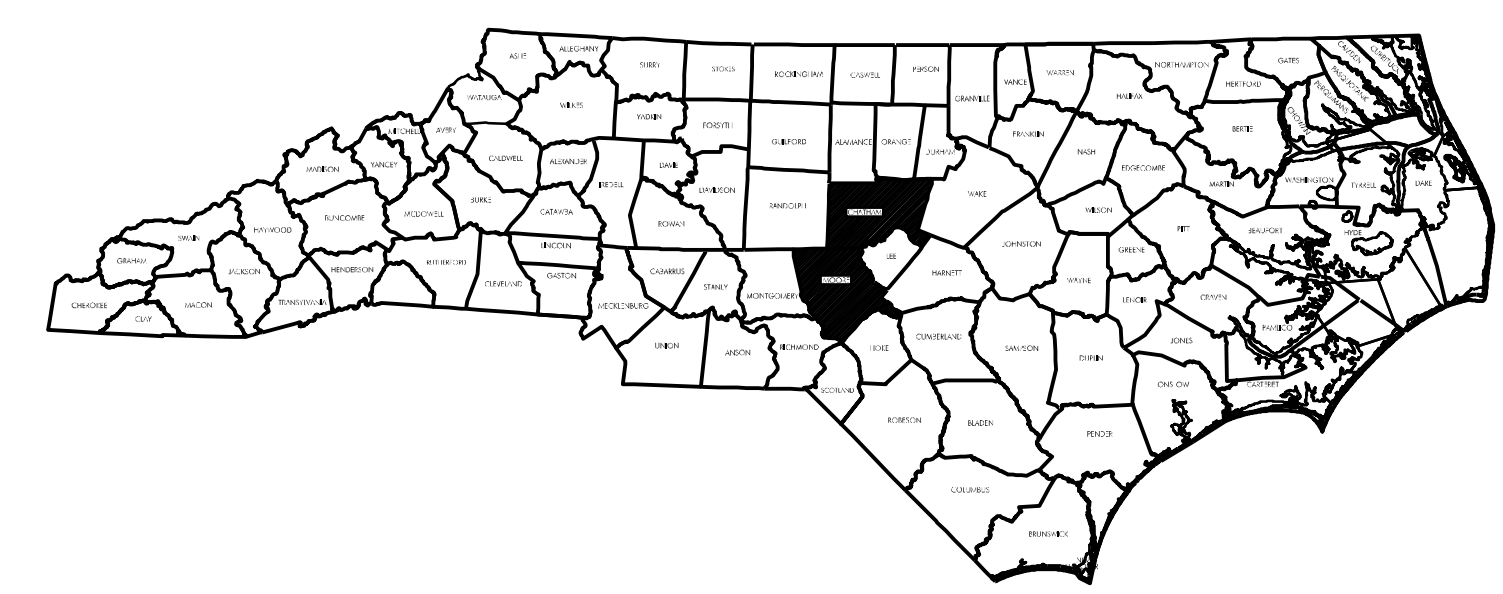


**CONTRACT: C204455 TIP PROJECT: 15BPR.130**

**STRUCTURES**



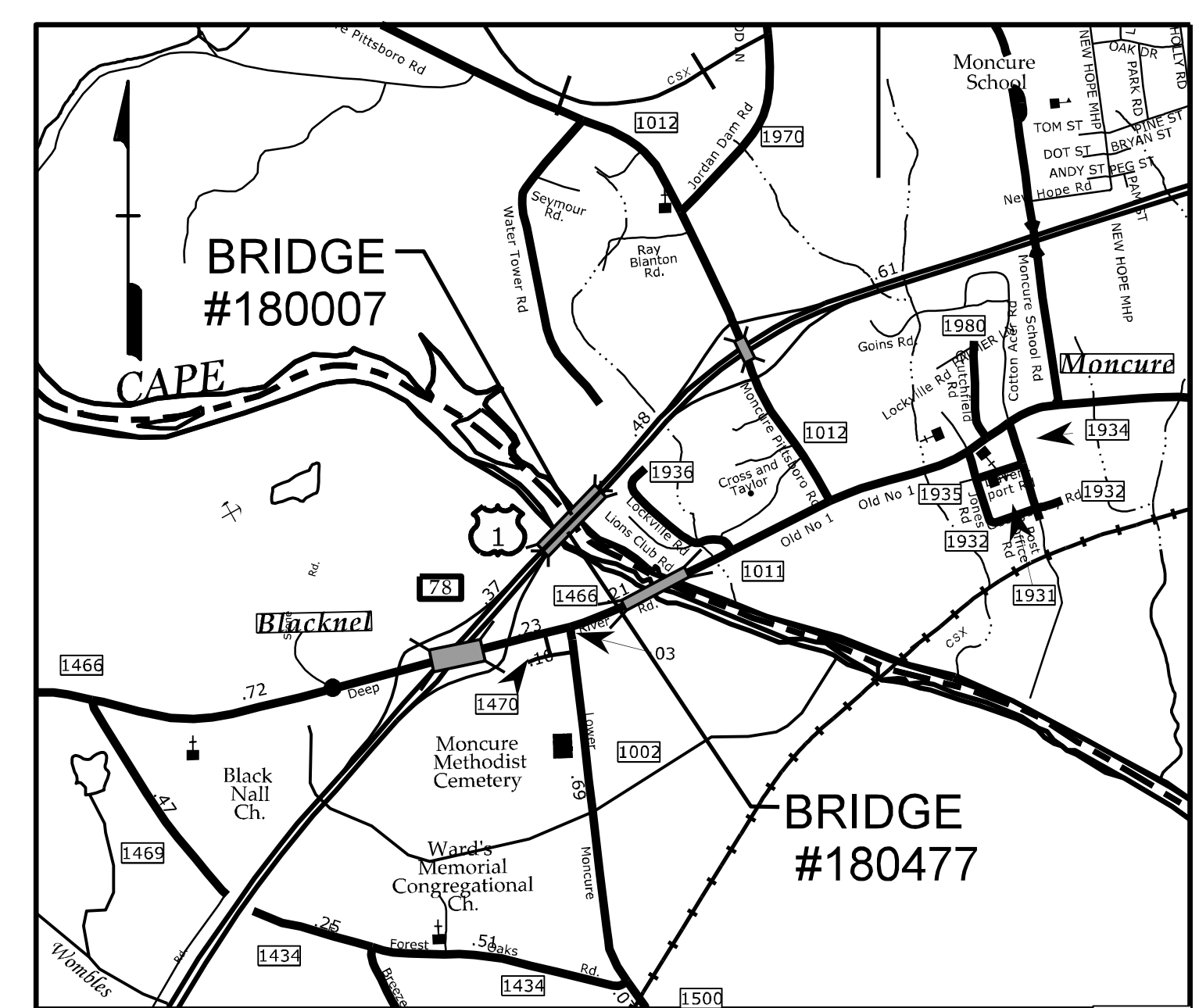
**STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS**

**MOORE & CHATHAM COUNTY**

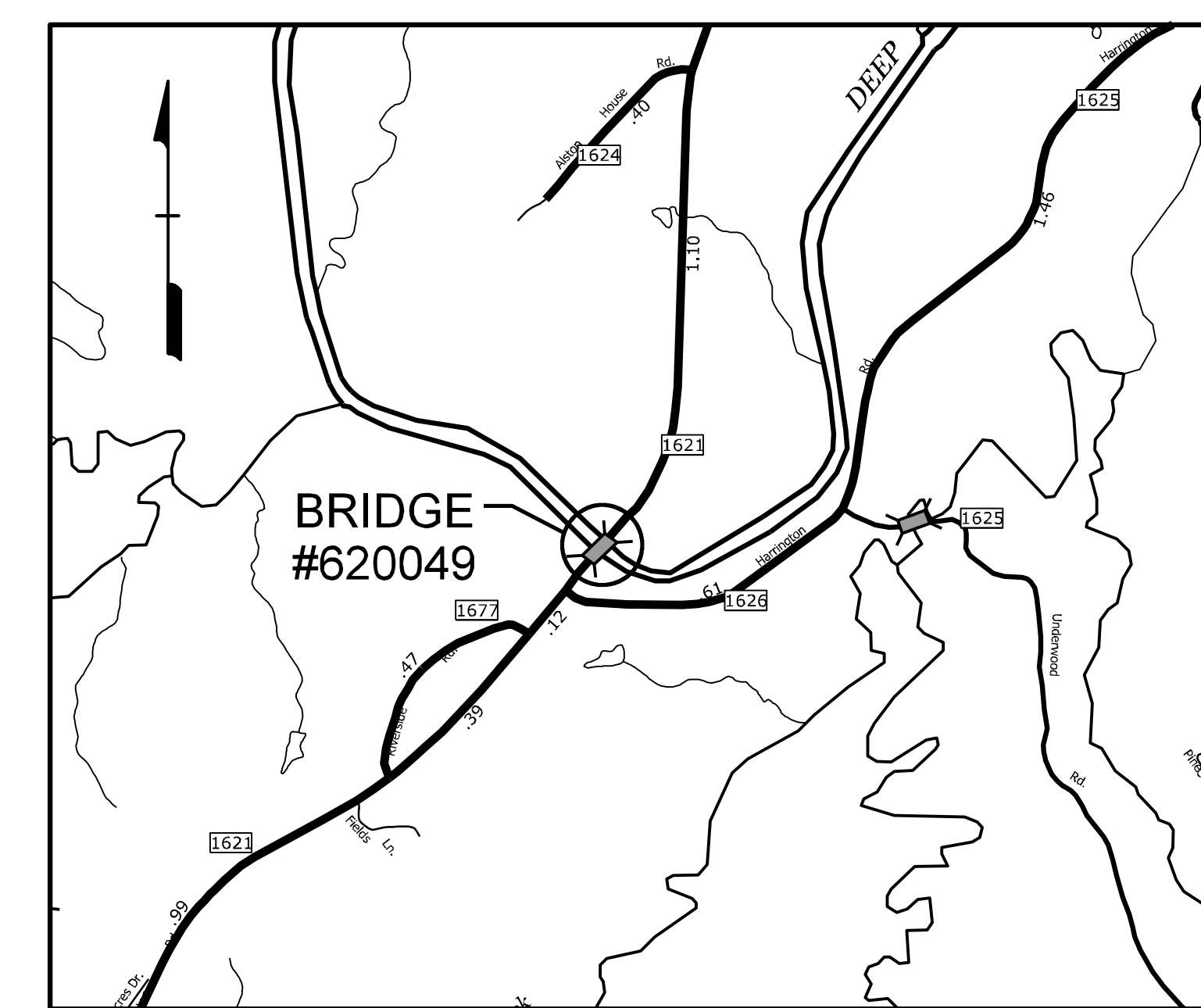
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15BPR.130	1	
STATE PROJECT NO.	F. A. PROJ. NO.	DESCRIPTION	
15BPR.130.1		PE	
15BPR.130.3		CONSTR.	

**LOCATION:** BRIDGE #180007 ON US 1 SBL OVER DEEP RIVER BETWEEN SR 1012 (MONCURE PITTSBORO RD) AND SR 1466 (DEEP RIVER RD).  
 BRIDGE #180477 ON US 1 NBL OVER DEEP RIVER BETWEEN SR 1012 (MONCURE PITTSBORO RD) AND SR 1466 (DEEP RIVER RD).  
 BRIDGE #620049 ON SR 1621 (S CARBANTON RD) OVER DEEP RIVER BETWEEN SR 1626 (HARRINGTON RD) AND SR 1624 (ALSTON HOUSE RD).  
 BRIDGE #620072 ON NC 22 OVER DEEP RIVER BETWEEN SR 1470 (N MOORE RD) AND SR 1606 (RIVER RD).

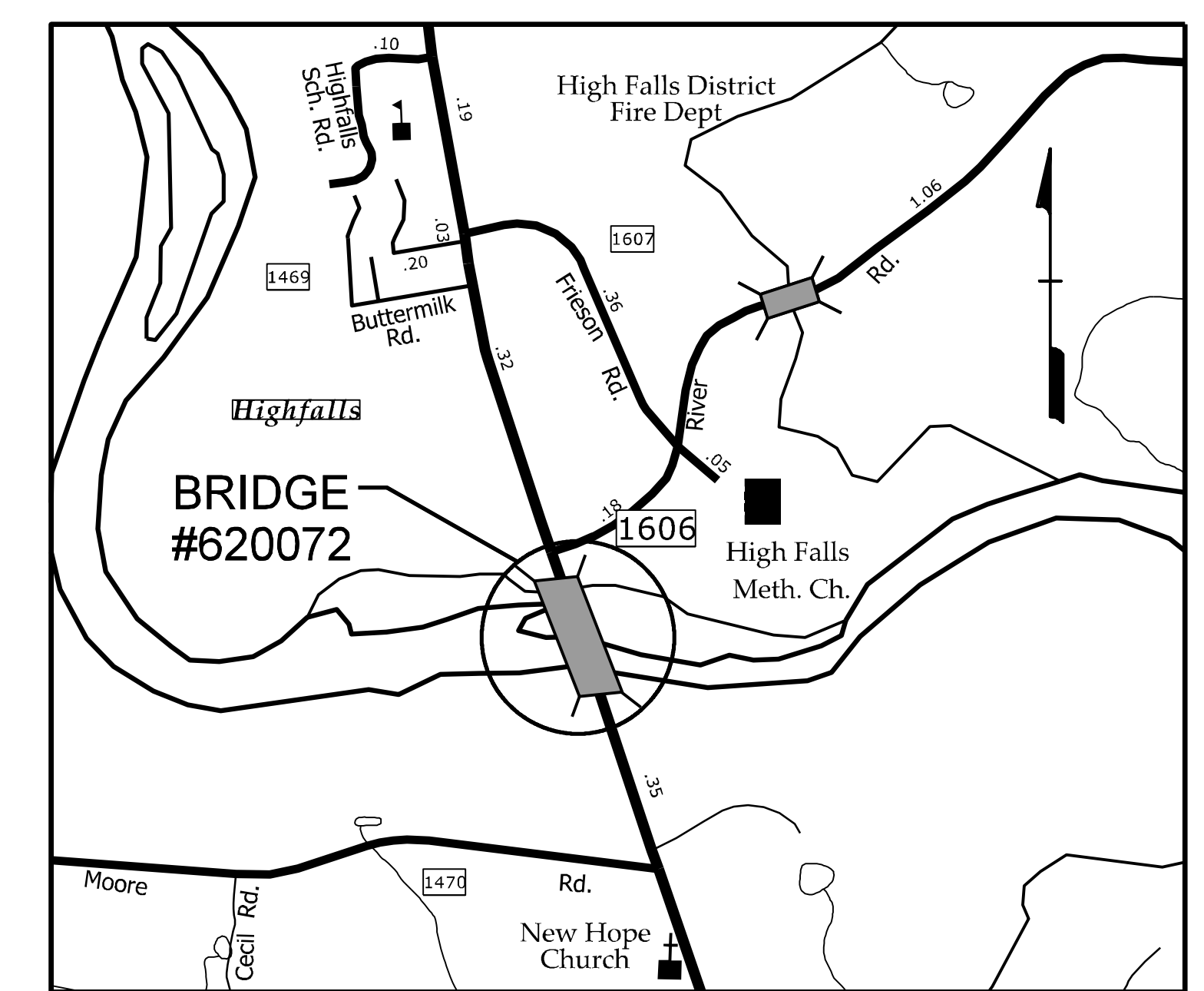
**TYPE OF WORK:** BRIDGE PRESERVATION - SILANE BARRIER TREATMENT, LATEX MODIFIED CONCRETE OVERLAY, POLYMER CONCRETE OVERLAY, DECK REPAIRS, JOINT REPAIRS, REPAIRS TO PRESTRESSED CONCRETE GIRDERS, CLEANING AND ZONE PAINTING EXISTING STRUCTURAL STEEL, SUBSTRUCTURE REPAIRS, DRIFT REMOVAL.



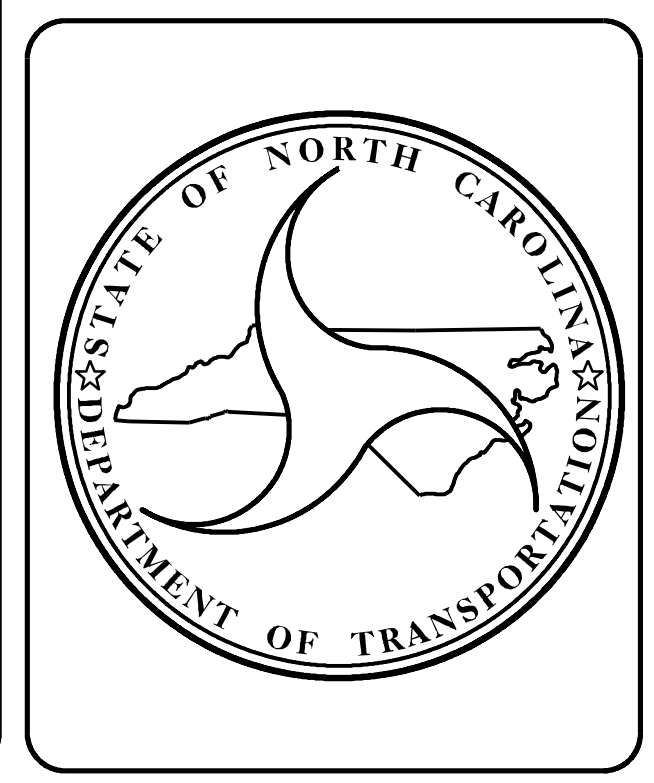
**CHATHAM 180007 & 180477**



**MOORE 620049**



**MOORE 620072**



**DESIGN DATA**

BRIDGE #180007	ADT 2019	= 16,500
BRIDGE #180477	ADT 2019	= 16,500
BRIDGE #620049	ADT 2015	= 480
BRIDGE #620072	ADT 2018	= 2,100

**PROJECT LENGTH**

PROJECT LENGTH	#180007	= 0.159 MI
PROJECT LENGTH	#180477	= 0.159 MI
PROJECT LENGTH	#620049	= 0.074 MI
PROJECT LENGTH	#620072	= 0.125 MI

*Prepared for:*  
**STRUCTURES MANAGEMENT UNIT**  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2024 STANDARD SPECIFICATIONS

**LETTING DATE:**  
JUNE 18, 2024

**EMILY MURRAY**  
PROJECT ENGINEER

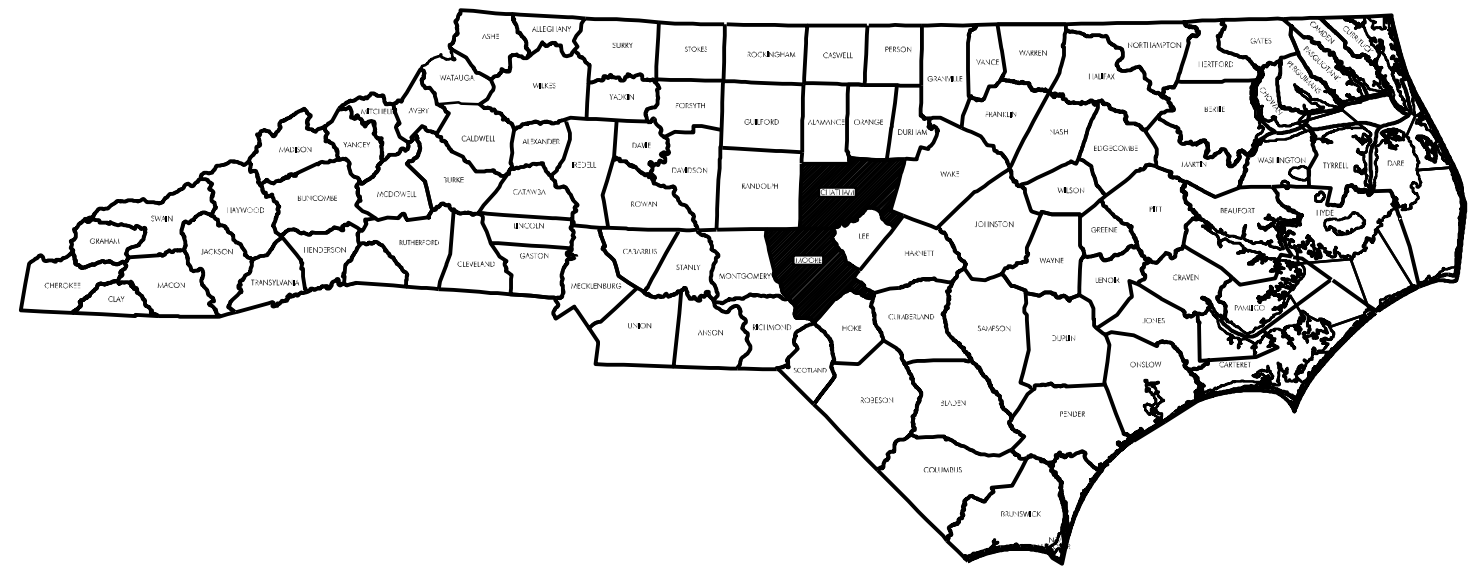
**VOLKERT**

5430 Wade Park Boulevard, Suite 410  
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Tel. 919-854-0344 Fax. 919-854-0355  
NC License No. F-0765



**TIP PROJECT: 15BPR.130**

**CONTRACT: C204455**



**STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS**

**MOORE & CHATHAM COUNTY**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15BPR.130	1A	
STATE PROJECT NO.	F. A. PROJ. NO.	DESCRIPTION	
15BPR.130.1		PE	
15BPR.130.3		CONSTR.	

LOCATION: BRIDGE #180007 ON US 1 SBL OVER DEEP RIVER BETWEEN SR 1012 (MONCURE PITTSBORO RD) AND SR 1466 (DEEP RIVER RD).  
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 BRIDGE #620072 ON NC 22 OVER DEEP RIVER BETWEEN SR 1470 (N MOORE RD) AND SR 1606 (RIVER RD).

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**INDEX OF SHEETS**

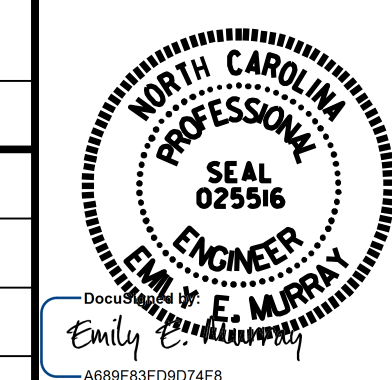
STRUCTURE NO.	DESCRIPTION	SHEET NUMBER
	TITLE SHEET	1
	INDEX OF SHEETS & SUMMARY OF QUANTITIES	1A
180007	BRIDGE ON US 1 SBL OVER DEEP RIVER	S-1 TO S-43
180477	BRIDGE ON US 1 NBL OVER DEEP RIVER	S-44 TO S-84
620049	BRIDGE ON SR 1626 OVER DEEP RIVER	S-85 TO S-116
620072	BRIDGE ON NC 22 OVER DEEP RIVER	S-117 TO S-154
	DETAILS	S-155 TO S-156
	STANDARD NOTES	SN

TOTAL BILL OF MATERIALS

BRIDGE NO.	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C	ASPHALT BINDER PLANT MIX	GROOVING BRIDGE FLOORS	POLLUTION CONTROL	CLASS II SURFACE PREPARATION	CONCRETE REPAIRS	SHOTCRETE REPAIRS	EPOXY RESIN INJECTION	DRIFT REMOVAL	ZONE PAINTING OF EXISTING STRUCTURE	PAINTING CONTAINMENT FOR ZONE PAINTING	PAINTING CONTAINMENT FOR BRIDGE NO. ....	FOAM JOINT SEALS FOR PRESERVATION	LATEX MODIFIED CONCRETE OVERLAY - VERY EARLY STRENGTH	POLYESTER POLYMER CONCRETE MATERIALS
	SQ. YDS.	TON	TON	SQ. FT.	LUMP SUM	SQ. YDS.	CU. FT.	CU. FT.	LF	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LF	CU. YDS.	CU. YDS.
180007	0.0	0.0	0.0	30085.6	LUMP SUM	32.2	1.5	7.0	74.5	LUMP SUM	LUMP SUM	LUMP SUM	0.0	273.0	0.0	101.1
180477	0.0	0.0	0.0	36652.9	LUMP SUM	39.3	0.0	0.0	12.0	LUMP SUM	LUMP SUM	LUMP SUM	0.0	329.0	0.0	121.4
620049	156	13.2	0.8	9729.4	LUMP SUM	136.2	63.0	63.5	98.0	LUMP SUM	0.0	0.0	LUMP SUM	145.0	50.6	0.0
620072	156	13.2	0.8	16318.4	0.0	11.0	4.9	369.2	263.5	LUMP SUM	0.0	0.0	0.0	270.0	85.4	0.0
TOTAL	312.0	26.4	1.6	92786.3	LUMP SUM	218.7	69.4	439.7	448.0	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	1017.0	136.0	222.5

TOTAL BILL OF MATERIALS

BRIDGE NO.	EPOXY POLYMER CONCRETE MATERIALS (ALTERNATE)	ELASTOMERIC CONCRETE FOR PRESERVATION	REPAIRS TO PRESTRESSED CONCRETE GIRDERS	BRIDGE JOINT DEMOLITION	SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	SILANE BARRIER RAIL TREATMENT	EPOXY COATING	PLACING AND FINISHING OF LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	SHOTBLASTING BRIDGE DECK	PLACING AND FINISHING POLYMER CONCRETE OVERLAY	CONCRETE DECK REPAIR FOR POLYMER CONCRETE OVERLAY	CLEANING AND PAINTING EXISTING BEARINGS WITH HRCSA	TYPE I BRIDGE JACKING FOR BRIDGE NO. ....
	CU. YD.	CU. FT.	CU. FT.	SQ. FT.	SQ. FT.	SQ. FT.	SQ. FT.	SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	EA.	EA.
180007	101.1	0.0	0.0	0.0	5865.5	5865.5	1703.7	0.0	3639.2	0.0	3639.2	3639.2	32.2	0.0	0.0
180477	121.4	0.0	0.0	0.0	5865.5	5865.5	2061.7	0.0	4370.6	0.0	4370.6	4370.6	39.3	0.0	0.0
620049	0	35.0	12.3	51.0	0.0	0.0	607.5	1215.8	1215.8	1215.8	0.0	0.0	0.0	48.0	6.0
620072	0	65.7	0.0	229.0	0.0	0.0	895.0	2039.8	2039.8	2039.8	0.0	0.0	0.0	0.0	1.0
TOTAL	222.5	100.7	12.3	280.0	11731.0	11731.0	5267.9	3255.6	11265.4	3255.6	8009.8	8009.8	71.5	48.0	7.0



DRAWN BY : B. H. BARNHILL DATE : 04/2024  
 CHECKED BY : E. E. MURRAY DATE : 04/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



### GENERAL NOTES

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT DUE TO THE NATURE OF PRESERVATION PROJECTS, THE EXTENT OF WORK CANNOT ALWAYS BE ACCURATELY DETERMINED PRIOR TO COMMENCEMENT OF WORK. REPAIR LOCATIONS AND ESTIMATES OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS.

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN WHAT IS SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

ALL PAVEMENT MARKINGS WILL BE IN ACCORDANCE WITH THE TRAFFIC MANAGEMENT PLANS.

PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL SUBMIT FOR REVIEW AND APPROVAL A COMPLETE SEQUENCE OF TASKS FOR EACH OPERATION AFFECTING THE BRIDGE SURFACE AND/OR TRAFFIC.

ANY DAMAGE TO EXISTING REINFORCING STEEL, DURING CONTRACTOR'S OPERATIONS, SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AND PERFORMED AT NO ADDITIONAL COST TO THE DEPARTMENT.

THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT THE EXISTING STRUCTURE WHICH IS TO REMAIN IN PLACE WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY PART OF THE EXISTING STRUCTURE WHICH IS TO REMAIN IN PLACE, THE DAMAGED AREA SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER AT NO ADDITIONAL COST TO THE DEPARTMENT.

WORK ON THE BRIDGE(S) SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL BELOW, EXCEPT WHERE THE CONTRACTOR PLANS TO USE PLATFORMS, NETS, SCREENS OR OTHER PROTECTIVE DEVICES TO CATCH THE MATERIAL. THE CONTRACTOR SHALL SUBMIT PLANS FOR CONSTRUCTION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS AND THE PROJECT SPECIAL PROVISIONS.

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 AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATIONS OF THE BRIDGE DECK. THE CONTRACTOR SHALL TAKE CARE THAT ANY CONSTRUCTION DEBRIS THAT COLLECTS IN THE DRAINS IS CONTAINED. DRAINS IN SHOULDERS OF ADJACENT TRAVEL LANE(S) SHALL BE KEPT FREE AND CLEAR OF DEBRIS.

FOR SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT AND SILANE BARRIER RAIL TREATMENT, SEE SILANE BARRIER RAIL TREATMENT SPECIAL PROVISION.

FOR SECURING OF VESSELS, SEE SPECIAL PROVISIONS.

FOR DRIFT REMOVAL, SEE SPECIAL PROVISIONS.

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

FOR SCARIFYING BRIDGE DECK, SHOTBLASTING BRIDGE DECK, AND CLASS II SURFACE PREPARATION, SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.

THE EXISTING BRIDGE DECK SHALL BE REPAIRED AS SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER AFTER SCARIFICATION AND PRIOR TO BRIDGE DECK SHOTBLAST AND APPLICATION OF THE PC OVERLAY. UNLESS OTHERWISE APPROVED, SUCH LOCATIONS SHALL BE REPAIRED WITH PC.

FOR CONCRETE DECK REPAIR FOR POLYMER CONCRETE OVERLAY, PLACING & FINISHING POLYMER CONCRETE OVERLAY, GROOVING BRIDGE FLOORS, POLYMER CONCRETE MATERIALS, AND EPOXY POLYMER CONCRETE MATERIALS, SEE POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISION.

EXISTING STEEL GIRDERS SHALL BE ZONE PAINTED. PAINT ALL BEAM ENDS FOR A LENGTH OF FIVE FEET AND PAINT THREE FEET OUT FROM CENTER OF BOLTED FIELD SPLICES. FOR ZONE PAINTING, PAINTING CONTAINMENT FOR ZONE PAINTING, AND POLLUTION CONTROL, SEE ZONE PAINTING OF EXISTING STRUCTURES SPECIAL PROVISION.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

AT THE TIME OF PREPARATION OF THESE PLANS, IT WAS NOT ANTICIPATED THAT THE FOLLOWING ITEM(S) LISTED BELOW WOULD BE REQUIRED. HOWEVER, IT MAY BE DETERMINED THAT FOLLOWING ITEM(S) LISTED, 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.

ITEM	DESCRIPTION	UNIT
1	CLASS III SURFACE PREPARATION	SO.QY.
2	TYPE II BRIDGE JACKING BRIDGE NO.: 180007 & 180477	EACH

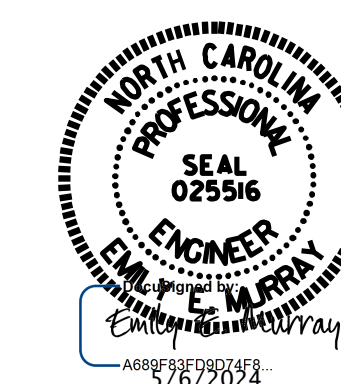


BRIDGE 180007 - LATITUDE: 35°37'10.85"; LONGITUDE: 79°5'38.97"  
 BRIDGE 180477 - LATITUDE: 35°37'10.32"; LONGITUDE: 79°5'38.5"

### 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.

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180007, 180477



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR BRIDGES ON US 1 OVER  
 DEEP RIVER BETWEEN SR 1012  
 (MONCURE PITTSBORO RD.) AND  
 SR 1466 (DEEP RIVER RD.)

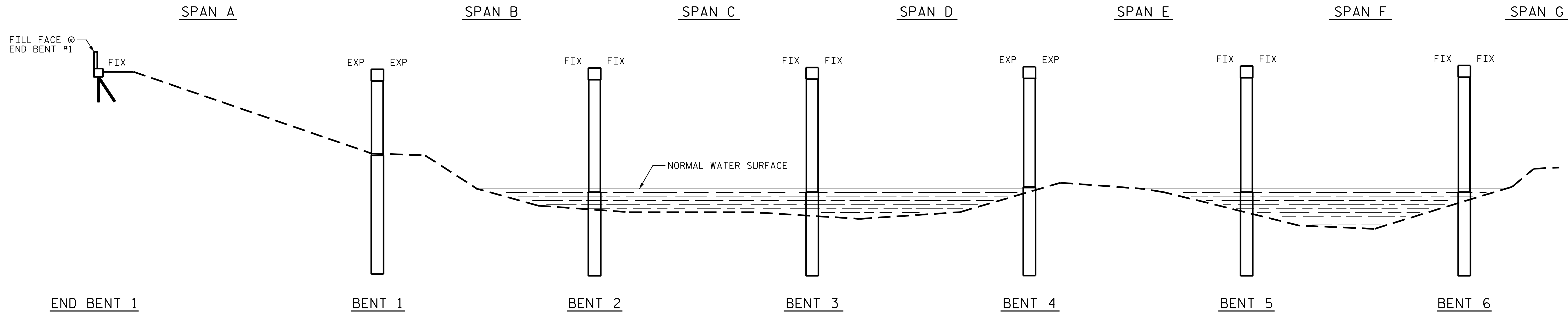
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 Raleigh, NC 27607  
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 SIGNATURES COMPLETED

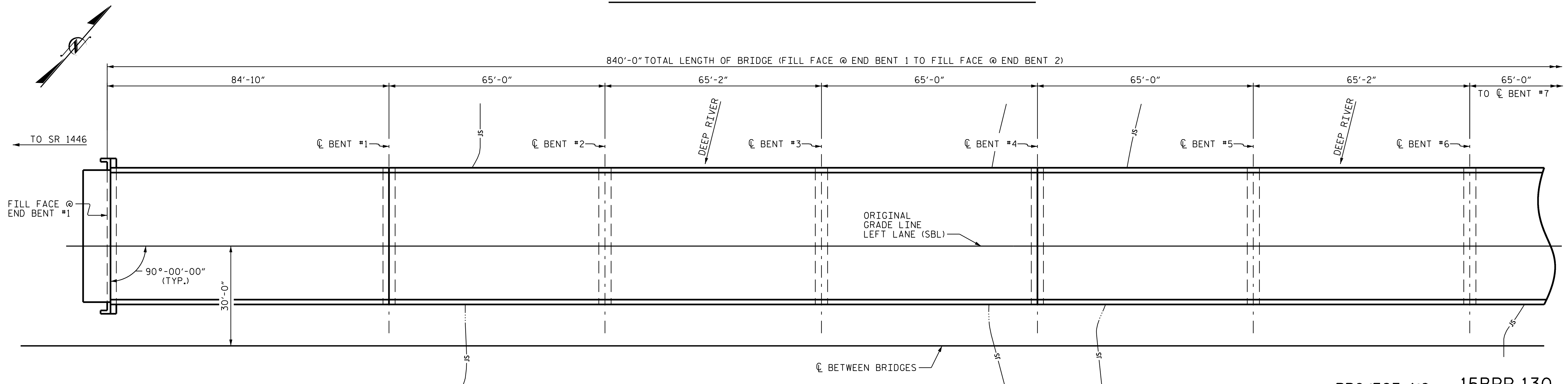
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : J. BRYANT DATE : 7/21/22  
 CHECKED BY : E. MURRAY DATE : 3/1/24





**SECTION ALONG ORIGINAL GRADE LINE**



**PLAN**

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180007

SHEET 1 OF 2

**NOTES:**

GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 8/31/2023.

BRIDGE ORIENTATION CONFORMS TO THE ORIGINAL BRIDGE PLANS/ROUTINE INSPECTION.

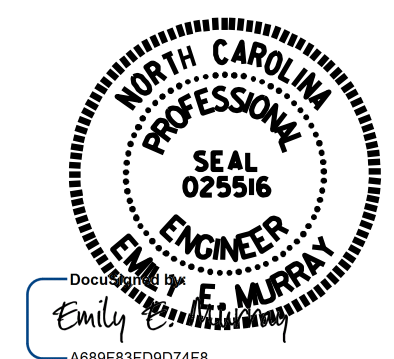
I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.

RESIDENT ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

**SCOPE OF WORK:**

- PARTIALLY REMOVE TOP OF BRIDGE DECK CONCRETE BY SCARIFICATION AND SHOTBLASTING.
- OVERLAY PREPARED TOP OF BRIDGE DECK WITH POLYMER CONCRETE (PC).
- REMOVE EXISTING JOINT MATERIAL AND INSTALL FOAM JOINT SEALS FOR PRESERVATION.
- GROOVE PC BRIDGE DECK.
- PREPARE SURFACE AND APPLY SILANE BARRIER RAIL TREATMENT.

- CLEAN AND ZONE PAINT EXISTING STEEL GIRDERS.
- REMOVE DEBRIS FROM TOP OF EXISTING END BENT AND BENT CAPS AND APPLY EPOXY COATING.
- EPOXY RESIN INJECTION OF CONCRETE CRACKS.
- REMOVE UNSOUND CONCRETE AND PROPERLY PREPARE EXISTING END BENT AND BENT AREAS FOR SHOTCRETE AND CONCRETE REPAIRS.
- REMOVE DRIFT ACCUMULATION.



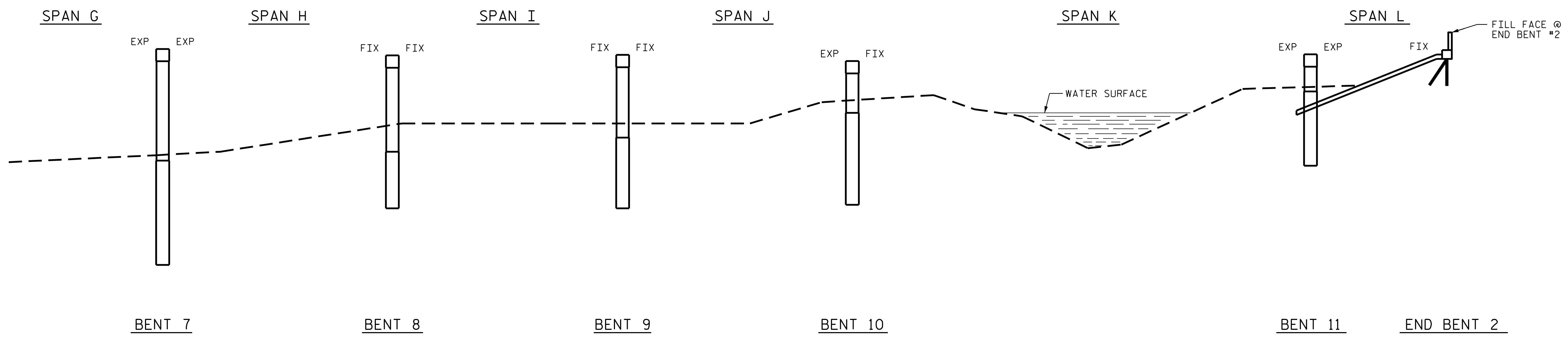
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR LEFT LANE (SBL) OVER  
 DEEP RIVER ON US-1 BETWEEN  
 SR 1012 AND SR 1466

**VOLKERT**  
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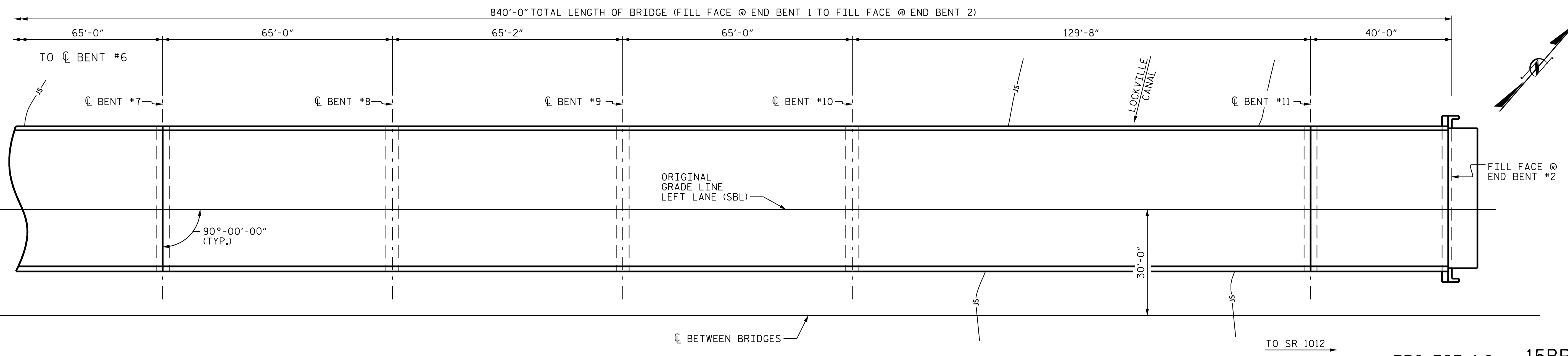
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1			3			TOTAL SHEETS
2			4			156

DRAWN BY : J. BRYANT DATE : 7/21/22  
 CHECKED BY : D. GLADDEN DATE : 8/3/23





SECTION ALONG ORIGINAL GRADE LINE



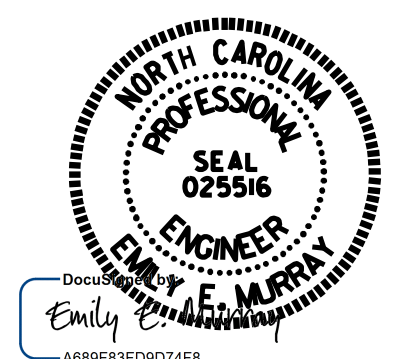
PLAN

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
BRIDGE NO. 180007

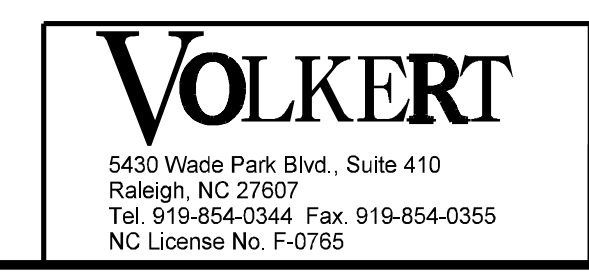
SHEET 2 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**GENERAL DRAWING**  
FOR LEFT LANE (SBL) OVER  
DEEP RIVER ON US-1 BETWEEN  
SR 1012 AND SR 1466



4/24/2024



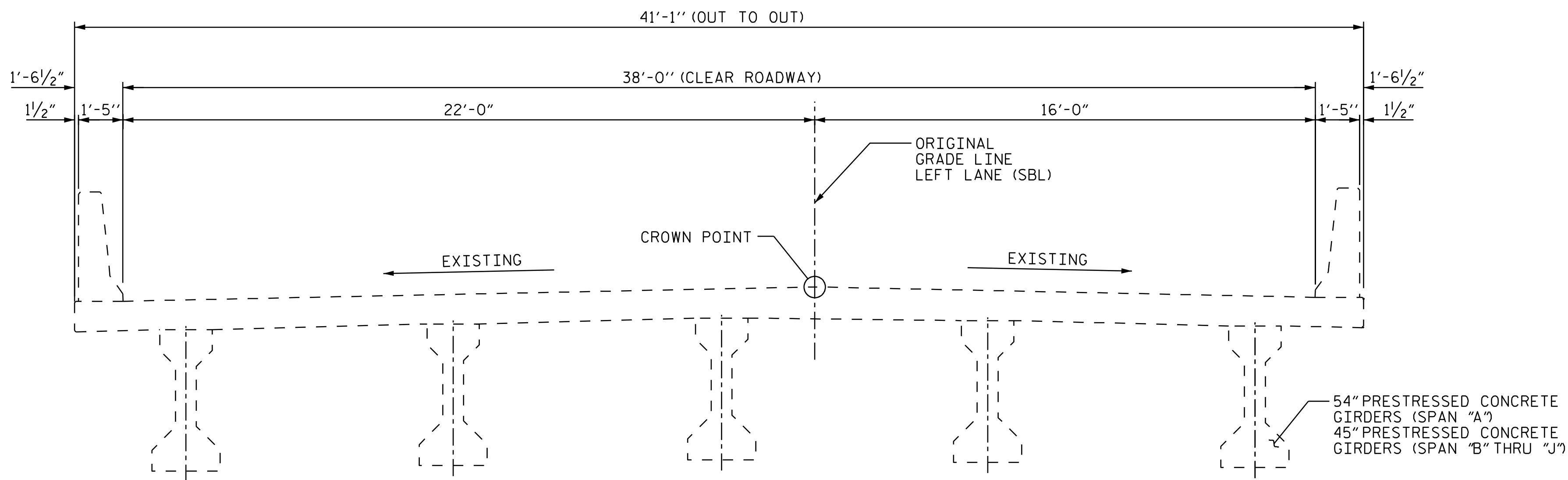
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DRAWN BY : J.BRYANT      DATE : 7/21/22  
CHECKED BY : D. GLADDEN      DATE : 8/3/23

15-APR-2024 15:26  
\*\*\*\*\*DCN\*\*\*\*\*  
brent.bornhill AT C-1001568

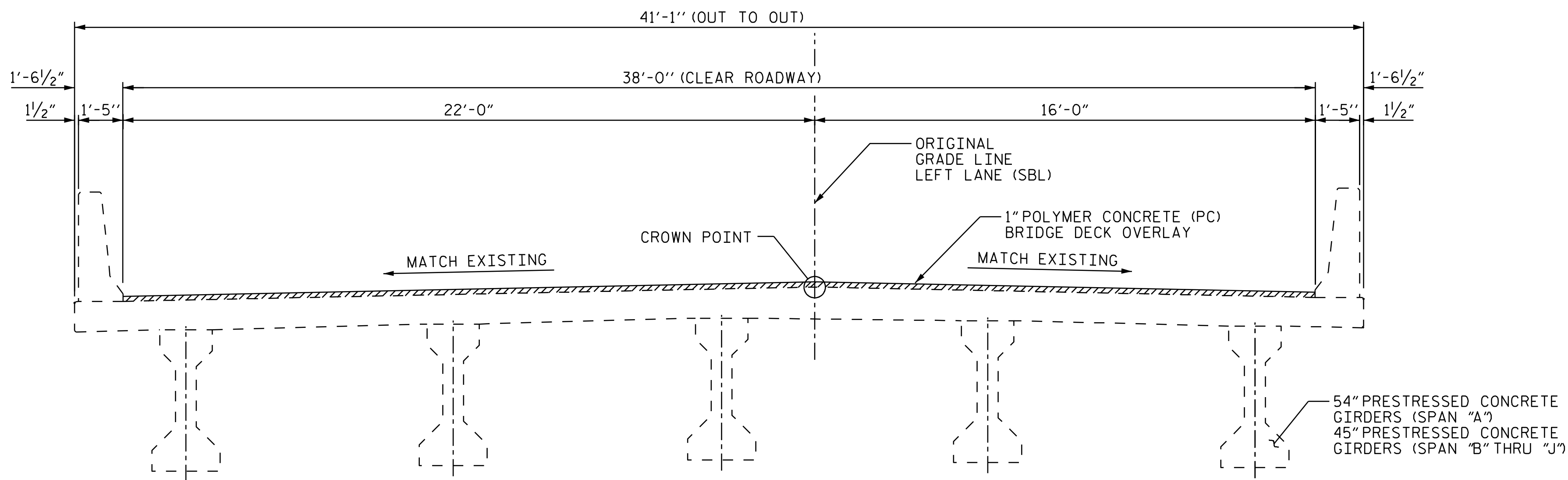
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			156





**EXISTING TYPICAL SECTION**

SPAN "A" THRU "J"

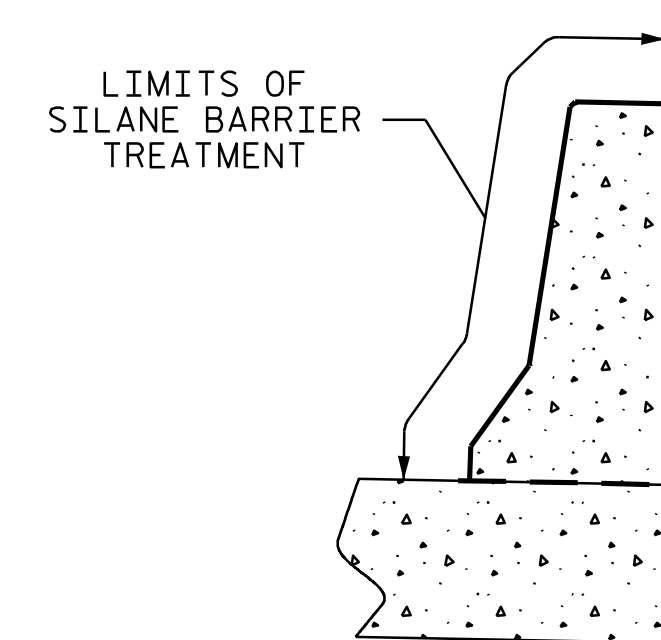
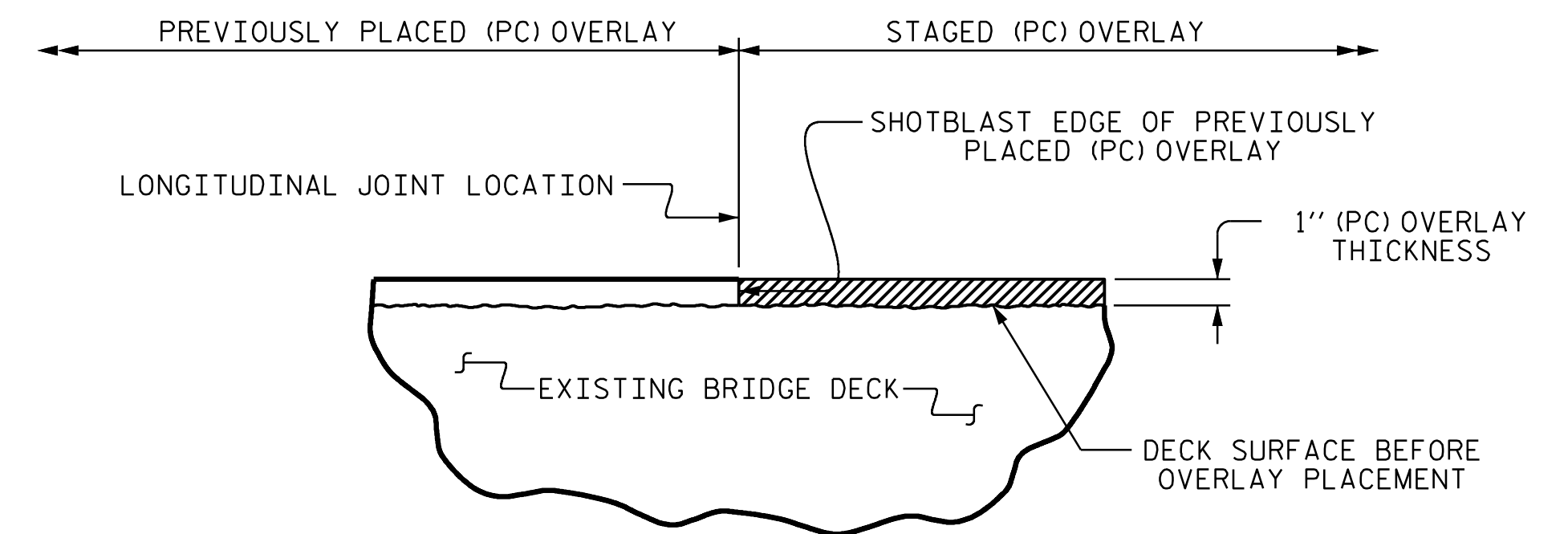
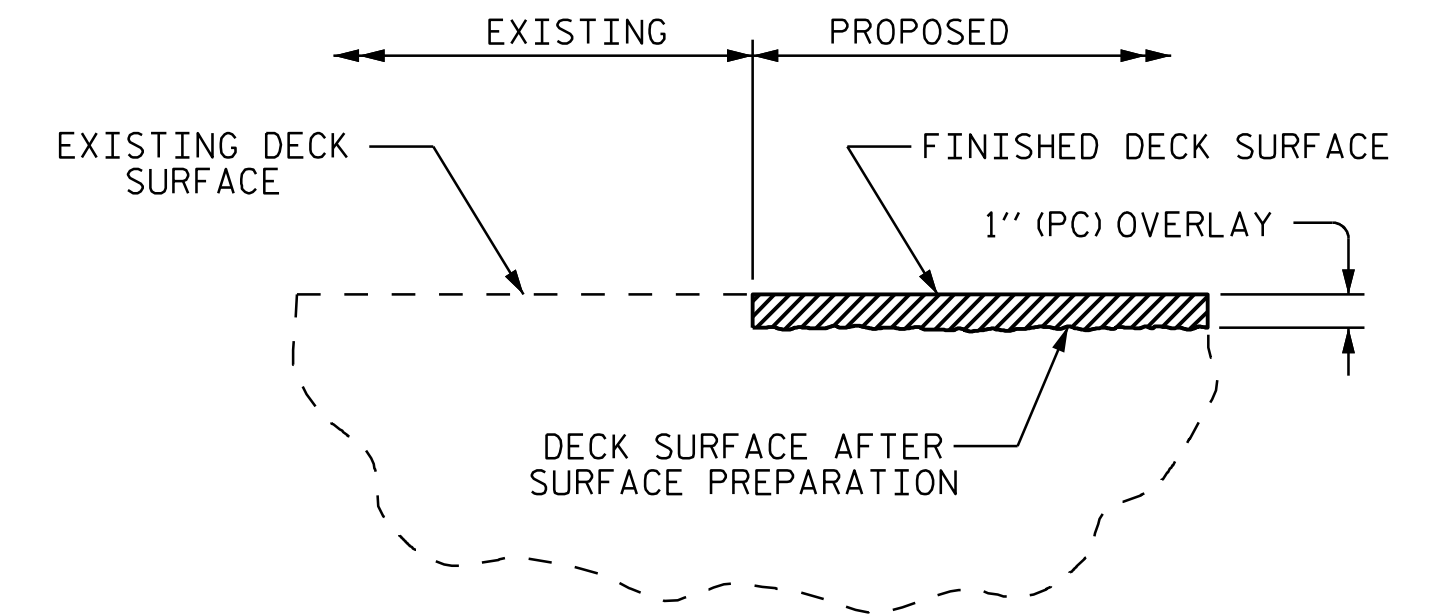


**PROPOSED TYPICAL SECTION**

SPANS "A" THRU "J"

**NOTES**

SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND POLYMER CONCRETE PLACEMENT.



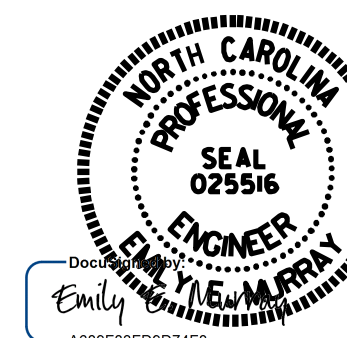
**SILANE BARRIER RAIL TREATMENT**

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
BRIDGE NO: 180007

SHEET 1 OF 3

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**TYPICAL SECTION AND SURFACE PREPARATION DETAILS**



4/24/2024

**VOLKERT**

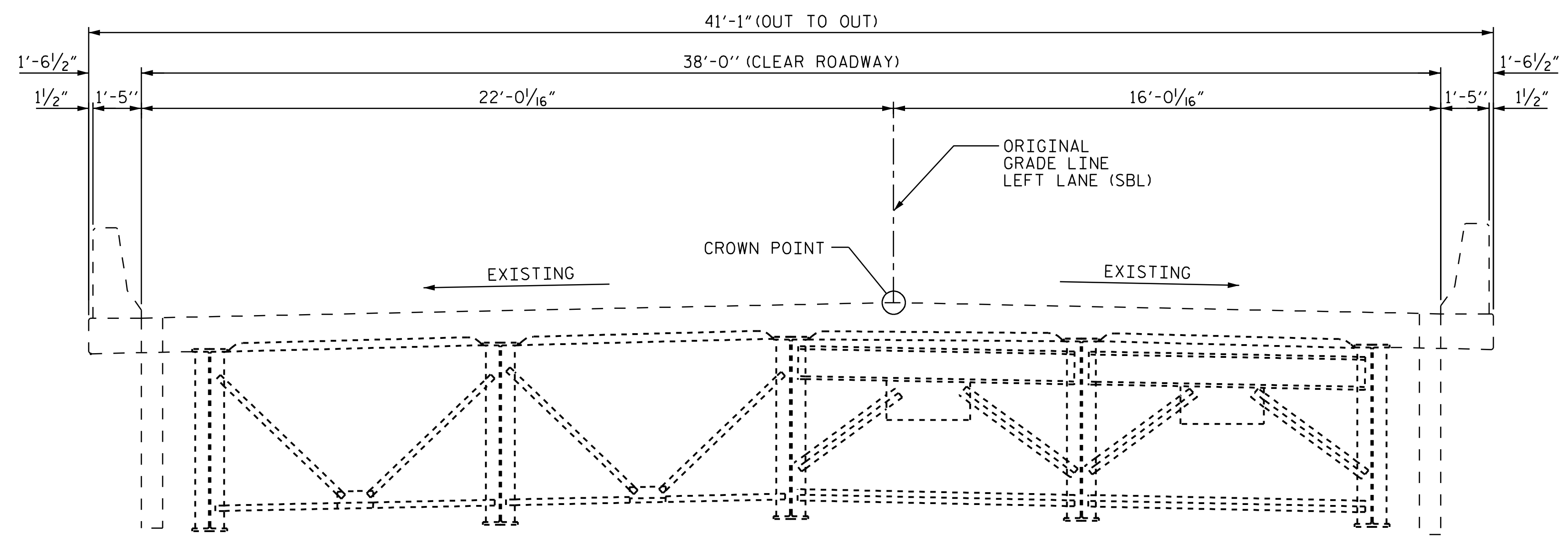
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			156

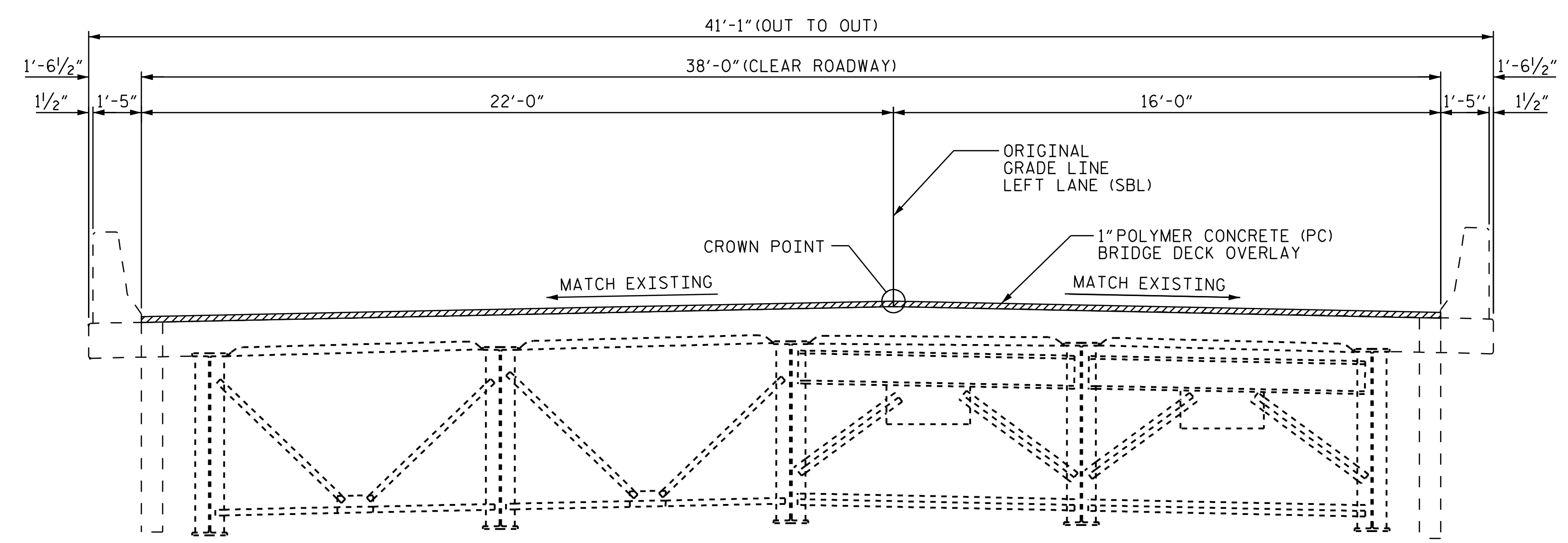
DRAWN BY : T.MAZARURA DATE : 8/22  
CHECKED BY : D.GLADDEN DATE : 8/22





HALF SECTION AT INTERMEDIATE DIAPHRAGM SPAN 'K' ONLY  
 HALF SECTION AT BENT DIAPHRAGM BENT #10 (SPAN 'K') & BENT #11 (SPANS 'K' & 'L')

EXISTING TYPICAL SECTION  
SPAN "K"

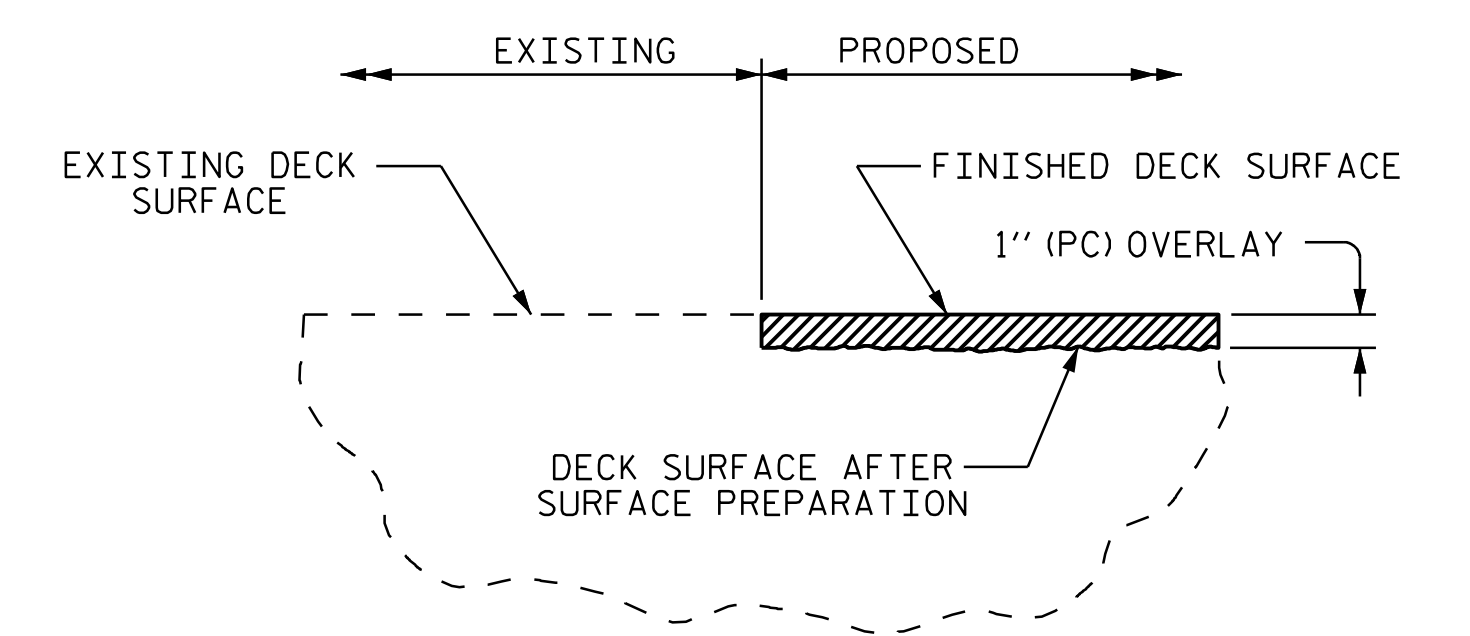


HALF SECTION AT INTERMEDIATE DIAPHRAGM SPAN 'K' ONLY  
 HALF SECTION AT BENT DIAPHRAGM BENT #10 (SPAN 'K') & BENT #11 (SPANS 'K' & 'L')

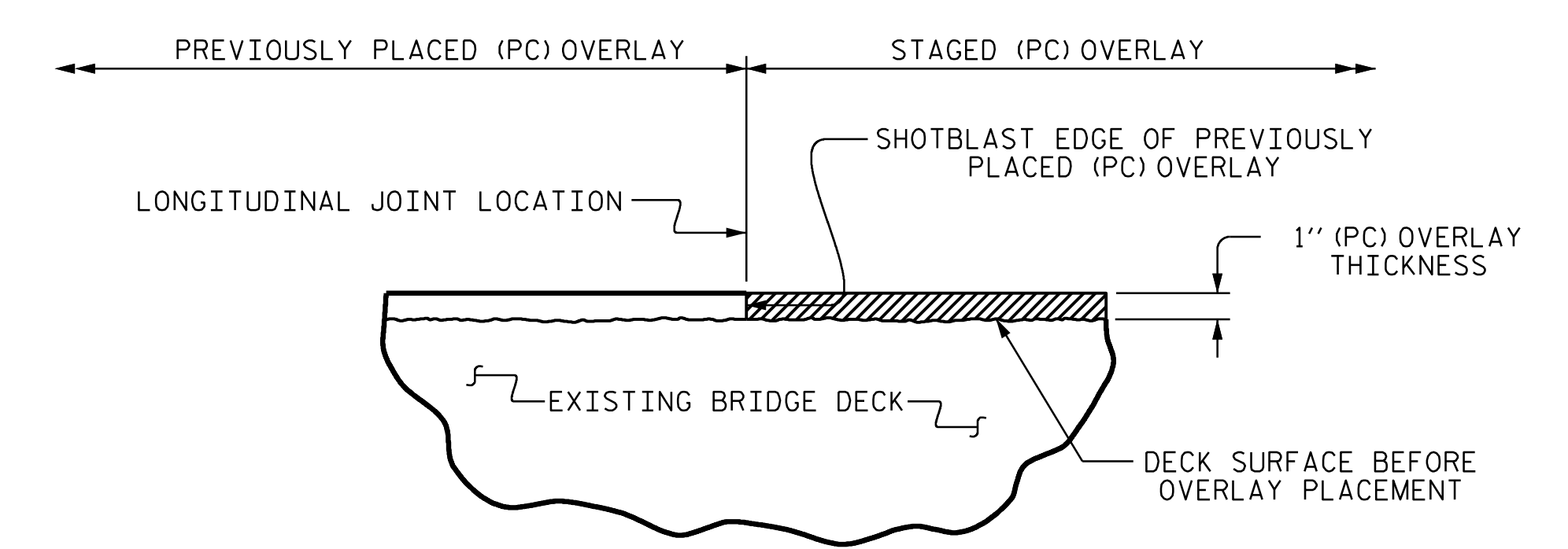
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SPAN "K"

**NOTES**

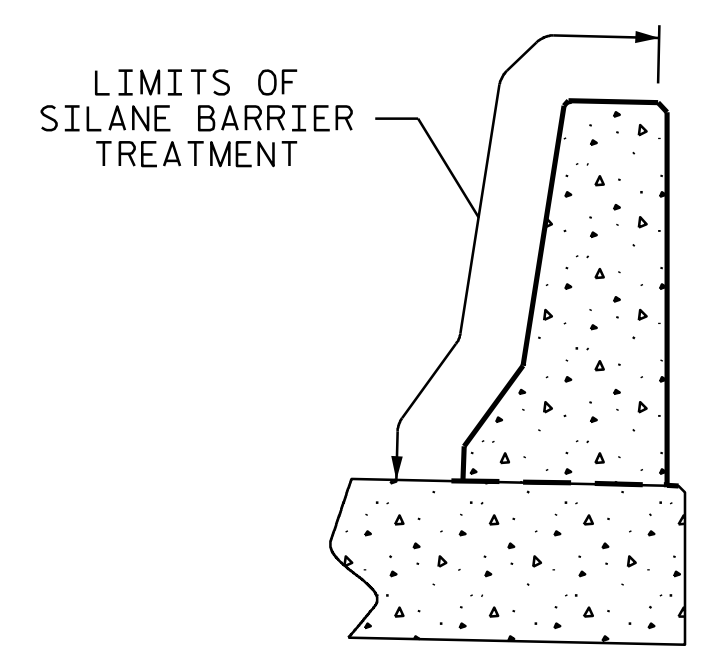
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND POLYMER CONCRETE PLACEMENT.



DETAIL OF POLYMER CONCRETE OVERLAY



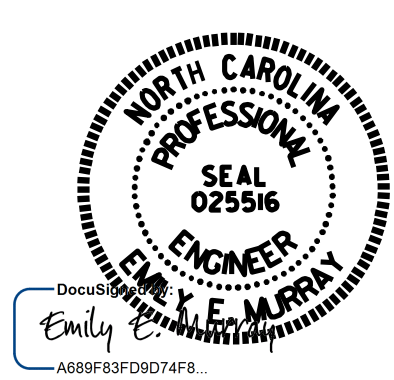
STAGED POLYMER CONCRETE OVERLAY JOINT  
(AS NEEDED)



SILANE BARRIER RAIL TREATMENT

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO.: 180007

SHEET 2 OF 3



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**TYPICAL SECTION AND SURFACE PREPARATION DETAILS**

DRAWN BY : T.MAZARURA DATE : 8/22  
 CHECKED BY : D. GLADDEN DATE : 8/22

**VOLKERT**  
 5430 Wade Park Blvd., Suite 410  
 Raleigh, NC 27607  
 Tel: 919-854-0344 Fax: 919-854-0355  
 NC License No. F-0765

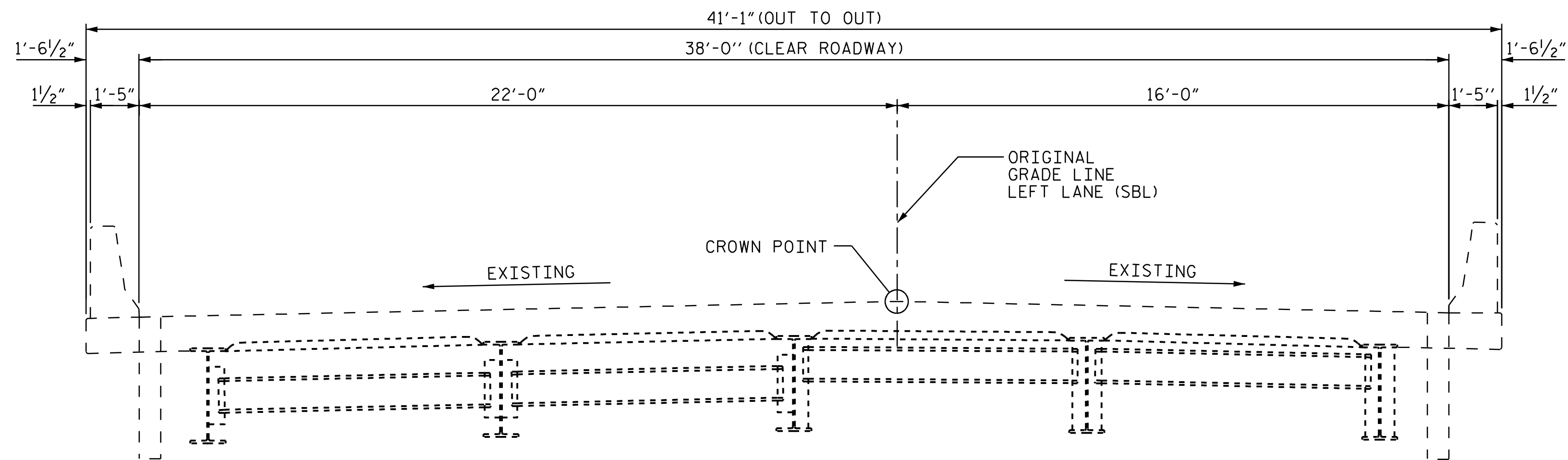
4/24/2024  
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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			156



**NOTES**

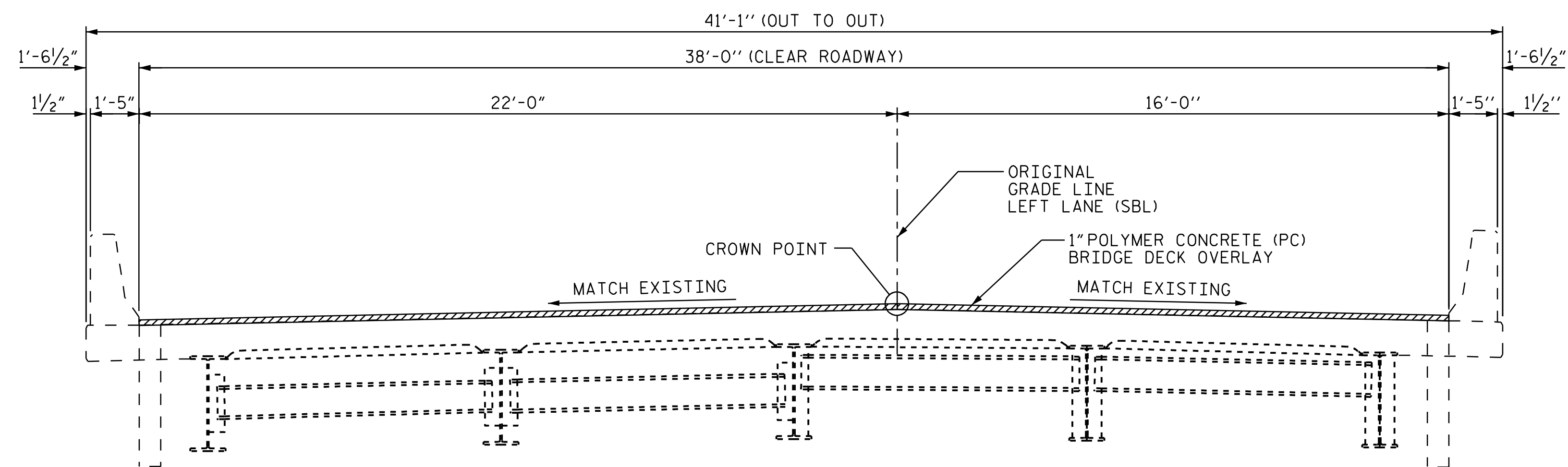
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND POLYMER CONCRETE PLACEMENT.



HALF SECTION AT INTERMEDIATE DIAPHRAGM  
SPAN "L" ONLY

HALF SECTION AT BENT DIAPHRAGM  
END BENT #2 ONLY

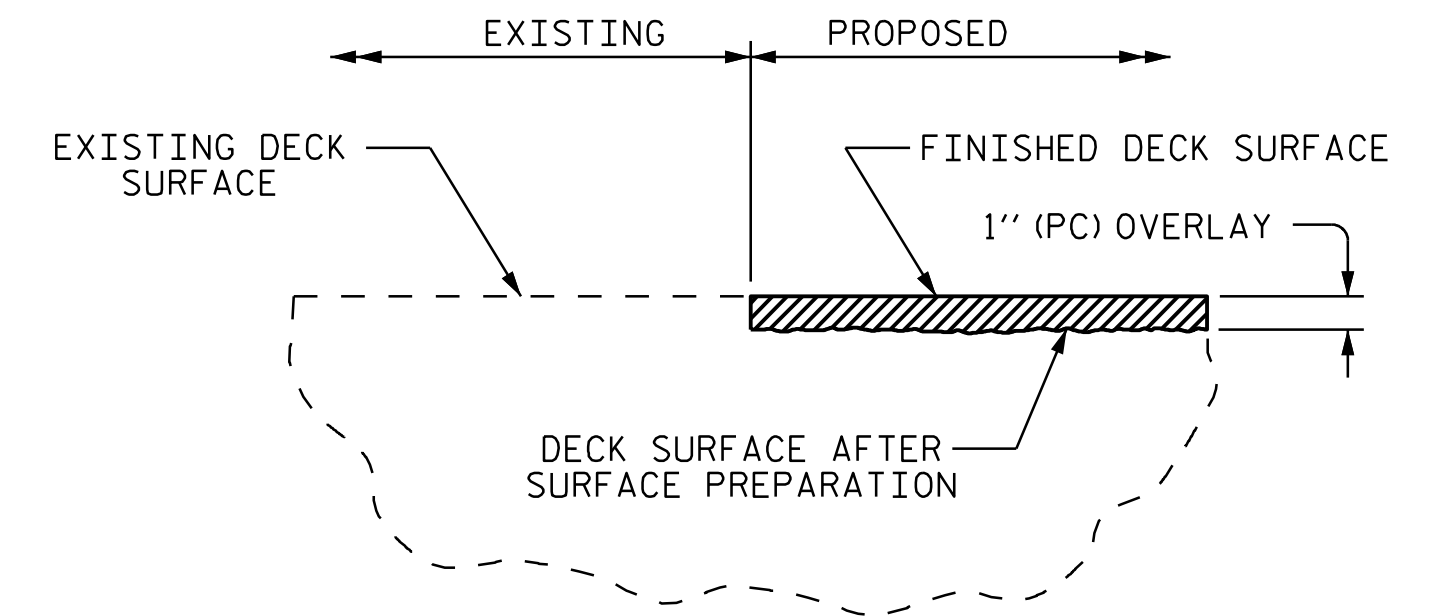
EXISTING TYPICAL SECTION  
SPAN "L"



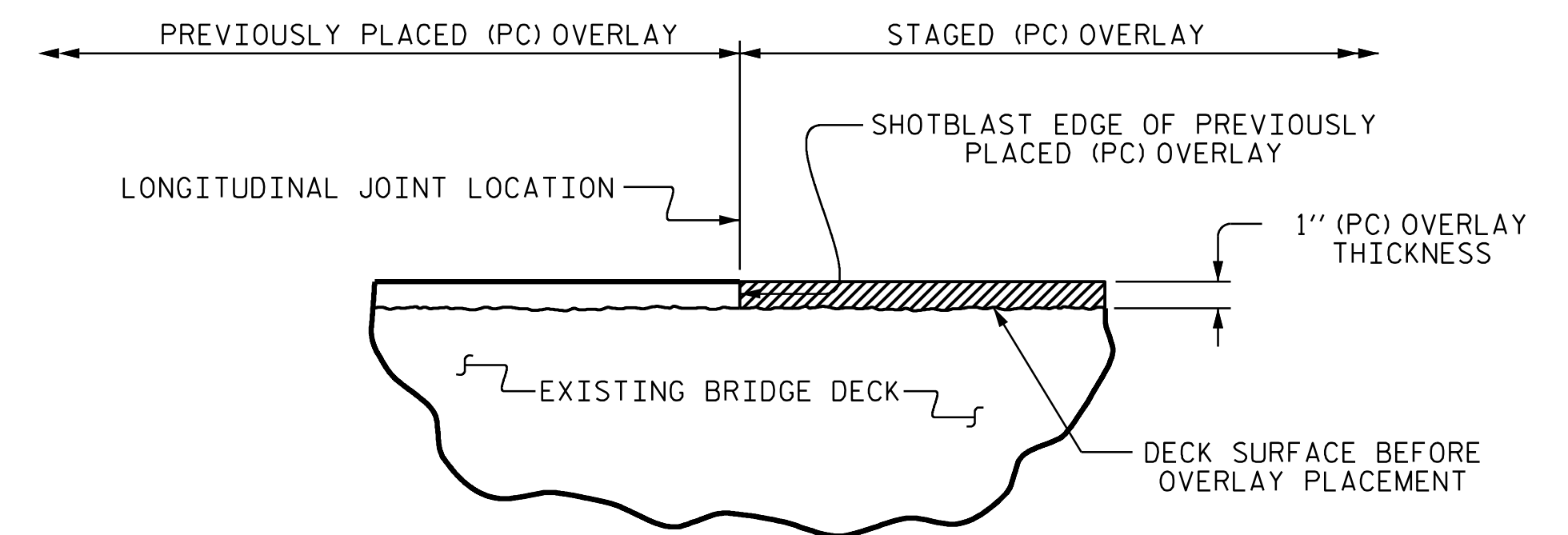
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SPAN "L" ONLY

HALF SECTION AT BENT DIAPHRAGM  
END BENT #2 ONLY

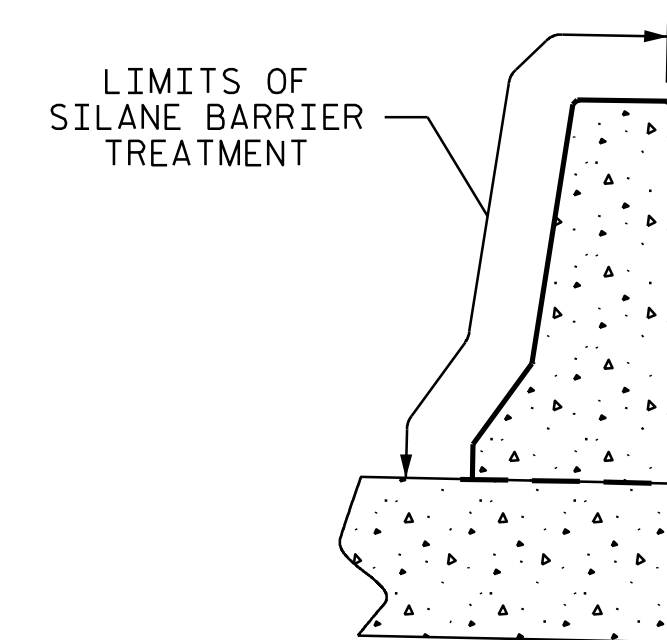
PROPOSED TYPICAL SECTION  
SPAN "L"



DETAIL OF  
POLYMER CONCRETE OVERLAY



STAGED POLYMER  
CONCRETE OVERLAY JOINT  
(AS NEEDED)



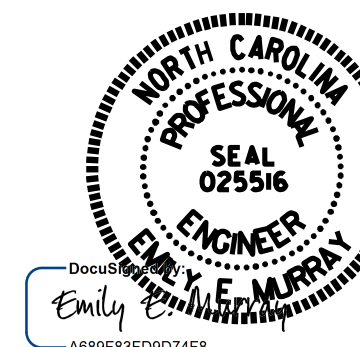
SILANE BARRIER  
RAIL TREATMENT

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
BRIDGE NO.: 180007

SHEET 3 OF 3

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

TYPICAL SECTION  
AND SURFACE  
PREPARATION DETAILS



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1			3			S-6
2			4			TOTAL SHEETS 156

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## AS-BUILT REPAIR QUANTITY TABLE

### TOP OF DECK REPAIRS

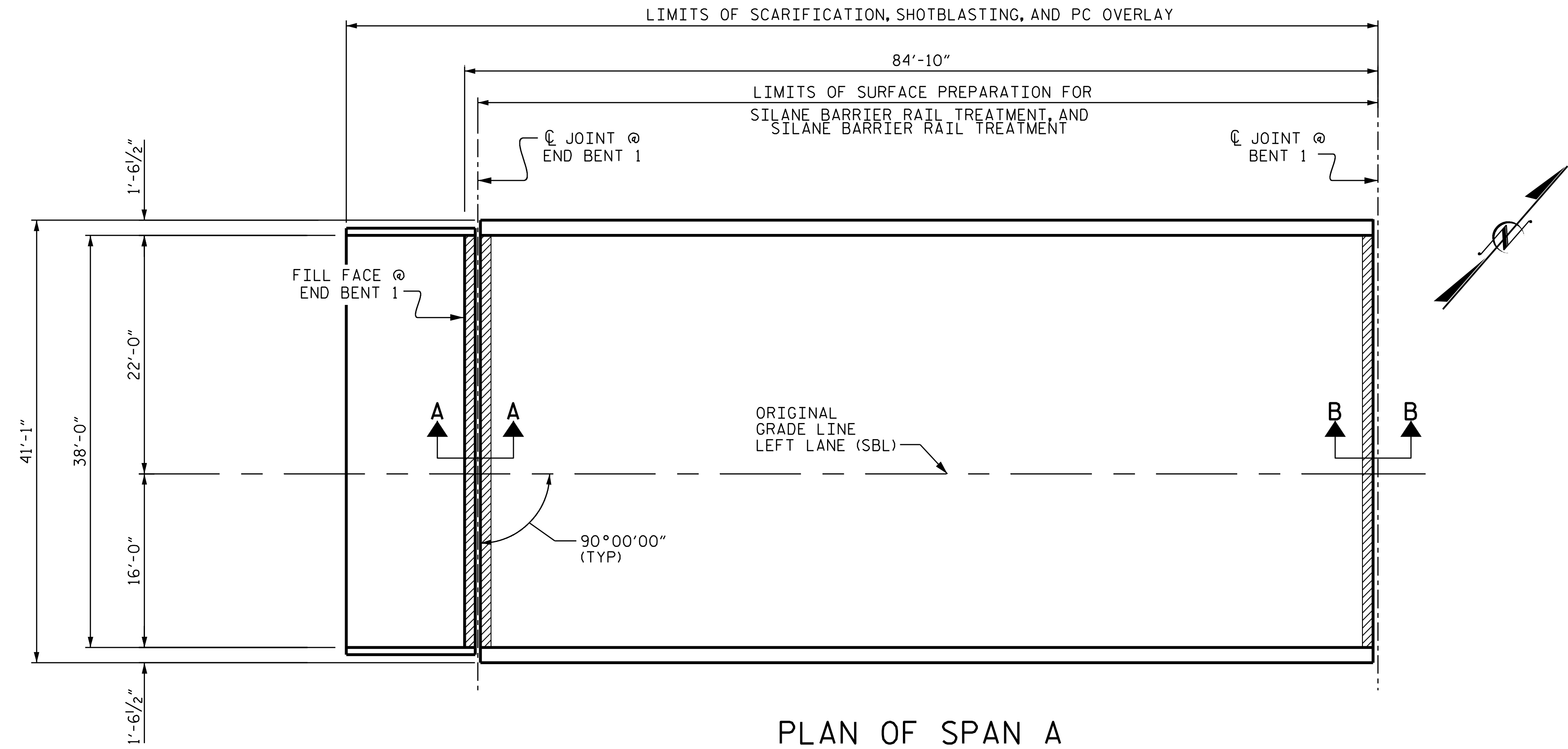
### UNDERSIDE OF DECK REPAIRS

QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR POLYMER OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.

CLASS II SURFACE PREPARATION

UNDERSIDE REPAIR

APPROACH SLAB AT END BENT 1			SPAN A			UNDERSIDE OF DECK REPAIRS			
	ESTIMATE	ACTUAL		ESTIMATE	ACTUAL	ESTIMATE		ACTUAL	
						AREA SF	VOLUME CF	AREA SF	VOLUME CF
SCARIFYING BRIDGE DECK	50.7 SY		SCARIFYING BRIDGE DECK	353.8 SY		UNDERSIDE OF DECK	0.0	0.0	
SHOTBLASTING OF BRIDGE DECK	50.7 SY		SHOTBLASTING OF BRIDGE DECK	353.8 SY		OVERHANG DIAPHRAGMS	0.0	0.0	
CLASS II SURFACE PREPARATION	2.1 SY		CLASS II SURFACE PREPARATION	4.2 SY		UNDERSIDE OF OVERHANG	0.0	0.0	
EPOXY RESIN INJECTION	0.0 LF		EPOXY RESIN INJECTION	0.0 LF		INTERIOR DIAPHRAGMS	0.0	0.0	
GROOVING BRIDGE FLOORS	414.2 SF		GROOVING BRIDGE FLOORS	2921.0 SF					
CONCRETE DECK REPAIR FOR PC OVERLAY	2.1 SY		CONCRETE DECK REPAIR FOR PC OVERLAY	4.2 SY					
POLYMER CONCRETE MATERIALS	1.4 CY		POLYMER CONCRETE MATERIALS	9.8 CY					
PLACING AND FINISHING POLYMER CONCRETE OVERLAY	50.7 SY		PLACING AND FINISHING POLYMER CONCRETE OVERLAY	353.8 SY					
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	0.0 SF		SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	586.5 SF					
SILANE BARRIER RAIL TREATMENT	0.0 SF		SILANE BARRIER RAIL TREATMENT	586.5 SF					



### 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.

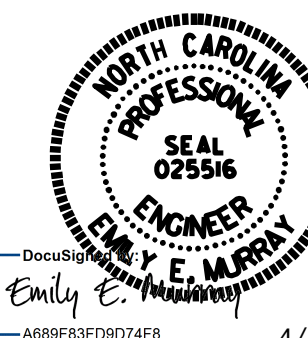
FOR SECTIONS A-A AND B-B, SEE "JOINT REPAIR DETAILS" SHEET.

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180007

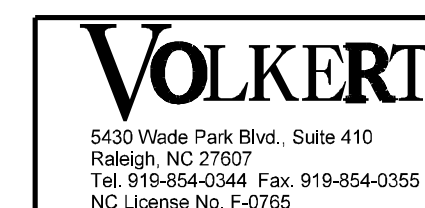
SHEET 1 OF 6

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE  
 PLAN OF SPAN A**  
 LEFT LANE (SBL)



DocuSign  
 Emily E. Mapp  
 4/24/2024



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 CHECKED BY : D. GLADDEN DATE : 2/2023



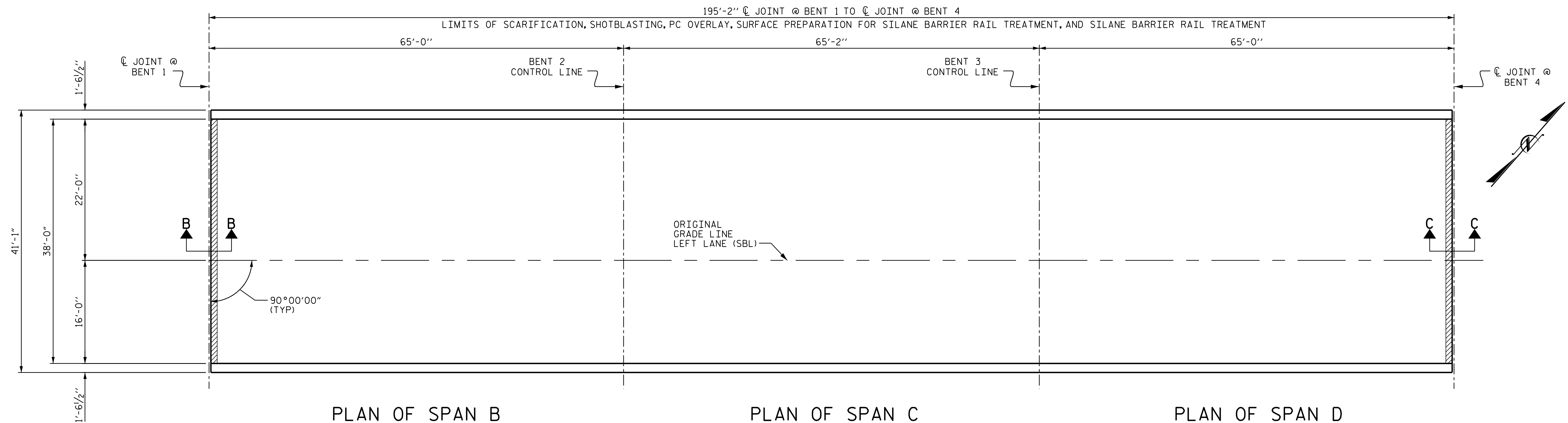
## AS-BUILT REPAIR QUANTITY TABLE

QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR POLYMER OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.

CLASS II SURFACE PREPARATION

UNDERSIDE REPAIR

TOP OF DECK REPAIRS			UNDERSIDE OF DECK REPAIRS											
	SPAN B-D		SPAN B				SPAN C				SPAN D			
	ESTIMATE	ACTUAL	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
	ESTIMATE	ACTUAL	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF
SCARIFYING BRIDGE DECK	824.0	SY												
SHOTBLASTING OF BRIDGE DECK	824.0	SY												
CLASS II SURFACE PREPARATION	4.9	SY												
EPOXY RESIN INJECTION	0.0	LF												
GROOVING BRIDGE FLOORS	6819.2	SF												
CONCRETE DECK REPAIR FOR PC OVERLAY	4.9	SY												
POLYMER CONCRETE MATERIALS	22.9	CY												
PLACING AND FINISHING POLYMER CONCRETE OVERLAY	824.0	SY												
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	1366.2	SF												
SILANE BARRIER RAIL TREATMENT	1366.2	SF												
			ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
UNDERSIDE OF DECK			0.0	0.0			0.0	0.0			0.0	0.0		
OVERHANG DIAPHRAGMS			0.0	0.0			0.0	0.0			0.0	0.0		
UNDERSIDE OF OVERHANG			0.0	0.0			0.0	0.0			0.0	0.0		
INTERIOR DIAPHRAGMS			0.0	0.0			0.0	0.0			0.0	0.0		
			ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
UNDERSIDE EPOXY RESIN INJECTION			0.0	LF			0.0	LF			0.0	LF		



PLAN OF SPAN B

PLAN OF SPAN C

PLAN OF SPAN D

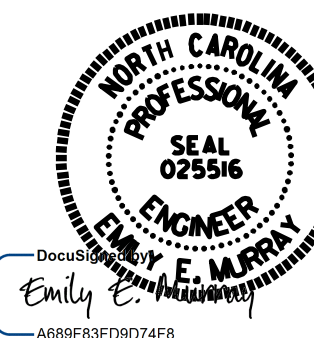
PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180007

SHEET 2 OF 6

### 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.

FOR SECTIONS B-B AND C-C, SEE "JOINT REPAIR DETAILS" SHEET.

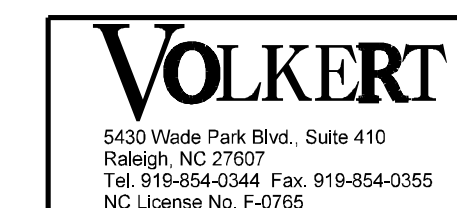


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

### SUPERSTRUCTURE PLAN OF SPAN B, SPAN C AND SPAN D LEFT LANE (SBL)

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 CHECKED BY : D. GLADDEN DATE : 2/2023

23-APR-2024 16:58  
 brent.barnhill AT C-1001568



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1			3			TOTAL SHEETS
2			4			156

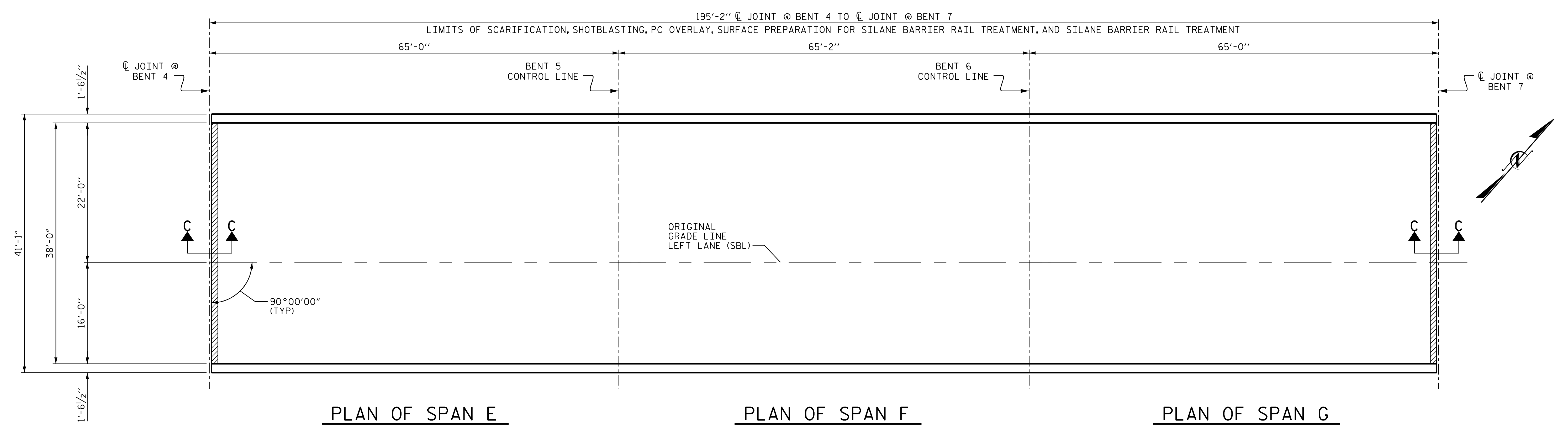


## AS-BUILT REPAIR QUANTITY TABLE

QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR POLYMER OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.

- CLASS II SURFACE PREPARATION
- UNDERSIDE REPAIR

TOP OF DECK REPAIRS			UNDERSIDE OF DECK REPAIRS											
	SPAN E-G		SPAN E				SPAN F				SPAN G			
	ESTIMATE	ACTUAL	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
			AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF
SCARIFYING BRIDGE DECK	824.0	SY												
SHOTBLASTING OF BRIDGE DECK	824.0	SY												
CLASS II SURFACE PREPARATION	5.6	SY												
EPOXY RESIN INJECTION	0.0	LF												
GROOVING BRIDGE FLOORS	6819.2	SF												
CONCRETE DECK REPAIR FOR PC OVERLAY	5.6	SY												
POLYMER CONCRETE MATERIALS	22.9	CY												
PLACING AND FINISHING POLYMER CONCRETE OVERLAY	824.0	SY												
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	1366.2	SF												
SILANE BARRIER RAIL TREATMENT	1366.2	SF												
			ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
UNDERSIDE OF DECK			0.0	0.0			0.0	0.0			0.0	0.0		
OVERHANG DIAPHRAGMS			0.0	0.0			0.0	0.0			0.0	0.0		
UNDERSIDE OF OVERHANG			0.0	0.0			0.0	0.0			0.0	0.0		
INTERIOR DIAPHRAGMS			0.0	0.0			0.0	0.0			0.0	0.0		
UNDERSIDE EPOXY RESIN INJECTION			0.0	LF			0.0	LF			0.0	LF		



PLAN OF SPAN E

PLAN OF SPAN F

PLAN OF SPAN G

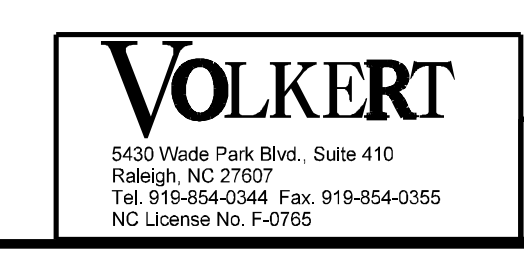
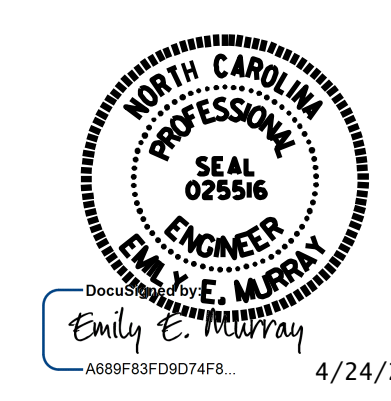
PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180007

SHEET 3 OF 6

### NOTES

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FOR SECTIONS C-C, SEE "JOINT REPAIR DETAILS" SHEET.



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DEPARTMENT OF TRANSPORTATION  
RALEIGH

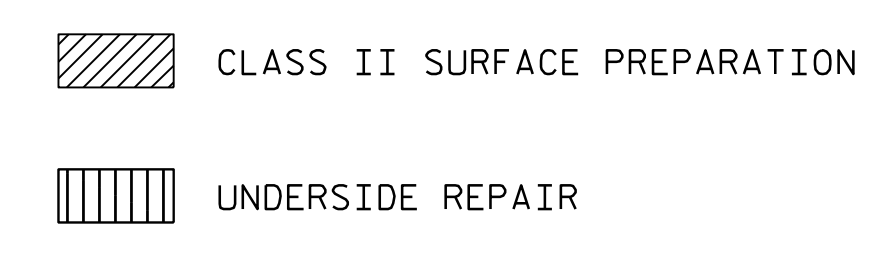
## SUPERSTRUCTURE PLAN OF SPAN E, SPAN F AND SPAN G LEFT LANE (SBL)

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1			3			TOTAL SHEETS
2			4			156

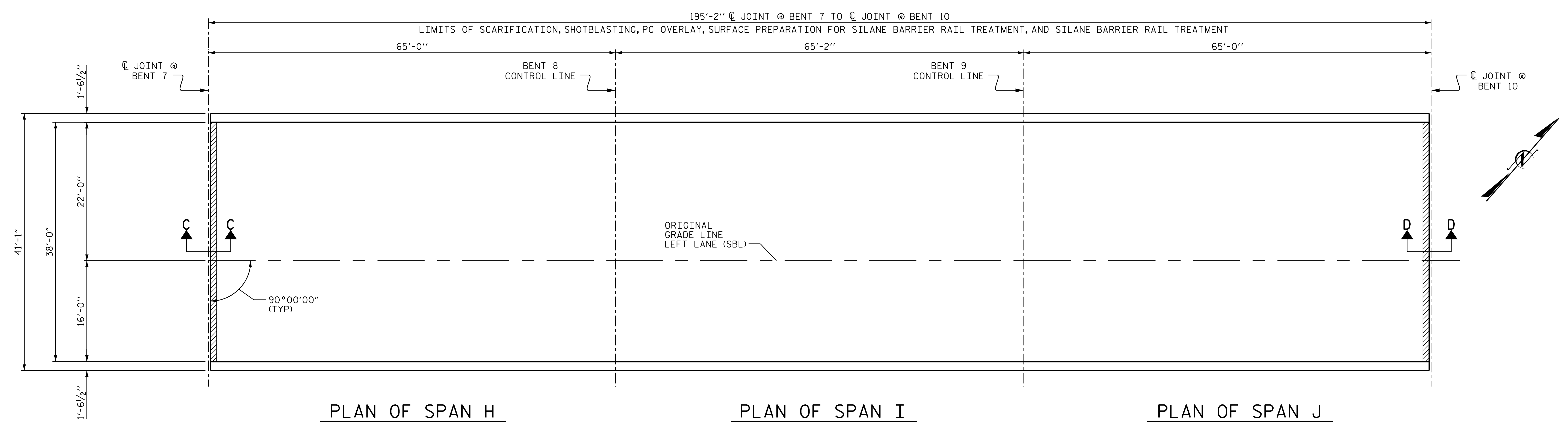
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### AS-BUILT REPAIR QUANTITY TABLE

QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR POLYMER OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.



TOP OF DECK REPAIRS			UNDERSIDE OF DECK REPAIRS											
	SPAN H-J		SPAN H				SPAN I				SPAN J			
	ESTIMATE	ACTUAL	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
			AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF
SCARIFYING BRIDGE DECK	824.0	SY												
SHOTBLASTING OF BRIDGE DECK	824.0	SY												
CLASS II SURFACE PREPARATION	4.9	SY												
EPOXY RESIN INJECTION	0.0	LF												
GROOVING BRIDGE FLOORS	6819.2	SF												
CONCRETE DECK REPAIR FOR PC OVERLAY	4.9	SY												
POLYMER CONCRETE MATERIALS	22.9	CY												
PLACING AND FINISHING POLYMER CONCRETE OVERLAY	824.0	SY												
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	1366.2	SF												
SILANE BARRIER RAIL TREATMENT	1366.2	SF												
			ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
UNDERSIDE OF DECK			0.0	0.0			0.0	0.0			0.0	0.0		
OVERHANG DIAPHRAGMS			0.0	0.0			0.0	0.0			0.0	0.0		
UNDERSIDE OF OVERHANG			0.0	0.0			0.0	0.0			0.0	0.0		
INTERIOR DIAPHRAGMS			0.0	0.0			0.0	0.0			0.0	0.0		
UNDERSIDE EPOXY RESIN INJECTION			0.0	LF			0.0	LF			0.0	LF		



PLAN OF SPAN H

PLAN OF SPAN I

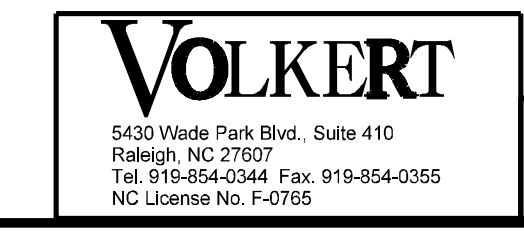
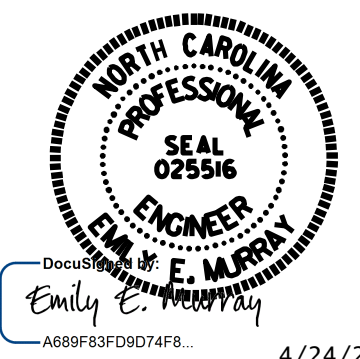
PLAN OF SPAN J

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180007

SHEET 4 OF 6

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE  
 PLAN OF SPAN H,  
 SPAN I AND SPAN J**  
 LEFT LANE (SBL)



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1			3		
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#### NOTES

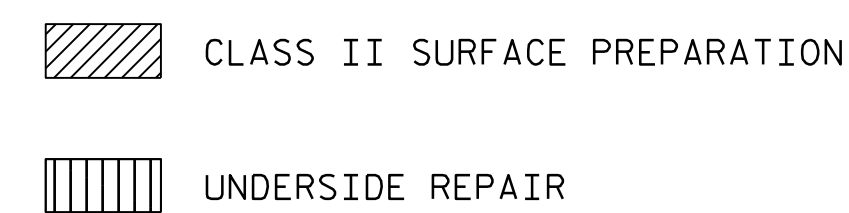
REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES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

FOR SECTIONS C-C AND D-D, SEE "JOINT REPAIR DETAILS" SHEET.

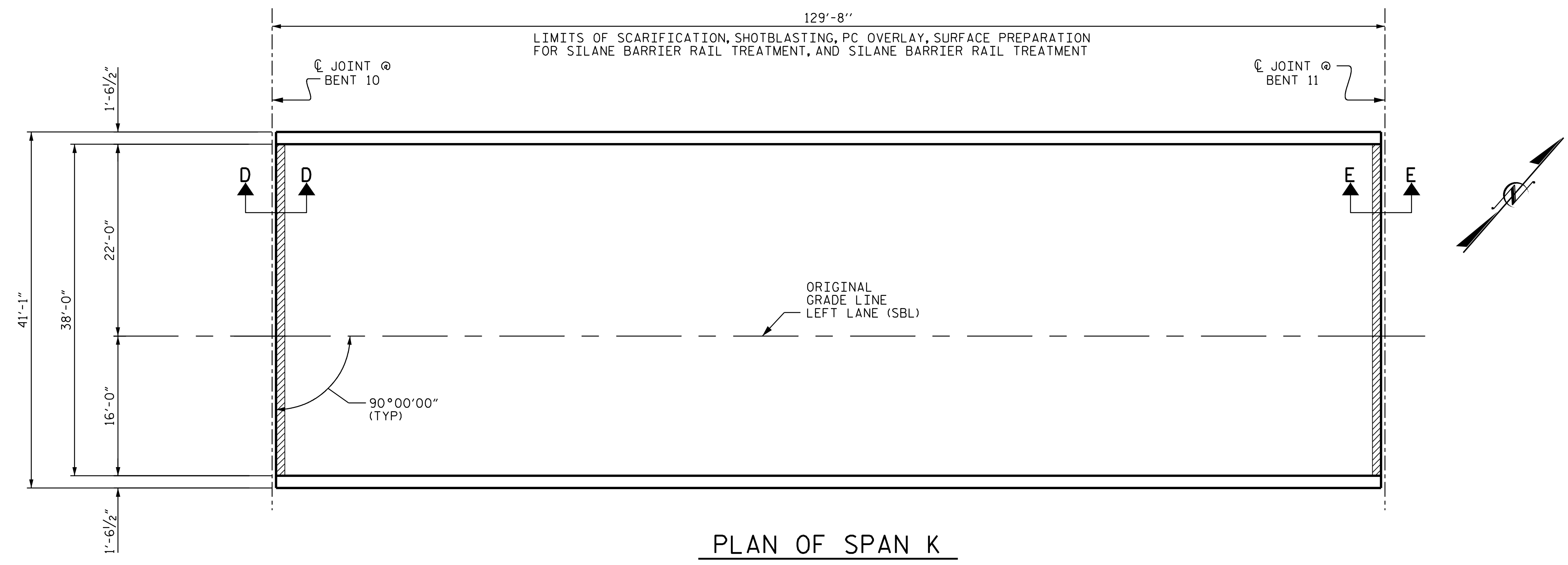
DRAWN BY : T.MAZARURA DATE : 1/2023  
 CHECKED BY : D.GLADDEN DATE : 2/2023



QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR POLYMER OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.



AS-BUILT REPAIR QUANTITY TABLE				
TOP OF DECK REPAIRS			UNDERSIDE OF DECK REPAIRS	
SPAN K			SHOTCRETE REPAIRS	
	ESTIMATE	ACTUAL	AREA SF	VOLUME CF
SCARIFYING BRIDGE DECK	547.5 SY		0.0	0.0
SHOTBLASTING OF BRIDGE DECK	547.5 SY		0.0	0.0
CLASS II SURFACE PREPARATION	4.2 SY		0.0	0.0
EPOXY RESIN INJECTION	0.0 LF		0.0	0.0
GROOVING BRIDGE FLOORS	4526.7 SF			
CONCRETE DECK REPAIR FOR PC OVERLAY	4.2 SY			
POLYMER CONCRETE MATERIALS	15.2 CY			
PLACING AND FINISHING POLYMER CONCRETE OVERLAY	547.5 SY			
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	907.7 SF			
SILANE BARRIER RAIL TREATMENT	907.7 SF			
			ESTIMATE	
			ACTUAL	
			0.0	LF



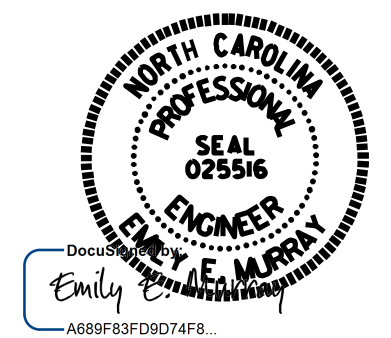
PLAN OF SPAN K

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180007

SHEET 5 OF 6

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE  
 PLAN OF SPAN K**  
 LEFT LANE (SBL)

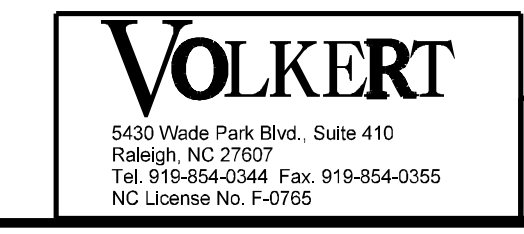


**NOTES**

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.

FOR SECTIONS D-D AND E-E, SEE "JOINT REPAIR DETAILS" SHEET.

DRAWN BY : T. MAZARURA DATE : 1/2023  
 CHECKED BY : D. GLADDEN DATE : 2/2023



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NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			156

## AS-BUILT REPAIR QUANTITY TABLE

### TOP OF DECK REPAIRS

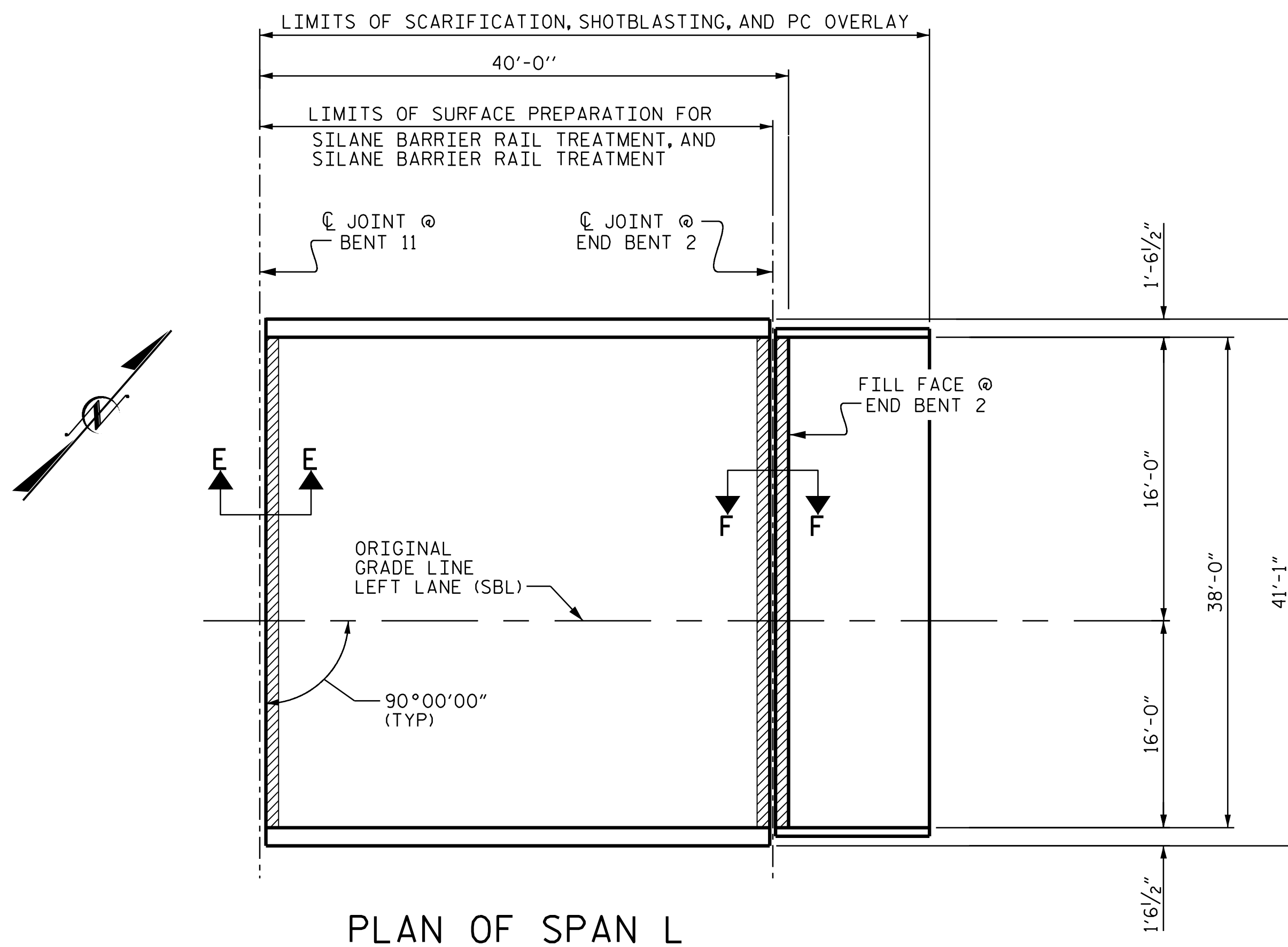
### UNDERSIDE OF DECK REPAIRS

QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR POLYMER OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.

CLASS II SURFACE PREPARATION

UNDERSIDE REPAIR

SPAN L			APPROACH SLAB AT END BENT 2			UNDERSIDE OF DECK REPAIRS			
	ESTIMATE		ACTUAL			ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF		AREA SF	VOLUME CF	AREA SF	VOLUME CF
SCARIFYING BRIDGE DECK	164.5	SY			SCARIFYING BRIDGE DECK	50.7	SY		
SHOTBLASTING OF BRIDGE DECK	164.5	SY			SHOTBLASTING OF BRIDGE DECK	50.7	SY		
CLASS II SURFACE PREPARATION	4.2	SY			CLASS II SURFACE PREPARATION	2.1	SY		
EPOXY RESIN INJECTION	0.0	LF			EPOXY RESIN INJECTION	0.0	LF		
GROOVING BRIDGE FLOORS	1351.9	SF			GROOVING BRIDGE FLOORS	414.2	SF		
CONCRETE DECK REPAIR FOR PC OVERLAY	4.2	SY			CONCRETE DECK REPAIR FOR PC OVERLAY	2.1	SY		
POLYMER CONCRETE MATERIALS	4.6	CY			POLYMER CONCRETE MATERIALS	1.4	CY		
PLACING AND FINISHING POLYMER CONCRETE OVERLAY	164.5	SY			PLACING AND FINISHING POLYMER CONCRETE OVERLAY	50.7	SY		
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	272.7	SF			SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	0.0	SF		
SILANE BARRIER RAIL TREATMENT	272.7	SF			SILANE BARRIER RAIL TREATMENT	0.0	SF		
						ESTIMATE		ACTUAL	
						0.0	LF		



### 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.

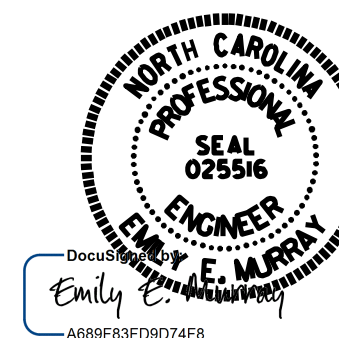
FOR SECTIONS E-E AND F-F, SEE "JOINT REPAIR DETAILS" SHEET.

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180007

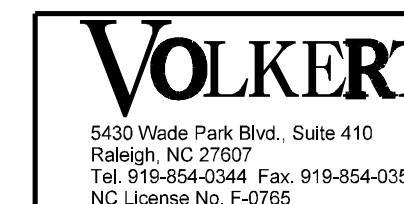
SHEET 6 OF 6

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE  
 PLAN OF SPAN L**  
 LEFT LANE (SBL)



4/24/2024

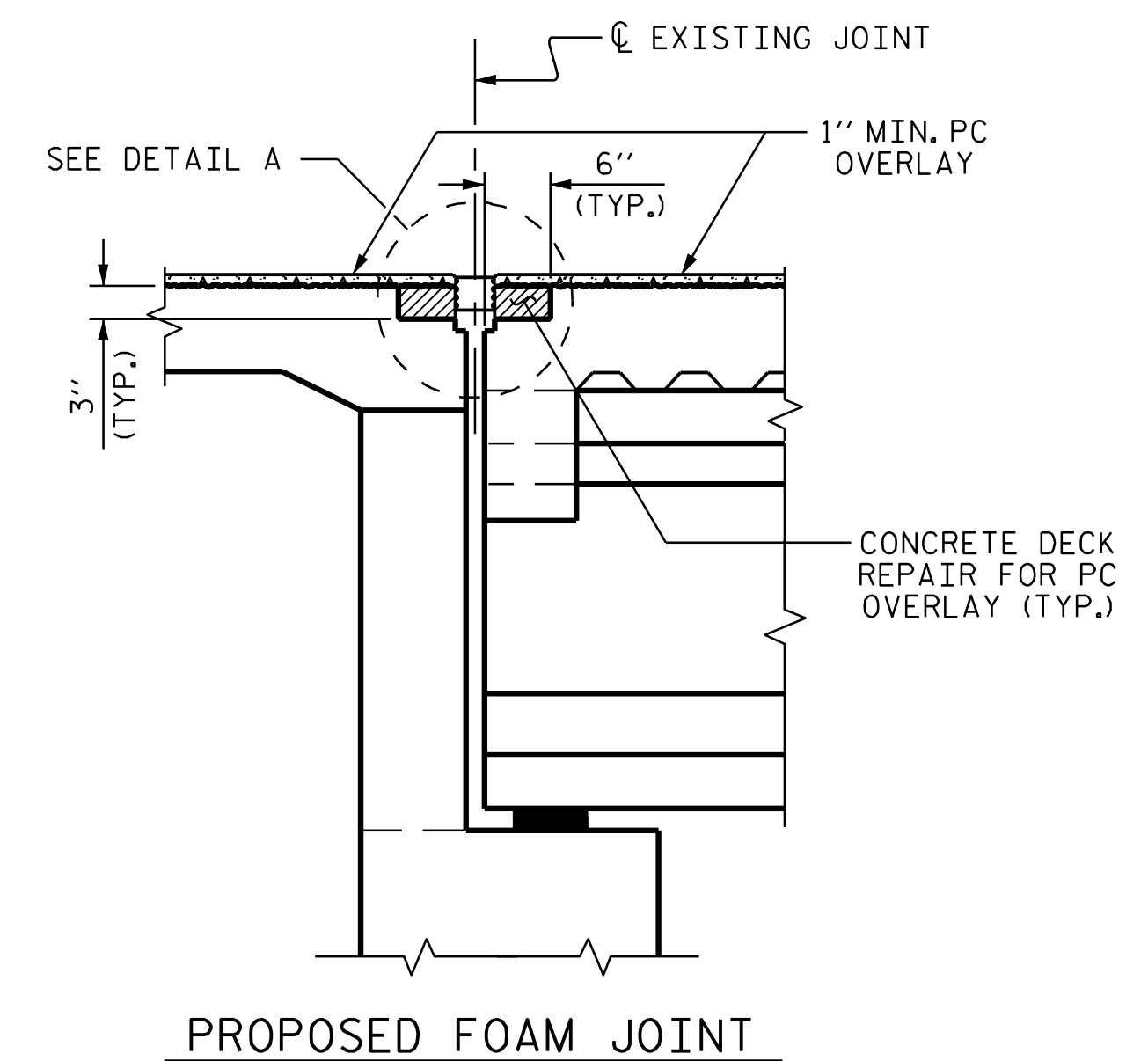
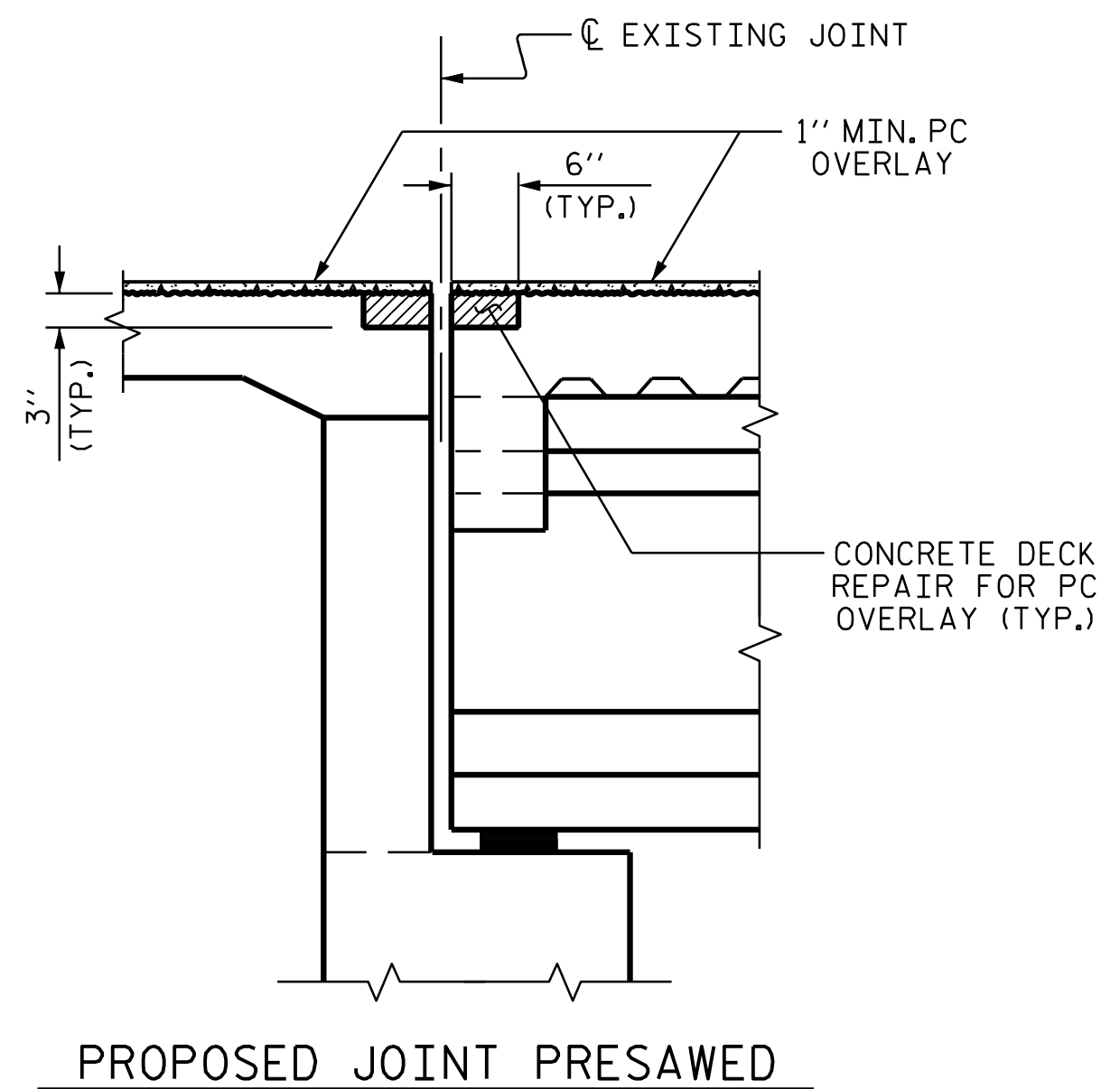
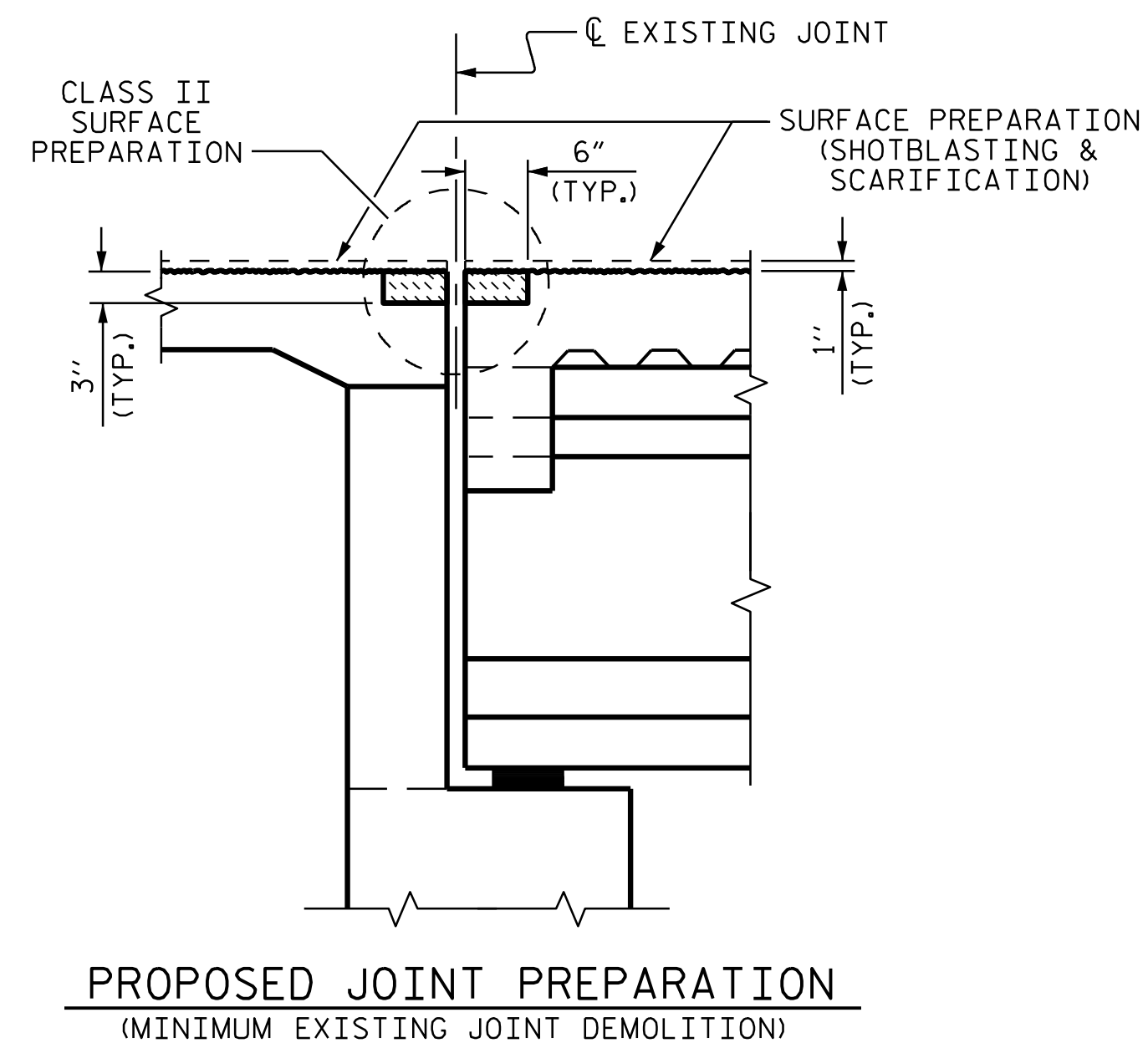
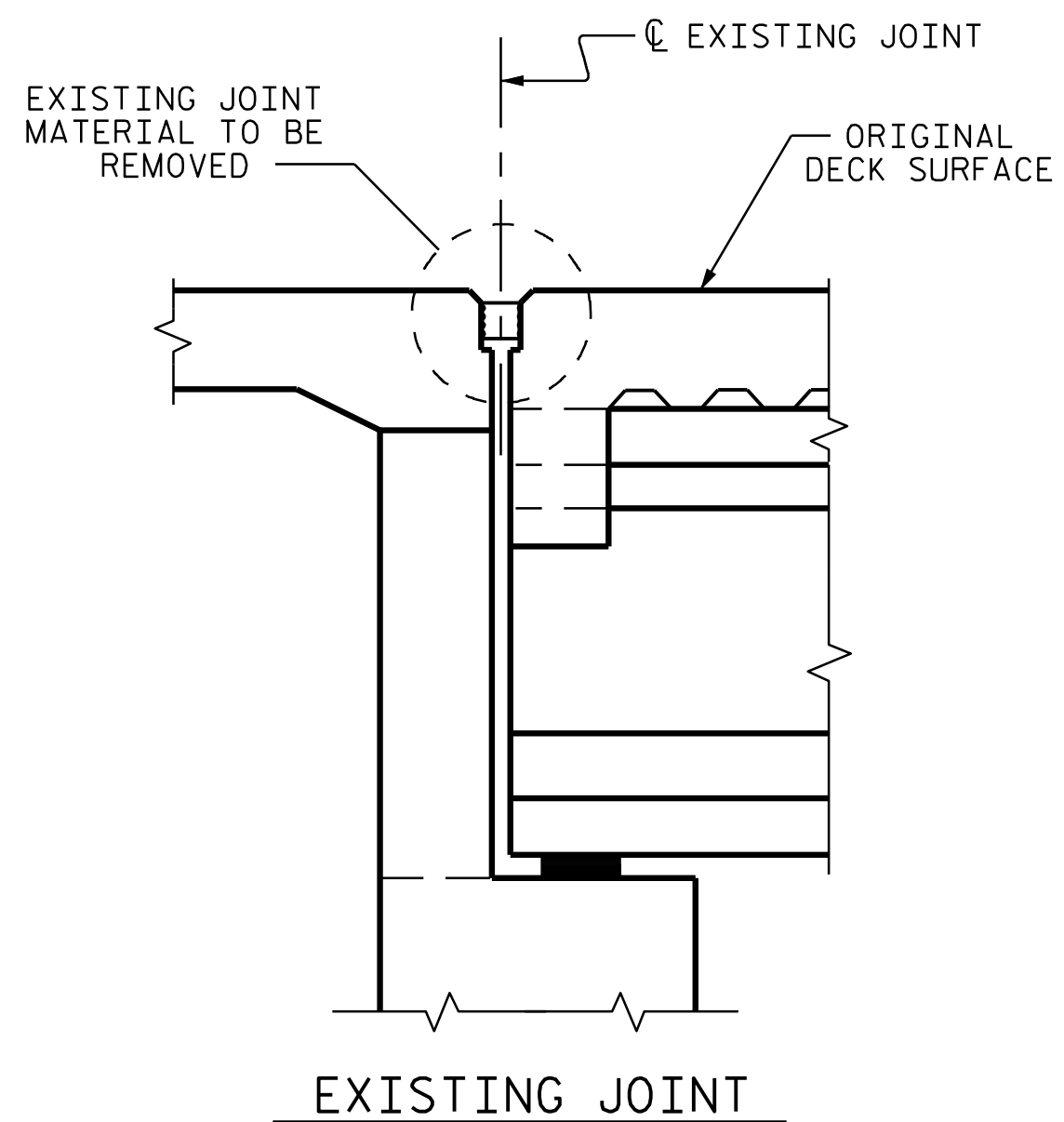


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NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : T. MAZARURA DATE : 1/2023  
 CHECKED BY : D. GLADDEN DATE : 2/2023





**JOINT INSTALLATION SEQUENCE AT END BENT 1 (SECTION A-A)**

**NOTES**

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDER 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.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL BASED ON JOINT OPENINGS.

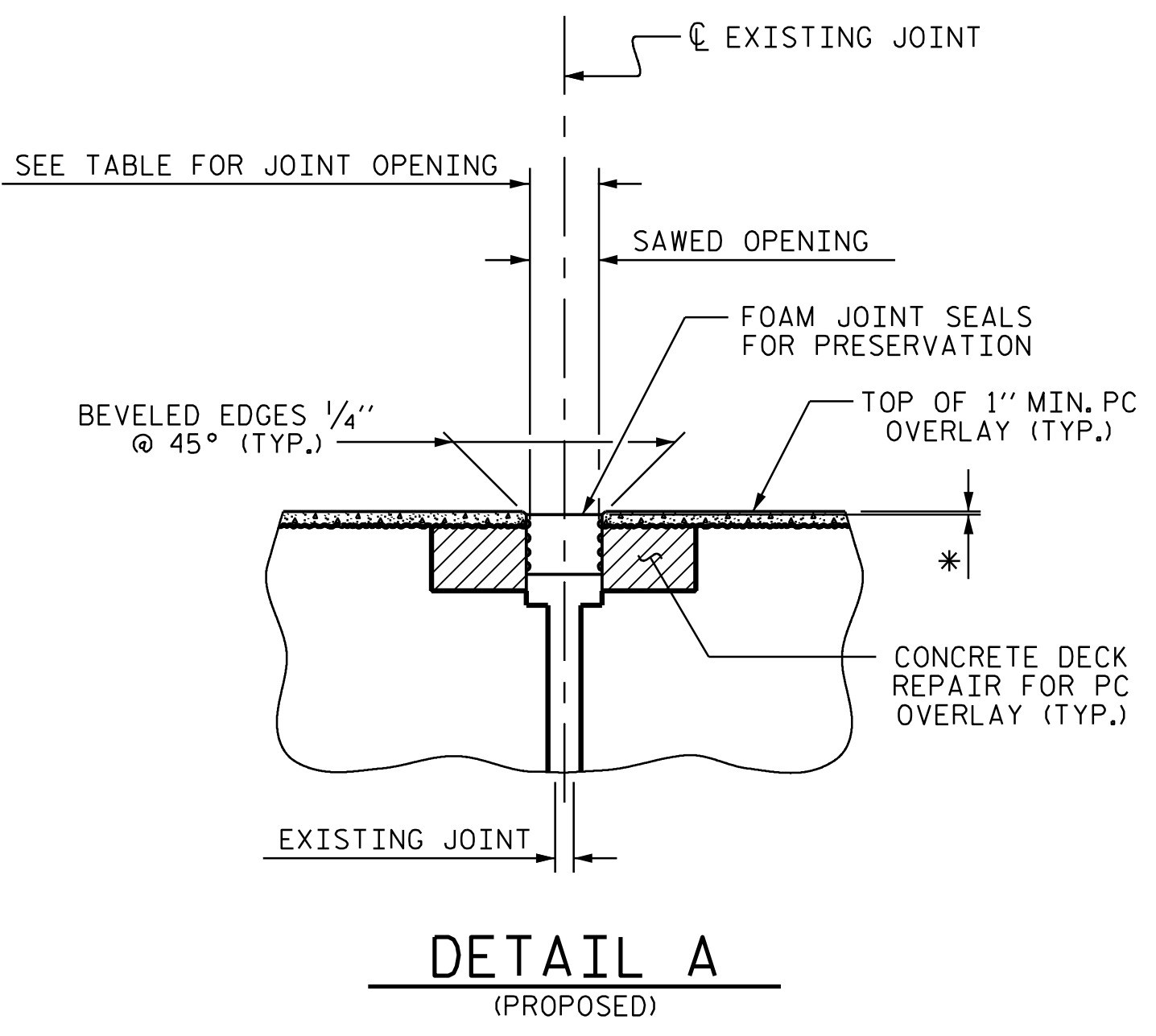
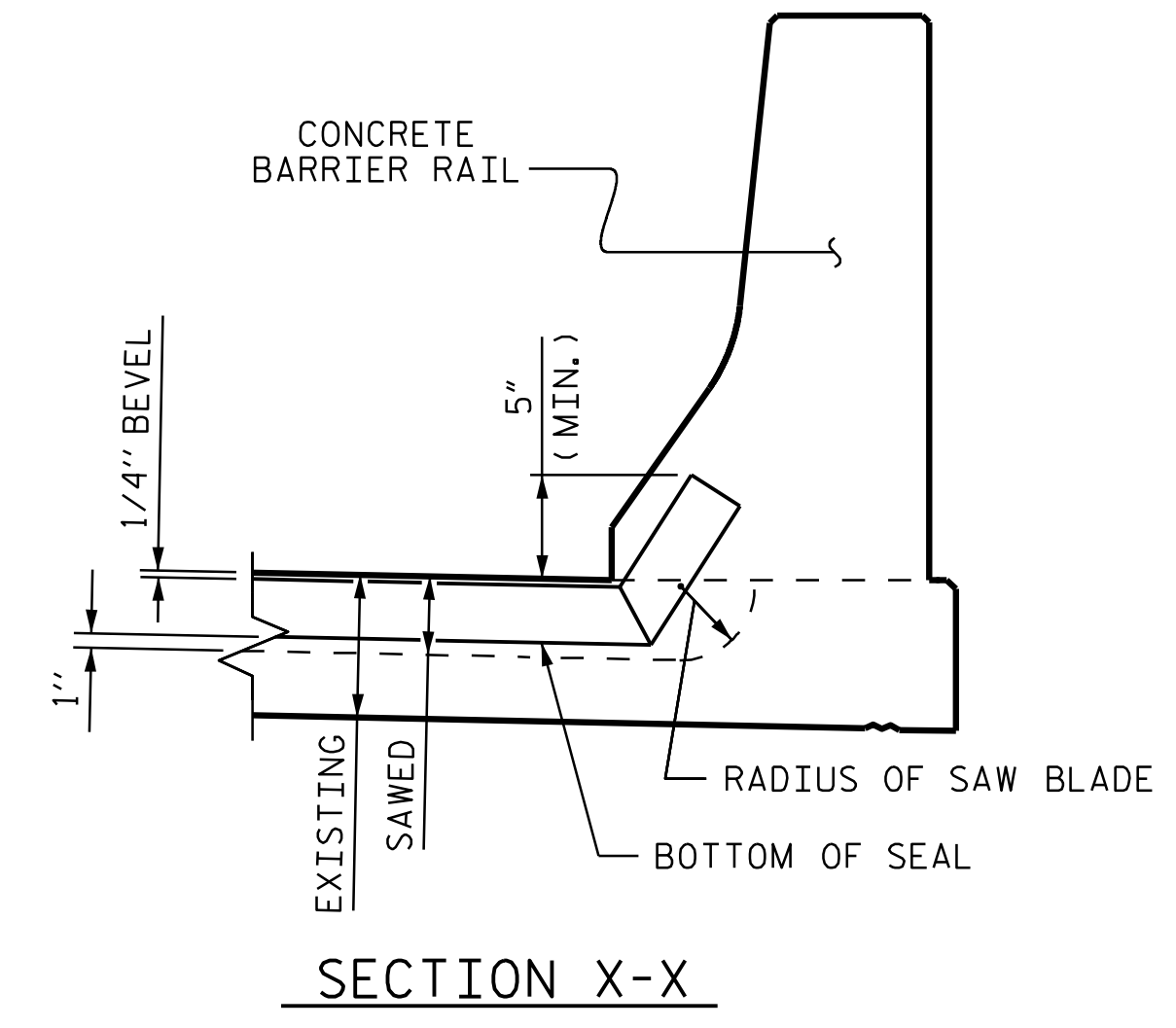
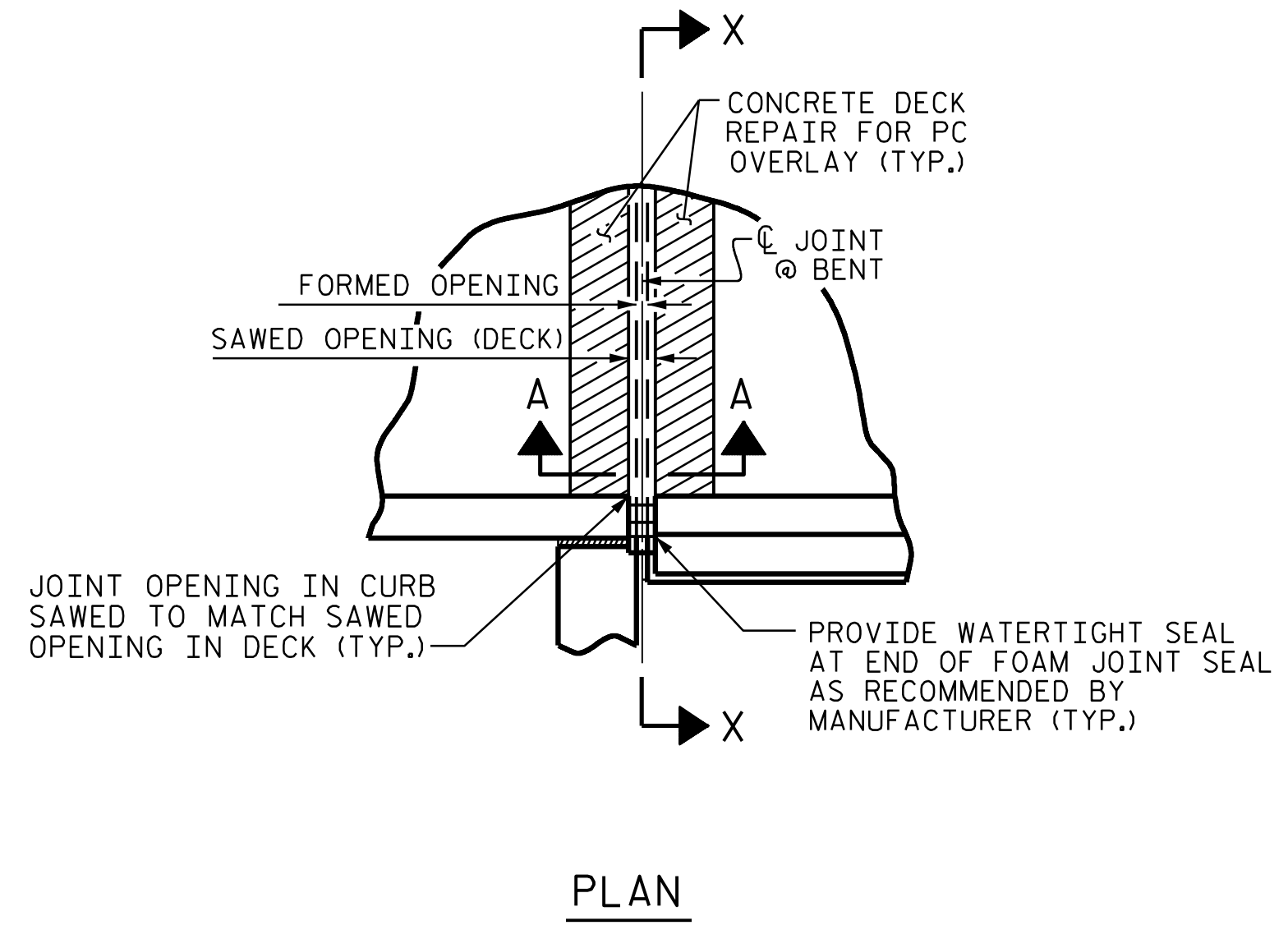
FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

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 LOCATION OF SECTION A-A, SEE PLAN OF SPAN SHEETS.

FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.



**JOINT SEAL DETAILS @ END BENT 1**

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

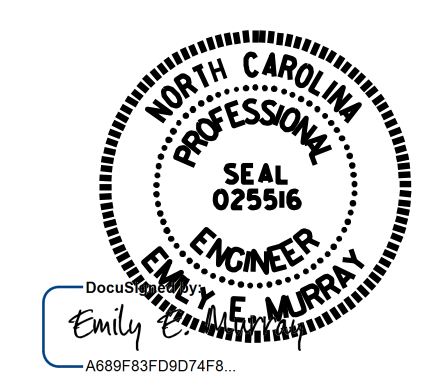
\* FOAM JOINT SEALS FOR PRESERVATION SHALL BE RECESSED AS PER MANUFACTURER'S RECOMMENDATIONS.

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO: 180007

SHEET 1 OF 6

JOINT REPAIR QUANTITY	
LOCATION	FOAM JOINT SEALS FOR PRESERVATION ESTIMATED (LIN. FT.)
END BENT 1	39.0

SAWED JOINT OPENING TABLE				
LOCATION	SKIEW ANGLE	PERPENDICULAR JOINT OPENING AT 45°	PERPENDICULAR JOINT OPENING AT 60°	PERPENDICULAR JOINT OPENING AT 90°
END BENT 1	90°00'00"	1 9/16"	1 9/16"	1 9/16"



4/24/2024

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 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

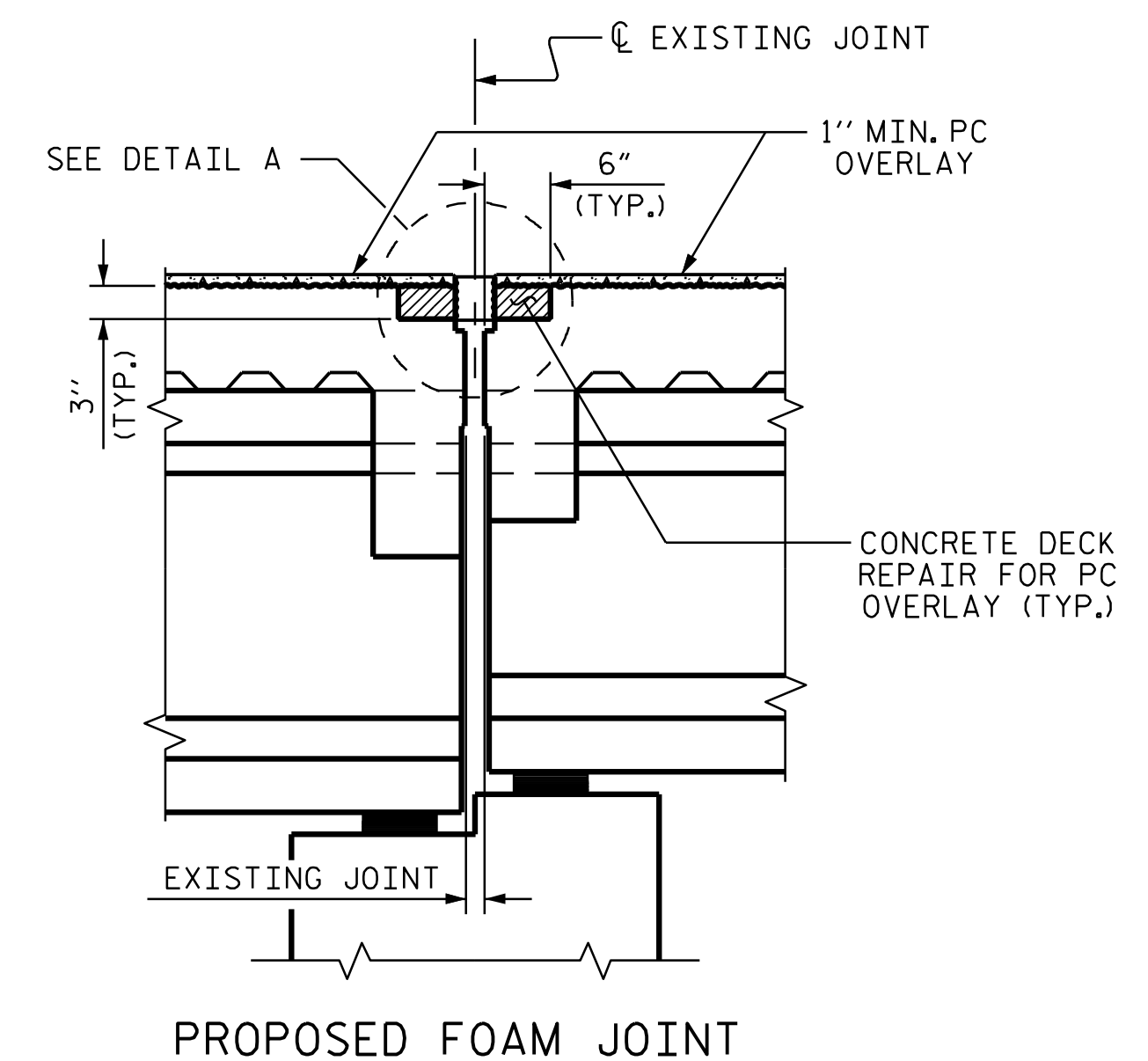
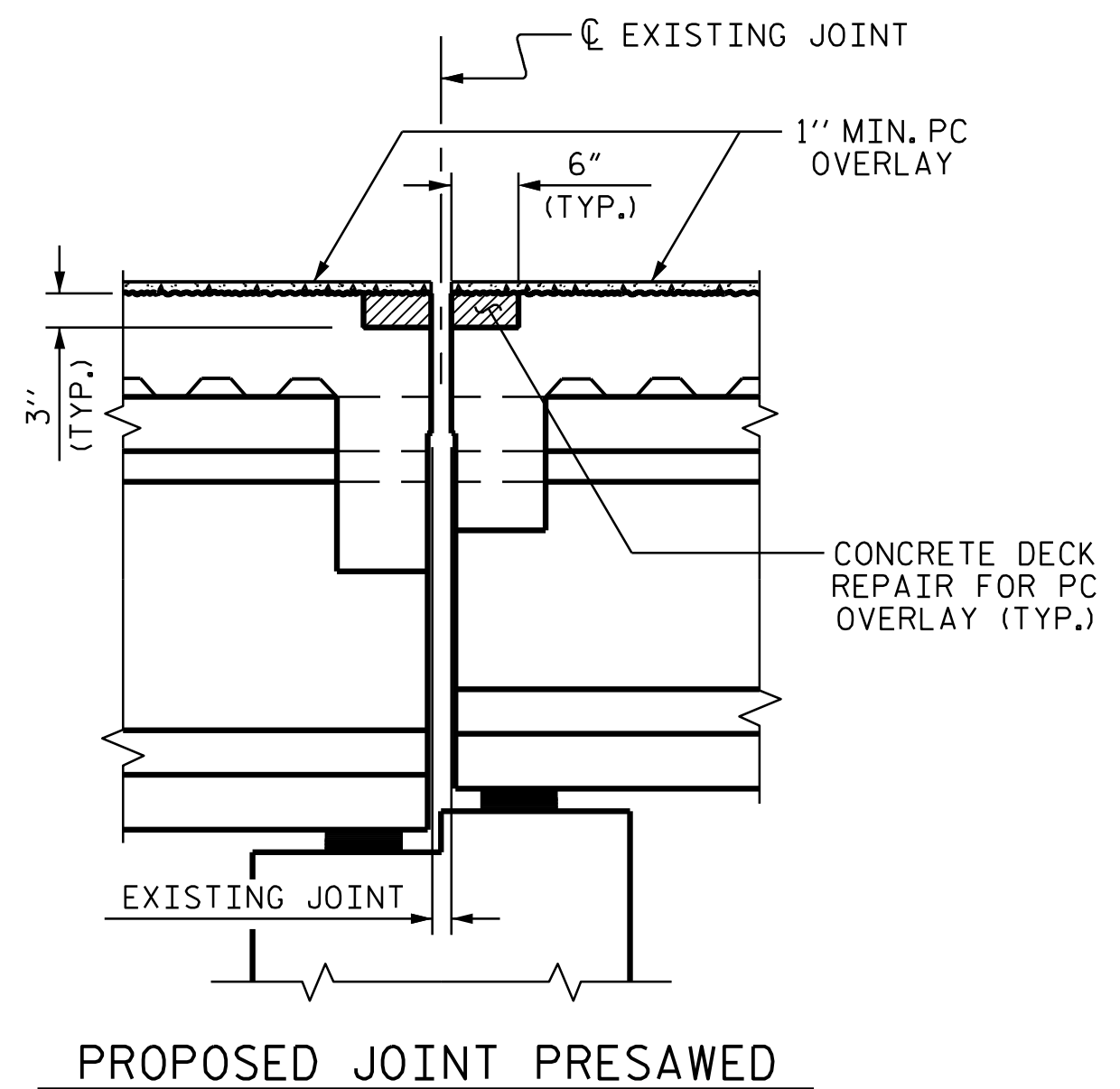
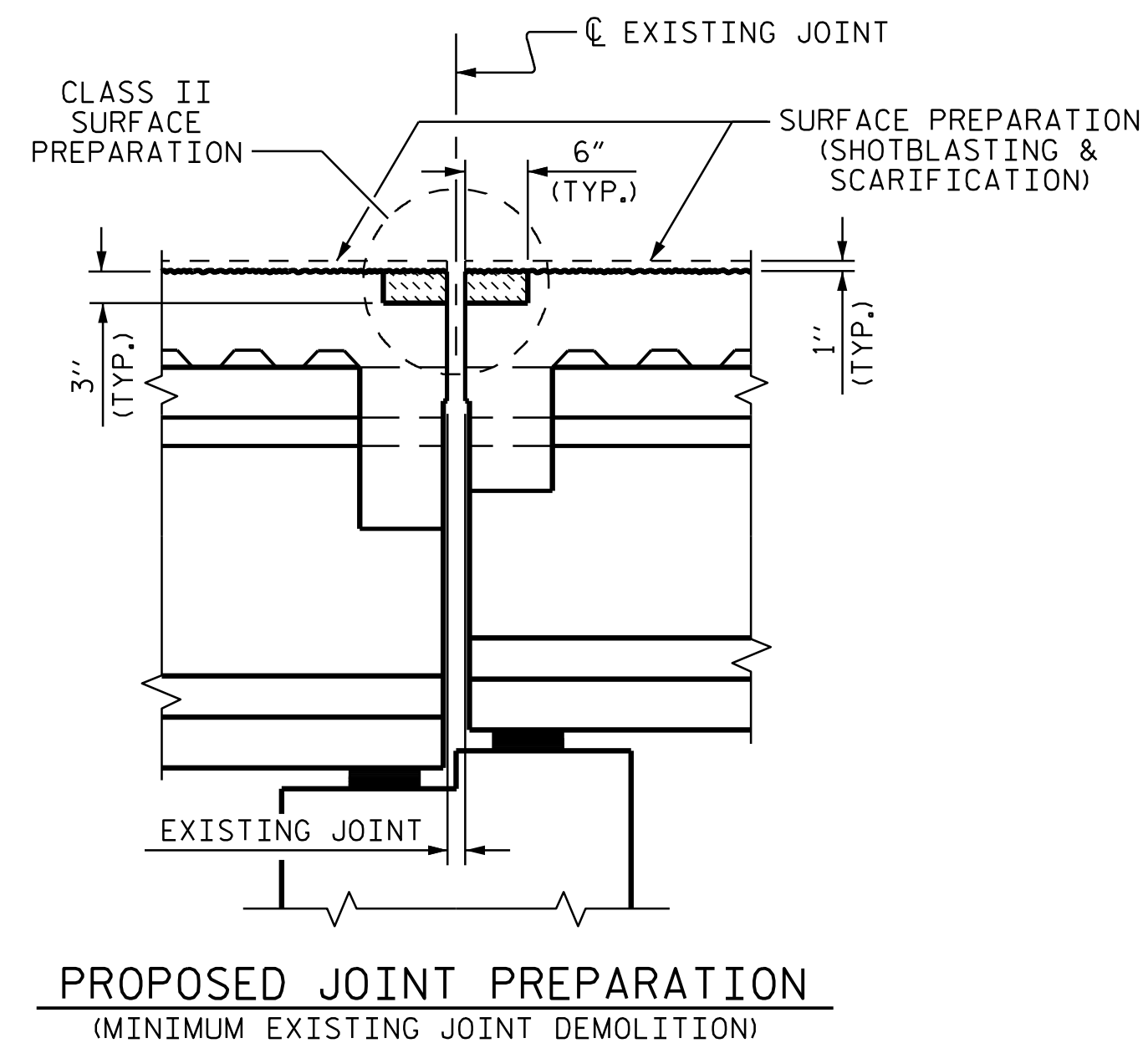
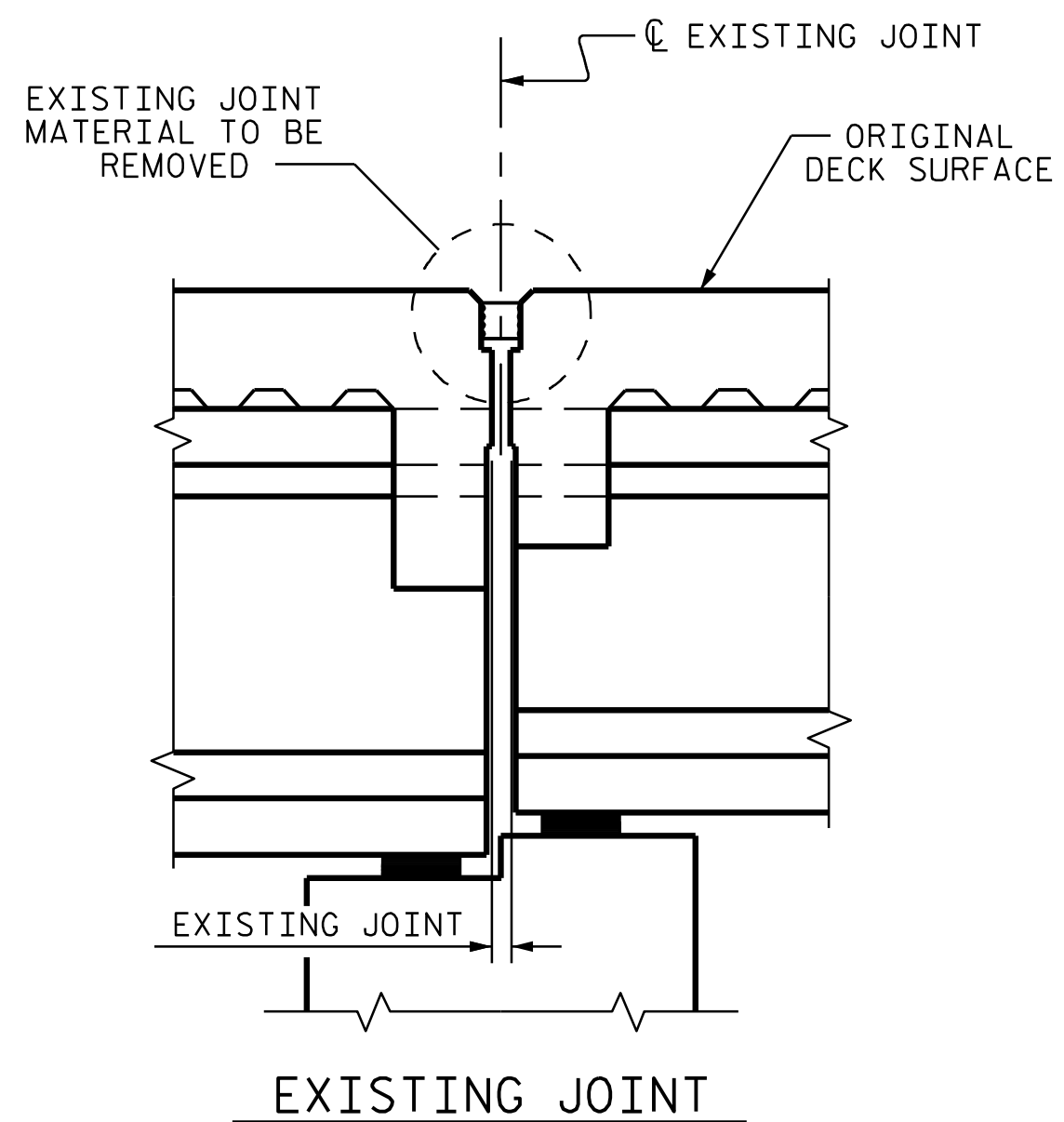
**JOINT REPAIR DETAILS AT END BENT 1**

DRAWN BY : D. A. GLADDEN DATE : 5/23  
 CHECKED BY : E. E. MURRAY DATE : 3/24

**VOLKERT**  
 5430 Wade Park BLVD, Suite 410  
 Raleigh, NC 27607  
 Tel: 919-854-0344 Fax: 919-854-0355  
 NC License No. F-0765

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1			3			TOTAL SHEETS
2			4			156



**JOINT INSTALLATION SEQUENCE AT BENT 1 (SECTION B-B)**

**NOTES**

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDER 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.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL BASED ON JOINT OPENINGS.

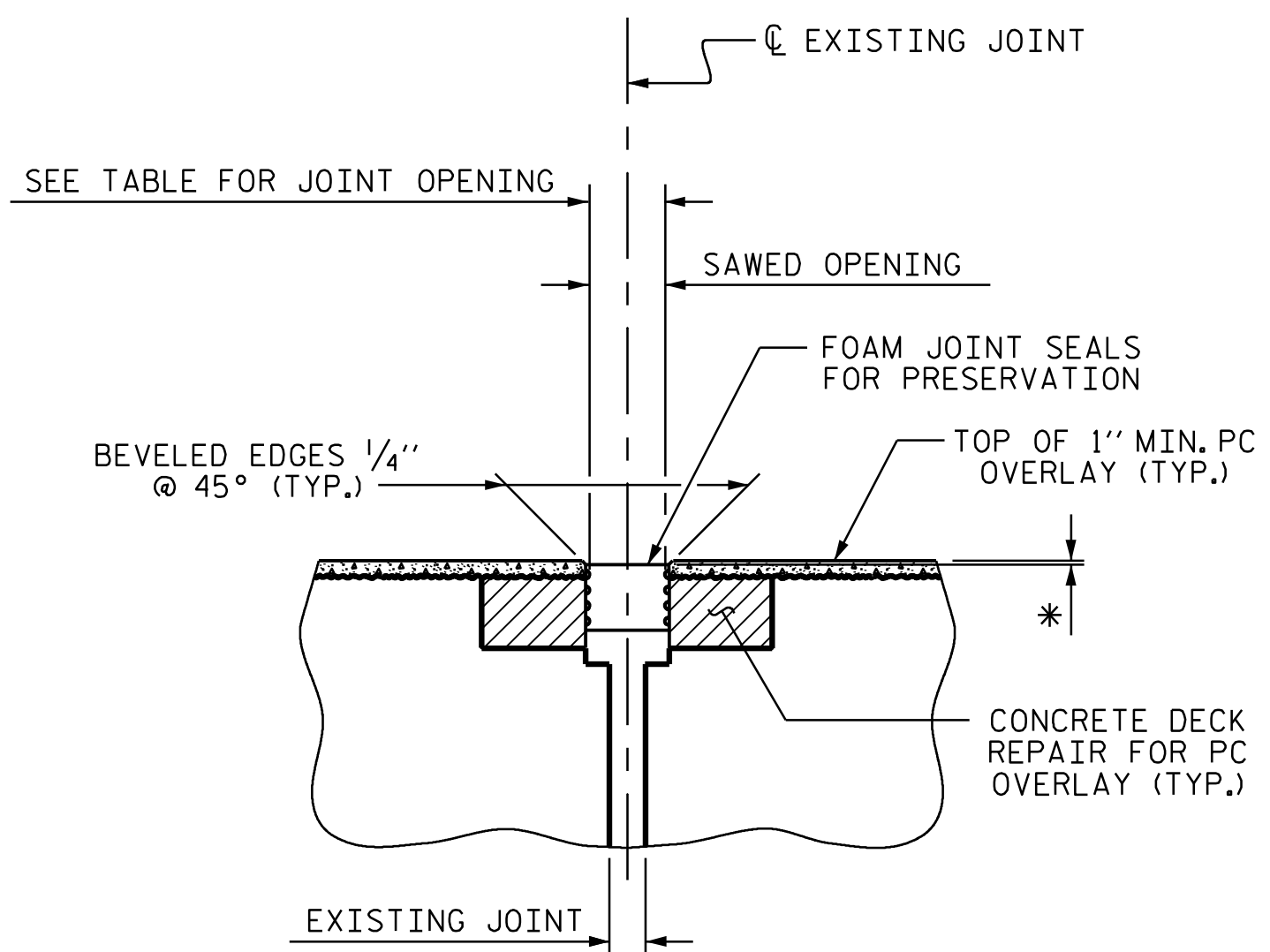
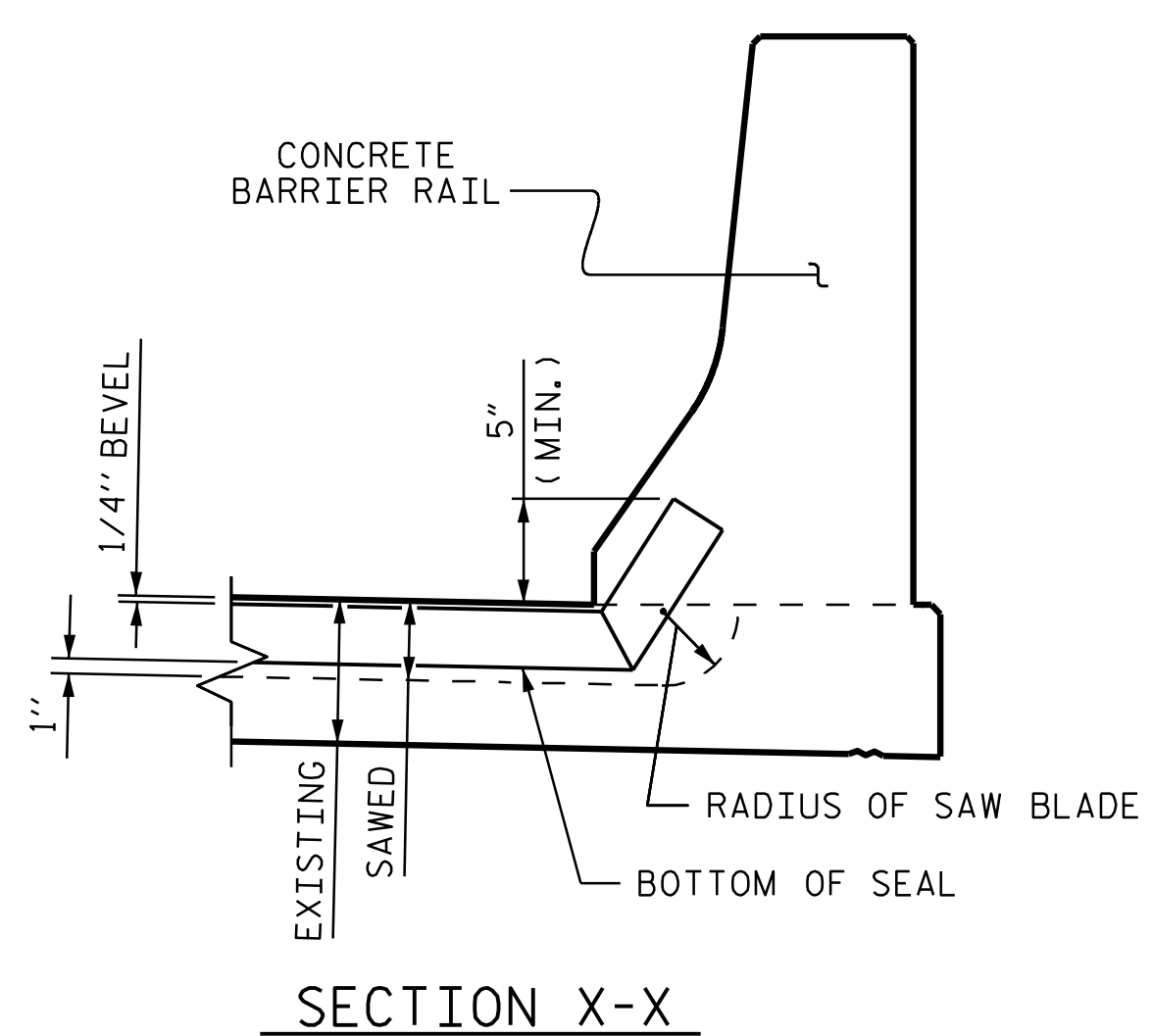
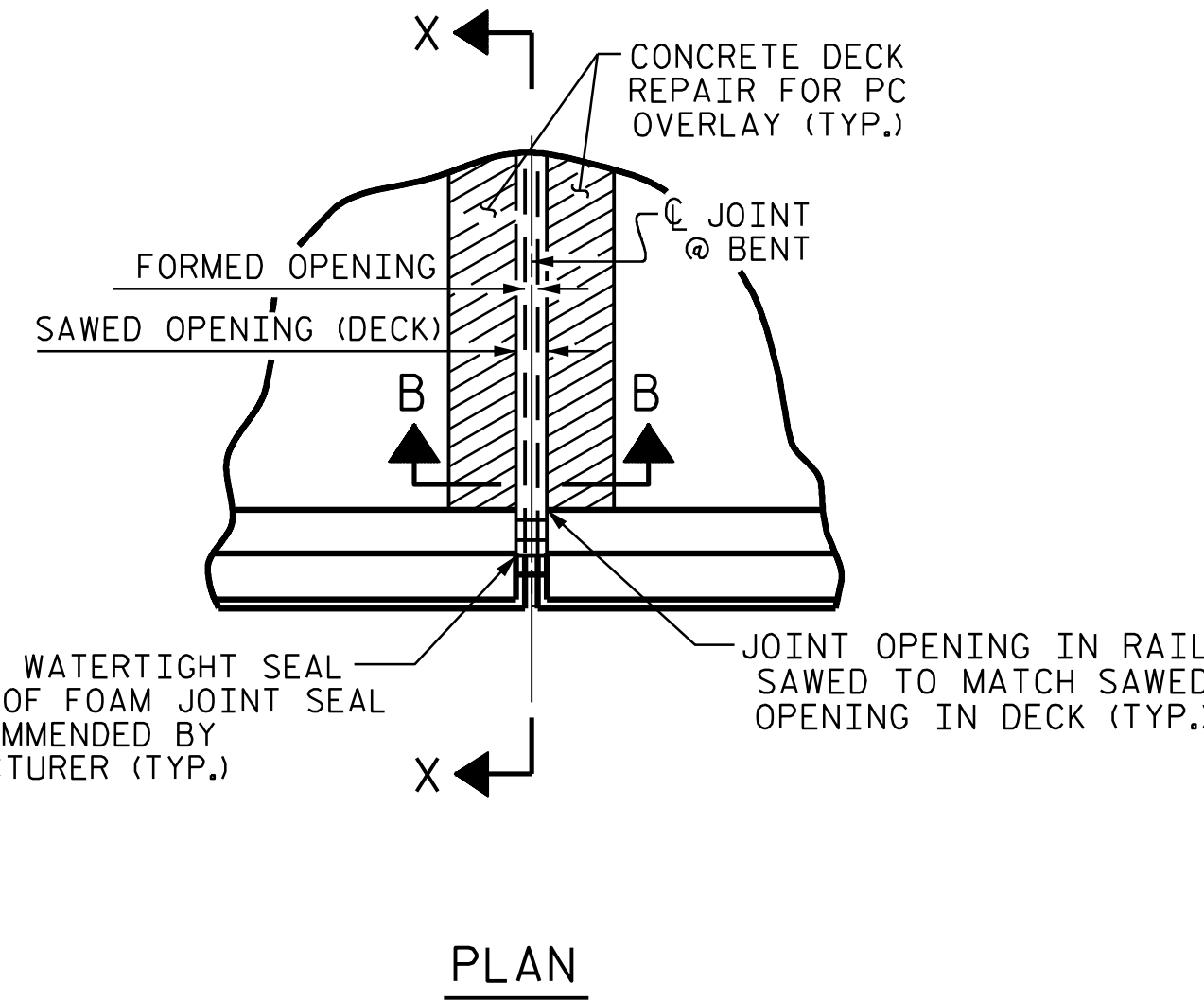
FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

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 LOCATION OF SECTION B-B, SEE PLAN OF SPAN SHEETS.

FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.



**JOINT SEAL DETAILS @ BENT 1**

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

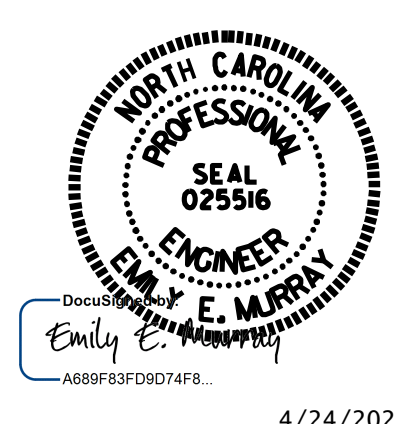
\* FOAM JOINT SEALS FOR PRESERVATION SHALL BE RECESSED AS PER MANUFACTURER'S RECOMMENDATIONS.

PROJECT NO. 15BPR.130  
 CHATHAM COUNTY  
 BRIDGE NO: 180007

SHEET 2 OF 6

JOINT REPAIR QUANTITY	
LOCATION	FOAM JOINT SEALS FOR PRESERVATION ESTIMATED (LIN. FT.)
BENT 1	39.0

SAWED JOINT OPENING TABLE				
LOCATION	SKEW ANGLE	PERPENDICULAR JOINT OPENING AT 45°	PERPENDICULAR JOINT OPENING AT 60°	PERPENDICULAR JOINT OPENING AT 90°
BENT 1	90°00'00"	2 1/2"	2 5/8"	1 5/16"



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**JOINT REPAIR DETAILS AT BENT 1**

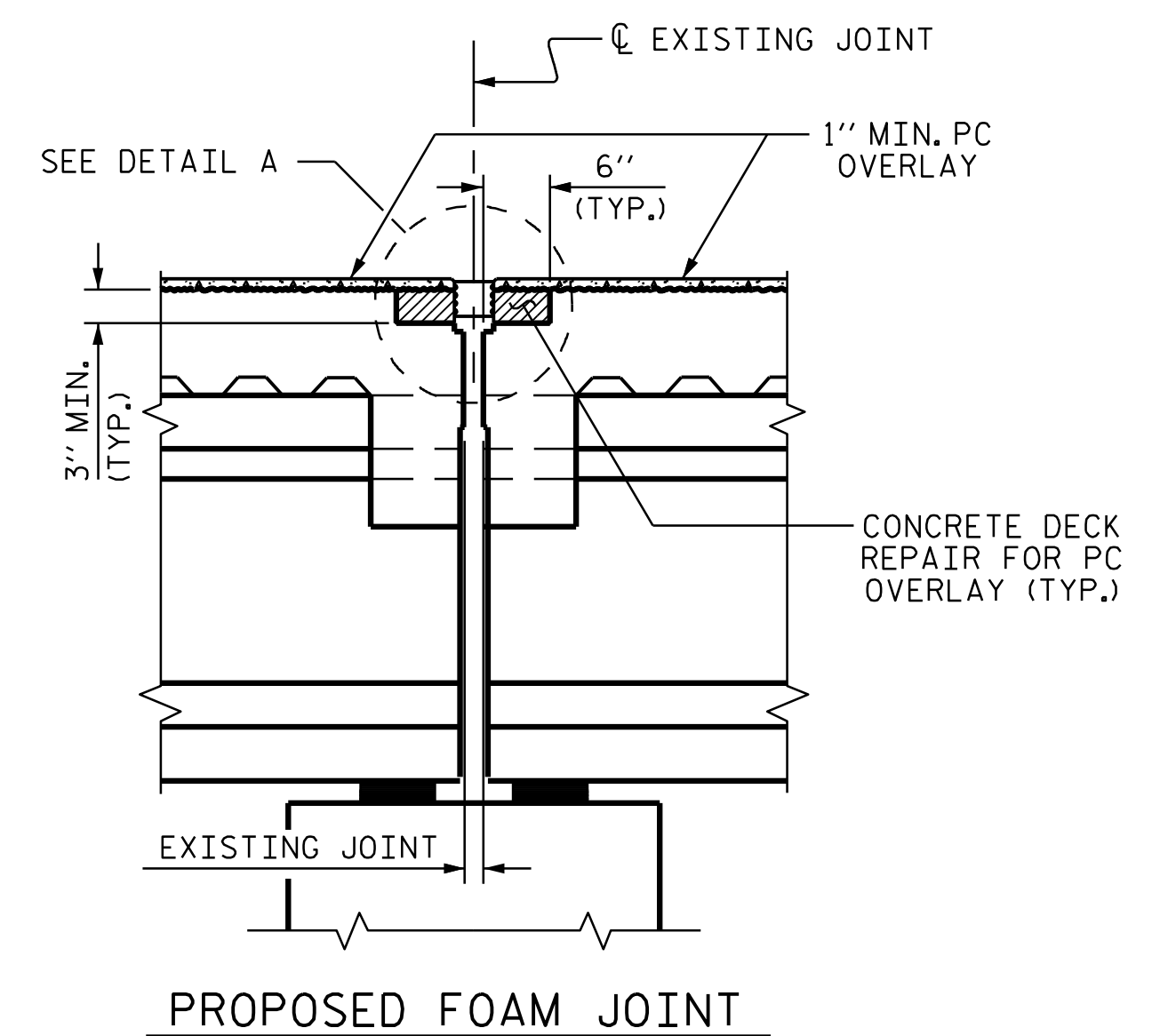
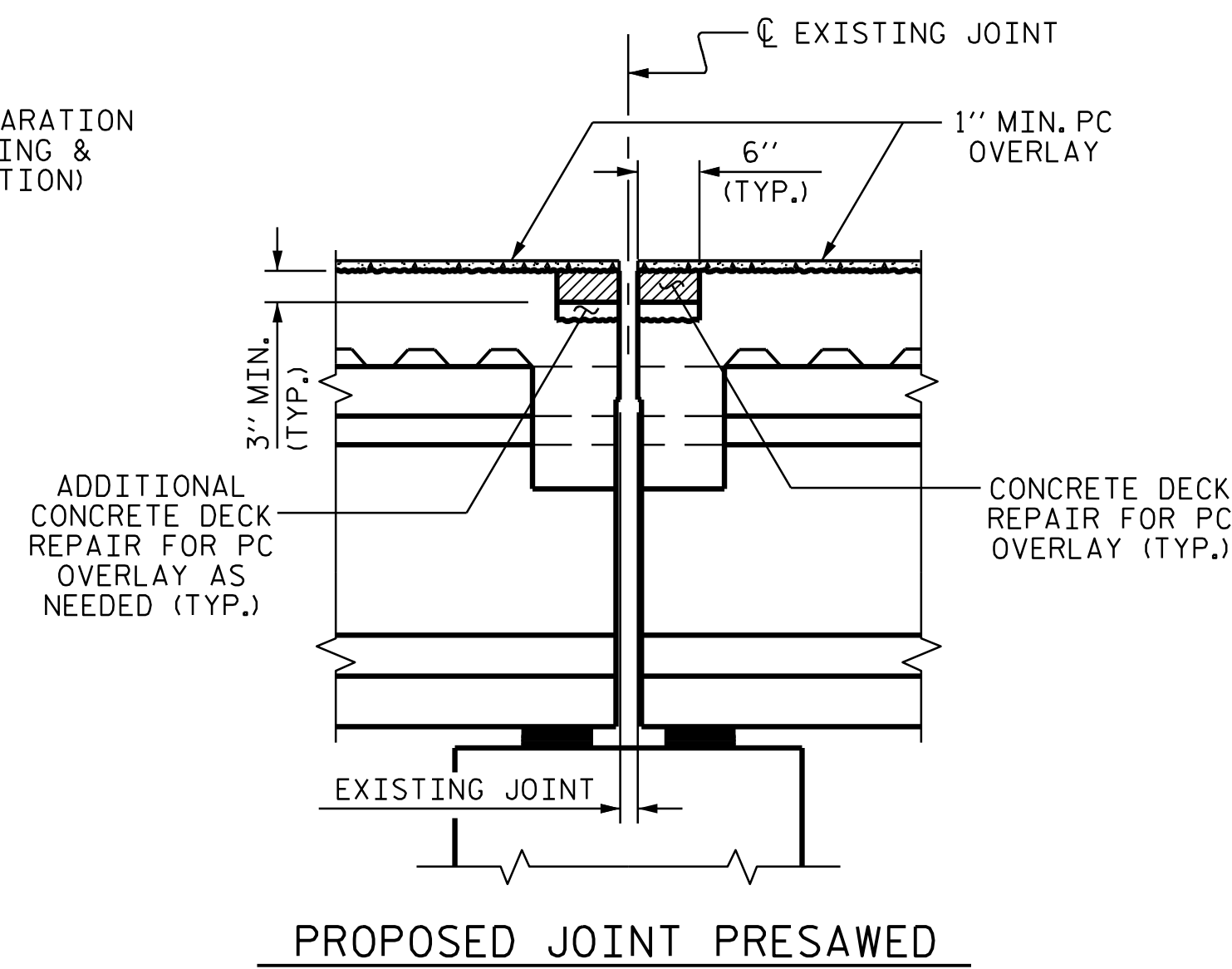
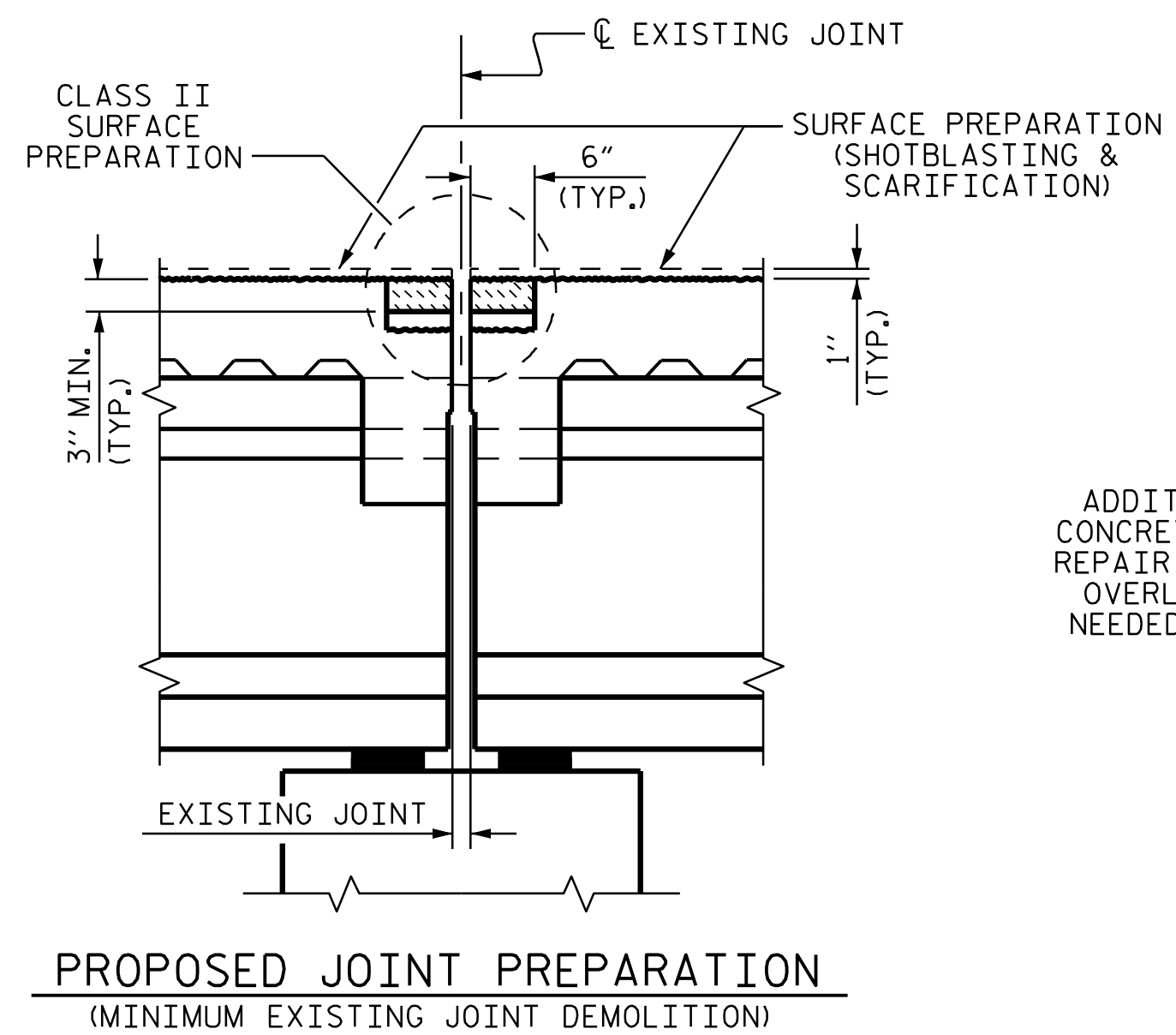
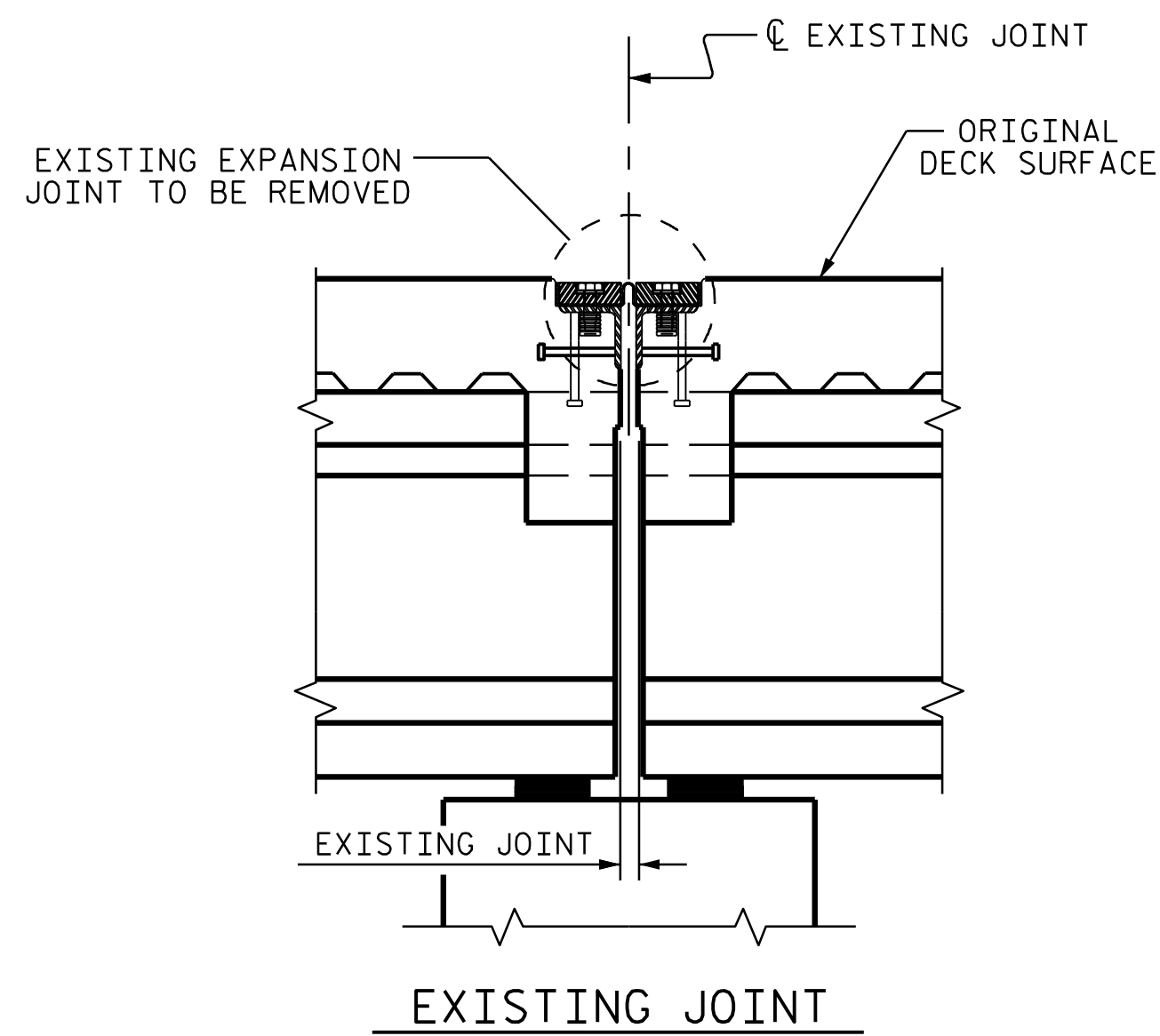
DRAWN BY : D. A. GLADDEN DATE : 5/23  
 CHECKED BY : E. E. MURRAY DATE : 3/24

**VOLKERT**  
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 Raleigh, NC 27607  
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 NC License No. F-0765

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2			4			156





**JOINT INSTALLATION SEQUENCE AT BENTS 4 AND 7 (SECTION C-C)**

**NOTES**

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDER 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.

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THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL BASED ON JOINT OPENINGS.

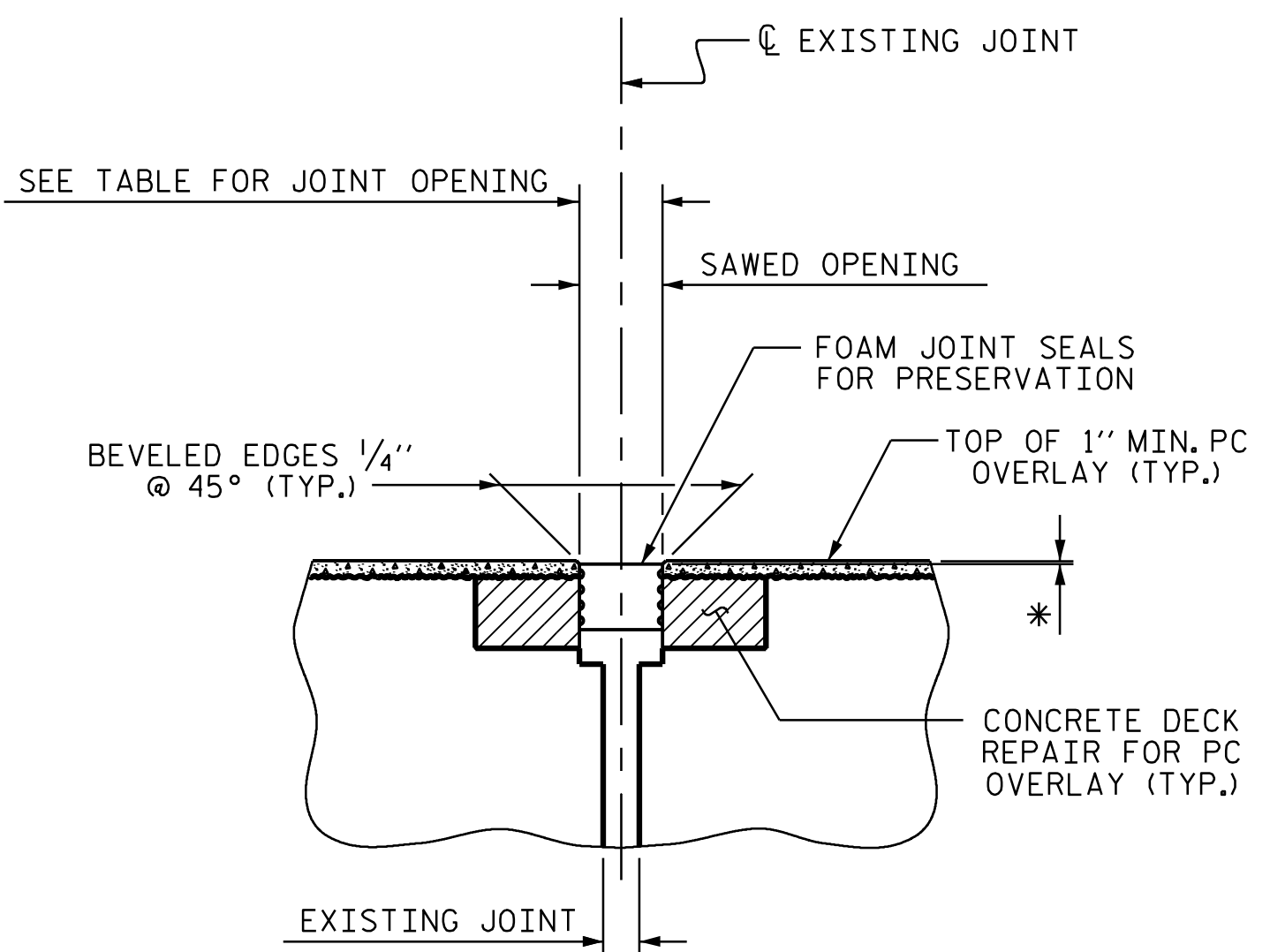
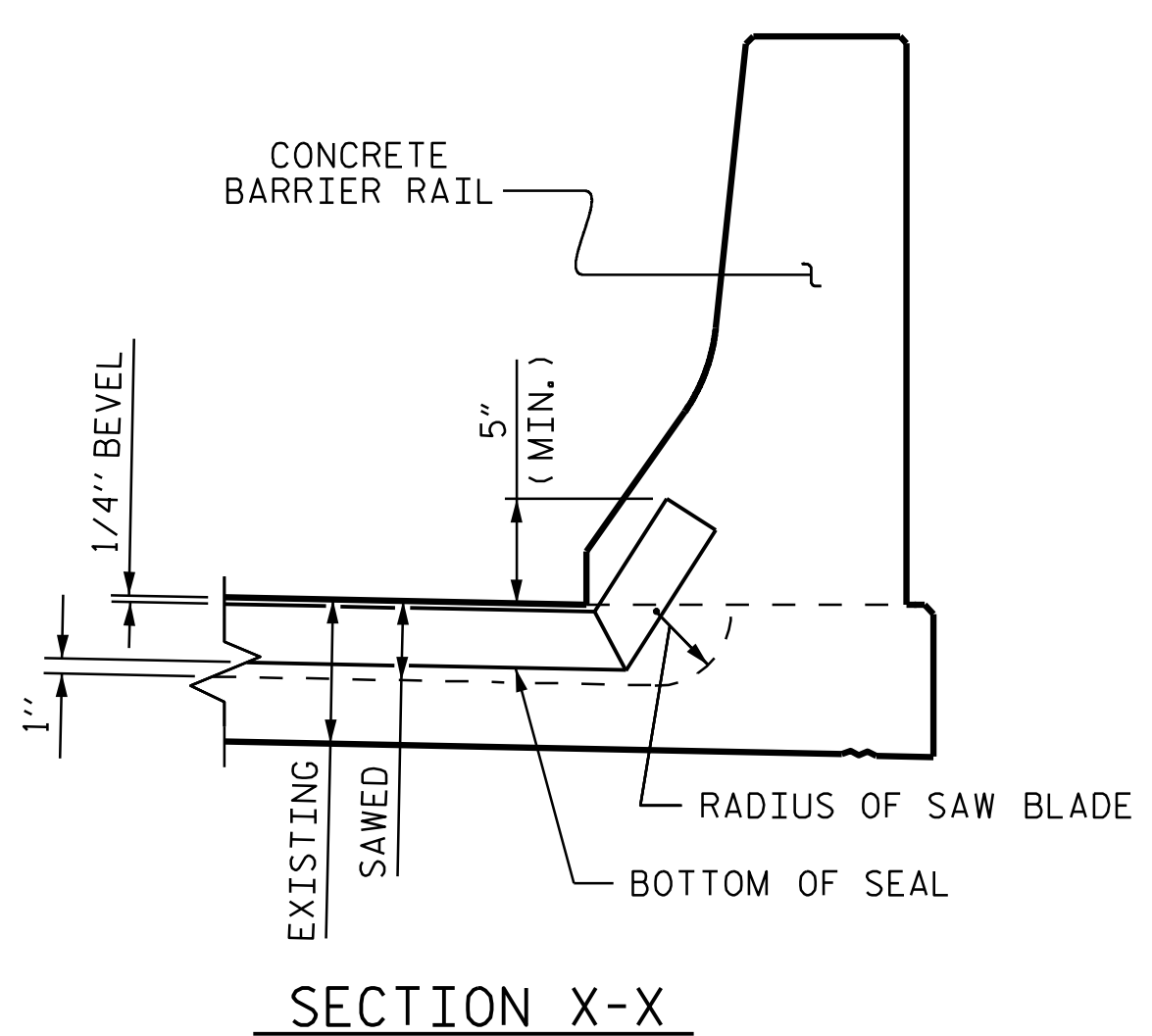
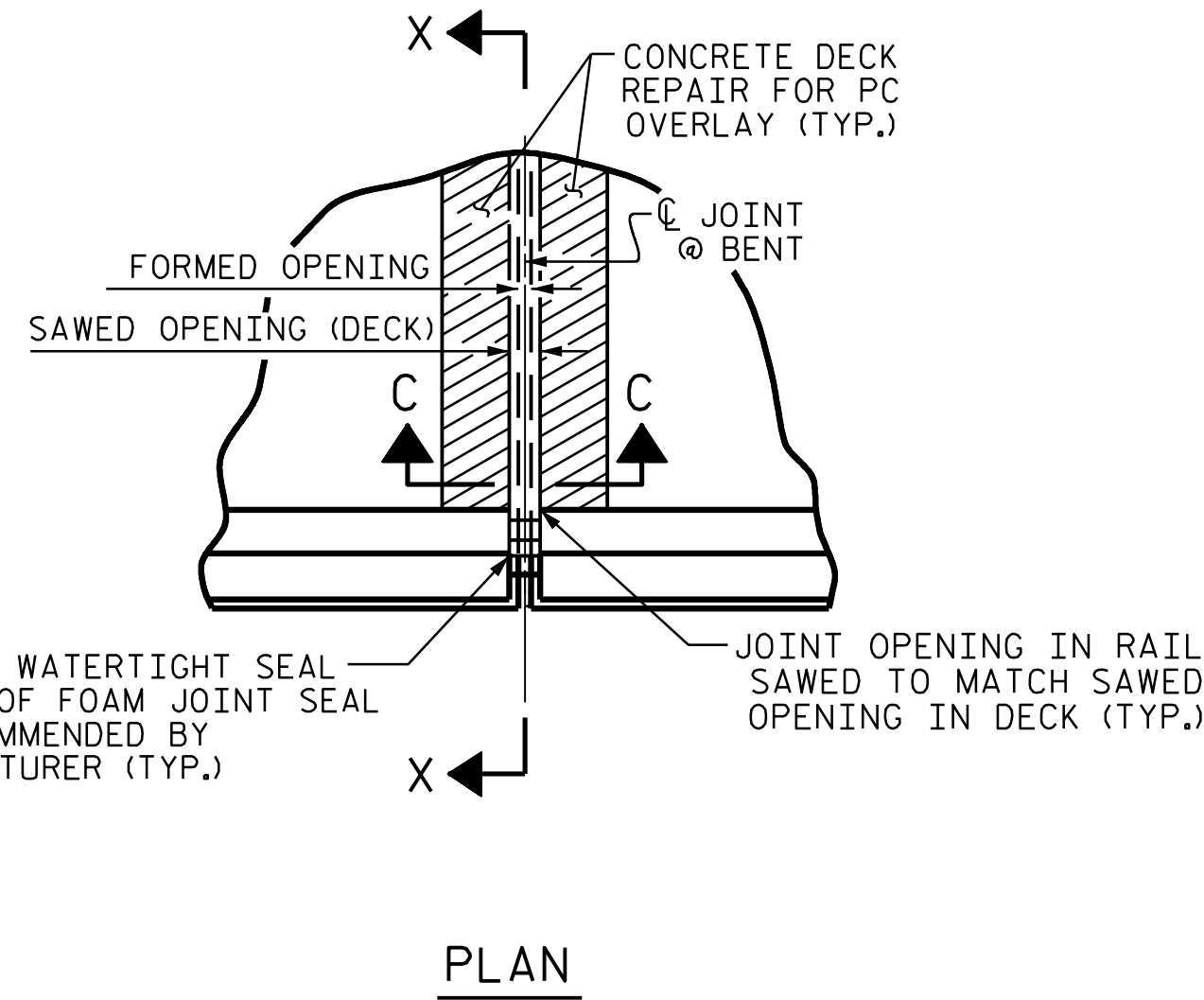
FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

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 LOCATION OF SECTION C-C, SEE PLAN OF SPAN SHEETS.

FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.



**JOINT SEAL DETAILS @ BENTS 4 AND 7**

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

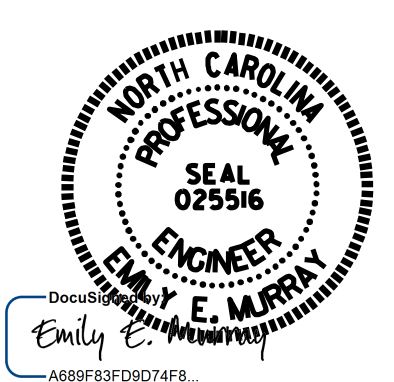
\* FOAM JOINT SEALS FOR PRESERVATION SHALL BE RECESSED AS PER MANUFACTURER'S RECOMMENDATIONS.

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO: 180007

SHEET 3 OF 6

JOINT REPAIR QUANTITY	
LOCATION	FOAM JOINT SEALS FOR PRESERVATION ESTIMATED (LIN. FT.)
BENT 4	39.0
BENT 7	39.0

SAWED JOINT OPENING TABLE				
LOCATION	SKEW ANGLE	PERPENDICULAR JOINT OPENING AT 45°	PERPENDICULAR JOINT OPENING AT 60°	PERPENDICULAR JOINT OPENING AT 90°
BENT 4	90°00'00"	2 7/8"	2 1/16"	2 1/4"
BENT 7	90°00'00"	2 7/8"	2 1/16"	2 1/4"



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

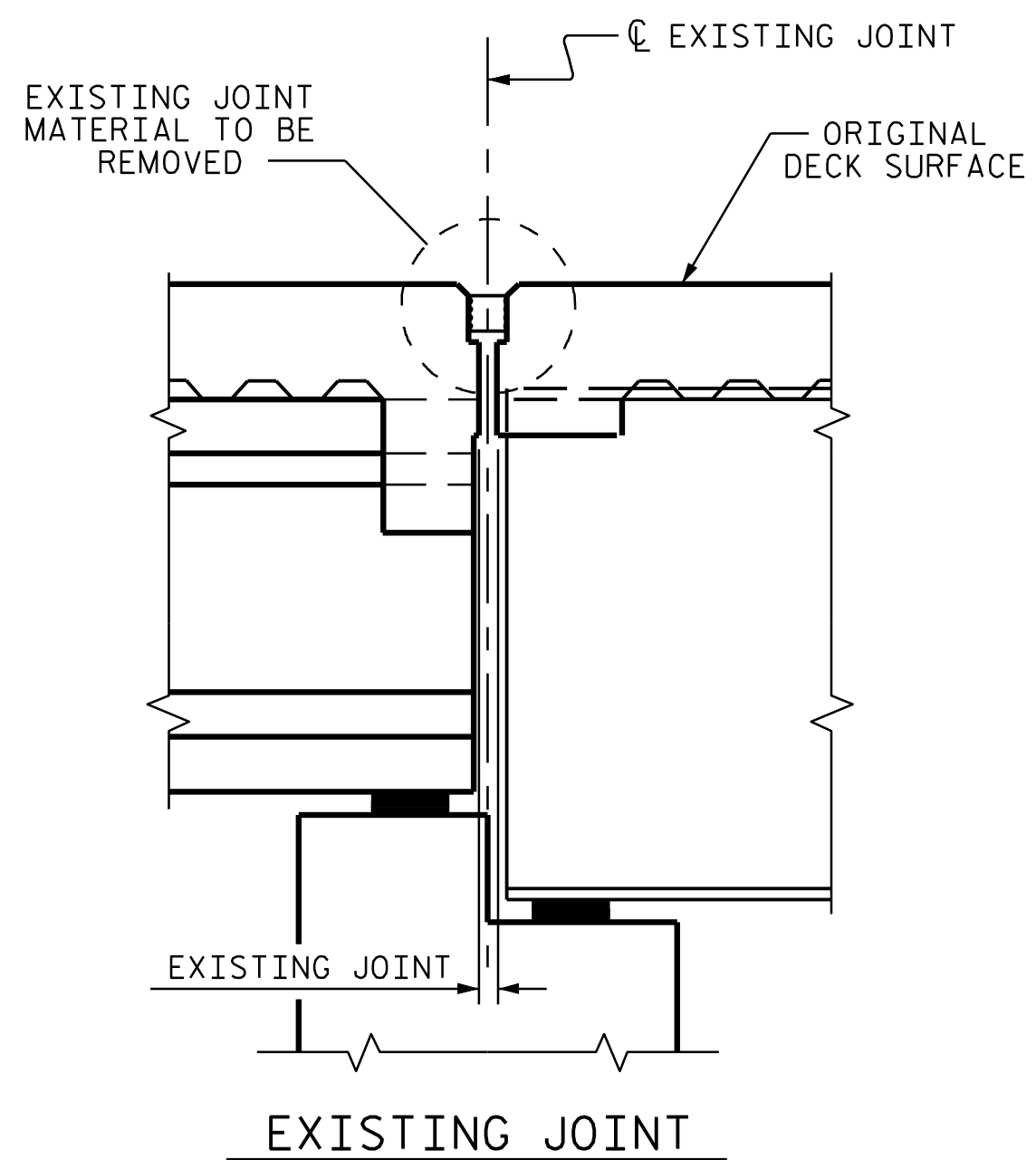
**JOINT REPAIR DETAILS AT BENTS 4 AND 7**

DRAWN BY : D. A. GLADDEN DATE : 5/23  
 CHECKED BY : E. E. MURRAY DATE : 3/24

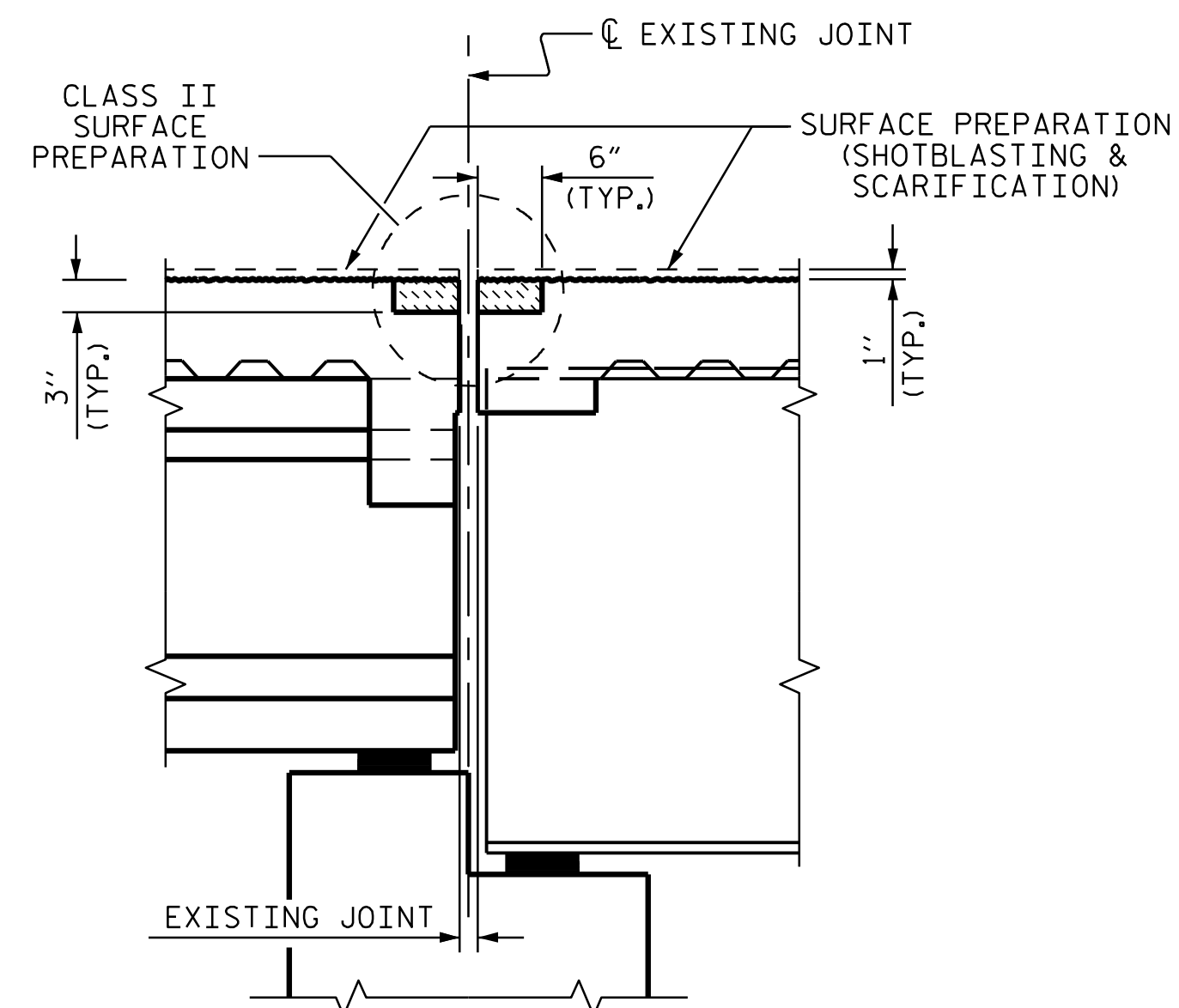
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
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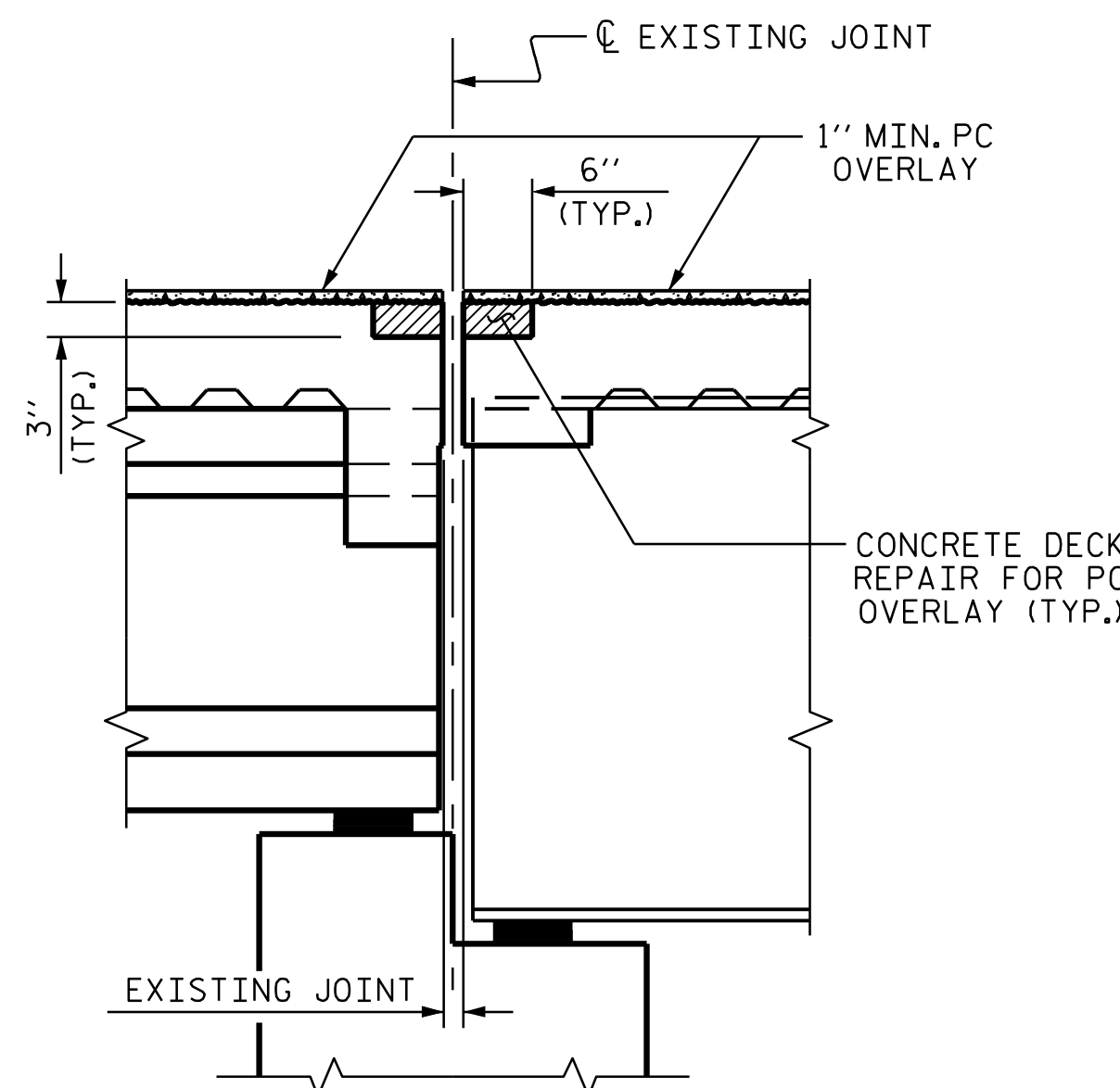
4/24/2024



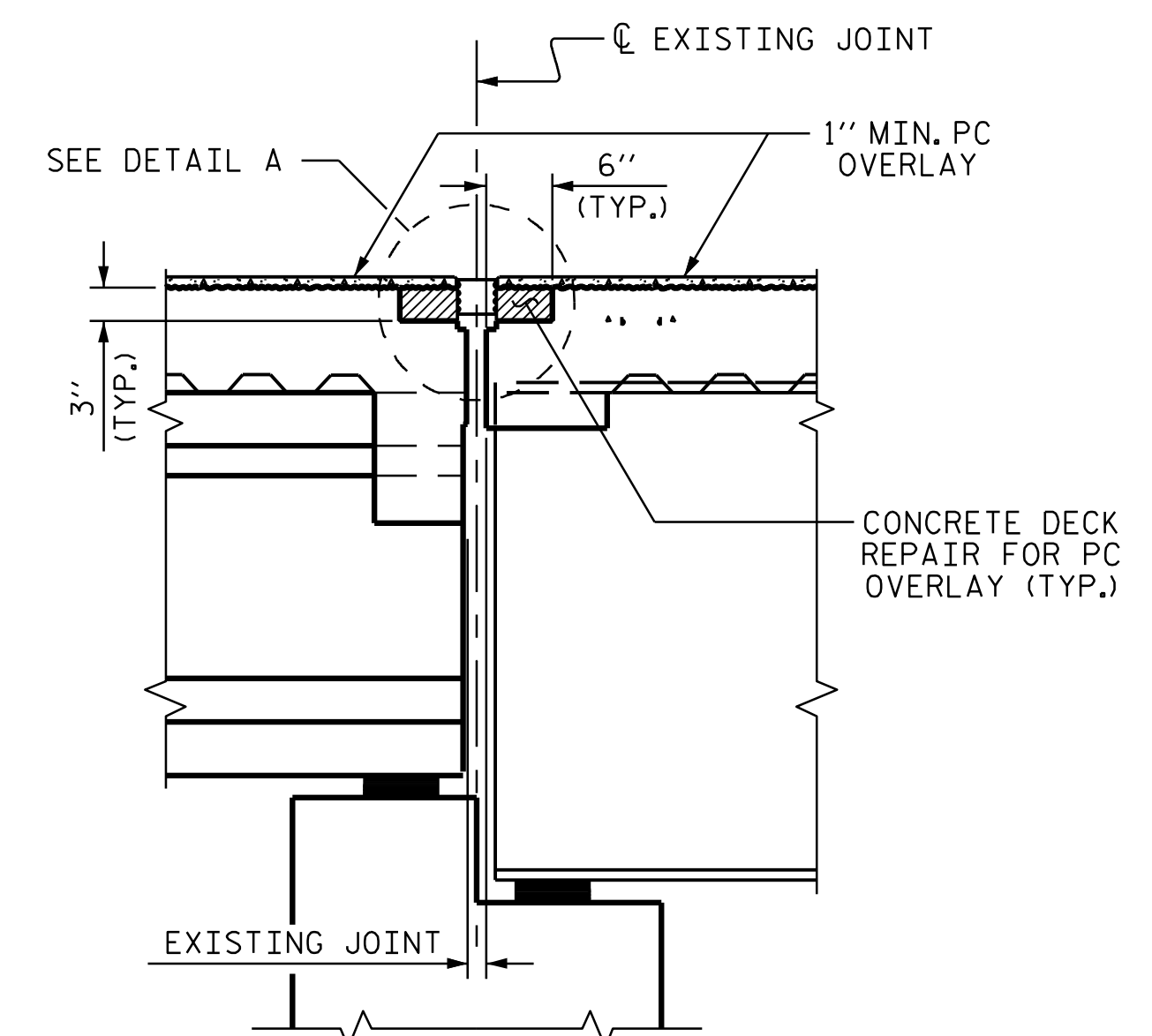
EXISTING JOINT



PROPOSED JOINT PREPARATION  
(MINIMUM EXISTING JOINT DEMOLITION)



PROPOSED JOINT PRESAWED

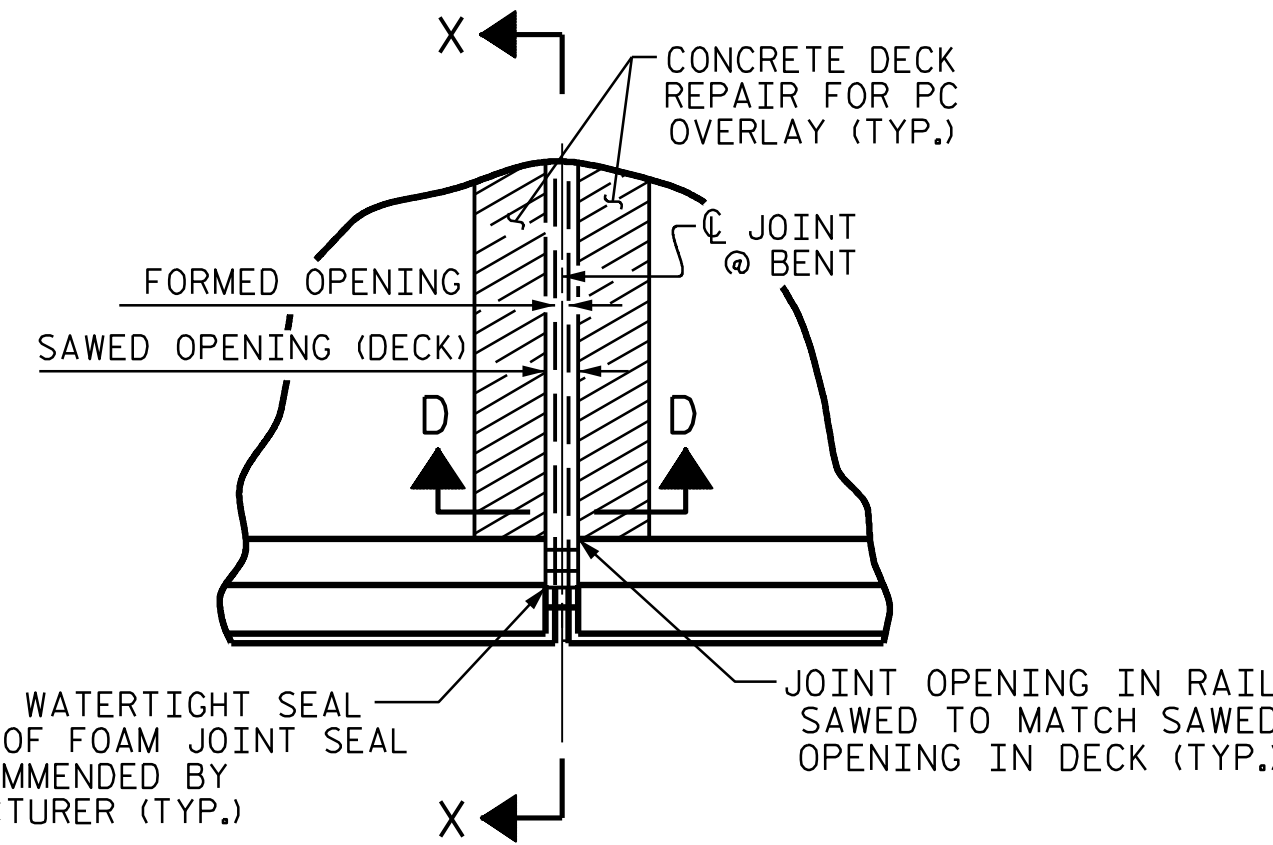


PROPOSED FOAM JOINT

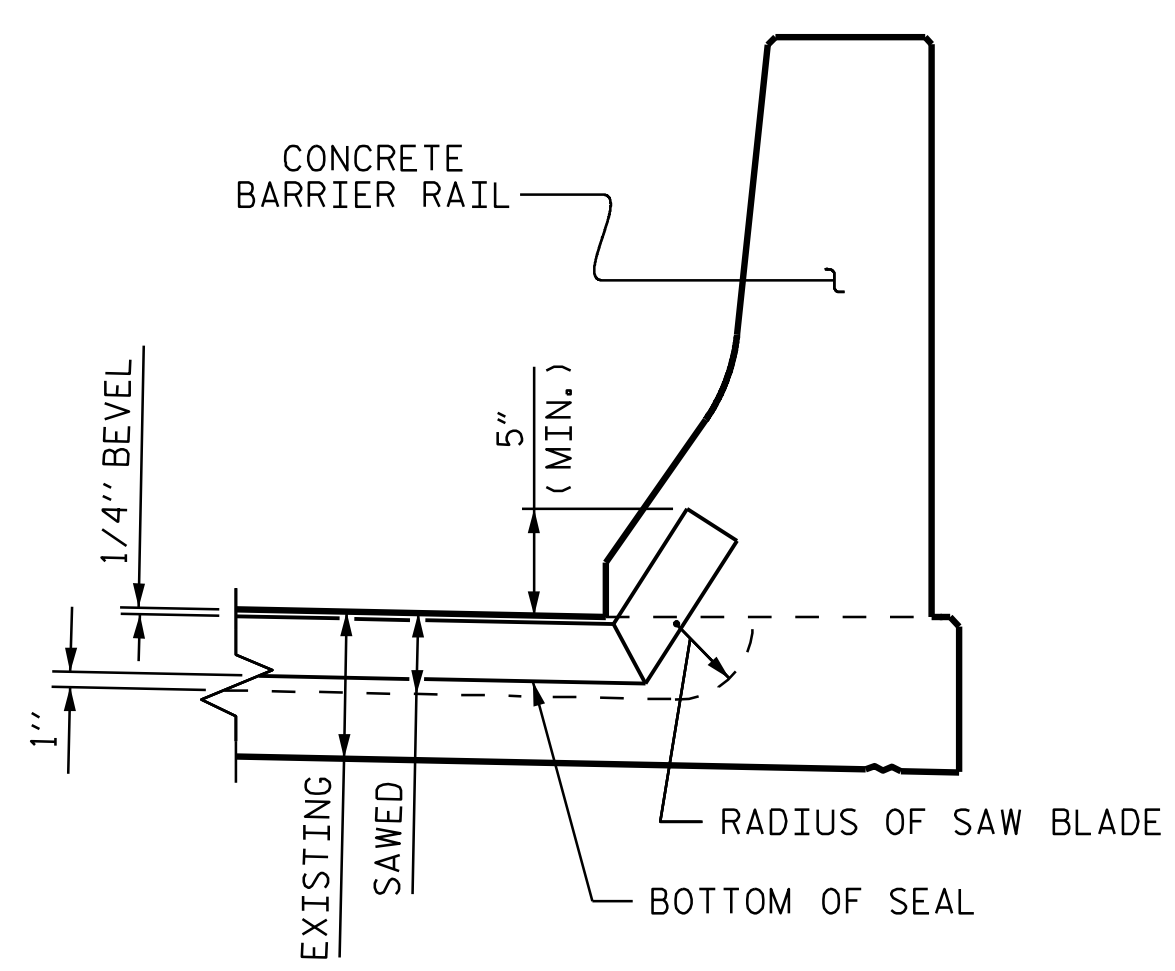
JOINT INSTALLATION SEQUENCE AT BENT 10 (SECTION D-D)

NOTES

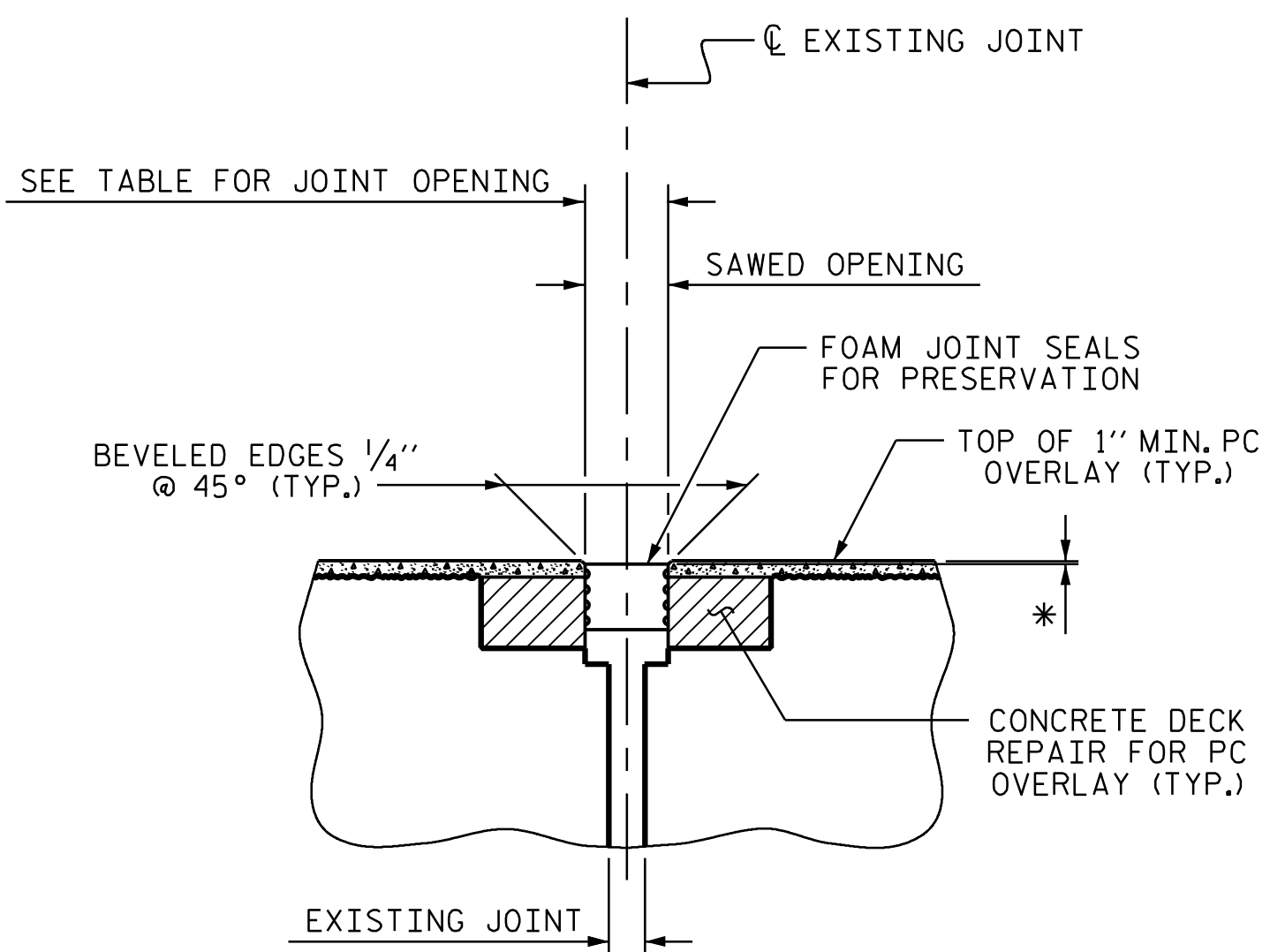
- THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDER JOINT SEAL MATERIAL. IF THE ACTUAL JOINT OPENING VARIES FROM THE OPENING ALLOWED BY THE JOINT SEAL MATERIAL, NOTIFY THE ENGINEER. REVISION TO THE JOINT SEAL SIZE AND TYPE MIGHT BE NECESSARY.
- THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS FOR THE JOINT SEALS IN LIEU OF SAWING THE JOINT.
- THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL BASED ON JOINT OPENINGS.
- 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 LOCATION OF SECTION D-D, SEE PLAN OF SPAN SHEETS.
- FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.



PLAN



SECTION X-X



DETAIL A  
(PROPOSED)

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

JOINT SEAL DETAILS @ BENT 10

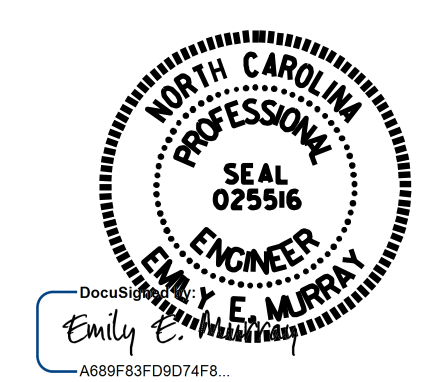
FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
BRIDGE NO: 180007

SHEET 4 OF 6

JOINT REPAIR QUANTITY	
LOCATION	FOAM JOINT SEALS FOR PRESERVATION ESTIMATED (LIN. FT.)
BENT 10	39.0

SAWED JOINT OPENING TABLE				
LOCATION	SKEW ANGLE	PERPENDICULAR JOINT OPENING AT 45°	PERPENDICULAR JOINT OPENING AT 60°	PERPENDICULAR JOINT OPENING AT 90°
BENT 10	90°00'00"	1 1/16"	1 9/16"	1 3/8"



4/24/2024

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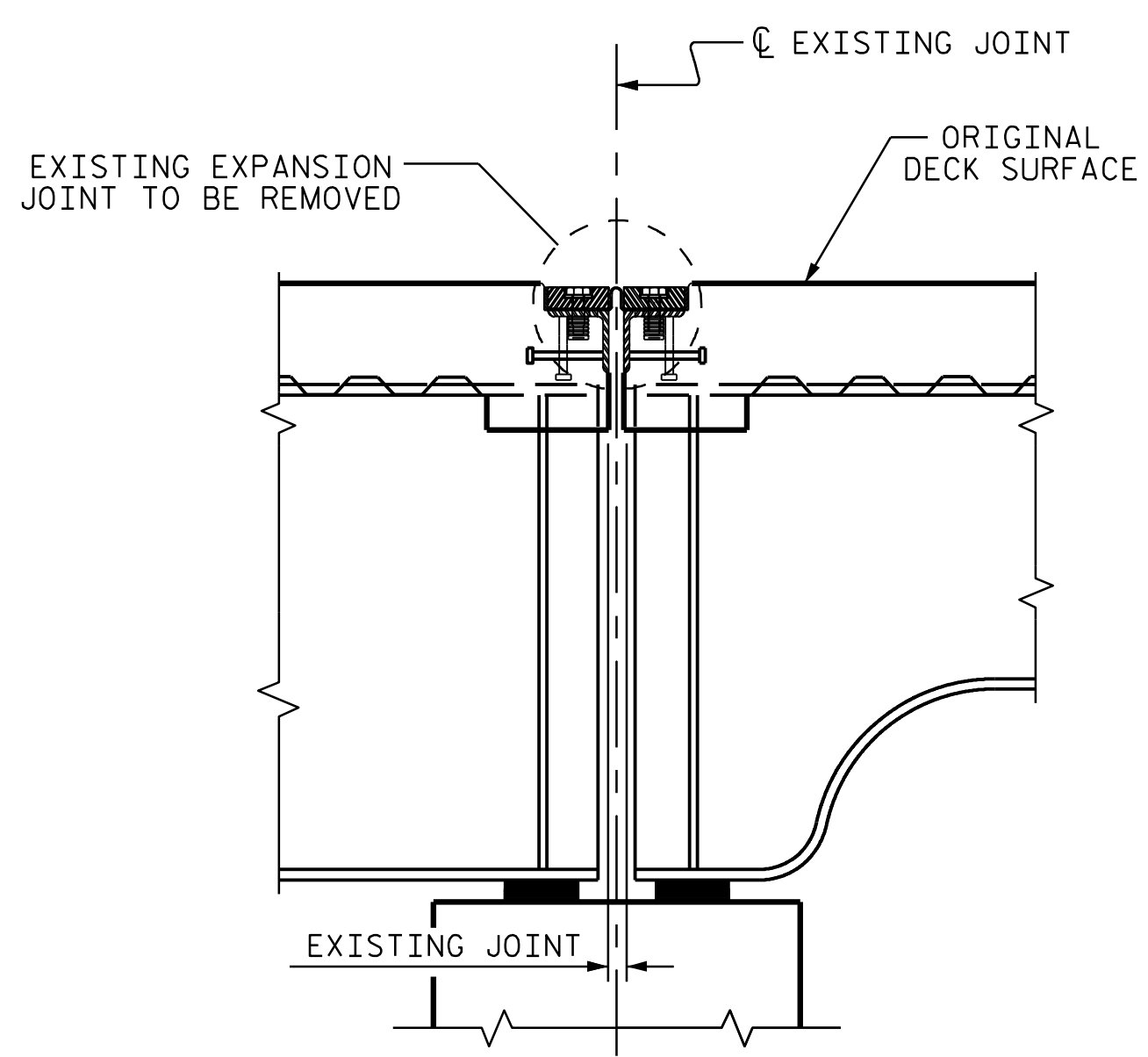
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

JOINT REPAIR DETAILS AT BENT 10

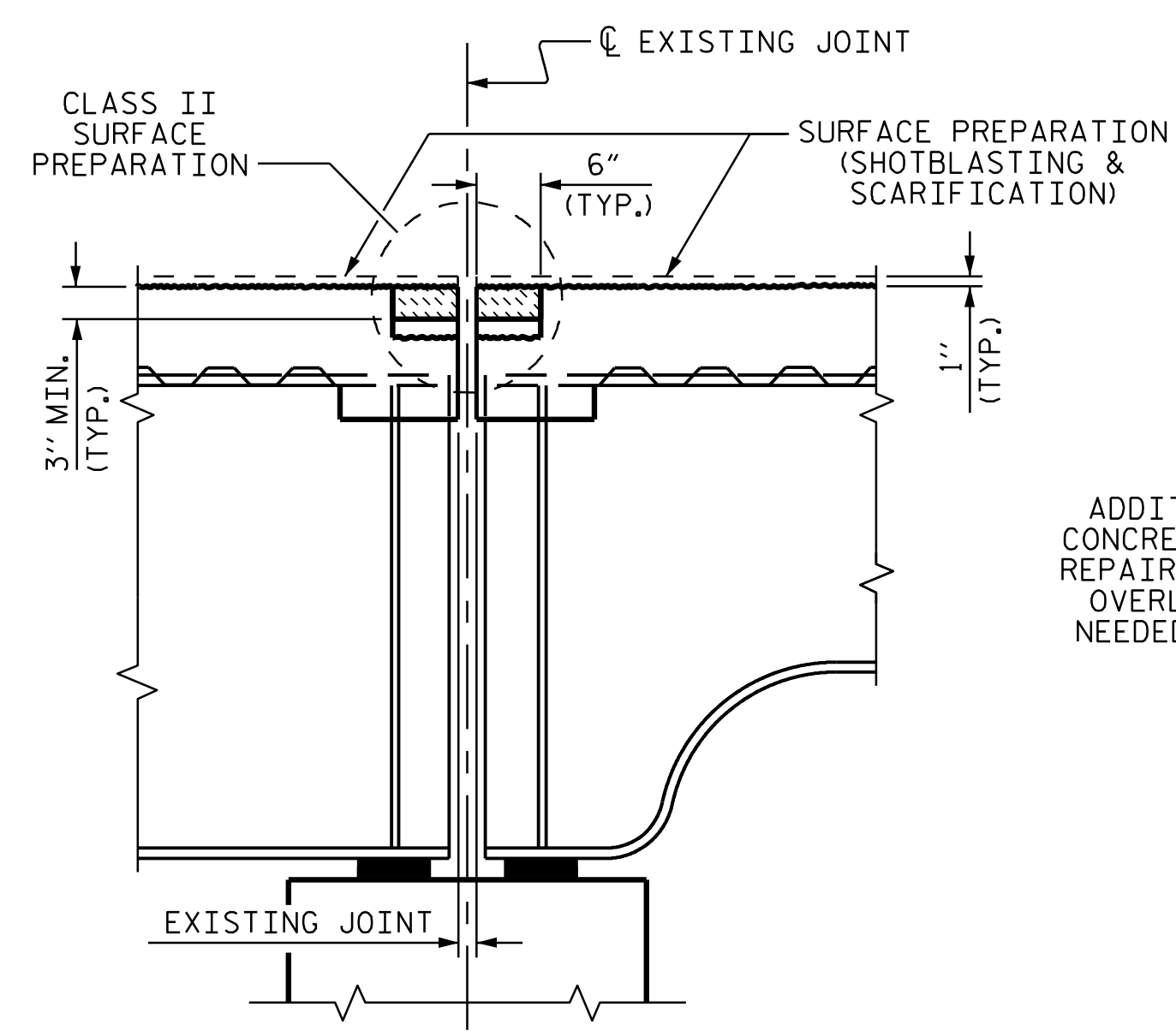
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			156

DRAWN BY: D. A. GLADDEN DATE: 5/23  
CHECKED BY: E. E. MURRAY DATE: 3/24

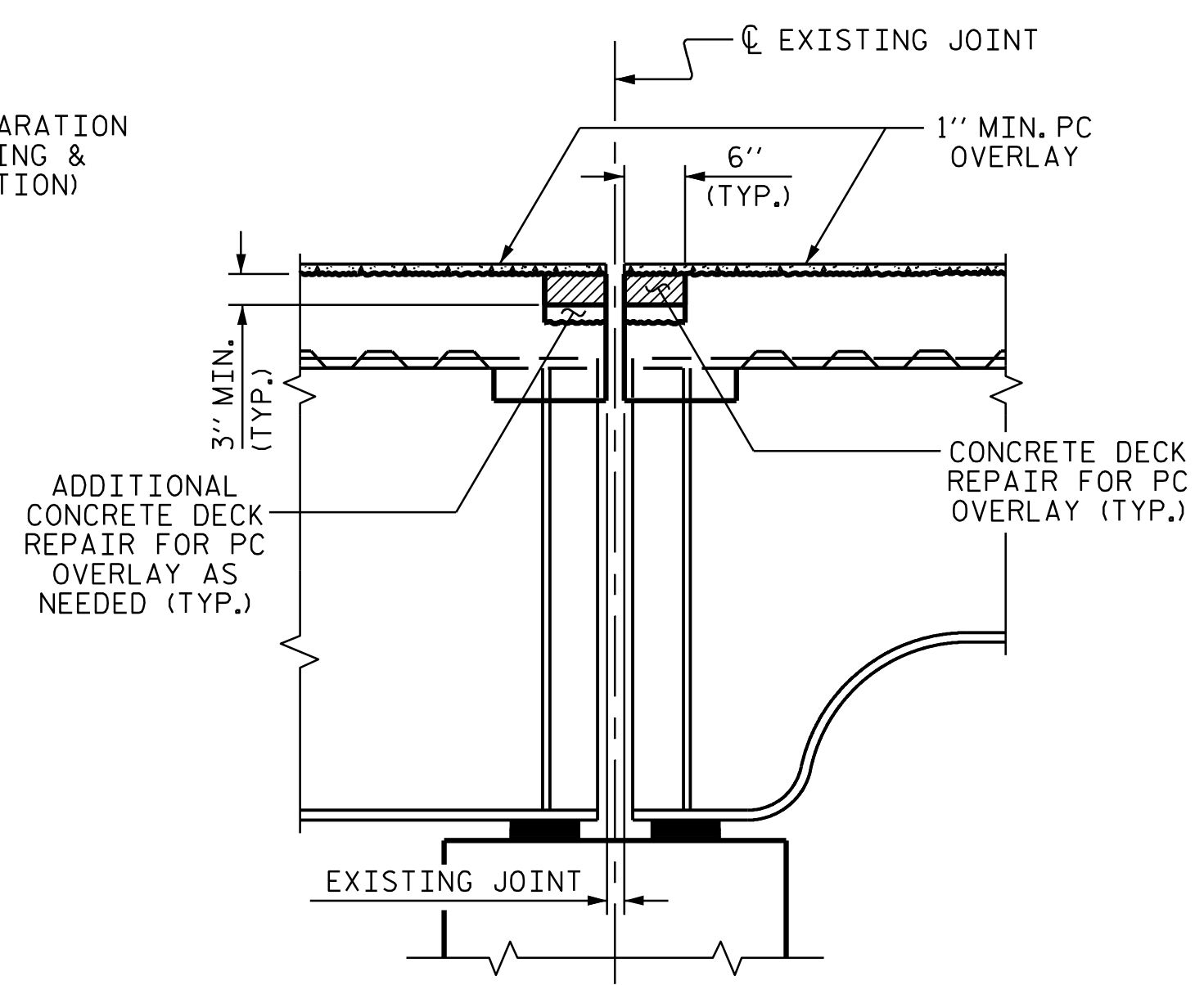




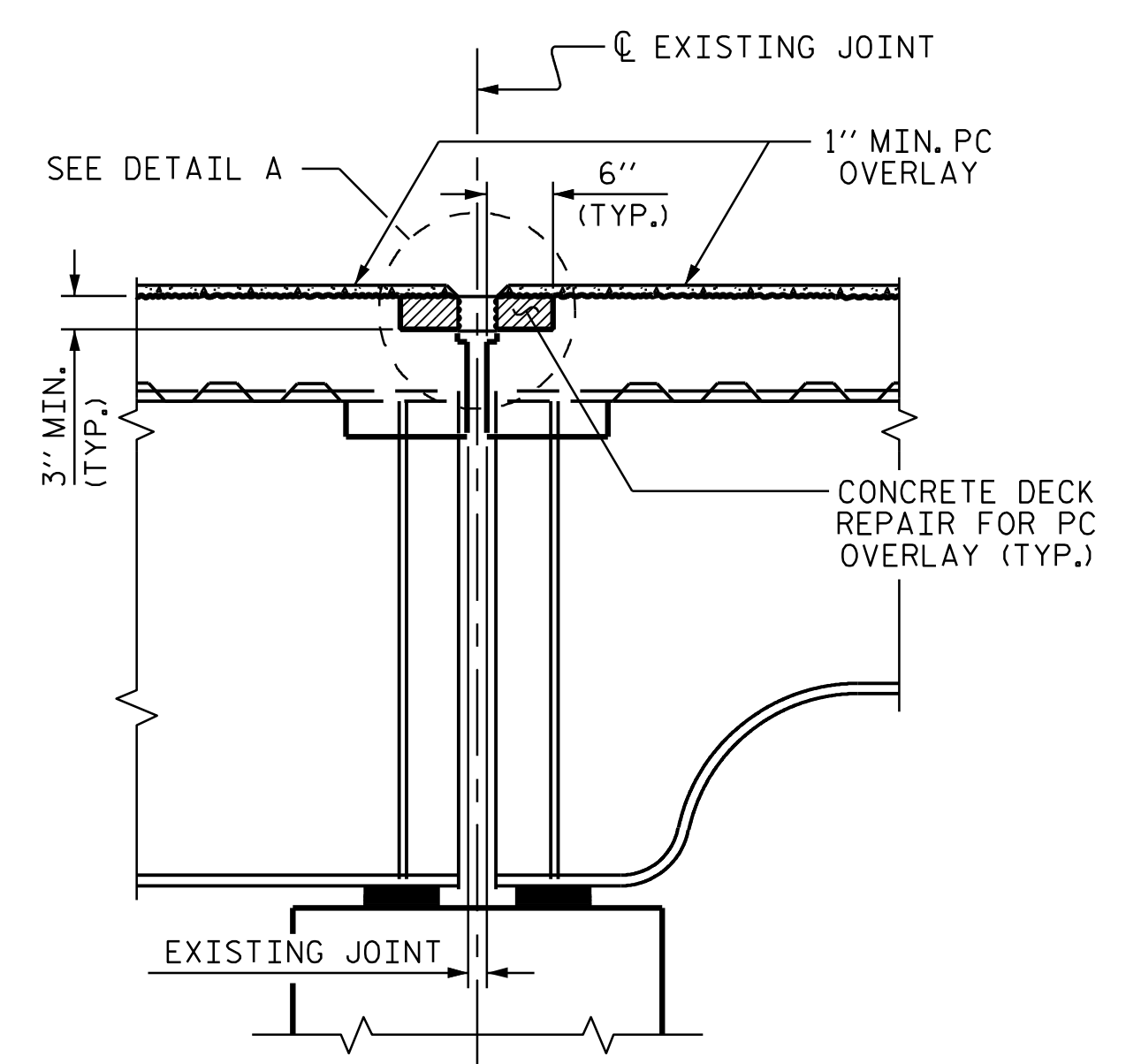
EXISTING JOINT



PROPOSED JOINT PREPARATION  
(MINIMUM EXISTING JOINT DEMOLITION)



PROPOSED JOINT PRESAWED



PROPOSED FOAM JOINT

JOINT INSTALLATION SEQUENCE AT BENT 11 (SECTION E-E)

NOTES

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDER 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.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL BASED ON JOINT OPENINGS.

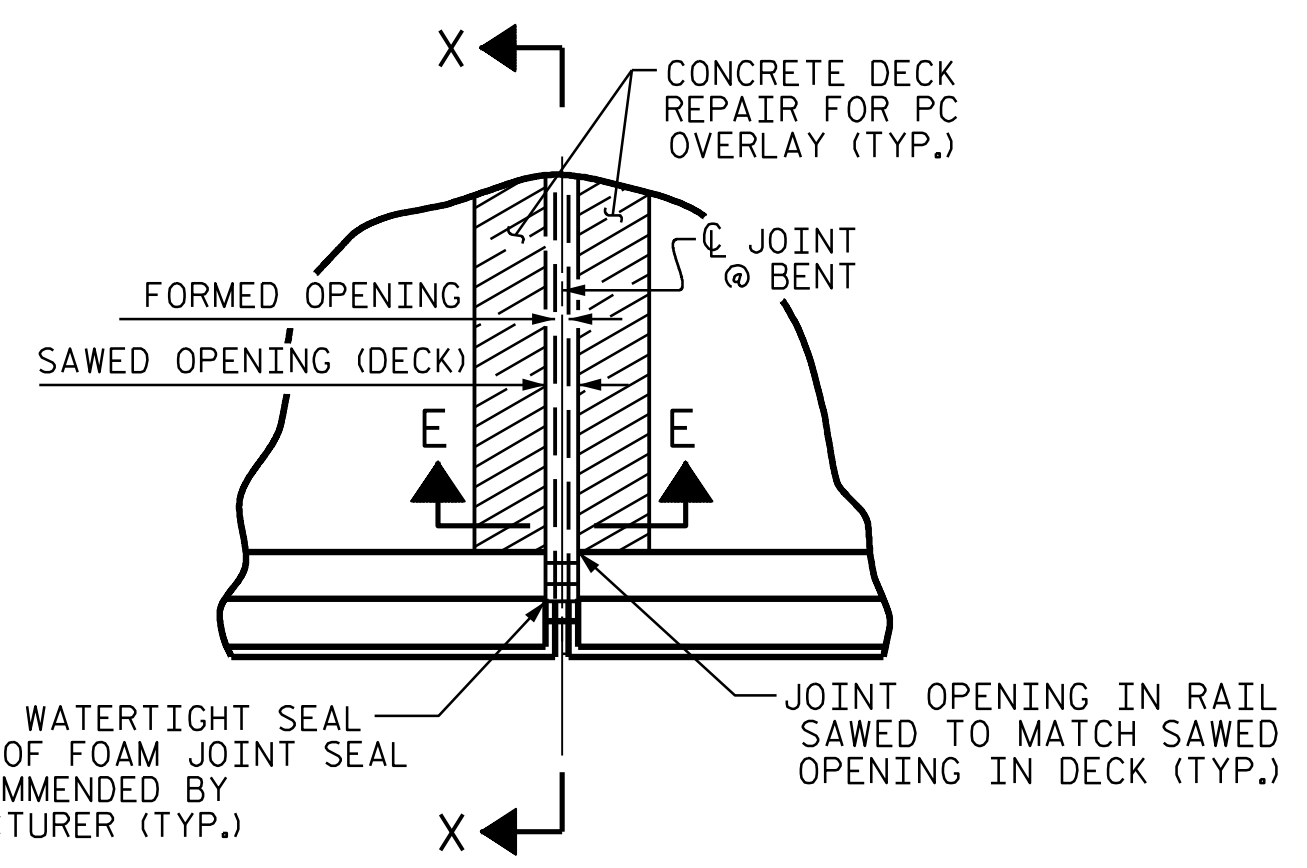
FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOAM JOINT SEALS FOR PRESERVATION SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION.

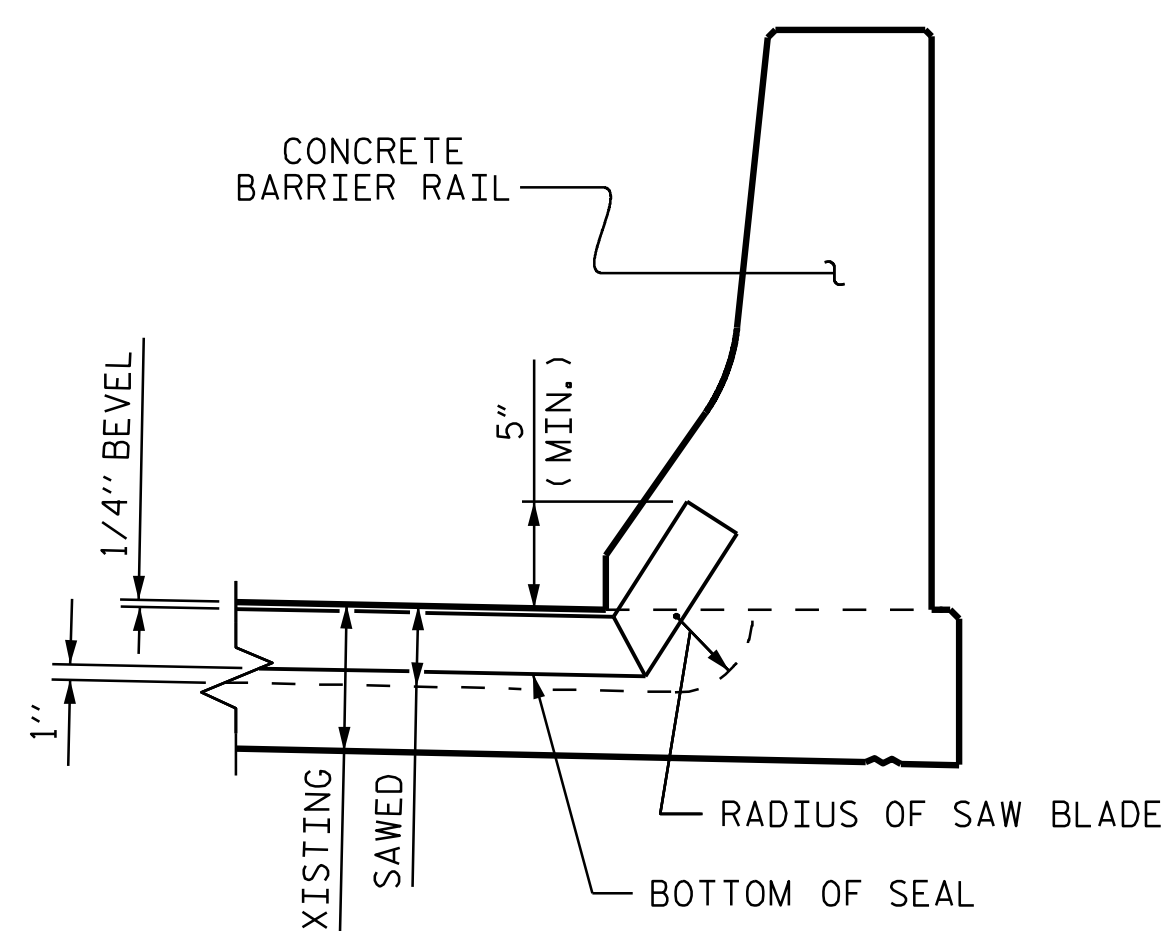
THE INSTALLED FOAM JOINT SEALS FOR PRESERVATION SHALL BE WATER TIGHT.

FOR LOCATION OF SECTION E-E, SEE PLAN OF SPAN SHEETS.

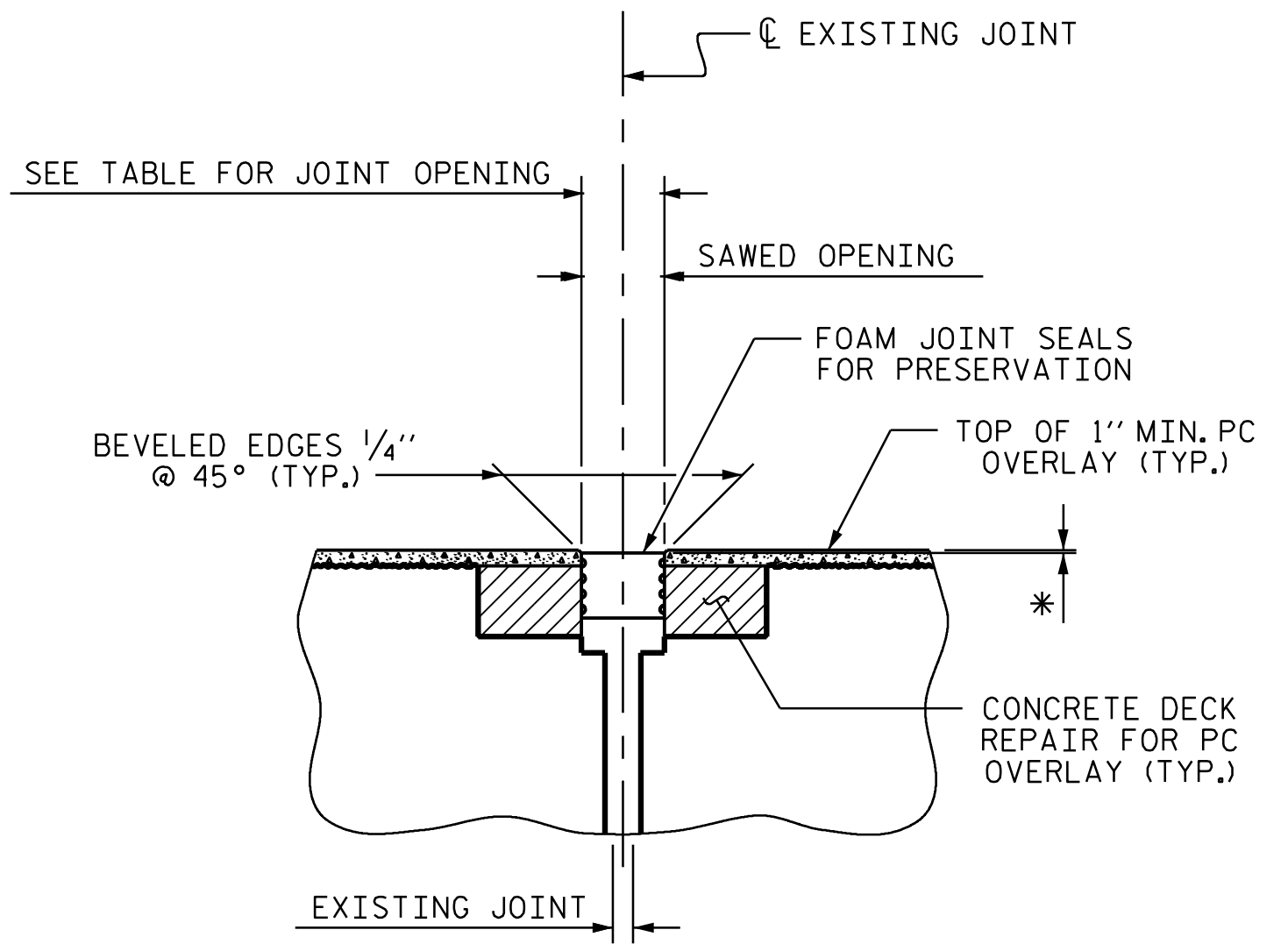
FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.



PLAN



SECTION X-X



DETAIL A  
(PROPOSED)

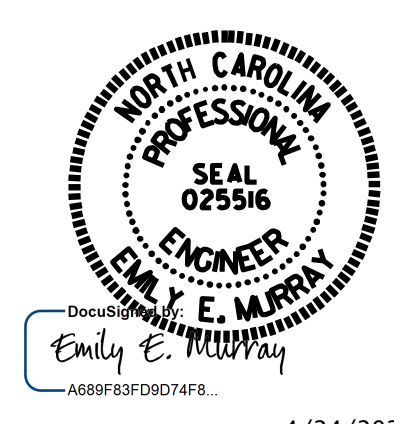
\* FOAM JOINT SEALS FOR PRESERVATION SHALL BE RECESSED AS PER MANUFACTURER'S RECOMMENDATIONS.

JOINT SEAL DETAILS @ BENT 11

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO: 180007

SHEET 5 OF 6



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
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JOINT REPAIR  
 DETAILS AT  
 BENT 11

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			156

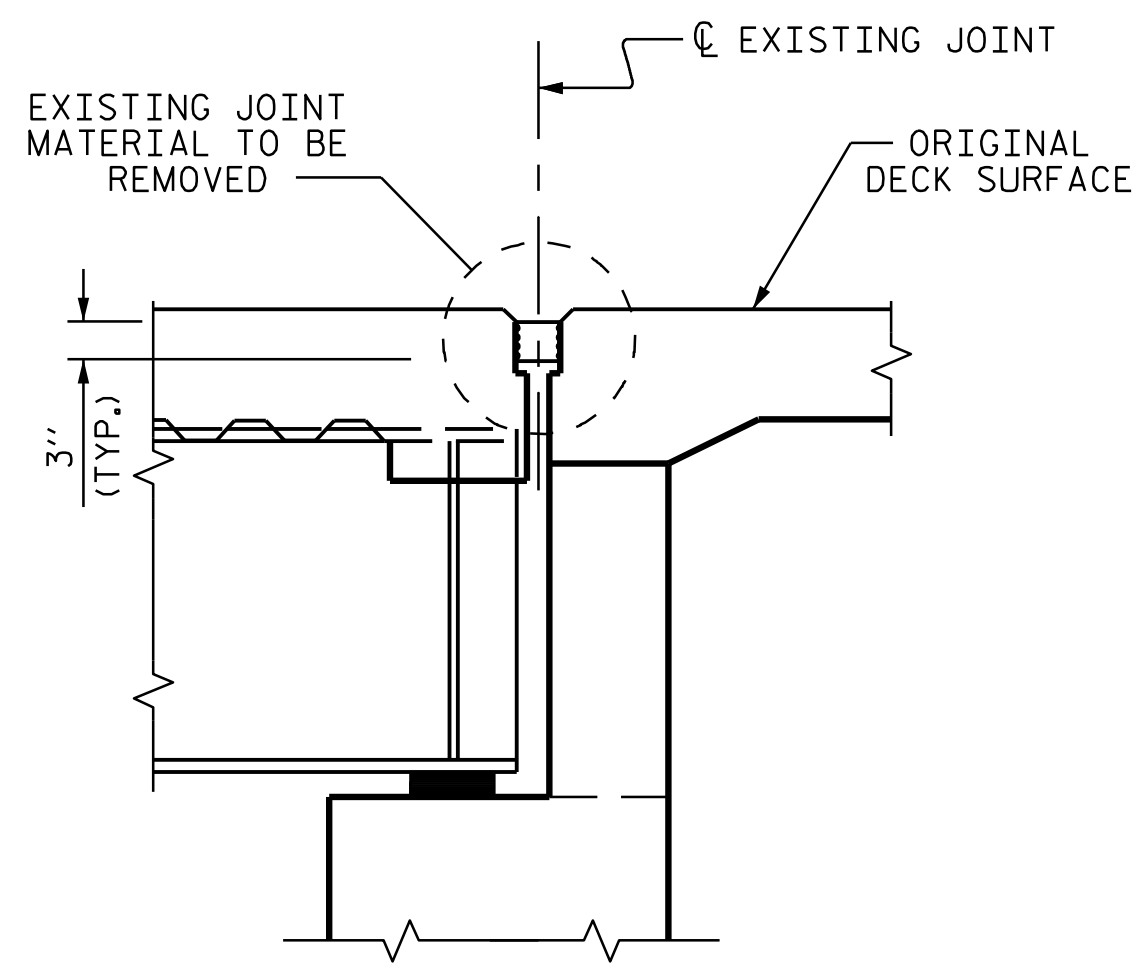
JOINT REPAIR QUANTITY	
LOCATION	FOAM JOINT SEALS FOR PRESERVATION ESTIMATED (LIN. FT.)
BENT 11	39.0

SAWED JOINT OPENING TABLE				
LOCATION	SKEW ANGLE	PERPENDICULAR JOINT OPENING AT 45°	PERPENDICULAR JOINT OPENING AT 60°	PERPENDICULAR JOINT OPENING AT 90°
BENT 11	90°00'00"	2 7/8"	2 11/16"	2 5/16"

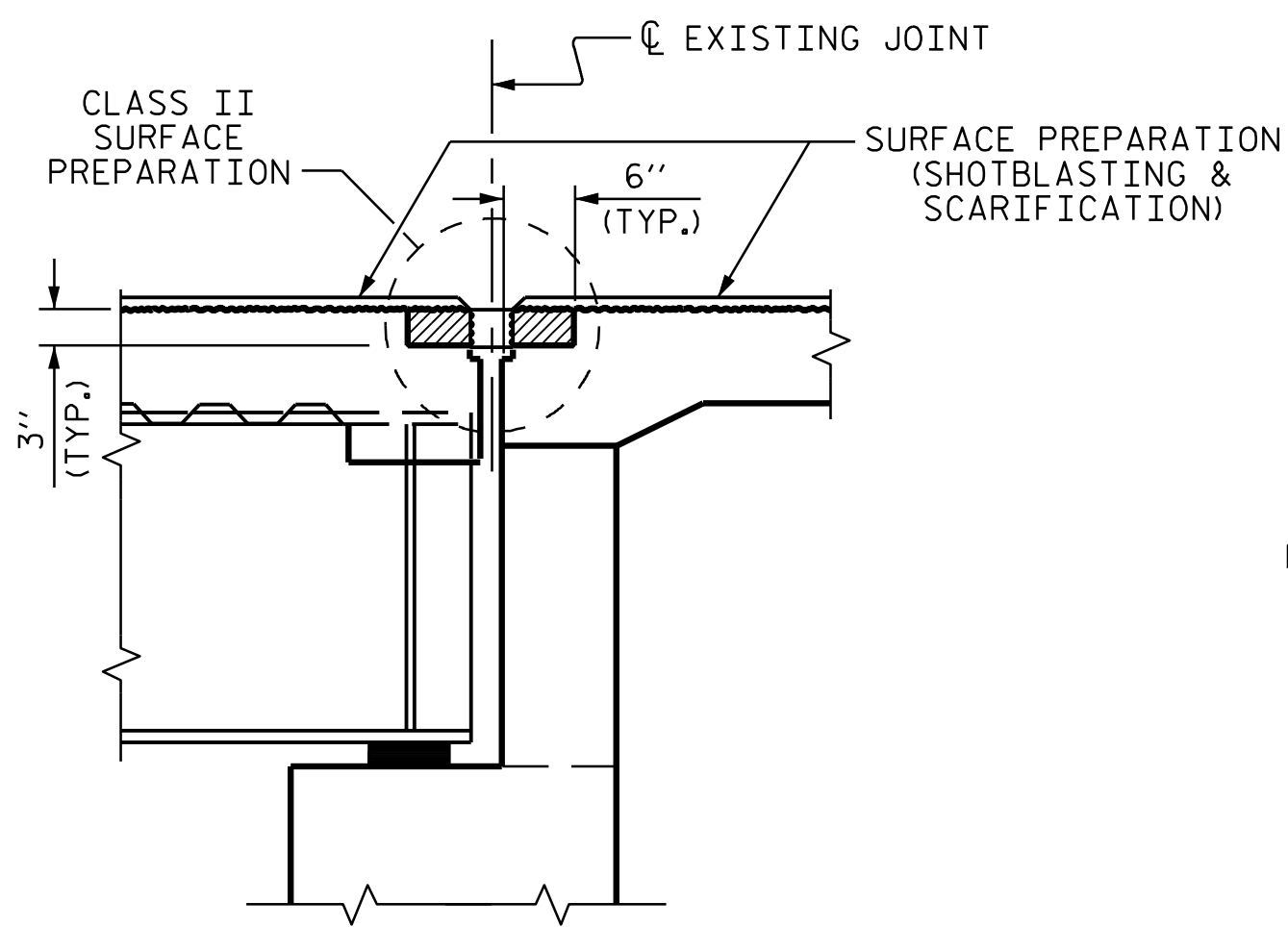
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 Raleigh, NC 27607  
 Tel: 919-854-0344 Fax: 919-854-0355  
 NC License No. F-0785

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

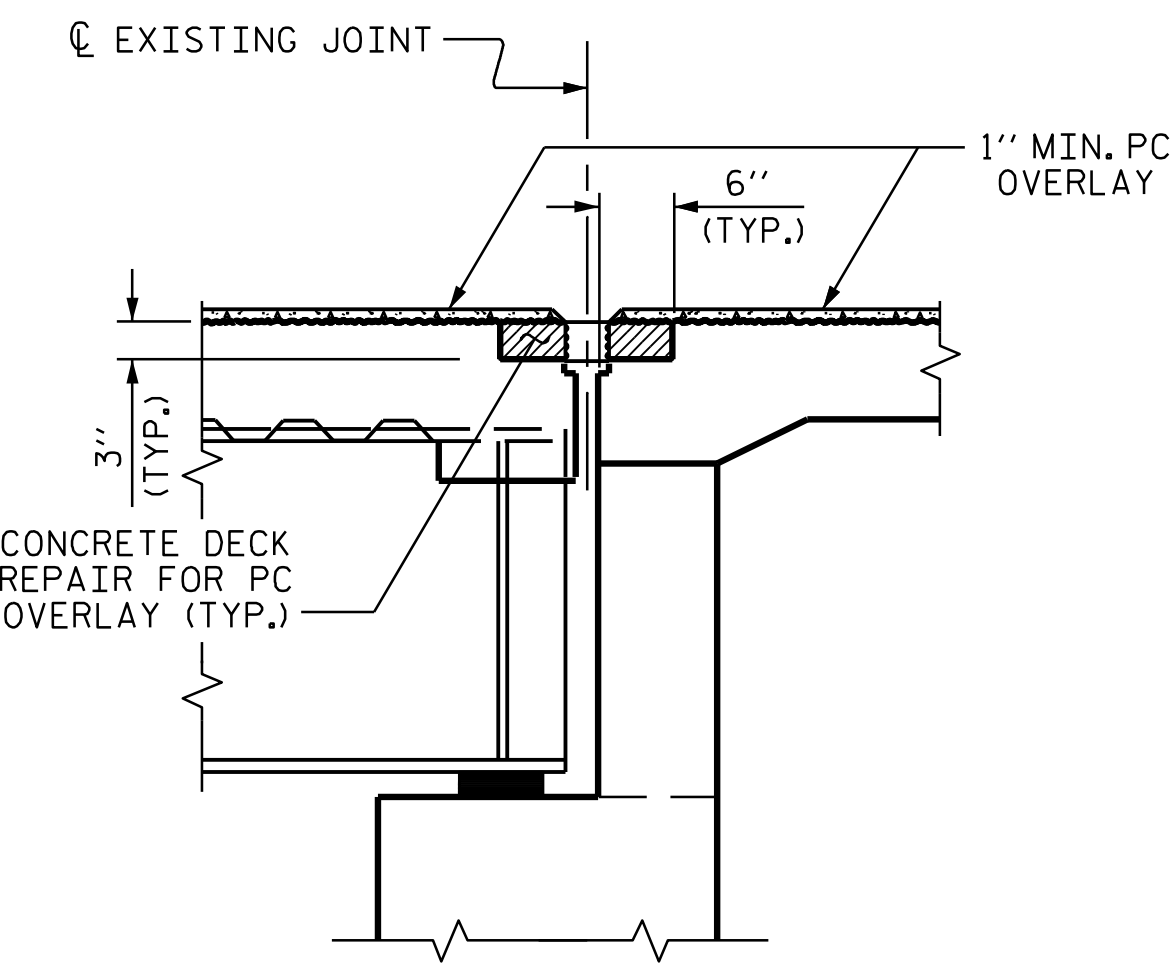
DRAWN BY : D. A. GLADDEN DATE : 5/23  
 CHECKED BY : E. E. MURRAY DATE : 3/24



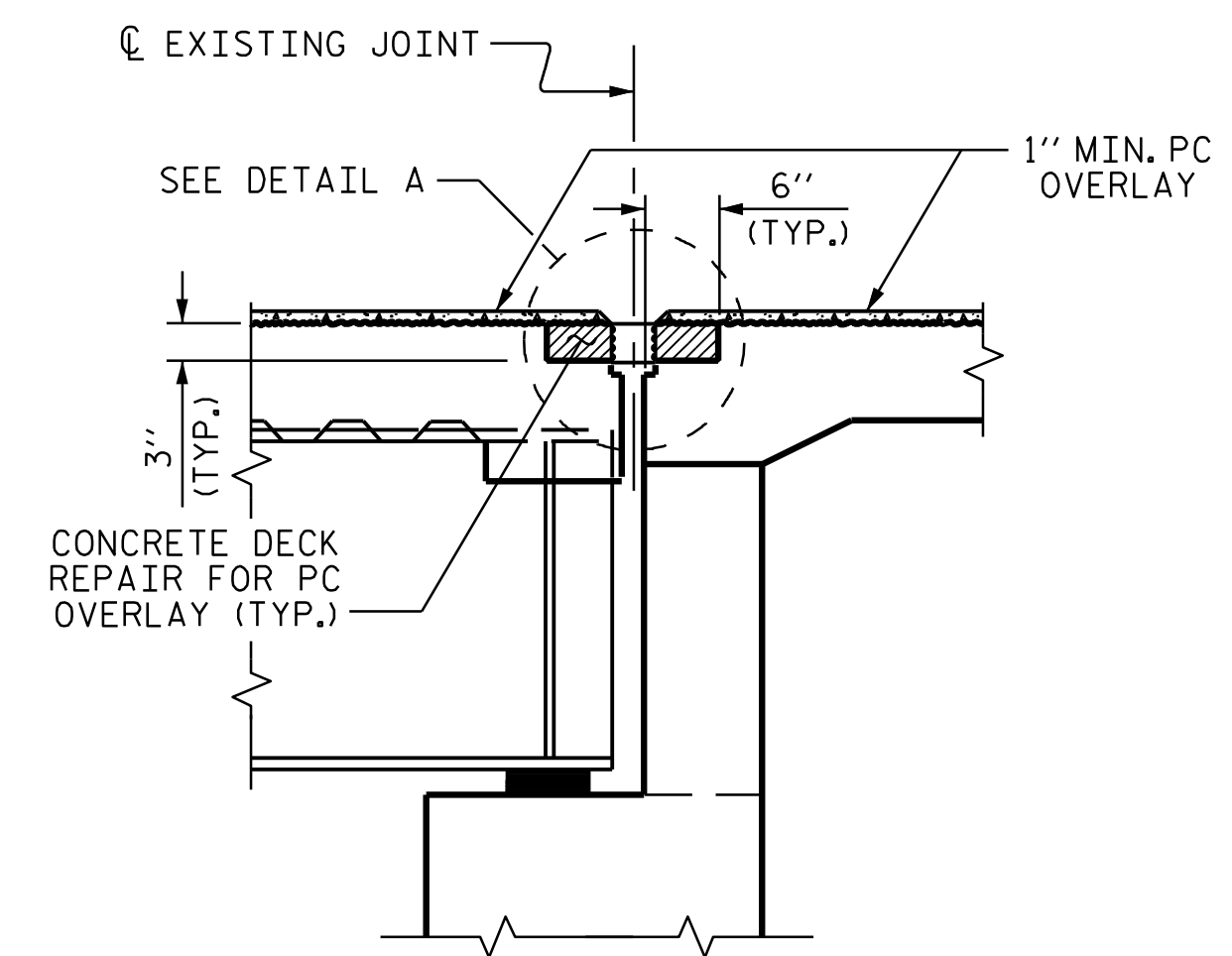
EXISTING JOINT



PROPOSED JOINT PREPARATION  
(MINIMUM EXISTING JOINT DEMOLITION)



PROPOSED JOINT PRESAWED



PROPOSED FOAM JOINT

JOINT INSTALLATION SEQUENCE AT END BENT 2 (SECTION F-F)

NOTES

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDER 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.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL BASED ON JOINT OPENINGS.

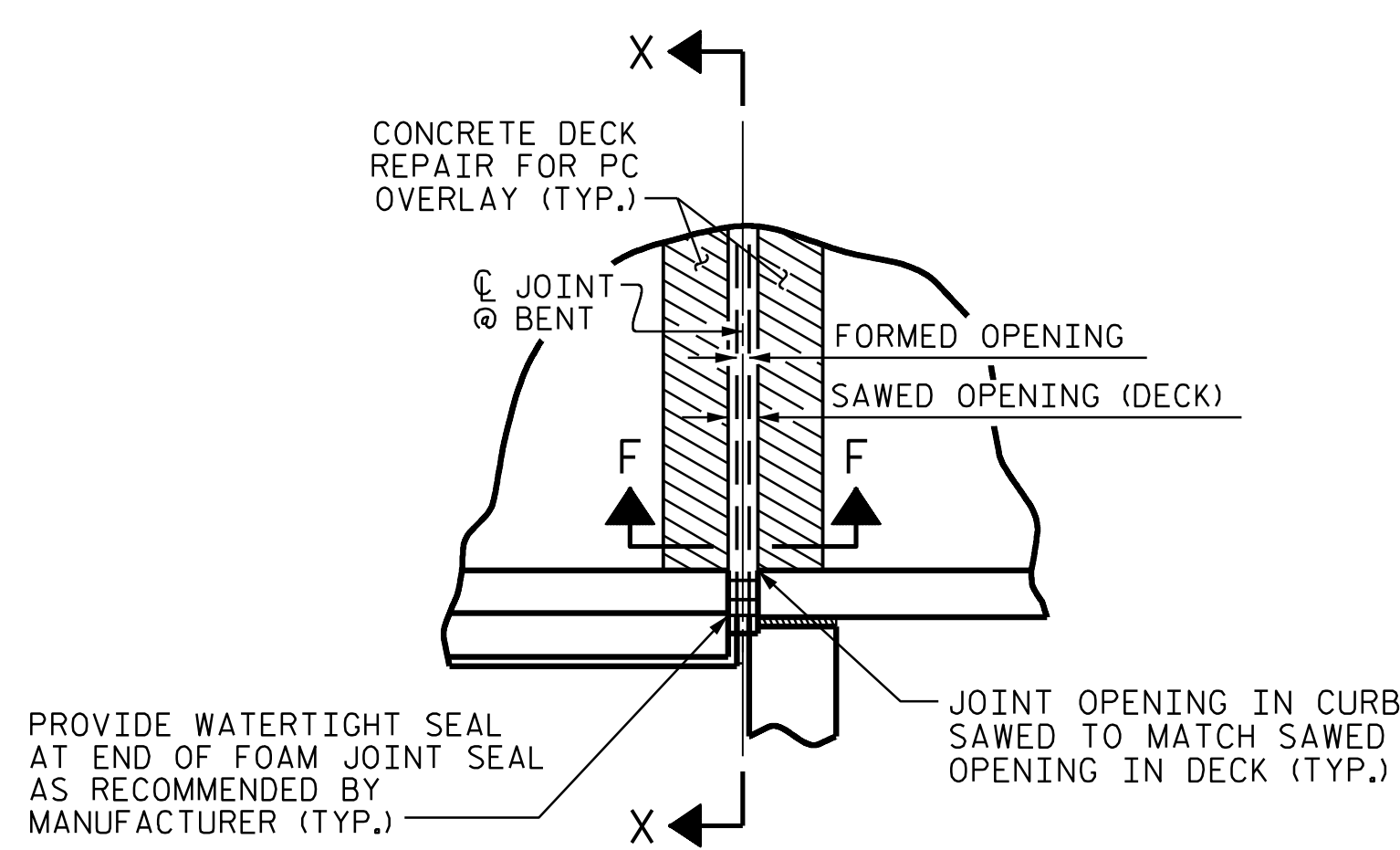
FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOAM JOINT SEALS FOR PRESERVATION SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION.

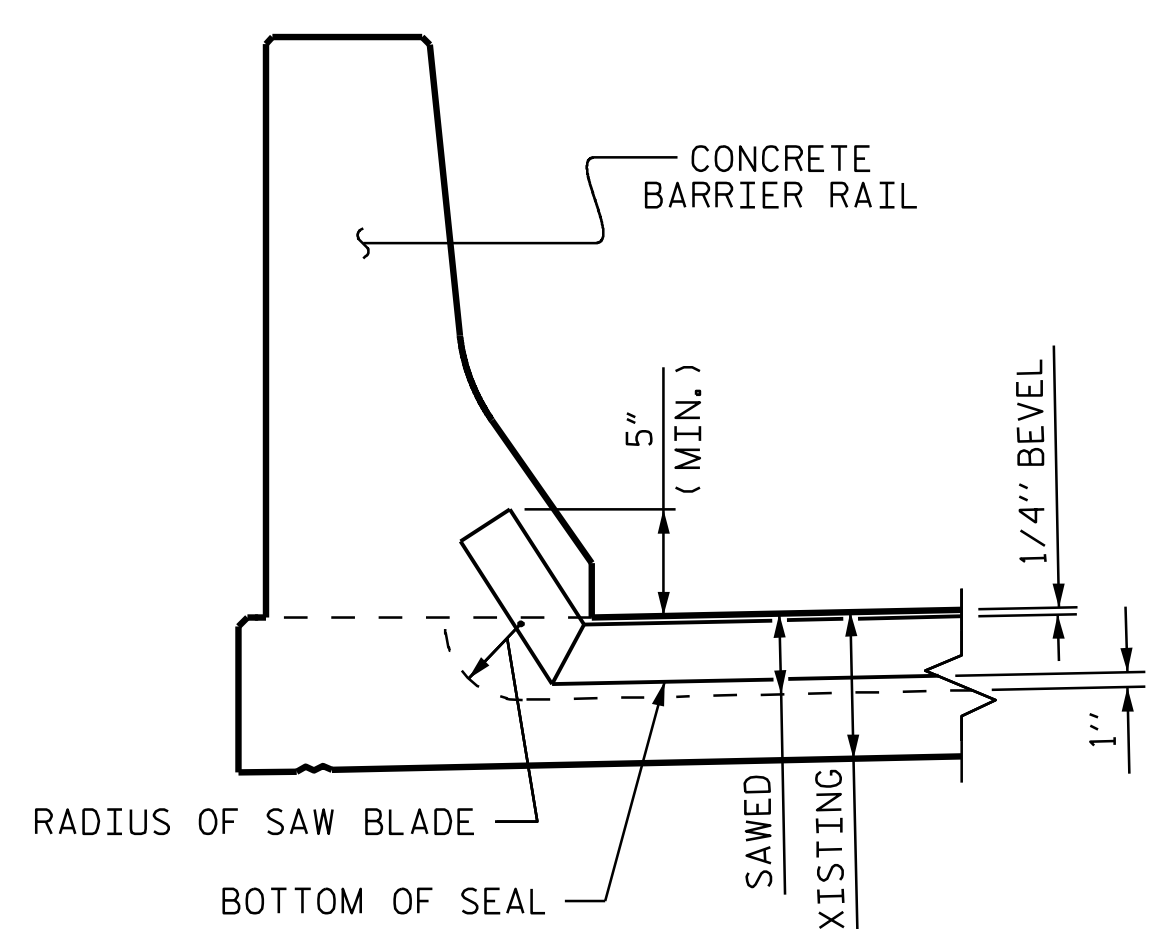
THE INSTALLED FOAM JOINT SEALS FOR PRESERVATION SHALL BE WATER TIGHT.

FOR LOCATION OF SECTION F-F, SEE PLAN OF SPAN SHEETS.

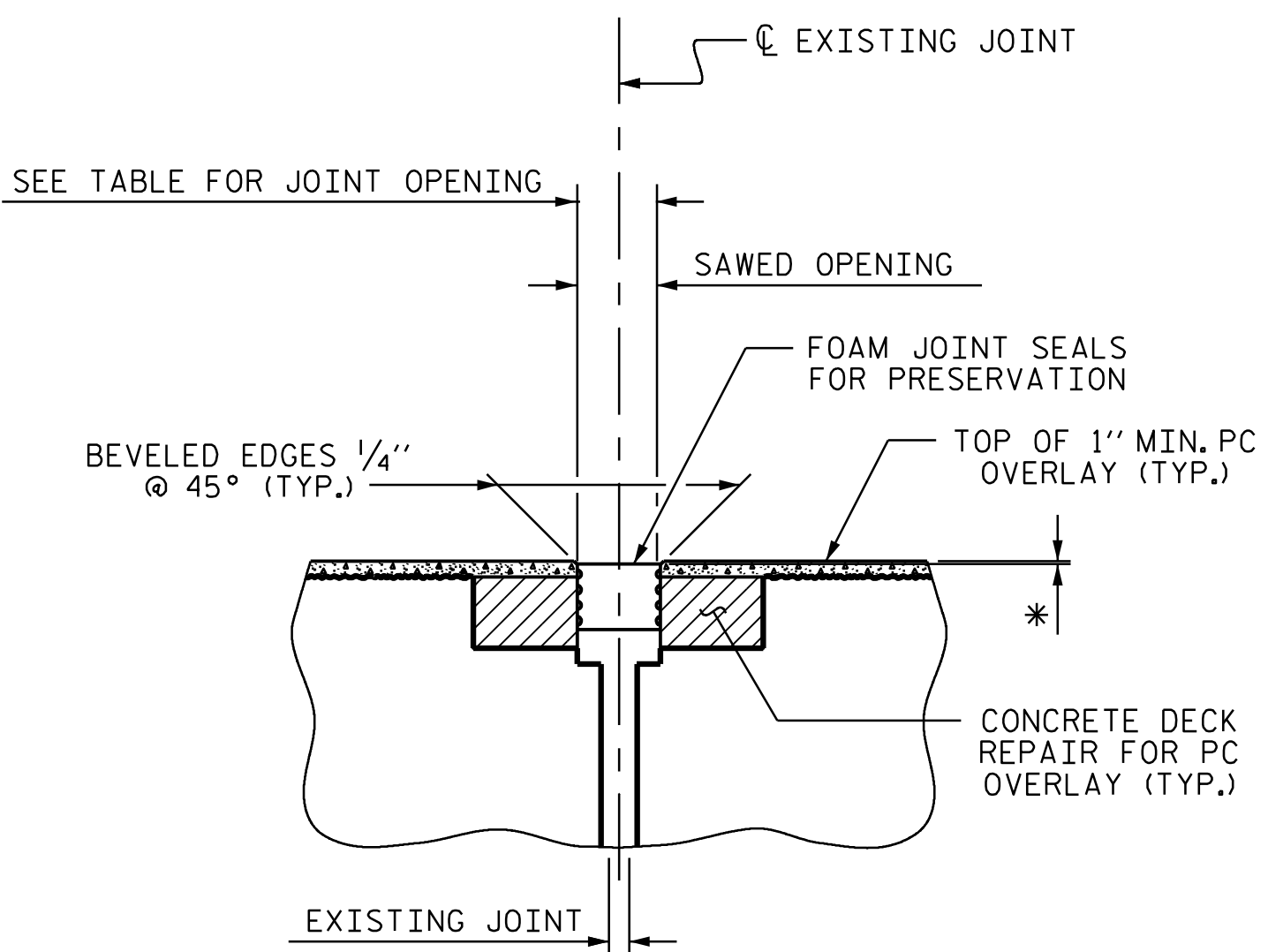
FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.



PLAN



SECTION X-X



DETAIL A  
(PROPOSED)

JOINT SEAL DETAILS @ END BENT 2

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

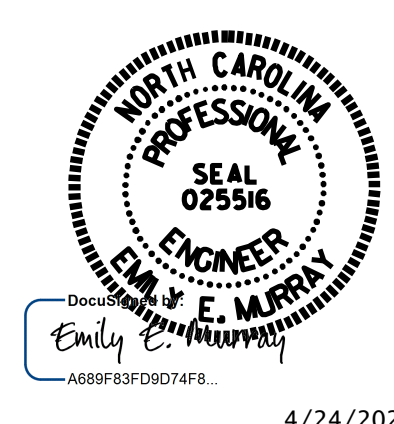
\* FOAM JOINT SEALS FOR PRESERVATION SHALL BE RECESSED AS PER MANUFACTURER'S RECOMMENDATIONS.

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
BRIDGE NO: 180007

SHEET 6 OF 6

JOINT REPAIR QUANTITY	
LOCATION	FOAM JOINT SEALS FOR PRESERVATION ESTIMATED (LIN. FT.)
END BENT 2	39.0

SAWED JOINT OPENING TABLE				
LOCATION	SKEW ANGLE	PERPENDICULAR JOINT OPENING AT 45°	PERPENDICULAR JOINT OPENING AT 60°	PERPENDICULAR JOINT OPENING AT 90°
END BENT 2	90°00'00"	1 1/16"	1 1/16"	1 1/16"



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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

JOINT REPAIR DETAILS AT END BENT 2

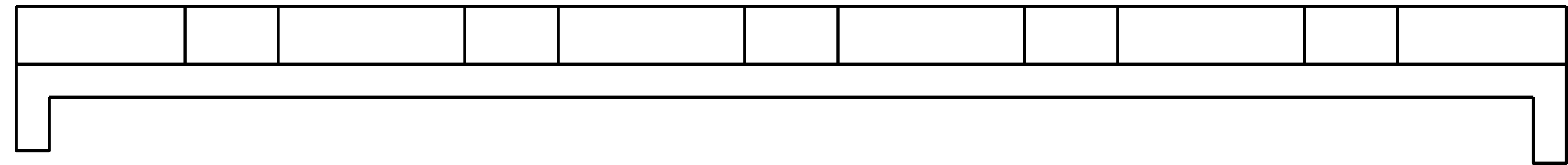
DRAWN BY : D. A. GLADDEN DATE : 5/23  
CHECKED BY : E. E. MURRAY DATE : 3/24

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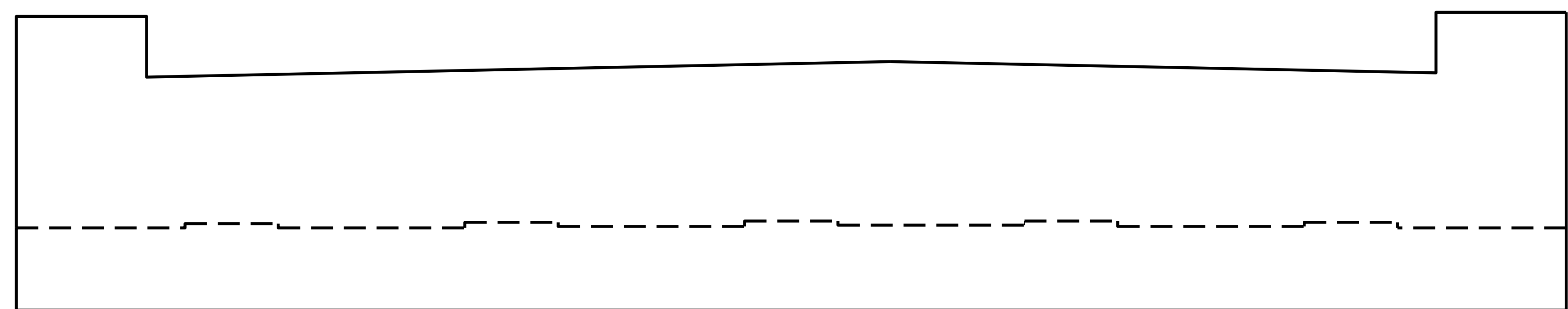
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			156





TOP OF CAP @ END BENT 1

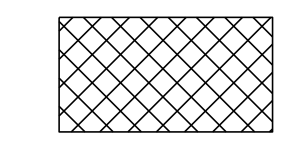


ELEVATION @ END BENT 1 (SPAN A)

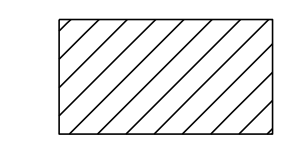
**AS-BUILT REPAIR QUANTITY TABLE**

REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
<b>SHOTCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
<b>CONCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
<b>EPOXY RESIN INJECTION</b>		LN. FT.		LN. FT.
CAP		0.0		
<b>EPOXY COATING</b>		SQ. FT.		SQ. FT.
TOP OF BENT CAP		82.4		

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

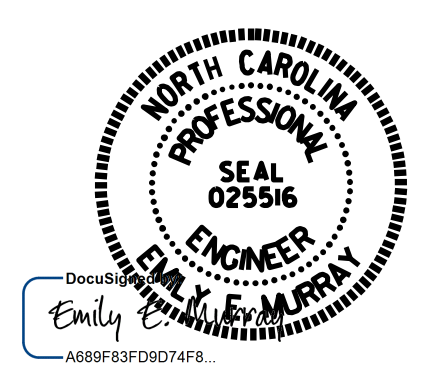


CONCRETE REPAIR



EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007



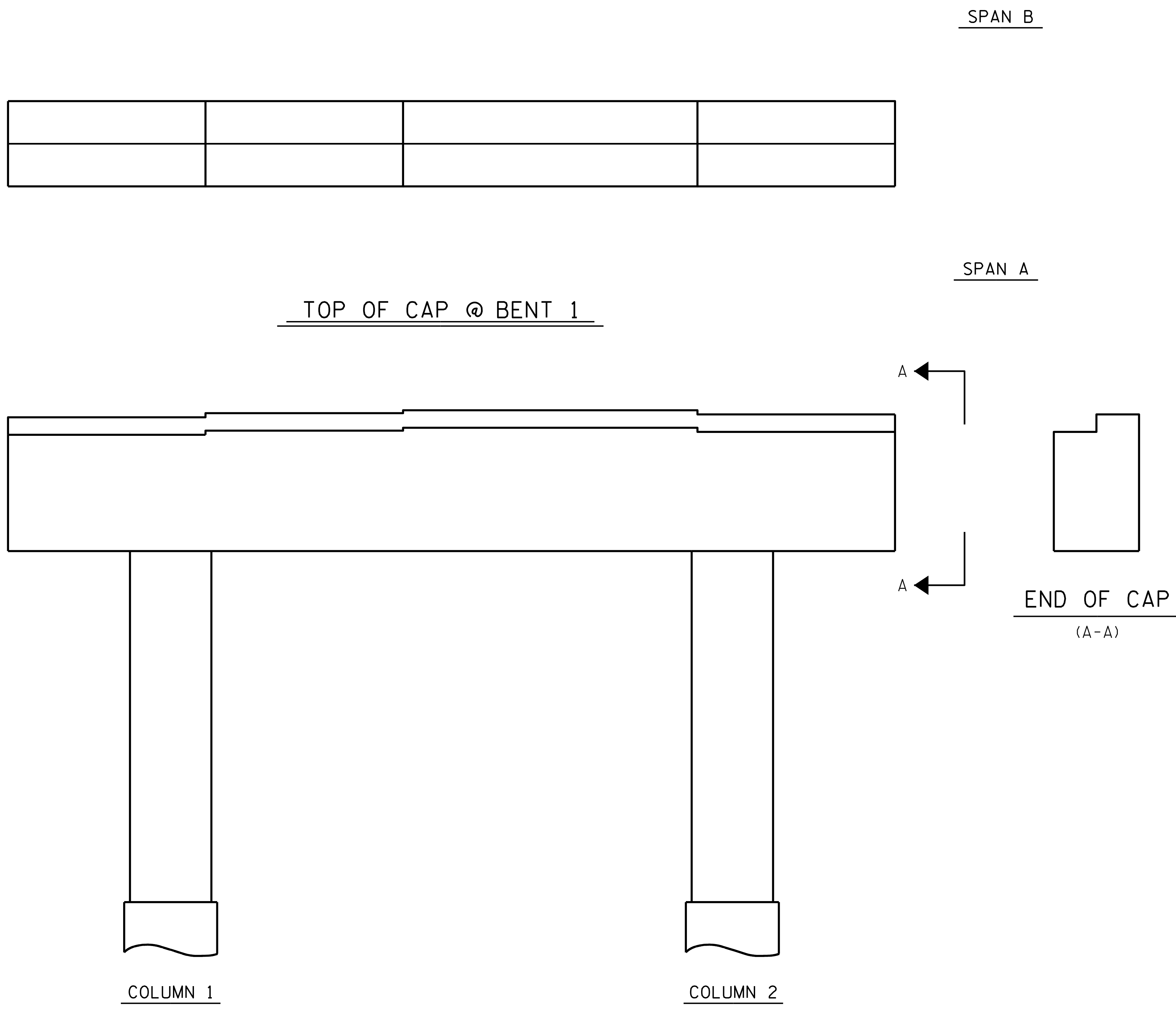
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**END BENT 1**

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			156

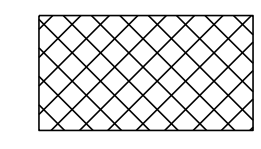
DRAWN BY : S. C. NICHOLS DATE : 09/2022  
 CHECKED BY : P. N. HOLDER DATE : 03/2024



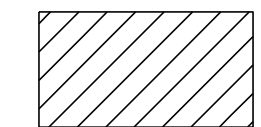
### AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
<b>SHOTCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
<b>CONCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
<b>EPOXY RESIN INJECTION</b>		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
<b>EPOXY COATING</b>		SQ. FT.		SQ. FT.
TOP OF BENT CAP		139.9		

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



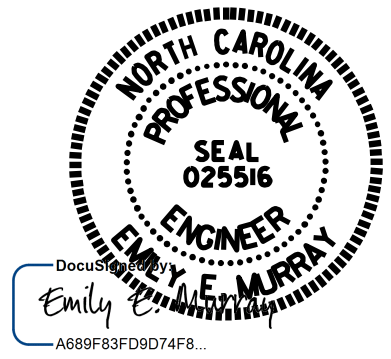
CONCRETE REPAIR



EPOXY RESIN INJECTION

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007

SHEET 1 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

## BENT 1

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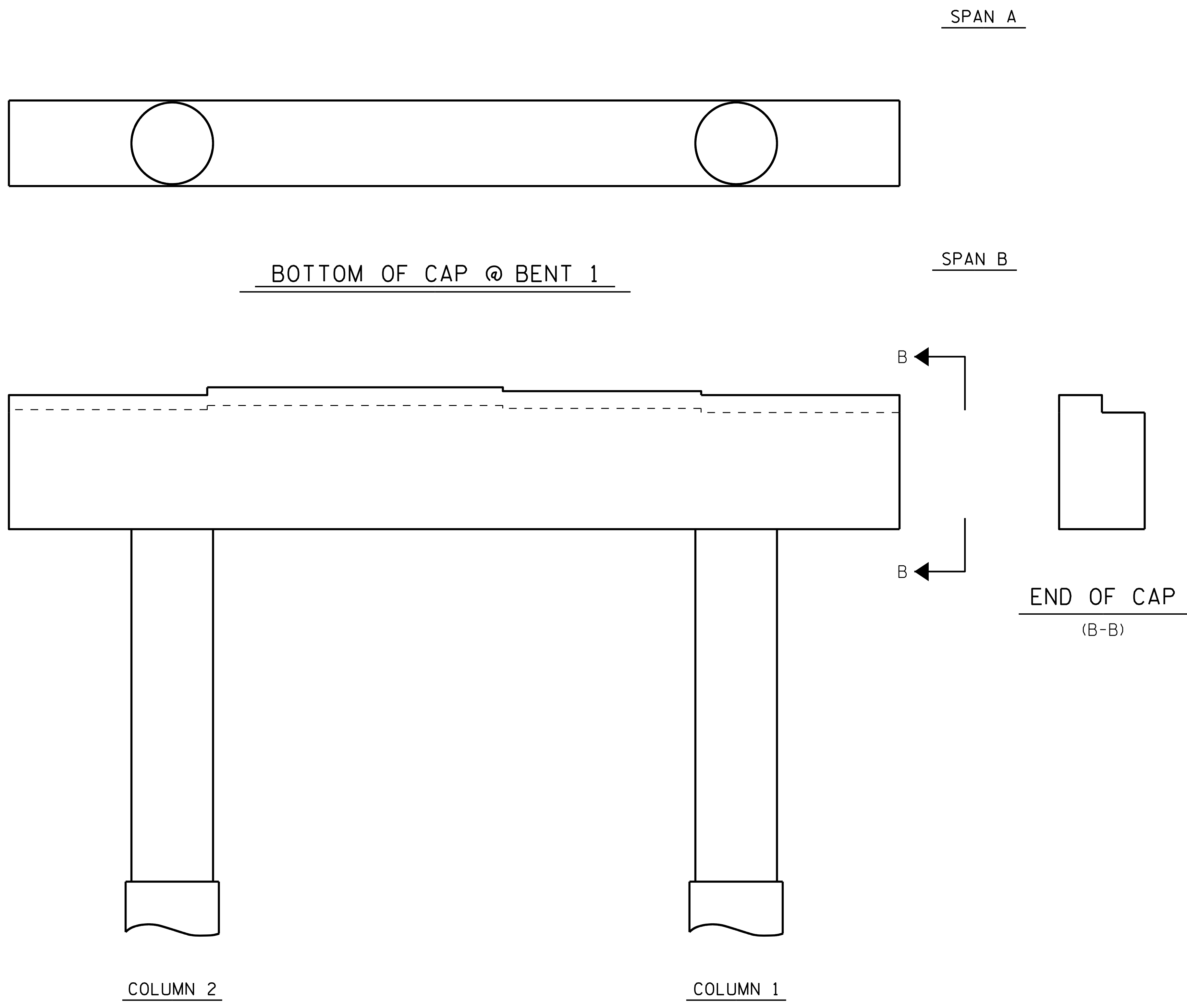
4/24/2024  
 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

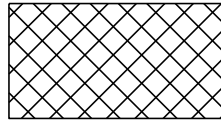
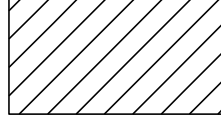

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-20
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/2022  
 CHECKED BY : P. N. HOLDER DATE : 03/2024

ELEVATION @ BENT 1 (SPAN A)





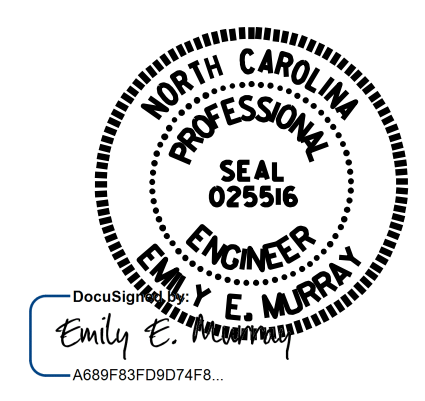
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT 1

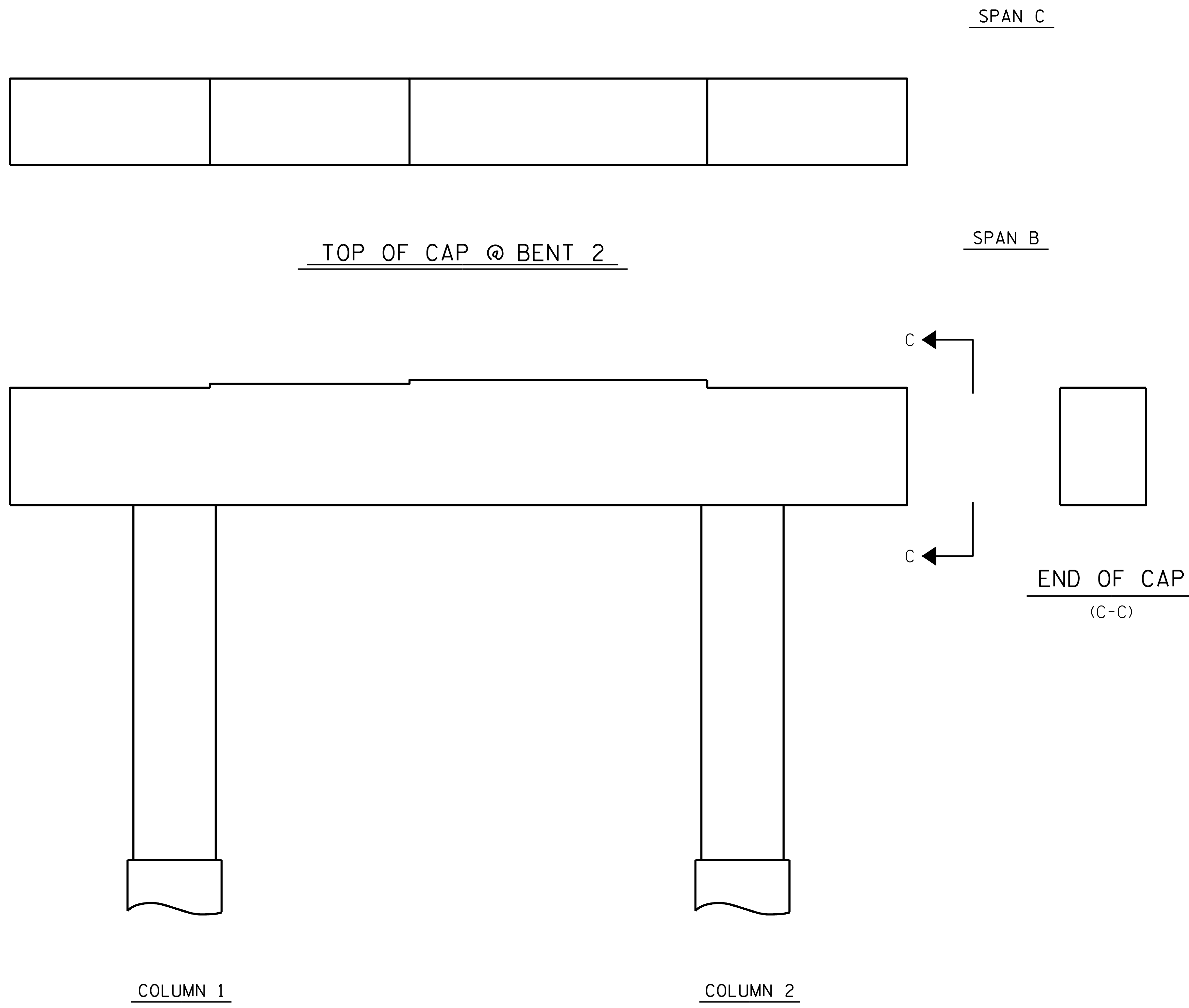


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 SIGNATURES COMPLETED

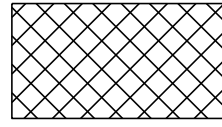
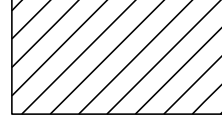

DRAWN BY : S. C. NICHOLS DATE : 09/2022  
 CHECKED BY : P. N. HOLDER DATE : 03/2024

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			156



AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	3.5	1.8		
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		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF BENT CAP		139.9		

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

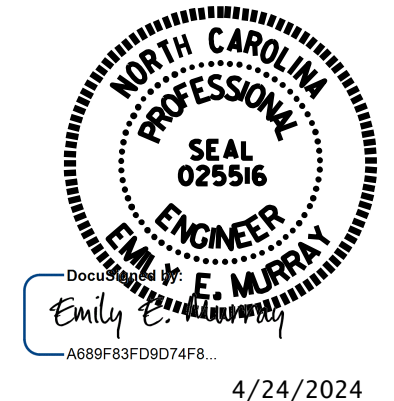
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 2**



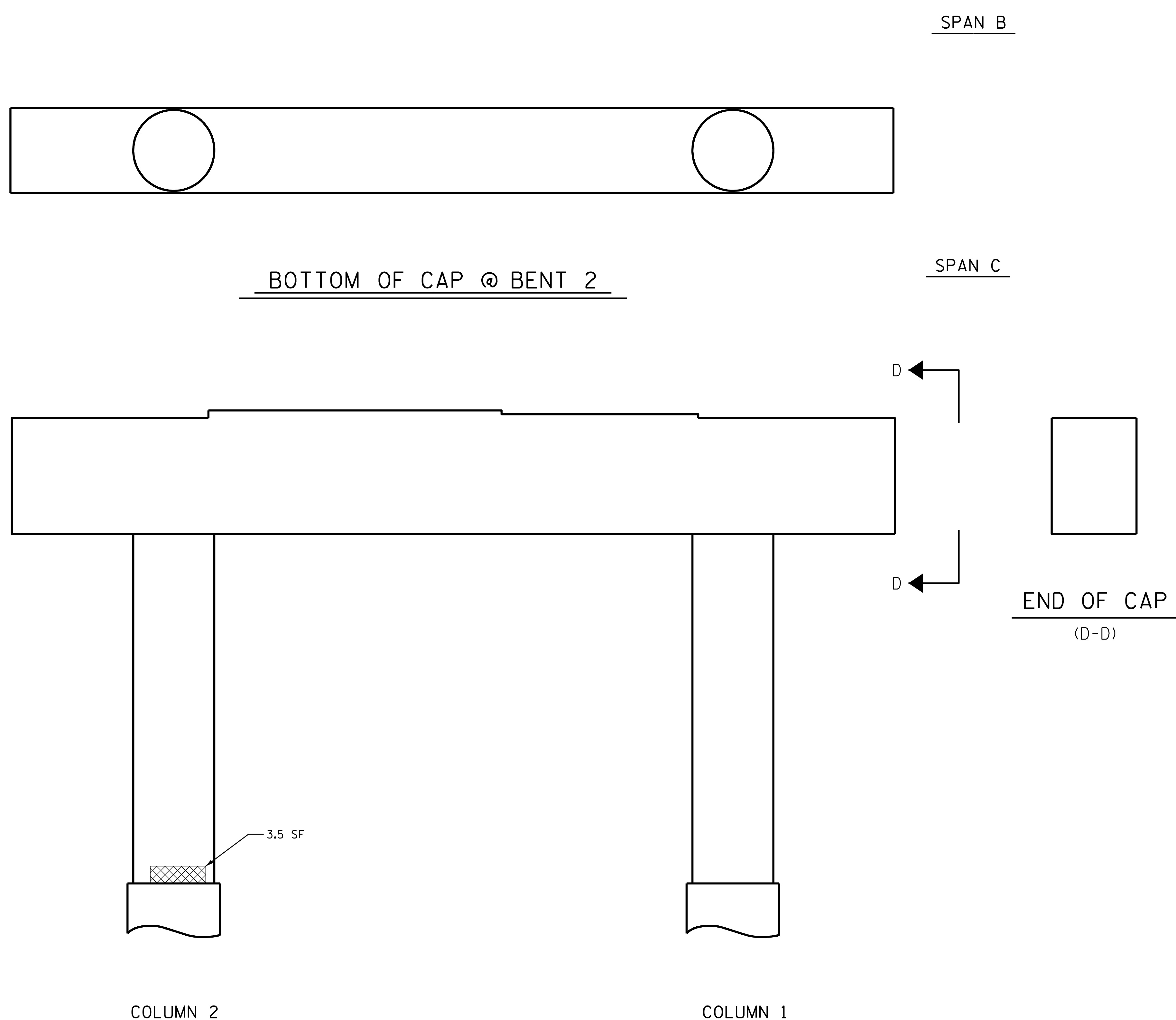
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 NC License No. F-0765

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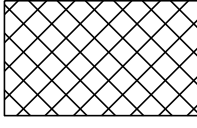
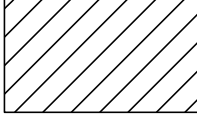

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/2022  
 CHECKED BY : P. N. HOLDER DATE : 03/2024





3.5 SF

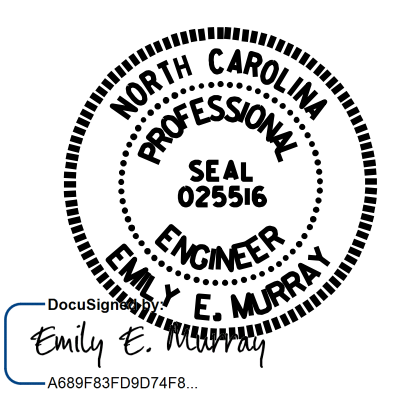
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 2**



4/24/2024

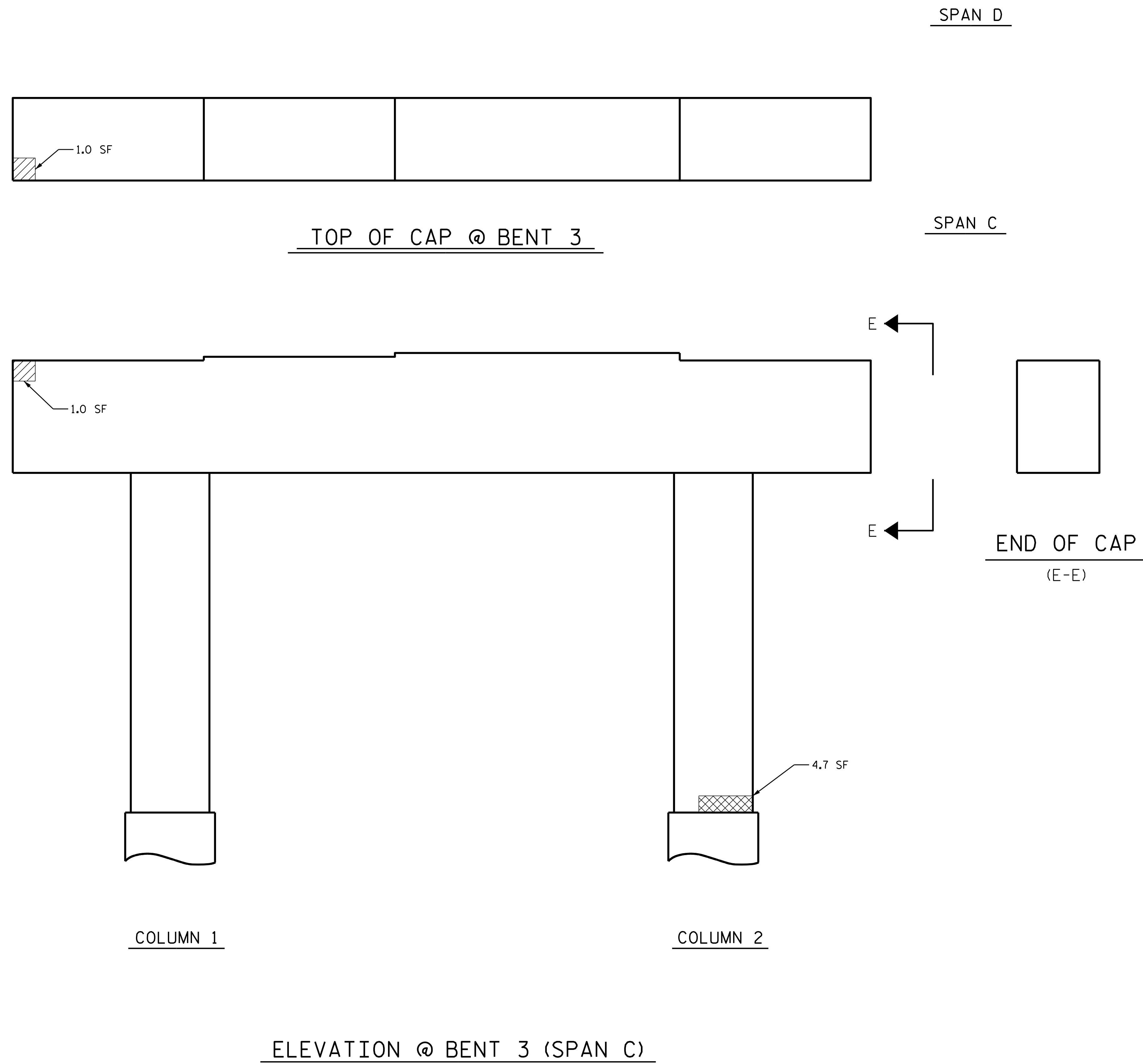
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			156

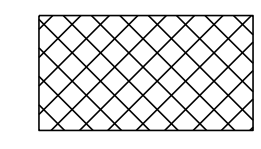
DRAWN BY : S. C. NICHOLS DATE : 09/2022  
 CHECKED BY : P. N. HOLDER DATE : 03/2024

ELEVATION @ BENT 2 (SPAN C)

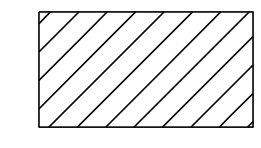


AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	4.7	2.4		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	3.0	1.5		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.	LN. FT.	
CAP		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		139.9		

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



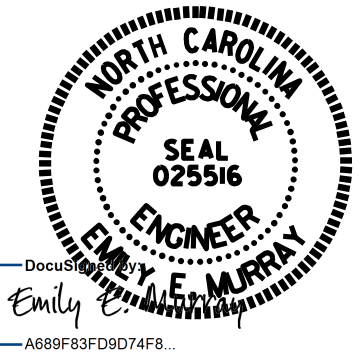
EPOXY RESIN INJECTION

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 3**



4/24/2024

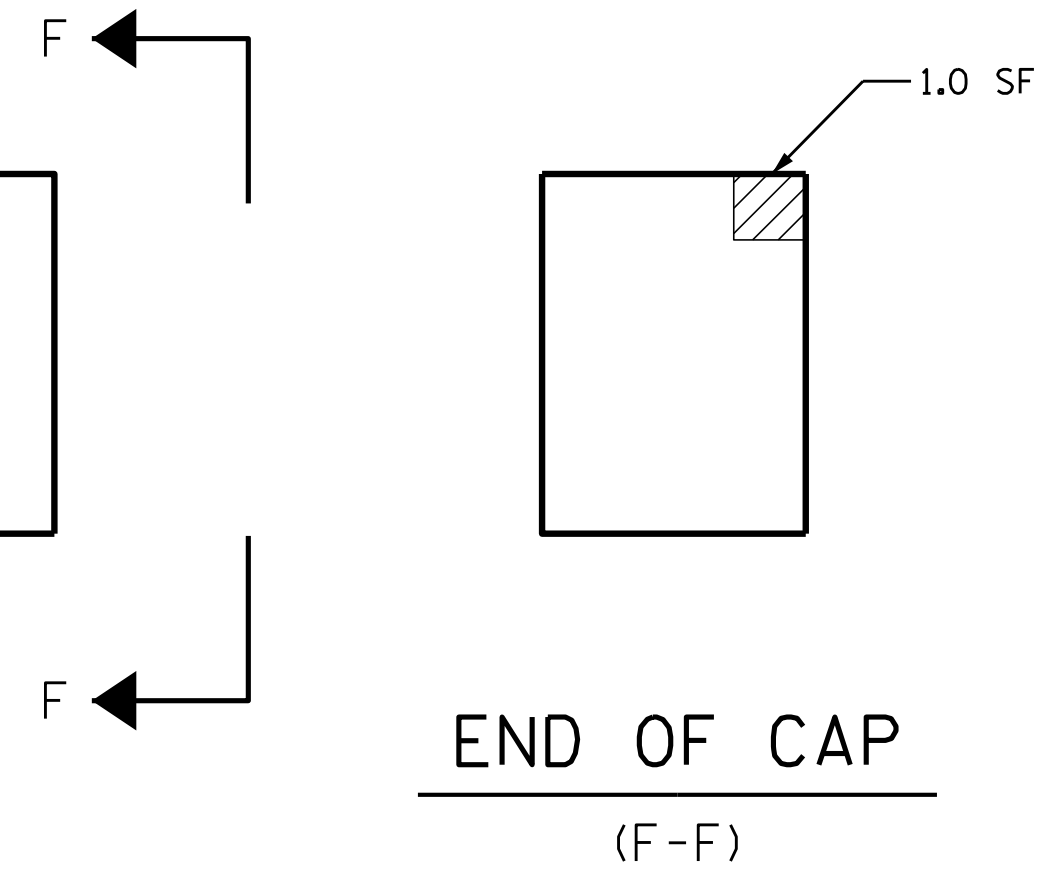
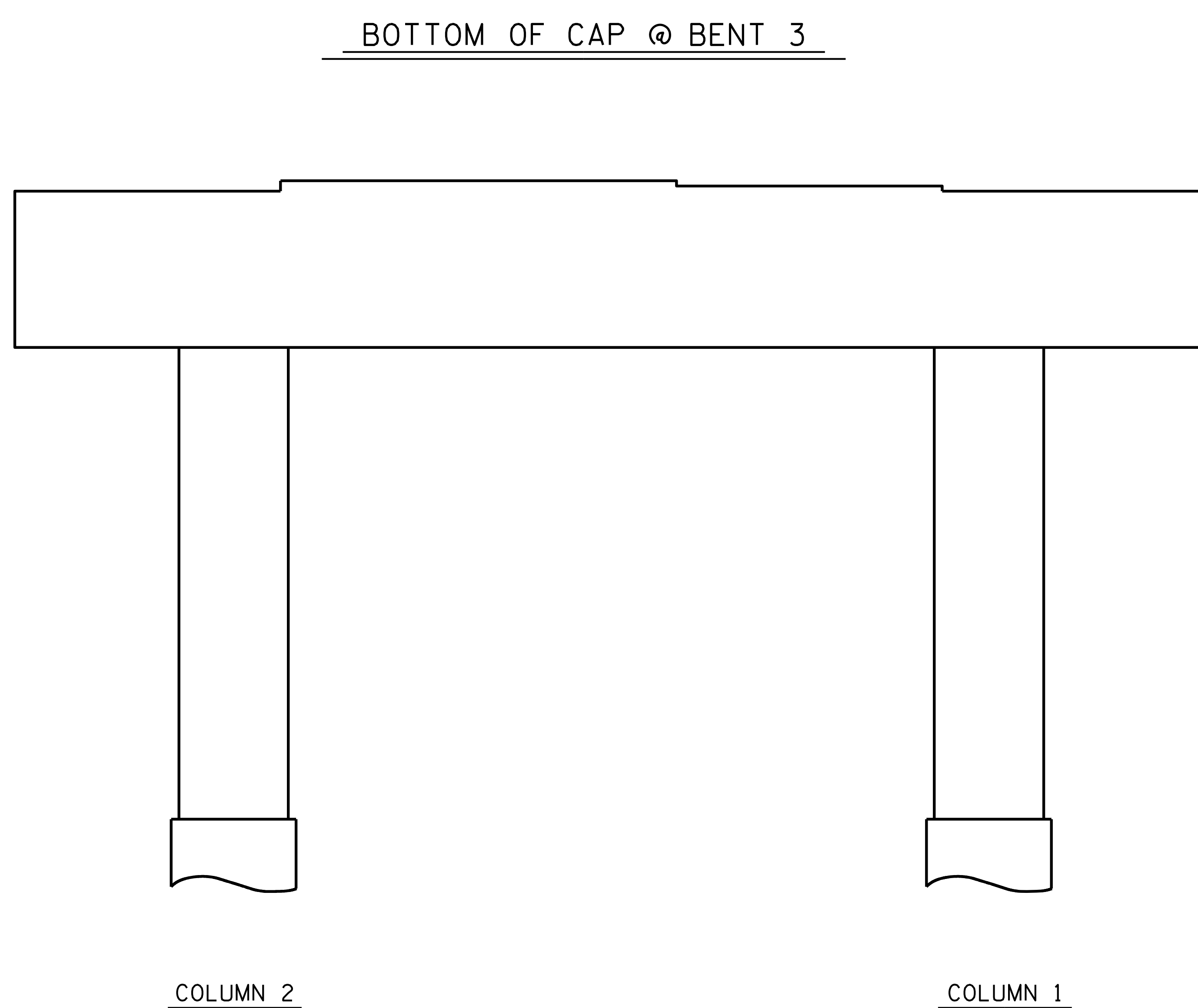
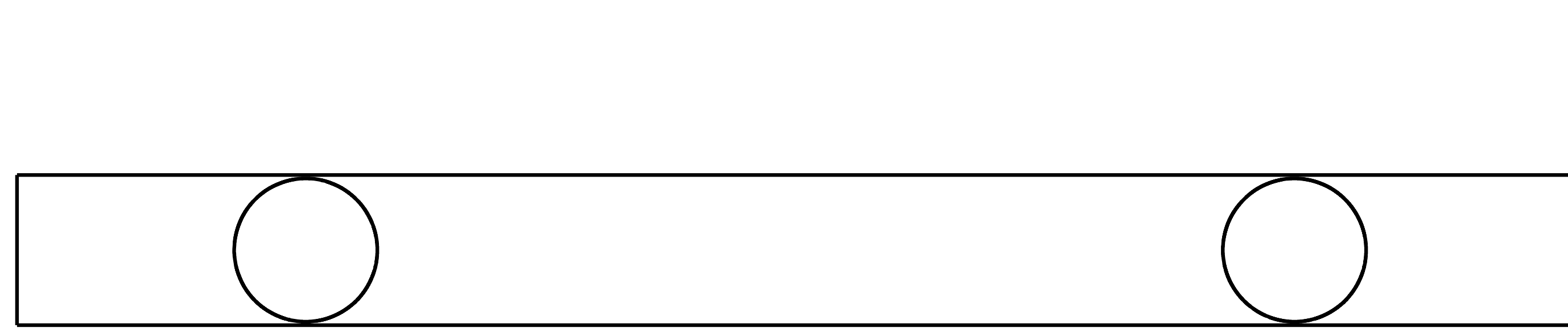
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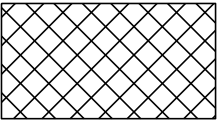
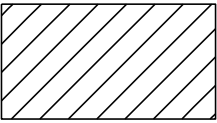

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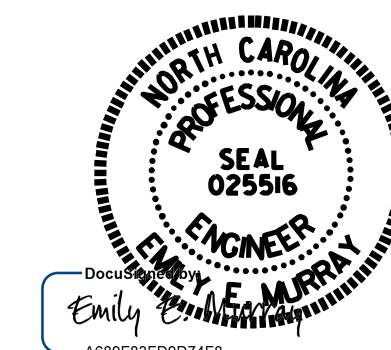




-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION

PROJECT NO. 15BPR.130  
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 STATION: 180007

SHEET 2 OF 2

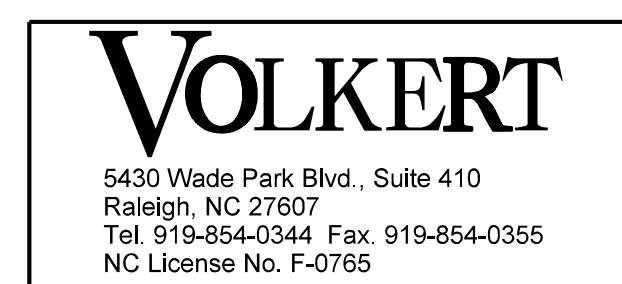


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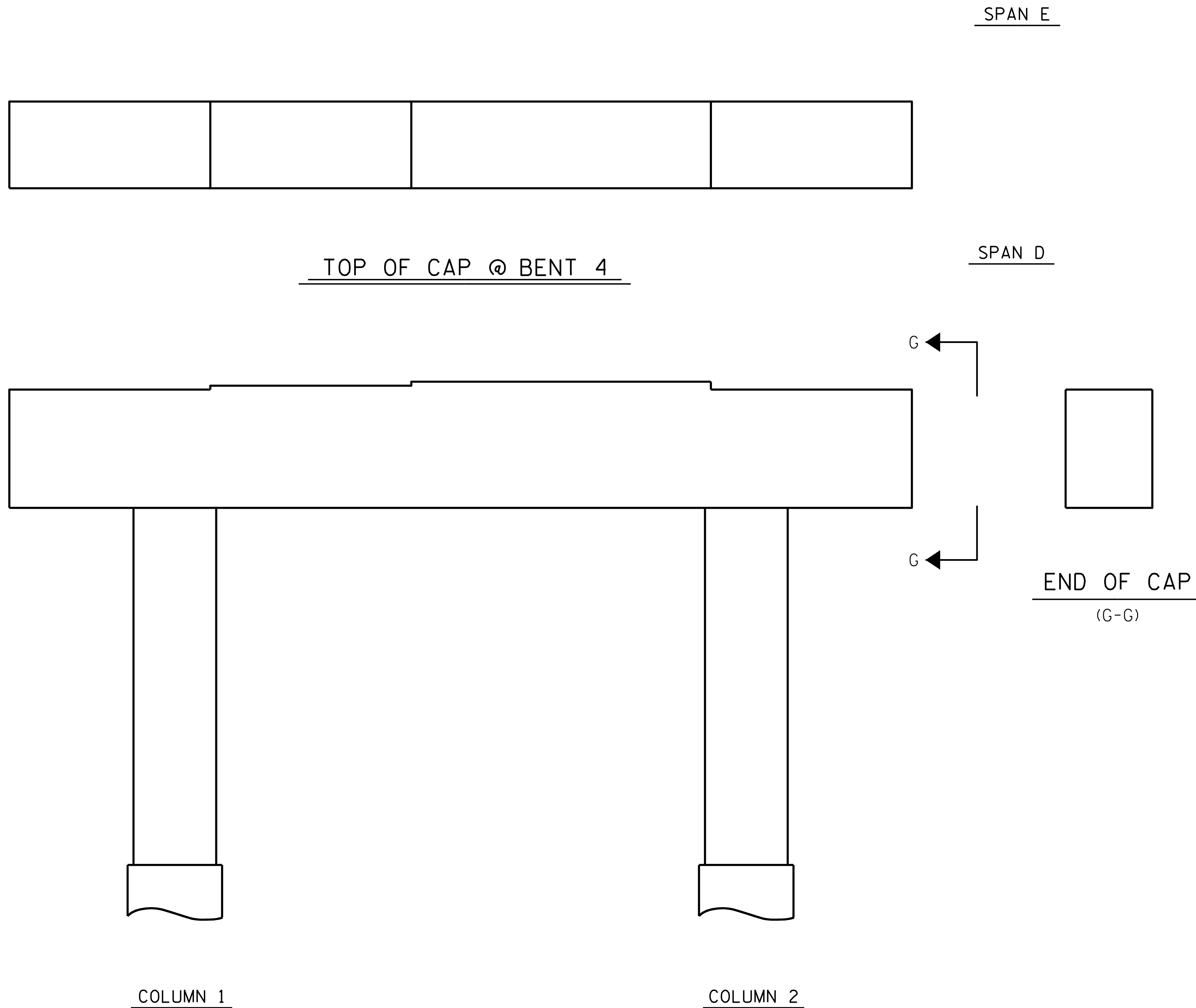
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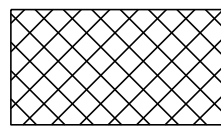
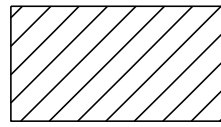

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1			3			S-25
2			4			TOTAL SHEETS 156



ELEVATION @ BENT 4 (SPAN D)

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 4	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
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		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		139.9		

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

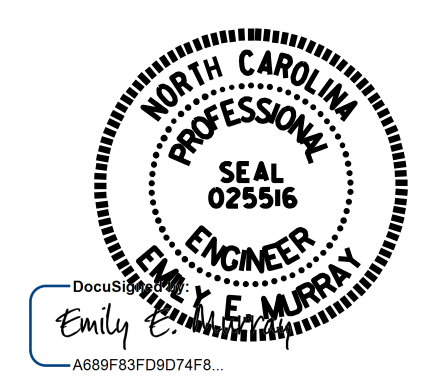
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007

SHEET 1 OF 2

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 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 4**



4/24/2024

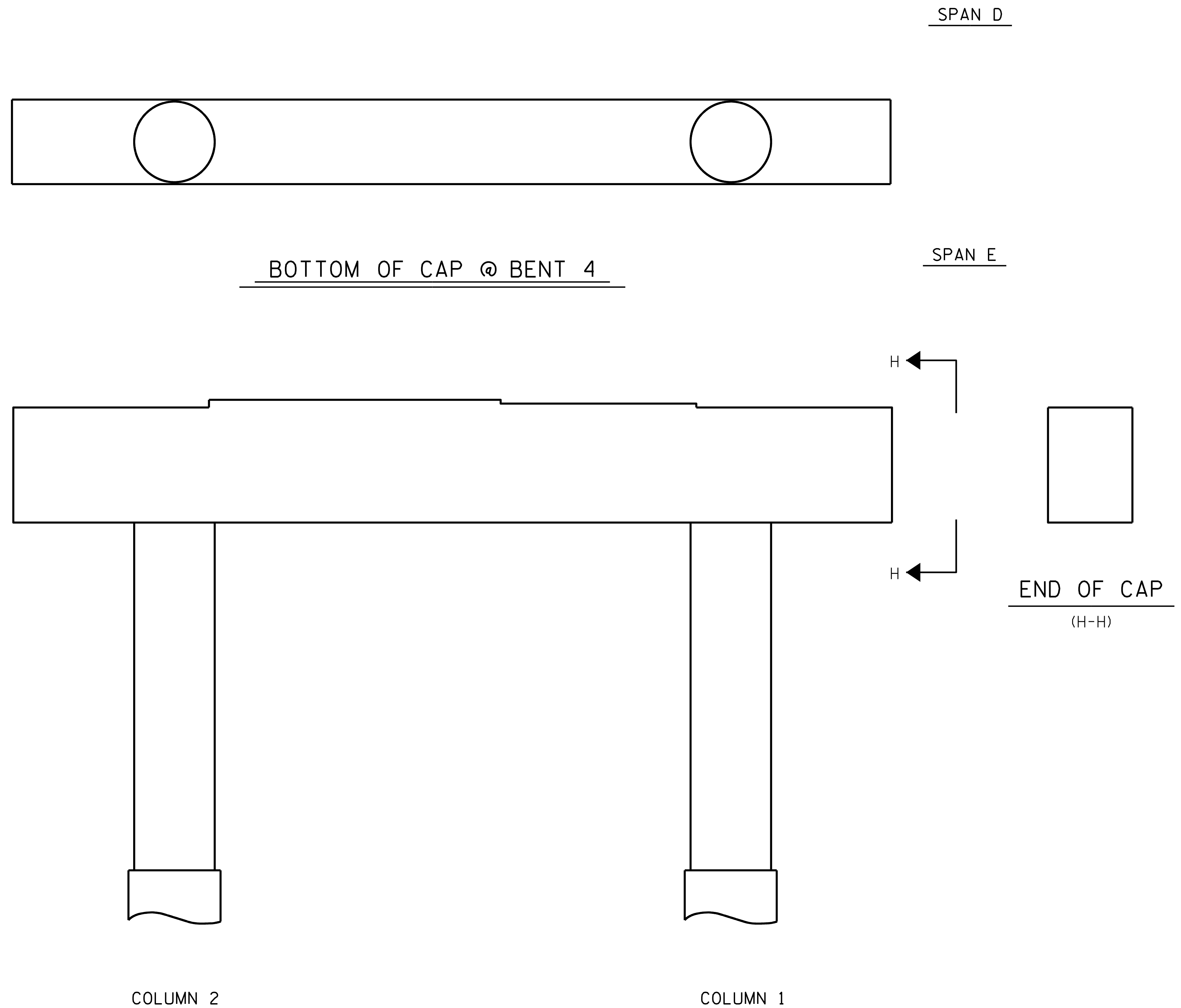
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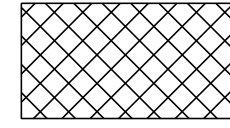
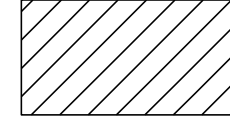

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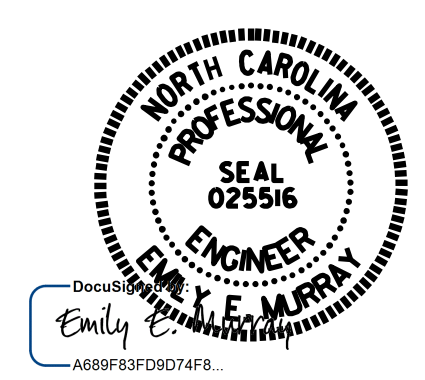
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION

PROJECT NO. 15BPR.130  
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 STATION: 180007

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
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**BENT 4**



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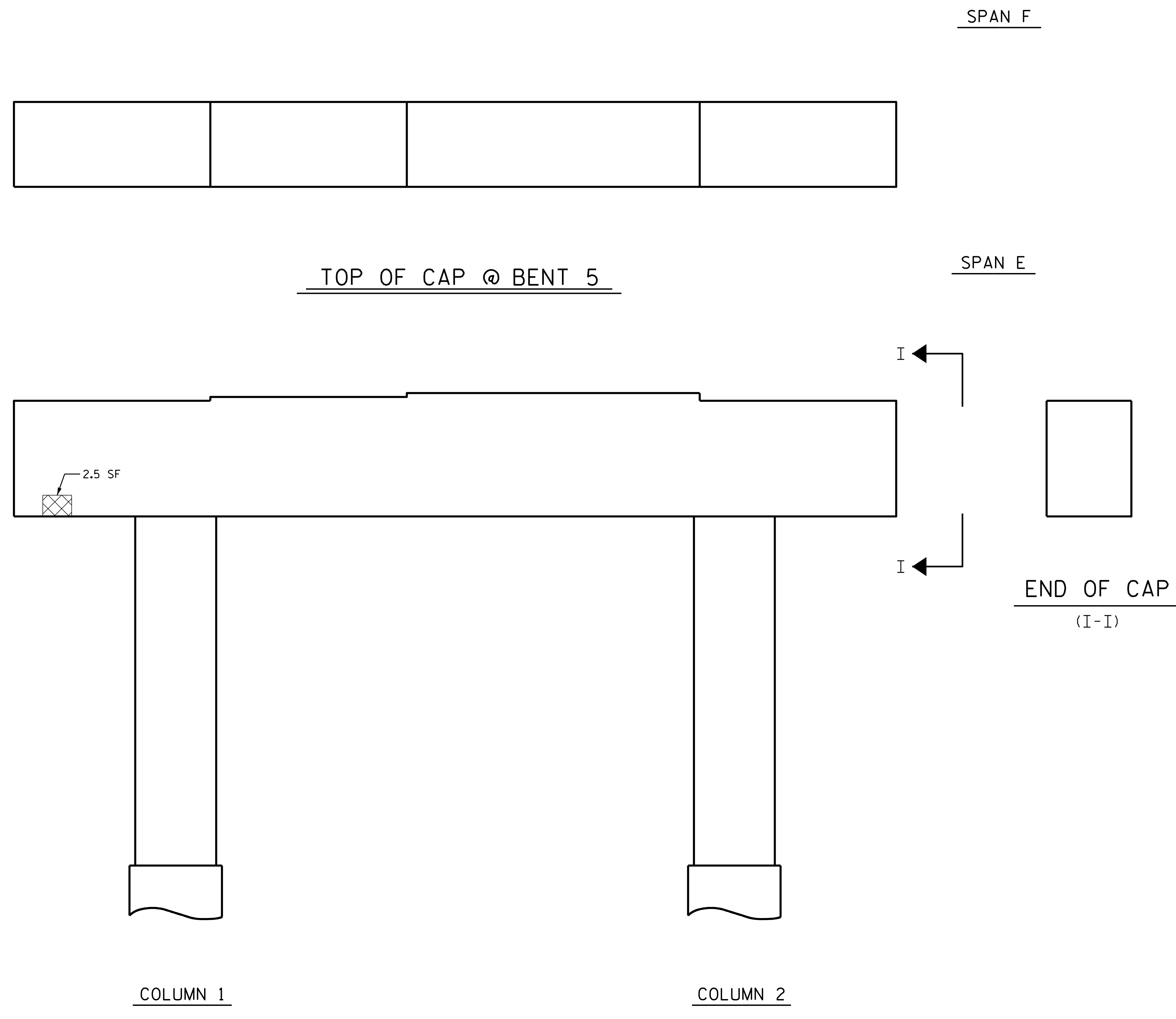
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1			3			TOTAL SHEETS
2			4			156

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ELEVATION @ BENT 4 (SPAN E)



### AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 5	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	3.6	1.8		
COLUMN	0.0	0.0		
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		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		139.9		

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

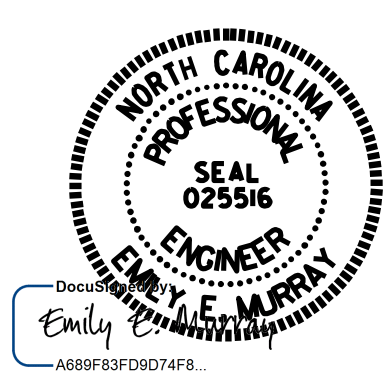
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## BENT 5

REVISIONS						SHEET NO.
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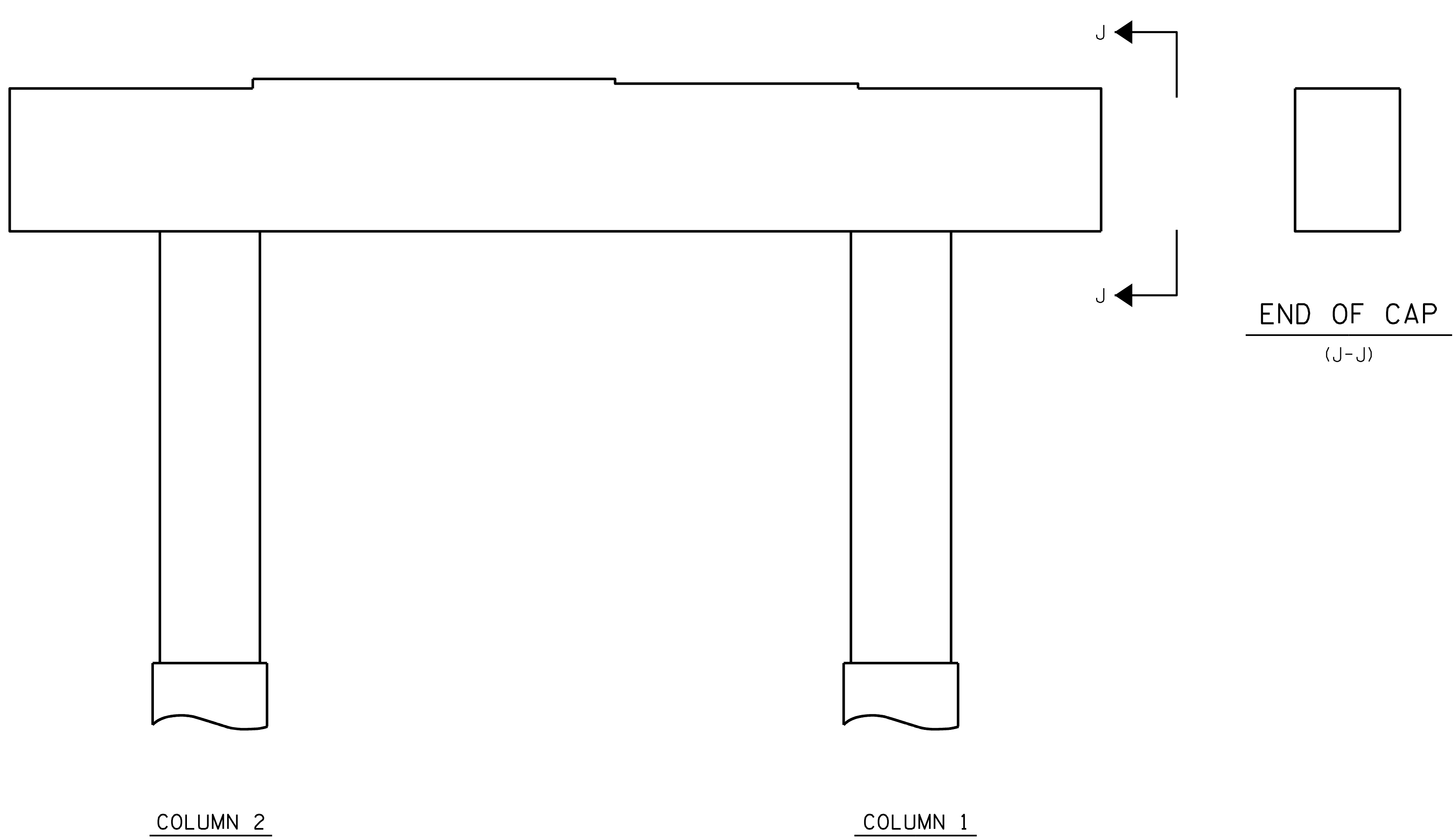
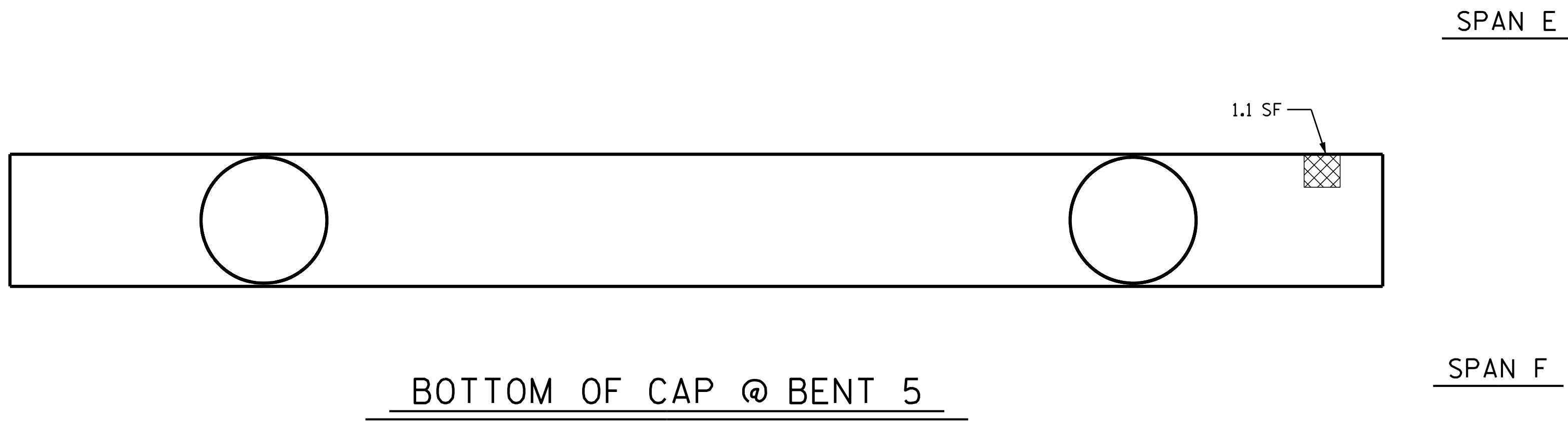
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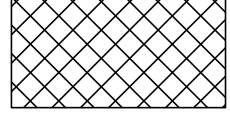
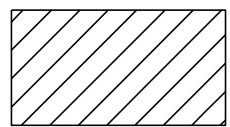

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-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION

PROJECT NO. 15BPR.130  
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 STATION: 180007

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 DEPARTMENT OF TRANSPORTATION  
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BENT 5



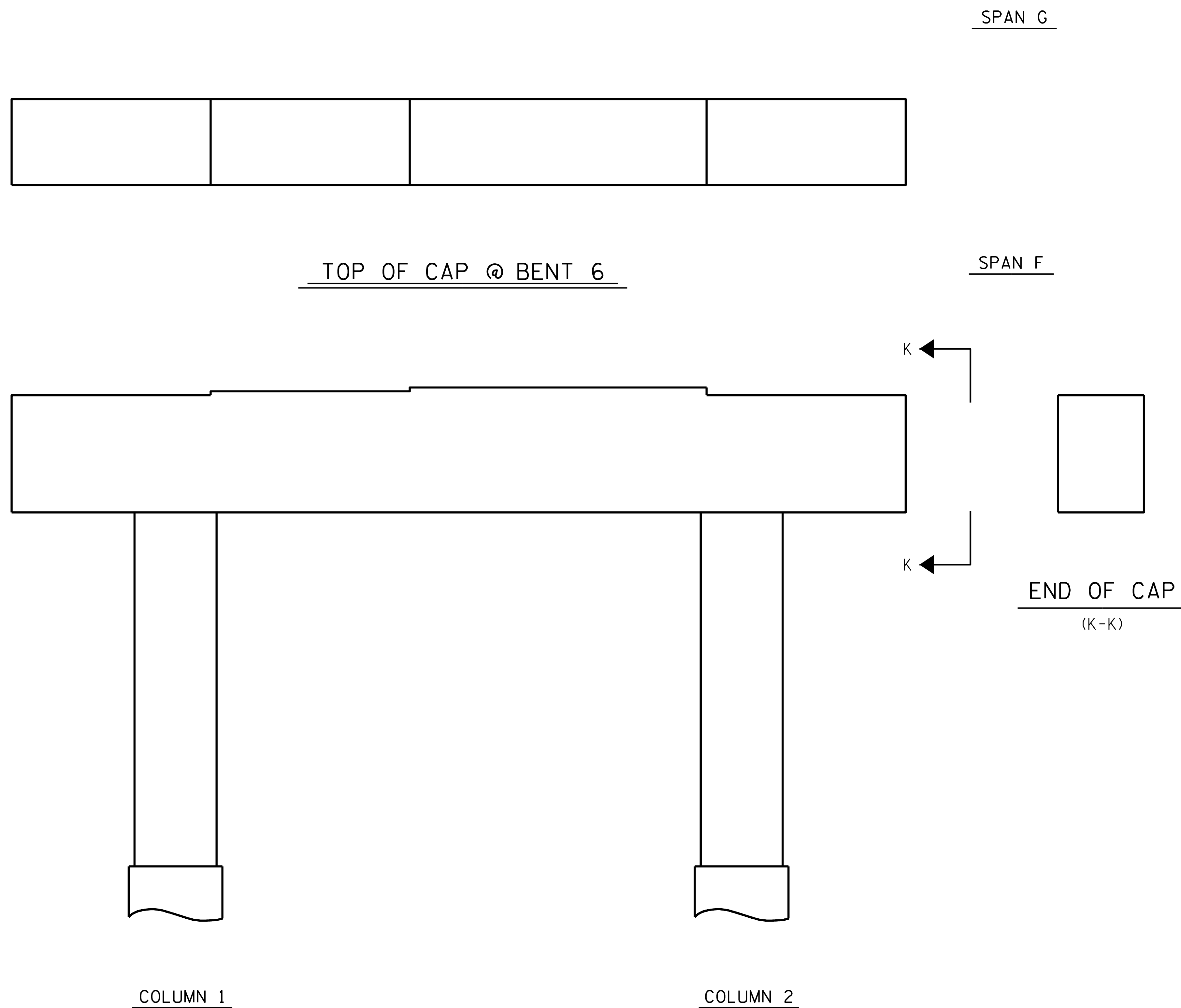
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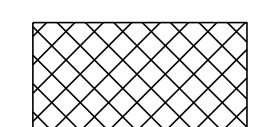
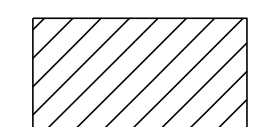

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ELEVATION @ BENT 6 (SPAN F)

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 6	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
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		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		139.9		

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

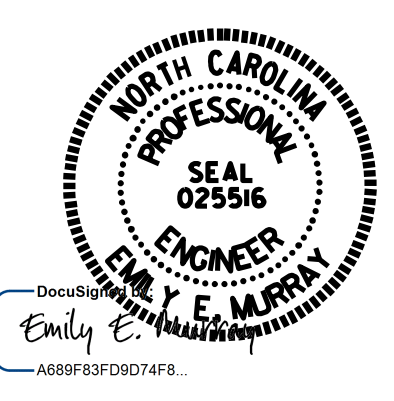
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007

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**BENT 6**



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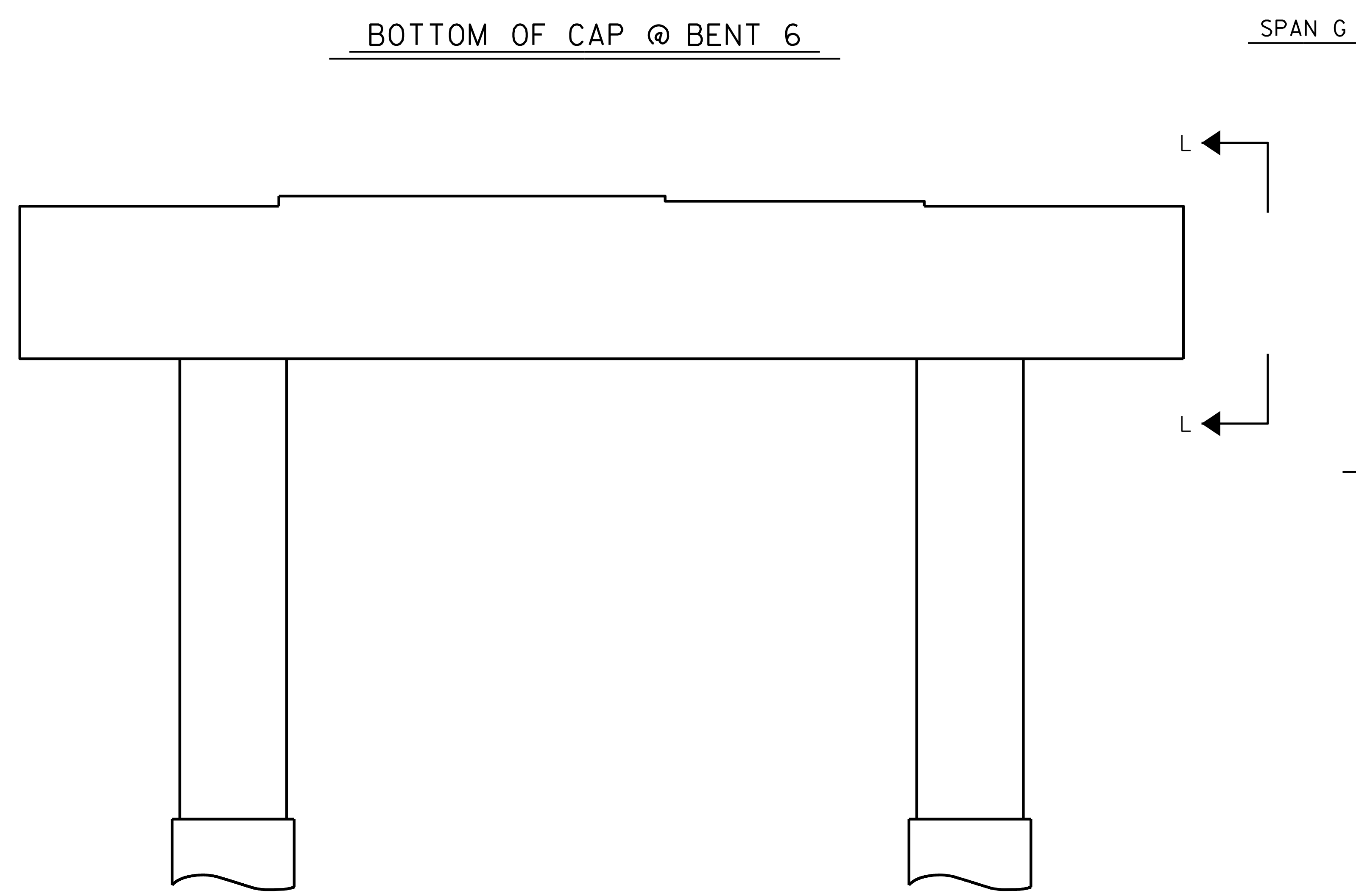
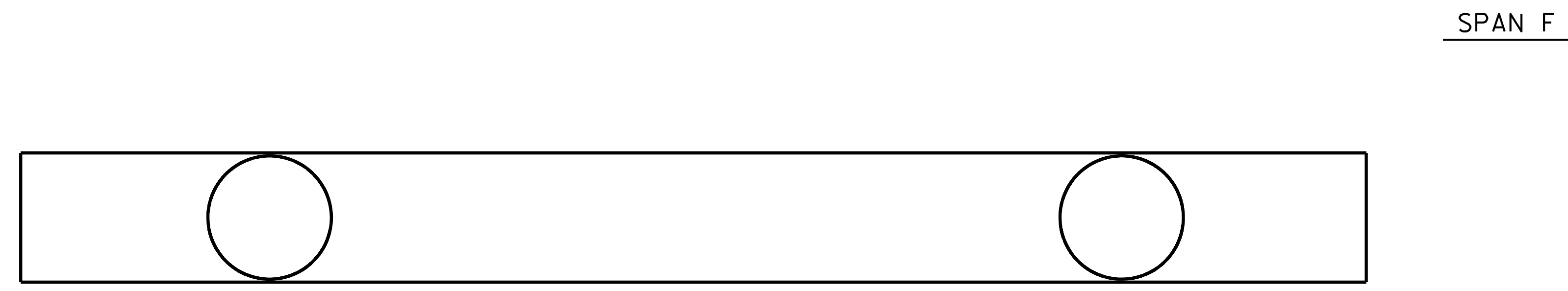
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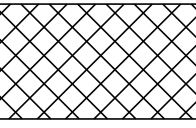
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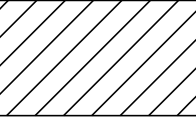
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END OF CAP  
(L-L)

 SHOTCRETE REPAIR

 CONCRETE REPAIR

 EPOXY RESIN INJECTION

COLUMN 2

COLUMN 1

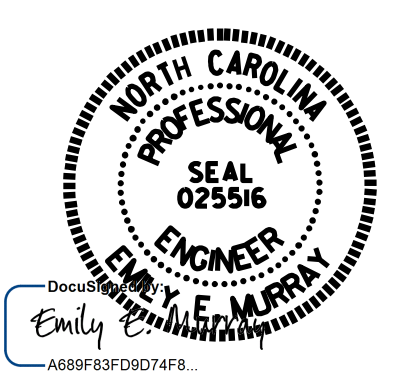
ELEVATION @ BENT 6 (SPAN G)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007

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BENT 6



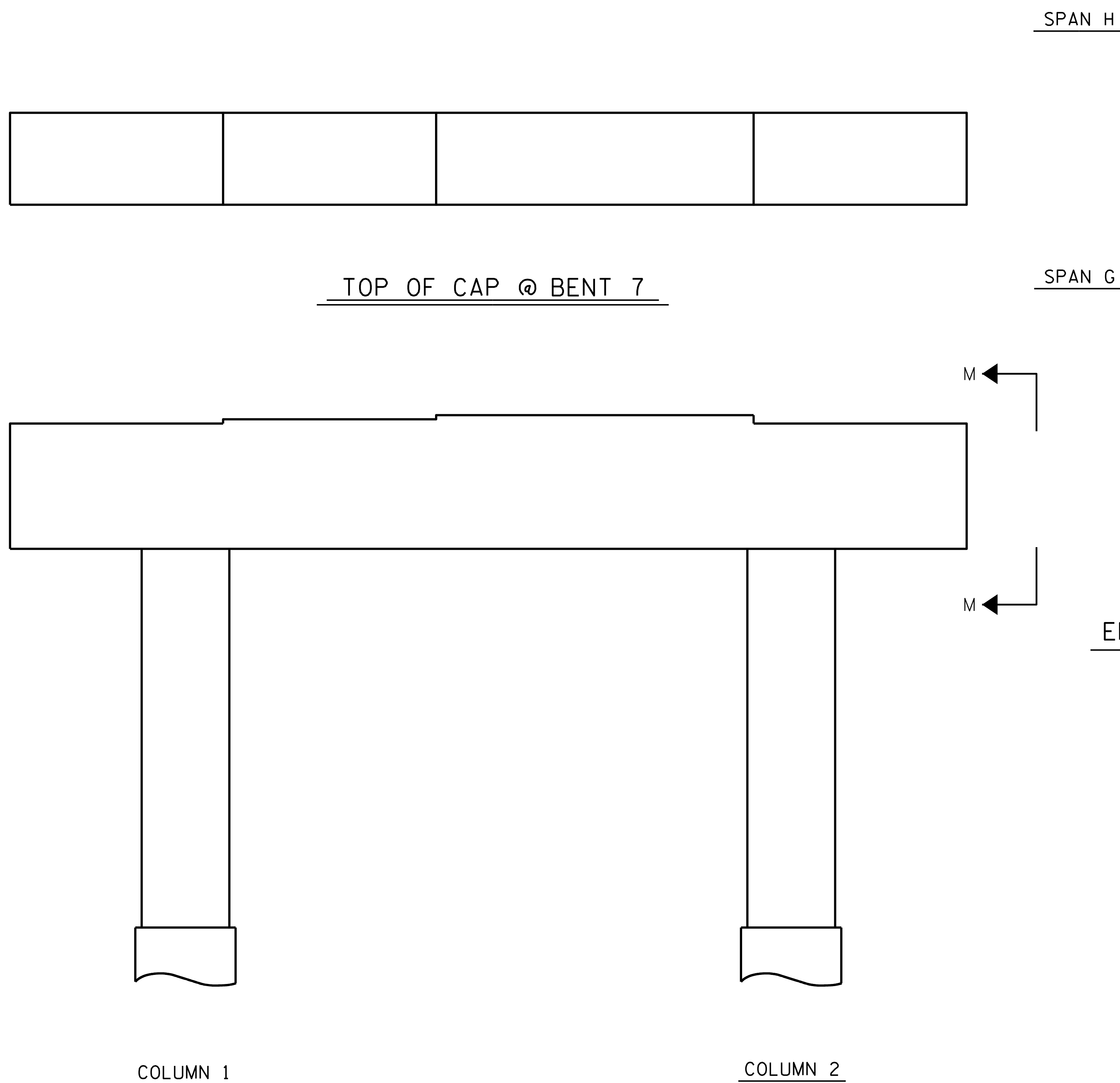
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1			3			TOTAL SHEETS
2			4			156



### AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 7	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	1.9	1.0		
COLUMN	0.0	0.0		
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		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		139.9		

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

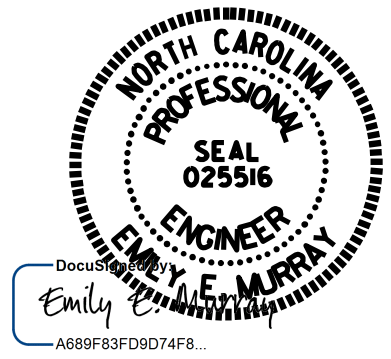
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## BENT 7

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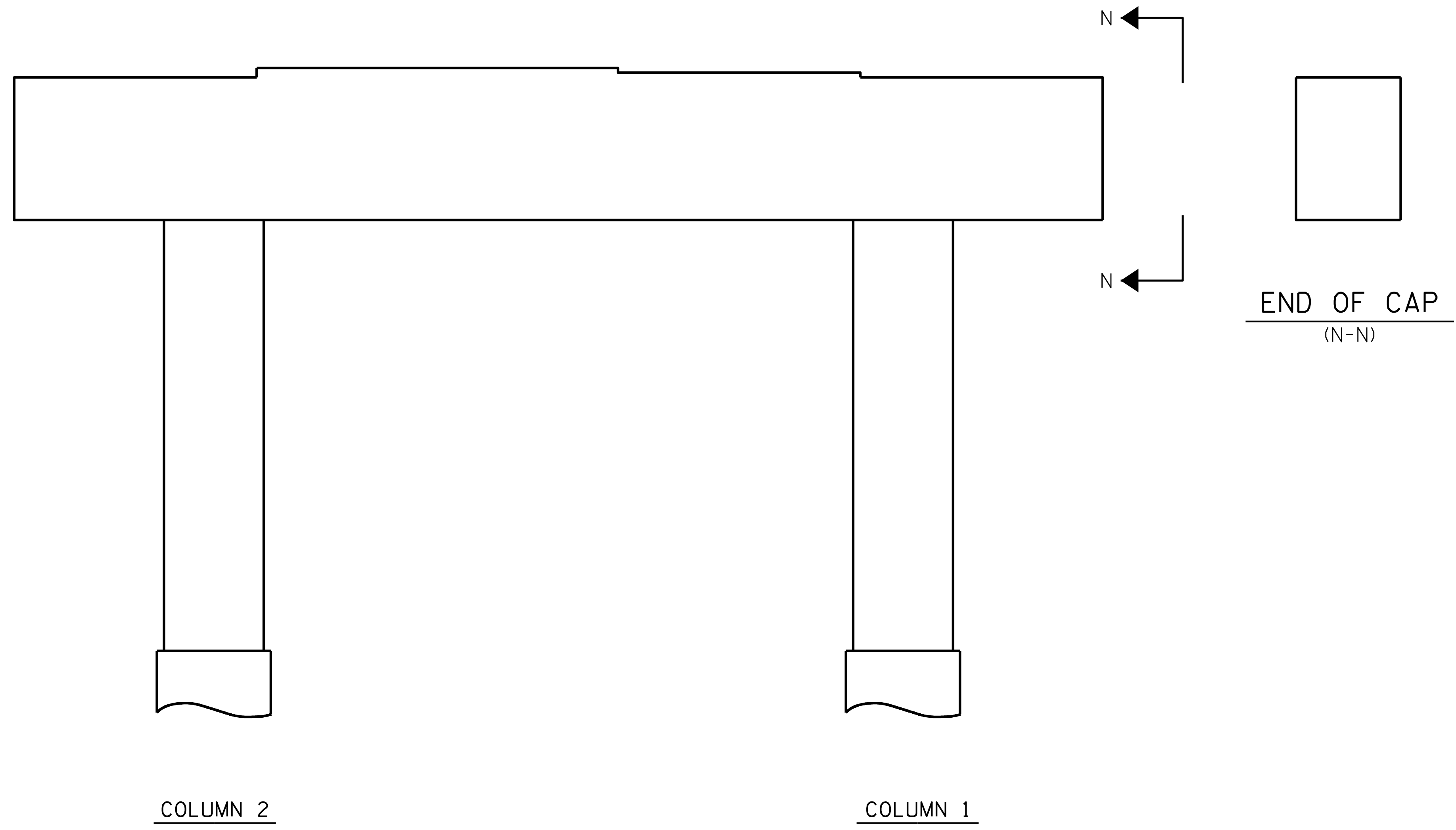
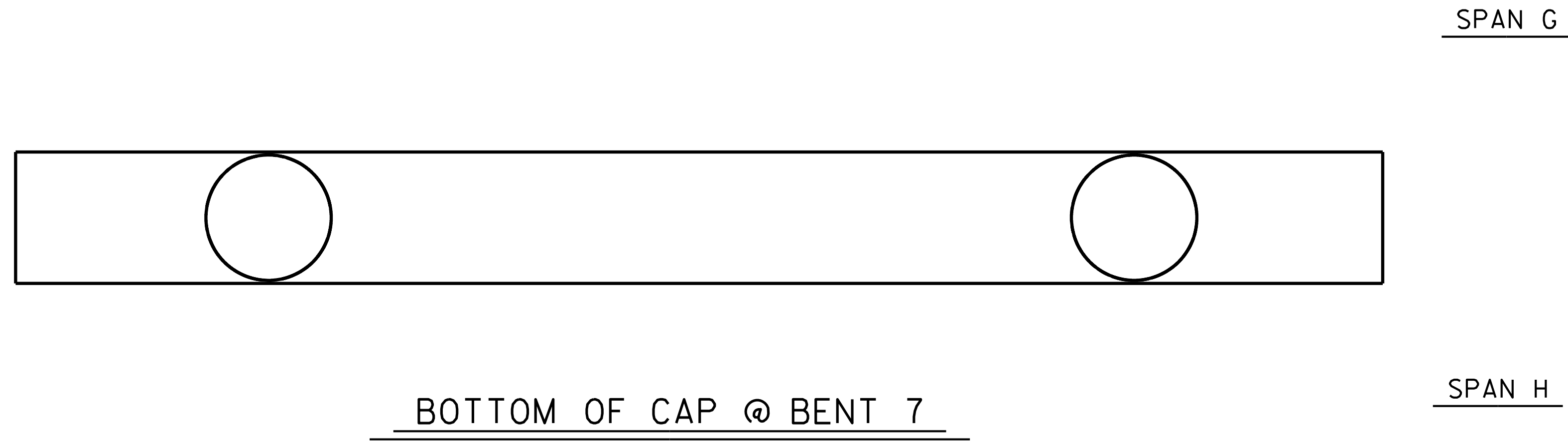
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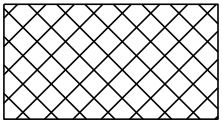
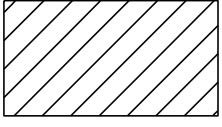

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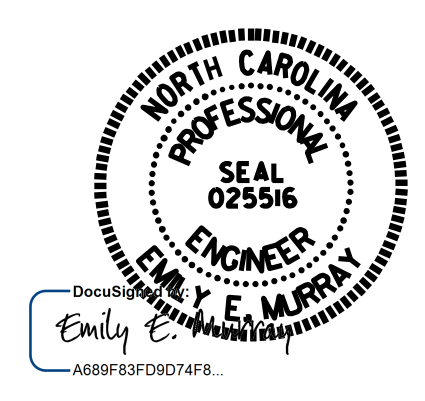
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION

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**BENT 7**



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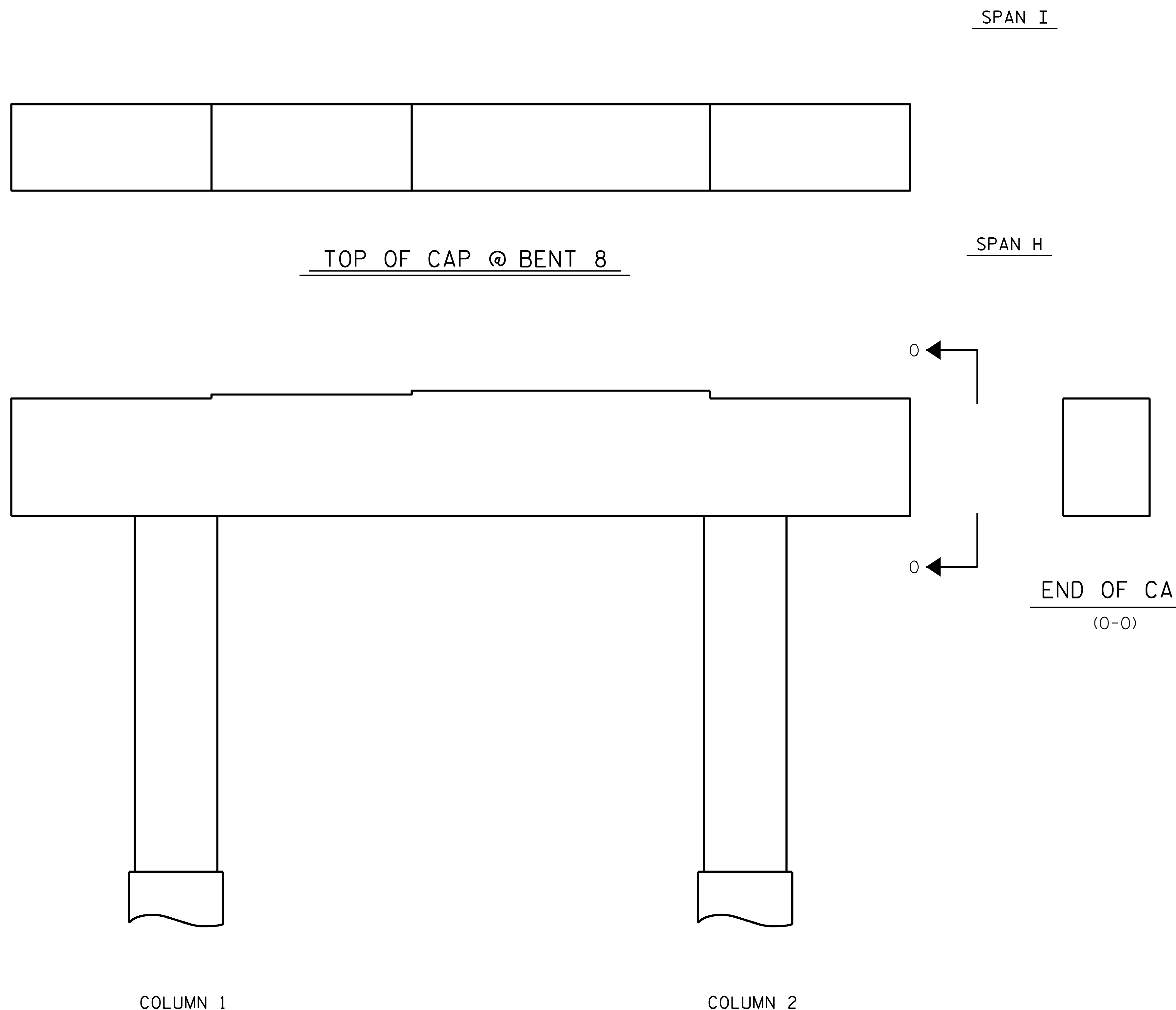
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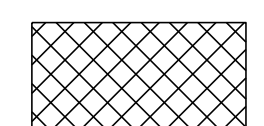
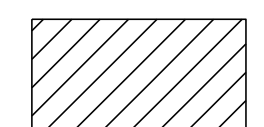

ELEVATION @ BENT 7 (SPAN H)



ELEVATION @ BENT 8 (SPAN H)

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 8	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
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		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		139.9		

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

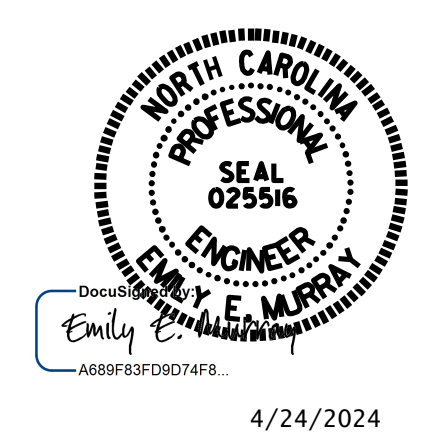
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION

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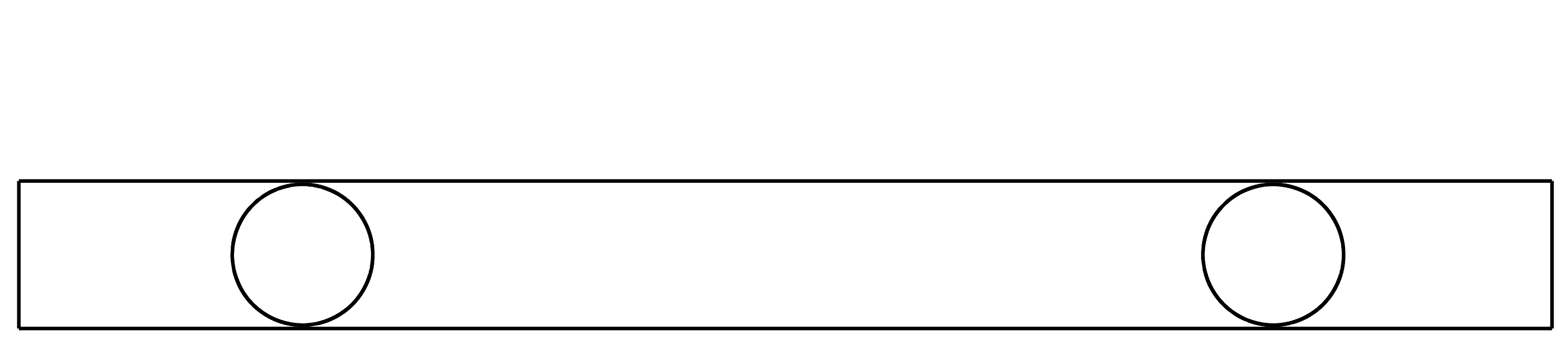


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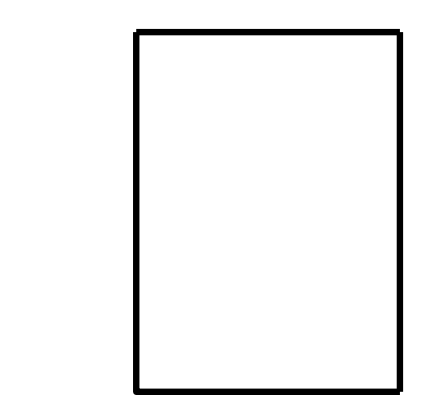
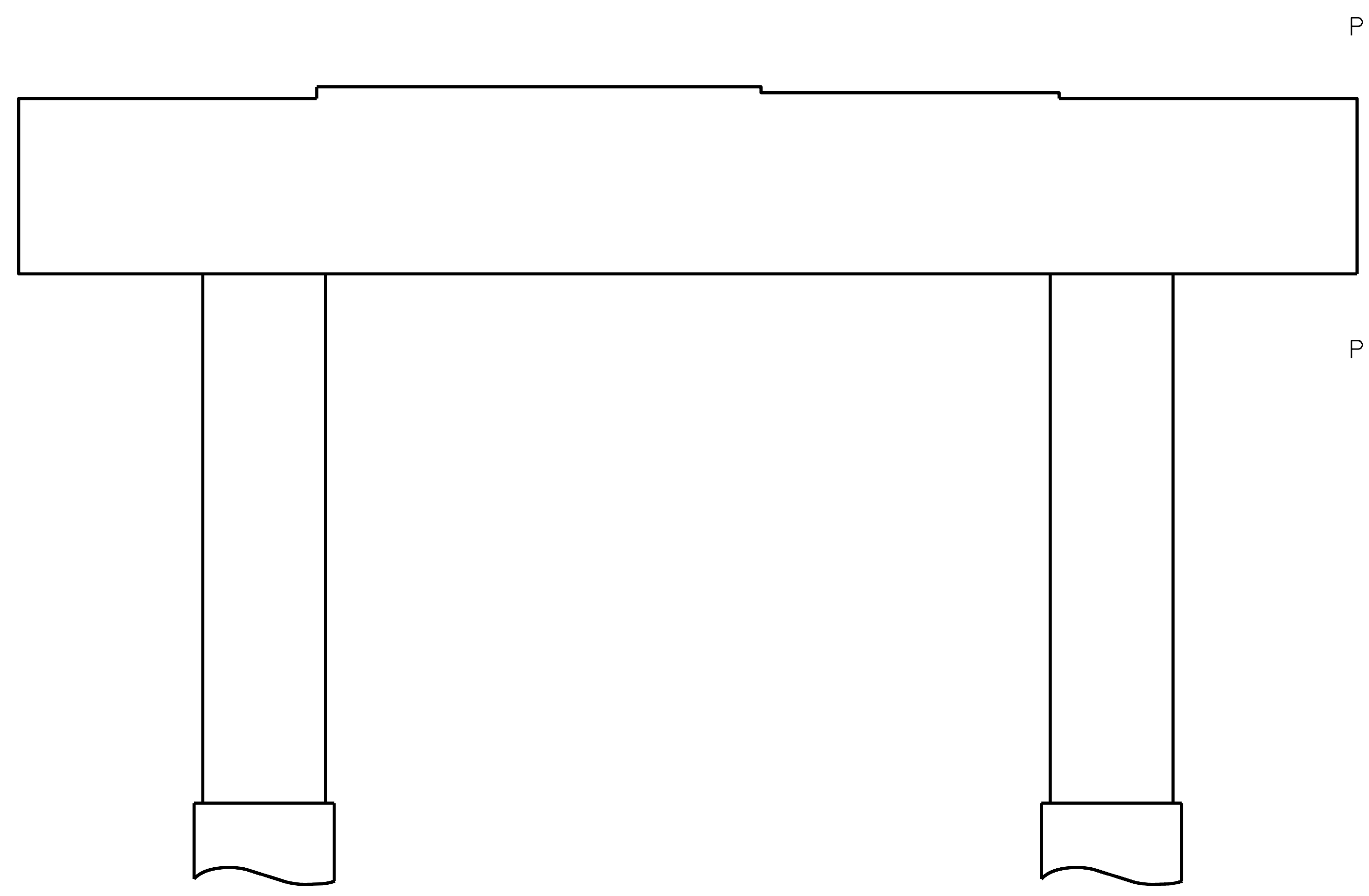
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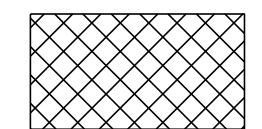
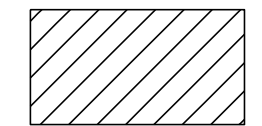

SPAN H

BOTTOM OF CAP @ BENT 8

SPAN I



END OF CAP  
(P-P)

-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION

COLUMN 2

COLUMN 1

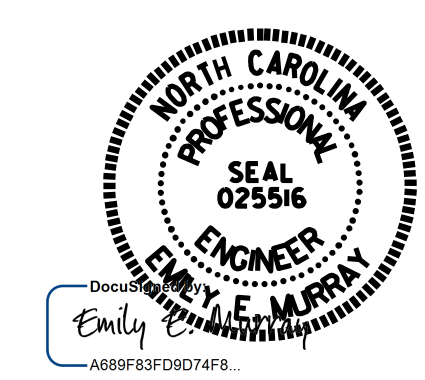
ELEVATION @ BENT 8 (SPAN I)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT 8



4/24/2024

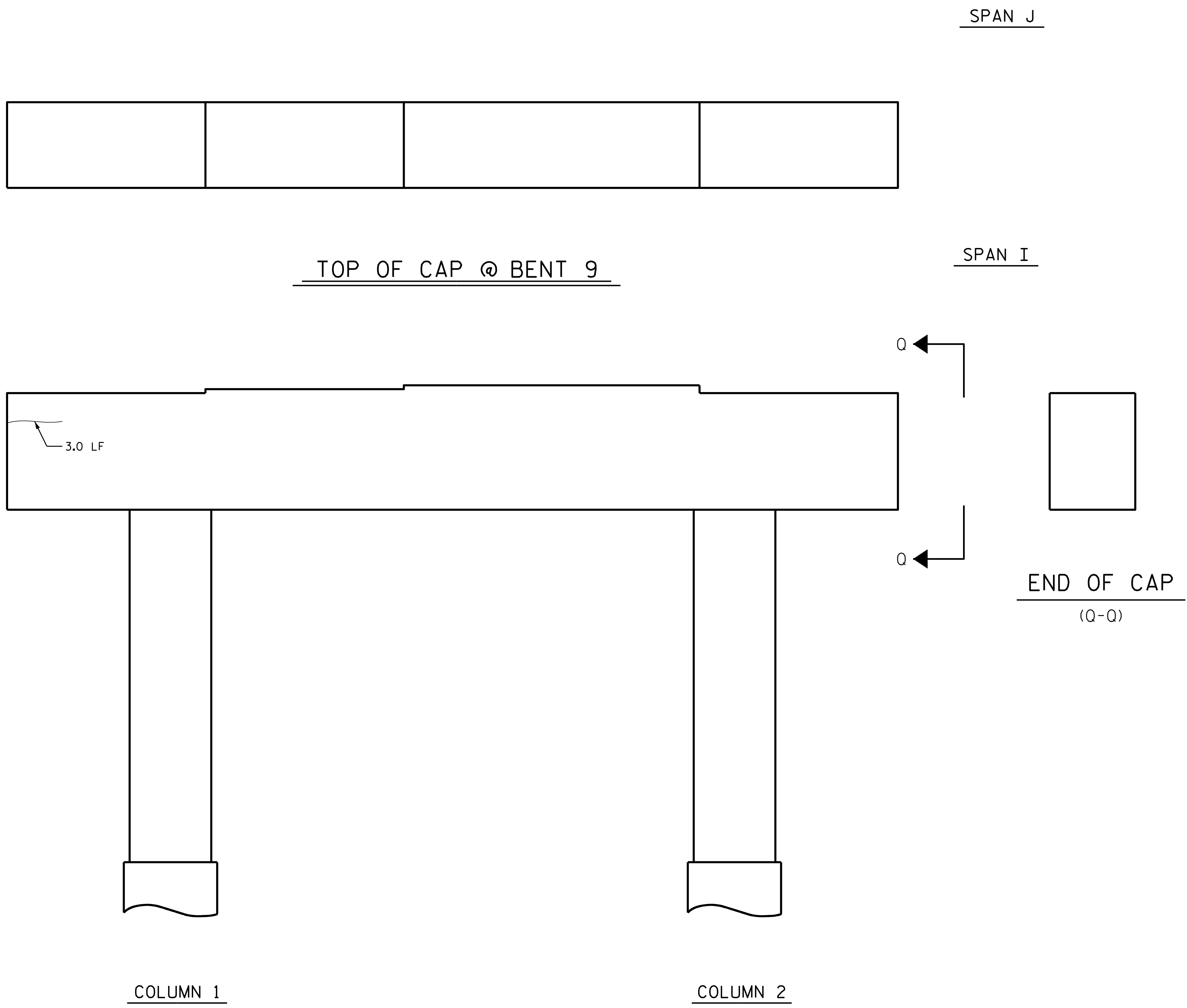
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-35
1			3			TOTAL SHEETS
2			4			156

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 CHECKED BY : P. N. HOLDER DATE : 03/2024





ELEVATION @ BENT 9 (SPAN I)

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 9	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
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		139.9		

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

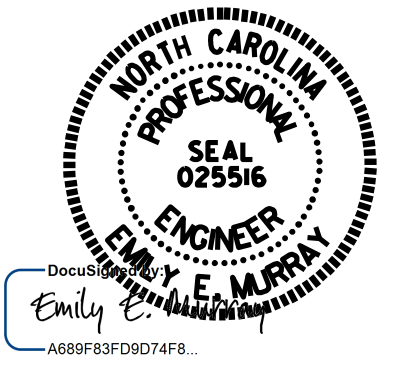
- SHOTCRETE REPAIR
- CONCRETE REPAIR
- EPOXY RESIN INJECTION

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT 9



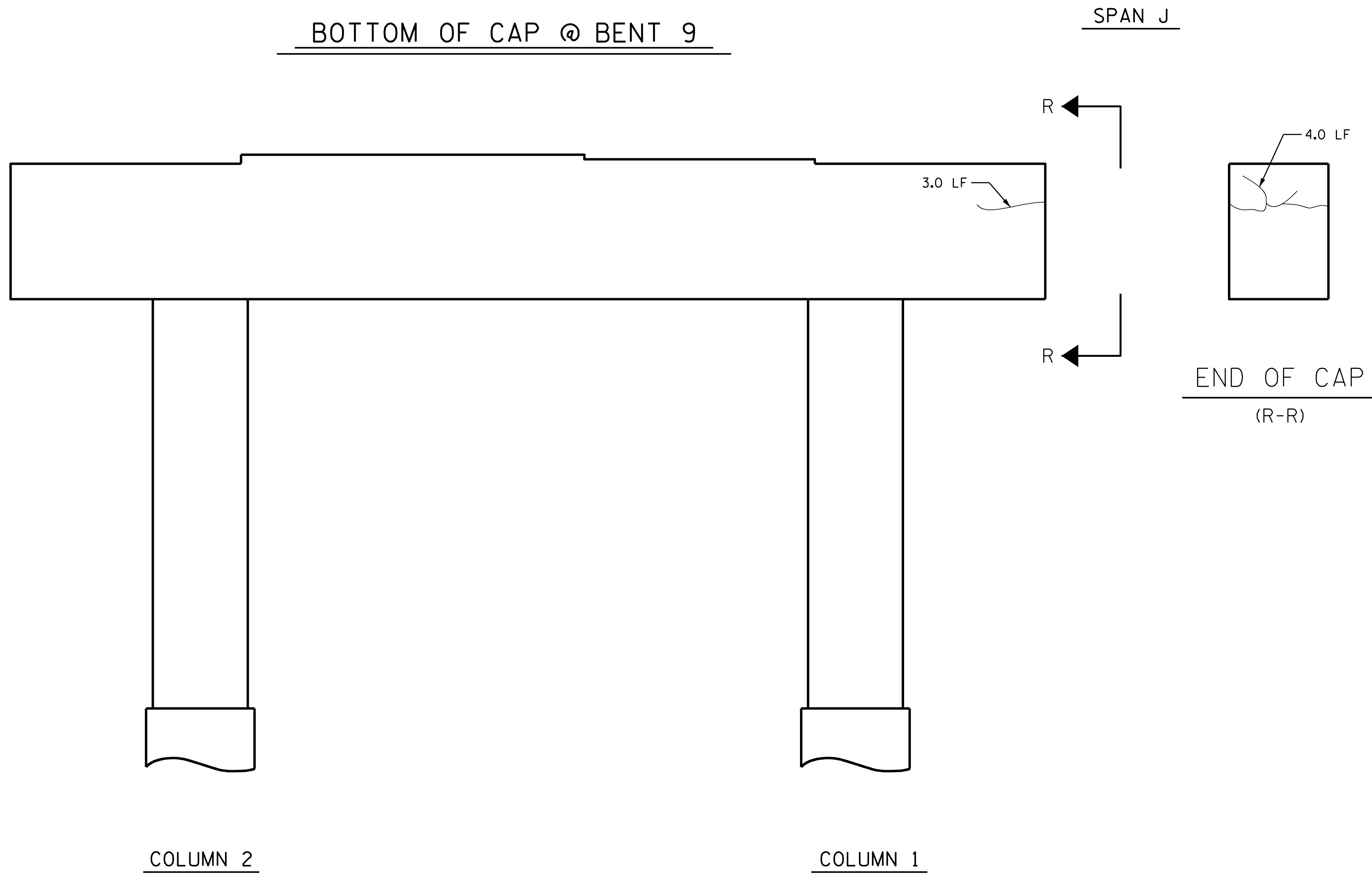
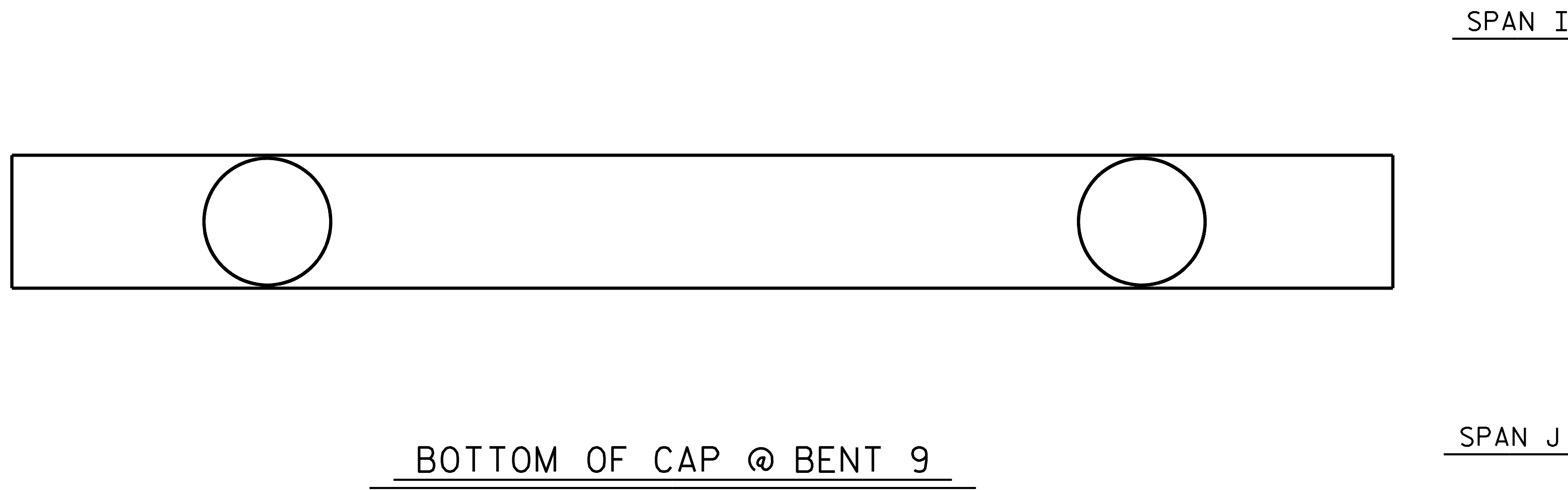
4/24/2024

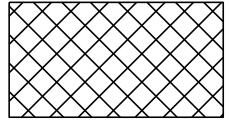
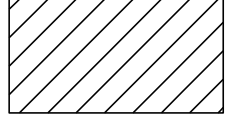

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-36
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/2022  
 CHECKED BY : P. N. HOLDER DATE : 03/2024



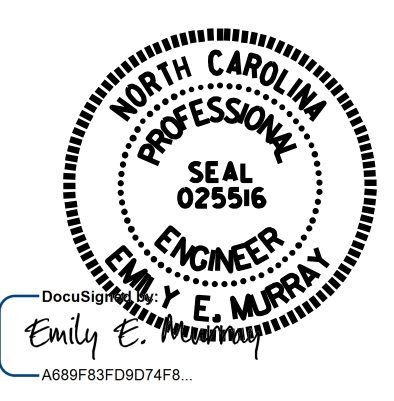
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT 9



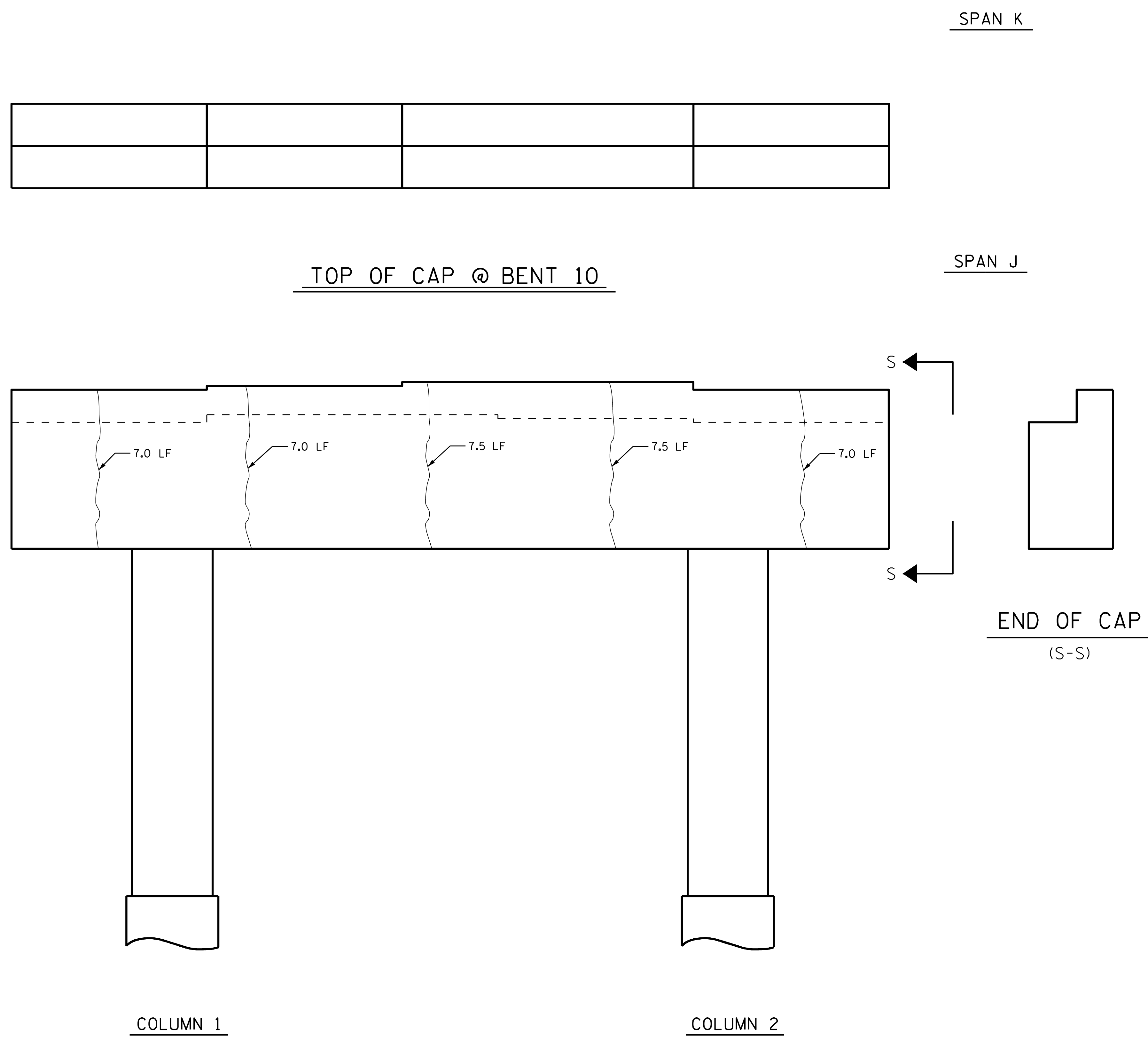
4/24/2024

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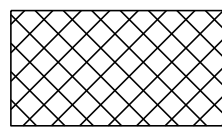
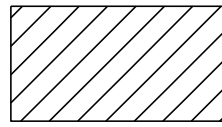

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-37
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/2022  
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AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 10	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
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		64.5		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		139.9		

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

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
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**BENT 10**



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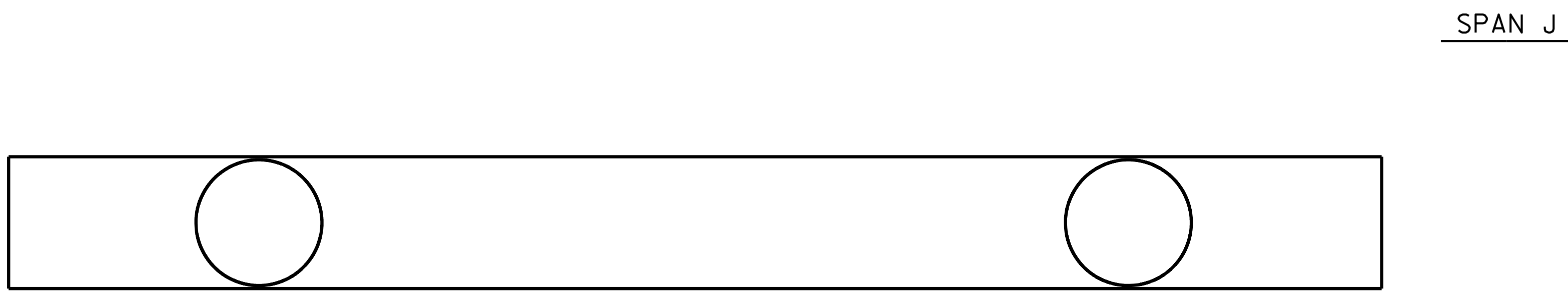
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-38
1			3			TOTAL SHEETS
2			4			156

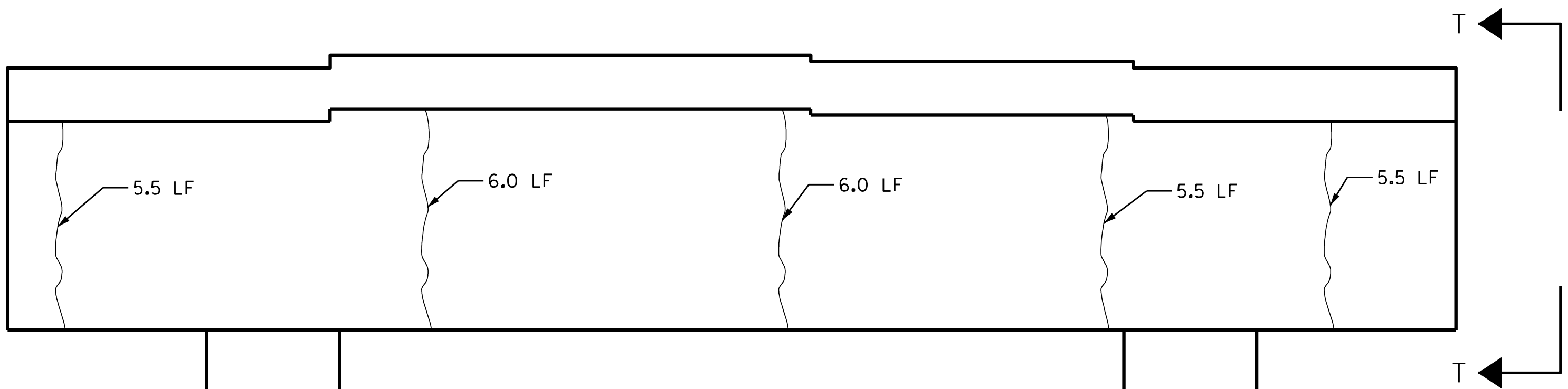
DRAWN BY : S. C. NICHOLS DATE : 09/2022  
 CHECKED BY : P. N. HOLDER DATE : 03/2024

ELEVATION @ BENT 10 (SPAN J)

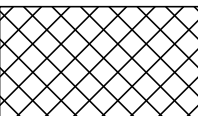
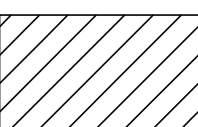



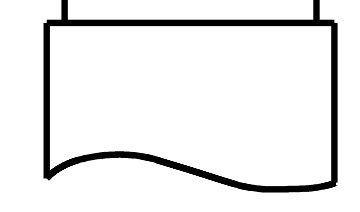


BOTTOM OF CAP @ BENT 10

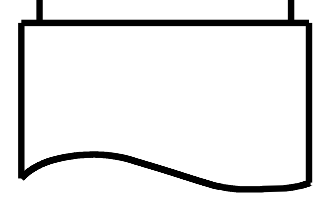


END OF CAP (T-T)

-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION



COLUMN 2



COLUMN 1

ELEVATION @ BENT 10 (SPAN K)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007

SHEET 2 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
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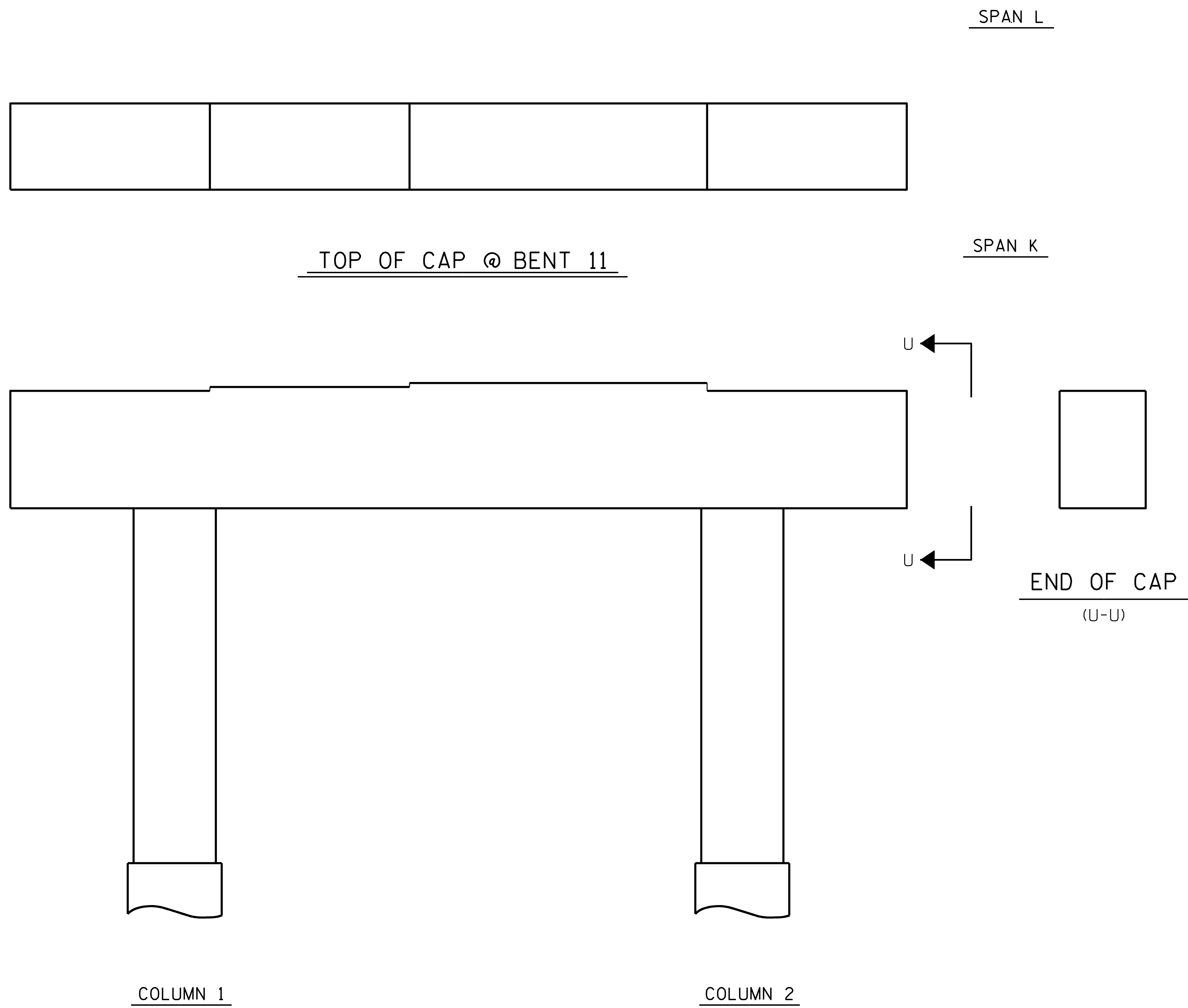
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1			3			TOTAL SHEETS
2			4			156

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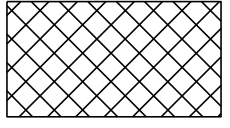
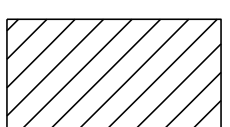



ELEVATION @ BENT 11 (SPAN K)

**AS-BUILT REPAIR QUANTITY TABLE**

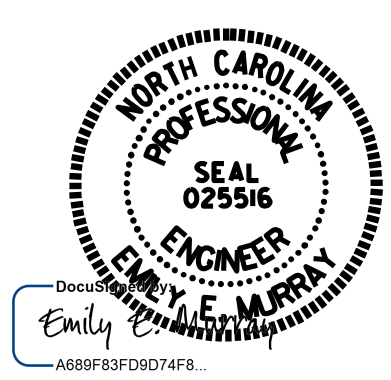
REPAIRS BENT 11	QUANTITIES			
	ESTIMATE		ACTUAL	
<b>SHOTCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
<b>CONCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
<b>EPOXY RESIN INJECTION</b>		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
<b>EPOXY COATING</b>		SQ. FT.		SQ. FT.
TOP OF BENT CAP		139.9		

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

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007

SHEET 1 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
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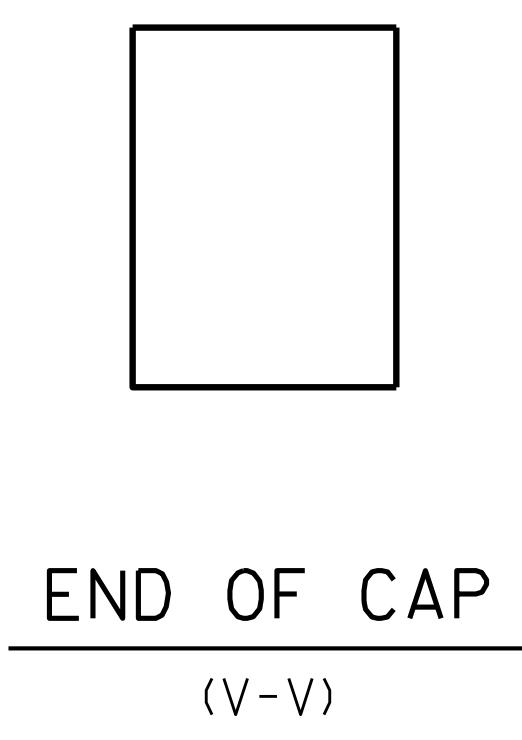
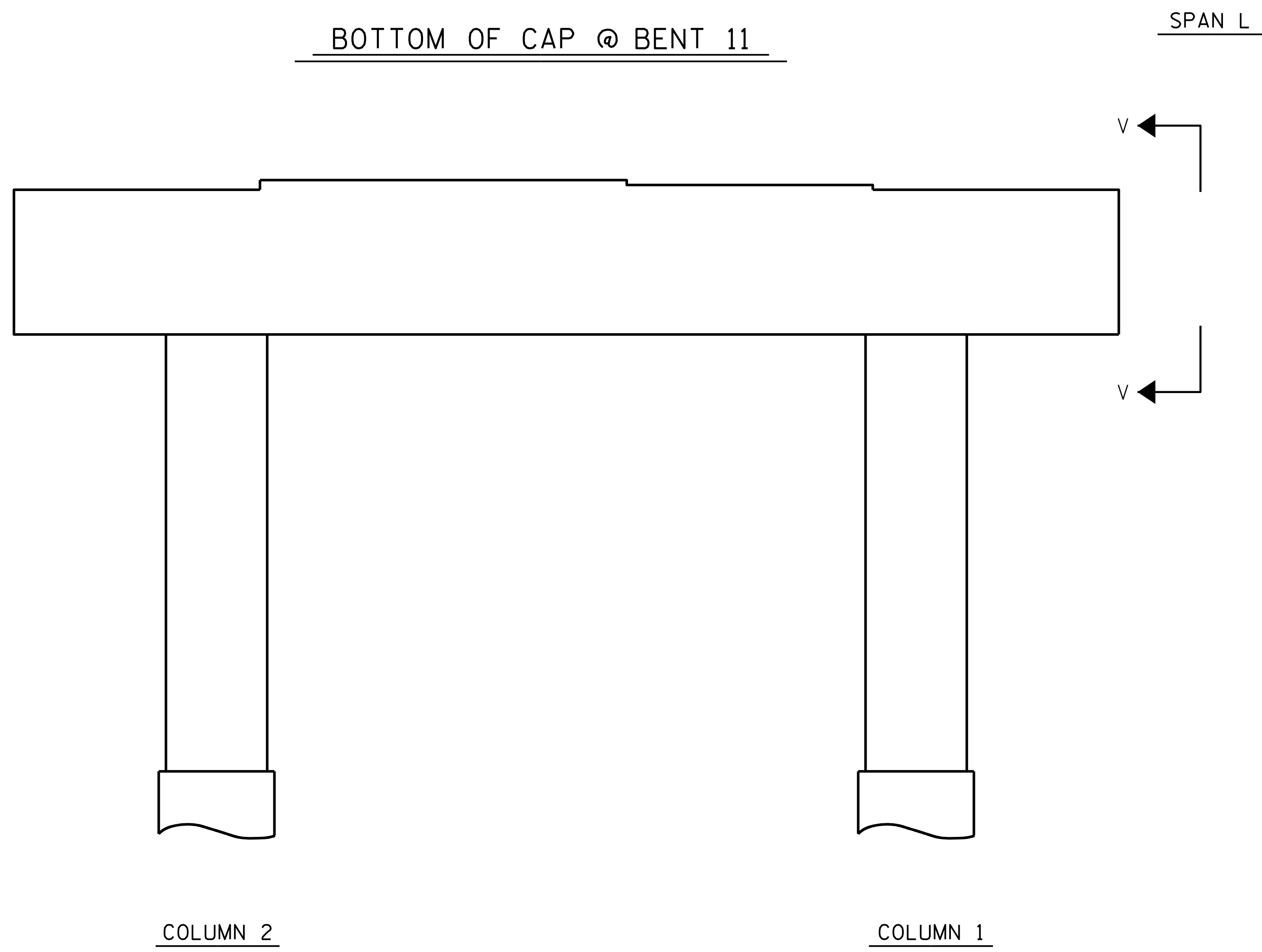
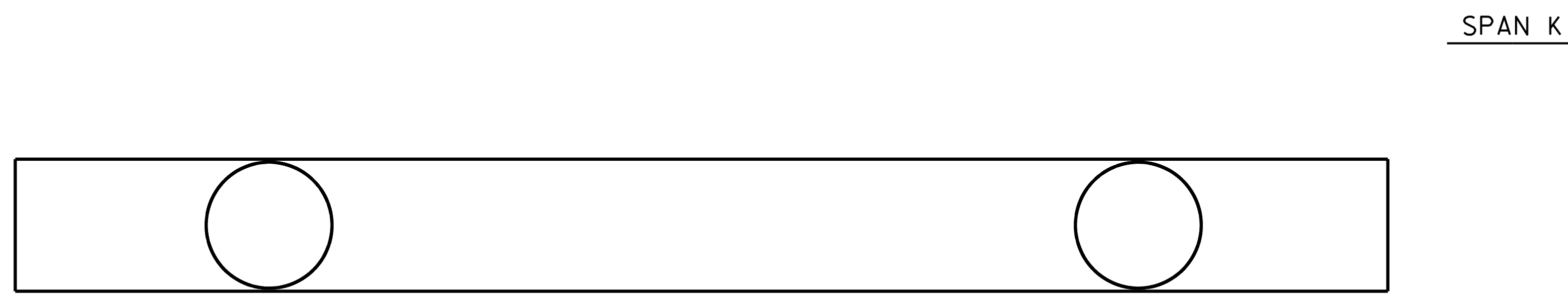
**BENT 11**

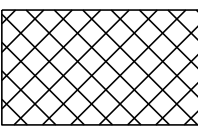
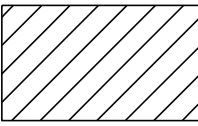

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1			3			156
2			4			

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 CHECKED BY : P. N. HOLDER DATE : 03/2024



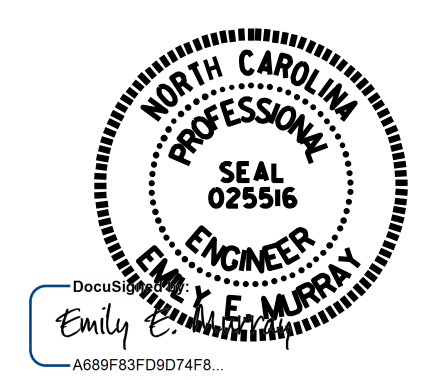
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
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BENT 11



4/24/2024

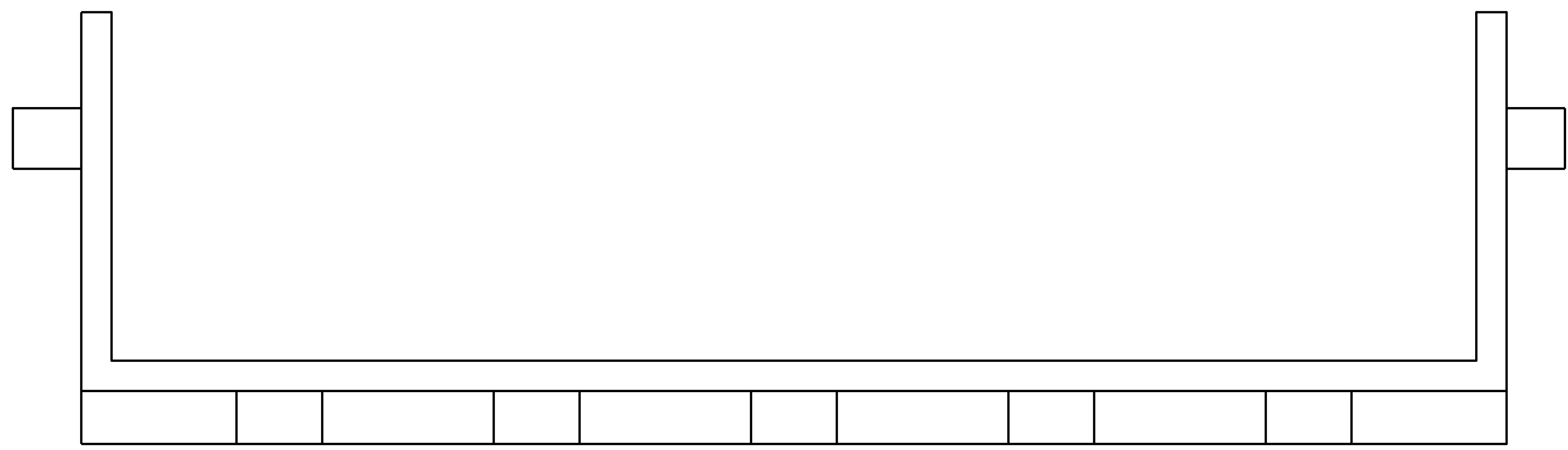
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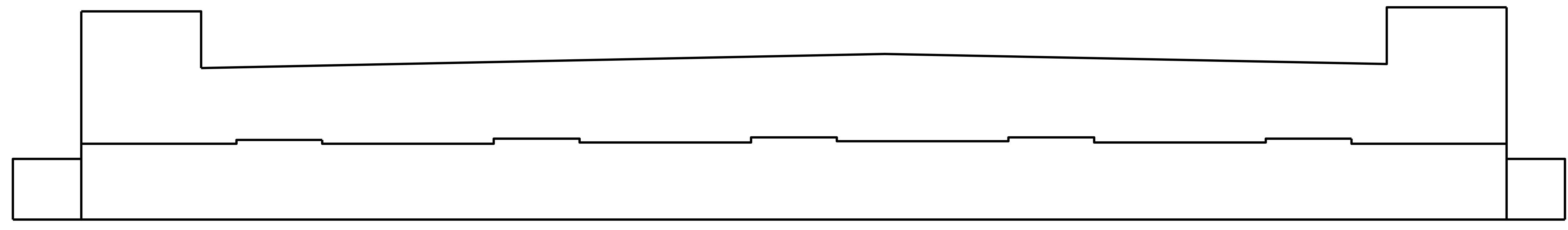
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-41
1			3			TOTAL SHEETS
2			4			156

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TOP OF CAP @ END BENT 2

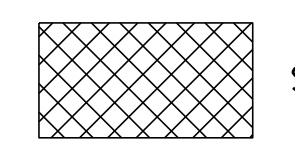


ELEVATION @ END BENT 2 (SPAN L)

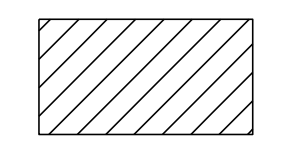
**AS-BUILT REPAIR QUANTITY TABLE**

REPAIRS END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
<b>SHOTCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
<b>CONCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
<b>EPOXY RESIN INJECTION</b>		LN. FT.		LN. FT.
CAP		0.0		
<b>EPOXY COATING</b>		SQ. FT.		SQ. FT.
TOP OF BENT CAP		82.4		

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

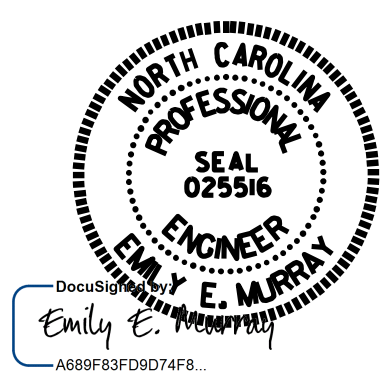


CONCRETE REPAIR



EPOXY RESIN INJECTION

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 STATION: 180007



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**END BENT 2**

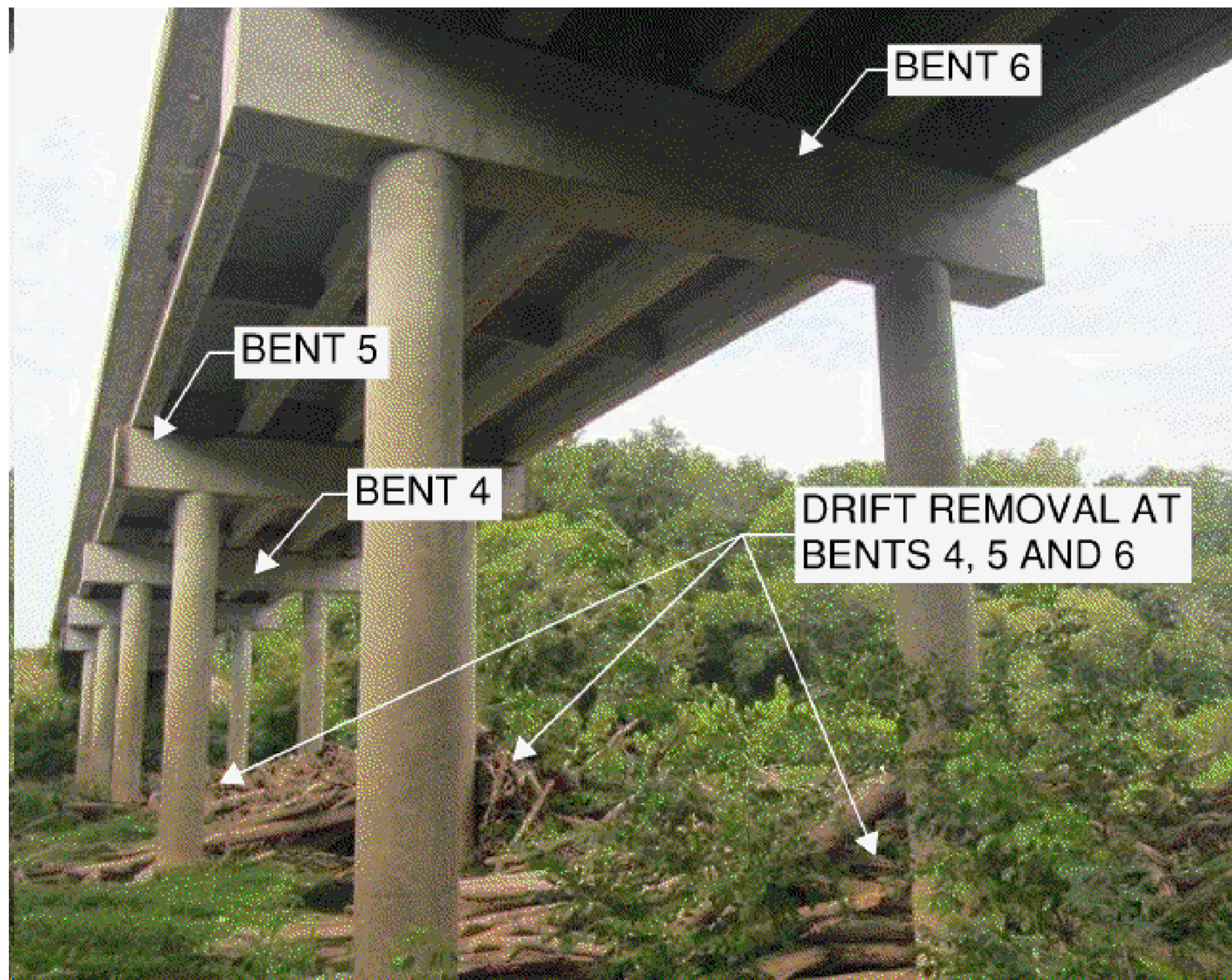
DRAWN BY : S. C. NICHOLS DATE : 09/2022  
 CHECKED BY : P. N. HOLDER DATE : 03/2024

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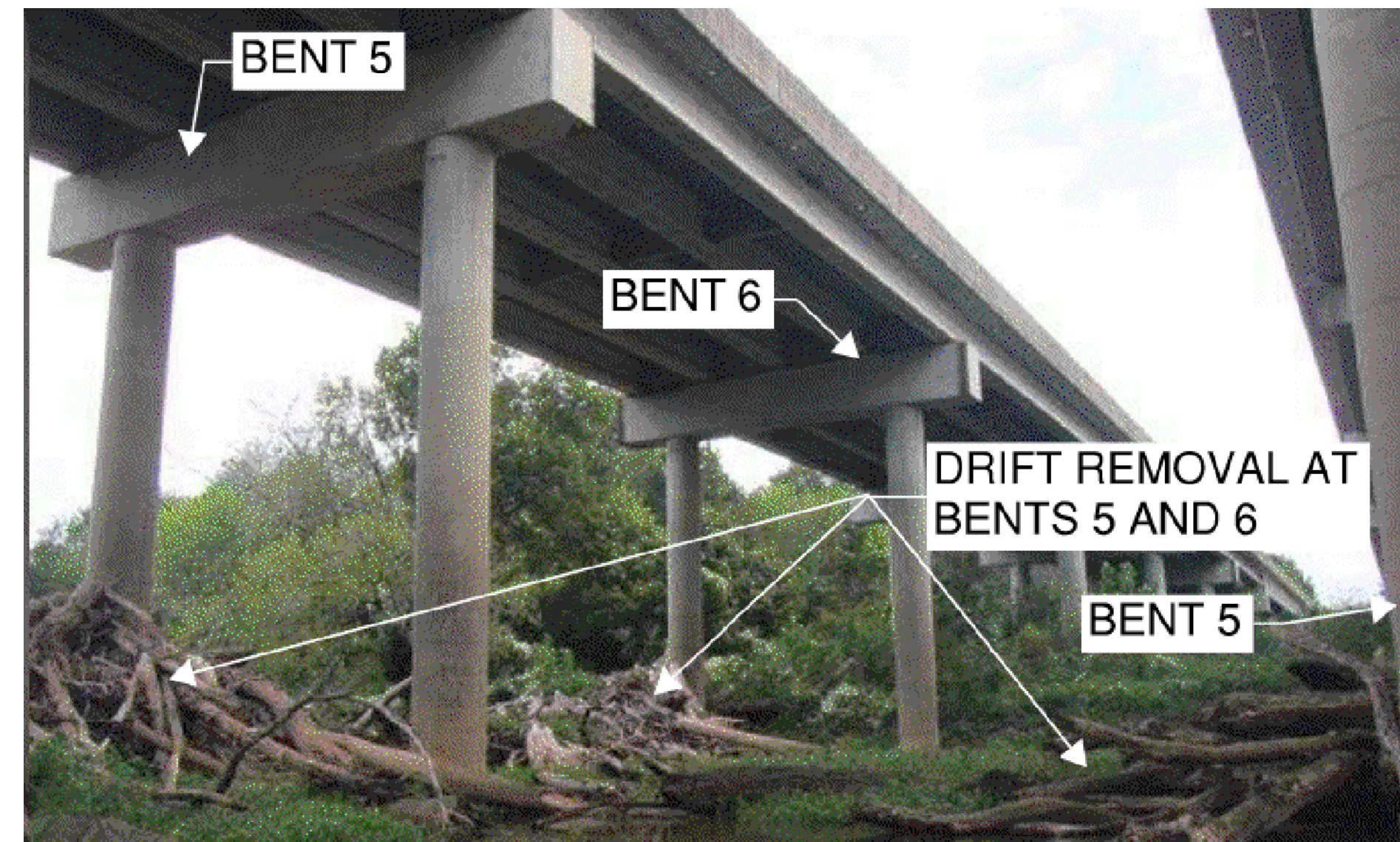
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1			3			156
2			4			

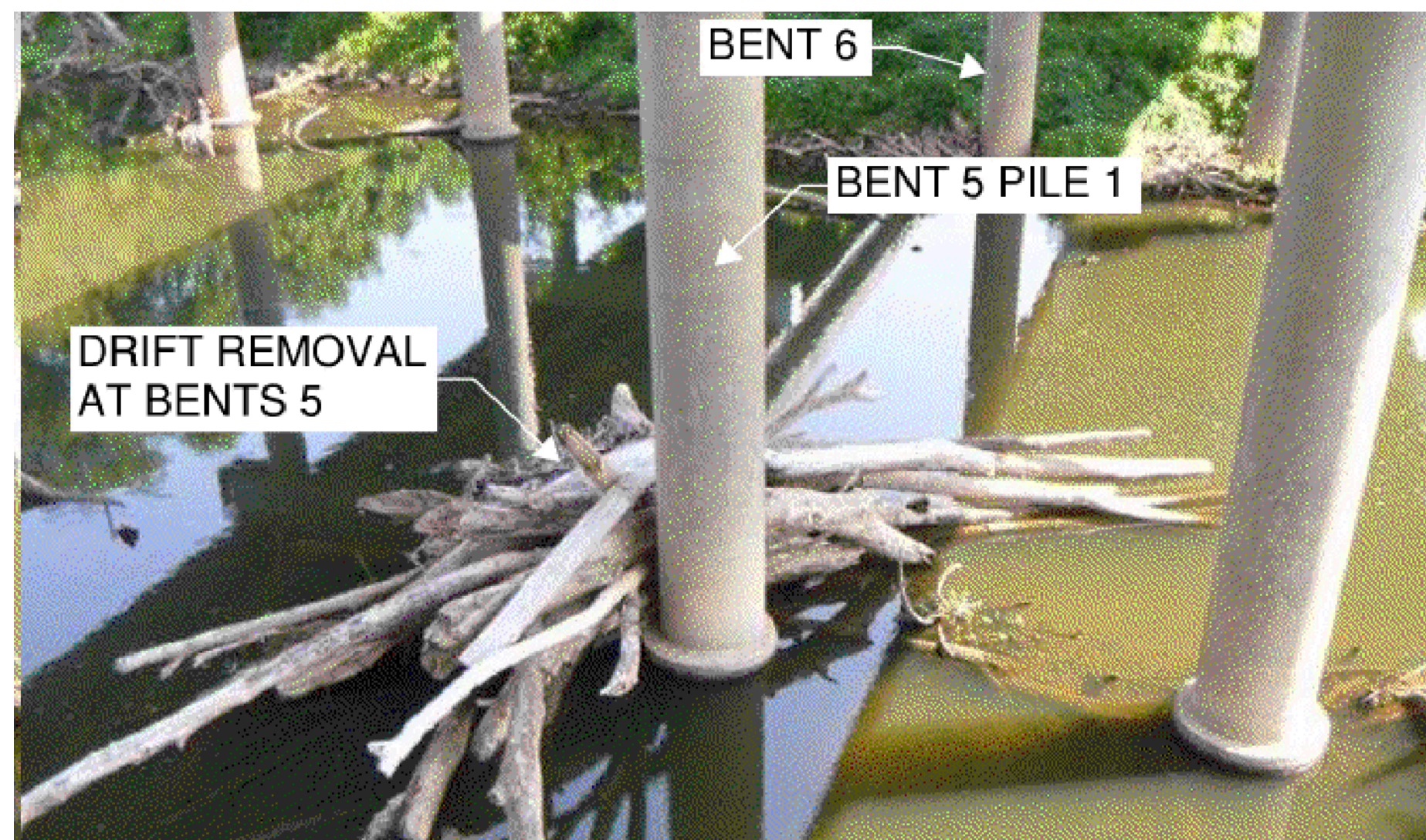




BRIDGE 180007 BENT 6 LOOKING SOUTH



BRIDGE 180007 BENT 4 LOOKING NORTH



BRIDGE 180477 BENT 5 LOOKING NORTH

DRIFT REMOVAL LOCATIONS

DRIFT REMOVAL

THE INFORMATION PROVIDED IS BASED ON DRIFT ACCUMULATION AS OF 3/8/2022. THE EXACT AMOUNT OF DRIFT VARIES DAILY.

REMOVAL OF DRIFT SHALL BE ACCESSED FROM THE TOP OF THE BRIDGE DECK. ASSISTANCE FROM BOATS IN THE RIVER MAYBE ALLOWED, BUT NO ACCESS TO THE DRIFT SHALL BE ALLOWED FROM THE RIVER BANK.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ALL DRIFT MATERIALS PRIOR TO THE PROJECT'S END.

THE CONTRACTOR SHALL NOT ALLOW, AT ANY TIME, THE DRIFT MATERIALS TO FLOW DOWNSTREAM OF THE PROJECT SITE. THE CONTRACTOR SHALL CONTAIN AND DISPOSE OF COLLECTED DRIFT MATERIALS OFF SITE.

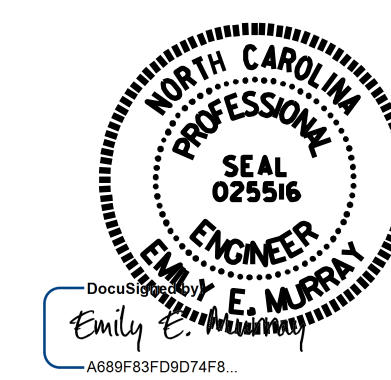
FOR DRIFT REMOVAL, SEE SPECIAL PROVISIONS.

FOR SECURING OF VESSELS, SEE SPECIAL PROVISIONS.

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

RESIDENT ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180007, 180477



4/24/2024

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

DRIFT REMOVAL

DRAWN BY : B. H. BARNHILL DATE : 04/2024  
 CHECKED BY : E. E. MURRAY DATE : 04/2024

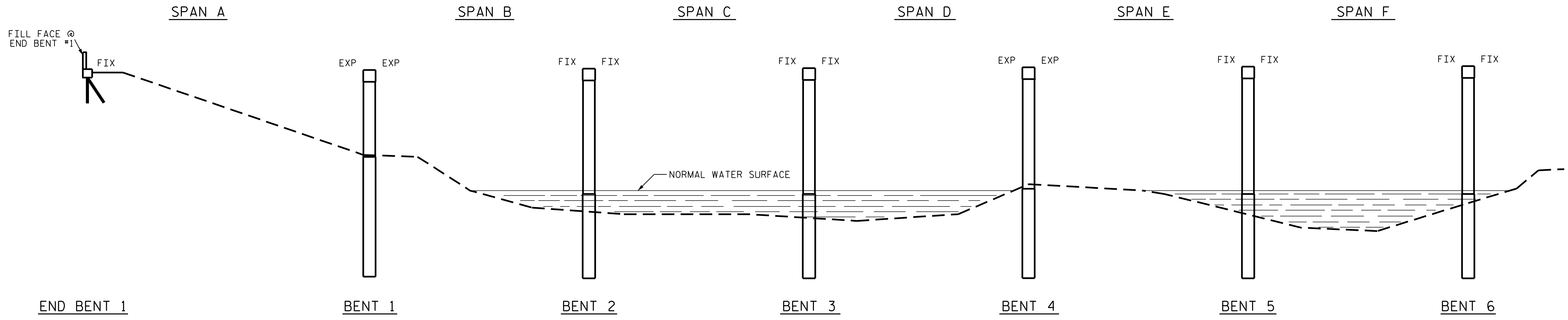
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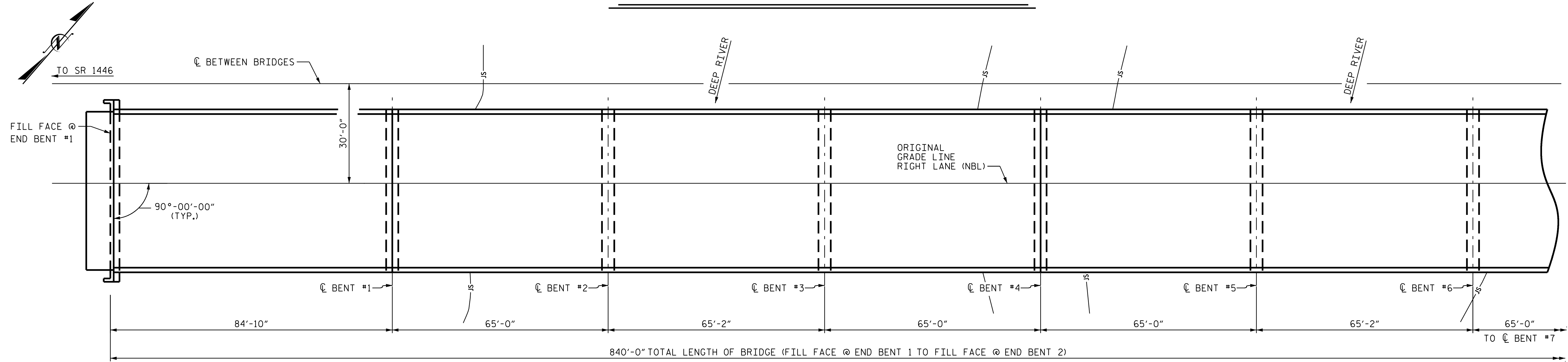
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-43
1			3			TOTAL SHEETS
2			4			156





**SECTION ALONG ORIGINAL GRADE LINE**



**PLAN**

**NOTES:**  
 GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 8/24/2023.  
 BRIDGE ORIENTATION CONFORMS TO THE ORIGINAL BRIDGE PLANS/ROUTINE INSPECTION

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

RESIDENT ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

**SCOPE OF WORK:**

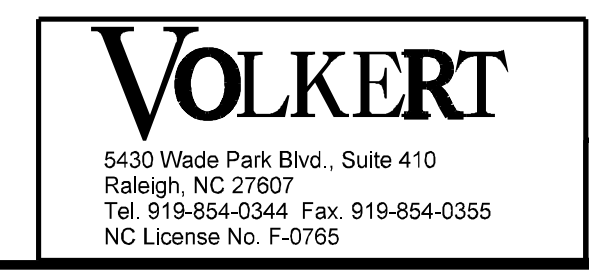
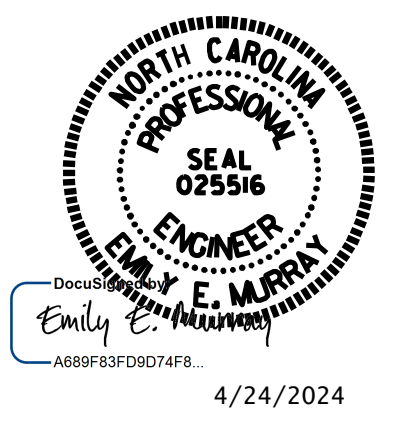
PARTIALLY REMOVE TOP OF BRIDGE DECK CONCRETE BY SCARIFICATION AND SHOTBLASTING.  
 CLEAN AND ZONE PAINT EXISTING STEEL GIRDERS.  
 REMOVE DEBRIS FROM TOP OF EXISTING END BENT AND BENT CAPS AND APPLY EPOXY COATING.  
 OVERLAY PREPARED TOP OF BRIDGE DECK WITH POLYMER CONCRETE (PC).  
 EPOXY RESIN INJECTION OF CONCRETE CRACKS.  
 REMOVE EXISTING JOINT MATERIAL AND INSTALL FOAM JOINT SEALS FOR PRESERVATION.  
 REMOVE UNSOUND CONCRETE AND PROPERLY PREPARE EXISTING END BENT AND BENT AREAS FOR SHOTCRETE AND CONCRETE REPAIRS.  
 GROOVE PC BRIDGE DECK.  
 PREPARE SURFACE AND APPLY SILANE BARRIER RAIL TREATMENT.  
 REMOVE DRIFT ACCUMULATION.

PROJECT NO. 15BPR.130  
 CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**  
 FOR RIGHT LANE (NBL) OVER  
 DEEP RIVER ON US-1 BETWEEN  
 SR 1012 AND SR 1466

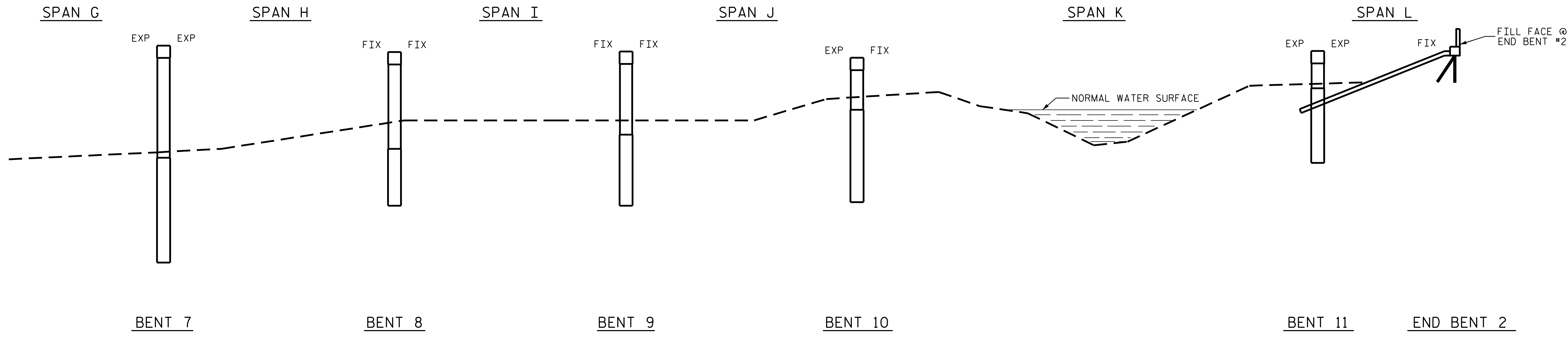


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

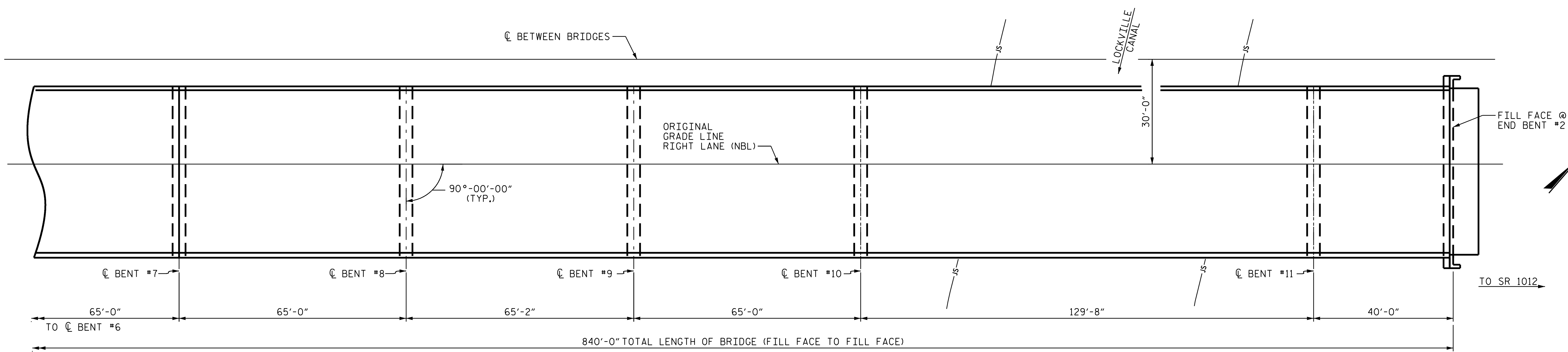
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-44
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : J. BRYANT DATE : 7/21/22  
 CHECKED BY : D. GLADDEN DATE : 8/3/23





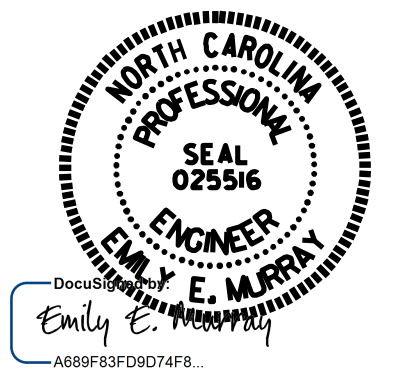
SECTION ALONG ORIGINAL GRADE LINE



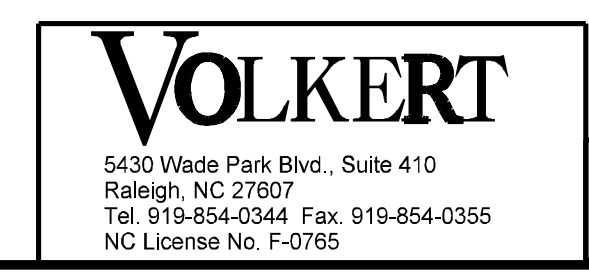
PLAN

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 2 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR RIGHT LANE (NBL) OVER  
 DEEP RIVER ON US-1 BETWEEN  
 SR 1012 AND SR 1466



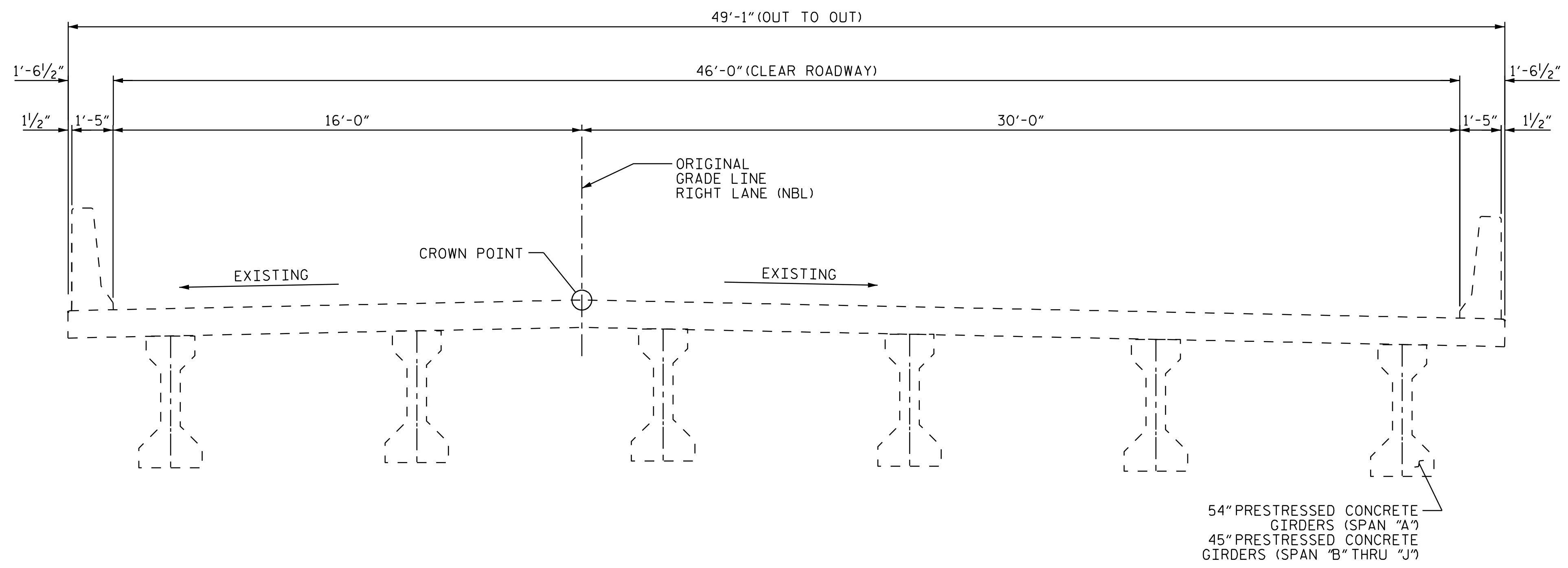
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-45
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2			4			156

DRAWN BY : J. BRYANT DATE : 7/21/22  
 CHECKED BY : D. GLADDEN DATE : 8/3/23

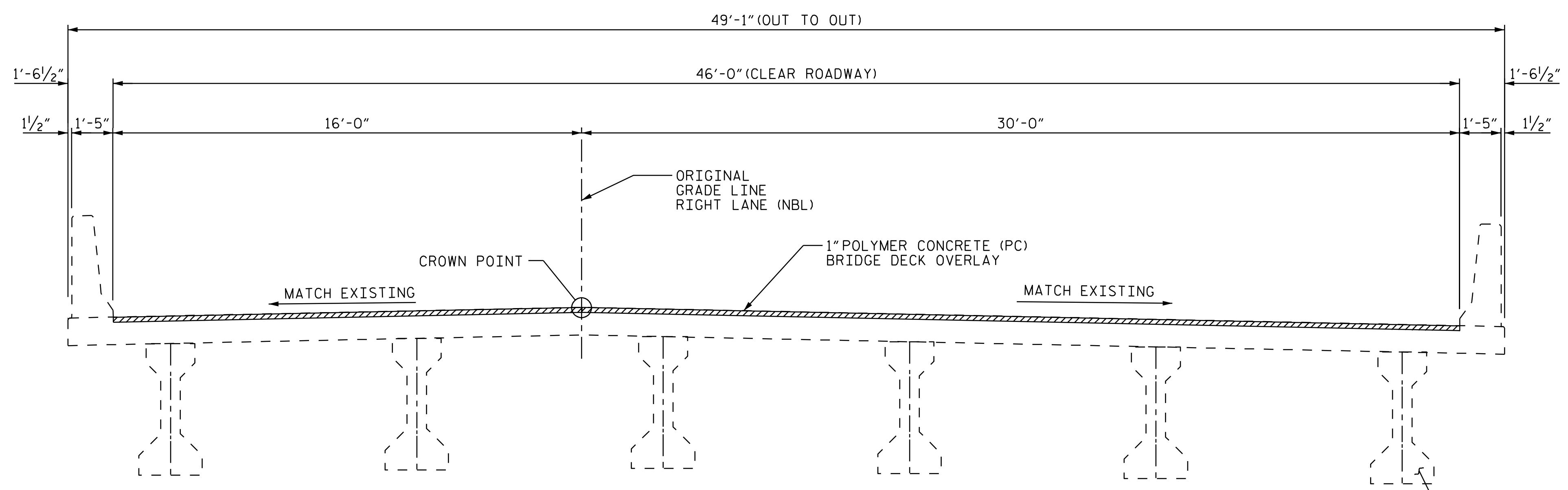
### NOTES

SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND POLYMER CONCRETE PLACEMENT.



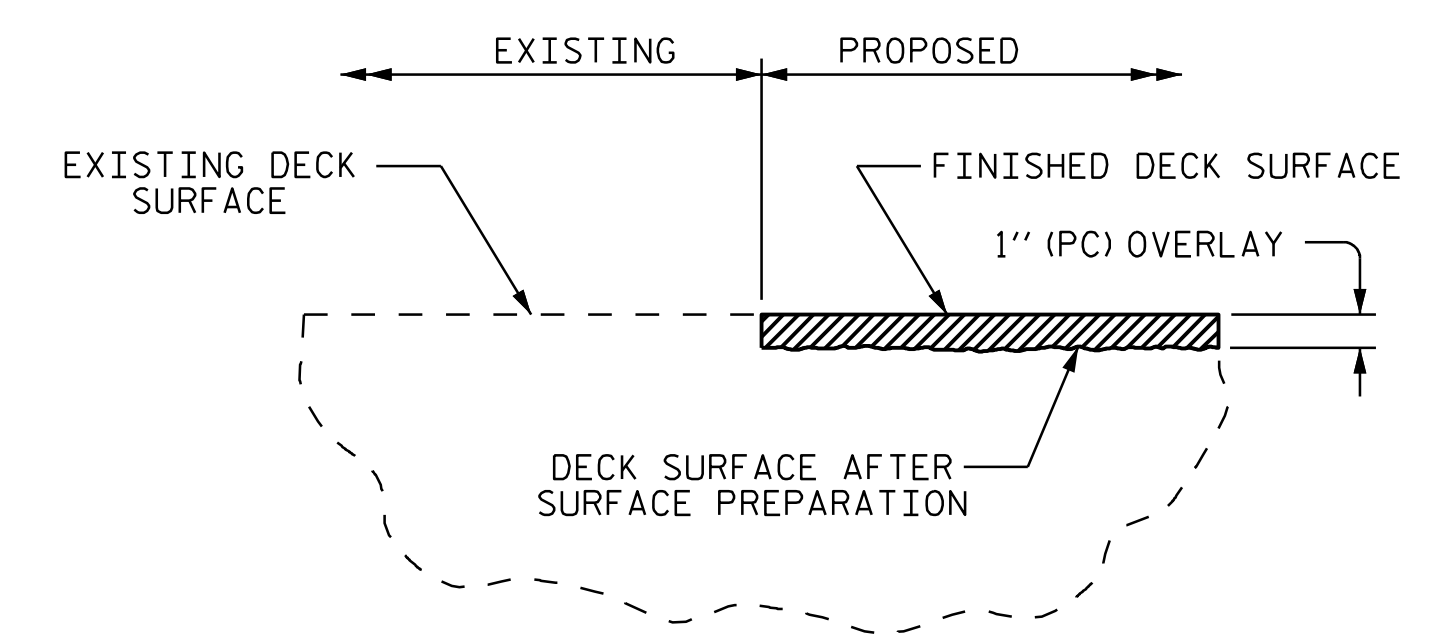
### EXISTING TYPICAL SECTION

SPANS "A THRU J"

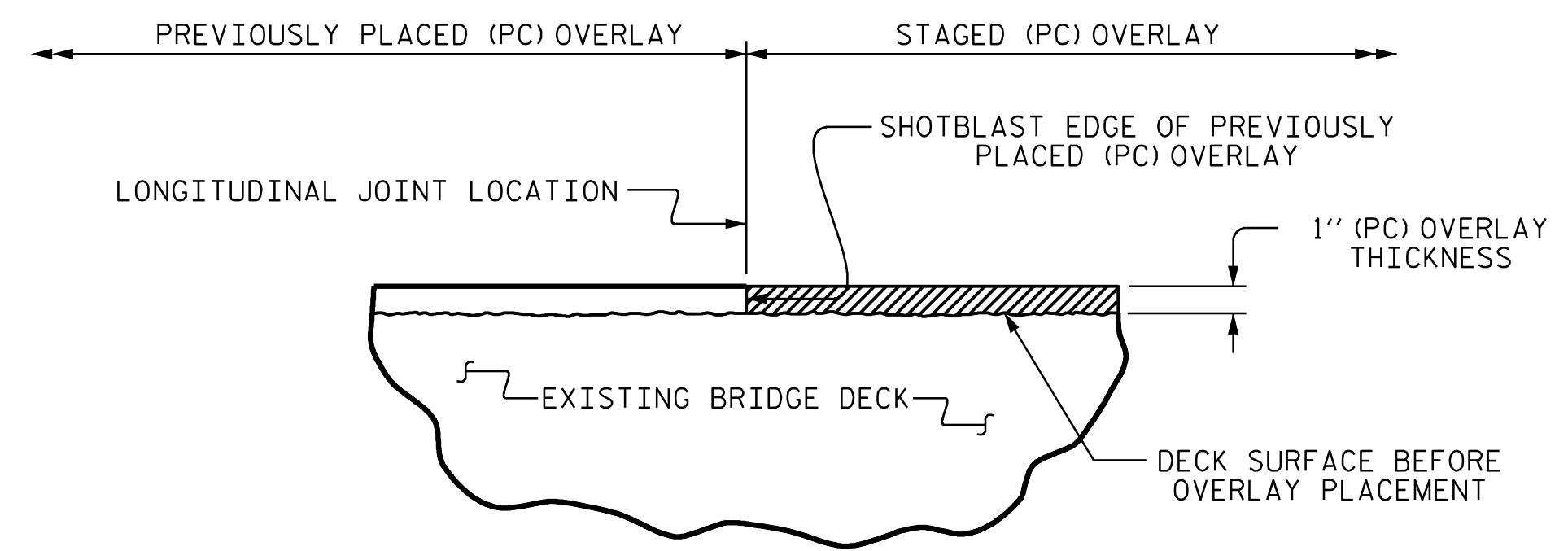


### PROPOSED TYPICAL SECTION

SPANS "A THRU J"

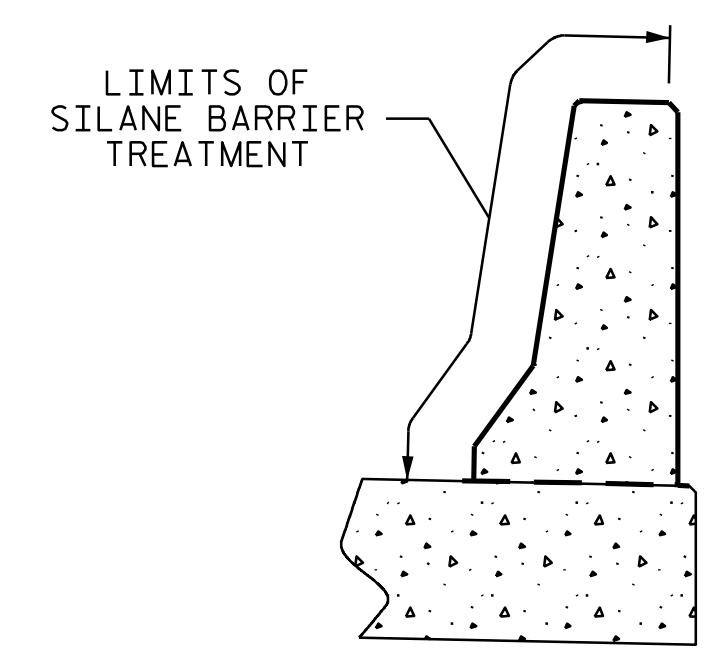


### DETAIL OF POLYMER CONCRETE OVERLAY



### STAGED POLYMER CONCRETE OVERLAY JOINT

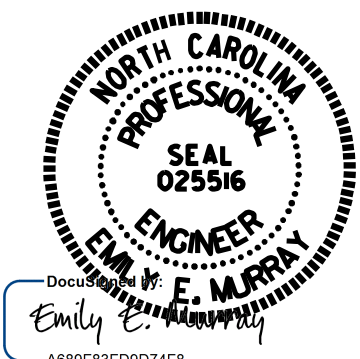
(AS NEEDED)



### SILANE BARRIER RAIL TREATMENT

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO: 180477

SHEET 1 OF 3



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**TYPICAL SECTION  
 AND SURFACE  
 PREPARATION DETAILS**

DRAWN BY : T.MAZARURA DATE : 8/22  
 CHECKED BY : D. GLADDEN DATE : 8/22

**VOLKERT**  
 5430 Wade Park Blvd., Suite 410  
 Raleigh, NC 27607  
 Tel. 919-854-0344 Fax. 919-854-0355  
 NC License No. F-0765

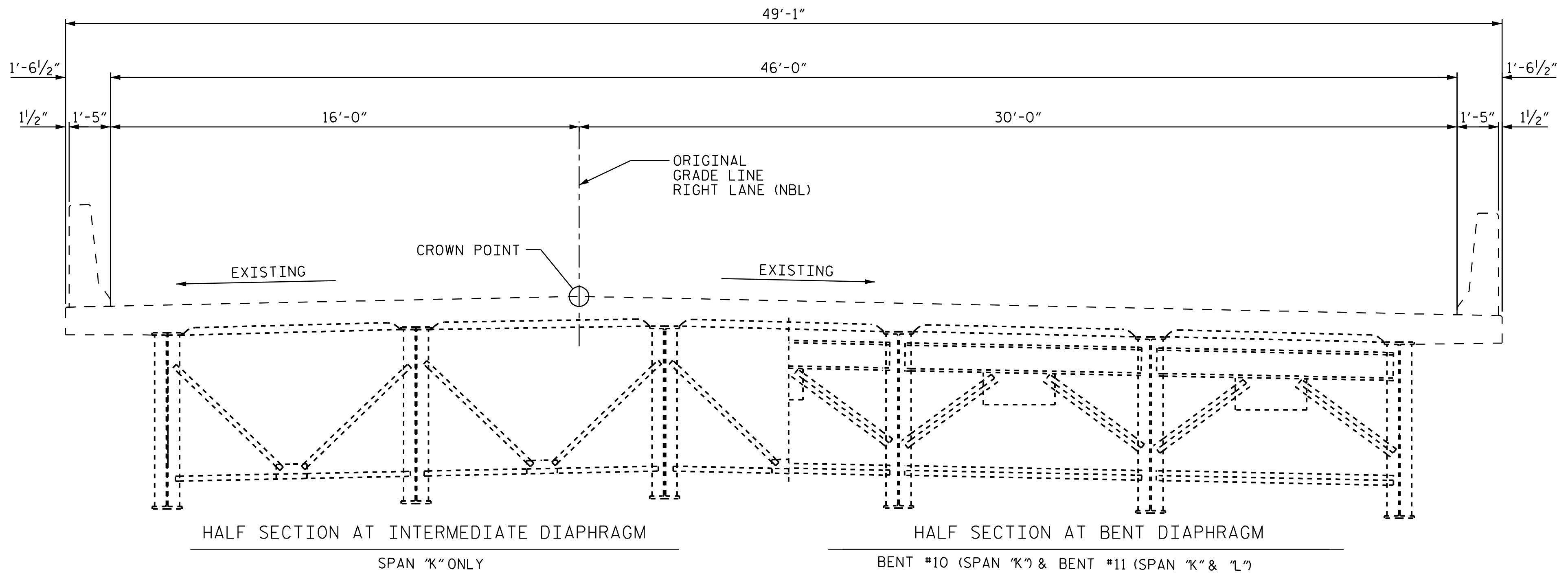
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 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-46
1			3			TOTAL SHEETS
2			4			156

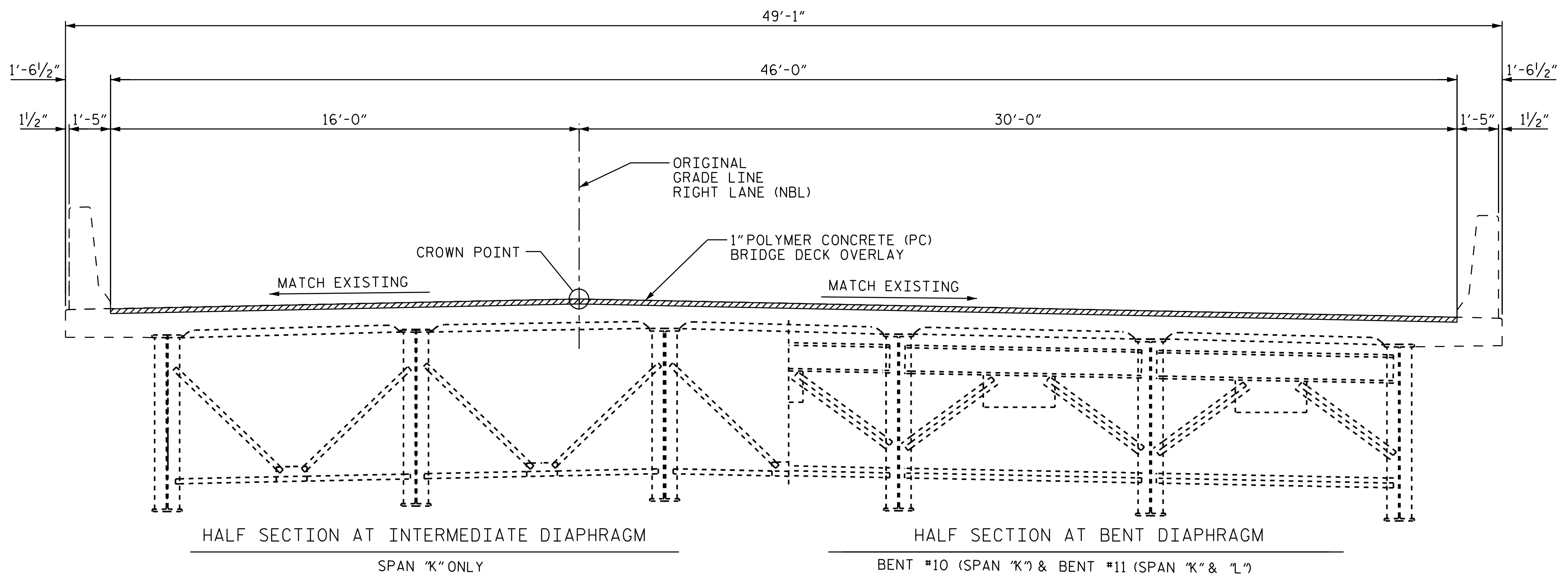
4/24/2024

### NOTES

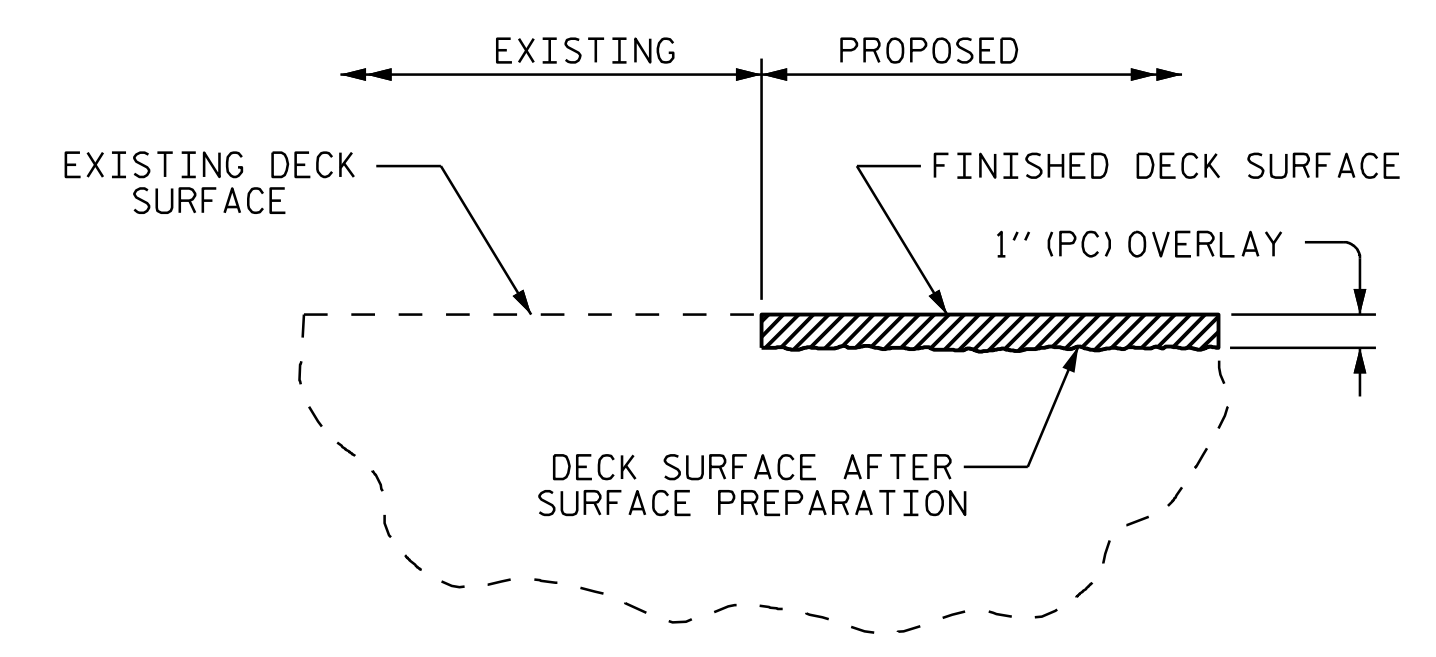
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND POLYMER CONCRETE PLACEMENT.



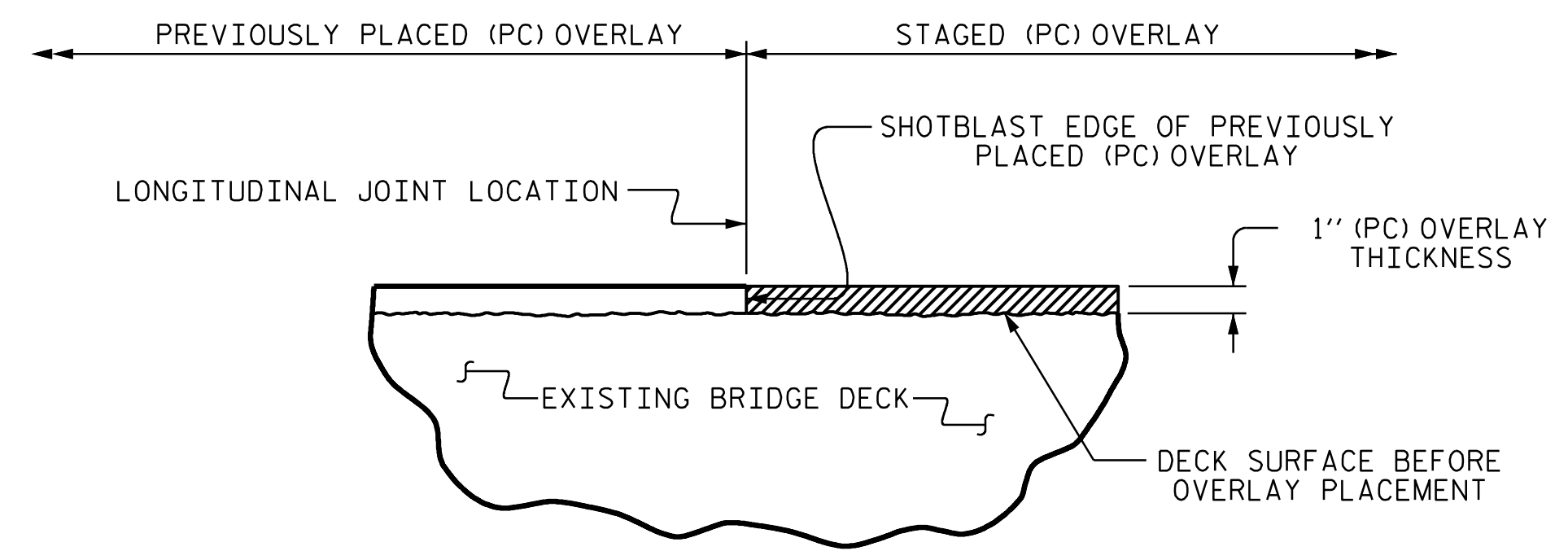
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SPAN "K"



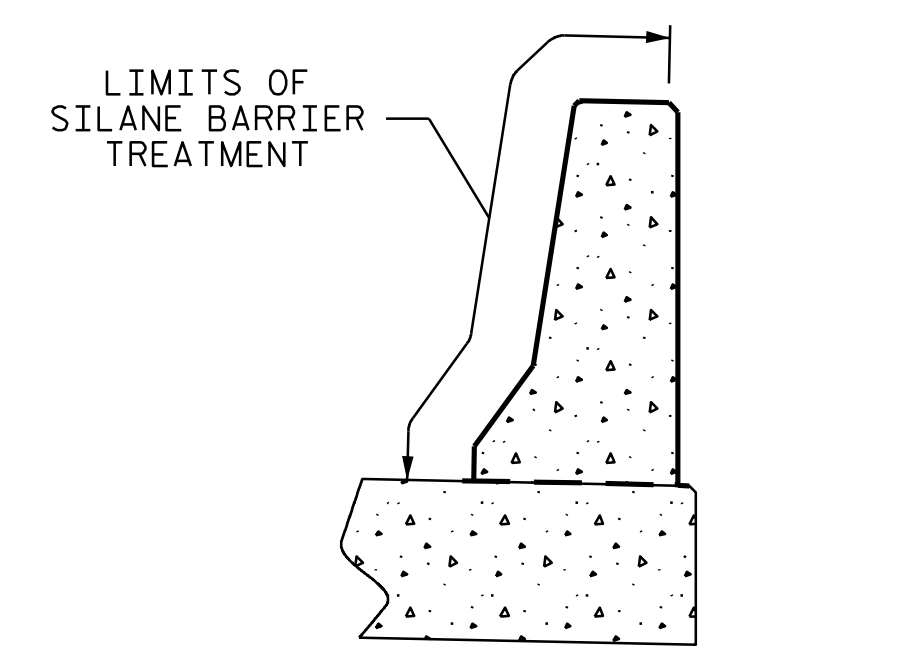
**PROPOSED TYPICAL SECTIONS**  
SPAN "K"



**DETAIL OF POLYMER CONCRETE OVERLAY**



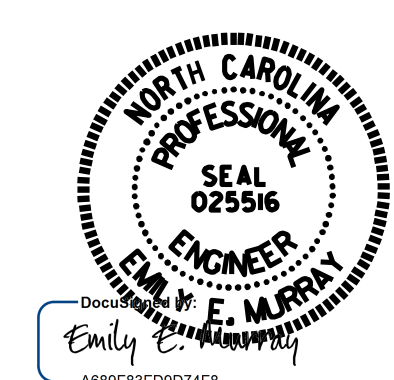
**STAGED POLYMER CONCRETE OVERLAY JOINT**  
(AS NEEDED)



**SILANE BARRIER RAIL TREATMENT**

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
BRIDGE NO.: 180477

SHEET 2 OF 3



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**TYPICAL SECTION AND SURFACE PREPARATION DETAILS**

DRAWN BY : T.MAZARURA DATE : 8/22  
CHECKED BY : D. GLADDEN DATE : 8/22

**VOLKERT**  
5430 Wade Park Blvd., Suite 410  
Raleigh, NC 27607  
Tel: 919-854-0344 Fax: 919-854-0355  
NC License No. F-0765

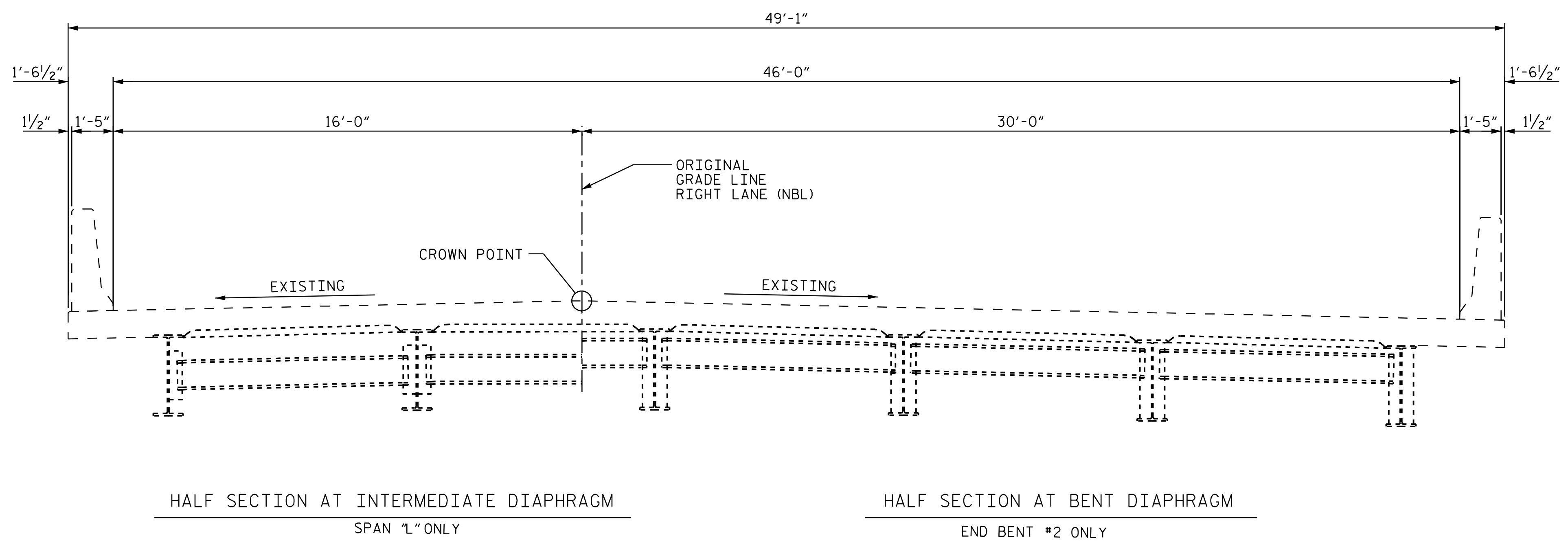
4/24/2024  
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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2			4			TOTAL SHEETS 156

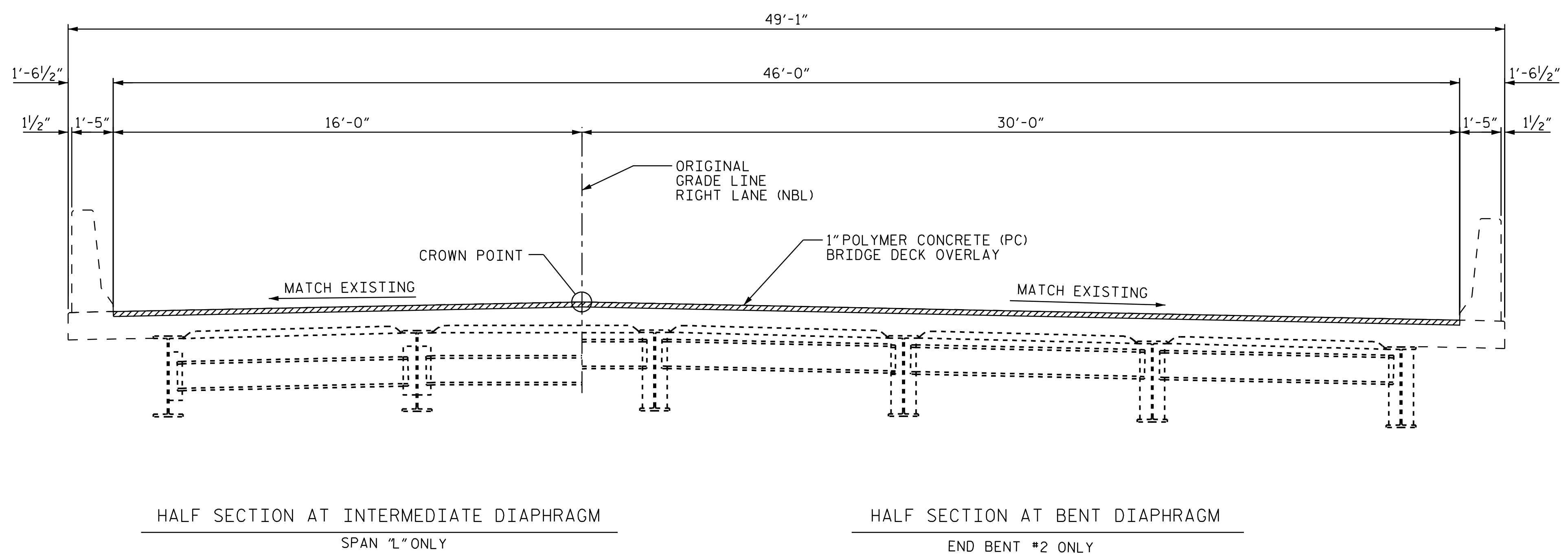


### NOTES

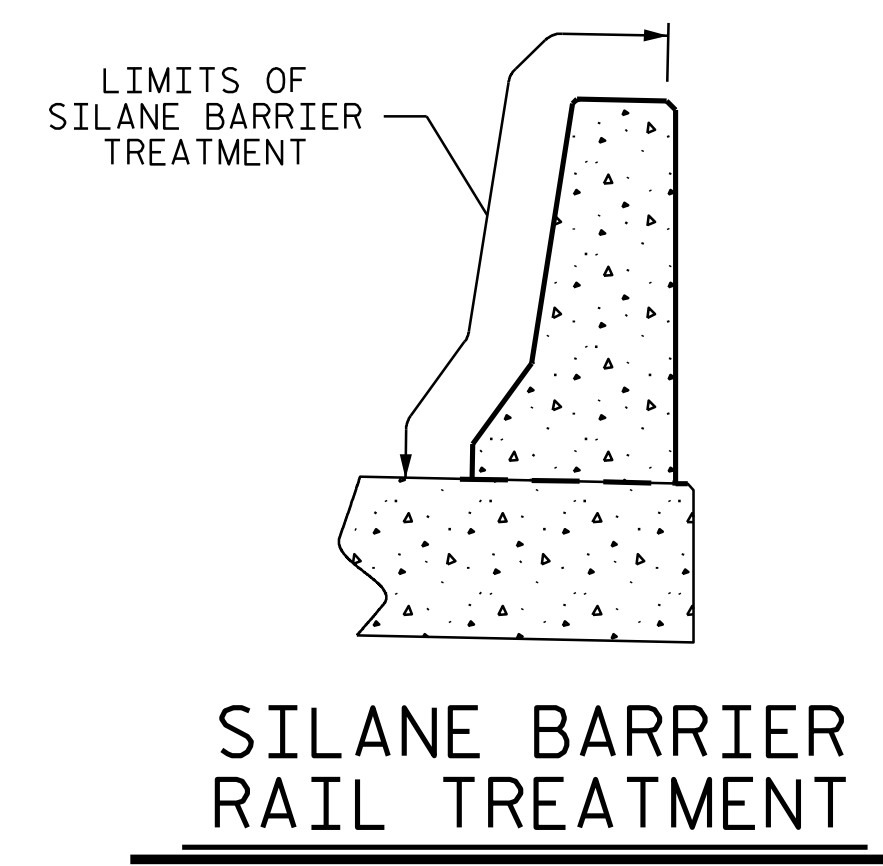
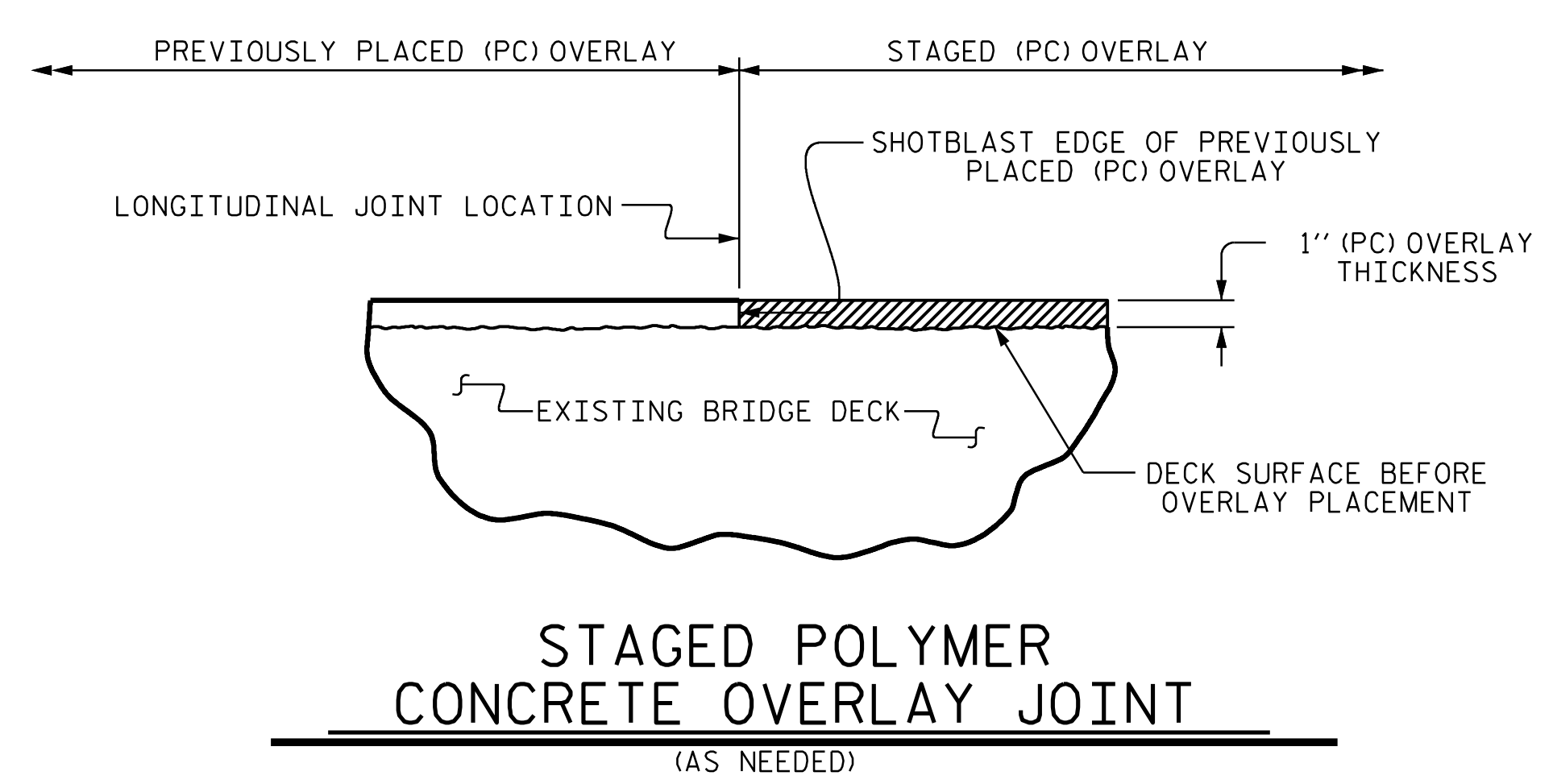
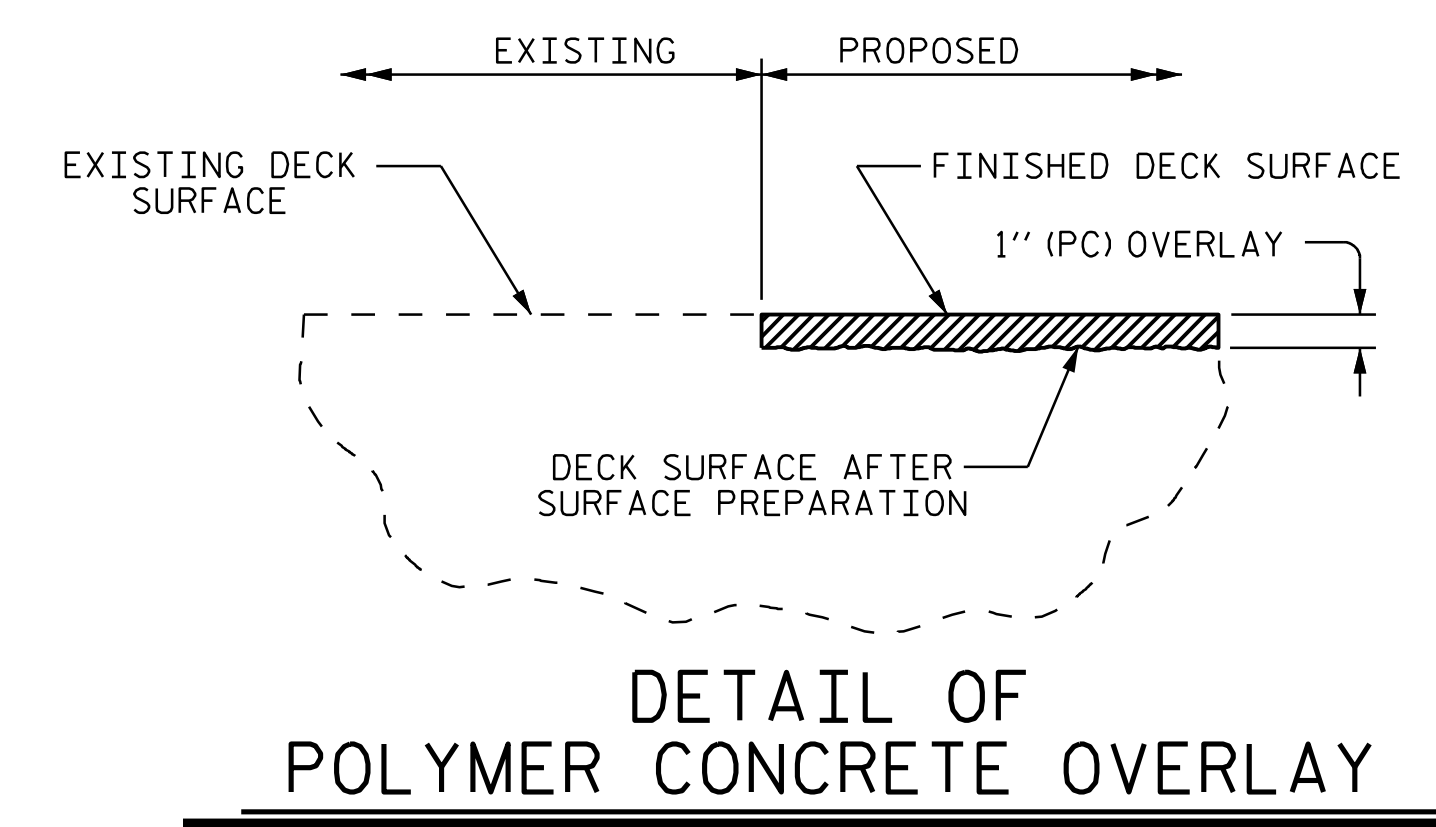
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND POLYMER CONCRETE PLACEMENT.



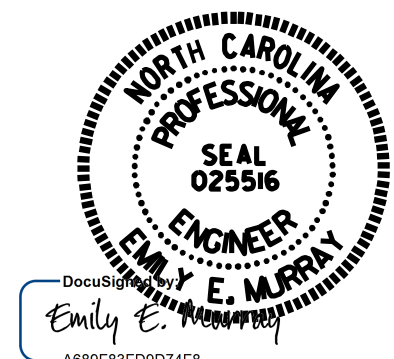
**EXISTING TYPICAL SECTION**  
SPAN "L"



**PROPOSED TYPICAL SECTIONS**  
SPAN "L"



PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
BRIDGE NO.: 180477



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**TYPICAL SECTION AND SURFACE PREPARATION DETAILS**

DRAWN BY : T.MAZARURA DATE : 8/22  
CHECKED BY : D. GLADDEN DATE : 8/22

**VOLKERT**  
5430 Wade Park Blvd., Suite 410  
Raleigh, NC 27607  
Tel: 919-854-0344 Fax: 919-854-0355  
NC License No. F-0765

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-48
1			3			TOTAL SHEETS
2			4			156

4/24/2024

### AS-BUILT REPAIR QUANTITY TABLE

#### TOP OF DECK REPAIRS

#### UNDERSIDE OF DECK REPAIRS

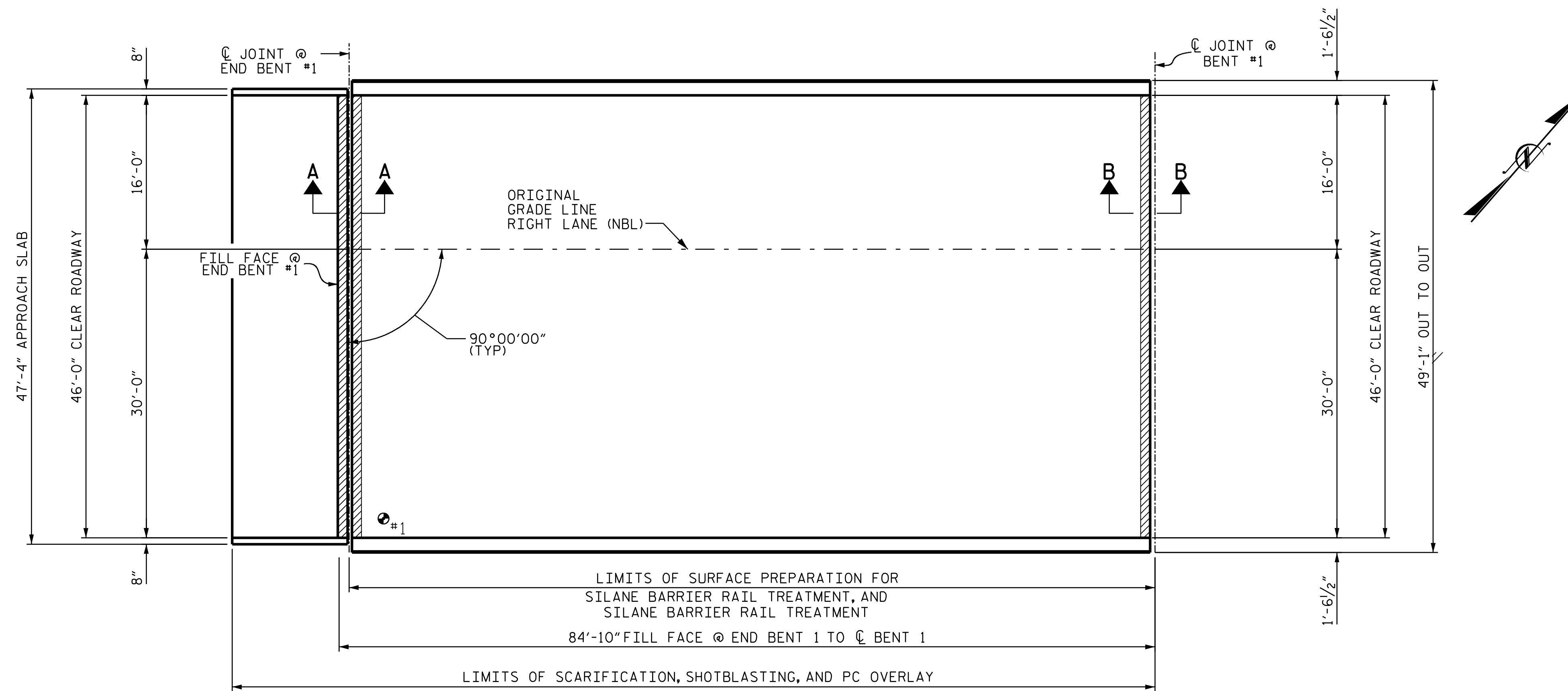
QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR POLYMER OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.

CLASS II SURFACE PREPARATION

UNDERSIDE REPAIR

TEST LOCATION

APPROACH SLAB AT END BENT 1			SPAN A			SHOTCRETE REPAIRS			
	ESTIMATE	ACTUAL		ESTIMATE	ACTUAL	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF		AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF
SCARIFYING BRIDGE DECK	61.3	SY	SCARIFYING BRIDGE DECK	428.3	SY				
SHOTBLASTING OF BRIDGE DECK	61.3	SY	SHOTBLASTING OF BRIDGE DECK	428.3	SY				
CLASS II SURFACE PREPARATION	2.6	SY	CLASS II SURFACE PREPARATION	5.1	SY				
EPOXY RESIN INJECTION	0.0	LF	EPOXY RESIN INJECTION	0.0	LF				
GROOVING BRIDGE FLOORS	508.8	SF	GROOVING BRIDGE FLOORS	3588.7	SF				
CONCRETE DECK REPAIR FOR PC OVERLAY	2.6	SY	CONCRETE DECK REPAIR FOR PC OVERLAY	5.1	SY				
POLYMER CONCRETE MATERIALS	1.7	CY	POLYMER CONCRETE MATERIALS	11.9	CY				
PLACING AND FINISHING POLYMER CONCRETE OVERLAY	61.3	SY	PLACING AND FINISHING POLYMER CONCRETE OVERLAY	428.3	SY				
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	0.0	SF	SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	586.5	SF				
SILANE BARRIER RAIL TREATMENT	0.0	SF	SILANE BARRIER RAIL TREATMENT	586.5	SF				
						ESTIMATE		ACTUAL	
						0.0	LF		



**PLAN OF SPAN A**

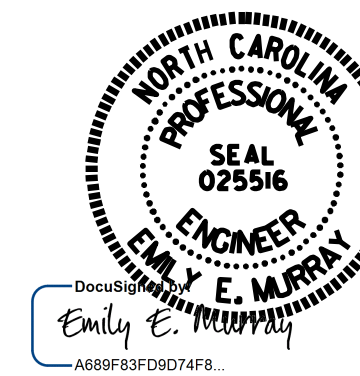
#### NOTES

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.

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

TEST LOCATION	* CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#1	2 1/2"	5250

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 6/01/2022.



4/24/2024

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 1 OF 6

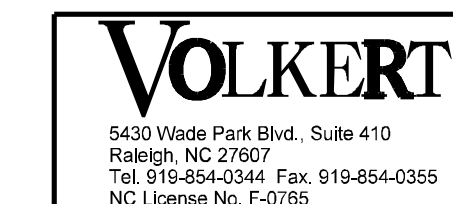
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

### SUPERSTRUCTURE PLAN OF SPAN A

RIGHT LANE (NBL)

DRAWN BY : J.BRYANT DATE : 8/22/22  
 CHECKED BY : D.GLADDEN DATE : 9/2022

22-APR-2024 16:19  
 \*\*\*\*\*DCGN\*\*\*\*\*  
 brent.barnhill AT C-1001568



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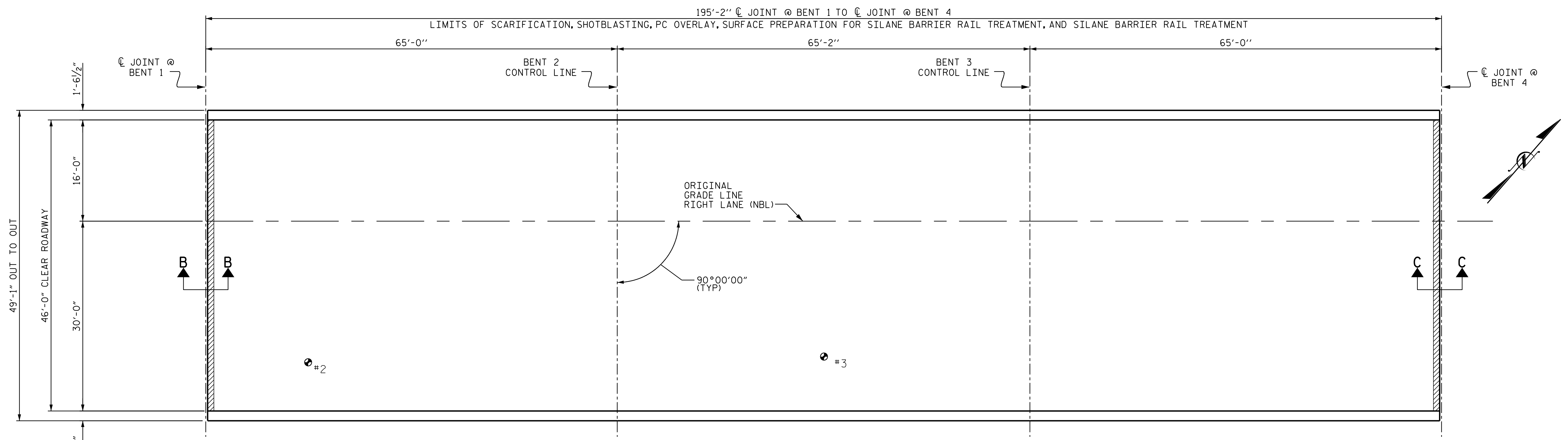
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-49
1			3			TOTAL SHEETS
2			4			156

### AS-BUILT REPAIR QUANTITY TABLE

QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR POLYMER OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.

- CLASS II SURFACE PREPARATION
- UNDERSIDE REPAIR
- TEST LOCATION

TOP OF DECK REPAIRS			UNDERSIDE OF DECK REPAIRS											
	SPAN B-D		SPAN B				SPAN C				SPAN D			
	ESTIMATE	ACTUAL	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
			AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF
SCARIFYING BRIDGE DECK	997.5	SY	SHOTCRETE REPAIRS											
SHOTBLASTING OF BRIDGE DECK	997.5	SY	UNDERSIDE OF DECK											
CLASS II SURFACE PREPARATION	6.0	SY	OVERHANG DIAPHRAGMS											
EPOXY RESIN INJECTION	0.0	LF	UNDERSIDE OF OVERHANG											
GROOVING BRIDGE FLOORS	8377.8	SF	INTERIOR DIAPHRAGMS											
CONCRETE DECK REPAIR FOR PC OVERLAY	6.0	SY												
POLYMER CONCRETE MATERIALS	27.7	CY												
PLACING AND FINISHING POLYMER CONCRETE OVERLAY	997.5	SY												
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	1366.2	SF												
SILANE BARRIER RAIL TREATMENT	1366.2	SF												



PLAN OF SPAN B

PLAN OF SPAN C

PLAN OF SPAN D

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

#### 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.

FOR SECTIONS B-B AND C-C, SEE "JOINT REPAIR DETAILS" SHEET.

TEST LOCATION	* CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
2	2 1/4"	6930
3	2 1/8"	7310

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 6/01/2022.



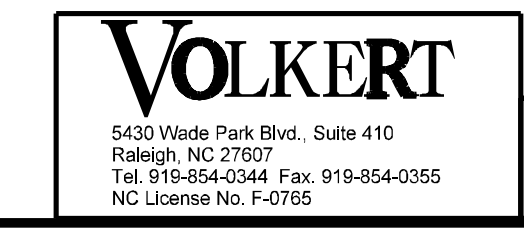
4/24/2024

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

### SUPERSTRUCTURE PLAN OF SPAN B, SPAN C AND SPAN D

RIGHT LANE (NBL)

DRAWN BY : T.MAZARURA DATE : 8/2022  
 CHECKED BY : D.GLADDEN DATE : 9/2022






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NO.	BY:	DATE:	NO.	BY:	DATE:	S-50
1			3			TOTAL SHEETS
2			4			156

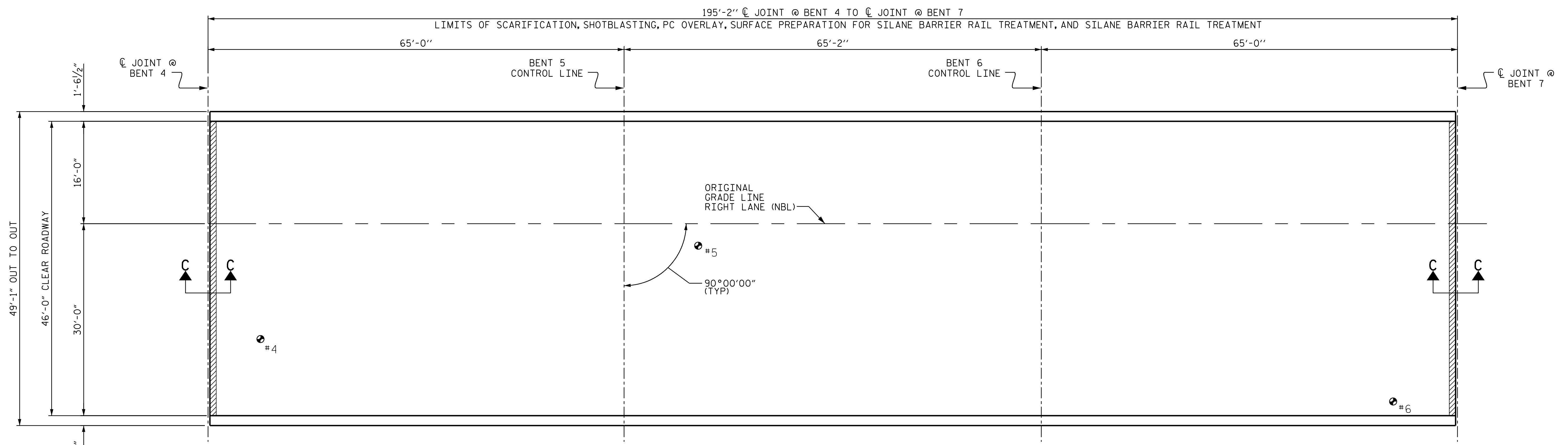


### AS-BUILT REPAIR QUANTITY TABLE

QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR POLYMER OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.

-  CLASS II SURFACE PREPARATION
-  UNDERSIDE REPAIR
-  TEST LOCATION

TOP OF DECK REPAIRS				UNDERSIDE OF DECK REPAIRS										
	SPAN E-G		SHOTCRETE REPAIRS	SPAN E		SPAN F		SPAN G		ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	
	ESTIMATE	ACTUAL		ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL					
			AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF
SCARIFYING BRIDGE DECK	997.5	SY	0.0	0.0			0.0	0.0			0.0	0.0		
SHOTBLASTING OF BRIDGE DECK	997.5	SY	0.0	0.0			0.0	0.0			0.0	0.0		
CLASS II SURFACE PREPARATION	6.8	SY	0.0	0.0			0.0	0.0			0.0	0.0		
EPOXY RESIN INJECTION	0.0	LF	0.0	0.0			0.0	0.0			0.0	0.0		
GROOVING BRIDGE FLOORS	8377.8	SF												
CONCRETE DECK REPAIR FOR PC OVERLAY	6.8	SY												
POLYMER CONCRETE MATERIALS	27.7	CY												
PLACING AND FINISHING POLYMER CONCRETE OVERLAY	997.5	SY												
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	1366.2	SF												
SILANE BARRIER RAIL TREATMENT	1366.2	SF												



PLAN OF SPAN E

PLAN OF SPAN F

PLAN OF SPAN G

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 3 OF 6

#### 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.

FOR SECTIONS C-C, SEE "JOINT REPAIR DETAILS" SHEET.

TEST LOCATION	* CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
4	2 1/4"	5610
5	2 1/4"	7800
6	3"	4730

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 6/01/2022.



4/24/2024

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE  
 PLAN OF SPAN E,  
 SPAN F AND SPAN G**

RIGHT LANE (NBL)

DRAWN BY : T.MAZARURA DATE : 8/2022  
 CHECKED BY : D.GLADDEN DATE : 9/2022

22-APR-2024 16:21

brant.barnhill AT C-1001568

**VOLKERT**  
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 Tel: 919-854-0344 Fax: 919-854-0355  
 NC License No. F-0765

DOCUMENT NOT CONSIDERED  
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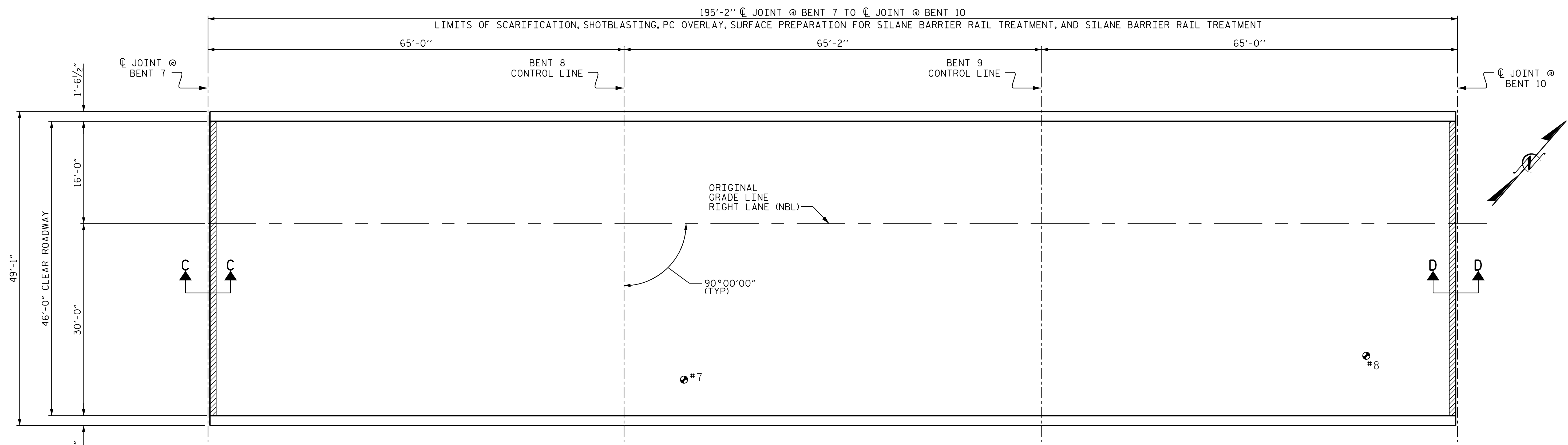
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-51
1			3			TOTAL SHEETS
2			4			156

## AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS				UNDERSIDE OF DECK REPAIRS											
				SPAN H				SPAN I				SPAN J			
				ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
				AREA SF		VOLUME CF		AREA SF		VOLUME CF		AREA SF		VOLUME CF	
SCARIFYING BRIDGE DECK				997.5											
SHOTBLASTING OF BRIDGE DECK				997.5											
CLASS II SURFACE PREPARATION				6.0											
EPOXY RESIN INJECTION				0.0											
GROOVING BRIDGE FLOORS				8377.8											
CONCRETE DECK REPAIR FOR PC OVERLAY				6.0											
POLYMER CONCRETE MATERIALS				27.7											
PLACING AND FINISHING POLYMER CONCRETE OVERLAY				997.5											
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT				1366.2											
SILANE BARRIER RAIL TREATMENT				1366.2											

QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR POLYMER OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.

- CLASS II SURFACE PREPARATION
- UNDERSIDE REPAIR
- TEST LOCATION



PLAN OF SPAN H

PLAN OF SPAN I

PLAN OF SPAN J

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 4 OF 6

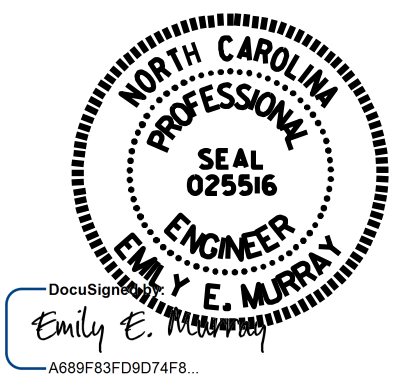
### NOTES

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.

FOR SECTIONS C-C AND D-D, SEE "JOINT REPAIR DETAILS" SHEET.

TEST LOCATION	* CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
7	2 3/8"	5930
8	2 1/4"	6520

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 6/01/2022.



4/24/2024

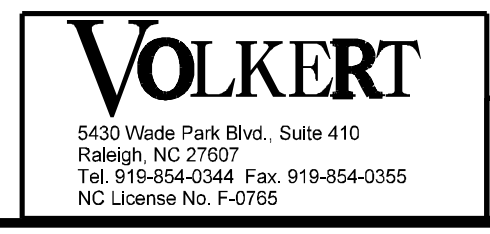
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

### SUPERSTRUCTURE PLAN OF SPAN H, SPAN I AND SPAN J

RIGHT LANE (NBL)

DRAWN BY : T. MAZARURA DATE : 8/2022  
 CHECKED BY : D. GLADDEN DATE : 9/2022

23-APR-2024 18:18  
 brent.barnhill AT C-1001568



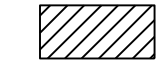


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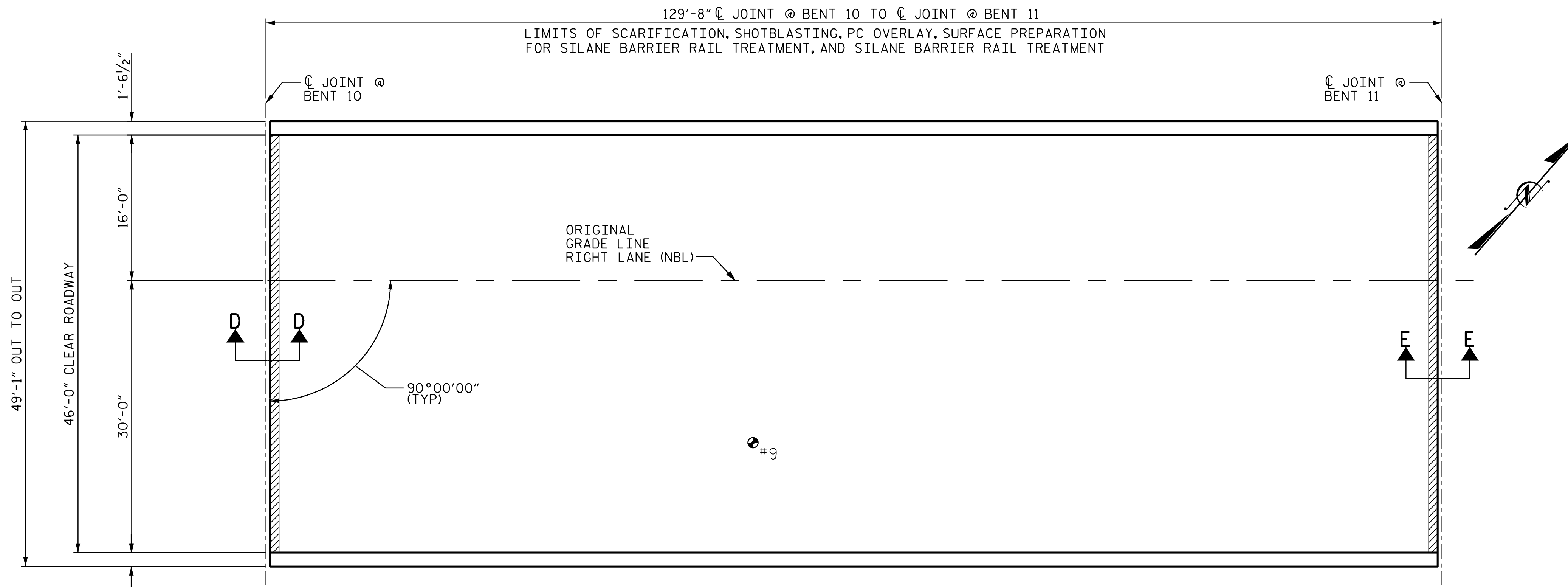
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-52
1			3			TOTAL SHEETS
2			4			156

### AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS			UNDERSIDE OF DECK REPAIRS					
SPAN K			SHOTCRETE REPAIRS		ESTIMATE		ACTUAL	
	ESTIMATE	ACTUAL	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF
SCARIFYING BRIDGE DECK	662.7 SY		0.0	0.0				
SHOTBLASTING OF BRIDGE DECK	662.7 SY		0.0	0.0				
CLASS II SURFACE PREPARATION	5.1 SY		0.0	0.0				
EPOXY RESIN INJECTION	0.0 LF		0.0	0.0				
GROOVING BRIDGE FLOORS	5561.3 SF							
CONCRETE DECK REPAIR FOR PC OVERLAY	5.1 SY							
POLYMER CONCRETE MATERIALS	18.4 CY							
PLACING AND FINISHING POLYMER CONCRETE OVERLAY	662.7 SY							
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	907.7 SF							
SILANE BARRIER RAIL TREATMENT	907.7 SF							
			ESTIMATE		ACTUAL			
			0.0	LF				

QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR POLYMER OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.

-  CLASS II SURFACE PREPARATION
-  UNDERSIDE REPAIR
-  TEST LOCATION



PLAN OF SPAN K

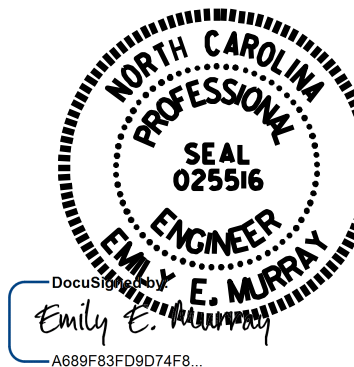
#### NOTES

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FOR SECTIONS D-D AND E-E, SEE "JOINT REPAIR DETAILS" SHEET.

TEST LOCATION	* CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#9	1 1/2"	6380

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 6/01/2022.



4/24/2024

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 5 OF 6

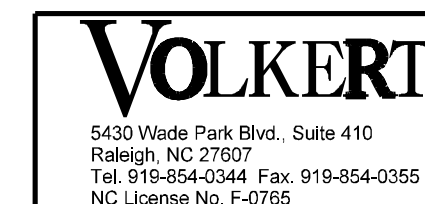
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

### SUPERSTRUCTURE PLAN OF SPAN K

RIGHT LANE (NBL)

DRAWN BY : T.MAZARURA DATE : 8/2022  
 CHECKED BY : D.GLADDEN DATE : 9/2022

22-APR-2024 16:22  
 \*\*\*\*\*DCN\*\*\*\*\*  
 brent.bornhill AT C-1001568



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-53
1			3			TOTAL SHEETS
2			4			156



## AS-BUILT REPAIR QUANTITY TABLE

### TOP OF DECK REPAIRS

### UNDERSIDE OF DECK REPAIRS

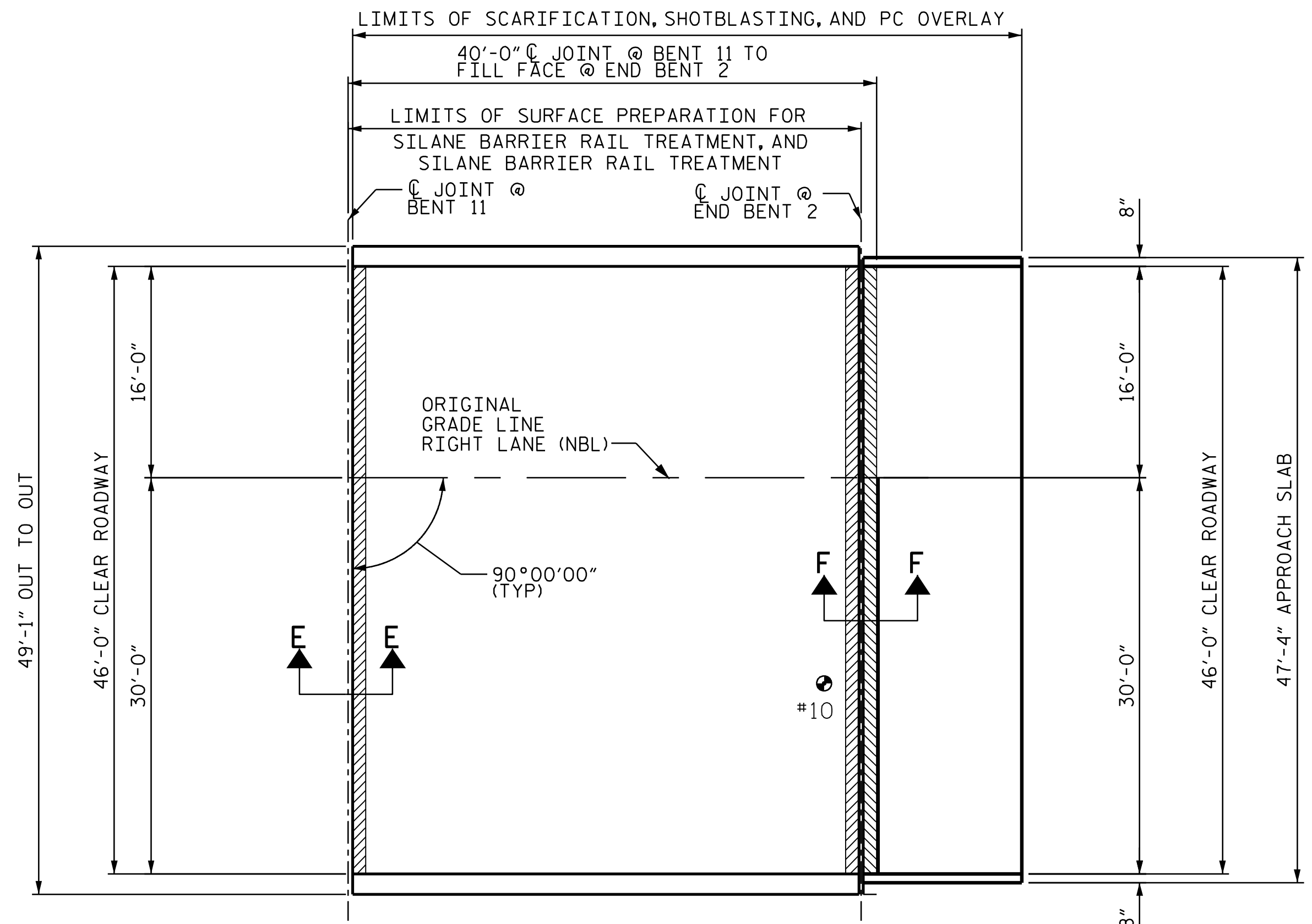
QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR POLYMER OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.

CLASS II SURFACE PREPARATION

UNDERSIDE REPAIR

TEST LOCATION

SPAN L			APPROACH SLAB AT END BENT 2			UNDERSIDE OF DECK REPAIRS			
	ESTIMATE		ACTUAL			ESTIMATE		ACTUAL	
	SY	LF	SF	CY		AREA SF	VOLUME CF	AREA SF	VOLUME CF
SCARIFYING BRIDGE DECK	199.1	SY			SCARIFYING BRIDGE DECK	61.3	SY		
SHOTBLASTING OF BRIDGE DECK	199.1	SY			SHOTBLASTING OF BRIDGE DECK	61.3	SY		
CLASS II SURFACE PREPARATION	5.1	SY			CLASS II SURFACE PREPARATION	2.6	SY		
EPOXY RESIN INJECTION	0.0	LF			EPOXY RESIN INJECTION	0.0	LF		
GROOVING BRIDGE FLOORS	1660.9	SF			GROOVING BRIDGE FLOORS	508.8	SF		
CONCRETE DECK REPAIR FOR PC OVERLAY	5.1	SY			CONCRETE DECK REPAIR FOR PC OVERLAY	2.6	SY		
POLYMER CONCRETE MATERIALS	5.5	CY			POLYMER CONCRETE MATERIALS	1.7	CY		
PLACING AND FINISHING POLYMER CONCRETE OVERLAY	199.1	SY			PLACING AND FINISHING POLYMER CONCRETE OVERLAY	61.3	SY		
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	272.7	SF			SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	0.0	SF		
SILANE BARRIER RAIL TREATMENT	272.7	SF			SILANE BARRIER RAIL TREATMENT	0.0	SF		
						ESTIMATE		ACTUAL	
						0.0	LF		



**PLAN OF SPAN L**

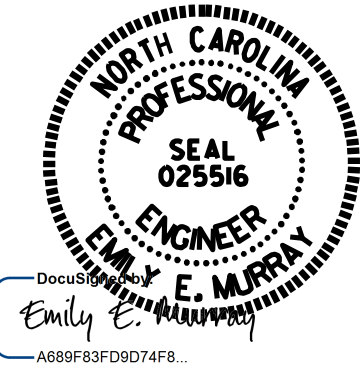
### NOTES

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.

FOR SECTIONS E-E AND F-F, SEE "JOINT REPAIR DETAILS" SHEET.

TEST LOCATION	* CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#10	2 5/8"	6940

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 6/01/2022.



4/24/2024

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

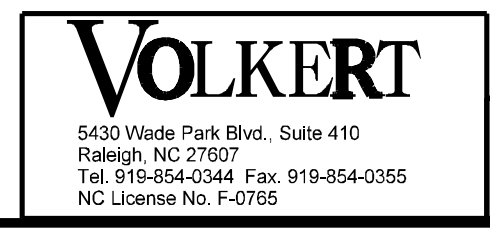
SHEET 6 OF 6

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

## SUPERSTRUCTURE PLAN OF SPAN L

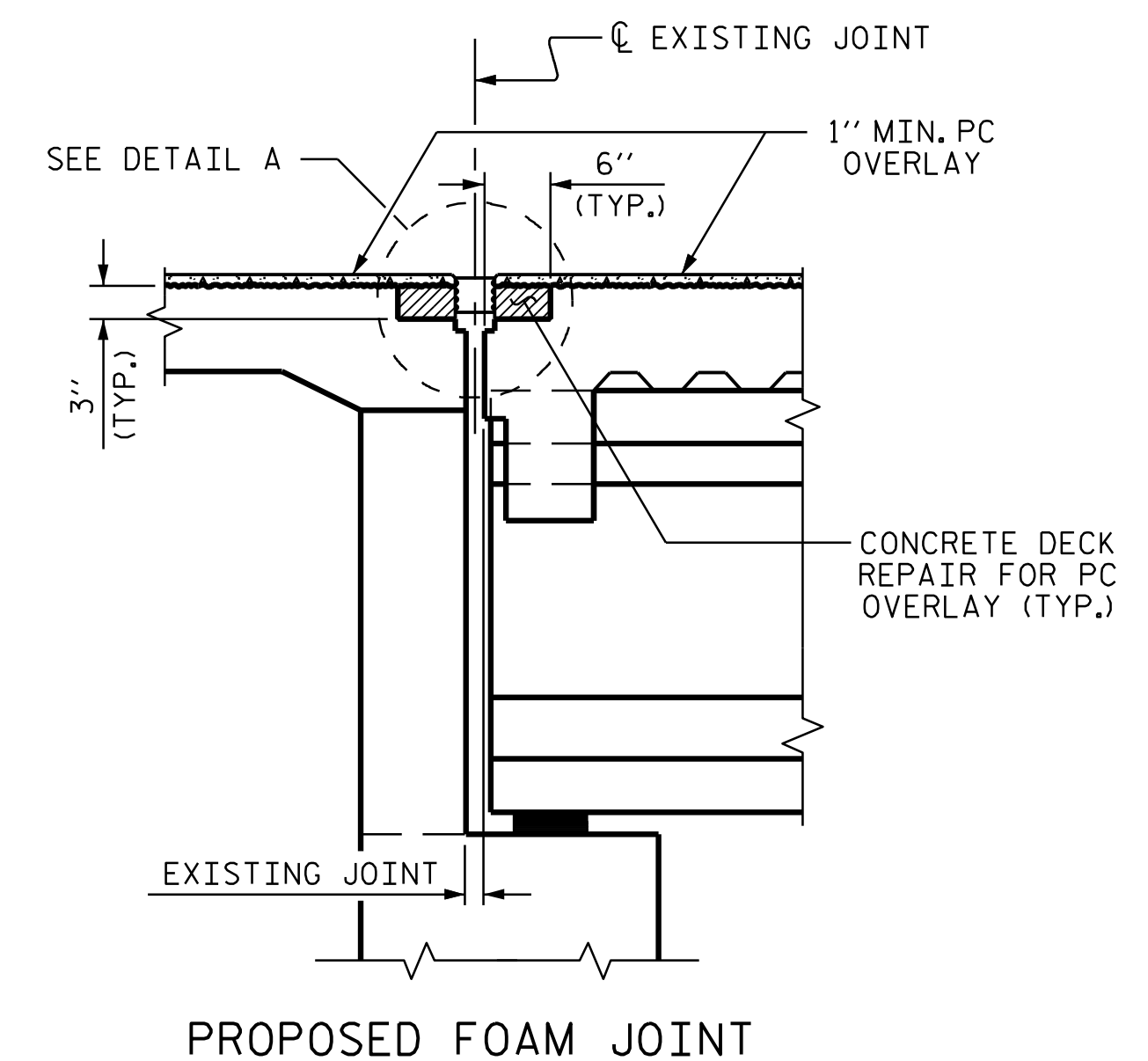
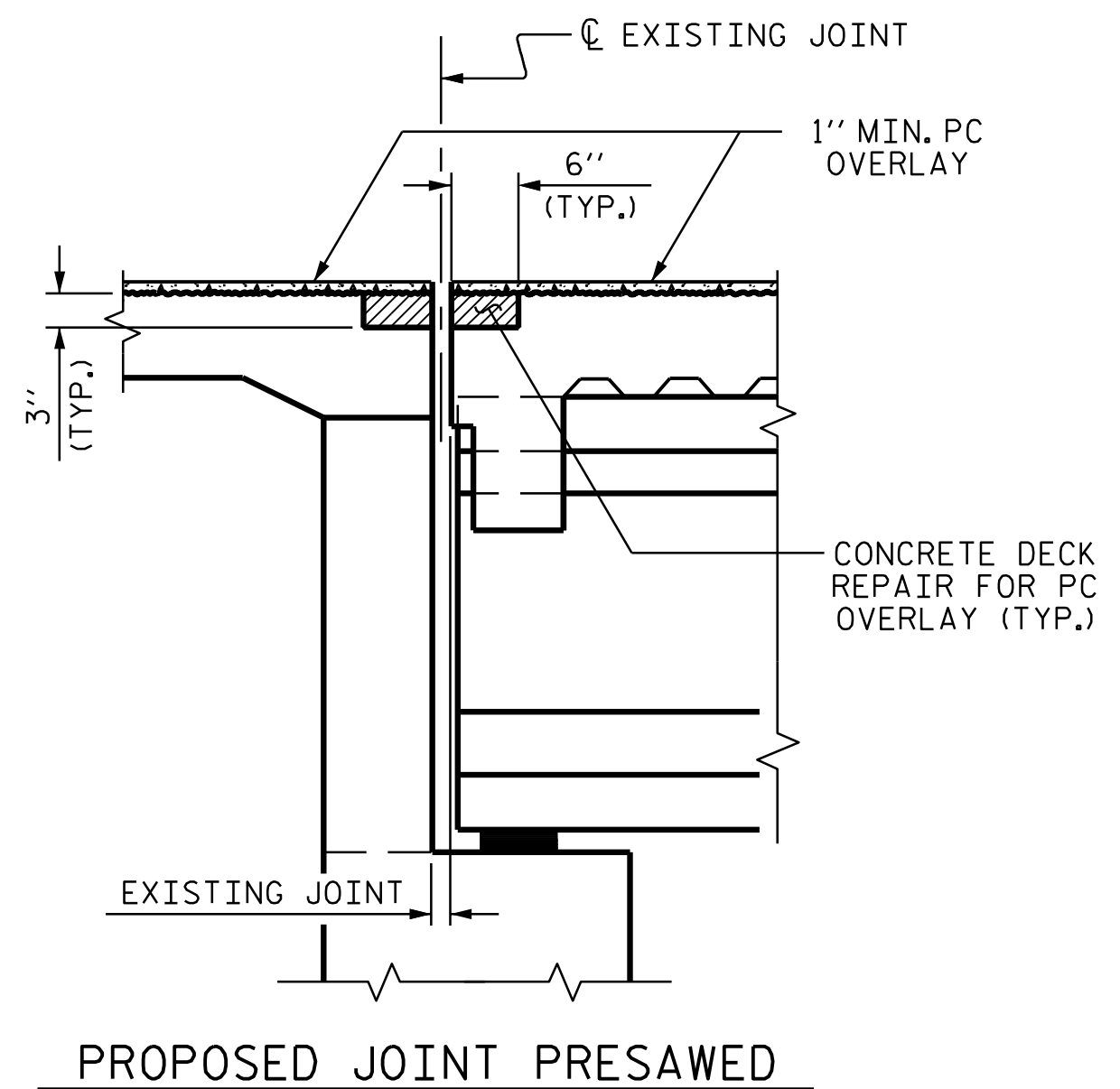
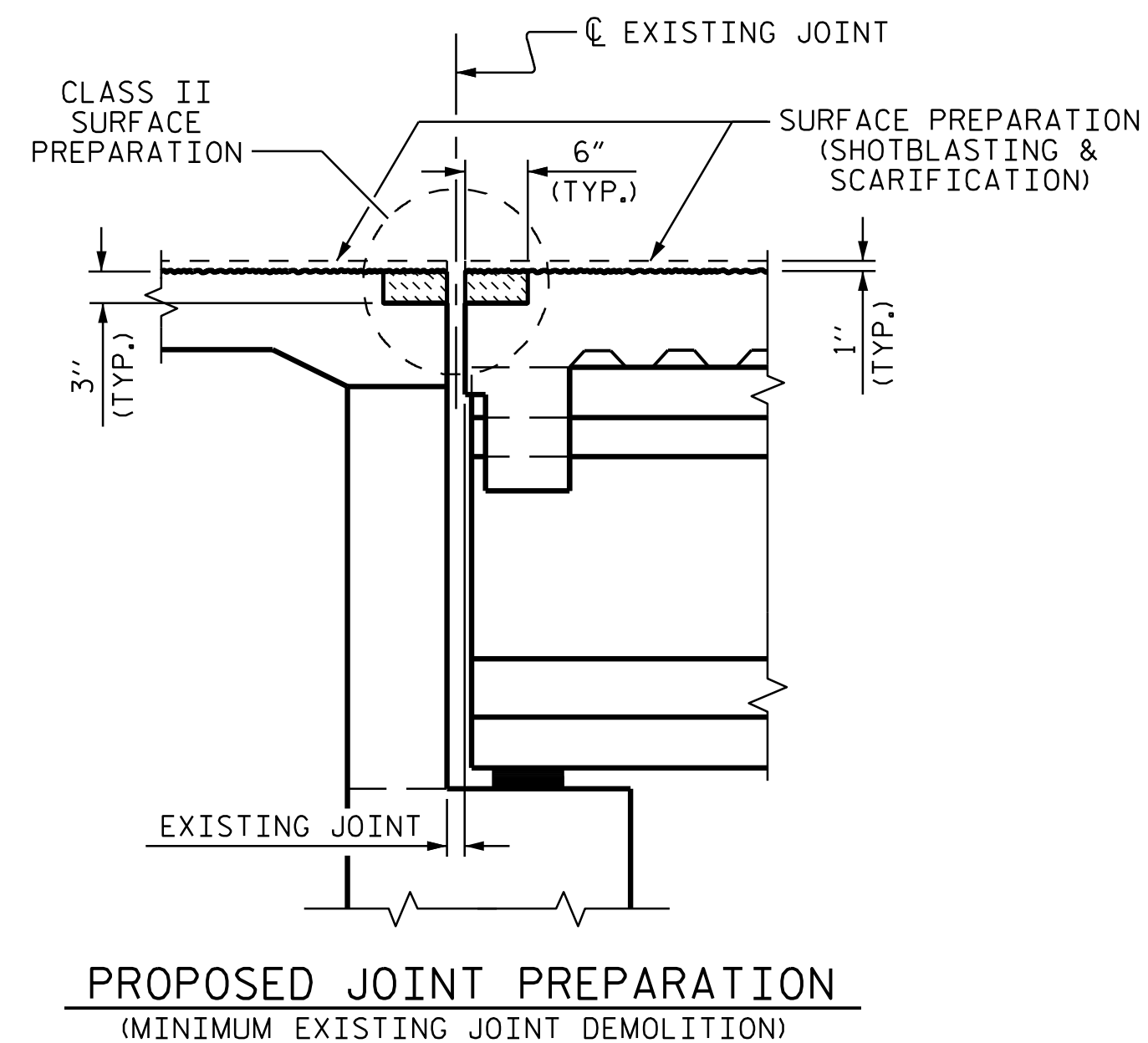
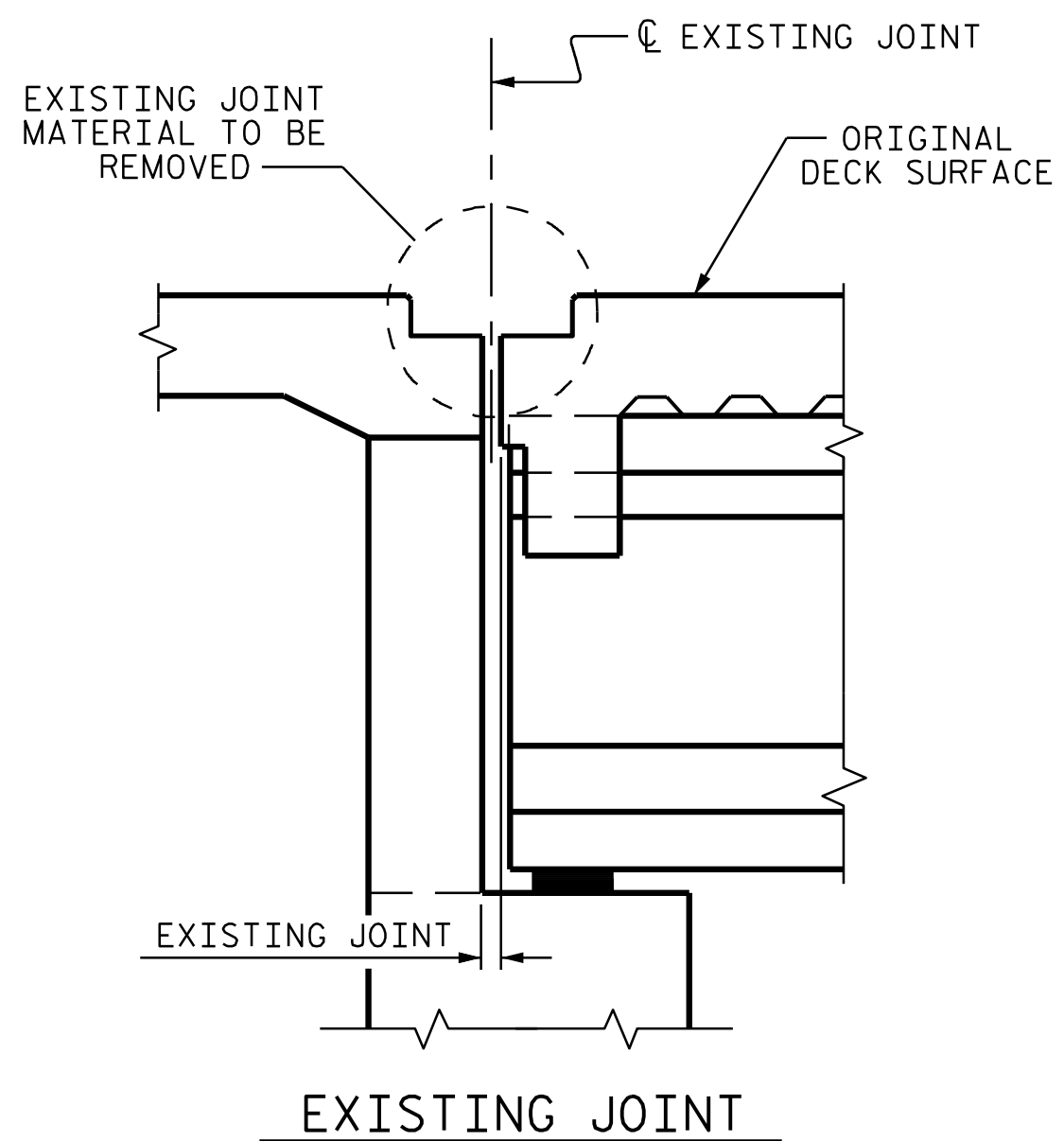
RIGHT LANE (NBL)

DRAWN BY : T. MAZARURA DATE : 8/2022  
 CHECKED BY : D. GLADDEN DATE : 9/2022



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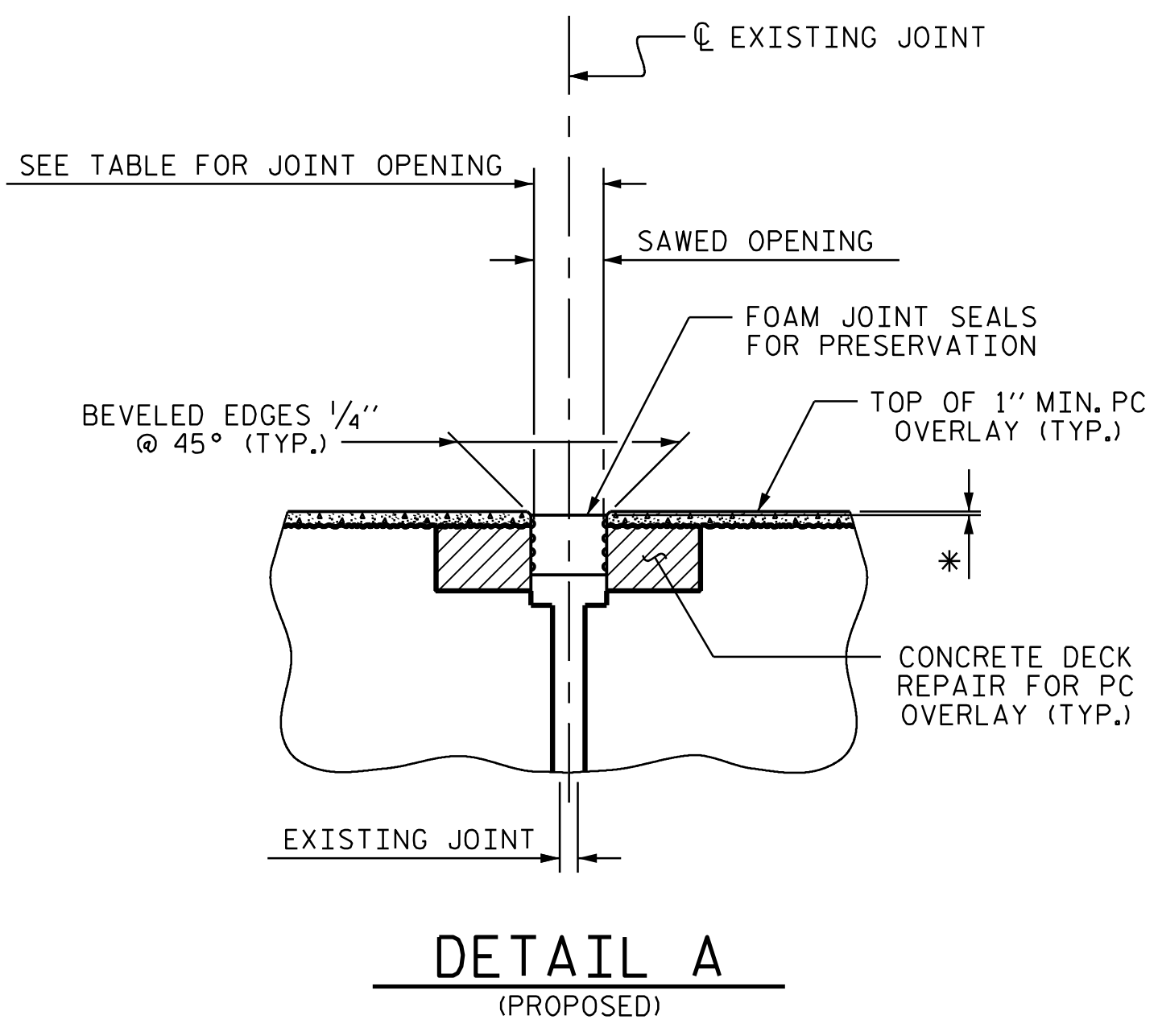
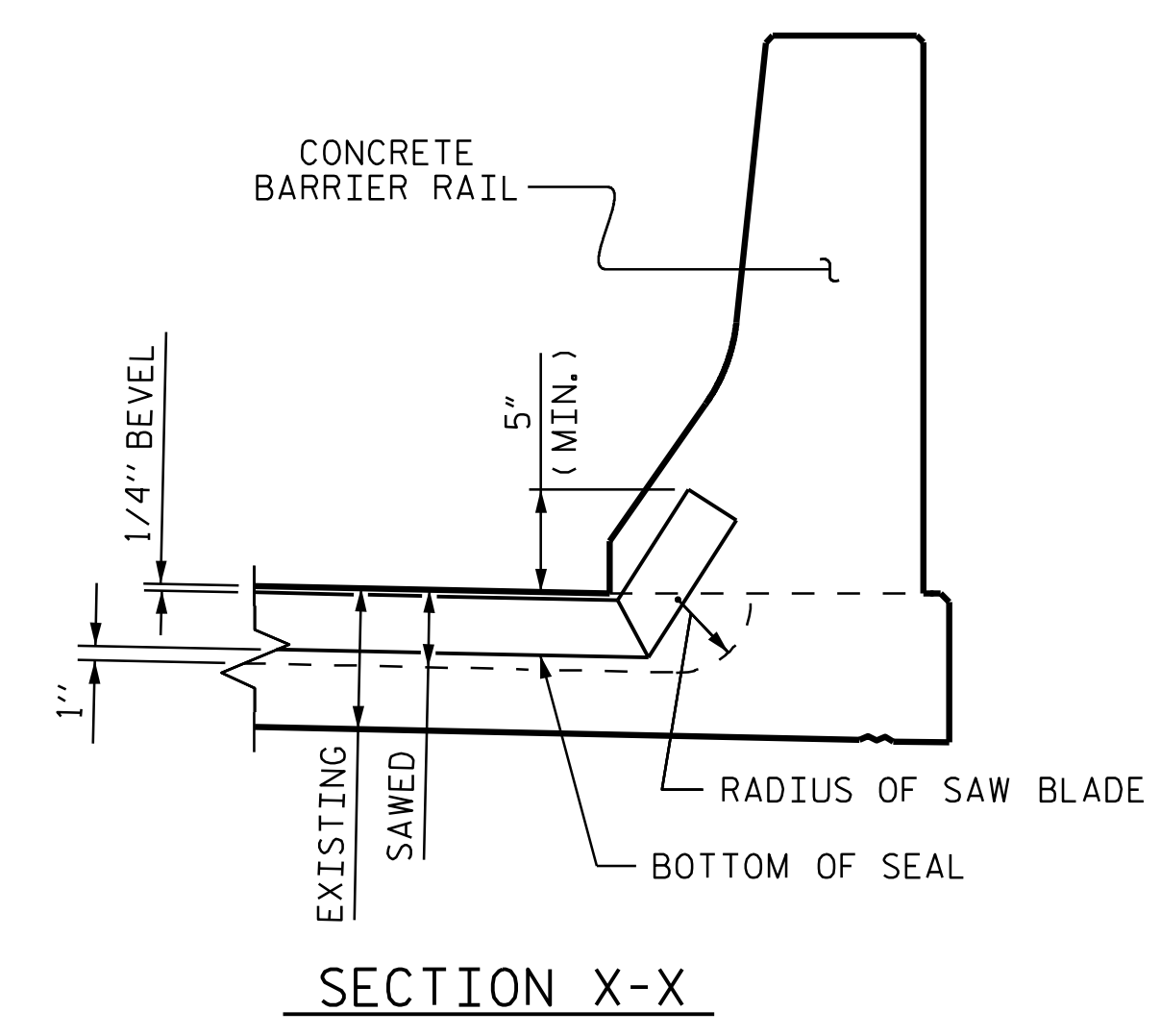
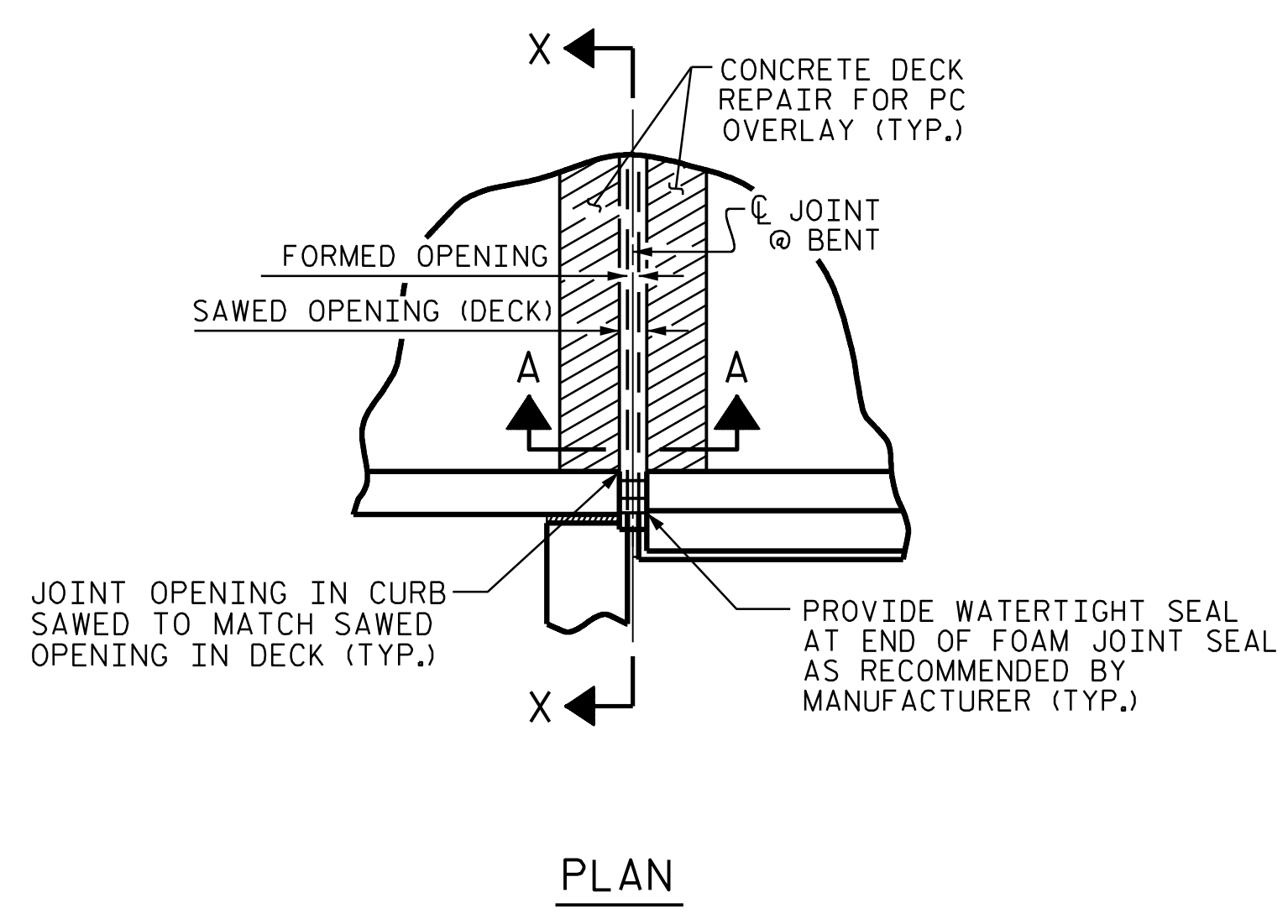
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-54
1			3			TOTAL SHEETS
2			4			156



**JOINT INSTALLATION SEQUENCE AT END BENT 1 (SECTION A-A)**

**NOTES**

- THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDER 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.
- THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL BASED ON JOINT OPENINGS.
- 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 LOCATION OF SECTION A-A, SEE PLAN OF SPAN SHEETS.
- FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.



**JOINT SEAL DETAILS @ END BENT 1**

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

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

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO: 180477

SHEET 1 OF 6

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**JOINT REPAIR  
 DETAILS AT  
 END BENT 1**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-55
1			3			TOTAL SHEETS
2			4			156

JOINT REPAIR QUANTITY	
LOCATION	FOAM JOINT SEALS FOR PRESERVATION ESTIMATED (LIN. FT.)
END BENT 1	47.0

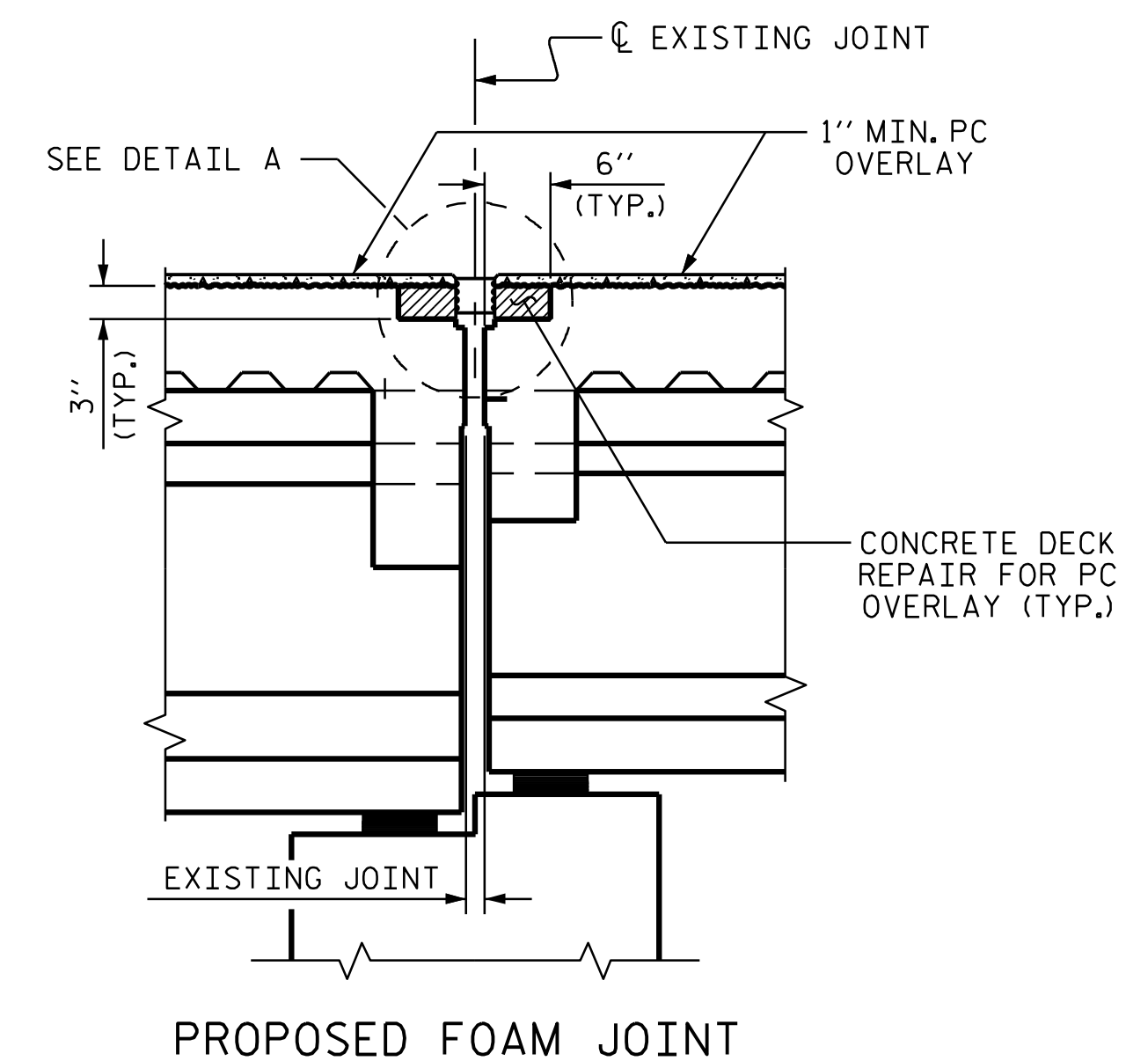
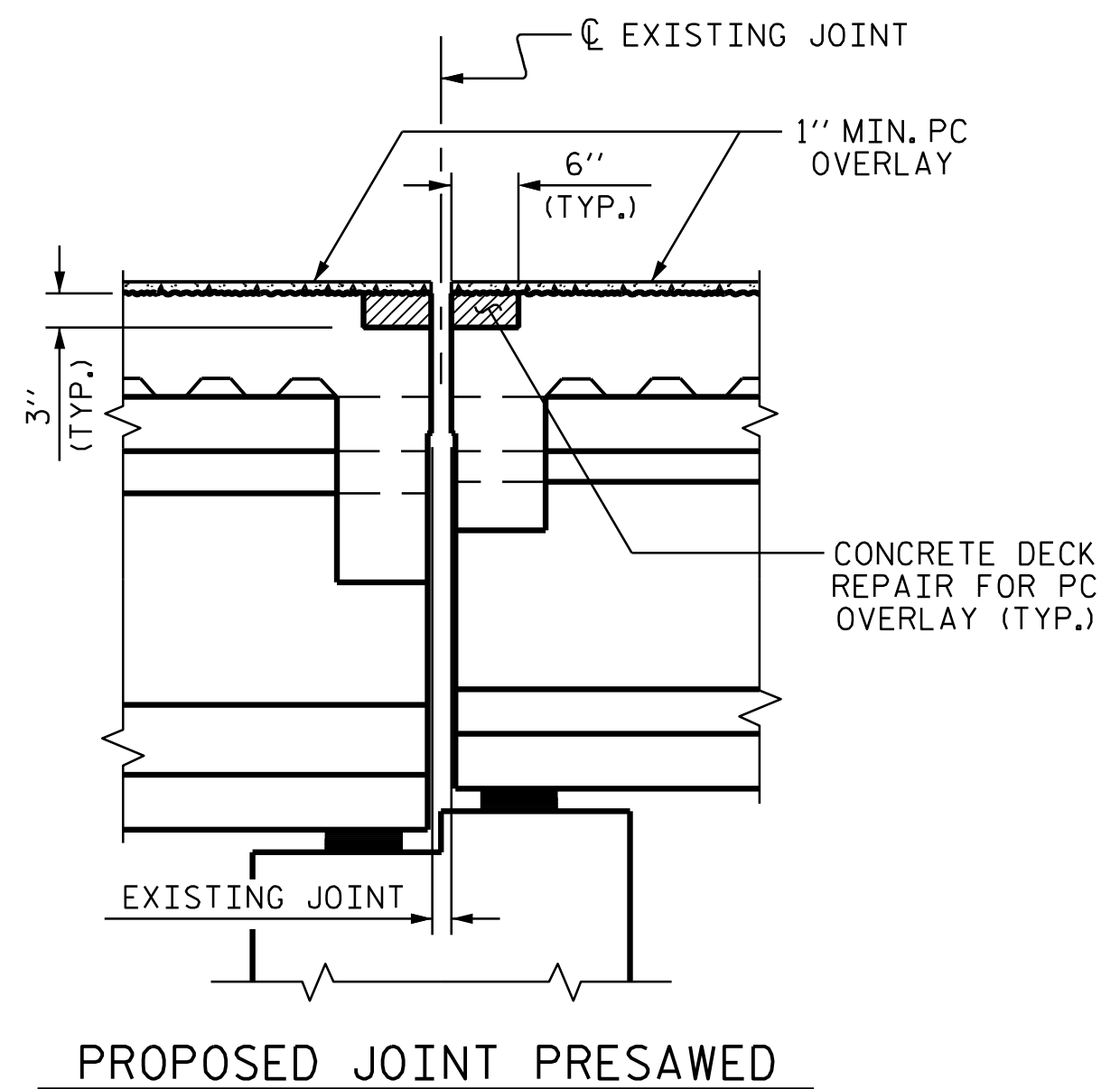
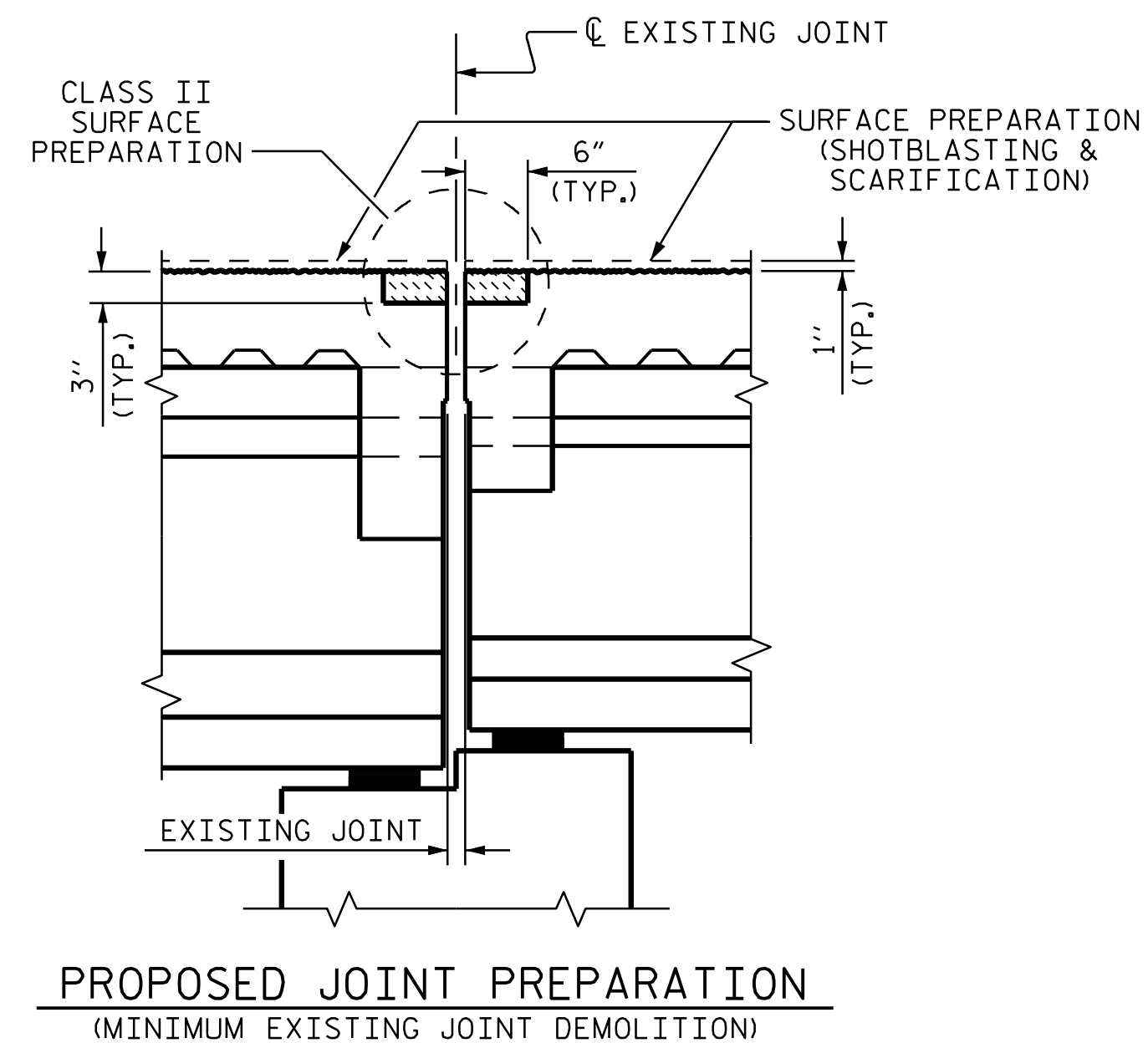
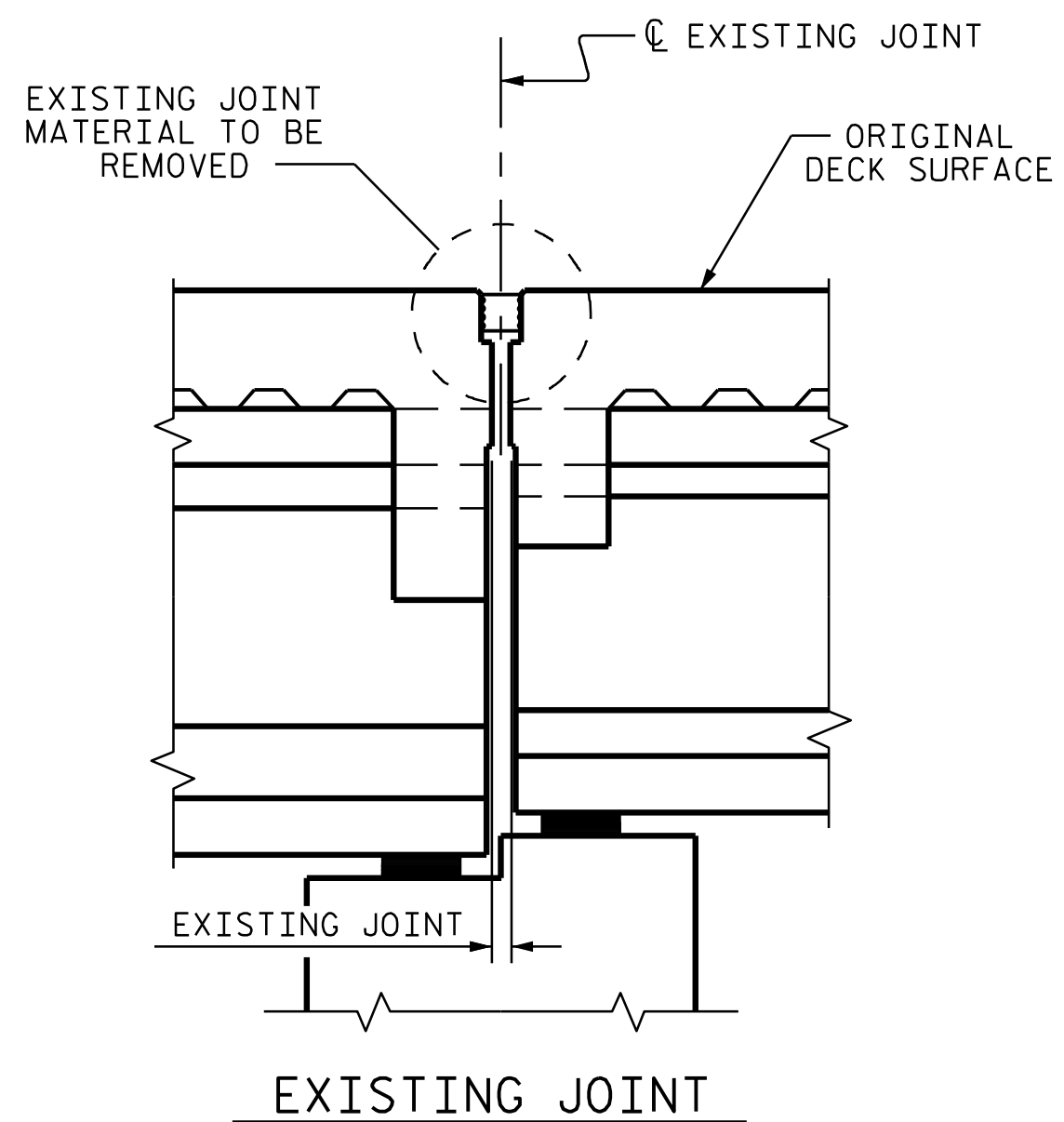
SAWED JOINT OPENING TABLE				
LOCATION	SKEW ANGLE	PERPENDICULAR JOINT OPENING AT 45°	PERPENDICULAR JOINT OPENING AT 60°	PERPENDICULAR JOINT OPENING AT 90°
END BENT 1	90°00'00"	1 9/16"	1 9/16"	1 9/16"

DRAWN BY : D. A. GLADDEN DATE : 5/23  
 CHECKED BY : E. E. MURRAY DATE : 3/24

**VOLKERT**  
 5430 Wade Park BLVD, Suite 410  
 Raleigh, NC 27607  
 Tel: 919-854-0344 Fax: 919-854-0355  
 NC License No. F-0765

Professional Engineer  
 SEAL 025516  
 EMILY E. MURRAY  
 4/24/2024

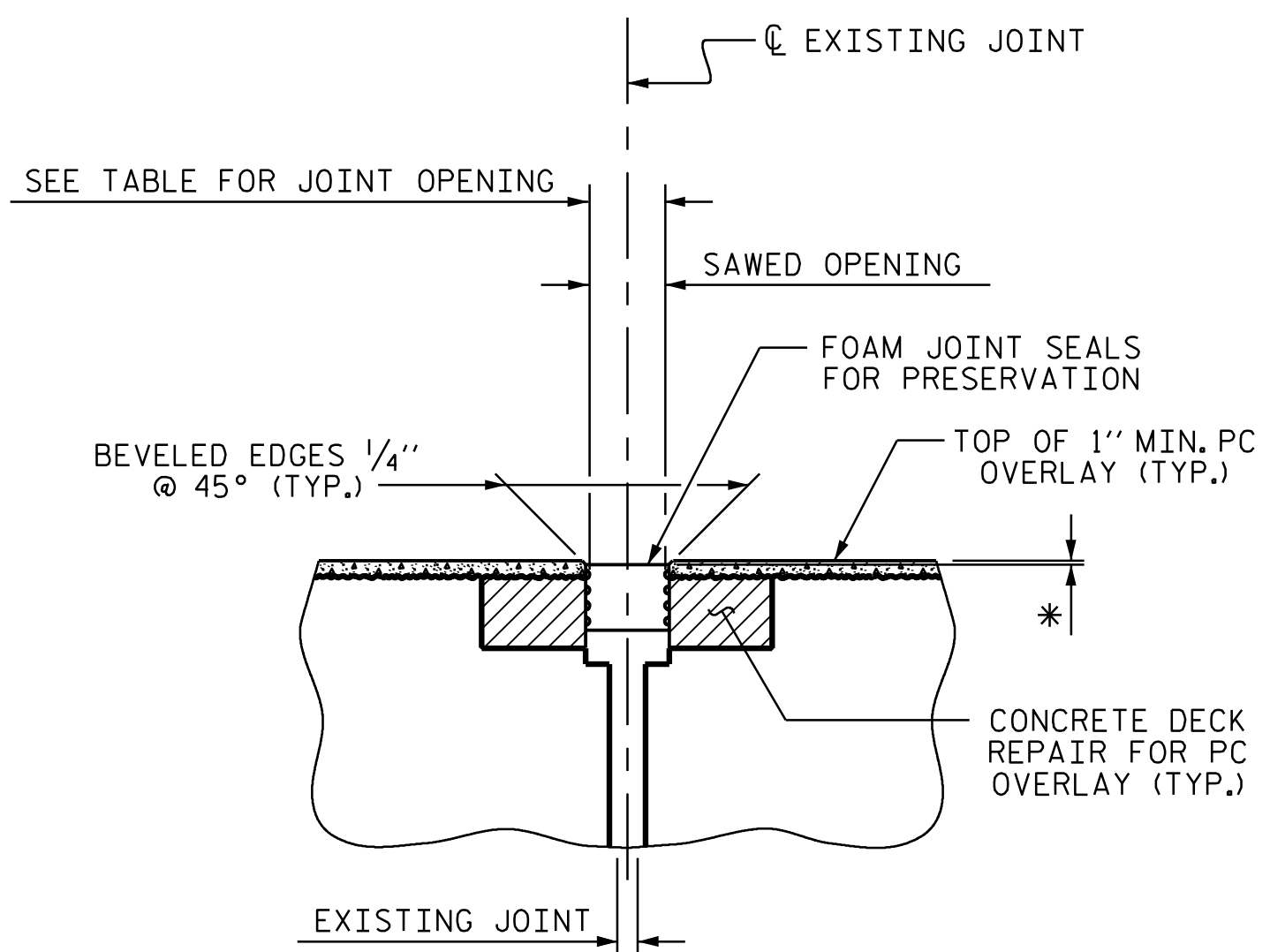
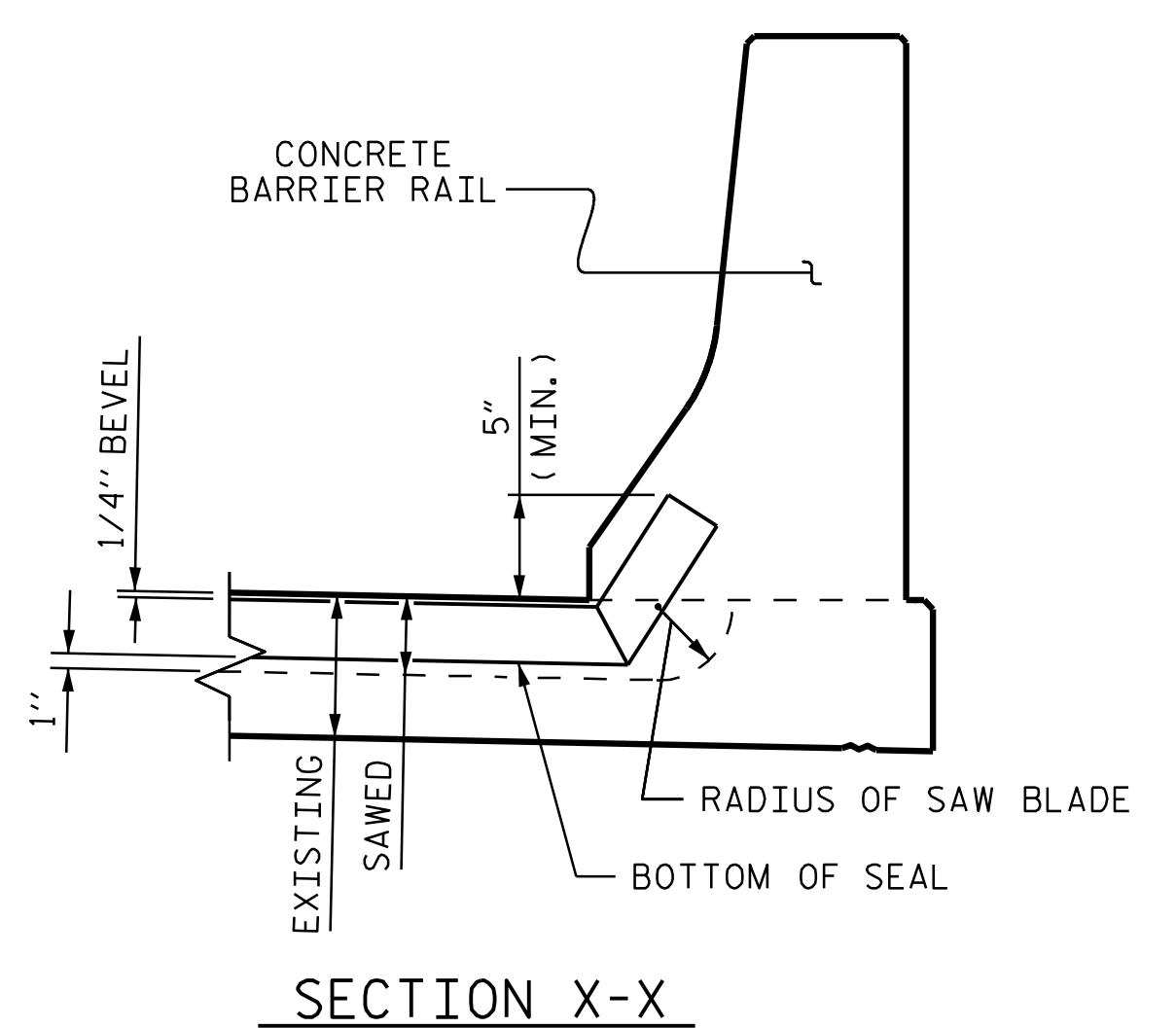
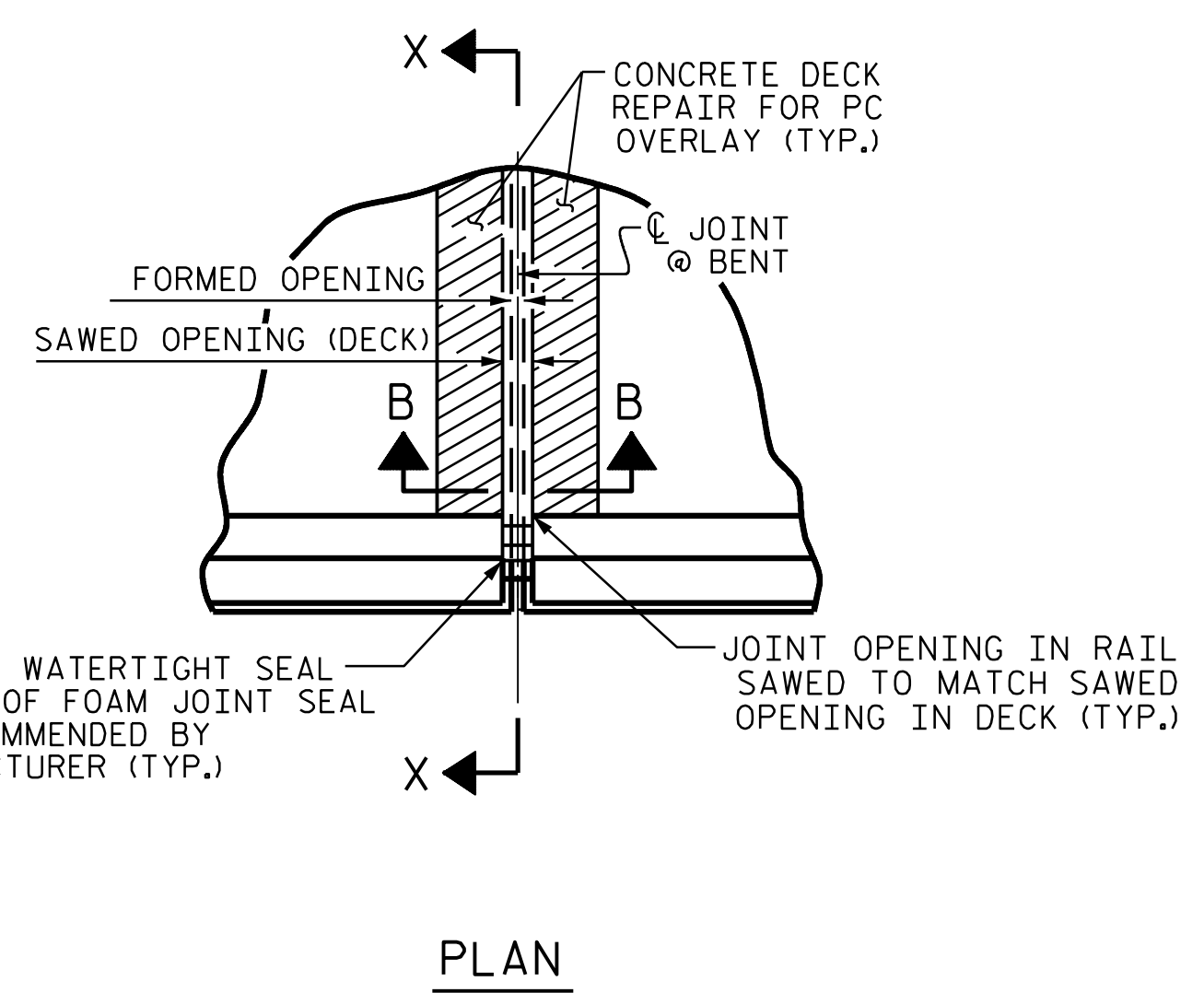




**JOINT INSTALLATION SEQUENCE AT BENT 1 (SECTION B-B)**

**NOTES**

- THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDER 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.
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- 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 LOCATION OF SECTION B-B, SEE PLAN OF SPAN SHEETS.
- FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.



**JOINT SEAL DETAILS @ BENT 1**

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

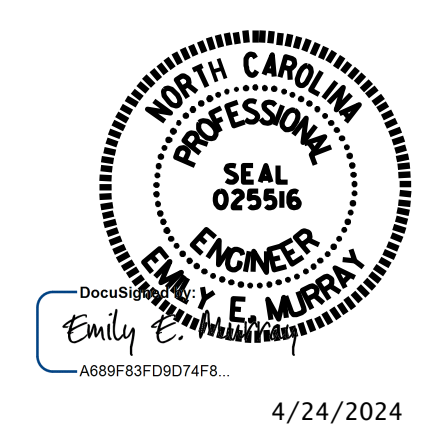
\* FOAM JOINT SEALS FOR PRESERVATION SHALL BE RECESSED AS PER MANUFACTURER'S RECOMMENDATIONS.

PROJECT NO. 15BPR.130  
 CHATHAM COUNTY  
 BRIDGE NO: 180477

SHEET 2 OF 6

JOINT REPAIR QUANTITY	
LOCATION	FOAM JOINT SEALS FOR PRESERVATION ESTIMATED (LIN. FT.)
BENT 1	47.0

SAWED JOINT OPENING TABLE				
LOCATION	SKEW ANGLE	PERPENDICULAR JOINT OPENING AT 45°	PERPENDICULAR JOINT OPENING AT 60°	PERPENDICULAR JOINT OPENING AT 90°
BENT 1	90°00'00"	2 1/2"	2 5/16"	1 5/16"



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**JOINT REPAIR DETAILS AT BENT 1**

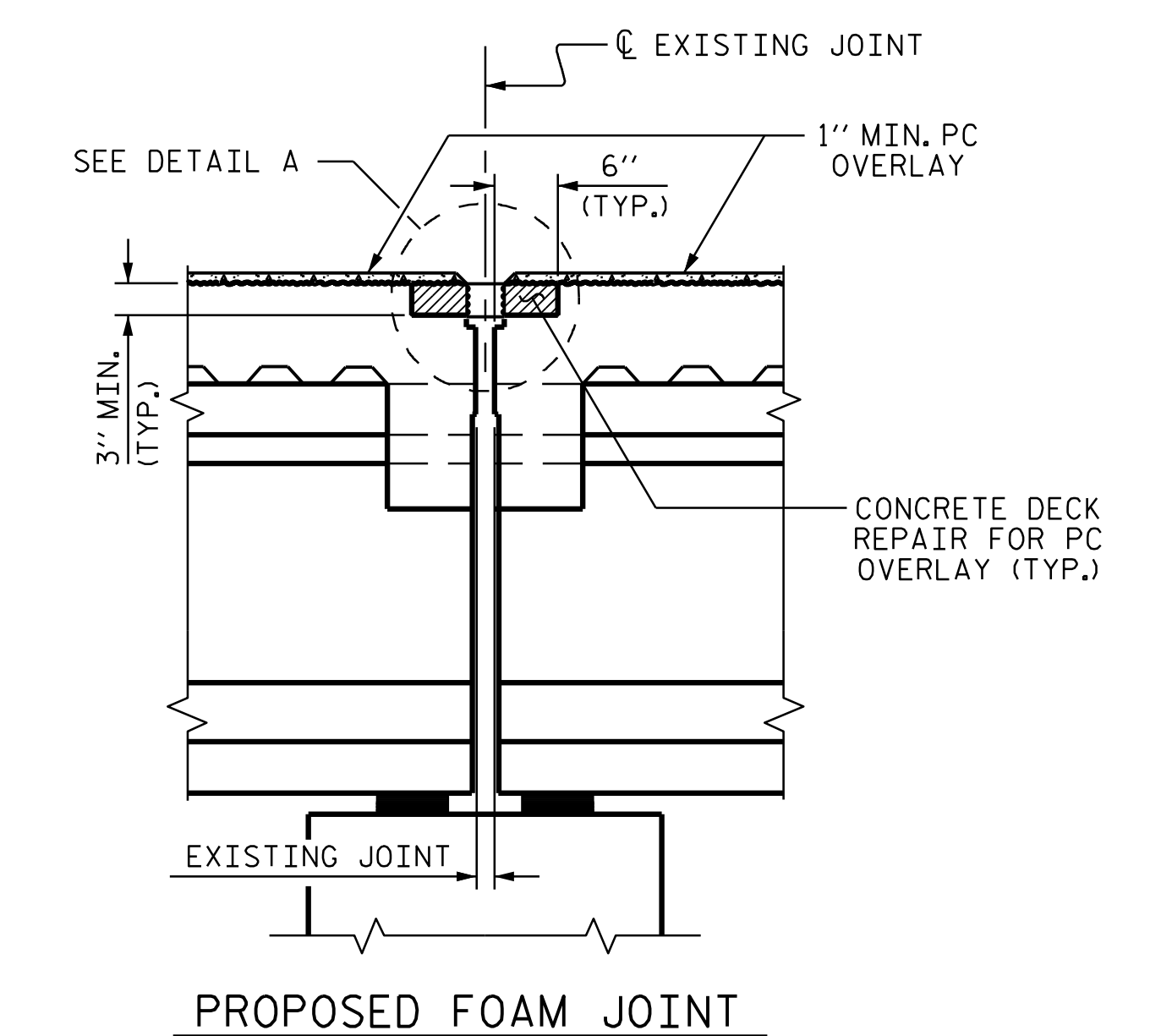
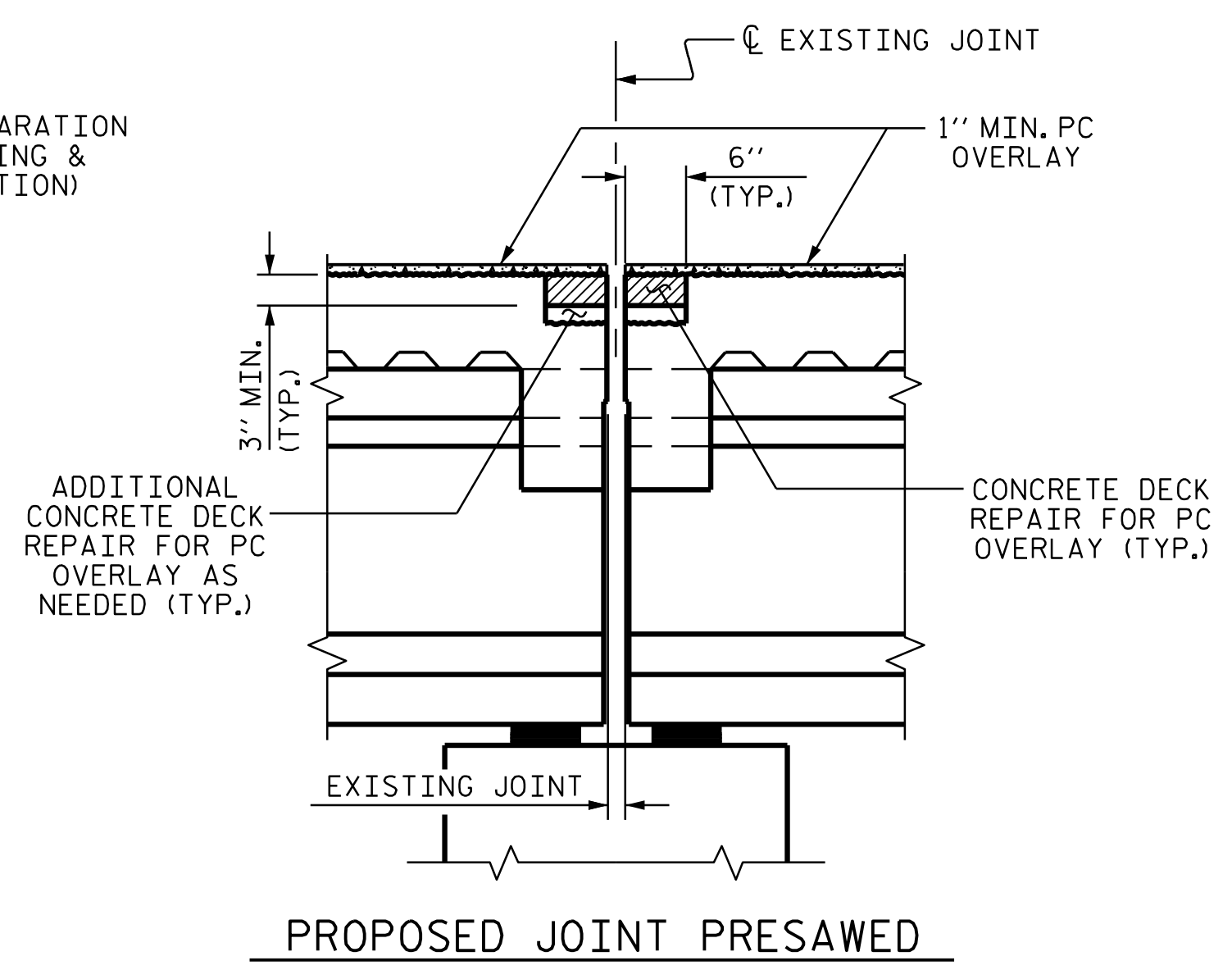
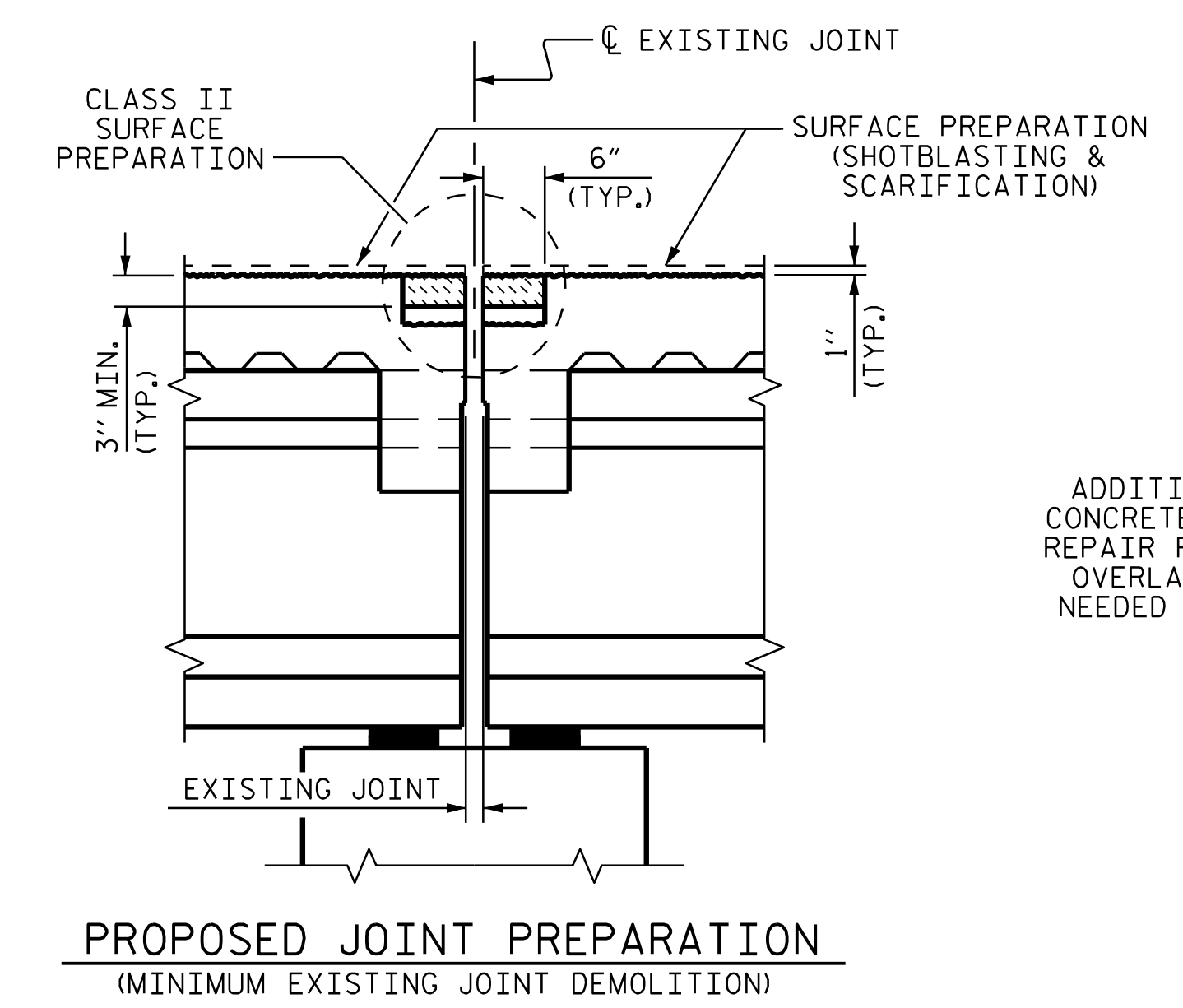
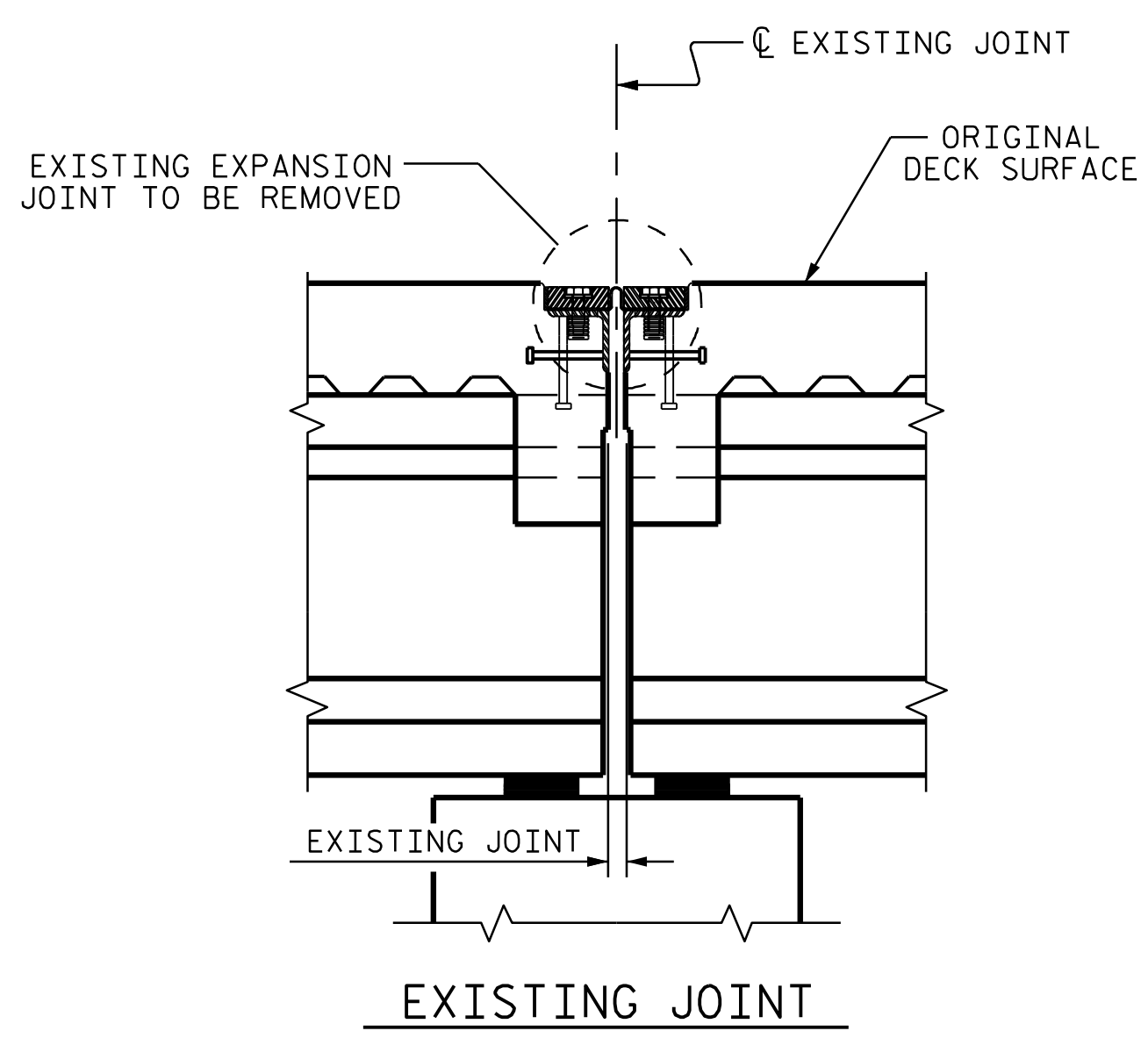
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-56
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : D. A. GLADDEN DATE : 5/23  
 CHECKED BY : E. E. MURRAY DATE : 3/24

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 Raleigh, NC 27607  
 Tel: 919-854-0344 Fax: 919-854-0355  
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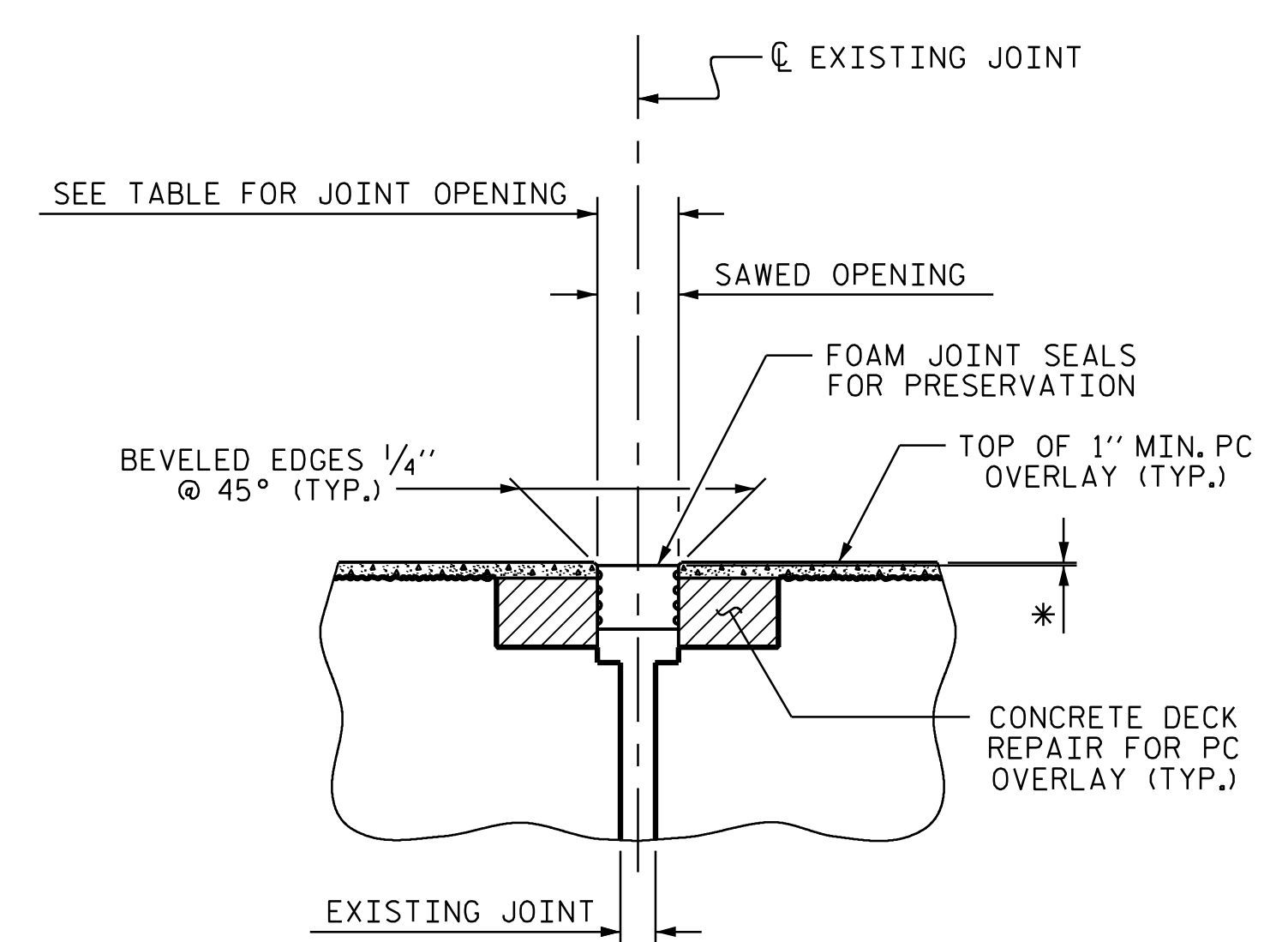
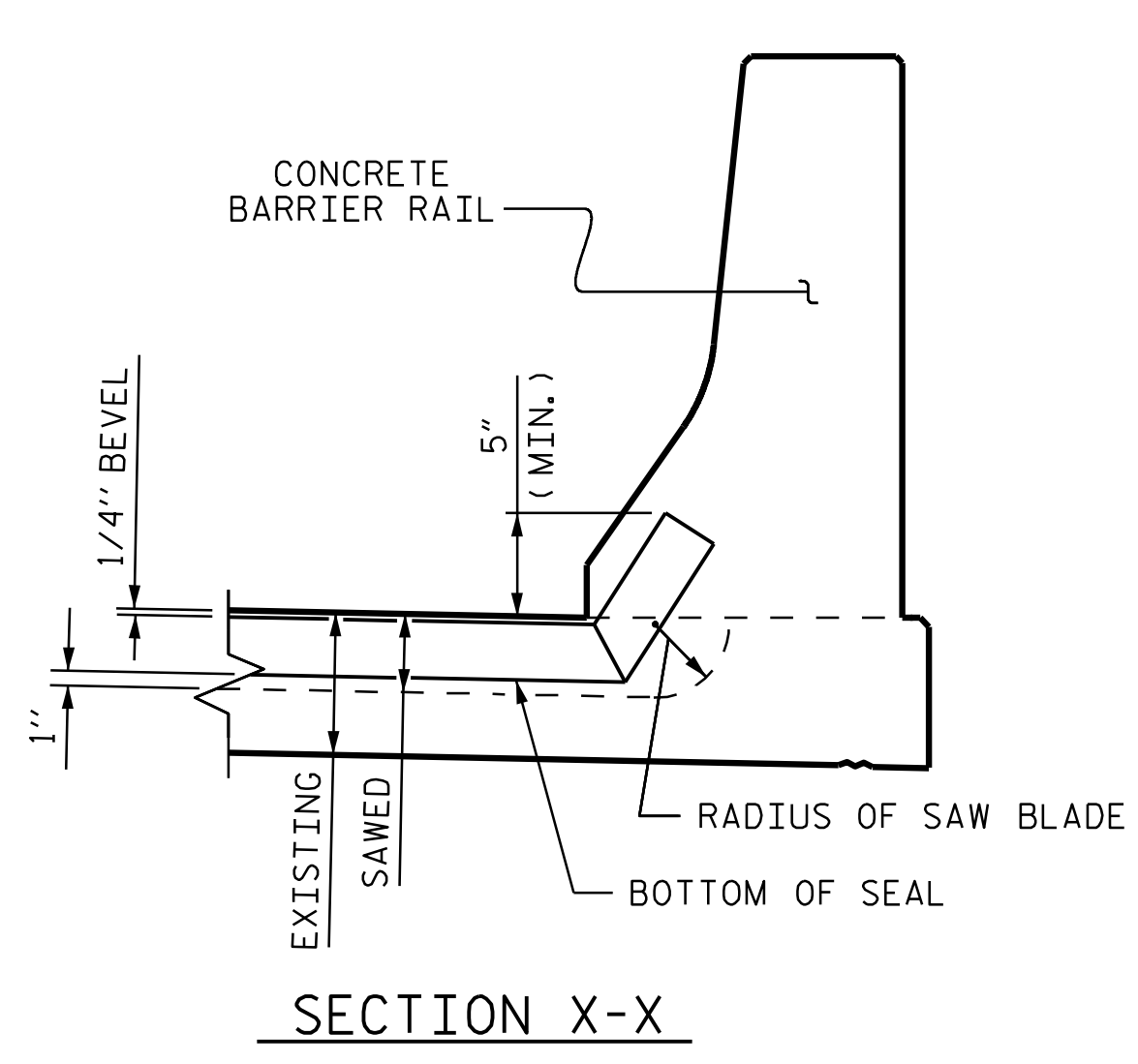
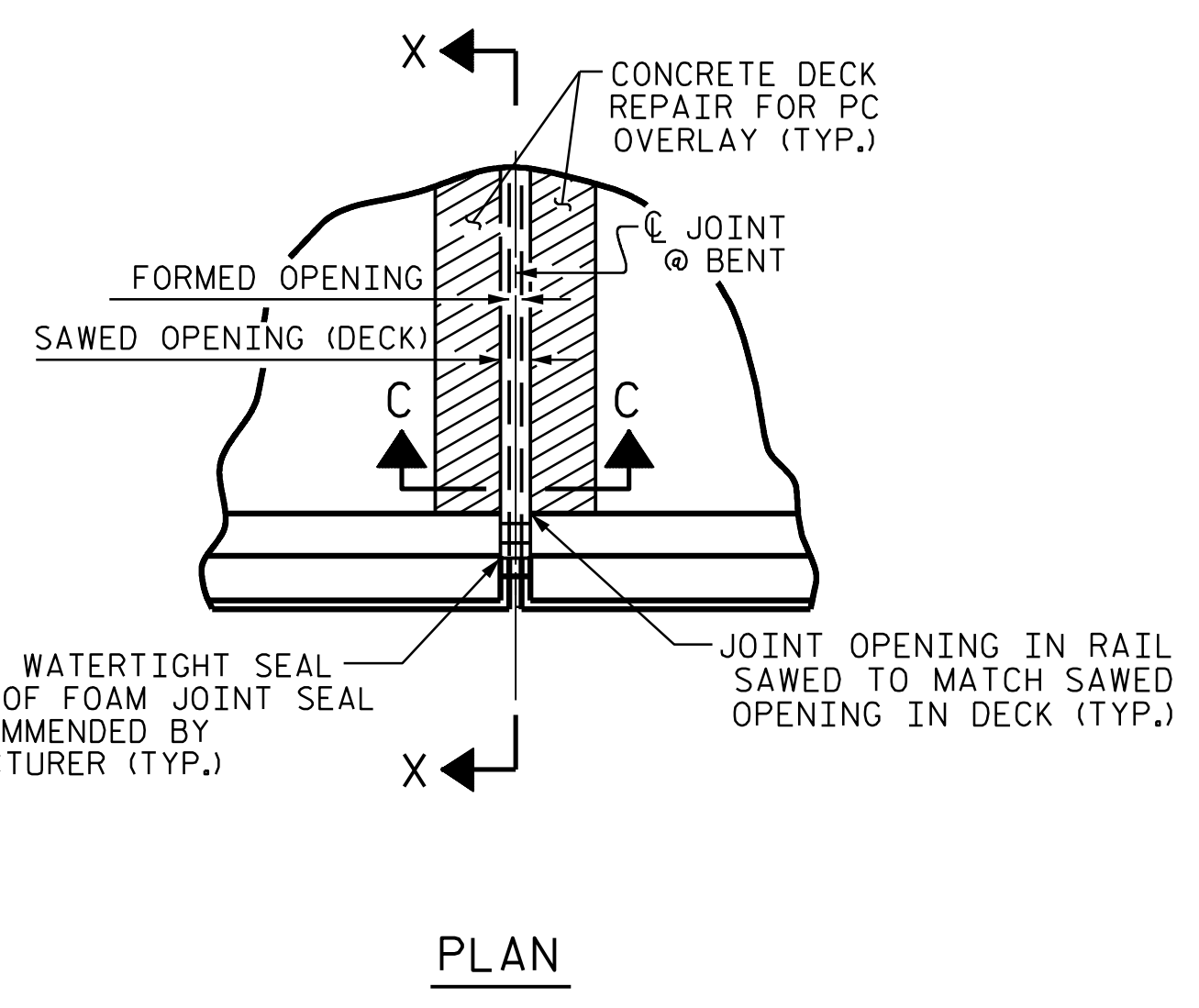




**JOINT INSTALLATION SEQUENCE AT BENTS 4 AND 7 (SECTION C-C)**

**NOTES**

- THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDER 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.
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- FOR LOCATION OF SECTION C-C, SEE PLAN OF SPAN SHEETS.
- FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.



**JOINT SEAL DETAILS @ BENTS 4 AND 7**

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

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

JOINT REPAIR QUANTITY	
LOCATION	FOAM JOINT SEALS FOR PRESERVATION ESTIMATED (LIN. FT.)
BENT 4	47.0
BENT 7	47.0

SAWED JOINT OPENING TABLE				
LOCATION	SKEW ANGLE	PERPENDICULAR JOINT OPENING AT 45°	PERPENDICULAR JOINT OPENING AT 60°	PERPENDICULAR JOINT OPENING AT 90°
BENT 4	90°00'00"	2 7/8"	2 11/16"	2 1/4"
BENT 7	90°00'00"	2 7/8"	2 11/16"	2 1/4"

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
BRIDGE NO: 180477

SHEET 3 OF 6

STATE OF NORTH CAROLINA  
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RALEIGH

**JOINT REPAIR DETAILS AT BENTS 4 AND 7**

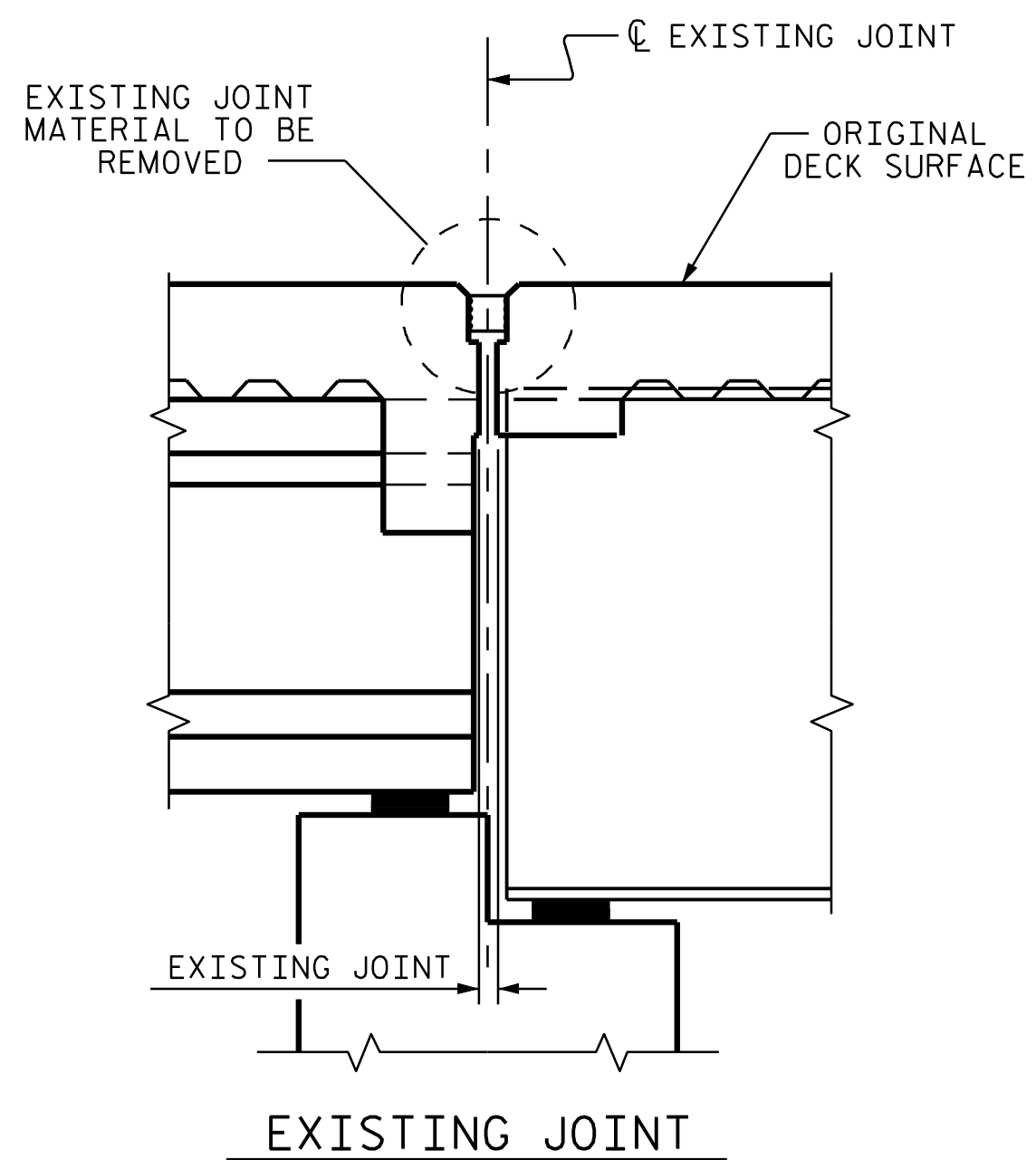


DRAWN BY : D. A. GLADDEN DATE : 5/23  
CHECKED BY : E. E. MURRAY DATE : 3/24

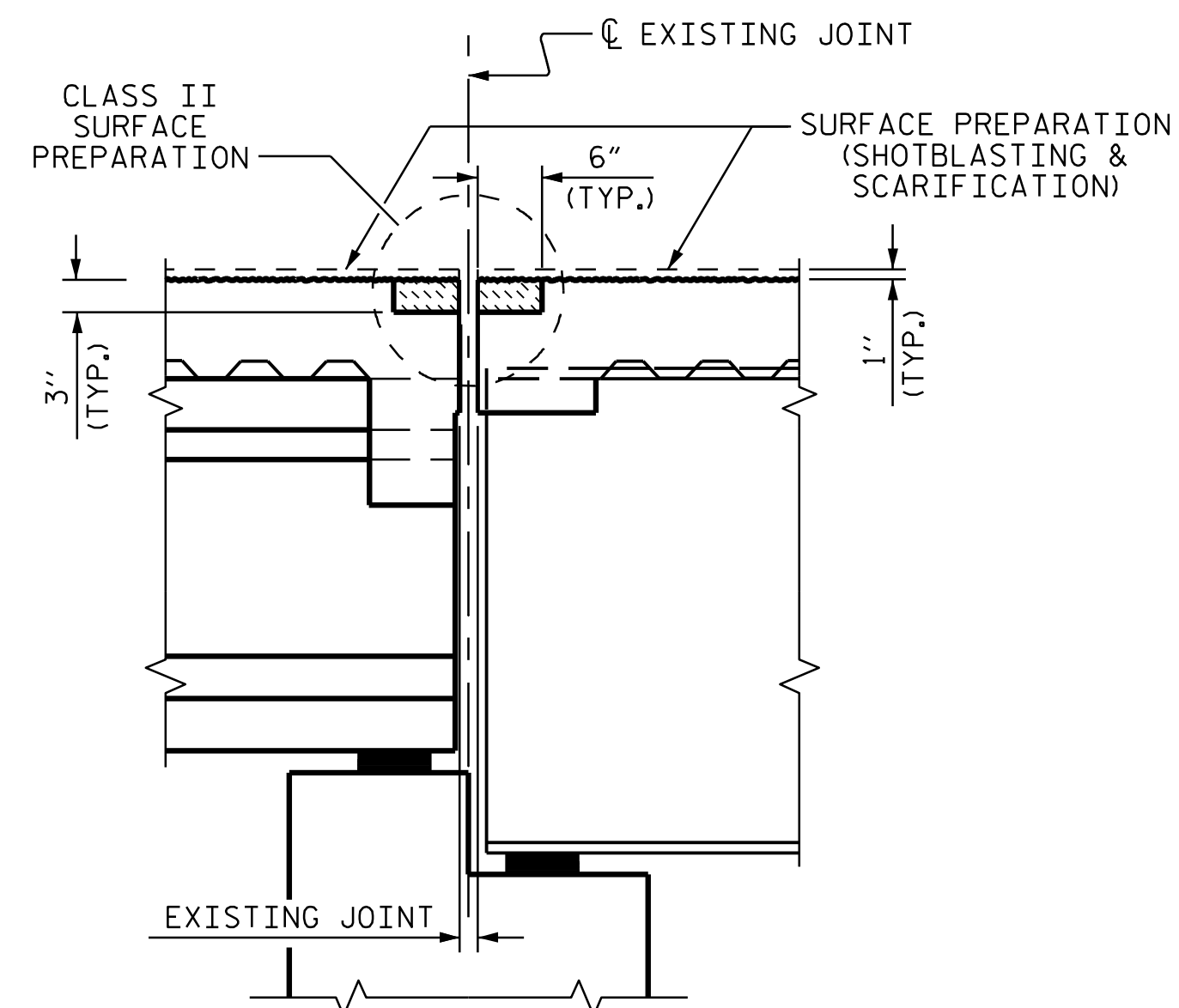
**VOLKERT**  
5430 Wade Park Blvd, Suite 410  
Raleigh, NC 27607  
Tel: 919-854-0344 Fax: 919-854-0355  
NC License No. F-0765

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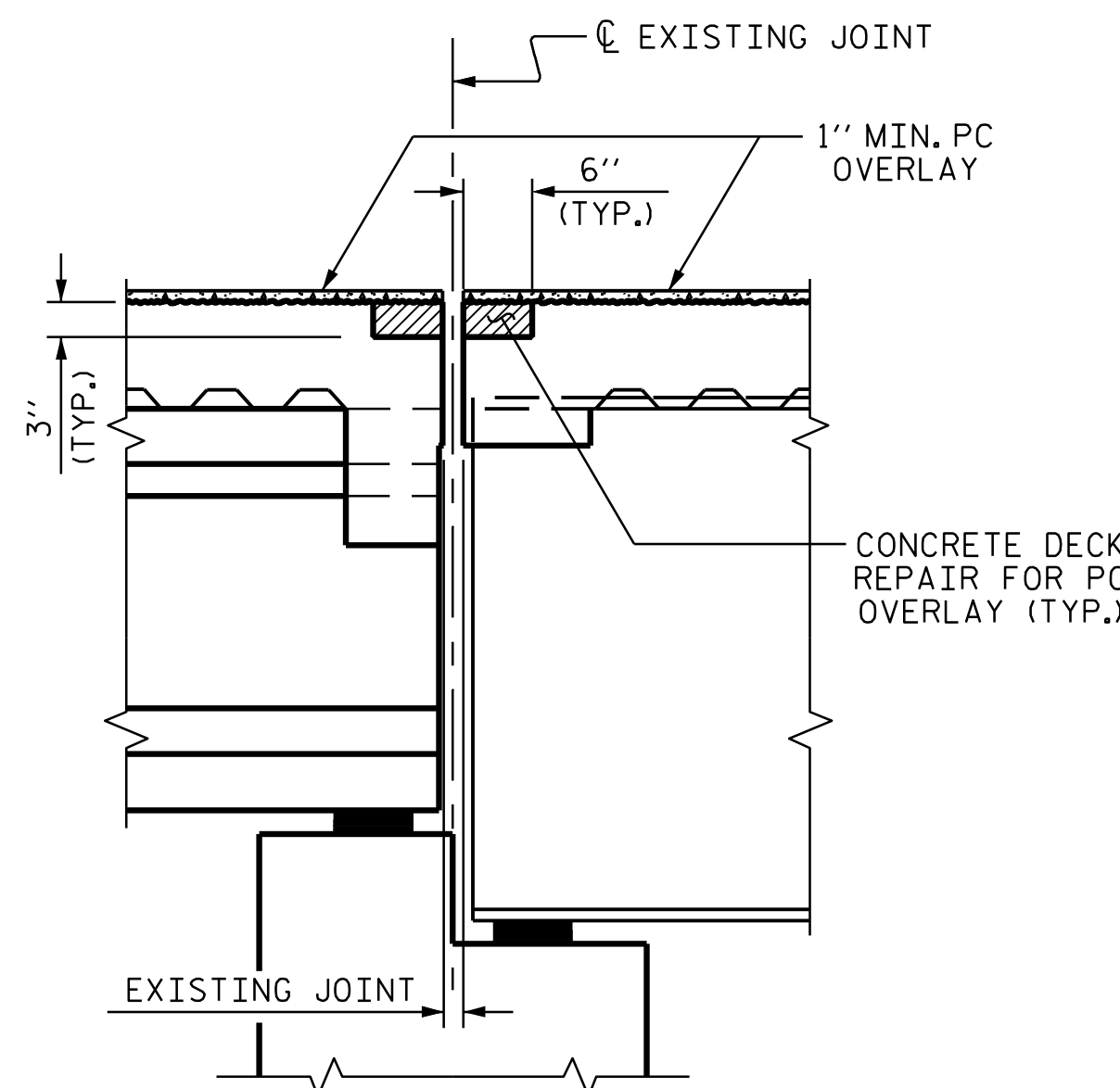
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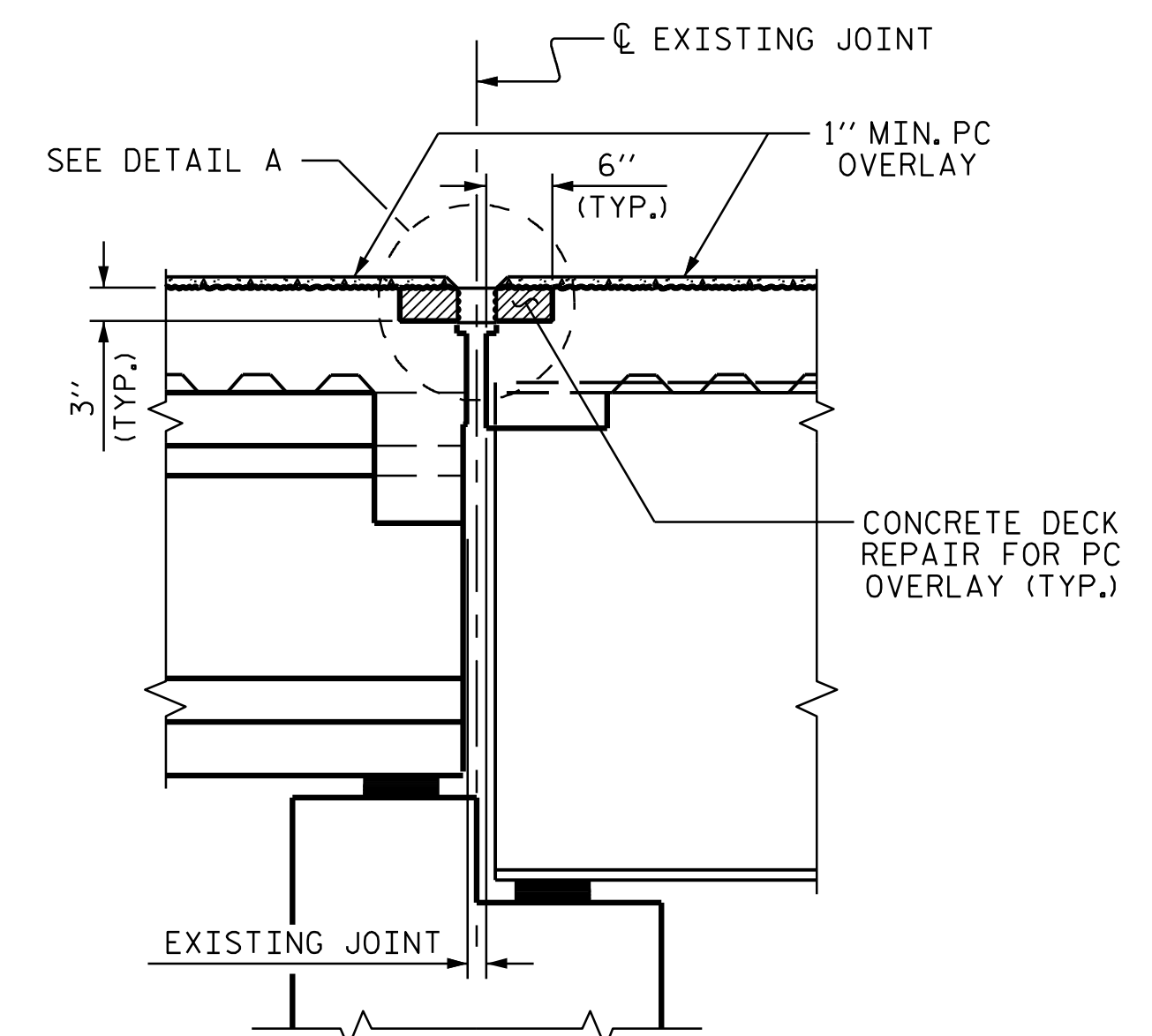
EXISTING JOINT



PROPOSED JOINT PREPARATION  
(MINIMUM EXISTING JOINT DEMOLITION)



PROPOSED JOINT PRESAWED

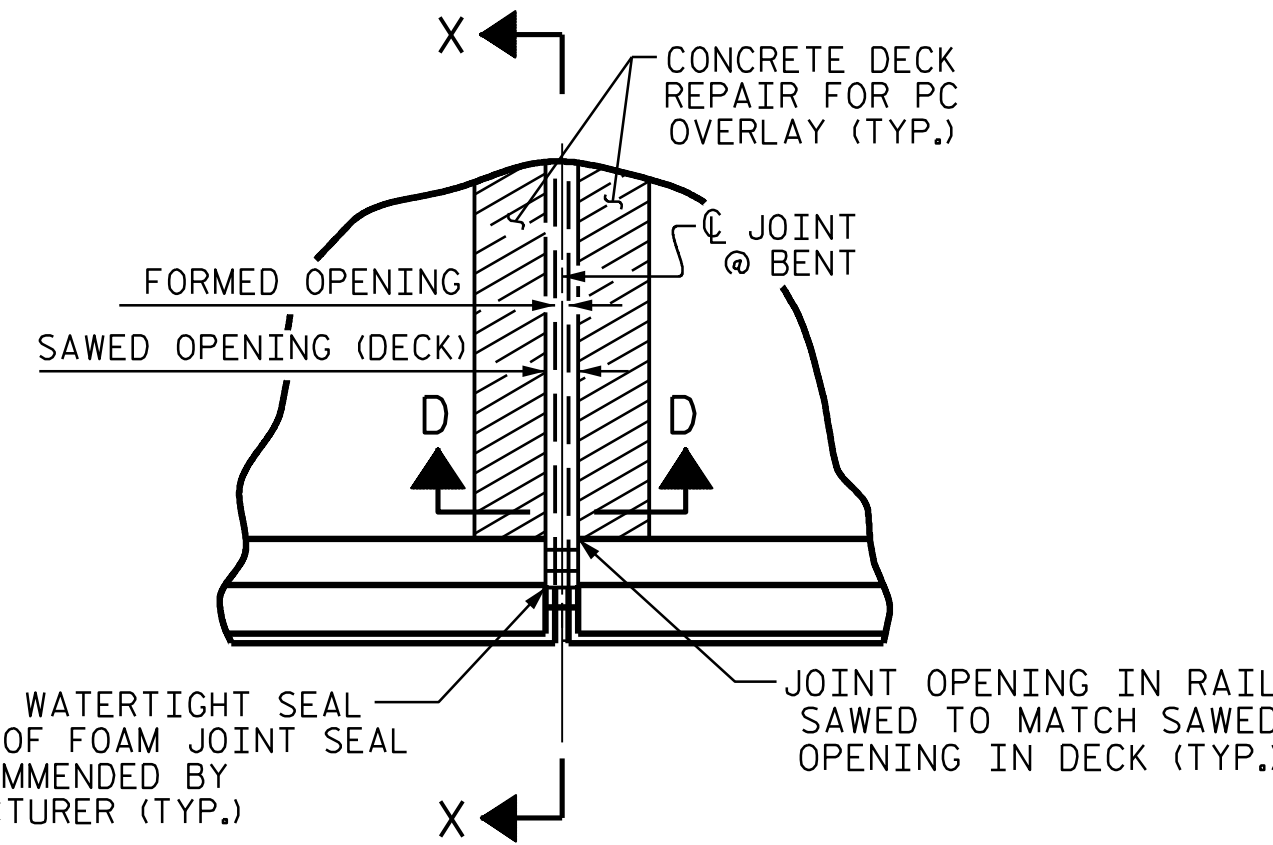


PROPOSED FOAM JOINT

JOINT INSTALLATION SEQUENCE AT BENTS 10 (SECTION D-D)

NOTES

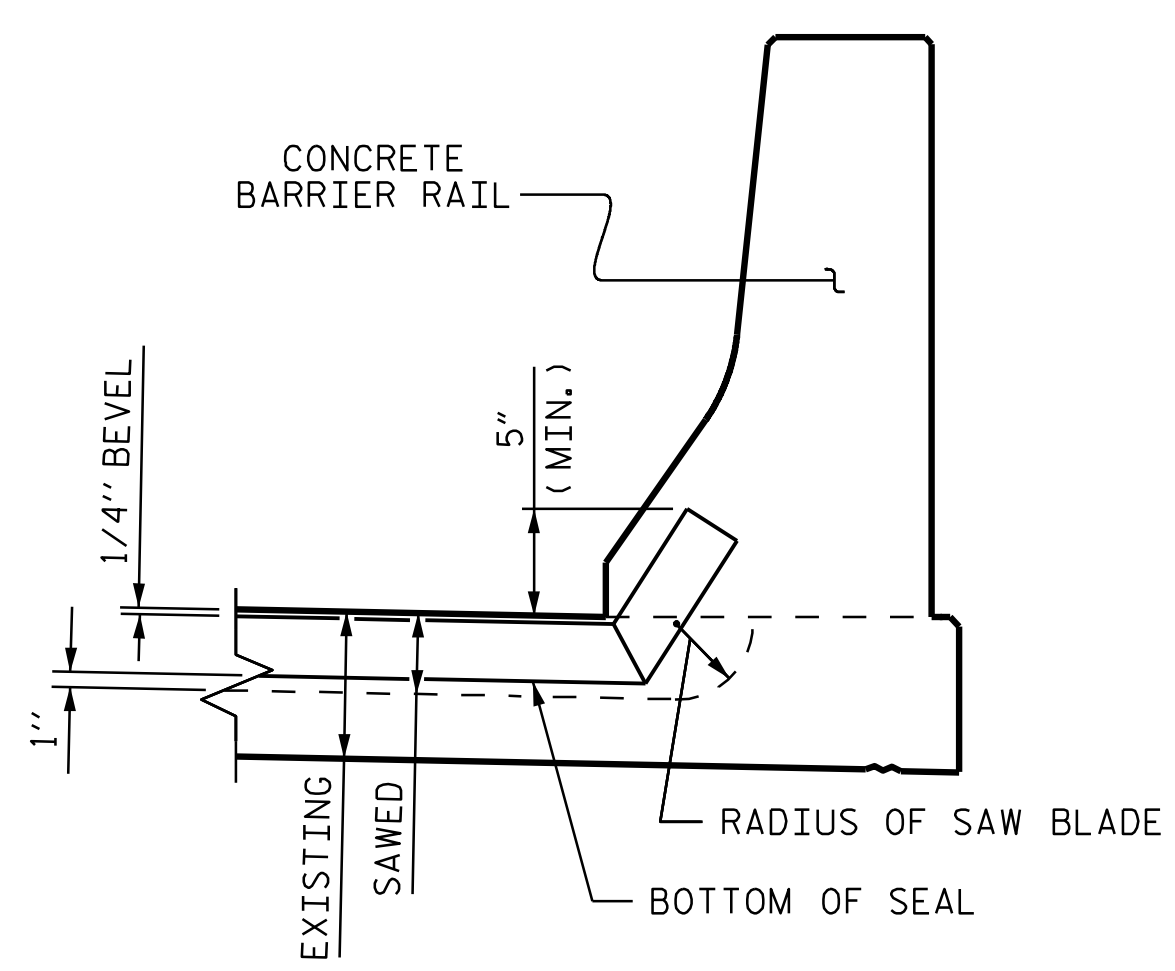
- THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDER JOINT SEAL MATERIAL. IF THE ACTUAL JOINT OPENING VARIES FROM THE OPENING ALLOWED BY THE JOINT SEAL MATERIAL, NOTIFY THE ENGINEER. REVISION TO THE JOINT SEAL SIZE AND TYPE MIGHT BE NECESSARY.
- THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS FOR THE JOINT SEALS IN LIEU OF SAWING THE JOINT.
- THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL BASED ON JOINT OPENINGS.
- 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 LOCATION OF SECTION D-D, SEE PLAN OF SPAN SHEETS.
- FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.



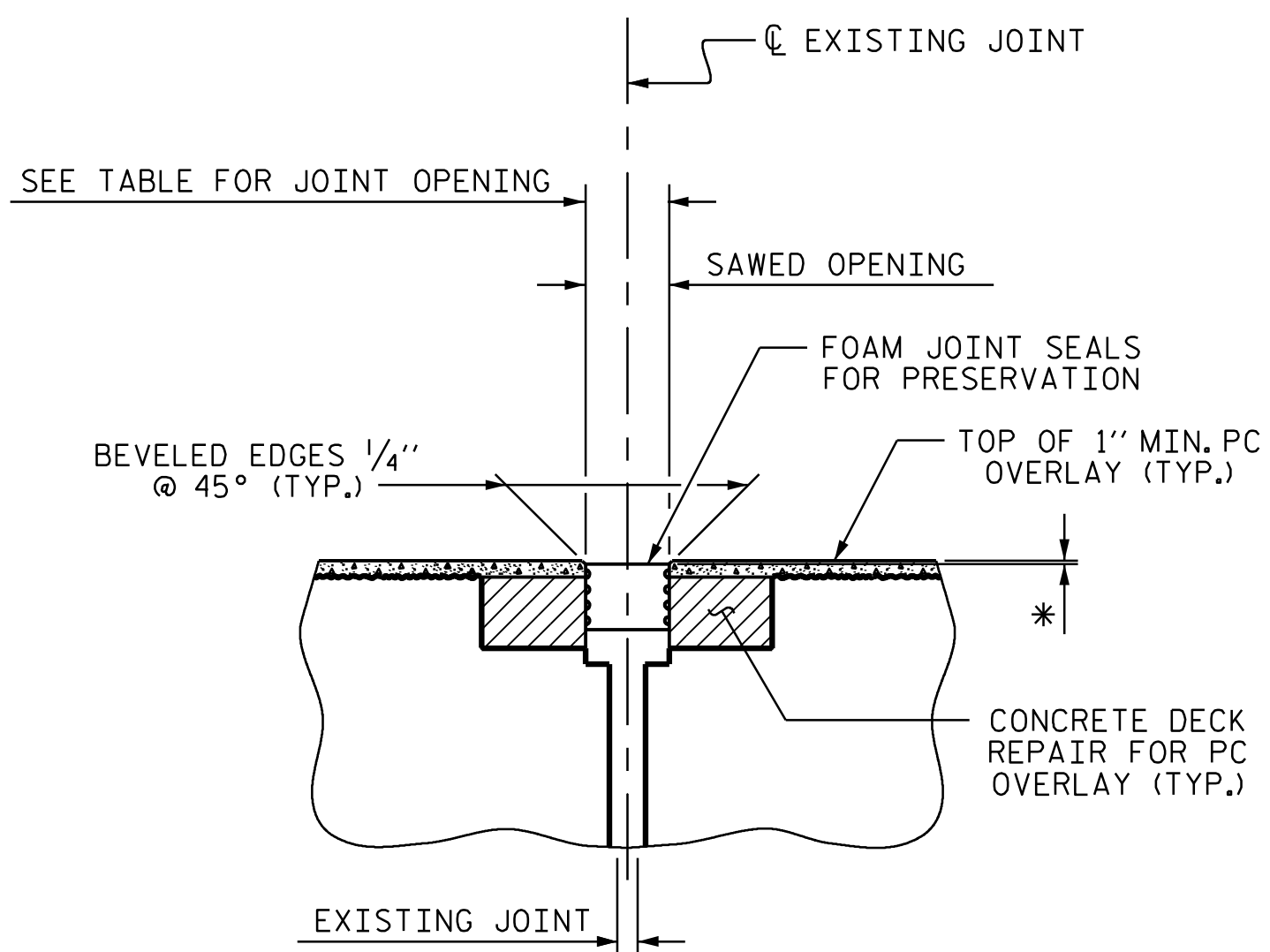
PLAN

JOINT SEAL DETAILS @ BENT 10

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.



SECTION X-X



DETAIL A

(PROPOSED)

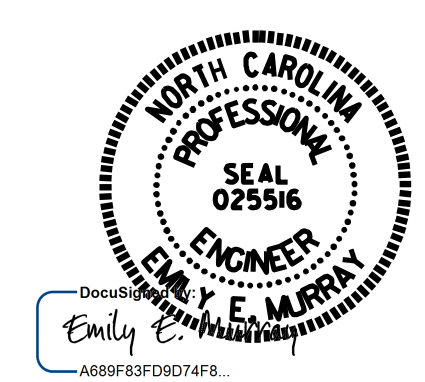
\* FOAM JOINT SEALS FOR PRESERVATION SHALL BE RECESSED AS PER MANUFACTURER'S RECOMMENDATIONS.

JOINT REPAIR QUANTITY	
LOCATION	FOAM JOINT SEALS FOR PRESERVATION ESTIMATED (LIN. FT.)
BENT 10	47.0

SAWED JOINT OPENING TABLE				
LOCATION	SKEW ANGLE	PERPENDICULAR JOINT OPENING AT 45°	PERPENDICULAR JOINT OPENING AT 60°	PERPENDICULAR JOINT OPENING AT 90°
BENT 10	90°00'00"	1 1/16"	1 9/16"	1 3/8"

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
BRIDGE NO: 180477

SHEET 4 OF 6



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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

JOINT REPAIR DETAILS AT BENT 10

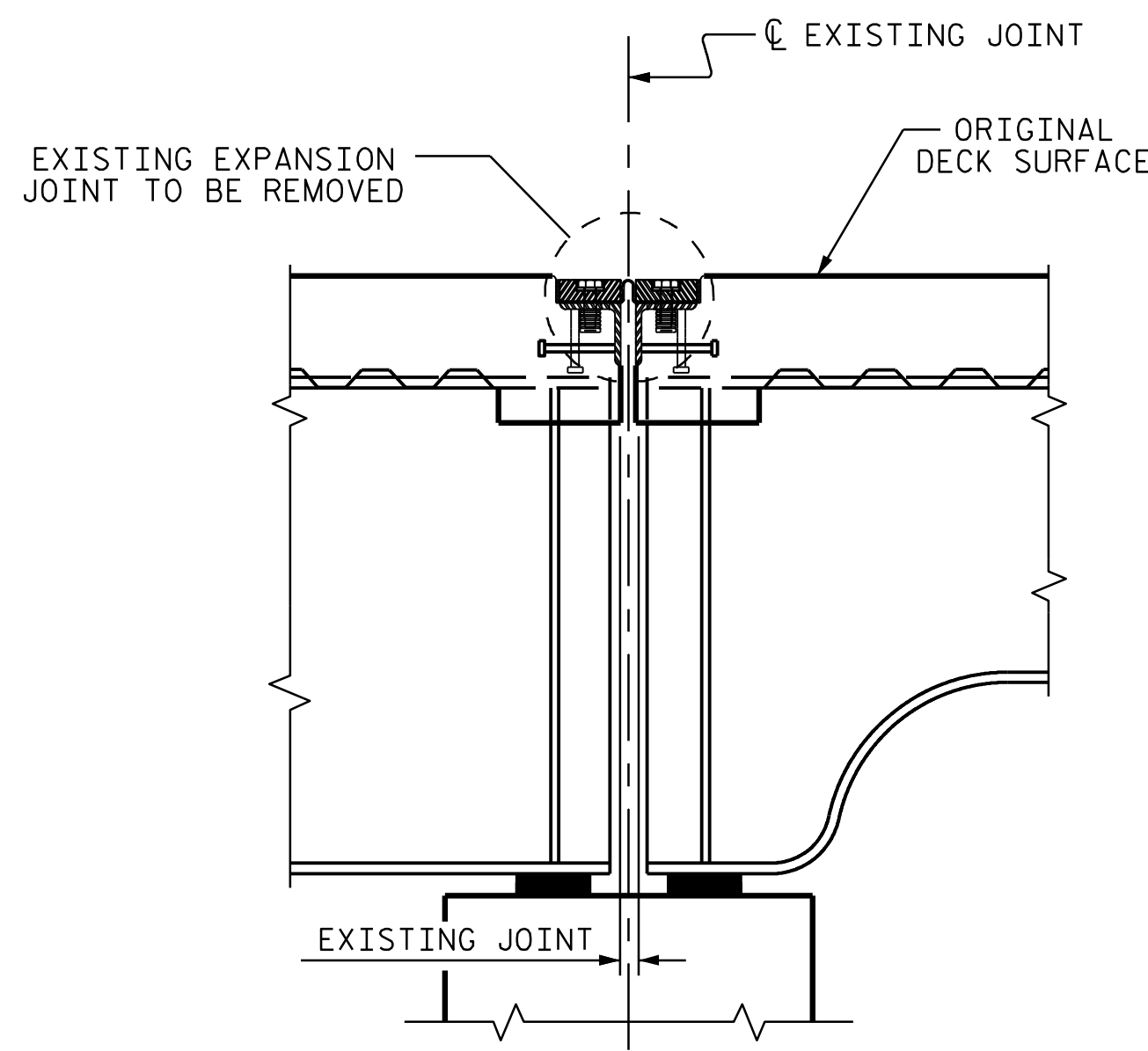
DRAWN BY : D. A. GLADDEN DATE : 5/23  
CHECKED BY : E. E. MURRAY DATE : 3/24

**VOLKERT**  
5430 Wade Park Blvd, Suite 410  
Raleigh, NC 27607  
Tel: 919-854-0344 Fax: 919-854-0355  
NC License No. F-0765

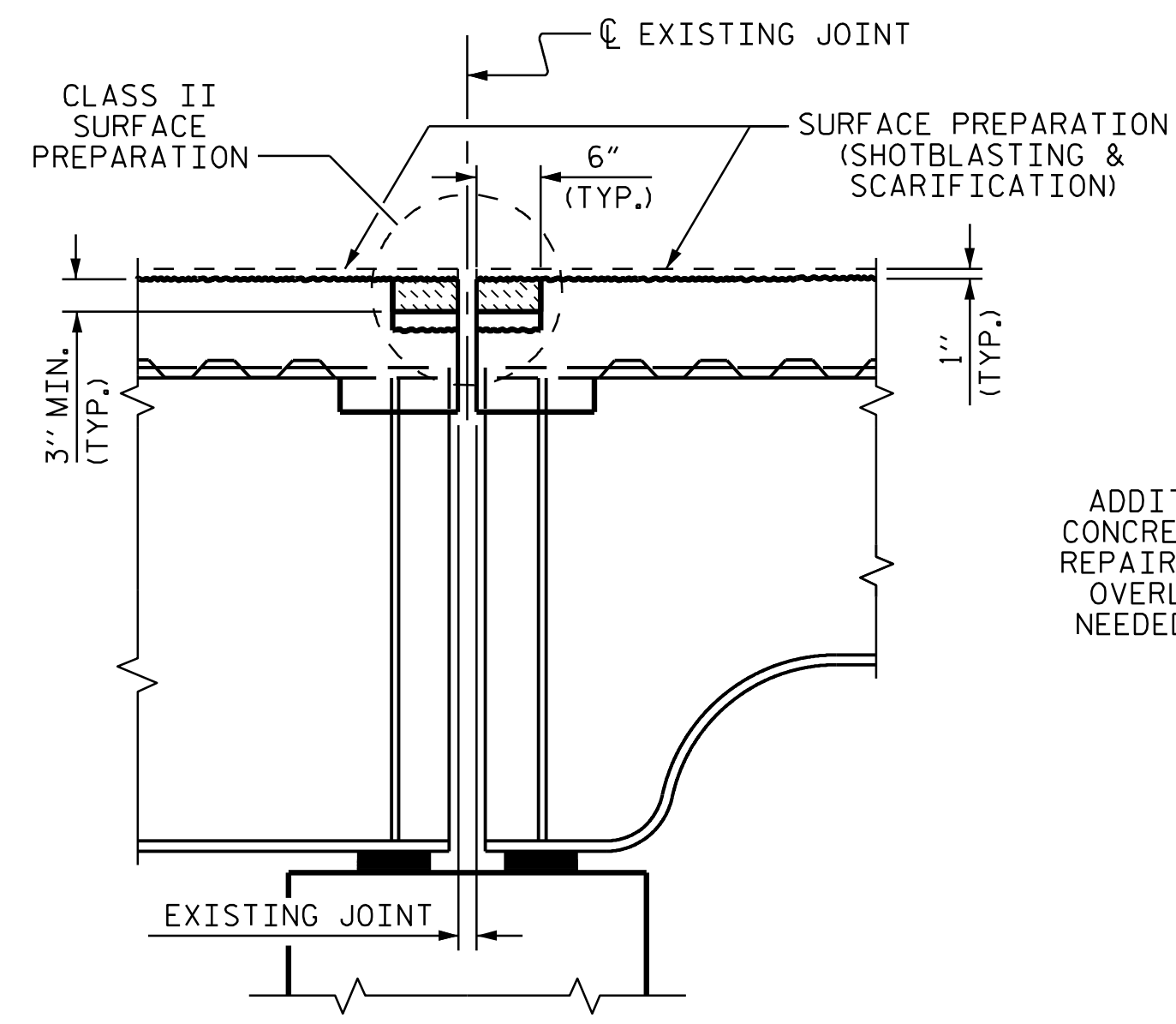
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-58
1			3			TOTAL SHEETS
2			4			156

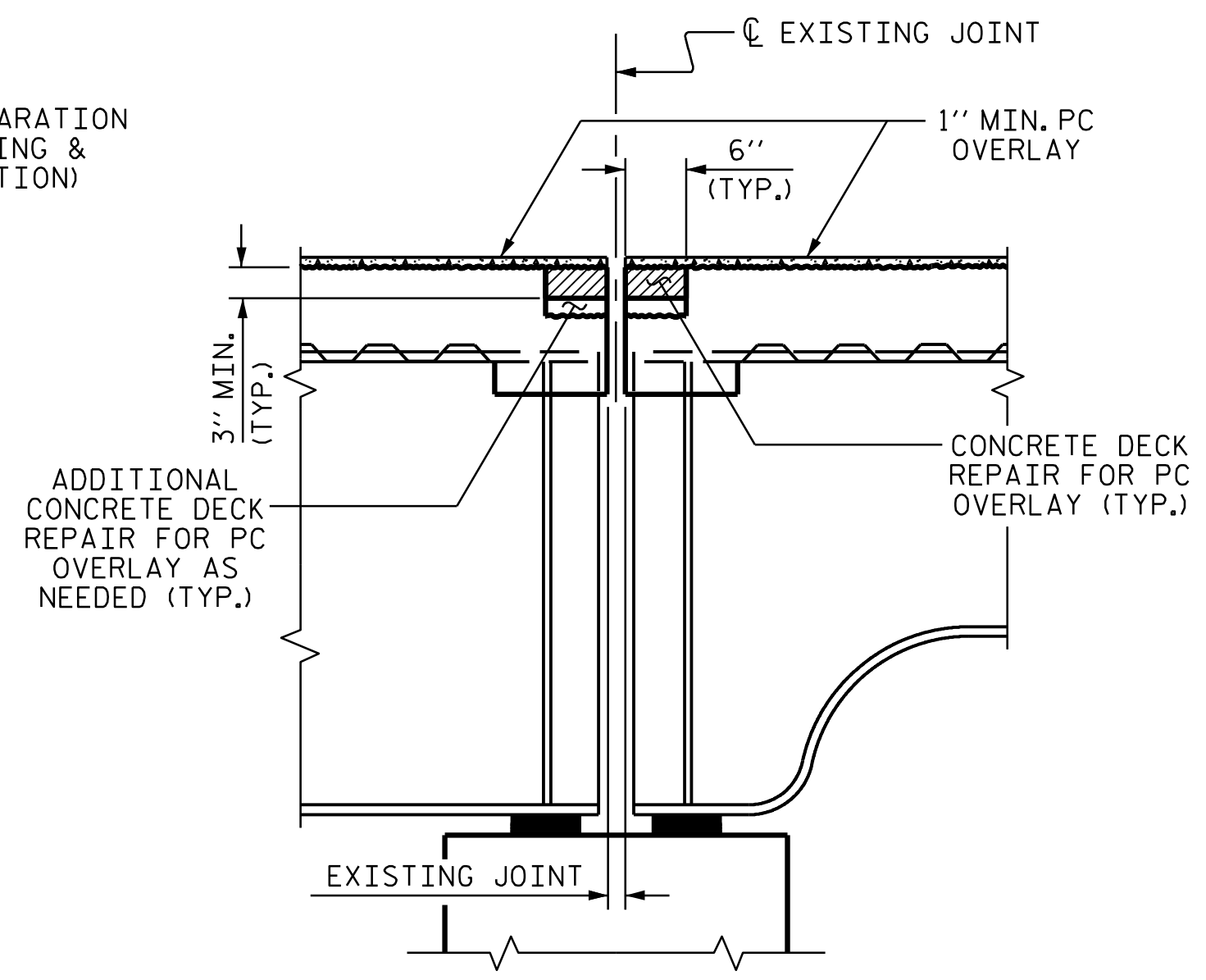




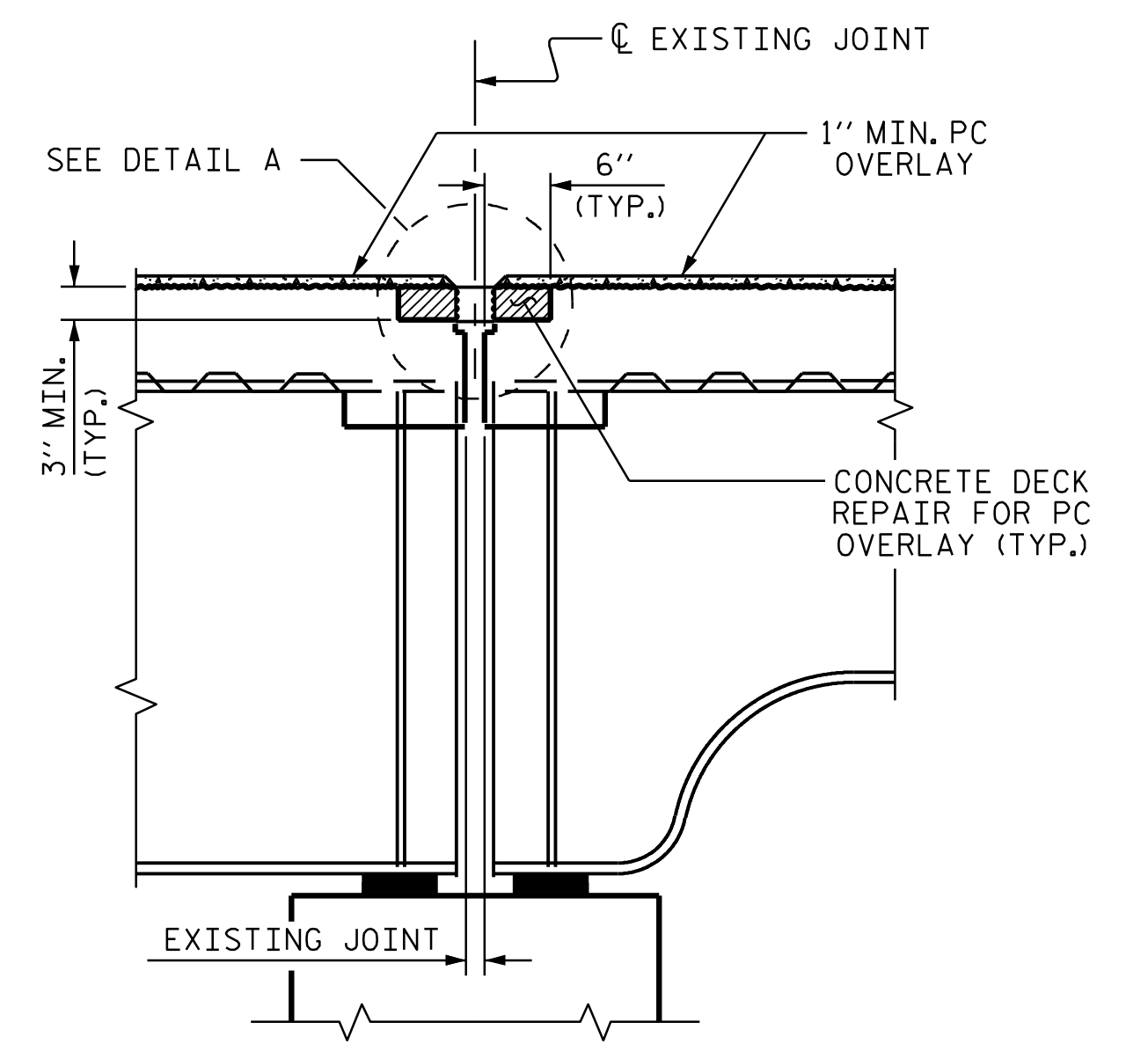
EXISTING JOINT



PROPOSED JOINT PREPARATION  
(MINIMUM EXISTING JOINT DEMOLITION)



PROPOSED JOINT PRESAWED



PROPOSED FOAM JOINT

JOINT INSTALLATION SEQUENCE AT BENT 11 (SECTION E-E)

NOTES

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDER 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.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL BASED ON JOINT OPENINGS.

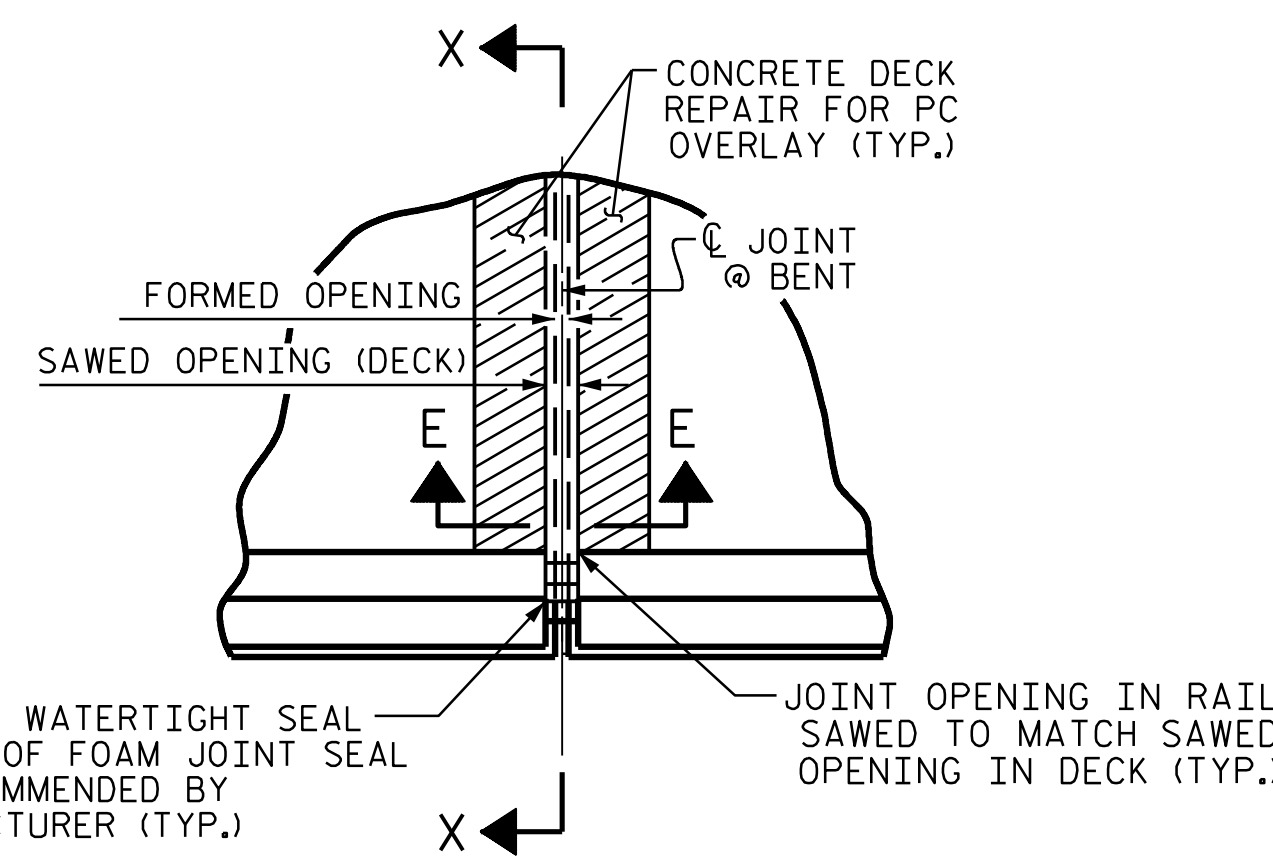
FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOAM JOINT SEALS FOR PRESERVATION SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION.

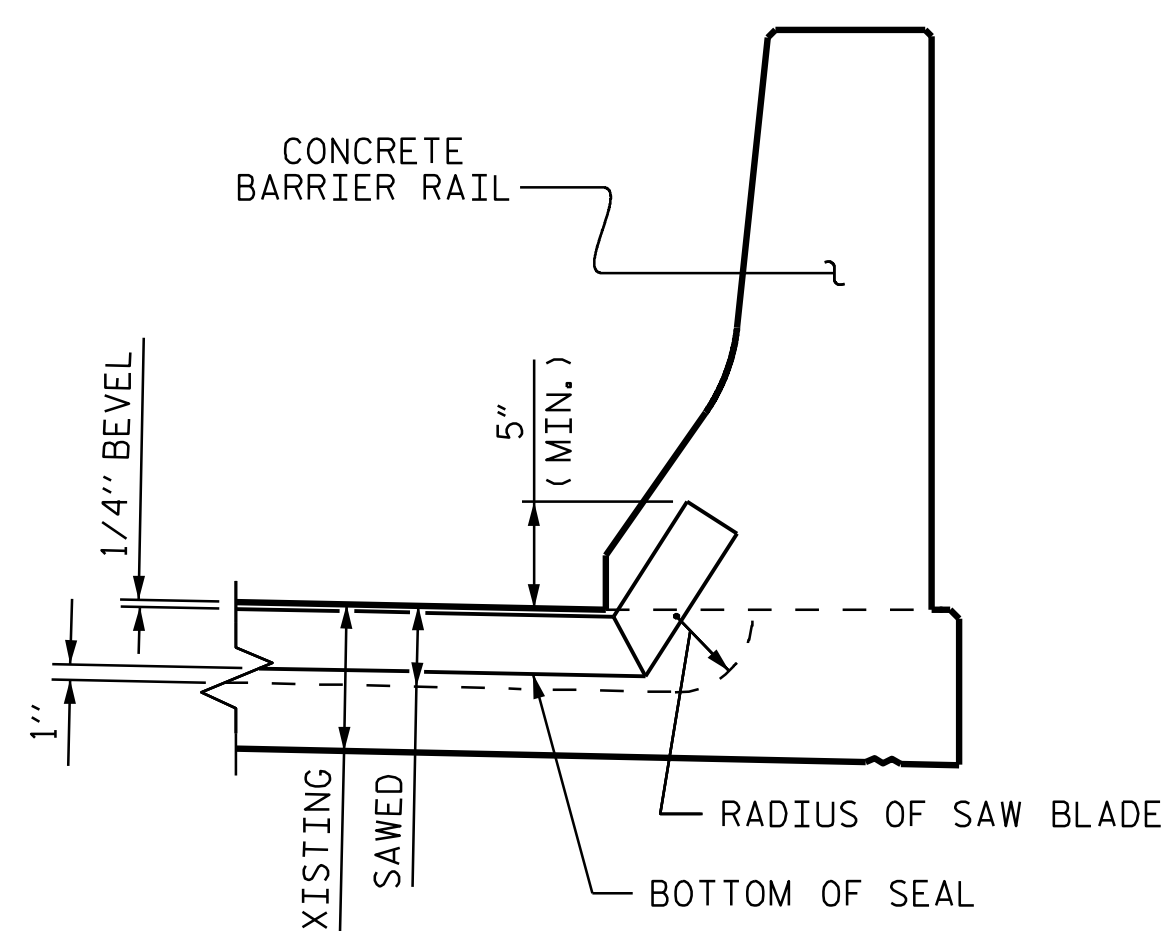
THE INSTALLED FOAM JOINT SEALS FOR PRESERVATION SHALL BE WATER TIGHT.

FOR LOCATION OF SECTION E-E, SEE PLAN OF SPAN SHEETS.

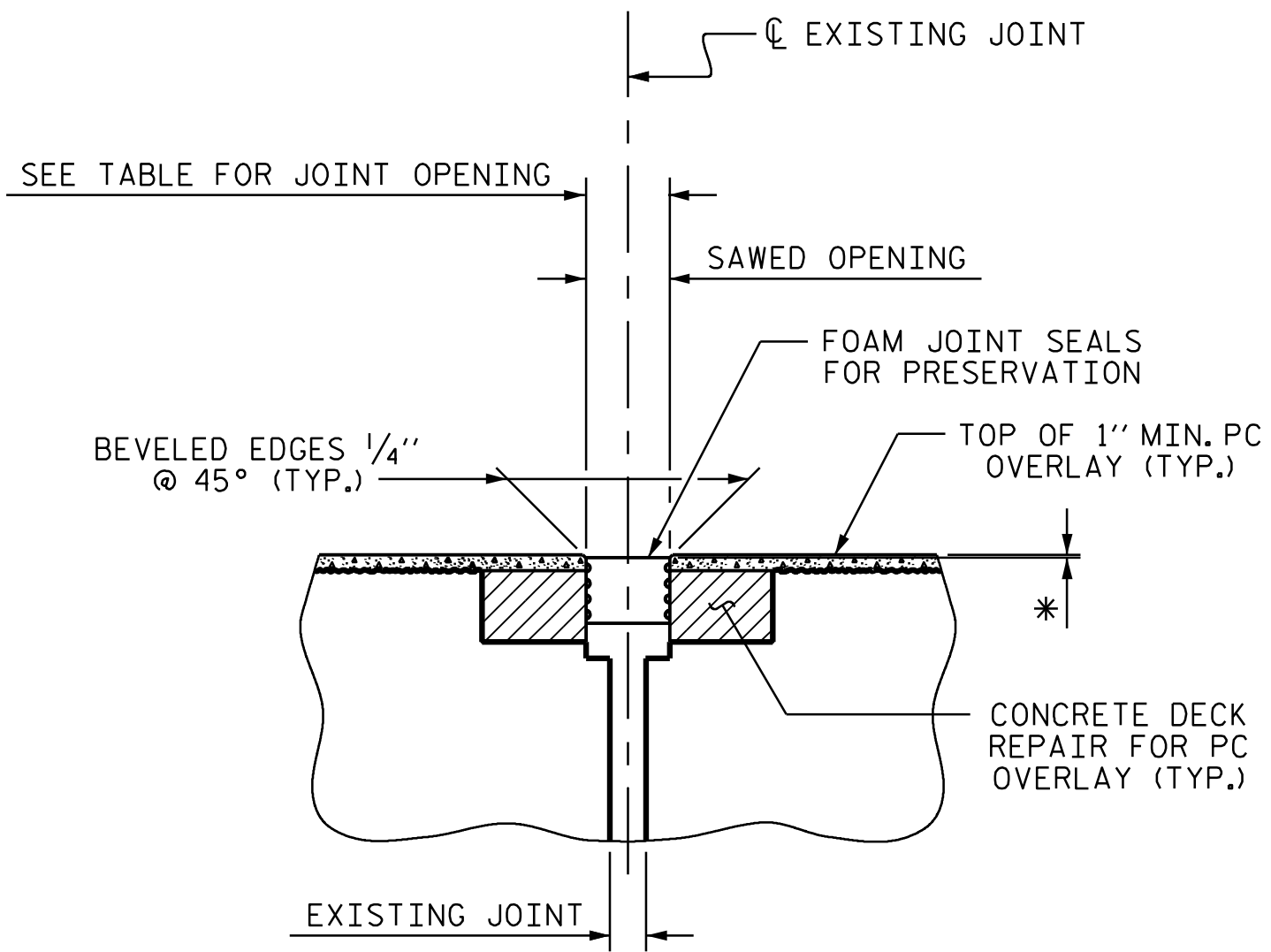
FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.



PLAN



SECTION X-X



DETAIL A  
(PROPOSED)

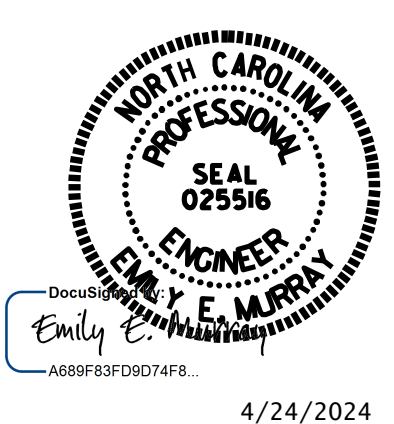
\* FOAM JOINT SEALS FOR PRESERVATION SHALL BE RECESSED AS PER MANUFACTURER'S RECOMMENDATIONS.

JOINT SEAL DETAILS @ BENT 11

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

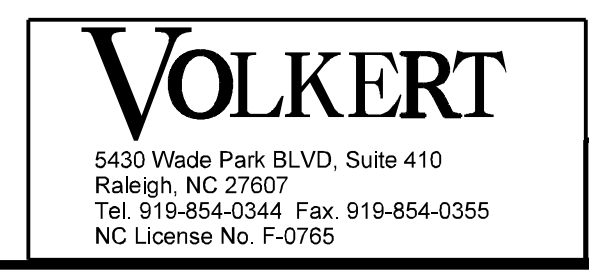
PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
BRIDGE NO: 180477

SHEET 5 OF 6



JOINT REPAIR QUANTITY	
LOCATION	FOAM JOINT SEALS FOR PRESERVATION ESTIMATED (LIN. FT.)
BENT 11	47.0

SAWED JOINT OPENING TABLE				
LOCATION	SKEW ANGLE	PERPENDICULAR JOINT OPENING AT 45°	PERPENDICULAR JOINT OPENING AT 60°	PERPENDICULAR JOINT OPENING AT 90°
BENT 11	90°00'00"	2 7/8"	2 11/16"	2 5/16"



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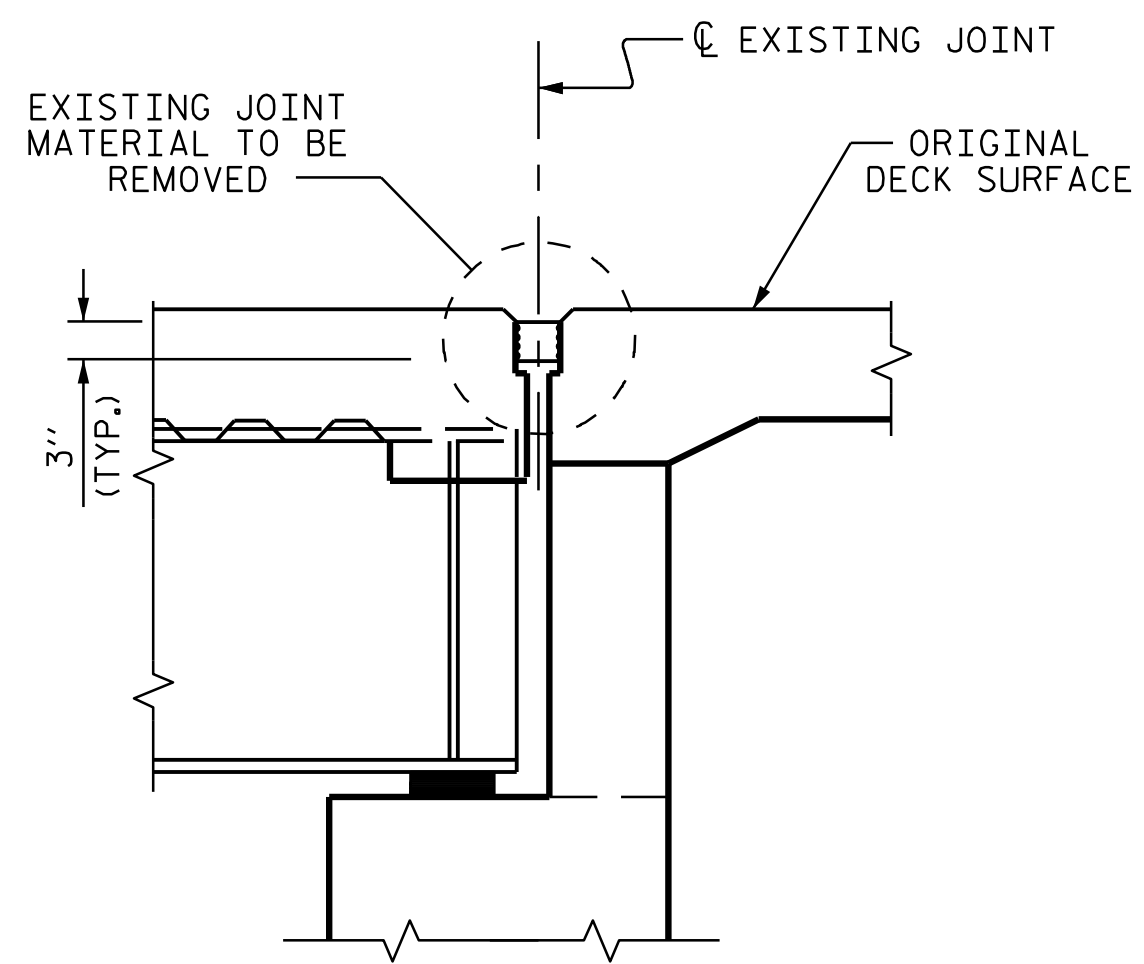
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

JOINT REPAIR DETAILS AT BENT 11

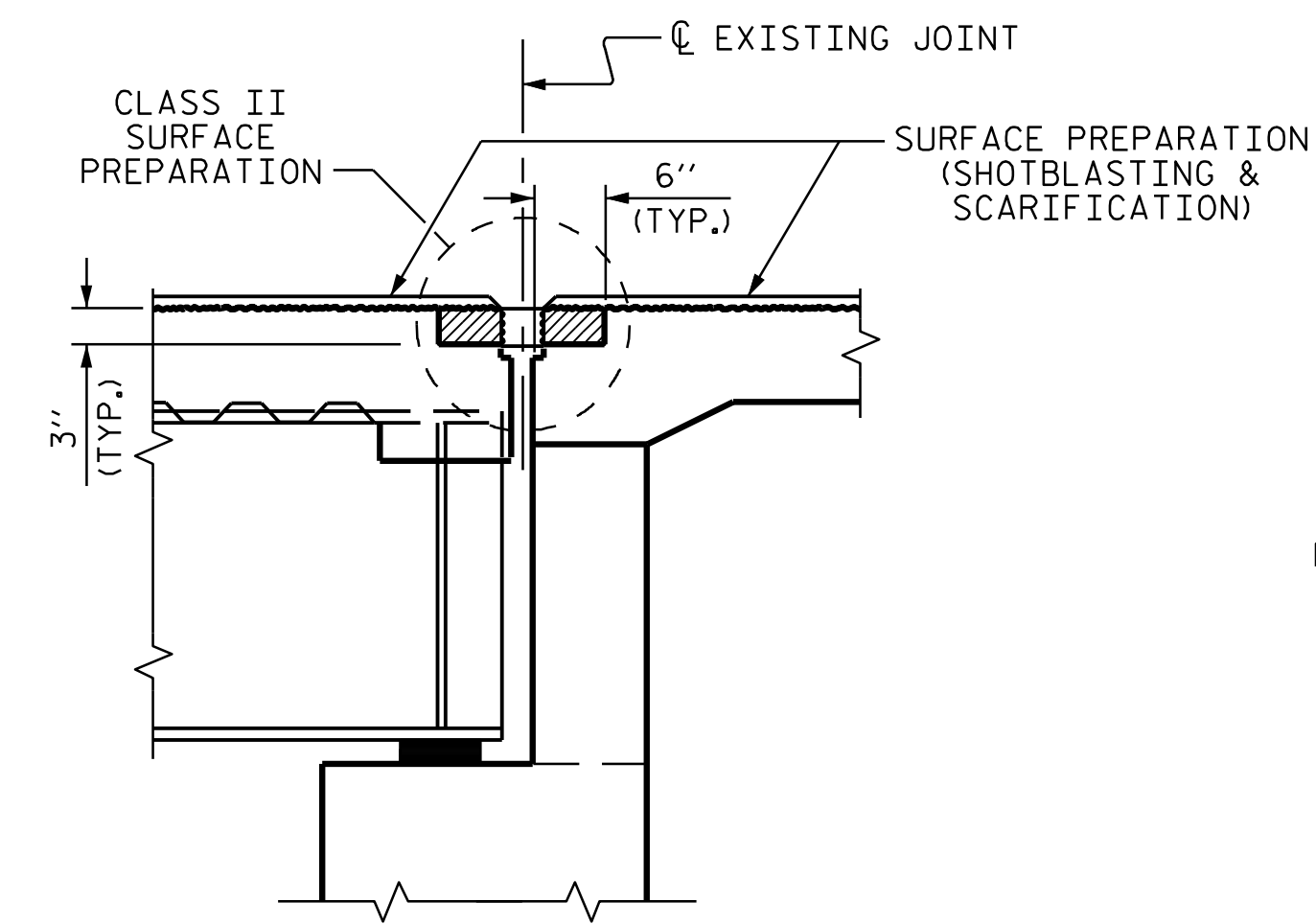
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-59
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : D. A. GLADDEN DATE : 5/23  
CHECKED BY : E. E. MURRAY DATE : 3/24

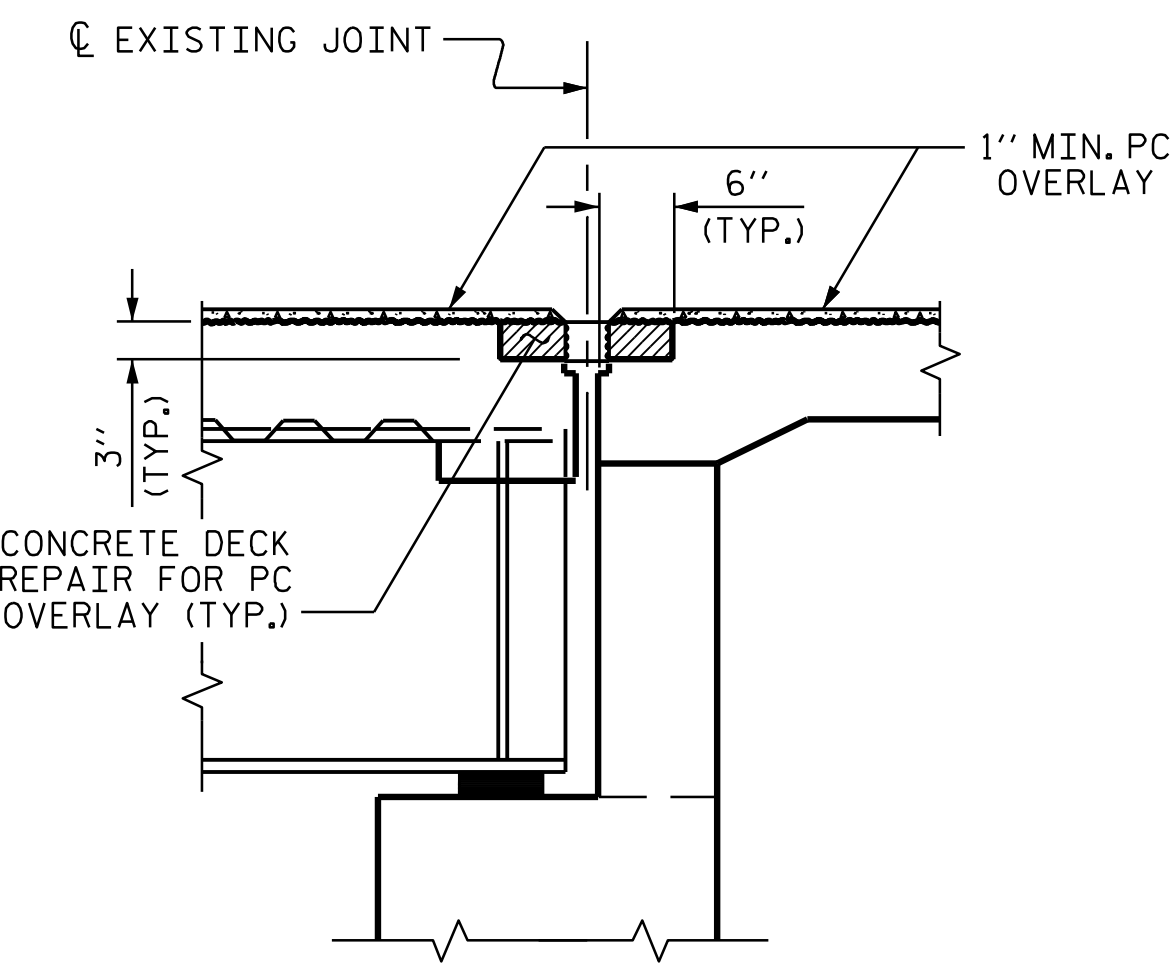




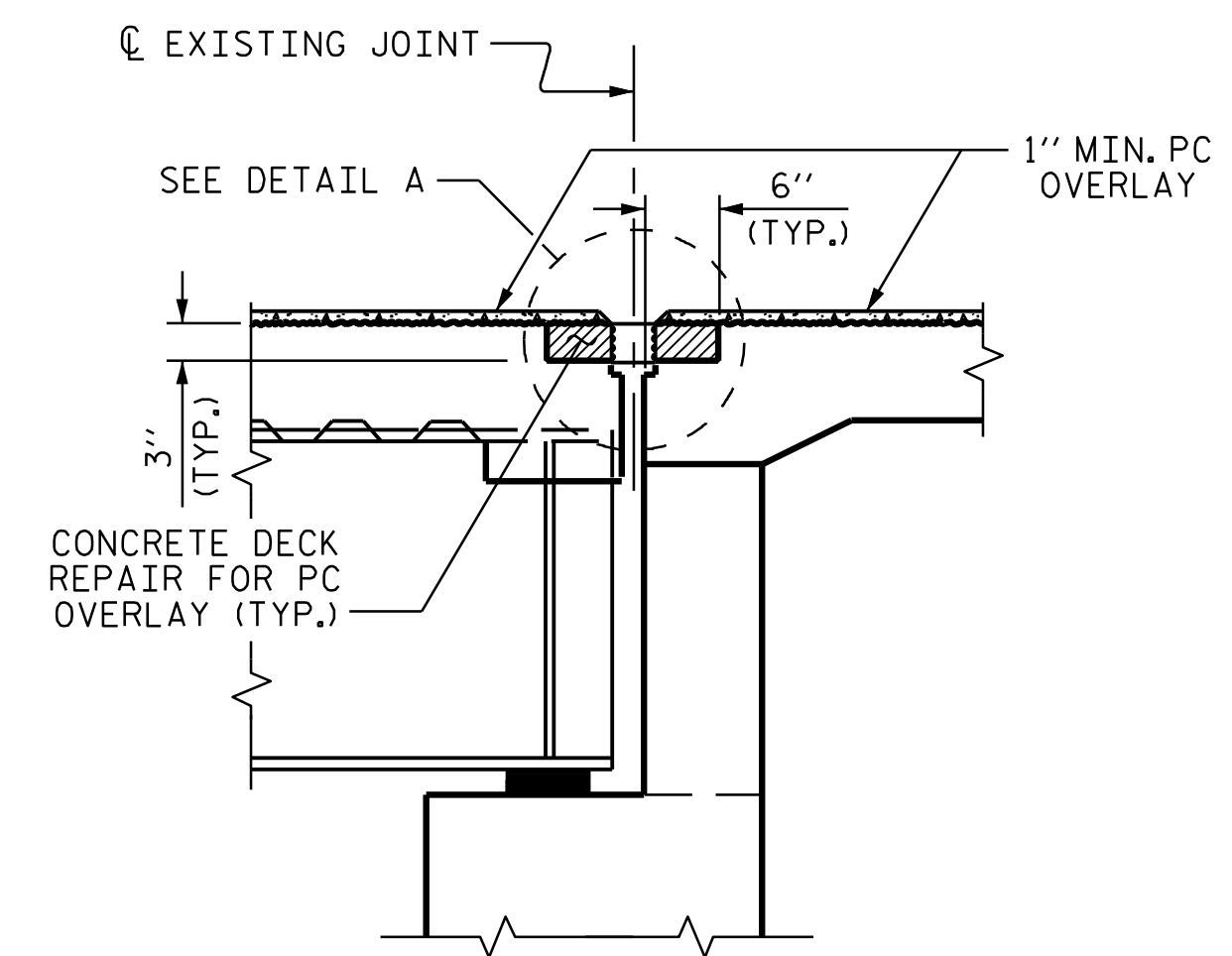
EXISTING JOINT



PROPOSED JOINT PREPARATION  
(MINIMUM EXISTING JOINT DEMOLITION)



PROPOSED JOINT PRESAWED

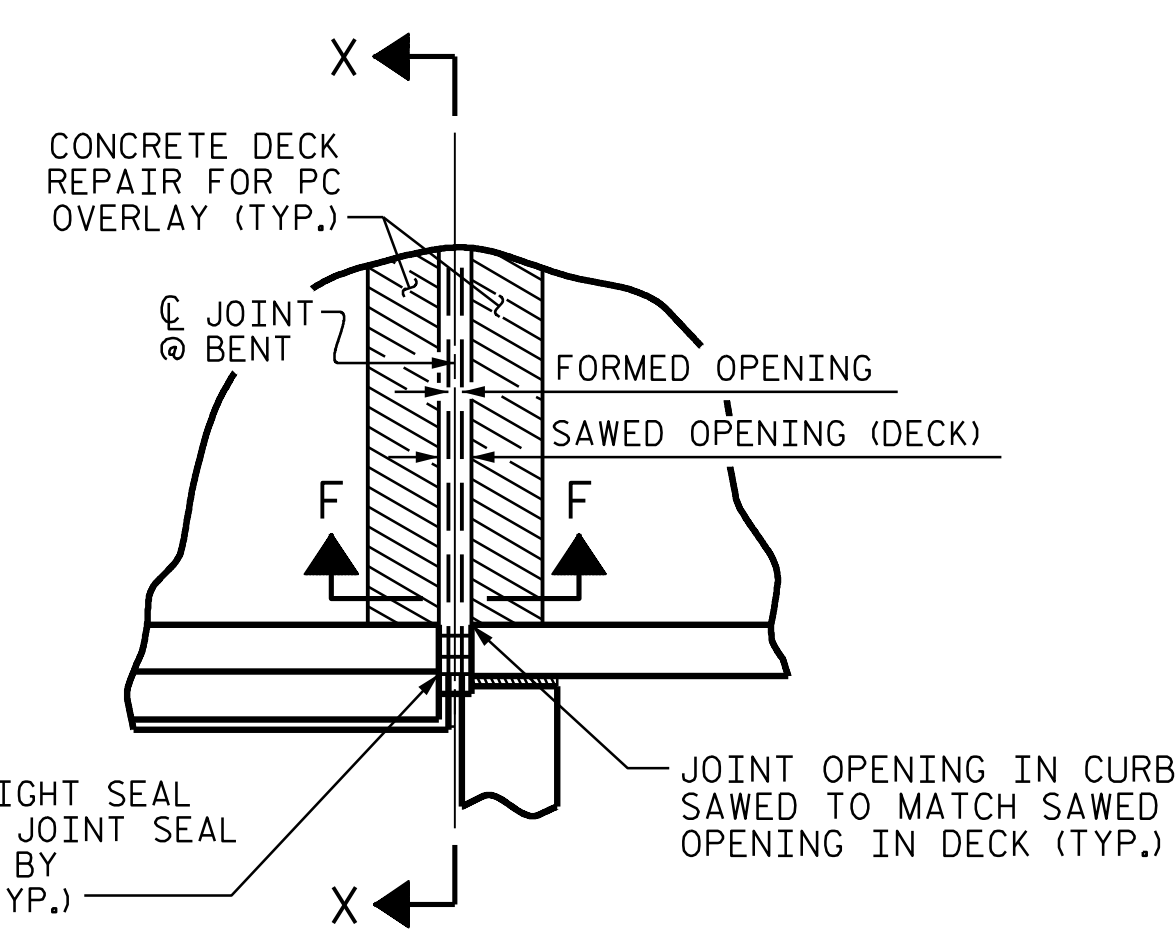


PROPOSED FOAM JOINT

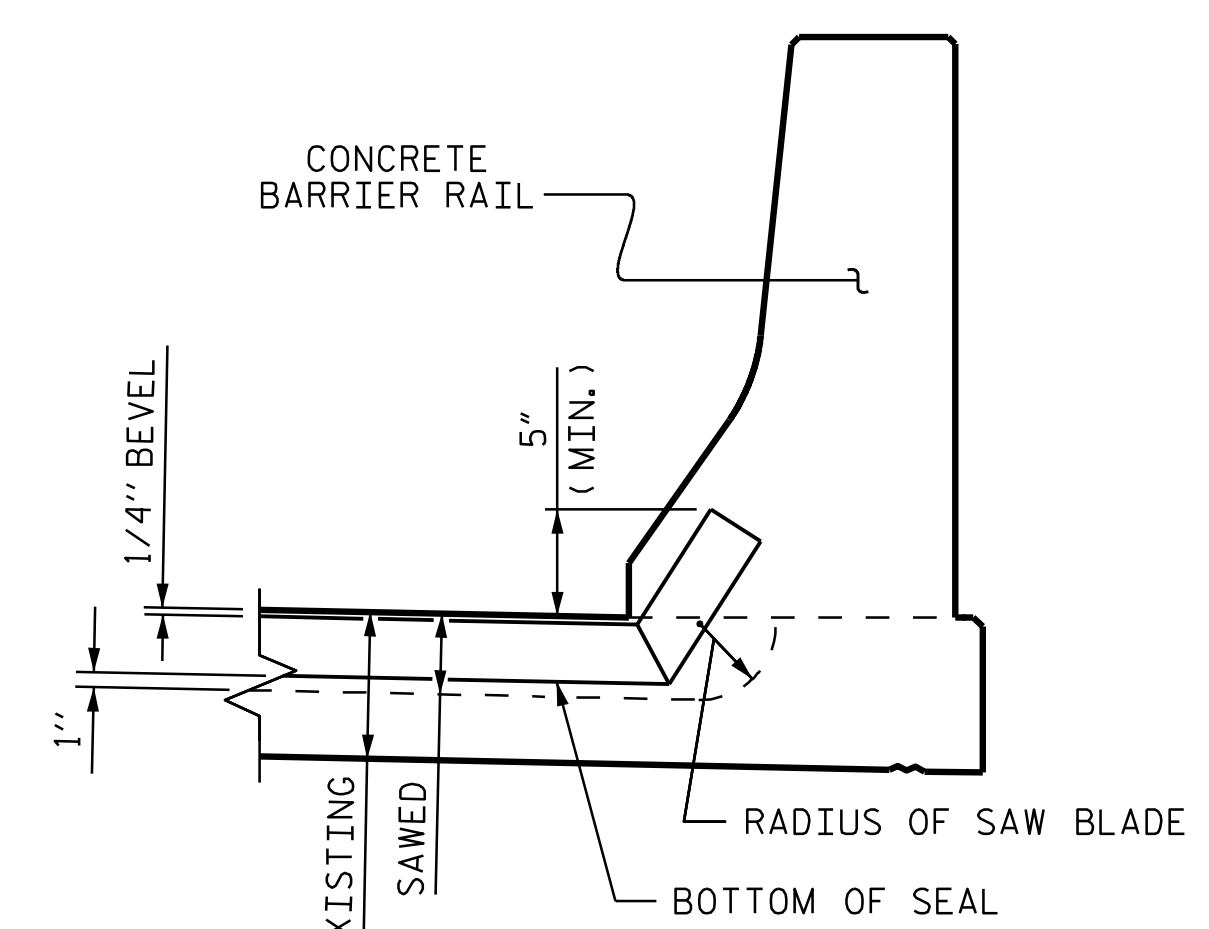
JOINT INSTALLATION SEQUENCE AT END BENT 2 (SECTION F-F)

NOTES

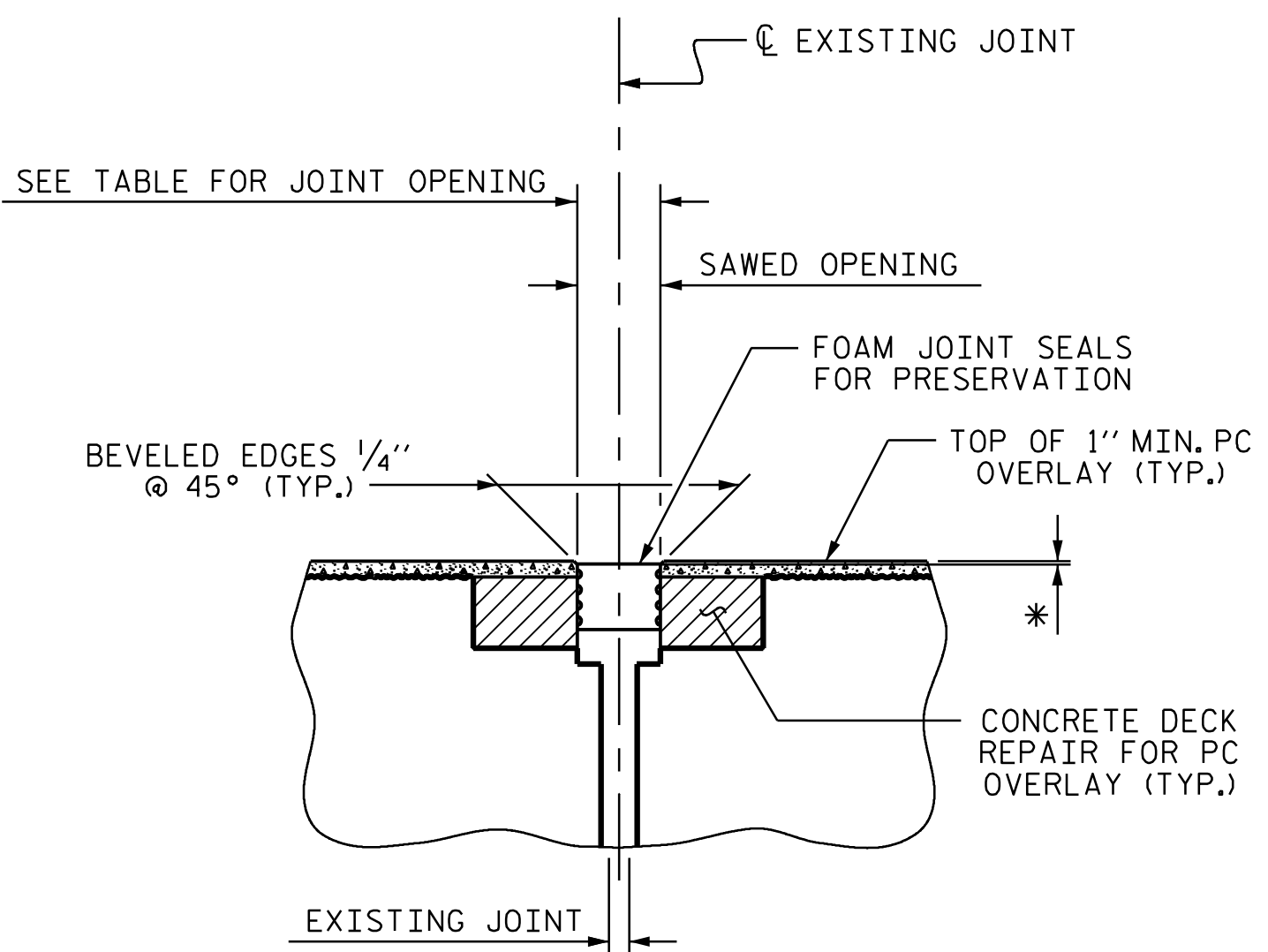
- THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDER JOINT SEAL MATERIAL. IF THE ACTUAL JOINT OPENING VARIES FROM THE OPENING ALLOWED BY THE JOINT SEAL MATERIAL, NOTIFY THE ENGINEER. REVISION TO THE JOINT SEAL SIZE AND TYPE MIGHT BE NECESSARY.
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- 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 LOCATION OF SECTION F-F, SEE PLAN OF SPAN SHEETS.
- FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.



PLAN



SECTION X-X



DETAIL A  
(PROPOSED)

JOINT SEAL DETAILS @ AT END BENT 2

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

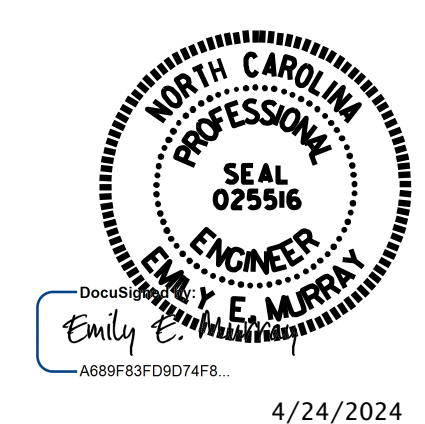
\* FOAM JOINT SEALS FOR PRESERVATION SHALL BE RECESSED AS PER MANUFACTURER'S RECOMMENDATIONS.

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
BRIDGE NO: 180477

SHEET 6 OF 6

JOINT REPAIR QUANTITY	
LOCATION	FOAM JOINT SEALS FOR PRESERVATION ESTIMATED (LIN. FT.)
END BENT 2	47.0

SAWED JOINT OPENING TABLE				
LOCATION	SKEW ANGLE	PERPENDICULAR JOINT OPENING AT 45°	PERPENDICULAR JOINT OPENING AT 60°	PERPENDICULAR JOINT OPENING AT 90°
END BENT 2	90°00'00"	1 1/16"	1 1/16"	1 1/16"



4/24/2024

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

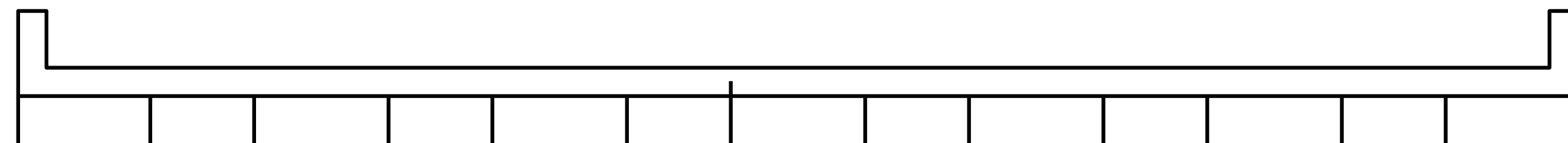
JOINT REPAIR DETAILS AT END BENT 2

DRAWN BY : D. A. GLADDEN DATE : 5/23  
CHECKED BY : E. E. MURRAY DATE : 3/24

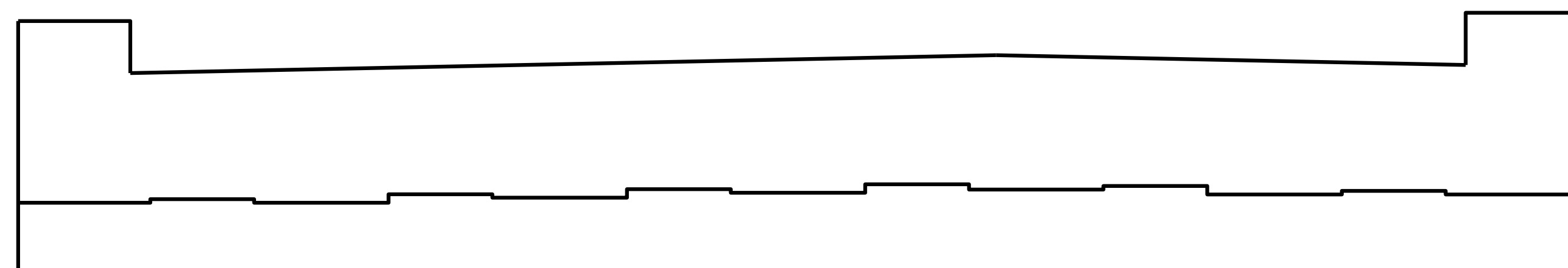
**VOLKERT**  
5430 Wade Park Blvd, Suite 410  
Raleigh, NC 27607  
Tel: 919-854-0344 Fax: 919-854-0355  
NC License No. F-0765

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1			3			TOTAL SHEETS
2			4			156



PLAN OF END BENT 1



ELEVATION OF END BENT 1

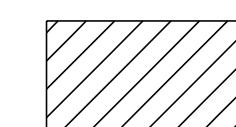
**AS-BUILT REPAIR QUANTITY TABLE**

REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
<b>SHOTCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
<b>CONCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
<b>EPOXY RESIN INJECTION</b>		LN. FT.		LN. FT.
CAP		0.0		
<b>EPOXY COATING</b>		SQ. FT.		SQ. FT.
TOP OF BENT CAP		96.4		

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

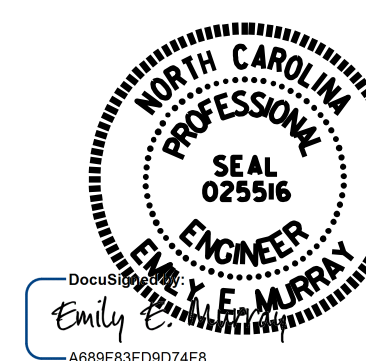


CONCRETE REPAIR



EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477



4/24/2024

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

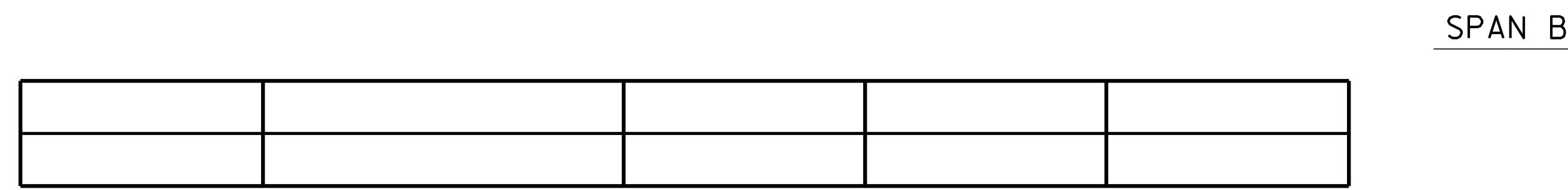
**END BENT 1**

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

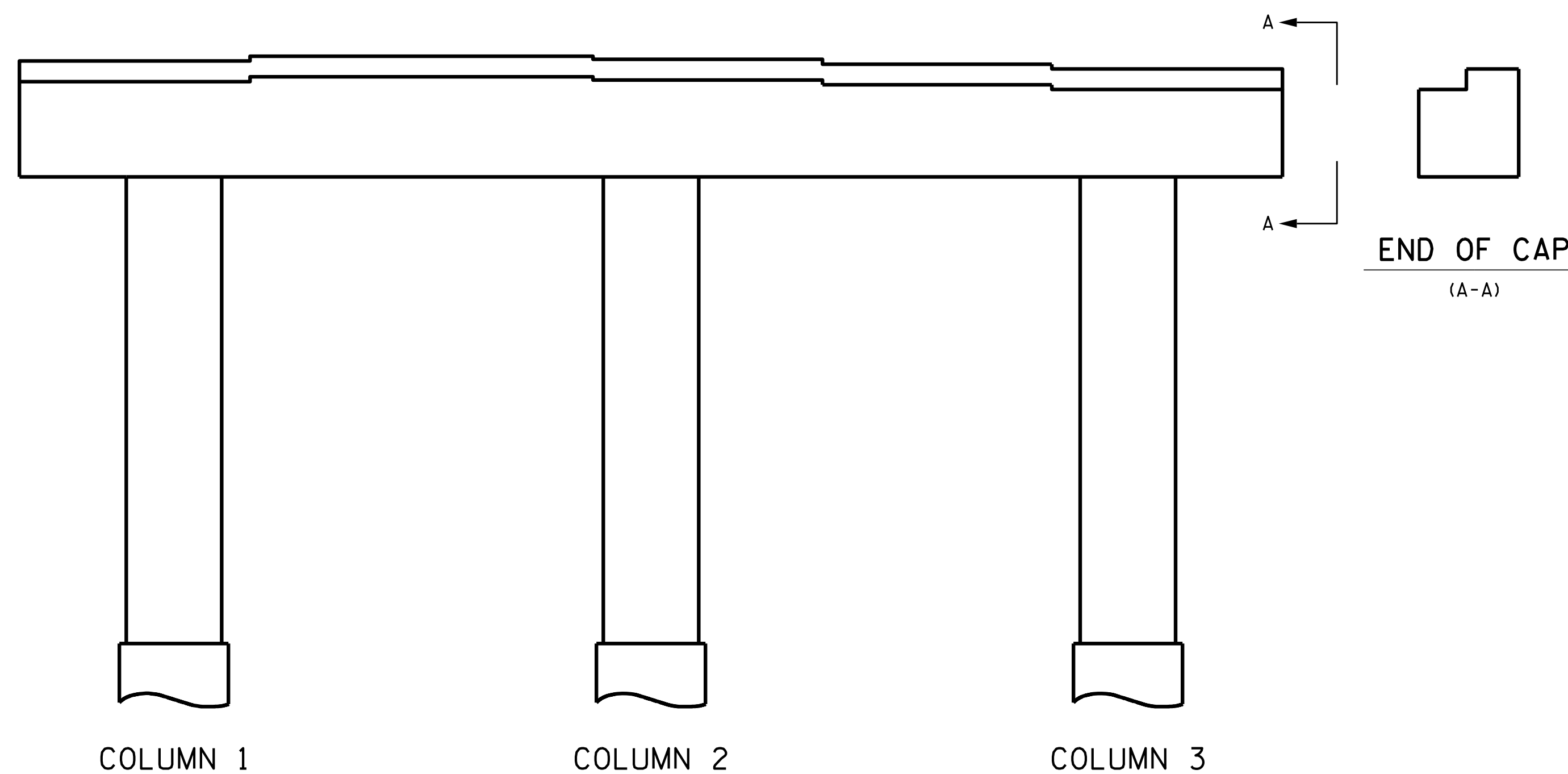
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-61
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24



TOP OF CAP @ BENT 1



ELEVATION @ BENT 1 (SPAN A)

**AS-BUILT REPAIR QUANTITY TABLE**

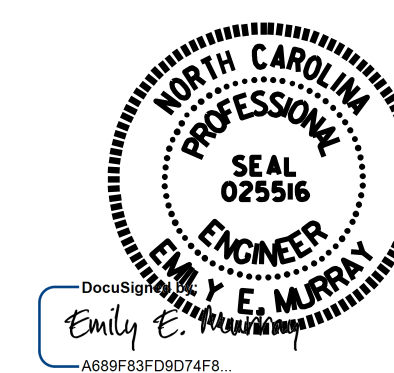
REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
<b>SHOTCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
<b>CONCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
<b>EPOXY RESIN INJECTION</b>		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
<b>EPOXY COATING</b>		SQ. FT.		SQ. FT.
TOP OF BENT CAP		169.9		

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.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 1 OF 2



4/24/2024

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 1**

VOLKERT

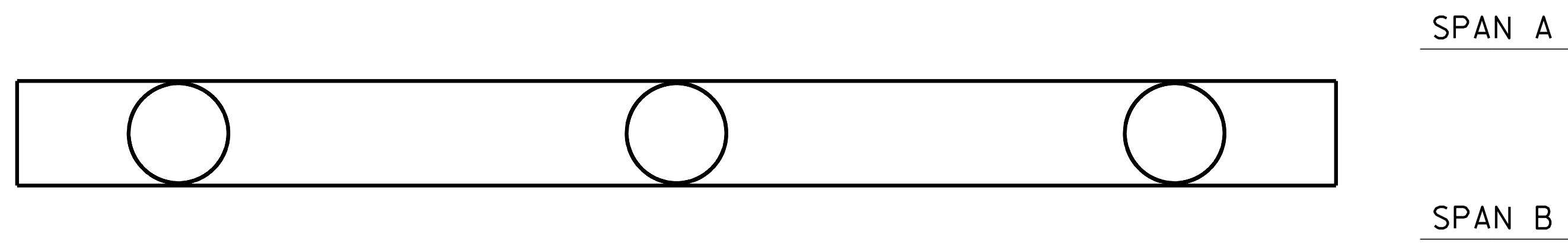
5540 Centerview Drive, Suite 305  
 Raleigh, NC 27606  
 Tel. 919-854-0344 Fax. 919-854-0355  
 NC License No. F-0765

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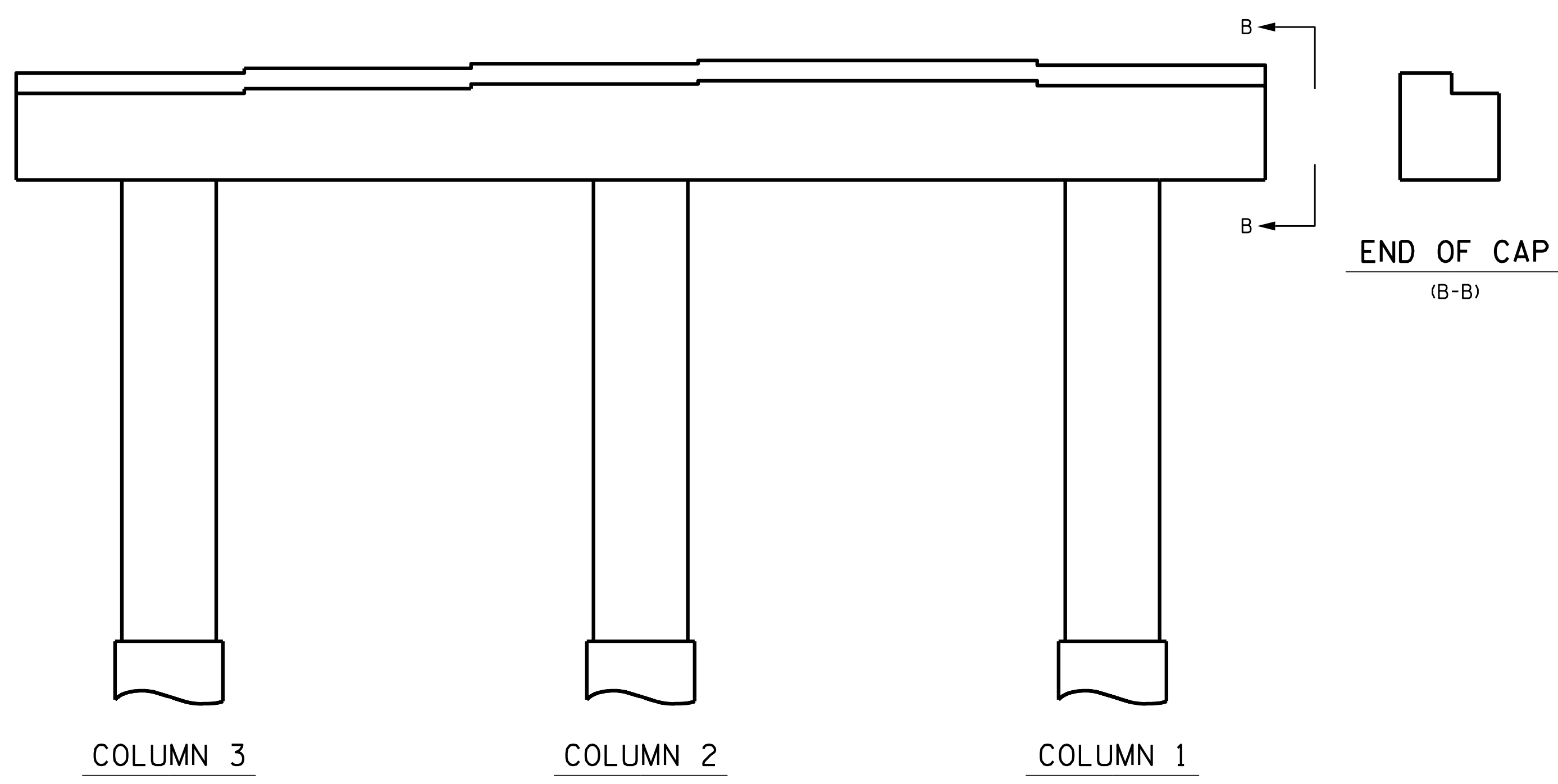
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-62
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24





BOTTOM OF CAP @ BENT 1



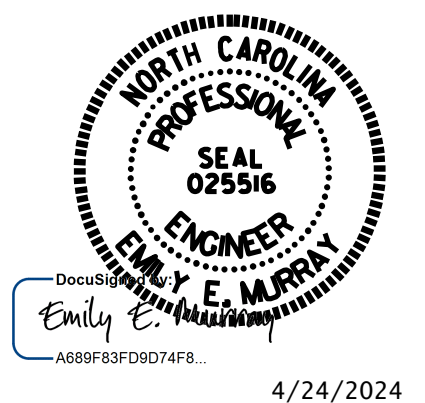
ELEVATION @ BENT 1 (SPAN B)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT 1



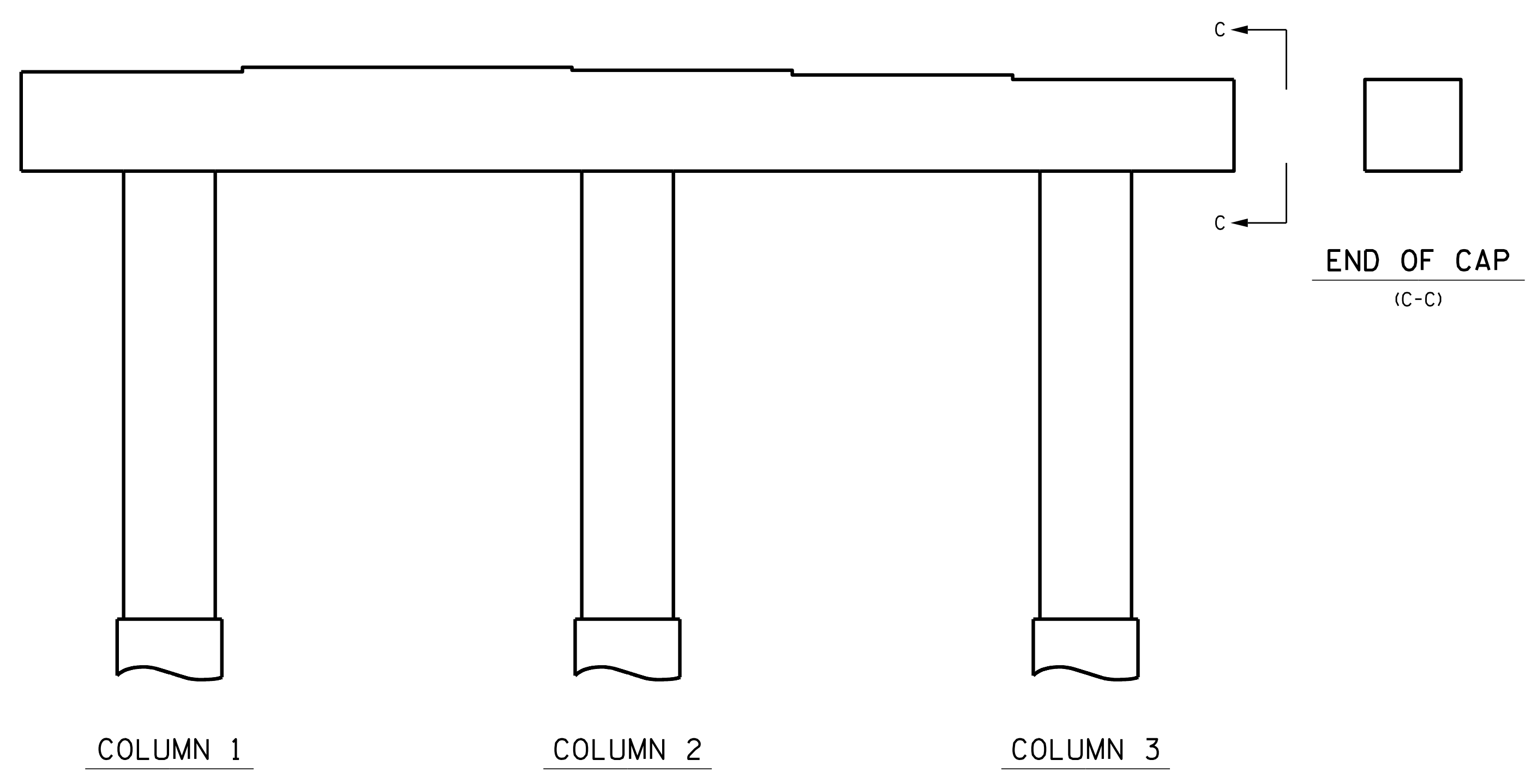
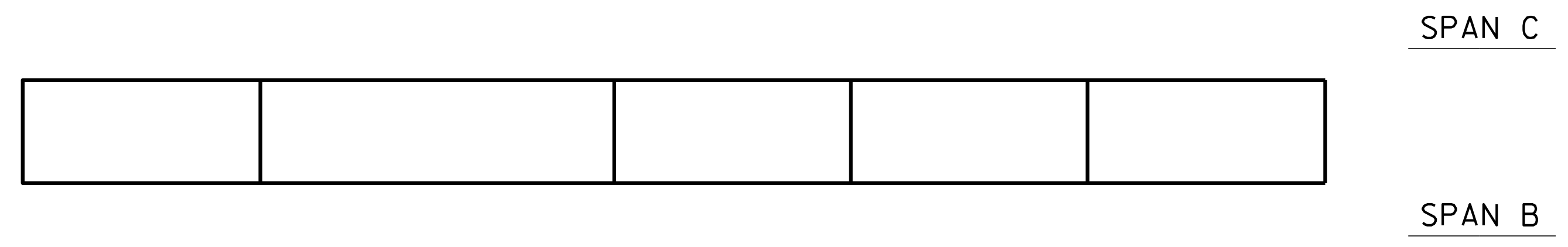
**VOLKERT**  
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 Raleigh, NC 27606  
 Tel. 919-854-0344 Fax. 919-854-0355  
 NC License No. F-0765

DOCUMENT NOT CONSIDERED  
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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-63
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24

4/24/2024



ELEVATION @ BENT 2 (SPAN B)

**AS-BUILT REPAIR QUANTITY TABLE**

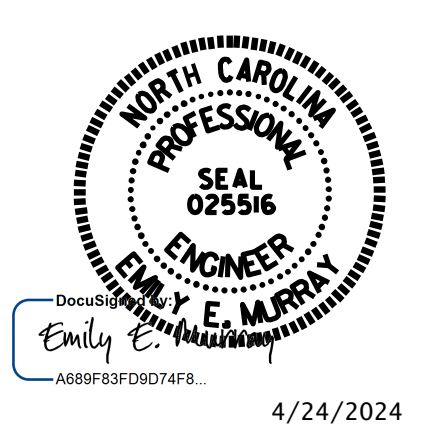
REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.	LN. FT.	
CAP		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		169.9		

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.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 1 OF 2



4/24/2024

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## BENT 2

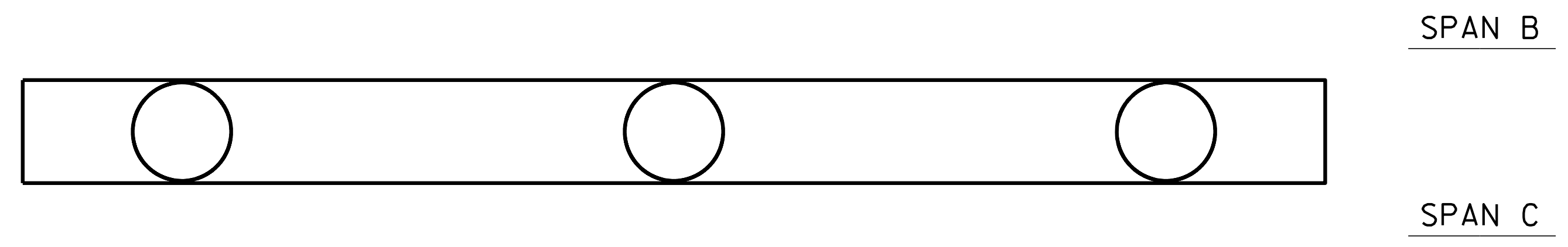
**VOLKERT**

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

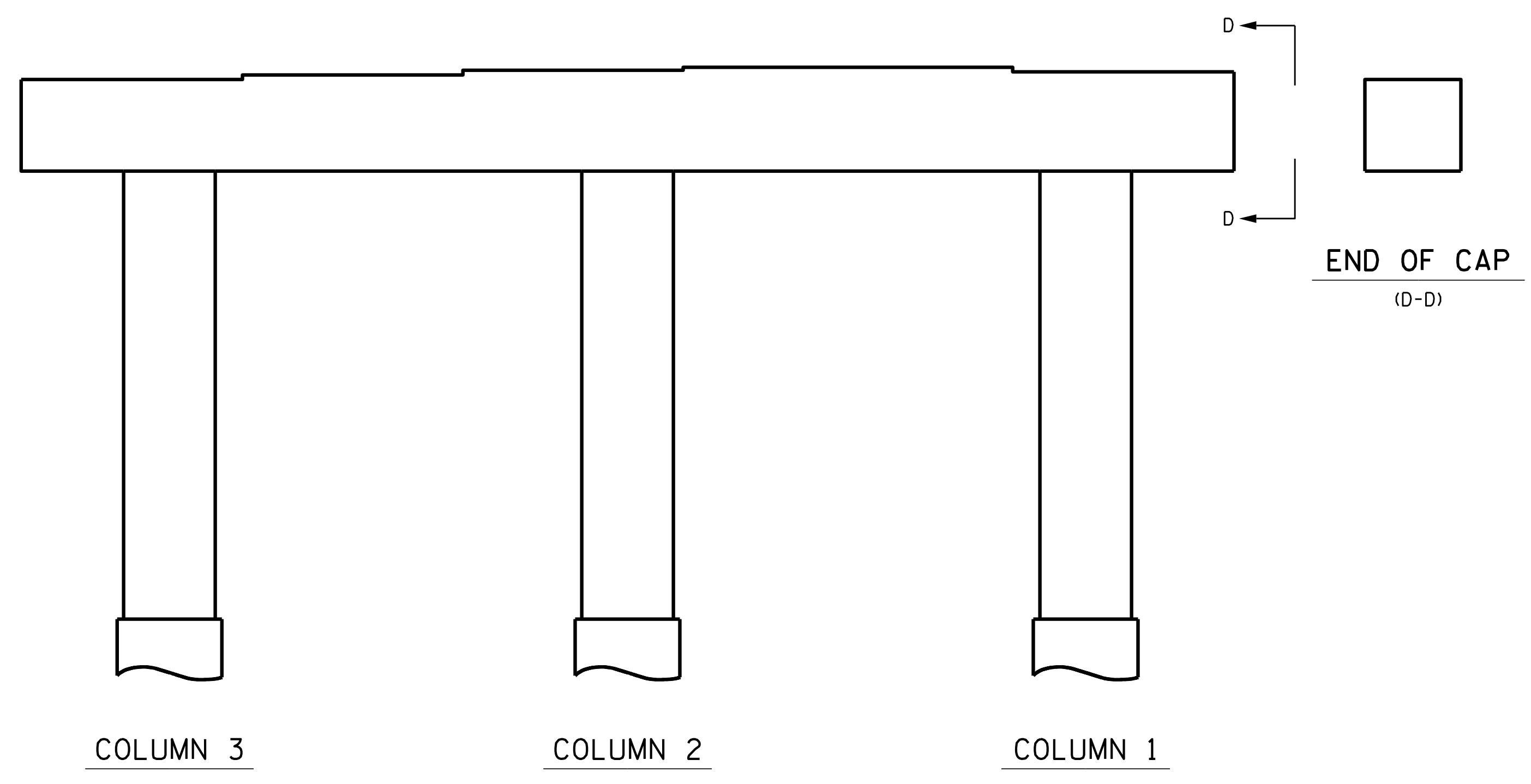
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-64
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24

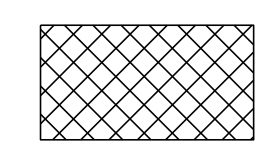
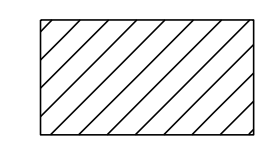

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



BOTTOM OF CAP @ BENT 2



ELEVATION @ BENT 2 (SPAN C)

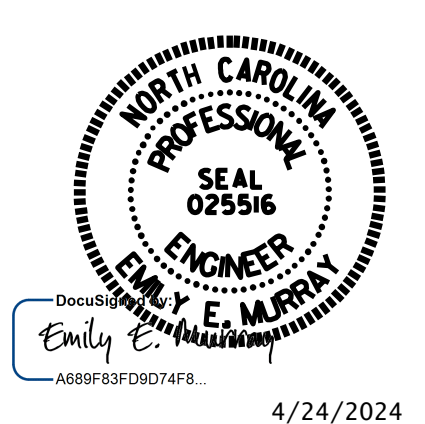
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 2**



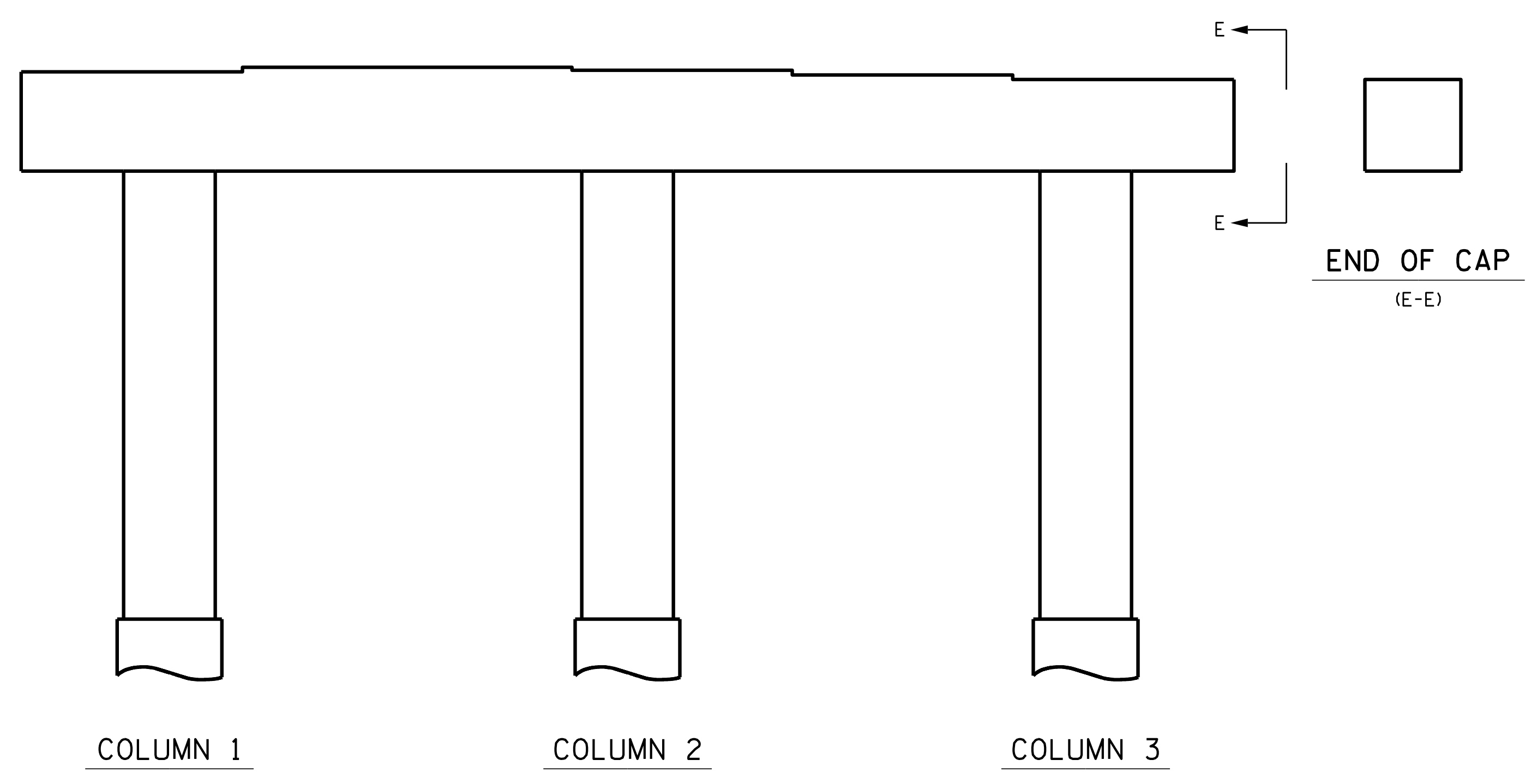
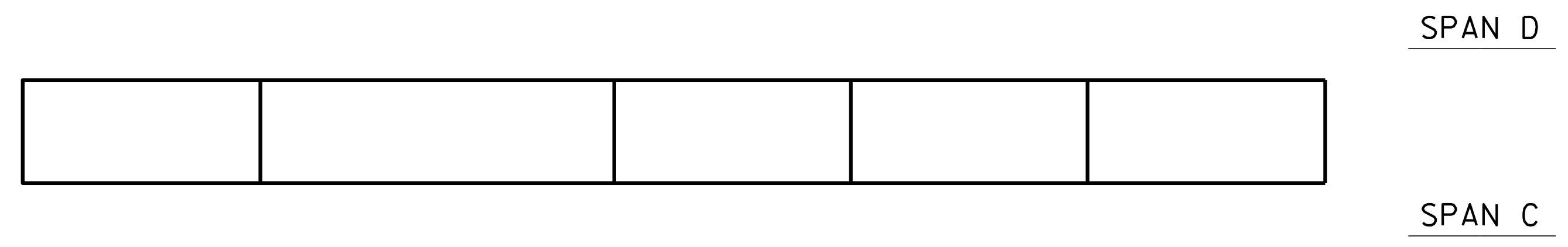
**VOLKERT**  
 5540 Centerview Drive, Suite 305  
 Raleigh, NC 27606  
 Tel. 919-854-0344 Fax. 919-854-0355  
 NC License No. F-0765

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-65
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24





ELEVATION @ BENT 3 (SPAN C)

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
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		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		169.9		

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

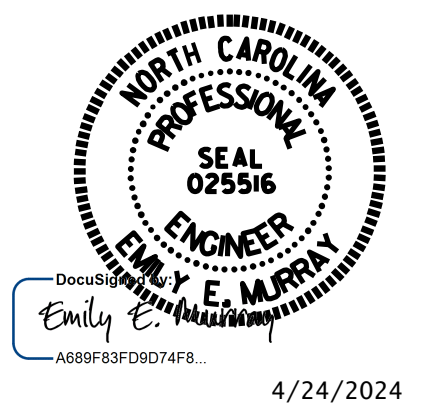
- SHOTCRETE REPAIR
- CONCRETE REPAIR
- EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

BENT 3



4/24/2024

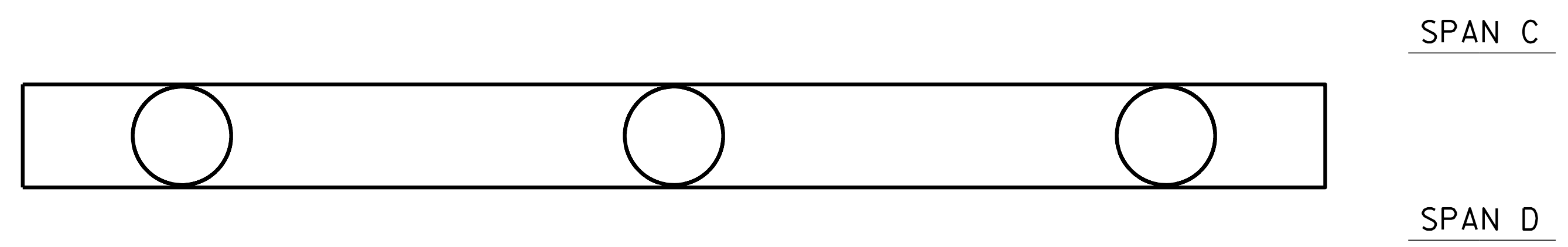
VOLKERT

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Raleigh, NC 27606  
Tel. 919-854-0344 Fax. 919-854-0355  
NC License No. F-0765

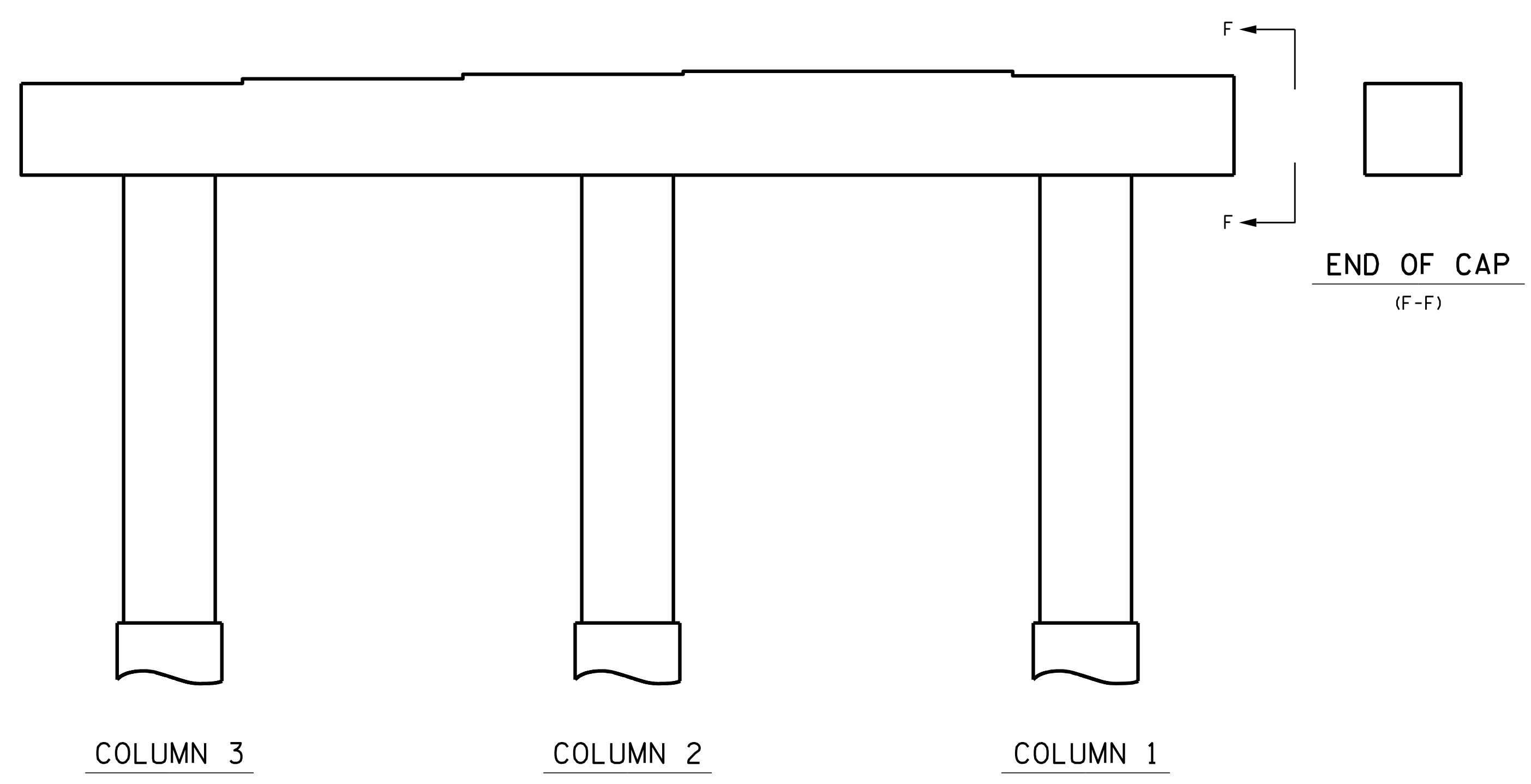
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-66
1			3			TOTAL SHEETS
2			4			156

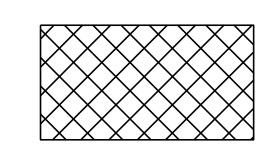
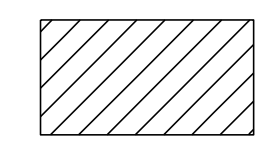

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24



BOTTOM OF CAP @ BENT 3



ELEVATION @ BENT 3 (SPAN D)

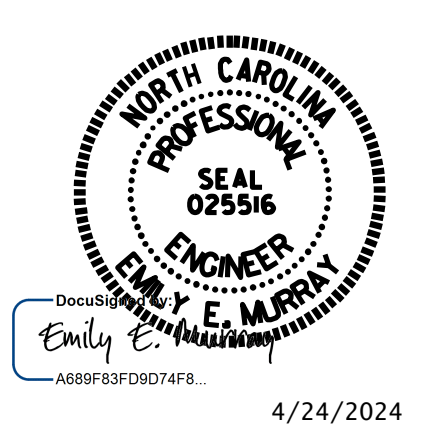
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 3**

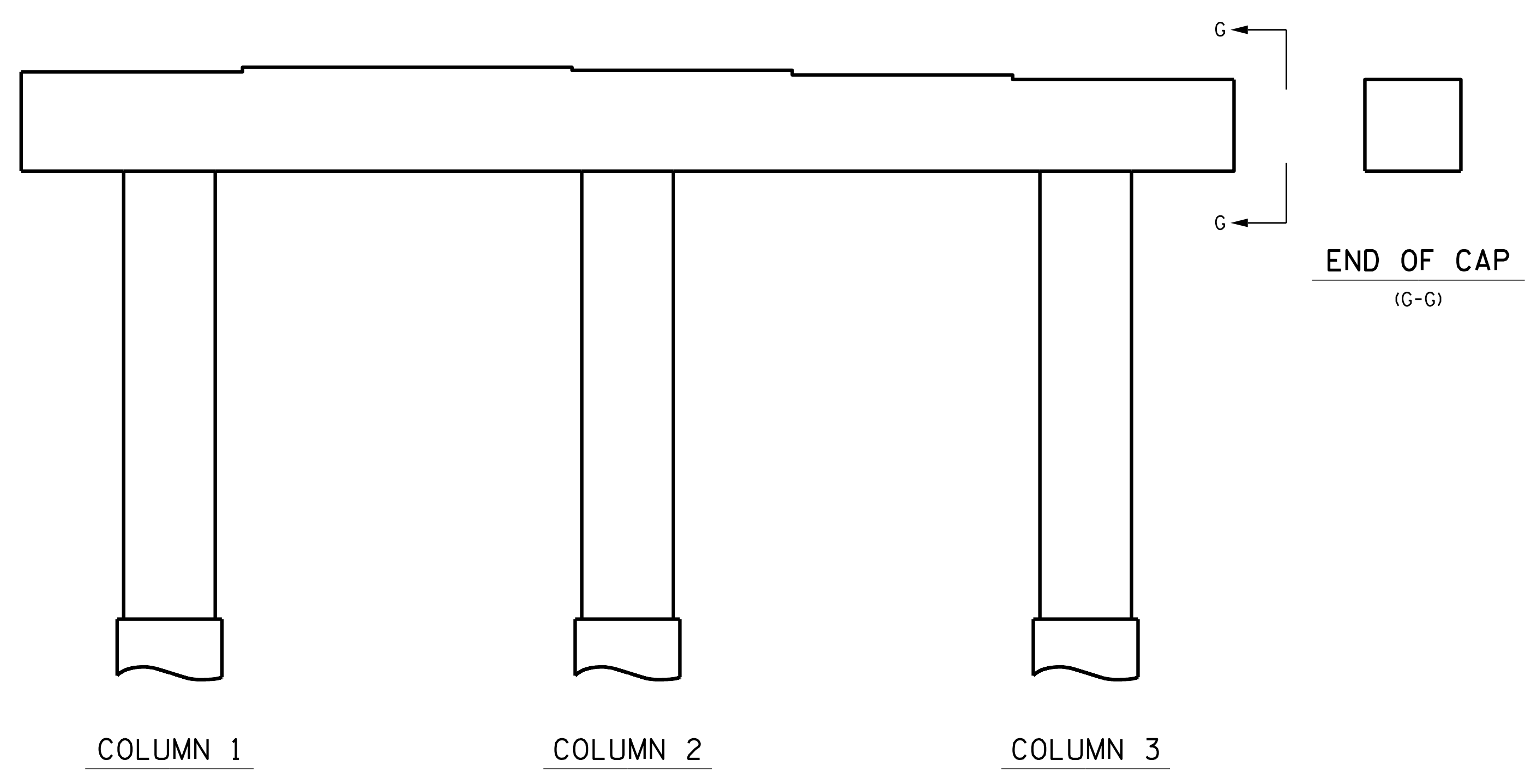
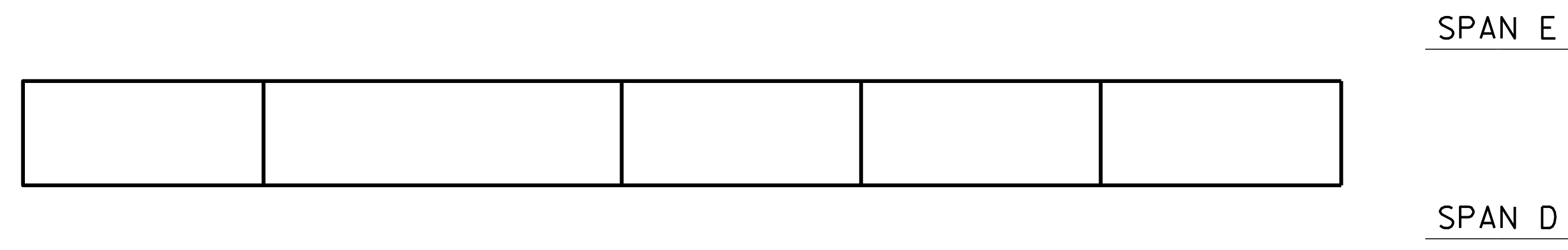


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 Raleigh, NC 27606  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-67
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24



ELEVATION @ BENT 4 (SPAN D)

**AS-BUILT REPAIR QUANTITY TABLE**

REPAIRS BENT 4	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
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		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		169.9		

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

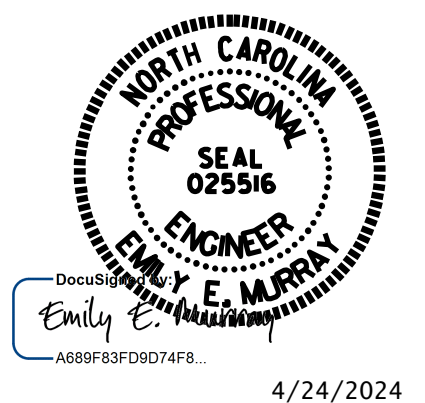
- SHOTCRETE REPAIR
- CONCRETE REPAIR
- EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

BENT 4



VOLKERT

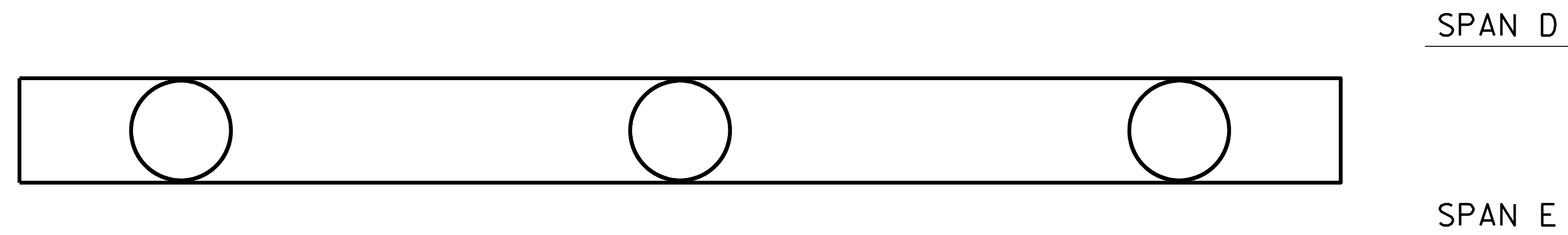
5540 Centerview Drive, Suite 305  
Raleigh, NC 27606  
Tel. 919-854-0344 Fax. 919-854-0355  
NC License No. F-0765

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24

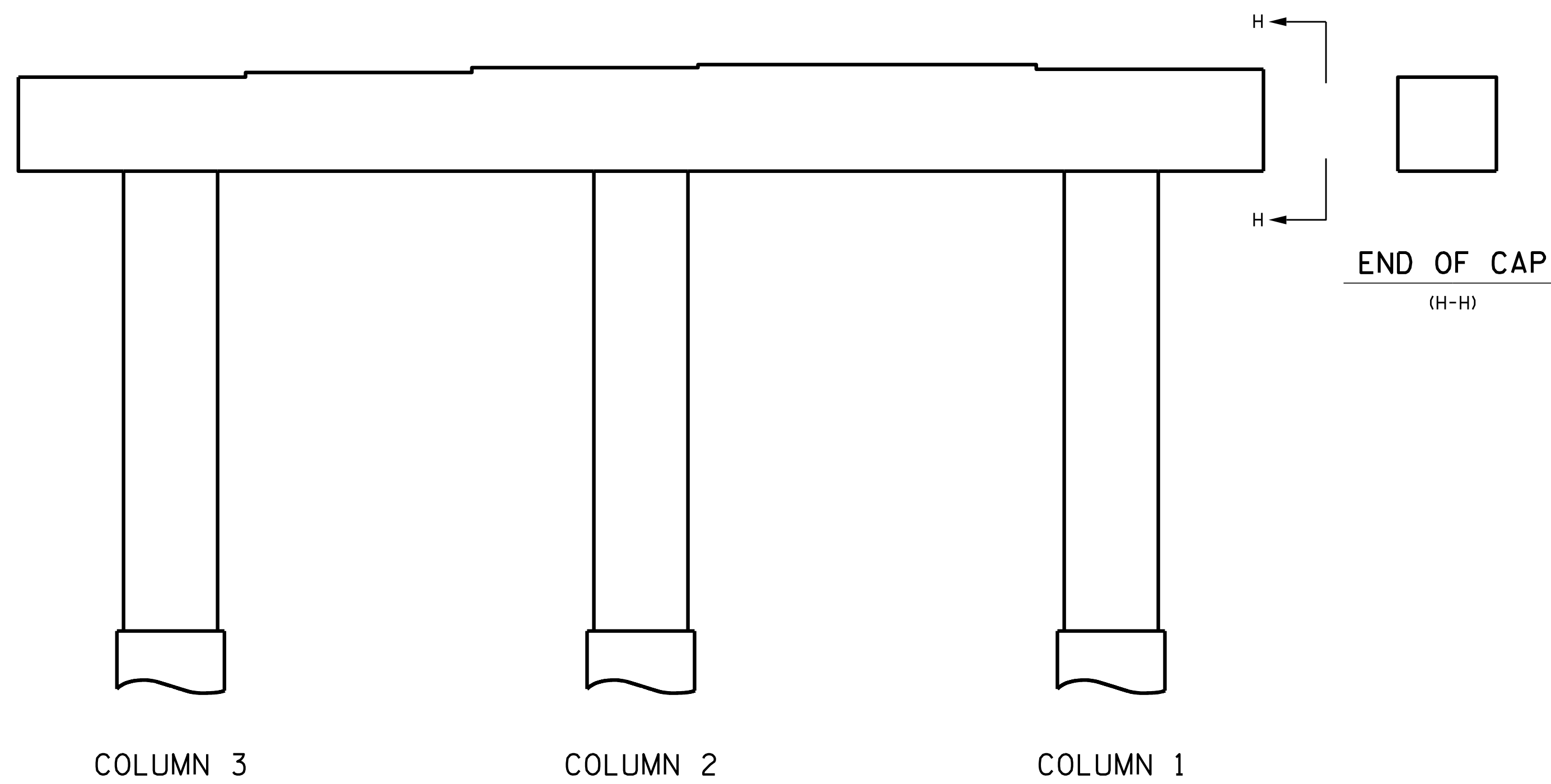
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-68
1			3			TOTAL SHEETS 156
2			4			

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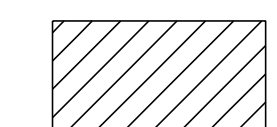





BOTTOM OF CAP @ BENT 4



ELEVATION @ BENT 4 (SPAN E)

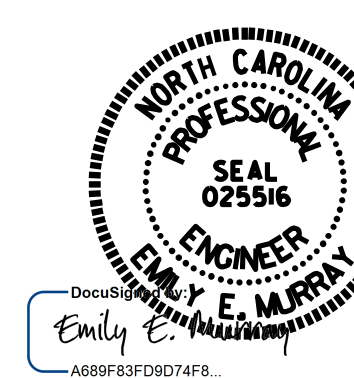
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT 4



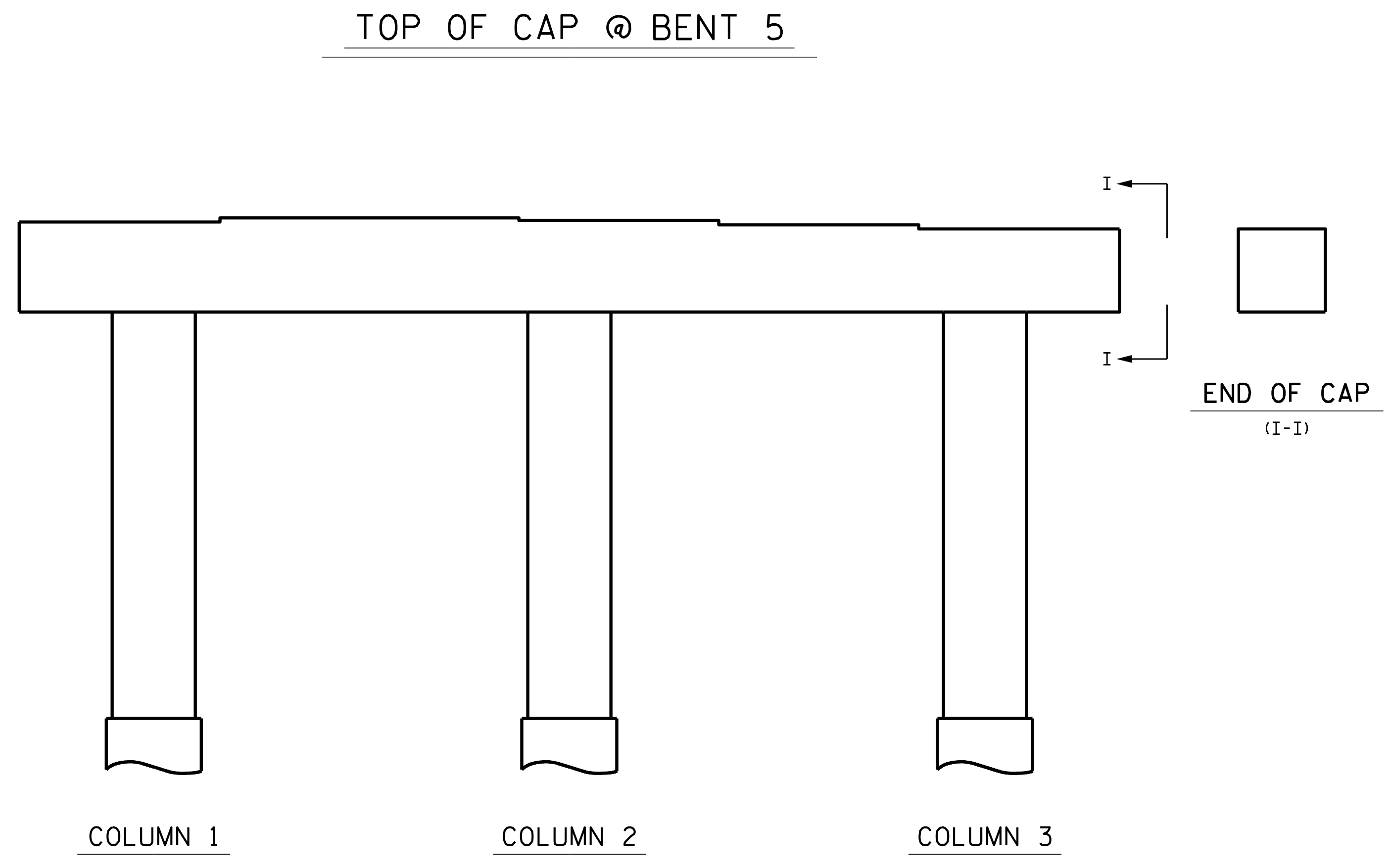
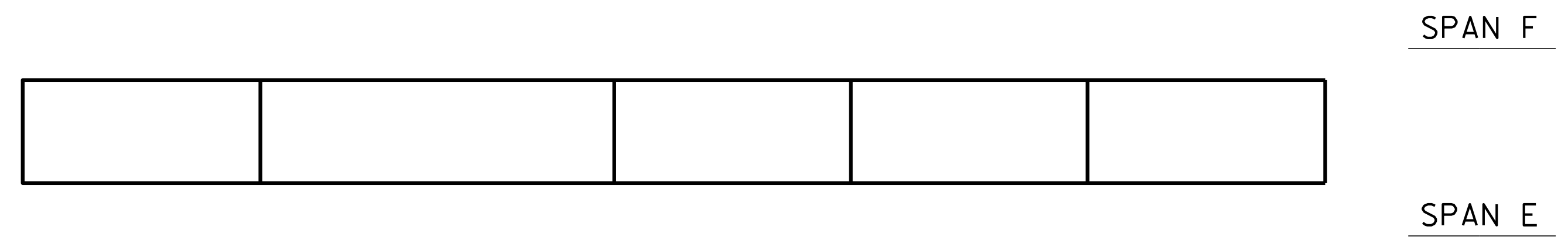
Emily E. Murray  
 4/24/2024

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 Raleigh, NC 27606  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-69
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24



ELEVATION @ BENT 5 (SPAN E)

**AS-BUILT REPAIR QUANTITY TABLE**

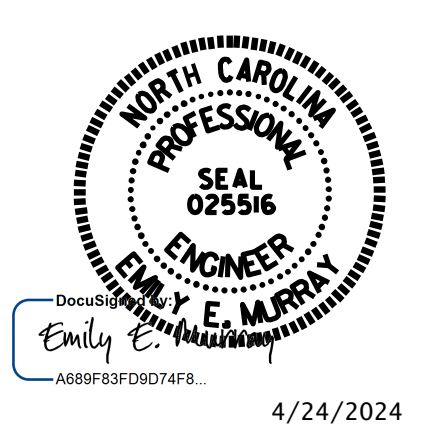
REPAIRS BENT 5	QUANTITIES			
	ESTIMATE		ACTUAL	
<b>SHOTCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
<b>CONCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
<b>EPOXY RESIN INJECTION</b>		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
<b>EPOXY COATING</b>		SQ. FT.		SQ. FT.
TOP OF BENT CAP		169.9		

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.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 1 OF 2



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 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 5**

**VOLKERT**

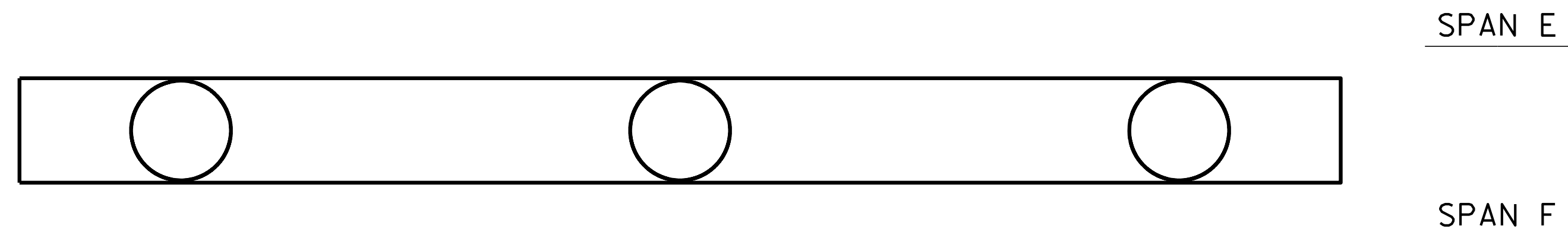
5540 Centerview Drive, Suite 305  
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 Tel. 919-854-0344 Fax. 919-854-0355  
 NC License No. F-0765

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-70
1			3			TOTAL SHEETS
2			4			156

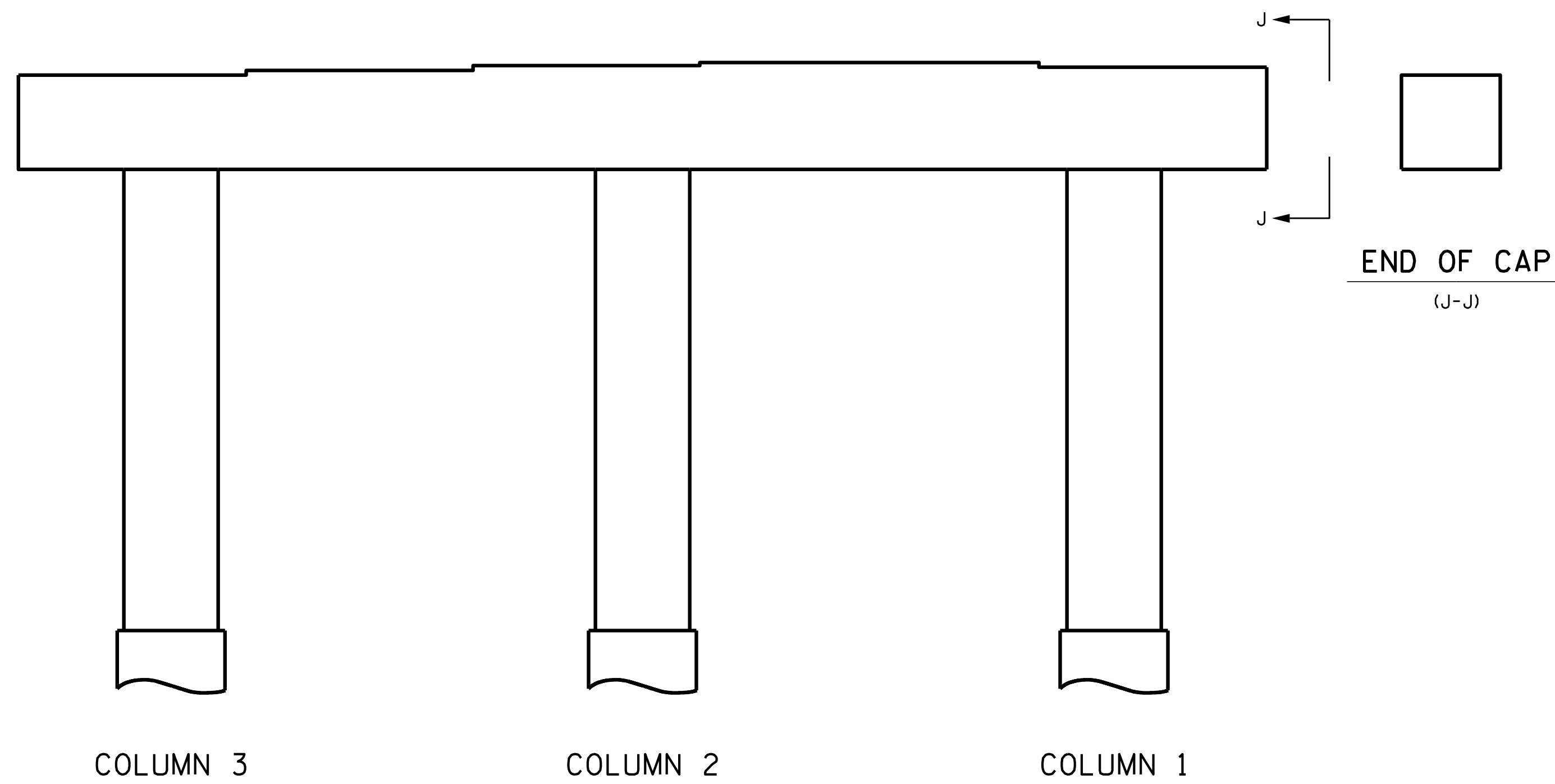
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 CHECKED BY : P. N. HOLDER DATE : 03/24

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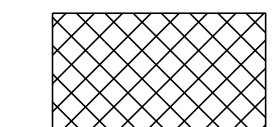
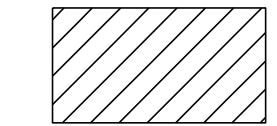

4/24/2024



BOTTOM OF CAP @ BENT 5



ELEVATION @ BENT 5 (SPAN F)

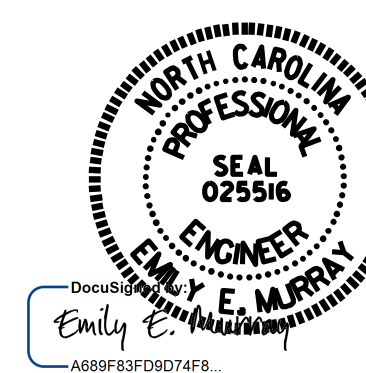
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
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BENT 5



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 4/24/2024

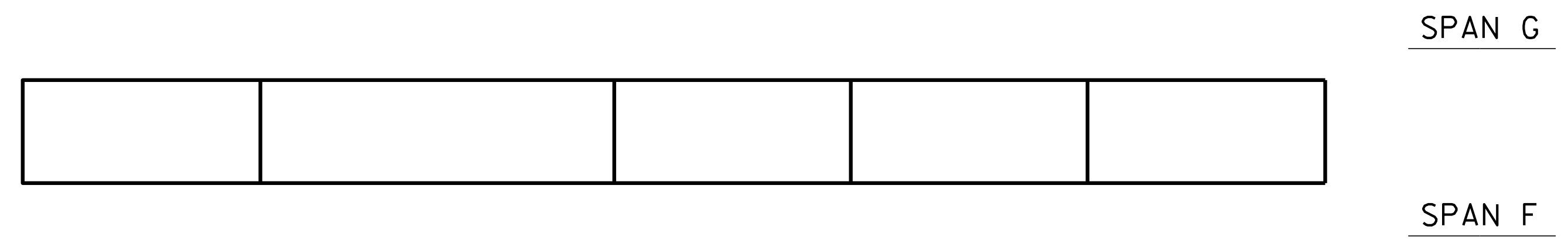
**VOLKERT**  
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 Tel. 919-854-0344 Fax. 919-854-0355  
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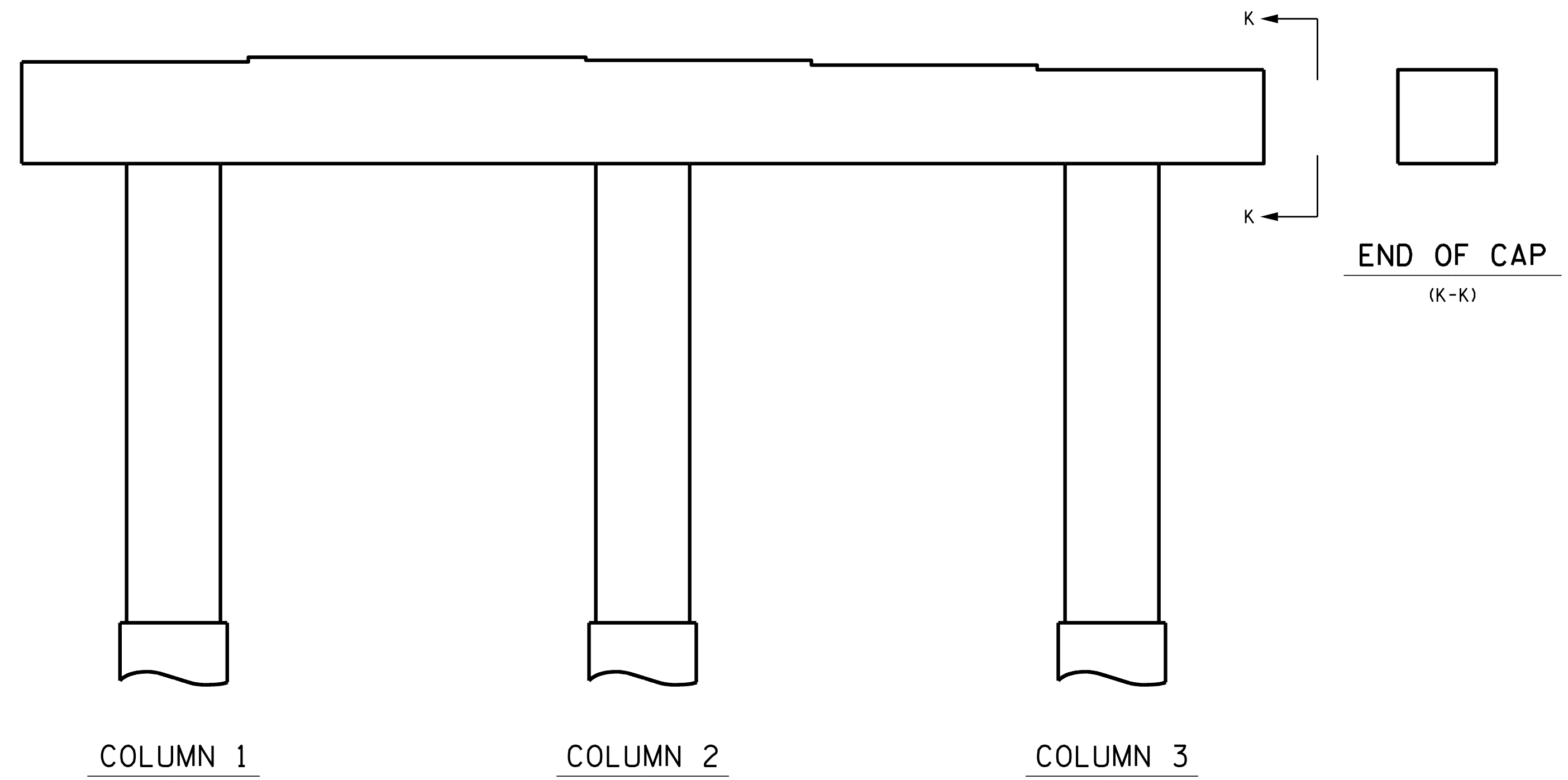
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-71
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24





TOP OF CAP @ BENT 6



ELEVATION @ BENT 6 (SPAN F)

**AS-BUILT REPAIR QUANTITY TABLE**

REPAIRS BENT 6	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
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		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		169.9		

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

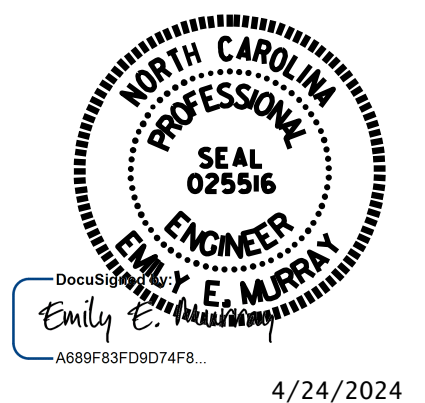
- SHOTCRETE REPAIR
- CONCRETE REPAIR
- EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT 6



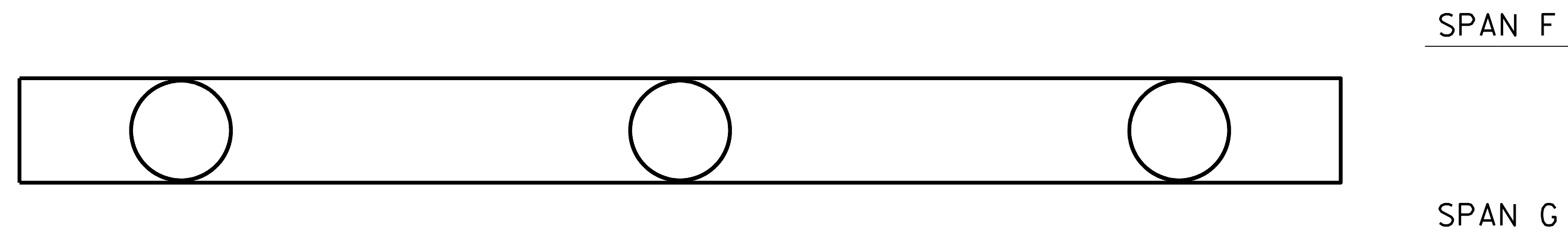
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 NC License No. F-0765

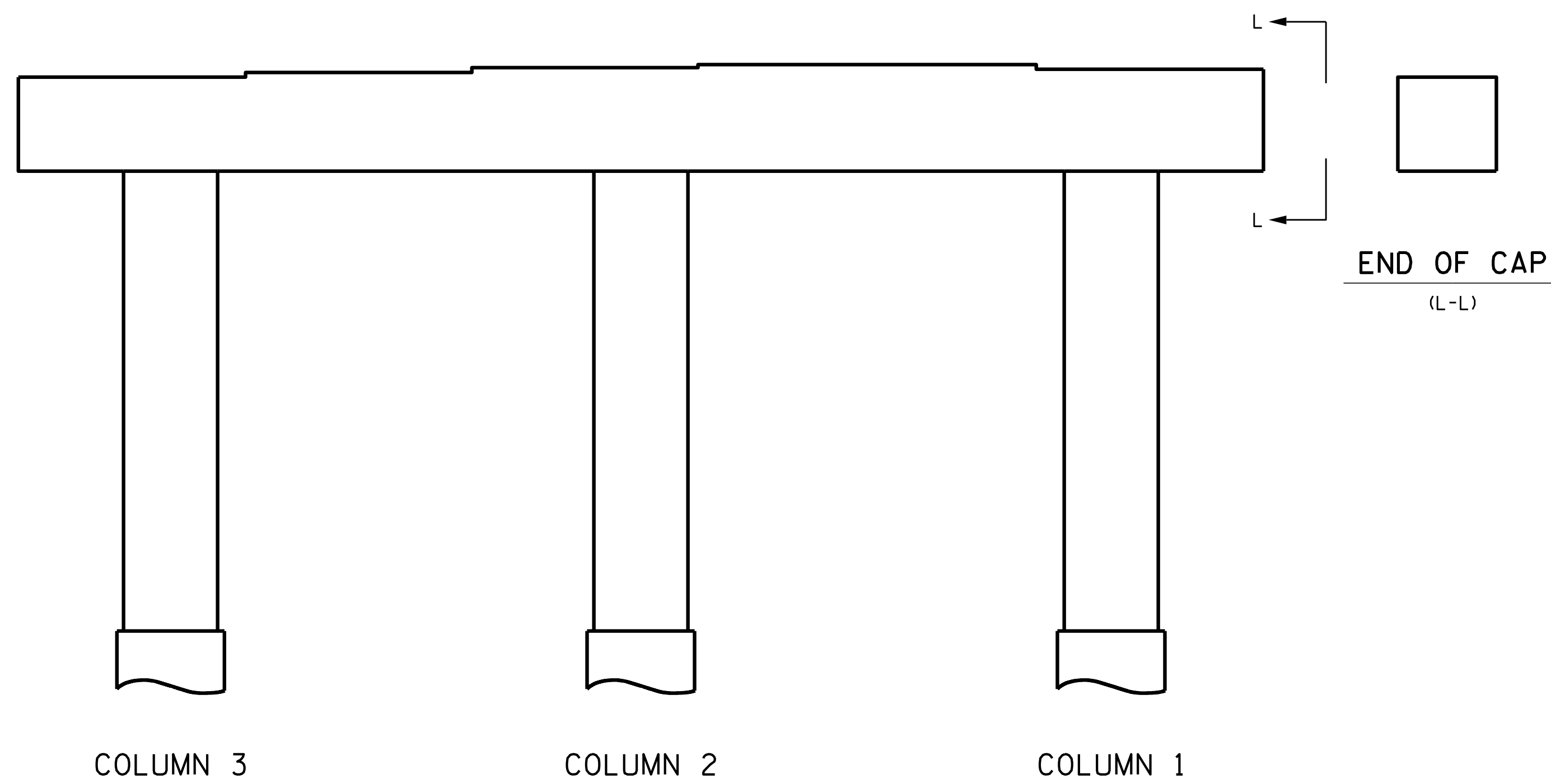
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DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24

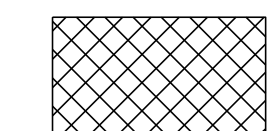


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



BOTTOM OF CAP @ BENT 6



ELEVATION @ BENT 6 (SPAN G)

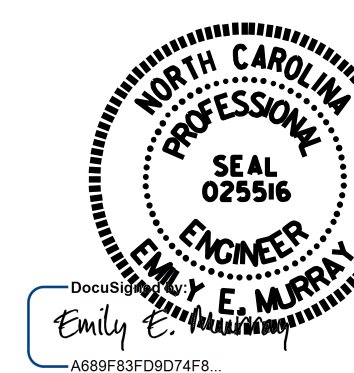
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT 6



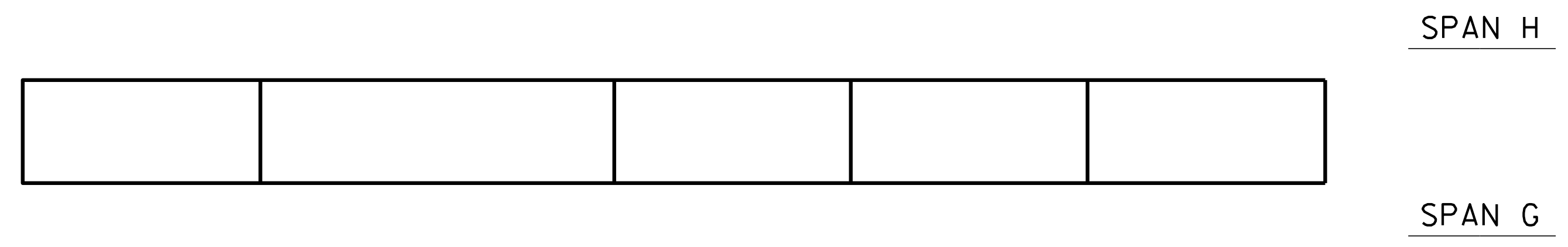
4/24/2024

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 Raleigh, NC 27606  
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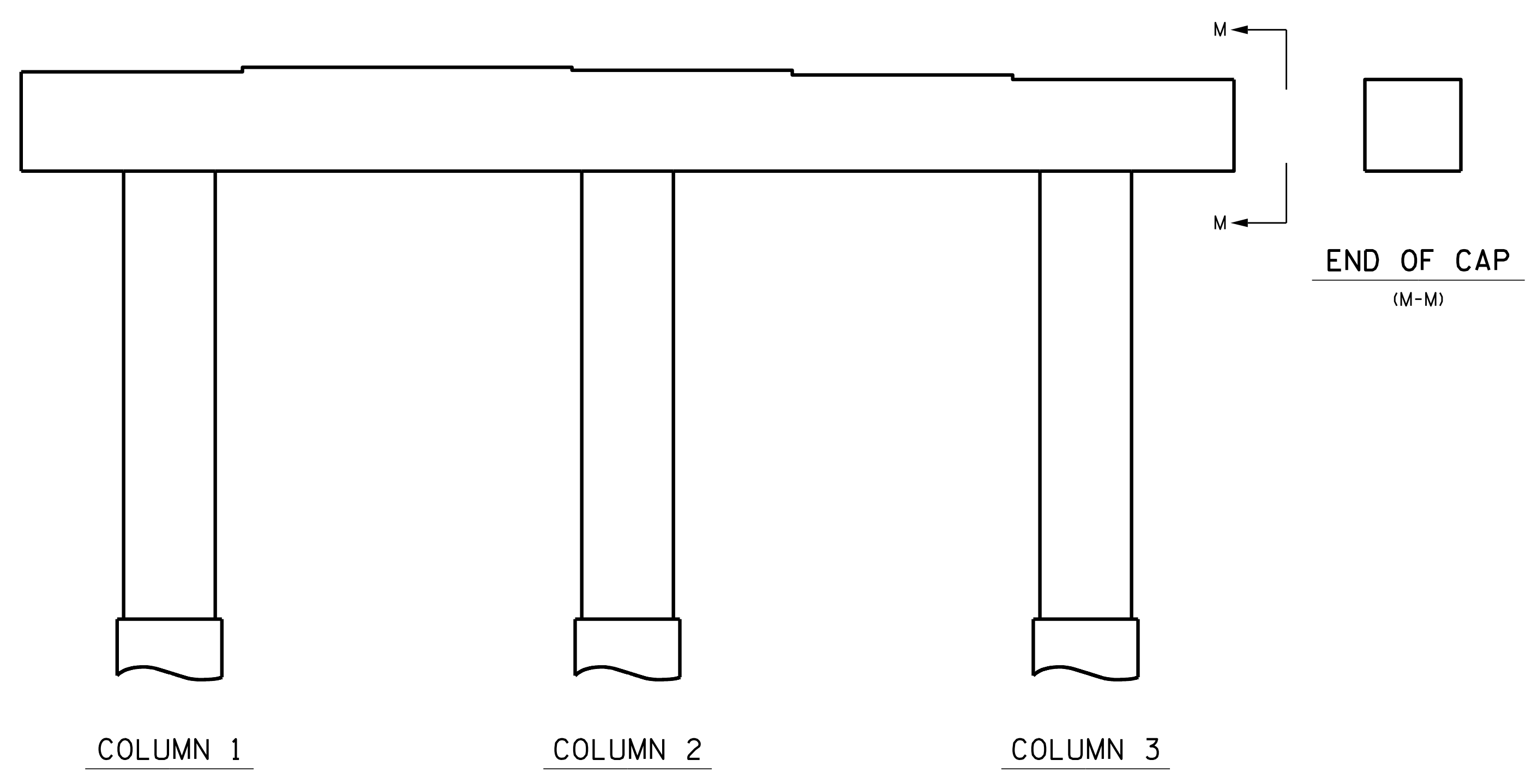
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1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24



TOP OF CAP @ BENT 7



ELEVATION @ BENT 7 (SPAN G)

**AS-BUILT REPAIR QUANTITY TABLE**

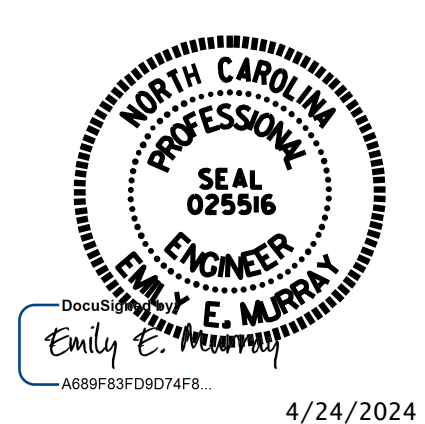
REPAIRS BENT 7	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.	LN. FT.	
CAP		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		169.9		

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.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 1 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 7**

VOLKERT

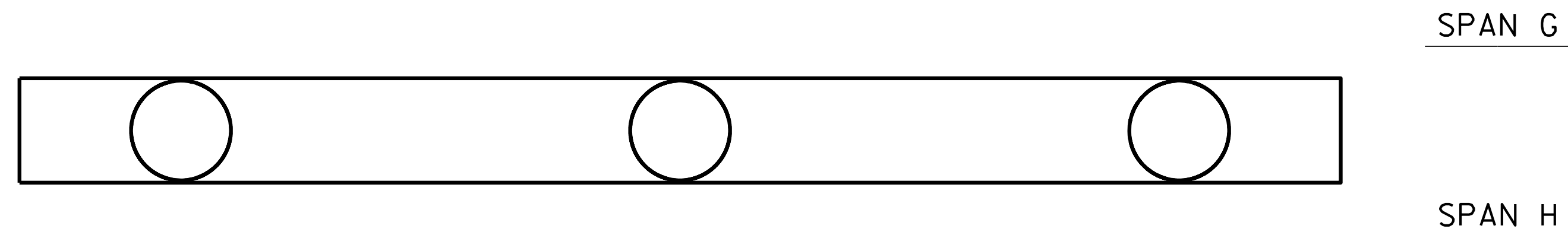
5540 Centerview Drive, Suite 305  
 Raleigh, NC 27606  
 Tel. 919-854-0344 Fax. 919-854-0355  
 NC License No. F-0765

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-74
1			3			TOTAL SHEETS
2			4			156

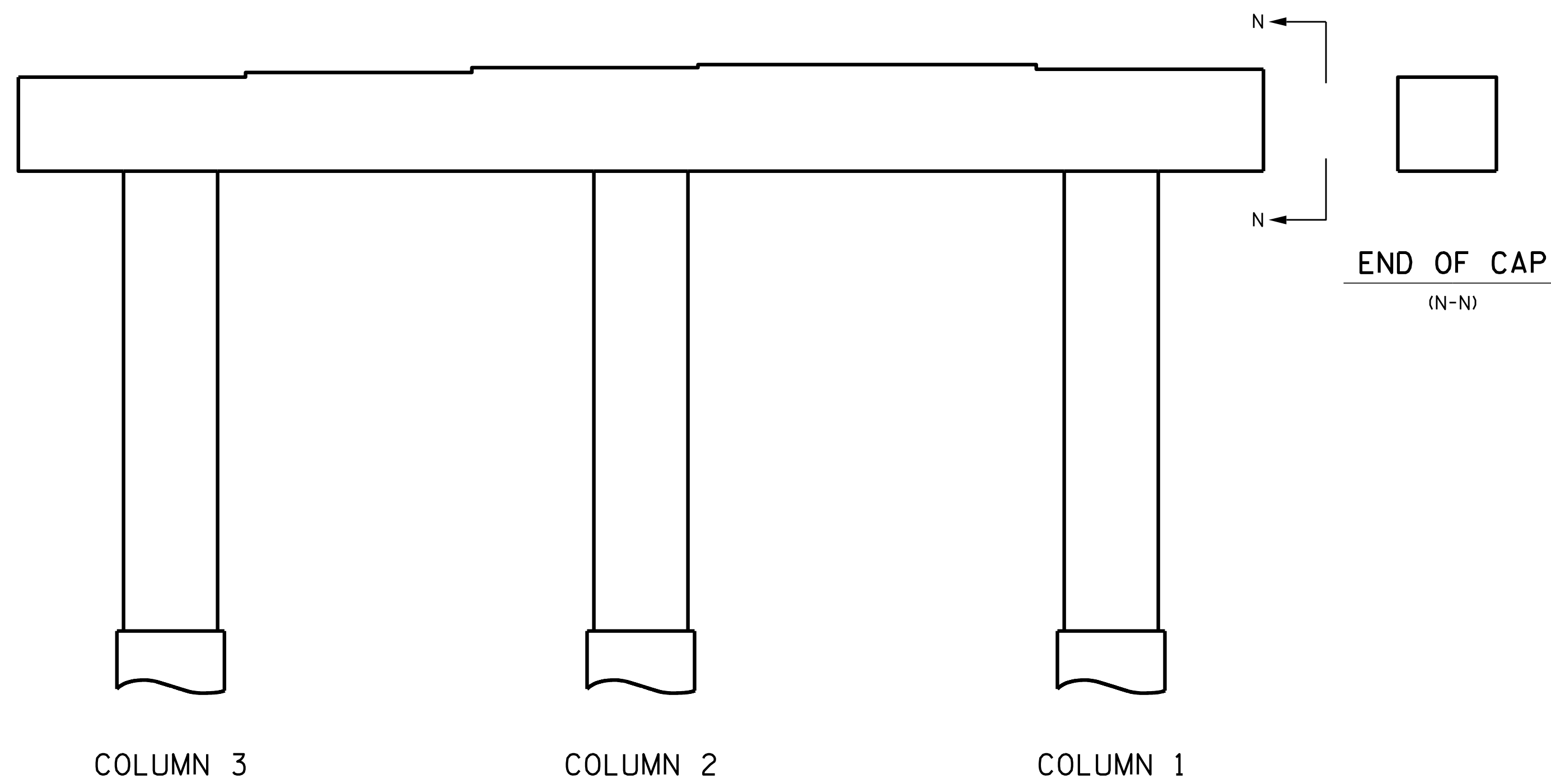
DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24

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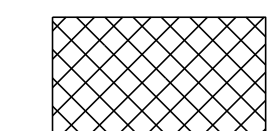






BOTTOM OF CAP @ BENT 7



ELEVATION @ BENT 7 (SPAN H)

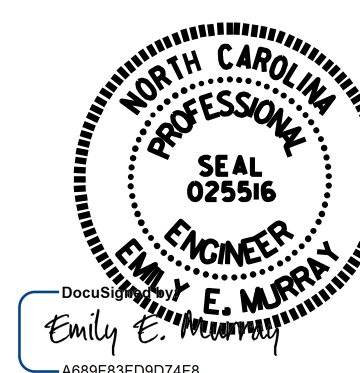
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT 7



Emily E. Murray  
 4/24/2024

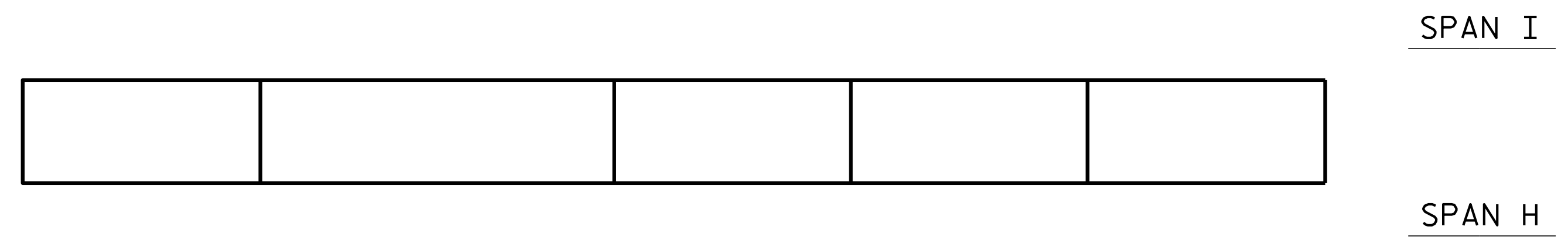


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 Tel. 919-854-0344 Fax. 919-854-0355  
 NC License No. F-0765

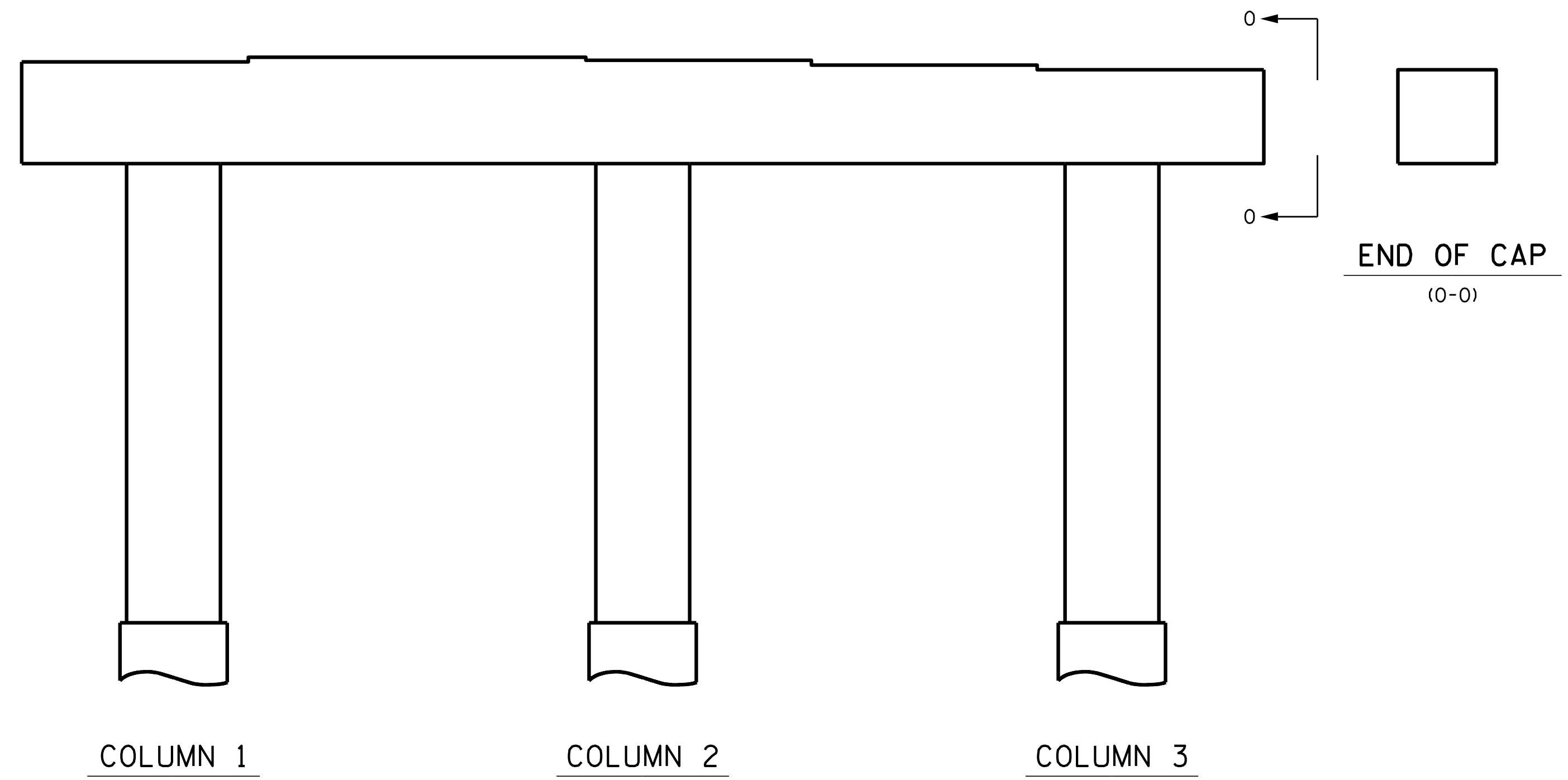
DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-75
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24



TOP OF CAP @ BENT 8



ELEVATION @ BENT 8 (SPAN H)

**AS-BUILT REPAIR QUANTITY TABLE**

REPAIRS BENT 8	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
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		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		169.9		

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

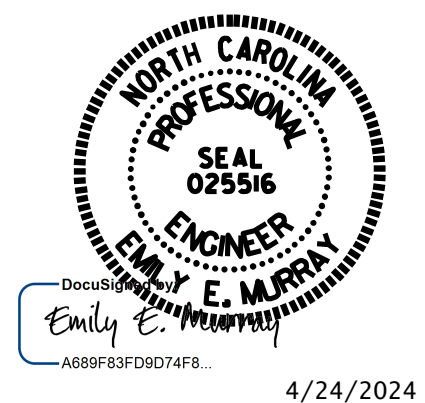
- SHOTCRETE REPAIR
- CONCRETE REPAIR
- EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT 8

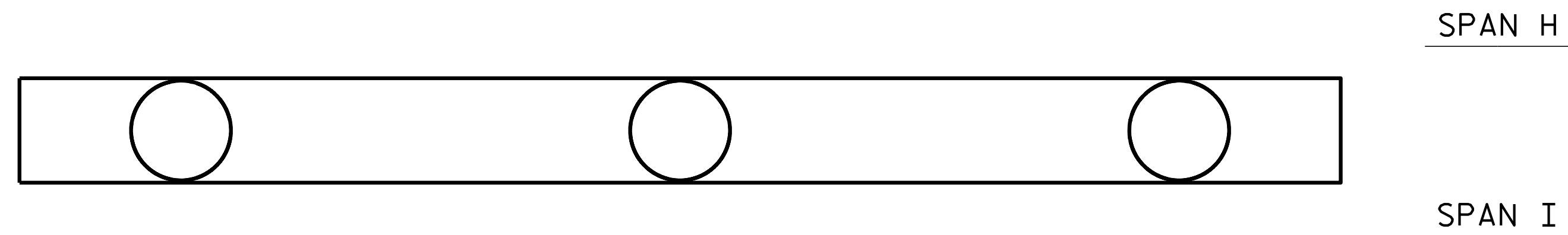


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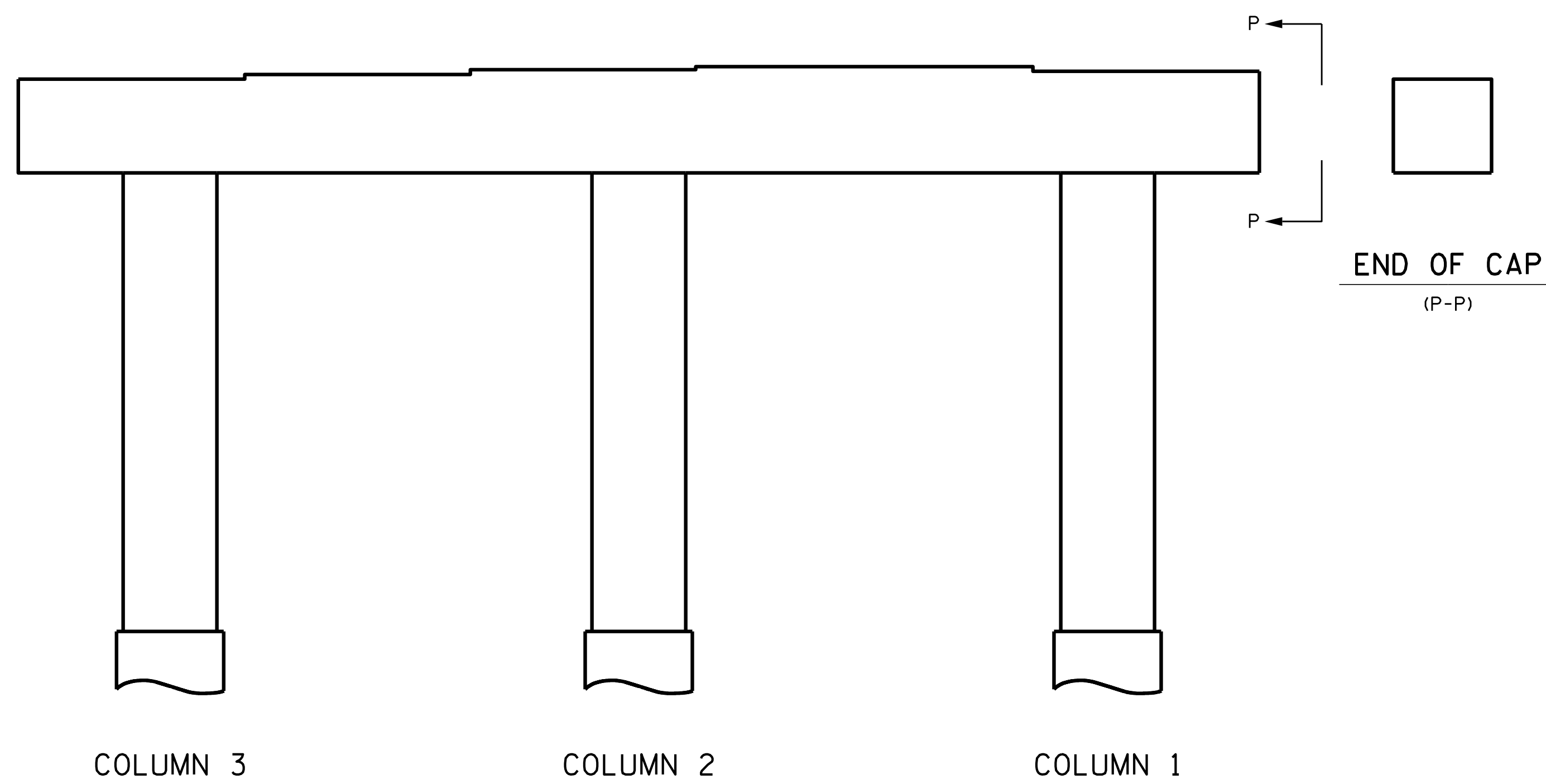
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-76
1			3			TOTAL SHEETS
2			4			156

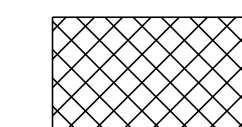
DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24



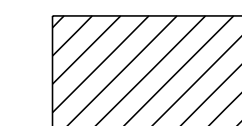
BOTTOM OF CAP @ BENT 8



ELEVATION @ BENT 8 (SPAN I)



SHOTCRETE REPAIR



CONCRETE REPAIR



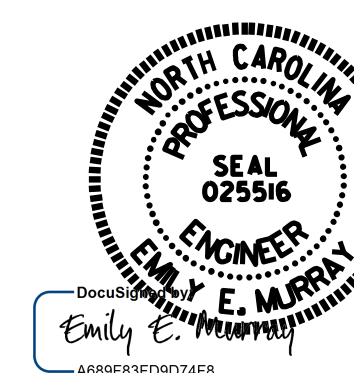
EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT 8



Emily E. Murray  
 4/24/2024

**VOLKERT**

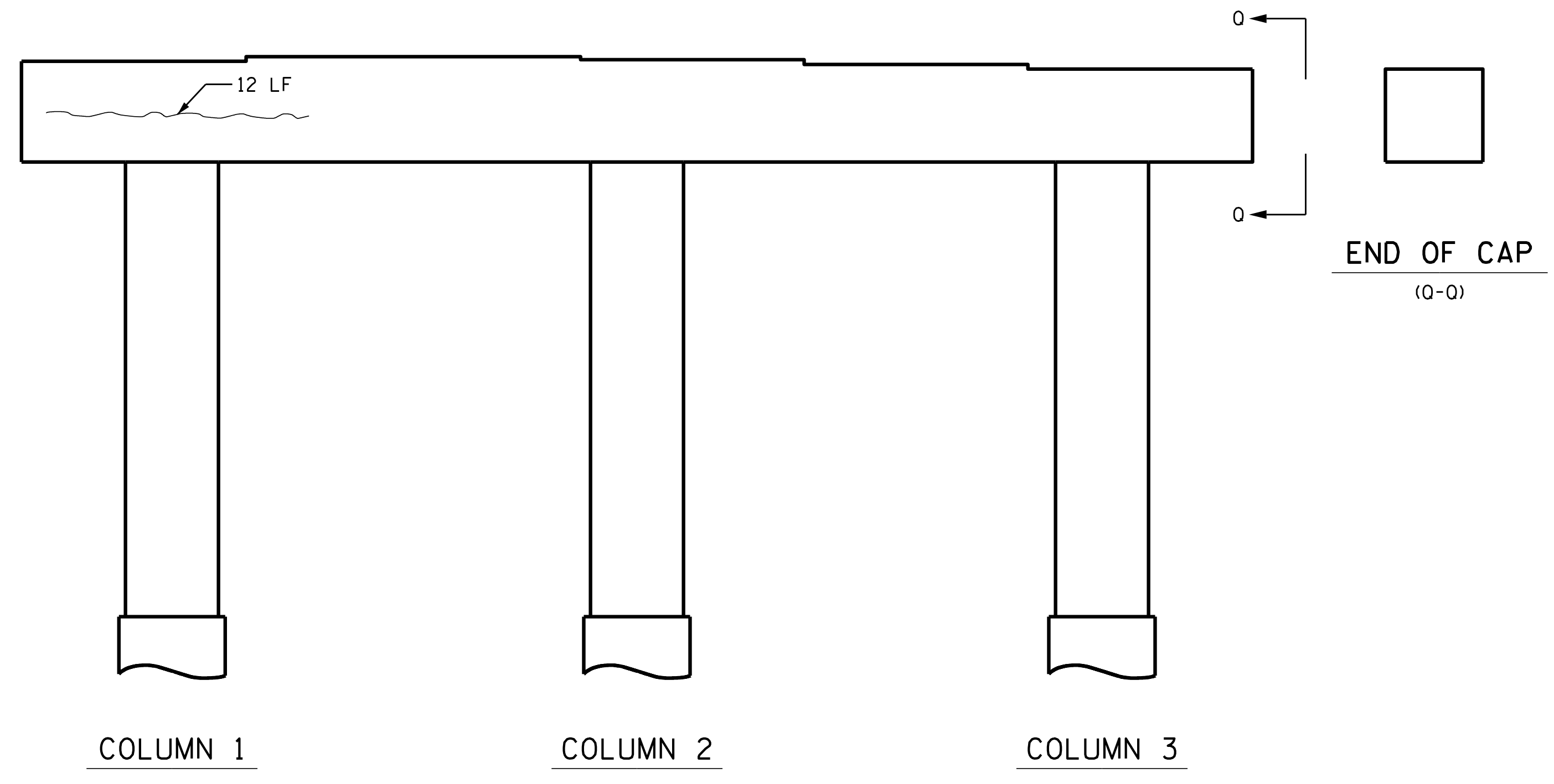
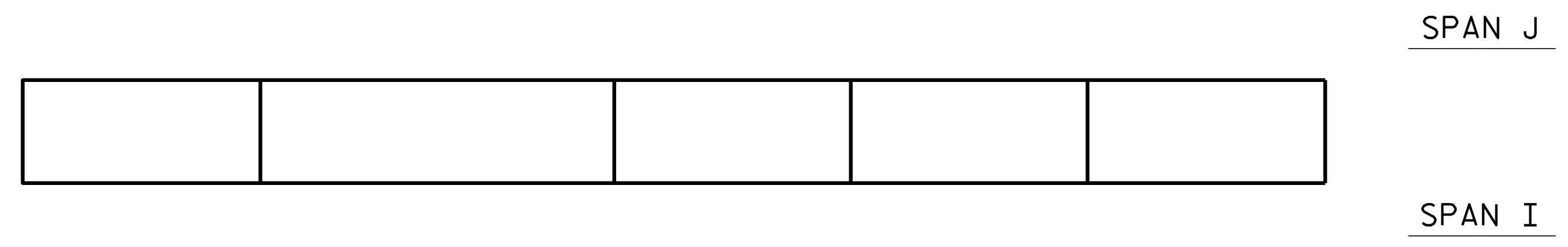
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-77
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24





ELEVATION @ BENT 9 (SPAN I)

**AS-BUILT REPAIR QUANTITY TABLE**

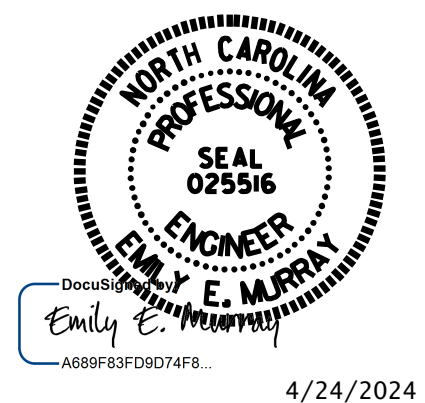
REPAIRS BENT 9	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.	LN. FT.	
CAP		12.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		169.9		

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.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 1 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

## BENT 9

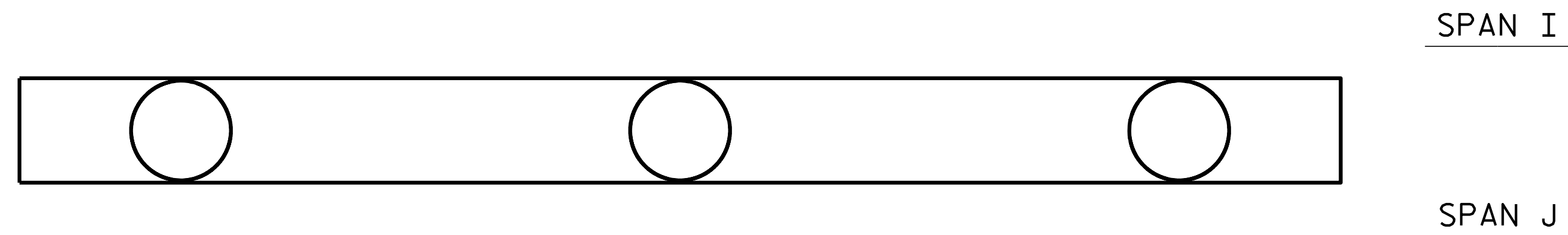
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 NC License No. F-0765

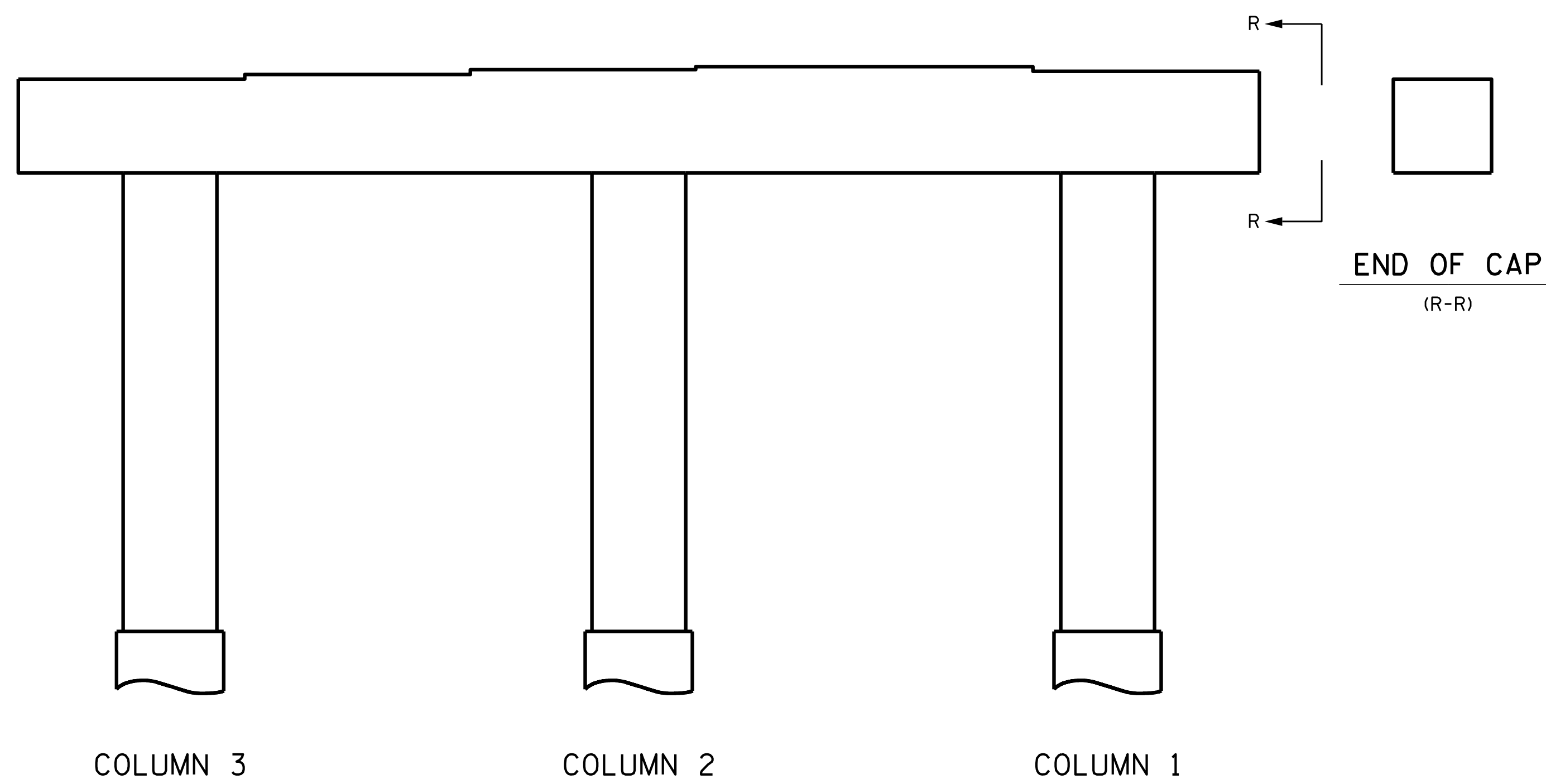
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-78
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/22  
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BOTTOM OF CAP @ BENT 9



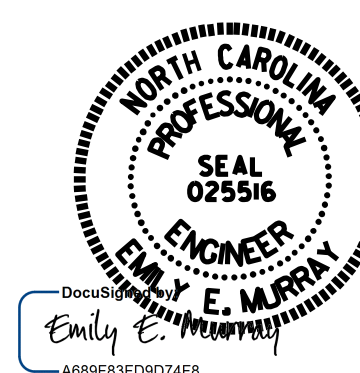
ELEVATION @ BENT 9 (SPAN J)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT 9



Emily E. Murray  
 4/24/2024

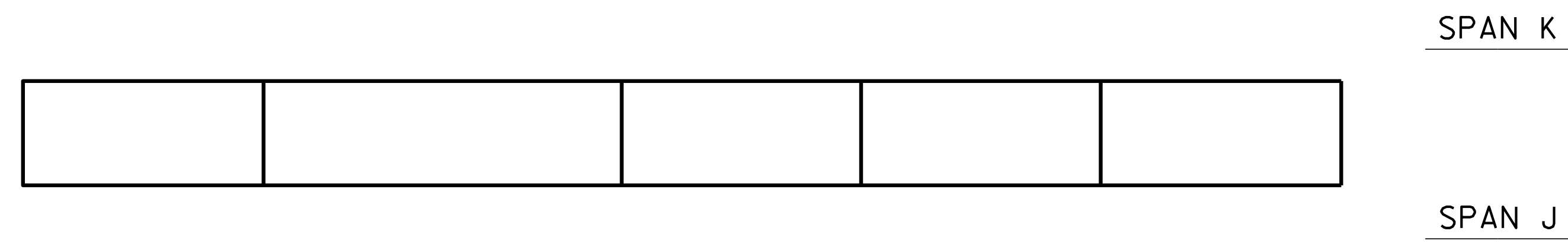
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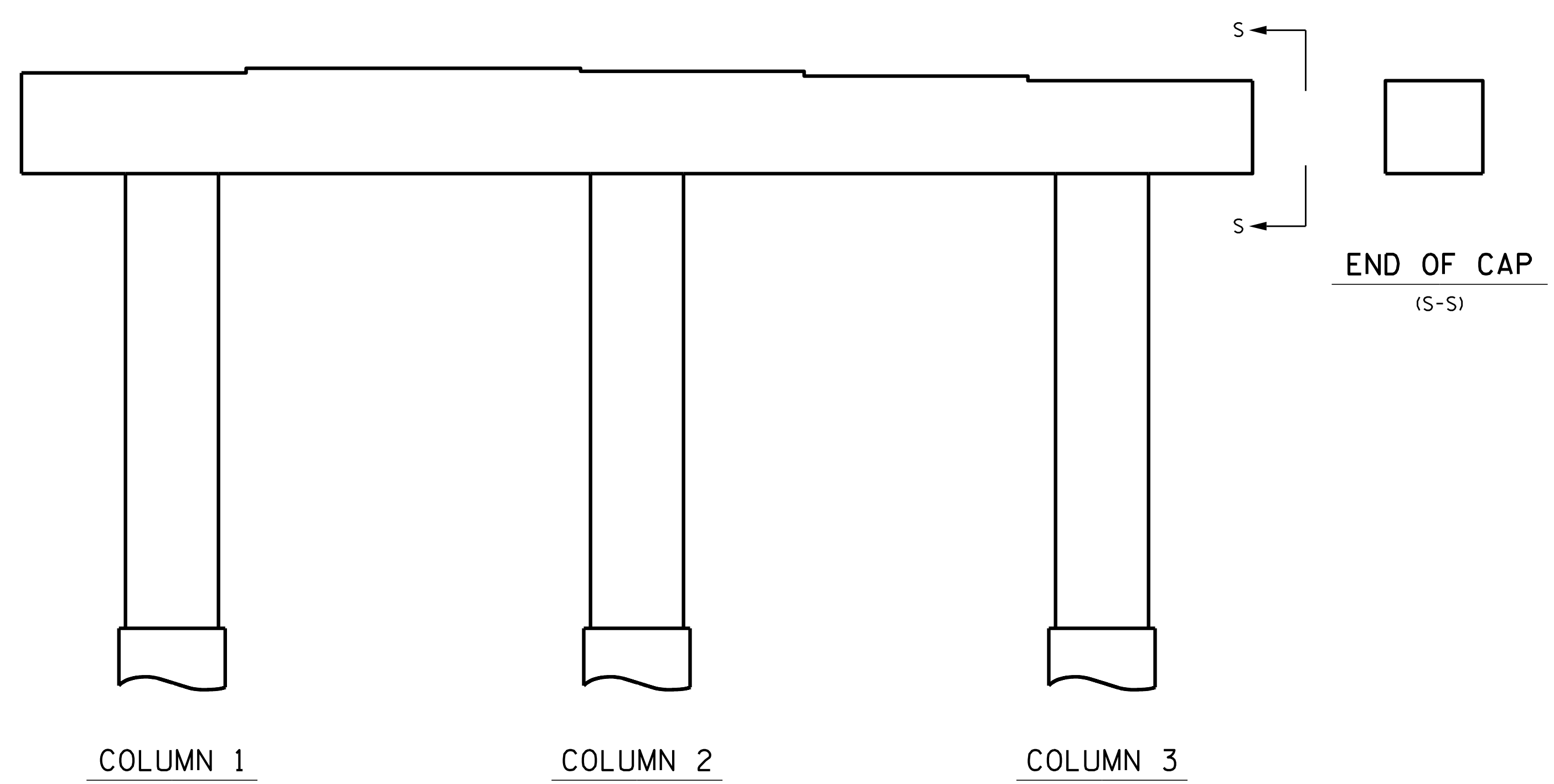
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-79
1			3			TOTAL SHEETS
2			4			156

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 CHECKED BY : P. N. HOLDER DATE : 03/24



TOP OF CAP @ BENT 10



ELEVATION @ BENT 10 (SPAN J)

**AS-BUILT REPAIR QUANTITY TABLE**

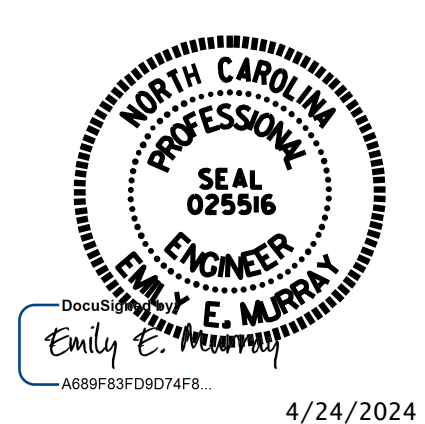
REPAIRS BENT 10	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.	LN. FT.	
CAP		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		169.9		

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.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 1 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 10**

**VOLKERT**

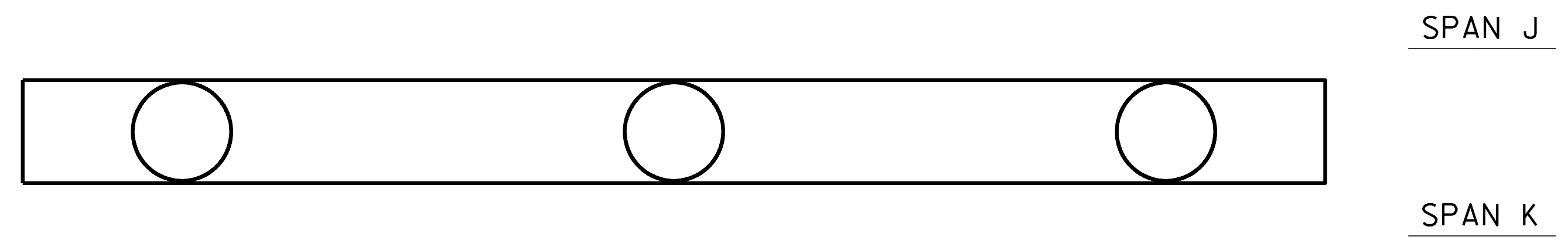
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-80
1			3			TOTAL SHEETS
2			4			156

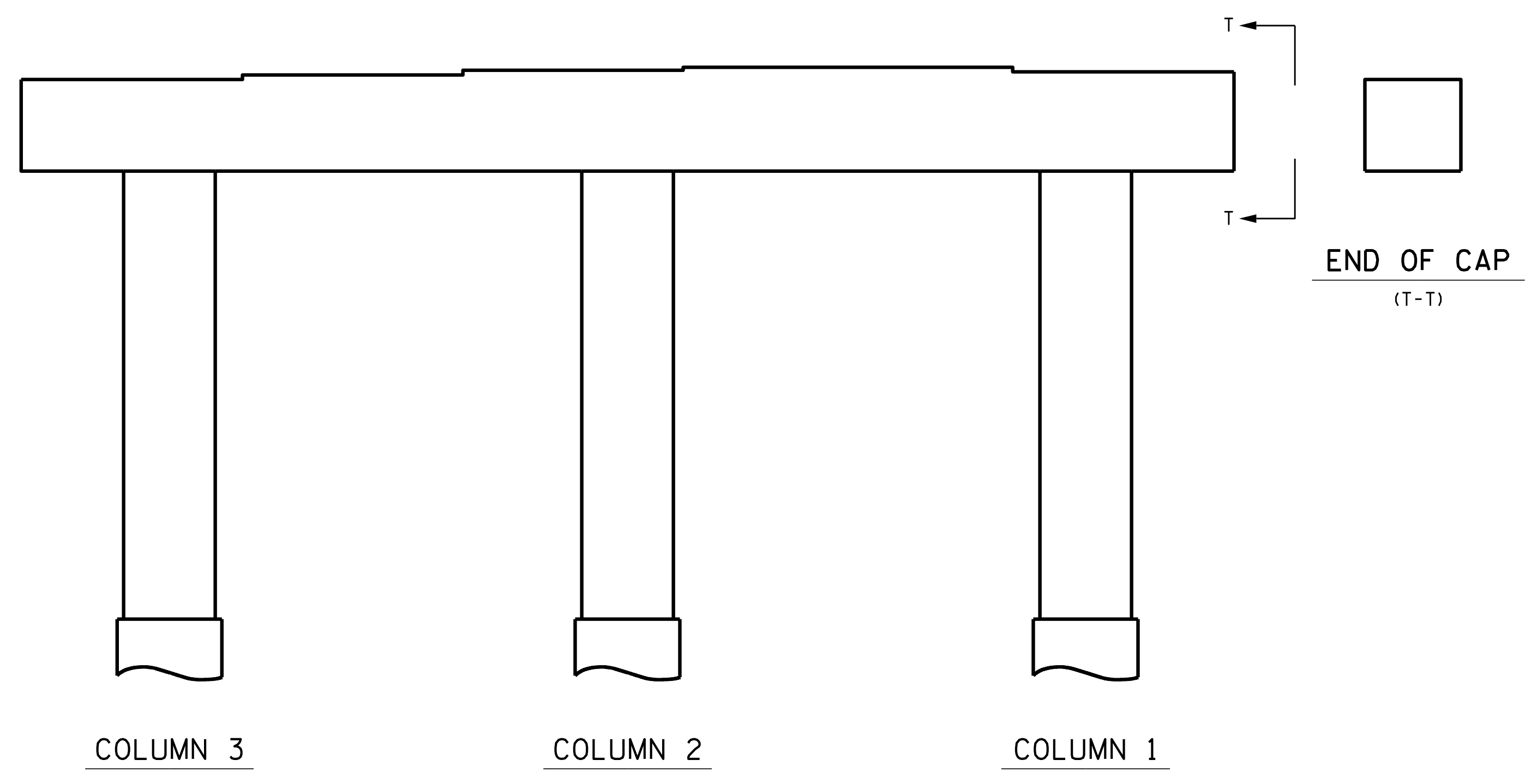
DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24

DOCUMENT NOT CONSIDERED  
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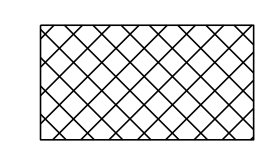
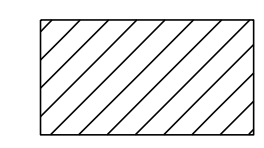





BOTTOM OF CAP @ BENT 10



ELEVATION @ BENT 10 (SPAN K)

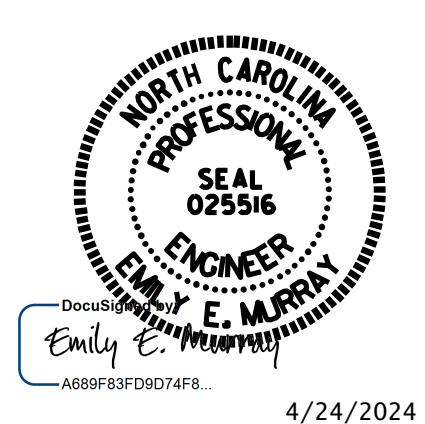
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 10**

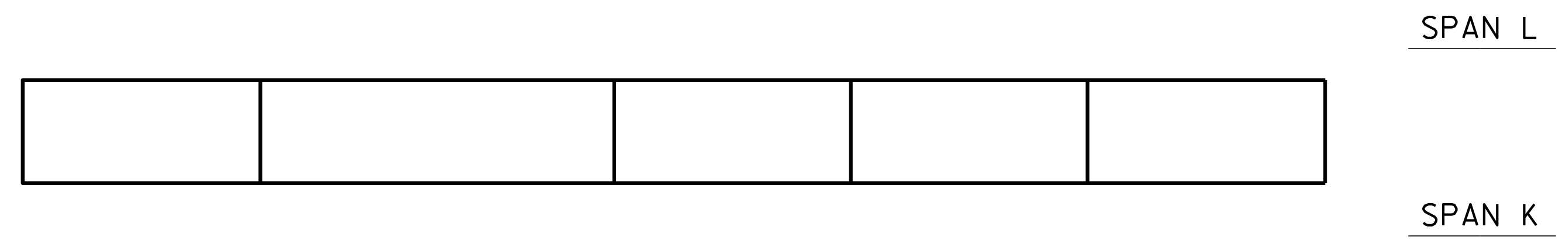


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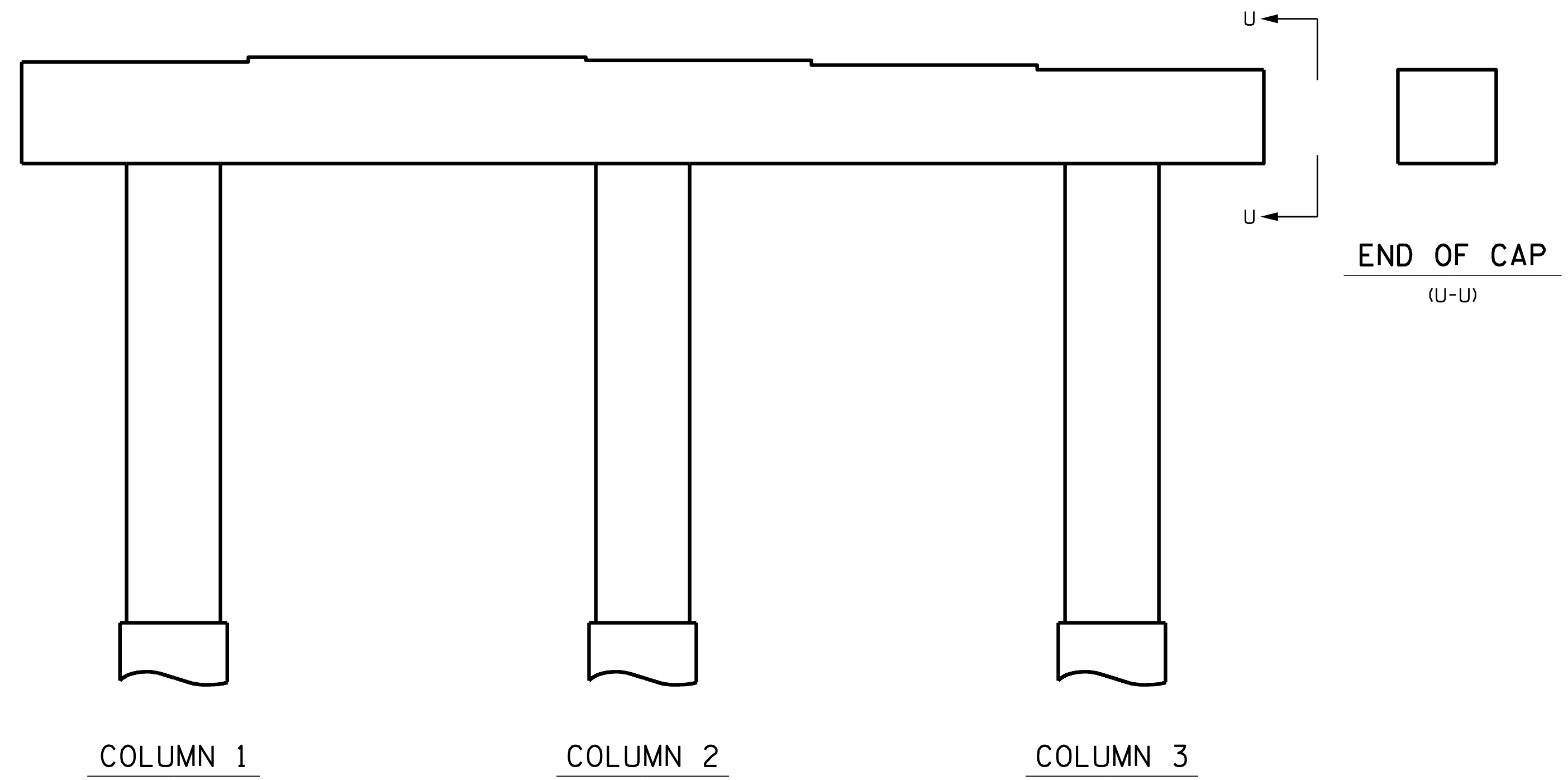
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-81
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24



TOP OF CAP @ BENT 11



ELEVATION @ BENT 11 (SPAN K)

**AS-BUILT REPAIR QUANTITY TABLE**

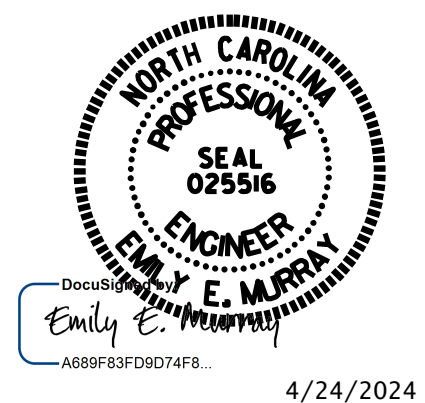
REPAIRS BENT 11	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.	LN. FT.	
CAP		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		169.9		

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.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 1 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 11**

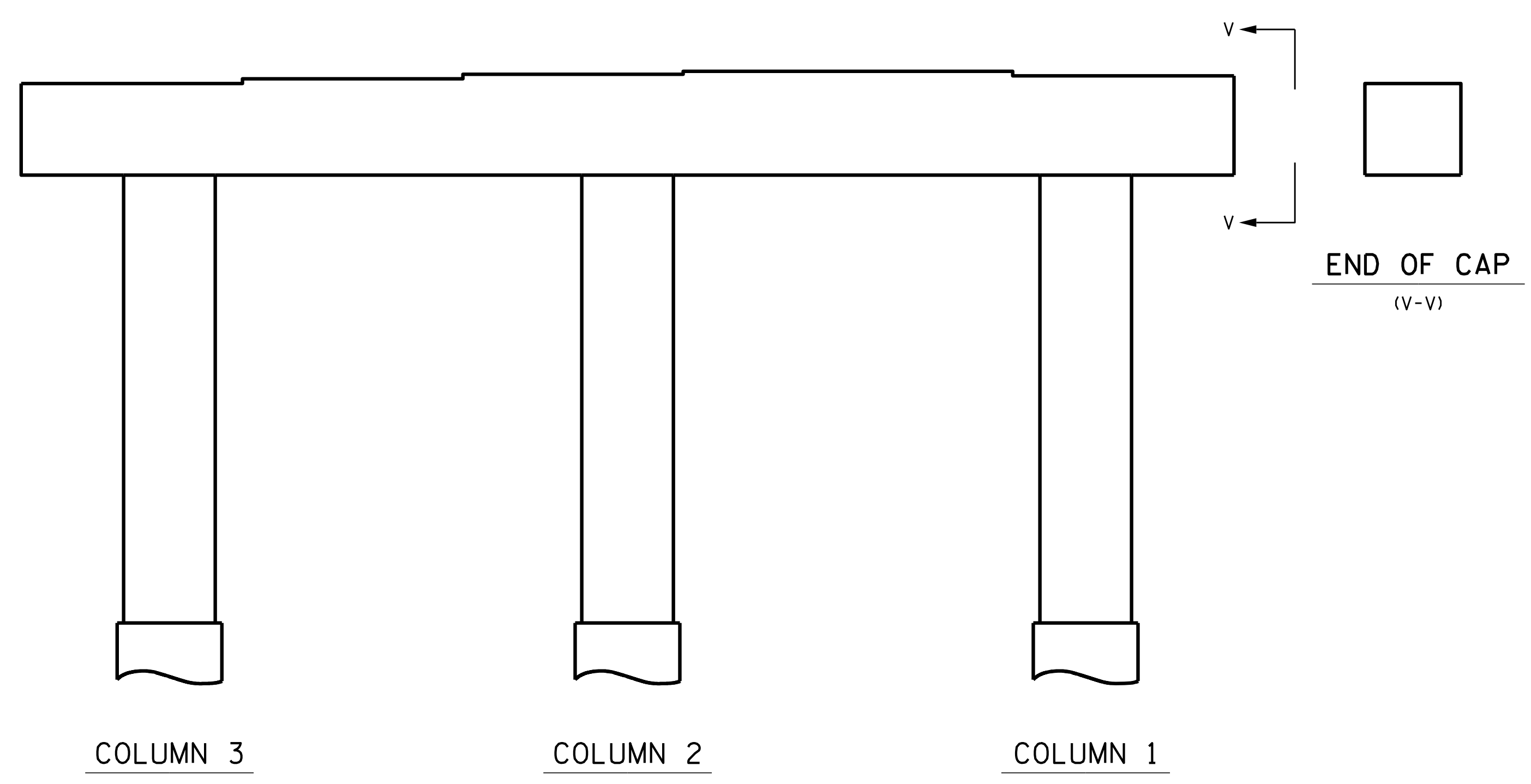
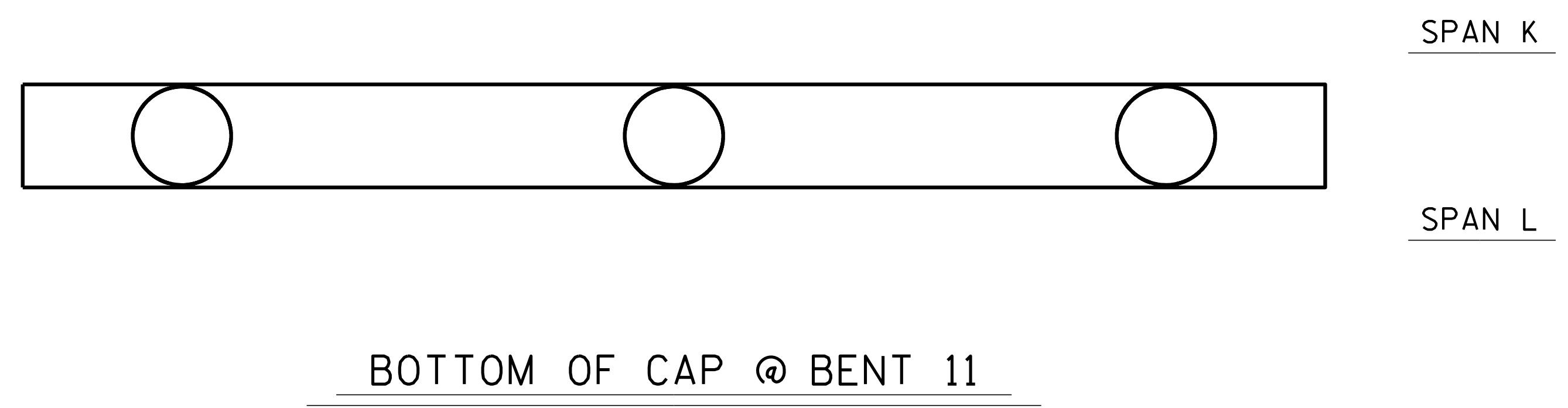
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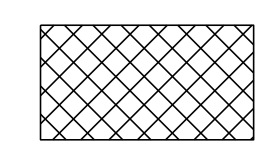
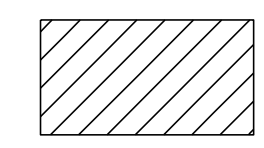

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-82
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24



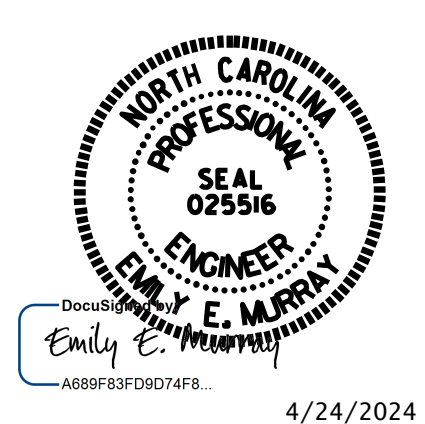
-  SHOTCRETE REPAIR
-  CONCRETE REPAIR
-  EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 11**



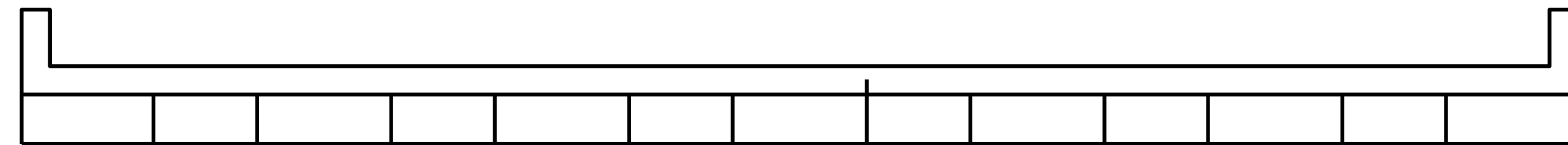
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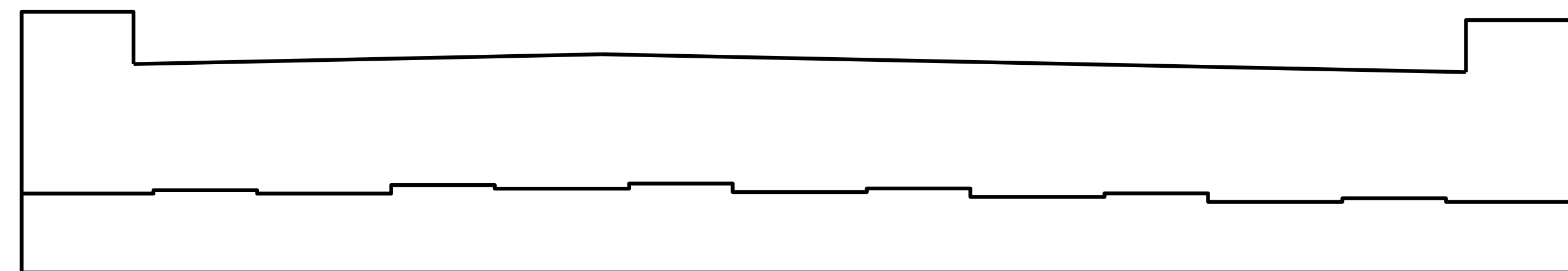
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-83
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24





PLAN OF END BENT 2

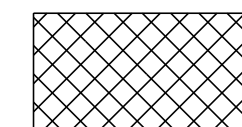


ELEVATION OF END BENT 2

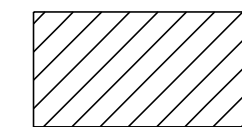
**AS-BUILT REPAIR QUANTITY TABLE**

REPAIRS END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
<b>SHOTCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
<b>CONCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
<b>EPOXY RESIN INJECTION</b>		LN. FT.		LN. FT.
CAP		0.0		
<b>EPOXY COATING</b>		SQ. FT.		SQ. FT.
TOP OF BENT CAP		96.4		

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

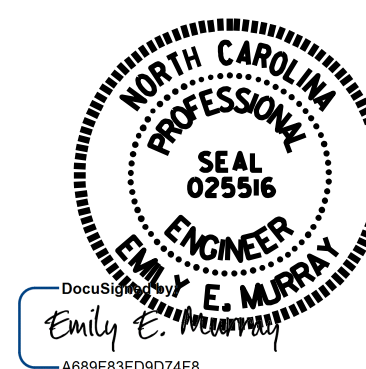


CONCRETE REPAIR



EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.130  
CHATHAM COUNTY  
 BRIDGE NO. 180477



4/24/2024

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**END BENT 2**

DRAWN BY : S. C. NICHOLS DATE : 09/22  
 CHECKED BY : P. N. HOLDER DATE : 03/24

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-84
1			3			TOTAL SHEETS
2			4			156





BRIDGE 620049 - LATITUDE: 35°27'26.23"; LONGITUDE: 79°22'49.73"

**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.

**GENERAL NOTES**

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

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.

DURING CONSTRUCTION, BERMS OR APPROPRIATE MEASURES SHALL BE USED TO ENSURE HYDRO-DEMOLITION WATER DOES NOT MIGRATE INTO ACTIVE TRAVEL LANES.

WORK ON THE BRIDGE(S) SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL BELOW, EXCEPT WHERE THE CONTRACTOR'S PLAN USE PLATFORM NETS, SCREENS OR OTHER PROTECTIVE DEVICES TO CATCH THE MATERIAL. THE CONTRACTOR SHALL SUBMIT PLANS FOR CONSTRUCTION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS AND THE PROJECT SPECIAL PROVISIONS.

ANY DAMAGE TO EXISTING REINFORCING STEEL, DURING CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AND PERFORMED AT NO ADDITIONAL COST TO THE DEPARTMENT.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF THE BRIDGE DECK.

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

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

THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS, SEE LMC OVERLAY SURFACE PREPARATION SPECIAL PROVISIONS.

THE LMC CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK DURING HYDRO-DEMOLITION.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR OVERLAY OF BRIDGE WITH LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIR, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR DRIFT REMOVAL, SEE SPECIAL PROVISIONS.

FOR CLEANING AND PAINTING EXISTING BEARINGS WITH HRCSA, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR REPAIRS TO PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT THE EXISTING STRUCTURE WHICH IS TO REMAIN IN PLACE WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY PART OF THE EXISTING STRUCTURE WHICH IS TO REMAIN IN PLACE, THE DAMAGED AREA SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER AT NO ADDITIONAL COST TO THE DEPARTMENT.

PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL SUBMIT FOR REVIEW AND APPROVAL A COMPLETE SEQUENCE OF TASKS FOR EACH OPERATION AFFECTING THE BRIDGE SURFACE AND/OR TRAFFIC.

THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN WHAT IS SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

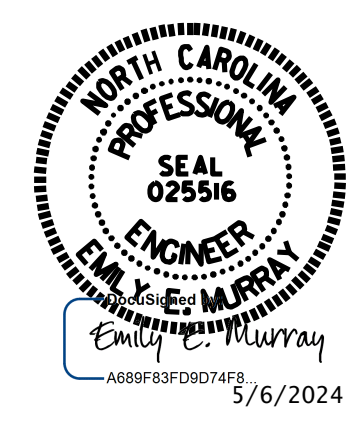
AT THE TIME OF PREPARATION OF THESE PLANS, IT WAS NOT ANTICIPATED THAT ITEMS SHOWN BELOW WOULD BE REQUIRED. HOWEVER, IT MAY BE DETERMINED IN THE FIELD THAT THESE ITEMS, OR OTHER WORK WILL BE NECESSARY TO PROPERLY COMPLETE THE INTENDED BRIDGE PRESERVATION/REHABILITATION WORK. THE CONTRACTOR SHALL BE PREPARED 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 PER ARTICLE 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.

UNANTICIPATED ITEMS:

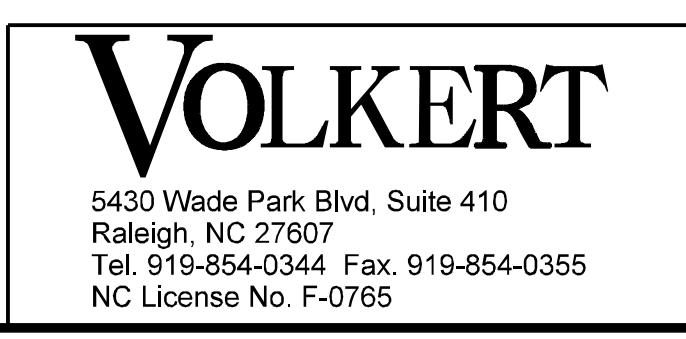
ITEM NO.	DESCRIPTION	UNIT
1	CLASS III SURFACE PREPARATION	SQ. YDS.
2	SPLICING OF PRESTRESSING STRAND	EACH
3	VOLUMETRIC MIXER	LUMP SUM
4	TYPE II BRIDGE JACKING BRIDGE NO.: 620049	EACH

PROJECT NO. 15BPR.130  
MOORE COUNTY  
 BRIDGE NO. 620049

SHEET 2 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR BRIDGE OVER DEEP RIVER  
 ON SR 1626 BETWEEN  
 CARTHAGE AND CARBONTON

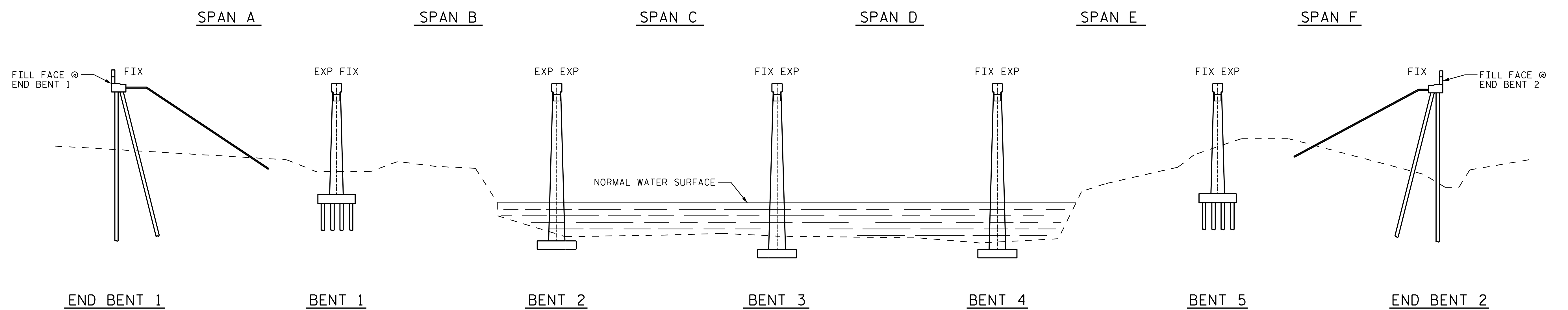


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

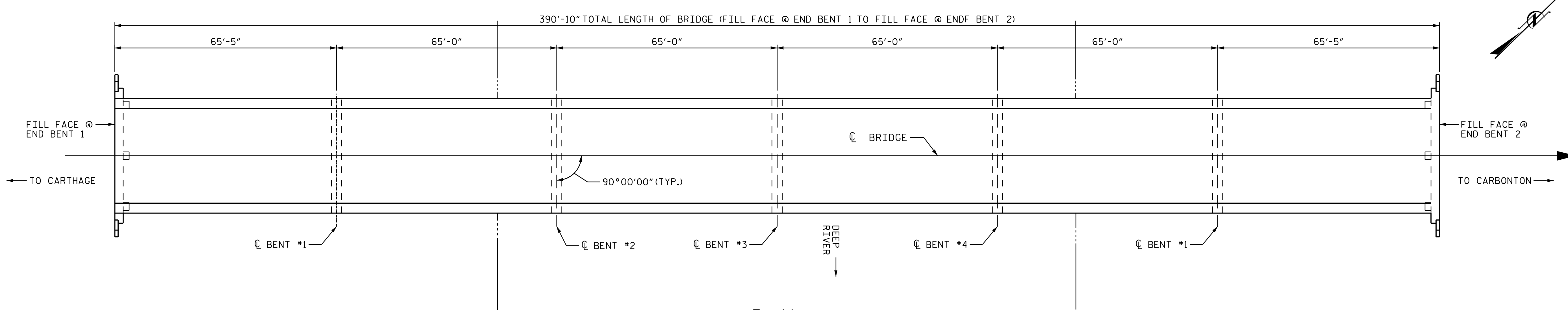
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-85
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : J. BRYANT DATE : 7/21/22  
 CHECKED BY : E. MURRAY DATE : 3/1/24





SECTION ALONG Q BRIDGE



PLAN

**NOTES:**

GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 3/8/2022  
 BRIDGE ORIENTATION CONFORMS TO THE ORIGINAL BRIDGE PLANS/ROUTINE INSPECTION.

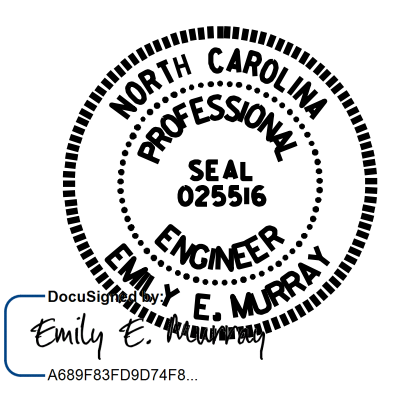
I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.  
 \_\_\_\_\_  
 RESIDENT ENGINEER DATE

**SCOPE OF WORK:**

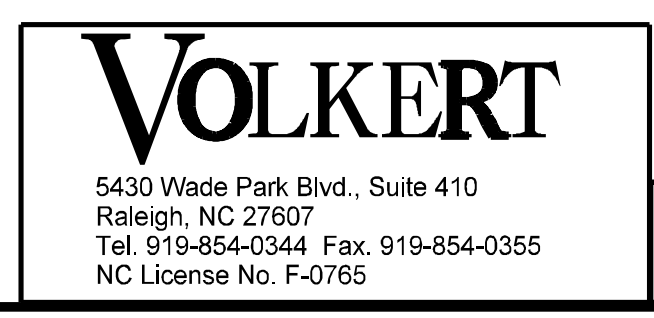
- REMOVE DRIFT ACCUMULATION.
- REPAIR SUBSTRUCTURE USING EPOXY RESIN INJECTION, SHOTCRETE, AND CONCRETE.
- PERFORM PRESTRESSED GIRDER REPAIRS.
- PARTIALLY REMOVE BRIDGE DECK CONCRETE BY SCARIFICATION AND HYDRO-DEMOLITION METHODS.
- PERFORM DECK REPAIRS IN PREPARED AREAS.
- OVERLAY PREPARED BRIDGE DECK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

PROJECT NO. 15BPR.130  
MOORE COUNTY  
 BRIDGE NO. 620049

SHEET 1 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR BRIDGE OVER DEEP RIVER  
 ON SR 1626 BETWEEN  
 CARTHAGE AND CARBANTON

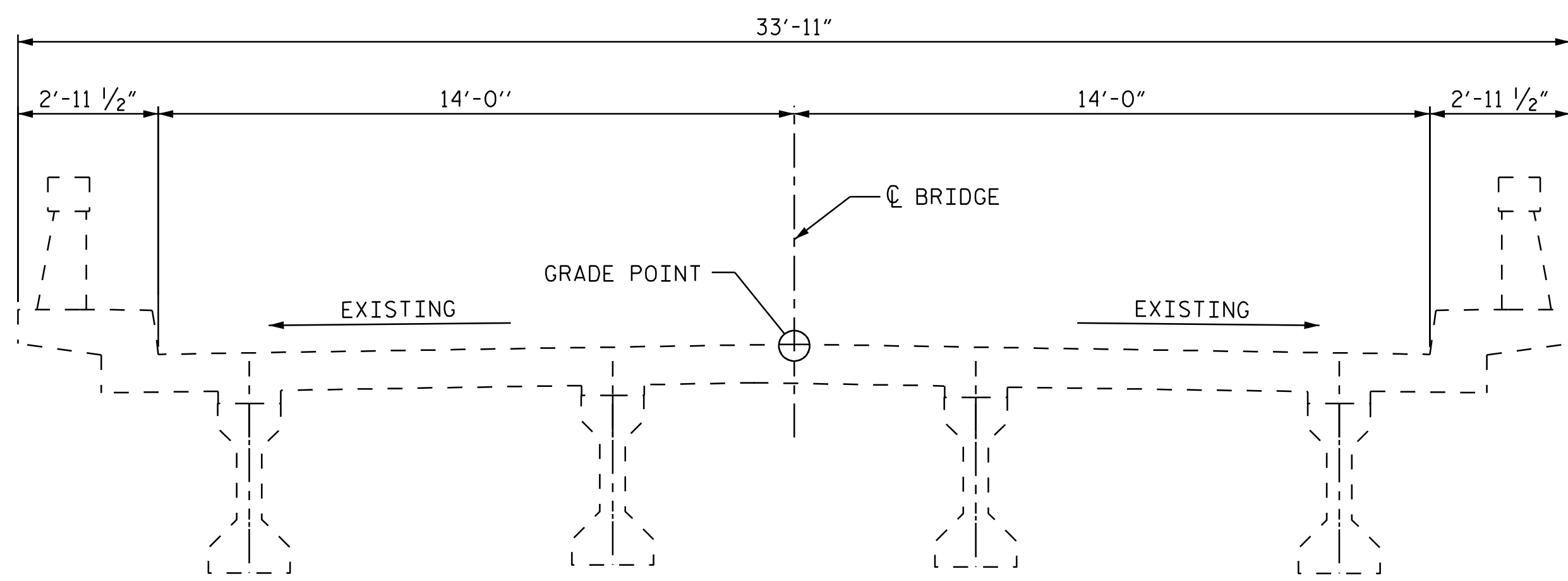


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

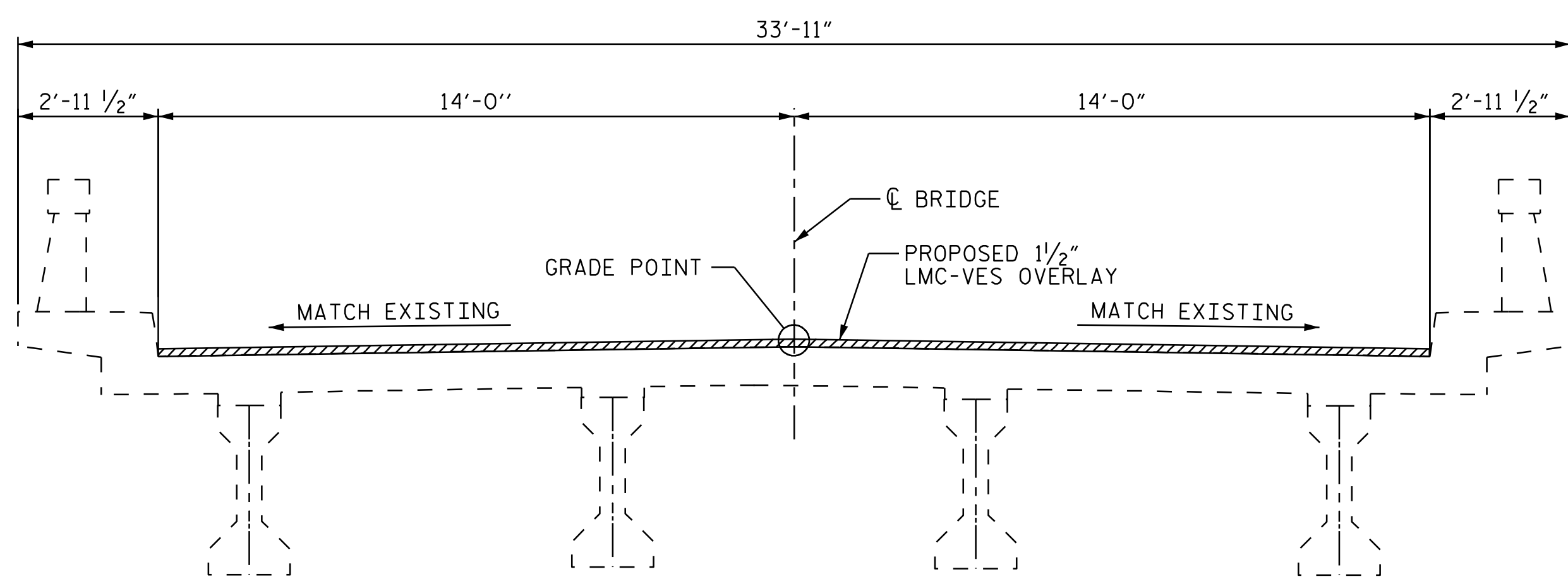
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-86
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : J. BRYANT DATE : 07/2022  
 CHECKED BY : E.E. MURRAY DATE : 03/2024





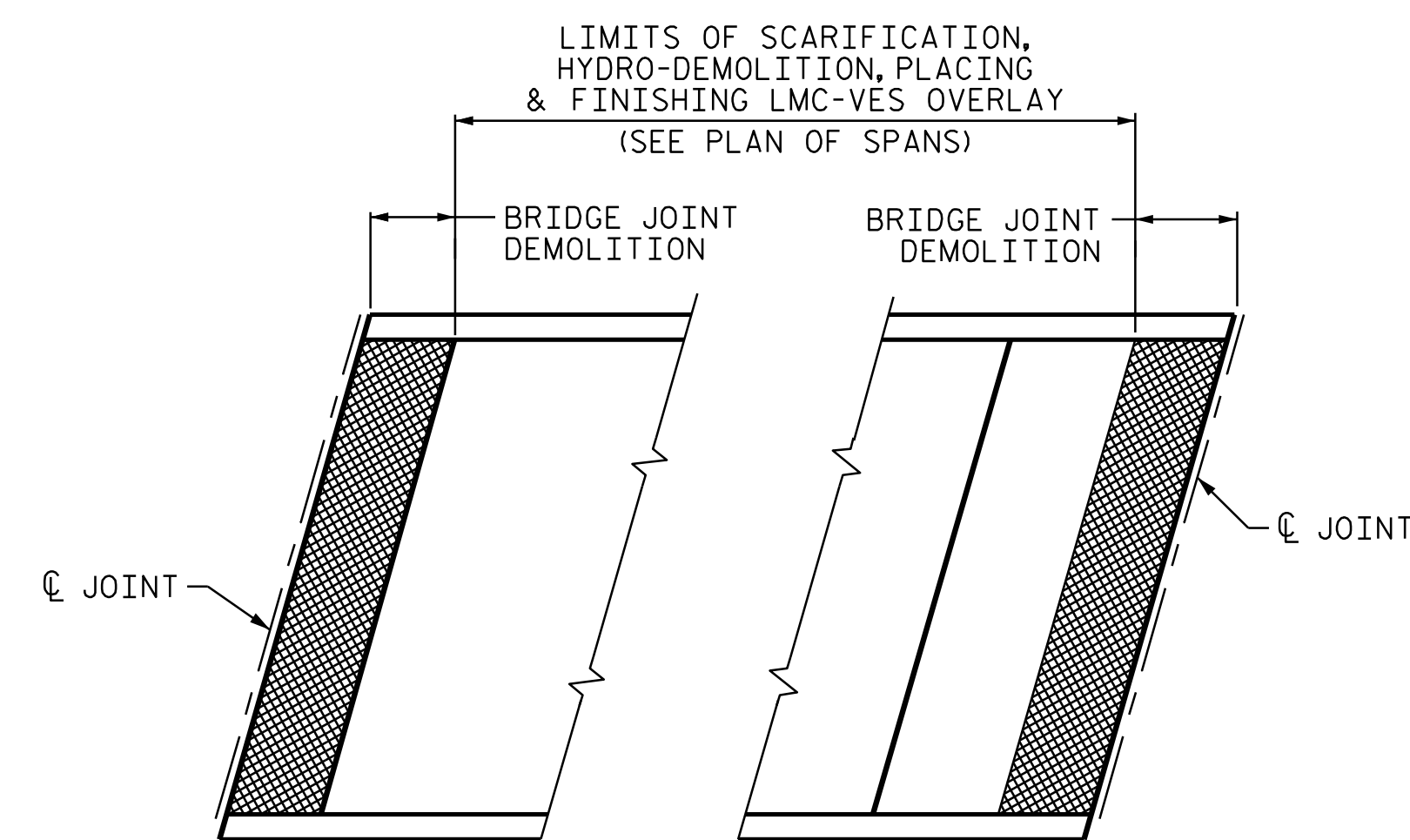
**EXISTING TYPICAL SECTION**



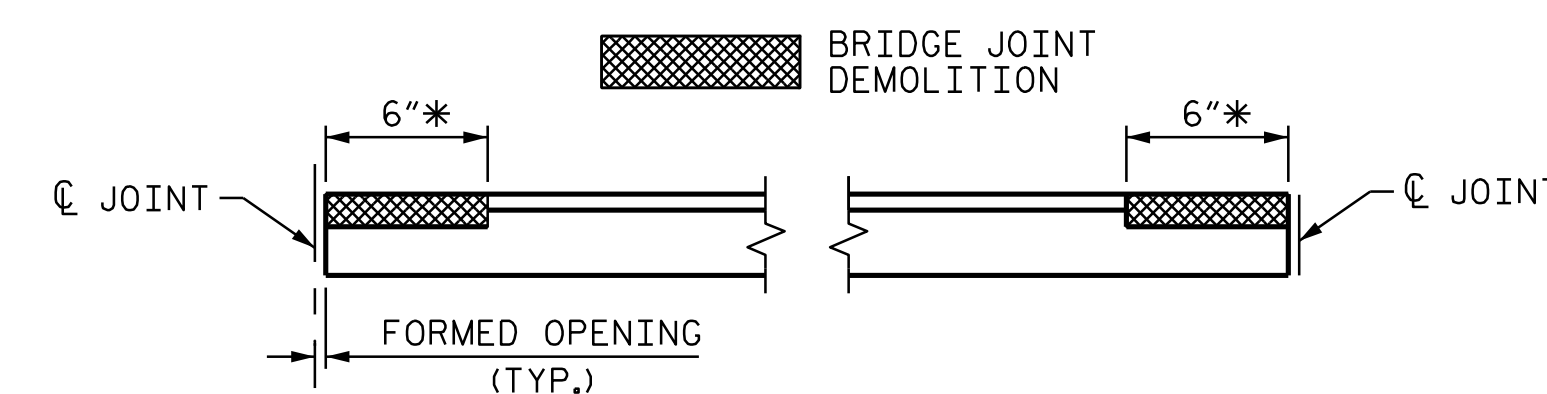
**PROPOSED TYPICAL SECTION**

**NOTES**

SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND LATEX MODIFIED CONCRETE (LMC) BRIDGE DECK OVERLAY.



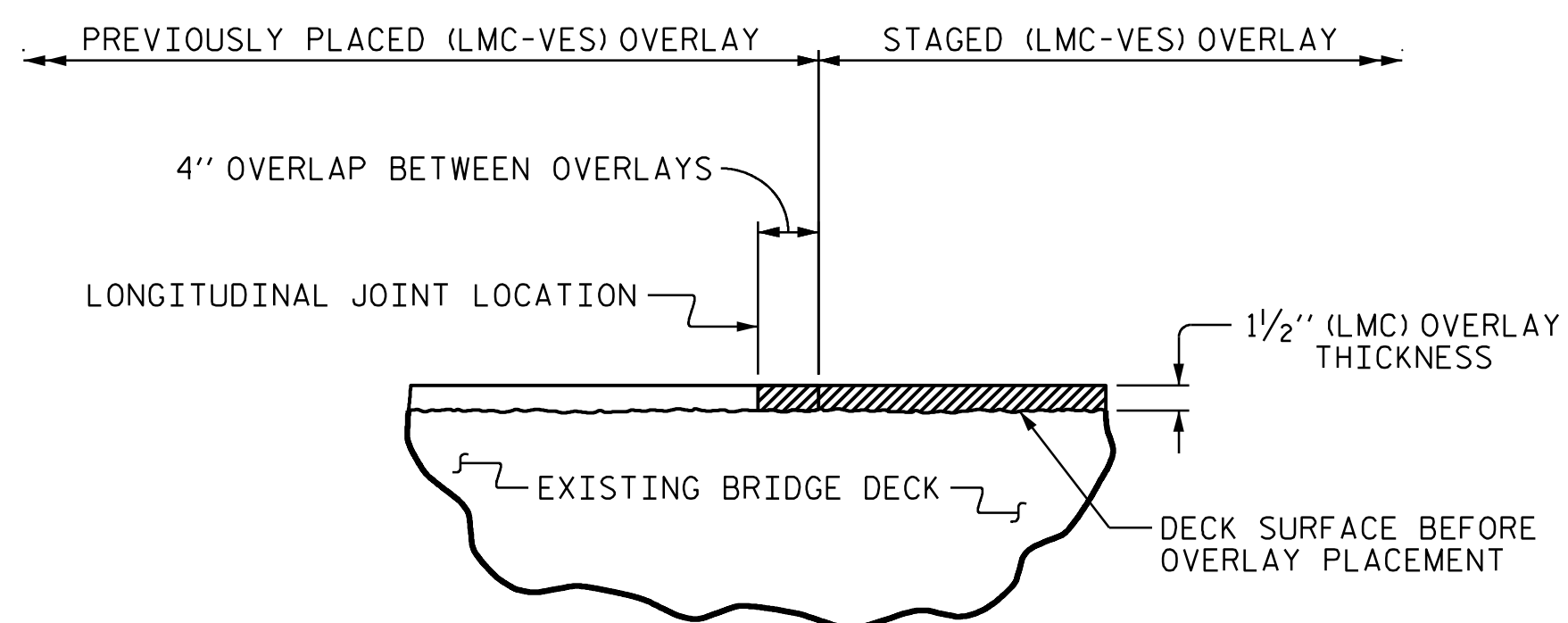
**PLAN**



\* DIMENSION MEASURED PERPENDICULAR TO JOINT

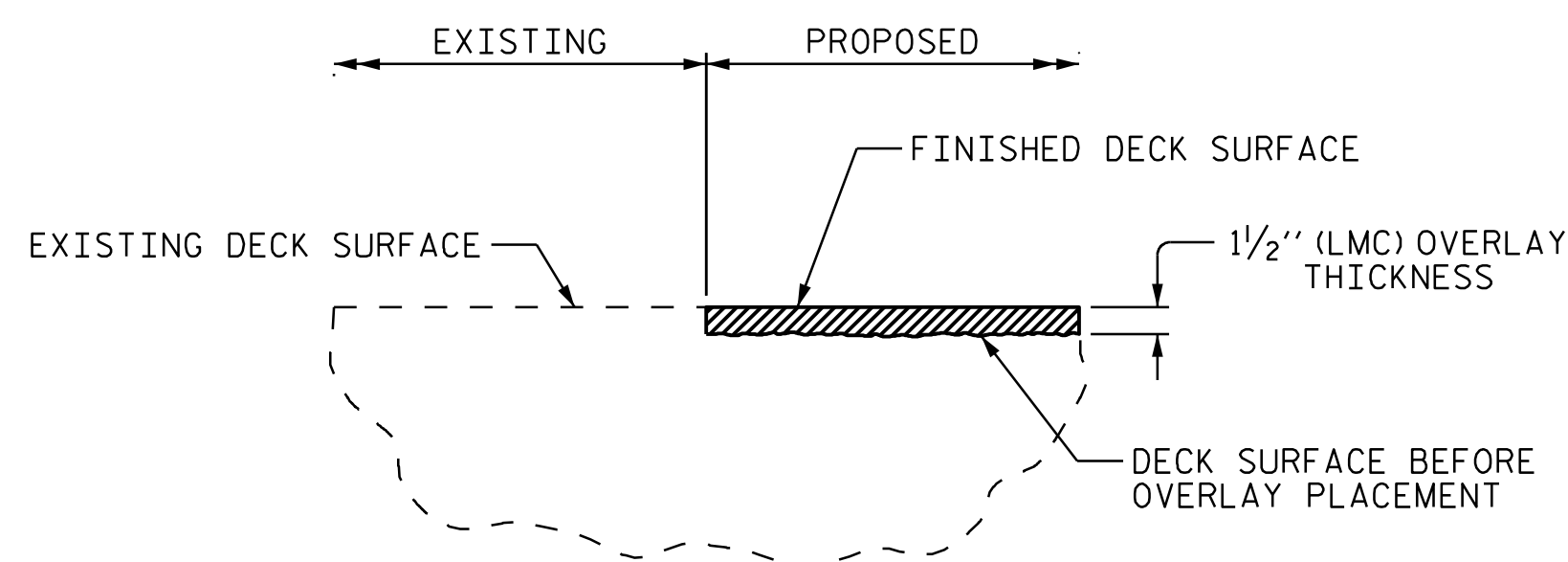
**ELEVATION**

**PAY LIMITS FOR OVERLAY BID ITEMS**



**STAGED LATEX MODIFIED CONCRETE OVERLAY JOINT**

(AS NEEDED)

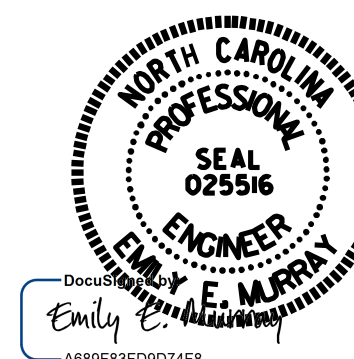


**DETAIL OF LATEX MODIFIED CONCRETE OVERLAY**

PROJECT NO. 15BPR.130  
MOORE COUNTY  
 BRIDGE NO.: 620049

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**TYPICAL SECTION**



DRAWN BY : T. MAZARURA DATE : 08/2022  
 CHECKED BY : E. E. MURRAY DATE : 02/2024

23-APR-2024 20:31  
 \*\*\*\*\*DCN\*\*\*\*\*  
 brent.bornhill AT C-1001568

**VOLKERT**  
 5430 Wade Park Blvd., Suite 410  
 Raleigh, NC 27607  
 Tel. 919-854-0344 Fax. 919-854-0355  
 NC License No. F-0765

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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			156

AS-BUILT REPAIR QUANTITY TABLE		
TOP OF DECK REPAIRS		
SPAN A		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	203.5 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	203.5 SY	
CLASS II SURFACE PREPARATION	3.3 SY	
CLASS III SURFACE PREPARATION	0.0 SY	
LMC OVERLAY-VES	8.5 CY	
PLACING AND FINISHING LMC OVERLAY-VES	203.5 SY	
GROOVING BRIDGE FLOORS	1631.3 SF	
BRIDGE JOINT DEMOLITION	0.0 SF	

**NOTES**

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE BASED ON 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 ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS II (PARTIAL DEPTH) SURFACE PREPARATION ARE APPROXIMATE AND MAY NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED AT THE PROJECT SITE.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF THE BRIDGE DECK.

FOR OVERLAY OF BRIDGE WITH LATEX MODIFIED CONCRETE- VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.

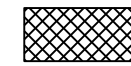

PREVIOUSLY PLACED LMC OVERLAY AT STAGED EDGES SHALL BE DEMOLISHED BACK A MINIMUM OF 4 INCHES AND RECAST WITH LMC.

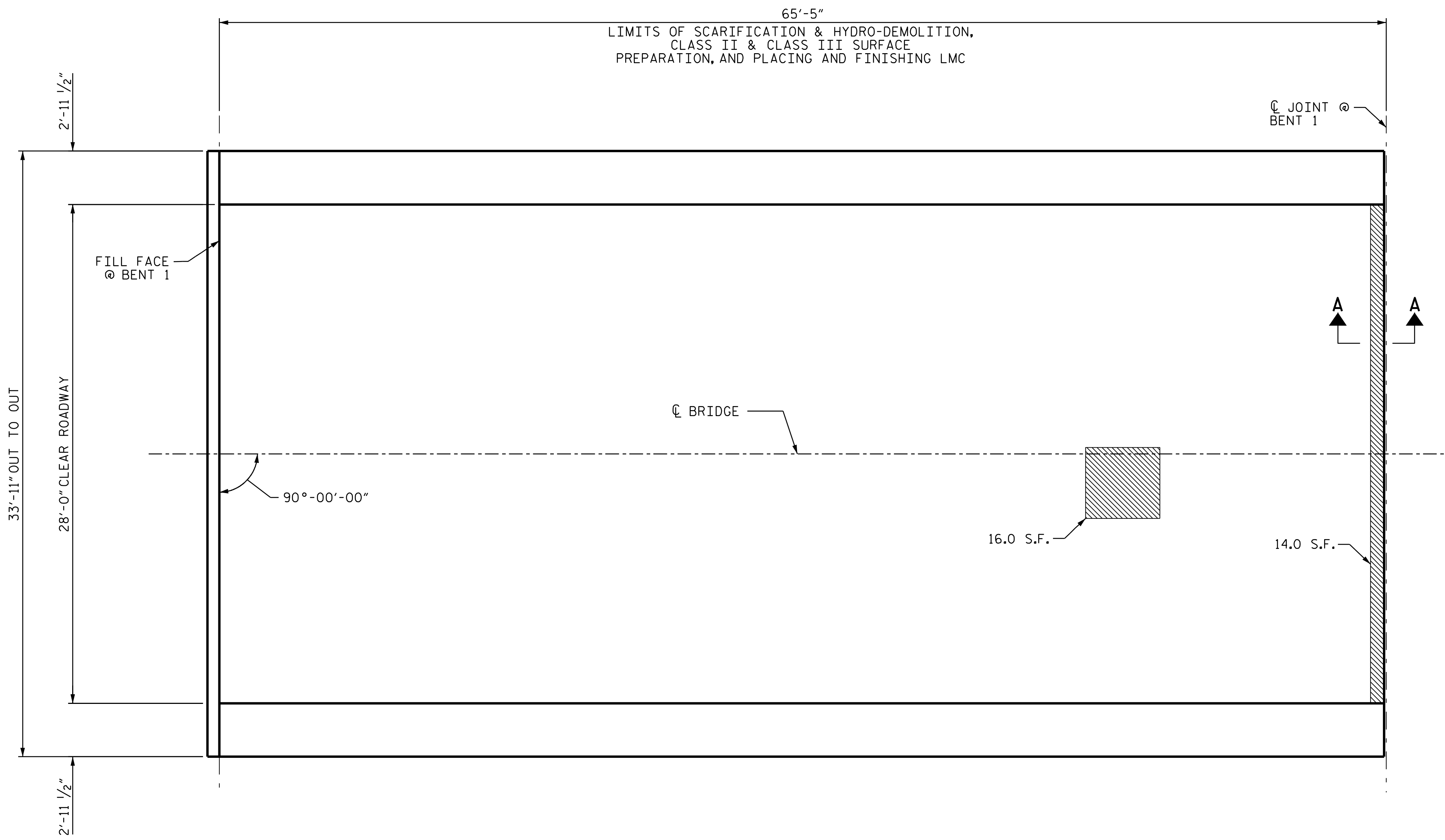
FOR LMC OVERLAY - VES SURFACE PREPARATION, SEE SPECIAL PROVISIONS.

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR SECTION A-A, SEE BRIDGE JOINT DETAILS SHEET.

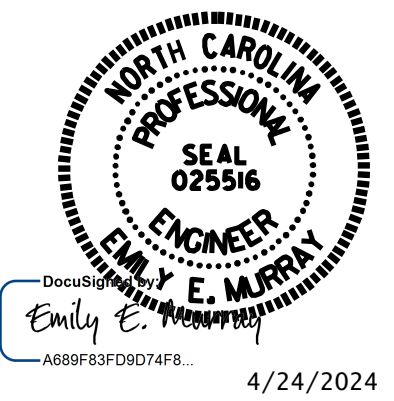
-  BRIDGE JOINT DEMOLITION
-  CLASS II SURFACE PREPARATION



PLAN OF SPAN A

PROJECT NO. 15BPR.130  
MOORE COUNTY  
 BRIDGE NO. 620049

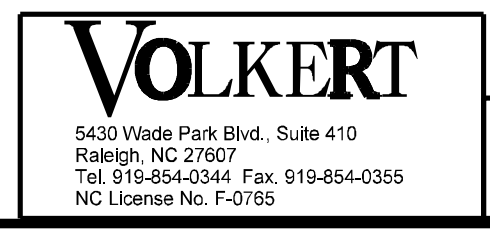
SHEET 1 OF 12



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUPERSTRUCTURE  
 PLAN OF SPAN A  
 (SURFACE PREPARATION)**

DRAWN BY : T. MAZARURA DATE : 8/2022  
 CHECKED BY : D. GLADDEN DATE : 2/2024

23-APR-2024 10:28  
 \*\*\*\*\*DCN\*\*\*\*\*  
 brent.barnhill AT C-1001568



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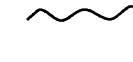
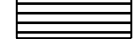
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2			4			TOTAL SHEETS 156

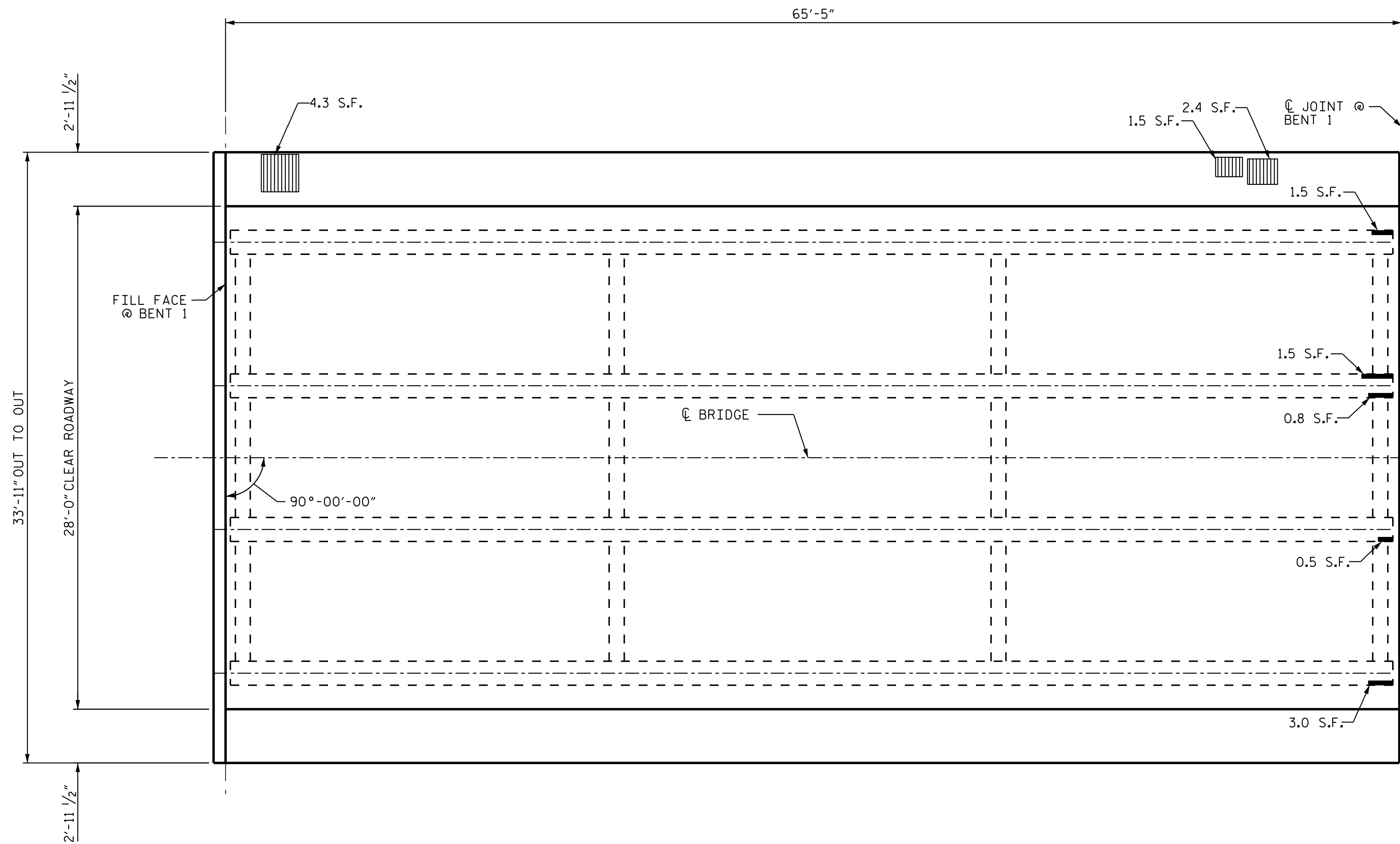
### AS-BUILT REPAIR QUANTITY TABLE

#### 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	8.2	2.8			
INTERIOR DIAPHRAGMS	0.0	0.0			
		ESTIMATE		ACTUAL	
UNDERSIDE EPOXY RESIN INJECTION	0.0	LF			
PRESTRESSED GIRDER EPOXY RESIN INJECTION	0.0	LF			
REPAIRS FOR PRESTRESSED CONCRETE GIRDERS		ESTIMATE		ACTUAL	
		AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED GIRDER	7.3	2.0			

QUANTITIES IN TABLE REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR, AND MINIMUM 2" CLEAR TO SAW CUT. SEE REPAIR DETAILS.

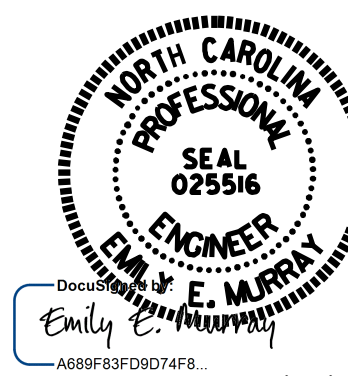
-  UNDERSIDE REPAIR
-  PRESTRESSED GIRDER REPAIR
-  EPOXY RESIN INJECTION (ERI)
-  DIAPHRAGM REPAIR



PLAN OF SPAN A

PROJECT NO. 15BPR.130  
MOORE COUNTY  
 BRIDGE NO. 620049

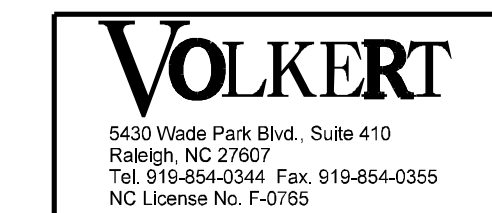
SHEET 2 OF 12



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUPERSTRUCTURE  
 PLAN OF SPAN A  
 (UNDERSIDE REPAIRS)**

DRAWN BY : T. MAZARURA DATE : 8/2022  
 CHECKED BY : D. GLADDEN DATE : 2/2024

23-APR-2024 10:30  
 \*\*\*\*\*DCN\*\*\*\*\*  
 brent.barnhill AT C-1001568



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NO.	BY:	DATE:	NO.	BY:	DATE:	S-89
1			3			TOTAL SHEETS
2			4			156



AS-BUILT REPAIR QUANTITY TABLE		
TOP OF DECK REPAIRS		
SPAN B		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	202.2 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	202.2 SY	
CLASS II SURFACE PREPARATION	3.1 SY	
CLASS III SURFACE PREPARATION	0.0 SY	
LMC OVERLAY-VES	8.4 CY	
PLACING AND FINISHING LMC OVERLAY-VES	202.2 SY	
GROOVING BRIDGE FLOORS	1616.7 SF	
BRIDGE JOINT DEMOLITION	0.0 SF	

**NOTES**

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE BASED ON 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 ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS II (PARTIAL DEPTH) SURFACE PREPARATION ARE APPROXIMATE AND MAY NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED AT THE PROJECT SITE.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF THE BRIDGE DECK.

FOR OVERLAY OF BRIDGE WITH LATEX MODIFIED CONCRETE- VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.


PREVIOUSLY PLACED LMC OVERLAY AT STAGED EDGES SHALL BE DEMOLISHED BACK A MINIMUM OF 4 INCHES AND RECAST WITH LMC.

FOR LMC OVERLAY - VES SURFACE PREPARATION, SEE SPECIAL PROVISIONS.

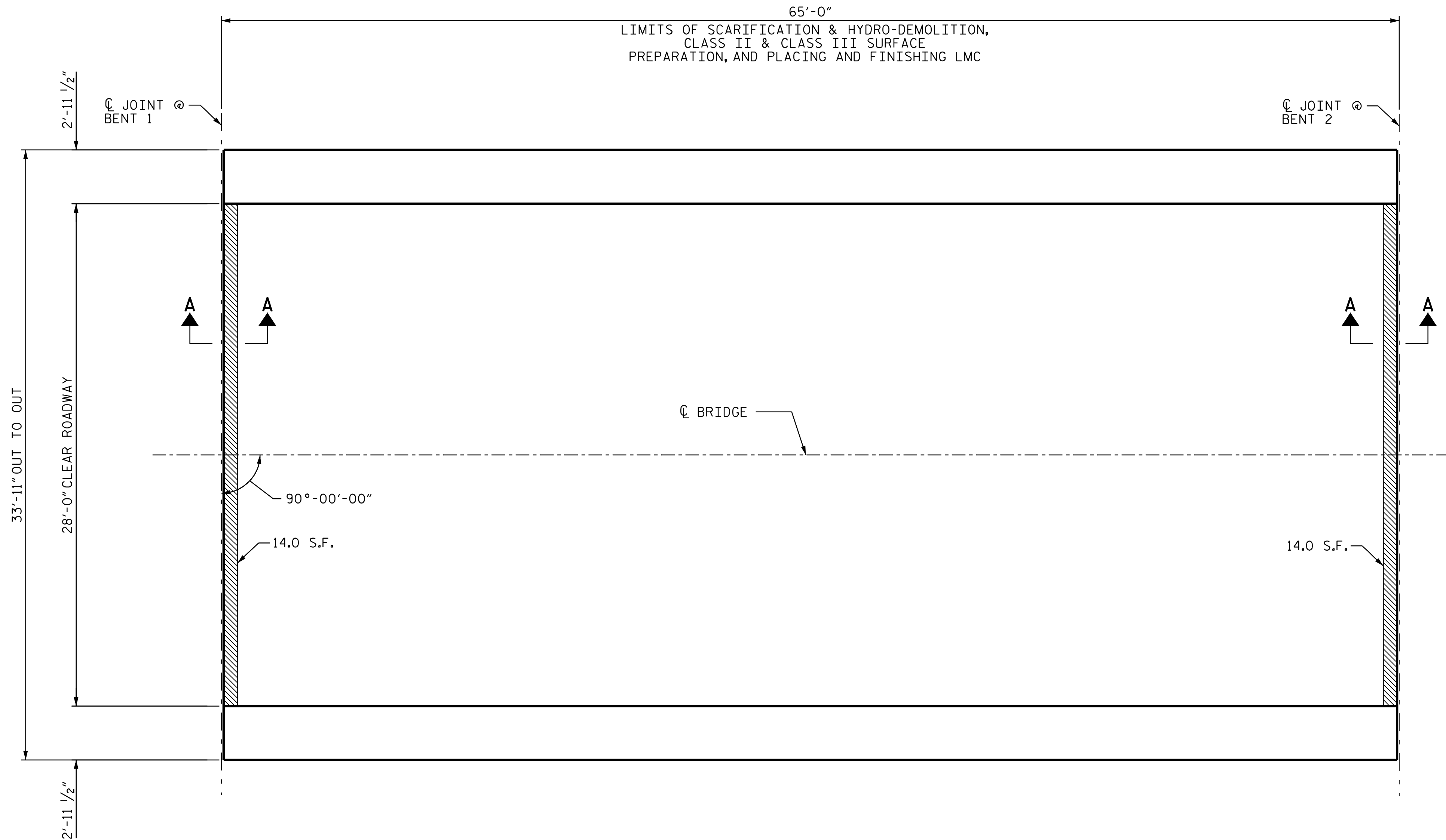
FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR SECTION A-A, SEE BRIDGE JOINT DETAILS SHEET.

 BRIDGE JOINT DEMOLITION

 CLASS II SURFACE PREPARATION



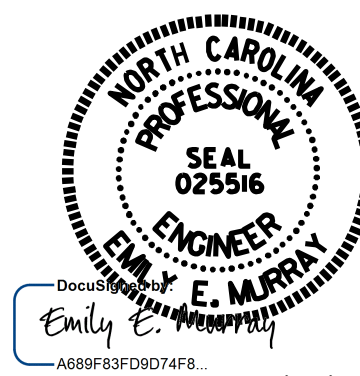
PLAN OF SPAN B

PROJECT NO. 15BPR.130  
MOORE COUNTY  
 BRIDGE NO. 620049

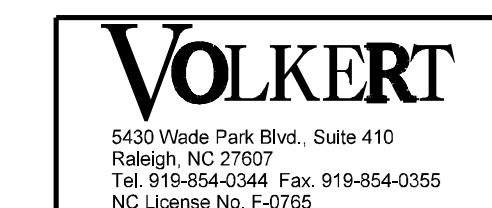
SHEET 3 OF 12

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE  
 PLAN OF SPAN B  
 (SURFACE PREPARATION)**



Emily E. Murray  
 4/24/2024






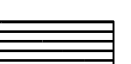
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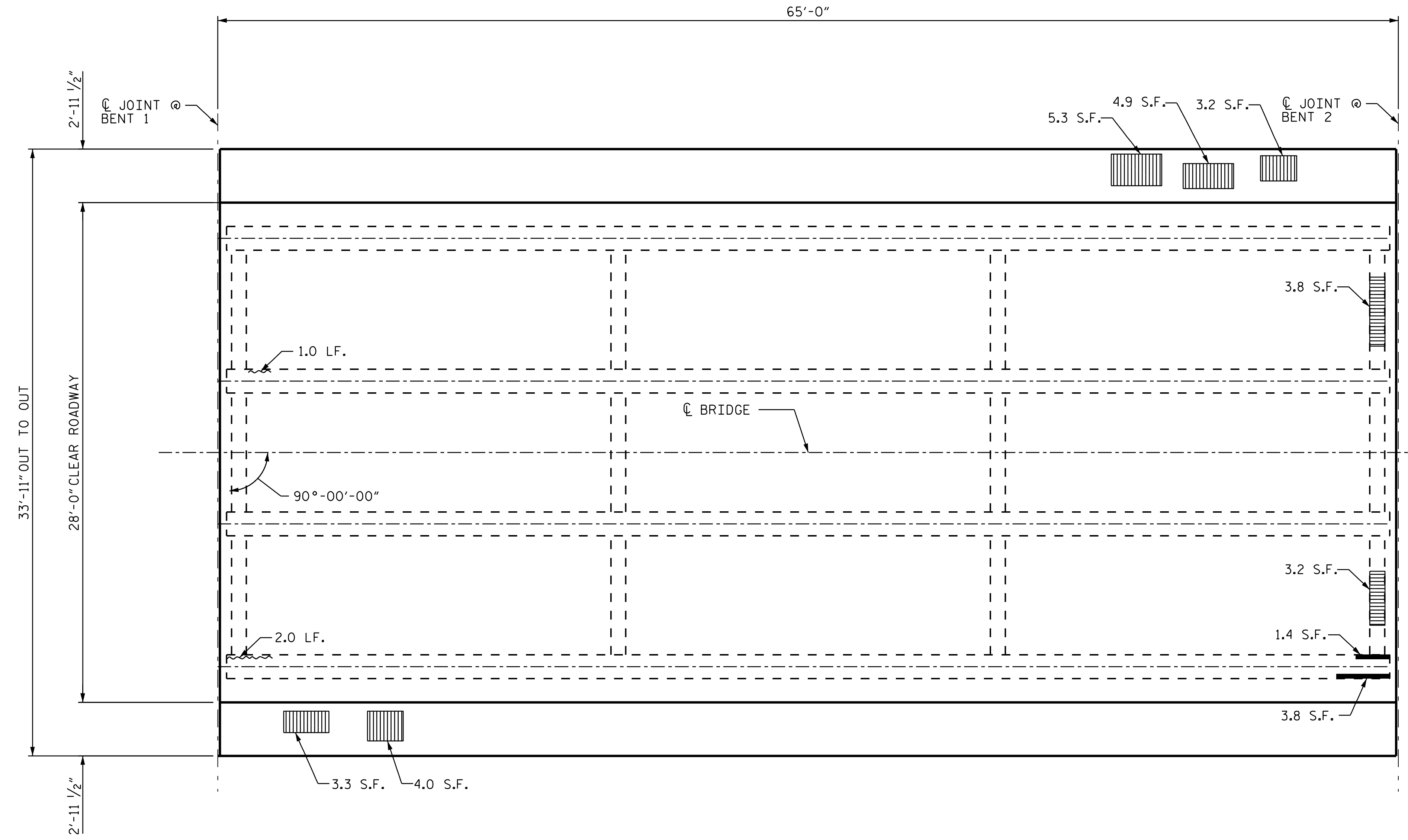
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-90
1			3			TOTAL SHEETS
2			4			156

DRAWN BY : T.MAZARURA DATE : 8/2022  
 CHECKED BY : D. GLADDEN DATE : 2/2024

AS-BUILT REPAIR QUANTITY TABLE				
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	20.7	7.1		
INTERIOR DIAPHRAGMS	7.0	2.4		
UNDERSIDE EPOXY RESIN INJECTION				
UNDERSIDE EPOXY RESIN INJECTION	0.0	LF		
PRESTRESSED GIRDER EPOXY RESIN INJECTION	3.0	LF		
REPAIRS FOR PRESTRESSED CONCRETE GIRDERS				
PRESTRESSED GIRDER	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED GIRDER	5.2	1.4		

QUANTITIES IN TABLE REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR, AND MINIMUM 2" CLEAR TO SAW CUT. SEE REPAIR DETAILS.

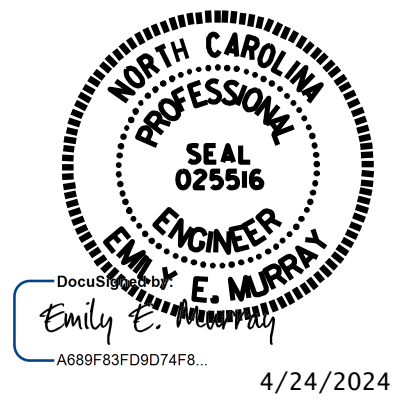
-  UNDERSIDE REPAIR
-  PRESTRESSED GIRDER REPAIR
-  EPOXY RESIN INJECTION (ERI)
-  DIAPHRAGM REPAIR



PLAN OF SPAN B

PROJECT NO. 15BPR.130  
MOORE COUNTY  
 BRIDGE NO. 620049

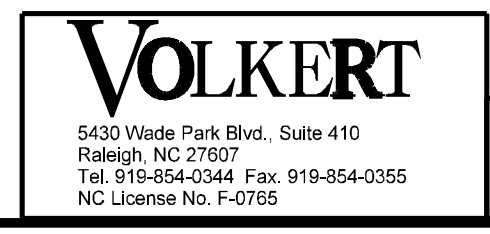
SHEET 4 OF 12



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE  
 PLAN OF SPAN B  
 (UNDERSIDE REPAIRS)**

DRAWN BY : T.MAZARURA DATE : 8/2022  
 CHECKED BY : D. GLADDEN DATE : 2/2024



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1			3			TOTAL SHEETS
2			4			156

AS-BUILT REPAIR QUANTITY TABLE		
TOP OF DECK REPAIRS		
SPAN C		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	202.2 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	202.2 SY	
CLASS II SURFACE PREPARATION	126.1 SY	
CLASS III SURFACE PREPARATION	0.0 SY	
LMC OVERLAY-VES	8.4 CY	
PLACING AND FINISHING LMC OVERLAY-VES	202.2 SY	
GROOVING BRIDGE FLOORS	1616.7 SF	
BRIDGE JOINT DEMOLITION	0.0 SF	

**NOTES**

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE BASED ON 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 ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS II (PARTIAL DEPTH) SURFACE PREPARATION ARE APPROXIMATE AND MAY NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED AT THE PROJECT SITE.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF THE BRIDGE DECK.

FOR OVERLAY OF BRIDGE WITH LATEX MODIFIED CONCRETE- VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.


PREVIOUSLY PLACED LMC OVERLAY AT STAGED EDGES SHALL BE DEMOLISHED BACK A MINIMUM OF 4 INCHES AND RECAST WITH LMC.

FOR LMC OVERLAY - VES SURFACE PREPARATION, SEE SPECIAL PROVISIONS.

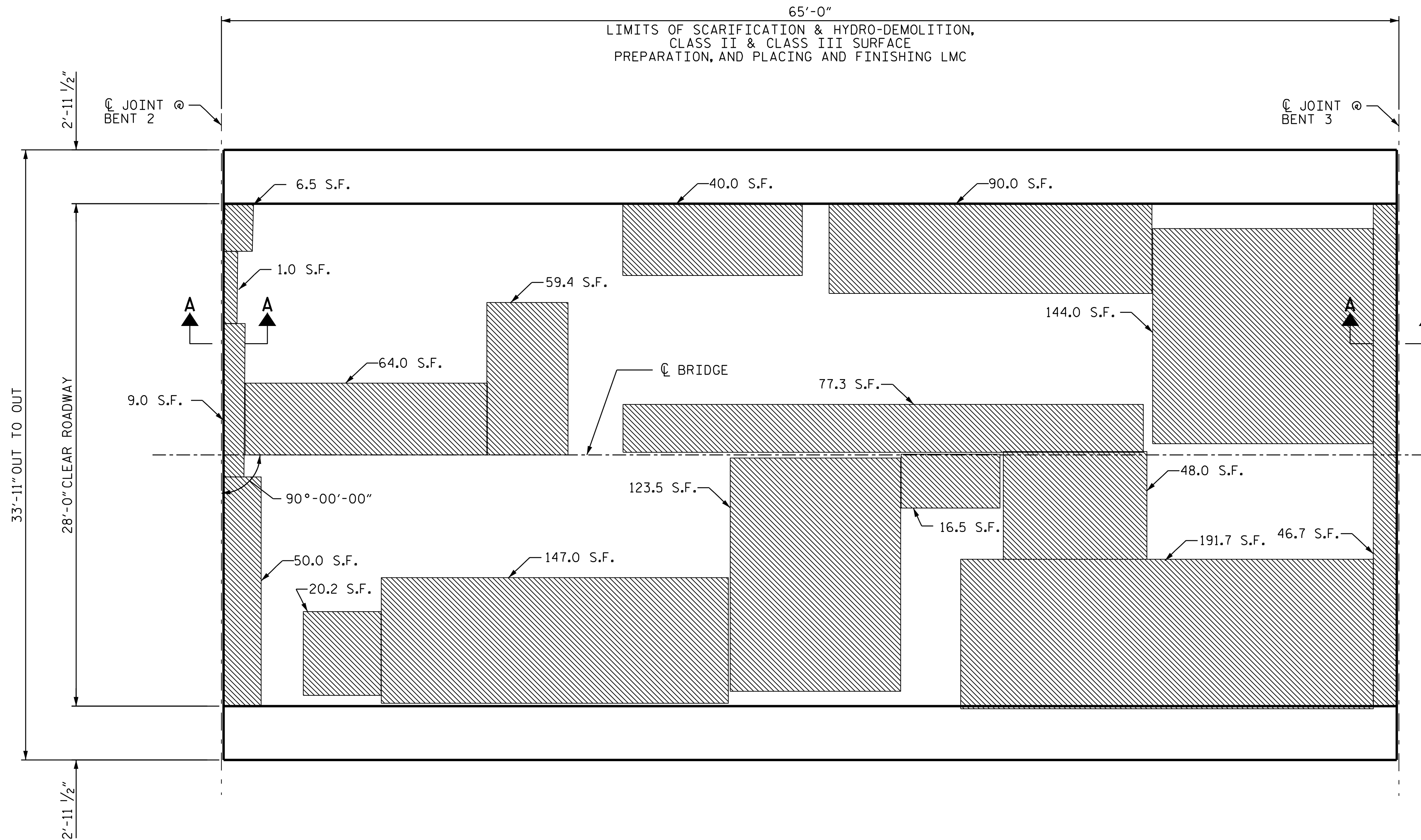
FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR SECTION A-A, SEE BRIDGE JOINT DETAILS SHEET.

 BRIDGE JOINT DEMOLITION

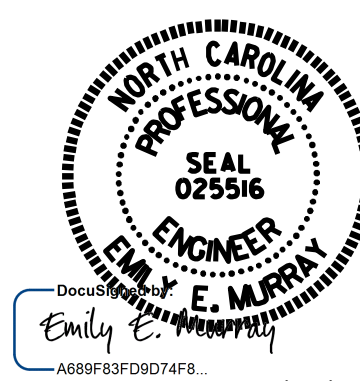
 CLASS II SURFACE PREPARATION



PLAN OF SPAN C

PROJECT NO. 15BPR.130  
MOORE COUNTY  
 BRIDGE NO. 620049

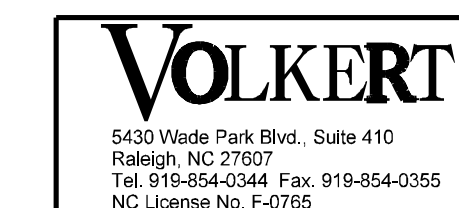
SHEET 5 OF 12



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUPERSTRUCTURE  
 PLAN OF SPAN C  
 (SURFACE PREPARATION)**

DRAWN BY : T. MAZARURA DATE : 8/2022  
 CHECKED BY : D. GLADDEN DATE : 2/2024

23-APR-2024 10:32  
 \*\*\*\*\*DCN\*\*\*\*\*  
 brent.barnhill AT C-1001568






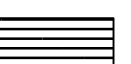
DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

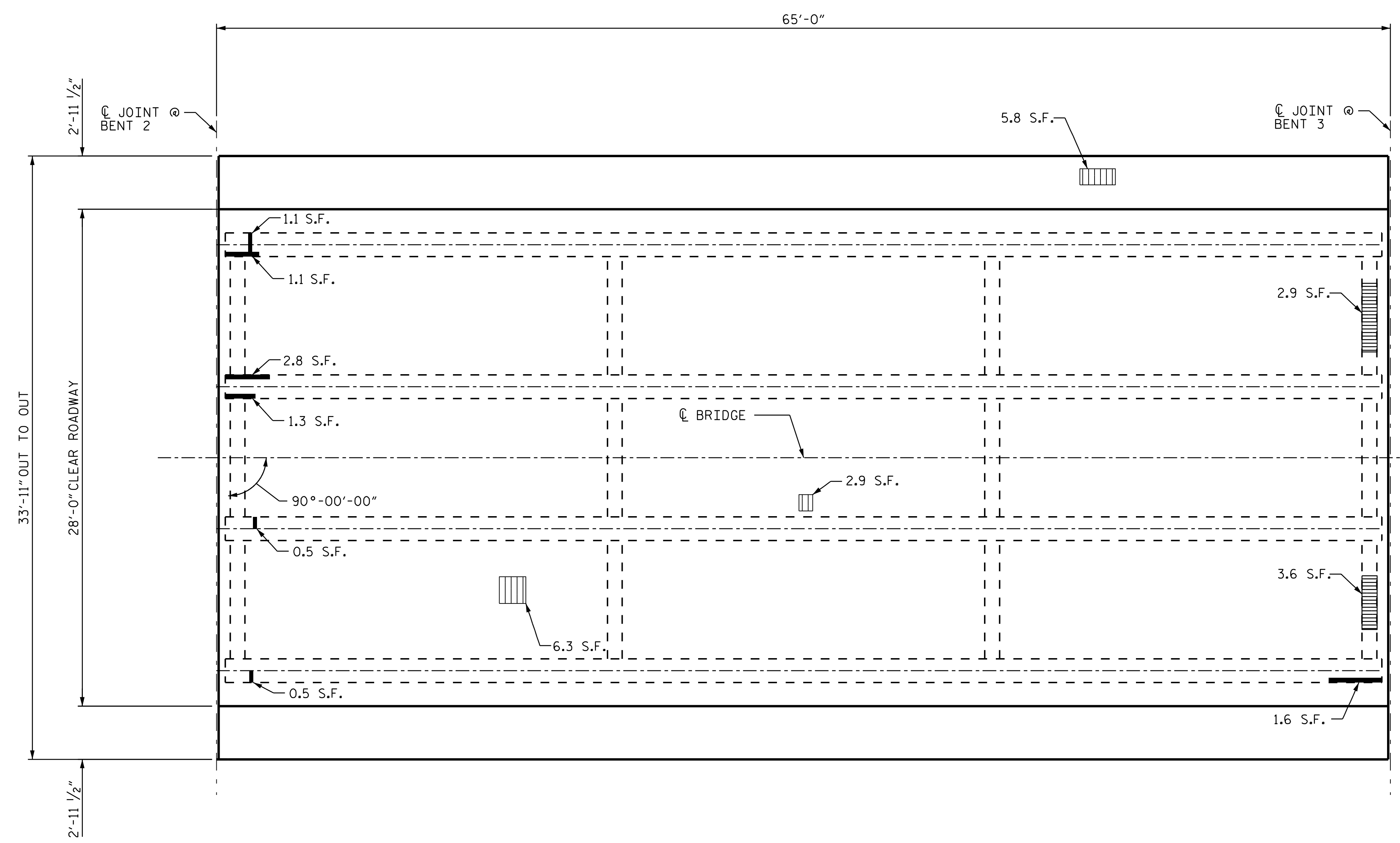
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-92
1			3			TOTAL SHEETS
2			4			156



AS-BUILT REPAIR QUANTITY TABLE				
UNDERSIDE OF DECK REPAIRS				
SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	9.2	3.1		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	5.8	2.0		
INTERIOR DIAPHRAGMS	6.5	2.3		
UNDERSIDE EPOXY RESIN INJECTION				
UNDERSIDE EPOXY RESIN INJECTION	0.0	LF		
PRESTRESSED GIRDER EPOXY RESIN INJECTION	0.0	LF		
REPAIRS FOR PRESTRESSED CONCRETE GIRDERS				
PRESTRESSED GIRDER	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED GIRDER	8.9	2.5		

QUANTITIES IN TABLE REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR, AND MINIMUM 2" CLEAR TO SAW CUT. SEE REPAIR DETAILS.

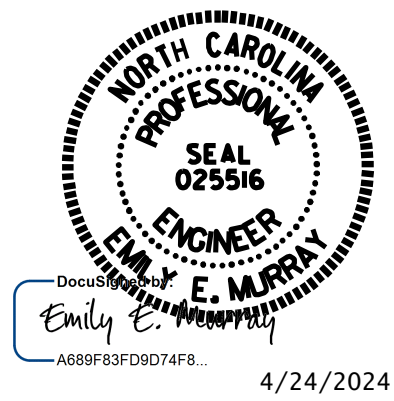
-  UNDERSIDE REPAIR
-  PRESTRESSED GIRDER REPAIR
-  EPOXY RESIN INJECTION (ERI)
-  DIAPHRAGM REPAIR



PLAN OF SPAN C

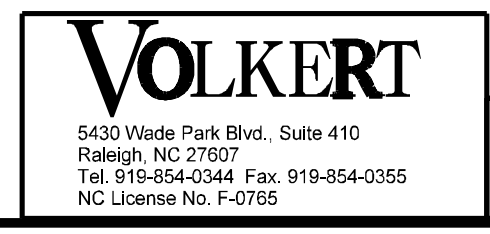
PROJECT NO. 15BPR.130  
MOORE COUNTY  
 BRIDGE NO. 620049

SHEET 6 OF 12



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUPERSTRUCTURE  
 PLAN OF SPAN C  
 (UNDERSIDE REPAIRS)**

DRAWN BY : T. MAZARURA DATE : 8/2022  
 CHECKED BY : D. GLADDEN DATE : 2/2024



DOCUMENT NOT CONSIDERED  
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1			3			TOTAL SHEETS
2			4			156