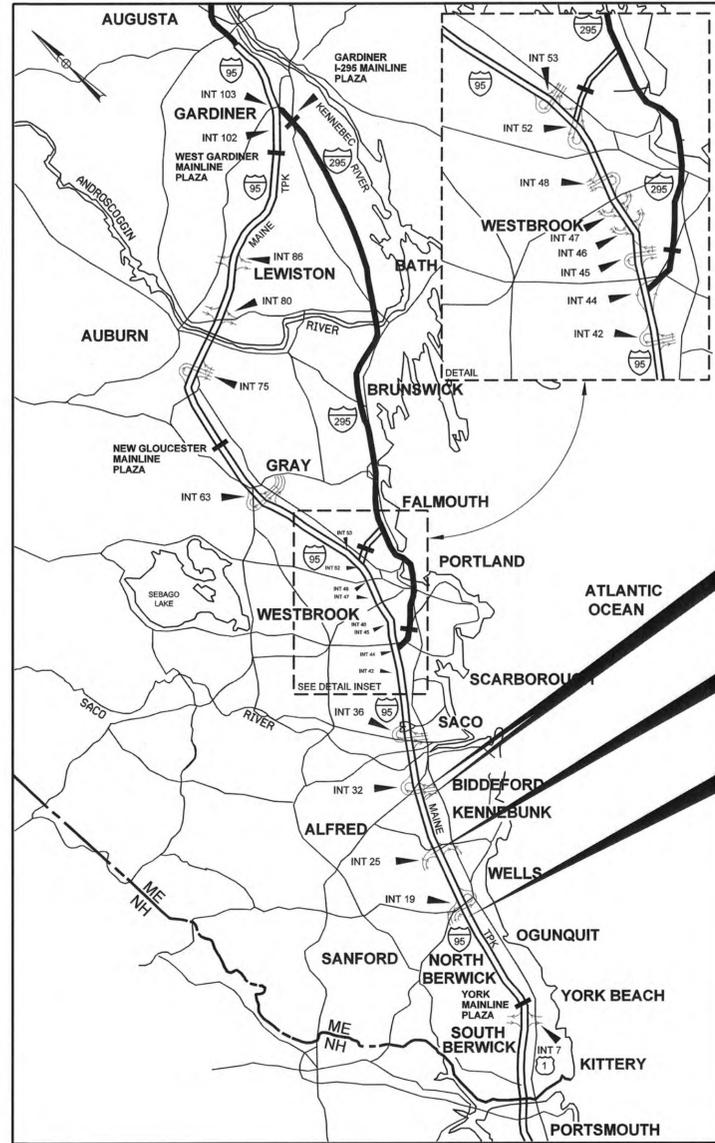


Date: 2/15/2018



LOCATION MAP



THE GOLD STAR MEMORIAL HIGHWAY

# MAINE TURNPIKE AUTHORITY

DANIEL E. WATHEN, CHAIR  
 ROBERT D. STONE, VICE CHAIR  
 MICHAEL J. CIANCHETTE, MEMBER  
 JOHN E. DORITY, MEMBER  
 ANN R. ROBINSON, MEMBER  
 THOMAS J. ZUKE, MEMBER  
 KAREN S. DOYLE, MEMBER EX-OFFICIO

S. PETER MILLS, EXECUTIVE DIRECTOR

INDEX OF SHEETS	
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3	GENERAL NOTES
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BIDDEFORD INTERCHANGE (MM 31.6)  
 ROUTE 111 UNDERPASS (MM 31.3)

KENNEBUNK SB SERVICE PLAZA (MM 25.5)

CREDIFORD BROOK CULVERT (MM 18.75)

## CONTRACT 2018.06 PARKING INSTALLATION KENNEBUNK SB SERVICE PLAZA (MM 25.5) PAVING REHABILITATION BIDDEFORD INTERCHANGE (MM 31.6)

## BRIDGE AND CULVERT REPAIRS CREDIFORD BROOK CULVERT (MM 18.75) ROUTE 111 UNDERPASS (MM 31.3) BIDDEFORD INTERCHANGE UNDERPASS (MM 31.6)

CONTRACT 2018.06



*Roland A. Lavallee*  
 ROLAND A. LAVALLEE P.E., PLS  
 VICE PRESIDENT  
 DIRECTOR OF OPERATIONS  
 DATE: 2/6/18

APPROVED:  
 MAINE TURNPIKE AUTHORITY  
*Peter S. Merfeld* 2/7/18  
 PETER S. MERFELD, P.E. - CHIEF OPERATIONS OFFICER DATE  
*Stephen R. Tartre* 2/7/18  
 STEPHEN R. TARTRE, P.E., - DIRECTOR OF ENGINEERING & BUILDING MAINTENANCE DATE

Filename: 001\_MTA>Title.dgn

Date: 2/19/2018

ITEM NO.	ITEM DESCRIPTION	UNIT	CREDIFORD BROOK CULVERT	KENNEBUNK SERVICE PLAZA	ROUTE III BRIDGE	BIDDEFORD INTER. BRIDGE	BIDDEFORD INTER. PAVING	TOTAL
201.23	Removing Single Tree Top Only	EA		6				6
201.24	Removing Stump	EA		6				6
202.12	Removing Existing Structural Concrete	CY				10		10
202.202	Removing Pavement Surface - Mainline	SY					27700	27700
202.2021	Removing Pavement Surface - Bridge Deck	SY			1550	1400		2950
202.2026	Removing Pavement Surface - Drainage Paths	SY				150		150
203.20	Common Excavation	CY		360				360
304.10	Aggregate Subbase Course - Gravel	CY		265			5	270
304.14	Aggregate Base Course - Type A	CY		36				36
403.208	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size	TON		32	130			162
403.2081	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size, (Polymer Modified) - RAP	TON				120	2300	2420
403.2084	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Sidewalks, Drives, Islands & Incidentals)	TON					25	25
403.212	Hot Mix Asphalt, 4.75 mm Nominal Maximum Size	TON					760	760
403.213	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base Course)	TON		74		3	118	195
409.15	Bituminous Tack Coat - Applied	GAL		20	80	70	2250	2420
419.30	Sawing Bituminous Pavement	LF		145	150	100	45	440
424.323	Asphalt Rubber Fiber Crack Sealer	LB					3050	3050
470.08	Berm Dropoff Correction - Grindings	TON					170	170
502.21	Structural Concrete, Abutments and Retaining Walls	CY				15		15
503.14	Epoxy-Coated Reinforcing Steel, Fabricated and Delivered	LB				3600		3600
503.15	Epoxy-Coated Reinforcing Steel, Placing	LB				3600		3600
507.095	Aluminum Bridge Railing - Splice Modification	EA			4	4		8
514.06	Curing Box for Concrete Cylinders	EA	1		0.5	0.5		2
515.201	Pigmented Protective Coating for Concrete Surfaces	SY			300			300
515.202	Clear Protective Coating for Concrete Surfaces	SY	1200		500	600		2300
518.39	Granite Curb Joint Mortar and Bedding Mortar Repair	LF				180		180
518.40	Epoxy Injection Crack Repair	LF	120		10	40		170
518.43	Parapet Joint Repair	LF			470	600		1070
518.51	Repair of Upward Facing Surfaces - Below Reinforcing Steel < 8 inches	SF	50		25	25		100
518.511	Repair of Upward Facing Culvert Surfaces - Below Reinforcing Steel < 8 inches	SF	160					160
518.53	Culvert Floor Refacing	SF	1650					1650
518.60	Repair of Vertical Surfaces < 8 inches	SF	245		15			260
518.86	Bridge Joint Header Concrete Replacement	SF			450			450
520.2228	Metal Armor Repair	LF			10			10
520.2234	Joint Armor Modification	LF			150			150
520.23	Expansion Device - Asphaltic Plug Joint	LF				97		97
526.306	Temporary Concrete Barrier, Type I - Supplied by Authority	LS				1		1
527.342	Work Zone Crash Cushions - TL-2	UN				2		2
603.1753	18 Inch Reinforced Concrete Pipe - Class V	LF					44	44
603.28	Concrete Collar	EA					1	1
604.184	Rebuild Catch Basin to Grade - Type II	EA					2	2
606.1723	Bridge Transition - Type III	EA				8		8
606.178	Guardrail Beam	LF					653	653
606.278	Terminal End - Anchored End	EA					1	1
606.352	Reflectorized Beam Guardrail Delineator	EA					290	290
606.353	Delineator Post	EA					88	88
606.3562	Delineator Post - Remove and Stack	EA					88	88
606.3621	Guardrail Adjust, Single Rail	LF					7363	7363
606.3622	Guardrail Adjust, Double Rail	LF					1525	1525
606.369	Guardrail - Remove and Stack	LF					150	150
606.471	Single Offset Block - W-Beam	EA					86	86
606.48	Single Galvanized Steel Post	EA					74	74
607.24	Remove and Reset Fence	LF		35				35
609.15	Sloped Curb Type I	LF				45		45
609.238	Terminal Curb Type I - 8'	EA		1				1
609.441	Curbing Removed and Stacked	LF		115				115
615.07	Loam	CY		20				20
618.13	Seeding Method Number 1	UN		2				2
619.1201	Mulch - Plan Quantity	UN		2				2
619.1202	Temporary Mulch	LS	0.7	0.2	0.1			1
619.14	Erosion Control Mix	CY	40	20	10			70
626.12	36" x 24" x 36" Quazite Junction Box	EA					3	3
626.13	18" x 12" x 18" Quazite Junction Box	EA		4				4
626.22	Non-Metallic Conduit	LF		240				240
626.32	24" Diameter Concrete Foundation	EA		1				1
627.712	White or Yellow Pavement Marking Line	LF				2810	21790	24600
627.77	Removing Existing Pavement Marking	SF				520		520

ITEM NO.	ITEM DESCRIPTION	UNIT	CREDIFORD BROOK CULVERT	KENNEBUNK SERVICE PLAZA	ROUTE III BRIDGE	BIDDEFORD INTER. BRIDGE	BIDDEFORD INTER. PAVING	TOTAL
627.812	Temporary Raised Pavement Markers	EA					1170	1170
627.943	Pavement Marking Line - Recessed Tape, Solid White or Yellow Lane Line, 6 - inch width	LF					1300	1300
627.944	Pavement Markings - Recessed Tape, Words, Arrows, Stop Bars	SF					490	490
629.05	Hand Labor, Straight Time	HR	20	10	20	20		70
631.10	Air Compressor (including operator)	HR	20		20	20		60
631.11	Air Tool (including operator)	HR	20		20	20		60
631.12	All Purpose Excavator (including operator)	HR	10	10	10	10		40
631.172	Truck - large (including operator)	HR	10		10	10		30
631.36	Foreman	HR	10		10	10		30
631.40	Welder (including operator)	HR			20	20		40
631.53	Electrician	HR		20			20	40
631.54	Electrician's Apprentice	HR		20			20	40
634.208	Remove and Reset Light Standard	EA		1				1
643.901	Interconnect Wire IMSA 50-2 #14 AWG	LF					480	480
645.106	Demount Regulatory, Warning, Confirmation, and Route Marker Assembly Sign	EA		3				3
645.116	Reinstall Regulatory, Warning, Confirmation and Route Marker Assembly Sign	EA		3				3
652.361	Traffic Control Devices and Maintenance of Traffic Control Devices: Cridford Brook	LS	1					1
652.361	Traffic Control Devices and Maintenance of Traffic Control Devices: Kennebunk Service Plaza	LS		1				1
652.361	Traffic Control Devices and Maintenance of Traffic Control Devices: Route III	LS			1			1
652.361	Traffic Control Devices and Maintenance of Traffic Control Devices: Biddeford	LS				0.5	0.5	1
652.38	Flagger	HR			40			40
652.41	Portable-Changeable Message Sign	EA					5	5
652.411	Portable-Changeable Message Sign	CD					60	60
652.45	Truck Mounted Attenuator	CD					10	10
652.451	Automated Trailer Mounted Speed Limit Sign	CD					20	20
655.101	#6 AWG Wire	LF		1000				1000
655.11	#10 AWG Wire	LF		250				250
655.204	3" Schedule 80 PVC Conduit	LF					700	700
656.50	Baled Hay, in place	EA	20	2	10	10		42
656.632	30 inch Temporary Silt Fence	LF	500	100	300	300		1200
659.10	Mobilization	LS	0.15	0.10	0.25	0.25	0.25	1

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Scale:		Designed by:			
		<b>HNTB</b>			
No.	Revision	By	Date		
				CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.	
		By	Date	By	Date
		Designed	AES 2\18	Checked	LZD 2\18
		Drawn	PEB 2\18	In Charge of	RAL 2\18

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## THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

BRIDGE AND CULVERT REPAIRS

ESTIMATED QUANTITIES

SHEET NUMBER: EQ-01

CONTRACT: 2018.06

2 OF 48

**GENERAL NOTES**

1. THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO START OF WORK.
2. THE CONTRACTOR SHALL NOTIFY THE RESIDENT 10 DAYS PRIOR TO CONSTRUCTION SO THE RESIDENT CAN ARRANGE FOR MAINE TURNPIKE UNDERGROUND UTILITY LOCATION. ALL PROPOSED SIGN LOCATIONS AND EXCAVATION LOCATIONS SHALL BE MARKED AT THE TIME OF NOTIFICATION. EXCAVATION WILL NOT BE PERMITTED UNTIL THE AUTHORITY HAS LOCATED AND MARKED ITS UNDERGROUND UTILITIES, OR NOTIFIED THE RESIDENT THERE ARE NO UNDERGROUND UTILITIES IN THE MARKED AREAS.  
  
THE AUTHORITY HAS PROGRAMMED TWO FIELD VISITS FOR MAINE TURNPIKE UTILITY COORDINATION ON THIS PROJECT. SHOULD THE CONTRACTOR NEED ADDITIONAL SIGN LOCATIONS AND/OR ADDITIONAL EXCAVATION LOCATIONS MARKED, OR SHOULD THE CONTRACTOR FAIL TO MAINTAIN THE AUTHORITY'S PREVIOUSLY ESTABLISHED DIG SAFE MARKS, THE AUTHORITY SHALL DEDUCT THE ADDED MARKING COSTS FROM THE CONTRACTOR'S PAYMENTS.
3. EXCAVATIONS ACCOMPLISHED AS PART OF THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH OSHA SUBPART P OF 29 CFR PART 1926.650-652 (CONSTRUCTION STANDARDS FOR EXCAVATIONS).
4. ALL DETAILS SHALL BE IN CONFORMANCE WITH MAINE DEPARTMENT OF TRANSPORTATION (MAINEDOT) STANDARD DETAILS HIGHWAY AND BRIDGES 2014, WITH LATEST REVISIONS, AND MAINEDOT BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL, LATEST REVISION, UNLESS OTHERWISE INCLUDED IN THESE PLANS.
5. REINFORCING STEEL SHALL HAVE A CLEAR COVER OF 2" UNLESS OTHERWISE NOTED.
6. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4" UNLESS OTHERWISE NOTED.
7. WHERE DRILLING AND ANCHORING OF REINFORCING STEEL IS SPECIFIED THE CONTRACTOR SHALL USE A MATERIAL LISTED ON THE MAINEDOT PREQUALIFIED LIST OF CONCRETE ADHESIVE ANCHORING MATERIALS. THE DEPTH OF EMBEDMENT SHALL BE SUFFICIENT TO DEVELOP 125% OF THE YIELD STRENGTH OF THE BAR, BUT SHALL BE NO LESS THAN THE MINIMUM DEPTH OF EMBEDMENT WHEN SPECIFIED. WHERE MINIMUM EMBEDMENT DEPTHS HAVE NOT BEEN SPECIFIED BAR LENGTHS HAVE BEEN DEVELOPED BASED ON AN ASSUMED EMBEDMENT DEPTH OF 9" FOR #5 BARS AND 12" FOR #6 BARS. THE CONTRACTOR SHALL VERIFY THE REQUIRED DEPTH OF EMBEDMENT AND ADJUST THE REQUIRED BAR LENGTHS AS REQUIRED.
8. THERE ARE NO PERMANENT OR TEMPORARY EASEMENTS ASSOCIATED WITH THIS PROJECT. ALL WORK SHALL BE COMPLETED WITHIN THE EXISTING RIGHT OF WAY.
9. THE CONTRACTOR SHALL SUBMIT THE PROPOSED STAGING AREA(S) TO THE RESIDENT PRIOR TO STARTING WORK.
10. CONTRACTOR IS REQUIRED TO MAINTAIN ACCESS TO ALL DRIVEWAYS AND SIDE ROAD DURING CONSTRUCTION UNLESS OTHERWISE SHOWN ON THE PLANS.
11. ANY DAMAGE TO FINAL PAVEMENT, SLOPES, OR STRUCTURES CAUSED BY THE CONTRACTOR'S EQUIPMENT, PERSONNEL OR OPERATIONS SHALL BE REPAIRED TO THE SATISFACTION OF THE RESIDENT. ALL WORK, EQUIPMENT, AND MATERIALS REQUIRED TO MAKE REPAIRS SHALL BE AT THE CONTRACTOR'S EXPENSE.
12. COPIES OF AS-BUILT PLANS ARE POSTED ON THE MAINE TURNPIKE AUTHORITY WEBSITE AT [WWW.MAINeturnpike.com/PROJECT-AND-PLANNING/CONSTRUCTION-CONTRACTS.ASPX](http://WWW.MAINeturnpike.com/PROJECT-AND-PLANNING/CONSTRUCTION-CONTRACTS.ASPX). THE COMPLETENESS AND ACCURACY OF THESE PLANS IS NOT GUARANTEED.

**MATERIALS**

CONCRETE

SUBSTRUCTURE CONCRETE REPAIR MATERIALS SHALL BE PER SPECIAL PROVISION 518. ALL OTHER CONCRETE SHALL BE CLASS AAA.

REINFORCING STEEL

AASHTO M31, GRADE 60. ALL REINFORCING SHALL BE EPOXY-COATED.

**DRAINAGE NOTES**

1. NO EXISTING DRAINAGE SHALL BE ABANDONED, REMOVED OR PLUGGED WITHOUT APPROVAL OF THE RESIDENT.

**EROSION CONTROL**

1. ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MAINE DEPARTMENT OF TRANSPORTATION BEST MANAGEMENT PRACTICES.
2. ADDITIONAL MEASURES MAY BE PROPOSED BY THE CONTRACTOR DUE TO SITE OR WEATHER CONDITIONS. THE RESIDENT MAY DIRECT THE CONTRACTOR TO IMPLEMENT ADDITIONAL MEASURES. ANY ADDITIONAL MEASURES APPROVED BY THE RESIDENT WILL BE MEASURED FOR PAYMENT.

**GUARDRAIL NOTES**

1. AT THE END OF THE WORK DAY, EVERYDAY, THE CONTRACTOR IS REQUIRED TO HAVE AN APPROVED CRASHWORTHY END TREATMENT ON ALL GUARDRAIL WITHIN ALL WORK AREAS THAT ARE ACCESSIBLE TO TRAFFIC.
2. CONNECTIONS FOR PROPOSED GUARDRAIL TO EXISTING GUARDRAIL SHALL BE INCIDENTAL TO THE PROPOSED GUARDRAIL ITEMS.
3. FOR ALL NEW GUARDRAIL TYPE 3d, OFFSET BLOCKS SHALL BE NON-WOOD CONFORMING TO NCHRP 350 TEST LEVEL.
4. ALL PROPOSED GUARDRAIL AND RESET GUARDRAIL SHALL BE INSTALLED IN A MANNER TO AVOID DRAINAGE STRUCTURES AND UTILITIES.

**LIGHTING**

1. EXISTING CONDUIT IS ASBESTOS CEMENT CONDUIT. CONTRACTOR SHALL TAKE EXTREME CARE NOT TO DAMAGE IT.
2. ALL WIRE SHALL BE COPPER, NO ALUMINUM WIRE IS ALLOWED.
3. PROPOSED NON-METALLIC CONDUIT SHALL BE 2" SCHEDULE 80 PVC AND CONTAIN FOUR #6 AND ONE #10 (GROUND) WIRES, CONSISTENT WITH EXISTING CIRCUIT. CONTRACTOR TO FIELD VERIFY.
4. CONTRACTOR SHALL ONLY EXCAVATE AN AMOUNT OF UTILITY TRENCH THAT CAN BE BACKFILLED IN THE SAME DAY. UTILITY TRENCHES SHALL NOT BE LEFT OPEN OVER NIGHT.

**EARTHWORK**

1. WASTE MATERIALS SHALL BE DISPOSED OF OFF THE PROJECT SITE, IN ACCORDANCE WITH ALL ENVIRONMENTAL REGULATIONS.

**LIST OF ABBREVIATIONS**

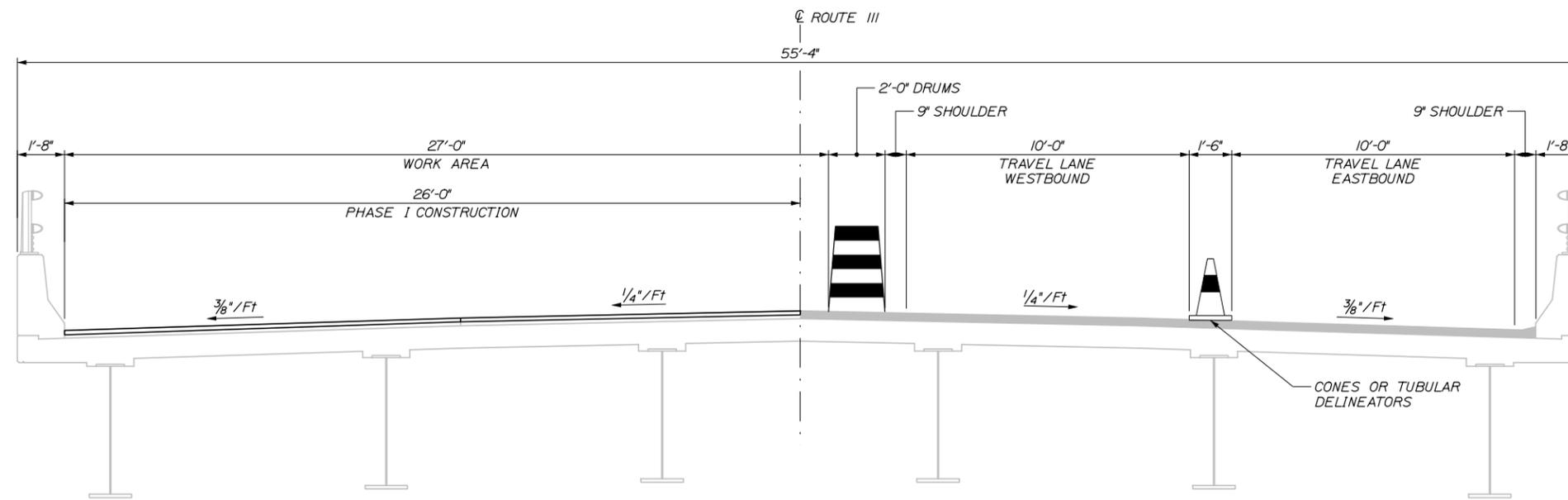
- ABUT. - ABUTMENT
- ADDL. - ADDITIONAL
- ALT. - ALTERNATE
- APPROX. - APPROXIMATELY
- BOT. - BOTTOM
- BRG. - BEARING
- CL. - CLEAR
- CL. - CENTERLINE
- CONC. - CONCRETE
- CONSTR. - CONSTRUCTION
- DEMO. - DEMOLITION
- DIA. - DIAMETER
- EA. - EACH
- EB - EASTBOUND
- E.F. - EACH FACE
- EL. - ELEVATION
- EQ. - EQUAL
- EXIST. - EXISTING
- EXP. - EXPANSION
- F.F. - FAR FACE
- JT. - JOINT
- MAX. - MAXIMUM
- MAINEDOT - MAINE DEPARTMENT OF TRANSPORTATION
- MIN. - MINIMUM
- MTA - MAINE TURNPIKE AUTHORITY
- NB - NORTHBOUND
- N.F. - NEAR FACE
- N.T.S. - NOT TO SCALE
- PED. - PEDESTAL
- PGL - PROFILE GRADE LINE
- PL. - PLATE
- PROP. - PROPOSED
- P.S.I. - POUNDS per SQUARE INCH
- RDWY. - ROADWAY
- SHLDR. - SHOULDER
- SB - SOUTHBOUND
- SP. - SPACES
- STA. - STATION
- T.&B. - TOP & BOTTOM
- TPKE. - TURNPIKE
- TYP. - TYPICAL
- U.O.N. - UNLESS OTHERWISE NOTED
- VERT. - VERTICAL
- WB - WESTBOUND
- W.P. - WORKING POINT

Date: 2/19/2018

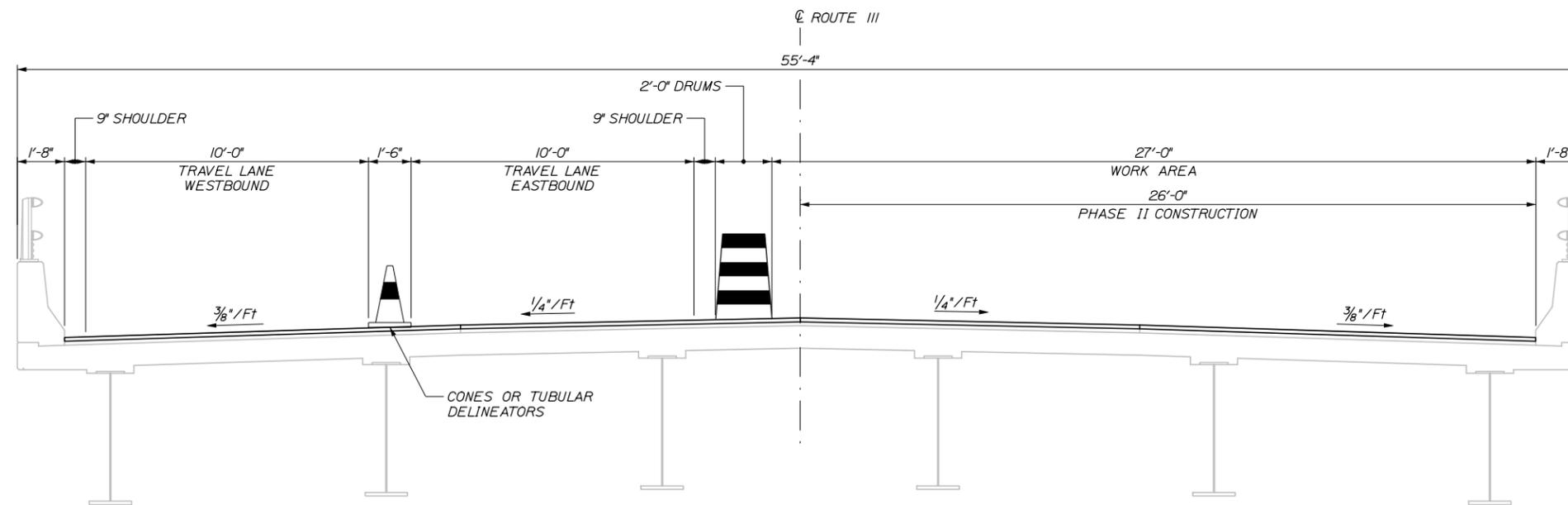
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Scale:		Designed by:				 HNTB CORPORATION 340 County Road, Suite 6-C Westbrook, ME 04092 TEL (207) 774-5155 FAX (207) 228-0909		 <b>THE GOLD STAR MEMORIAL HIGHWAY</b>		BRIDGE AND CULVERT REPAIRS																	
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No.	Revision	By	Date																								
Designed		By	Date	Checked		By	Date	SHEET NUMBER: GN-01																			
Drawn		PEB	2\18	In Charge of		RAL	2\18			CONTRACT: 2018.06																	
						MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.		3 OF 48																			

Date: 2/19/2018



PHASE I CONSTRUCTION



PHASE II CONSTRUCTION

**NOTES:**

1. PHASE I AND II HEADER, JOINT INSTALLATION, AND PARAPET REPAIRS SHALL BE UNDERTAKEN AT NIGHT TO MINIMIZE IMPACT ON THE TRAFFIC.
2. AT THE END OF EACH WORK SHIFT ANY OPEN DECK OR HEADER AREAS SHALL BE STEEL PLATED TO PREVENT PEDESTRIANS AND VEHICLES FROM FALLING INTO THE OPENING(S). PAYMENT SHALL BE INCIDENTAL TO RELATED CONTRACT ITEMS.
3. PARAPET REPAIRS SHALL ONLY OCCUR OVER CLOSED TRAVEL LANES OR SHOULDERS. SEE THE SPECIFICATIONS FOR PERMITTED TRAVEL LANE AND SHOULDER CLOSURE HOURS.

Filename: 004 RTE 111 Phasing Plan.dgn

Scale:

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**THE GOLD STAR  
MEMORIAL HIGHWAY**

BRIDGE AND CULVERT REPAIRS  
MAINTENANCE OF TRAFFIC  
ROUTE 111  
CONSTRUCTION PHASING

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.					
	By	Date		By	Date
Designed	AES	2\18	Checked	LZD	2\18
Drawn	PEB	2\18	In Charge of	RAL	2\18

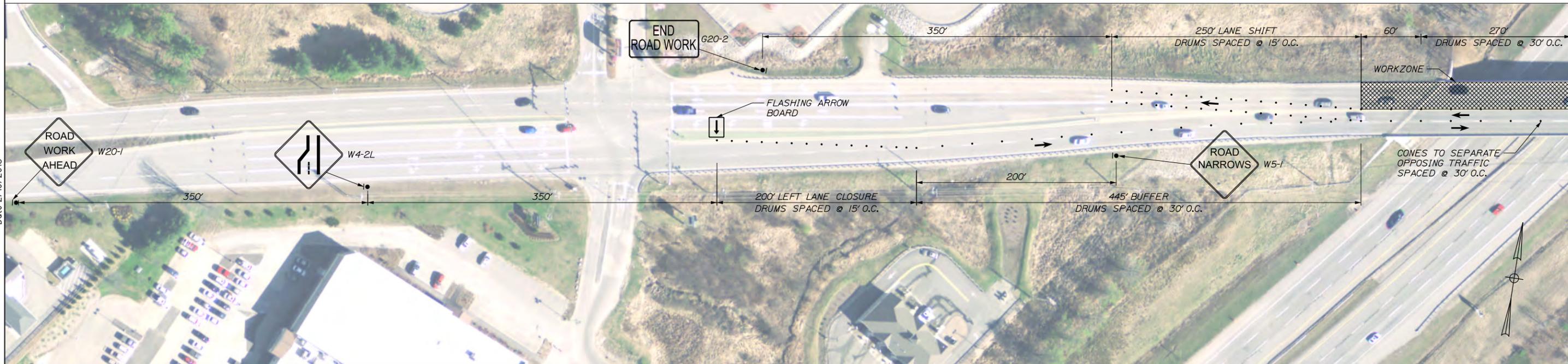
MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

CONTRACT: 2018.06

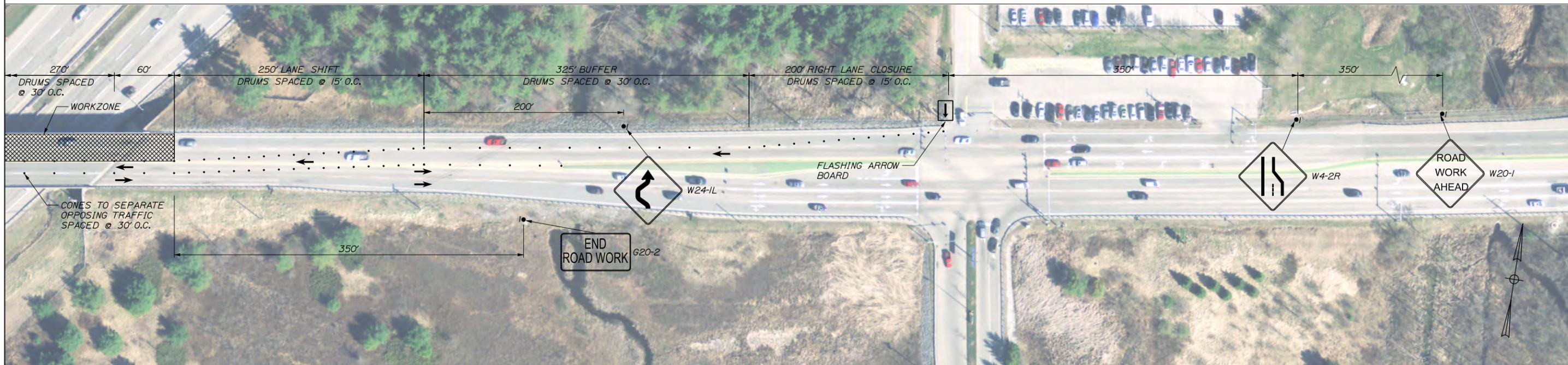
SHEET NUMBER: MOT-01

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Date: 2/19/2018

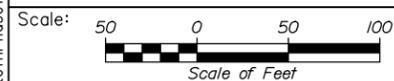


PLAN



PLAN

Filename: 005\_Route111Phase1.dgn



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THE GOLD STAR  
MEMORIAL HIGHWAY

BRIDGE AND CULVERT REPAIRS  
MAINTENANCE OF TRAFFIC  
ROUTE 111  
PHASE I

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.					
Designed	LZD	2\18	Checked	RWH	2\18
Drawn	EDD	2\18	In Charge of	RAL	2\18

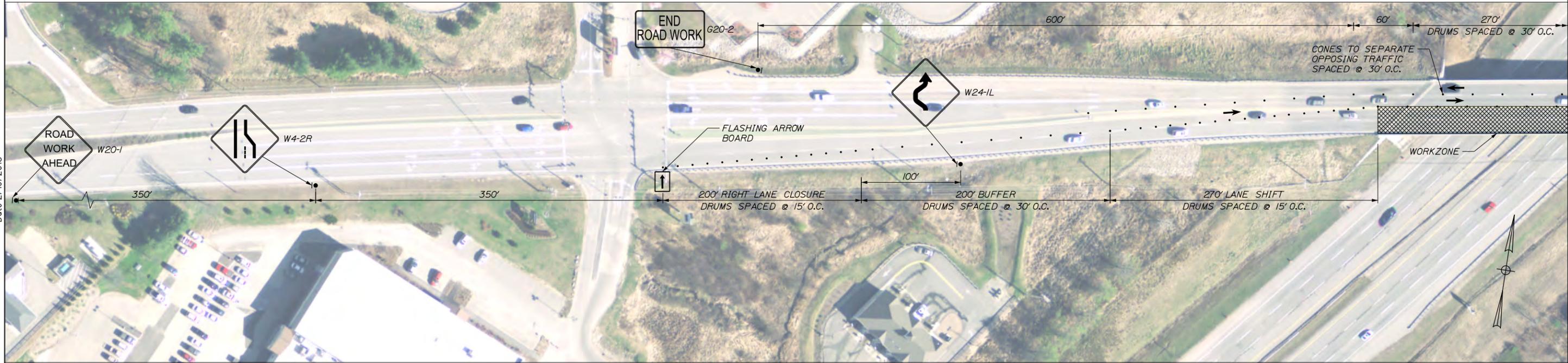
MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

CONTRACT: 2018.06

SHEET NUMBER: MOT-02

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Date: 2/19/2018

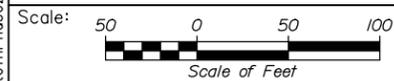


PLAN



PLAN

Filename: 006\_Route111Phase2.dgn



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THE GOLD STAR  
MEMORIAL HIGHWAY

BRIDGE AND CULVERT REPAIRS  
MAINTENANCE OF TRAFFIC

ROUTE 111  
PHASE II

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.

No.	Revision	By	Date	By	Date

Designed	LZD	2\18	Checked	RWH	2\18
Drawn	EDD	2\18	In Charge of	RAL	2\18

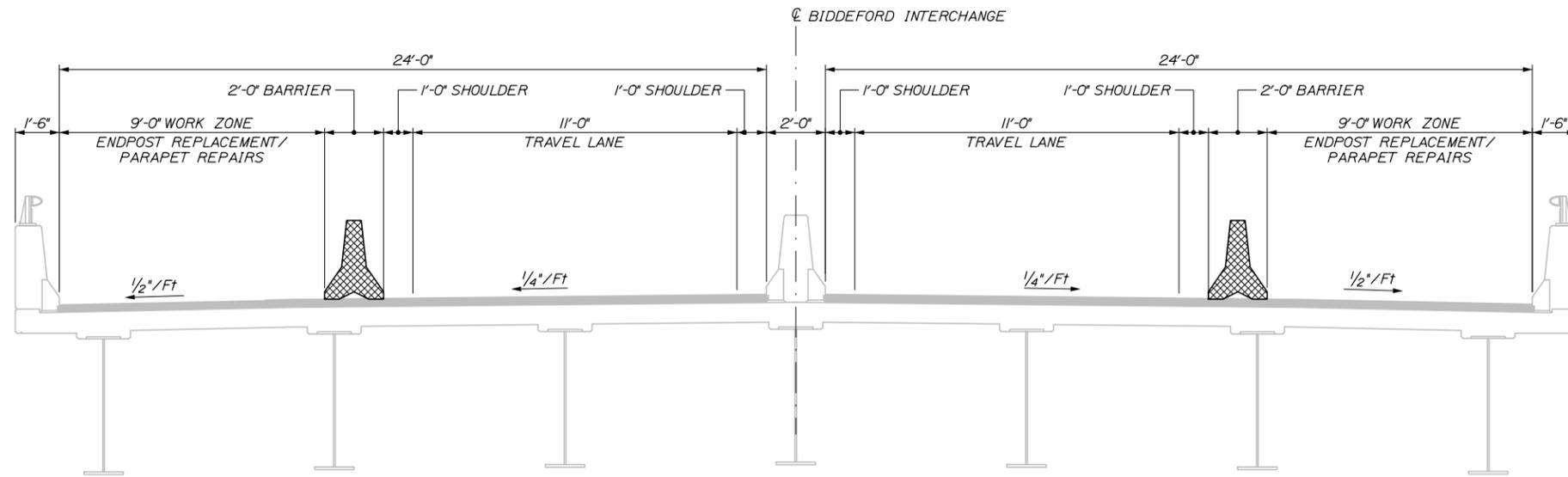
MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

CONTRACT: 2018.06

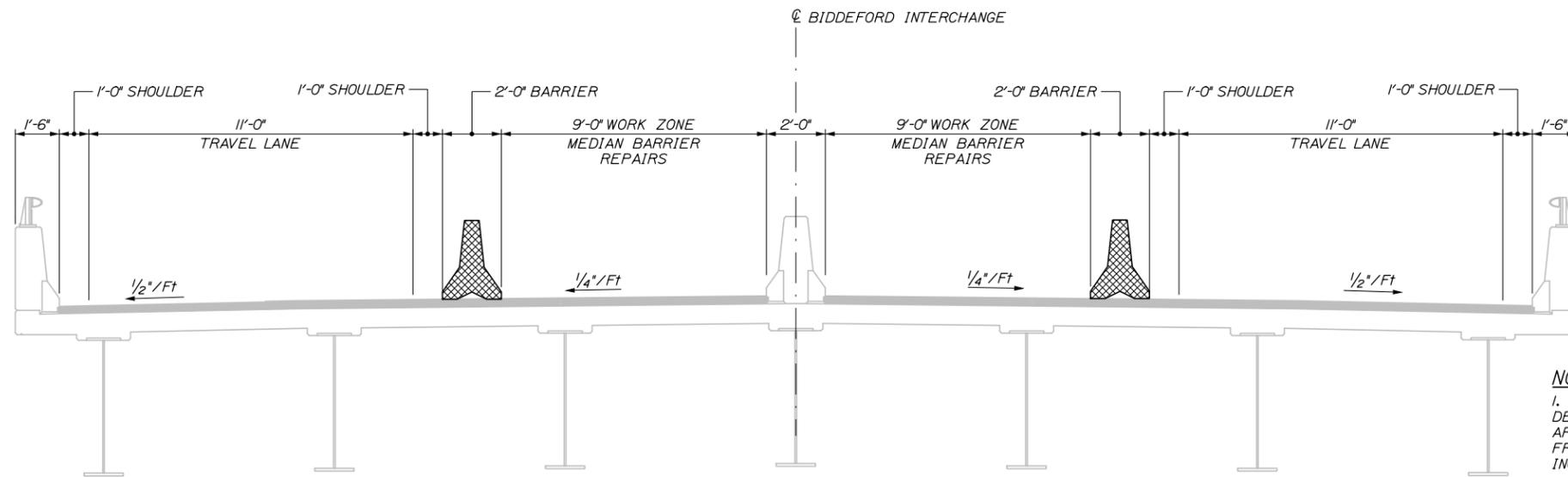
SHEET NUMBER: MOT-03

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Date: 2/19/2018



PHASE I CONSTRUCTION



PHASE II CONSTRUCTION

**NOTES:**

1. AT THE END OF EACH WORK SHIFT ANY INCOMPLETE DECK OR HEADER REPAIR AREAS OPENED TO TRAFFIC AREAS SHALL BE STEEL PLATED TO PREVENT VEHICLES FROM FALLING INTO THE OPENING(S). PAYMENT SHALL BE INCIDENTAL TO RELATED CONTRACT ITEMS.
2. PARAPET REPAIRS SHALL ONLY OCCUR OVER CLOSED TRAVEL LANES OR SHOULDERS. SEE THE SPECIFICATIONS FOR PERMITTED TRAVEL LANE AND SHOULDER CLOSURE HOURS.
3. END POST MODIFICATIONS AND PARAPET REPAIRS SHALL OCCUR DURING PHASE I. MEDIAN BARRIER REPAIRS SHALL OCCUR DURING PHASE II.
4. ALL EXISTING ASPHALTIC PLUG JOINT BRIDGING PLATES SHALL BE REMOVED AS PART OF THE PROPOSED WORK.
5. PAVEMENT MILLING, PAVING, AND ASPHALTIC PLUG JOINT INSTALLATION WORK MAY BE COMPLETED WITH NIGHTLY RAMP CLOSURES IN ACCORDANCE WITH SPECIAL ROVISION 652.

Filename: 007\_Biddeford Interchange Phasing Plan.dgn

Scale:

Designed by:



HNTB CORPORATION  
 340 County Road, Suite 6-C  
 Westbrook, ME 04092  
 TEL (207) 774-5155  
 FAX (207) 228-0909



THE GOLD STAR  
 MEMORIAL HIGHWAY

BRIDGE AND CULVERT REPAIRS  
 MAINTENANCE OF TRAFFIC  
 BIDDEFORD INTERCHANGE  
 CONSTRUCTION PHASING

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.					
	By	Date		By	Date
Designed	AES	2\18	Checked	LZD	2\18
Drawn	PEB	2\18	In Charge of	RAL	2\18

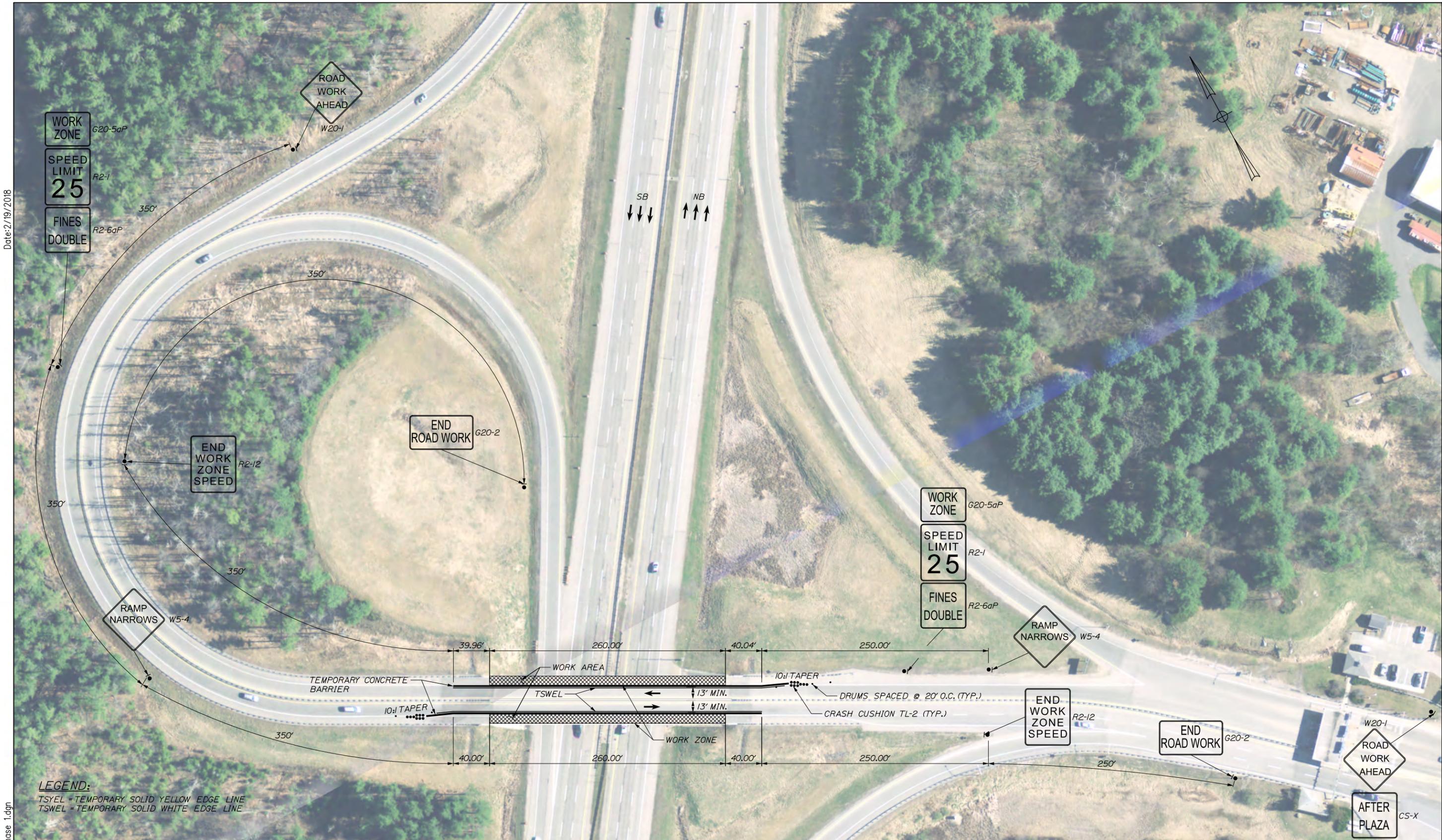
MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

CONTRACT: 2018.06

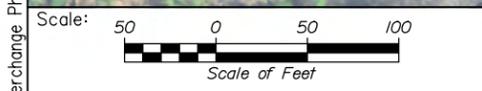
SHEET NUMBER: MOT-04

7 OF 48

Date: 2/19/2018



**LEGEND:**  
 TSYEL = TEMPORARY SOLID YELLOW EDGE LINE  
 TSWEL = TEMPORARY SOLID WHITE EDGE LINE



No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.

	By	Date		By	Date
Designed	LZD	2\18	Checked	RWH	2\18
Drawn	EDD	2\18	In Charge of	RAL	2\18

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**MAINE TURNPIKE**

**THE GOLD STAR MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

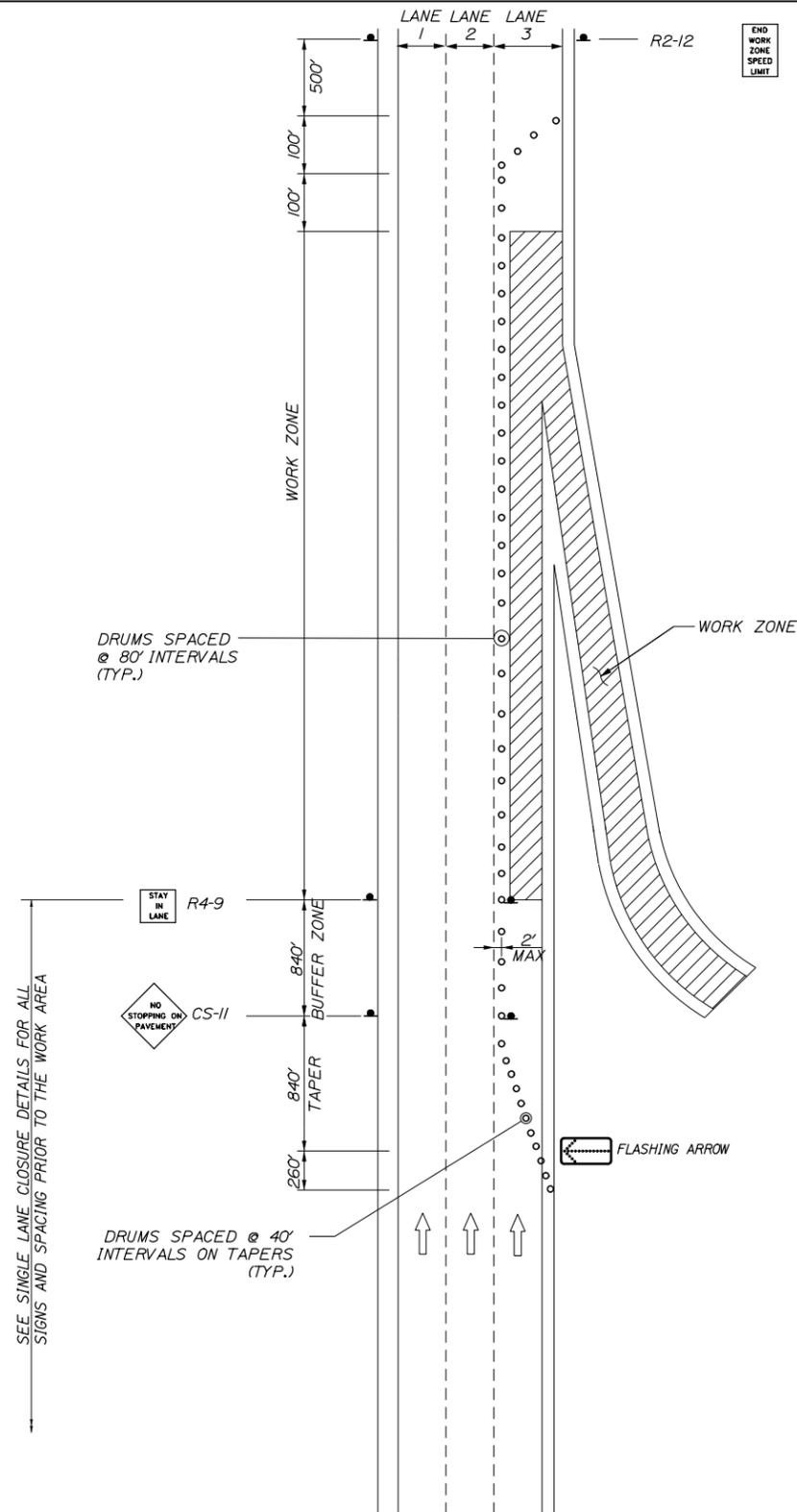
BRIDGE AND CULVERT REPAIRS  
 MAINTENANCE OF TRAFFIC  
 BIDDEFORD INTERCHANGE  
 PHASE I

SHEET NUMBER: MOT-05  
 8 OF 48

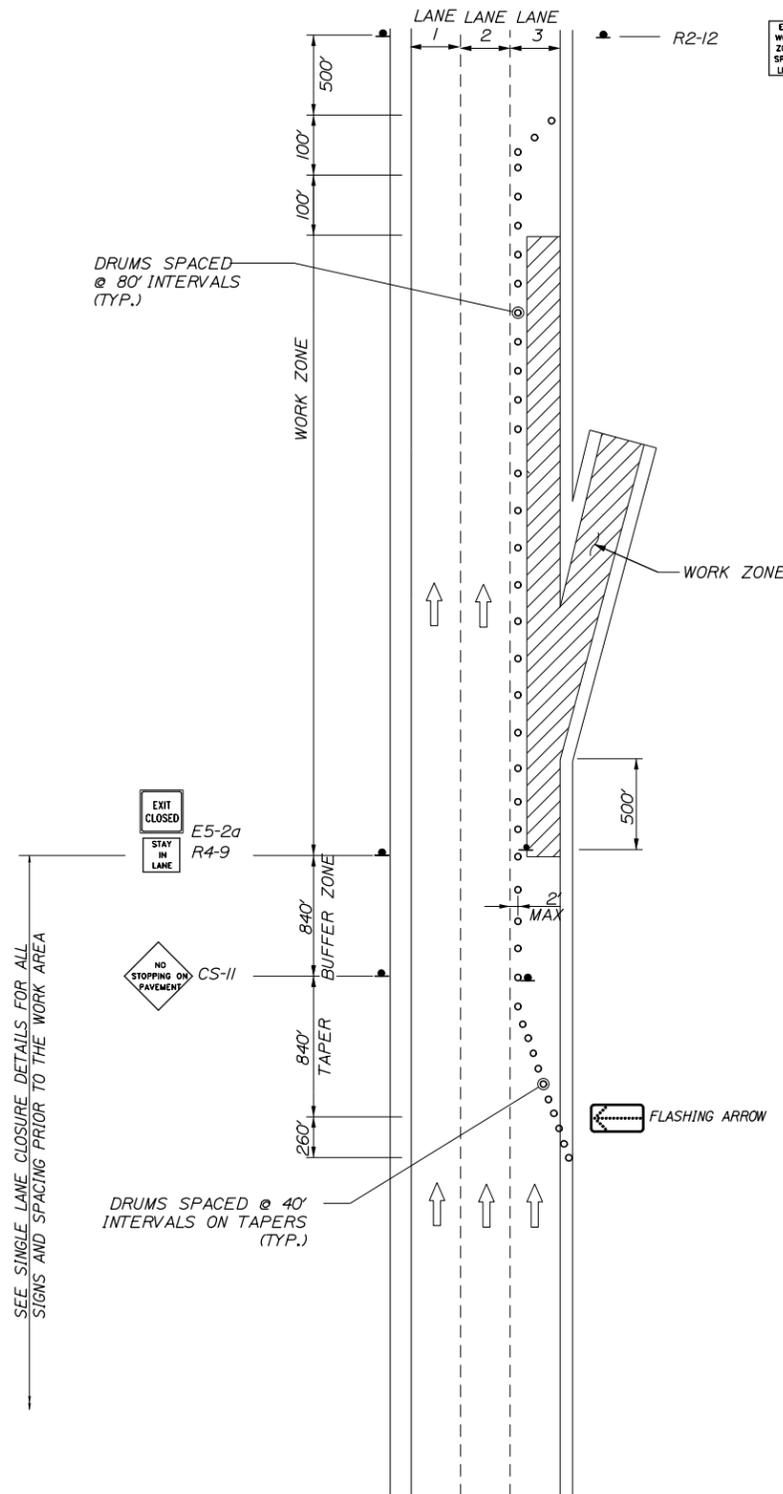
CONTRACT: 2018.06



Date: 2/19/2018



TRAVEL LANE CLOSURE  
AT ON RAMP CLOSURE



TRAVEL LANE CLOSURE  
AT OFF RAMP CLOSURE

- NOTES:**
1. FOR SIGN DETAILS, SEE SIGN SUMMARY SHEETS.
  2. ALL SIGNS ARE TO BE MOUNTED ON EASELS.
  3. LANE CLOSURES AT ENTRANCE AND EXIT RAMP MAY BE COMBINED IF APPROVED BY THE RESIDENT.

Filename: 010\_MOT\_Ramp Closure.dgn

Scale:			
No.	Revision	By	Date

Designed by:					
<b>HNTB</b>					
CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.					
	By	Date		By	Date
	CAH	2\18		LZD	2\18
	Drawn	SLS	2\18	In Charge of	RAL
					2\18

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THE GOLD STAR  
MEMORIAL HIGHWAY

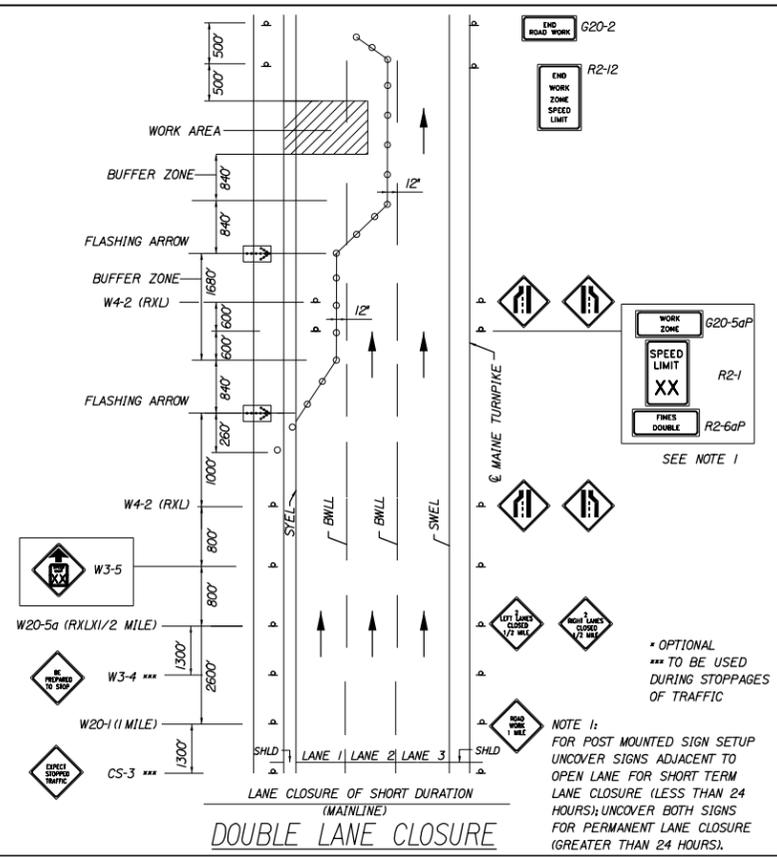
MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

BRIDGE AND CULVERT REPAIRS  
MAINTENANCE OF TRAFFIC  
BIDDEFORD INTERCHANGE  
RAMP CLOSURE DETAIL

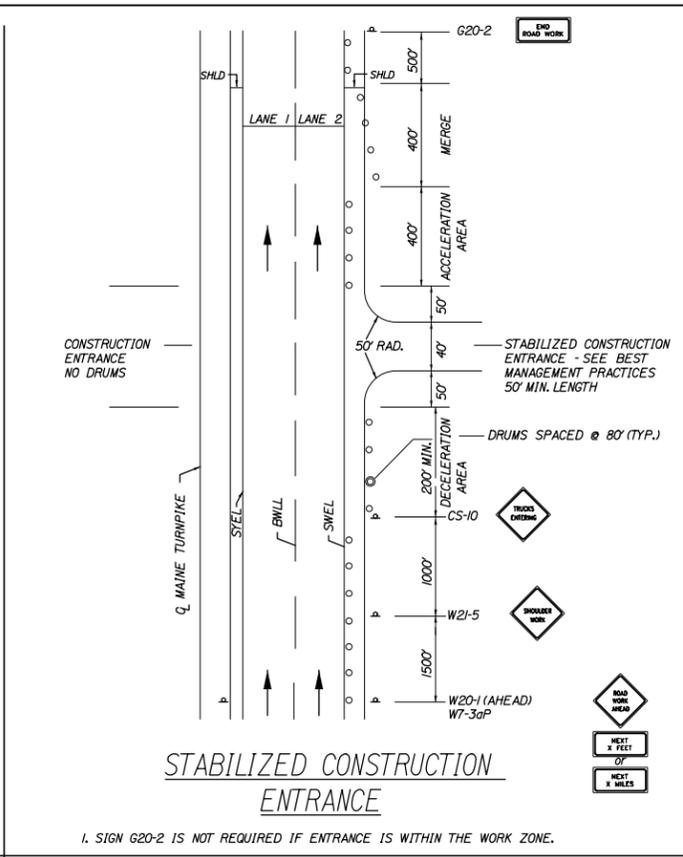
SHEET NUMBER: MOT-07  
10 OF 48

CONTRACT: 2018.06

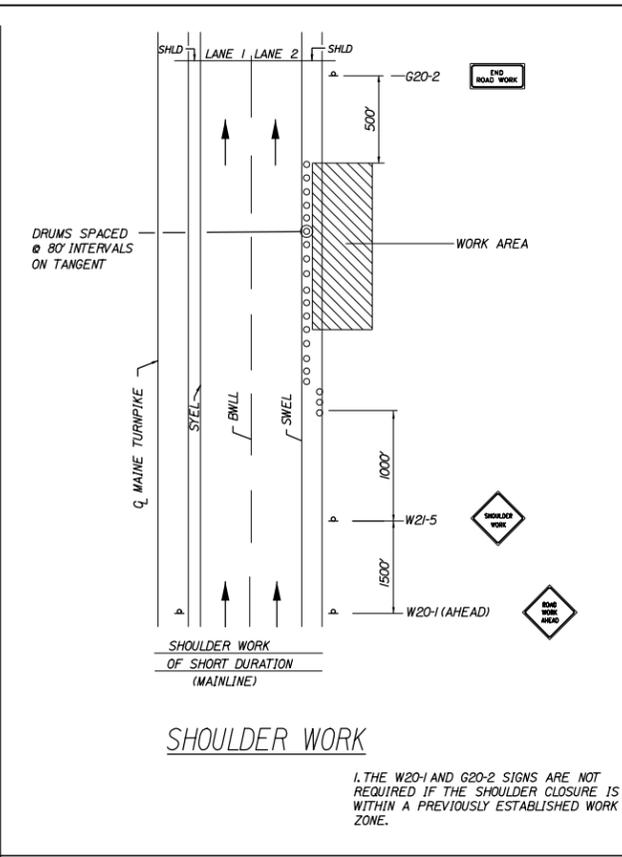
Date: 2/19/2018



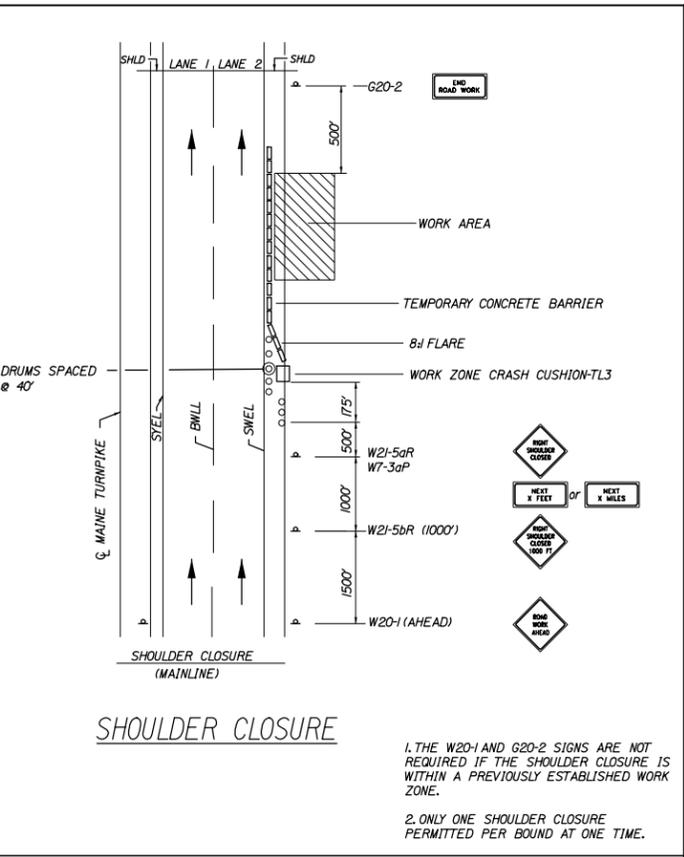
DOUBLE LANE CLOSURE



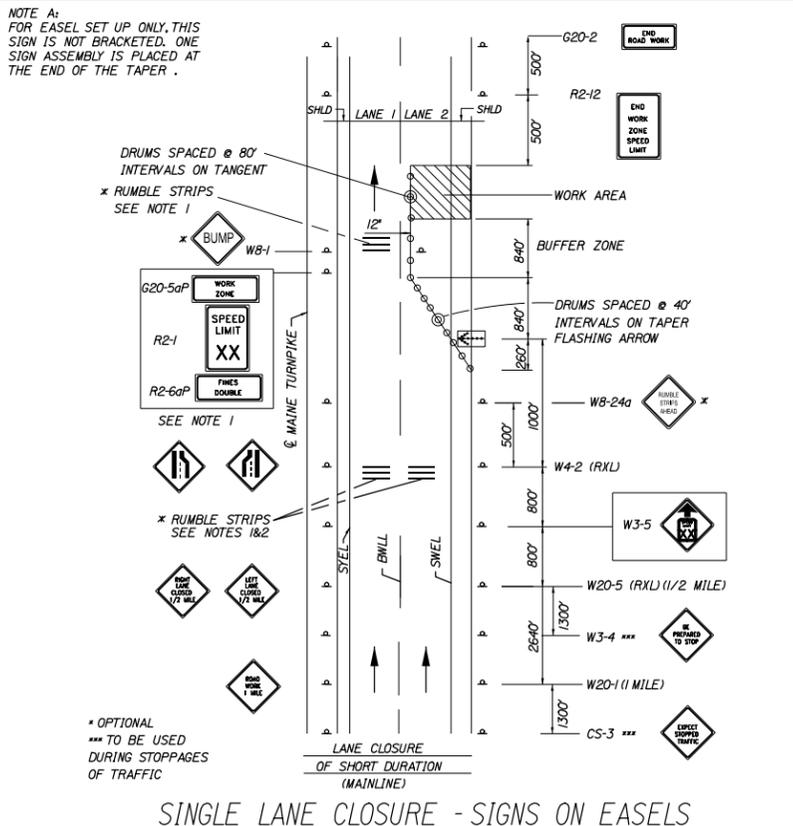
STABILIZED CONSTRUCTION ENTRANCE



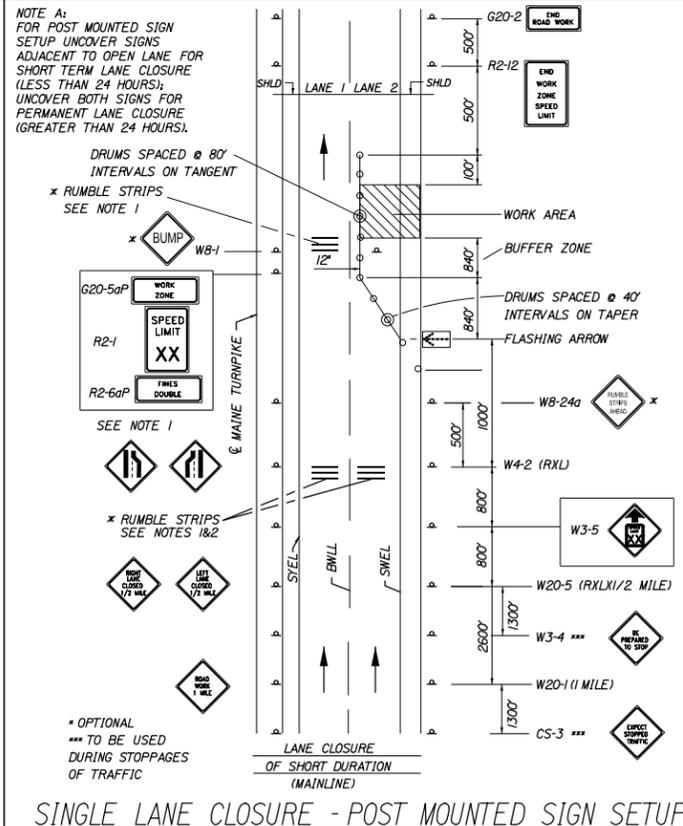
SHOULDER WORK



SHOULDER CLOSURE



SINGLE LANE CLOSURE - SIGNS ON EASELS



SINGLE LANE CLOSURE - POST MOUNTED SIGN SETUP

TEMPORARY RUMBLE STRIP NOTES

- IF RUMBLE STRIPS ARE USED THEY SHALL BE PLACED IN ONE OF THE FOLLOWING CONFIGURATIONS:
  - ADJACENT TO THE WORK ZONE (1 UNIT)
  - UPSTREAM FROM THE TAPER FOR THE WORKZONE (2 UNITS)
  - BOTH ADJACENT TO THE WORKZONE AND PRIOR TO THE TAPER (3 UNITS)
- RUMBLE STRIPS MAY BE PLACED UPSTREAM OF THE TAPER BETWEEN THE W3-5 SIGNS AND THE W4-2 SIGNS. IF RUMBLE STRIPS ARE INSTALLED PRIOR TO TAPER, W8-1 SIGNS SHALL BE PLACED ADJACENT TO THE FIRST STRIP AND THE W8-24a SIGNS SHALL BE MOVED TO 400' AFTER THE W20-5 SIGNS.

- GENERAL MAINTENANCE OF TRAFFIC NOTES:
- ALL PAVEMENT STRIPING & SIGNING SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", U.S.D.O.T., F.H.W.A., LATEST EDITION.
  - THESE PLANS SHOW THE GENERAL CONDITION FOR TURNPIKE MAINLINE TRAFFIC CONTROL DURING CONSTRUCTION, SLIGHT MODIFICATIONS IN CONSTRUCTION PROCEDURE MAY OCCUR AND MAY REQUIRE SOME MINOR ADJUSTMENTS TO BE MADE IN THE FIELD, ALL PROCEDURES MUST BE APPROVED BY THE RESIDENT.
  - THE CONTRACTOR SHALL REMOVE ALL PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED PAVEMENT MARKINGS IN ACCORDANCE WITH THE SPECIFICATIONS AND MUTCD. PAYMENT SHALL BE MADE UNDER ITEM 627.77 - REMOVING PAVEMENT MARKINGS.
  - EXPOSED BARRIER ENDS SHALL BE PROTECTED BY A WORK ZONE CRASH CUSHION. PAYMENT WILL BE UNDER ITEM 527.341 - WORK ZONE CRASH CUSHION - TL-3.
  - GEOMETRIC INFORMATION FOR TRAFFIC SIGNS SHOWN ON THE PLANS WILL BE SUPPLIED TO THE CONTRACTOR AFTER AWARD.
  - SPEED LIMIT, STOP AND YIELD SIGNS SHALL BE A MINIMUM OF 5' ABOVE THE PAVEMENT.

- ABBREVIATIONS FOR ALL M.O.T. PLANS
- BWLL = BROKEN WHITE LANE LINE
  - SWLL = SOLID WHITE LANE LINE
  - SYLL = SOLID YELLOW LANE LINE
  - TBWLL = TEMPORARY BROKEN WHITE LANE LINE
  - TSWLL = TEMPORARY SOLID WHITE LANE LINE
  - TSYLL = TEMPORARY SOLID YELLOW LANE LINE

Scale:

No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.

	By	Date		By	Date
Designed	LZD	2\18	Checked	RWH	2\18
Drawn	EDD	2\18	In Charge of	RAL	2\18

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**MAINE TURNPIKE**

**THE GOLD STAR MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

BRIDGE AND CULVERT REPAIRS  
 MAINTENANCE OF TRAFFIC  
 MISCELLANEOUS DETAILS

SHEET NUMBER: MOT-08  
 11 OF 48

CONTRACT: 2018.06



CONSTRUCTION SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR		BORDER RADIUS	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND BORDER		
W20-1 (AHEAD)	48"	48"		TEXT DIMENSIONS SHALL CONFORM TO "STANDARD HIGHWAY SIGNS" - 2000			TBD BY THE CONTRACTOR	ORANGE	BLACK		16.00 (XX)
W20-5L (1/2 MILE)	48"	48"									16.00 (XX)
W20-5R (1/2 MILE)	48"	48"									16.00 (XX)
W24-1L	48"	48"									16.00 (XX)
W24-1R	48"	48"									16.00 (XX)

Date: 2/19/2018

Filename: 013\_signsummary.il.dgn

Scale: NOT TO SCALE

No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.			
By	Date	By	Date
Designed	LZD 2\18	Checked	RWH 2\18
Drawn	EDD 2\18	In Charge of	RAL 2\18

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**THE GOLD STAR MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

BRIDGE AND CULVERT REPAIRS  
 MAINTENANCE OF TRAFFIC  
 SIGN SUMMARY II

SHEET NUMBER: MOT-10  
 CONTRACT: 2018.06  
 13 OF 48

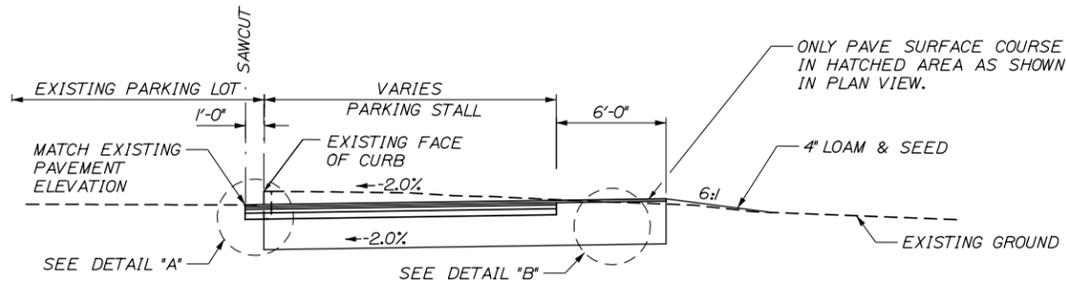
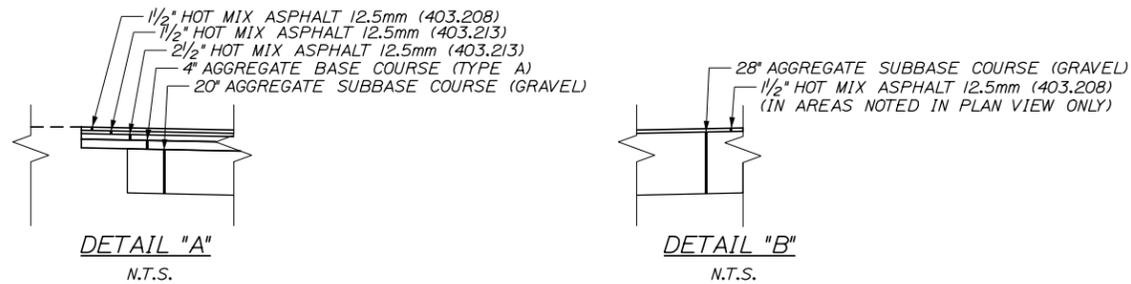
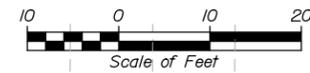
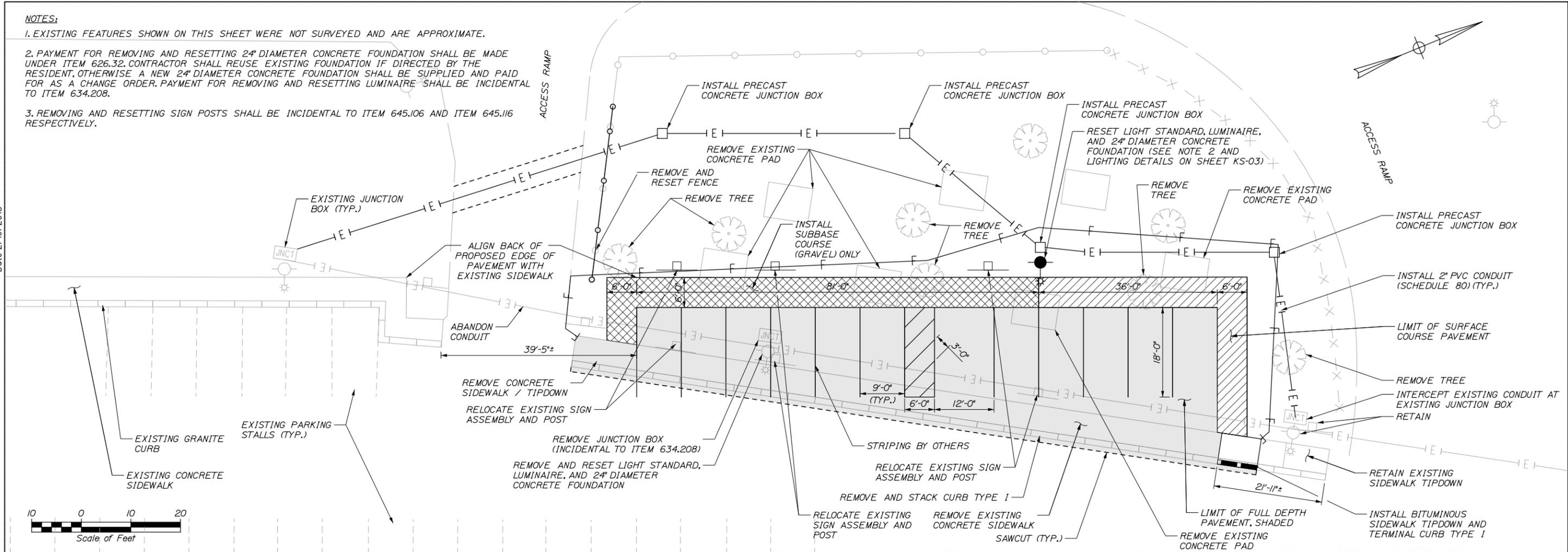
**NOTES:**

1. EXISTING FEATURES SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE APPROXIMATE.

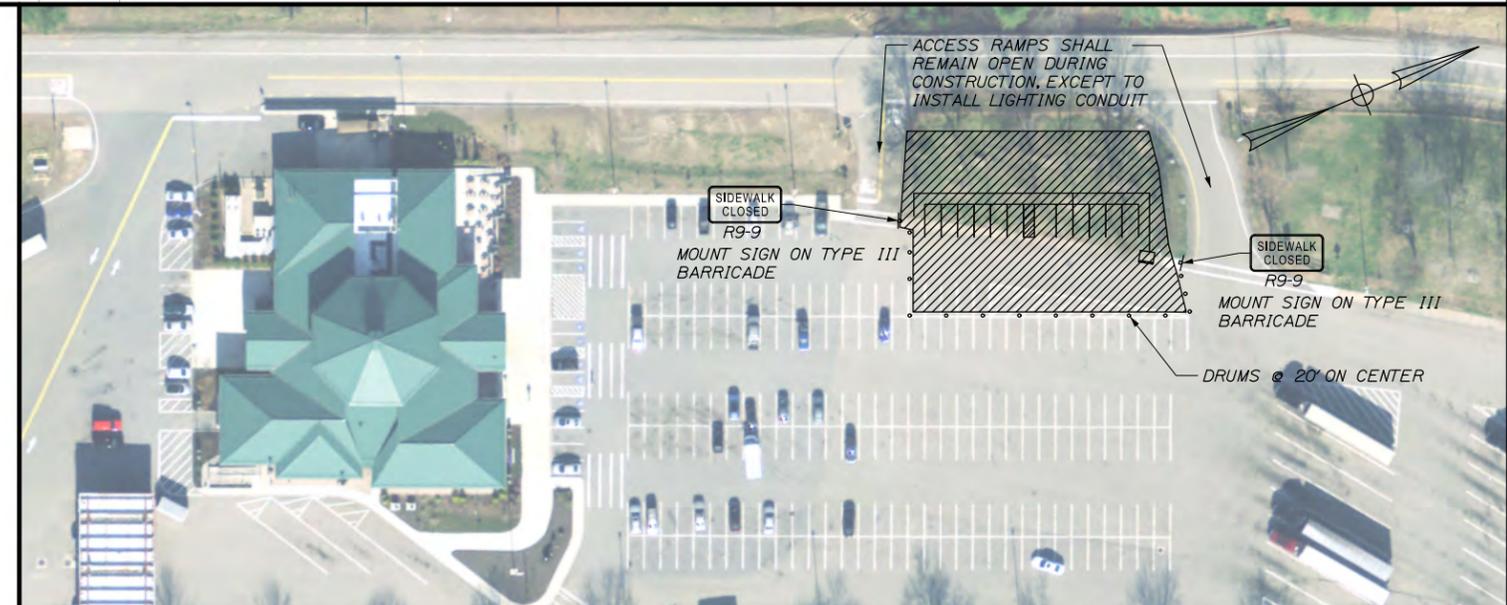
2. PAYMENT FOR REMOVING AND RESETTING 24" DIAMETER CONCRETE FOUNDATION SHALL BE MADE UNDER ITEM 626.32. CONTRACTOR SHALL REUSE EXISTING FOUNDATION IF DIRECTED BY THE RESIDENT. OTHERWISE A NEW 24" DIAMETER CONCRETE FOUNDATION SHALL BE SUPPLIED AND PAID FOR AS A CHANGE ORDER. PAYMENT FOR REMOVING AND RESETTING LUMINAIRE SHALL BE INCIDENTAL TO ITEM 634.208.

3. REMOVING AND RESETTING SIGN POSTS SHALL BE INCIDENTAL TO ITEM 645.106 AND ITEM 645.116 RESPECTIVELY.

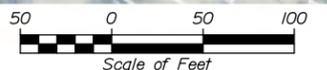
Date: 2/19/2018



**KENNEBUNK SERVICE PLAZA CAR PARKING TYPICAL SECTION**  
N.T.S.



**MAINTENANCE OF TRAFFIC PLAN**



Filename: 014\_Kennebunk SB Service Plaza1.dgn

No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.

	By	Date		By	Date
Designed	PEM	2\18	Checked	DAM	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

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**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

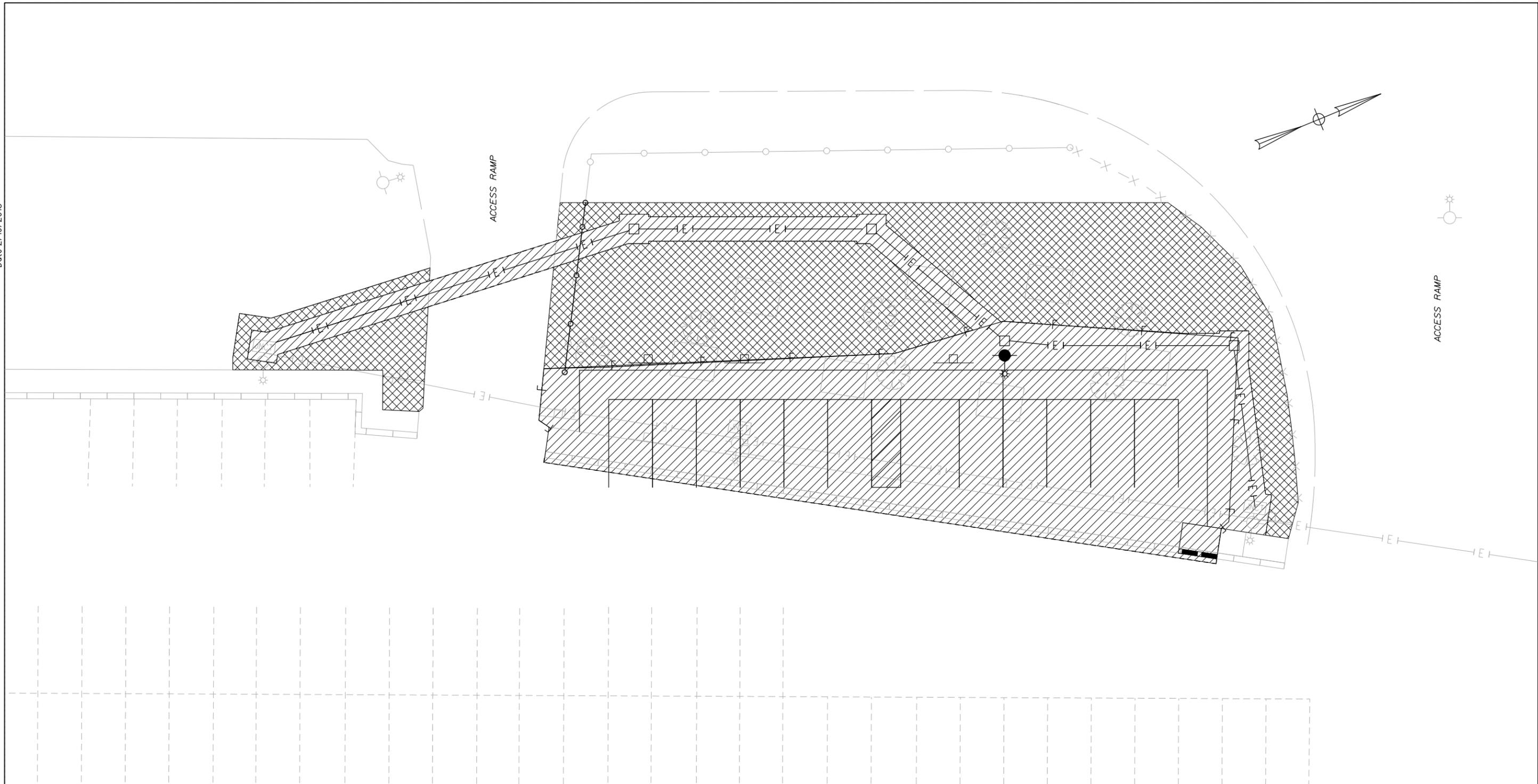
BRIDGE AND CULVERT REPAIRS  
PARKING INSTALLATION  
KENNEBUNK SOUTHBOUND  
SERVICE PLAZA DETAILS I

SHEET NUMBER: KS-01  
14 OF 48

CONTRACT: 2018.06

Date: 2/19/2018

Filename: 015\_Kennebunk SB Service Plaza LOD.dgn



**NOTES:**

1. EROSION AND SEDIMENTATION CONTROL DEVICES REQUIRED FOR THE CONTRACTOR'S ACCESS LOCATIONS AND STORAGE AREAS WILL NOT BE MEASURED FOR PAYMENT.
2. SEE SPECIFICATIONS FOR CONTRACTOR'S SUBMITTAL REQUIREMENTS IF ADDING ADDITIONAL LIMITS OF DISTURBANCE TO THE PROJECT ESTIMATED QUANTITIES.
3. TOTAL CONTRACT LIMIT OF DISTURBANCE FOR THIS LOCATION HAS BEEN ESTIMATED TO BE 0.24 ACRES.

**LEGEND**



LIMIT OF DISTURBANCE:  
0.14 ACRES



CONTRACTOR'S LIMIT OF DISTURBANCE  
AREA FOR ACCESS AND STORAGE:  
0.16 ACRES



Designed by:



CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.

No.	Revision	By	Date	No.	Revision	By	Date

By	Date	By	Date
Designed	PEM 2\18	Checked	DAM 2\18
Drawn	SLS 2\18	In Charge of	RAL 2\18

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**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

**BRIDGE AND CULVERT REPAIRS  
PARKING INSTALLATION**  
KENNEBUNK SOUTHBOUND SERVICE  
PLAZA LIMIT OF DISTURBANCE PLAN

CONTRACT: 2018.06

SHEET NUMBER: KS-02

15 OF 48

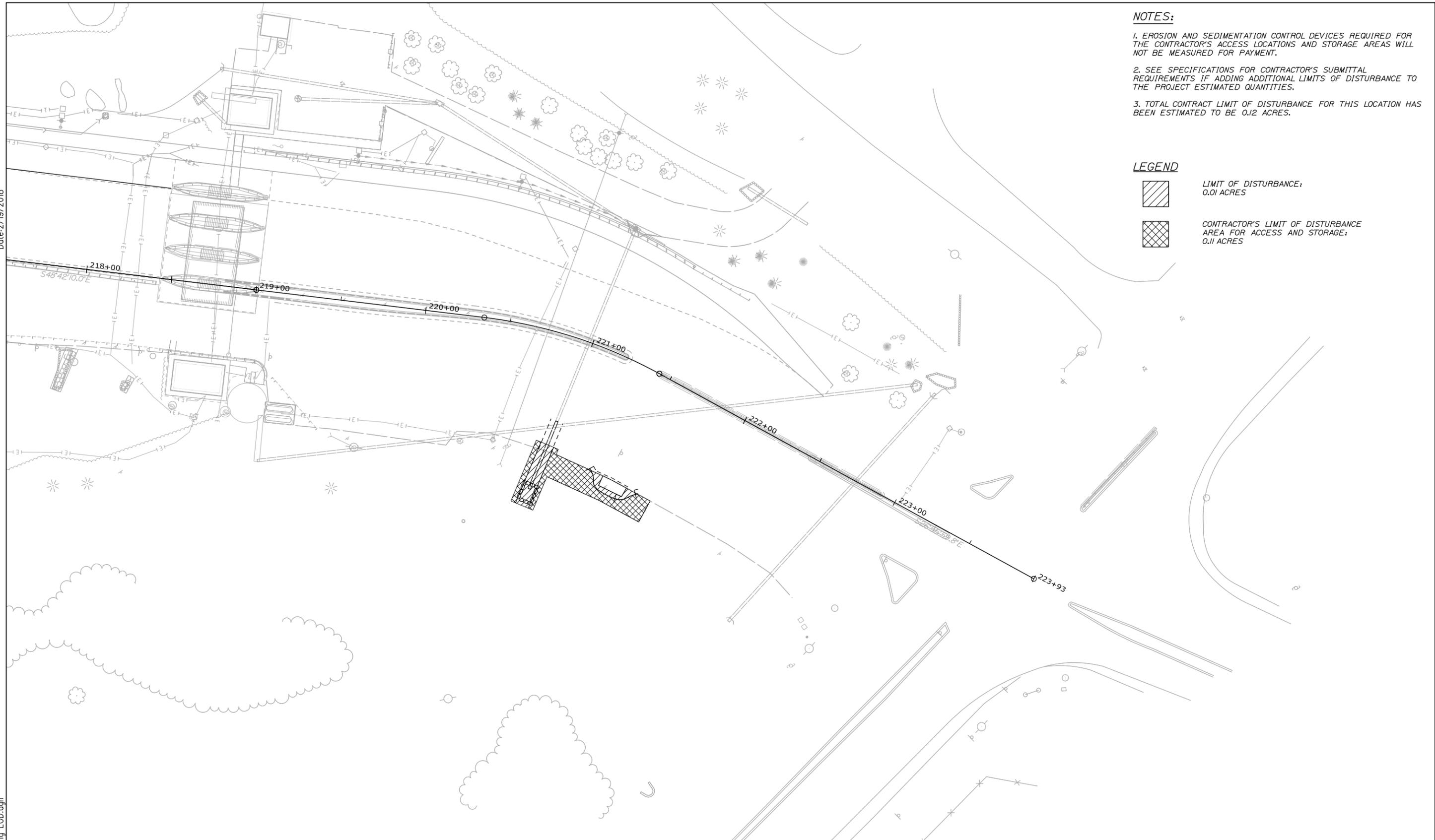


**NOTES:**

1. EROSION AND SEDIMENTATION CONTROL DEVICES REQUIRED FOR THE CONTRACTOR'S ACCESS LOCATIONS AND STORAGE AREAS WILL NOT BE MEASURED FOR PAYMENT.
2. SEE SPECIFICATIONS FOR CONTRACTOR'S SUBMITTAL REQUIREMENTS IF ADDING ADDITIONAL LIMITS OF DISTURBANCE TO THE PROJECT ESTIMATED QUANTITIES.
3. TOTAL CONTRACT LIMIT OF DISTURBANCE FOR THIS LOCATION HAS BEEN ESTIMATED TO BE 0.12 ACRES.

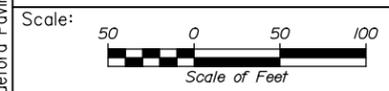
**LEGEND**

-  LIMIT OF DISTURBANCE: 0.01 ACRES
-  CONTRACTOR'S LIMIT OF DISTURBANCE AREA FOR ACCESS AND STORAGE: 0.11 ACRES



Date: 2/19/2018

Filename: 017\_Biddeford Paving LOD.dgn



Designed by:



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**THE GOLD STAR  
 MEMORIAL HIGHWAY**

**BRIDGE AND CULVERT REPAIRS  
 PAVING REHABILITATION  
 BIDDEFORD INTERCHANGE  
 LIMITS OF DISTURBANCE**

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.			
	By	Date	
Designed	LZD	2\18	Checked RWH 2\18
Drawn	SLS	2\18	In Charge of RAL 2\18

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

CONTRACT: 2018.06

SHEET NUMBER: BI-01

17 OF 48



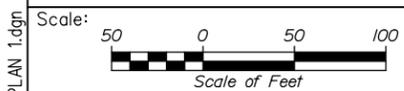
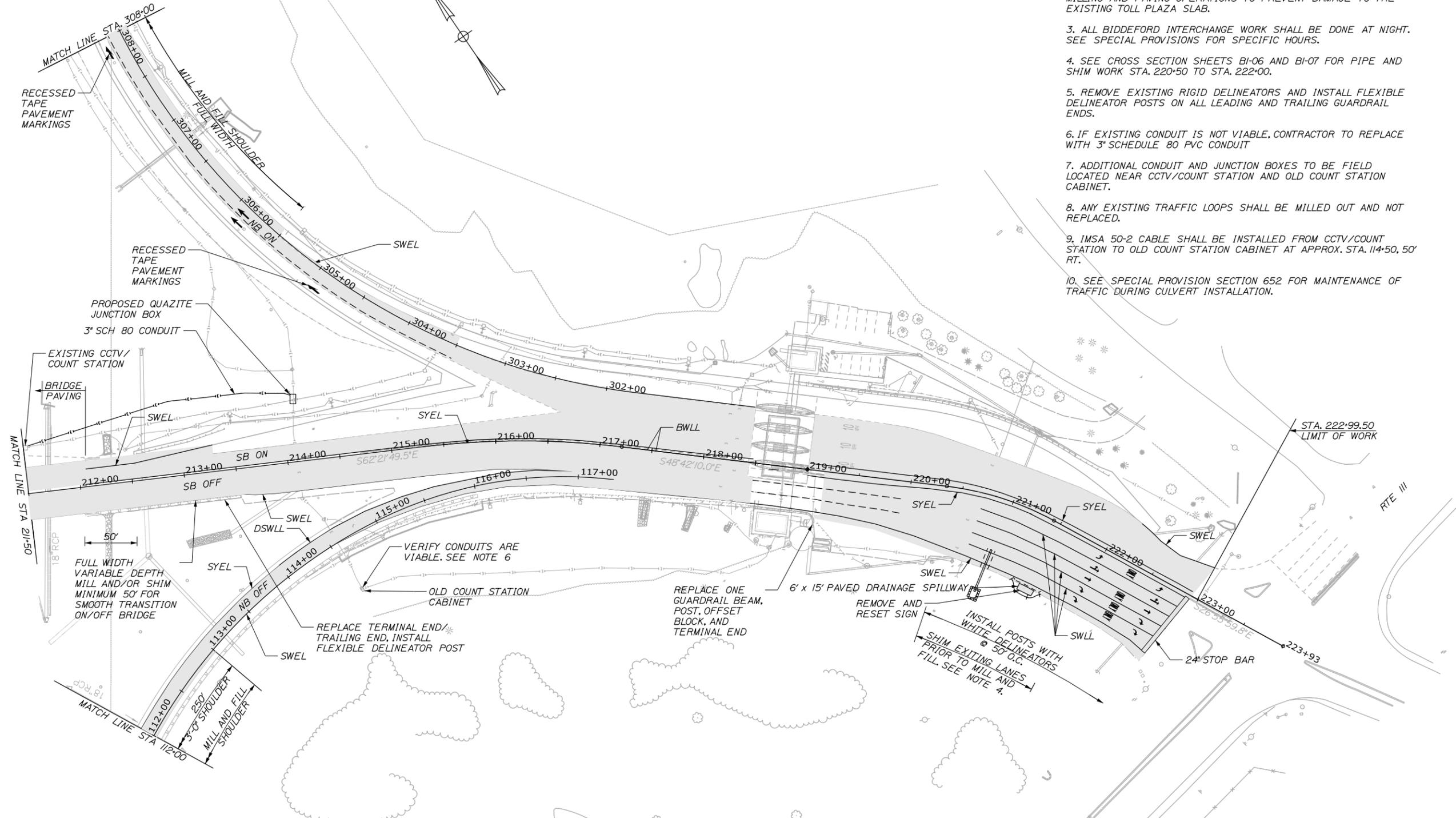
Date: 2/19/2018

**LEGEND:**

-  2" MILL AND FILL (1/2" HMA 12.5mm & 1/2" 4.75mm HMA SHIM) OF RAMP LANES (YELLOW LINE TO WHITE LINE)
- SWEL SOLID WHITE EDGE LINE
- SYEL SOLID YELLOW EDGE LINE
- DWLL DOTTED WHITE LANE LINE
- DSWLL DOUBLE SOLID WHITE LANE LINE
- BWLL BROKEN WHITE LANE LINE
- SWLL SOLID WHITE LANE LINE

**GENERAL NOTES:**

1. PROVIDE 1/2" HMA 12.5mm (POLYMER MODIFIED) ON THE RAMPS AFTER COMPLETING THE SPECIFIED MILL AND 1/2" SHIM.
2. SAWCUT ANY CONCRETE PROTRUSIONS ALONG CONCRETE SLAB AT PLAZA WHERE CONCRETE WAS USED TO REPAIR THE PAVEMENT. MILL ALL THE WAY TO THE CONCRETE SLAB. FINISHED PAVEMENT SURFACE SHALL BE 1/8" HIGHER THAN TOLL PLAZA CONCRETE SLAB.
3. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES DURING MILLING AND PAVING OPERATIONS TO PREVENT DAMAGE TO THE EXISTING TOLL PLAZA SLAB.
4. ALL BIDDEFORD INTERCHANGE WORK SHALL BE DONE AT NIGHT. SEE SPECIAL PROVISIONS FOR SPECIFIC HOURS.
5. SEE CROSS SECTION SHEETS BI-06 AND BI-07 FOR PIPE AND SHIM WORK STA. 220+50 TO STA. 222+00.
6. REMOVE EXISTING RIGID DELINEATORS AND INSTALL FLEXIBLE DELINEATOR POSTS ON ALL LEADING AND TRAILING GUARDRAIL ENDS.
7. IF EXISTING CONDUIT IS NOT VIABLE, CONTRACTOR TO REPLACE WITH 3" SCHEDULE 80 PVC CONDUIT
8. ADDITIONAL CONDUIT AND JUNCTION BOXES TO BE FIELD LOCATED NEAR CCTV/COUNT STATION AND OLD COUNT STATION CABINET.
9. ANY EXISTING TRAFFIC LOOPS SHALL BE MILLED OUT AND NOT REPLACED.
10. IMSA 50-2 CABLE SHALL BE INSTALLED FROM CCTV/COUNT STATION TO OLD COUNT STATION CABINET AT APPROX. STA. 114+50, 50' RT.
11. SEE SPECIAL PROVISION SECTION 652 FOR MAINTENANCE OF TRAFFIC DURING CULVERT INSTALLATION.



Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.

No.	Revision	By	Date

	By	Date		By	Date
Designed	CAH	2\18	Checked	LZD	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

HNTB CORPORATION  
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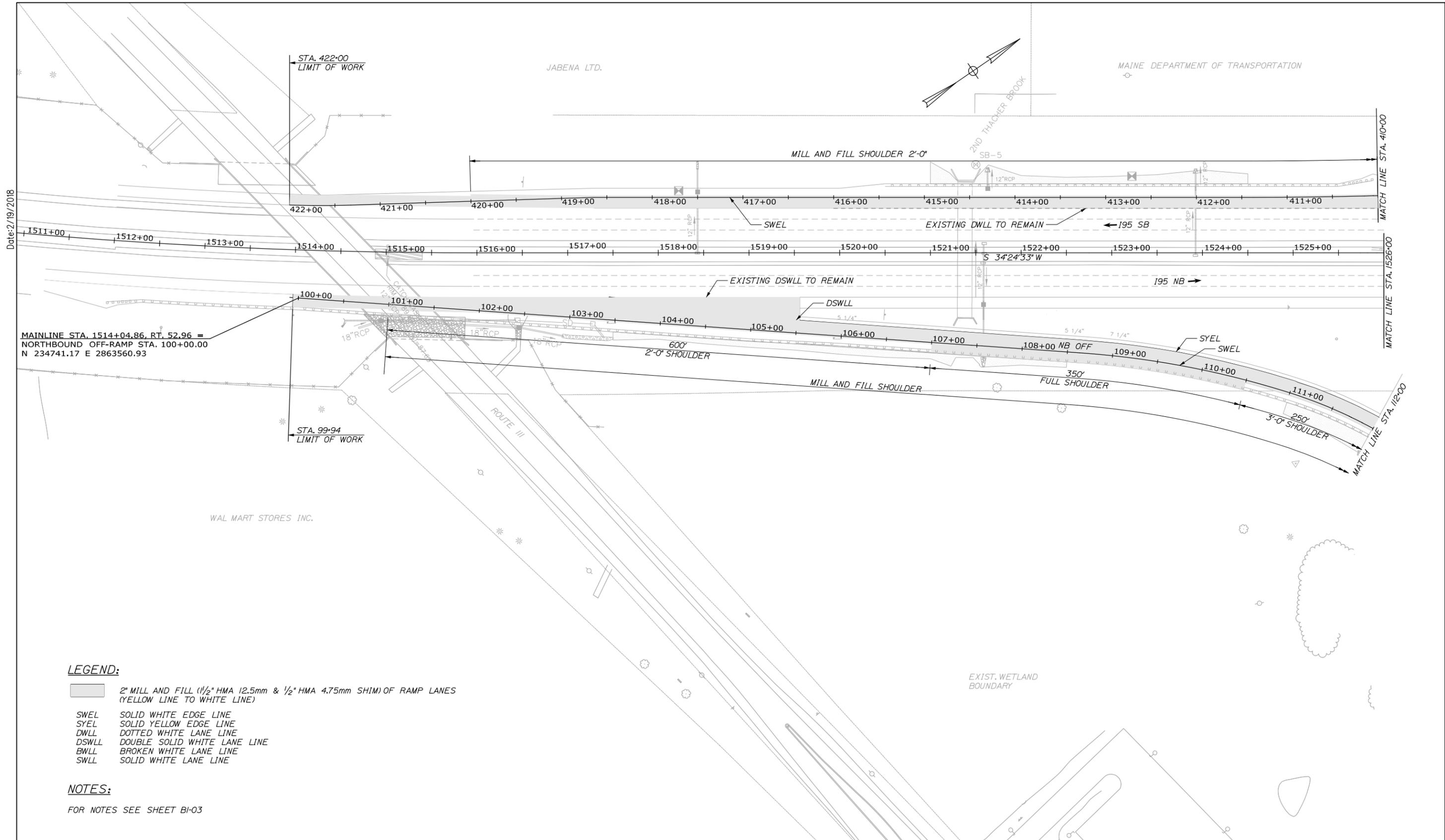
**THE GOLD STAR  
 MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

**BRIDGE AND CULVERT REPAIRS  
 PAVING REHABILITATION  
 BIDDEFORD INTERCHANGE  
 PAVING PLAN I**

SHEET NUMBER: BI-03  
 CONTRACT: 2018.06  
 19 OF 48

Filename: 019\_HDPLAN 1.dgn



Date: 2/19/2018

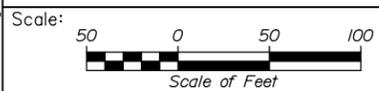
MAINLINE STA. 1514+04.86, RT. 52.96 =  
 NORTHBOUND OFF-RAMP STA. 100+00.00  
 N 234741.17 E 2863560.93

**LEGEND:**

- 2" MILL AND FILL (1/2" HMA 12.5mm & 1/2" HMA 4.75mm SHIM) OF RAMP LANES (YELLOW LINE TO WHITE LINE)
- SWEL SOLID WHITE EDGE LINE
- SYEL SOLID YELLOW EDGE LINE
- DWLL DOTTED WHITE LANE LINE
- DSWLL DOUBLE SOLID WHITE LANE LINE
- BWLL BROKEN WHITE LANE LINE
- SWLL SOLID WHITE LANE LINE

**NOTES:**

FOR NOTES SEE SHEET BI-03



No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.

	By	Date		By	Date
Designed	CAH	2\18	Checked	LZD	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

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**THE GOLD STAR  
 MEMORIAL HIGHWAY**

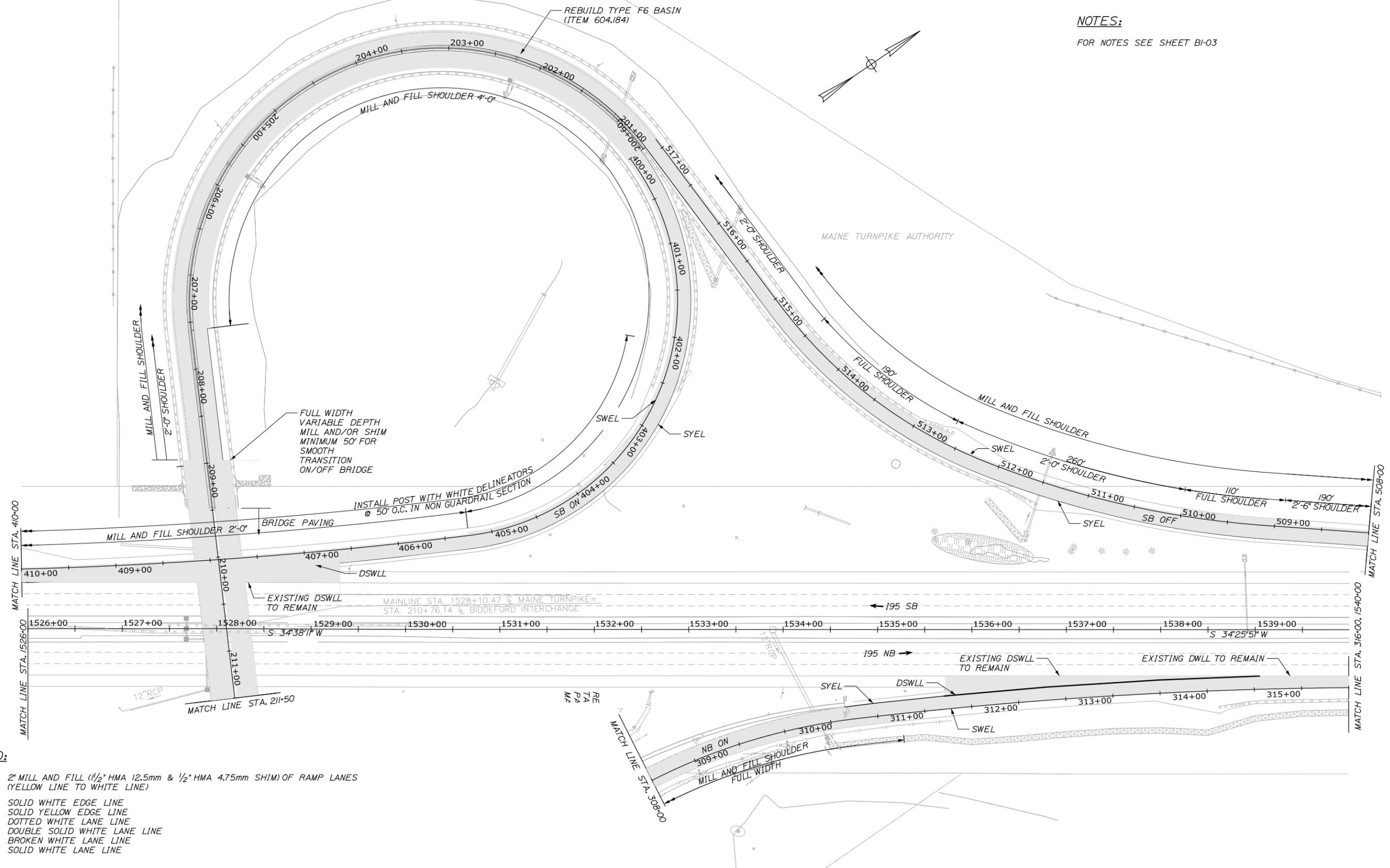
MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

**BRIDGE AND CULVERT REPAIRS  
 PAVING REHABILITATION  
 BIDDEFORD INTERCHANGE  
 PAVING PLAN II**

SHEET NUMBER: BI-04  
 CONTRACT: 2018.06  
 20 OF 48

Date: 2/19/2018

**NOTES:**  
FOR NOTES SEE SHEET BI-03



**LEGEND:**

- 2" MILL AND FILL (1/2" HMA 12.5mm & 1/2" HMA 4.75mm SHIM) OF RAMP LANES (YELLOW LINE TO WHITE LINE)
- SWEL SOLID WHITE EDGE LINE
- SYEL SOLID YELLOW EDGE LINE
- DWLL DOTTED WHITE LANE LINE
- DSWLL DOUBLE SOLID WHITE LANE LINE
- BWLL BROKEN WHITE LANE LINE
- SWLL SOLID WHITE LANE LINE

Scale: Scale of Feet

No.	Revision	By	Date

Designed by:

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.

	By	Date		By	Date
Designed	CAH	2\18	Checked	LZD	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

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THE GOLD STAR  
MEMORIAL HIGHWAY

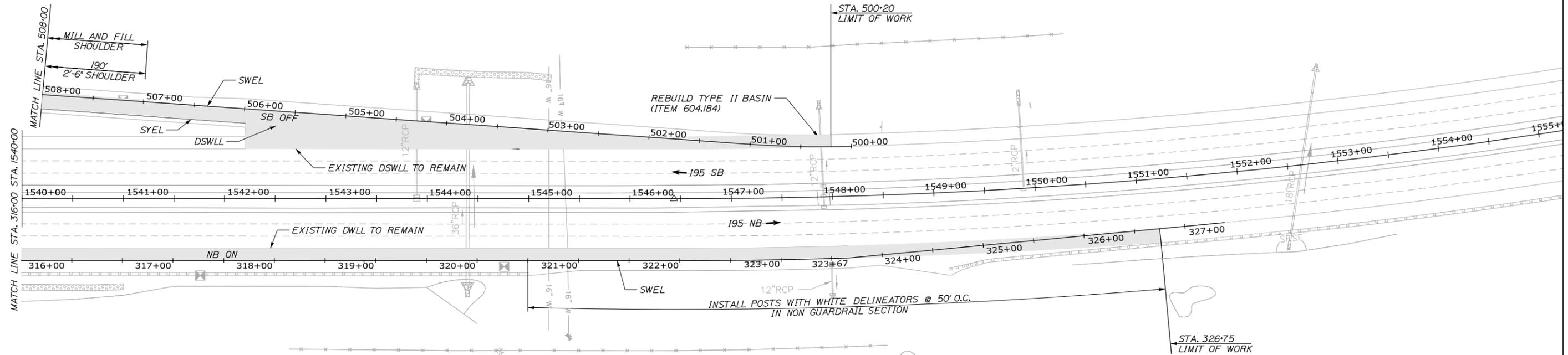
MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

BRIDGE AND CULVERT REPAIRS  
PAVING REHABILITATION  
BIDDEFORD INTERCHANGE  
PAVING PLAN III

SHEET NUMBER: BI-05  
CONTRACT: 2018.06  
21 OF 48

Filename: 021\_HDPLAN\_3.dgn

Date: 2/19/2018



**LEGEND:**

- 2" MILL AND FILL (1/2" HMA 12.5mm & 1/2" HMA 4.75mm SHIM) OF RAMP LANES (YELLOW LINE TO WHITE LINE)
- SWEL SOLID WHITE EDGE LINE
- SYEL SOLID YELLOW EDGE LINE
- DWLL DOTTED WHITE LANE LINE
- DSWLL DOUBLE SOLID WHITE LANE LINE
- BWLL BROKEN WHITE LANE LINE
- SWLL SOLID WHITE LANE LINE

**NOTES:**

FOR NOTES SEE BI-03

Filename: 022\_HDPLAN\_4.dgn



Designed by:



HNTB CORPORATION  
340 County Road, Suite 6-C  
Westbrook, ME 04092  
TEL (207) 774-5155  
FAX (207) 228-0909



**THE GOLD STAR  
MEMORIAL HIGHWAY**

BRIDGE AND CULVERT REPAIRS  
PAVING REHABILITATION  
BIDDEFORD INTERCHANGE  
PAVING PLAN IV

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.			
	By	Date	
Designed	CAH	2\18	Checked LZD 2\18
Drawn	SLS	2\18	In Charge of RAL 2\18

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

CONTRACT: 2018.06

SHEET NUMBER: BI-06

22 OF 48

Date: 2/19/2018

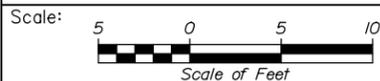
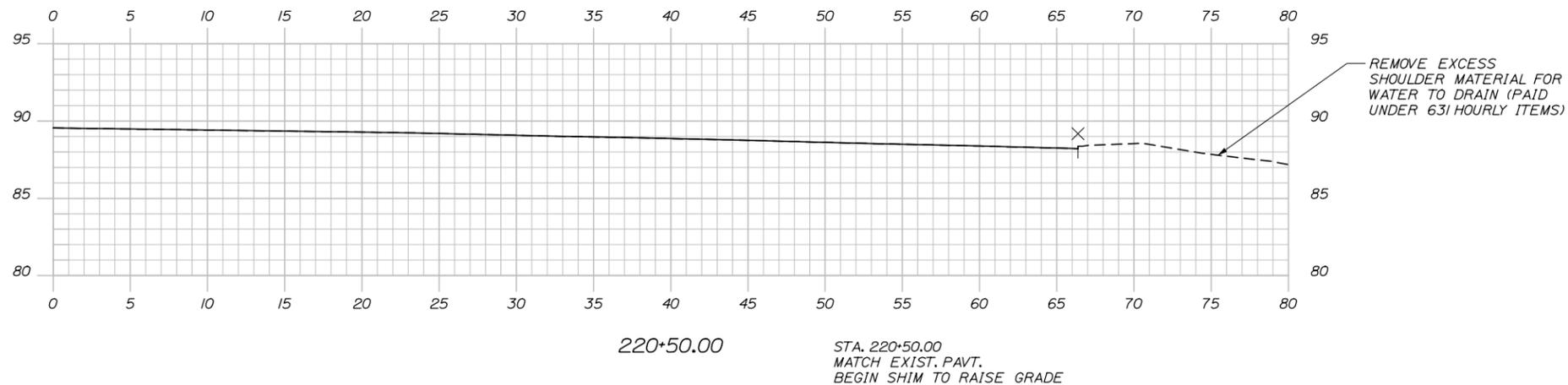
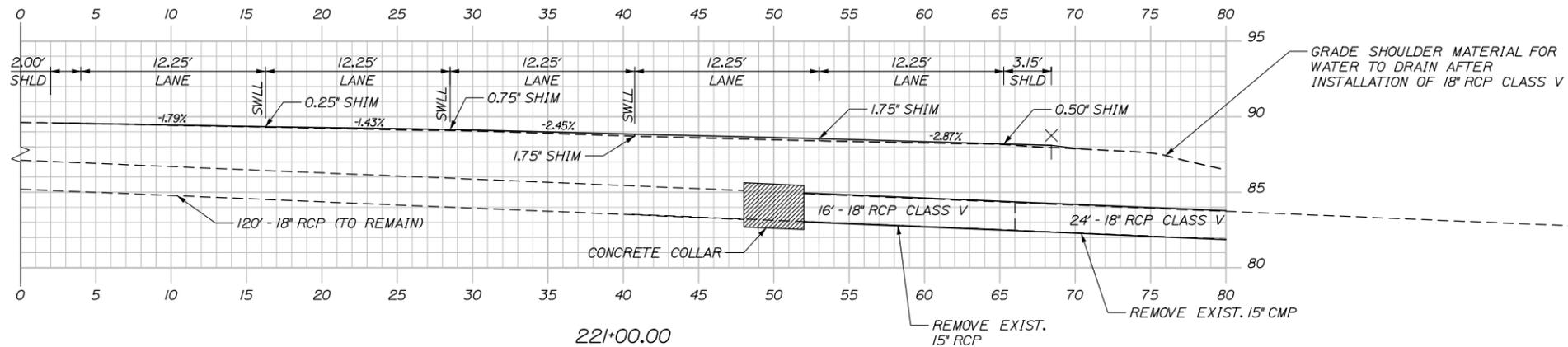
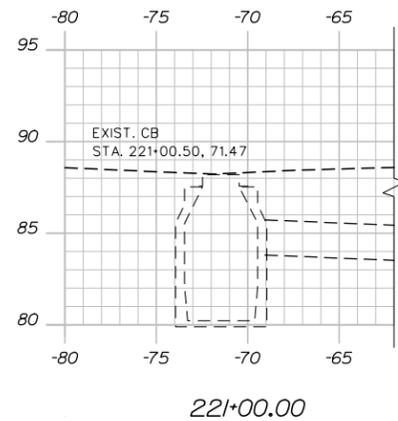
Filename: 023\_Xsec Biddeford Paving1.dgn

**CONSTRUCTION SEQUENCE NOTES:**

1. CONTRACTOR SHALL PLACE SHIM TO THE DEPTHS AND CROSS SLOPES NOTED ON CROSS SECTIONS 221+00 and 221+50.
2. AREA SHALL THEN BE MILLED 2", SHIMMED 1/2", AND FILLED 1/2" CONSISTENT WITH THE FULL INTERCHANGE.
3. FOR MAINTENANCE OF TRAFFIC DURING CULVERT INSTALLATION SEE SPECIAL PROVISION 652.

**DRAINAGE NOTE:**

CONTRACTOR SHALL FIELD VERIFY EXIST. PIPE SLOPE AND INVERTS. PROPOSED INVERTS SHALL BE DETERMINED AND APPROVED BY THE RESIDENT. THERE SHALL BE A 3" DROP BETWEEN INVERT IN AND INVERT OUT AT CATCH BASIN. ADD RIPRAP OUTLET PROTECTION.



Designed by:



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340 County Road, Suite 6-C  
Westbrook, ME 04092  
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FAX (207) 228-0909



**THE GOLD STAR  
MEMORIAL HIGHWAY**

BRIDGE AND CULVERT REPAIRS  
PAVING REHABILITATION  
BIDDEFORD INTERCHANGE CROSS SECTIONS  
STA. 220+50 TO STA. 221+00

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.					
Designed	By	Date	Checked	By	Date
Drawn	EDD	2\18	LZD	RAL	2\18
	SLS	2\18	In Charge of		

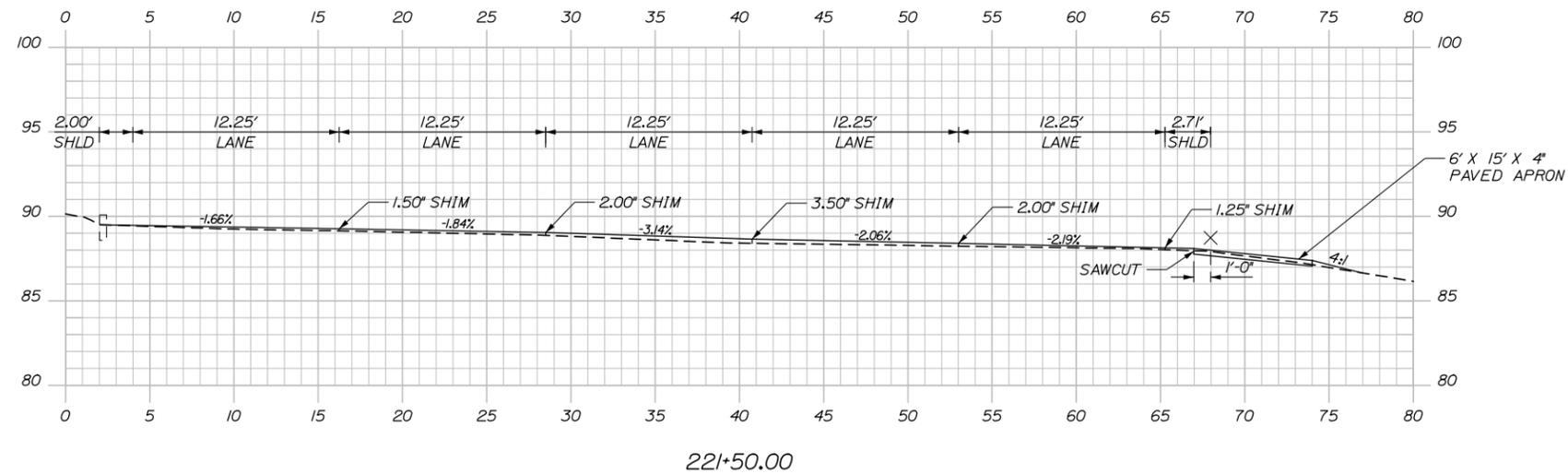
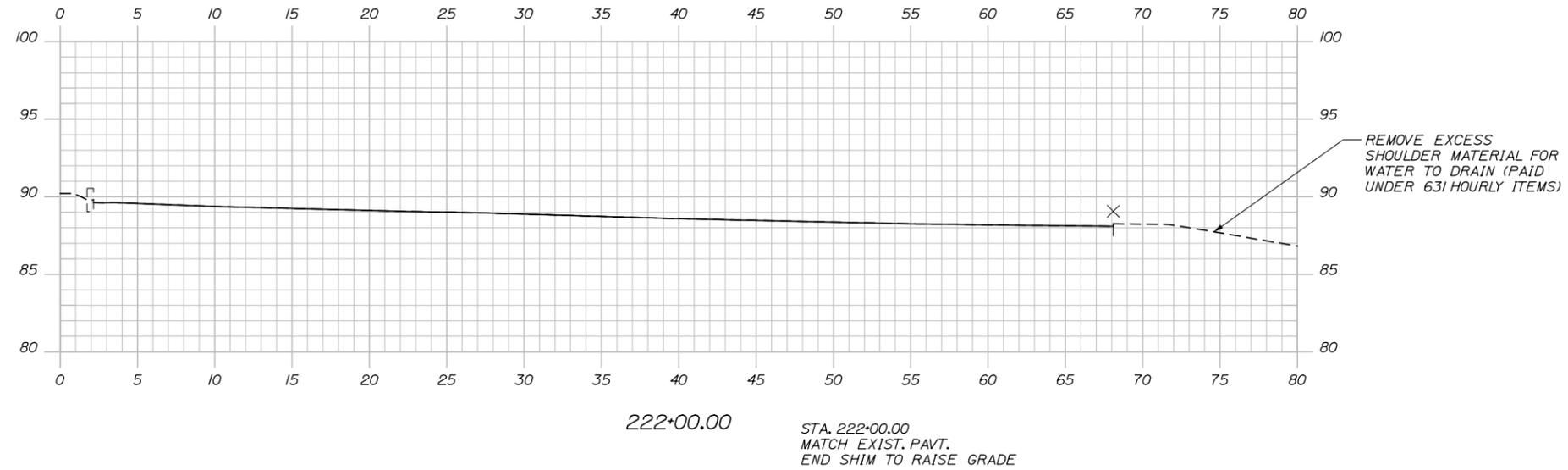
MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

CONTRACT: 2018.06

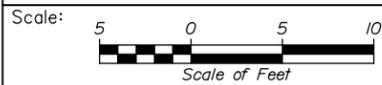
SHEET NUMBER: BI-07

23 OF 48

Date: 2/19/2018



Filename: 024\_Xsec Biddeford Paving 2.dgn



Designed by:



HNTB CORPORATION  
 340 County Road, Suite 6-C  
 Westbrook, ME 04092  
 TEL (207) 774-5155  
 FAX (207) 228-0909



THE GOLD STAR  
 MEMORIAL HIGHWAY

BRIDGE AND CULVERT REPAIRS  
 PAVING REHABILITATION  
 BIDDEFORD INTERCHANGE CROSS SECTIONS  
 STA. 221+50 TO STA. 222+00

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.			
By	Date	By	Date
Designed	EDD 2\18	Checked	LZD 2\18
Drawn	SLS 2\18	In Charge of	RAL 2\18

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

CONTRACT: 2018.06

SHEET NUMBER: BI-08

24 OF 48

SCHEDULE OF EXIT 32 GUARDRAIL WORK

MILE MARKER	LOCATION DESCRIPTION	LOCATION OF WORK				GUARDRAIL STRUCTURE	ITEM 606.1723 BRIDGE TRANSITION TYPE III	ITEM 606.178 GUARDRAIL BEAM	ITEM 606.278 TERMINAL END - ANCHORED END	ITEM 606.3621 GUARDRAIL ADJUST, SINGLE RAIL	ITEM 606.3622 GUARDRAIL ADJUST, DOUBLE RAIL	ITEM 606.369 GUARDRAIL - REMOVE AND STACK	ITEM 606.471 SINGLE OFFSET BLOCK - W BEAM	ITEM 606.48 SINGLE GALVANIZED STEEL POST	DESCRIPTION OF WORK
		EXISTING	PROPOSED	APPROX. STATION	APPROX. STATION OF TERMINAL END OR ENDPST										
NB Off Ramp	Right Shoulder	1511+96.50	1512+34.00	1511+96.50	1512+34.00	FLEAT 350		12.5	0.0						See Installation Notes 1 and 2.
NB Off Ramp	Right Shoulder	1512+34.00	218+87.50	1512+34.00	218+87.50	Type 3D Single Rail		102.5	2050.0			17	17		See Installation Notes 1 and 2.
NB Off Ramp	Right Shoulder	218+87.50	219+00	218+87.50	219+00	Terminal End - Trailing End		0.0	0.0						See Installation Notes 1 and 2.
NB Off Ramp	Right Shoulder	219+25	219+50	219+25	219+50	Type 3D Single Rail		12.5	0.0			1	1		See Installation Note 1.
NB On Ramp	Right Shoulder	1538+62.50	1539+00	1538+62.50	1539+00	FLEAT 350		12.5	0.0						See Installation Notes 1 and 2.
NB On Ramp	Right Shoulder	1539+00	1544+87.50	1539+00	1544+87.50	Type 3D Single Rail		37.5	587.5			5	5		See Installation Note 1.
NB On Ramp	Right Shoulder	1544+87.50	1545+00	1544+87.50	1545+00	Terminal End - Trailing End		0.0	0.0						See Installation Notes 1 and 2.
NB On Ramp	Right Shoulder	1549+12.50	1549+50	1549+12.50	1549+50	FLEAT 350		12.5	0.0						See Installation Notes 1 and 2.
NB On Ramp	Right Shoulder	1549+50	1559+40.99	1549+50	1559+40.99	Type 3D Single Rail		50.0	1,000.0			8	8		See Installation Note 1.
NB On Ramp	Right Shoulder	1559+40.99	1559+53.49	1559+40.99	1559+53.49	Terminal End - Trailing End		0.0	0.0						See Installation Notes 1 and 2.
SB Off Ramp	Left Shoulder	511+49.72	511+87.22	511+49.72	511+87.22	FLEAT 350		12.5	0.0						See Installation Notes 1 and 2.
SB Off Ramp	Left Shoulder	511+87.22	516+64.30	511+87.22	516+64.30	Type 3D Single Rail		25.0	487.5			4	4		See Installation Note 1.
SB Off/ SB On Ramp	Left Shoulder	516+64.30	209+22.64	516+64.30	209+22.64	Type 3D Double Rail		100.0	0.0	9/2.5		14	7		See Installation Note 1.
SB Off/ SB On Ramp	Left Shoulder	209+22.64	209+47.64	209+22.64	209+47.64	Type A Attachment Double Rail	2.0	0.0	0.0		37.5				See Installation Note 1.
SB Off/ SB On Ramp	Left Shoulder	212+04.64	212+29.64	212+04.64	212+29.64	Type A Attachment Double Rail	2.0	0.0	0.0		37.5				See Installation Note 1.
SB Off/ SB On Ramp	Left Shoulder	212+29.64	218+20.44	212+29.64	218+20.44	Type 3D Double Rail		62.5	0.0	6/2.5		10	5		See Installation Note 1.
SB Off/ SB On Ramp	Left Shoulder	218+20.44	218+41.10	218+20.44	218+41.10	Bridge Transition Type III		0.0	0.0						See Installation Note 1.
SB Off Ramp	Right Shoulder	512+60.22	512+97.72	512+60.22	512+97.72	FLEAT 350		12.5	0.0						See Installation Notes 1 and 2.
SB Off Ramp	Right Shoulder	512+97.72	209+09.58	512+97.72	209+09.58	Type 3D Single Rail		62.5	1325.0			10	10		See Installation Note 1.
SB Off Ramp	Right Shoulder	209+09.58	209+34.58	209+09.58	209+34.58	Type A Attachment Single Rail	1.0	0.0	0.0		18.8				See Installation Note 1.
SB Off Ramp	Right Shoulder	212+11.71	212+36.70	212+11.71	212+36.70	Type A Attachment Single Rail	1.0	0.0	0.0		18.8				See Installation Note 1.
SB Off Ramp	Right Shoulder	212+36.70	213+36.70	212+36.70	213+36.70	Type 3D Single Rail		12.5	100.0			1	1		See Installation Note 1.
SB Off Ramp	Right Shoulder	213+36.70	213+50.00	213+36.70	213+50.00	Terminal End - Trailing End		0.0	1.0	0.0					See Installation Note 1.
SB On Ramp	Right Shoulder	402+45.85	402+58.77	402+45.85	402+58.77	Terminal End - Trailing End		0.0	0.0						See Installation Note 1.
SB On Ramp	Left / Right Shoulder	402+45.85	209+12.58	402+45.85	209+12.58	Type 3D Single Rail		50.0	1025.0			9	9		See Installation Note 1.
SB On Ramp	Left Shoulder	209+12.58	209+37.58	209+12.58	209+37.58	Type A Attachment Single Rail	1.0	0.0	0.0		18.8				See Installation Note 1.
SB On Ramp	Left Shoulder	212+17.60	212+42.60	212+17.60	212+42.60	Type A Attachment Single Rail	1.0	0.0	0.0		18.8				See Installation Note 1.
SB On Ramp	Left Shoulder	212+42.60	213+06.87	212+42.60	213+06.87	Type 3D Single Rail		12.5	87.5			1	1		See Installation Note 1.
SB On Ramp	Left Shoulder	213+06.87	213+44.37	213+06.87	213+44.37	FLEAT 350		12.5	0.0						See Installation Note 1.
SB On Ramp	Left Shoulder	400+25.00	402+41.18	400+25.00	402+41.18	Type 3D Single Rail		12.5	212.5			2	2		See Installation Note 1.
SB On Ramp	Left Shoulder	402+41.18	402+53.68	402+41.18	402+53.68	Terminal End - Trailing End		0.0	0.0						See Installation Note 1.
SB On Ramp	Left Shoulder	1520+50	1520+62.50	1520+50	1520+62.50	Terminal End - Trailing End		0.0	0.0						See Installation Note 1.
SB On Ramp	Left Shoulder	1520+62.50	1525+50	1520+62.50	1525+50	Type 3D Single Rail		25.0	487.5			4	4		See Installation Note 1.
SB On Ramp	Left Shoulder	1525+50	1525+87.5	1525+50	1525+87.5	FLEAT 350		12.5	0.0						See Installation Note 1.
						TOTALS	8.0	652.5	1.0	7362.5	1525.0	150.0	86.0	74.0	

GENERAL NOTES:

- APPROXIMATE STATION IS THE LEADING END OR TRAILING END OF THE EXISTING GUARDRAIL ASSEMBLY.
- REPAIR DAMAGED GUARDRAIL BEAMS AS INDICATED OR AS DIRECTED BY THE RESIDENT ENGINEER.
- REPLACE ALL RIGID GUARDRAIL DELINEATOR POSTS WITH FLEXIBLE DELINEATORS AS PER SECTION 606 GUARDRAIL DELINEATOR POST.
- INDICATED INSTALLATION LOCATION OF FLEAT UNITS REFERS TO LOCATION OF THE FLEAT CRASH HEAD.

INSTALLATION NOTES:

- ADJUST GUARDRAIL TO 30-INCH ABOVE EDGE OF PAVEMENT. TAPER GUARDRAIL UP TO 30-INCH HEIGHT FROM CRASH ENDS OVER 25-FOOT LENGTH.
- REMOVE EXISTING END SECTION AND STACK; INSTALL ANCHORED TRAILING END.

Filename: 025\_Guardrail Schedule.dgn

Scale:		Designed by:				HNTB CORPORATION 340 County Road, Suite 6-C Westbrook, ME 04092 TEL (207) 774-5155 FAX (207) 228-0909				<b>THE GOLD STAR MEMORIAL HIGHWAY</b>		BRIDGE AND CULVERT REPAIRS PAVING REHABILITATION BIDDEFORD INTERCHANGE GUARDRAIL SCHEDULE		SHEET NUMBER: BI-09 CONTRACT: 2018.06 25 OF 48	
No.	Revision	By	Date												
				By	Date	By	Date	MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.							
				Designed	CAH 2\18	Checked	LZD 2\18								
				Drawn	SLS 2\18	In Charge of	RAL 2\18								



**DIMENSIONS FOR SLOPE OF 2:1**

D	a (FT)	b (FT)	c (FT)	e (FT)	f (FT)	g (FT)	STONE DEPTH (FT)	STONE (CY)
12"	1.00	4.00	3.00	2.00	6.00	1.00	1.50	1.30
15"	1.00	4.50	3.37	2.25	6.75	1.63	1.50	1.70
18"	1.00	5.00	3.75	2.50	7.50	2.25	1.50	2.09
21"	1.00	5.50	4.13	2.75	8.25	2.88	1.50	2.58
24"	1.00	6.00	4.50	3.00	9.00	3.50	1.50	3.12
30"	1.00	7.00	5.25	3.50	10.50	4.75	1.50	4.33
36"	1.00	8.00	6.00	4.00	12.00	6.00	1.50	5.75
42"	1.00	9.00	6.75	4.50	13.50	7.25	1.50	7.37
48"	1.00	10.00	7.50	5.00	15.00	8.50	1.50	9.18
54"	1.00	11.00	8.25	5.50	16.50	9.75	1.50	11.19
60"	1.00	12.00	9.00	6.00	18.00	11.00	1.50	13.40
66"	1.00	13.00	9.75	6.50	19.50	12.25	1.50	15.81
72"	1.00	14.00	10.50	7.00	21.00	13.50	1.50	18.41
84"	1.00	16.00	12.00	8.00	24.00	16.00	1.50	24.22

**DIMENSIONS FOR SLOPE OF 4:1**

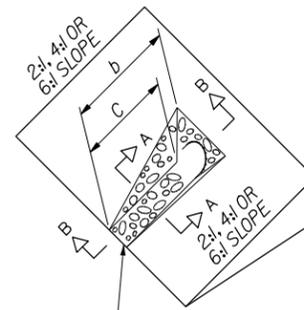
D	a (FT)	b (FT)	c (FT)	e (FT)	f (FT)	g (FT)	STONE DEPTH (FT)	STONE (CY)
12"	1.00	8.00	6.00	2.00	6.00	0.00	1.50	2.20
15"	1.00	9.00	6.75	2.25	6.75	0.00	1.50	2.80
18"	1.00	10.00	7.50	2.50	7.50	0.00	1.50	3.40
21"	1.00	11.00	8.25	2.75	8.25	0.00	1.50	4.10
24"	1.00	12.00	9.00	3.00	9.00	0.00	1.50	4.86
30"	1.00	14.00	10.50	3.50	10.50	0.00	1.50	6.58
36"	1.00	16.00	12.00	4.00	12.00	0.00	1.50	8.56
42"	1.00	18.00	13.50	4.50	13.50	0.50	1.50	10.92
48"	1.00	20.00	15.00	5.00	15.00	1.00	1.50	13.57
54"	1.00	22.00	16.50	5.50	16.50	1.50	1.50	16.50
60"	1.00	24.00	18.00	6.00	18.00	2.00	1.50	19.72
66"	1.00	26.00	19.50	6.50	19.50	2.50	1.50	23.22
72"	1.00	28.00	21.00	7.00	21.00	3.00	1.50	27.01
84"	1.00	32.00	24.00	8.00	24.00	4.00	1.50	35.45

**DIMENSIONS FOR SLOPE OF 6:1**

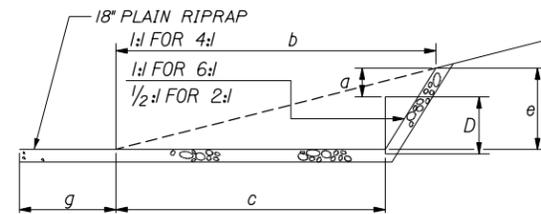
D	a (FT)	b (FT)	c (FT)	e (FT)	f (FT)	g (FT)	STONE DEPTH (FT)	STONE (CY)
12"	0.50	9.00	7.50	1.50	4.50	0.00	1.50	2.30
15"	0.50	10.50	8.75	1.75	5.50	0.00	1.50	2.93
18"	0.50	12.00	10.00	2.00	6.50	0.00	1.50	3.57
21"	0.50	13.50	11.25	2.25	7.25	0.00	1.50	4.46
24"	0.50	15.00	12.50	2.50	8.00	0.00	1.50	5.44
30"	0.50	18.00	15.00	3.00	9.50	0.00	1.50	7.71
36"	0.50	21.00	17.50	3.50	11.00	0.00	1.50	10.37
42"	0.50	24.00	20.00	4.00	12.50	0.00	1.50	13.42
48"	0.50	27.00	22.50	4.50	14.00	0.00	1.50	16.87
54"	0.50	30.00	25.00	5.00	15.50	0.00	1.50	20.70
60"	0.50	33.00	27.50	5.50	17.00	0.00	1.50	24.93
66"	0.50	36.00	30.00	6.00	18.50	0.00	1.50	29.55
72"	0.50	39.00	32.50	6.50	20.00	0.00	1.50	34.56
84"	0.50	45.00	37.50	7.50	23.00	0.00	1.50	45.76

**NOTES:**

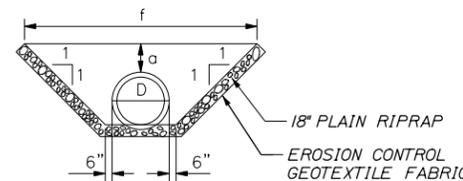
1. THE DIMENSIONS SHOWN ARE APPROXIMATE AND ME BE MODIFIED BY THE RESIDENT.
2. STONE QUANTITIES ARE FOR ONE END OF THE PIPE



PLAIN RIPRAP (ITEM 610.08)

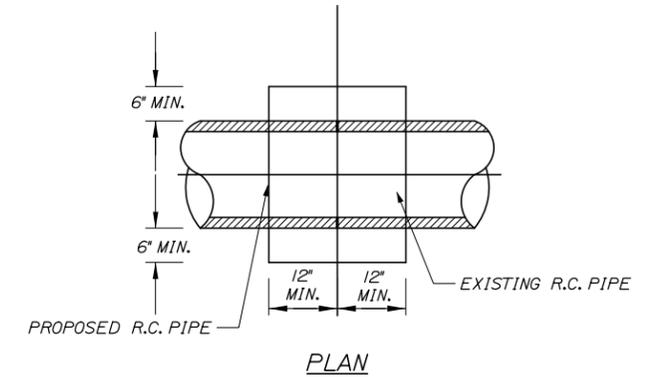


SECTION B-B

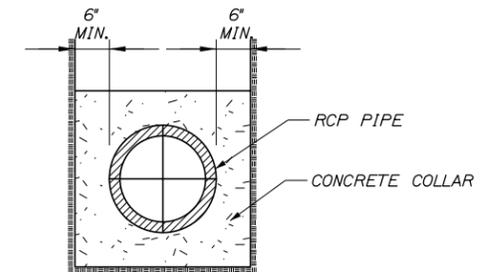


SECTION A-A

ROADWAY CULVERT END SLOPE TREATMENT



PLAN



SECTION

CONCRETE COLLAR

N.T.S.

CONCRETE COLLAR WIDTH SCHEDULE	
PIPE DIA. (INCHES)	WIDTH OF CONC. (INCHES)
12	24
15	24
18	24
24	24
30	30
36	36
42	48
48	48

**NOTES:**

1. CONNECTION AND PIPE TO BE BACKFILLED PER ASTM D2321 (CRUSHED STONE).
2. CONCRETE SHALL BE CLASS A FIBER REINFORCED.
3. SEE CONCRETE COLLAR WIDTH SCHEDULE FOR DIMENSIONS.

Date: 2/19/2018

Filename: 027\_Drainage\_Details.dgn

Scale:		Designed by:			
		<b>HNTB</b>			
No.	Revision	By	Date		
				CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.	
		By	Date	By	Date
		CAH	2\18	Checked	LZD 2\18
		Drawn	SLS 2\18	In Charge of	RAL 2\18

HNTB CORPORATION  
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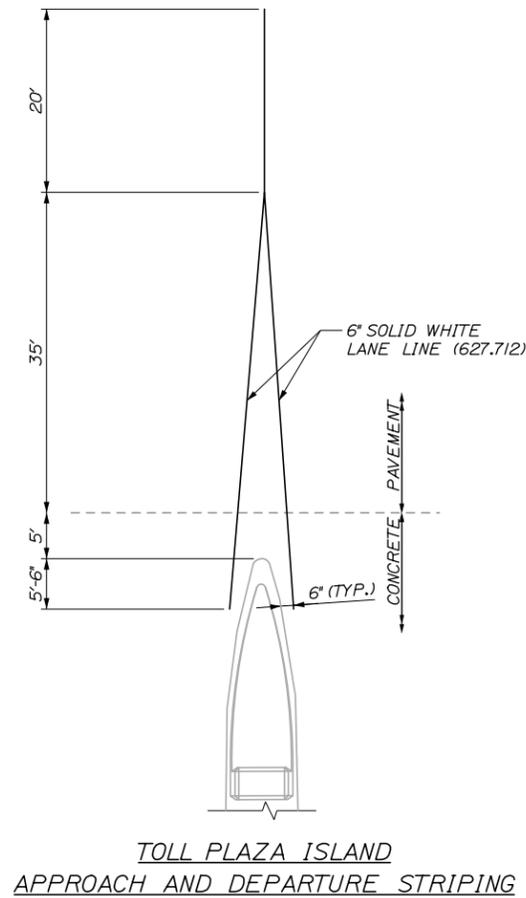
THE GOLD STAR  
MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

BRIDGE AND CULVERT REPAIRS  
PAVING REHABILITATION  
BIDDEFORD INTERCHANGE  
DRAINAGE DETAILS

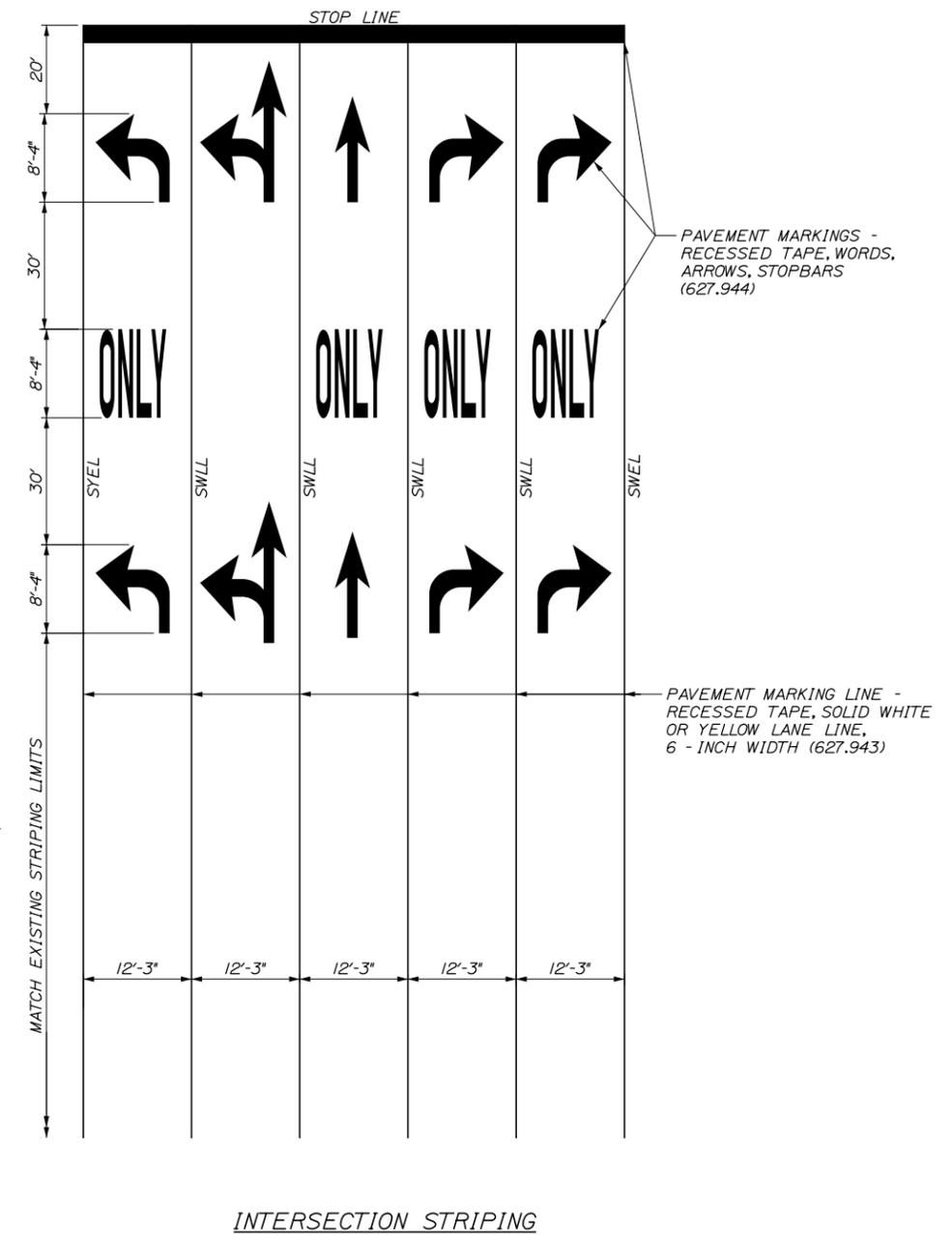
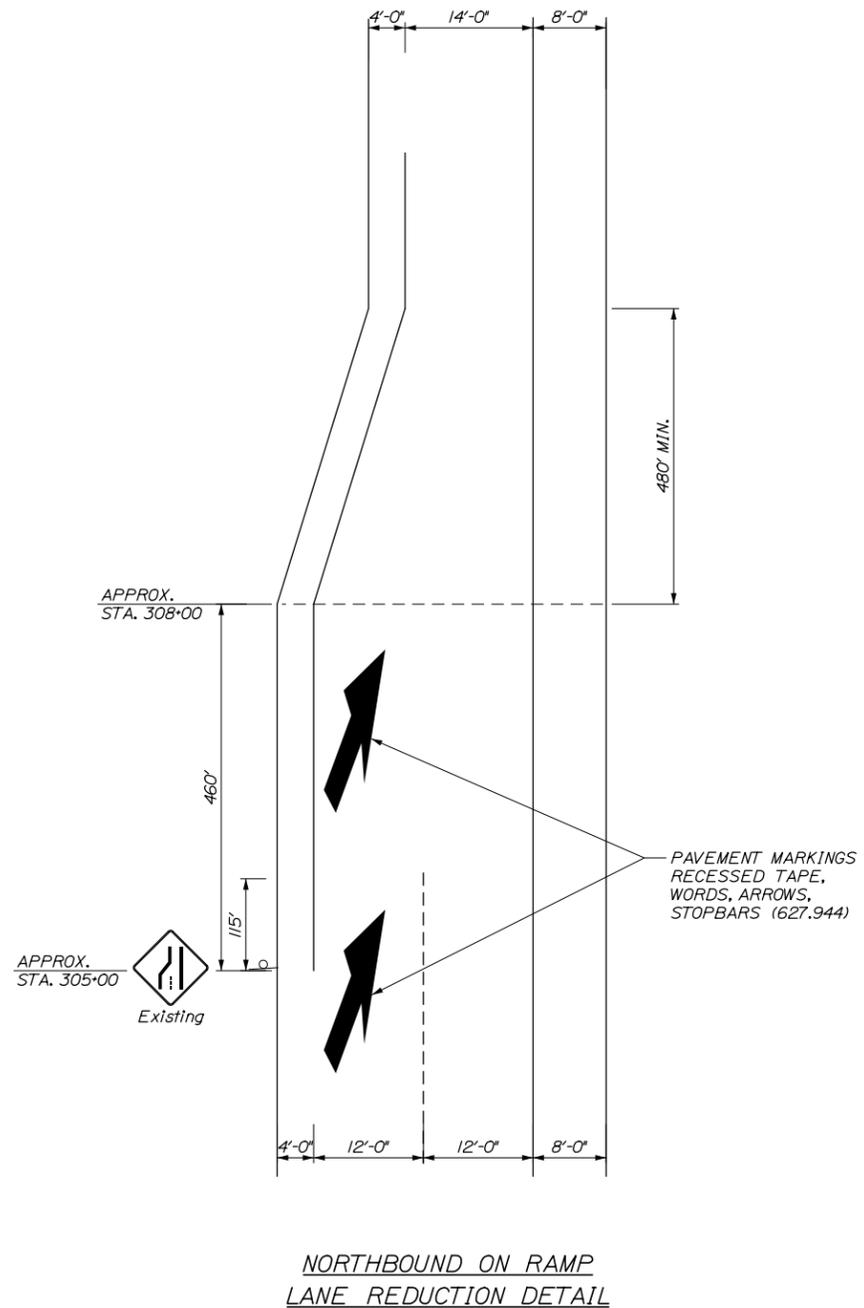
SHEET NUMBER: BI-11  
CONTRACT: 2018.06  
27 OF 48

Date: 2/19/2018



**NOTES:**

1. THE CONTRACTOR SHALL FURNISH ALL TEMPORARY STRIPING AT BIDDEFORD INTERCHANGE. TEMPORARY STRIPES SHALL NOT BE PAINTED ON THE FINAL PAVEMENT SURFACE.
2. THE CONTRACTOR SHALL INSTALL THE PERMANENT RAMP STRIPING. THE PERMANENT RAMP STRIPING SHALL BE INSTALLED PER THE TOLERANCES OUTLINED IN THE 627 SPECIFICATIONS.
3. THE CONTRACTOR SHALL SURVEY AND TIE THE EXISTING PAVEMENT MARKING LINES ON THE RAMPS AND IN THE PLAZA AREAS AT BIDDEFORD INTERCHANGE PRIOR TO REMOVING, MILLING, OR PAVING OVER THE EXISTING PAVEMENT MARKING LINES AT THE EXIT. THE CONTRACTOR SHALL USE THE SURVEYED INFORMATION TO RE-ESTABLISH THE PAVEMENT MARKING LINES AFTER THE SURFACE PAVING IS COMPLETED. THIS WORK SHALL BE INCIDENTAL TO THE 627 PAY ITEM(S).
4. THE CONTRACTOR SHALL STRIPE THE APPROACH AND DEPARTURE AREAS IN FRONT OF THE TOLL ISLANDS AS SHOWN ON THE STRIPING DETAIL ON THIS PAGE.
5. THE CONTRACTOR SHALL INSTALL THE WORD AND ARROW PAVEMENT MARKINGS AT THE SIGNALIZED INTERSECTION WITH ALFRED STREET AS SHOWN ON THE STRIPING DETAIL ON THIS PAGE. THE WORD AND ARROW PAVEMENT MARKINGS SHALL BE PAID BY THE SQUARE FOOT BASED ON THE AREAS NOTED ON PAGE 627(102) OF THE MAINEDOT STANDARD DETAILS.



Filename: 028\_Pavement Marking Details.dgn

Scale:		Designed by:			
		<b>HNTB</b>			
No.	Revision	By	Date		
				CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.	
		By	Date	By	Date
		CAH	2\18	Checked	LZD 2\18
		SLS	2\18	In Charge of	RAL 2\18

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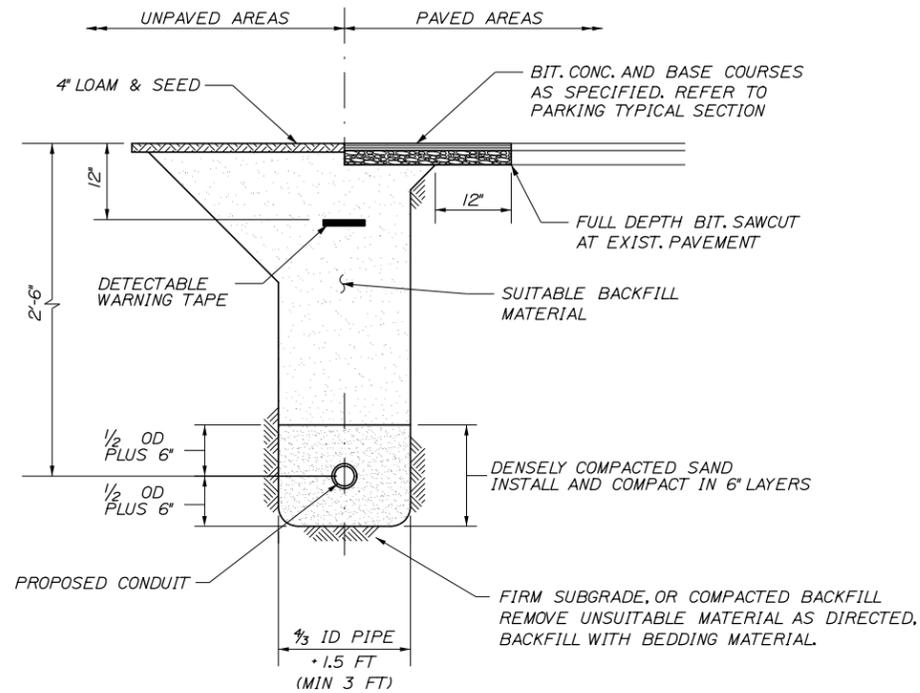
THE GOLD STAR  
MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

BRIDGE AND CULVERT REPAIRS  
 PAVING REHABILITATION  
 BIDDEFORD INTERCHANGE  
 PAVEMENT MARKING DETAILS

SHEET NUMBER: BI-12  
 CONTRACT: 2018.06  
 28 OF 48

Date: 2/19/2018



**STANDARD PIPE/CONDUIT TRENCH DETAIL**  
N.T.S.

**STANDARD PIPE/CONDUIT TRENCH NOTES:**

1. BEDDING SHALL BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY. USE HAND TAMPERS OR VIBRATORY COMPACTORS.
2. FILTER FABRIC SHALL BE INSTALLED AGAINST THE TRENCH WALLS IN THE HAUNCHING AND BEDDING ZONES WHEN FINE SANDS, SILT, CLAY, OR ORGANIC MATERIALS ARE ENCOUNTERED AT THE TRENCH BOTTOM.
3. CONTRACTOR SHALL SHORE TRENCH SIDES WHEN REQUIRED OR AS DIRECTED BY THE RESIDENT.
4. PAYMENT FOR CONDUIT, ALL LABOR, EQUIPMENT AND MATERIALS INCLUDING EXCAVATION, BEDDING, PAVEMENT, AND BACKFILL SHALL BE PAID FOR UNDER ITEM 626.22, NON-METALLIC CONDUIT OR 655.204, 3" SCHEDULE 80 PVC CONDUIT.

Filename: 029\_Conduit\_Details.dgn

Scale:			
NOT TO SCALE			
No.	Revision	By	Date

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CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.					
	By	Date		By	Date
Designed	PEM	2\18	Checked	DAM	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

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MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

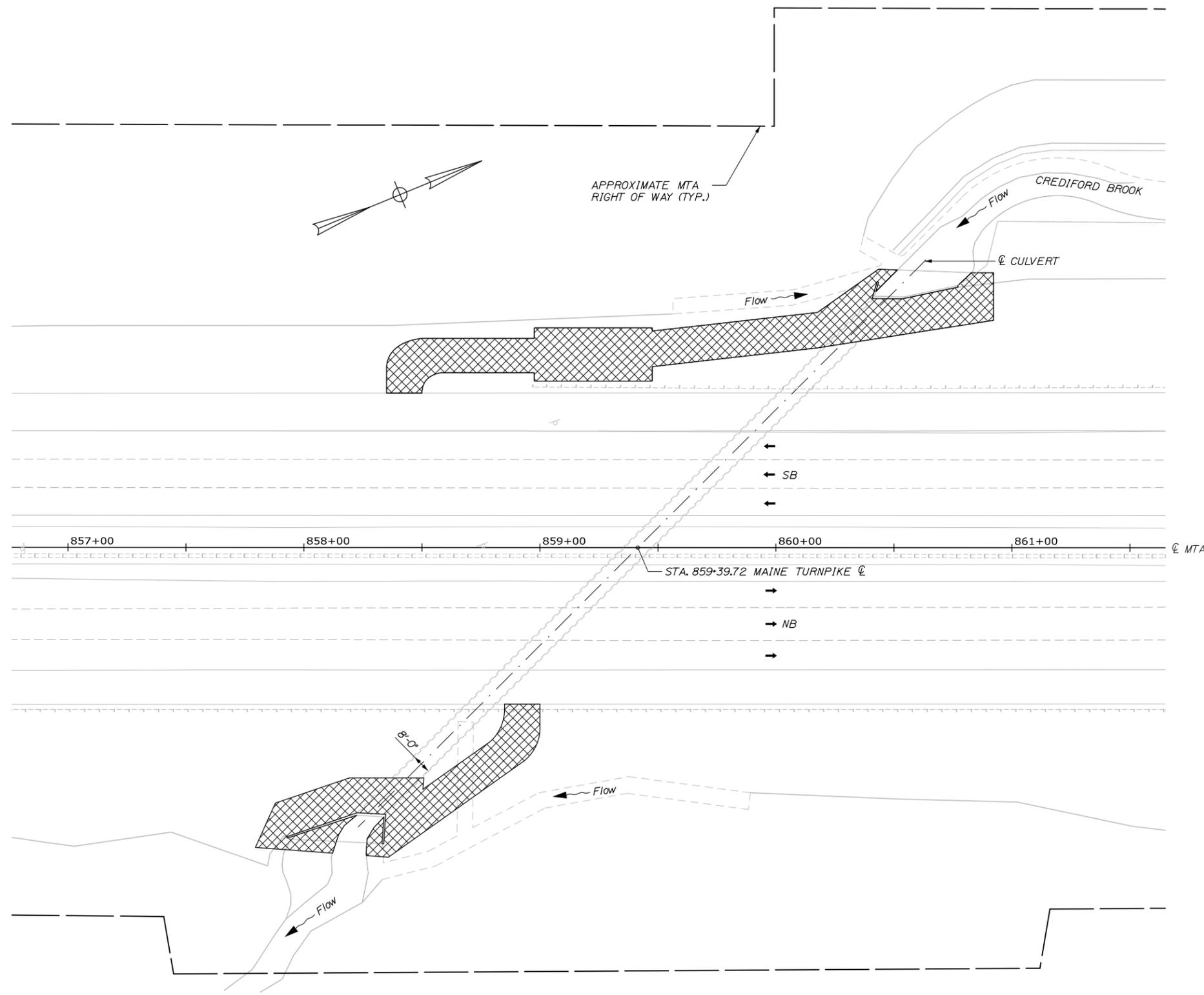
BRIDGE AND CULVERT REPAIRS  
PAVING REHABILITATION

CONDUIT DETAILS

SHEET NUMBER: CD-01  
CONTRACT: 2018.06  
29 OF 48

Date: 2/19/2018

Filename: 030\_Crediford Brook LOD Plan.dgn



**LEGEND**

 CONTRACTOR'S LIMIT OF DISTURBANCE AREA FOR ACCESS AND STORAGE: 0.31 ACRES

1. ALL EROSION AND SEDIMENTATION CONTROL SHALL BE INCIDENTAL TO THE RELATED CONTRACT ITEMS.
2. SEE SPECIFICATIONS FOR CONTRACTOR'S SUBMITTAL REQUIREMENTS IF ADDING ADDITIONAL LIMITS OF DISTURBANCE TO THE PROJECT ESTIMATED QUANTITIES.
3. TOTAL CONTRACT LIMIT OF DISTURBANCE FOR THIS LOCATION HAS BEEN ESTIMATED TO BE 0.31 ACRES.
4. FOR CULVERT REPAIRS SEE SHEETS S-02 TO S-05.
5. FOR IN-WATER WORK WINDOW AND ALLOWANCES, REFER TO SPECIAL PROVISION 107.4.7, LIMITATIONS OF OPERATIONS.

**LIMITS OF DISTURBANCE PLAN**  
1" = 25'-0"

Scale:			
No.	Revision	By	Date

Designed by:			
<b>HNTB</b>			
CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.			
	By	Date	
Designed	NMW	2\18	Checked AES 2\18
Drawn	SLS	2\18	In Charge of RAL 2\18

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**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E

BRIDGE AND CULVERT REPAIRS

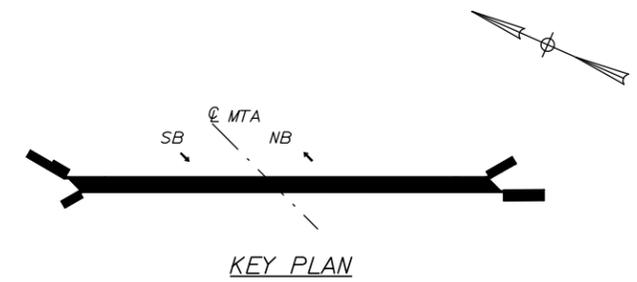
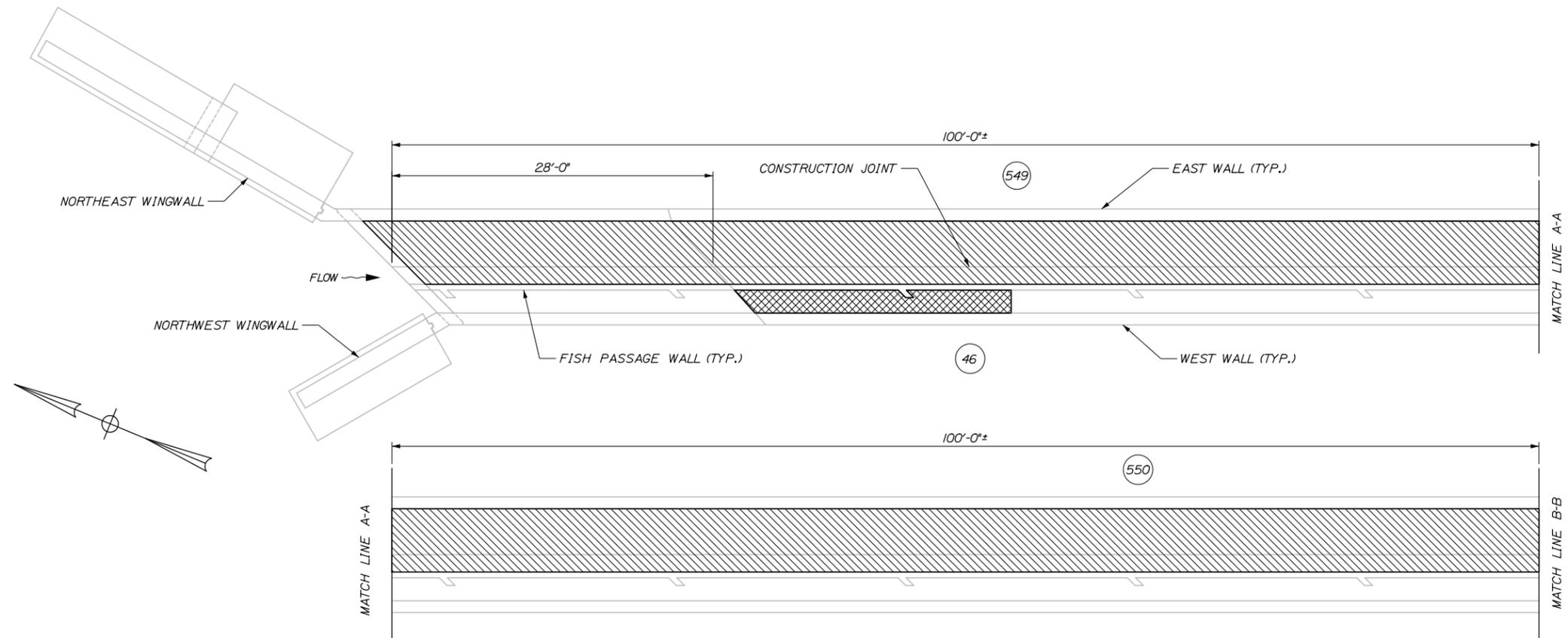
CREDIFORD BROOK  
LIMITS OF DISTURBANCE

SHEET NUMBER: S-01

CONTRACT: 2018.06 30 OF 48

Date: 2/19/2018

Filename: 031\_Crediford Brook Repairs.dgn



**REPAIR QUANTITIES**

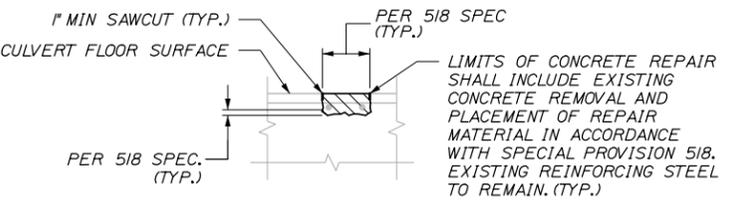
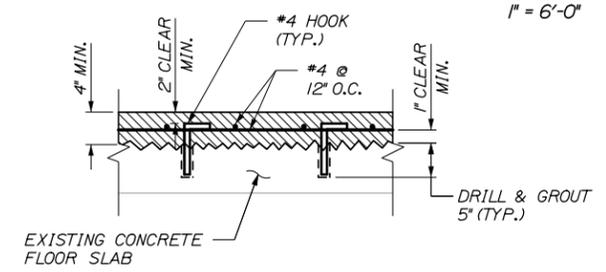
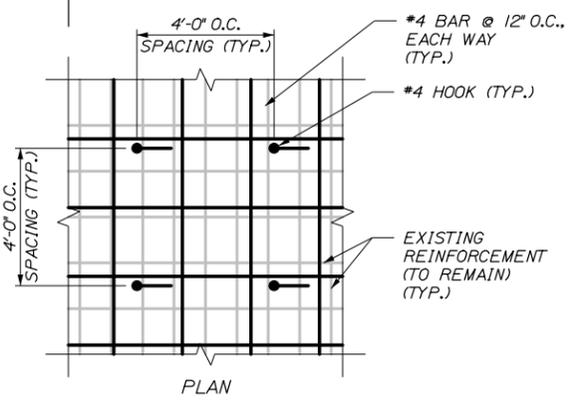
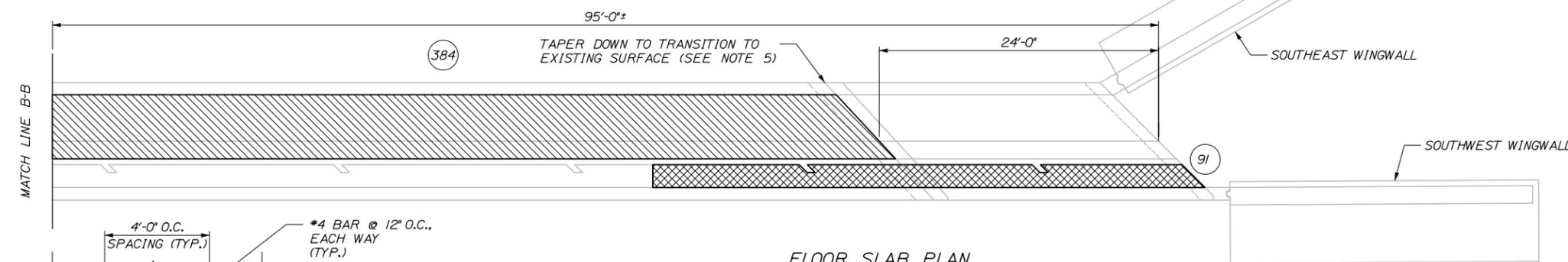
REPAIR OF UPWARD FACING CULVERT SURFACES - BELOW REINFORCING STEEL < 8 INCHES 152 S.F.\*  
 CULVERT FLOOR REFACING 1633 S.F.\*\*  
 \* INCLUDES 15 S.F. ADDITIONAL REPAIR QUANTITY AS A CONTINGENCY.  
 \*\* INCLUDES 150 S.F. ADDITIONAL REPAIR QUANTITY AS A CONTINGENCY.

**LEGEND**

- REPAIR OF UPWARD FACING CULVERT SURFACES - BELOW REINFORCING STEEL < 8 INCHES
- CULVERT FLOOR REFACING
- SQUARE FOOT AREA OF REPAIR
- LINEAR FEET OF CRACK REPAIR
- EPOXY INJECTION CRACK REPAIR

**NOTES:**

1. FOR REPAIR OF UPWARD FACING CULVERT SURFACES - BELOW REINFORCING STEEL < 8 INCHES CONCRETE REPAIR PROCEDURAL NOTES SEE "MISCELLANEOUS DETAILS 1" SHEET.
2. LOCATION OF REPAIRS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY LOCATIONS WITH THE RESIDENT PRIOR TO REPAIR.
3. FOR CULVERT FLOOR REFACING THE EXISTING CONCRETE SURFACE SHALL BE CLEANED, DOWELS DRILLED, AND GROUDED REINFORCEMENT PLACED FOLLOWED BY CONCRETE PLACEMENT.
4. THE CONTRACTOR SHALL USE WOODEN FORMWORK, OR OTHER APPROVED METHODS, TO DIVERT FLOW SUCH THAT THE CONCRETE REPAIRS MAY BE PERFORMED IN THE DRY. PAYMENT FOR WOODEN FORMWORK, OR OTHER APPROVED METHODS, SHALL BE INCIDENTAL TO THE RELATED CONCRETE REPAIR ITEMS.
5. THE CULVERT FLOOR REFACING SHALL BE TAPERED DOWN TO TRANSITION TO THE EXISTING CULVERT FLOOR SURFACE. REFER TO "CULVERT REPAIRS II" FOR ADDITIONAL INFORMATION.



**CULVERT FLOOR REFACING DETAIL**  
N.T.S.

**REPAIR OF UPWARD FACING CULVERT SURFACES - BELOW REINFORCING STEEL < 8 INCHES**  
N.T.S.

No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.

	By	Date		By	Date
Designed	NMW	2\18	Checked	AES	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

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THE GOLD STAR  
MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

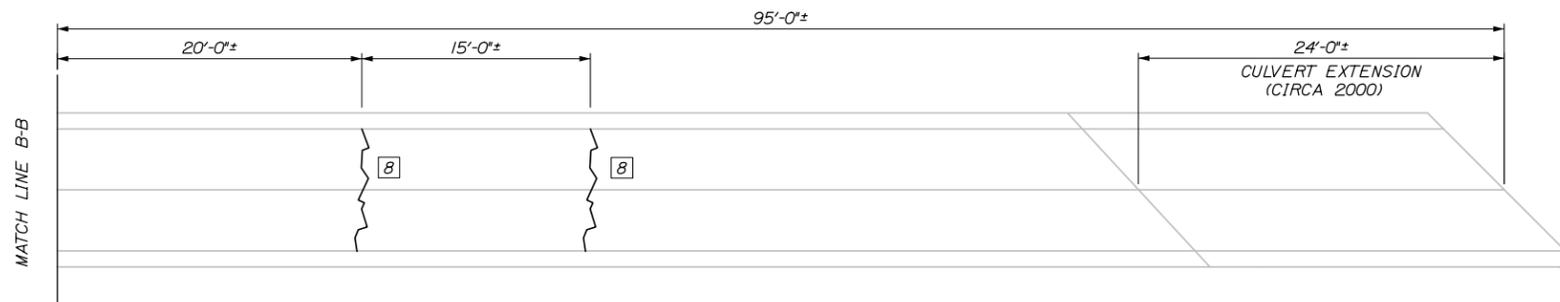
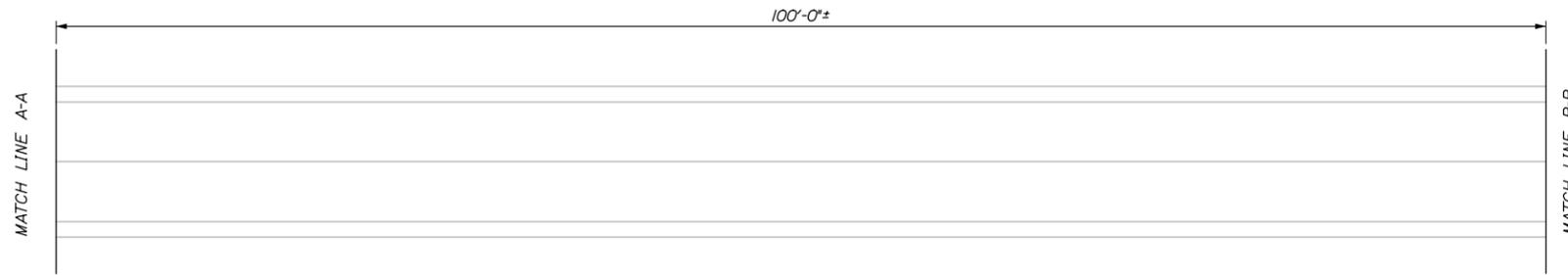
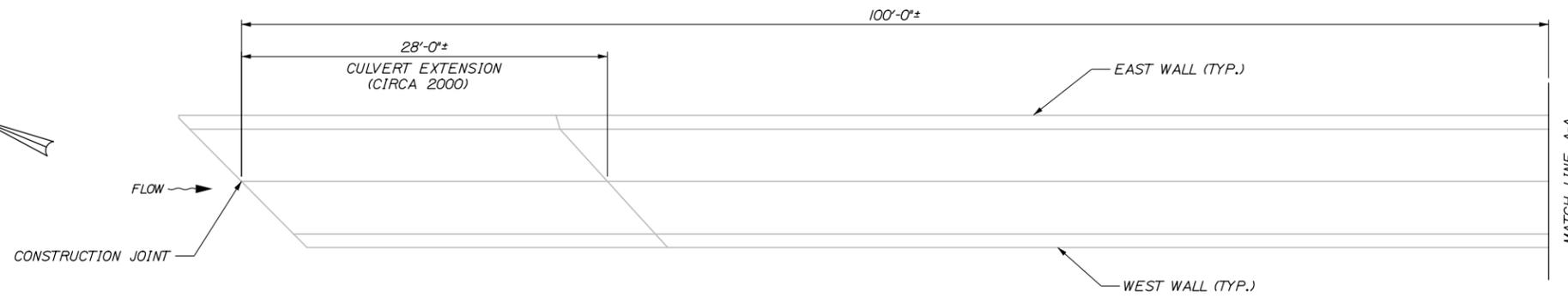
BRIDGE AND CULVERT REPAIRS

CREDIFORD BROOK  
CULVERT REPAIRS I

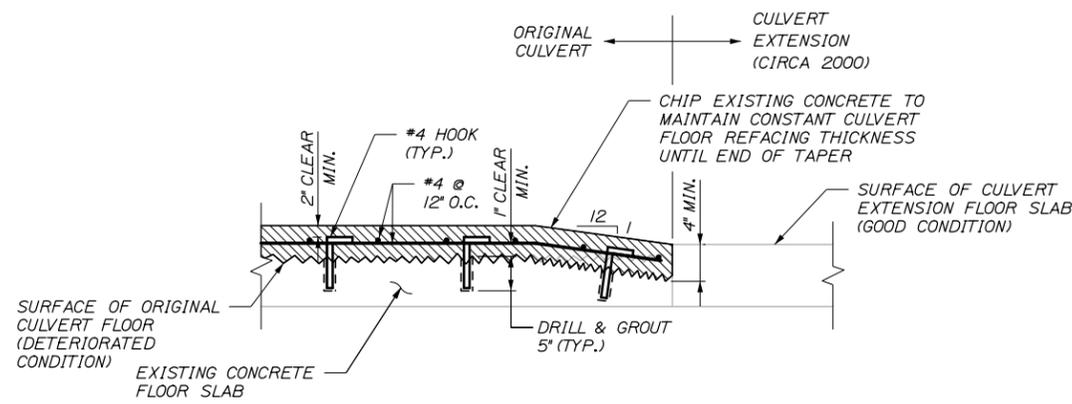
SHEET NUMBER: S-02  
CONTRACT: 2018.06  
31 OF 48

Date: 2/19/2018

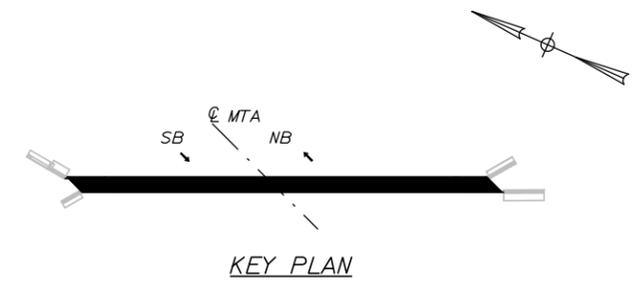
Filename: 032\_Crediford Brook Repairs.dgn



CEILING SLAB PLAN  
1" = 6'-0"



CULVERT FLOOR REFACING TRANSITION DETAIL  
N.T.S.



**REPAIR QUANTITIES**

EPOXY INJECTION CRACK REPAIR 21 L.F.\*  
\* INCLUDES 5 L.F. OF ADDITIONAL CRACK REPAIR QUANTITY AS A CONTINGENCY.

**LEGEND**

- # LINEAR FEET OF CRACK REPAIR
- EPOXY INJECTION CRACK REPAIR

**NOTES:**

1. FOR CONCRETE REPAIR DETAILS AND PROCEDURAL NOTES SEE "MISCELLANEOUS DETAILS 1".
2. LOCATION OF REPAIRS ALONG THE CULVERT ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY LOCATIONS WITH THE RESIDENT PRIOR TO REPAIR.

Scale:			
No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.

By	Date	By	Date
Designed	NMW 2\18	Checked	AES 2\18
Drawn	SLS 2\18	In Charge of	RAL 2\18

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**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

BRIDGE AND CULVERT REPAIRS

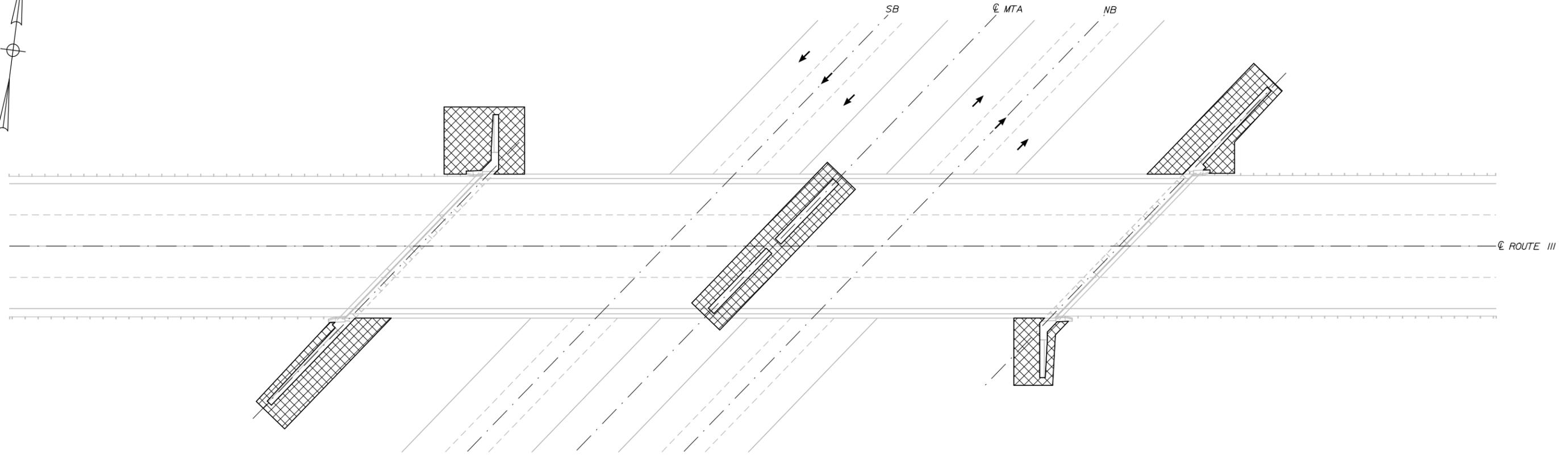
CREDIFORD BROOK  
CULVERT REPAIRS II

SHEET NUMBER: S-03  
CONTRACT: 2018.06  
32 OF 48





Date: 2/19/2018



LIMITS OF DISTURBANCE  
1" = 20'-0"

**NOTES:**

1. EROSION AND SEDIMENTATION CONTROL DEVICES REQUIRED FOR THE CONTRACTOR'S ACCESS TO LOCATIONS AND STORAGE AREAS WILL NOT BE MEASURED FOR PAYMENT.
2. SEE SPECIFICATIONS FOR CONTRACTOR'S SUBMITTAL REQUIREMENTS IF ADDING ADDITIONAL LIMITS OF DISTURBANCE TO THE PROJECT ESTIMATED QUANTITIES.
3. AN ADDITIONAL 0.05 ACRES HAS BEEN ESTIMATED FOR CONTRACTOR ACCESS LOCATIONS AND STORAGE AREAS.
4. TOTAL CONTRACT LIMIT OF DISTURBANCE FOR THIS LOCATION HAS BEEN ESTIMATED TO BE 0.13 ACRES.

**LEGEND**



CONTRACTOR'S LIMIT OF DISTURBANCE AREA FOR ACCESS AND STORAGE: 0.08 ACRES

Filename: 035 RTE 111 LOD.dgn

Scale:			
No.	Revision	By	Date

Designed by:					
<b>HNTB</b>					
CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.					
	By	Date		By	Date
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**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

BRIDGE AND CULVERT REPAIRS

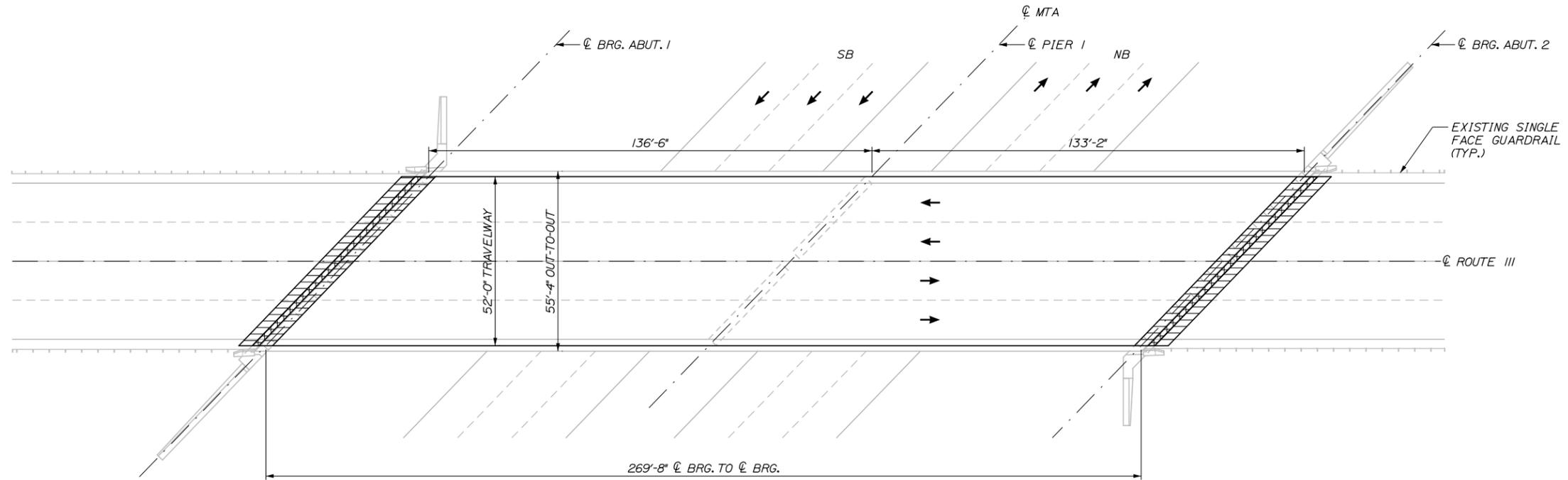
ROUTE 111  
LIMITS OF DISTURBANCE

SHEET NUMBER: S-06

CONTRACT: 2018.06

35 OF 48

Date: 2/19/2018



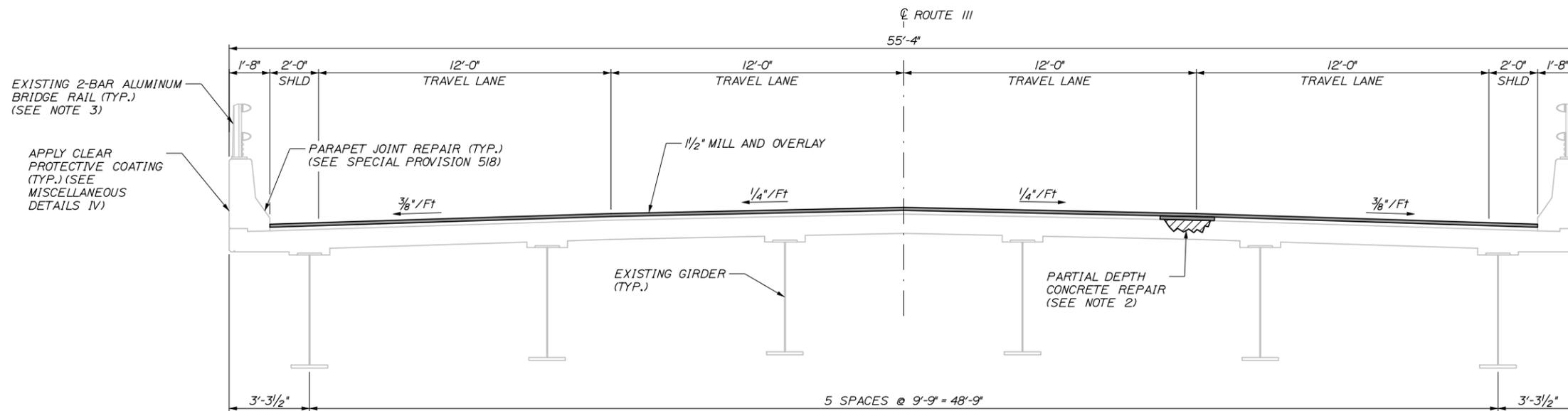
PLAN  
1" = 20'-0"

LEGEND

- APPROXIMATE LIMITS OF BRIDGE JOINT HEADER CONCRETE REPLACEMENT
- APPROXIMATE LIMITS OF BRIDGE JOINT MODIFICATION

NOTES

1. SEE SHEET S-08, "JOINT DETAILS" FOR BRIDGE JOINT HEADER CONCRETE REPAIR AND JOINT MODIFICATION DETAILS.
2. AFTER MILLING, AREAS OF CRACKED PAVEMENT, AS IDENTIFIED BY THE RESIDENT, SHALL BE REMOVED AND THE UNDERLYING CONCRETE SURFACE WILL BE INSPECTED BY THE RESIDENT. IF DIRECTED BY THE RESIDENT, THE CONTRACTOR SHALL COMPLETE PARTIAL DEPTH CONCRETE REPAIRS IN ACCORDANCE WITH THE DETAILS SHOWN ON THE SHEET "MISCELLANEOUS DETAILS II". PARTIAL DEPTH DECK REPAIRS SHALL BE MEASURED FOR PAYMENT UNDER PAY ITEM 518.60. REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 INCHES.
3. RETROFIT ALL EXISTING ALUMINUM BRIDGE RAIL SPLICES NOT IN CONFORMANCE WITH THE ALUMINUM RAILING - SPLICE MODIFICATION DETAIL ON "MISCELLANEOUS DETAILS IV". PAYMENT TO BE MADE UNDER 507.095.
4. ALL PVC DECK WEEPS WHICH DRAIN ONTO ABUTMENTS OR STRUCTURAL STEEL SHALL BE EXTENDED AND DIVERTED AWAY FROM BRIDGE COMPONENTS BELOW DECK, AS DIRECTED BY THE RESIDENT. PAYMENT SHALL BE INCIDENTAL TO PAY ITEM 518.51, REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 INCHES.



TRANSVERSE SECTION  
3/8" = 1'-0"

Filename: 036 RTE 111 Typical Section.dgn

Scale:			
No.	Revision	By	Date

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CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.					
	By	Date		By	Date
Designed	HJW	2\18	Checked	AES	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

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THE GOLD STAR  
MEMORIAL HIGHWAY

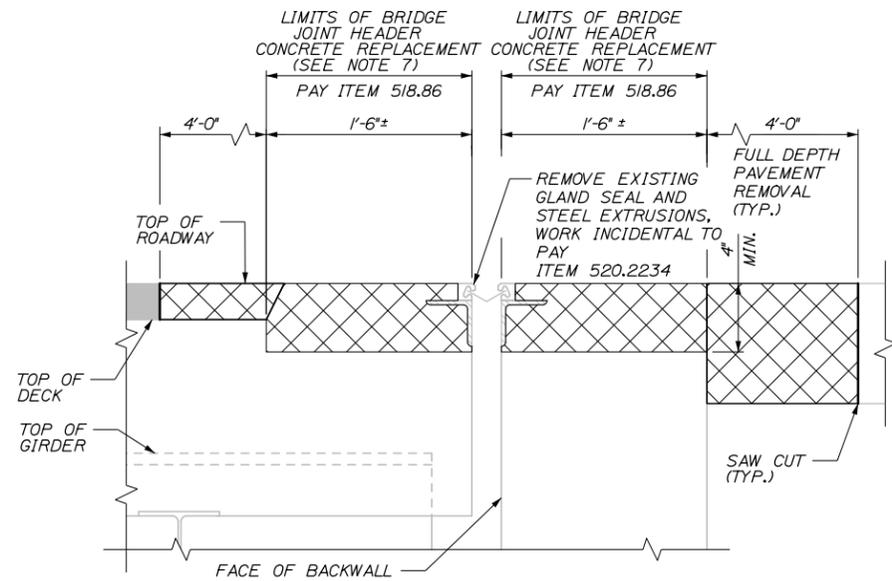
MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

BRIDGE AND CULVERT REPAIRS

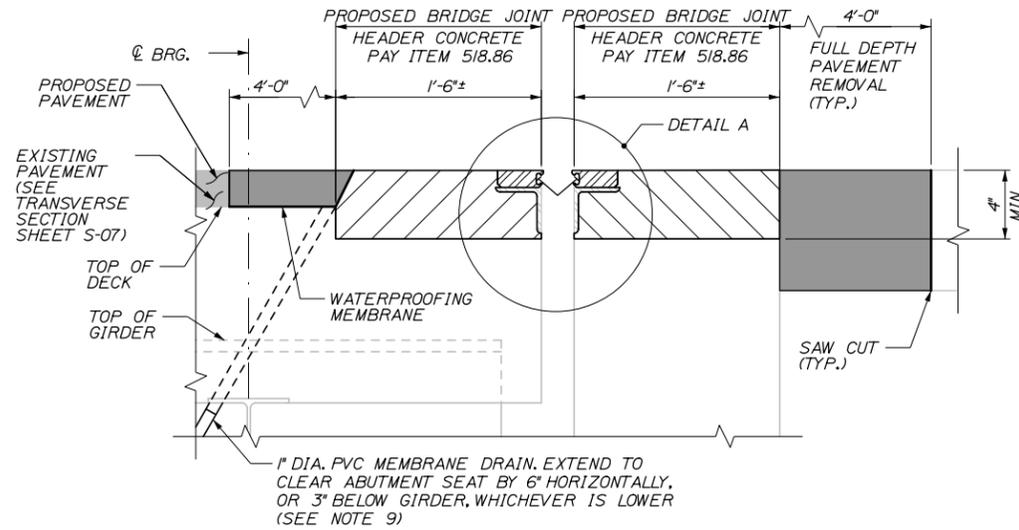
ROUTE 111  
PLAN AND TYPICAL SECTION

SHEET NUMBER: S-07  
CONTRACT: 2018.06  
36 OF 48

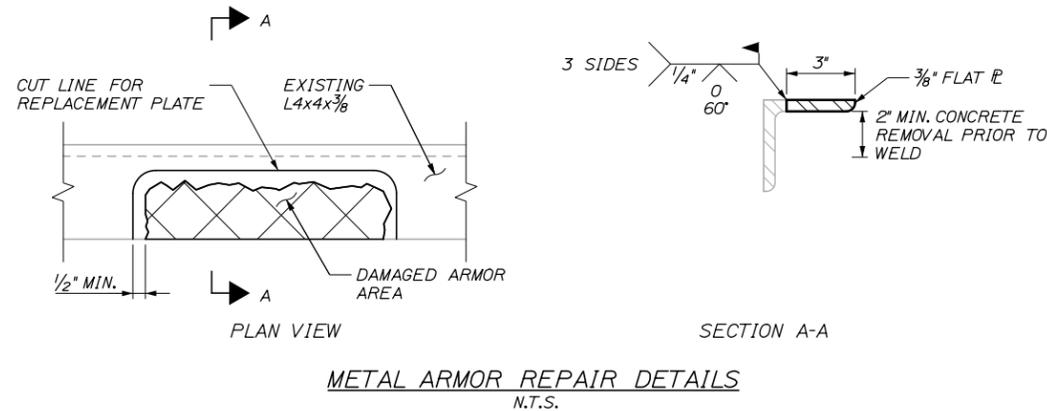
Date: 2/19/2018



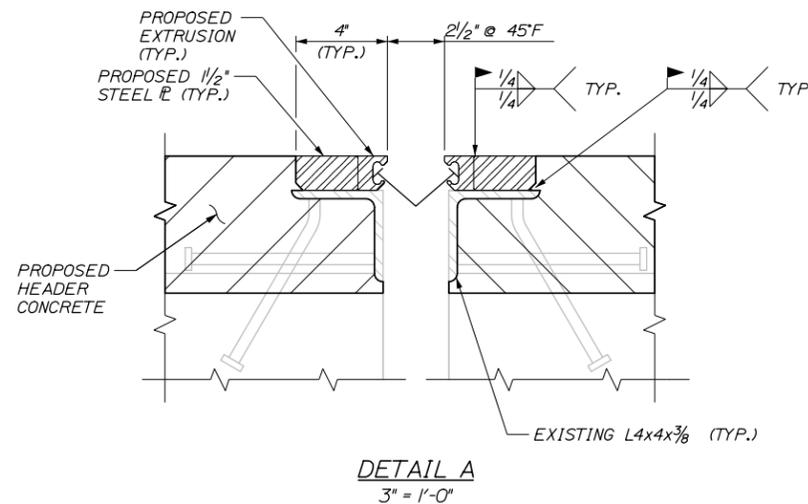
**BRIDGE JOINT MODIFICATION - DEMOLITION**  
1/2" = 1'-0"



**BRIDGE JOINT MODIFICATION - RECONSTRUCTION**  
1/2" = 1'-0"



**METAL ARMOR REPAIR DETAILS**  
N.T.S.



**DETAIL A**  
3" = 1'-0"

**EXPANSION JOINT NOTES**

1. METAL FOR JOINT ARMOR MODIFICATION SHALL BE AASHTO M270 GRADE 36, EXCEPT AS OTHERWISE NOTED. THE ENTIRE ASSEMBLY, STEEL PLATE, EXTRUSION, AND GLAND SEAL, SHALL BE MEASURED FOR PAYMENT UNDER PAY ITEM 520.2234. THE TOP SIDE OF THE COMPLETED JOINT ASSEMBLY SHALL BE COLD GALVANIZED WITH BUSH APPLIED ZRC COLD GALVANIZING COMPOUND IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AFTER FABRICATION.
2. ALL FIELD WELDED SPLICES IN THE PROPOSED JOINT ARMOR SHALL BE 3/8" BEVEL WELDS AND SHALL EXTEND BEYOND ALONG THE THE FULL LENGTH OF THE TOP AND BACK FACE OF THE METAL EXTRUSION.
3. SHOP DRAWINGS SHALL BE SUBMITTED TO THE RESIDENT FOR APPROVAL.
4. THE GLAND SEAL SHALL BE INSTALLED IN ONE CONTINUOUS PIECE AFTER THE JOINT ARMOR IS INSTALLED AND DECK PAVING IS COMPLETE.
5. JOINT SEALS SHALL HAVE A MINIMUM MOVEMENT RATING OF 4 INCHES. SEALS SHALL BE D.S. BROWN E2M-SEAL OR WATSON BOWMAN ACME SE-400, OR AN APPROVED EQUAL.
6. DIMENSIONS AND INFORMATION SHOWN ON THE PLANS ARE BASED ON AS-BUILT AND STANDARD DETAIL DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY JOINT OPENING AND GLAND SEAL EXTRUSION THICKNESS PRIOR TO SUBMISSION OF SHOP DRAWINGS.
7. EXISTING BRIDGE JOINT HEADER CONCRETE SHALL BE REMOVED TO SOLID CONCRETE, BUT NOT LESS THAN 4 INCHES BELOW EXISTING ROADWAY SURFACE OR 2 INCHES BELOW TOP MAT OF REINFORCING STEEL, WHICHEVER IS LOWER. BRIDGE JOINT HEADER CONCRETE REMOVAL AND REPLACEMENT SHALL BE MEASURED FOR PAYMENT UNDER PAY ITEM 518.86, BRIDGE JOINT HEADER CONCRETE REPLACEMENT. ALL PAVEMENT AND MEMBRANE REMOVAL AND REPLACEMENT REQUIRED TO COMPLETE THE JOINT HEADER CONCRETE REPLACEMENT SHALL BE INCIDENTAL TO ITEM 202.2021.
8. NO VENTS ARE PRESENT TO RELEASE AIR TRAPPED BELOW THE L4X4X3/8 HORIZONTAL LEG OF THE JOINT ARMOR DURING CONCRETE PLACEMENT. THE CONTRACTOR SHALL PLACE CONCRETE TO ELIMINATE ENTRAPPED AIR SUCH THAT THE EXISTING L4X4X3/8 HORIZONTAL LEG FULLY BEARS ON CONCRETE.
9. ALL PVC MEMBRANE DRAIN EXTENSIONS SHALL BE INCIDENTAL TO PAY ITEM 518.51, REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 INCHES.
10. METAL ARMOR REPAIR SHALL BE MEASURED FOR PAYMENT UNDER PAY ITEM 520.2228.

Filename: 037 RTE 111 Joints.dgn

Scale:			
No.	Revision	By	Date

Designed by:					
<b>HNTB</b>					
CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.					
	By	Date		By	Date
Designed	HJW	2\18	Checked	AES	2\18
Drawn	PEB	2\18	In Charge of	RAL	2\18

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**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

**BRIDGE AND CULVERT REPAIRS**

ROUTE 111  
JOINT REPAIR DETAILS

SHEET NUMBER: S-08

CONTRACT: 2018.06

94 OF 48

Date: 2/19/2018

Filename: 038 RTE 111 East Abutment 2.dgn

**REPAIR QUANTITIES**

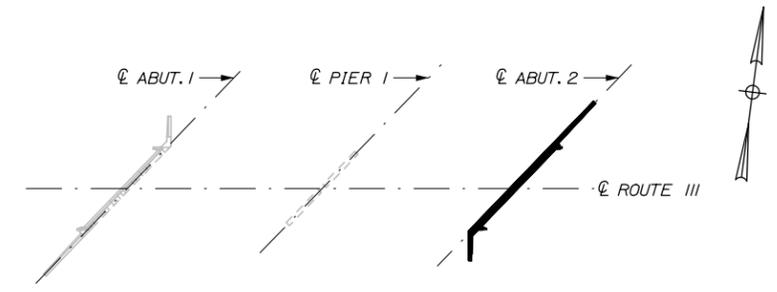
REPAIR OF VERTICAL SURFACES < 8 INCHES 14 S.F.\*  
 EPOXY INJECTION CRACK REPAIR 10 L.F.\*\*  
 \* INCLUDES 5 S.F. ADDITIONAL REPAIR QUANTITY AS A CONTINGENCY.  
 \*\* ASSUMES 10 L.F. OF CRACK REPAIR

**LEGEND**

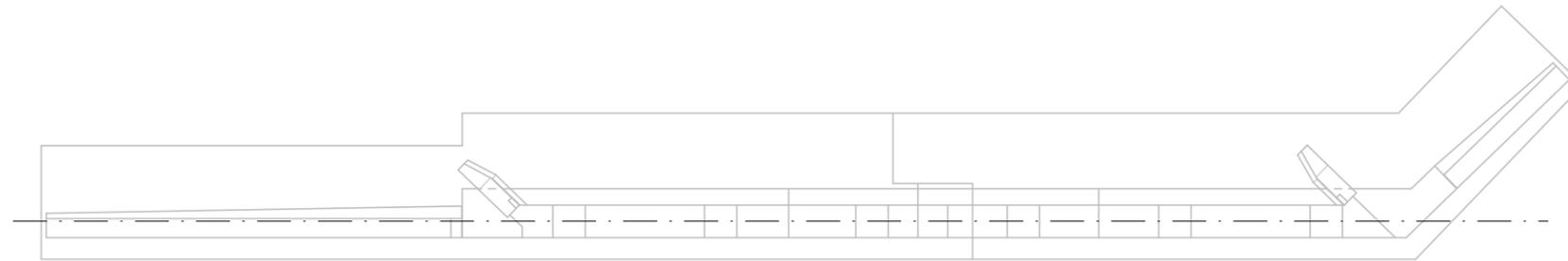
-  LIMIT OF SURFACE PATCH REPAIR
-  SQUARE FOOT AREA OF REPAIR
-  LINEAR FOOT LENGTH OF CRACK
-  EPOXY INJECTION CRACK REPAIR

**NOTES:**

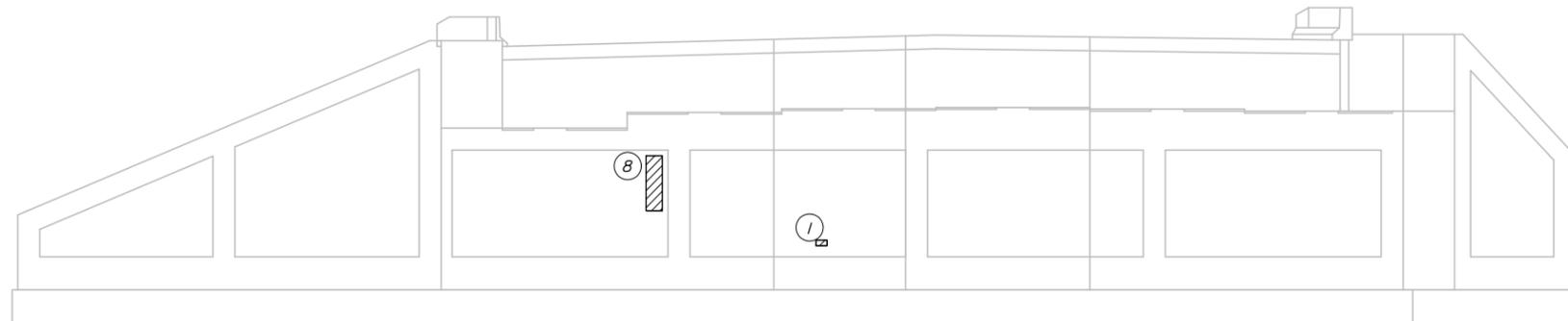
1. FOR CONCRETE REPAIR DETAIL AND PROCEDURAL NOTES SEE "MISCELLANEOUS DETAILS I".
2. CONCRETE AND CRACK REPAIRS ARE NOT ANTICIPATED AT ABUTMENT 1 OR PIER 1.



**KEY PLAN**



**ABUTMENT 2 SEAT PLAN**  
 1/8" = 1'-0"



**ABUTMENT 2 ELEVATION**  
 1/8" = 1'-0"

Scale:			
No.	Revision	By	Date

Designed by:					
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CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.					
	By	Date		By	Date
Designed	NMW	2\18	Checked	AES	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

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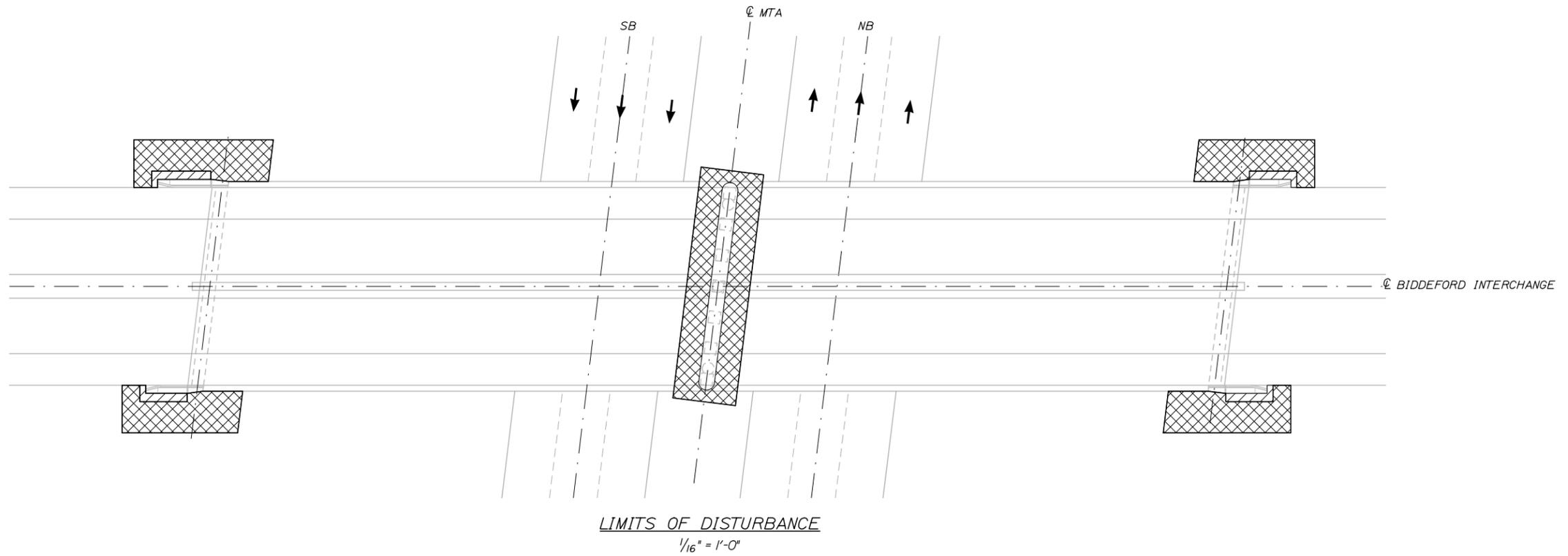
MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

BRIDGE AND CULVERT REPAIRS  
 ROUTE 111  
 SUBSTRUCTURE REPAIR: ABUTMENT 2

SHEET NUMBER: S-09  
 CONTRACT: 2018.06  
 38 OF 48

Date: 2/19/2018

Filename: 039\_Biddeford Interchange LOD.dgn



**NOTES:**

1. EROSION AND SEDIMENTATION CONTROL DEVICES REQUIRED FOR THE CONTRACTOR'S ACCESS TO LOCATIONS AND STORAGE AREAS WILL NOT BE MEASURED FOR PAYMENT.
2. SEE SPECIFICATIONS FOR CONTRACTOR'S SUBMITTAL REQUIREMENTS IF ADDING ADDITIONAL LIMITS OF DISTURBANCE TO THE PROJECT ESTIMATED QUANTITIES.
3. AN ADDITIONAL 0.05 ACRES HAS BEEN ESTIMATED FOR CONTRACTOR ACCESS LOCATIONS AND STORAGE AREAS.
4. TOTAL CONTRACT LIMIT OF DISTURBANCE FOR THIS LOCATION HAS BEEN ESTIMATED TO BE 0.12 ACRES.

**LEGEND**

- CONTRACTOR'S LIMIT OF DISTURBANCE AREA FOR ACCESS AND STORAGE: 0.06 ACRES
- LIMIT OF DISTURBANCE: 0.01 ACRES

Scale:			
No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.

	By	Date	Checked	By	Date
Designed	NMW	2\18	AES	AES	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

HNTB CORPORATION  
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**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

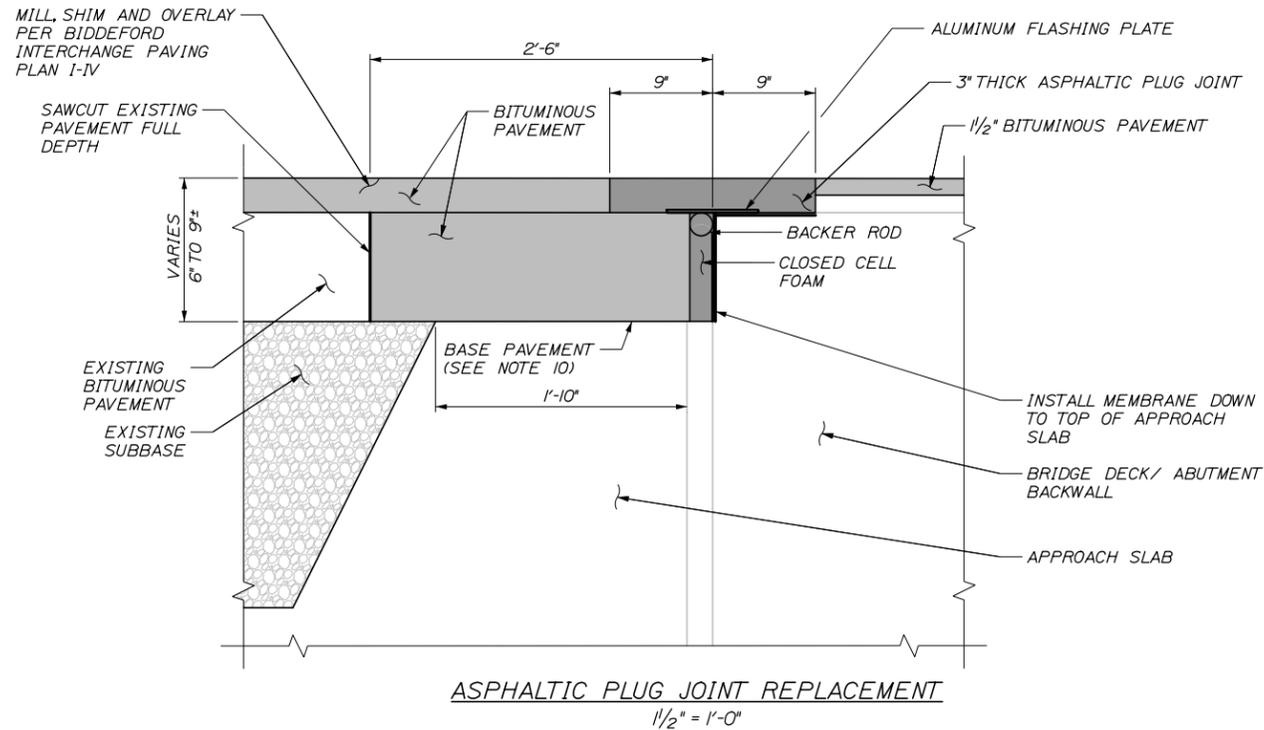
BRIDGE AND CULVERT REPAIRS

BIDDEFORD INTERCHANGE  
LIMITS OF DISTURBANCE

SHEET NUMBER: S-10  
CONTRACT: 2018.06  
39 OF 48



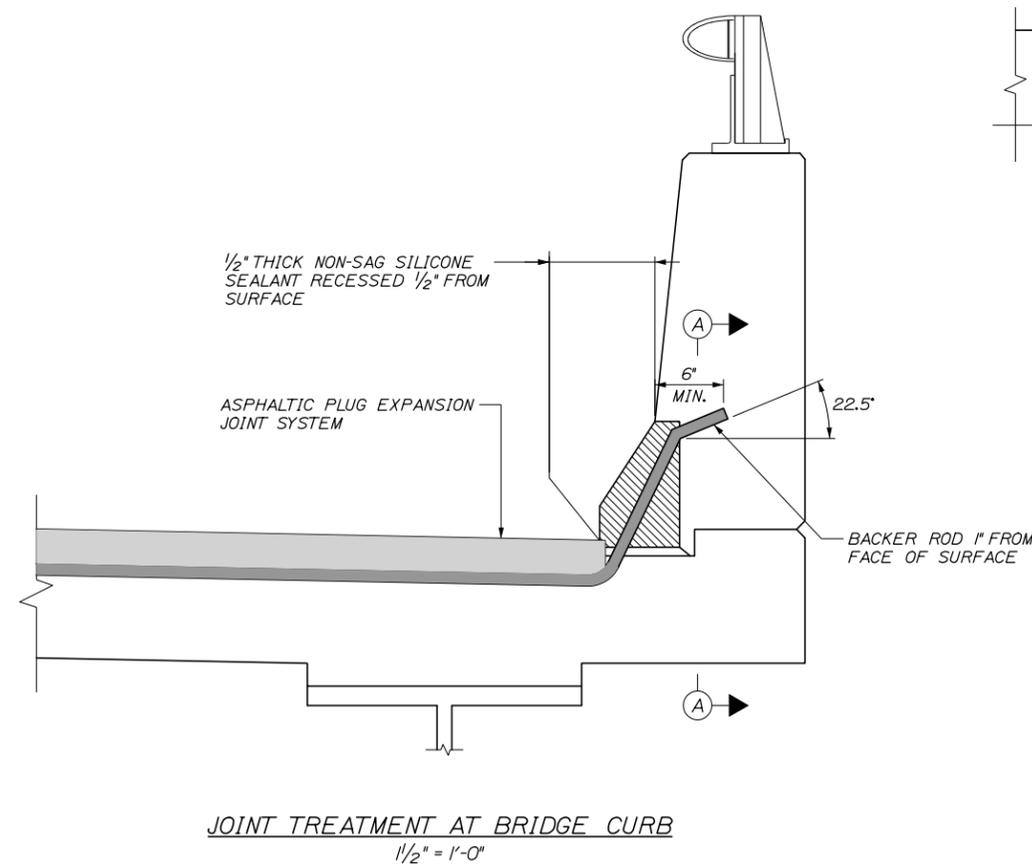
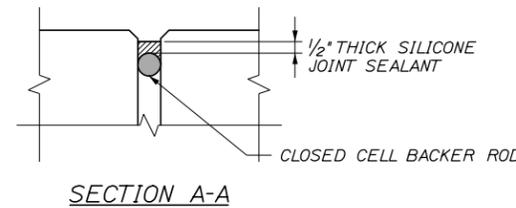
Date: 2/19/2018



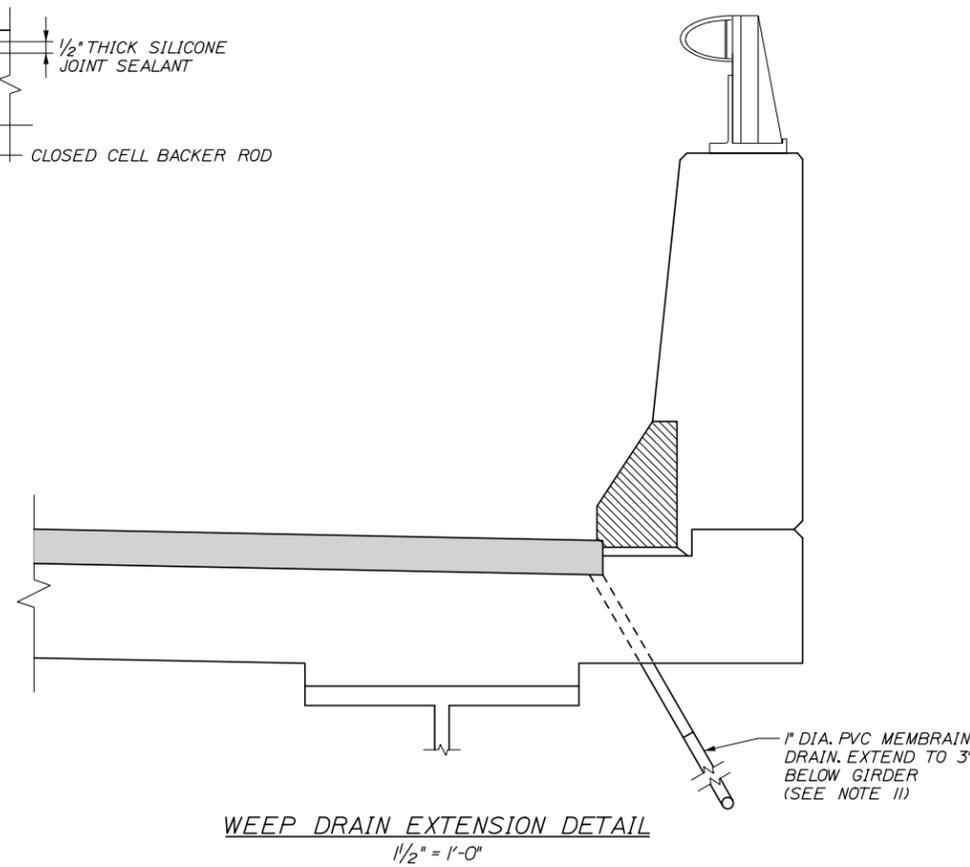
ASPHALTIC PLUG JOINT REPLACEMENT  
1/2" = 1'-0"

**NOTES:**

1. ASPHALTIC PLUG JOINTS SHALL BE INSTALLED AFTER THE SURFACE PAVEMENT ON THE BRIDGE AND THE APPROACHES IS COMPLETE.
2. THE ASPHALTIC PLUG JOINT SHALL BE INSTALLED AT AN AIR TEMPERATURE BETWEEN 40°F AND 60°F.
3. DECK AND BACKWALL REINFORCING NOT SHOWN FOR CLARITY.
4. THE DECK AREAS UNDER, AND ADJACENT TO, THE ASPHALTIC PLUG JOINT SHALL BE SOUNDED FOR AREAS OF DETERIORATION AND PATCHED AS NEEDED. IF AREAS OF DETERIORATION ARE FOUND THE RESIDENT SHALL APPROVE THE REPAIRS PRIOR TO BEGINNING THE WORK. ALL WORK TO BE COMPLETED FOR PARTIAL DECK CONCRETE REPAIRS AND REINFORCEMENT SHALL BE PAID UNDER PAY ITEM "REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 INCHES".
5. THE AREA UNDER THE ASPHALTIC PLUG JOINT SHALL BE SMOOTH AND PARALLEL TO THE PROPOSED ROADWAY SURFACE TO PERMIT THE ASPHALTIC PLUG JOINT TO BE INSTALLED AT A CONSISTENT THICKNESS. THE CONTRACTOR SHALL ADVISE THE RESIDENT IF THE EXISTING OR PATCHED DECK SURFACES ARE NOT SMOOTH AND PARALLEL TO THE PROPOSED ROADWAY SURFACE.
6. THE ASPHALTIC PLUG JOINTS SHALL BE ONE OF THE SYSTEMS LISTED IN THE PROJECT SPECIFICATIONS AND SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. EQUIVALENT JOINT SYSTEMS MAY BE USED WITH APPROVAL OF THE ENGINEER.
7. ALL BACKER ROD SHALL BE CLOSED CELL FOAM IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND SHALL BE SIZED AS REQUIRED TO FILL THE OPENING.
8. CLOSED CELL FOAM AND MEMBRANE SHALL NOT BE MEASURED FOR PAYMENT, BUT SHALL BE INCIDENTAL TO PAY ITEM 520.23, EXPANSION DEVICE - ASPHALTIC PLUG JOINT.
9. 16D GALVANIZED CENTERING NAILS SHALL BE SPACED AT 12" O.C. MAXIMUM AND PLACED 2" FROM JOINTS IN THE ALUMINUM FLASHING PLATE.
10. AREAS OF FULL DEPTH PAVEMENT REMOVED BEHIND THE BACKWALL SHALL BE FITTED WITH BASE PAVEMENT TO THE TOP OF DECK. USE 3" MAXIMUM PAVEMENT LIFTS, AND 1 1/2" MINIMUM PAVEMENT LIFTS. BASE PAVEMENT SHALL BE PAID UNDER ITEM 403.213, HOT MIX ASPHALT, 12.5mm NOMINAL MAXIMUM SIZE (BASE AND INTERMEDIATE BASE COURSE).
11. ALL PVC DRAIN EXTENSIONS SHALL BE INCIDENTAL TO PAY ITEM 518.51, REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 INCHES.



JOINT TREATMENT AT BRIDGE CURB  
1/2" = 1'-0"



WEEP DRAIN EXTENSION DETAIL  
1/2" = 1'-0"

Filename: 041\_Biddeford Interchange Deck Joint Details.dgn

No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.

	By	Date		By	Date
Designed	HJW	2\18	Checked	AES	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

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**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

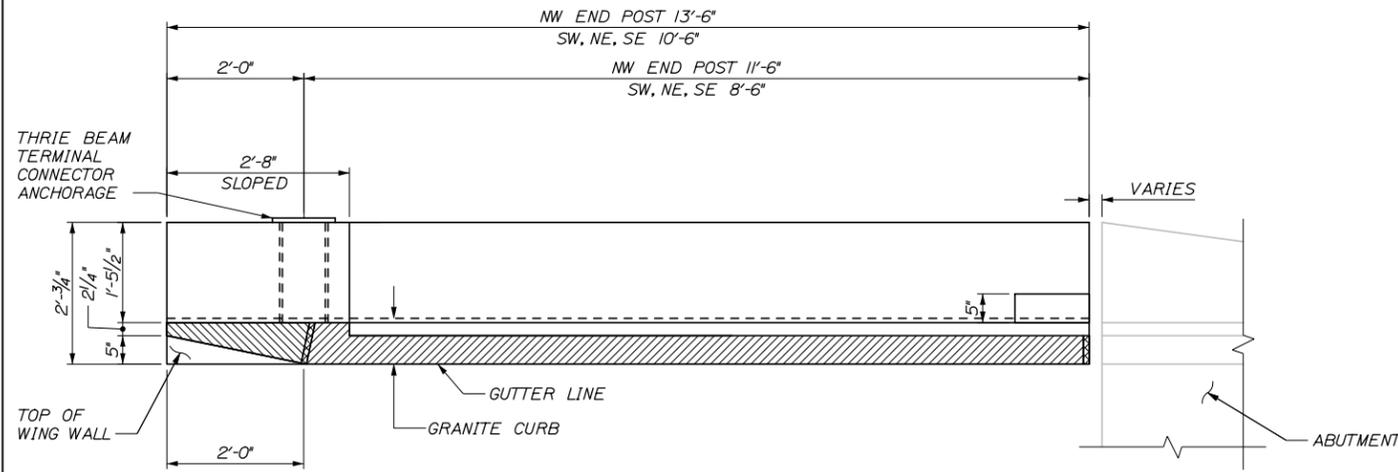
**BRIDGE AND CULVERT REPAIRS**

**BIDDEFORD INTERCHANGE  
JOINT DETAILS**

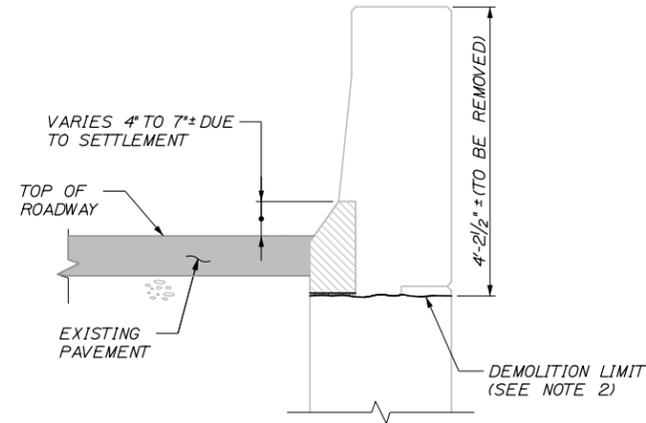
SHEET NUMBER: S-12  
CONTRACT: 2018.06  
41 OF 48

Date: 2/19/2018

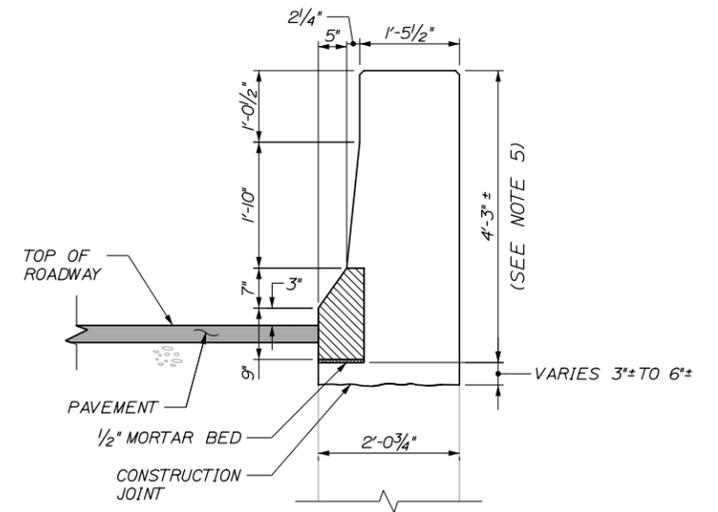
Filename: 042\_Biddeford Interchange Endpost Details 1.dgn



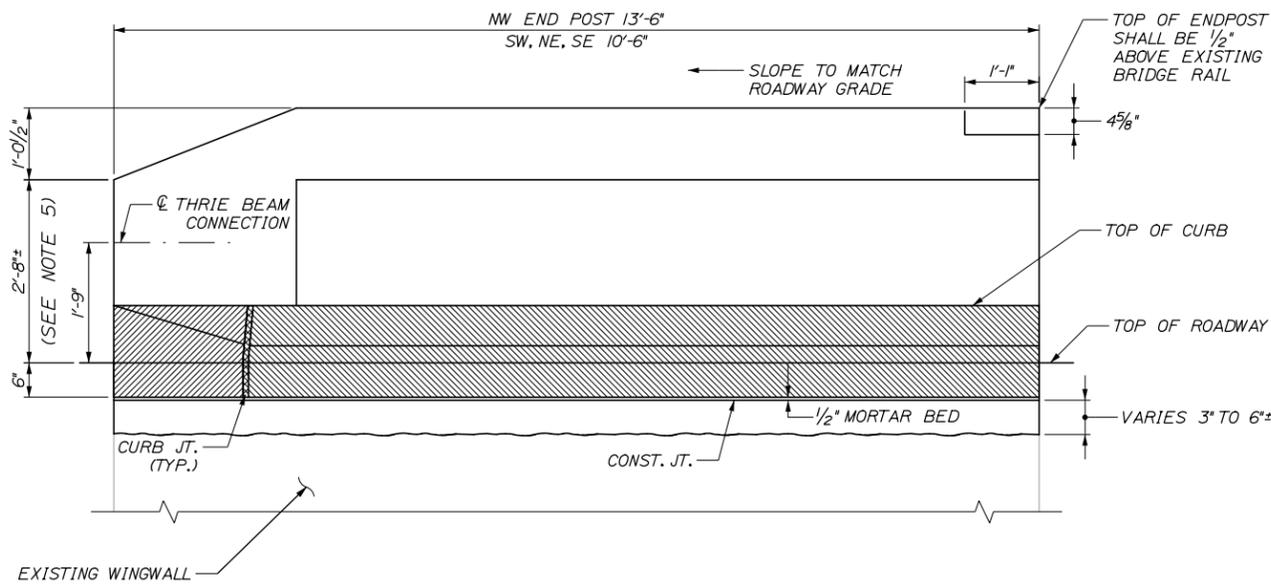
**PLAN**  
(ABUT. I, NORTHWEST ENDPOST SHOWN,  
ALL OTHERS SIMILAR)  
3/4" = 1'-0"



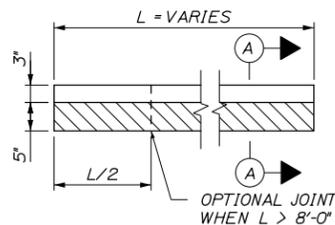
**EXISTING TYPICAL SECTION**  
3/4" = 1'-0"



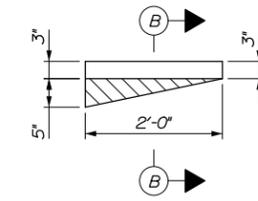
**PROPOSED TYPICAL SECTION**  
3/4" = 1'-0"



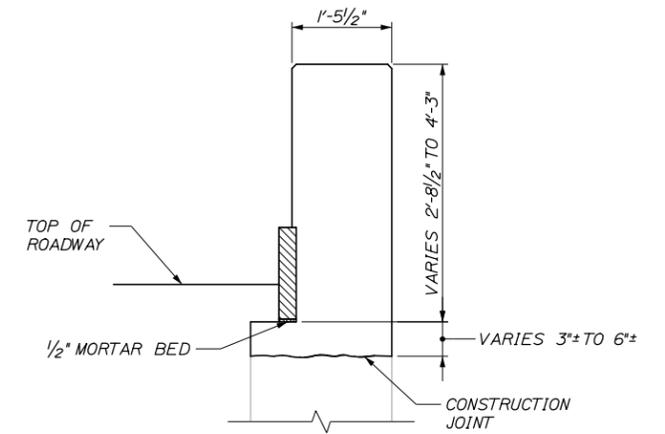
**ELEVATION**  
(ABUT. I, NORTHWEST ENDPOST SHOWN,  
OTHERS SIMILAR)  
3/4" = 1'-0"



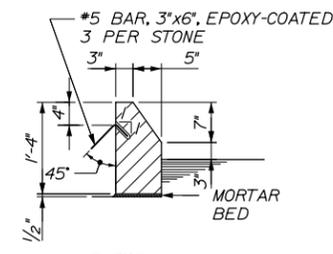
PLAN



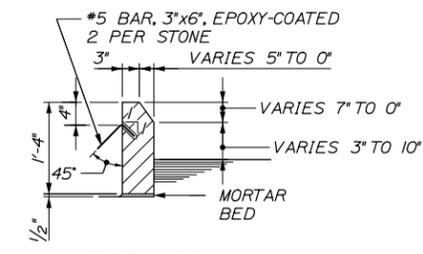
PLAN AT END OF ENDPOST



**PROPOSED TYPICAL END SECTION**  
3/4" = 1'-0"



SECTION A-A



SECTION B-B

**ENDPOST GRANITE CURB DETAILS**  
3/4" = 1'-0"

**NOTES:**

1. THRIE RAIL CONNECTION PLATE SHALL BE SLEEVED THROUGH THE END POST. THE THRIE RAIL CONNECTION PLATE, THRIE RAIL TRANSITION AND INSTALLATION SHALL BE PAID UNDER ITEM 606.172.3, "BRIDGE TRANSITION - TYPE III".
2. EXISTING CONCRETE END POST SHALL BE REMOVED TO THE EXISTING BOTTOM OF CURB MORTAR ELEVATION. DEPTH TO BE FIELD VERIFIED BY THE CONTRACTOR. CONCRETE REMOVAL SHALL BE PAID UNDER ITEM 202.12, REMOVING EXISTING STRUCTURAL CONCRETE.
3. PROPOSED END POST CONCRETE INSTALLATION AND MATERIALS SHALL BE PAID UNDER ITEM 502.21, "STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS".
4. GRANITE CURB INSTALLATION AND MATERIALS SHALL BE PAID UNDER ITEM 609.15, "SLOPED CURB TYPE I".
5. PROPOSED ENDPOSTS SHALL BE RECAST SUCH THAT THE TOP OF ENDPOST IS 1/2" ABOVE THE TOP OF ALUMINUM RAILING
6. ANY ALUMINUM BRIDGE RAILING REMOVAL, STACKING AND RE-INSTALLATION SHALL BE INCIDENTAL TO THE RELATED ENDPOST REPLACEMENT ITEMS.

Scale:		Designed by:	
No.	Revision	By	Date
CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.			
Designed	HJW	2\18	Checked AES 2\18
Drawn	SLS	2\18	In Charge of RAL 2\18

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**MAINE TURNPIKE**

**THE GOLD STAR MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

BRIDGE AND CULVERT REPAIRS

BIDDEFORD INTERCHANGE  
ENDPOST DETAILS I

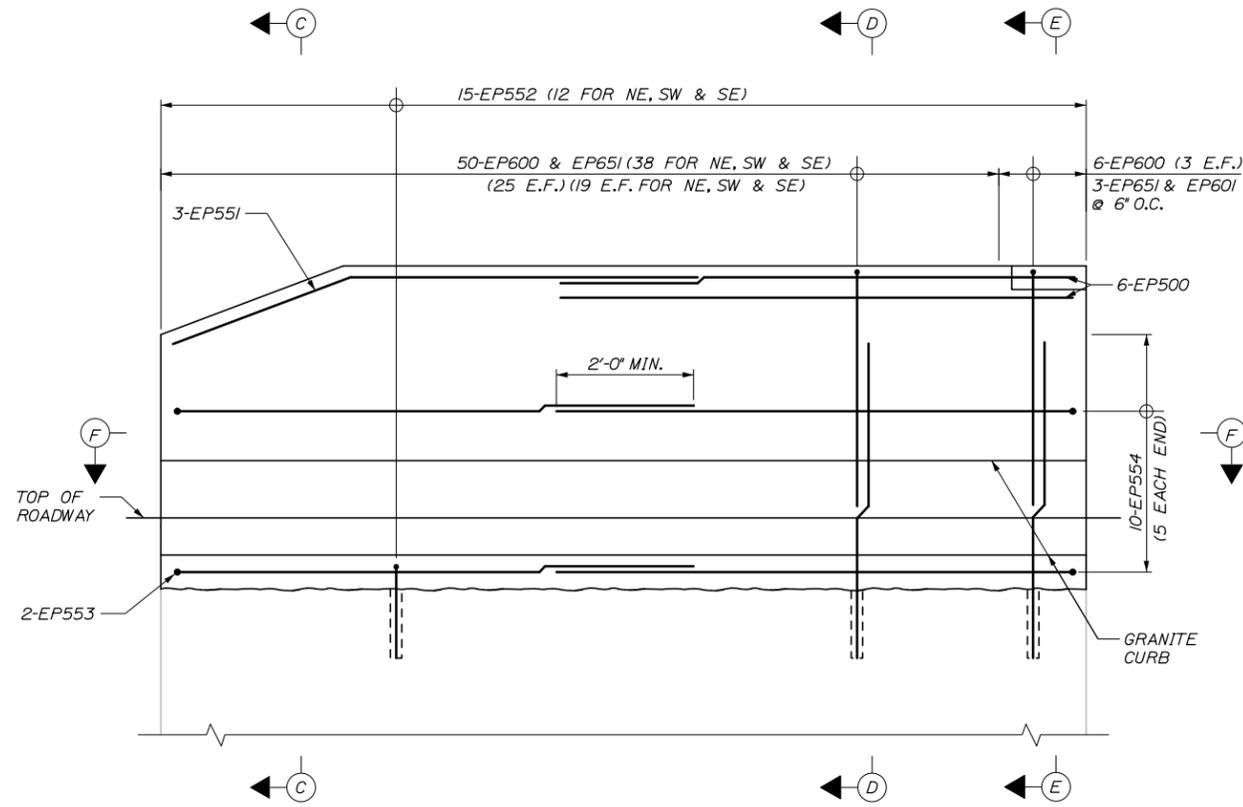
SHEET NUMBER: S-13

CONTRACT: 2018.06

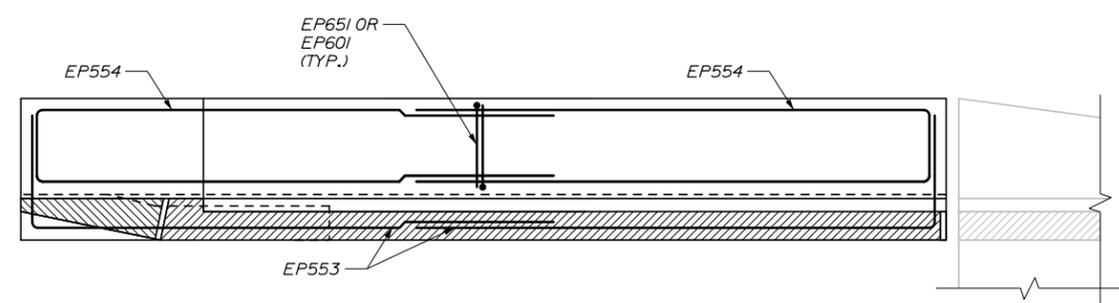
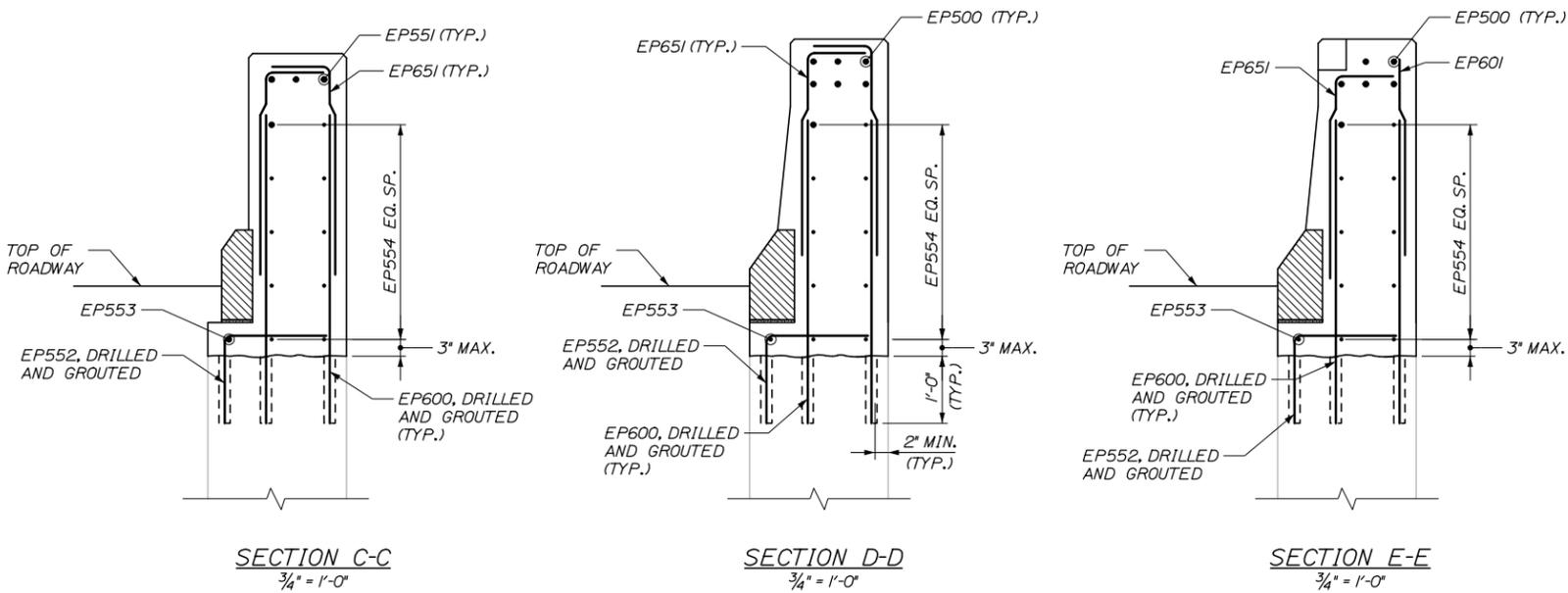
42 OF 48

Date: 2/19/2018

Filename: 043\_Biddeford Interchange Endpost Details 2.dgn



**ELEVATION**  
(ABUT. I, NORTHWEST ENDPOST SHOWN, NORTHEAST, SOUTHWEST & SOUTHEAST SIMILAR)  
3/4" = 1'-0"



**SECTION F-F**  
3/4" = 1'-0"

- NOTES:**
1. NORTHWEST END POST BAR QUANTITIES SHOWN. OTHER END POST BAR QUANTITIES SHOWN IN PARENTHESES WHERE DIFFERENT.
  2. BARS SHOWN HEREIN ARE EQUALLY SPACED UNLESS OTHERWISE NOTED.
  3. END POST REINFORCEMENT SHALL BE PAID UNDER THE 503 REINFORCING STEEL PAY ITEMS.

Scale:

No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.

	By	Date		By	Date
Designed	HJW	2\18	Checked	AES	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

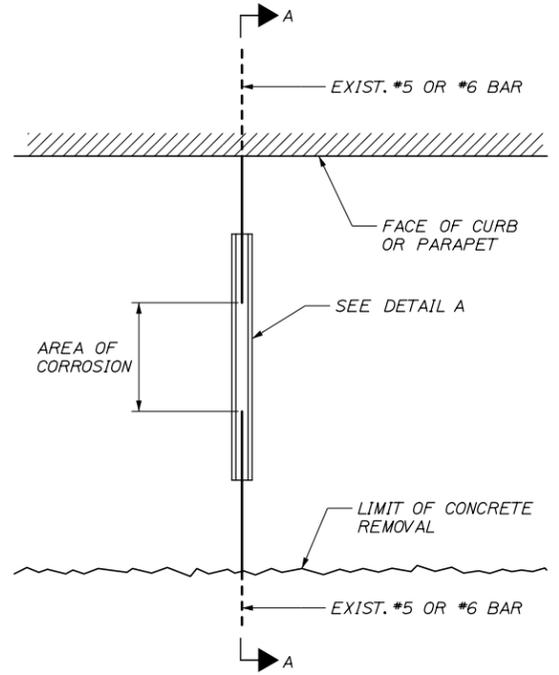
HNTB CORPORATION  
340 County Road, Suite 6-C  
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**THE GOLD STAR MEMORIAL HIGHWAY**

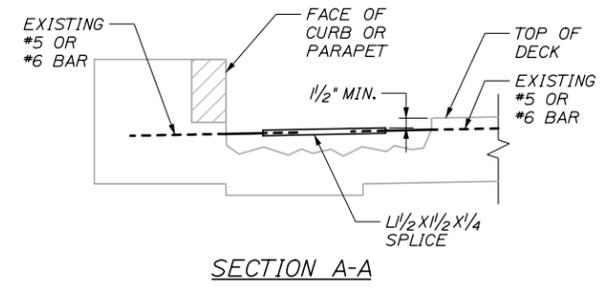
MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

BRIDGE AND CULVERT REPAIRS  
BIDDEFORD INTERCHANGE  
ENDPOST DETAILS II  
SHEET NUMBER: S-14  
CONTRACT: 2018.06  
43 OF 48

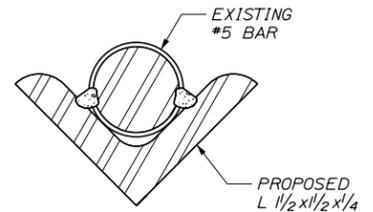
Date: 2/19/2018



REPAIR TO CORRODED DECK REINFORCING - DETAIL I



SECTION A-A



SECTION B-B

**CORRODED DECK REINFORCING NOTES:**

1. ALL REINFORCING BARS LOCATED WITHIN AREAS OF REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 INCHES, WHICH EXHIBIT MORE THAN 25% SECTION LOSS, SHALL BE REPAIRED PER THE DETAILS ON THIS SHEET.
2. ALL REINFORCING BARS RECEIVING WELD MATERIAL SHALL BE THOROUGHLY CLEANED OF DEBRIS, SLAG, AND CORROSION PRODUCTS BEFORE WELDING. CLEANING SHALL BE BY SANDBLASTING TO SSPC- SP10.
3. THE ENDS OF EXISTING REINFORCING BARS TO BE WELDED WILL EXHIBIT NO MORE THAN 25% SECTION LOSS.
4. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.4: STRUCTURAL WELDING CODE - REINFORCING STEEL.
5. ANGLE IRON SPLICE PIECES SHALL BE L 1/2 X 1/2 X 1/4 (UNCOATED) CONFORMING TO ASTM A36. OTHER SIZES OF ANGLE IRON, HAVING A CROSS SECTIONAL AREA OF AT LEAST 0.56 SQUARE INCHES AND PROVIDING A MINIMUM CLEAR COVER TO THE DECK SURFACE OF AT LEAST 1.5", MAY BE SUBSTITUTED WITH APPROVAL OF THE RESIDENT.

**CONCRETE REPAIR PROCEDURAL NOTES:**

1. CONCRETE REPAIRS SHALL BE PAID UNDER 518 ITEMS.

**REMOVAL PROCEDURES:**

1. PRIOR TO THE START OF THE CONCRETE REMOVALS, THE RESIDENT AND THE CONTRACTOR SHALL SOUND THE CONCRETE AND AGREE ON THE REMOVAL LIMITS. SHOULD THE REMOVAL AREA LIMITS APPEAR TO CHANGE DURING THE DEMOLITION PROCESS, THE CONTRACTOR SHALL NOTIFY THE RESIDENT. THE RESIDENT AND CONTRACTOR SHALL AGREE ON THE REVISED PAY LIMITS PRIOR TO THE CONTRACTOR CONTINUING REMOVALS.
2. PERFORM 1 INCH DEEP SAWCUTS ALONG LIMITS OF REMOVAL.
3. CHIP CONCRETE TO DEPTH REQUIRED PER THE MAINE DOT SPECIFICATION 518.

**CONCRETE SURFACE PATCH/REPAIR PROCEDURE:**

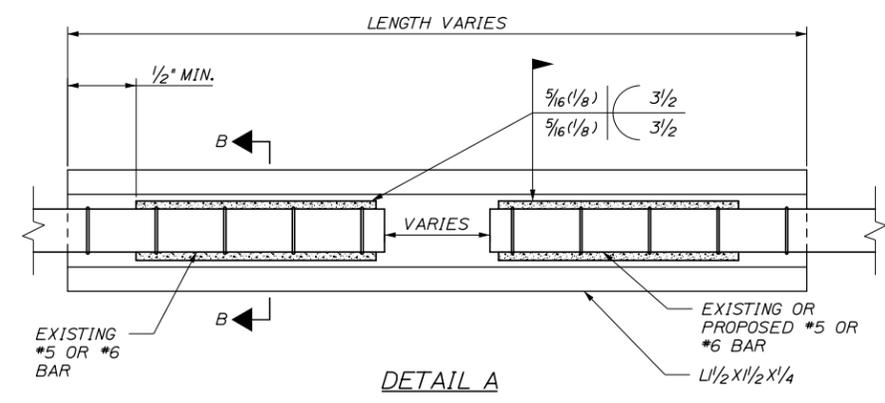
1. PREPARE AND PATCH REPAIR AREAS WITH CLASS AAA MODIFIED CONCRETE. SEE SPECIFICATIONS FOR MATERIAL, PREPARATION, PLACEMENT, AND CURING REQUIREMENTS.
2. PERFORM GENERAL FINISHING (SEE BELOW).

**EPOXY INJECTION CRACK REPAIR:**

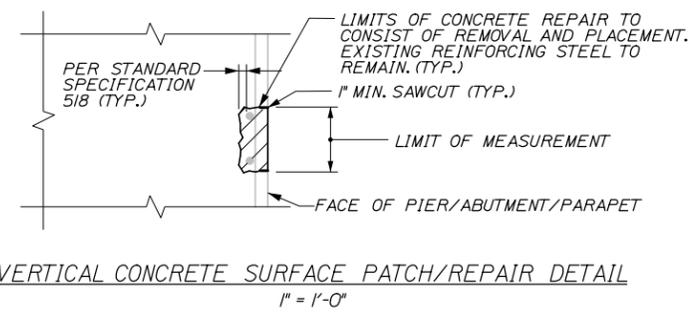
1. PREPARE CONCRETE SURFACE AND CRACK AREA BY CLEANING SUBSTRATE WITH WIRE BRUSH TO REMOVE LAITANCE AND CONTAMINANTS. BLAST CLEAN THE CRACK AND CONCRETE SURFACE; DO NOT USE WATER.
2. SET INJECTION PORTS ALONG THE LENGTH OF THE CRACK USING A HIGH-MODULUS, LOW VISCOSITY EPOXY SUCH AS SIKADUR 35, SIKADUR 55, OR APPROVED EQUAL. ONCE SET SEAL PORTS AND CRACK WITH THE SAME EPOXY ADHESIVE. EPOXY SEAL AROUND PORTS SHALL BE ALLOWED TO CURE PRIOR TO CRACK INJECTION.

**GENERAL FINISHING:**

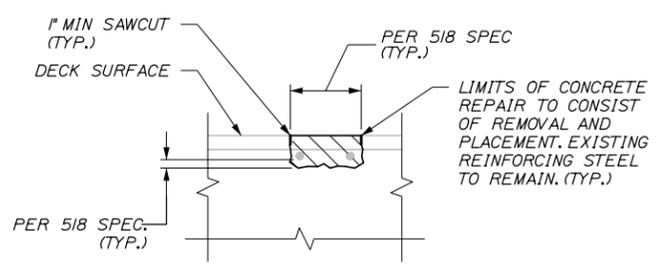
1. ALL EXPOSED SUBSTRUCTURE SURFACES SHALL BE COATED WITH A PROTECTIVE COATING SUITABLE FOR CONCRETE SURFACES AFTER PATCHING IS COMPLETE AND PATCH MATERIALS HAVE CURED IN ACCORDANCE WITH SPECIAL PROVISION 515.



DETAIL A



VERTICAL CONCRETE SURFACE PATCH/REPAIR DETAIL  
1" = 1'-0"



UPWARD FACING CONCRETE SURFACE PATCH/REPAIR DETAIL  
1" = 1'-0"

Filename: 044\_Miscellaneous Details 1.dgn

Scale:			
No.	Revision	By	Date

Designed by:						
<b>HNTB</b>						
CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.						
	By	Date		By	Date	
	Designed	HJW	2\18	Checked	AES	2\18
	Drawn	SLS	2\18	In Charge of	RAL	2\18

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**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

BRIDGE AND CULVERT REPAIRS

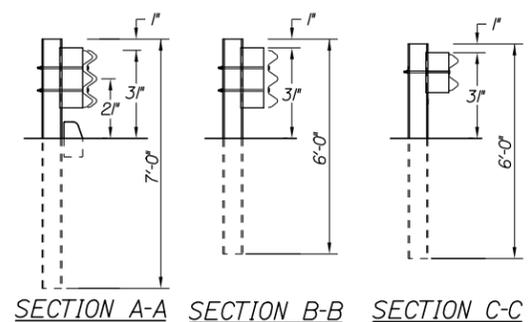
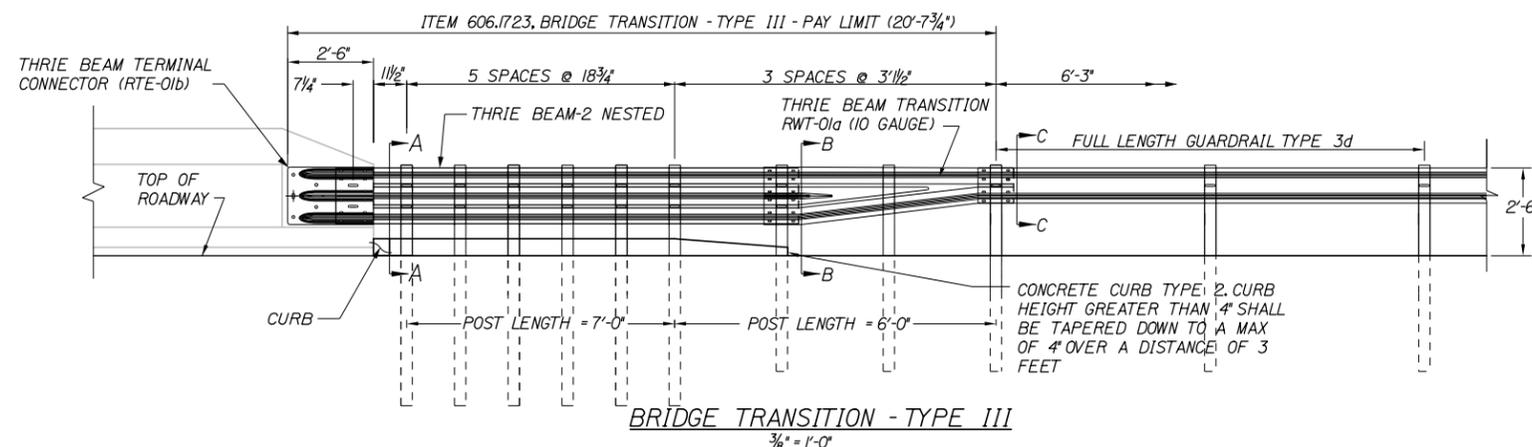
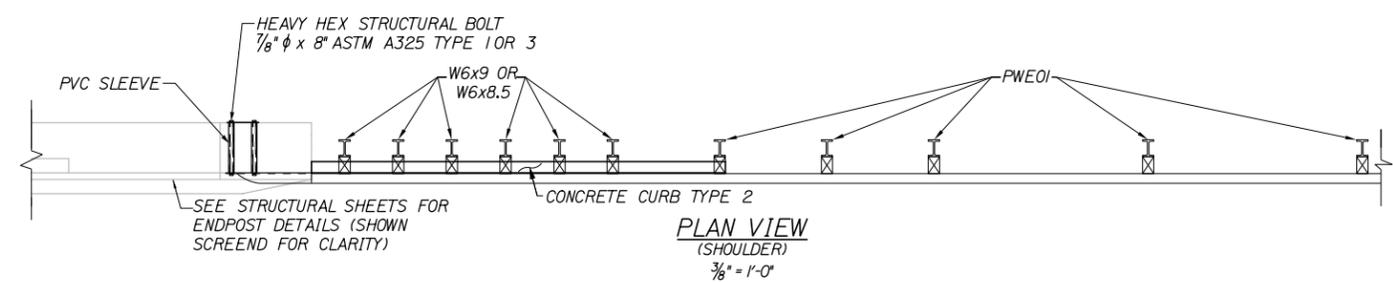
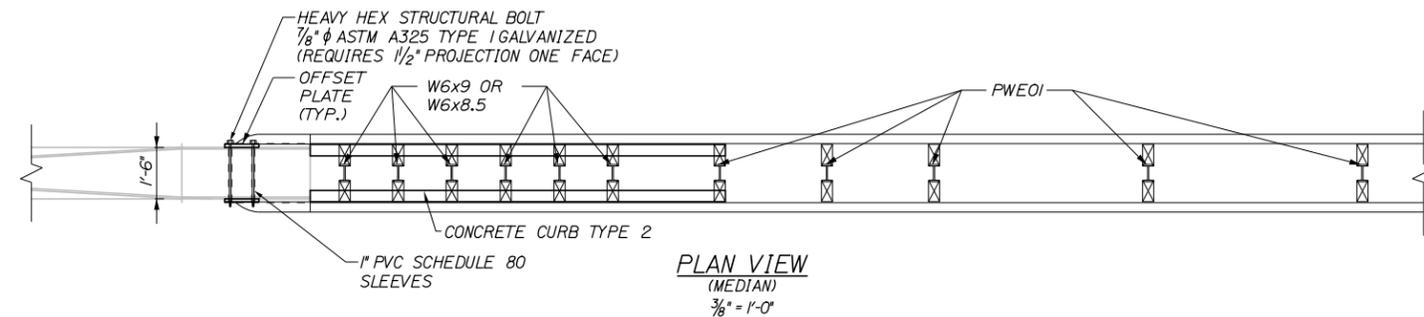
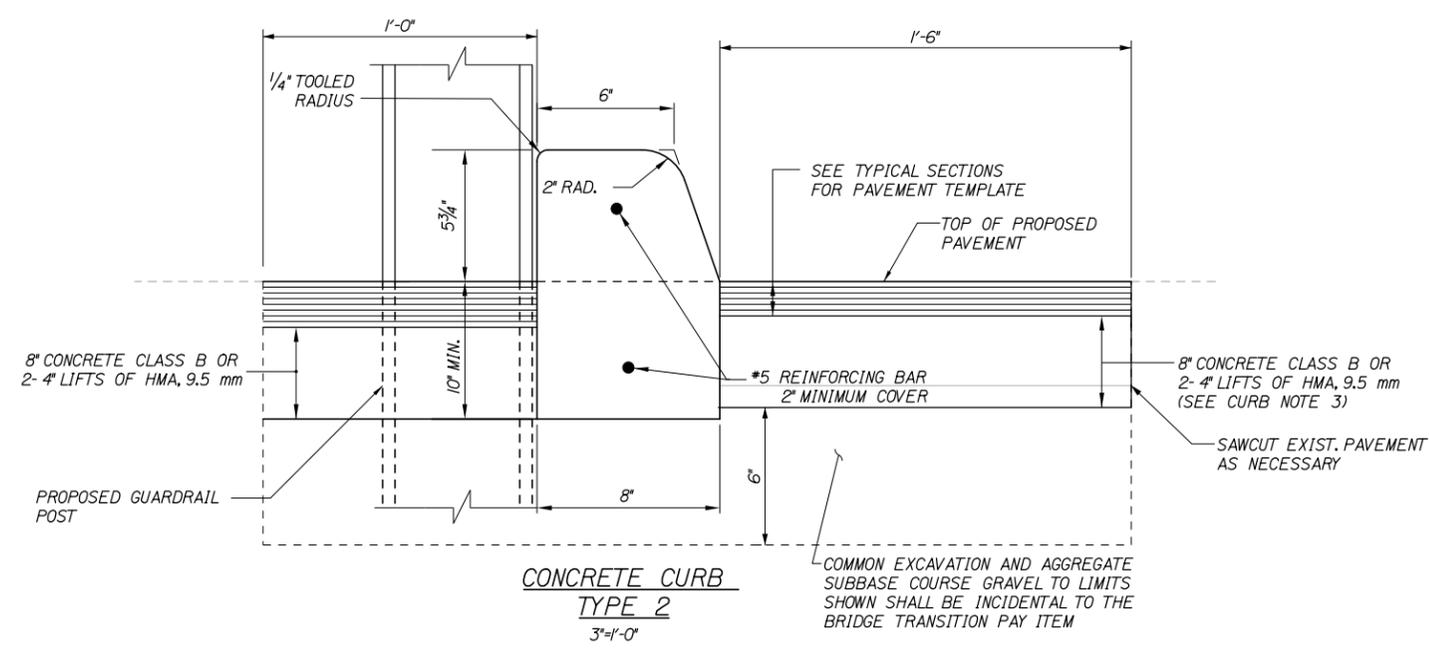
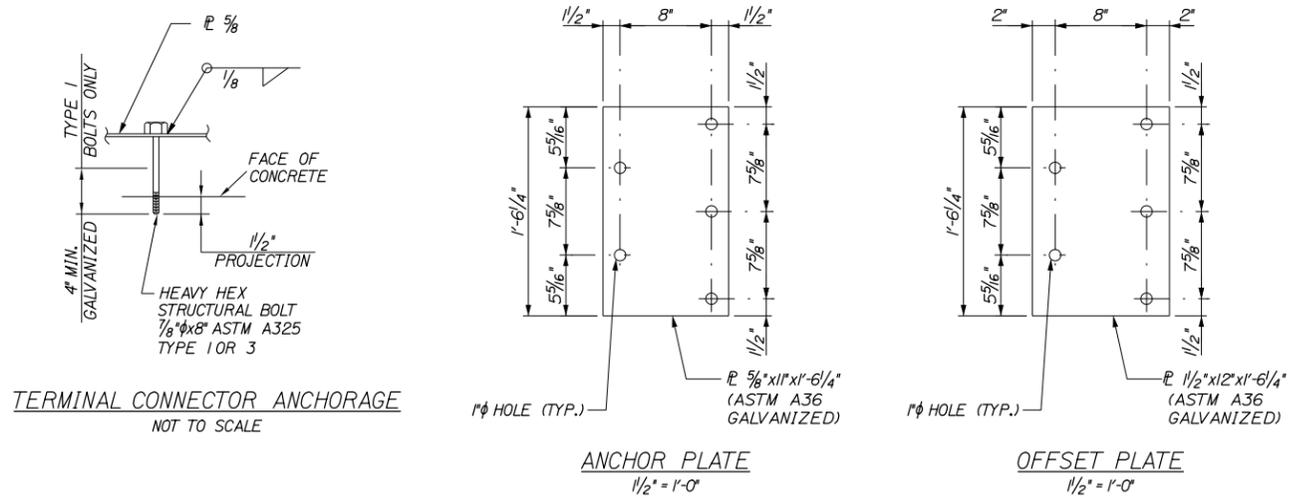
MISCELLANEOUS DETAILS I

SHEET NUMBER: S-15  
CONTRACT: 2018.06  
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Date: 2/19/2018

Filename: 046\_Miscellaneous Details 3.dgn



**CURB NOTES:**

1. CURBING SHALL BE EITHER PRECAST CONCRETE, CAST-IN-PLACE CONCRETE OR GRANITE TO MEET DIMENSIONS SHOWN ON THE PLANS.
2. CONCRETE CURBS USED IN CONJUNCTION WITH THRIE-BEAM BRIDGE ATTACHMENT SHALL BE TYPE 2, SEE DETAILS THIS SHEET. CONCRETE CURBS SHALL BE SET TO FORM A CONTINUOUS GUTTERLINE WITHOUT ANY DRAINAGE OPENINGS.
3. CURB TRANSITION SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCIDENTAL TO THE BRIDGE TRANSITION PAY ITEM.
4. SAWCUTTING EXISTING PAVEMENT, CONCRETE FILL, AND PAVEMENT TO LIMITS SHOWN SHALL BE INCIDENTAL TO THE BRIDGE TRANSITION PAY ITEM.

**GENERAL NOTES:**

1. ADDITIONAL HOLES MAY BE MADE IN THE THRIE-BEAM PANELS BY DRILLING, PUNCHING, OR OTHER MEANS THAT PRODUCE A NEAT, CLEAN HOLE. BURNING HOLES WILL NOT BE ALLOWED.
2. THRIE BEAM SHALL BE PLACED WITH THE COMPOSITE BLOCKOUT FACE IN FRONT OF OR DIRECTLY ABOVE THE CURB FACE.
3. RAIL ELEMENT SHALL MEET ALL REQUIREMENTS OF AASHTO M-180 EXCEPT AS MODIFIED ON THE PLANS. THE THRIE BEAM TRANSITION TO W-BEAM SHALL BE OF THE SAME MATERIAL, BUT SHALL NOT BE LESS THAN 10 GAUGE.
4. AFTER INSTALLATION IS COMPLETE, UPSET THE THREAD ON THE ANCHOR BOLTS IN THREE PLACES AROUND EACH BOLT, AT THE JUNCTION OF THE NUT AND THE EXPOSED THREAD, WITH A CENTER PUNCH OR SIMILAR TOOL.
5. STANDARD BARRIER HARDWARE HAS BEEN USED TO DEVELOP THESE GUARDRAIL ATTACHMENTS. DESIGNATIONS PROVIDED IN PARENTHESIS RELATE TO STANDARD ELEMENTS DETAILED IN "A GUIDE TO STANDARDIZED BARRIER RAIL HARDWARE," 1979. AASHTO-AGC-ARTBA JOINT COOPERATE COMMITTEE.
6. 1" HOLE IN CONCRETE SHALL BE FORMED BY A 1" I.D. PVC SLEEVE AS APPROVED BY THE ENGINEER.
7. FOR ITEM 606.1723, SECTION C-C EXISTING GUARDRAIL TYPE 3d SHALL TAPER FROM 3" AT TOP OF RAIL AT BRIDGE TRANSITION TO 27/4" MIN. OVER 25' MIN. PROPOSED RAIL SHALL TAPER FROM 3" TO 30"
8. FOR ITEM 606.1724 SECTION C-C EXISTING OR PROPOSED THRIE RAIL SHALL TAPER FROM 3" TO 32" OVER 25' MIN.
9. GUARDRAIL HEIGHT SHALL BE ADJUSTED UNIFORMLY BETWEEN SECTION CALLOUTS.

Scale:		Designed by:	
No.	Revision	By	Date

**HNTB**

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CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.

By	Date	By	Date
Designed HJW	2\18	Checked AES	2\18
Drawn SLS	2\18	In Charge of RAL	2\18

**MAINE TURNPIKE**

**THE GOLD STAR MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

**BRIDGE AND CULVERT REPAIRS**

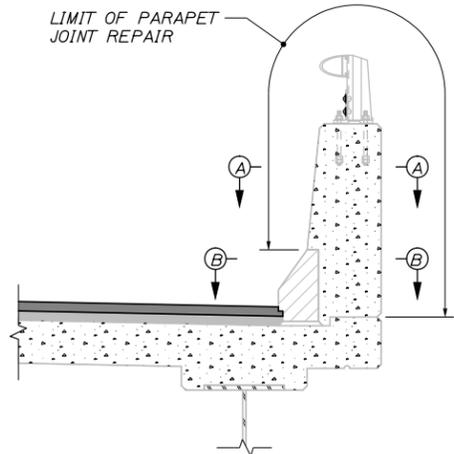
**MISCELLANEOUS DETAILS III**

SHEET NUMBER: S-17

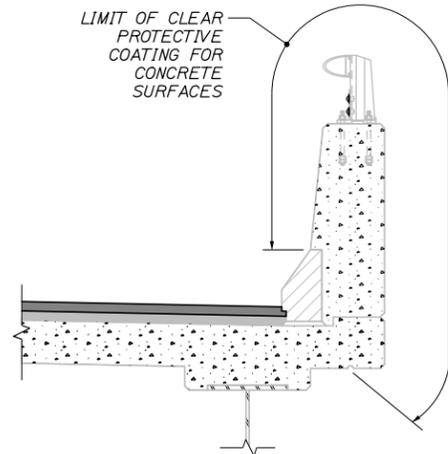
CONTRACT: 2018.06

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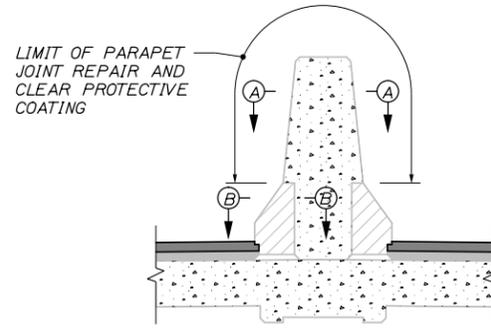
Date: 2/19/2018



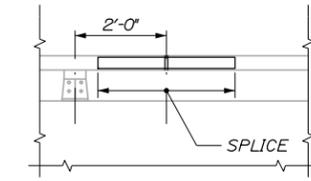
**PARAPET JOINT REPAIR LIMITS**  
(BIDDEFORD INTERCHANGE)  
3/4" = 1'-0"



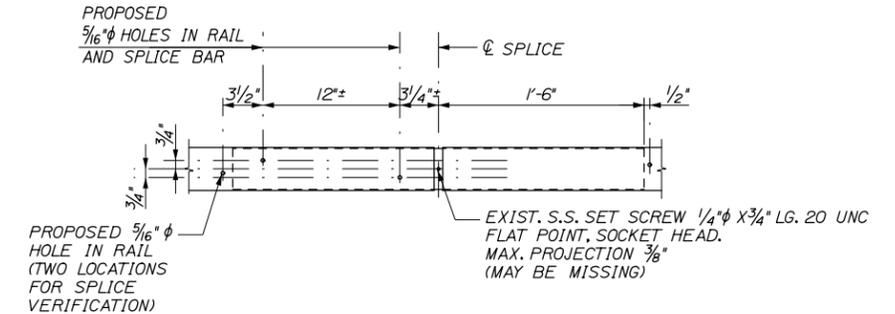
**PARAPET PROTECTIVE COATING LIMITS**  
(BIDDEFORD INTERCHANGE)  
3/4" = 1'-0"



**PARAPET PROTECTIVE COATING AND JOINT REPAIR LIMITS**  
(BIDDEFORD INTERCHANGE)  
3/4" = 1'-0"

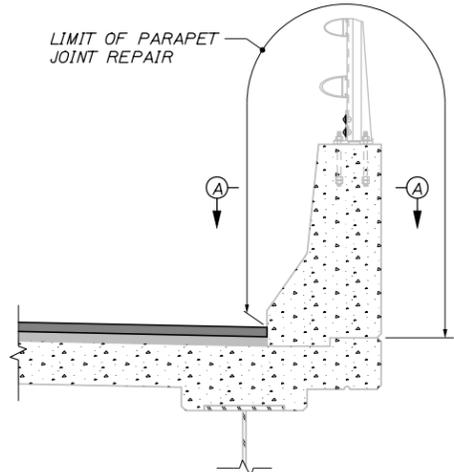


**BRIDGE RAIL - ELEVATION**  
1/2" = 1'-0"

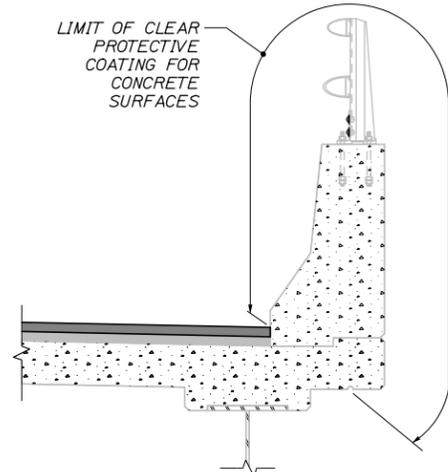


**BRIDGE RAIL SPLICE MODIFICATION DETAIL**  
(ELEVATION VIEW FROM BACK SIDE OF RAIL)  
1/2" = 1'-0"

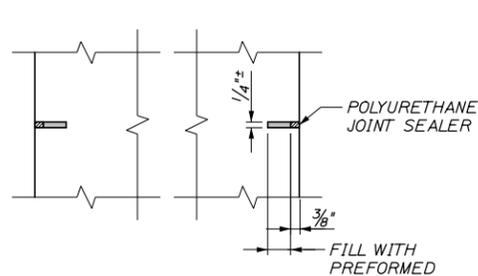
**NOTE:**  
RE-CENTER EXISTING SPLICE BAR AND DRILL TWO 5/16" HOLES AND INSTALL TWO 3/8" x 1" TYPE F, HEX. WASHER HEAD TAPPING SCREWS (STAINLESS). DRILL TWO ADDITIONAL 5/16" HOLES IN RAIL FOR SPLICE LOCATION VERIFICATION.



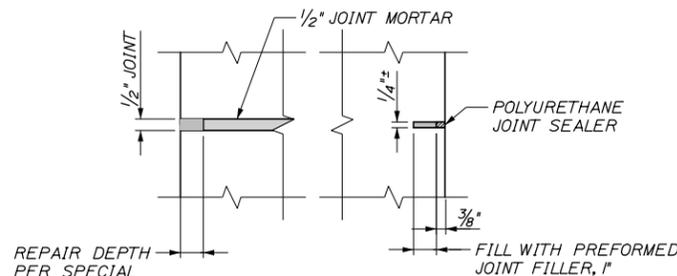
**PARAPET JOINT REPAIR LIMITS**  
(ROUTE III)  
3/4" = 1'-0"



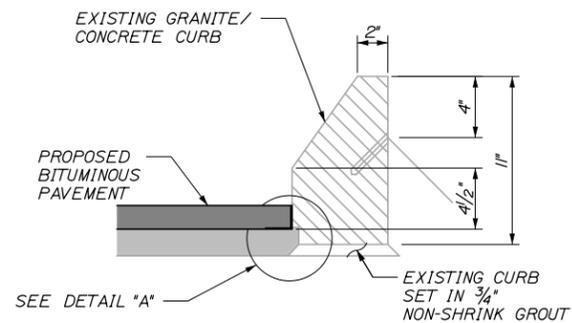
**PARAPET PROTECTIVE COATING LIMITS**  
(ROUTE III)  
3/4" = 1'-0"



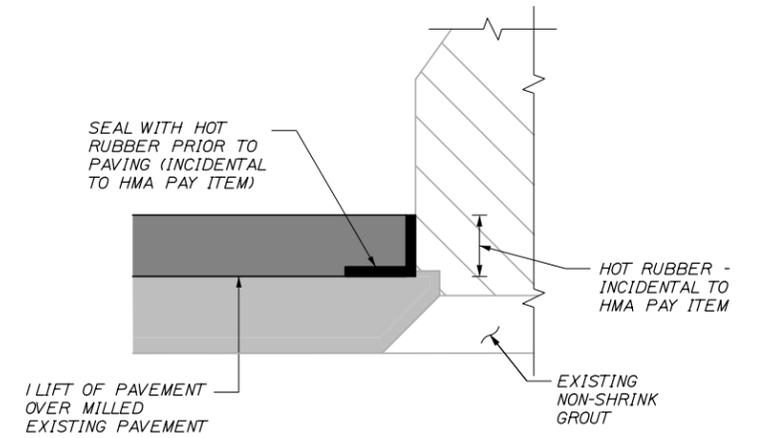
**SECTION A-A**  
3" = 1'-0"



**SECTION B-B**  
(AT PARAPET AND CURB JOINT LOCATIONS)  
3" = 1'-0"



**GRANITE CURB DETAIL**  
N.T.S.



**DETAIL A**  
N.T.S.

**NOTE:**  
1. PARAPET AND CURB JOINTS DO NOT ALWAYS ALIGN.

Filename: 047\_Miscellaneous Details 4.dgn

No.	Revision	By	Date

Designed by:			
<b>HNTB</b>			
CONSULTANT PROJECT MANAGER: Ashley E. Stephens, P.E.			
	By	Date	
Designed	NMW	2\18	Checked AES 2\18
Drawn	SLS	2\18	In Charge of RAL 2\18

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**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV, P.E., P.T.O.E.

BRIDGE AND CULVERT REPAIRS  
MISCELLANEOUS DETAILS IV

SHEET NUMBER: S-18  
CONTRACT: 2018.06  
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