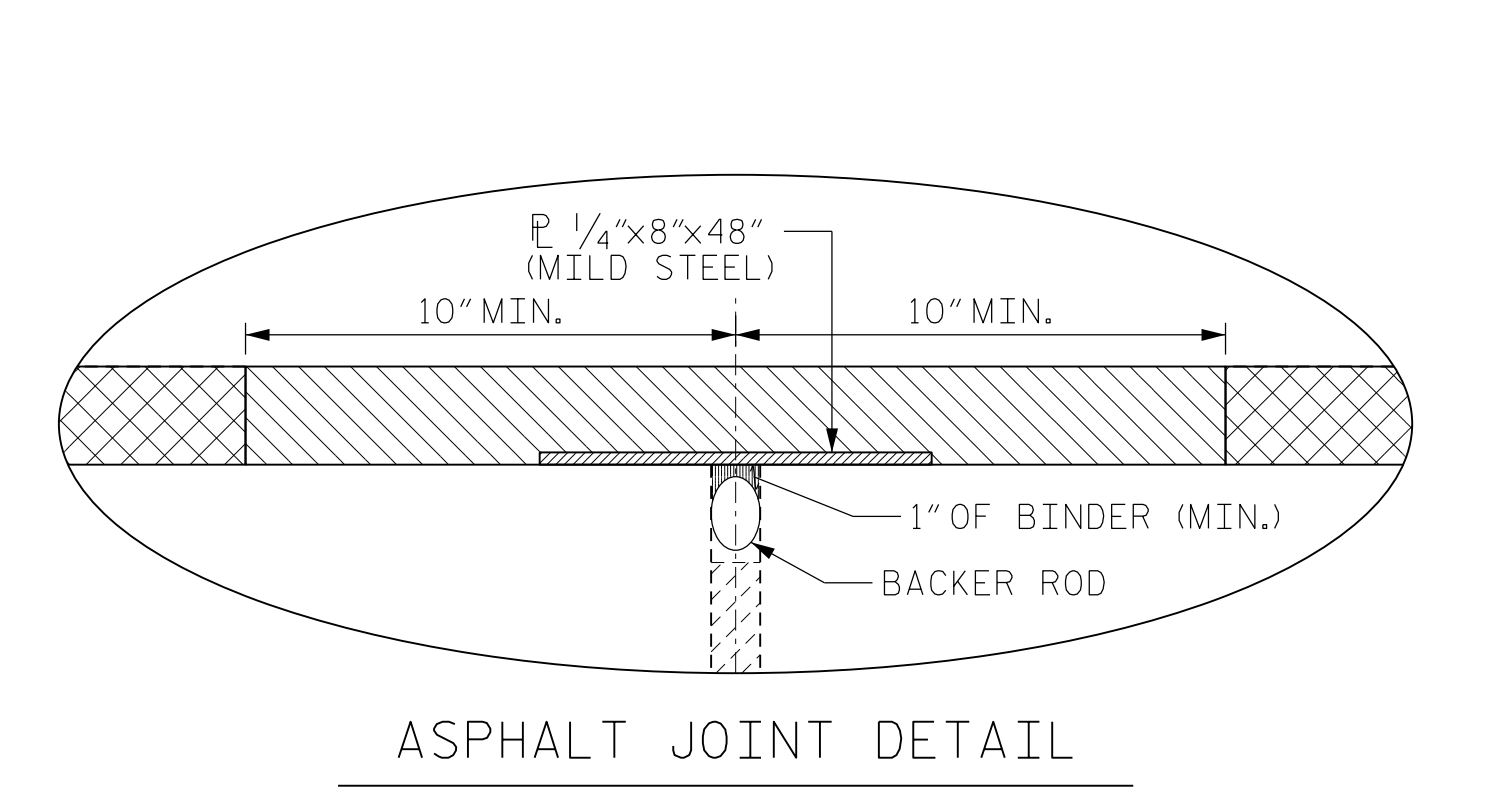
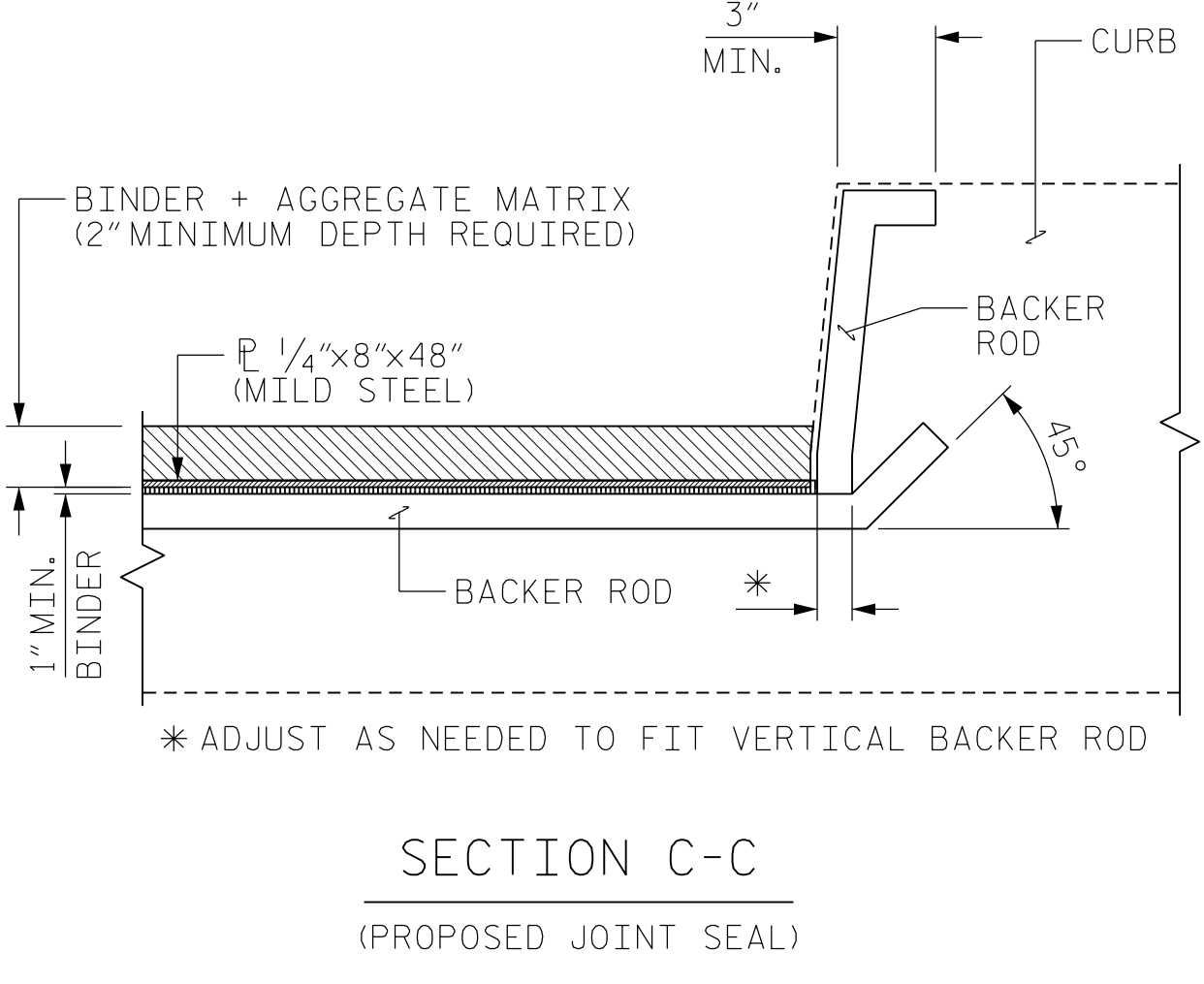
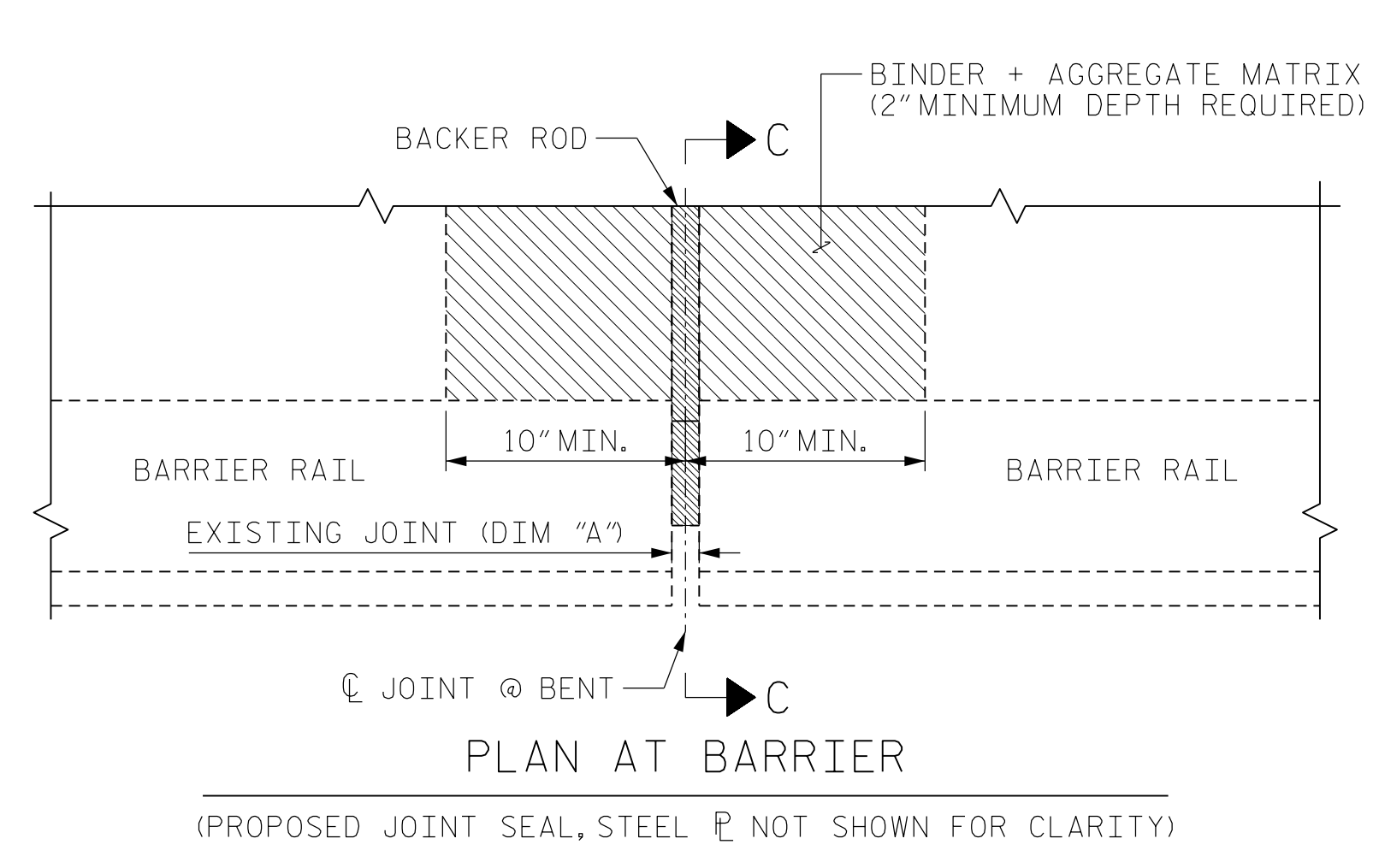
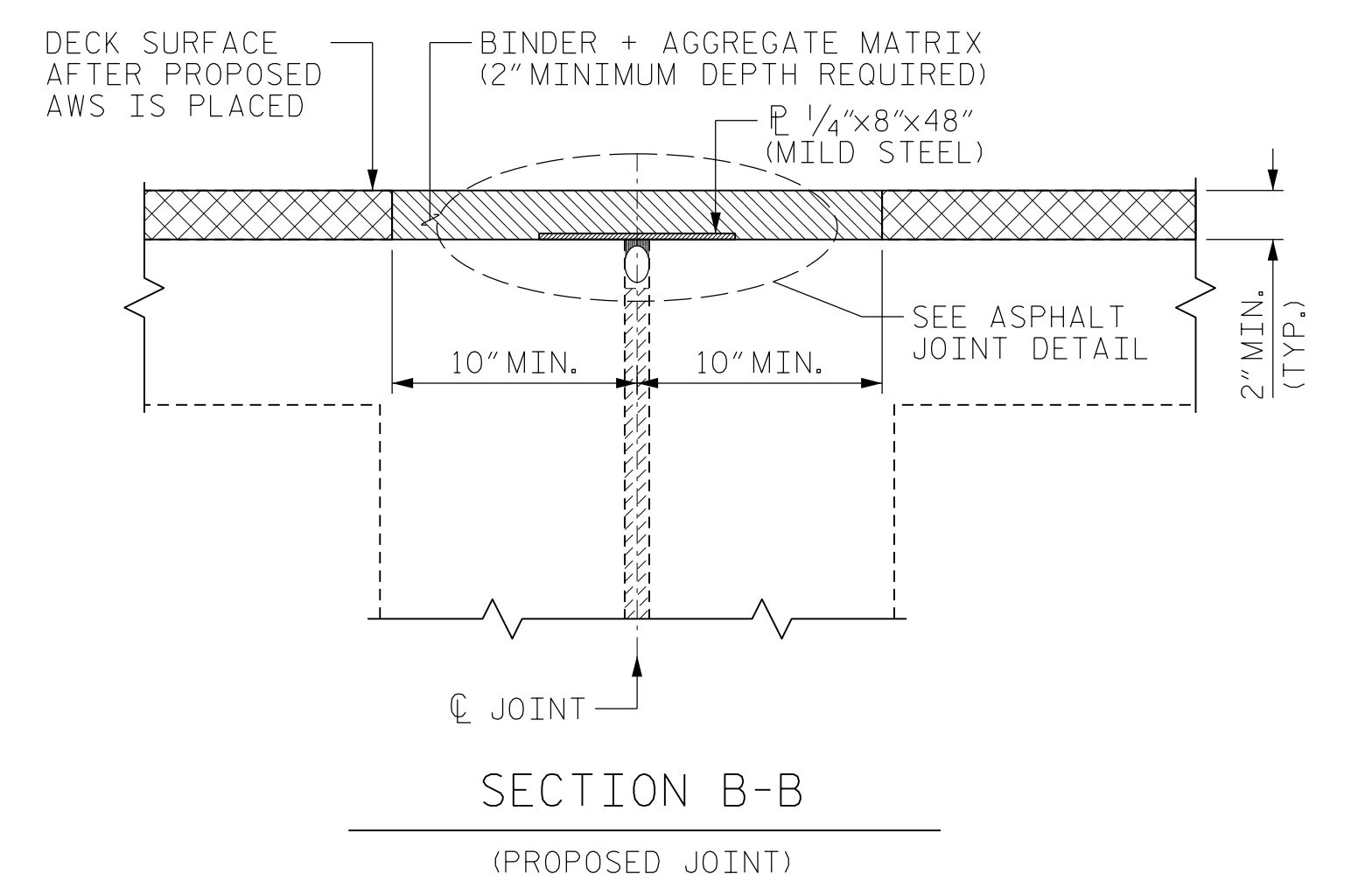
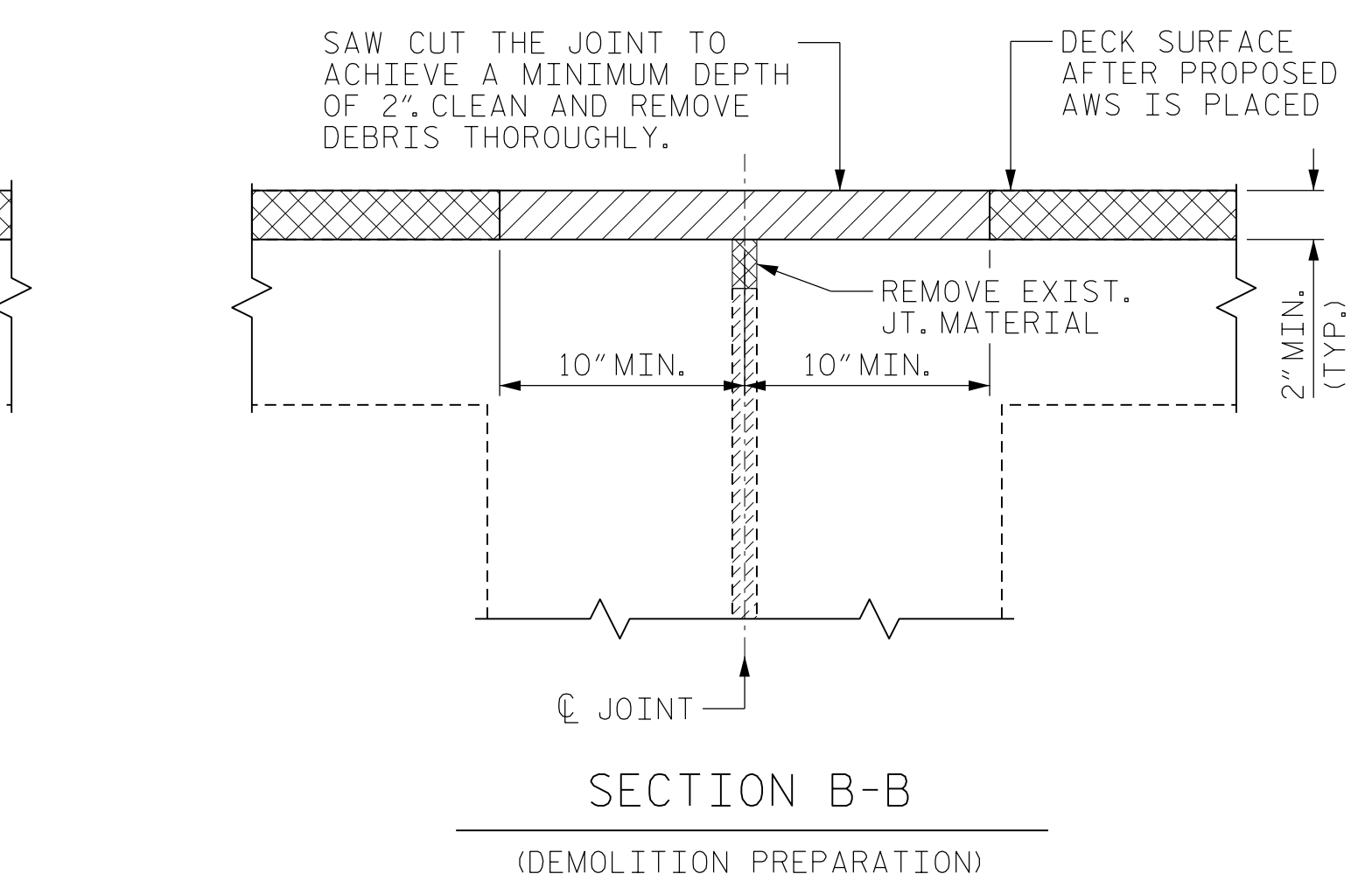
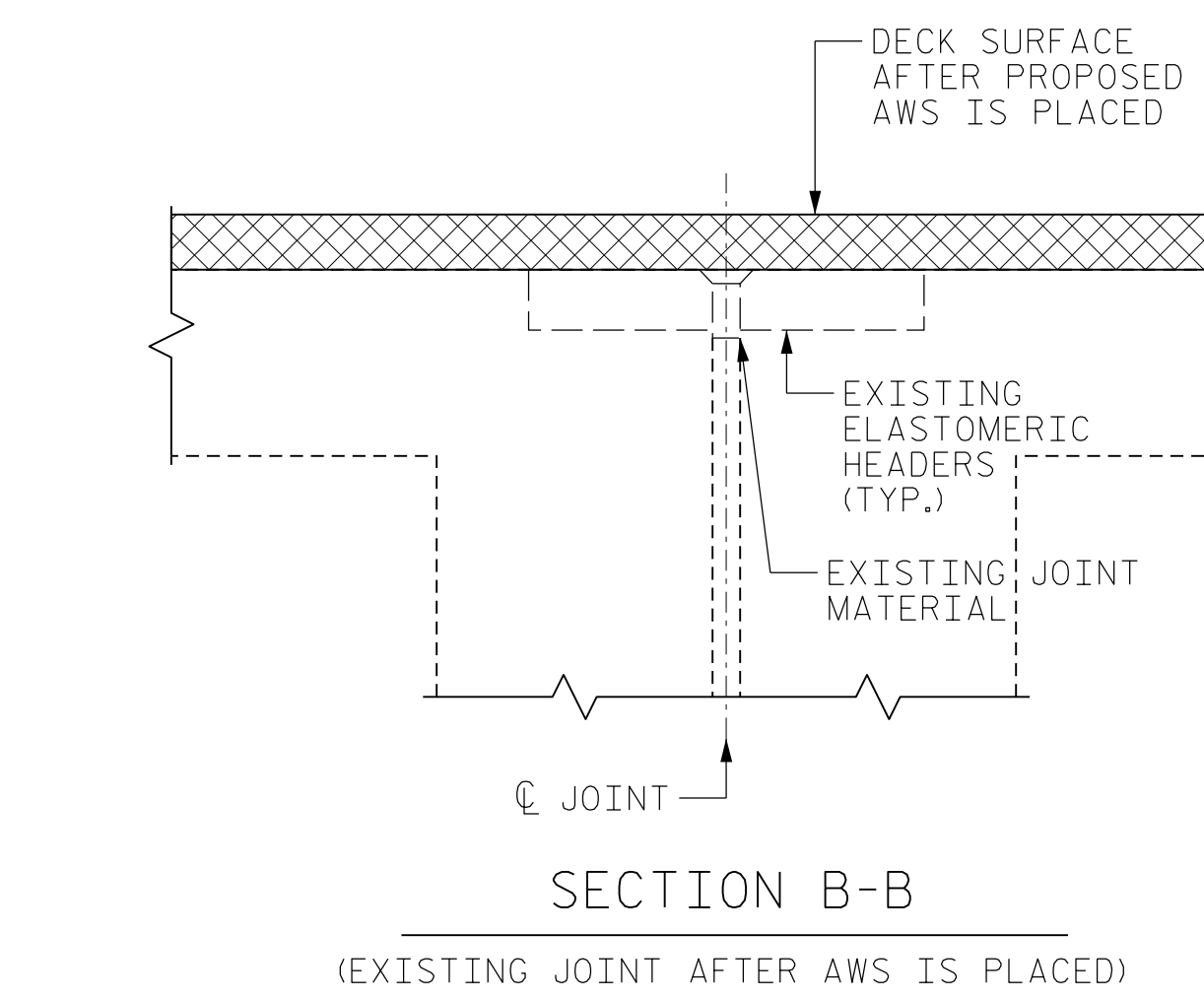
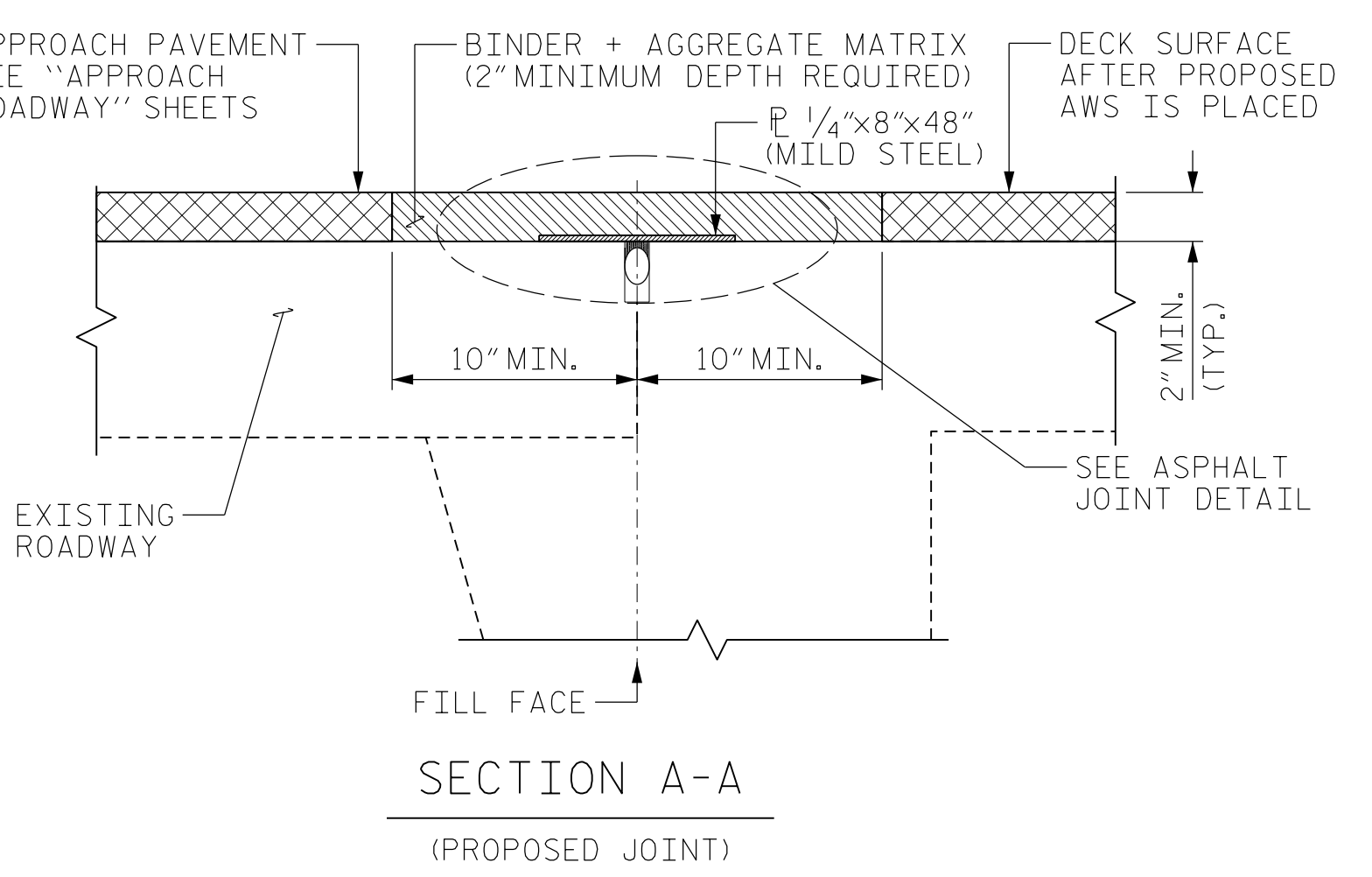
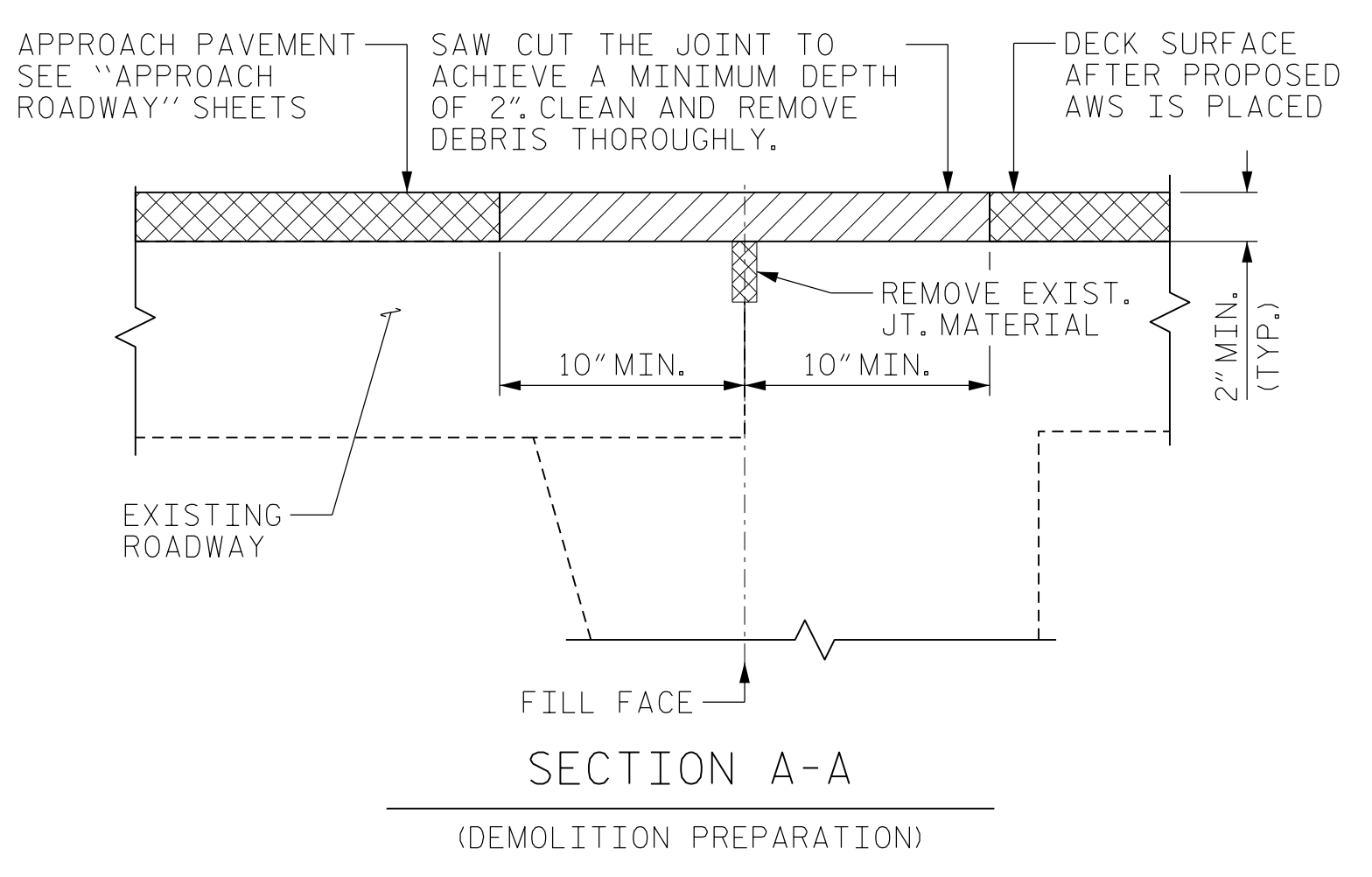
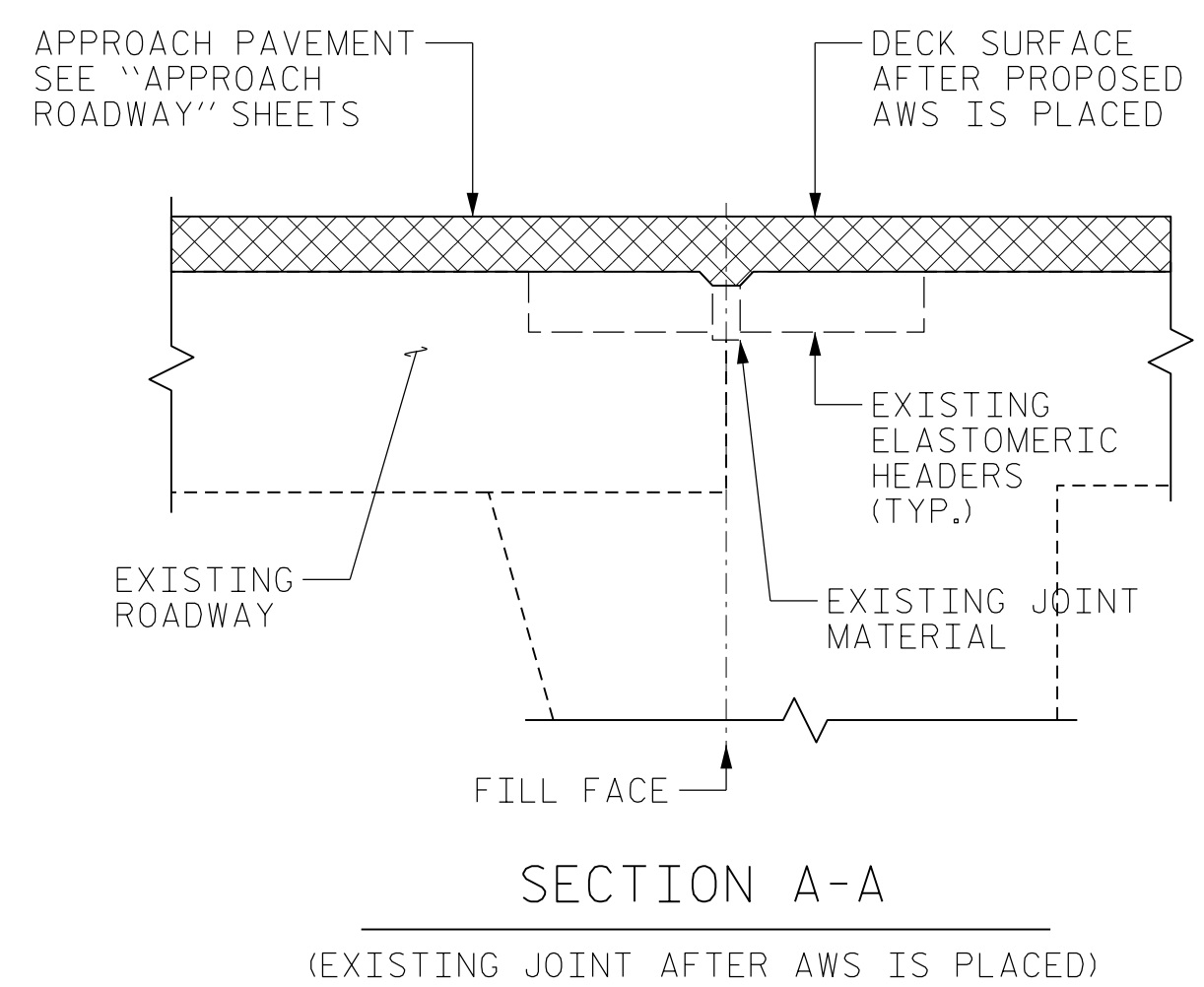


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**NOTES:**

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF THE ACTUAL OPENING VARIES FROM THE OPENING INDICATED IN THE DETAIL BY MORE THAN 1/4", NOTIFY THE ENGINEER. REVISION OF THE JOINT SEAL SIZE MIGHT BE NECESSARY.

THE CONTRACTOR SHALL TAKE CARE DURING JOINT REPAIR OPERATIONS NOT TO DROP ANY MATERIAL THAT FALLS BELOW THE BRIDGE, WITHOUT PROTECTIVE DEVICES BELOW TO CATCH THE MATERIAL. ANY MATERIAL THAT FALLS BELOW THE BRIDGE SHALL BE CONTAINED, REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO EXTRA COST TO THE DEPARTMENT. IF THE ENGINEER DETERMINES THAT THE PROTECTIVE DEVICES ARE NOT ADEQUATE OR NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

THE INSTALLED BACKER ROD AND SILICONE SEALANT SHALL BE WATER TIGHT.

QUANTITIES SHOWN IN THE ELASTOMERIC CONCRETE FOR PRESERVATION TABLE ASSUMES A MINIMUM OF 1 1/2" THICKNESS BASED ON THE MINIMUM ASPHALT JOINT THICKNESS SHOWN.

FOR EXCAVATION BELOW THE BOTTOM OF THE PLANNED JOINT DECK DEMOLITION, CONCRETE FOR DECK REPAIRS SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT BOTTOM OF THE PROPOSED ASPHALT JOINT DETAIL SHOWN.

DEMOLISH BRIDGE JOINT AREA SUCH THAT THE BOTTOM OF THE EXCAVATION SHALL BE REASONABLY FLAT AND LEVEL AND TO THE NECESSARY DEPTH, SUCH THAT ASPHALT JOINT SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE.

PRIOR TO ASPHALT JOINT REPAIR/REPLACEMENT, PERFORM DECK SURFACE REPAIR IN ACCORDANCE WITH "PLAN OF SPAN" SHEETS.

BACKER ROD SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.

FOR ASPHALT JOINT REPAIR/REPLACEMENT, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

PROPOSED JOINT QUANTITY		
	ESTIMATED (LIN.FT.)	ACTUAL (LIN.FT.)
ASPHALT JOINT REPAIR/REPLACEMENT	188.7	

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480065

BENT/ JOINTS	DIM "A" @ 60°F
END BENT 1	2 1/2"
1	2 3/4"
2	2 5/8"
3	2 1/2"
END BENT 2	2 1/2"



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

JOINT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S9-5
2			4			TOTAL SHEETS 12

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

# AS-BUILT REPAIR QUANTITY TABLE

	ESTIMATE	ACTUAL
INCIDENTAL MILLING	1545 SY	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	217 TON	
ASPHALT BINDER FOR PLANT MIX	13.1 TON	

## NOTES:

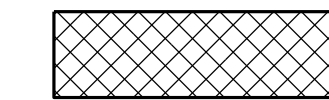
INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVEMENT TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1/2" DEPTH OF NEW ASPHALT PAVEMENT. NEW ASPHALT PAVEMENT SHALL BE OF THICKNESS NECESSARY TO PROVIDE A SMOOTH TRANSITION BETWEEN THE ROADWAY AND THE BRIDGE DECK. THE NEW ASPHALT PAVEMENT THICKNESS MAY EXCEED 1/2" DUE TO SETTLEMENT OF THE EXISTING APPROACH.

FOR NEW ASPHALT PLACEMENT, SEE STANDARD SPECIFICATIONS.

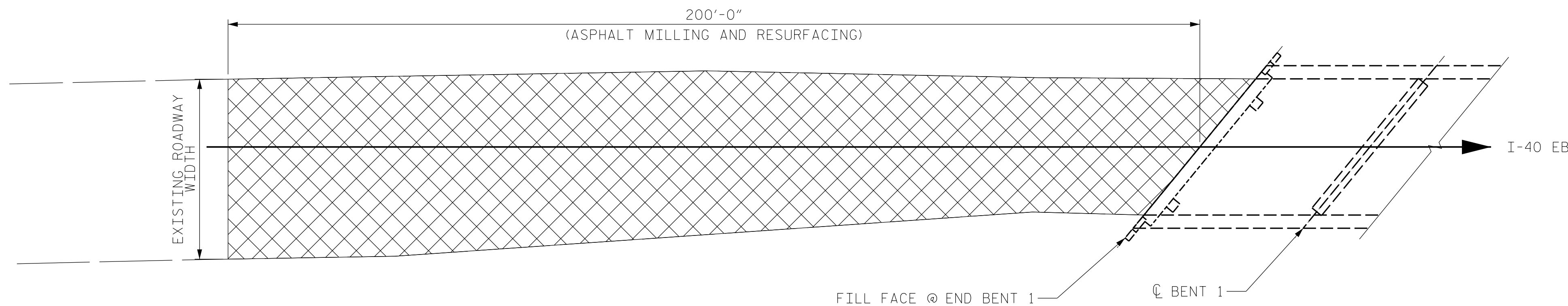
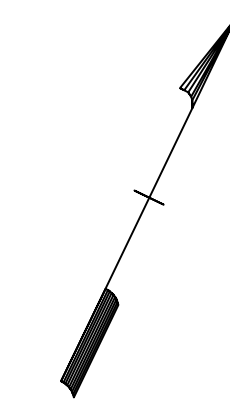
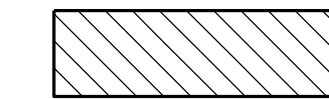
GRADE MAY BE ADJUSTED BY THE ENGINEER TO ENSURE PROPER TIE-IN AT THE END BENTS.

C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 2" IN DEPTH.
----	---

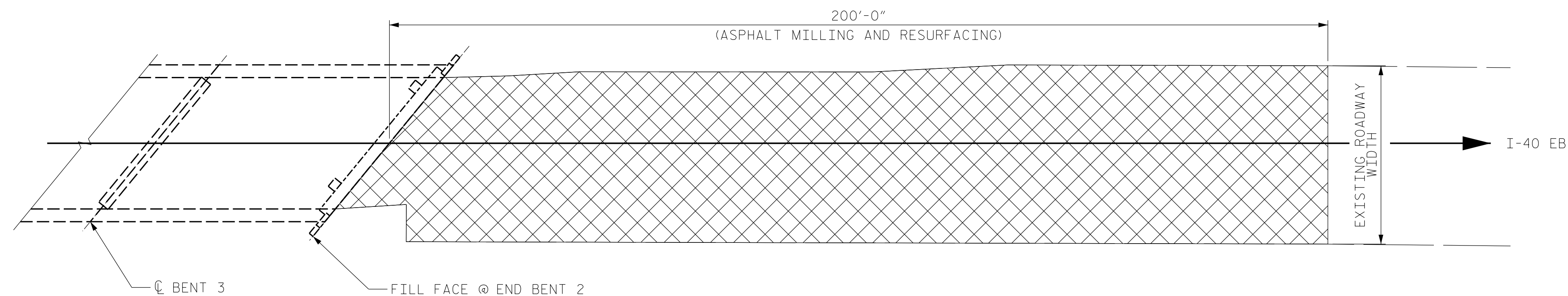
INCIDENTAL MILLING



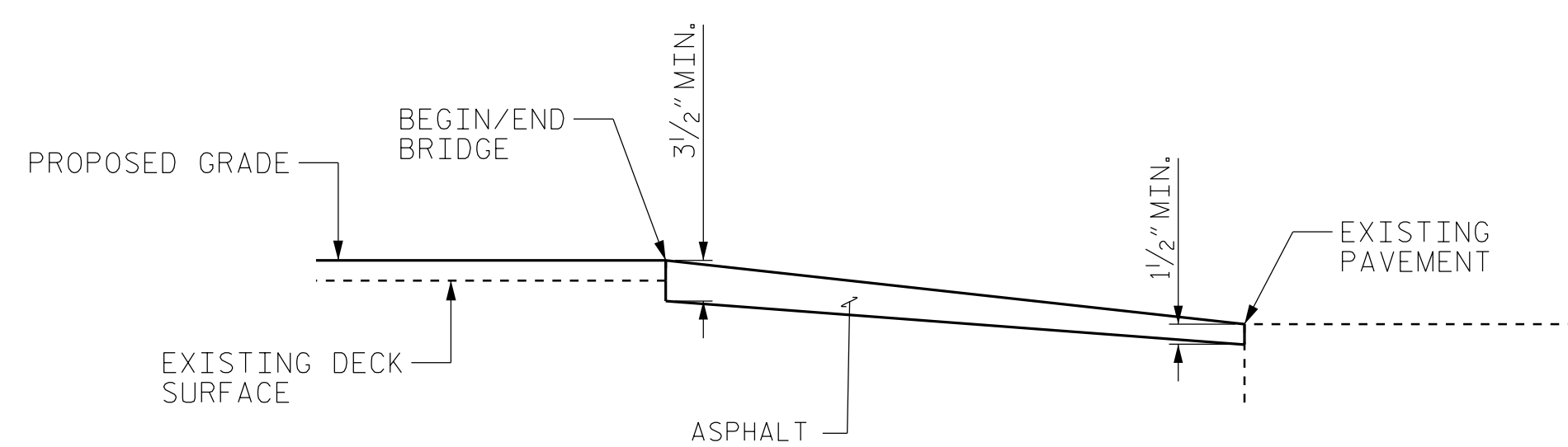
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C (C1)



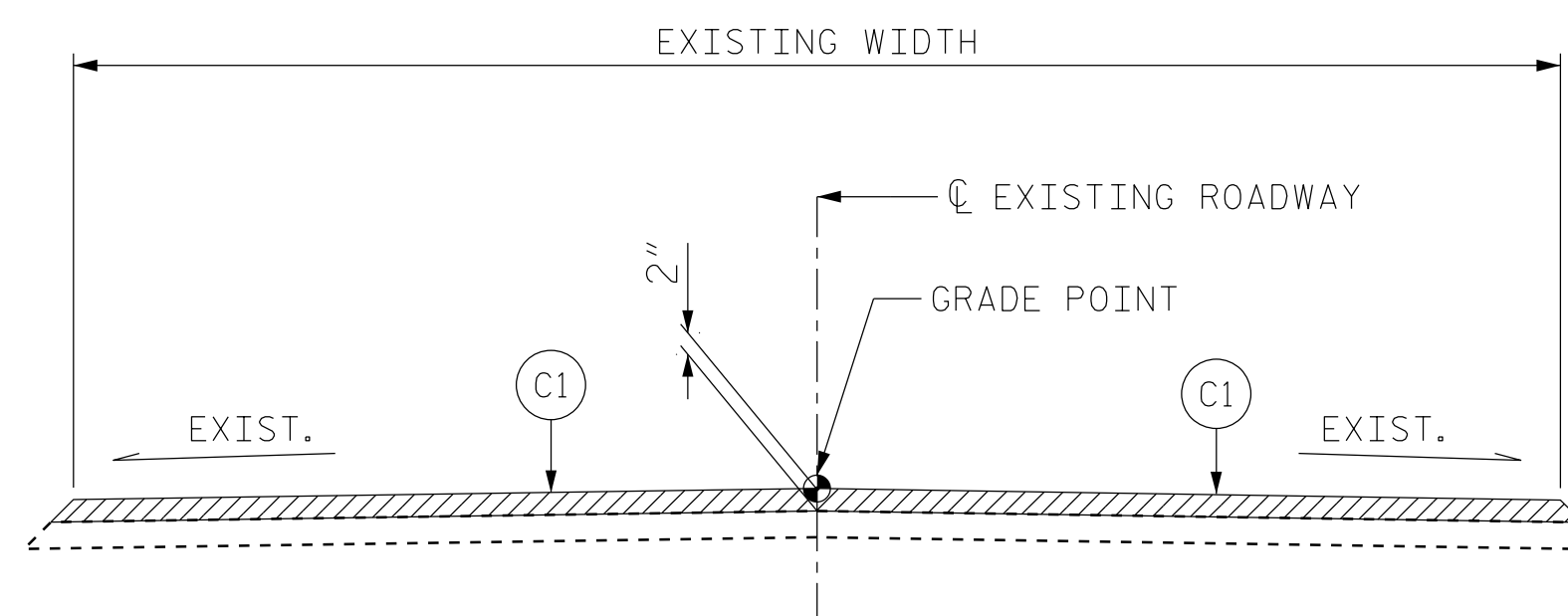
BEGIN APPROACH SLAB



END APPROACH SLAB

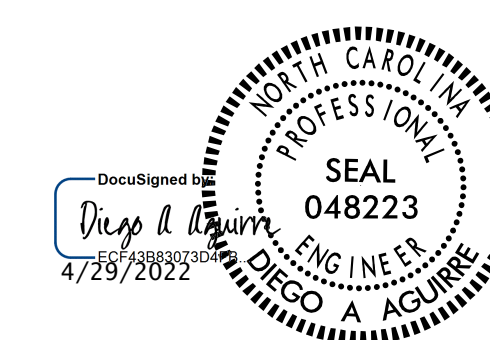


PAVEMENT KEY-IN DETAIL FOR BOTH END BENTS



ROADWAY SECTION  
BEGIN/END BRIDGE

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480065



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 APPROACH ROADWAY  
 MILLING AND RESURFACING

DRAWN BY : FIDEL L. FLORES DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

4/21/2022  
 I5915B.SMU.AR01.480065.dgn  
 daguirre

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S9-6
2			4			TOTAL SHEETS 12



# AS-BUILT REPAIR QUANTITY TABLE

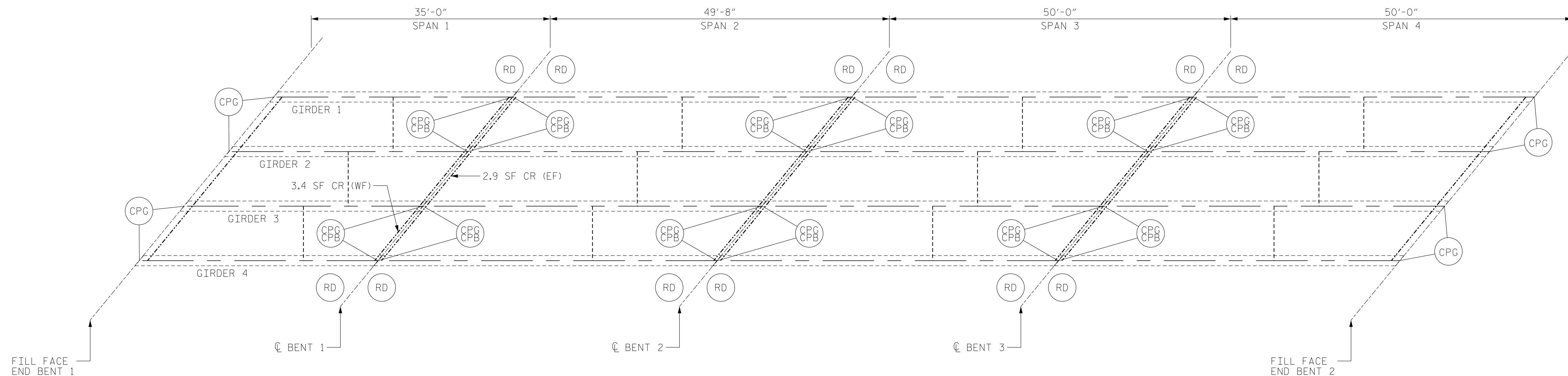
## SUPERSTRUCTURE REPAIRS

	SPAN 1		SPAN 2		SPAN 3		SPAN 4	
	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME
CONCRETE REPAIR AREA (CR)	3.4 SF	1.2 CF			2.9 SF	1.0 CF	-- SF	-- CF
CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
	4 EA				8 EA		4 EA	

**LEGEND:**

- CPG CLEAN AND PAINT GIRDER ENDS (5 LF)
- CPB CLEAN AND PAINT BEARING
- RD REMOVE END DIAPHRAGM AT OVERHANG (SEE DETAIL "RD")
- CR CONCRETE REPAIR AREA
- EF EAST FACE
- WF WEST FACE

\* QUANTITIES FOR REMOVAL OF DIAPHRAGMS AT OVERHANGS (RD) ARE NOT INCLUDED AND SHALL BE INCIDENTAL TO THE PAY ITEM FOR "CONCRETE REPAIRS".



PLAN

**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 TABLE ABOVE.

FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

PRIOR TO CLEANING AND PAINTING STEEL ELEMENTS, REMOVE EXTERIOR DIAPHRAGMS AND A PORTION OF THE INTERIOR DIAPHRAGMS SO AS TO ALLOW FOR CLEANING OF EXISTING STEEL ELEMENTS PRIOR TO PAINTING. SEE DETAILS "RD" AND "RRD".

AFTER THE REMOVAL OF EXTERIOR END DIAPHRAGMS, CUT ANY EXPOSED REBAR FLUSH WITH THE DECK. COAT THE REMAINING EXPOSED REBAR WITH EPOXY. EPOXY WILL BE INCIDENTAL TO THE PAY ITEM FOR "CONCRETE REPAIRS".

FOR DETAILS OF CLEANING AND PAINTING GIRDER ENDS (CPG), REMOVE END DIAPHRAGMS AT OVERHANG (RD), AND REMOVE AND REPAIR DIAPHRAGM ENDS (RRD), SEE "MISCELLANEOUS REPAIRS" SHEET.

FOR CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA, SEE SPECIAL PROVISIONS.

FOR ZONE PAINTING OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480065



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

### SUPERSTRUCTURE REPAIRS

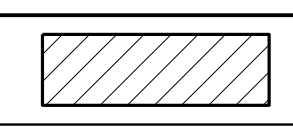
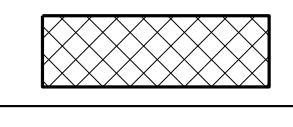

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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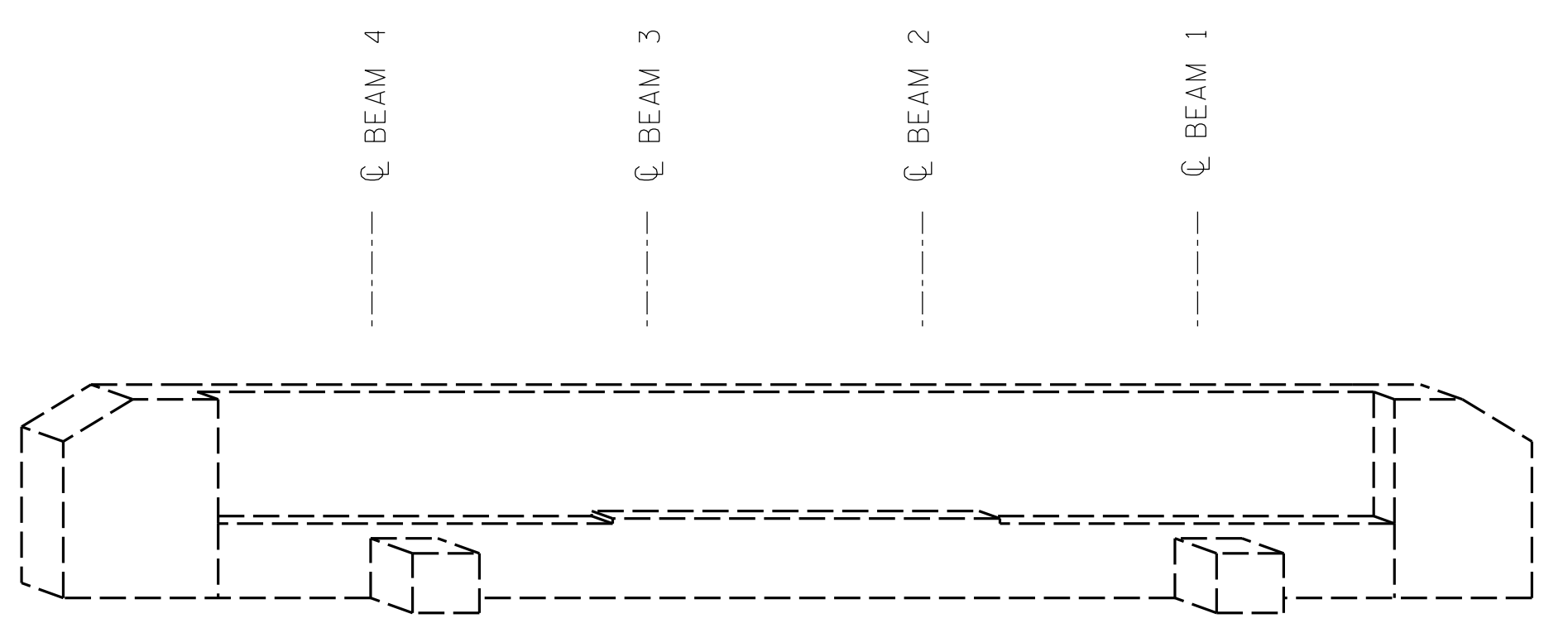
**KCA**  
**KISINGER CAMPO & ASSOCIATES**  
 301 FAYETTEVILLE ST., SUITE 1500  
 RALEIGH, NC 27601 (919) 882-7839  
 NC FIRM LICENSE: C-1506

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S9-7
2			4			TOTAL SHEETS 12

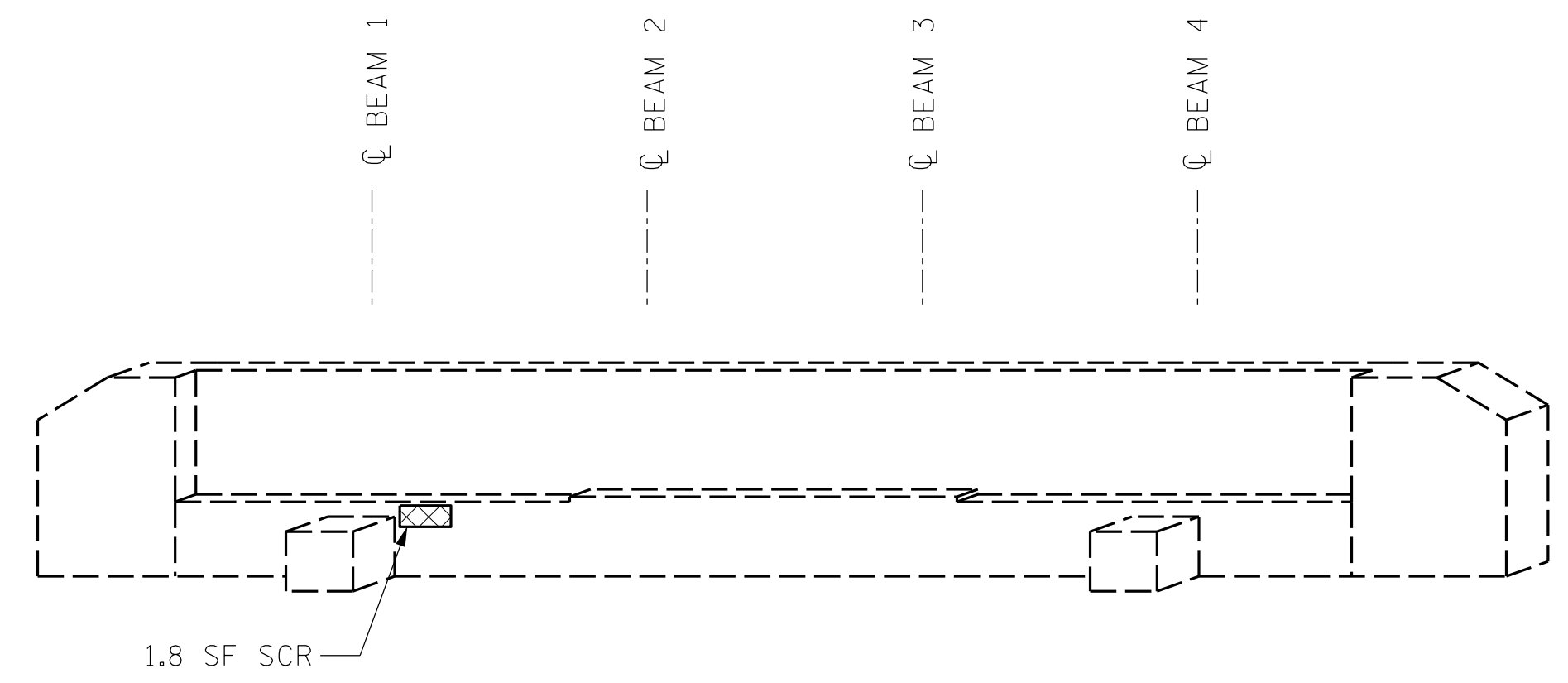


LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP/BACKWALL	1.8	0.6	
COLUMN/PILE	-	-		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP	-	-	
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
	CAP/BACKWALL	-		
COLUMN/PILE	-			



END BENT 1  
(EAST FACE)



END BENT 2  
(WEST FACE)

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS  $\geq 1/16"$  AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
BRIDGE NO. 480065

SHEET 1 OF 4

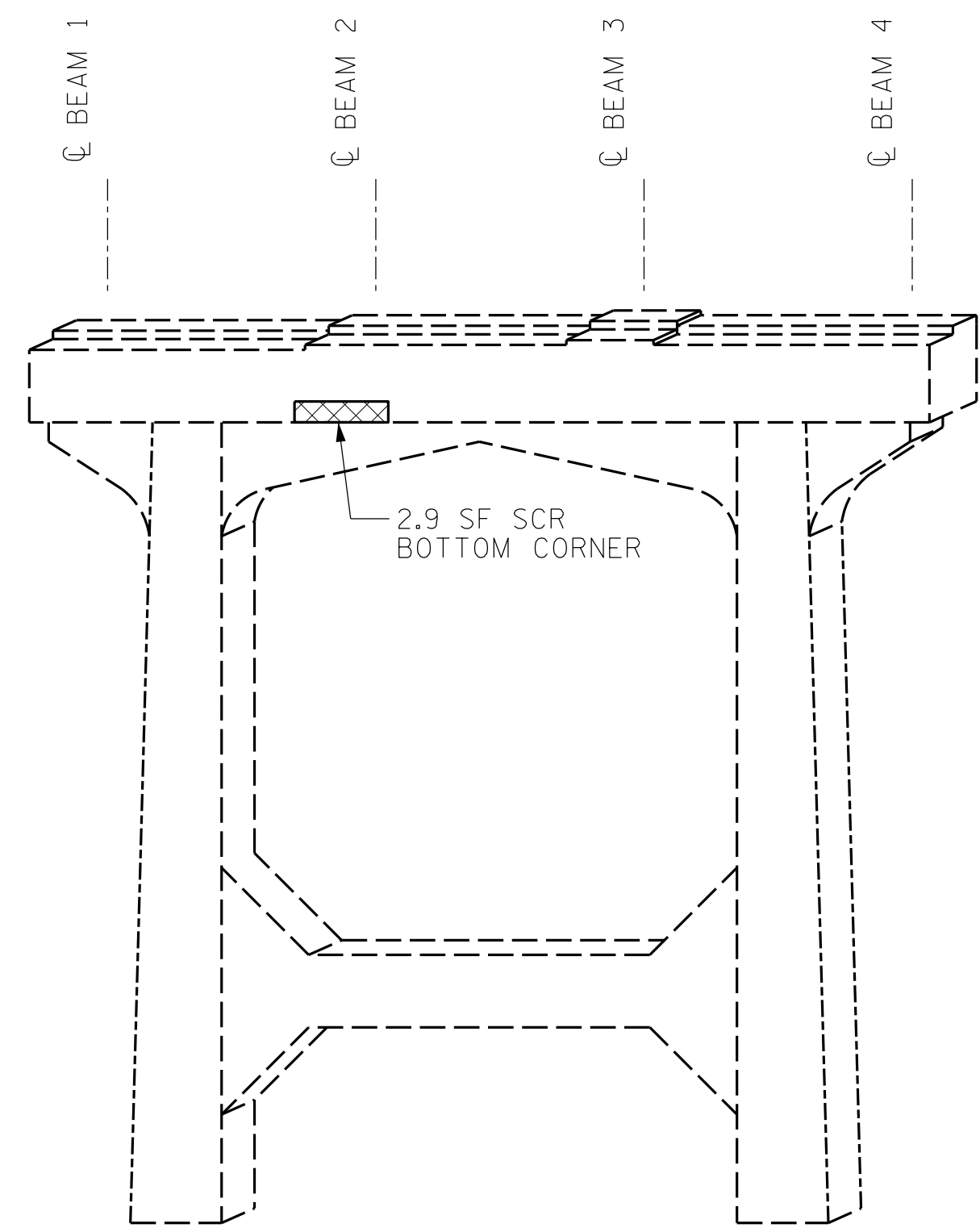


STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**SUBSTRUCTURE REPAIRS**  
END BENTS 1 & 2

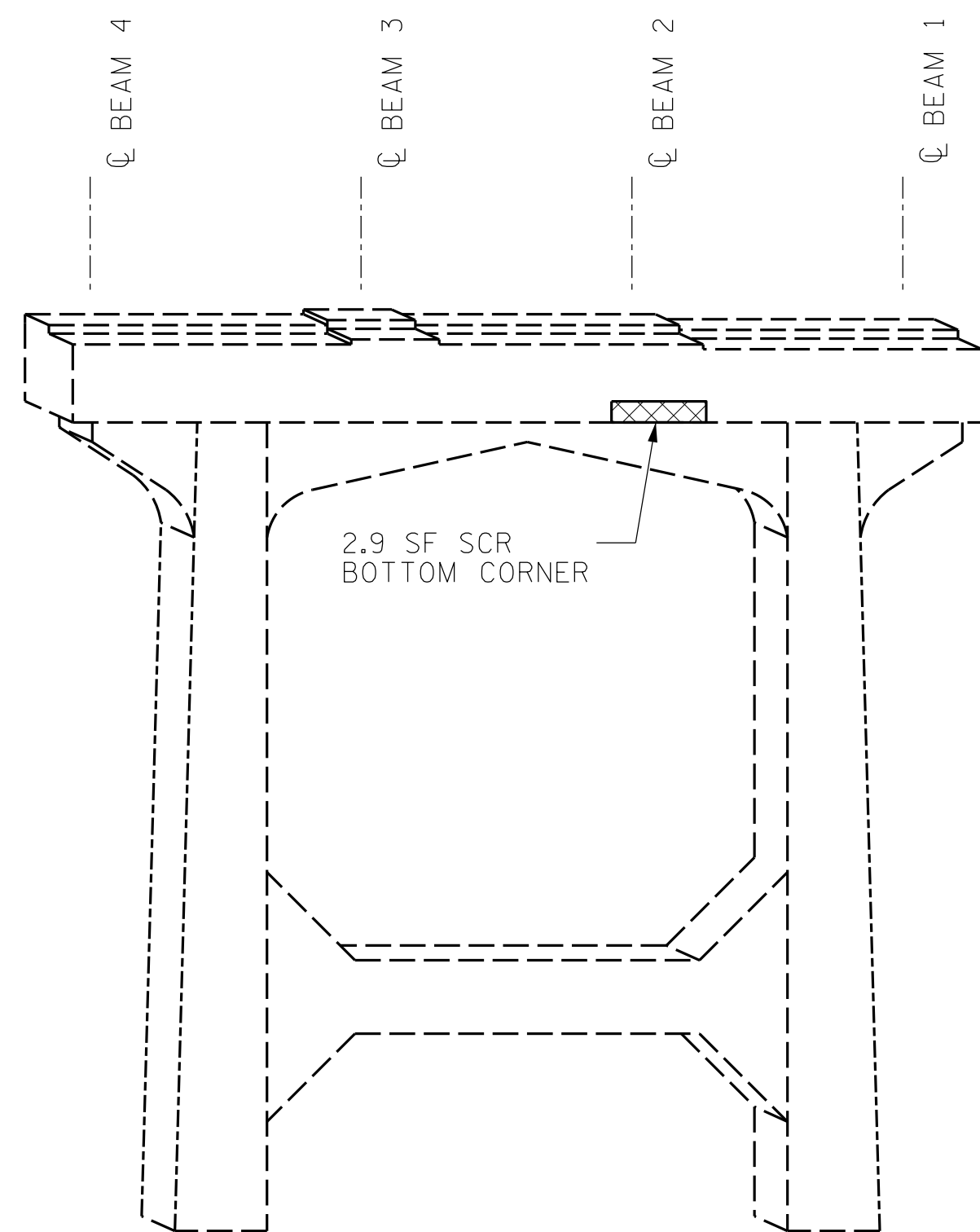
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			9-8
2			4			12



BENT 1  
(WEST FACE)



BENT 1  
(EAST FACE)

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	5.8	2.0		
COLUMN/PILE	-	-		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	-			
COLUMN/PILE	-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

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AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480065

SHEET 2 OF 4



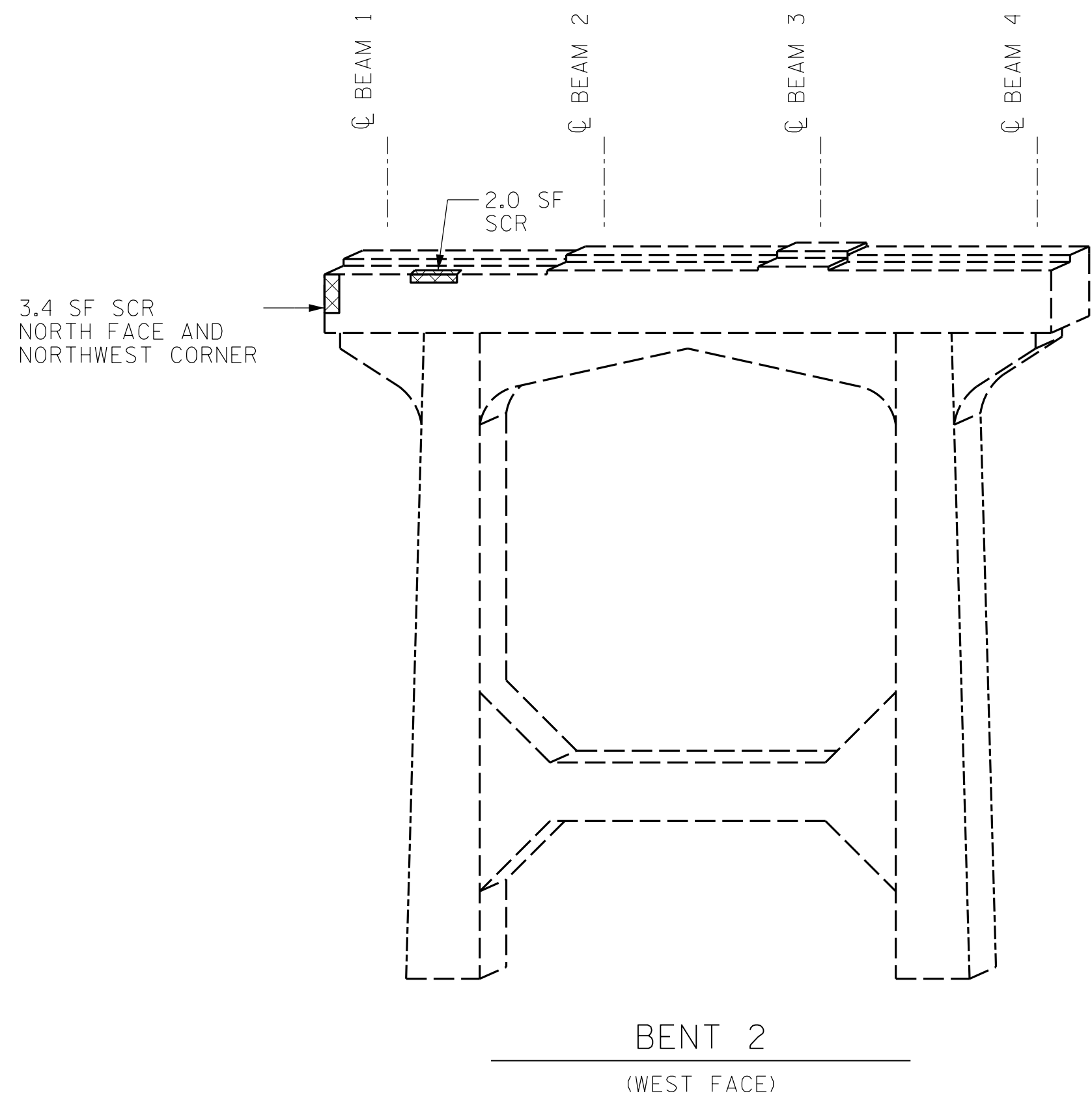
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 BENT 1

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

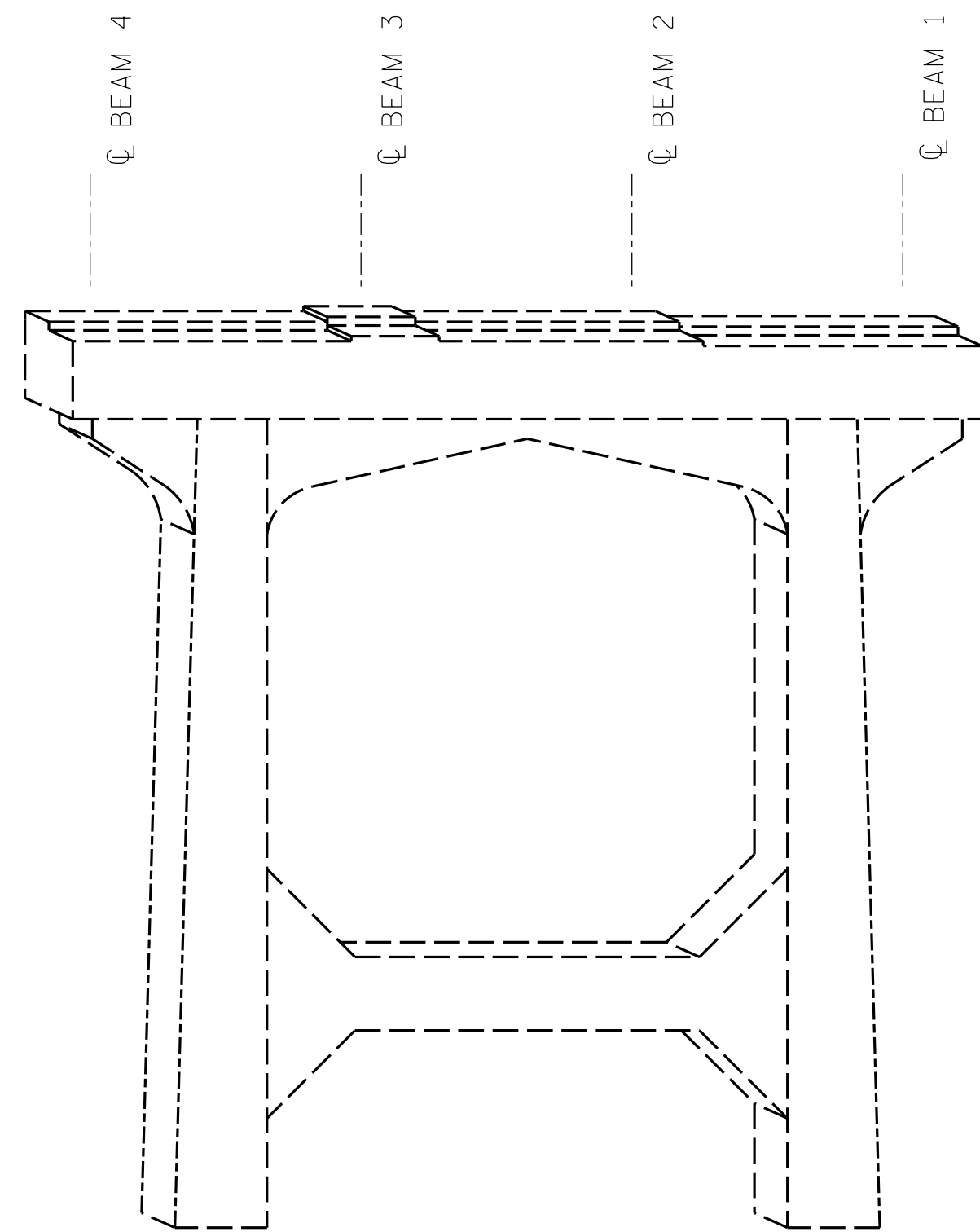
4/29/2022  
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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			9
2			4			12



BENT 2  
(WEST FACE)



BENT 2  
(EAST FACE)

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	5.4	2.4		
COLUMN/PILE	-	-		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	-			
COLUMN/PILE	-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS  $\geq 1/16"$  AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

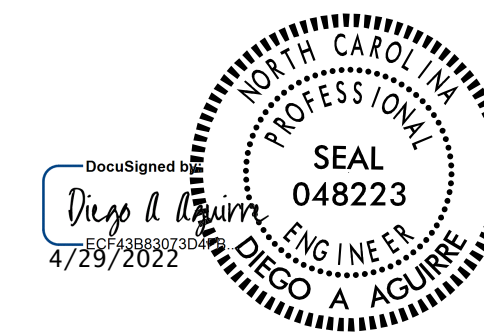
FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480065

SHEET 3 OF 4



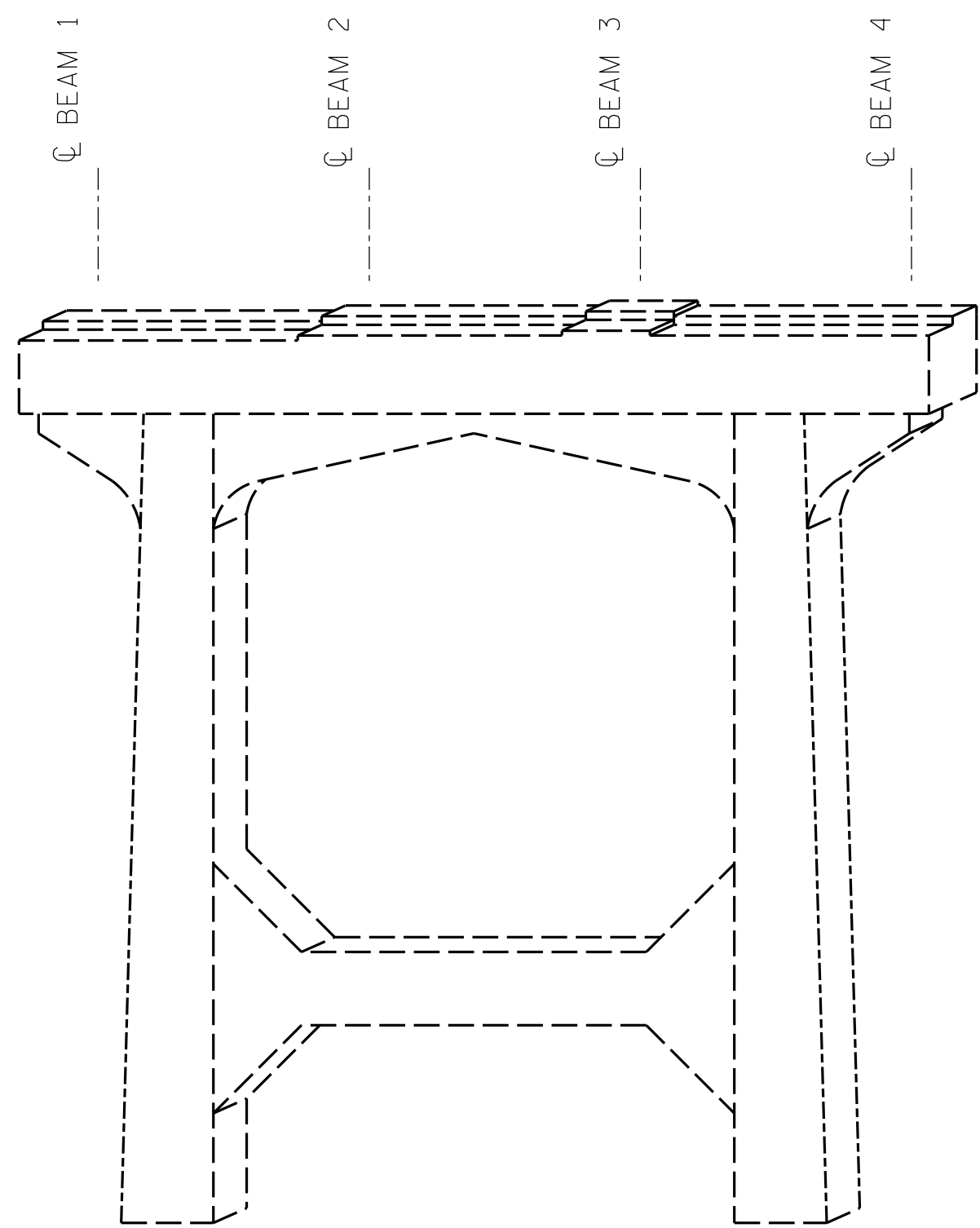
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 BENT 2

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

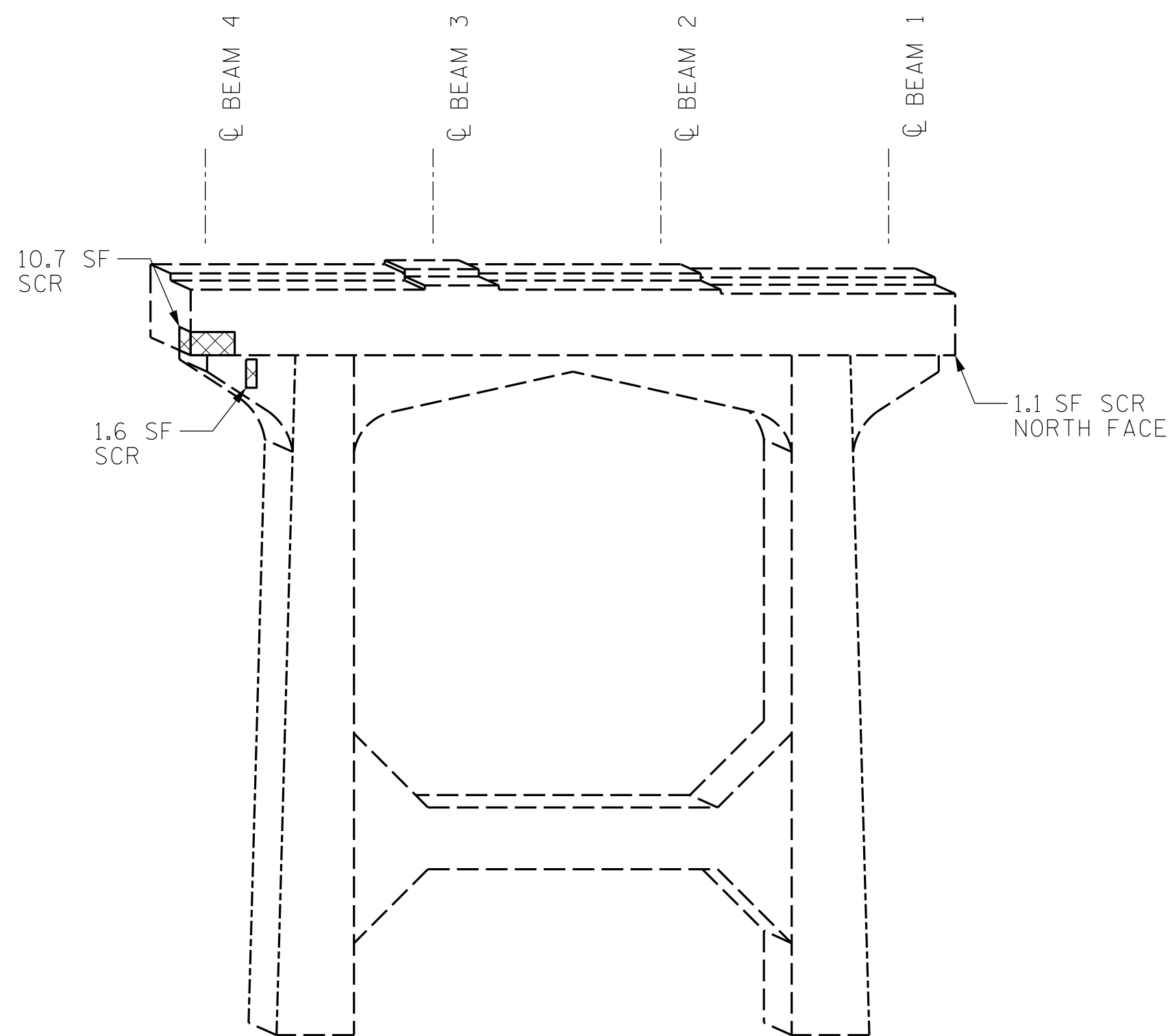
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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





BENT 3  
(WEST FACE)



BENT 3  
(EAST FACE)

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	13.4	4.6		
COLUMN/PILE	-	-		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	-			
COLUMN/PILE	-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS  $\geq 1/16"$  AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480065

SHEET 4 OF 4



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 BENT 3

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

4/29/2022  
 I5915B.SMU.SBR03.480065.dgn  
 daquirre

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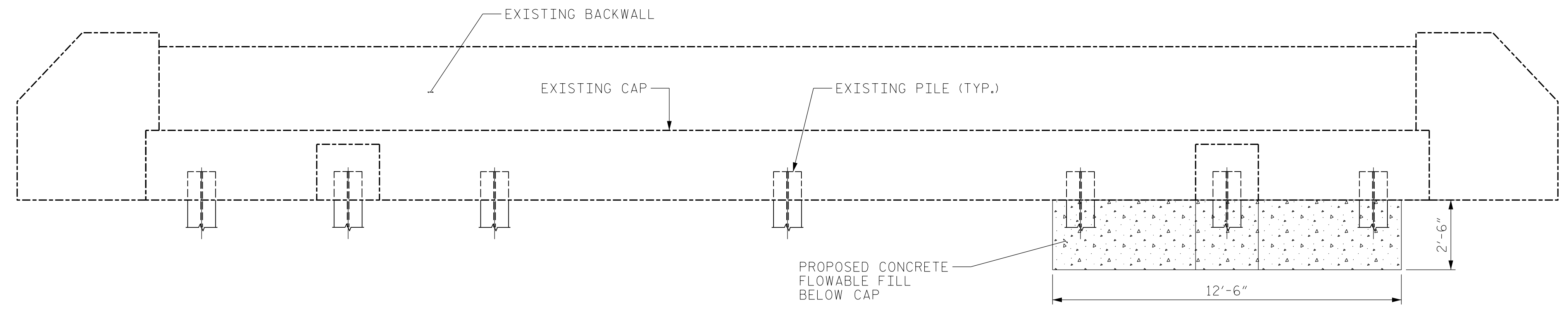
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S9-11
2			4			TOTAL SHEETS 12

AS-BUILT REPAIR QUANTITY TABLE

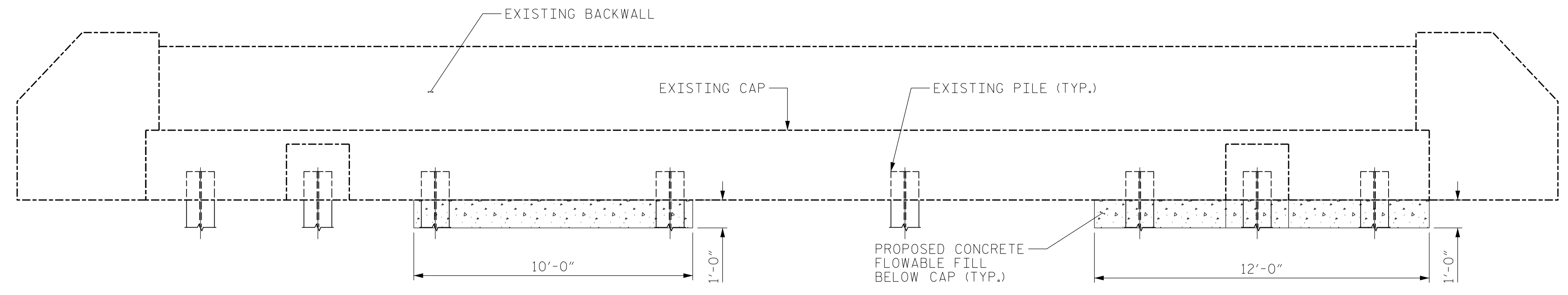
	END BENT 1		END BENT 2	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
UNCLASSIFIED STRUCTURE EXCAVATION	2.8 CY		2.1 CY	
FLOWABLE FILL	2.8 CY		2.1 CY	
BORROW EXCAVATION	4.1 CY		4.4 CY	

NOTES:

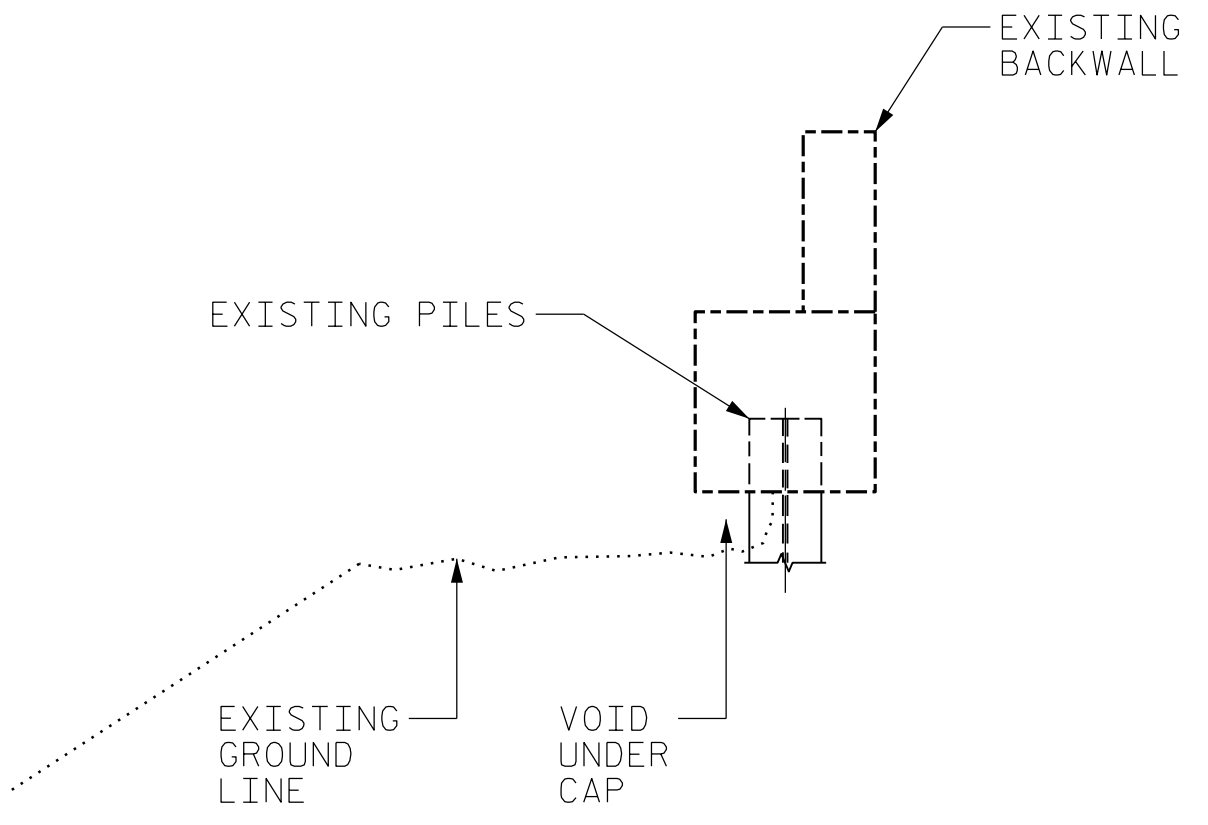
- EXCAVATE BELOW THE EXISTING AS INDICATED IN THE ELEVATION VIEWS. EXCAVATION BELOW THE CAP IS TO BE PAID FOR AS "UNCLASSIFIED STRUCTURE EXCAVATION".
- PLACE CONCRETE FLOWABLE FILL UNDER THE CAP AS SHOWN IN THESE PLANS, FULLY ENGAGING ADJACENT PILES.
- PLACE GEOTEXTILE TO THE LIMITS SHOWN IN THESE PLANS, UP THE FACE OF THE CAP, 1.0 FT ABOVE THE BOTTOM OF THE CAP.
- REPLACE REMOVED SOIL AND REGRADE SLOPE USING MATERIAL FROM UNCLASSIFIED STRUCTURE EXCAVATION, AND ADDITIONAL MATERIAL FROM BORROW EXCAVATION, AS NEEDED. SEE ARTICLE 230-5 OF THE 2018 STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS OF BORROW EXCAVATION.



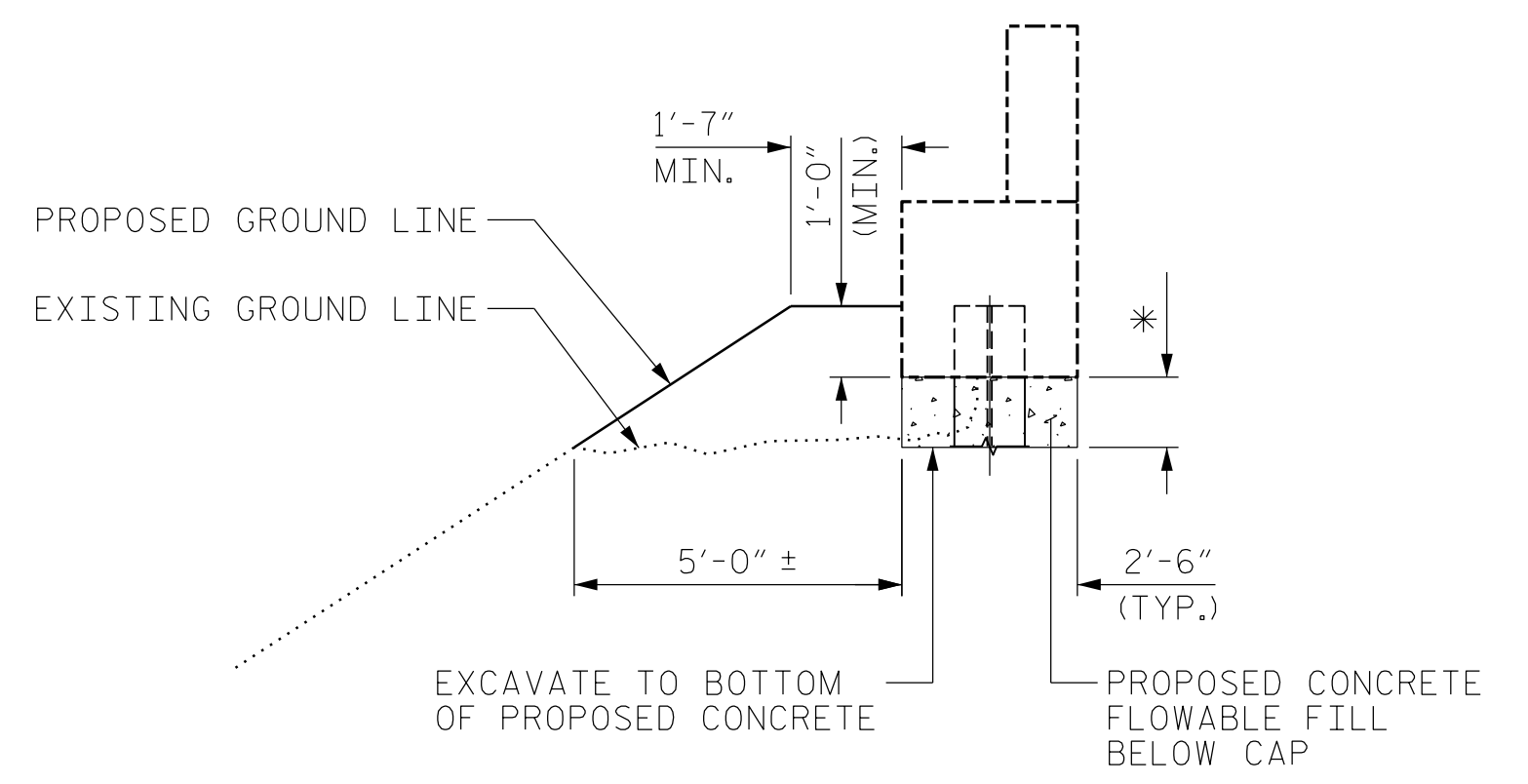
END BENT 1  
ELEVATION



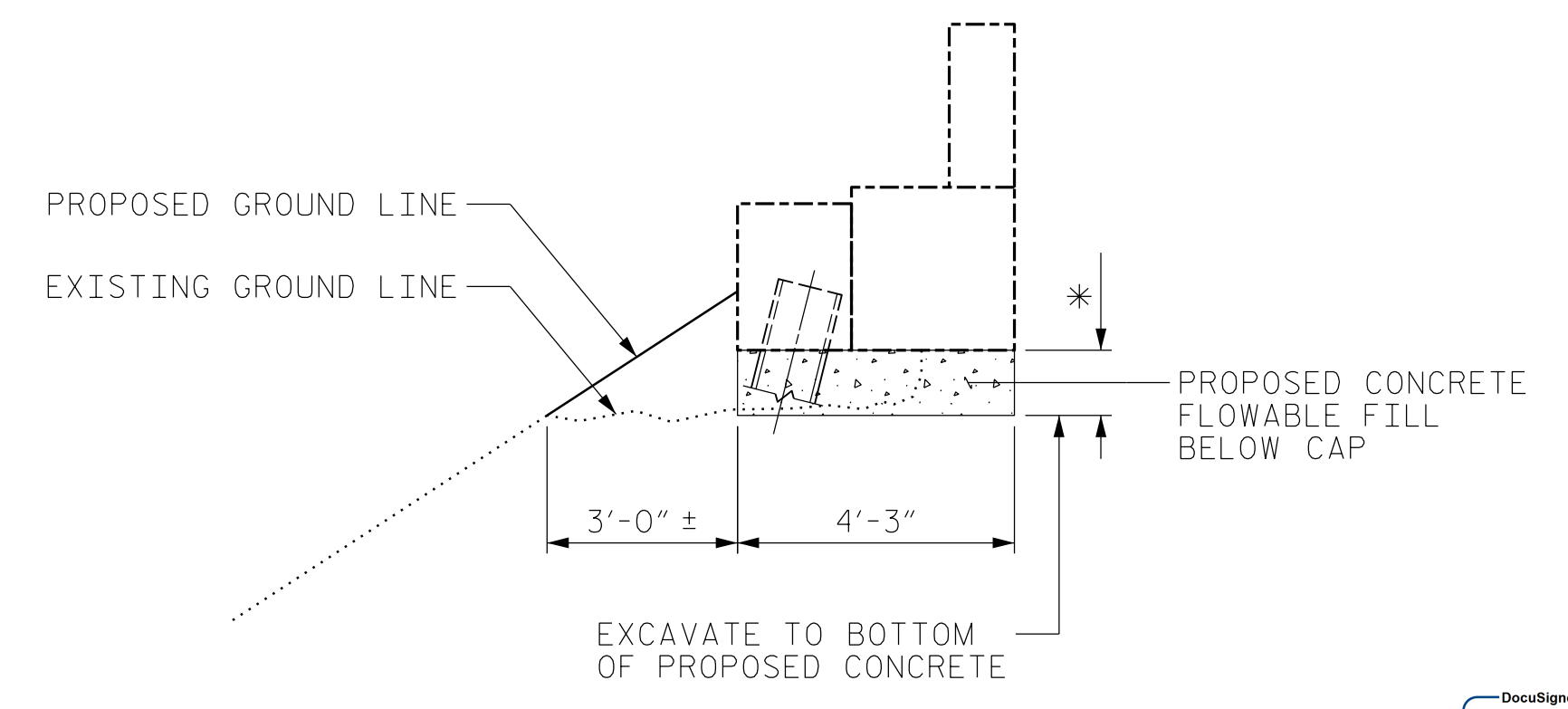
END BENT 2  
ELEVATION



EXISTING  
CAP SECTION



PROPOSED  
CAP SECTION  
(\* SEE ELEVATION)



PROPOSED  
CAP SECTION AT BRACE PILES  
(\* SEE ELEVATION)

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480065



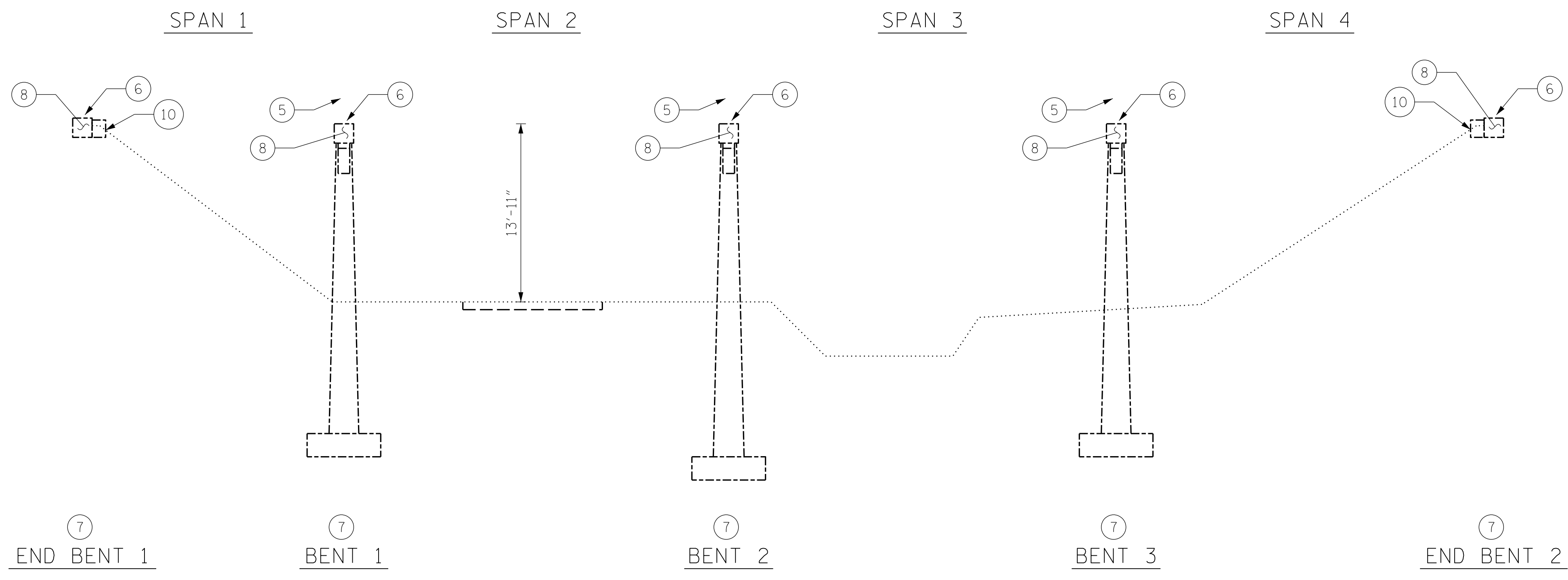
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 EROSION REMEDIATION  
 END BENT 1 & END BENT 2

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

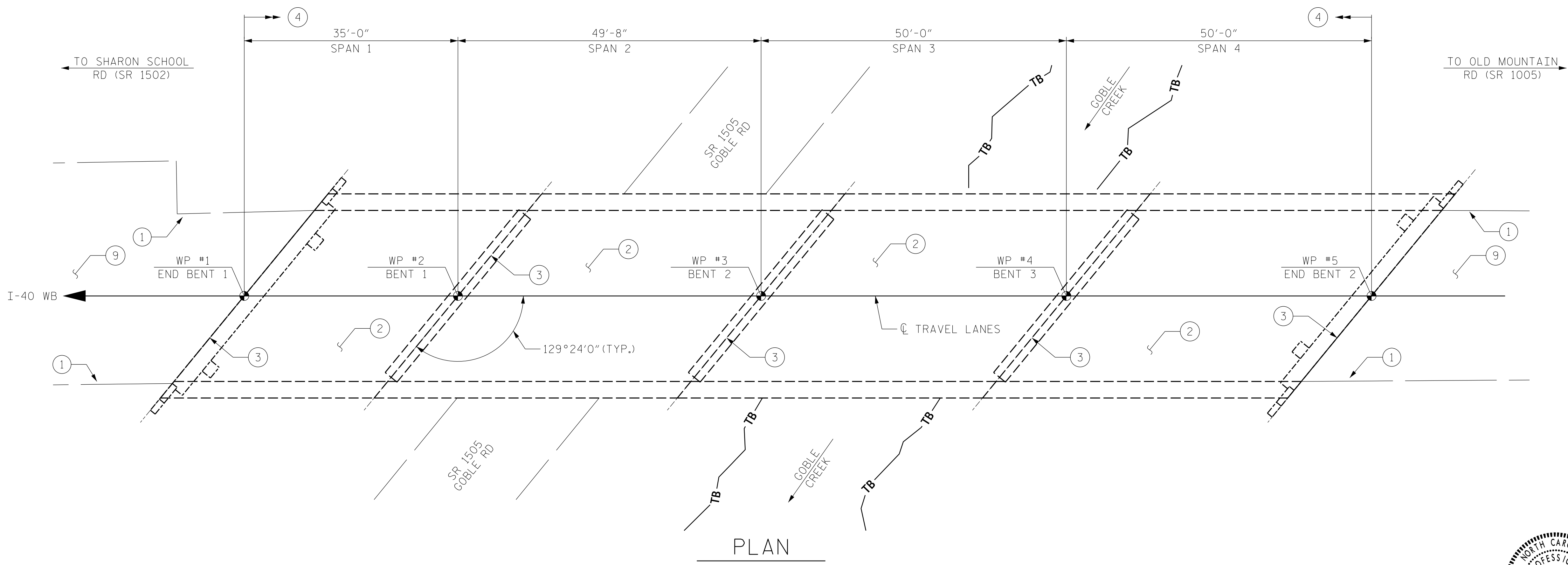
4/21/2022  
 I5915B.SMU.SP01.480065.dgn  
 daguirre

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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			99-12
2			4			12



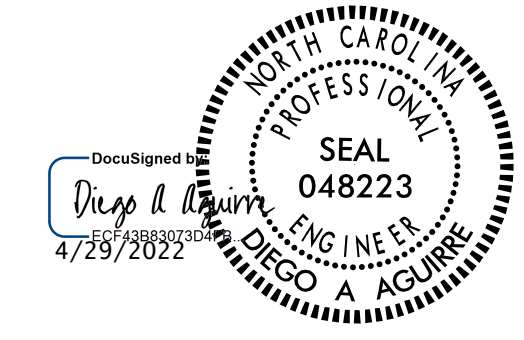
- SCOPE LEGEND:**
- ① CLEAR SHOULDERS OF DEBRIS AND VEGETATION
  - ② CONCRETE DECK REPAIRS
  - ③ ASPHALT JOINT REPAIR/REPLACEMENT
  - ④ ADD ASPHALT WEARING SURFACE
  - ⑤ SUPERSTRUCTURE CONCRETE REPAIRS
  - ⑥ PAINT EXISTING STEEL GIRDER ENDS AND BEARINGS
  - ⑦ SUBSTRUCTURE CONCRETE REPAIRS
  - ⑧ SUBSTRUCTURE EPOXY RESIN INJECTION
  - ⑨ APPROACH ROADWAY MILLING AND RESURFACING
  - ⑩ END BENT EROSION REMEDIATION



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

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

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480066



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR BRIDGE ON I-40 WB  
 OVER SR 1505

**NOTES:**

GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE MOST UP TO DATE ROUTINE INSPECTION REPORT DATED 09/23/2021.

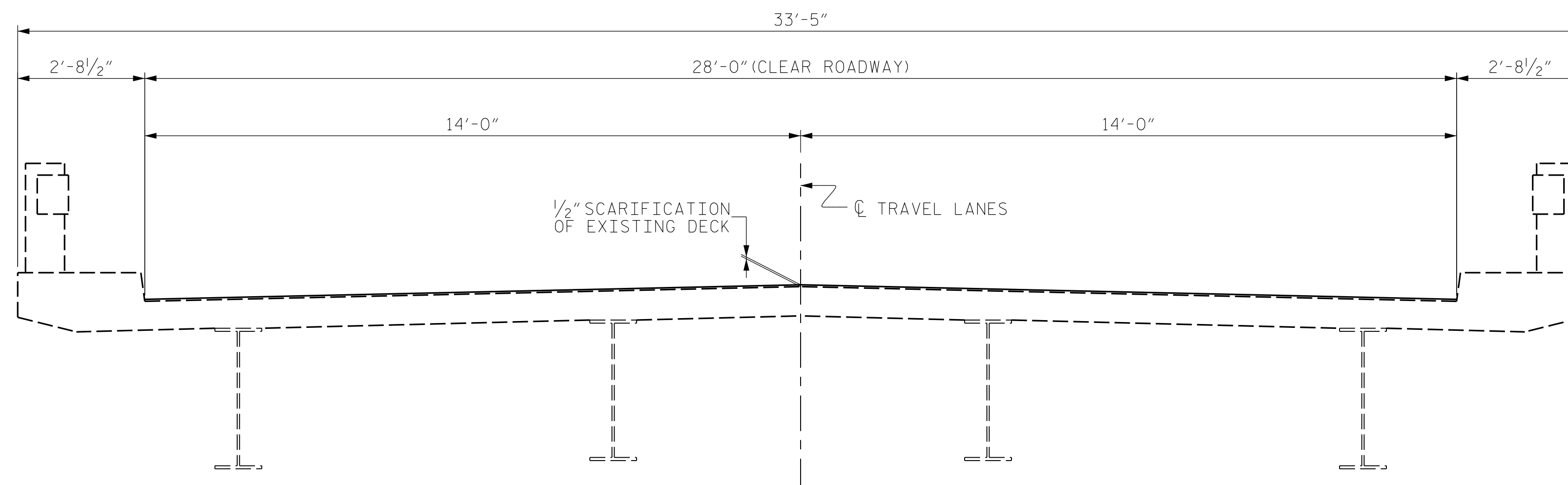
DRAWN BY : FIDEL L. FLORES DATE : 01/2022  
 CHECKED BY : DIEGO A. AGUIRRE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

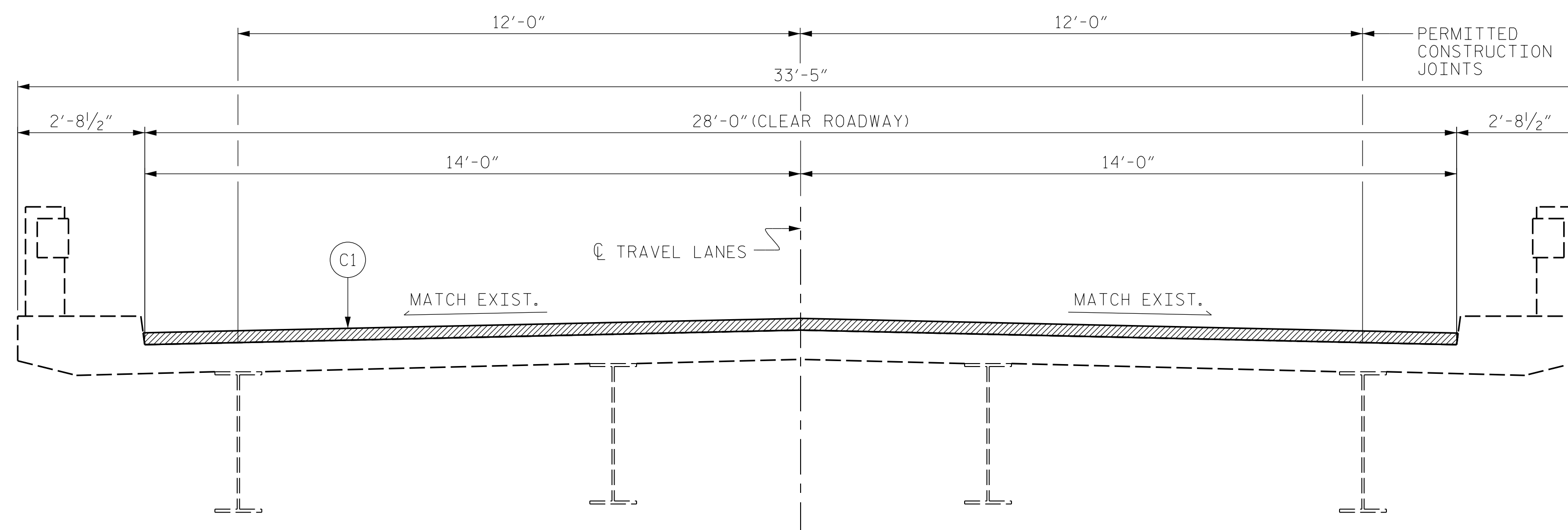


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S10-1
1			3			TOTAL SHEETS
2			4			12





EXISTING



PROPOSED

**NOTES:**

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

SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF ASPHALT WEARING SURFACE (AWS) OVERLAY.

FOR NEW ASPHALT PLACEMENT, SEE STANDARD SPECIFICATIONS.

C1	PROPOSED APPROXIMATE 2" MIN. ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 2" IN DEPTH.
----	--

ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C



301 FAYETTEVILLE ST., SUITE 1500  
RALEIGH, NC 27601 (919) 882-7839  
NC FIRM LICENSE: C-1506

PROJECT NO. I-5915B  
IREDELL COUNTY  
BRIDGE NO. 480066

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**TYPICAL SECTION**

DRAWN BY :	DIEGO A. AGUIRRE	DATE :	01/2022
CHECKED BY :	FIDEL L. FLORES	DATE :	01/2022
DESIGN ENGINEER OF RECORD:	DIEGO A. AGUIRRE	DATE :	01/2022

4/21/2022  
I5915B\_SMU\_TS01.480066.dgn  
daguirre

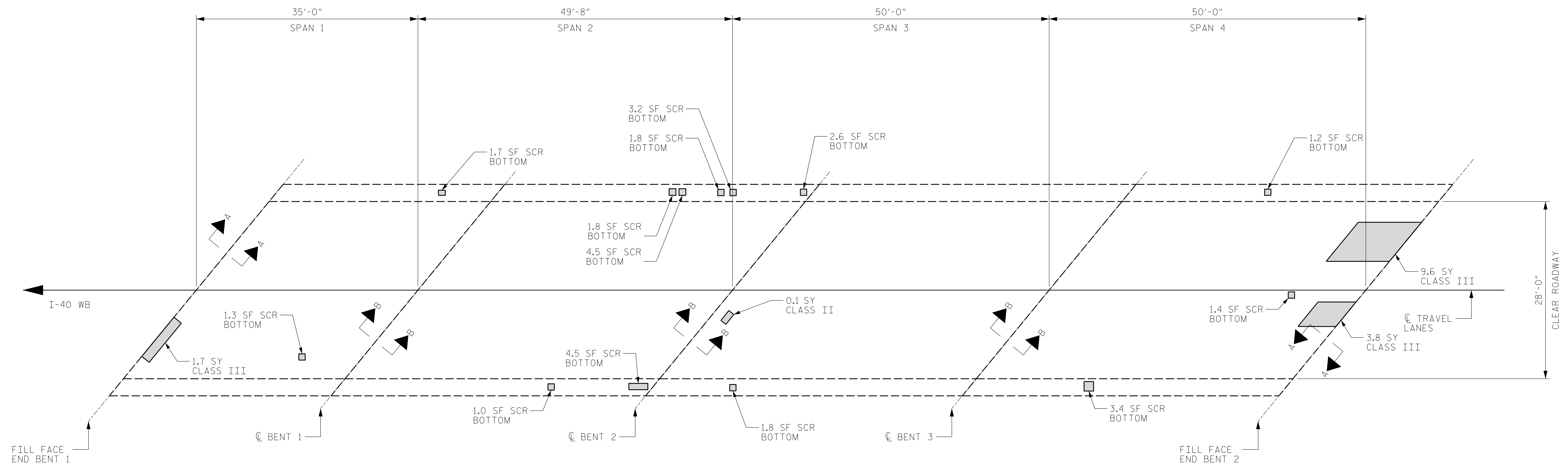
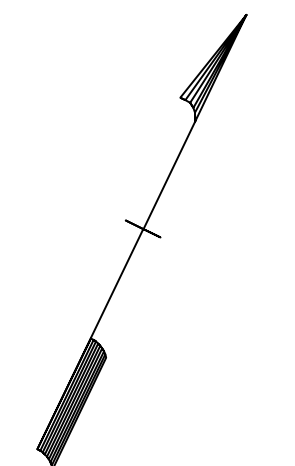
DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

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

# AS-BUILT REPAIR QUANTITY TABLE

## DECK REPAIRS

	SPAN 1		SPAN 2		SPAN 3		SPAN 4	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	-- SY		-- SY		0.1 SY		-- SY	
CLASS III SURFACE PREPARATION	1.7 SY		-- SY		-- SY		13.4 SY	
SCARIFYING BRIDGE DECK	109 SY		155 SY		156 SY		156 SY	
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME
SHOTCRETE REPAIR AREA (SCR)	3.0 SF	1.1 CF			19.4 SF	6.6 CF		
					1.8 SF	0.6 CF		
							6.0 SF	2.9 CF



PLAN

**NOTES:**

PRIOR TO SURFACE PREPARATION, REMOVE ALL LOOSE, DISINTEGRATED, UNSOUND OR CONTAMINATED CONCRETE FROM THE BRIDGE DECK.  
 FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.  
 FOR SCARIFYING BRIDGE DECK, SEE OVERLAY SURFACE PREPARATION SPECIAL PROVISION.

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.

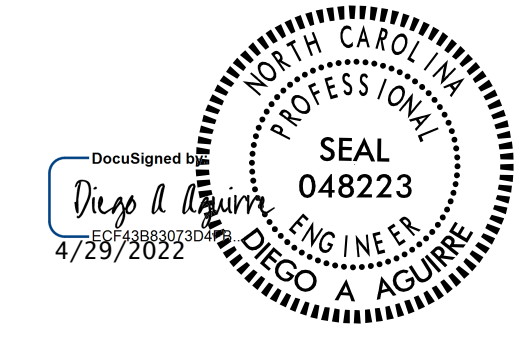
DEFECTS (SEE PLAN CALLOUT FOR DETAILS)

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

4/21/2022  
 I5915B.SMU.DSR01.480066.dgn  
 daquirre

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480066

SHEET 1 OF 2



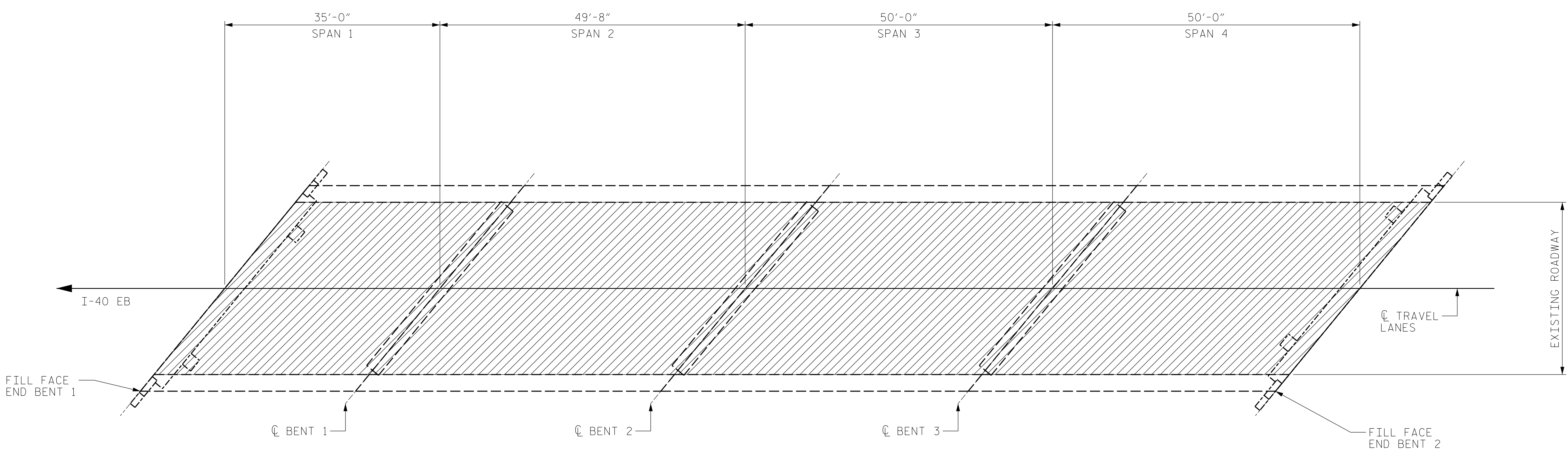
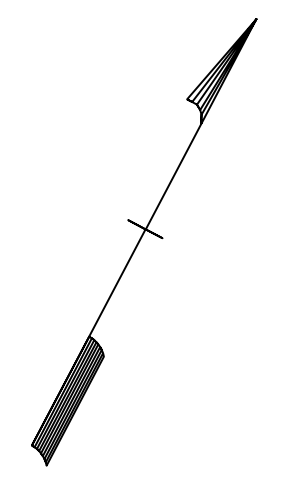
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

### PLAN OF SPANS DECK REPAIRS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED						SHEET NO. S10-3	
REVISIONS		NO.		BY:		DATE:	
1		3					
2		4					
						TOTAL SHEETS 12	

### AS-BUILT REPAIR QUANTITY TABLE

	SPAN 1		SPAN 2		SPAN 3		SPAN 4	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	13 TON		18 TON		18 TON		18 TON	
ASPHALT BINDER FOR PLANT MIX	0.8 TON		1.1 TON		1.1 TON		1.1 TON	



PLAN

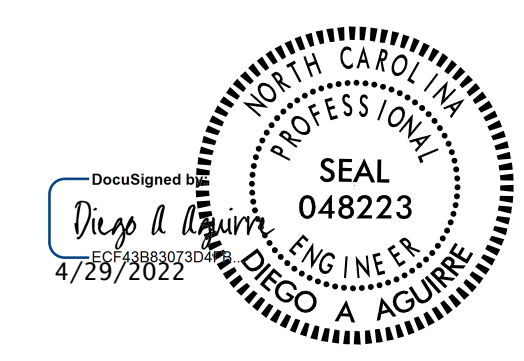
NOTES:

- WORK THIS SHEET WITH "JOINT DETAILS" SHEET.
- WORK THIS SHEET WITH "TYPICAL SECTION" SHEET.
- WORK THIS SHEET WITH "DECK REPAIR DETAILS" SHEET.
- FOR NEW ASPHALT PLACEMENT, SEE STANDARD SPECIFICATIONS.

 ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C

DRAWN BY : FIDEL L. FLORES DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

4/21/2022  
 I5915B.SMU.DSR02.480066.dgn  
 daquirre



**KCA**  
**KISINGER CAMPO & ASSOCIATES**  
 301 FAYETTEVILLE ST., SUITE 1500  
 RALEIGH, NC 27601 (919) 882-7839  
 NC FIRM LICENSE: C-1506

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480066

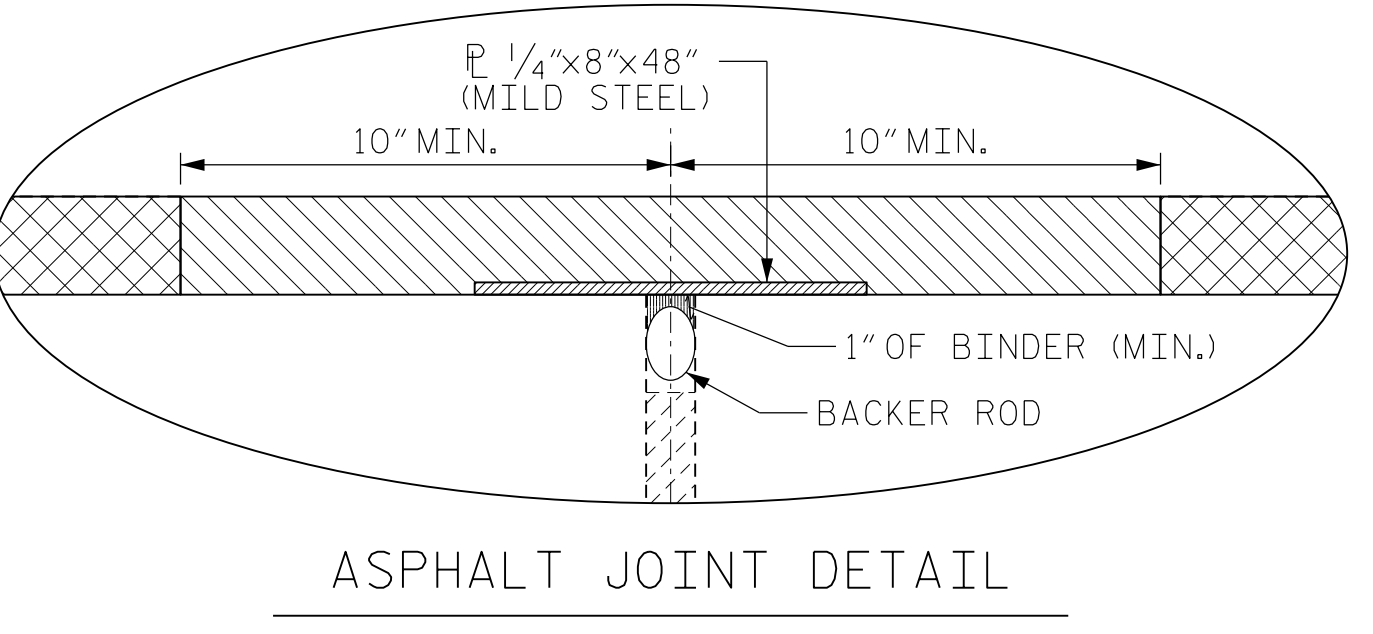
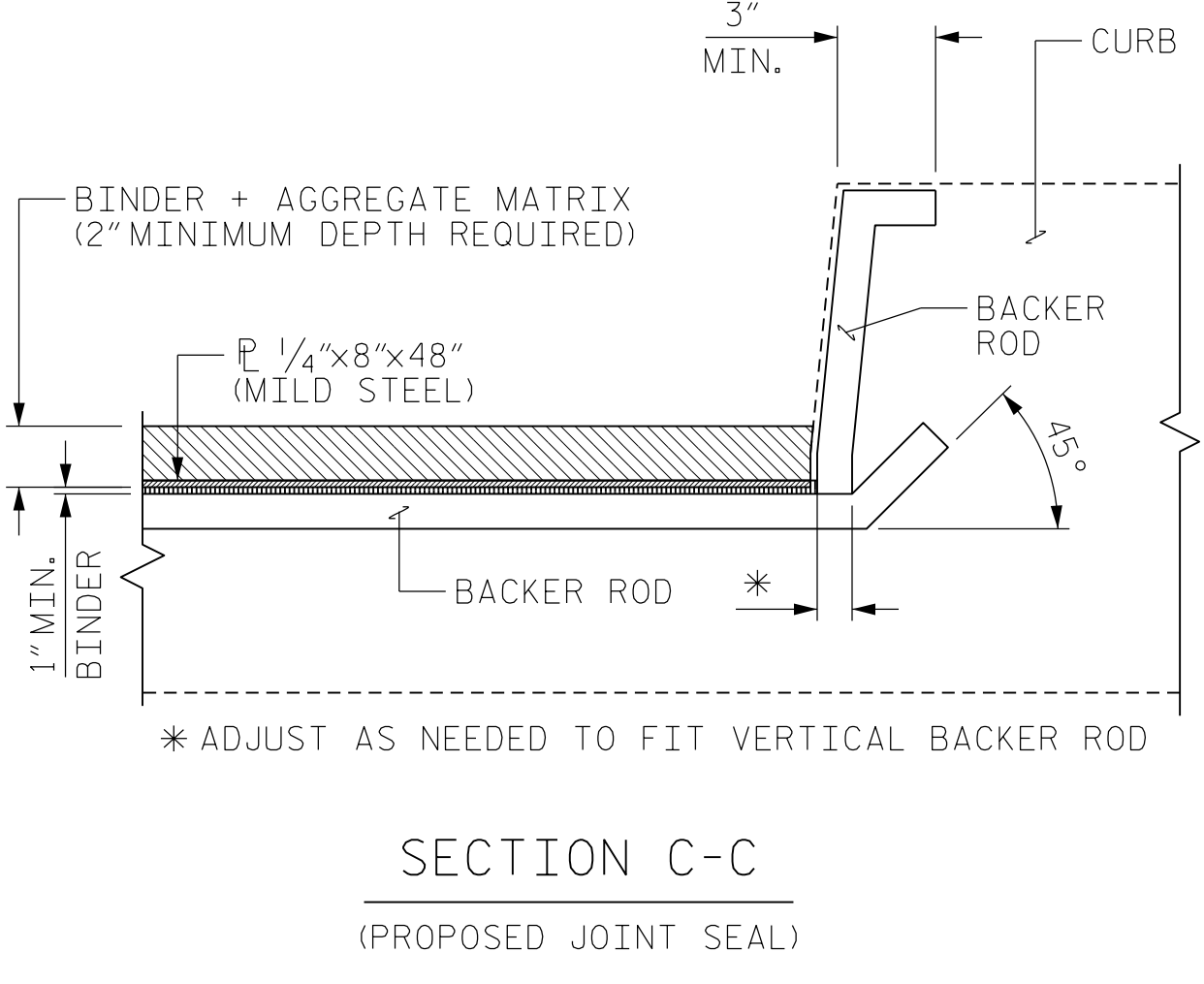
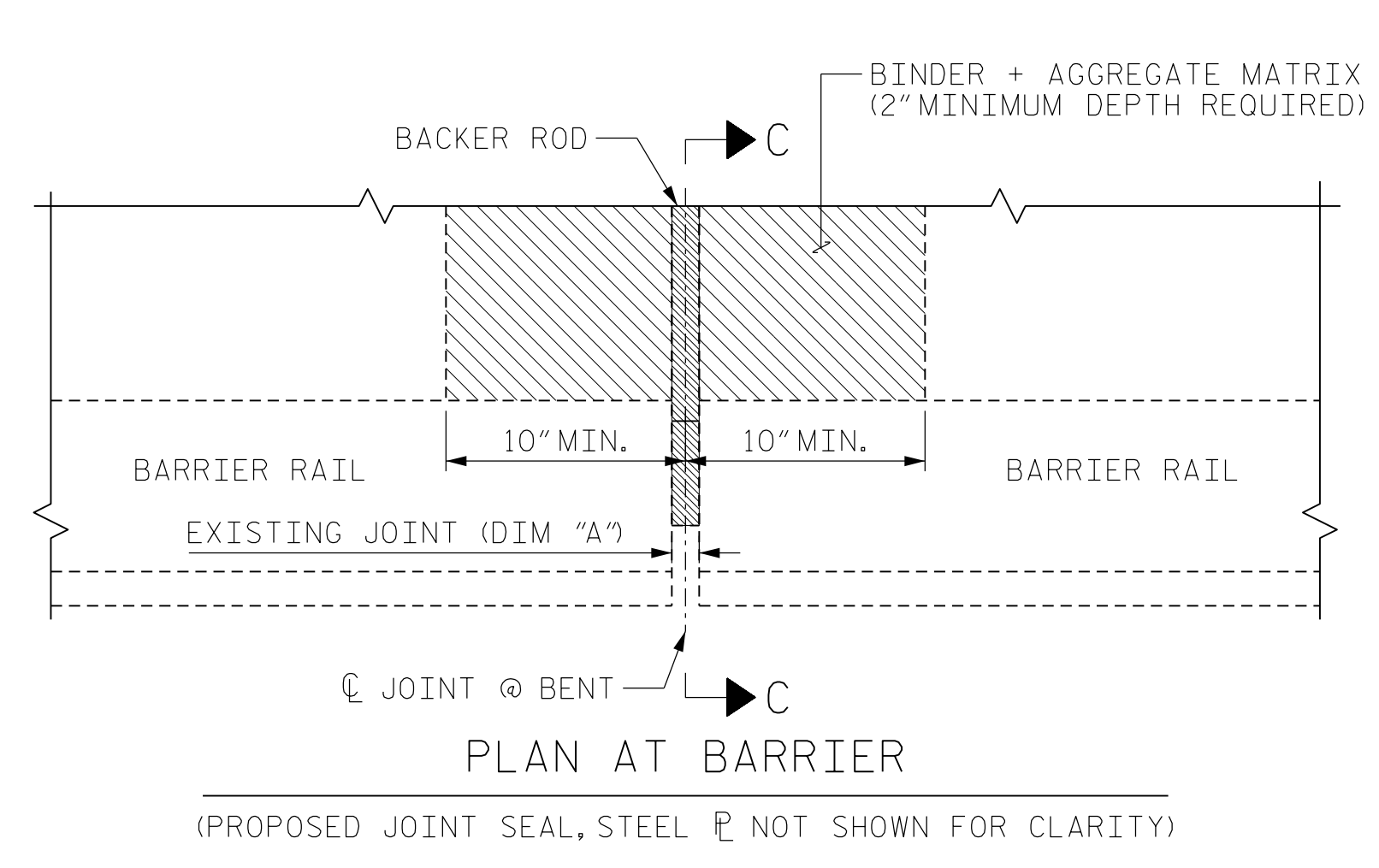
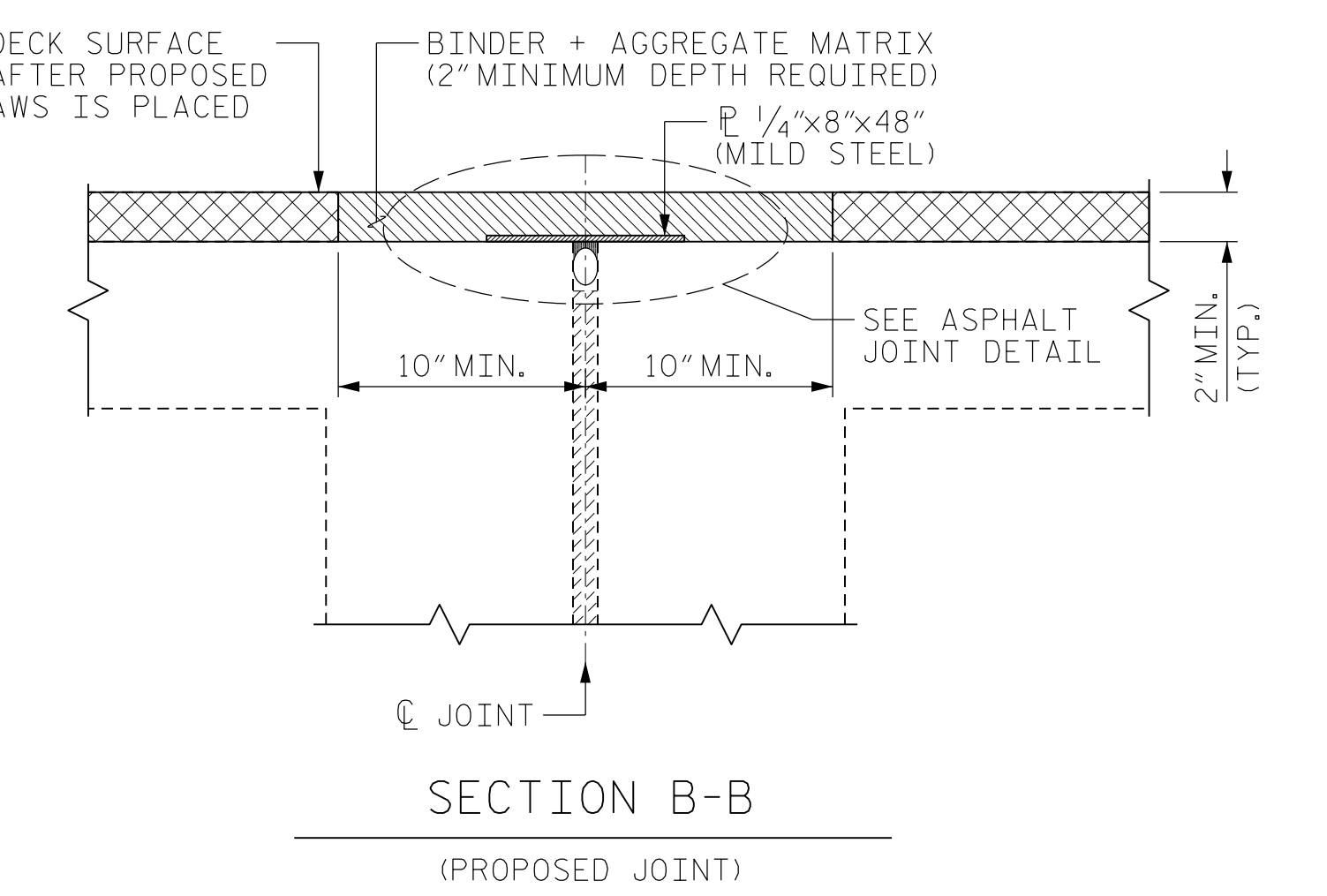
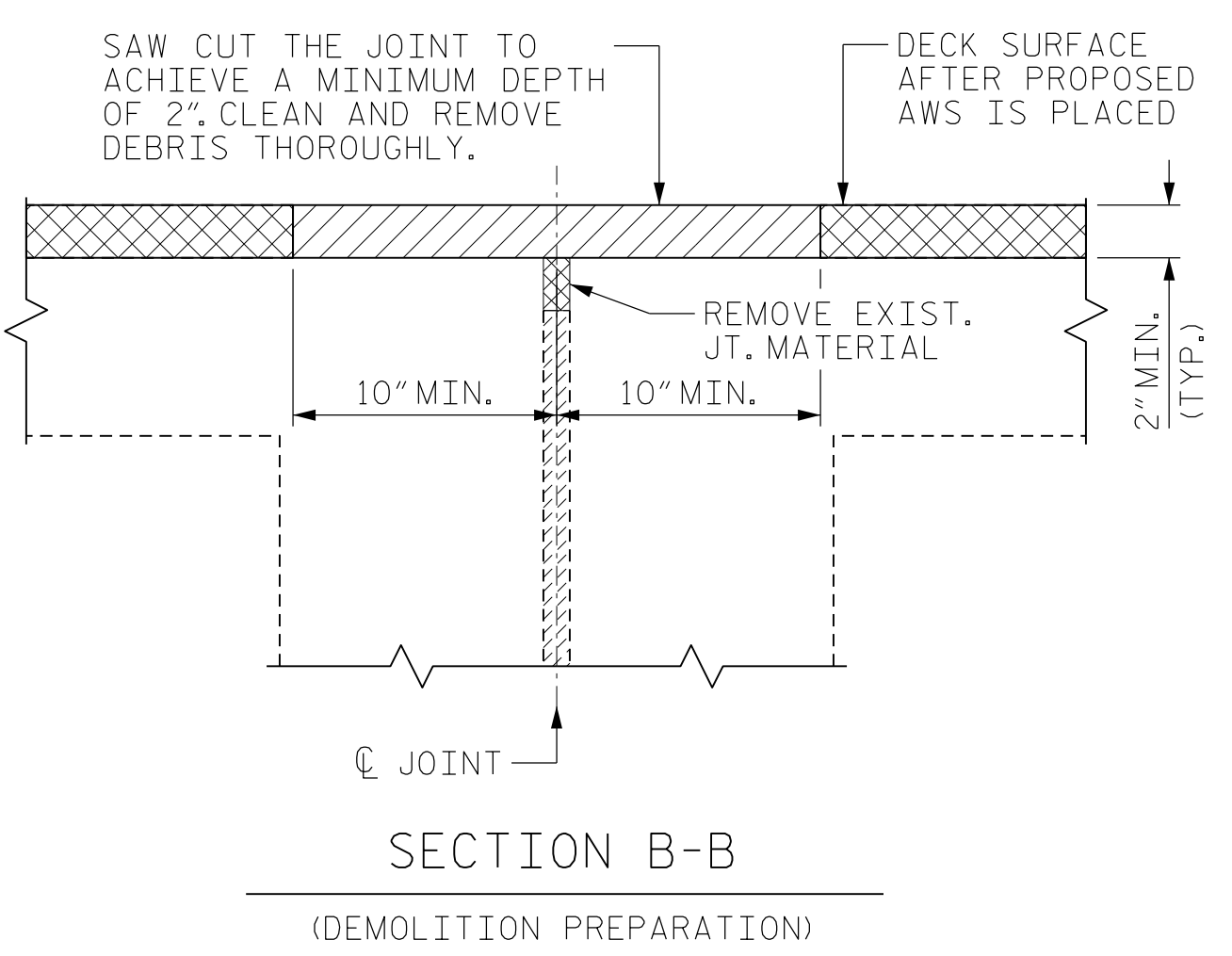
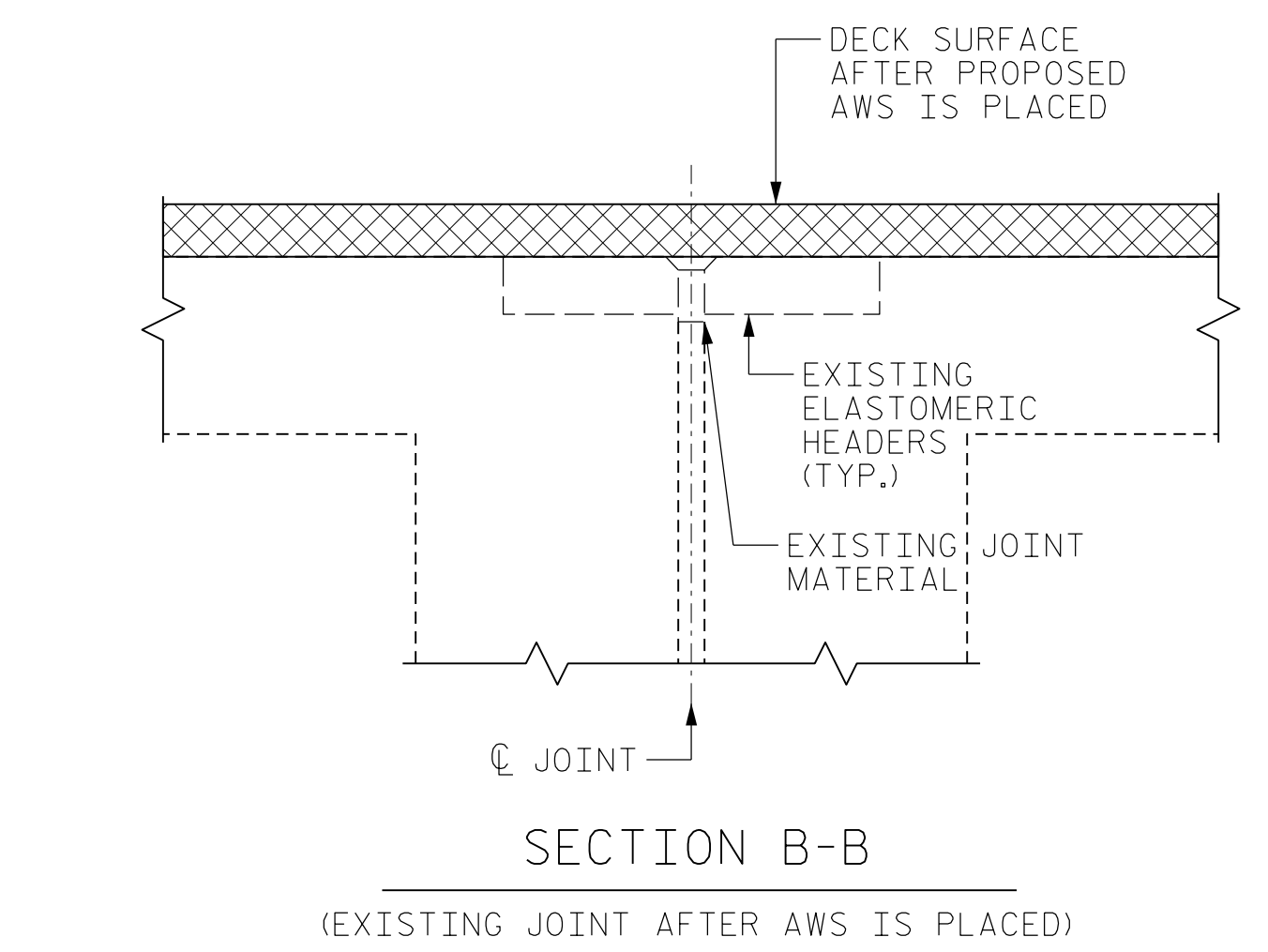
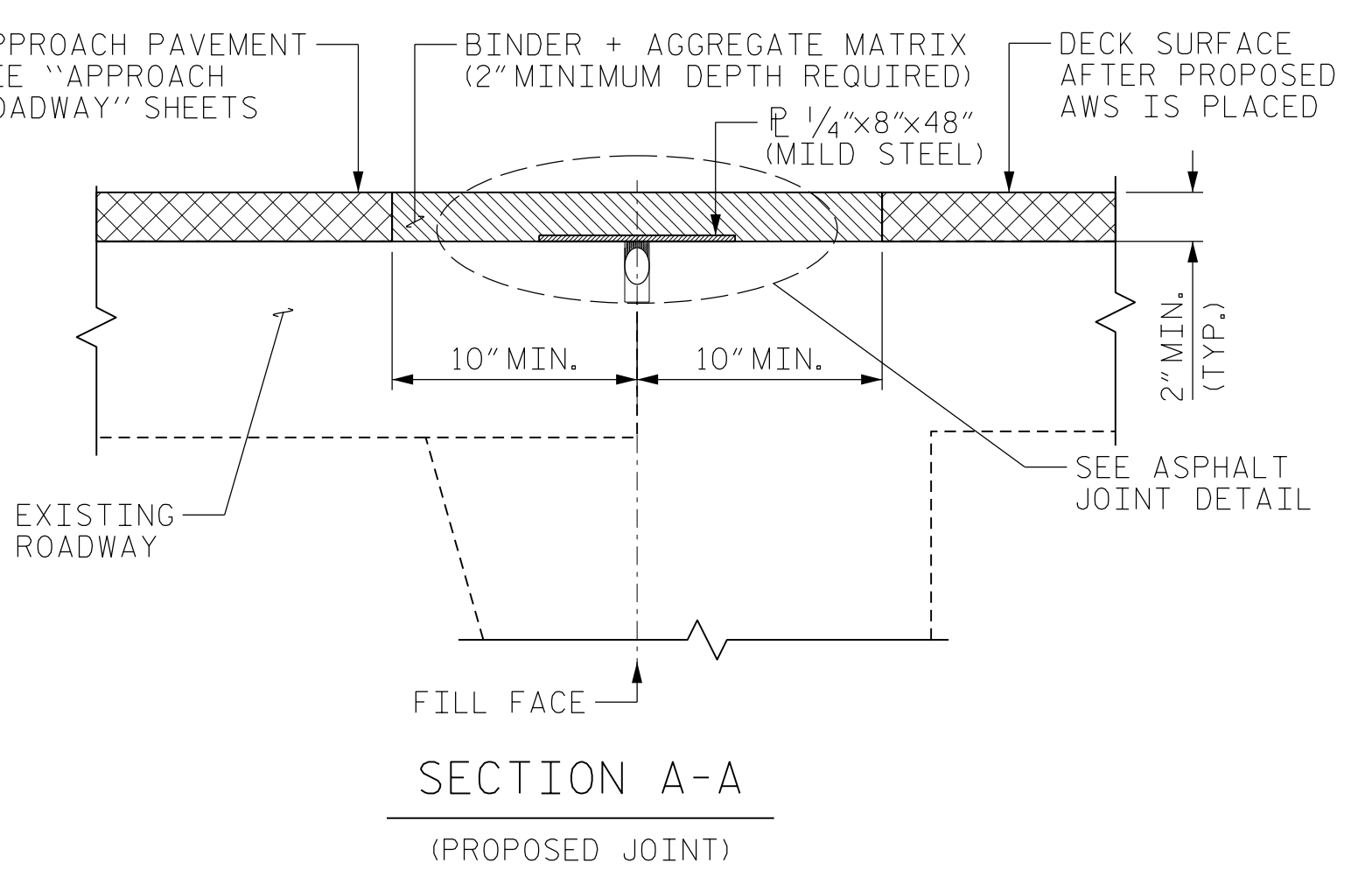
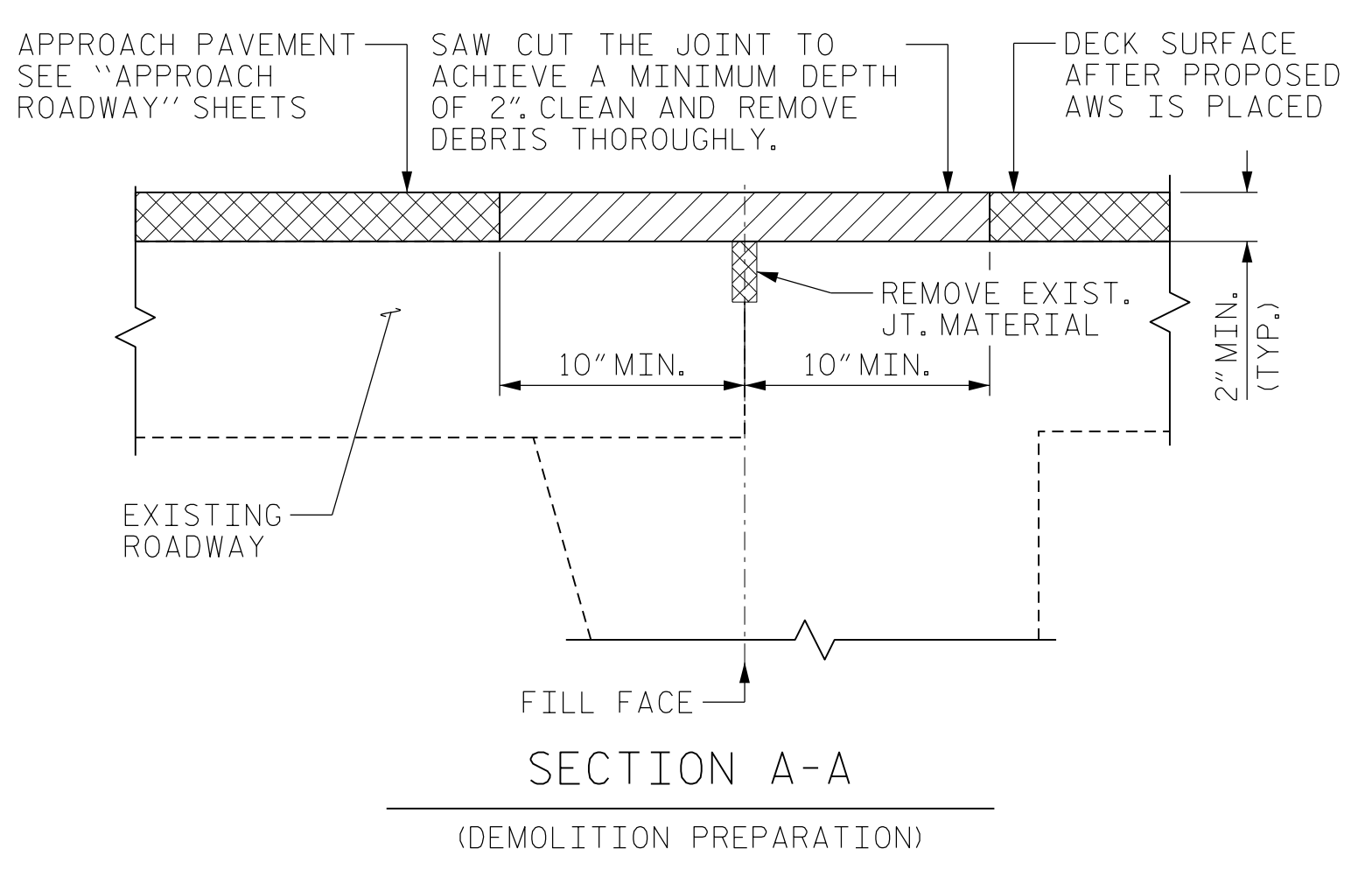
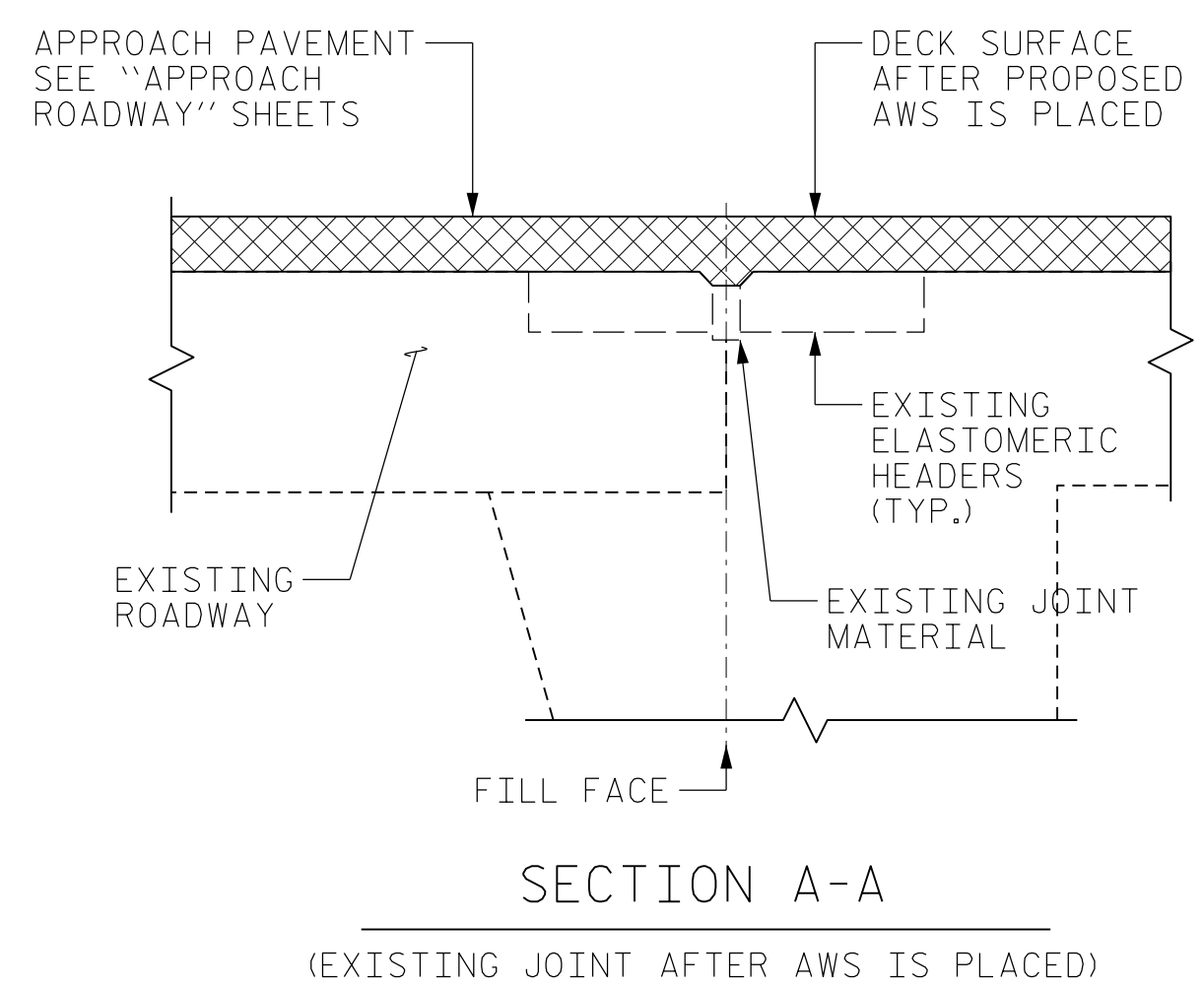
SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 PLAN OF SPANS  
 ASPHALT WEARING SURFACE

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S10-4
2			4			TOTAL SHEETS 12





**NOTES:**

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF THE ACTUAL OPENING VARIES FROM THE OPENING INDICATED IN THE DETAIL BY MORE THAN 1/4", NOTIFY THE ENGINEER. REVISION OF THE JOINT SEAL SIZE MIGHT BE NECESSARY.

THE CONTRACTOR SHALL TAKE CARE DURING JOINT REPAIR OPERATIONS NOT TO DROP ANY MATERIAL THAT FALLS BELOW THE BRIDGE, WITHOUT PROTECTIVE DEVICES BELOW TO CATCH THE MATERIAL. ANY MATERIAL THAT FALLS BELOW THE BRIDGE SHALL BE CONTAINED, REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO EXTRA COST TO THE DEPARTMENT. IF THE ENGINEER DETERMINES THAT THE PROTECTIVE DEVICES ARE NOT ADEQUATE OR NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

THE INSTALLED BACKER ROD AND SILICONE SEALANT SHALL BE WATER TIGHT.

QUANTITIES SHOWN IN THE ELASTOMERIC CONCRETE FOR PRESERVATION TABLE ASSUMES A MINIMUM OF 1 1/2" THICKNESS BASED ON THE MINIMUM ASPHALT JOINT THICKNESS SHOWN.

FOR EXCAVATION BELOW THE BOTTOM OF THE PLANNED JOINT DECK DEMOLITION, CONCRETE FOR DECK REPAIRS SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT BOTTOM OF THE PROPOSED ASPHALT JOINT DETAIL SHOWN.

DEMOLISH BRIDGE JOINT AREA SUCH THAT THE BOTTOM OF THE EXCAVATION SHALL BE REASONABLY FLAT AND LEVEL AND TO THE NECESSARY DEPTH, SUCH THAT ASPHALT JOINT SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE.

PRIOR TO ASPHALT JOINT REPAIR/REPLACEMENT, PERFORM DECK SURFACE REPAIR IN ACCORDANCE WITH "PLAN OF SPAN" SHEETS.

BACKER ROD SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.

FOR ASPHALT JOINT REPAIR/REPLACEMENT, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

PROPOSED JOINT QUANTITY		
	ESTIMATED (LIN.FT.)	ACTUAL (LIN.FT.)
ASPHALT JOINT REPAIR/REPLACEMENT	188.7	

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480066

BENT/ JOINTS	DIM "A" @ 60°F
END BENT 1	2 3/8"
1	2 5/8"
2	2 1/2"
3	2 1/2"
END BENT 2	3"



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

JOINT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S10-5
2			4			TOTAL SHEETS 12

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

# AS-BUILT REPAIR QUANTITY TABLE

	ESTIMATE	ACTUAL
INCIDENTAL MILLING	1518 SY	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	213 TON	
ASPHALT BINDER FOR PLANT MIX	12.8 TON	

## NOTES:

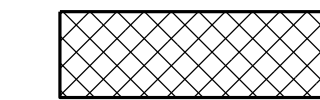
INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVEMENT TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1/2" DEPTH OF NEW ASPHALT PAVEMENT. NEW ASPHALT PAVEMENT SHALL BE OF THICKNESS NECESSARY TO PROVIDE A SMOOTH TRANSITION BETWEEN THE ROADWAY AND THE BRIDGE DECK. THE NEW ASPHALT PAVEMENT THICKNESS MAY EXCEED 1/2" DUE TO SETTLEMENT OF THE EXISTING APPROACH.

FOR NEW ASPHALT PLACEMENT, SEE STANDARD SPECIFICATIONS.

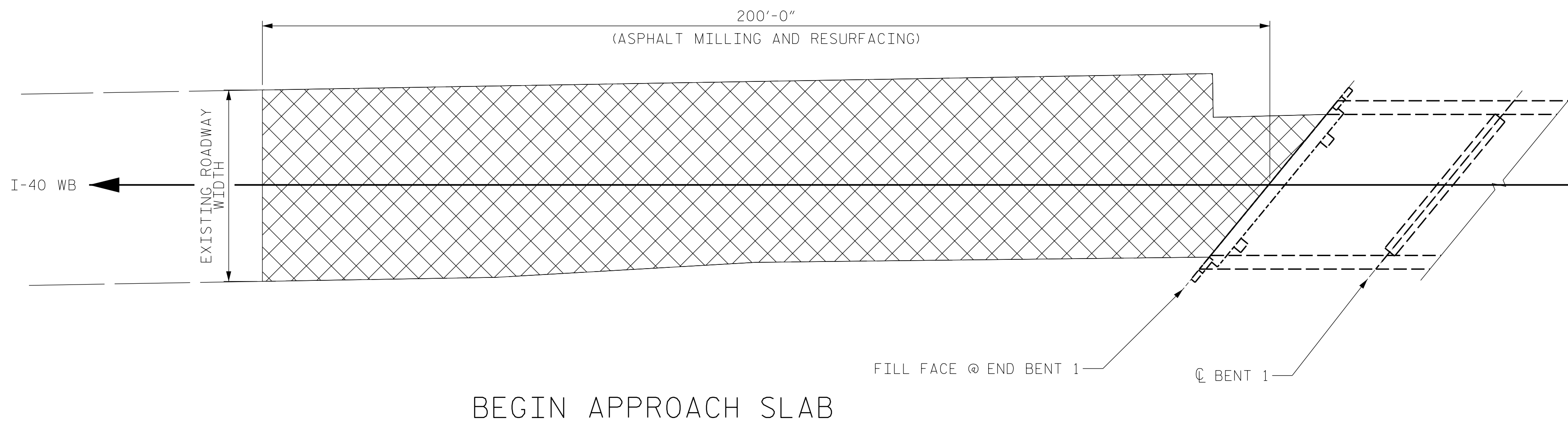
GRADE MAY BE ADJUSTED BY THE ENGINEER TO ENSURE PROPER TIE-IN AT THE END BENTS.

**C1** PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 2" IN DEPTH.

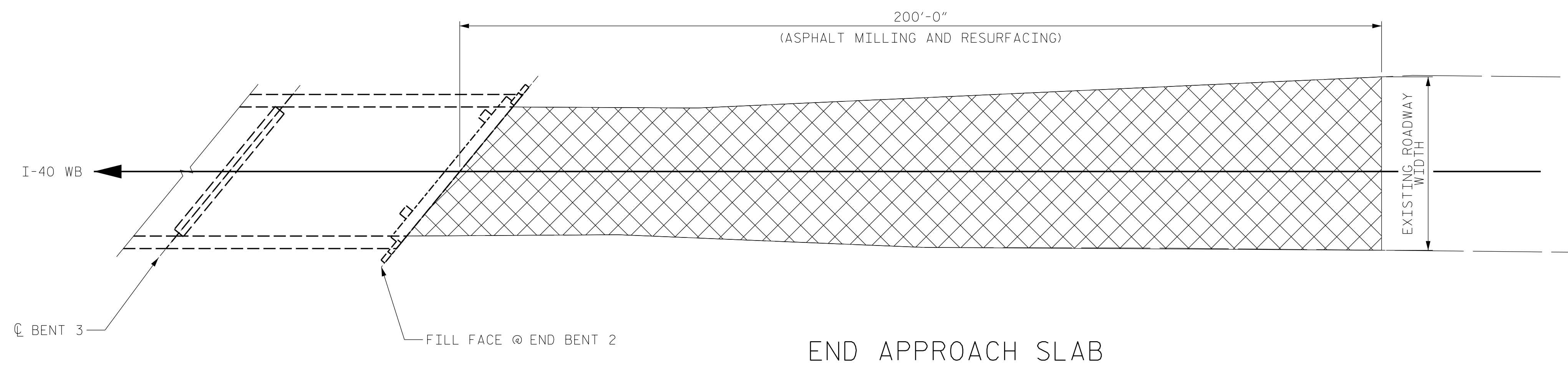
INCIDENTAL MILLING



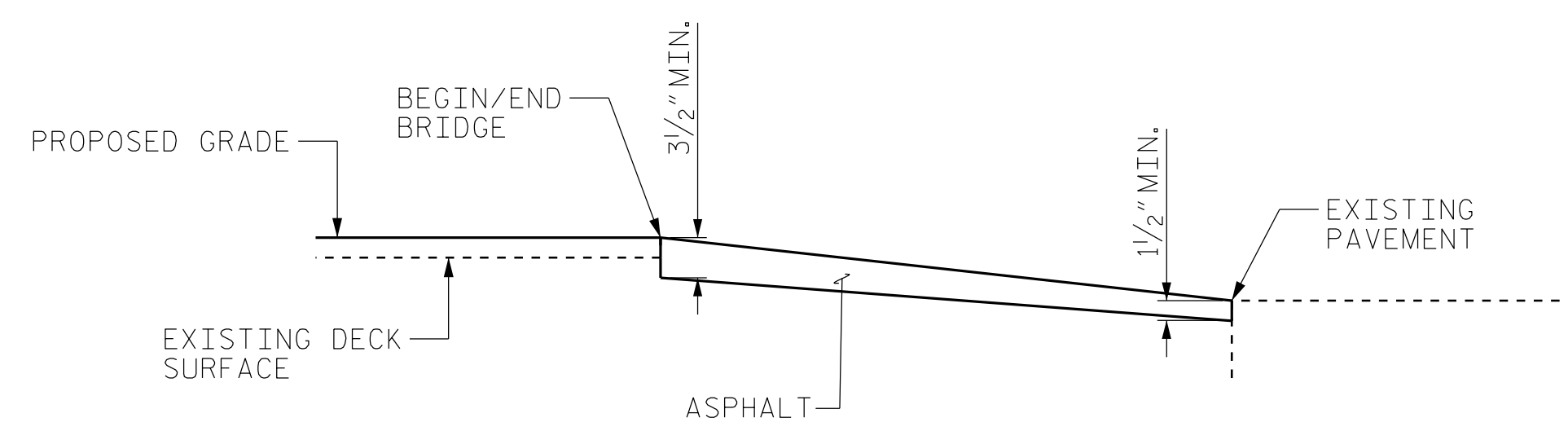
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C (C1)



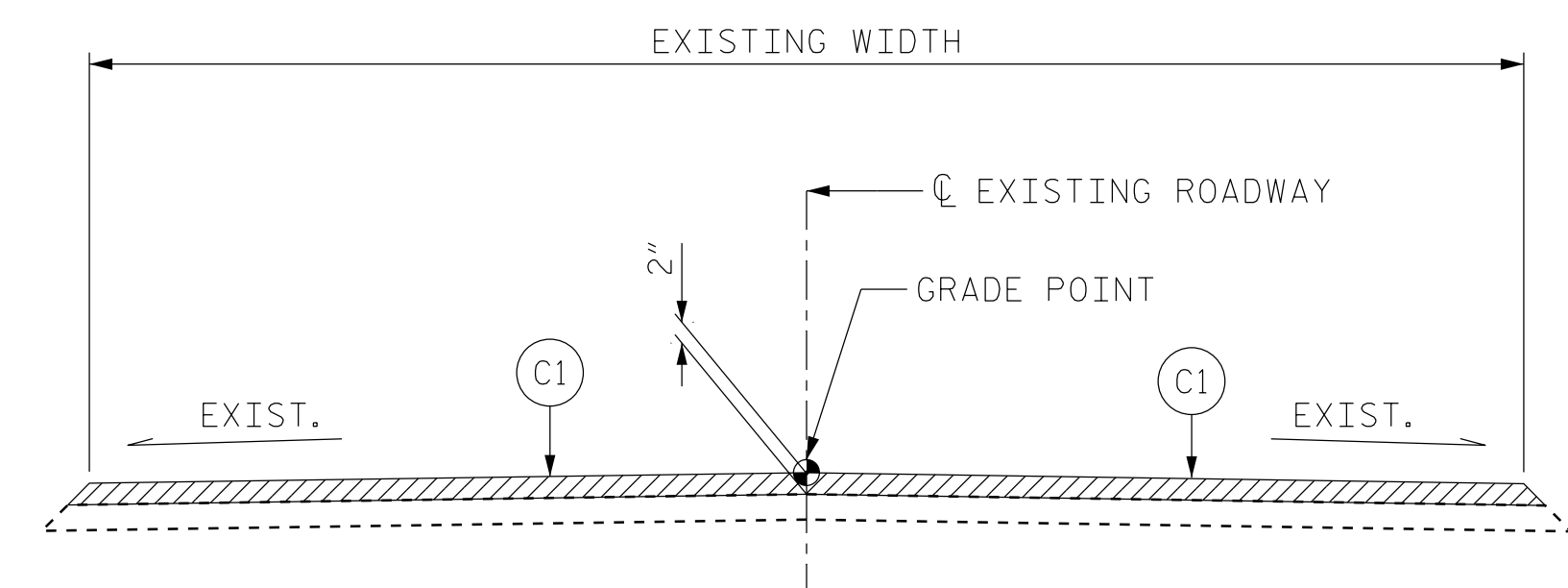
BEGIN APPROACH SLAB



END APPROACH SLAB



PAVEMENT KEY-IN DETAIL FOR BOTH END BENTS



ROADWAY SECTION  
BEGIN/END BRIDGE

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480066



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**APPROACH ROADWAY  
 ASPHALT MILLING**

DRAWN BY : FIDEL L. FLORES DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

4/21/2022  
 I5915B.SMU.AR01.480066.dgn  
 daquirre

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S10-6
2			4			TOTAL SHEETS 12



# AS-BUILT REPAIR QUANTITY TABLE

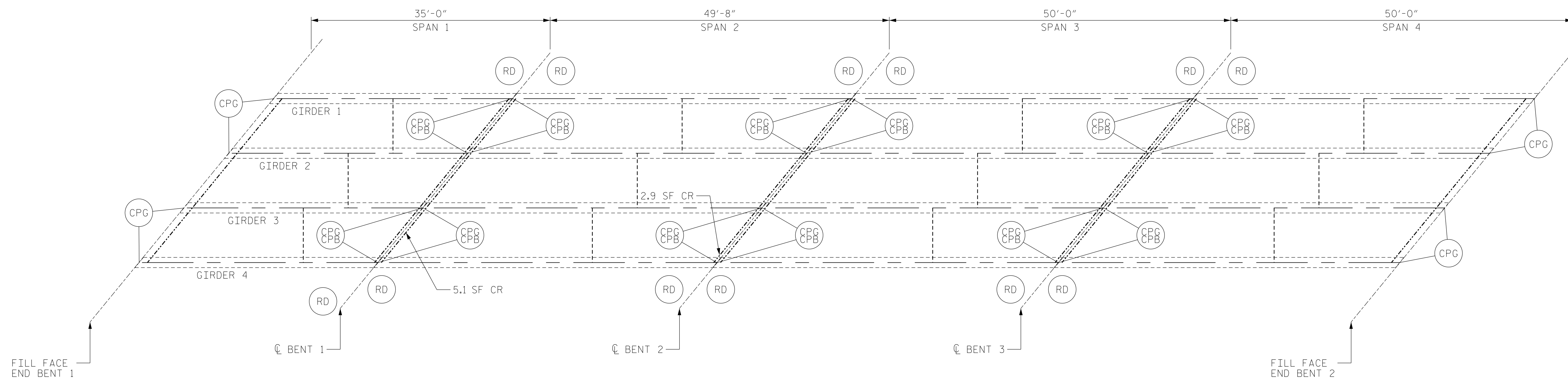
## SUPERSTRUCTURE REPAIRS

	SPAN 1		SPAN 2		SPAN 3		SPAN 4									
	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL									
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME								
CONCRETE REPAIR AREA (CR)	-- SF	-- CF			8.0 SF	2.7 CF			-- SF	-- CF						
CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
	4 EA				8 EA				8 EA				4 EA			

**LEGEND:**

- CPG CLEAN AND PAINT GIRDER ENDS (5 LF)
- CPB CLEAN AND PAINT BEARING
- RD REMOVE END DIAPHRAGM AT OVERHANG (SEE DETAIL "RD")
- CR CONCRETE REPAIR AREA

\* QUANTITIES FOR REMOVAL OF DIAPHRAGMS AT OVERHANGS (RD) ARE NOT INCLUDED AND SHALL BE INCIDENTAL TO THE PAY ITEM FOR "CONCRETE REPAIRS".



PLAN

**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 TABLE ABOVE.

FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

PRIOR TO CLEANING AND PAINTING STEEL ELEMENTS, REMOVE EXTERIOR DIAPHRAGMS AND A PORTION OF THE INTERIOR DIAPHRAGMS SO AS TO ALLOW FOR CLEANING OF EXISTING STEEL ELEMENTS PRIOR TO PAINTING. SEE DETAILS "RD" AND "RRD".

AFTER THE REMOVAL OF EXTERIOR END DIAPHRAGMS, CUT ANY EXPOSED REBAR FLUSH WITH THE DECK. COAT THE REMAINING EXPOSED REBAR WITH EPOXY. EPOXY WILL BE INCIDENTAL TO THE PAY ITEM FOR "CONCRETE REPAIRS".

FOR DETAILS OF CLEANING AND PAINTING GIRDER ENDS (CPG), REMOVE END DIAPHRAGMS AT OVERHANG (RD), AND REMOVE AND REPAIR DIAPHRAGM ENDS (RRD), SEE "MISCELLANEOUS REPAIRS" SHEET.

FOR CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA, SEE SPECIAL PROVISIONS.

FOR ZONE PAINTING OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480066



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

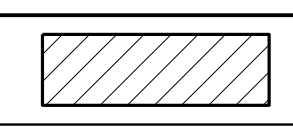
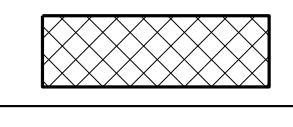

### SUPERSTRUCTURE REPAIRS

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S10-7
2			4			TOTAL SHEETS 12



LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	14.8	5.0		
COLUMN/PILE	-	-		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	6.0			
COLUMN/PILE	-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

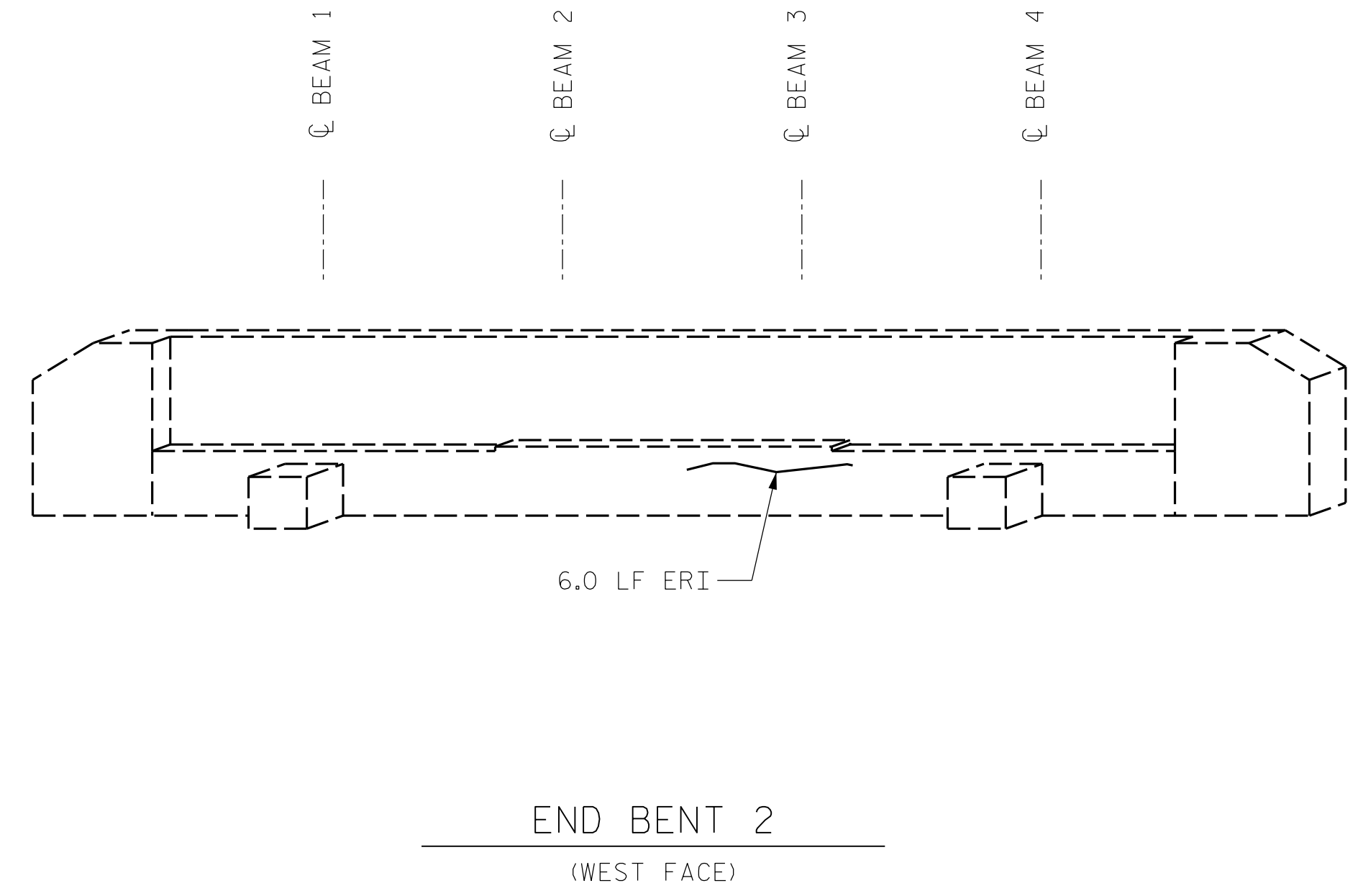
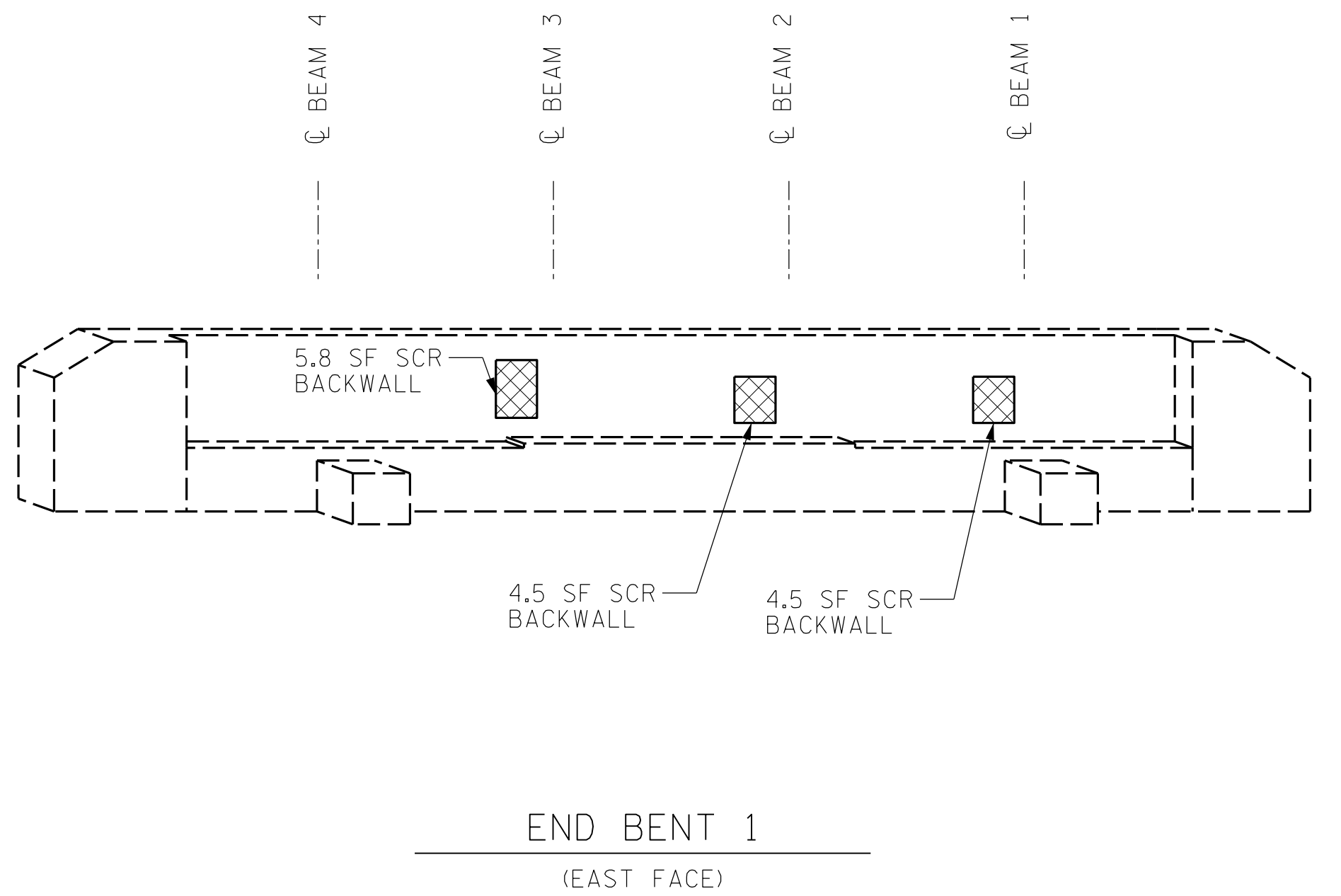
CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS  $\geq 1/16"$  AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

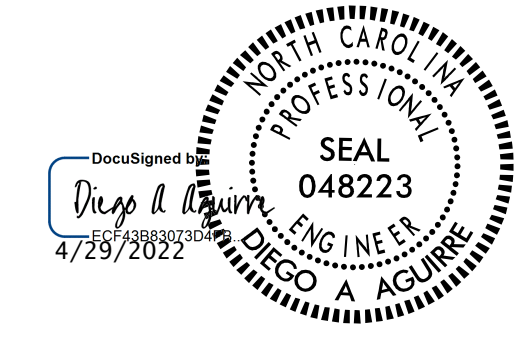
SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.



PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480066

SHEET 1 OF 4



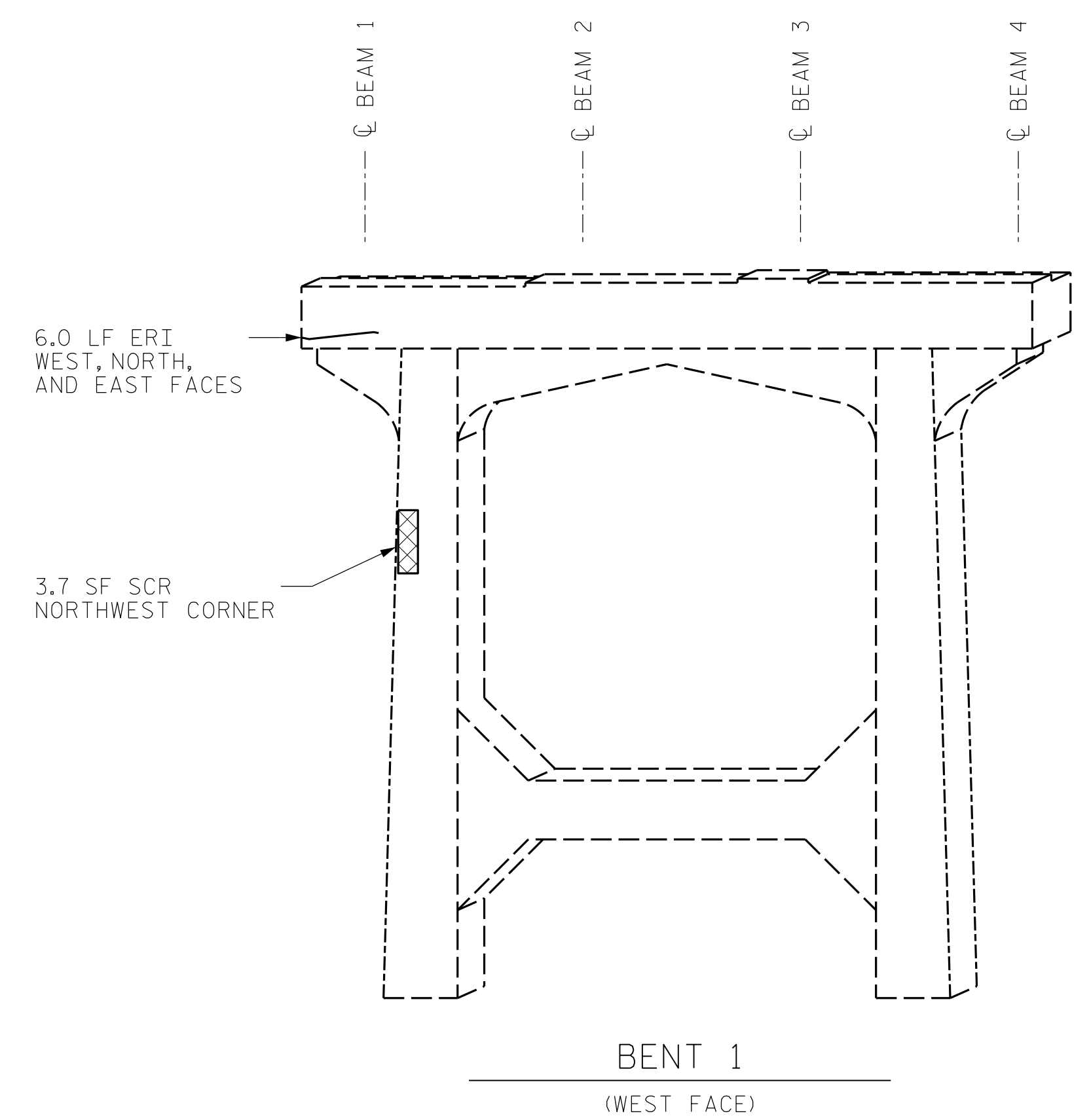
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 END BENTS 1 & 2

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

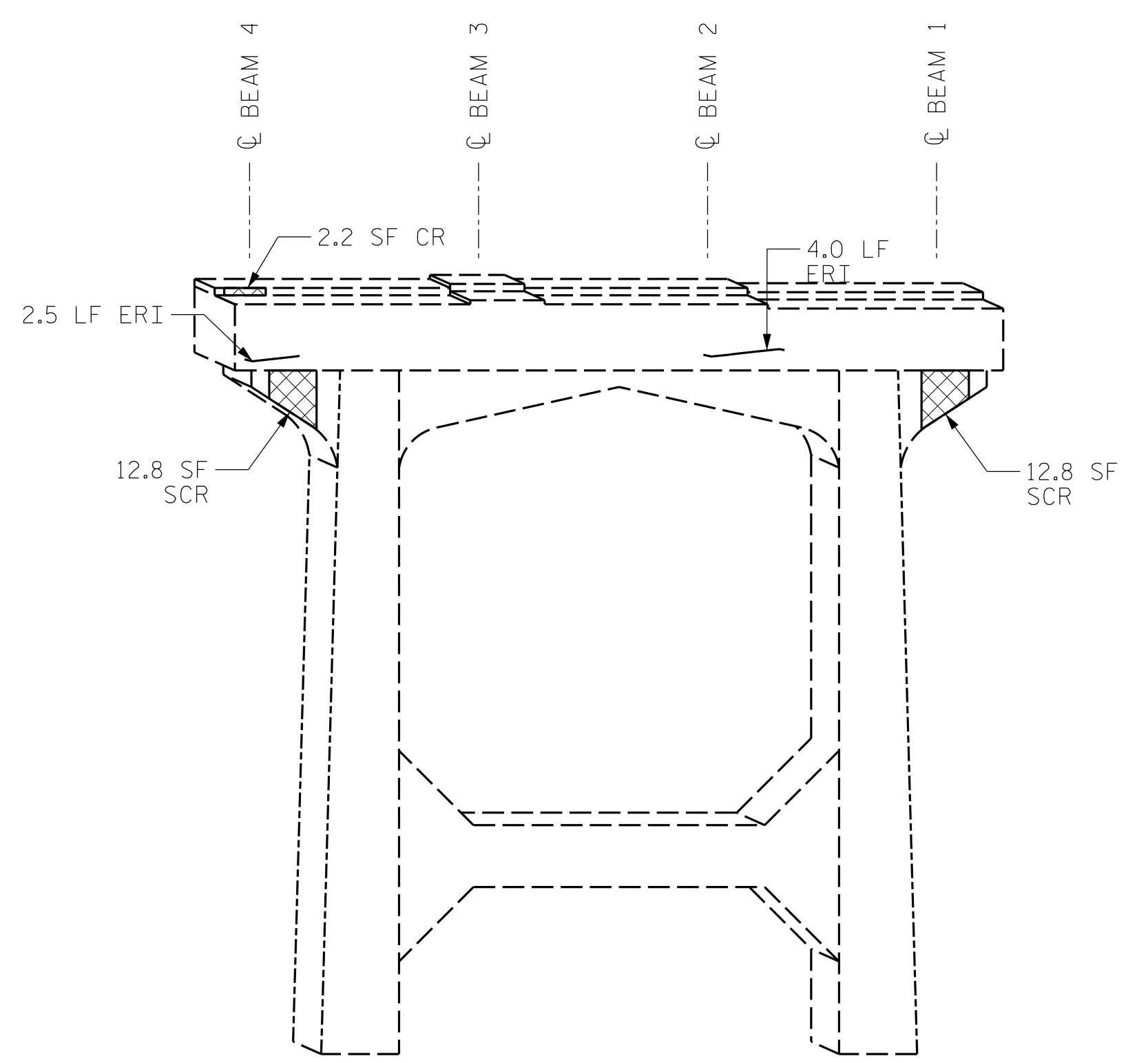
4/21/2022  
 I5915B.SMU.SBR00.480066.dgn  
 daquirre

DOCUMENT NOT CONSIDERED  
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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S10-8
2			4			TOTAL SHEETS 12



BENT 1  
(WEST FACE)



BENT 1  
(EAST FACE)

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	25.6	8.6		
COLUMN/PILE	3.7	1.3		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	2.2	0.8		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	12.5			
COLUMN/PILE	-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**NOTES:**  
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REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
BRIDGE NO. 480066

SHEET 2 OF 4

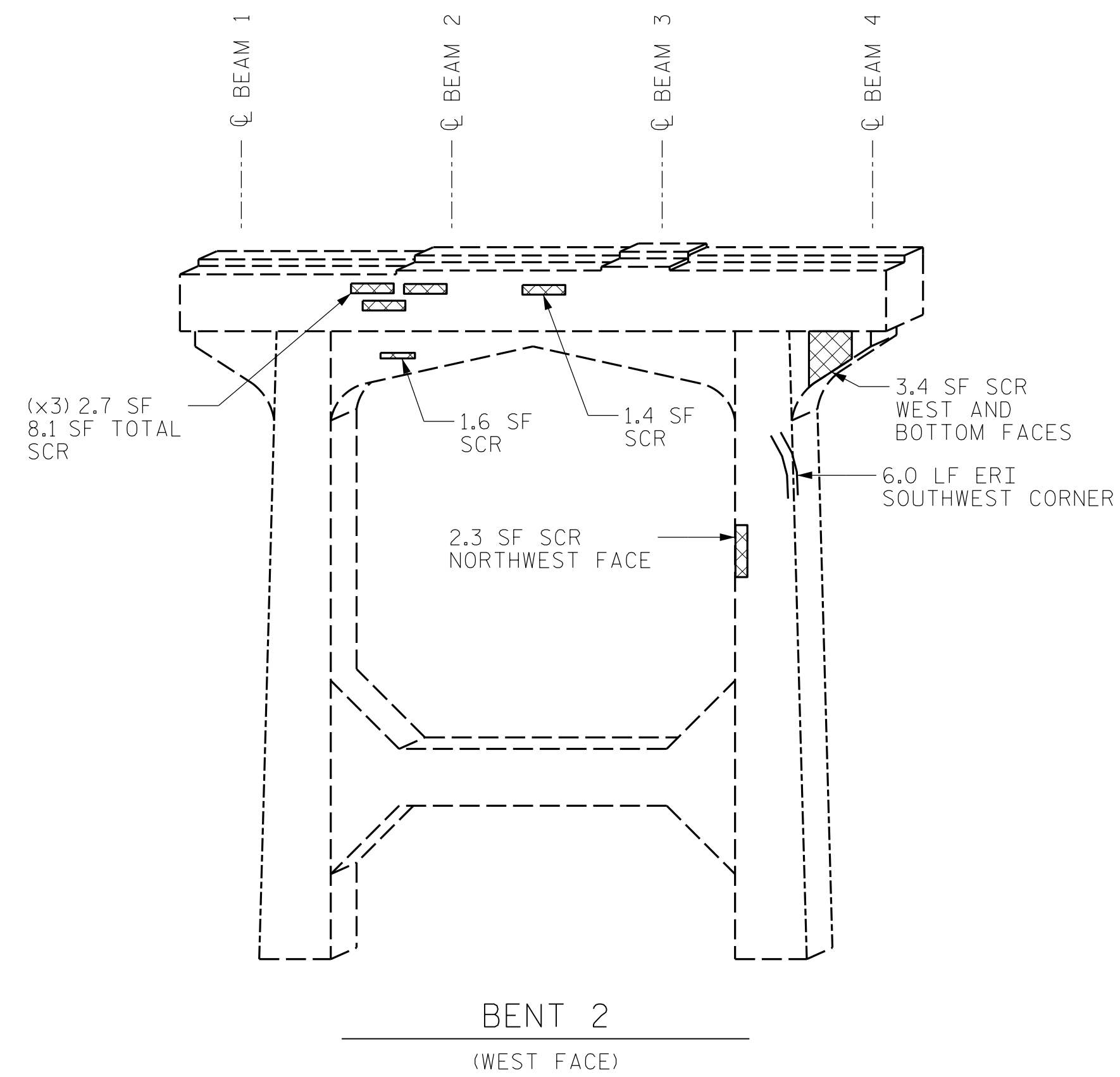


STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**SUBSTRUCTURE REPAIRS**  
BENT 1

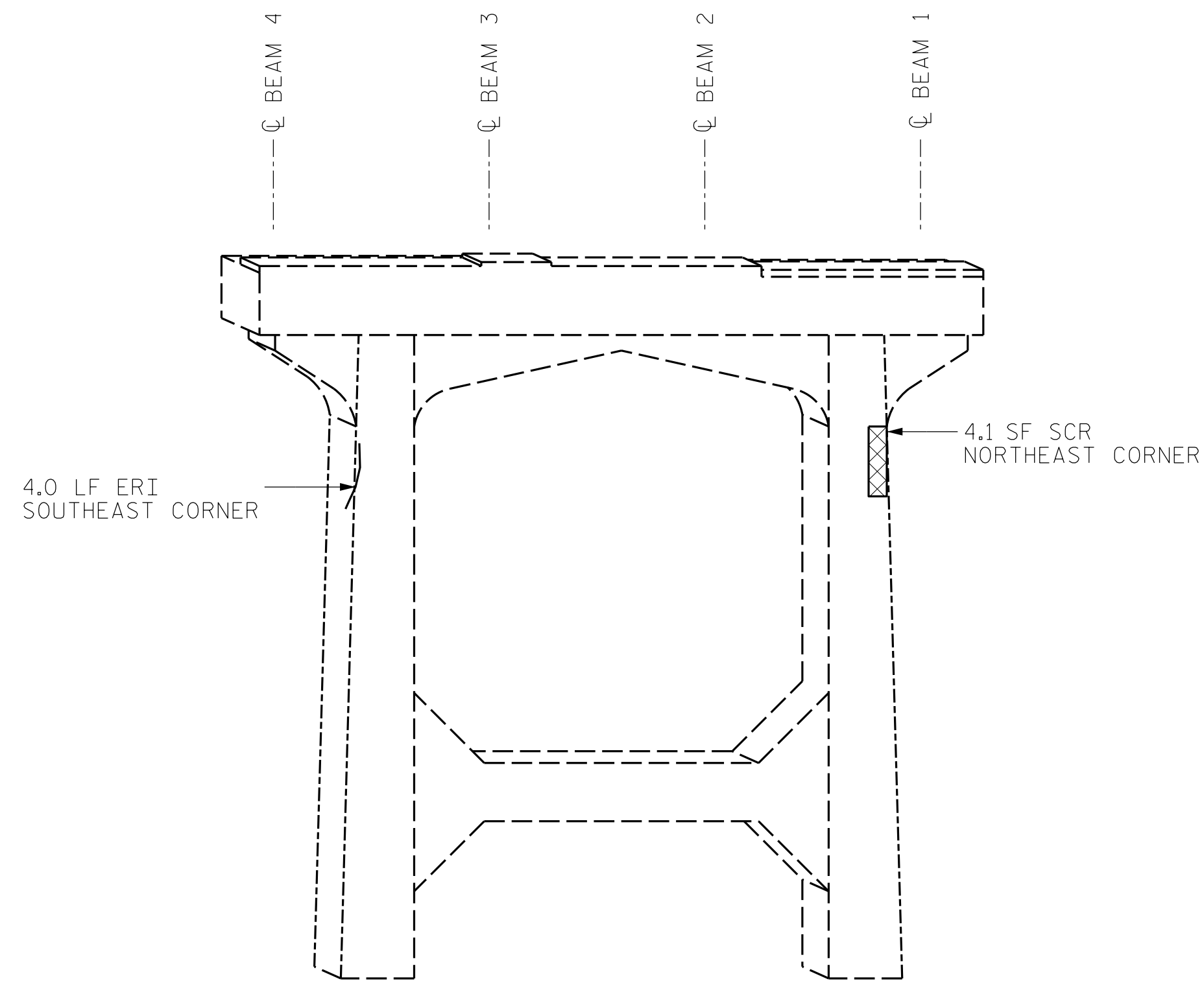
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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



BENT 2  
(WEST FACE)



BENT 2  
(EAST FACE)

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	14.5	5.0		
COLUMN/PILE	6.4	2.8		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	-			
COLUMN/PILE	10.0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480066

SHEET 3 OF 4



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 BENT 2

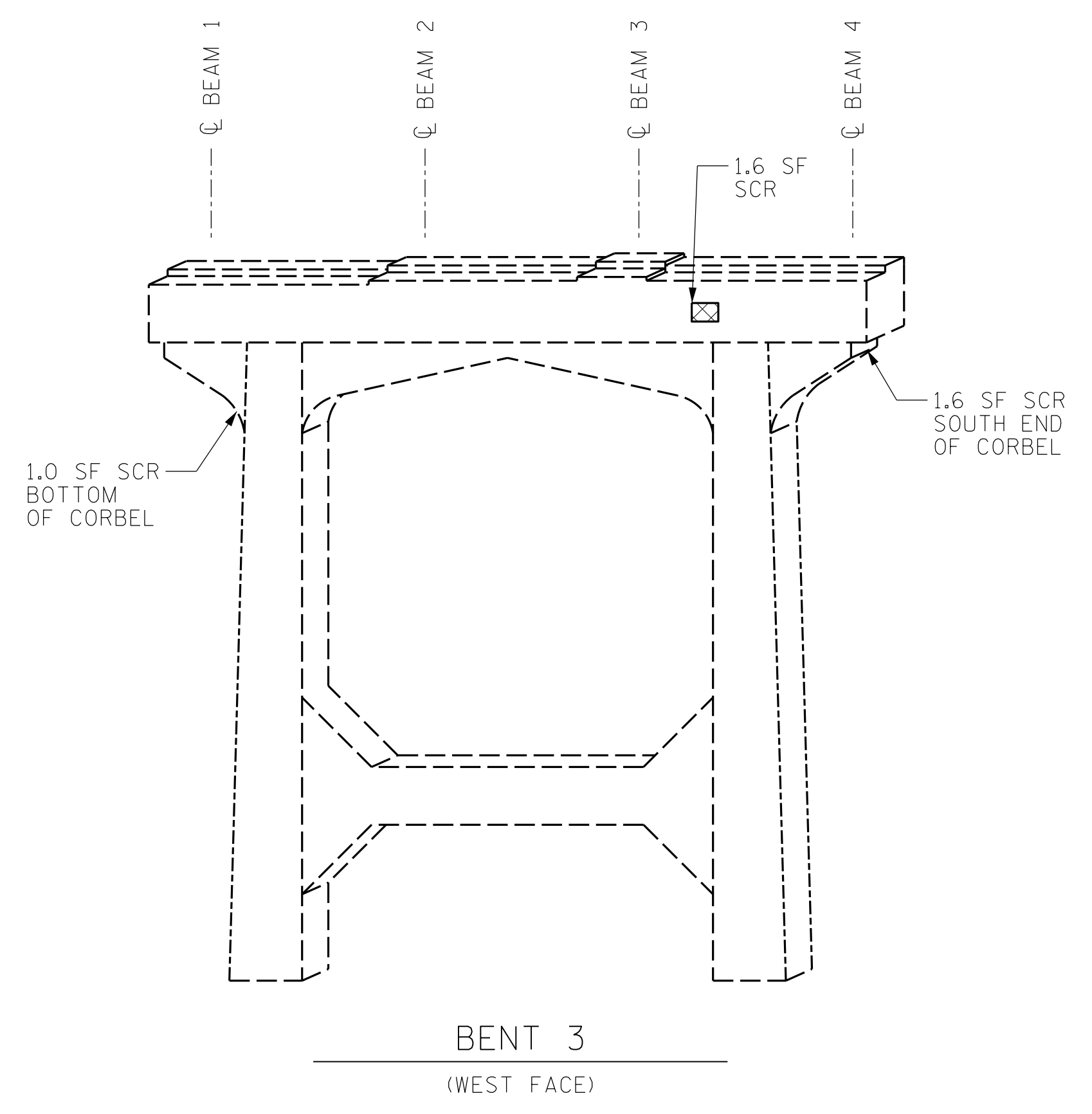
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

4/21/2022  
 I5915B\_SMU\_SBR02\_480066.dgn  
 daquirre

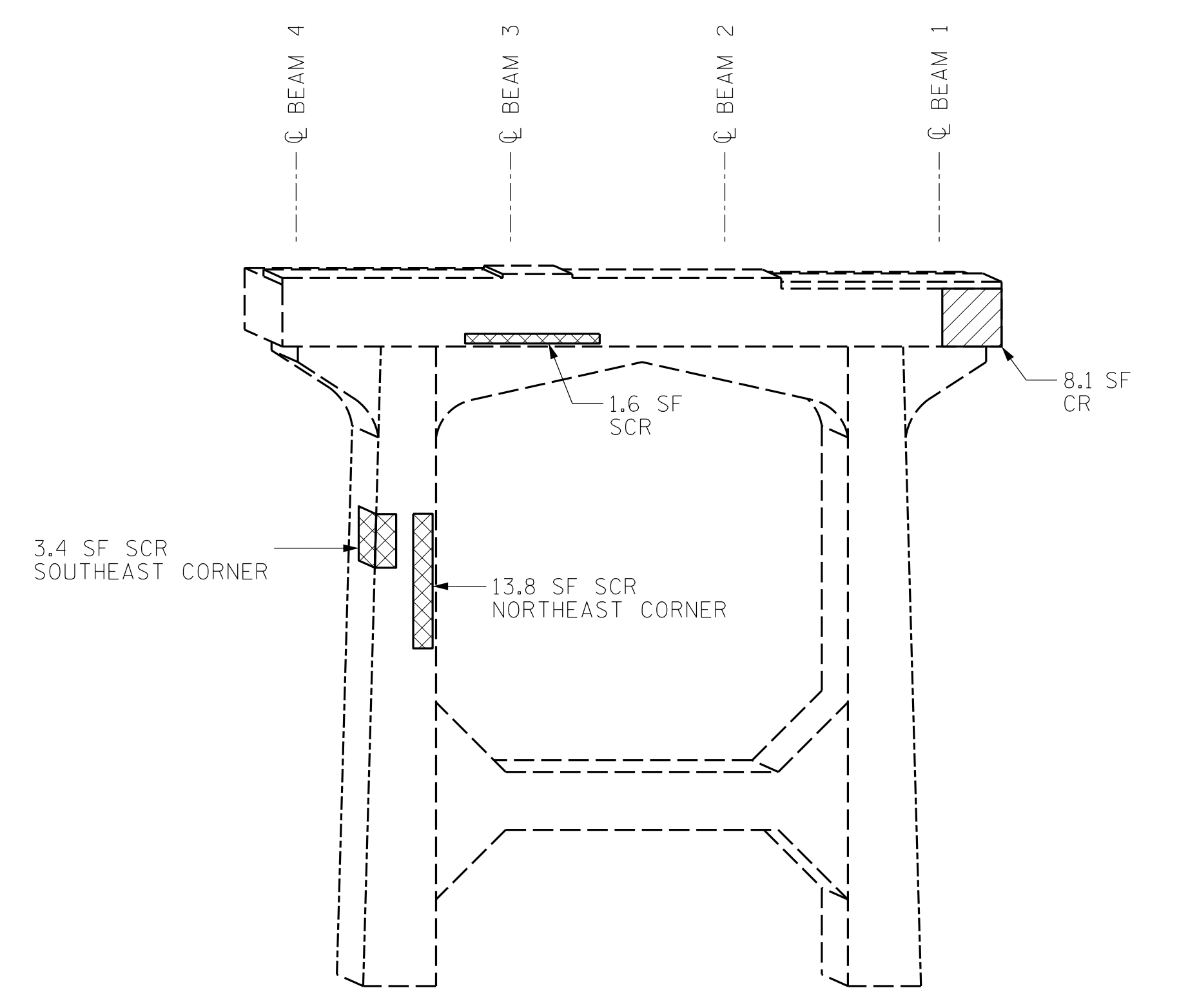
DOCUMENT NOT CONSIDERED  
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 SIGNATURES COMPLETED

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





BENT 3  
(WEST FACE)



BENT 3  
(EAST FACE)

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP/BACKWALL	5.8	2.4	
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP	8.1	2.7	
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
	CAP/BACKWALL	-		
COLUMN/PILE	-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
BRIDGE NO. 480066

SHEET 4 OF 4



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**SUBSTRUCTURE REPAIRS**  
BENT 3

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

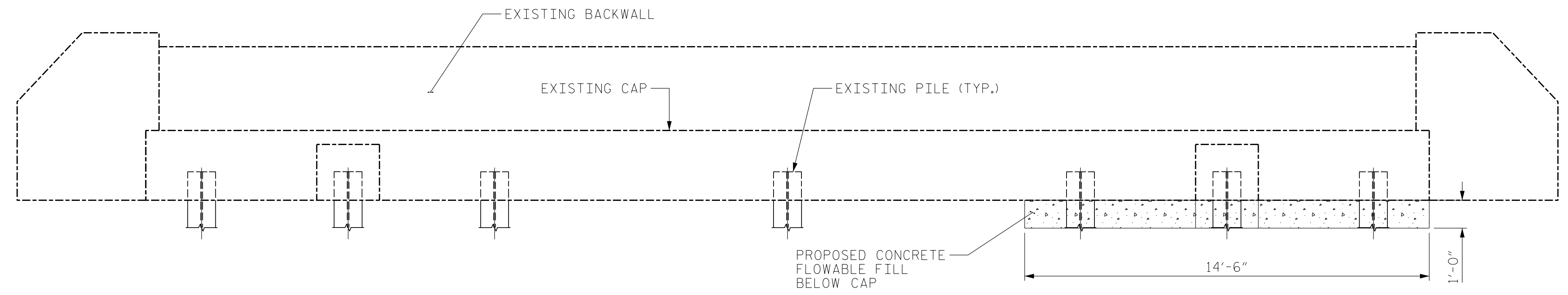
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			11
2			4			12

AS-BUILT REPAIR QUANTITY TABLE

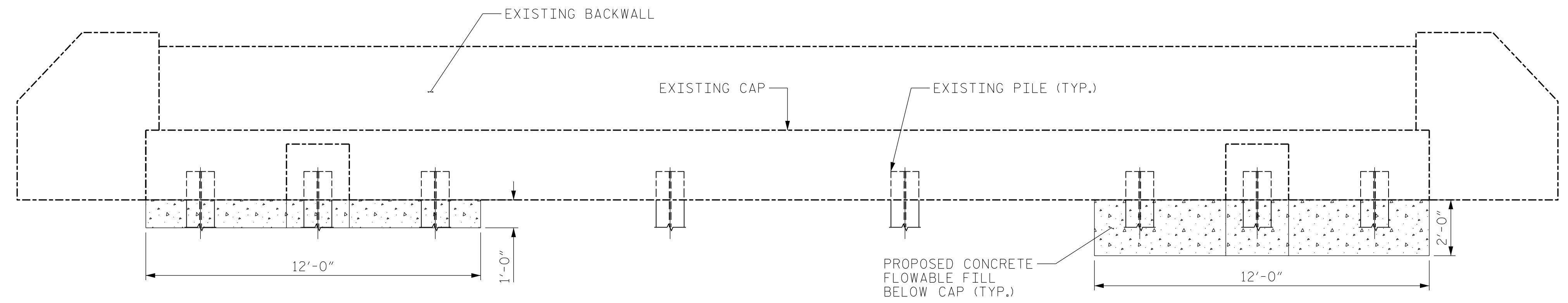
	END BENT 1		END BENT 2	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
UNCLASSIFIED STRUCTURE EXCAVATION	1.3 CY		3.2 CY	
FLOWABLE FILL	1.3 CY		3.2 CY	
BORROW EXCAVATION	2.8 CY		5.7 CY	

NOTES:

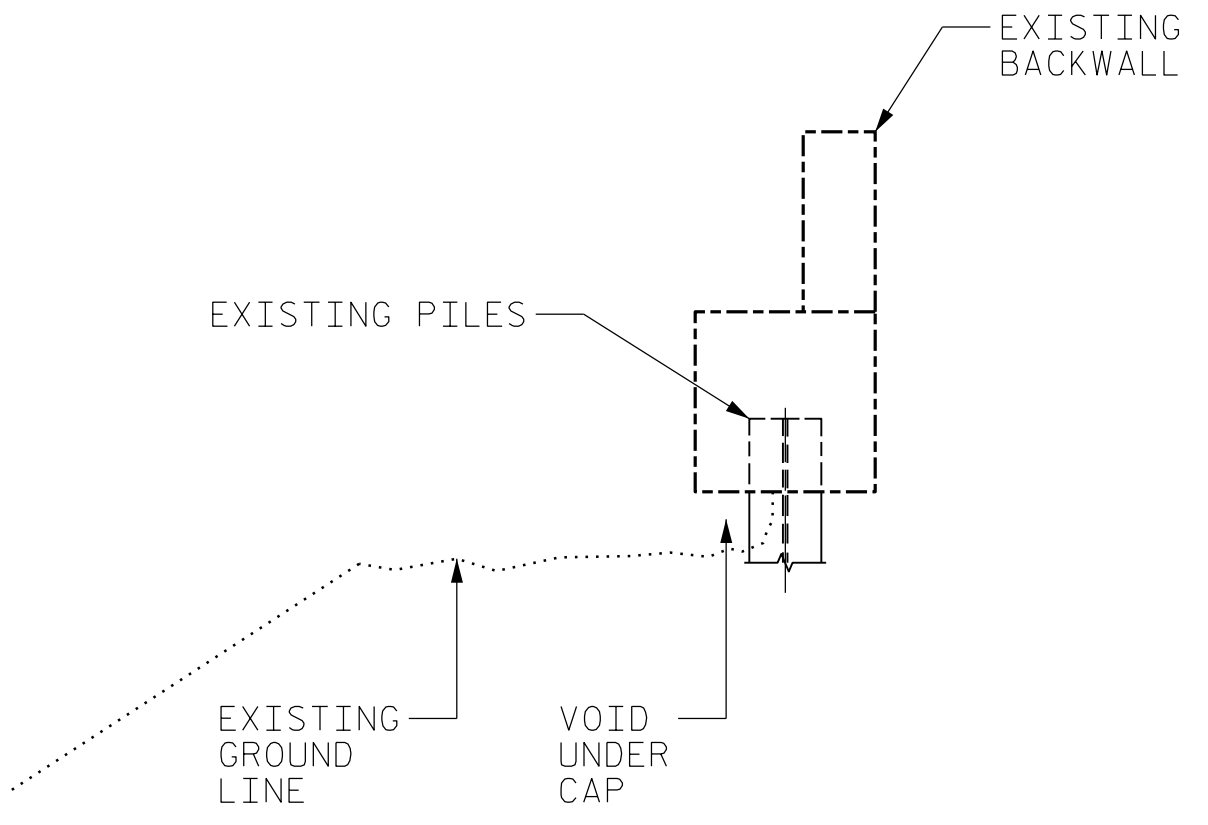
- EXCAVATE BELOW THE EXISTING AS INDICATED IN THE ELEVATION VIEWS. EXCAVATION BELOW THE CAP IS TO BE PAID FOR AS "UNCLASSIFIED STRUCTURE EXCAVATION".
- PLACE CONCRETE FLOWABLE FILL UNDER THE CAP AS SHOWN IN THESE PLANS, FULLY ENGAGING ADJACENT PILES.
- PLACE GEOTEXTILE TO THE LIMITS SHOWN IN THESE PLANS, UP THE FACE OF THE CAP, 1.0 FT ABOVE THE BOTTOM OF THE CAP.
- REPLACE REMOVED SOIL AND REGRADE SLOPE USING MATERIAL FROM UNCLASSIFIED STRUCTURE EXCAVATION, AND ADDITIONAL MATERIAL FROM BORROW EXCAVATION, AS NEEDED. SEE ARTICLE 230-5 OF THE 2018 STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS OF BORROW EXCAVATION.



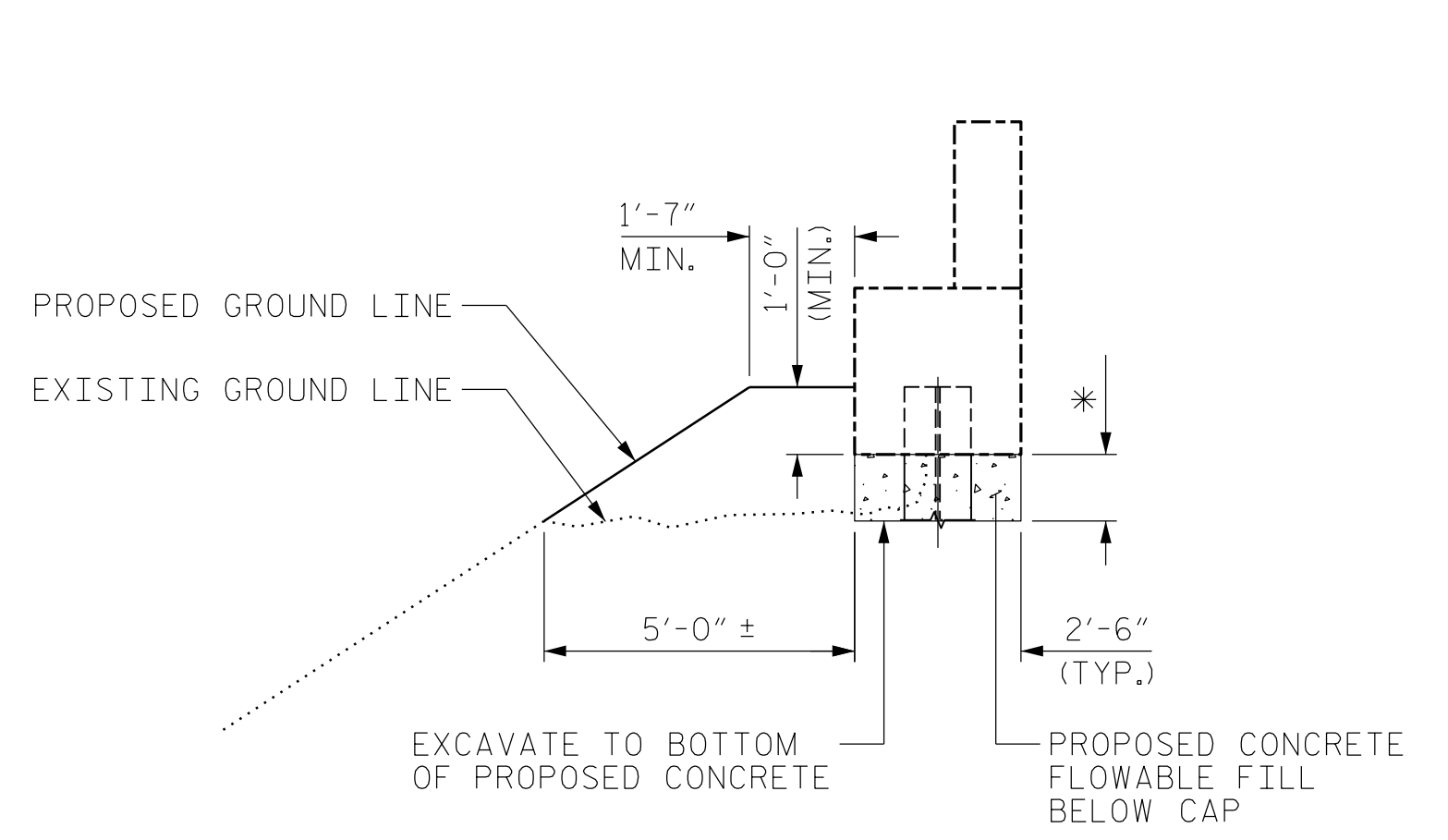
END BENT 1  
ELEVATION



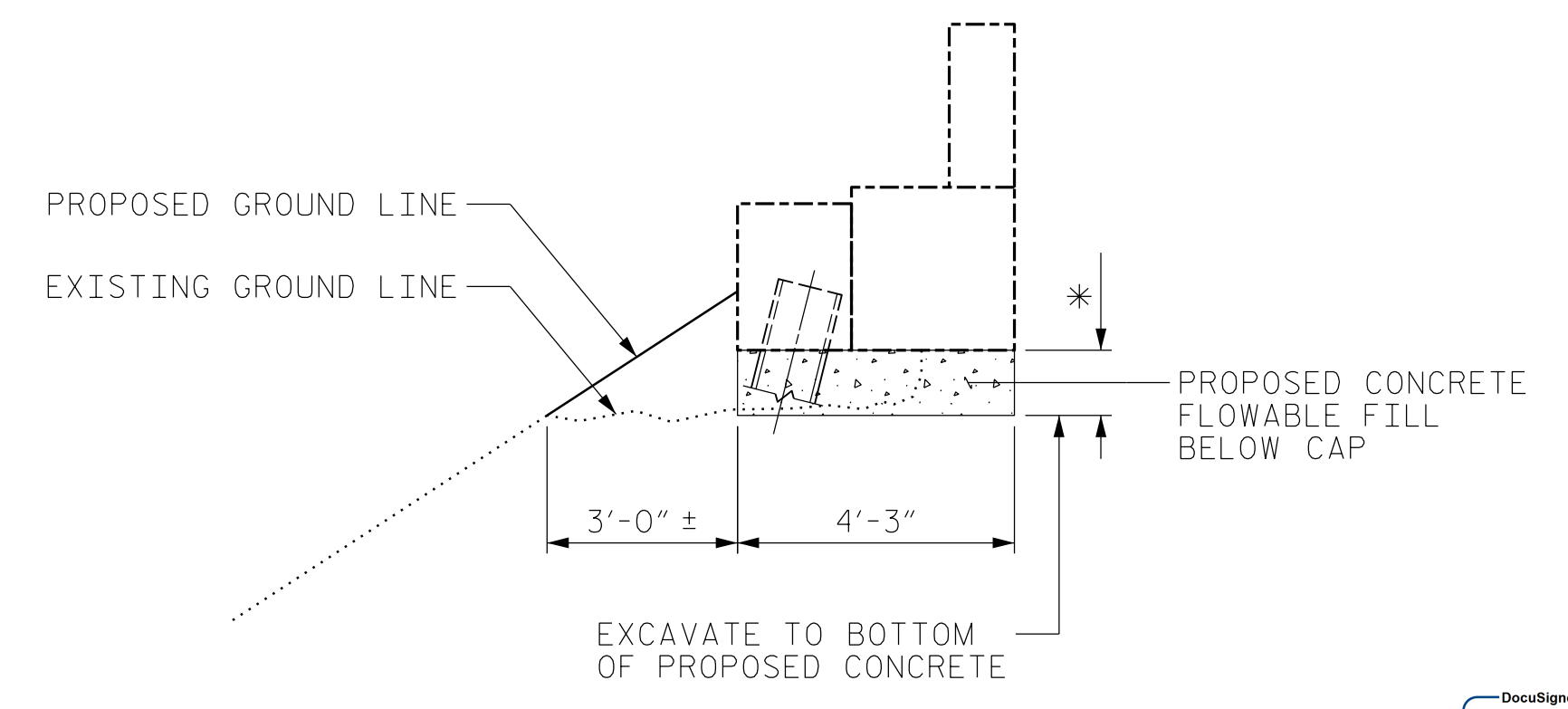
END BENT 2  
ELEVATION



EXISTING  
CAP SECTION

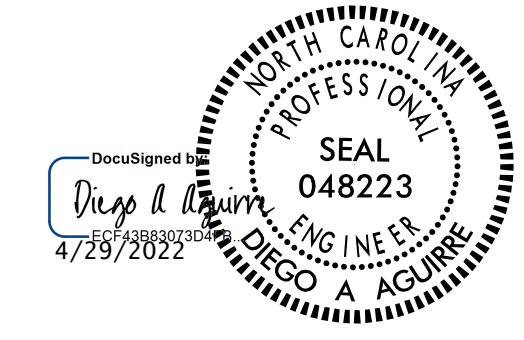


PROPOSED  
CAP SECTION  
(\* SEE ELEVATION)



PROPOSED  
CAP SECTION AT BRACE PILES  
(\* SEE ELEVATION)

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480066



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 EROSION REMEDIATION  
 END BENT 1 & END BENT 2

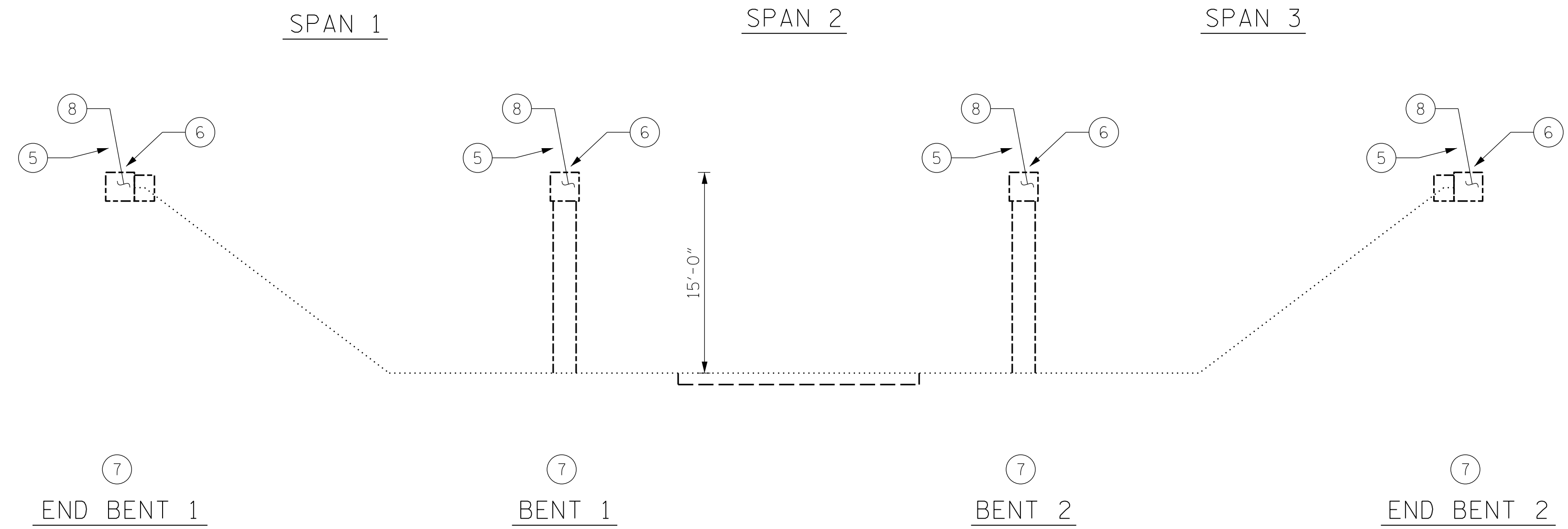
DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

4/21/2022  
 I5915B.SMU.SP01.480066.dgn  
 daquirre

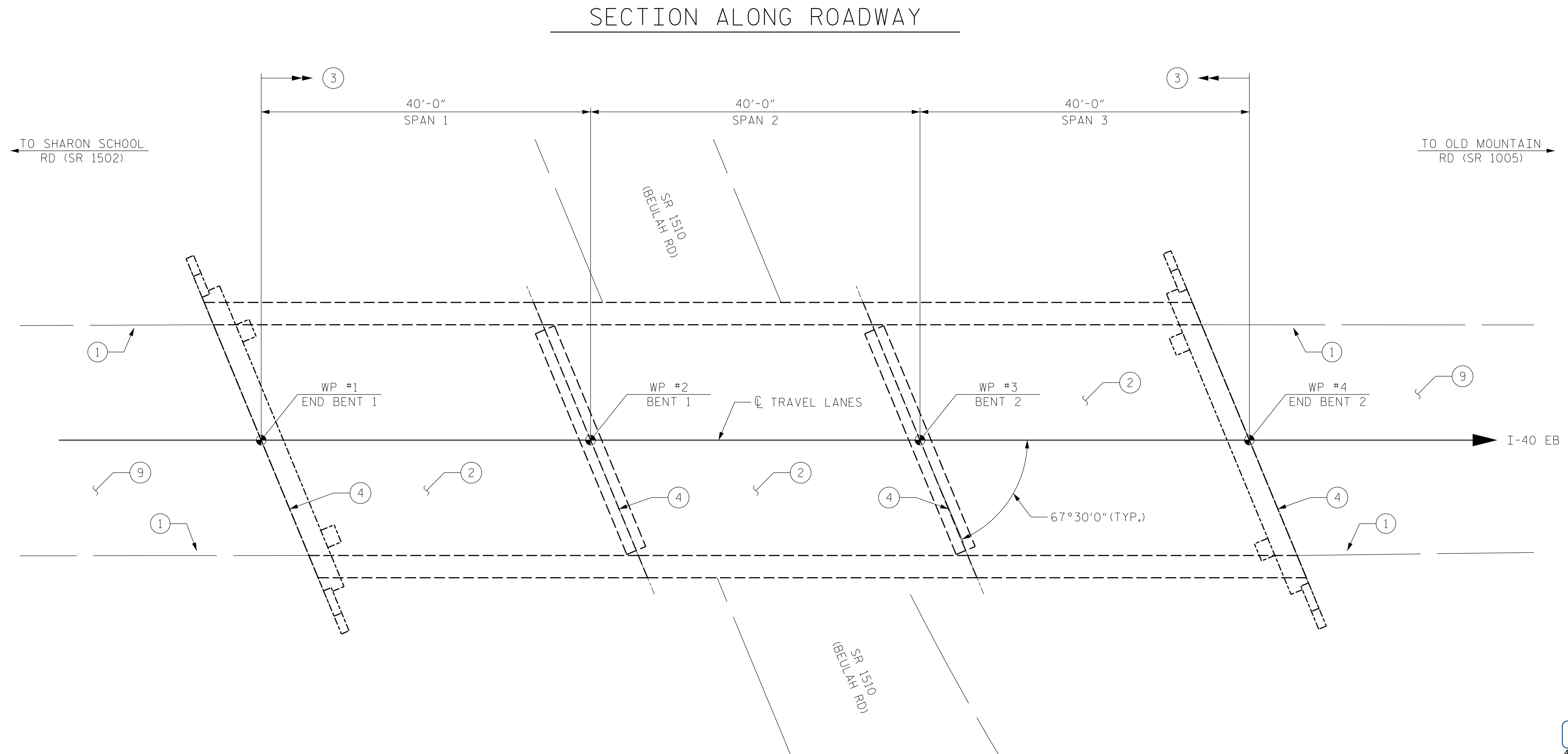
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			12
2			4			



- SCOPE LEGEND:**
- ① CLEAR SHOULDERS OF DEBRIS AND VEGETATION
  - ② CONCRETE DECK REPAIRS
  - ③ LATEX MODIFIED CONCRETE OVERLAY - VERY EARLY STRENGTH
  - ④ JOINT REPAIR/REPLACEMENT
  - ⑤ SUPERSTRUCTURE CONCRETE REPAIRS
  - ⑥ PAINT EXISTING STEEL GIRDER ENDS AND BEARINGS
  - ⑦ SUBSTRUCTURE CONCRETE REPAIRS
  - ⑧ SUBSTRUCTURE EPOXY RESIN INJECTION
  - ⑨ APPROACH ROADWAY MILLING AND RESURFACING



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

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

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480072



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR BRIDGE ON I-40 EB  
 OVER SR 1510

**NOTES:**  
 GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE MOST UP TO DATE ROUTINE INSPECTION REPORT DATED 09/26/2021.

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

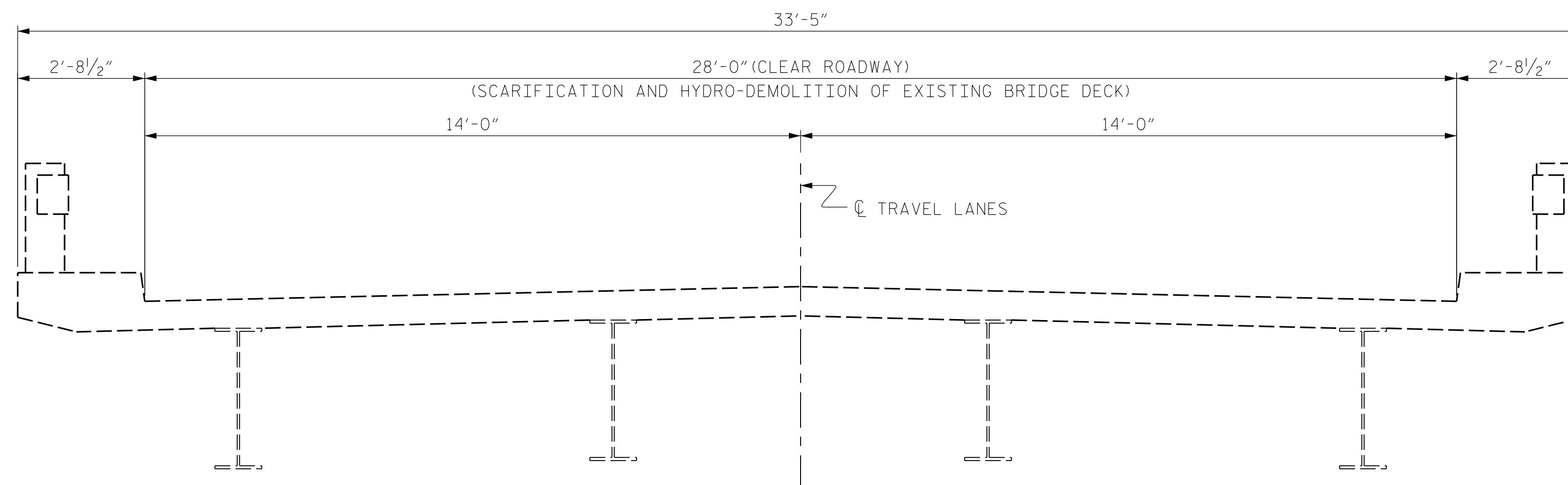
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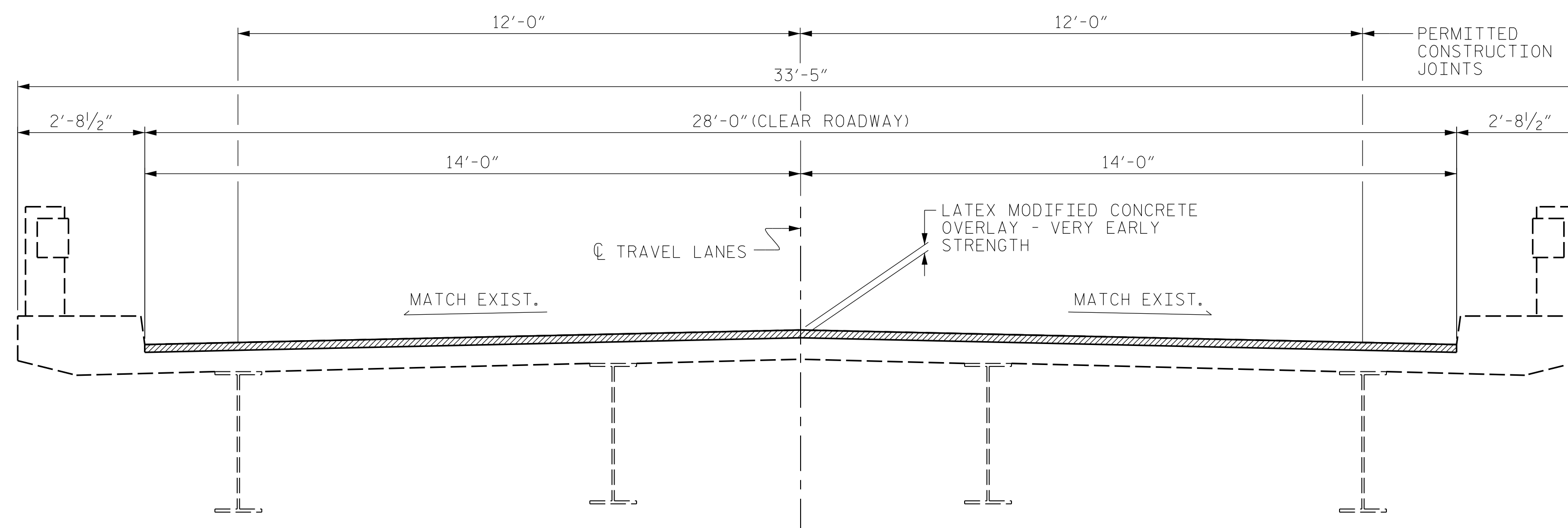


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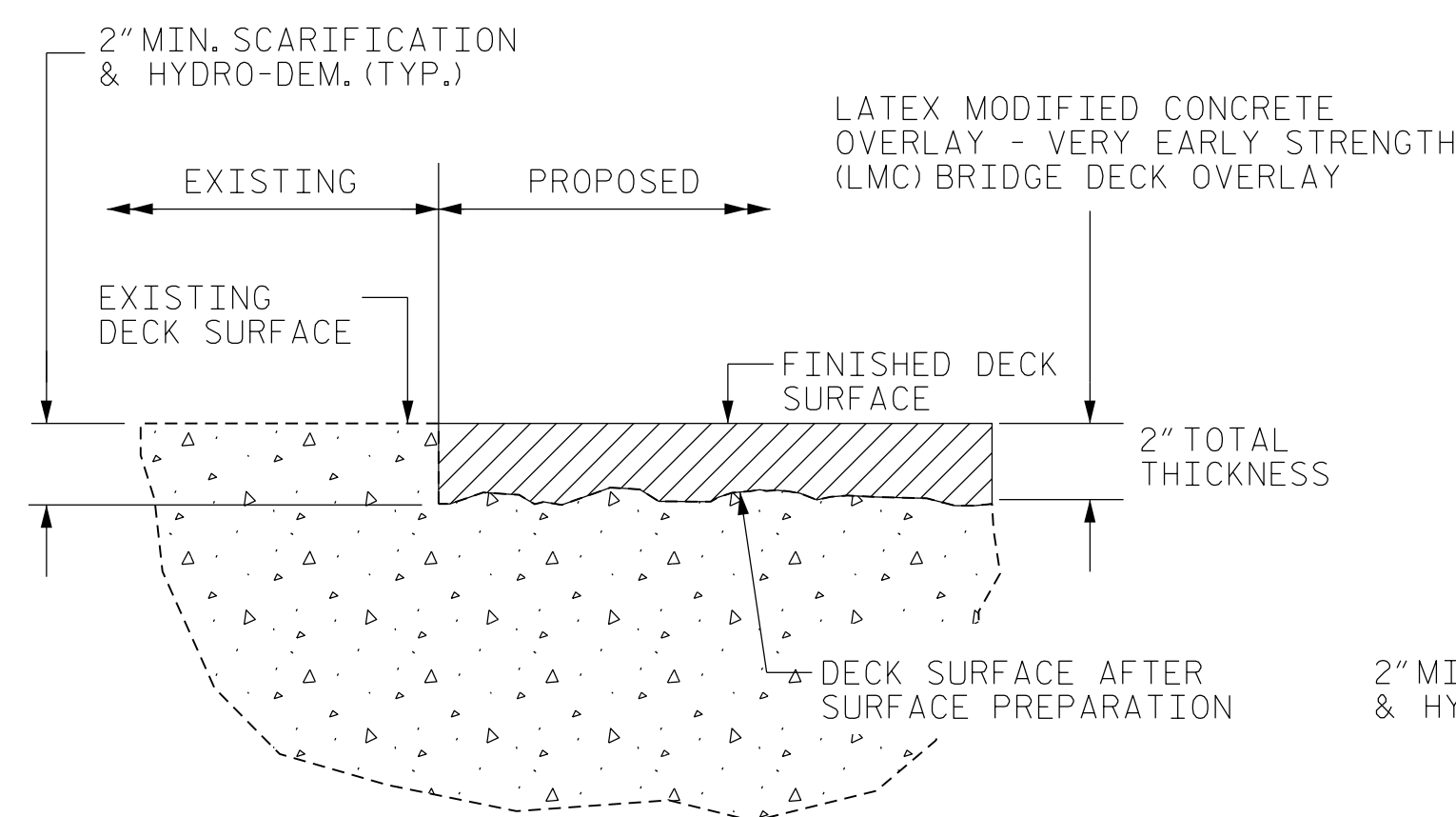




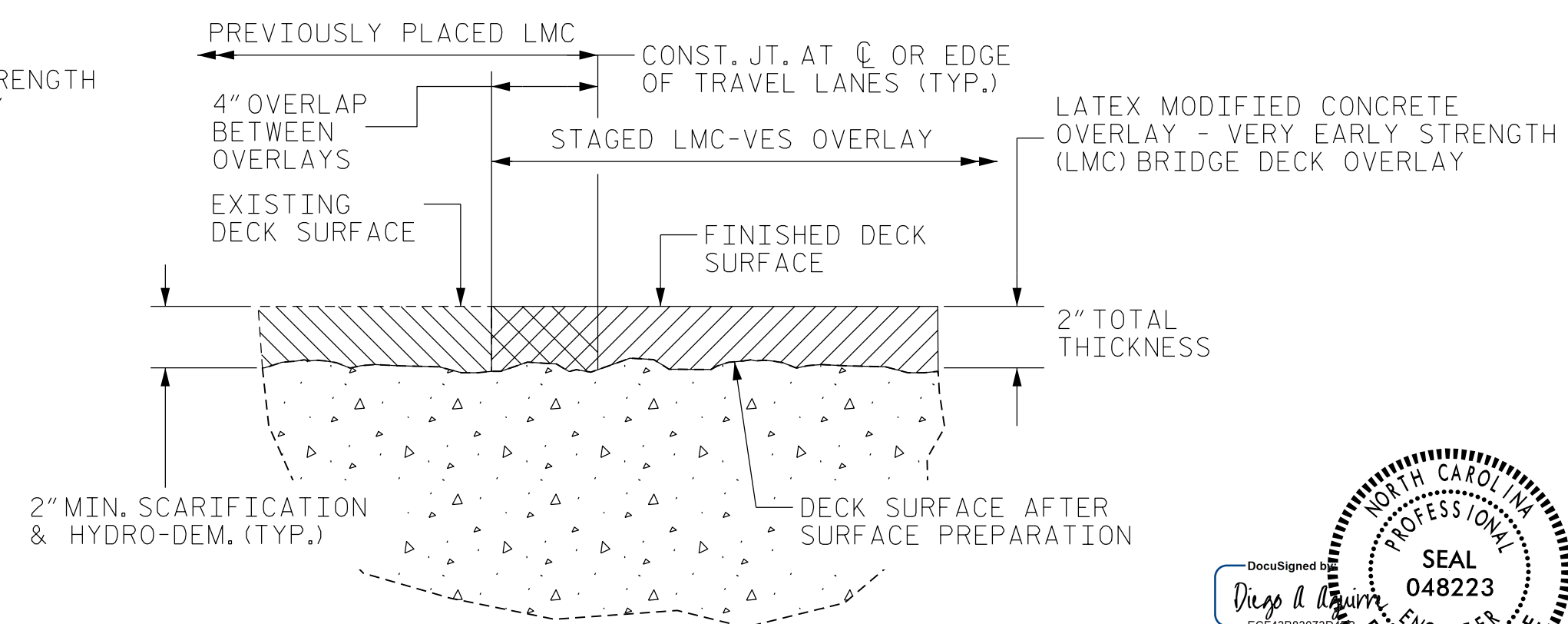
EXISTING



PROPOSED



DETAIL FOR LMC OVERLAY



DETAIL FOR STAGED LMC OVERLAY

NOTES:

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

SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF LATEX MODIFIED CONCRETE OVERLAY - VERY EARLY STRENGTH (LMC) SYSTEM AND SURFACE PREPARATION.

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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PROJECT NO. I-5915B  
IREDELL COUNTY  
BRIDGE NO. 480072

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

TYPICAL SECTION

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**KCA**  
KISINGER CAMPO & ASSOCIATES  
301 FAYETTEVILLE ST., SUITE 1500  
RALEIGH, NC 27601 (919) 882-7839  
NC FIRM LICENSE: C-1506

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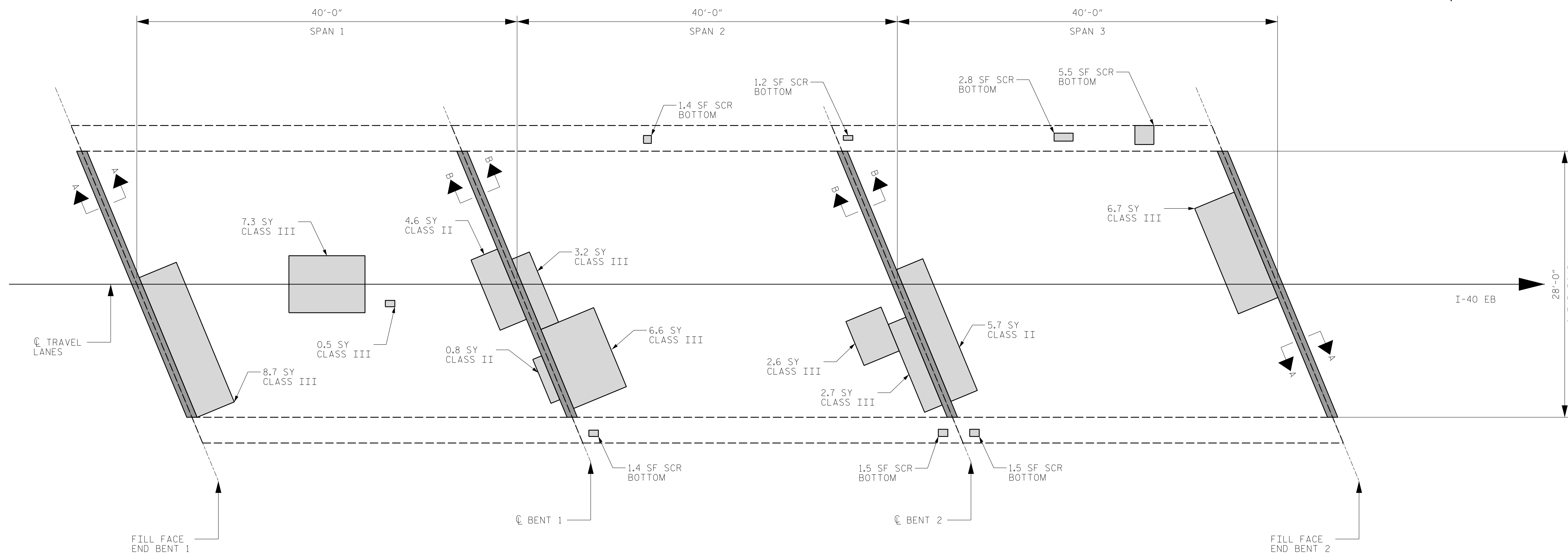
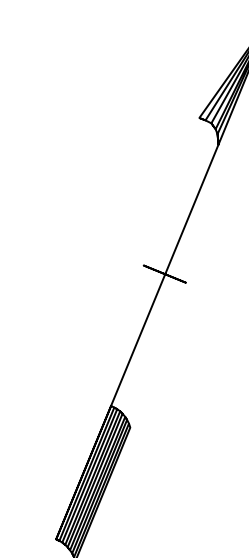
# AS-BUILT REPAIR QUANTITY TABLE

## DECK REPAIRS

	SPAN 1		SPAN 2		SPAN 3	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	5.4 SY		-- SY		5.7 SY	
CLASS III SURFACE PREPARATION	16.5 SY		15.1 SY		6.7 SY	
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME
SHOTCRETE REPAIR AREA (SCR)	-- SF	-- CF			4.3 SF	1.5 CF
CONCRETE REPAIR AREA (CR)	-- SF	-- CF			-- SF	-- CF

### LEGEND:

- CR CONCRETE REPAIR AREA
- SCR SHOTCRETE REPAIR AREA



PLAN

### NOTES:

PRIOR TO SURFACE PREPARATION, REMOVE ALL LOOSE, DISINTEGRATED, UNSOUND OR CONTAMINATED CONCRETE FROM THE BRIDGE DECK.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

FOR SCARIFYING BRIDGE DECK, SEE OVERLAY SURFACE PREPARATION SPECIAL PROVISION.

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.

DEFECTS (SEE PLAN CALLOUT FOR DETAILS)

BRIDGE JOINT DEMOLITION

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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PROJECT NO. I-5915B  
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 BRIDGE NO. 480072

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
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## PLAN OF SPANS DECK REPAIRS

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2			4			TOTAL SHEETS 10

### AS-BUILT REPAIR QUANTITY TABLE

	SPAN 1		SPAN 2		SPAN 3	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	125 SY		125 SY		125 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	125 SY		125 SY		125 SY	
LATEX OVERLAY - VERY EARLY STRENGTH	7.0 CY		7.0 CY		7.0 CY	
PLACING AND FINISHING LMC OVERLAY	125 SY		125 SY		125 SY	
GROOVING BRIDGE FLOORS	1120 SF		1120 SF		1120 SF	

**NOTES:**

BRIDGE DECK GROOVING QUANTITY BASED ON LIMITS REQUIRED IN SECTION 420-14(B) OF STANDARD SPECIFICATIONS.

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

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

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

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

FOR PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH (LMC-VES), SEE LATEX MODIFIED CONCRETE-VERY EARLY CONCRETE SPECIAL PROVISIONS.

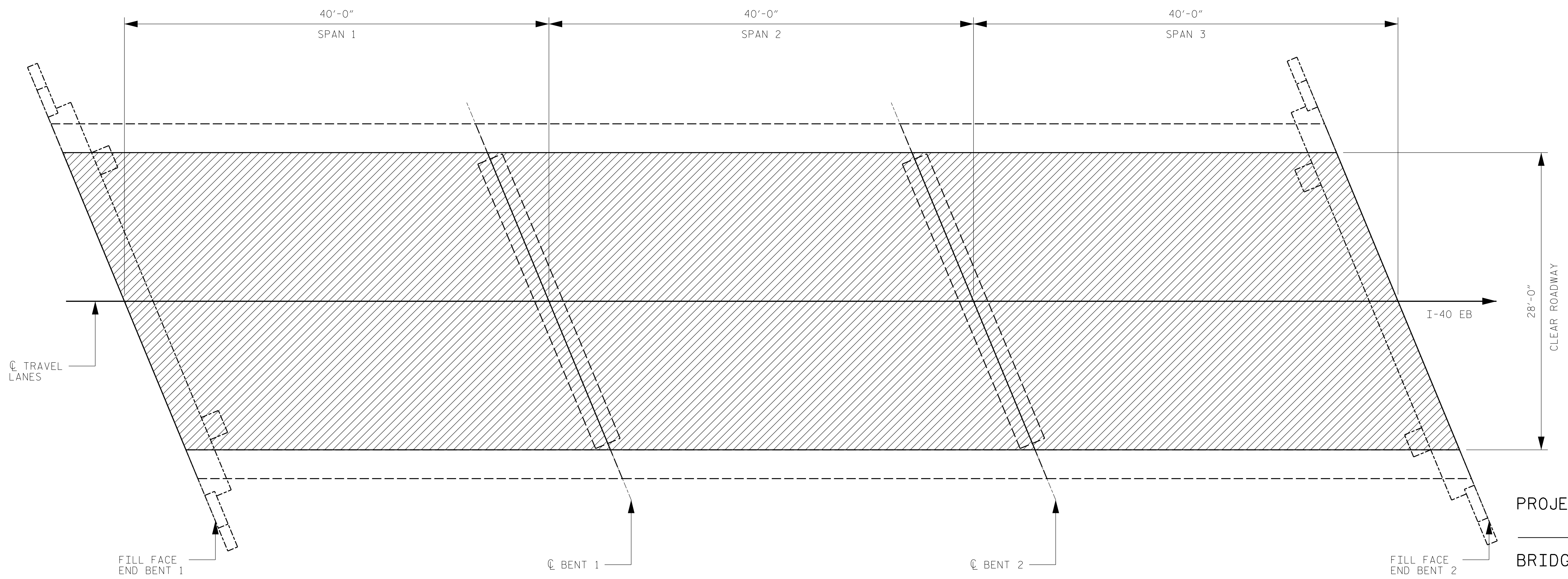
LONGITUDINAL CONSTRUCTION JOINTS SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

BRIDGE DECK SCARIFICATION, HYDRO-DEMOLITION, AND LMC-VES, LIMITS ARE THE FULL CLEAR ROADWAY WIDTH (INSIDE FACE OF EACH BRIDGE RAIL). CATION. CURRENT AVERAGE COVER IS EXPECTED TO BE FROM 0 TO 1 1/2" TO 2" BASED ON VISUAL INSPECTION.

WORK THIS SHEET WITH "JOINT DETAILS" SHEET.

WORK THIS SHEET WITH "TYPICAL SECTION" SHEET.

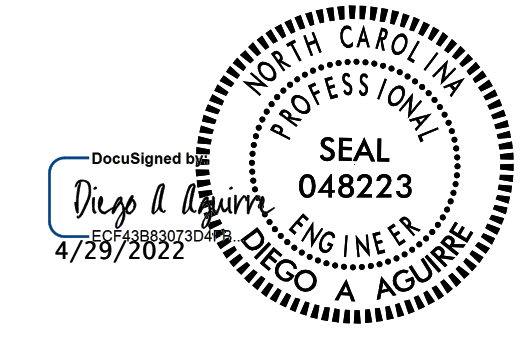
WORK THIS SHEET WITH "DECK REPAIR DETAILS" SHEET.



PLAN

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480072

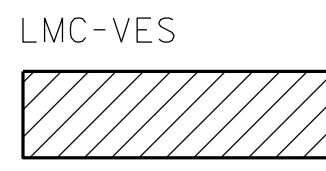
SHEET 2 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
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PLAN OF SPANS  
 LMC OVERLAY

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

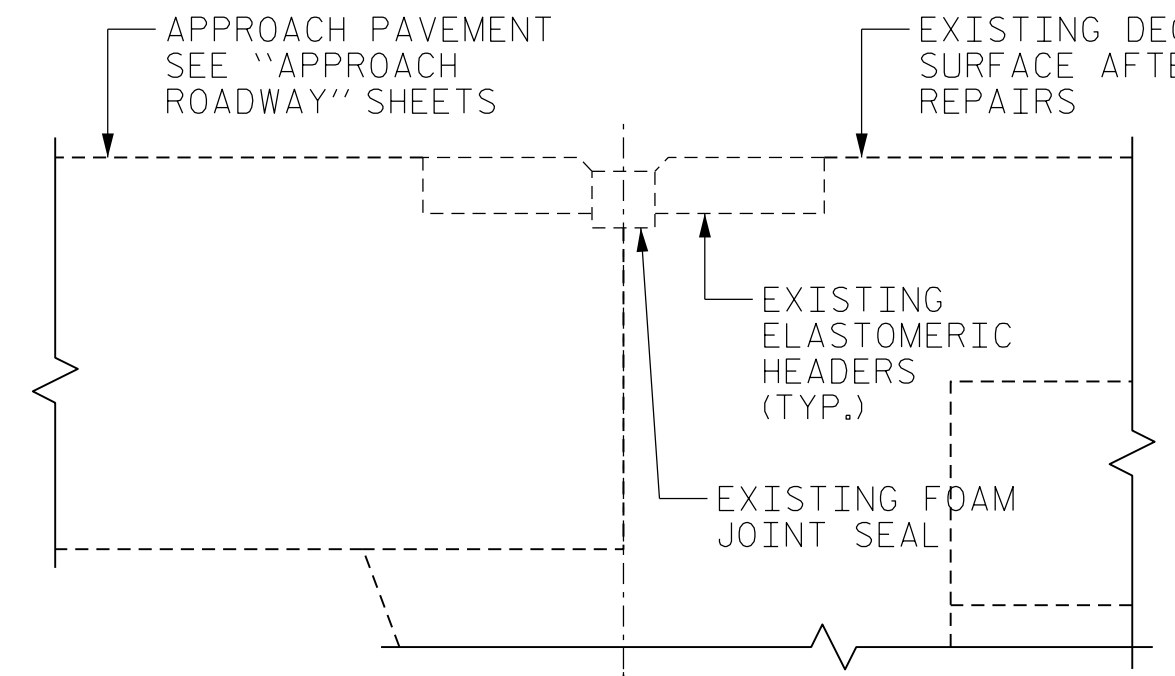


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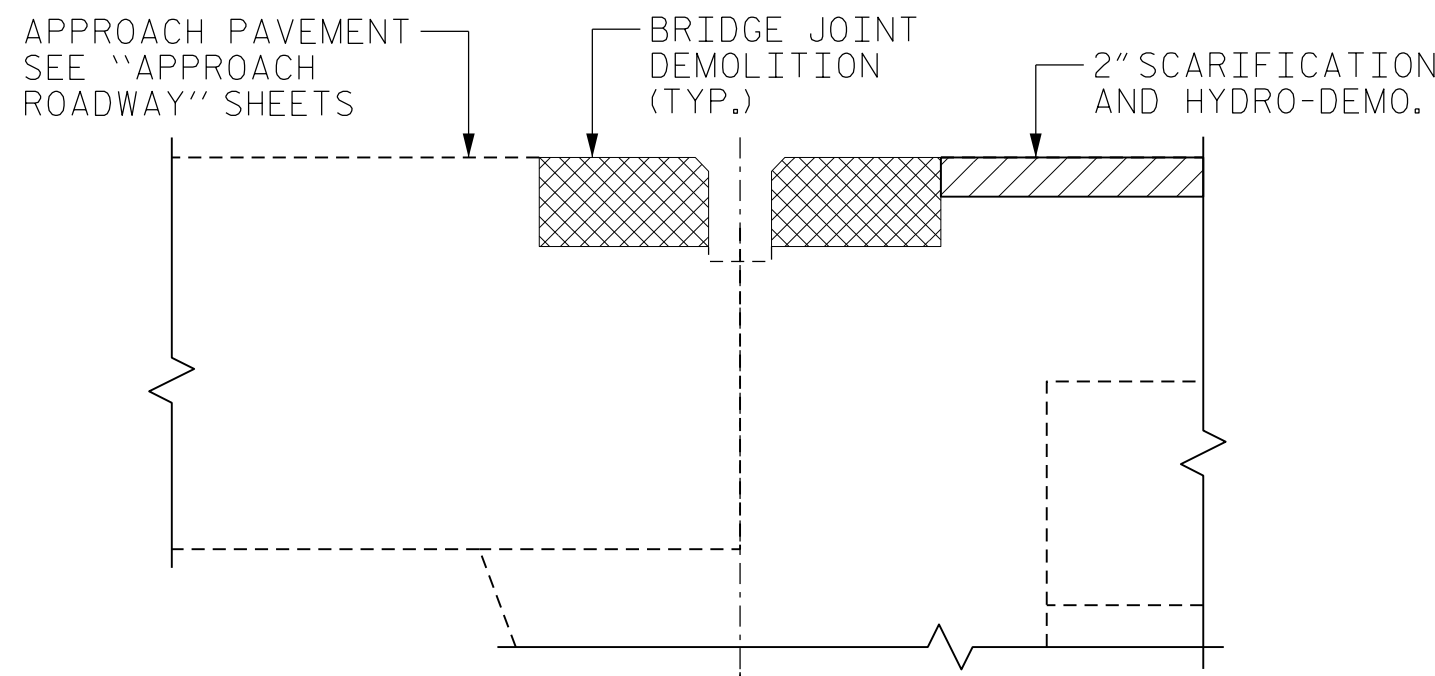
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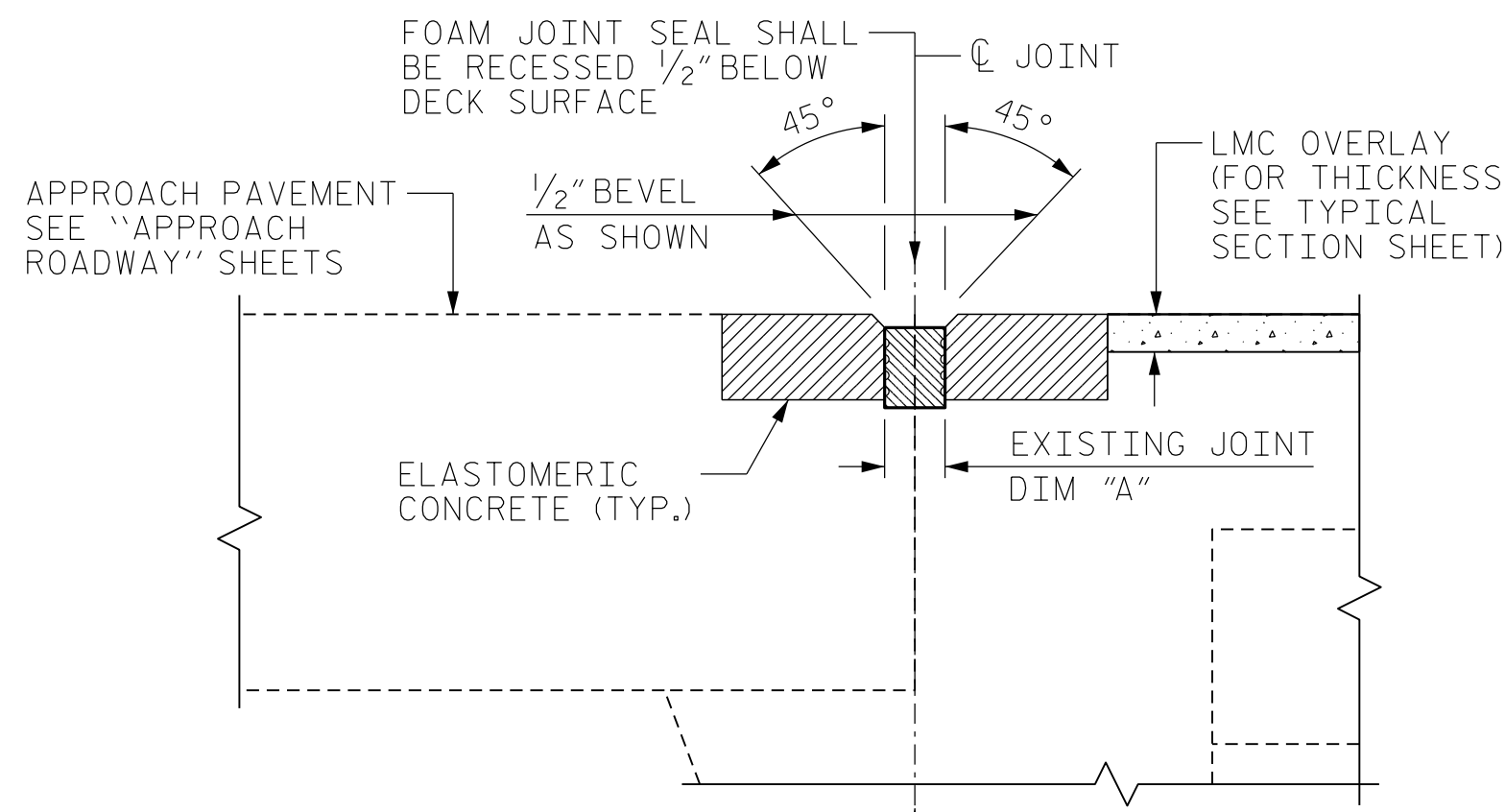
SECTION A-A

(EXISTING JOINT)



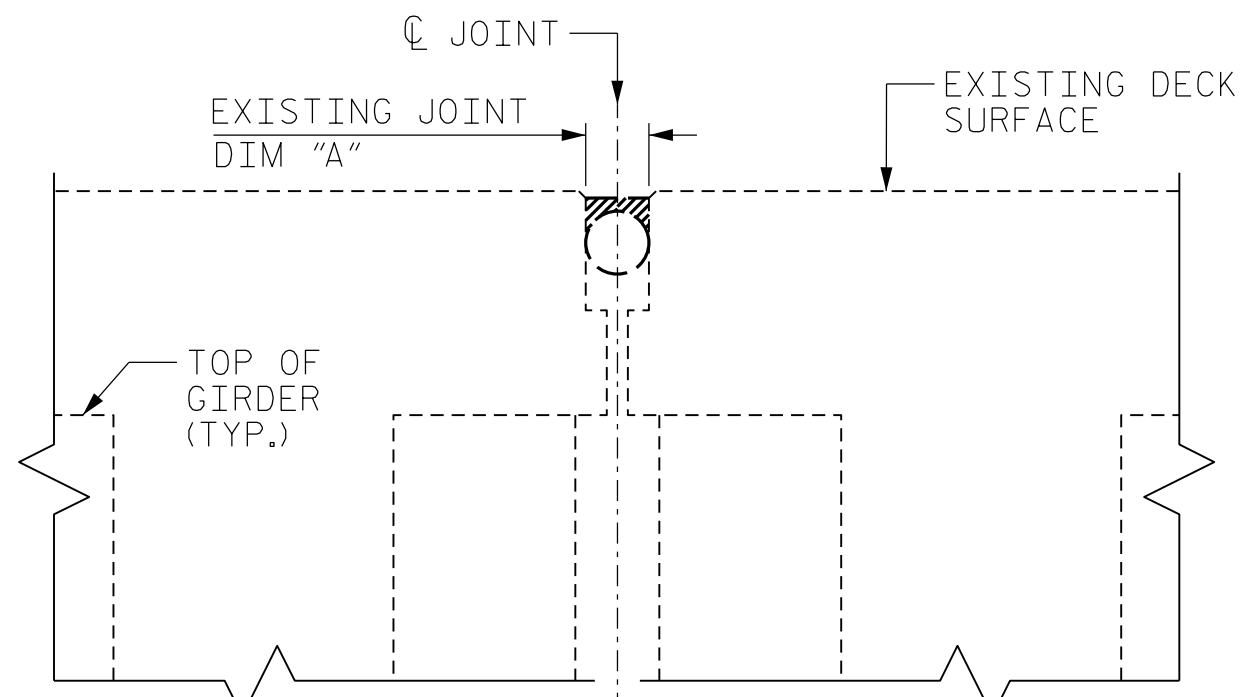
SECTION A-A

(DEMOLITION PREPARATION)



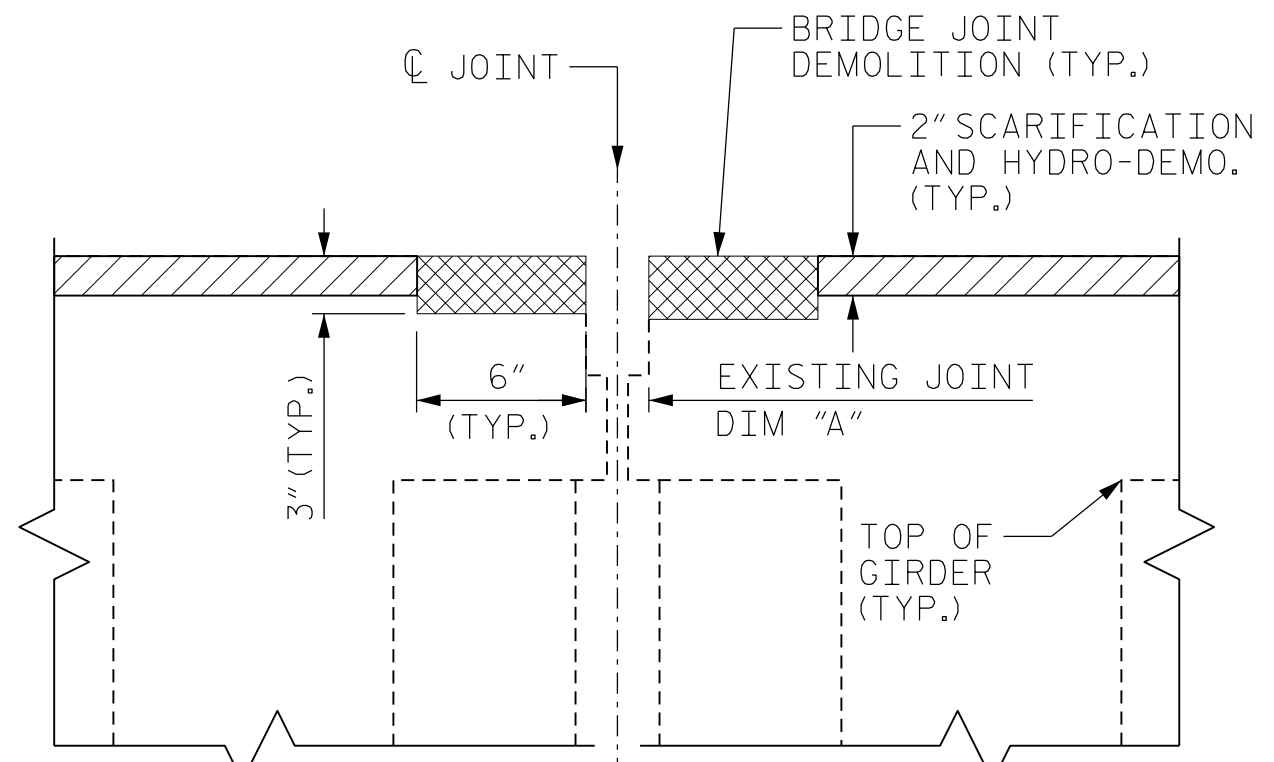
SECTION A-A

(PROPOSED FOAM JOINT SEAL)



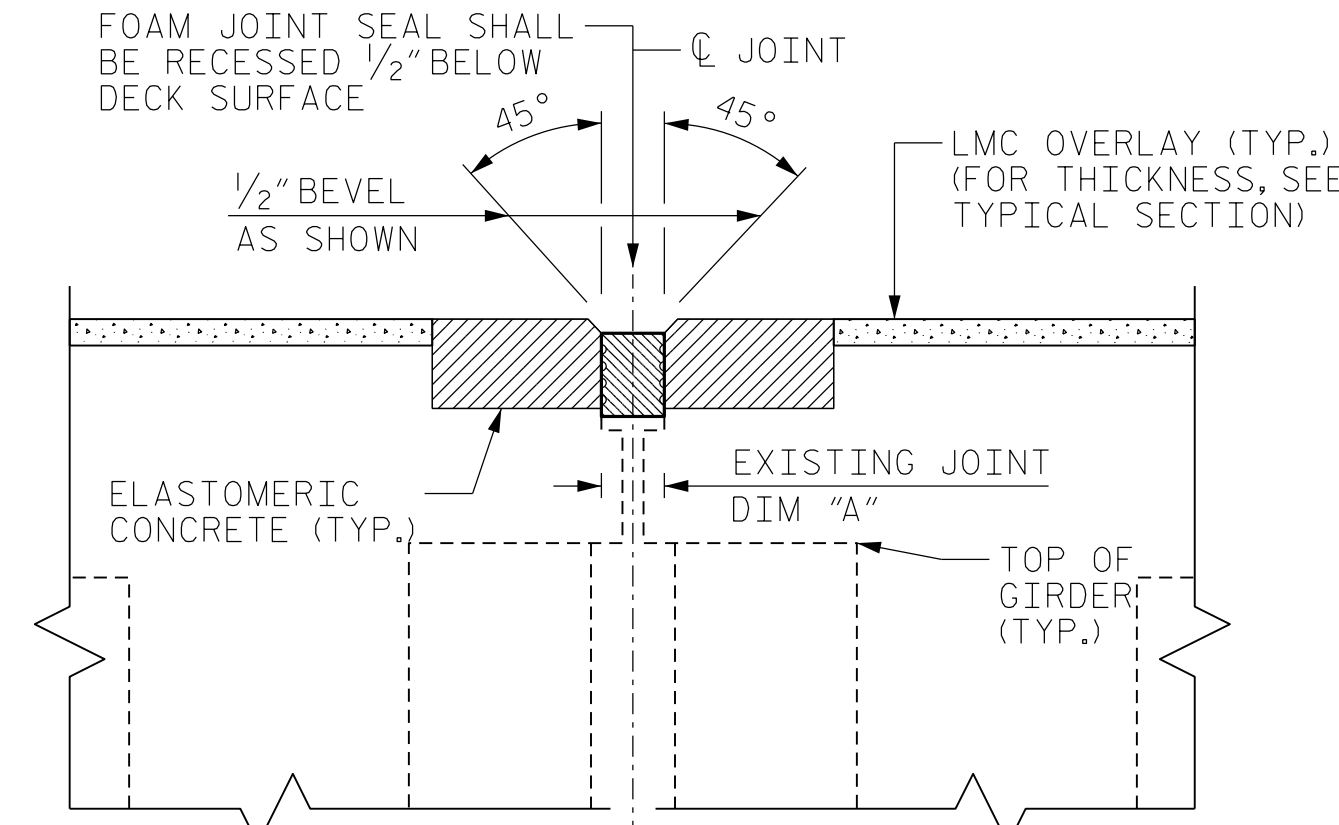
SECTION B-B

(EXISTING JOINT)



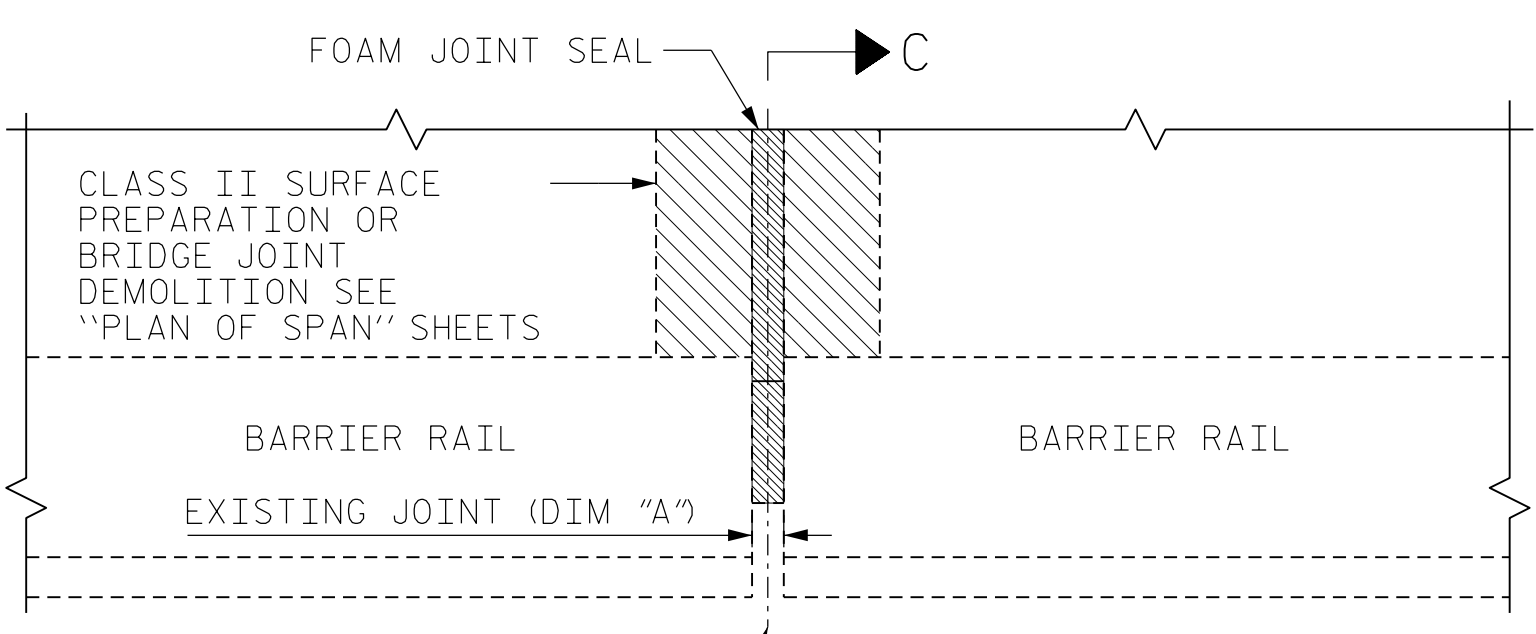
SECTION B-B

(DEMOLITION PREPARATION)



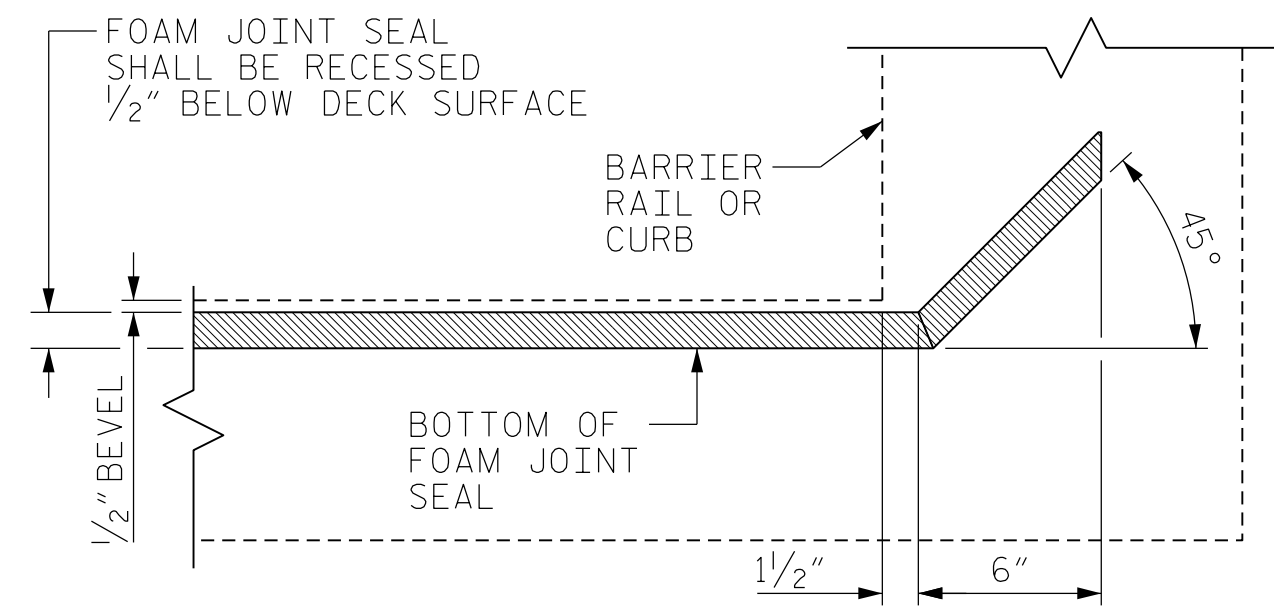
SECTION B-B

(PROPOSED FOAM JOINT SEAL)



PLAN AT BARRIER

(PROPOSED JOINT SEAL)



SECTION C-C

(PROPOSED JOINT SEAL)

BRIDGE JOINT DEMOLITION		
LOCATION	ESTIMATED (SQ.FT.)	ACTUAL (SQ.FT.)
END BENTS	60.7	
BENT 1	30.3	
BENT 2	30.3	

ELASTOMERIC CONCRETE FOR PRESERVATION		
LOCATION	ESTIMATED (CU.FT.)	ACTUAL (CU.FT.)
END BENTS	15.2	
BENT 1	7.6	
BENT 2	7.6	

PROPOSED JOINT QUANTITY		
	ESTIMATED (LIN.FT.)	ACTUAL (LIN.FT.)
FOAM JOINT SEALS FOR PRESERVATION	128.0	

TABLE 1	
Table Date 02-2022	
BENT/ JOINTS	DIM "A" @ 60°F
END BENT 1	3"
1	2 1/4"
2	2 3/4"
END BENT 2	2 3/4"

NOTES:

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF THE ACTUAL OPENING VARIES FROM THE OPENING INDICATED IN THE DETAIL BY MORE THAN 1/4", NOTIFY THE ENGINEER. REVISION OF THE JOINT SEAL SIZE MIGHT BE NECESSARY.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL FOR THE SIZE OF THE OPENING ON THE PLANS AND ACCOMMODATE THE MINIMUM EXPANSION SHOWN ON THE PLANS.

FOAM JOINTS SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL TAKE CARE DURING JOINT REPAIR OPERATIONS NOT TO DROP ANY MATERIAL THAT FALLS BELOW THE BRIDGE, WITHOUT PROTECTIVE DEVICES BELOW TO CATCH THE MATERIAL. ANY MATERIAL THAT FALLS BELOW THE BRIDGE SHALL BE CONTAINED, REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO EXTRA COST TO THE DEPARTMENT. IF THE ENGINEER DETERMINES THAT THE PROTECTIVE DEVICES ARE NOT ADEQUATE OR NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

QUANTITIES SHOWN IN THE ELASTOMERIC CONCRETE FOR PRESERVATION TABLE BASED ON THE MINIMUM JOINT DEMOLITION SHOWN.

FOR EXCAVATION BELOW THE BOTTOM OF THE PLANNED JOINT DECK DEMOLITION, CONCRETE FOR DECK REPAIRS SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT BOTTOM OF THE PROPOSED ELASTOMERIC CONCRETE FOR PRESERVATION HEADERS SHOWN.

IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, OR IF UNSOUND CONCRETE IS REMOVED WITHIN 2" OF THE WATERSTOP, THE ENTIRE CONCRETE DEPTH TO THE WATERSTOPS SHALL BE REMOVED. IF SUCH EXCAVATION EXTENDS MORE THAN 2" BELOW THE BOTTOM OF THE PLANNED ELASTOMERIC CONCRETE HEADER, AS SHOWN, APPROVED REPAIR CONCRETE SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT THE BOTTOM OF THE ELASTOMERIC CONCRETE.

DEMOLISH BRIDGE JOINT AREA SUCH THAT THE BOTTOM OF THE EXCAVATION SHALL BE REASONABLY FLAT AND LEVEL AND TO THE NECESSARY DEPTH, SUCH THAT ELASTOMERIC CONCRETE SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE.

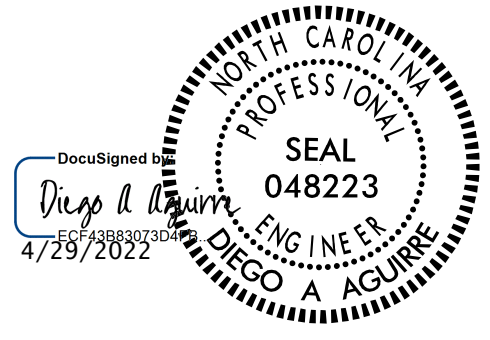
FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
 IREDELL COUNTY  
 BRIDGE NO. 480072



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
JOINT DETAILS					
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DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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# AS-BUILT REPAIR QUANTITY TABLE

	ESTIMATE	ACTUAL
INCIDENTAL MILLING	311 SY	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	26 TON	
ASPHALT BINDER FOR PLANT MIX	1.6 TON	
CLASS II SURFACE PREPARATION	6.9 SY	

## NOTES:

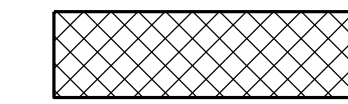
INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVEMENT TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1/2" DEPTH OF NEW ASPHALT PAVEMENT. NEW ASPHALT PAVEMENT SHALL BE OF THICKNESS NECESSARY TO PROVIDE A SMOOTH TRANSITION BETWEEN THE ROADWAY AND THE BRIDGE DECK. THE NEW ASPHALT PAVEMENT THICKNESS MAY EXCEED 1/2" DUE TO SETTLEMENT OF THE EXISTING APPROACH.

FOR NEW ASPHALT PLACEMENT, SEE STANDARD SPECIFICATIONS.

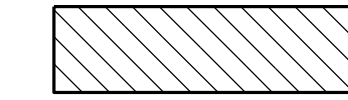
GRADE MAY BE ADJUSTED BY THE ENGINEER TO ENSURE PROPER TIE-IN AT THE END BENTS.

**C1** PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 2" IN DEPTH.

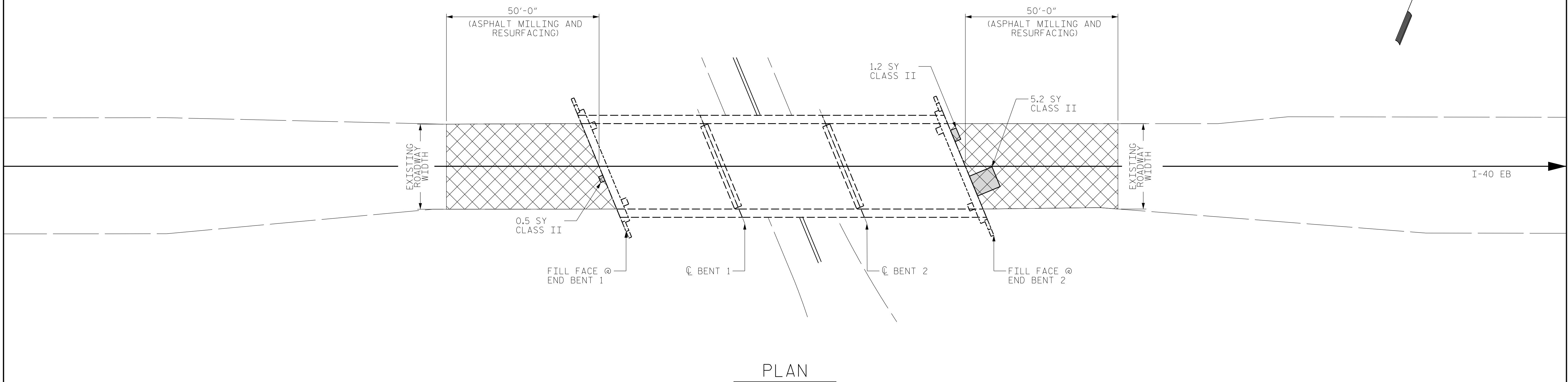
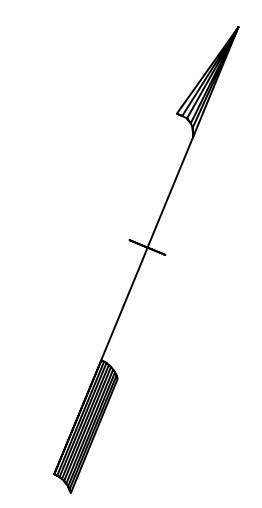
INCIDENTAL MILLING



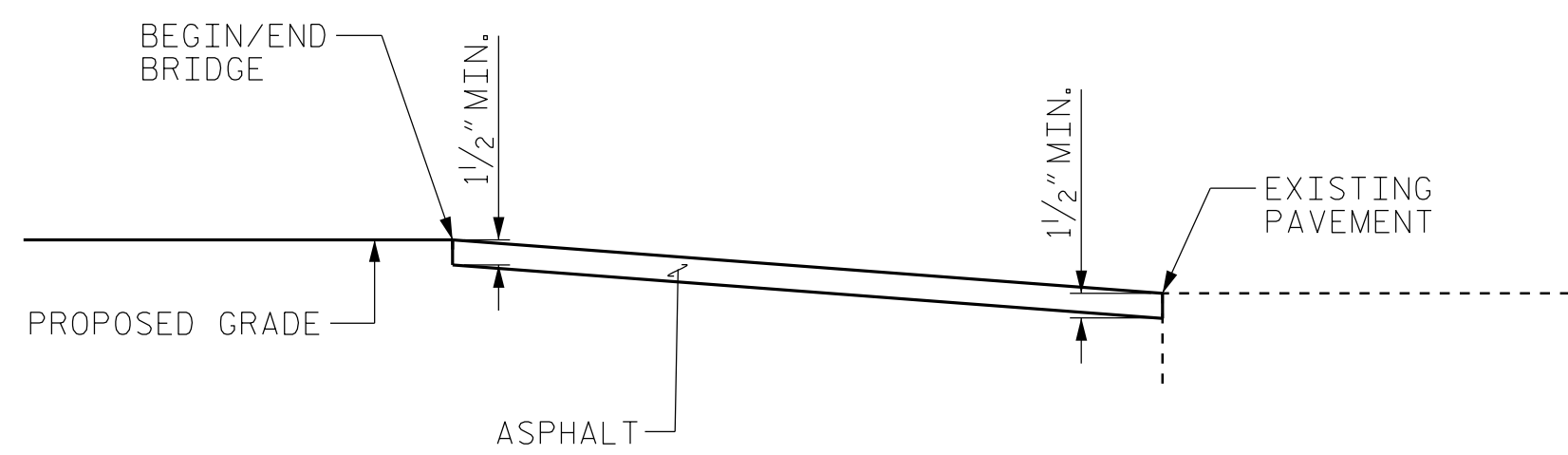
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C (C1)



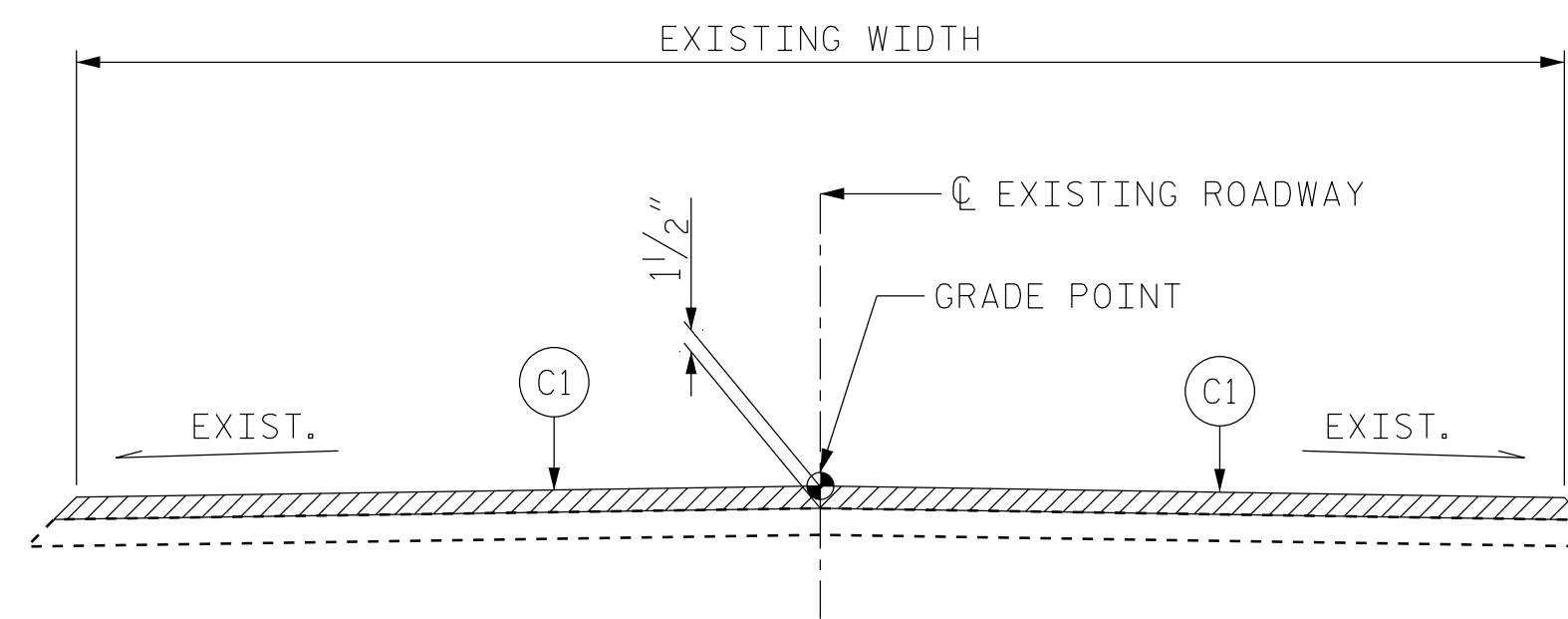
DEFECTS (SEE PLAN CALLOUT FOR DETAILS)



PLAN

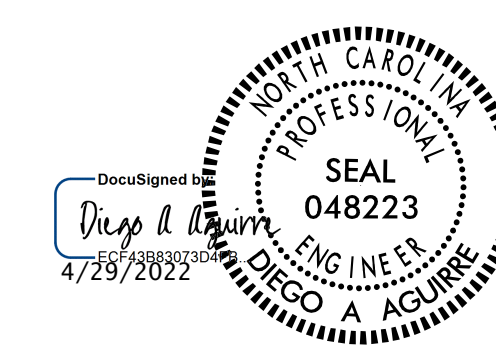


PAVEMENT KEY-IN DETAIL FOR BOTH END BENTS



ROADWAY SECTION  
BEGIN/END BRIDGE

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480072



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 APPROACH ROADWAY  
 MILLING AND RESURFACING

DRAWN BY : FIDEL L. FLORES DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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# AS-BUILT REPAIR QUANTITY TABLE

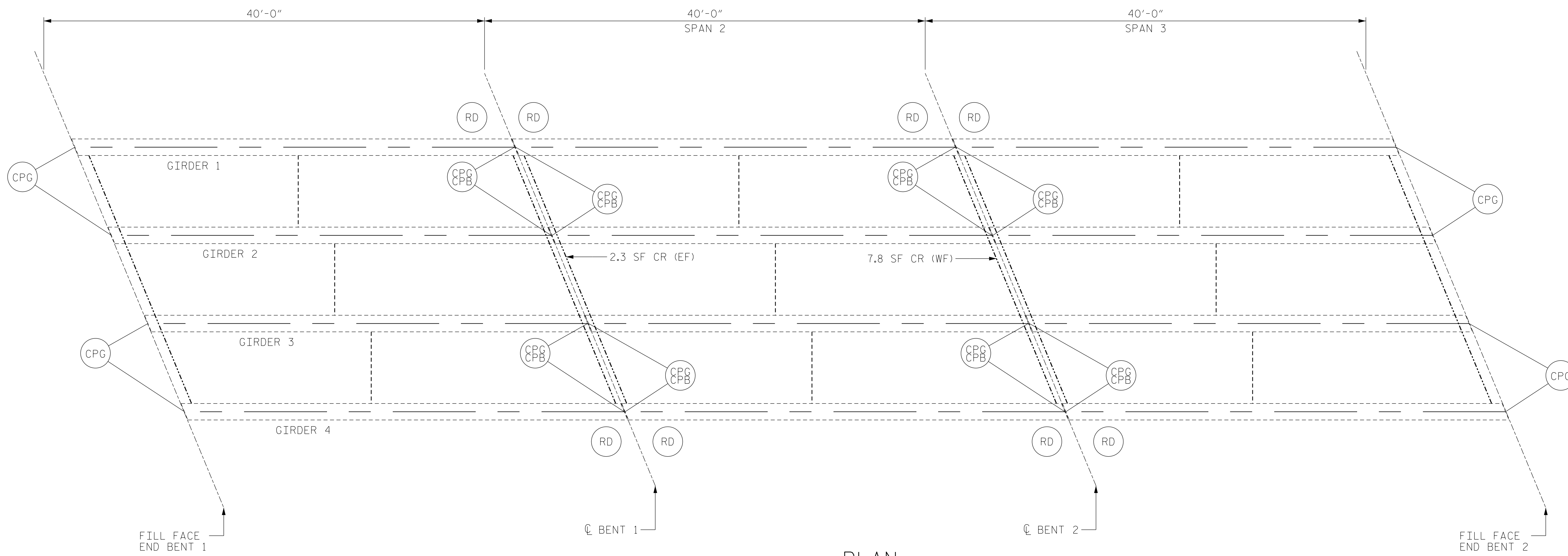
## SUPERSTRUCTURE REPAIRS

	SPAN 1		SPAN 2				SPAN 3					
	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME
CONCRETE REPAIR AREA (CR)	-- SF	-- CF			10.1 SF	3.4 CF			-- SF	-- CF		
CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
	4 EA				8 EA				4 EA			

### LEGEND:

-  CLEAN AND PAINT GIRDER ENDS (5 LF)
-  CLEAN AND PAINT BEARING
-  REMOVE END DIAPHRAGM AT OVERHANG (SEE DETAIL "RD")
- CR CONCRETE REPAIR AREA

\* QUANTITIES FOR REMOVAL OF DIAPHRAGMS AT OVERHANGS (RD) ARE NOT INCLUDED AND SHALL BE INCIDENTAL TO THE PAY ITEM FOR "CONCRETE REPAIRS".



PLAN

### 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 TABLE ABOVE.

FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

PRIOR TO CLEANING AND PAINTING STEEL ELEMENTS, REMOVE EXTERIOR DIAPHRAGMS AND A PORTION OF THE INTERIOR DIAPHRAGMS SO AS TO ALLOW FOR CLEANING OF EXISTING STEEL ELEMENTS PRIOR TO PAINTING. SEE DETAILS "RD" AND "RRD".

AFTER THE REMOVAL OF EXTERIOR END DIAPHRAGMS, CUT ANY EXPOSED REBAR FLUSH WITH THE DECK. COAT THE REMAINING EXPOSED REBAR WITH EPOXY. EPOXY WILL BE INCIDENTAL TO THE PAY ITEM FOR "CONCRETE REPAIRS".

FOR DETAILS OF CLEANING AND PAINTING GIRDER ENDS (CPG), REMOVE END DIAPHRAGMS AT OVERHANG (RD), AND REMOVE AND REPAIR DIAPHRAGM ENDS (RRD), SEE "MISCELLANEOUS REPAIRS" SHEET.

FOR CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA, SEE SPECIAL PROVISIONS.

FOR ZONE PAINTING OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480072



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

## SUPERSTRUCTURE REPAIRS

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	15.7	5.4		
COLUMN/PILE	-	-		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	9.0			
COLUMN/PILE				

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

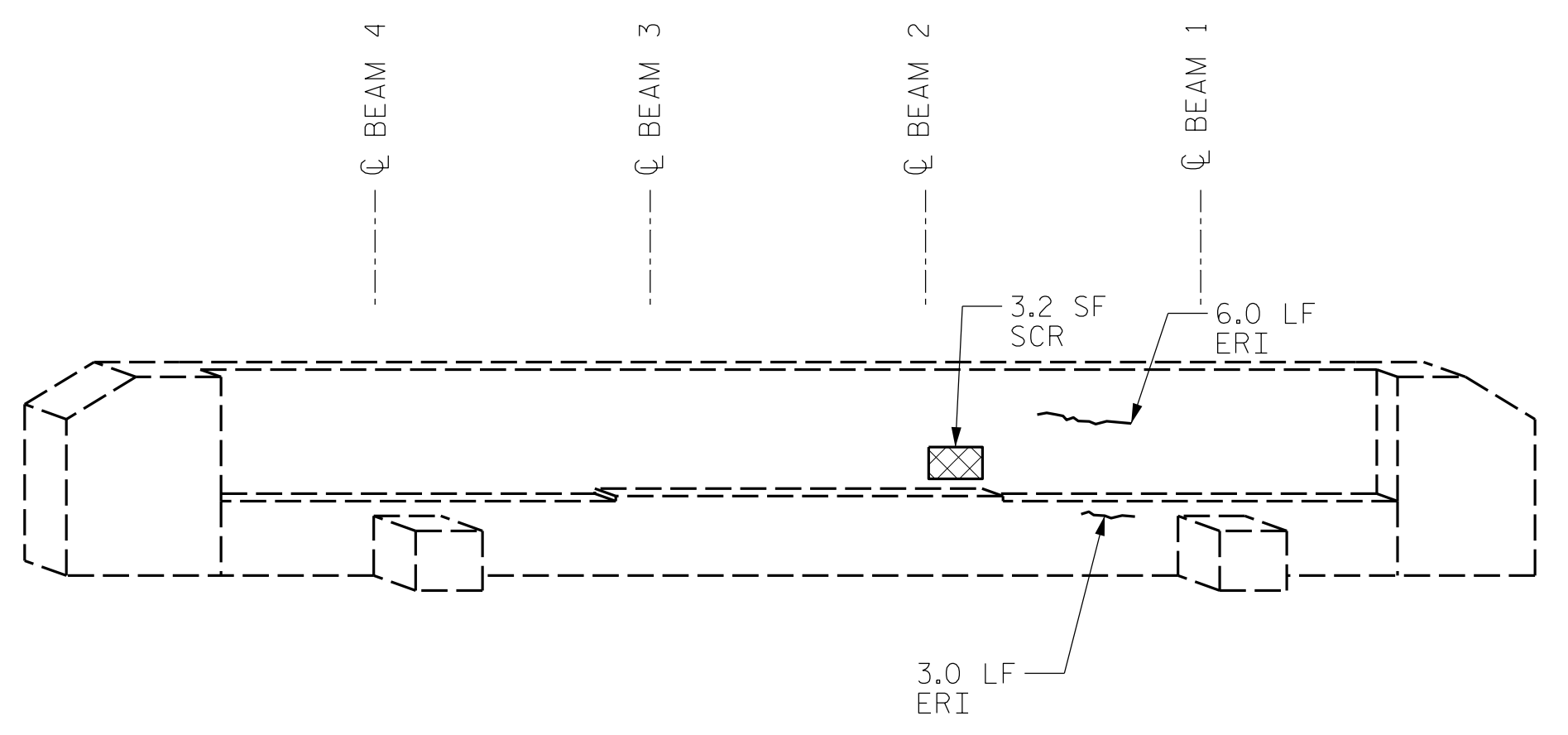
CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS  $\geq 1/16"$  AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

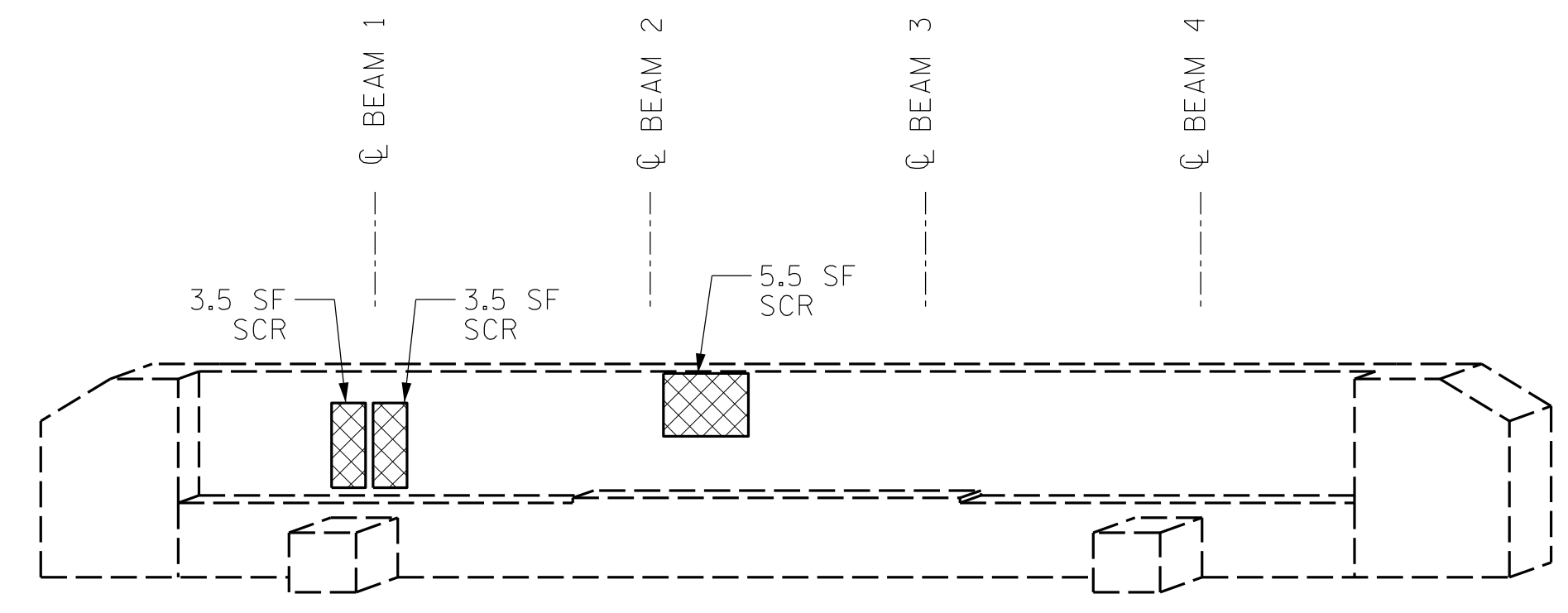
FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.



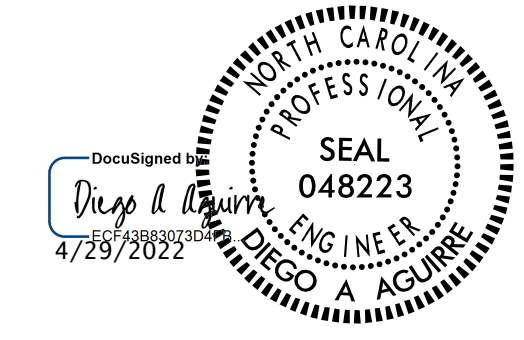
END BENT 1  
(EAST FACE)



END BENT 2  
(WEST FACE)

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480072

SHEET 1 OF 3



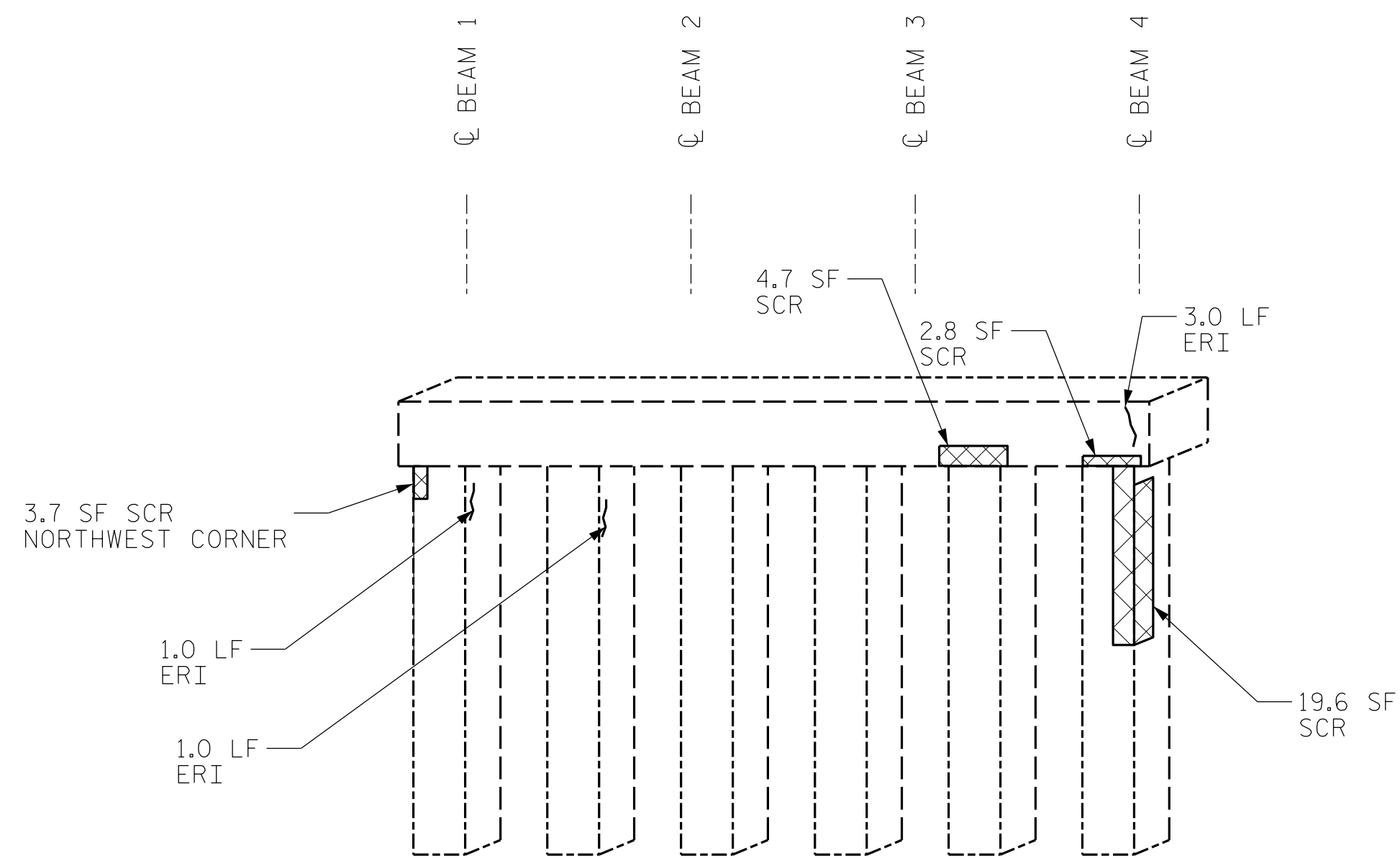
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 END BENTS 1 & 2



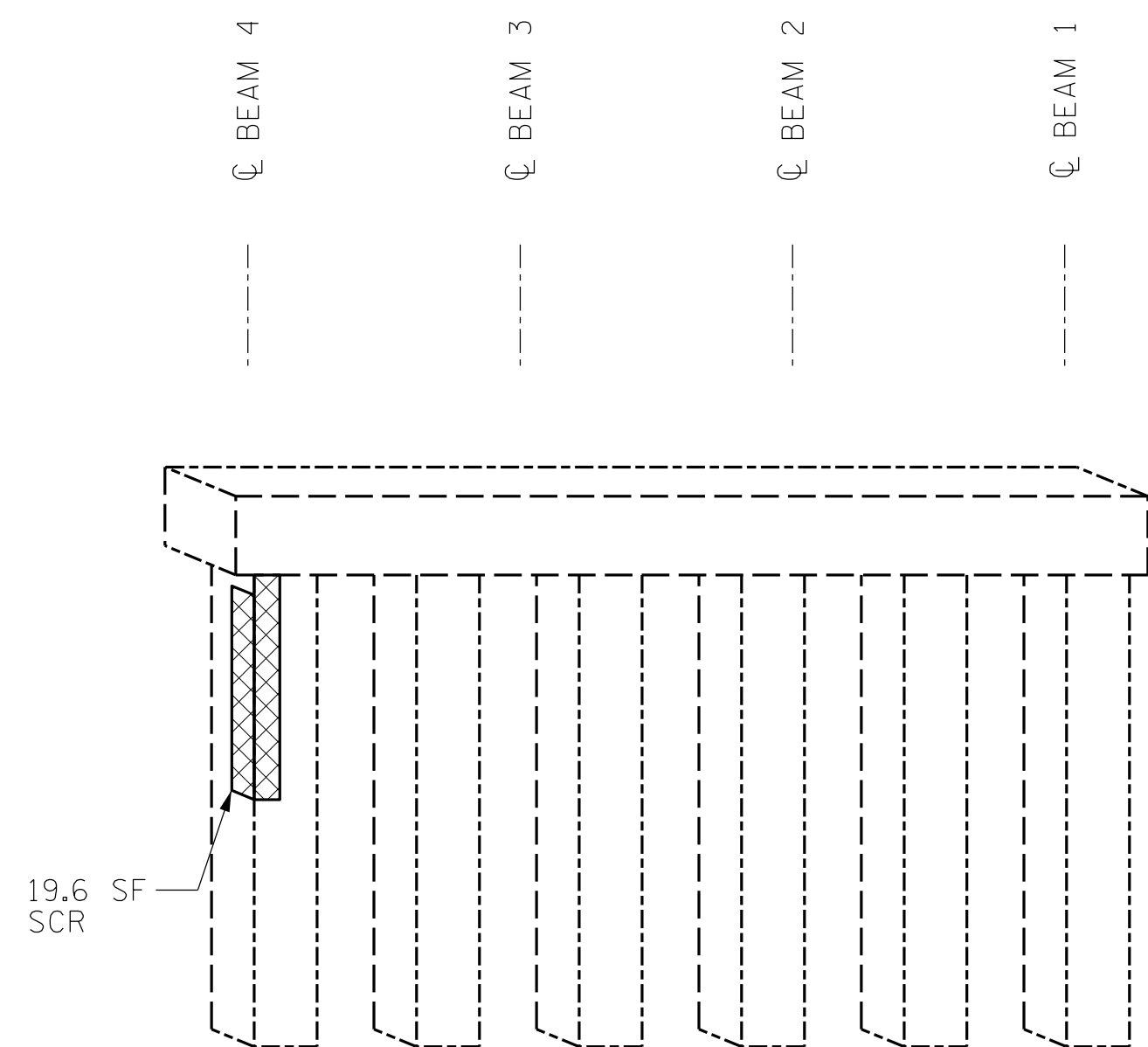
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S11-8
2			4			TOTAL SHEETS 10



BENT 1  
(WEST FACE)



BENT 1  
(EAST FACE)

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP/BACKWALL	7.5	2.6	
COLUMN/PILE	42.9	15.1		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP	-	-	
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
	CAP/BACKWALL	3.0		
COLUMN/PILE	2.0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS  $\geq 1/16"$  AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480072

SHEET 2 OF 3



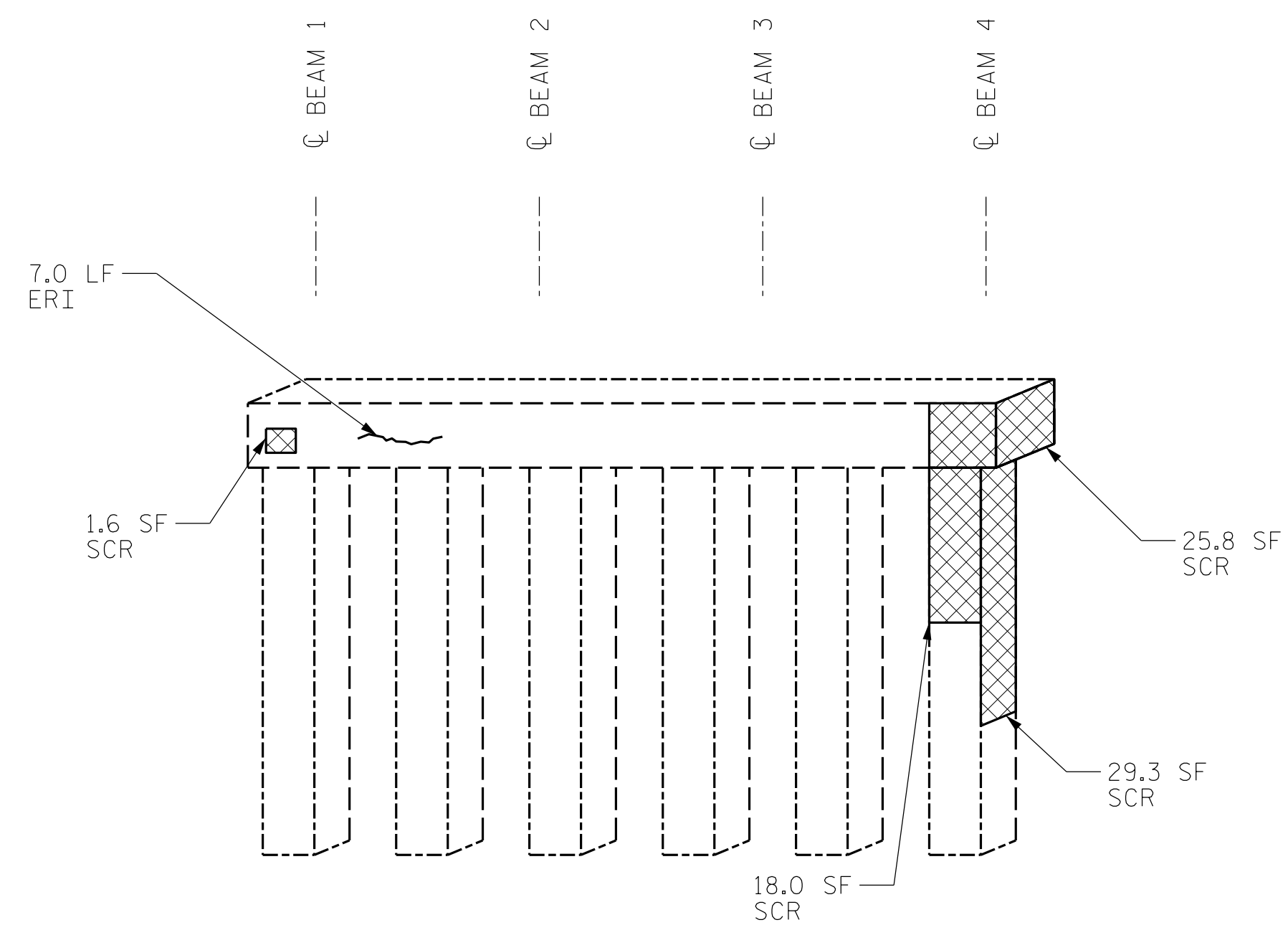
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 BENT 1

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

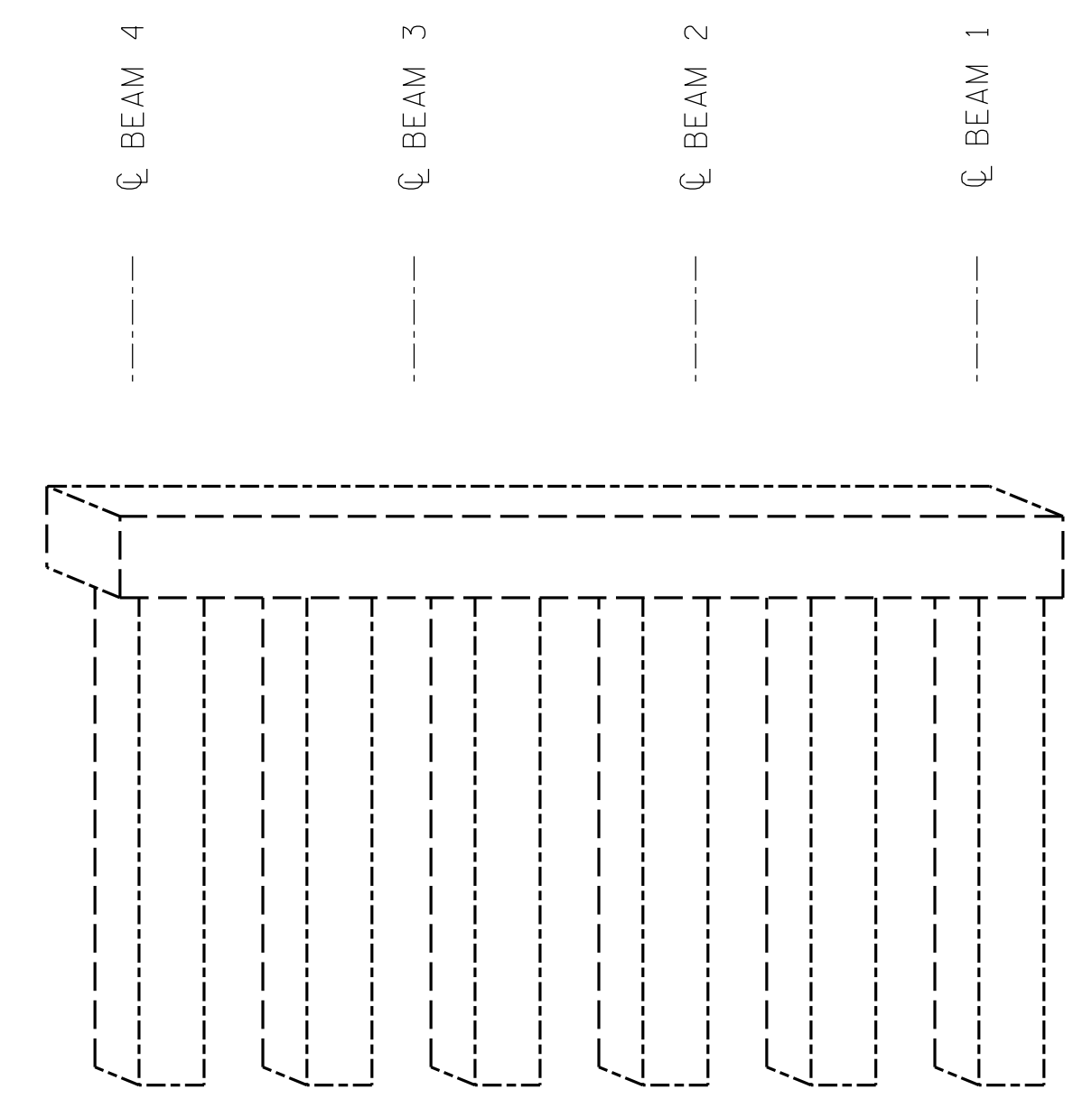
4/21/2022  
 I5915B\_SMU\_SBR01.480072.dgn  
 daquirre

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 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S11-9
2			4			TOTAL SHEETS 10



BENT 2  
(WEST FACE)



BENT 2  
(EAST FACE)

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP/BACKWALL	27.4	9.2	
COLUMN/PILE	47.3	15.8		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP	-	-	
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	7.0			
COLUMN/PILE	-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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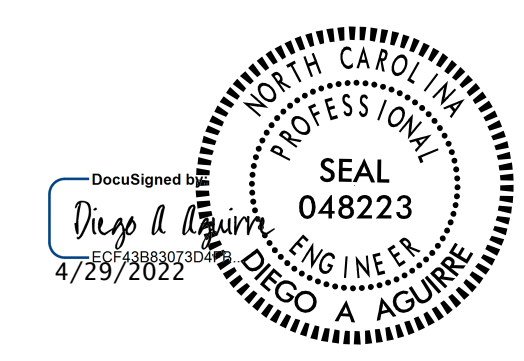
FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
BRIDGE NO. 480072

SHEET 3 OF 3



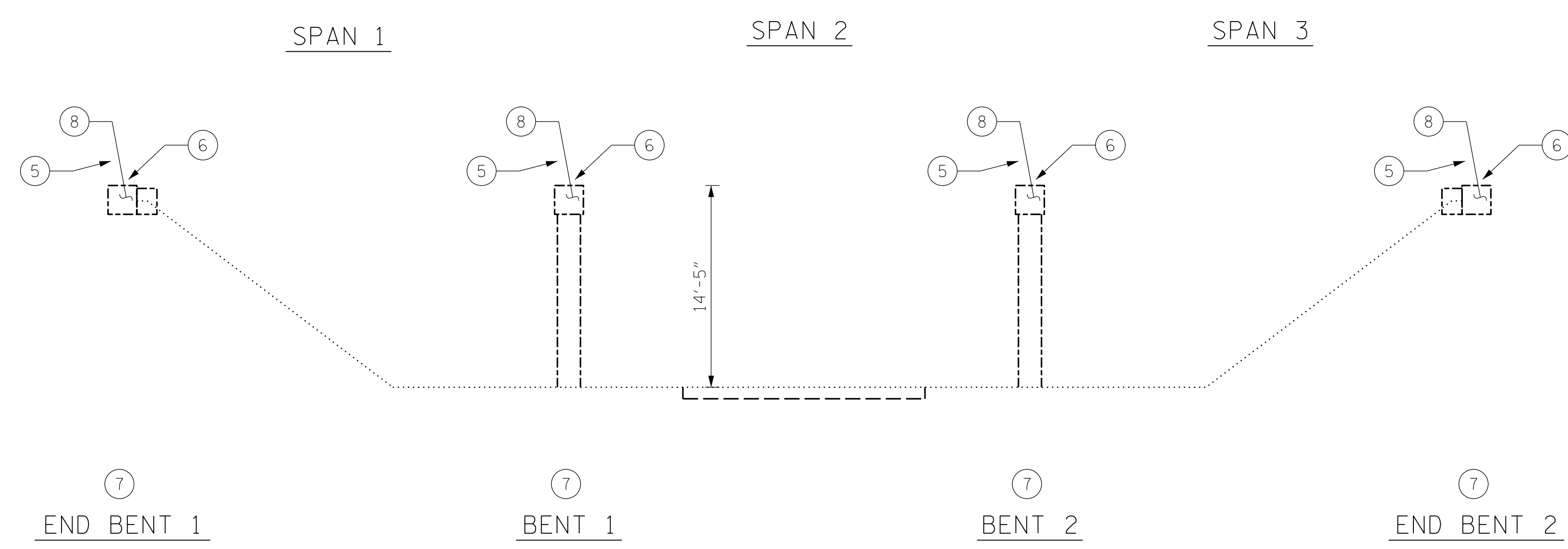
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**SUBSTRUCTURE REPAIRS**  
BENT 2

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

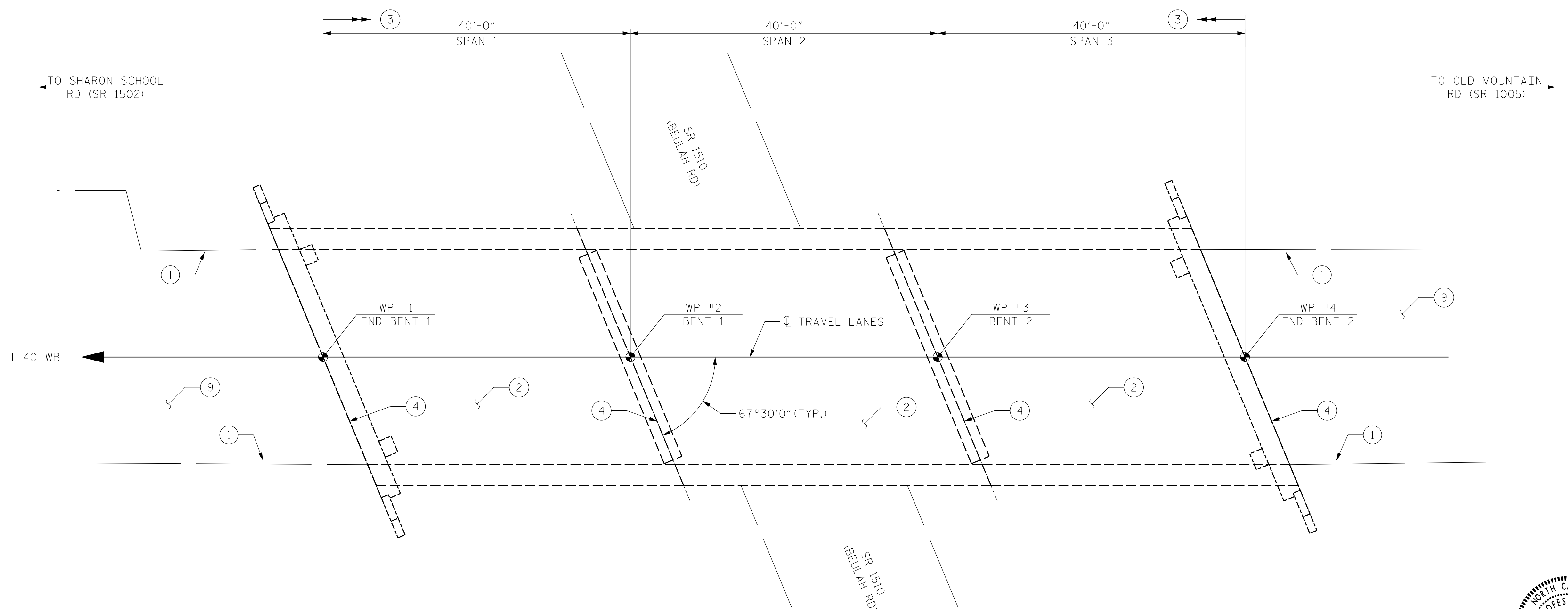
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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





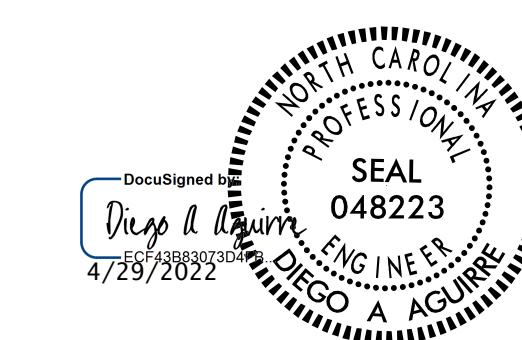
- SCOPE LEGEND:**
- ① CLEAR SHOULDERS OF DEBRIS AND VEGETATION
  - ② CONCRETE DECK REPAIRS
  - ③ LATEX MODIFIED CONCRETE OVERLAY - VERY EARLY STRENGTH
  - ④ JOINT REPAIR/REPLACEMENT
  - ⑤ SUPERSTRUCTURE CONCRETE REPAIRS
  - ⑥ PAINT EXISTING STEEL GIRDER ENDS AND BEARINGS
  - ⑦ SUBSTRUCTURE CONCRETE REPAIRS
  - ⑧ SUBSTRUCTURE EPOXY RESIN INJECTION
  - ⑨ APPROACH ROADWAY MILLING AND RESURFACING



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

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

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480073



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR BRIDGE ON I-40 WB  
 OVER SR 1510

**NOTES:**

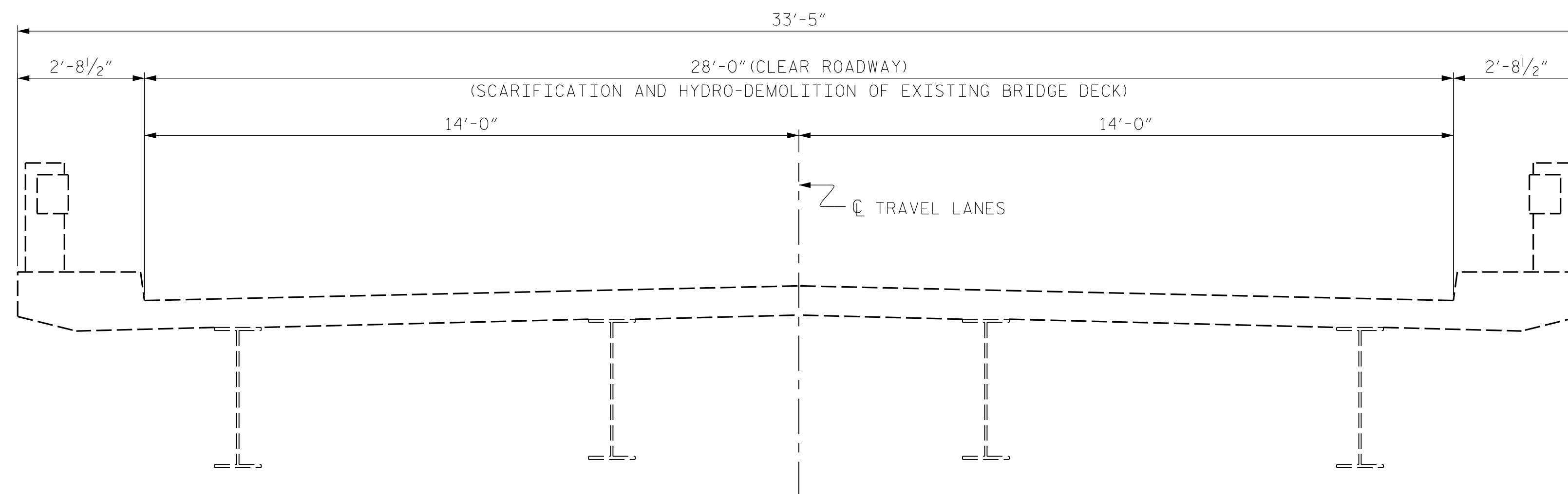
GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE MOST UP TO DATE ROUTINE INSPECTION REPORT DATED 09/26/2021.

DRAWN BY : FIDEL L. FLORES DATE : 01/2022  
 CHECKED BY : DIEGO A. AGUIRRE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

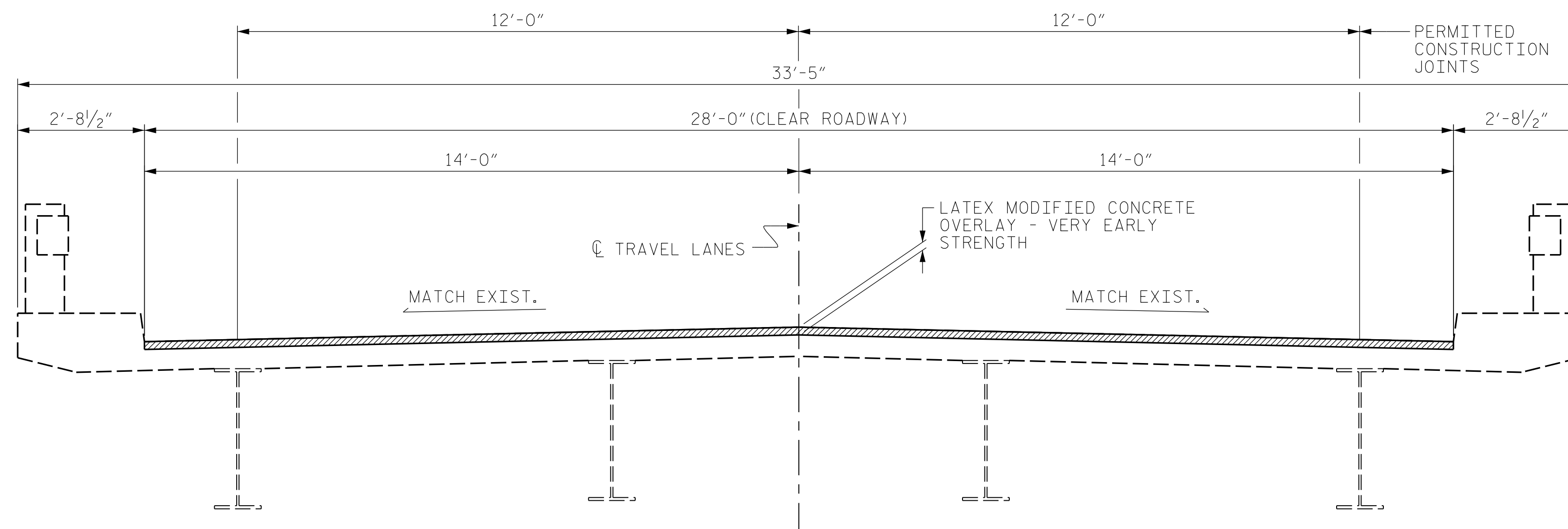
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

**KCA**  
**KISINGER CAMPO & ASSOCIATES**  
 301 FAYETTEVILLE ST., SUITE 1500  
 RALEIGH, NC 27601 (919) 882-7839  
 NC FIRM LICENSE: C-1506

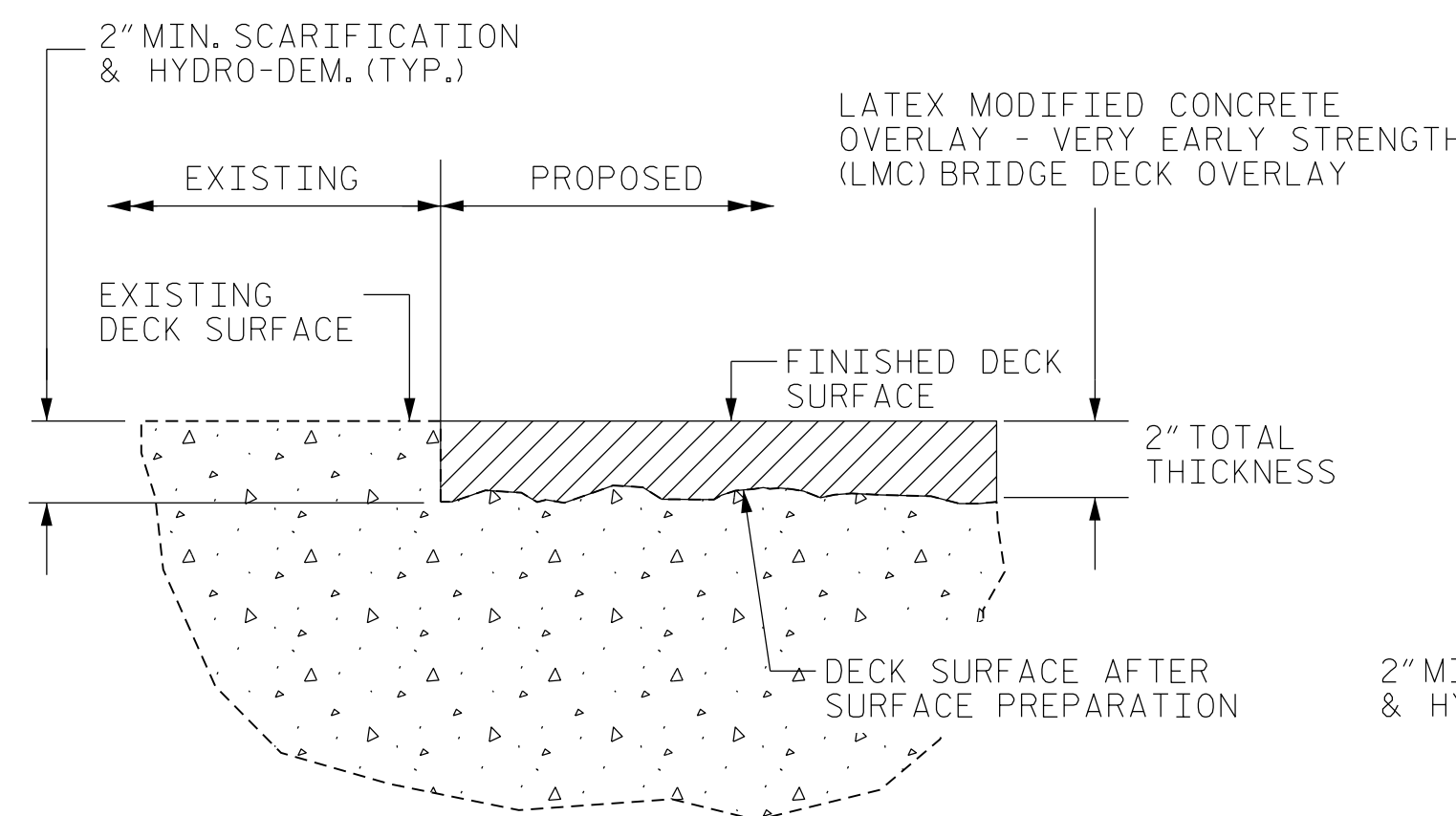
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NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S12-1
2			4			TOTAL SHEETS 10



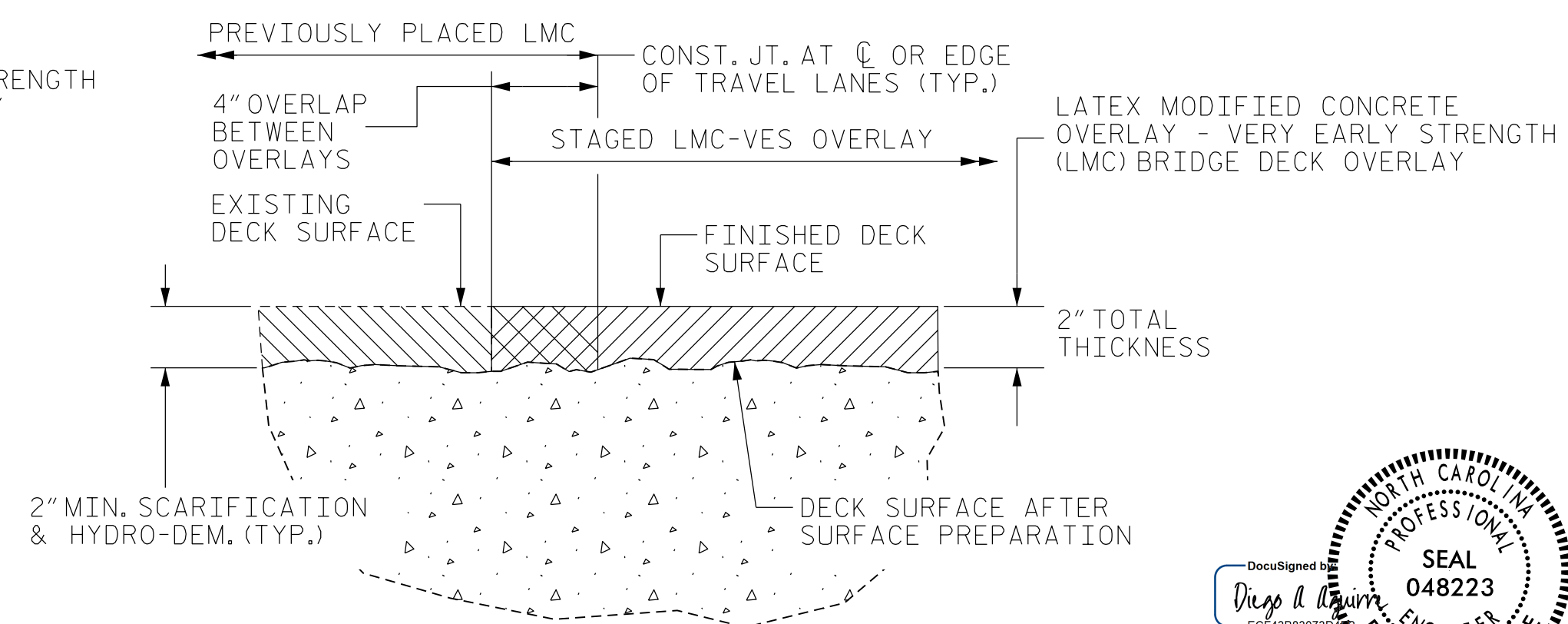
EXISTING



PROPOSED



DETAIL FOR LMC OVERLAY



DETAIL FOR STAGED LMC OVERLAY

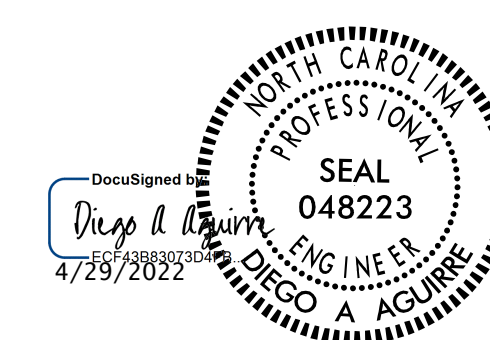
NOTES:

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

SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF LATEX MODIFIED CONCRETE OVERLAY - VERY EARLY STRENGTH (LMC) SYSTEM AND SURFACE PREPARATION.

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

4/21/2022  
I5915B.SMU.TS01.480073.dgn  
daguirre



PROJECT NO. I-5915B  
IREDELL COUNTY  
BRIDGE NO. 480073

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

TYPICAL SECTION

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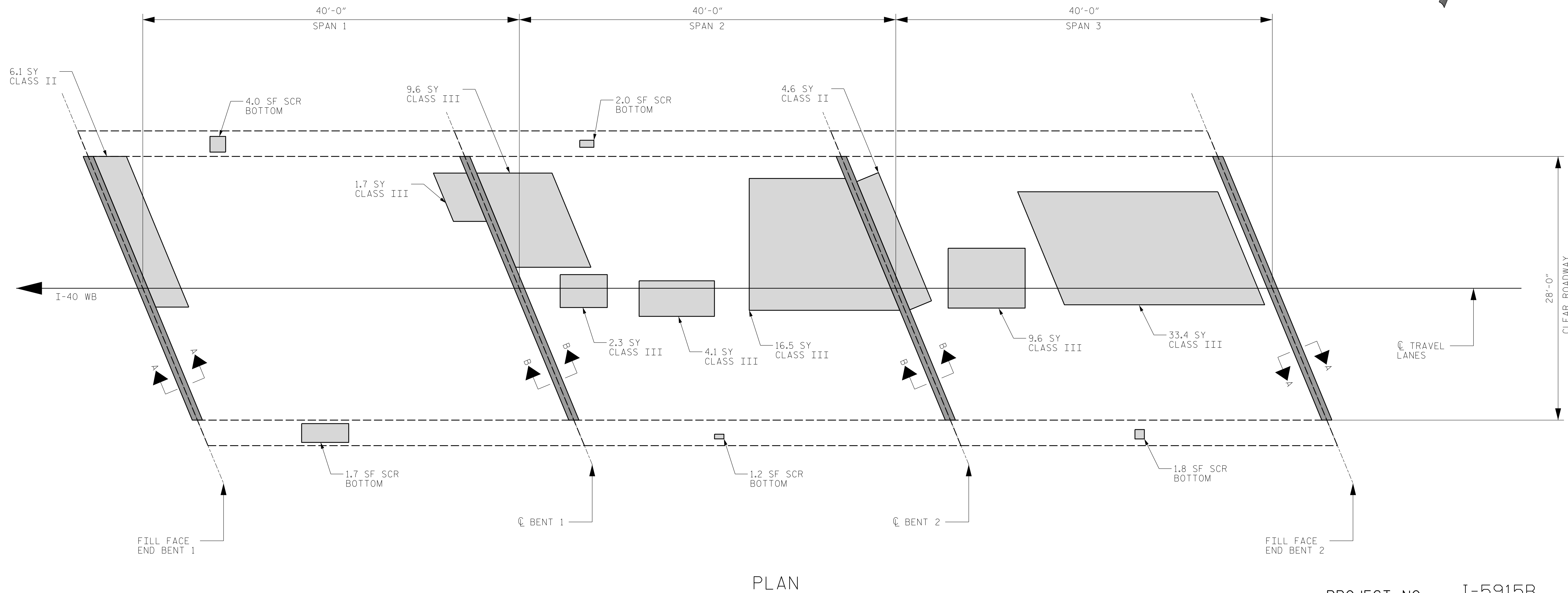
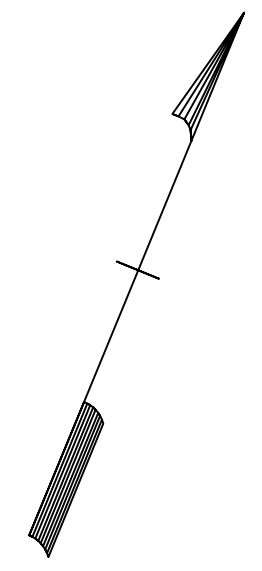
**KCA**  
KISINGER CAMPO & ASSOCIATES  
301 FAYETTEVILLE ST., SUITE 1500  
RALEIGH, NC 27601 (919) 882-7839  
NC FIRM LICENSE: C-1506

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			10
2			4			

# AS-BUILT REPAIR QUANTITY TABLE

## DECK REPAIRS

	SPAN 1		SPAN 2				SPAN 3					
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL				
CLASS II SURFACE PREPARATION	6.1 SY		-- SY		4.6 SY							
CLASS III SURFACE PREPARATION	1.7 SY		32.5 SY		43.0 SY							
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME				
SHOTCRETE REPAIR (SCR)	5.7 SF	2.0 CF			3.2 SF	1.1 CF			1.8 SF	0.6 CF		



PLAN

**NOTES:**

PRIOR TO SURFACE PREPARATION, REMOVE ALL LOOSE, DISINTEGRATED, UNSOUND OR CONTAMINATED CONCRETE FROM THE BRIDGE DECK.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

FOR SCARIFYING BRIDGE DECK, SEE OVERLAY SURFACE PREPARATION SPECIAL PROVISION.

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.

DEFECTS (SEE PLAN CALLOUT FOR DETAILS)

BRIDGE JOINT DEMOLITION

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

4/21/2022  
 I5915B.SMU.DSR01.480073.dgn  
 daguirre



PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480073

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS  
 DECK REPAIRS

DOCUMENT NOT CONSIDERED  
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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S12-3
2			4			TOTAL SHEETS 10



### AS-BUILT REPAIR QUANTITY TABLE

	SPAN 1		SPAN 2		SPAN 3	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	125 SY		125 SY		125 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	125 SY		125 SY		125 SY	
LATEX OVERLAY - VERY EARLY STRENGTH	7 CY		7 CY		7 CY	
PLACING AND FINISHING LMC OVERLAY	125 SY		125 SY		125 SY	
GROOVING BRIDGE FLOORS	1120 SF		1120 SF		1120 SF	

**NOTES:**

BRIDGE DECK GROOVING QUANTITY BASED ON LIMITS REQUIRED IN SECTION 420-14(B) OF STANDARD SPECIFICATIONS.

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

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

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

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

FOR PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH (LMC-VES), SEE LATEX MODIFIED CONCRETE-VERY EARLY CONCRETE SPECIAL PROVISIONS.

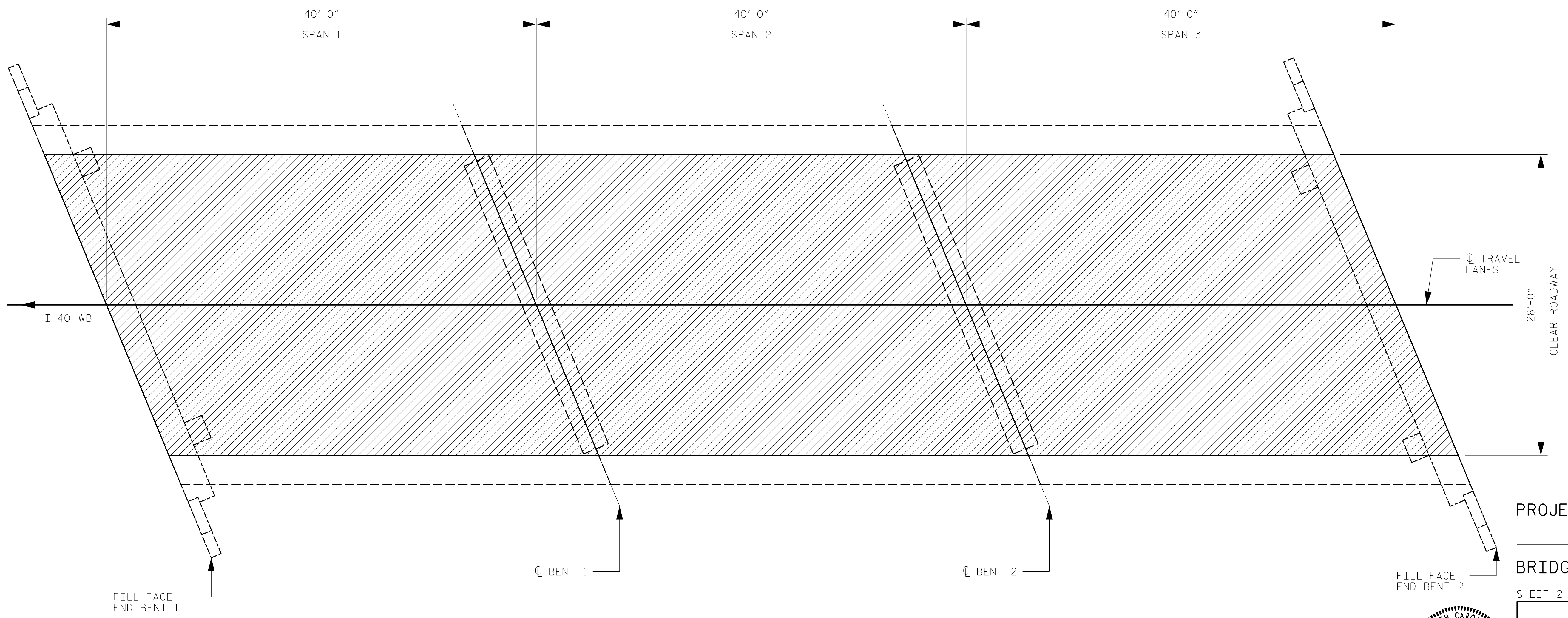
LONGITUDINAL CONSTRUCTION JOINTS SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

BRIDGE DECK SCARIFICATION, HYDRO-DEMOLITION, AND LMC-VES, LIMITS ARE THE FULL CLEAR ROADWAY WIDTH (INSIDE FACE OF EACH BRIDGE RAIL). CATION. CURRENT AVERAGE COVER IS EXPECTED TO BE FROM 0 TO 1 1/2" TO 2" BASED ON VISUAL INSPECTION.

WORK THIS SHEET WITH "JOINT DETAILS" SHEET.

WORK THIS SHEET WITH "TYPICAL SECTION" SHEET.

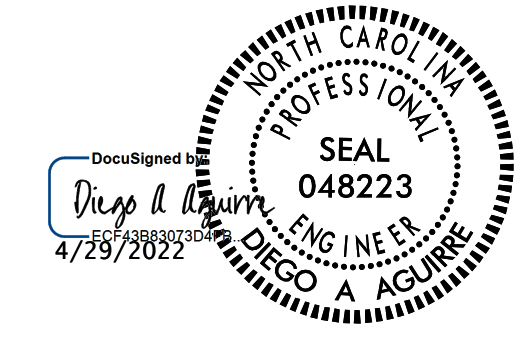
WORK THIS SHEET WITH "DECK REPAIR DETAILS" SHEET.



PLAN

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480073

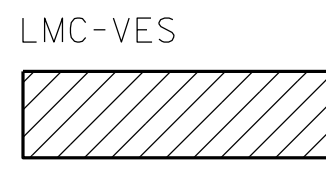
SHEET 2 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS  
 LMC OVERLAY

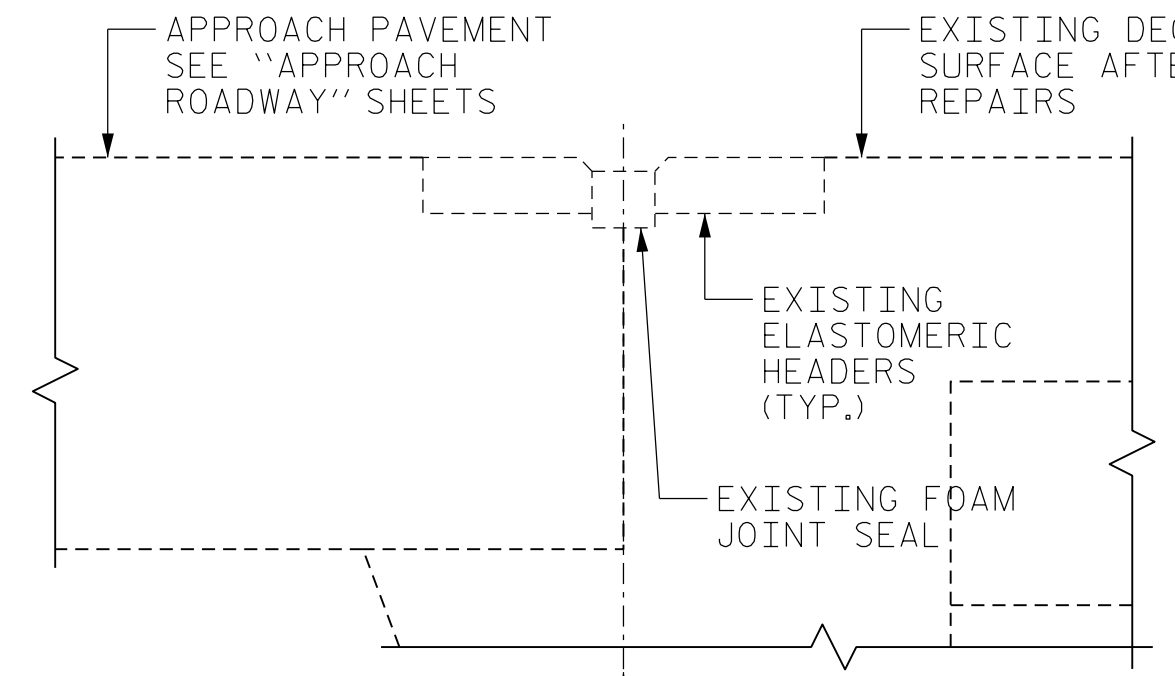
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022



DOCUMENT NOT CONSIDERED  
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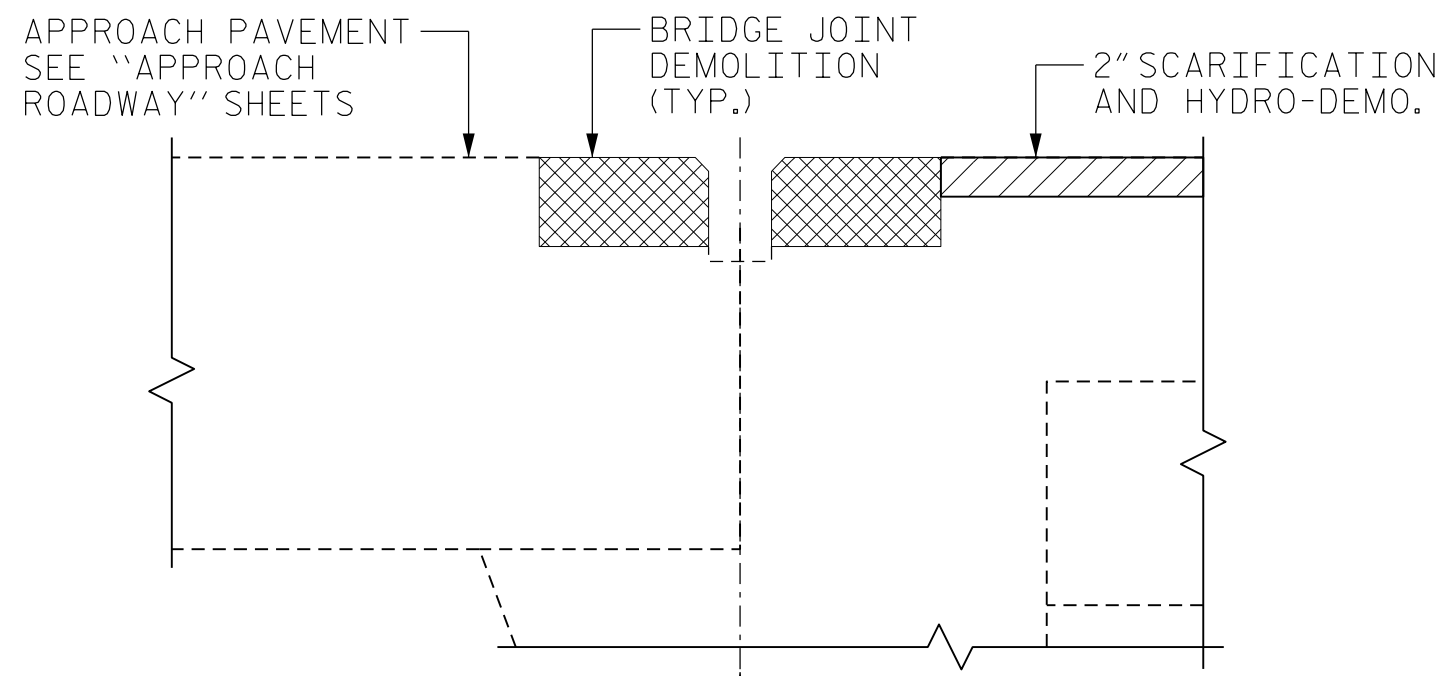


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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			10



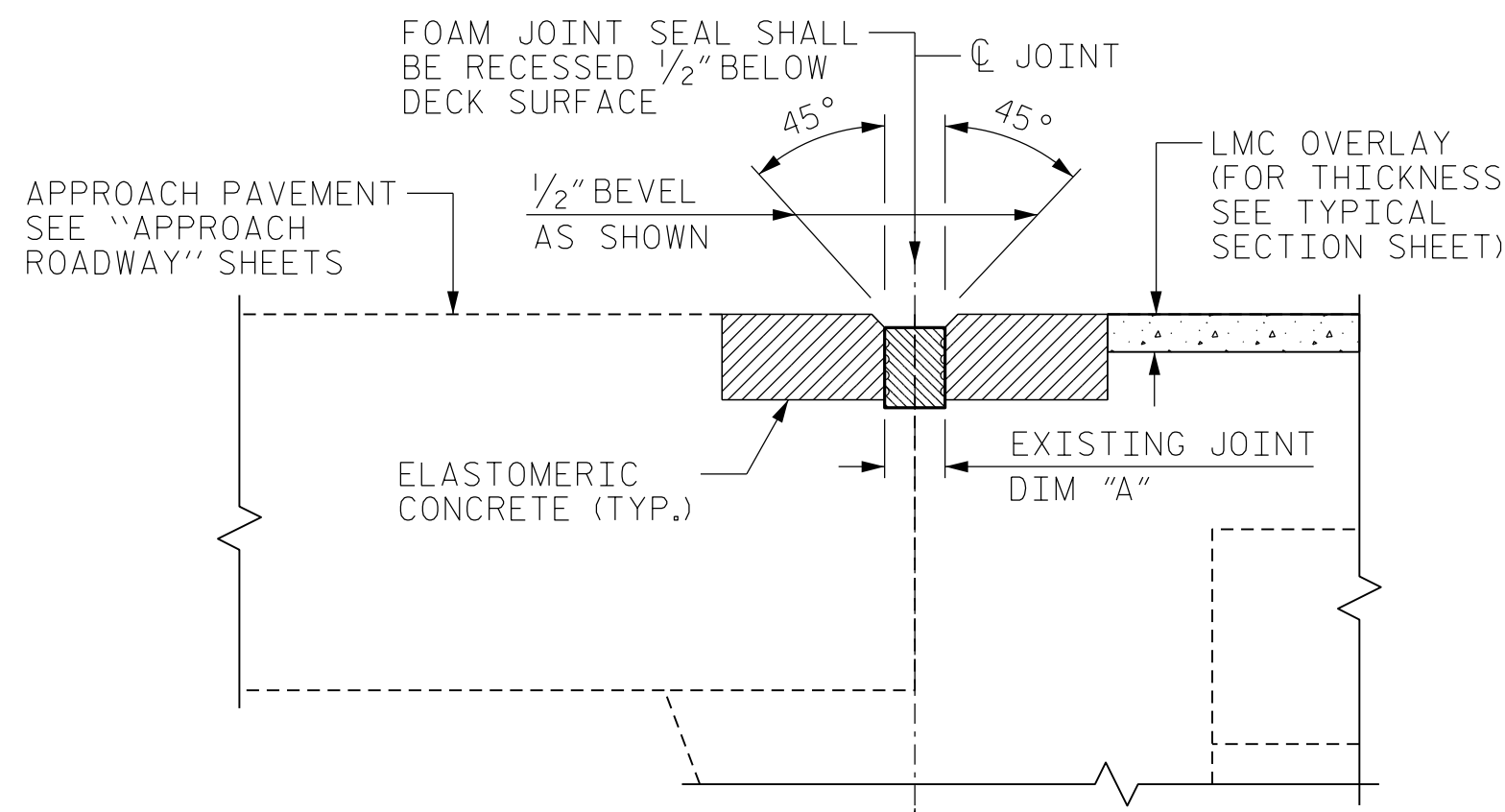
SECTION A-A

(EXISTING JOINT)



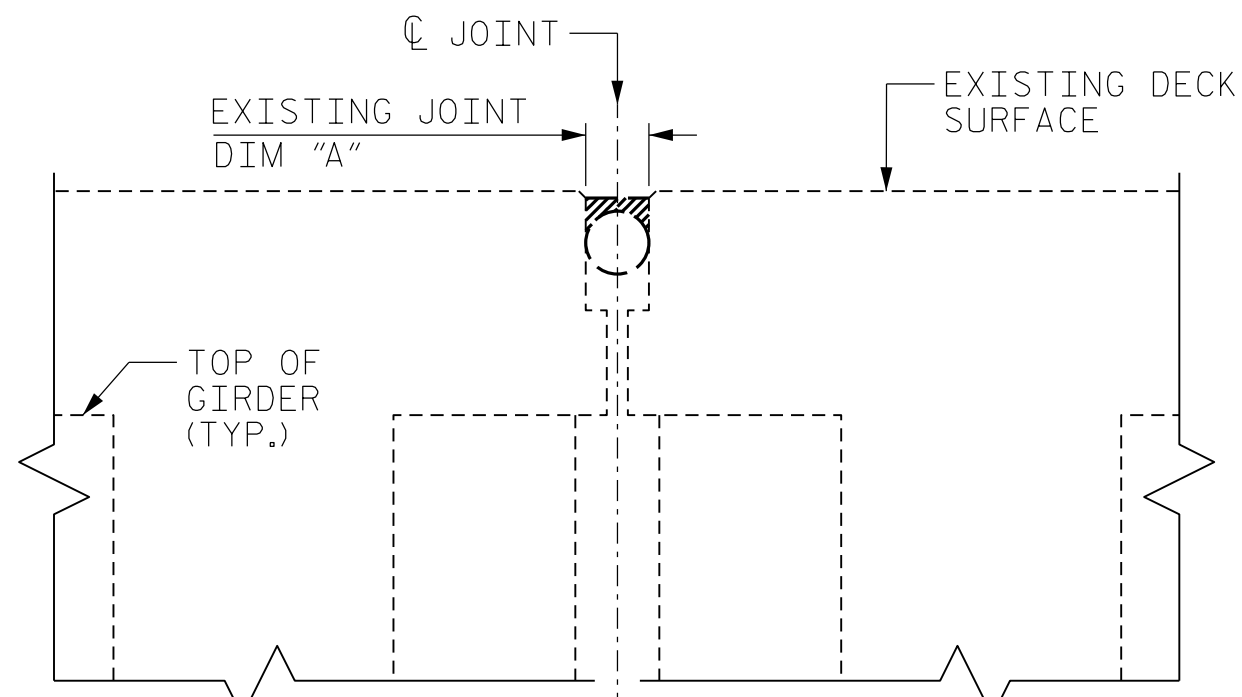
SECTION A-A

(DEMOLITION PREPARATION)



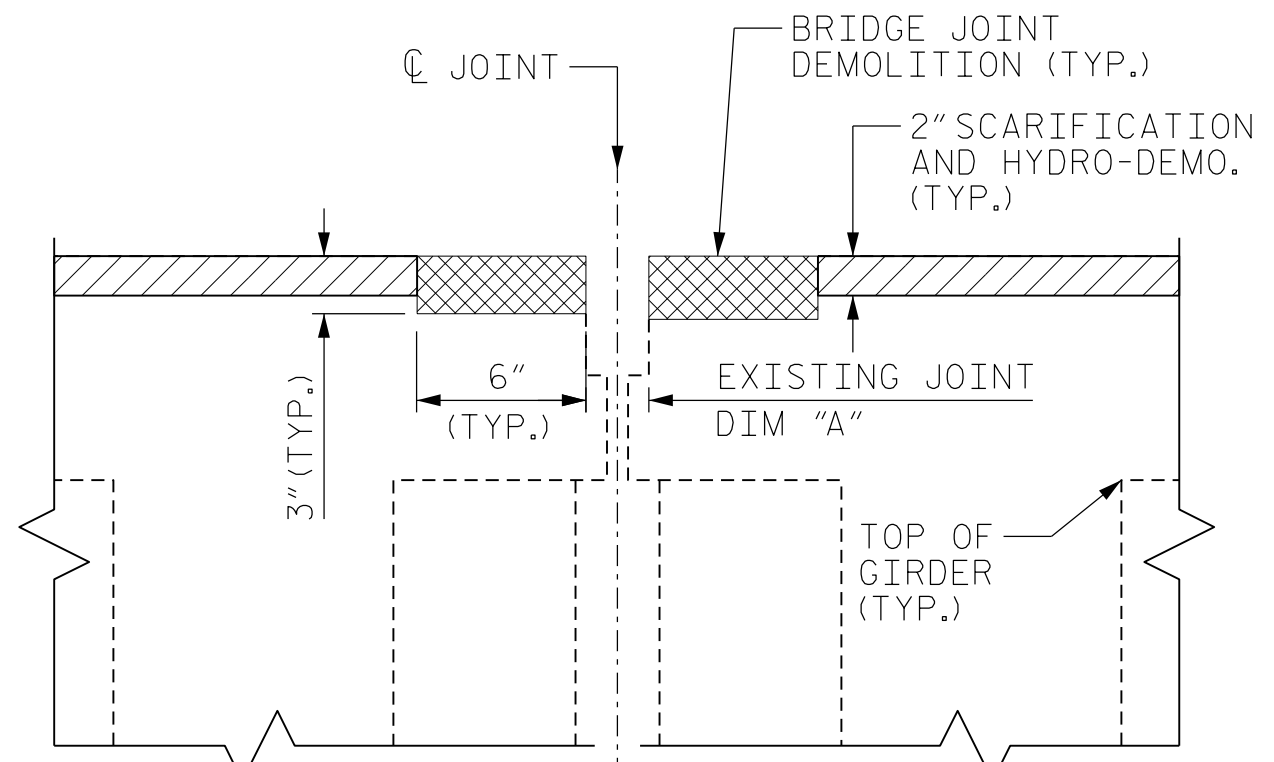
SECTION A-A

(PROPOSED FOAM JOINT SEAL)



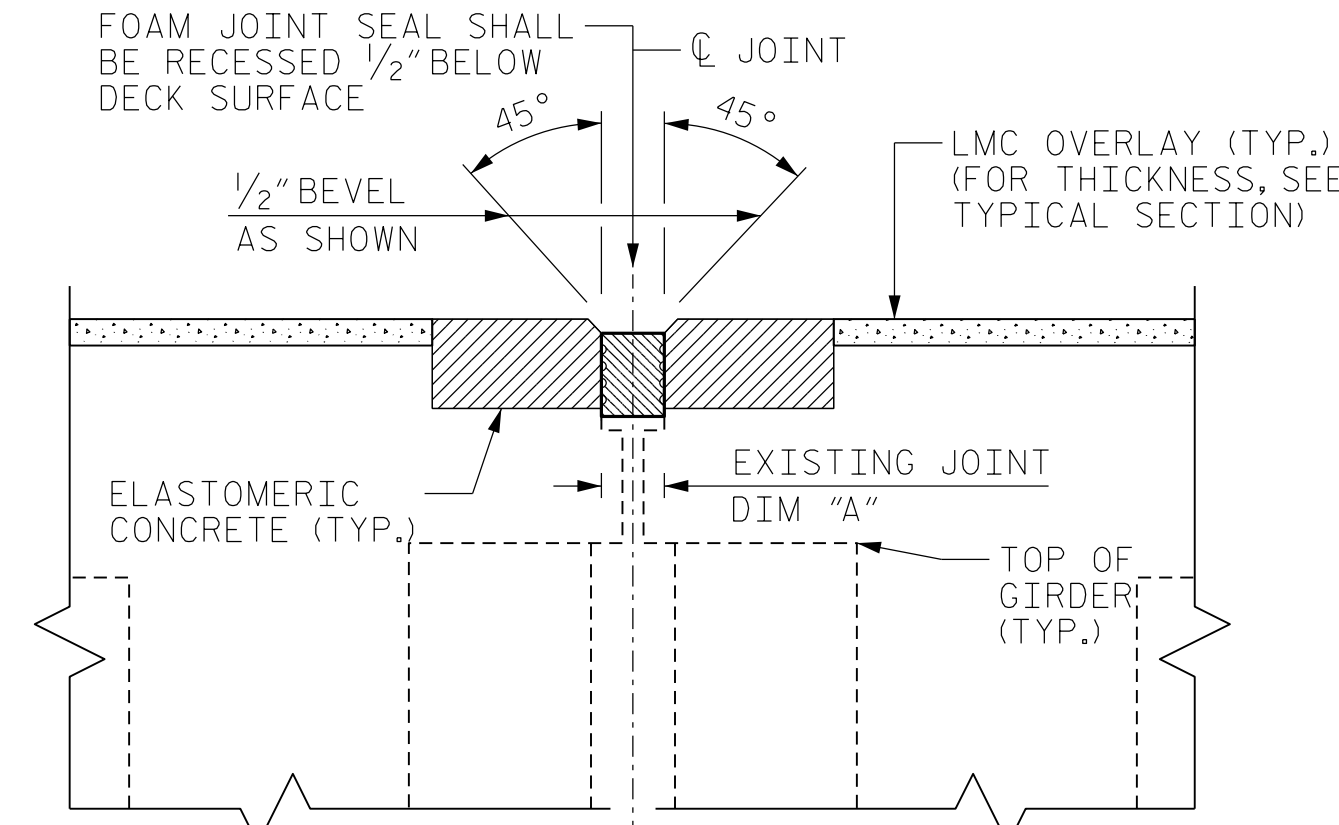
SECTION B-B

(EXISTING JOINT)



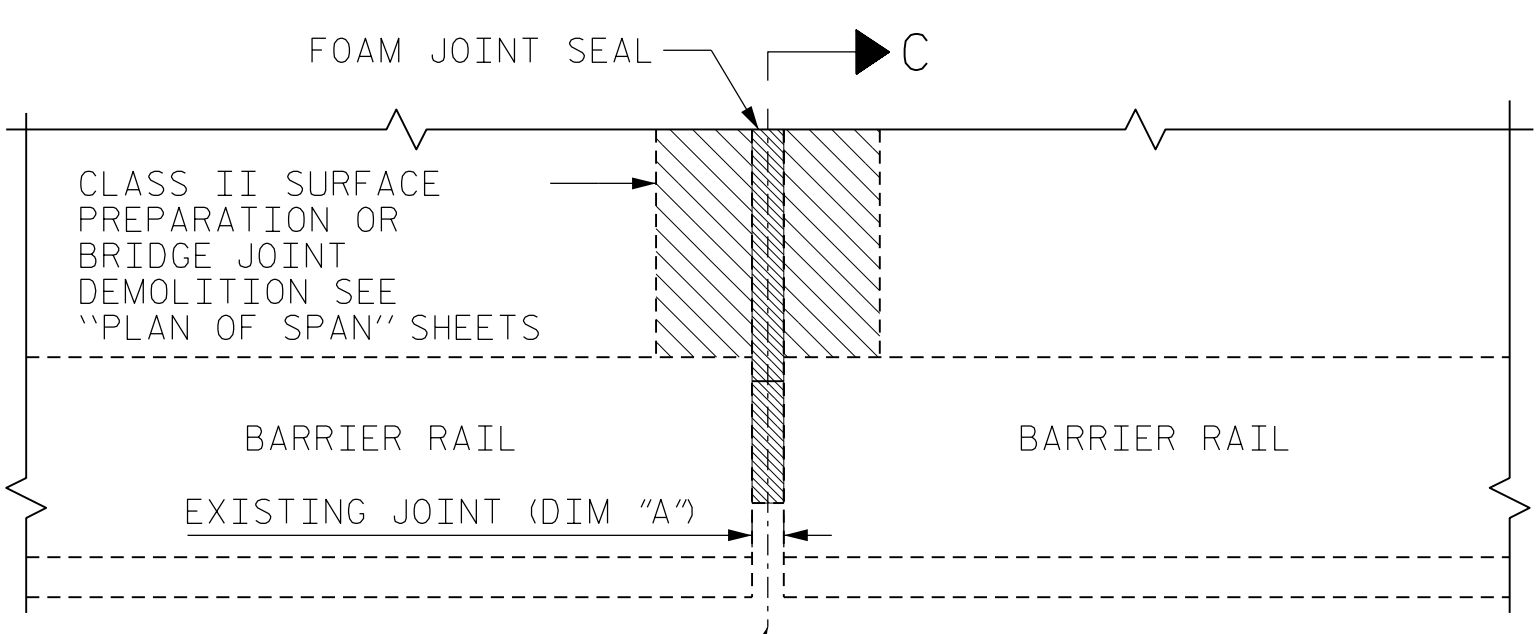
SECTION B-B

(DEMOLITION PREPARATION)



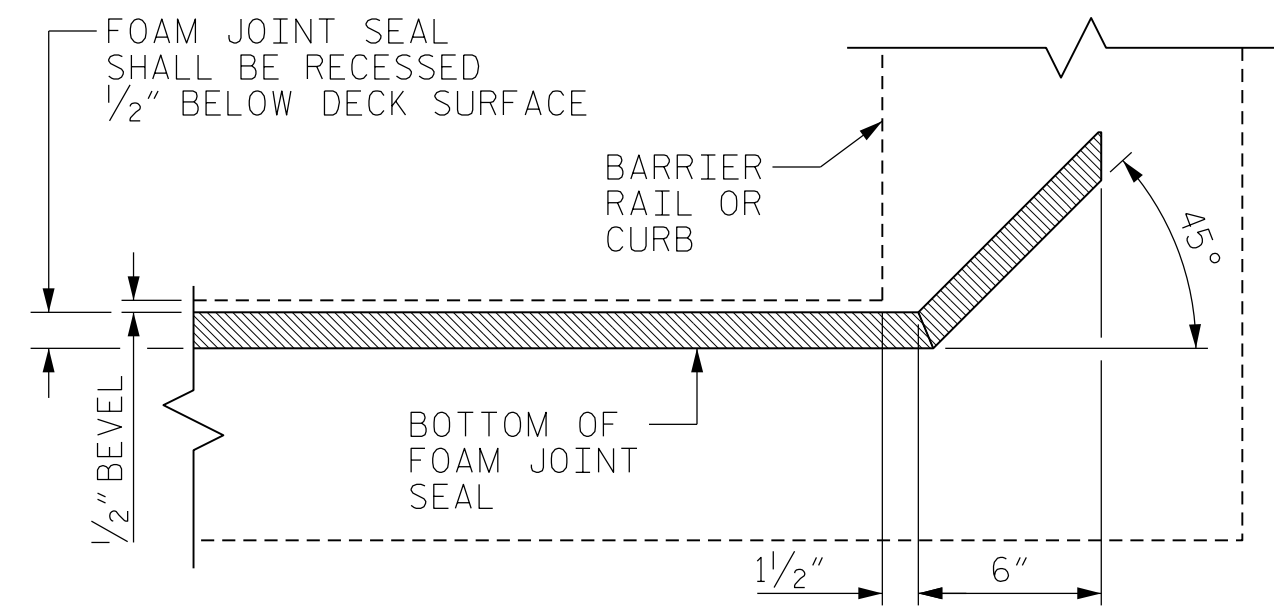
SECTION B-B

(PROPOSED FOAM JOINT SEAL)



PLAN AT BARRIER

(PROPOSED JOINT SEAL)



SECTION C-C

(PROPOSED JOINT SEAL)

BRIDGE JOINT DEMOLITION		
LOCATION	ESTIMATED (SQ.FT.)	ACTUAL (SQ.FT.)
END BENTS	60.7	
BENT 1	30.3	
BENT 2	30.3	

ELASTOMERIC CONCRETE FOR PRESERVATION		
LOCATION	ESTIMATED (CU.FT.)	ACTUAL (CU.FT.)
END BENTS	15.2	
BENT 1	7.6	
BENT 2	7.6	

PROPOSED JOINT QUANTITY		
	ESTIMATED (LIN.FT.)	ACTUAL (LIN.FT.)
FOAM JOINT SEALS FOR PRESERVATION	128.0	

TABLE 1	
Table Date 02-2022	
BENT/ JOINTS	DIM "A" @ 71°F
END BENT 1	2"
1	2"
2	2 1/2"
END BENT 2	2 1/2"

NOTES:

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF THE ACTUAL OPENING VARIES FROM THE OPENING INDICATED IN THE DETAIL BY MORE THAN 1/4", NOTIFY THE ENGINEER. REVISION OF THE JOINT SEAL SIZE MIGHT BE NECESSARY.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL FOR THE SIZE OF THE OPENING ON THE PLANS AND ACCOMMODATE THE MINIMUM EXPANSION SHOWN ON THE PLANS.

FOAM JOINTS SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL TAKE CARE DURING JOINT REPAIR OPERATIONS NOT TO DROP ANY MATERIAL THAT FALLS BELOW THE BRIDGE, WITHOUT PROTECTIVE DEVICES BELOW TO CATCH THE MATERIAL. ANY MATERIAL THAT FALLS BELOW THE BRIDGE SHALL BE CONTAINED, REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO EXTRA COST TO THE DEPARTMENT. IF THE ENGINEER DETERMINES THAT THE PROTECTIVE DEVICES ARE NOT ADEQUATE OR NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

QUANTITIES SHOWN IN THE ELASTOMERIC CONCRETE FOR PRESERVATION TABLE BASED ON THE MINIMUM JOINT DEMOLITION SHOWN.

FOR EXCAVATION BELOW THE BOTTOM OF THE PLANNED JOINT DECK DEMOLITION, CONCRETE FOR DECK REPAIRS SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT BOTTOM OF THE PROPOSED ELASTOMERIC CONCRETE FOR PRESERVATION HEADERS SHOWN.

IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, OR IF UNSOUND CONCRETE IS REMOVED WITHIN 2" OF THE WATERSTOP, THE ENTIRE CONCRETE DEPTH TO THE WATERSTOPS SHALL BE REMOVED. IF SUCH EXCAVATION EXTENDS MORE THAN 2" BELOW THE BOTTOM OF THE PLANNED ELASTOMERIC CONCRETE HEADER, AS SHOWN, APPROVED REPAIR CONCRETE SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT THE BOTTOM OF THE ELASTOMERIC CONCRETE.

DEMOLISH BRIDGE JOINT AREA SUCH THAT THE BOTTOM OF THE EXCAVATION SHALL BE REASONABLY FLAT AND LEVEL AND TO THE NECESSARY DEPTH, SUCH THAT ELASTOMERIC CONCRETE SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE.

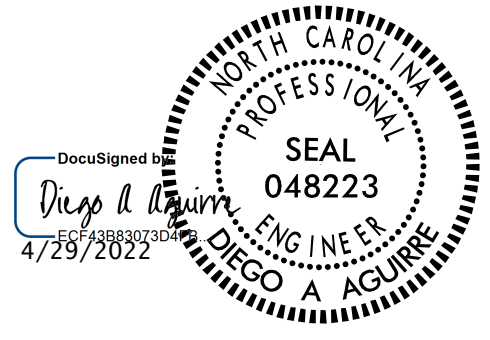
FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480073



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
JOINT DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.	
NO.	TOTAL SHEETS
S12-5	10

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



# AS-BUILT REPAIR QUANTITY TABLE

	ESTIMATE	ACTUAL
INCIDENTAL MILLING	331 SY	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	28 TON	
ASPHALT BINDER FOR PLANT MIX	1.7 TON	

## NOTES:

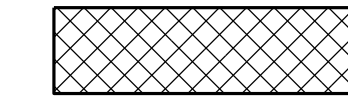
INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVEMENT TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1/2" DEPTH OF NEW ASPHALT PAVEMENT. NEW ASPHALT PAVEMENT SHALL BE OF THICKNESS NECESSARY TO PROVIDE A SMOOTH TRANSITION BETWEEN THE ROADWAY AND THE BRIDGE DECK. THE NEW ASPHALT PAVEMENT THICKNESS MAY EXCEED 1/2" DUE TO SETTLEMENT OF THE EXISTING APPROACH.

FOR NEW ASPHALT PLACEMENT, SEE STANDARD SPECIFICATIONS.

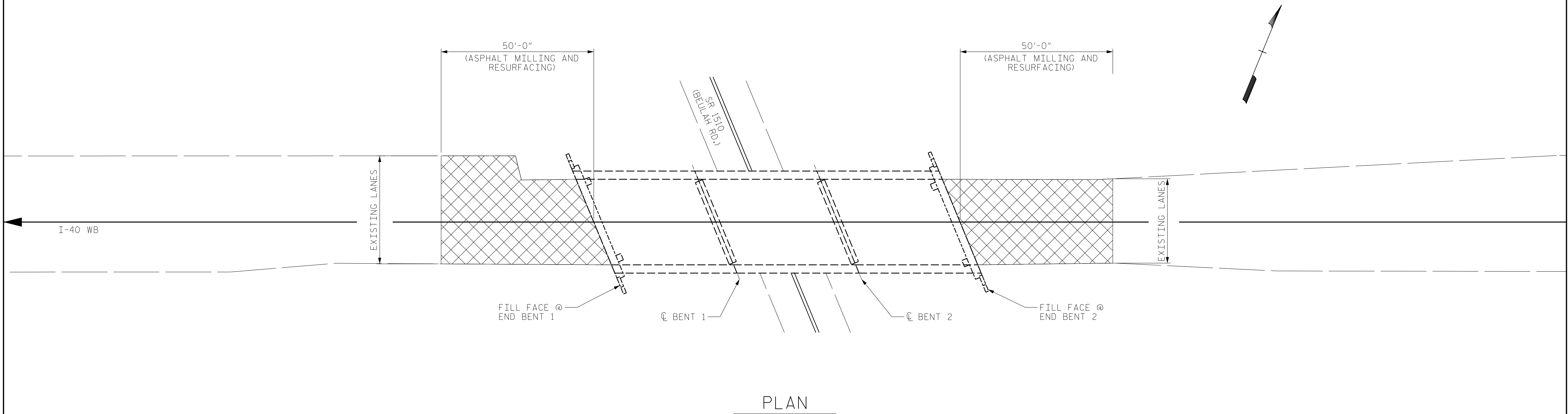
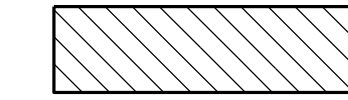
GRADE MAY BE ADJUSTED BY THE ENGINEER TO ENSURE PROPER TIE-IN AT THE END BENTS.

**C1** PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 2" IN DEPTH.

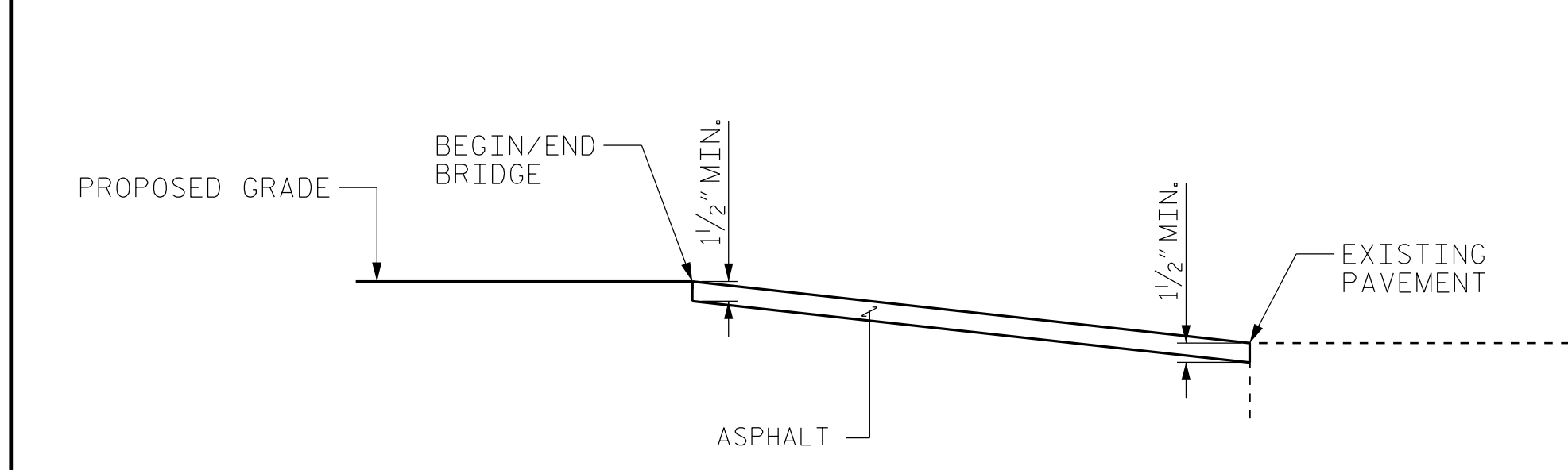
INCIDENTAL MILLING



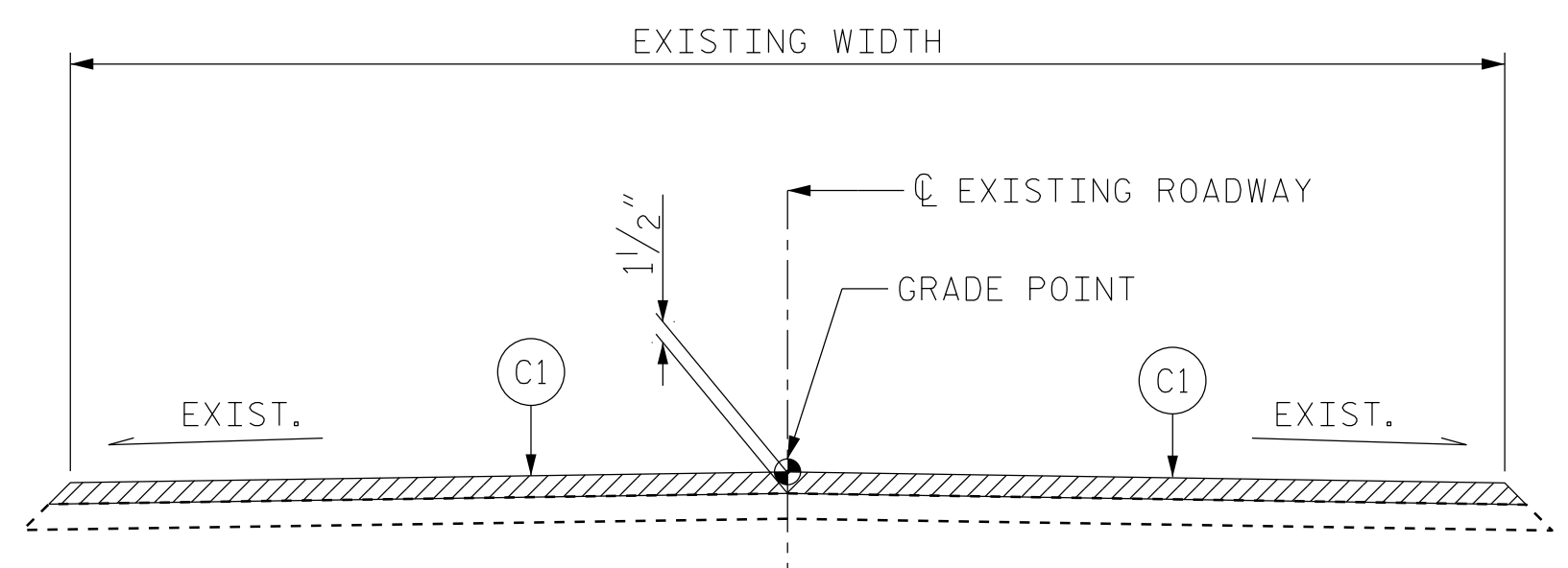
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C (C1)



PLAN



PAVEMENT KEY-IN DETAIL FOR BOTH END BENTS



ROADWAY SECTION

BEGIN/END BRIDGE

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480073



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**APPROACH ROADWAY  
 MILLING AND RESURFACING**

DRAWN BY : FIDEL L. FLORES DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

4/21/2022  
 I5915B.SMU.AR01.480073.dgn  
 daquirre

DOCUMENT NOT CONSIDERED  
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 SIGNATURES COMPLETED

**KCA**  
**KISINGER CAMPO  
 & ASSOCIATES**  
 301 FAYETTEVILLE ST., SUITE 1500  
 RALEIGH, NC 27601 (919) 882-7839  
 NC FIRM LICENSE: C-1506

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			10
2			4			



# AS-BUILT REPAIR QUANTITY TABLE

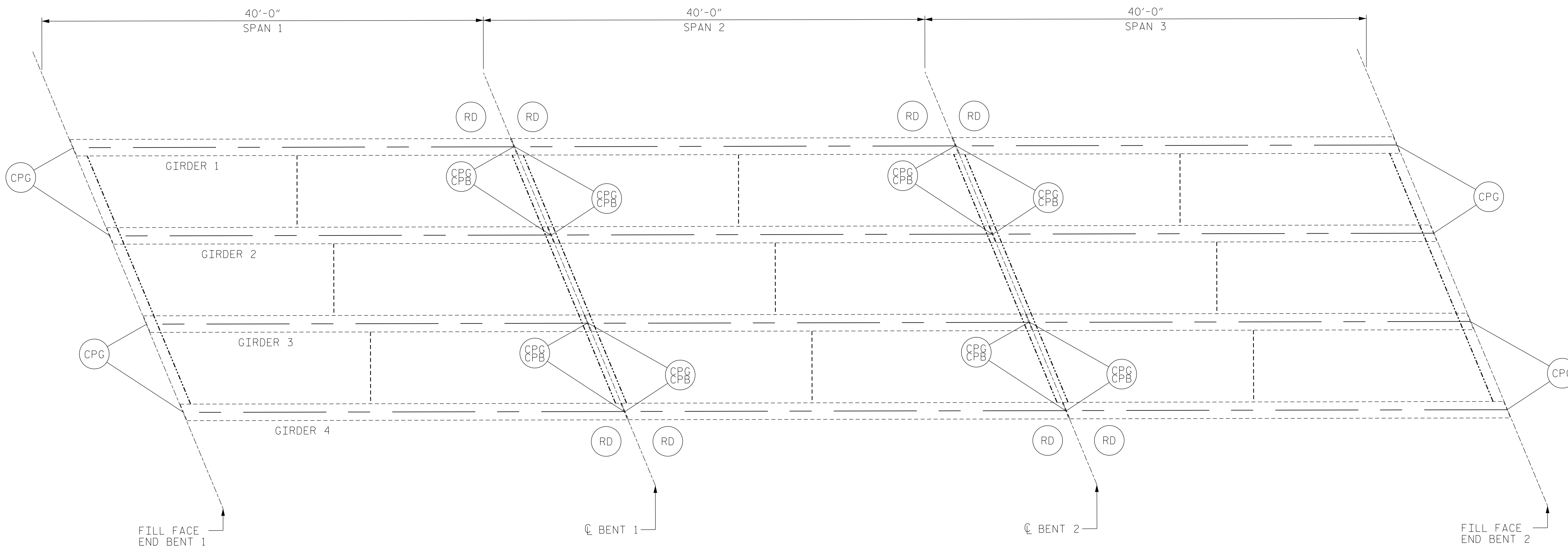
## SUPERSTRUCTURE REPAIRS

	SPAN 1		SPAN 2		SPAN 3							
	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL					
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME				
CONCRETE REPAIR AREA (CR)	-- SF	-- CF			-- SF	-- CF			-- SF	-- CF		
CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
	4 EA				8 EA				4 EA			

**LEGEND:**

- CPG CLEAN AND PAINT GIRDER ENDS (5 LF)
- CPB CLEAN AND PAINT BEARING
- RD REMOVE END DIAPHRAGM AT OVERHANG (SEE DETAIL "RD")
- CR CONCRETE REPAIR AREA

\* QUANTITIES FOR REMOVAL OF DIAPHRAGMS AT OVERHANGS (RD) ARE NOT INCLUDED AND SHALL BE INCIDENTAL TO THE PAY ITEM FOR "CONCRETE REPAIRS".



PLAN

**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 TABLE ABOVE.

FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

PRIOR TO CLEANING AND PAINTING STEEL ELEMENTS, REMOVE EXTERIOR DIAPHRAGMS AND A PORTION OF THE INTERIOR DIAPHRAGMS SO AS TO ALLOW FOR CLEANING OF EXISTING STEEL ELEMENTS PRIOR TO PAINTING. SEE DETAILS "RD" AND "RRD".

AFTER THE REMOVAL OF EXTERIOR END DIAPHRAGMS, CUT ANY EXPOSED REBAR FLUSH WITH THE DECK. COAT THE REMAINING EXPOSED REBAR WITH EPOXY. EPOXY WILL BE INCIDENTAL TO THE PAY ITEM FOR "CONCRETE REPAIRS".

FOR DETAILS OF CLEANING AND PAINTING GIRDER ENDS (CPG), REMOVE END DIAPHRAGMS AT OVERHANG (RD), AND REMOVE AND REPAIR DIAPHRAGM ENDS (RRD), SEE "MISCELLANEOUS REPAIRS" SHEET.

FOR CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA, SEE SPECIAL PROVISIONS.

FOR ZONE PAINTING OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480073



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

### SUPERSTRUCTURE REPAIRS

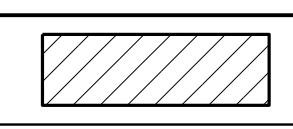
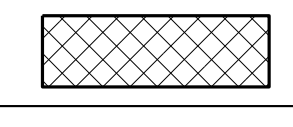

DRAWN BY : ALLEN J. MCSWAIN      DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE      DATE : 01/2022  
 DESIGN ENGINEER OF RECORD : DIEGO A. AGUIRRE      DATE : 01/2022

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 SIGNATURES COMPLETED



301 FAYETTEVILLE ST., SUITE 1500  
 RALEIGH, NC 27601 (919) 882-7839  
 NC FIRM LICENSE: C-1506

REVISIONS						SHEET NO.
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1			3			S12-7
2			4			10

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	13.6	4.6		
COLUMN/PILE	-	-		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	12.0			
COLUMN/PILE	-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

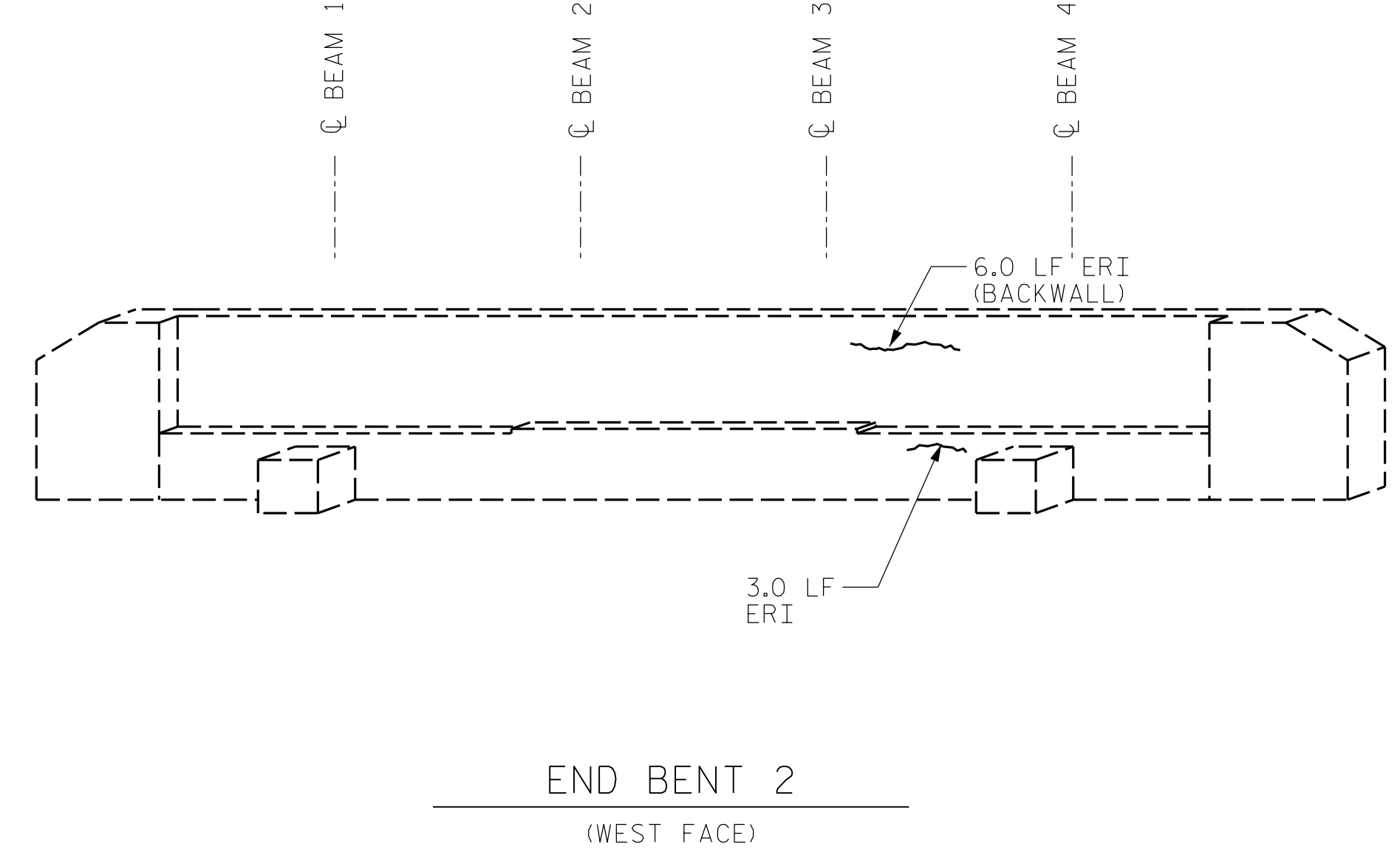
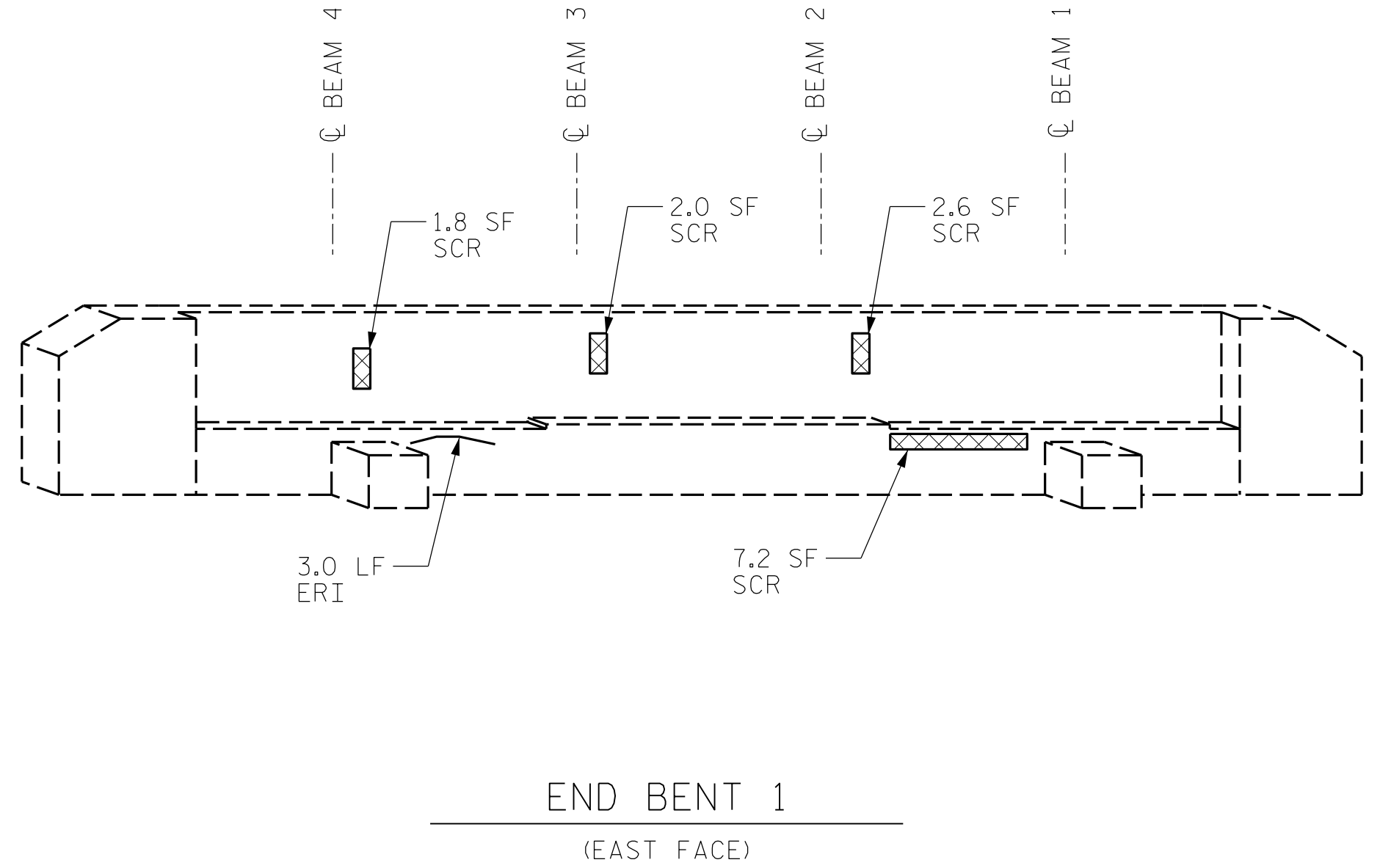
CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS  $\geq 1/16"$  AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

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REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.



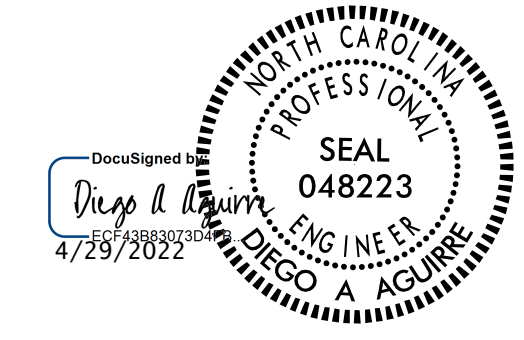
PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480073

SHEET 1 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE REPAIRS**

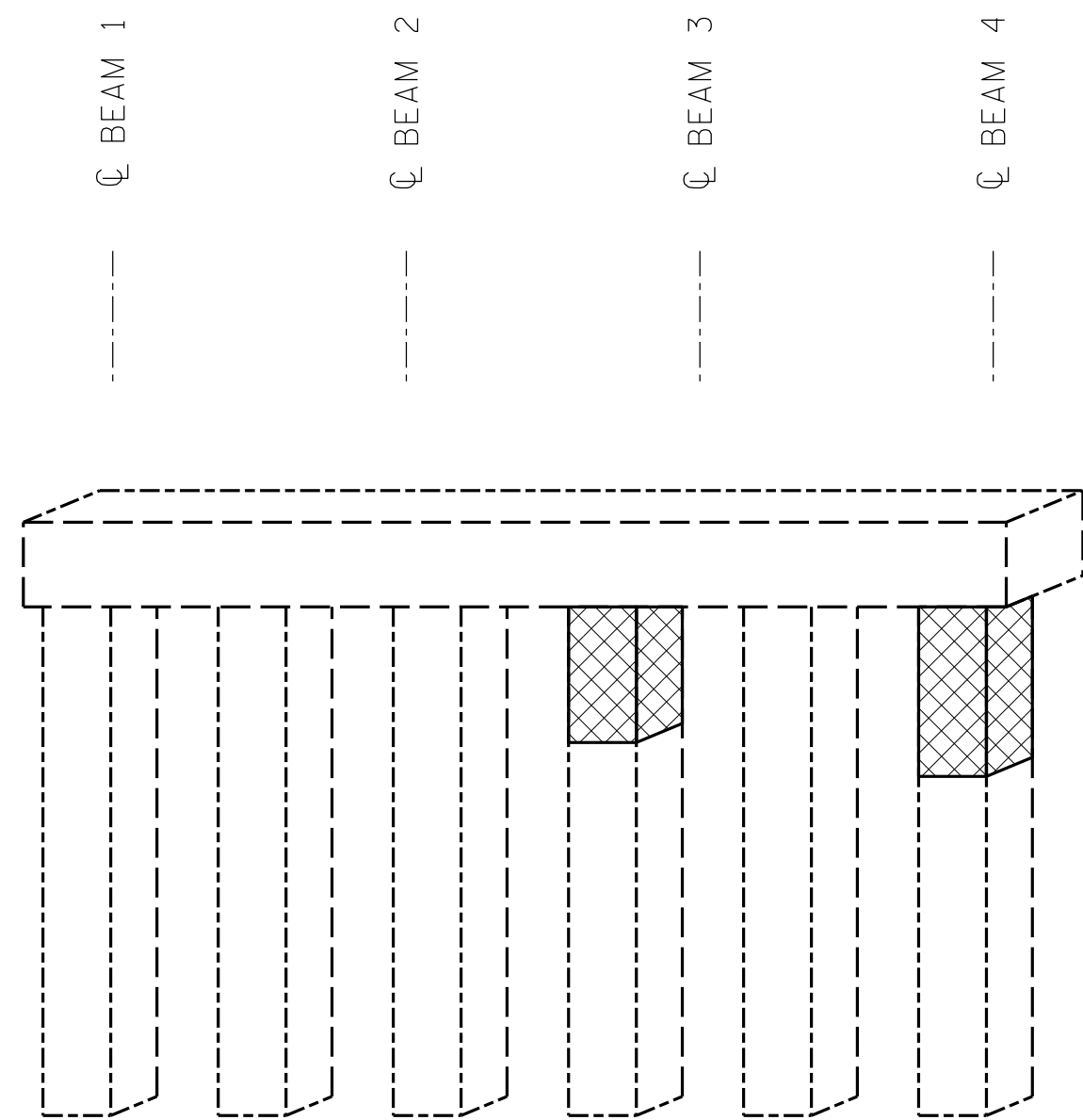
END BENTS 1 & 2



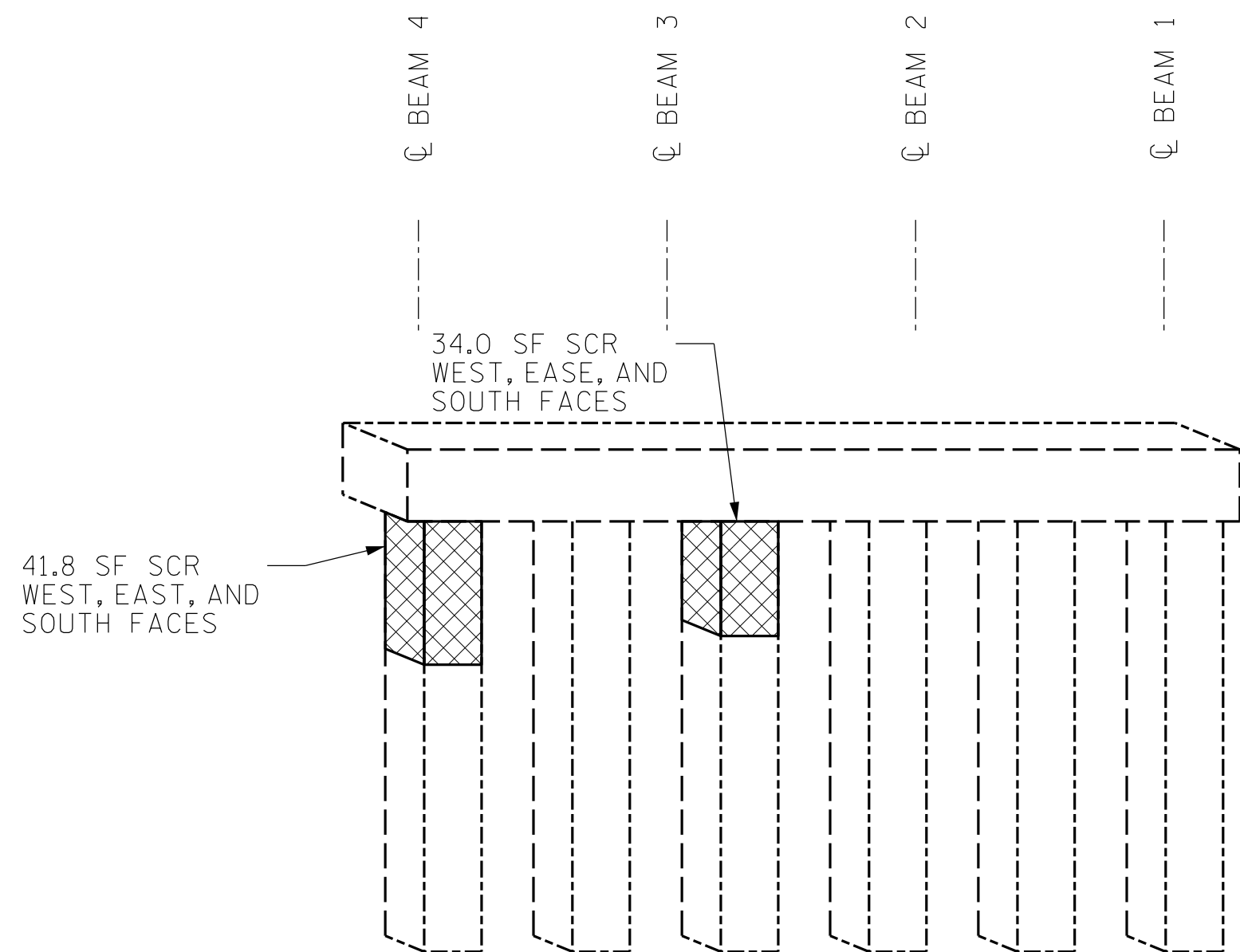
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			10



BENT 1  
(WEST FACE)



BENT 1  
(EAST FACE)

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	-	-		
COLUMN/PILE	75.8	28.2		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	-			
COLUMN/PILE	-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

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AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480073

SHEET 2 OF 3



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 BENT 1

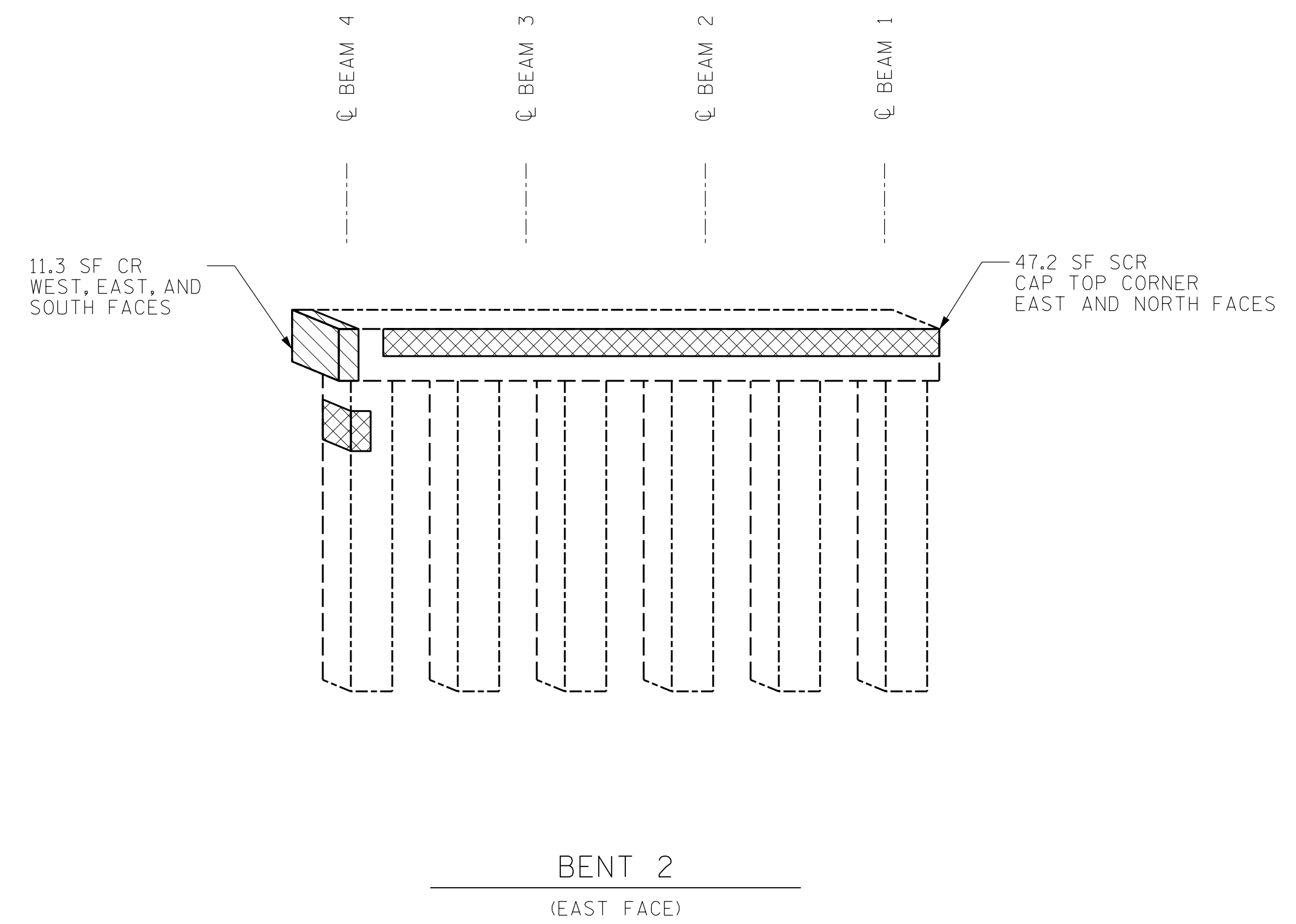
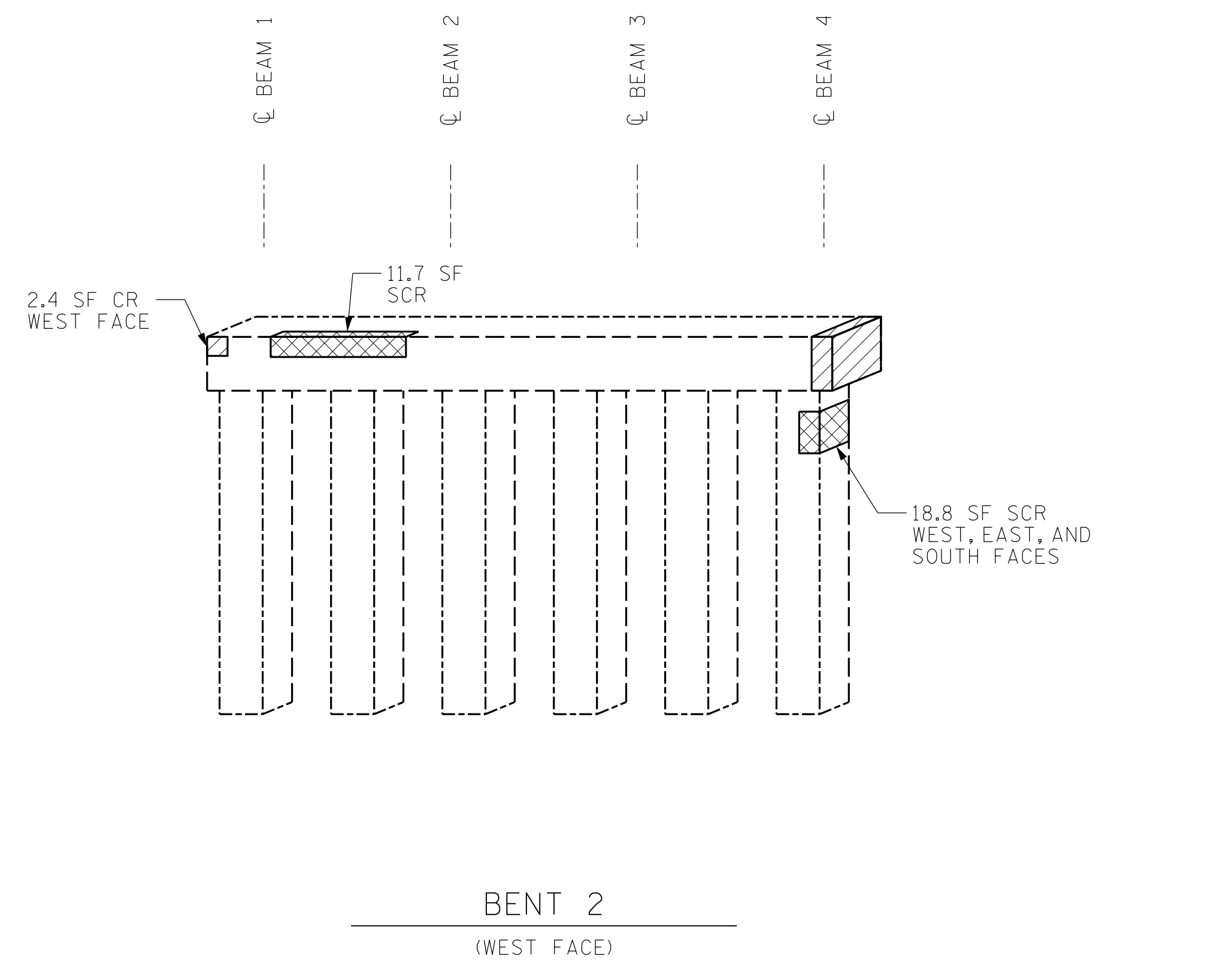
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

4/21/2022  
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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			10





LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

		AS-BUILT REPAIR QUANTITY TABLE			
		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS		AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL		11.7	3.9		
COLUMN/PILE		18.8	6.3		
CONCRETE REPAIRS		AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP		58.5	21.5		
EPOXY RESIN INJECTION		LIN. FT.		LIN. FT.	
CAP/BACKWALL		-			
COLUMN/PILE		-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480073

SHEET 3 OF 3

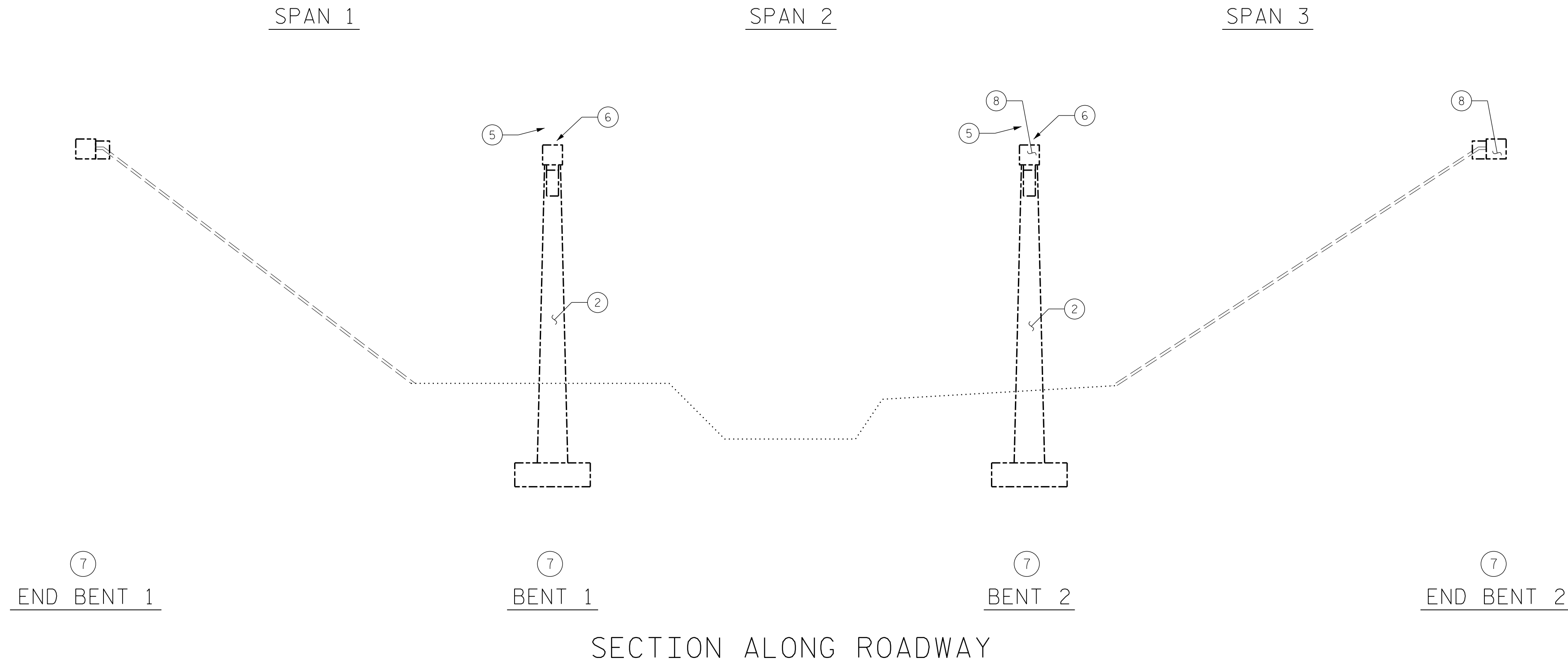


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 BENT 2

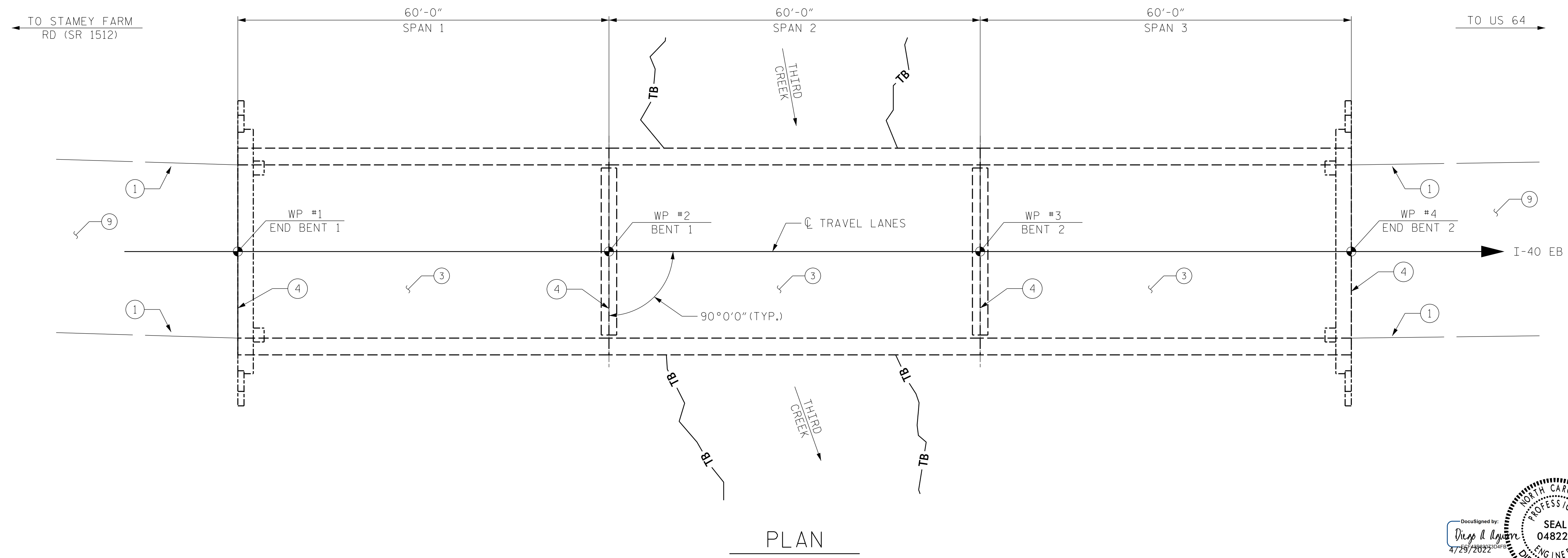
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			10
2			4			



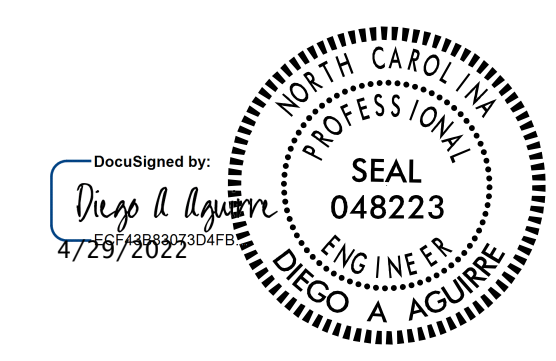
- SCOPE LEGEND:**
- ① CLEAR SHOULDERS OF DEBRIS AND VEGETATION
  - ② CLEAR SUBSTRUCTURE OF DEBRIS AND VEGETATION
  - ③ CONCRETE DECK REPAIRS
  - ④ JOINT REPAIRS/REPLACEMENT
  - ⑤ SUPERSTRUCTURE CONCRETE REPAIRS
  - ⑥ PAINT EXISTING STEEL GIRDER ENDS AND BEARINGS
  - ⑦ SUBSTRUCTURE CONCRETE REPAIRS
  - ⑧ SUBSTRUCTURE EPOXY RESIN INJECTION
  - ⑨ APPROACH ROADWAY MILLING AND RESURFACING



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

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

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480096



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**

FOR BRIDGE ON I-40 EB  
 OVER THIRD CREEK

**NOTES:**

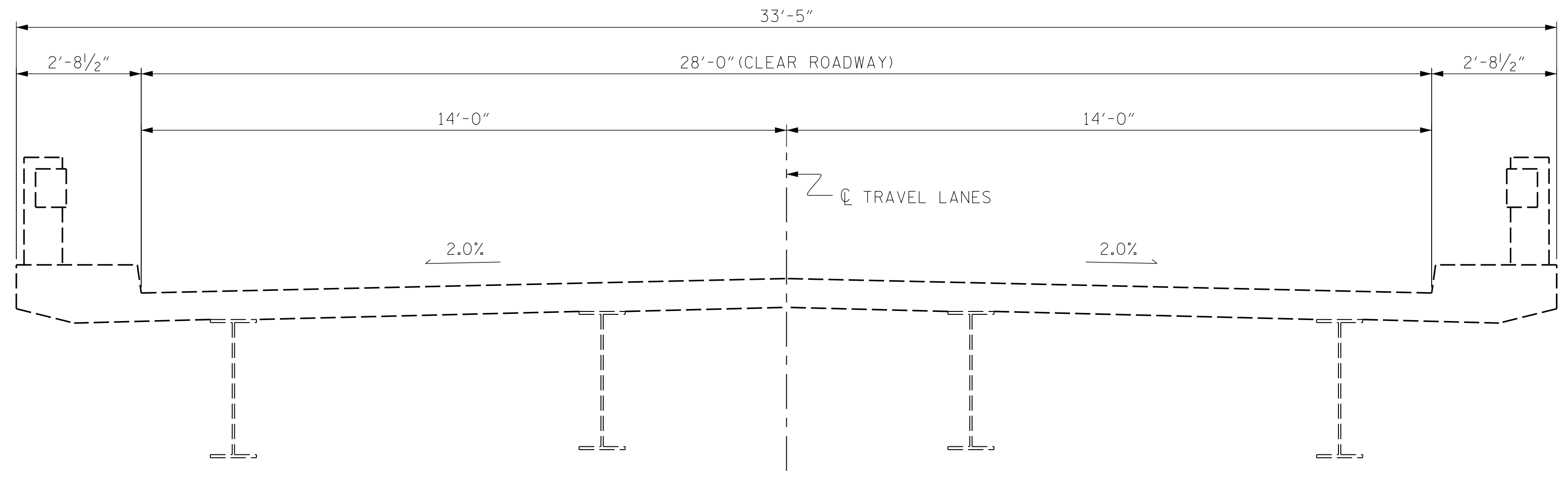
GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE MOST UP TO DATE ROUTINE INSPECTION REPORT DATED 09/20/2021.

DRAWN BY : FIDEL L. FLORES DATE : 01/2022  
 CHECKED BY : DIEGO A. AGUIRRE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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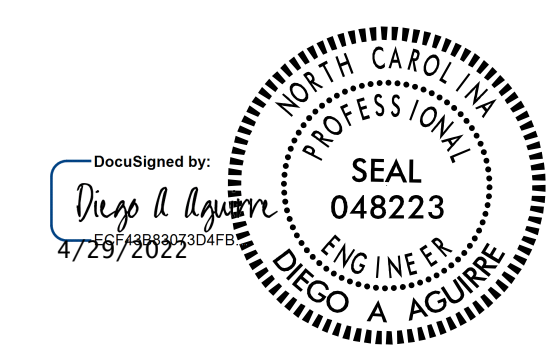
**KCA**  
 KISINGER CAMPO & ASSOCIATES  
 301 FAYETTEVILLE ST., SUITE 1500  
 RALEIGH, NC 27601 (919) 882-7839  
 NC FIRM LICENSE: C-1506

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			9
2			4			



EXISTING

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480096



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
TYPICAL SECTION					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 9

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

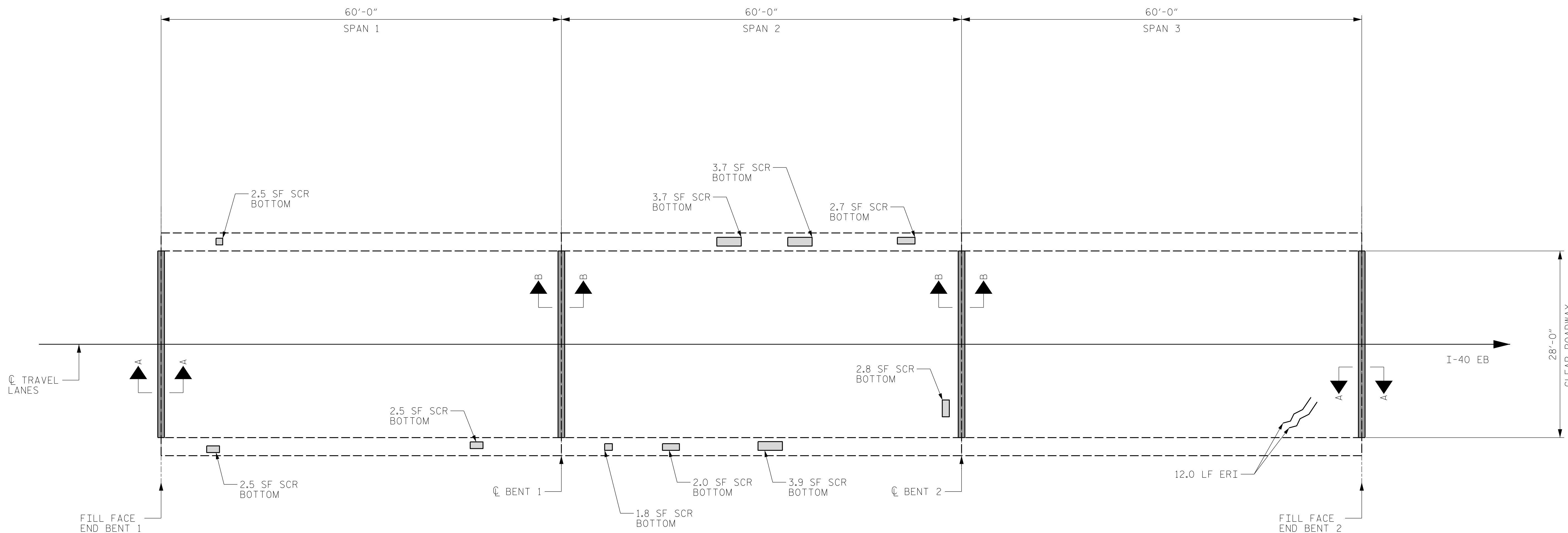
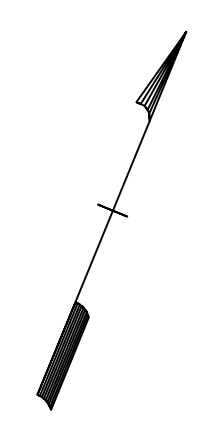
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# AS-BUILT REPAIR QUANTITY TABLE

## DECK REPAIRS

	SPAN 1		SPAN 2		SPAN 3	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	-- SY		-- SY		-- SY	
CLASS III SURFACE PREPARATION	-- SY		-- SY		-- SY	
EPOXY RESIN INJECTION (ERI)	-- LF		-- LF		12.0 LF	
SHOTCRETE REPAIRS (SCR)	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME
	7.5 SF	2.7 CF			-- SF	-- CF



PLAN

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480096

**NOTES:**

PRIOR TO SURFACE PREPARATION, REMOVE ALL LOOSE, DISINTEGRATED, UNSOUND OR CONTAMINATED CONCRETE FROM THE BRIDGE DECK.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

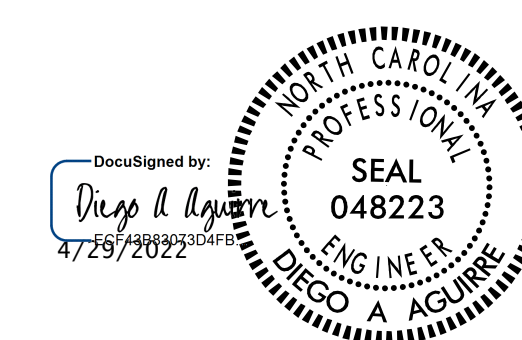
FOR SCARIFYING BRIDGE DECK, SEE OVERLAY SURFACE PREPARATION SPECIAL PROVISION.

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.

DEFECTS (SEE PLAN  
 CALLOUT FOR DETAILS)

BRIDGE JOINT DEMOLITION

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS  
 DECK REPAIRS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S13-3
2			4			TOTAL SHEETS 9

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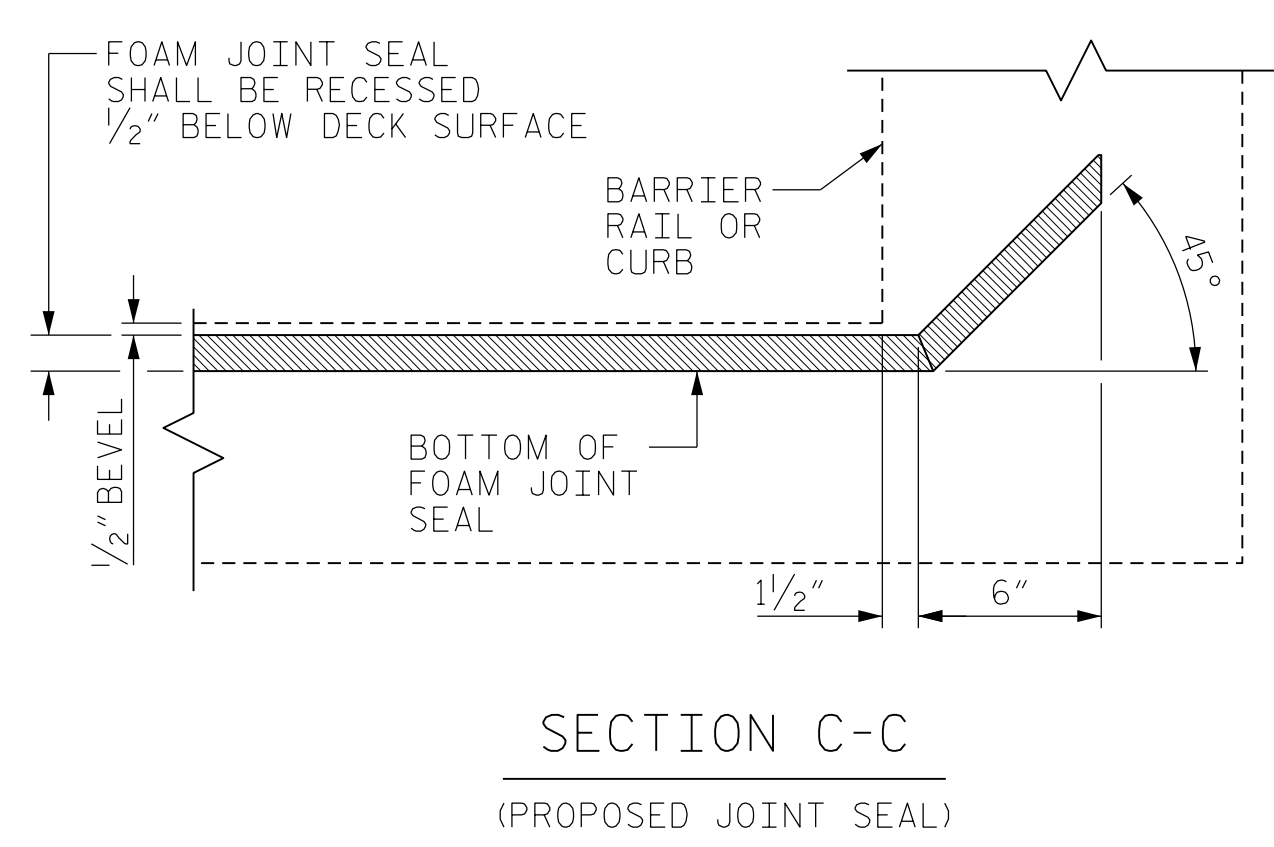
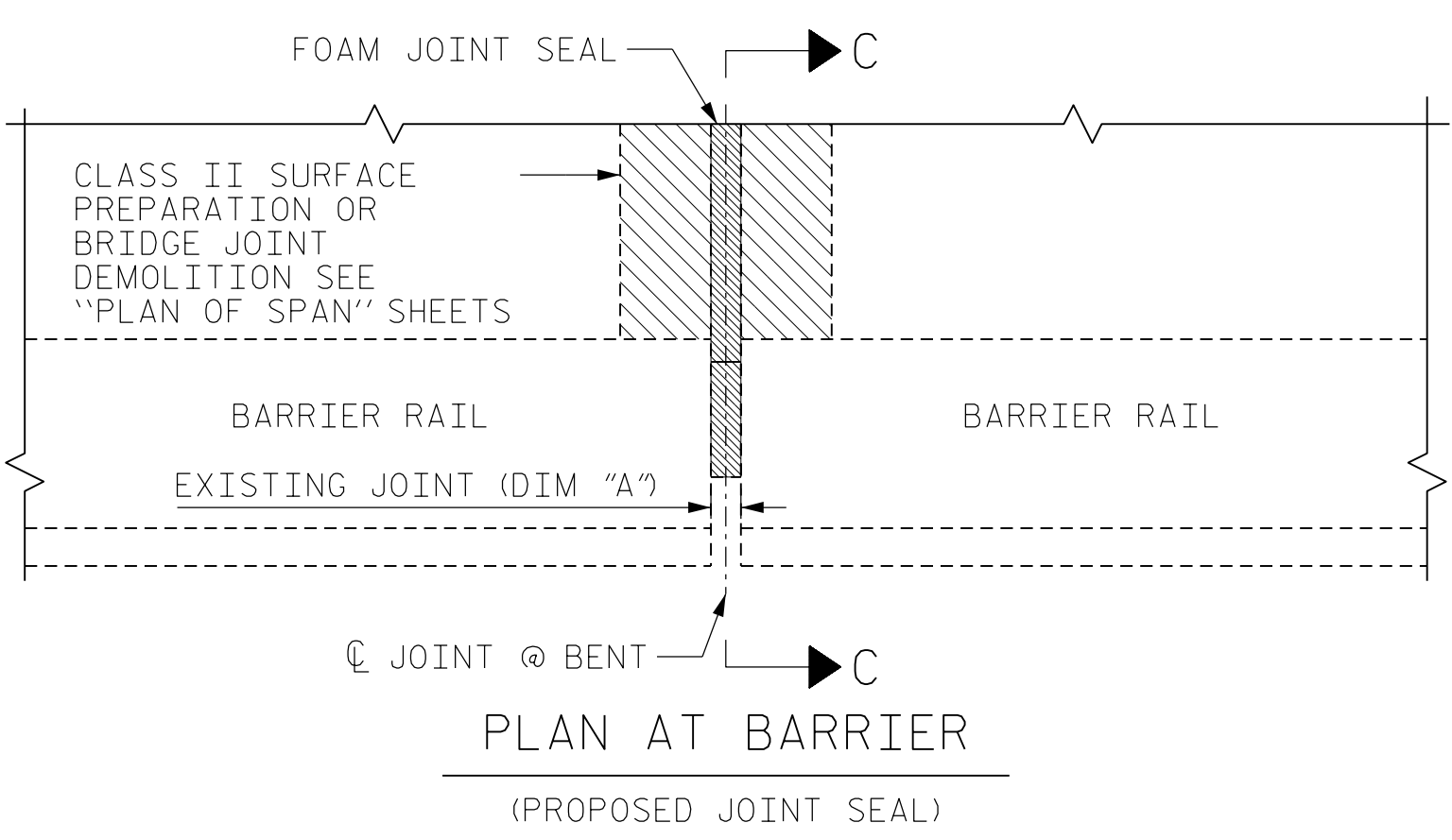
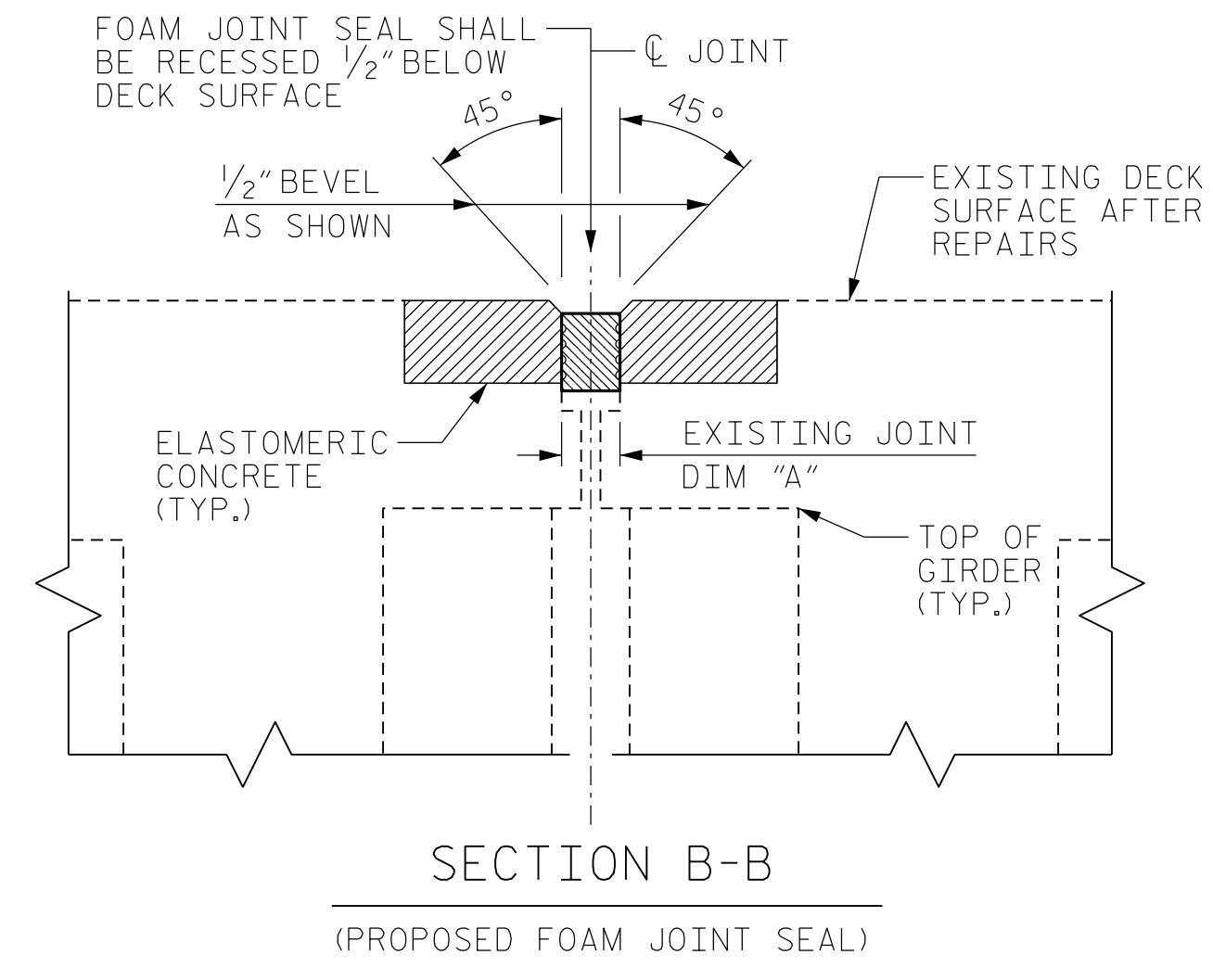
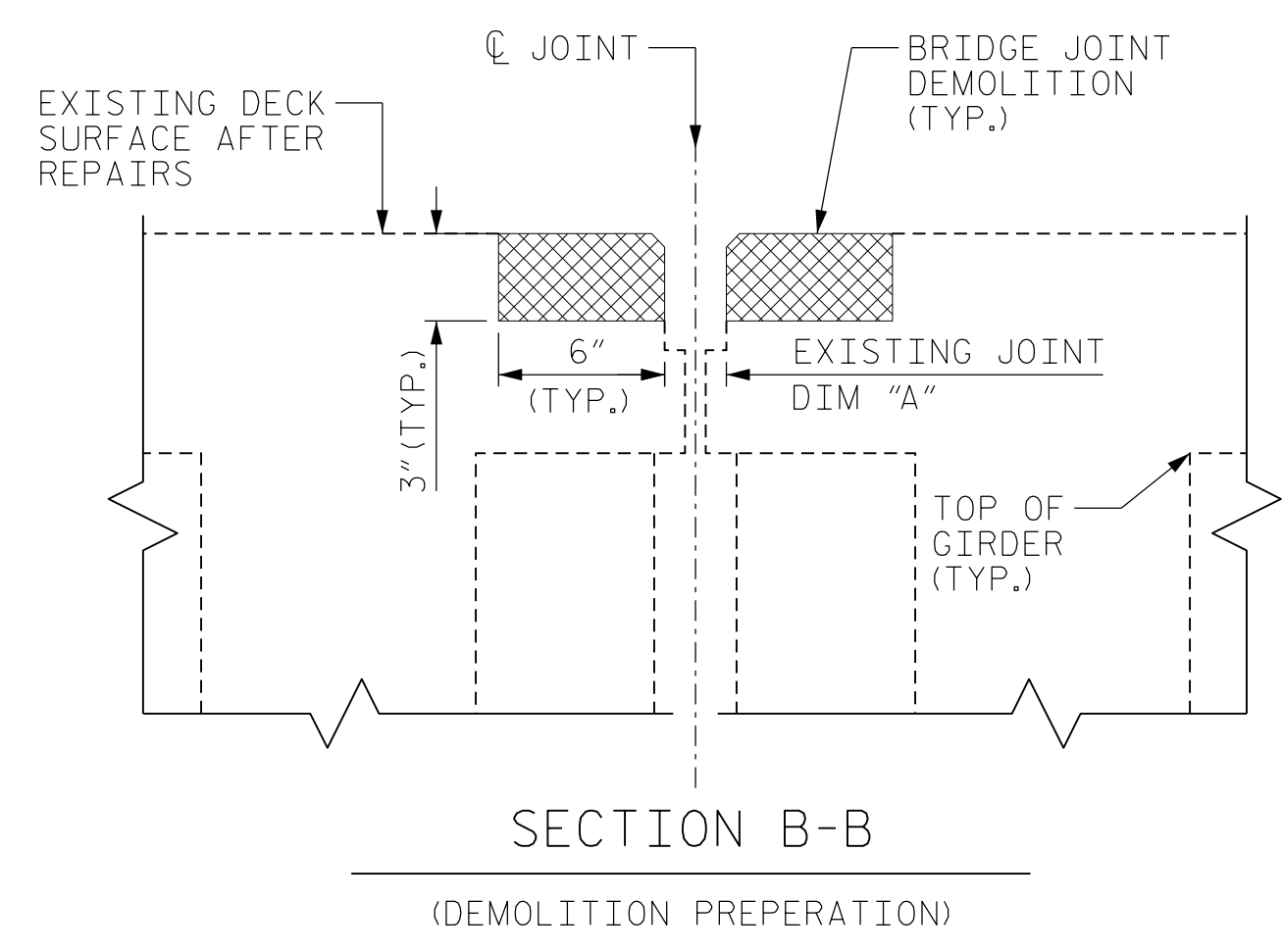
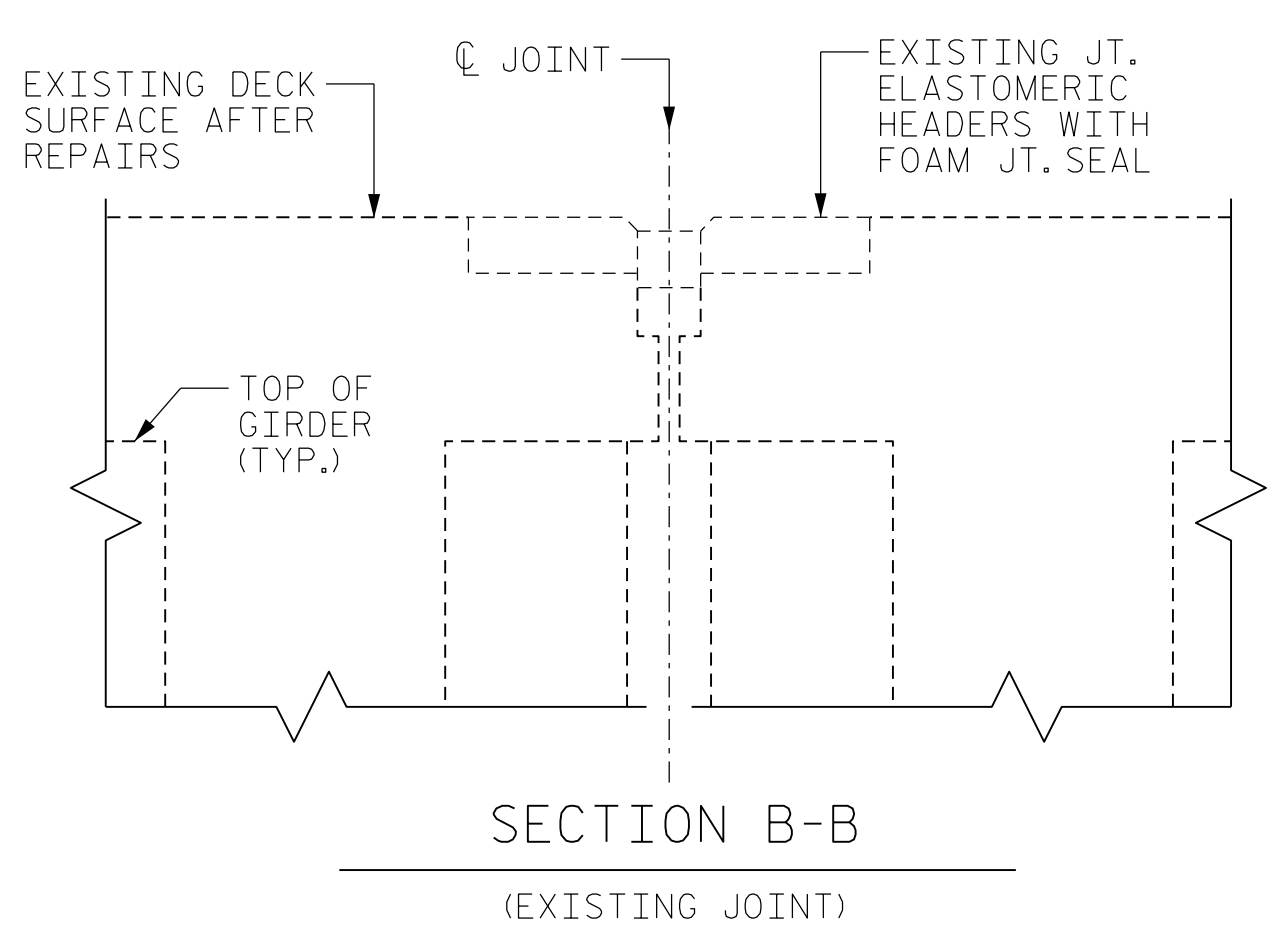
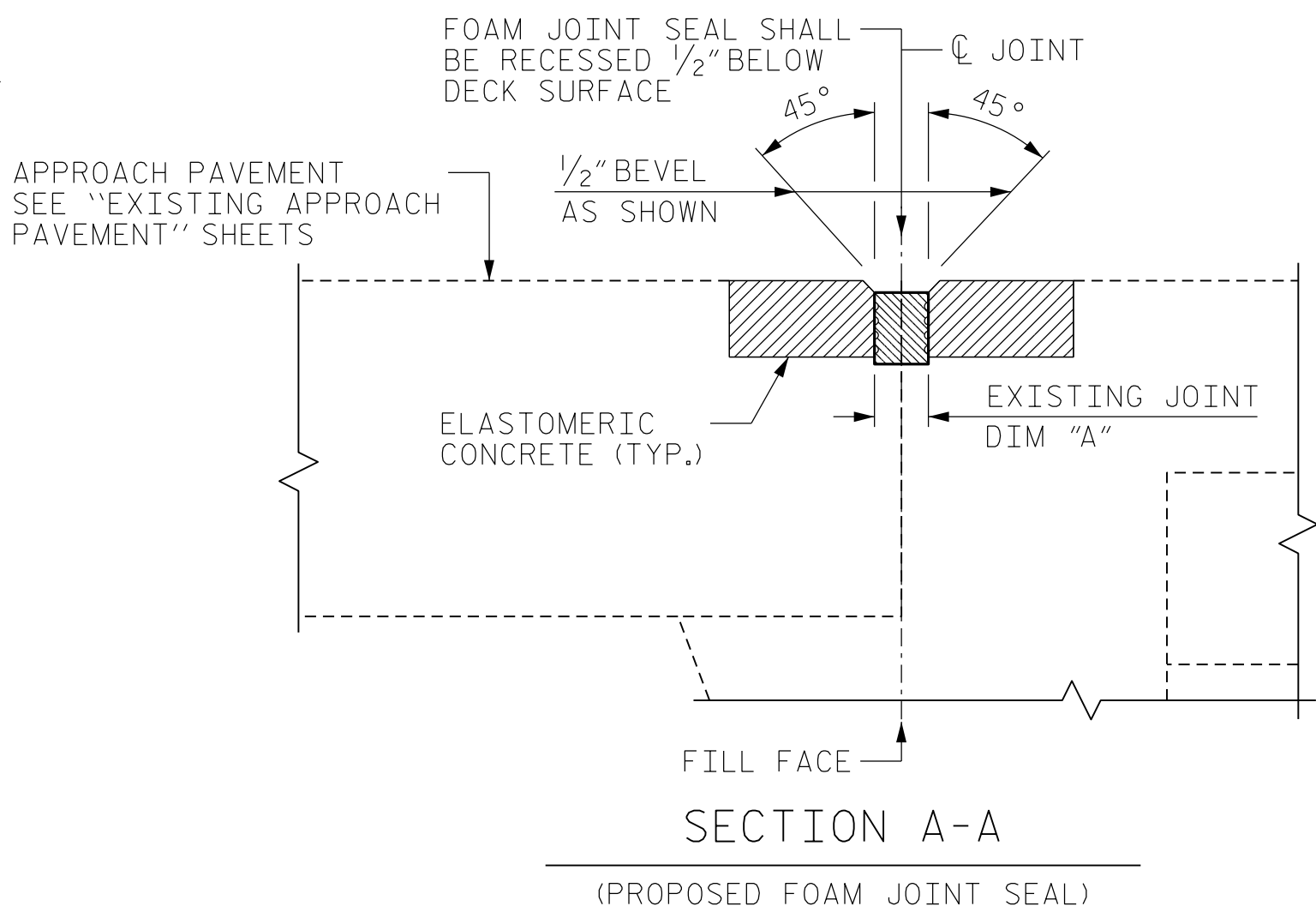
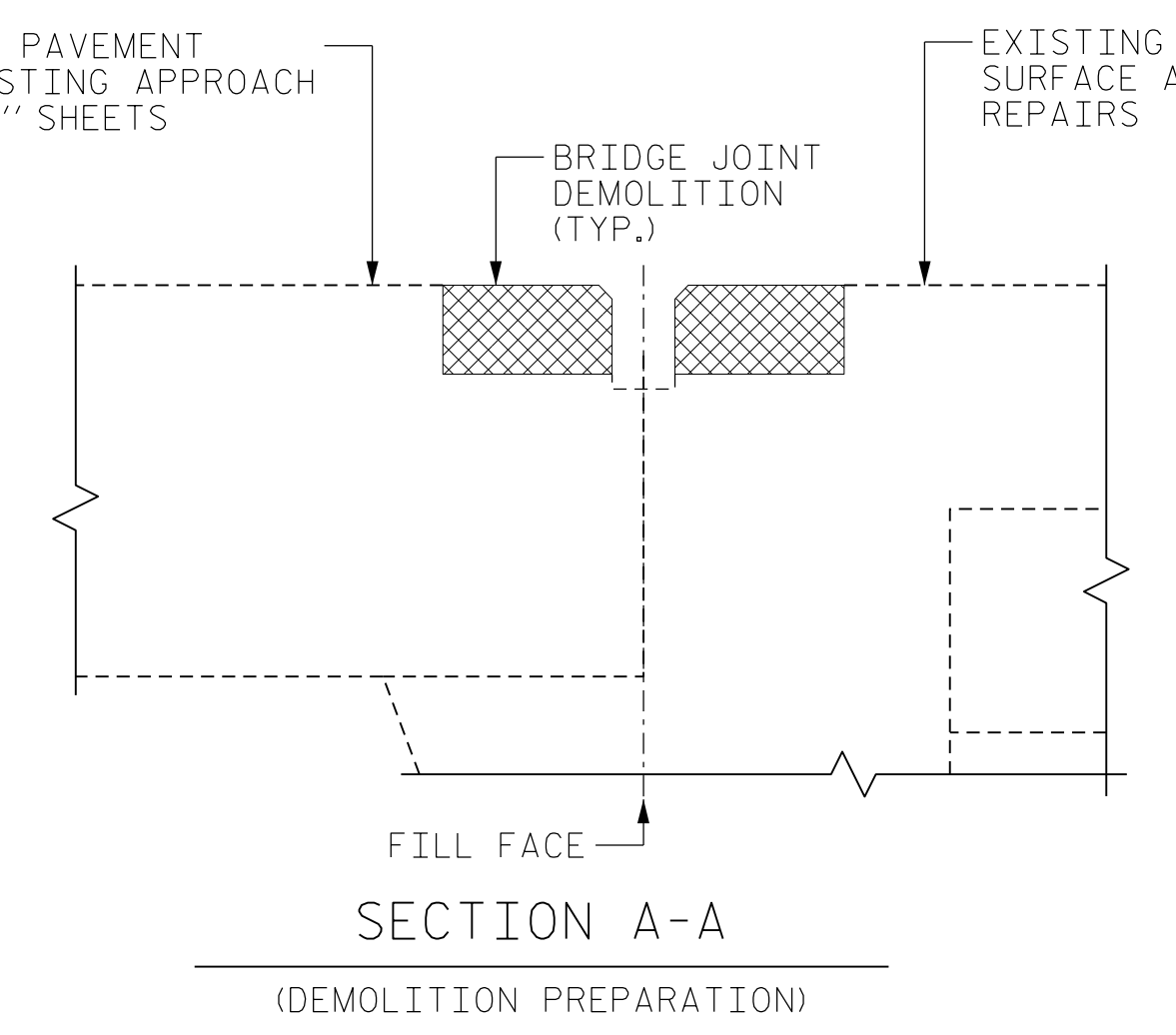
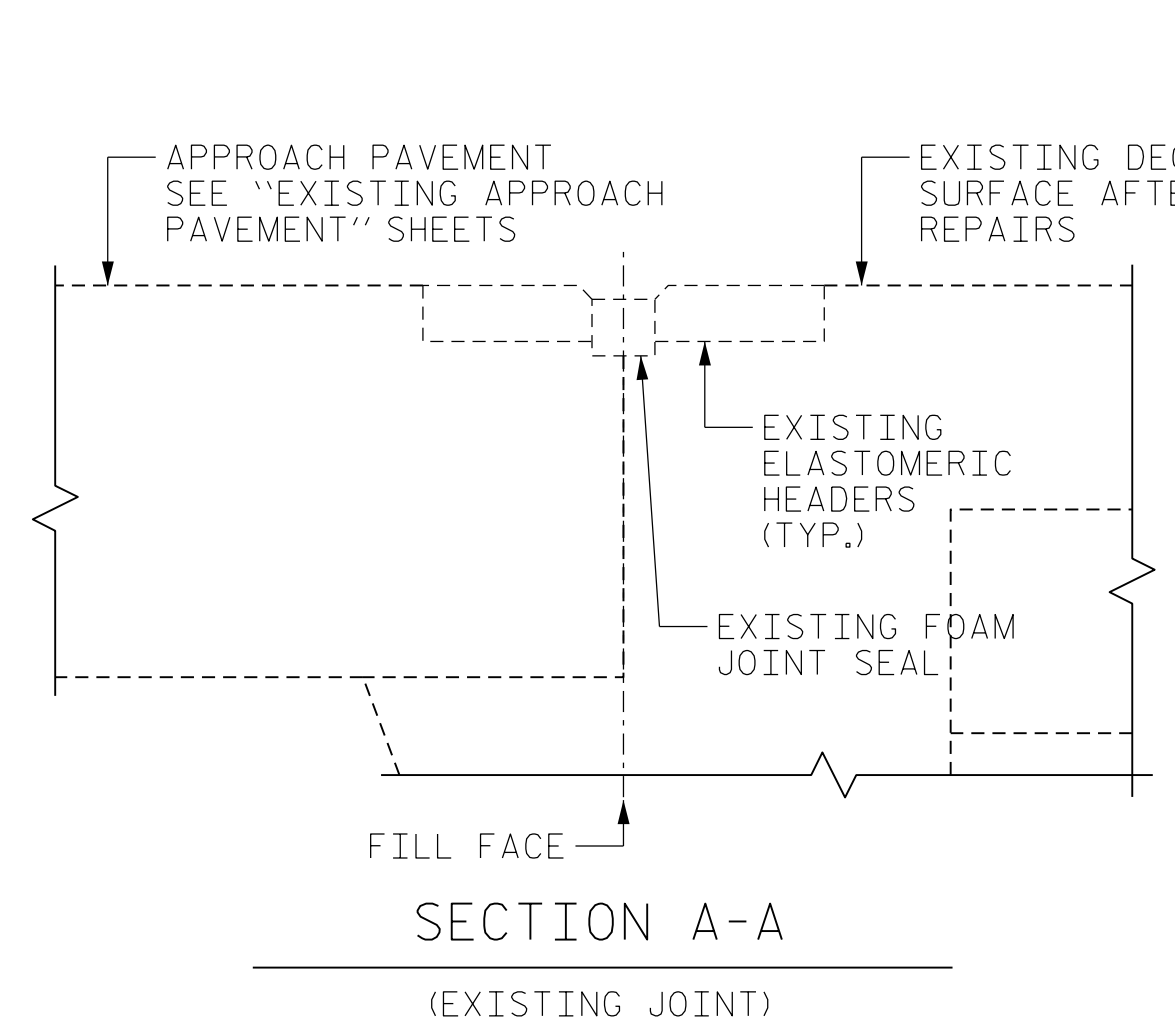


TABLE 1

Table Date 02-2022

BENT/ JOINTS	DIM "A" @ 50°F
END BENT 1	2"
1	2 1/4"
2	1 3/4"
END BENT 2	2 1/4"

BRIDGE JOINT DEMOLITION

LOCATION	ESTIMATED (SQ.FT.)	ACTUAL (SQ.FT.)
END BENTS	70.0	
BENT 1	35.0	
BENT 2	35.0	

ELASTOMERIC CONCRETE FOR PRESERVATION

LOCATION	ESTIMATED (CU.FT.)	ACTUAL (CU.FT.)
END BENTS	17.6	
BENT 1	8.8	
BENT 2	8.8	

PROPOSED JOINT QUANTITY

	ESTIMATED (LIN.FT.)	ACTUAL (LIN.FT.)
FOAM JOINT SEALS FOR PRESERVATION	118.0	

NOTES:

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF THE ACTUAL OPENING VARIES FROM THE OPENING INDICATED IN THE DETAIL BY MORE THAN 1/4", NOTIFY THE ENGINEER. REVISION OF THE JOINT SEAL SIZE MIGHT BE NECESSARY.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL FOR THE SIZE OF THE OPENING ON THE PLANS AND ACCOMMODATE THE MINIMUM EXPANSION SHOWN ON THE PLANS.

FOAM JOINTS SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL TAKE CARE DURING JOINT REPAIR OPERATIONS NOT TO DROP ANY MATERIAL THAT FALLS BELOW THE BRIDGE, WITHOUT PROTECTIVE DEVICES BELOW TO CATCH THE MATERIAL. ANY MATERIAL THAT FALLS BELOW THE BRIDGE SHALL BE CONTAINED, REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO EXTRA COST TO THE DEPARTMENT. IF THE ENGINEER DETERMINES THAT THE PROTECTIVE DEVICES ARE NOT ADEQUATE OR NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

QUANTITIES SHOWN IN THE ELASTOMERIC CONCRETE FOR PRESERVATION TABLE BASED ON THE MINIMUM JOINT DEMOLITION SHOWN.

FOR EXCAVATION BELOW THE BOTTOM OF THE PLANNED JOINT DECK DEMOLITION, CONCRETE FOR DECK REPAIRS SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT BOTTOM OF THE PROPOSED ELASTOMERIC CONCRETE FOR PRESERVATION HEADERS SHOWN.

IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, OR IF UNSOUND CONCRETE IS REMOVED WITHIN 2" OF THE WATERSTOP, THE ENTIRE CONCRETE DEPTH TO THE WATERSTOPS SHALL BE REMOVED. IF SUCH EXCAVATION EXTENDS MORE THAN 2" BELOW THE BOTTOM OF THE PLANNED ELASTOMERIC CONCRETE HEADER, AS SHOWN, APPROVED REPAIR CONCRETE SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT THE BOTTOM OF THE ELASTOMERIC CONCRETE.

DEMOLISH BRIDGE JOINT AREA SUCH THAT THE BOTTOM OF THE EXCAVATION SHALL BE REASONABLY FLAT AND LEVEL AND TO THE NECESSARY DEPTH, SUCH THAT ELASTOMERIC CONCRETE SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
BRIDGE NO. 480096



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

JOINT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S13-4
2			4			TOTAL SHEETS 9

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
CHECKED BY : JACOB H. DUKE DATE : 01/2022  
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

# AS-BUILT REPAIR QUANTITY TABLE

	ESTIMATE	ACTUAL
INCIDENTAL MILLING	314 SY	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	27 TON	
ASPHALT BINDER FOR PLANT MIX	1.6 TON	

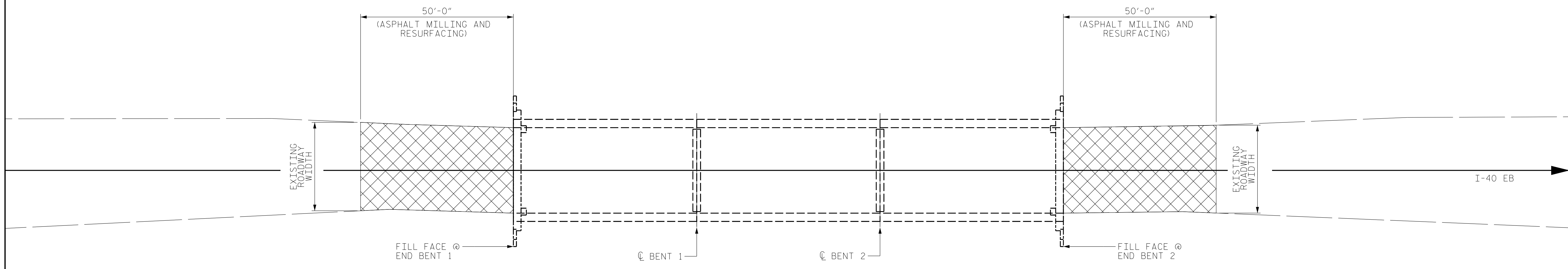
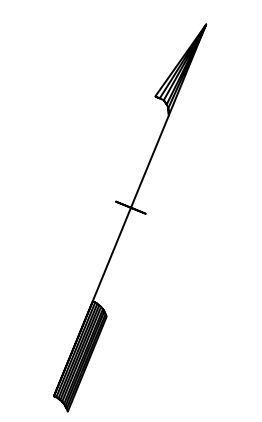
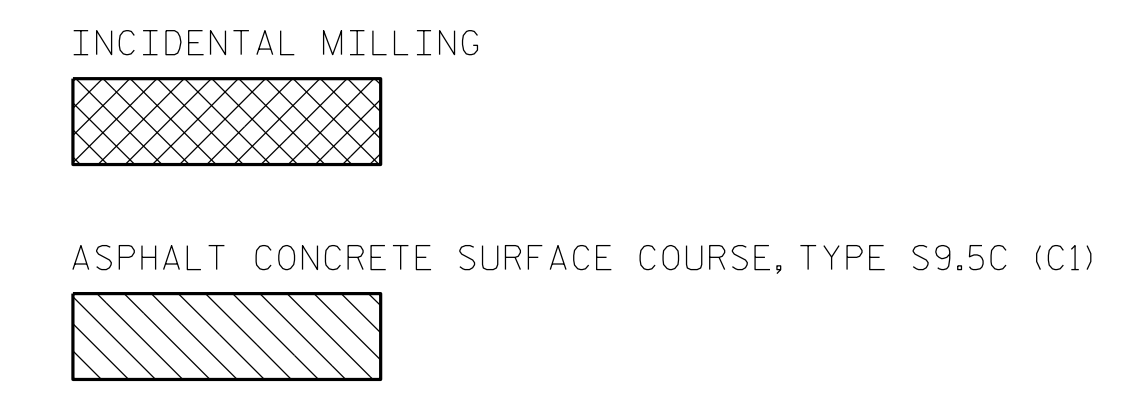
## NOTES:

INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVEMENT TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1/2" DEPTH OF NEW ASPHALT PAVEMENT. NEW ASPHALT PAVEMENT SHALL BE OF THICKNESS NECESSARY TO PROVIDE A SMOOTH TRANSITION BETWEEN THE ROADWAY AND THE BRIDGE DECK. THE NEW ASPHALT PAVEMENT THICKNESS MAY EXCEED 1/2" DUE TO SETTLEMENT OF THE EXISTING APPROACH.

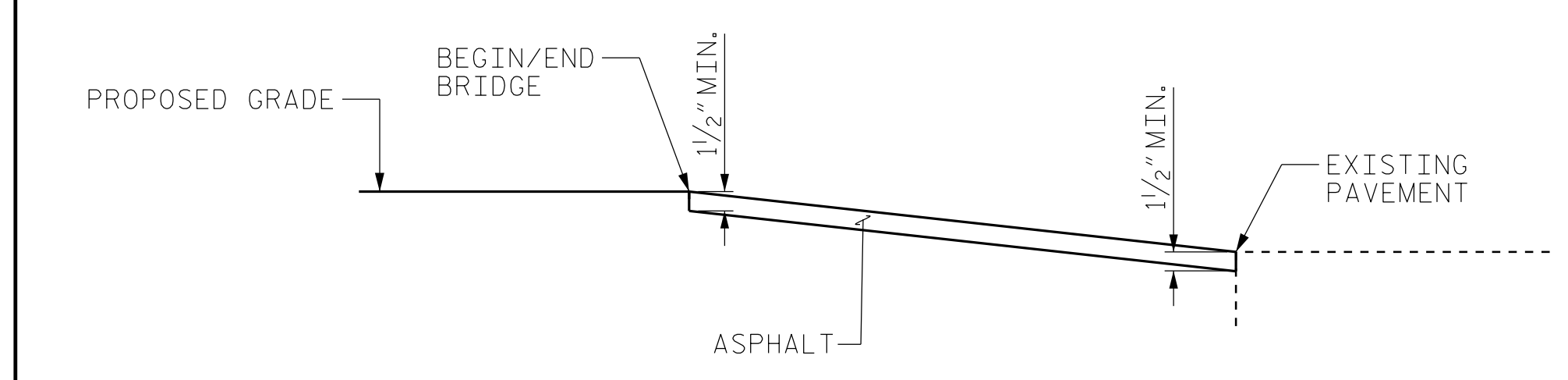
FOR NEW ASPHALT PLACEMENT, SEE STANDARD SPECIFICATIONS.

GRADE MAY BE ADJUSTED BY THE ENGINEER TO ENSURE PROPER TIE-IN AT THE END BENTS.

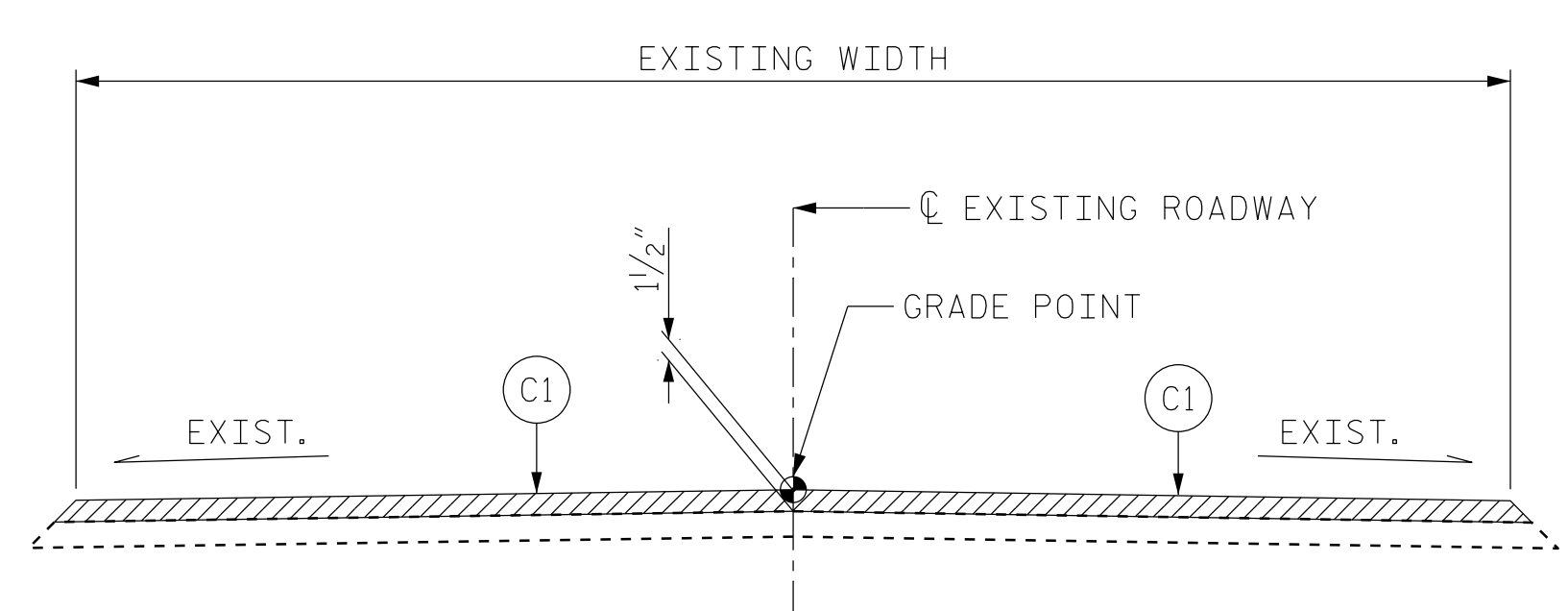
**C1** PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 2" IN DEPTH.



PLAN

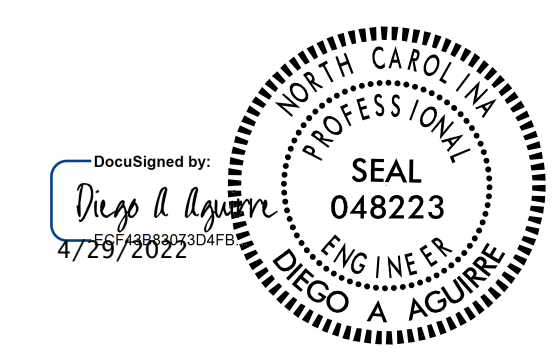


PAVEMENT KEY-IN DETAIL FOR BOTH END BENTS



ROADWAY SECTION  
BEGIN/END BRIDGE

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480096



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

## APPROACH ROADWAY MILLING AND RESURFACING

DRAWN BY : FIDEL L. FLORES DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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2			4			



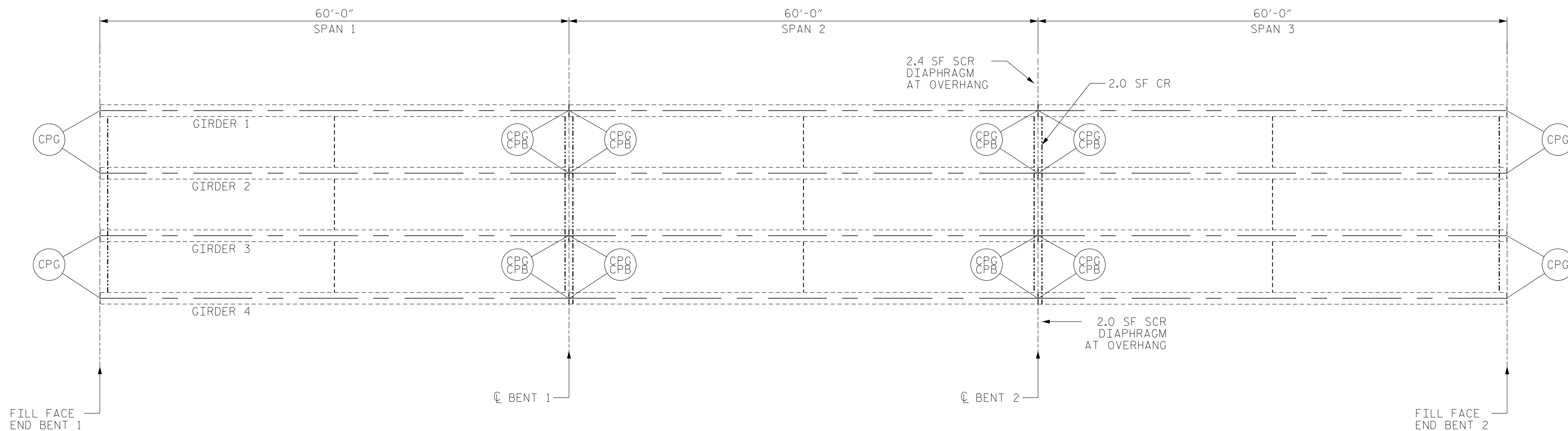
# AS-BUILT REPAIR QUANTITY TABLE

## SUPERSTRUCTURE REPAIRS

	SPAN 1		SPAN 2		SPAN 3							
	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL					
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME				
CONCRETE REPAIR AREA (CR)	-- SF	-- CF			-- SF	-- CF			2.0 SF	0.7 CF		
SHOTCRETE REPAIR AREA (SCR)	-- SF	-- CF			2.4 SF	0.8 CF			2.0 SF	0.7 CF		
	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA	4 EA				8 EA				4 EA			

**LEGEND:**

- CPG CLEAN AND PAINT GIRDER ENDS (5 LF)
- CPB CLEAN AND PAINT BEARING
- CR CONCRETE REPAIR AREA
- SCR SHOTCRETE REPAIR AREA



PLAN

**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 TABLE ABOVE.

FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

FOR CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA, SEE SPECIAL PROVISIONS.

FOR ZONE PAINTING OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR DETAILS OF CLEANING AND PAINTING GIRDER ENDS (CPG), SEE "MISCELLANEOUS REPAIRS" SHEET.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480096



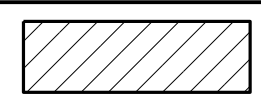
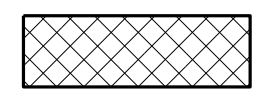

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

### SUPERSTRUCTURE REPAIRS

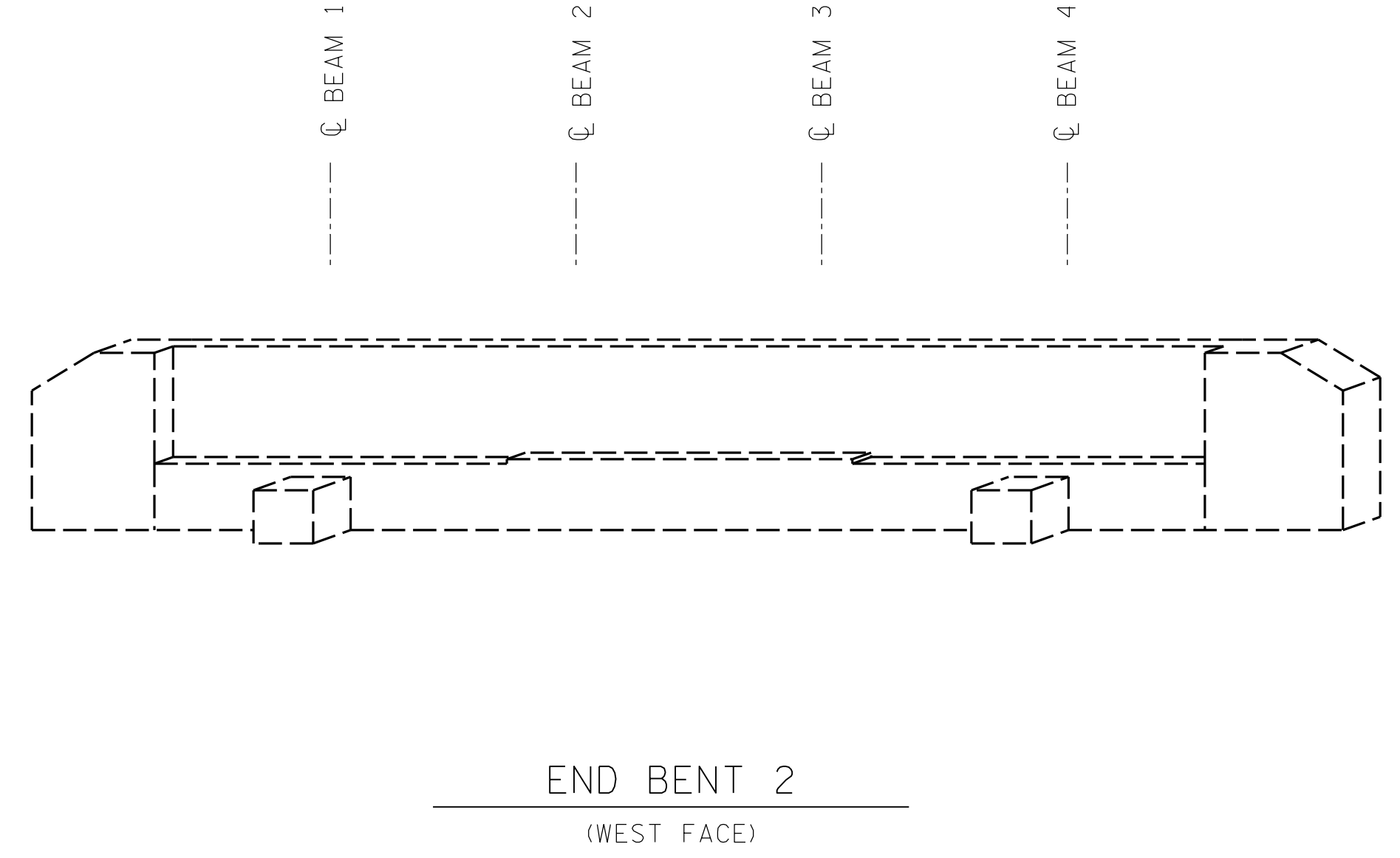
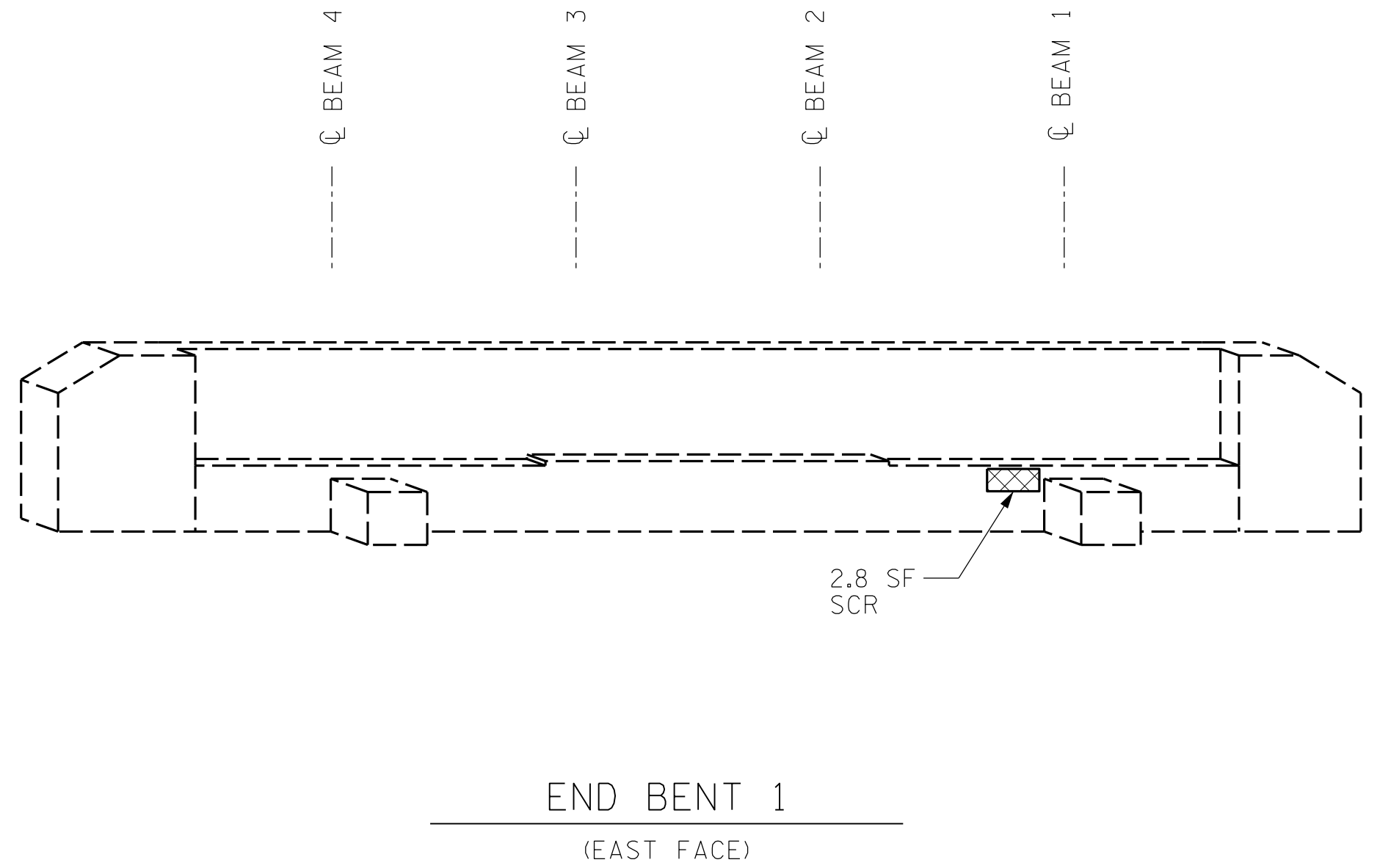
DRAWN BY : ALLEN J. MCSWAIN	DATE : 01/2022
CHECKED BY : JACOB H. DUKE	DATE : 01/2022
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE	DATE : 01/2022

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S13-6
2			4			TOTAL SHEETS 9

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	2.8	1.0		
COLUMN/PILE	-	-		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	-			
COLUMN/PILE	-			



VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS  $\geq 1/16"$  AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

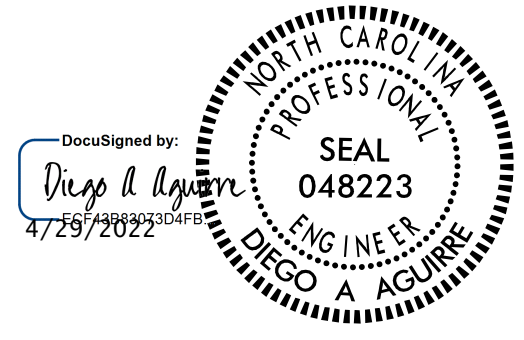
FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
BRIDGE NO. 480096

SHEET 1 OF 3



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE REPAIRS					
END BENTS 1 & 2					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					9

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP/BACKWALL	3.7	1.3	
COLUMN/PILE	12.4	4.3		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP	-	-	
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
	CAP/BACKWALL	-		
COLUMN/PILE	-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

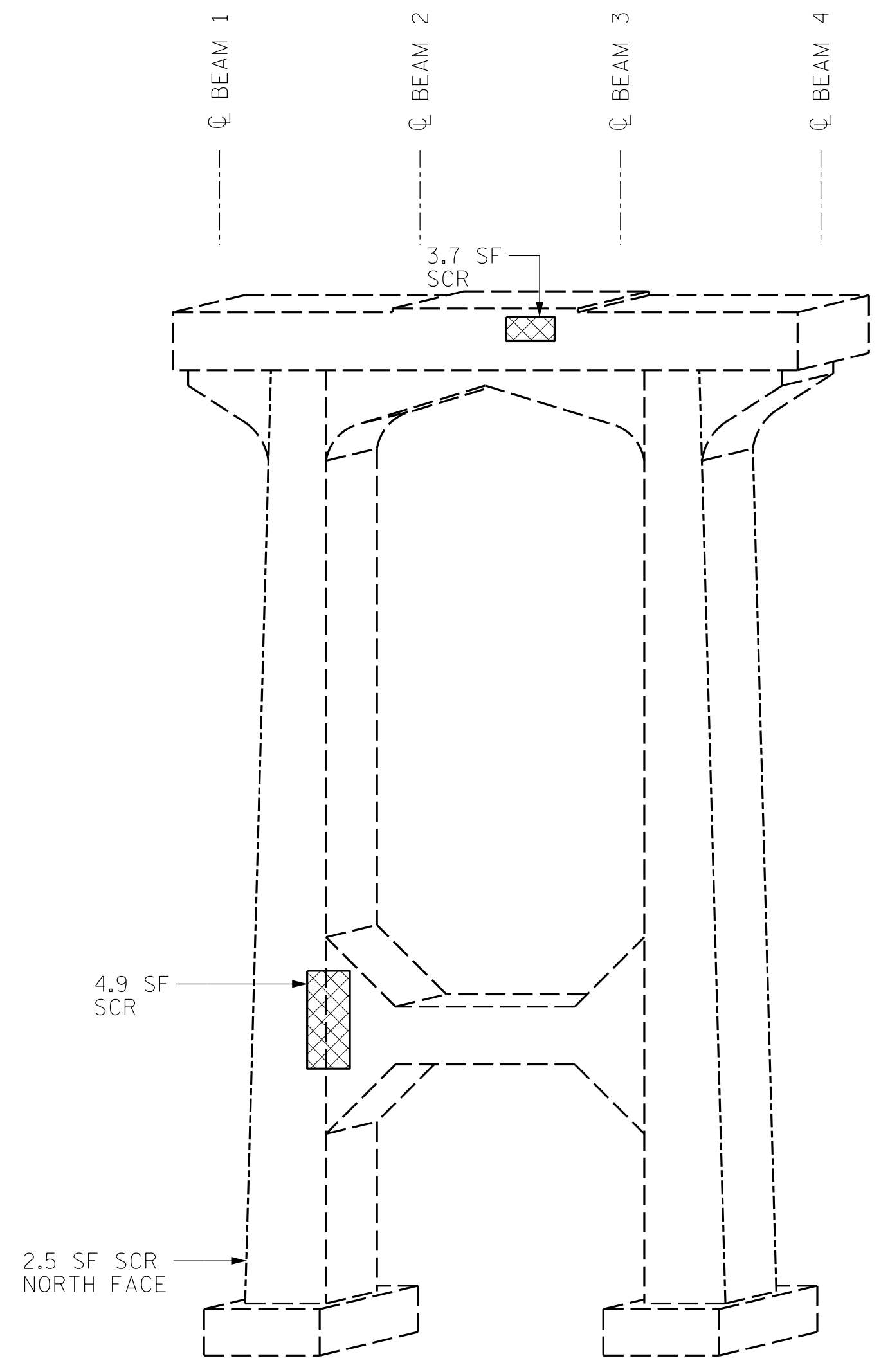
CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS  $\geq 1/16"$  AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

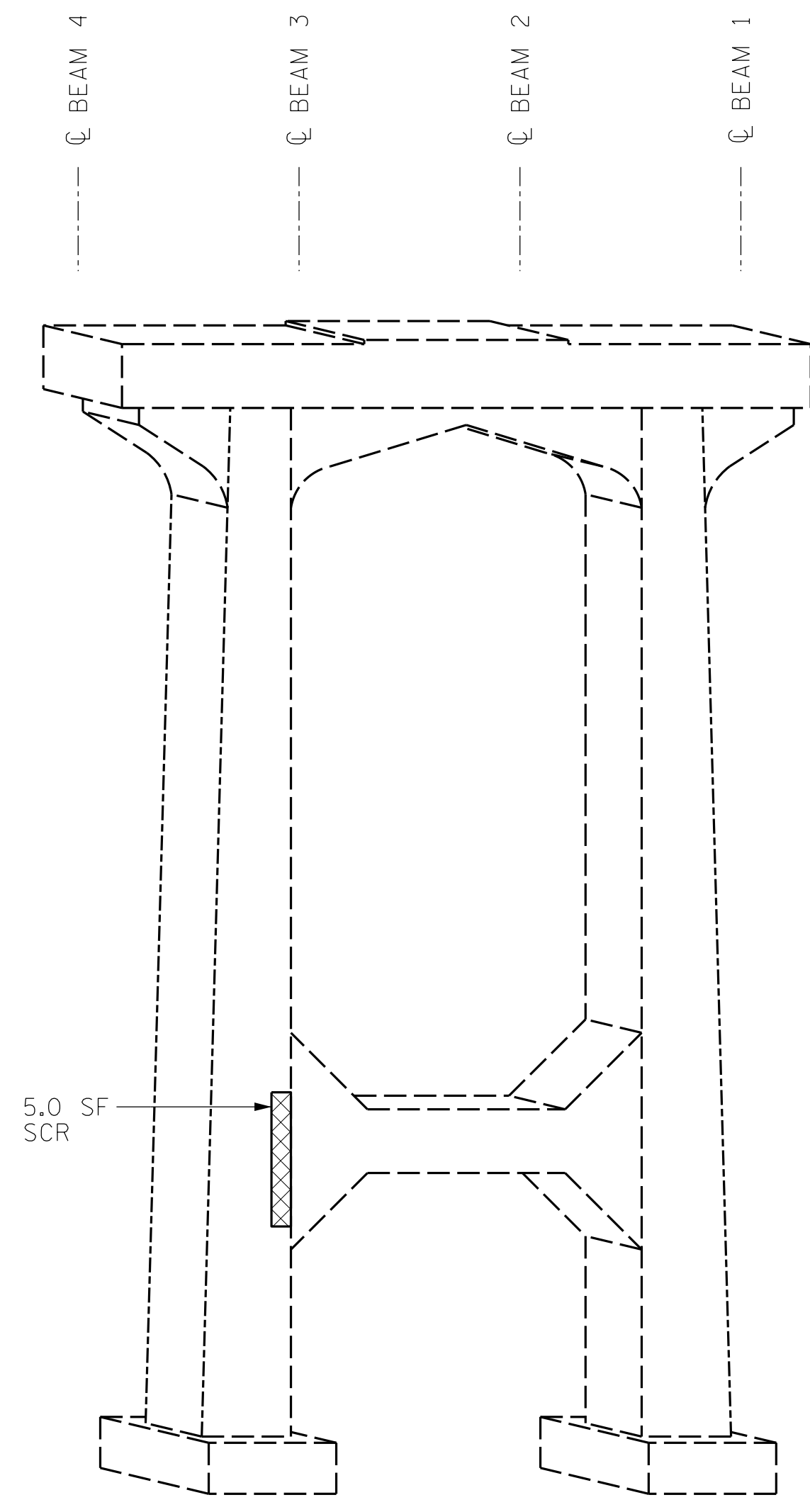
FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.



BENT 1  
(WEST FACE)



BENT 1  
(EAST FACE)

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480096

SHEET 2 OF 3



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 BENT 1



DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

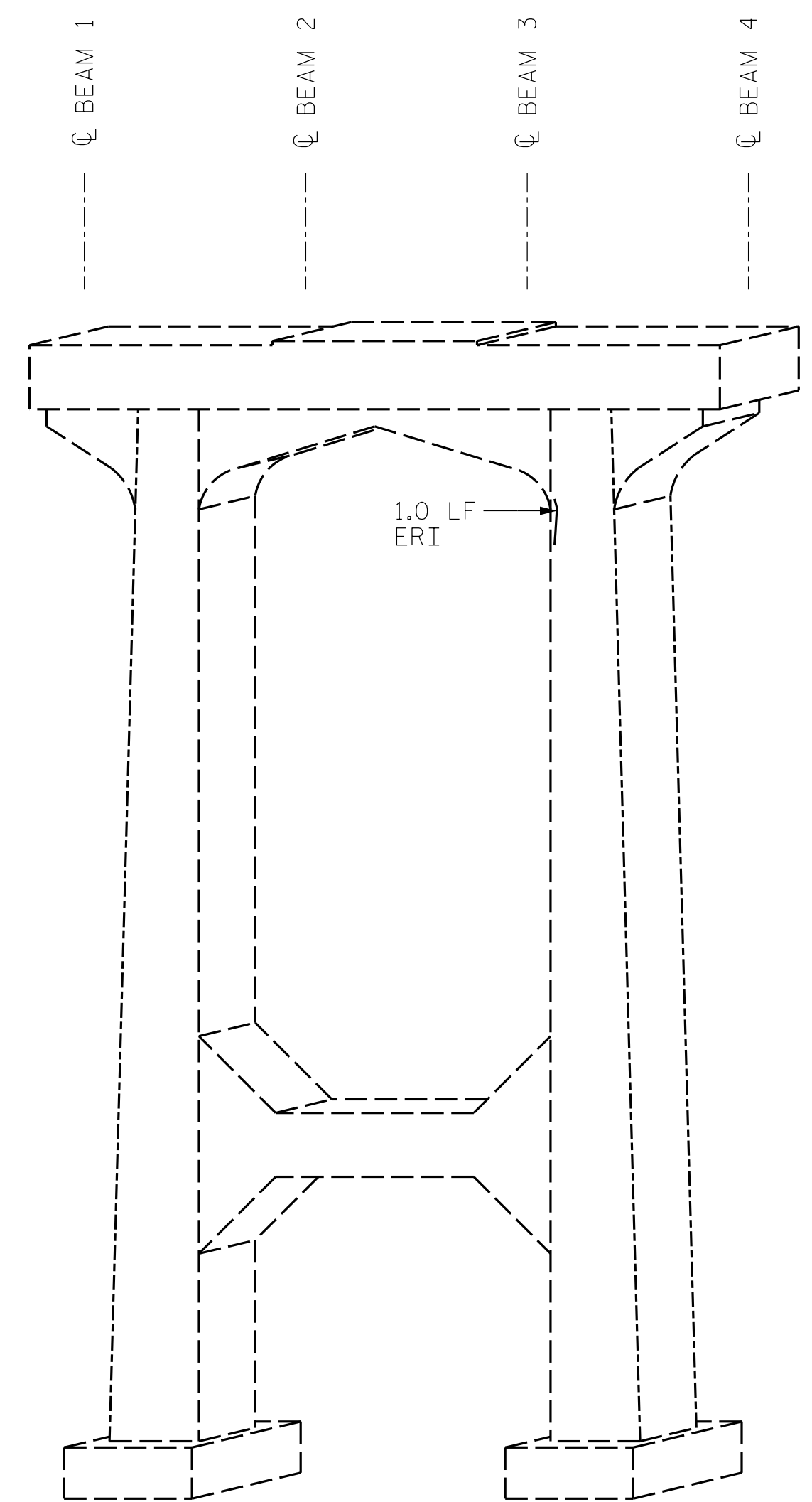
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S13-8
2			4			TOTAL SHEETS 9

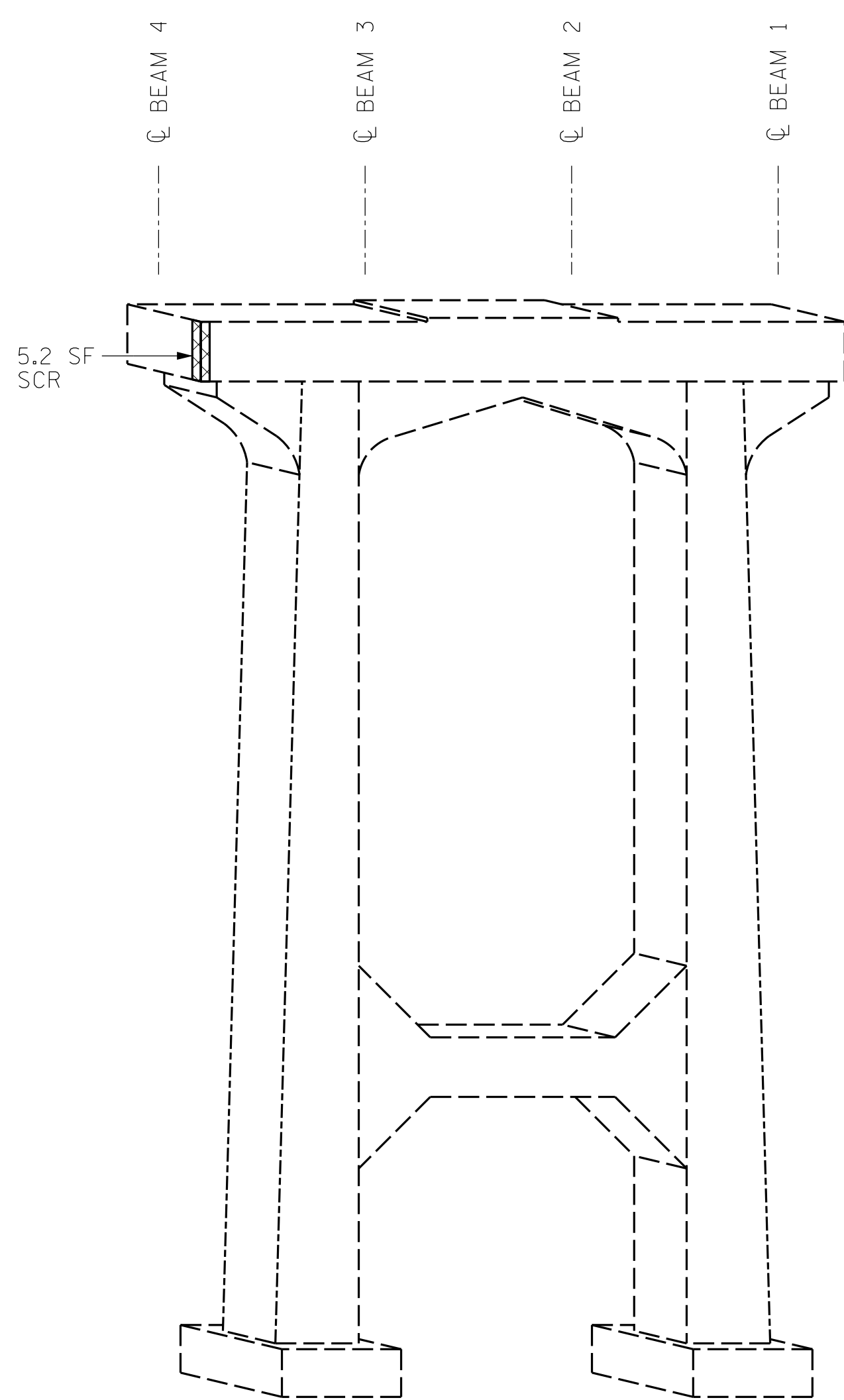


LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

		AS-BUILT REPAIR QUANTITY TABLE			
		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS		AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL		5.2	2.6		
COLUMN/PILE		-	-		
CONCRETE REPAIRS		AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP		-	-		
EPOXY RESIN INJECTION		LIN. FT.		LIN. FT.	
CAP/BACKWALL		-			
COLUMN/PILE		1.0			



BENT 2  
(WEST FACE)



BENT 2  
(EAST FACE)

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS  $\geq 1/16"$  AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
BRIDGE NO. 480096

SHEET 3 OF 3



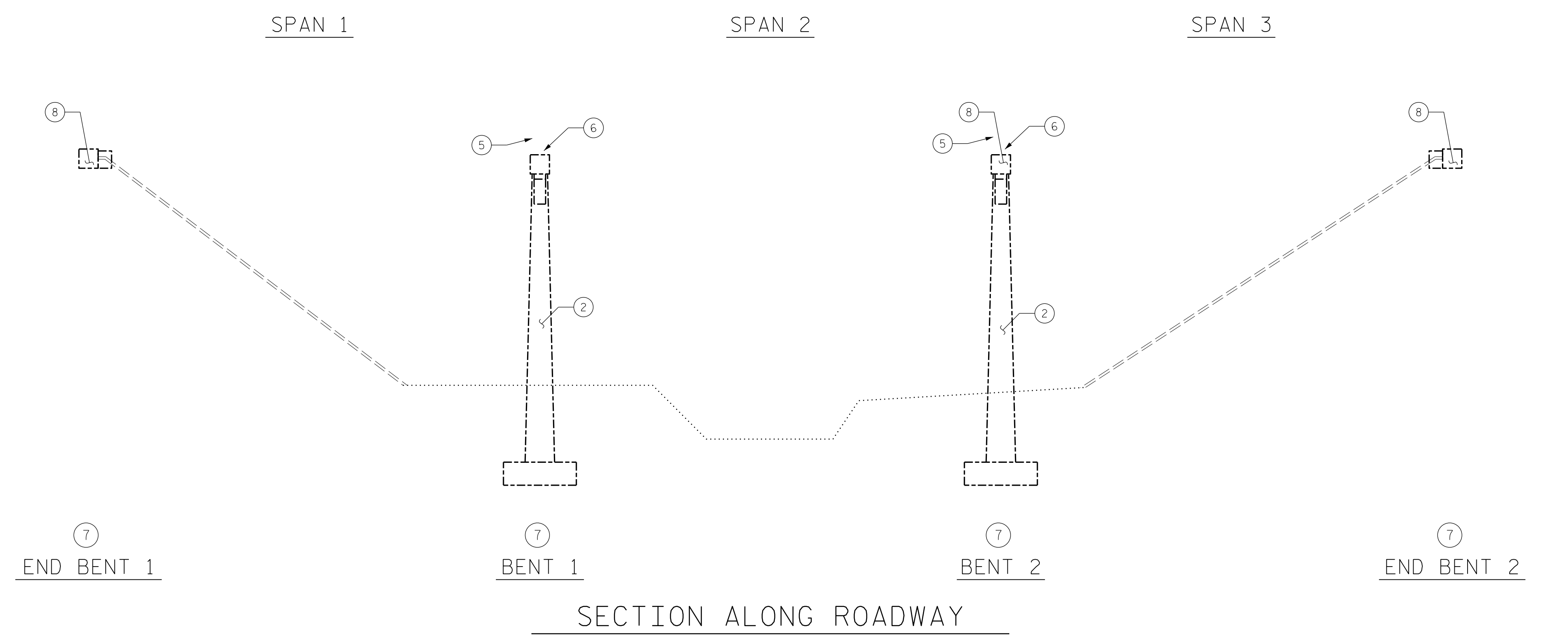
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**SUBSTRUCTURE REPAIRS**  
BENT 2



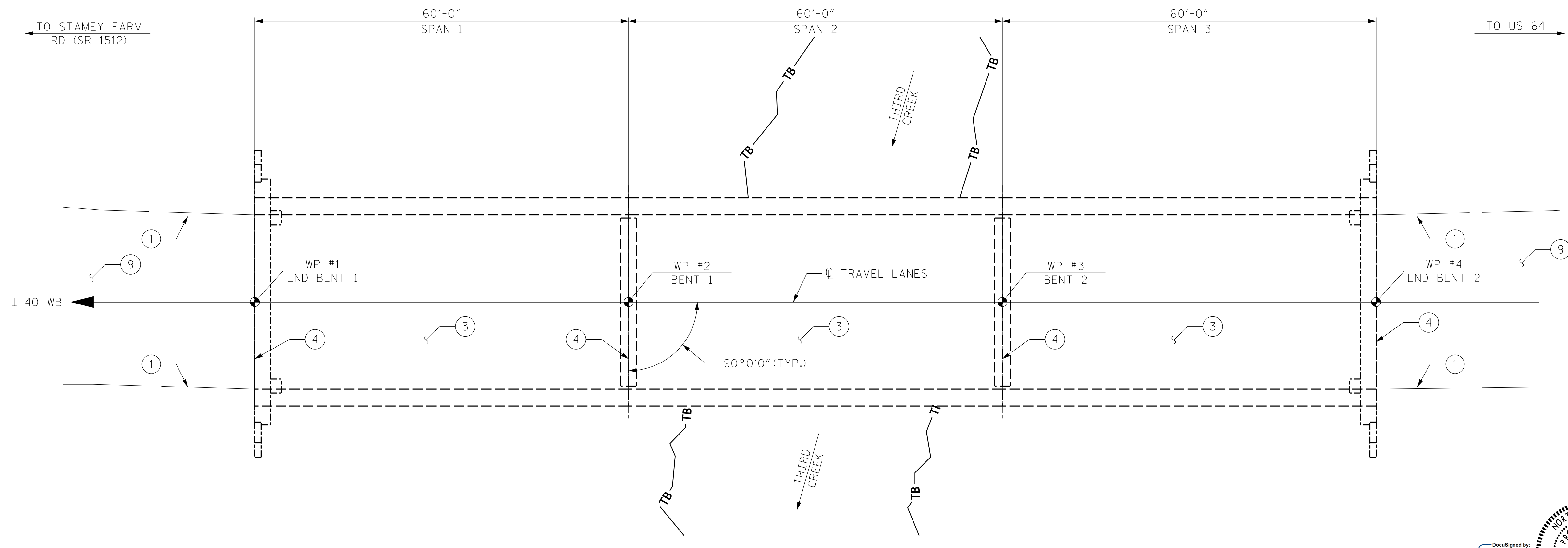
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S13-9
1			3			TOTAL SHEETS
2			4			9



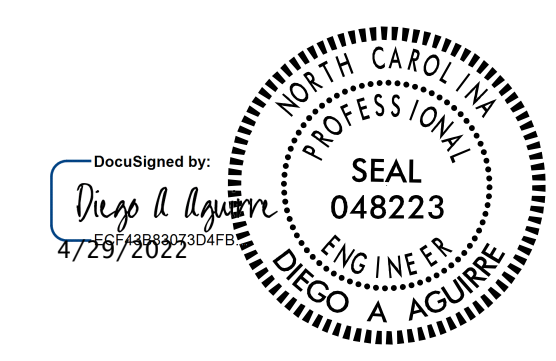
- SCOPE LEGEND:**
- ① CLEAR SHOULDERS OF DEBRIS AND VEGETATION
  - ② CLEAR SUBSTRUCTURE OF DEBRIS AND VEGETATION
  - ③ CONCRETE DECK REPAIRS AND SILANE DECK TREATMENT
  - ④ JOINT REPAIRS/REPLACEMENT
  - ⑤ SUPERSTRUCTURE CONCRETE REPAIRS
  - ⑥ PAINT EXISTING STEEL GIRDER ENDS AND BEARINGS
  - ⑦ SUBSTRUCTURE CONCRETE REPAIRS
  - ⑧ SUBSTRUCTURE EPOXY RESIN INJECTION
  - ⑨ APPROACH ROADWAY MILLING AND RESURFACING



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

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

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480102



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR BRIDGE ON I-40 WB  
 OVER THIRD CREEK

**NOTES:**

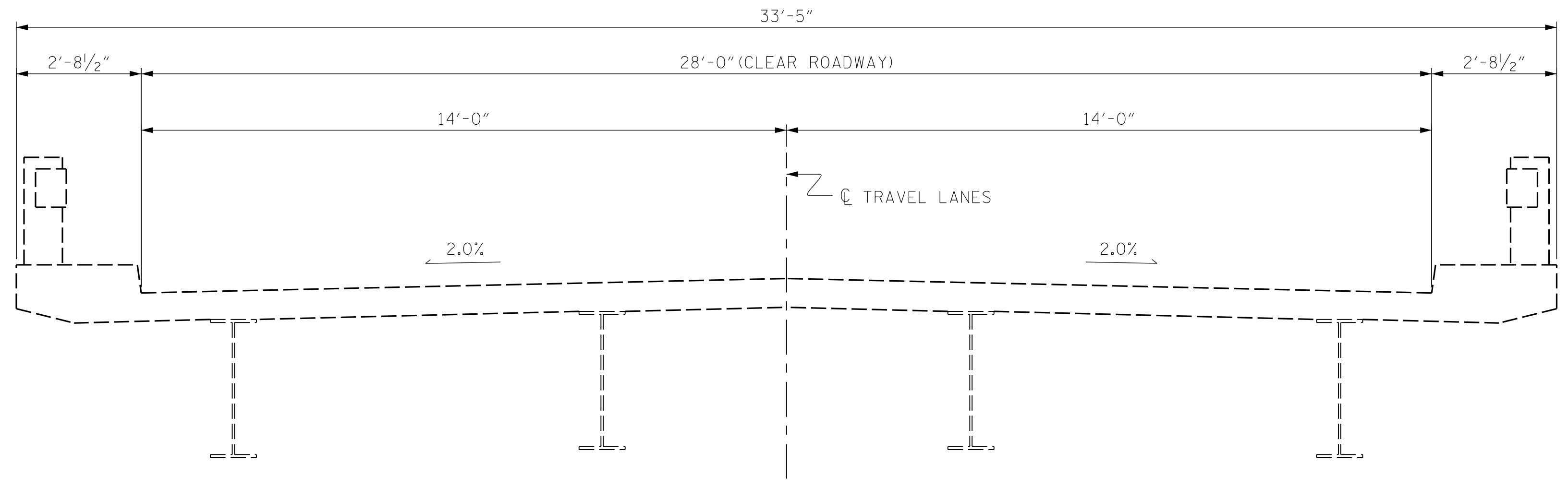
GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE MOST UP TO DATE ROUTINE INSPECTION REPORT DATED 09/21/2021.

DRAWN BY : FIDEL L. FLORES DATE : 01/2022  
 CHECKED BY : DIEGO A. AGUIRRE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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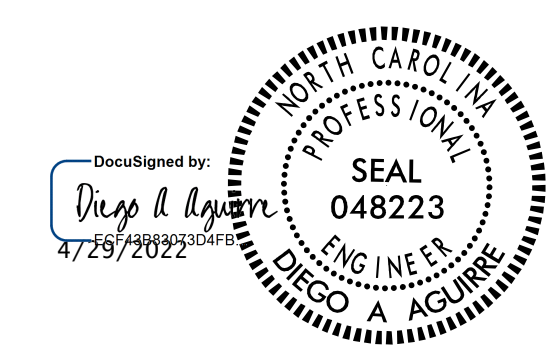
**KCA**  
**KISINGER CAMPO & ASSOCIATES**  
 301 FAYETTEVILLE ST., SUITE 1500  
 RALEIGH, NC 27601 (919) 882-7839  
 NC FIRM LICENSE: C-1506

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			9
2			4			



EXISTING

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480102



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
TYPICAL SECTION					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S14-2					TOTAL SHEETS 9

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

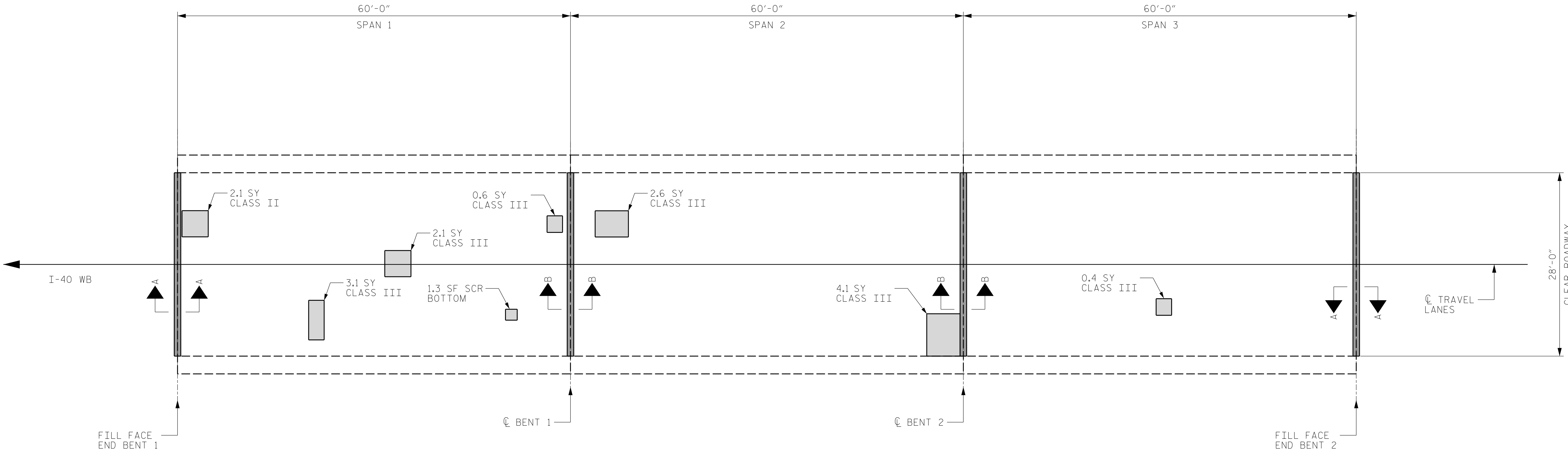
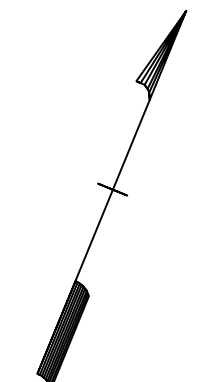
DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED



# AS-BUILT REPAIR QUANTITY TABLE

## DECK REPAIRS

	SPAN 1		SPAN 2		SPAN 3	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	2.1 SY		-- SY		-- SY	
CLASS III SURFACE PREPARATION	5.8 SY		6.7 SY		0.4 SY	
SHOTBLASTING BRIDGE DECK	187 SY		187 SY		187 SY	
SILANE DECK TREATMENT	187 SY		187 SY		187 SY	
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME
SHOTCRETE REPAIR AREA (SCR)	1.3 SF	0.5 CF			-- SF	-- CF



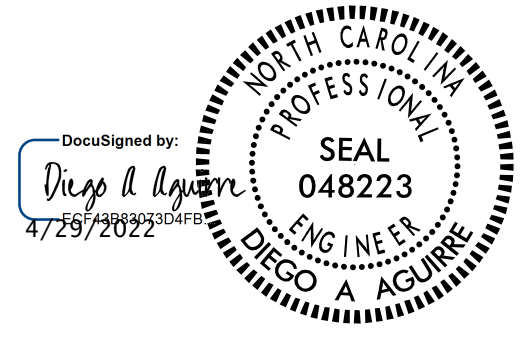
PLAN

**NOTES:**

PRIOR TO SURFACE PREPARATION, REMOVE ALL LOOSE, DISINTEGRATED, UNSOUND OR CONTAMINATED CONCRETE FROM THE BRIDGE DECK.  
 BRIDGE DECK SHOTBLASTING AND SILANE SEAL LIMITS ARE THE FULL CLEAR ROADWAY WIDTH (INSIDE FACE OF EACH BRIDGE RAIL).  
 FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.  
 FOR SILANE DECK TREATMENT AND SHOTBLASTING BRIDGE DECK, SEE SPECIAL PROVISIONS.

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.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480102



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**PLAN OF SPANS**  
**DECK REPAIRS**

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

SILANE SEAL DECK TREATMENT 	DEFECTS (SEE PLAN CALLOUT FOR DETAILS) 	BRIDGE JOINT DEMOLITION 
--------------------------------	--	-----------------------------

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S14-3
2			4			TOTAL SHEETS 9

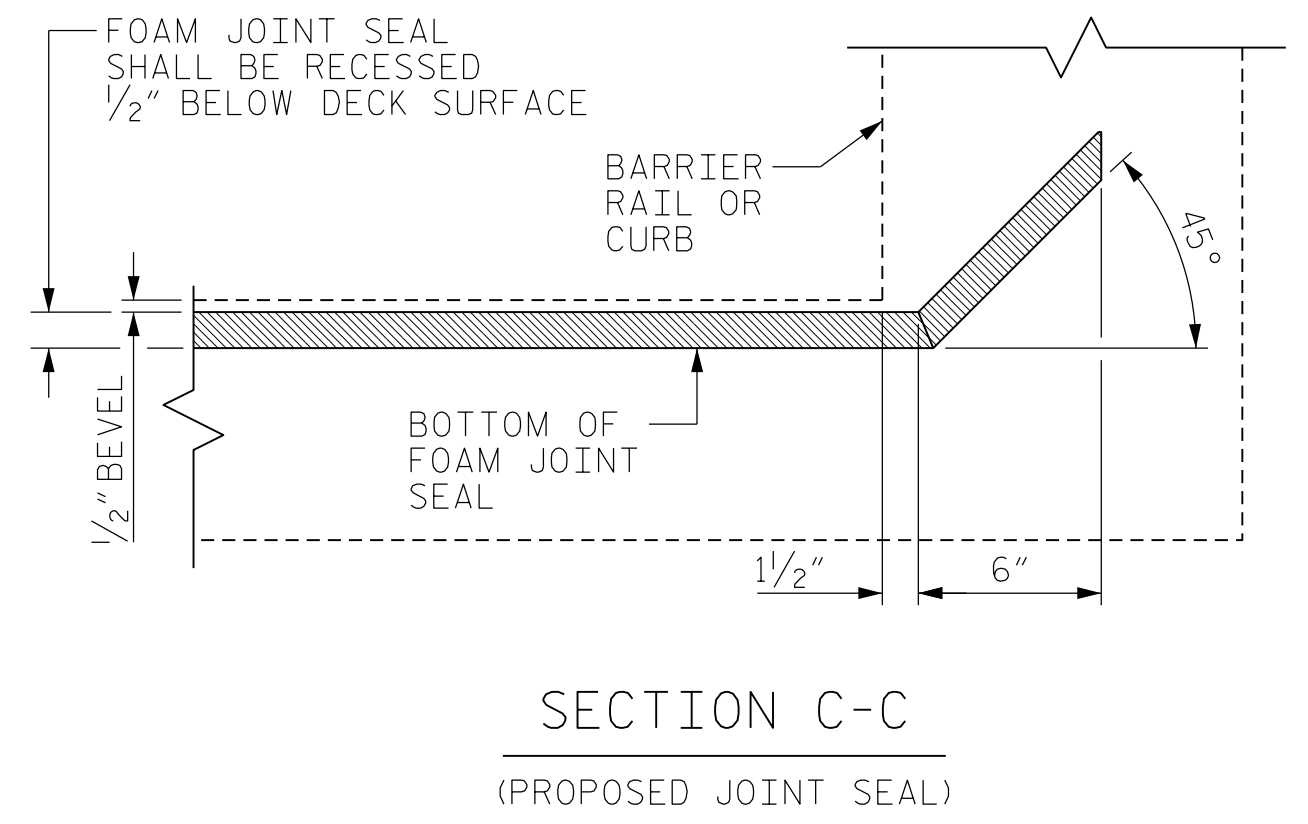
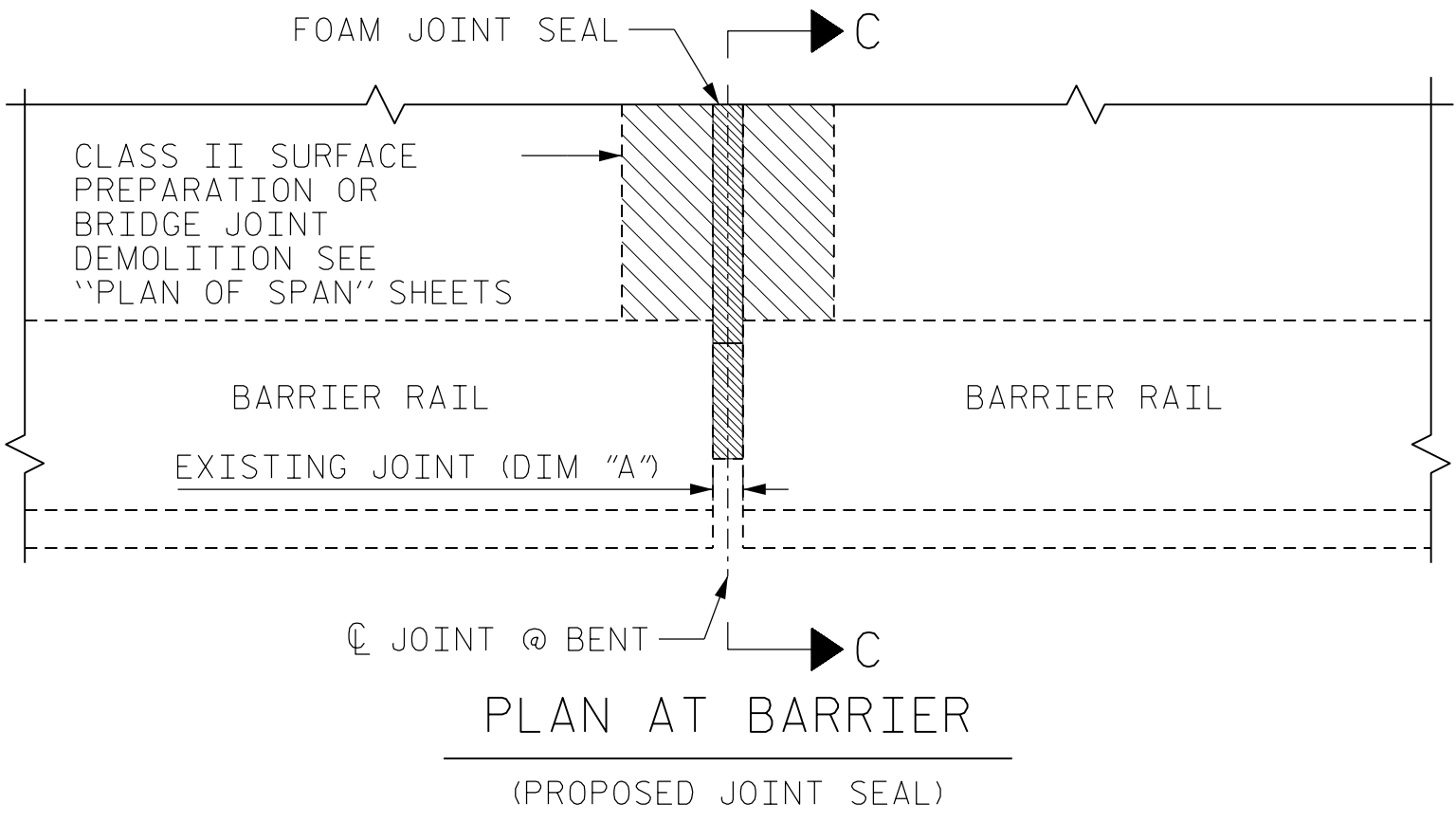
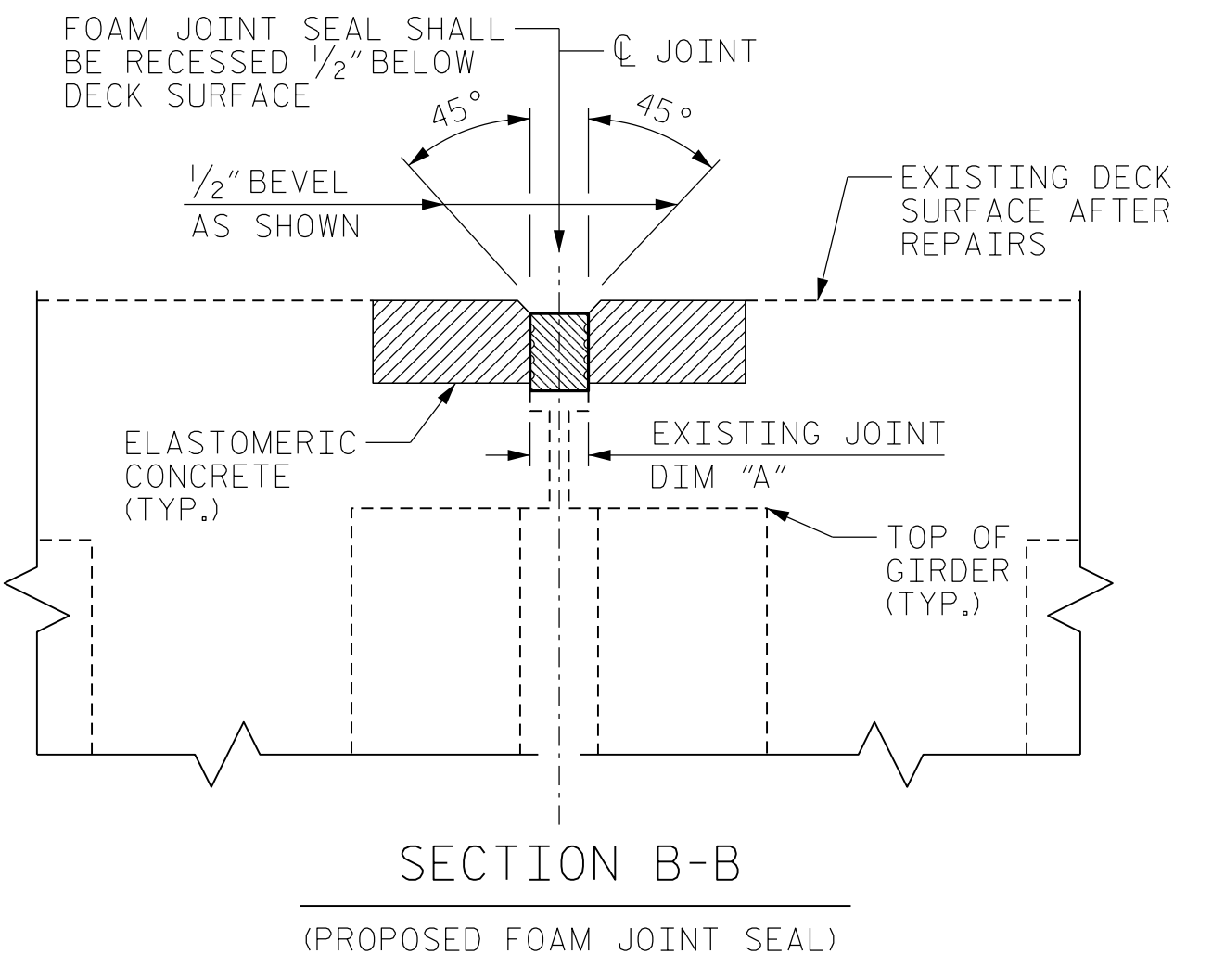
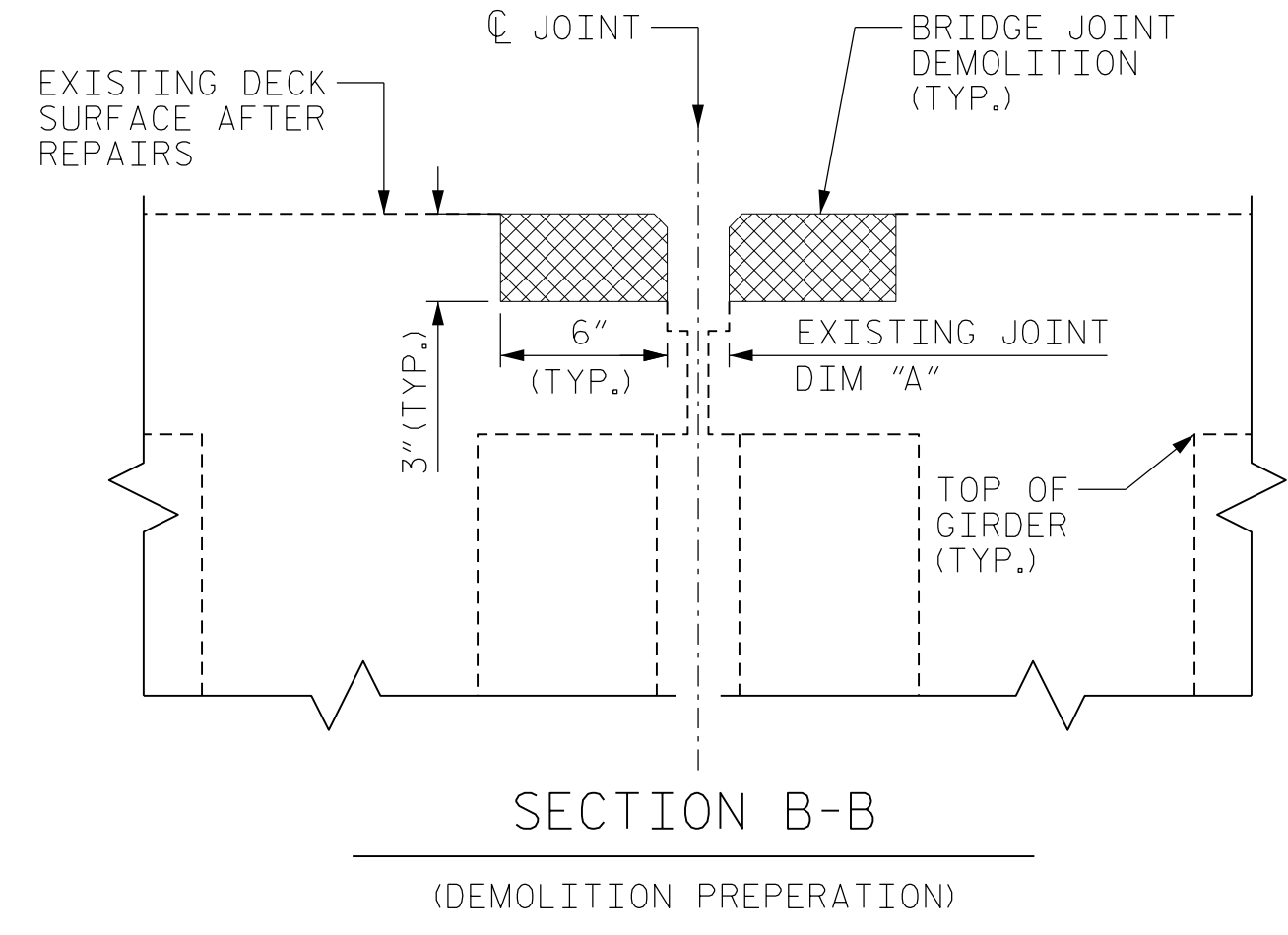
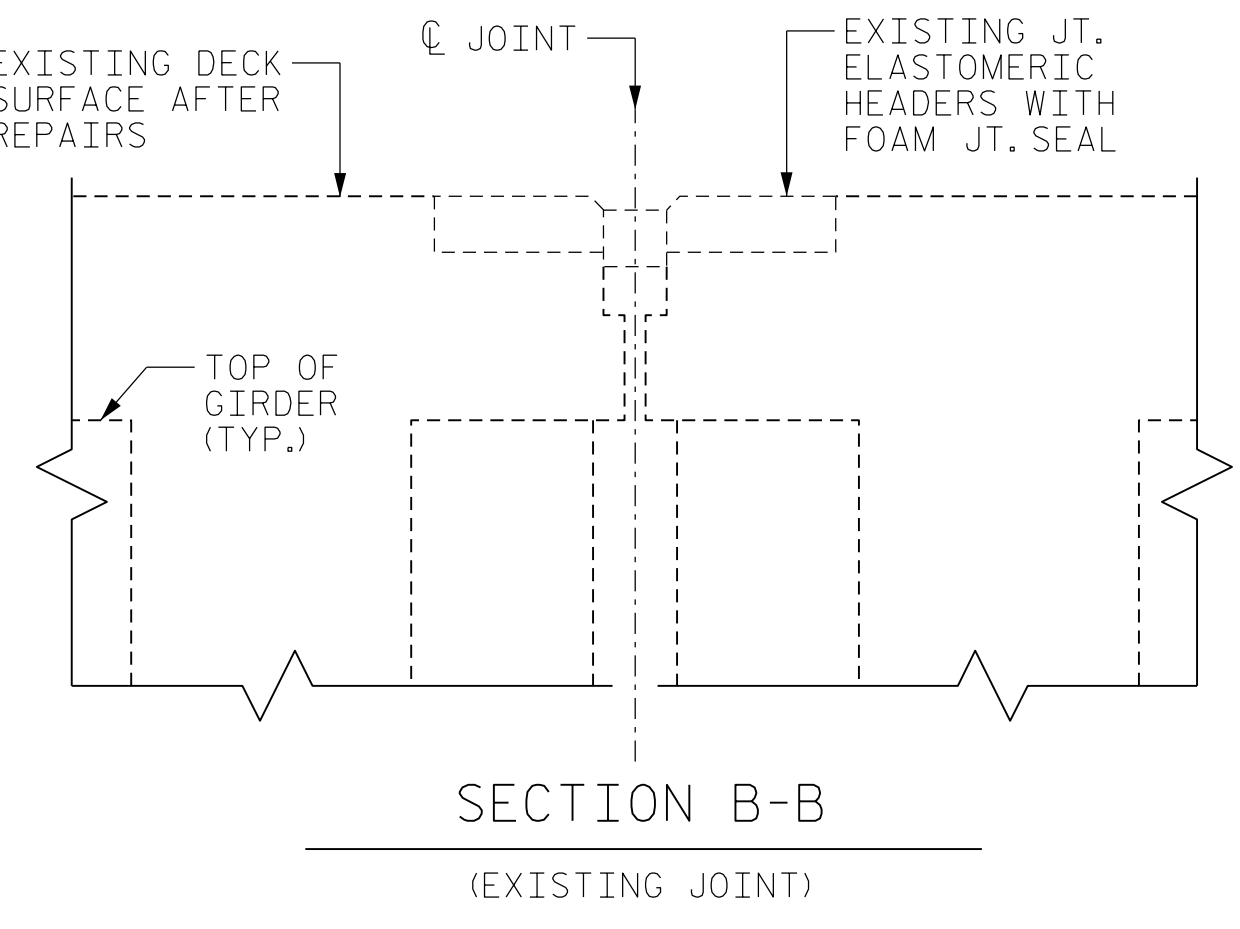
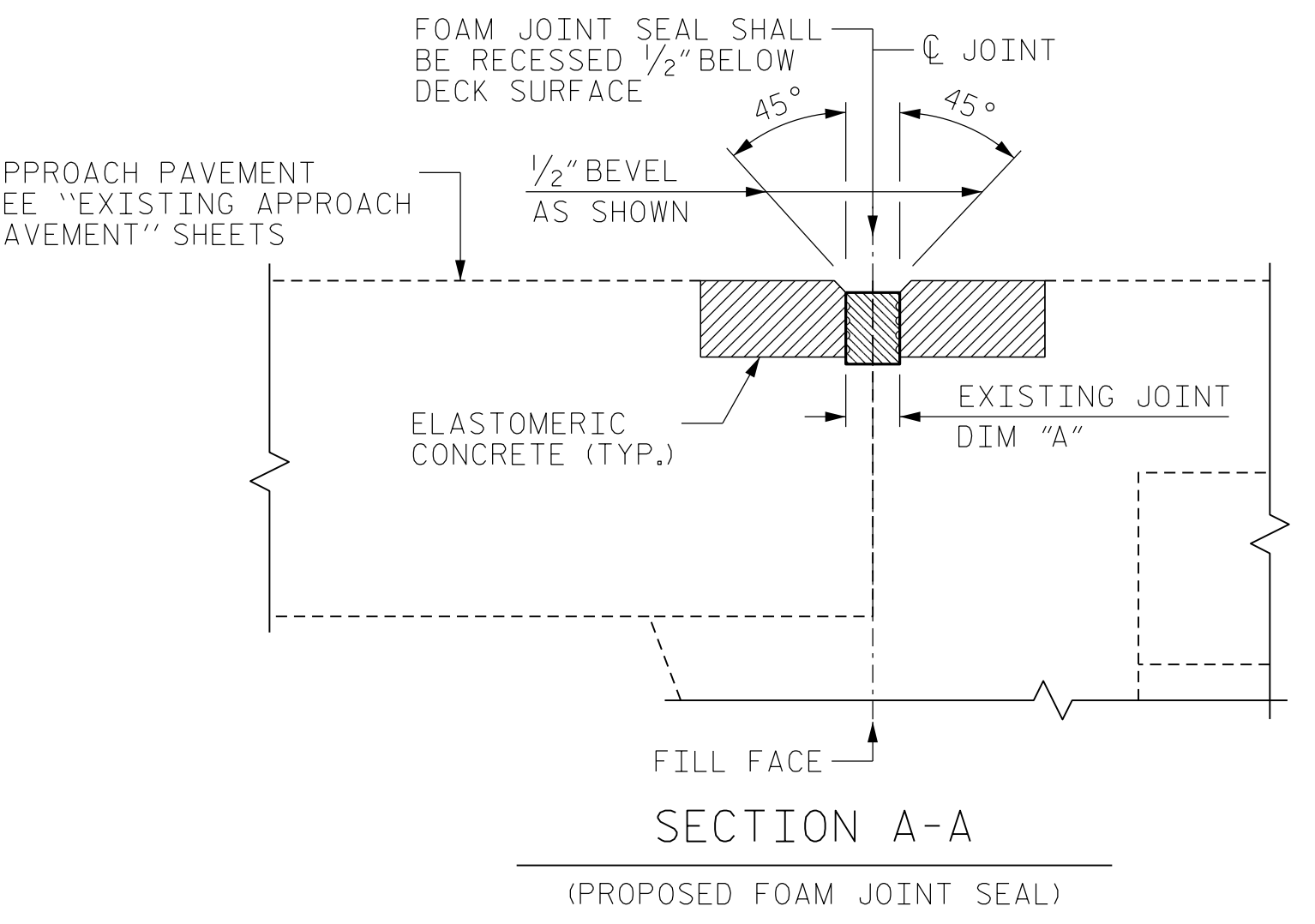
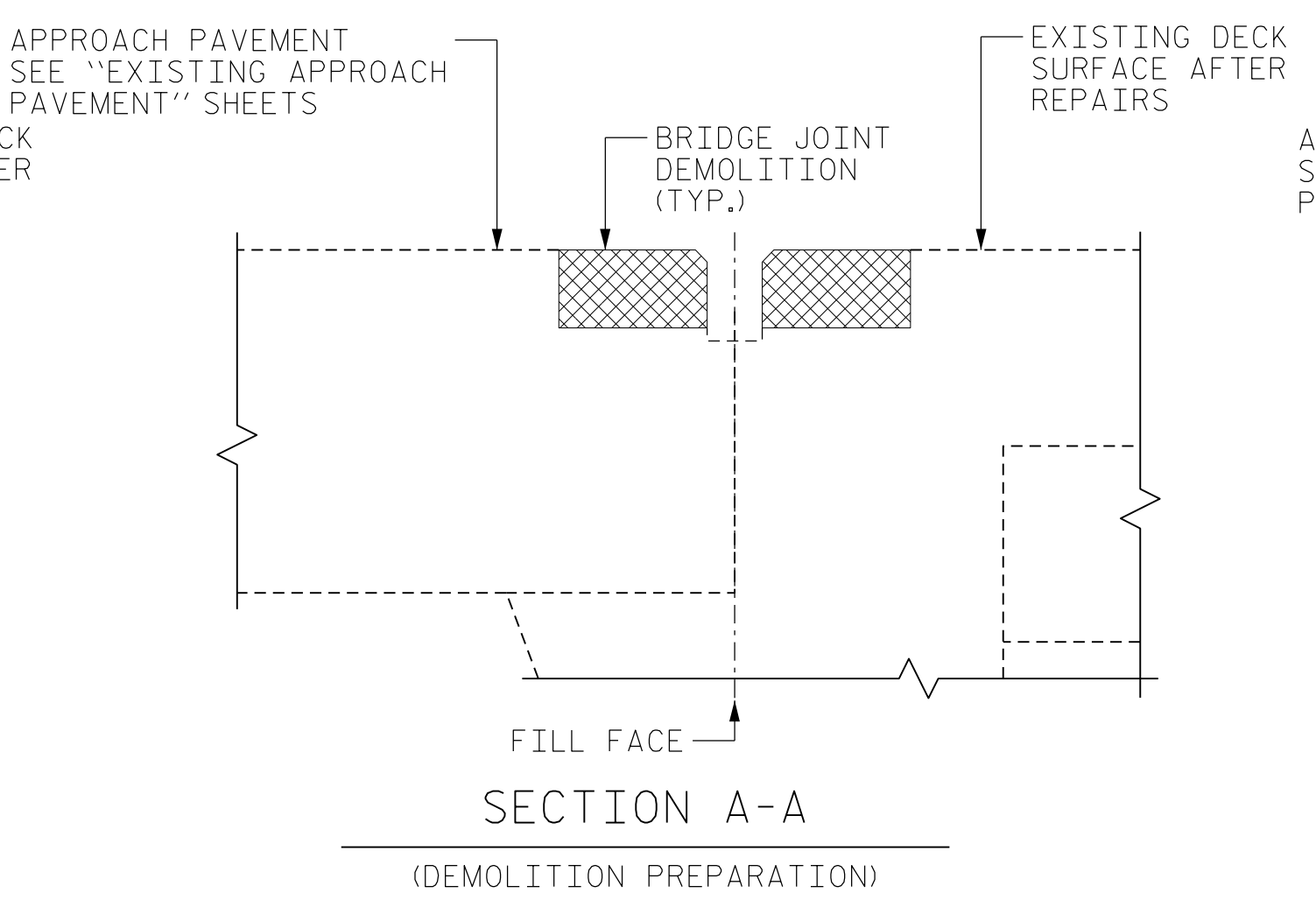
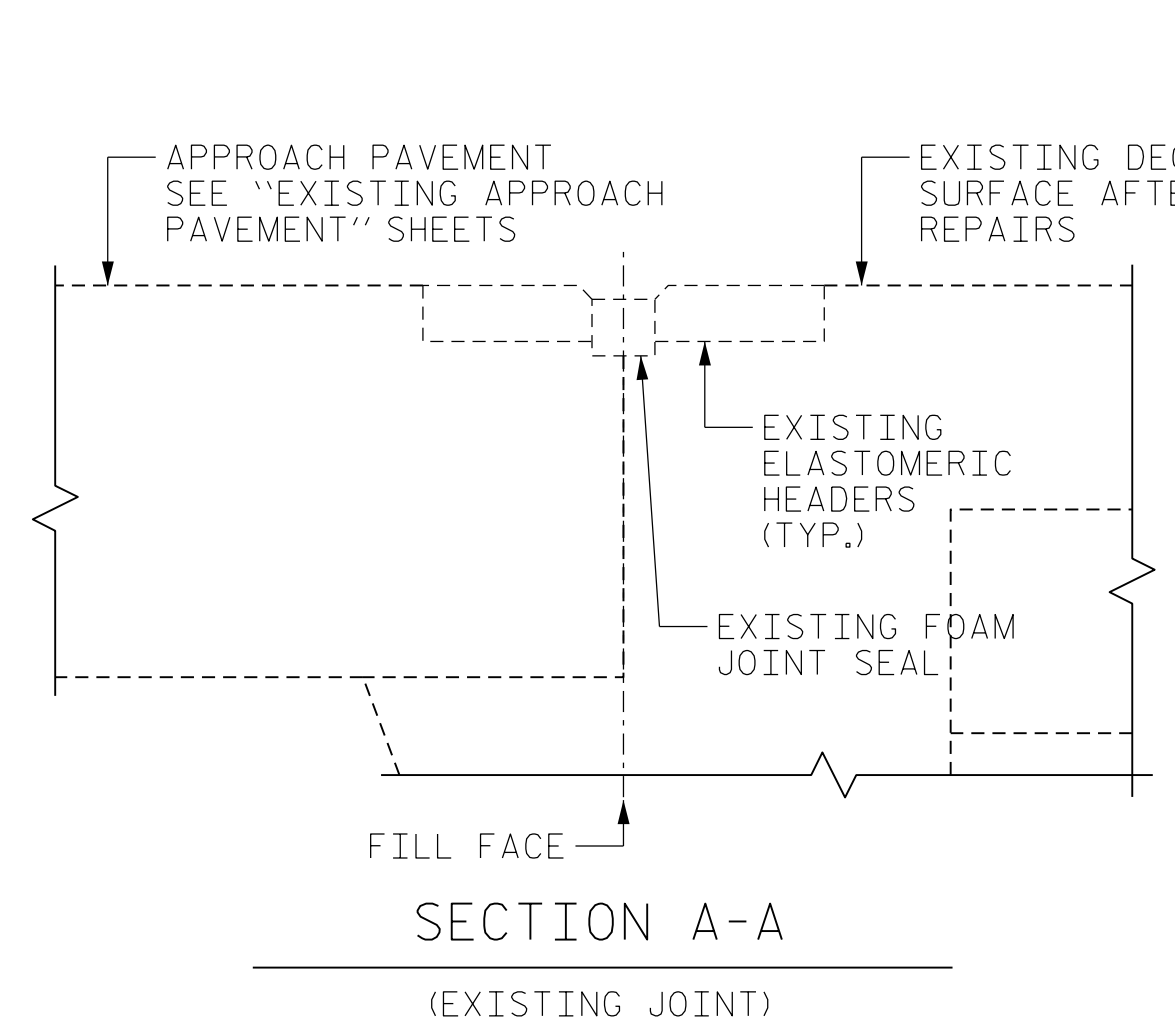


TABLE 1

Table Date 02-2022

BENT/ JOINTS	DIM "A" @ 50°F
END BENT 1	2"
1	2 1/4"
2	2"
END BENT 2	2"

BRIDGE JOINT DEMOLITION

LOCATION	ESTIMATED (SQ.FT.)	ACTUAL (SQ.FT.)
END BENTS	65.3	
BENT 1	32.7	
BENT 2	32.7	

ELASTOMERIC CONCRETE FOR PRESERVATION

LOCATION	ESTIMATED (CU.FT.)	ACTUAL (CU.FT.)
END BENTS	16.4	
BENT 1	8.2	
BENT 2	8.2	

PROPOSED JOINT QUANTITY

	ESTIMATED (LIN.FT.)	ACTUAL (LIN.FT.)
FOAM JOINT SEALS FOR PRESERVATION	118.0	

NOTES:

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF THE ACTUAL OPENING VARIES FROM THE OPENING INDICATED IN THE DETAIL BY MORE THAN 1/4", NOTIFY THE ENGINEER. REVISION OF THE JOINT SEAL SIZE MIGHT BE NECESSARY.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL FOR THE SIZE OF THE OPENING ON THE PLANS AND ACCOMMODATE THE MINIMUM EXPANSION SHOWN ON THE PLANS.

FOAM JOINTS SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL TAKE CARE DURING JOINT REPAIR OPERATIONS NOT TO DROP ANY MATERIAL THAT FALLS BELOW THE BRIDGE, WITHOUT PROTECTIVE DEVICES BELOW TO CATCH THE MATERIAL. ANY MATERIAL THAT FALLS BELOW THE BRIDGE SHALL BE CONTAINED, REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO EXTRA COST TO THE DEPARTMENT. IF THE ENGINEER DETERMINES THAT THE PROTECTIVE DEVICES ARE NOT ADEQUATE OR NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

QUANTITIES SHOWN IN THE ELASTOMERIC CONCRETE FOR PRESERVATION TABLE BASED ON THE MINIMUM JOINT DEMOLITION SHOWN.

FOR EXCAVATION BELOW THE BOTTOM OF THE PLANNED JOINT DECK DEMOLITION, CONCRETE FOR DECK REPAIRS SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT BOTTOM OF THE PROPOSED ELASTOMERIC CONCRETE FOR PRESERVATION HEADERS SHOWN.

IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, OR IF UNSOUND CONCRETE IS REMOVED WITHIN 2" OF THE WATERSTOP, THE ENTIRE CONCRETE DEPTH TO THE WATERSTOPS SHALL BE REMOVED. IF SUCH EXCAVATION EXTENDS MORE THAN 2" BELOW THE BOTTOM OF THE PLANNED ELASTOMERIC CONCRETE HEADER, AS SHOWN, APPROVED REPAIR CONCRETE SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT THE BOTTOM OF THE ELASTOMERIC CONCRETE.

DEMOLISH BRIDGE JOINT AREA SUCH THAT THE BOTTOM OF THE EXCAVATION SHALL BE REASONABLY FLAT AND LEVEL AND TO THE NECESSARY DEPTH, SUCH THAT ELASTOMERIC CONCRETE SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE.

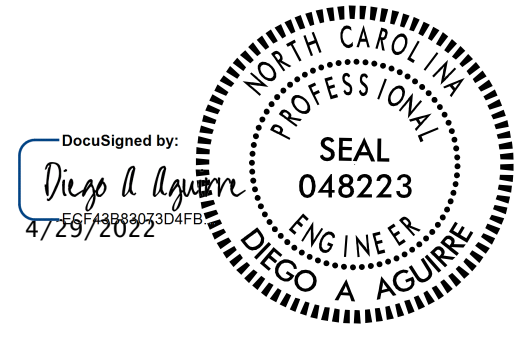
FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
BRIDGE NO. 480102



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

JOINT DETAILS

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
CHECKED BY : JACOB H. DUKE DATE : 01/2022  
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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1			3			S14-4
2			4			TOTAL SHEETS 9

# AS-BUILT REPAIR QUANTITY TABLE

	ESTIMATE	ACTUAL
INCIDENTAL MILLING	318 SY	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	27 TON	
ASPHALT BINDER FOR PLANT MIX	1.6 TON	
CLASS II SURFACE PREPARATION	1.5 SY	

## NOTES:

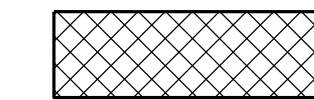
INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVEMENT TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1/2" DEPTH OF NEW ASPHALT PAVEMENT. NEW ASPHALT PAVEMENT SHALL BE OF THICKNESS NECESSARY TO PROVIDE A SMOOTH TRANSITION BETWEEN THE ROADWAY AND THE BRIDGE DECK. THE NEW ASPHALT PAVEMENT THICKNESS MAY EXCEED 1/2" DUE TO SETTLEMENT OF THE EXISTING APPROACH.

FOR NEW ASPHALT PLACEMENT, SEE STANDARD SPECIFICATIONS.

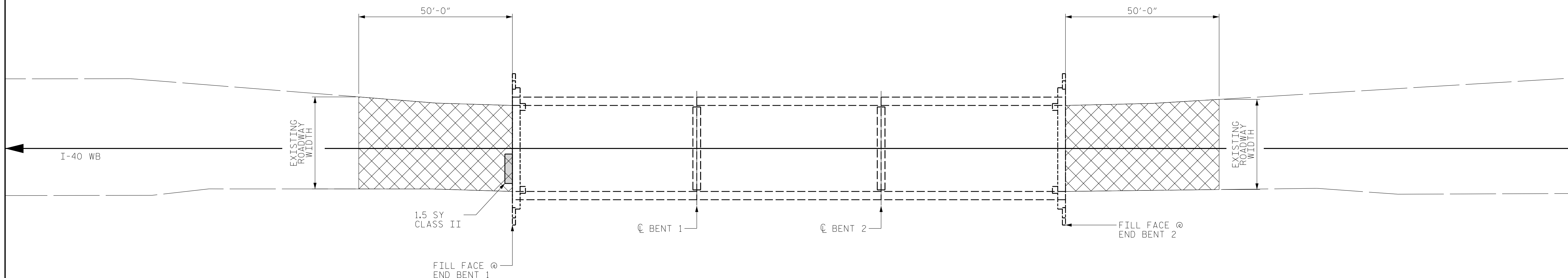
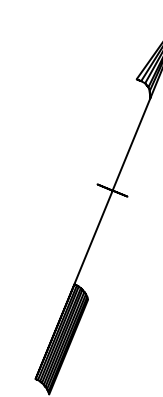
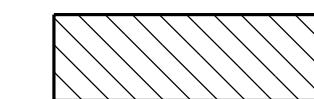
GRADE MAY BE ADJUSTED BY THE ENGINEER TO ENSURE PROPER TIE-IN AT THE END BENTS.

**C1** PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 2" IN DEPTH.

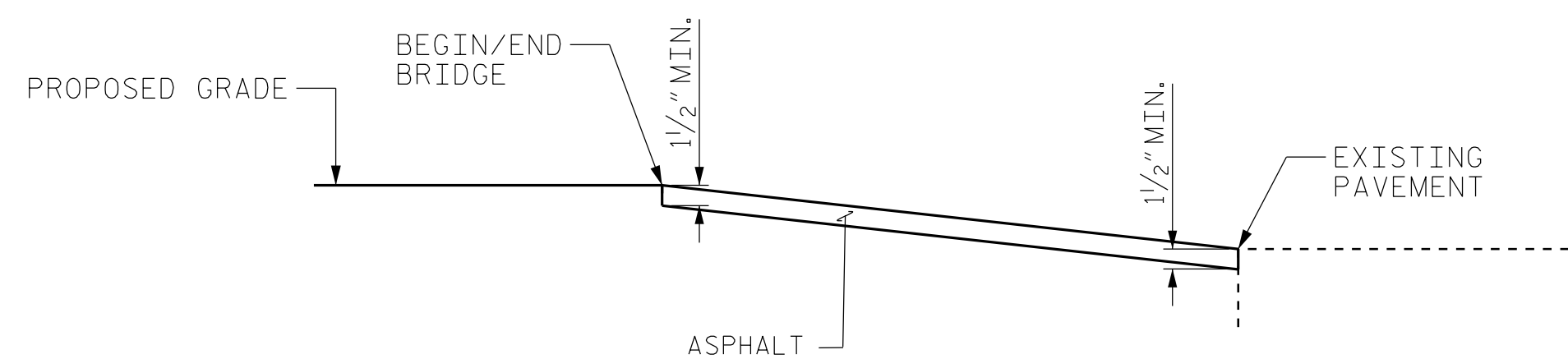
INCIDENTAL MILLING



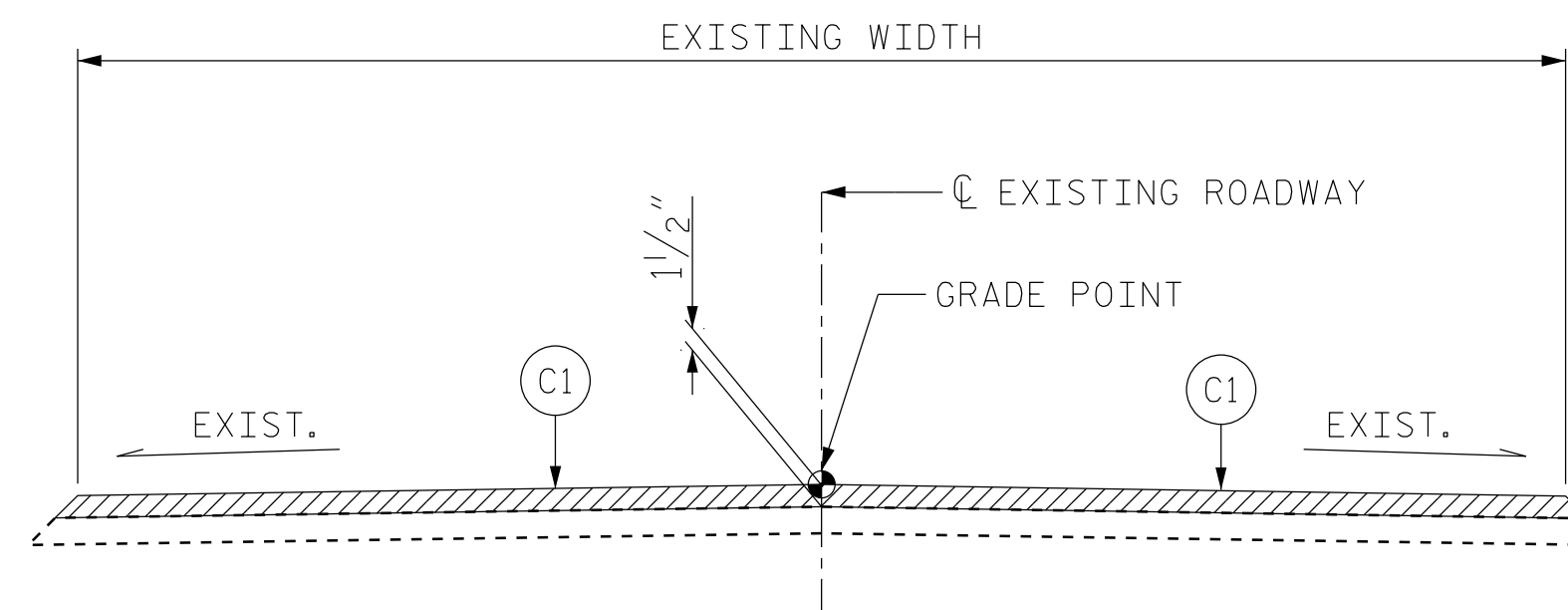
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C (C1)



PLAN



PAVEMENT KEY-IN DETAIL FOR BOTH END BENTS



ROADWAY SECTION

BEGIN/END BRIDGE

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480102



**KCA**  
 KISINGER CAMPO  
 & ASSOCIATES  
 301 FAYETTEVILLE ST., SUITE 1500  
 RALEIGH, NC 27601 (919) 882-7839  
 NC FIRM LICENSE: C-1506

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**APPROACH ROADWAY  
 MILLING AND RESURFACING**

DRAWN BY : FIDEL L. FLORES DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DEFECTS (SEE PLAN  
 CALLOUT FOR DETAILS)



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2			4			




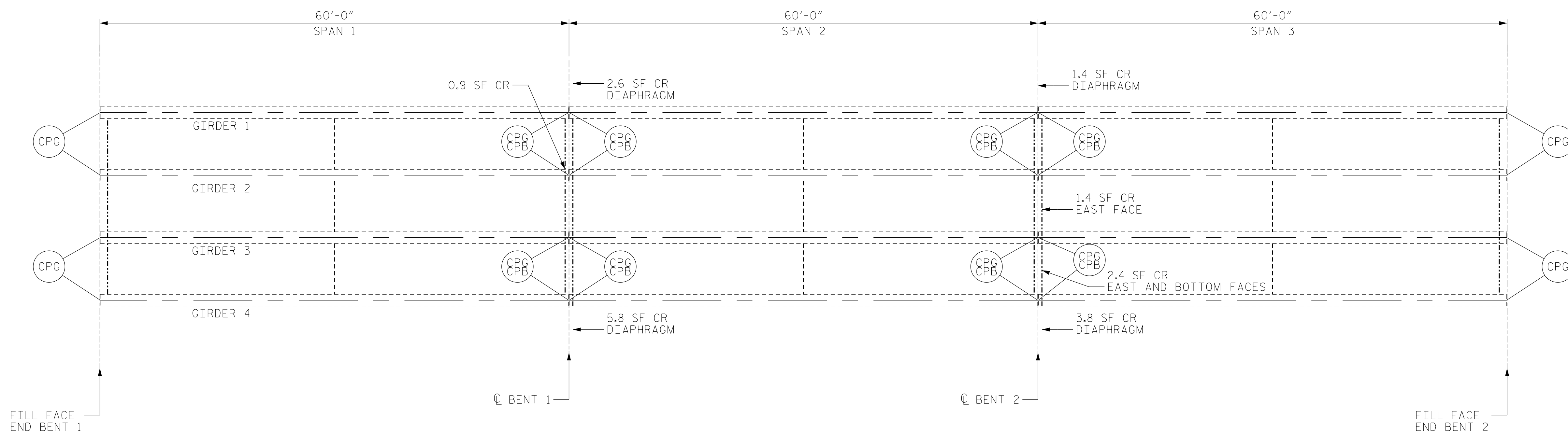
# AS-BUILT REPAIR QUANTITY TABLE

## SUPERSTRUCTURE REPAIRS

	SPAN 1		SPAN 2		SPAN 3							
	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL					
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME				
CONCRETE REPAIR AREA (CR)	0.9 SF	0.3 CF			8.4 SF	2.9 CF			9.0 SF	4.4 CF		
	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA	4 EA				8 EA				4 EA			

**LEGEND:**

-  CLEAN AND PAINT GIRDER ENDS (5 LF)
-  CLEAN AND PAINT BEARING
- CR CONCRETE REPAIR AREA



PLAN

**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 TABLE ABOVE.

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

FOR CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA, SEE SPECIAL PROVISIONS.

FOR ZONE PAINTING OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR DETAILS OF CLEANING AND PAINTING GIRDER ENDS (CPG), SEE "MISCELLANEOUS REPAIRS" SHEET.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480102



**KISINGER CAMPO & ASSOCIATES**  
 301 FAYETTEVILLE ST., SUITE 1500  
 RALEIGH, NC 27601 (919) 882-7839  
 NC FIRM LICENSE: C-1506

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

### SUPERSTRUCTURE REPAIRS

DRAWN BY :	ALLEN J. MCSWAIN	DATE :	01/2022
CHECKED BY :	JACOB H. DUKE	DATE :	01/2022
DESIGN ENGINEER OF RECORD:	DIEGO A. AGUIRRE	DATE :	01/2022

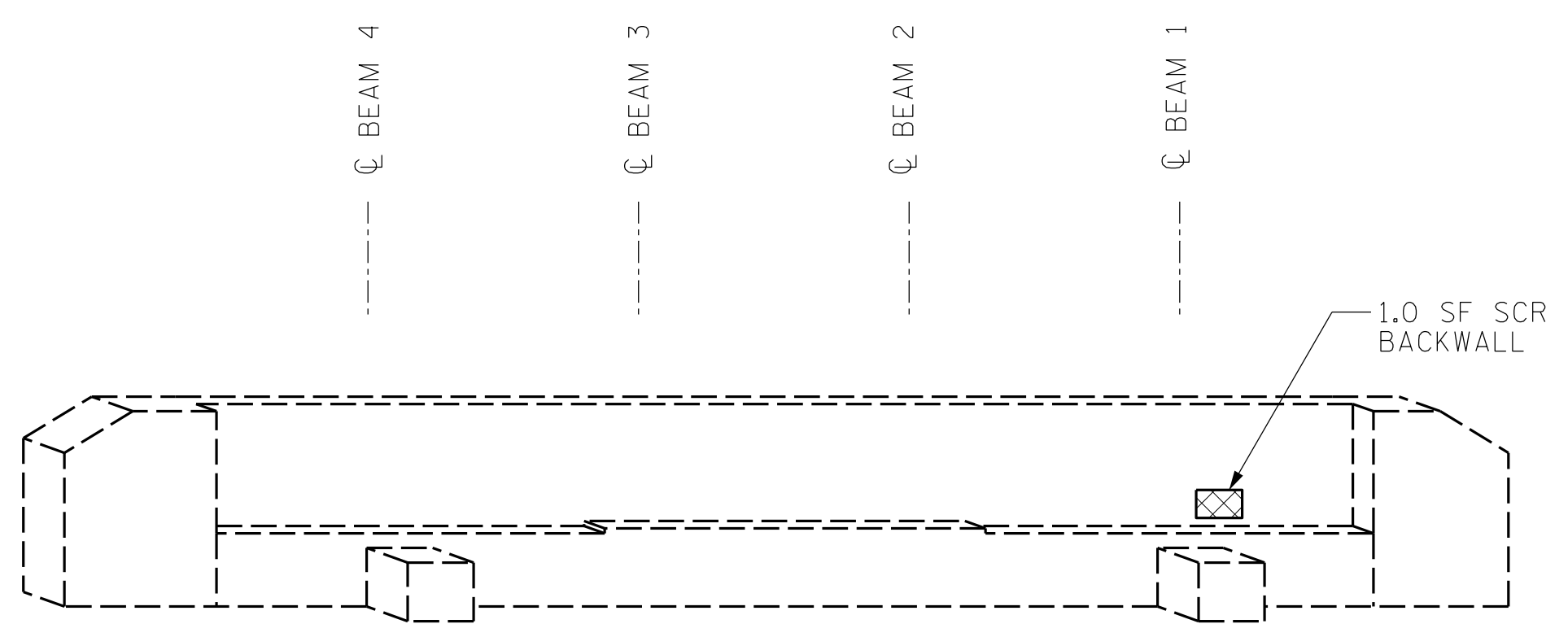
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 I5915B.SMU.SSR01.480102.dgn  
 daguirre

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 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

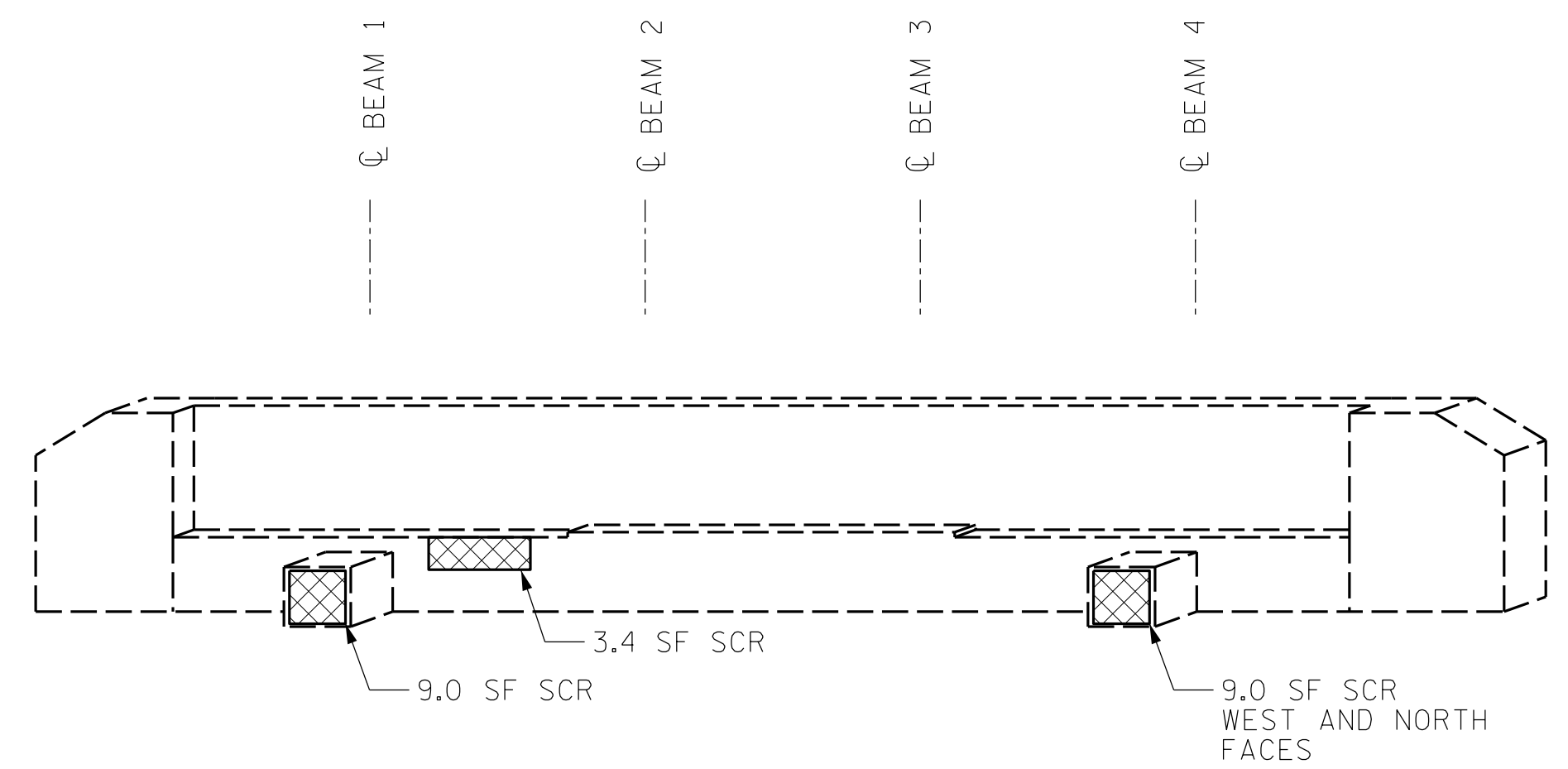
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S14-6
2			4			TOTAL SHEETS 9

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	22.4	10.6		
COLUMN/PILE	-	-		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	-			
COLUMN/PILE	-			



END BENT 1  
(EAST FACE)



END BENT 2  
(WEST FACE)

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

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AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

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REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
BRIDGE NO. 480102

SHEET 1 OF 3



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
SUBSTRUCTURE REPAIRS  
END BENTS 1 & 2

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S14-7
2			4			TOTAL SHEETS 9

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	6.6	2.3		
COLUMN/PILE	-	-		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	-			
COLUMN/PILE	-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

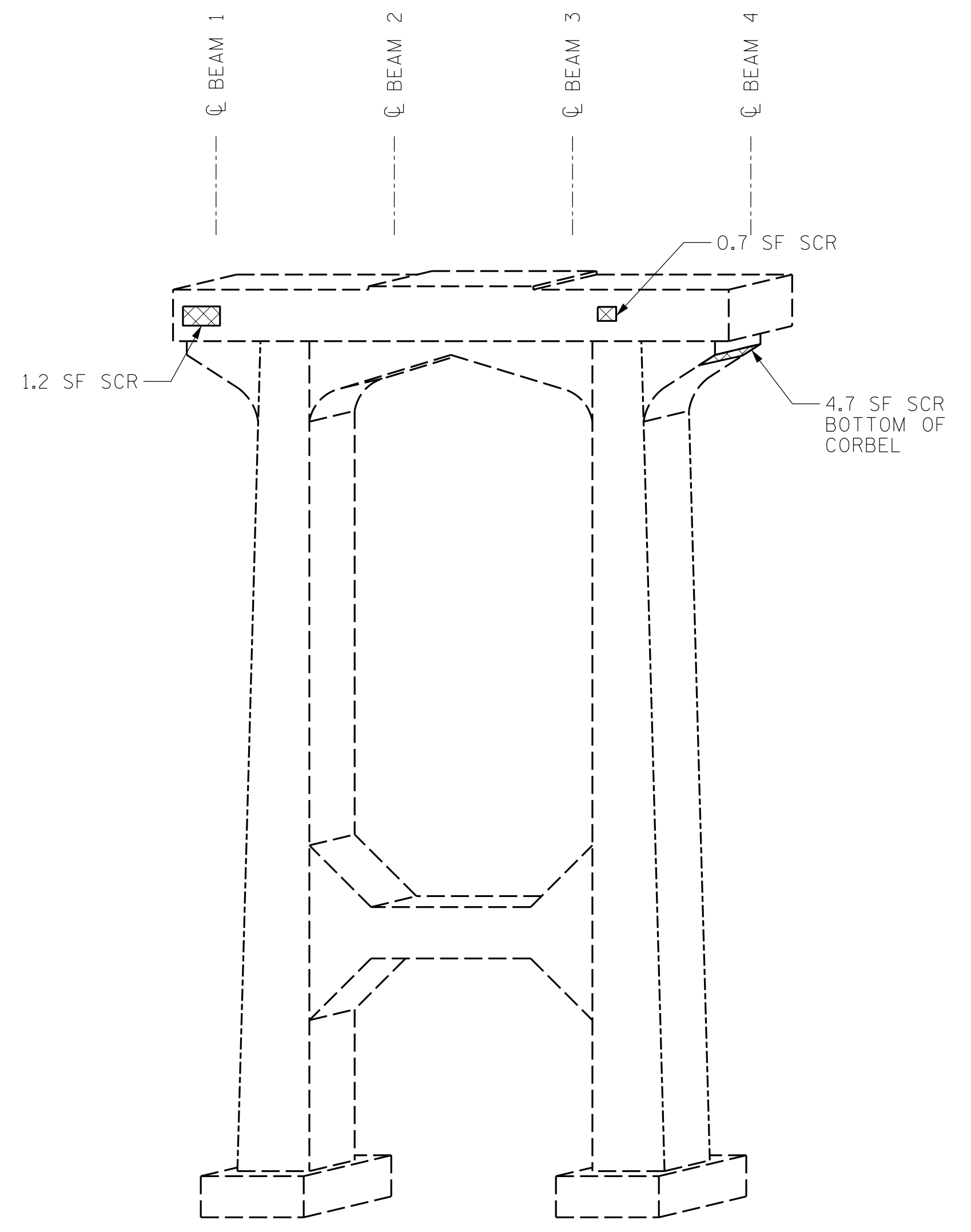
CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS  $\geq 1/16"$  AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

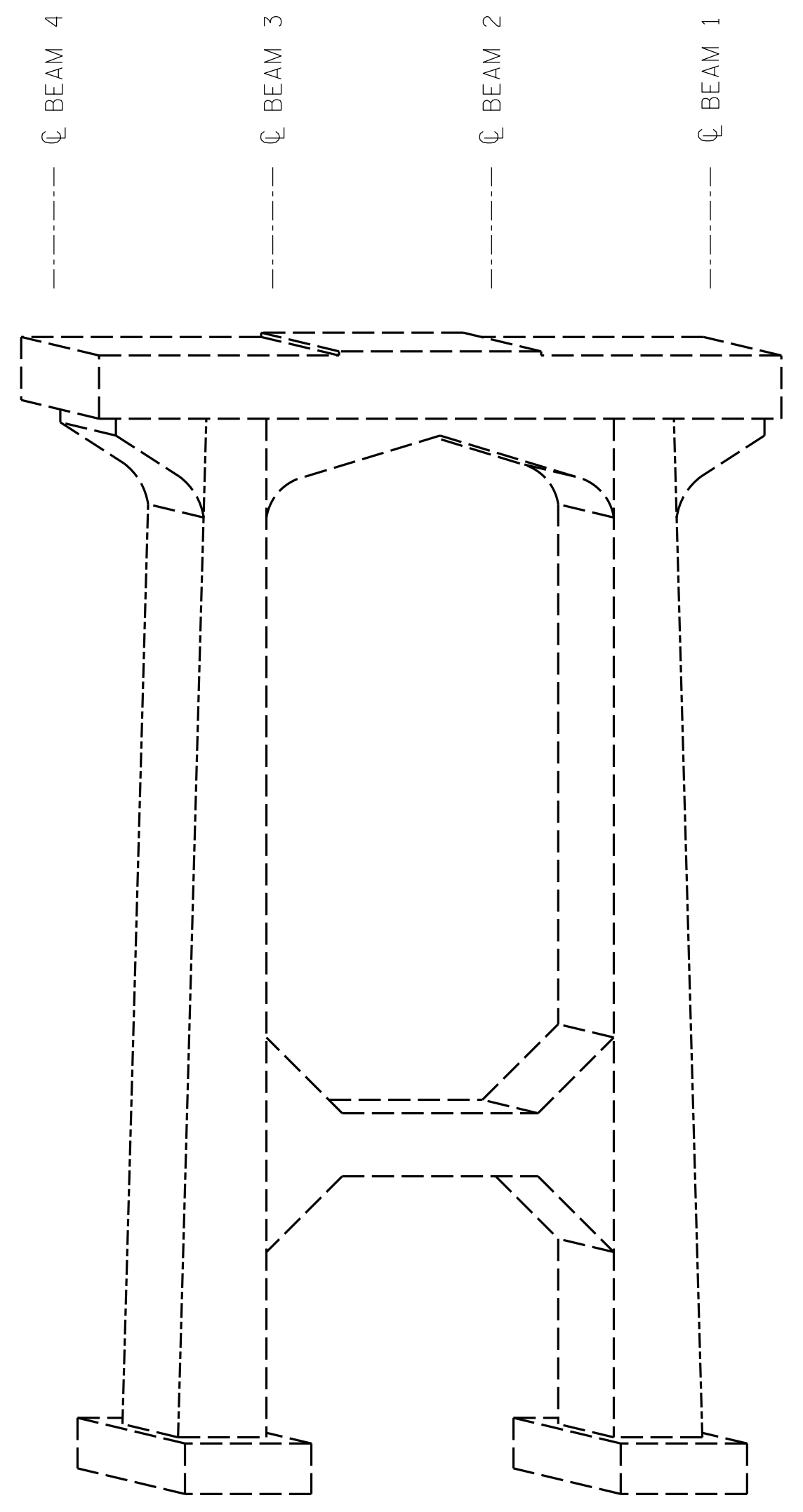
FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.



BENT 1  
(WEST FACE)



BENT 1  
(EAST FACE)

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480102

SHEET 2 OF 3



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 BENT 1



DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

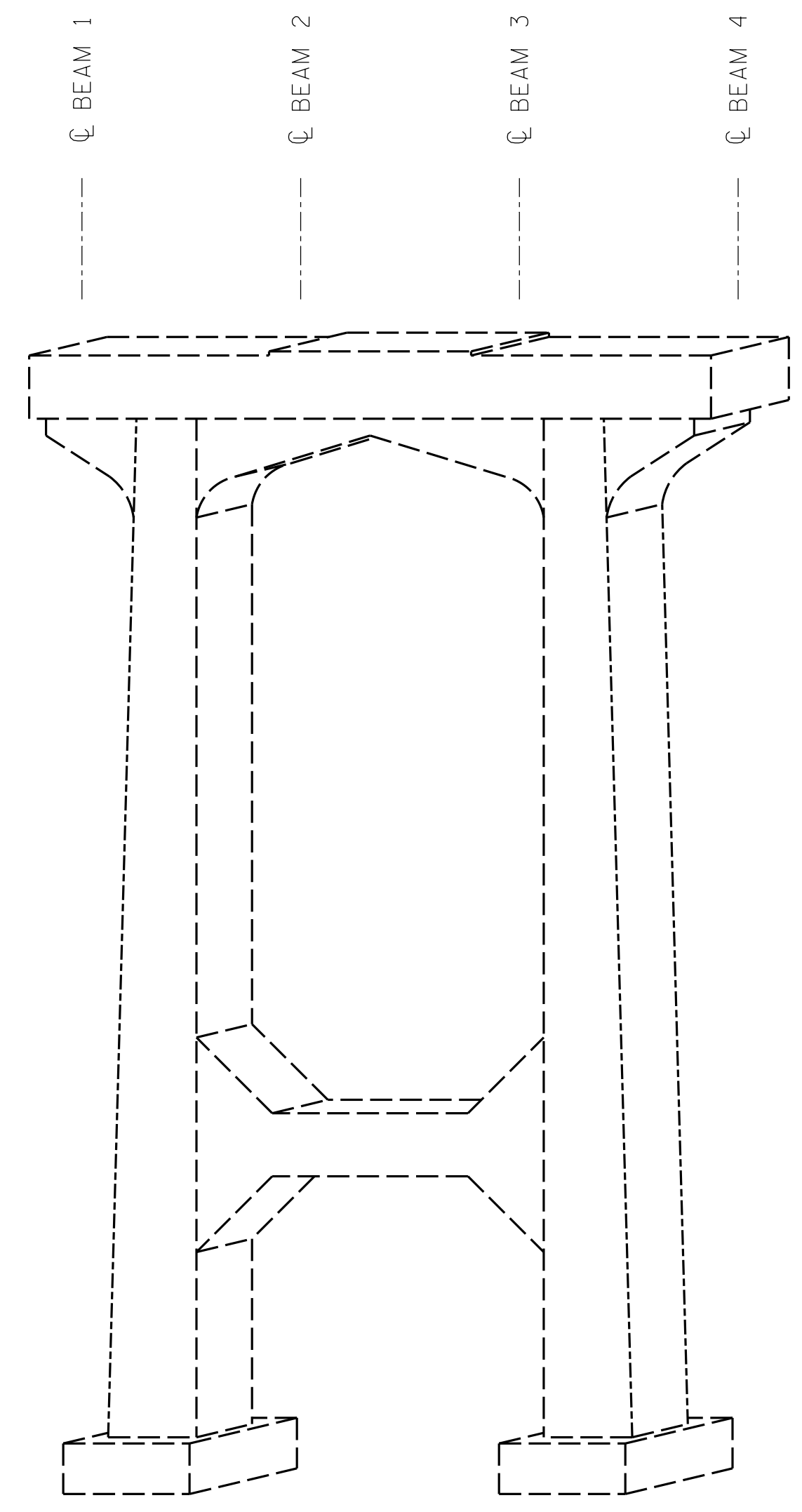
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S14-8
2			4			TOTAL SHEETS 9

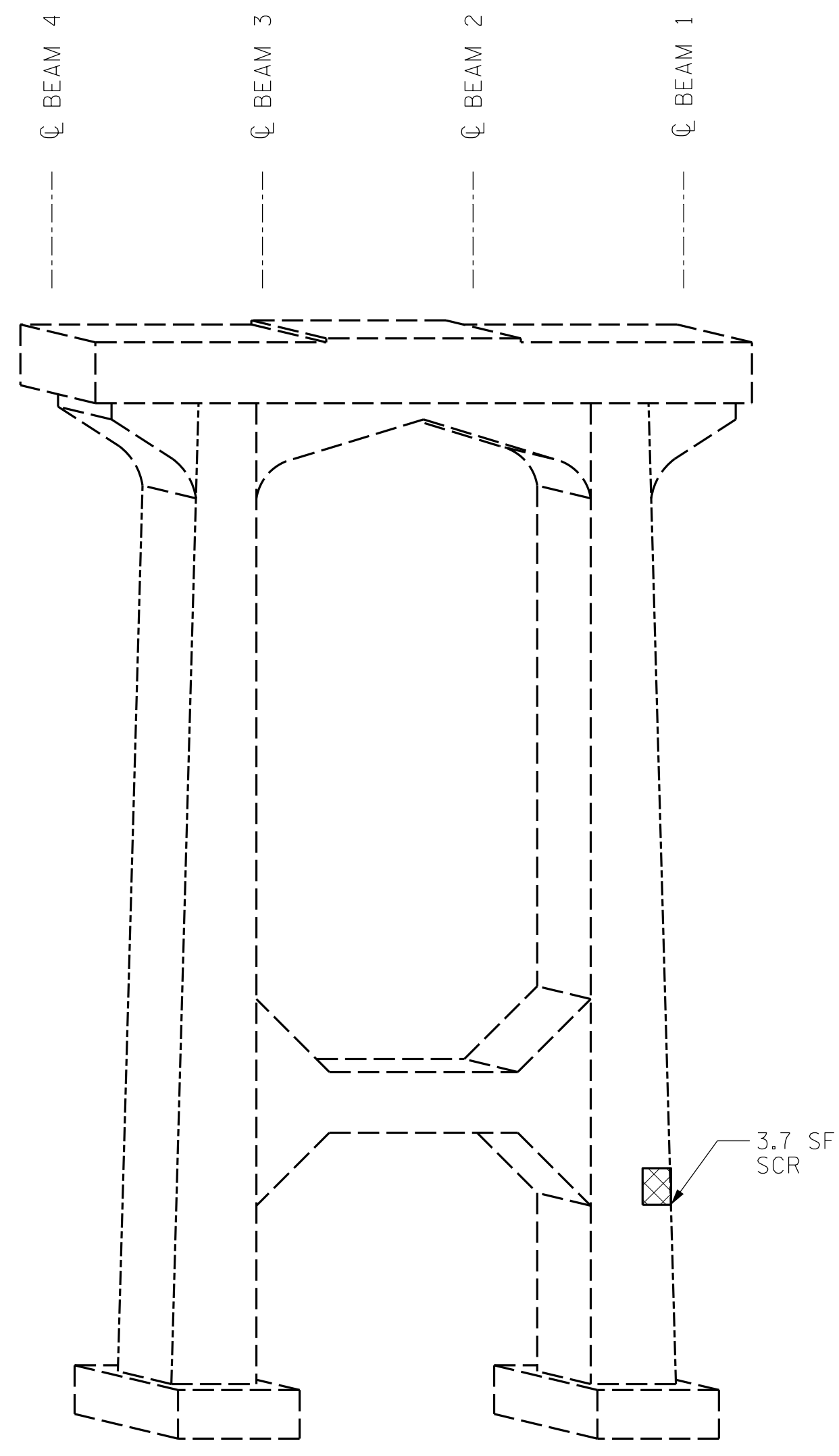


LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	-	-		
COLUMN/PILE	3.7	1.9		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	-			
COLUMN/PILE	-			



BENT 2  
(WEST FACE)



BENT 2  
(EAST FACE)

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS  $\geq 1/16"$  AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
BRIDGE NO. 480102

SHEET 3 OF 3



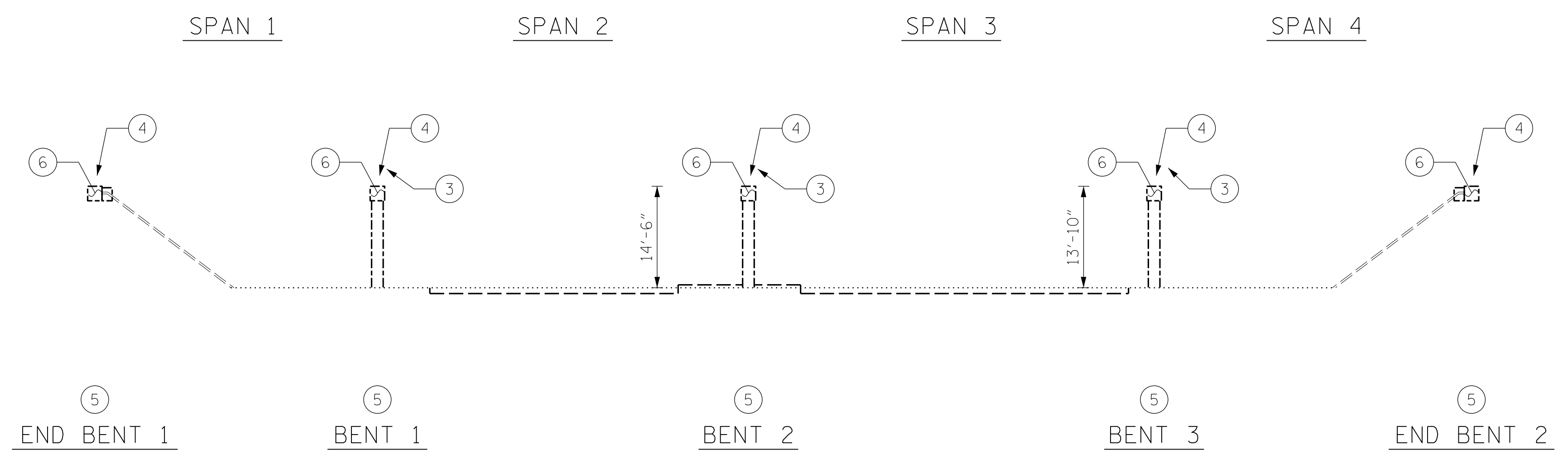
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**SUBSTRUCTURE REPAIRS**  
BENT 2



DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

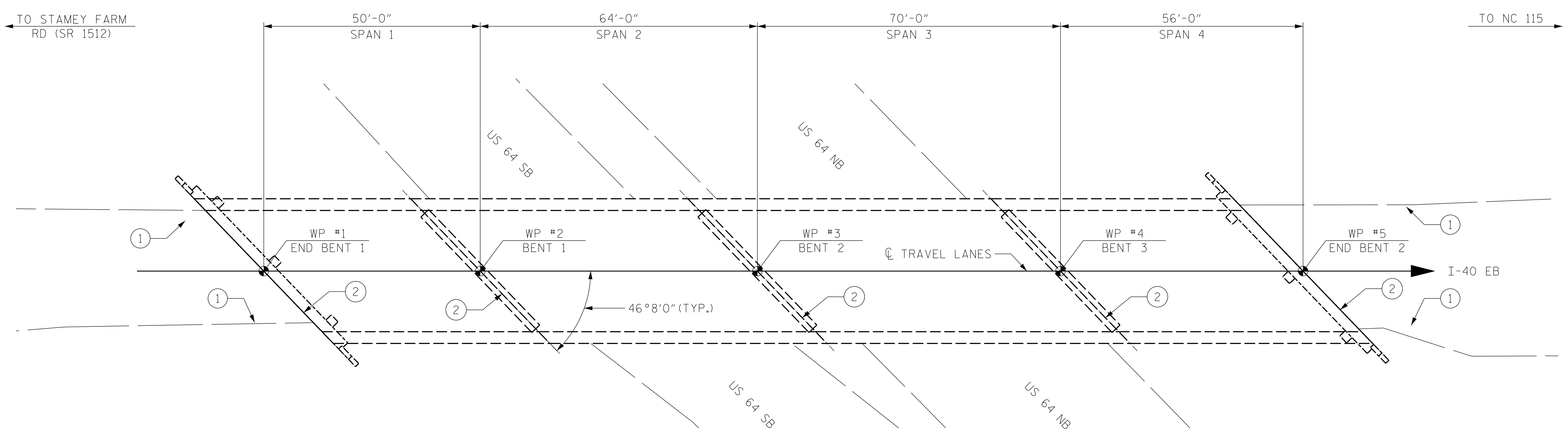
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			9
2			4			



- SCOPE LEGEND:**
- ① CLEAR SHOULDERS OF DEBRIS AND VEGETATION
  - ② JOINT REPAIRS/REPLACEMENT
  - ③ SUPERSTRUCTURE CONCRETE REPAIRS
  - ④ PAINT EXISTING STEEL BEARINGS
  - ⑤ SUBSTRUCTURE CONCRETE REPAIRS
  - ⑥ SUBSTRUCTURE EPOXY RESIN INJECTION

SECTION ALONG ROADWAY



PLAN

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

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

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480104



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR BRIDGE ON I-40 EB  
 OVER US-64

**NOTES:**

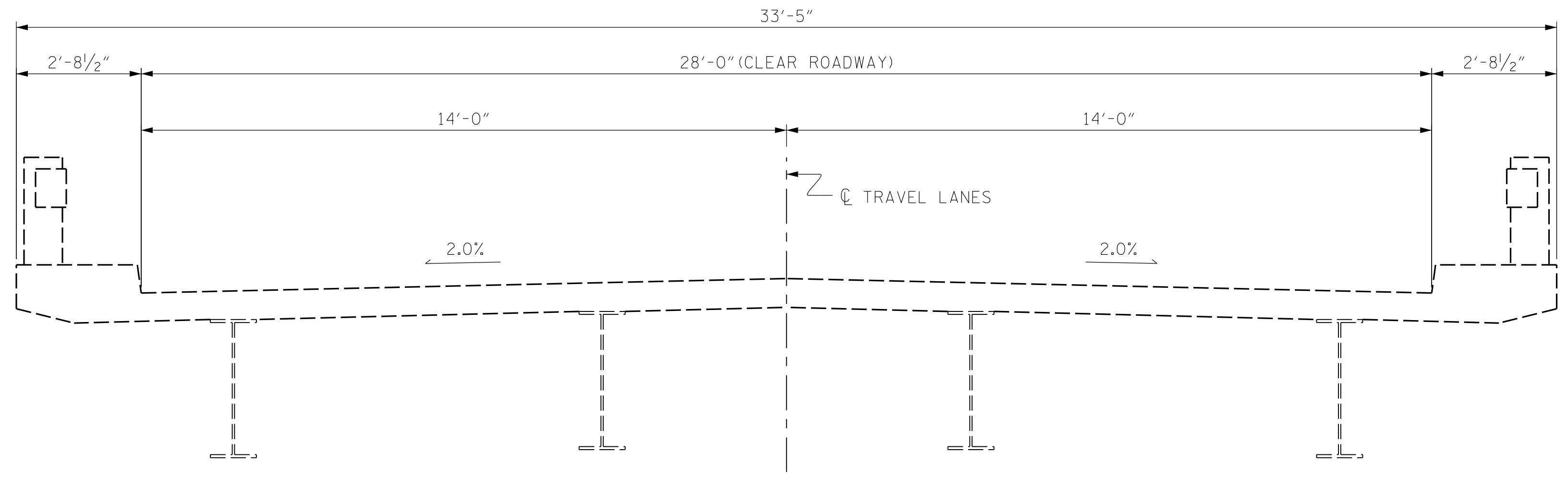
GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE MOST UP TO DATE ROUTINE INSPECTION REPORT DATED 09/16/2021.

DRAWN BY : FIDEL L. FLORES DATE : 01/2022  
 CHECKED BY : DIEGO A. AGUIRRE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

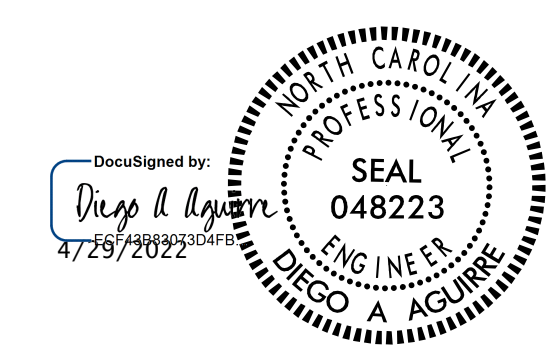


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			9
2			4			



EXISTING

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480104



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
TYPICAL SECTION						S15-2
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	9
1			3			
2			4			

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

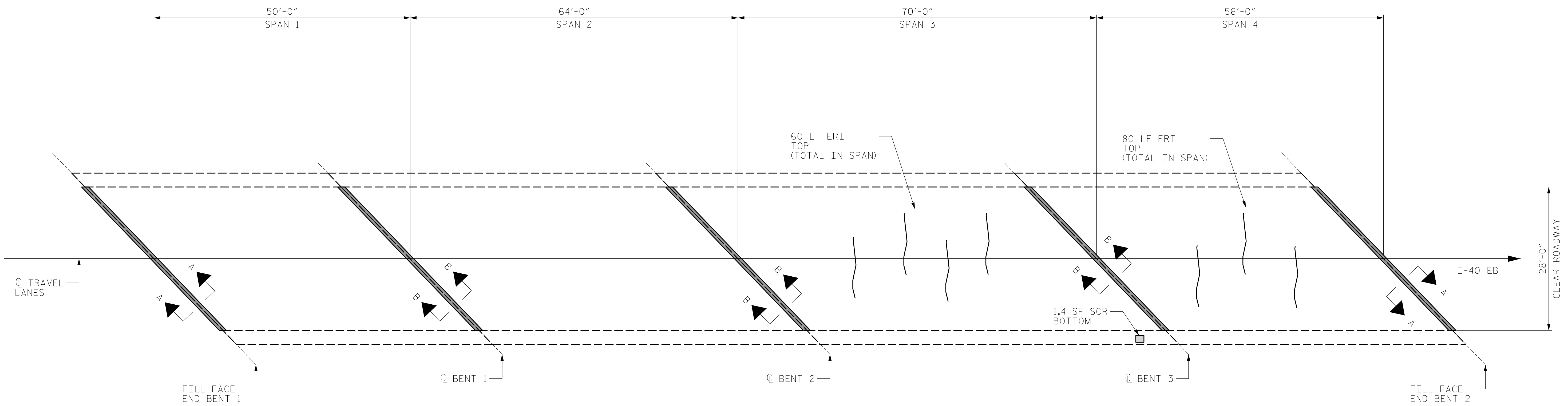
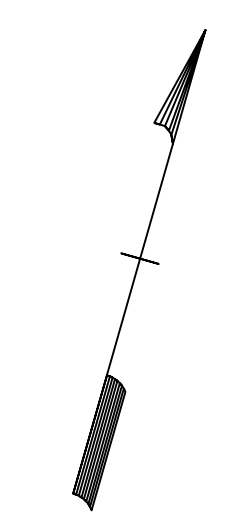
DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED



# AS-BUILT REPAIR QUANTITY TABLE

## DECK REPAIRS

	SPAN 1		SPAN 2		SPAN 3		SPAN 4	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	-- SY		-- SY		-- SY		-- SY	
CLASS III SURFACE PREPARATION	-- SY		-- SY		-- SY		-- SY	
EPOXY RESIN INJECTION (ERI)	-- LF		-- LF		60 LF		80 LF	
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME
SHOTCRETE REPAIR AREA (SCR)	-- SF	-- CF			-- SF	-- CF		
					1.4 SF	0.5 CF	-- SF	-- CF



PLAN

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480104

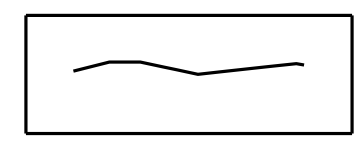
**NOTES:**

PRIOR TO SURFACE PREPARATION, REMOVE ALL LOOSE, DISINTEGRATED, UNSOUND OR CONTAMINATED CONCRETE FROM THE BRIDGE DECK.  
 FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.  
 FOR SCARIFYING BRIDGE DECK, SEE OVERLAY SURFACE PREPARATION SPECIAL PROVISION.

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.

DEFECTS (SEE PLAN CALLOUT FOR DETAILS)      BRIDGE JOINT DEMOLITION      EPOXY RESIN INJECTION (ERI)

DRAWN BY : ALLEN J. MCSWAIN      DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE      DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE      DATE : 01/2022

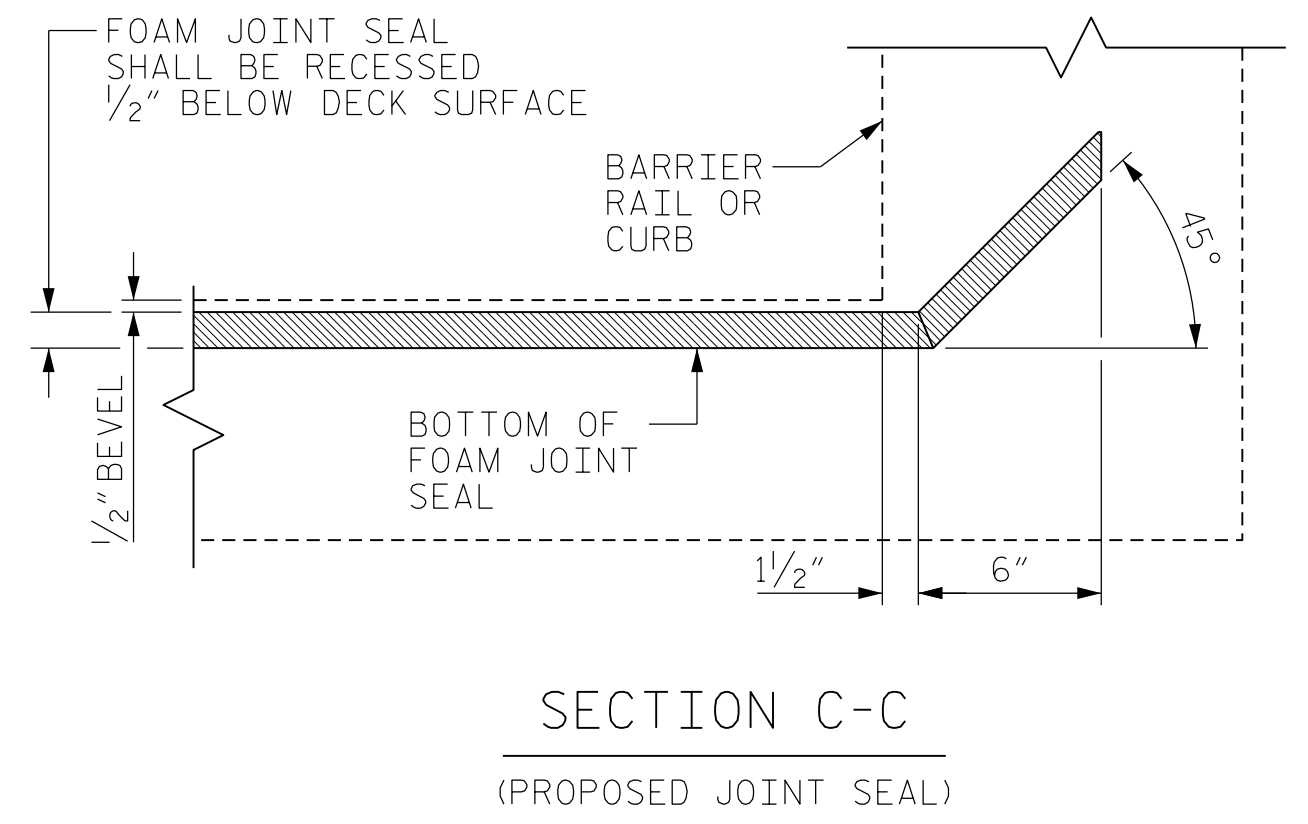
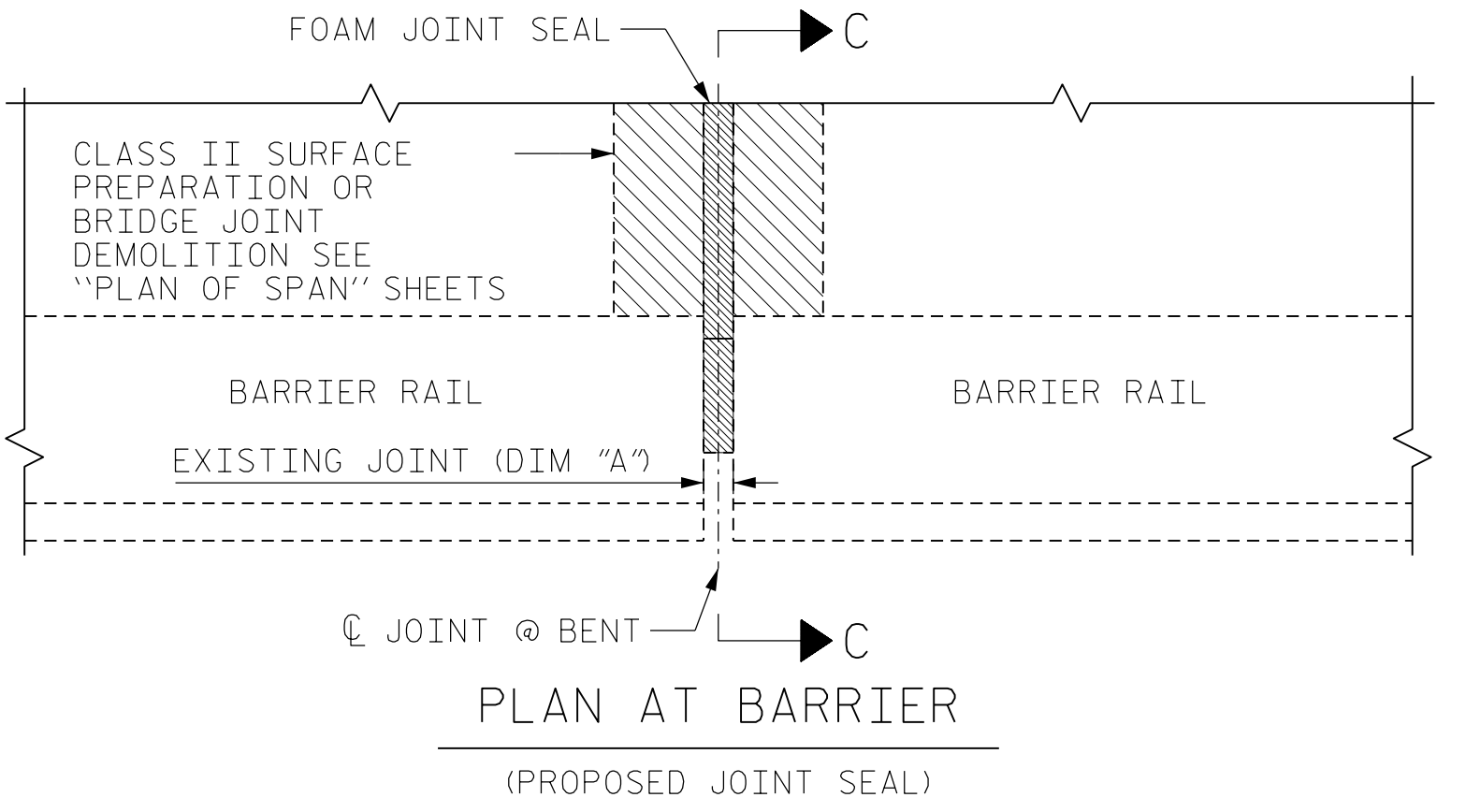
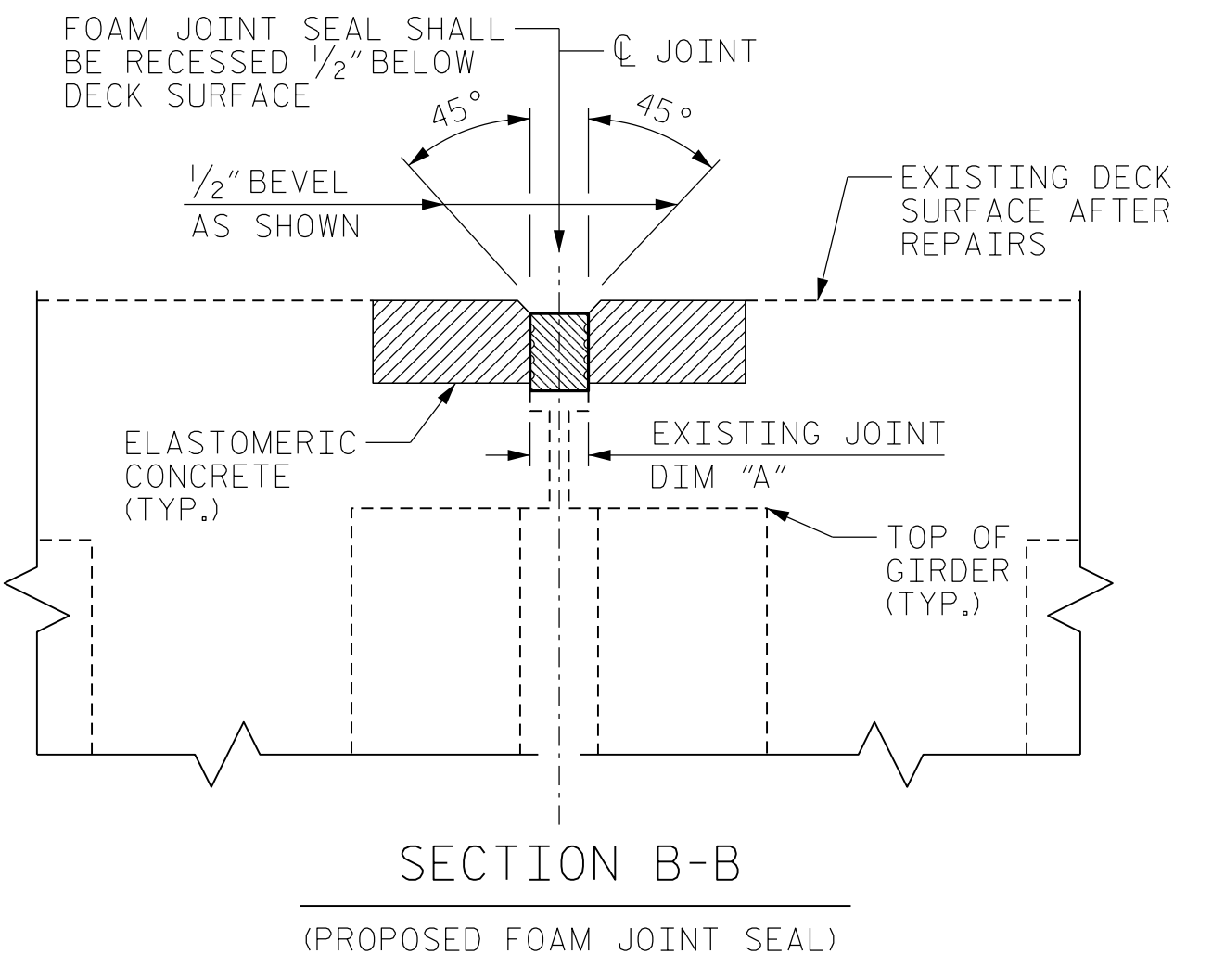
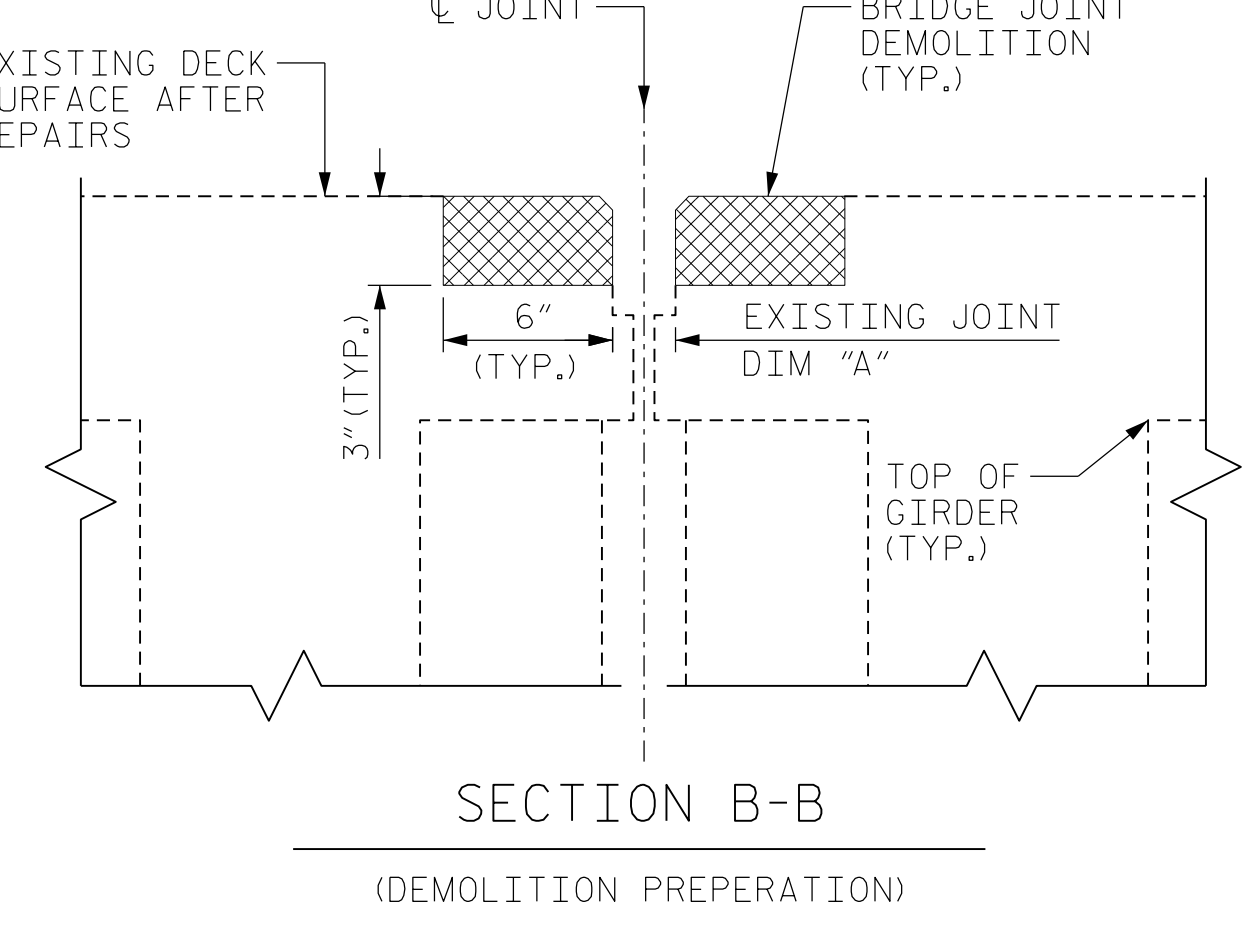
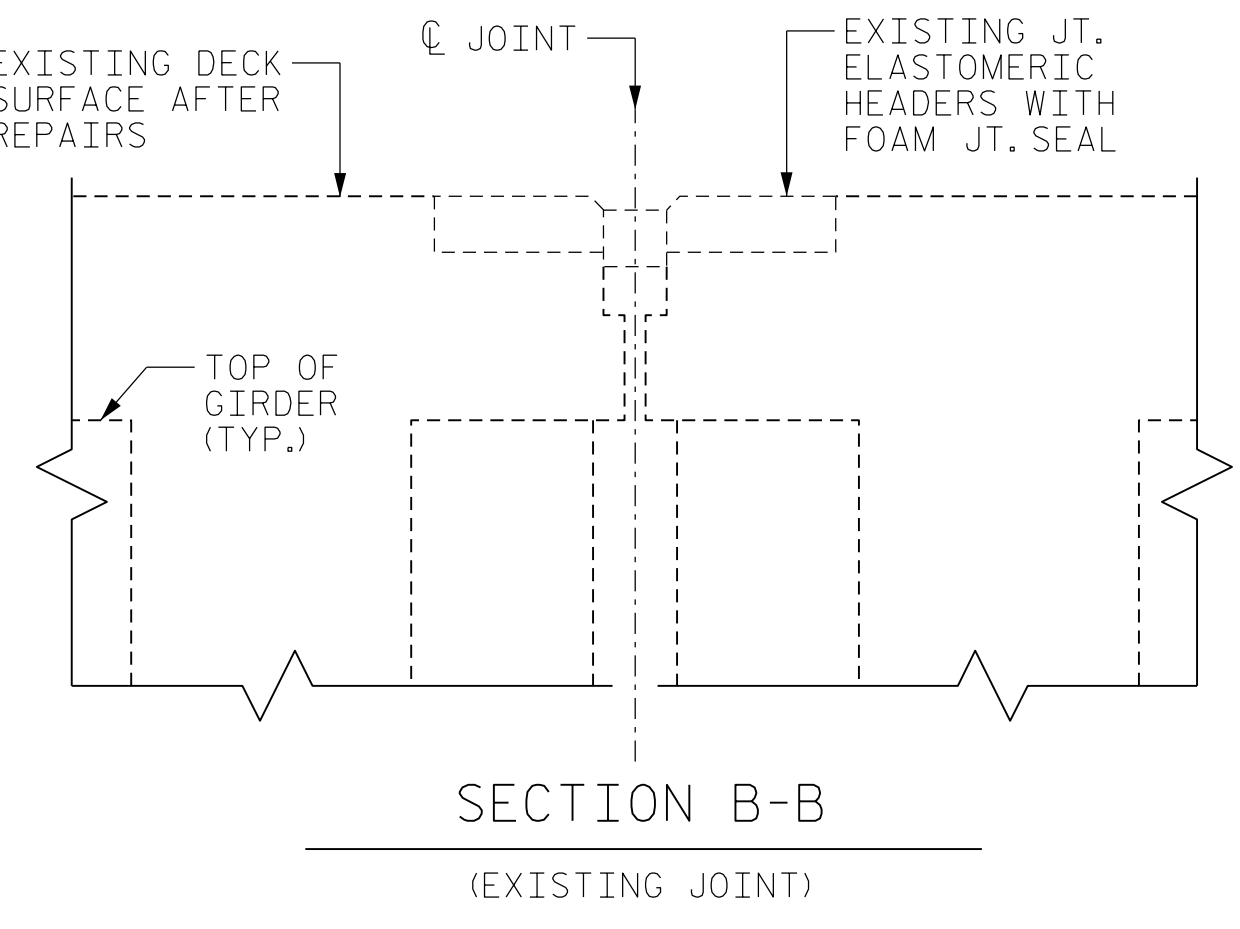
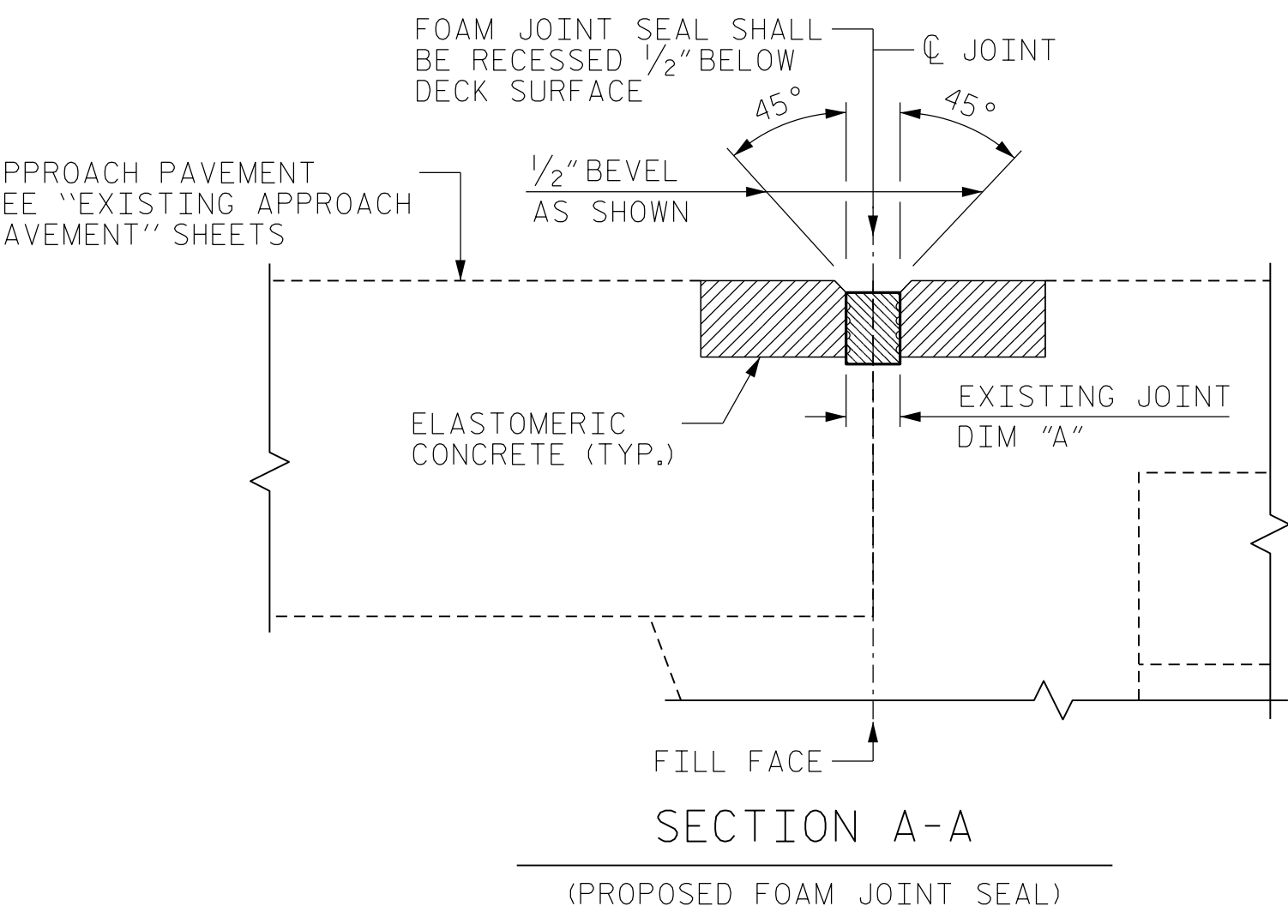
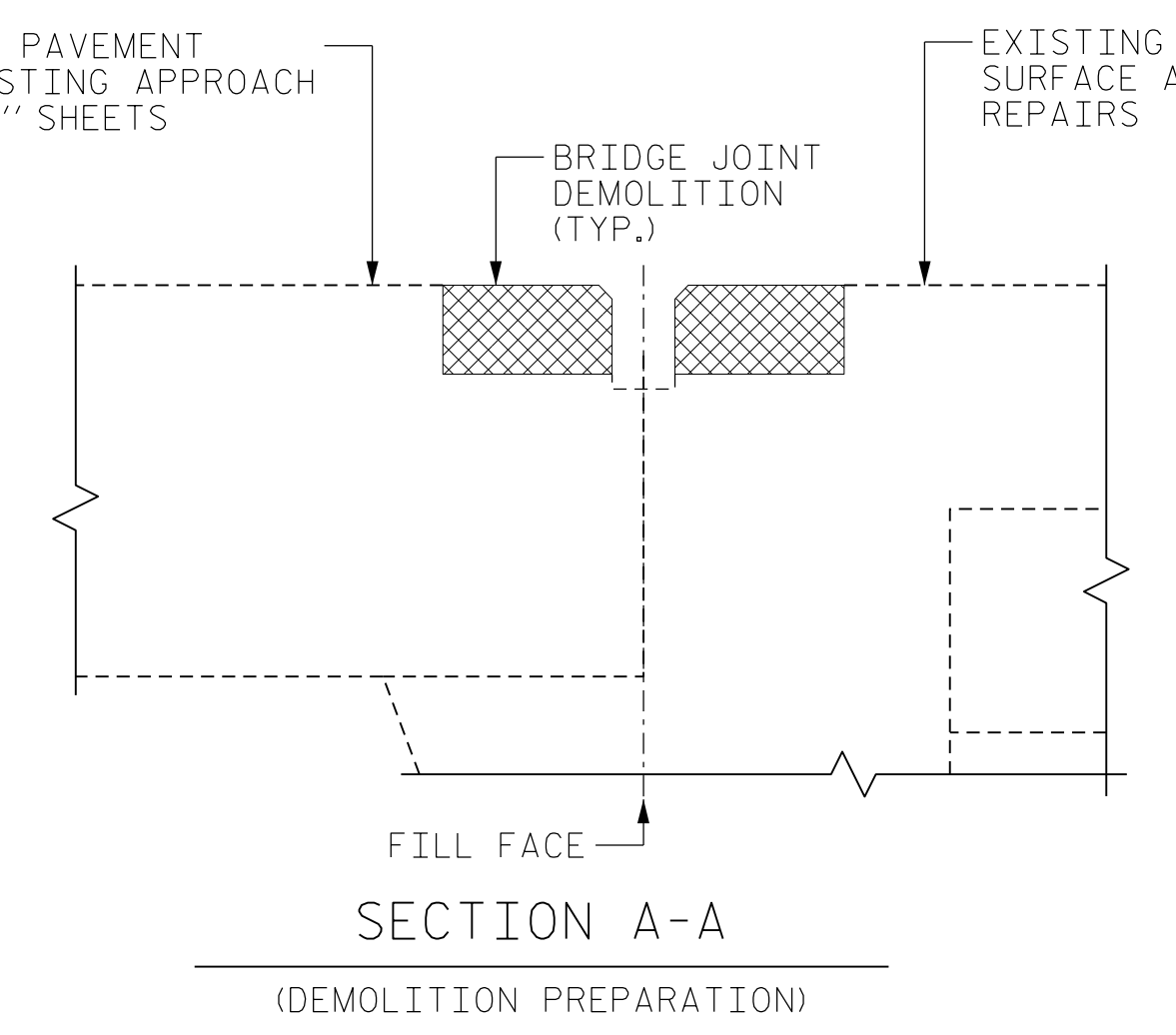
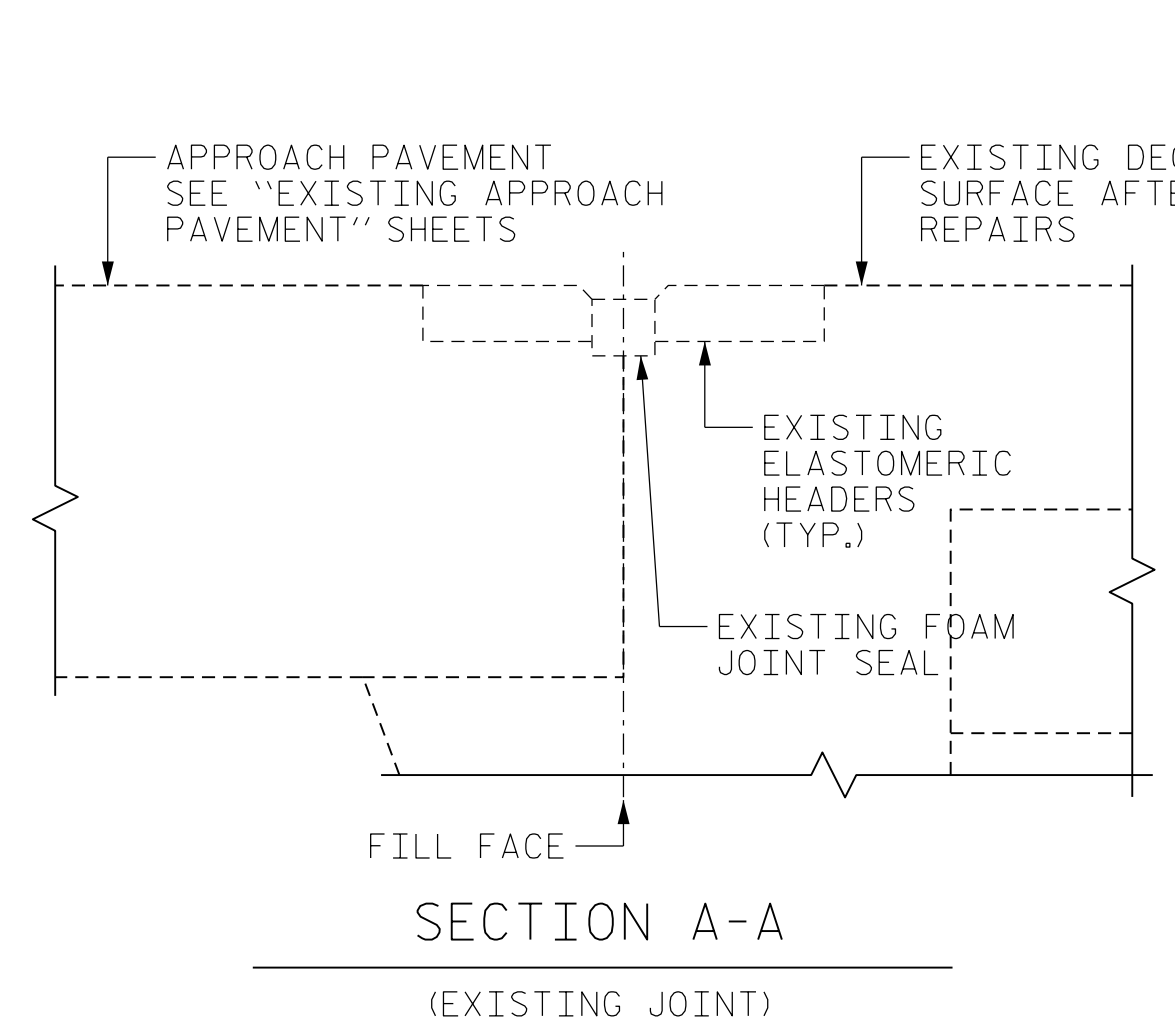


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS  
 DECK REPAIRS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			9
2			4			

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**NOTES:**

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF THE ACTUAL OPENING VARIES FROM THE OPENING INDICATED IN THE DETAIL BY MORE THAN 1/4", NOTIFY THE ENGINEER. REVISION OF THE JOINT SEAL SIZE MIGHT BE NECESSARY.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL FOR THE SIZE OF THE OPENING ON THE PLANS AND ACCOMMODATE THE MINIMUM EXPANSION SHOWN ON THE PLANS.

FOAM JOINTS SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL TAKE CARE DURING JOINT REPAIR OPERATIONS NOT TO DROP ANY MATERIAL THAT FALLS BELOW THE BRIDGE, WITHOUT PROTECTIVE DEVICES BELOW TO CATCH THE MATERIAL. ANY MATERIAL THAT FALLS BELOW THE BRIDGE SHALL BE CONTAINED, REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO EXTRA COST TO THE DEPARTMENT. IF THE ENGINEER DETERMINES THAT THE PROTECTIVE DEVICES ARE NOT ADEQUATE OR NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

QUANTITIES SHOWN IN THE ELASTOMERIC CONCRETE FOR PRESERVATION TABLE BASED ON THE MINIMUM JOINT DEMOLITION SHOWN.

FOR EXCAVATION BELOW THE BOTTOM OF THE PLANNED JOINT DECK DEMOLITION, CONCRETE FOR DECK REPAIRS SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT BOTTOM OF THE PROPOSED ELASTOMERIC CONCRETE FOR PRESERVATION HEADERS SHOWN.

IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, OR IF UNSOUND CONCRETE IS REMOVED WITHIN 2" OF THE WATERSTOP, THE ENTIRE CONCRETE DEPTH TO THE WATERSTOPS SHALL BE REMOVED. IF SUCH EXCAVATION EXTENDS MORE THAN 2" BELOW THE BOTTOM OF THE PLANNED ELASTOMERIC CONCRETE HEADER, AS SHOWN, APPROVED REPAIR CONCRETE SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT THE BOTTOM OF THE ELASTOMERIC CONCRETE.

DEMOLISH BRIDGE JOINT AREA SUCH THAT THE BOTTOM OF THE EXCAVATION SHALL BE REASONABLY FLAT AND LEVEL AND TO THE NECESSARY DEPTH, SUCH THAT ELASTOMERIC CONCRETE SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

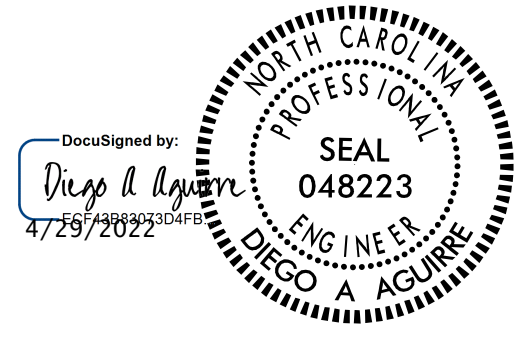
PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480104

BRIDGE JOINT DEMOLITION		
LOCATION	ESTIMATED (SQ.FT.)	ACTUAL (SQ.FT.)
END BENTS	77.7	
BENT 1	38.8	
BENT 2	38.8	
BENT 3	38.8	

ELASTOMERIC CONCRETE FOR PRESERVATION		
LOCATION	ESTIMATED (CU.FT.)	ACTUAL (CU.FT.)
END BENTS	19.6	
BENT 1	9.8	
BENT 2	9.8	
BENT 3	9.8	

TABLE 1	
Table Date 02-2022	
BENT/ JOINTS	DIM "A" @ 60° F
END BENT 1	2 1/4"
1	2 1/4"
2	2 1/4"
3	2"
END BENT 2	2 1/4"

PROPOSED JOINT QUANTITY		
	ESTIMATED (LIN.FT.)	ACTUAL (LIN.FT.)
FOAM JOINT SEALS FOR PRESERVATION	202.0	



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

JOINT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S15-4
2			4			TOTAL SHEETS 9

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022





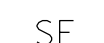


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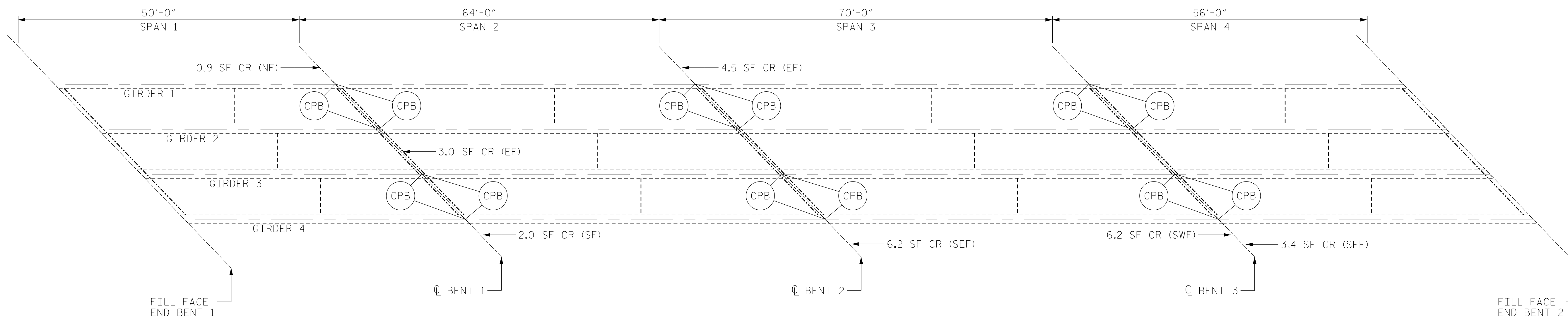
# AS-BUILT REPAIR QUANTITY TABLE

## SUPERSTRUCTURE REPAIRS

	SPAN 1		SPAN 2		SPAN 3		SPAN 4									
	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL									
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME								
CONCRETE REPAIR AREA (CR)	0.9 SF	0.3 CF			5.0 SF	2.5 CF			16.9 SF	5.7 CF			3.4 SF	1.2 CF		
	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA	4 EA				8 EA				8 EA				4 EA			

### LEGEND:

-  CLEAN AND PAINT BEARING
-  CONCRETE REPAIR AREA
-  EAST FACE
-  NORTH FACE
-  SOUTH FACE
-  SOUTHEAST FACE
-  SOUTHWEST FACE



PLAN

### 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 TABLE ABOVE.

FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

FOR CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480104



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

## SUPERSTRUCTURE REPAIRS

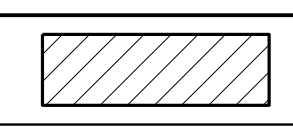
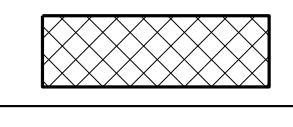

DRAWN BY :	ALLEN J. MCSWAIN	DATE :	01/2022
CHECKED BY :	JACOB H. DUKE	DATE :	01/2022
DESIGN ENGINEER OF RECORD:	DIEGO A. AGUIRRE	DATE :	01/2022

4/21/2022  
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DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S15-5
1			3			TOTAL SHEETS
2			4			9



LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP/BACKWALL	3.4	1.2	
COLUMN/PILE	-	-		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP	-	-	
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
	CAP/BACKWALL	-		
COLUMN/PILE	-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

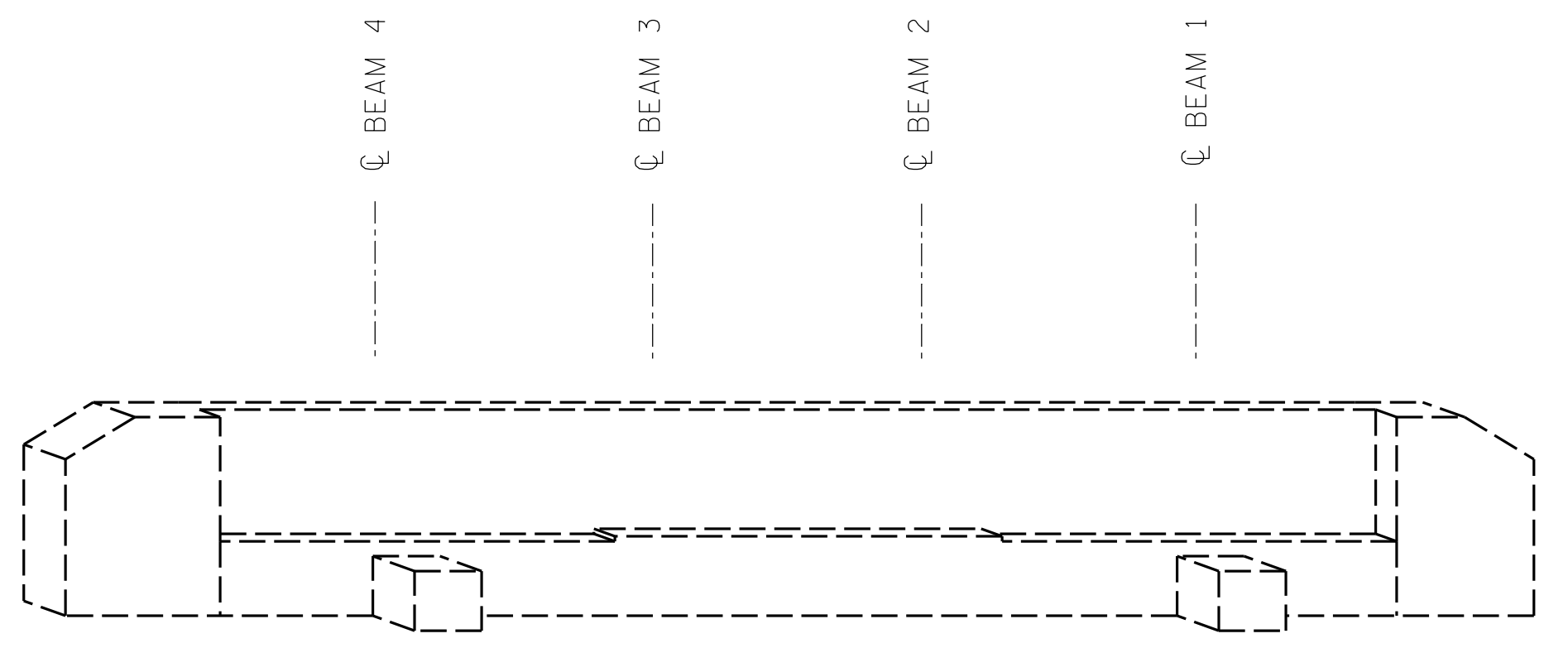
CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS  $\geq 1/16"$  AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

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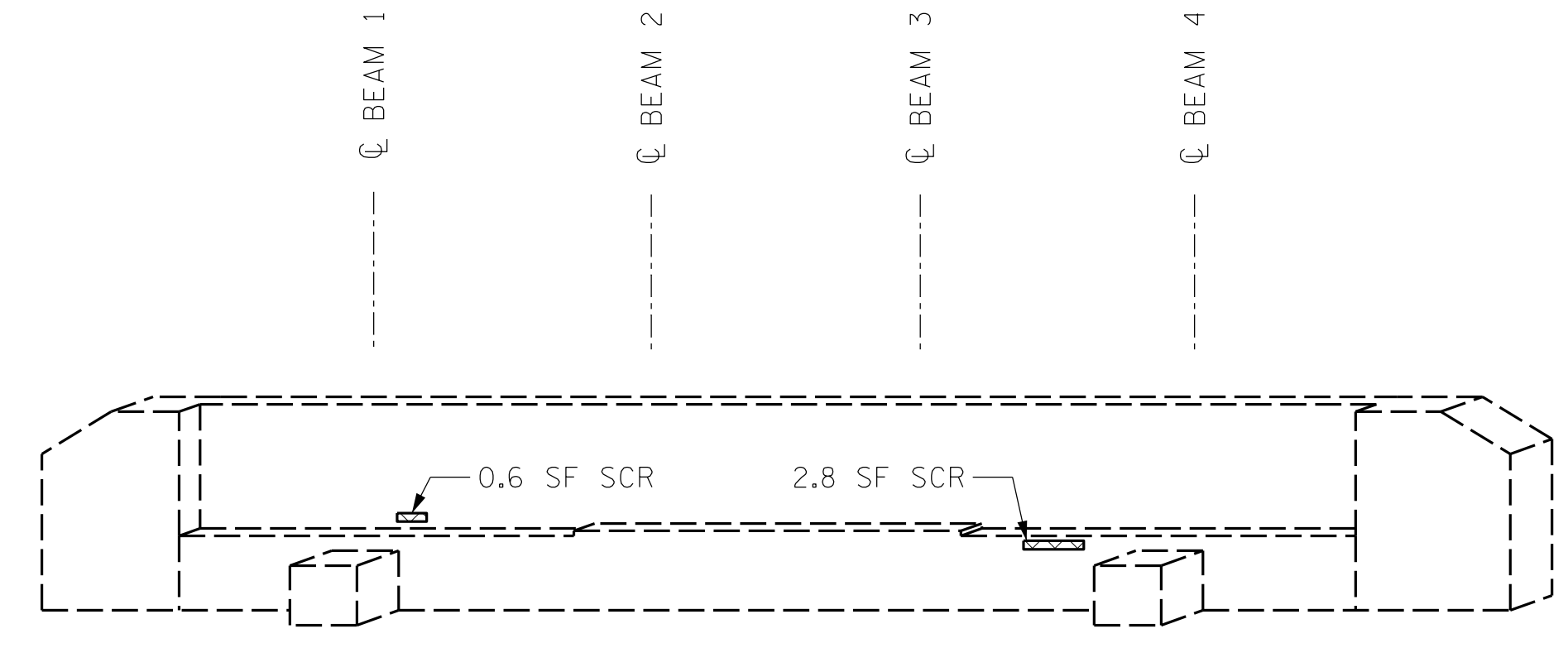
FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.



END BENT 1  
(EAST FACE)



END BENT 2  
(WEST FACE)

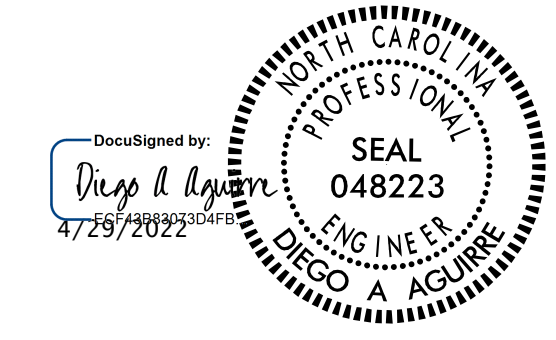
PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480104

SHEET 1 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE REPAIRS**

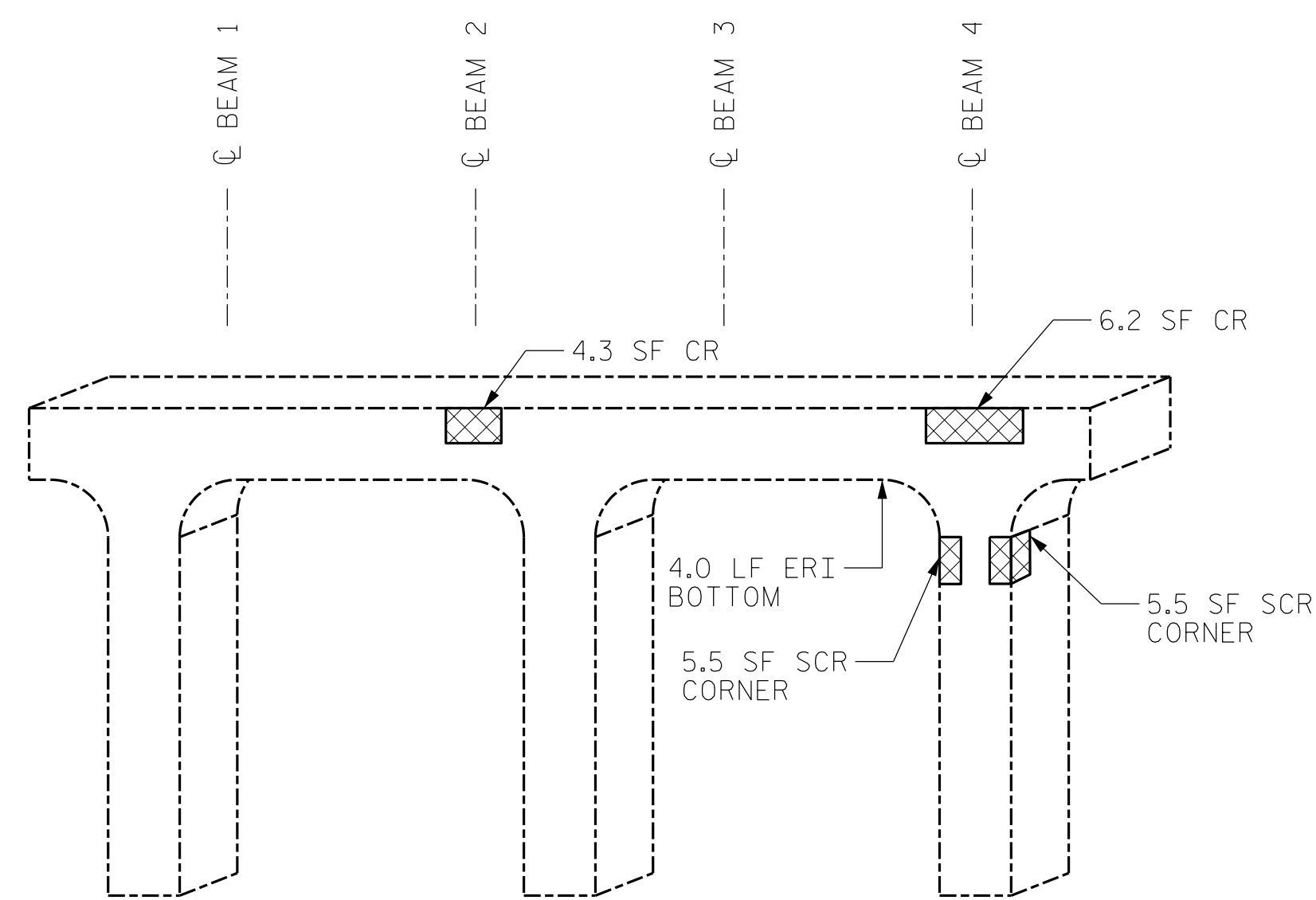
END BENTS 1 & 2



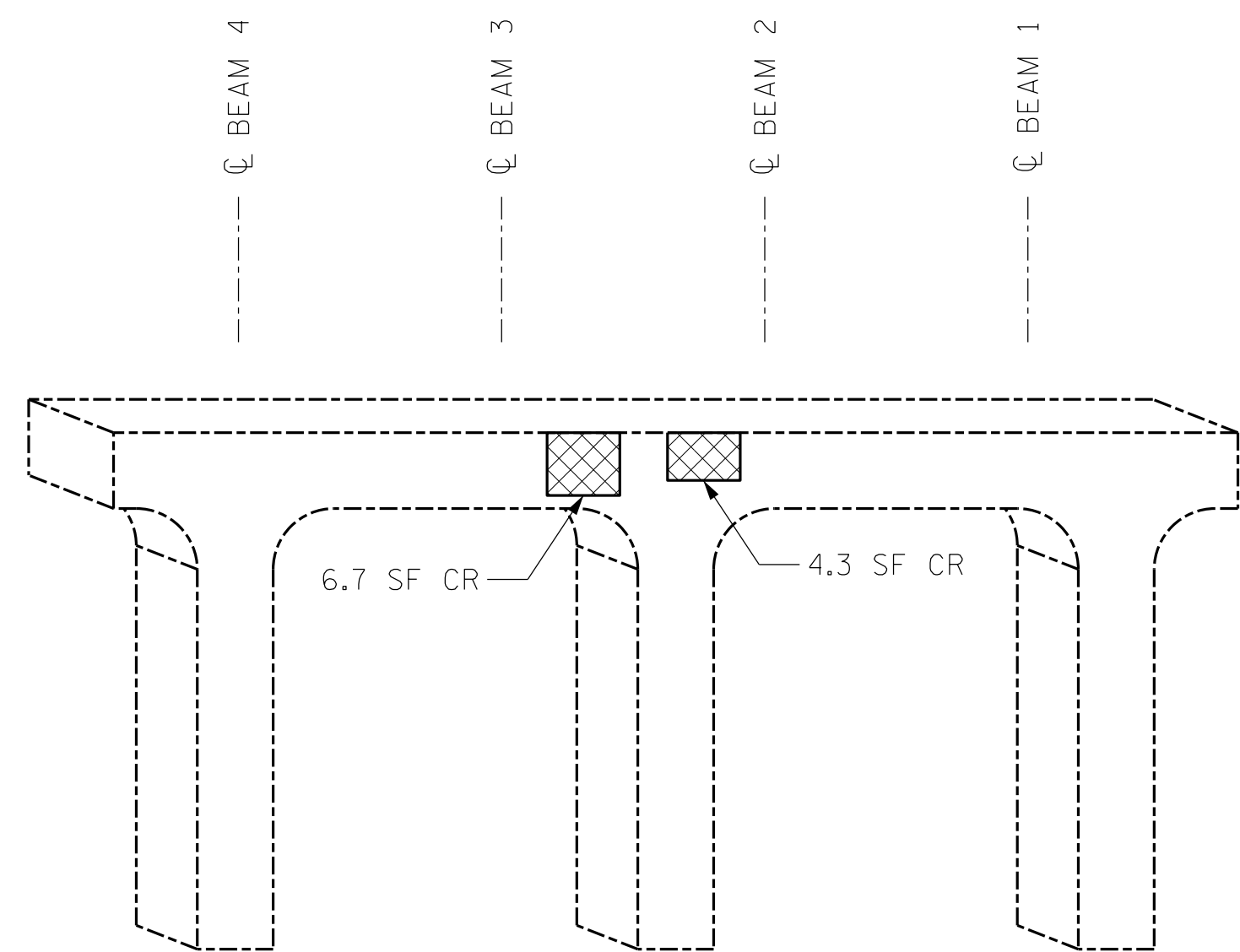
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			9
2			4			



BENT 1  
(WEST FACE)



BENT 1  
(EAST FACE)

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	-	-		
COLUMN/PILE	11.0	5.6		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	21.5	7.4		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	4.0			
COLUMN/PILE	-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**NOTES:**

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PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480104

SHEET 2 OF 4

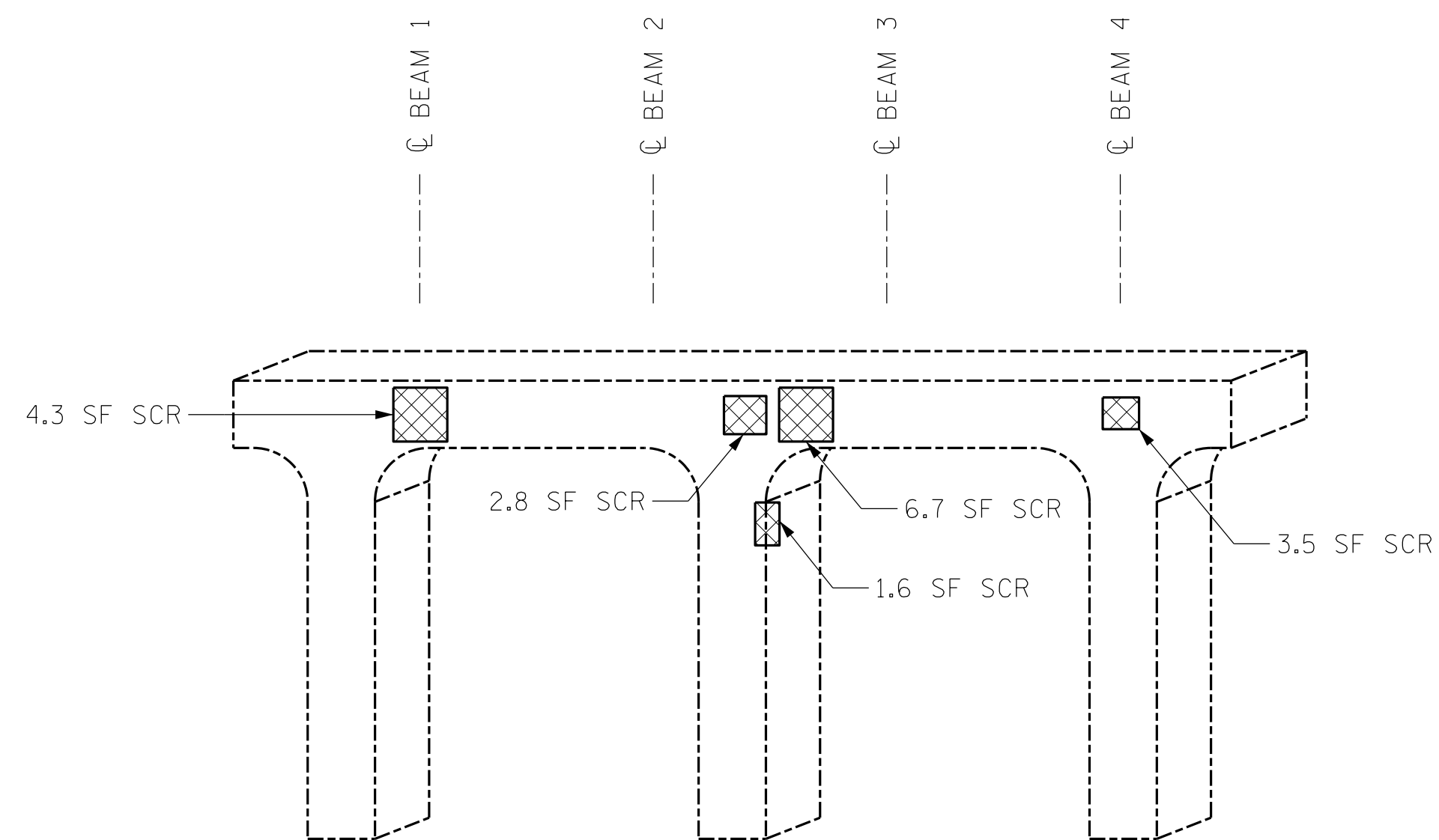


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 BENT 1

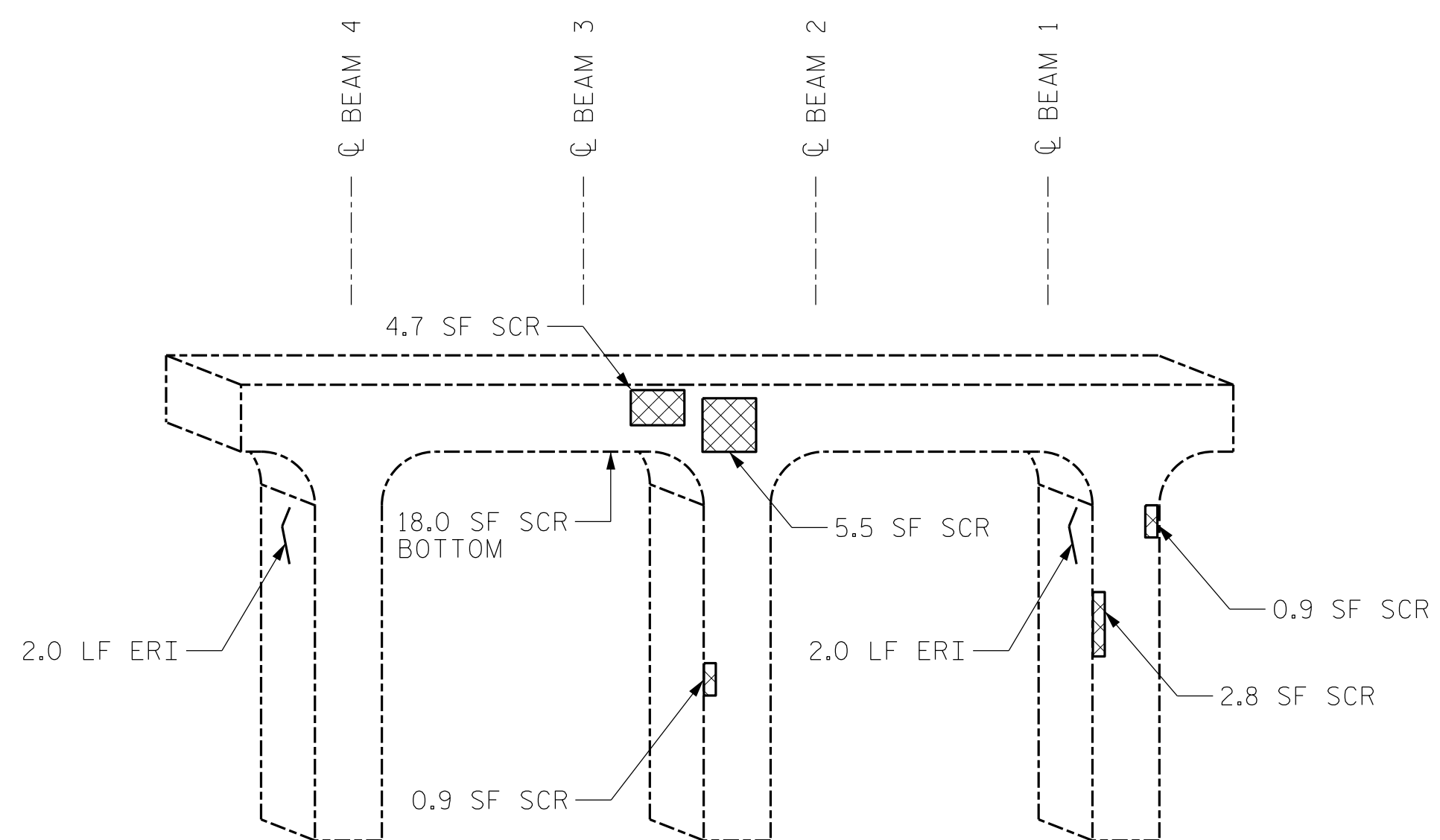
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S15-7
2			4			TOTAL SHEETS 9



BENT 2  
(WEST FACE)



BENT 2  
(EAST FACE)

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	45.5	15.5		
COLUMN/PILE	6.2	2.6		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	-			
COLUMN/PILE	4.0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480104

SHEET 3 OF 4



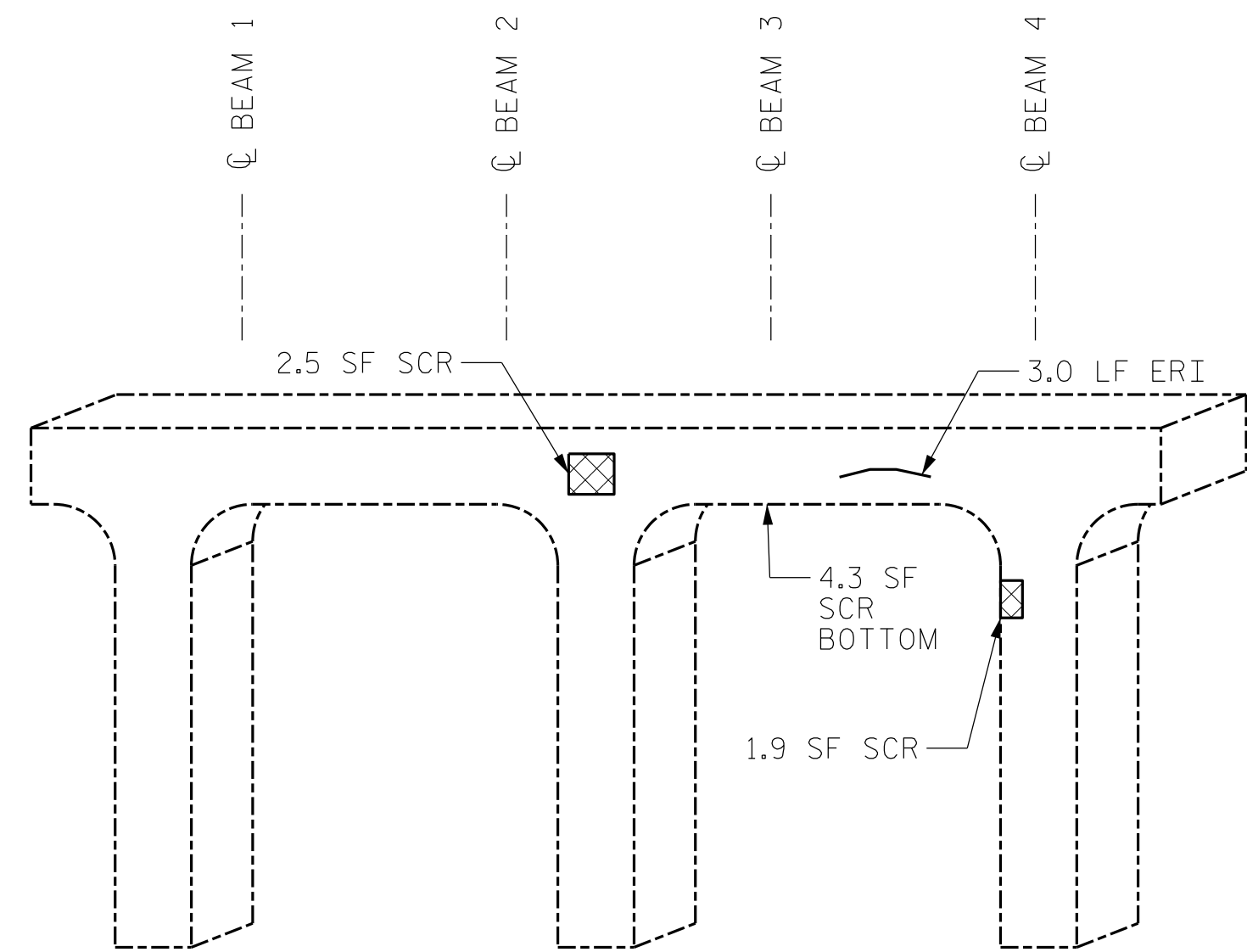
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 BENT 2

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

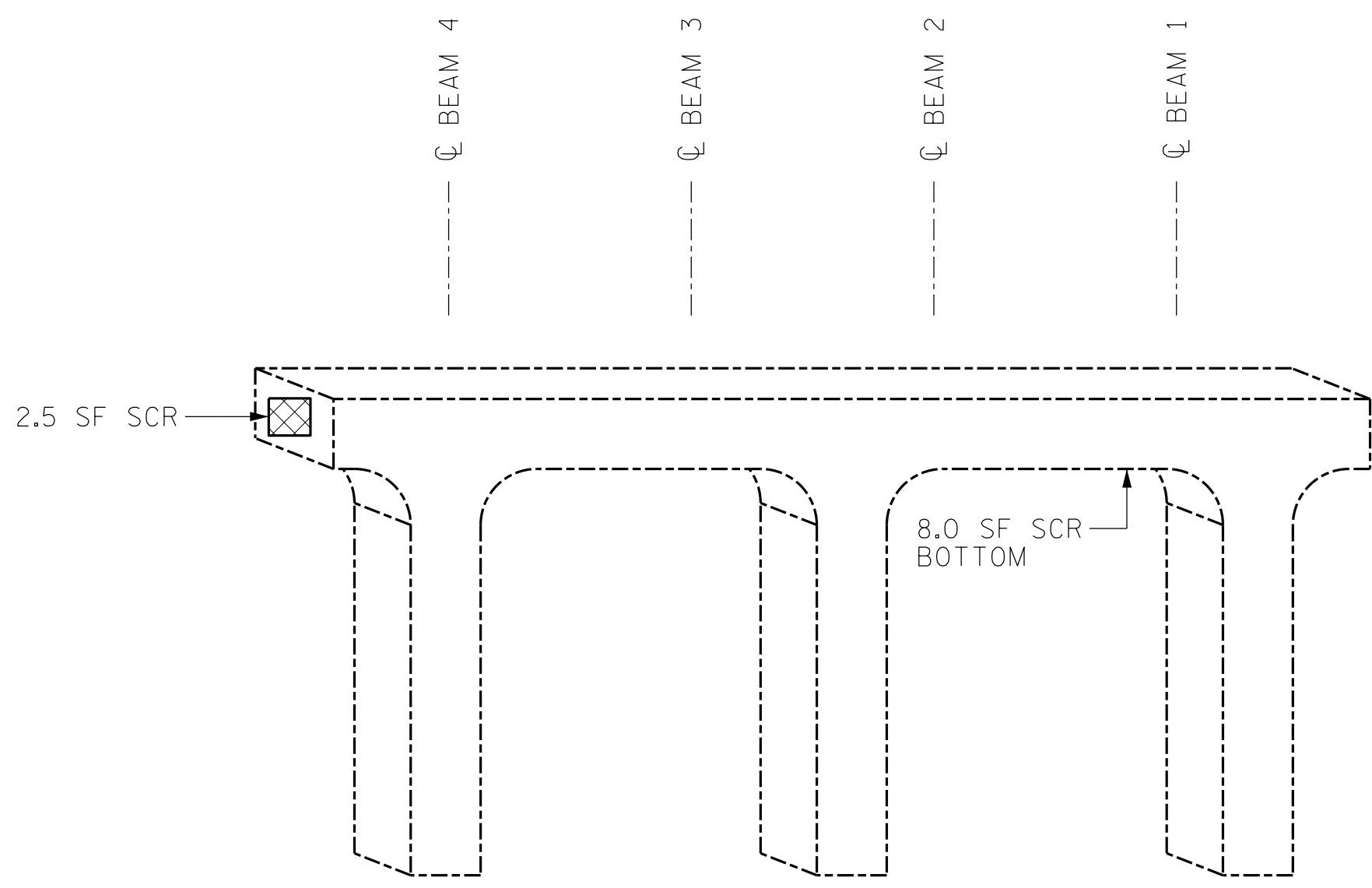
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S15-8
2			4			TOTAL SHEETS 9





BENT 3  
(WEST FACE)



BENT 3  
(EAST FACE)

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP/BACKWALL	17.3	6.0	
COLUMN/PILE	1.9	0.7		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP	-	-	
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
	CAP/BACKWALL	3.0		
COLUMN/PILE	-			

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PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480104

SHEET 4 OF 4

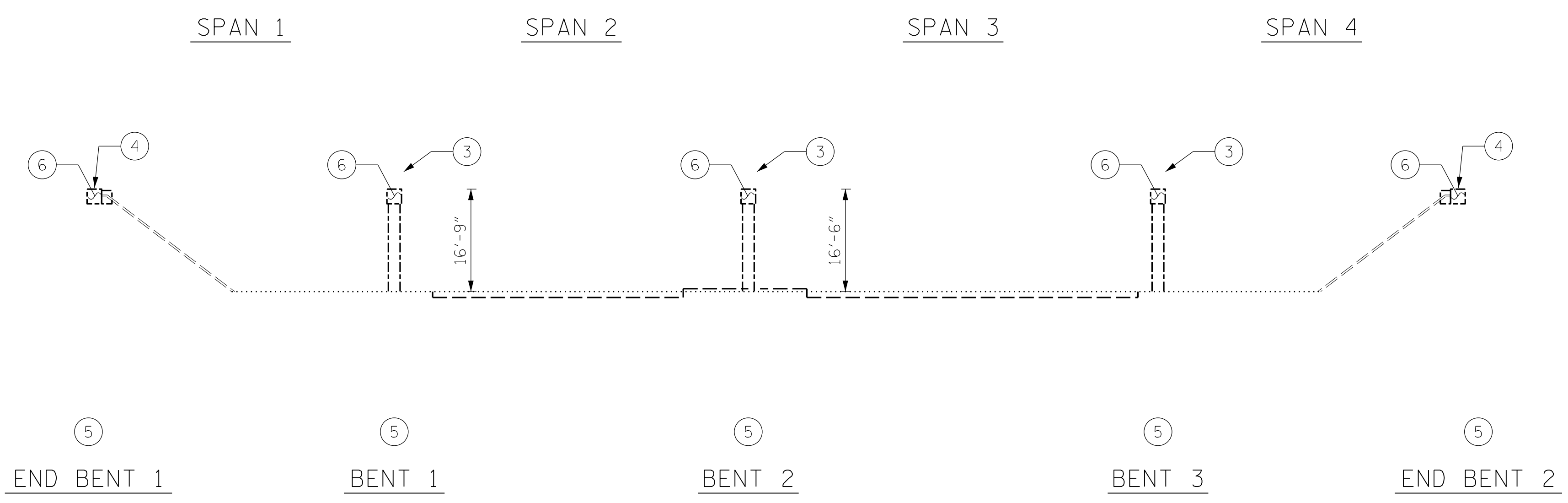


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 BENT 3

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

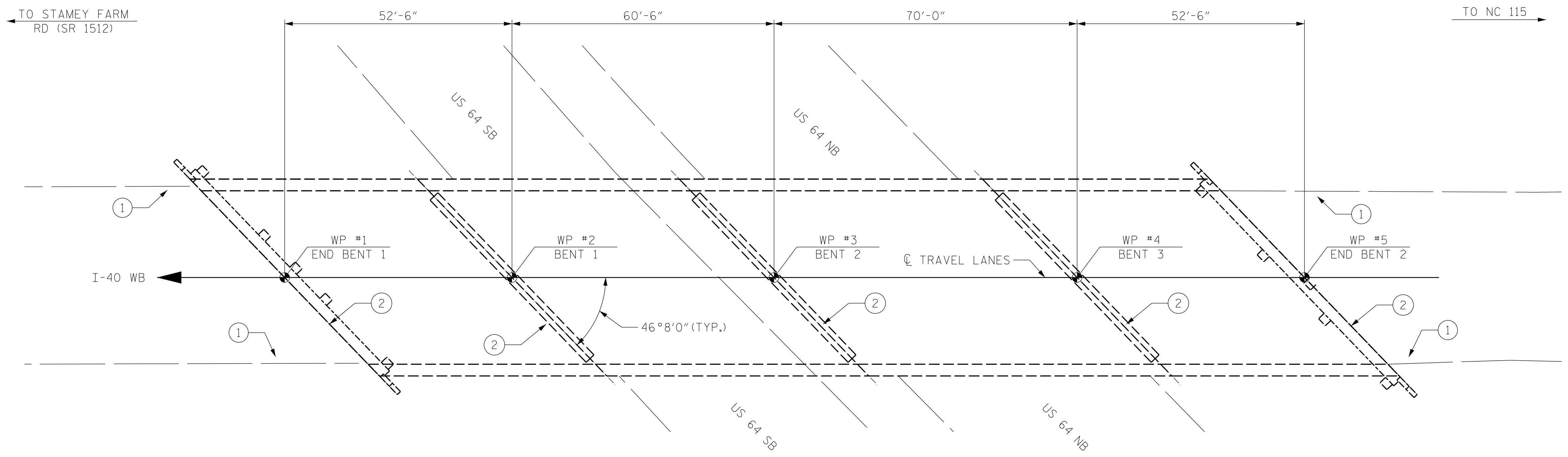
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S15-9
2			4			TOTAL SHEETS 9



- SCOPE LEGEND:**
- ① CLEAR SHOULDERS OF DEBRIS AND VEGETATION
  - ② JOINT REPAIRS/REPLACEMENT
  - ③ SUPERSTRUCTURE CONCRETE REPAIRS
  - ④ PAINT EXISTING STEEL BEARINGS
  - ⑤ SUBSTRUCTURE CONCRETE REPAIRS
  - ⑥ SUBSTRUCTURE EPOXY RESIN INJECTION

SECTION ALONG ROADWAY

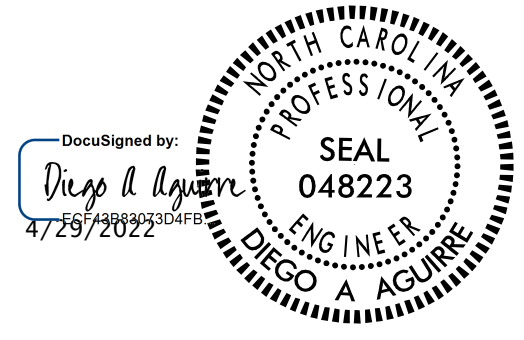


PLAN

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

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

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480109



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**

FOR BRIDGE ON I-40 WB  
 OVER US-64

**NOTES:**

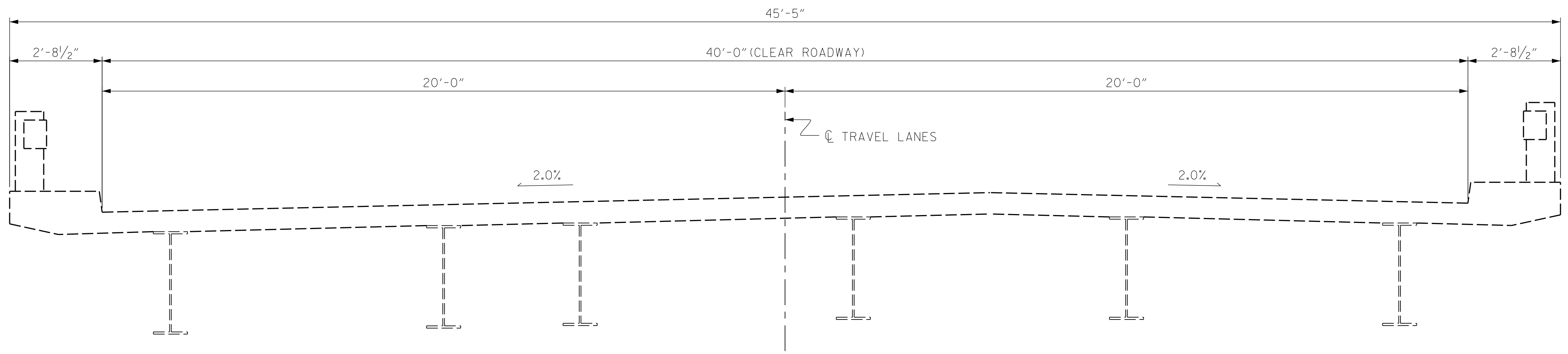
GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE MOST UP TO DATE ROUTINE INSPECTION REPORT DATED 09/16/2021.

DRAWN BY : FIDEL L. FLORES DATE : 01/2022  
 CHECKED BY : DIEGO A. AGUIRRE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

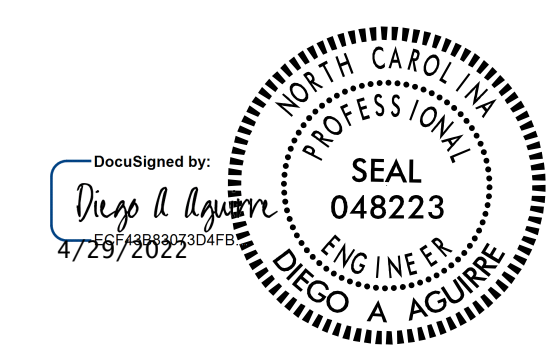


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			9
2			4			



EXISTING

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480109



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
TYPICAL SECTION						S16-2
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	9
1			3			
2			4			

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

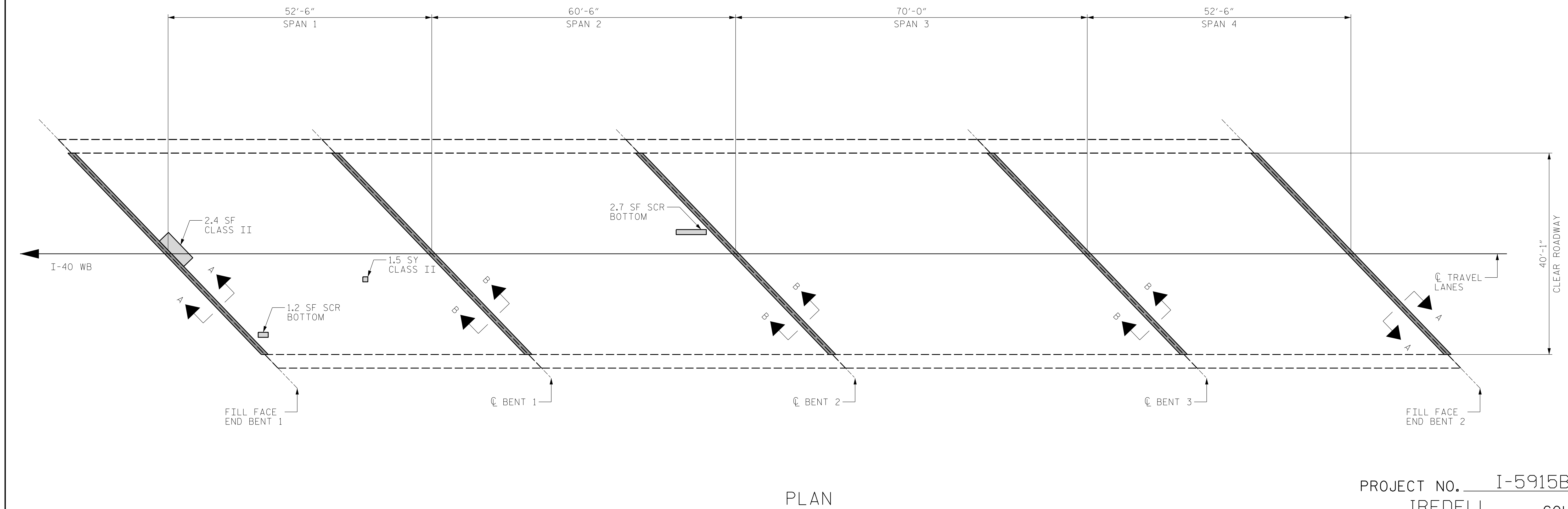
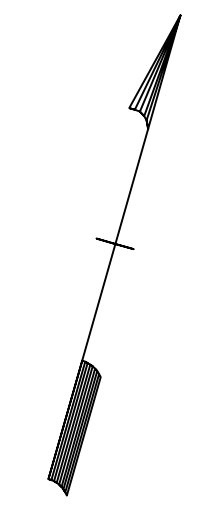
DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED



# AS-BUILT REPAIR QUANTITY TABLE

## DECK REPAIRS

	SPAN 1		SPAN 2		SPAN 3		SPAN 4	
	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME
CLASS II SURFACE PREPARATION	3.9 SY		-- SY		-- SY		-- SY	
SHOTCRETE REPAIR AREA (SCR)	1.2 SF	0.4 CF			2.7 SF	0.9 CF		



PLAN

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480109

**NOTES:**

PRIOR TO SURFACE PREPARATION, REMOVE ALL LOOSE, DISINTEGRATED, UNSOUND OR CONTAMINATED CONCRETE FROM THE BRIDGE DECK.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

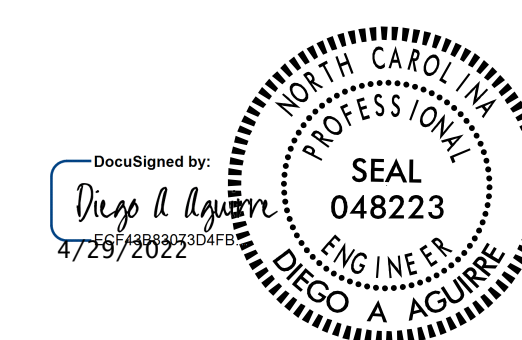
FOR SCARIFYING BRIDGE DECK, SEE OVERLAY SURFACE PREPARATION SPECIAL PROVISION.

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DEFECTS (SEE PLAN  
 CALLOUT FOR DETAILS)

BRIDGE JOINT DEMOLITION

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

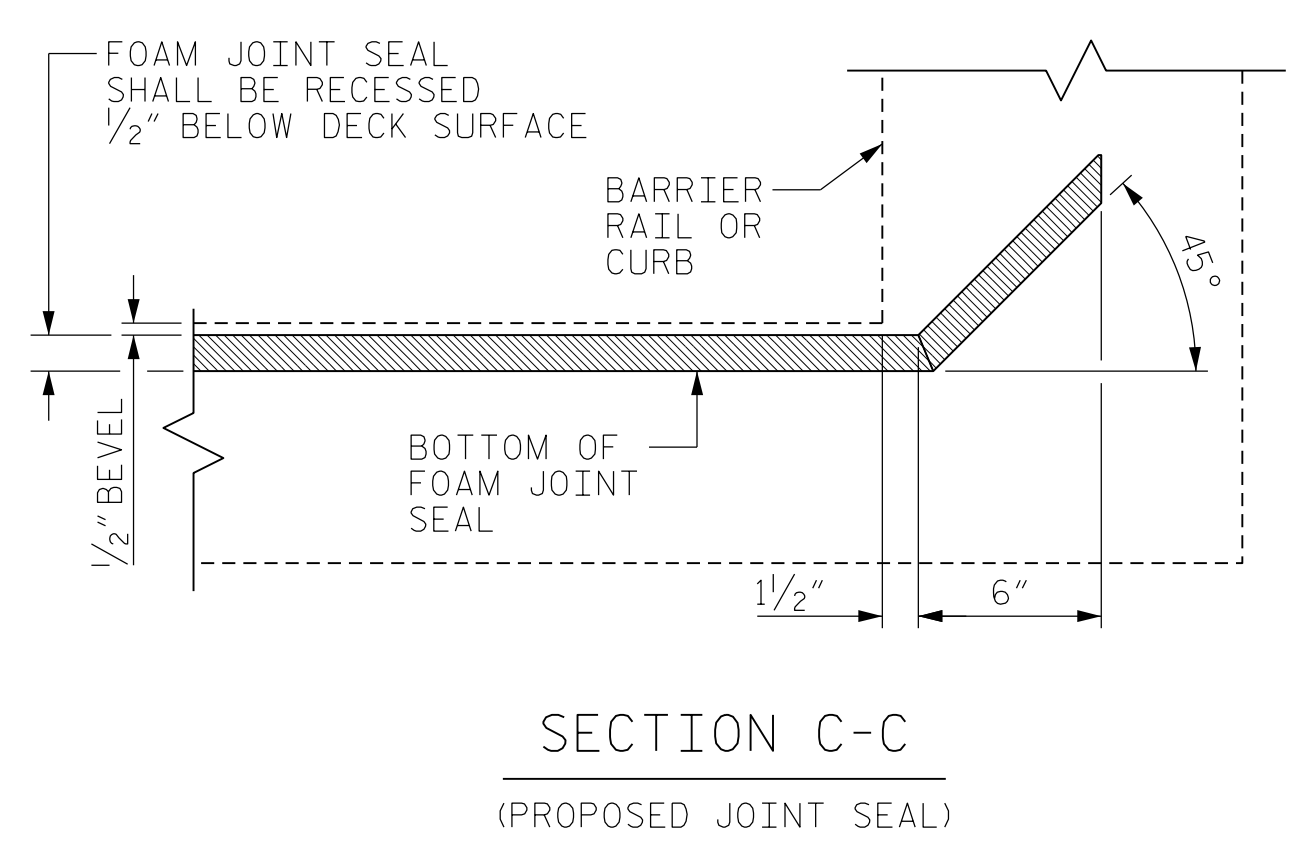
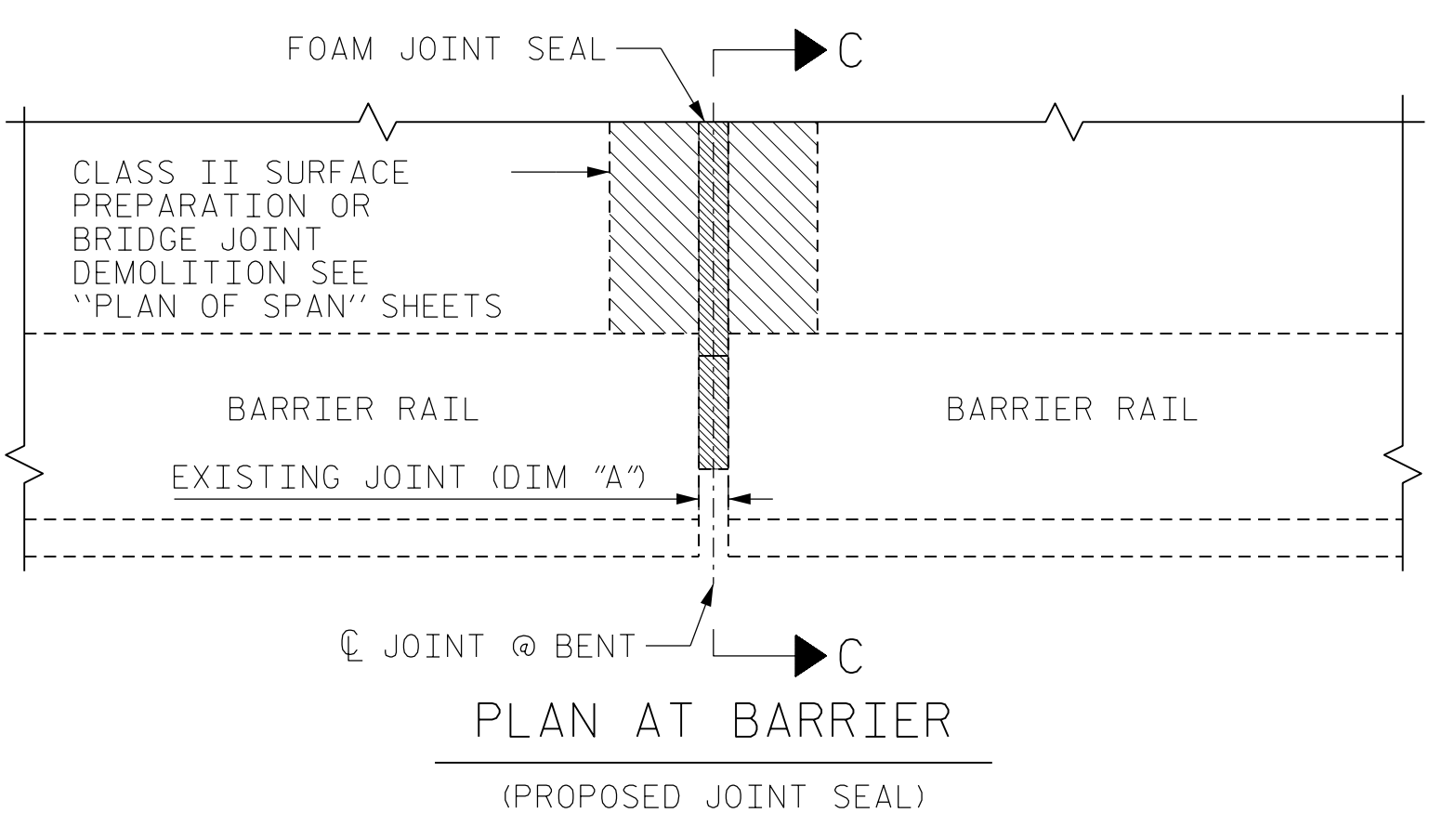
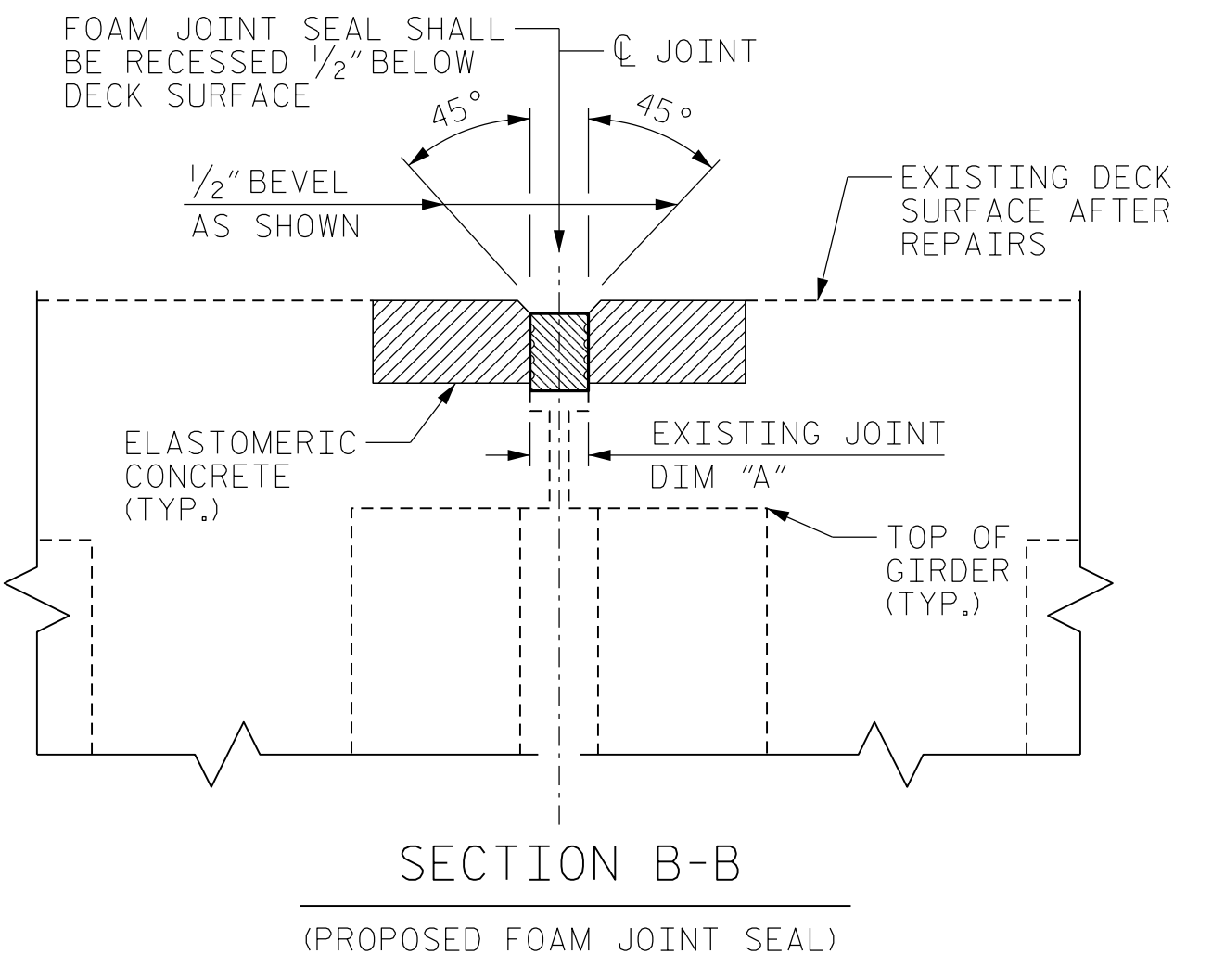
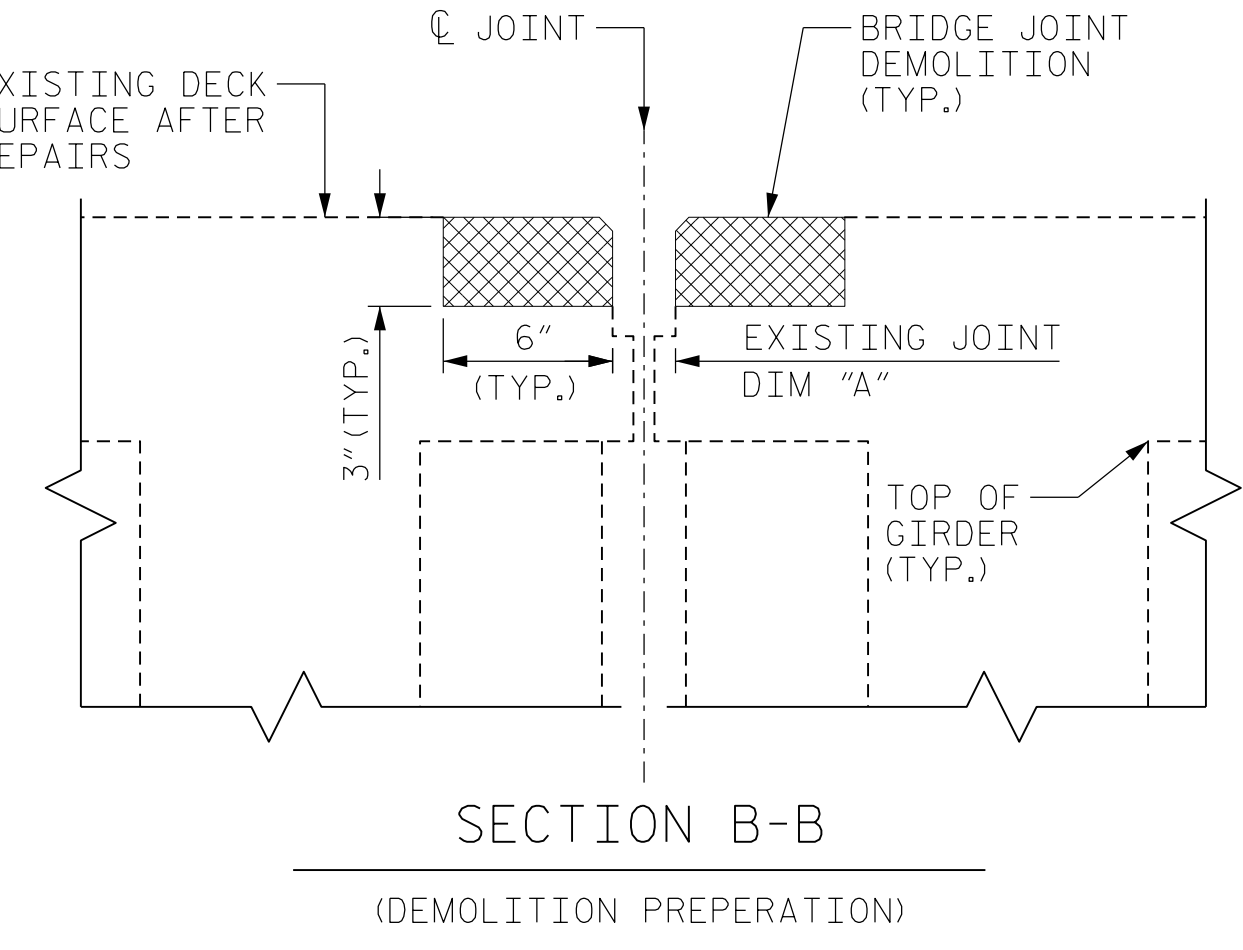
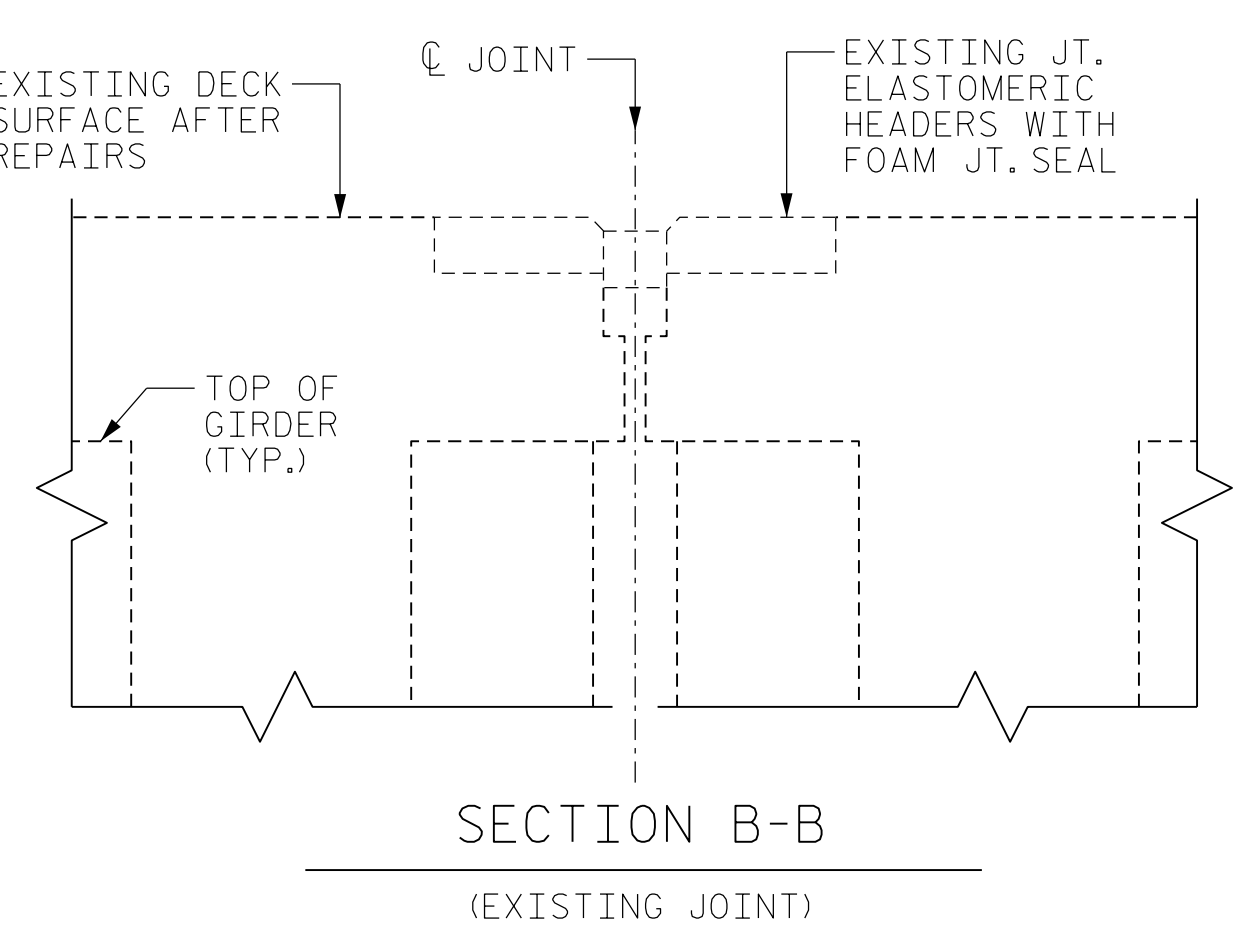
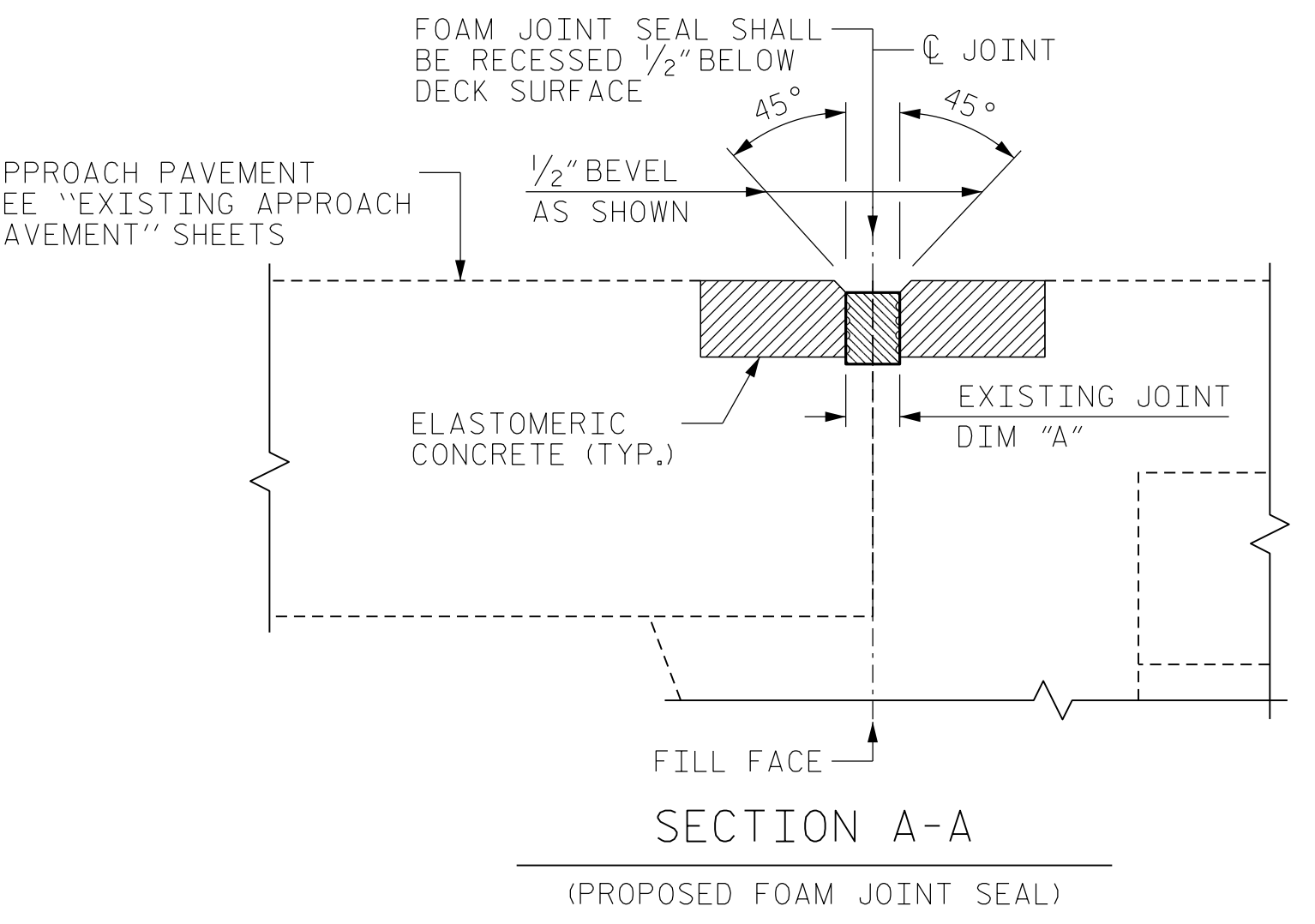
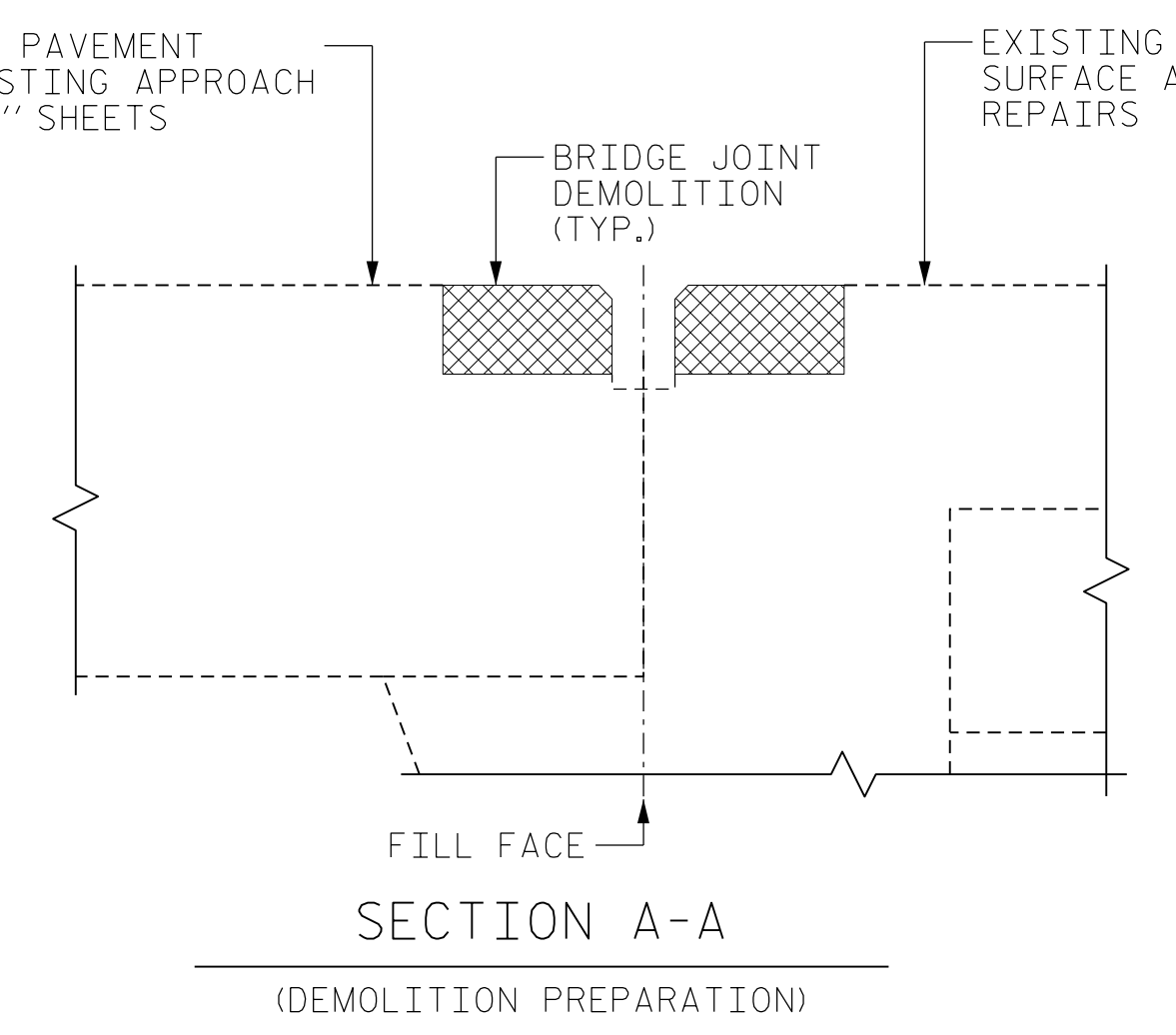
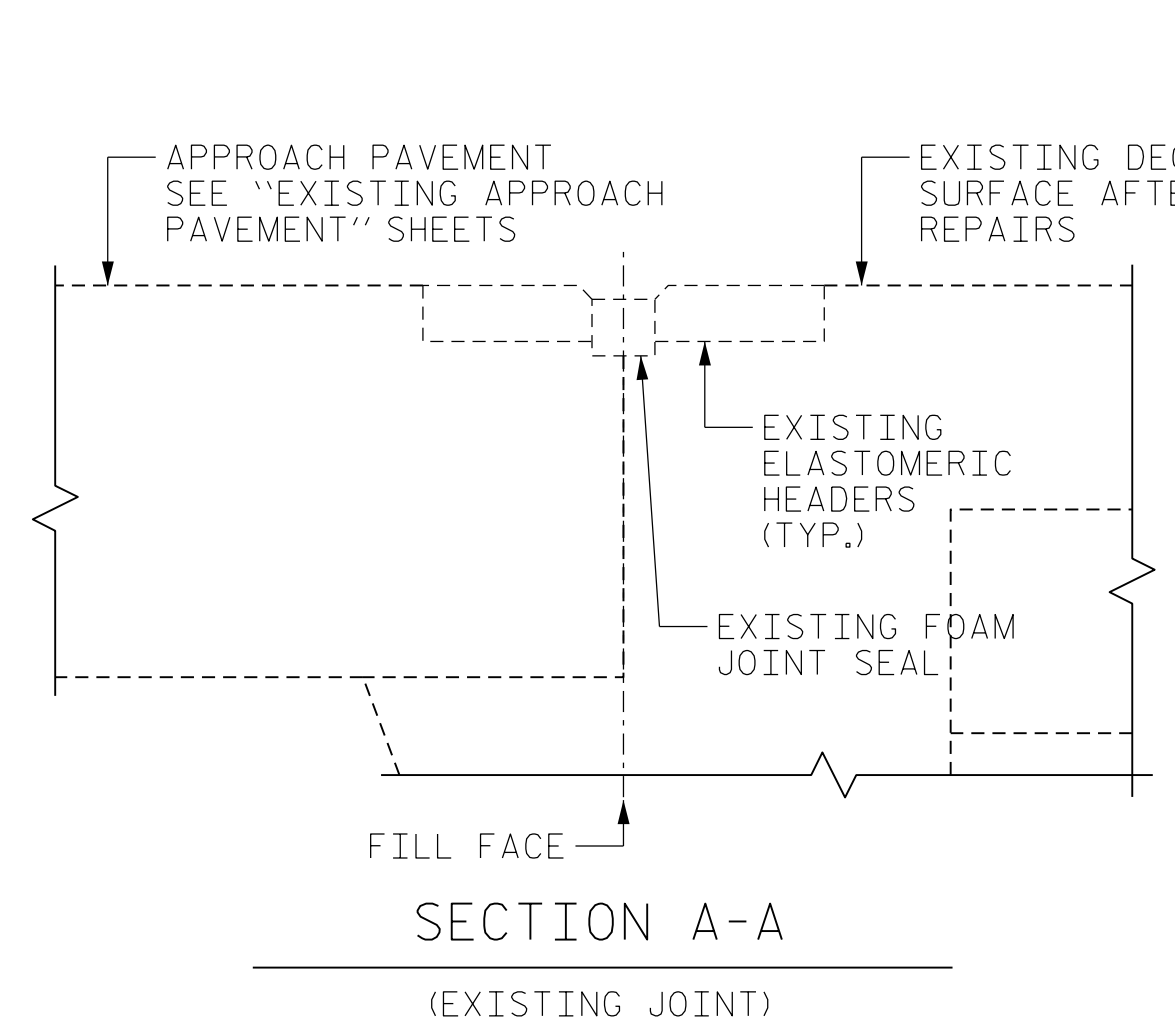


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**PLAN OF SPANS  
 DECK REPAIRS**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S16-3
2			4			TOTAL SHEETS 9

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED



**NOTES:**

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF THE ACTUAL OPENING VARIES FROM THE OPENING INDICATED IN THE DETAIL BY MORE THAN 1/4", NOTIFY THE ENGINEER. REVISION OF THE JOINT SEAL SIZE MIGHT BE NECESSARY.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL FOR THE SIZE OF THE OPENING ON THE PLANS AND ACCOMMODATE THE MINIMUM EXPANSION SHOWN ON THE PLANS.

FOAM JOINTS SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL TAKE CARE DURING JOINT REPAIR OPERATIONS NOT TO DROP ANY MATERIAL THAT FALLS BELOW THE BRIDGE, WITHOUT PROTECTIVE DEVICES BELOW TO CATCH THE MATERIAL. ANY MATERIAL THAT FALLS BELOW THE BRIDGE SHALL BE CONTAINED, REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO EXTRA COST TO THE DEPARTMENT. IF THE ENGINEER DETERMINES THAT THE PROTECTIVE DEVICES ARE NOT ADEQUATE OR NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

QUANTITIES SHOWN IN THE ELASTOMERIC CONCRETE FOR PRESERVATION TABLE BASED ON THE MINIMUM JOINT DEMOLITION SHOWN.

FOR EXCAVATION BELOW THE BOTTOM OF THE PLANNED JOINT DECK DEMOLITION, CONCRETE FOR DECK REPAIRS SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT BOTTOM OF THE PROPOSED ELASTOMERIC CONCRETE FOR PRESERVATION HEADERS SHOWN.

IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, OR IF UNSOUND CONCRETE IS REMOVED WITHIN 2" OF THE WATERSTOP, THE ENTIRE CONCRETE DEPTH TO THE WATERSTOPS SHALL BE REMOVED. IF SUCH EXCAVATION EXTENDS MORE THAN 2" BELOW THE BOTTOM OF THE PLANNED ELASTOMERIC CONCRETE HEADER, AS SHOWN, APPROVED REPAIR CONCRETE SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT THE BOTTOM OF THE ELASTOMERIC CONCRETE.

DEMOLISH BRIDGE JOINT AREA SUCH THAT THE BOTTOM OF THE EXCAVATION SHALL BE REASONABLY FLAT AND LEVEL AND TO THE NECESSARY DEPTH, SUCH THAT ELASTOMERIC CONCRETE SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

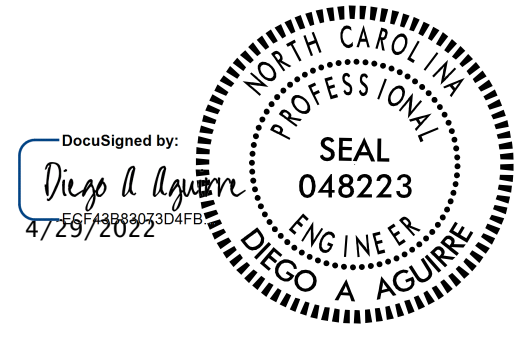
PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480109

BRIDGE JOINT DEMOLITION		
LOCATION	ESTIMATED (SQ.FT.)	ACTUAL (SQ.FT.)
END BENTS	111.3	
BENT 1	55.7	
BENT 2	55.7	
BENT 3	55.7	

ELASTOMERIC CONCRETE FOR PRESERVATION		
LOCATION	ESTIMATED (CU.FT.)	ACTUAL (CU.FT.)
END BENTS	28.0	
BENT 1	14.0	
BENT 2	14.0	
BENT 3	14.0	

TABLE 1	
Table Date 02-2022	
BENT/ JOINTS	DIM "A" @ 60° F
END BENT 1	3/4"
1	2"
2	2"
3	1 7/8"
END BENT 2	1"

PROPOSED JOINT QUANTITY		
	ESTIMATED (LIN.FT.)	ACTUAL (LIN.FT.)
FOAM JOINT SEALS FOR PRESERVATION	286.0	



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

JOINT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S16-4
2			4			TOTAL SHEETS 9

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

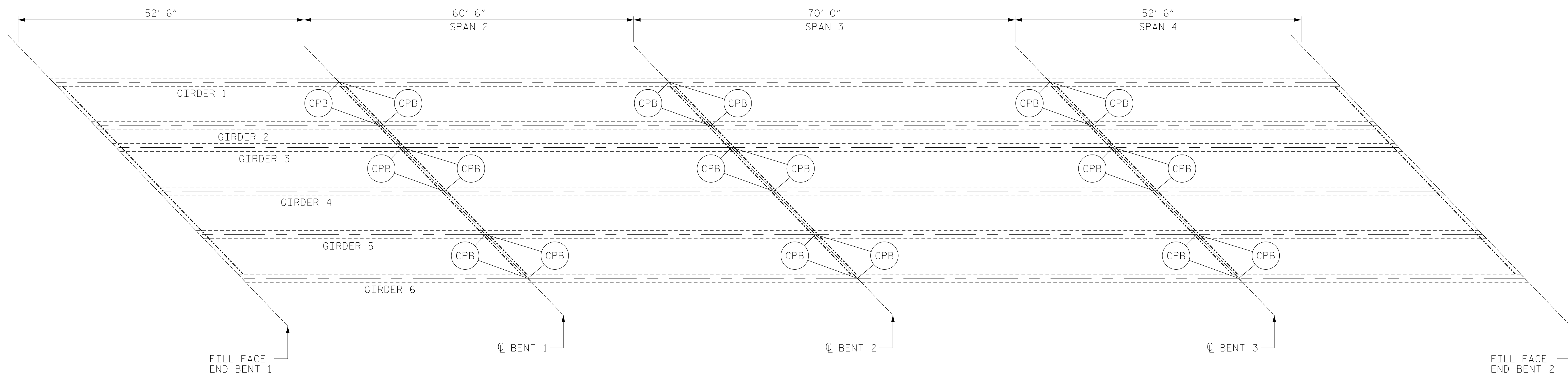
# AS-BUILT REPAIR QUANTITY TABLE

## SUPERSTRUCTURE REPAIRS

	SPAN 1		SPAN 2		SPAN 3		SPAN 4					
	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL					
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME				
CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA	6 EA				12 EA				6 EA			
CONCRETE REPAIR AREA (CR)	-- SF	-- CF			-- SF	-- CF			-- SF	-- CF		

**LEGEND:**

CPB CLEAN AND PAINT BEARING



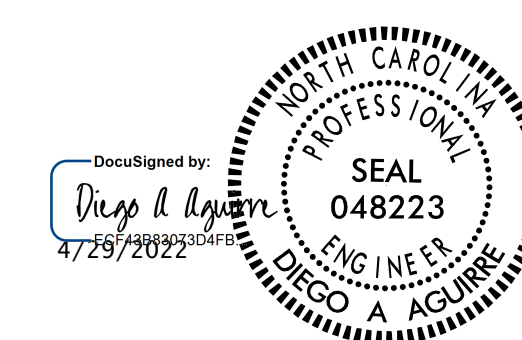
PLAN

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480109

**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 TABLE ABOVE.

FOR CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA, SEE SPECIAL PROVISIONS.



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

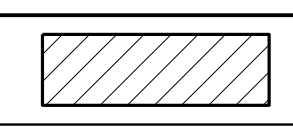
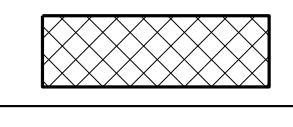

### SUPERSTRUCTURE REPAIRS

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

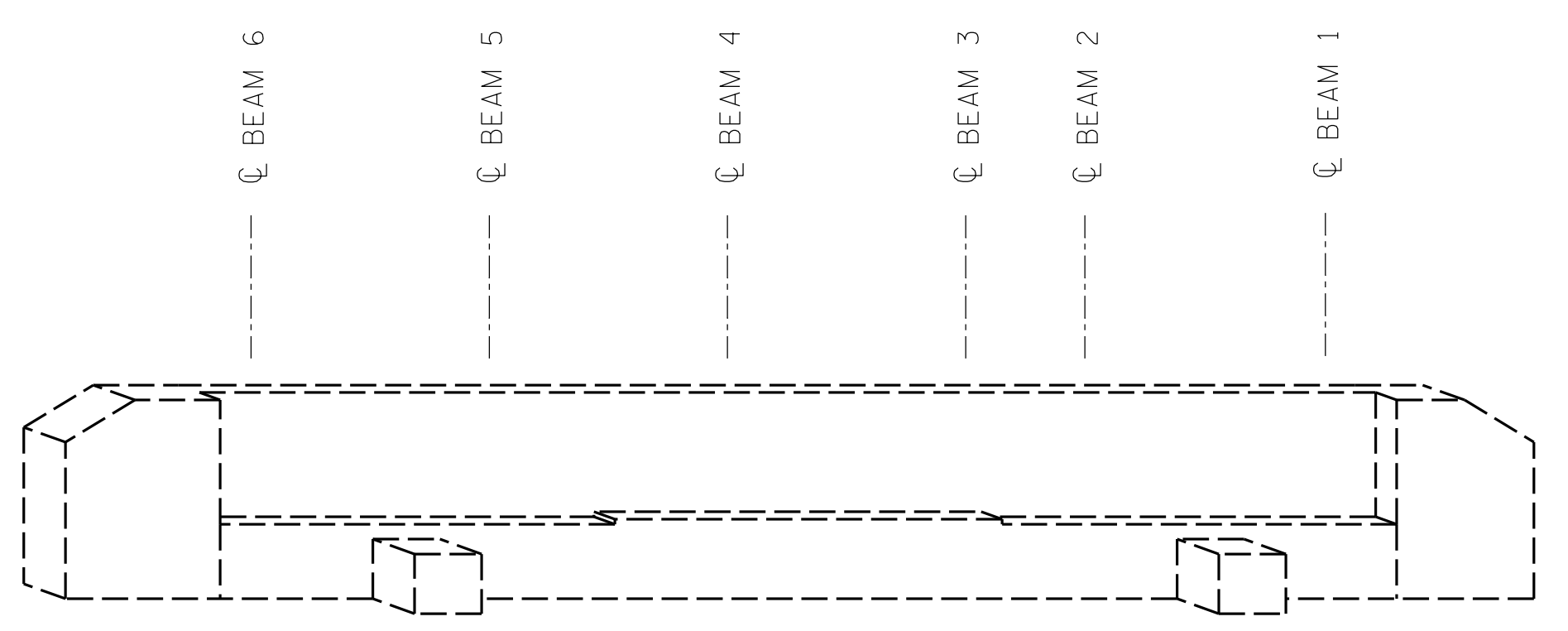
DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S16-5
2			4			TOTAL SHEETS 9

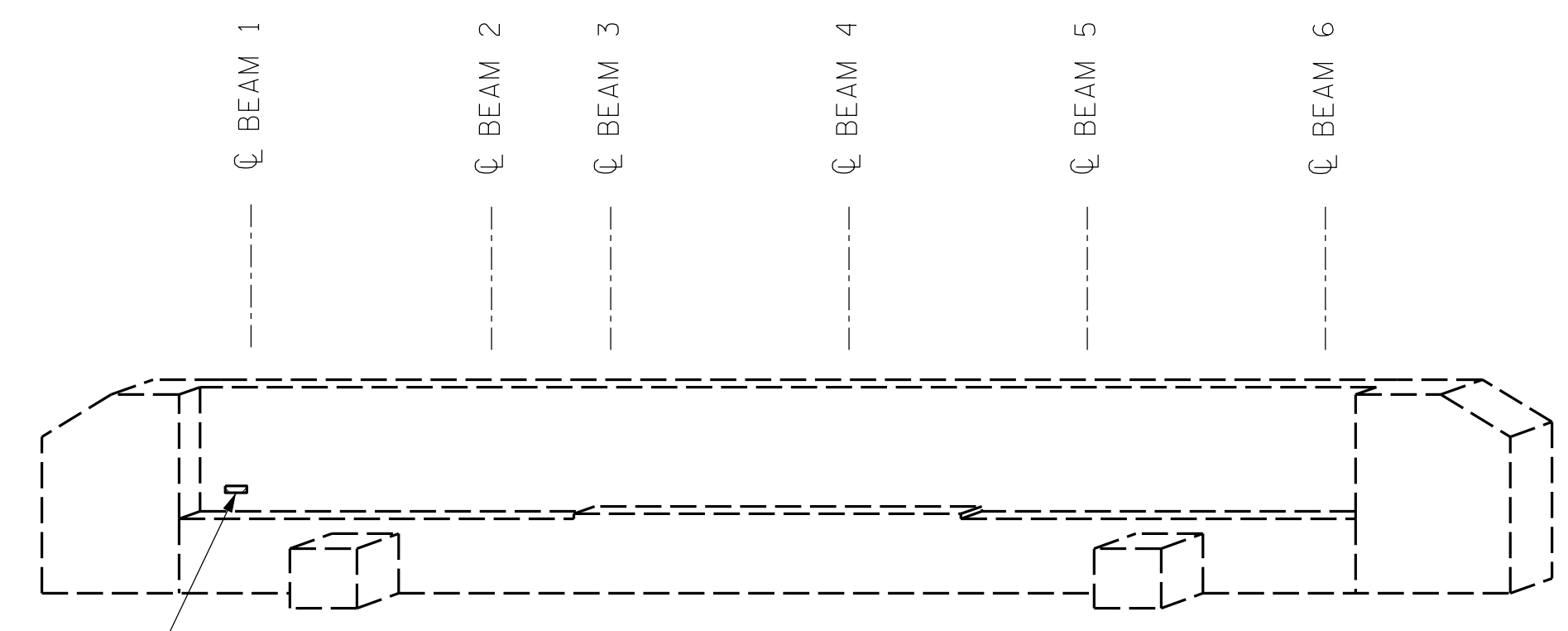


LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP/BACKWALL	0.7	0.3	
COLUMN/PILE	-	-		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP	-	-	
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
	CAP/BACKWALL	-		
COLUMN/PILE	-			



END BENT 1  
(EAST FACE)



END BENT 2  
(WEST FACE)

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**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 TABLE ABOVE.

CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS  $\geq 1/16"$  AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

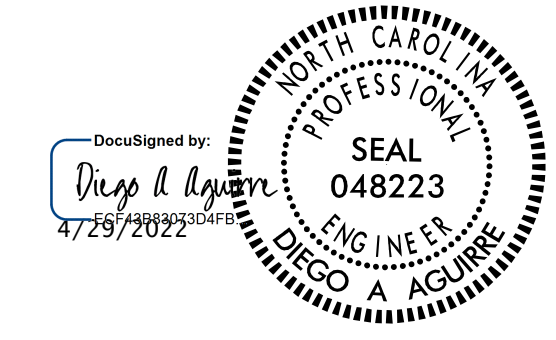
FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480109

SHEET 1 OF 4



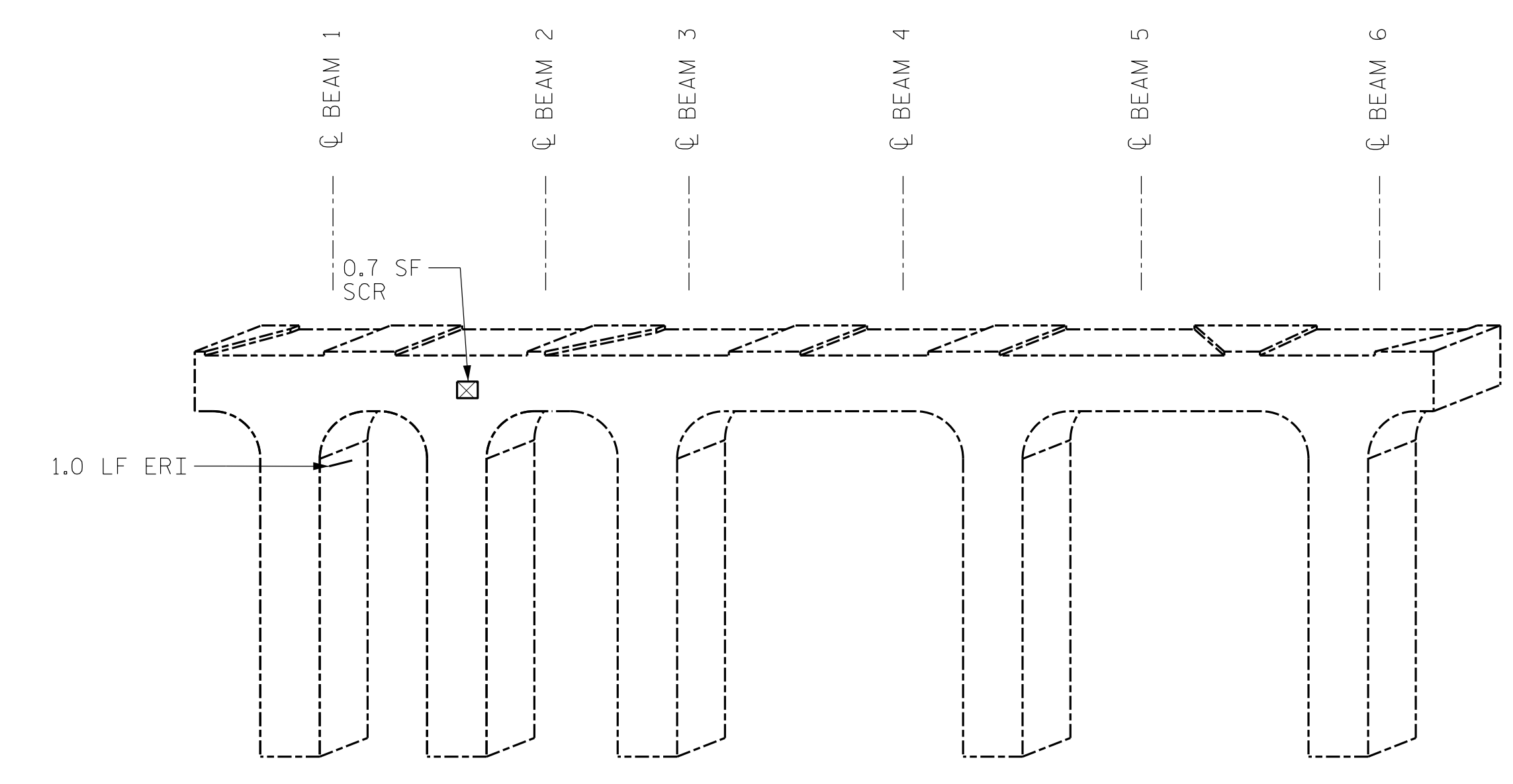
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 END BENTS 1 & 2

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

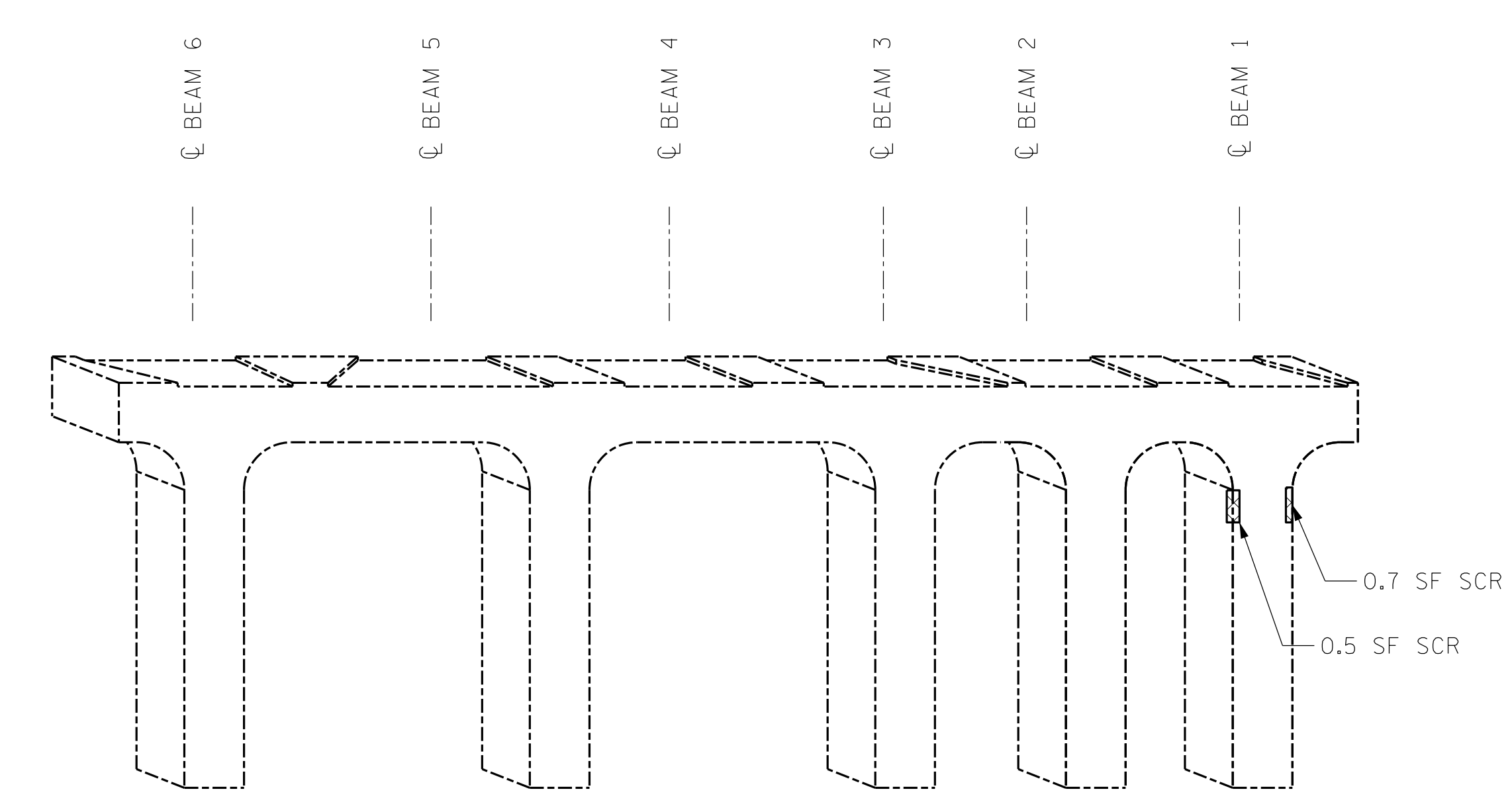
4/21/2022  
 I5915B.SMU.SBR00\_480109.dgn  
 daquirre

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S16-6
2			4			TOTAL SHEETS 9



BENT 1  
(WEST FACE)



BENT 1  
(EAST FACE)

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	0.7	0.3		
COLUMN/PILE	1.2	0.6		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	-			
COLUMN/PILE	1.0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**NOTES:**  
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AVERAGE CONCRETE COVER IS EXPECTED TO BE FROM 2" TO 3" ON THE CAP AND FROM 1 1/2" TO 2" ON THE PILES. ACTUAL CONCRETE COVER SHALL BE DETERMINED BY THE CONTRACTOR AND PRESENTED TO THE ENGINEER PRIOR TO BEGINNING EXCAVATION/ DEMOLITION.

FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
BRIDGE NO. 480109

SHEET 2 OF 4

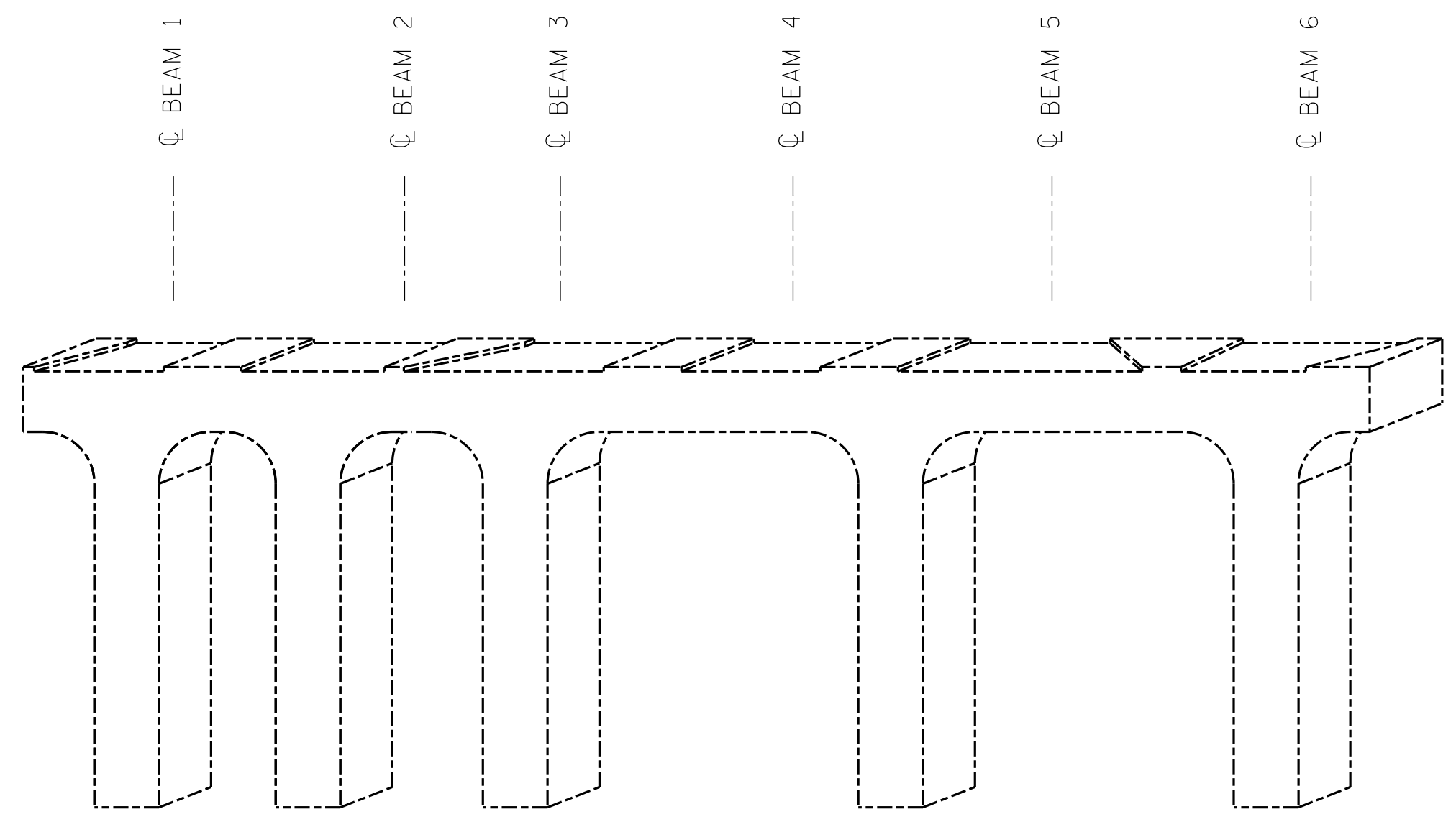


STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**SUBSTRUCTURE REPAIRS**  
BENT 1

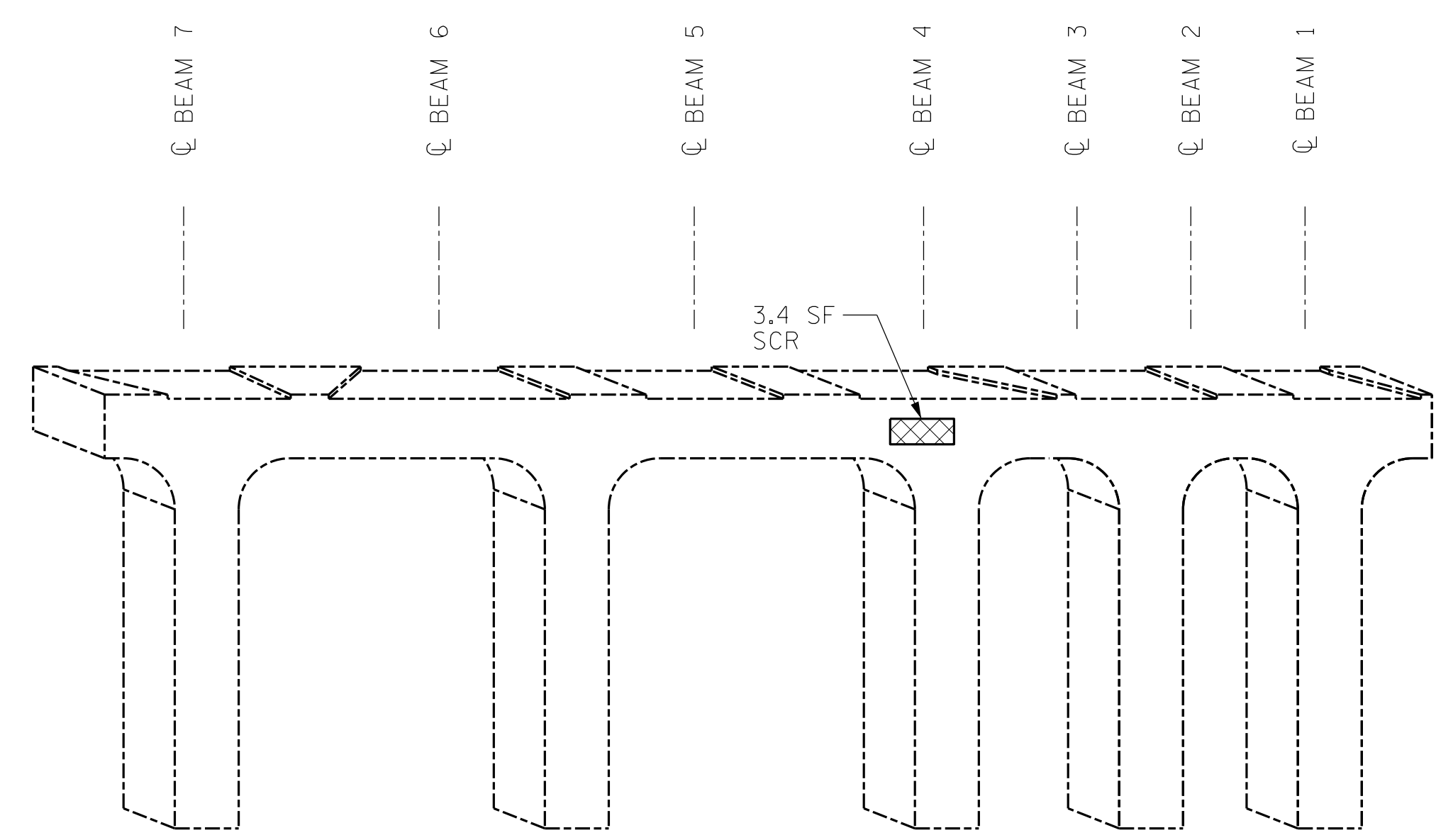
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S16-7
2			4			TOTAL SHEETS 9



BENT 2  
(WEST FACE)



BENT 2  
(EAST FACE)

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	3.4	1.2		
COLUMN/PILE	-	-		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	-			
COLUMN/PILE	-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

**NOTES:**

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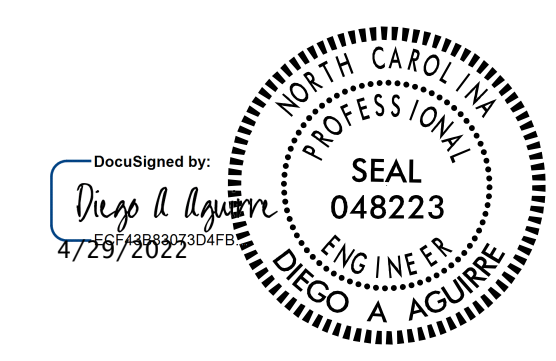
FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480109

SHEET 3 OF 4



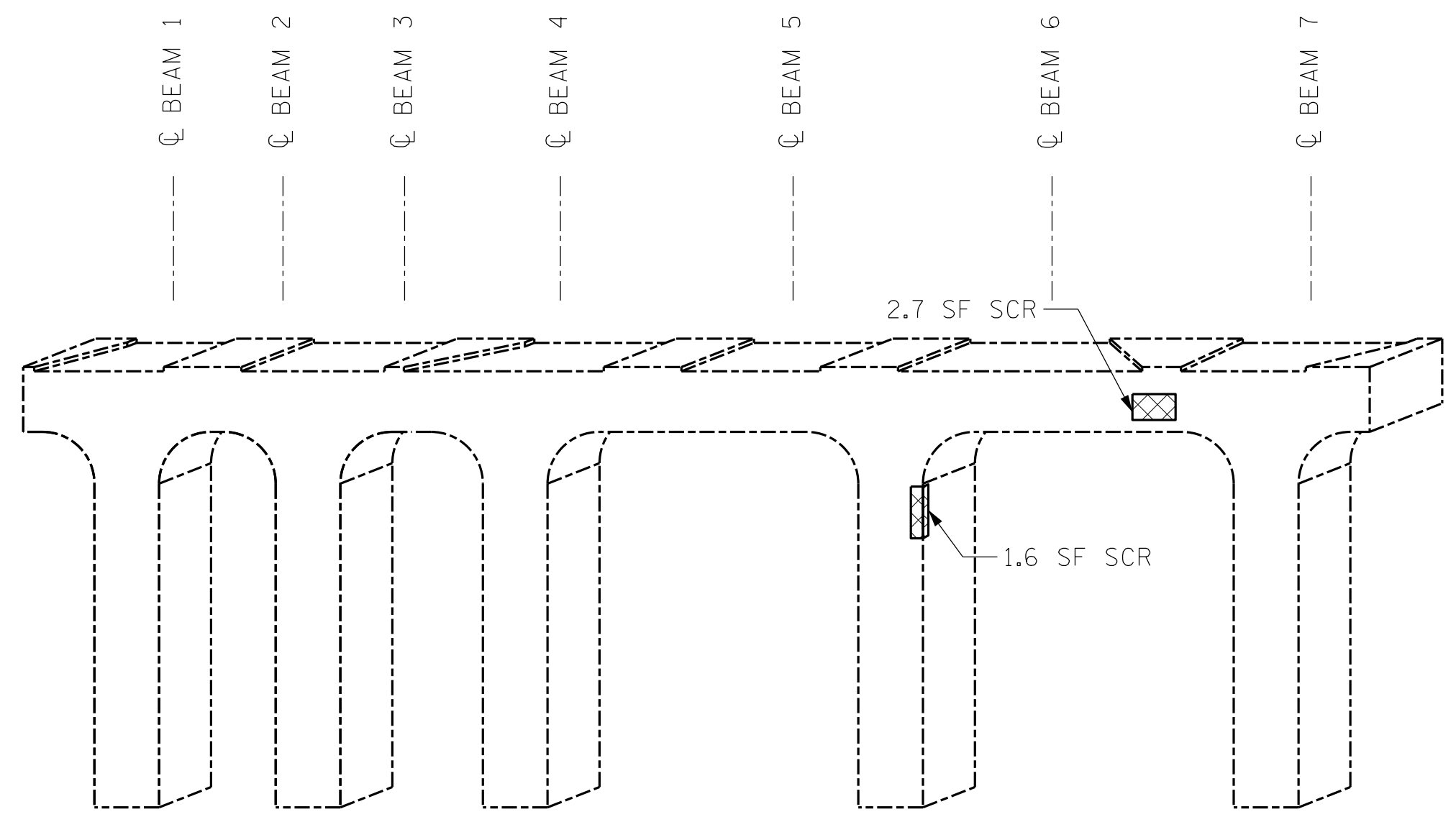
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 BENT 2

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

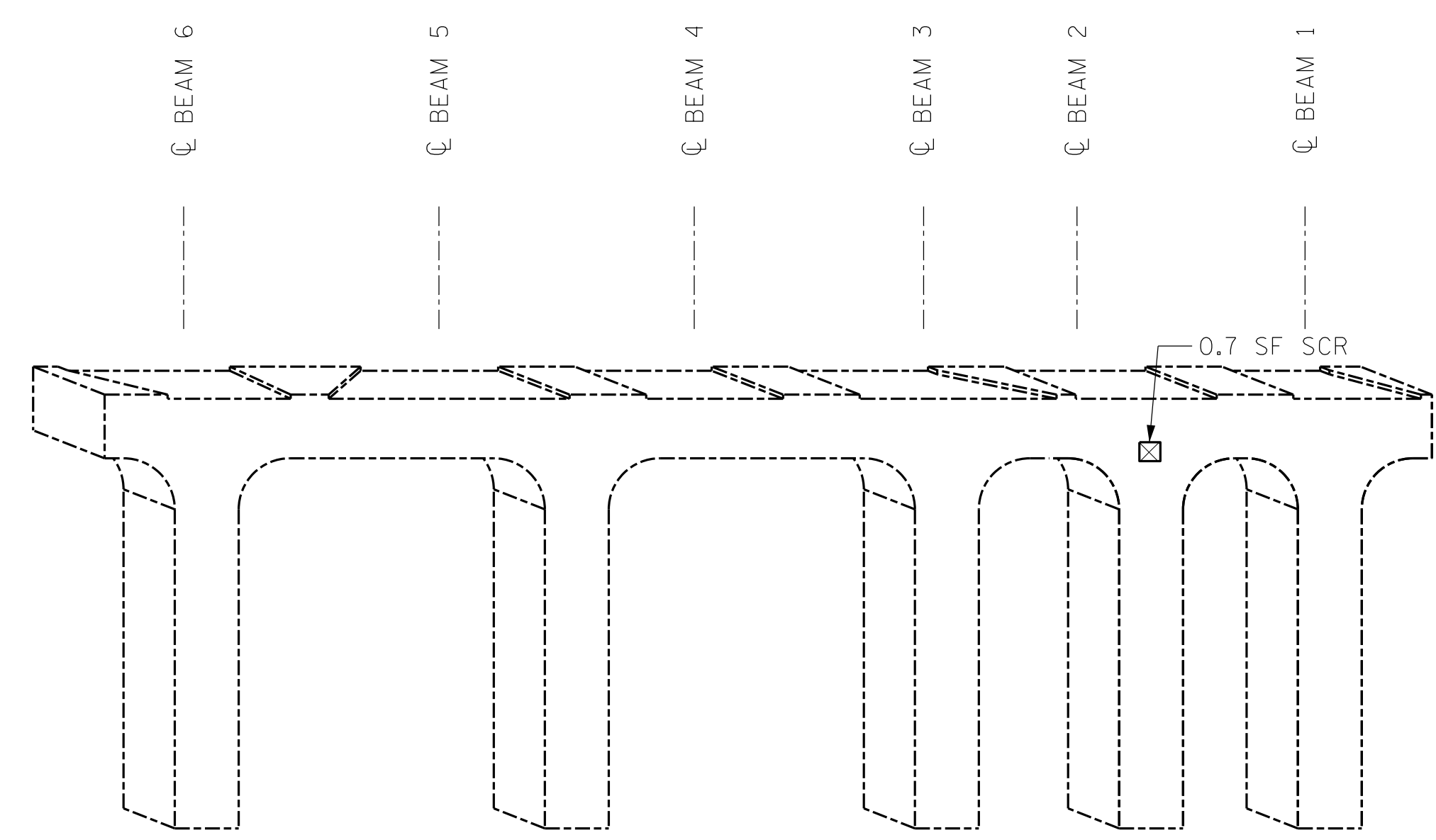
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S16-8
2			4			TOTAL SHEETS 9





BENT 3  
(WEST FACE)



BENT 3  
(EAST FACE)

LEGEND	
	CONCRETE REPAIR AREA (CR)
	SHOTCRETE REPAIR AREA (SCR)
	EPOXY RESIN INJECTION (ERI)

	AS-BUILT REPAIR QUANTITY TABLE			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	3.4	1.2		
COLUMN/PILE	1.6	0.6		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	-			
COLUMN/PILE	-			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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

REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480109

SHEET 4 OF 4

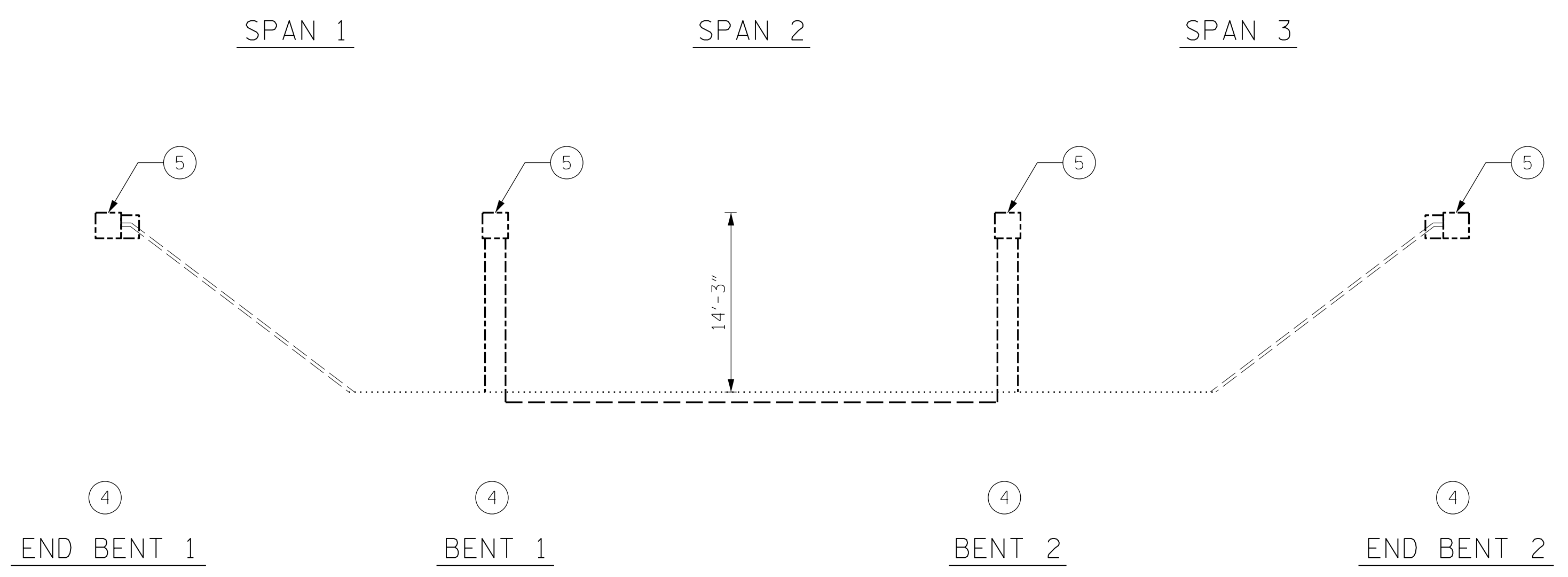


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIRS**  
 BENT 3

DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

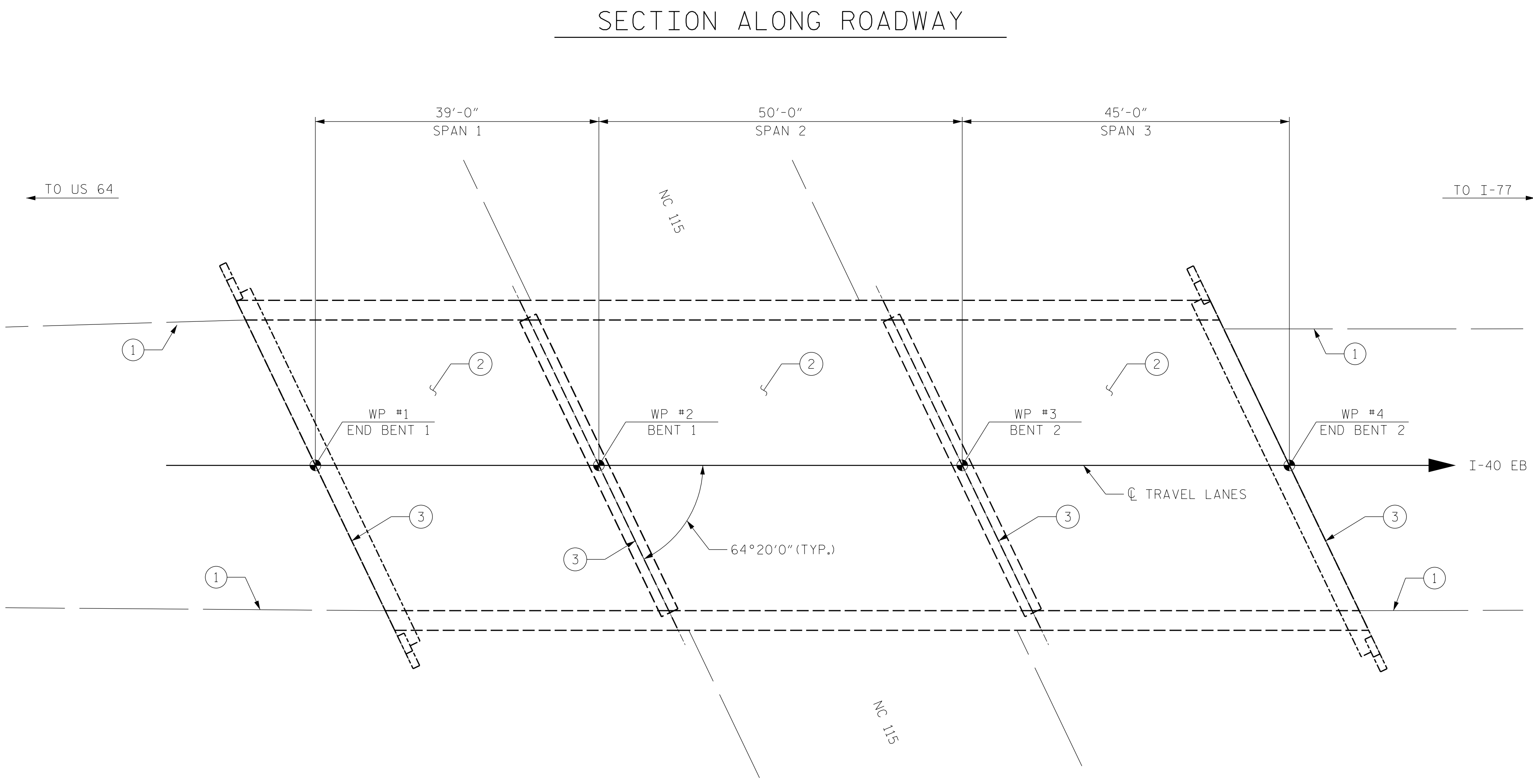
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S16-9
2			4			TOTAL SHEETS 9



**SCOPE LEGEND:**

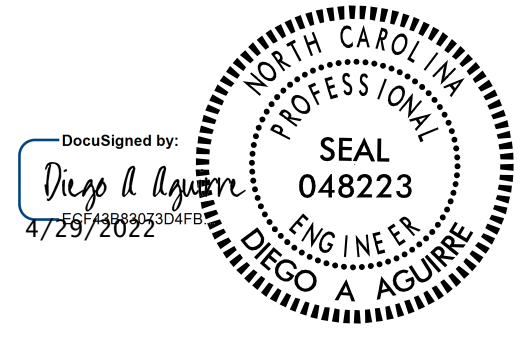
- ① CLEAR SHOULDERS OF DEBRIS AND VEGETATION
- ② CONCRETE DECK REPAIRS
- ③ JOINT REPAIRS/REPLACEMENT
- ④ SUBSTRUCTURE CONCRETE REPAIRS
- ⑤ SUBSTRUCTURE EPOXY RESIN INJECTION



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

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

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480123



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR BRIDGE ON I-40 EB  
 OVER NC 115

**NOTES:**

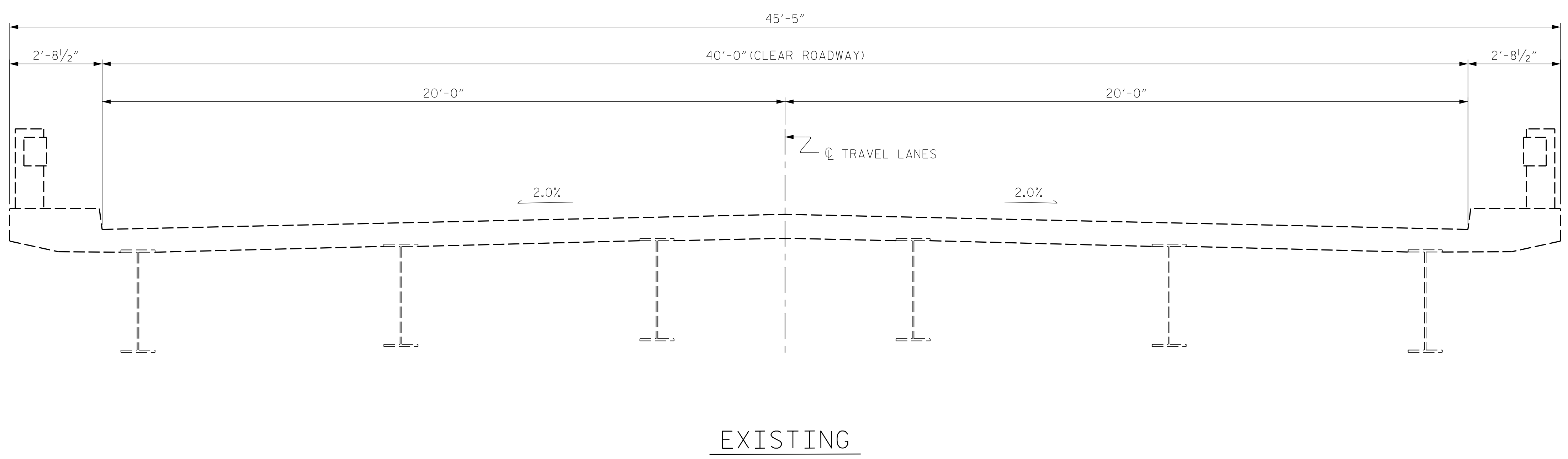
GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE MOST UP TO DATE ROUTINE INSPECTION REPORT DATED 09/12/2021.

BRIDGE ORIENTATION CONFORMS TO THE EXISTING BRIDGE ROUTINE INSPECTION.

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			8
2			4			



PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480123



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
TYPICAL SECTION					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S17-2
TOTAL SHEETS					8

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

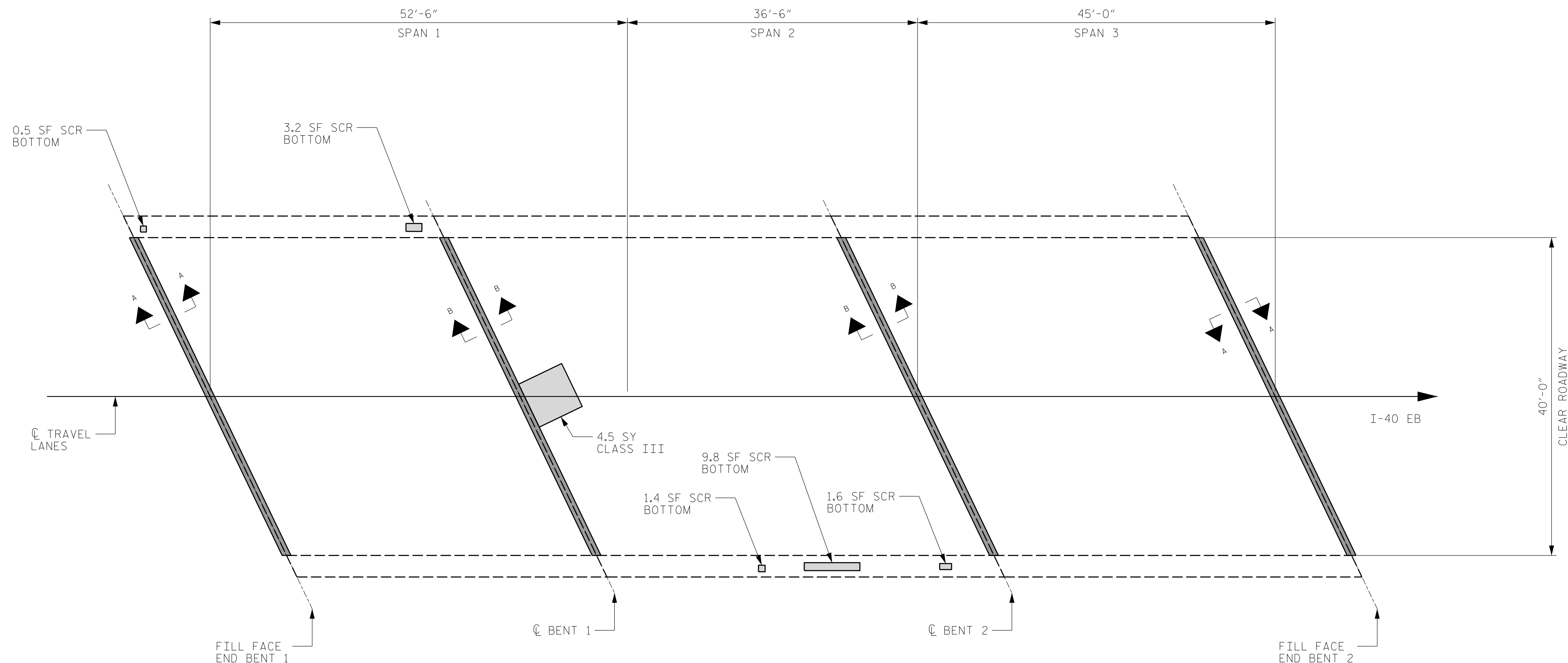
DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED



# AS-BUILT REPAIR QUANTITY TABLE

## DECK REPAIRS

	SPAN 1		SPAN 2		SPAN 3	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
CLASS III SURFACE PREPARATION	-- SY		4.5 SY		-- SY	
SHOTCRETE REPAIR AREA (SCR)	3.7 SF	1.3 CF	12.8 SF	4.4 CF	-- SF	-- CF



PLAN

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480123

**NOTES:**

PRIOR TO SURFACE PREPARATION, REMOVE ALL LOOSE, DISINTEGRATED, UNSOUND OR CONTAMINATED CONCRETE FROM THE BRIDGE DECK.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

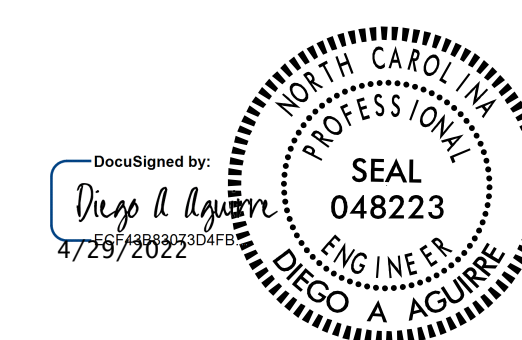
FOR SCARIFYING BRIDGE DECK, SEE OVERLAY SURFACE PREPARATION SPECIAL PROVISION.

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.

DEFECTS (SEE PLAN  
 CALLOUT FOR DETAILS)

BRIDGE JOINT DEMOLITION

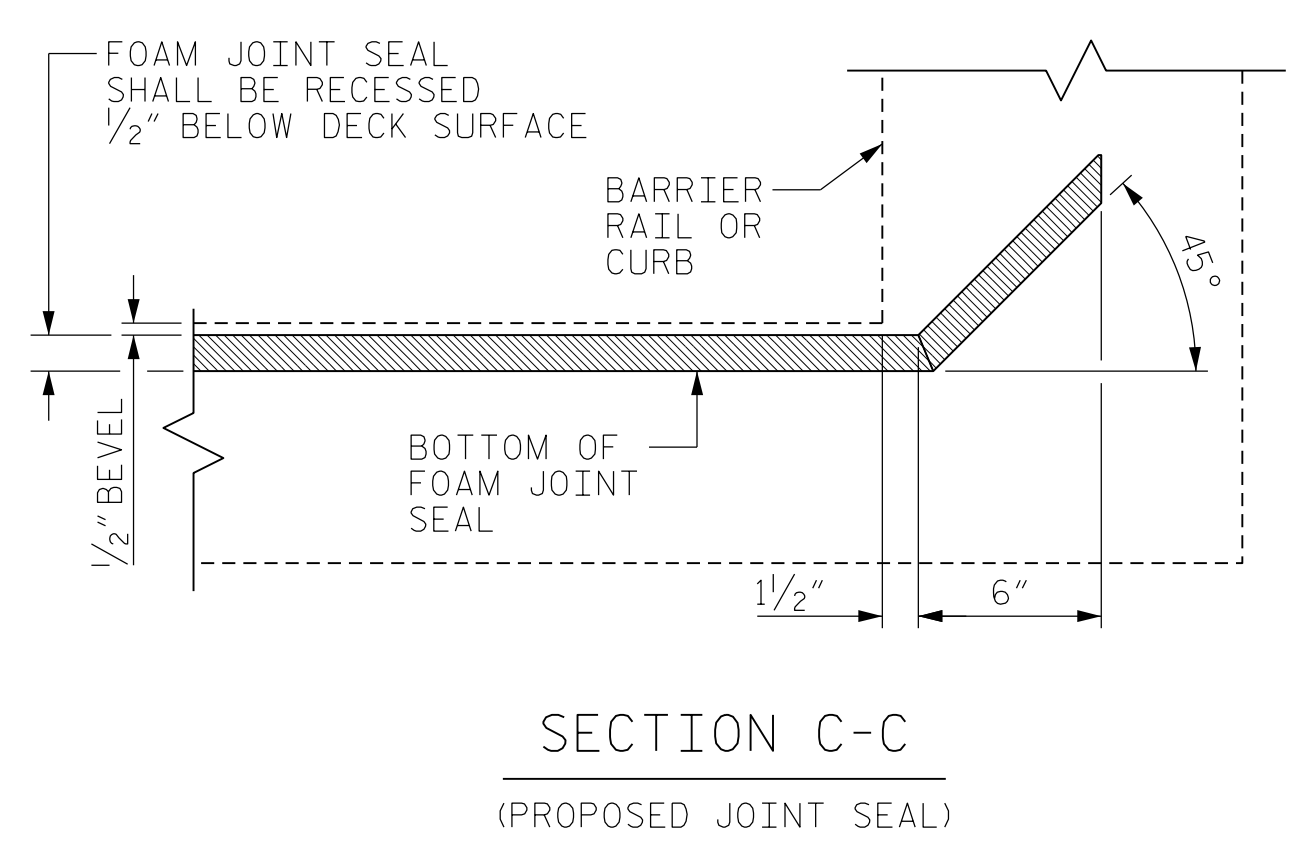
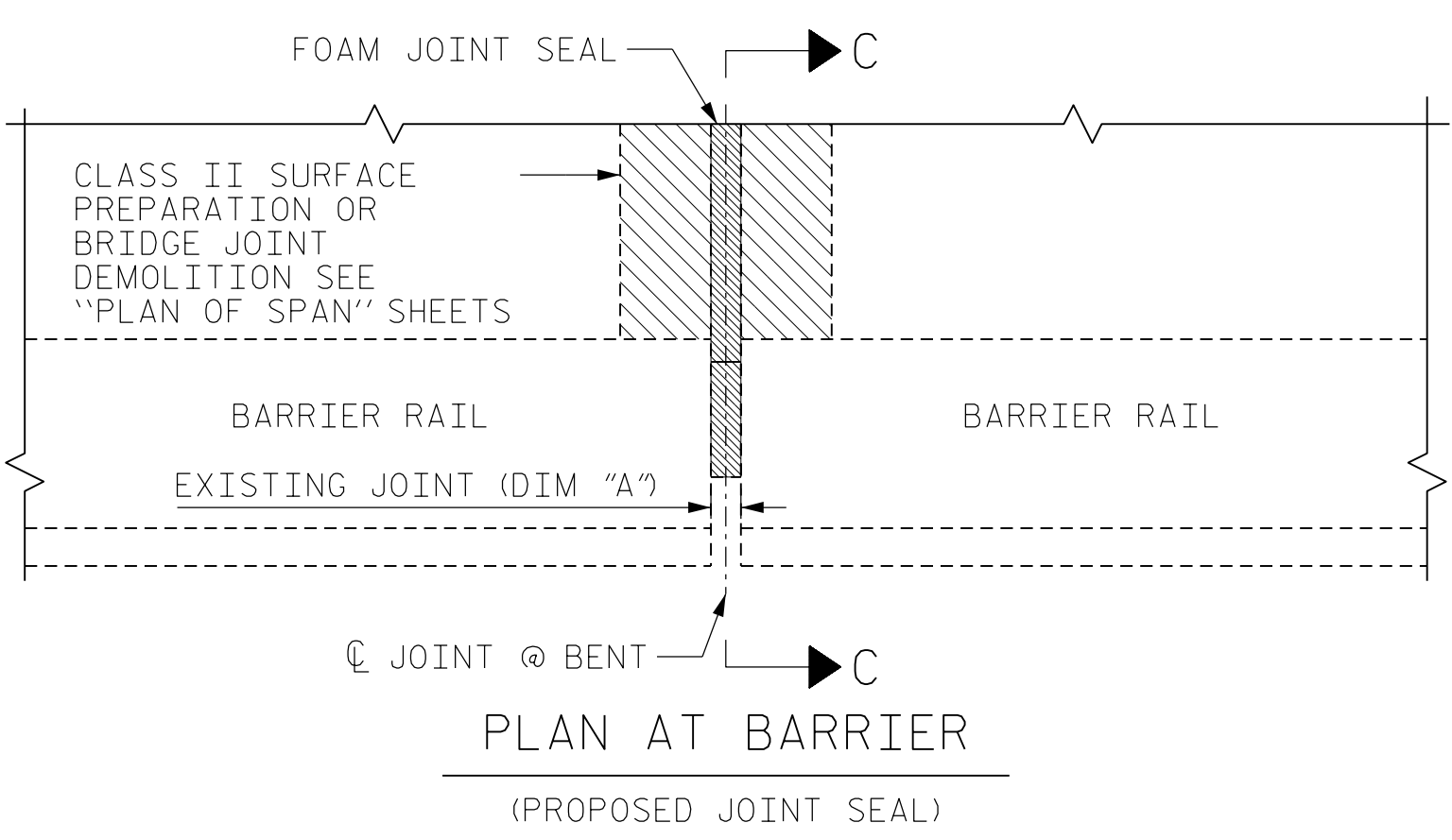
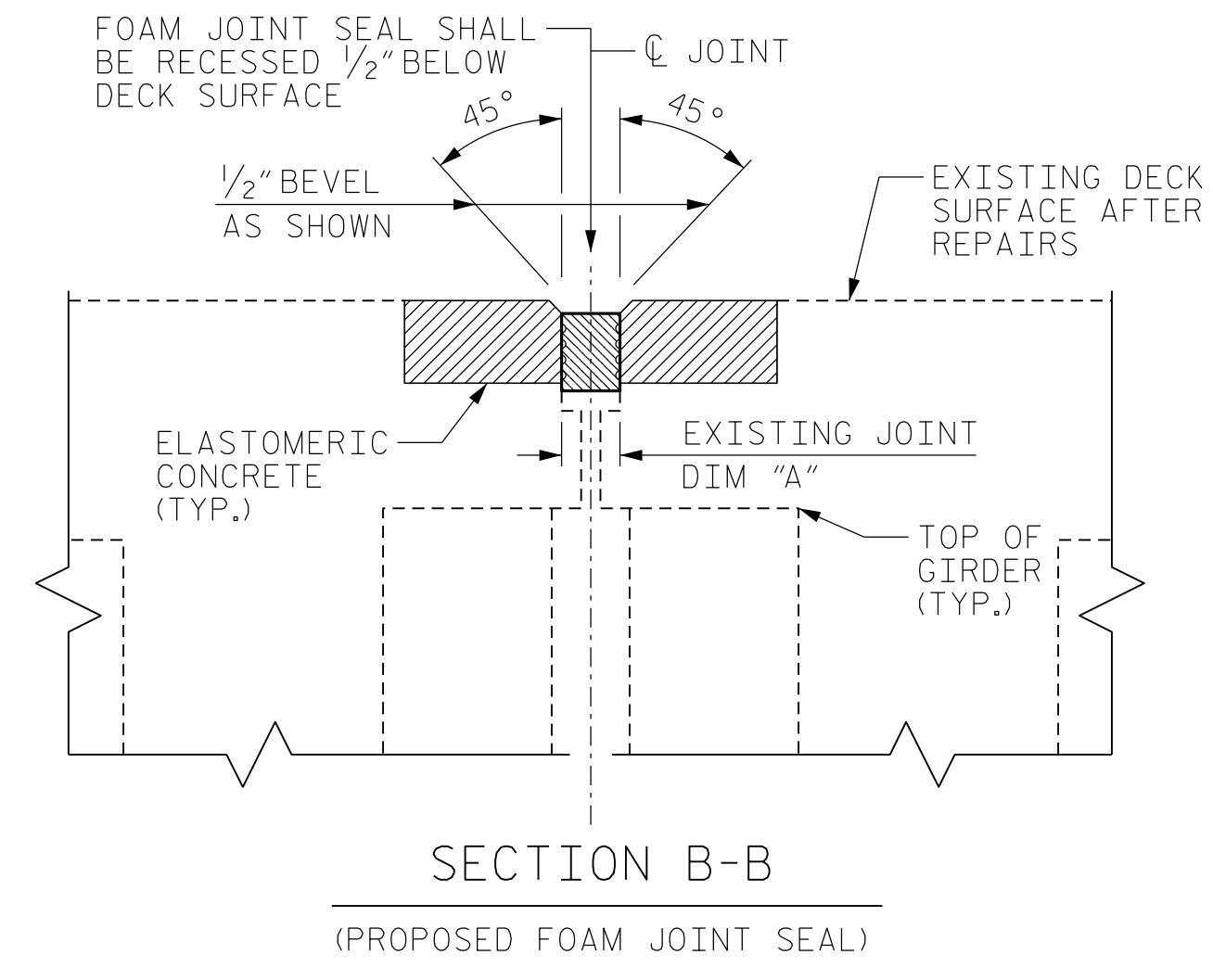
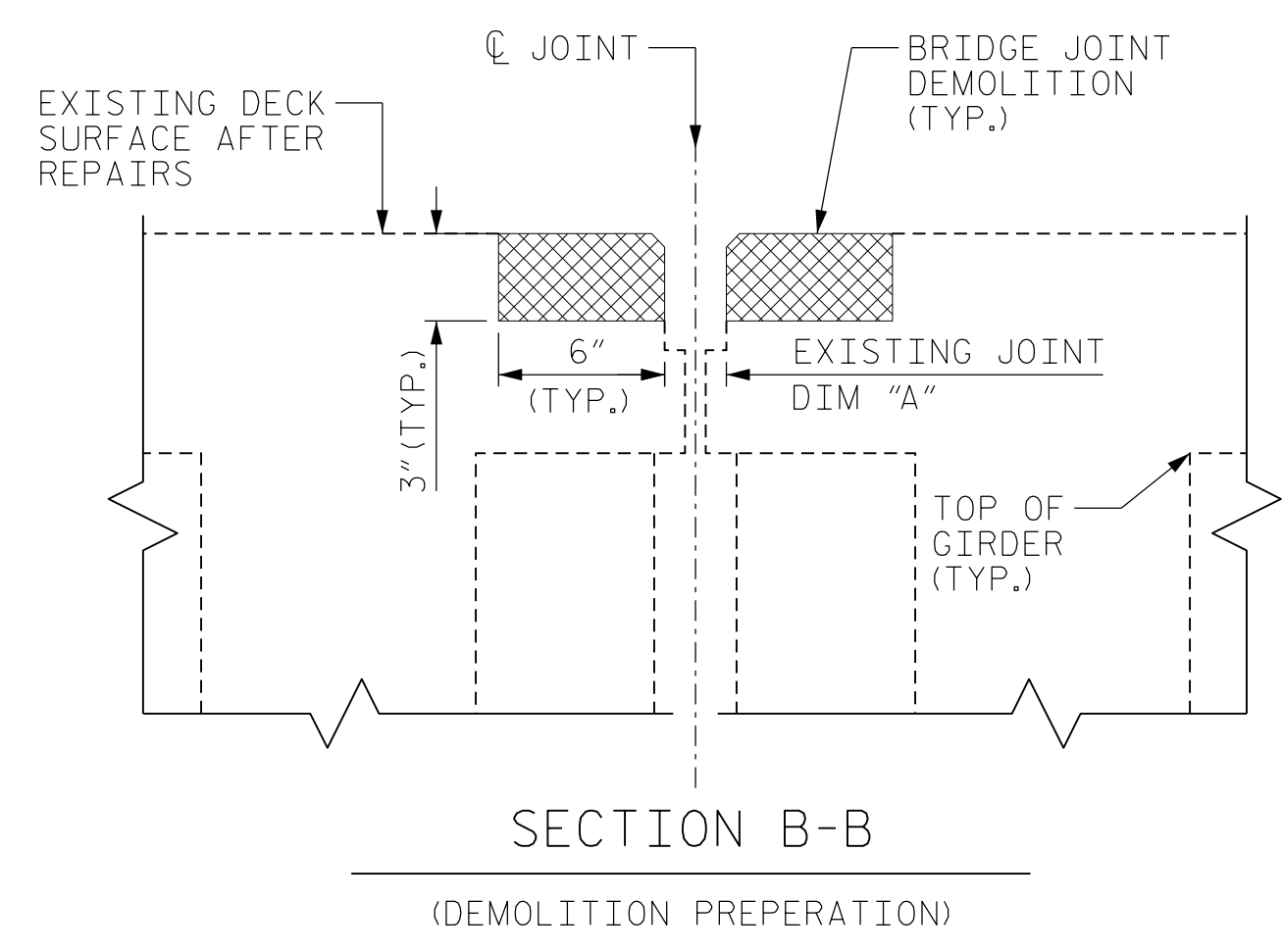
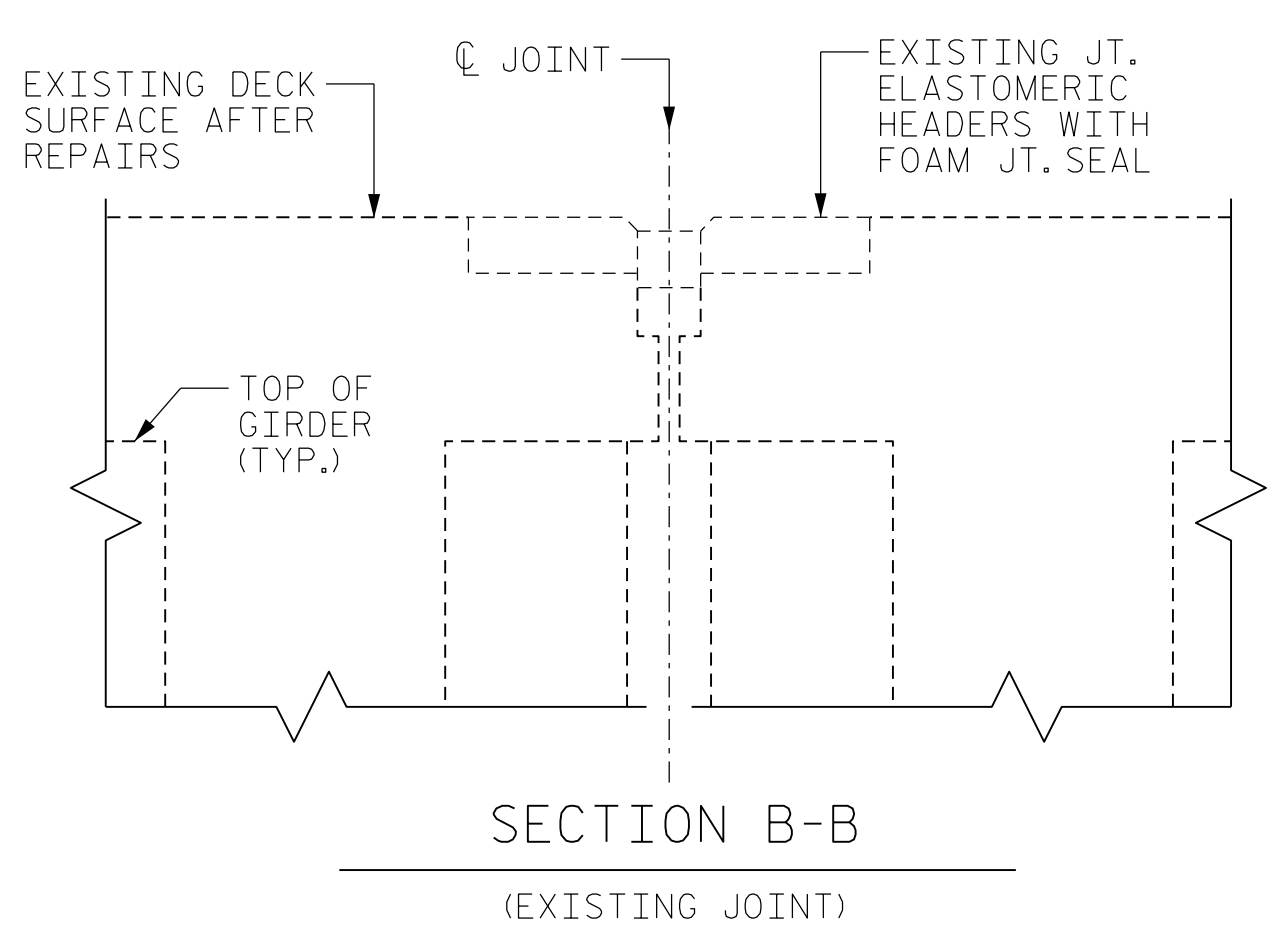
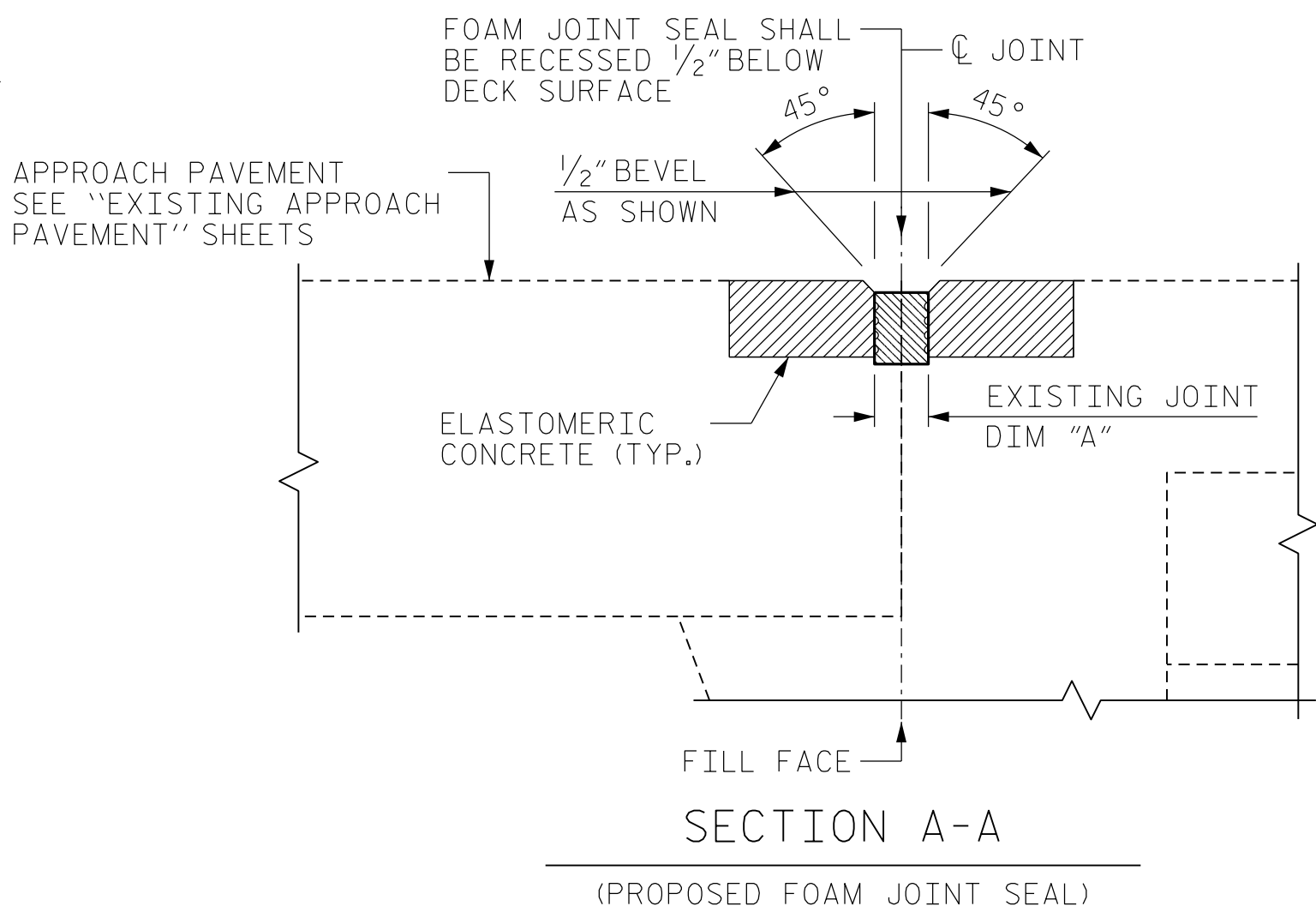
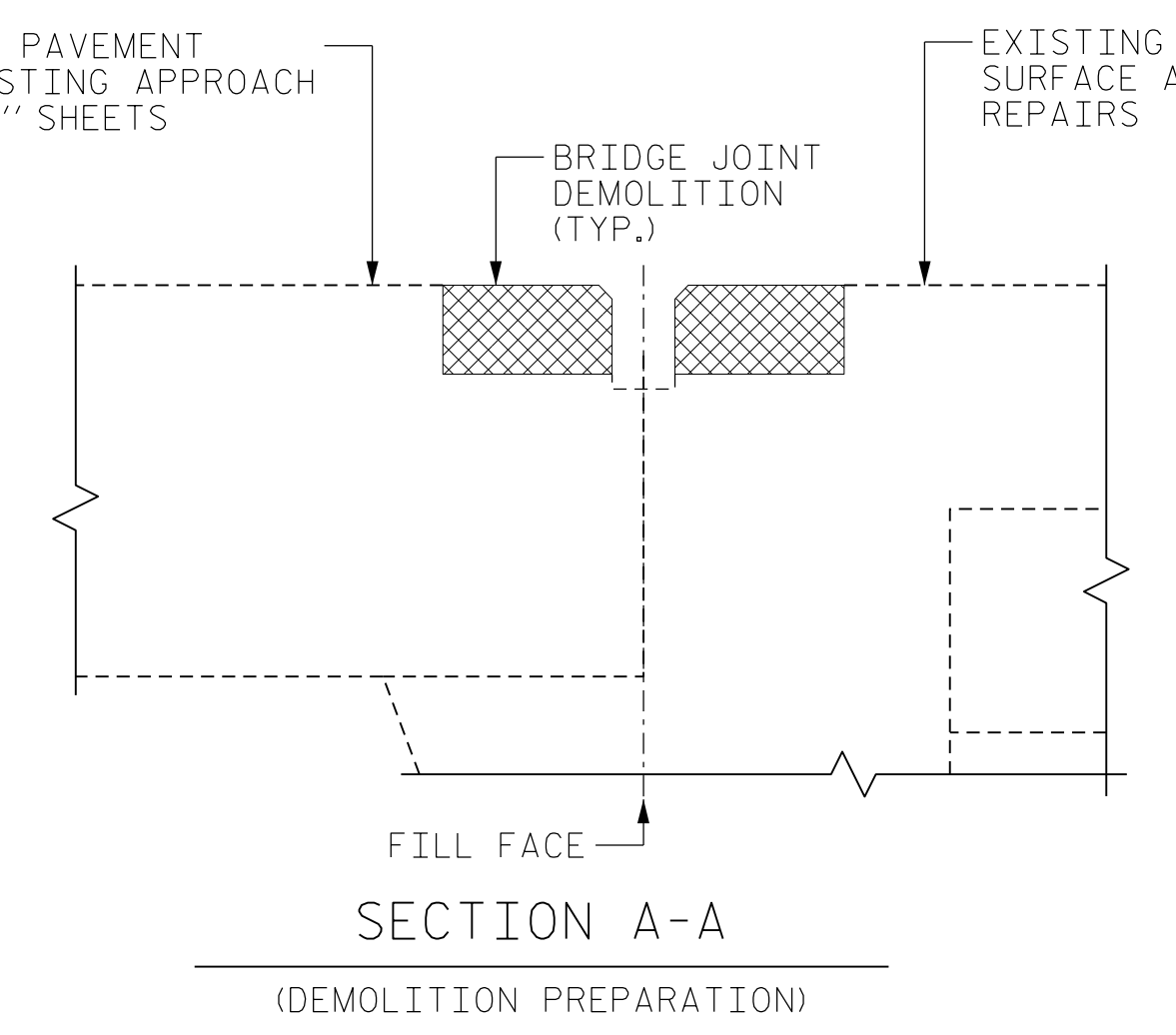
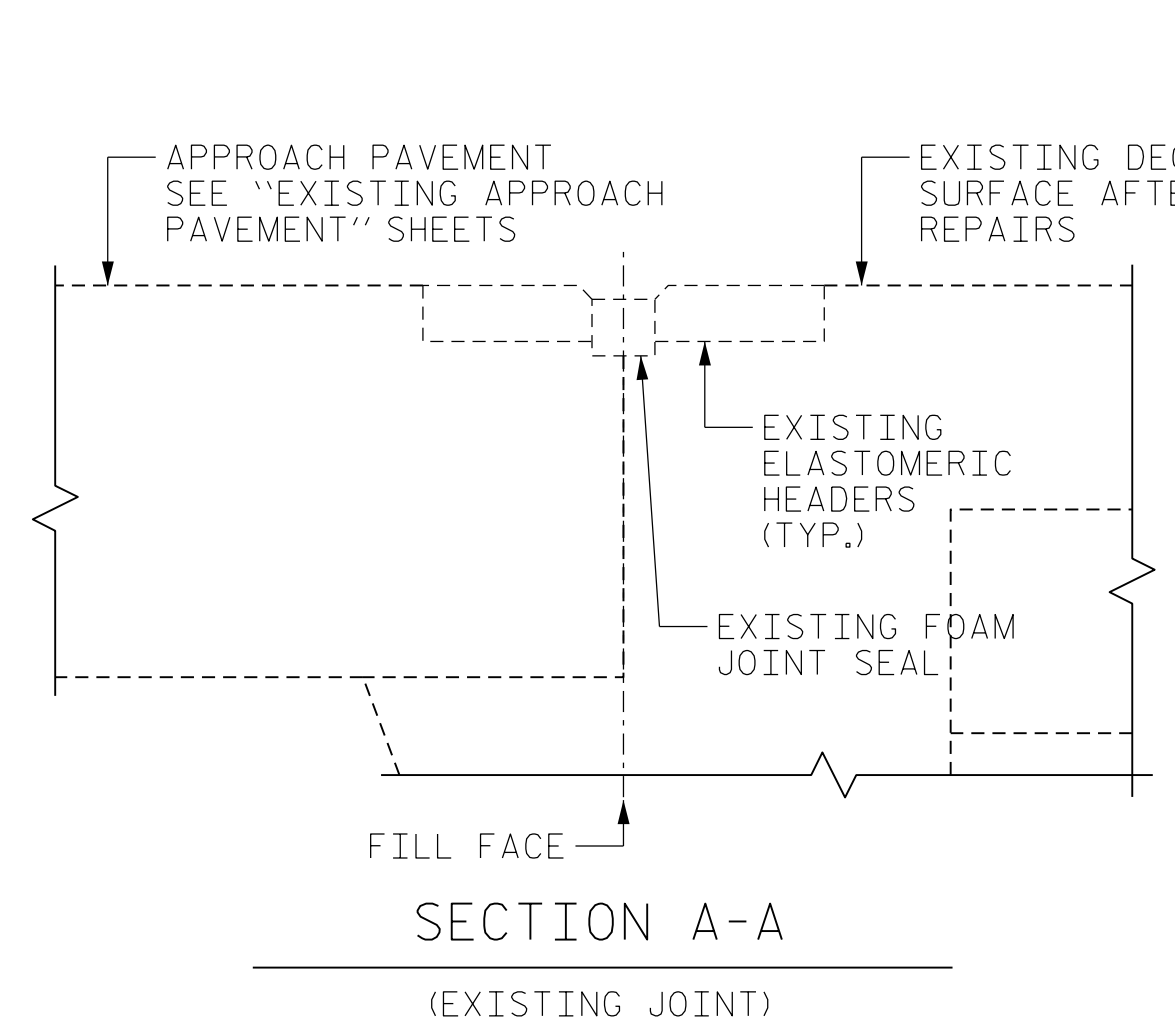
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**PLAN OF SPANS**  
**DECK REPAIRS**

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			8



**NOTES:**

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF THE ACTUAL OPENING VARIES FROM THE OPENING INDICATED IN THE DETAIL BY MORE THAN 1/4", NOTIFY THE ENGINEER. REVISION OF THE JOINT SEAL SIZE MIGHT BE NECESSARY.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL FOR THE SIZE OF THE OPENING ON THE PLANS AND ACCOMMODATE THE MINIMUM EXPANSION SHOWN ON THE PLANS.

FOAM JOINTS SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL TAKE CARE DURING JOINT REPAIR OPERATIONS NOT TO DROP ANY MATERIAL THAT FALLS BELOW THE BRIDGE, WITHOUT PROTECTIVE DEVICES BELOW TO CATCH THE MATERIAL. ANY MATERIAL THAT FALLS BELOW THE BRIDGE SHALL BE CONTAINED, REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO EXTRA COST TO THE DEPARTMENT. IF THE ENGINEER DETERMINES THAT THE PROTECTIVE DEVICES ARE NOT ADEQUATE OR NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

QUANTITIES SHOWN IN THE ELASTOMERIC CONCRETE FOR PRESERVATION TABLE BASED ON THE MINIMUM JOINT DEMOLITION SHOWN.

FOR EXCAVATION BELOW THE BOTTOM OF THE PLANNED JOINT DECK DEMOLITION, CONCRETE FOR DECK REPAIRS SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT BOTTOM OF THE PROPOSED ELASTOMERIC CONCRETE FOR PRESERVATION HEADERS SHOWN.

IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, OR IF UNSOUND CONCRETE IS REMOVED WITHIN 2" OF THE WATERSTOP, THE ENTIRE CONCRETE DEPTH TO THE WATERSTOPS SHALL BE REMOVED. IF SUCH EXCAVATION EXTENDS MORE THAN 2" BELOW THE BOTTOM OF THE PLANNED ELASTOMERIC CONCRETE HEADER, AS SHOWN, APPROVED REPAIR CONCRETE SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT THE BOTTOM OF THE ELASTOMERIC CONCRETE.

DEMOLISH BRIDGE JOINT AREA SUCH THAT THE BOTTOM OF THE EXCAVATION SHALL BE REASONABLY FLAT AND LEVEL AND TO THE NECESSARY DEPTH, SUCH THAT ELASTOMERIC CONCRETE SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
 BRIDGE NO. 480123

BRIDGE JOINT DEMOLITION		
LOCATION	ESTIMATED (SQ.FT.)	ACTUAL (SQ.FT.)
END BENTS	88.8	
BENT 1	44.4	
BENT 2	44.4	

ELASTOMERIC CONCRETE FOR PRESERVATION		
LOCATION	ESTIMATED (CU.FT.)	ACTUAL (CU.FT.)
END BENTS	22.4	
BENT 1	11.2	
BENT 2	11.2	

TABLE 1	
Table Date 02-2022	
BENT/ JOINTS	DIM "A" @ 40 °F
END BENT 1	1 5/8"
1	1 5/8"
2	1 3/4"
END BENT 2	1 3/4"

PROPOSED JOINT QUANTITY		
	ESTIMATED (LIN.FT.)	ACTUAL (LIN.FT.)
FOAM JOINT SEALS FOR PRESERVATION	184.0	



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JOINT DETAILS

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1			3			S17-4
2			4			TOTAL SHEETS 8

DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022  
 CHECKED BY : JACOB H. DUKE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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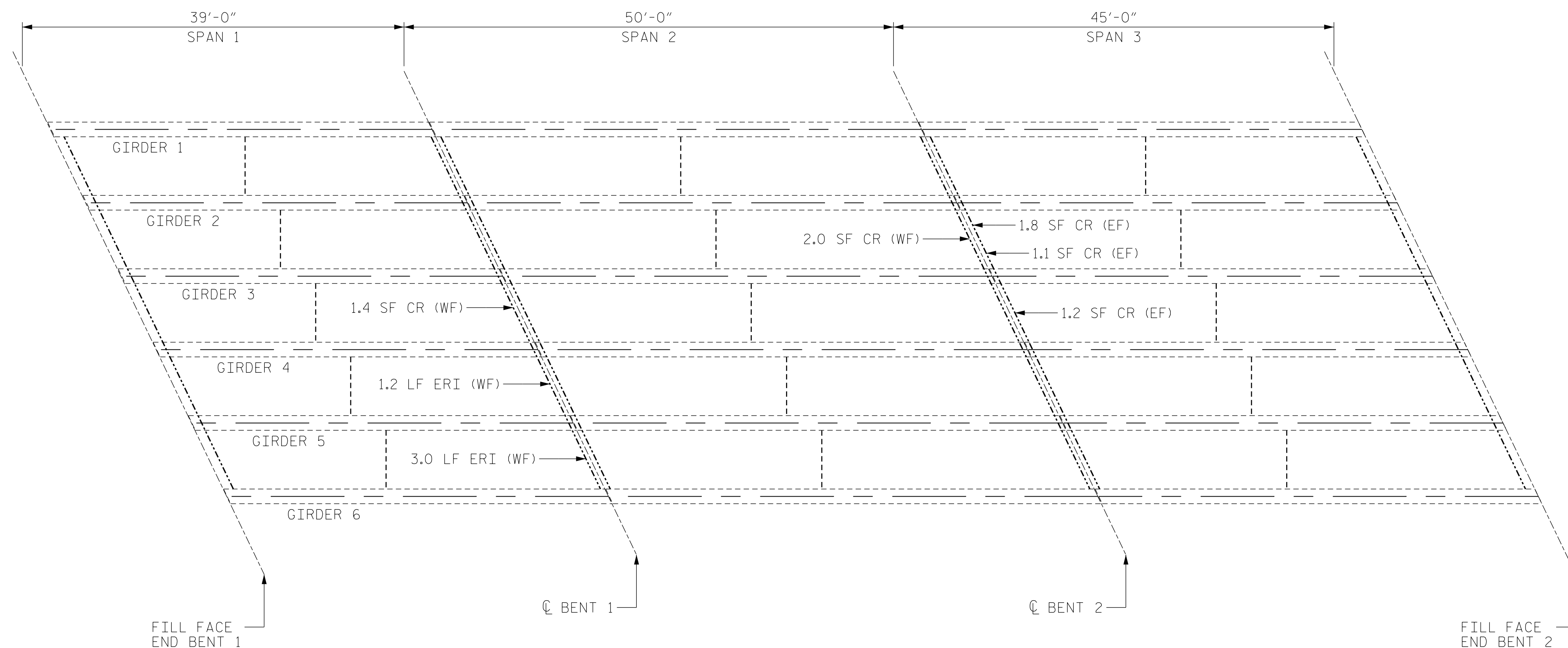
# AS-BUILT REPAIR QUANTITY TABLE

## SUPERSTRUCTURE REPAIRS

	SPAN 1				SPAN 2				SPAN 3			
	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME
CONCRETE REPAIR AREA (CR)	1.4 SF	0.5 CF			2.0 SF	1.0 CF			4.1 SF	1.4 CF		
EPOXY RESIN INJECTION (ERI)	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
	4.2 LF				-- LF				-- LF			

**LEGEND:**

- CR CONCRETE REPAIR AREA
- ERI EPOXY RESIN INJECTION
- EF EAST FACE
- WF WEST FACE



PLAN

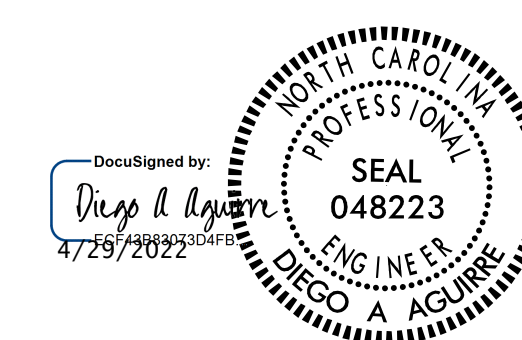
**NOTES:**

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 TABLE ABOVE.

CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS  $\geq 1/16"$  AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

FOR CONCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

PROJECT NO. I-5915B  
IREDELL COUNTY  
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### SUPERSTRUCTURE REPAIRS

DRAWN BY : ALLEN J. MCSWAIN	DATE : 01/2022
CHECKED BY : JACOB H. DUKE	DATE : 01/2022
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE	DATE : 01/2022

4/21/2022  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S17-5
2			4			TOTAL SHEETS 8