

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION



TRAFFIC DATA 16689.00

Current (2010) AADT	10,420
Future (2030) AADT	13,550
DHV - % of AADT	12%
Design Hour Volume	1,626
Heavy Trucks (% of AADT)	6%
Heavy Trucks (% of DHV)	4%
Directional Distribution (% of DHV)	100%
18 kip Equivalent P 2.0	918
18 kip Equivalent P 2.5	875

TRAFFIC DATA 16690.00

Current (2010) AADT	1,920
Future (2030) AADT	2,300
DHV - % of AADT	13%
Design Hour Volume	299
Heavy Trucks (% of AADT)	6%
Heavy Trucks (% of DHV)	4%
Directional Distribution (% of DHV)	100%
18 kip Equivalent P 2.0	155
18 kip Equivalent P 2.5	148

TRAFFIC DATA 16691.00

Current (2010) AADT	23,480
Future (2030) AADT	32,870
DHV - % of AADT	11%
Design Hour Volume	3,616
Heavy Trucks (% of AADT)	6%
Heavy Trucks (% of DHV)	4%
Directional Distribution (% of DHV)	66%
18 kip Equivalent P 2.0	755
18 kip Equivalent P 2.5	720

MATERIALS

Concrete:	
Unless noted otherwise	Class "LP"
Deck rehabilitation	Class "A"
Reinforcing Steel	ASTM A 615/A 615M, Grade 60

BASIC DESIGN STRESSES

Concrete	f'c = 4,350 psi
Reinforcing Steel	f y = 60,000 psi

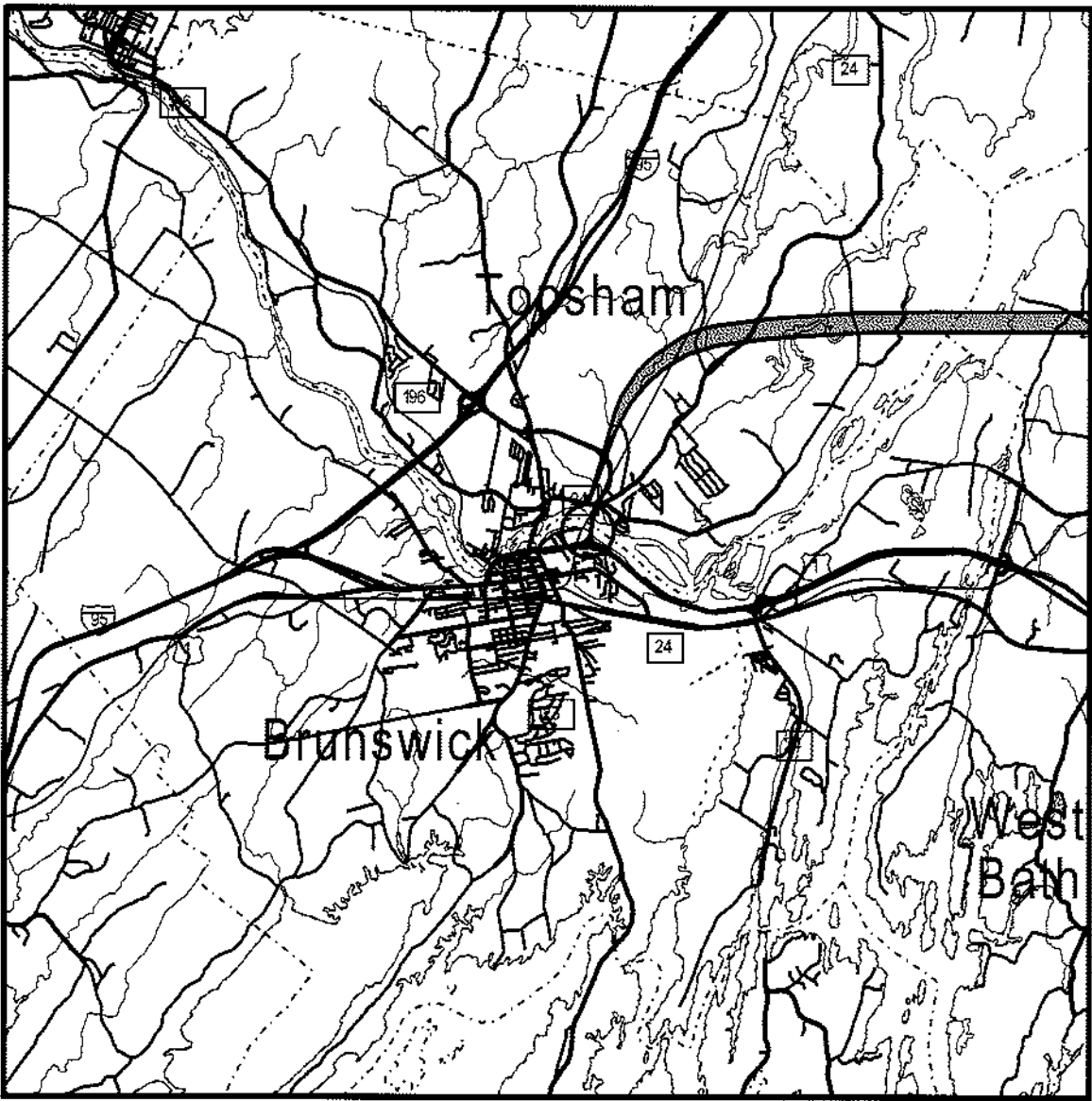
UTILITIES

Maine Natural Gas  
Town of Brunswick  
Town of Topsham

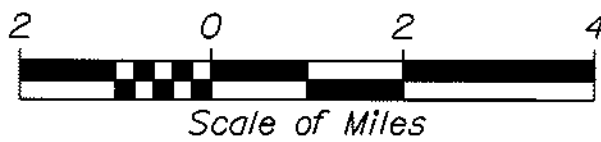
BRUNSWICK-TOPSHAM  
CUMBERLAND & SAGADAHOC COUNTIES  
RAMP B  
RAMP C  
MERRYMEETING BAY BRIDGE

BH-1668(900)X, BH-1669(000)X, BH-1669(100)X

WEARING SURFACE REHABILITATION  
BRIDGE NO. 6372, 6373, 6371



LOCATION MAP



LIST OF DRAWINGS

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Barrier Details	11
Joint Modifications	12

BH-1668(900) X, BH-1669(000)X, BH-1669(100)X PIN16689.00, 16690.00, 16691.00

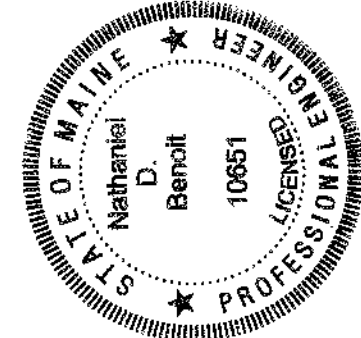
BRUNSWICK - TOPSHAM  
WEARING SURFACE PROJECTS

TITLE SHEET

SHEET NUMBER

1

OF 12



SIGNATURE  
Neilson Benoit  
P.E. NUMBER  
10651  
DATE  
2-18-11

PROGRAM	BRIDGE
PROJECT MANAGER	M. Parin / N. Benoit
DESIGNER	G. Gustafson
CONSULTANT	
PROJECT RESIDENT	S. Paul
CONTRACTOR	
PROJECT COMPLETION DATE	

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	DATE 2/25/11
APPROVED COMMISSIONER	CHIEF ENGINEER

ESTIMATED QUANTITIES						
ITEM NO.	DESCRIPTION	QUANTITY				
		016689.00	016690.00	016691.00	TOTAL	UNIT
202.127	REMOVE EXISTING BITUMINOUS PAVEMENT	1000	1300	8370	1	LS
403.2081	12.5 MM POLYMER MODIFIED HMA	9	14	1036	1059	T
403.211	HOT MIX ASPHALT (SHIMMING)	-	-	25	25	T
409.15	BITUMINOUS TACK COAT - APPLIED	4	6	419	429	G
502.29	STRUCTURAL CONCRETE WEARING SURFACE ON BRIDGES	78	100	-	1	LS
514.06	CURING BOX FOR CONCRETE CYLINDERS	0.33	0.33	0.34	1	EA
515.21	PROTECTIVE COATING FOR CONCRETE SURFACES	940	1200	40	1	LS
518.50	REPAIR OF UPWARD FACING SURFACES - TO REINFORCING STEEL < 7.9 IN.	420	540	-	960	SF
518.51	REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 7.9 IN.	170	220	-	390	SF
518.511	FULL DEPTH CONCRETE REPAIR	45	55	-	100	SF
520.241	BRIDGE JOINT MODIFICATION TYPE 1	2	2	-	4	EA
520.246	BRIDGE JOINT MODIFICATION TYPE 6	-	-	2	2	EA
526.301	TEMPORARY CONCRETE BARRIER TYPE 1	50	50	50	1	LS
526.321	PERMANENT CONCRETE BARRIER TYPE III A	-	-	3.5 (FT)	1	LS
527.34	WORK ZONE CRASH CUSHIONS	1	1	2	4	UN
627.733	4 INCH WHITE OR YELLOW PAINTED PAVE MRK LINE	710	920	6500	8130	LF
627.76	TEMPORARY PVMT. MARK LINE, W OR YELLOW	0.33	-	0.67	1	LS
629.05	HAND LABOR, STRAIGHT TIME	20	20	20	60	HR
639.18	FIELD OFFICE TYPE A	0.33	0.33	0.34	1	EA
652.30	FLASHING ARROW BOARD	1	-	-	1	EA
652.312	TYPE III BARRICADE	1	1	-	2	EA
652.33	DRUM	10	30	10	50	EA
652.34	CONE	40	10	100	150	EA
652.341	TEMPORARY FLEXIBLE DELINEATOR	50	-	-	50	EA
652.35	CONSTRUCTION SIGNS	1220	175	260	1655	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES	45	30	30	1	LS
652.38	FLAGGER	96	72	72	240	HR
652.381	TRAFFIC OFFICERS	100	50	50	200	HR
652.41	PORTABLE CHANGEABLE MESSAGE SIGN	1	1	2	4	EA
659.10	MOBILIZATION	1	1	1	1	LS

STRUCTURAL NOTES

1. Protective coating for concrete surfaces shall be applied to all exposed surfaces of new concrete.
2. The Contractor shall take care not to damage the existing concrete or reinforcing steel to remain. Any damaged concrete or reinforcing steel shall be repaired or replaced as directed by the Resident at no expense to the Department.
3. 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.
4. All concrete surfaces where elastomeric concrete is to be applied shall have a 1/4-in. minimum anchor profile or roughened surface.
5. Elastomeric concrete shall be applied according to the manufacturer's recommendations.

CONSTRUCTION PHASING NOTES

1. Construction phasing plans represent bridge phasing work only. Required maintenance of traffic is not shown and shall be designed by the Contractor in accordance with Special Provision 652.
2. The Contractor shall note work zone time restrictions exist for all work zones. See Special Provision 107 for specific work zone time restrictions and limitations of operations.
3. All lanes in long term lane closures and work zones shall be delineated with temporary paint lines or temporary raised pavement markings. Temporary paint lines will not be permitted on the surface course of the new wearing surfaces. Temporary raised pavement markings shall only be used when approved by the Resident.

GENERAL CONSTRUCTION NOTES

1. Bidders and Contractors may obtain a copy of the existing bridge plans by faxing a request for information to the bid contact person. Existing bridge plans may also 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/comprehensive-list-projects/project-information.php>
2. All dimensions, angles and stationing shown on existing plans are taken from as-built construction drawings from 1995, 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.
3. Quantities included for pay items measured and paid for by Lump Sum are estimated quantities and are provided 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 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.
4. The Contractor shall survey all grades, pavement markings, and locations prior to construction. Upon completion of the project all grades & pavement markings shall be restored by the Contractor.

UTILITY NOTES

1. All utility facilities shall be adjusted by the respective utilities unless otherwise noted.
2. The Contractor shall note that Merrymeeting Bay Bridge has galvanized electrical conduits embedded in the concrete barrier, deck, and backwalls. Prior to demolition of any component, or drilling and grouting into any component, the contractor shall field locate the conduit(s) and verify the work will not damage the conduit. The Contractor shall advise the Resident of all interferences prior to proceeding with the work. See the project as-builts for additional information. Any damaged conduits or wiring resulting from the contractors operations shall be repaired to the Resident's satisfaction at no cost to the Department.

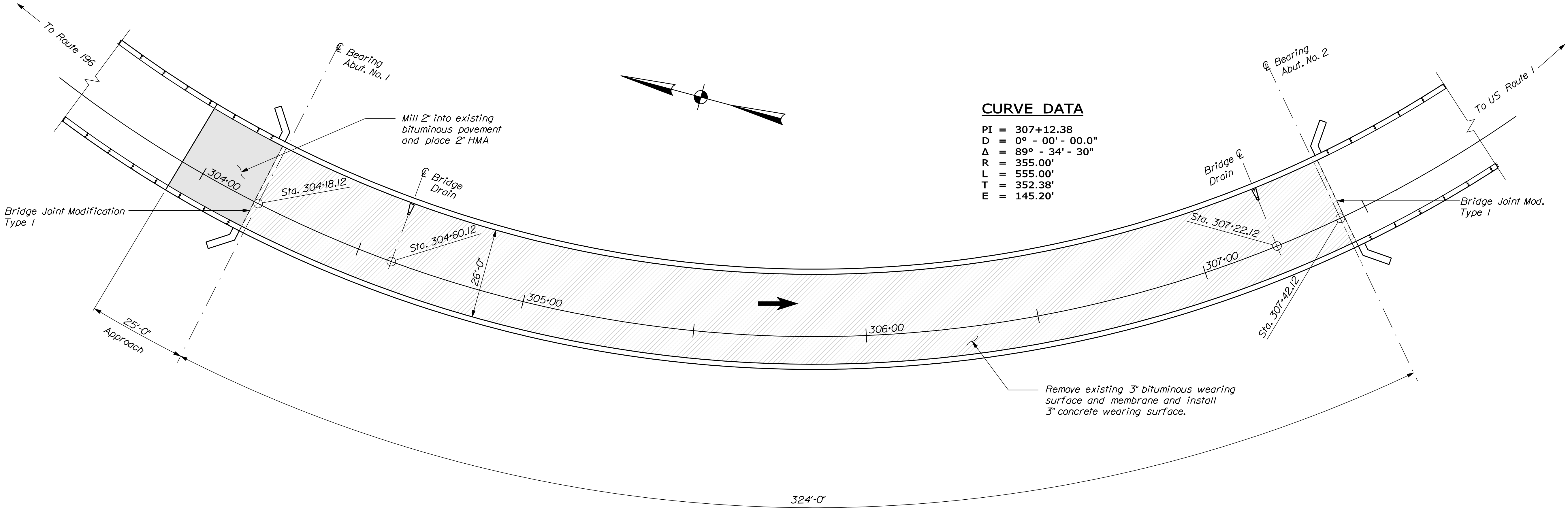
STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
BH-1668(900)X, BH-1669(000)X, BH-1669(100)X

PIN 16689.00  
PIN 16690.00  
PIN 16691.00

BRUNSWICK - TOPSHAM  
WEARING SURFACE PROJECTS

ESTIMATED QUANTITIES & NOTES

SHEET NUMBER  
2  
OF 12



**CURVE DATA**

PI = 307+12.38  
D = 0° - 00' - 00.0"  
Δ = 89° - 34' - 30"  
R = 355.00'  
L = 555.00'  
T = 352.38'  
E = 145.20'

PLAN

**DECK REHABILITATION NOTES**

After the existing wearing surface and membrane have been removed, the Contractor may be directed by the Resident to rehabilitate areas of the deck. Payment will be made under the appropriate rehabilitation items.

**CONCRETE WEARING SURFACE NOTES**

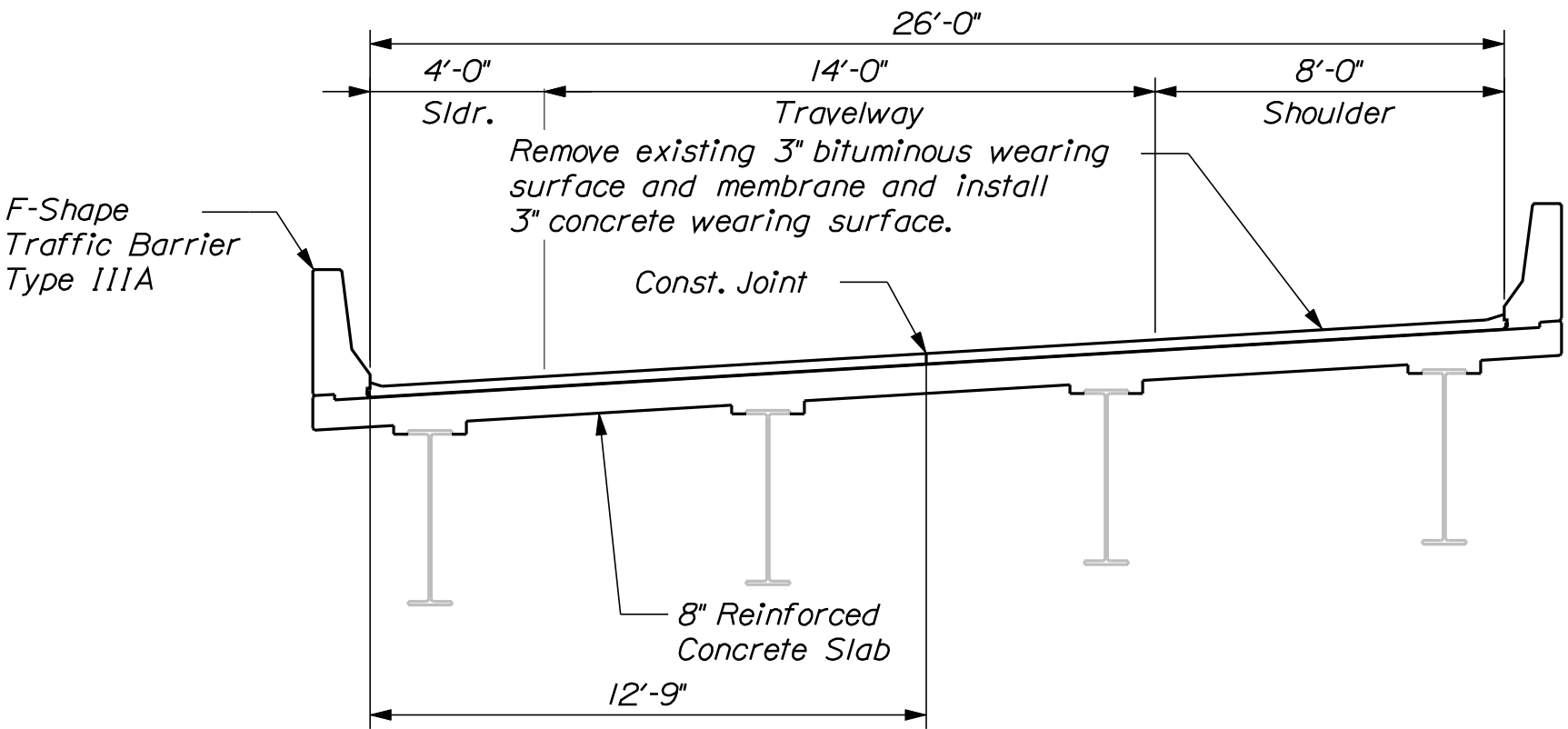
1. The Contractor will be required to hold pre-placement meetings for the concrete wearing surfaces one week prior to each placement.

2. Top of concrete wearing surface elevations shall be established by the Contractor at centerline and gutter at 10 foot intervals based on centerline finish grade profile. Elevations shall be provided to the Resident one week prior to setting top of concrete wearing surface grades.

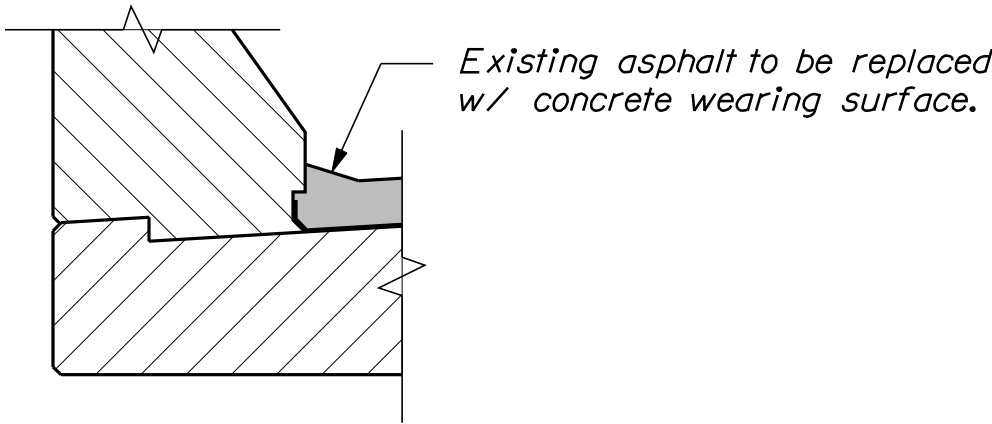
3. The concrete wearing surface shall be finished with either a steel tined finish or a transverse saw cut groove finish.

4. The Contractor shall provide a minimum 7 day wet cure for the concrete wearing surface. After 7 days of wet cure, the Contractor shall allow normal live load traffic, provided that the concrete has reached 80% of design strength. The Contractor shall make concrete test specimens and cure with the concrete wearing surfaces. The Contractor shall submit compressive strength test results to the Resident prior to allowing live loads on the bridge.

5. The use of a bonding agent between the concrete wearing surface and the deck shall not be permitted. The Contractor shall use a bonding grout with a ratio of 3 parts cement to 1 part sand by volume.



BRIDGE SECTION  
(typical)

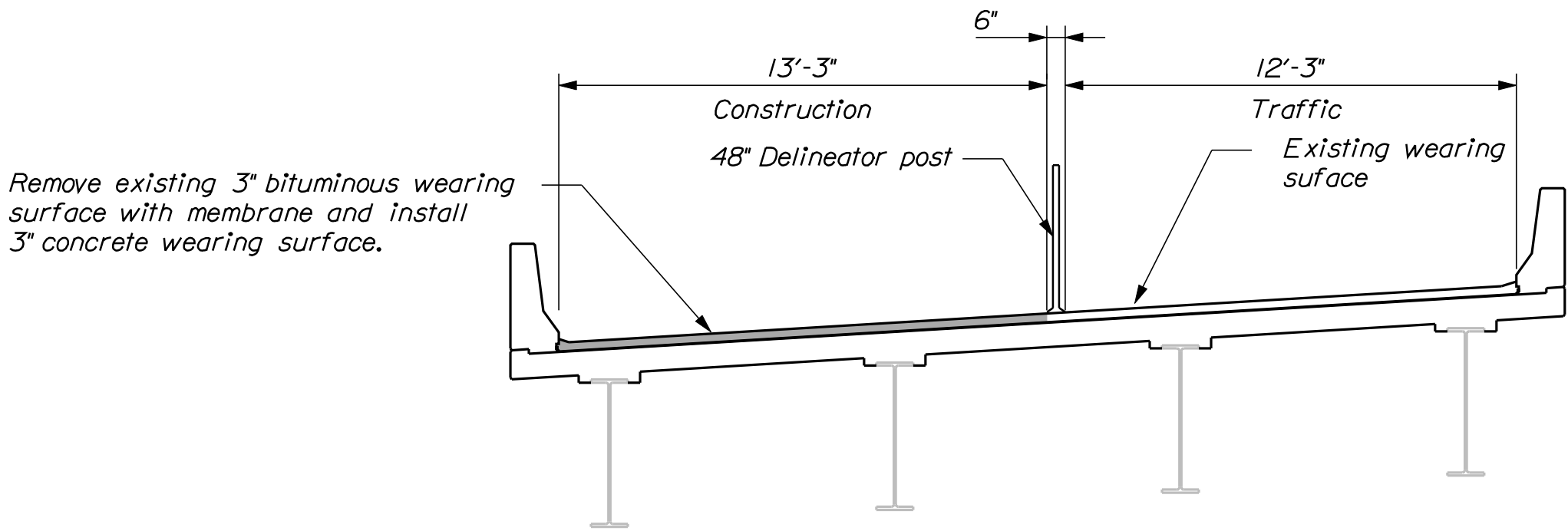


GUTTER DETAIL

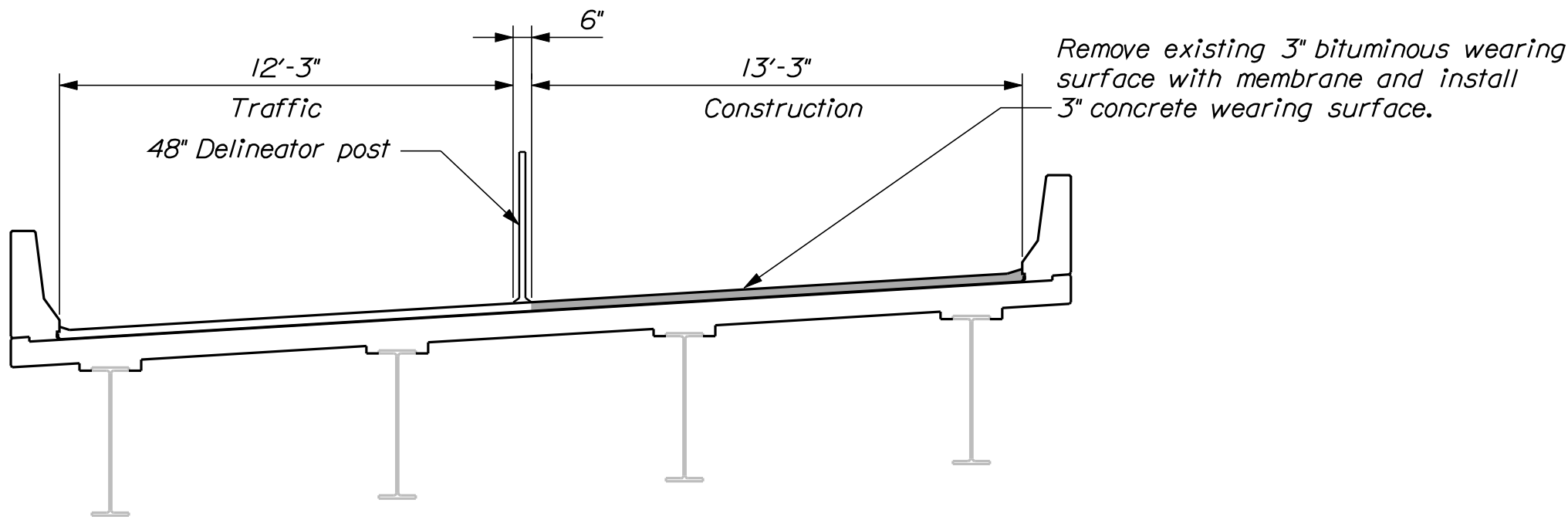
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BRIDGE PLAN & SECTION		SHEET NUMBER		3		OF 12			
DESIGNED-Detailed		CHECKED-Reviewed		DESIGNED-Detailed		CHECKED-Reviewed		DESIGNED-Detailed	
BY		DATE		BY		DATE		BY	
ADN				ADN				ADN	
SIGNATURE		P.E. NUMBER		DATE					

CONSTRUCTION STAGING NOTES

- 1. The Contractor shall note that Stage I includes casting the concrete wearing surface against the existing bituminous wearing surface.
- 2. Stage II shall include the removal of a portion of the concrete placed during Stage I to facilitate a clean construction joint.
- 3. The Contractor shall note that the stages shown overlap by six inches.
- 4. The Contractor shall provide a minimum lane width of 12 feet.
- 5. The Contractor shall place the delineator posts no more than 15 feet apart.



STAGE I



STAGE II

STATE OF MAINE DEPARTMENT OF TRANSPORTATION  BH-1668(900)X							
						SIGNATURE	
						P.E. NUMBER	
						DATE	
BRIDGE NO. 6372						PIN 16689.00	BRIDGE PLANS

RAMP B OVER US ROUTE 1 BRUNSWICK CUMBERLAND COUNTY CONSTRUCTION STAGING	PROJ. MANAGER	M. Porlin	BY	DATE	
	DESIGN-DETAILED	CAC	ADN		
	CHECKED-REVIEWED	SRP			
	DESIGN-DETAILED2				
	DESIGN-DETAILED3				
	REVISIONS 1				
	REVISIONS 2				
	REVISIONS 3				
	REVISIONS 4				
	FIELD CHANGES				
SHEET NUMBER					
4					
OF 12					



1

DETOUR  
AHEAD

48 x 48

2

DETOUR

TO TO

NORTH SOUTH

1 1

↑ →

24 x 12

24 x 12

24 x 12

24 x 24

21 x 15

3

DETOUR

TO TO

SOUTH NORTH

1 1

← →

4

DETOUR

TO TO

NORTH SOUTH

1 1

↑ ↱

5

DETOUR

TO TO

SOUTH NORTH

1 1

↰ ↲

6

DETOUR

TO TO

NORTH SOUTH

1 1

↰ ↑

7

NB  
RAMP  
CLOSED  
AHEAD

48 x 48

8

DETOUR

TO TO

NORTH SOUTH

1 1

← ↑

9

DETOUR

TO

NORTH

1

↱

10

DETOUR

TO

NORTH

1

→

11

DETOUR

TO

NORTH

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12

DETOUR

TO

NORTH

1

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13

DETOUR

TO

NORTH

1

↑

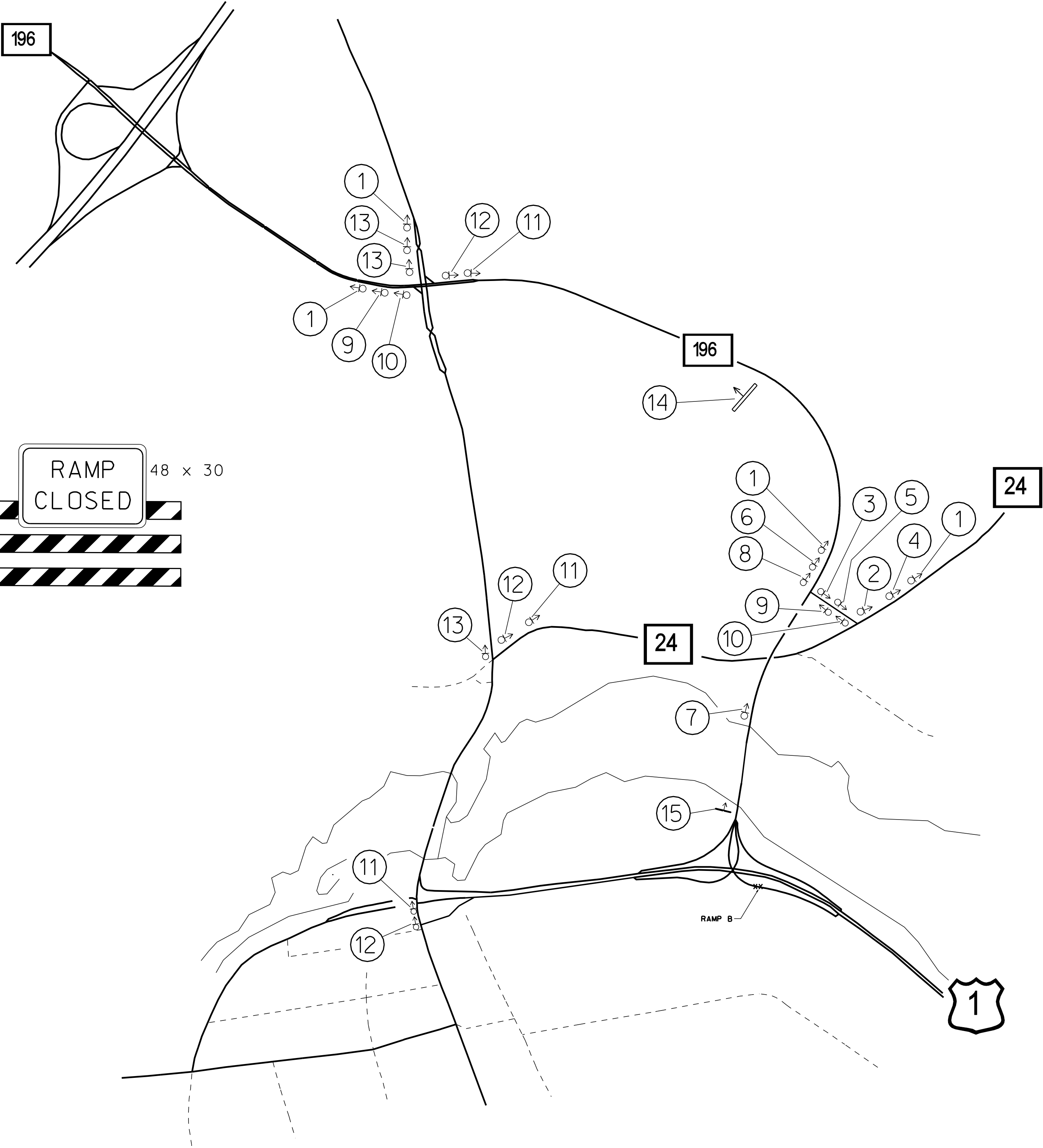
14

PORTABLE CHANGEABLE  
MESSAGE SIGN

15

RAMP  
CLOSED


48 x 30



NOT TO SCALE


STATE OF MAINE DEPARTMENT OF TRANSPORTATION BH-1668(900)X, BH-169(000)X, BH-169(100)X PIN 16689.00, 16690.00 & 16691.00 BRIDGE NO. 6372, 6373 & 6371	SIGNATURE				DATE
	P.E. NUMBER				DATE
	DATE				DATE
RAMP B OVER U.S. ROUTE 1 BRUNSWICK CUMBERLAND COUNTY DETOUR I	PROJ. MANAGER	M. Parlin	BY	D. Hanks SRP	DATE
	CHECKED-DETAILED	D. Hanks GAS	CHECKED-REVIEWED	D. Hanks SRP	DATE
SHEET NUMBER 5 OF 12	DESIGN-DETAILED				
	DESIGN-REVIEWED				
	DESIGN-DETAILED				
	DESIGN-REVIEWED				

- 1

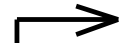


48 x 48
- 2

TRUCK DETOUR

TO  NORTH


ALL TRUCKS TOWING TRAILERS




12 x 72

48 x 84
- 3

TRUCK DETOUR

TO  NORTH


ALL TRUCKS TOWING TRAILERS



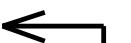
12 x 72

48 x 84
- 4

TRUCK DETOUR

TO  NORTH


ALL TRUCKS TOWING TRAILERS



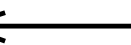
12 x 72

48 x 84
- 5

TRUCK DETOUR

TO  NORTH


ALL TRUCKS TOWING TRAILERS




12 x 72

48 x 84
- 6

TRUCK DETOUR


TO  NORTH

ALL TRUCKS TOWING TRAILERS




12 x 72

48 x 84
- 7



48 x 48
- 8

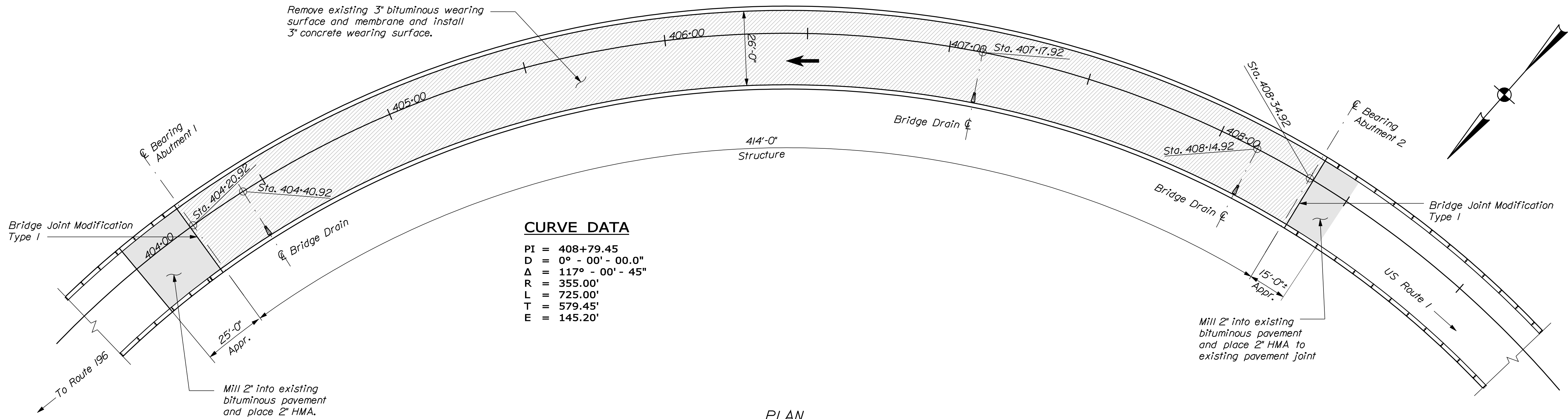


48 x 48
- 9

PORTABLE CHANGEABLE MESSAGE SIGN

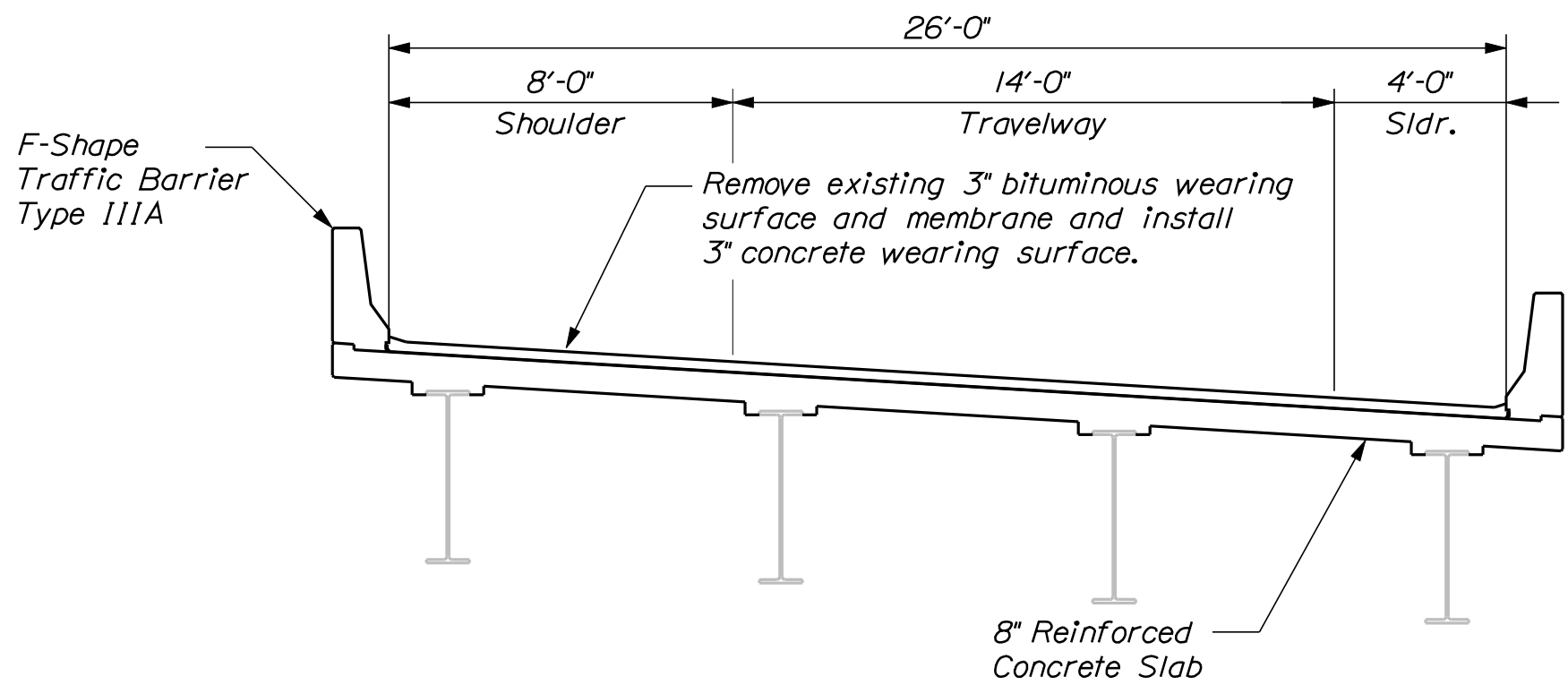


STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		BH-1668(900)X, BH-169(000)X, BH-169(100)X		PIN 16689.00, 16690.00 & 16691.00		BRIDGE NO. 6372, 6373 & 6371		BRIDGE PLANS	
RAMP B		OVER U.S. ROUTE 1		CUMBERLAND COUNTY		DETOUR II		SHEET NUMBER		6	
PROJ. MANAGER		M. Parlin		BY		DATE		SIGNATURE		P.E. NUMBER	
DESIGN-DETAILED		D. Hanks		SRP							
CHECKED-REVIEWED		GAS									
DESIGN-DETAILED											
REVISIONS 1											
REVISIONS 2											
REVISIONS 3											
REVISIONS 4											
FIELD CHANGES											

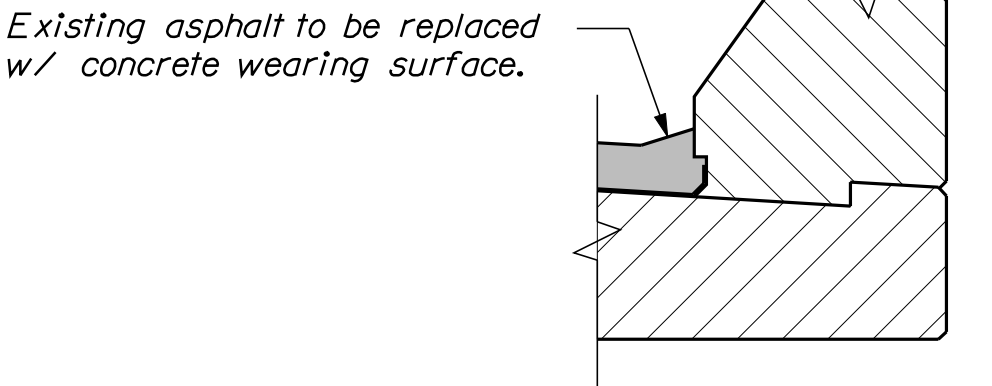


**CURVE DATA**  
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Δ = 117° - 00' - 45"  
R = 355.00'  
L = 725.00'  
T = 579.45'  
E = 145.20'

PLAN



BRIDGE SECTION  
(typical)



GUTTER DETAIL

**NOTE:**  
Refer to Sheet 3 for  
Deck Rehabilitation Notes &  
Concrete Wearing Surface Notes.

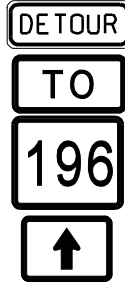
STATE OF MAINE DEPARTMENT OF TRANSPORTATION BH-1669(000)X	SIGNATURE			
	P.E. NUMBER			
	DATE			
RAMP C OVER U.S. ROUTE 1 & RAMP B BRUNSWICK CUMBERLAND COUNTY BRIDGE PLAN & SECTION	PROJ. MANAGER	M. Parlin	BY	ADN
	DESIGN-DETAILED	CAC	DATE	
	CHECKED-REVIEWED	SRP		
	DESIGN-DETAILED			
	REVISIONS 1			
SHEET NUMBER 7 OF 12	REVISIONS 2			
	REVISIONS 3			
	REVISIONS 4			
FIELD CHANGES				
STATE OF MAINE DEPARTMENT OF TRANSPORTATION BH-1669(000)X		BRIDGE NO. 6373	PIN 16690.00	BRIDGE PLANS

1

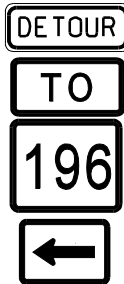


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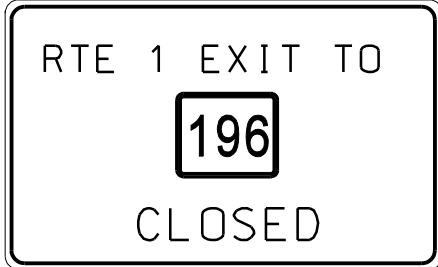
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3

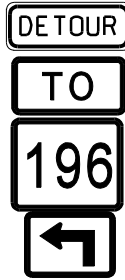


4



48 x 84

5

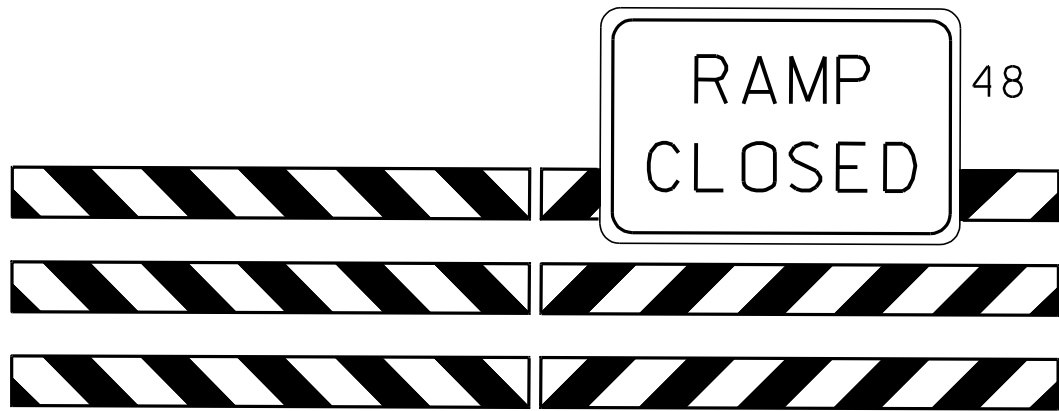


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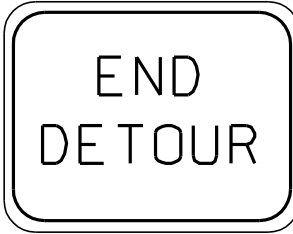
48 x 48

7



48 x 30

8



24 x 18

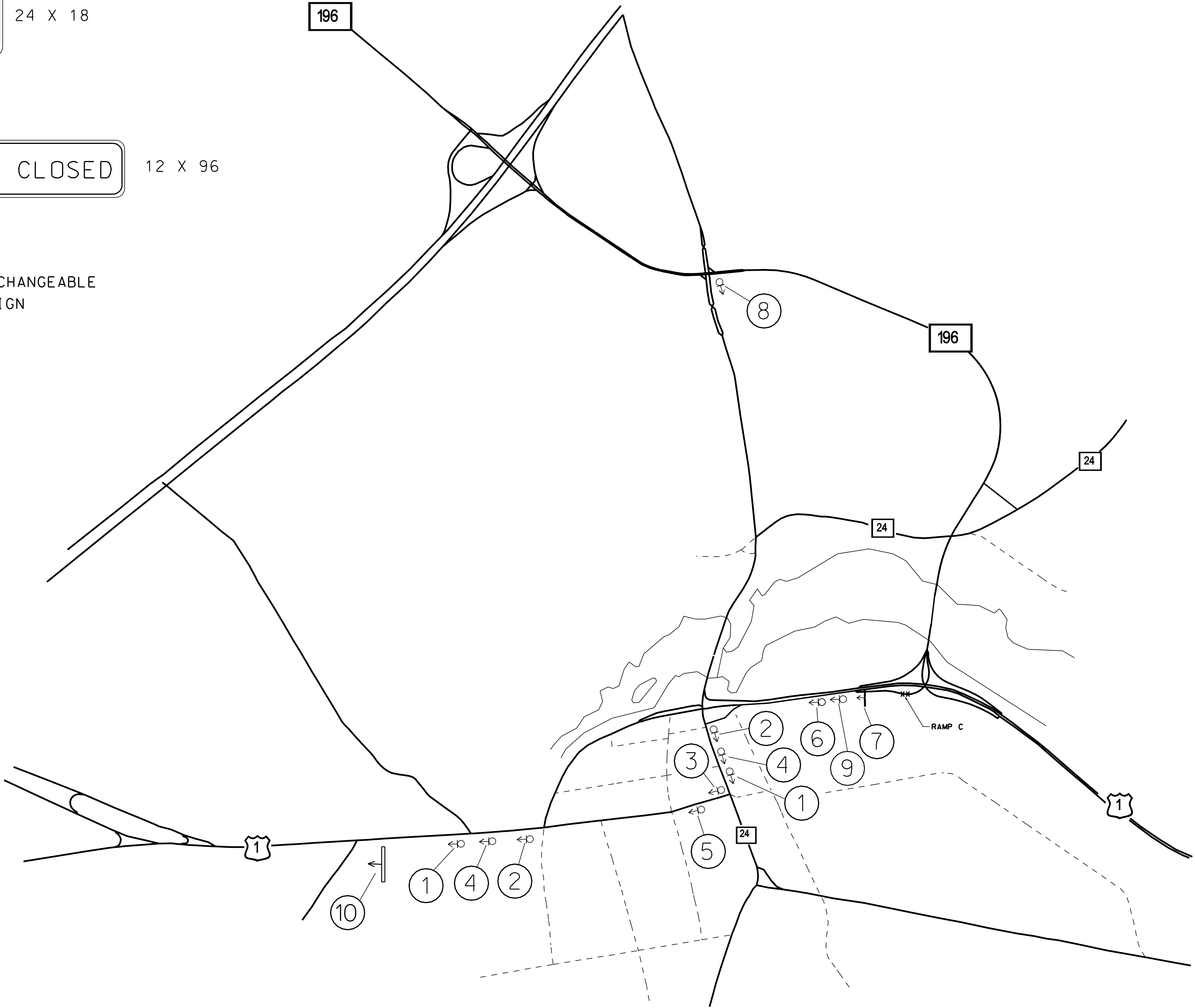
9



12 x 96

10

PORTABLE CHANGEABLE  
MESSAGE SIGN



General Notes

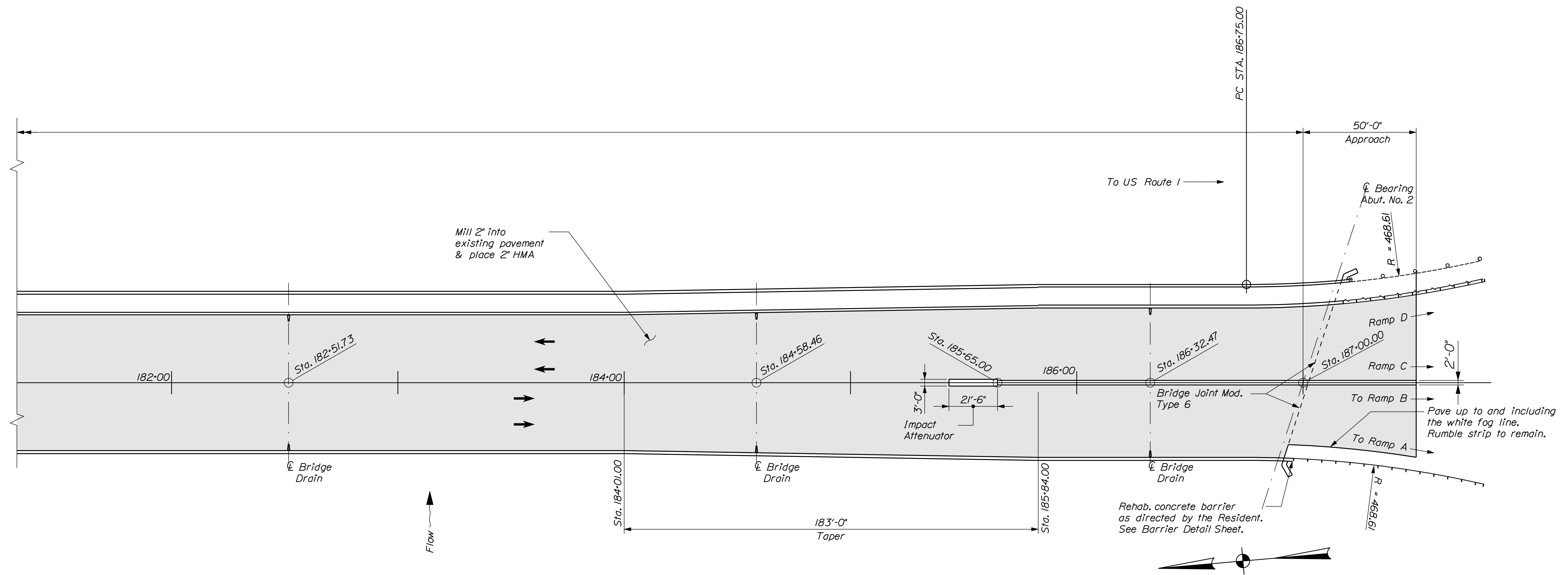
- 1) Other signs may be needed as directed by the Resident.  
2) Sign 9 shall be installed diagonally across the existing ground-mounted directional sign to 196.

NOT TO SCALE

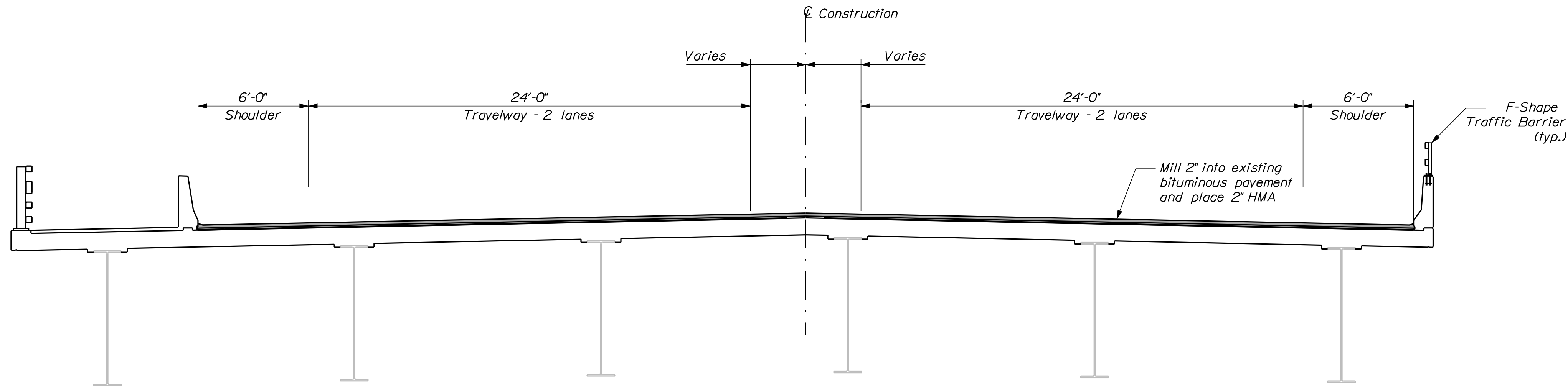
STATE OF MAINE DEPARTMENT OF TRANSPORTATION BH-1668(900)X, BH-169(000)X, BH-169(100)X PIN 16689.00, 16690.00 & 16691.00 BRIDGE NO. 6372, 6373 & 6371 BRIDGE PLANS				
	RAMP C OVER U.S. ROUTE 1 & RAMP B BRUNSWICK CUMBERLAND COUNTY DETOUR		PROJ. MANAGER M. Parlin	DATE
	SHEET NUMBER 8 OF 12		DESIGN-DETAILED D. Hanks GAS SRP	SIGNATURE P.E. NUMBER DATE



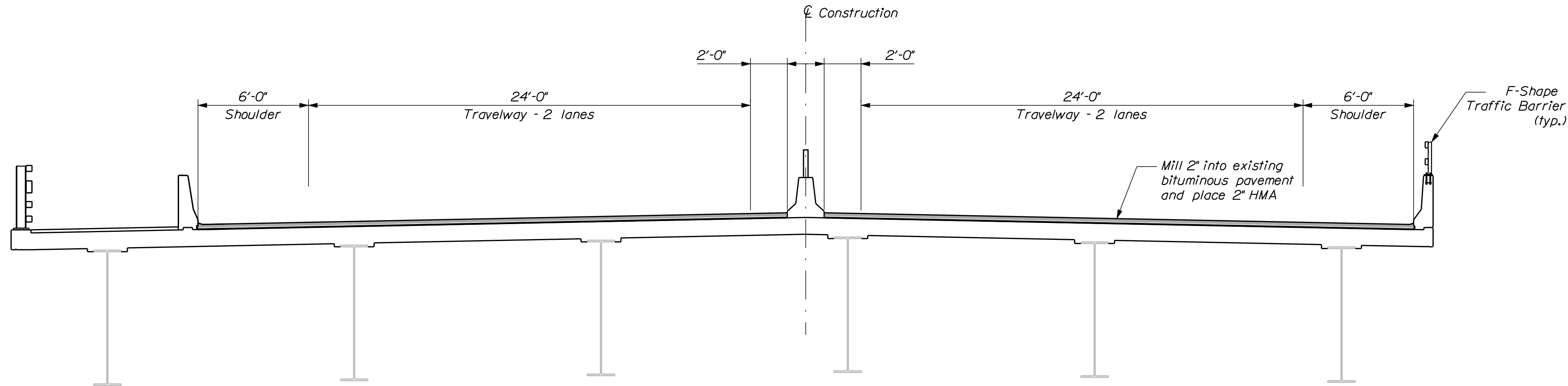
*The Contractor shall mill the existing pavement at the northern approach to a variable depth reduce the effect of settlement on that approach. If further work is necessary to restore the grade on this approach, pavement shim shall be placed as directed by the Resident.*



9 OF 12	SHEET NUMBER	MERRYMEETING BAY BRIDGE ANDROSCOGGIN RIVER BRUNSWICK - TOPSHAM CUMBERLAND - SAGADAHO					PROJ. MANAGER	M. Perlin	BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION		
		PLAN					DESIGN-DETAILED	CAC	ADN		SIGNATURE		
							DESIGN-REVIEWED	SRP					
							DESIGN2-DETAILED2						
							DESIGN3-DETAILED3						
							REVISIONS 1				P.E. NUMBER	BH-1669(100)X	
							REVISIONS 2						
							REVISIONS 3						
							REVISIONS 4				DATE	PIN	BRIDGE NO. 6371
							FIELD CHANGES					16691.00	BRIDGE PLANS



BRIDGE SECTION  
(Abutment 1 to Sta. 185+84.00)

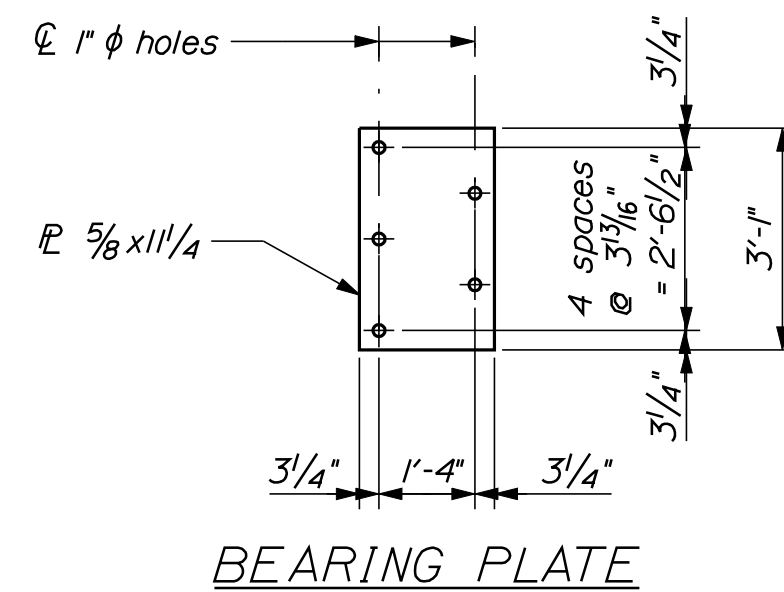
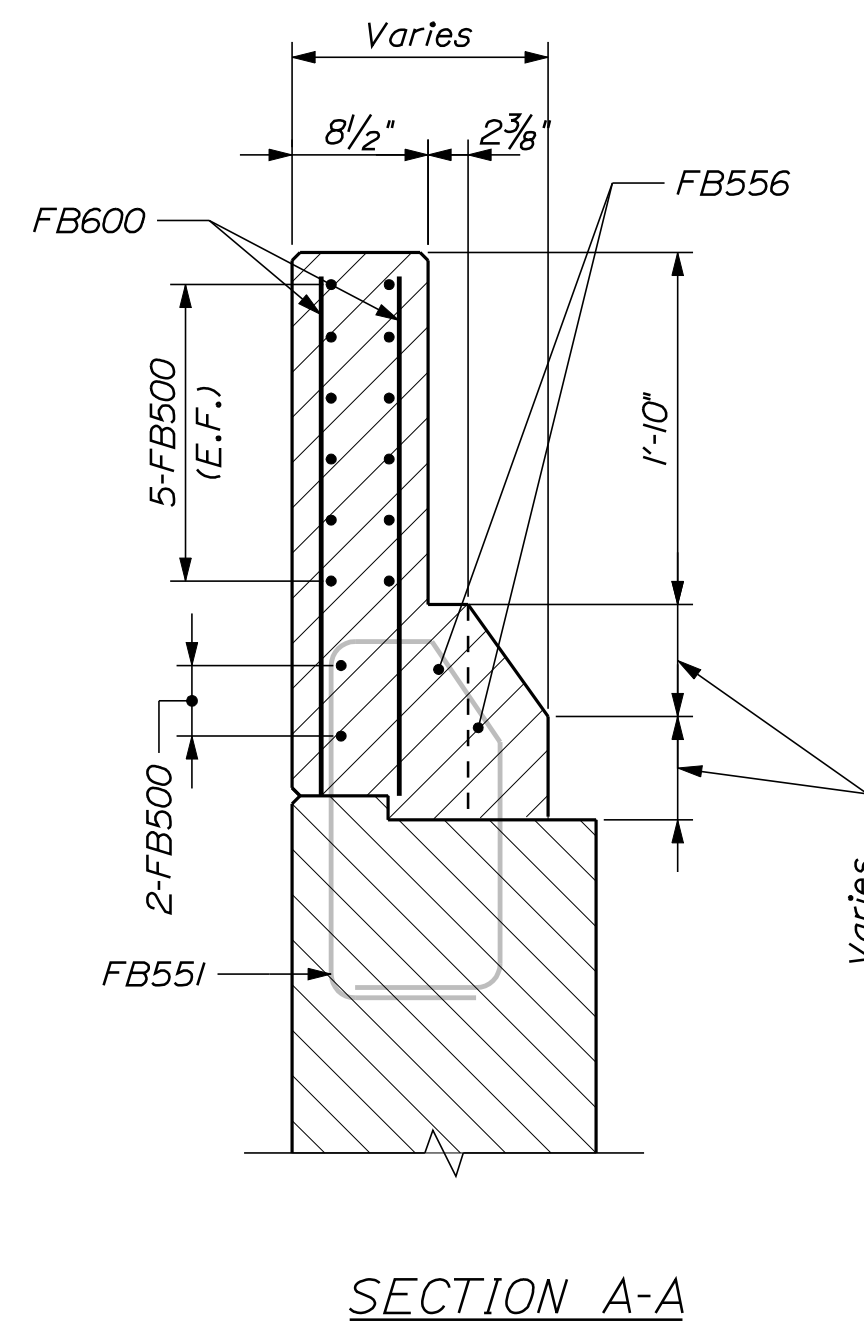
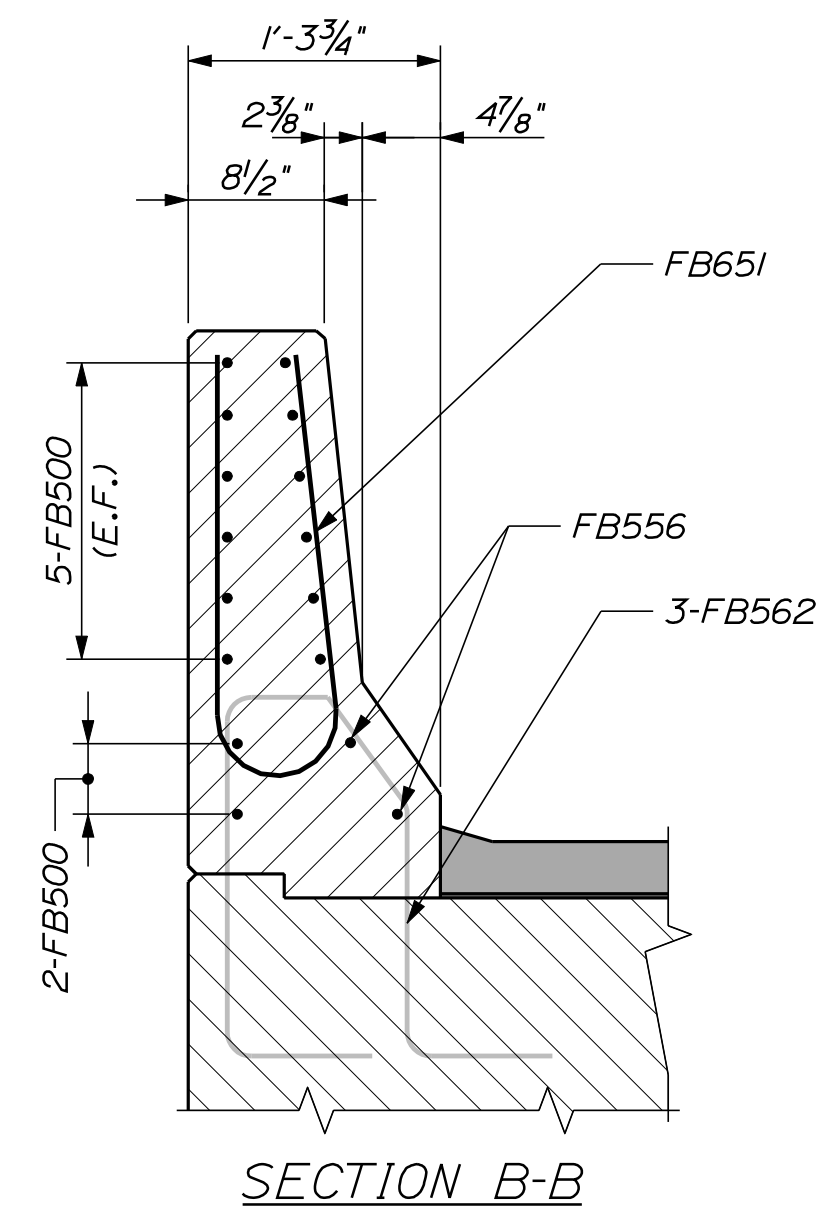


BRIDGE SECTION  
(Sta. 185+84.00 to Sta. 186+75.00)

CONSTRUCTION PHASING NOTES

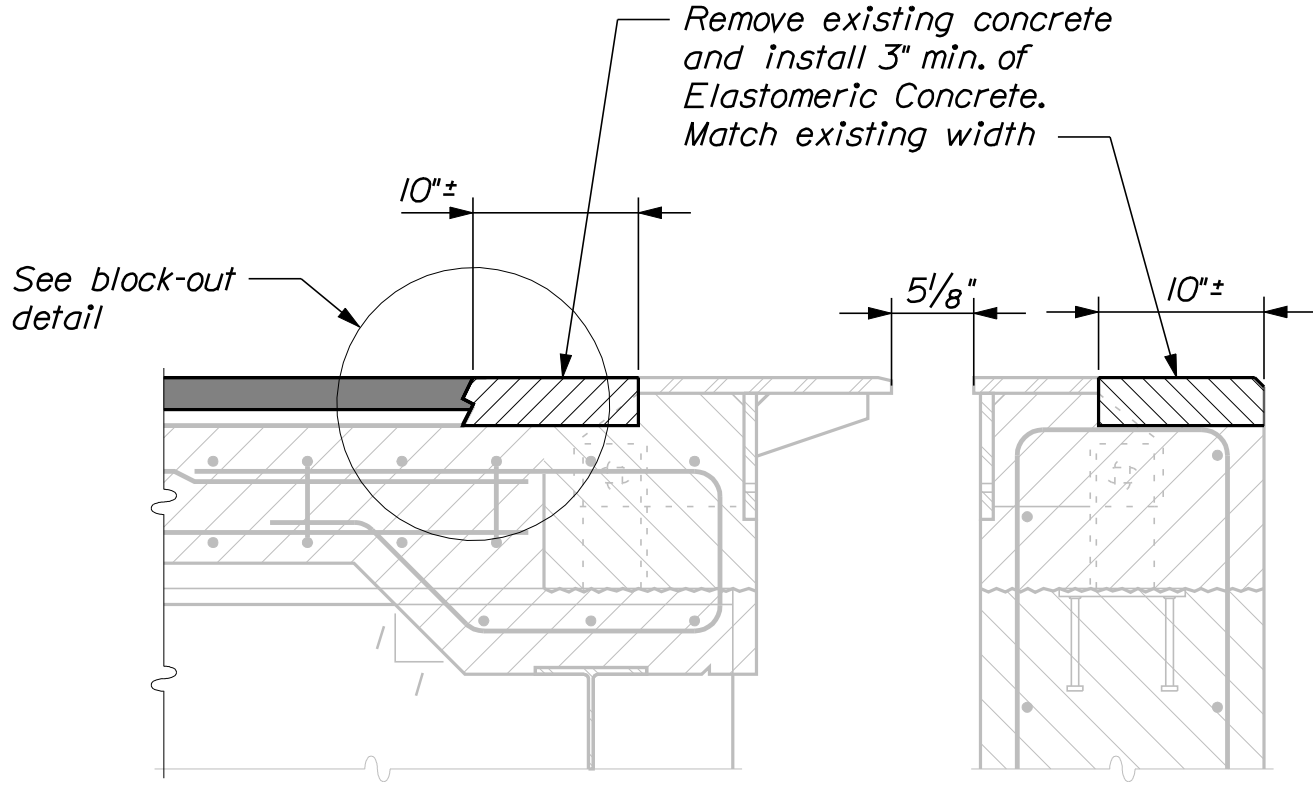
1. The Contractor shall install longitudinal pavement joints at crown lines or lane lines.  
2. The Contractor shall provide a minimum of two 11 foot travel lanes, one in each direction, unless otherwise noted on the Plans or in the Specifications.

MERRYMEETING BAY BRIDGE ANDROSCOGGIN RIVER BRUNSWICK - TOPSHAM CUMBERLAND - SAGADAHOCH			PROJ. MANAGER M. Parlin GAG SRP		BY ADN	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION	
TYPICAL BRIDGE SECTIONS			DESIGN-DETAILED				BH-1669(100)X	
			CHECKED-REVIEWED					
			DESIGN2-DETAILED2			SIGNATURE		
			DESIGN3-DETAILED3			P.E. NUMBER		
			REVISIONS 1					
			REVISIONS 2				BRIDGE NO. 6371 PIN 16691.00 BRIDGE PLANS	
			REVISIONS 3					
			REVISIONS 4					
			FIELD CHANGES			DATE		
SHEET NUMBER								
10								
OF 12								

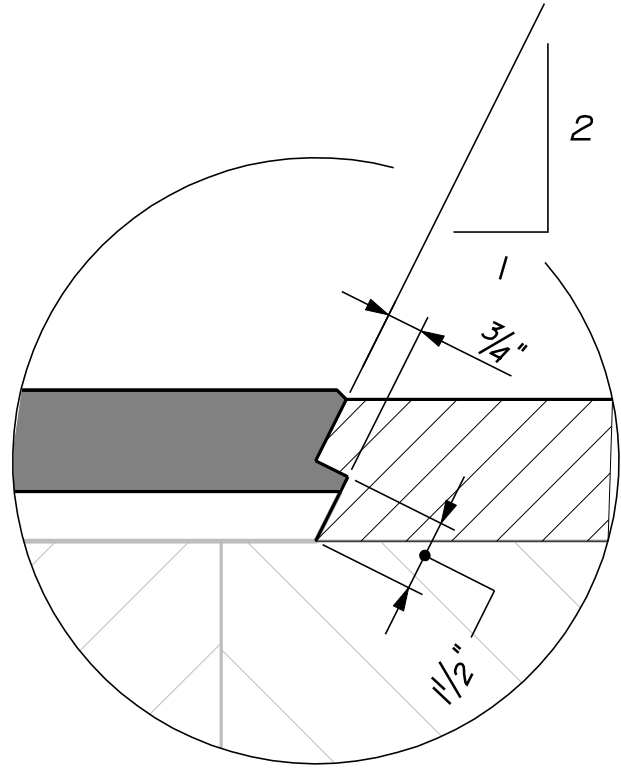


5. Relocation of fence post(s) and modification of fencing shall be incidental to related contract items.

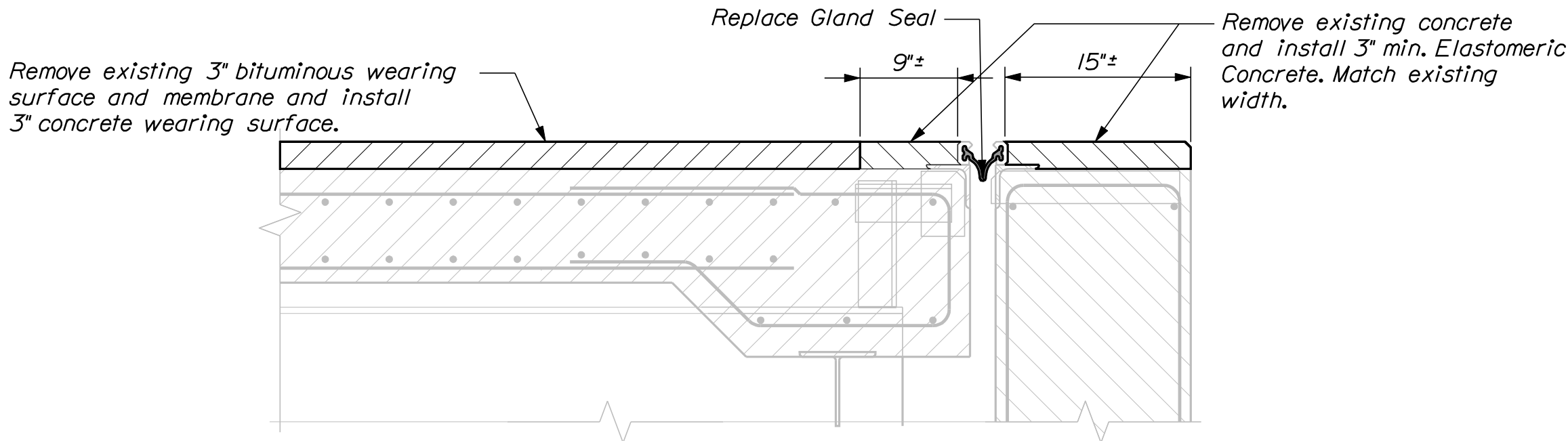
[illegible]



JOINT MODIFICATION TYPE 6  
Merrymeeting Bay Bridge



BITUMINOUS WEARING SURFACE DETAIL



JOINT MODIFICATION TYPE 1  
Ramp B & C

JOINT MODIFICATION I NOTES

- 1.The seals to be furnished for Ramp B shall have a minimum Movement Rating of:
- Abutment Number 1 = 0.90  
Abutment Number 2 = 2.07
- 2.The seals to be furnished for Ramp C shall have a minimum Movement Rating of:
- Abutment Number 1 = 2.03  
Abutment Number 2 = 2.03
- 3.The Resident shall approve the seals prior to ordering and installation. The Contractor shall verify the dimensions necessary to assure that the new joint seals will fit.
- 4.The new bridge joint seals shall be placed in one continuous length and shall extend through the bridge curbs as shown in Standard Detail 520(01).

BRUNSWICK - TOPSHAM WEARING SURFACE PROJECTS	PROJ. MANAGER		M. Perrin	BY	DATE
	DESIGN-DETAILED		GAG	ADN	
	CHECKED-REVISED		SRP		
	DESIGN2-DETAILED2				
	DESIGN3-DETAILED3				
	REVISED 1				
	REVISED 2				
	REVISED 3				
	REVISED 4				
	FIELD CHANGES				
JOINT MODIFICATIONS					
SHEET NUMBER					
12					
OF 12					