

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



SPECIFICATIONS

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

TRAFFIC DATA

Current (2018) AADT	112
Future (2028) AADT	112
Future (2038) AADT	112
DHV - % of AADT	Unavailable
Design Hour Volume	Unavailable
Heavy Trucks (% of AADT)	5%
Heavy Trucks (% of DHV)	5%
Directional Distribution (% of DHV)	50%
18 kip Equivalent P 2.0	Unavailable
18 kip Equivalent P 2.5	Unavailable
Design Speed (mph)	20

HYDROLOGIC DATA

Mean Higher High Water	5.0 ft
Mean High Water	4.6 ft
Mean Tide Level	-0.3 ft
Mean Low Water	-5.3 ft
Mean Lower Low Water	-5.6 ft

MATERIALS

Reinforcing Steel	ASTM A 615/A 615M, Grade 60
Railing:	
Rail Bars	ASTM A 500, Grade B
Rail posts, shapes & plates	AASHTO M 270M/M270, Grade 50
All other bolts & nuts (unless noted)	ASTM F3125, Grade A325

BASIC DESIGN STRESSES

Non-shrink Grout	f'c = 5,000 psi
Reinforcing Steel	f y = 60,000 psi
Structural Steel	
ASTM 500, Grade B	f y = 46,000 psi
AASHTO M 270, Grade 50	f y = 50,000 psi
ASTM F3125, Grade A325	f u = 120,000 psi

VINALHAVEN
KNOX COUNTY
LANE'S ISLAND BRIDGE
OVER
CARVERS HARBOR
LANE'S ISLAND ROAD

FEDERAL AID PROJECT NO. STP - 2170(700)
PROJECT LENGTH 0.1 mi.
BRIDGE NO. 5270

LIST OF DRAWINGS

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UTILITIES

Fox Island Electric Co-op
Time Warner Cable
Fairpoint

MAINTENANCE OF TRAFFIC

One lane of alternating traffic will be maintained during construction for installation of the guardrail with limited short term closures for protective coating for concrete surfaces on the deck and for joint repairs.

PROJECT LOCATION:	On Lane's Island Road, 0.08 miles south of the intersection with Round The Mountain Road. Lat. - 44° 02' 32" N Long. - 68° 49' 54" W
PROGRAM AREA:	Bridge
OUTLINE OF WORK:	Repair the expansion joints, repair the bridge and approach railing, apply a protective deck coating, and stabilize granite block substructures

WIN 021707.00

STP- 2170(700)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED

COMMISSIONER

CHIEF ENGINEER

DATE
8-20-19
8-20-19

Peter Perkins
PETER PERKINS
No. 8251
PROFESSIONAL ENGINEER

SIGNATURE
8251
P.E. NUMBER
8/19/2019
DATE

PROJECT INFORMATION

PROGRAM

PROJECT MANAGER

DESIGNER

CONSULTANT

PROJECT RESIDENT

CONTRACTOR

BRIDGE

Joel Kittredge

Peter Perkins

CHA Consulting Inc.

PROJECT COMPLETION DATE

VINALHAVEN
LANE'S ISLAND BRIDGE

TITLE SHEET

1
OF 14

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GENERAL CONSTRUCTION NOTES

1. Clearing will be only allowed with the approval of the resident. Clearing will be considered incidental to the contract.

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

3. Place riprap where directed by the Resident.

4. Place loam 2 inches deep on all new or reconstructed side slopes or as directed by the Resident.

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

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

Fascias
Top of curbs
Face of curbs
Top of concrete deck

7. The top two granite stones for the wingwalls at the four corners of the bridge will be adjusted and pinned as directed by the Resident. Pins must be #8 bar installed 4'-0" on center, two pins per stone minimum. Adjusting stones will be paid under Item 629.07, Stone Mason and Item 629.05, Hand Labor Straight Time. Pinning will be paid under Item 504.9061 Rock Dowel.

8. Work completed below Mean Tide Level is anticipated to be completed underwater. The actual extent of underwater work will be dependent on the Contractor's schedule relative to the tides.

9. Intact existing bridge rail or complete and accepted new bridge rail are required at all times that traffic is maintained on the bridge.

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

11. The existing bridge plans may be accessed at the MaineDOT web address. The plans are reproductions of the original drawings as prepared for the construction of the bridge. It is very unlikely that the plans will show any construction field changes or any alterations which may have been made to the bridge during its life span.

12. The project geotechnical report titled: *Geotechnical Data Report, Preservation of Lane's Island Bridge, Lane's Island Road over Tidal Flow (Carver's Harbor), Vinalhaven, ME, April 9, 2019*, may be accessed at the MaineDOT web address.

13. 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.

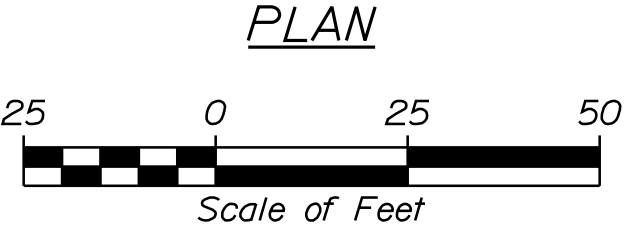
14. Quantities included for pay items measured and paid for by Lump Sum are estimated quantities and are provided by MaineDOT for informational purposes only. Lump Sum pay items will be paid for at the Contract Bid amount, with no addition or reduction in payment to the Contractor if the actual final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

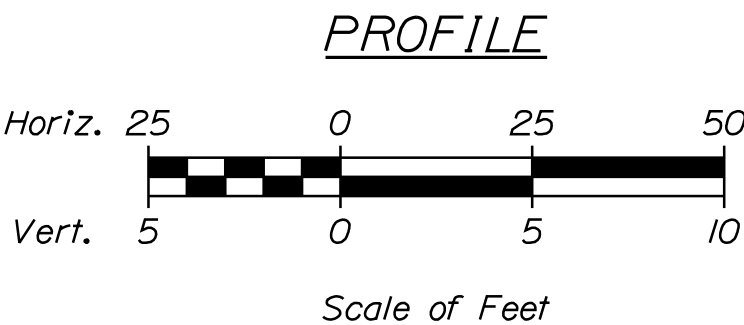
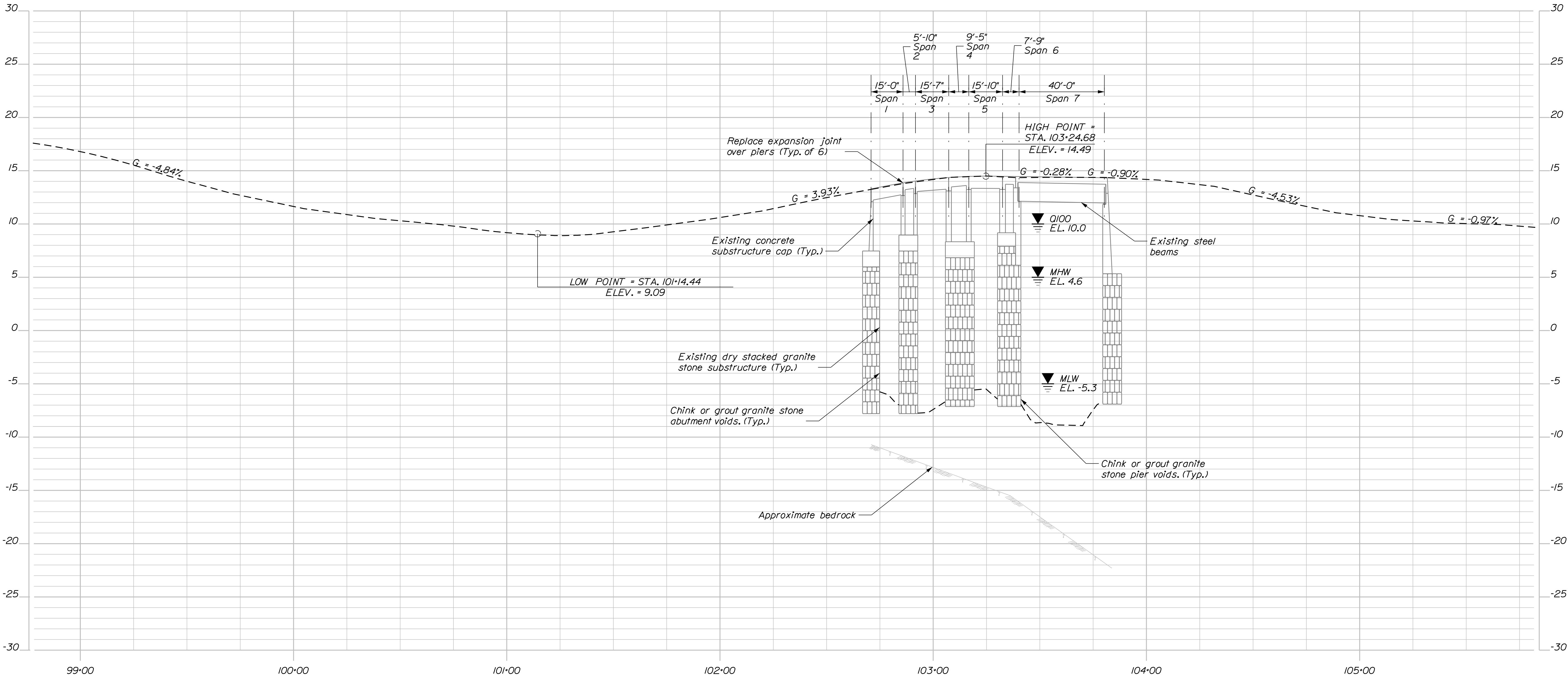
a. If a Lump Sum pay item is eliminated, the requirements of Standard Specifications Section 109.2, Elimination of Items, will take precedence.

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.

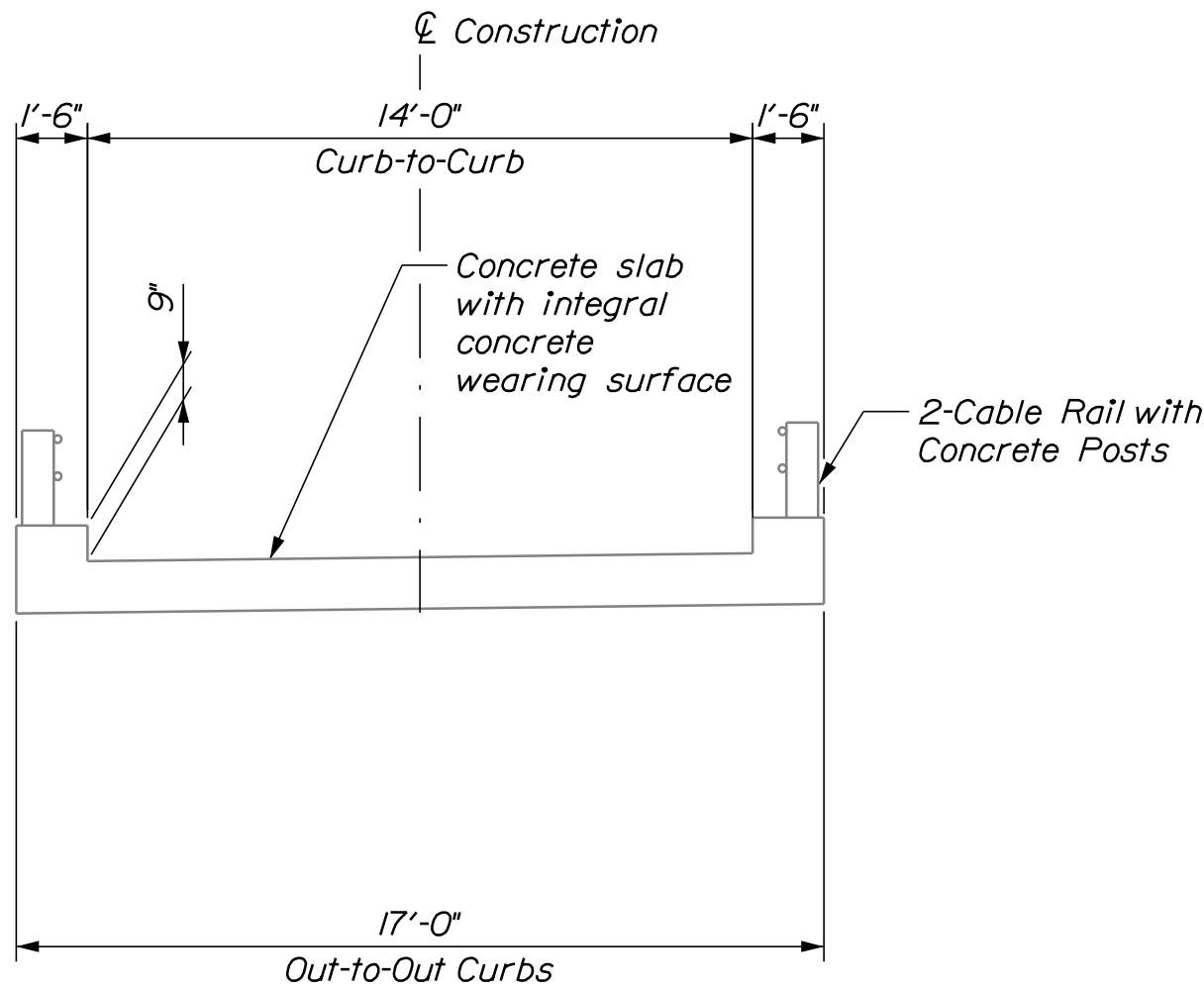
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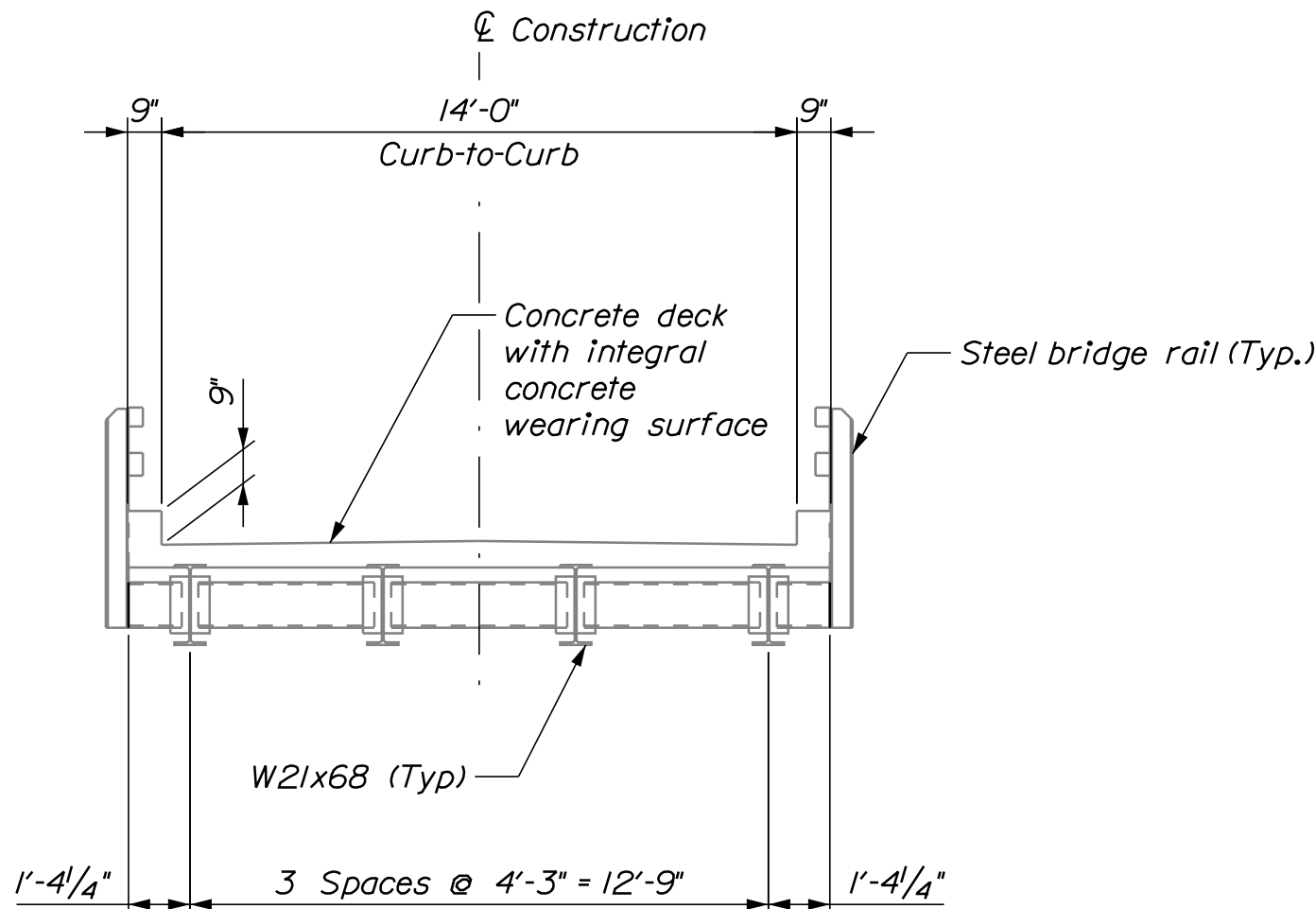


PROJ. MANAGER	BY	DATE	SIGNATURE
Joel Kirtledge	P. Lusitani	8/2019	
CHECKED-REVIEWED	P. Lusitani	8/2019	
DESIGNED-DETAILED			
DESIGNED-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

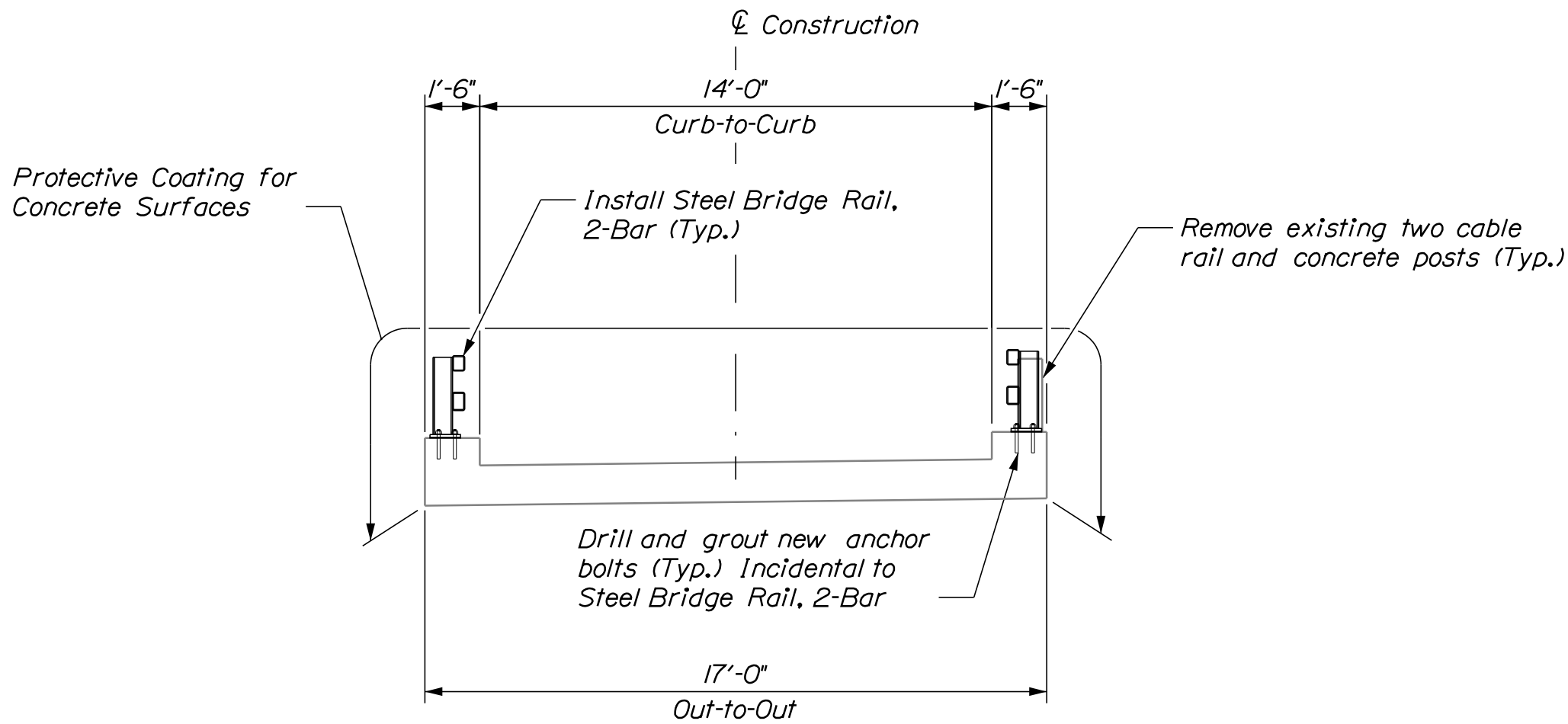
LANE'S ISLAND BRIDGE CARVERS HARBOR VINALHAVEN	KNOX COUNTY PROFILE
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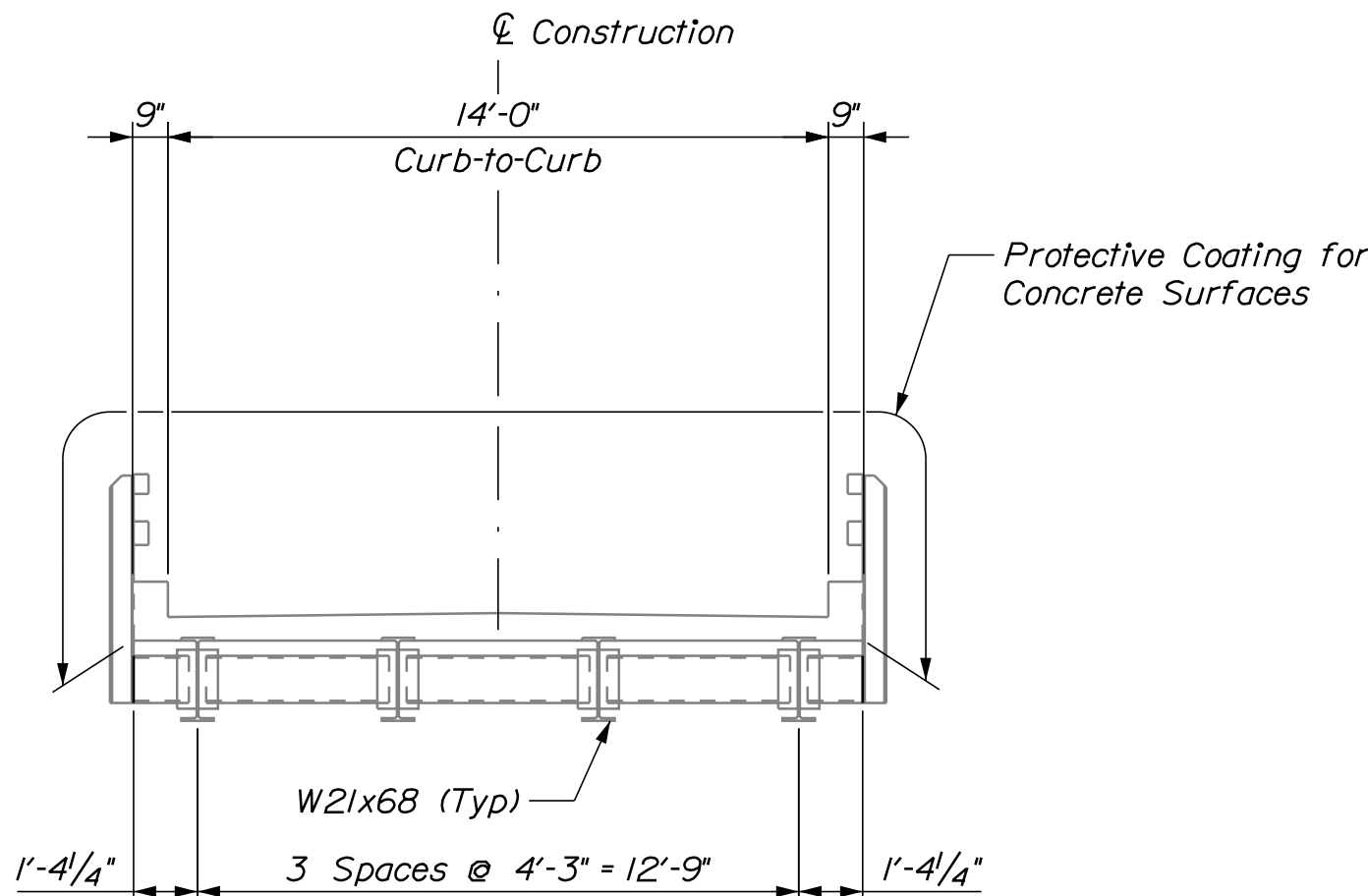
EXISTING BRIDGE SECTION: CONCRETE SLAB



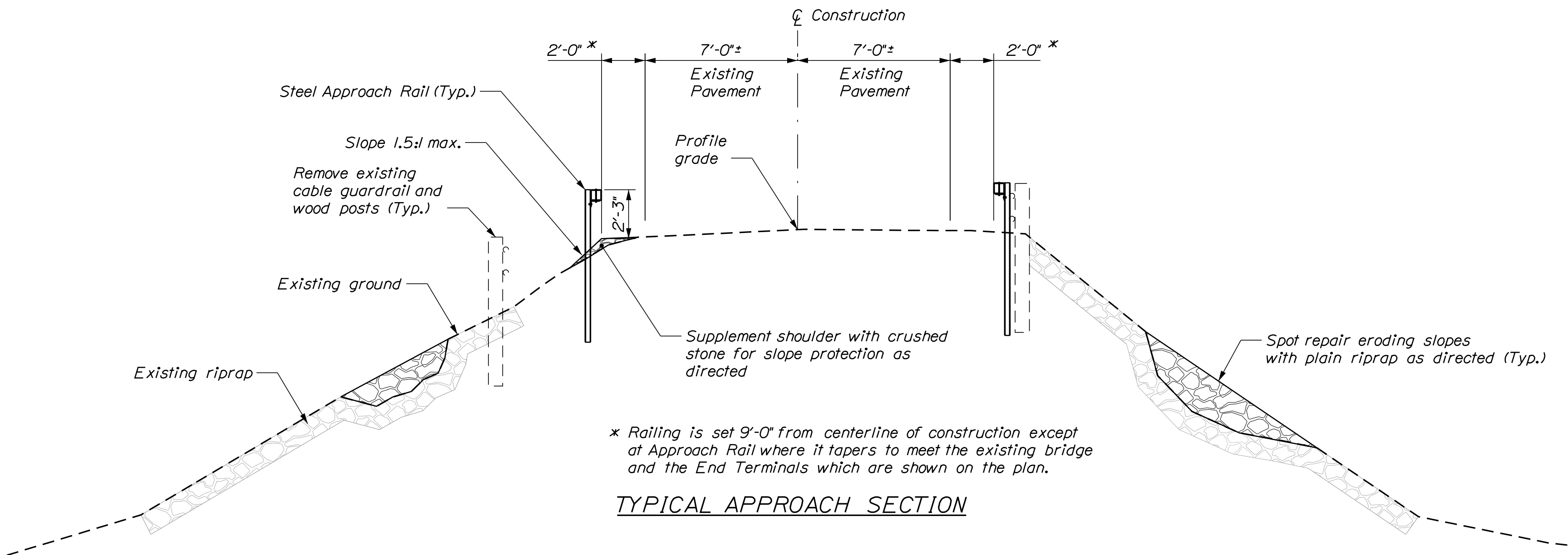
EXISTING BRIDGE SECTION: STEEL BEAMS



PROPOSED BRIDGE SECTION: CONCRETE SLAB



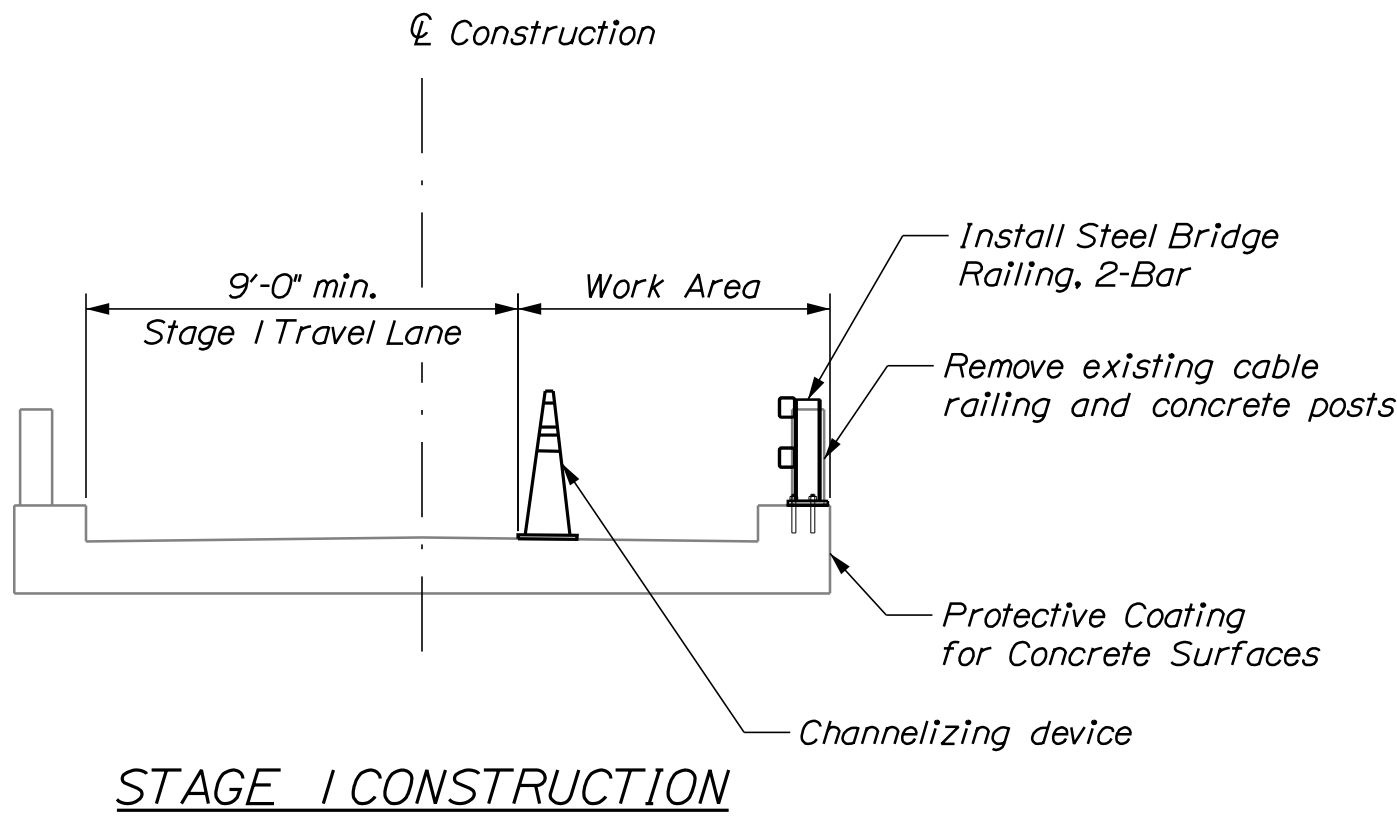
PROPOSED BRIDGE SECTION: STEEL BEAMS



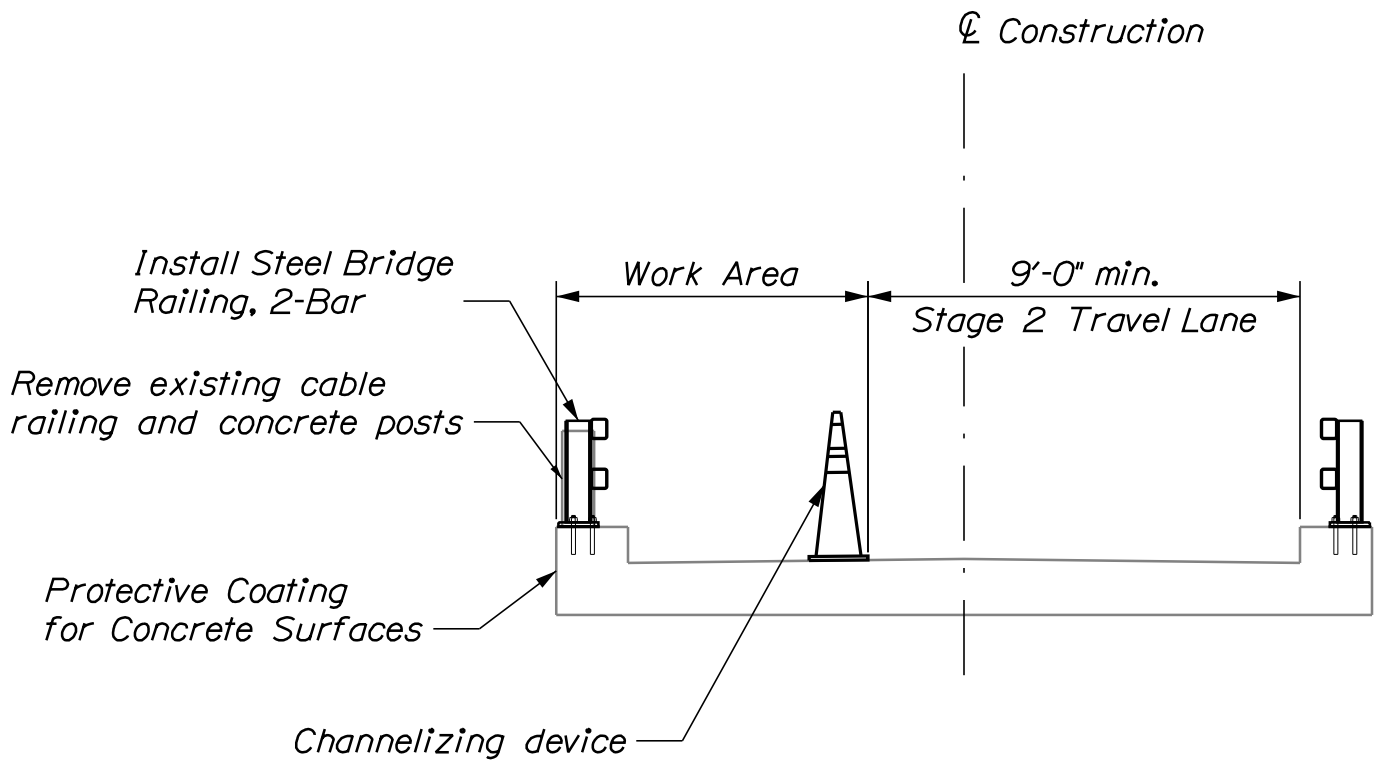
* Railing is set 9'-0" from centerline of construction except at Approach Rail where it tapers to meet the existing bridge and the End Terminals which are shown on the plan.

TYPICAL APPROACH SECTION

LANE'S ISLAND BRIDGE CARVERS HARBOR VINALHAVEN					KNOX COUNTY		STATE OF MAINE DEPARTMENT OF TRANSPORTATION							
TYPICAL SECTIONS					PROJ. MANAGER	Joel Kiltredge	BY	DATE						
					DESIGN-DETAILED	C. Omsimon	P. Lusitani	8/2019						
					CHECKED-REVIEWED	P. Lusitani	P. Perkins	8/2019						
					DESIGN2-DETAILED2									
					DESIGN3-DETAILED3									
					REVISIONS 1			P.E. NUMBER						
					REVISIONS 2									
					REVISIONS 3									
					REVISIONS 4			DATE						
					FIELD CHANGES									
SHEET NUMBER					BRIDGE NO. 5270				WIN		021707.00		BRIDGE PLANS	
5														
OF 14														



STAGE 1 CONSTRUCTION



STAGE 2 CONSTRUCTION

STAGED CONSTRUCTION NOTES

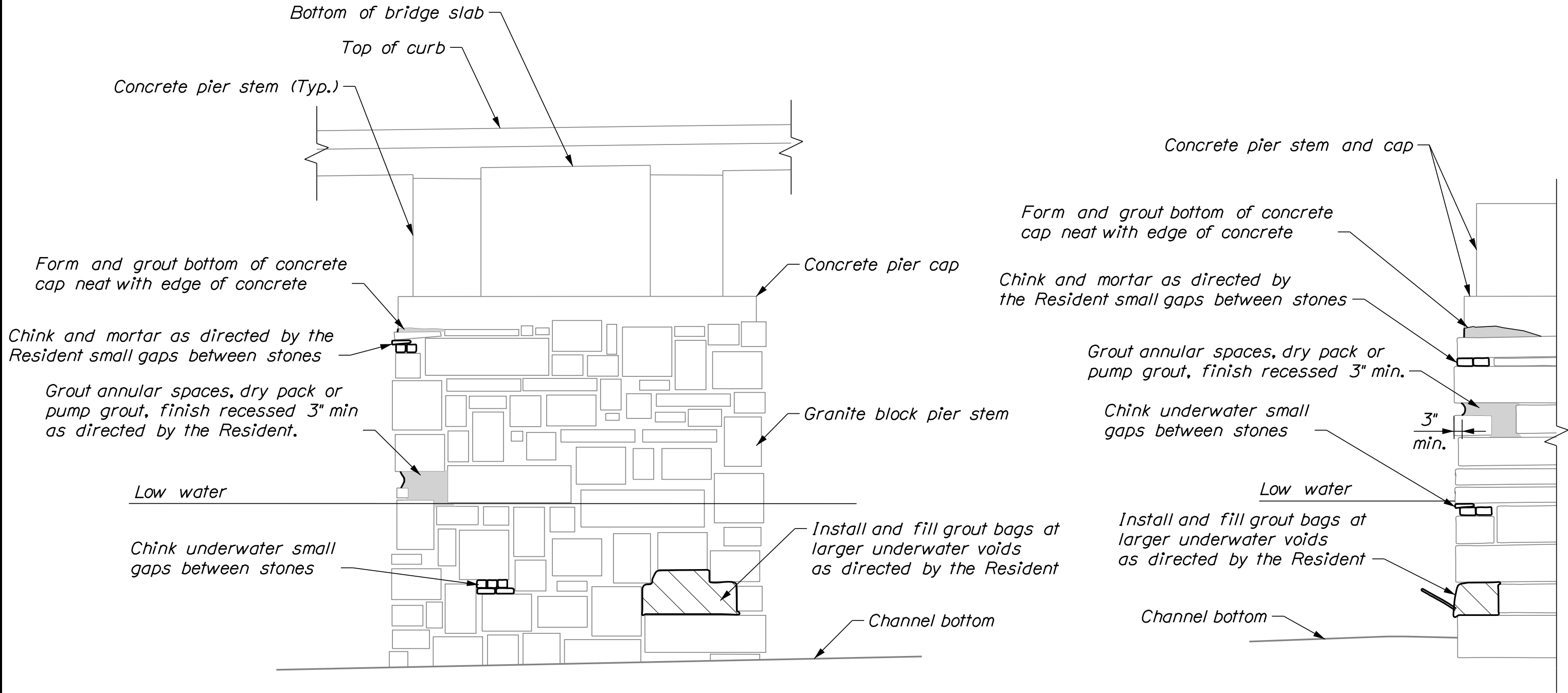
Intact existing bridge rail or complete and accepted new bridge rail are required at all times that traffic is maintained on the bridge.

Stage 1 - Establish one 9'-0" travel lane for alternating traffic on the west side. Install new rail posts. Remove existing cable rail and concrete posts on spans 1-6. Install new rails. Apply Protective Coating for Concrete Surfaces.

Stage 2 - Establish one 9'-0" travel lane for alternating traffic on the east side. Install new rail posts. Remove existing cable rail and concrete posts on spans 1-6. Install new rails. Apply Protective Coating for Concrete Surfaces.

Stage 3 - Close bridge to traffic and install the Protective Coating for Concrete Surfaces on the deck and to install the bridge joints.

LANE'S ISLAND BRIDGE CARVERS HARBOR VINALHAVEN KNOX COUNTY					STATE OF MAINE DEPARTMENT OF TRANSPORTATION		
STAGED CONSTRUCTION					DESIGN-DETAILED	BY	DATE
					CHECKED-REVIEWED	C. Omsmon P. Lusiani	8/2019
					DESIGN2-DETAILED2	P. Perkins	8/2019
					DESIGN3-DETAILED3		
					REVISIONS 1		P.E. NUMBER
					REVISIONS 2		
					REVISIONS 3		
					REVISIONS 4		DATE
					FIELD CHANGES		
SHEET NUMBER					BRIDGE NO. 5270		
6					WIN 021707.00		
OF 14					BRIDGE PLANS		



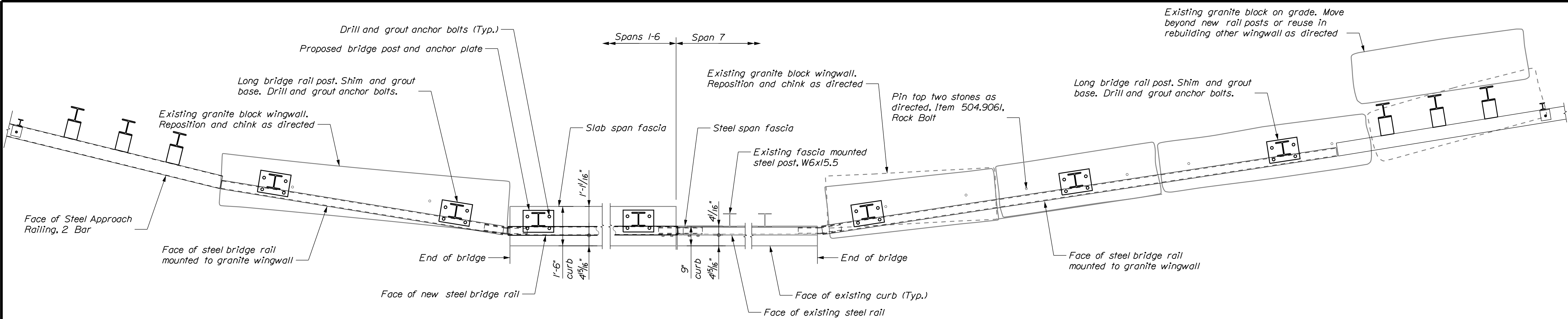
PIER ELEVATION
 NOT TO SCALE

PIER SECTION
 NOT TO SCALE

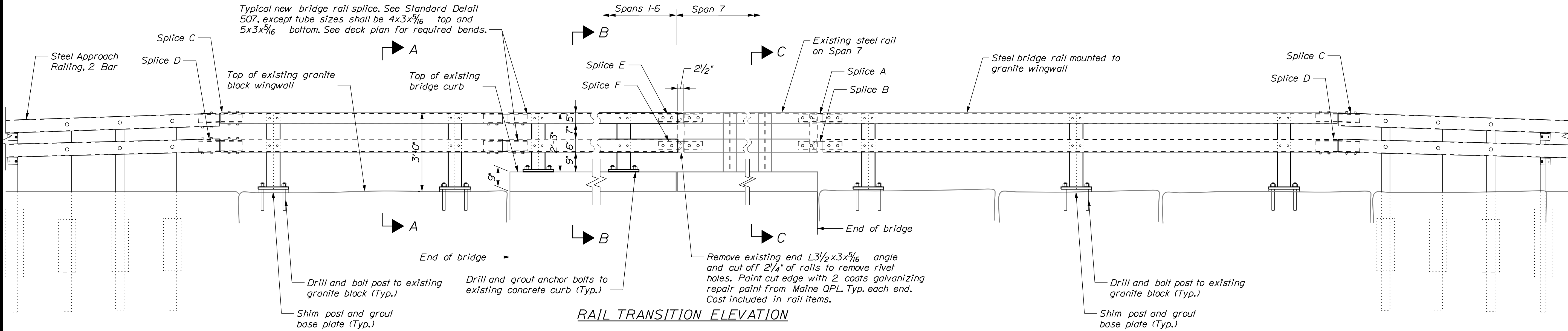
NOTES

- Locations of stone and grout work shall be as directed by the Resident. Contractor shall provide access to the granite stonework for the Resident to assess the locations of work.
- Grout shall be colored black as possible by the addition of cement dye.
- Annular Space Grouting will be used to fill deeper or larger voids above water. Methods to fill voids may include dry packing or pumping grout through a tube.
- Care shall be taken to not drip, leak or spill grout on the exposed faces of the granite. Completion of the project without negatively impacting the aesthetics of the existing granite, as approved by the Resident, will be considered incidental to the contract. No separate payments will be made.
- Repositioning and chinking of granite stones will be paid for under Item 629.07, Stone Mason and 629.05, Hand Labor, Straight Time.
- Stones used to fill voids shall be similar in color to the existing granite. Stones preferably shall be obtained from the quarries on Vinalhaven.

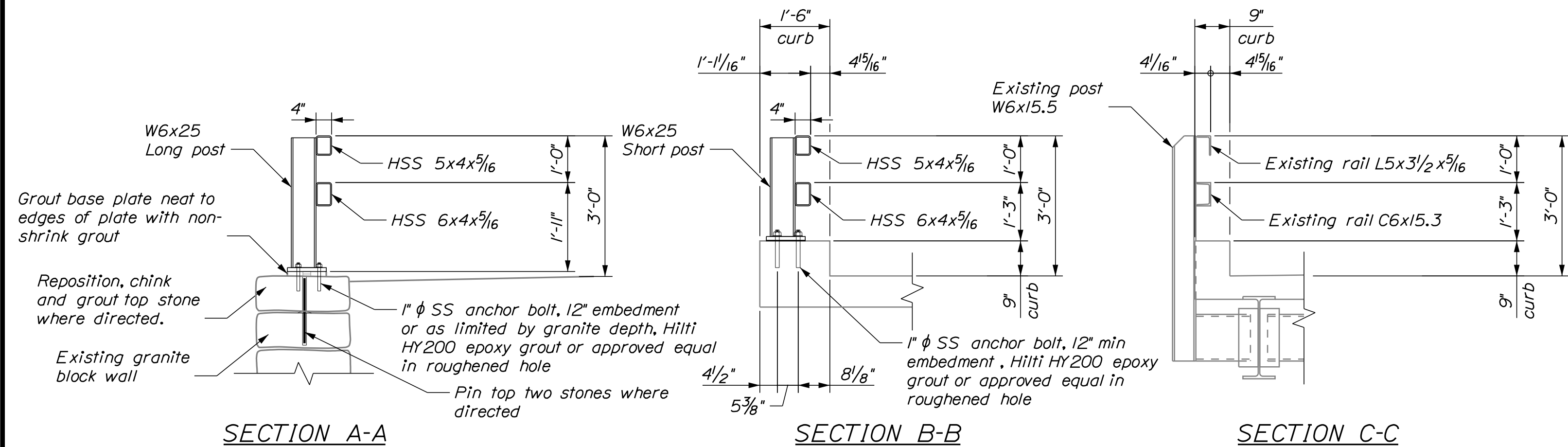
LANE'S ISLAND BRIDGE CARVERS HARBOR VINALHAVEN		STATE OF MAINE DEPARTMENT OF TRANSPORTATION		021707.00		WIN 021707.00		BRIDGE NO. 5270 BRIDGE PLANS	
		KNOX COUNTY		SUBSTRUCTURE DETAILS		SHEET NUMBER		7 OF 14	
		PROJ. MANAGER	Joel Kittredge	BY	DATE	SIGNATURE P.E. NUMBER DATE			
		DESIGN-DETAILED	C. Orosmon	P. Lusitani	8/2019				
		CHECKED-REVIEWED	P. Lusitani	P. Perkins	8/2019				
		DESIGN-DETAILED							
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		REVISIONS 4							
		FIELD CHANGES							



RAIL TRANSITION PLAN



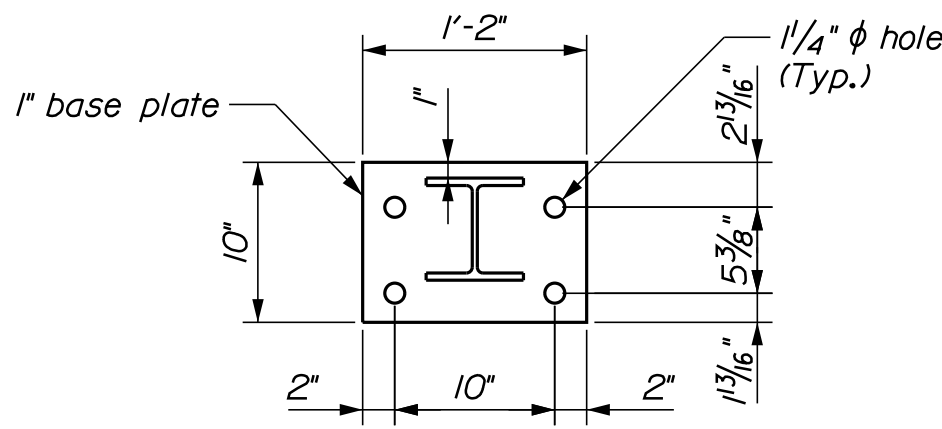
RAIL TRANSITION ELEVATION



SECTION A-A

SECTION B-B

SECTION C-C

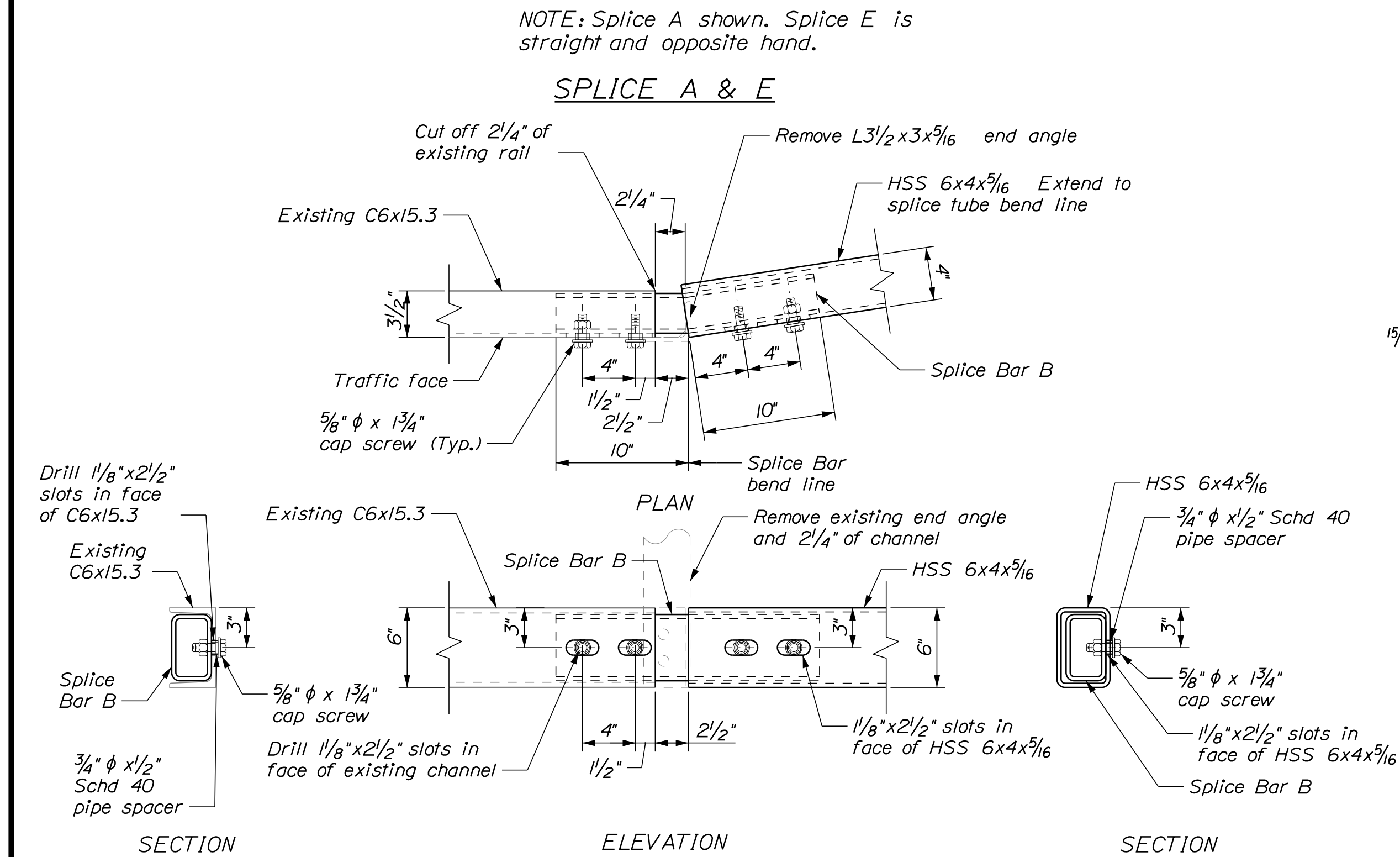


RAIL POST BASE PLATE

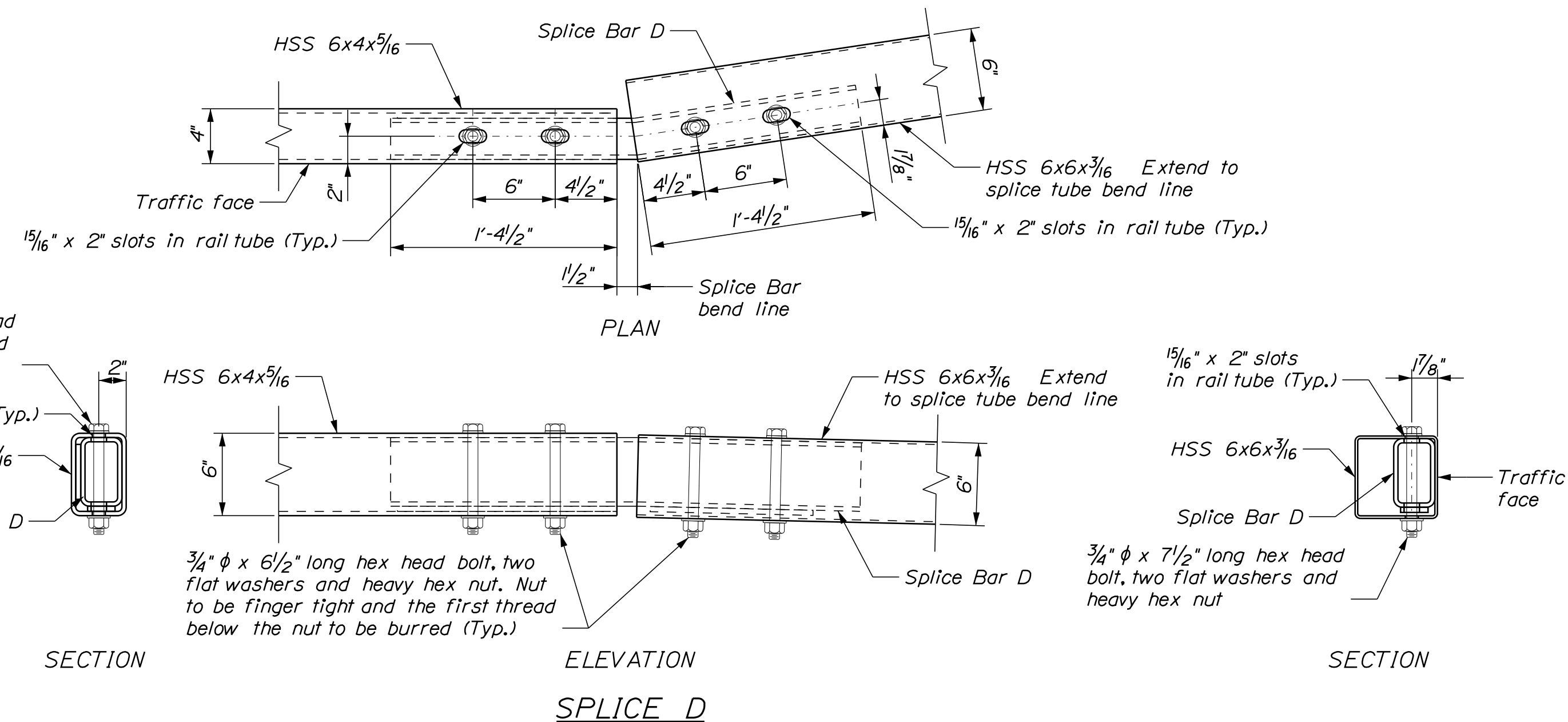
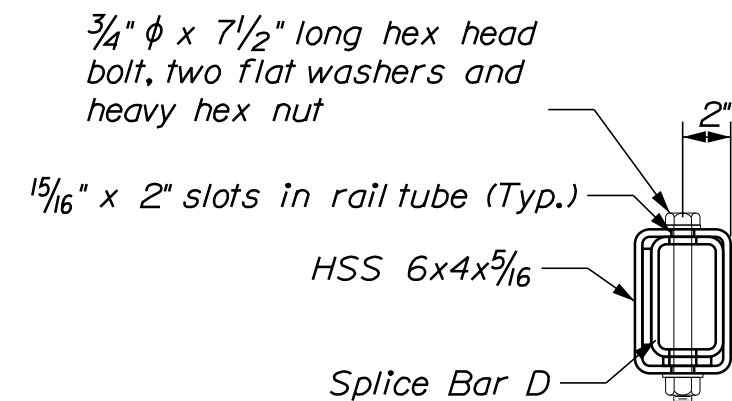
BRIDGE RAIL NOTES

1. For additional information not shown see Standard Detail 507.
2. Rail shall be in conformance with Standard Specification 507 except as shown in the plans.
3. For "Splice A" thru "Splice F", see Bridge Rail Details.
4. The base plates shall be perpendicular to the post unless otherwise noted.
5. Tubular steel rails, rail tube splice assemblies, bolts, nuts, lock washers, and plain flat washers shall be paid for under the railing items.
6. Payment for all work related to shimming and grouting base plates, anchor rods, drilling holes, epoxy, nuts, and washers, shall be considered incidental to related Contract Pay Items.
7. All anchor rods shall be set so they do not protrude more than 1" above the nuts. the first three threads above the nut shall be damaged as ordered by the Resident.
8. Unless covered by other specifications, all dimensions related to the fabrication of the steel railing shall have a tolerance of 1/16 inch.
9. All steel shall be galvanized after welding in accordance with ASTM A123
10. Except as noted, all bolts to be torqued snug tight (approximately 100 ft.-lbs.).

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		021707.00		WIN		021707.00		BRIDGE NO. 5270		BRIDGE PLANS	
LANE'S ISLAND BRIDGE		CARVERS HARBOR		KNOX COUNTY		VINALHAVEN		BRIDGE RAIL		SHEET NUMBER		9	
PROJ. MANAGER		BY		DATE		SIGNATURE		P.E. NUMBER		DATE			
DESIGN-DETAILED		C. Orosmon		8/2019									
CHECKED-REVIEWED		P. Perkins		8/2019									
DESIGN-DETAILED													
REVISIONS 1													
REVISIONS 2													
REVISIONS 3													
REVISIONS 4													
FIELD CHANGES													



SPLICE A & E



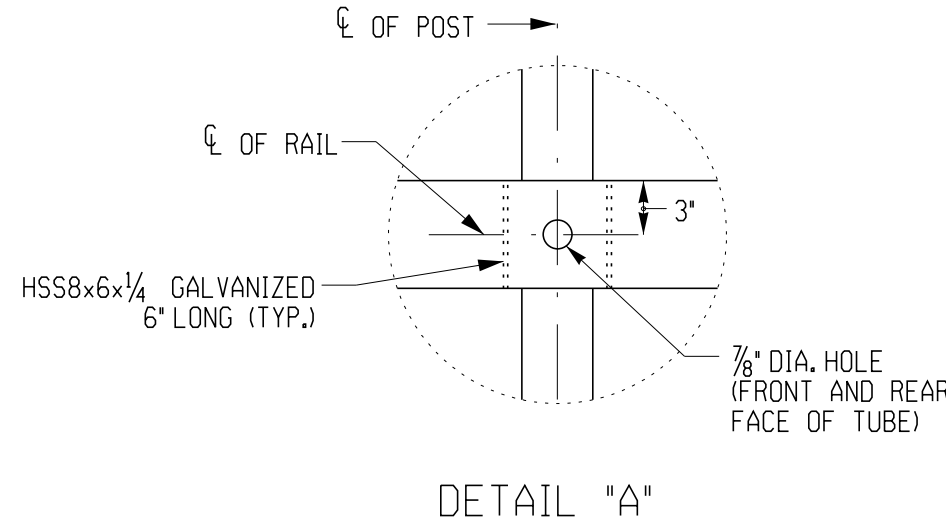
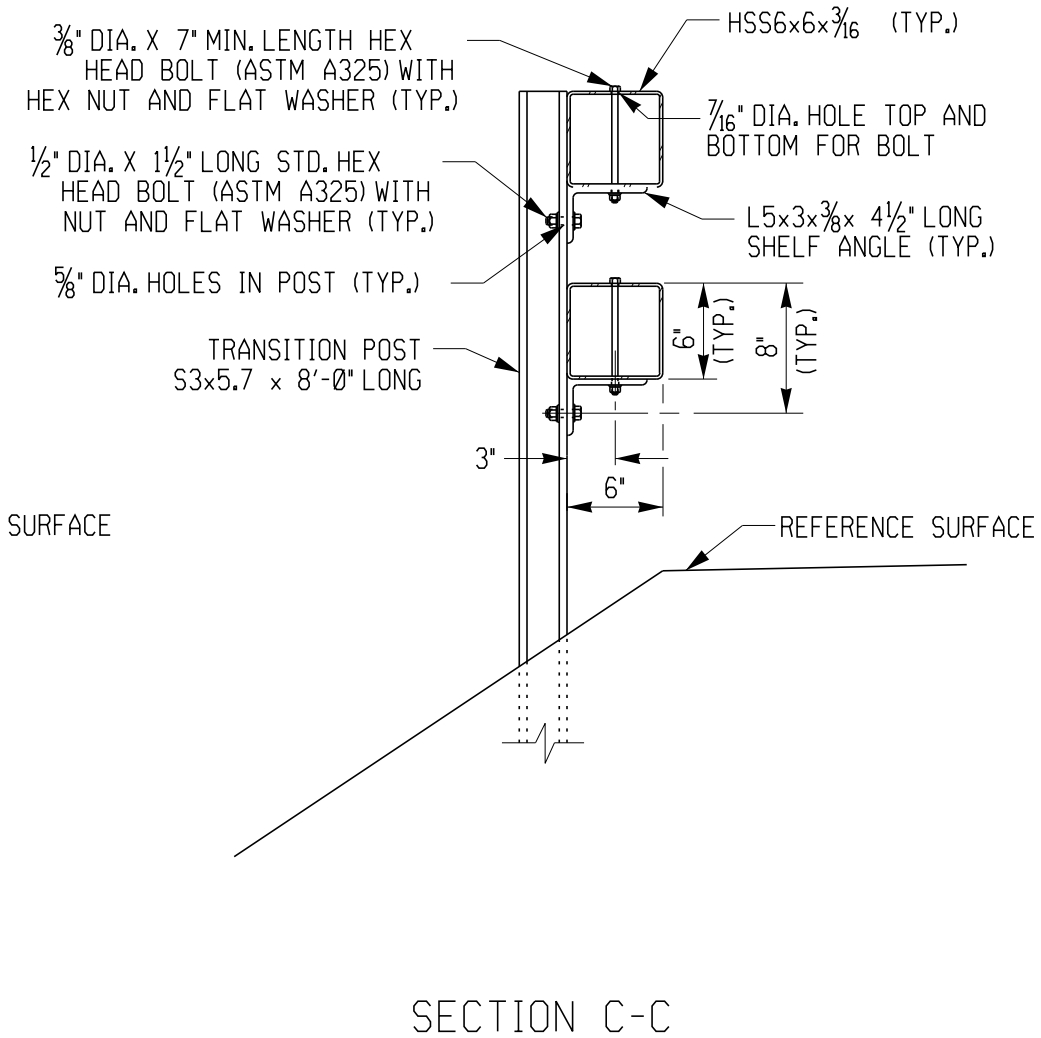
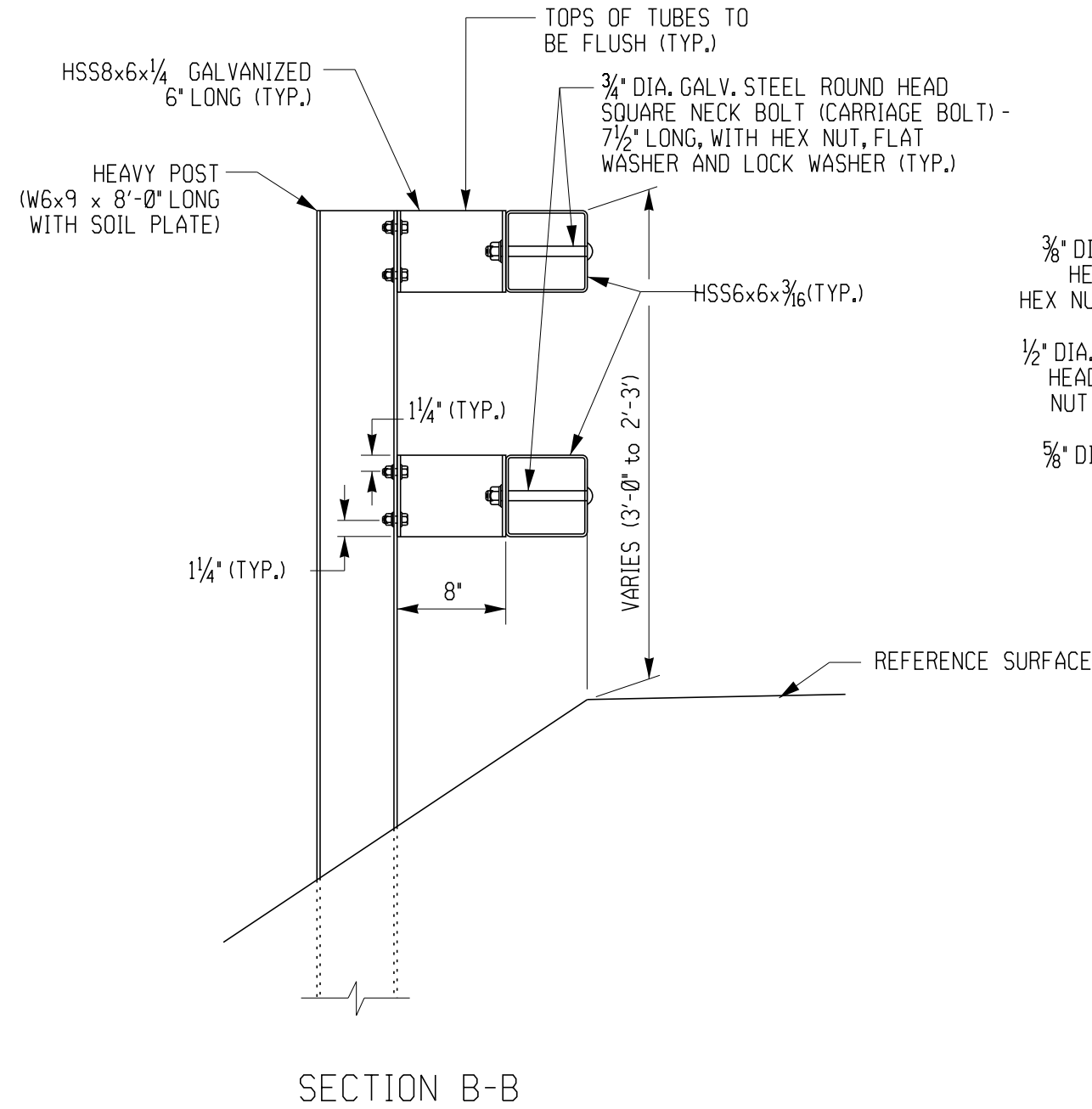
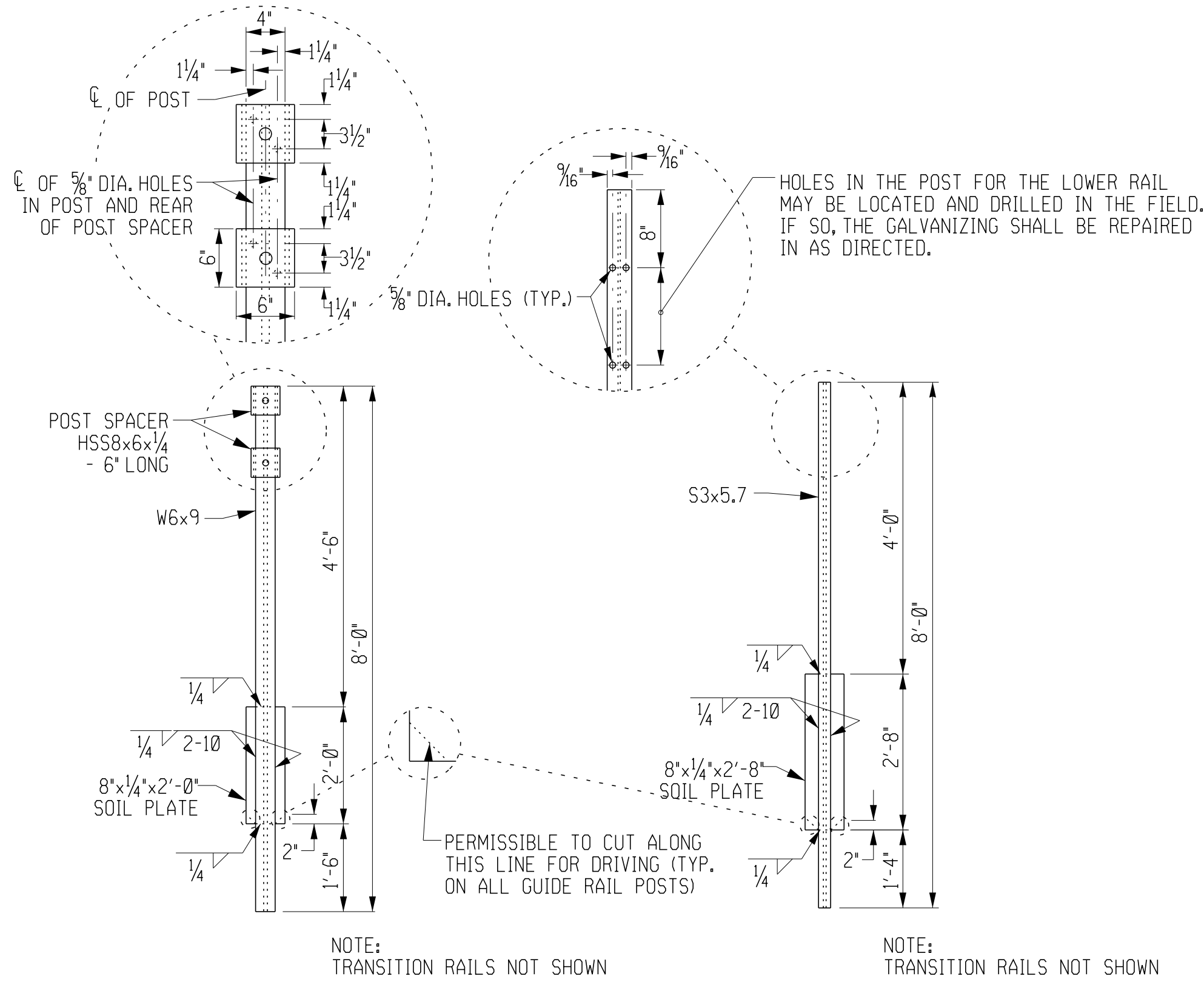
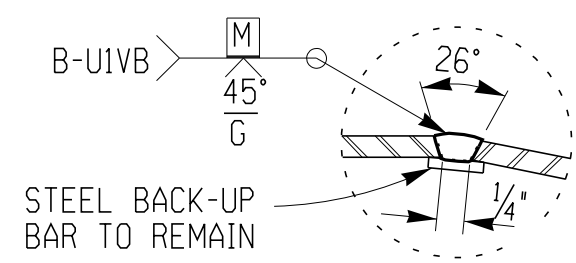
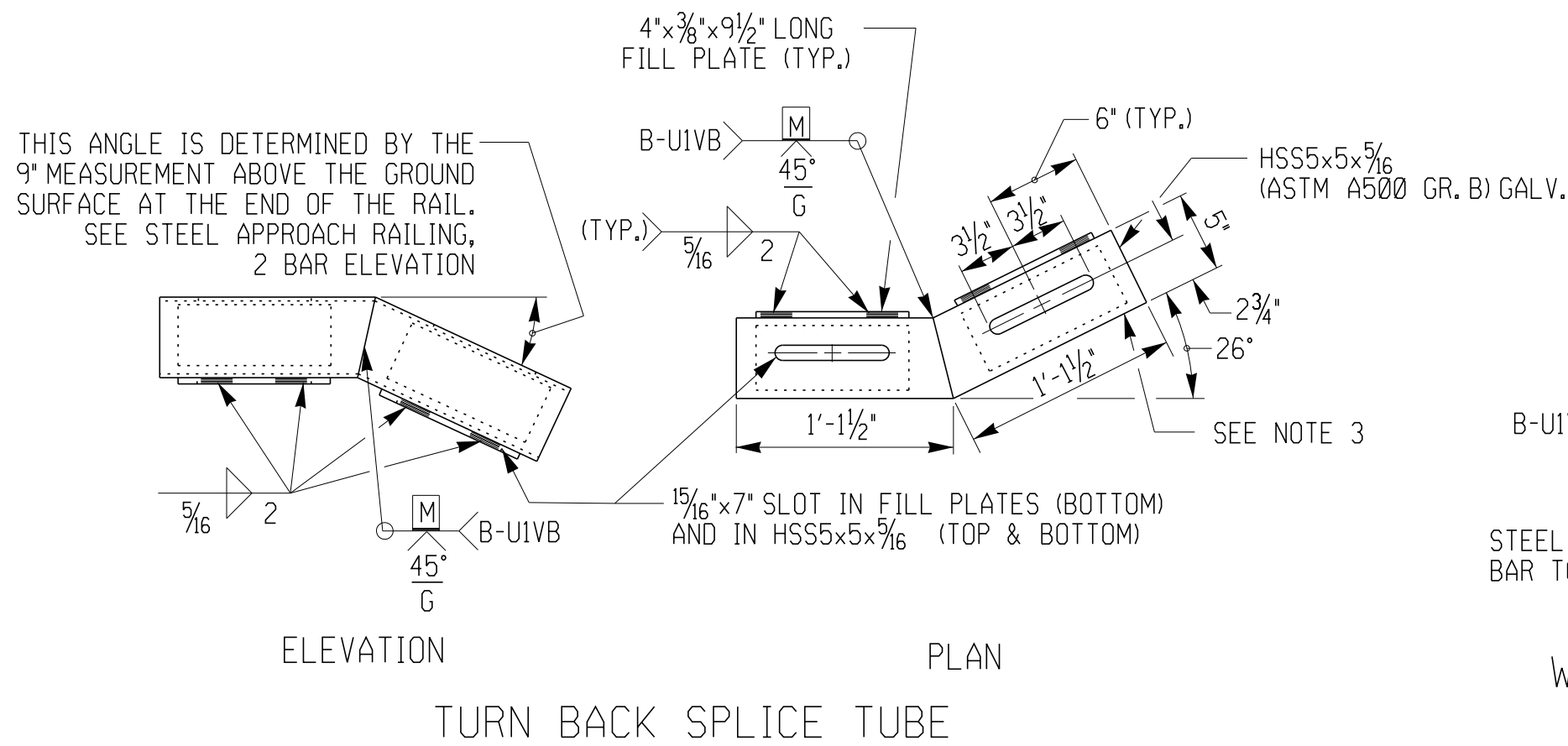
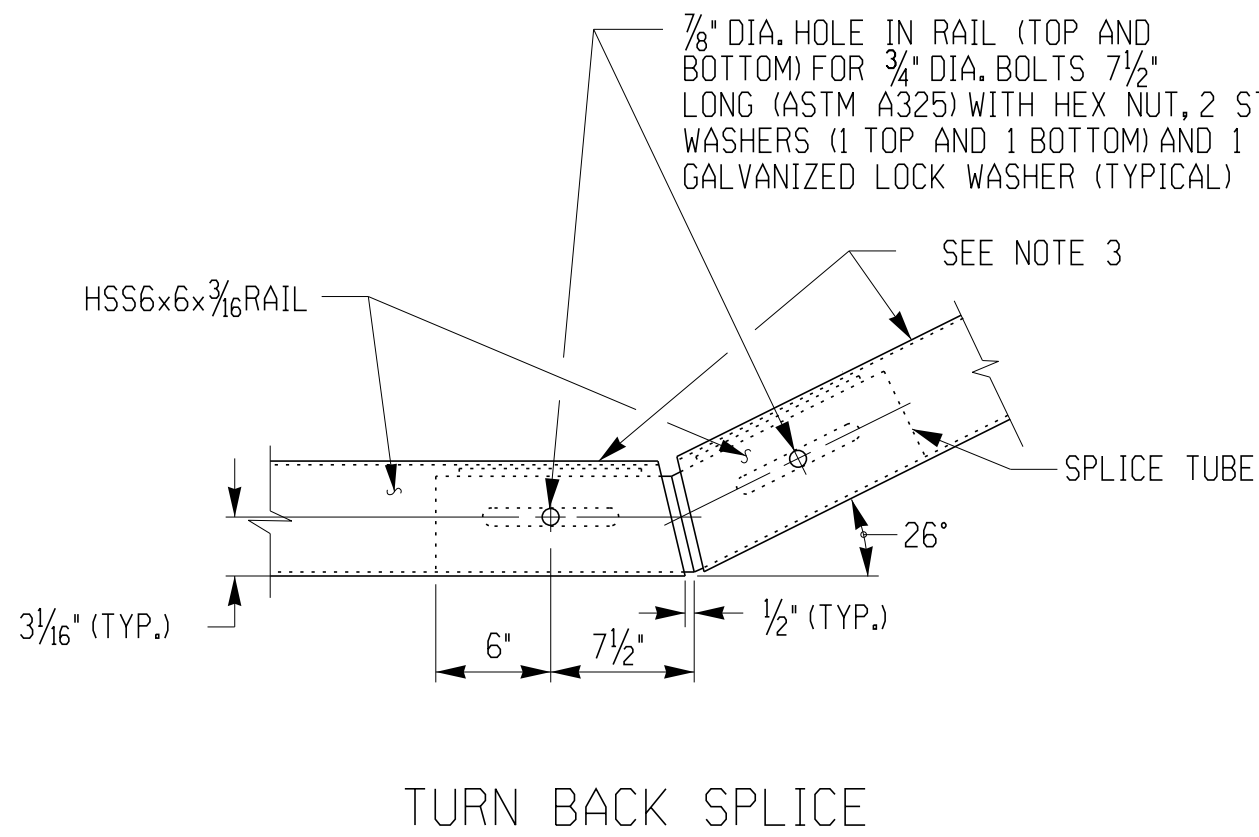
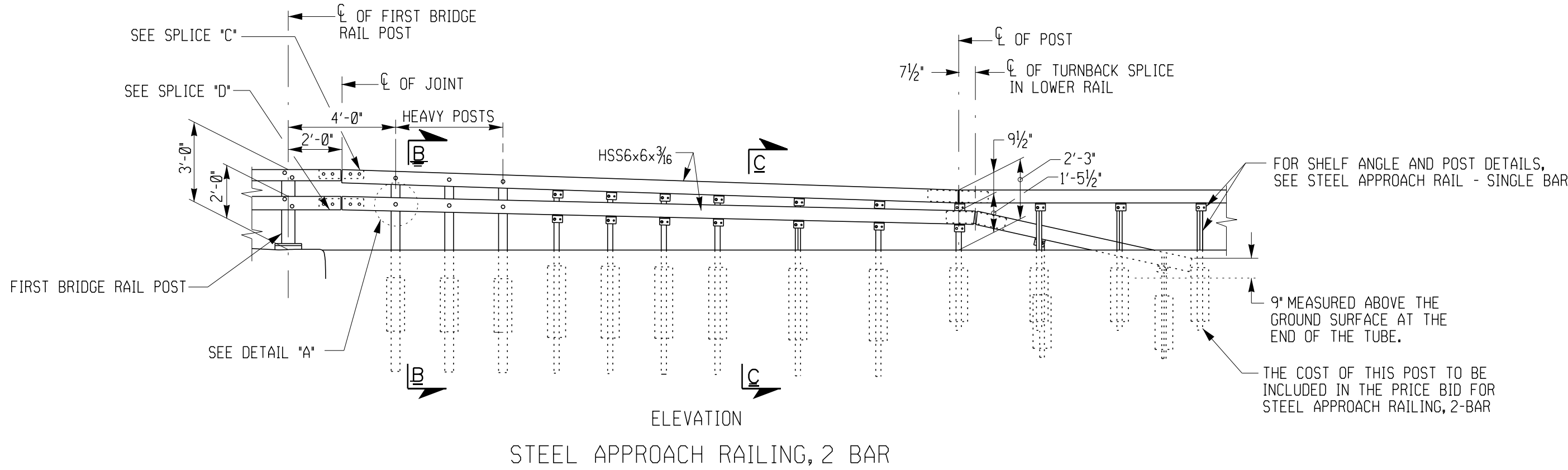
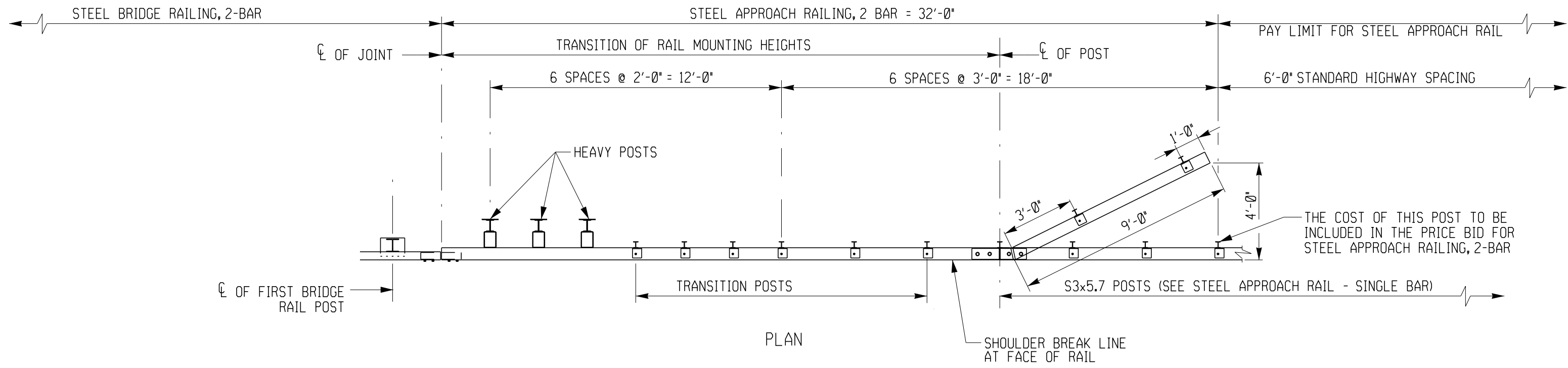
1. For location of "Splice A" thru "Splice F", see sheet 9.
2. Top and traffic face of rails shall be flush as practicable.
3. Protrusions caused by welding or galvanizing are not permitted on the inside walls of the rail tubes or on the outside of the splice tubes.

Date:8/19/2019

Username: 1151

Division: HIGHWAY

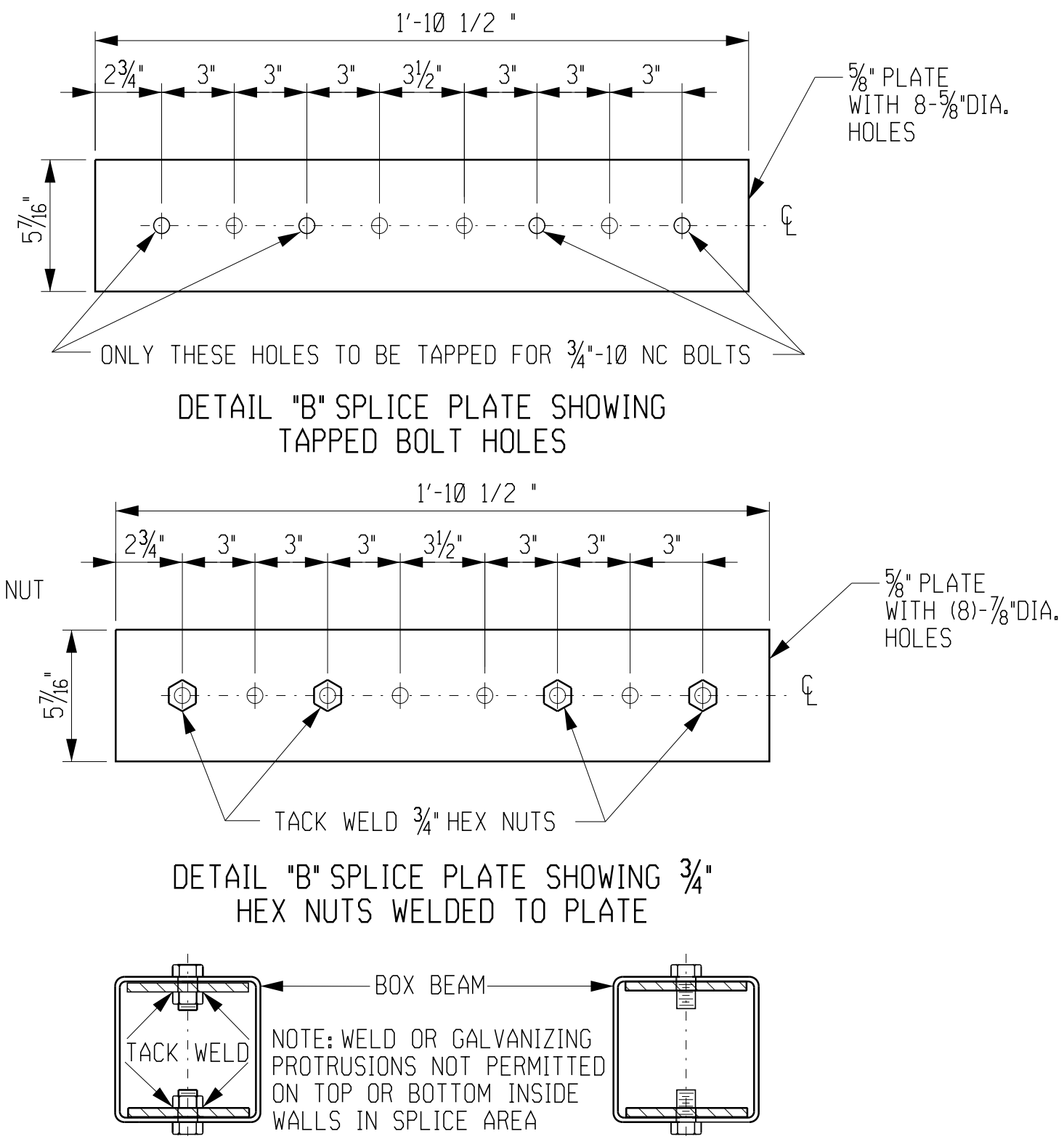
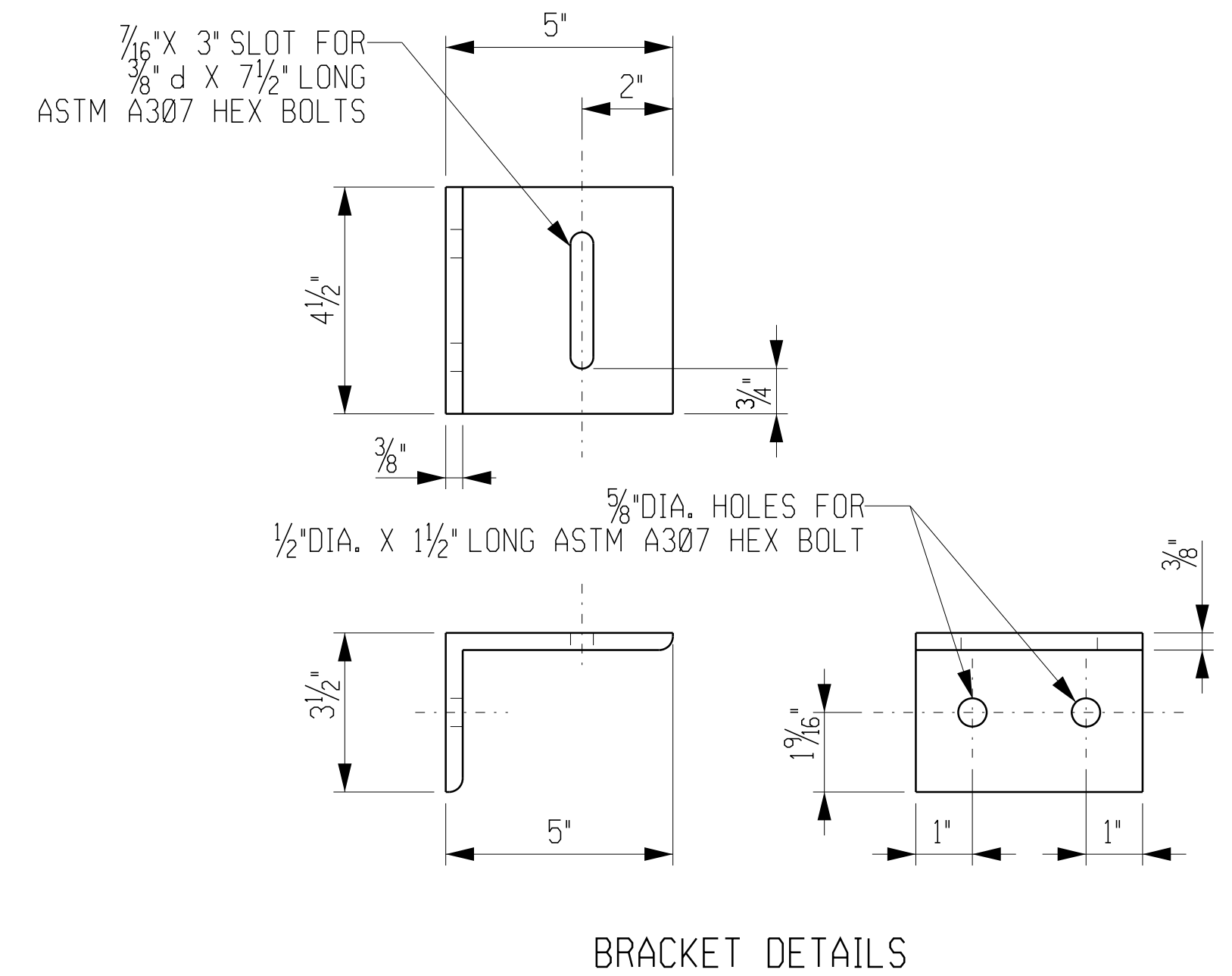
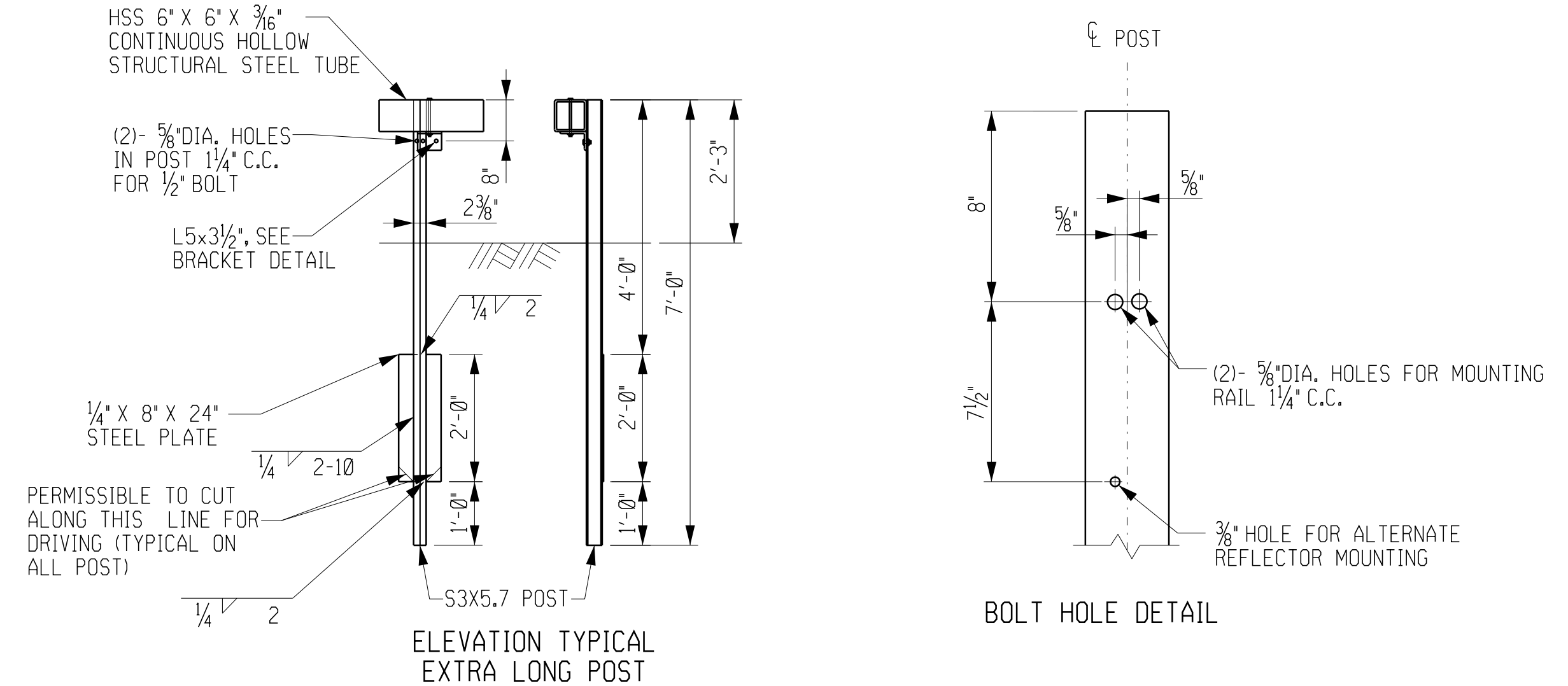
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NOTES

1. FOR "SPlice C" AND "SPlice D," SEE BRIDGE RAIL DETAILS.
2. FOR ADDITIONAL NOTES SEE BRIDGE RAIL.
3. PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE INSIDE WALLS OF THE RAIL TUBES OR OUTSIDE OF THE SPLICE TUBES.

LANE'S ISLAND BRIDGE CARVERS HARBOR VINALHAVEN					KNOX COUNTY					STATE OF MAINE DEPARTMENT OF TRANSPORTATION	
STEEL APPROACH RAILING, 2 BAR										021707.00	
SHEET NUMBER					12					WIN	
OF 14					BRIDGE NO. 5270					021707.00	
BRIDGE PLANS											
PROJ. MANAGER					BY					DATE	
Joel Kittredge					P. Lusitani					8/2019	
DESIGN-DETAILED					C. Orosmon					SIGNATURE	
CHECKED-REVIEWED					P. Perkins					8/2019	
DESIGN2-DETAILED2											
DESIGN3-DETAILED3											
REVISIONS 1										P.E. NUMBER	
REVISIONS 2											
REVISIONS 3											
REVISIONS 4										DATE	
FIELD CHANGES											



- GENERAL NOTES:
1. POST SPACING SHALL BE 6'-0". POSTS ARE CONNECTED TO RAIL AT 6'-0" SPACING UNLESS NOTED OTHERWISE.
 2. SEE DETAILS FOR POST SPACING AT END TERMINAL AND STEEL APPROACH RAILING, 2 BAR.
 3. THE LINE OF STEEL APPROACH RAIL, WHEN COMPLETED, SHALL PRESENT A SMOOTH AND PLEASING GRADE LINE IN BOTH HORIZONTAL AND VERTICAL PLANES. RAIL WITH RADIUS OF 720'-0" OR LESS SHALL BE SHOP WORKED TO THE REQUIRED CURVATURE. PAYMENT FOR SUCH CURVED LENGTHS SHALL BE MADE UNDER THE APPROPRIATE ITEM.
 4. THE RAIL MOUNTING HEIGHT OF ALL GUIDE RAIL SHALL BE MEASURED FROM THE GROUND SURFACE UNDER THE FACE OF THE RAIL.

