

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION



SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, 9th Edition 2020.

DESIGN LOADING

Live Load Maine Legal Loads

TRAFFIC DATA

Current (2019) AADT	3,380
Future (2029) AADT	3720
DHV - % of AADT	13
Design Hourly Volume	528
Heavy Trucks (% of AADT)	7%
Heavy Trucks (% of DHV)	2%
Directional Distribution (% of DHV)	53%
18 kip Equivalent P 2.0	136
18 kip Equivalent P 2.5	130
Design Speed (mph)	30

MATERIALS

Concrete (Unless otherwise noted) Class A
Plain Reinforcing Steel ASTM A615/A615M, Grade 60

Structural Steel:
All Material (except as noted) ASTM A709, Grade 50
Portal Bracing ASTM A709, Grade 36
High Strength Bolts ASTM F3125, Grade A325, Type 1

Timber:
Fender System Grade 1 Lumber, 2.5 pcf CCA
Timber Fender Bolts ASTM F1554, Grade 36
Sidewalk, Control House, Control House Deck Grade 1 Lumber

BASIC DESIGN STRESSES

Concrete f 'c = 4,000 psi
Reinforcing Steel F y = 60,000 psi
Timber Fbo = 1,000 psi Minimum

Structural Steel:
ASTM A 709, Grade 50 F y = 50,000 psi
ASTM A 709, Grade 36 F y = 36,000 psi
ASTM A 325 Fu = 120,000 psi

HYDROLOGIC DATA

Mean Lower Low Water (MLLW)	-5.3 ft
Mean Low Water (MLW)	-4.9 ft
Mean Tide Level (MTL)	-0.6 ft
Mean High Water (MHW)	4.0 ft
Mean Higher High Water (MHHW)	4.4 ft

UTILITIES

Central Maine Power Company
Fairpoint Communications
Spectrum
MaineDOT Electrical Department

MAINTENANCE OF TRAFFIC

Signalized alternating one-way vehicular traffic. Open to marine traffic during construction, with intermittent closures permitted. Closed to marine traffic for electrical & mechanical systems replacement.

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SOUTHPORT-BOOTHBAY HARBOR

LINCOLN COUNTY

SOUTHPORT BRIDGE

OVER

TOWNSEND GUT/ATLANTIC OCEAN

ROUTE 27

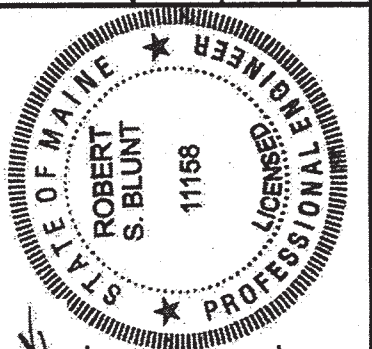
FEDERAL PROJECT NO. 2309401

PROJECT LENGTH 0.034 mi.

BRIDGE NO. 2789

PROJECT LOCATION:	Route 27 over Townsend Gut/Atlantic Ocean at Southport-Boothbay Harbor Town Line Lat./Long. 43°50'33" N, 69°39'15" W
PROGRAM AREA:	Bridge
OUTLINE OF WORK:	Bridge Strengthening, Electrical & Mechanical Upgrades, Fender Systems Replacement, Control House Replacement, Replacement of Existing Barrier Gates and Traffic Warning and Control System

WIN 21751.01



STATE OF MAINE	DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
COMMISSIONER		10-5-22	
CHIEF ENGINEER		10-30-2022	

DATE	BY	PE	PROJ. MANAGER	J. STETSON	PE
8/19/22	8/19/22	8/19/22	DESIGN-DETAILED	BCP	DESIGN-DETAILED
8/19/22	8/19/22	8/19/22	CHECKED-REVIEWED	CTA	DESIGN-DETAILED
8/19/22	8/19/22	8/19/22	DESIGN-DETAILED	DESIGN-DETAILED	DESIGN-DETAILED
8/19/22	8/19/22	8/19/22	REVISIONS 1	REVISIONS 2	REVISIONS 3
8/19/22	8/19/22	8/19/22	REVISIONS 4	REVISIONS 5	REVISIONS 6
8/19/22	8/19/22	8/19/22	FIELD CHANGES	FIELD CHANGES	FIELD CHANGES

SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT SOUTHPORT & BOOTHBAY HARBOR ME LINCOLN COUNTY	TITLE SHEET
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SHEET NUMBER	1
OF 48	

ESTIMATED QUANTITIES				
ITEM NO.	DESCRIPTION	QUANTITY	UNIT	
202.01	Removing Structures and Obstructions, Existing Fender System	1	LS	
202.01	Removing Structures and Obstructions, Existing Steel Grid Deck	1	LS	
202.08	Removing Building No. 1 - Control House	1	LS	
202.12	Removing Existing Structural Concrete	5	CY	
202.27	Existing Machinery Removal and Demolition	1	LS	
202.56	Remove Existing Advance Warning Beacon	2	EA	
202.57	Removing Existing Warning Gate, Bridge Mounted	2	EA	
202.57	Removing Existing Warning Gate, Foundation Mounted	2	EA	
203.20	Common Excavation	270	CY	
203.35	Crushed Stone 3/4-inch	5	CY	
206.082	Structural Earth Excavation - Major Structures, Plan Quantity	20	CY	
304.10	Aggregate Subbase Course - Gravel	110	CY	
403.208	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size	30	TON	
403.213	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base Course)	90	TON	
409.15	Bituminous Tack Coat, Applied	32	Gal	
501.239	Dynamic Loading Tests - Providing For	4	EA	
501.48	Steel H-beam Piles 74 lb/ft, Delivered	4750	LF	
501.481	Steel H-beam Piles 74 lb/ft, In Place	4750	LF	
501.90	Pile Tips	50	EA	
501.91	Pile Splices	50	EA	
501.92	Pile Driving Equipment Mobilization	1	LS	
502.219	Structural Concrete, Abutments and Retaining Walls	5 CY	1	LS
502.26	Structural Concrete Roadway and Sidewalk Slab on Steel Bridges	130 CY	1	LS
502.291	Saw Cut Grooving	5,100 SF	1	LS
502.49	Structural Concrete Curbs and Sidewalks	3 CY	1	LS
503.12	Reinforcing Steel, Fabricated and Delivered		34600	LB
503.13	Reinforcing Steel, Placing		34600	LB
503.17	Mechanical/Welded Splice		685	EA
504.70	Structural Steel Fabricated and Delivered	90,000 LB	1	LS
504.71	Structural Steel Erection	90,000 LB	1	LS
505.08	Shear Connectors	3,700 EA	1	LS
506.1705	Surface Preparation of Existing Structural Steel	1,500 SF	1	LS
506.1775	Field Painting, New and Existing Steel with Zinc Rich Paint		1	LS
507.0841	Steel Pipe Hand Railing	300 LF	1	LS
507.13	Temporary Bridge Rail		370	LF
515.21	Protective Coating for Concrete Surfaces	1,150 SY	1	LS
518.50	Repair of Upward Facing Surfaces - to Reinforcing Steel < 8 inches		50	SF
518.60	Repair of Vertical Surfaces < 8 inches		250	SF
518.70	Repair of Overhead Surfaces < 8 inches		50	SF
526.301	Temporary Concrete Barrier, Type I	610 LF	1	LS
526.305	Temporary Concrete Barrier, Braced Type I	370 LF	1	LS
526.34	Permanent Concrete Transition Barrier		4	EA
528.01	Structural Timber, Fabrication and Delivery	89,100 BF	1	LS
528.02	Structural Timber, Erection	89,100 BF	1	LS
530.02	Prefabricated Deck Panels		4900	SF
606.1722	Bridge Transition - Type II		6	EA
606.25	Terminal Connector		2	EA
606.55	Guardrail Type 3 - Single Rail		210	LF
609.11	Vertical Curb Type I		40	LF
610.08	Plain Riprap		115	CY
626.11	Precast Concrete Junction Box		2	EA
626.22	Non-Metallic Conduit		450	LF
626.221	Non-Metallic Conduit Concrete Encased		125	LF
626.251	Non-Metallic Under Pavement Conduit (Sch. 80 or Greater)		40	LF
626.43	30-inch Diameter Foundation		28	LF
626.451	42-inch Diameter Foundation		47	LF
627.733	4" White or Yellow Painted Pavement Marking Line		650	LF
627.75	White or Yellow Pavement & Curb Marking		50	SF
629.05	Hand Labor, Straight Time		20	HR
631.10	Air Compressor (Including Operator)		12	HR
631.11	Air Tool (Including Operator)		12	HR
631.12	All-Purpose Excavator (Including Operator)		12	HR
631.172	Truck-Large (Including Operator)		12	HR
639.18	Field Office Type A		1	EA
643.01	Traffic Signals and Gates, Movable Bridge Hybrid Warning and Resistance Gate		1	LS
643.60	Flashing Beacon at Eastbound Approach		1	LS
643.60	Flashing Beacon at Westbound Approach		1	LS
643.72	Temporary Traffic Signal		1	LS
643.80	Traffic Signals at Southport Bridge Route 27 over Townsend Gut		1	LS
643.92	Pedestal Pole		1	EA
643.94	Dual Purpose Pole with 35' Warning Beacon		2	EA
643.97	Wood Poles with Guys and Span Wire		1	EA
652.33	Drum		20	EA
652.34	Cone		20	EA
652.35	Construction Signs		300	SF
652.361	Maintenance of Traffic Control Devices	200 CD	1	LS
652.38	Flaggers		560	HR
655.3002	Bridge Control System		1	LS
659.10	Mobilization		1	LS
660.21	On-The-Job Training		1000	HR
815.00	Building: Control House		1	LS
860.1851	Live Load Rollers		1	LS
860.1863	End Jack Assemblies		1	LS
860.1864	End Seat Assemblies		1	LS
860.1865	Fully Closed Stops		1	LS
860.187	Miscellaneous Mechanical Repairs		1	LS

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
860.231	Span Drive Machinery	1	LS
860.30	Functional Testing	1	LS
880.02	Bridge Balancing	1	LS
880.031	Balance Block - Steel	1	LS
910.301	Special Work - Staff Gauges	1	LS

GENERAL BRIDGE CONSTRUCTION NOTES

1. For easements, construction limits and right of way lines, refer to the Right of Way Plans.
2. All utility facilities shall be adjusted by the respective utilities unless otherwise noted.
3. Protective Coating for Concrete Surfaces shall be applied to the following areas:

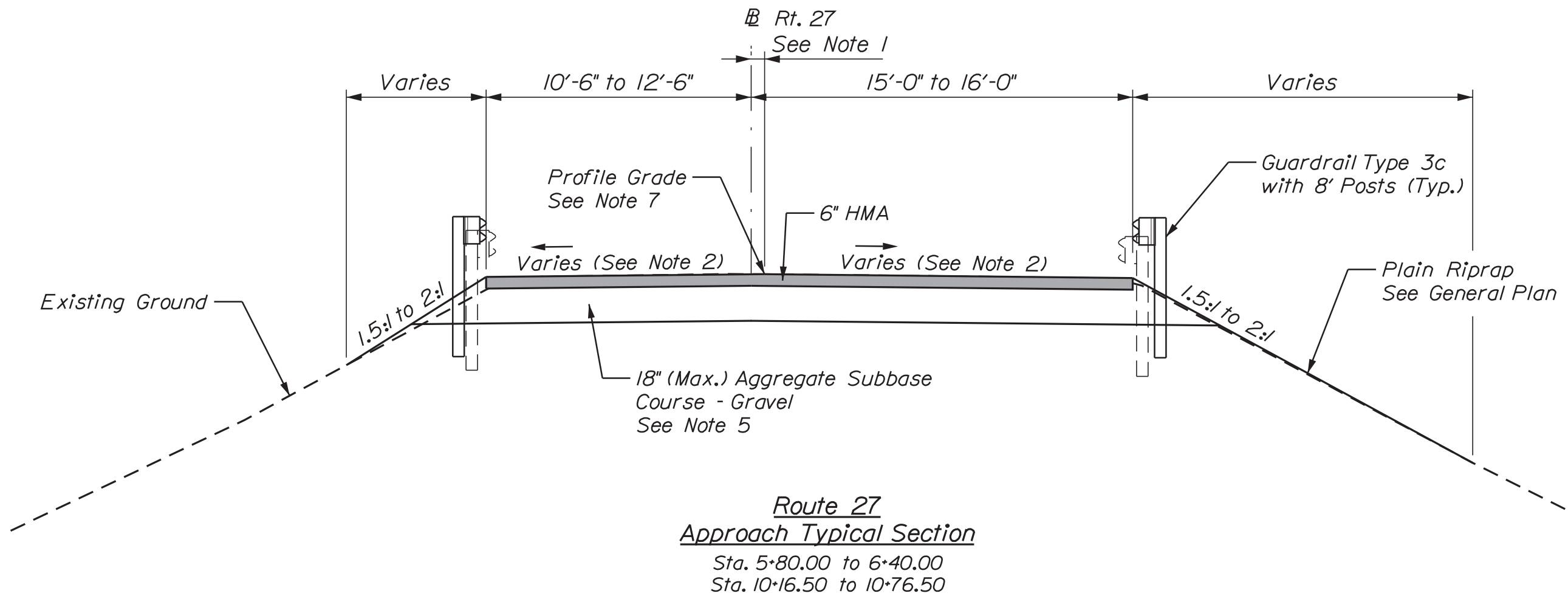
All exposed surfaces of existing and proposed concrete above the waterline.
4. Project information referred to below may be accessed at the following MaineDOT web address: <https://www.maine.gov/mdot/contractors/>
5. Bidders and Contractors may access the existing bridge plans at the MaineDOT web address. 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.
6. Bidders and Contractors may access a copy of the project geotechnical report at the MaineDOT web address.
7. 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.
8. 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.

9. All existing bridge materials and fender system timbers to be removed 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 existing fender system timbers are creosote treated. The Contractor is responsible for the containment, proper management, and disposal of all lead contaminated hazardous waste and creosote contaminated hasardous waste generated by the process of demolishing the bridge components and existing fender systems. The Contractor is responsible for implementing appropriate OSHA mandated personal protection standards related to this process. Once the existing bridge and fender system materials are removed, the Contractor is solely responsible for the care, custody, and control of the components of the existing bridge and fender system materials and any hazardous waste generated as a result of storage, recycling, or disposal of the bridge and fender system components. The Contractor shall recycle or reuse the steel in accordance with Maine Department of Environmental Protection's "Maine Hazardous Waste Management Regulations," Chapter 850. A copy of this regulation is available at the 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 materials and fender system will be considered incidental to the respective bridge and fender system removal pay items. The existing bridge and fender system materials shall be removed by and become the property of the Contractor.
10. The Contractor shall submit Fender Demolition Plans and Existing Grid Deck Demolition Plans to the Resident at least 10 business days prior to the start of demolition work. The plans shall outline the methods, equipment, and sequencing to be used to remove and dispose of all materials. No work related to the removal of the bridge materials shall be undertaken by the Contractor until MaineDOT has reviewed the plans for appropriateness and completeness. Payment for all work necessary for developing, submitting, and finalizing the Demolition Plans will be considered incidental to the respective removal pay items.
11. All new structural steel, excluding the fender system, shall be field painted with a minimum 10mil DFT of a Zinc Rich Paint and compatible topcoat sealer. Unless noted otherwise, the finish topcoat color of all steel shall be green and match the following Federal Standard 595C, light green, color number: 14272. This work shall conform to section 506 of the MaineDOT Standard Specification and shall be paid for under Item 506.1775, Field Paint New and Existing Steel with Zinc Rich Paint. The Contractor shall provide a sample of the coating for field verification of existing bridge color match.
12. The Contractor shall plan and conduct work so that upon completion of the project there is no drop-off from the edge of the shoulder pavement.
13. Do not excavate for Aggregate Subbase Course where existing material is suitable as determined by the Resident.
14. 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.



NOTES:

1. The proposed geometric layout shifts 1'-9" to the right from start of transition near Sta. 5+80.00 to start of bridge deck near Sta. 6+40.00. This proposed geometric layout shifts 1'-9" back to the left from end of bridge deck near Sta. 10+16.50 to end of approach near Sta. 10+76.50.
2. Cross slope shall transition from existing cross slopes at approach ends to -1.0% at bridge deck.
3. The pavement and subbase depths as shown on the plans are intended to be nominal.
4. See Sheet 35 for sidewalk details.
5. See Deck Over Backwall Detail on Sheet 23 for aggregate subbase transition.
6. Stationing is approximate.
7. The proposed profile shall match existing elevations at the start of each approach, and match proposed elevations of the top of bridge deck at the end of each approach. The Contractor shall lay out the profile and it will be accepted by the Resident.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2309401

WIN
21751.01

BRIDGE NO. 2789
BRIDGE PLANS

PROJ. MANAGER J. STETSON, PE
DESIGN-DETAILED BGP
CHECKED-REVISED CTA
DESIGN2-DETAILED2
DESIGN3-DETAILED3
REVISIONS 1
REVISIONS 2
REVISIONS 3
REVISIONS 4
FIELD CHANGES

DATE 8/19/22
BY
UPD
RSLNT

SIGNATURE 1158
P.E. NUMBER 11158
August 19, 2022
DATE

SOUTHPORT BRIDGE ROUTE 27
OVER TOWNSEND GUT
SOUTHPORT & BOOTHBAY HARBOR ME
LINCOLN COUNTY

ESTIMATED QUANTITIES &
GENERAL NOTES

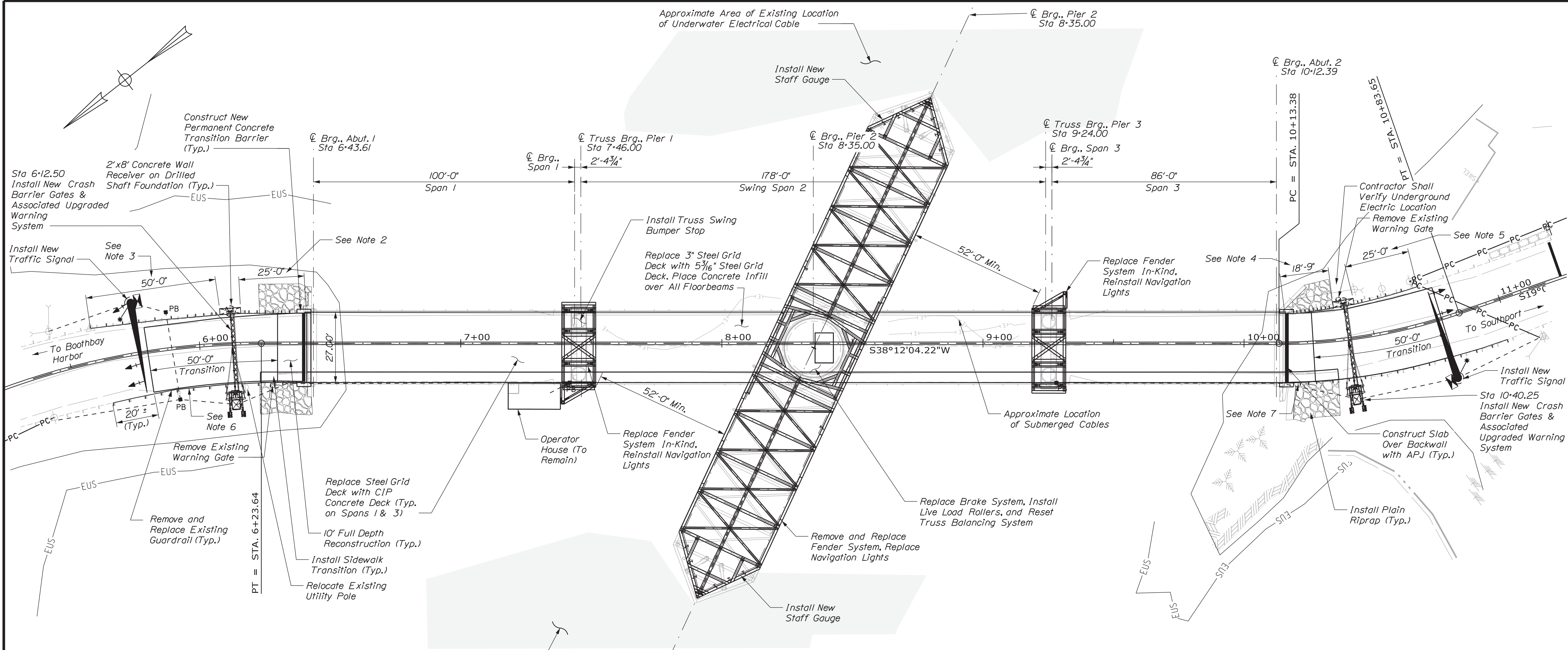
SHEET NUMBER
2
OF 48

Date: 9/21/2022

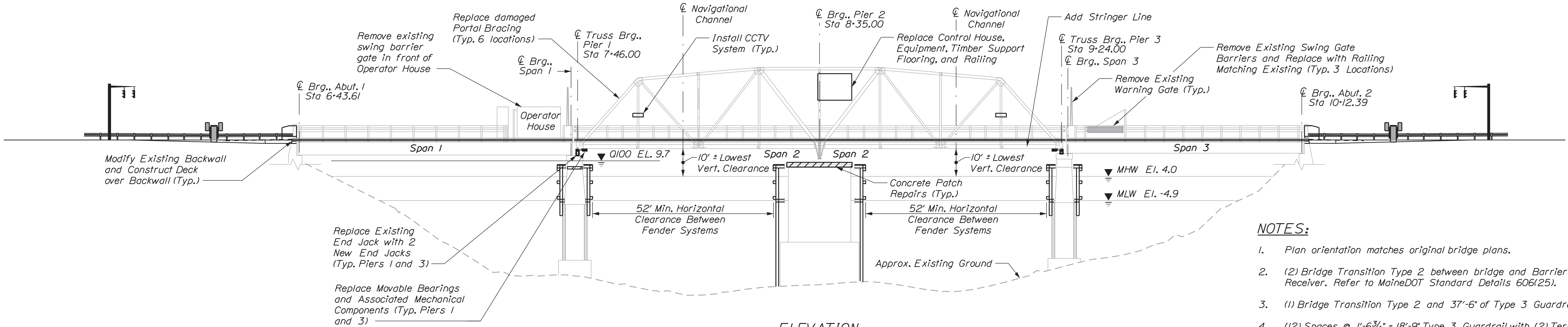
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Division: HIGHWAY

Filename: ...\\STA\\003_Plan_ELEV_01.dgn



PLAN



ELEVATION

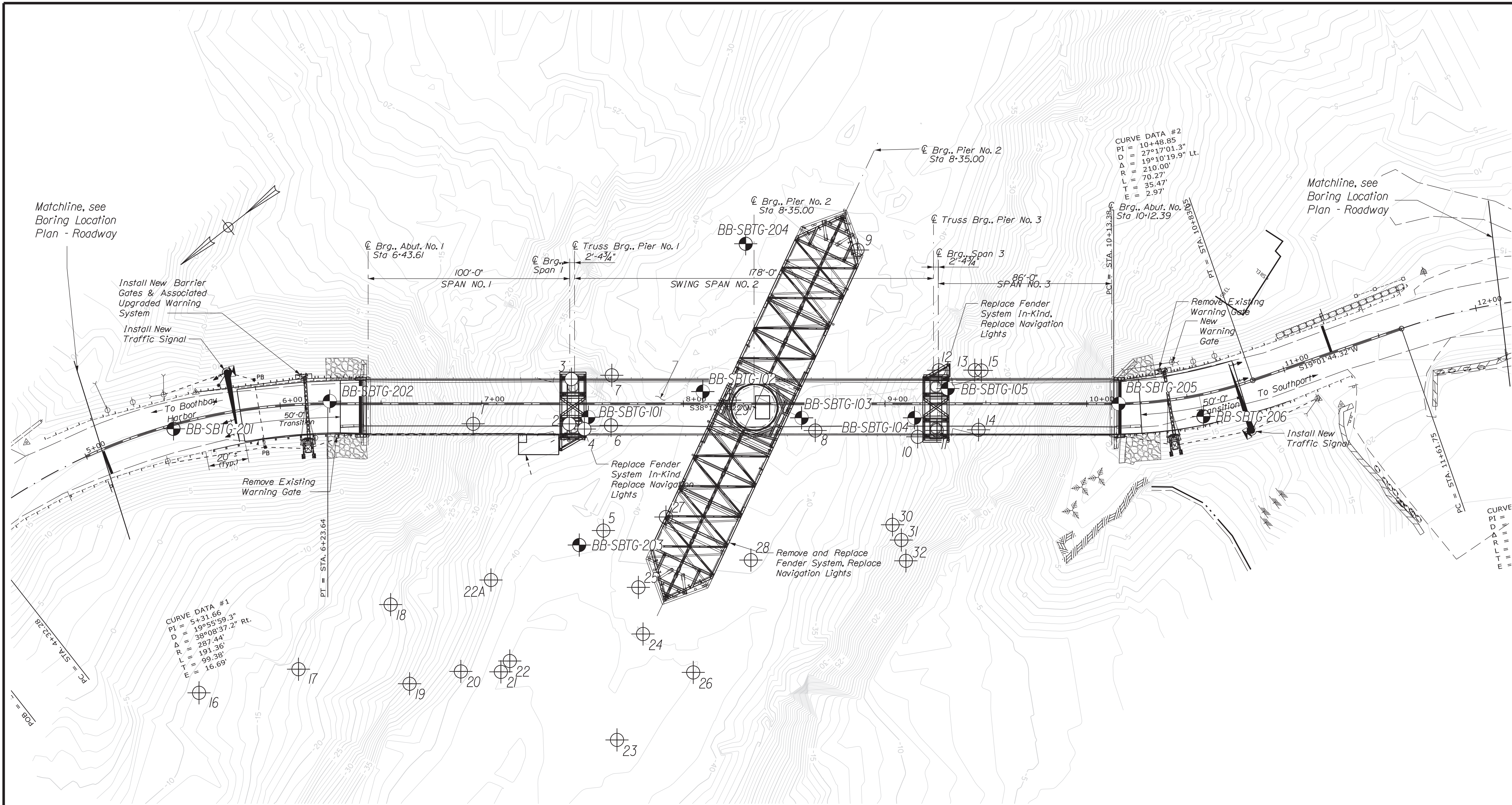
(Navigation Lights not Shown)
(Utilities not Shown)

NOTES:

- Plan orientation matches original bridge plans.
- (2) Bridge Transition Type 2 between bridge and Barrier Gate Receiver. Refer to MaineDOT Standard Details 606(25).
- (1) Bridge Transition Type 2 and 37'-6" of Type 3 Guardrail.
- (12) Spaces @ 1'-6 3/4" = 18'-9" Type 3 Guardrail with (2) Terminal Connectors (one each end).
- (1) Bridge Transition Type 2 and 12'-6" of Type 3 Guardrail.
- (1) Bridge Transition Type 2 and 62'-6" of Type 3 Guardrail.
- (1) Bridge Transition Type 2 and 75'-0" of Type 3 Guardrail.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2309401		BRIDGE NO. 2789		WIN		21751.01	
SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT		LINCOLN COUNTY		SOUTHPORT & BOOTHBAY HARBOR ME		GENERAL PLAN AND ELEVATION		SHEET NUMBER	
DATE		BY		DESIGN-DETAILED		CHECKED-REVIEWED		DESIGN-DETAILED	
8/19/22		J. STETSON, PE		BSP		CTA		CTA	
SIGNATURE		P.E. NUMBER		DATE		REVISIONS		FIELD CHANGES	
1158		August 19, 2022				1			
						2			
						3			
						4			
						5			
						6			
						7			

Division: HIGHWAY
Username: common
Date: 8/19/2022
Filename: ...\\1 - BLP\\BLP - Bridge.dgn

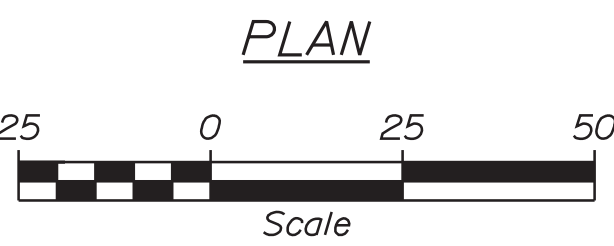


NOTES

- 1) Base map developed from electronic files (Ex-Bridge.dgn, TBK_Southport.dgn, BRIDGE.dgn, Alignments.dgn, Contours.dgn, and Topo.dgn) provided by VHB on June 22, 2022.
- 2) The locations of the 1939 borings were estimated by overlaying the 1939 boring location plan over the current bridge plan and should be considered approximate.
- 3) BB-SBTG-100 series bridge borings were performed by New England Boring Contractors and observed by GZA personnel between June 10, 2019 and June 13, 2019. The as drilled locations of the test borings were estimated by taping to existing bridge structural elements and should be considered approximate.
- 4) BB-SBTG-200 series bridge borings were performed by New England Boring Contractors and observed by GZA personnel between November 9, 2020 and July 28, 2021. The as drilled locations of BB-SBTG-201, -202, -205, and -206 were estimated by taping to existing bridge structural elements and should be considered approximate. BB-SBTG-203 and 204 were surveyed by a MaineDOT survey crew and provided to GZA in the field.

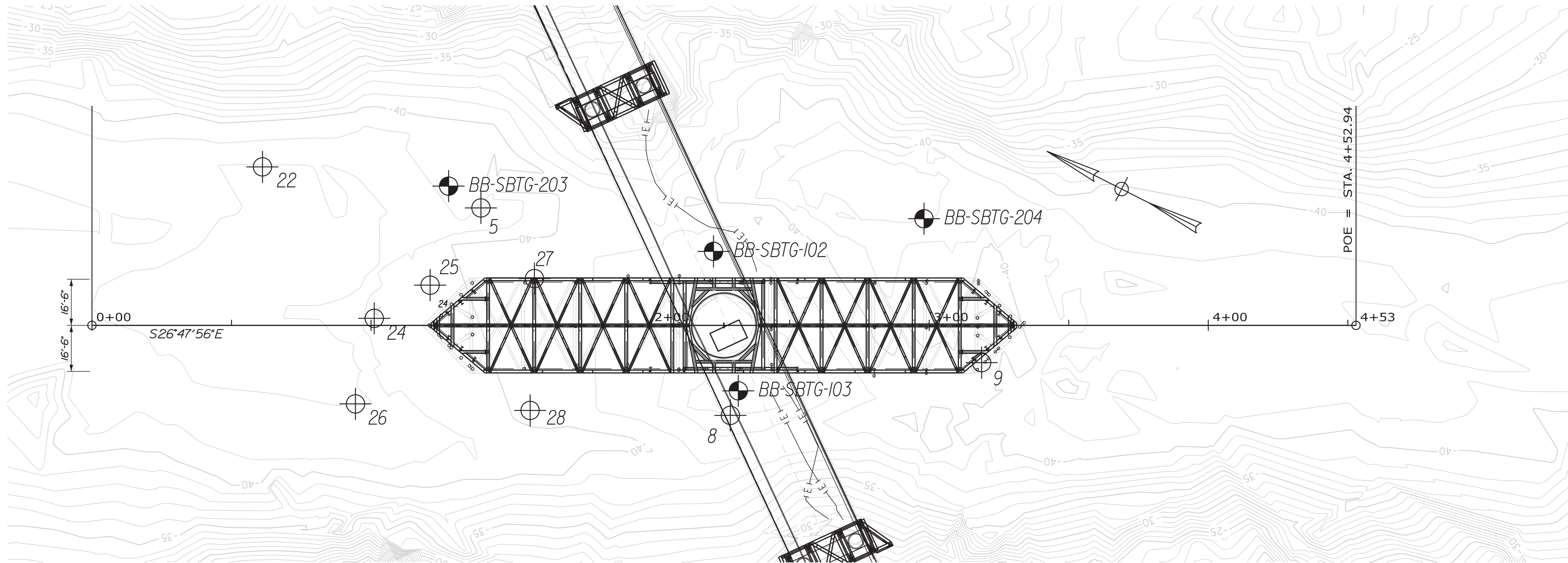
BORING LOCATION PLAN LEGEND

- BB-SBTG-105 Approximate location and designation of 100-Series cased wash borings by GZA
- BB-SBTG-206 Approximate location and designation of 200-Series cased wash borings by GZA
- 32 Approximate location and designation of 1939 borings by MaineDOT



PREPARED BY:

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2175(100)		BRIDGE NO. 2789		WIN 21751.00		BRIDGE PLANS	
SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT		SOUTHPORT & BOOTHBAY HARBOR ME		LINCOLN COUNTY		BORING LOCATION PLAN BRIDGE		FIGURE 5 OF 48	
SIGNATURE 		P.E. NUMBER 10957		DATE 08/19/2022					
PROJ. MANAGER J. STETSON		BY N. WILLIAMS		DATE AUG 2022					
DESIGN-DETAILED		CHECKED-REVIEWED		DESIGN-DETAILED		REVISIONS			
DESIGN-DETAILED02		DESIGN-DETAILED03		DESIGN-DETAILED04		REVISIONS 1			
						REVISIONS 2			
						REVISIONS 3			
						REVISIONS 4			
						FIELD CHANGES			



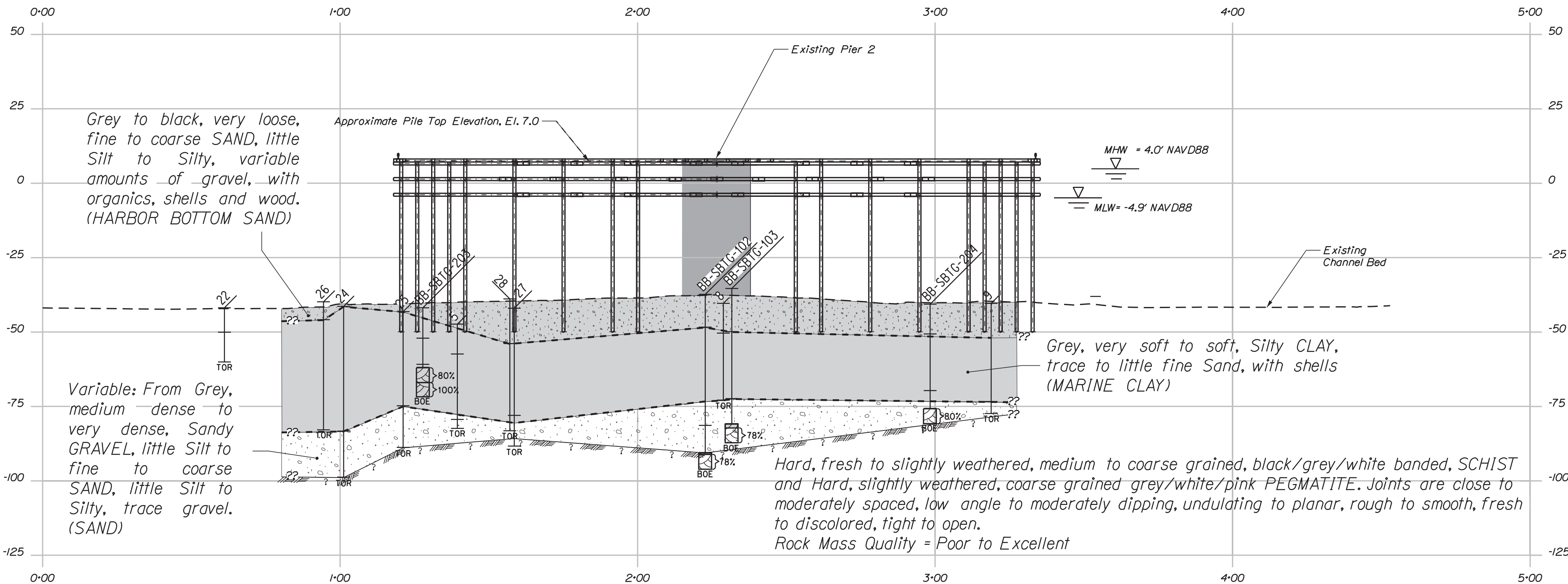
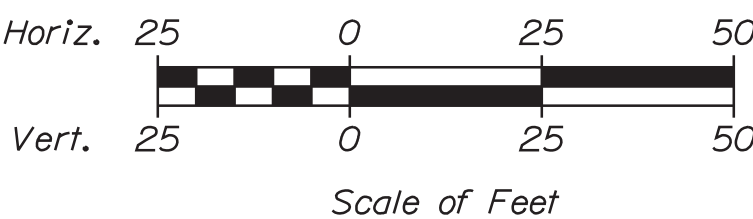
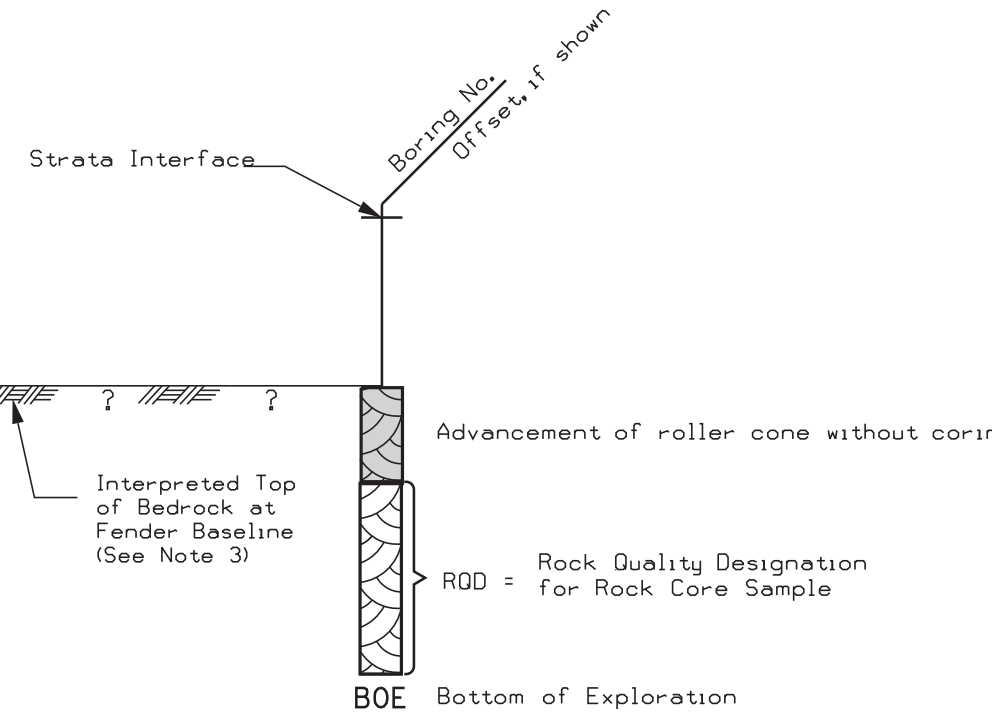
NOTES

- 1) Base map developed from electronic files provided by VHB dated June 22, 2022 (Files included BRIDGE.dgn, Ex-Bridge.dgn, TBK_Southport.dgn, and z_Fender-sys_P&P.dgn)
- 2) See Notes 2 through 4 on Boring Location Plan - Bridge for details of the subsurface exploration dates and locations.
- 3) This generalized interpretive soil profile is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and have been developed by interpretations of widely spaced explorations and samples. Actual soil and rock transitions may vary and are probably more erratic. For more specific information refer to the exploration logs.

BORING LOCATION PLAN LEGEND

- BB-SBTG-206 Approximate Location and designation of 100- and 200-Series cased wash borings by GZA
- 32 Approximate Location and designation of 1939 borings by MaineDOT

INTERPRETIVE SUBSURFACE PROFILE LEGEND



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	STP-2175(100)	BRIDGE NO. 2789	WIN	21751.00
BRIDGE PLANS				

PROJ. MANAGER J. STETSON	BY N. WILLIAMS	DATE AUG 2022	SIGNATURE Andrew R. Blaisdell	P.E. NUMBER 10987	DATE 08/19/2022
DESIGN-DETAILED N. WILLIAMS	CHECKED-REVIEWED J. LABARELLE	DATE AUG 2022	SIGNATURE	P.E. NUMBER	DATE
DESIGN-2-DETAILED2	DESIGN-3-DETAILED3				
REVISIONS 1	REVISIONS 2				
REVISIONS 3	REVISIONS 4				
FIELD CHANGES					

SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT	LINCOLN COUNTY
SOUTHPORT & BOOTHBAY HARBOR ME	
BORING LOCATION PLAN & INTERPRETIVE SUBSURFACE PROFILE - FENDER	

FIGURE

6



Maine Department of Transportation				Project:	Location:	Boring No.:
Soil/Back Exploration Log				Southport Bridge No. 2789	Route 27 over Townsend Gut	RP-SBTG-201
US CUSTOMARY UNITS				Location:	Southport - Boothbay Harbor, Maine	WIN: 21751.00
Driller:	New England Boring Contractors	Elevation (ft.):	49.0'	Auger ID/OD:		
Operator:	P. Schofield	Datum:	NAVD 88	Sampler:	Standard Split Spoon	
Logged By:	E. Tome	Rig Type:	Truck-Mounted Mobile Drill B-48	Hammer WL/Fall:	M49/30"	
Date Start/Finish:	11/9/20-11/9/20	Drilling Method:	HSA	Cone Barre:		
Boring Location:	N26556, E501263	Coring ID/OD:	4" / 4.5"	Water Level:	**	Not Encountered
Hammer Efficiency Factor:	0.84	Hammer Type:	Automatic ☒ Hydraulic ☐ Rope & Cathead ☐			
Notes:				Laboratory Testing Results/ASHTO and Unified Class.		
1. NEBC Automatic hammer serial #2705 Energy Transfer Ratio = .84% 2. The as-drilled location was measured from existing structural elements (N26556, E501263). Elevation was interpolated from existing contours and estimated to the nearest 0.5'. 3. The 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 Manual Standard based percentages passing specific grain sizes.				Page 1 of 1 Boring No.: RB-SBTG-201		

Maine Department of Transportation				Project:	Location:	Boring No.:
Soil/Back Exploration Log				Southport Bridge No. 2789	Route 27 over Townsend Gut	RP-SBTG-202
US CUSTOMARY UNITS				Location:	Southport - Boothbay Harbor, Maine	WIN: 21751.00
Driller:	New England Boring Contractors	Elevation (ft.):	58.0'	Auger ID/OD:	4" / 4.5"	
Operator:	P. Schofield	Datum:	NAVD 88	Sampler:	N/A	
Logged By:	E. Tome	Rig Type:	Truck-Mounted Mobile Drill B-48	Hammer WL/Fall:	N/A	
Date Start/Finish:	11/9/20-11/9/20	Drilling Method:	HSA	Cone Barre:		
Boring Location:	N26225, E501058	Coring ID/OD:		Water Level:	**	Not Encountered
Hammer Efficiency Factor:	N/A	Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☐			
Notes:				Laboratory Testing Results/ASHTO and Unified Class.		
1. The as-drilled location was measured from existing structural elements (N26225, E501058). Elevation was interpolated from existing contours and estimated to the nearest 0.5'. 2. Soil descriptions are based on soil recovered from auger flights.				Page 1 of 1 Boring No.: RP-SBTG-202		

Maine Department of Transportation				Project:	Location:	Boring No.:
Soil/Back Exploration Log				Southport Bridge No. 2789	Route 27 over Townsend Gut	RP-SBTG-203A
US CUSTOMARY UNITS				Location:	Southport - Boothbay Harbor, Maine	WIN: 21751.00
Driller:	New England Boring Contractors	Elevation (ft.):	49.5'	Auger ID/OD:	4" / 4.5"	
Operator:	P. Schofield	Datum:	NAVD 88	Sampler:	N/A	
Logged By:	E. Tome	Rig Type:	Truck-Mounted Mobile Drill B-48	Hammer WL/Fall:	N/A	
Date Start/Finish:	11/9/20-11/9/20	Drilling Method:	HSA	Cone Barre:		
Boring Location:	N26057, E501030	Coring ID/OD:		Water Level:	**	Not Encountered
Hammer Efficiency Factor:		Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☐			
Notes:				Laboratory Testing Results/ASHTO and Unified Class.		
1. The as-drilled location was measured from existing structural elements (N26057, E501030). Elevation was interpolated from existing contours and estimated to the nearest 0.5'. 2. Soil descriptions are based on soil recovered from auger flights.				Page 1 of 1 Boring No.: RP-SBTG-203A		

Maine Department of Transportation				Project:	Location:	Boring No.:
Soil/Back Exploration Log				Southport Bridge No. 2789	Route 27 over Townsend Gut	RP-SBTG-205
US CUSTOMARY UNITS				Location:	Southport - Boothbay Harbor, Maine	WIN: 21751.00
Driller:	New England Boring Contractors	Elevation (ft.):	18.5'	Auger ID/OD:	4" / 4.5"	
Operator:	P. Schofield	Datum:	NAVD 88	Sampler:	N/A	
Logged By:	E. Tome	Rig Type:	Truck-Mounted Mobile Drill B-48	Hammer WL/Fall:	N/A	
Date Start/Finish:	11/9/20-11/9/20	Drilling Method:	HSA	Cone Barre:		
Boring Location:	Sta. 4+47.9' LT	Coring ID/OD:		Water Level:	**	Not Encountered
Hammer Efficiency Factor:		Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☐			
Notes:				Laboratory Testing Results/ASHTO and Unified Class.		
1. The as-drilled location was measured from existing structural elements (N25655, E501018). Elevation was interpolated from existing contours and estimated to the nearest 0.5'. 2. Soil descriptions are based on soil recovered from auger flights.				Page 1 of 1 Boring No.: RP-SBTG-205		

Maine Department of Transportation				Project:	Location:	Boring No.:
Soil/Back Exploration Log				Southport Bridge No. 2789	Route 27 over Townsend Gut	RP-SBTG-201
US CUSTOMARY UNITS				Location:	Southport - Boothbay Harbor, Maine	WIN: 21751.00
Driller:	New England Boring Contractors	Elevation (ft.):	47.0'	Auger ID/OD:	4" / 4.5"	
Operator:	P. Schofield	Datum:	NAVD 88	Sampler:	N/A	
Logged By:	E. Tome	Rig Type:	Truck-Mounted Mobile Drill B-48	Hammer WL/Fall:	N/A	
Date Start/Finish:	11/9/20-11/9/20	Drilling Method:	HSA	Cone Barre:		
Boring Location:	N26442, E501094	Coring ID/OD:		Water Level:	**	Not Encountered
Hammer Efficiency Factor:	N/A	Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☐			
Notes:				Laboratory Testing Results/ASHTO and Unified Class.		
1. The as-drilled location was measured from existing structural elements (N26442, E501094). Elevation was interpolated from existing contours and estimated to the nearest 0.5'. 2. Soil descriptions are based on soil recovered from auger flights.				Page 1 of 1 Boring No.: RP-SBTG-201		

Maine Department of Transportation				Project:	Location:	Boring No.:
Soil/Back Exploration Log				Southport Bridge No. 2789	Route 27 over Townsend Gut	RP-SBTG-203
US CUSTOMARY UNITS				Location:	Southport - Boothbay Harbor, Maine	WIN: 21751.00
Driller:	New England Boring Contractors	Elevation (ft.):	51.0'	Auger ID/OD:	4" / 4.5"	
Operator:	P. Schofield	Datum:	NAVD 88	Sampler:	N/A	
Logged By:	E. Tome	Rig Type:	Truck-Mounted Mobile Drill B-48	Hammer WL/Fall:	N/A	
Date Start/Finish:	11/9/20-11/9/20	Drilling Method:	HSA	Cone Barre:		
Boring Location:	N26086, E501048	Coring ID/OD:		Water Level:	**	Not Encountered
Hammer Efficiency Factor:		Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☐			
Notes:				Laboratory Testing Results/ASHTO and Unified Class.		
1. The as-drilled location was measured from existing structural elements (N26086, E501048). Elevation was interpolated from existing contours and estimated to the nearest 0.5'. 2. Soil descriptions are based on soil recovered from auger flights.				Page 1 of 1 Boring No.: RP-SBTG-203		

Maine Department of Transportation				Project:	Location:	Boring No.:
Soil/Back Exploration Log				Southport Bridge No. 2789	Route 27 over Townsend Gut	RP-SBTG-204
US CUSTOMARY UNITS				Location:	Southport - Boothbay Harbor, Maine	WIN: 21751.00
Driller:	New England Boring Contractors	Elevation (ft.):	34.0'	Auger ID/OD:	4" / 4.5"	
Operator:	P. Schofield	Datum:	NAVD 88	Sampler:	N/A	
Logged By:	E. Tome	Rig Type:	Truck-Mounted Mobile Drill B-48	Hammer WL/Fall:	N/A	
Date Start/Finish:	11/9/20-11/9/20	Drilling Method:	HSA	Cone Barre:		
Boring Location:	N25861, E500981	Coring ID/OD:		Water Level:	**	Not Encountered
Hammer Efficiency Factor:		Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☐			
Notes:				Laboratory Testing Results/ASHTO and Unified Class.		
1. The as-drilled location was measured from existing structural elements (N25861, E500981). Elevation was interpolated from existing contours and estimated to the nearest 0.5'. 2. Soil descriptions are based on soil recovered from auger flights.				Page 1 of 1 Boring No.: RP-SBTG-204		



SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT				LINCOLN COUNTY				STATE OF MAINE DEPARTMENT OF TRANSPORTATION				STATE OF MAINE DEPARTMENT OF TRANSPORTATION			
SOUTHPORT & BOOTHBAY HARBOR ME								SIGNATURE				STP-2175(100)			
BORING LOGS 1								P.E. NUMBER				WIN			
								DATE				21751.00			
												BRIDGE NO. 2789			

1. NEBC Automatic Hammer series 27075 Energy Transfer Ratio = .842
The air-dried location was measured from existing structural elements (N12559, E100689). Elevation was interpolated from existing contours and estimated to the nearest 0.5'.
2. Fine-Grained Soil Descriptions on this log are based on plasticity estimated using visual-manual classification techniques or laboratory classification tests if available, rather than the Unified Soil Classification System (USCS) Standard based percentages passing specific grain sizes.
3. Water level measured after approximately 30 minutes of stabilization time with casing in place.

See Section 10 for more information on data collection and quality control. Data were collected and analyzed in accordance with the NEBC Standard for Geotechnical Engineering. Data were collected and analyzed in accordance with the NEBC Standard for Geotechnical Engineering. Data were collected and analyzed in accordance with the NEBC Standard for Geotechnical Engineering.

Page 1 of 1
Boring Name: BR-SBTG-201

1. NEEC Automatic Hammer series #2705 Energy Transfer Ratio = .842
2. The 2-in dia cell was measured from existing structural elements IN2490, E5009521. Elevation was interpolated from existing contours and estimated to the nearest 0.5'.
3. 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.
4. Water level measured after approximately 10 minutes of stabilization with clogging in place.

Stratification logs represent approximate boundaries between soil types; transitions may be gradual.
Water level readings have been made outside of times and under conditions atypical. Groundwater fluctuations may occur due to conditions after the time recorded at the time water was measured.

Page 1 of 1
Boring No.: BB-SGTC-202

1. Mudline elevation measured relative to the local board surveyed by MineDol.

2. Boring locations were surveyed by MineDol IN25436, E190089.

3. Field notes consisted of Gecor rectangular wires with a rod diameter of 65mm. Raw torque readings were converted to undrained shear strength.

4. 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 MineDol Standard based percentages passing specific grain sizes.

Specification lines represent approximate boundaries between soil type/ transitions may be gradual.

Water level readings have been made both at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those stated.

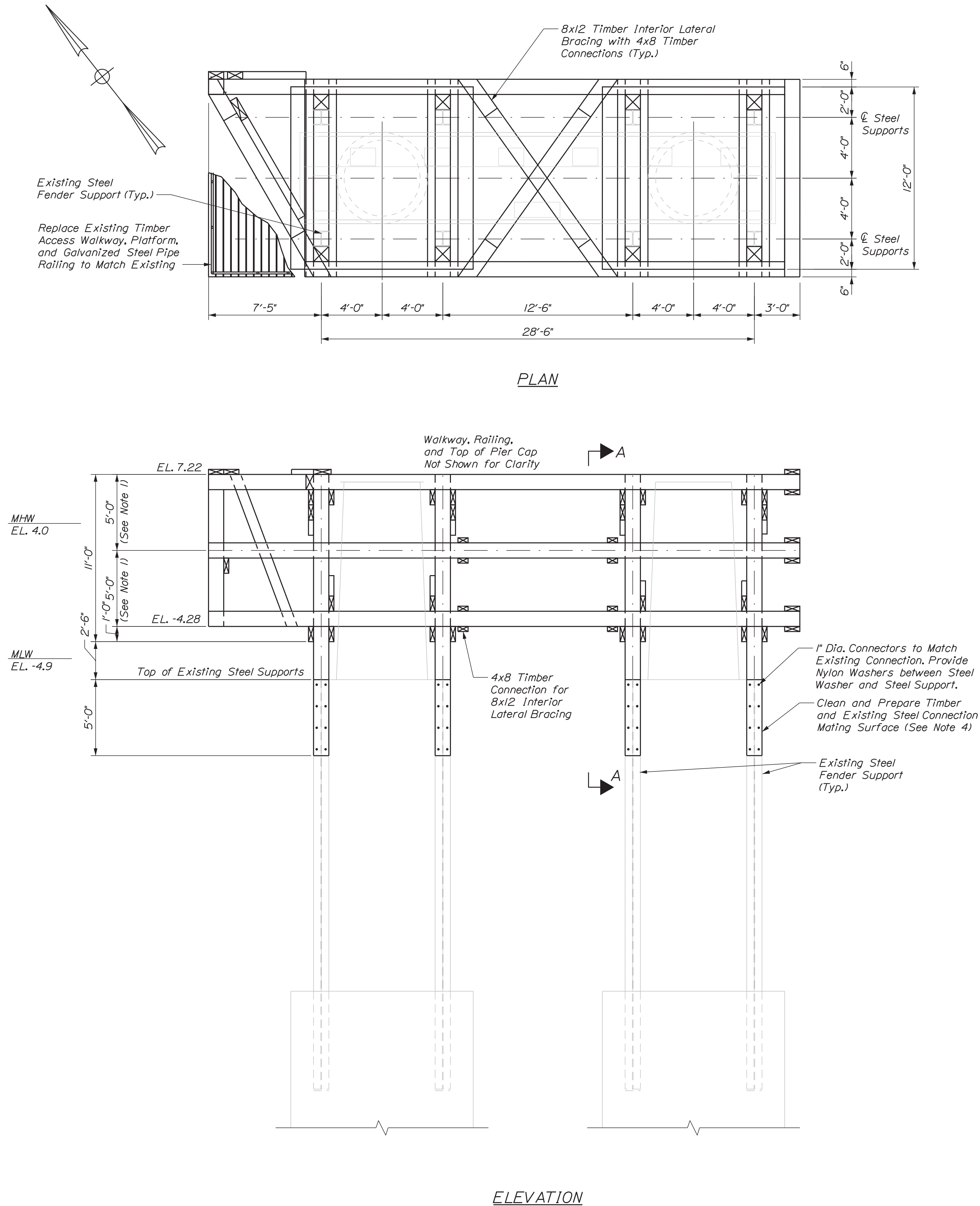
Page 1 of 1
Boring No.: BB-SBTC-203

1. Automatic hazard NERC Q23 Energy Transfer Ratio = 0.895.
2. Fine-Grained Soil Descriptions on this log are based on statistically estimated using visual/manual classification techniques or laboratory tests. Limit tests if available, rather than the Modified Standard based percentages posting specific grain sizes.
3. The as-laid location was measured from existing structural elements (N25393, E1500866). Ground surface/mudline elevation measured 53.9 below top of lagge deck.

Observations may represent observations/assessments between full type transitions may be gradual.
Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions after the time stated at the time measurement was taken.

Page 1 of 1
Rating No.: BR-SRTG-101

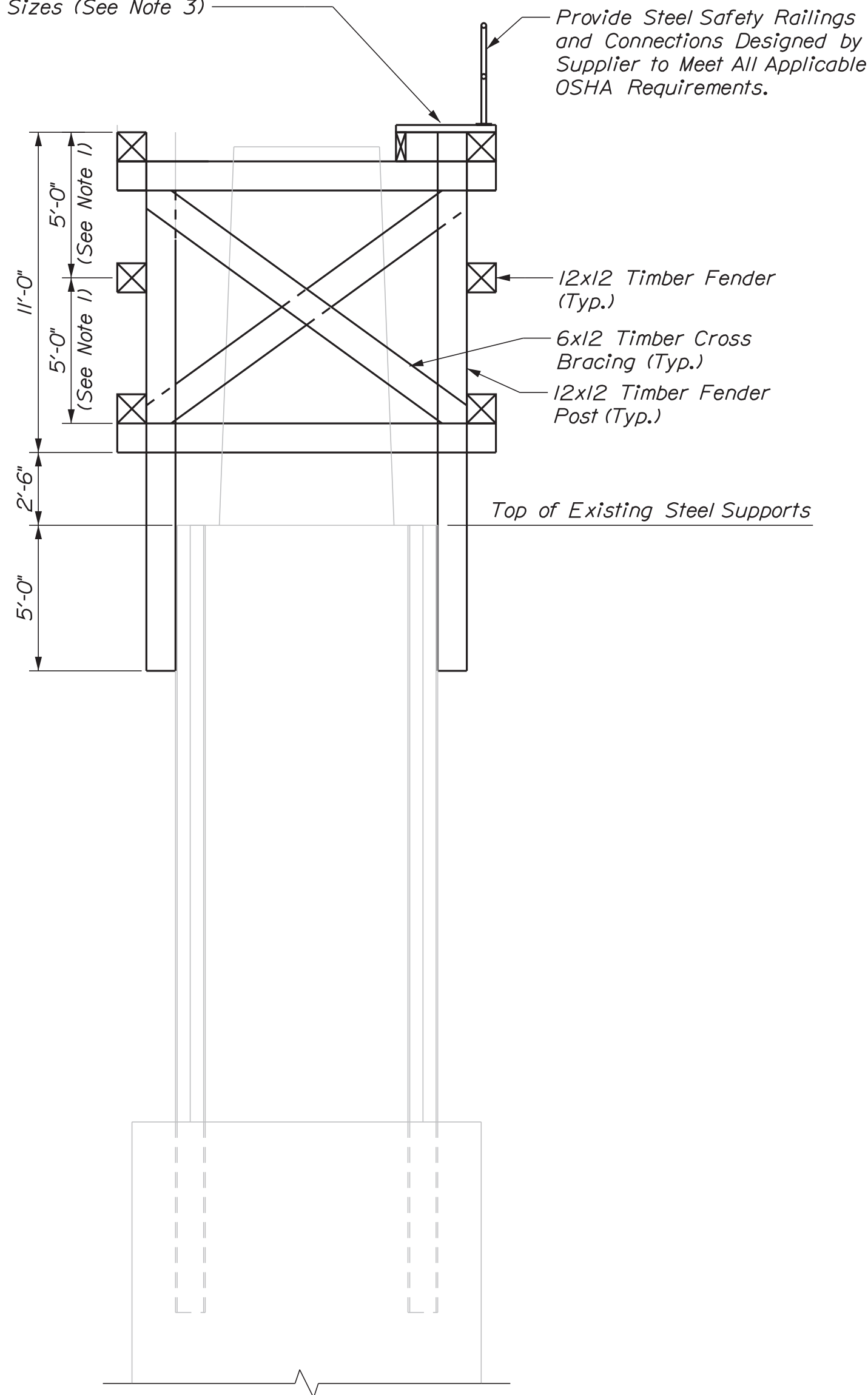
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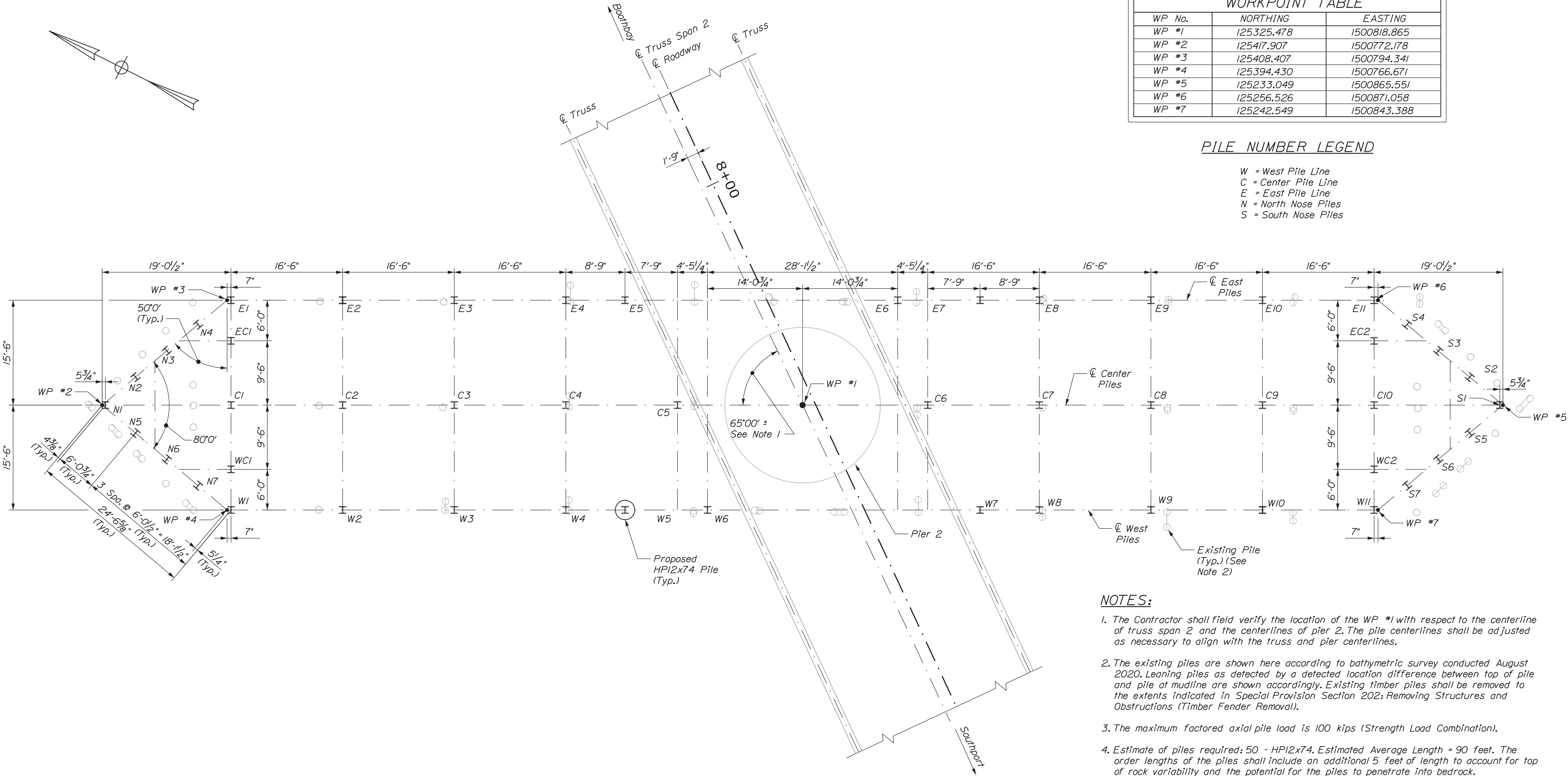
NOTES:

1. Replace Existing Timber Fender System in kind with members and connectors of the same size and spacing as existing, with the exception of the fender timber spacing as shown. Refer to the 1939 original plans and 1985 rehabilitation plans for member and connector details and material schedule.
2. All fender timber connectors shall be galvanized.
3. Proposed timber walkway and railing is not completely shown, but shall be replaced in kind. The contractor shall submit construction drawings to the Resident for review and approval at least two weeks prior to installation.
4. The Contractor shall remove all deleterious materials from the existing steel supports at least two months prior to ordering materials for the fender system replacements. Each steel support shall be inspected by the Contractor Representative and the Contractor's Dive Team to verify removal of deleterious materials and structural adequacy for the new timber connections. The Resident shall be notified at least two weeks prior to this activity and provided access during the inspections.
5. Timber walkway fasteners not shown for clarity. Contractor shall select appropriate length fastener. Fasteners shall be Pheinox RSS 305 or 316 stainless steel 7/16" dia., or approved equal.

Construct Proposed Worker Access Walkway to Match Existing Layout and Member Sizes (See Note 3)



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2309401		BRIDGE NO. 2789		WIN 21751.01		BRIDGE PLANS	
SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT		LINCOLN COUNTY		PIER 1		FENDER SYSTEM			
SHEET NUMBER		11		OF 48					
PROJ. MANAGER		J. STETSON, PE		BY		DPD		RSL/INT	
DESIGN-DETAILED		BGP		DATE		8/19/22		8/19/22	
CHECKED-REVIEWED		CTA		SIGNATURE		1158		P.E. NUMBER	
DESIGN-DETAILED		CTA		DATE		August 19, 2022		DATE	
REVISIONS		1		REVISIONS		2		REVISIONS	
REVISIONS		3		REVISIONS		4		FIELD CHANGES	



PILE LAYOUT PLAN

WORKPOINT TABLE		
WP No.	NORTHING	EASTING
WP #1	125325.478	1500818.865
WP #2	125417.907	1500772.178
WP #3	125408.407	1500794.341
WP #4	125394.430	1500766.671
WP #5	125233.049	1500865.551
WP #6	125256.526	1500871.058
WP #7	125242.549	1500843.388

PILE NUMBER LEGEND

W = West Pile Line
C = Center Pile Line
E = East Pile Line
N = North Nose Piles
S = South Nose Piles

NOTES:

- The Contractor shall field verify the location of the WP #1 with respect to the centerline of truss span 2 and the centerlines of pier 2. The pile centerlines shall be adjusted as necessary to align with the truss and pier centerlines.
- The existing piles are shown here according to bathymetric survey conducted August 2020. Leaning piles as detected by a detected location difference between top of pile and pile at mudline are shown accordingly. Existing timber piles shall be removed to the extents indicated in Special Provision Section 202: Removing Structures and Obstructions (Timber Fender Removal).
- The maximum factored axial pile load is 100 kips (Strength Load Combination).
- Estimate of piles required: 50 - HPI2x74. Estimated Average Length = 90 feet. The order lengths of the piles shall include an additional 5 feet of length to account for top of rock variability and the potential for the piles to penetrate into bedrock.
- H-pile material shall be ASTM A572, Grade 50.
- Piles may be installed using a vibratory hammer and should be advanced until the pile tips are on or near bedrock. Four production piles shall be selected including two among pile N1 through N7 and two among S1 through S7 for retapping using an impact hammer. The piles selected for retapping shall be tested by agents of the Department using dynamic load testing methods. Satisfactory retap tests shall be completed before installation of additional piles. Additional requirements are provided in Special Provision SP50I, Vibratory Pile Installation and Retapping.
- The Contractor shall submit to the Department, for review and acceptance, their proposed pile driving equipment with a completed "Pile and Driving Equipment Data Form," Figure I, of Standard Specification 50I-Foundation Piles. A form shall be submitted for both the proposed vibratory hammer and retap test impact hammer. Acceptance of the proposed pile driving equipment by the Department will be based on Department-conducted wave equation analyses. If the Department-conducted wave equation analyses show that the proposed driving systems are unacceptable, the Contractor shall modify or replace the proposed driving equipment in an amendment of the OCP, at their own expense, until subsequent wave equation analyses by the Department indicate the pile can be driven to the required nominal resistance without damage. The required nominal resistance for the piles is the maximum factored axial pile load divided by a resistance factor equal to 0.5 per LRFD specifications.
- The Contractor shall provide access for the agents of the Department to perform four (4) dynamic load tests with signal matching during retapping with an impact hammer, as specified in Special Provision SP50I, Vibratory Pile Installation and Retapping. The retapped piles shall be the first four piles driven.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2309401

WIN
21751.01

BRIDGE NO. 2789
BRIDGE PLANS

PROJ. MANAGER
J. STETSON, PE

DESIGN-DETAILED
BGP

CHECKED-REVIEWED
CTA

DESIGN-DETAILED
DET2

DESIGN-DETAILED
DET3

REVISIONS
1

REVISIONS
2

REVISIONS
3

REVISIONS
4

FIELD CHANGES

DATE
8/19/22

BY
UPD

RSBLNT

SIGNATURE
1158

P.E. NUMBER
11158

DATE
August 19, 2022

SOUTHPORT BRIDGE ROUTE 27
OVER TOWNSEND GUT

SOUTHPORT & BOOTHBAY HARBOR ME
LINCOLN COUNTY

PIER 2 FENDER SYSTEM
PILE LAYOUT

SHEET NUMBER

12

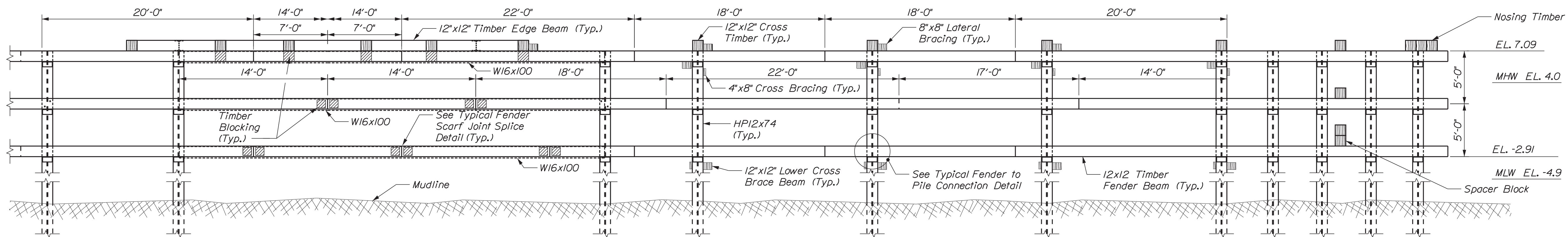
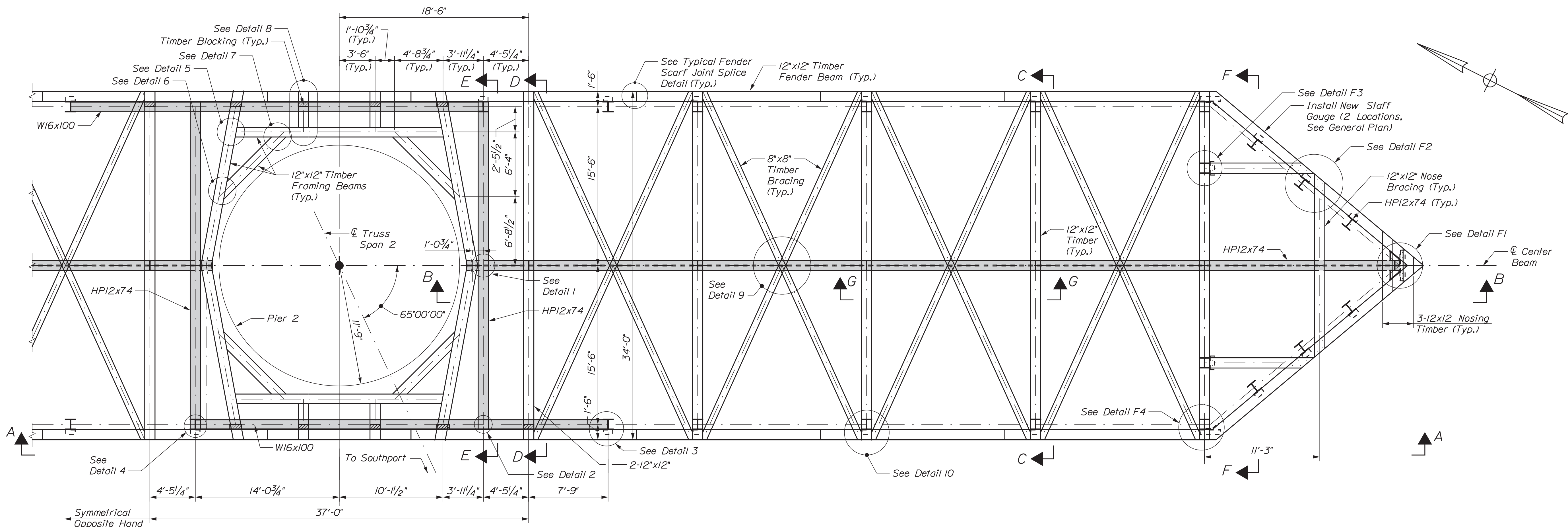
OF 48

Date: 8/19/2022

Username:

Division: BRIDGE

Filename: ...\\MSTA\\013_Pier_2_Fender-P&E.dgn

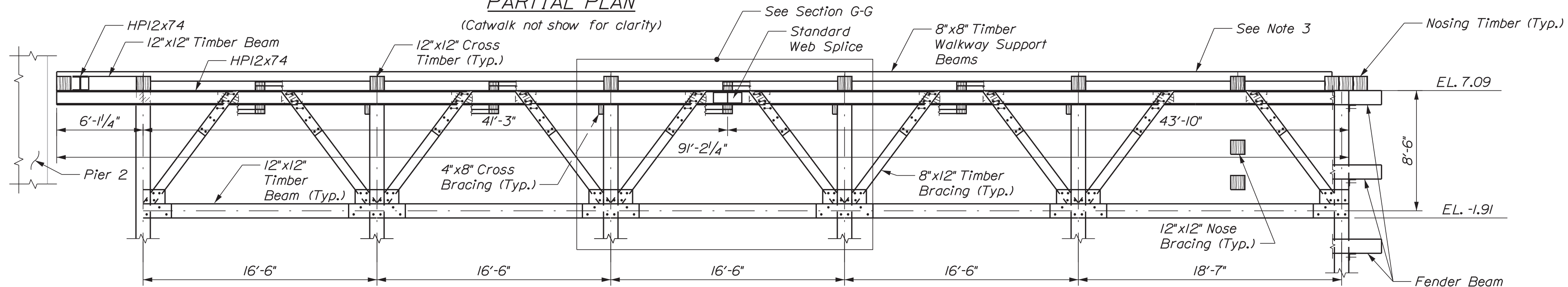


VIEW A-A

(Catwalk not shown for clarity, See Pier 2 Catwalk Details)

PARTIAL PLAN

(Catwalk not shown for clarity)

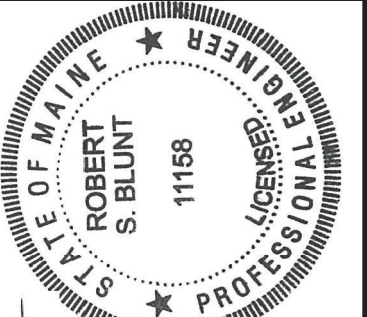


VIEW B-B

(Catwalk not shown for clarity)

NOTES:

1. South end of fender system shown, north end of fender system similar by opposite hand.
2. See Pier 2 Fender System Details sheets for Sections C-C, D-D, E-E, F-F, G-G; Details 1 through 10; Details F1 through F4; and Typical Fender Scarf Joint Splice.
3. For catwalk details see Pier 2 Fender System Catwalk Details sheet.
4. Steel fabrication shop drawings for all structural steel shall be submitted to the Department for review and approval prior to fabrication.
5. All timber fender connectors shall be 1" dia. and hot-dip galvanized in accordance with ASTM A153.
6. The Contractor shall use carriage bolt heads for all connectors at the outside face of fender beams. The Contractor may opt to use countersunk heads in lieu of carriage bolt heads as approved by the Resident.



SIGNATURE
1158
P.E. NUMBER
August 19, 2022
DATE

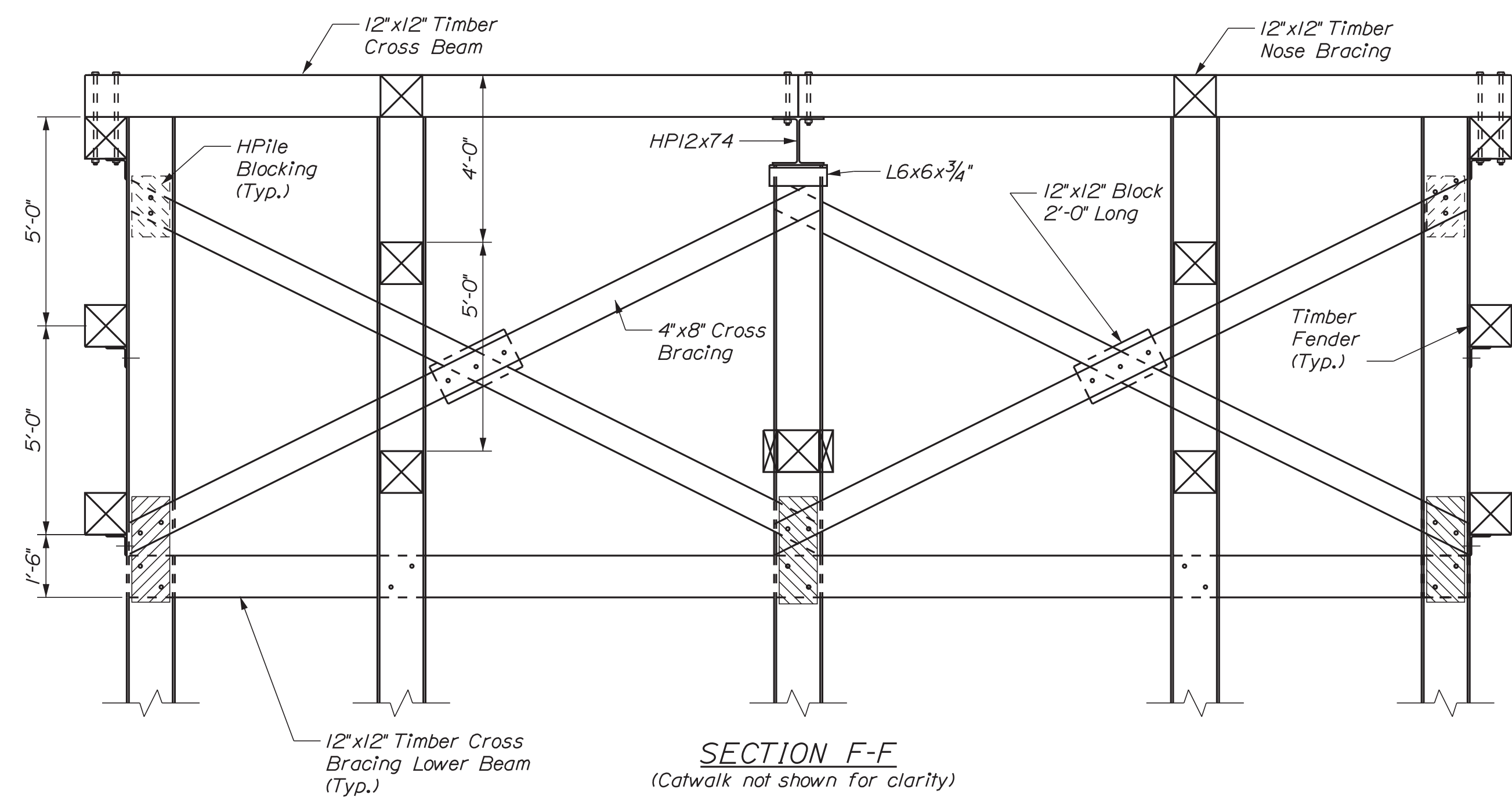
PROJ. MANAGER	J. STETSON, PE	BY	DATE
DESIGN-DETAILED	BGP	DPD	8/19/22
CHECKED-REVIEWED	CTA	RSBLUNT	8/19/22
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

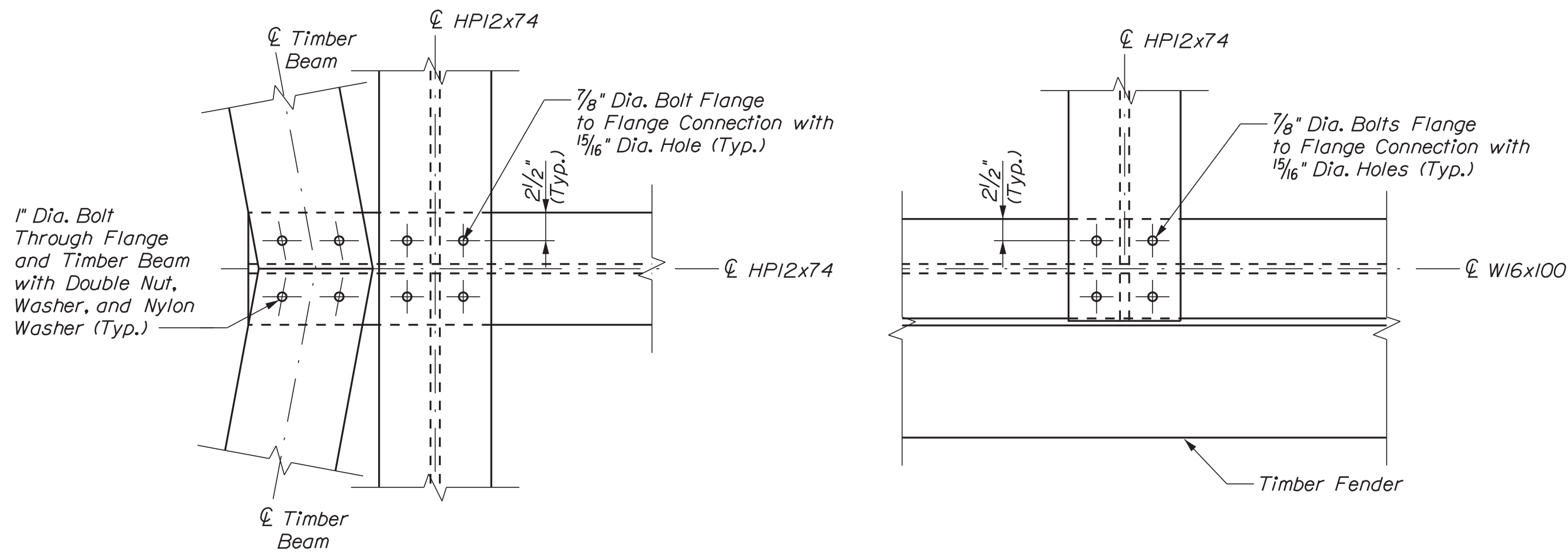
SOUTHPORT BRIDGE ROUTE 27
OVER TOWNSEND GUT
SOUTHPORT & BOOTHBAY HARBOR ME
LINCOLN COUNTY
PIER 2 FENDER SYSTEM
PLAN & ELEVATIONS

SHEET NUMBER

13

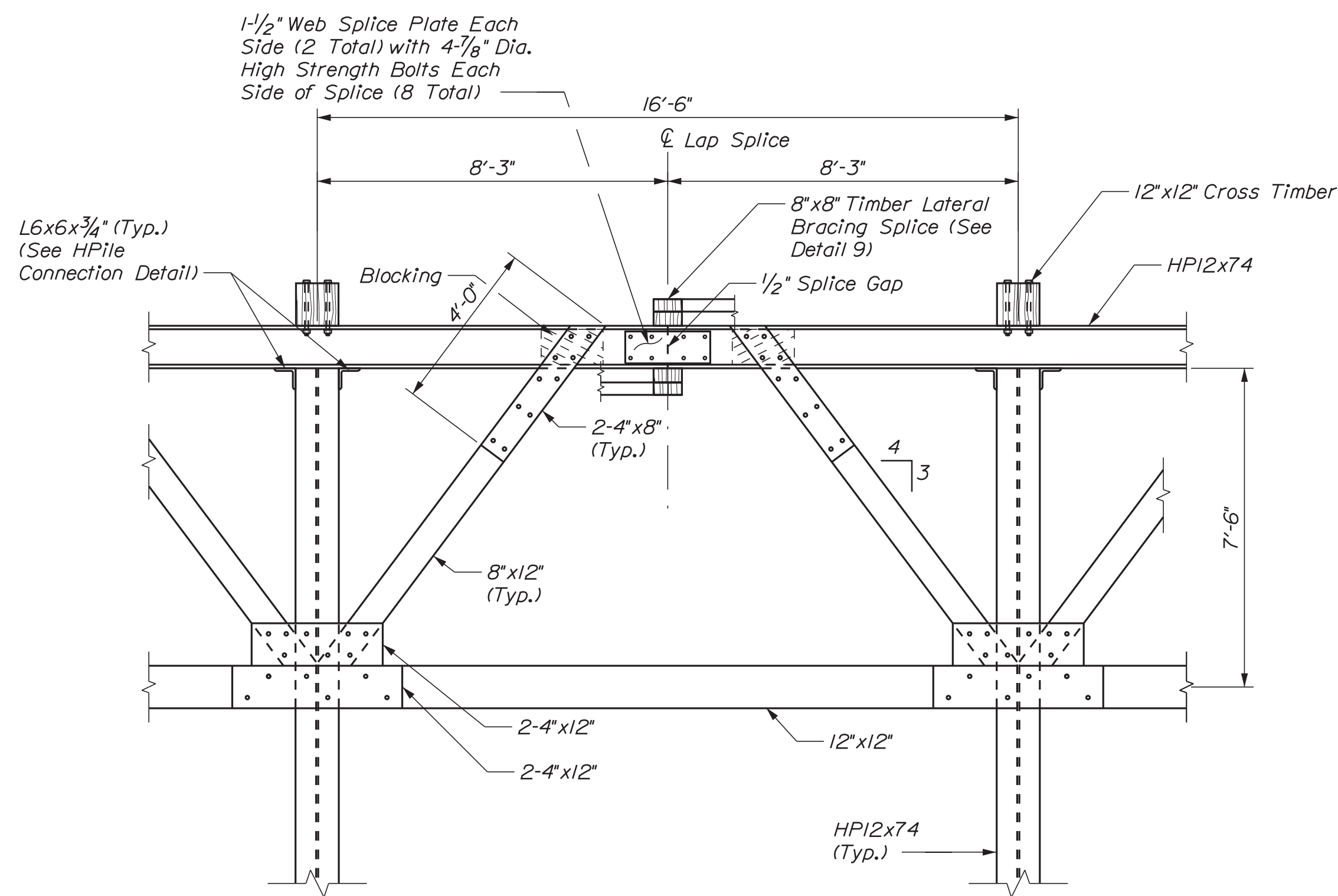
OF 48



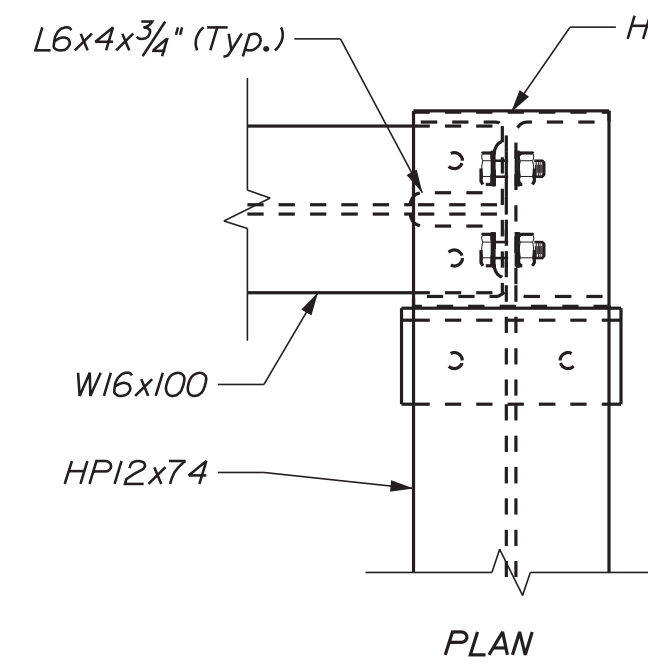


DETAIL 1
(2 Locations)

DETAIL 2
(2 Locations)

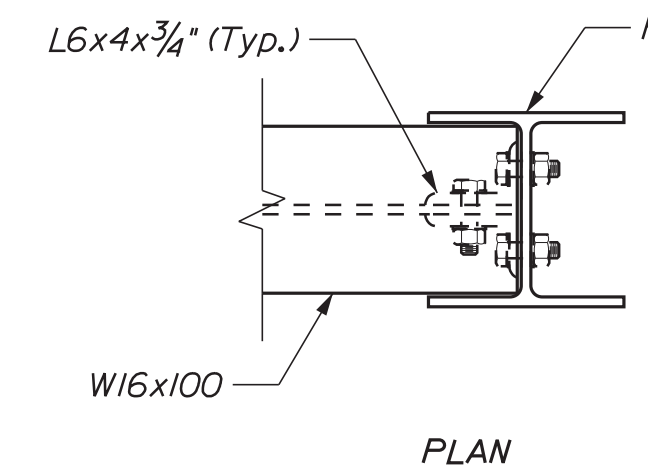


SECTION G-G
(Catwalk not shown for clarity)



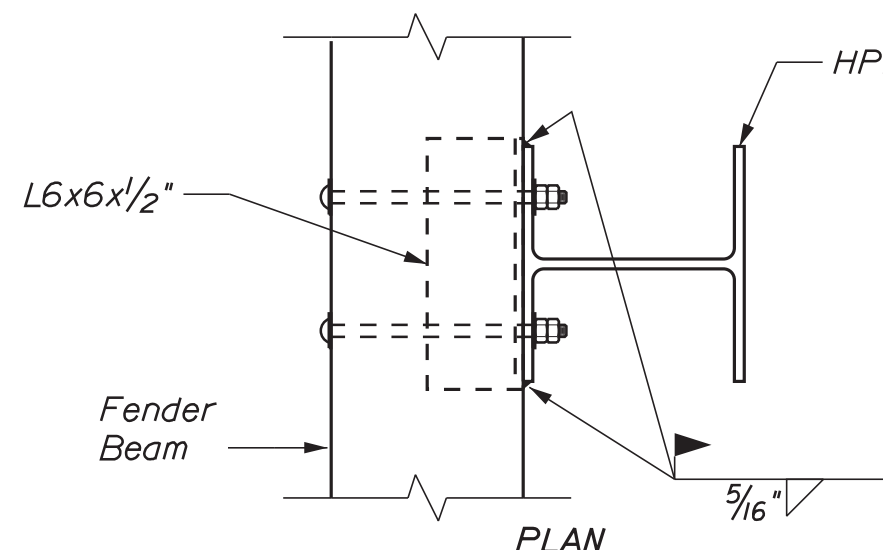
PLAN

DETAIL 4
(2 Locations)



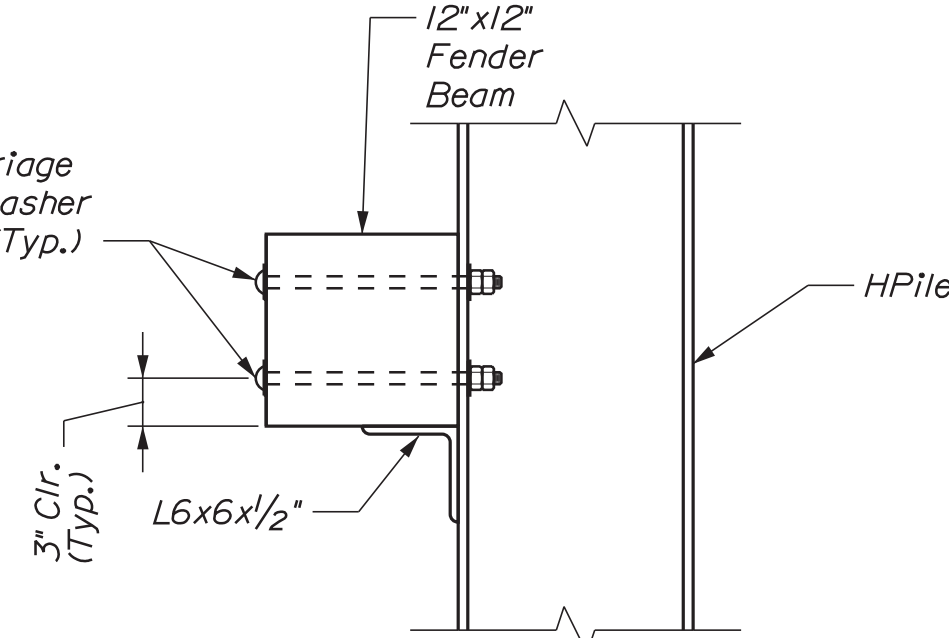
PLAN

DETAIL 3
(2 Locations)



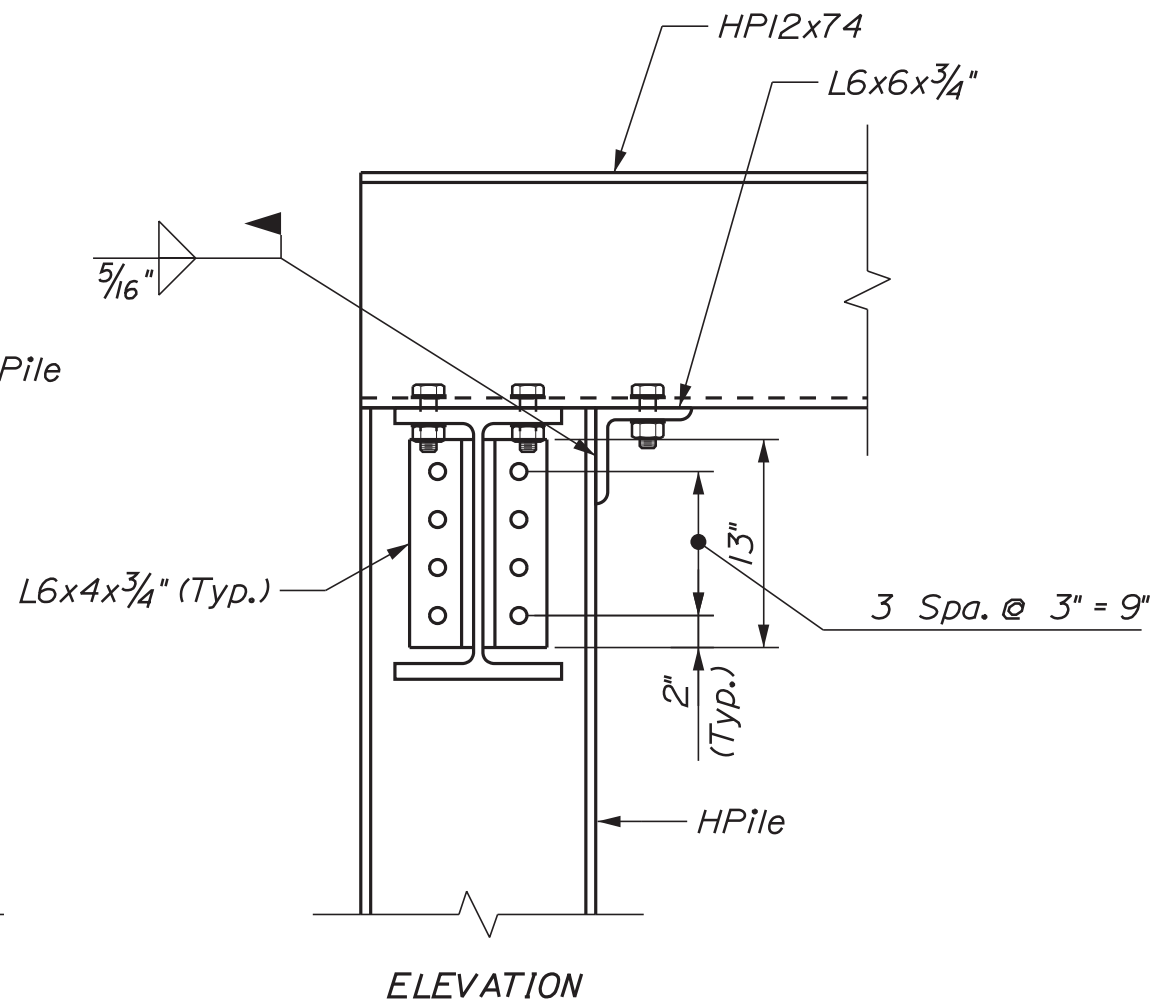
PLAN

2" Galvanized Carriage Bolts, Double Nut, Washer and Nylon Washer (Typ.)



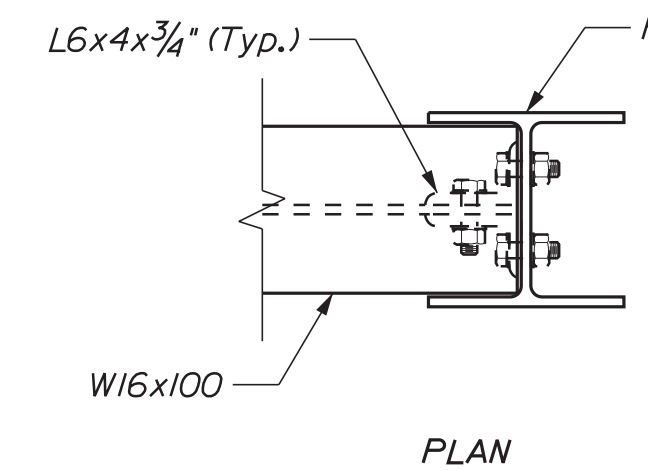
ELEVATION

TYPICAL FENDER TO PILE
CONNECTION DETAIL



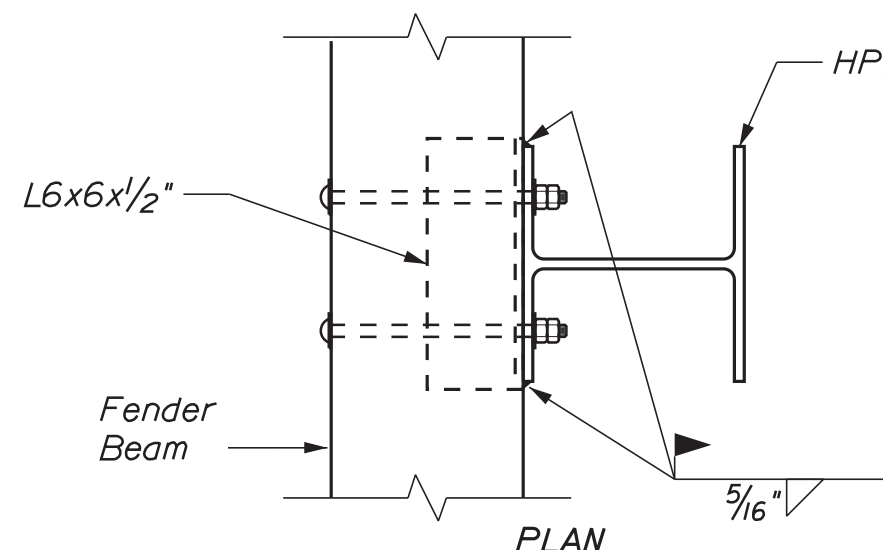
ELEVATION

DETAIL 4
(2 Locations)



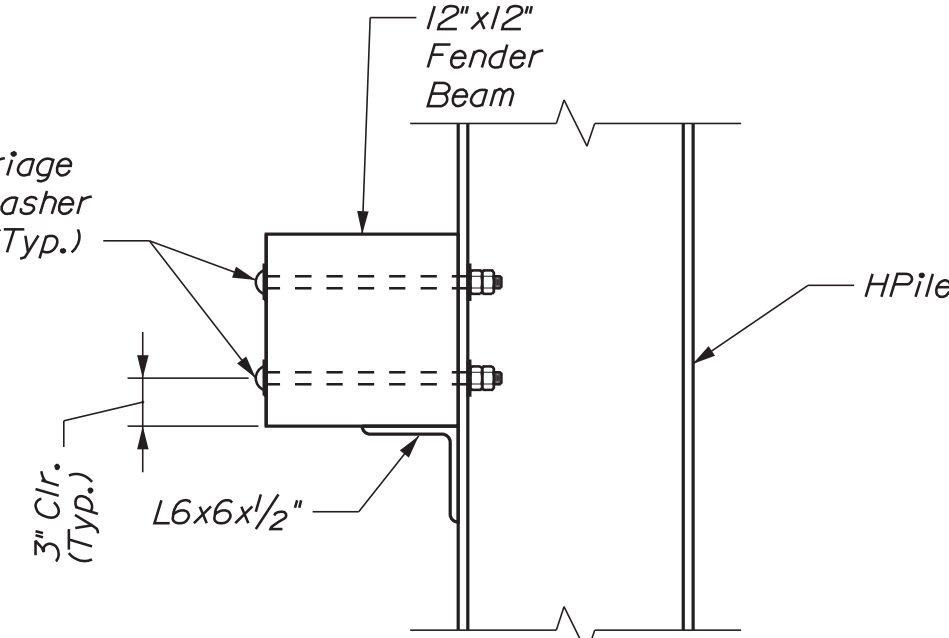
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DETAIL 3
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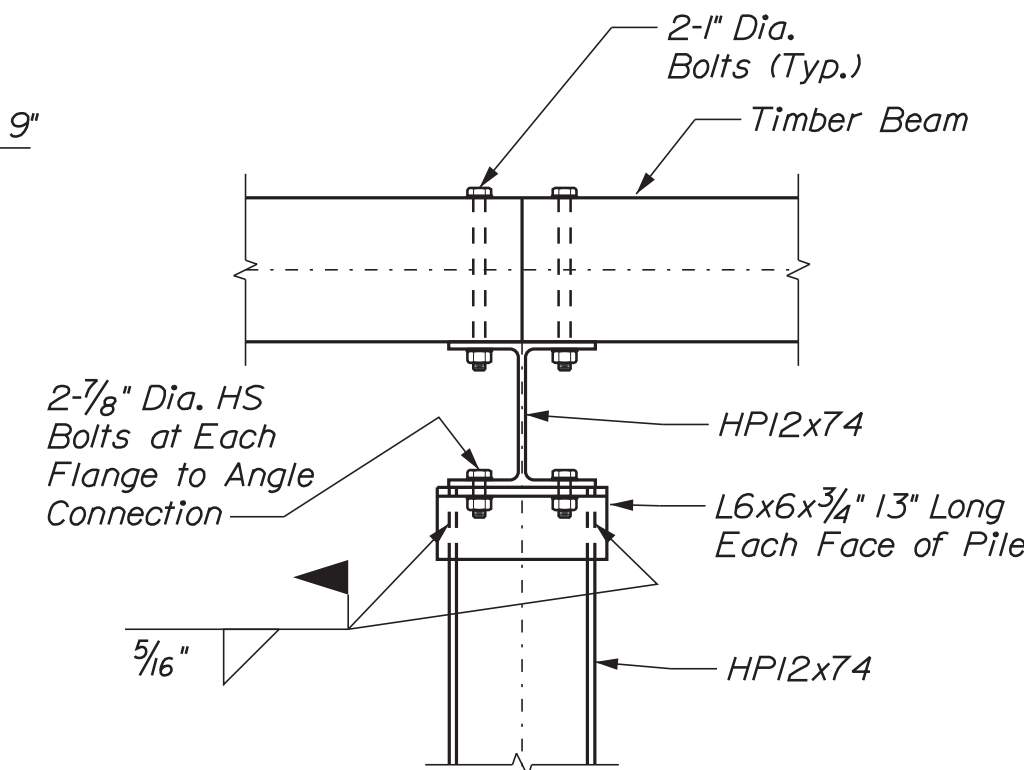
PLAN

2" Galvanized Carriage Bolts, Double Nut, Washer and Nylon Washer (Typ.)

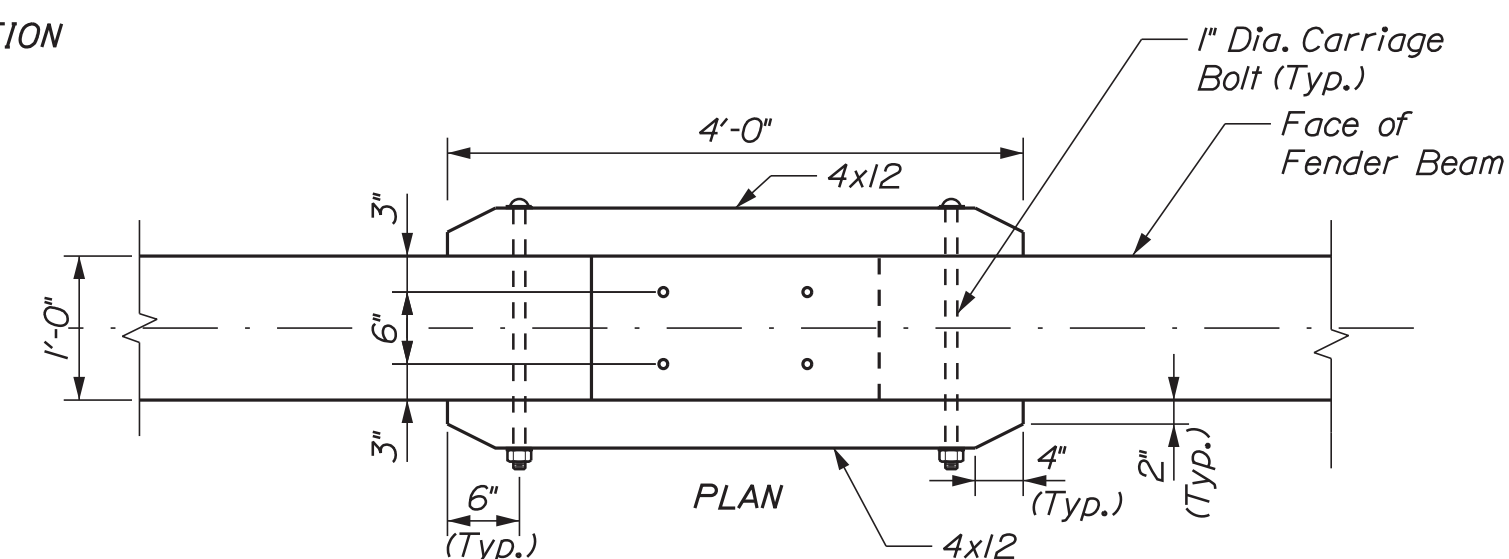


ELEVATION

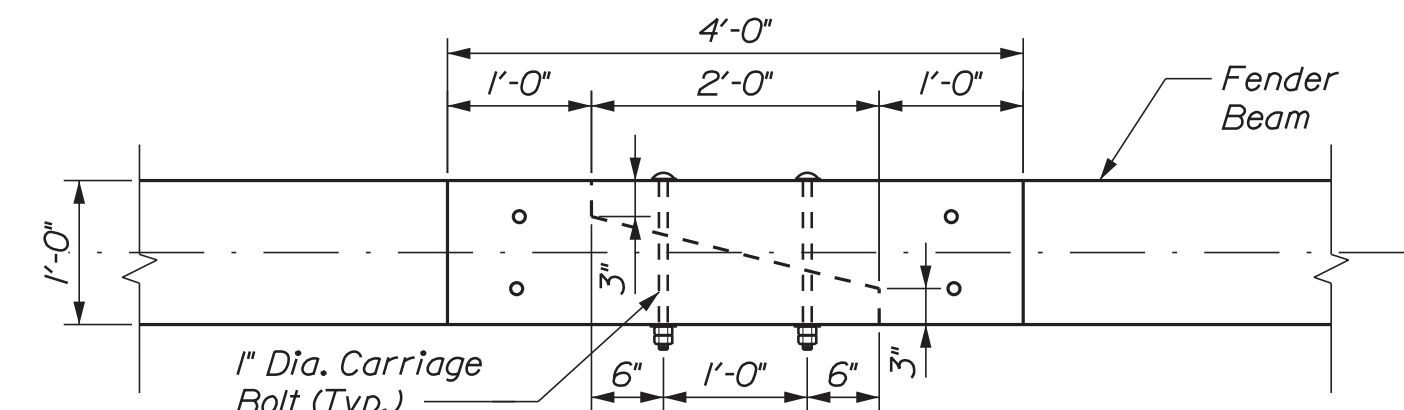
TYPICAL FENDER TO PILE
CONNECTION DETAIL



H-PILE
CONNECTION DETAIL



PLAN



ELEVATION

TYPICAL FENDER
SCARF JOINT SPLICE

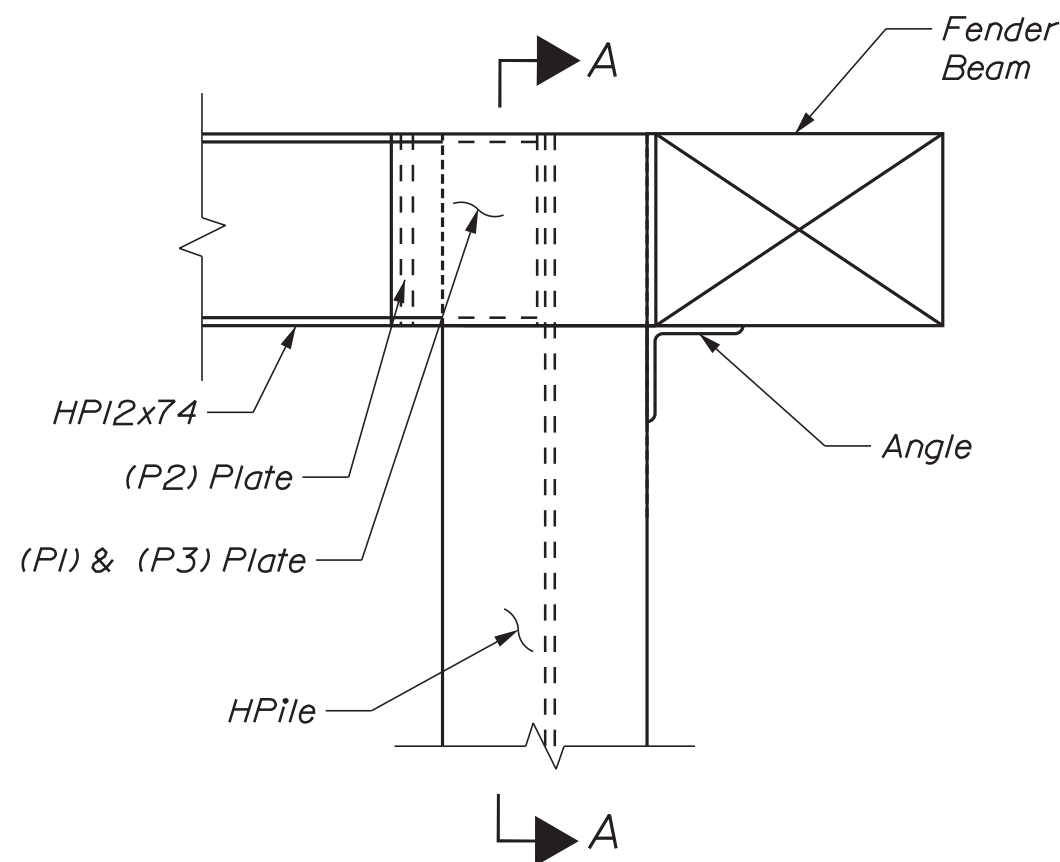
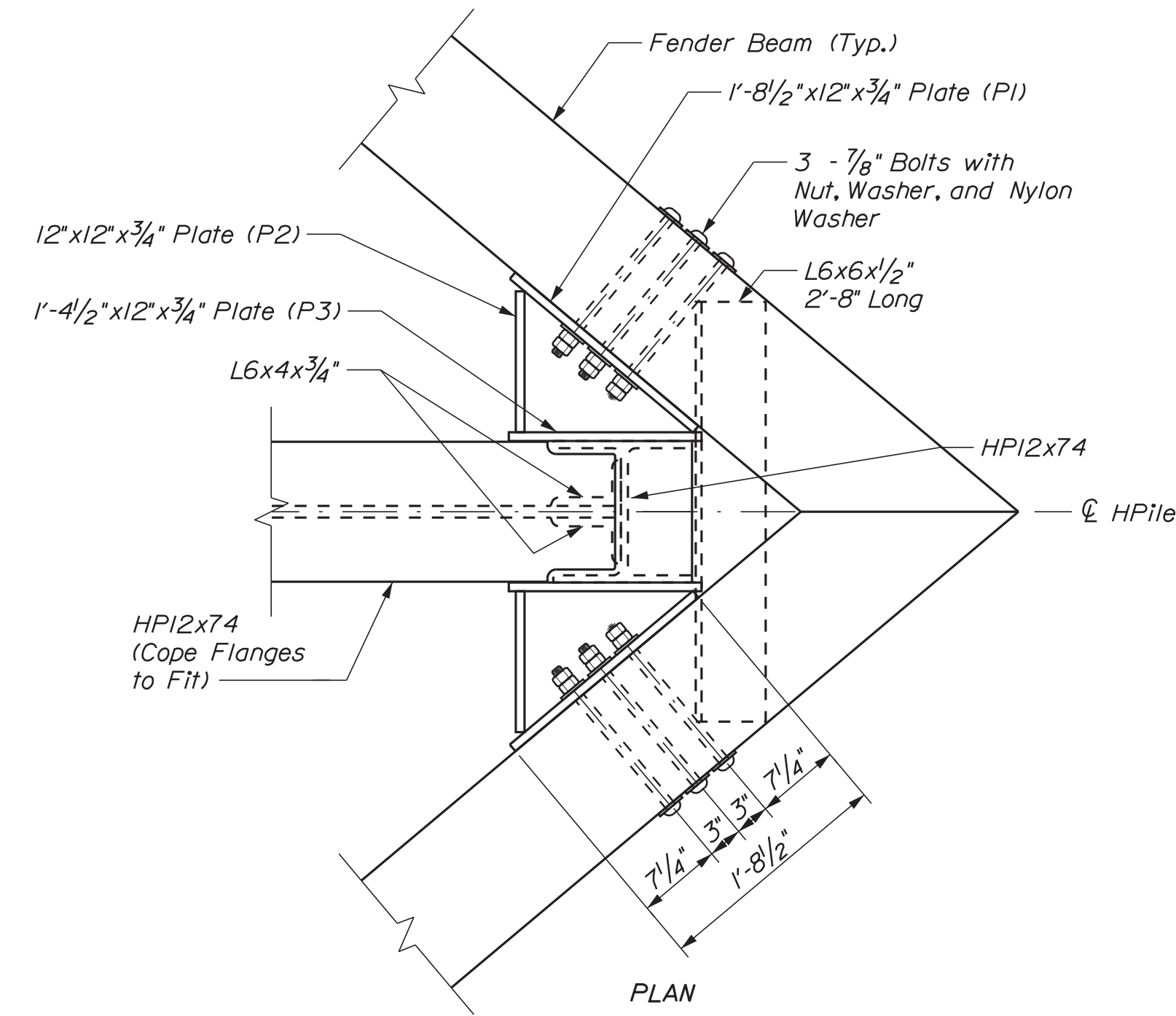
NOTES:

- All connection plates, angles, and hardware shall be incidental to pile fabrication, delivery, and installation items. Timber connection hardware shall be incidental to timber items.
- After tightening the timber fender connection bolts, the Contractor shall topcoat the washer, nut and exposed threads with an underwater epoxy compatible with galvanized hardware. The epoxy coating shall be a color match to the exposed steel. If a matching color is not available the Contractor shall use brown or black.

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		2309401		WIN		BRIDGE NO. 2789		21751.01		BRIDGE PLANS	
SOUTHPORT BRIDGE ROUTE 27		OVER TOWNSEND GUT		LINCOLN COUNTY		SOUTHPORT & BOOTHBAY HARBOR ME		PIER 2 FENDER SYSTEM		DETAILS (2 OF 5)		SHEET NUMBER	
15		OF 48											
PROJ. MANAGER		J. STETSON, PE		DESIGN-DETAILED		BSP		REVISIONS		1		DATE	
CHECKED/REVIEWED		CTA		DESIGN-REVIEWED		CTA		REVISIONS		2		DATE	
DESIGN-DETAILED		CTA		DESIGN-REVIEWED		CTA		REVISIONS		3		DATE	
DESIGN-DETAILED		CTA		DESIGN-REVIEWED		CTA		REVISIONS		4		DATE	
DESIGN-DETAILED		CTA		DESIGN-REVIEWED		CTA		REVISIONS		5		DATE	
DESIGN-DETAILED		CTA		DESIGN-REVIEWED		CTA		REVISIONS		6		DATE	
DESIGN-DETAILED		CTA		DESIGN-REVIEWED		CTA		REVISIONS		7		DATE	
DESIGN-DETAILED		CTA		DESIGN-REVIEWED		CTA		REVISIONS		8		DATE	
DESIGN-DETAILED		CTA		DESIGN-REVIEWED		CTA		REVISIONS		9		DATE	
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DESIGN-DETAILED		CTA		DESIGN-REVIEWED		CTA		REVISIONS		12		DATE	
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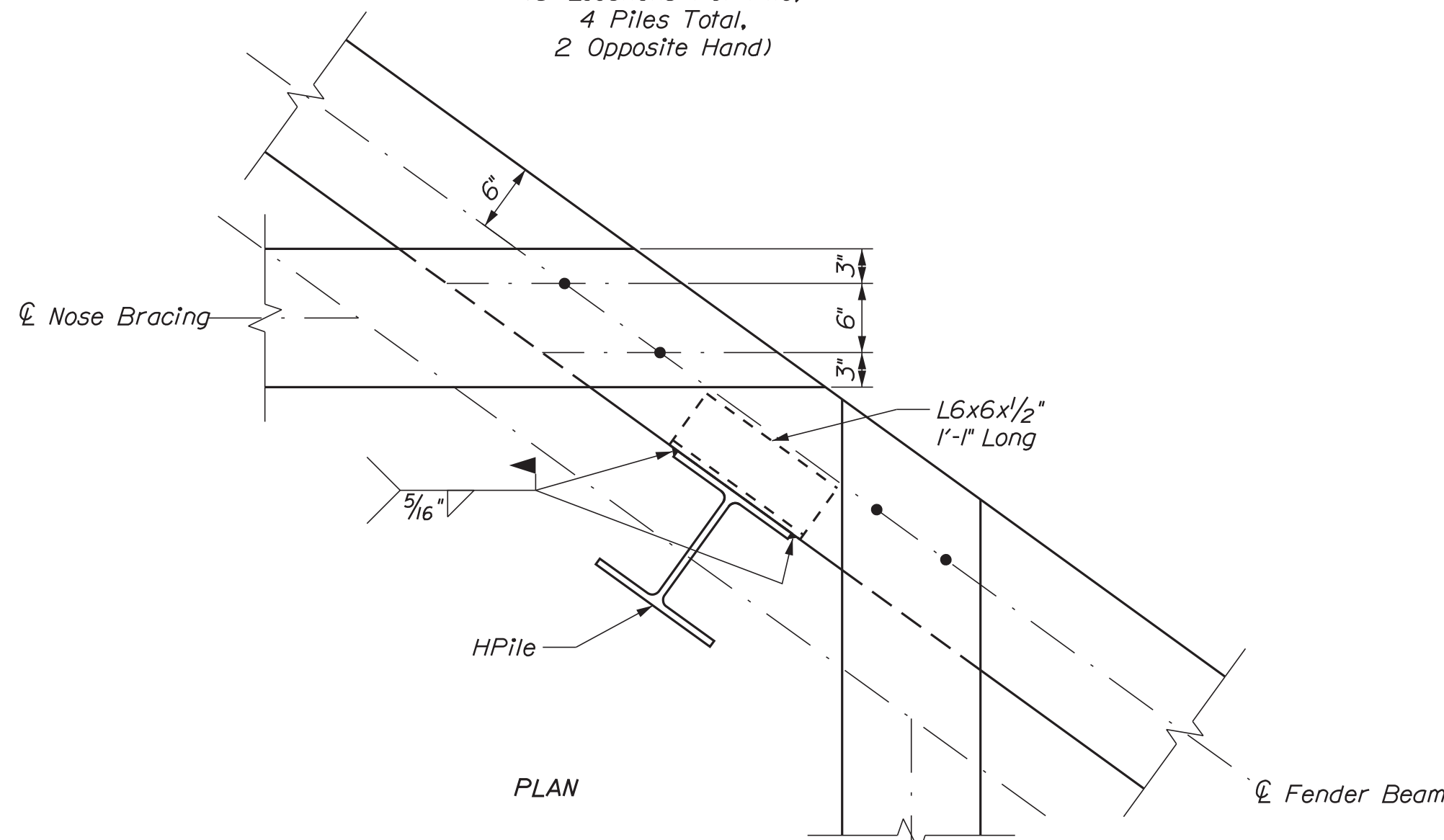


2. After tightening the timber fender connection bolts, the Contractor shall topcoat the washer, nut and exposed threads with an underwater epoxy compatible with galvanized hardware. The epoxy coating shall be a color match to the exposed steel. If a matching color is not available the Contractor shall use brown or black.



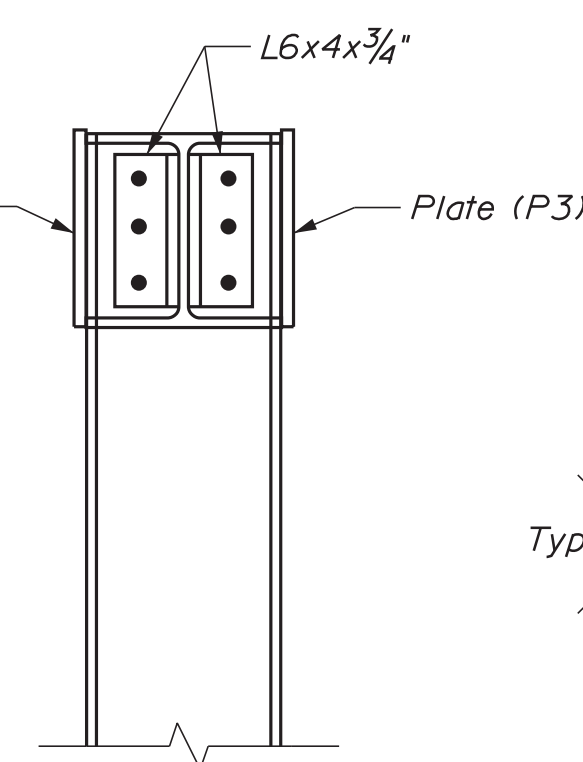
DETAIL F1

(3 Locations Per Pile,
4 Piles Total,
2 Opposite Hand)

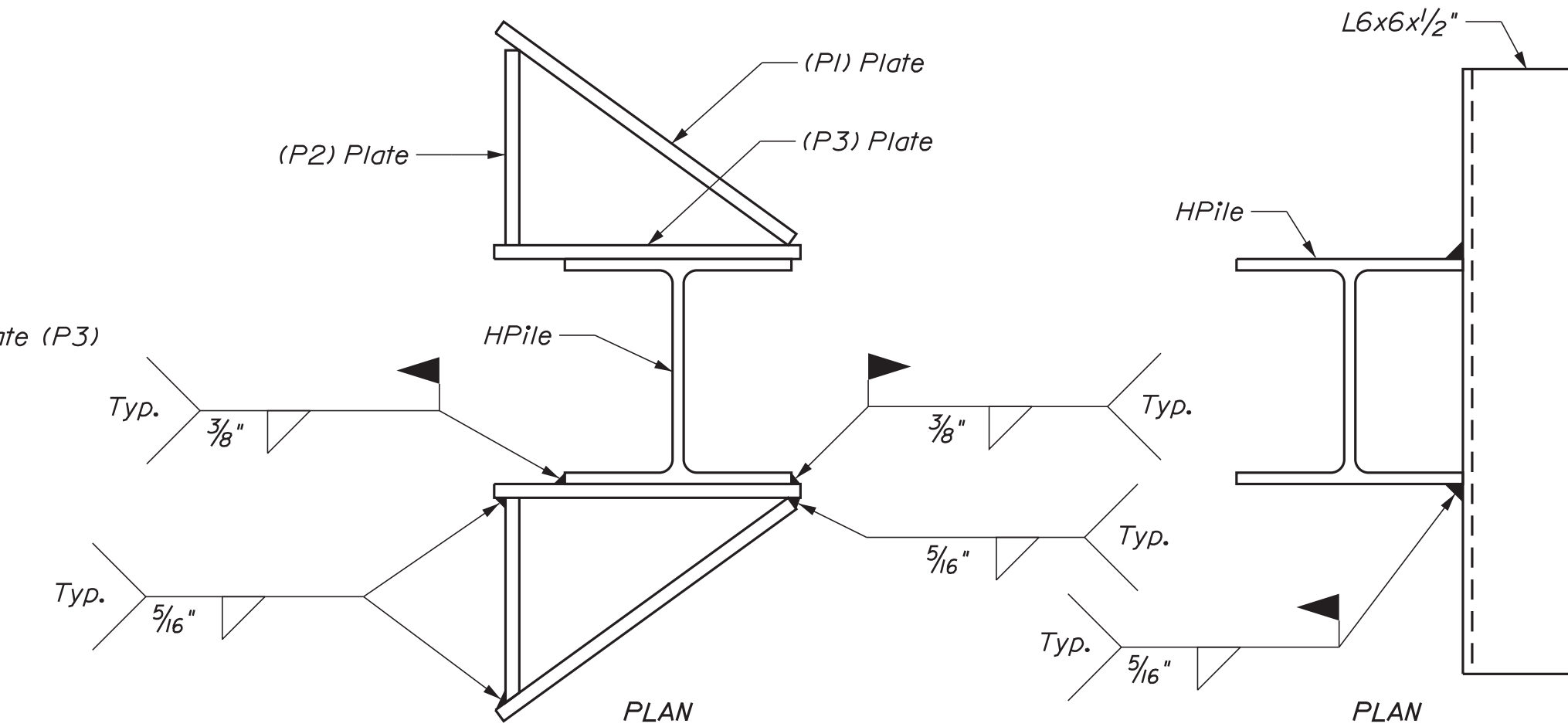


DETAIL F2

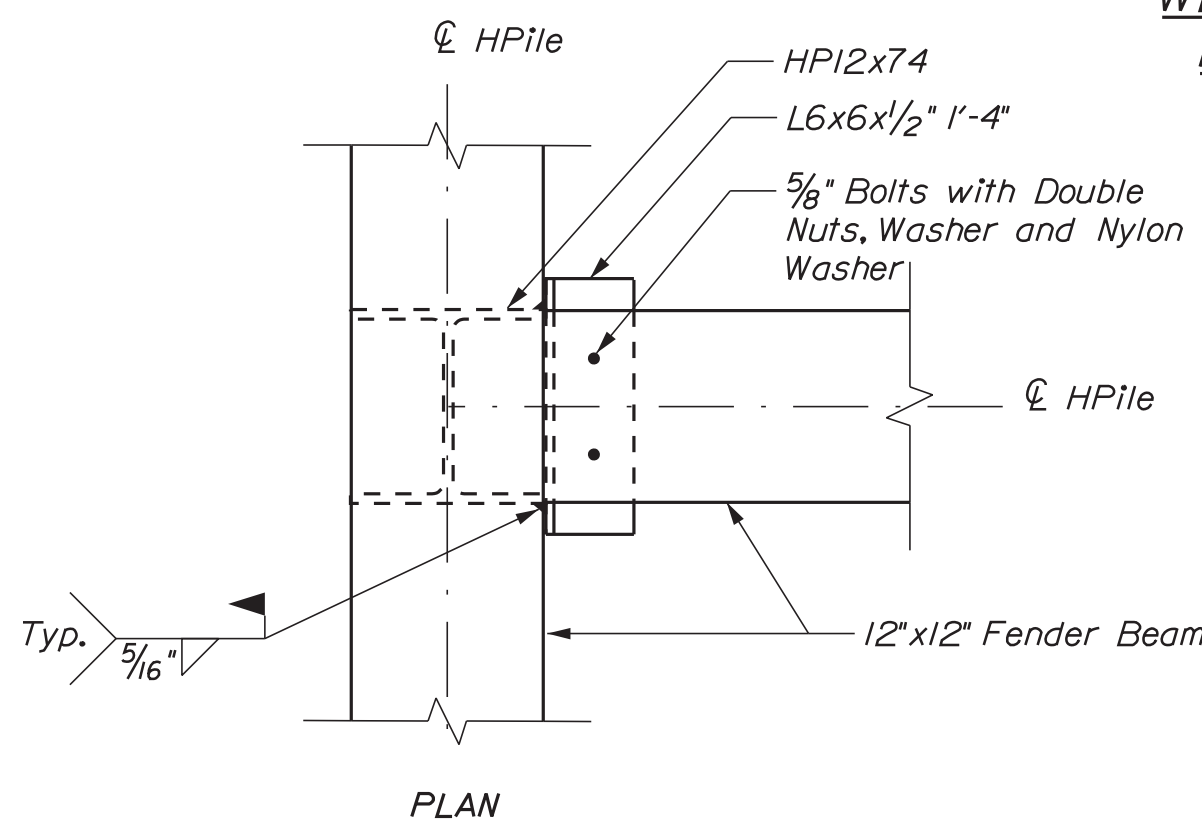
(3 Locations Per Pile,
4 Piles Total,
2 Opposite Hand)



SECTION A-A



WELDING DETAILS
FOR DETAIL F1



DETAIL F3

(3 Locations per Pile, 4 Piles
Total, Top Connection Shown)

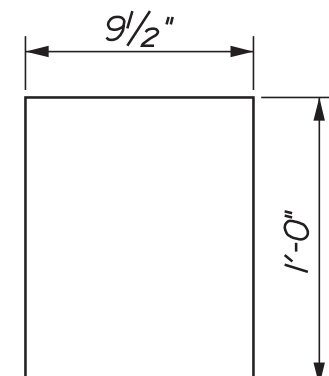
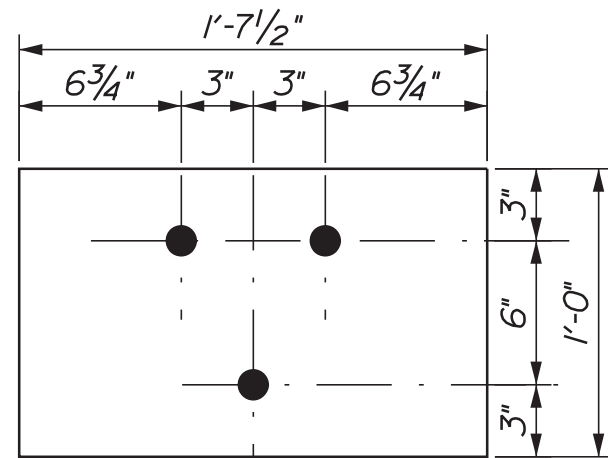
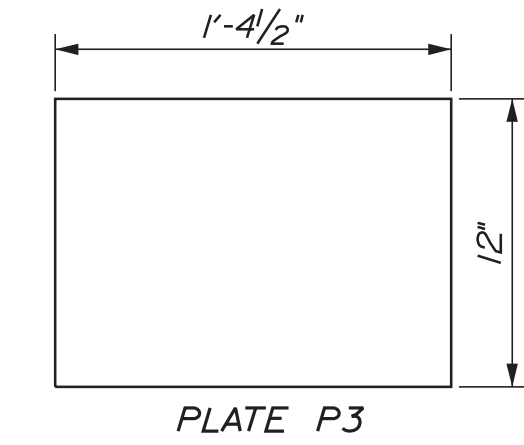
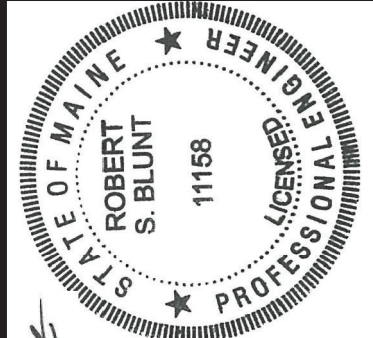


PLATE DETAILS
FOR DETAIL F1

NOTES:

1. All connection plates, angles, and hardware shall be incidental to pile fabrication, delivery, and installation items. Timber connection hardware shall be incidental to timber items.
2. After tightening the timber fender connection bolts, the Contractor shall topcoat the washer, nut and exposed threads with an underwater epoxy compatible with galvanized hardware. The epoxy coating shall be a color match to the exposed steel. If a matching color is not available the Contractor shall use brown or black.

STATE OF MAINE	BRIDGE PLANS
DEPARTMENT OF TRANSPORTATION	WIN
2309401	21751.01
BRIDGE NO. 2789	

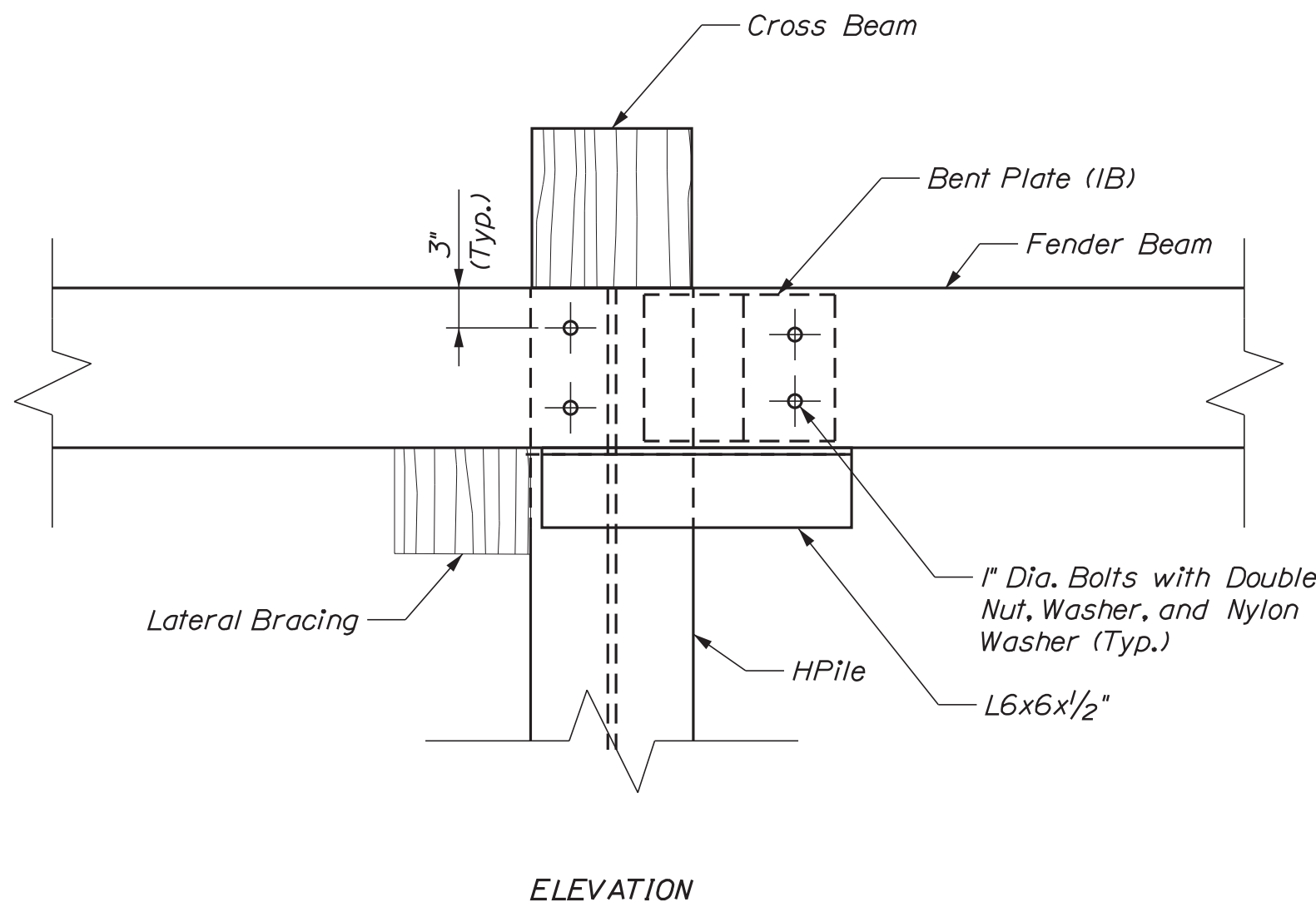
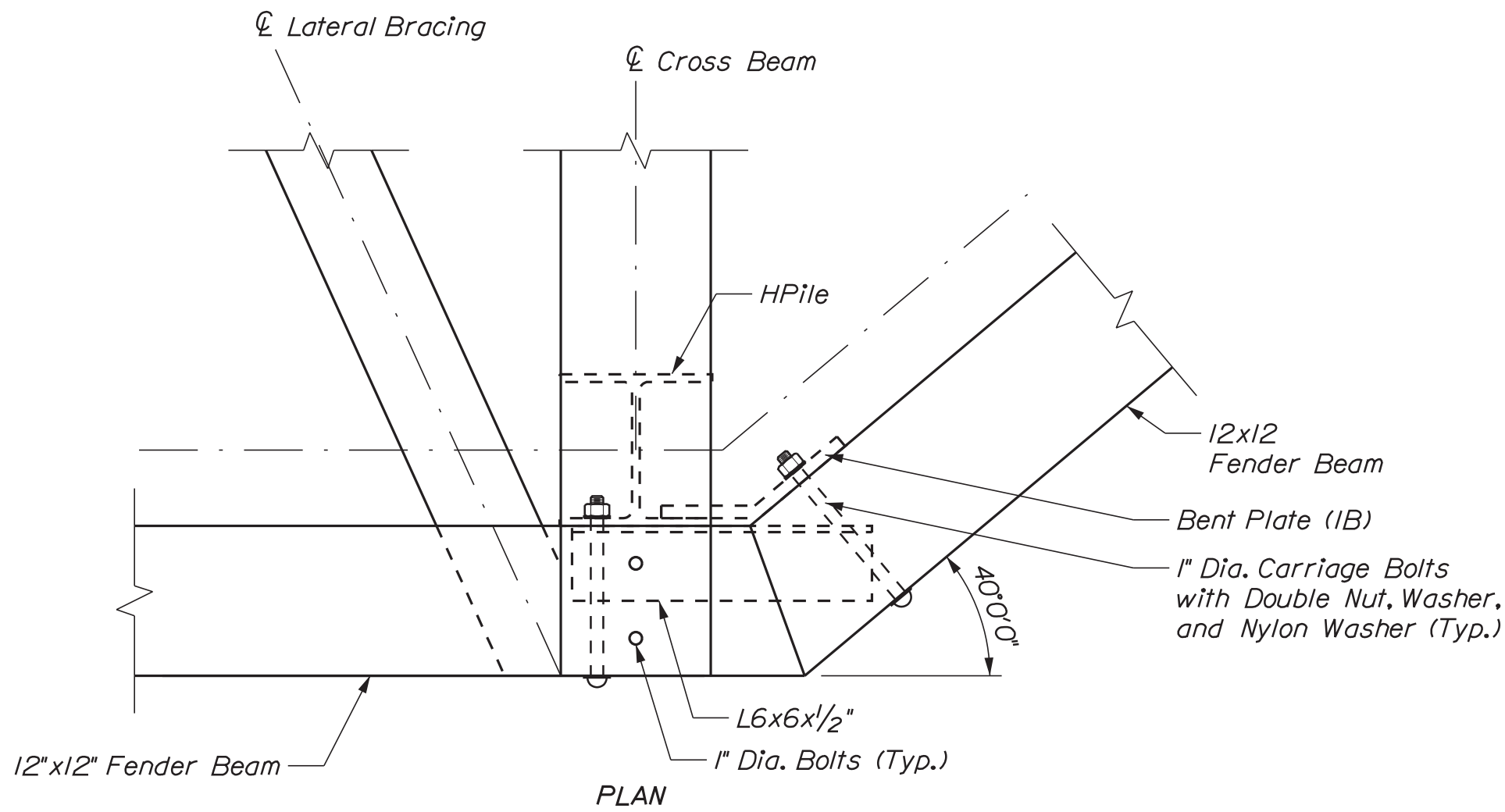


PROJ. MANAGER	J. STETSON, PE	DATE	8/19/22
DESIGN-DETAILED	BSP	BY	UPD
CHECKED-REVIEWED	CTA	BY	RSBLNT
DESIGN2-DETAILED	02		
DESIGN3-DETAILED	03		
REVISIONS	1		
REVISIONS	2		
REVISIONS	3		
REVISIONS	4		
FIELD CHANGES			

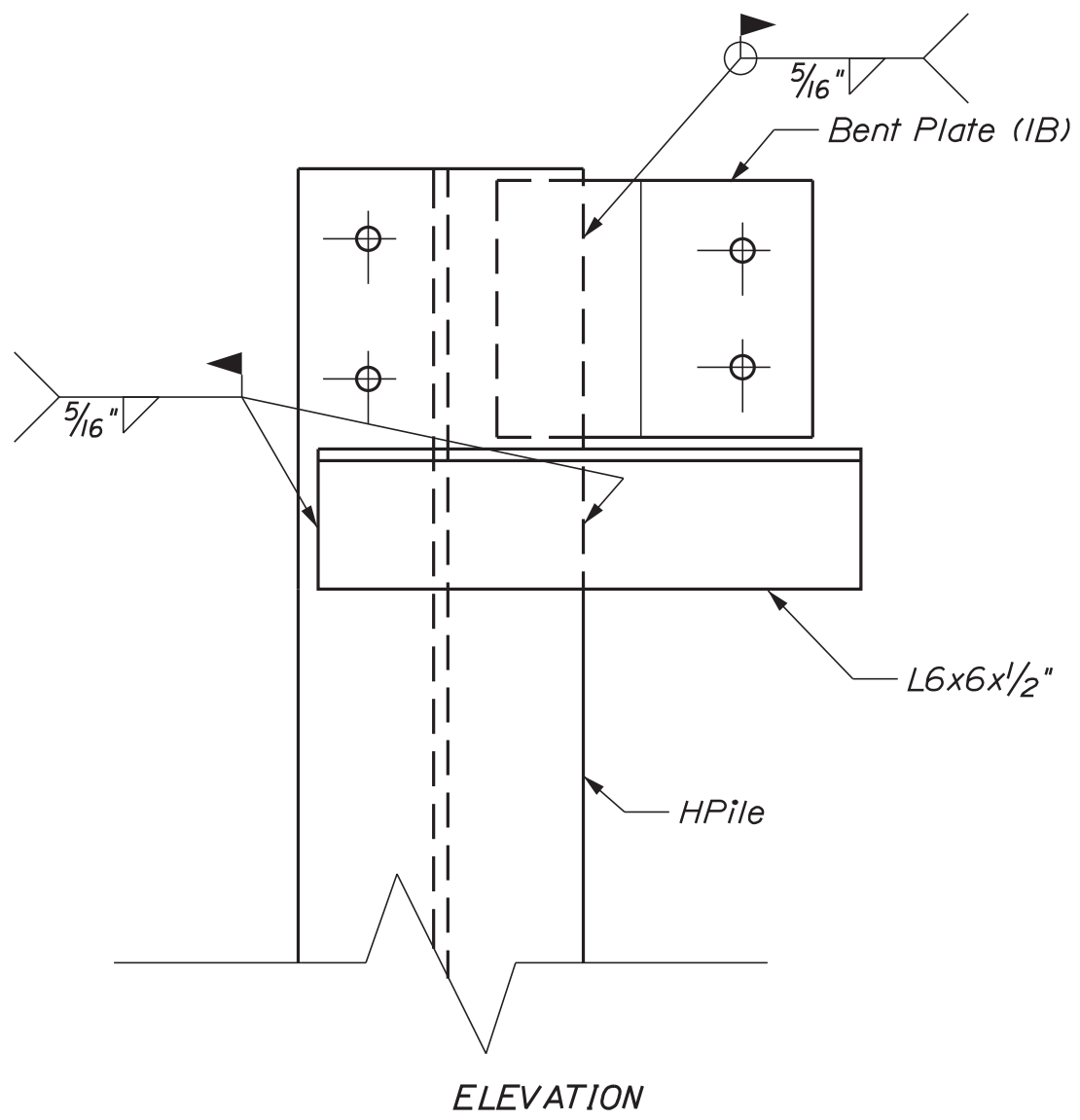
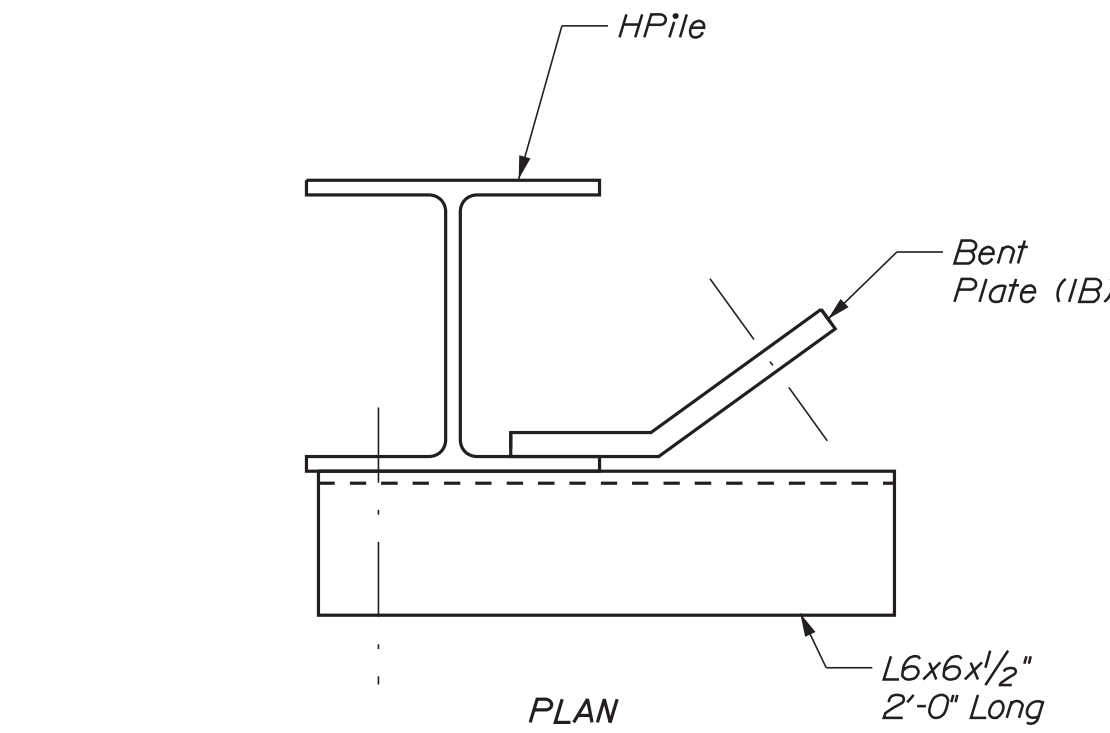
SIGNATURE	1158	P.E. NUMBER	August 19, 2022
DATE			

SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT	LINCOLN COUNTY
SOUTHPORT & BOOTHBAY HARBOR ME	
PIER 2 FENDER SYSTEM	
DETAILS (4 OF 5)	

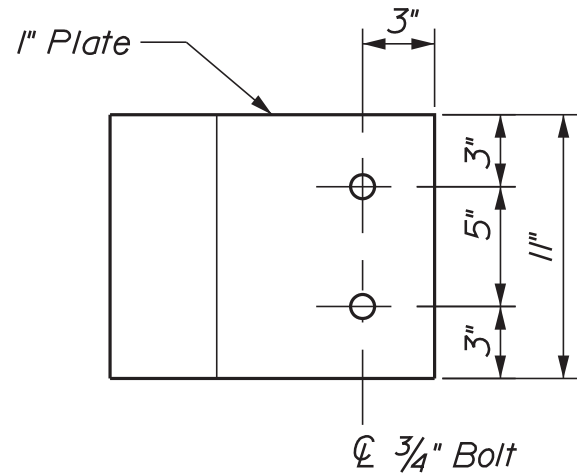
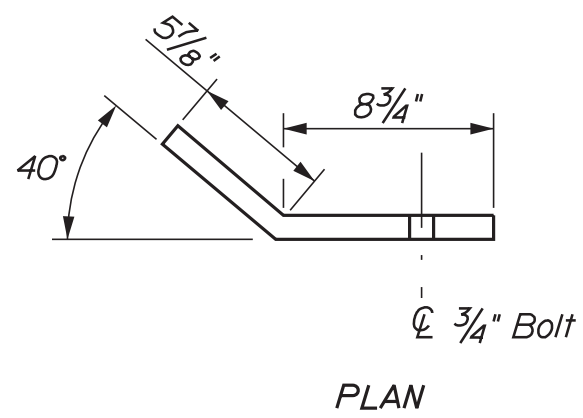
SHEET NUMBER	17
OF 48	



CONNECTION
DETAIL F4
(3 Locations Per Pile,
4 Piles Total,
2 Opposite Hand,
Top Connection Shown)



ASSEMBLY
DETAIL F4

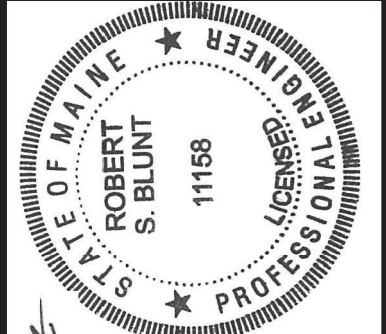


BENT PLATE (IB)

NOTES:

1. All connection plates, angles, and hardware shall be incidental to pile fabrication, delivery, and installation items. Timber connection hardware shall be incidental to timber items.
2. After tightening the timber fender connection bolts, the Contractor shall topcoat the washer, nut and exposed threads with an underwater epoxy compatible with galvanized hardware. The epoxy coating shall be a color match to the exposed steel. If a matching color is not available the Contractor shall use brown or black.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
2309401
WIN
BRIDGE NO. 2789
21751.01
BRIDGE PLANS

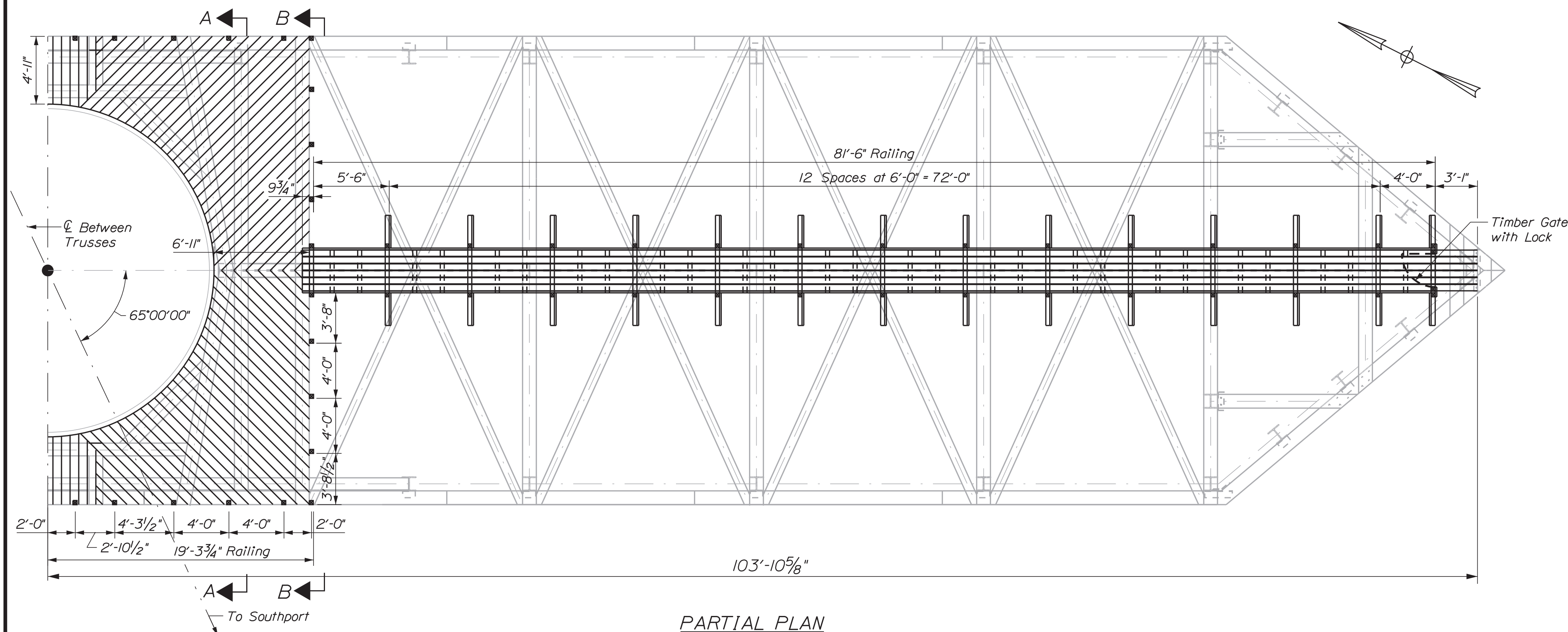


Signature	11158
P.E. NUMBER	August 19, 2022
DATE	

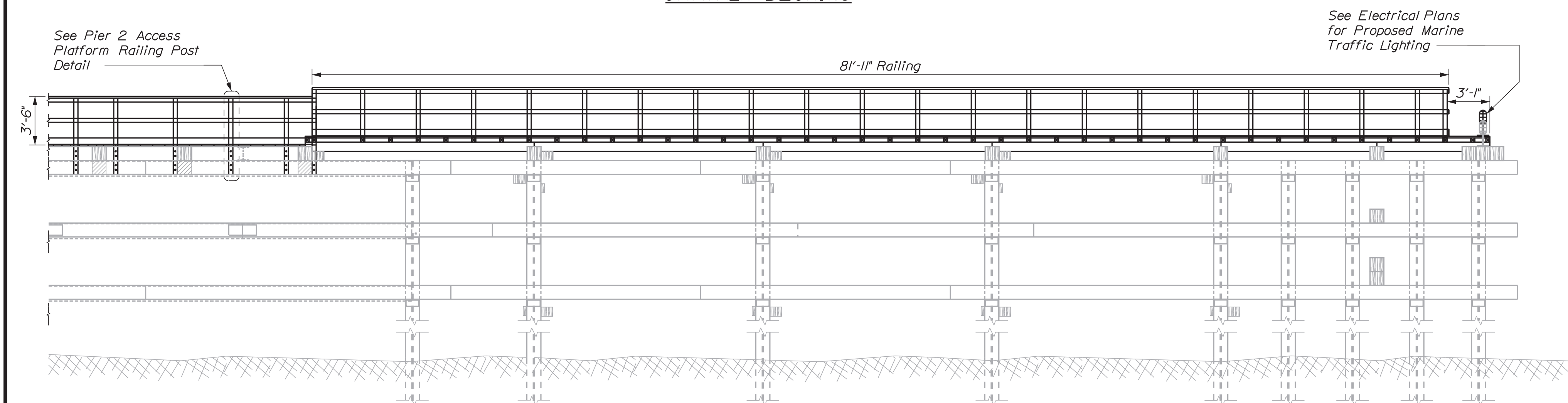
PROJ. MANAGER	J. STETSON, PE	BY	DPD	8/19/22
DESIGN-DETAILED	BGP	BY	RBLUNT	8/19/22
CHECKED-REVIEWED	CTA			
DESIGN2-DETAILED2				
DESIGN3-DETAILED3				
REVISIONS	1			
REVISIONS	2			
REVISIONS	3			
REVISIONS	4			
FIELD CHANGES				

SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT	LINCOLN COUNTY
SOUTHPORT & BOOTHBAY HARBOR ME	
PIER 2 FENDER SYSTEM	
DETAILS (5 OF 5)	

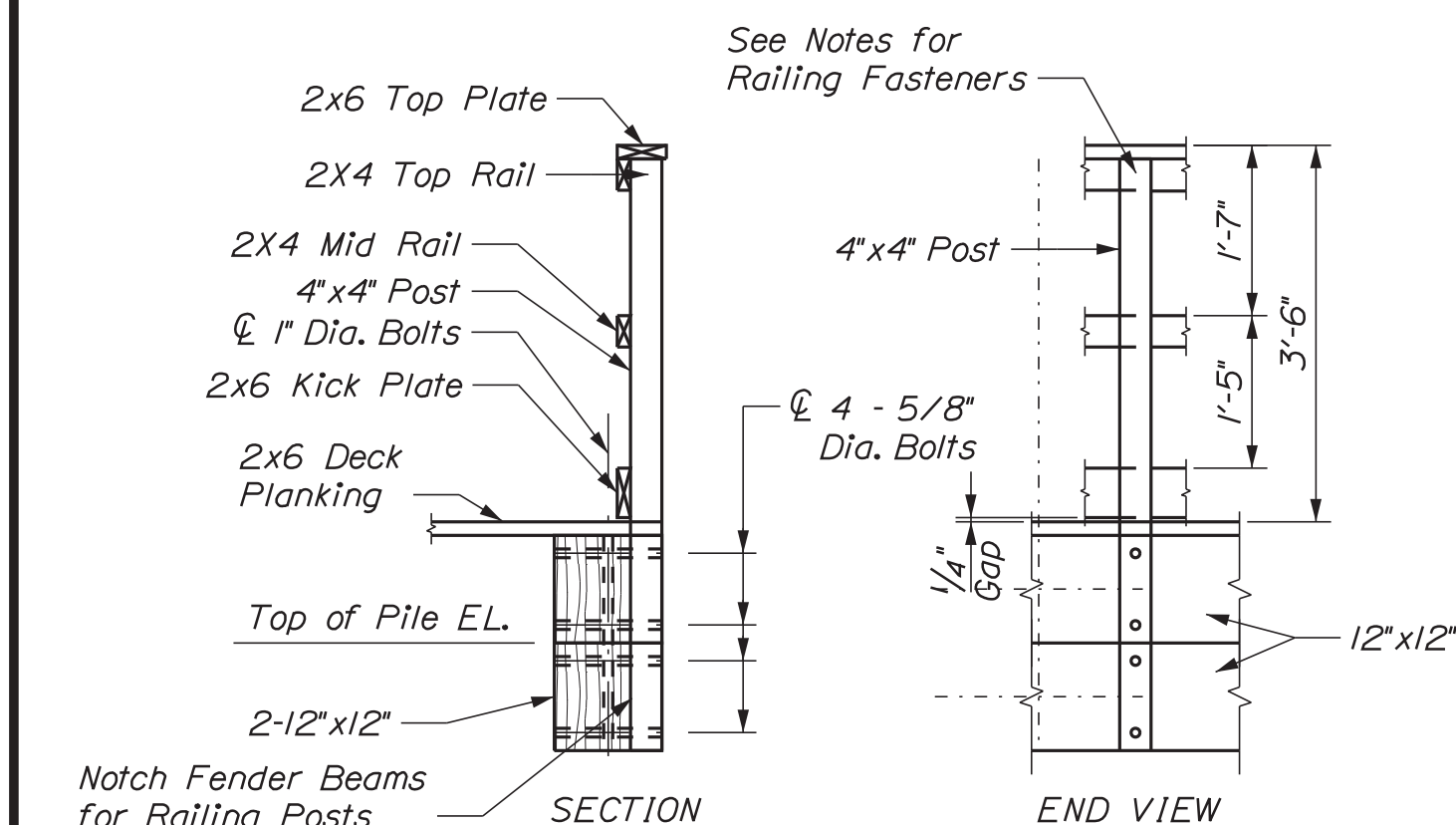
SHEET NUMBER
18
OF 48



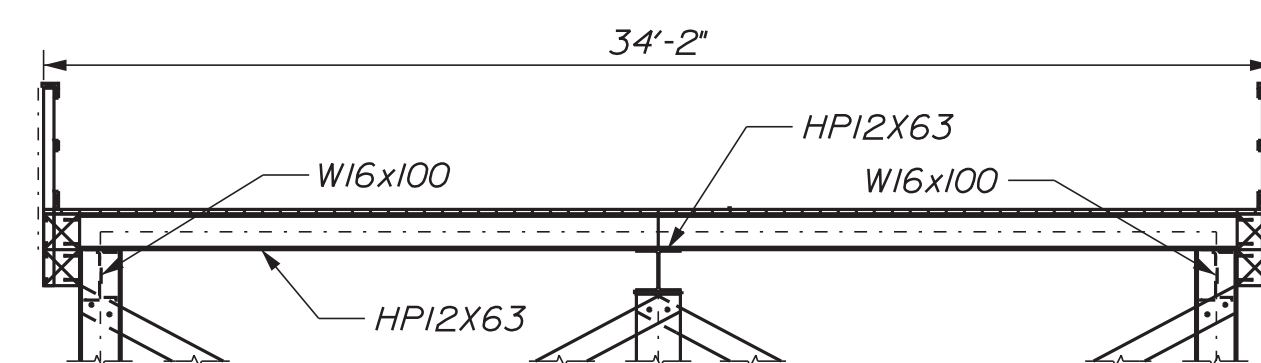
PARTIAL PLAN
CATWALK DECKING



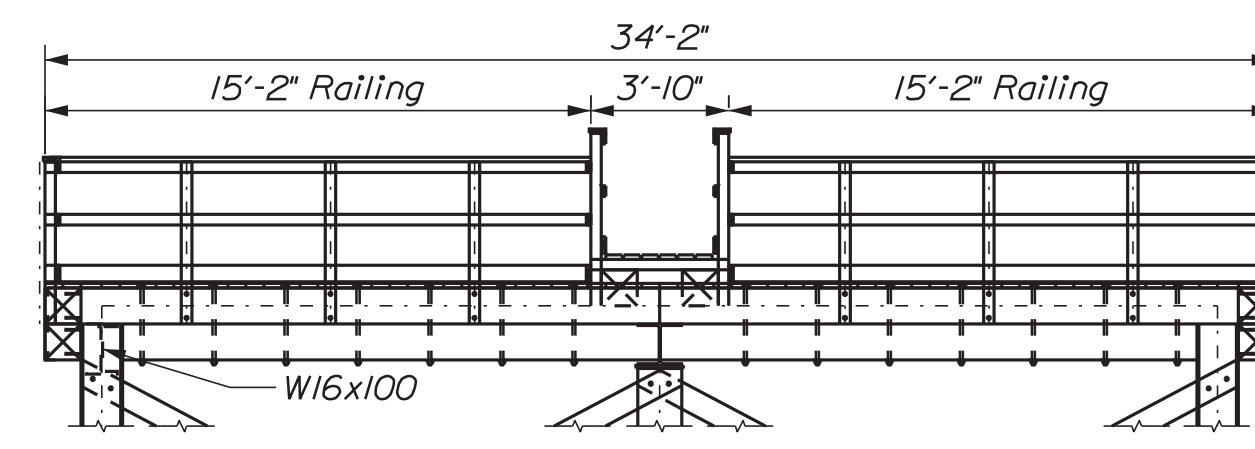
PARTIAL ELEVATION
CATWALK DECKING



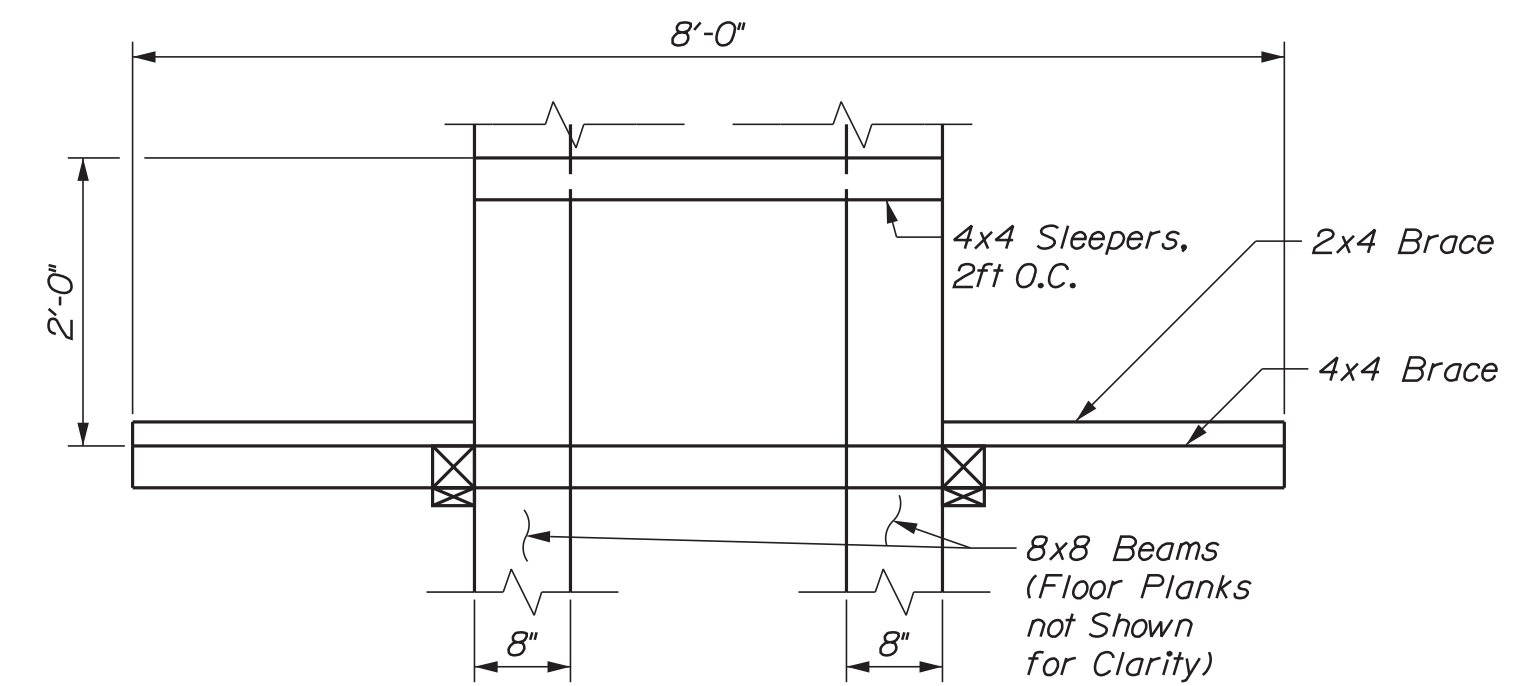
PIER 2 ACCESS PLATFORM
RAILING POST DETAIL



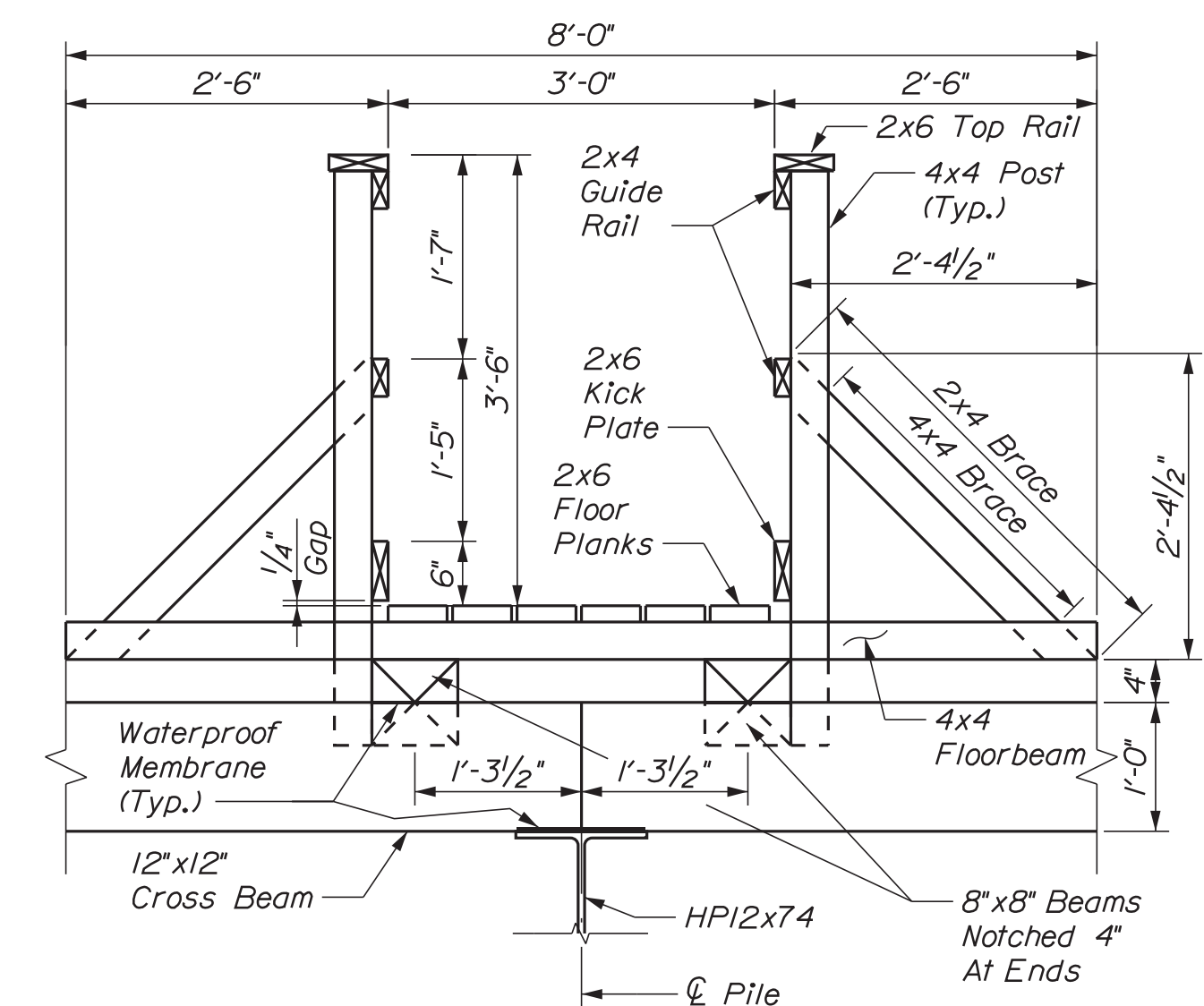
SECTION A-A



SECTION B-B



CATWALK PLAN



CATWALK
TYPICAL SECTION

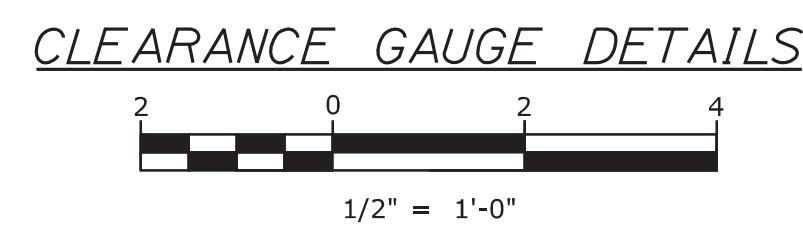
NOTES:

1. *Timber walkway fasteners not shown for clarity. Contractor to select appropriate length fastener. Fasteners shall be PhenoXo RSS 305 or 316 stainless steel 5/16" diam., or approved equal.*
2. *The Contractor may substitute galvanized pipe railing in lieu of the timber railing around the pier 2 access platform. The Contractor shall submit pipe railing shop drawings to the Department at least 14 days prior to fabrication and installation. No additional payment shall be made for this substitution.*
3. *Contractor to submit "gate design and details" to Resident for final approval.*

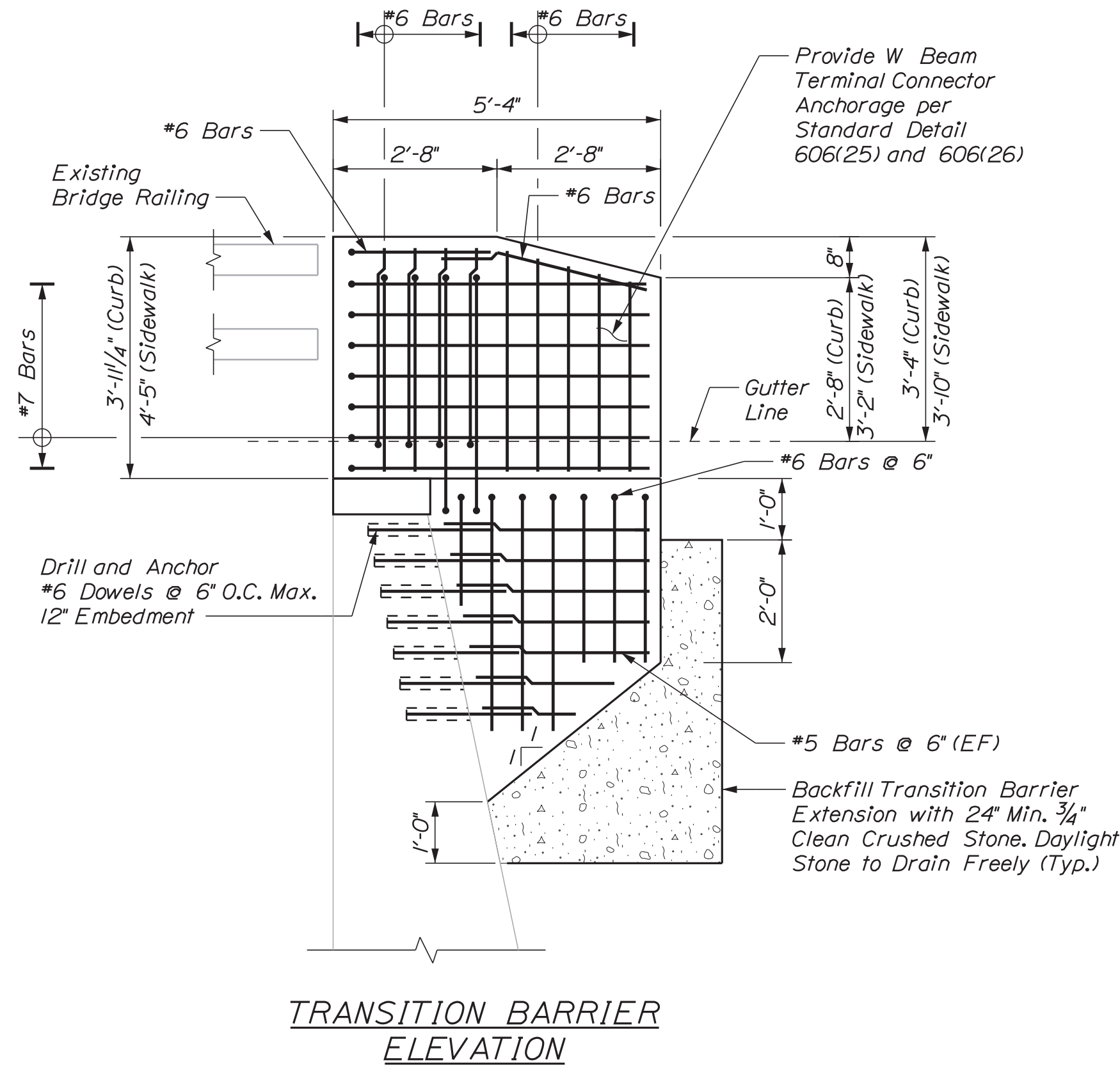
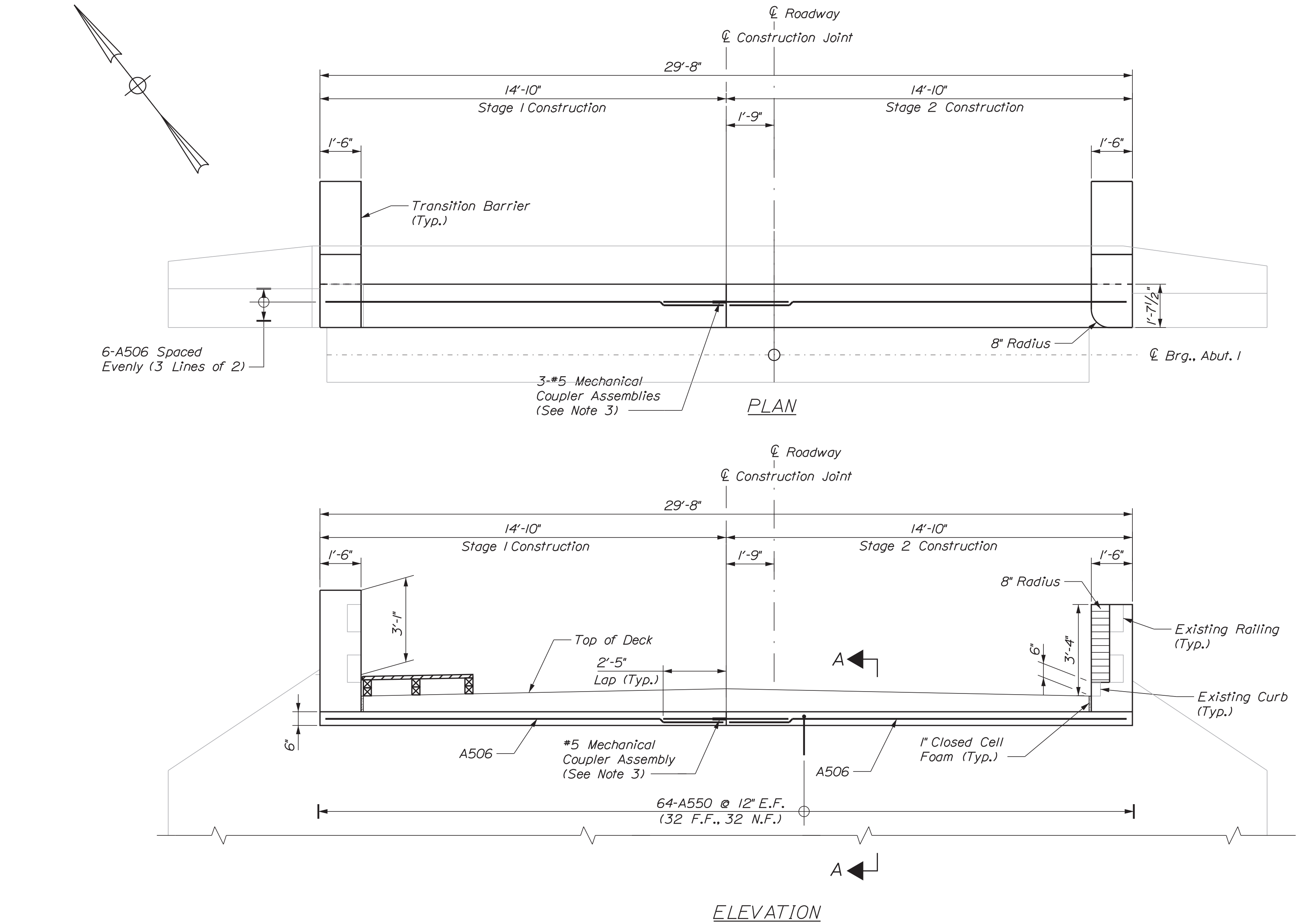


- Construct Proposed Worker
Access Walkway to Match
Existing Layout and Member
Sizes (See Note 3) _____ Provide Steel Safety Railings





1. See General Plan and Elevation sheet for staff gauge installation locations.



Location	Bar Size	Dim "A"	Dim "B"	Quantity (Ea.)
Abut. No. 1 Seat	#5	2'-5"	2'-5"	3

MECHANICAL CONNECTOR ASSEMBLY DETAIL

NOTES

- The Contractor shall submit shop drawings and reinforcing schedule for the transition barriers to the Engineer for approval. The transition barrier reinforcement shall be in accordance with MaineDOT Standard Details 526(16), 526(17). Payment for transition barrier reinforcing steel and drilling and grouting of anchor dowels shall be incidental to Item 526.34, Permanent Concrete Transition Barrier.
- All reinforcement shall have a minimum clearance of 2".
- Mechanical Coupler Assembly shall be paid for under Item 503.17, Mechanical/Welded Splice.
- Smooth Surfaced Asphalt Roll Roofing and Closed Cell Foam shall be incidental to deck over backwall detail items.

STRAIGHT BARS				BENT BARS							TYPE
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	LOCATION	A B L
A506	6	14'-6"	Abutment 1	A550	64	2'-7"	L	1'-4"	1'-3"	Abutment 1	

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2309401

BRIDGE NO. 2789WIN21751.01

BRIDGE PLANS

PROF. QUALIFIED ENGINEER

ROBERT S. BLUNT

11158

SIGNATURE

11158

P.E. NUMBER

August 19, 2022

DATE

SOUTHPORT BRIDGE ROUTE 27
OVER TOWNSEND GUT

SOUTHPORT & BOOTHBAY HARBOR ME LINCOLN COUNTY

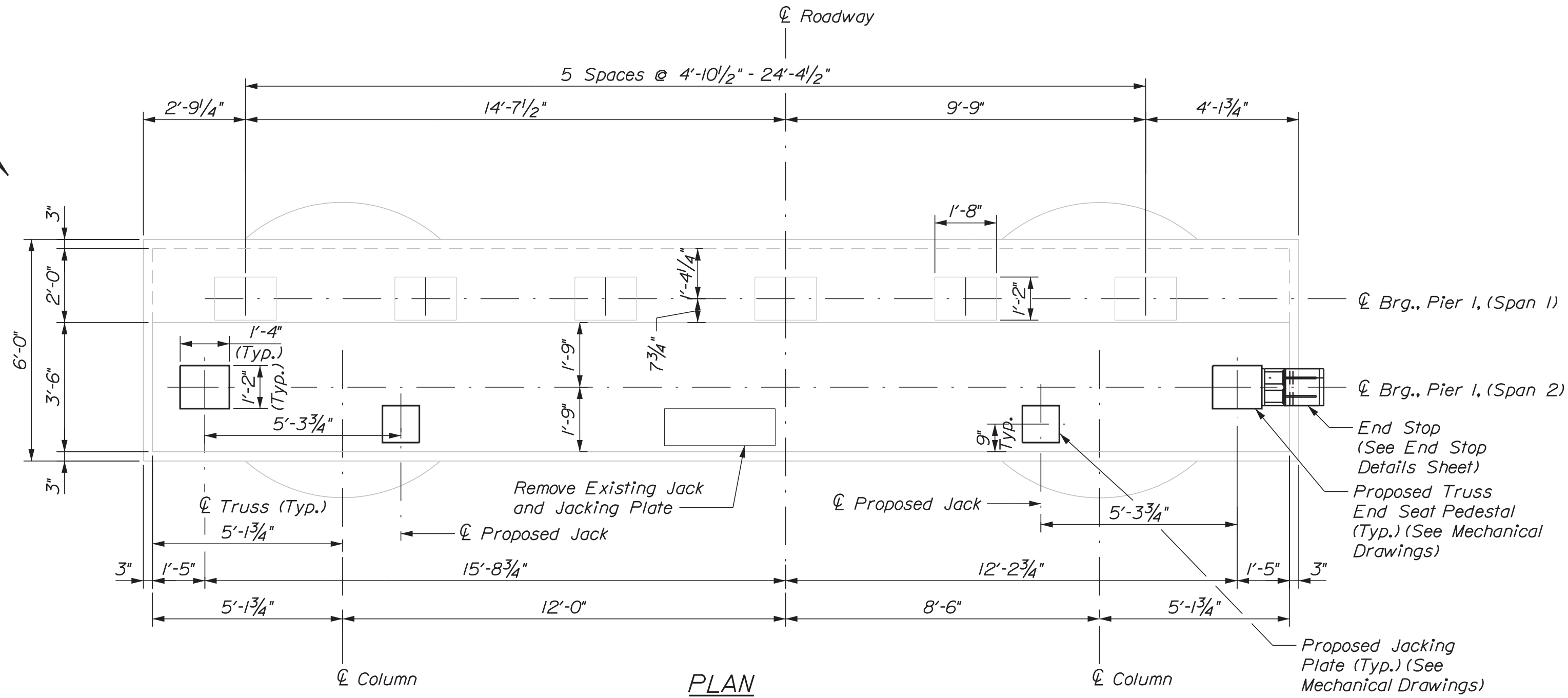
ABUTMENT 1

RECONSTRUCTION DETAILS

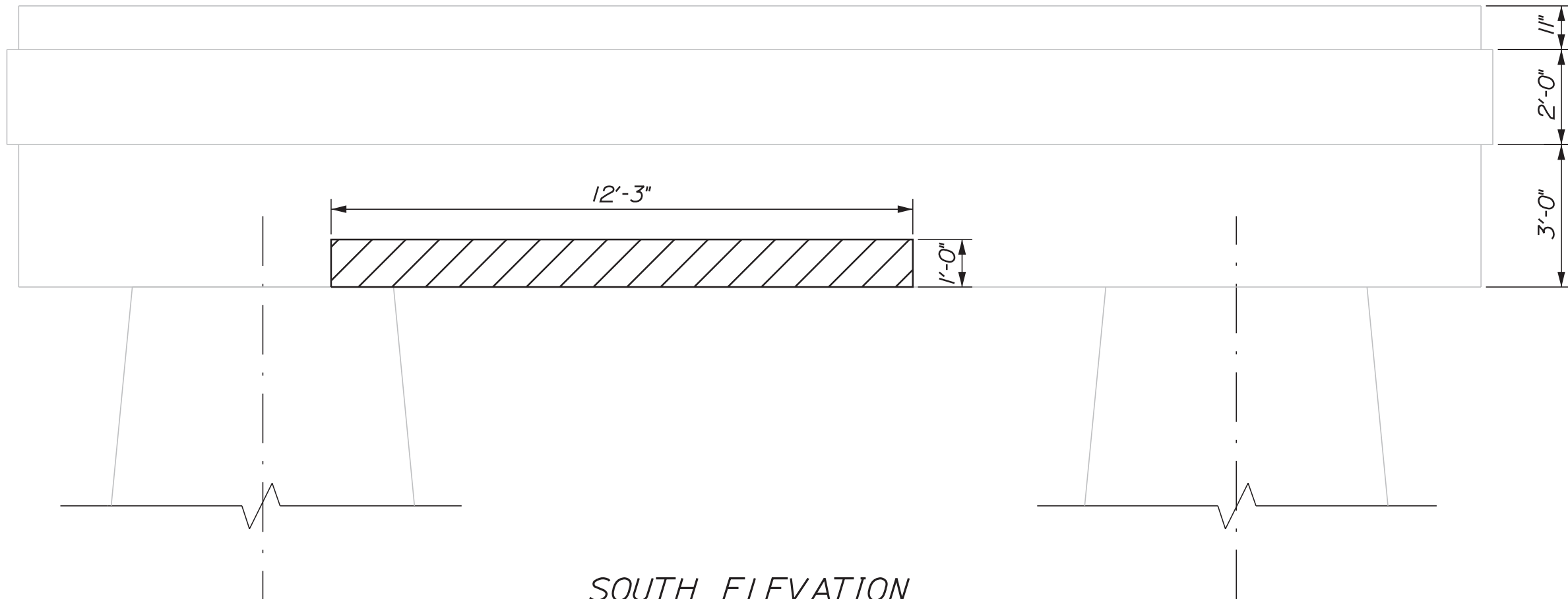
SHEET NUMBER

23

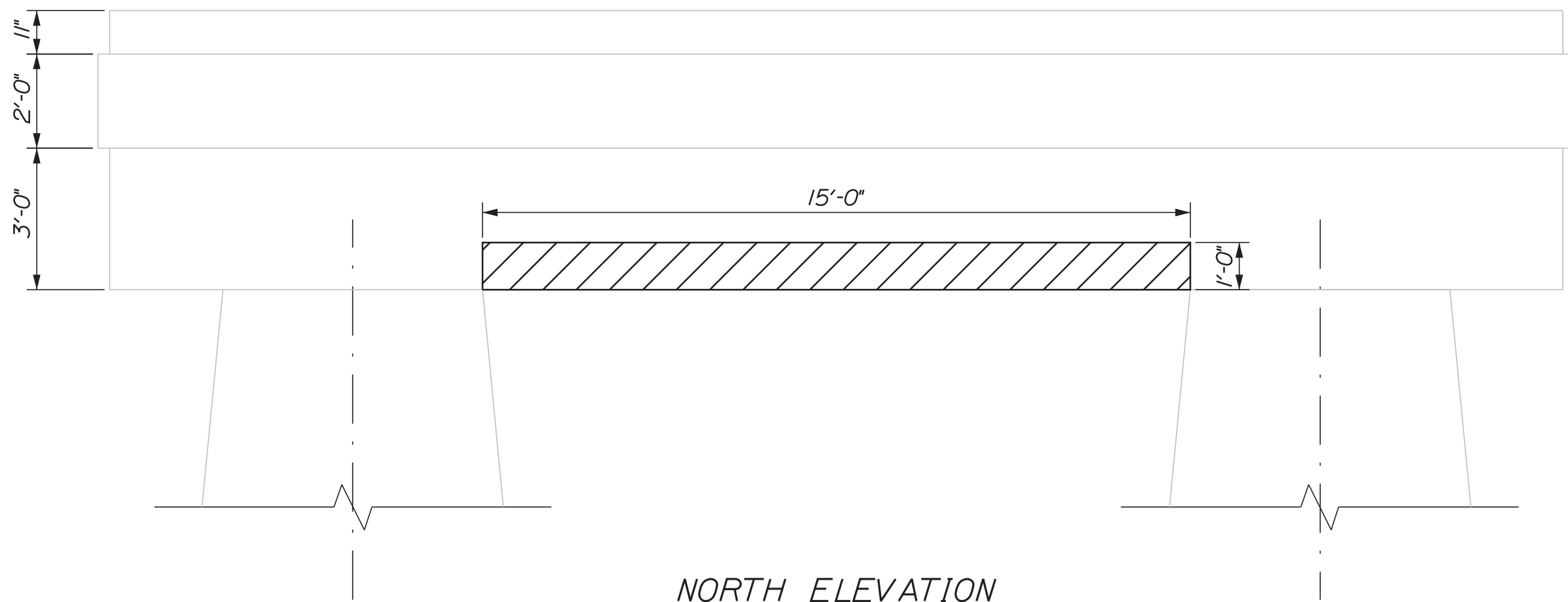
OF 48



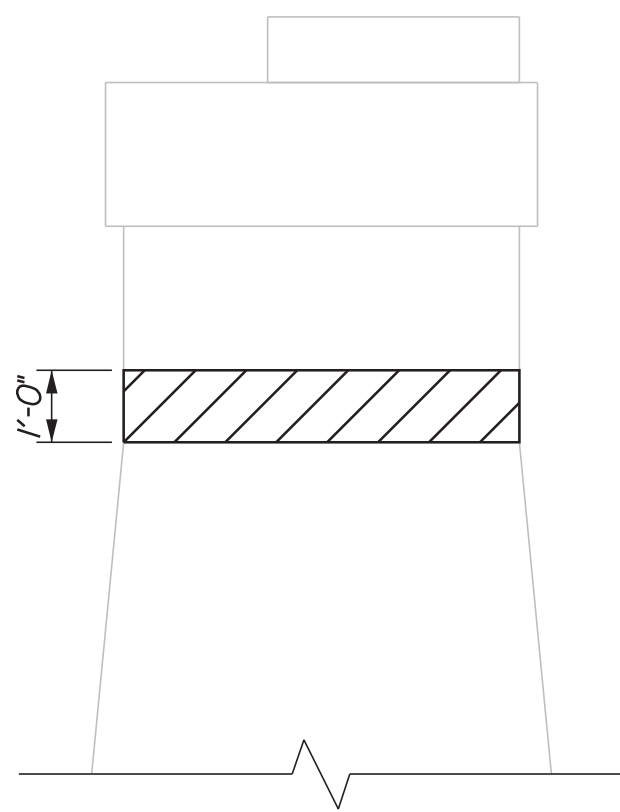
PLAN



SOUTH ELEVATION



NORTH ELEVATION



EAST END VIEW

NOTES

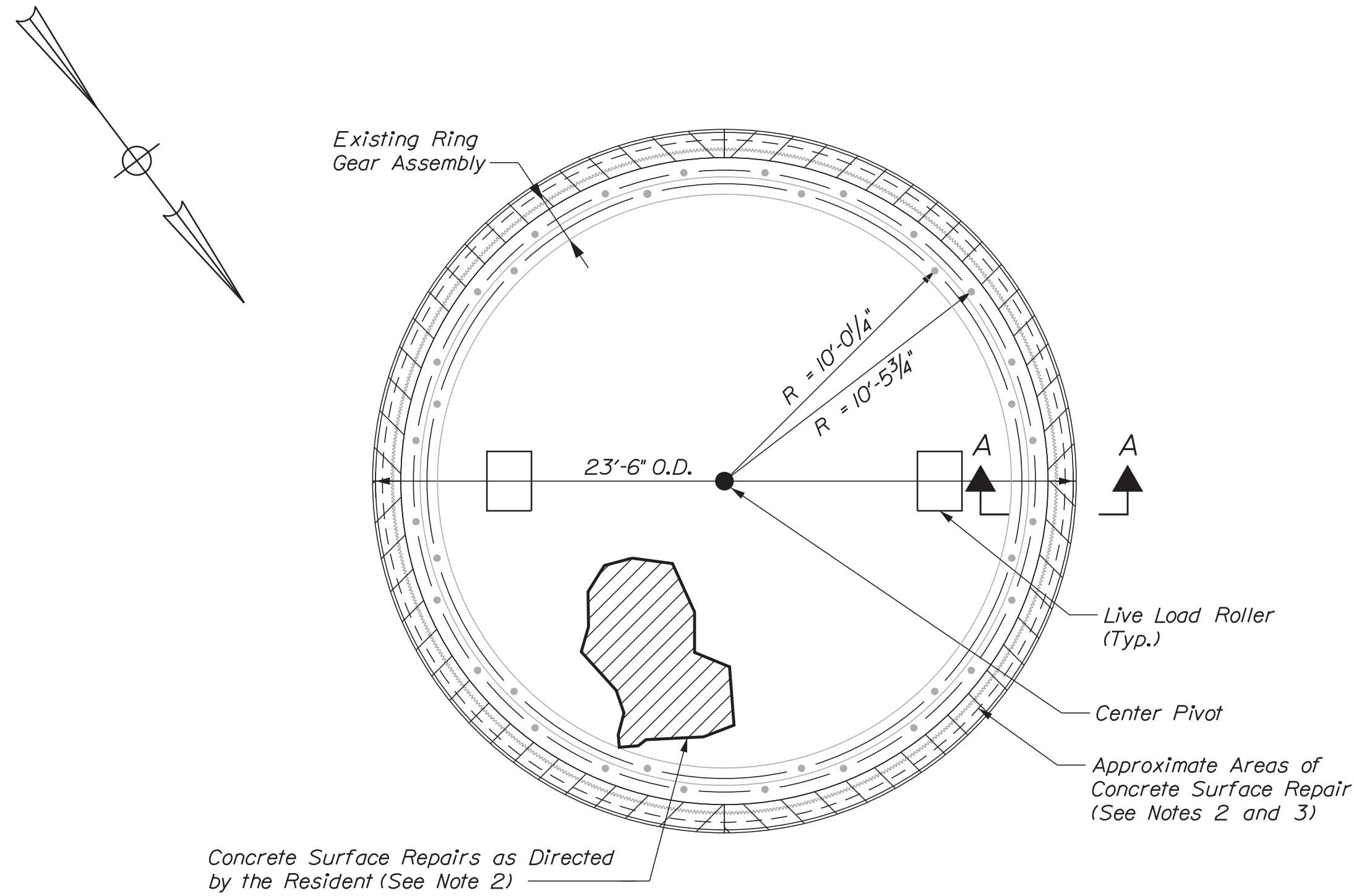
1. All dimensions shall be field verified by the Contractor prior to fabrication.
2. Shop drawings for bumper stop mounting assembly shall be submitted to the Department Engineer for review and approval prior to fabrication.

KEY

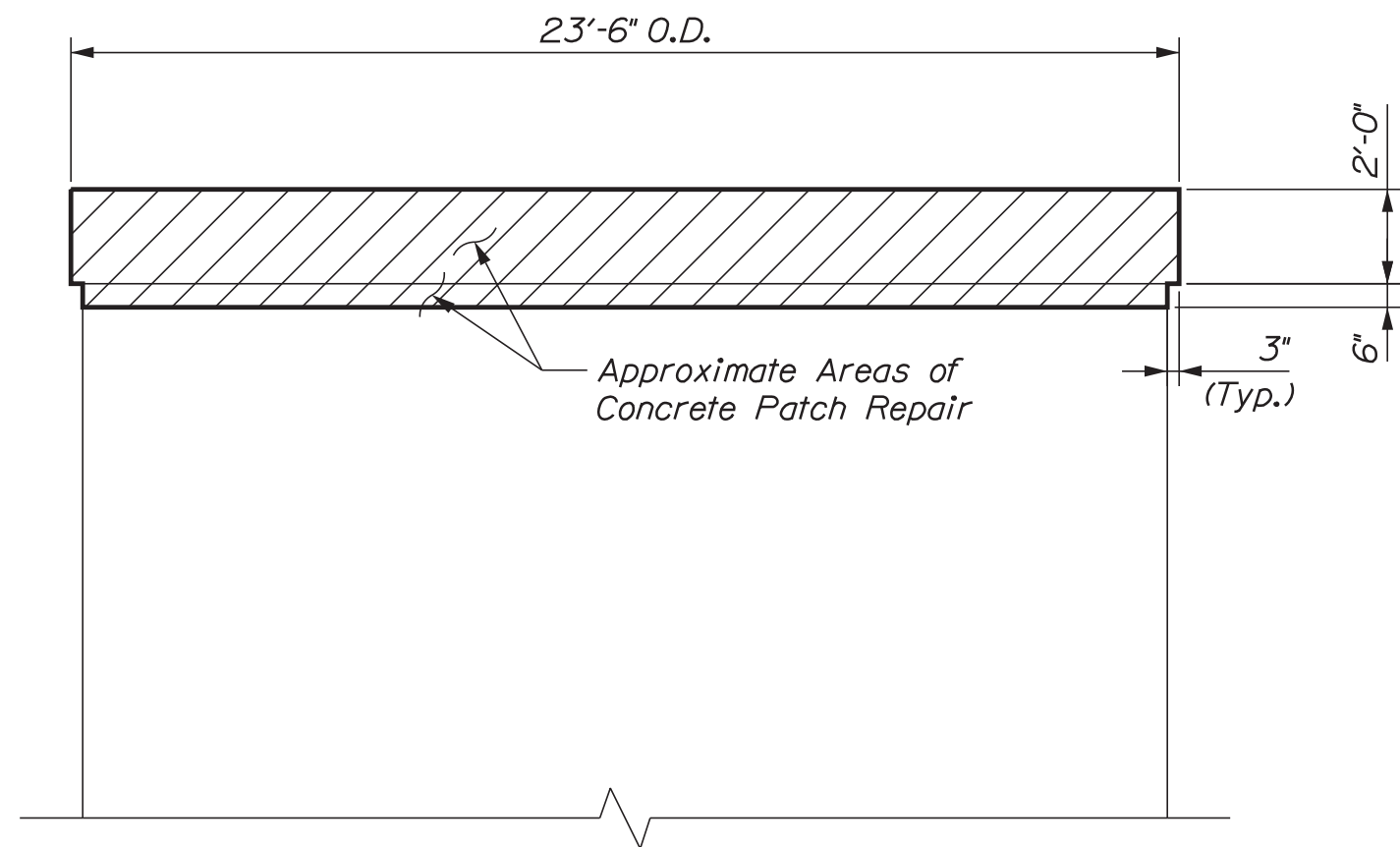


Limit of Repair of Concrete Surfaces

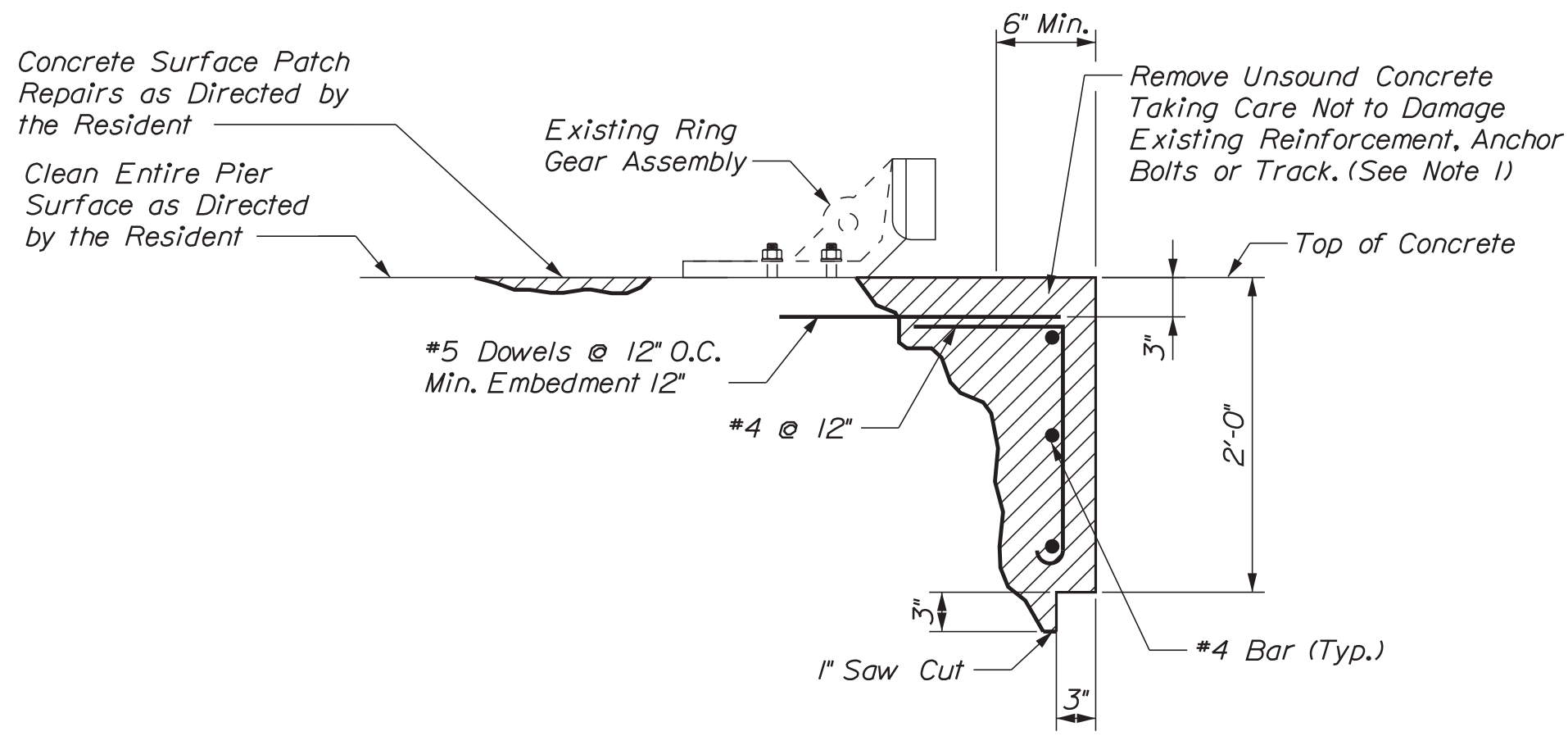
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2309401		BRIDGE NO. 2789		WIN		21751.01		BRIDGE PLANS	
SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT		LINCOLN COUNTY		PIER 1 CONCRETE PATCH REPAIR DETAILS		SHEET NUMBER		24		OF 48	
SOUTHPORT & BOOTHBAY HARBOR ME		LINCOLN COUNTY		PIER 1 CONCRETE PATCH REPAIR DETAILS		SHEET NUMBER		24		OF 48	
PROJ. MANAGER J. STETSON, PE		BY		DATE		SIGNATURE		P.E. NUMBER		DATE	
DESIGN-DETAILED BGP		UPD		8/19/22		ROBERT S. BLUNT		11158		August 19, 2022	
CHECKED-REVIEWED CTA		RSLUNT		8/19/22							
DESIGN2-DETAILED2											
DESIGN3-DETAILED3											
REVISIONS 1											
REVISIONS 2											
REVISIONS 3											
REVISIONS 4											
FIELD CHANGES											



PLAN

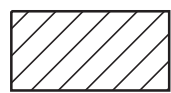


ELEVATION



Section A-A

KEY

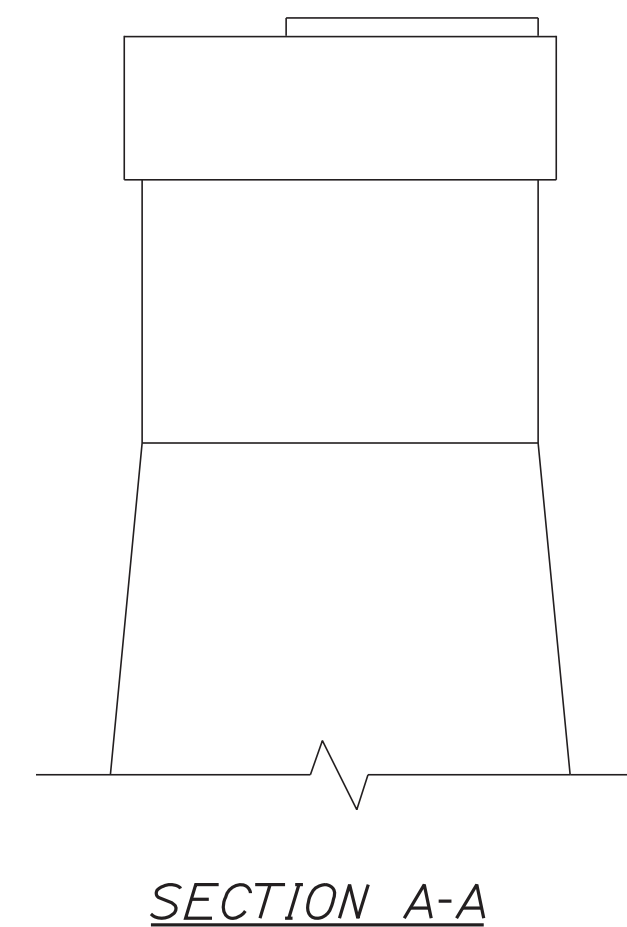
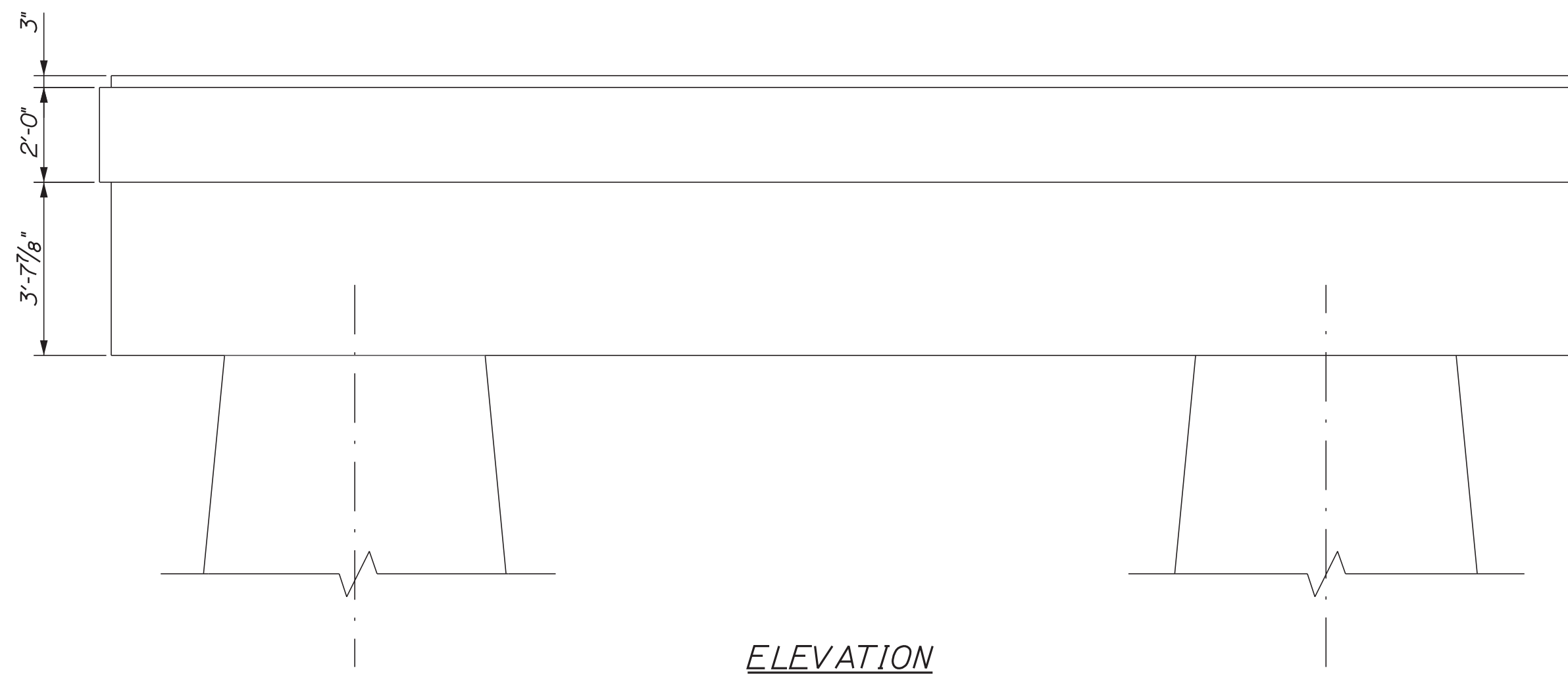
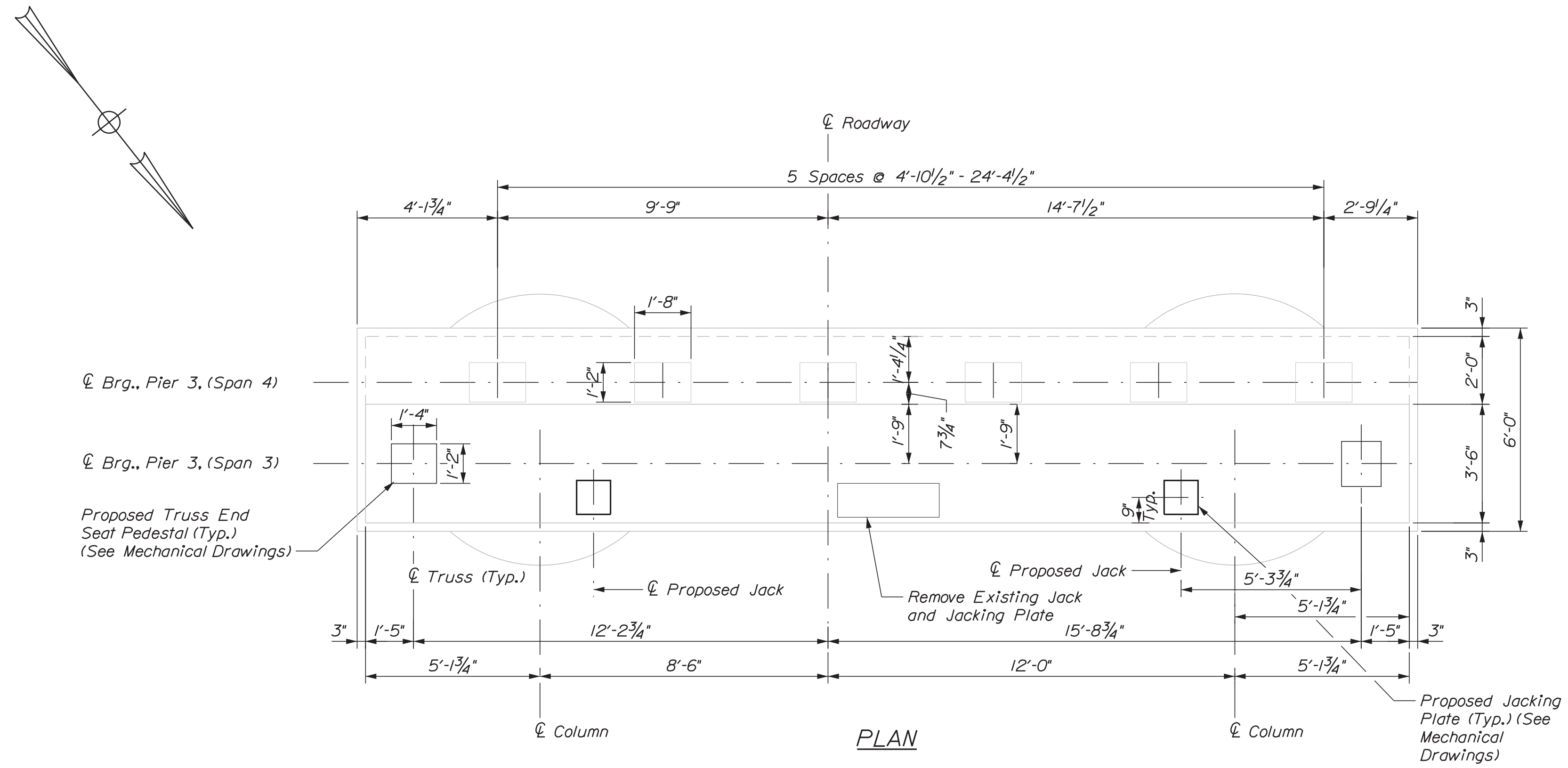


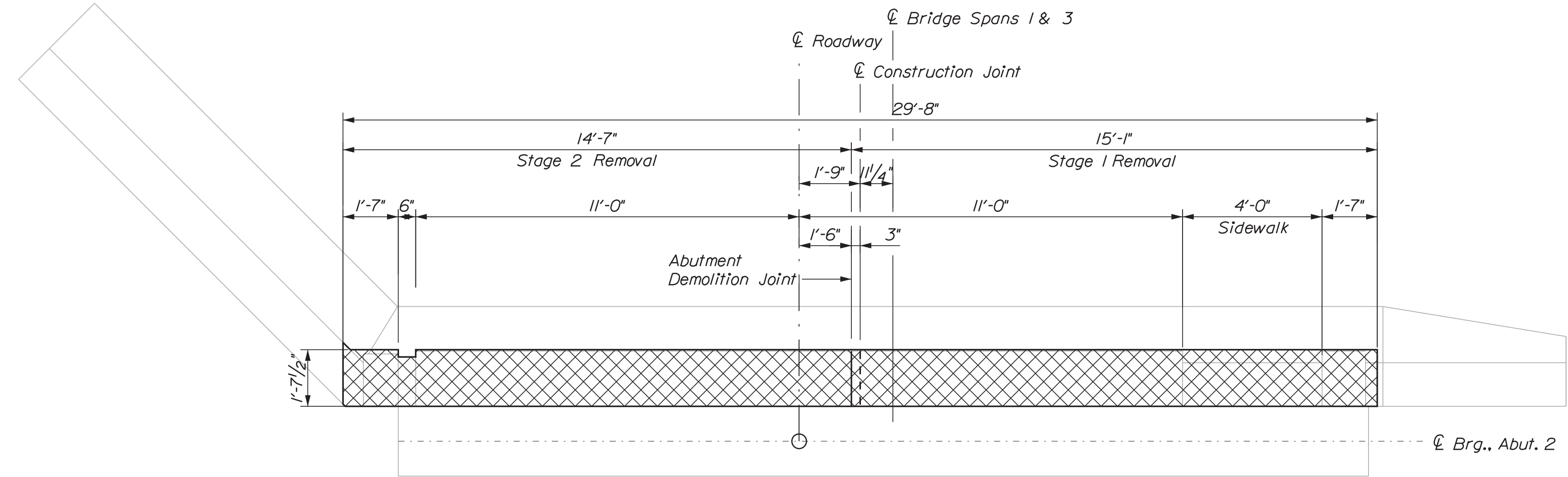
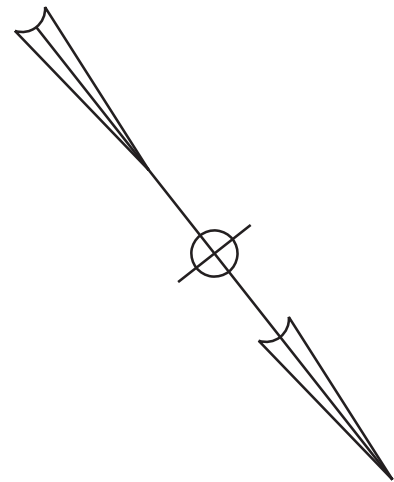
Limit of Repair of Concrete Surfaces

NOTES:

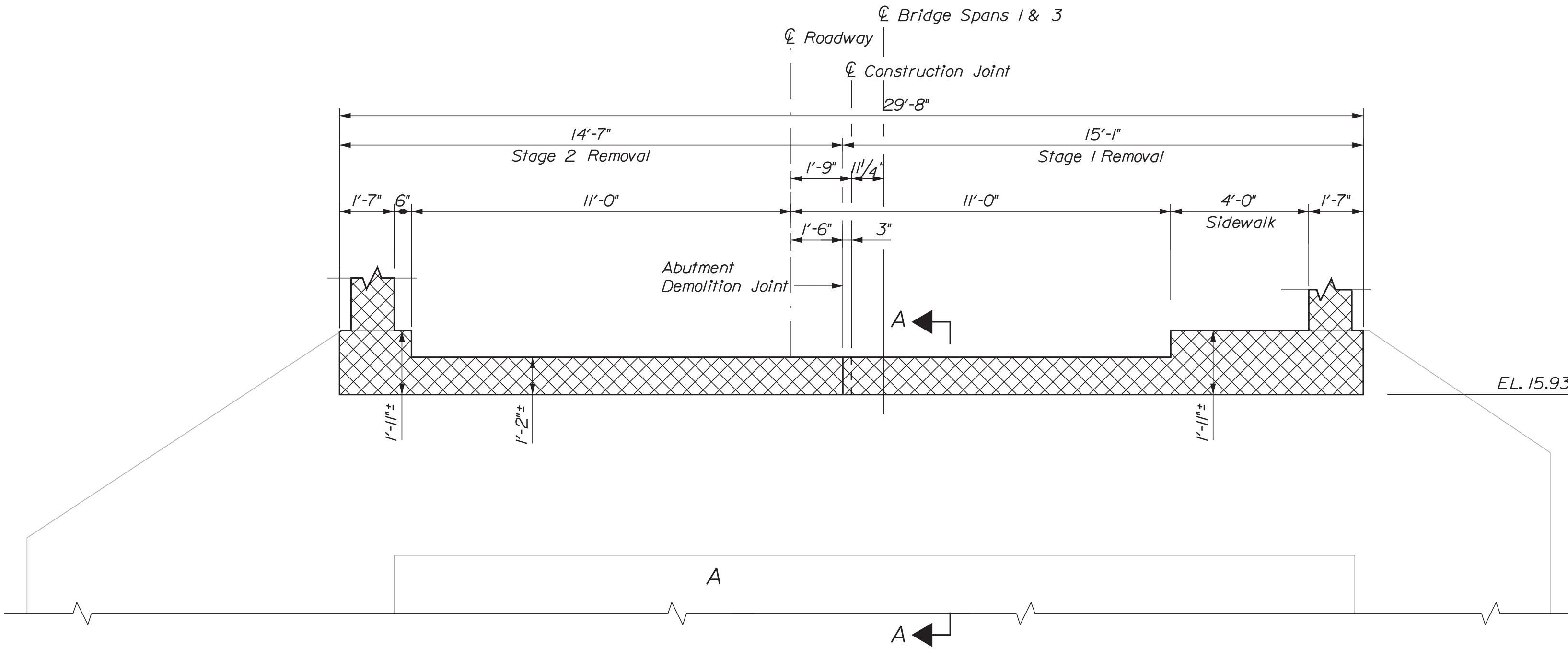
1. Concrete may be removed to a maximum of 1 1/2" of the ring gear bearing contact width. If unsound concrete is found beyond this limit, the Department must be notified, and a removal plan developed prior to commencing further removal of concrete.
2. Precise location of concrete patch repairs shall be determined in the field and approved by the Resident.
3. Reinforcement shop drawings for vertical surface repairs shall be submitted to the Department at least 14 days prior to fabrication.

SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT SOUTHPORT & BOOTHBAY HARBOR ME LINCOLN COUNTY	STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2309401		BRIDGE NO. 2789		WIN 21751.01		BRIDGE PLANS		
			SIGNATURE 11158		P.E. NUMBER 11158		DATE August 19, 2022				
PIER 2 CONCRETE PATCH REPAIR DETAILS		SHEET NUMBER 26		OF 48							

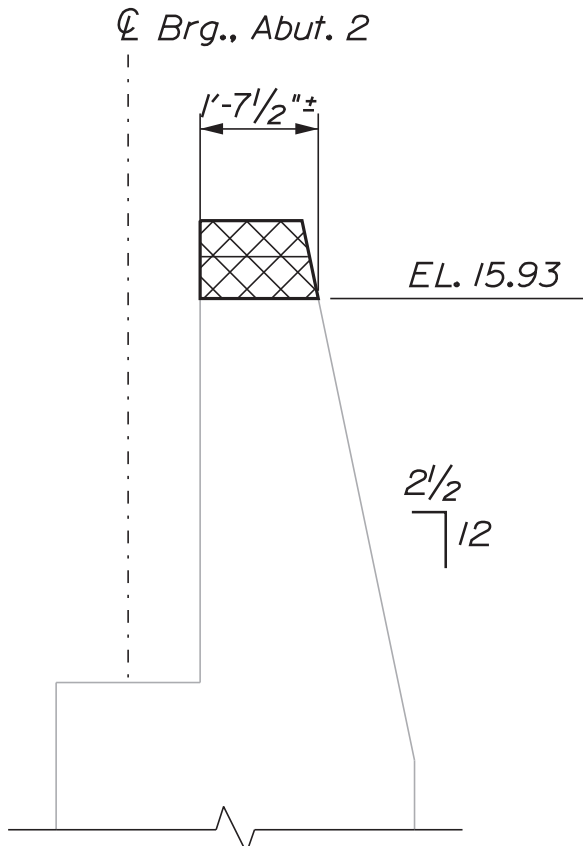




PLAN



ELEVATION



SECTION A-A

DEMOLITION QUANTITY (CY)

Removing Existing Structural Concrete 2.5

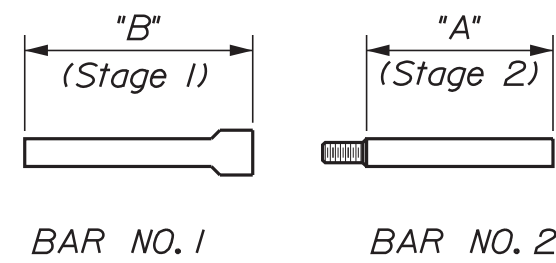
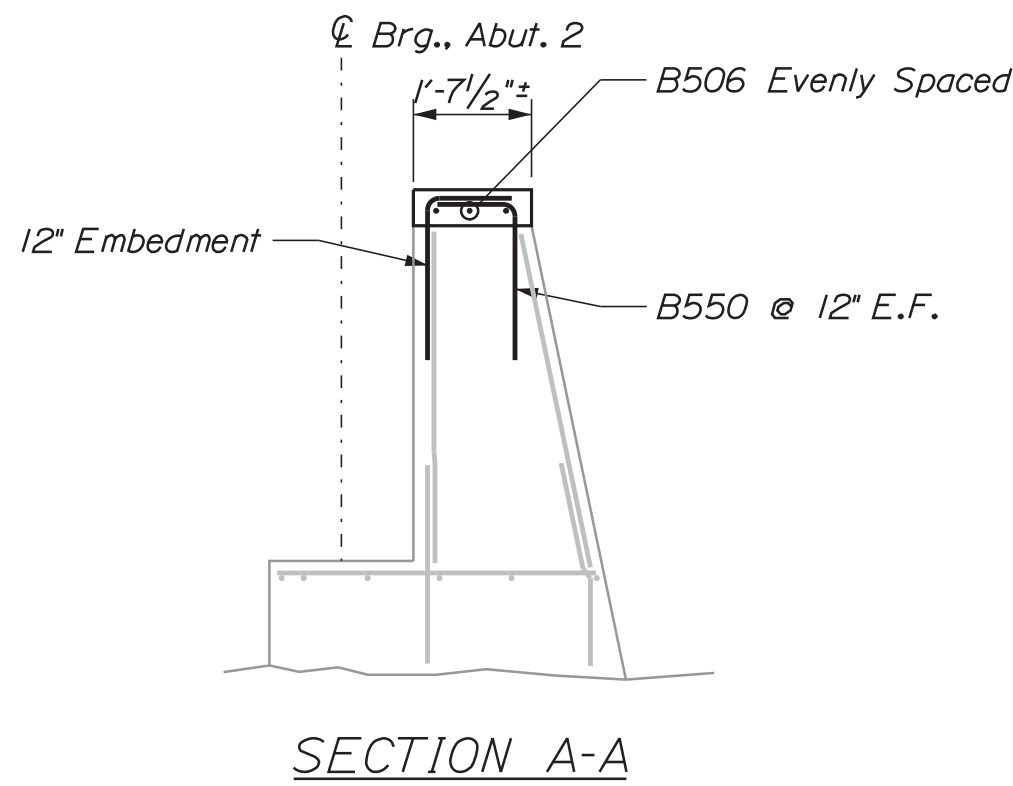
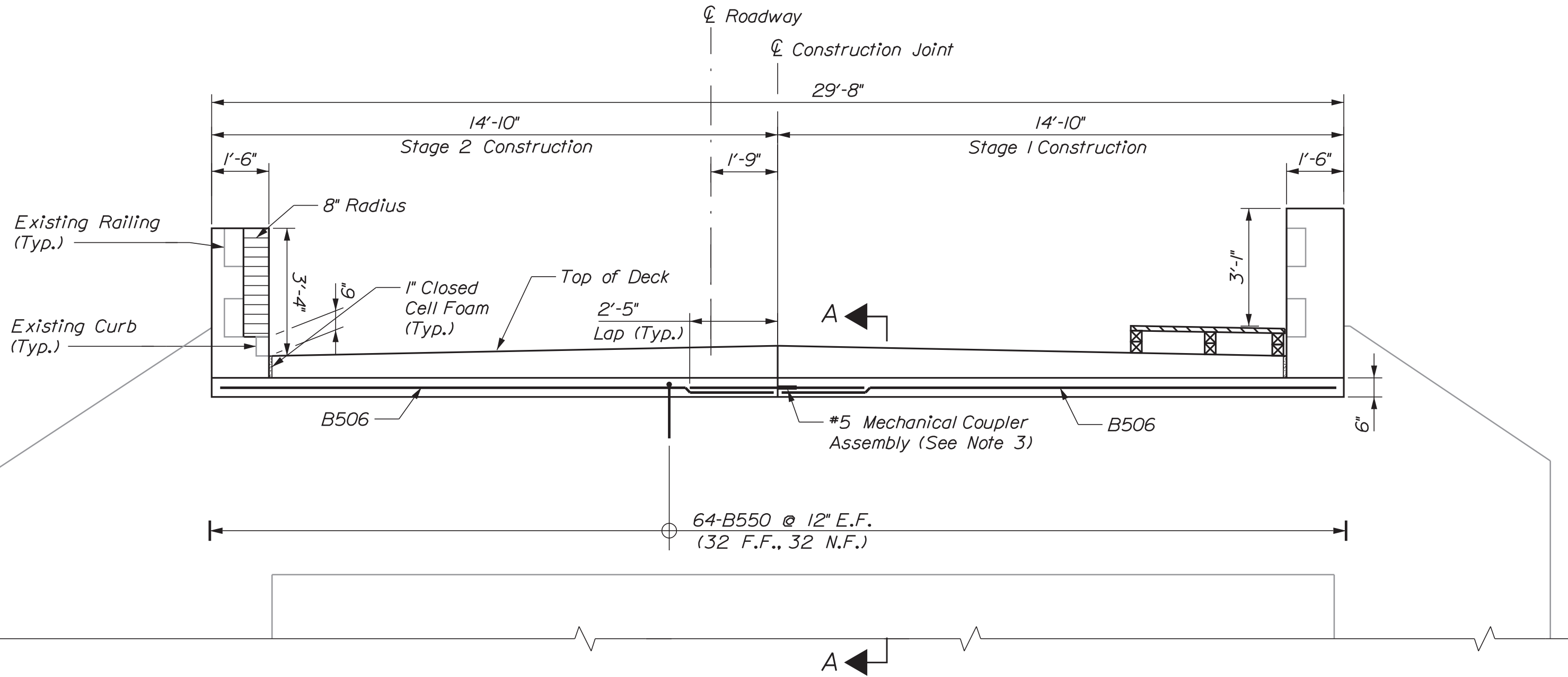
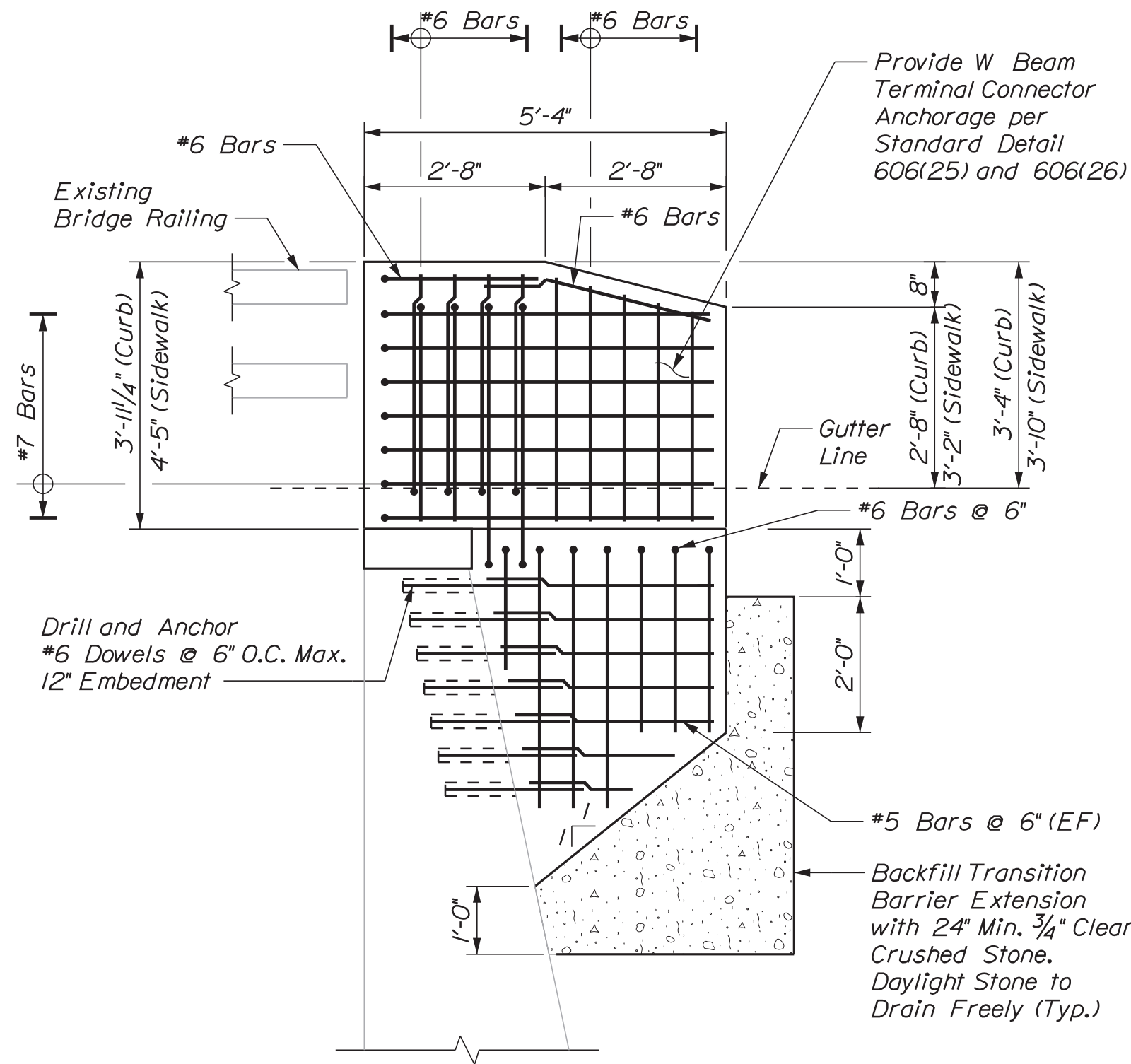
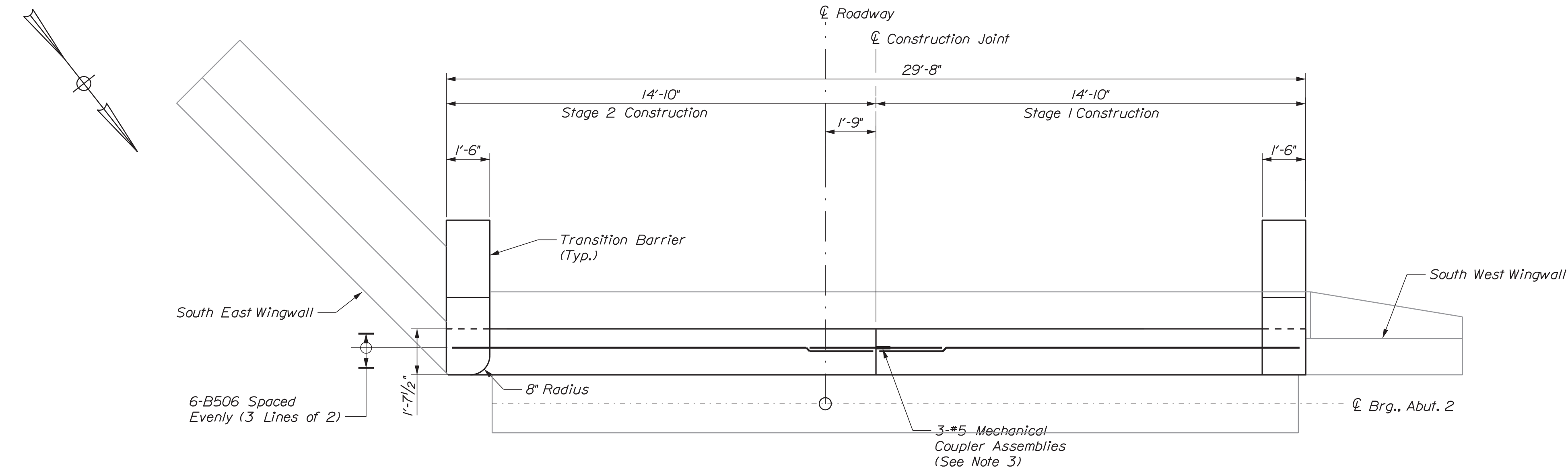
KEY

= Concrete Removal (Item 202.12)

NOTE

1. Vertical removal dimensions shown are approximate. The Contractor shall field verify all dimensions.

SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT SOUTHPORT & BOOTHBAY HARBOR ME LINCOLN COUNTY	STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2309401		BRIDGE NO. 2789 WIN 21751.01 BRIDGE PLANS
	SIGNATURE 1158		P.E. NUMBER August 19, 2022		
	DATE 8/19/22		BY RSLJNT		
DESIGN-DETAILED CHECKED-REVIEWED CTA		PROJ. MANAGER J. STETSON, PE BGP		REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4 FIELD CHANGES	
SOUTHPORT & BOOTHBAY HARBOR ME LINCOLN COUNTY ABUTMENT 2 REMOVAL LIMITS		SHEET NUMBER 28 OF 48			



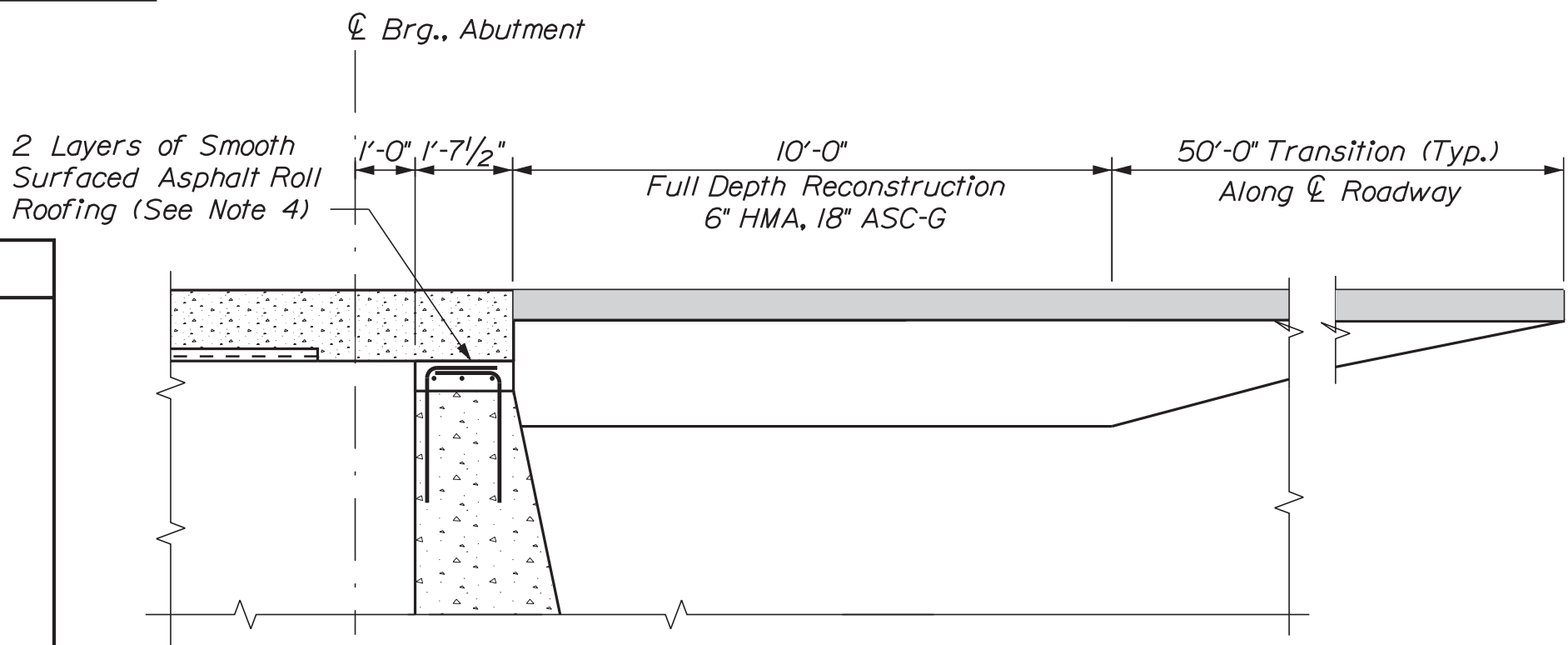
Location	Bar Size	Dim "A"	Dim "B"	Quantity (Ea.)
Abut. No. 2 Seat	#5	2'-5"	2'-5"	3

MECHANICAL CONNECTOR
ASSEMBLY DETAIL

NOTES

- The Contractor shall submit shop drawings and reinforcing schedule or the transition barriers to the Department for approval. The transition barrier reinforcement shall be in accordance with MaineDOT Standard details 526(16), 526(17). Payment for transition barrier reinforcing steel and drilling and grouting of anchor dowels shall be incidental to Item 526.34, Permanent Concrete Transition Barrier.
- All reinforcement shall have a minimum clearance of 2".
- Mechanical Coupler Assembly shall be paid for under Item 503.17, Mechanical/Welded splice.
- Smooth Surfaced Asphalt Roll Roofing and Closed Cell Foam shall be incidental to deck over backwall detail items.

STRAIGHT BARS				BENT BARS							TYPE
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	LOCATION	A B L
B506	6	14'-6"	Abutment 2	B550	64	2'-7"	L	1'-4"	1'-3"	Abutment 2	



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2309401

BRIDGE NO. 2789
WIN
21751.01

BRIDGE PLANS

PROJ. MANAGER
J. STETSON, PE

DESIGN-DETAILED
BSP

CHECKED-REVIEWED
CTA

DESIGN-DETAILED
DESIGN-DETAILED
DESIGN-DETAILED

REVISIONS
1

REVISIONS
2

REVISIONS
3

REVISIONS
4

FIELD CHANGES

DATE
8/19/22

BY
UPD
RBLNT

SIGNATURE
1158

P.E. NUMBER
1158

DATE
August 19, 2022

SOUTHPORT BRIDGE ROUTE 27
OVER TOWNSEND GUT

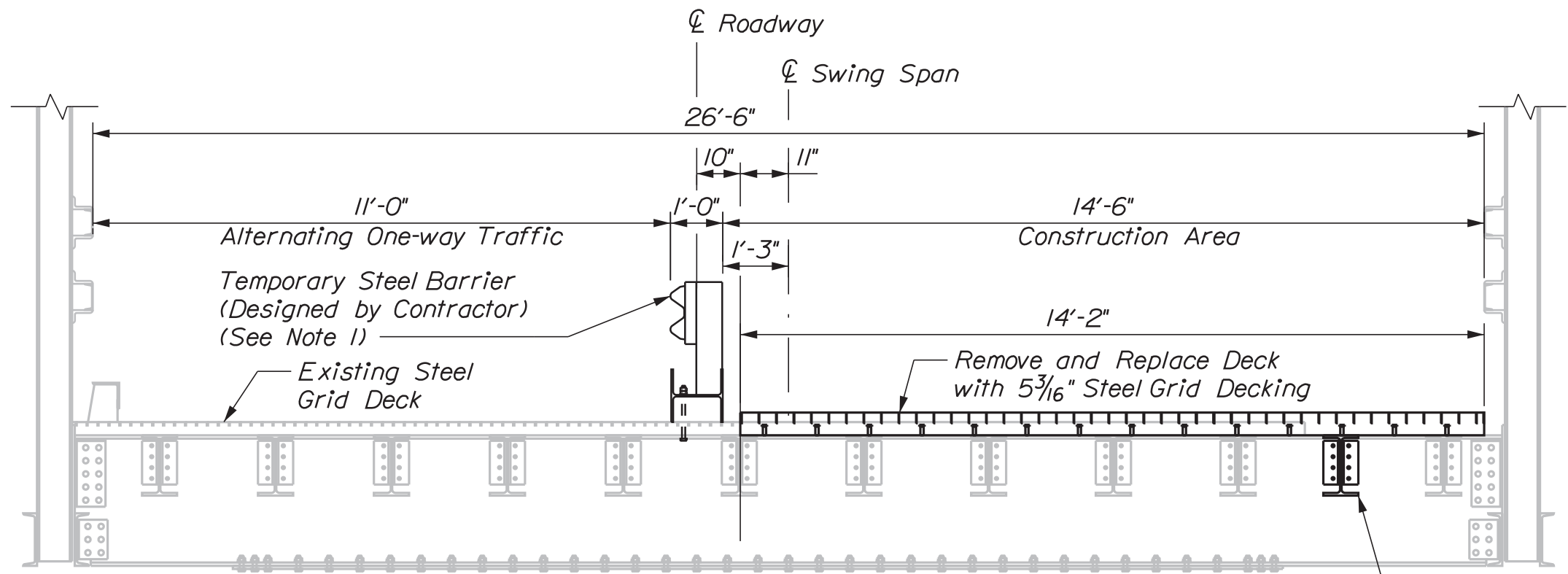
SOUTHPORT & BOOTHBAY HARBOR ME
LINCOLN COUNTY

ABUTMENT 2
RECONSTRUCTION DETAILS

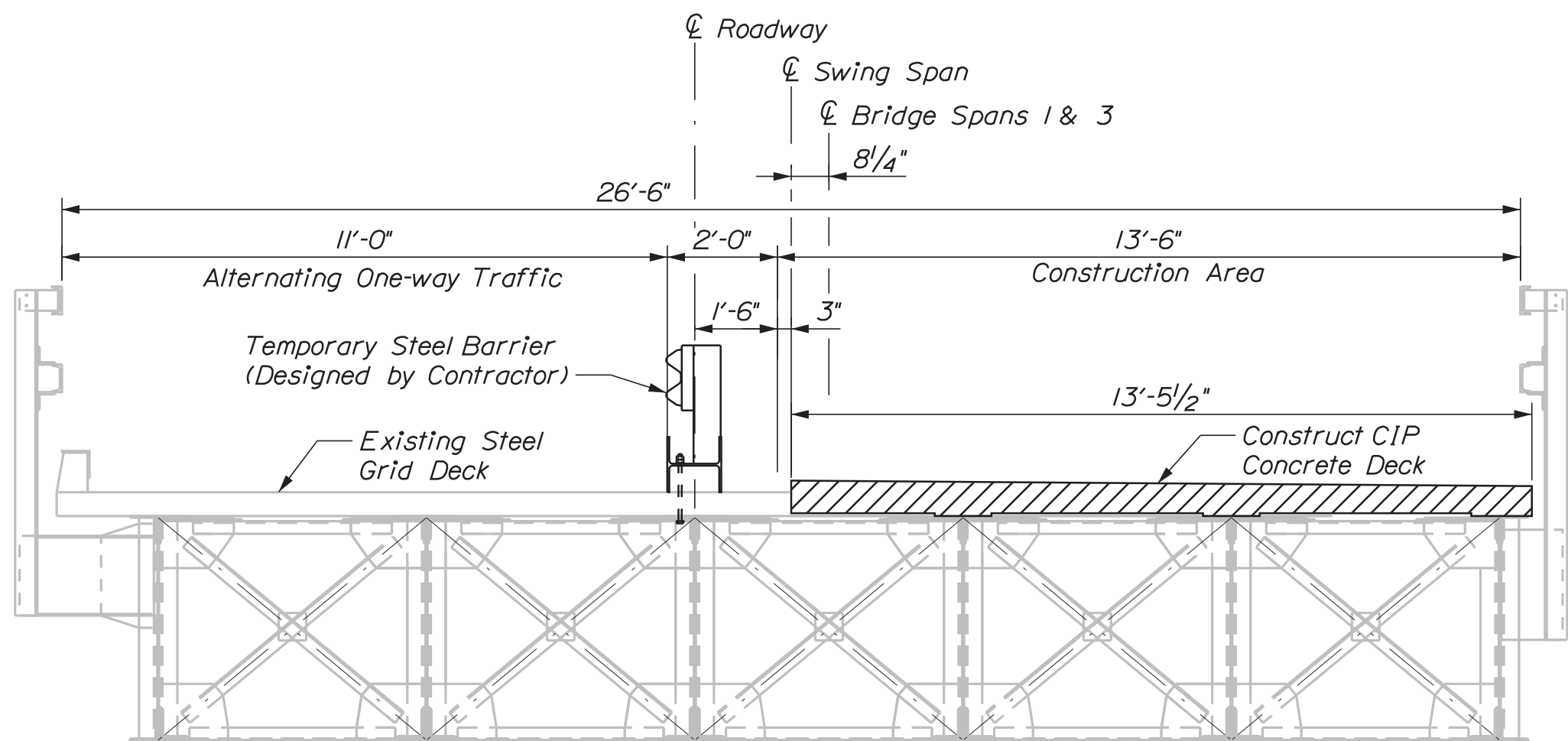
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29

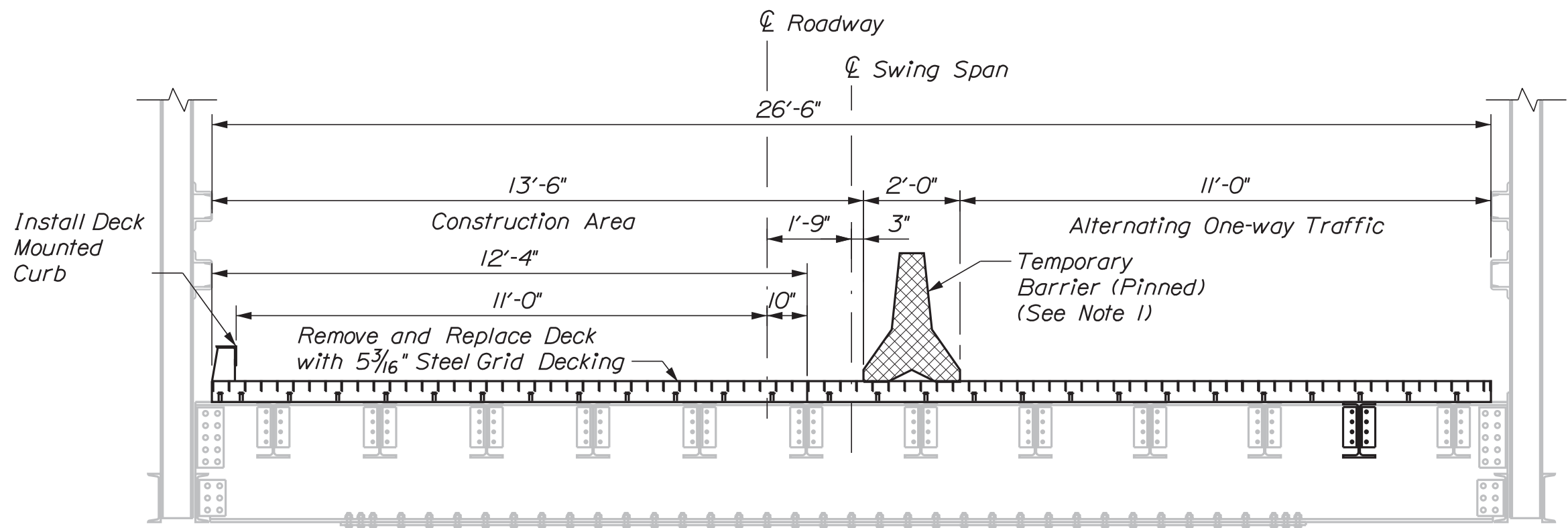
OF 48



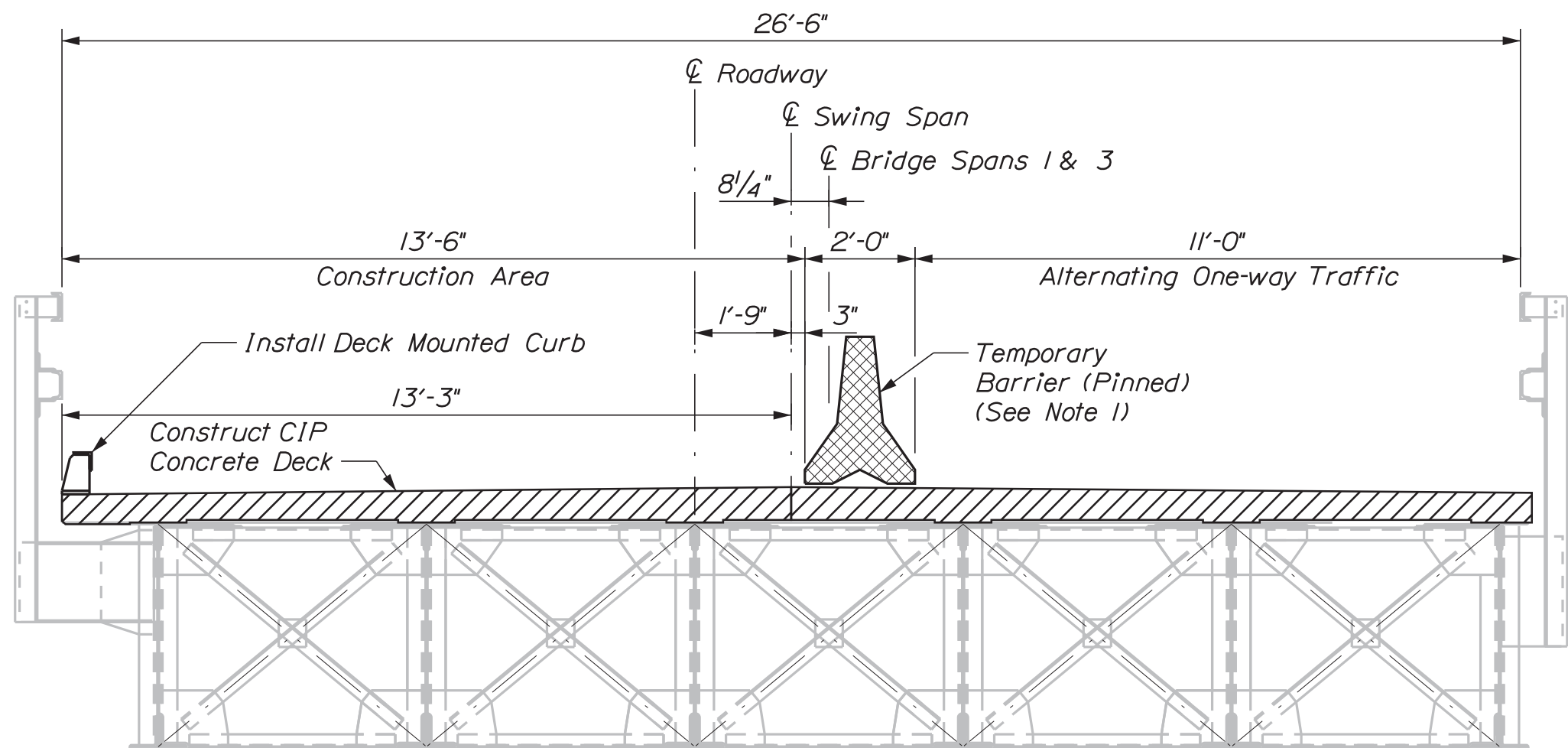
TYPICAL SECTION AT TRUSS STAGE 1
(Looking toward Southport)
Scale: 3/8" = 1'-0"



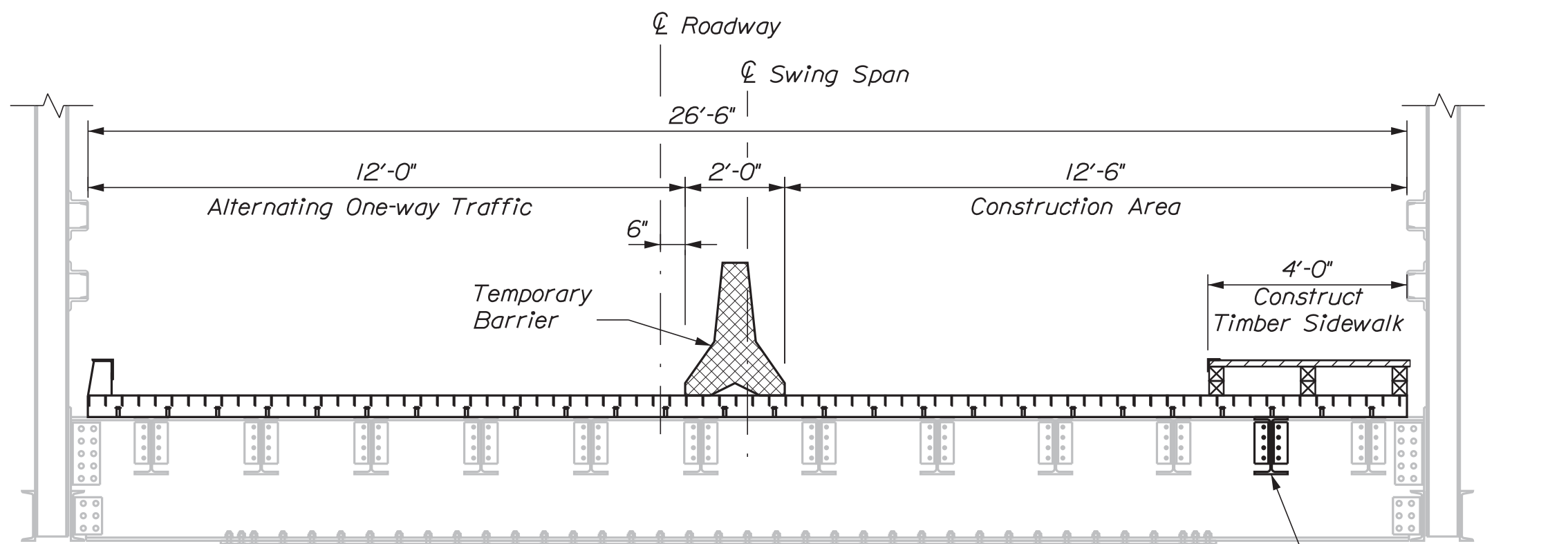
TYPICAL SECTION AT SPANS 1 & 3 STAGE 1
(Looking toward Southport)
Scale: 3/8" = 1'-0"



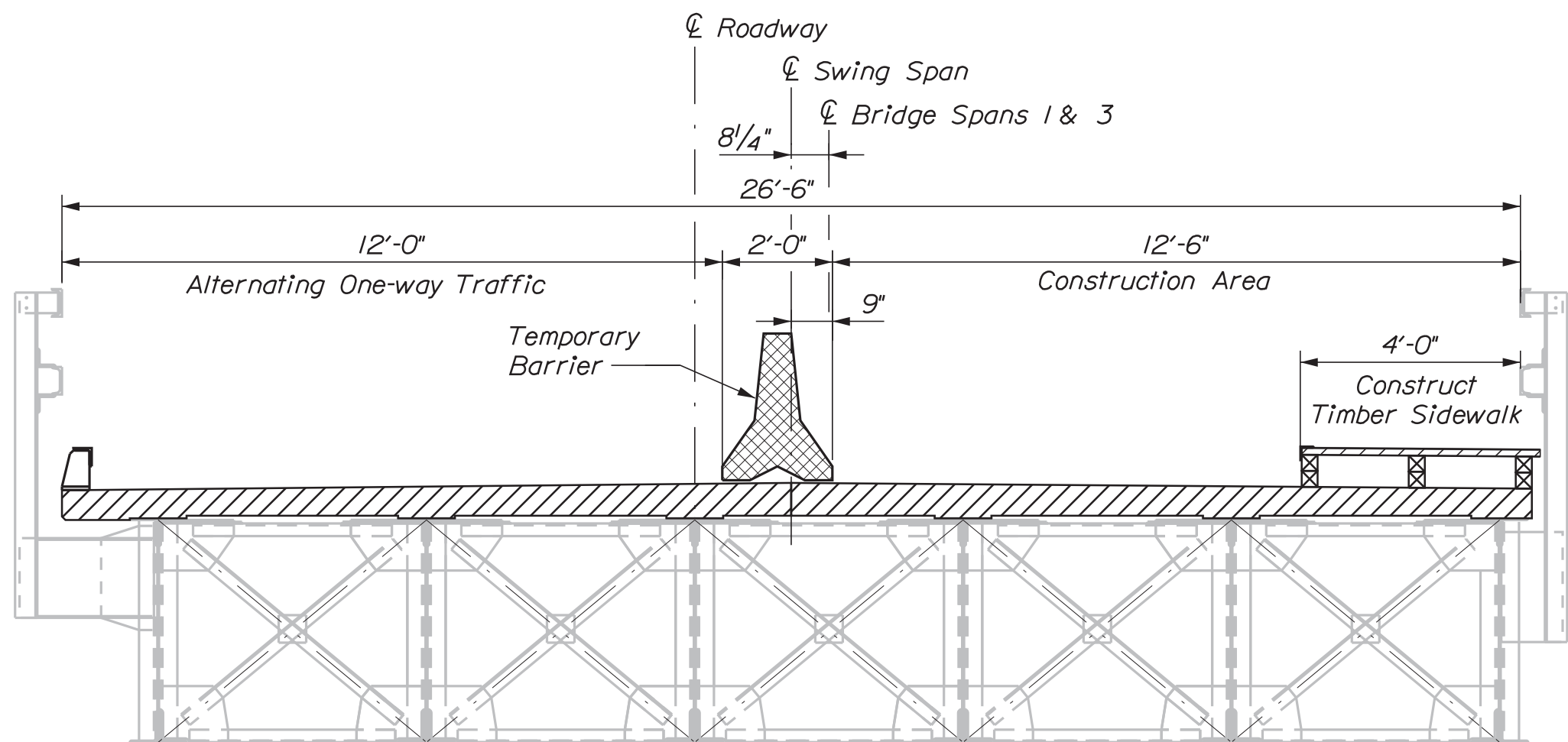
STAGE 2
(Looking toward Southport)
Scale: 3/8" = 1'-0"



STAGE 2
(Looking toward Southport)
Scale: 3/8" = 1'-0"



STAGE 3
(Looking toward Southport)
Scale: 3/8" = 1'-0"

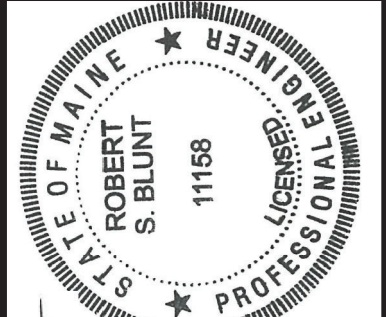


STAGE 3
(Looking toward Southport)
Scale: 3/8" = 1'-0"

NOTES:

1. Temporary Steel Barrier shall be paid for under Item 507.13, Temporary Bridge Rail, Temporary Barrier (Pinned) shall be paid for under Item 526.305, Temporary Concrete Barrier, Braced Type 1.
2. Removal of existing steel grid deck shall be paid for under Item 202.01, Removing Structures and Obstructions, Existing Steel Grid Deck.

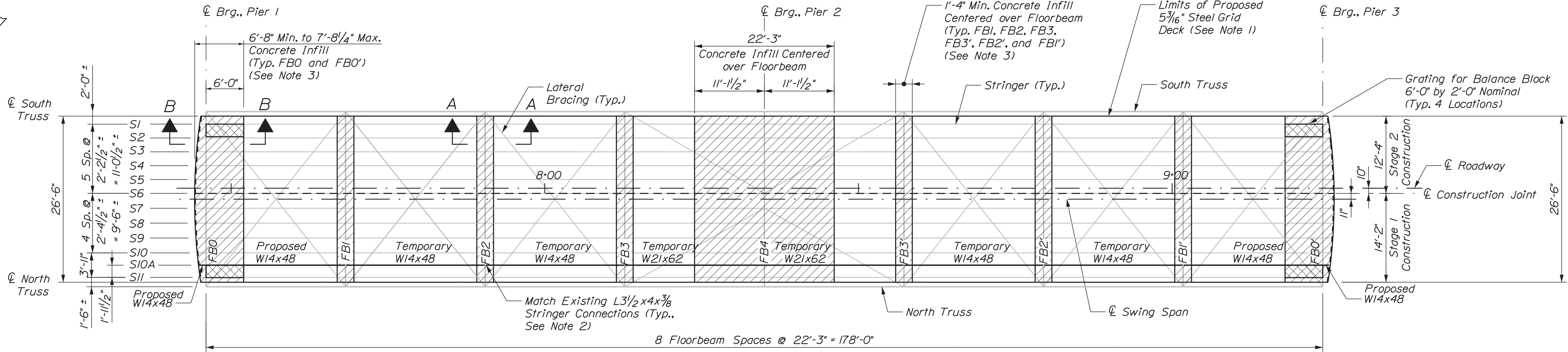
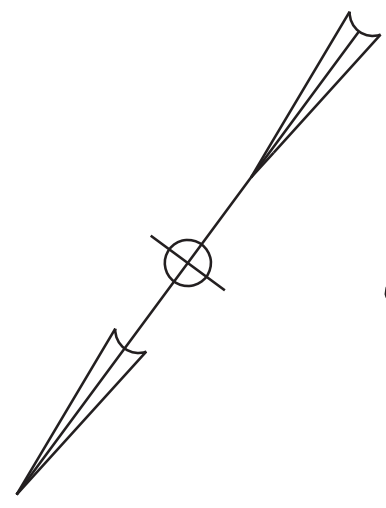
STATE OF MAINE	BRIDGE PLANS
DEPARTMENT OF TRANSPORTATION	
2309401	WIN
BRIDGE NO. 2789	21751.01



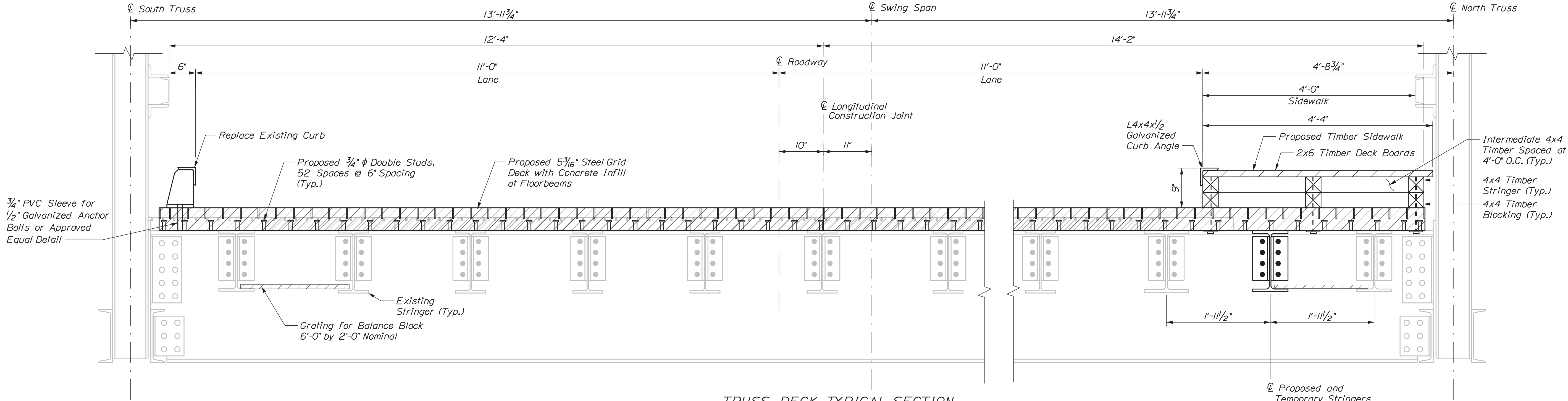
PROJ. MANAGER	J. STETSON, PE	DATE	8/19/22
DESIGN-DETAILED	BGP	BY	DPD, B WISE
CHECKED-REVIEWED	CTA	REVISION	1158
DESIGN-DETAILED	CTA	REVISION	1158
DESIGN-DETAILED	CTA	REVISION	1158
REVISIONS	1	P.E. NUMBER	August 19, 2022
REVISIONS	2	DATE	
REVISIONS	3		
REVISIONS	4		
FIELD CHANGES			

SOUTHPORT BRIDGE ROUTE 27	LINCOLN COUNTY
OVER TOWNSEND GUT	
SOUTHPORT & BOOTHBAY HARBOR ME	
STAGED CONSTRUCTION SECTIONS	

SHEET NUMBER
30
OF 48



FLOOR PLAN

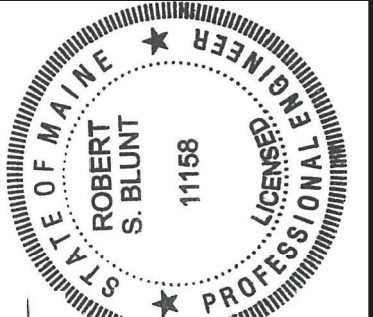


TRUSS DECK TYPICAL SECTION

106 Studs per Floorbeam x 9 Floorbeams = 954 Studs

NOTES:

- Steel grid deck panel widths are not shown and shall be designed by supplier and approved by the Department.
- Connections of new stringers shall match existing connections of adjacent existing stringers in each respective bay. Shop drawings shall be submitted to and approved by the Department.
- Concrete infill dimension is centerline to centerline of steel grid deck main beams. Concrete infill shall be paid for under Item 502.26, Structural Concrete Roadway and Sidewalk Slab on Steel Bridges
- Maximum aggregate size for all deck concrete shall be 3/8". Aggregate gradation shall be submitted to the Department for approval.
- Concrete infill shall not project above the top of the steel grid deck.
- See Steel Grid Deck and Joint Details sheet for Sections A-A and B-B.
- The sidewalk shall be constructed of dressed and pressure treated lumber. Lumber dimensions shown are nominal. Procurement and installation of timber sidewalk to deck connections shall be incidental to related items.
- After removal, preparation of the existing beam top flanges, and installation of the deck panel system the Contractor shall apply a minimum 10mil DFT of a Zinc Rich Paint and compatible topcoat sealer to the top of the top flanges of all stringers and floorbeams and down the edge of the top flange. The color of the system shall match and be compatible with the hot dip galvanized decking system. The work to prepare the top surface of the existing beams for acceptance of the deck panels and coating system shall be included in the Quality Control plan per section 506 of the MaineDOT Standard Specification. This work shall be paid for under Item No. 506.1775, Field Painting, New and Existing Steel with Zinc Rich Paint.
- The procurement and installation of the proposed stringers and their connections and the new steel curb and its connections shall be paid for under Item 504.70, Structural Steel Fabricated and Delivered, and Item 504.71, Structural Steel Erection. Procurement and installation of new steel curb deck connections shall be incidental to related items.
- All bolts for stringer connection angles shall be 7/8" diameter ASTM A325 hot dip galvanized in accordance with ASTM A153. Threads shall be excluded from the shear plane.
- Removal of Temporary Stringers shall be incidental to Item 504.70, Structural Steel Fabricated and Delivered and Item 504.71, Structural Steel Erection.
- Materials, equipment, and labor for Grating for Balance Blocks shall be incidental to Item 880.31, Balance Block - Steel.



Robert S. Blunt
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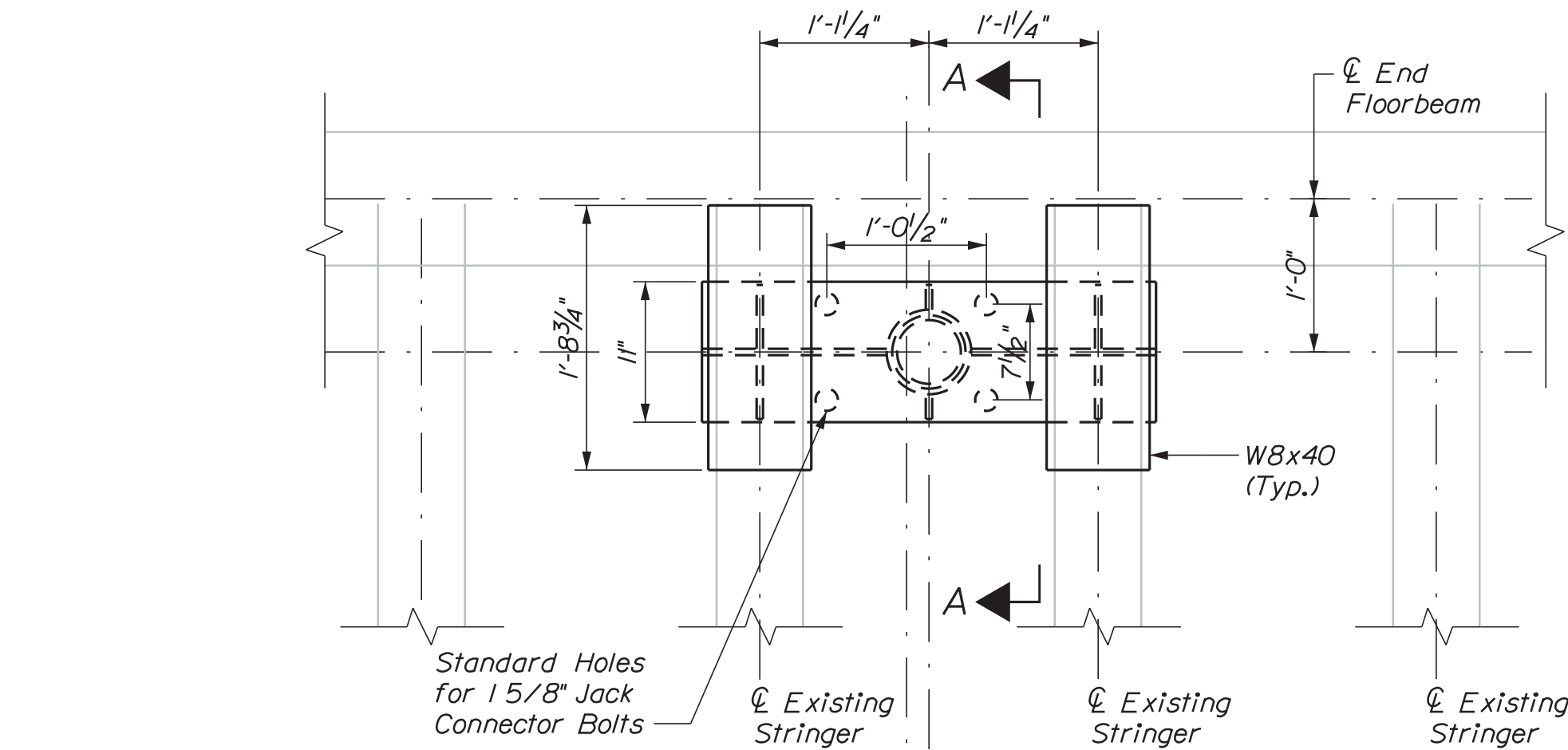
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CHECKED-REVIEWED	CTA	REVIEWED	RBLUNT
DESIGN-DETAILED	CTA	DESIGNED	CTA
REVISIONS	1	REVISIONS	2
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REVISIONS	99	REVISIONS	100

SOUTHPORT BRIDGE ROUTE 27
OVER TOWNSEND GUT
SOUTHPORT & BOOTHBAY HARBOR ME
LINCOLN COUNTY
TRUSS SWING SPAN
PLAN AND TYPICAL SECTION

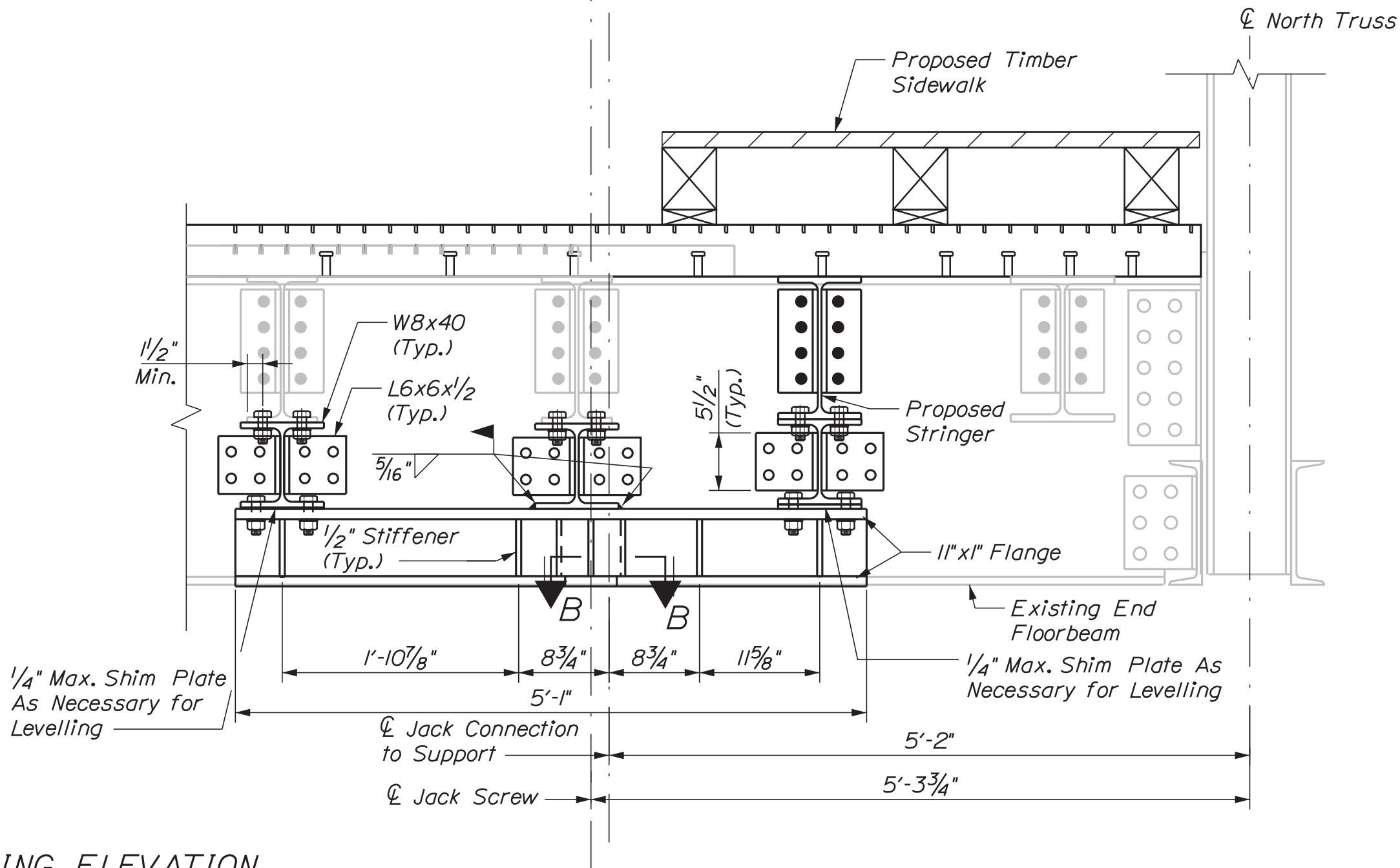
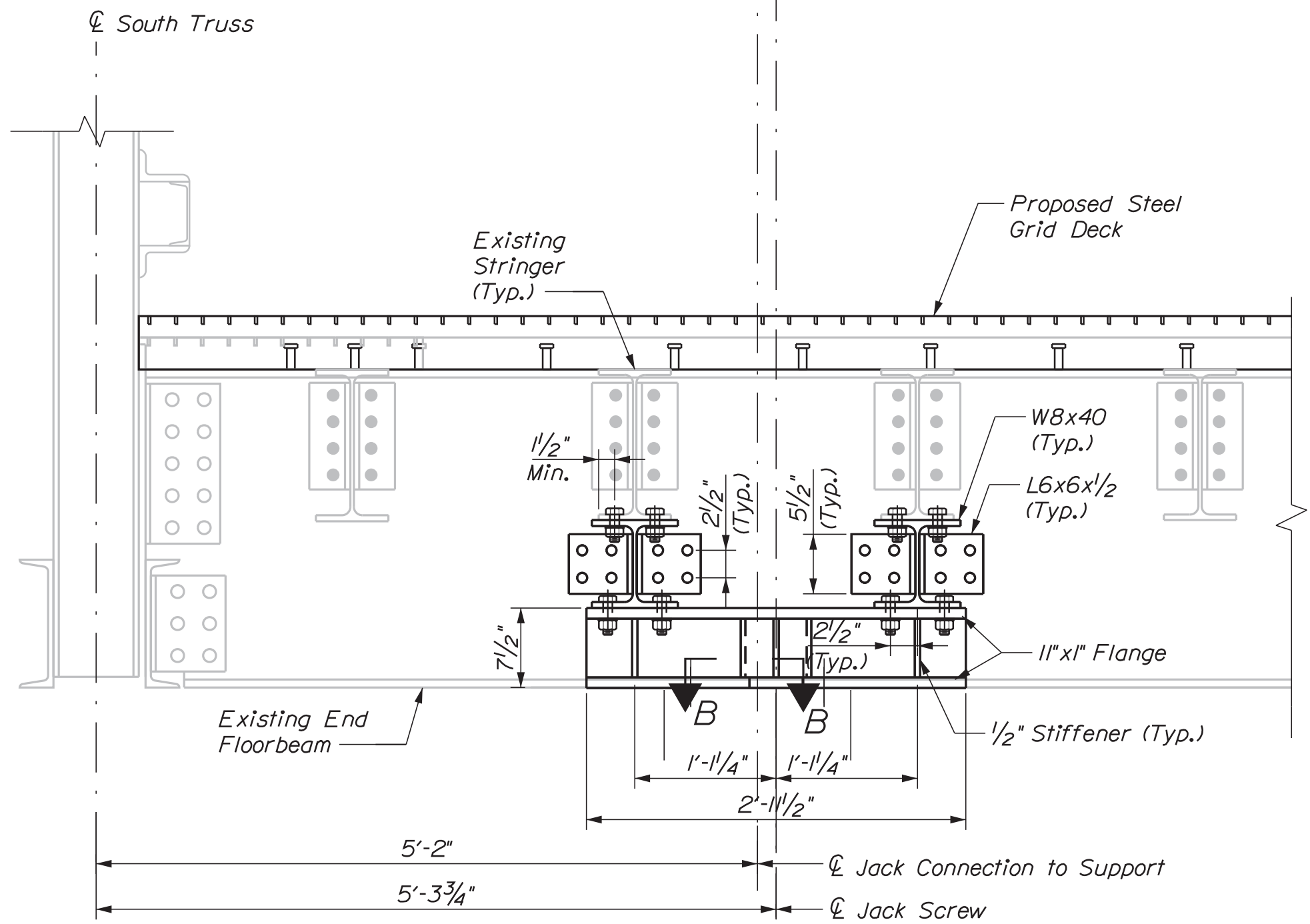
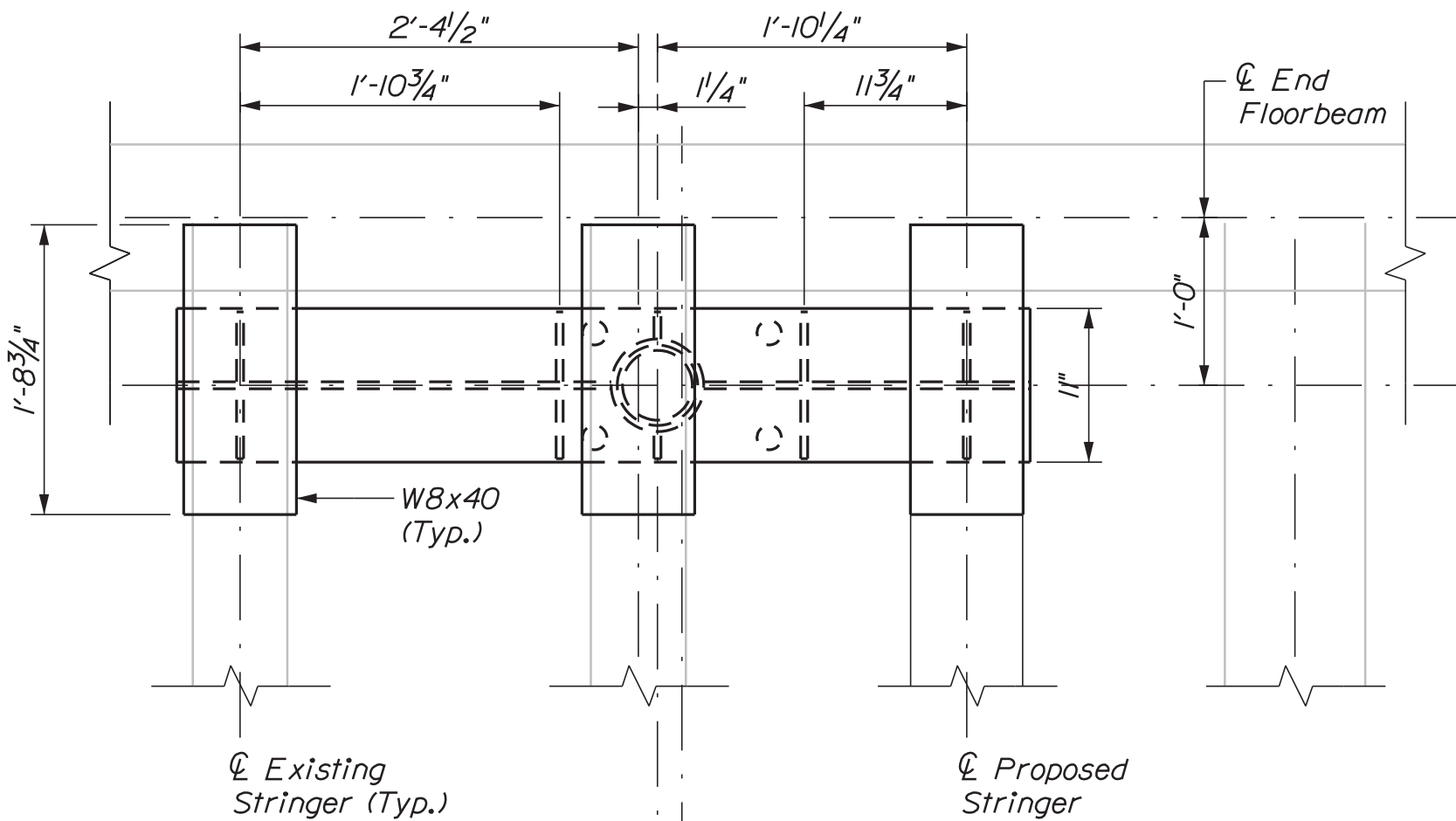
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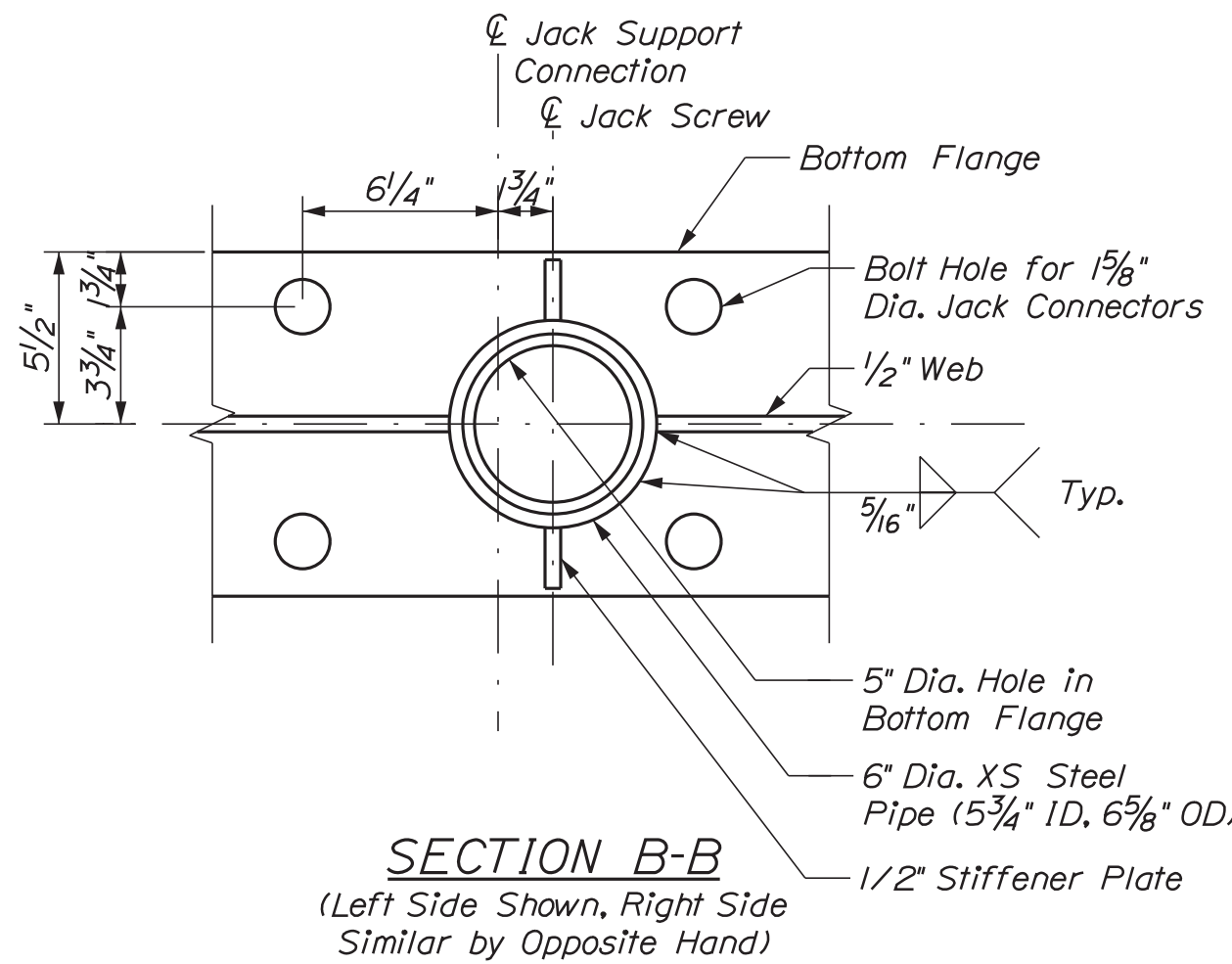


JACKING PLAN

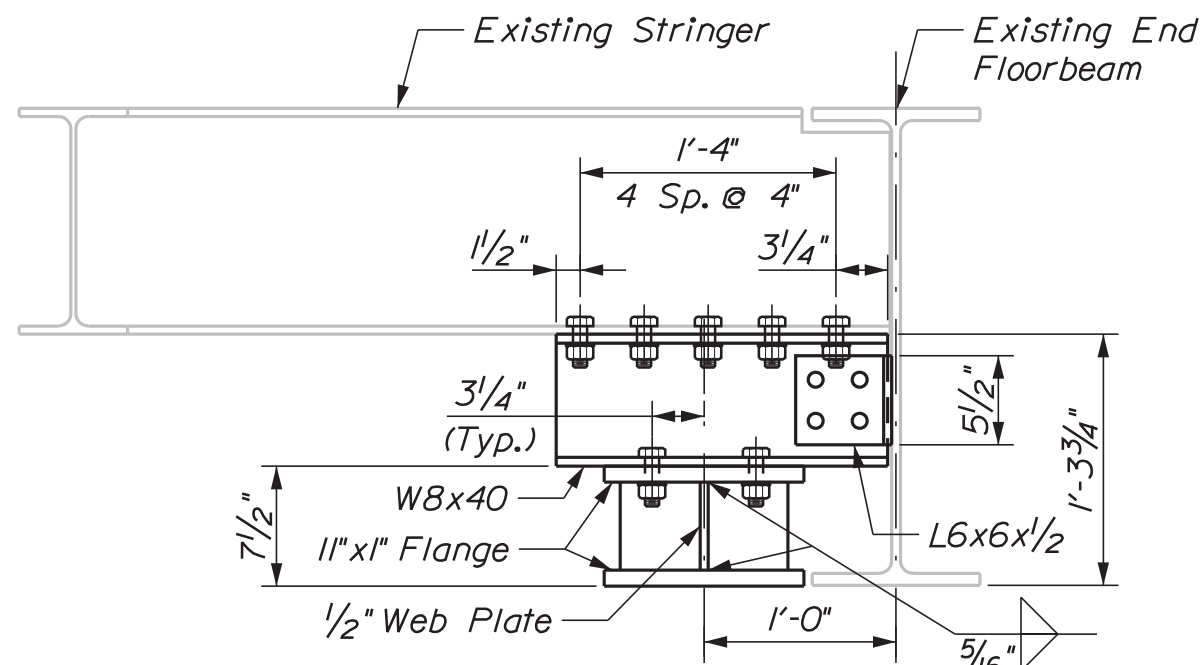


JACKING ELEVATION
(View Looking Towards Southport)
(Boothbay End Similar by Opposite Hand)

Jack Details and Top of Pier Not Shown. See Mechanical Drawings.



SECTION B-B
(Left Side Shown, Right Side Similar by Opposite Hand)

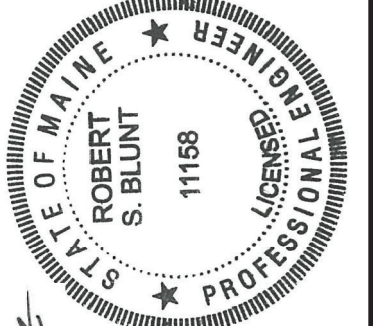


SECTION A-A
Jack and Shims Not Shown. See Mechanical Drawings.

NOTES

- See Mechanical Drawings for jack details. The Contractor shall verify jack dimensions, configuration, and connector layout prior to fabrication of truss end jack support details.
- The Contractor shall submit shop drawings to the Department at least 14 days prior to fabrication.
- Procurement, fabrication, and installation of all jack support components shall be paid for under item 860.186, End Jack Assemblies.
- All jack support connectors shall be 7/8" diam. F3125, Grade 325 High Strength Bolts.

STATE OF MAINE	BRIDGE PLANS
DEPARTMENT OF TRANSPORTATION	21751.01
2309401	WIN
BRIDGE NO. 2789	21751.01



SIGNATURE	DATE
11158	August 19, 2022
P.E. NUMBER	DATE
11158	

PROJ. MANAGER	J. STETSON, PE	DATE	8/19/22
DESIGN-DETAILED	BGP	BY	UPD, B WASE
CHECKED-REVIEWED	CTA	BY	RSBLUNT
DESIGN-DETAILED	CTA	DATE	8/19/22
DESIGN-DETAILED	CTA	DATE	8/19/22
REVISIONS	1	DATE	
REVISIONS	2	DATE	
REVISIONS	3	DATE	
REVISIONS	4	DATE	
FIELD CHANGES		DATE	

SOUTHPORT BRIDGE ROUTE 27	LINCOLN COUNTY
OVER TOWNSEND GUT	
SOUTHPORT & BOOTHBAY HARBOR ME	
TRUSS SWING SPAN	
JACK SUPPORT DETAILS	

SHEET NUMBER

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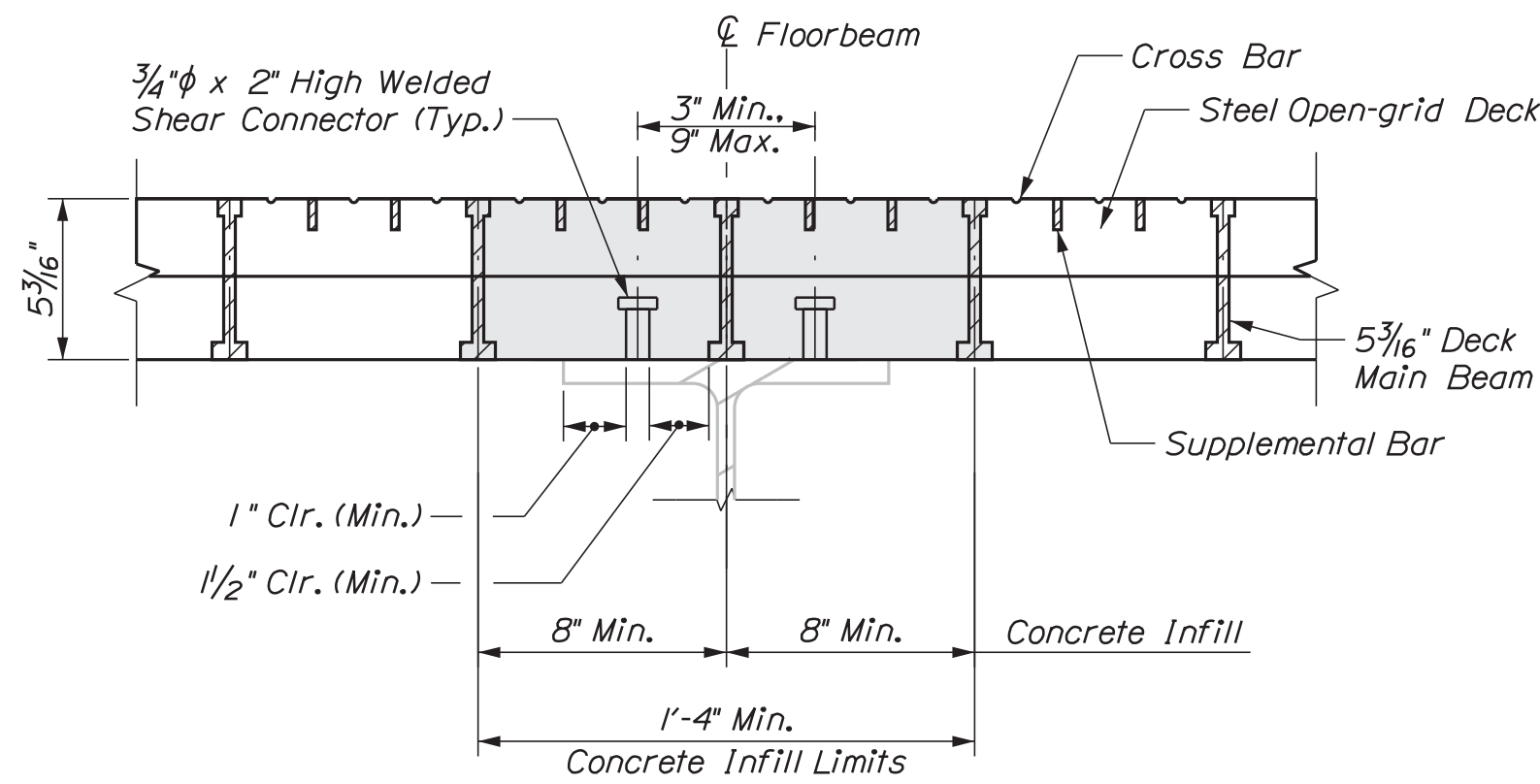
1. Transition crown from 1% to 0% on Spans 1 and 3. See crown transition on deck plan layout.
2. Prior to forming the deck, the Contractor shall take survey shots of the tops of spans 1 and 3 girders at the 10th points and submit a blocking plan to the Department for approval.
3. The sidewalk shall be constructed of dressed lumber. Lumber dimensions shown are nominal.
4. See Bridge Gate Removal and Cross Frame Repair Locations Sheet for details of cross frame strut replacements and top lateral bracing removal.
5. Payment for the as-necessary removal of upper lateral bracing shall be incidental to related deck removal and installation items.

Date:8/19/2022

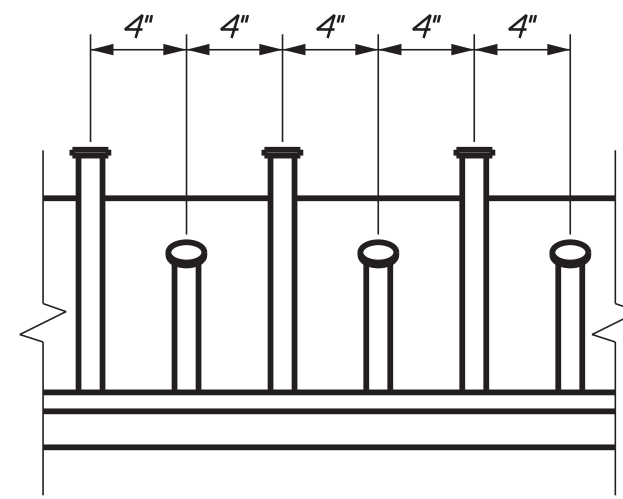
Username:

Division: BRIDGE

Filename: ...\\MSTA\\034_Deck_Grid_01.dgn



SECTION A-A



JOINT PLATE DETAIL /
ANCHOR STUD LAYOUT

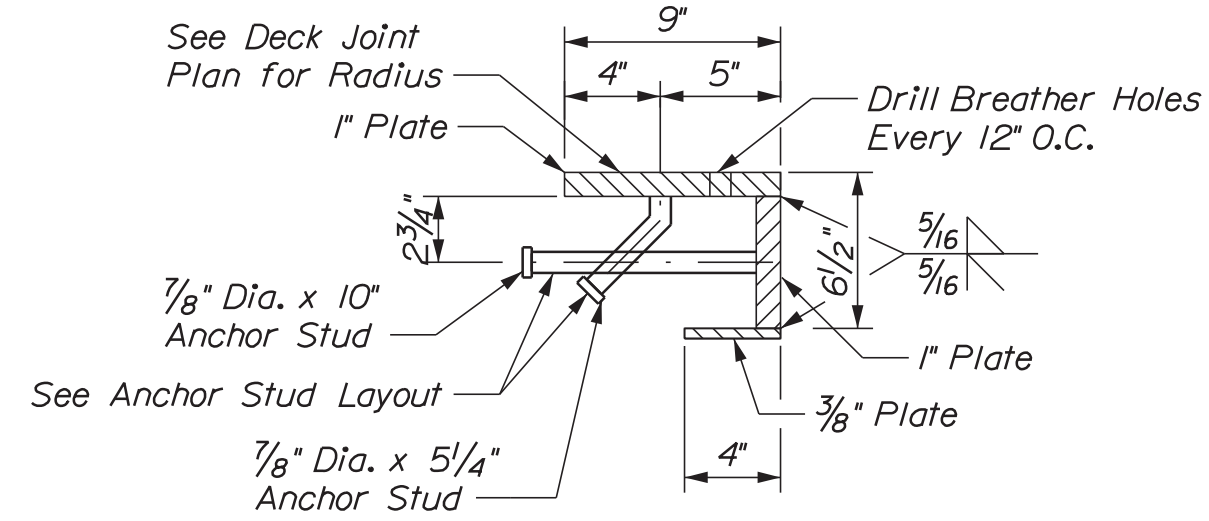


PLATE JOINT DETAIL 1

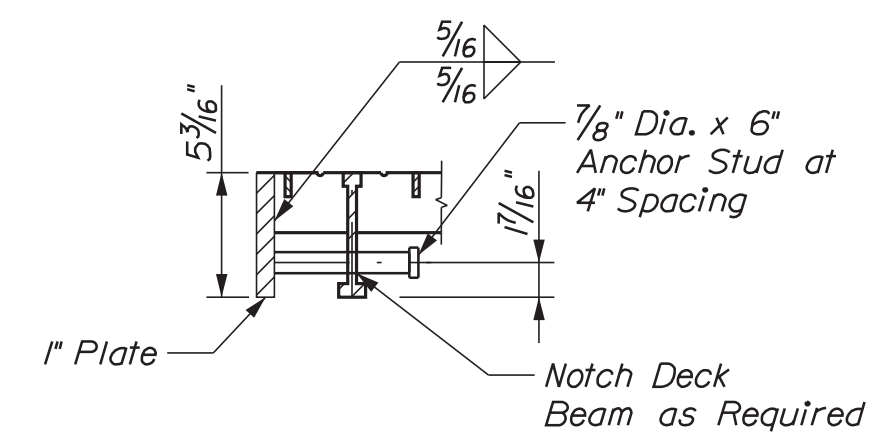
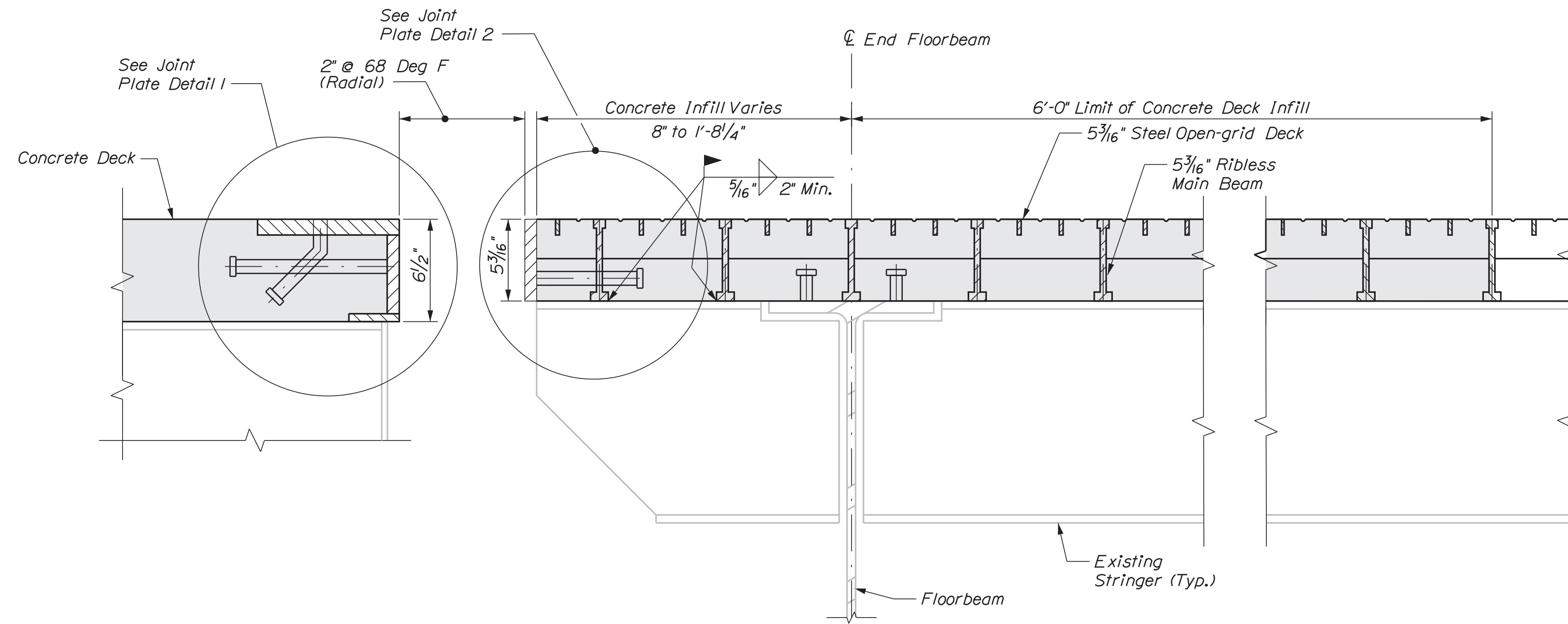
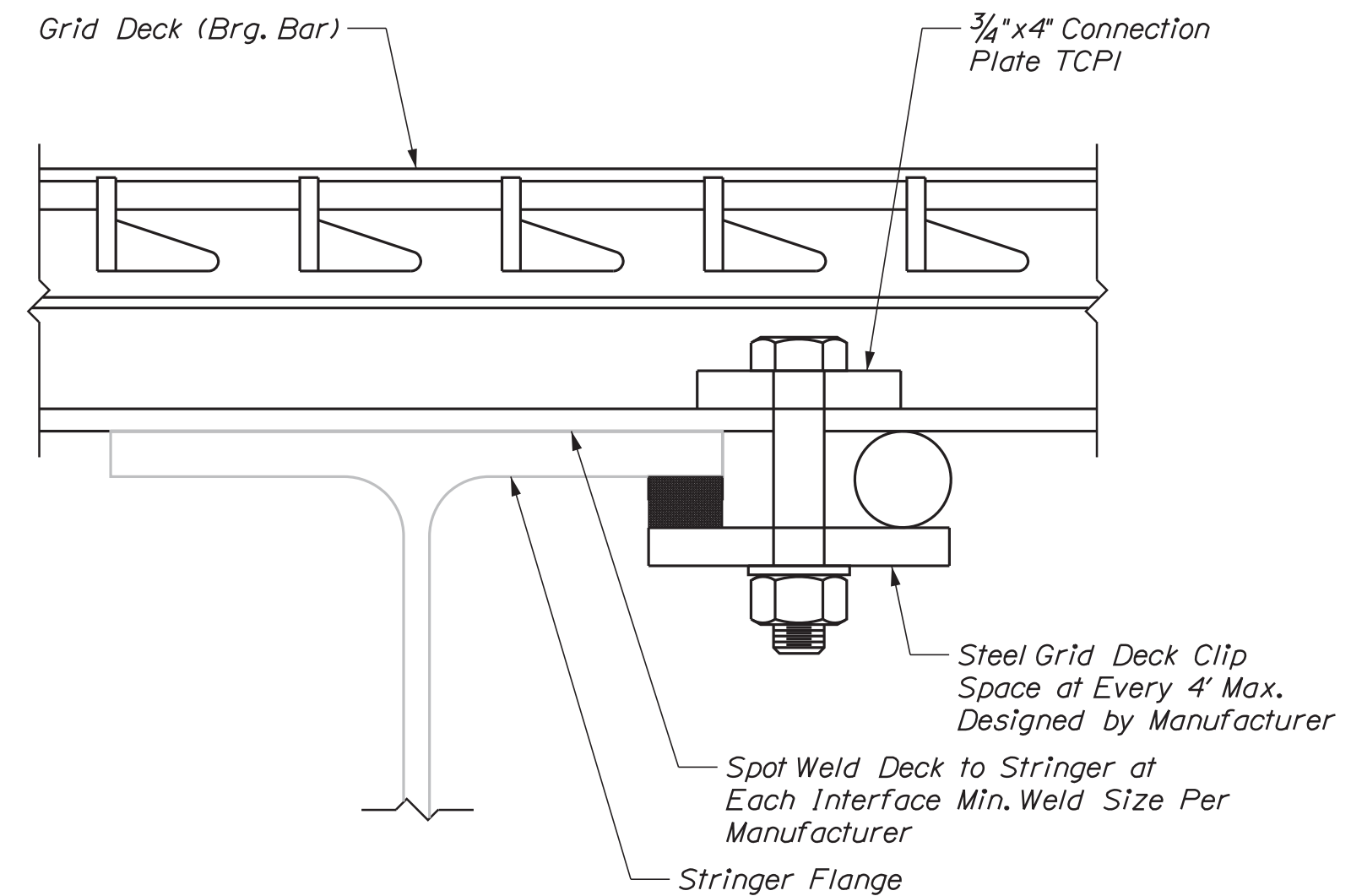


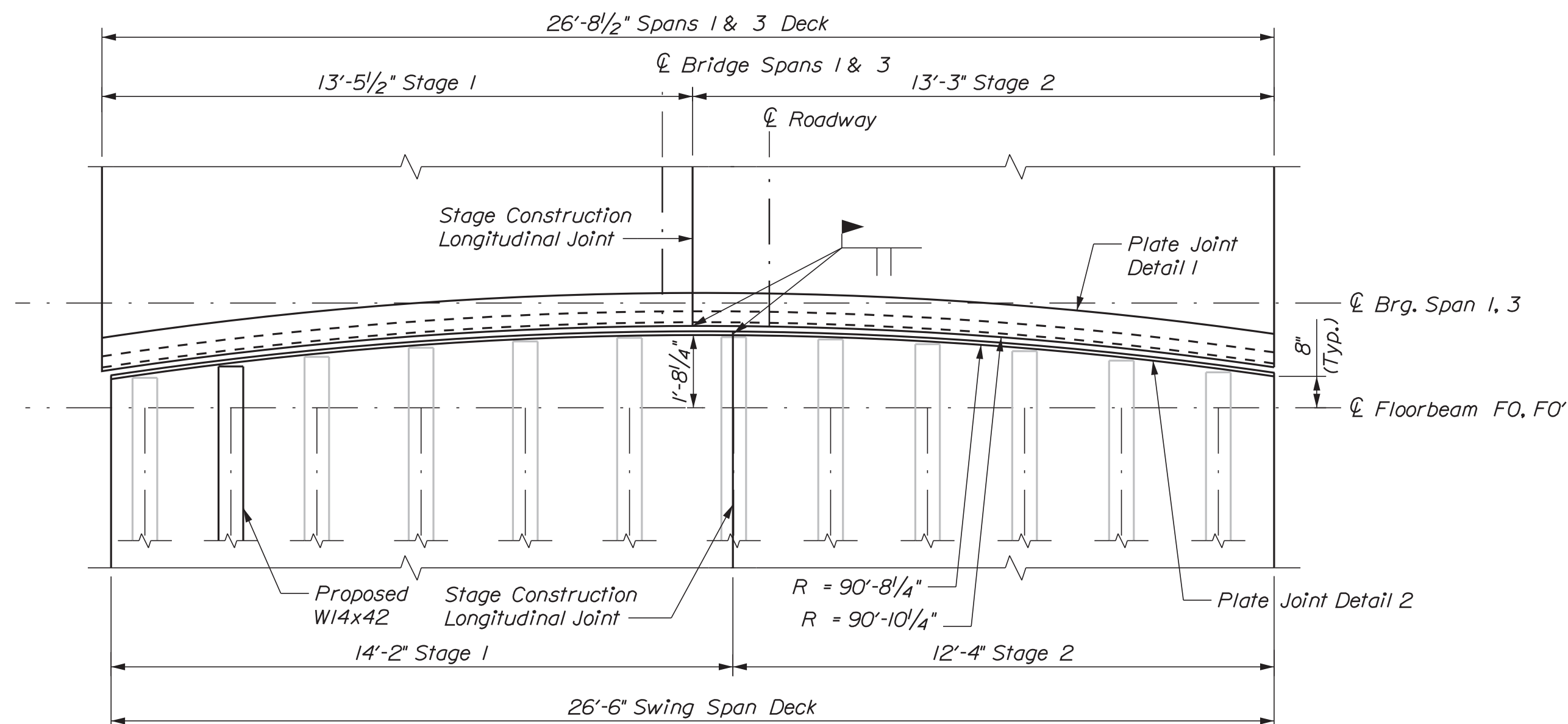
PLATE JOINT DETAIL 2



SECTION B-B



TYPICAL CLIP ASSEMBLY DETAIL



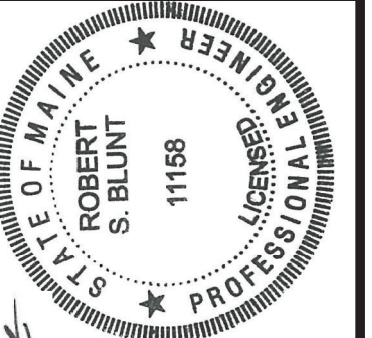
DECK JOINT PLAN

(Pier 1 shown, Pier 3 Similar)

NOTES

1. All new structural steel shall be shop painted with connections masked. Any existing steel within 6" of new steel shall be painted.
2. Concrete material for infilling concrete deck shall meet the requirements of Special Provision 502.
3. Concrete infill shall not project above the top of the steel grid deck.
4. Ceramic ferrules for existing shear connectors shall be completely removed prior to installing new grid deck.
5. Contractor shall field verify joint radius.
6. See Truss Swing Span Plan and Typical Section sheet for locations of Sections A-A and B-B.
7. Procurement, fabrication, and installation of steel plate joints shall be incidental to related deck items.
8. Steel grid deck clip assembly detail shall be designed by the steel grid deck supplier. Shop drawings shall be submitted to the Resident prior to steel grid deck fabrication and installation. The connection of the new steel grid deck to truss floorbeams and stringers shall include both weldments and clips as indicated in the typical clip assembly detail. Design, procurement, and installation of clips shall be incidental to Item 530.02, Prefabricated Deck Panels.

STATE OF MAINE	BRIDGE PLANS
DEPARTMENT OF TRANSPORTATION	WIN
2309401	21751.01
BRIDGE NO. 2789	



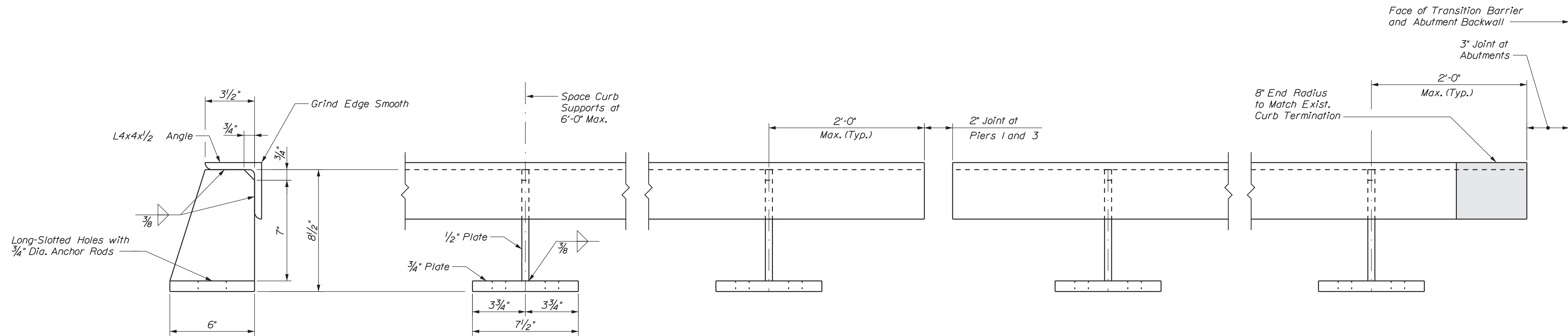
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DESIGN-DETAILED	BGP	BY	UPD, B WISE
CHECKED-REVIEWED	CTA	DESIGNED	RSBLUNT
DESIGN-DETAILED	CTA	DESIGNED	RSBLUNT
DESIGN-DETAILED	CTA	DESIGNED	RSBLUNT
REVISIONS	1	DATE	August 19, 2022
REVISIONS	2	DATE	
REVISIONS	3	DATE	
REVISIONS	4	DATE	
FIELD CHANGES		DATE	

SOUTHPORT BRIDGE ROUTE 27	LINCOLN COUNTY
OVER TOWNSEND GUT	
SOUTHPORT & BOOTHBAY HARBOR ME	
STEEL GRID DECK AND	
JOINT DETAILS	

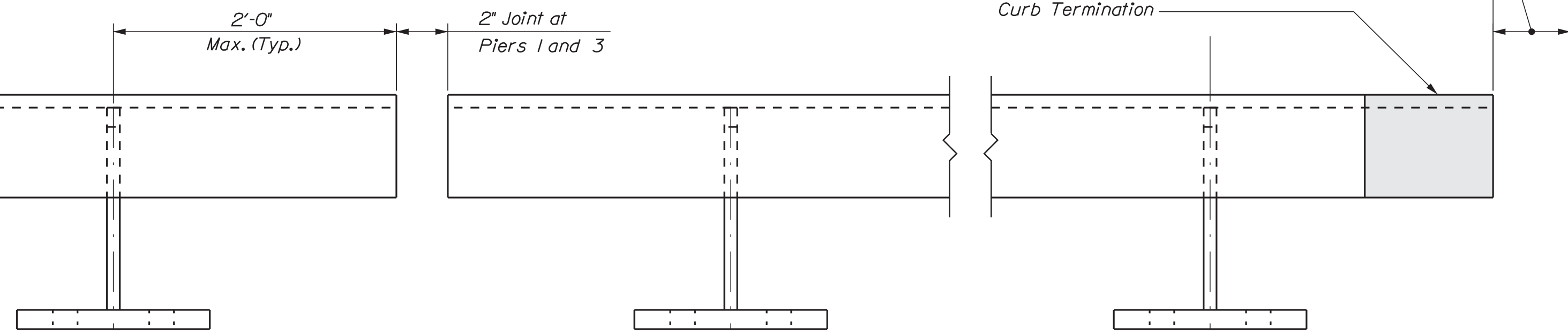
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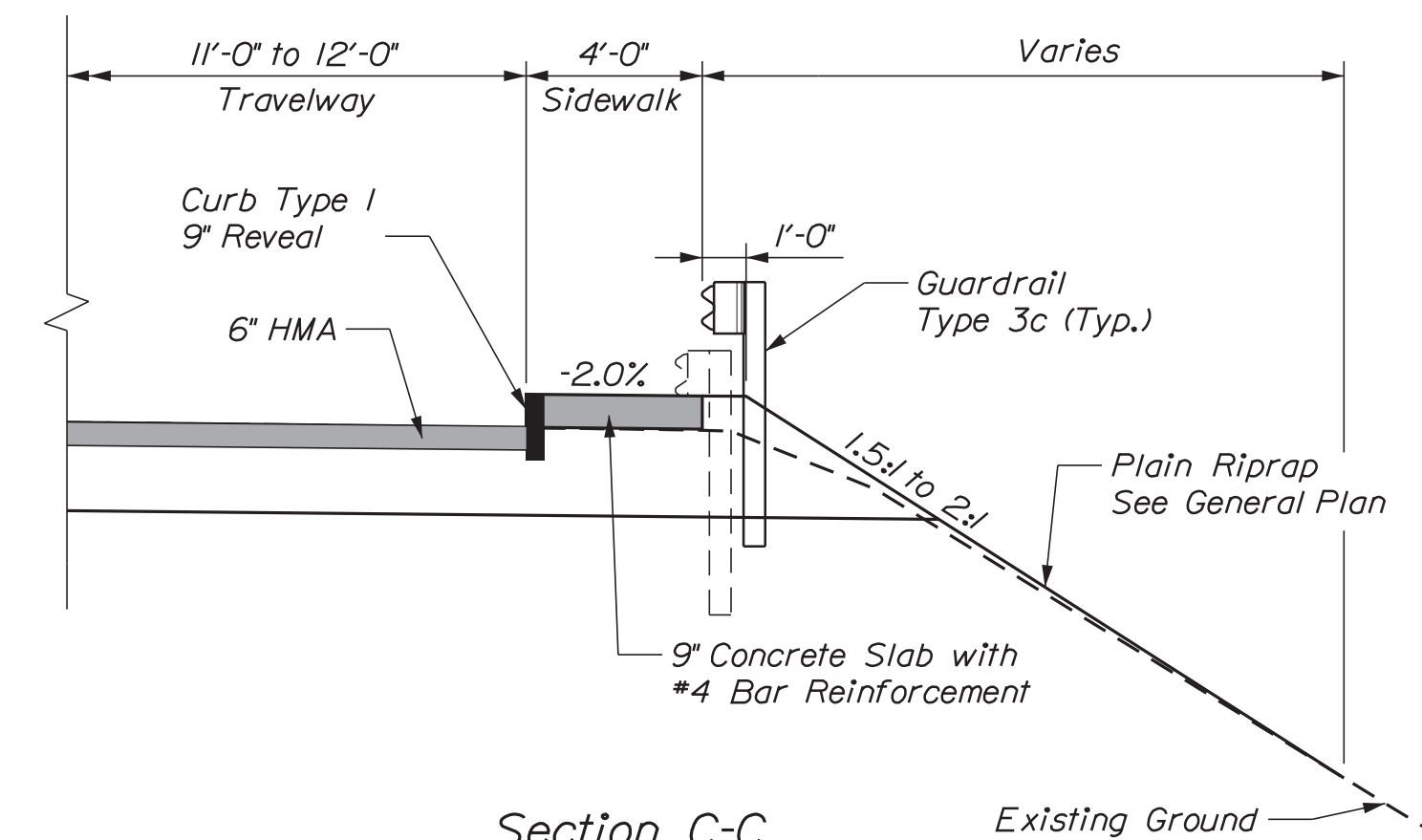


END VIEW

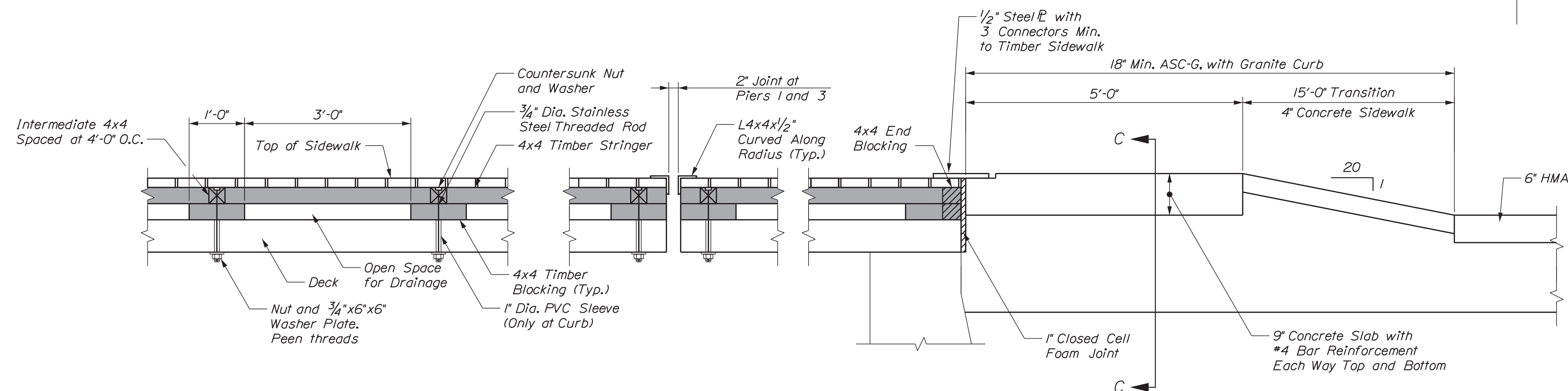


SECTION

CURB DETAIL



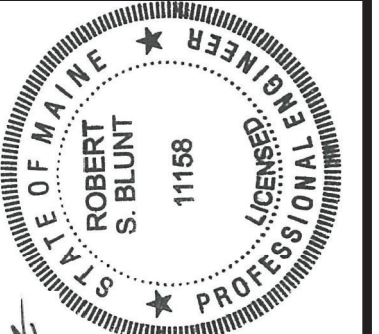
Section C-C
Not to Scale



SIDEWALK ELEVATION DETAIL

NOTES

- 1. See Truss Swing Span Plan and Typical Section sheet for locations of Sections A-A and B-B.*
- 2. The steel curb and all its connections shall be paid for under items 504.70, Structural Steel Fabricated and Delivered and 504.71, Structural Steel Erection.*
- 3. Sidewalk stainless steel threaded rods, PVC Sleeves, and all sidewalk connectors shall be incidental to related items.*
- 4. The 9" Concrete Slab at sidewalk approaches shall be paid for under Item 502.49, Structural Concrete Curbs and Sidewalks. All reinforcement shall be incidental to this item.*



PROJ. MANAGER	J. STETSON, PE	BY	DATE
DESIGN DESIGNER	BGP	DPD, B. MASSE	8/19/22
CHECKED	REVIEWED	RSBLINT	
DESIGN2 - DET AILED02	CTA		
DESIGN3 - DET AILED03			
REVISIONS 1			
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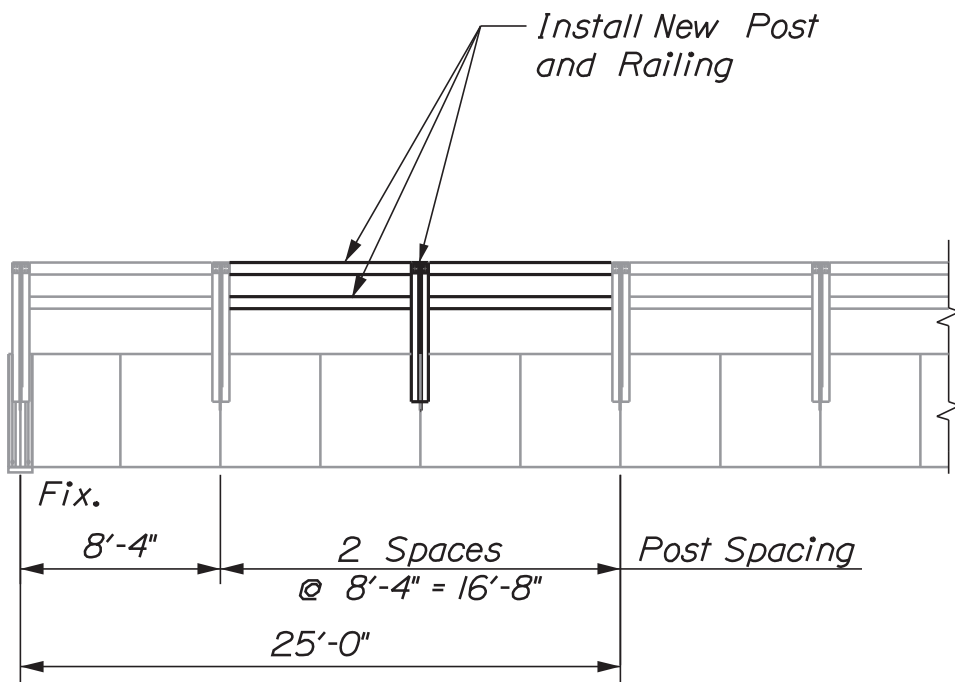


1. Piece designations indicated on this sheet are in accordance with the existing 1939 plans.
2. The cross frame locations shall be field verified by the Resident and Contractor. The total number of strut replacements shall not exceed the number indicated on the plans.
3. If approved by the Resident, the Contractor may elect to not replace a strut indicated on the plans if the total section loss is less than 40%.
4. Payment for removal of top lateral bracing shall be incidental to concrete deck items.
5. Payment for the removal of all existing steel required for new railing installation and cross brace strut replacement as indicated on this sheet, including all existing barrier gate steel, shall be incidental to Item 504.70, Structural Steel Fabricated and Delivered, and Item 504.71, Structural Steel Erection.
6. Procurement and installation of new steel for cross brace strut replacements shall be paid for under Item 504.70, Structural Steel Fabricated and Delivered, and Item 504.71, Structural Steel Erection. Removal and preparation of existing steel is incidental to these items.

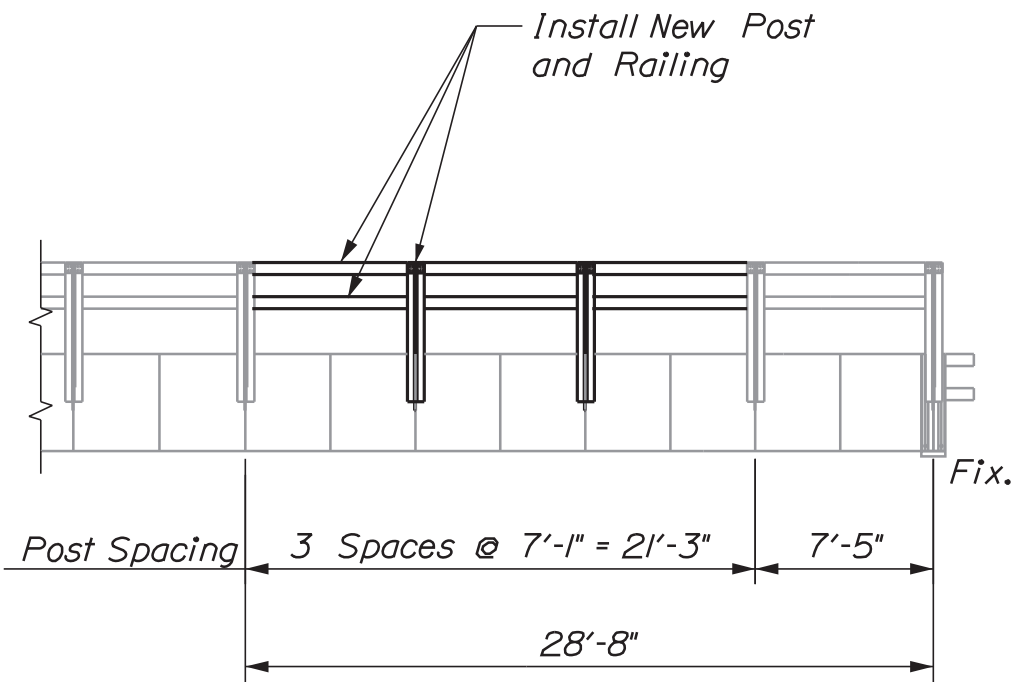
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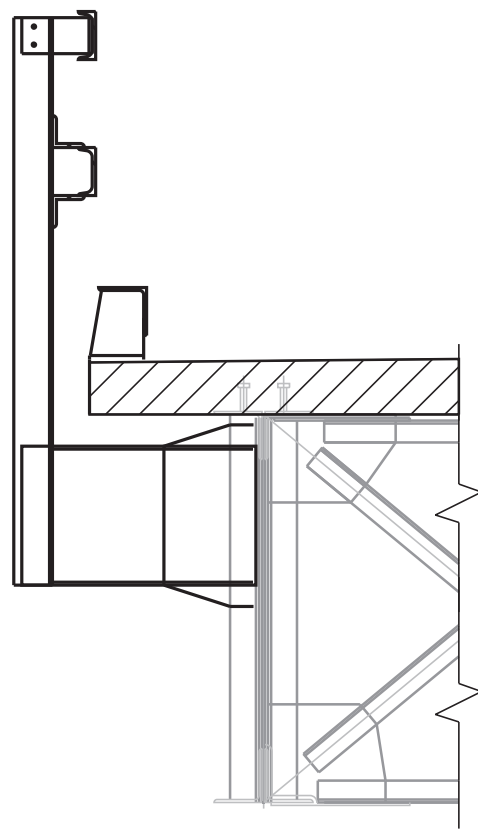
OF 48



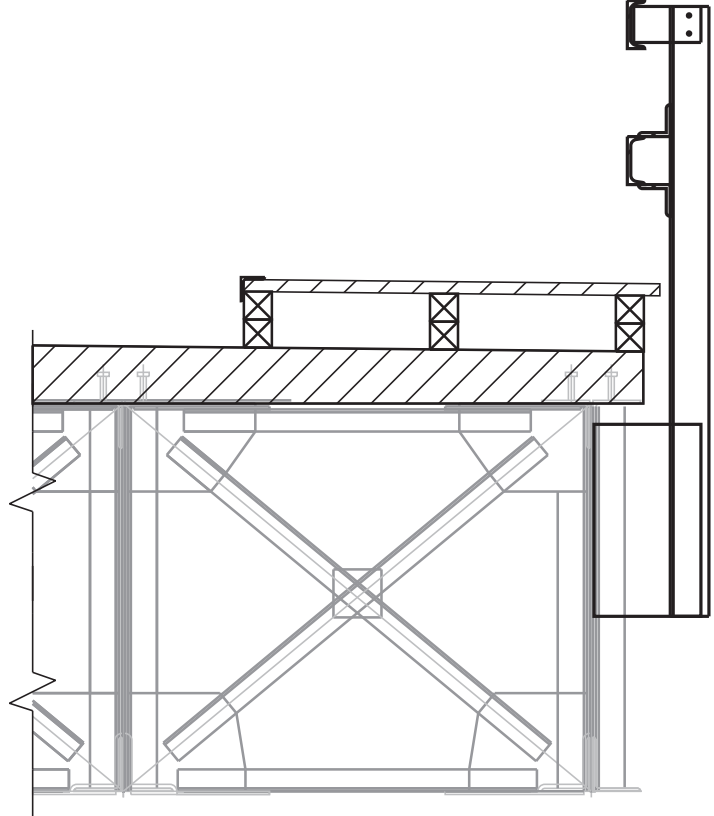
EAST ELEVATION
SPAN 1



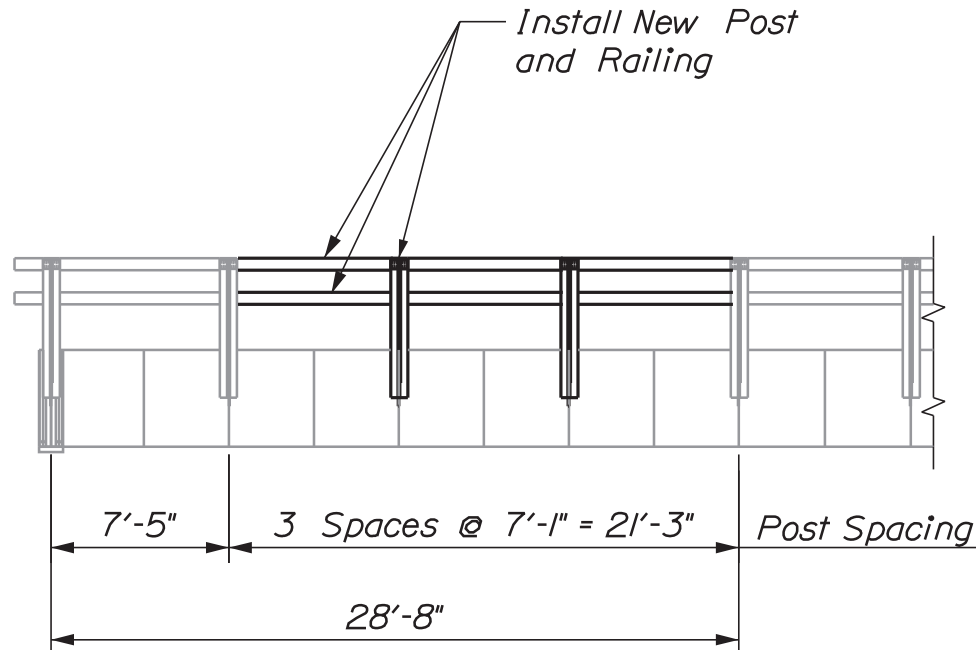
EAST ELEVATION
SPAN 3



ROADWAY CURB BRACKET



SIDEWALK GIRDER BRACKET

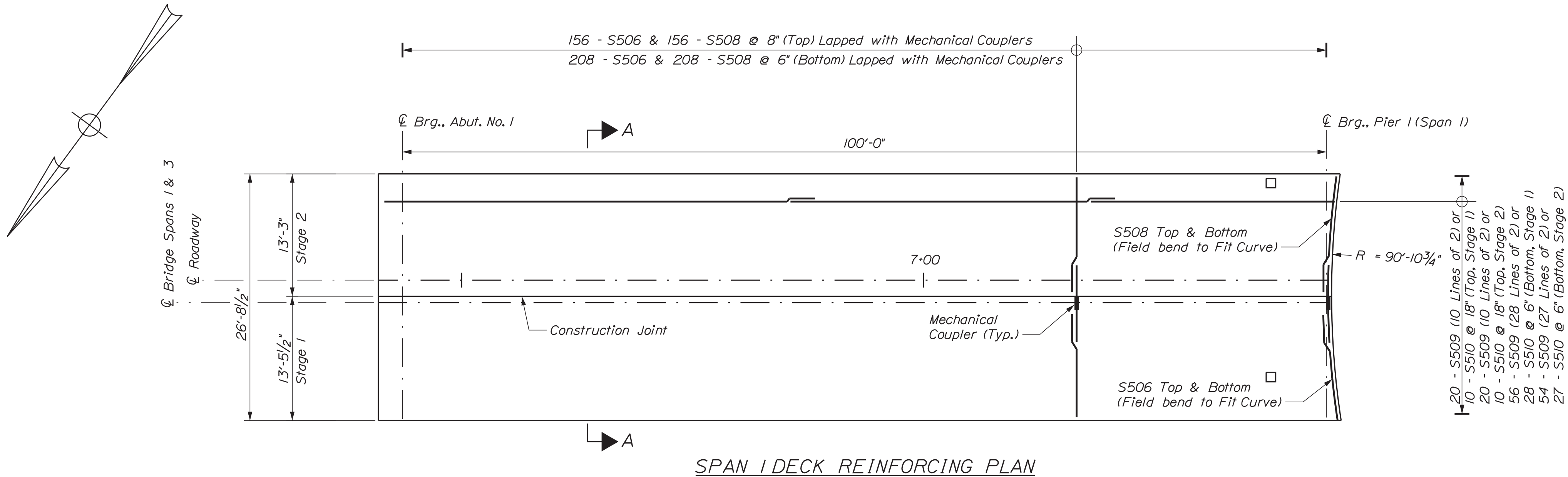


WEST ELEVATION
SPAN 3

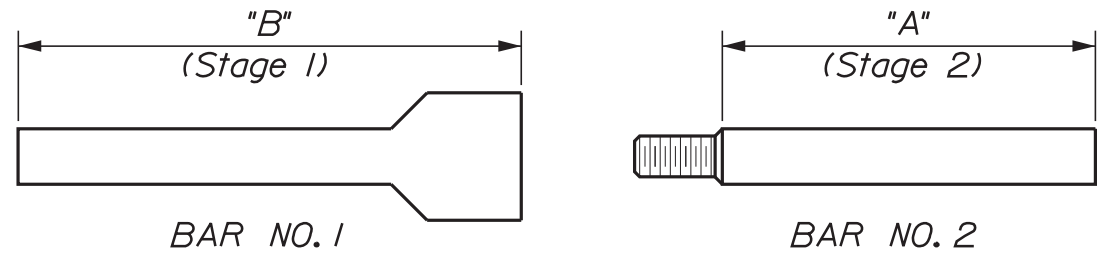
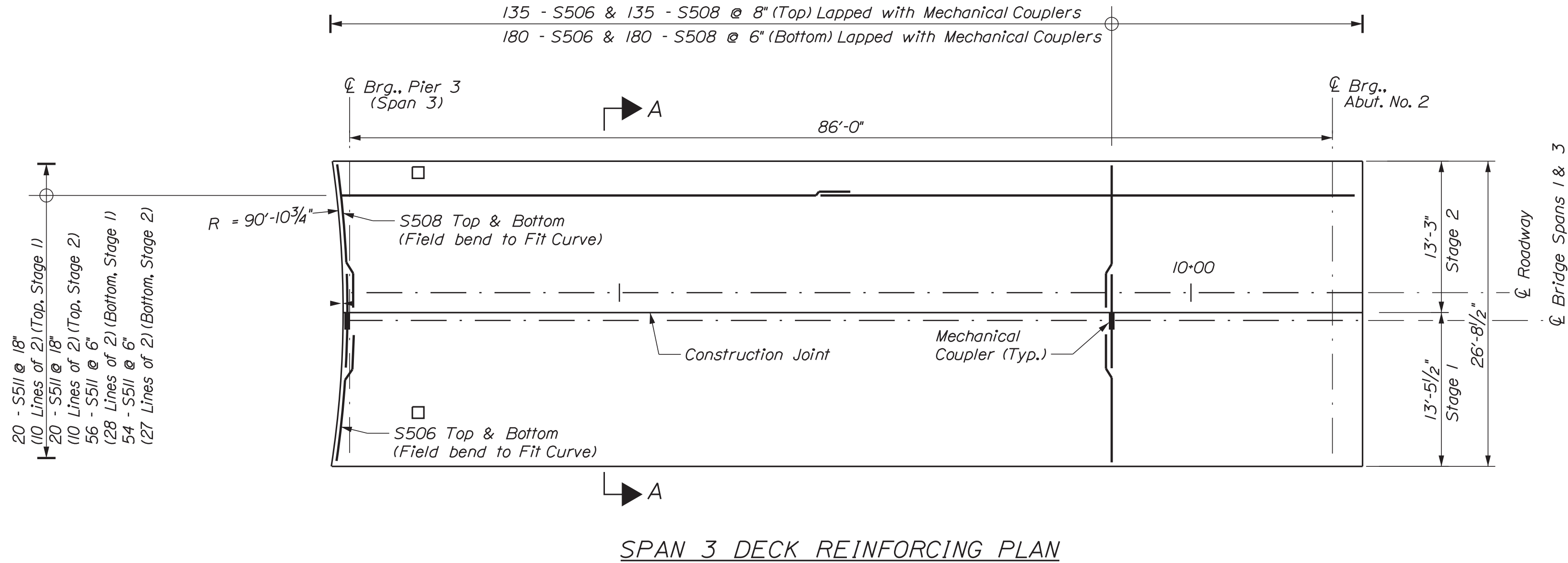
NOTES:

1. Proposed railing and railing support brackets shall match existing railing and railing support brackets. For details, see the 1939 bridge drawings. Contractor shall submit shop drawings to the Department for approval.
2. Procurement and installation of all new railing steel and related connections shall be paid for under Item 504.70, Structural Steel Fabricated and Delivered, and Item 504.71, Structural Steel Erection.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION 2309401 BRIDGE NO. 2789 WIN 21751.01 BRIDGE PLANS	STATE OF MAINE ROBERT S. BLUNT 11158 PROFESSIONAL ENGINEER Signature 11158 P.E. NUMBER August 19, 2022 DATE	DATE 8/19/22	BY DPD RSBLUNT	PROJ. MANAGER J. STETSON, PE	DESIGN-DETAILED BGP	CHECKED-REVIEWED CTA	DESIGN2-DETAILED2	DESIGN3-DETAILED3	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES
		SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT SOUTHPORT & BOOTHBAY HARBOR ME LINCOLN COUNTY BRIDGE RAILING REPLACEMENT DETAILS											
		SHEET NUMBER 37 OF 48											

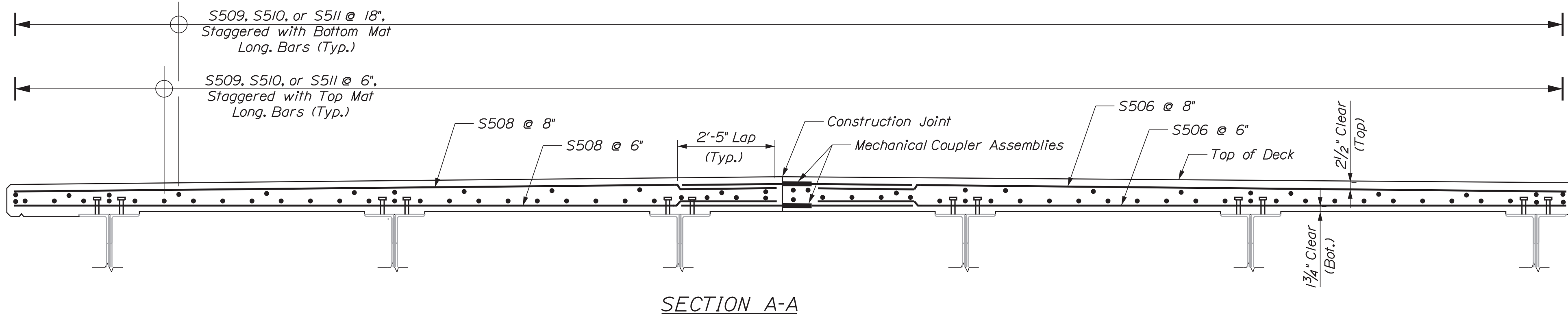


STRAIGHT BARS			
MARK	QTY.	LENGTH	LOCATION
S506	679	13'-1"	Deck Slab
S508	679	12'-11"	
S509	150	40'-0"	
S510	75	27'-11"	
S511	150	46'-0"	



Location	Bar Size	Dim "A"	Dim "B"	Quantity (Ea.)
Deck Approach Spans 1 & 3	#5	2'-9"	2'-9"	679

MECHANICAL CONNECTOR
ASSEMBLY DETAIL



NOTES:

1. Mechanical Coupler Assembly shall be paid for under Item 503.17, Mechanical/Welded Splice.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2309401

BRIDGE NO. 2789WIN21751.01BRIDGE PLANS

Signature: Robert S. Blunt

Signature: 1158

P.E. NUMBER: 11158

DATE: August 19, 2022

SOUTHPORT BRIDGE ROUTE 27
OVER TOWNSEND GUT
SOUTHPORT & BOOTHBAY HARBOR ME LINCOLN COUNTY

S506, S508, S510, or S511 @ 8",
Staggered with Bottom Mat
Long Bars (Typ.)

S506, S508, S510, or S511 @ 6",
Staggered with Top Mat
Long Bars (Typ.)

S508 @ 8"

S508 @ 6"

2'-5" Lap
(Typ.)

Construction Joint

Mechanical Coupler Assemblies

S506 @ 8"

S506 @ 6"

Top of Deck

2 1/2" Clear
(Top)

1 3/4" Clear
(Bot.)

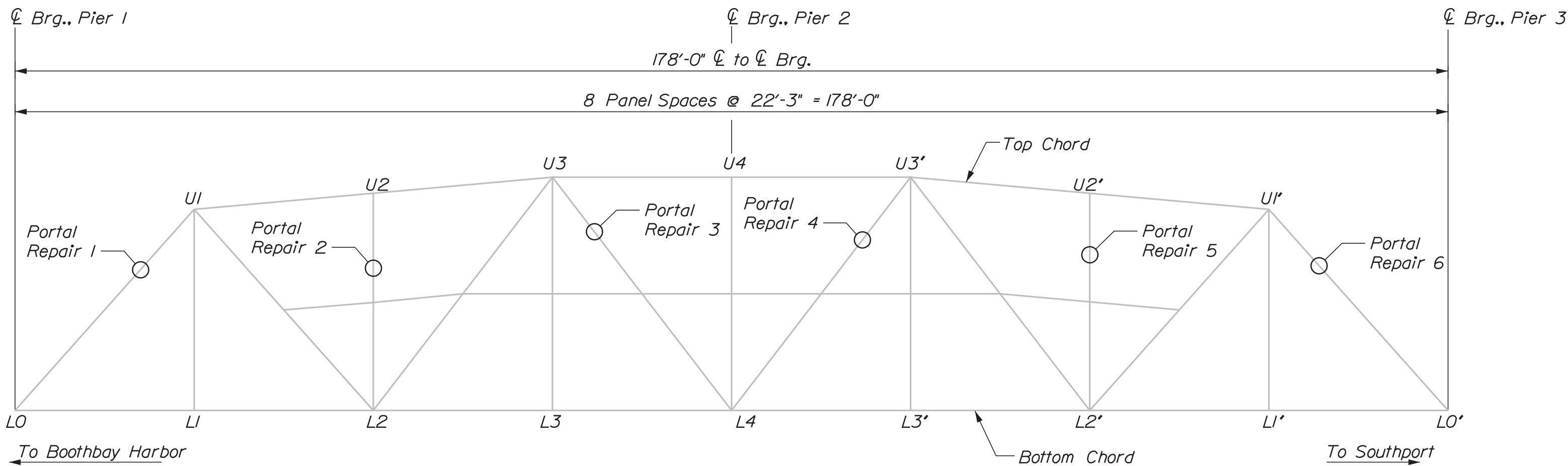
SECTION A-A

SHEET NUMBER

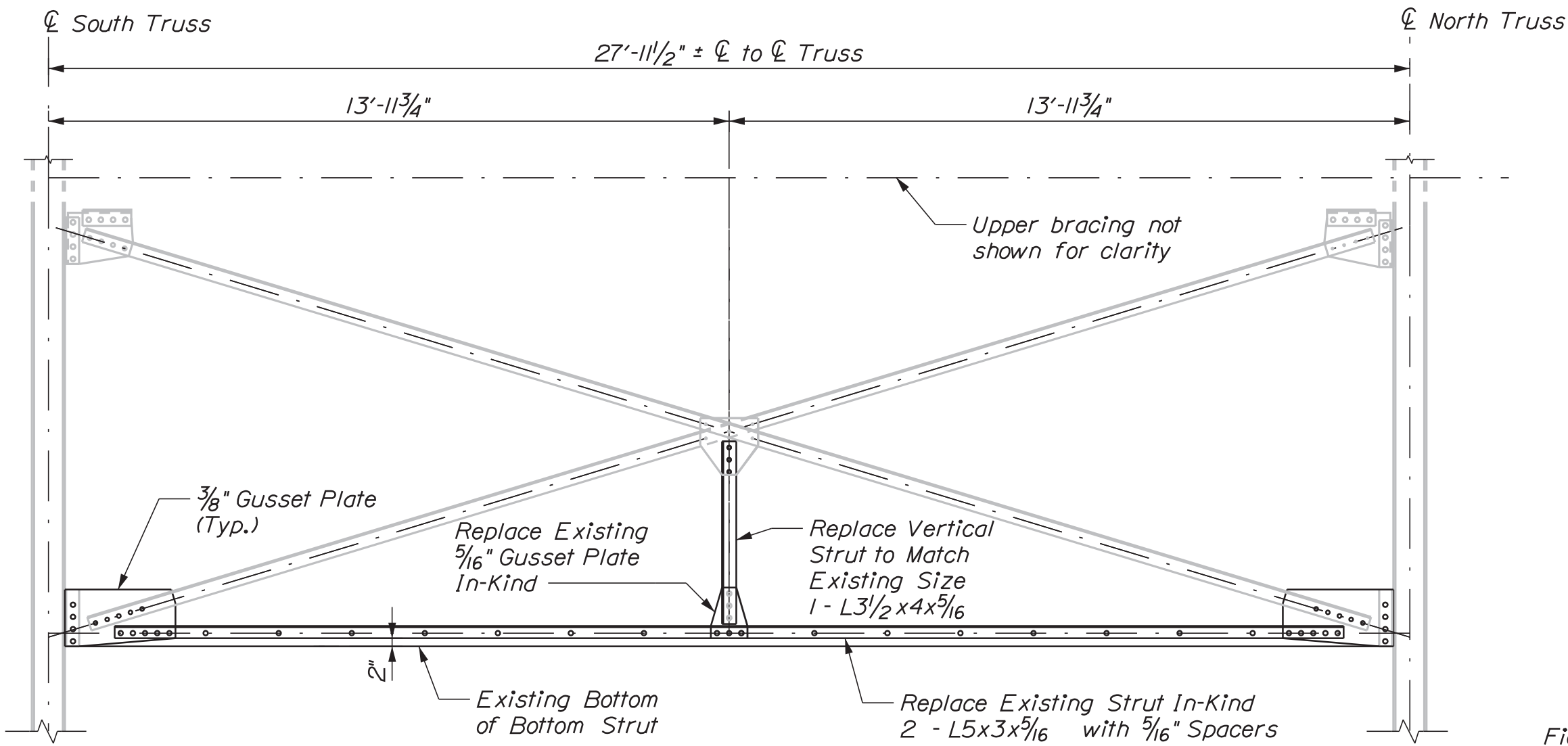
38

OF 48

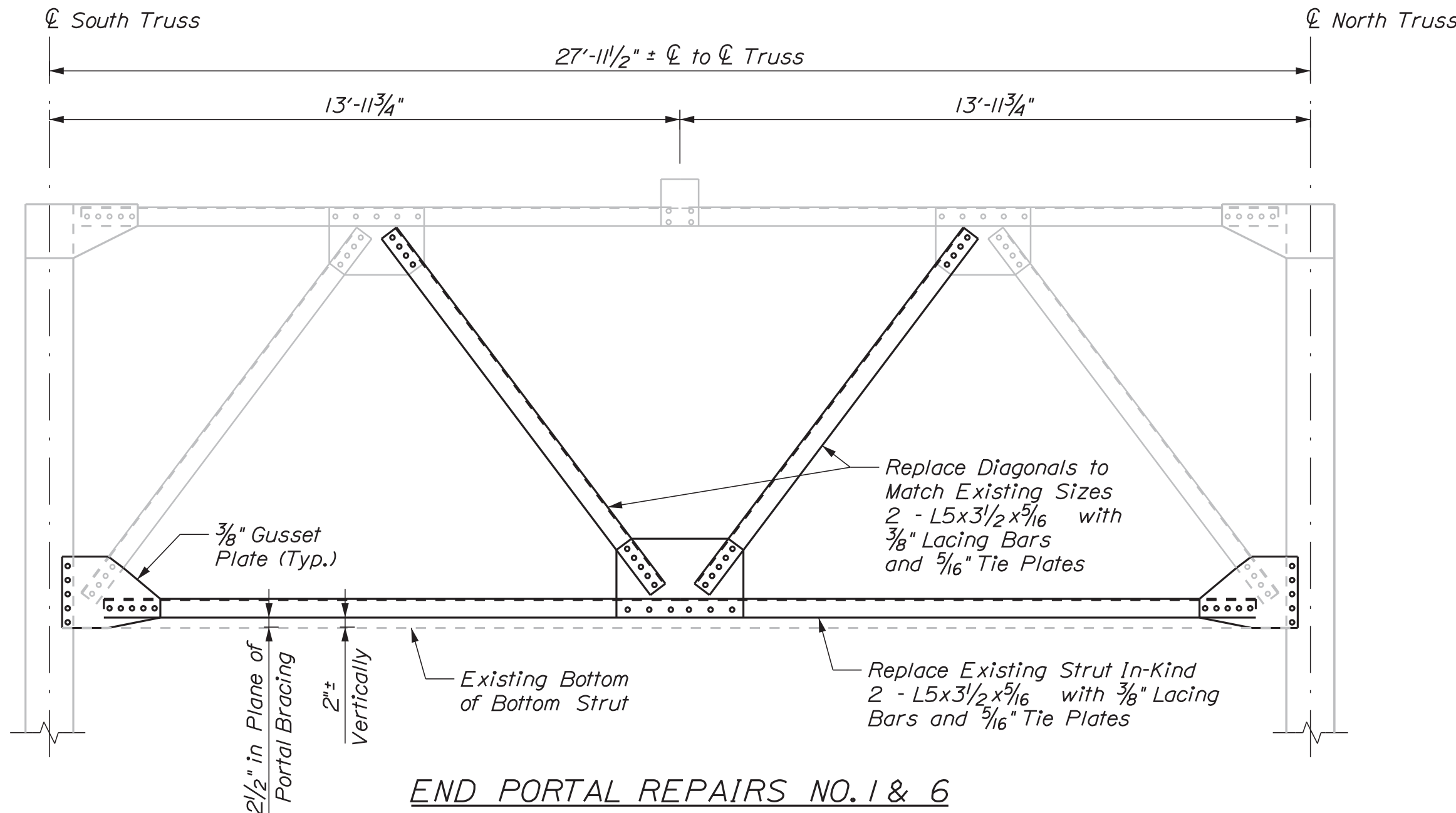
REINFORCING PLANS AND SECTION
SPANS 1 AND 3 DECK



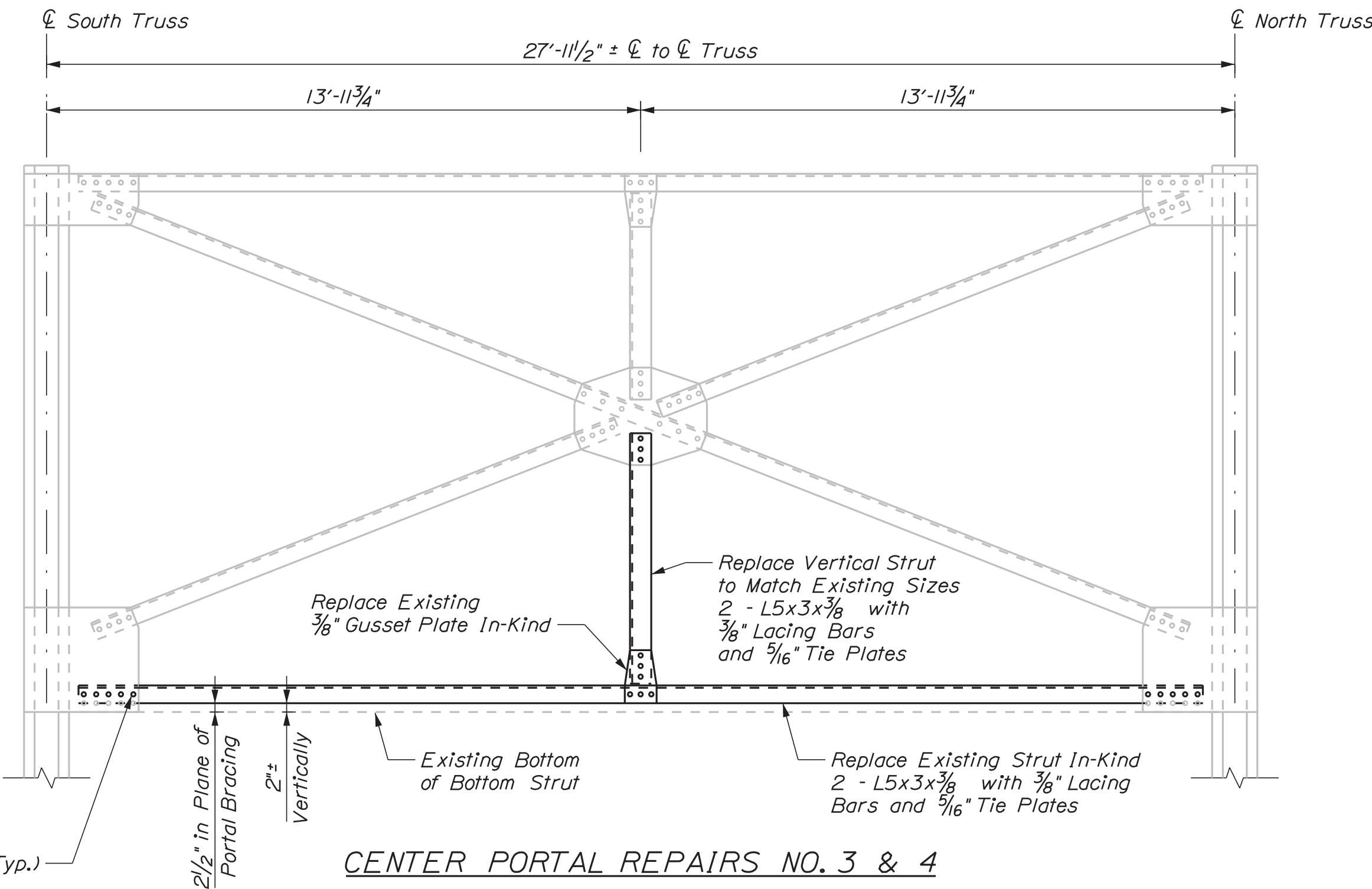
ELEVATION



INTERIOR PORTAL BRACE REPAIRS NO. 2 AND 5



END PORTAL REPAIRS NO. 1 & 6



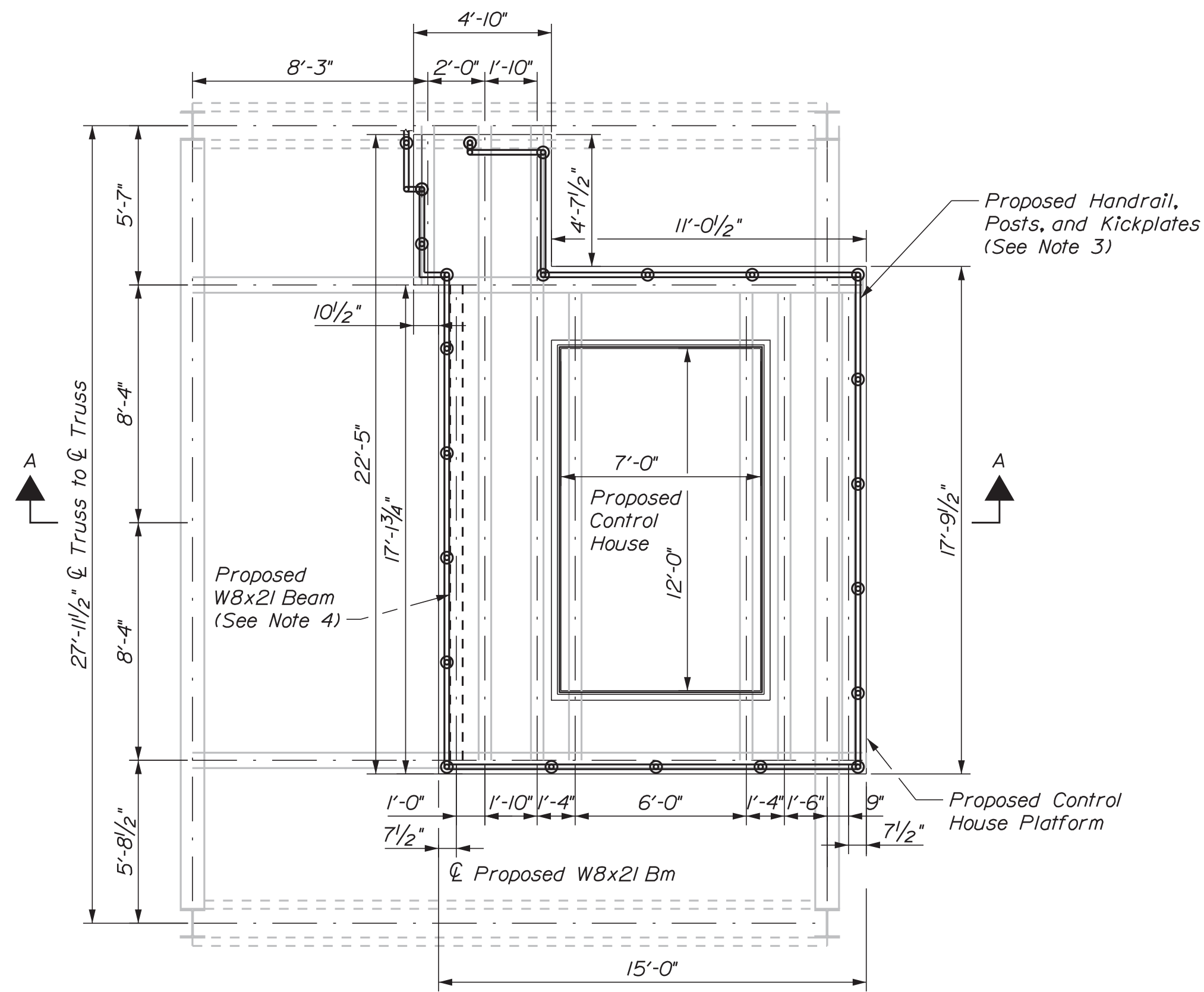
CENTER PORTAL REPAIRS NO. 3 & 4

Field Drill New Connection Standard Holes for 7/8" Bolts to Match Existing Spacing (Typ.)

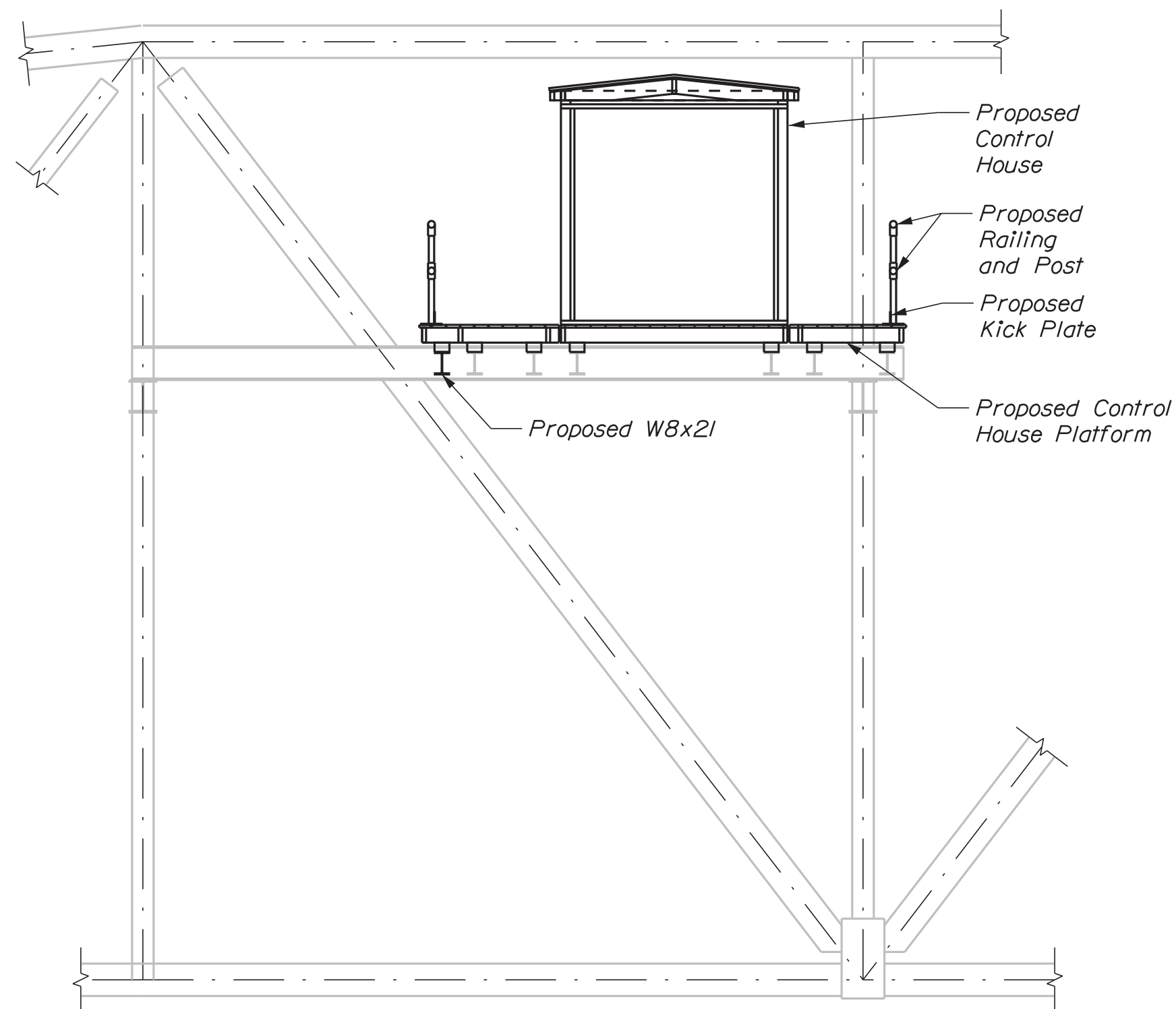
NOTES:

1. The Contractor shall field verify all dimensions and member plate sizes.
2. The Contractor shall submit shop drawings of all portal bracing repairs to the Engineer of Record for approval prior to commencing with any repair work. All members and connection plates shall be replaced in-kind except as indicated to accommodate the 2" vertical geometry adjustment.
3. The Contractor shall provide temporary bracing supports at strut replacement locations if winds exceed 35 mph. Plans for temporary bracing supports shall be submitted to the Resident for review and approval at least 14 days prior to commencing portal brace repair operations. Payment for temporary bracing supports shall be incidental to Items 504.70, Structural Steel Fabricated and Delivered and 504.71, Structural Steel Erection.
4. Removal of all existing steel required for the installation of the portal bracing member replacements as indicated on this sheet shall be incidental to Item 504.70, Structural Steel Fabricated and Delivered, and Item 504.71, Structural Steel Erection.
5. Procurement and installation of all new portal bracing members and connections shall be paid for under Item 504.70, Structural Steel Fabricated and Delivered, and Item 504.71, Structural Steel Erection.

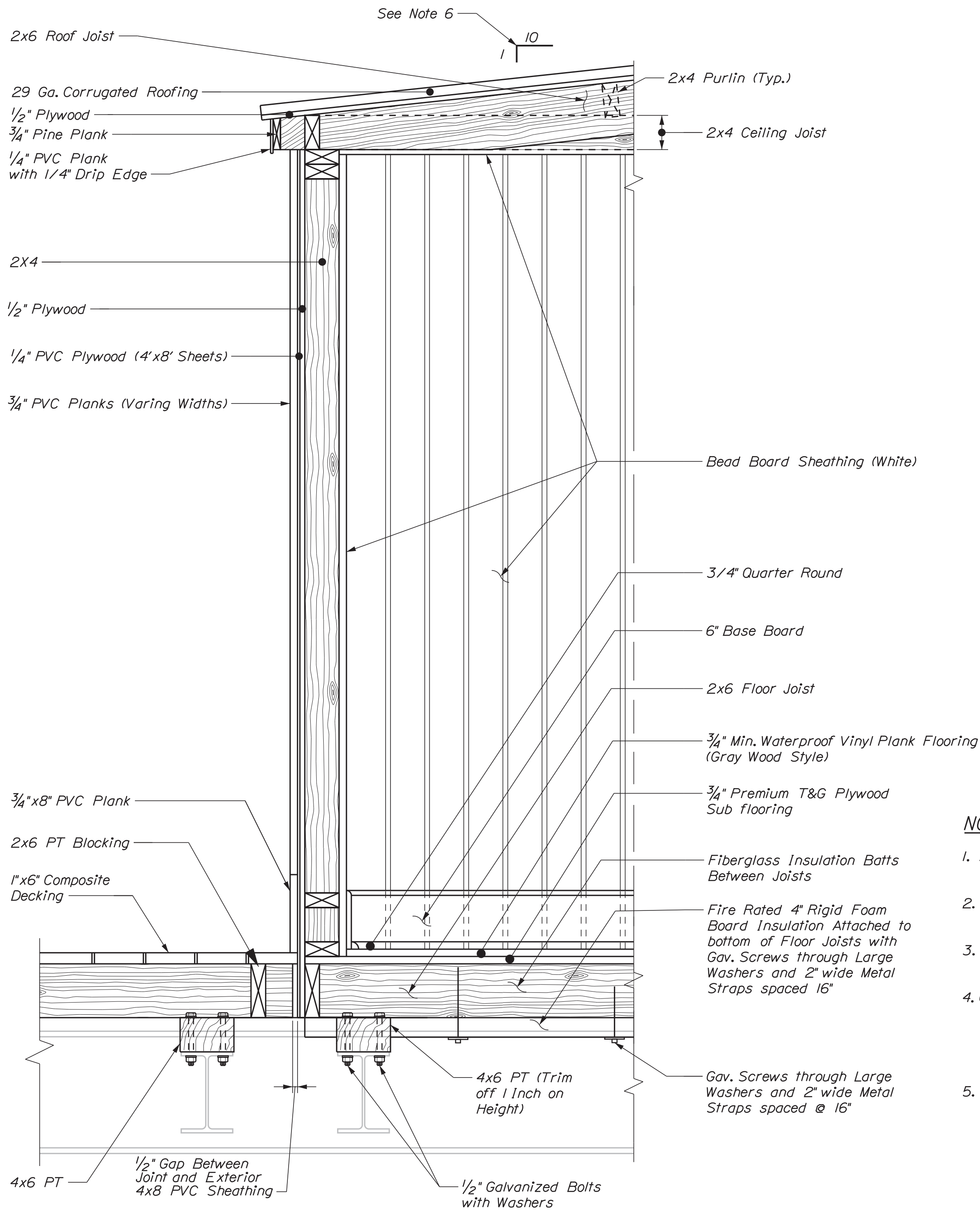
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2309401		BRIDGE NO. 2789		WIN		21751.01		BRIDGE PLANS	
SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT		LINCOLN COUNTY		SOUTHPORT & BOOTHBAY HARBOR ME		PORTAL BRACING REPAIR DETAILS		SHEET NUMBER		39	
PROJ. MANAGER J. STETSON, PE		BY		DATE		SIGNATURE		P.E. NUMBER		DATE	
DESIGN-DETAILED BGP		DPD, B WISE		8/19/22		1158		1158		August 19, 2022	
CHECKED-REVIEWED CTA		RBLUNT									
DESIGN-DETAILED2											
DESIGN-DETAILED3											
REVISIONS 1											
REVISIONS 2											
REVISIONS 3											
REVISIONS 4											
FIELD CHANGES											



CONTROL HOUSE PLATFORM
PLAN VIEW



SECTION A-A

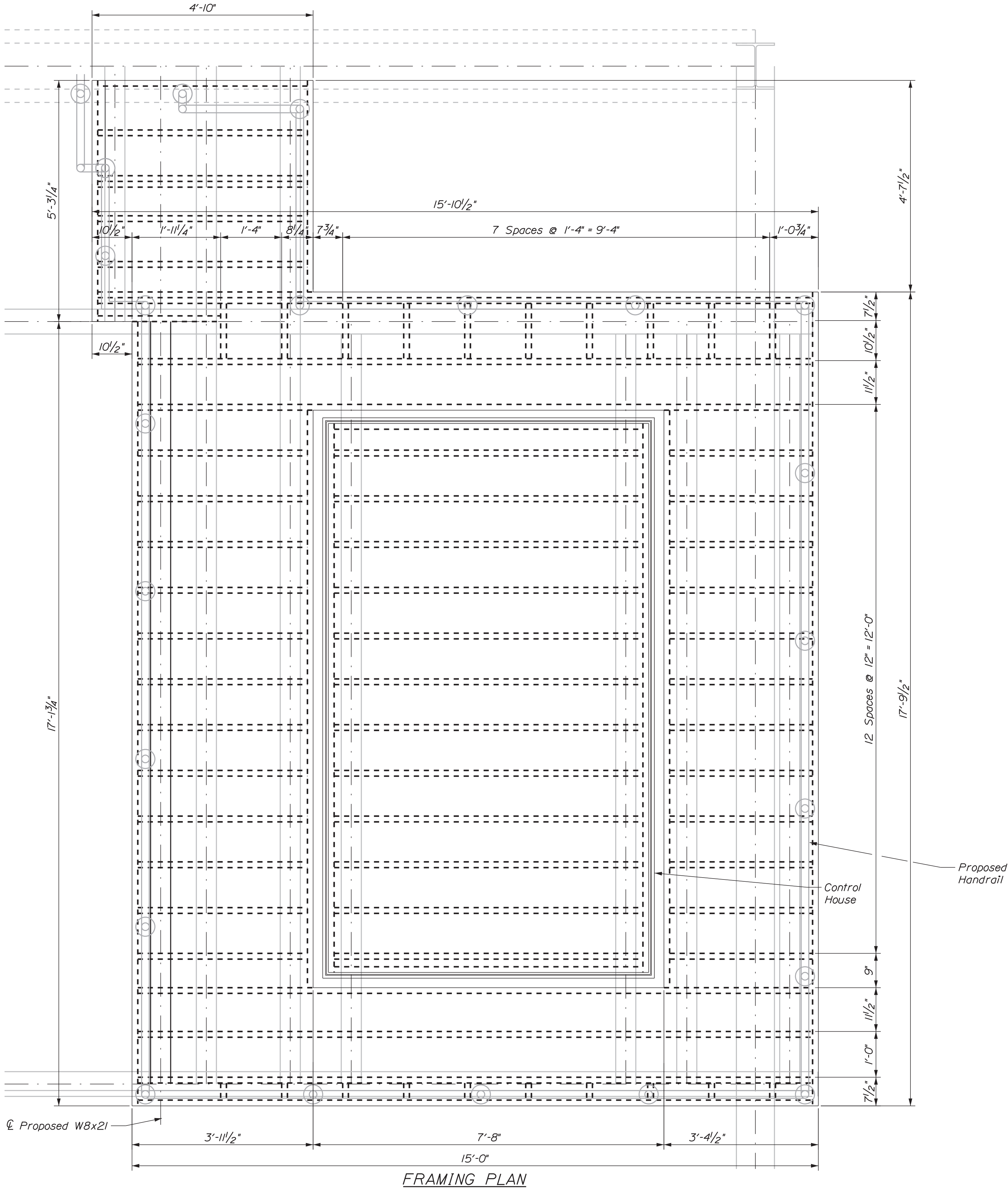
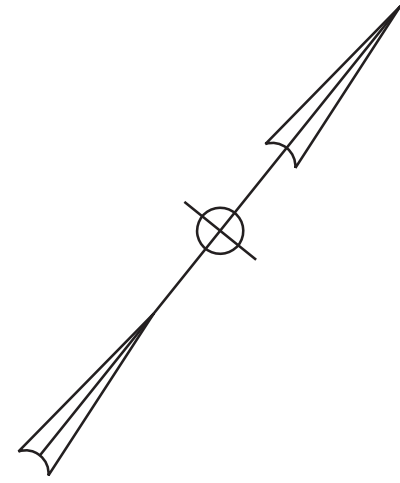


TYPICAL WALL SECTION
N.T.S.

NOTES:

- All dimensions are approximate. Contractor shall field verify all dimensions before proceeding with work.
- Match connections to adjust control house platform support members.
- Proposed railing shall be galvanized and designed by the supplier in accordance with OSHA standards.
- Connections for proposed W8x21 beam shall match existing adjacent connections. The Contractor shall field verify all dimensions and shall submit steel fabrication shop drawings to the Department for review and approval prior to commencing work.
- If the Contractor elects to prefabricate the Control House, it is permissible for the Contractor to remove and reinstall the truss top lateral bracing that is immediately above the Control House. If the top lateral bracing is removed and reinstalled, the Contractor shall submit a plan for temporary lateral bracing support to the Resident for review and approval at least 14 days prior to the removal of truss lateral bracing. The temporary lateral bracing support shall be installed if wind speeds exceed 35 mph. All labor, equipment, and materials for this work shall be incidental to Items 202.08, Removing Building No.1 and 815.00, Building Control House. All labor, equipment, and materials for this work shall be incidental to Items 202.08, Removing Building No.1 and 815.00, Building Control House.
- The Contractor shall field verify that there will be adequate vertical clearance between the control house roof and the bottom of the truss lateral bracing immediately above the roof.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2175(100)		BRIDGE NO. 2789		WIN		21751.00		BRIDGE PLANS	
SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT		SOUTHPORT & BOOTHBAY HARBOR ME		LINCOLN COUNTY		CONTROL HOUSE PLAN AND SECTIONS		SHEET NUMBER		40	
PROJ. MANAGER J. STETSON, PE		DESIGN-DETAILED BGP		CHECKED-REVIEWED GME/CTA		DESIGN-DETAILED GME/CTA		REVISIONS 1		REVISIONS 2	
BY		UPD		TSP/ASBLUNT		DATE		SIGNATURE		P.E. NUMBER	
8/19/22		8/19/22		8/19/22		1158		August 19, 2022		DATE	
FIELD CHANGES		REVISIONS 3		REVISIONS 4		REVISIONS 5		REVISIONS 6		REVISIONS 7	



FRAMING PLAN

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2175(100)

BRIDGE NO. 2789
WIN
21751.00
BRIDGE PLANS

PROJ. MANAGER

J. STETSON, PE

DESIGN-DETAILED

BCP

CHECKED/REVIEWED

GME/CTA

DESIGN2-DETAILED2

DESIGN3-DETAILED3

REVISIONS

1

REVISIONS

2

REVISIONS

3

REVISIONS

4

FIELD CHANGES

DATE

8/19/22

BY

UPD
T387ASBLUNT

SIGNATURE

1158

P.E. NUMBER

1158

DATE

August 19, 2022

PROF. QUALIFIER

11158

PROF. QUALIFIER

11158

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

STP-2175(100)

BRIDGE NO. 2789

WIN

21751.00

BRIDGE PLANS

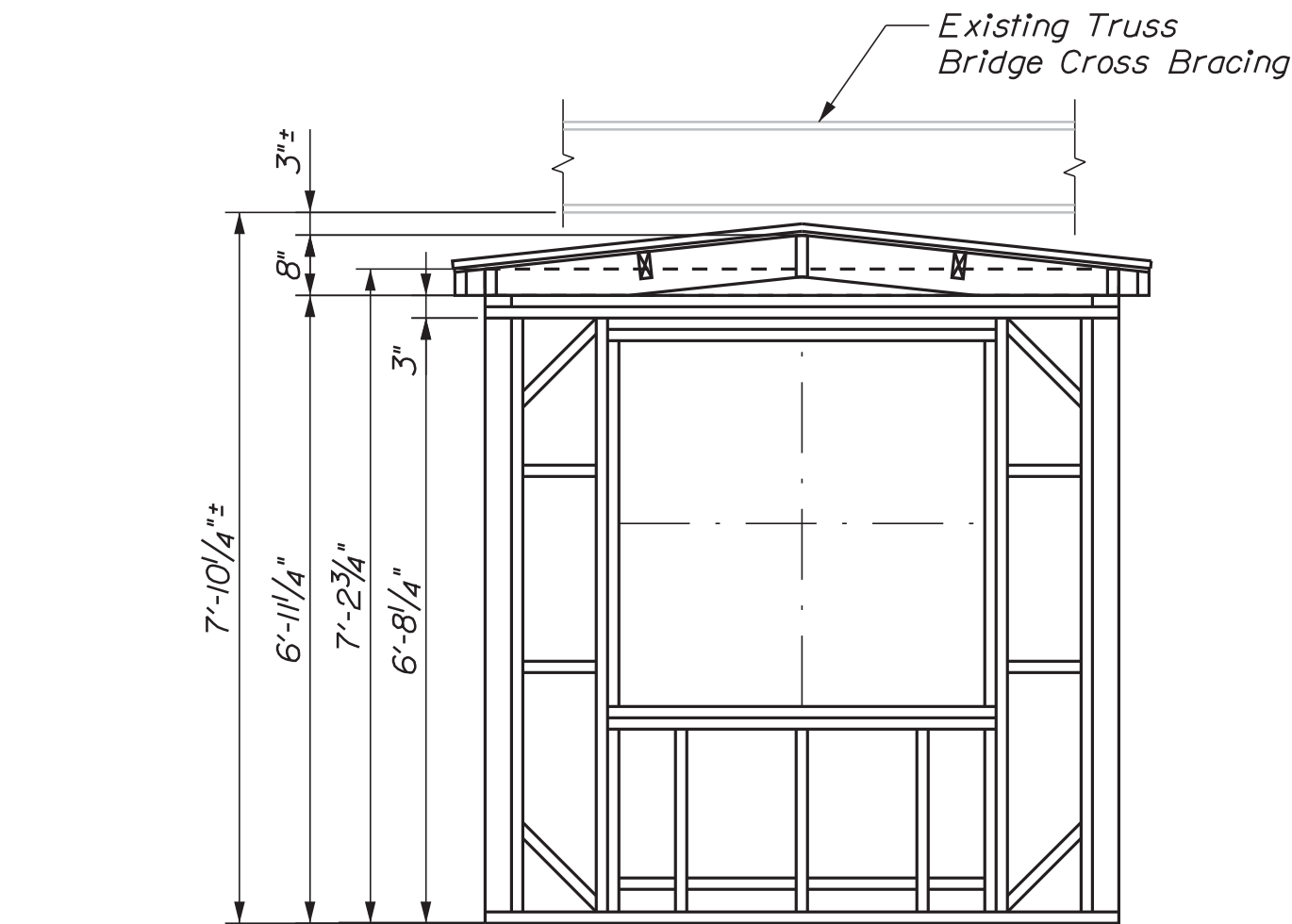
SOUTHPORT BRIDGE ROUTE 27
OVER TOWNSEND GUT
SOUTHPORT & BOOTHBAY HARBOR ME LINCOLN COUNTY

CONTROL HOUSE
DECK FRAMING PLAN

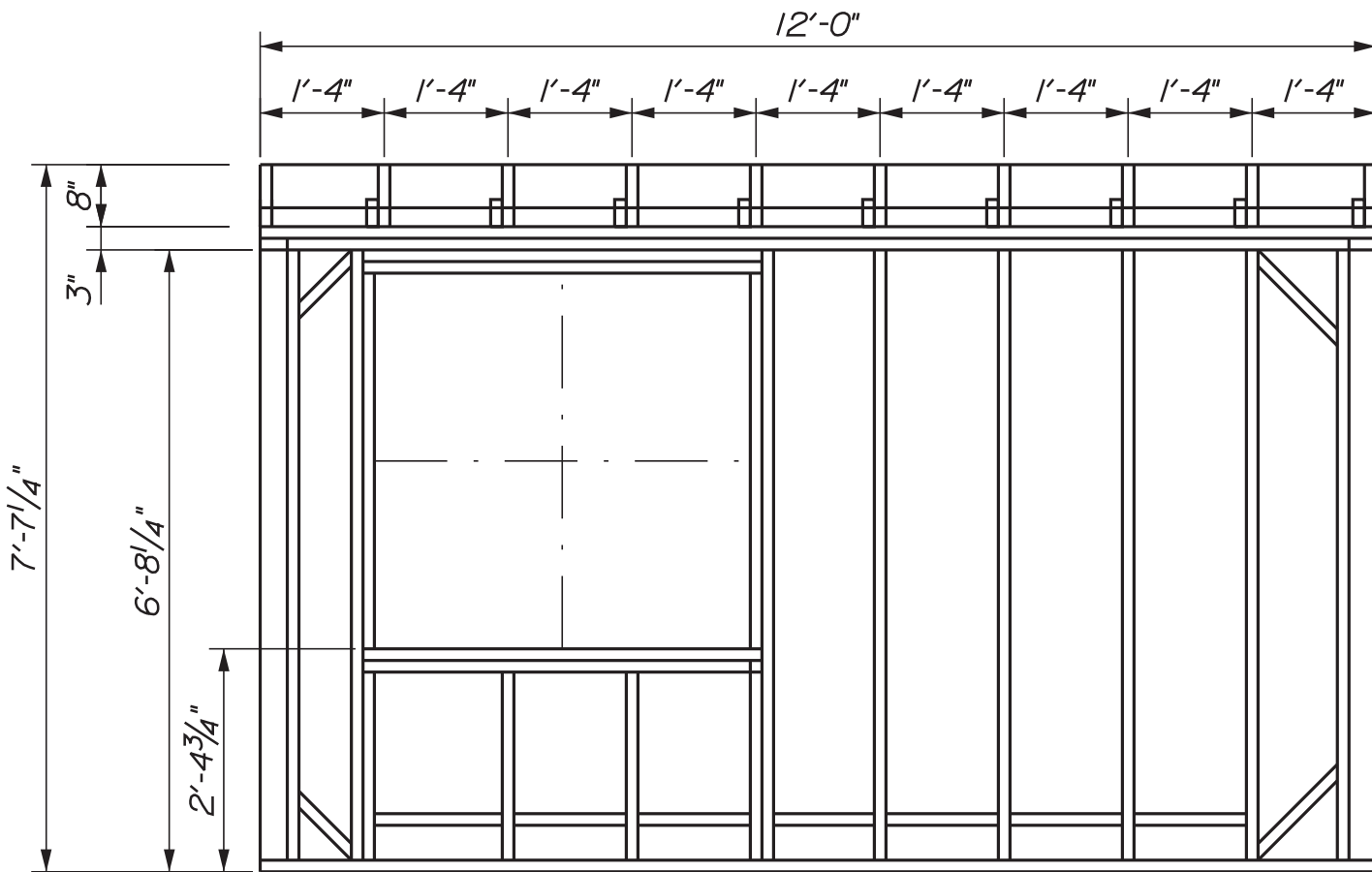
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41

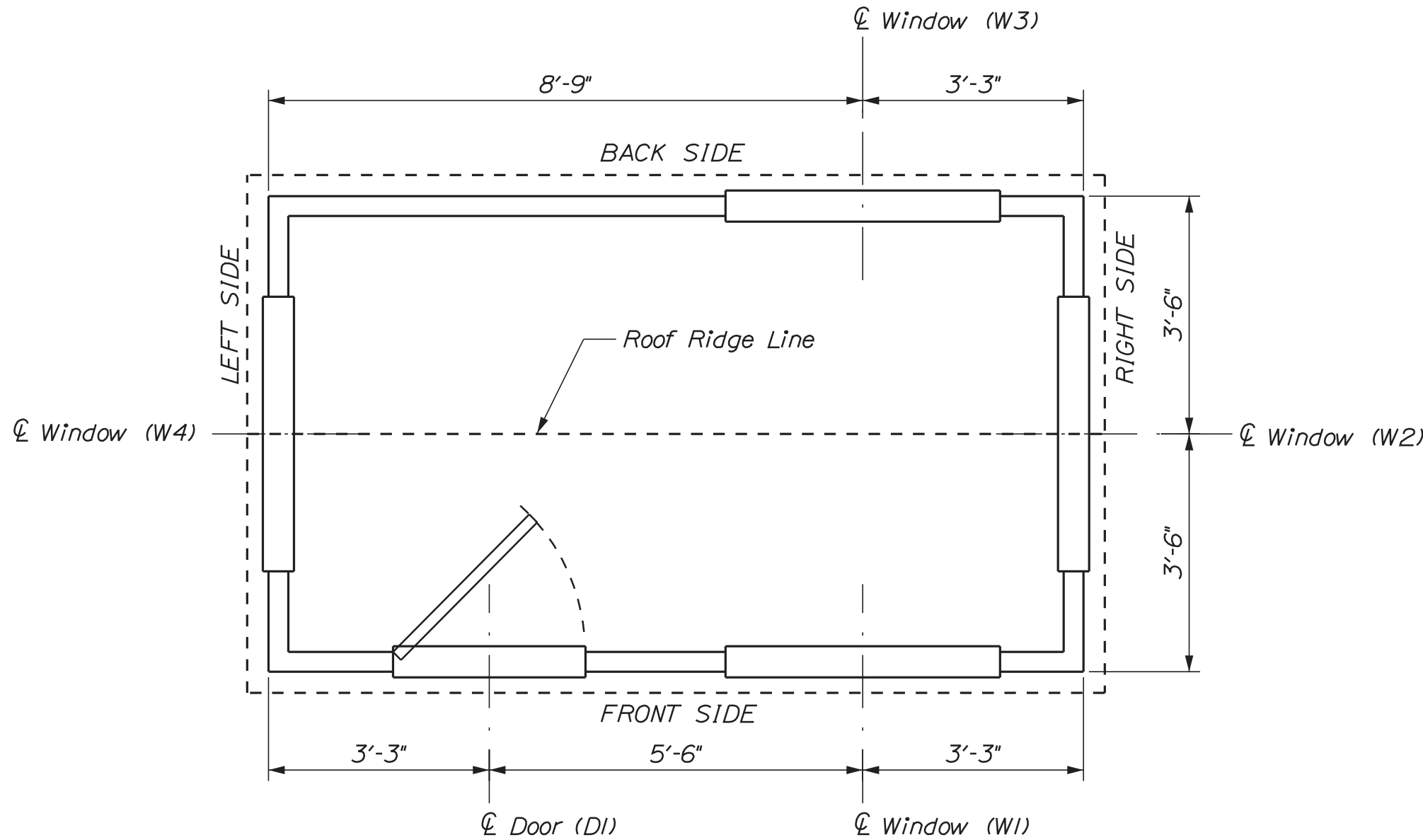
OF 48



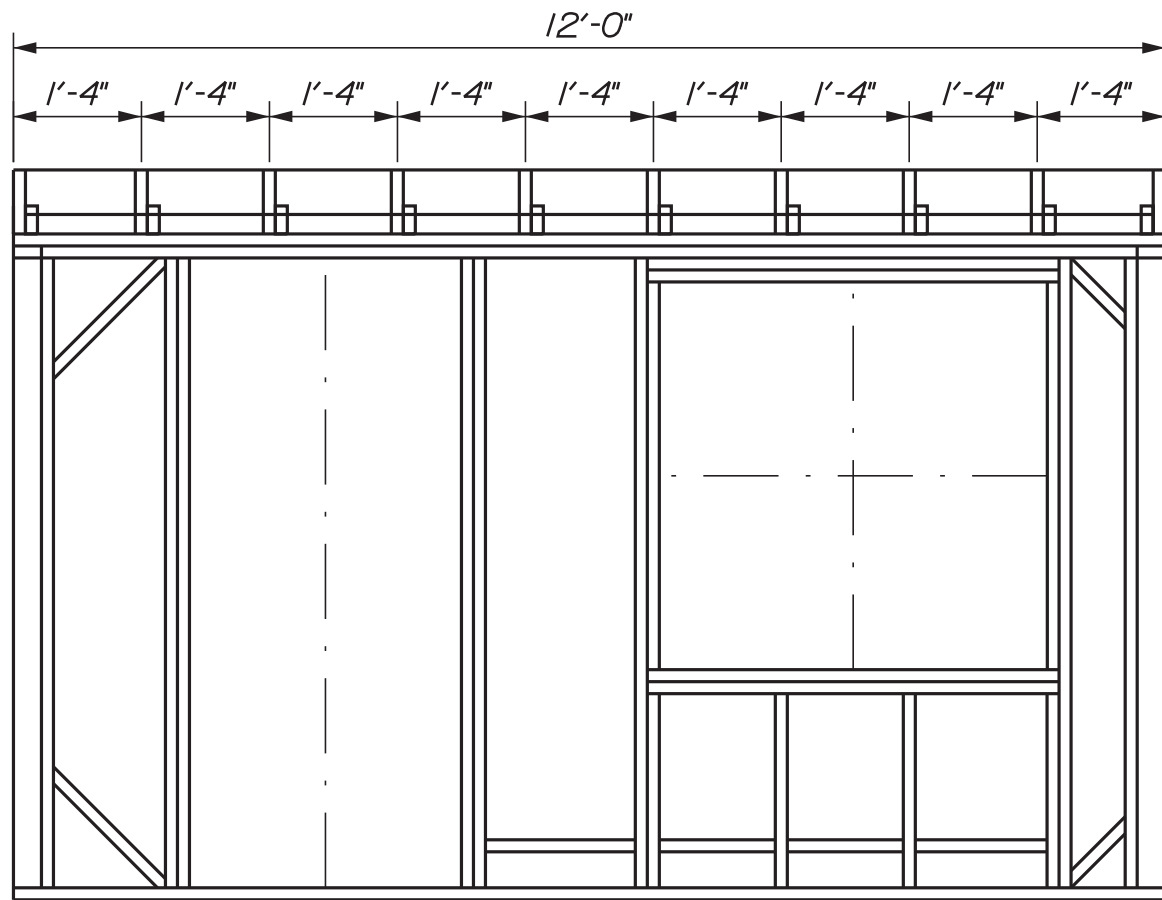
END VIEW
(Left and Right Side Shown)



BACK VIEW



CONTROL HOUSE
PLAN VIEW

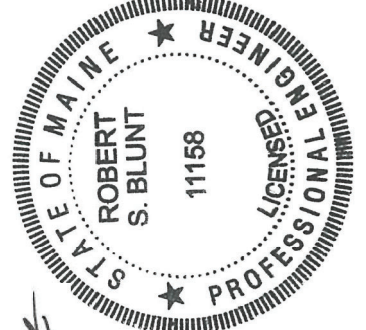


FRONT VIEW

WINDOW NO.	LOCATION	FRAME & R.O.	UNIT DIMENSION	PRODUCT ID#
W1	CONTROL RM.	VINYL 4'-0" x 4'-0"	3'-11 1/2" x 3'-11 1/2"	A/W 244GW4040
W2	CONTROL RM.	VINYL 4'-0" x 4'-0"	3'-11 1/2" x 3'-11 1/2"	A/W 244GW4040
W3	CONTROL RM.	VINYL 4'-0" x 4'-0"	3'-11 1/2" x 3'-11 1/2"	A/W 244GW4040
W4	CONTROL RM.	VINYL 4'-0" x 4'-0"	3'-11 1/2" x 3'-11 1/2"	A/W 244GW4040

DOOR NO.	LOCATION	FRAME & R.O.	UNIT DIMENSION	MODEL NO.
D1	CONTROL RM.	VINYL 4'-0" x 4'-0"	Steel, 2'-8" x 6'-8"	28355

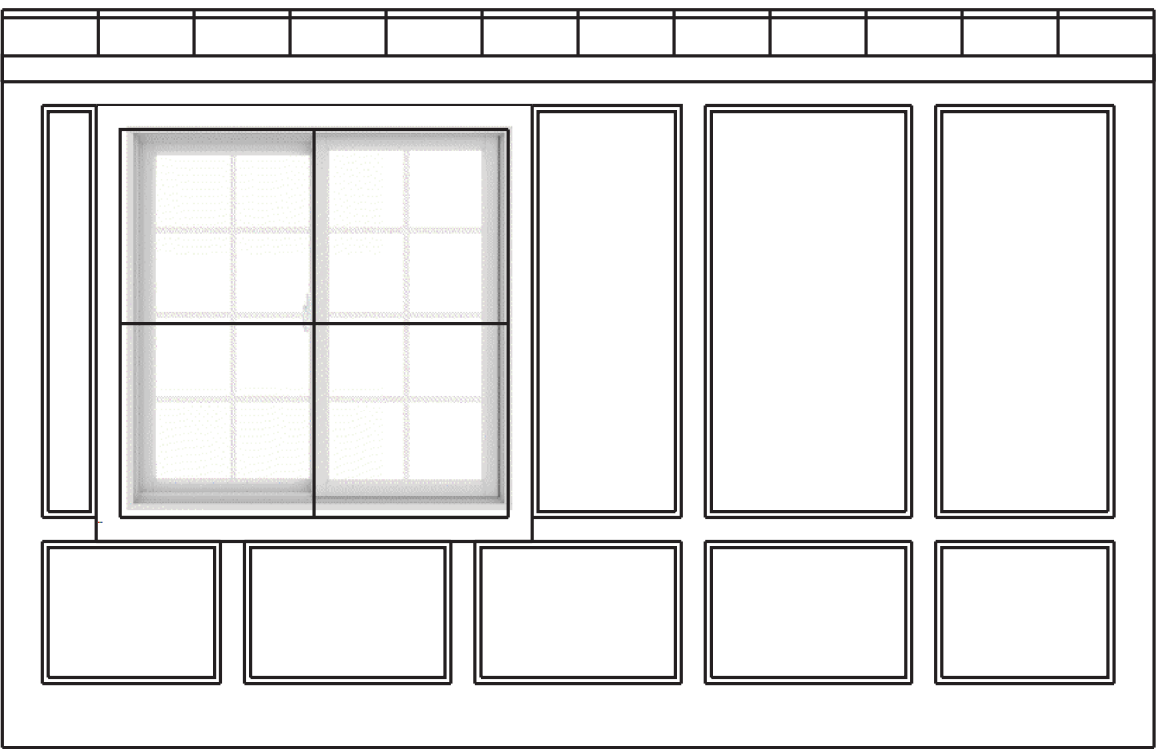
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2175(100)
WIN
21751.00
BRIDGE NO. 2789



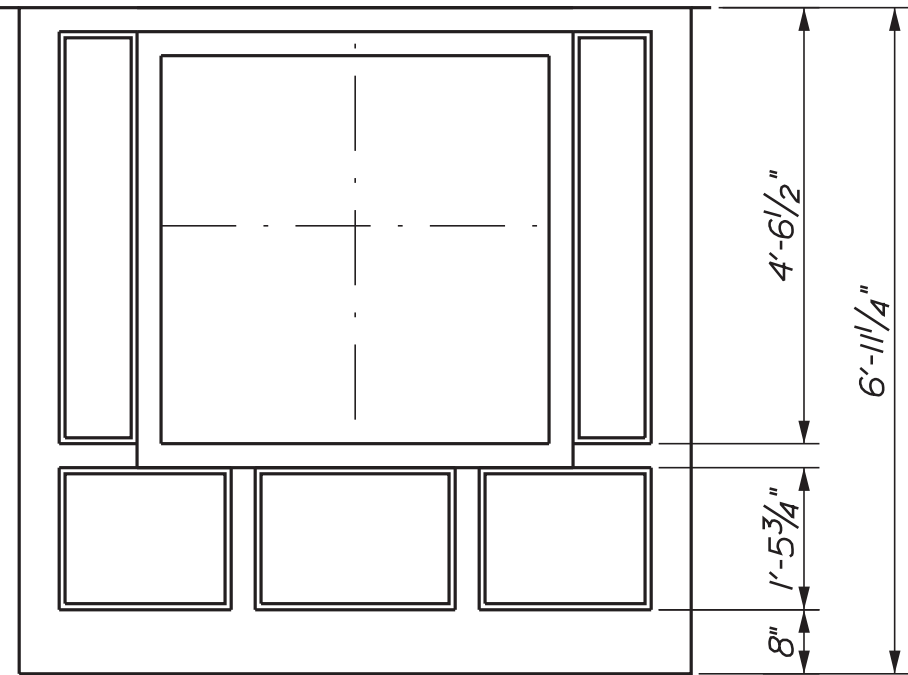
Signature: Robert S. Blunt
P.E. NUMBER: 11158
DATE: August 19, 2022

PROJ. MANAGER	J. STETSON, PE	BY	DATE
DESIGN-DETAILED	BGP	UPD	8/19/22
CHECKED-REVIEWED	GME/CTA	TSP/RSBLUNT	8/19/22
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

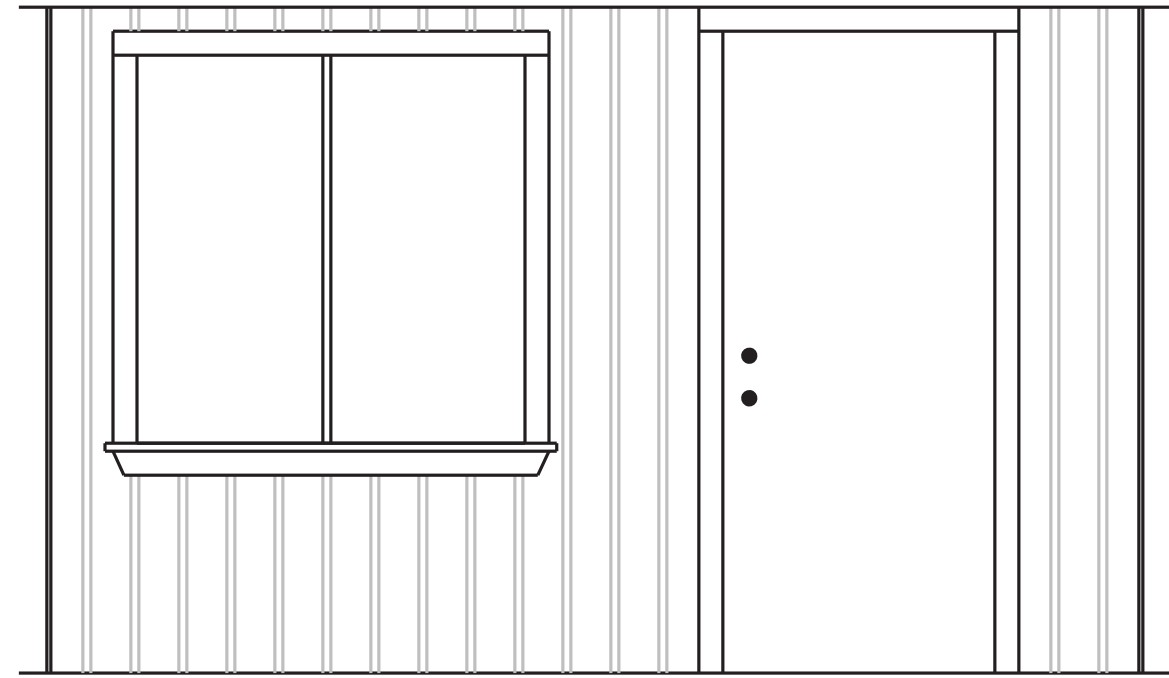
SOUTHPORT BRIDGE ROUTE 27
OVER TOWNSEND GUT
SOUTHPORT & BOOTHBAY HARBOR ME LINCOLN COUNTY
CONTROL HOUSE
FRAMING



BACK VIEW
EXTERIOR



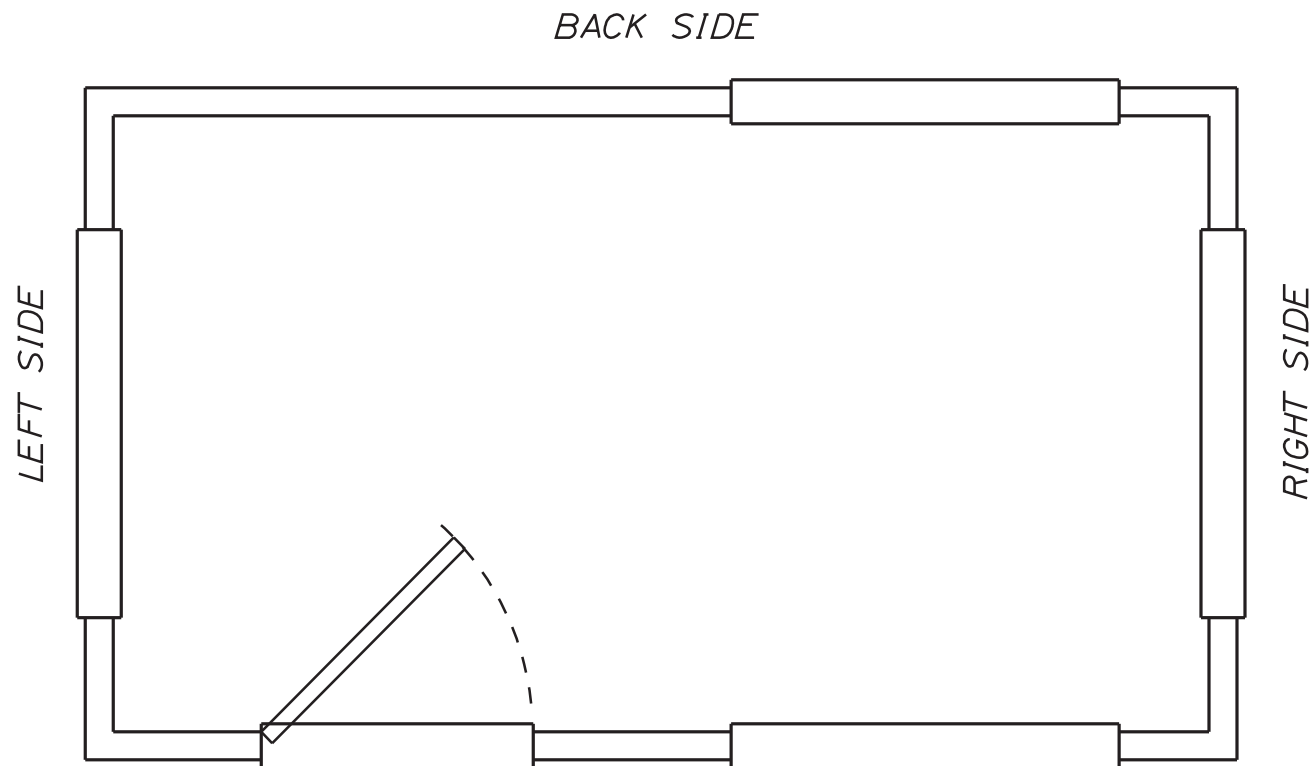
SIDE VIEW
EXTERIOR
(Left or Right Side Shown)



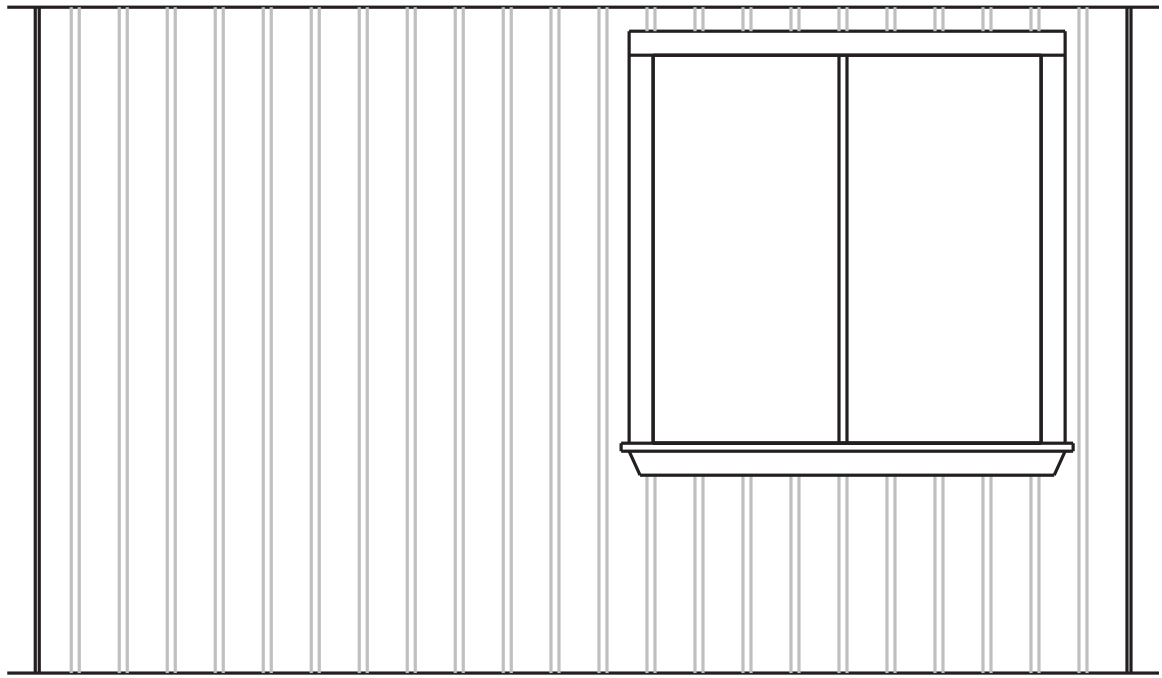
FRONT VIEW
INTERIOR



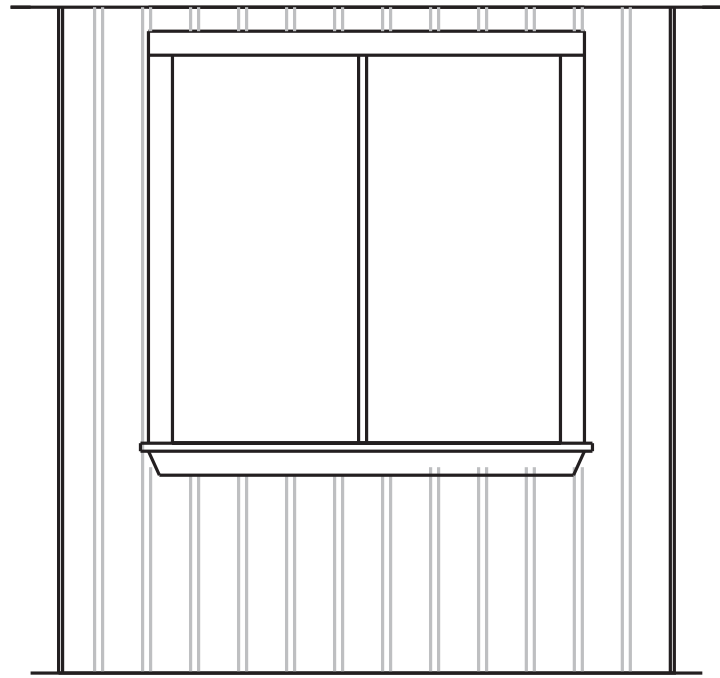
FRONT VIEW
EXTERIOR



CONTROL HOUSE
PLAN VIEW



BACK VIEW
INTERIOR



SIDE VIEW
INTERIOR
(Left or Right Side Shown)

GENERAL NOTES

- Interior Wall Planks shall be Painted Egg Shell White and Trim Boards Painted with Semi Gloss White.
- All PVC Planks shall be screwed with Composite Deck Screws with White Heads.
- 1/2" PVC Quarter Round shall be Glued with PVC Bonding adhesive
- Interior Boards shall be installed with Composite Deck Screws with White heads.

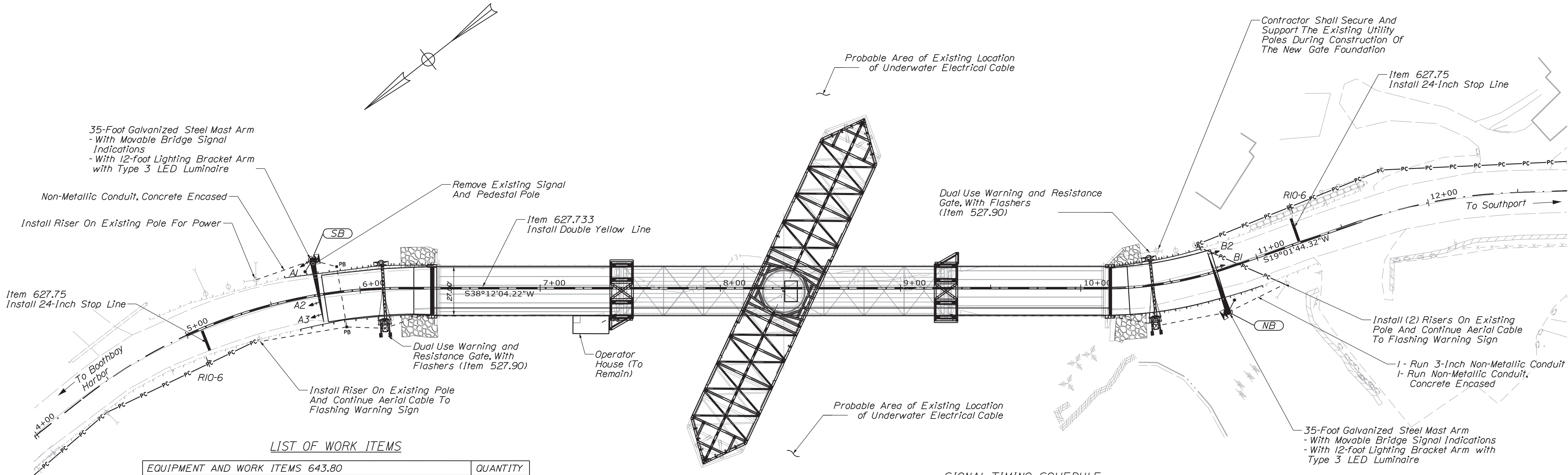
SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT SOUTHPORT & BOOTHBAY HARBOR ME LINCOLN COUNTY		STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2175(100)	
CONTROL HOUSE INTERIOR & EXTERIOR DETAILS		BRIDGE NO. 2789 WIN 21751.00 BRIDGE PLANS	
SHEET NUMBER 43 OF 48			
DESIGN-DETAILED CHECKED-REVIEWED DESIGN2-DETAILED2 DESIGN3-DETAILED3 REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4 FIELD CHANGES		DATE 8/19/22 8/19/22 	
PROJ. MANAGER J. STETSON, PE BGP GME/CTA		BY UPD TSP/ASBLUNT	
SIGNATURE 1158		P.E. NUMBER August 19, 2022 DATE	

Date:9/14/2022

Username:

Division: HIGHWAY

Filename: ... \BRIDGE\WSTA\044_Traffic_01.dgn

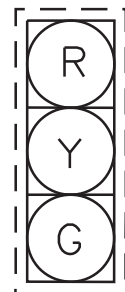


LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.80	QUANTITY
Furnish And Install Pole Mounted Cabinet And Nema Controller With All Ancillary Equipment And Wiring	2
Furnish And Install One-Way 3-Section 12-Inch Traffic Signal Heads, With Led Modules, Tunnel Visors, And 5-Inch Louvered Back Plates With 3-Inch Retroreflectivity Mounted On Mast Arms With Astro-Brackets	5
Furnish And Install Post Mounted Signs	2
Remove Existing Signal Equipment	-
Furnish And Install New Signal Cable	-
Implement Local Signal Timings	-

The Listed Quantities Are Approximate And Are Furnished For Information Only.
- See Advance Warning Beacon Plan For Other Work Items. -

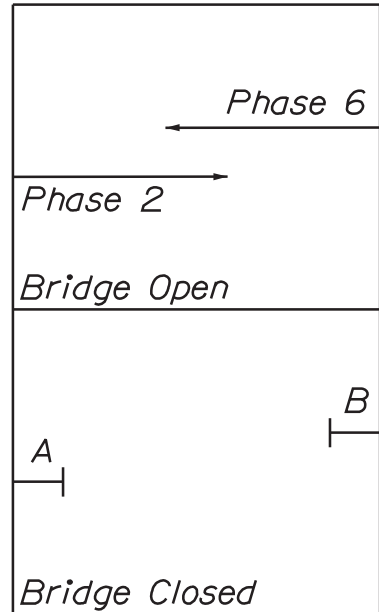
PROPOSED INDICATIONS



A1,A2,A3,B1,B2

Note:
All Vehicle Indications Shall Be 12" Light Emitting Diodes (LED's) With 5" Louvered Backplates

PHASE DIAGRAM



Where:
→ Protected Traffic Movement
-- Permissive Traffic Movement

PROPOSED POST MOUNTED SIGNS



R10-6
24" x 36"
2 - Proposed

PREEMPTION OPERATION

ID	PREEMPT ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		Not Use/Reserved	
2		Swing Bridge	
3		Not Used	
4		Not Used	
5		Not Used	
6		Not Used	

PRE-EMPTION NOTES:

1. Pre-Emption Signals Shall Be Transmitted From The Operator House To Activate The Traffic Signals And Warning Beacons.
2. In Response To A Pre-Emption Signal Received From The Bridge Operator, The Controller Shall Time Pre-Emption Phase Clearance (4.0 Seconds Yellow And 16.0 Seconds All Red) And Service The Marine Traffic. At The Closure Of The Bridge Back Into Place The Controller Shall Time The Pre-Emption Clearance And Resume Normal Operations (Hold On Green For Phase 2 & Phase 6).
3. Flashers Shall Be Illuminated For The Advance Beacons And Warning Gates Whenever Any Preemption Is On.

SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ 2	φ 6
Min Green	10	10
Extension	-	-
Max 1	-	-
Max 2	-	-
Veh Clear	4	4
Red Clear	16	16
Walk	-	-
Ped Clear	-	-
Flash	FR	FR
Recal	OFF	OFF
Pre-Empt Priority	2	2

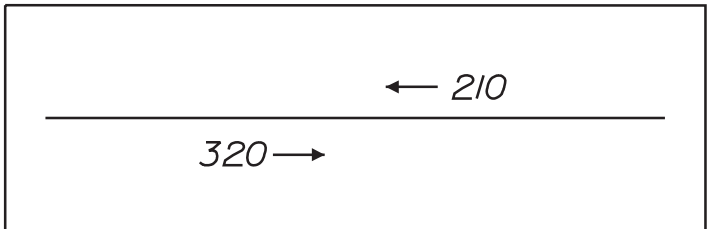
NOTES:

1. Traffic Signal Control Shall Provide 4.0 Seconds Of Vehicle Clearance Time And 16 Seconds Of All Red Prior To Gate Closure
2. Bridge Closure Lengths Shall Vary And Be Determined By The Operator.
3. Traffic Shall Return To All Green At The Completion Of The Bridge Closure Preemption.
4. Traffic Signal Operations Shall Rest On Green
5. Traffic Signal Shall Fail On Red
6. Signals Shall Hold On Red During Preemption Until The Warning And Resistance Gate Is Raised.

STRUCTURE LIST

Structure	Description	Foundation
NB	35' Mast Arm	See Sheet 48
SB	35' Mast Arm	See Sheet 47
SB-PI	15' Pedestal Pole	24" Diameter

2023 DESIGN VOLUMES



LEGEND

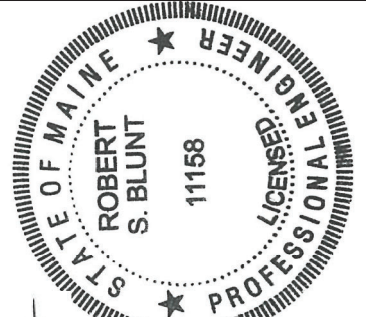
- ☒ Pole Mounted G Cabinet With Controller
- Proposed Vehicular Head (Black)
- Mast Arm Pole
- Aluminum Pedestal Pole
- - - - Underground Conduit
- PB Pull Box
- PC— Communication Cable

PLAN

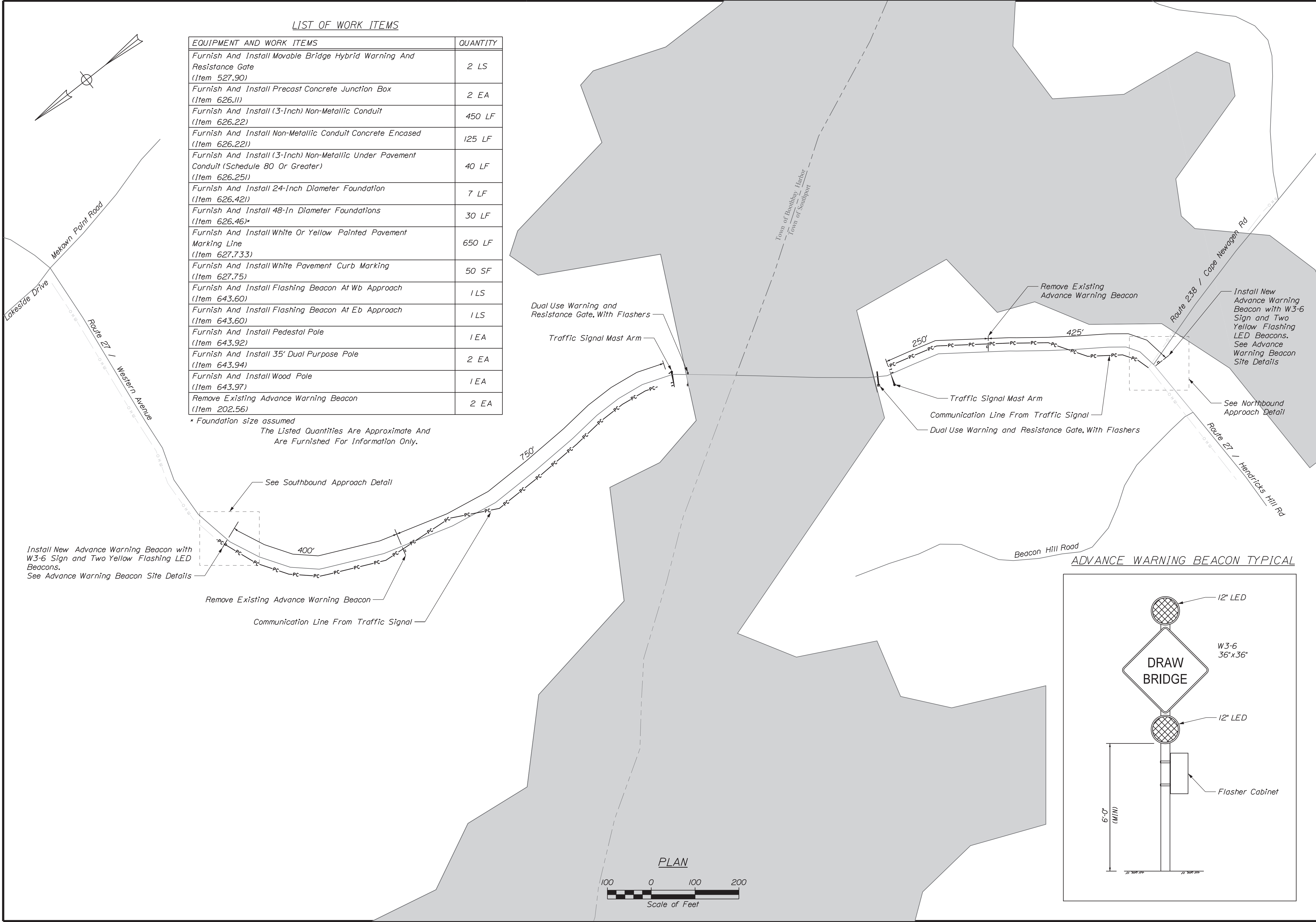


NOTES:

1. All Signing Signal And Striping Materials And Placement Shall Conform To The Mainedot Standard Specifications, Supplemental Specifications And Standard Details And With The Federal Highway Administration Manual On Uniform Traffic Control Devices (MUTCD) Dated 2009, As Amended.
2. All Signal Heads Shall Be Fix Mounted To Mast Arms With Astrobrackets, Or Mounted To Mast Arm Poles With Bracket Arms As Indicated On Plans.
3. The Bottom Of The Housing Of Signal Faces Shall Be At Least 17 Feet But Not More Than 19 Feet Above The Pavement Grade At The Center Of The Roadway. For Pole Mounted Signal Heads, The Bottom Of The Housing Shall Be Mounted At Least 8 Feet But Not More Than 19 Feet Above The Pavement Grade At The High Point Of The Road.
4. All Stop Lines Shall Be 24-Inches Wide.
5. Foundations
New Traffic Signal Mast Arm Pole Or Pedestal Pole Foundation Shall Be Constructed In Locations Shown On The Plans. The Proposed Foundations As Shown Shall Be Within Existing Right-Of-Way To Avoid Underground Conflicts Based On Available Information Provided During Design.
6. Temporary Traffic Signals
Temporary Traffic Signal Modifications Shall Be Paid Under Item 643.72 Temporary Traffic Signals. The Contractor Shall Be Responsible For Submitting Any Temporary Signal Layouts To The Resident For Approval.

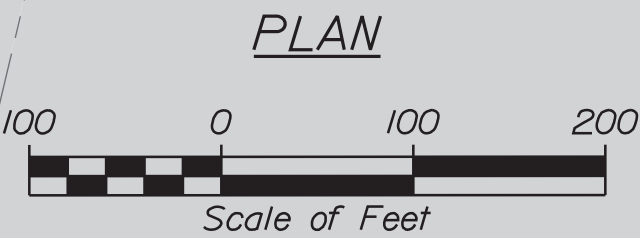
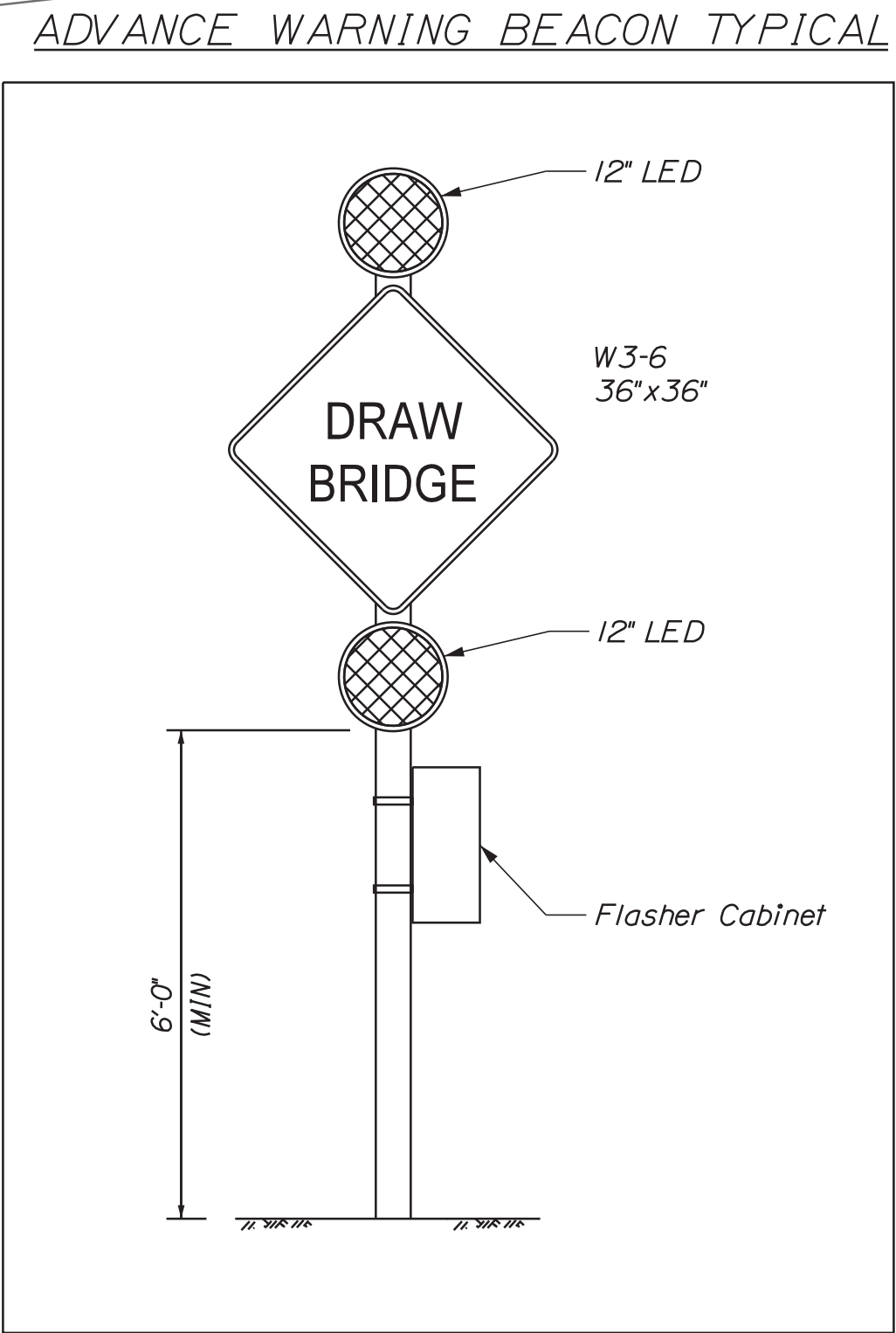


DATE	BY	REVISION	DESCRIPTION
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8/19/22	JAR	2	CHECKED-REVIEWED
8/19/22	JAR	3	DESIGN-DETAILED
8/19/22	JAR	4	DESIGN-DETAILED
8/19/22	JAR	5	DESIGN-DETAILED
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8/19/22	JAR	98	DESIGN-DETAILED
8/19/22	JAR	99	DESIGN-DETAILED
8/19/22	JAR	100	DESIGN-DETAILED



LIST OF WORK ITEMS	
EQUIPMENT AND WORK ITEMS	QUANTITY
Furnish And Install Movable Bridge Hybrid Warning And Resistance Gate (Item 527.90)	2 LS
Furnish And Install Precast Concrete Junction Box (Item 626.11)	2 EA
Furnish And Install (3-Inch) Non-Metallic Conduit (Item 626.22)	450 LF
Furnish And Install Non-Metallic Conduit Concrete Encased (Item 626.221)	125 LF
Furnish And Install (3-Inch) Non-Metallic Under Pavement Conduit (Schedule 80 Or Greater) (Item 626.251)	40 LF
Furnish And Install 24-Inch Diameter Foundation (Item 626.421)	7 LF
Furnish And Install 48-In Diameter Foundations (Item 626.46)*	30 LF
Furnish And Install White Or Yellow Painted Pavement Marking Line (Item 627.733)	650 LF
Furnish And Install White Pavement Curb Marking (Item 627.75)	50 SF
Furnish And Install Flashing Beacon At Wb Approach (Item 643.60)	1 LS
Furnish And Install Flashing Beacon At Eb Approach (Item 643.60)	1 LS
Furnish And Install Pedestal Pole (Item 643.92)	1 EA
Furnish And Install 35' Dual Purpose Pole (Item 643.94)	2 EA
Furnish And Install Wood Pole (Item 643.97)	1 EA
Remove Existing Advance Warning Beacon (Item 202.56)	2 EA

* Foundation size assumed
The Listed Quantities Are Approximate And
Are Furnished For Information Only.



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2309401

WIN
21751.01

BRIDGE NO. 2789
BRIDGE PLANS

PROF. QUALIFIER
ROBERT S. BLUNT
11158
August 19, 2022

SIGNATURE
11158
P.E. NUMBER
August 19, 2022
DATE

SOUTHPORT BRIDGE ROUTE 27
OVER TOWNSEND GUT
SOUTHPORT & BOOTHBAY HARBOR ME
LINCOLN COUNTY

ADVANCE WARNING
BEACON PLAN

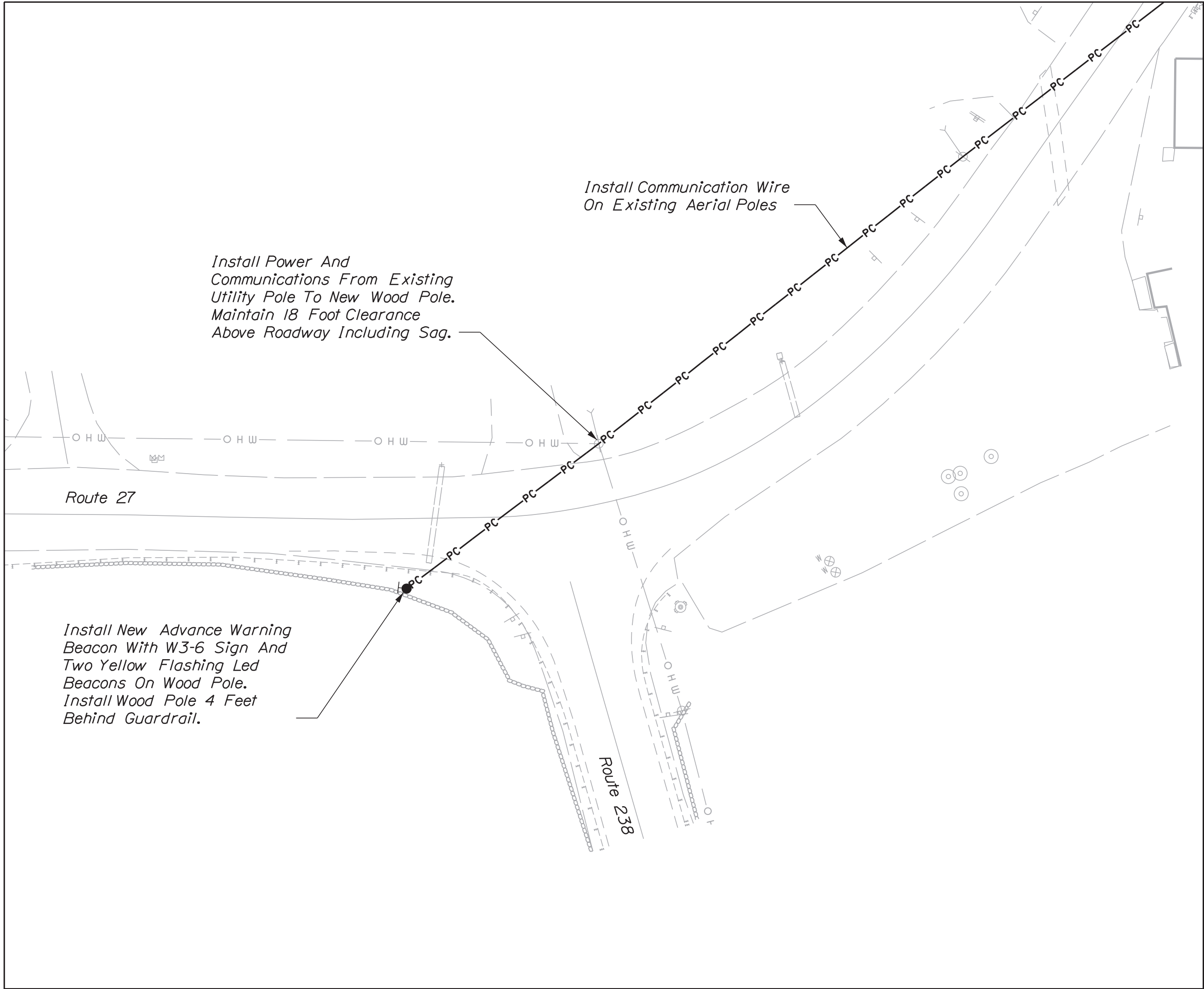
SHEET NUMBER

45

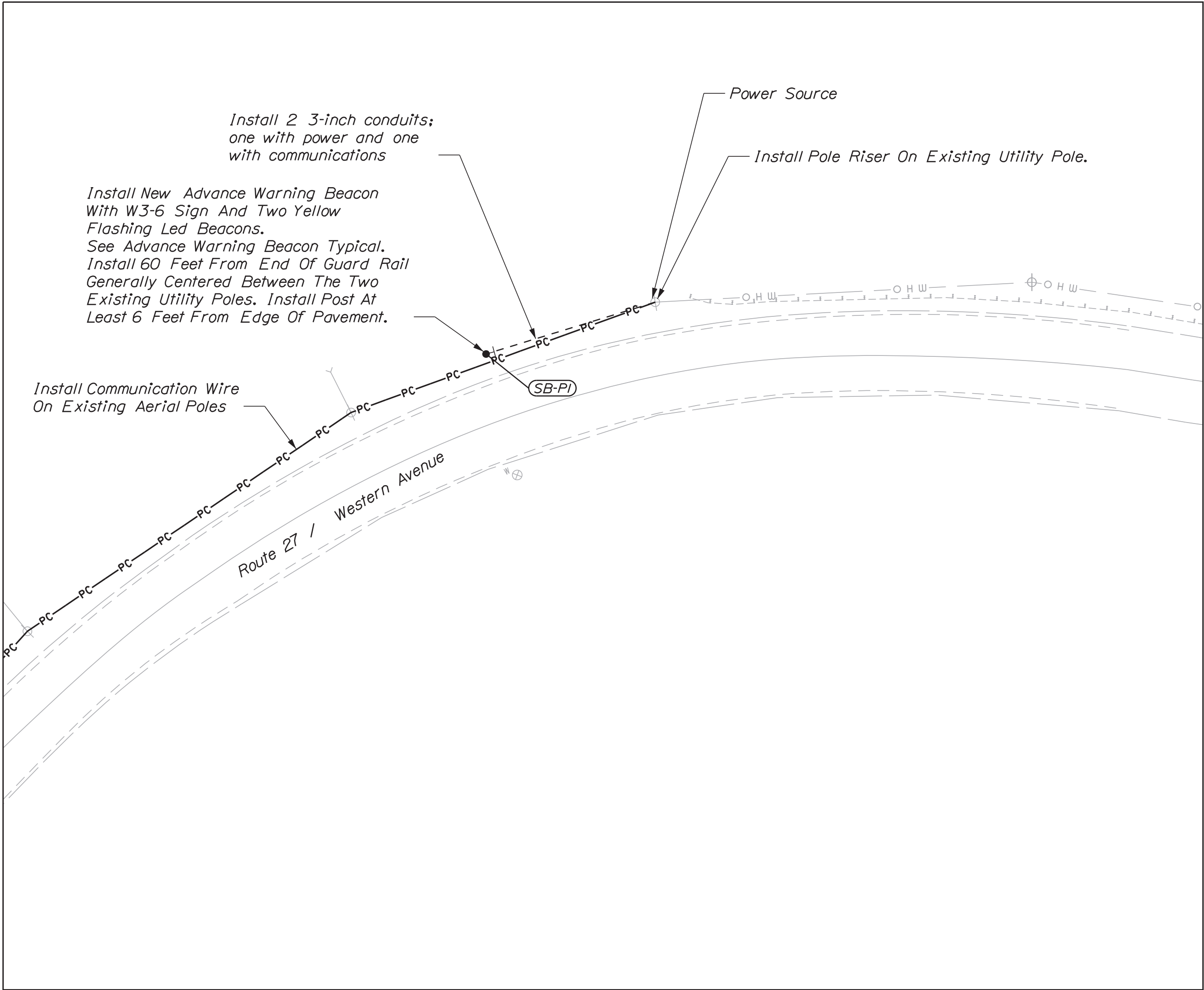
OF 48



NORTHBOUND APPROACH
(SOUTHPORT)



SOUTHBOUND APPROACH
(BOOTHBAY HARBOR)



PLAN



STATE OF MAINE	BRIDGE NO. 2789	WIN	21751.01
DEPARTMENT OF TRANSPORTATION			
2309401			

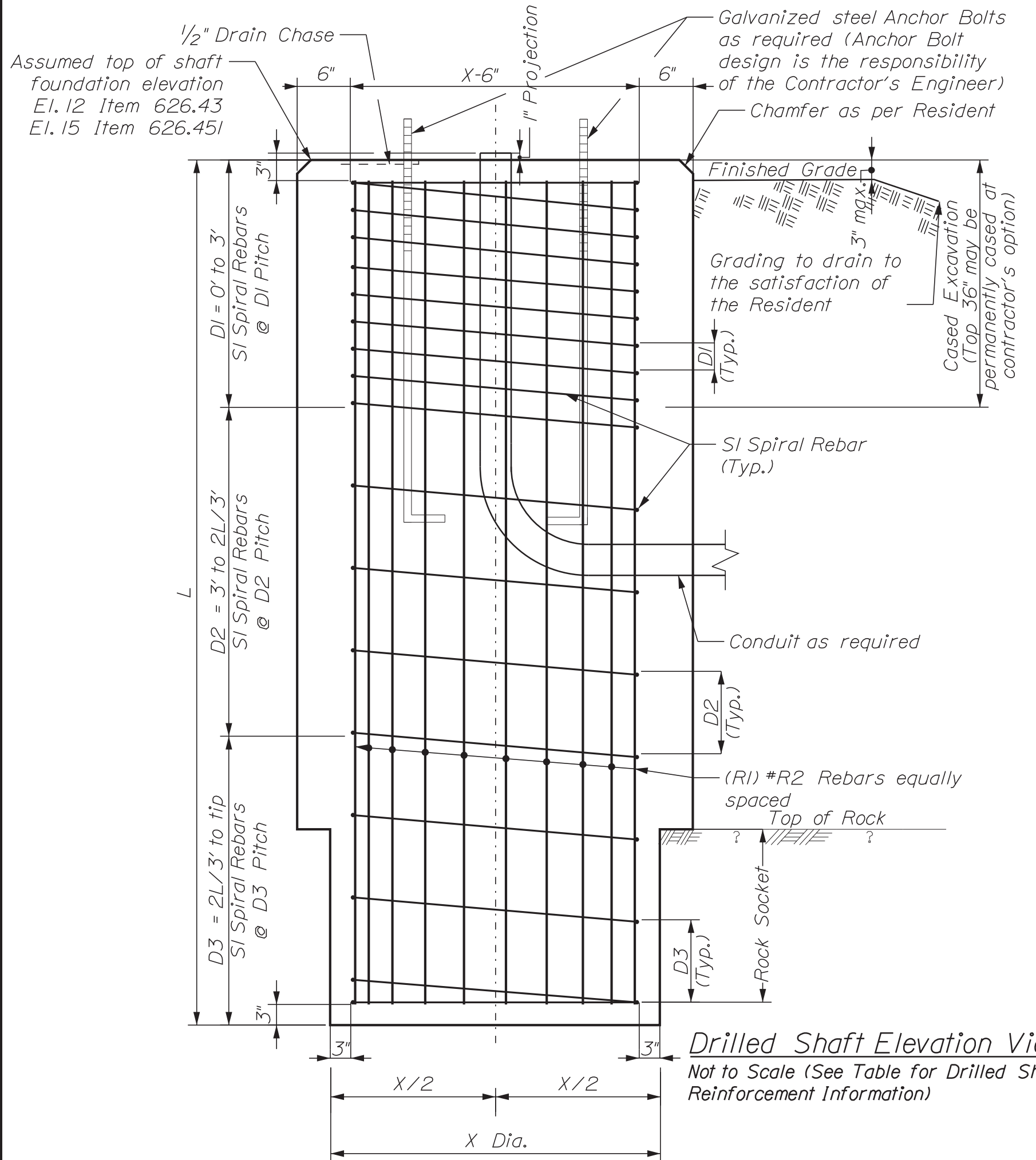


SIGNATURE	11158	P.E. NUMBER	August 19, 2022
DATE		DATE	

PROJ. MANAGER	J. STETSON, PE	BY	JAR	DATE	8/19/22
DESIGN-DETAILED	NDS	BY	JAR	DATE	8/19/22
CHECKED-REVIEWED	CTA	BY	RSBLUNT	DATE	
DESIGN2-DETAILED2		BY		DATE	
DESIGN3-DETAILED3		BY		DATE	
REVISIONS	1	BY		DATE	
REVISIONS	2	BY		DATE	
REVISIONS	3	BY		DATE	
REVISIONS	4	BY		DATE	
FIELD CHANGES		BY		DATE	

SOUTHPORT BRIDGE ROUTE 27 OVER TOWNSEND GUT	LINCOLN COUNTY
SOUTHPORT & BOOTHBAY HARBOR ME	
ADVANCE WARNING BEACON SITE DETAIL	

SHEET NUMBER
46
OF 48



North of Abutment 1



 BB-SBTG-202 *Approximate location and designation of 200-Series cased wash borings by GZA*

NOTES:

1. All reinforcing steel is to be grade 60 and conform to MaineDOT Standard Specification requirements along with any project specific Supplementals or Special Provisions.
2. All rebar shall have 3" cover unless otherwise noted.
3. Should there be a discrepancy between these Details and actual observed field conditions report it to the Resident immediately.
4. Do not proceed with dependent work until any such discrepancy is resolved to the satisfaction of the Resident.
5. Concrete to be Class LP with $f'c = 5,000$ PSI.
6. Item 626.45I (Crash Barrier) provides alternate designs including a smaller diameter rock-socketed shaft, or a larger diameter shaft without a rock socket, in accordance with the dimensions provided in the summary table.

PREPARED BY:



