

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION



ISLAND FALLS  
AROOSTOOK COUNTY  
INTERSTATE 95 SOUTHBOUND  
BRIDGE REHABILITATION PROJECTS

NHPP-2263(300)  
BRIDGE NUMBERS:  
6163, 6175, 6176, 6177, 6178

SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Seventh Edition 2014 with 2016 Interim Revisions.

MATERIALS

Concrete (Unless noted otherwise).....Class "A"  
Concrete (Joint Replacements, Curbs & Transition Barriers).....Class "LP"  
Reinforcing Steel.....ASTM A 615/A 615M, Grade 60  
Structural Steel: All Material.....ASTM A 36/A 36M

BASIC DESIGN STRESSES

Concrete.....f'c = 4,000 psi  
Reinforcing Steel.....fy = 60,000 psi

MAINTENANCE OF TRAFFIC

One lane of traffic will be maintained during phased construction.

LIST OF DRAWINGS

Title Sheet .....	1
Estimated Bridge Quantities & General Notes.....	2
General Plans.....	3
Transverse Sections.....	4
Joint Modification Details I.....	5
Joint Modification Details II.....	6
Joint Modification Details III.....	7

AS-Built's by TAH 3-17-17

PROJECT LOCATION:	Deck, Wearing Surface, and Joint Repairs to be completed prior to I-95 Southbound Paving Project WIN 20425.00 - Bridge #s 6176, 6177, 6178, 6175, 6163
PROGRAM AREA:	Bridge Preservation
OUTLINE OF WORK:	Wearing Surface Replacements, Deck Rehabilitations, and Joint Modifications Resident: Tim Hebert

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
COMMISSIONER:	<i>[Signature]</i>	3/24/16
CHIEF ENGINEER:	<i>[Signature]</i>	3-23-16



*Michael Wright*  
SIGNATURE  
8089  
P.E. NUMBER  
3/15/2016  
DATE

PROJECT INFORMATION	BRIDGE
PROGRAM	BRIDGE
PROJECT MANAGER	MICHAEL WRIGHT
DESIGNER	JOSHUA HASBROUCK
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

INTERSTATE 95 SOUTHBOUND ISLAND FALLS AROOSTOOK COUNTY	TITLE SHEET
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SHEET NUMBER
1
OF 7

ESTIMATED BRIDGE QUANTITIES								
ITEM NO.	DESCRIPTION	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	TOTAL	UNIT
		Route 159 over West Branch Mattawamkeag River Br. No. 6163	Route 159 over I-95 Br. No. 6175	I-95 Southbound over Old Patten Road and B.A.R.R. Br. No. 6176	I-95 Southbound over Fish Stream and Bog Brook Road Br. No. 6177	I-95 Southbound over West Branch Mattawamkeag River Br. No. 6178		
202.127	REMOVE EXISTING BITUMINOUS PAVEMENT (SY)	686	1268	15	48	8	1	LS
202.202	REMOVING PAVEMENT SURFACE	78	156		192	8	434	SY
403.208	HOT MIX ASPHALT 12.5 MM HMA SURFACE			2	27	1	30	T
403.208I	HOT MIX ASPHALT 12.5 MM HMA SURFACE	84	157				241	T
403.21I	HOT MIX ASPHALT 9.5 MM SHIM		5				5	T
403.213	HOT MIX ASPHALT 12.5 MM HMA BASE	4			37		41	T
409.15	BITUMINOUS TACK COAT	22	46	1	11	1	81	G
508.14	HIGH PERFORMANCE WATERPROOFING MEMBRANE (SY)	686	1,268		48		1	LS
518.50	REPAIR OF UPWARD FACING SURFACES - TO REINFORCING STEEL < 8 IN.	200	150				350	SF
518.5I	REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 IN.	25	25				50	SF
520.24I	BRIDGE JOINT MODIFICATION TYPE 1	1		2		1	4	EA
520.245	BRIDGE JOINT MODIFICATION TYPE 5				2		2	EA
526.30I	TEMPORARY CONCRETE BARRIER TYPE 1 (1000 LF)						1	LS
527.34	WORK ZONE CRASH CUSHIONS	2	2	1	1	1	7	UN
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	744	1365	5	150	5	2269	LF
627.76	TEMPORARY PAVEMENT MARKING LINE, WHITE OR YELLOW (700 LF)						1	LS
627.77	REMOVING PAVEMENT MARKINGS				250		250	SF
629.05	HAND LABOR, STRAIGHT TIME	10	10	10	10	10	50	HR
631.10	AIR COMPRESSOR (INCLUDING OPERATOR)	10	10	10	10	10	50	HR
631.1I	AIR TOOL (INCLUDING OPERATOR)	10	10	10	10	10	50	HR
631.1I2	WELDING MACHINE (INCLUDING OPERATOR)	8		8		8	24	HR
643.72	TEMPORARY TRAFFIC SIGNAL AT: ROUTE 159 & BRIDGE *6163	1					1	LS
643.72	TEMPORARY TRAFFIC SIGNAL AT: ROUTE 159 & BRIDGE *6175		1				1	LS
652.312	TYPE III BARRICADE	6	6				12	EA
652.33	DRUM	10	10	50	50	50	170	EA
652.34	CONE	50	50				100	EA
652.35	CONSTRUCTION SIGNS	300	300	350	350	350	1650	SF
652.36I	MAINTENANCE OF TRAFFIC CONTROL DEVICES (CD)	15	15	5	20	5	1	LS
652.38	FLAGGER	100	75				175	HR
652.4I	PORTABLE CHANGEABLE MESSAGE SIGN	2	2				4	EA
656.75	TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL						1	LS
659.10	MOBILIZATION						1	LS

Notes:  
1. Estimated Quantities for each bridge are provided here for reference purposes only.

STRUCTURAL

1. Payment for the selective demolition and recasting of existing concrete end posts, approach curbs, and bridge curbs will be considered incidental to item 520.245.
2. Reinforcing steel schedules will be the responsibility of the Contractor. Refer to Subsection 503.03 of the Standard Specifications for more information. Payment for all work associated with developing reinforcing steel schedules will be considered incidental to related Contract Items.
3. An NCHRP350 compliant impact attenuation system shall be installed concurrently with the placement of each run of concrete barrier.
4. Any damage to existing concrete or reinforcing steel resulting from the work performed, shall be repaired or replaced by a method approved by the Resident at no cost to the Department.
5. All reinforcing steel that is to be exposed and reused shall be cleaned by a method approved by the Resident. Payment shall be incidental to related contract items.
6. The integrity of existing approach pavement and subbase gravel shall be maintained during removal of backwall concrete. Payment for any repair or damages shall be incidental to related contract items.
7. Seal(s) for the Heavy Duty or compression seal(s) shall be approved by the Resident prior to installation of joint armor.
8. All expansion joints shall be fabricated so the expansion joints construction joints align with the bridge phasing. New seals shall be installed full length after all sections of the joint armor have been installed.
9. All existing materials which are removed from the work area shall be removed from the site and properly disposed of by the Contractor in a manner approved by the Resident. These existing materials include, but are not limited to, concrete, metal casing, reinforcing steel, pavement, silt and other debris on or attached to the structure within the work areas. The cost of removal and disposal shall be incidental to the cost of the work items for which these removals are required.
10. Contractor shall form a one inch V-groove on the fascias at the horizontal joint between the curb and slab.
11. Reinforcing steel shall have a 2 inch minimum cover unless otherwise noted.
12. Mortar for bedding and for joints in the granite curb shall contain an approved non-shrink additive.
13. If the depth of the deteriorated concrete is below the reinforcing steel then remove the concrete to a minimum depth of 1 inch below the bars.

14. Where bridge rail posts are required to be relocated new hot dip galvanized anchor rods conforming to ASTM F1554 Grade 50 shall be furnished and drilled and anchored into the proposed curb. The depth of embedment shall be sufficient to develop an ultimate tension capacity of 33 kips per anchor rod. This work may also require replacement or repair of rail clamp bars, and replacement of bolts, where the bolt or clamp bar threads are damaged during the rail disassembly process. Where the Contractor elects to repair the damaged mounting bars the existing threads shall be repaired through the use of a stainless steel heli-coil insert. The proposed repair shall be completed in a manner which maintains the original fastener size and diameter. Payment for bridge rail post relocation and associated materials, equipment, labor and incidentals necessary to complete the work will be considered incidental to Item 520.245, Bridge Joint Modification Type 5.

15. All transverse reinforcing steel in the deck and backwall shall be structurally continuous along the full width of the bridge. Payment for lap splices and threaded couplers will not be paid for directly, but shall be considered incidental to the related contract items.

16. The reinforcing steel and anchor rod anchoring material shall be selected from Maine DOT's Qualified Products List. The Contractor shall submit the proposed system to the resident for approval. The selected anchoring material shall be installed in strict accordance with the manufacturer's recommendations. Reinforcing steel and anchor rods, drilled and anchored into existing concrete, shall be embedded to develop 125% of the yield strength of the bar.

17. All proposed anchor rods shall be hot dip galvanized.

18. For Interstate bridges, when a new joint is being installed or an existing joint is being substantially modified, and field conditions permit, the approach side of the joint shall be set 1/8" - 1/4" higher than the departure side of the joint. Under no circumstances shall the departing side of the joint be higher than the approach side of the joint.

19. Where provided, nominal joint openings are measured perpendicular to the joint opening. Adjustments provided in the seal adjustment charts shall be measured along the centerline of the bridge, not perpendicular to the joint opening.

MOVEMENT RATING FOR COMPRESSION SEAL

BRIDGE NO.	DISTANCE
6163	7/8"
6175	1 1/4"
6178	1 1/4"

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GENERAL

1. A temporary ramp shall be constructed with HMA at the ends of the roadway section paved or milled each day. The use of millings or RAP will not be allowed, but cold patch may be temporarily utilized until HMA plants are open for the season.

For Interstate Highways or roadways with speed limits exceeding 50 mph, temporary ramps shall be constructed with one foot of length for every 1/8" of transition depth on the leading end, and one foot of length for every 1/4" of transition depth on the trailing end.

For all other roadways with speed limits less than 50 mph, temporary ramps shall be constructed with one foot of length for every 1/4" of transition depth on the leading and the trailing end.

Materials, placement, maintenance, and removal shall be incidental to contract items.

2. All joints between existing and proposed hot mix asphalt shall be butted. Payment shall be made under Item 202.202.

3. Any necessary cleaning of existing pavement prior to paving or milling shall be incidental to the related items.

4. All spoils, HMA & millings shall be cleaned daily from project to the satisfaction of the Resident prior to the contractor leaving for the shift.

5. The millings shall become the property of the Contractor.

6. Existing bridge plans may be accessed at the web address below. The plans are reproductions of the original drawings as prepared for the construction of the bridges. It is very unlikely that the plans will show any construction field changes or any alterations which may have been made to the bridge.  
<http://www.maine.gov/mdot/contractors/>

7. All dimensions, angles and stationing shown on existing plans are taken from as-built construction drawings from 1966 through 1991, supplemented by limited field measurements and are not guaranteed to be correct. All existing bridge information shall be verified in the field by the Contractor prior to commencing any work.

CONSTRUCTION PHASING

1. Contractor shall install longitudinal pavement joints at crown lines or lane lines.

2. Placement of the high performance membrane shall be in accordance with standard specifications and manufacturers published recommendations. Contractor shall submit proposed membrane overlap details at the longitudinal joints to the Resident for review and approval. Details shall include proposed methodology for bond breaker for the overlaps between construction phases as well as procedures for infilling and removal of bituminous material without damage to the membrane.

3. Contractor is responsible for all maintenance of traffic required for all work including ramp traffic control.

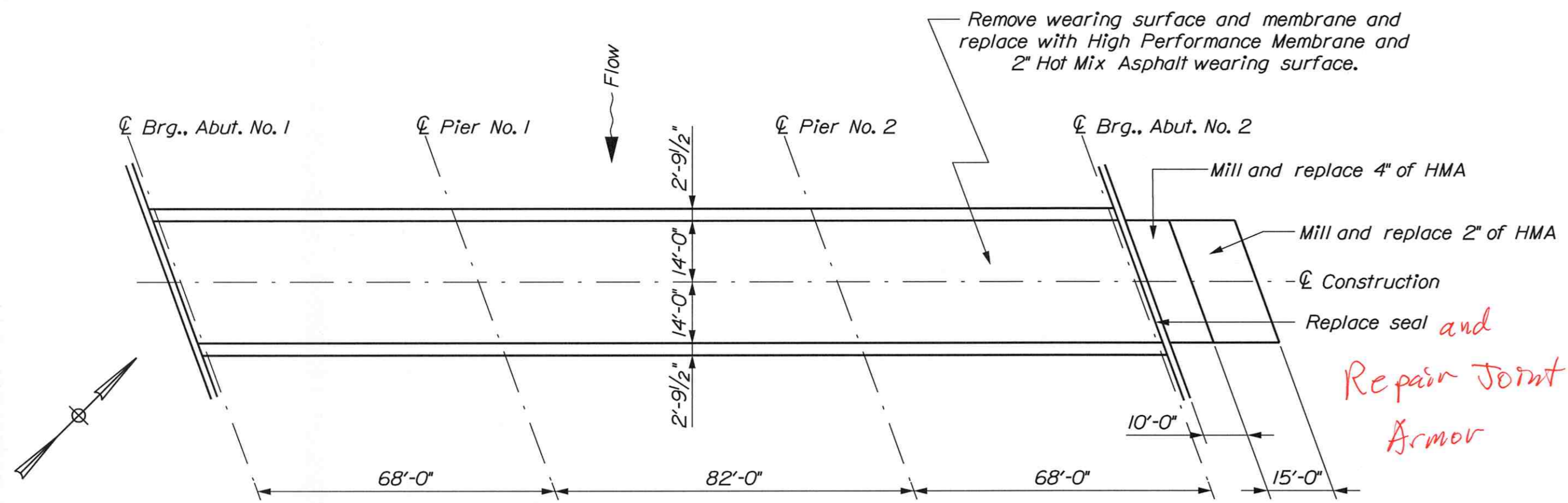
4. Long term lane closures required for bridge work shall be protected with temporary concrete barrier at the work zones.

UTILITIES

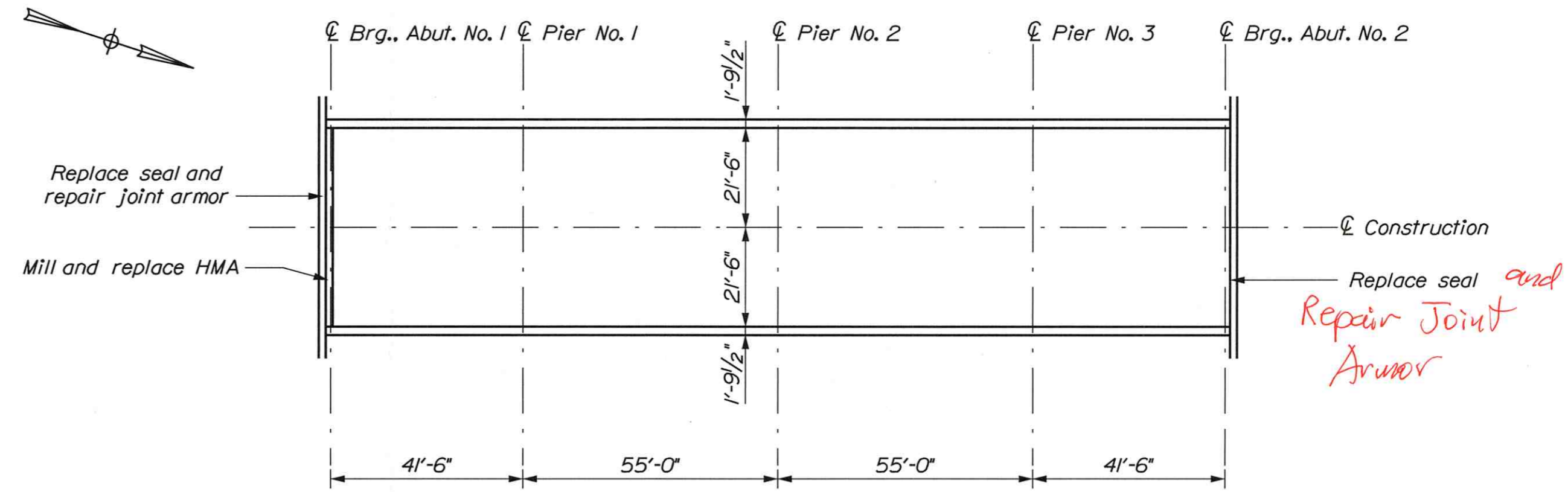
1. Utilities in this contract are listed in Special Provision Section 104, Utilities.

2. All utility facilities shall be adjusted by the respective utilities unless otherwise noted. No utility adjustment is anticipated.

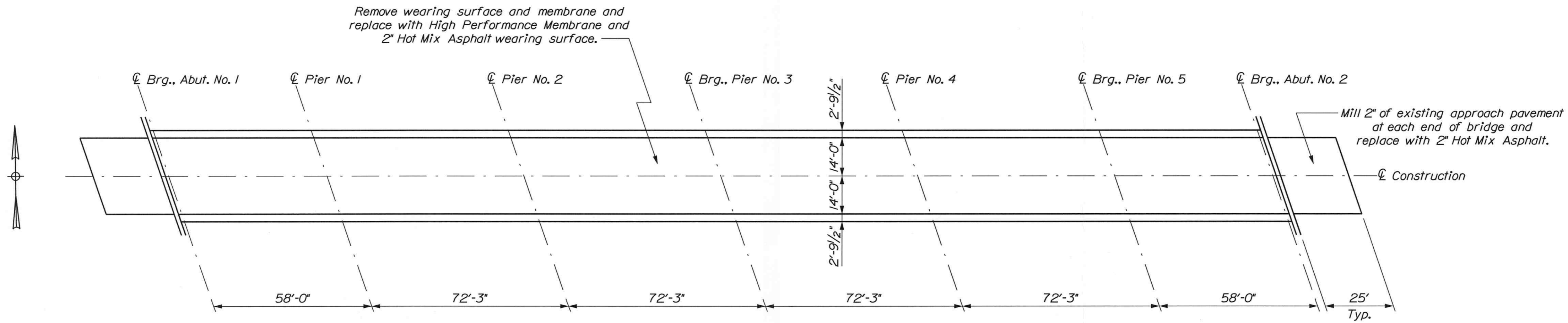
STATE OF MAINE DEPARTMENT OF TRANSPORTATION NHP-2263(300)	INTERSTATE 95 SOUTHBOUND BRIDGE WEARING SURFACE REHABILITATION ISLAND FALLS AROOSTOOK COUNTY ESTIMATED BRIDGE QUANTITIES & GENERAL NOTES	PROJ. MGR.	DESIGN-DETAILED	CHECKED-REVIEWED	J. HASEROUCK J. POLIN	DATE	BY	M. WIGHT	SIGNATURE	P.E. NUMBER	DATE
		DESIGN-DETAILED	DESIGN-REVIEWED	DESIGN-DETAILED	DESIGN-REVIEWED	DESIGN-DETAILED	DESIGN-REVIEWED	DESIGN-DETAILED	DESIGN-REVIEWED	DESIGN-DETAILED	DESIGN-REVIEWED
SHEET NUMBER		2									
OF 7											



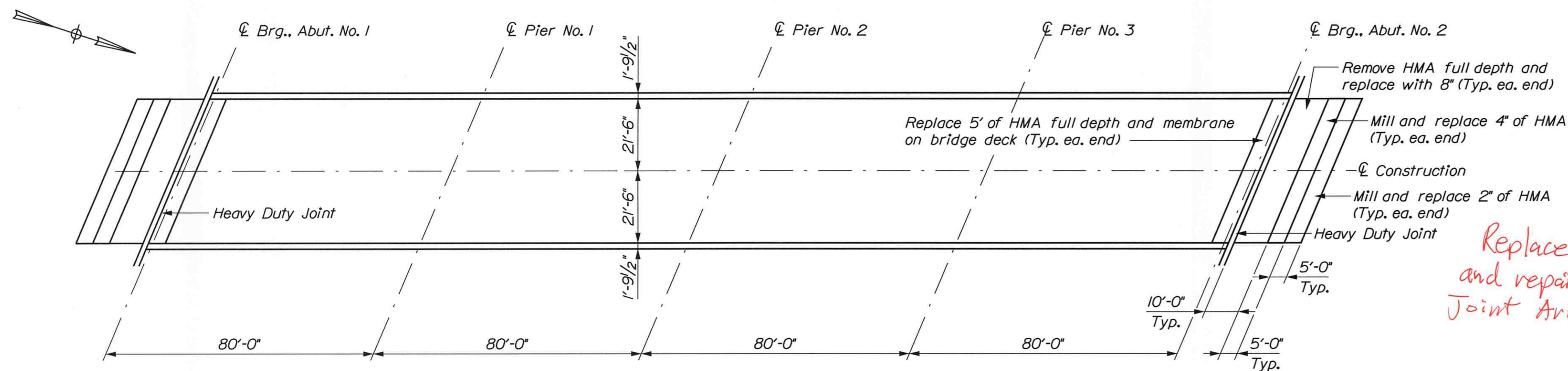
ROUTE 159 OVER WEST BRANCH MATTAWAMKEAG RIVER  
Bridge No. 6163



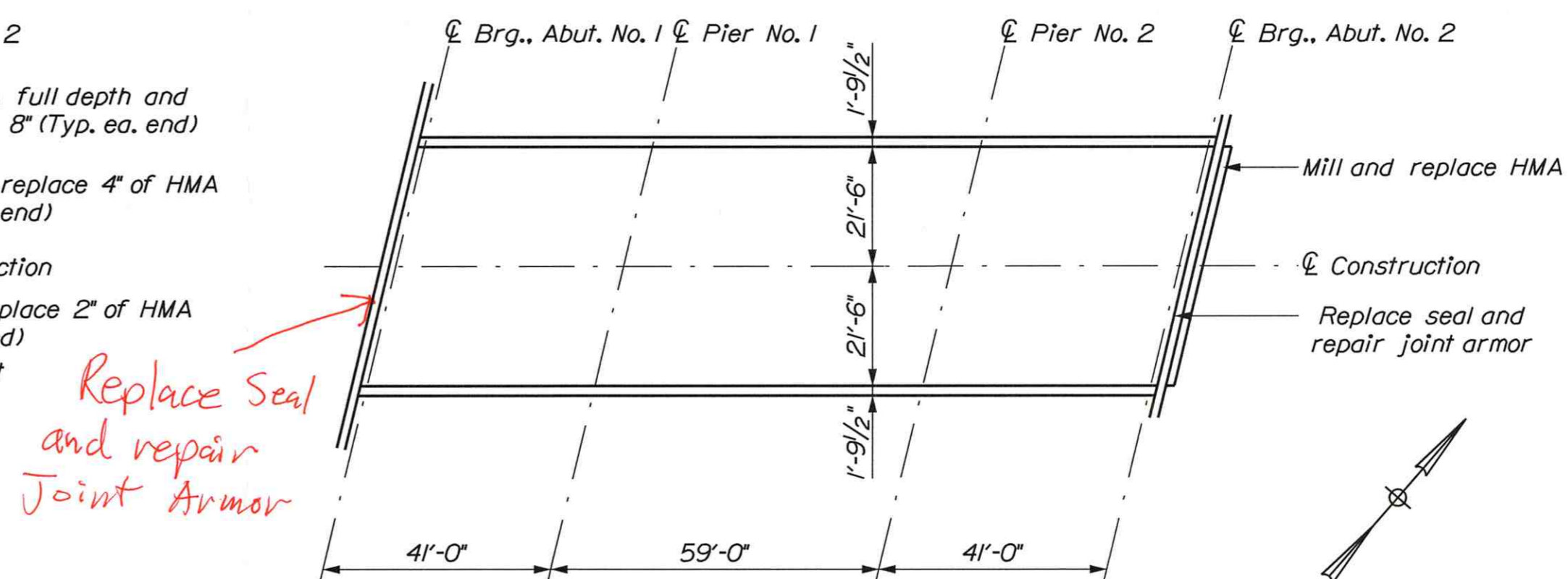
INTERSTATE 95 SOUTHBOUND OVER  
OLD PATTEN ROAD AND B.A.R.R.  
Bridge No. 6176



ROUTE 159 OVER INTERSTATE 95  
Bridge No. 6175



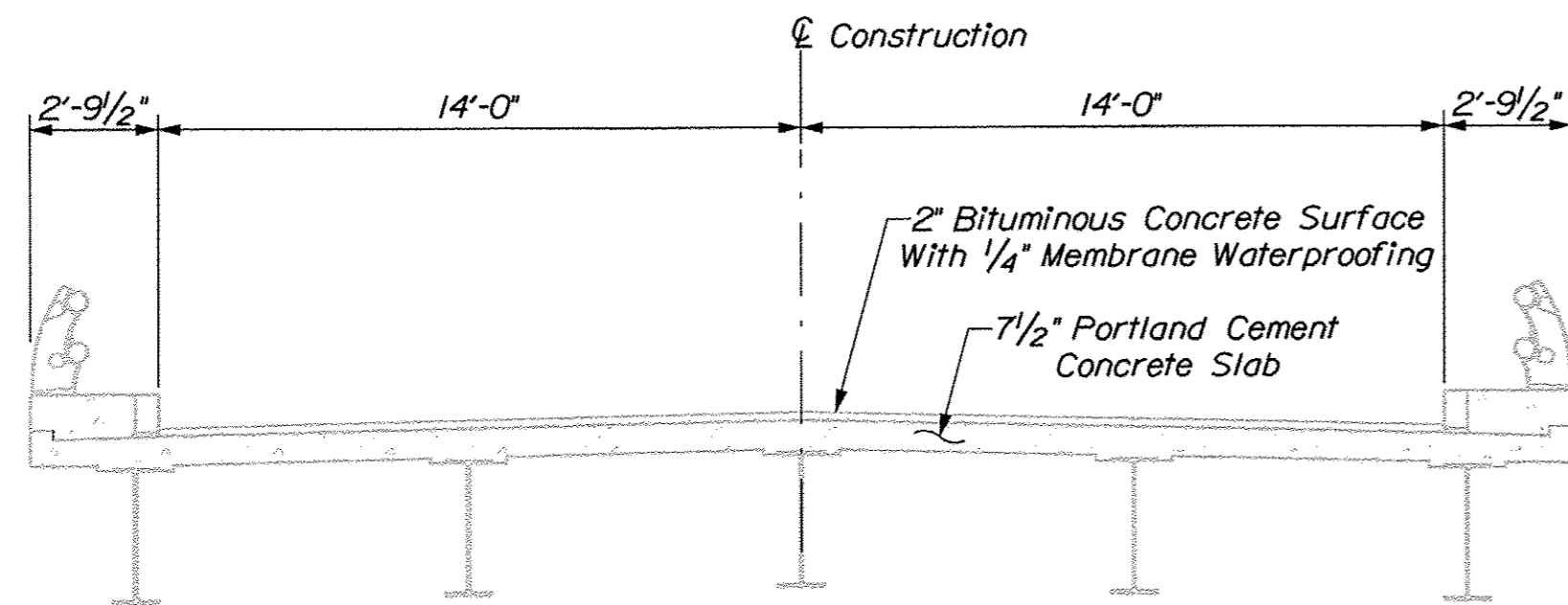
INTERSTATE 95 SOUTHBOUND OVER  
FISH STREAM AND BOG BROOK ROAD  
Bridge No. 6177



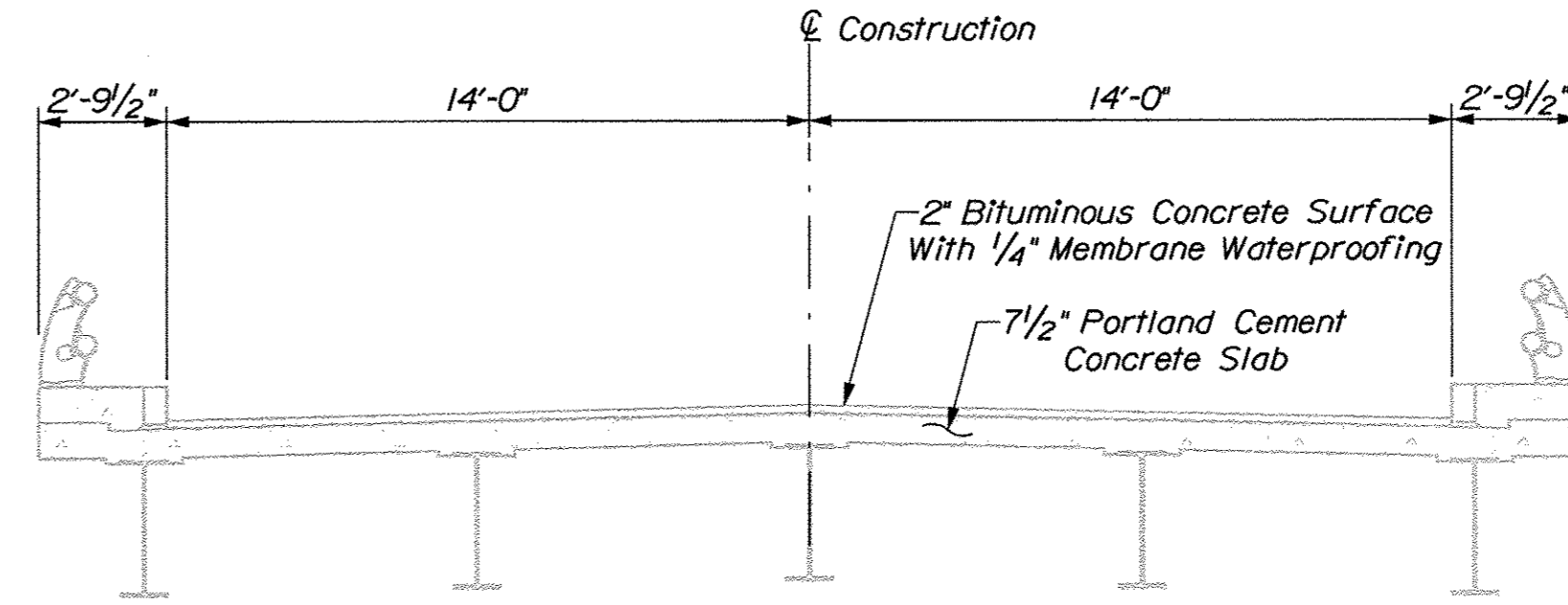
INTERSTATE 95 SOUTHBOUND OVER  
WEST BRANCH MATTAWAMKEAG RIVER  
Bridge No. 6178

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		NHP-2263(300)		WIN 22633.00		BRIDGE NOS. 6163, 6175, 6176, 6177 and 6178		BRIDGE PLANS	
INTERSTATE 95 SOUTHBOUND		BRIDGE WEARING SURFACE REHABILITATION		ISLAND FALLS		AROOSTOOK COUNTY		PLANS	
PROJ. MANAGER	DESIGN-DETAILED	CHECKED-REVIEWED	DESIGN2-DETAILED2	DESIGN3-DETAILED3	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES
M. WIGHT	J. HASBROUCK	D. SHAW							
DATE	BY	DATE	SIGNATURE	P.E. NUMBER	DATE				
SHEET NUMBER		3		OF 7					

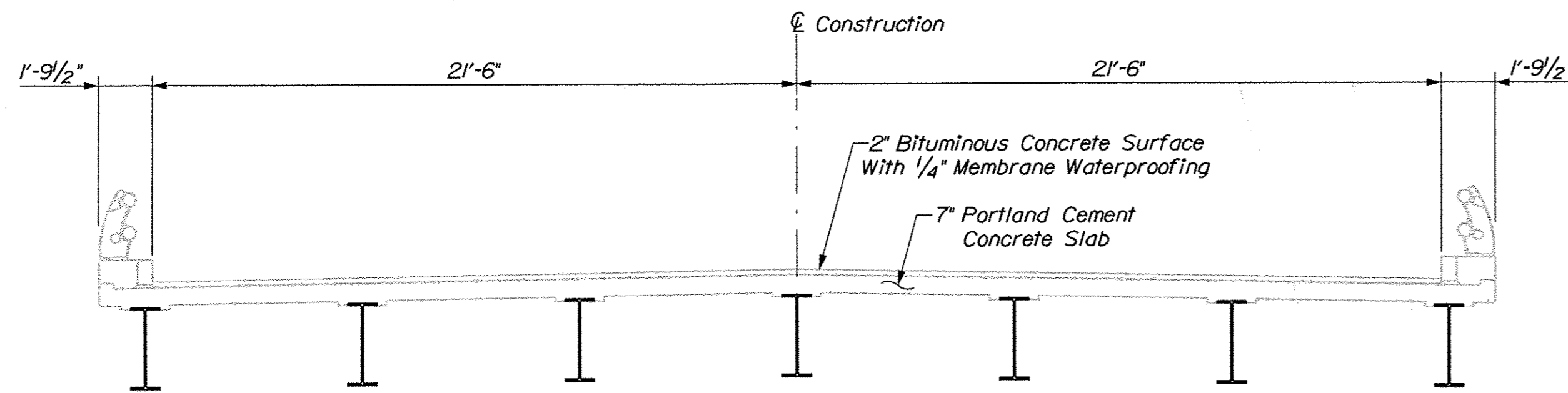
Revised AS Builts by TAH 3-17-17



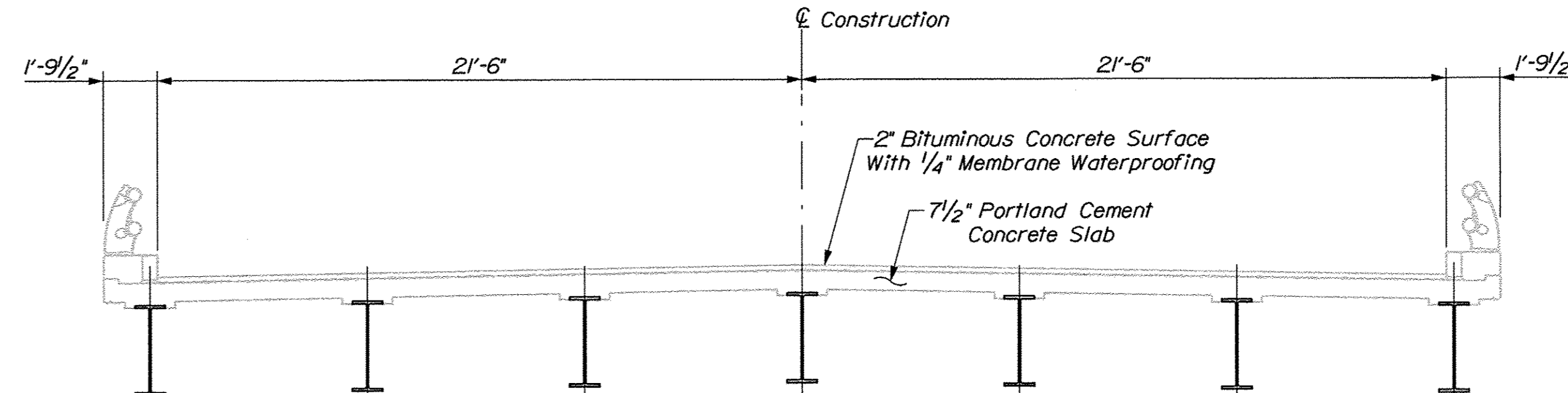
EXISTING BRIDGE SECTION  
ROUTE 159 OVER  
WEST BRANCH MATTAWAMKEAG RIVER  
Bridge No. 6163



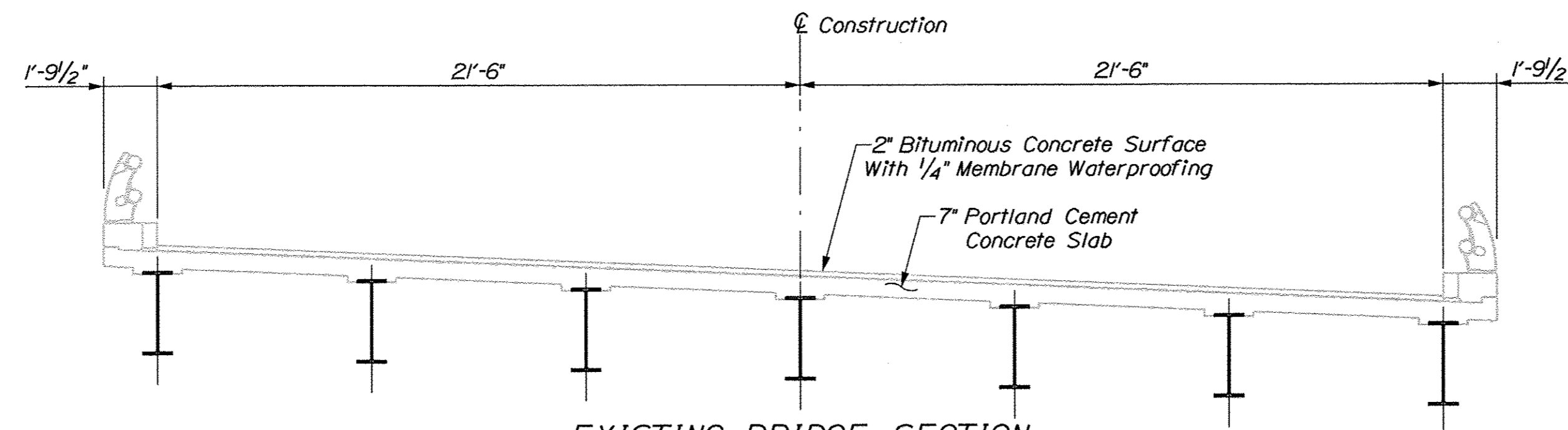
EXISTING BRIDGE SECTION  
ROUTE 159 OVER  
INTERSTATE 95 N.B. AND S.B.  
Bridge No. 6175



EXISTING BRIDGE SECTION  
INTERSTATE 95 SOUTHBOUND OVER  
OLD PATTEN ROAD  
Bridge No. 6176



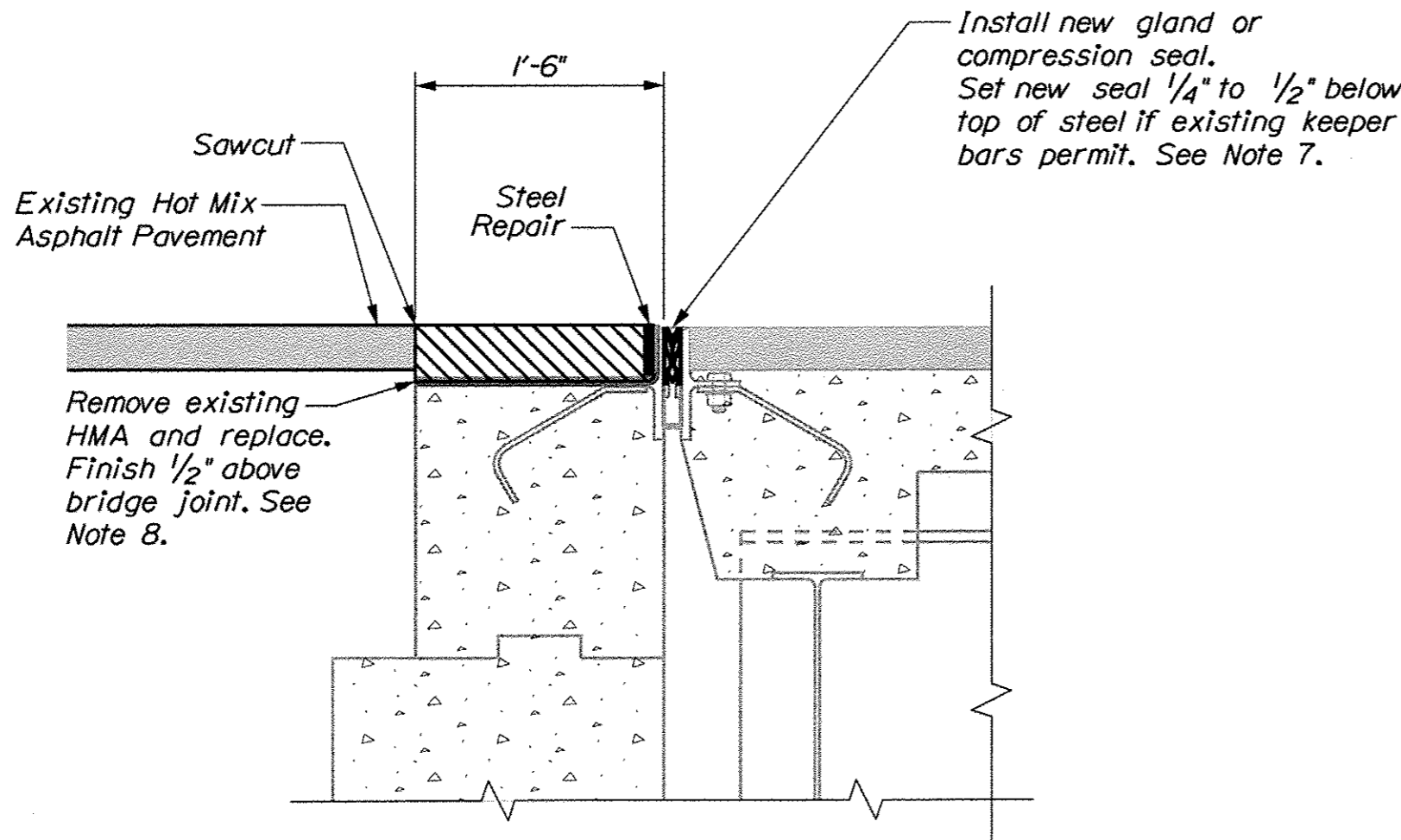
EXISTING BRIDGE SECTION  
INTERSTATE 95 SOUTHBOUND OVER  
FISH STREAM AND BOG BROOK ROAD  
Bridge No. 6177



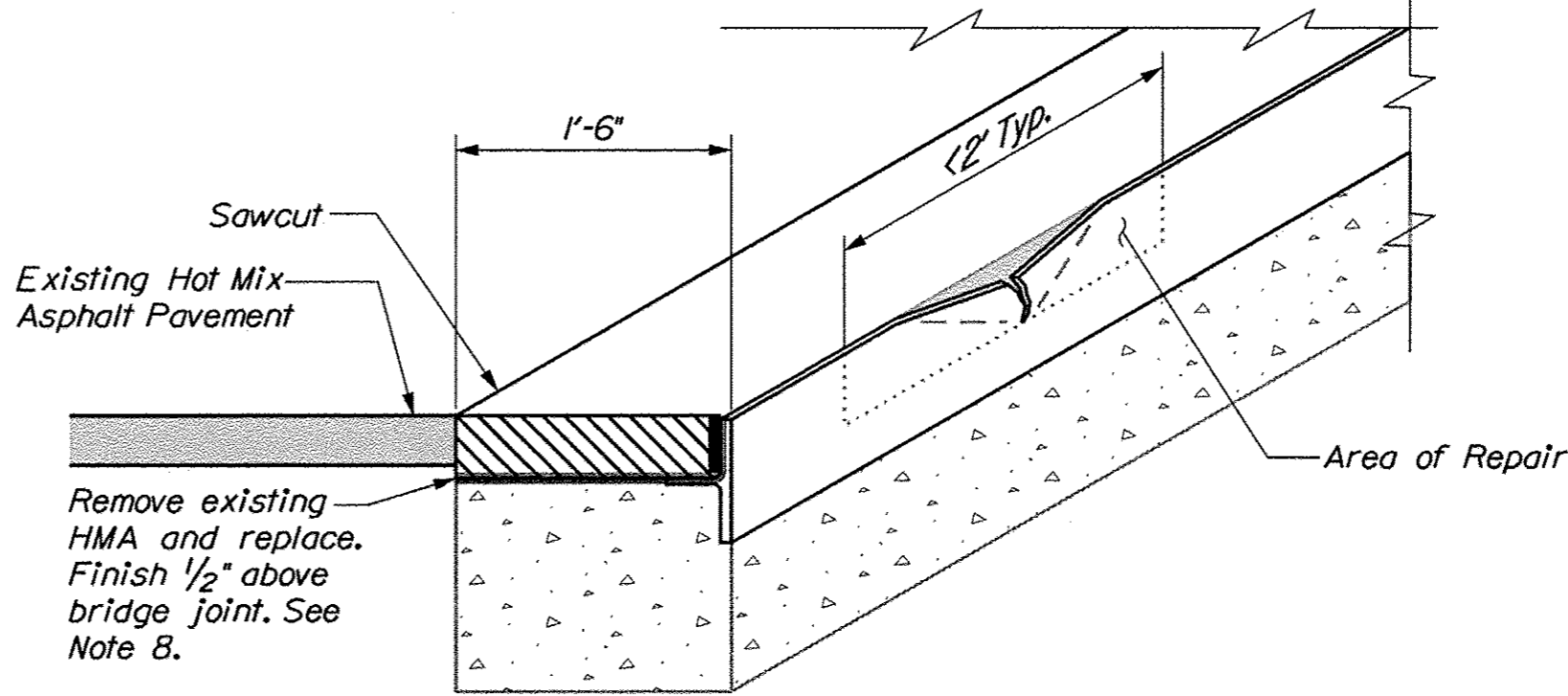
EXISTING BRIDGE SECTION  
INTERSTATE 95 SOUTHBOUND OVER  
WEST BRANCH MATTAWAMKEAG RIVER  
Bridge No. 6178

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STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		NHPP-2263(300)		WIN 22633.00		BRIDGE NOS. 6163, 6175, 6176, 6177 and 6178		BRIDGE PLANS	
INTERSTATE 95 SOUTHBOUND		BRIDGE WEARING SURFACE REHABILITATION		ISLAND FALLS		AROOSTOOK COUNTY		SECTIONS		SHEET NUMBER	
PROJ. MANAGER		BY		DATE		SIGNATURE		P.E. NUMBER		DATE	
DESIGN-DETAILED		J. HASBROUCK		D. SHAW							
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DESIGN-DETAILED2											
DESIGN-DETAILED3											
REVISIONS 1											
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FIELD CHANGES											
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TYPICAL JOINT CROSS-SECTION



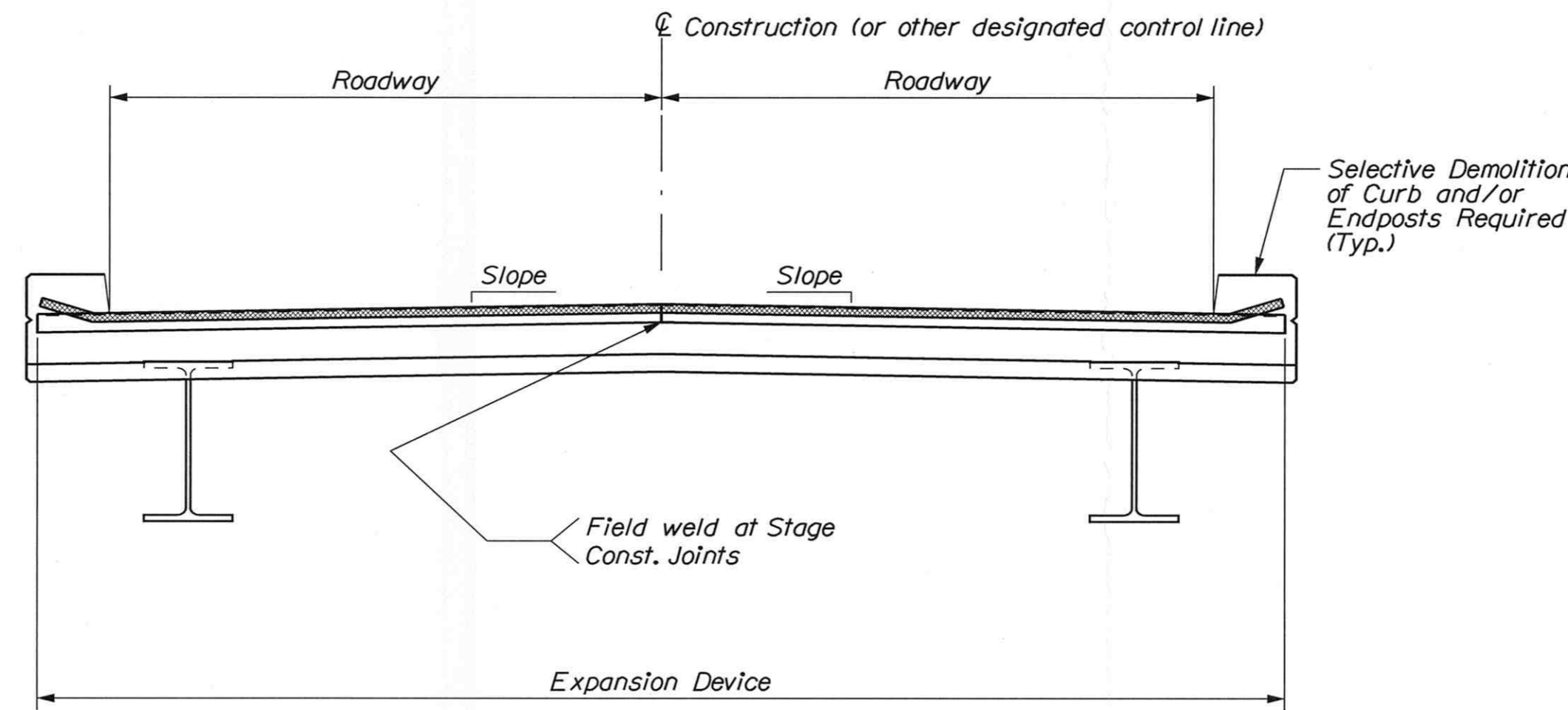
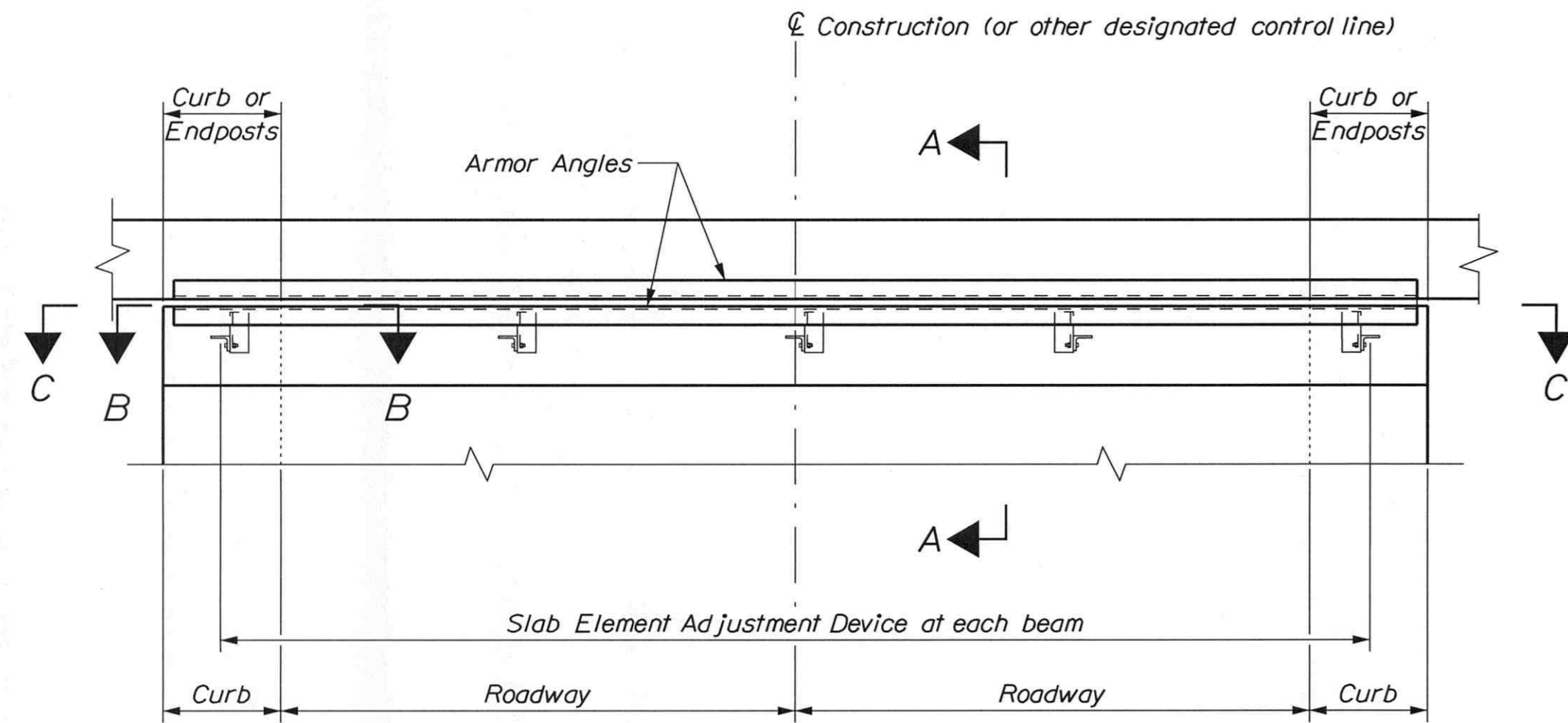
TYPICAL STEEL REPAIR DETAIL

REPAIR NOTES

1. Refer to Standard Details Section 520 for details and information not shown.
2. The Contractor shall be fully responsible for selecting the appropriate seal from the Qualified Products List based on the movement rating.
3. Bridge joint armor and extrusion modifications shall extend to the limits described on the respective joint modification details and as directed by the Resident. Damage may be repaired by replacing existing steel or by bending existing steel back to its original shape using a method approved by the Resident.
4. All new steel supplied for the bridge joint modification shall be uncoated.
5. Welding shall be completed as a series of skip welds to minimize welding distortion.
6. If the base metal temperature falls below 32 degrees Fahrenheit, the base metal shall be heated to a minimum of 80 degrees Fahrenheit before welding. If the base metal temperature falls below 50 degrees Fahrenheit, the base metal shall be heated to remove any moisture. A welding procedure and listing of proposed welding consumables shall be submitted to the Resident for approval.
7. Keeper bars shall be positioned to allow top of compression seal to sit 1/4" to 1/2" below top of armor. If existing keeper bar does not permit the seal to set at the specified depth, the Contractor shall notify the Resident.
8. Where any pavement removal is necessary to repair the joint, mill 2" of the approach pavement a minimum of 18" from the joint armor, for the full transverse width of the joint. The milled surface shall be clean, dry, and free of all loose and debonded material, with a layer of mastic from an approved bridge membrane system applied to the joint armor prior to re-paving.
9. Seal replacement and steel repair shall be paid for under Pay Item No. 520.241, Bridge Joint Modification Type I. HMA pavement removal and replacement shall be paid for under the related contract items.

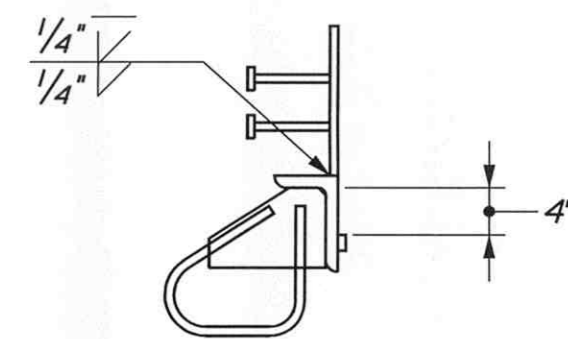
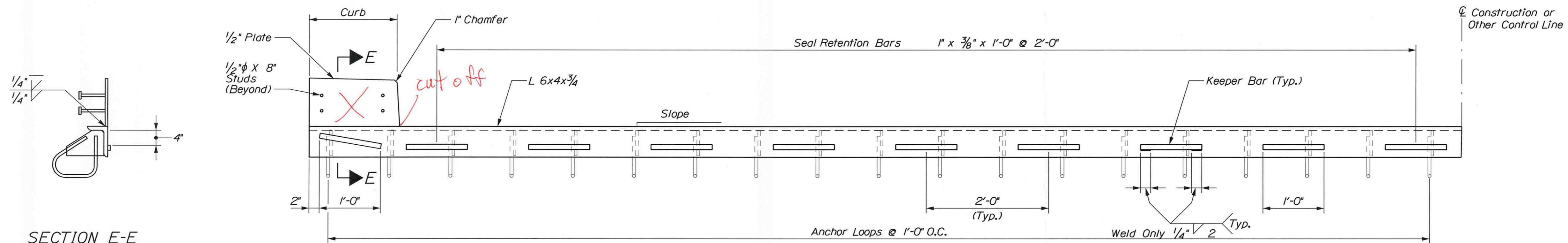
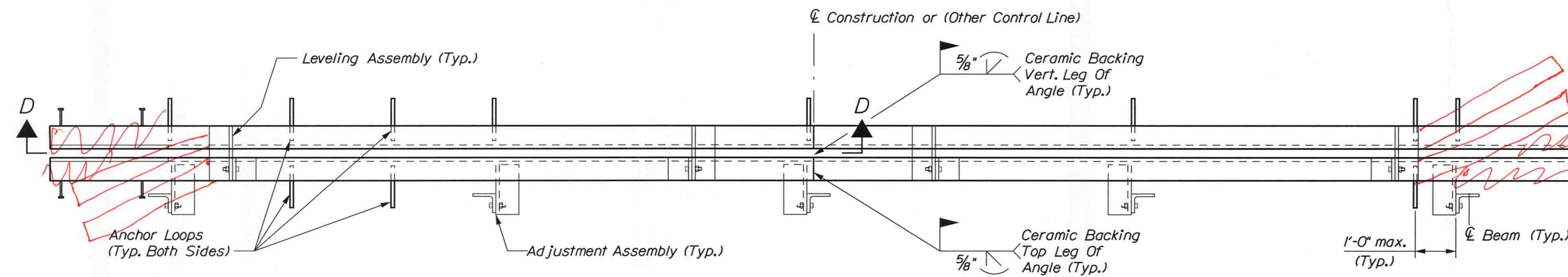
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		NHP-2263(300)		WIN 022633.00		BRIDGE NOS. 6163, 6175, 6176, 6177 and 6178		BRIDGE PLANS	
INTERSTATE 95 SOUTHBOUND		Varies		ARROSTOOK COUNTY		JOINT MODIFICATION DETAILS I		SHEET NUMBER		5	
ISLAND FALLS		ARROSTOOK COUNTY		JOINT MODIFICATION DETAILS I		SHEET NUMBER		5		OF 7	
PROJ. MANAGER		M. WIGHT		BY		DATE		SIGNATURE		P.E. NUMBER	
DESIGN-DETAILED		J. HASBROUCK		D. SHAW							
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DESIGN3-DETAILED3											
REVISIONS 1											
REVISIONS 2											
REVISIONS 3											
REVISIONS 4											
FIELD CHANGES											

AS-BUILTS by T&H 3-17-17



### HEAVY DUTY JOINT NOTES

1. The Contractor shall field measure the existing deck and joint and adjust the joint shop drawings accordingly. The curb plates shall be flush or slightly recessed from the concrete faces to avoid catching plows.
2. The Expansion Device shall be fabricated to be installed normal to grade.
3. The joint armor shall be furnished and installed un-galvanized.
4. Use a seal from the approved list in Special Provision 520 Expansion Devices - Non-Modular (Heavy Duty Joint) and with a 2" movement rating. Submit the selected seal to the Department with the shop drawings.
5. Prior to the installation of the seal the steel surfaces to receive the adhesive shall be blast cleaned and solvent washed per the seal manufacturer's instructions.
6. Heavy Duty Bridge Joint shall be paid for under Pay Item No. 520.245, Bridge Joint Modification Type 5.



HEAVY DUTY BRIDGE JOINT  
Revised

AS Built by TAH 3-17-17

STATE OF MAINE DEPARTMENT OF TRANSPORTATION  NHP-2263(300)	INTERSTATE 95 SOUTHBOUND ISLAND FALLS ISLAND FALLS AROOSTOOK COUNTY				JOINT MODIFICATION DETAILS II				
	PROJ. MANAGER	M. WIGHT	BY	DATE					
	DESIGN-DETAILED	J. HASBROUCK	D. SHAW		SIGNATURE				
	CHECKED-REVIEWED				P.E. NUMBER				
	DESIGN2-DETAILED2				DATE				
DESIGN3-DETAILED3									
REVISIONS 1									
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REVISIONS 4									
FIELD CHANGES									
SHEET NUMBER		6				OF 7			
BRIDGE NOS. 6163, 6175, 6176, 6177 and 6178		WIN 22633.00				BRIDGE PLANS			

