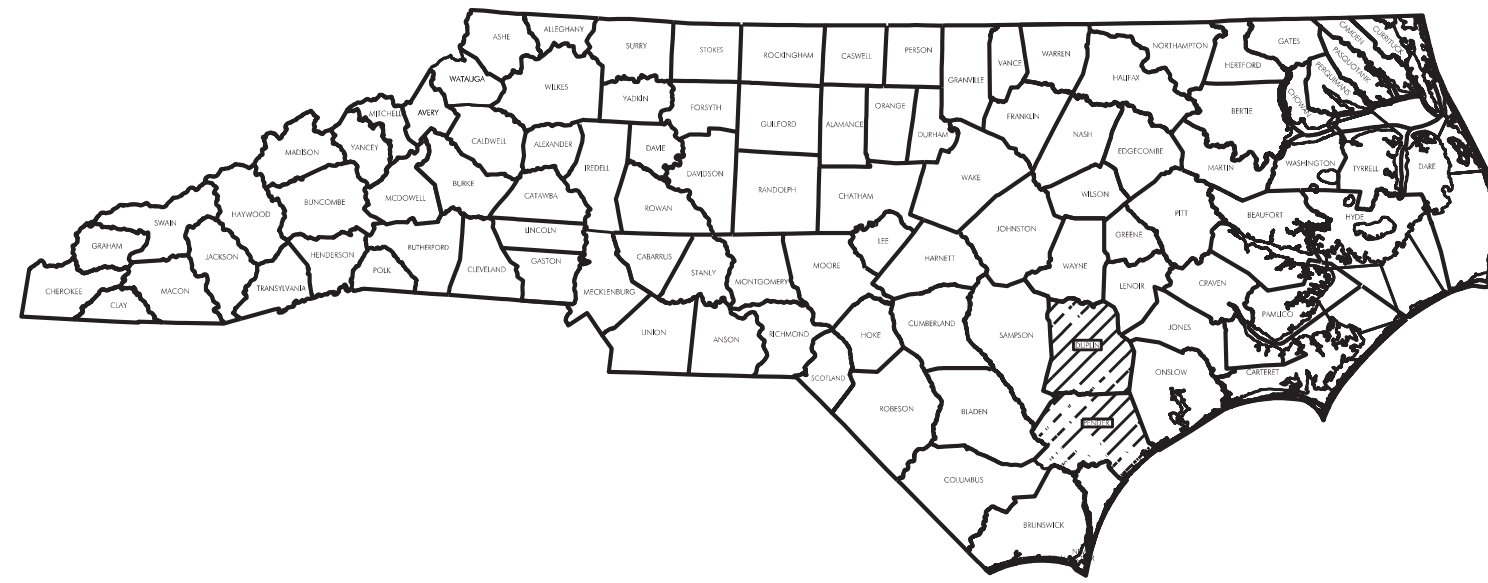


CONTRACT: C204449 TIP PROJECT: 15BPR.45

STRUCTURES



**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

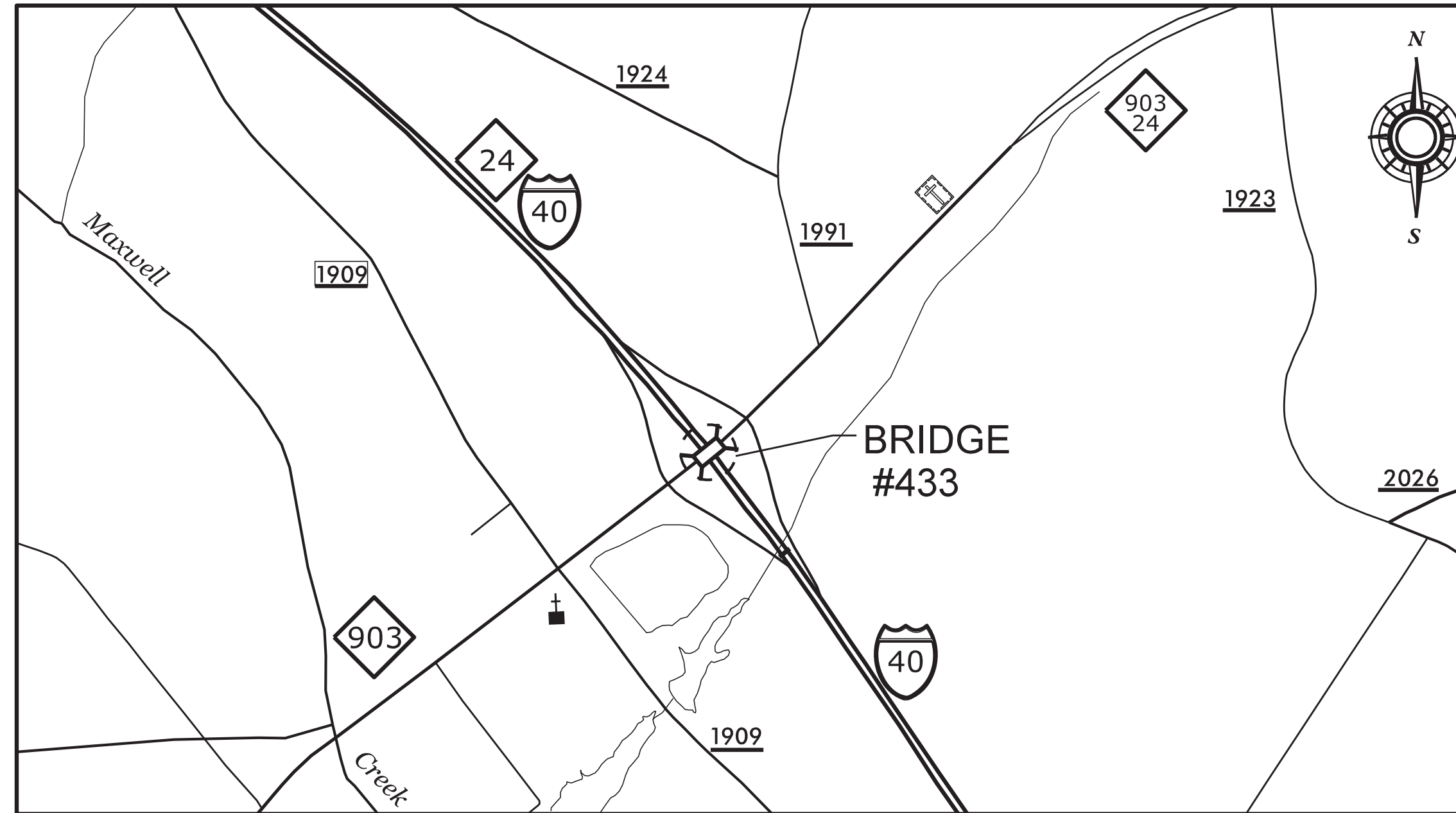
DUPLIN & PENDER COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15BPR.45	1	31
STATE PROJECT NO.	F. A. PROJ. NO.	DESCRIPTION	
15BPR.45		P.E.	
15BPR.45		CONST.	

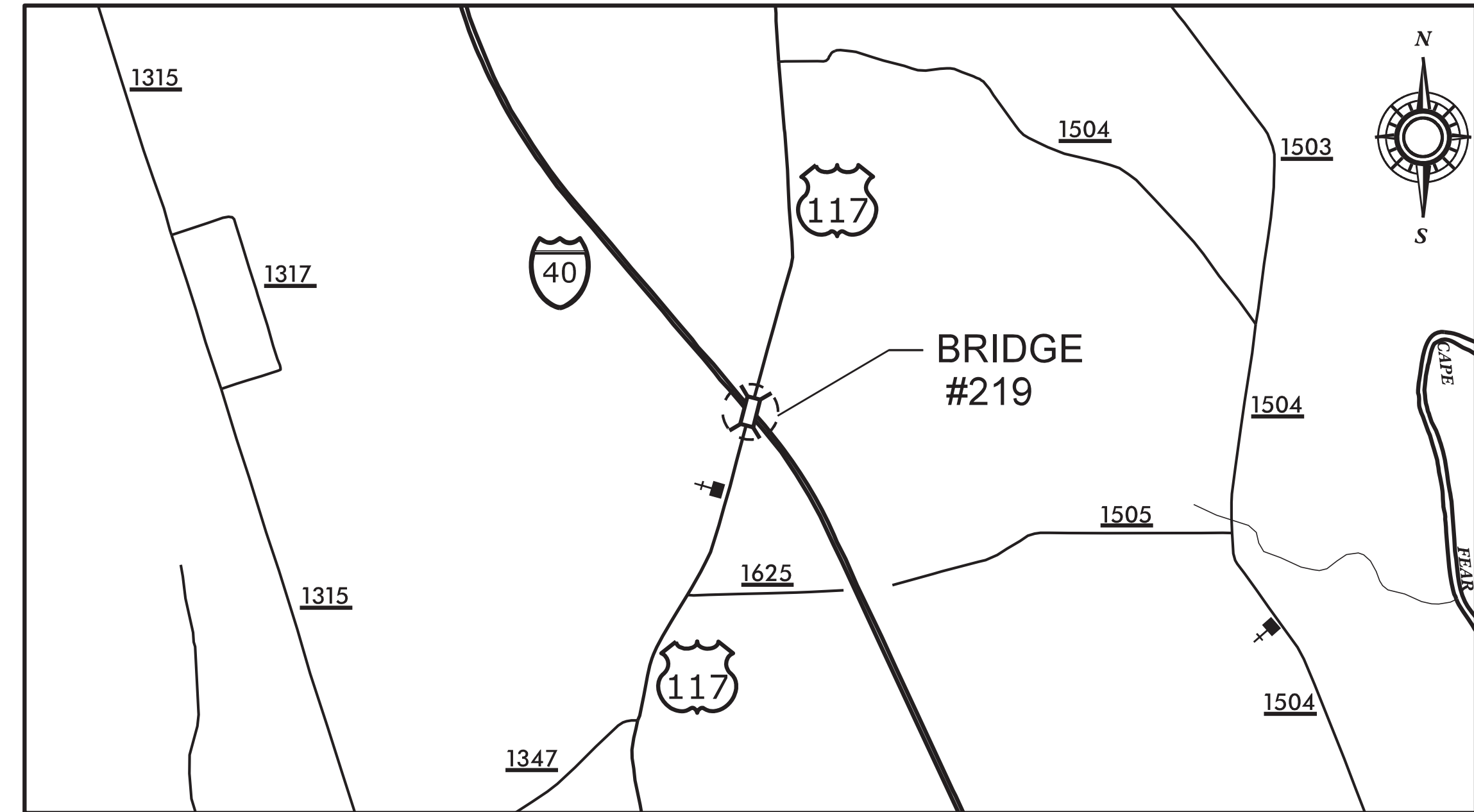
LOCATION: DUPLIN COUNTY:
BRIDGE #300433 OVER I40 ON NC 903 BETWEEN SR 1909 (JOHN WILLIAMS EVANS RD) AND SR 1991 (BRINSON RD).

PENDER COUNTY:
BRIDGE #700219 OVER I40 ON US 117 BETWEEN SR 1625 (JOHNSON LEE RD) AND SR 1504 (MURPHY RD).

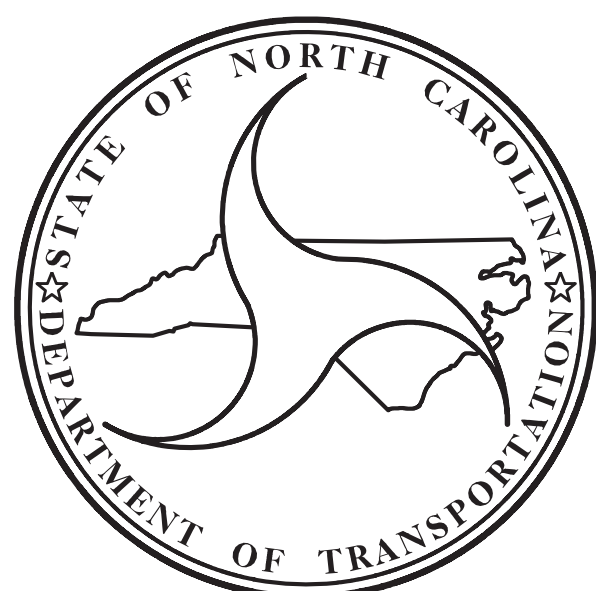
TYPE OF WORK: BRIDGE PRESERVATION - LATEX MODIFIED CONCRETE OVERLAY EARLY STRENGTH, DECK REPAIRS, JOINT REPAIRS, SUBSTRUCTURE REPAIRS.



DUPLIN 433



PENDER 219



DESIGN DATA

DUPLIN #300433 ADT 2015 = 3,400
PENDER #700219 ADT 2017 = 2,900

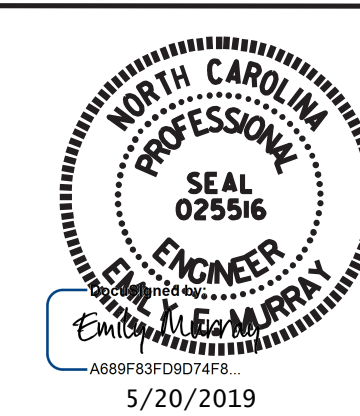
PROJECT LENGTH

DUPLIN #300433 = 0.037 MI
PENDER #700219 = 0.047 MI

Prepared for:
STRUCTURES MANAGEMENT UNIT
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

LETTING DATE:
FEBRUARY 16, 2021



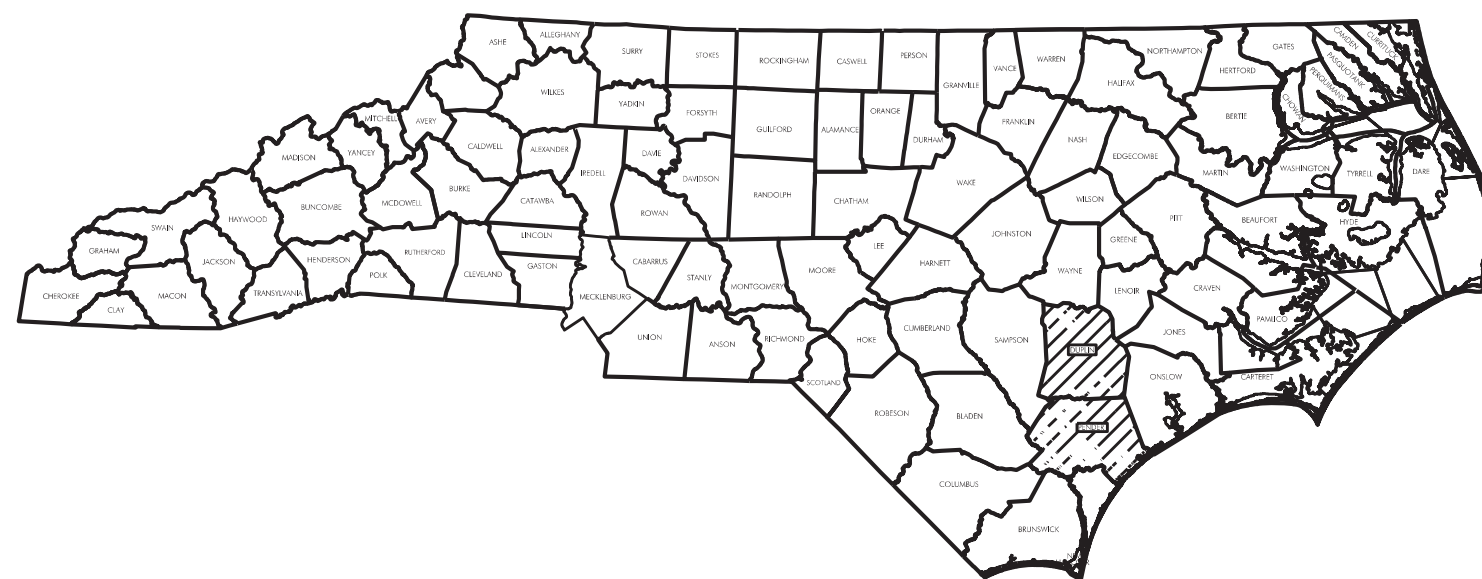
EMILY MURRAY, PE
PROJECT ENGINEER

VOLKERT

5540 Centerview Drive, Suite 305
Raleigh, NC 27606
Tel. 919-854-0344 Fax. 919-854-0355
NC License No. F-0765

TIP PROJECT: 15BPR.45

CONTRACT: C204449



**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

DUPLIN & PENDER COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15BPR.45	1A	31
STATE PROJECT NO.	F. A. PROJ. NO.	DESCRIPTION	
15BPR.45		P.E.	
15BPR.45		CONST.	

LOCATION: DUPLIN COUNTY:
BRIDGE #300433 OVER I40 ON NC 903 BETWEEN SR 1909 (JOHN WILLIAMS EVANS RD) AND SR 1991 (BRINSON RD).

PENDER COUNTY:
BRIDGE #700219 OVER I40 ON US 117 BETWEEN SR 1625 (JOHNSON LEE RD) AND SR 1504 (MURPHY RD).

INDEX OF SHEETS

STRUCTURE NO.	DESCRIPTION	SHEET NUMBER
	TITLE SHEET	1
	INDEX OF SHEETS & SUMMARY OF QUANTITIES	1A
300433	BRIDGE #433 ON NC 903 OVER I40	S1-1 TO S1-17
700219	BRIDGE #219 ON US 117 OVER I40	S2-1 TO S2-12
	DETAILS	SD-1 TO SD-2
	STANDARD NOTES	SN

TOTAL BILL OF MATERIAL									
BRIDGE NO.	GROOVING BRIDGE FLOORS	CLASS II SURFACE PREPARATION	CONCRETE REPAIRS	SHOTCRETE REPAIRS	EPOXY RESIN INJECTION	VOLUMETRIC MIXER	FOAM JOINT SEAL FOR PRESERVATION	POURABLE SILICONE JOINT SEALANT	LATEX MODIFIED CONCRETE OVERLAY- EARLY STRENGTH
	SQ. FT.	SO. YDS.	CU. FT.	CU. FT.	LF	LUMP SUM	LF	LF	CU. YDS.
300433	5625.0	27.0	29.2	425.2	16.5	LUMP SUM	95.5	63.7	42.7
700219	10952.8	11.8		0.7	15.5	LUMP SUM	55.6	111.2	59.3
TOTAL	16577.8	38.8	29.2	425.9	32.0	LUMP SUM	151.1	174.9	102.0

TOTAL BILL OF MATERIAL							
BRIDGE NO.	ELASTOMERIC CONCRETE FOR PRESERVATION	EPOXY COATING	BRIDGE JOINT DEMOLITION	PLACING AND FINISHING OF LATEX MODIFIED CONCRETE OVERLAY- EARLY STRENGTH	SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	TYPE I BRIDGE JACKING BRIDGE NO.---
	CU. FT.	SO. FT.	SO. FT.	SO. YDS.	SO. YDS.	SO. YDS.	EA
300433	37.5	496.2	150.0	714.2	714.2	714.2	3
700219	39.9		128.1	1314.0	1314.0	1314.0	
TOTAL	77.4	496.2	278.1	2028.2	2028.2	2028.2	3

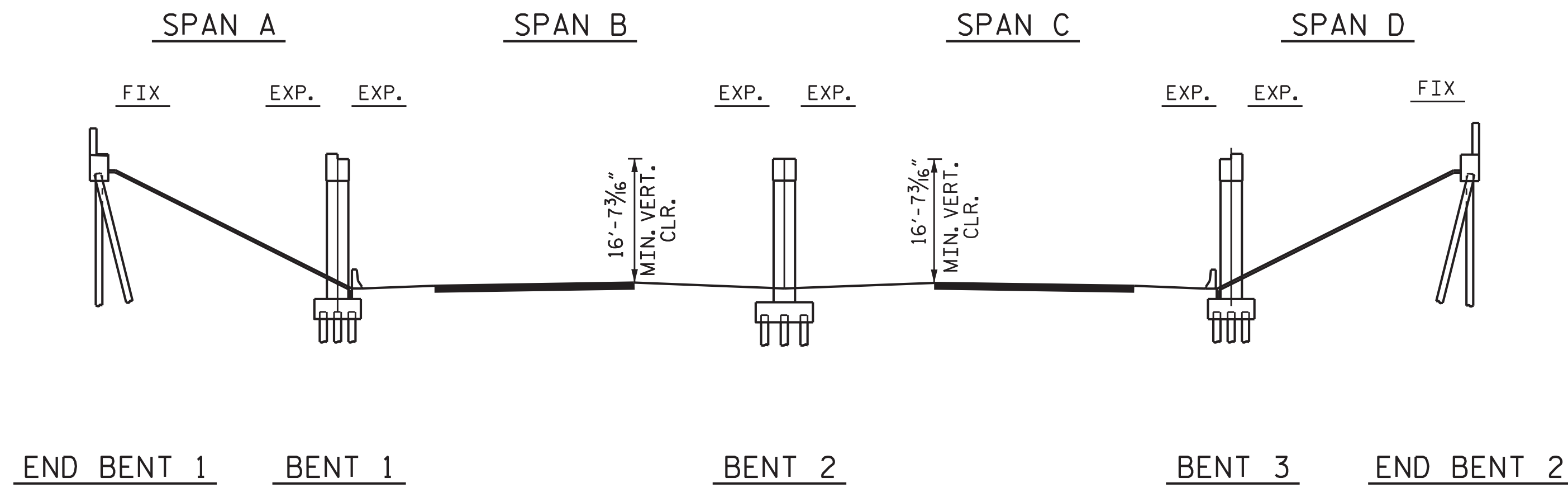


5/20/2019

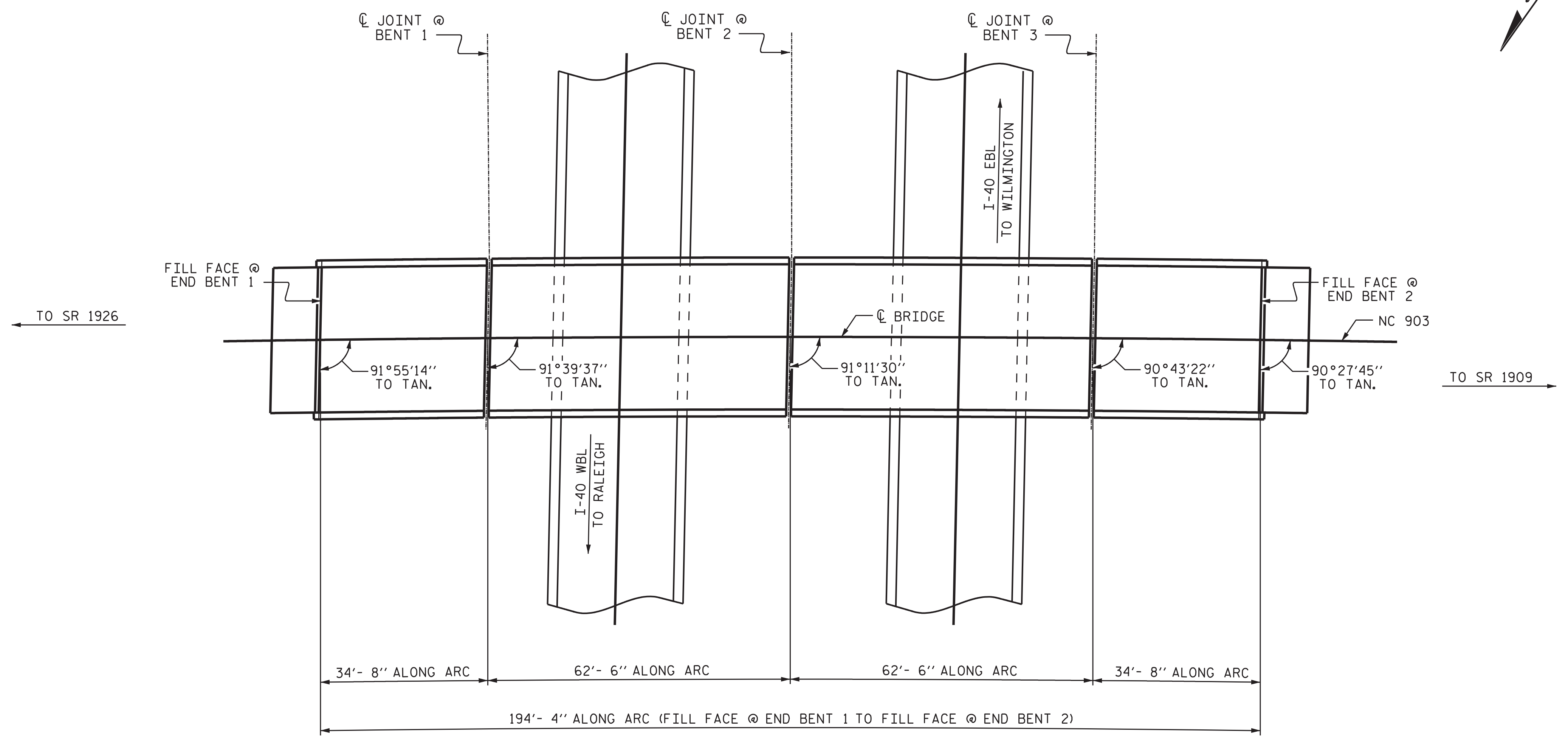
DRAWN BY : R.G.BEAUCHAMP DATE : 3/19
 CHECKED BY : J. R. MCROY DATE : 4/19

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 5540 Centerview Drive, Suite 305
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SECTION ALONG \bar{C} BRIDGE
 (SECTION TAKEN AT RIGHT ANGLE TO BENTS AND END BENTS)



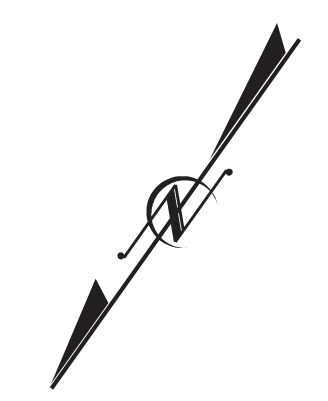
PLAN
 (PILES, COLUMNS AND FOOTINGS, ARE NOT SHOWN FOR CLARITY)

NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND ROUTINE INSPECTION REPORT DATED 8/24/2017
 BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- PARTIALLY REMOVE BRIDGE DECK CONCRETE BY SCARIFICATION AND HYDRO-DEMOLITION METHODS.
- PERFORM DECK REPAIRS IN PREPARED AREAS.
- OVERLAY PREPARED BRIDGE DECK WITH LATEX MODIFIED CONCRETE - EARLY STRENGTH.
- RECONSTRUCT BRIDGE JOINTS AND INSTALL JOINT SEALS.
- GROOVE LATEX MODIFIED CONCRETE - EARLY STRENGTH.
- REPAIR SUBSTRUCTURE USING EPOXY RESIN INJECTION, SHOTCRETE, AND CONCRETE.



I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.

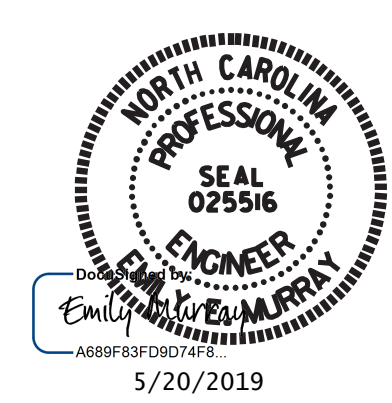
RESIDENT ENGINEER _____ DATE _____

PROJECT NO. 15BPR.45
DUPLIN COUNTY
 BRIDGE NO. 300433

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER I-40
 ON NC 903 BETWEEN
 SR 1926 AND SR 1909



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-1
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : D. A. GLADDEN DATE : 3/19
 CHECKED BY : J. R. McROY DATE : 3/19



LOCATION SKETCH

INFORMATION INDICATED ON THE LOCATION SKETCH SHALL BE CONSIDERED GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL CONFIRM, THROUGH OTHER SOURCES, SPECIFIC INFORMATION REGARDING BRIDGES, ROADWAYS, UTILITIES, THE SURROUNDING AREA, AND ANY OTHER ASPECTS THAT MAY BE NECESSARY TO PERFORM AND COMPLETE THE PROJECT.

LOCATION COORDINATES

LATITUDE	34° 55' 3.8"
LONGITUDE	78° 01' 28.3"

NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR SUMMARY OF QUANTITIES TABLE.

QUANTITIES HAVE BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION.

AT THE TIME OF PREPARATION OF THESE PLANS, IT WAS NOT ANTICIPATED THAT CLASS III SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR WOULD BE REQUIRED. HOWEVER, IT MAY BE DETERMINED THAT CLASS III SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR, OR OTHER WORK WILL BE NECESSARY TO PROPERLY COMPLETE THE INTENDED BRIDGE PRESERVATION/REHABILITATION WORK. THE CONTRACTOR SHALL BE PREPARED TO PERFORM SUCH WORK IN A TIMELY MANNER, AS DETERMINED IN THE FIELD. SUCH WORK SHALL BE CONSIDERED EXTRA WORK AND SHALL BE ADDRESSED AS 104-7 OF THE STANDARD SPECIFICATIONS. PROJECT SPECIAL PROVISIONS THAT OUTLINE REQUIREMENTS FOR THESE POTENTIAL ADDITIONAL WORK ITEMS HAVE BEEN PROVIDED IN PROJECT DOCUMENTS, BUT NO QUANTITIES HAVE BEEN LISTED. ACTUAL PAY ITEMS, QUANTITIES, AND COSTS WILL BE ESTABLISHED, AS REQUIRED, IF EXTRA WORK IS ENCOUNTERED.

CONCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

FOR CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLANS.

EXISTING JOINTS SHALL BE SEALED PRIOR TO BEGINNING REPAIRS OF BRIDGE DECK.

LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANE.

FOR SCARIFYING BRIDGE DECK, HYDRO-DEMOLITION OF BRIDGE DECK, CLASS II AND CLASS III SURFACE PREPARATION, SEE LMC OVERLAY SURFACE PREPARATION SPECIAL PROVISION.

FOR LATEX MODIFIED CONCRETE - EARLY STRENGTH AND PLACING AND FINISHING LATEX MODIFIED CONCRETE - EARLY STRENGTH, SEE LATEX MODIFIED CONCRETE - EARLY STRENGTH SPECIAL PROVISION.

FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR ELASTOMETRIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR EPOXY COATING, SEE EPOXY COATING AND DEBRIS REMOVAL SPECIAL PROVISION.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

PROJECT NO. 15BPR.45
DUPLIN COUNTY
 BRIDGE NO. 300433

SHEET 2 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER I-40
 ON NC 903 BETWEEN
 SR 1909 AND SR 1991

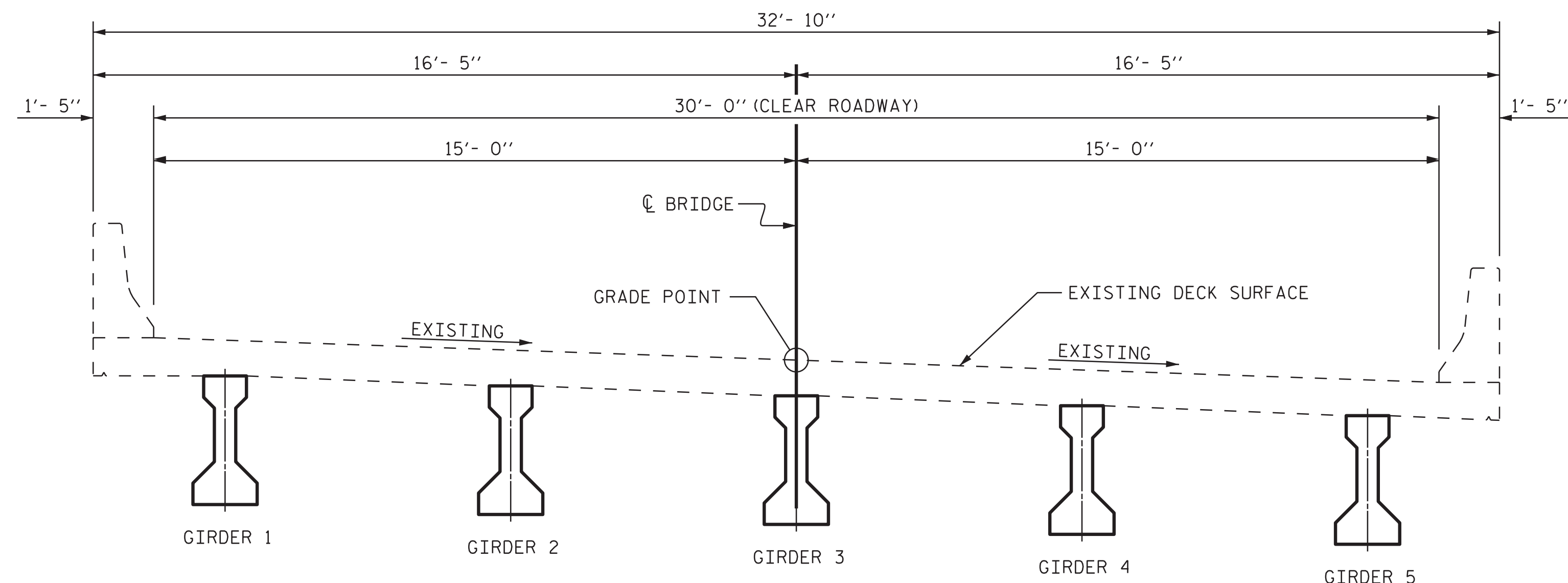
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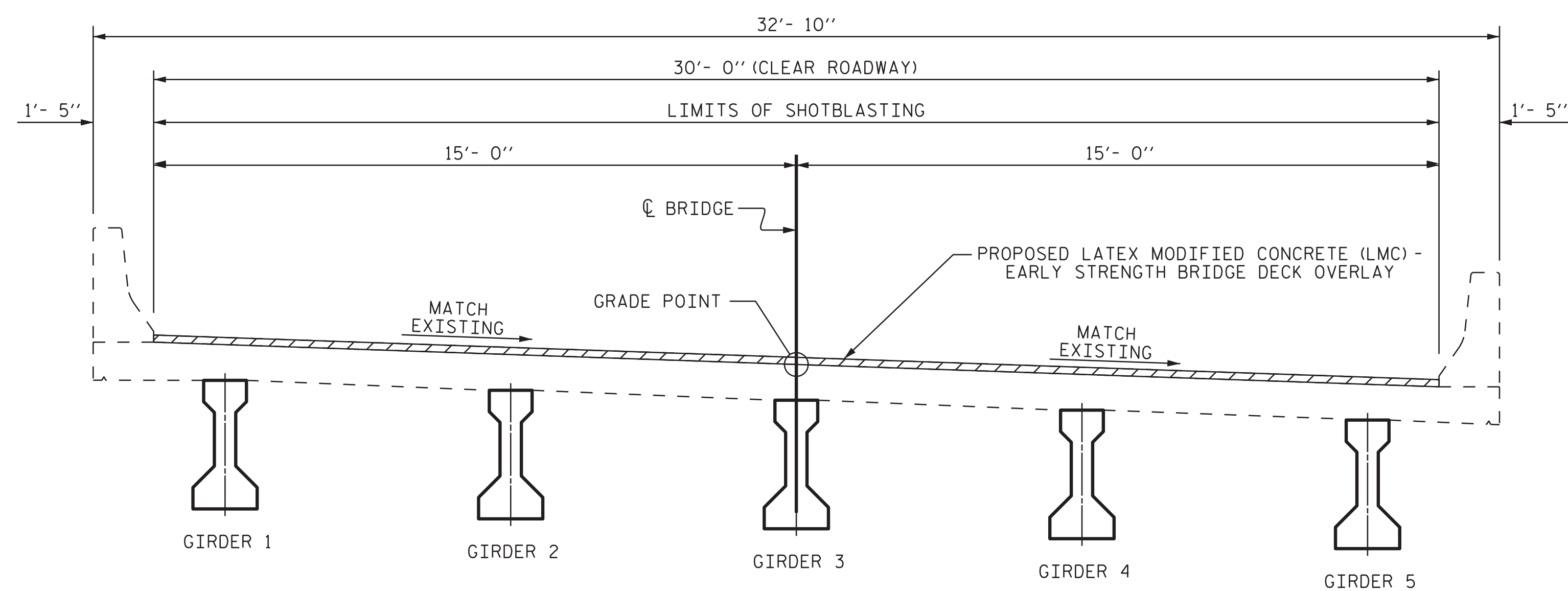
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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2			4			

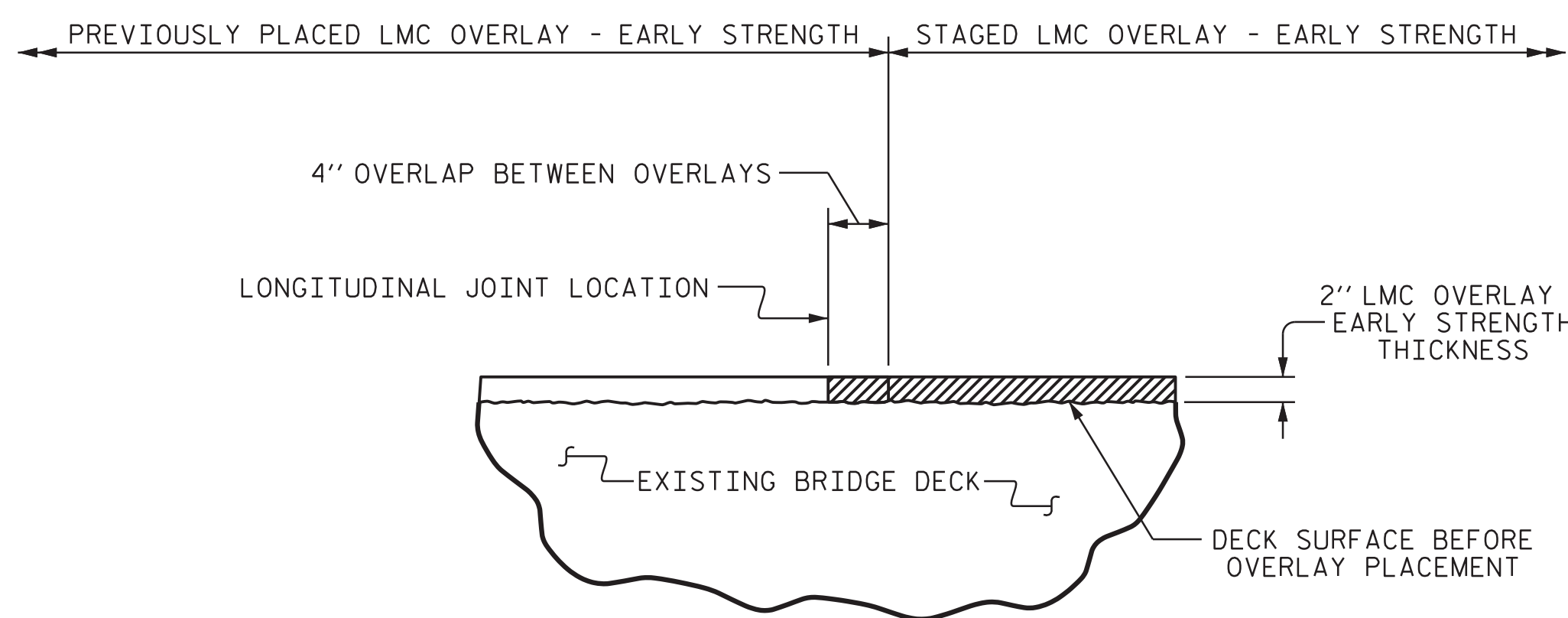
DRAWN BY : R. G. BEAUCHAMP DATE : 4/19
 CHECKED BY : J. R. MCROY DATE : 4/19



EXISTING TYPICAL SECTION

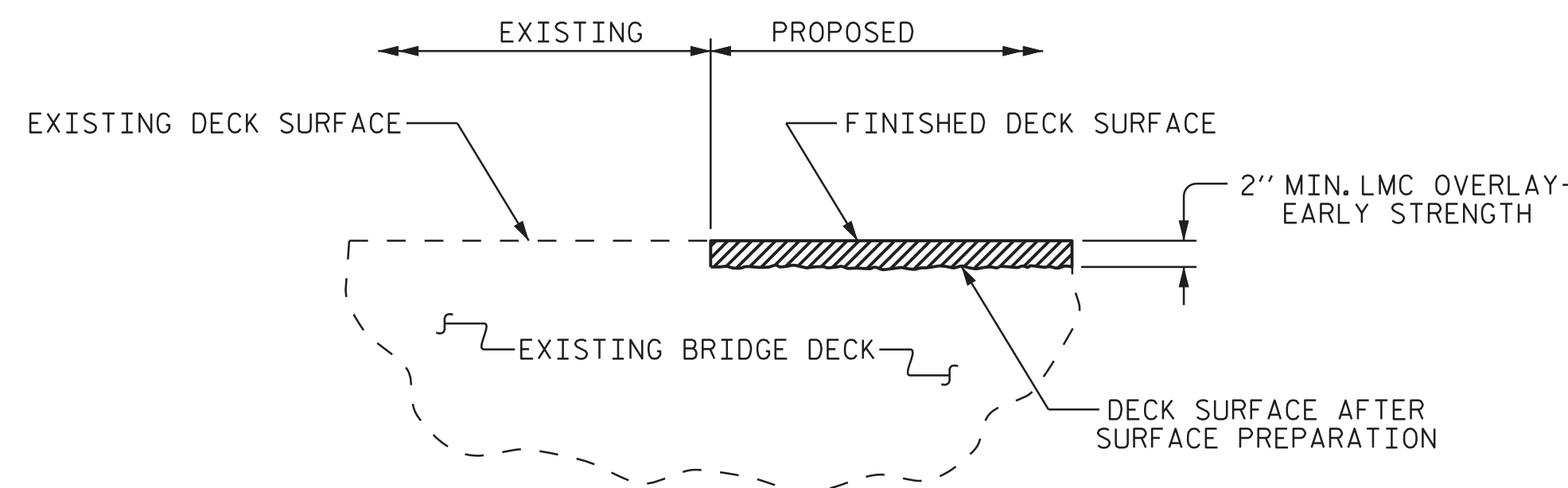


PROPOSED TYPICAL SECTION



STAGED LATEX MODIFIED CONCRETE OVERLAY JOINT

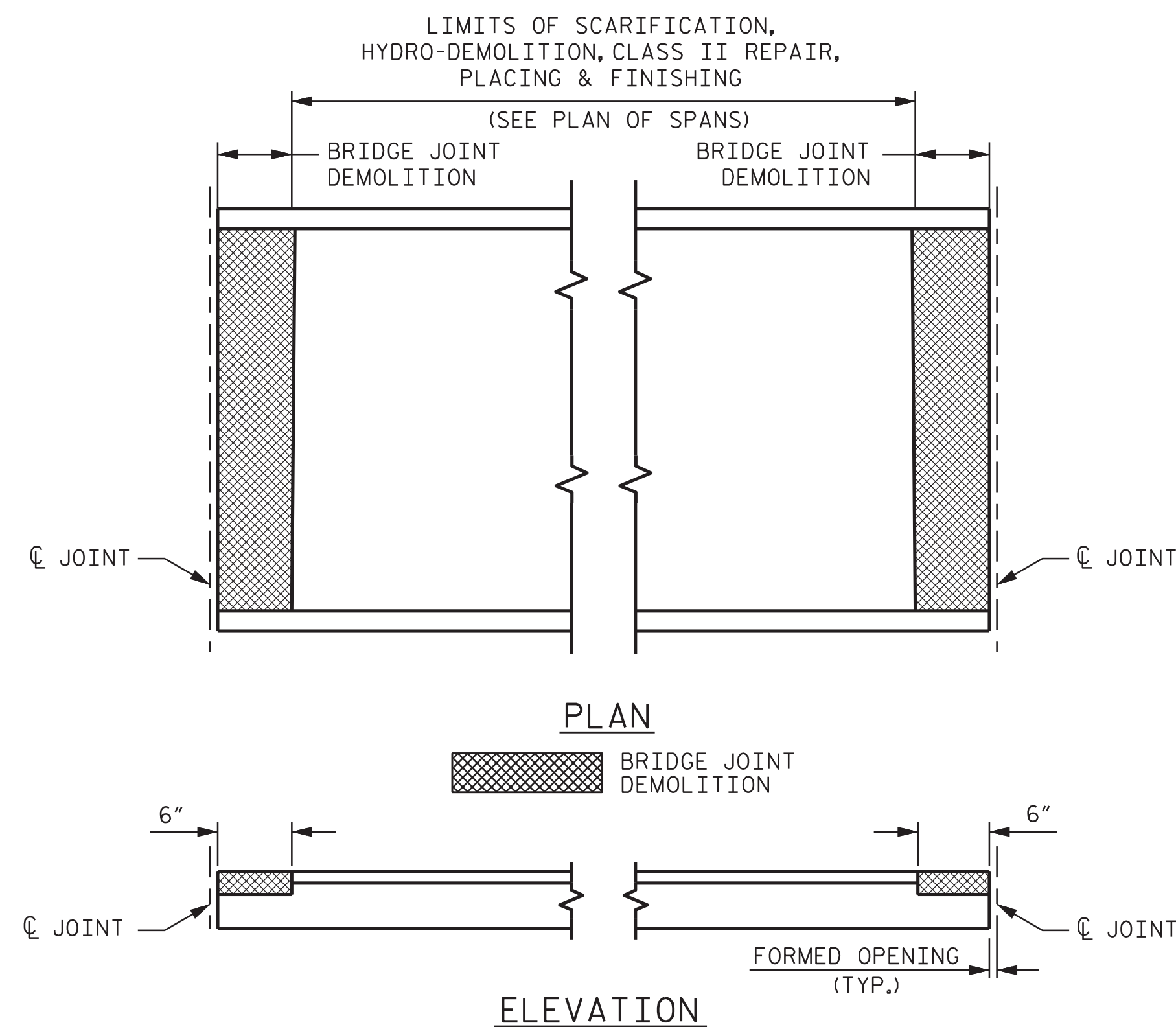
(AS NEEDED)



DETAIL OF LATEX MODIFIED CONCRETE OVERLAY

NOTES

SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND LATEX MODIFIED CONCRETE - EARLY STRENGTH PLACEMENT.

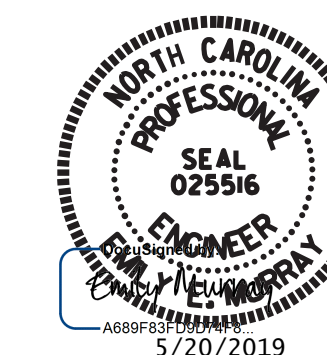


PAY LIMITS FOR OVERLAY BID ITEMS

PROJECT NO. 15BPR.45
 DUPLIN COUNTY
 BRIDGE NO. 300433

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TYPICAL SECTION

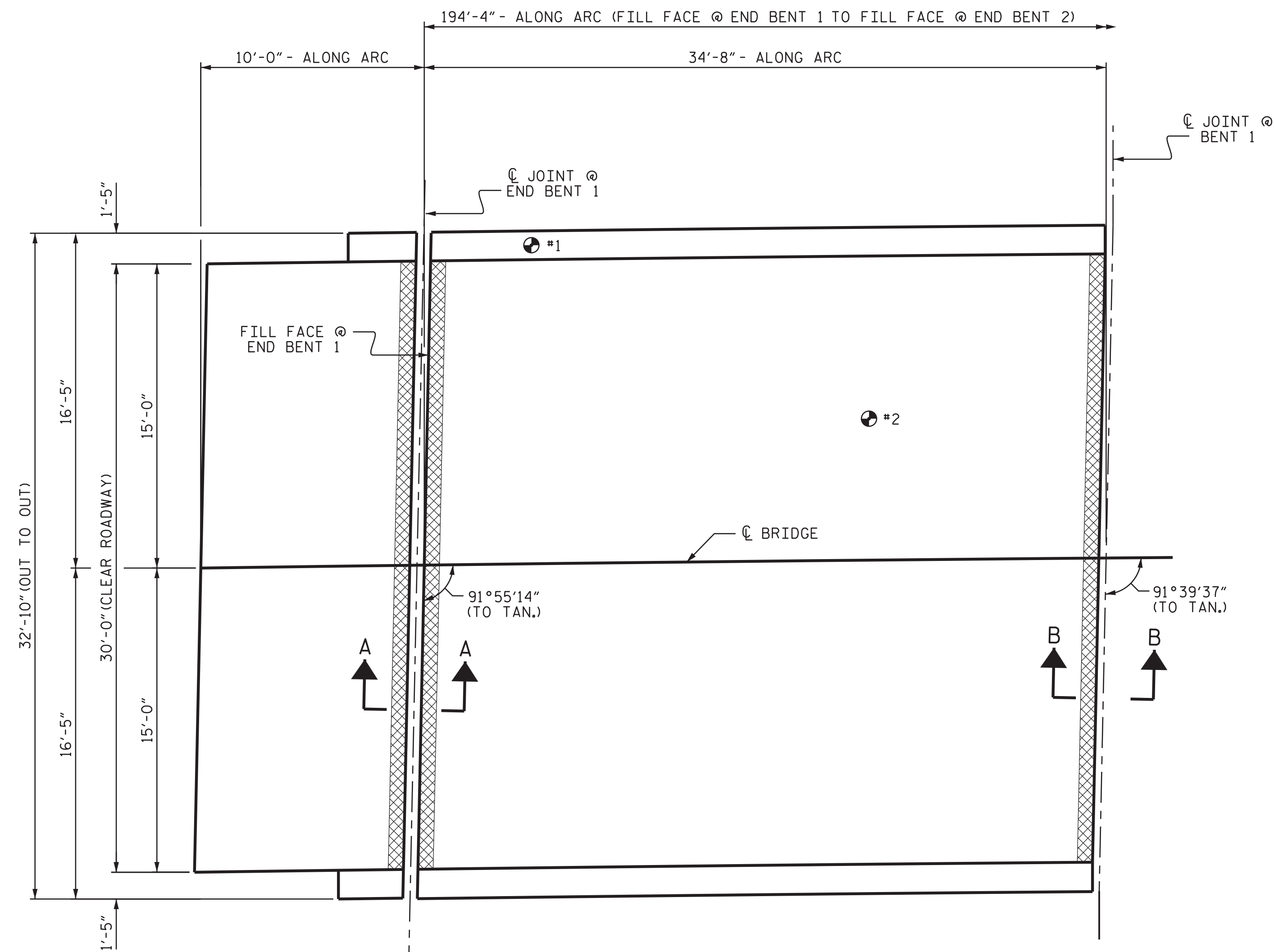
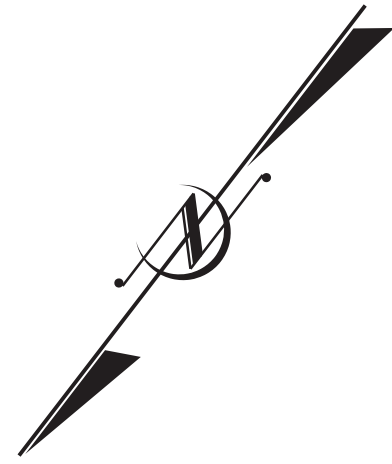


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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S1-3
2			4			31

DRAWN BY : J.R. MCROY DATE : 03/19
 CHECKED BY : D.A. GLADDEN DATE : 04/19



PLAN OF SPAN A

NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

PRIOR TO PLACEMENT OF THE LMC OVERLAY ACROSS THE DECK SPANS, THE CONTRACTOR SHALL SUBMIT A POUR SEQUENCE FOR APPROVAL BY THE ENGINEER.

FOR SECTION A-A AND B-B, SEE "JOINT REPAIR DETAILS" SHEET.

FOR BRIDGE JOINT DEMOLITION, SEE "JOINT REPAIR DETAILS" SHEET.

DRAWN BY : R. G. BEAUCHAMP DATE : 02/19
 CHECKED BY : D. A. GLADDEN DATE : 03/19

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

APPROACH SLAB			SPAN A		
	ESTIMATE	ACTUAL		ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	33.3 SY		SCARIFYING BRIDGE DECK	115.5 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	33.3 SY		HYDRO-DEMOLITION OF BRIDGE DECK	115.5 SY	
CLASS II SURFACE PREPARATION	0.0 SY		CLASS II SURFACE PREPARATION	0.0 SY	
BRIDGE JOINT DEMOLITION	15.0 SF		BRIDGE JOINT DEMOLITION	30.0 SF	
EPOXY RESIN INJECTION	0.0 LF		EPOXY RESIN INJECTION	0.0 LF	
GROOVING BRIDGE FLOORS	243.0 SF		GROOVING BRIDGE FLOORS	909.0 SF	
LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	1.9 CY		LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	6.4 CY	
PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	33.3 SY		PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	115.5 SY	

UNDERSIDE OF DECK REPAIRS

SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	0.0	0.0		
INTERIOR DIAPHRAGMS	0.0	0.0		
CONCRETE CURB AND RAIL	0.0	0.0		
	ESTIMATE		ACTUAL	
UNDERSIDE EPOXY RESIN INJECTION	0.0	LF		

VALUES IN CHARTS REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. SEE REPAIR DETAILS.

- APPROXIMATE CLASS II AREA
- APPROXIMATE CLASS III AREA
- UNDERSIDE REPAIR
- BRIDGE JOINT DEMOLITION
- TEST LOCATION

TEST LOCATION	* CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#1	2 3/8"	5870
#2	3"	5260

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 02/25/2019.
 * CONCRETE COVER FOR TOP BARS IN THE DECK ARE BASED ON DECK EVALUATION DATED 02/25/2019, EXISTING BRIDGE PLANS INDICATE 2 1/2" CONCRETE COVER.

PROJECT NO. 15BPR.45
DUPLIN COUNTY
 BRIDGE NO. 300433

SHEET 1 OF 4



5/20/2019

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPANS

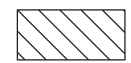


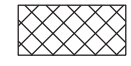

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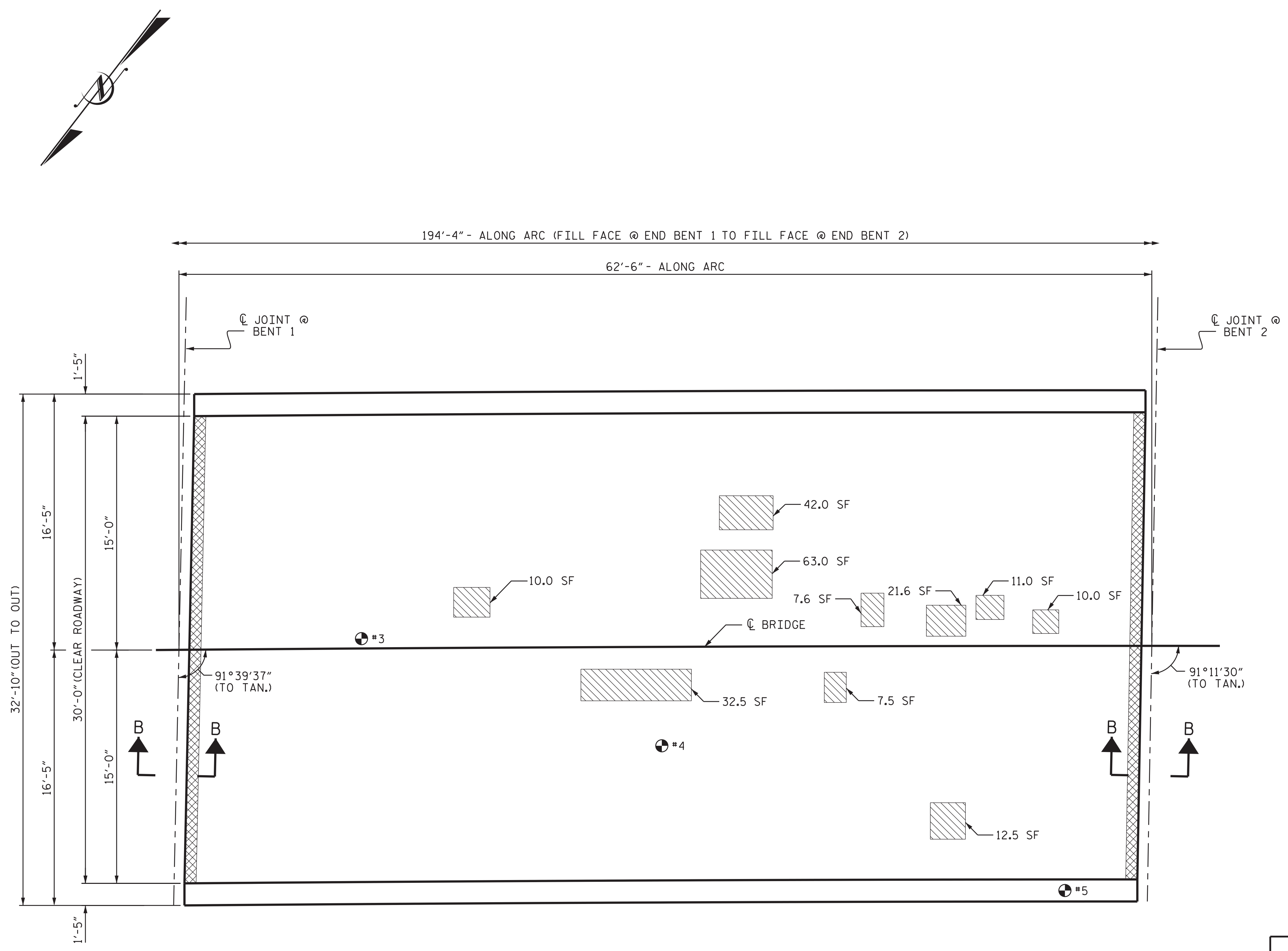
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S1-4
2			4			TOTAL SHEETS 31

AS-BUILT REPAIR QUANTITY TABLE				
TOP OF DECK REPAIRS				
SPAN B				
	ESTIMATE	ACTUAL		
SCARIFYING BRIDGE DECK	208.3 SY			
HYDRO-DEMOLITION OF BRIDGE DECK	208.3 SY			
CLASS II SURFACE PREPARATION	24.2 SY			
BRIDGE JOINT DEMOLITION	30.0 SF			
EPOXY RESIN INJECTION	0.0 LF			
GROOVING BRIDGE FLOORS	1660.5 SF			
LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	12.9 CY			
PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	208.3 SY			
UNDERSIDE OF DECK REPAIRS				
SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	0.0	0.0		
INTERIOR DIAPHRAGMS	0.0	0.0		
CONCRETE CURB AND RAIL	0.0	0.0		
	ESTIMATE		ACTUAL	
UNDERSIDE EPOXY RESIN INJECTION	0.0	LF		

VALUES IN CHARTS REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. SEE REPAIR DETAILS.

-  APPROXIMATE CLASS II AREA
-  APPROXIMATE CLASS III AREA
-  UNDERSIDE REPAIR
-  BRIDGE JOINT DEMOLITION
-  TEST LOCATION



PLAN OF SPAN B

TEST LOCATION	* CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#3	2 3/8"	5500
#4	2 1/2"	5720
#5	3"	5510

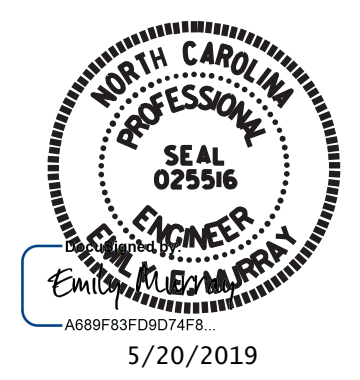
INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 02/25/2019.
 * CONCRETE COVER FOR TOP BARS IN THE DECK ARE BASED ON DECK EVALUATION DATED 02/25/2019. EXISTING BRIDGE PLANS INDICATE 2/2" CONCRETE COVER.

PROJECT NO. 15BPR.45
DUPLIN COUNTY
 BRIDGE NO. 300433

SHEET 2 OF 4

NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.
 PRIOR TO PLACEMENT OF THE LMC OVERLAY ACROSS THE DECK SPANS, THE CONTRACTOR SHALL SUBMIT A POUR SEQUENCE FOR APPROVAL BY THE ENGINEER.
 FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET.
 FOR BRIDGE JOINT DEMOLITION, SEE "JOINT REPAIR DETAILS" SHEET.



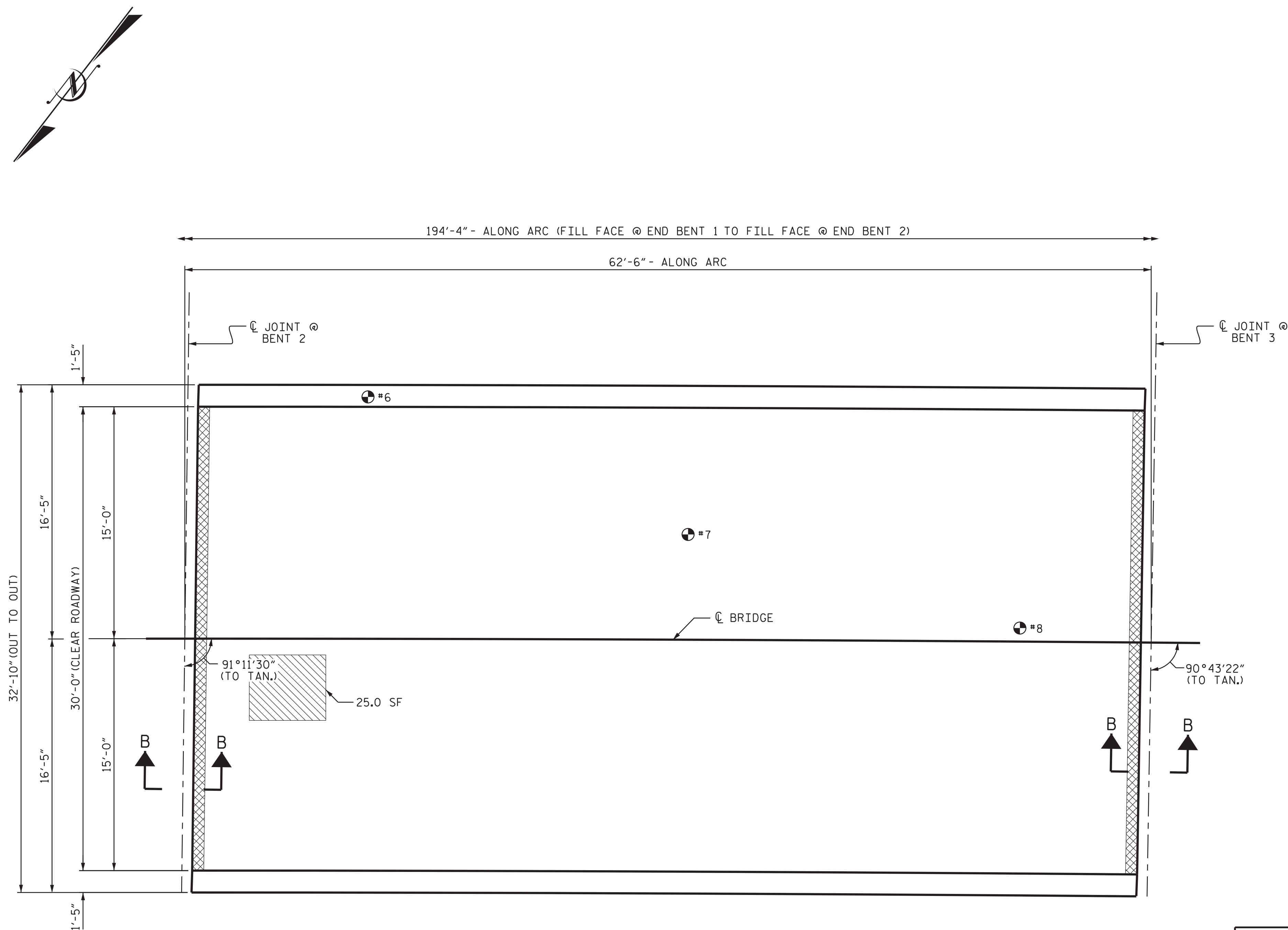
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPANS

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1			3			S1-5
2			4			31

DRAWN BY : R. G. BEAUCHAMP DATE : 02/19
 CHECKED BY : D. A. GLADDEN DATE : 03/19



PLAN OF SPAN C

NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

PRIOR TO PLACEMENT OF THE LMC OVERLAY ACROSS THE DECK SPANS, THE CONTRACTOR SHALL SUBMIT A POUR SEQUENCE FOR APPROVAL BY THE ENGINEER.

FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET.

FOR BRIDGE JOINT DEMOLITION, SEE "JOINT REPAIR DETAILS" SHEET.

AS-BUILT REPAIR QUANTITY TABLE				
TOP OF DECK REPAIRS				
SPAN C				
	ESTIMATE	ACTUAL		
SCARIFYING BRIDGE DECK	208.3 SY			
HYDRO-DEMOLITION OF BRIDGE DECK	208.3 SY			
CLASS II SURFACE PREPARATION	2.8 SY			
BRIDGE JOINT DEMOLITION	30.0 SF			
EPOXY RESIN INJECTION	0.0 LF			
GROOVING BRIDGE FLOORS	1660.5 SF			
LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	11.8 CY			
PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	208.3 SY			
UNDERSIDE OF DECK REPAIRS				
SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	0.0	0.0		
INTERIOR DIAPHRAGMS	0.0	0.0		
CONCRETE CURB AND RAIL	0.0	0.0		
	ESTIMATE		ACTUAL	
UNDERSIDE EPOXY RESIN INJECTION	0.0	LF		

VALUES IN CHARTS REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. SEE REPAIR DETAILS.

- APPROXIMATE CLASS II AREA
- APPROXIMATE CLASS III AREA
- UNDERSIDE REPAIR
- BRIDGE JOINT DEMOLITION
- TEST LOCATION

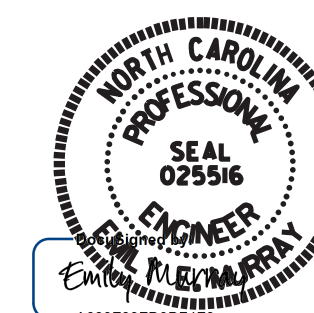
TEST LOCATION	* CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#6	2 3/8"	5920
#7	2 3/8"	5460
#8	2 7/8"	6110

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 02/25/2019.

* CONCRETE COVER FOR TOP BARS IN THE DECK ARE BASED ON DECK EVALUATION DATED 02/25/2018. EXISTING BRIDGE PLANS INDICATE 2/2" CONCRETE COVER.

PROJECT NO. 15BPR.45
DUPLIN COUNTY
 BRIDGE NO. 300433

SHEET 3 OF 4



5/20/2019

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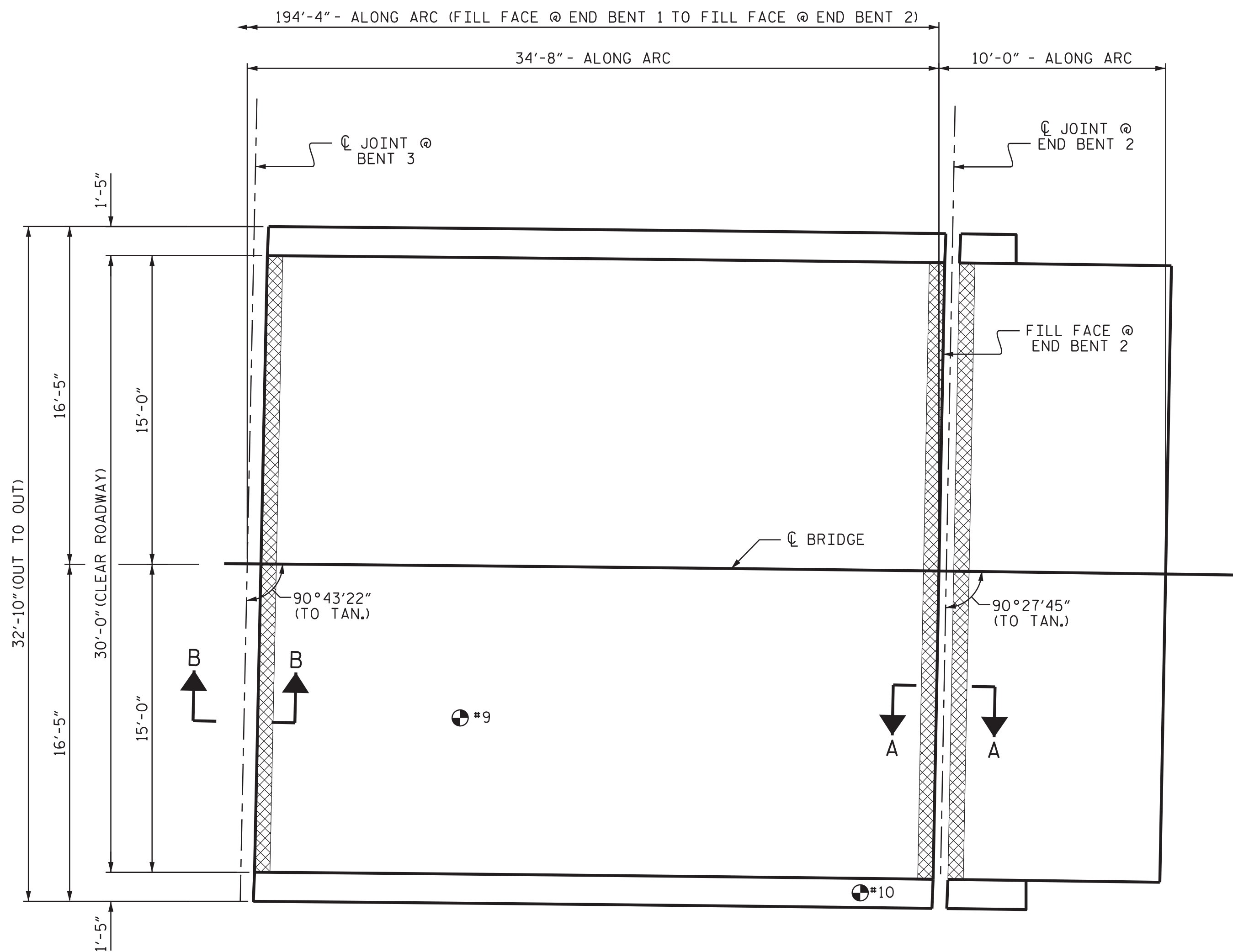
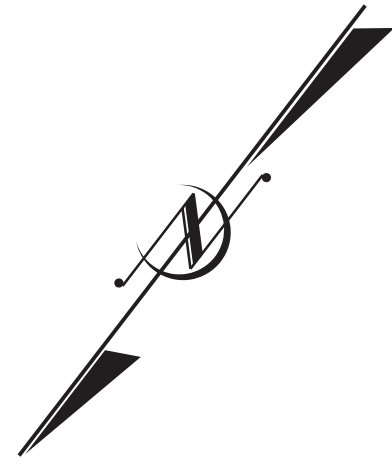
PLAN OF SPANS

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1			3			S1-6
2			4			31

DRAWN BY : R. G. BEAUCHAMP DATE : 02/19
 CHECKED BY : D. A. GLADDEN DATE : 03/19



PLAN OF SPAN D

NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

PRIOR TO PLACEMENT OF THE LMC OVERLAY ACROSS THE DECK SPANS, THE CONTRACTOR SHALL SUBMIT A POUR SEQUENCE FOR APPROVAL BY THE ENGINEER.

FOR SECTION A-A AND B-B, SEE "JOINT REPAIR DETAILS" SHEET.

FOR BRIDGE JOINT DEMOLITION, SEE "JOINT REPAIR DETAILS" SHEET.

DRAWN BY : R. G. BEAUCHAMP DATE : 02/19
 CHECKED BY : D. A. GLADDEN DATE : 03/19

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

APPROACH SLAB			SPAN D		
	ESTIMATE	ACTUAL		ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	33.3 SY		SCARIFYING BRIDGE DECK	115.5 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	33.3 SY		HYDRO-DEMOLITION OF BRIDGE DECK	115.5 SY	
CLASS II SURFACE PREPARATION	0.0 SY		CLASS II SURFACE PREPARATION	0.0 SY	
BRIDGE JOINT DEMOLITION	15.0 SF		BRIDGE JOINT DEMOLITION	30.0 SF	
EPOXY RESIN INJECTION	0.0 LF		EPOXY RESIN INJECTION	0.0 LF	
GROOVING BRIDGE FLOORS	243.0 SF		GROOVING BRIDGE FLOORS	909.0 SF	
LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	1.9 CY		LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	6.4 CY	
PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	33.3 SY		PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	115.5 SY	

UNDERSIDE OF DECK REPAIRS

SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	0.0	0.0		
INTERIOR DIAPHRAGMS	0.0	0.0		
CONCRETE CURB AND RAIL	0.0	0.0		
	ESTIMATE		ACTUAL	
UNDERSIDE EPOXY RESIN INJECTION	0.0	LF		

VALUES IN CHARTS REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. SEE REPAIR DETAILS.

- APPROXIMATE CLASS II AREA
- APPROXIMATE CLASS III AREA
- UNDERSIDE REPAIR
- BRIDGE JOINT DEMOLITION
- TEST LOCATION

TEST LOCATION	* CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#9	2 5/8"	5580
#10	2 5/8"	5770

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 02/25/2019.

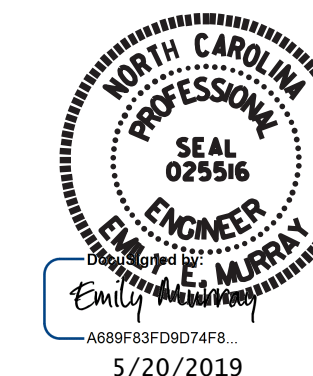
* CONCRETE COVER FOR TOP BARS IN THE DECK ARE BASED ON DECK EVALUATION DATED 02/25/2018, EXISTING BRIDGE PLANS INDICATE 2 1/2" CONCRETE COVER.

PROJECT NO. 15BPR.45
DUPLIN COUNTY
 BRIDGE NO. 300433

SHEET 4 OF 4

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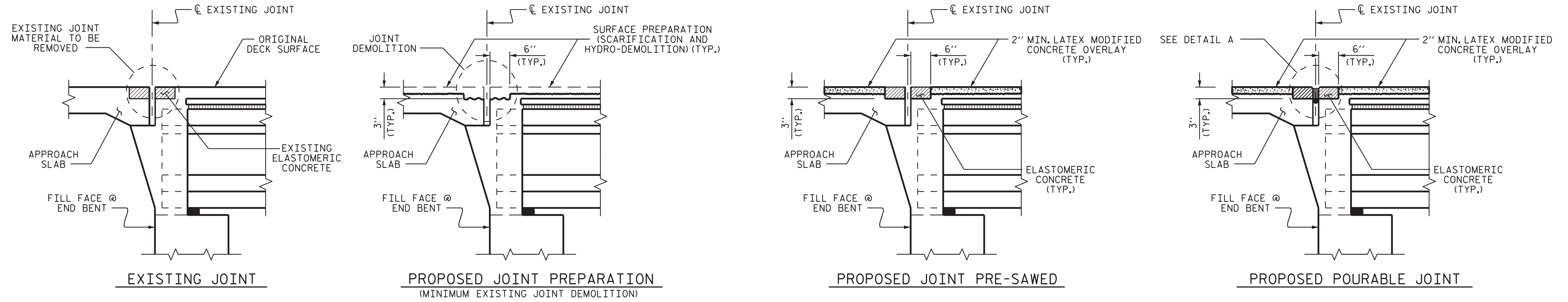
PLAN OF SPANS



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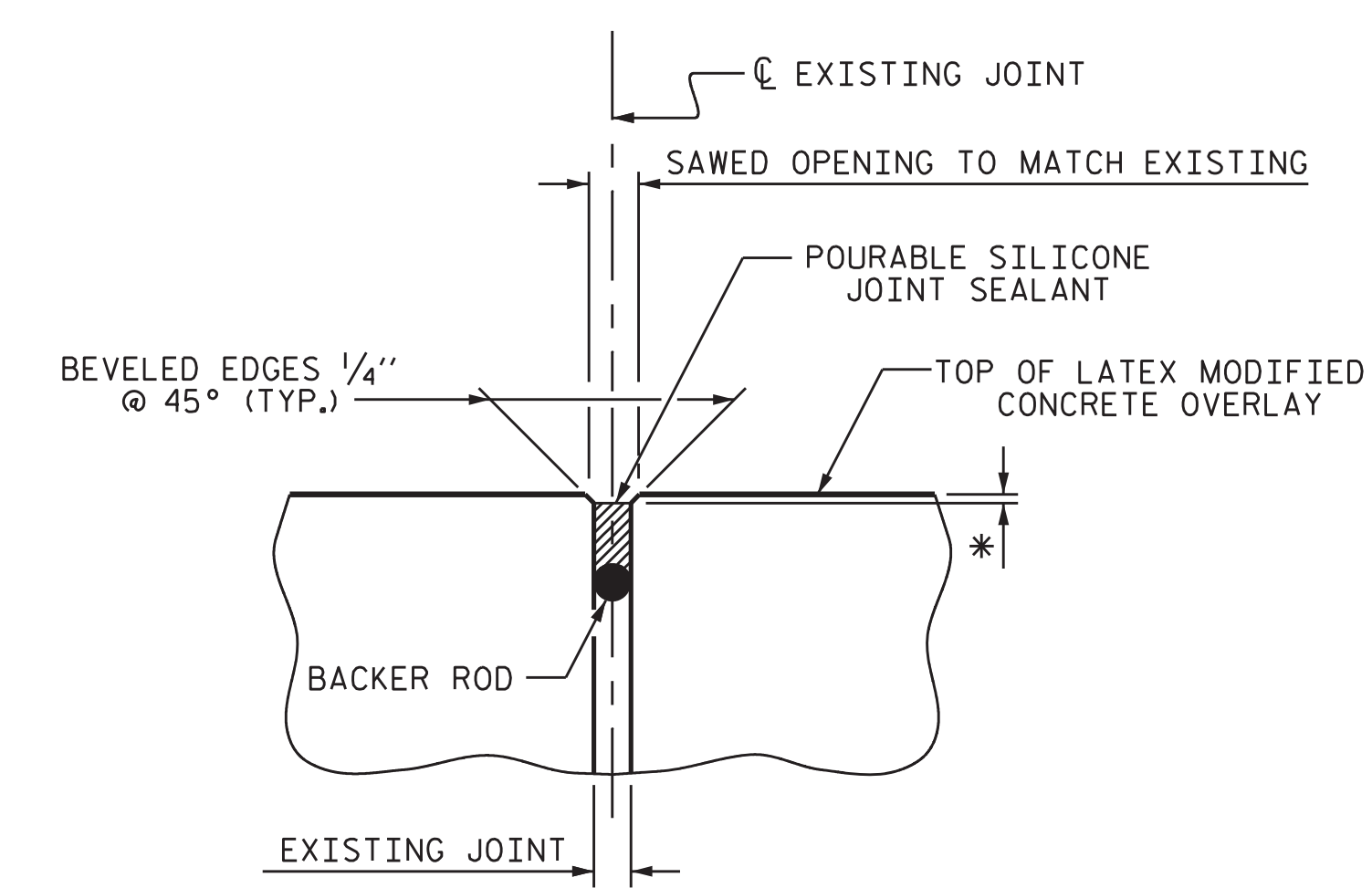
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1			3			S1-7
2			4			TOTAL SHEETS 31



JOINT INSTALLATION SEQUENCE AT END BENTS (SECTION A-A)

NOTES

- THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF THE ACTUAL JOINT OPENING VARIES FROM THE OPENING ALLOWED BY THE JOINT SEAL MATERIAL, NOTIFY THE ENGINEER. REVISION TO THE JOINT SEAL SIZE AND TYPE MIGHT BE NECESSARY.
- THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS FOR THE JOINT SEALS IN LIEU OF SAWING THE JOINT.
- FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.
- FOAM JOINT SEALS FOR PRESERVATION SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION.
- THE INSTALLED FOAM JOINT SEALS FOR PRESERVATION SHALL BE WATER TIGHT.
- FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.
- FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.
- POURABLE SILICONE JOINT SEALANT AND BACKER ROD SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION.
- THE INSTALLED POURABLE SILICONE JOINT SEALANT SHALL BE WATER TIGHT.
- FOR LOCATION OF SECTION A-A AND B-B, SEE PLAN OF SPAN SHEET.
- HYDRO-DEMOLITION OR EXCAVATION OF CONCRETE AT EXISTING JOINTS SHALL RESULT IN THE BOTTOM OF THE EXCAVATION BEING REASONABLY FLAT AND LEVEL TO PROVIDE SUFFICIENT SUBSTRATE FOR PLACEMENT AND SUPPORT OF ELASTOMERIC CONCRETE.
- WIDTH OF THE FOAM JOINT SEAL IS BASED ON JOINT OPENINGS. THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL.
- RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.
- DEMOLISH BRIDGE JOINT AREA TO THE NECESSARY DEPTH, SUCH THAT ELASTOMERIC CONCRETE SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE, NOT LATEX MODIFIED CONCRETE.
- IF THE EMBEDDED PORTION OF AN EXISTING WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, OR IF UNSOUND CONCRETE IS REMOVED TO WITHIN 2" OF A WATERSTOP, THE ENTIRE WATERSTOP SHALL BE REMOVED. IF SUCH EXCAVATION EXTENDS MORE THAN 2" BELOW THE BOTTOM OF THE PLANNED ELASTOMERIC CONCRETE HEADER, AS SHOW, APPROVED REPAIR CONCRETE SHALL BE PLACED IN THE EXCAVATION AREA TO THE ELEVATION OF THE BOTTOM OF THE ELASTOMERIC CONCRETE.



DETAIL A (PROPOSED)

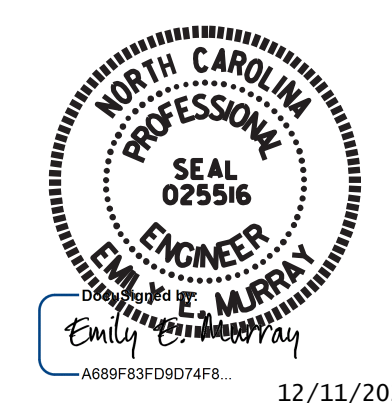
* POURABLE SILICONE JOINT SEALANT SHALL BE RECESSED AS PER MANUFACTURER'S RECOMMENDATIONS.

POURABLE SILICONE JOINT SEALANT		
END BENT 1	31.9	LF
END BENT 2	31.8	LF
TOTAL	63.7	LF

ELASTOMERIC CONCRETE FOR PRESERVATION		
END BENT 1	7.5	CU. FT.
BENT 1	7.5	CU. FT.
BENT 2	7.5	CU. FT.
BENT 3	7.5	CU. FT.
END BENT 2	7.5	CU. FT.
TOTAL	37.5	CU. FT.

PROJECT NO. 15BPR.45
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 BRIDGE NO. 300433

SHEET 1 OF 2



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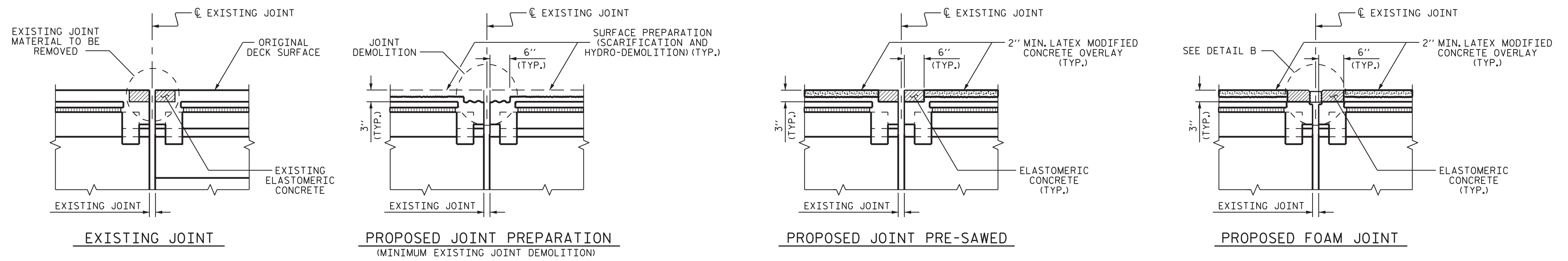
JOINT REPAIR DETAILS

DRAWN BY : R. G. BEAUCHAMP DATE : 2/19
 CHECKED BY : J. R. MCROY DATE : 4/19

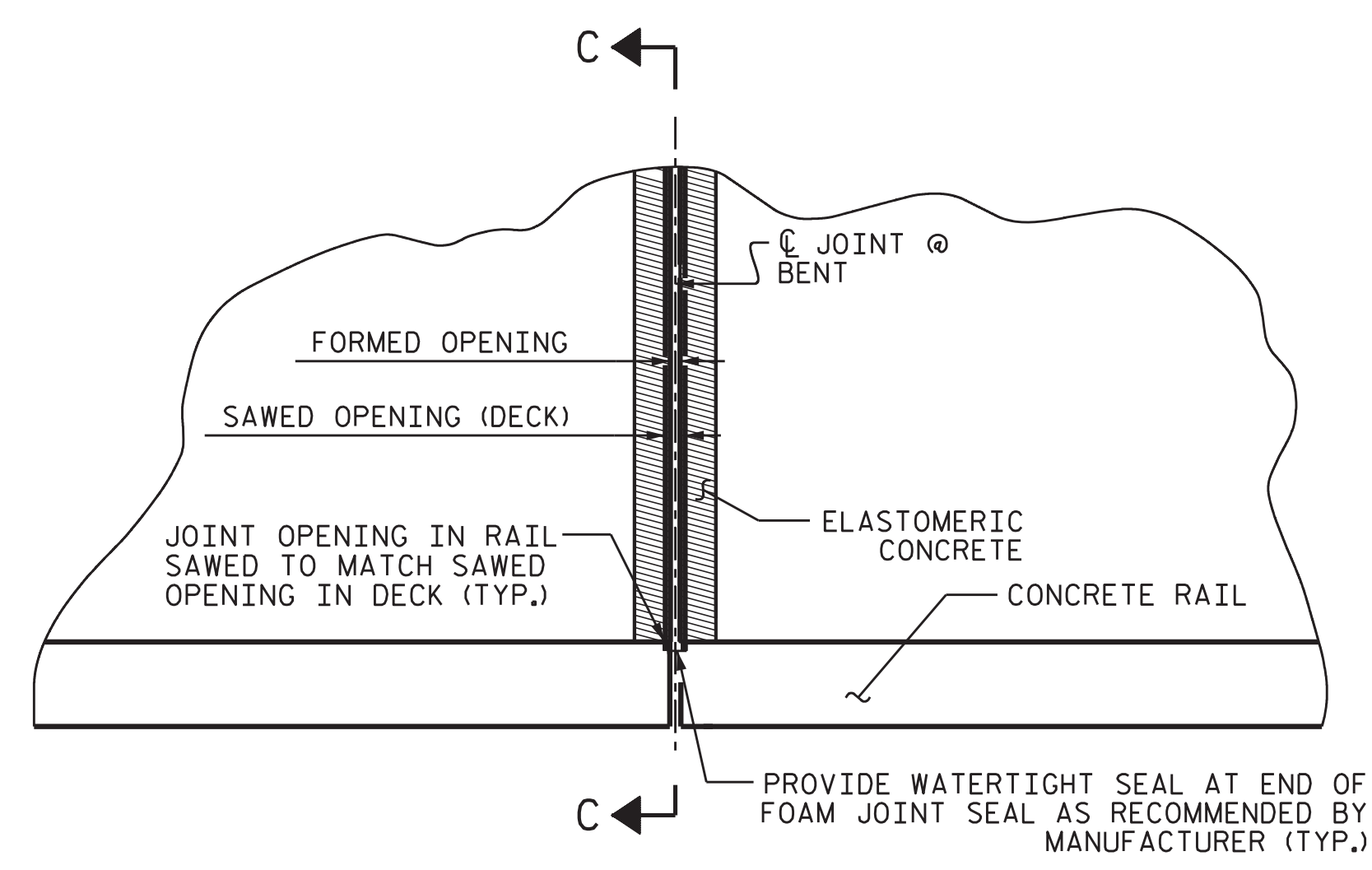
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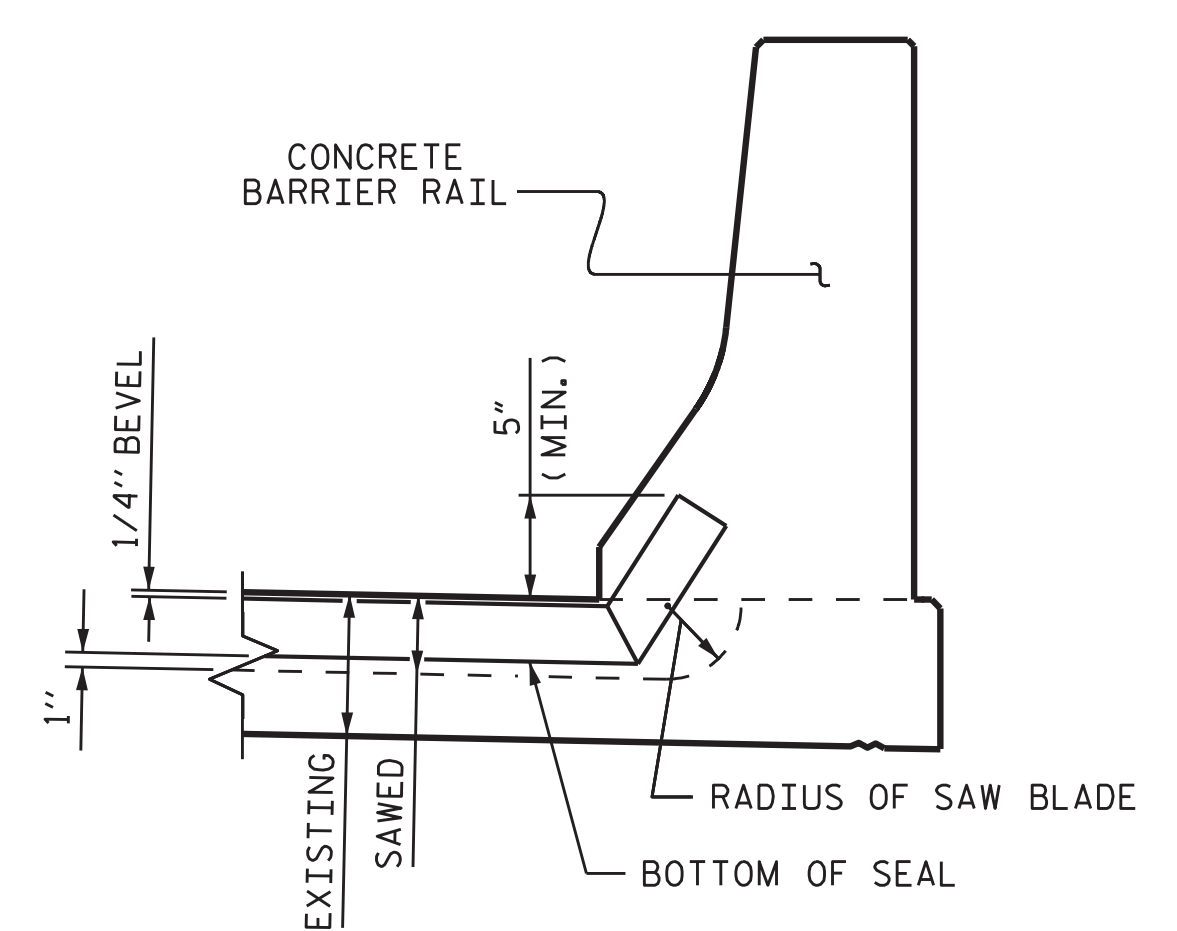
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2			4			



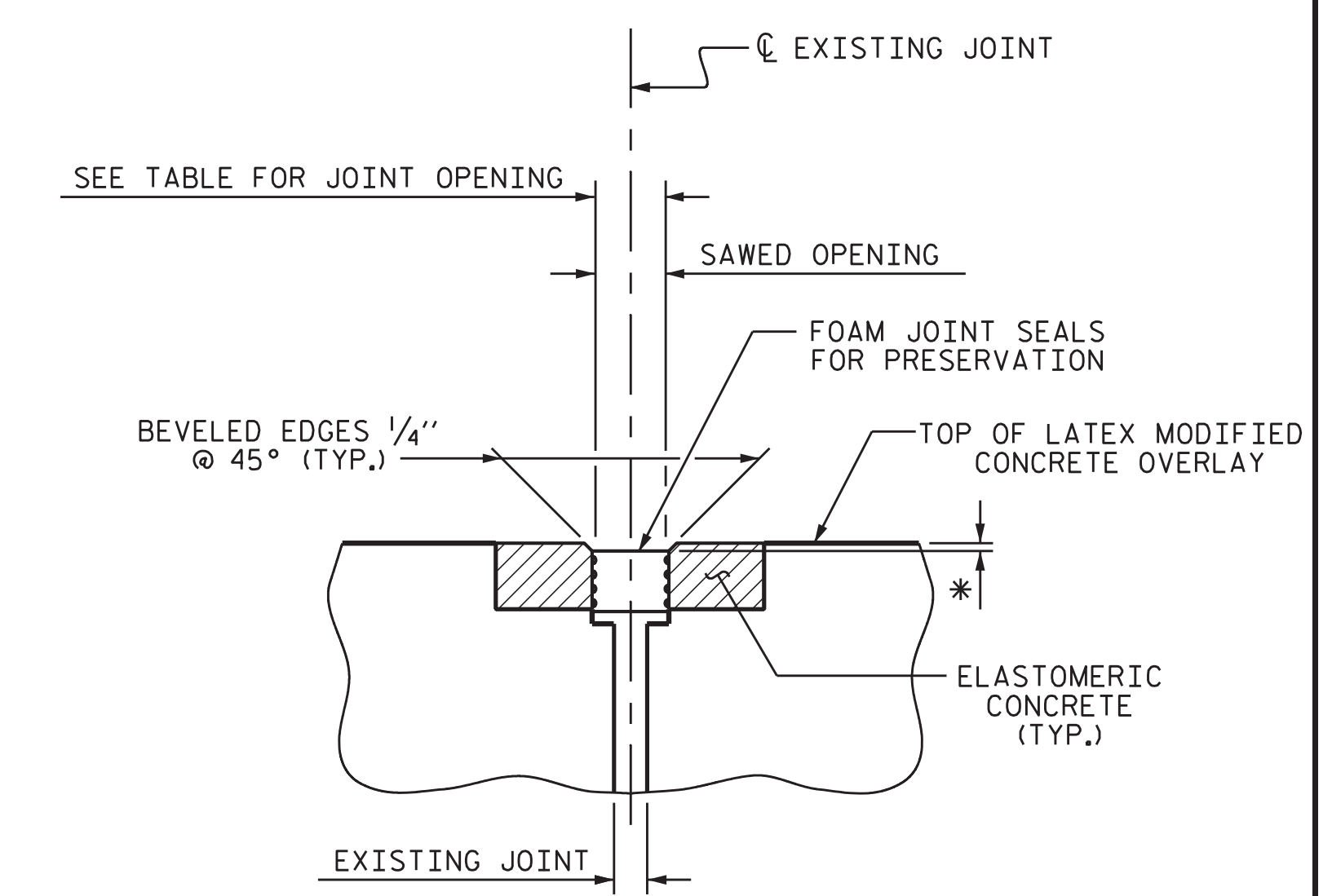
JOINT INSTALLATION SEQUENCE AT BENTS (SECTION B-B)



PLAN



SECTION C-C



DETAIL B
(PROPOSED)

* FOAM JOINT SEALS FOR PRESERVATION SHALL BE RECESSED AS PER MANUFACTURER'S RECOMMENDATIONS.

JOINT SEAL DETAILS AT BENTS

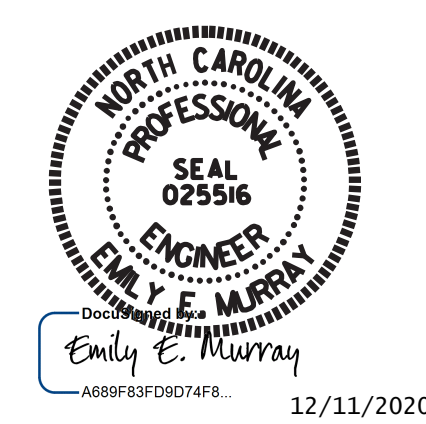
MOVEMENT AND SETTING AT FOAM JOINT					
LOCATION	SKEW ANGLE	NOMINAL UNCOMPRESSED SEAL WIDTH	PERPENDICULAR JOINT OPENING AT 45°	PERPENDICULAR JOINT OPENING AT 60°	PERPENDICULAR JOINT OPENING AT 90°
BENT 1	91°39'37"	**	1 1/16"	1 3/16"	1 7/16"
BENT 2	91°11'30"	**	1 1/16"	1 3/16"	1 7/16"
BENT 3	90°43'22"	**	1 1/16"	1 3/16"	1 7/16"

TOTAL MOVEMENT IS CALCULATED ALONG THE CENTERLINE OF ROADWAY. JOINT OPENINGS ARE MEASURED PERPENDICULAR TO JOINT.
 ** THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL BASED ON JOINT OPENINGS.

FOAM JOINT SEALS FOR PRESERVATION		
BENT 1	31.9	LF
BENT 2	31.8	LF
BENT 3	31.8	LF
TOTAL	95.5	LF

PROJECT NO. 15BPR.45
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 BRIDGE NO. 300433

SHEET 2 OF 2



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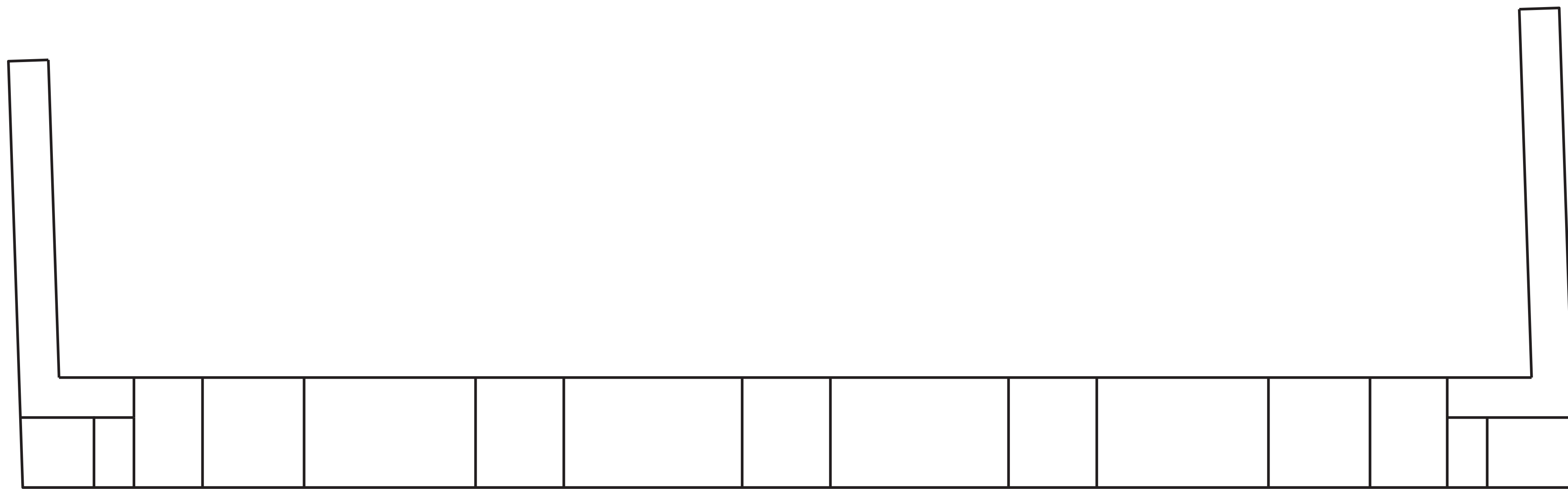
JOINT REPAIR DETAILS

DRAWN BY : R. G. BEAUCHAMP DATE : 2/19
 CHECKED BY : J. R. MCROY DATE : 4/19

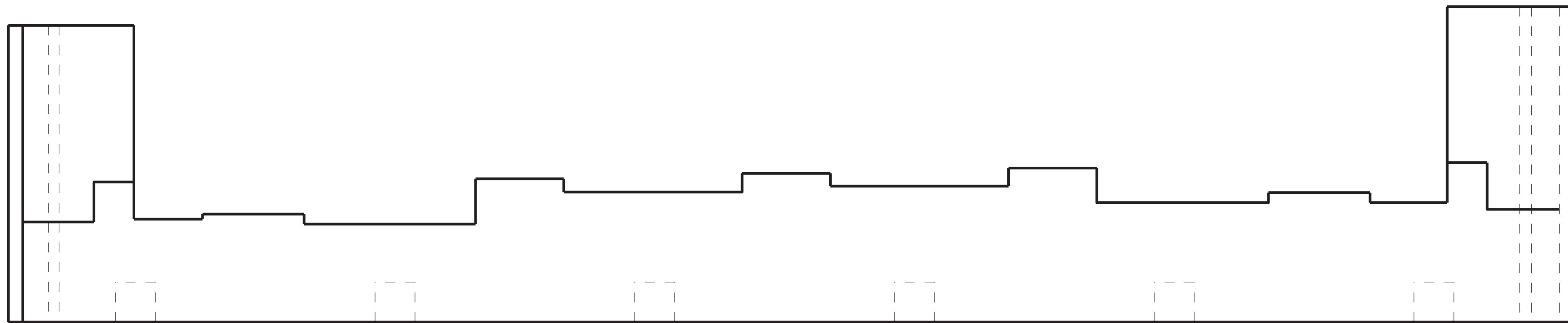
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1			3			S1-9
2			4			TOTAL SHEETS 31



TOP OF CAP @ END BENT 1

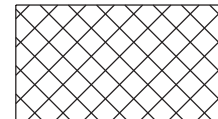
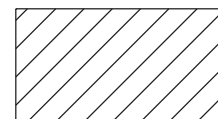



ELEVATION @ END BENT 1 (SPAN A)

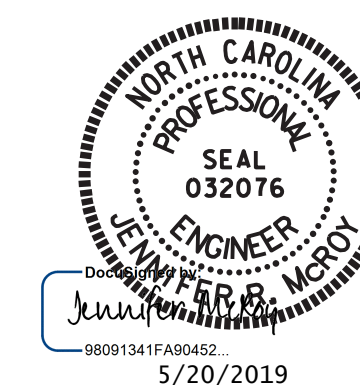
AS-BUILT REPAIR QUANTITY TABLE

REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF BENT CAP		106.8		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 2" MIN. CLEAR TO SAWCUT.

-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION (ERI)

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 BRIDGE NO. 300433



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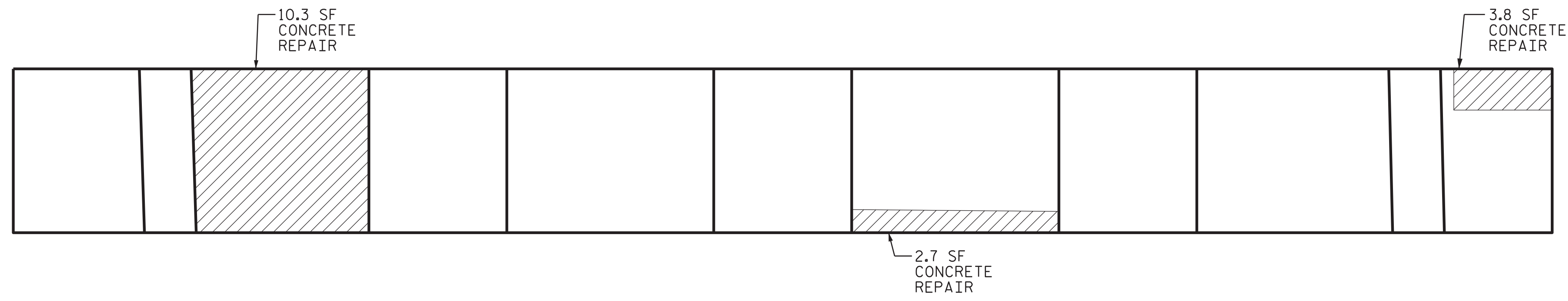
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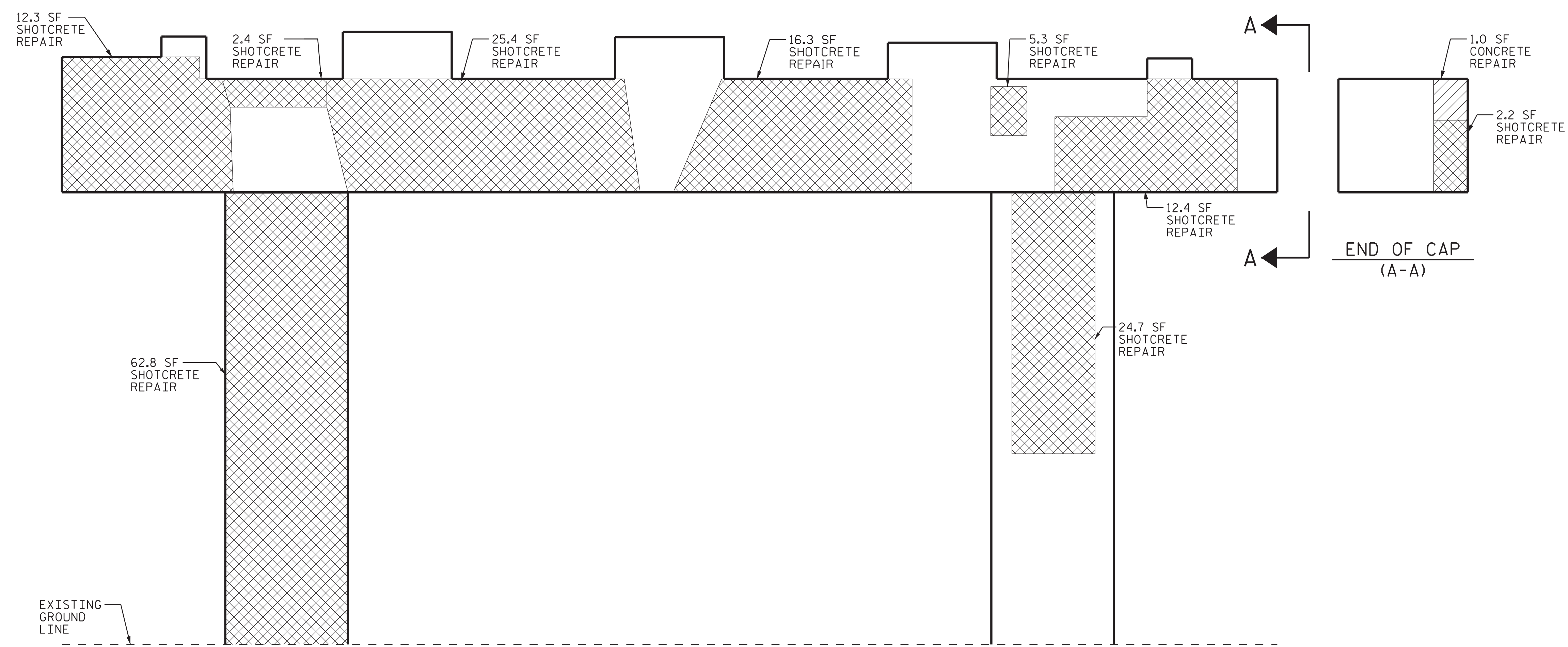
END BENT 1

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1			3			TOTAL SHEETS
2			4			31

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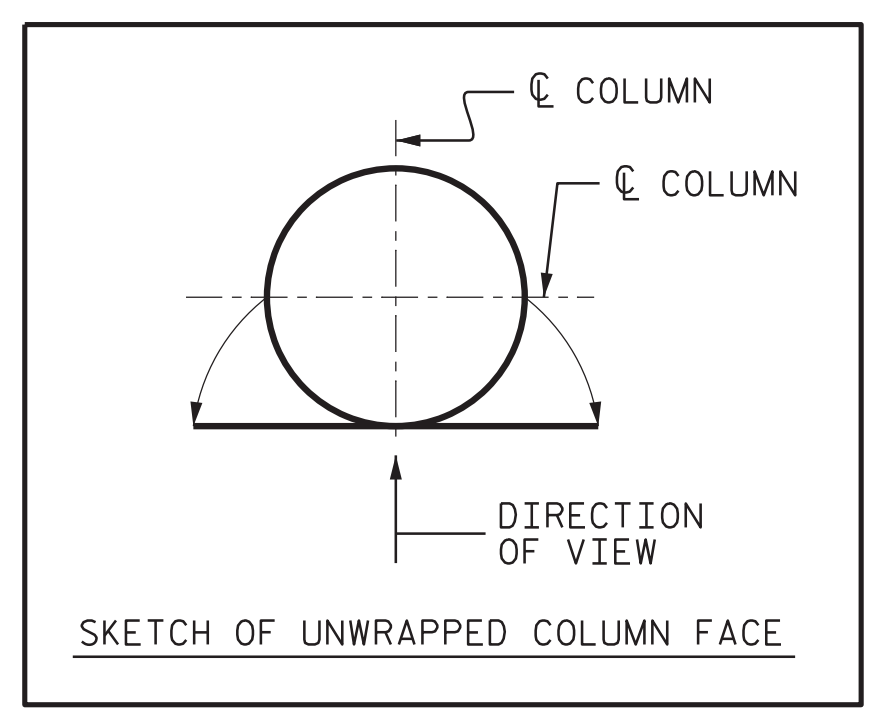
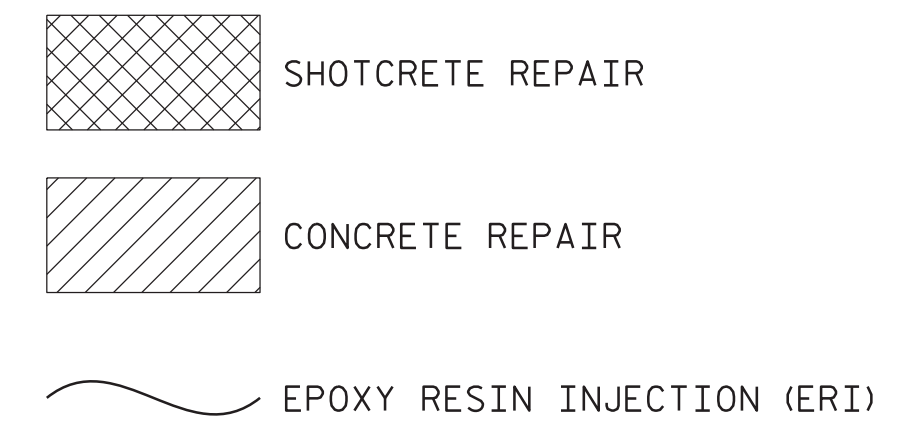
TOP OF CAP @ BENT 1



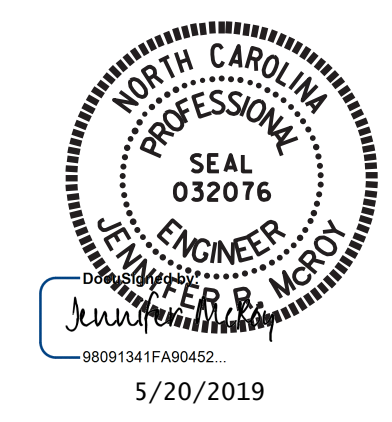
ELEVATION @ BENT 1 (SPAN A)
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	117.5	58.7		
COLUMN	158.9	79.4		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	20.0	10.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.	LN. FT.	
CAP		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		94.2		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 2" MIN. CLEAR TO SAWCUT.



PROJECT NO. 15BPR.45
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**BENT 1
 (SPAN A)**

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2			4			TOTAL SHEETS: 31

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NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR SUMMARY OF QUANTITIES TABLE.

FOR BENT REPAIRS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

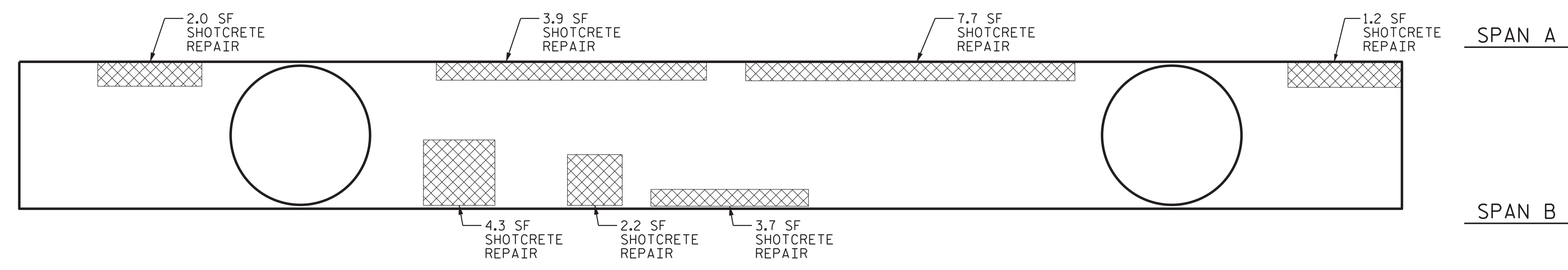
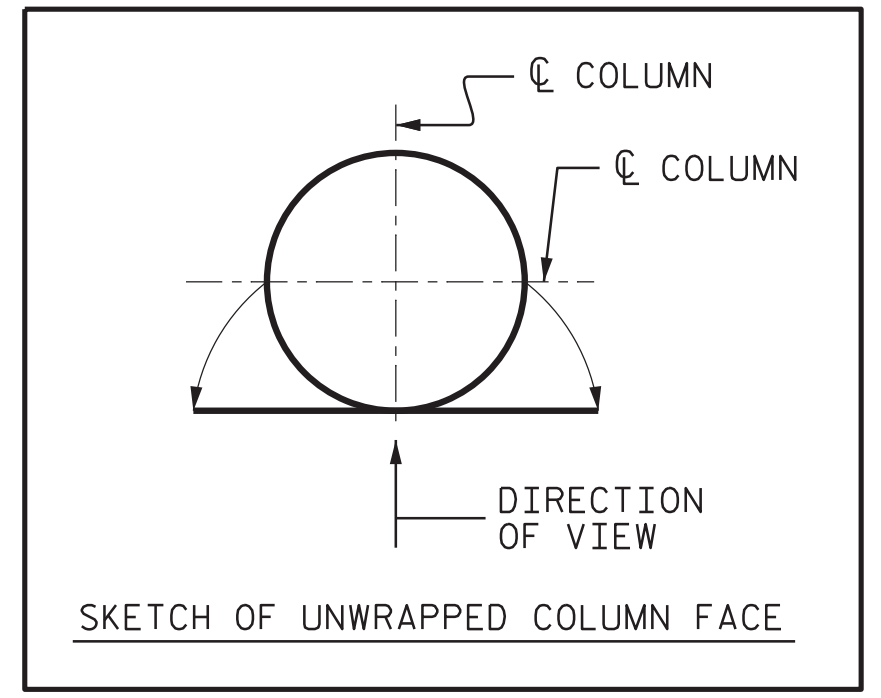
CONCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

EPOXY COATING SHALL BE APPLIED TO TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

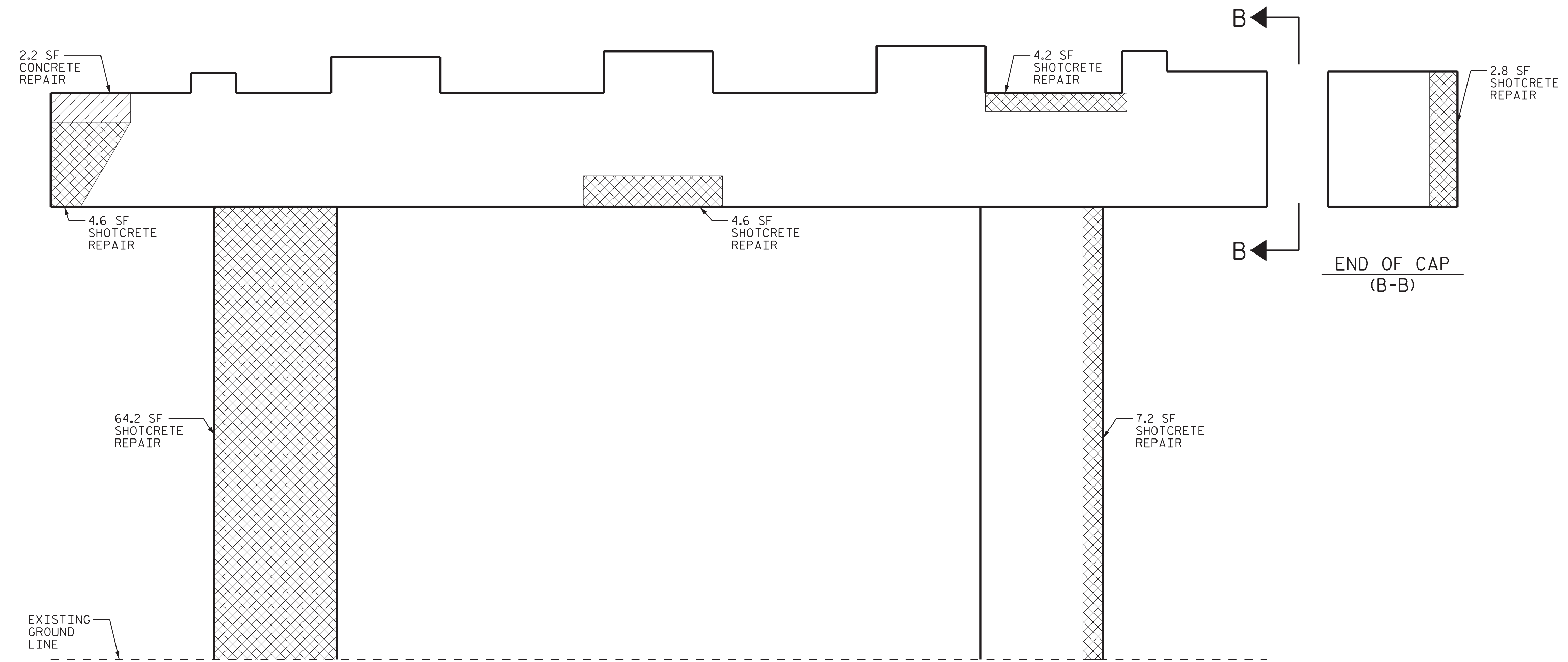
 SHOTCRETE REPAIR

 CONCRETE REPAIR

 EPOXY RESIN INJECTION (ERI)



BOTTOM OF CAP @ BENT 1

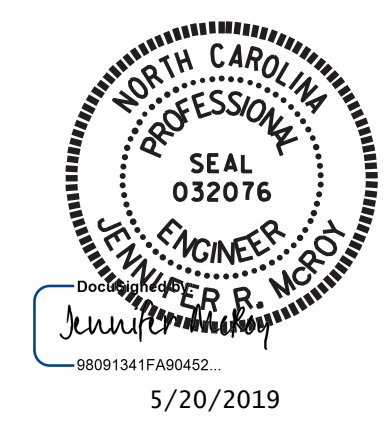


COLUMN 2

COLUMN 1

ELEVATION @ BENT 1 (SPAN B)
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

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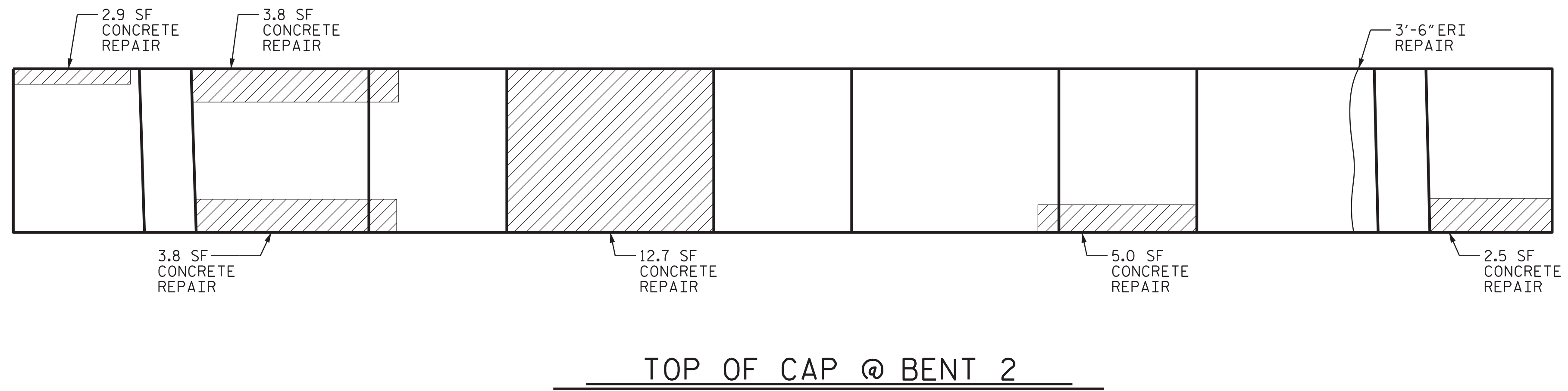
**BENT 1
 (SPAN B)**

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2			4			31

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 CHECKED BY : J. R. MCROY DATE : 3/19



SPAN C

SPAN B

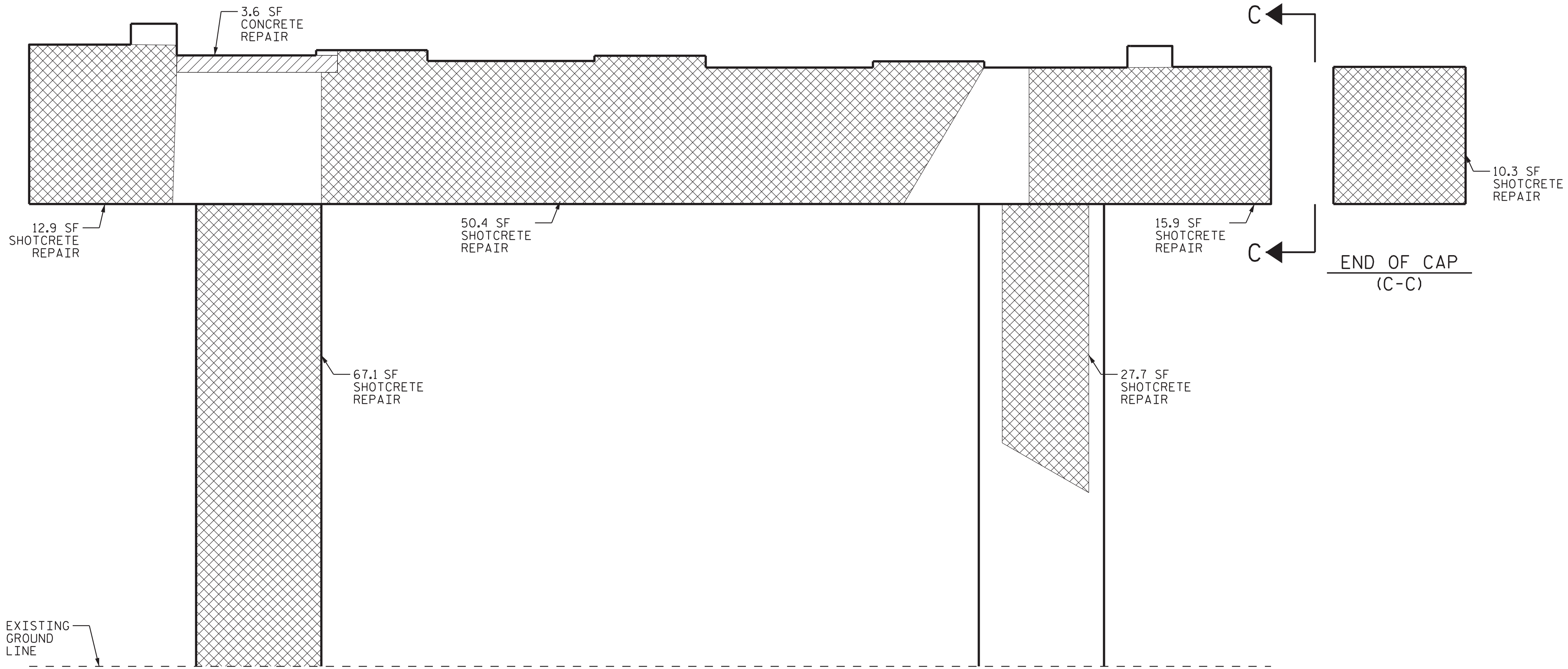
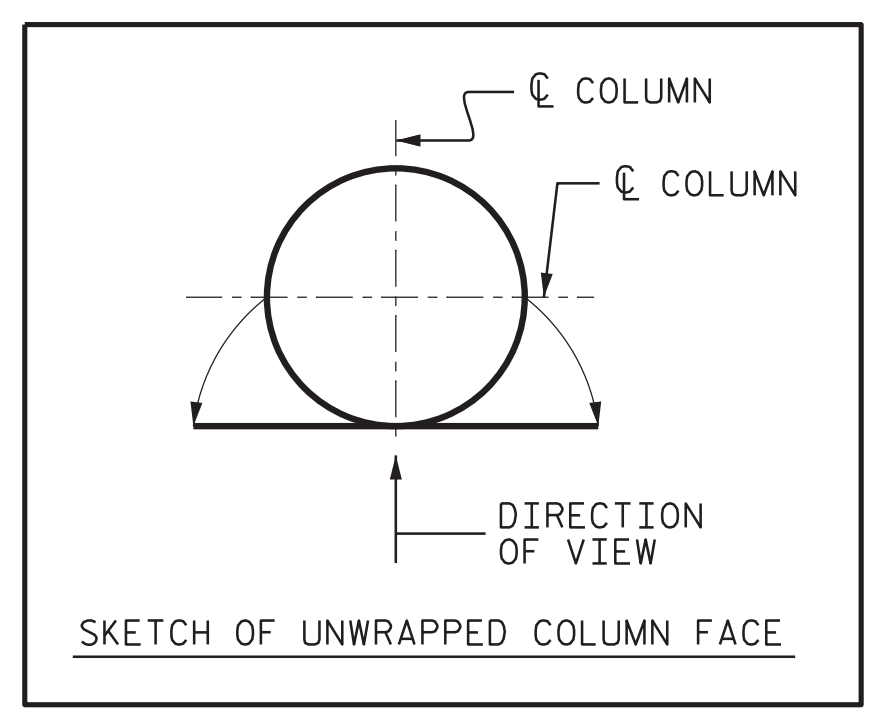
TOP OF CAP @ BENT 2

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	155.8	77.9		
COLUMN	175.6	87.8		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	38.4	19.2		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION	LN. FT.	LN. FT.		
CAP	6.5			
COLUMN	0.0			
EPOXY COATING	SQ. FT.	SQ. FT.		
TOP OF BENT CAP	94.2			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 2" MIN. CLEAR TO SAWCUT.

- SHOTCRETE REPAIR
- CONCRETE REPAIR
- EPOXY RESIN INJECTION (ERI)



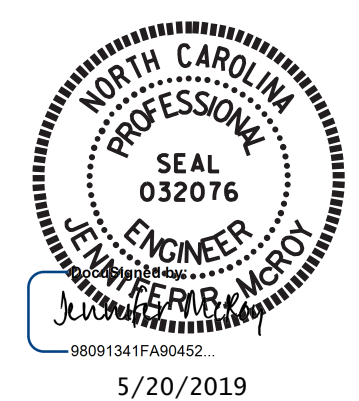
END OF CAP (C-C)

COLUMN 1

COLUMN 2

ELEVATION @ BENT 2 (SPAN B)
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

PROJECT NO. 15BPR.45
DUPLIN COUNTY
 BRIDGE NO. 300433



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
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**BENT 2
(SPAN B)**

DRAWN BY: R. G. BEAUCHAMP DATE: 3/19
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1			3			S1-13
2			4			TOTAL SHEETS: 31

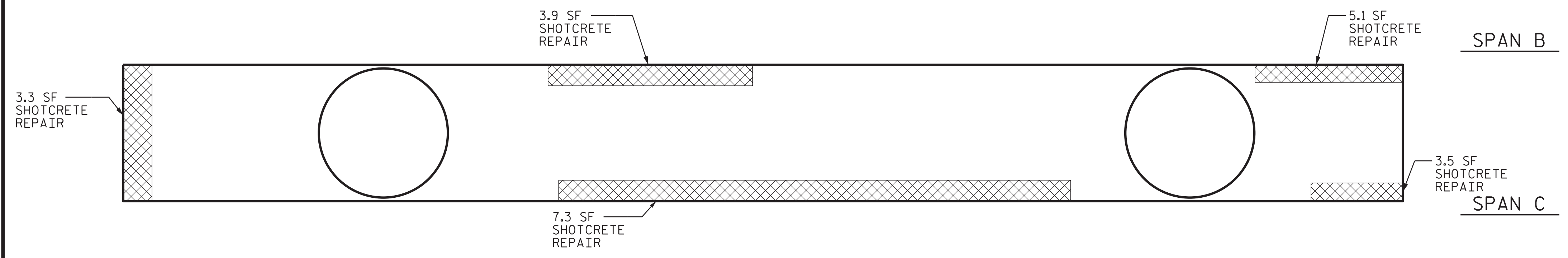
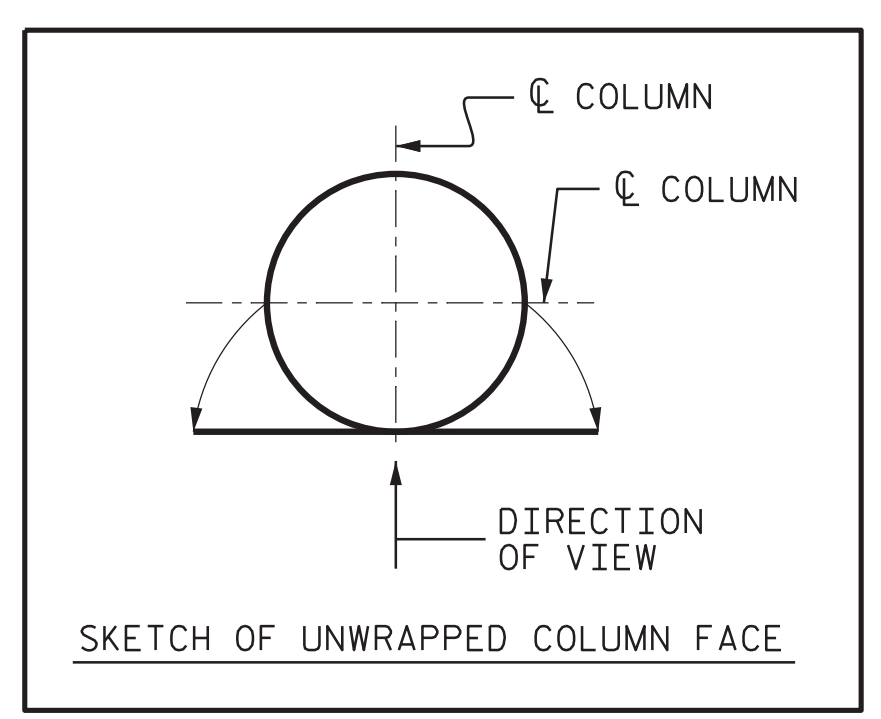
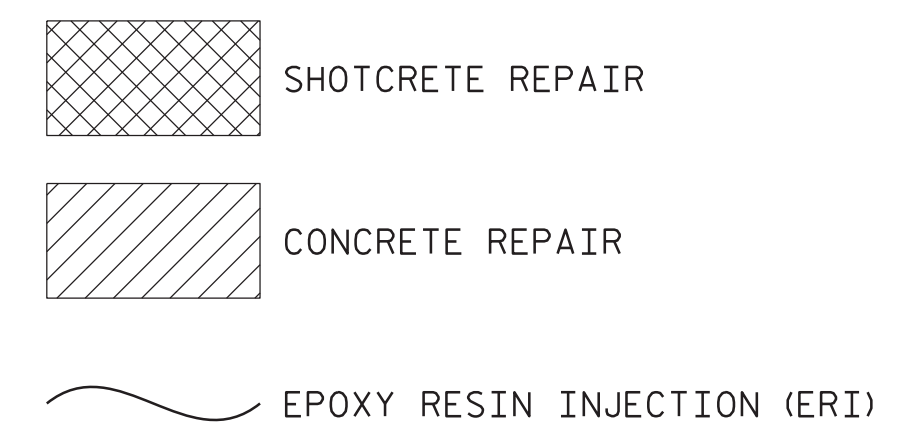
NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR SUMMARY OF QUANTITIES TABLE.

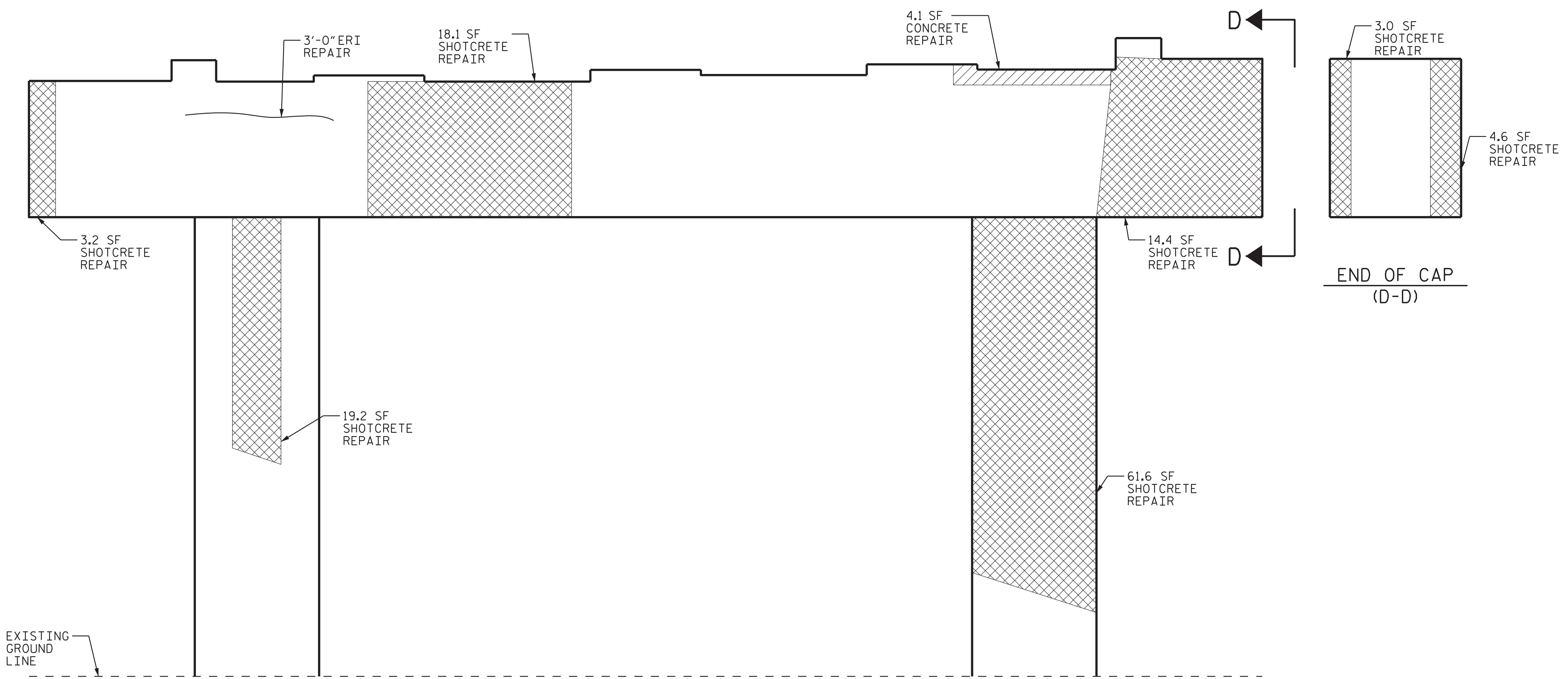
FOR BENT REPAIRS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

CONCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

EPOXY COATING SHALL BE APPLIED TO TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

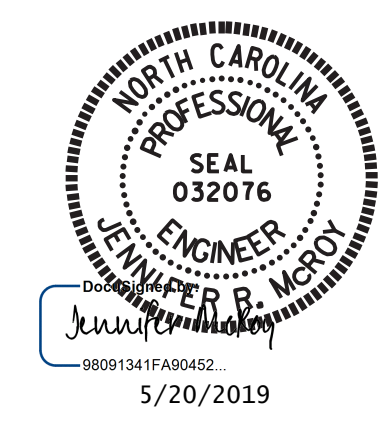


BOTTOM OF CAP @ BENT 2



ELEVATION @ BENT 2 (SPAN C)
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

PROJECT NO. 15BPR.45
DUPLIN COUNTY
 BRIDGE NO. 300433



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
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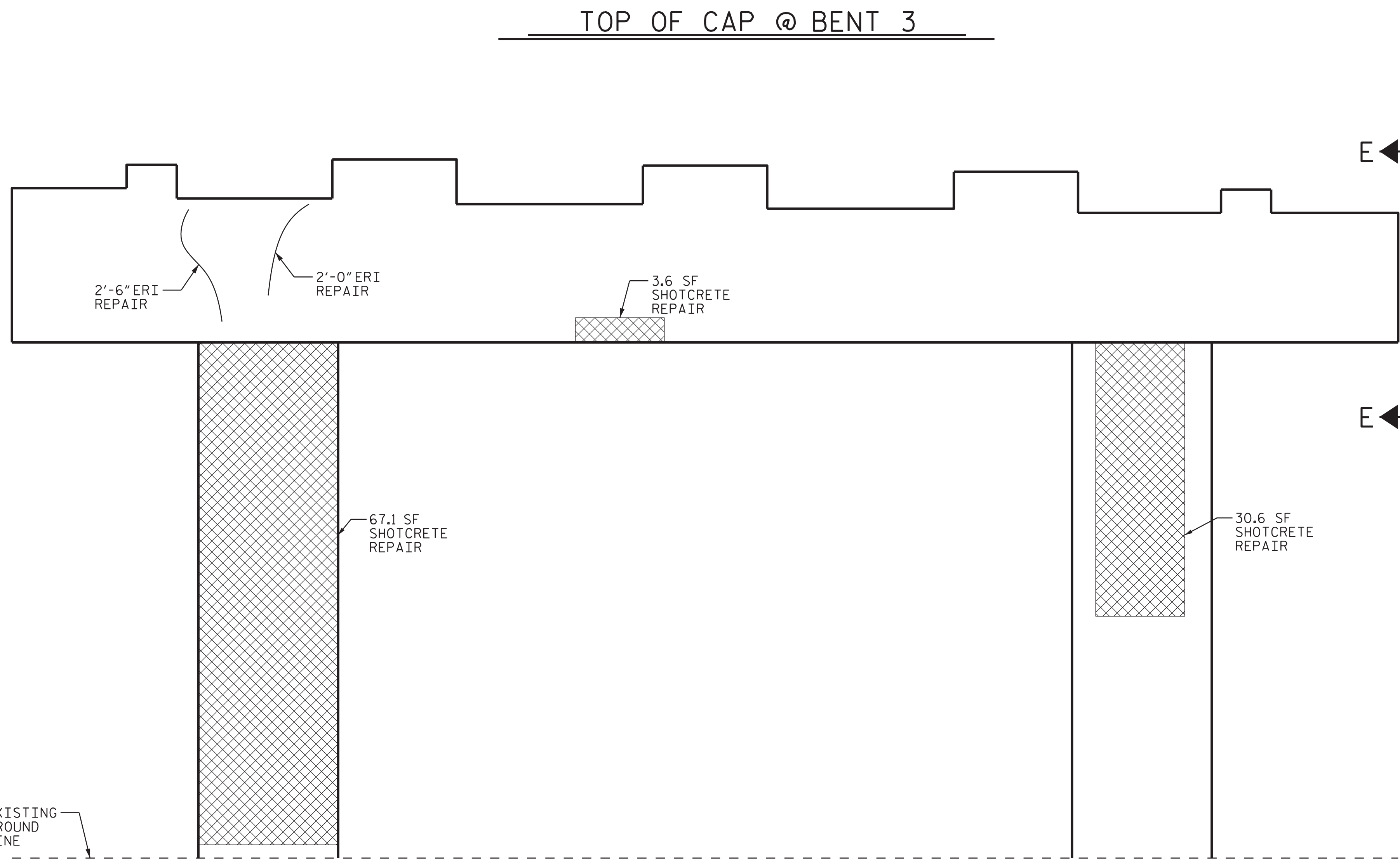
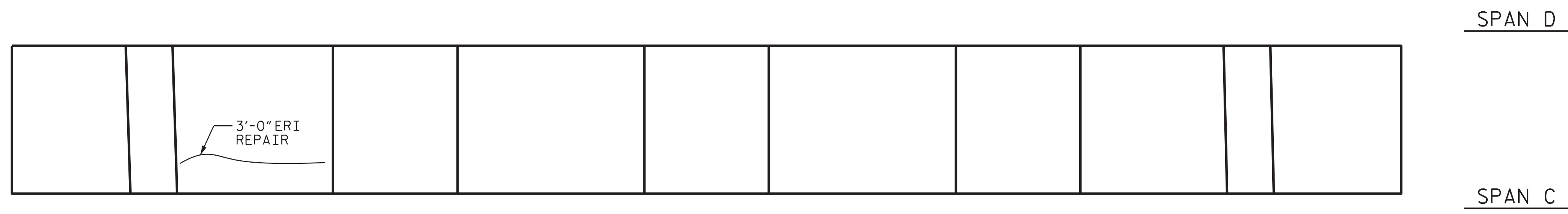
**BENT 2
 (SPAN C)**

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NO.	BY:	DATE:	NO.	BY:	DATE:	S1-14
1			3			TOTAL SHEETS
2			4			31

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 CHECKED BY: J. R. MCROY DATE: 3/19



SPAN D

SPAN C

TOP OF CAP @ BENT 3

END OF CAP (E-E)

COLUMN 1

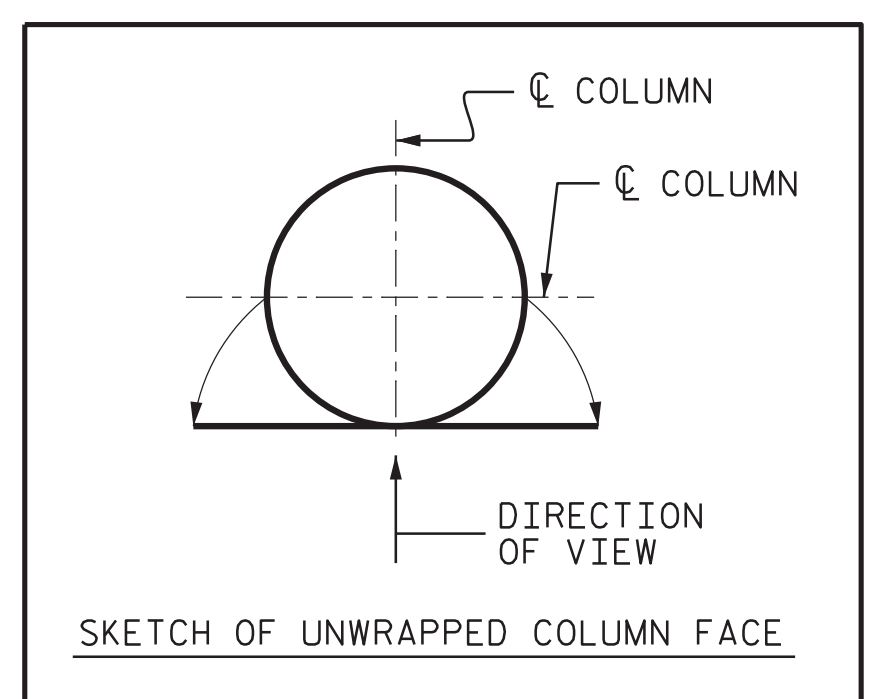
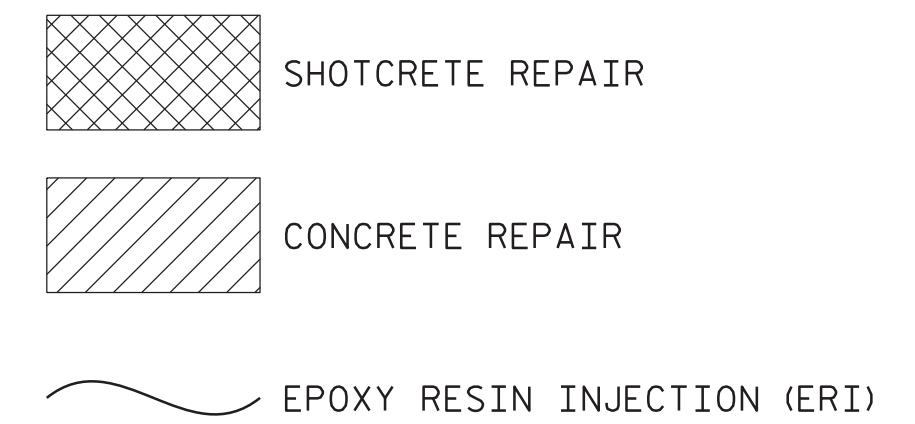
COLUMN 2

ELEVATION @ BENT 3 (SPAN C)
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

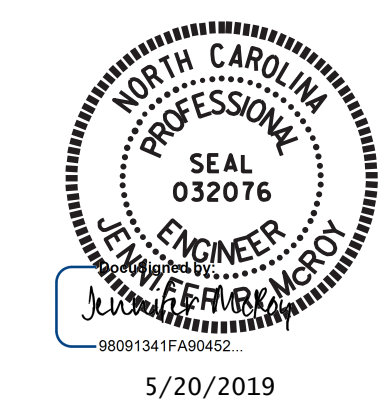
AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	71.2	35.6		
COLUMN	171.5	85.8		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		10.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF BENT CAP		94.2		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 2" MIN. CLEAR TO SAWCUT.



PROJECT NO. 15BPR.45
DUPLIN COUNTY
BRIDGE NO. 300433



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 3
(SPAN C)

DRAWN BY: R. G. BEAUCHAMP DATE: 3/19
CHECKED BY: J. R. MCROY DATE: 3/19

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1			3			S1-15
2			4			TOTAL SHEETS: 31

NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR SUMMARY OF QUANTITIES TABLE.

FOR BENT REPAIRS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

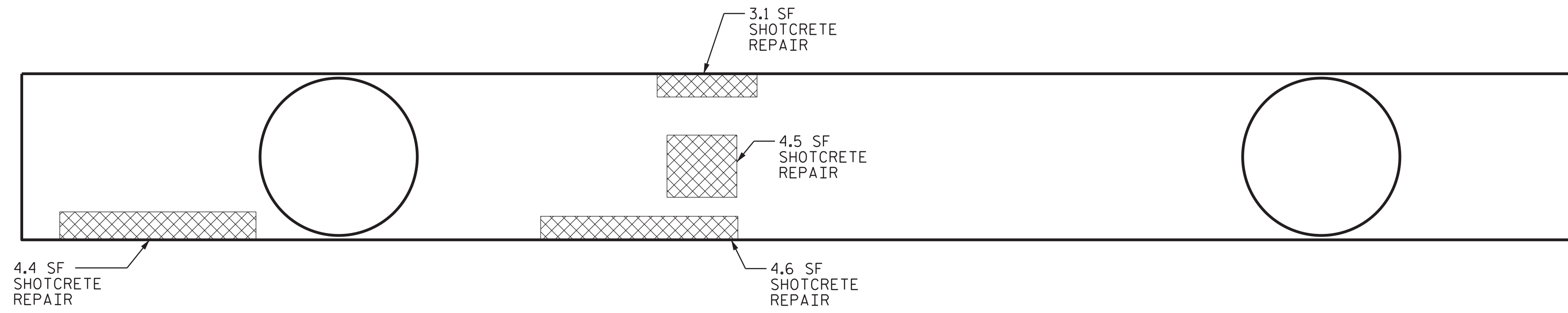
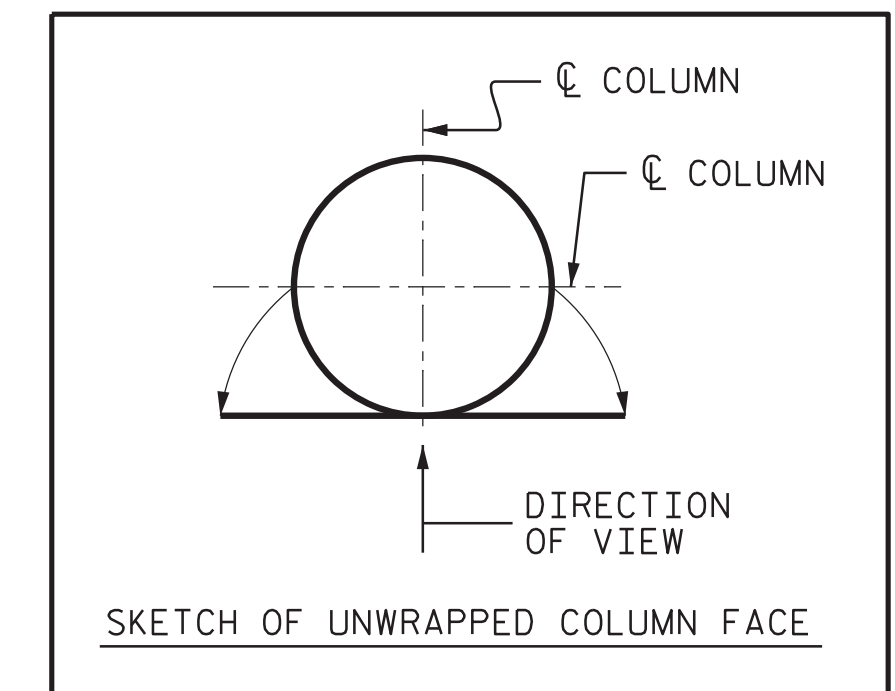
CONCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

EPOXY COATING SHALL BE APPLIED TO TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

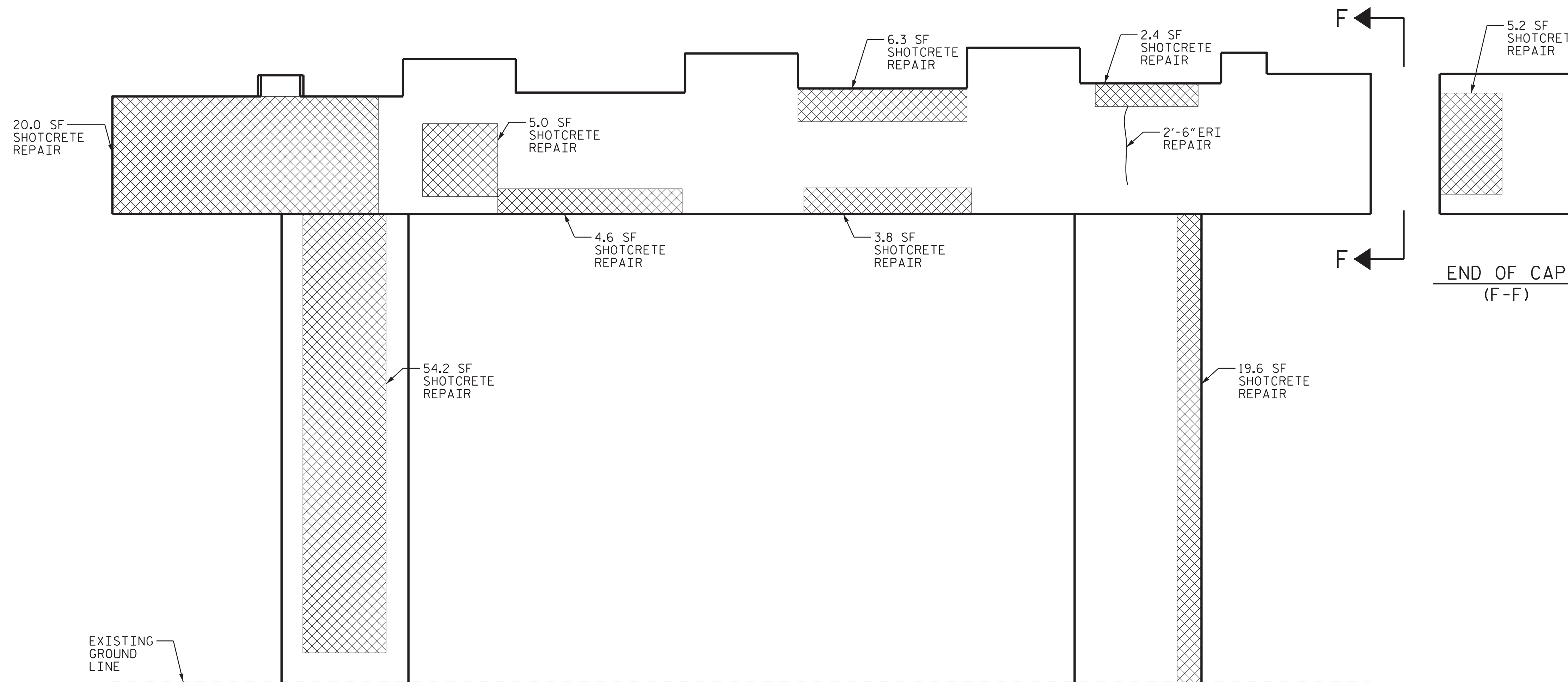
 SHOTCRETE REPAIR

 CONCRETE REPAIR

 EPOXY RESIN INJECTION (ERI)



BOTTOM OF CAP @ BENT 3



ELEVATION @ BENT 3 (SPAN D)

(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

PROJECT NO. 15BPR.45
DUPLIN COUNTY
 BRIDGE NO. 300433



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

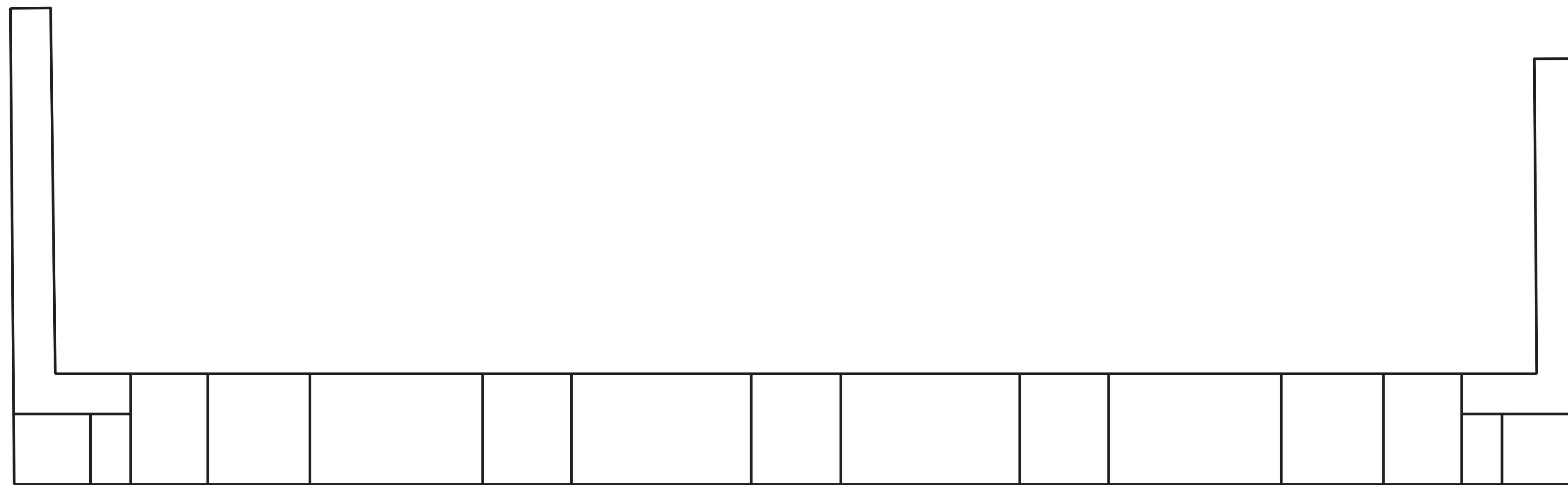
**BENT 3
 (SPAN D)**

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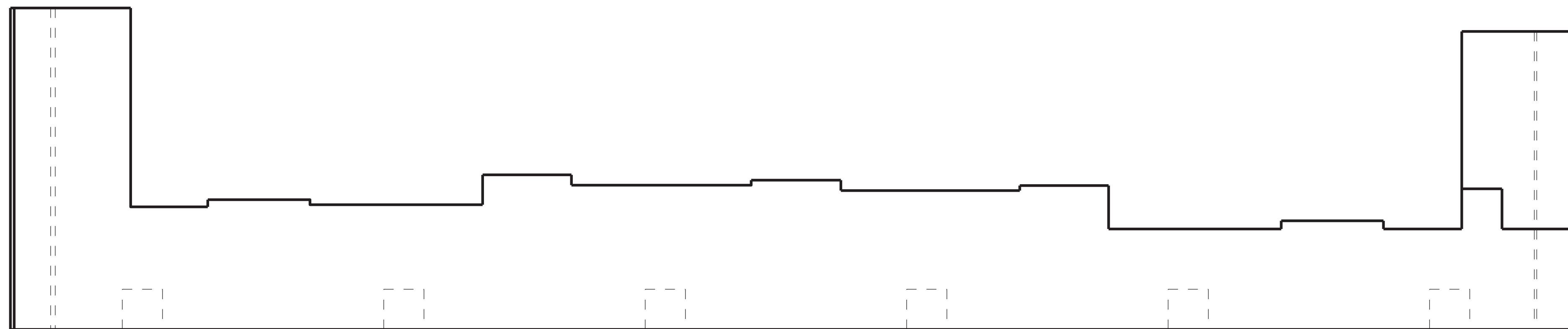
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1			3			S1-16
2			4			TOTAL SHEETS: 31

DRAWN BY: R. G. BEAUCHAMP DATE: 3/19
 CHECKED BY: J. R. MCROY DATE: 3/19



TOP OF CAP @ END BENT 2

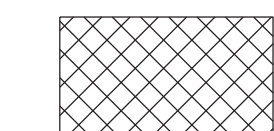


ELEVATION @ END BENT 2 (SPAN D)

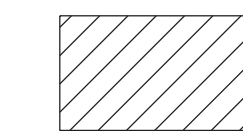
AS-BUILT REPAIR QUANTITY TABLE

REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
END BENT 2				
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF BENT CAP		106.8		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 2" MIN. CLEAR TO SAWCUT.



SHOTCRETE REPAIR



CONCRETE REPAIR



EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.45
DUPLIN COUNTY
 BRIDGE NO. 300433



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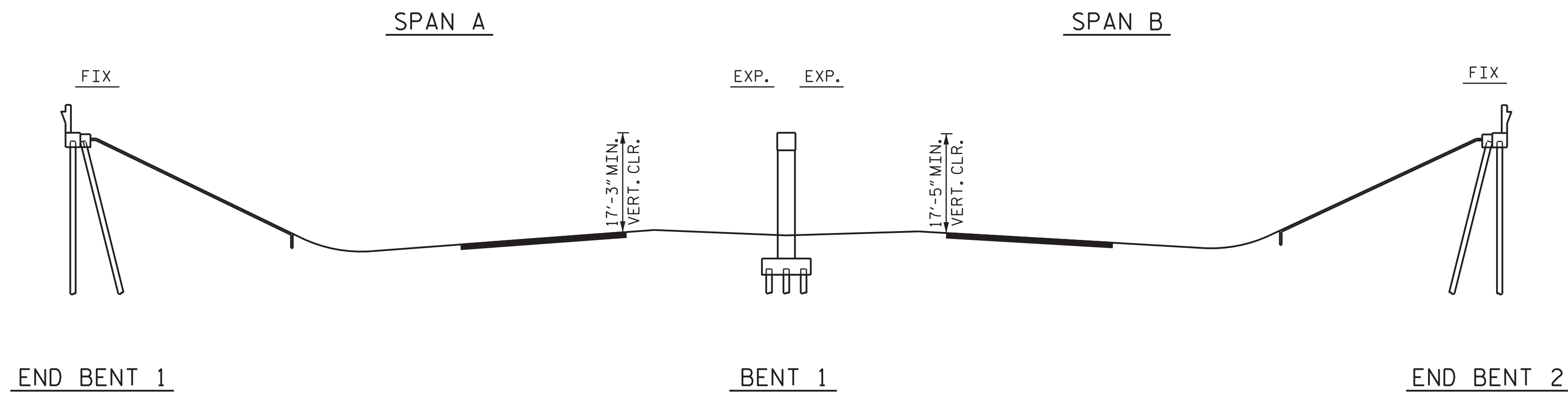
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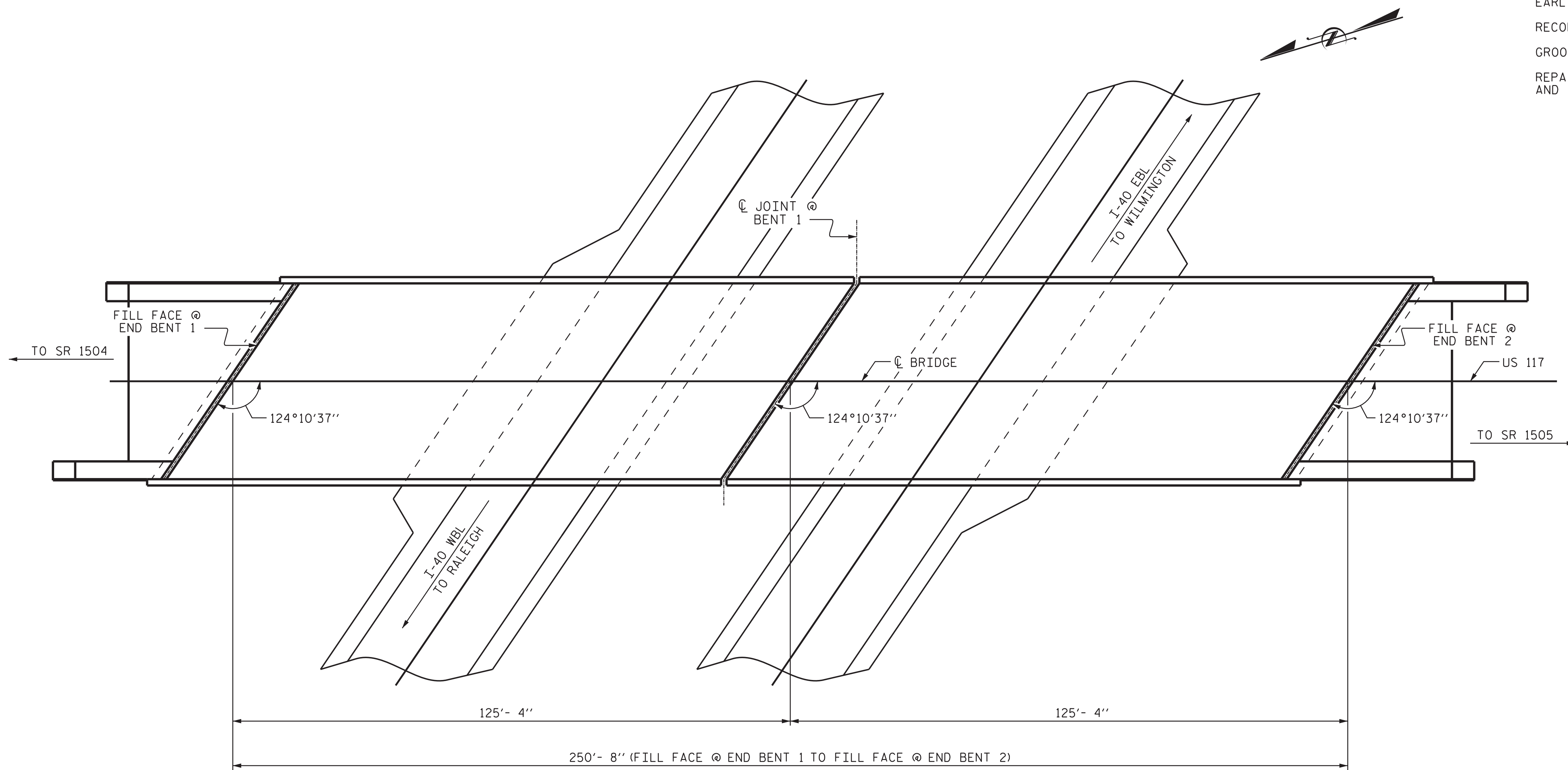
 END BENT 2

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1			3			TOTAL SHEETS
2			4			31

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 CHECKED BY : J. R. MCROY DATE : 3/19



SECTION ALONG C BRIDGE
 (SECTION TAKEN AT RIGHT ANGLE TO BENT AND END BENTS)



PLAN

(PILES, COLUMNS AND FOOTINGS, ARE NOT SHOWN FOR CLARITY)

NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND ROUTINE INSPECTION REPORT DATED 8/24/2017
 BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

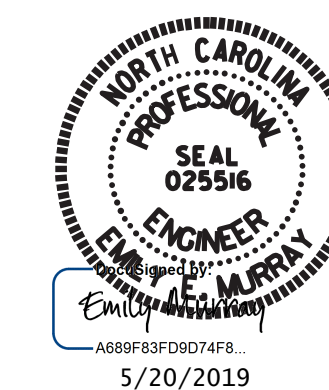
- PARTIALLY REMOVE BRIDGE DECK CONCRETE BY SCARIFICATION AND HYDRO-DEMOLITION METHODS.
- PERFORM DECK REPAIRS IN PREPARED AREAS.
- OVERLAY PREPARED BRIDGE DECK WITH LATEX MODIFIED CONCRETE - EARLY STRENGTH.
- RECONSTRUCT BRIDGE JOINTS AND INSTALL JOINT SEALS.
- GROOVE LATEX MODIFIED CONCRETE - EARLY STRENGTH.
- REPAIR SUBSTRUCTURE USING EPOXY RESIN INJECTION, SHOTCRETE, AND CONCRETE.

I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.

RESIDENT ENGINEER _____ DATE _____

PROJECT NO. 15BPR.45
PENDER COUNTY
 BRIDGE NO. 700219

SHEET 1 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER I-40
 ON US 117 BETWEEN
 SR 1504 AND SR 1505

DRAWN BY : D. A. GLADDEN DATE : 3/19
 CHECKED BY : J. R. MCROY DATE : 3/19



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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-1
1			3			TOTAL SHEETS
2			4			31



LOCATION SKETCH

INFORMATION INDICATED ON THE LOCATION SKETCH SHALL BE CONSIDERED GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL CONFIRM, THROUGH OTHER SOURCES, SPECIFIC INFORMATION REGARDING BRIDGES, ROADWAYS, UTILITIES, THE SURROUNDING AREA, AND ANY OTHER ASPECTS THAT MAY BE NECESSARY TO PERFORM AND COMPLETE THE PROJECT.

LOCATION COORDINATES	
LATITUDE	34° 36' 42.2"
LONGITUDE	77° 55' 13.8"

NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR SUMMARY OF QUANTITIES TABLE.

QUANTITIES HAVE BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION.

AT THE TIME OF PREPARATION OF THESE PLANS, IT WAS NOT ANTICIPATED THAT CLASS III SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR WOULD BE REQUIRED. HOWEVER, IT MAY BE DETERMINED THAT CLASS III SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR, OR OTHER WORK WILL BE NECESSARY TO PROPERLY COMPLETE THE INTENDED BRIDGE PRESERVATION/REHABILITATION WORK. THE CONTRACTOR SHALL BE PREPARED TO PERFORM SUCH WORK IN A TIMELY MANNER, AS DETERMINED IN THE FIELD. SUCH WORK SHALL BE CONSIDERED EXTRA WORK AND SHALL BE ADDRESSED AS 104-7 OF THE STANDARD SPECIFICATIONS. PROJECT SPECIAL PROVISIONS THAT OUTLINE REQUIREMENTS FOR THESE POTENTIAL ADDITIONAL WORK ITEMS HAVE BEEN PROVIDED IN PROJECT DOCUMENTS, BUT NO QUANTITIES HAVE BEEN LISTED. ACTUAL PAY ITEMS, QUANTITIES, AND COSTS WILL BE ESTABLISHED, AS REQUIRED, IF EXTRA WORK IS ENCOUNTERED.

CONCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

FOR CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLANS.

EXISTING JOINTS SHALL BE SEALED PRIOR TO BEGINNING REPAIRS OF BRIDGE DECK.

LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANE.

FOR SCARIFYING BRIDGE DECK, HYDRO-DEMOLITION OF BRIDGE DECK, CLASS II AND CLASS III SURFACE PREPARATION, SEE LMC OVERLAY SURFACE PREPARATION SPECIAL PROVISION.

FOR LATEX MODIFIED CONCRETE - EARLY STRENGTH AND PLACING AND FINISHING LATEX MODIFIED CONCRETE - EARLY STRENGTH, SEE LATEX MODIFIED CONCRETE - EARLY STRENGTH SPECIAL PROVISION.

FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR ELASTOMETRIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

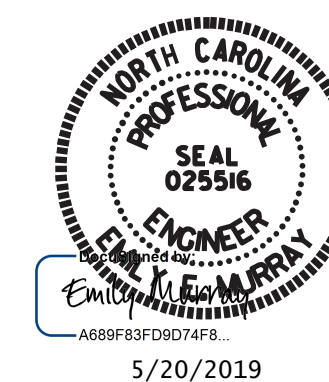
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

PROJECT NO. 15BPR.45
PENDER COUNTY
 BRIDGE NO. 700219

SHEET 2 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER I-40
 ON US 117 BETWEEN
 SR 1625 AND SR 1504

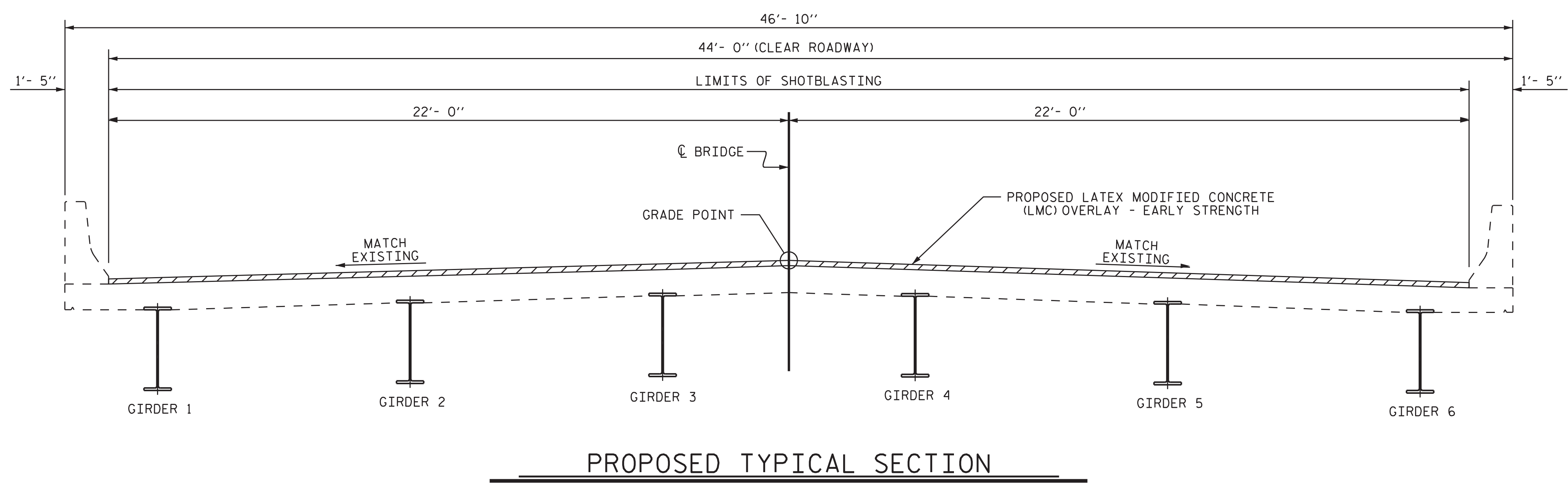
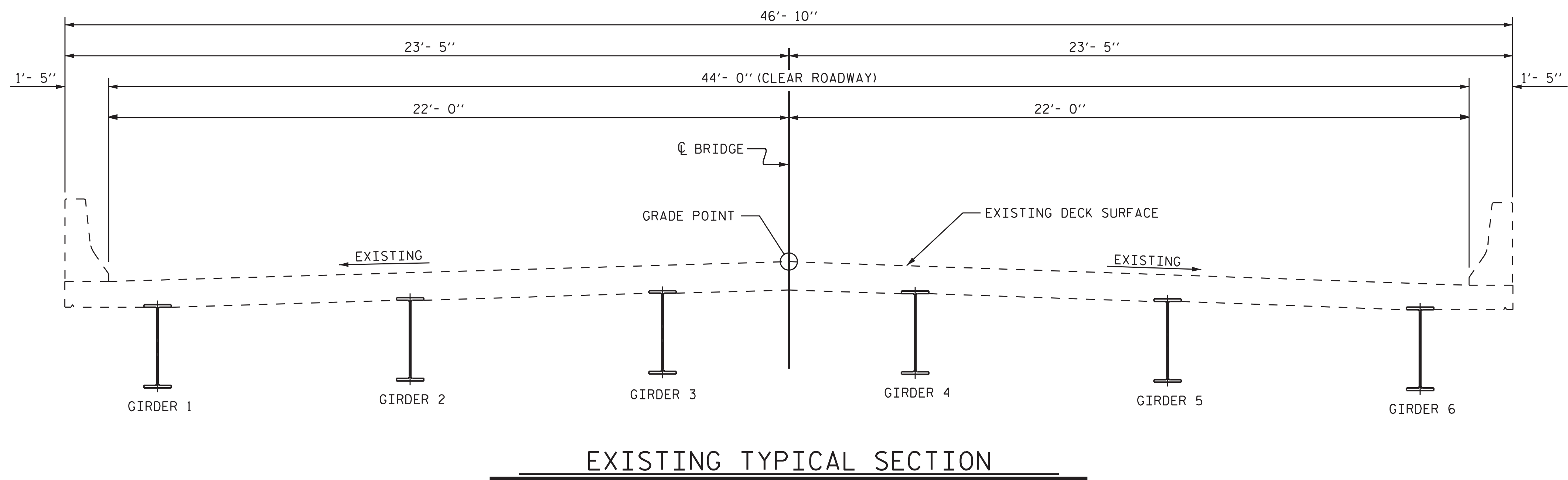
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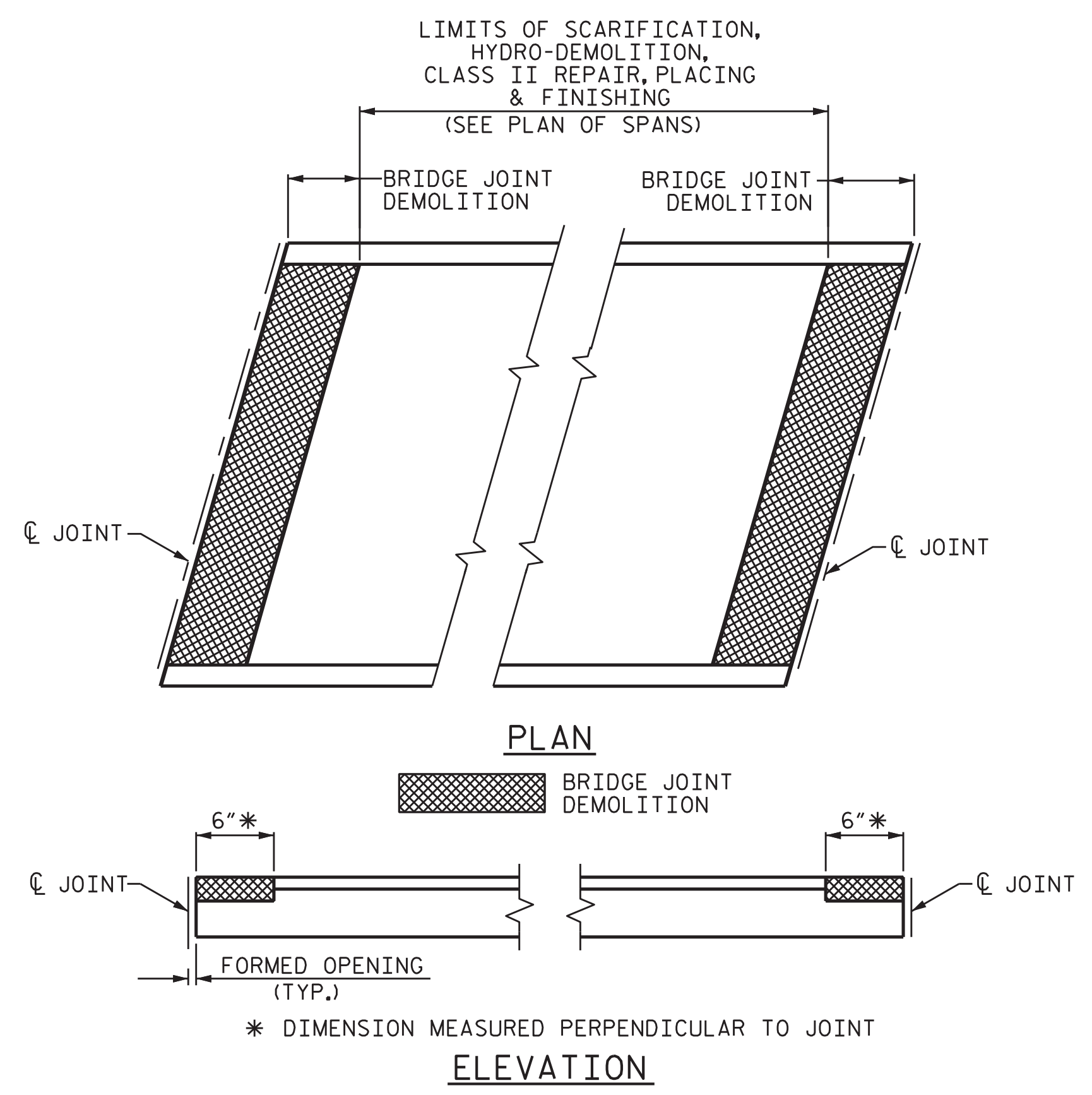
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-2
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : R. G. BEAUCHAMP DATE : 3/19
 CHECKED BY : J. R. MCROY DATE : 4/19

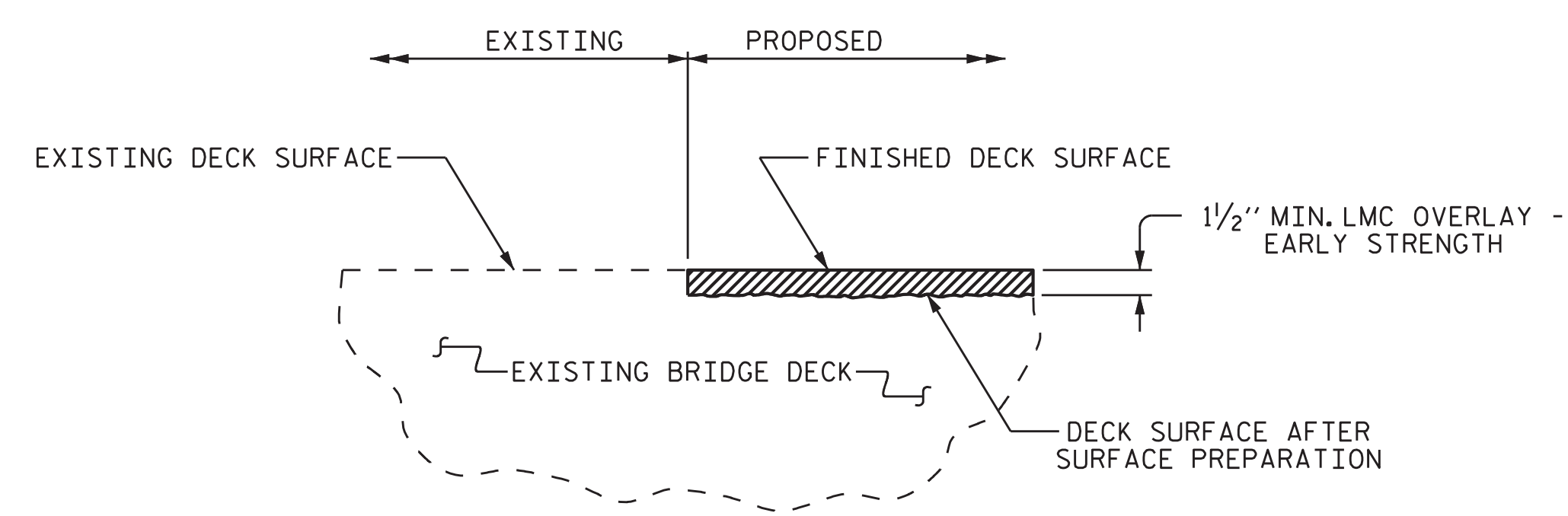
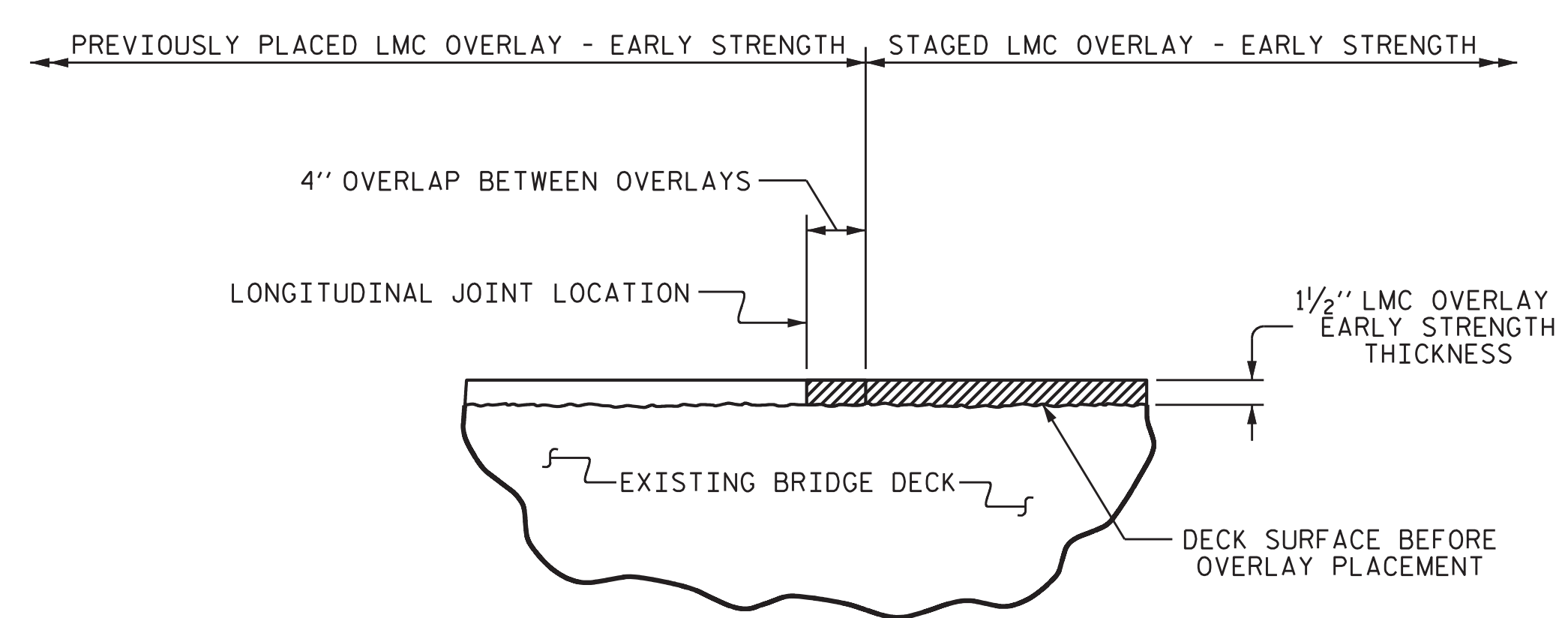


NOTES

SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND LATEX MODIFIED CONCRETE - EARLY STRENGTH PLACEMENT.



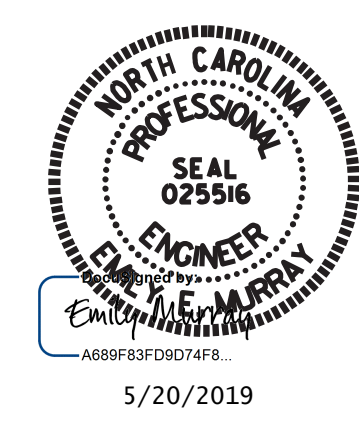
PAY LIMITS FOR OVERLAY BID ITEMS



PROJECT NO. 15BPR.45
PENDER COUNTY
 BRIDGE NO. 700219

STATE OF NORTH CAROLINA
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TYPICAL SECTION

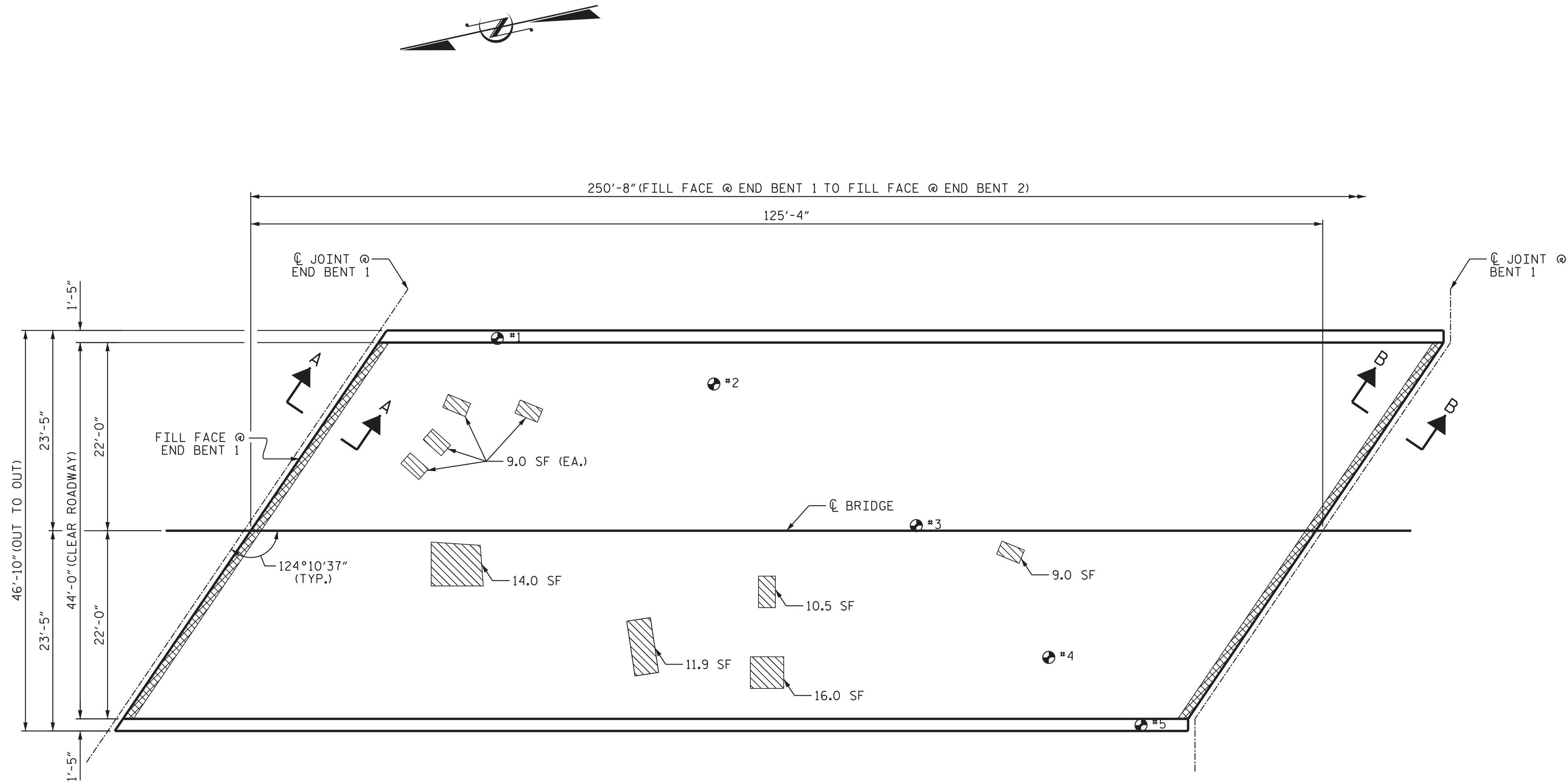


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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 31
2			4			

DRAWN BY : J.R. MCROY DATE : 03/19
 CHECKED BY : D.A. GLADDEN DATE : 04/19



PLAN OF SPAN A

NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

PRIOR TO PLACEMENT OF THE LMC OVERLAY ACROSS THE DECK SPANS, THE CONTRACTOR SHALL SUBMIT A POUR SEQUENCE FOR APPROVAL BY THE ENGINEER.

FOR SECTION A-A AND B-B, SEE "JOINT REPAIR DETAILS" SHEET.

FOR BRIDGE JOINT DEMOLITION, SEE "JOINT REPAIR DETAILS" SHEET.

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

SPAN A

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	612.7 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	612.7 SY	
CLASS II SURFACE PREPARATION	10.8 SY	
BRIDGE JOINT DEMOLITION	53.2 SF	
EPOXY RESIN INJECTION	0.0 LF	
GROOVING BRIDGE FLOORS	5097.7 SF	
LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	26.3 CY	
PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	612.7 SY	

UNDERSIDE OF DECK REPAIRS

SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	0.0	0.0		
INTERIOR DIAPHRAGMS	0.0	0.0		
CONCRETE CURB AND RAIL	0.0	0.0		
	ESTIMATE		ACTUAL	
UNDERSIDE EPOXY RESIN INJECTION	0.0	LF		

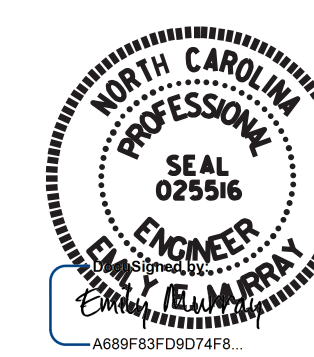
VALUES IN CHARTS REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. SEE REPAIR DETAILS.

- APPROXIMATE CLASS II AREA
- APPROXIMATE CLASS III AREA
- UNDERSIDE REPAIR
- BRIDGE JOINT DEMOLITION
- TEST LOCATION

TEST LOCATION	* CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#1	2 1/2"	6550
#2	1 1/2"	6400
#3	1 1/4"	5290
#4	1 5/8"	6290
#5	2 3/8"	5300

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 02/26/2019.

* CONCRETE COVER FOR TOP BARS IN THE DECK ARE BASED ON DECK EVALUATION DATED 03/05/2019. EXISTING BRIDGE PLANS INDICATE 2 1/2" CONCRETE COVER.



5/20/2019

PROJECT NO. 15BPR.45
PENDER COUNTY
 BRIDGE NO. 700219

SHEET 1 OF 3

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PLAN OF SPANS

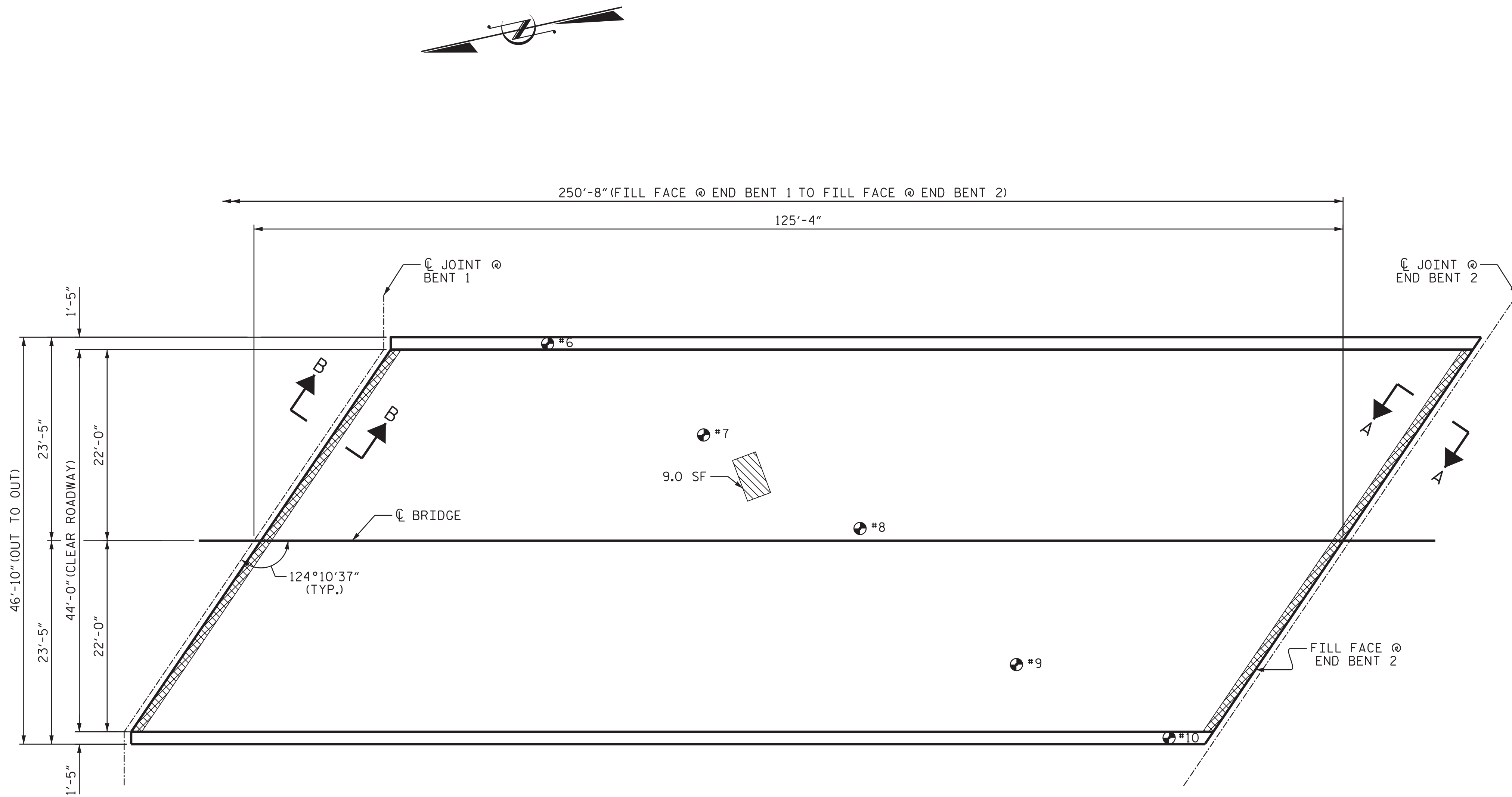


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2			4			TOTAL SHEETS 31

DRAWN BY : R. G. BEAUCHAMP DATE : 02/19
 CHECKED BY : D. A. GLADDEN DATE : 03/19



PLAN OF SPAN B

NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

PRIOR TO PLACEMENT OF THE LMC OVERLAY ACROSS THE DECK SPANS, THE CONTRACTOR SHALL SUBMIT A POUR SEQUENCE FOR APPROVAL BY THE ENGINEER.

FOR SECTION A-A AND B-B, SEE "JOINT REPAIR DETAILS" SHEET.

FOR BRIDGE JOINT DEMOLITION, SEE "JOINT REPAIR DETAILS" SHEET.

DRAWN BY : R. G. BEAUCHAMP DATE : 02/19
 CHECKED BY : D. A. GLADDEN DATE : 03/19

TEST LOCATION	* CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#6	2 5/8"	5490
#7	1 3/8"	5470
#8	1 5/8"	5930
#9	2 1/4"	6200
#10	2 1/4"	6670

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 2/26/2019.

* CONCRETE COVER FOR TOP BARS IN THE DECK ARE BASED ON DECK EVALUATION DATED 03/05/2019. EXISTING BRIDGE PLANS INDICATE 2 1/2" CONCRETE COVER.

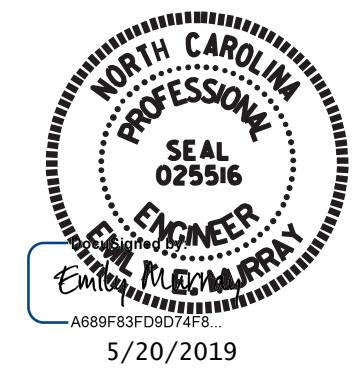
AS-BUILT REPAIR QUANTITY TABLE		
TOP OF DECK REPAIRS		
SPAN B		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	612.7 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	612.7 SY	
CLASS II SURFACE PREPARATION	1.0 SY	
BRIDGE JOINT DEMOLITION	53.2 SF	
EPOXY RESIN INJECTION	0.0 LF	
GROOVING BRIDGE FLOORS	5097.7 SF	
LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	25.6 CY	
PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	612.7 SY	

UNDERSIDE OF DECK REPAIRS				
SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	0.0	0.0		
INTERIOR DIAPHRAGMS	0.0	0.0		
CONCRETE CURB AND RAIL	0.0	0.0		
	ESTIMATE		ACTUAL	
UNDERSIDE EPOXY RESIN INJECTION	0.0	LF		

VALUES IN CHARTS REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. SEE REPAIR DETAILS.

- APPROXIMATE CLASS II AREA
- APPROXIMATE CLASS III AREA
- UNDERSIDE REPAIR
- BRIDGE JOINT DEMOLITION
- TEST LOCATION

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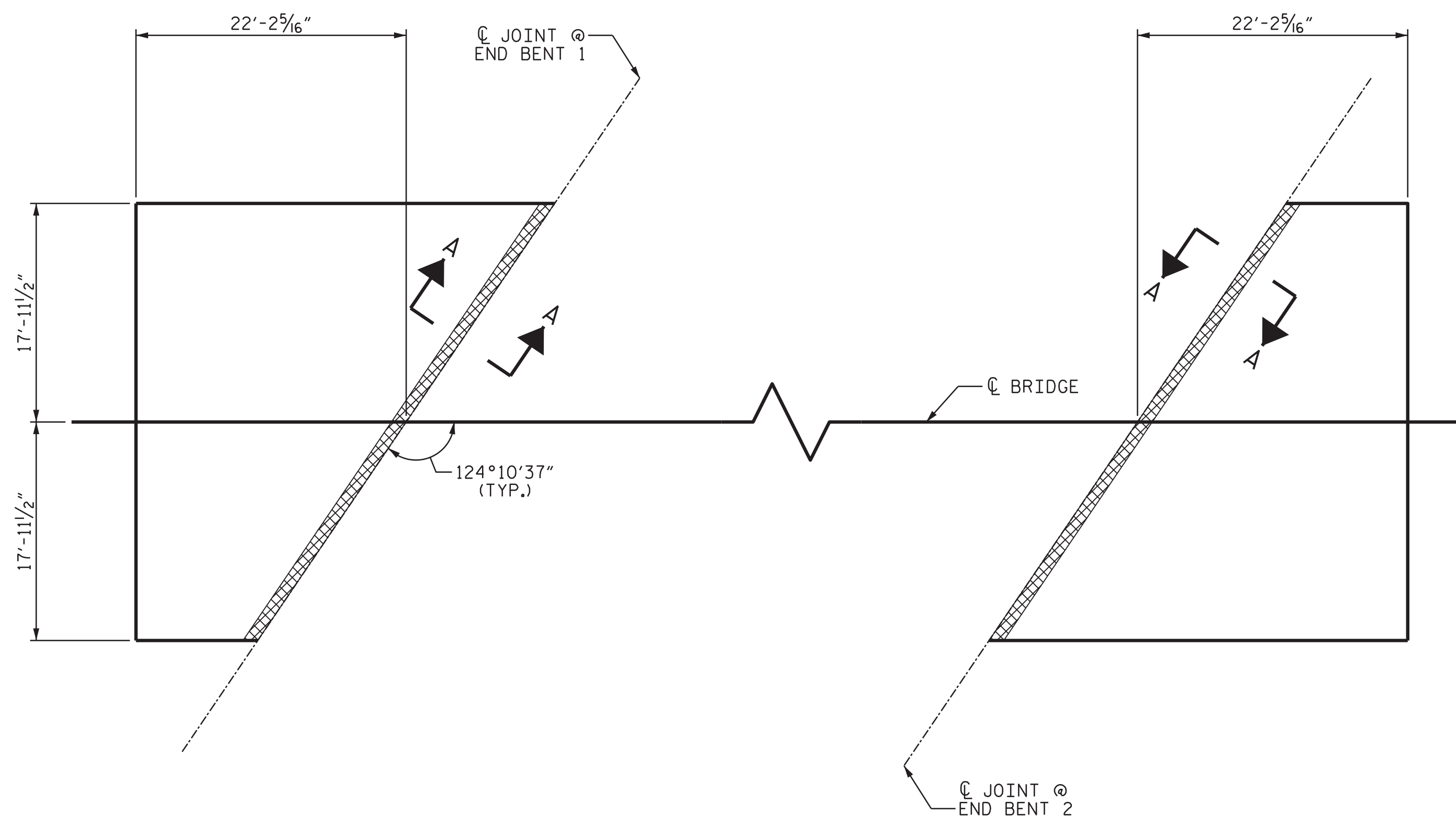
PROJECT NO. 15BPR.45
 PENDER COUNTY
 BRIDGE NO. 700219

SHEET 2 OF 3

STATE OF NORTH CAROLINA
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 PLAN OF SPANS

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APPROACH SLAB @ END BENT 1

APPROACH SLAB @ END BENT 2

NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

PRIOR TO PLACEMENT OF THE LMC OVERLAY ACROSS THE DECK SPANS, THE CONTRACTOR SHALL SUBMIT A POUR SEQUENCE FOR APPROVAL BY THE ENGINEER.

FOR SECTION A-A, SEE "JOINT REPAIR DETAILS" SHEET.

FOR BRIDGE JOINT DEMOLITION, SEE "JOINT REPAIR DETAILS" SHEET.

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

APPROACH SLAB @ END BENT 1

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	88.6 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	88.6 SY	
CLASS II SURFACE PREPARATION	0.0 SY	
BRIDGE JOINT DEMOLITION	21.7 SF	
EPOXY RESIN INJECTION	0.0 LF	
GROOVING BRIDGE FLOORS	757.4 SF	
LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	3.7 CY	
PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	88.6 SY	

APPROACH SLAB @ END BENT 2

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	88.6 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	88.6 SY	
CLASS II SURFACE PREPARATION	0.0 SY	
BRIDGE JOINT DEMOLITION	21.7 SF	
EPOXY RESIN INJECTION	0.0 LF	
GROOVING BRIDGE FLOORS	757.4 SF	
LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	3.7 CY	
PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY - EARLY STRENGTH	88.6 SY	

VALUES IN CHARTS REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. SEE REPAIR DETAILS.

- APPROXIMATE CLASS II AREA
- APPROXIMATE CLASS III AREA
- UNDERSIDE REPAIR
- BRIDGE JOINT DEMOLITION

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PENDER COUNTY
 BRIDGE NO. 700219

SHEET 3 OF 3

STATE OF NORTH CAROLINA
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PLAN OF SPANS



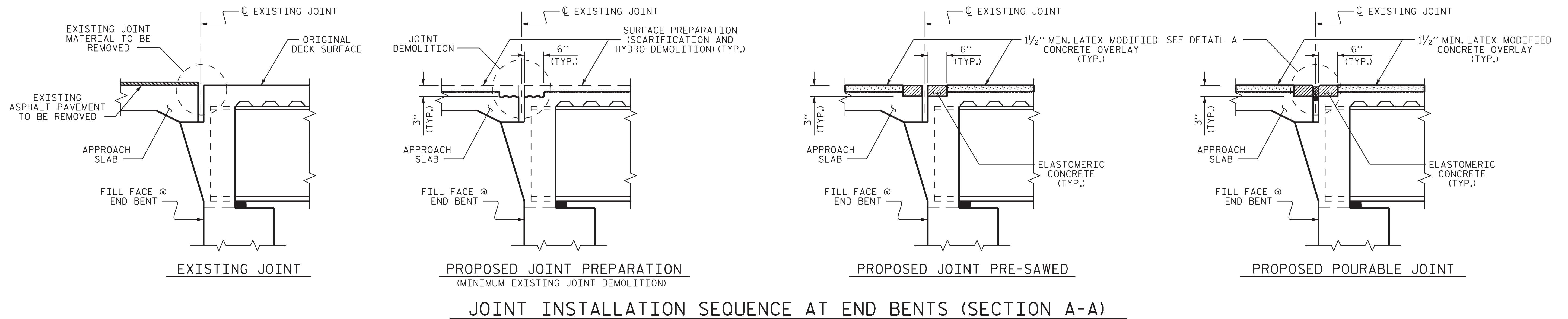
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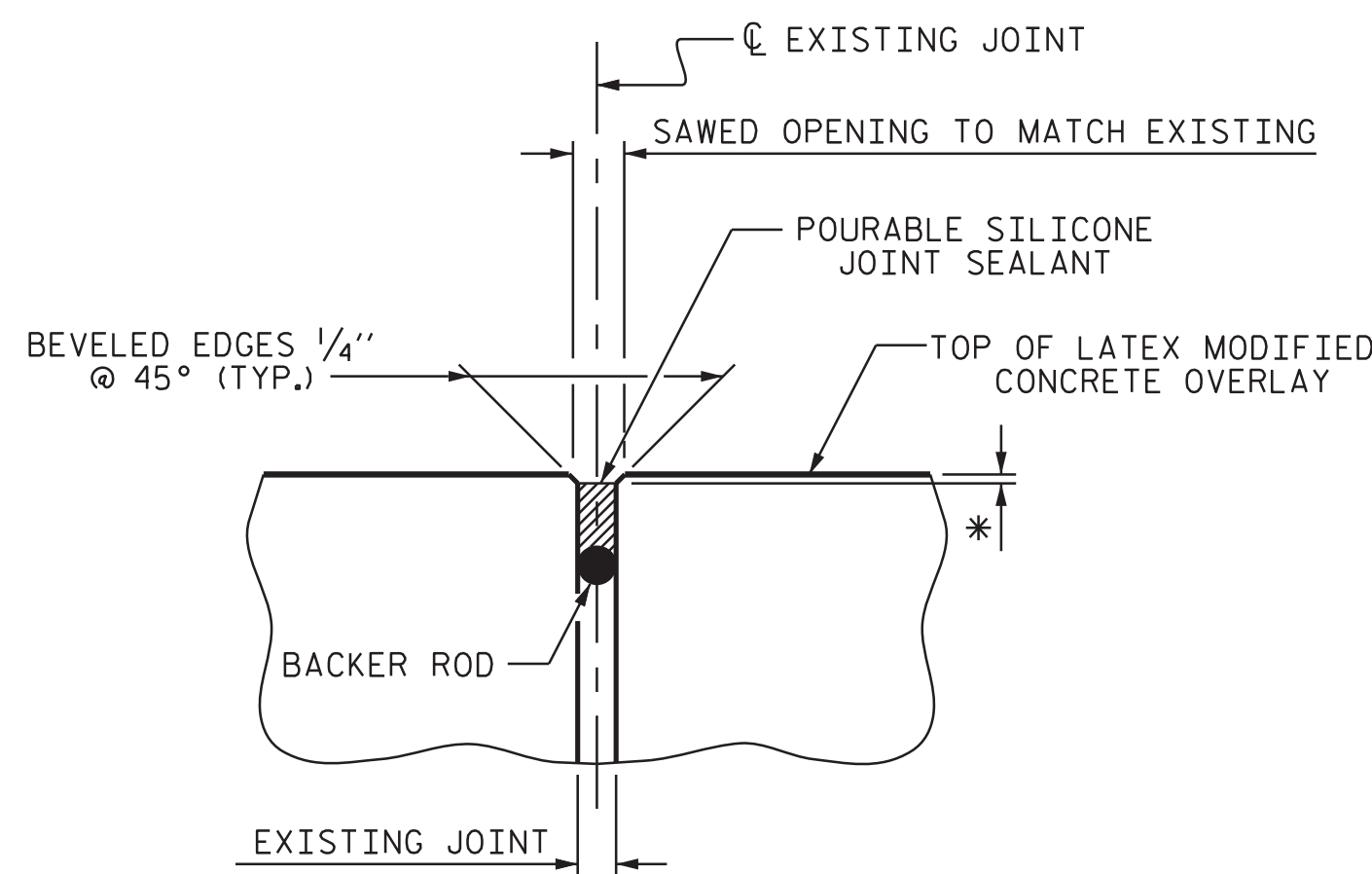
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1			3			S2-6
2			4			TOTAL SHEETS 31

DRAWN BY : R. G. BEAUCHAMP DATE : 02/19
 CHECKED BY : D. A. GLADDEN DATE : 03/19



NOTES

- THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF THE ACTUAL JOINT OPENING VARIES FROM THE OPENING ALLOWED BY THE JOINT SEAL MATERIAL, NOTIFY THE ENGINEER. REVISION TO THE JOINT SEAL SIZE AND TYPE MIGHT BE NECESSARY.
- THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS FOR THE JOINT SEALS IN LIEU OF SAWING THE JOINT.
- FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.
- FOAM JOINT SEALS FOR PRESERVATION SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION.
- THE INSTALLED FOAM JOINT SEALS FOR PRESERVATION SHALL BE WATER TIGHT.
- FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.
- FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.
- POURABLE SILICONE JOINT SEALANT AND BACKER ROD SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION.
- THE INSTALLED POURABLE SILICONE JOINT SEALANT SHALL BE WATER TIGHT.
- FOR LOCATION OF SECTION A-A AND B-B, SEE PLAN OF SPAN SHEET.
- HYDRO-DEMOLITION OR EXCAVATION OF CONCRETE AT EXISTING JOINTS SHALL RESULT IN THE BOTTOM OF THE EXCAVATION BEING REASONABLY FLAT AND LEVEL TO PROVIDE SUFFICIENT SUBSTRATE FOR PLACEMENT AND SUPPORT OF ELASTOMERIC CONCRETE.
- THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL BASED ON JOINT OPENINGS.
- RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.
- DEMOLISH BRIDGE JOINT AREA TO THE NECESSARY DEPTH, SUCH THAT ELASTOMERIC CONCRETE SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE, NOT LATEX MODIFIED CONCRETE.
- IF THE EMBEDDED PORTION OF AN EXISTING WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, OR IF UNSOUND CONCRETE IS REMOVED TO WITHIN 2" OF A WATERSTOP, THE ENTIRE WATERSTOP SHALL BE REMOVED. IF SUCH EXCAVATION EXTENDS MORE THAN 2" BELOW THE BOTTOM OF THE PLANNED ELASTOMERIC CONCRETE HEADER, AS SHOW, APPROVED REPAIR CONCRETE SHALL BE PLACED IN THE EXCAVATION AREA TO THE ELEVATION OF THE BOTTOM OF THE ELASTOMERIC CONCRETE.

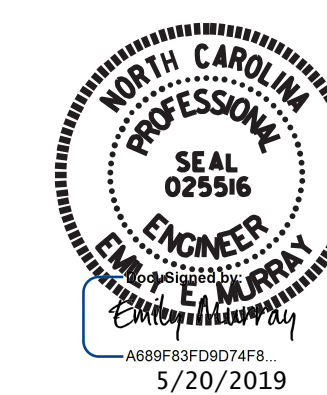


ELASTOMERIC CONCRETE FOR PRESERVATION	
END BENT 1	13.3 CU. FT.
BENT 1	13.3 CU. FT.
END BENT 2	13.3 CU. FT.
TOTAL	39.9 CU. FT.

POURABLE SILICONE JOINT SEALANT	
END BENT 1	55.6 LF
END BENT 2	55.6 LF
TOTAL	111.2 LF

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 BRIDGE NO. 700219

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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
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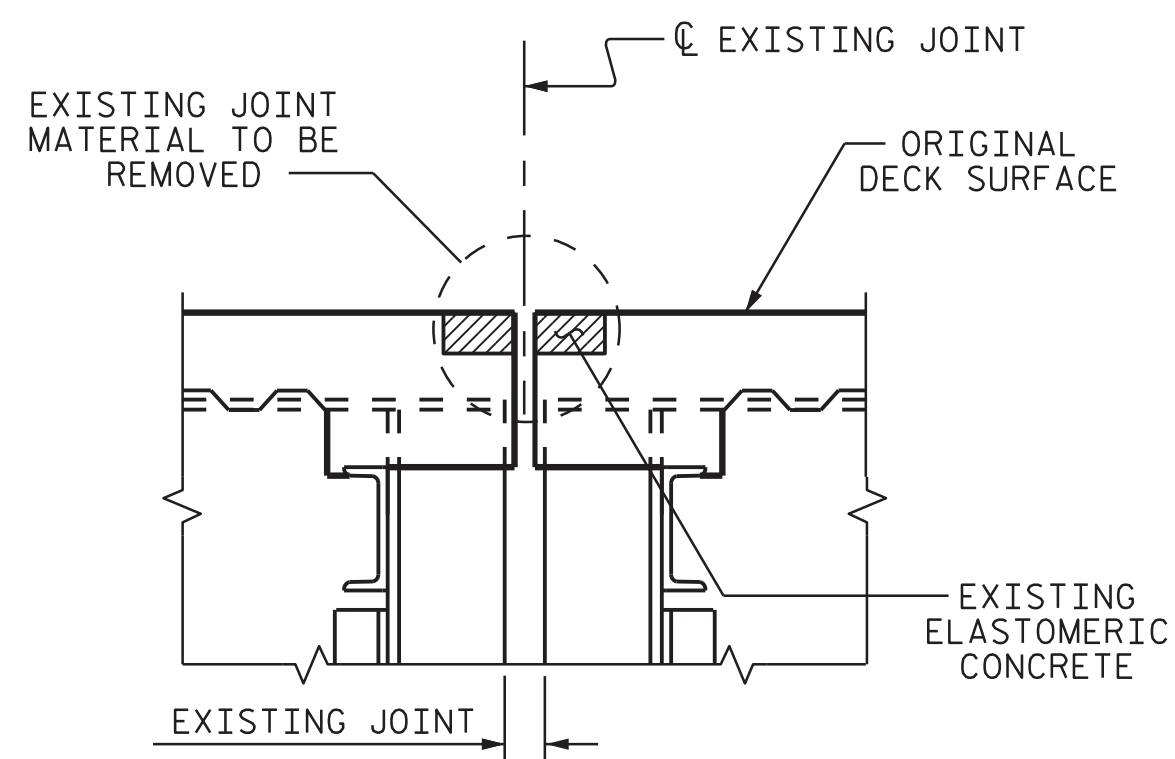
JOINT REPAIR DETAILS

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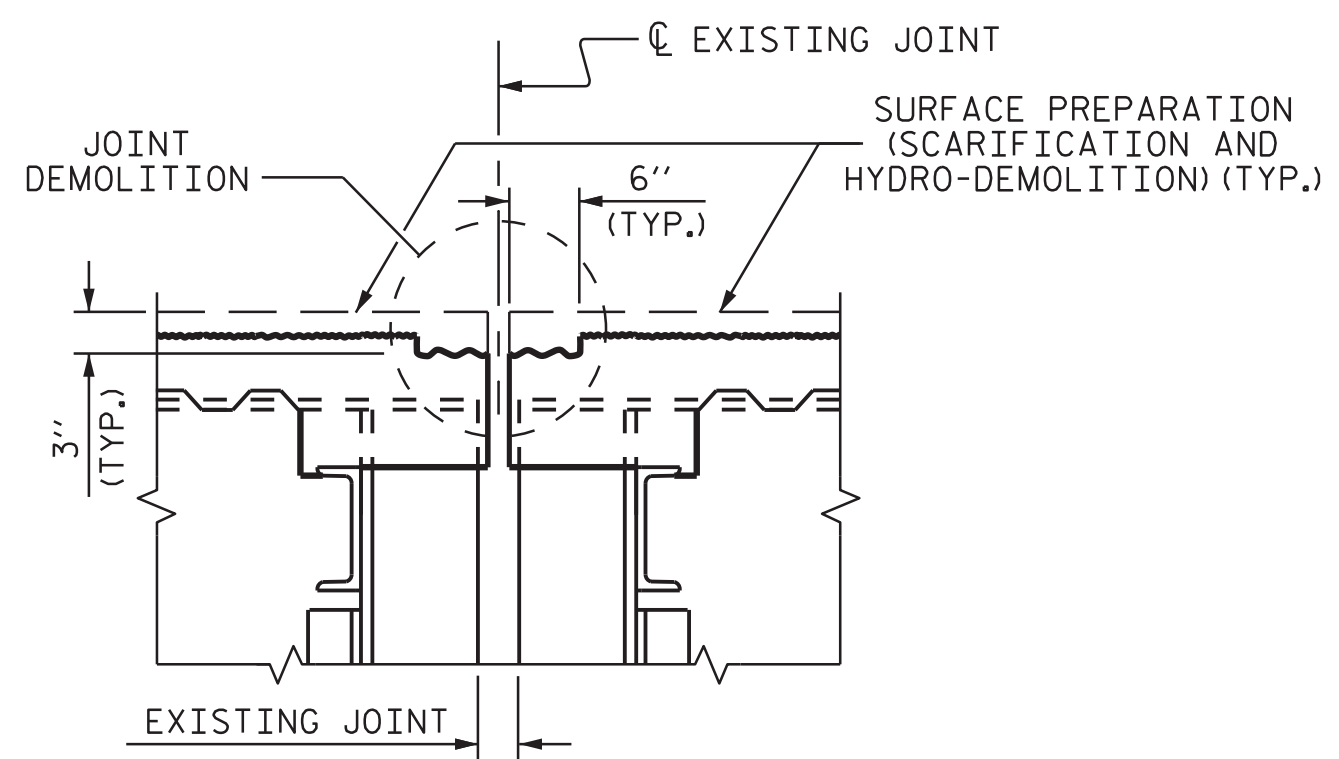
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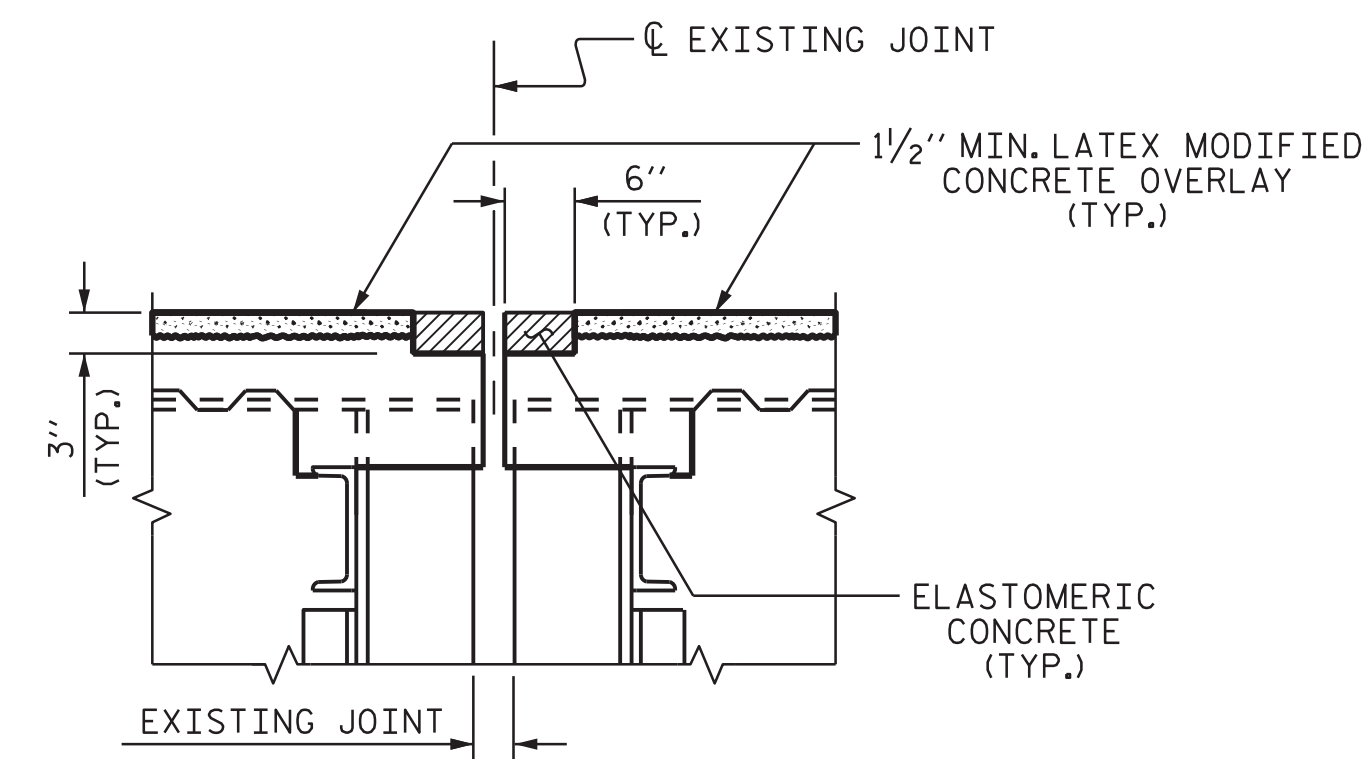
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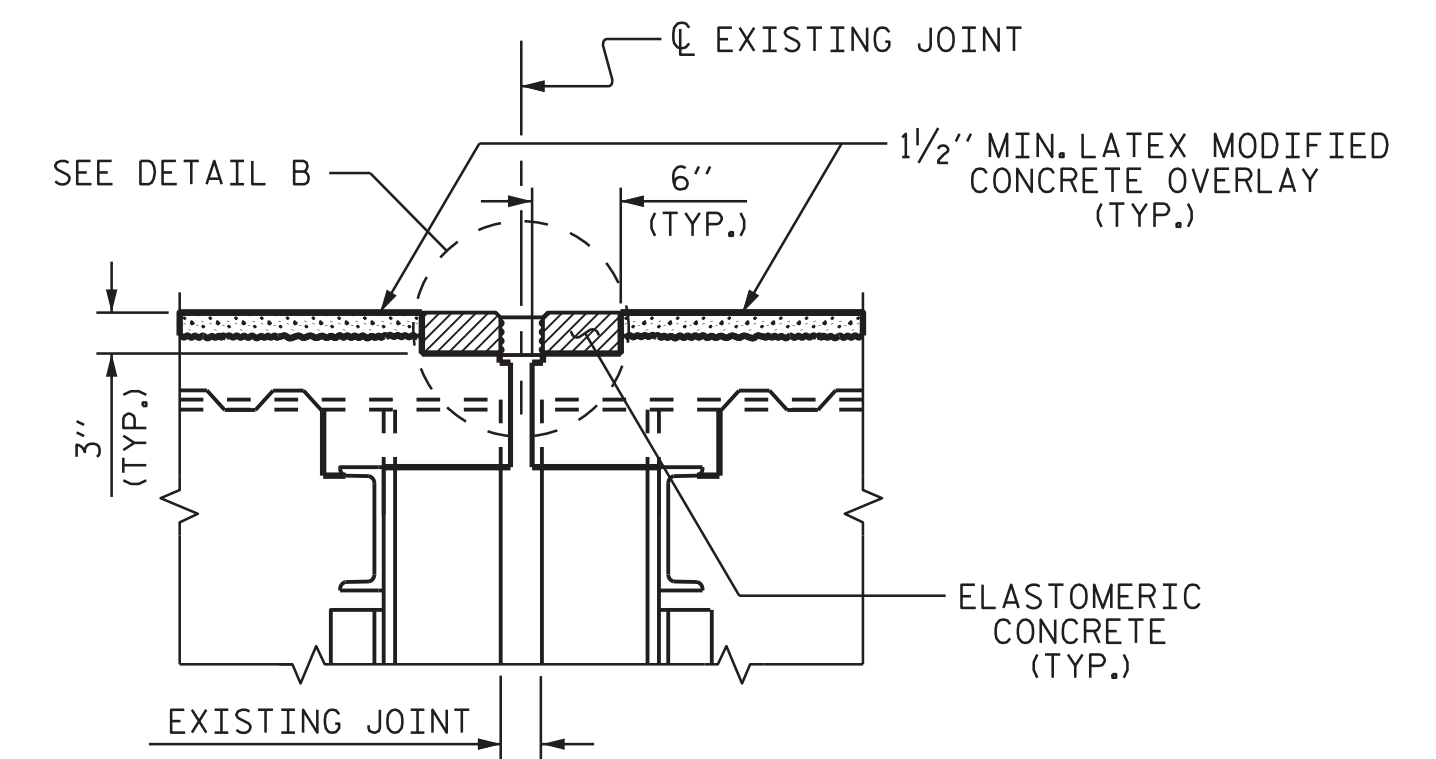
EXISTING JOINT



PROPOSED JOINT PREPARATION
(MINIMUM EXISTING JOINT DEMOLITION)

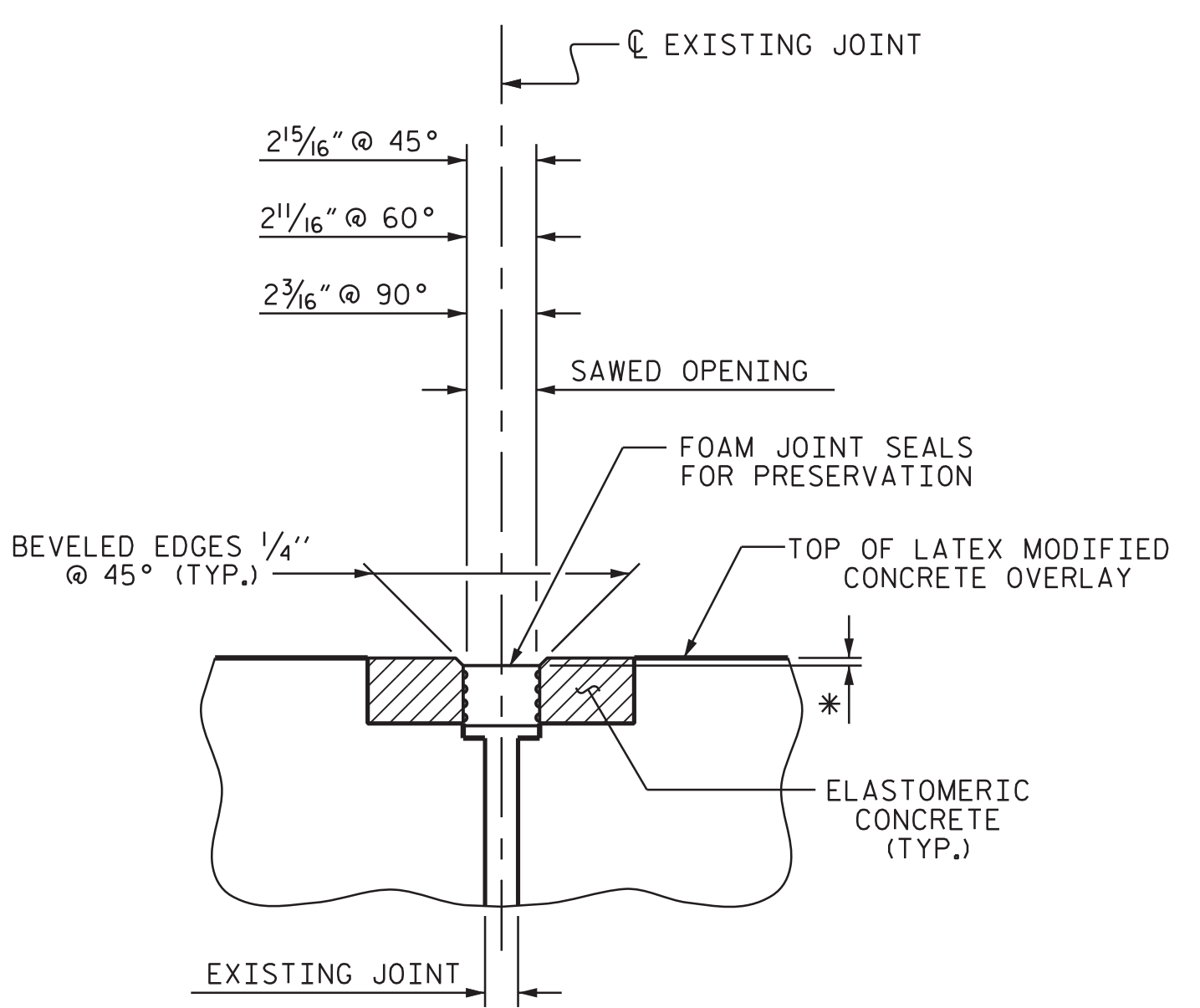


PROPOSED JOINT PRE-SAWED



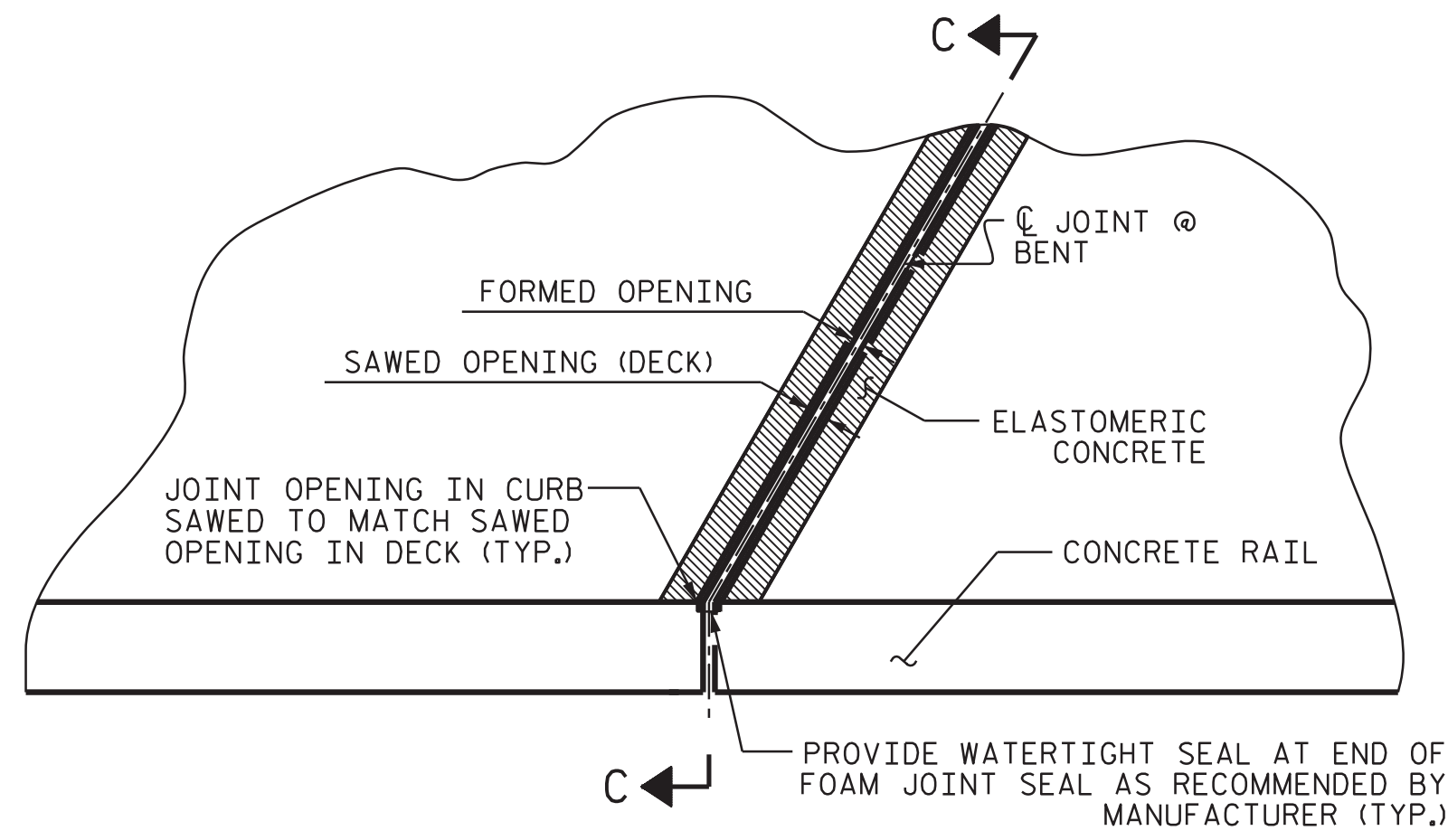
PROPOSED FOAM JOINT

JOINT INSTALLATION SEQUENCE AT BENTS (SECTION B-B)

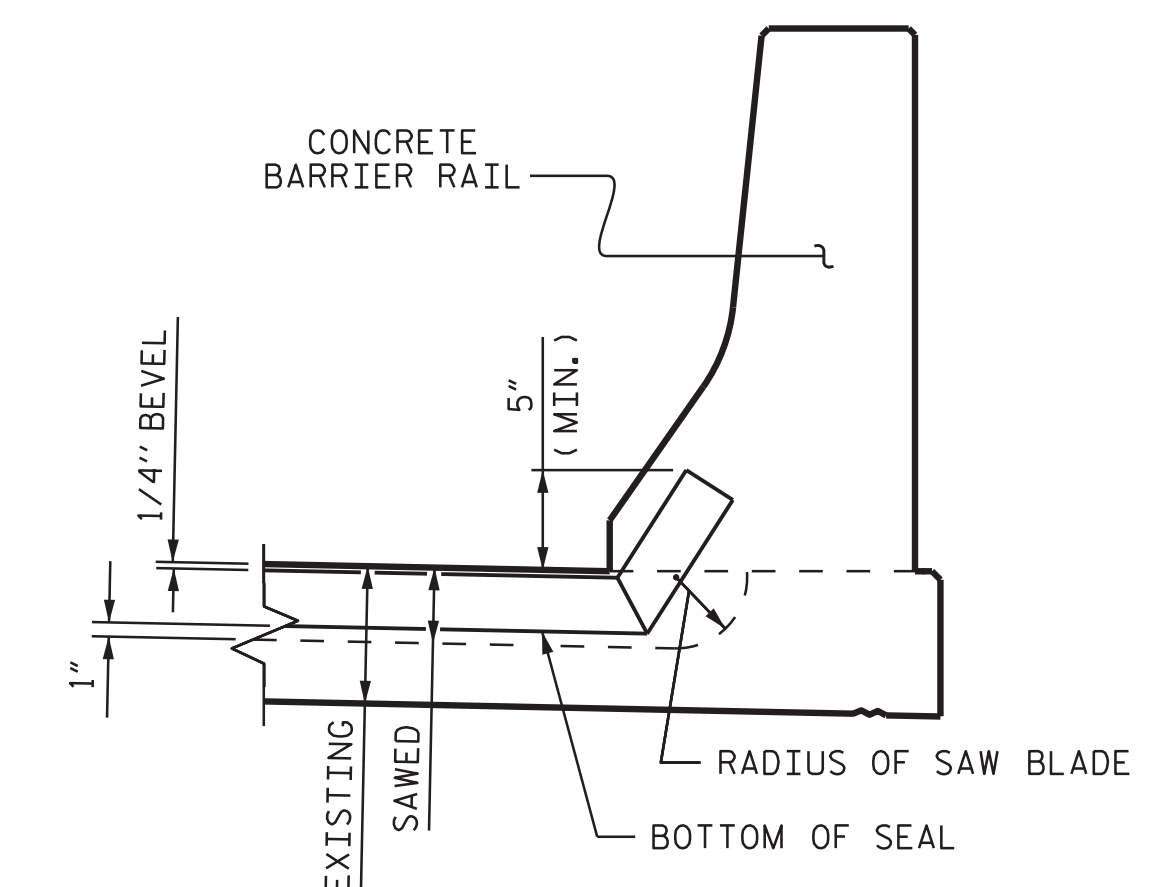


DETAIL B
(PROPOSED)

* FOAM JOINT SEALS FOR PRESERVATION SHALL BE RECESSED AS PER MANUFACTURER'S RECOMMENDATIONS.
TOTAL MOVEMENT IS CALCULATED ALONG THE CENTERLINE OF ROADWAY. JOINT OPENINGS ARE MEASURED PERPENDICULAR TO JOINT.



PLAN



SECTION C-C

JOINT SEAL DETAILS AT BENTS

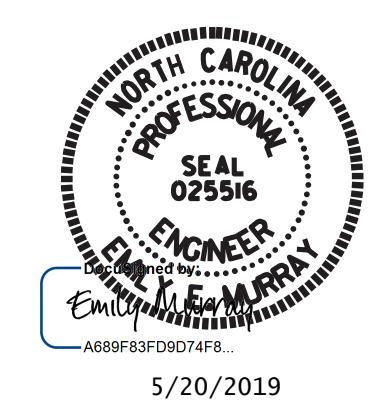
FOAM JOINT SEALS FOR PRESERVATION		
BENT 1	55.6	LF
TOTAL	55.6	LF

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JOINT REPAIR DETAILS



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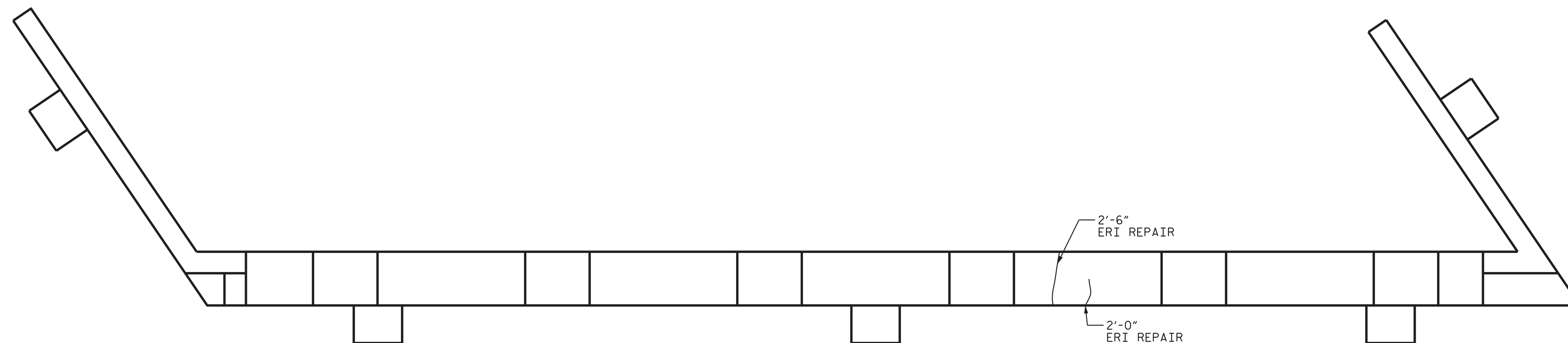
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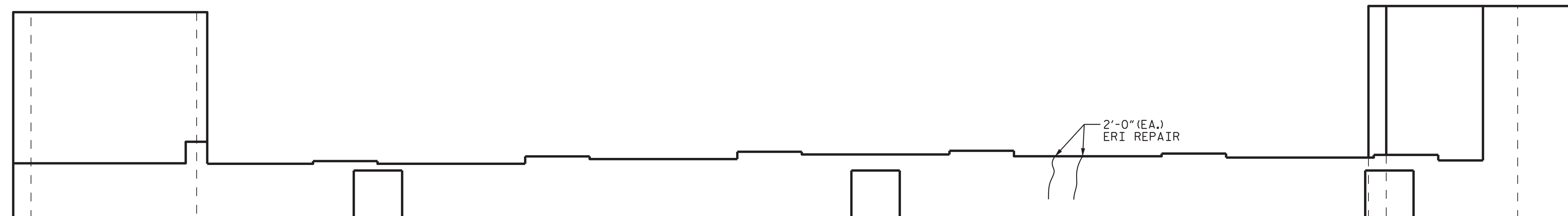
AS-BUILT REPAIR QUANTITY TABLE

REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
END BENT 1				
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		8.5		

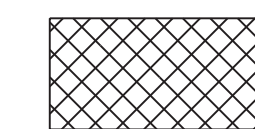
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 2" MIN. CLEAR TO SAWCUT.



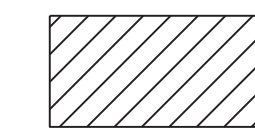
TOP OF CAP @ END BENT 1



ELEVATION @ END BENT 1 (SPAN A)



SHOTCRETE REPAIR

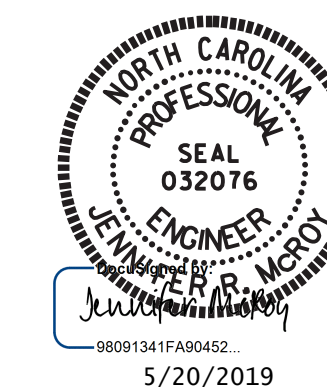


CONCRETE REPAIR



EPOXY RESIN INJECTION (ERI)

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END BENT 1

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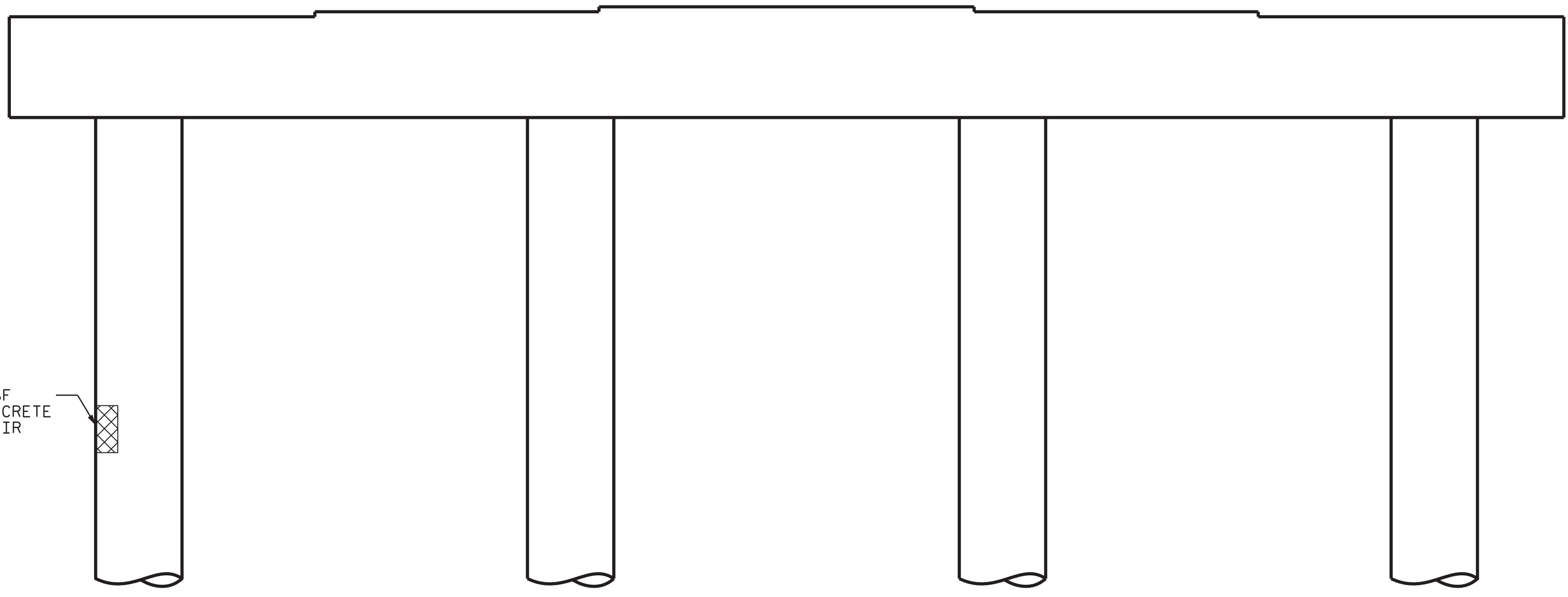
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TOP OF CAP @ BENT 1



COLUMN 1

COLUMN 2

COLUMN 3

COLUMN 4

ELEVATION @ BENT 1 (SPAN A)

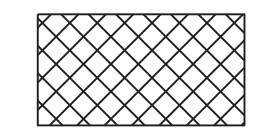
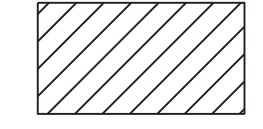

SPAN B

SPAN A

END OF CAP

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	1.4	0.7		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION	LN. FT.	LN. FT.	LN. FT.	LN. FT.
CAP	0.0			
COLUMN	0.0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 2" MIN. CLEAR TO SAWCUT.

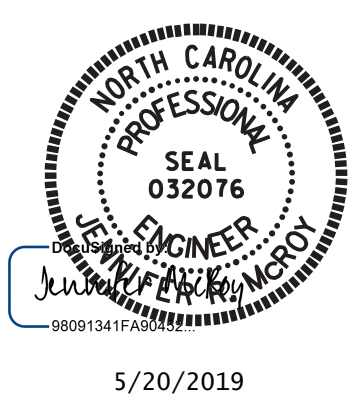
 SHOTCRETE REPAIR
 CONCRETE REPAIR
 EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.45
PENDER COUNTY
 BRIDGE NO. 700219

SHEET 1 OF 2

STATE OF NORTH CAROLINA
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**BENT 1
 (SPAN A)**



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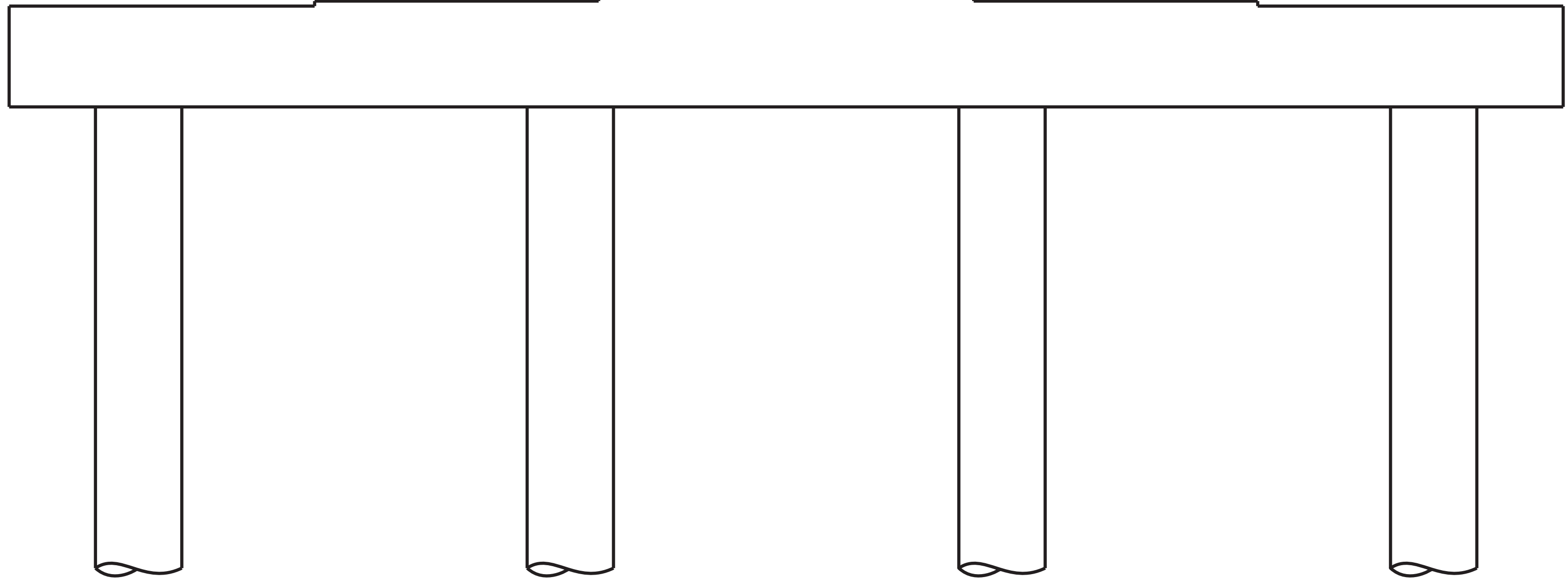
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BOTTOM OF CAP @ BENT 1



COLUMN 4

COLUMN 3

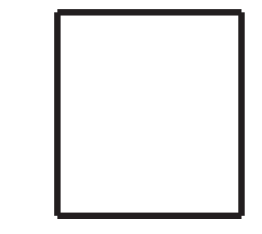
COLUMN 2

COLUMN 1

ELEVATION @ BENT 1 (SPAN B)

SPAN A

SPAN B



END OF CAP

NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR SUMMARY OF QUANTITIES TABLE.

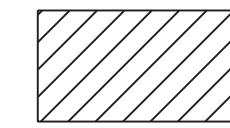
FOR BENT REPAIRS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

CONCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

EPOXY COATING SHALL BE APPLIED TO TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.



SHOTCRETE REPAIR



CONCRETE REPAIR



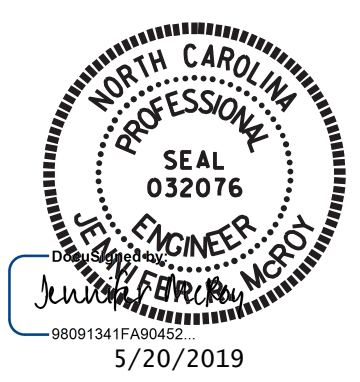
EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.45
PENDER COUNTY
 BRIDGE NO. 700219

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BENT 1
 (SPAN B)**



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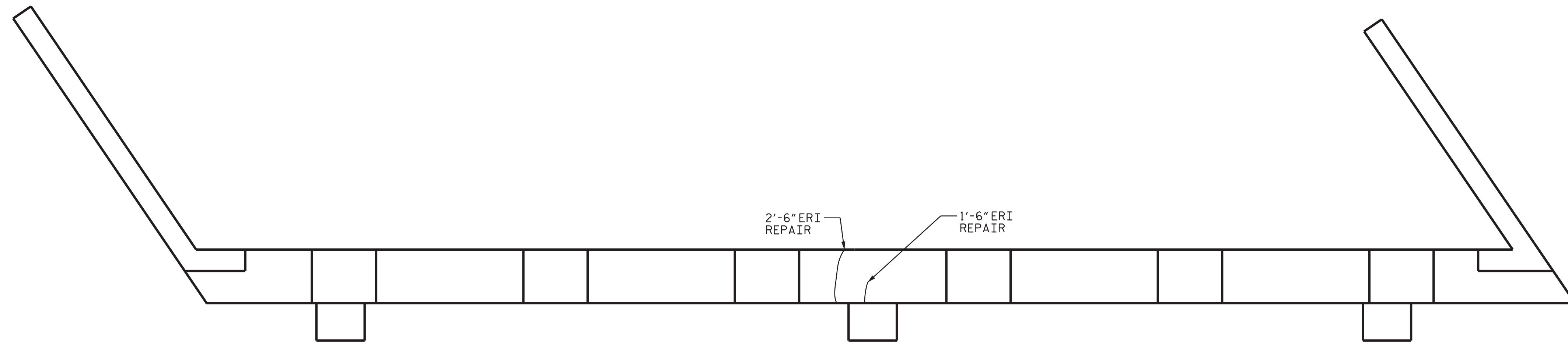
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-11
1			3			TOTAL SHEETS
2			4			31

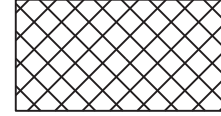
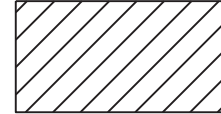

DRAWN BY : R. G. BEAUCHAMP DATE : 3/19
 CHECKED BY : J. R. MCROY DATE : 3/19

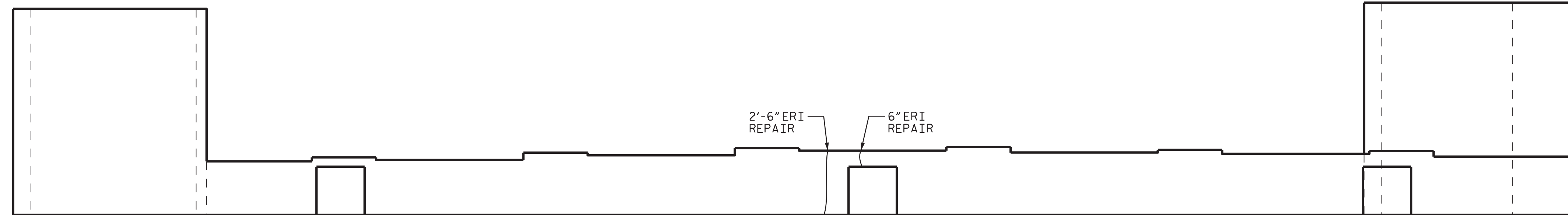
AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
END BENT 2				
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		7.0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 2" MIN. CLEAR TO SAWCUT.



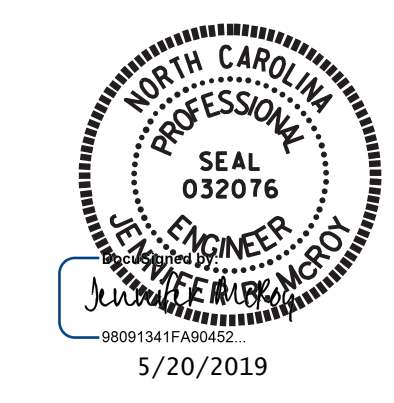
TOP OF CAP @ END BENT 2

 SHOTCRETE REPAIR
 CONCRETE REPAIR
 EPOXY RESIN INJECTION (ERI)



ELEVATION @ END BENT 2 (SPAN B)

PROJECT NO. 15BPR.45
PENDER COUNTY
 BRIDGE NO. 700219



STATE OF NORTH CAROLINA
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END BENT 2

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-12
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : R. G. BEAUCHAMP DATE : 3/19
 CHECKED BY : J. R. MCROY DATE : 3/19

NOTES

TYPICAL BENT CAP REPAIRS ARE SHOWN. REPAIR DETAILS SIMILAR FOR END BENT CAPS AND STRUTS.

THE METHOD USED TO DELINEATE THE AREAS OF UNSOUND CONCRETE TO BE REPAIRED SHALL NOT PERMANENTLY MARK THE CONCRETE, LEAVE ANY RESIDUE AFTER REMOVAL OR REQUIRE HARSH CHEMICALS TO REMOVE.

THE CONTRACTOR SHALL REMOVE THE DETERIORATED CONCRETE IN ACCORDANCE WITH THE GUIDELINES SET IN THESE NOTES, IN THE SPECIAL PROVISIONS AND THE STANDARD SPECIFICATIONS.

REMOVE UNSOUND CONCRETE TO THE EXTENT NECESSARY, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT.

NO MORE THAN ONE-THIRD OF THE CAP OR COLUMN CROSS SECTIONAL AREA SHALL BE REMOVED AT ONE TIME. SHOULD IT BECOME NECESSARY TO REMOVE MORE THAN 30% OF A CAP OR COLUMN CROSS SECTIONAL AREA, NOTIFY THE ENGINEER PRIOR TO PROCEEDING.

SIMULTANEOUS REMOVAL OF UNSOUND CONCRETE MAY BE PERMITTED ON MORE THAN ONE FACE OF A CAP AND/OR COLUMN, IF THE AREAS OF REMOVAL ARE NOT ADJACENT TO OR DIRECTLY OPPOSITE ONE ANOTHER. IF REMOVAL EXTENDS MORE THAN 1 1/2" BEHIND THE MAIN REINFORCING BARS, NOTIFY THE ENGINEER PRIOR TO PROCEEDING.

REINFORCING STEEL WHICH IS DETERMINED BY THE ENGINEER TO BE REPLACED, SHALL BE REMOVED TO A POINT WHERE IT IS SOUND. THE PATCH SHALL EXTEND A SUFFICIENT DISTANCE BEYOND THIS POINT TO DEVELOP A SPLICE LENGTH SPECIFIED IN THE TABLE ON THIS SHEET.

THE #4 "U" DOWELS ARE REQUIRED ONLY AROUND THE ANCHOR BOLTS. THE EXISTING REINFORCING STEEL IN THE PEDESTAL WALL SHALL BE CLEANED, STRAIGHTENED AND REMAIN IN PLACE.

FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS.

COAT ALL REPAIR SURFACE AREAS ON THE TOP OF CAPS, INCLUDING CHAMFERS, WITH EPOXY PROTECTIVE COATING, OVERLAPPING THE REPAIR AREA BY A MINIMUM OF 3" ON ALL POSSIBLE SIDES.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

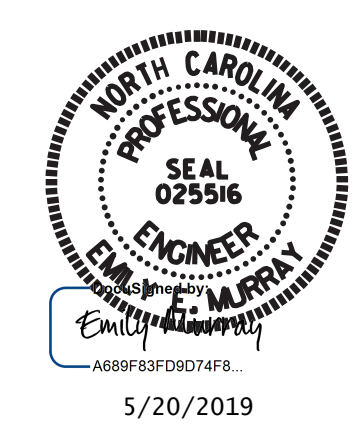
FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION (ERI), SEE SPECIAL PROVISIONS.

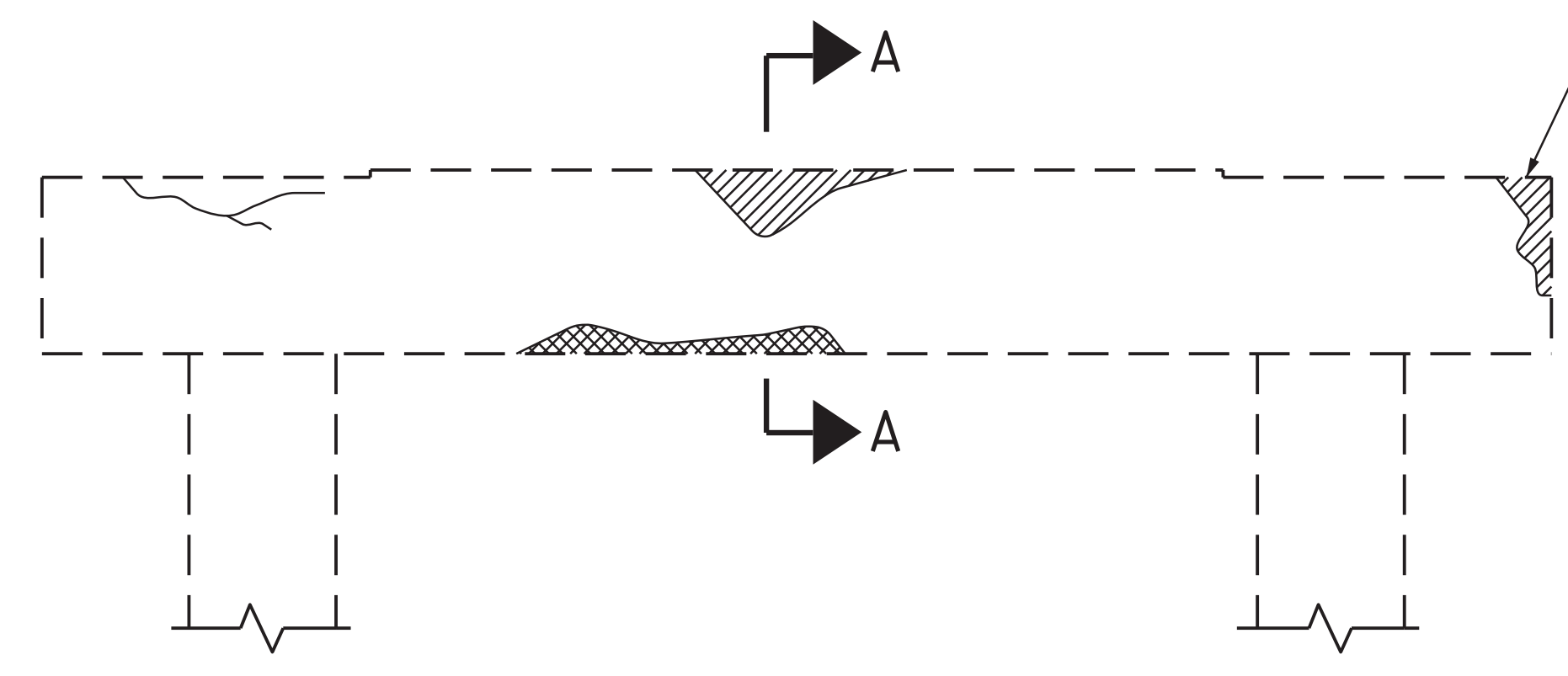
PROJ. NO. 15BPR.45
DUPLIN/PENDER COUNTY
 BRIDGE NO. DUPLIN 300433
PENDER 700219

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

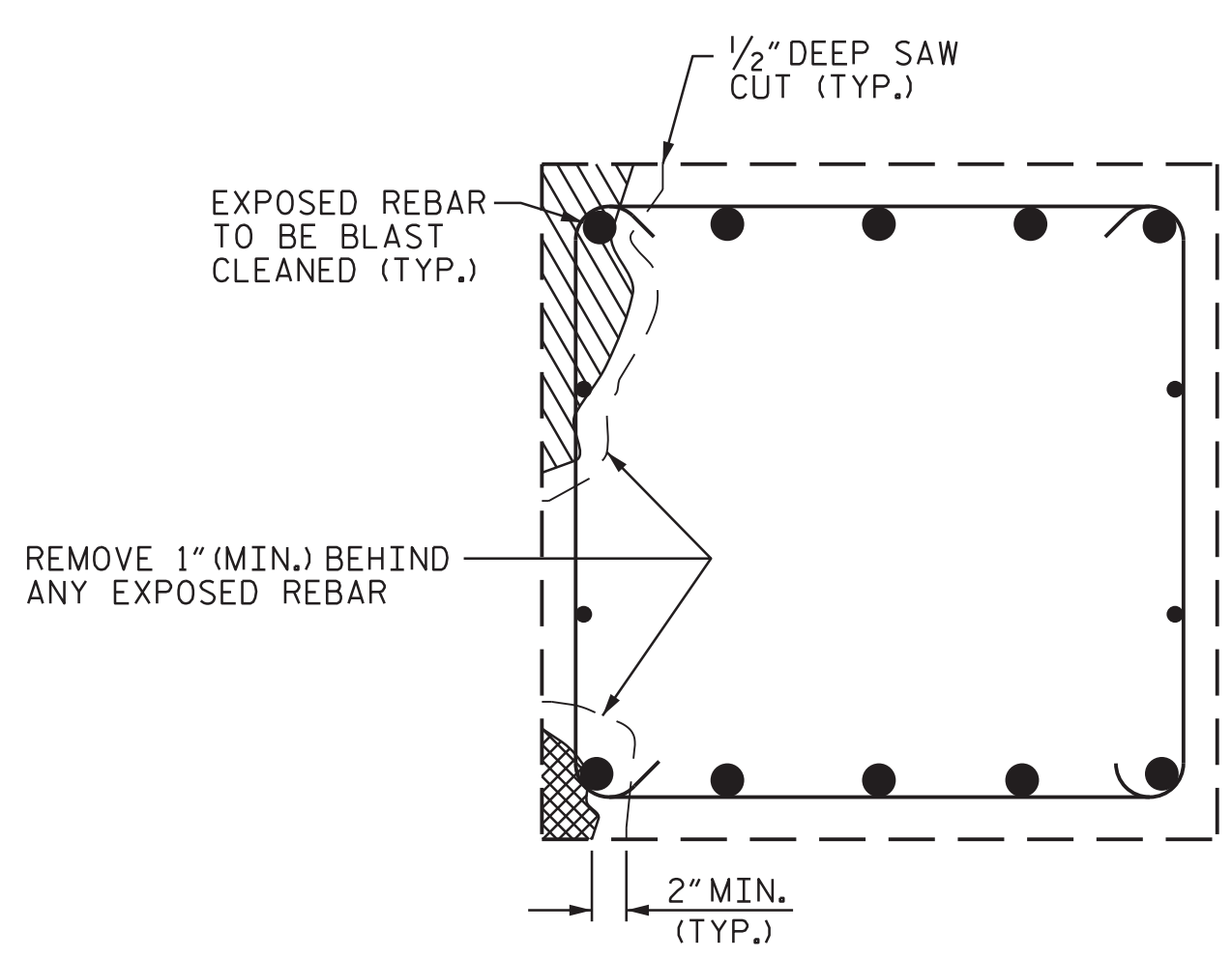
TYPICAL CAP AND COLUMN REPAIR DETAILS



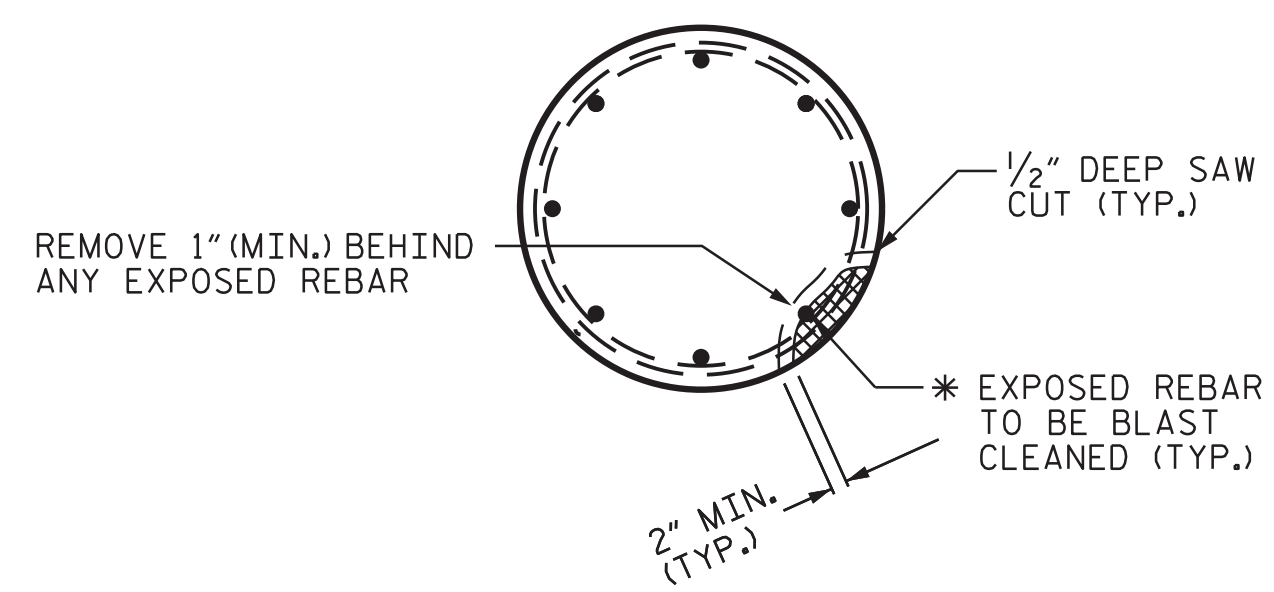
5/20/2019



BENT CAP REPAIRS



SECTION A-A

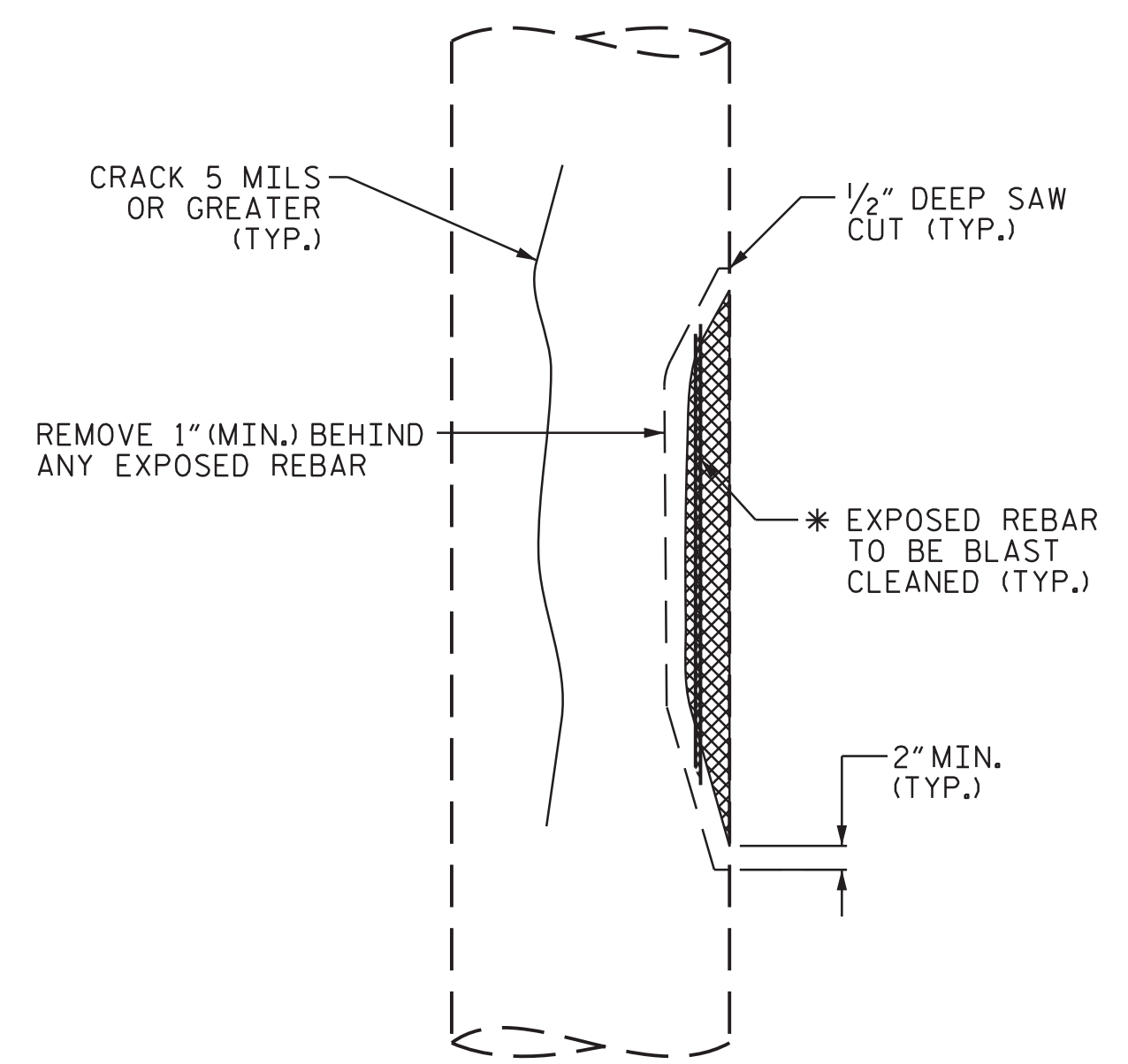


PLAN OF COLUMN

REPAIR KEY

- CONCRETE REPAIR AREA (FORM AND POUR)
- SHOTCRETE REPAIR AREA
- EPOXY RESIN INJECTION (ERI)

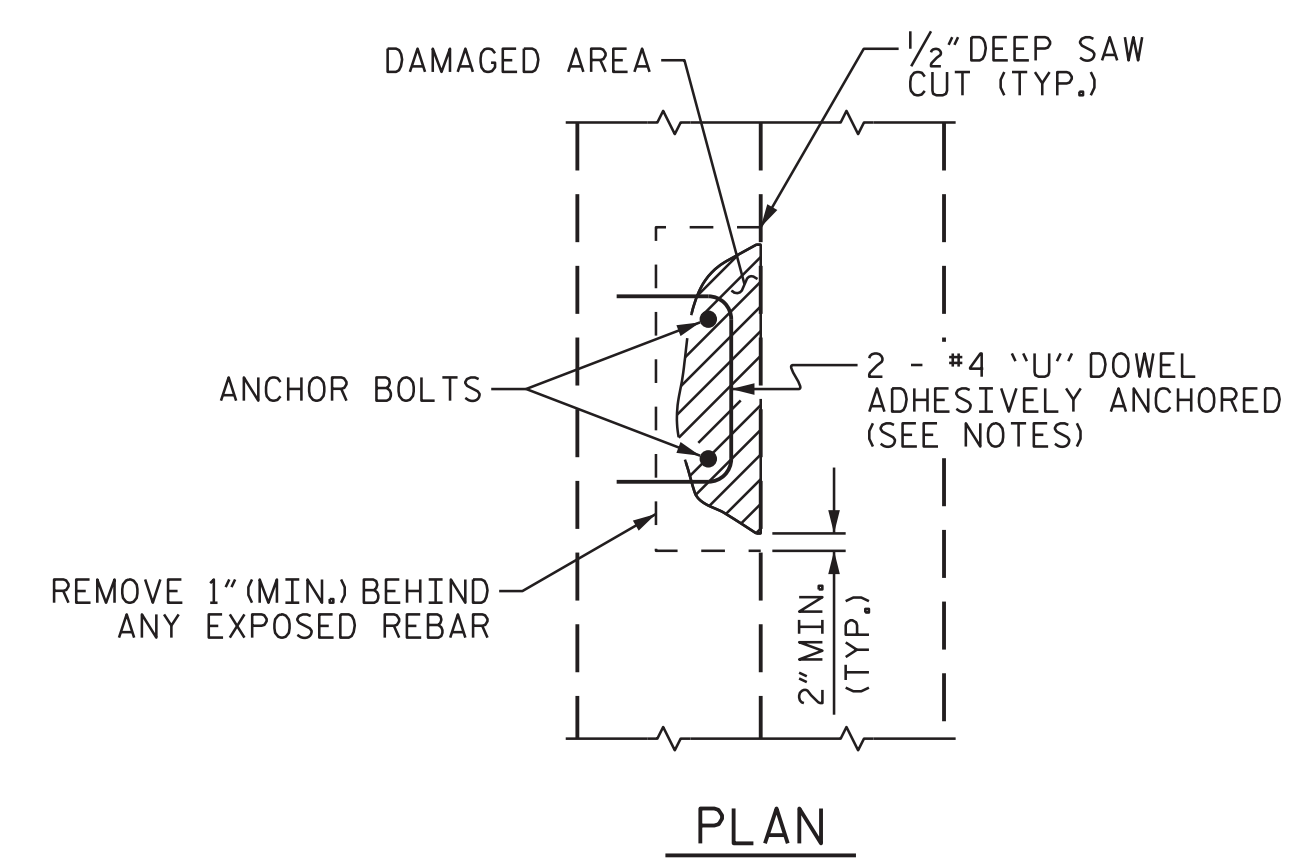
CAP REPAIR



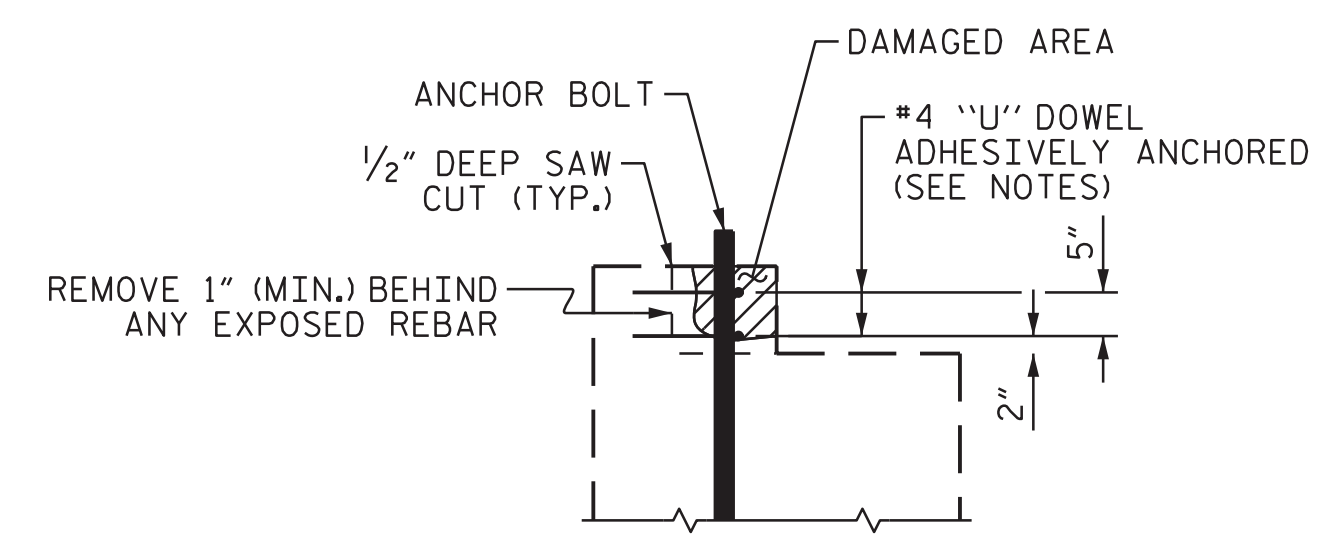
ELEVATION OF COLUMN

COLUMN REPAIR

* REPAIR LENGTH SHALL NOT EXCEED 10 FEET.



PLAN



ELEVATION

PEDESTAL WALL REPAIR
 PEDESTAL WALL REPAIR IS NOT ANTICIPATED BUT DETAIL IS PROVIDED IN CASE OF ADDITIONAL DETERIORATION.

BAR SIZE	MIN. SPLICE LENGTH
#4	2'-4"
#5	2'-9"
#6	4'-0"
#7	5'-3"
#8	6'-9"
#9	8'-6"
#10	10'-11"
#11	13'-4"

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SD-1
1			3			TOTAL SHEETS
2			4			31

ASSEMBLED BY : R. G. BEAUCHAMP	DATE : 4/19
CHECKED BY : J. R. MCROY	DATE : 4/19
DRAWN BY : NAP 8/18	
CHECKED BY :	

BRIDGE JACKING NOTES:

THIS DETAIL IS A GENERIC EXAMPLE OF A JACKING SCHEME AND DOES NOT NECESSARILY REPRESENT SPECIFIC CONDITIONS AT A PARTICULAR BRIDGE. ACTUAL BRIDGE GEOMETRIES, DIMENSIONS, AND CONDITIONS MAY DIFFER FROM THIS DETAIL. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL INVESTIGATE THE BRIDGES ON THE PROJECT AND DEVELOP A JACKING PLAN TO BE SUBMITTED FOR REVIEW AND APPROVAL. SEE BRIDGE JACKING SPECIAL PROVISION.

PRIOR TO BRIDGE JACKING OPERATIONS, THE ENGINEER AND CONTRACTOR SHALL INSPECT THE STRUCTURE FOR ANY NOTABLE DEFECTS TO THE PRIMARY AND SECONDARY STRUCTURAL MEMBERS. ALL NOTABLE DEFECTS SHALL BE DOCUMENTED AND REPORTED TO THE AREA BRIDGE MAINTENANCE ENGINEER PRIOR TO COMMENCEMENT OF ANY BRIDGE JACKING. THE CONTRACTOR SHALL PROVIDE SAFE AND SUFFICIENT ACCESS TO ALL STRUCTURAL MEMBERS FOR THE ENGINEER TO ESTABLISH PROPER DOCUMENTATION.

PRIOR TO JACKING, THE CONTRACTOR SHALL ENSURE THERE ARE NO OBSTACLES PREVENTING THE BEAM FROM BEING LIFTED.

THE BEAM SHALL BE LIFTED ENOUGH THAT THE BEAM CLEARS THE BEARINGS AND ALL LOAD IS SUPPORTED BY THE JACKS. AFTER JACKING IS COMPLETE, THE CONTRACTOR SHALL PROVIDE FOR A METHOD TO REMOVE THE JACKS AND SUPPORT THE BEAM FOR DEAD AND LIVE LOAD DURING THE REPAIR OPERATIONS, IF THE JACKS REMAIN IN PLACE DURING THE ENTIRE JACKING AND REPAIR OPERATION, THEY SHALL HAVE MECHANICAL LOCK OFF CAPABILITIES.

IF, DURING THE JACKING PROCESS, OR WHILE THE BEAM IS BEING SUPPORTED, THE BEAM SHIFTS FROM ITS ORIGINAL POSITION, ALL WORK SHALL CEASE AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

BEARINGS ADJACENT TO THE BEAM BEING JACKED MAY BE LOOSENED TO DECREASE THE RESISTANCE OF THE DECK SLAB DURING JACKING. ALL BEARINGS LOOSENED SHALL BE TIGHTENED BACK AFTER REPAIR OPERATIONS ARE COMPLETED AND THE JACKS AND BLOCKING HAVE BEEN REMOVED.

THE MAXIMUM DIFFERENTIAL BETWEEN ADJACENT BEAMS THAT ARE BEING JACKED IS 1/8".

LOADS PROVIDED IN THE "BRIDGE JACKING TABLE" ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY, THE CONTRACTOR'S ENGINEER SHALL DETERMINE THE EXPECTED LOADS TO BE LIFTED DURING THE BRIDGE JACKING OPERATIONS.

THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS AND CALCULATIONS OF THE JACKING PROCEDURE(S) SEALED BY A PROFESSIONAL ENGINEER IN THE STATE OF NORTH CAROLINA TO THE ENGINEER FOR APPROVAL PRIOR TO BRIDGE JACKING OPERATIONS.

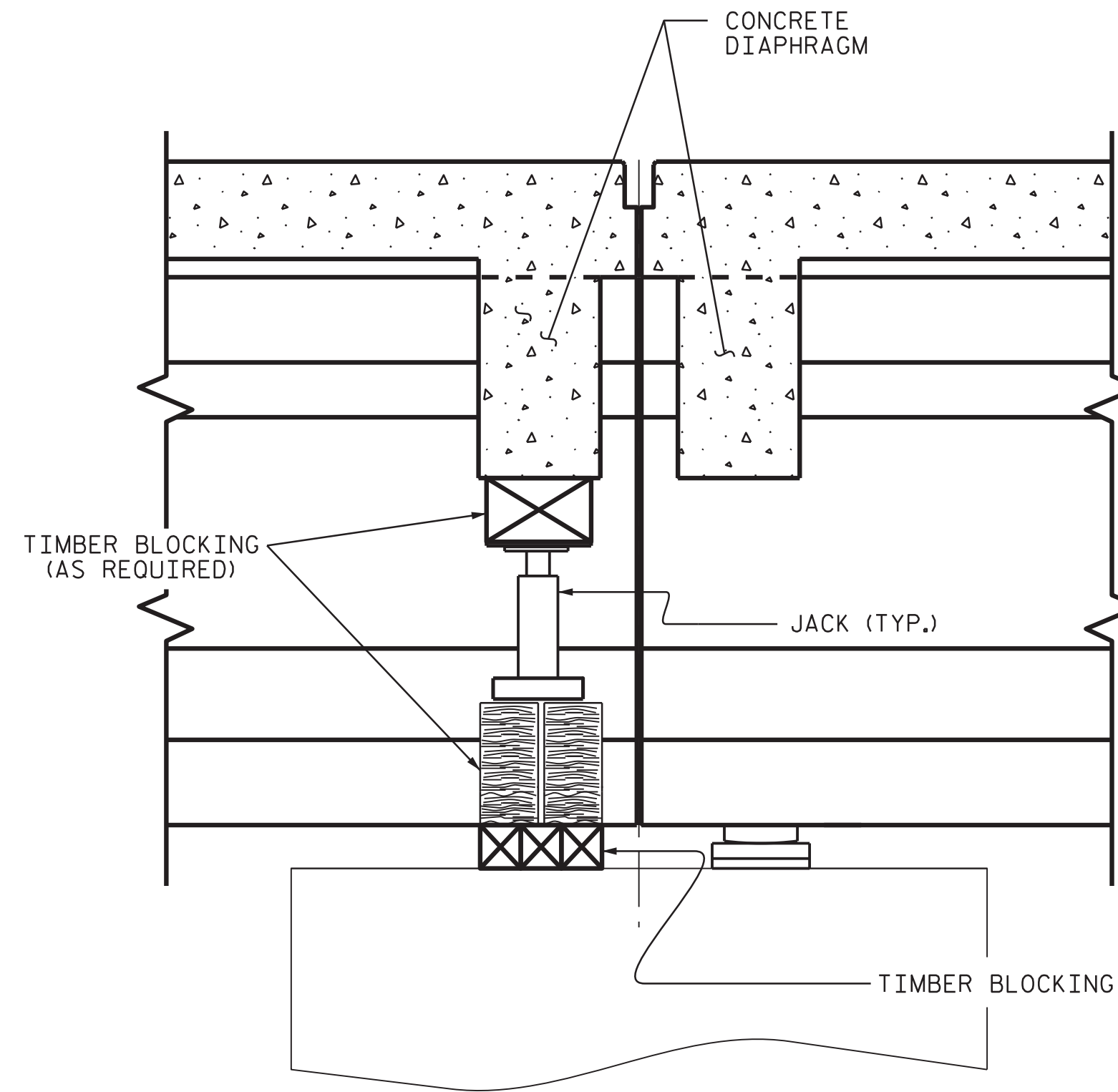
FOR TYPE I OR TYPE II BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR WORKING DRAWING SUBMITTALS, SEE SPECIAL PROVISIONS.

ANY STEEL THAT HAS BEEN WELDED TO THE EXISTING STRUCTURE SHALL REMAIN IN PLACE.

TYPE II BRIDGE JACKING SHALL BE DONE WITH A HYDRAULIC JACKING SYSTEM THAT LIFTS EACH BEAM ALONG ENTIRE SPAN END WITH EQUAL FORCE AND AT AN EQUAL RATE.

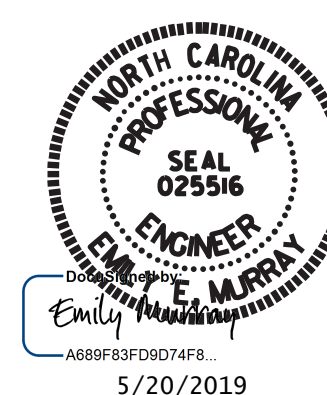
THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED TO THE EXISTING STRUCTURE BY BRIDGE JACKING OPERATIONS AT NO ADDITIONAL COST TO THE DEPARTMENT.



SECTION THRU DIAPHRAGM

BRIDGE JACKING TABLE				
LOCATION	SPAN	BEAM(S)	BRIDGE JACKING TYPE	DEAD LOAD (DC+DW) (KIPS)
BENT 1	B	5	TYPE I	48.0
BENT 2	B	5	TYPE I	48.0
BENT 2	B	4	TYPE I	49.0

PROJ. NO. 15BPR.45
DUPLIN COUNTY
 BRIDGE NO. 300433



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
**BRIDGE JACKING
 DETAILS**

ASSEMBLED BY : R. G. BEAUCHAMP DATE : 4/19
 CHECKED BY : J. R. MCROY DATE : 4/19
 DRAWN BY : NAP 08/18
 CHECKED BY :

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			SD-2
2			4			TOTAL SHEETS 31

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	- - - - -	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	- - - - -	SEE PLANS
IMPACT ALLOWANCE	- - - - -	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF STRUCTURAL STEEL - AASHTO M270 GRADE 36	- -	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	- -	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	- -	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION - GRADE 60	- - -	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	- - - - -	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	- - - - -	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR UNTREATED EXTREME FIBER STRESS	- - -	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	- - - - -	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	- - - - -	30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N.C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 3/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990

STD. NO. SN