

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



SPECIFICATIONS

2020 MaineDOT Standard Specifications with Updates, the 2014 MaineDOT Standard Details with Updates, and the MaineDOT Maintenance Manual.

TRAFFIC DATA

Current (2019) AADT Br#1463 & #5783 1,421
Current (2019) AADT Br#5784..... 309

MATERIALS

Structural Steel:
Rail Posts ASTM A 500, Grade C
All Material (except as noted)..... ASTM A 709, Grade 50
High Strength Bolts, Unless Noted Otherwise..... ASTM A325 or A449
Galvanized, ASTM 153
Hex Nuts and Heavy Hex Nuts..... Galvanized, ASTM A153

BASIC DESIGN STRESSES

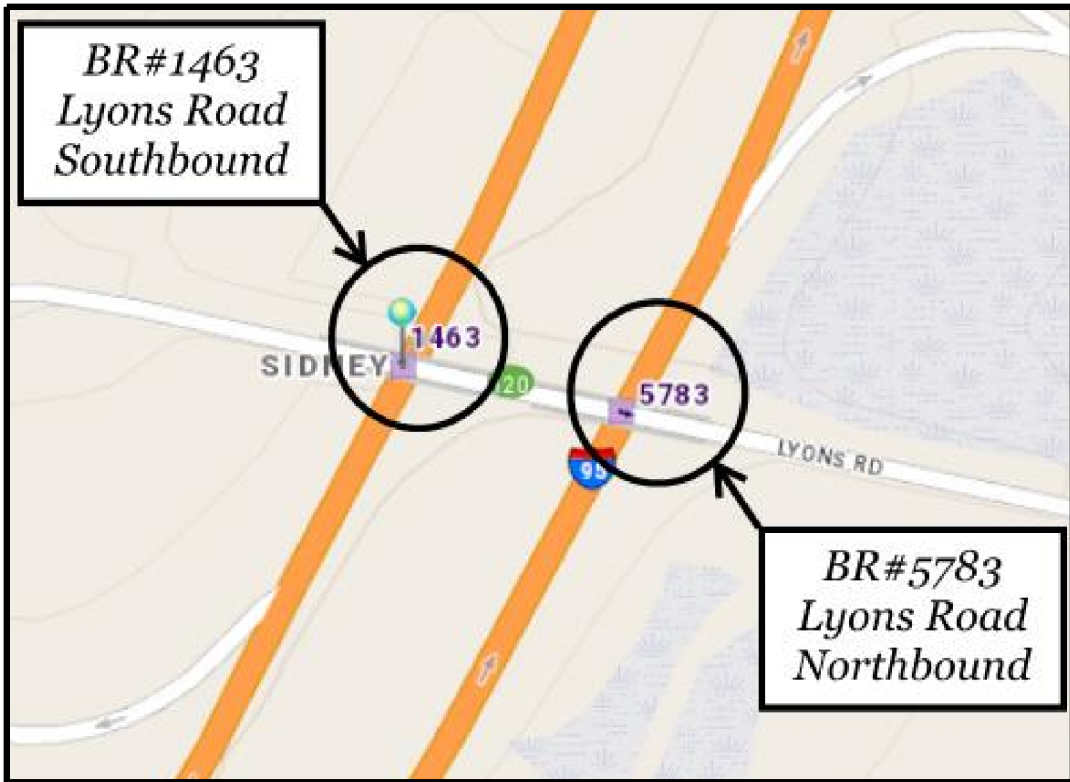
Structural Steel:
ASTM A 709, Grade 50..... F y = 50,000 psi
ASTM A 709, Grade 36..... F y = 36,000 psi
ASTM A449 or A325..... F μ = 120,000 psi

LIST OF DRAWINGS

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Bridge Rail Layout Plans.....	2
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BRIDGE RAIL AND POST REPLACEMENT
KENNEBEC COUNTY
LYONS ROAD BRIDGES (BR#1463 & BR#5783)
and
DRUMMOND ROAD BRIDGE (BR#5784)
OVER
INTERSTATE 95
WR#39865
WIN 26379.00

PROJECT LENGTH - Approxomately 0.11 mi. Total



MAINTENANCE OF TRAFFIC

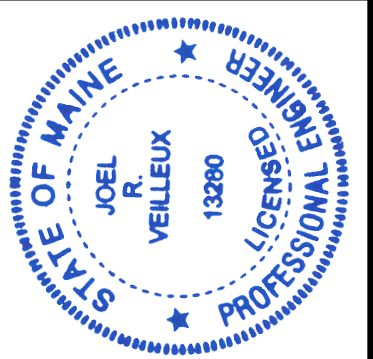
Maintain one 11'-0" minimum wide lane of alternating one - way traffic per MaineDOT Section 652 - Maintenance of Traffic specification.

PROJECT LOCATION	On the Lyons Road and the Drummond Road over I-95 in Sidney BR#1463 & BR#5783 (Lyons Road) ~ Lat./Long. 44°27'11.1" N 69°42'58.3" W BR#5784 (Drummond Road) ~ Lat./Long. 44°28'17.7" N 69°42'25.2" W
PROGRAM AREA	Bridge Maintenance
OUTLINE OF WORK	Replace existing Bridge Rail with new Steel tube and Thrie Beam system.

26379.00 WIN 26379.00

SIDNEY
Lyons Road & Drummond Road

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
COMMISSIONER:		
CHIEF ENGINEER:		



SIGNATURE
JOEL R. VELLEUX
P.E. NUMBER
4/21/2020
DATE

PROJECT INFORMATION	Bridge & Structure Maintenance
PROGRAM	Cy Adams
PROJECT MANAGER	G. Libby
DESIGNER	
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

TITLE SHEET

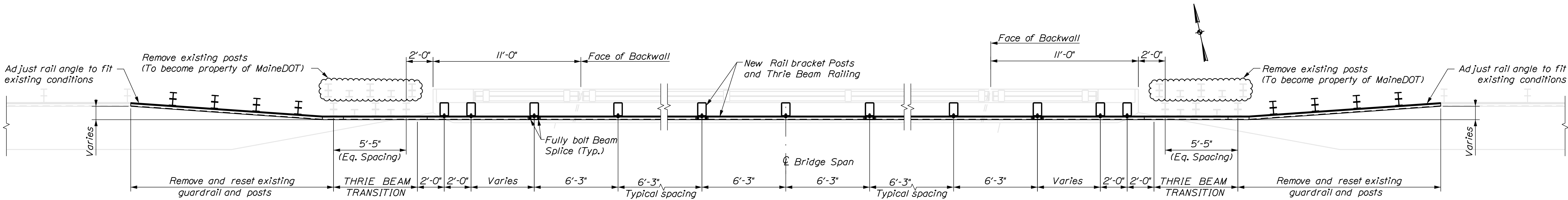
SHEET NUMBER
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OF 5

Date:4/16/2020

Username: common

Division: HIGHWAY

Filename: ... \CADD\002_RailLayout Plans.dgn

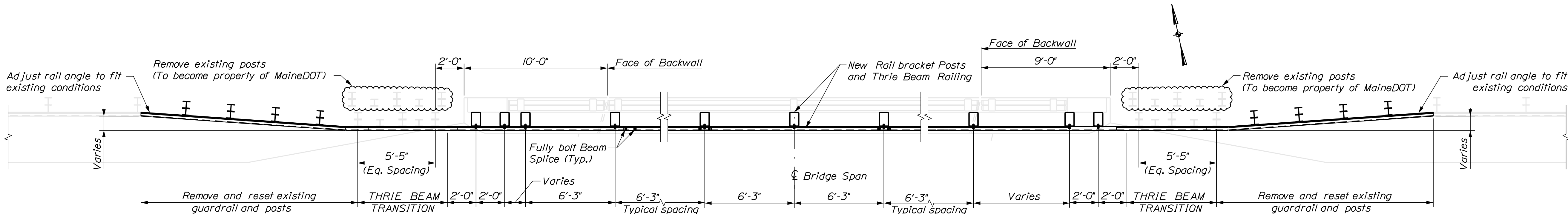


BRIDGE RAIL LAYOUT FOR LYONS ROAD (BR#1463) ~ OVER SOUTHBOUND LANE

(North Side As Detailed; Southern Side ~ Opposite Hand)

NOTES:

1. See 'THRIE BEAM ELEVATION AT CURB FOR BRIDGE #1463' for more information.
2. Refer to 'BRIDGE INFORMATION CHART' for bridge skew, number and location of joints, parapet height and width, and bridge length.
3. Thrie Beam splices shall be bolted with 12 ~ 7/8" ϕ x 3/4" Long Galvanized Bolts as recommended by the manufacturer and as directed by the Project Manager.

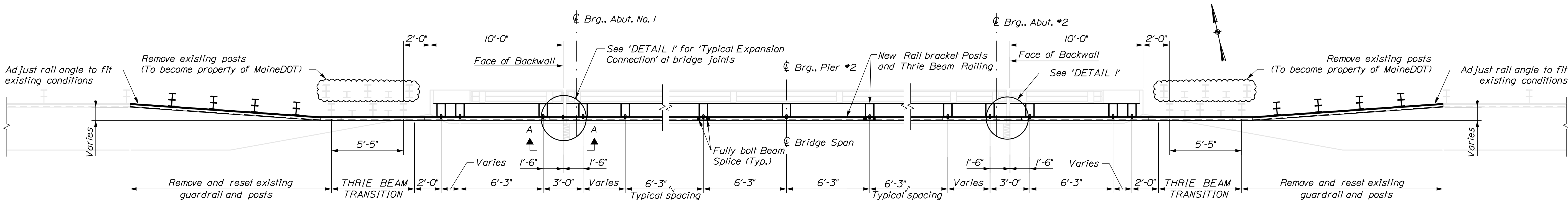


BRIDGE RAIL LAYOUT FOR LYONS ROAD (BR#5783) ~ OVER NORTHBOUND LANE

(North Side As Detailed; South Side ~ Opposite Hand)

NOTES:

1. See 'THRIE BEAM ELEVATION AT CURB FOR BRIDGE #5783' for more information.
2. Refer to 'BRIDGE INFORMATION CHART' for bridge skew, number and location of joints, parapet height and width, and bridge length.
3. Thrie Beam splices shall be bolted with 12 ~ 7/8" ϕ x 3/4" Long Galvanized Bolts as recommended by the manufacturer and as directed by the Project Manager.

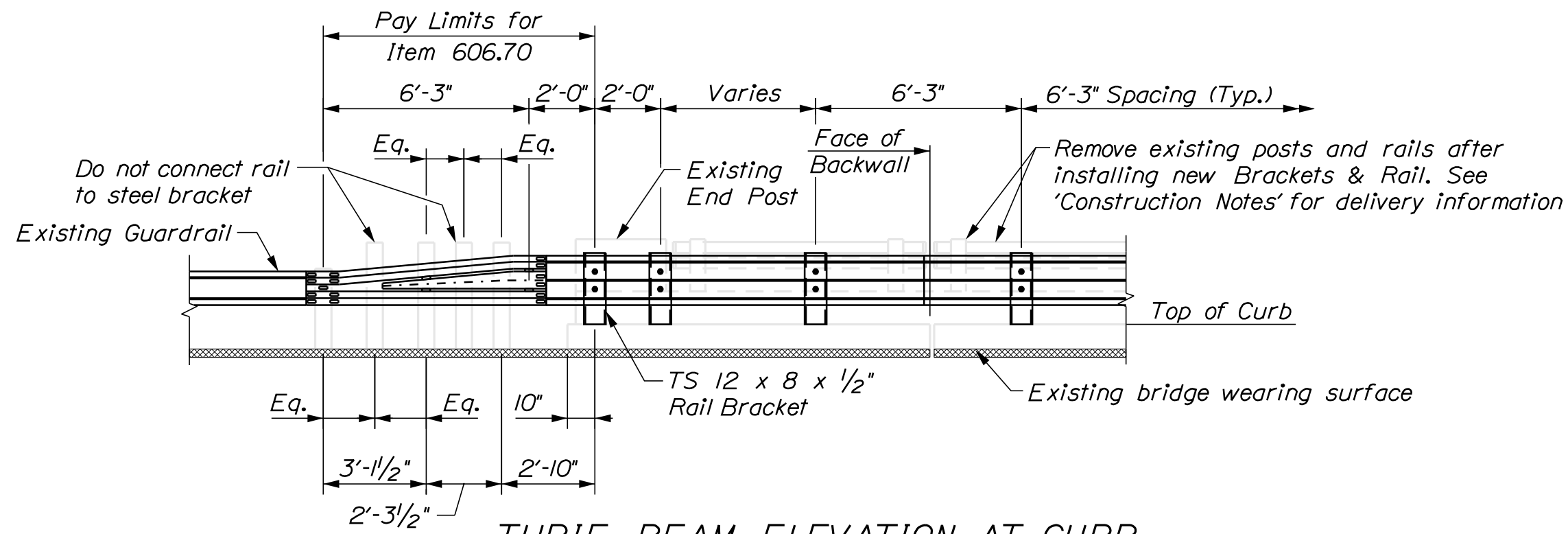


BRIDGE RAIL LAYOUT FOR DRUMMOND ROAD (BR#5784)

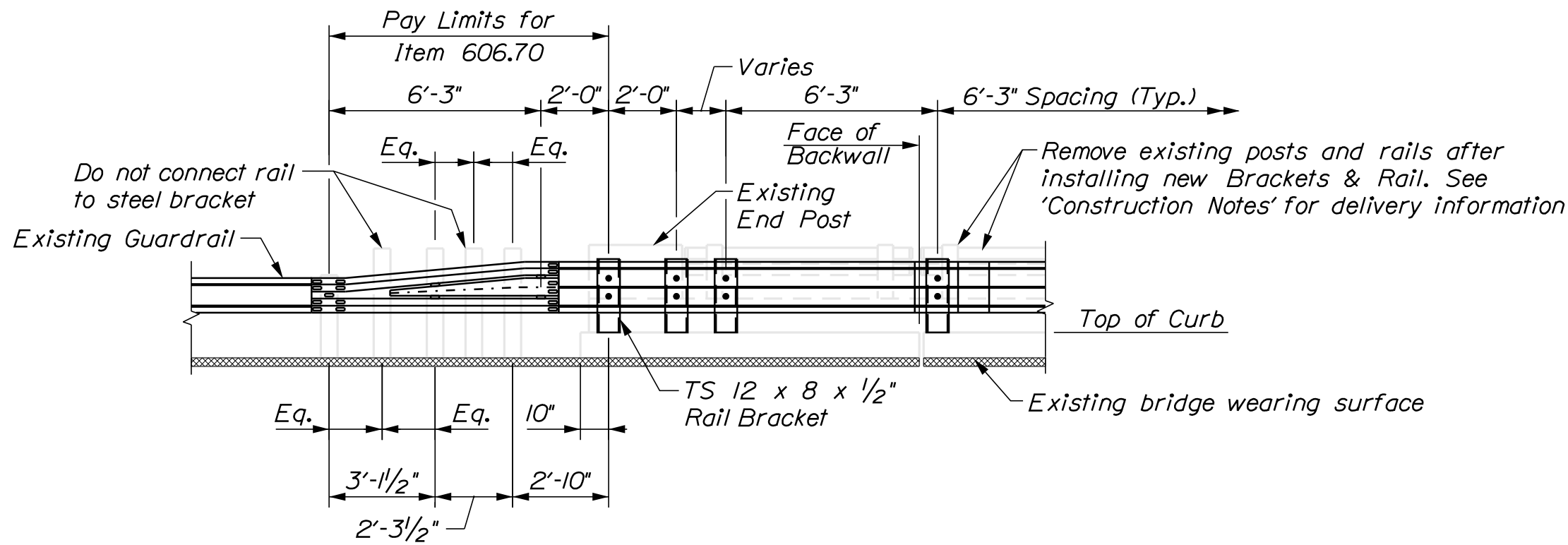
NOTES:

1. See 'THRIE BEAM ELEVATION AT CURB FOR BRIDGE #5784' for more information.
2. Refer to 'BRIDGE INFORMATION CHART' for bridge skew, number and location of joints, parapet height and width, and bridge length.
3. Thrie Beam splices shall be bolted with 12 ~ 7/8" ϕ x 3/4" Long Galvanized Bolts as recommended by the manufacturer and as directed by the Project Manager.

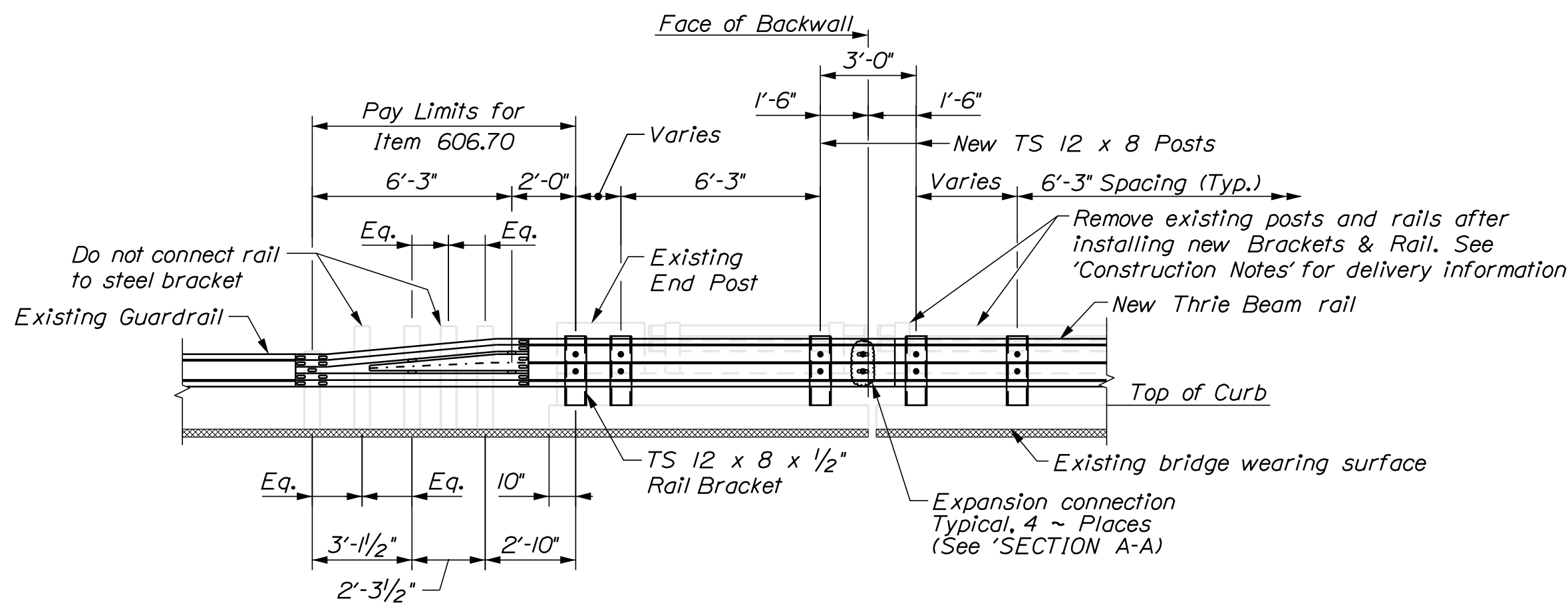
STATE OF MAINE DEPARTMENT OF TRANSPORTATION	BRIDGE RAIL REPLACEMENT		PLANS	
	BRIDGES: #1463, #5783 & #5784		WIN 26379.00	
LYONS ROAD and DRUMMOND ROAD over I-95 SIDNEY	PROJ. MANAGER	Cy Adams	BY	DATE
	CHECKED-REVIEWED	G. Libby J. Veilleux	APRIL 2020	APRIL 2020
	DESIGNED-DETAILED	J. Veilleux	SIGNATURE	
	REVISIONS 1		P.E. NUMBER	
BRIDGE RAIL LAYOUT PLANS	REVISIONS 2		DATE	
	REVISIONS 3			
	REVISIONS 4			
	FIELD CHANGES			
SHEET NUMBER				
2				
OF 5				



THRIE BEAM ELEVATION AT CURB
FOR BRIDGE #1463 - SIDNEY



THRIE BEAM ELEVATION AT CURB
FOR BRIDGE #5783 - SIDNEY



THRIE BEAM ELEVATION AT CURB
FOR BRIDGE #5784 - DRUMMOND ROAD

CONSTRUCTION NOTES:

1. Additional holes in the Thrie Beam and the Type 3 Guardrail panels may be made by drilling, punching or any other method that produces a neat, clean hole of the desired size. Burning of these holes will not be allowed. Paint the cut ends of the cut panels and all new holes with an approved Galvanizing Repair Paint from the MaineDOT QPL. All labor, materials, and incidentals needed to complete guardrail modifications shall be considered incidental to guardrail pay items.
2. The Contractor shall verify all field dimensions required for fabrication of guardrail items.
3. Modifications to new or existing Type 3 Guardrail shall include adding holes as required for conformance to standard details and providing panels of 10 gage thickness. These modifications shall be incidental to Item 606.70 - Transition Section Thrie Beam.
4. Threaded rod shall be ASTM A449 or approved equal.
5. Hardware for threaded rod connections shall be:
 - ~ ASTM A563 for 7/8" ϕ Heavy Hex nuts
 - ~ ASTM F436 for 7/8" ϕ Hardware washers
 - ~ ASTM A36 for 3" x 3" Plate washers
6. All associated hardware, including bolts, threaded rods, washers, nuts and plates shall be Hot Dipped Galvanized after fabrication. Galvanizing shall conform to the requirements as ASTM A153.
7. Holes through existing concrete parapet walls for 7/8" ϕ threaded rods are to be cored. No drilling of holes will be permitted.
8. Once installation of Thrie Beam is complete, upset threads of all 7/8" ϕ rods on each end and paint with a Galvanizing Repair Paint from the MaineDOT QPL.
9. All labor, equipment and material necessary to install the Thrie Beam Guardrail shall be incidental to Item 606.73.
10. Drilling and anchoring of new anchor bolts for the Thrie Beam rail installation on the bridge shall be done in accordance with Special Provision Section 606 - Thrie Beam - Single Rail Bridge Mounted.
11. All existing Bridge Rail shall be removed after installation of new Thrie Beam guardrail and become the property of the Maine Department of Transportation. All removed Bridge Rail and posts shall be placed on pallets and wrapped as directed by the Inspector on site. All salvaged posts and rails shall be delivered to MaineDOT Maintenance Camp at 131 Skowhegan Ave., Fairfield, Maine 04937 Attn. - Cy Adams, Region 2 Bridge Transportation Operations Manager (TOM) per Item 202.134 - Removing Existing Railing (Retained by the Department).
12. All materials and listed pay item quantities, including lump sum quantities are provided by MaineDOT for informational purposes only.

BRIDGE INFORMATION CHART							
BRIDGE #	TOWN	SKEW	# EXP. JNTS	LOCATION	PARAPET HT.	PARAPET WTH.	LENGTH (c/c of Brg. @ Abutments)
1463	SIDNEY	13° 16' 15"	2	2 - MS	1'-0"	1'-0"	153'-6"
5783	SIDNEY	15° 17'	2	2 - MS	1'-0"	1'-0"	161'-6"
5784	SIDNEY	No Skew	2	2 - AB	1'-0"	1'-0"	244'-10"

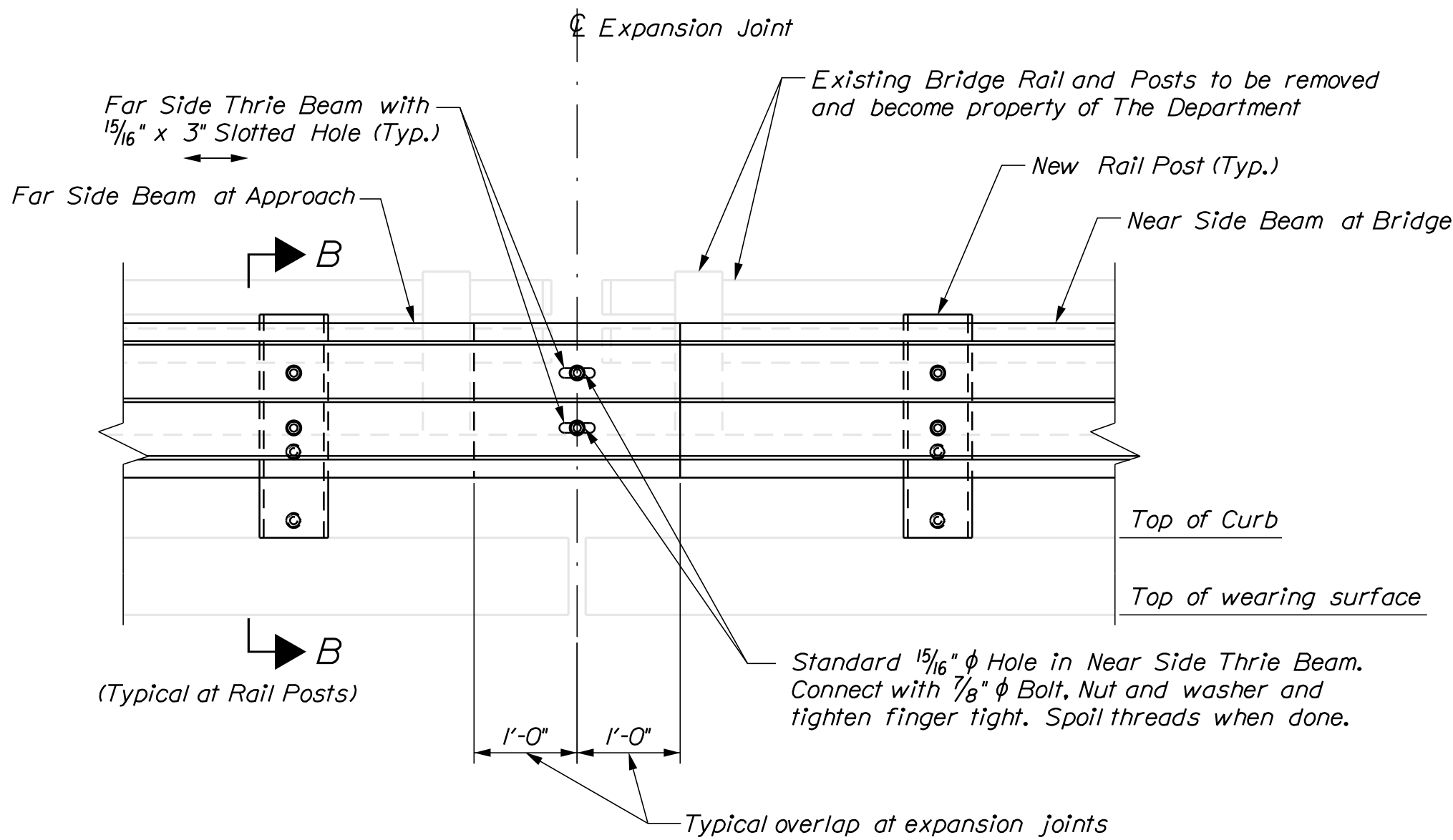
Note:
~ MS = Midspan
~ AB = Abutments

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BRIDGE RAIL REPLACEMENT

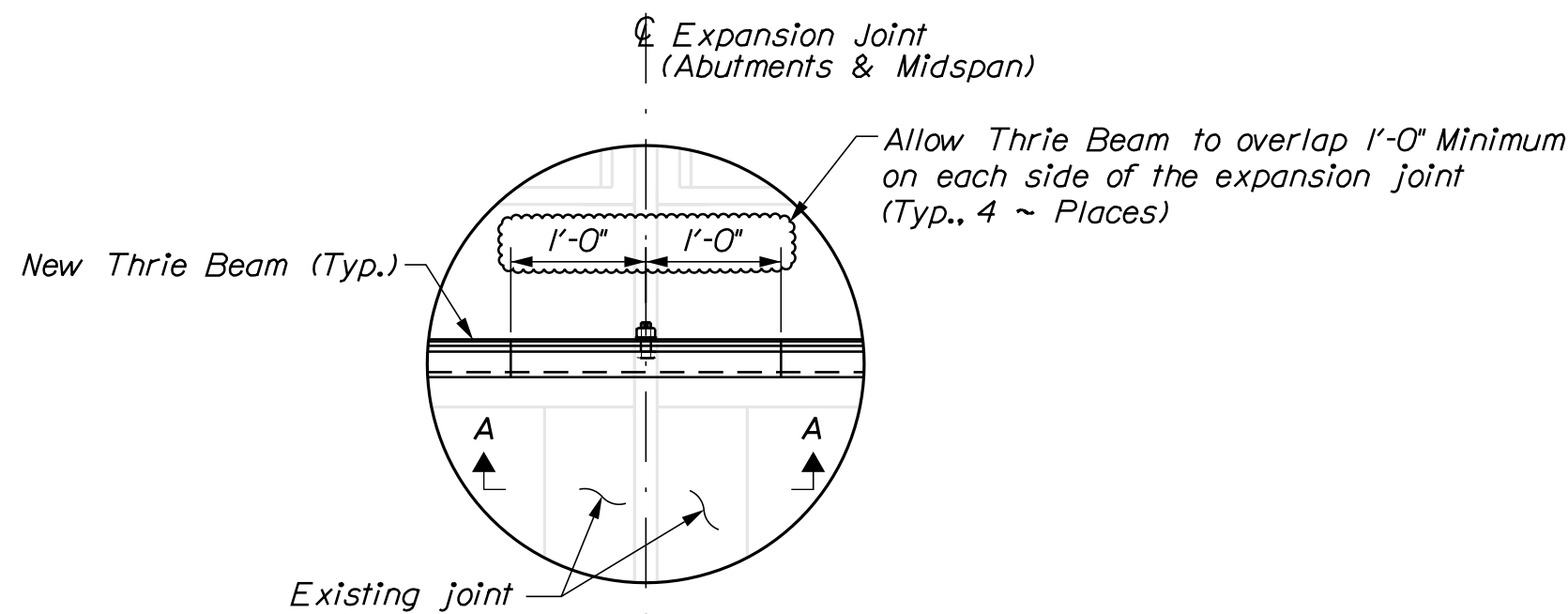
BRIDGES: #1463 #5783 & #5784
WIN 26379.00
PLANS

LYONS ROAD and DRUMMOND ROAD
over I-95
SIDNEY
KENNEBEC
ELEVATIONS and NOTES

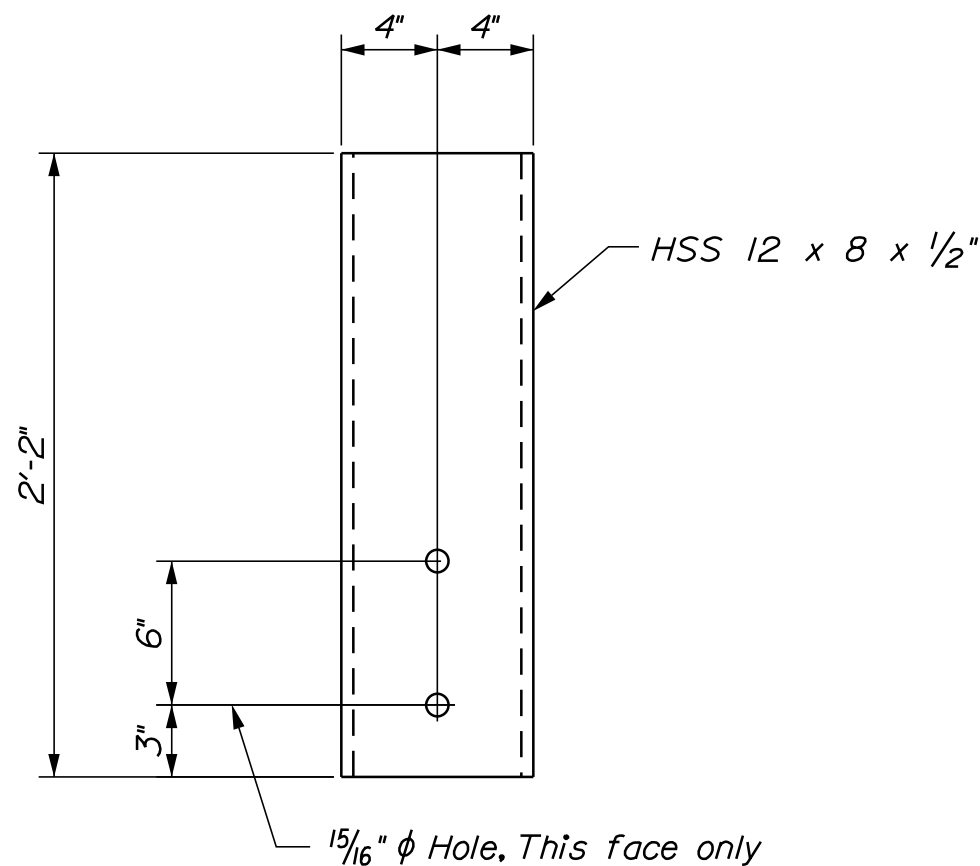
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OF 5



SECTION A - A

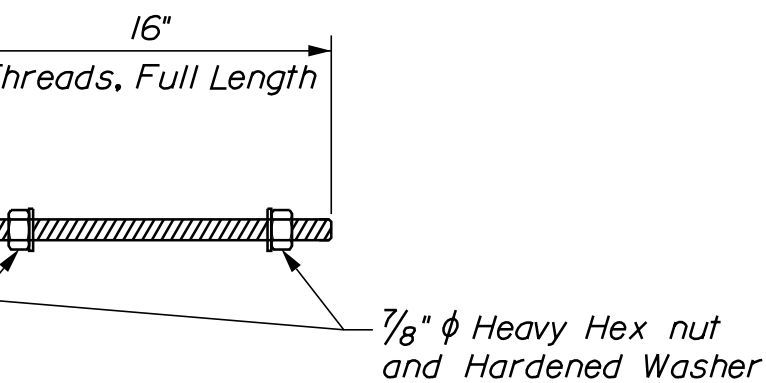


DETAIL 'I'



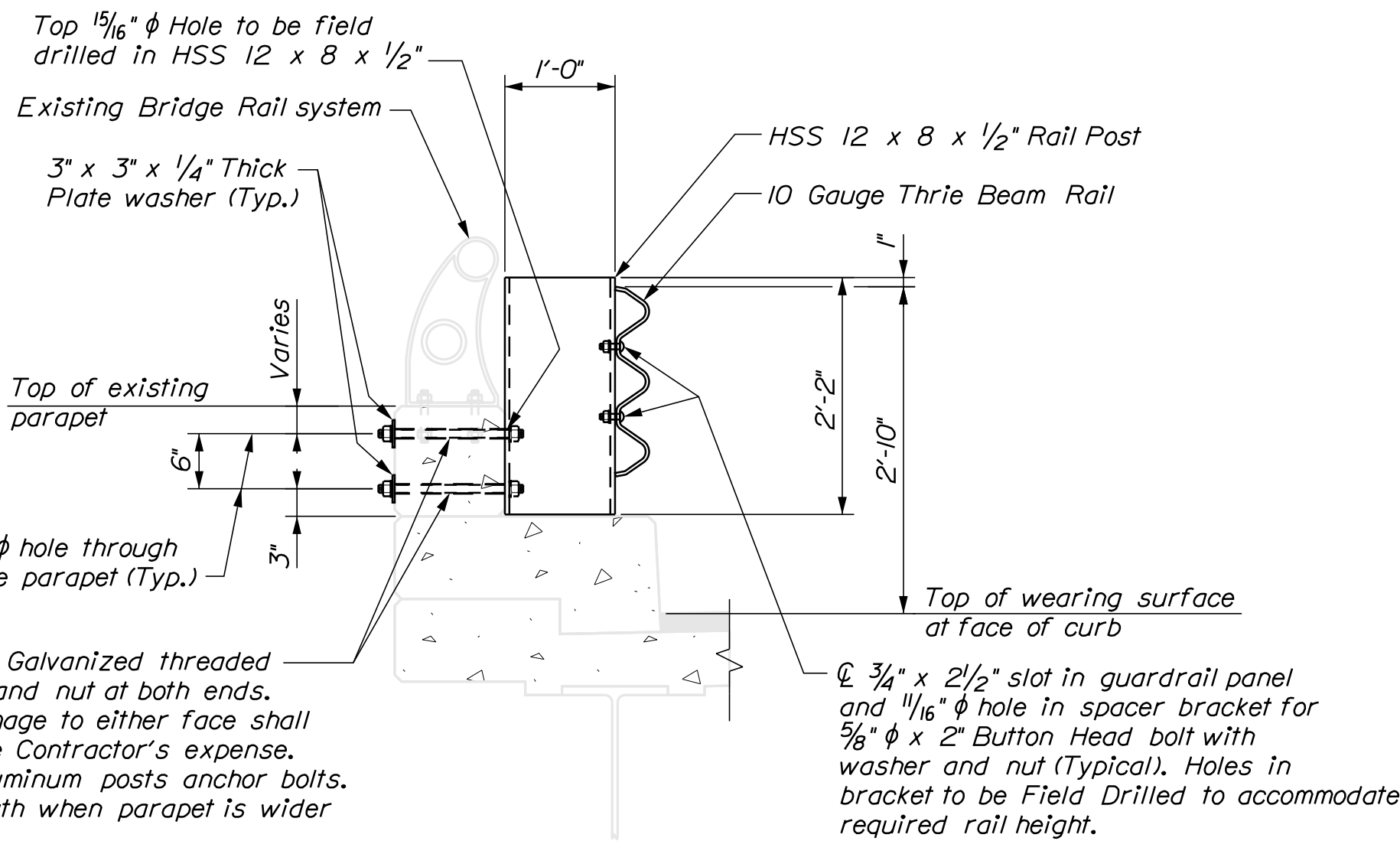
DETAIL OF RAIL BRACKET

Note:
~ Galvanize to ASTM A153



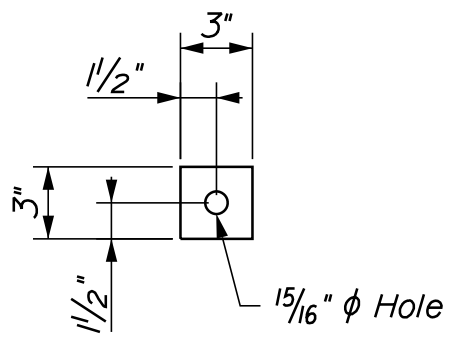
DETAIL OF THREADED ROD

Notes:
~ Rods to be cut in field according to existing conditions
~ All Hardware to be Galvanized to ASTM A153
~ 7/8 inch Rod - ASTM A449
~ 7/8 inch Heavy Hex nuts - A563
~ 7/8 inch Hardened Washer - F436



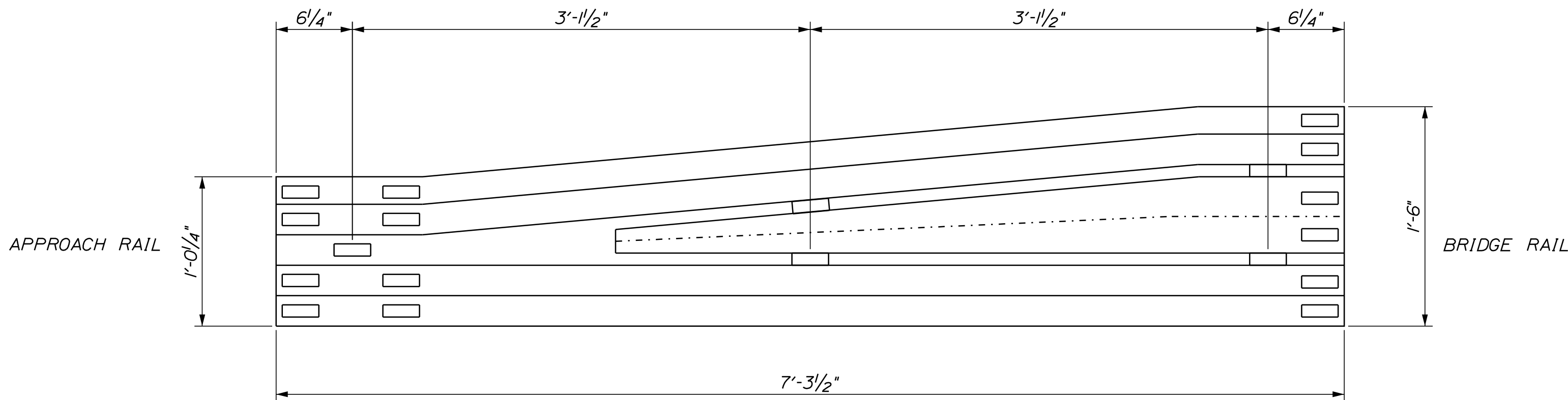
SECTION B - B

Note:
~ All Hardware to be Galvanized
~ Curb reveal is 9 inch ± at ALL bridges. Verify in field prior to fabricating Rail Brackets.



DETAIL OF PLATE WASHER

Note:
~ Galvanize to ASTM A153



THRIE BEAM TRANSITION

LYONS ROAD and DRUMMOND ROAD over I-95 SIDNEY				PROJ. MANAGER				Cy Adams	BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION		
KENNEBEC				DESIGN-DETAILED				C. Libby	APRIL 2020				
				CHECKED-REVIEWED				J. Veilleux	APRIL 2020				
				DESIGN2-DETAILED2									
				DESIGNS-DETAILED3									
SECTIONS and STEEL DETAILS				REVISIONS 1						P.E. NUMBER	BRIDGE RAIL REPLACEMENT		
				REVISIONS 2									
				REVISIONS 3									
				REVISIONS 4									
				FIELD CHANGES						DATE			
SHEET NUMBER								BRIDGES				WIN	PLANS
4								#1463, #5783 & #5784				26379.00	
OF 5													

PARTS SCHEDULE for BR*1463 (SIDNEY)			
QUANTITY	DESCRIPTION	LENGTH	REMARKS
62	HSS 12 x 8 x 1/2"	2'-2"	Guardrail Brackets - ASTM A500, Galvanized
125	7/8" ϕ Threaded Rod	1'-4"	Thread, Full Length - ASTM A449, Galvanized
250	7/8" ϕ Heavy Hex nut	NA	ASTM A563, Galvanized
250	7/8" ϕ Hardened Washer	NA	ASTM F436, Galvanized
125	3" x 3" x 1/4" Plate Washer	NA	ASTM A36, Galvanized
125	5/8" ϕ Button Head Bolts	2"	1 - Hex Nut (A563) and 1 - Hardened Washer (A436), Galvanized

Notes:

1) All hardware and materials shall be Galvanized to ASTM A153.

2) Guardrail Brackets and Threaded Rods to be cut in field to match existing conditions.

PARTS SCHEDULE for BR*5783 (SIDNEY)			
QUANTITY	DESCRIPTION	LENGTH	REMARKS
64	HSS 12 x 8 x 1/2"	2'-2"	Guardrail Brackets - ASTM A500, Galvanized
130	7/8" ϕ Threaded Rod	1'-4"	Thread, Full Length - ASTM A449, Galvanized
260	7/8" ϕ Heavy Hex nut	NA	ASTM A563, Galvanized
260	7/8" ϕ Hardened Washer	NA	ASTM F436, Galvanized
130	3" x 3" x 1/4" Plate Washer	NA	ASTM A36, Galvanized
130	5/8" ϕ Button Head Bolts	2"	1 - Hex Nut (A563) and 1 - Hardened Washer (A436), Galvanized

Notes:

1) All hardware and materials shall be Galvanized to ASTM A153.

2) Guardrail Brackets and Threaded Rods to be cut in field to match existing conditions.

PARTS SCHEDULE for BR*5784 (SIDNEY)			
QUANTITY	DESCRIPTION	LENGTH	REMARKS
94	HSS 12 x 8 x 1/2"	2'-2"	Guardrail Brackets - ASTM A500, Galvanized
190	7/8" ϕ Threaded Rod	1'-4"	Thread, Full Length - ASTM A449, Galvanized
380	7/8" ϕ Heavy Hex nut	NA	ASTM A563, Galvanized
380	7/8" ϕ Hardened Washer	NA	ASTM F436, Galvanized
190	3" x 3" x 1/4" Plate Washer	NA	ASTM A36, Galvanized
8	3/4" ϕ Button Head Bolts	13/4"	For Expansion Joint; 1 - Hex Nut (A563) and 1 - Hardened Washer (A436), Galvanized
190	5/8" ϕ Button Head Bolts	2"	1 - Hex Nut (A563) and 1 - Hardened Washer (A436), Galvanized

Notes:

1) All hardware and materials shall be Galvanized to ASTM A153.

2) Guardrail Brackets and Threaded Rods to be cut in field to match existing conditions.

ESTIMATED QUANTITIES						
ITEM NO.	DESCRIPTION	QUANTITY BR*1463	QUANTITY BR*5783	QUANTITY BR*5784	TOTAL	UNIT
202.134	Remove Existing Railing (Retained by Department) (1218 LF)	1	1	1	1	LS
606.366	Guardrail, Removed and Reset, Type 3c	100	100	100	300	LF
606.70	Transition Section - Thrie Beam	4	4	4	12	EA
606.73	Guardrail Thrie Beam - Single Rail Bridge Mounted	352	362	532	1246	LF
652.39	Work Zone Traffic Control	1	1	1	1	LS
659.10	Mobilization	1	1	1	1	LS

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

BRIDGE RAIL REPLACEMENT

BRIDGES

#1463 #5783 & #5784

WIN

26379.00

PLANS

LYONS ROAD and DRUMMOND ROAD

over I-95

SIDNEY

KENNEBEC

PARTS SCHEDULES and ESTIMATED QUANTITIES

SHEET NUMBER

5

OF 5

PROJ. MANAGER

Cy Adams

DESIGN-DETAILED

C. Libby

CHECKED-REVIEWED

J. Veilleux

DESIGNS-DETAILED

REVISIONS 1

REVISIONS 2

REVISIONS 3

REVISIONS 4

FIELD CHANGES

BY

G. Libby

J. Veilleux

DATE

APRIL 2020

APRIL 2020

SIGNATURE

P.E. NUMBER

DATE

NOTES:

1. All materials and listed pay item quantities, including lump sum quantities, are provided by MaineDOT for informational purposes only.

2.All quantities are estimated from existing plans. Dimensions and actual quantities shall be determined from field verifications.