

BEARING REPAIRS QUANTITY TABLE

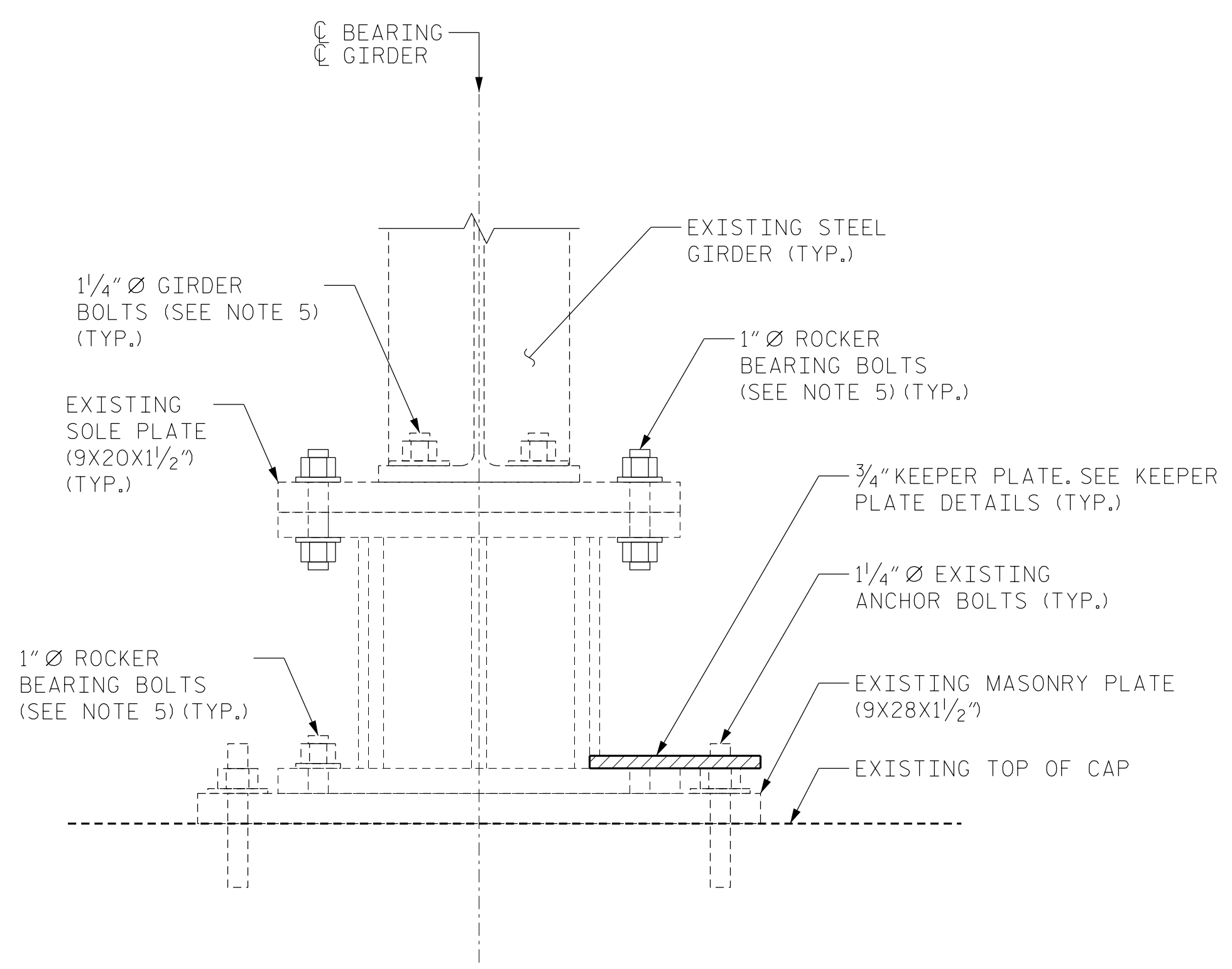
LOCATION			ESTIMATE	ACTUAL
SPAN	BENT	BEAM	(EA)	(EA)
1	END BENT 1	ALL	5	
6	BENT 6	3 & 4	2	
7	BENT 6	N/A	0	
11	END BENT 2	N/A	0	

NOTES:

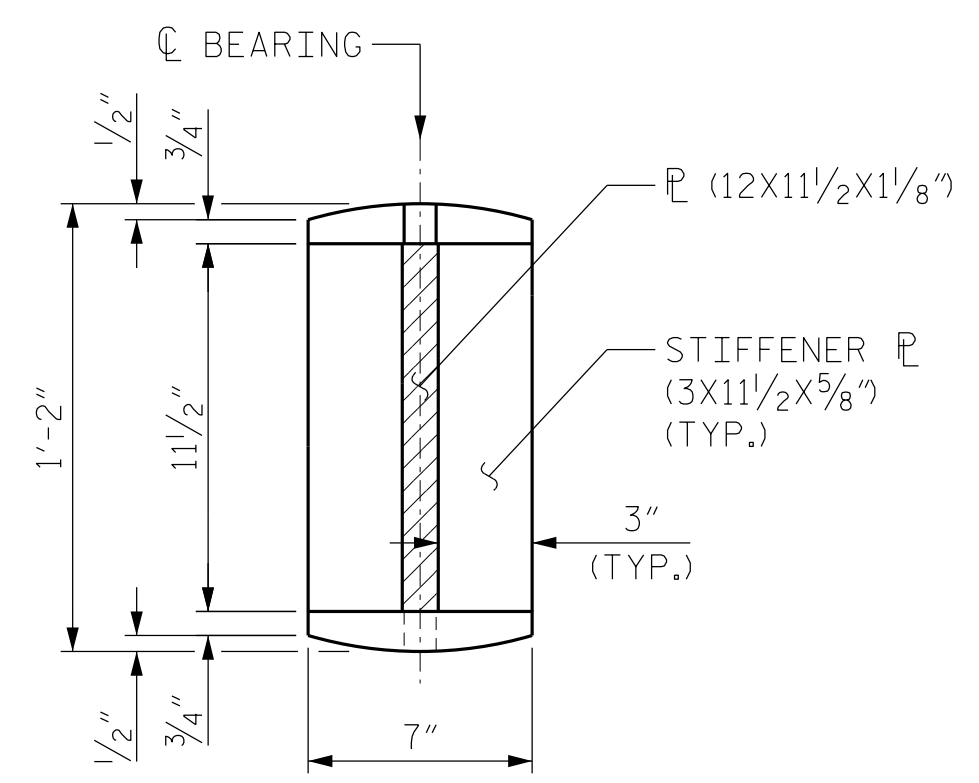
- WORK THIS SHEET WITH "SUPERSTRUCTURE REPAIRS" SHEETS.
- FOR CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA, SEE SPECIAL PROVISIONS.
- BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A563 GRADE C. USE MATERIAL COMPATIBLE WASHERS, AS NEEDED.
- BOLT, NUTS, AND WASHERS SHALL BE INCIDENTAL TO THE BEARING REPAIRS PAY ITEM.
- FOR BEARING REPAIRS, SEE SPECIAL PROVISIONS.
- FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS AND "BRIDGE JACKING" DETAIL SHEET.

BEARING REPAIRS SEQUENCE:

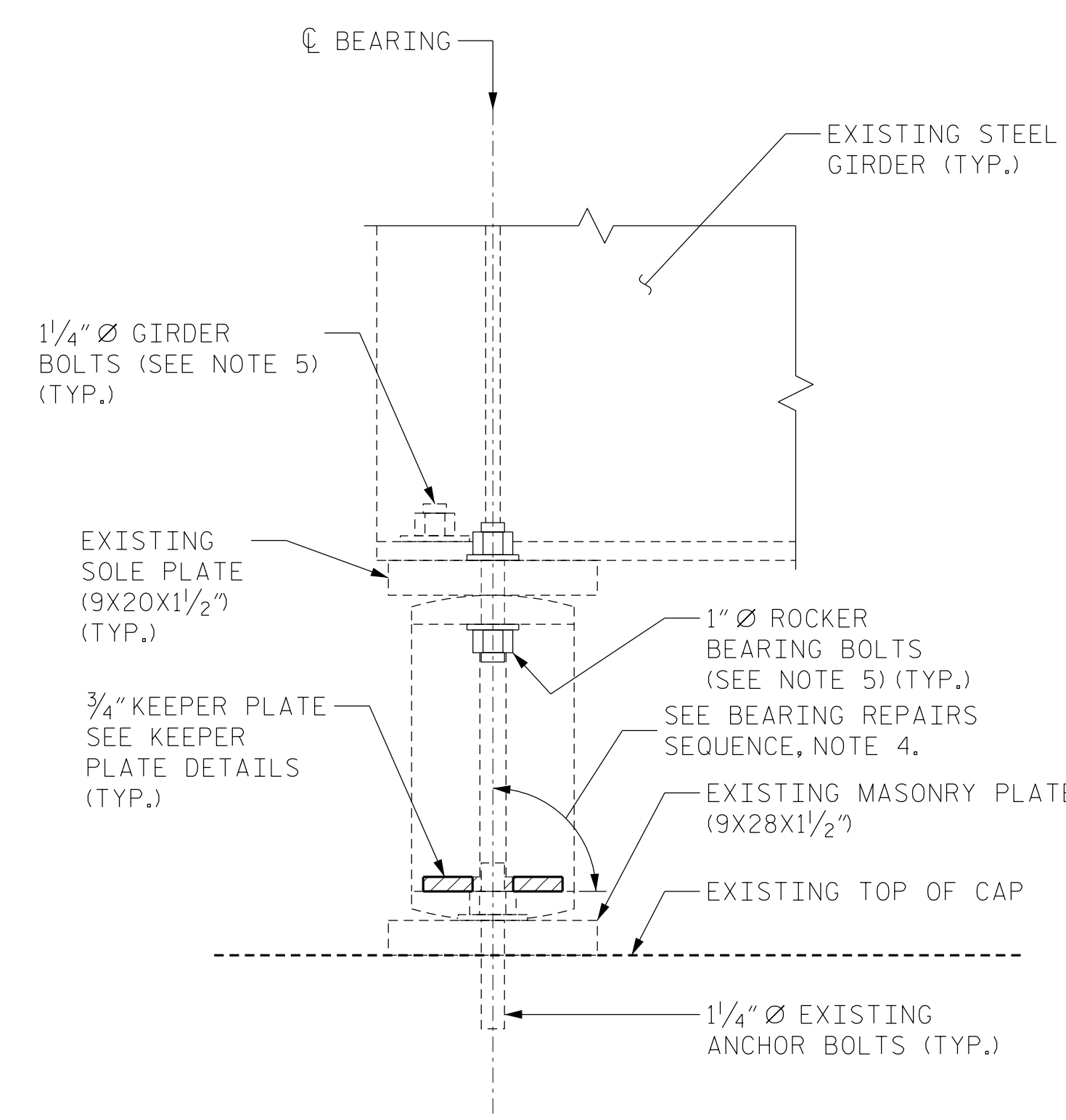
- CLEAN AND REMOVE PACK RUST FROM ROCKER BEARING AND CONNECTING PLATES. IF, AFTER THE BEARING CLEANING PROCESS, VISIBLE STEEL CRACKS OR MORE THAN 30% SECTION LOSS ARE OBSERVED, OR IF PERMANENT DEFORMATIONS DUE TO SECTION LOSS AND PACK RUST DO NOT ALLOW ROCKER BEARINGS TO FUNCTION APPROPRIATELY, ALL WORK SHALL STOP AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
- PERFORM JACKING OPERATIONS AS INDICATED IN THE "JACKING DETAILS" SHEET.
- DISCONNECT BOTH TOP AND BOTTOM ROCKER BEARING BOLTS.
- ALIGN AND/OR ROTATE ROCKER BEARINGS SUCH THAT THE VERTICAL AXIS SHALL BE AT 90° WITH RESPECT TO THE TOP FACE OF THE CAP, WITH A TOLERANCE OF +/- 2°. IN PLAN VIEW, THE CL OF THE BEARING ASSEMBLY SHALL BE ALIGNED WITH THE C GIRDER AND C BEARING LINES ON THE CAP. CONDUCT THE WORK WHEN TEMPERATURES ARE BETWEEN 45° F AND 75° F. WORK WITH THE ENGINEER TO ADJUST AS REQUIRED WHEN WORKING UNDER EXTREME TEMPERATURES.
- REPLACE MISSING/BROKEN BOLTS IN KIND AT THE GIRDER-SOLE PLATE CONNECTION, AND AT TOP ROCKER BEARING CONNECTIONS; BOLTS SHALL BE FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. FOR BOTTOM ROCKER BEARING CONNECTIONS, WELD A KEEPER PLATE TO BOTH SIDES OF THE ROCKER BEARING BOTTOM FLANGE.
- CONCLUDE JACKING OPERATIONS AS INDICATED IN THE "JACKING DETAILS" SHEET.
- ENSURE THAT THE BEARINGS ARE NOT LEFT UNRESTRAINED DURING TEMPERATURE MOVEMENTS. IF THE CONTRACTOR MUST DE-MOBILIZE, WORK WITH THE ENGINEER TO PROVIDE TEMPORARY REPLACEMENT OF THE BOLTS TO PROHIBIT UNWANTED ROTATION OF THE ROCKER BEARINGS.



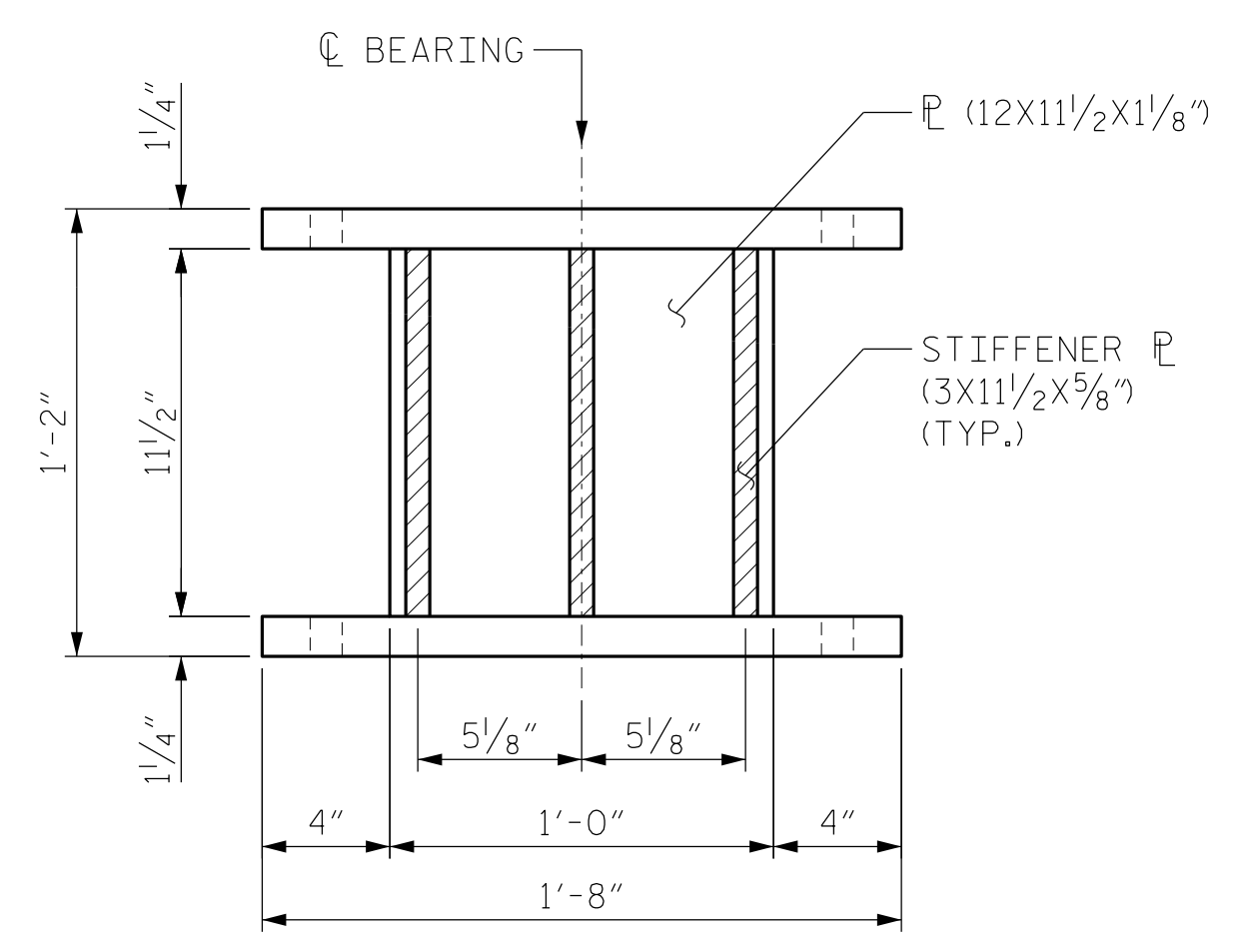
TYPICAL SECTION
(PROPOSED)



ROCKER BEARING DETAILS
(AS-BUILT DIMENSIONS)



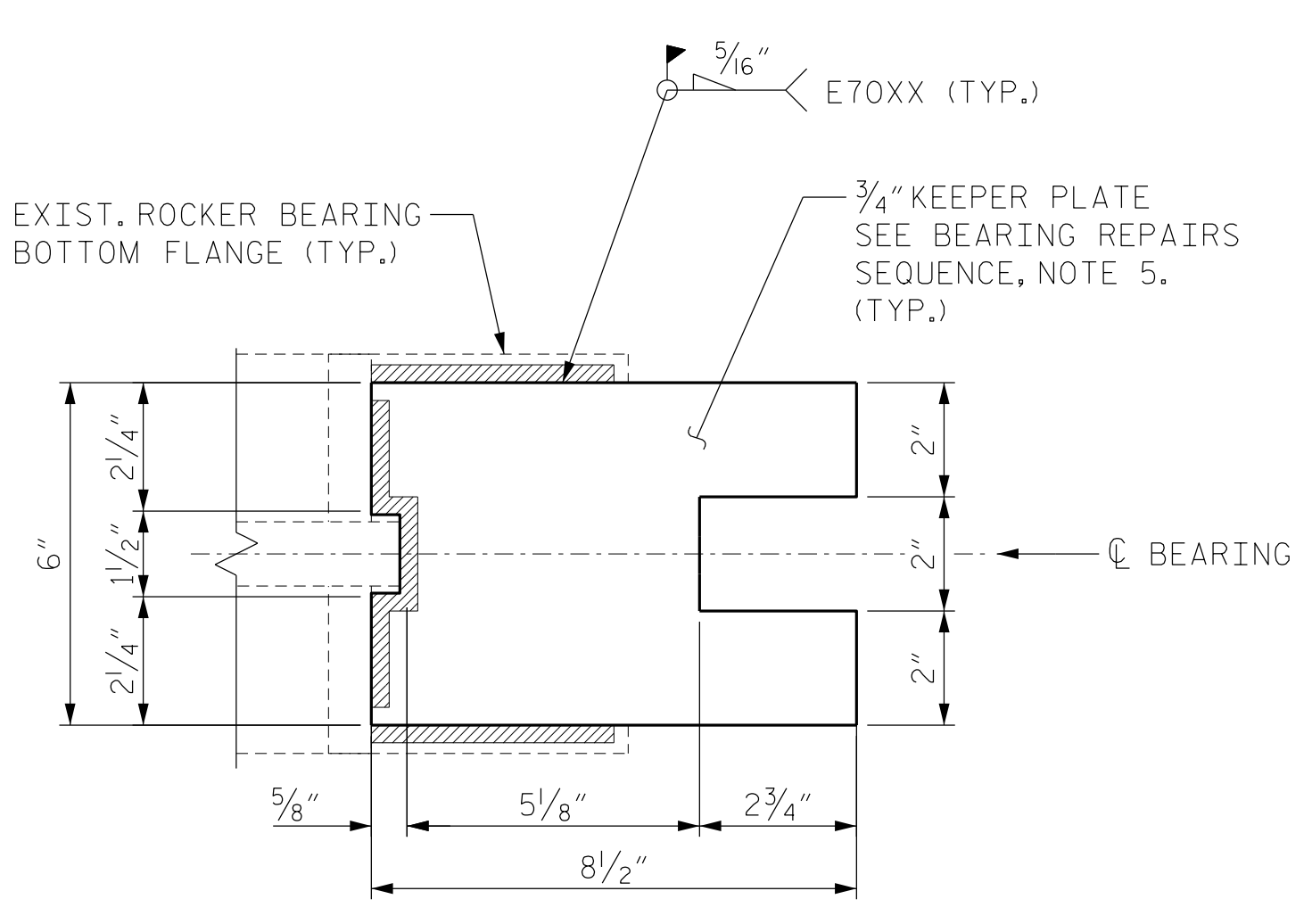
TYPICAL ELEVATION
(PROPOSED)



ROCKER BEARING DETAILS
(AS-BUILT DIMENSIONS)

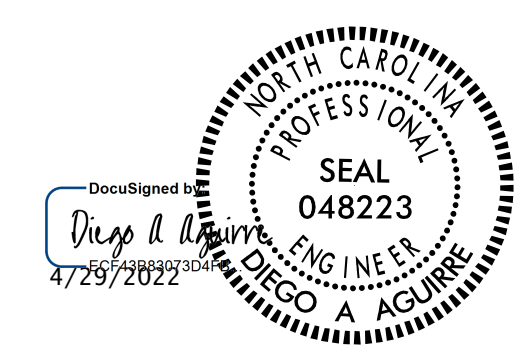
EXISTING ROCKER BEARINGS

- TYPICAL DAMAGE INCLUDES:
- CORROSION AND SECTION LOSS THROUGHOUT
 - MISSING/BROKEN ROCKER BEARING BOLTS
 - MISALIGNED/ROTATED AND/OR SHIFTED ROCKER BEARINGS



KEEPER PLATE DETAIL
(PROPOSED - PLAN)

PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480007



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BEARING REPAIRS

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

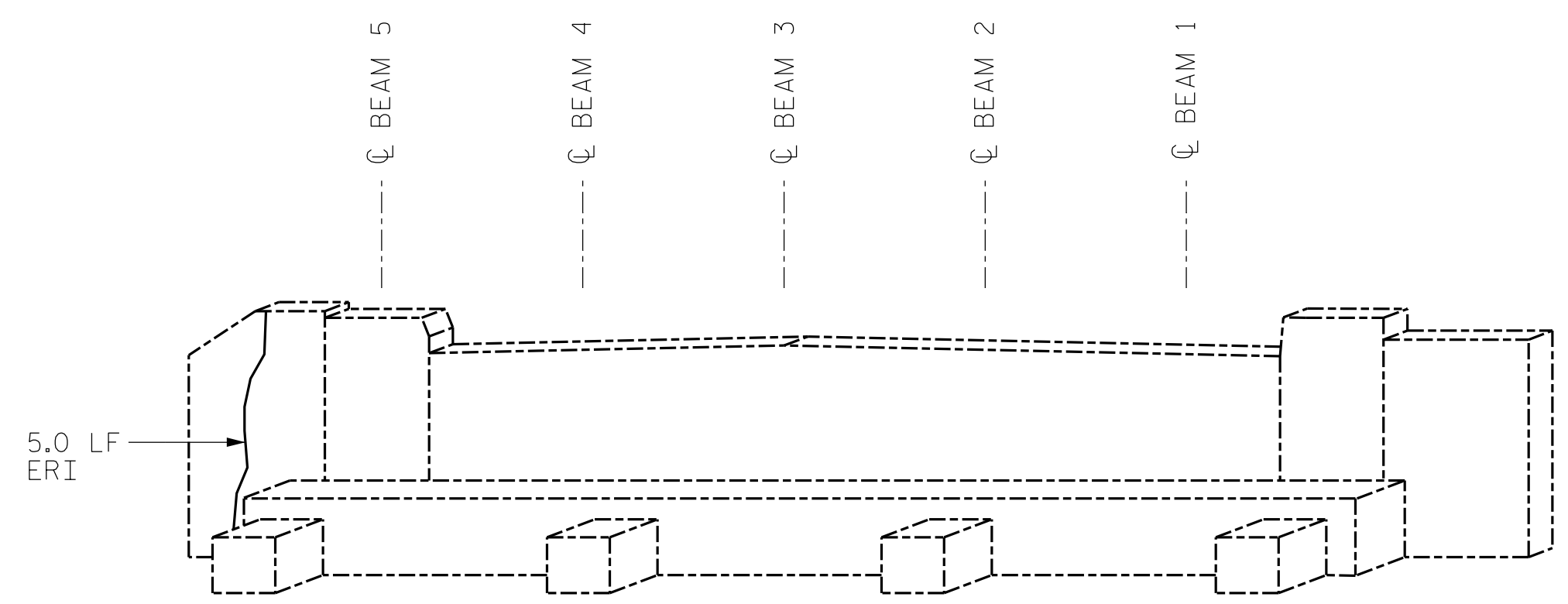
DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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

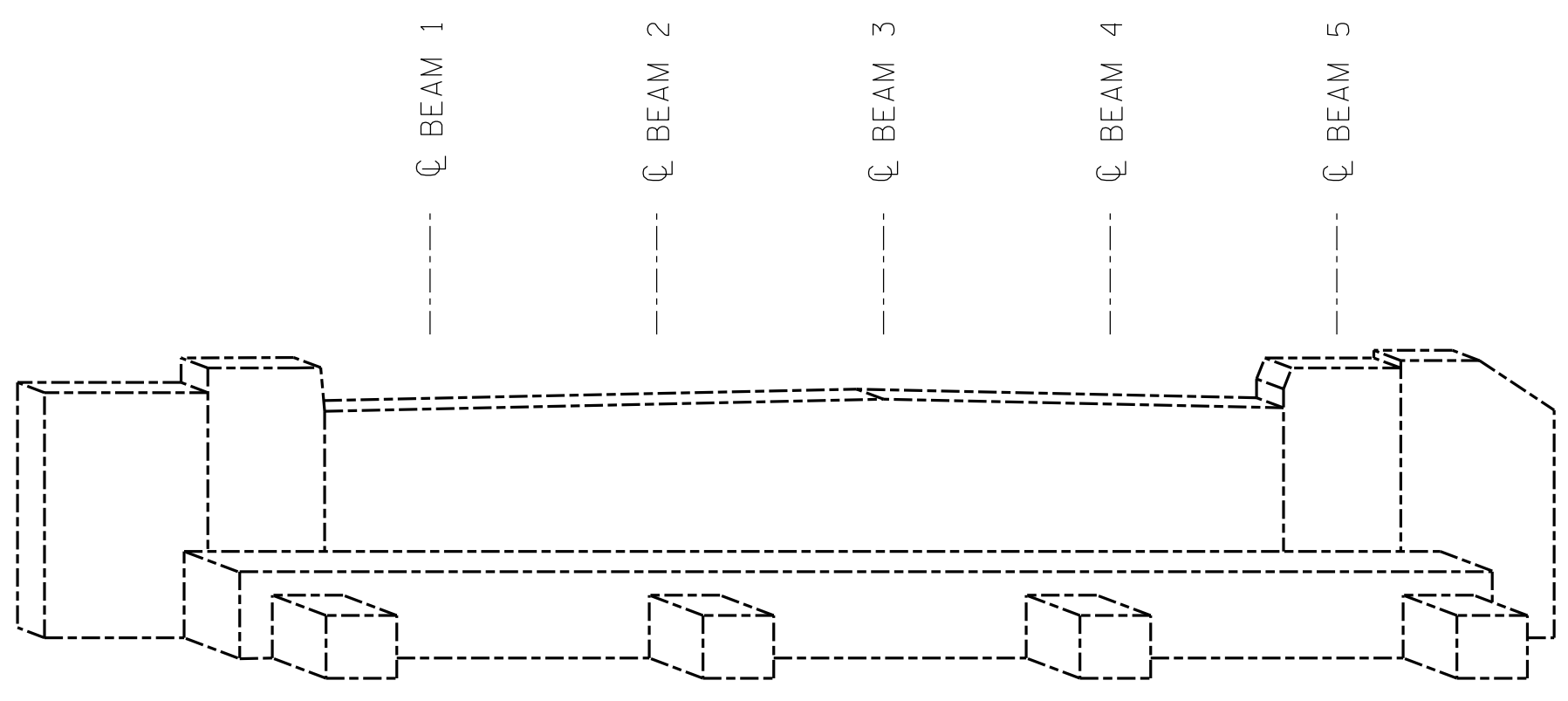
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S6-13
2			4			24

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	-	-		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP	-	-	
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
	CAP/BACKWALL	5.0		
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.

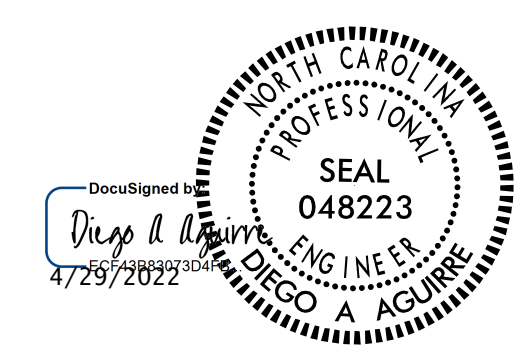
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SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

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

PROJECT NO. I-5915B
IREDELL COUNTY
BRIDGE NO. 480007

SHEET 1 OF 11

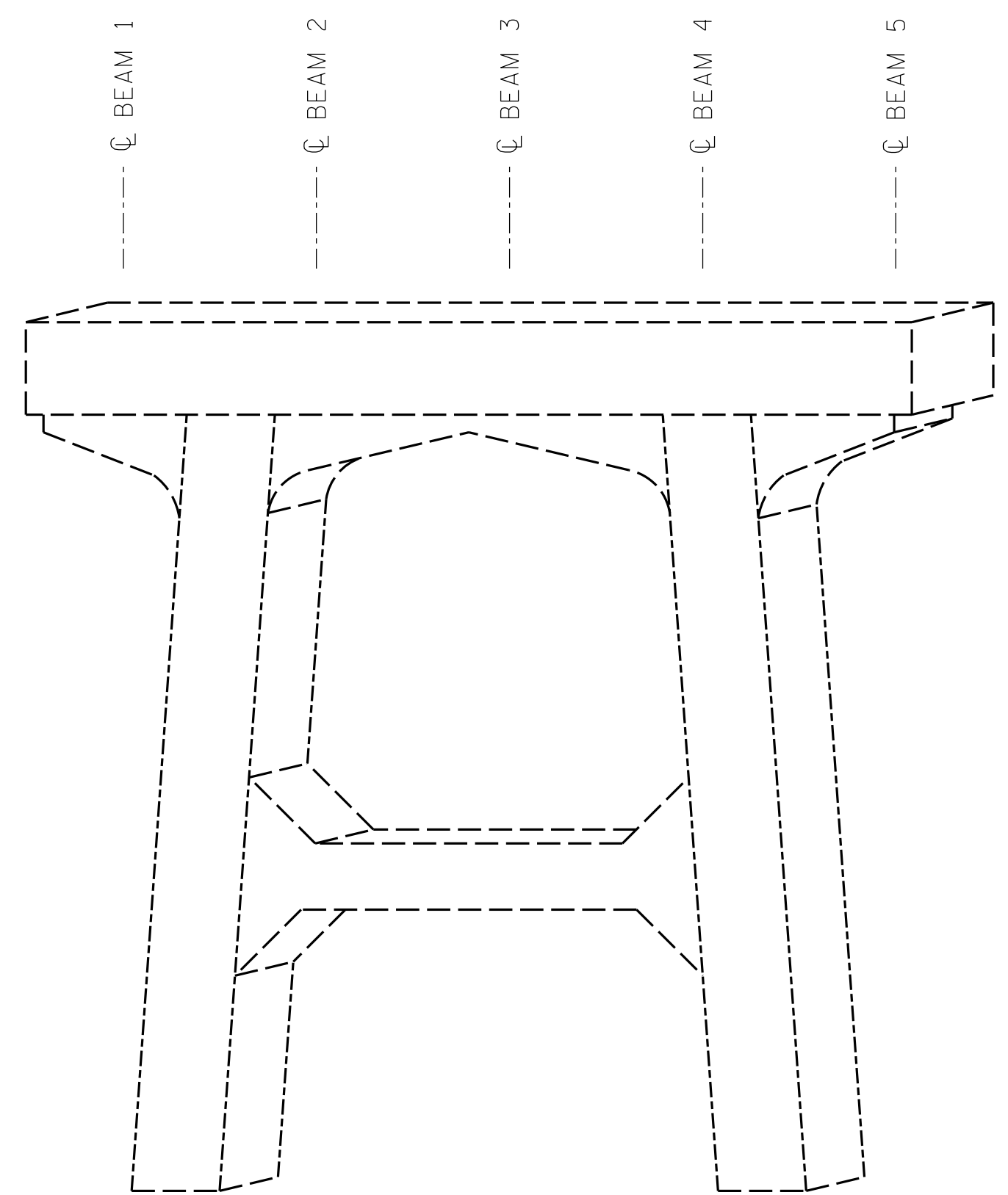


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
REPAIRS
END BENTS 1 & 2

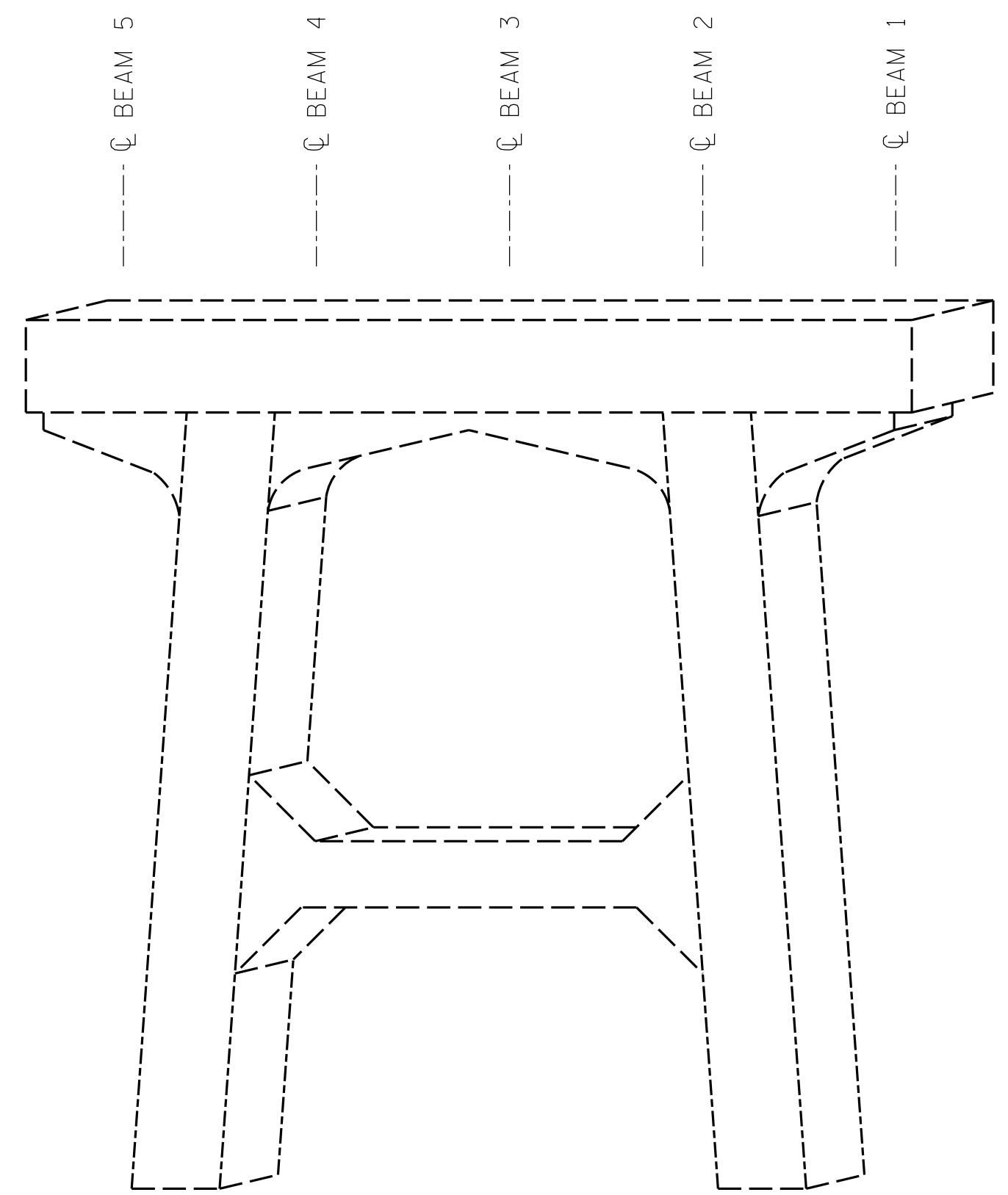
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022
CHECKED BY : FIDEL L. FLORES DATE : 01/2022
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			24
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		-	-		
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		-			

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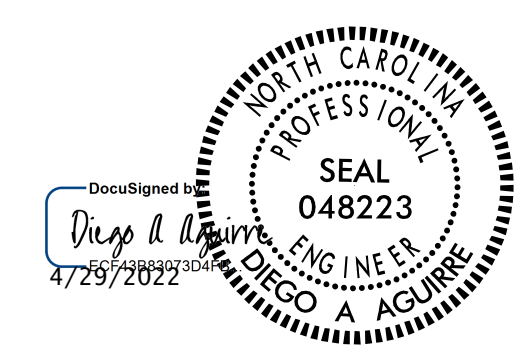
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PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480007

SHEET 2 OF 11



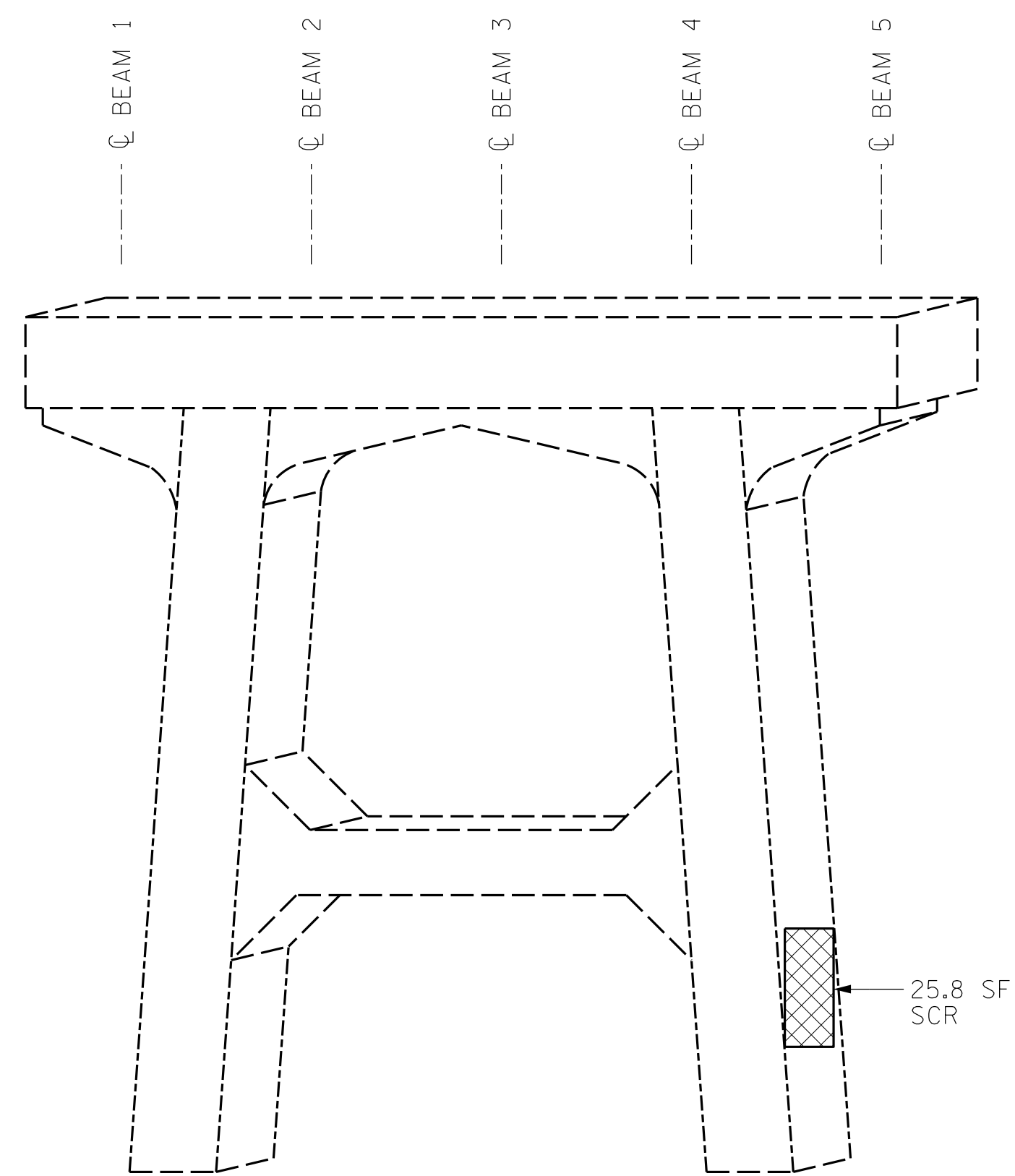
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 1



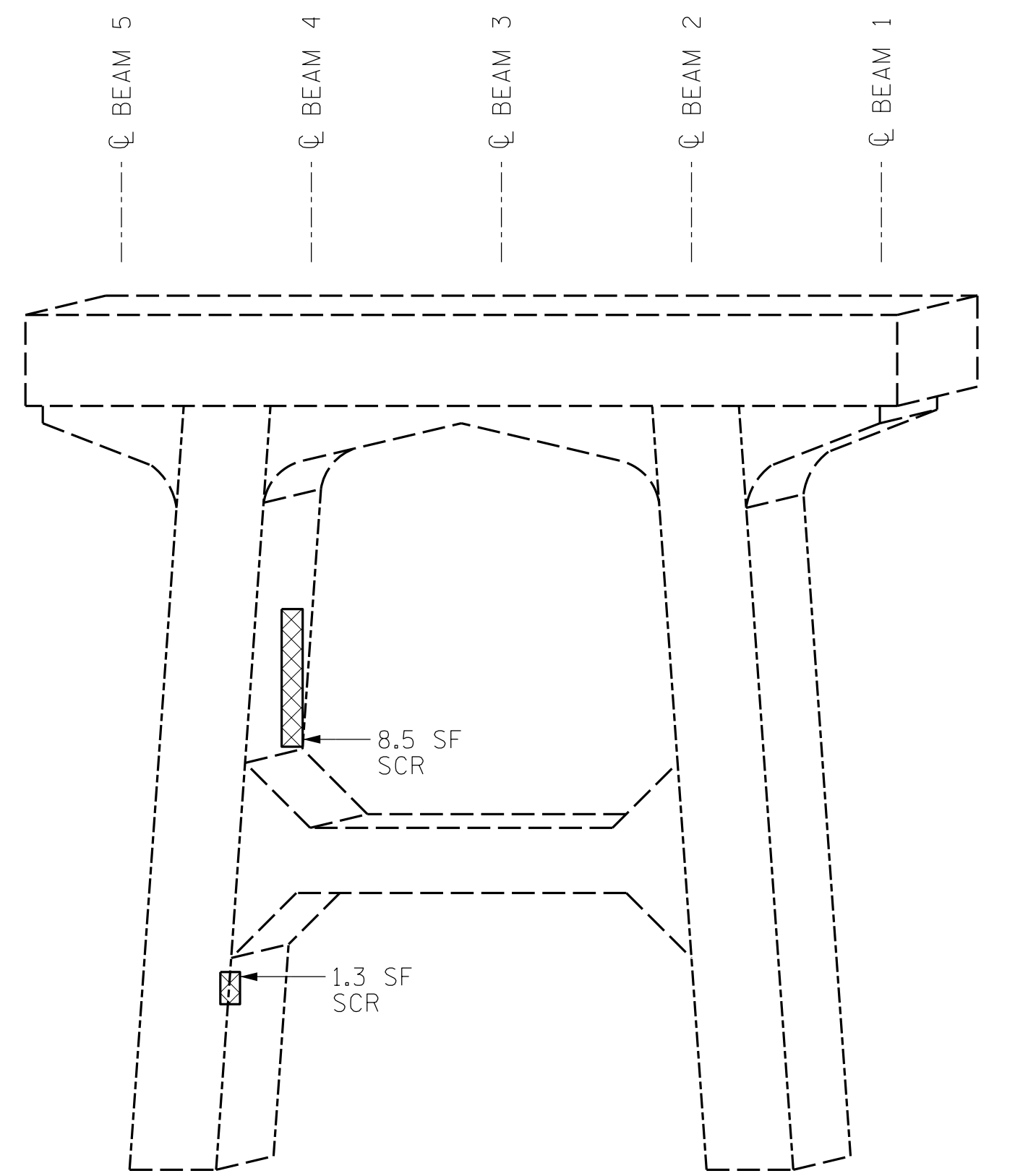
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 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			24
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	-	-		
COLUMN/PILE	35.6	12.0		
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	-			

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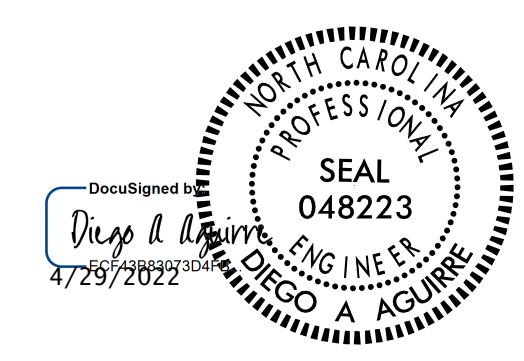
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PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480007

SHEET 3 OF 11

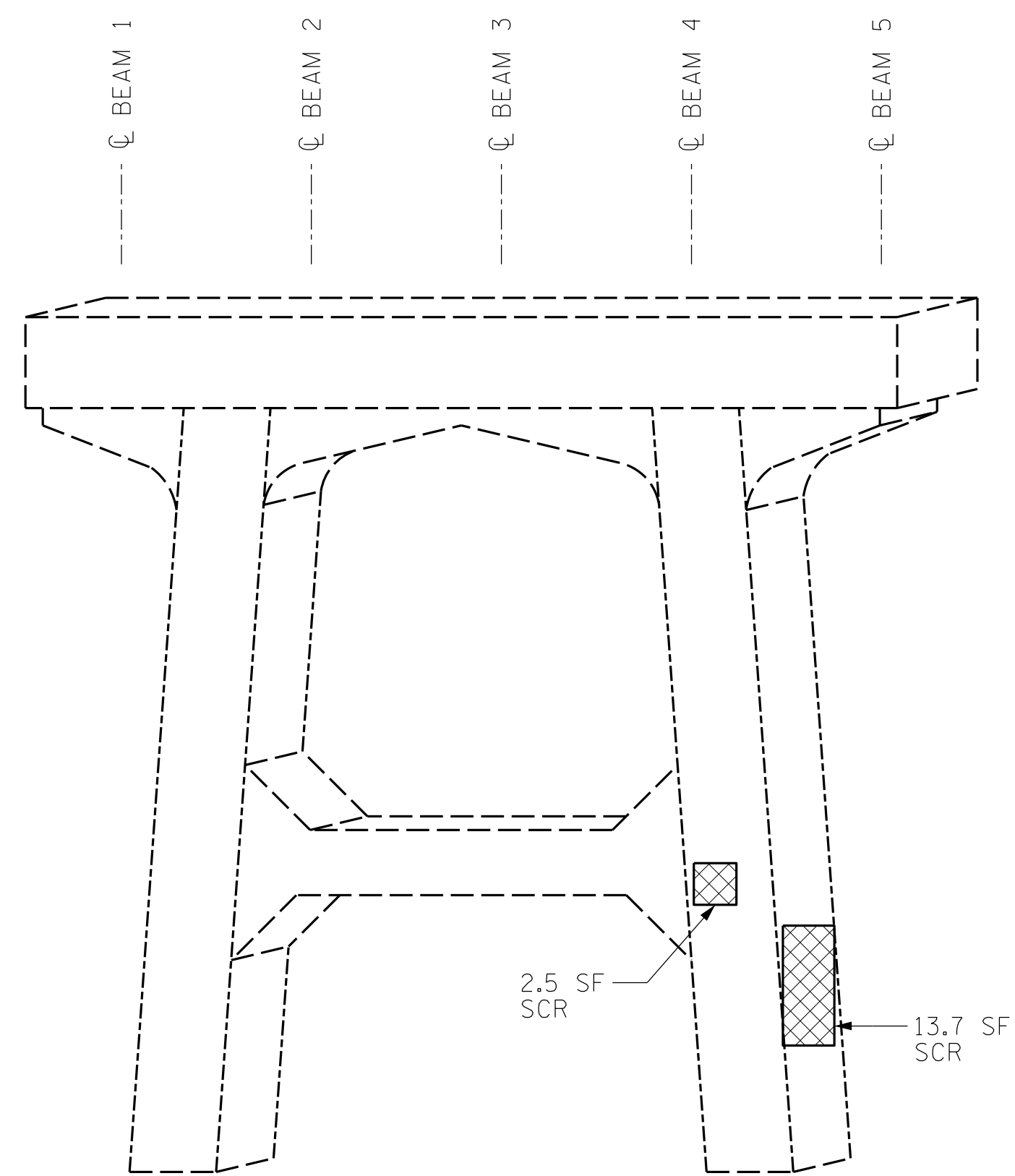


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 2

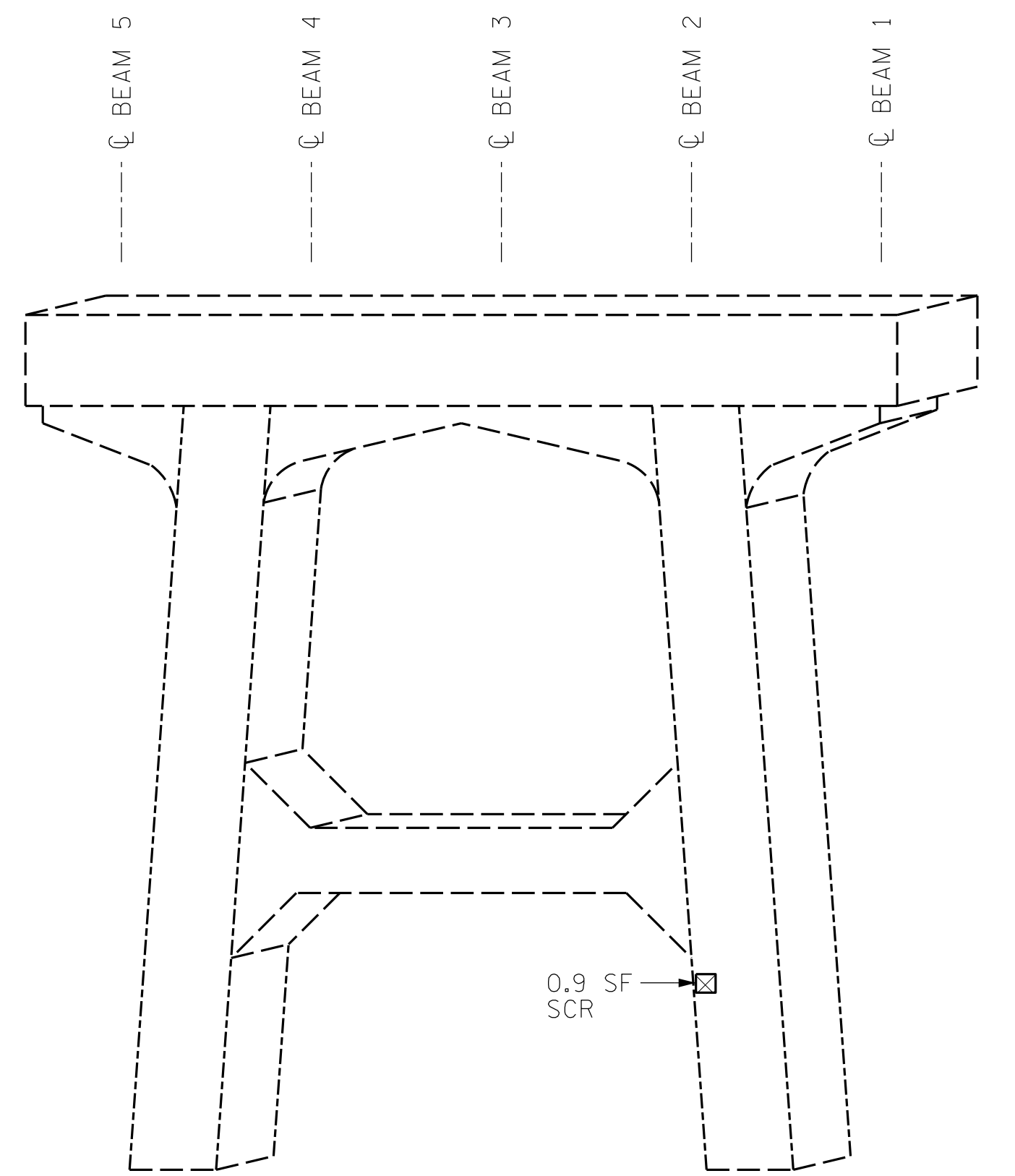
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			24
2			4			



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	-	-		
COLUMN/PILE	17.1	5.8		
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	-			

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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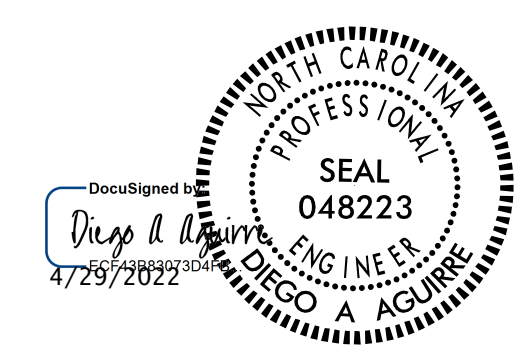
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PROJECT NO. I-5915B
IREDELL COUNTY
BRIDGE NO. 480007

SHEET 4 OF 11

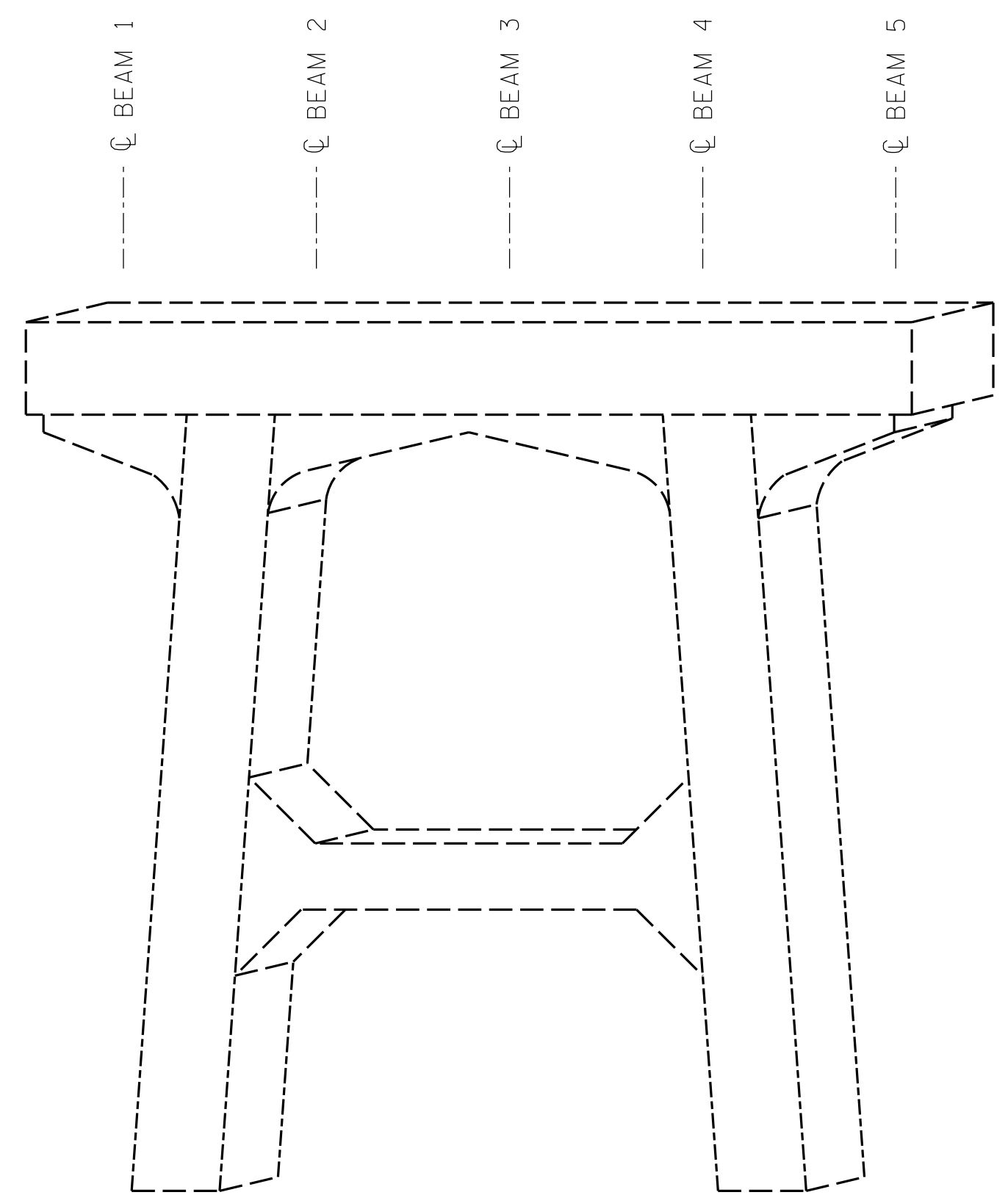


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE REPAIRS
BENT 3

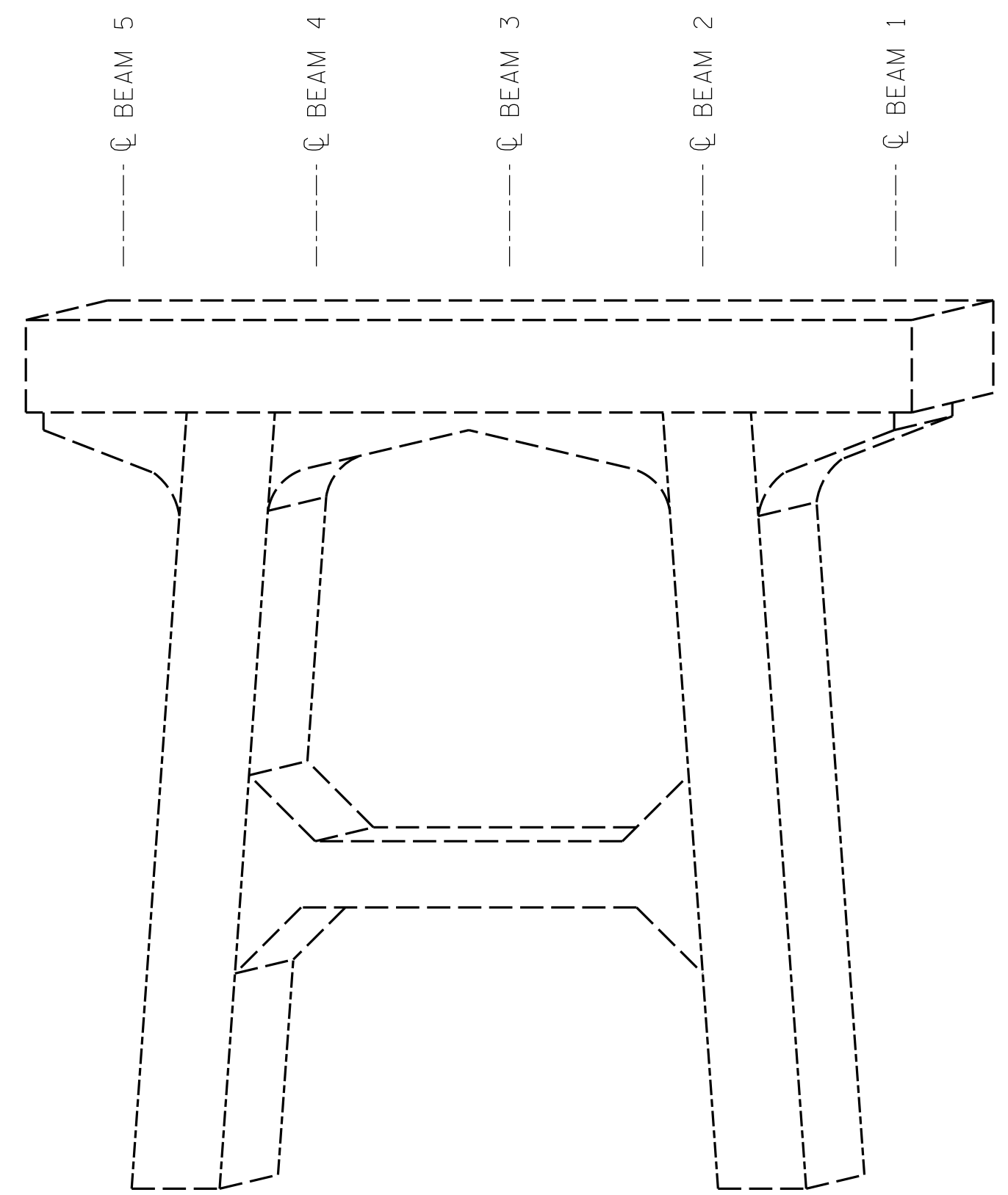
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S6-17
2			4			TOTAL SHEETS 24



BENT 4
(WEST FACE)



BENT 4
(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		-	-		
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		-			

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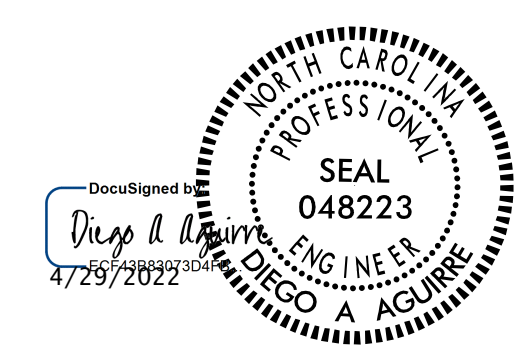
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 BRIDGE NO. 480007

SHEET 5 OF 11



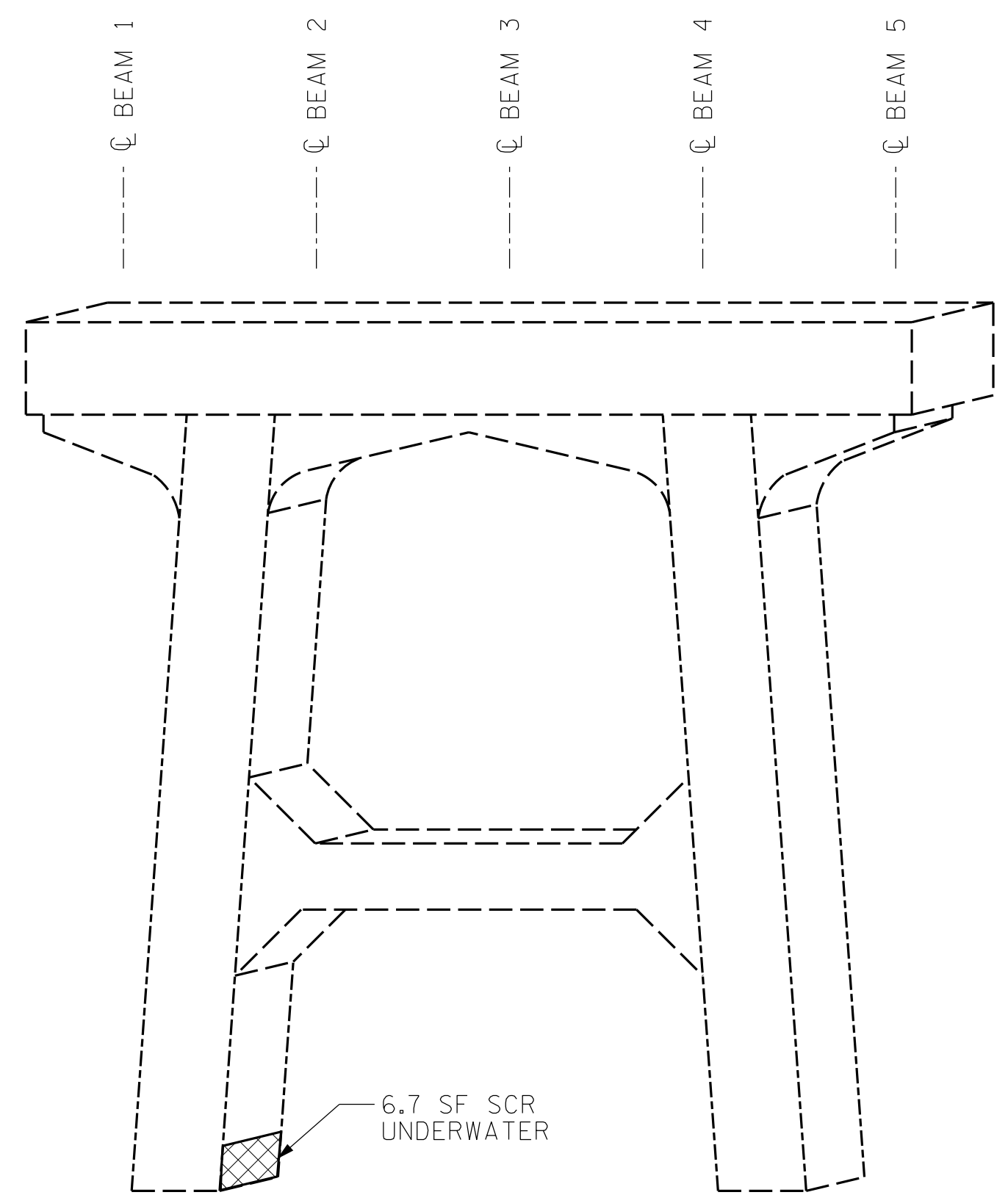
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 4



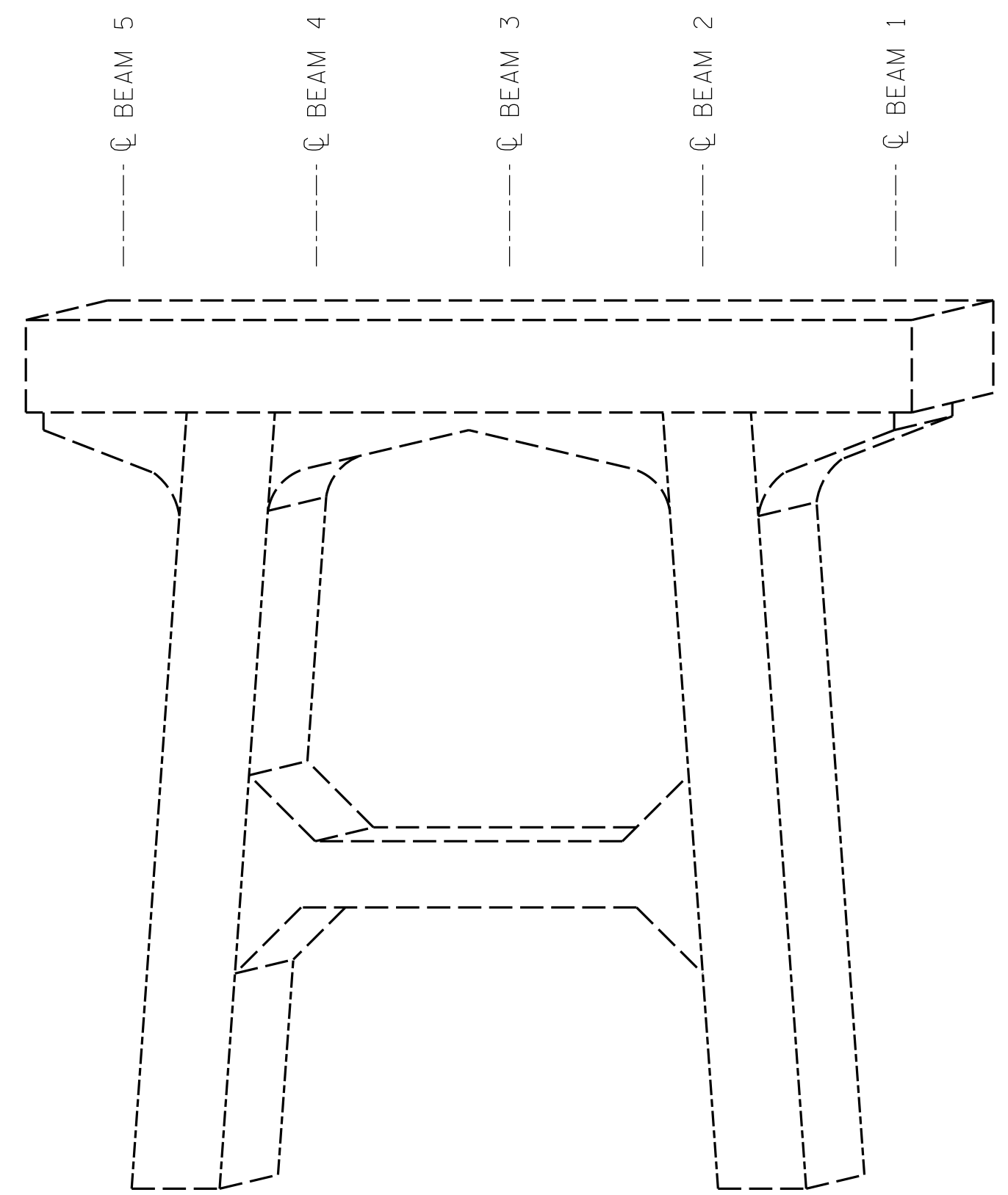
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1			3			24
2			4			



BENT 5
(WEST FACE)



BENT 5
(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		-	-		
CONCRETE REPAIRS		AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP		6.7	2.3		
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.

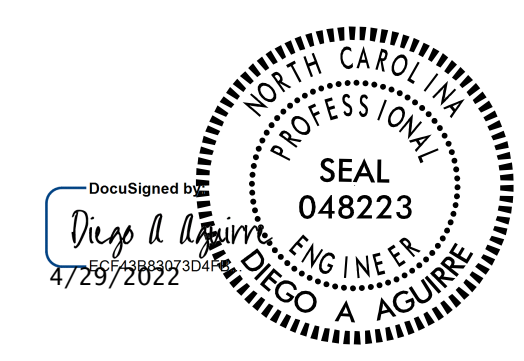
FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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. 480007

SHEET 6 OF 11

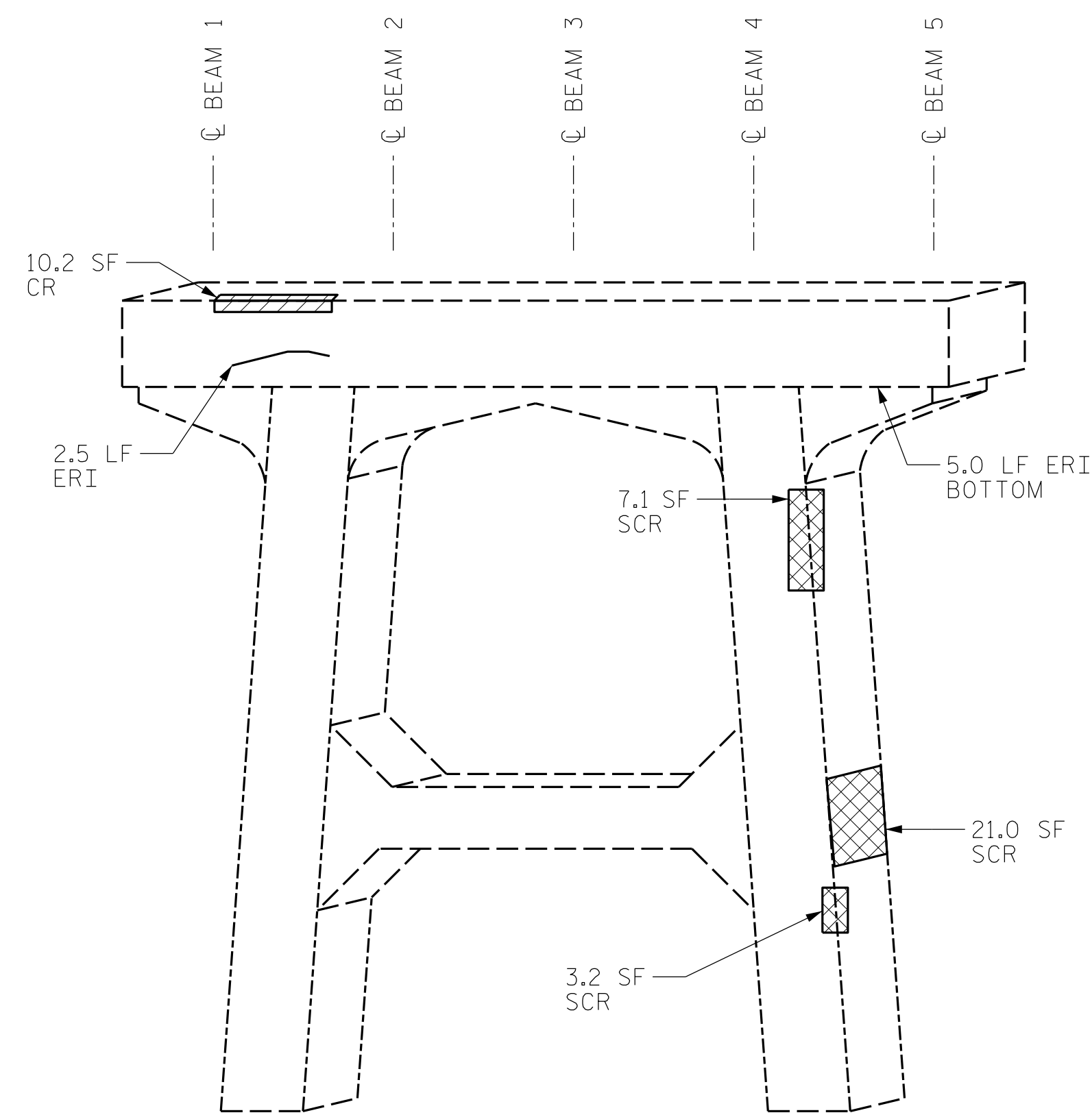


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 5

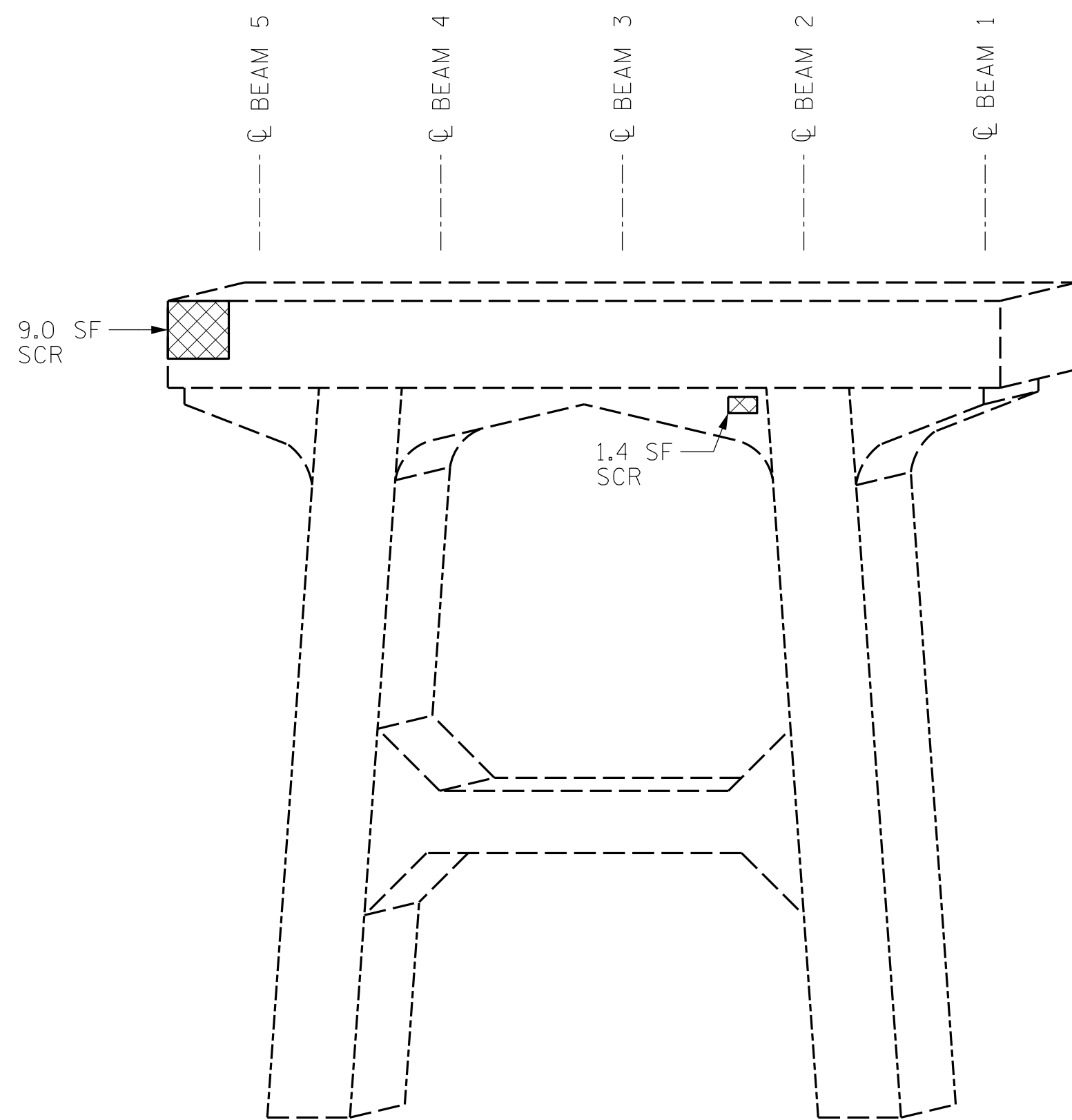
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S6-19
2			4			TOTAL SHEETS 24



BENT 6
(WEST FACE)



BENT 6
(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	10.4	3.5		
COLUMN/PILE	31.3	10.5		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	10.2	3.4		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	7.5			
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.

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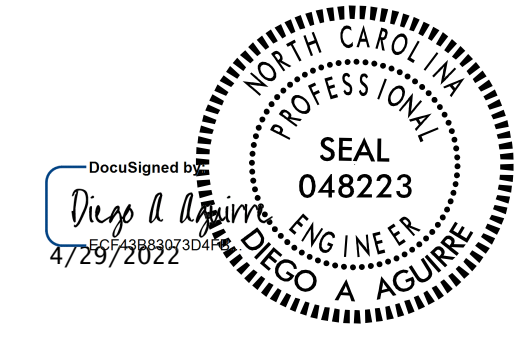
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PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480007

SHEET 7 OF 11



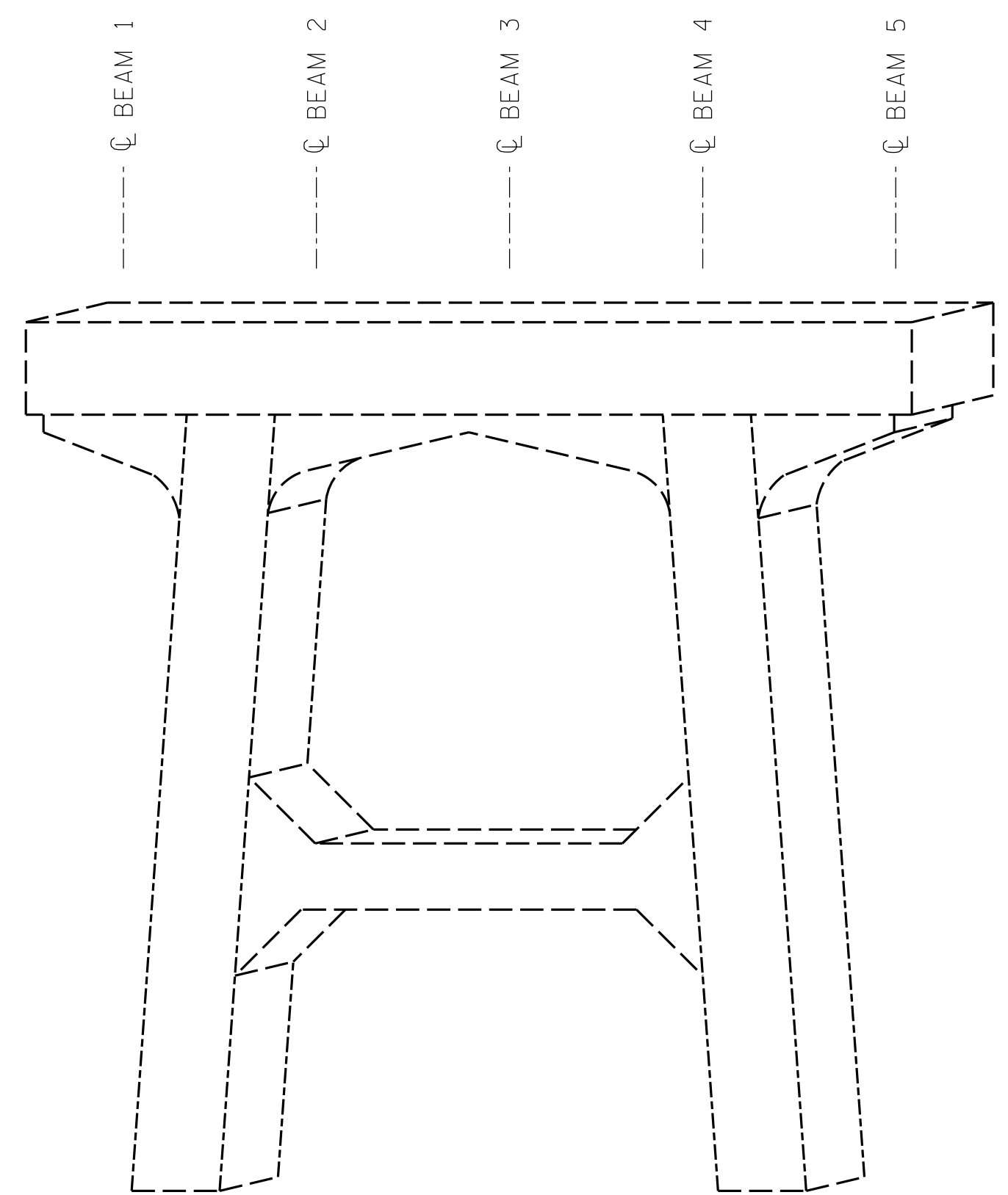
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 6

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

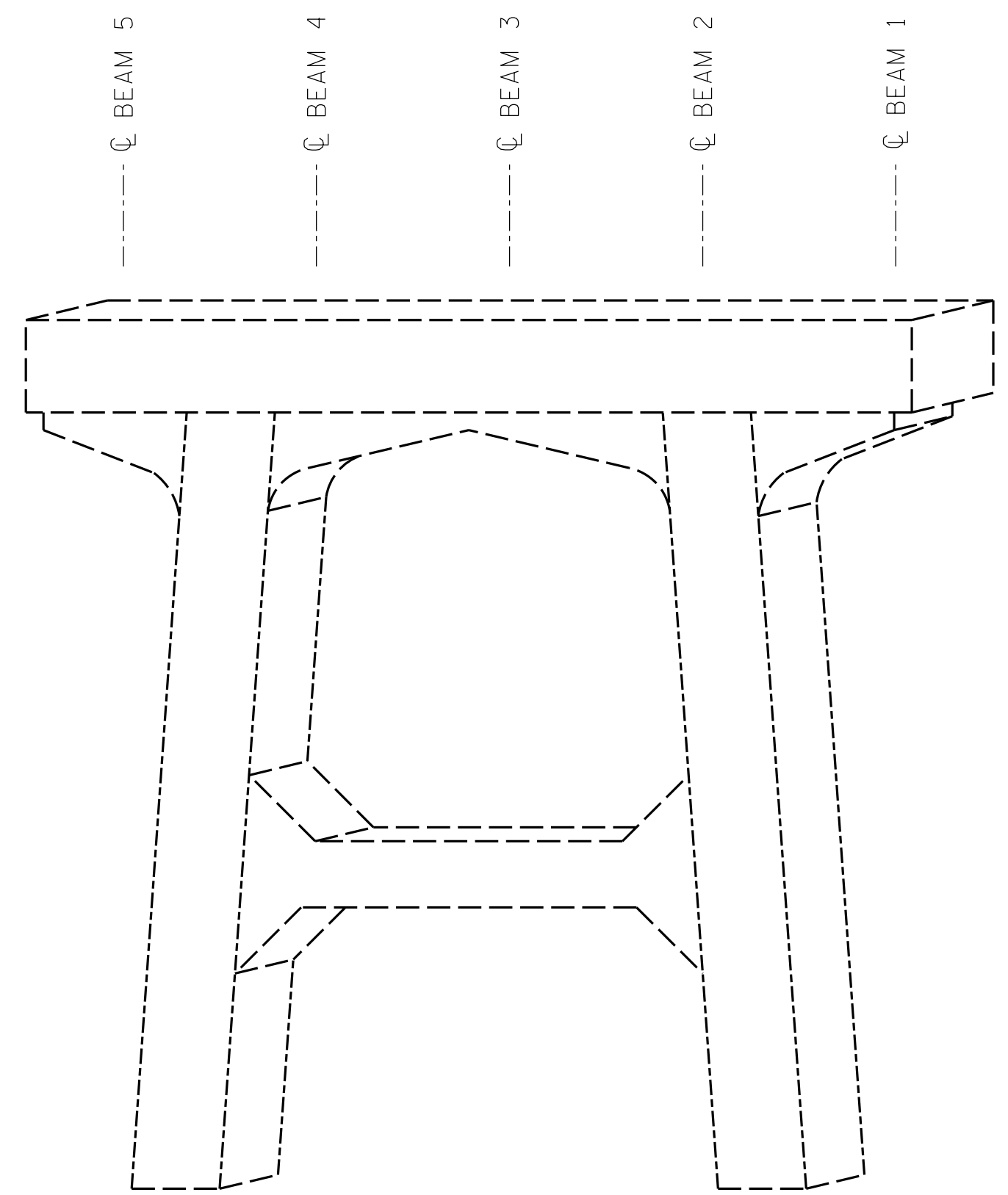
4/21/2022
 I5915B.SMU.SBR06.480007.dgn
 daquirre

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S6-20
2			4			TOTAL SHEETS 24



BENT 7
(WEST FACE)



BENT 7
(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		-	-		
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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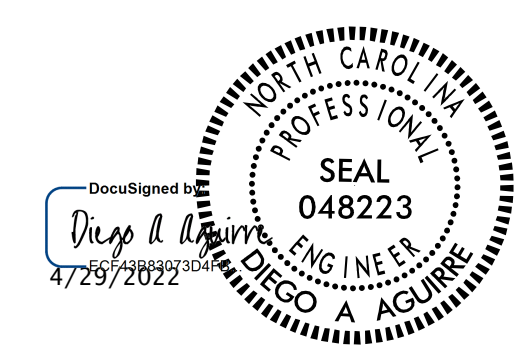
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PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480007

SHEET 8 OF 11

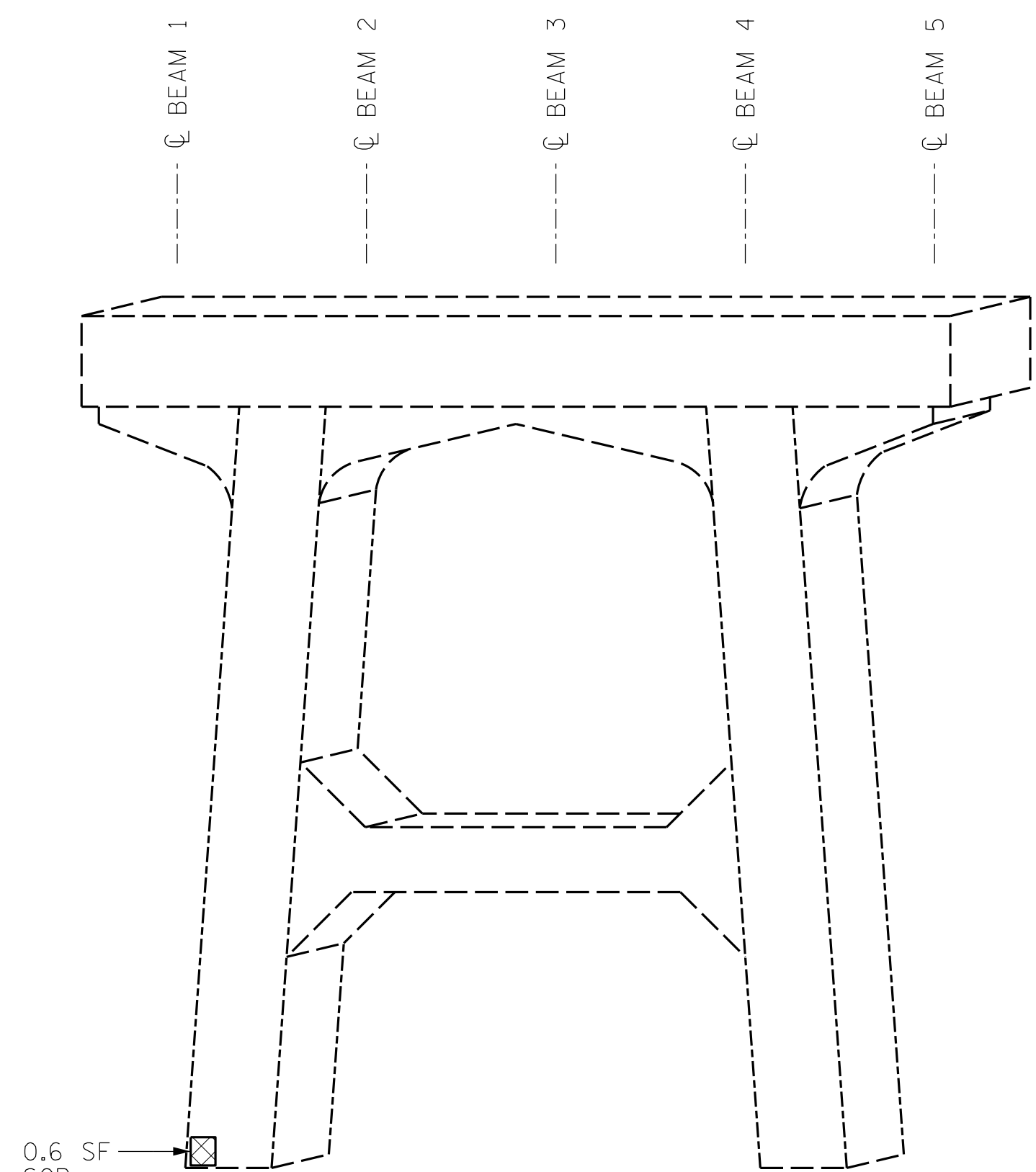


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 7

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

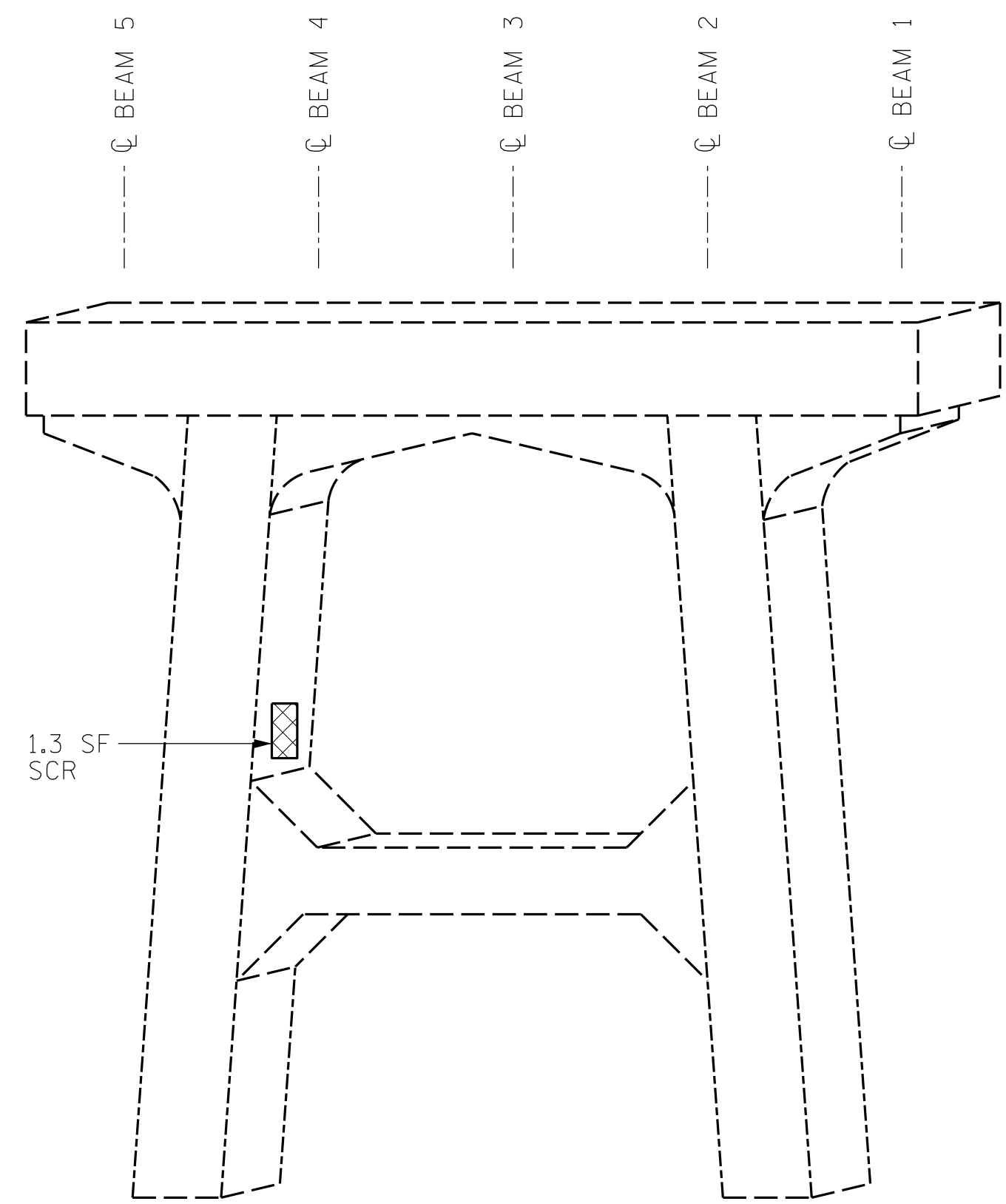
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			24
2			4			



BENT 8

(WEST FACE)



BENT 8

(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	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	-			
COLUMN/PILE	-			

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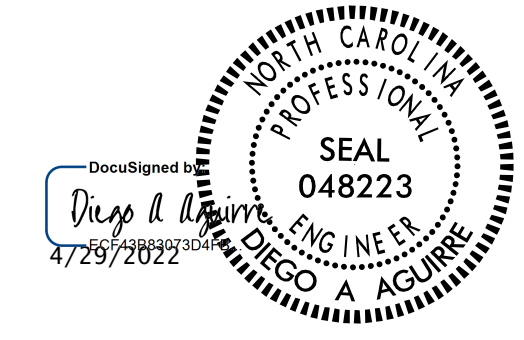
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PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480007

SHEET 9 OF 11



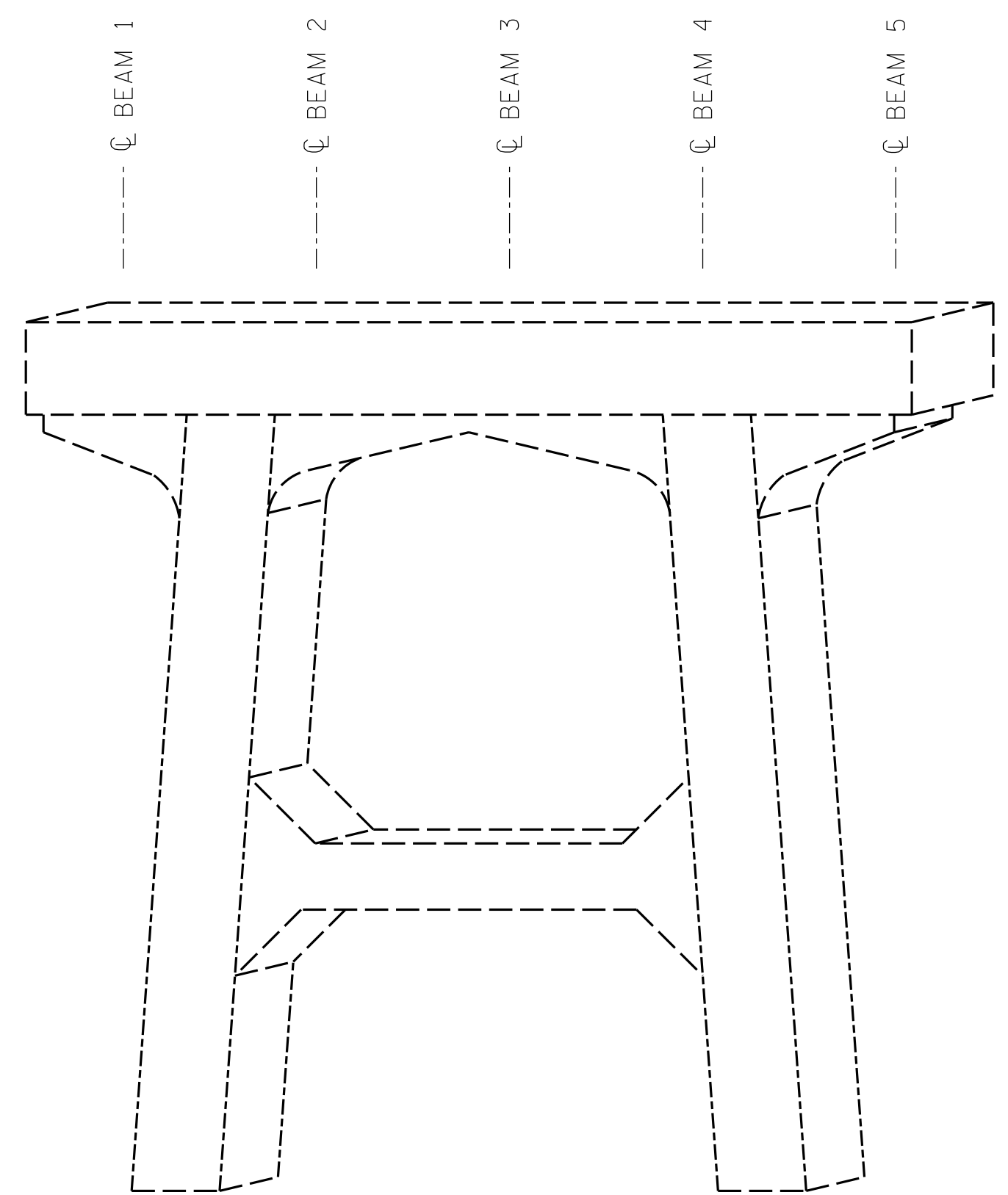
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 8



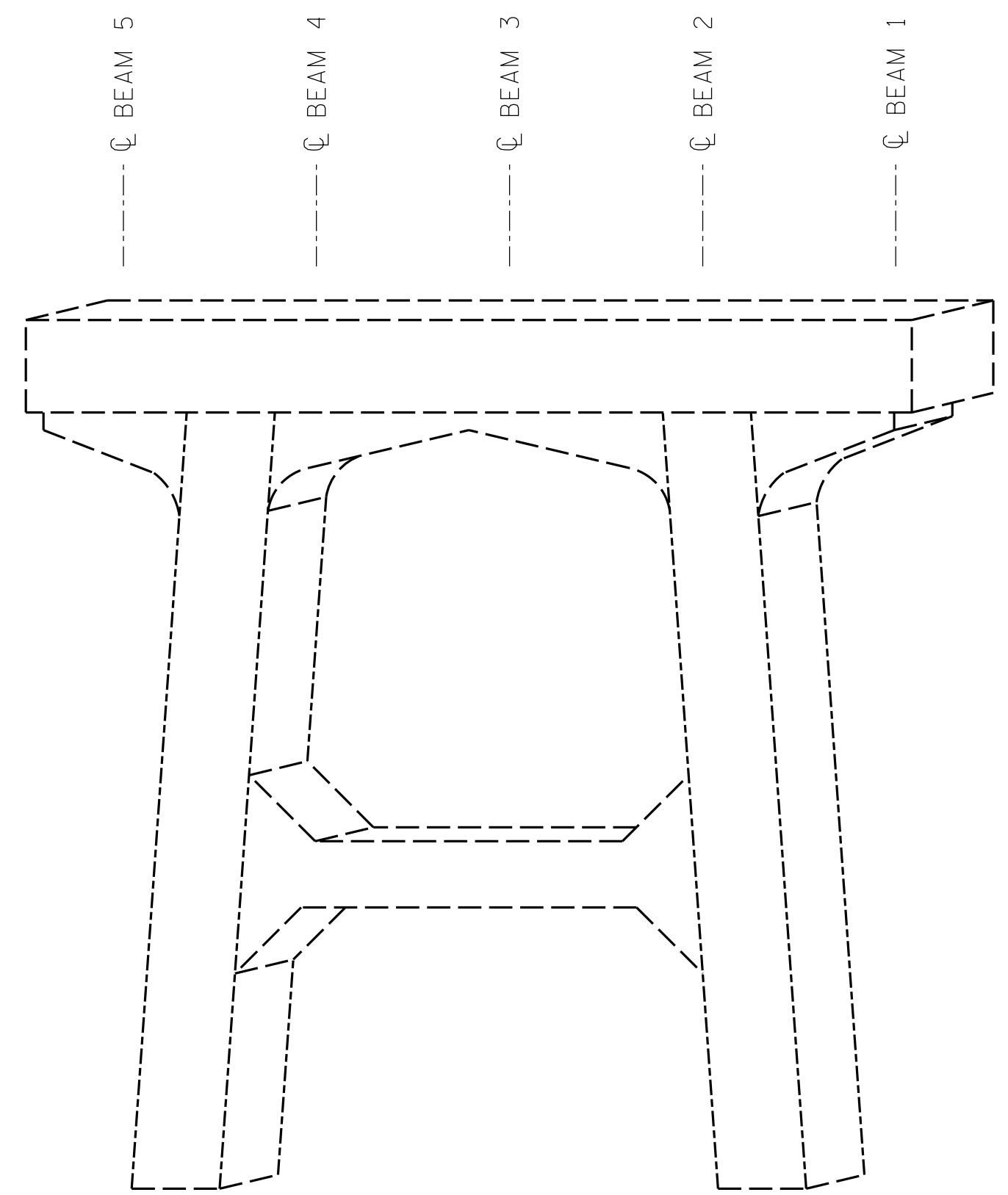
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S6-22
2			4			TOTAL SHEETS 24



BENT 9
(WEST FACE)



BENT 9
(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		-	-		
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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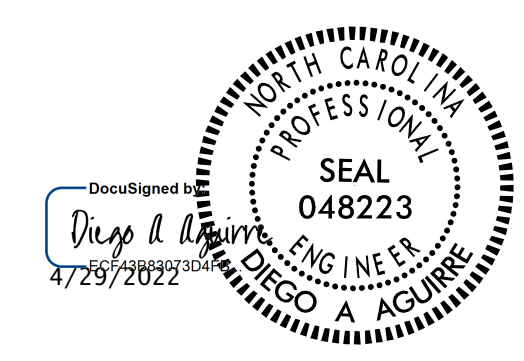
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PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480007

SHEET 10 OF 11

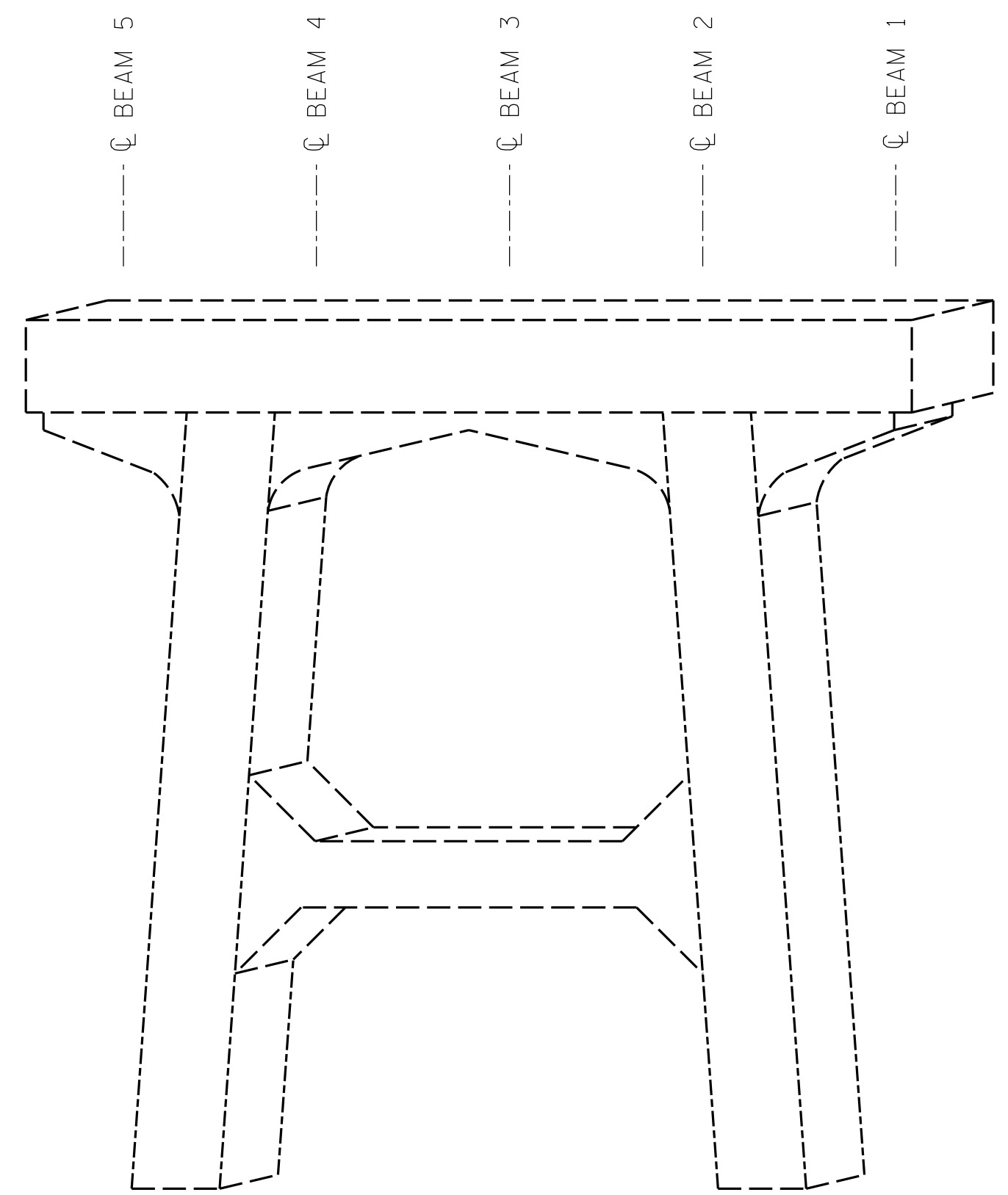
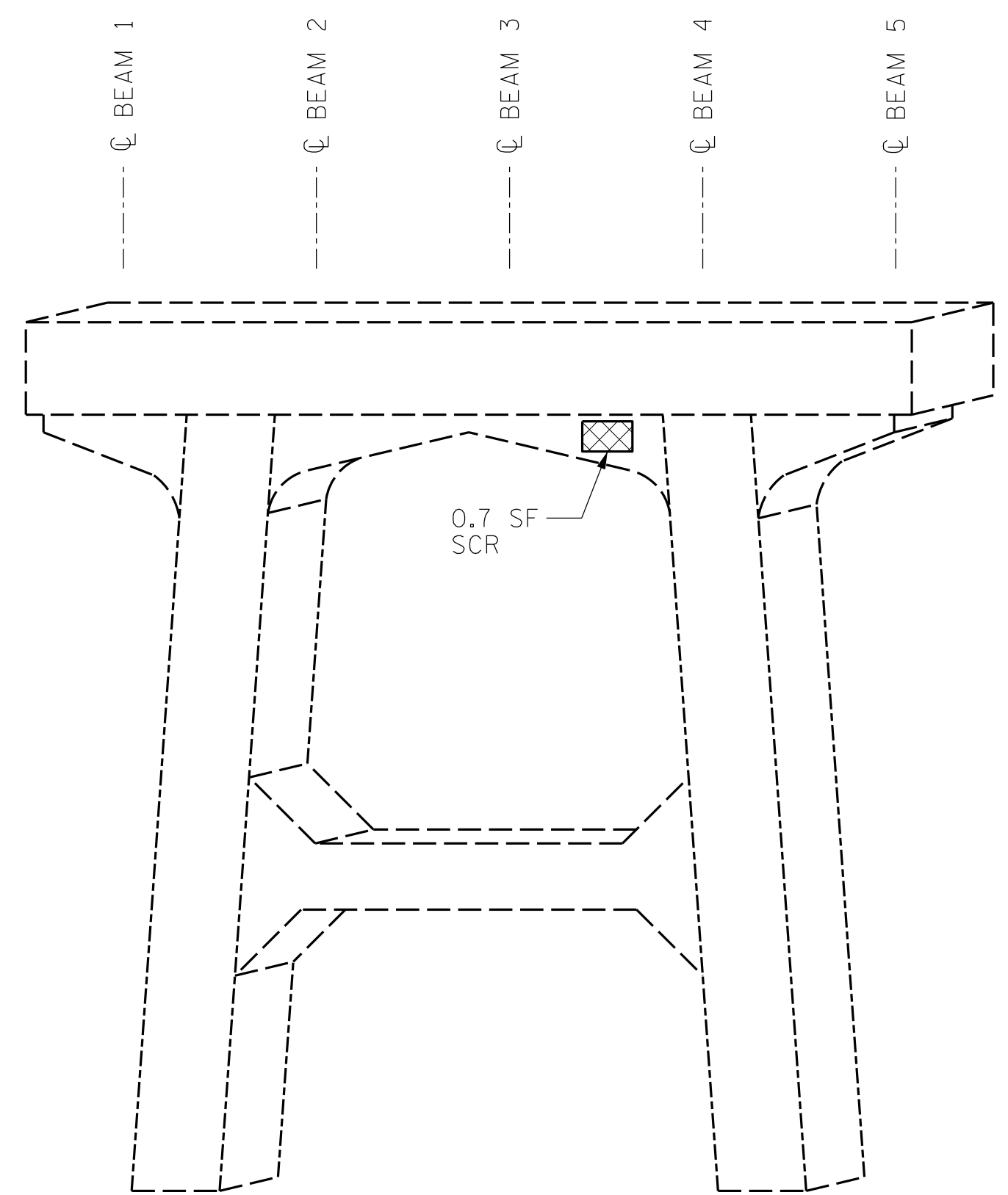


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 9

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			24
2			4			



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	-			

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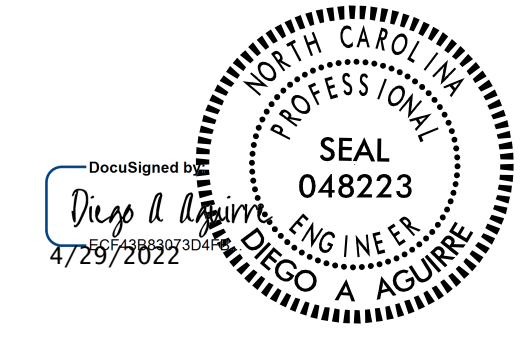
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PROJECT NO. I-5915B
IREDELL COUNTY
BRIDGE NO. 480007

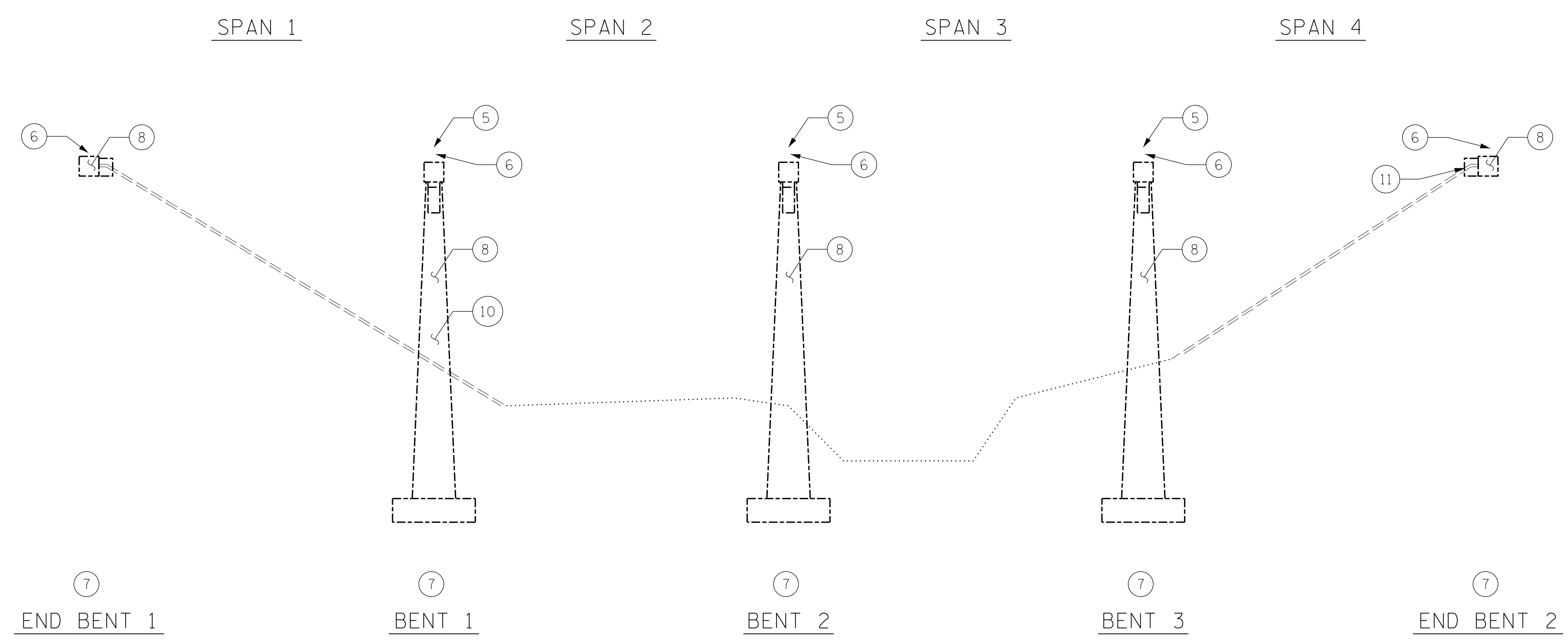
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE REPAIRS
BENT 10



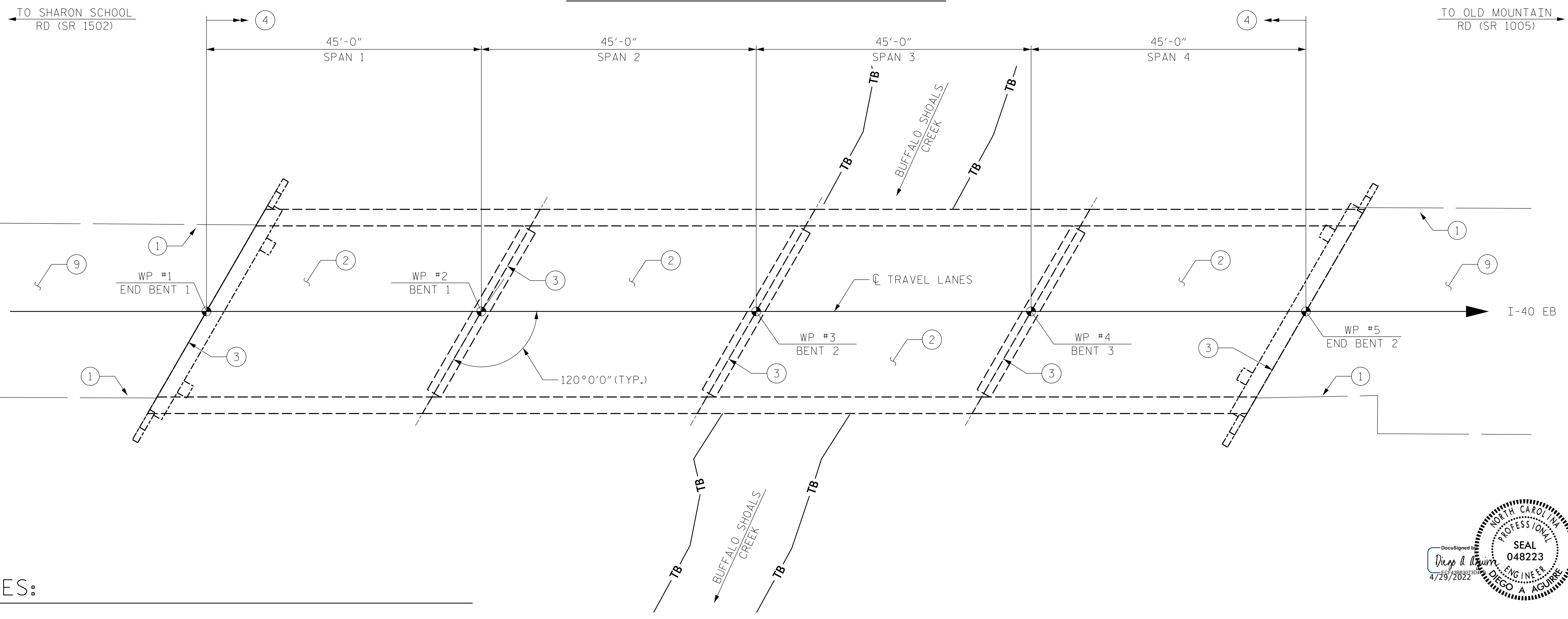
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022
CHECKED BY : FIDEL L. FLORES DATE : 01/2022
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			24
2			4			24



- 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 CLEAR SUBSTRUCTURE OF DEBRIS AND VEGETATION
 - ⑪ 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. 480051



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

FOR BRIDGE ON I-40 EB
 OVER BUFFALO SHOALS CREEK

NOTES:

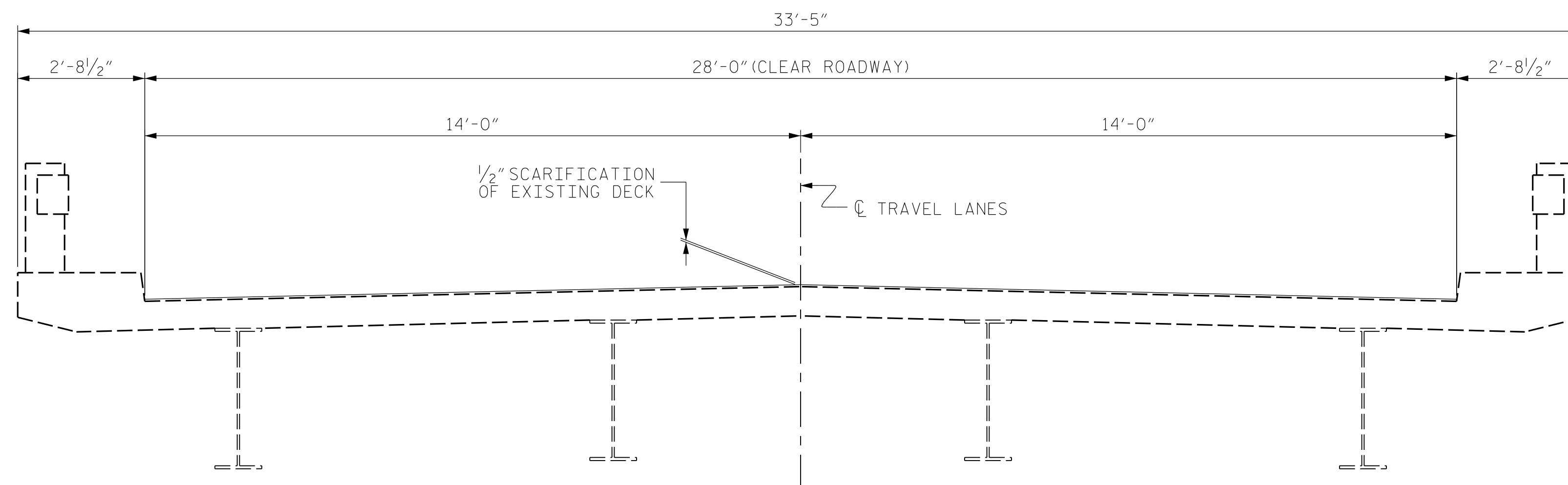
GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE MOST UP TO DATE ROUTINE INSPECTION REPORT DATED 09/22/2021.

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

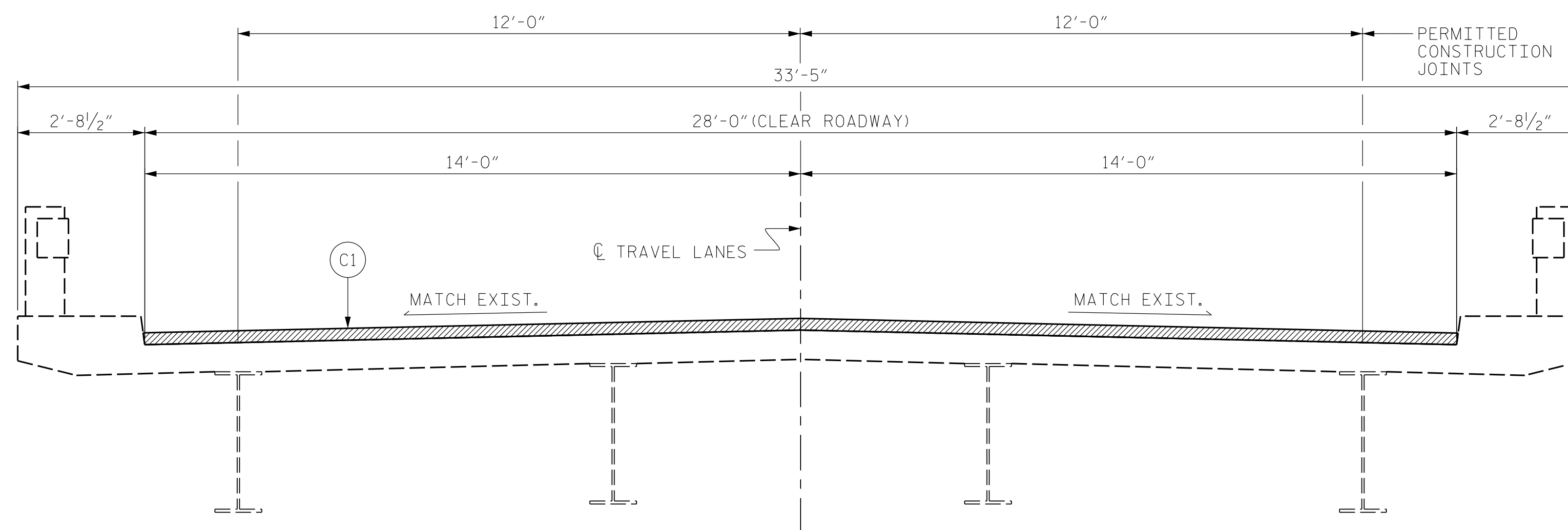
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S7-1
2			4			TOTAL SHEETS 12



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



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. 480051

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
TYPICAL SECTION					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S7-2
TOTAL SHEETS					12

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

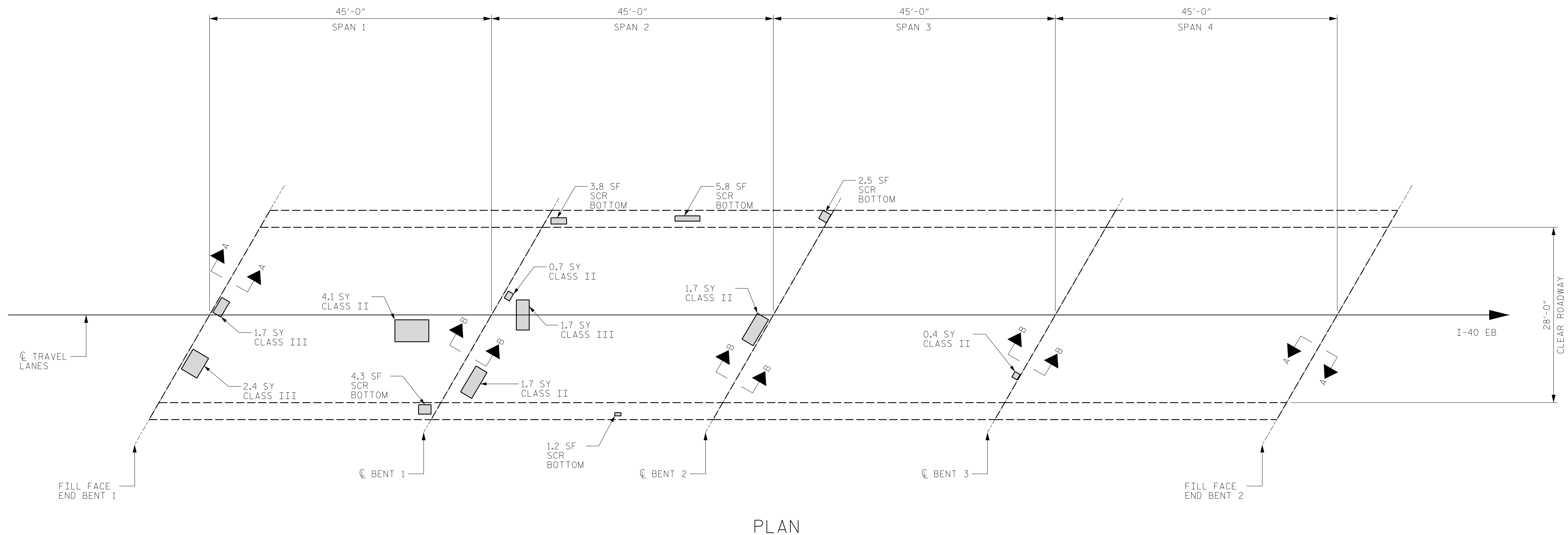
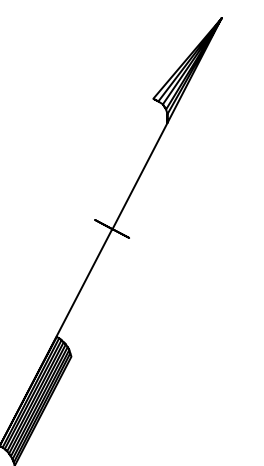
AS-BUILT REPAIR QUANTITY TABLE

DECK REPAIRS

	SPAN 1		SPAN 2		SPAN 3		SPAN 4	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	4.1 SY		4.1 SY		0.4 SY		-- SY	
CLASS III SURFACE PREPARATION	4.1 SY		1.7 SY		-- SY		-- SY	
SCARIFYING BRIDGE DECK	140 SY		140 SY		140 SY		140 SY	
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME
SHOTCRETE REPAIR AREA (SCR)	4.3 SF	1.5 CF			13.3 SF	4.6 CF		
					-- SF	-- CF		

LEGEND:

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)

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.DSR01.480051.dgn
 daguirre

PROJECT NO. I-5915B
 IREDELL COUNTY
 BRIDGE NO. 480051

SHEET 1 OF 2



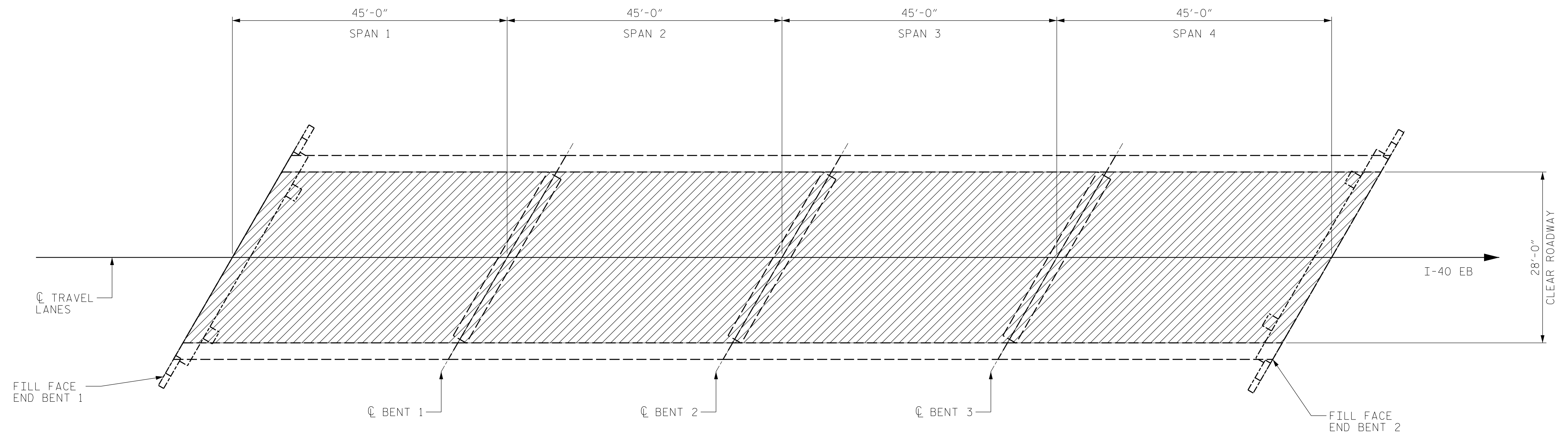
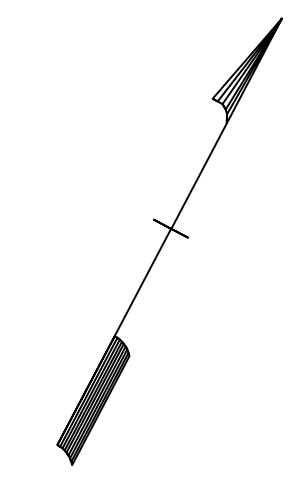
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PLAN OF SPANS
 DECK REPAIRS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S7-3
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	16 TON		16 TON		16 TON		16 TON	
ASPHALT BINDER FOR PLANT MIX	1.0 TON		1.0 TON		1.0 TON		1.0 TON	



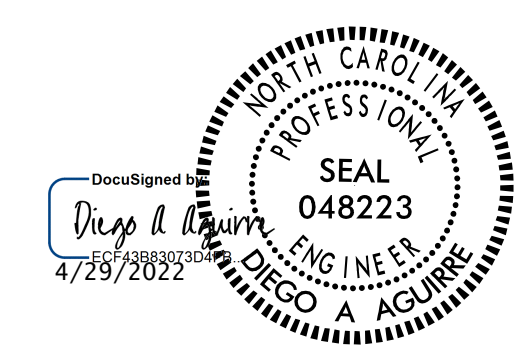
PLAN

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.

PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480051

SHEET 2 OF 2



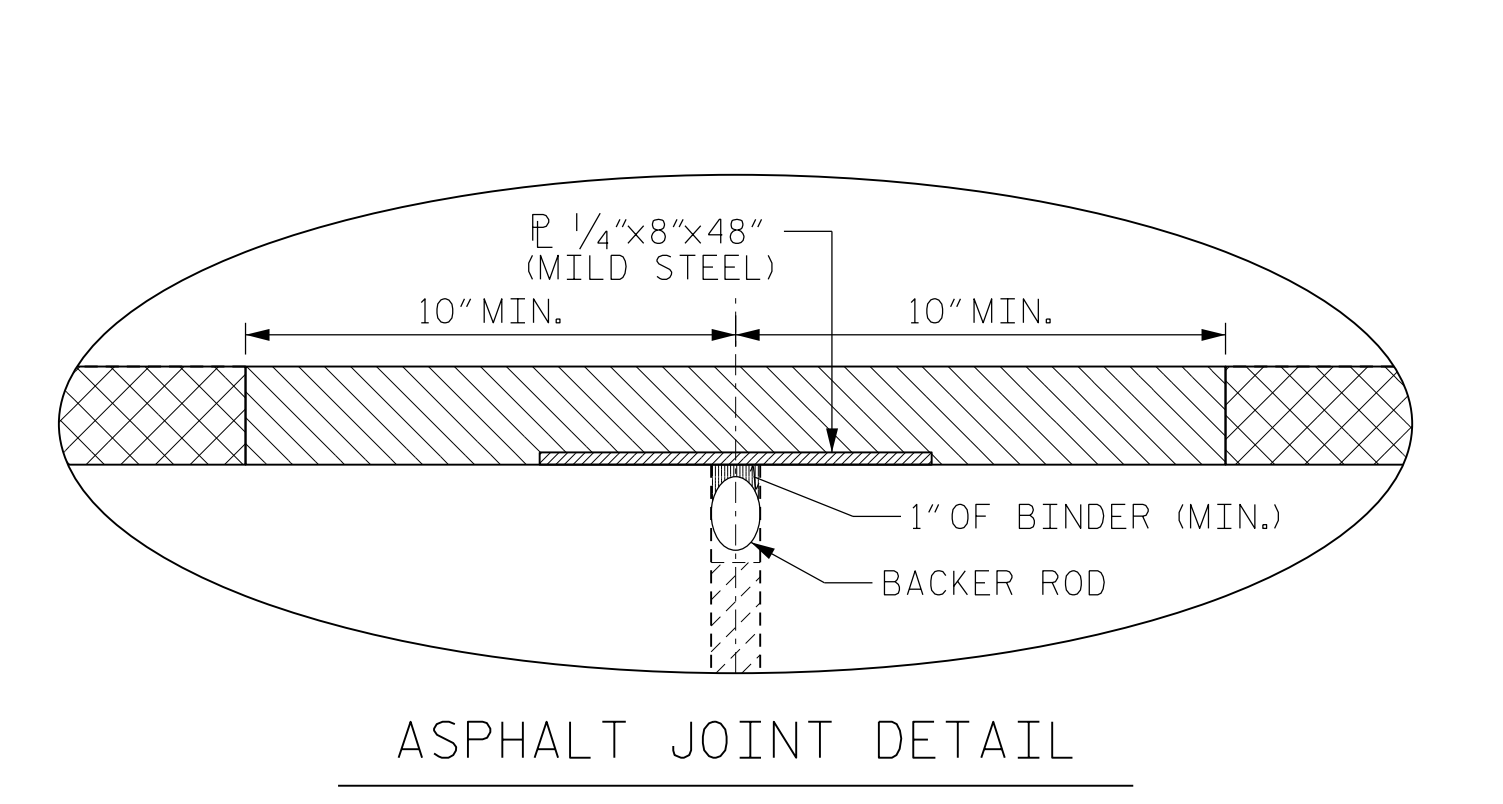
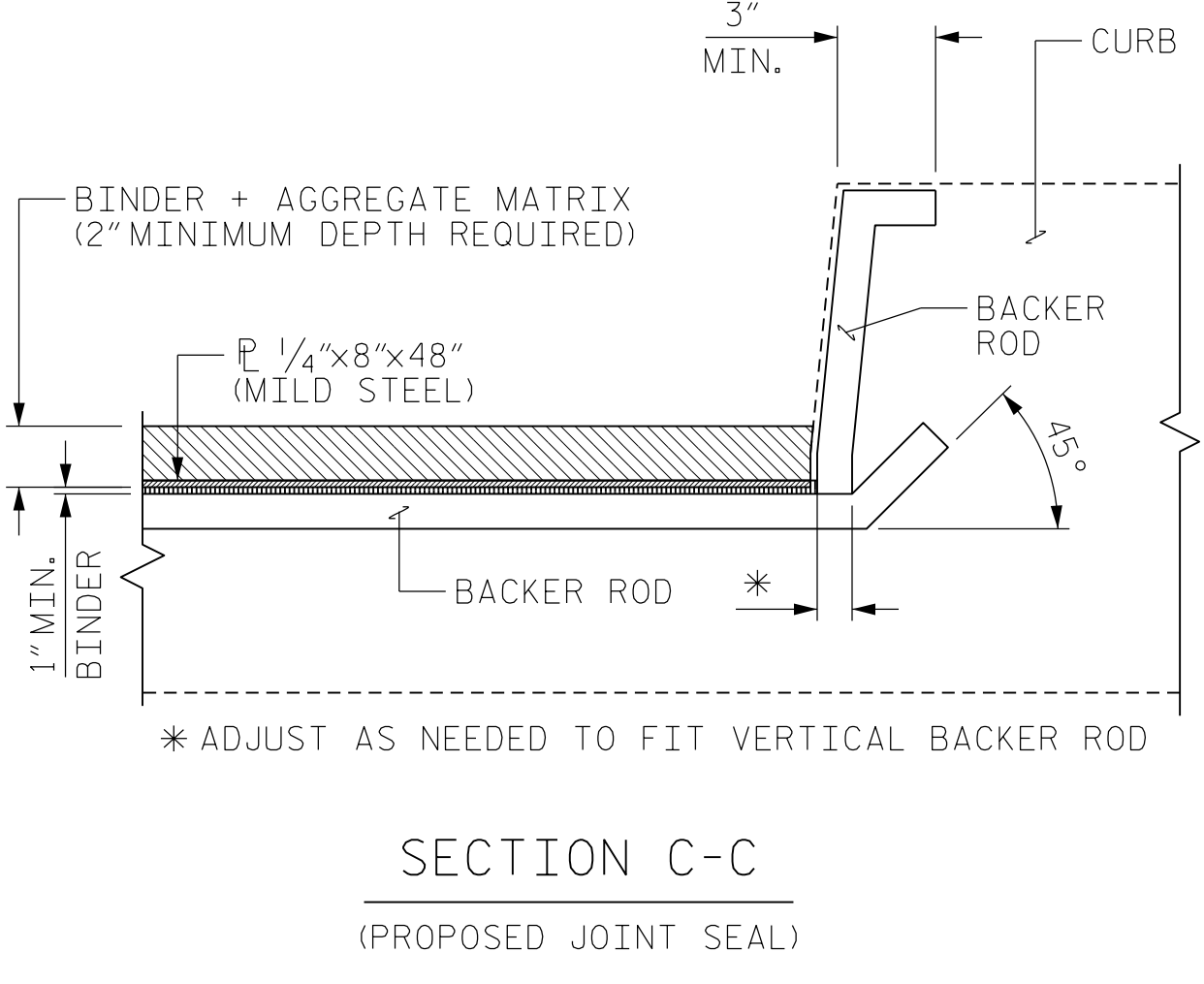
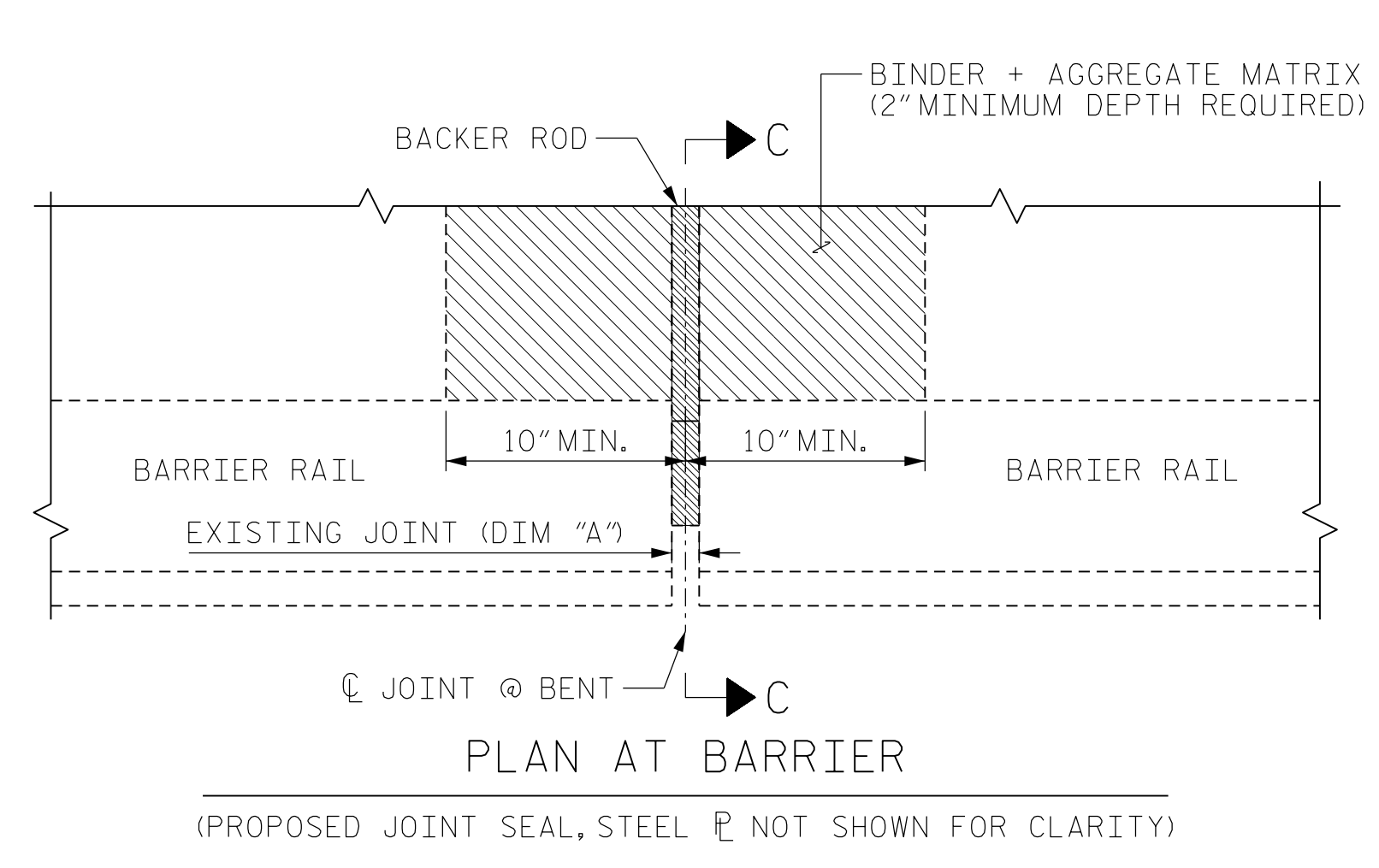
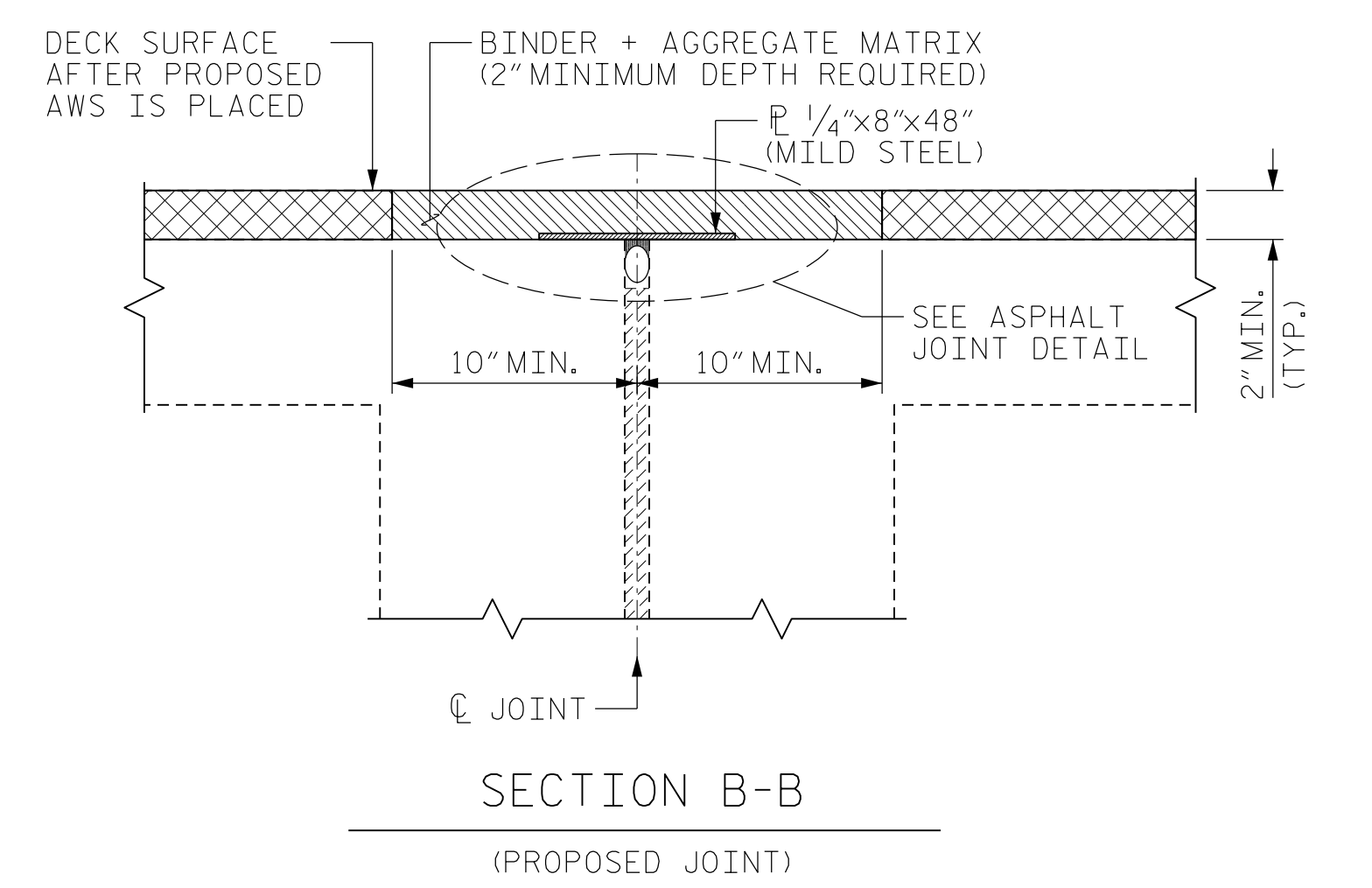
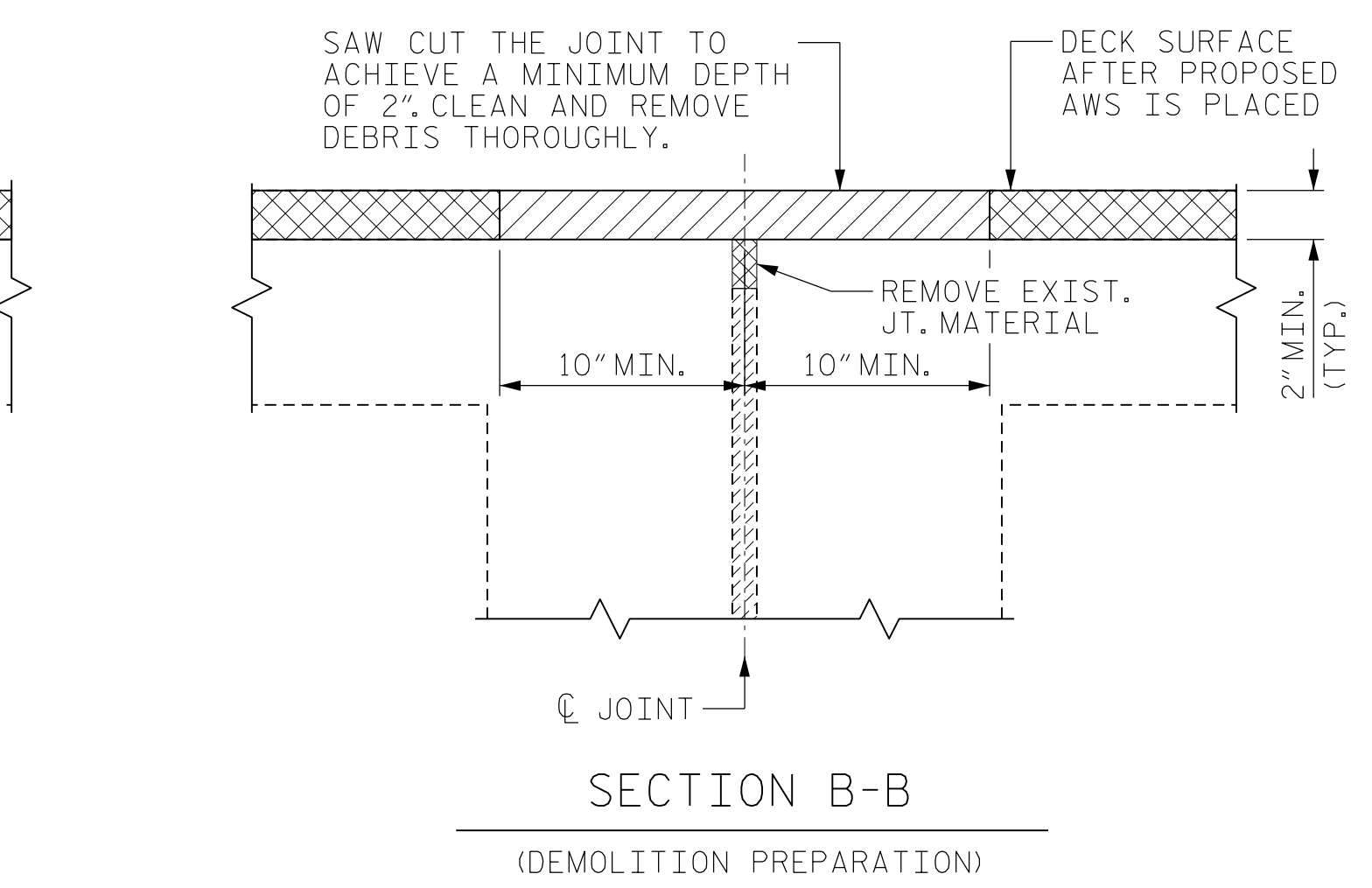
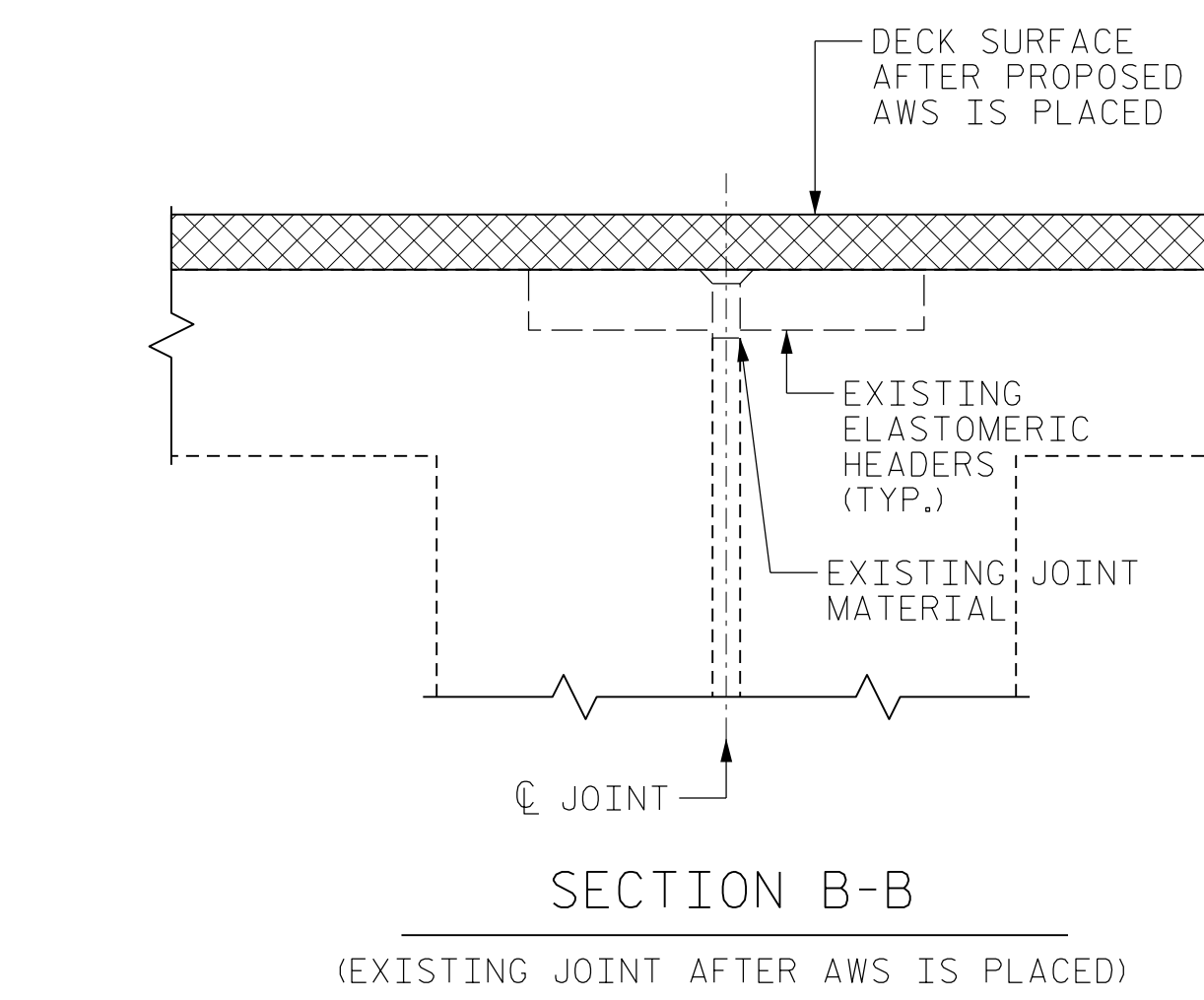
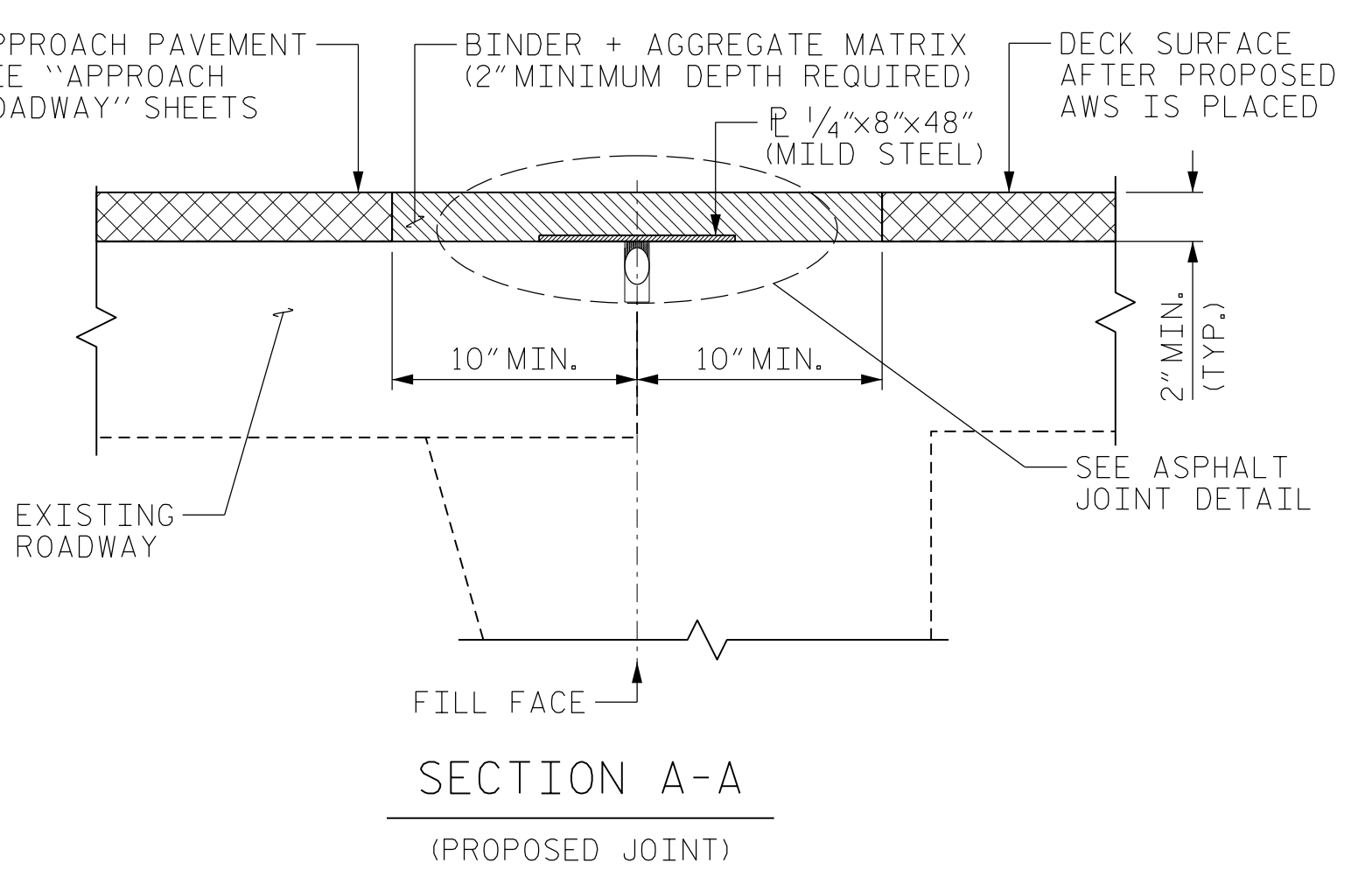
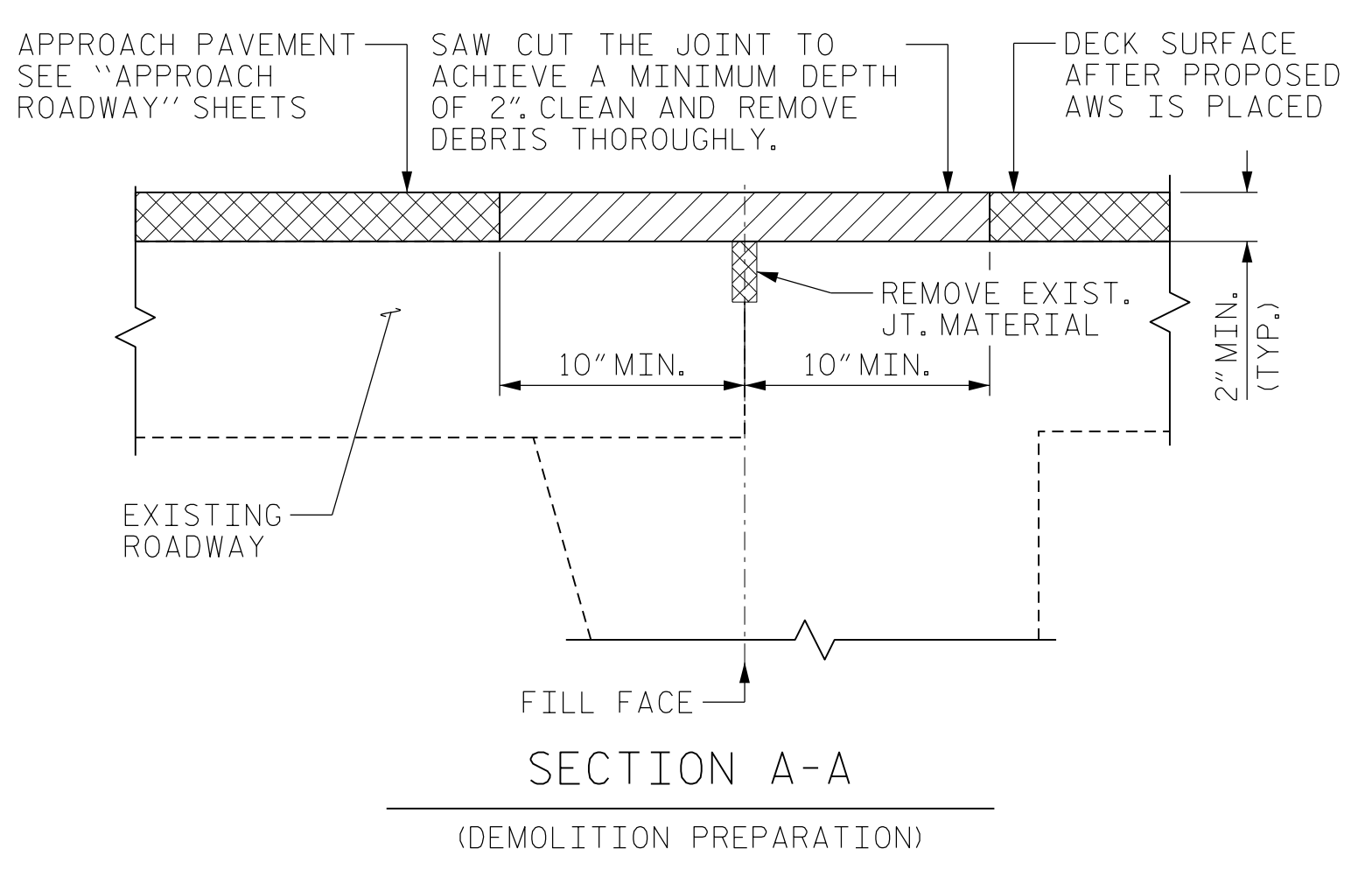
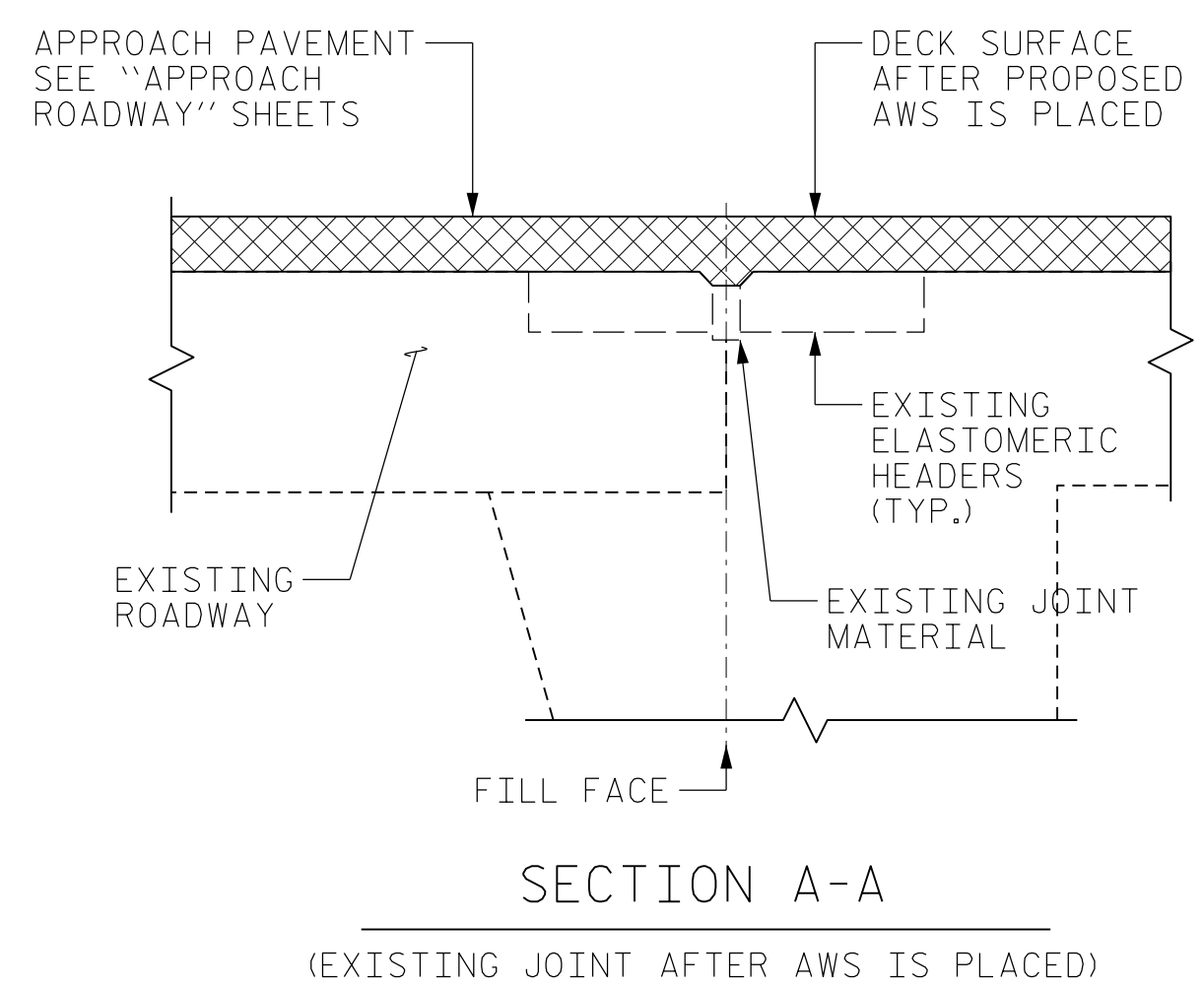
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PLAN OF SPANS
 ASPHALT WEARING SURFACE

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

ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			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	169.2	

PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480051

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



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S7-5
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	1538 SY	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	216 TON	
ASPHALT BINDER FOR PLANT MIX	13.0 TON	

NOTES:

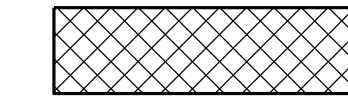
INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVEMENT TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1/2" DEPTH OF NEW ASPHALT PAVEMENT. NEW ASPHALT PAVEMENT SHALL BE OF THICKNESS NECESSARY TO PROVIDE A SMOOTH TRANSITION BETWEEN THE ROADWAY AND THE BRIDGE DECK. THE NEW ASPHALT PAVEMENT THICKNESS MAY EXCEED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

FOR NEW ASPHALT PLACEMENT, SEE STANDARD SPECIFICATIONS.

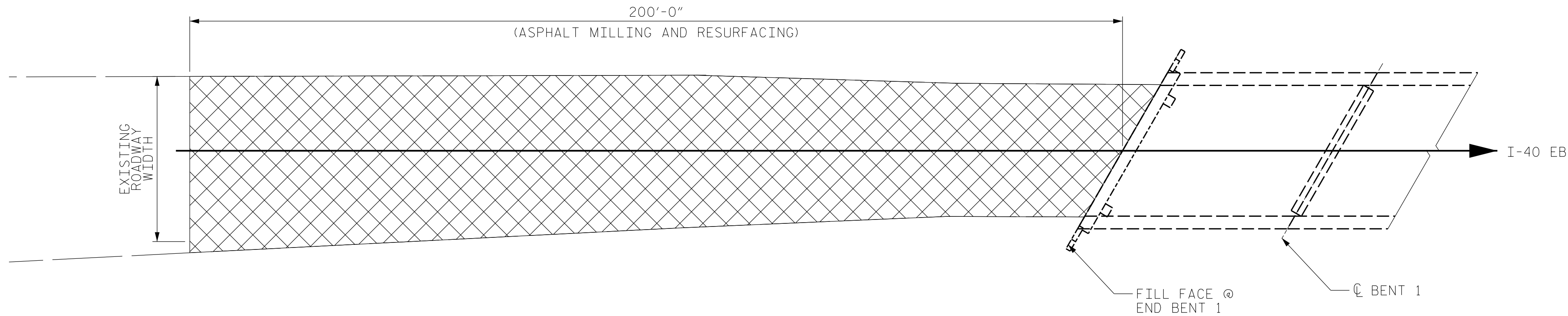
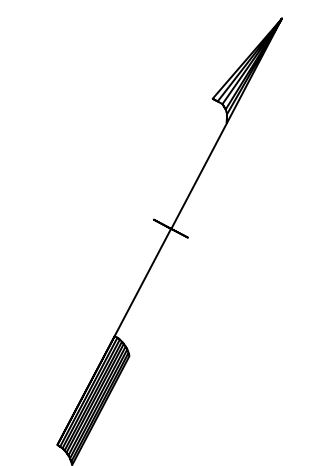
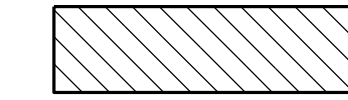
GRADE MAY BE ADJUSTED BY THE ENGINEER TO ENSURE PROPER TIE-IN AT THE END BENTS.

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.
----	---

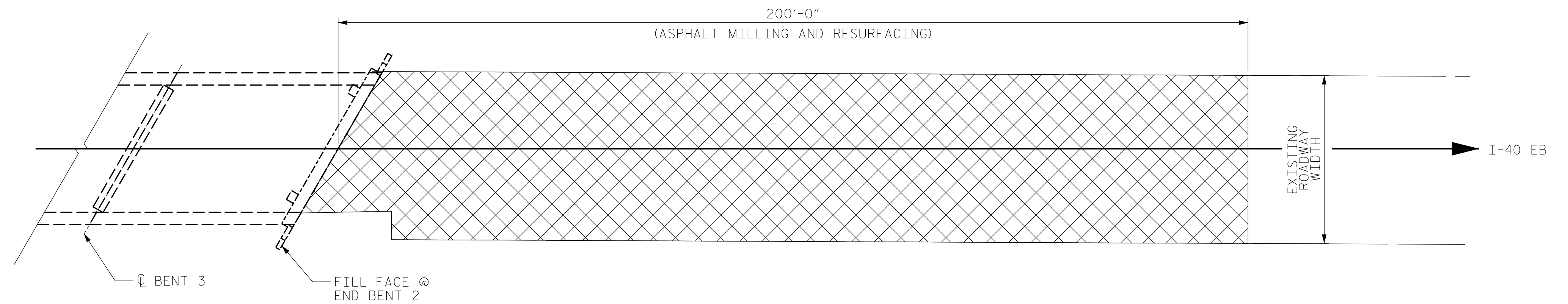
INCIDENTAL MILLING



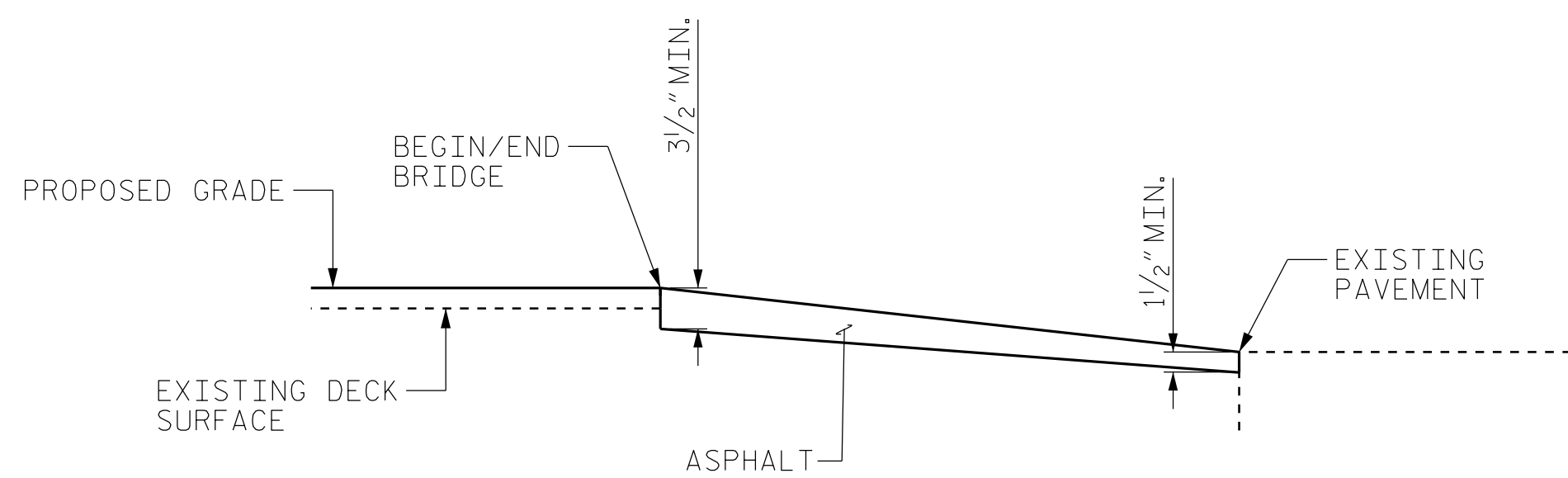
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C (C1)



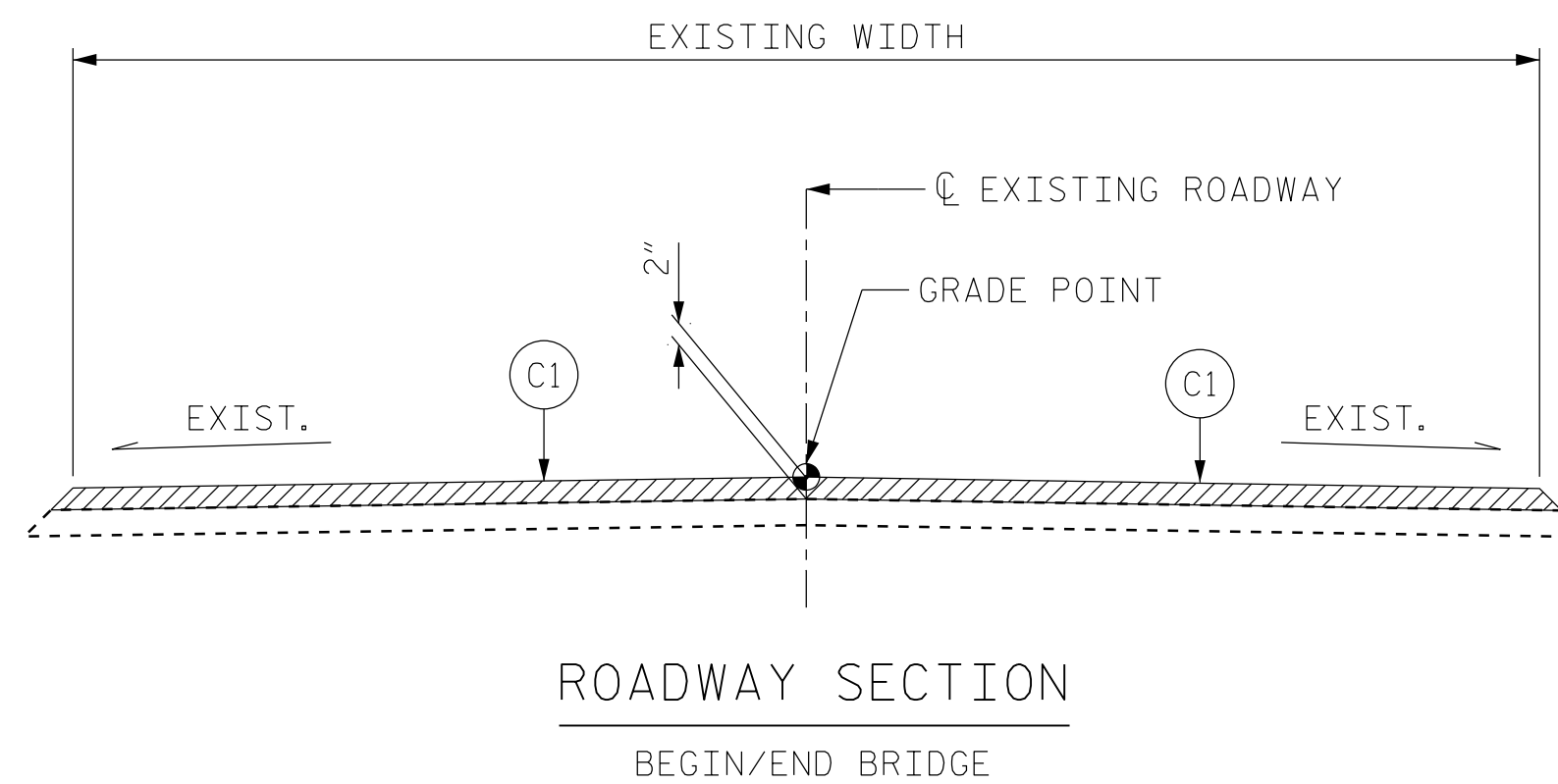
BEGIN APPROACH SLAB



END APPROACH SLAB



PAVEMENT KEY-IN DETAIL FOR BOTH END BENTS



ROADWAY SECTION
BEGIN/END BRIDGE

PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480051



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.AR01.480051.dgn
 daguirre

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:	
1			3			S7-6
2			4			TOTAL SHEETS 12

AS-BUILT REPAIR QUANTITY TABLE

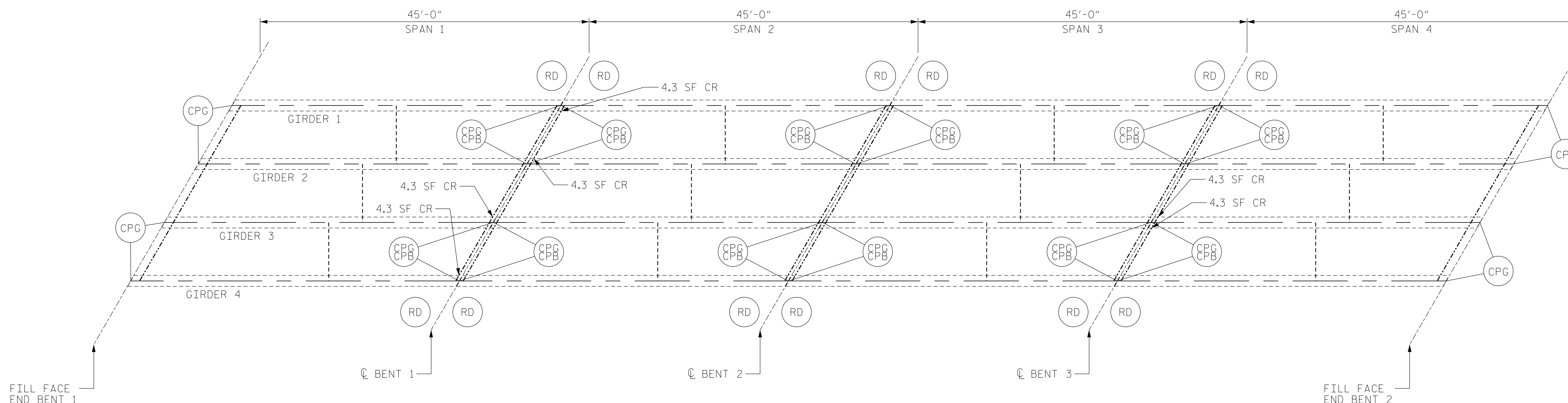
SUPERSTRUCTURE REPAIRS

	SPAN 1		SPAN 2		SPAN 3		SPAN 4					
	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL					
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME				
CONCRETE REPAIR AREA (CR)	8.6 SF	4.4 CF			8.6 SF	4.4 CF	-- SF	-- CF	8.6 SF	4.4 CF		
CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
	4 EA				8 EA				8 EA			

LEGEND:

- CPG CLEAN AND PAINT GIRDER ENDS (5 LF)
- CPB CLEAN AND PAINT BEARING
- RD REMOVE END DIAPHRAGM AT OVERHANG
- 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. 480051



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
 I5915B.SMU.SSR01.480051.dgn
 daquirre

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S7-7
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	19.9	6.9		
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	4.5			
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:
 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.

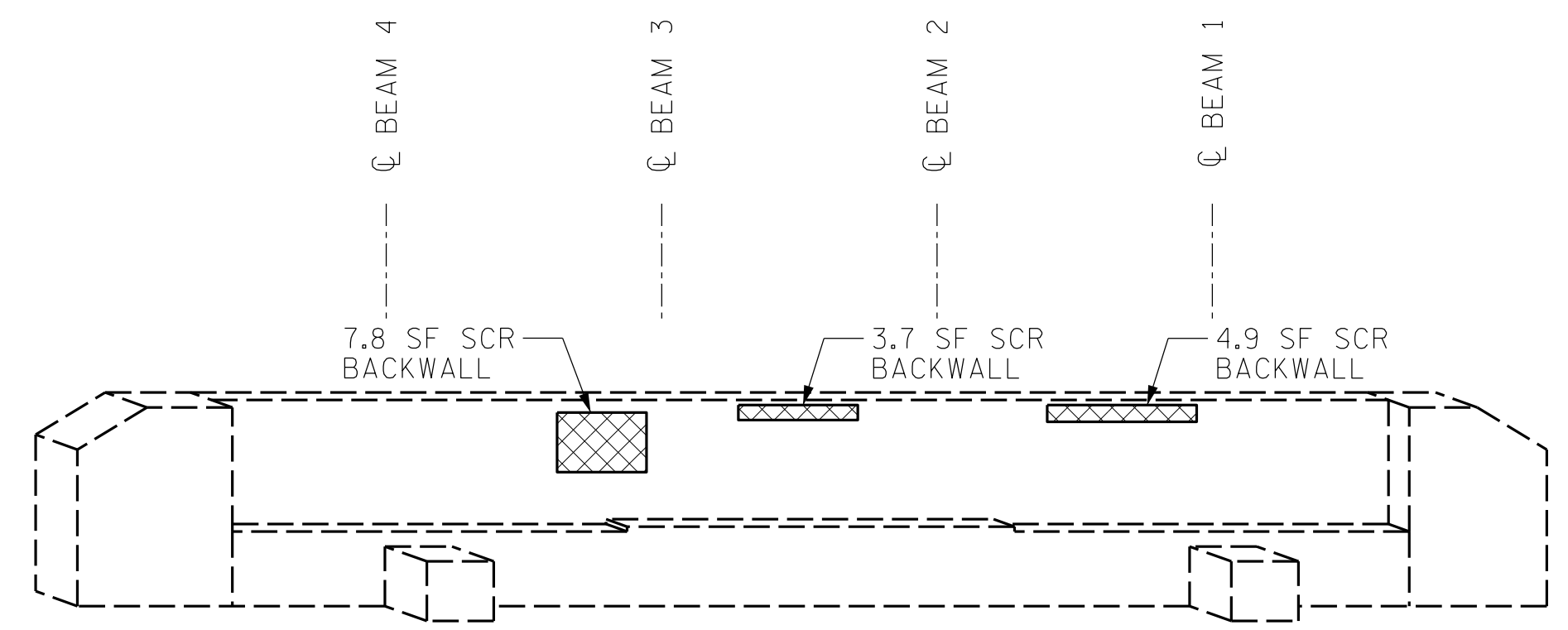
CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS $\geq 1/16"$ AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

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.

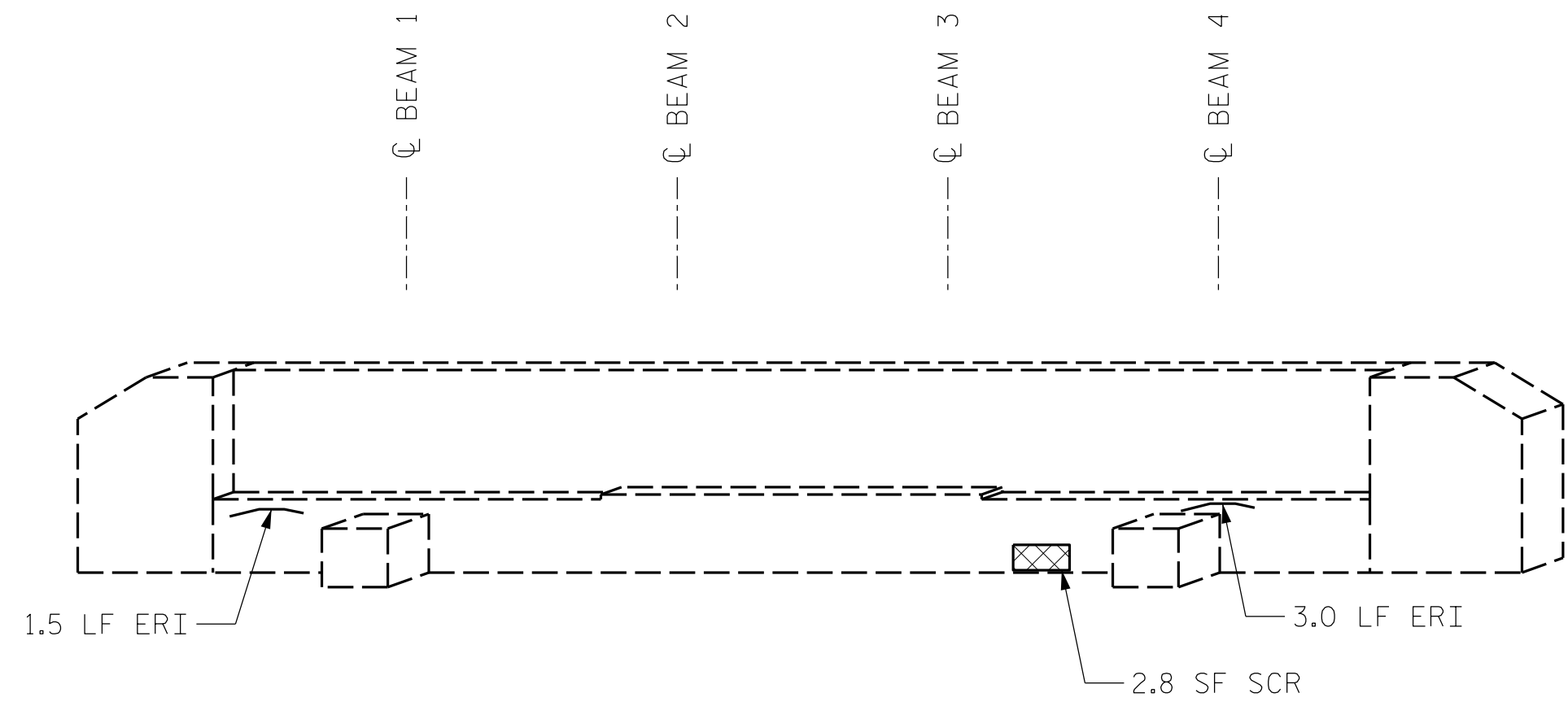
FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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.



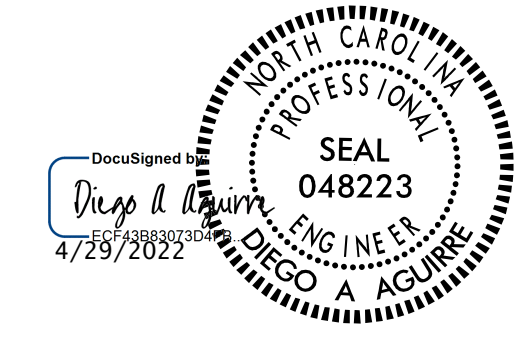
END BENT 1
(EAST FACE)



END BENT 2
(WEST FACE)

PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480051

SHEET 1 OF 4



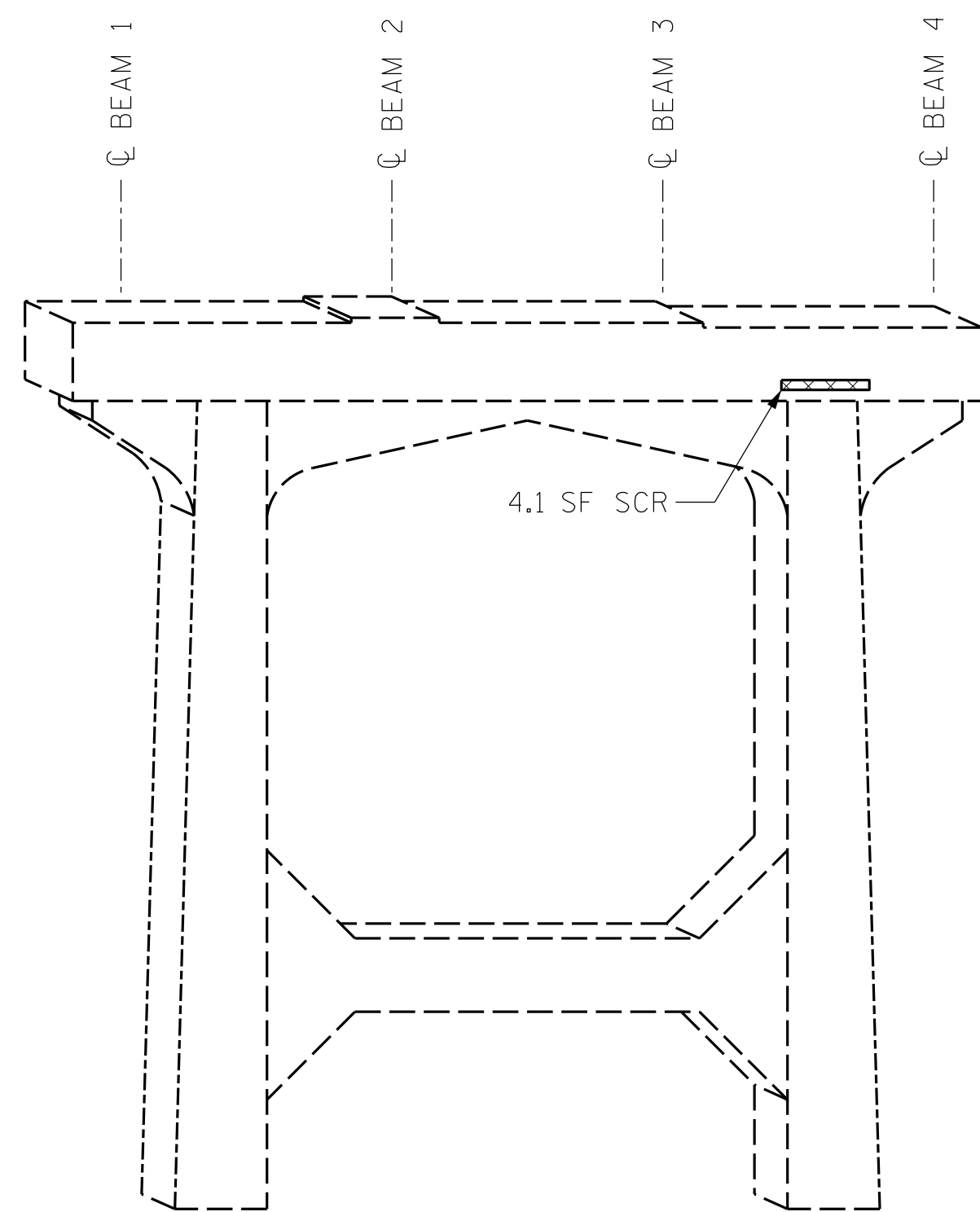
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 END BENTS 1 & 2



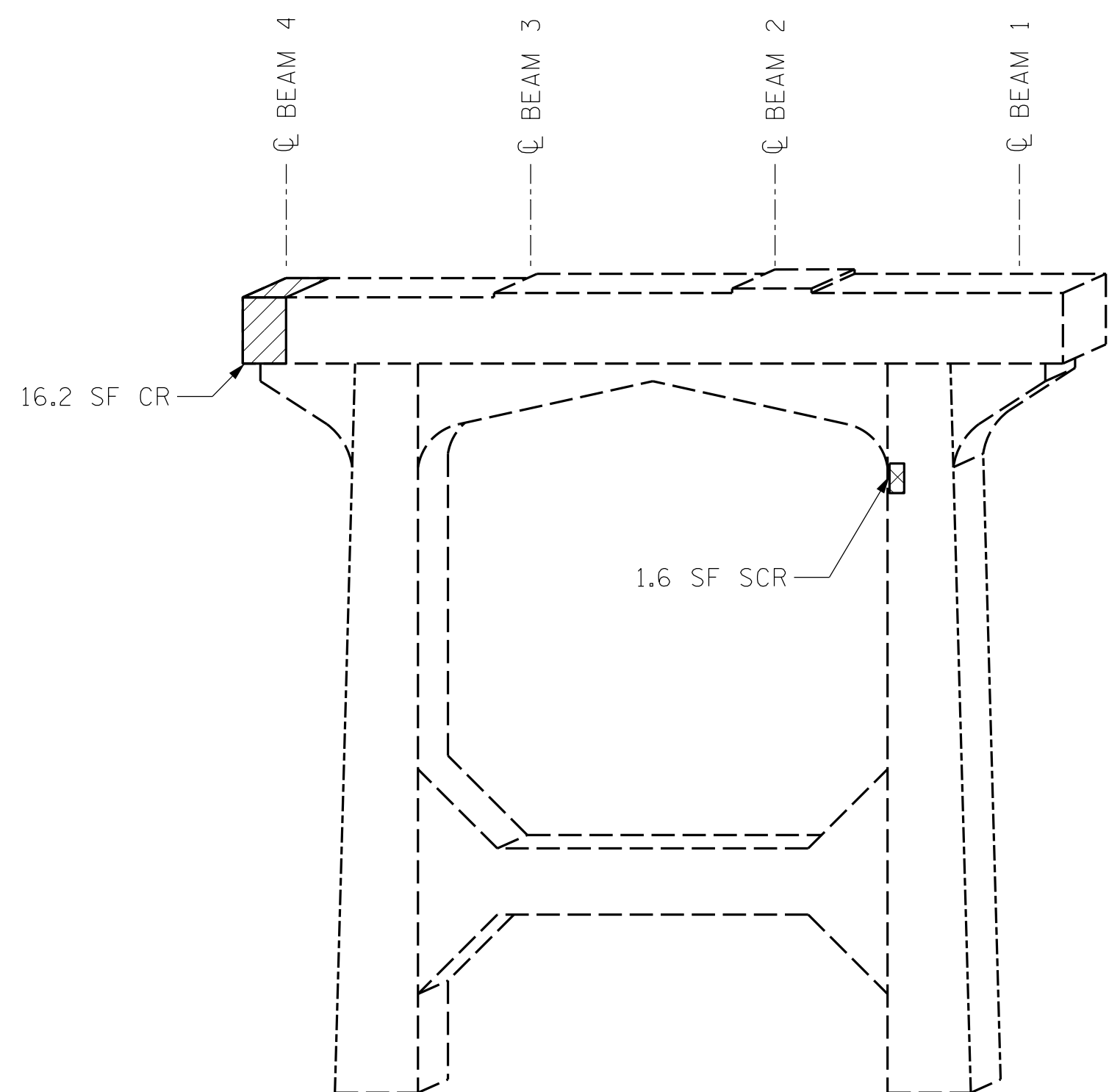
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			12
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	4.1	2.1		
COLUMN/PILE	1.6	0.6		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	16.2	8.1		
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. 480051

SHEET 2 OF 4



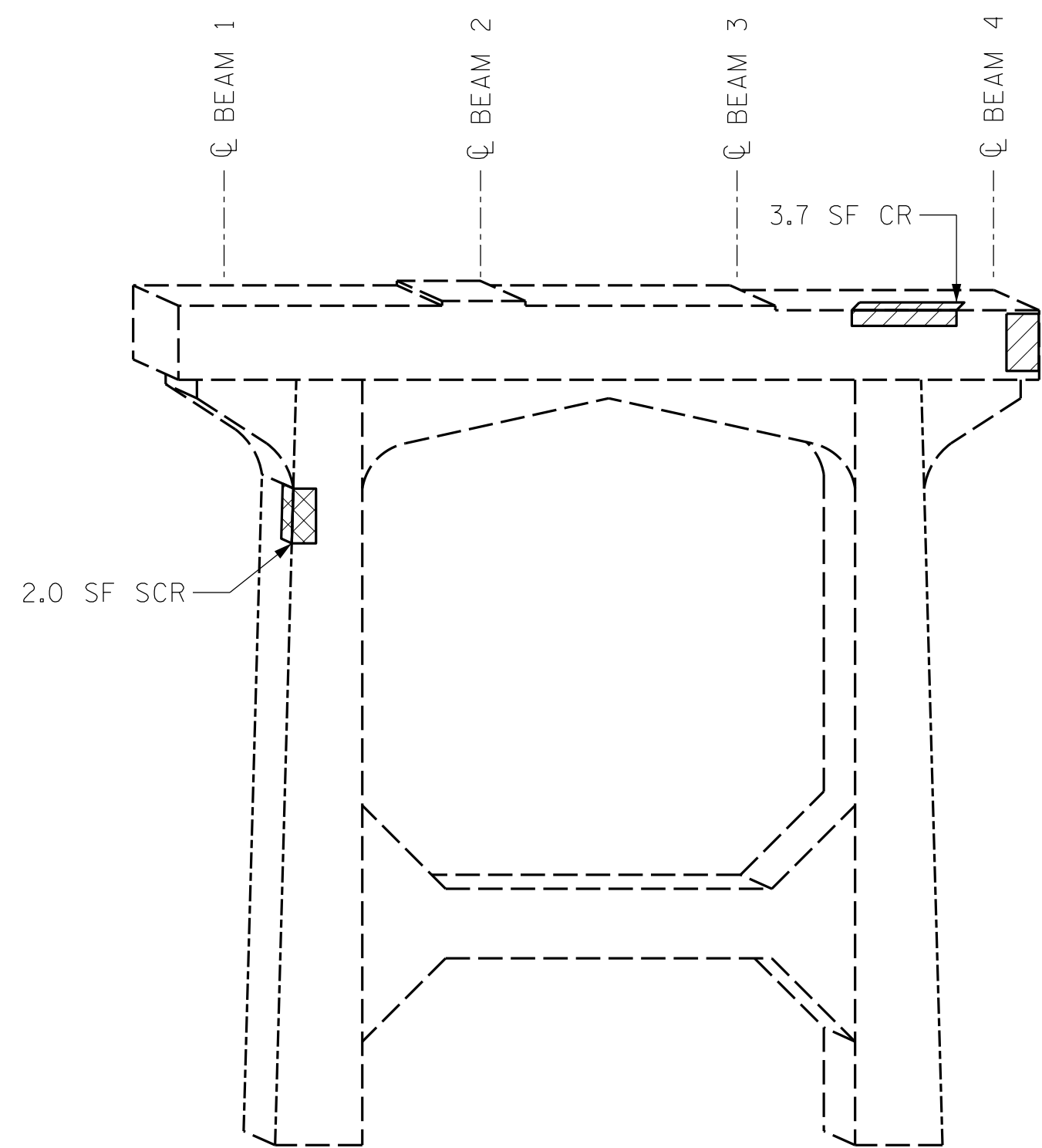
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 1



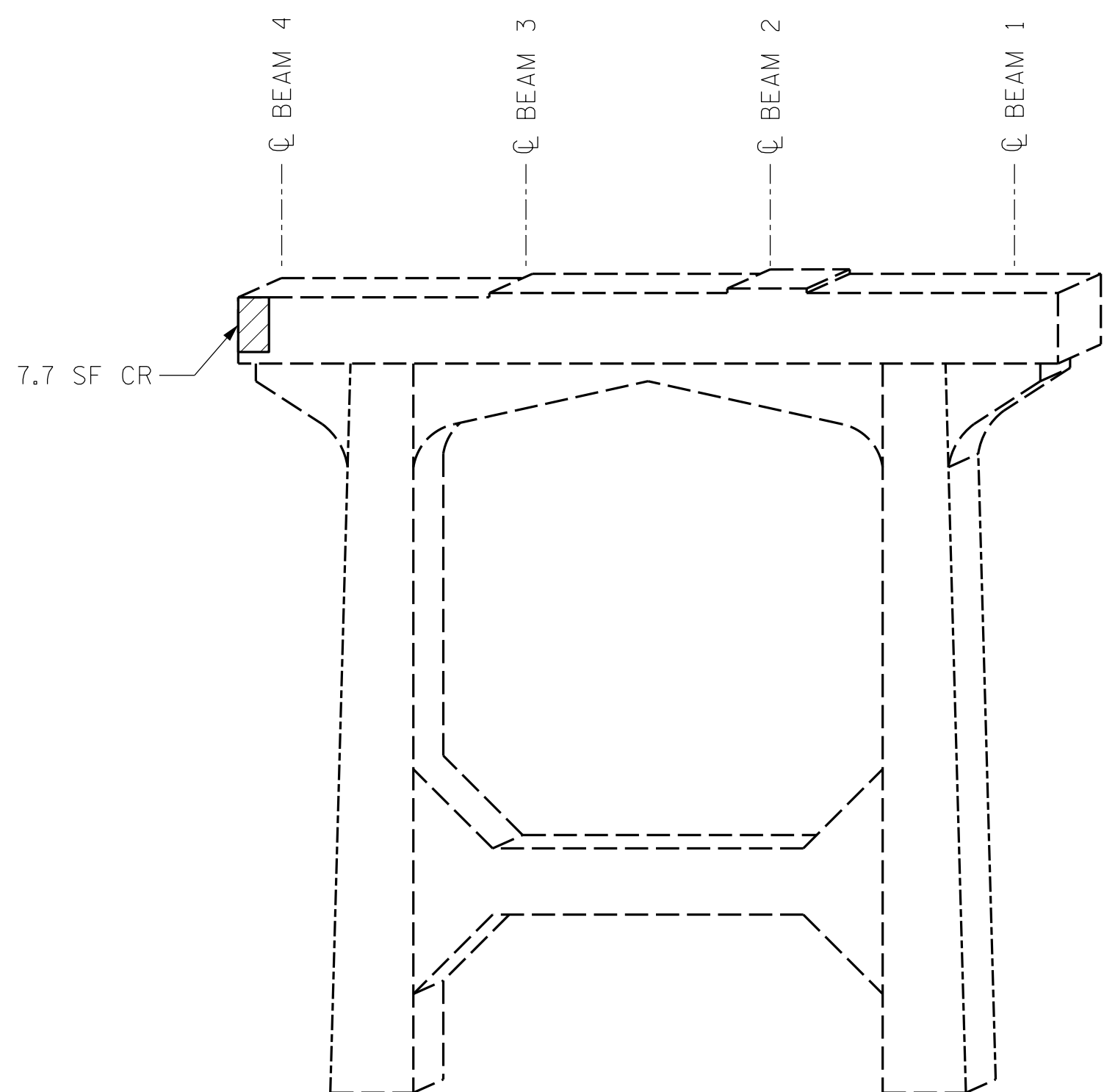
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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	-	-		
COLUMN/PILE	2.0	0.7		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	11.4	3.9		
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. 480051

SHEET 3 OF 4



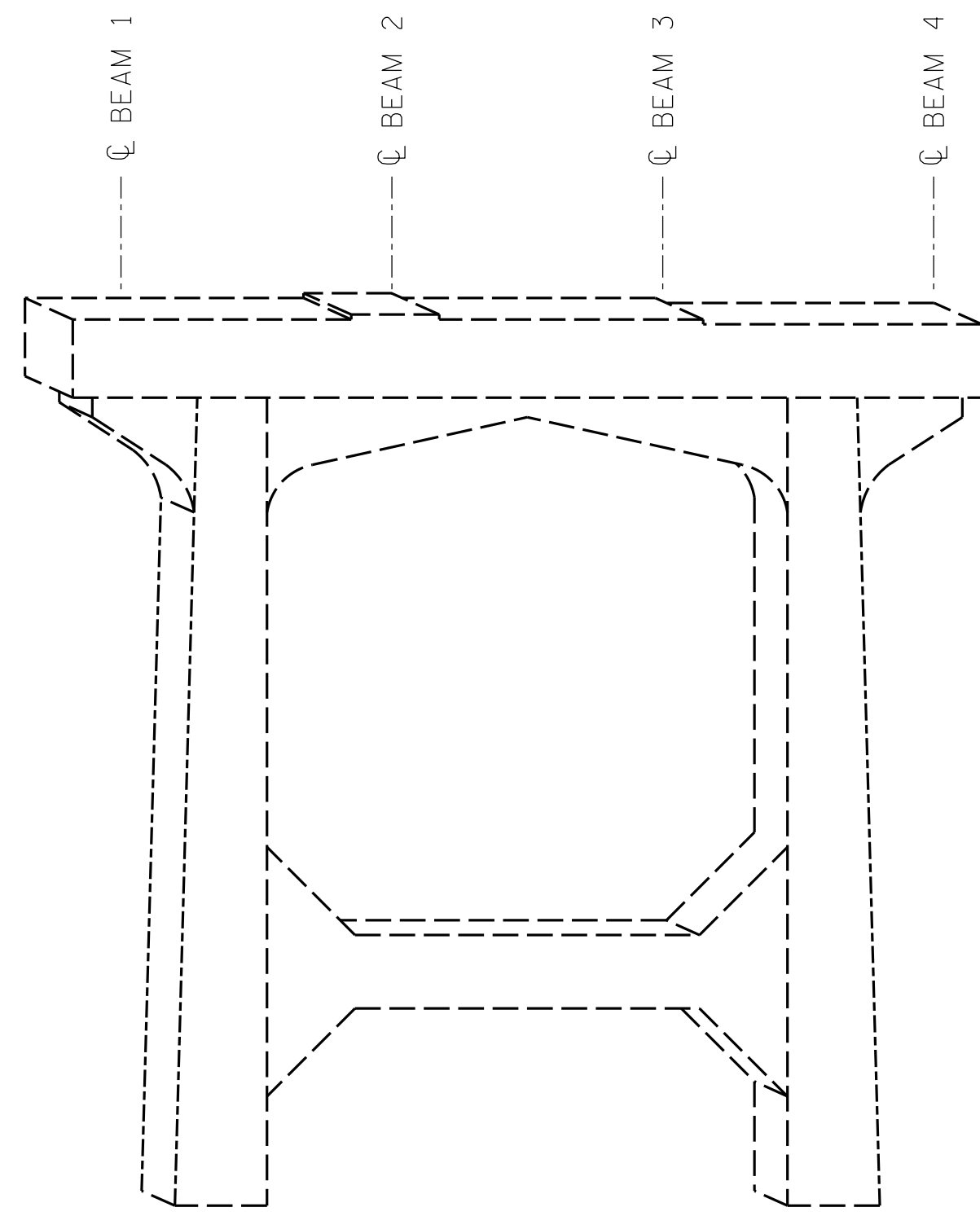
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 2



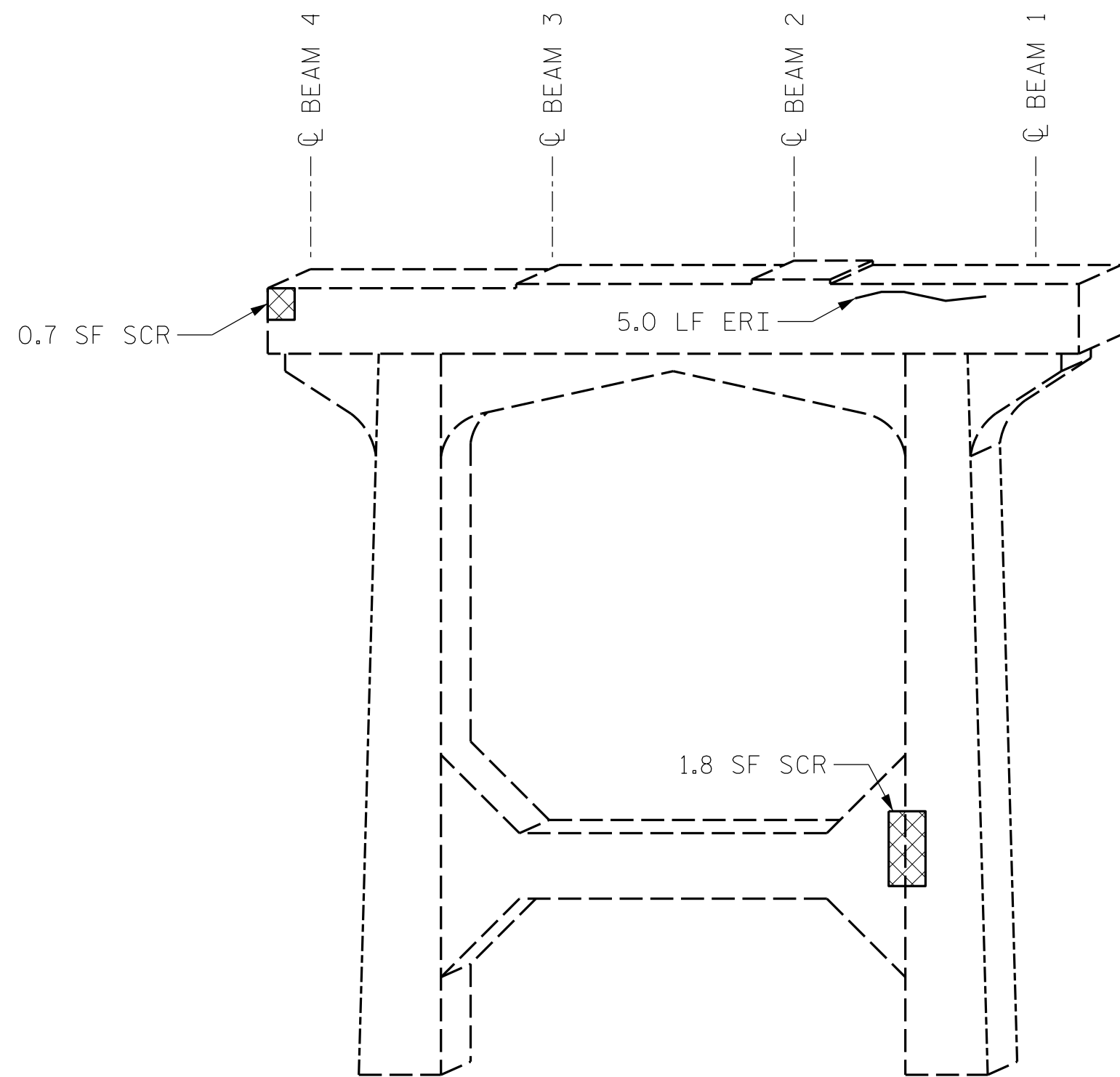
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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 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	0.7	0.3		
COLUMN/PILE	1.8	0.8		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	-	-		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP/BACKWALL	5.0			
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. 480051

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

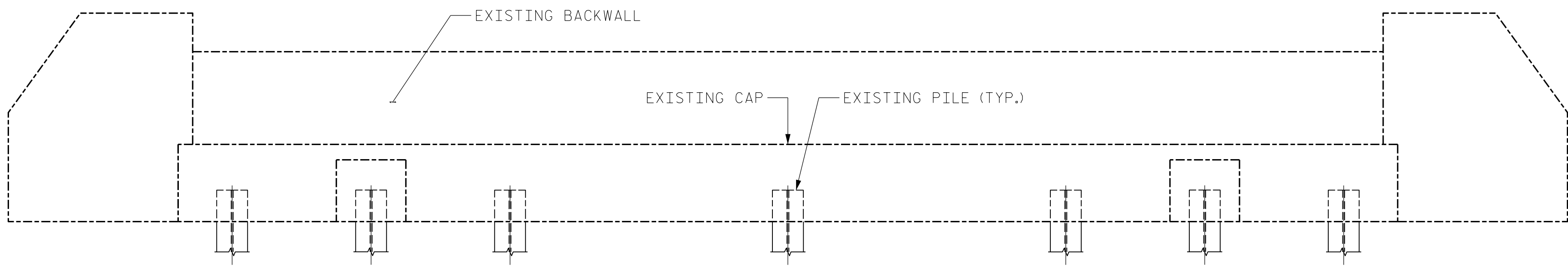
4/21/2022
 I5915B_SMU_SBR03_480051.dgn
 daquirre

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

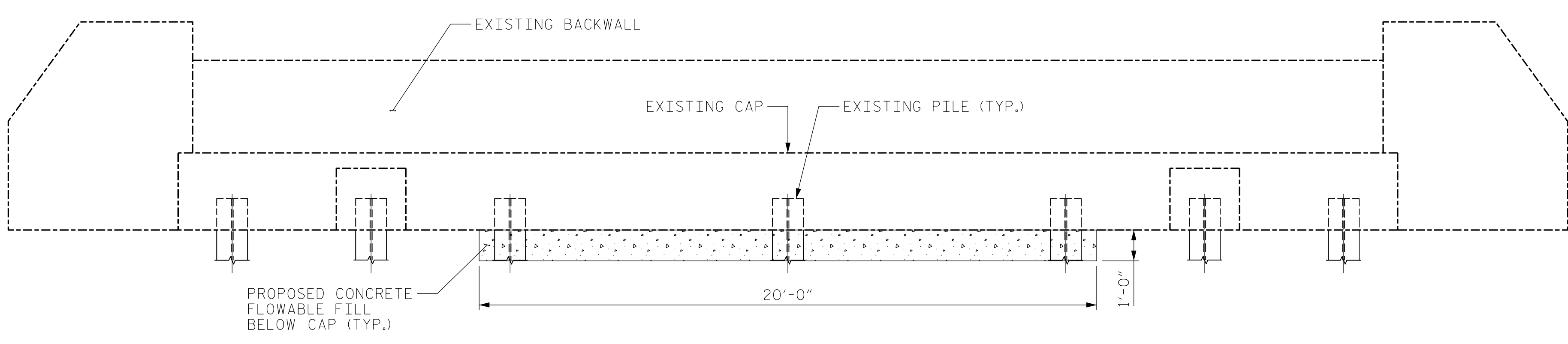
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			12
2			4			

AS-BUILT REPAIR QUANTITY TABLE

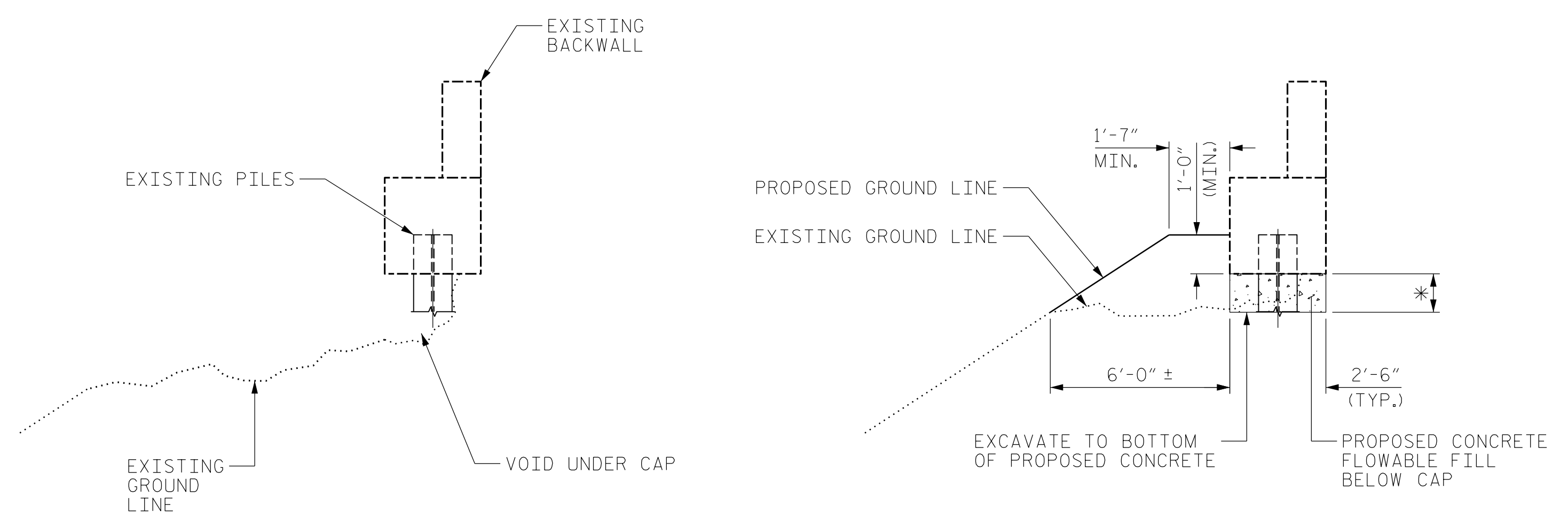
	END BENT 1		END BENT 2	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
UNCLASSIFIED STRUCTURE EXCAVATION	0.0 CY		1.9 CY	
FLOWABLE FILL	0.0 CY		1.9 CY	
BORROW EXCAVATION	0.0 CY		4.1 CY	



END BENT 1
ELEVATION



END BENT 2
ELEVATION



EXISTING
CAP SECTION

PROPOSED
CAP SECTION
(* SEE ELEVATION)

NOTES:

- EXCAVATE BELOW THE EXISTING CAP AS SHOWN IN THIS SHEET. EXCAVATION BELOW THE CAP IS TO BE PAID FOR AS "UNCLASSIFIED STRUCTURE EXCAVATION".
- PLACE CONCRETE FLOWABLE FILL UNDER THE CAP AS SHOWN IN THIS SHEET, FULLY ENGAGING ADJACENT PILES.
- 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.

PROJECT NO. I-5915B
IREDELL COUNTY
BRIDGE NO. 480051



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

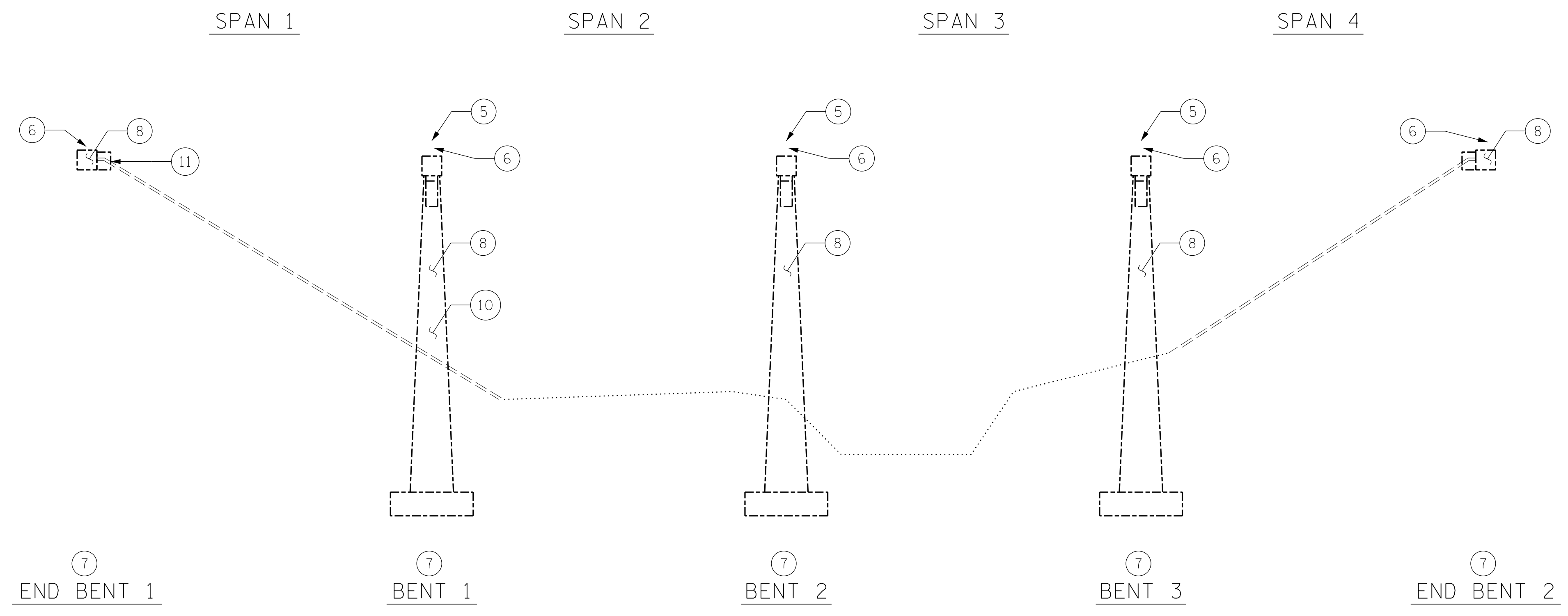
DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022
CHECKED BY : JACOB H. DUKE DATE : 01/2022
DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

4/21/2022
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daguirre

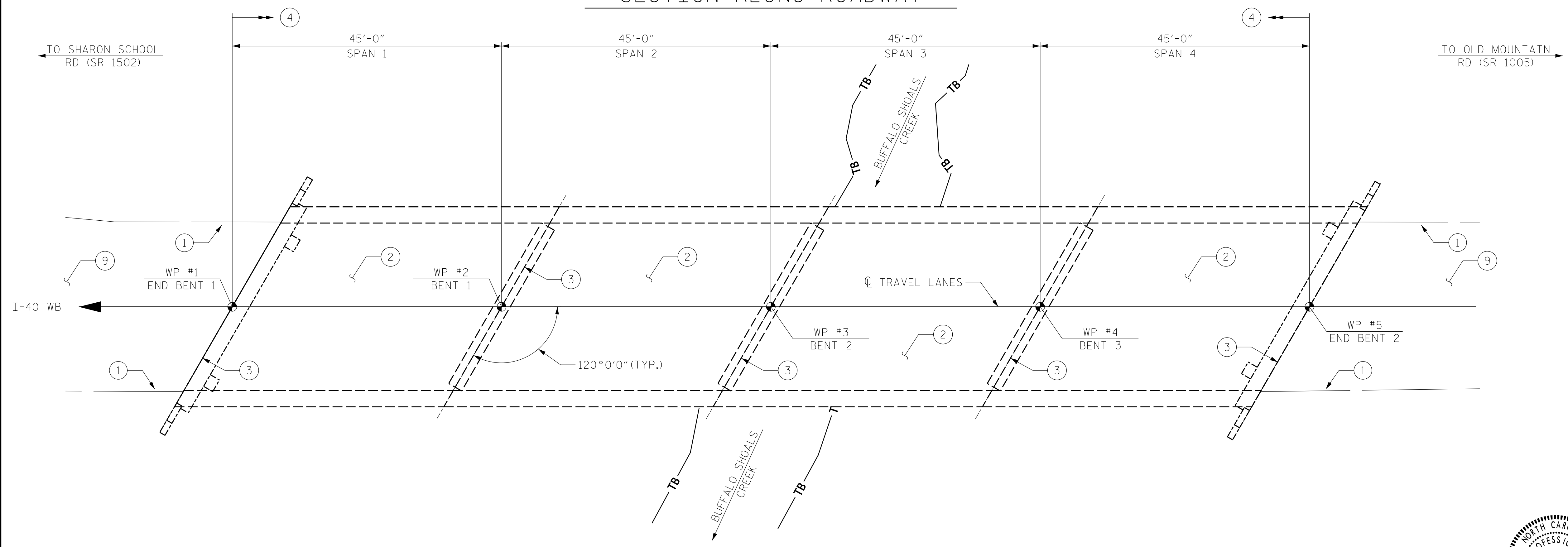
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



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



- 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 CLEAR SUBSTRUCTURE OF DEBRIS AND VEGETATION
 - ⑪ 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. 480054



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

FOR BRIDGE ON I-40 WB
 OVER BUFFALO SHOALS CREEK

NOTES:

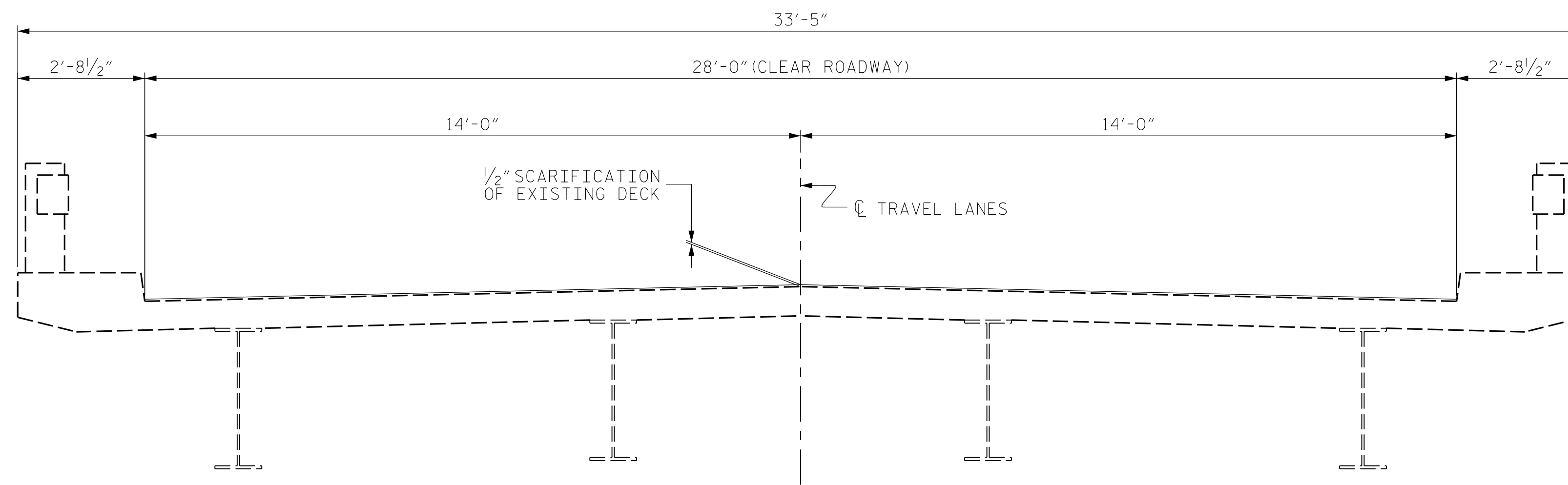
GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE MOST UP TO DATE ROUTINE INSPECTION REPORT DATED 09/22/2021.

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

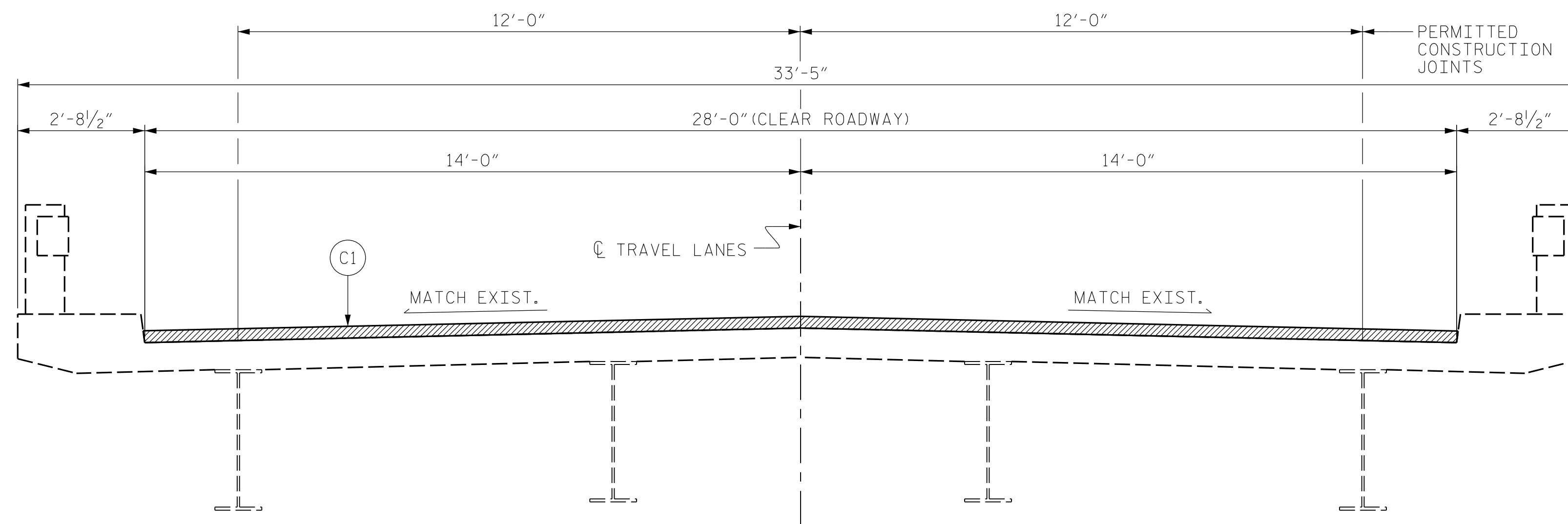
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S8-1
2			4			TOTAL SHEETS 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



KCS
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. 480054

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_TS01.480054.dgn
daguirre

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-2
1			3			TOTAL SHEETS
2			4			12

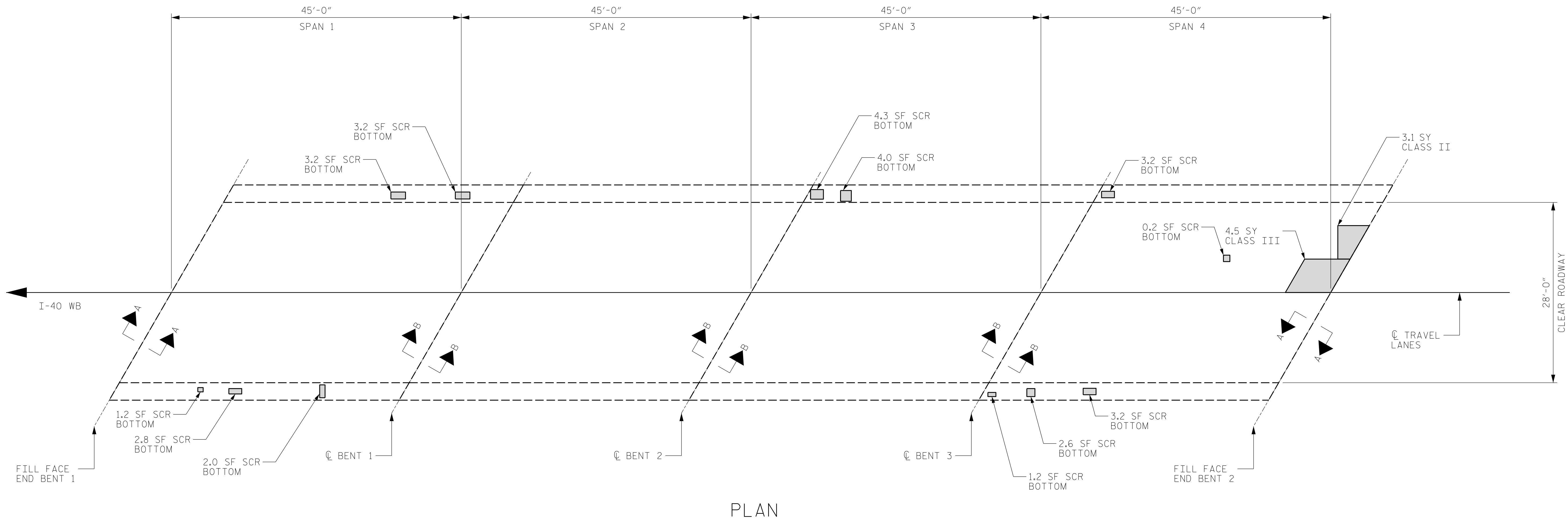
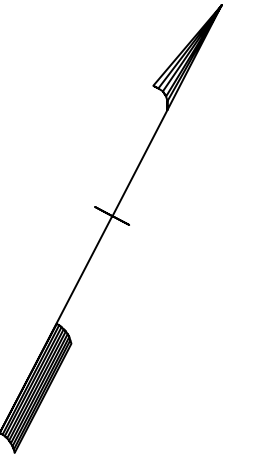
AS-BUILT REPAIR QUANTITY TABLE

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		3.1 SY	
CLASS III SURFACE PREPARATION	-- SY		-- SY		-- SY		4.5 SY	
SCARIFYING BRIDGE DECK	140 SY		140 SY		140 SY		140 SY	
EPOXY RESIN INJECTION (ERI)	-- LF		-- LF		-- LF		-- LF	
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME
SHOTCRETE REPAIR AREA (SCR)	12.4 SF	4.3 CF			-- SF	-- CF	8.3 SF	2.9 CF

LEGEND:

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)

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.DSR01.480054.dgn
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PROJECT NO. I-5915B
 IREDELL COUNTY
 BRIDGE NO. 480054

SHEET 1 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

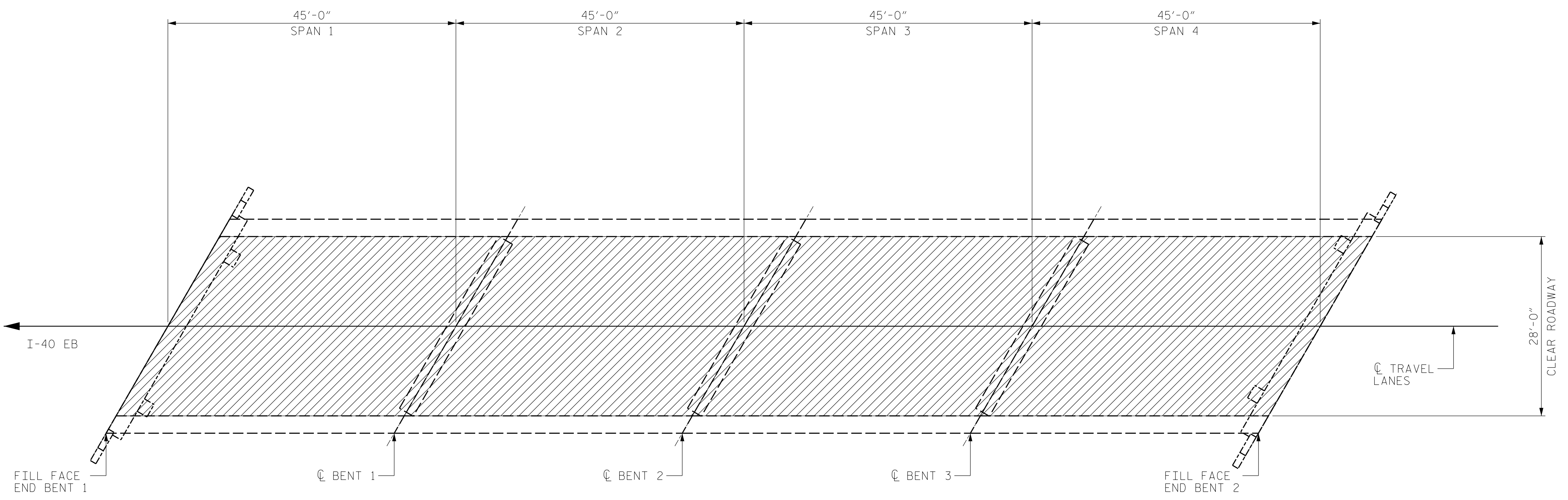
PLAN OF SPANS DECK REPAIRS

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S8-3
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	16 TON		16 TON		16 TON		16 TON	
ASPHALT BINDER FOR PLANT MIX	1.0 TON		1.0 TON		1.0 TON		1.0 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.

PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480054

SHEET 2 OF 2



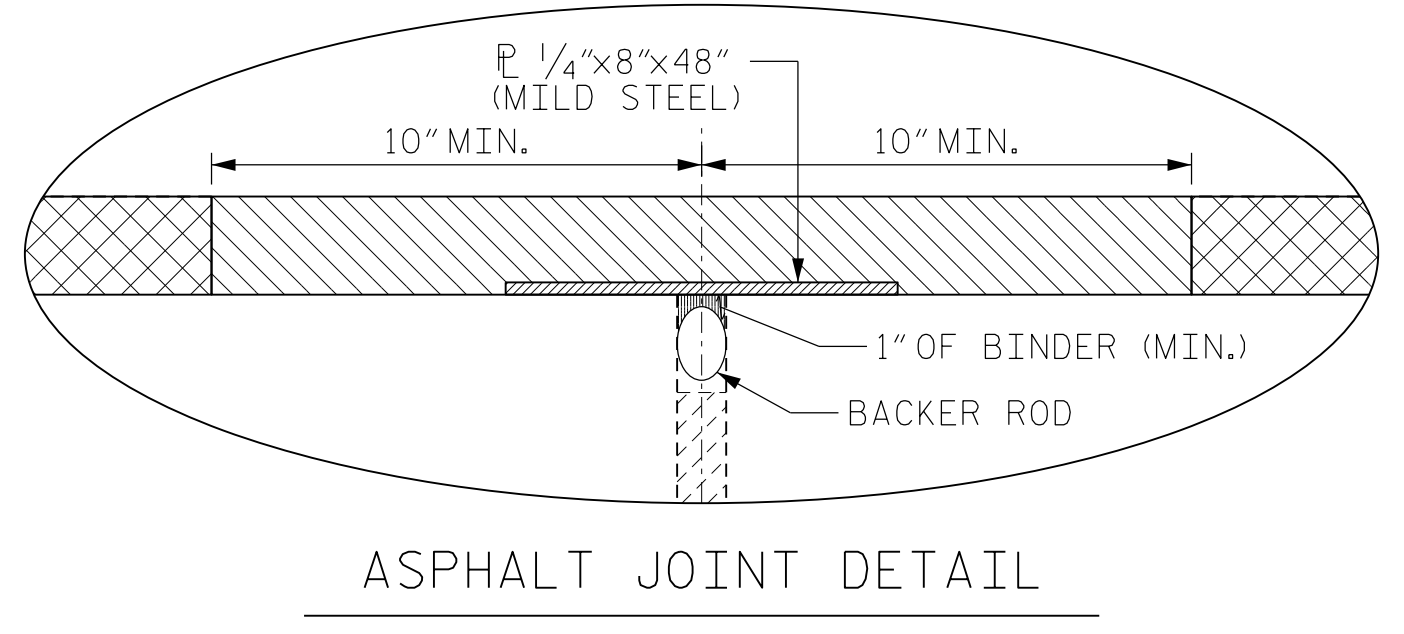
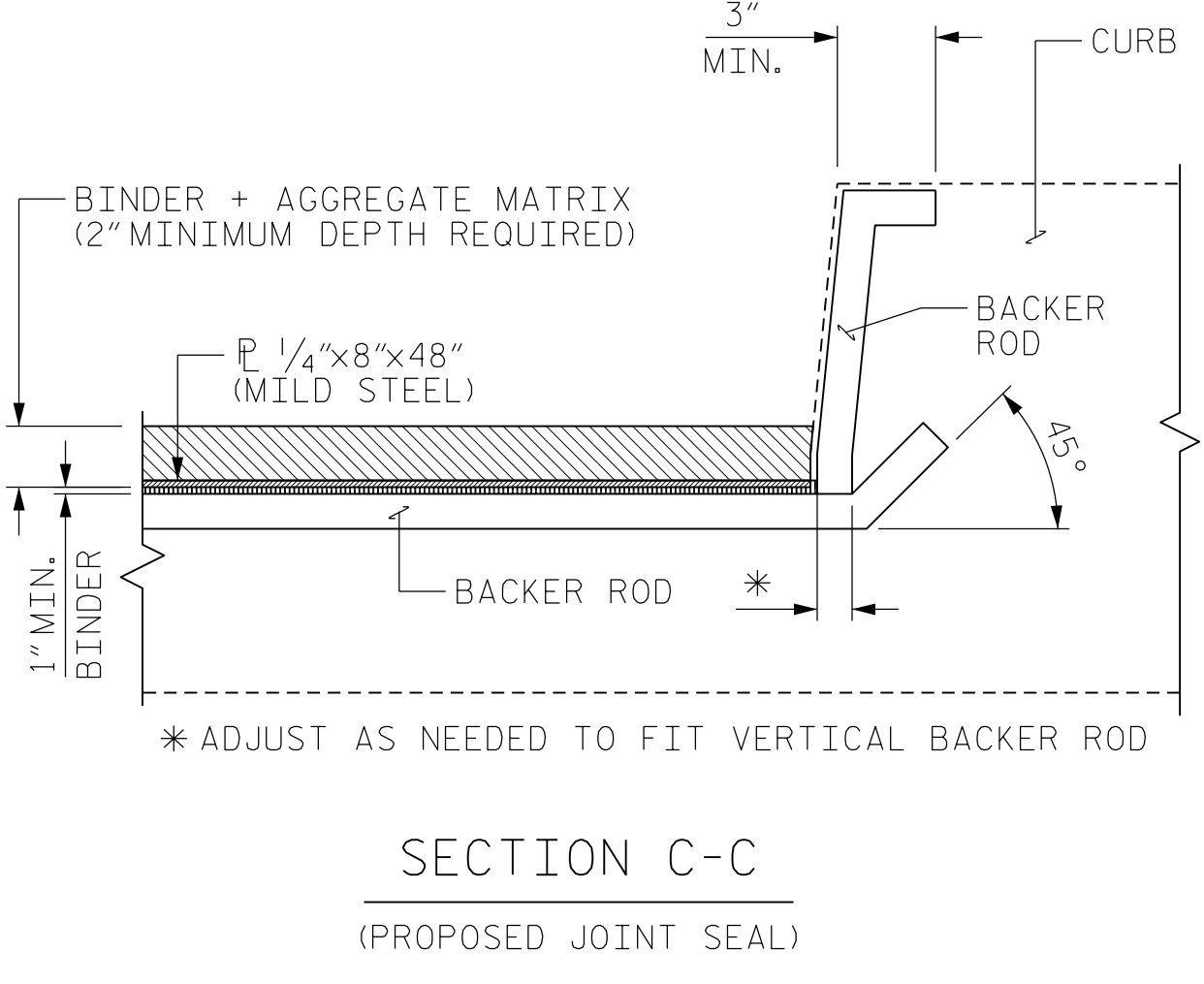
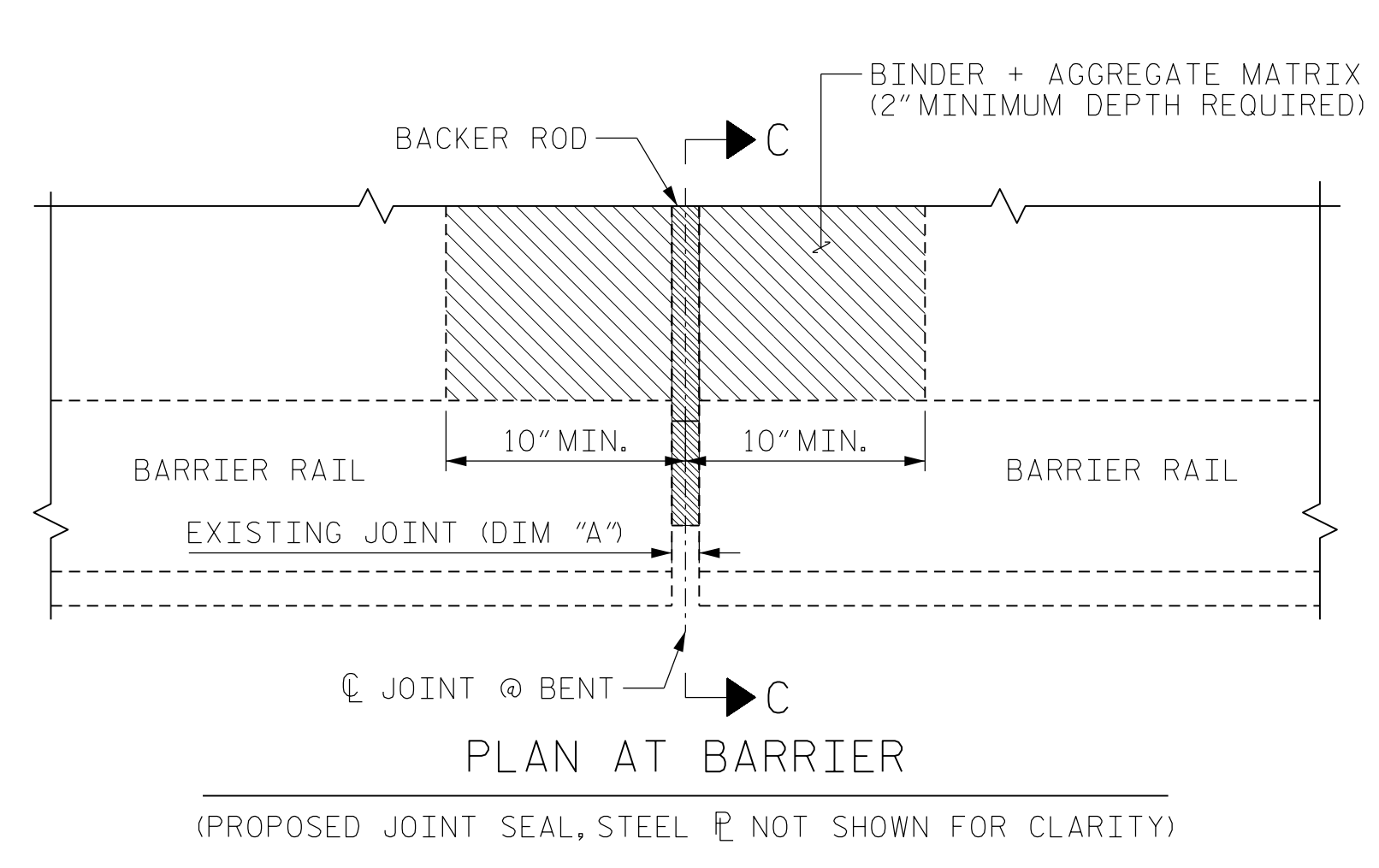
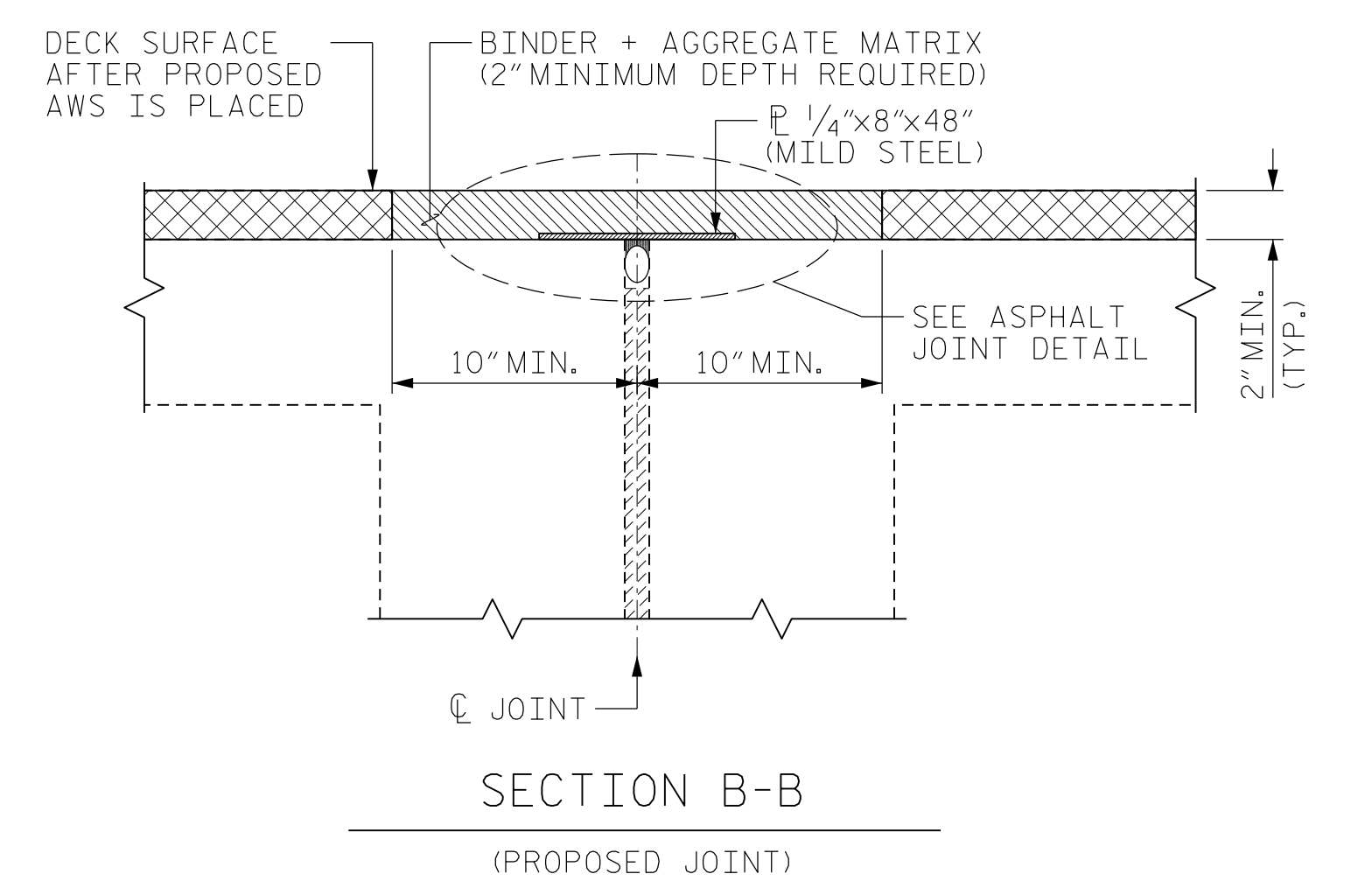
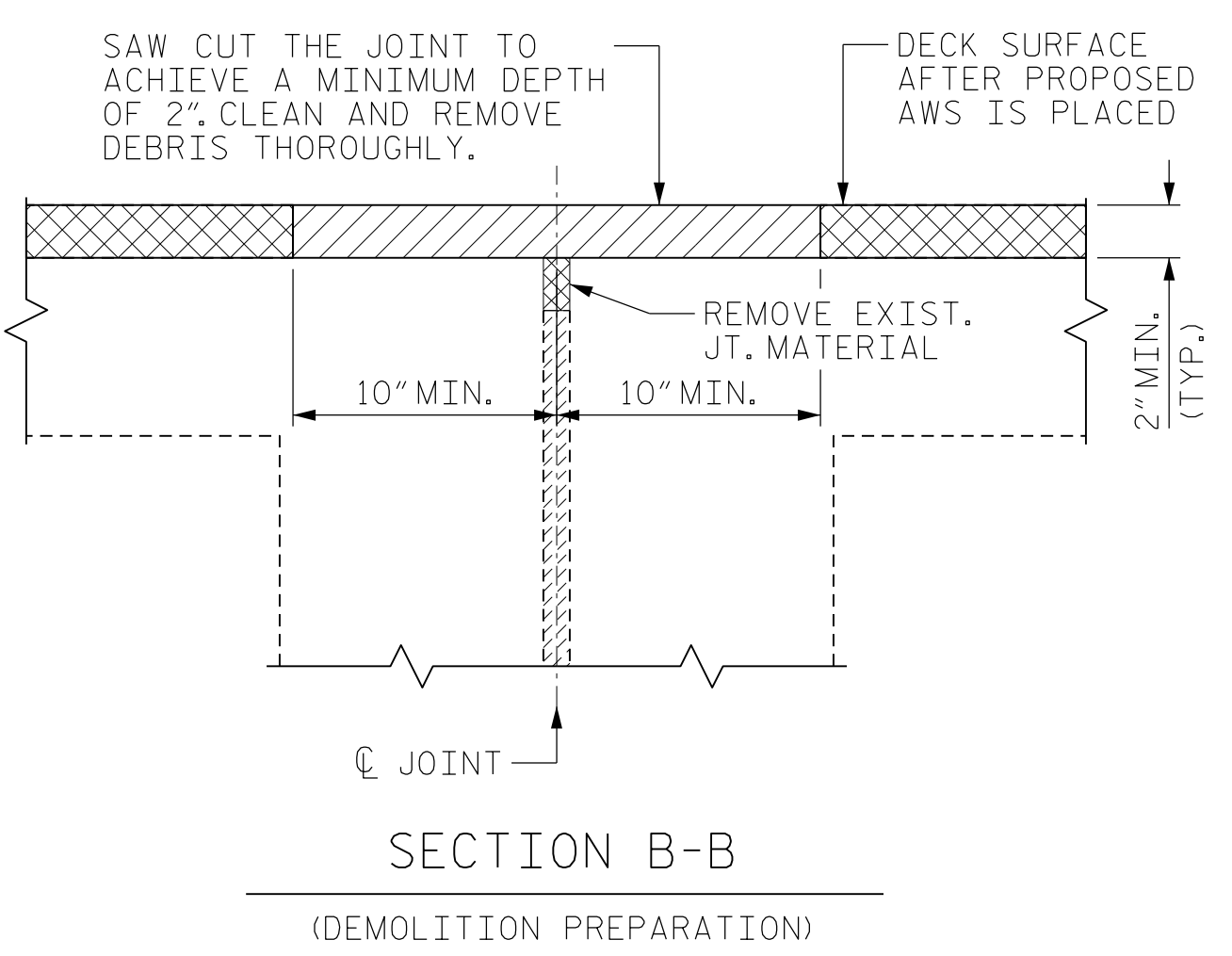
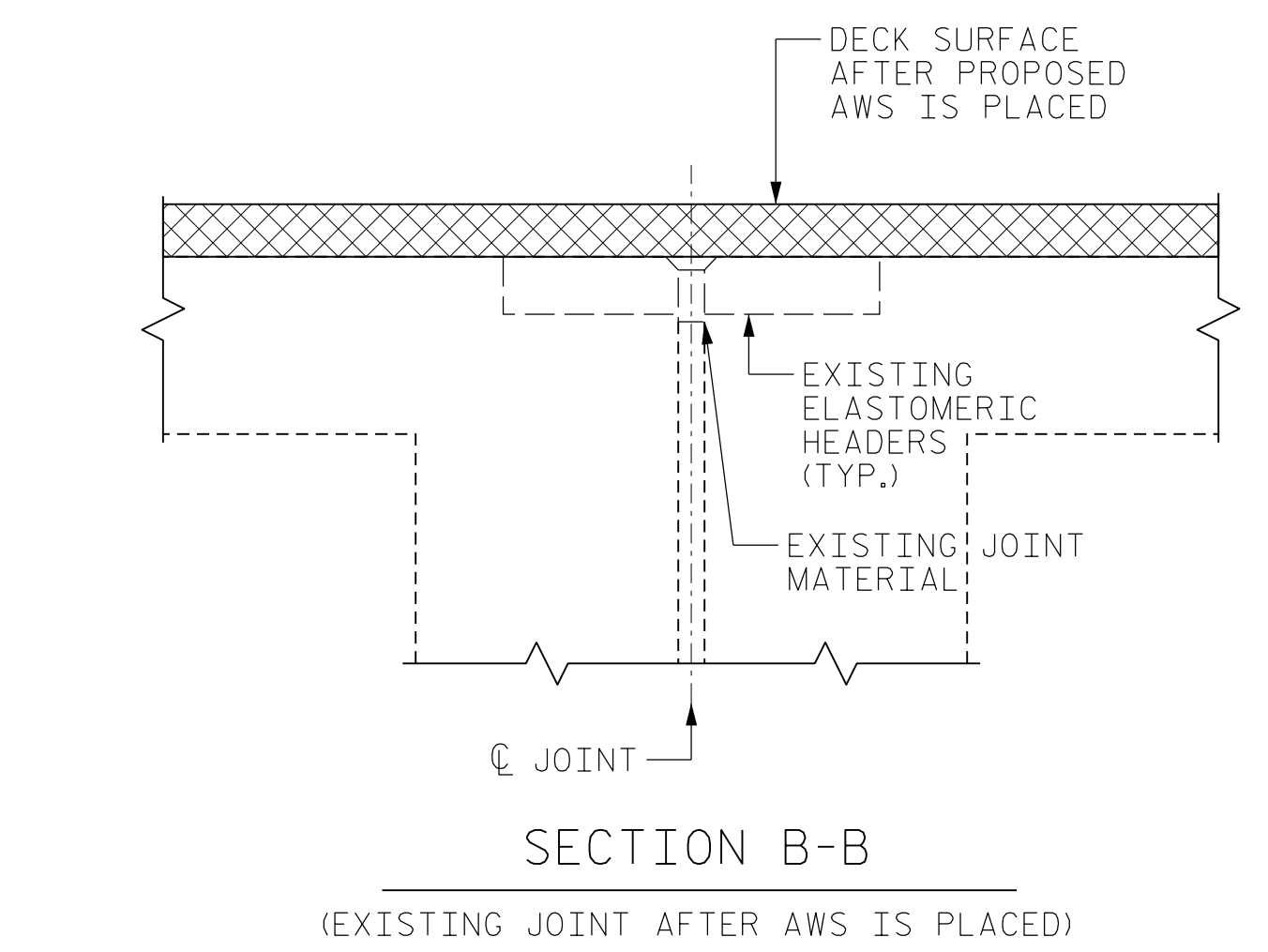
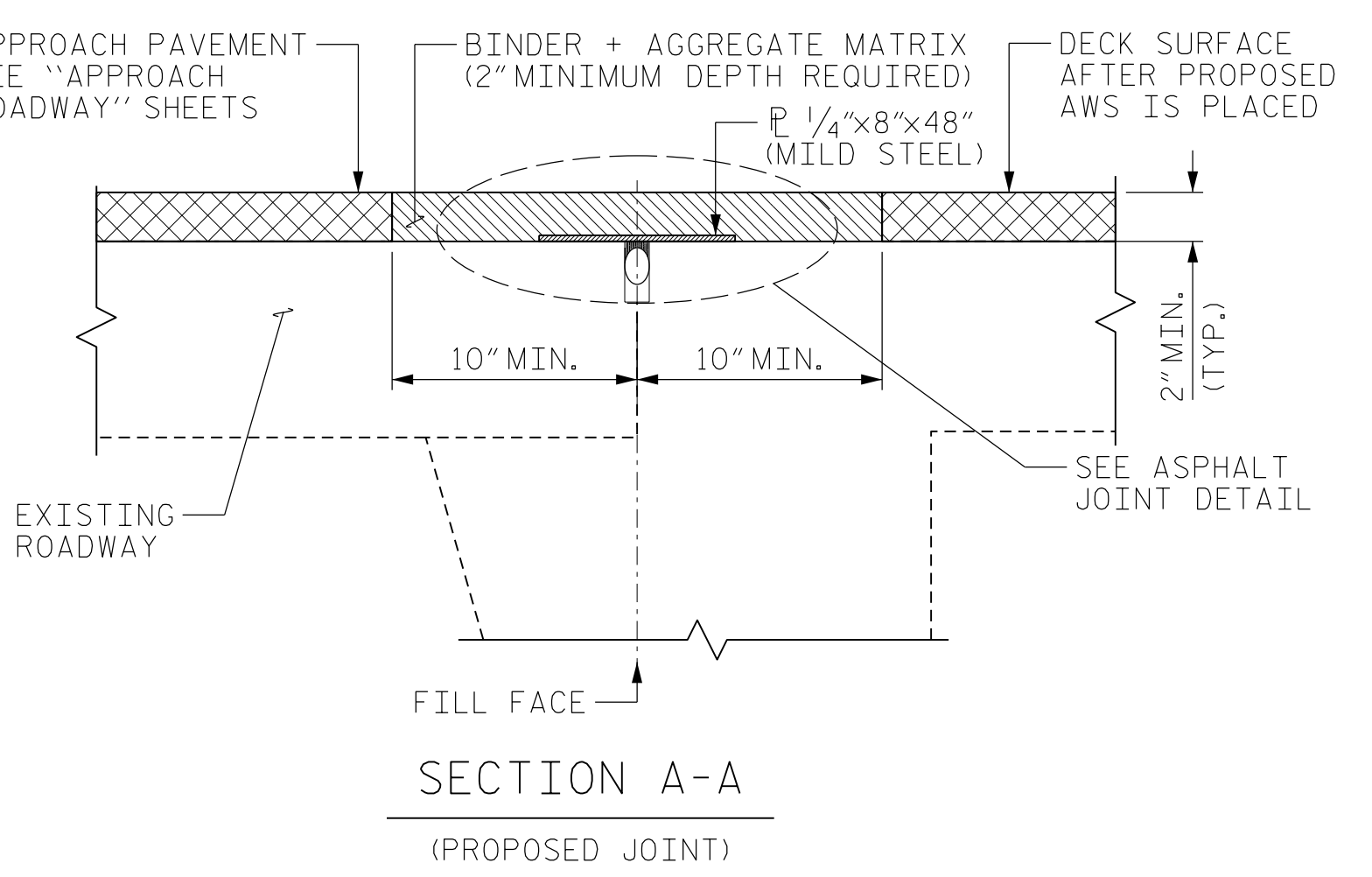
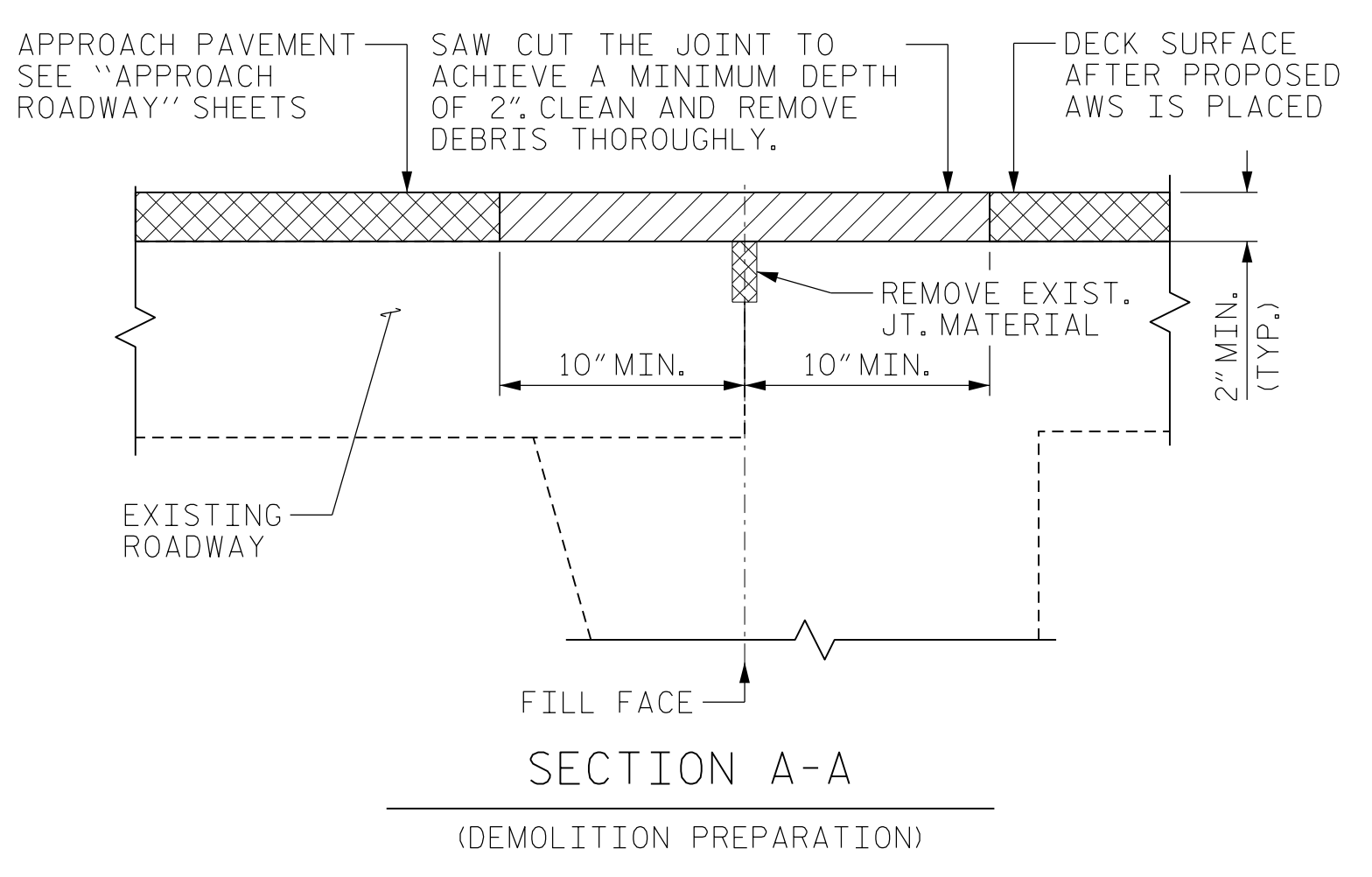
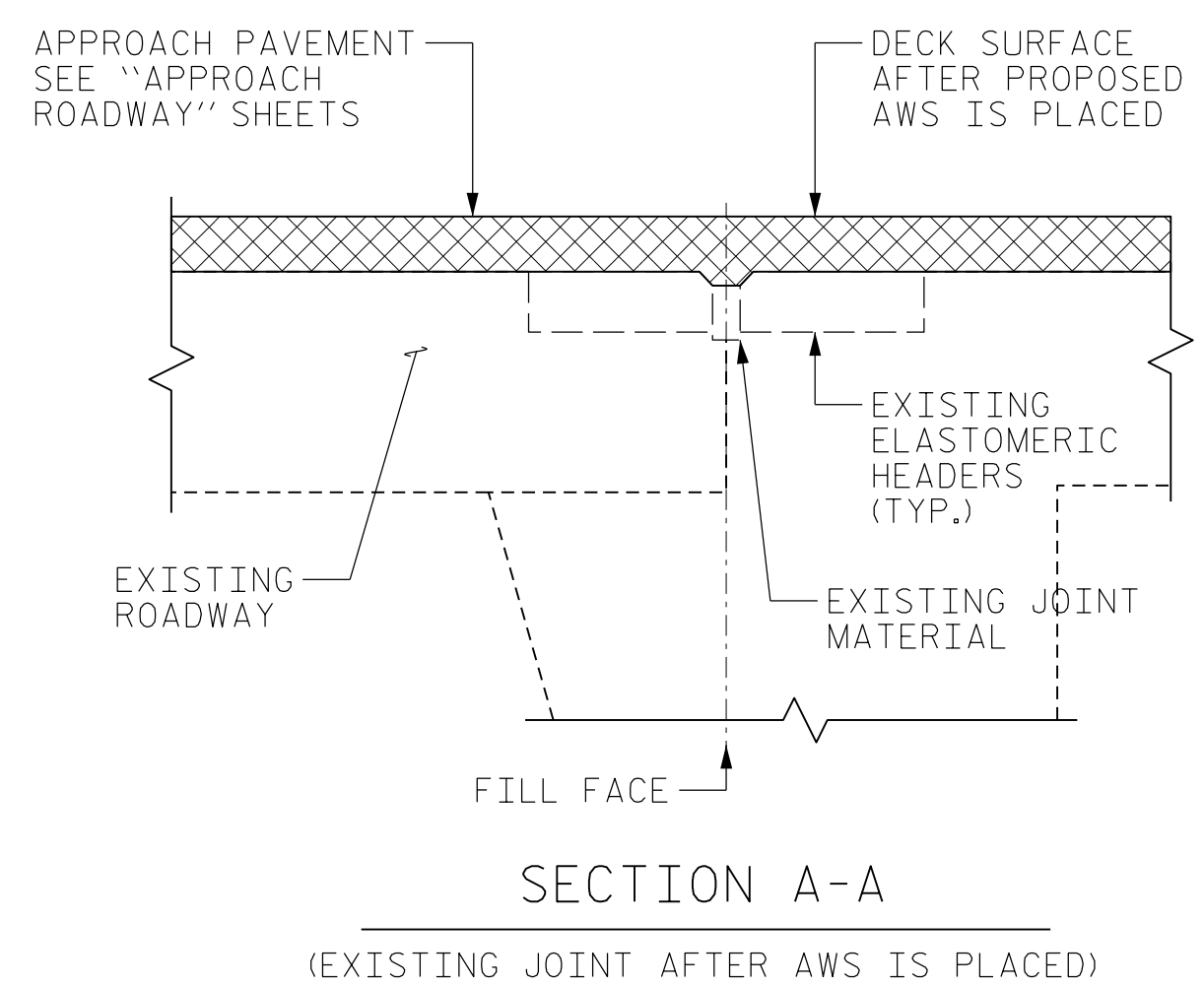
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PLAN OF SPANS
 ASPHALT WEARING SURFACE

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

 ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-4
1			3			TOTAL SHEETS
2			4			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.

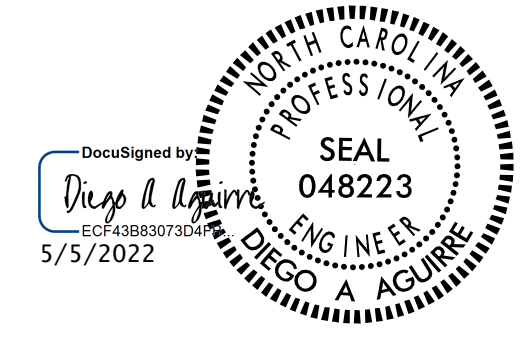
FOR ASPHALT JOINT REPAIR/REPLACEMENT, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

PROPOSED JOINT QUANTITY		
	ESTIMATED (LIN.FT.)	ACTUAL (LIN.FT.)
ASPHALT JOINT REPAIR/REPLACEMENT	169.2	

PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480054

BENT/ JOINTS	DIM "A" @ 60°F
END BENT 1	2 1/2"
1	2 3/4"
2	2 1/2"
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		
2			4		
					S8-5
					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	1498 SY	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	210 TON	
ASPHALT BINDER FOR PLANT MIX	12.6 TON	

NOTES:

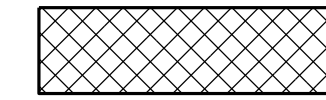
INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVEMENT TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1/2" DEPTH OF NEW ASPHALT PAVEMENT. NEW ASPHALT PAVEMENT SHALL BE OF THICKNESS NECESSARY TO PROVIDE A SMOOTH TRANSITION BETWEEN THE ROADWAY AND THE BRIDGE DECK. THE NEW ASPHALT PAVEMENT THICKNESS MAY EXCEED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

FOR NEW ASPHALT PLACEMENT, SEE STANDARD SPECIFICATIONS.

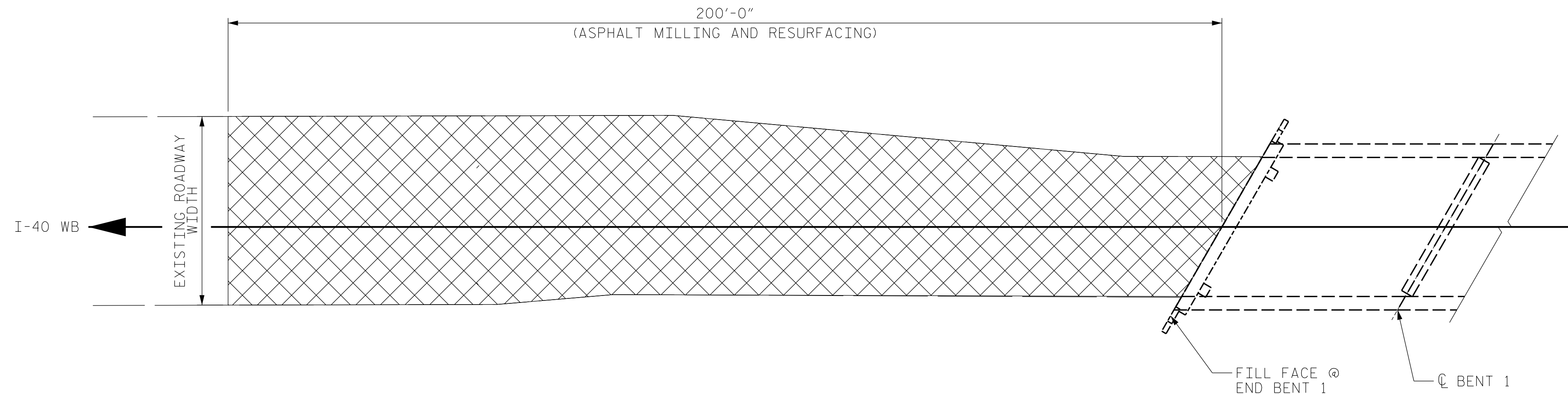
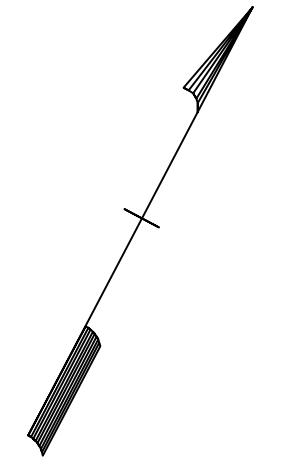
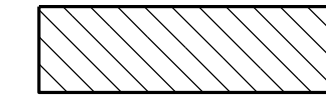
GRADE MAY BE ADJUSTED BY THE ENGINEER TO ENSURE PROPER TIE-IN AT THE END BENTS.

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.

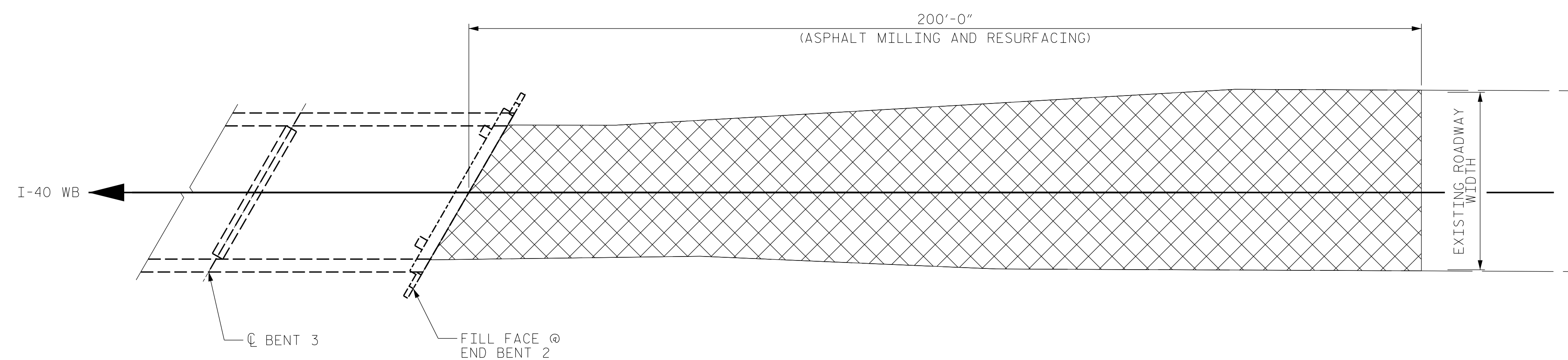
INCIDENTAL MILLING



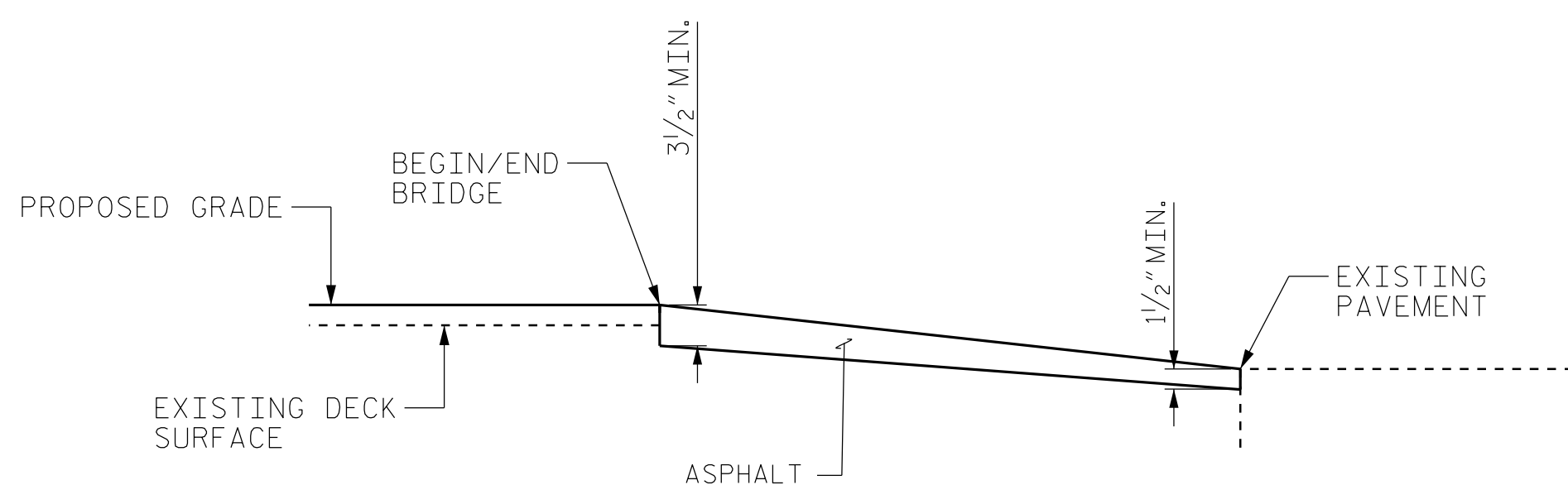
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C (C1)



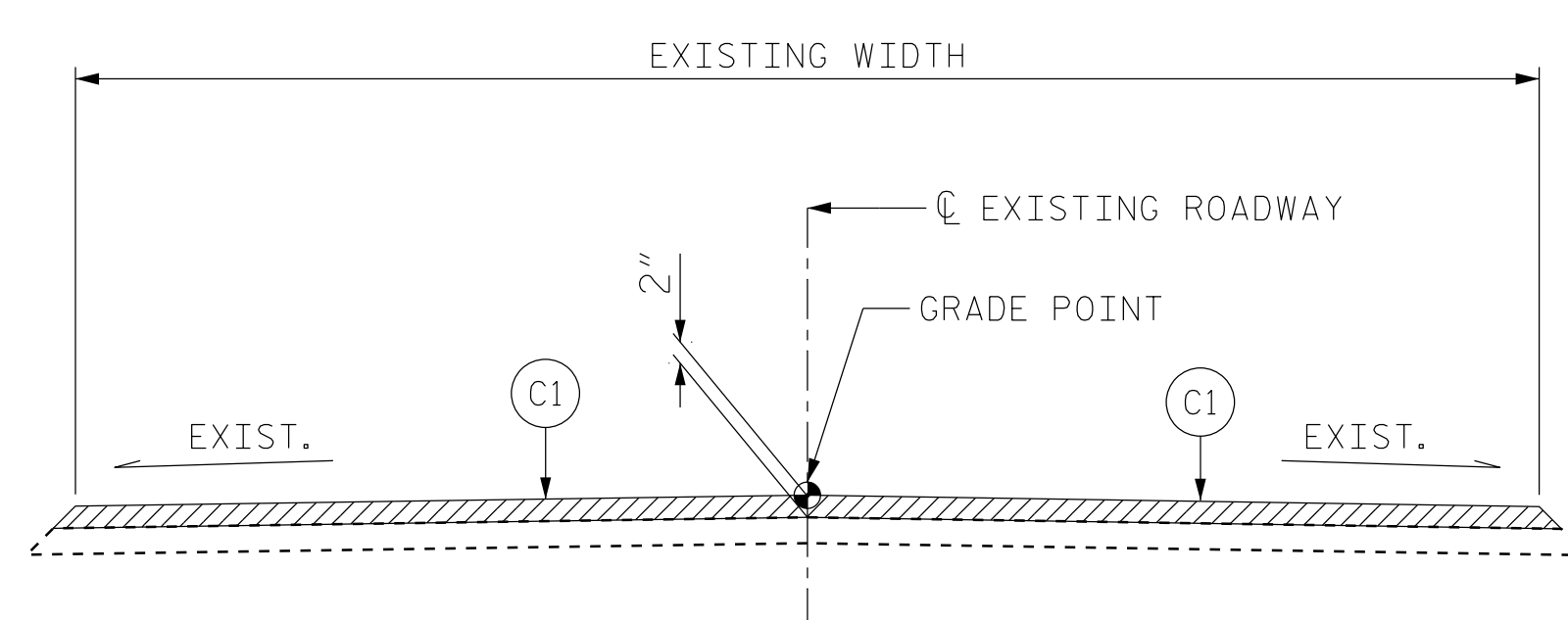
BEGIN APPROACH SLAB



END APPROACH SLAB



PAVEMENT KEY-IN DETAIL FOR BOTH END BENTS



ROADWAY SECTION
BEGIN/END BRIDGE

PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480054



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

4/21/2022
 I5915B_SMU_AR01.480054.dgn
 daguirre

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 FINAL UNLESS ALL
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-6
1			3			TOTAL SHEETS
2			4			12

AS-BUILT REPAIR QUANTITY TABLE

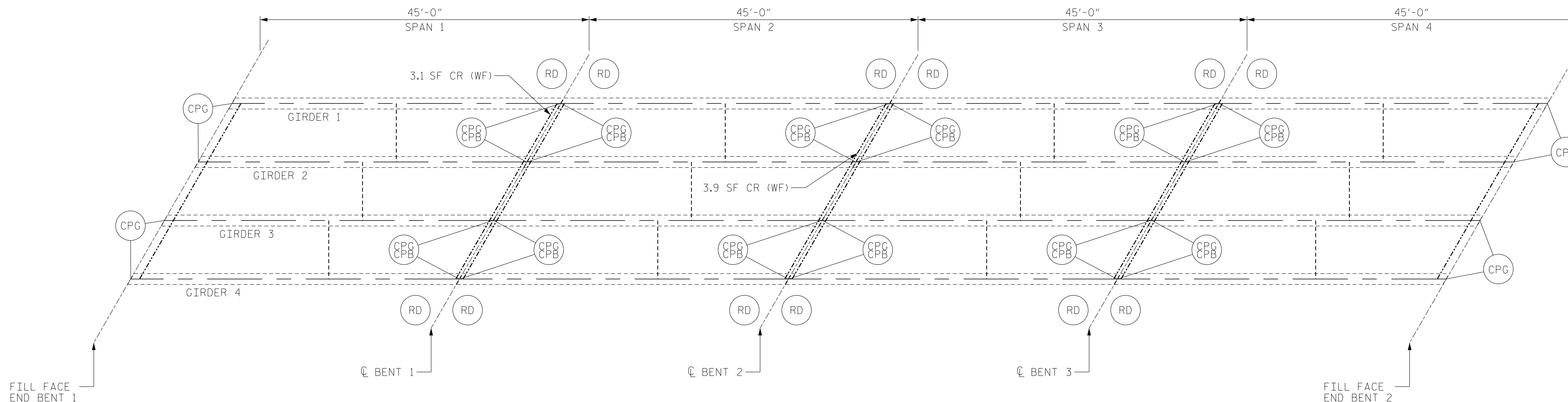
SUPERSTRUCTURE REPAIRS

	SPAN 1		SPAN 2		SPAN 3		SPAN 4	
	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME
CONCRETE REPAIR AREA (CR)	3.1 SF	1.6 CF			3.9 SF	3.3 CF	-- SF	-- CF
CLEANING & PAINTING EXISTING BEARINGS WITH HRSCA	ESTIMATE		ACTUAL		ESTIMATE		ACTUAL	
	4 EA				8 EA		4 EA	

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

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
- 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.

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. 480054



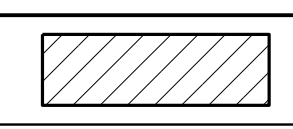
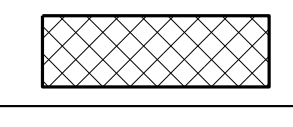

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

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			S8-7
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	9.4	3.2	
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	3.0		
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.

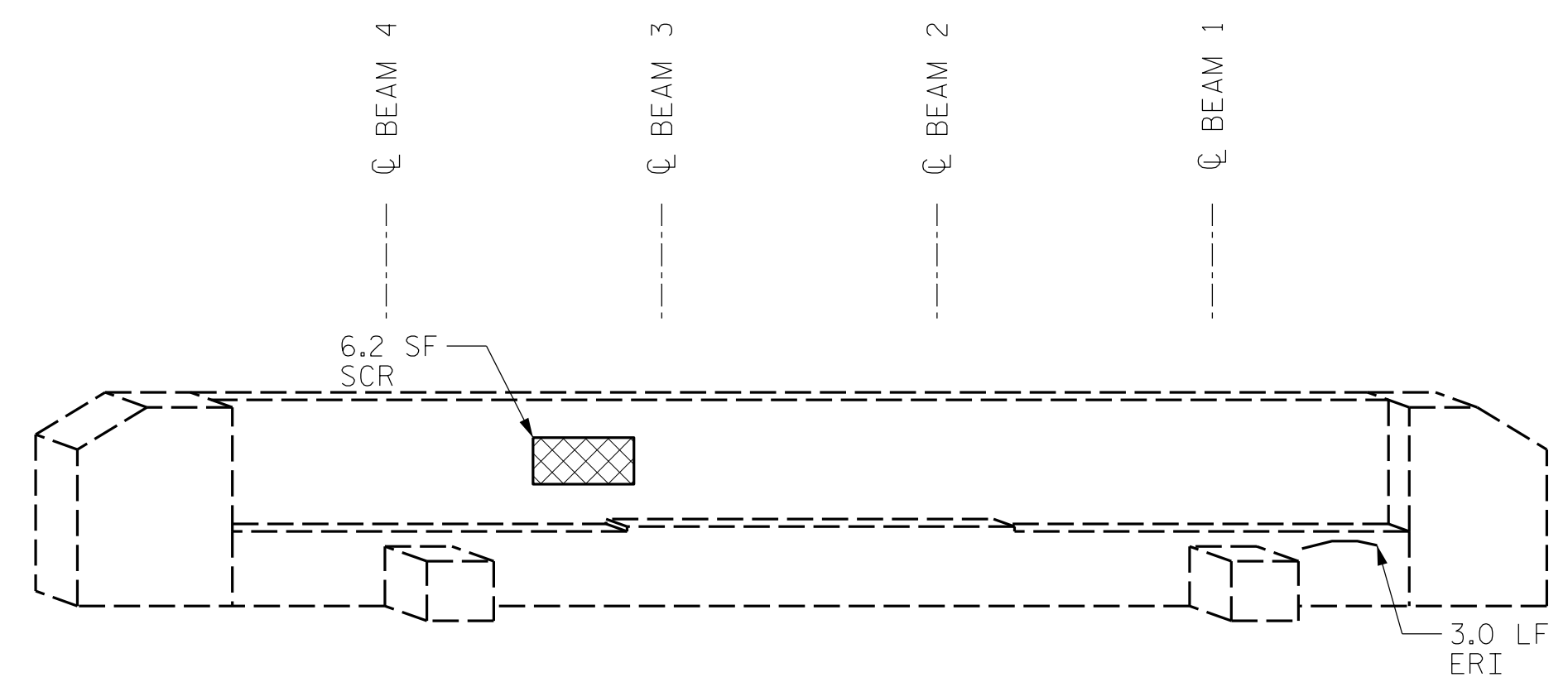
CRACKING LOCATIONS AND QUANTITIES FOR LOCATIONS DESCRIBED AS "SCATTERED THROUGHOUT" IN THE INSPECTION REPORT ARE BASED ON THE BEST INFORMATION AVAILABLE. THE ENGINEER AND CONTRACTOR SHALL IDENTIFY AND REPAIR ALL CRACKS $\geq 1/16"$ AS DESCRIBED IN THE SPECIAL PROVISIONS AT EACH BENT.

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.

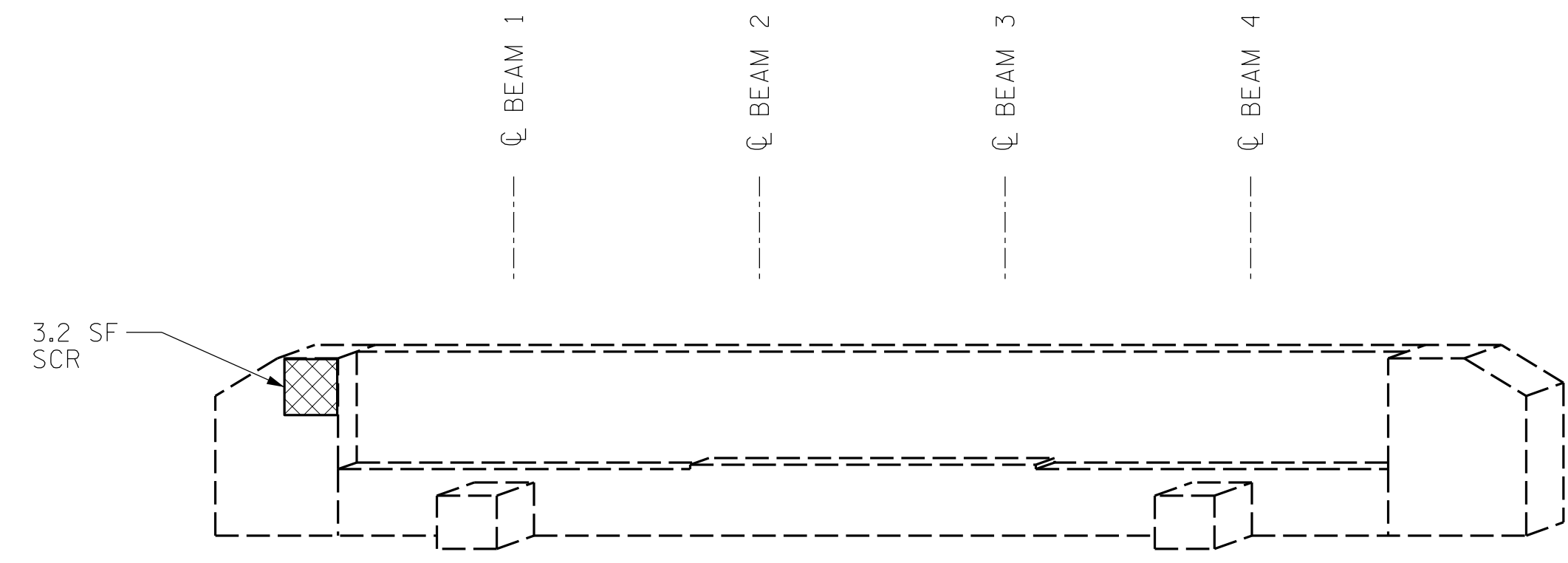
FOR CONCRETE AND SHOTCRETE REPAIRS, SEE "CONCRETE RESTORATION DETAILS" SHEETS.

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.



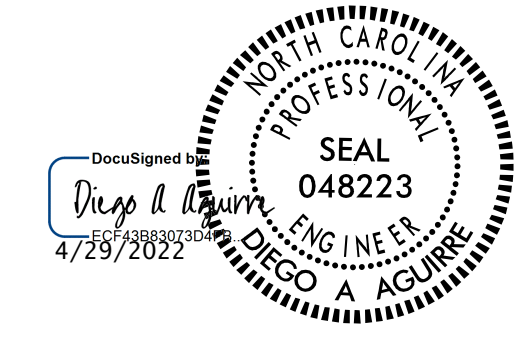
END BENT 1
(EAST FACE)



END BENT 2
(WEST FACE)

PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480054

SHEET 1 OF 4



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

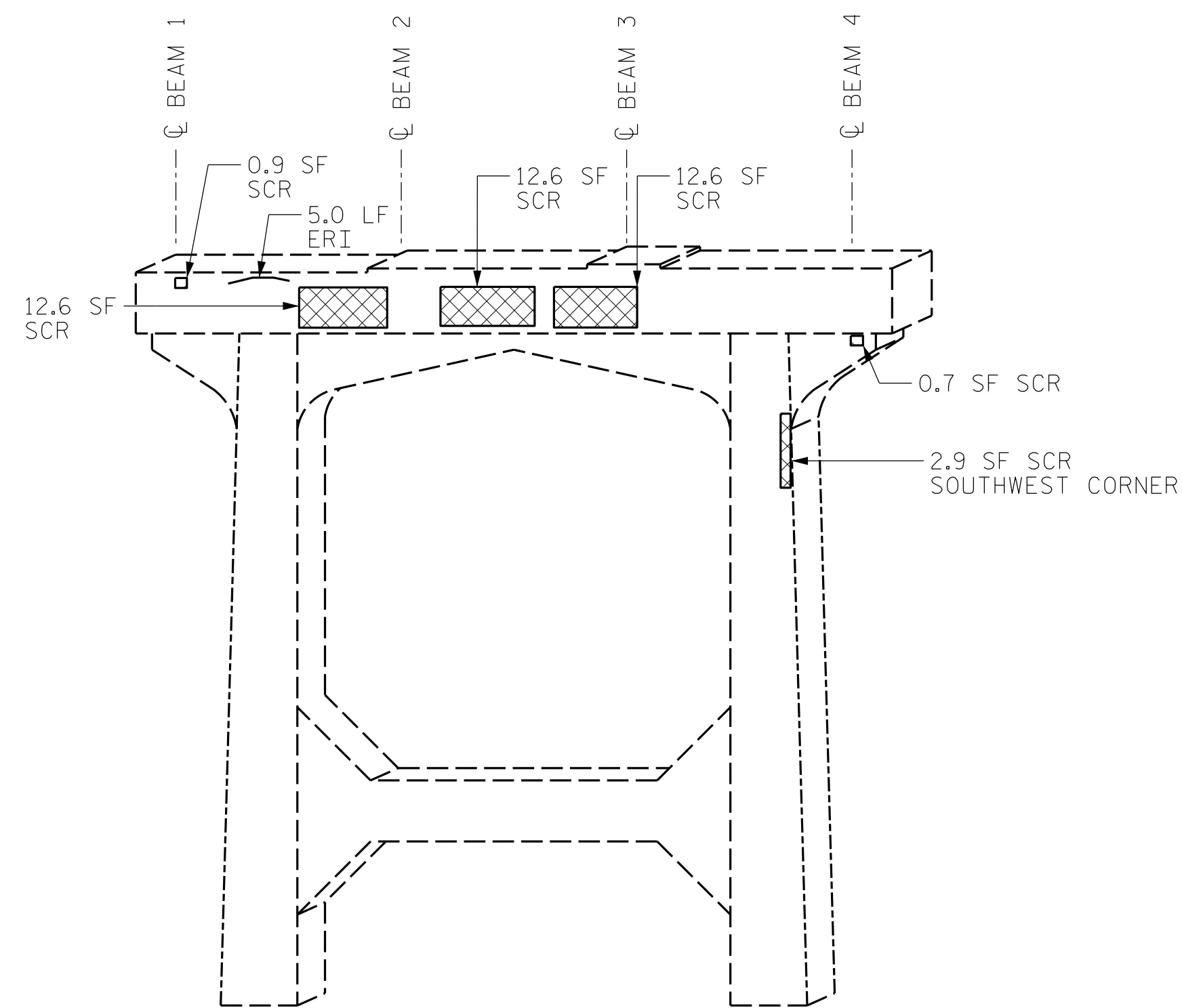
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

4/21/2022
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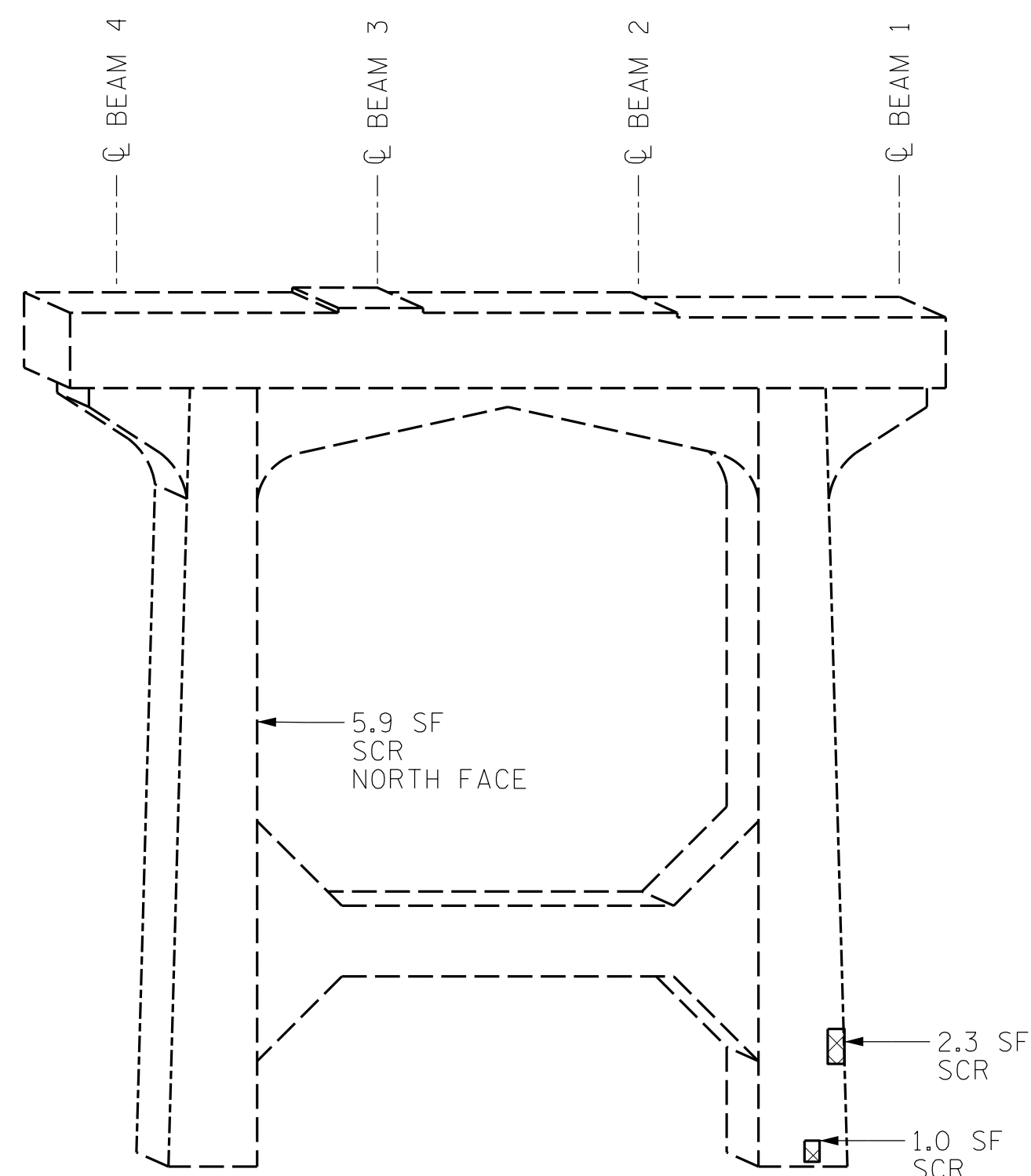
DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED

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:	S8-8
1			3			TOTAL SHEETS
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	39.4	13.2	
COLUMN/PILE	12.1	8.1		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
	CAP	-	-	
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
	CAP/BACKWALL	5.0		
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. 480054

SHEET 2 OF 4



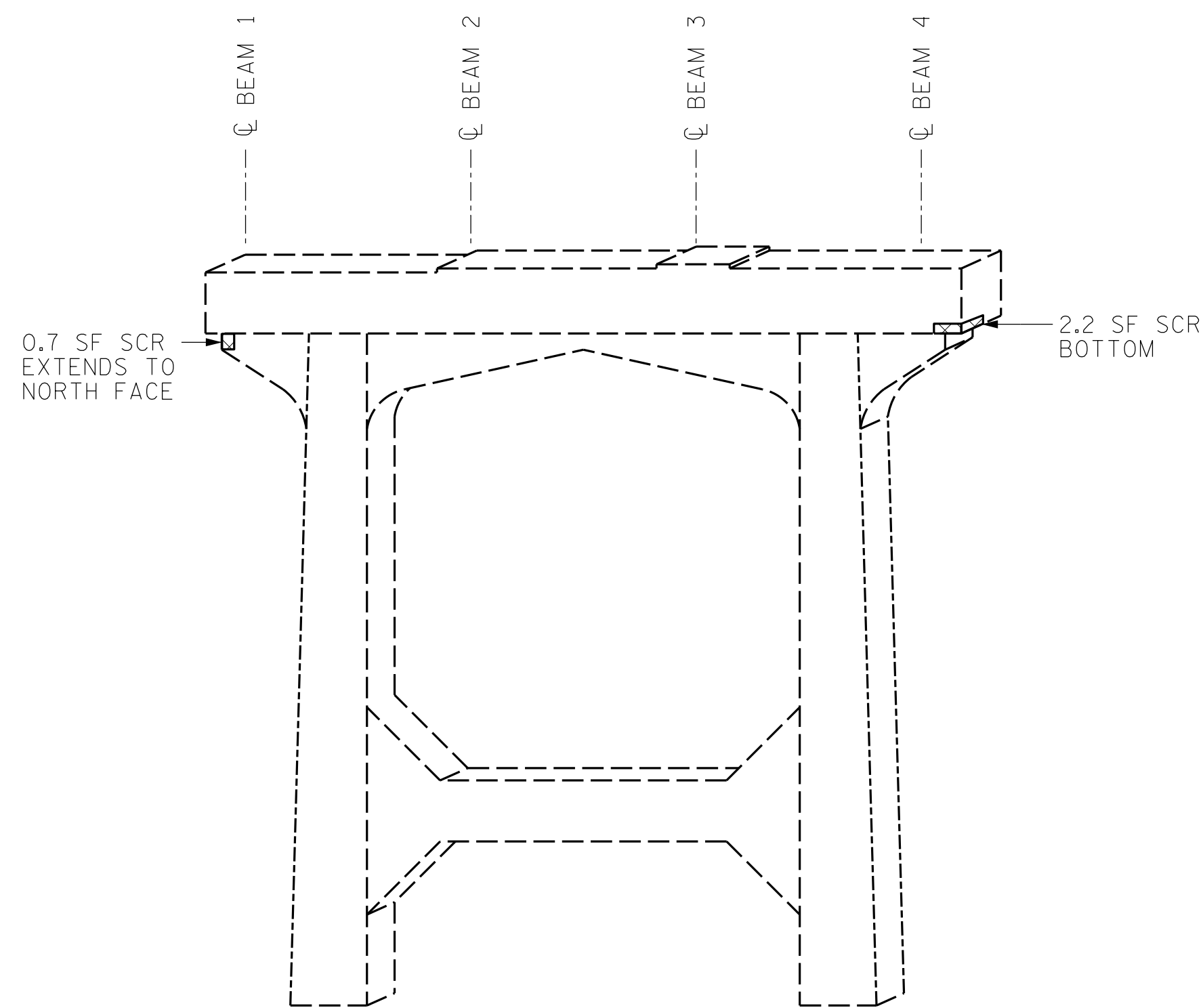
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 1



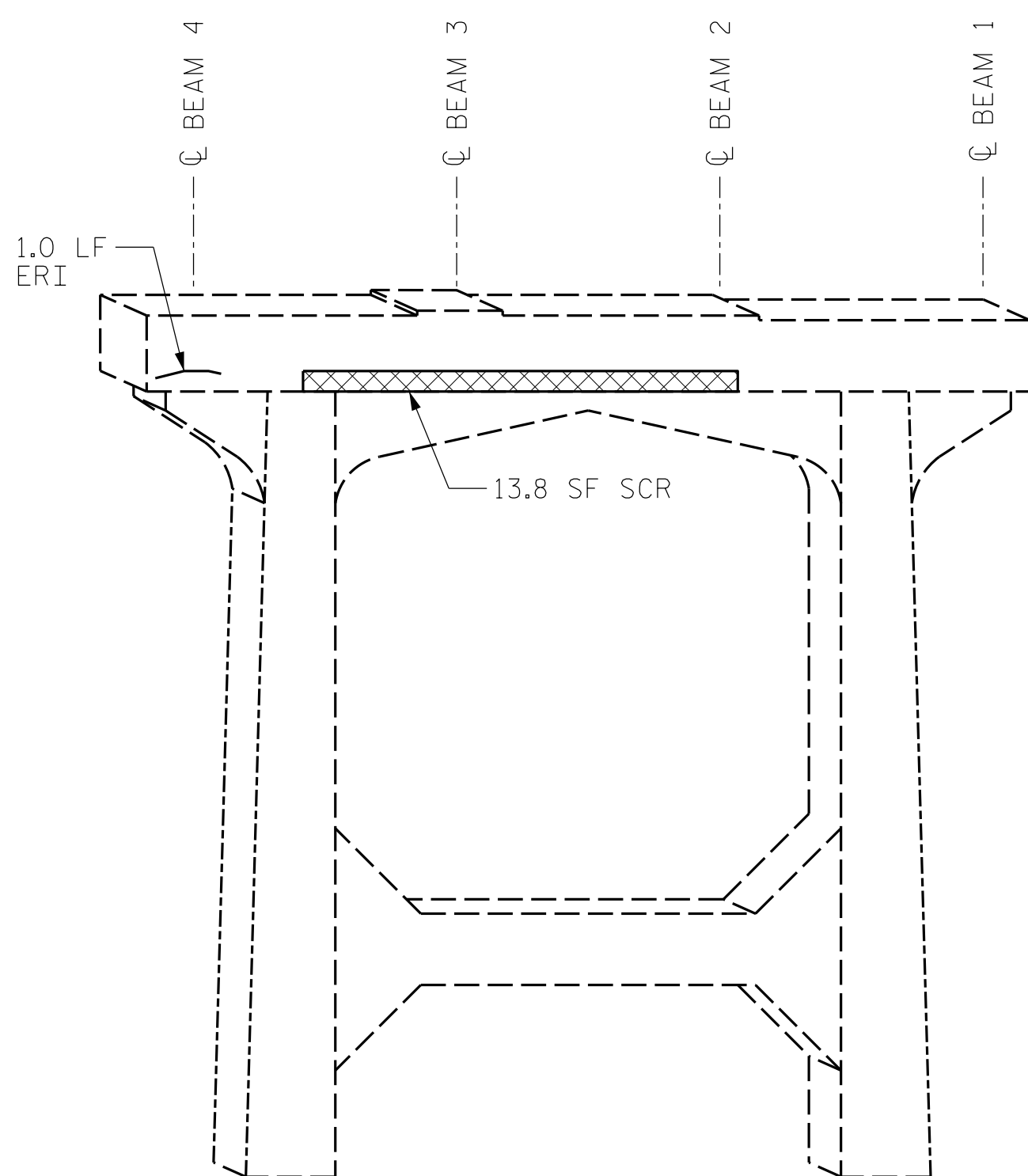
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-9
1			3			TOTAL SHEETS
2			4			12



BENT 2
(WEST FACE)



BENT 2
(EAST FACE)

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

	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP/BACKWALL	16.7	5.7		
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	1.0			
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. 480054

SHEET 3 OF 4



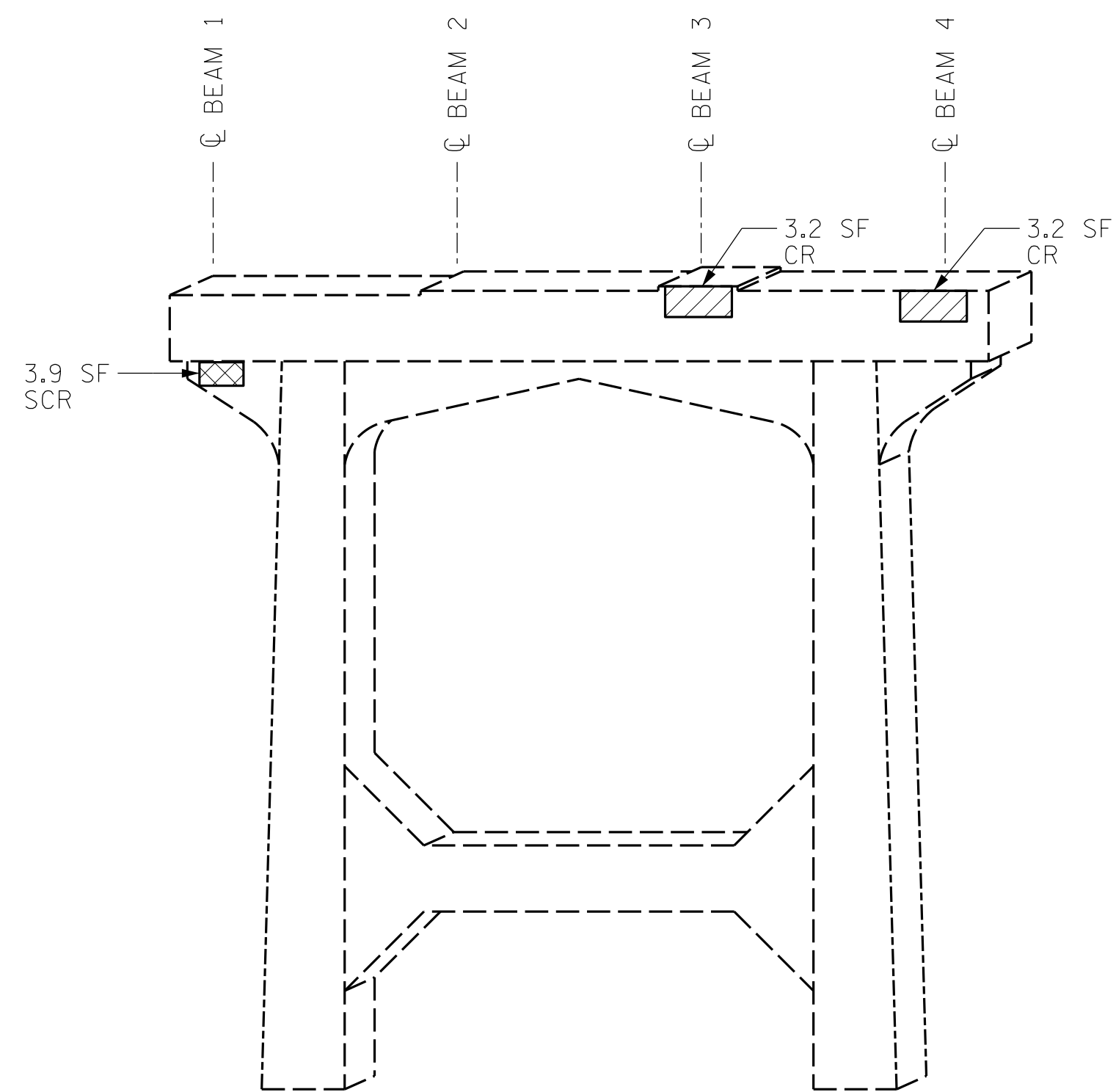
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 2



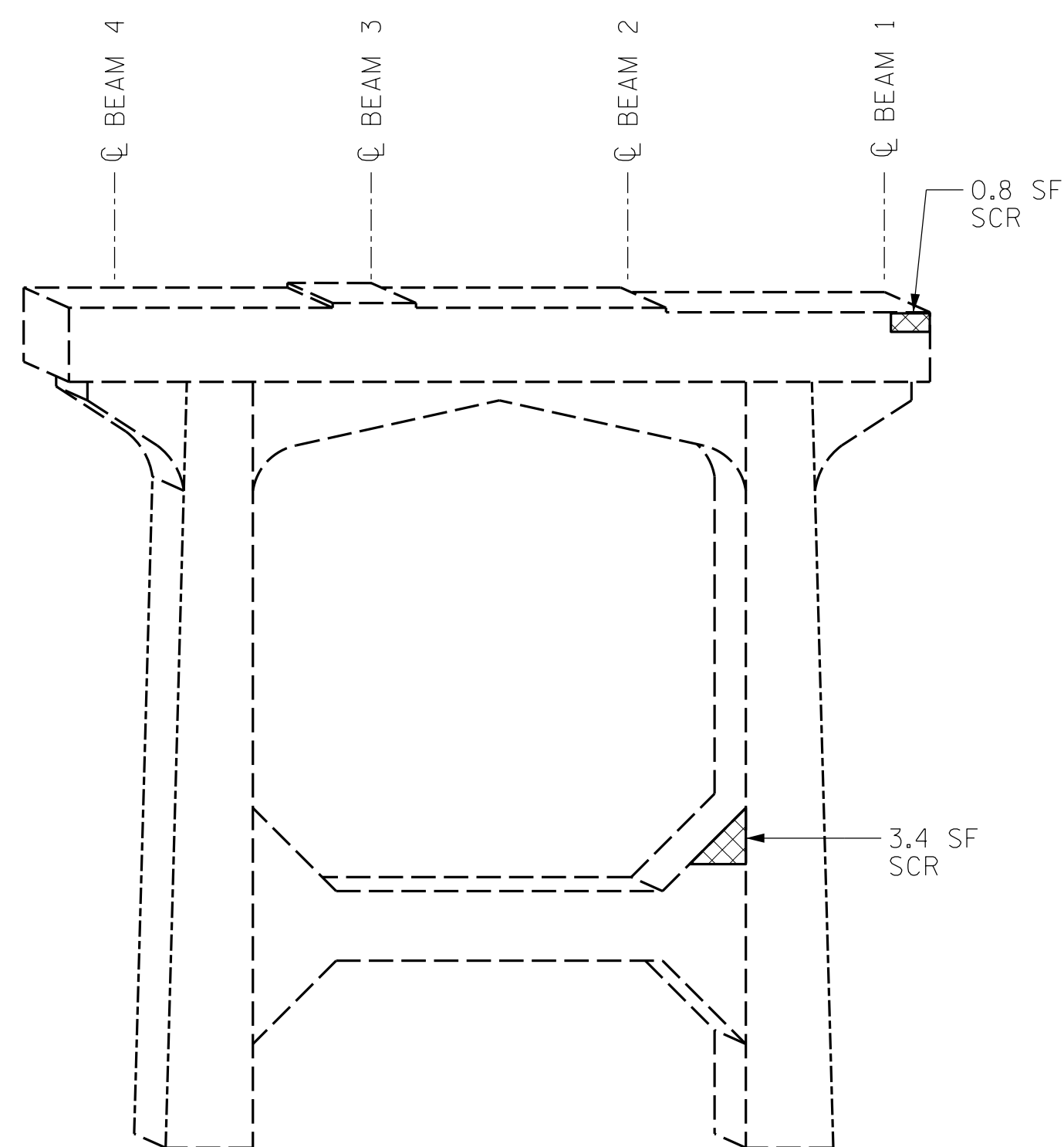
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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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	8.1	2.8		
COLUMN/PILE	-	-		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	6.4	2.2		
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. 480054

SHEET 4 OF 4



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



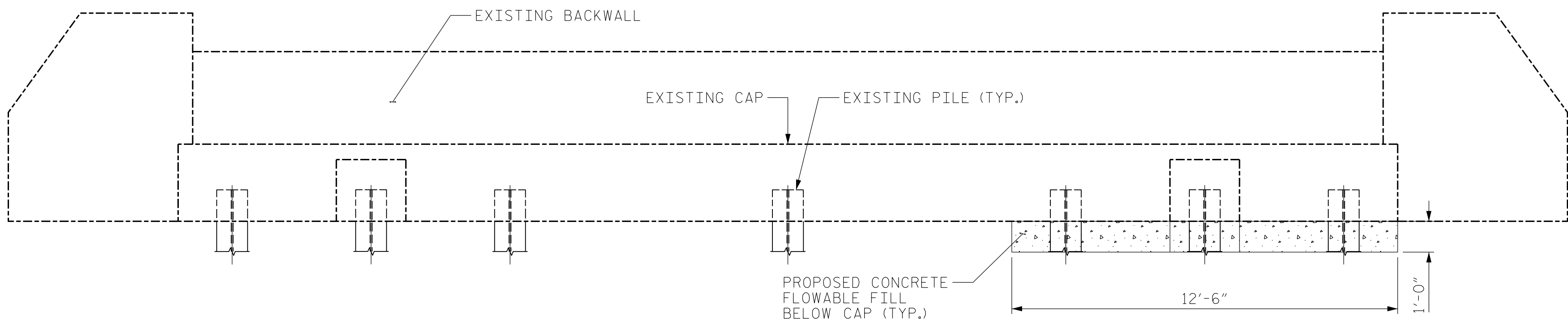
DRAWN BY : ALLEN J. MCSWAIN DATE : 01/2022
 CHECKED BY : FIDEL L. FLORES DATE : 01/2022
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

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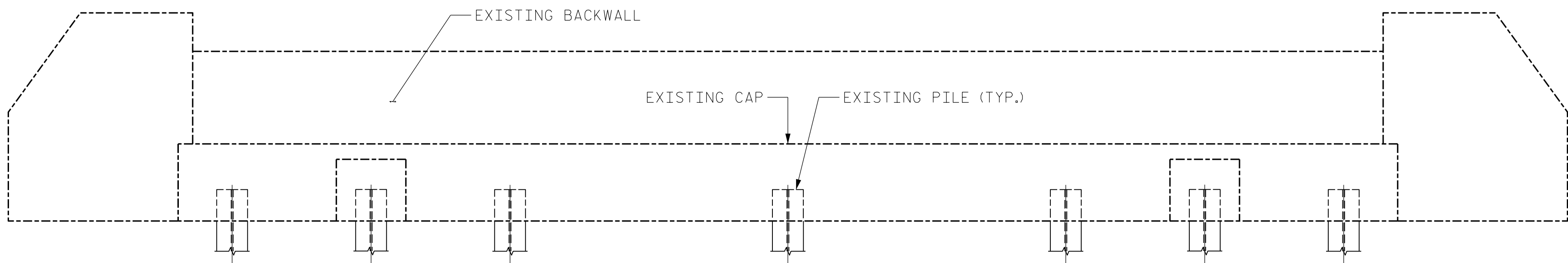
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-11
1			3			TOTAL SHEETS
2			4			12

AS-BUILT REPAIR QUANTITY TABLE

	END BENT 1		END BENT 2	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
UNCLASSIFIED STRUCTURE EXCAVATION	1.1 CY		0.0 CY	
FLOWABLE FILL	1.1 CY		0.0 CY	
BORROW EXCAVATION	2.4 CY		0.0 CY	



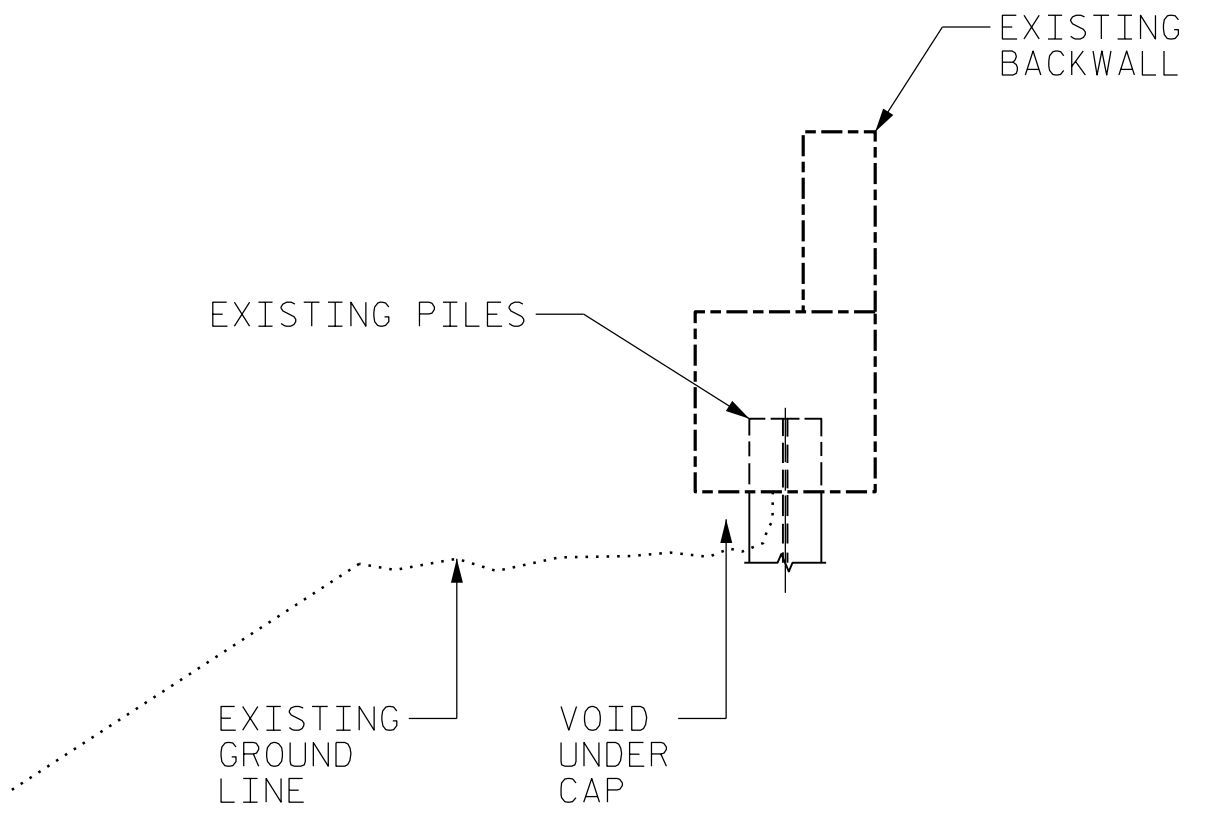
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ELEVATION



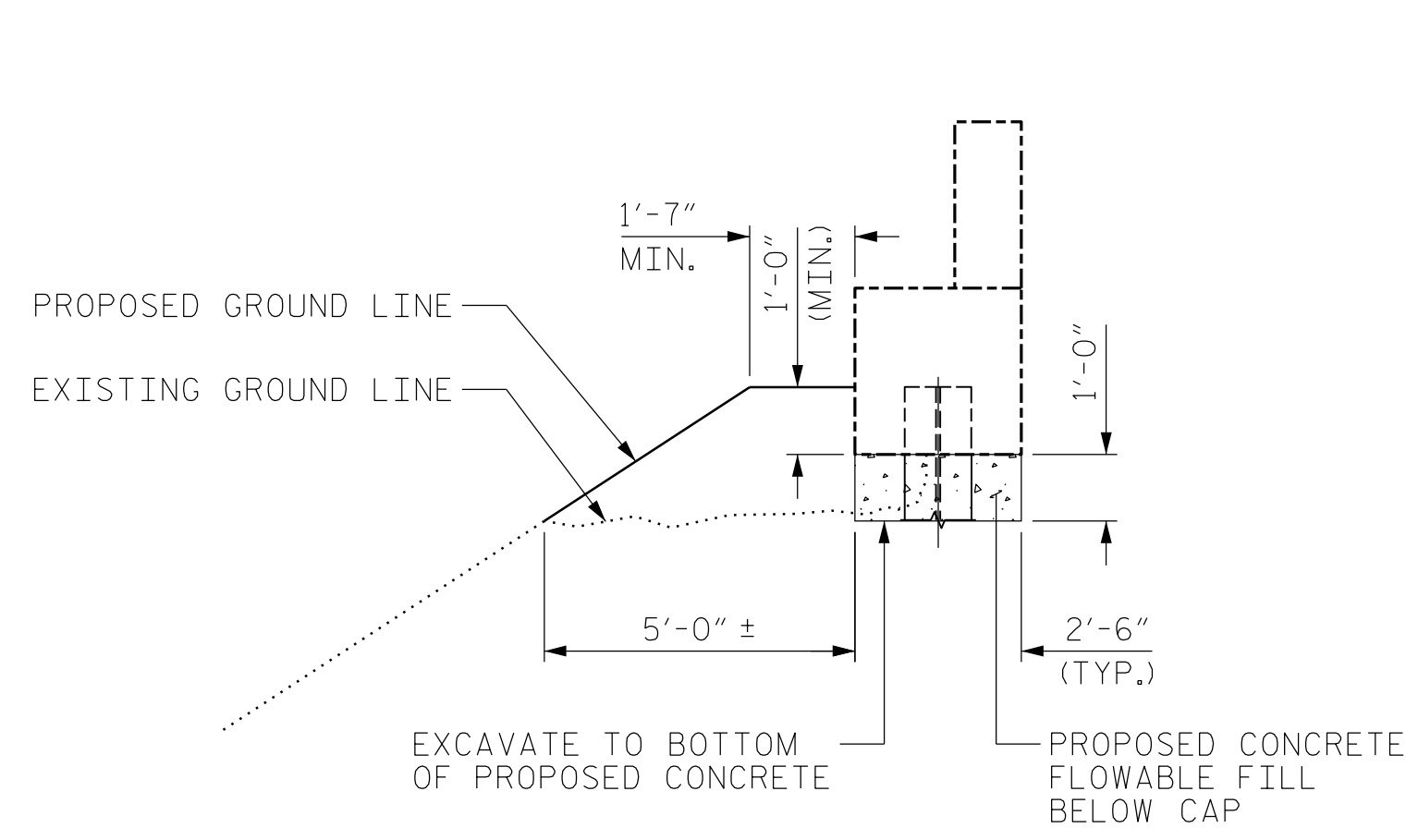
END BENT 2
ELEVATION

NOTES:

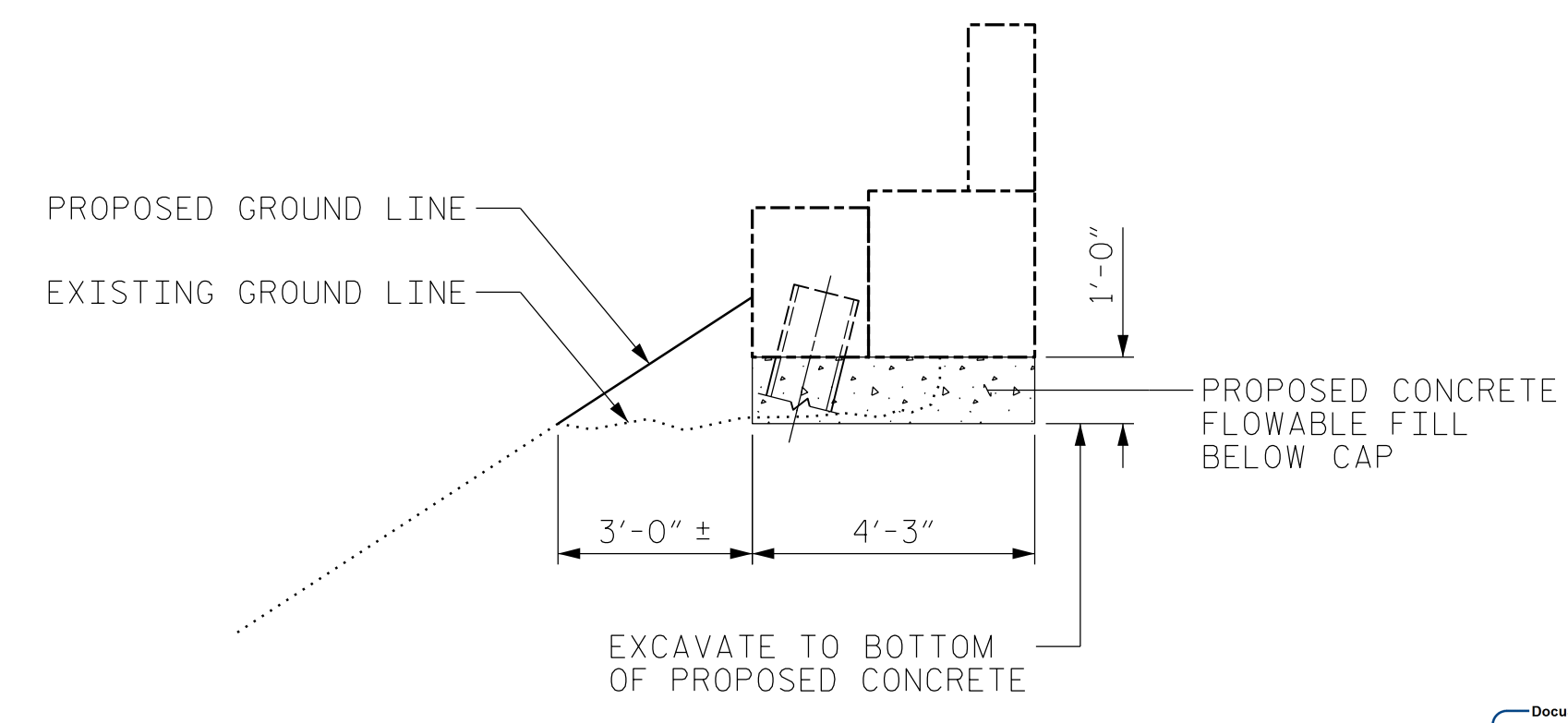
- EXCAVATE BELOW THE EXISTING CAP AS SHOWN IN THIS SHEET. EXCAVATION BELOW THE CAP IS TO BE PAID FOR AS "UNCLASSIFIED STRUCTURE EXCAVATION".
- PLACE CONCRETE FLOWABLE FILL UNDER THE CAP AS SHOWN IN THIS SHEET, FULLY ENGAGING ADJACENT PILES.
- REPLACE REMOVED SOIL AND REGRADE SLOPE USING MATERIAL FROM 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.



EXISTING
CAP SECTION

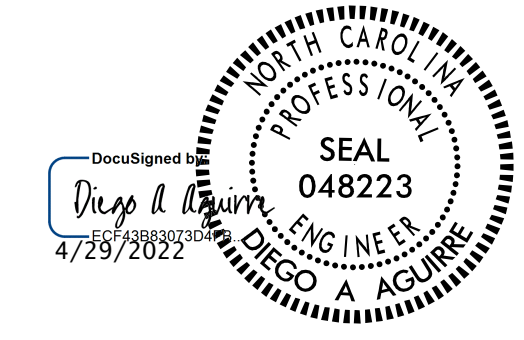


PROPOSED
CAP SECTION



PROPOSED
CAP SECTION AT BRACE PILES

PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480054



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

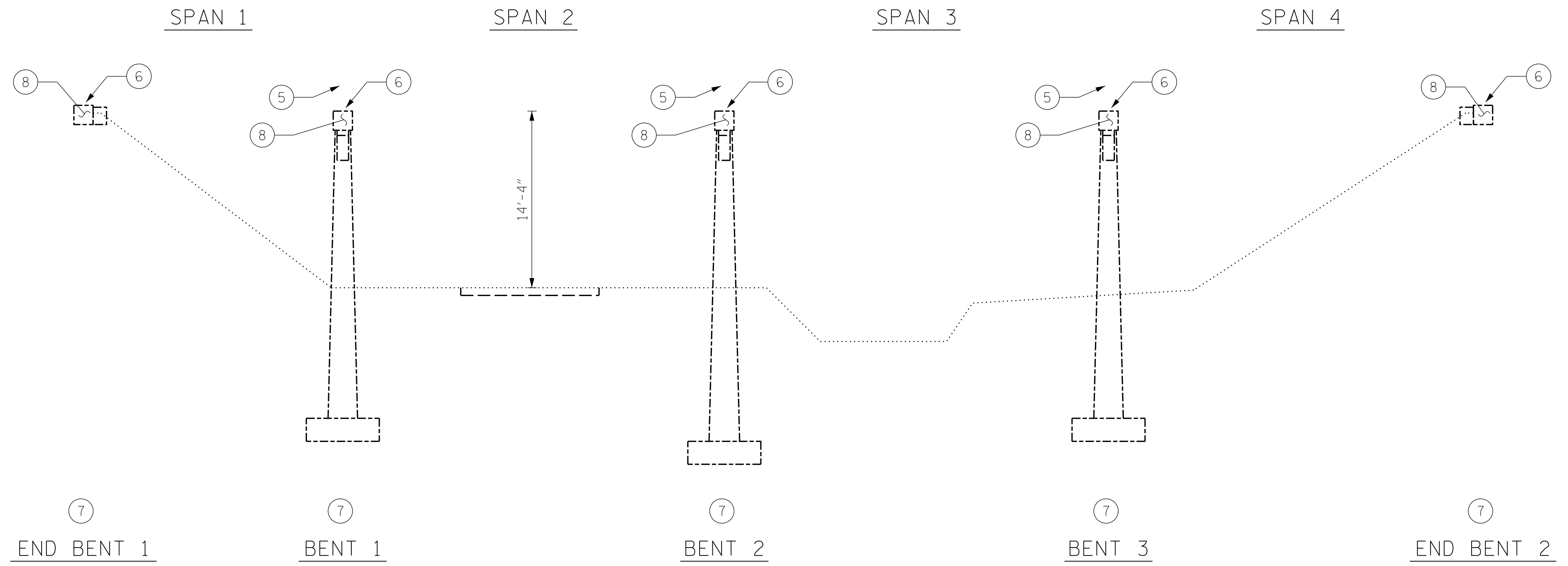
DRAWN BY : DIEGO A. AGUIRRE DATE : 01/2022
 CHECKED BY : JACOB H. DUKE DATE : 01/2022
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

4/21/2022
 I5915B.SMU.SP01.480054.dgn
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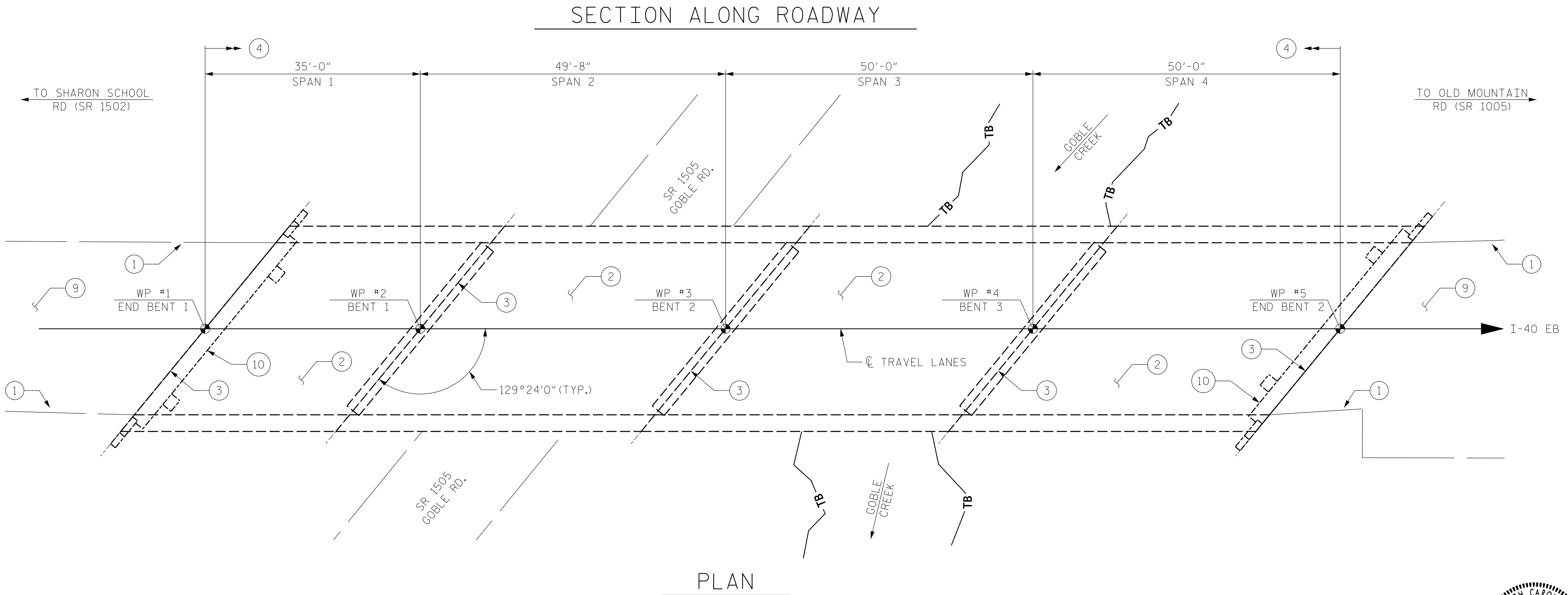
DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S8-12
2			4			TOTAL SHEETS 12



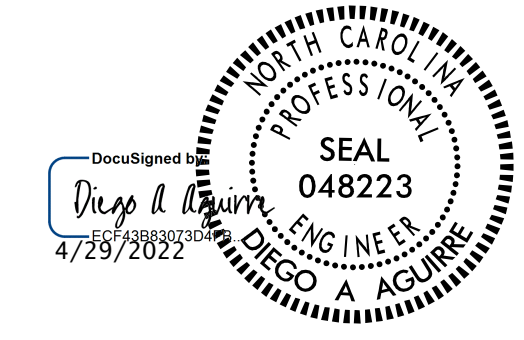
- SCOPE LEGEND:**
- ① CLEAR SHOULDERS OF DEBRIS AND VEGETATION
 - ② CONCRETE DECK REPAIRS
 - ③ ASPHALT JOINT REPAIR/REPLACEMENT
 - ④ ADD ASPHALT WEARING SURFACE
 - ⑤ SUPERSTRUCTURE CONCRETE REPAIRS
 - ⑥ PAINT EXISTING STEEL GIRDER ENDS AND BEARINGS
 - ⑦ SUBSTRUCTURE CONCRETE REPAIRS
 - ⑧ SUBSTRUCTURE 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. 480065



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

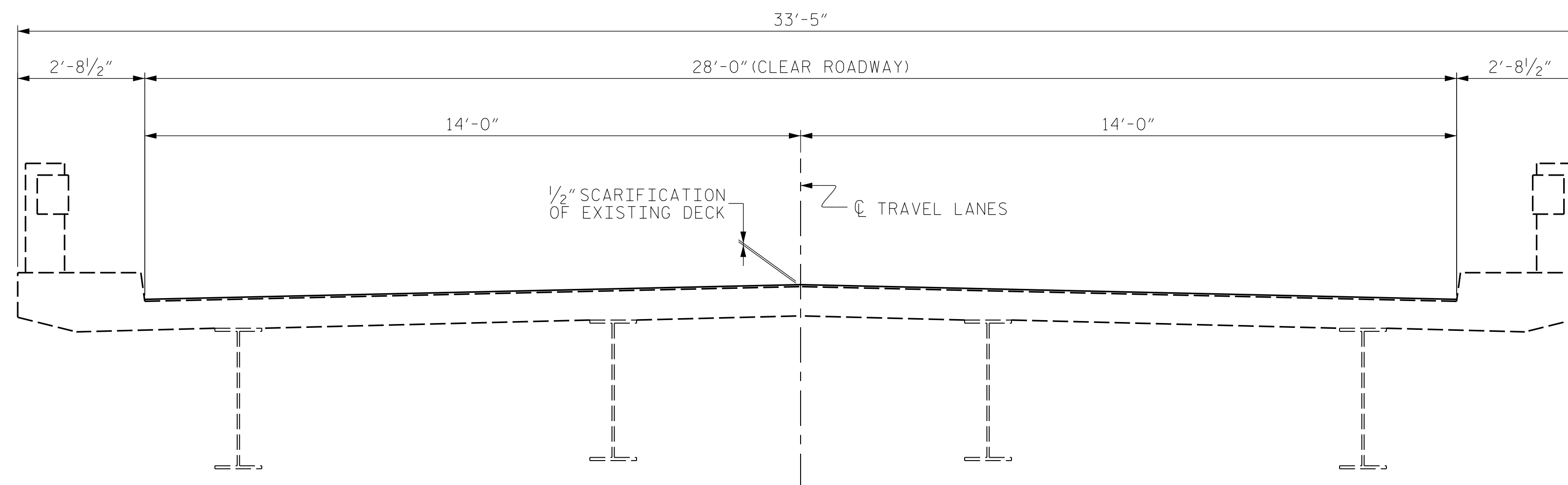
NOTES:

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

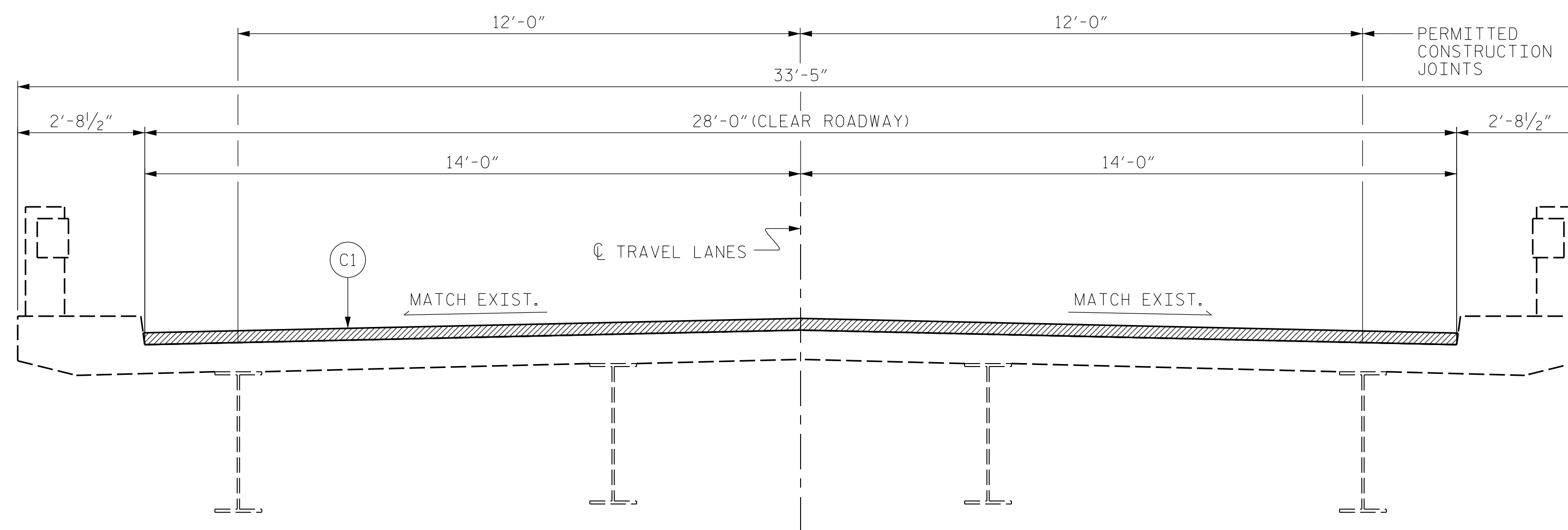
DRAWN BY : FIDEL L. FLORES DATE : 01/2022
 CHECKED BY : DIEGO A. AGUIRRE DATE : 01/2022
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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



EXISTING



PROPOSED

NOTES:

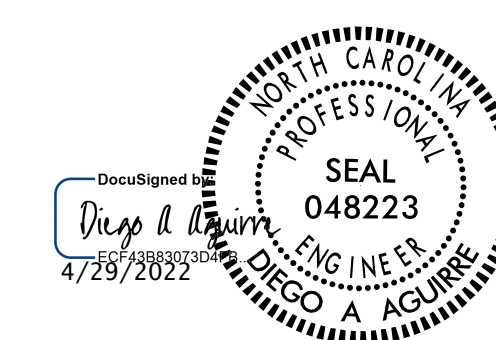
LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

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



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. 480065

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
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 FINAL UNLESS ALL
 SIGNATURES COMPLETED

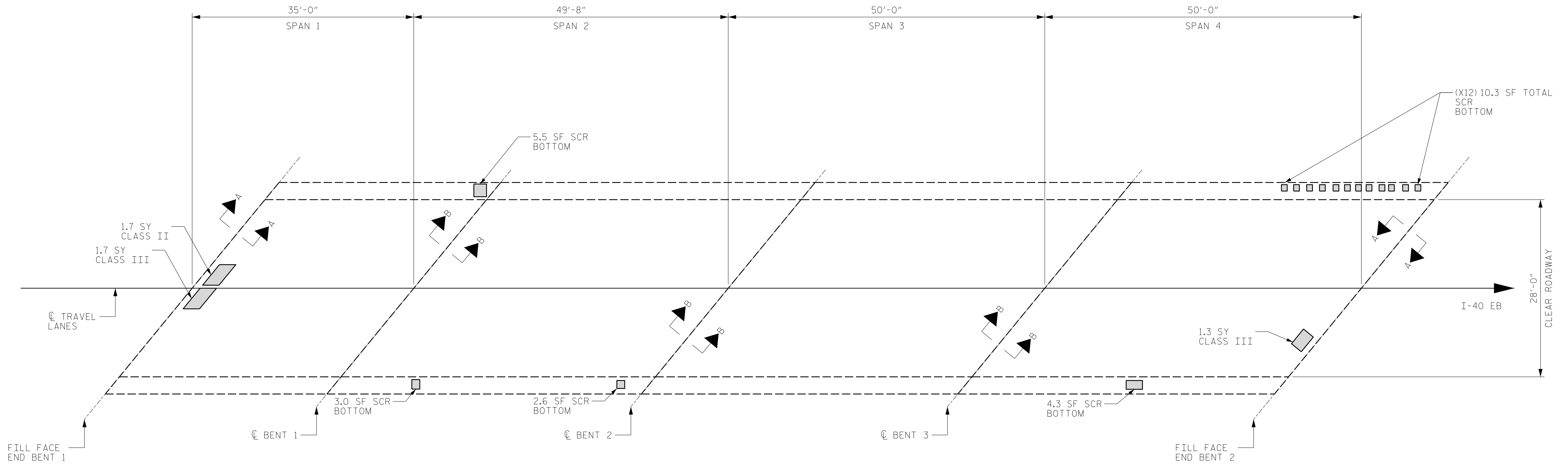
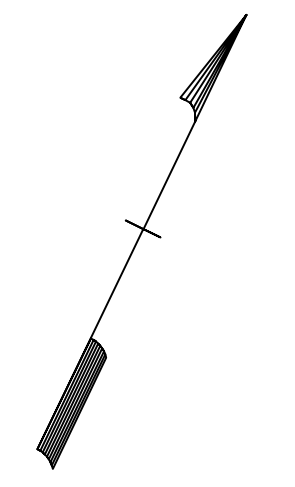
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			12
2			4			

S9-2

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	1.7 SY		-- SY		-- SY		-- SY	
CLASS III SURFACE PREPARATION	1.7 SY		-- SY		-- SY		1.3 SY	
SCARIFYING BRIDGE DECK	109 SY		155 SY		156 SY		156 SY	
	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME
SHOTCRETE REPAIR AREA (SCR)	5.5 SF	2.8 CF			5.6 SF	2.5 CF		
					-- SF	-- CF		
							14.6 SF	5.0 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
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PROJECT NO. I-5915B
IREDELL COUNTY
 BRIDGE NO. 480065

SHEET 1 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

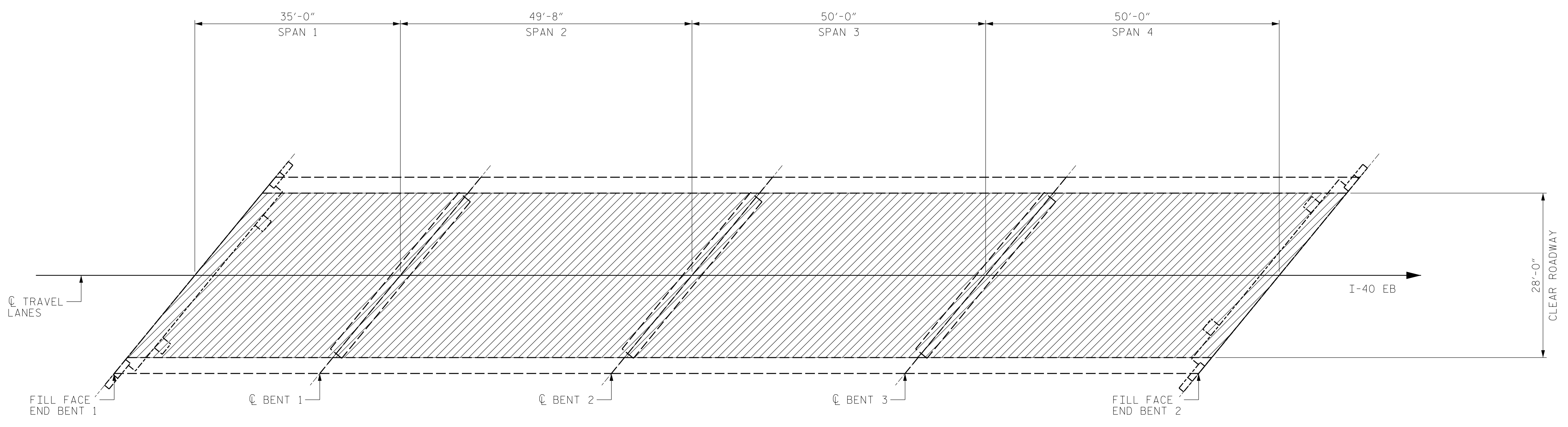
PLAN OF SPANS DECK REPAIRS

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S9-3
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

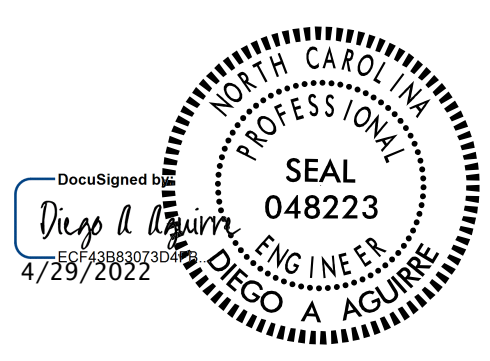
NOTES:

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

SHEET 2 OF 2

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

DOCUMENT NOT CONSIDERED
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S9-4
2			4			TOTAL SHEETS 12