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PROJECT: 15BPR.9

CONTRACT: DN00633

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SWAIN COUNTY

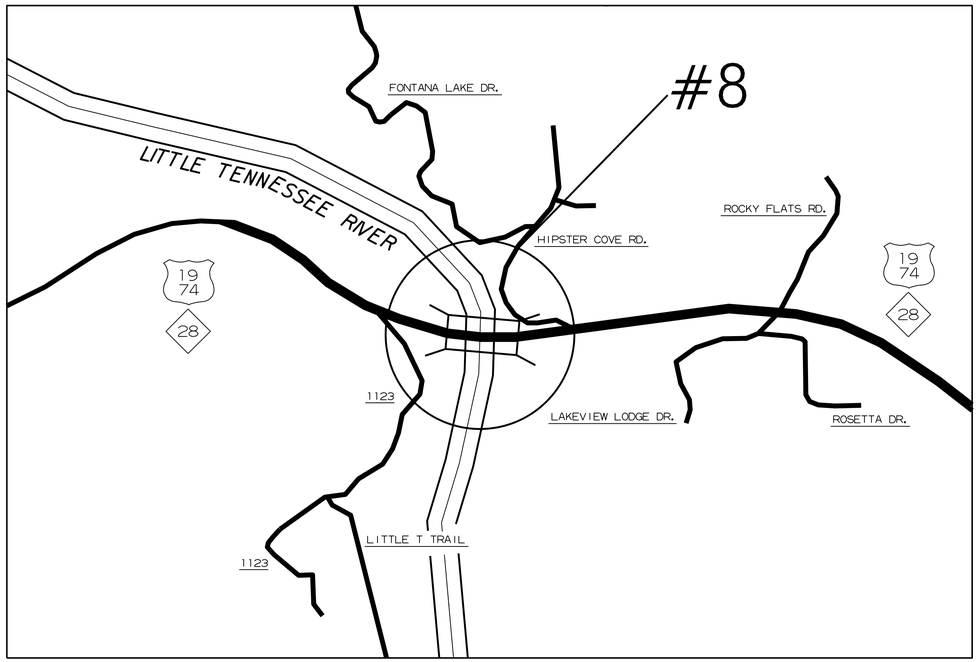
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15BPR.9	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
15BPR.9	–	P.E.
15BPR.9	–	CONST.

LOCATION: SWAIN COUNTY

BRIDGE #8 ON U.S. 19, U.S. 74, AND N.C. 28 OVER THE LITTLE TENNESSEE RIVER.

TYPE OF WORK: BRIDGE PRESERVATION – POLYESTER POLYMER CONCRETE OVERLAY, SILICONE JOINT SEALANT, PRESTRESSED GIRDER REPAIRS, AND SUBSTRUCTURE REPAIRS.



VICINITY MAP – SWAIN CO.

DESIGN DATA

SWAIN COUNTY
#8 ADT 2015 = 8,200

PROJECT LENGTH

SWAIN COUNTY
– #8 = 0.152 MILE

Prepared In the Office of:
DIVISION OF HIGHWAYS
STRUCTURES MANAGEMENT UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

2018 STANDARD SPECIFICATIONS

LETTING DATE :

MAY 22, 2018

A. KEITH PASCHAL, P.E.
PROJECT ENGINEER

AMBER M. LEE, P.E.
PROJECT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

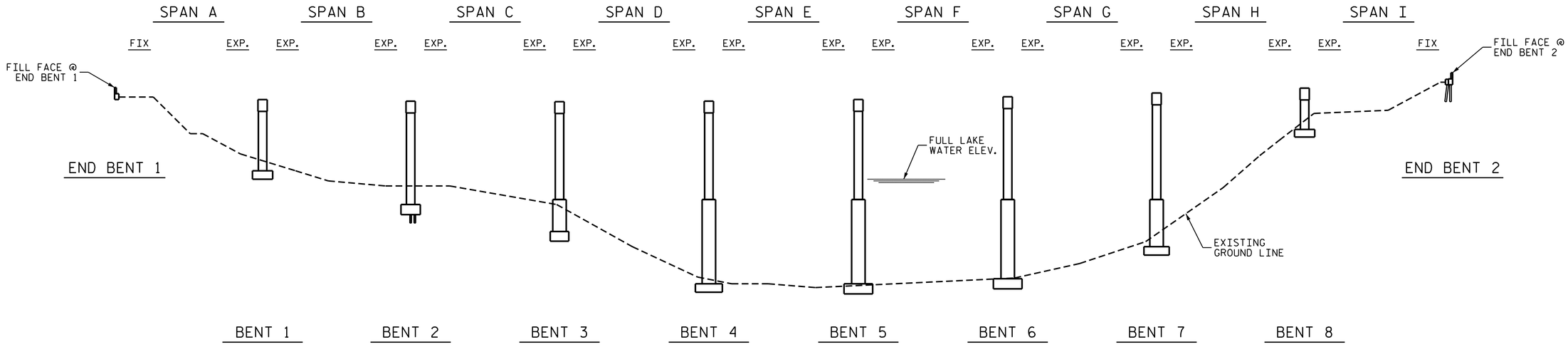
DocuSigned by:
B04B5A4F2FAD484...

4/23/2018

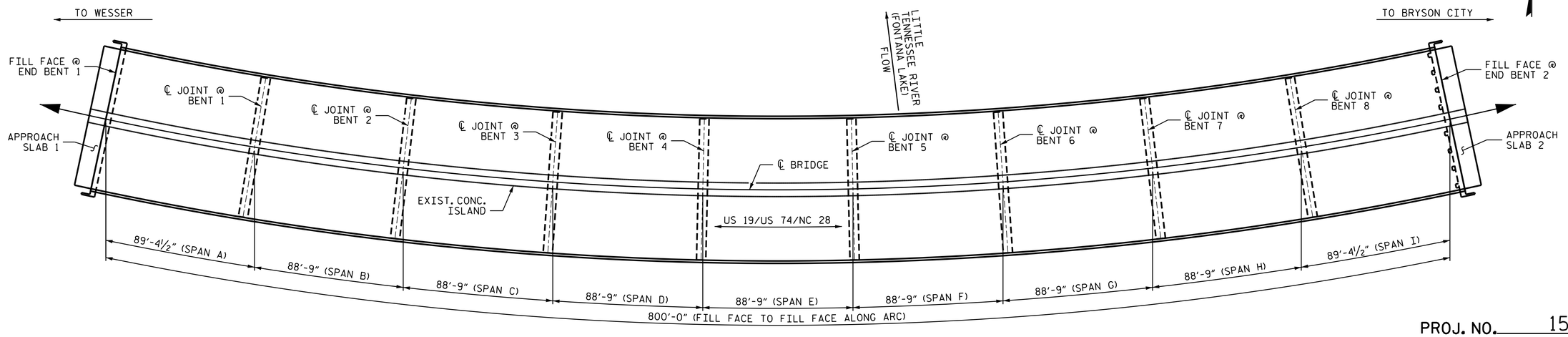
NOTES

GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 11/02/2017.

BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



SECTION ALONG ℄ OF ROADWAY



SCOPE OF WORK

- PARTIALLY REMOVE BRIDGE DECK CONCRETE BY SCARIFICATION AND SHOTBLASTING METHODS.
- OVERLAY PREPARED BRIDGE DECK WITH POLYESTER POLYMER CONCRETE (PPC).
- GROOVE PPC BRIDGE DECK.
- PREPARE AND REPAIR PRESTRESSED CONCRETE GIRDER REPAIR AREAS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- REMOVE UNSOUND CONCRETE AND PROPERLY PREPARE SHOTCRETE AND CONCRETE REPAIR AREAS.
- PERFORM SHOTCRETE AND CONCRETE REPAIRS IN PREPARED AREAS.
- REMOVE DEBRIS FROM TOP OF BENT CAPS AND APPLY EPOXY COATING.
- CLEAN AND PAINT CATWALK RAILS.
- PERFORM INCIDENTAL MILLING AND PLACE NEW ASPHALT PAVEMENT TO PROVIDE A SMOOTH TRANSITION BETWEEN ROADWAY AND BRIDGE.
- PLACE SILICONE JOINT SEALANT AT THE END BENTS.

PLAN

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

RESIDENT ENGINEER DATE

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

DocuSigned by: Amber Miller B04B5A4F2FAD484...

3/29/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJ. NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON
US 19, US 74, & NC 28 OVER
LITTLE TENNESSEE RIVER
(FONTANA LAKE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : R.L.PUTEK DATE : 11/17
CHECKED BY : A.M.LEE DATE : 01/18

27-MAR-2018 14:59
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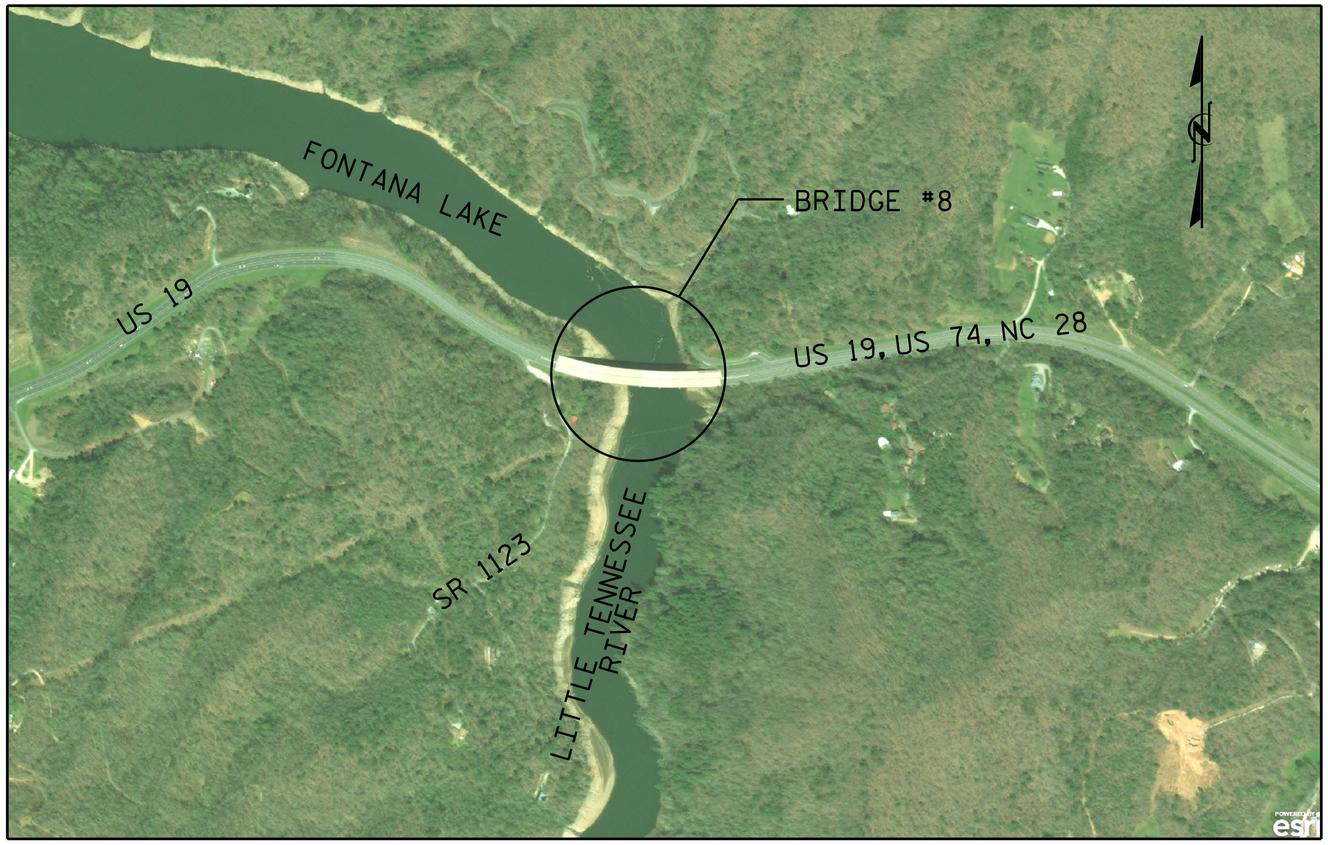

LOCATION SKETCH

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

NOTES

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

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

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

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRDIGE DECKS.

ROADWAY MILLING IS INCLUDED TO ENSURE A SMOOTH TRANSISTION ONTO THE BRIDGE FLOOR, DIMENSIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL MILL AS REQUIRED TO PROVIDE A SMOOTH TRANSITION TO THE ROADWAY AT BOTH ENDS OF THE BRIDGE.

FOR CONCRETE REPAIRS SEE, SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR SILICONE JOINT SEALEANT, SEE SPECIAL PROVISIONS.

WORK ON BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER, THE CONTRACTOR SHALL SUBMIT PLANS FOR CONSTRUCTION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

FOR CLEANING AND PAINTING OF EXISTING CATWALK RAILS SEE, SPECIAL PROVISIONS.

FOR POLLUTION CONTROL AND PAINTING CONTAINMENT, SEE CLEANING AND PAINTING EXISTING CATWALK RAILS SPECIAL PROVISION.

FOR POLYESTER POLYMER CONCRETE DECK OVERLAY, SEE SPECIAL PROVISIONS.

EXISTING BRIDGE CONCRETE DECK SHALL BE REPAIRED PRIOR TO THE SURFACE PREPARATION AND APPLICATION OF THE POLYESTER PIOLYMER CCONCRETE (PPC) OVERLAY AT LOCATIONS SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER, UNLESS APPROVED OTHERWISE, SUCH LOCATIONS SHALL BE REPAIRED WITH PPC.

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

FOR CONCRETE DECK REPAIR FOR PPC OVERLAY, PPC MATERIALS, PLACING, AND FINISHING PPC OVERLAY, SEE POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISION.

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

FOR REPAIRS TO PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.

FOR EPOXY COATING AND DEBRIS REMOVAL, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

		INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B	ASPHALT BINDER FOR PLANT MIX	GROOVING BRIDGE FLOOR	POLLUTION CONTROL	CLASS II SURFACE PREPARATION	CONCRETE REPAIRS	SHOTCRETE REPAIRS	EPOXY RESIN INJECTION	CLEANING & PAINTING EXISTING CATWALK RAILS
		SQ. YDS.	TONS	TONS	SQ. FT.	LUMP SUM	SQ. YDS.	CU. FT.	CU. FT.	LIN. FT.	LUMP SUM
BRIDGE NO. 8	TOTALS	887	80	6	57178	LUMP SUM	82.4	179.2	1684.3	7581.2	LUMP SUM

		PAINTING CONTAINMENT FOR EXISTING CATWALK RAILS	SILICONE JOINT SEALANT	PPC MATERIALS	REPAIRS TO PRESTRESSED CONCRETE GIRDERS	EPOXY COATING	CONCRETE DECK REPAIR FOR PPC OVERLAY	PLACING & FINISHING PPC OVERLAY	SCARIFYING BRIDGE DECK	SHOTBLASTING BRIDGE DECK
		LUMP SUM	LN. FT.	CU. YDS.	CU. FT.	SQ. FT.	SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.
BRIDGE NO. 8	TOTALS	LUMP SUM	152.0	240.7	16.1	4078.4	82.4	6930	6930	6930

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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3/29/2018

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE ON US 19, US 74, & NC 28 OVER LITTLE TENNESSEE RIVER (FONTANA LAKE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : R.L.PUTEK DATE : 01/18

CHECKED BY : A.M.LEE DATE : 01/18

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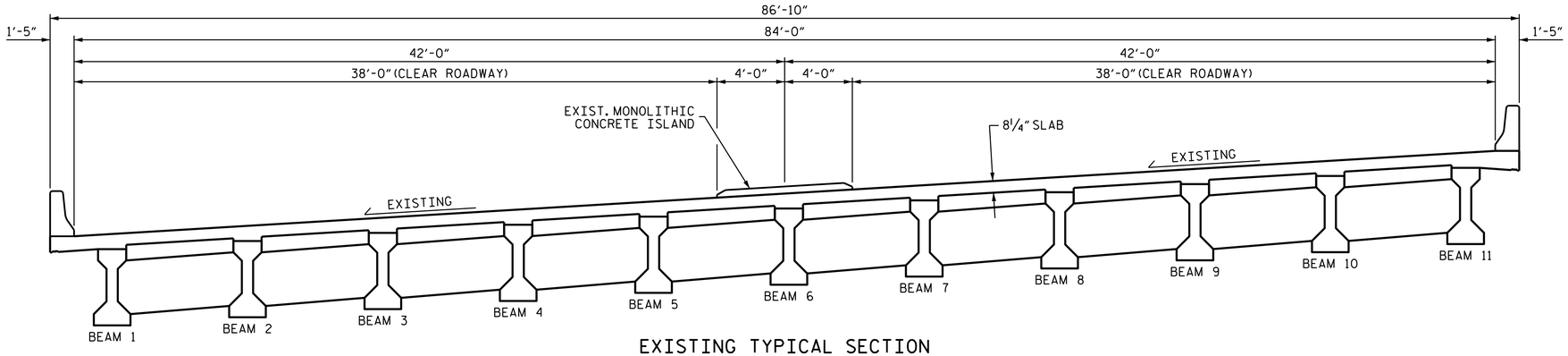
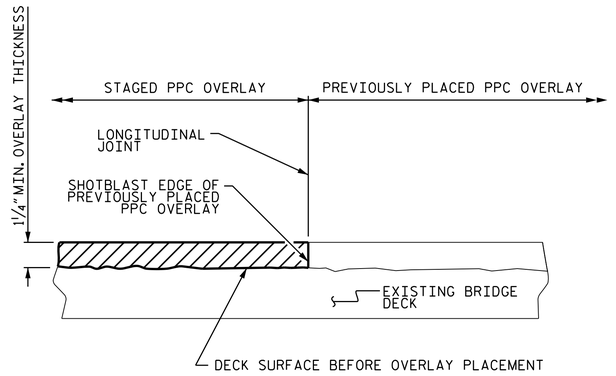
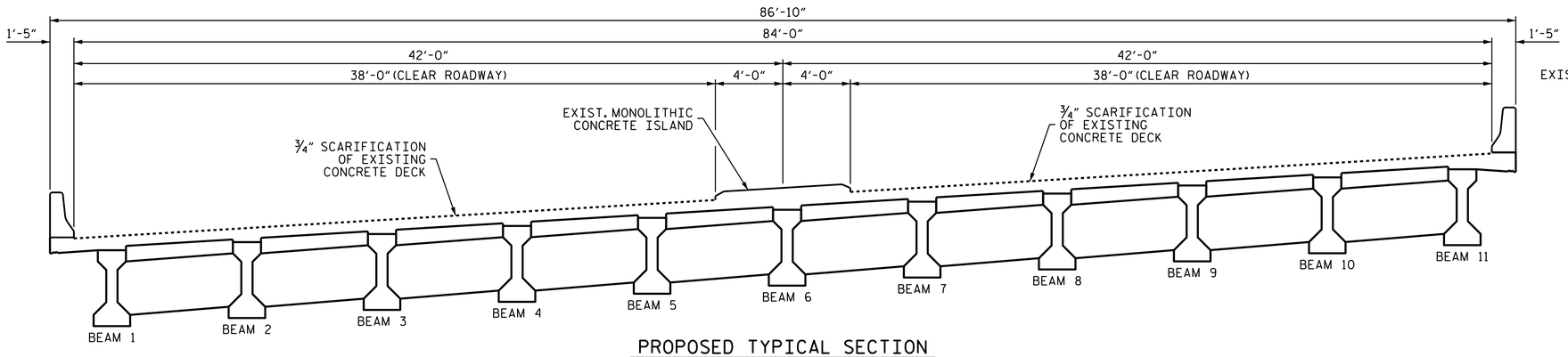


EXISTING TYPICAL SECTION

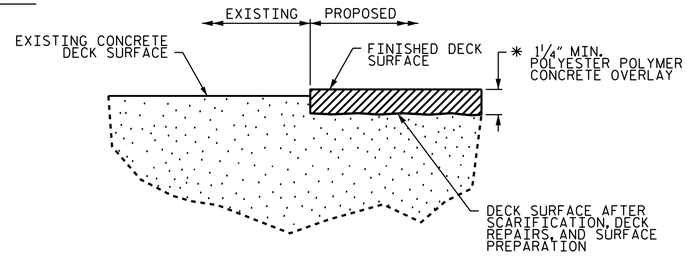


STAGED PPC OVERLAY JOINT

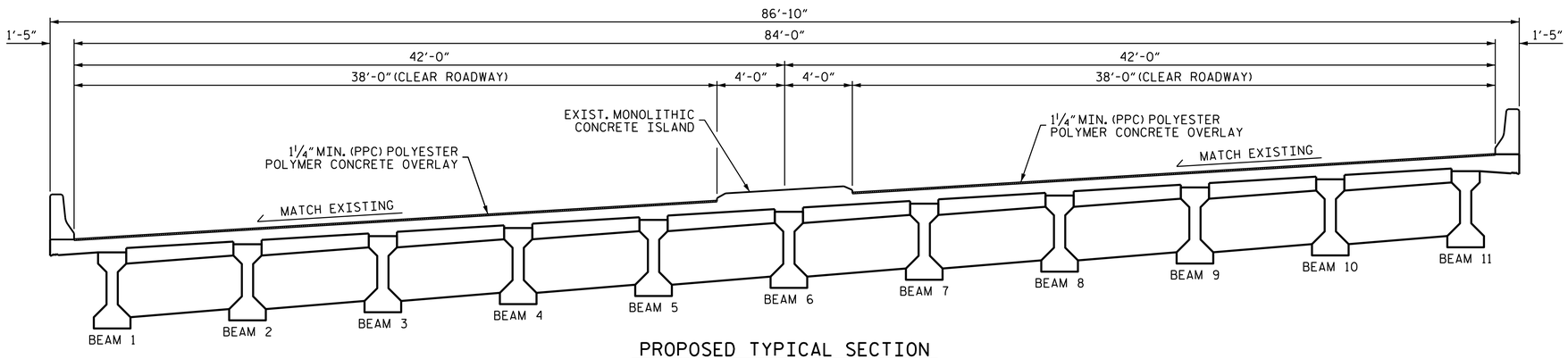
(AS NEEDED)



PROPOSED TYPICAL SECTION



DETAIL FOR POLYESTER POLYMER CONCRETE OVERLAY



PROPOSED TYPICAL SECTION

ALL DIMENSIONS ARE RADIAL

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION AND PPC OVERLAY DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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3/29/2018

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			32

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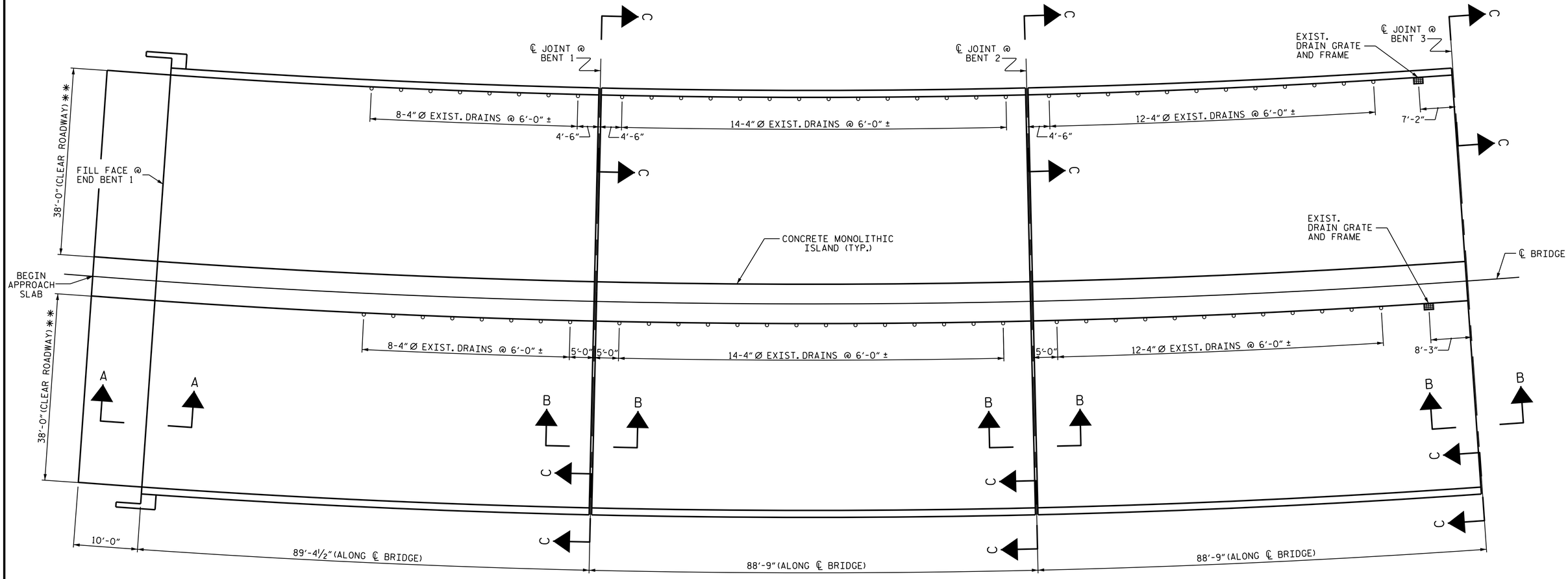

SPAN A

SPAN B

SPAN C

PLAN OF SPANS

** RADIAL DIMENSION

NOTES:

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

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

FOR UNDERSIDE OF DECK, GIRDER, AND DIAPHRAGM REPAIRS, SEE "FRAMING PLAN" SHEET 1 OF 3.

APPROX. CLASS II SURFACE PREPARATION

EPOXY RESIN INJECTION (ERI)

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS - SPANS A, B, & C

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	2341 SQ. YDS.	
CLASS II SURFACE PREPARATION	0.0 SQ. YDS.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.0 SQ. YDS.	
SHOTBLASTING BRIDGE DECK	2341 SQ. YDS.	
PPC MATERIALS	81.3 CU. YDS.	
PLACING AND FINISHING PPC OVERLAY	2341 SQ. YDS.	
GROOVING BRIDGE FLOORS	19,305 SQ. FT.	
SILICONE JOINT SEALANT	76.0 LIN. FT.	

TOP OF DECK REPAIR QUANTITIES REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE. (MIN. 2" CLEAR TO SAWCUT). SEE OVERLAY SURFACE PREPARATION FOR POLYESTER POLYMER CONCRETE SPECIAL PROVISION.

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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3/29/2018

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PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO.: 8

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPANS
SPAN A, B, & C

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : D.V. JOYNER DATE : 11/2017
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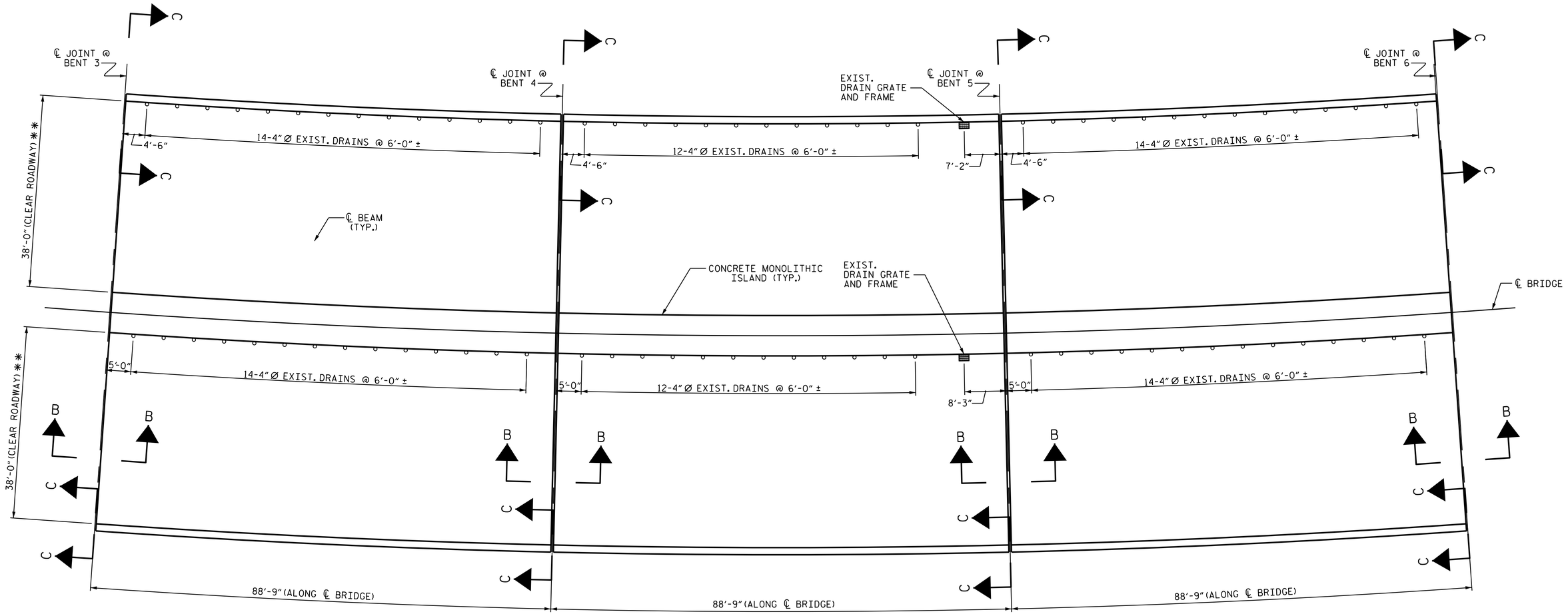

SPAN D

SPAN E

SPAN F

PLAN OF SPANS

** RADIAL DIMENSION

NOTES:

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

SECTION B-B AND SECTION C-C SEE "JOINT DETAILS" SHEET.

FOR UNDERSIDE OF DECK, GIRDER, AND DIAPHRAGM REPAIRS, SEE "FRAMING PLAN" SHEET 2 OF 3.

APPROX. CLASS II SURFACE PREPARATION

EPOXY RESIN INJECTION (ERI)

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS - SPANS D, E, & F

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	2248 SQ. YDS.	
CLASS II SURFACE PREPARATION	0.0 SQ. YDS.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.0 SQ. YDS.	
SHOTBLASTING BRIDGE DECK	2248 SQ. YDS.	
PPC MATERIALS	78.1 CU. YDS.	
PLACING AND FINISHING PPC OVERLAY	2248 SQ. YDS.	
GROOVING BRIDGE FLOORS	18,568 SQ. FT.	

TOP OF DECK REPAIR QUANTITIES REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE. (MIN. 2" CLEAR TO SAWCUT). SEE OVERLAY SURFACE PREPARATION FOR POLYESTER POLYMER CONCRETE SPECIAL PROVISION.

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO.: 8

SHEET 2 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

DocuSigned by: Amber Lee B04B5A4F2FAD484...

3/29/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPANS
SPAN D, E, & F

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			32

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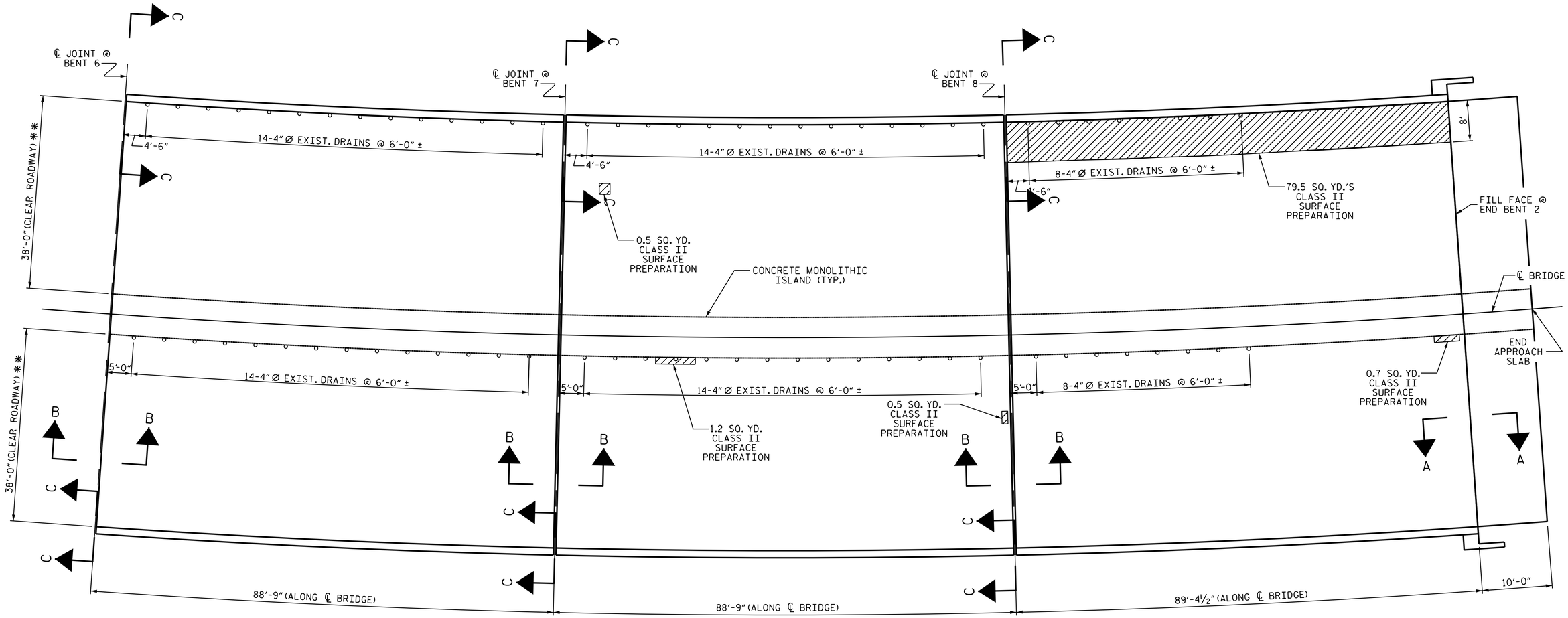

SPAN G

SPAN H

SPAN I

PLAN OF SPANS

** RADIAL DIMENSION

NOTES:

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

FOR UNDERSIDE OF DECK, GIRDER, AND DIAPHRAGM REPAIRS, SEE "FRAMING PLAN" SHEET 3 OF 3.

APPROX. CLASS II SURFACE PREPARATION

EPOXY RESIN INJECTION (ERI)

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS - SPANS G, H, & I

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	2341 SQ. YDS.	
CLASS II SURFACE PREPARATION	82.4 SQ. YDS.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	82.4 SQ. YDS.	
SHOTBLASTING BRIDGE DECK	2341 SQ. YDS.	
PPC MATERIALS	81.3 CU. YDS.	
PLACING AND FINISHING PPC OVERLAY	2341 SQ. YDS.	
GROOVING BRIDGE FLOORS	19,305 SQ. FT.	
SILICONE JOINT SEALANT	76.0 LIN. FT.	

TOP OF DECK REPAIR QUANTITIES REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE. (MIN. 2" CLEAR TO SAWCUT). SEE OVERLAY SURFACE PREPARATION FOR POLYESTER POLYMER CONCRETE SPECIAL PROVISION.

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO.: 8

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPANS
SPAN G, H, & I

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

DocuSigned by: Amber Lee
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3/29/2018

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : D.V. JOYNER DATE : 11/2017
CHECKED BY : H.A. LOCKLEAR DATE : 2/2018

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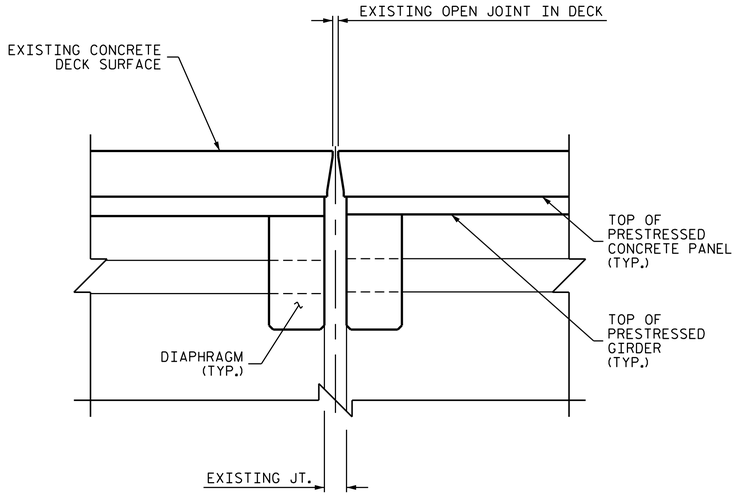
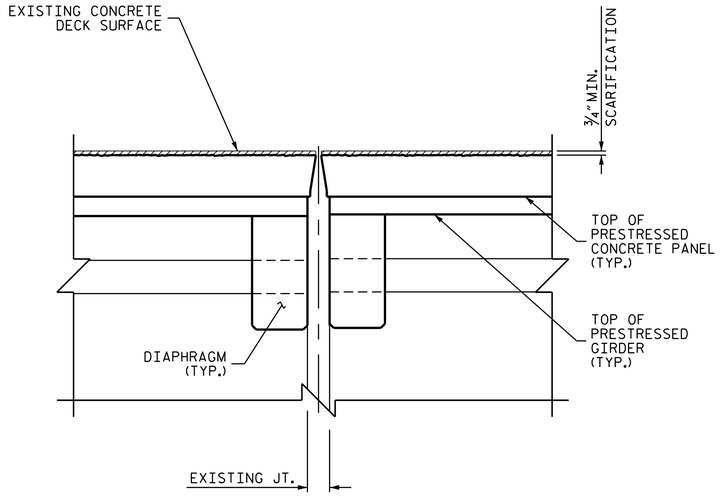
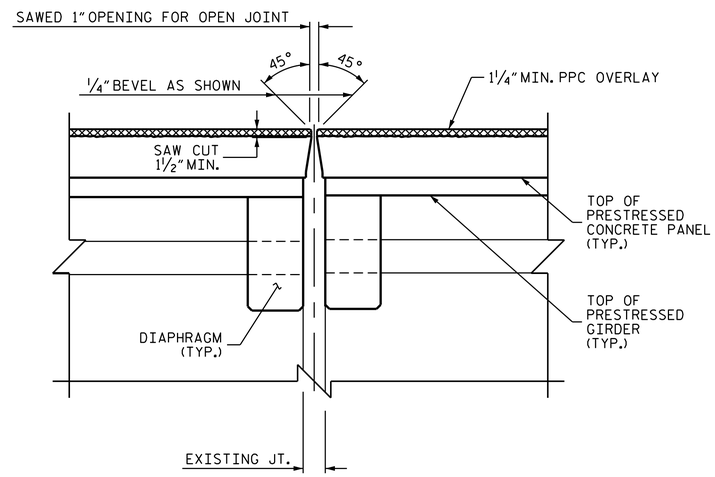


EXISTING JOINT

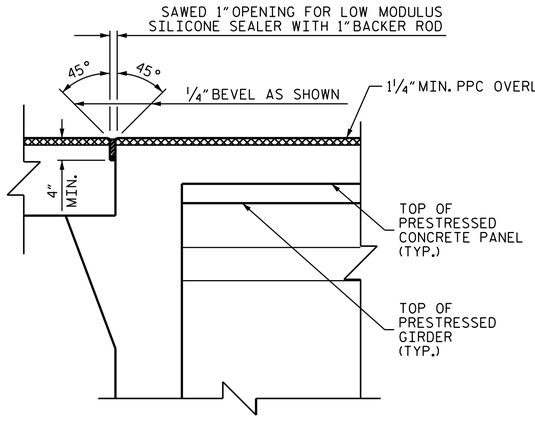


EXISTING JOINT AFTER DECK SCARIFICATION

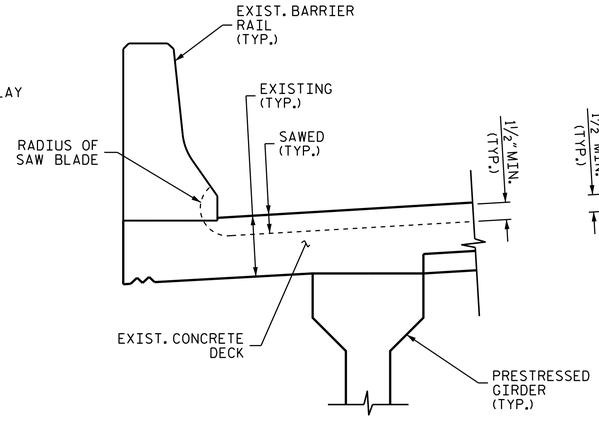


PROPOSED SAWED OPEN JOINT

SECTION B-B

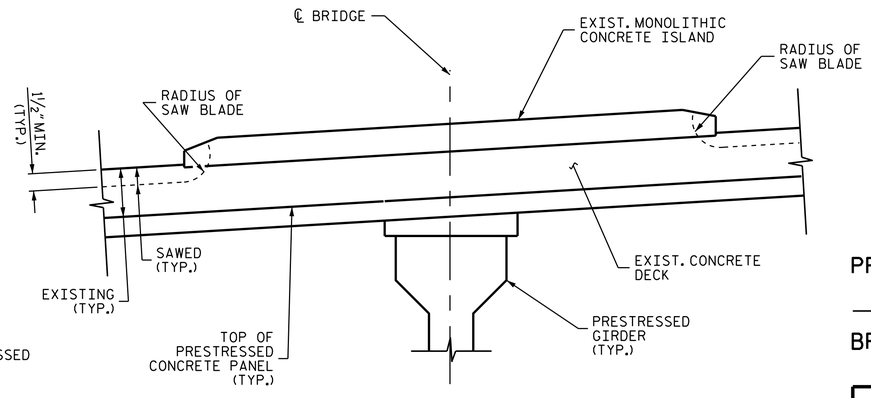


SECTION A-A



SECTION C-C

(LEFT BARRIER RAIL SHOWN, RIGHT BARRIER RAIL SIMILAR)



MEDIAN DETAIL

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

JOINT DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

DocuSigned by: Amber Lee
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3/29/2018

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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			32

DRAWN BY : R.L.PUTEK DATE : 02/18
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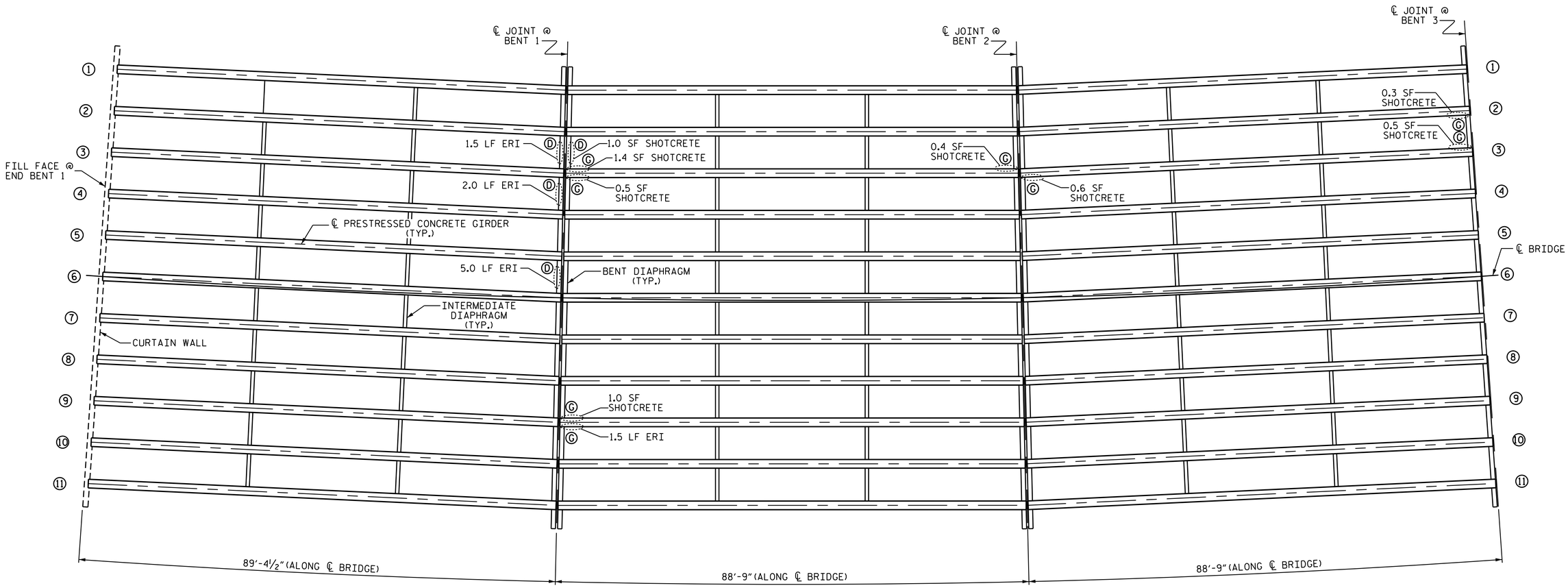

FRAMING PLAN

① BEAM NUMBER
Ⓖ GIRDER REPAIR
Ⓓ DIAPHRAGM REPAIR
EPOXY RESIN INJECTION (ERI)

NOTES:

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

FOR PRESTRESSED CONCRETE GIRDER REPAIRS AND DIAPHRAGM REPAIRS, SEE "PRESTRESSED GIRDER & DIAPHRAGM REPAIR DETAILS" SHEET.

AS-BUILT REPAIR QUANTITY TABLE

SPANS A, B, & C	QUANTITIES			
	ESTIMATE		ACTUAL	
GIRDER REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
SHOTCRETE	4.7	2.4		
	LIN. FT.		LIN. FT.	
EPOXY RESIN INJECTION	1.5			
DIAPHRAGM REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
SHOTCRETE	1.0	0.5		
	LIN. FT.		LIN. FT.	
EPOXY RESIN INJECTION	8.5			
UNDERSIDE OF DECK REPAIRS	LIN. FT.		LIN. FT.	
EPOXY RESIN INJECTION	0.0			

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

PROJECT NO. 15BPR.9
SWAIN COUNTY
BRIDGE NO.: 8

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

FRAMING PLAN
SPAN A, B, & C

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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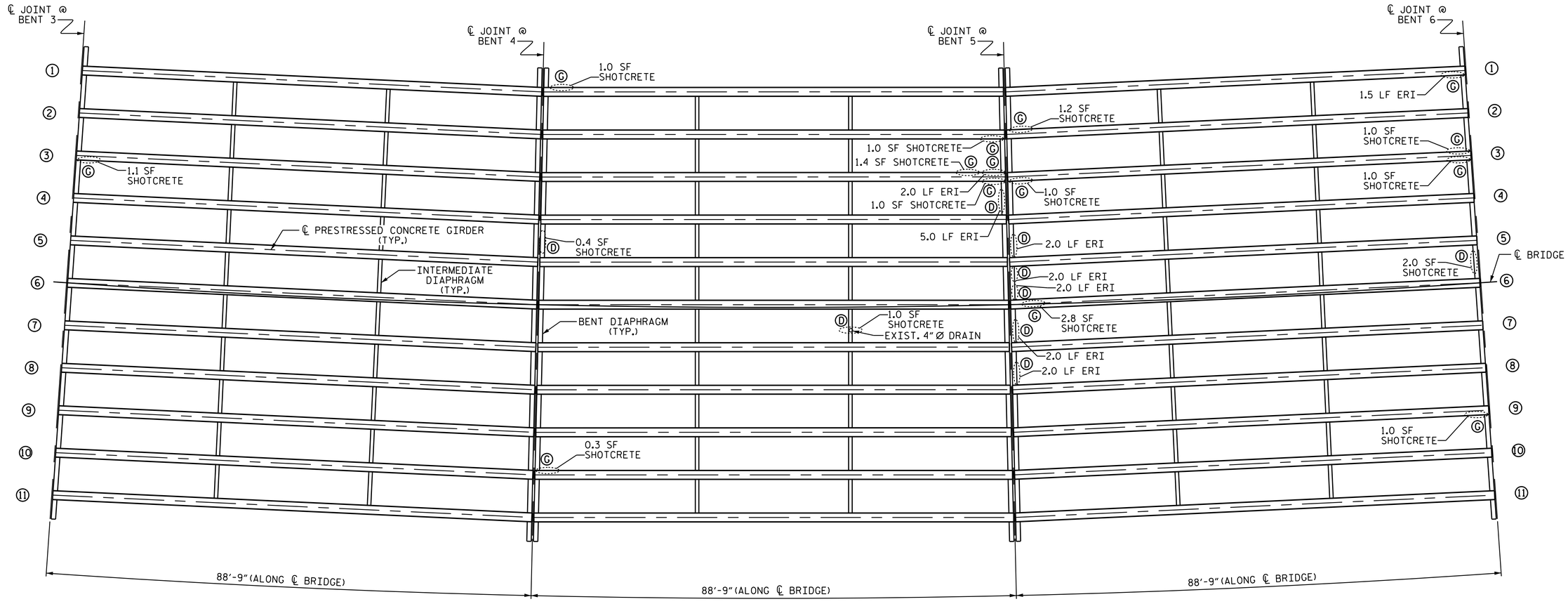

FRAMING PLAN

① BEAM NUMBER
Ⓖ GIRDER REPAIR
Ⓓ DIAPHRAGM REPAIR
EPOXY RESIN INJECTION (ERI)

NOTES:

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FOR PRESTRESSED CONCRETE GIRDER REPAIRS AND DIAPHRAGM REPAIRS, SEE "PRESTRESSED GIRDER & DIAPHRAGM REPAIR DETAILS" SHEET.

AS-BUILT REPAIR QUANTITY TABLE

SPANS D, E, & F	QUANTITIES			
	ESTIMATE		ACTUAL	
GIRDER REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
SHOTCRETE	13.8	6.9		
	LIN. FT.		LIN. FT.	
EPOXY RESIN INJECTION	3.5			
DIAPHRAGM REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
SHOTCRETE	3.4	1.7		
	LIN. FT.		LIN. FT.	
EPOXY RESIN INJECTION	15.0			
UNDERSIDE OF DECK REPAIRS	LIN. FT.		LIN. FT.	
EPOXY RESIN INJECTION	0.0			

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

PROJECT NO. 15BPR.9
SWAIN COUNTY
BRIDGE NO.: 8

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

FRAMING PLAN
SPAN D, E, & F

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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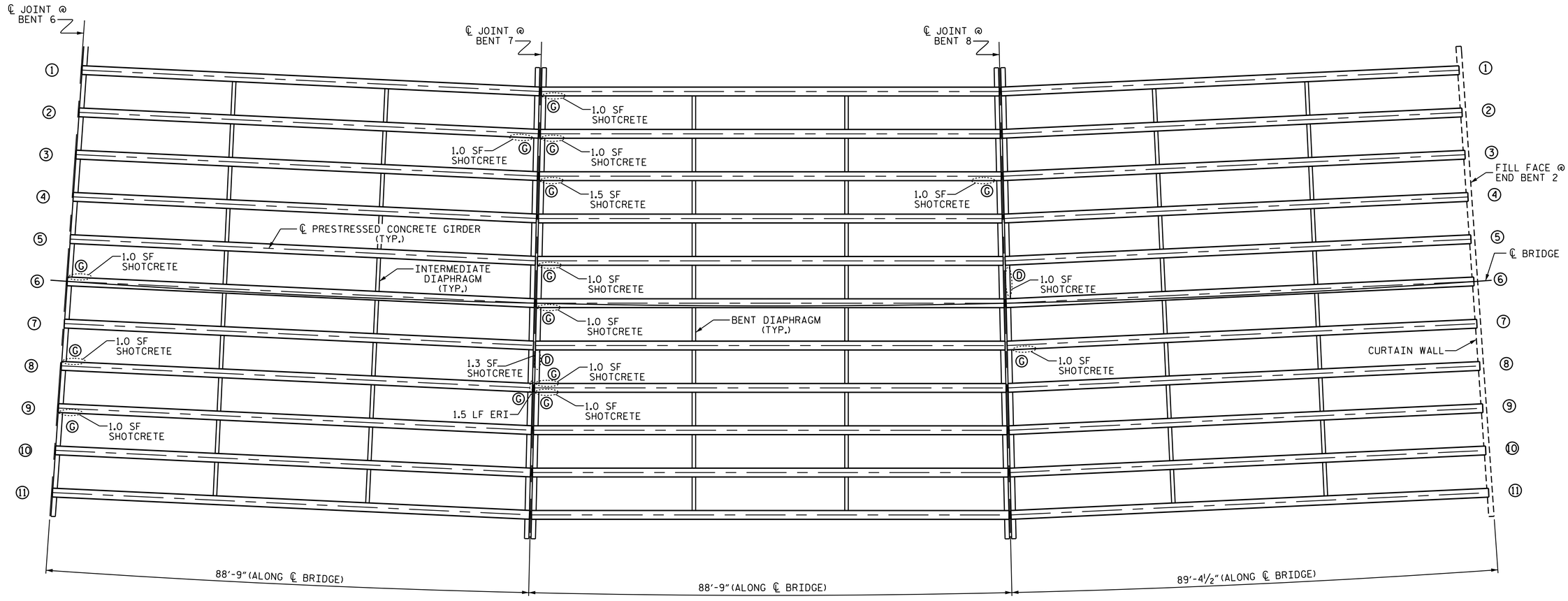

FRAMING PLAN

① BEAM NUMBER
Ⓖ GIRDER REPAIR
Ⓓ DIAPHRAGM REPAIR
EPOXY RESIN INJECTION (ERI)

NOTES:

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FOR PRESTRESSED CONCRETE GIRDER REPAIRS AND DIAPHRAGM REPAIRS, SEE "PRESTRESSED GIRDER & DIAPHRAGM REPAIR DETAILS" SHEET.

AS-BUILT REPAIR QUANTITY TABLE

SPANS G, H, & I	QUANTITIES			
	ESTIMATE		ACTUAL	
GIRDER REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
SHOTCRETE	13.5	6.8		
	LIN. FT.		LIN. FT.	
EPOXY RESIN INJECTION	1.5			
DIAPHRAGM REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
SHOTCRETE	2.3	1.2		
	LIN. FT.		LIN. FT.	
EPOXY RESIN INJECTION	0.0			
UNDERSIDE OF DECK REPAIRS	LIN. FT.		LIN. FT.	
EPOXY RESIN INJECTION	0.0			

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

PROJECT NO. 15BPR.9
SWAIN COUNTY
BRIDGE NO.: 8

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

FRAMING PLAN
SPAN G, H, & I

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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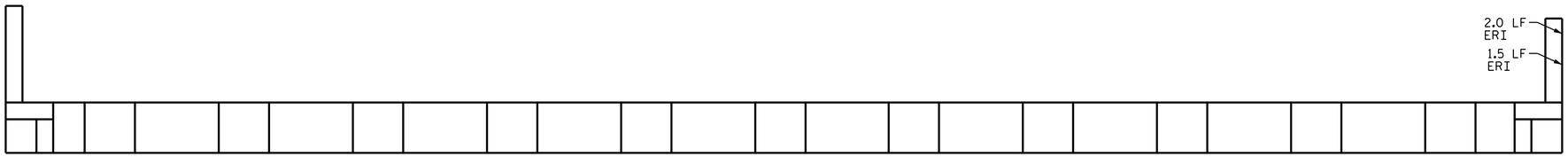
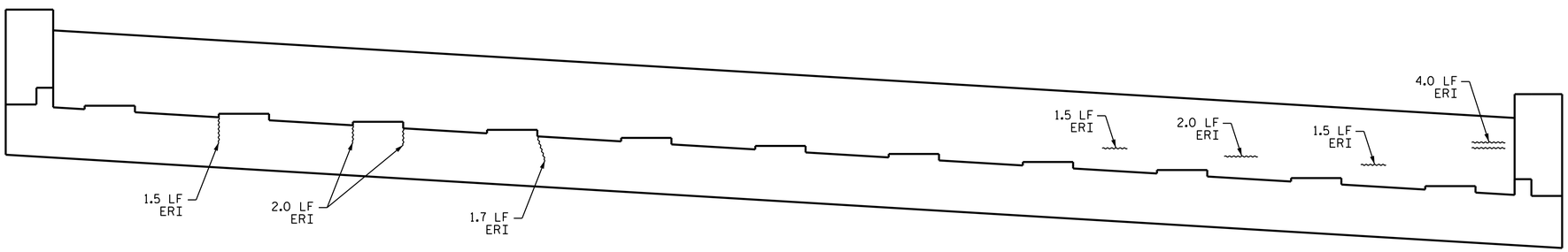


PLAN



ELEVATION

AS-BUILT REPAIR QUANTITY TABLE

END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.0	0.0		
CURTAIN WALL	0.0	0.0		
WING WALL	0.0	0.0		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.0	0.0		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	5.2			
CURTAIN WALL	9.0			
WING WALL	3.5			
EPOXY COATING	SQ. FT.		SQ. FT.	
TOP OF END BENT CAP	190			

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 "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

NOTES

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING TO THE TOP SURFACES OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENT 1

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1			3			TOTAL SHEETS
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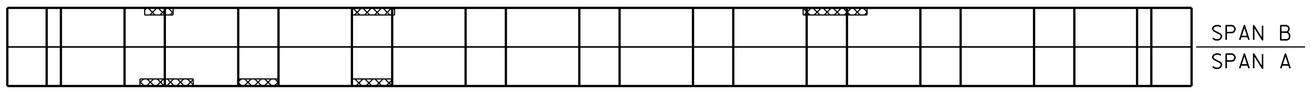
AS-BUILT REPAIR QUANTITY TABLE

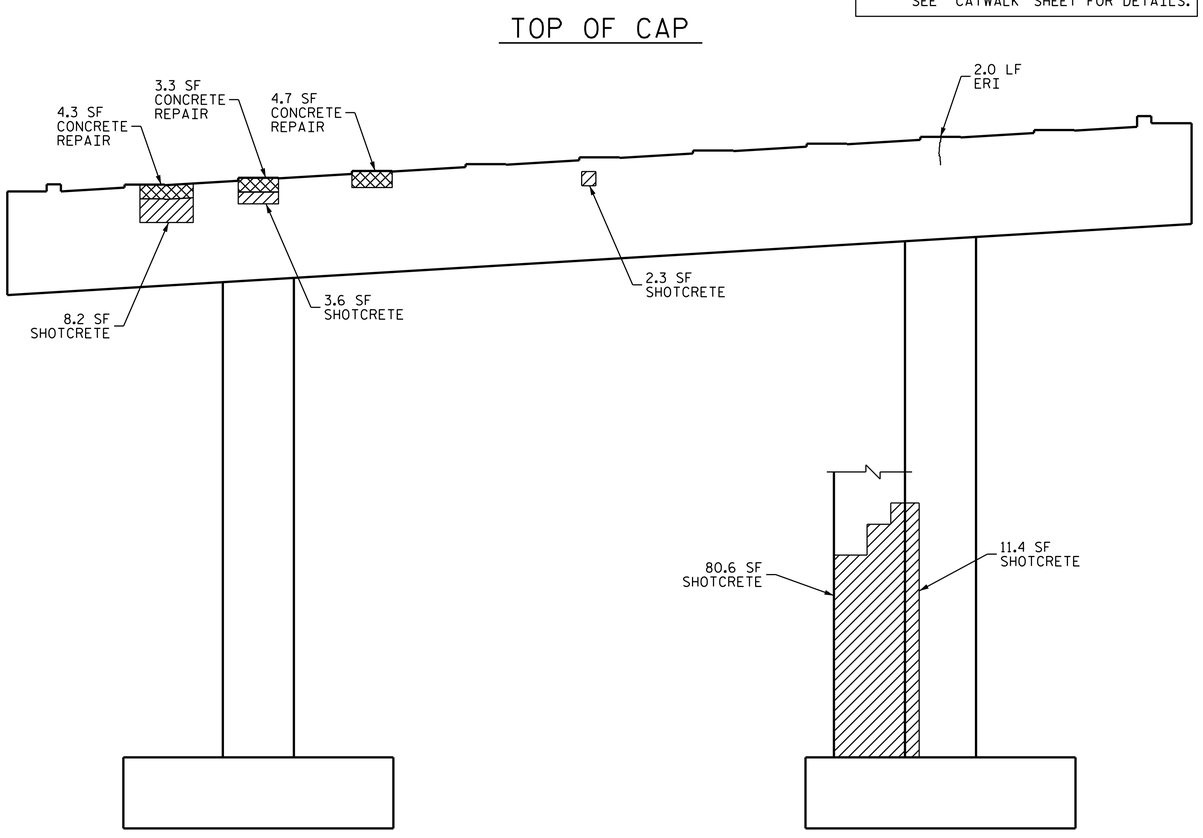
BENT 1 SPAN A	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	14.1	7.1		
COLUMN	92.0	46.0		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	12.3	6.2		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	2.0			
COLUMN	0.0			
EPOXY COATING	SQ. FT.		SQ. FT.	
TOP OF CAP	458.3			

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

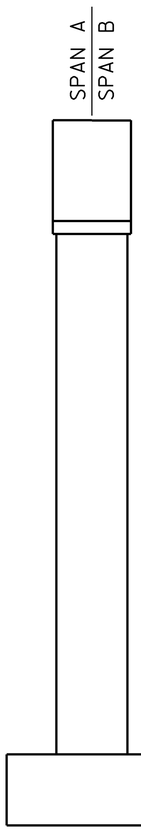


NOTE: CATWALK REMOVED FOR CLARITY. SEE "CATWALK" SHEET FOR DETAILS.

TOP OF CAP



ELEVATION
SPAN A FACE



END VIEW

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

NOTES:

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

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

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

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

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1
SPAN A FACE

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1			3			TOTAL SHEETS
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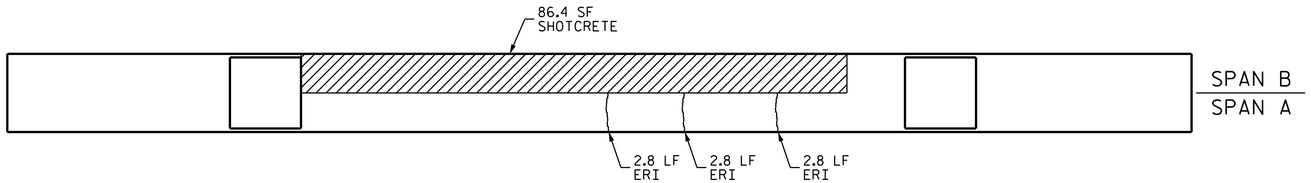
AS-BUILT REPAIR QUANTITY TABLE

BENT 1 SPAN B	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	181.8	90.9		
COLUMN	96.6	48.3		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	10.3	5.2		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	18.9			
COLUMN	0.0			

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



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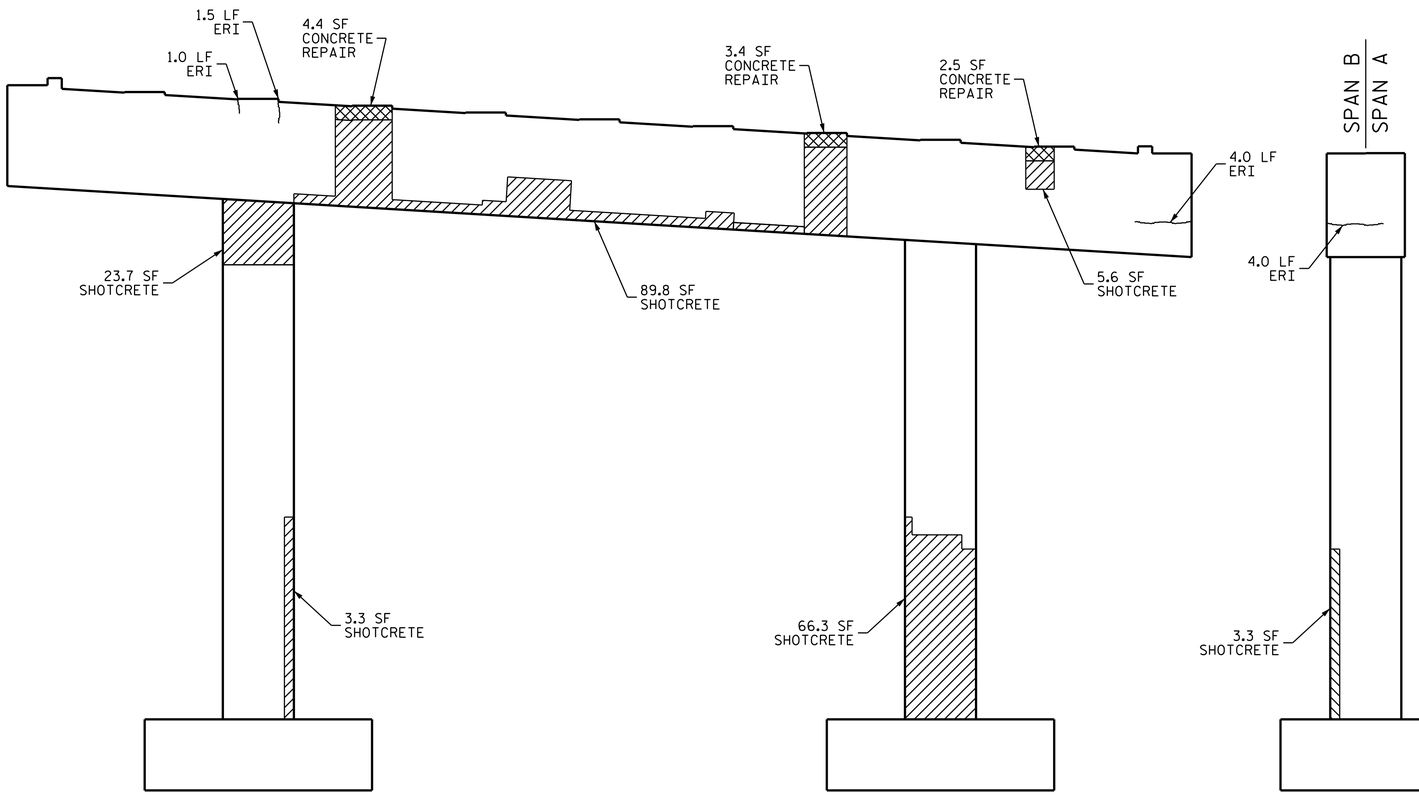

ELEVATION
SPAN B FACE

END VIEW

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

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

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1
SPAN B FACE

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2			4			32

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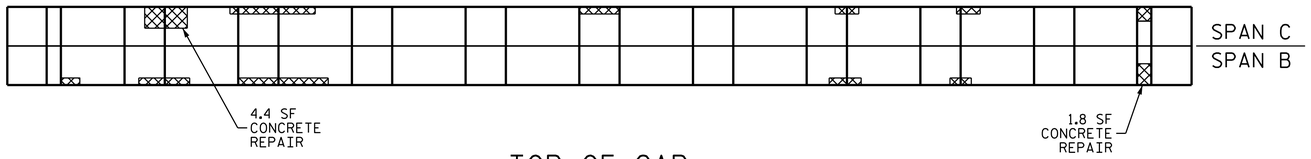
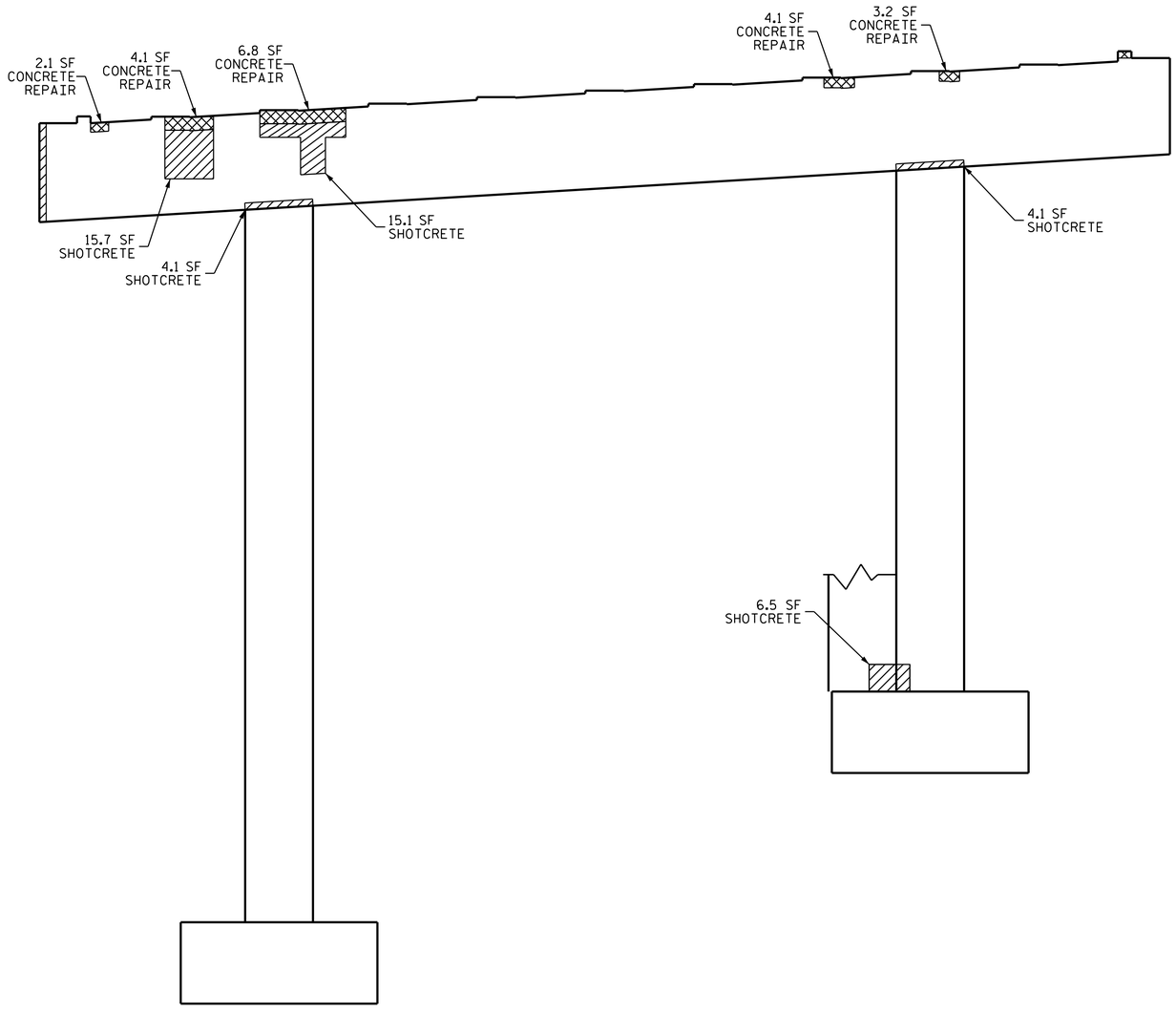
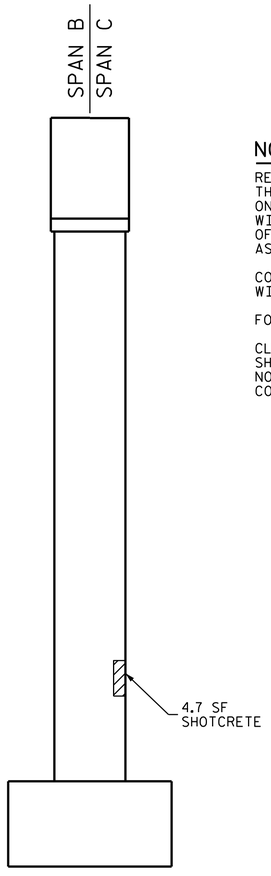


TOP OF CAP

NOTE: CATWALK REMOVED FOR CLARITY. SEE "CATWALK" SHEET FOR DETAILS.



ELEVATION
SPAN B FACE



END VIEW

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

AS-BUILT REPAIR QUANTITY TABLE

BENT 2 SPAN B	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	39.0	19.5		
COLUMN	11.2	5.6		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	26.5	13.3		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	0.0			
COLUMN	0.0			
EPOXY COATING	SQ. FT.		SQ. FT.	
TOP OF CAP	458.3			

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

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

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SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2
SPAN B FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
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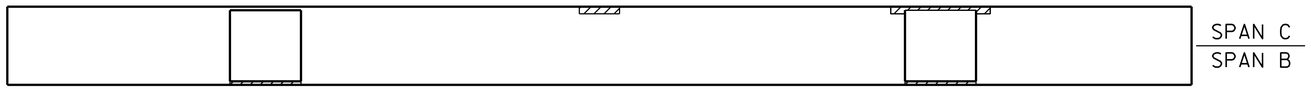
kpaschal

AS-BUILT REPAIR QUANTITY TABLE				
BENT 2 SPAN C	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	77.7	38.9		
COLUMN	24.4	12.2		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	25.8	12.9		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	0.0			
COLUMN	0.0			

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



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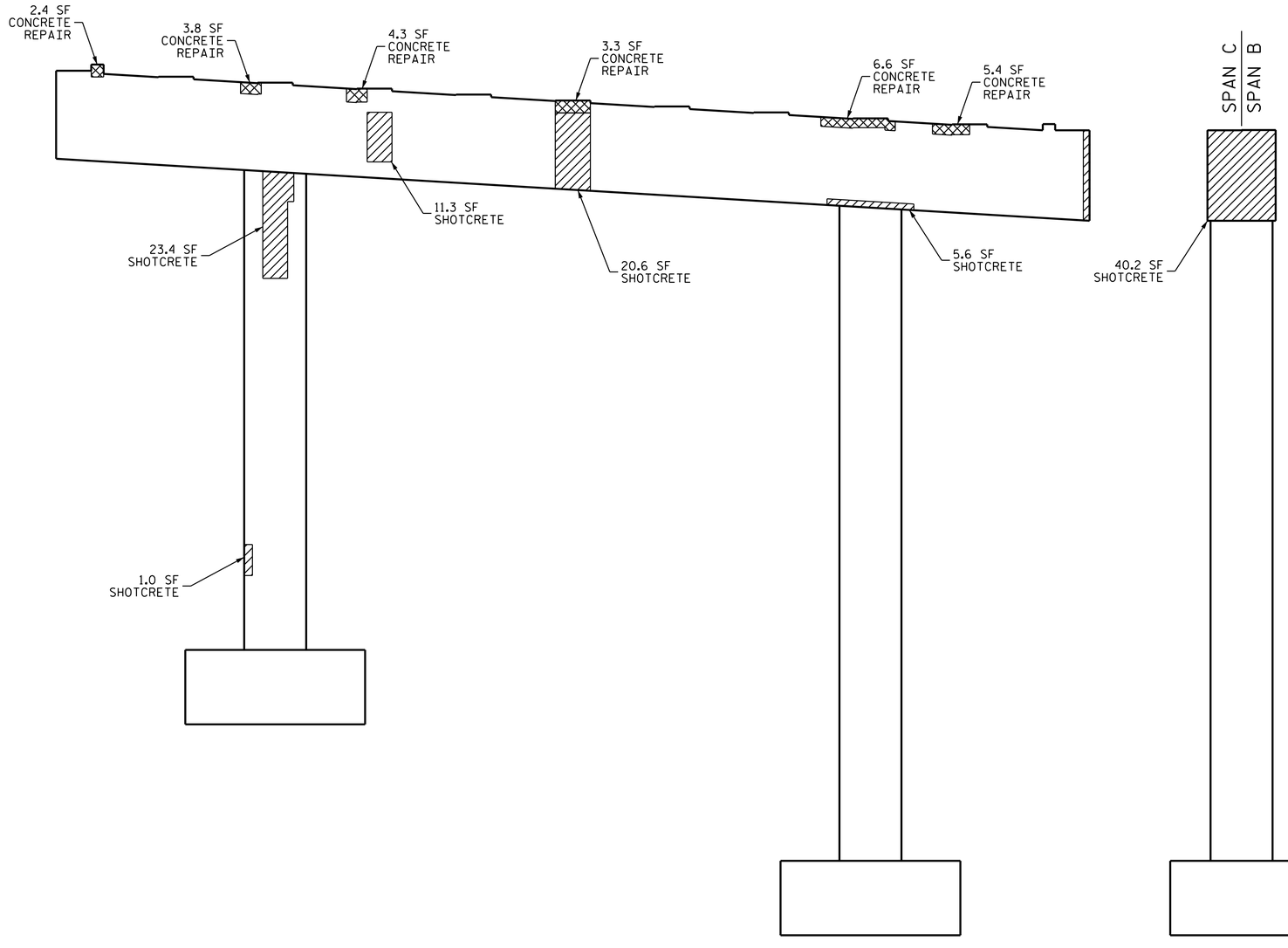

ELEVATION
SPAN C FACE

END VIEW

NOTES:

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

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

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

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2
SPAN C FACE

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

DocuSigned by: Amber Miller
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3/29/2018

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : D.V. JOYNER DATE : 11/2017
CHECKED BY : R.L. PUTEK DATE : 11/2017

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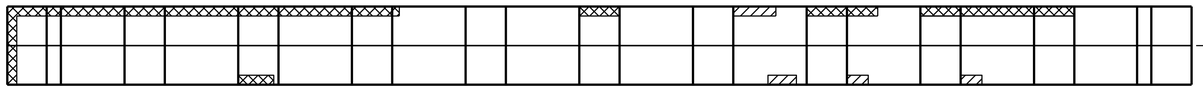
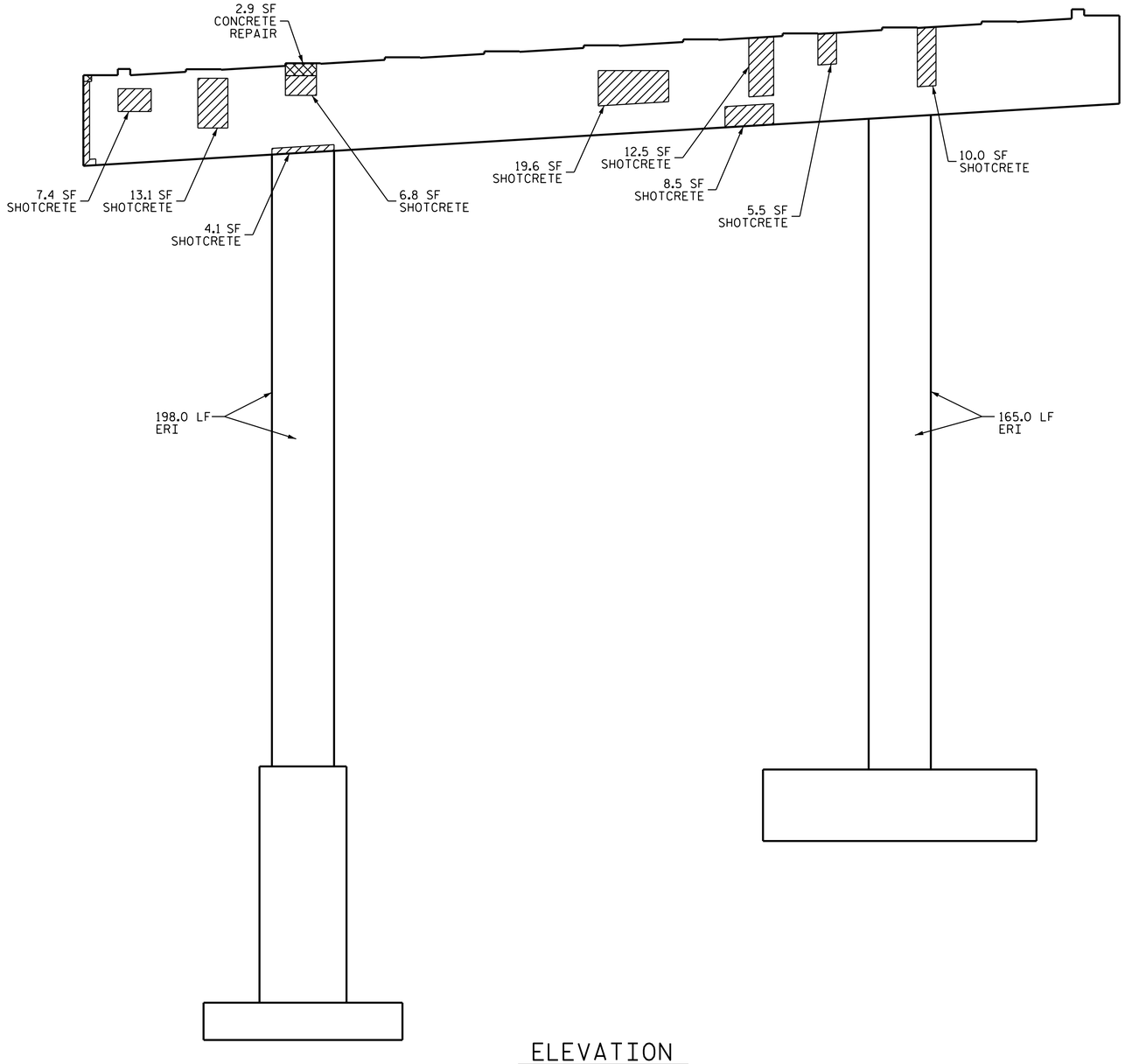
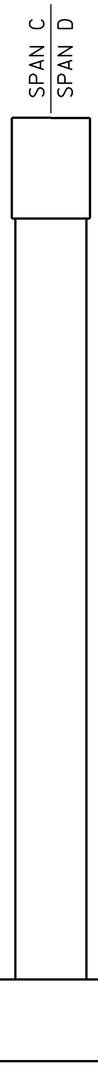


TOP OF CAP

NOTE: CATWALK REMOVED FOR CLARITY.
SEE "CATWALK" SHEET FOR DETAILS.



ELEVATION
SPAN C FACE



END VIEW

AS-BUILT REPAIR QUANTITY TABLE

BENT 3 SPAN C	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	87.5	43.8		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	2.9	1.5		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	0.0			
COLUMN	363.0			
EPOXY COATING	SQ. FT.		SQ. FT.	
TOP OF CAP	458.3			

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

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SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 3
SPAN C FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			32

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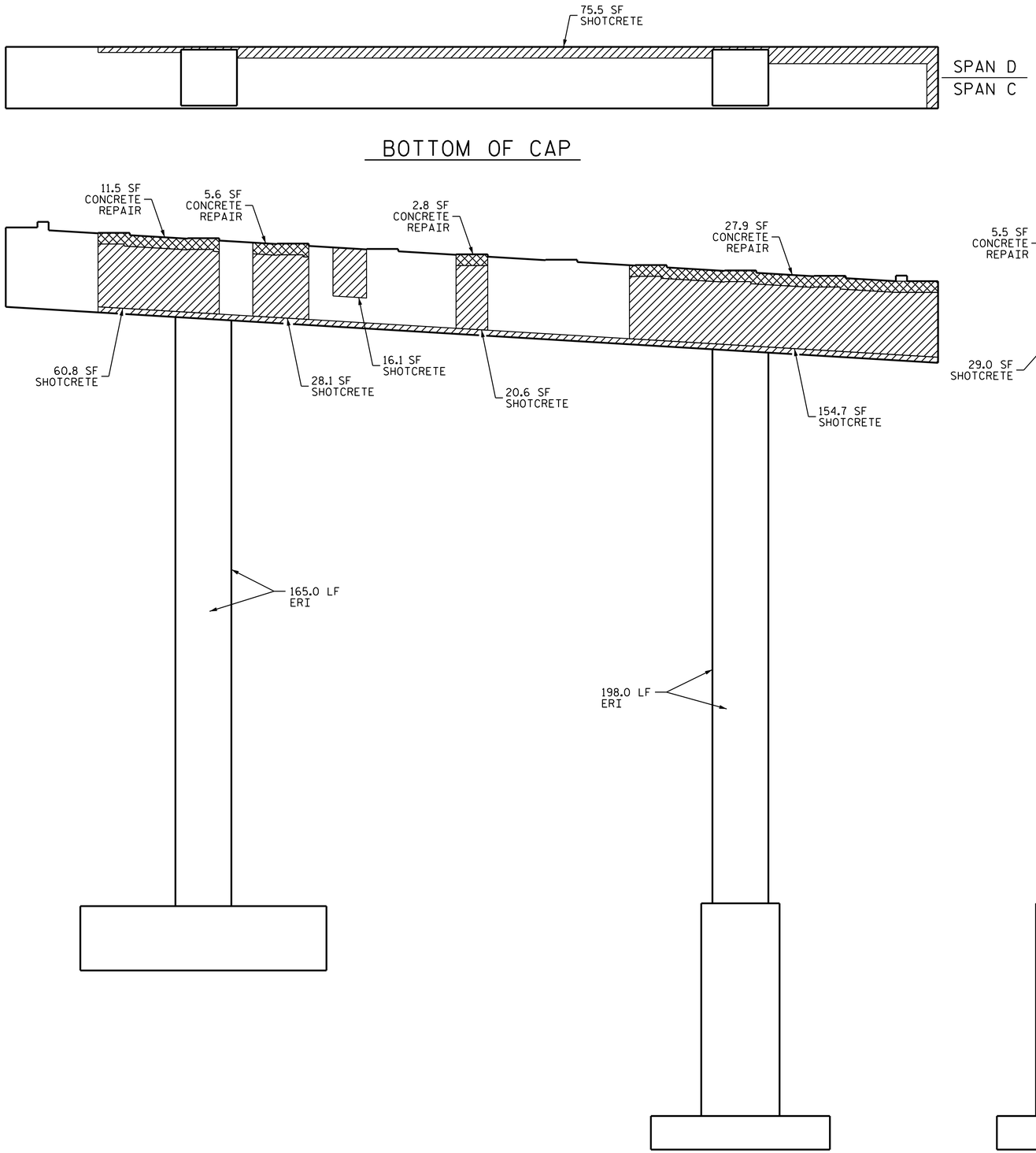
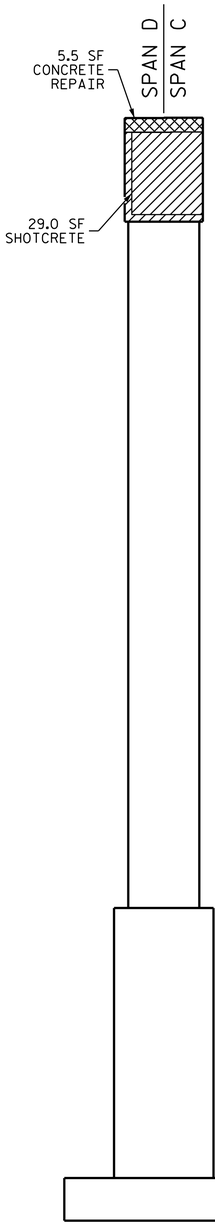


ELEVATION
SPAN D FACE



END VIEW

AS-BUILT REPAIR QUANTITY TABLE				
BENT 3 SPAN D	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	384.8	192.4		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	53.3	26.7		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	0.0			
COLUMN	363.0			

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

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

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 3
SPAN D FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			32

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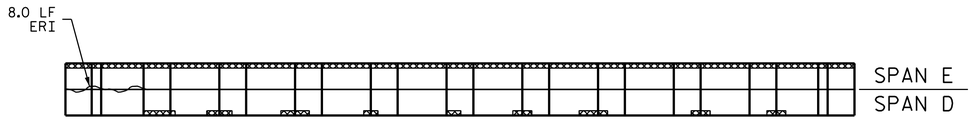
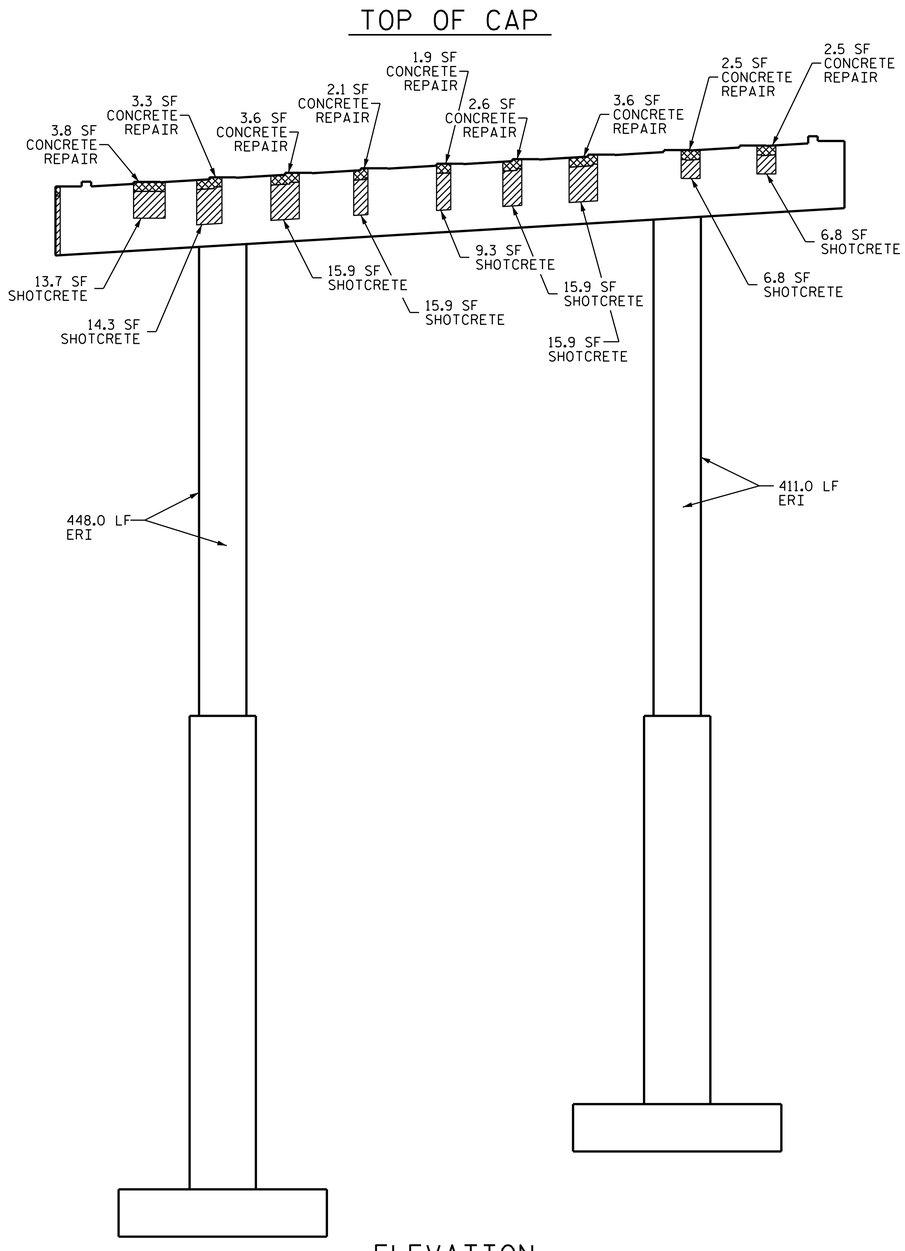
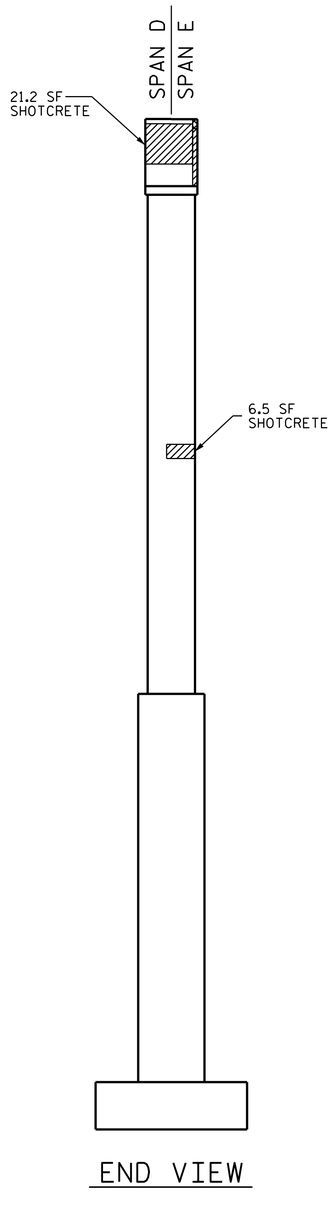


NOTE: CATWALK REMOVED FOR CLARITY.
SEE "CATWALK" SHEET FOR DETAILS.



ELEVATION
SPAN D FACE



END VIEW

AS-BUILT REPAIR QUANTITY TABLE

BENT 4 SPAN D	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	135.7	67.9		
COLUMN	6.5	3.3		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	25.9	13.0		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	8.0			
COLUMN	859.0			
EPOXY COATING	SQ. FT.		SQ. FT.	
TOP OF CAP	458.3			

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

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SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

DocuSigned by:
Amber Miller
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 4
SPAN D FACE

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1			3			TOTAL SHEETS
2			4			32

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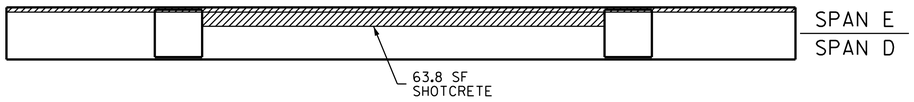

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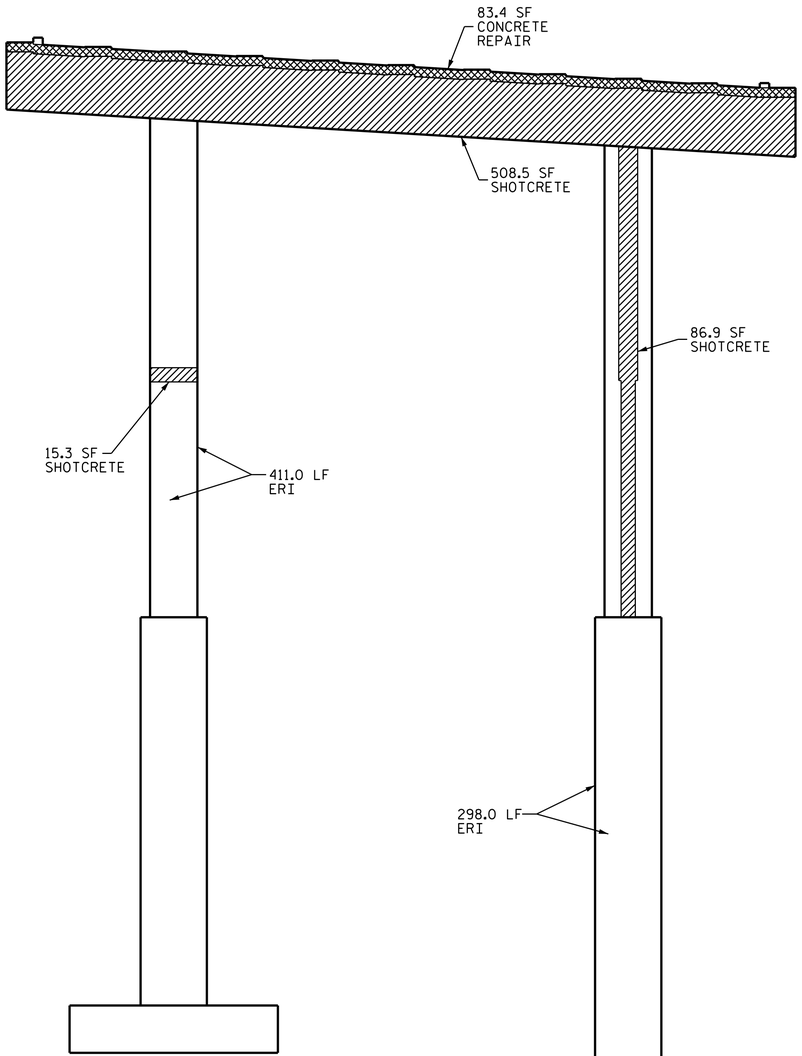
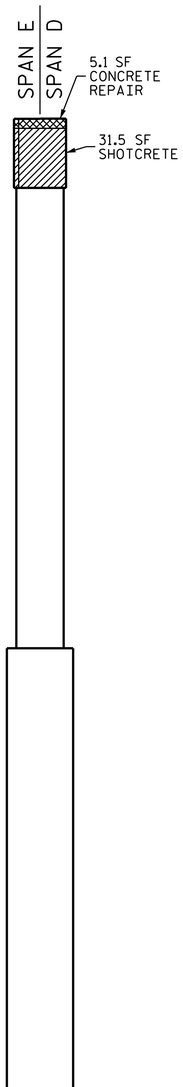


ELEVATION
SPAN E FACE



END VIEW

AS-BUILT REPAIR QUANTITY TABLE

BENT 4 SPAN E	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	603.8	301.9		
COLUMN	102.2	51.1		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	88.5	44.3		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	0.0			
COLUMN	709.0			

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

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SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 4
SPAN E FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			32

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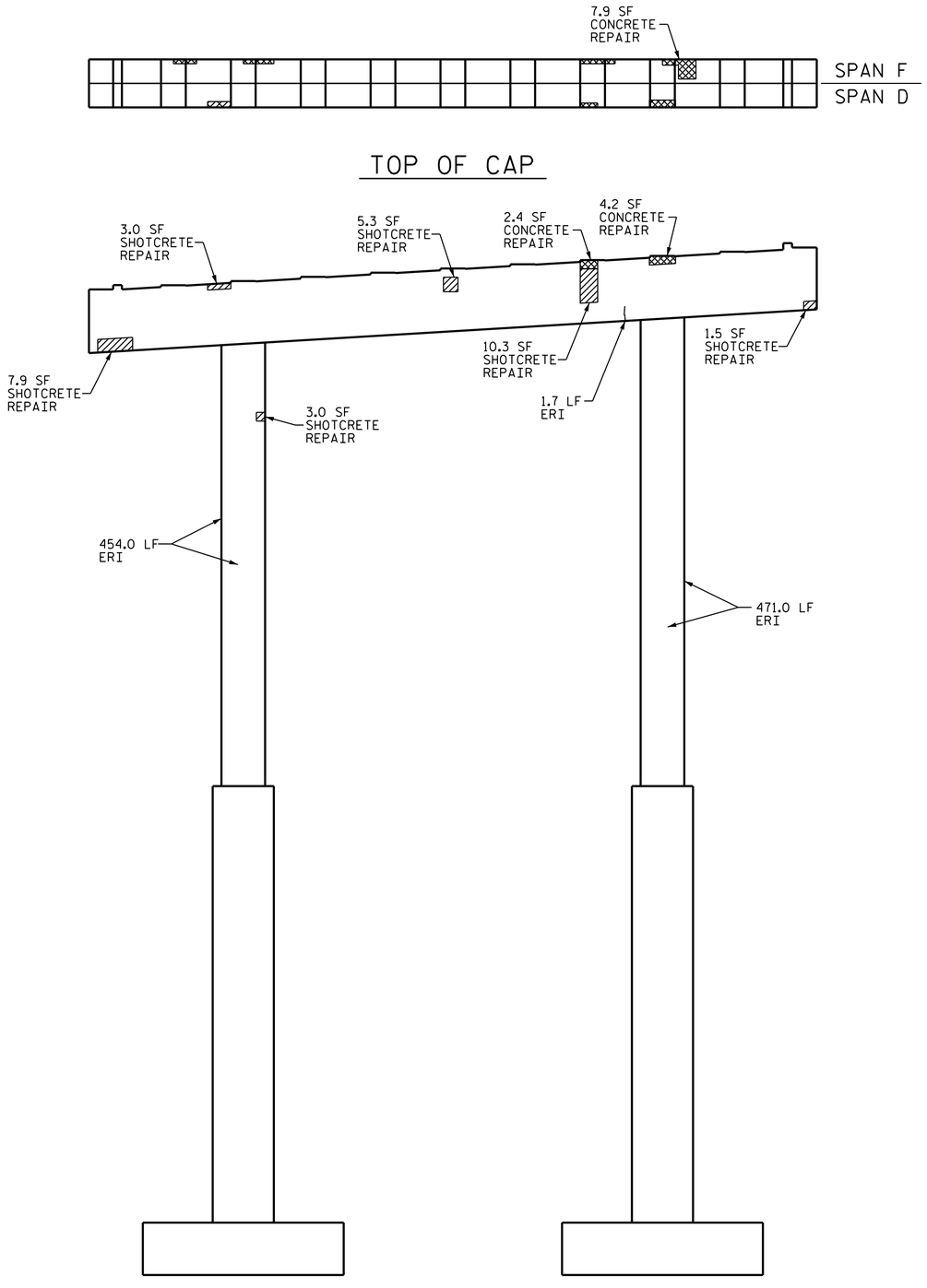
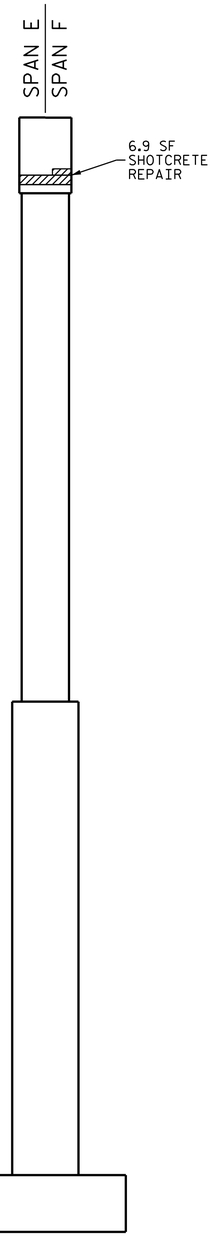


ELEVATION
SPAN E FACE

NOTE: CATWALK REMOVED FOR CLARITY. SEE "CATWALK" SHEET FOR DETAILS.



END VIEW

AS-BUILT REPAIR QUANTITY TABLE

BENT 5 SPAN E	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	34.9	17.5		
COLUMN	3.0	1.5		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	14.5	7.3		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	1.7			
COLUMN	925.0			
EPOXY COATING	SQ. FT.		SQ. FT.	
TOP OF CAP	458.3			

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

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SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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RALEIGH

BENT 5 SPAN E FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			32

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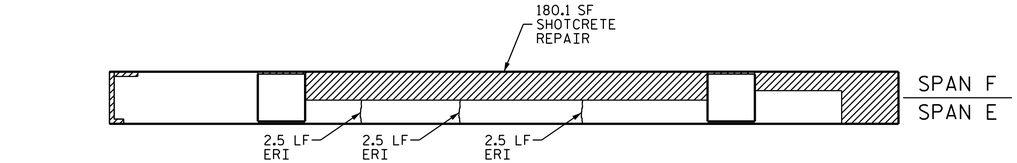
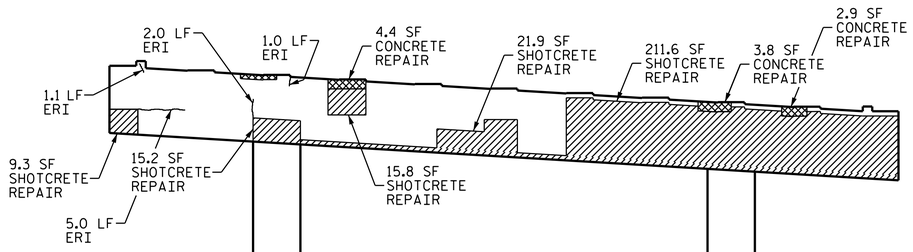
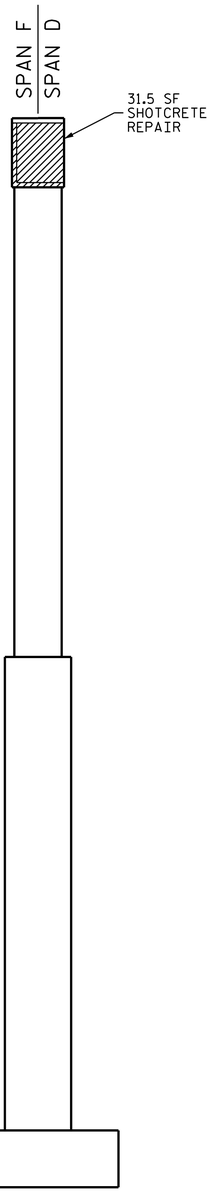


BOTTOM OF CAP



ELEVATION
SPAN F FACE



END VIEW

AS-BUILT REPAIR QUANTITY TABLE

BENT 5 SPAN F	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	485.4	242.7		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	11.1	5.6		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	16.6			
COLUMN	925.0			

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SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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RALEIGH

BENT 5
SPAN F FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			32

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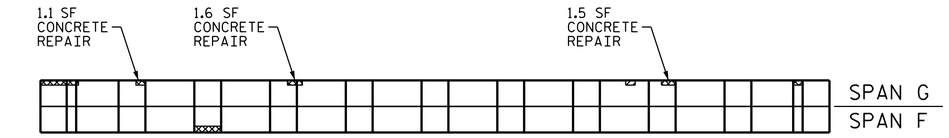
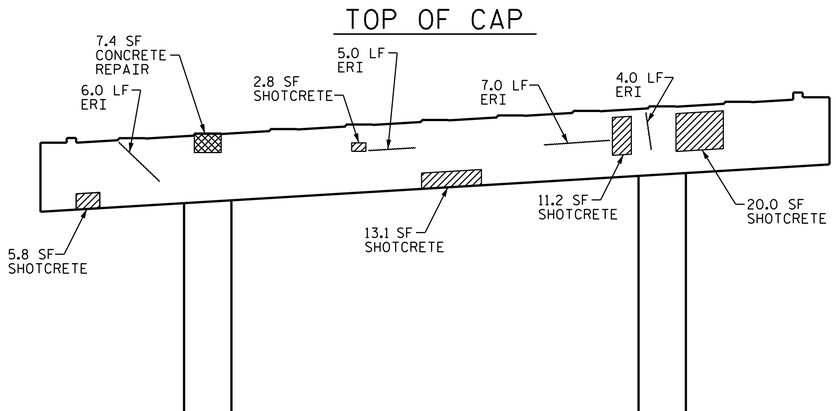


NOTE: CATWALK REMOVED FOR CLARITY. SEE "CATWALK" SHEET FOR DETAILS.



ELEVATION
SPAN F FACE

END VIEW

AS-BUILT REPAIR QUANTITY TABLE

BENT 6 SPAN F	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	52.9	26.5		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	11.6	5.8		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	22.0			
COLUMN	882.0			
EPOXY COATING	SQ. FT.		SQ. FT.	
TOP OF CAP	458.3			

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

NOTES:

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

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

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

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

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

DocuSigned by: Amber Miller
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3/29/2018

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 6
SPAN F FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : D.V. JOYNER DATE : 11/2017
CHECKED BY : R.L. PUTEK DATE : 11/2017

27-MAR-2018 14:59
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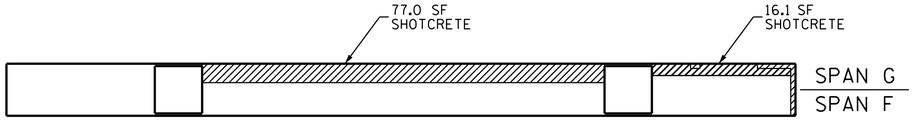
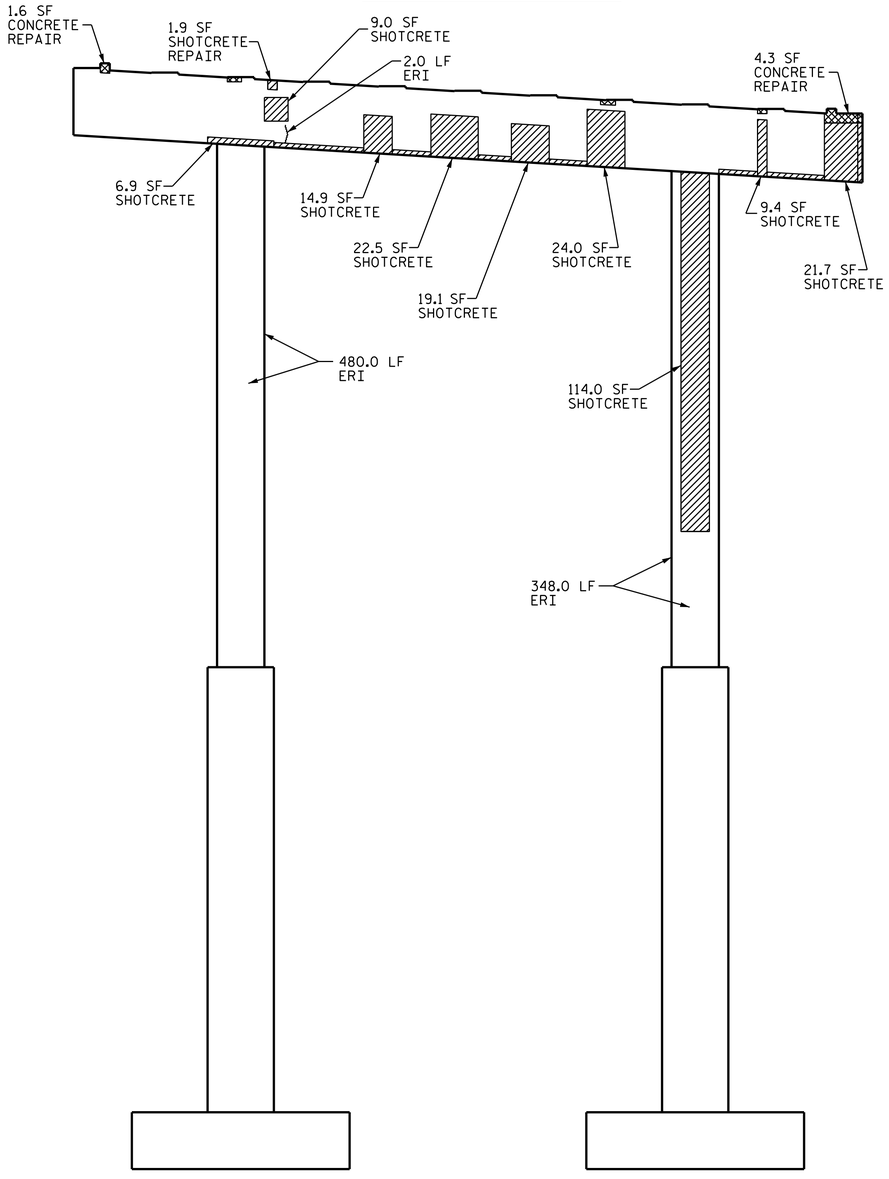
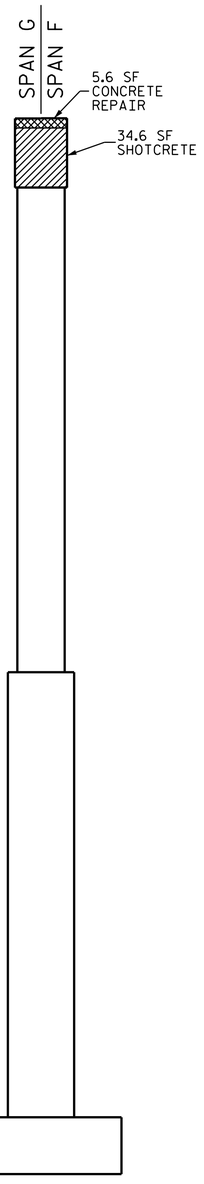


BOTTOM OF CAP



ELEVATION
SPAN G FACE



END VIEW

AS-BUILT REPAIR QUANTITY TABLE

BENT 6 SPAN G	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	257.1	128.6		
COLUMN	114.0	57.0		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	11.5	5.2		
EPOXY RESIN INJECTION		LIN. FT.		LIN. FT.
CAP		2.0		
COLUMN		828.0		

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

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

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 6
SPAN G FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : D.V. JOYNER DATE : 11/2017
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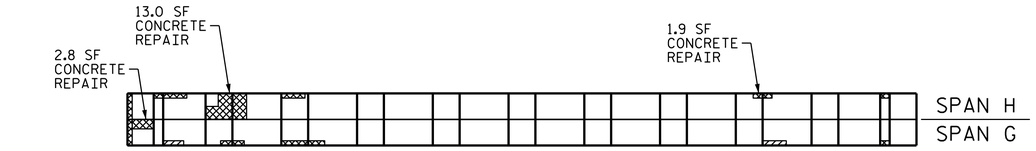
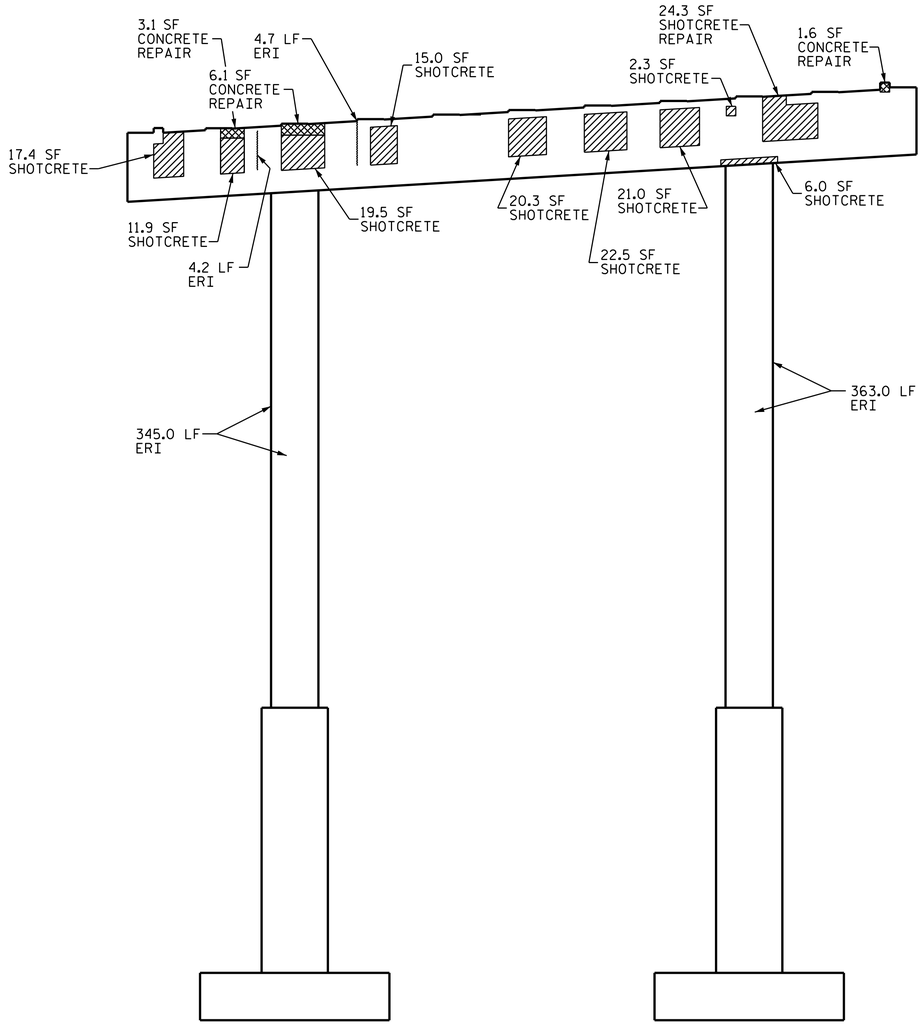
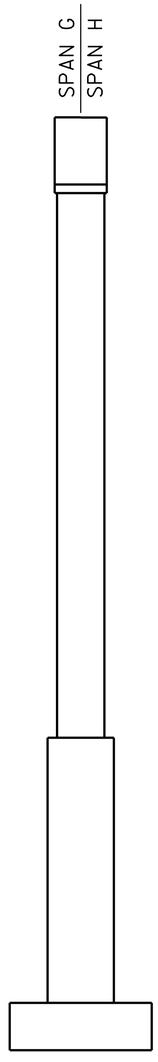


NOTE: CATWALK REMOVED FOR CLARITY. SEE "CATWALK" SHEET FOR DETAILS.

TOP OF CAP



ELEVATION
SPAN G FACE



END VIEW

AS-BUILT REPAIR QUANTITY TABLE

BENT 7 SPAN G	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	160.2	80.1		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	28.5	14.3		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	8.7			
COLUMN	708.0			
EPOXY COATING	SQ. FT.		SQ. FT.	
TOP OF CAP	458.3			

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

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SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

DocuSigned by: Amber Miller B04B5AAF2FAD484...

3/29/2018

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RALEIGH

BENT 7
SPAN G FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : D.V. JOYNER DATE : 11/2017
CHECKED BY : R.L. PUTEK DATE : 11/2017

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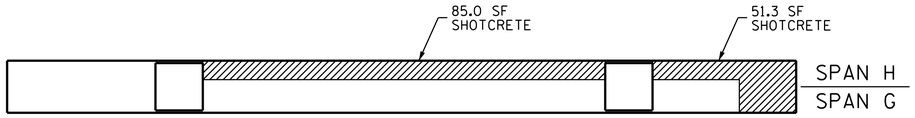

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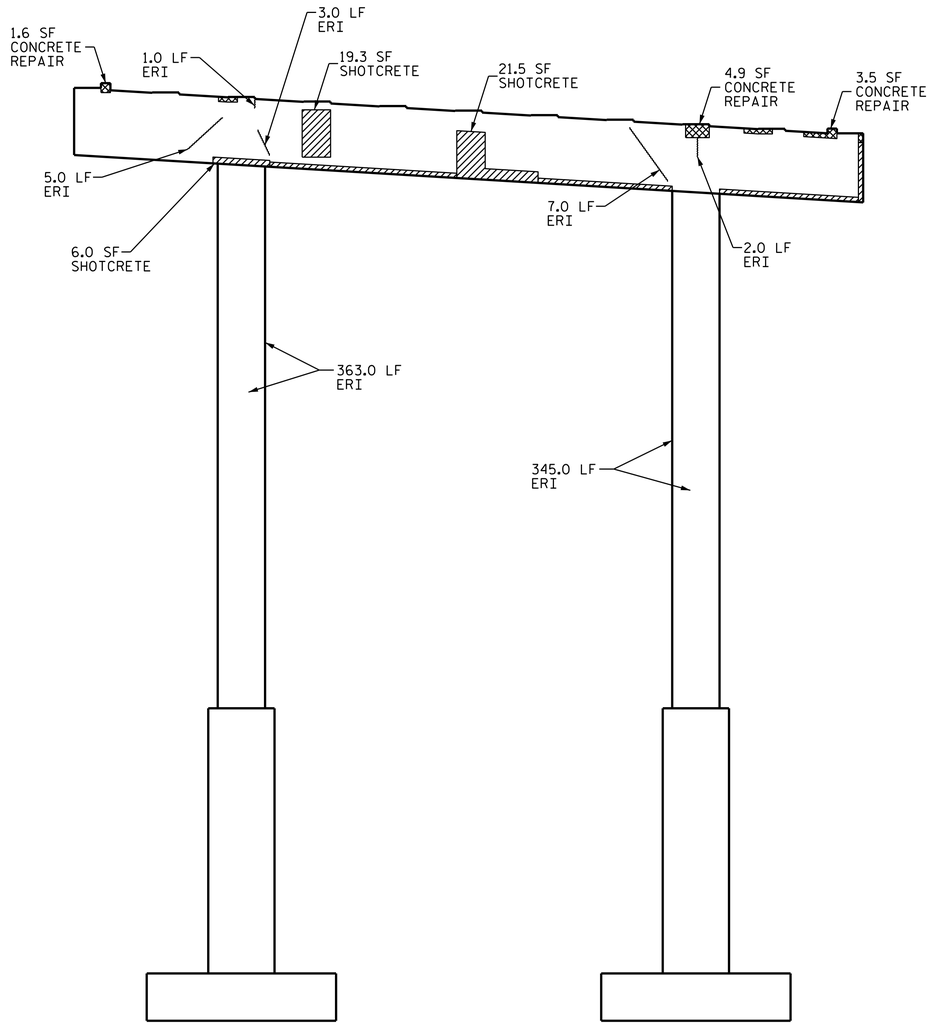
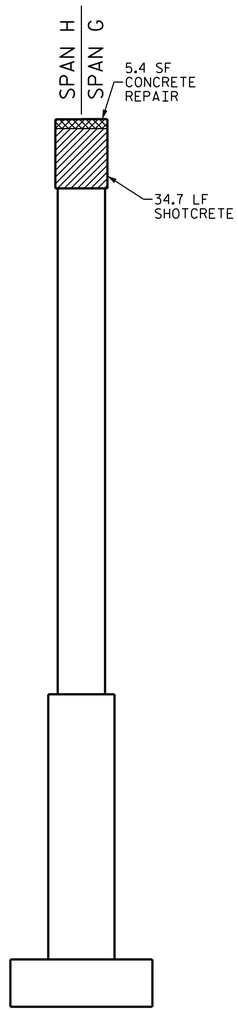


ELEVATION
SPAN H FACE



END VIEW

AS-BUILT REPAIR QUANTITY TABLE

BENT 7 SPAN H	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	217.8	108.9		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	15.4	7.7		
EPOXY RESIN INJECTION		LIN. FT.		LIN. FT.
CAP		18.0		
COLUMN		708.0		

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

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SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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RALEIGH

BENT 7
SPAN H FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : D. V. JOYNER DATE : 11/2017
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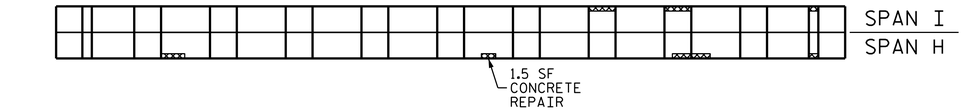

TOP OF CAP

NOTE: CATWALK REMOVED FOR CLARITY.
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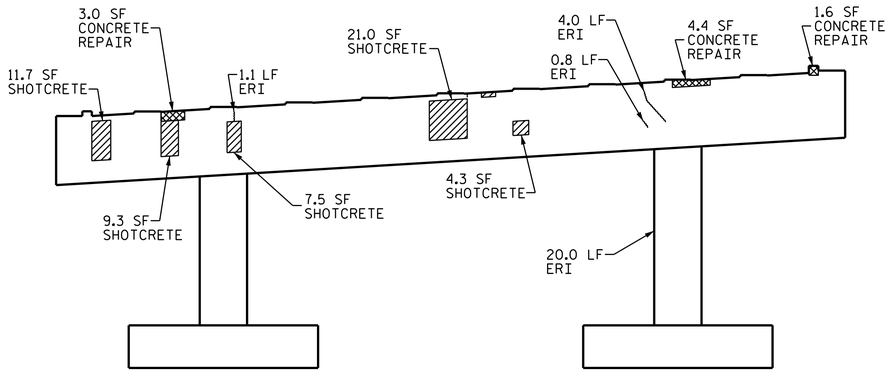
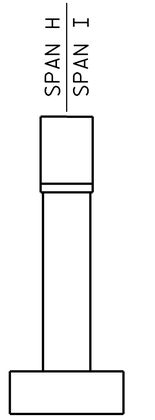


ELEVATION
SPAN H FACE



END VIEW

AS-BUILT REPAIR QUANTITY TABLE				
BENT 8	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	145.2	72.6		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	20.3	10.2		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	13.4			
COLUMN	20.0			
EPOXY COATING	SQ. FT.		SQ. FT.	
TOP OF CAP	458.3			

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

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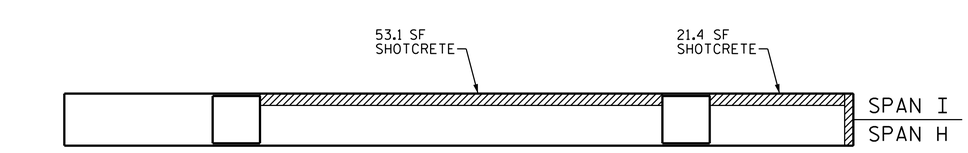
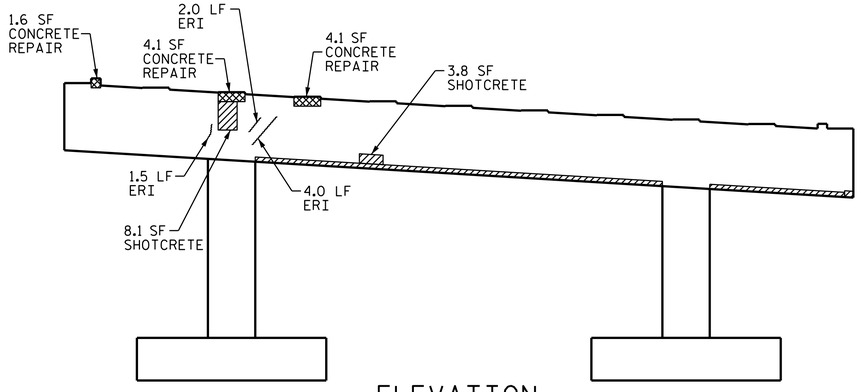
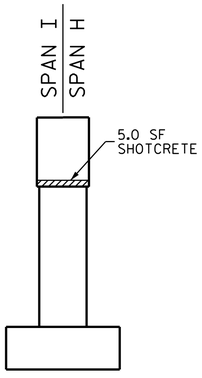


BOTTOM OF CAP



ELEVATION
SPAN I FACE



END VIEW

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 8
SPAN H & I FACES

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-26
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : D. V. JOYNER DATE : 11/2017
CHECKED BY : R.L. PUTEK DATE : 11/2017

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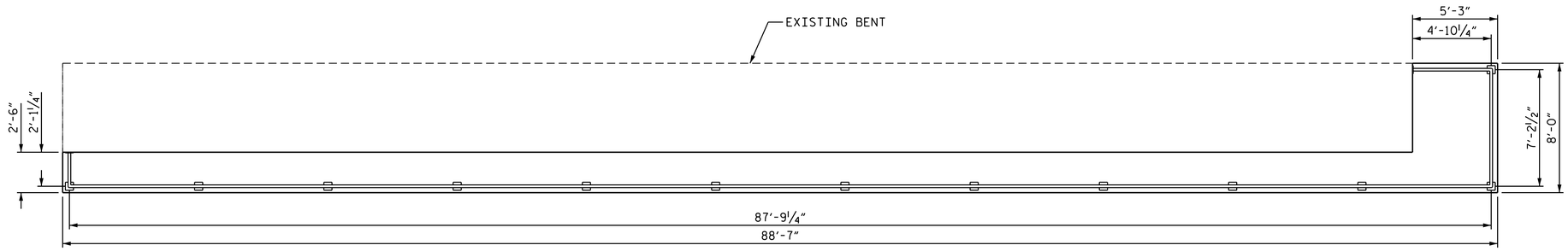
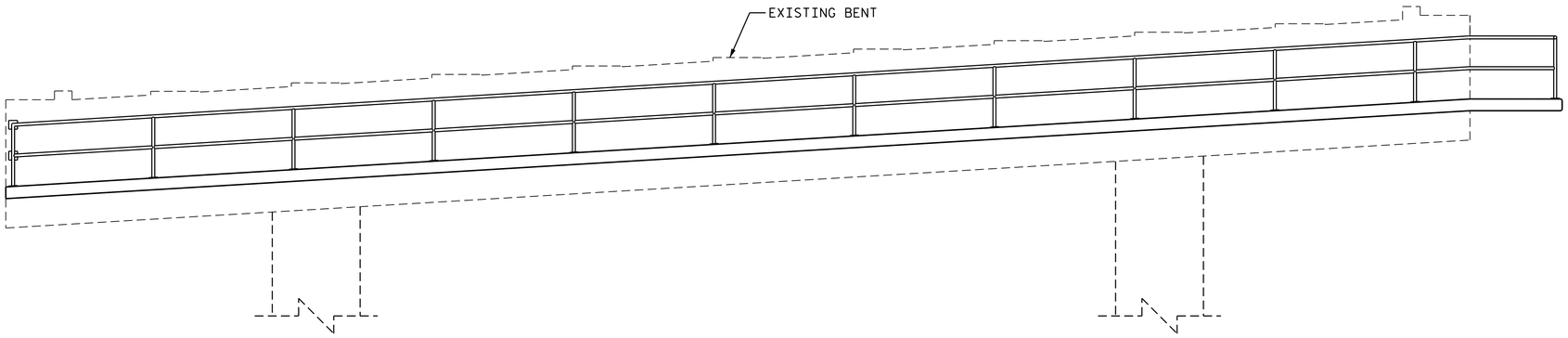


PLAN OF BENT CATWALK



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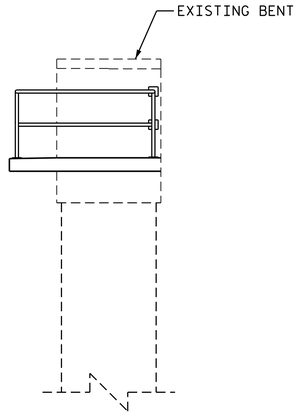

END VIEW

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CATWALK

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

DocuSigned by:
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3/29/2018

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-27
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : R.L.PUTEK DATE : 02/18
CHECKED BY : A.M. LEE, PE DATE : 3/18

27-MAR-2018 14:59
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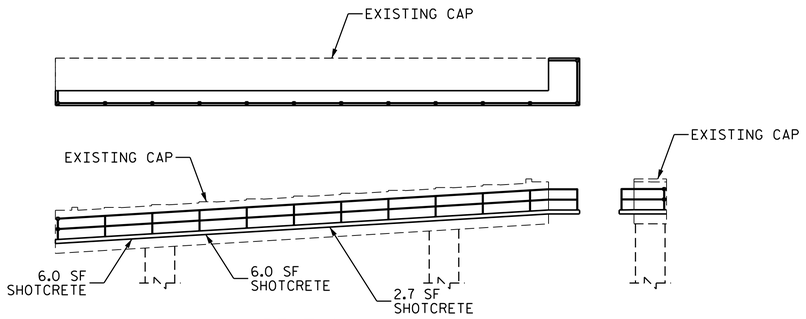

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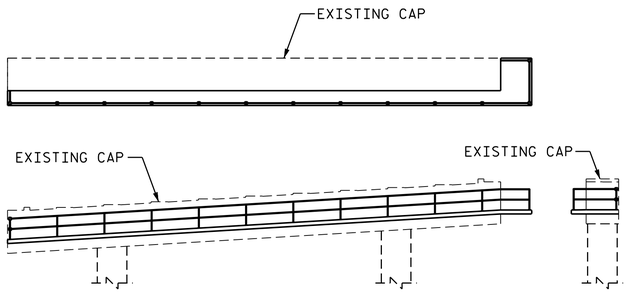

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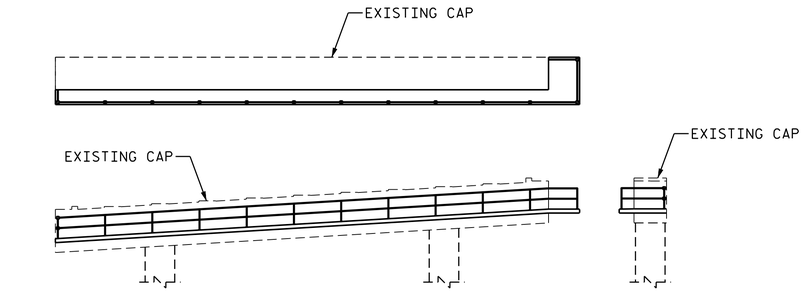

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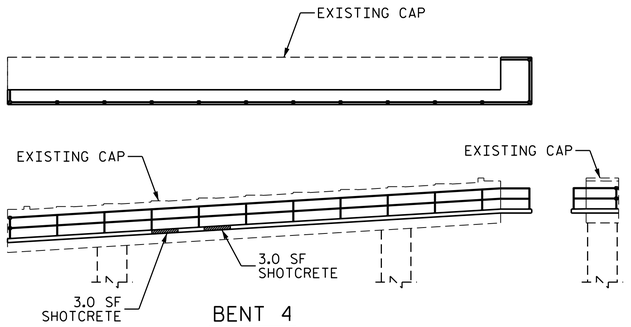

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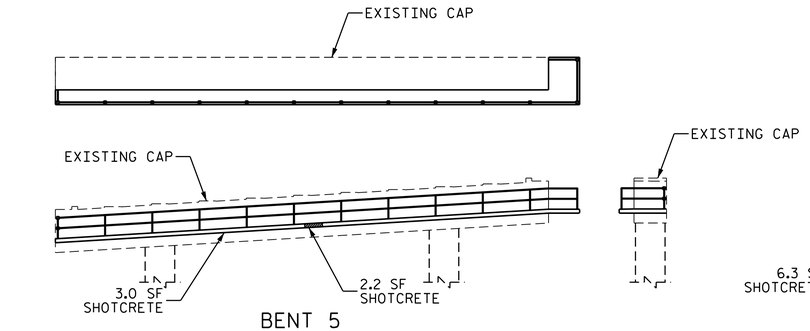

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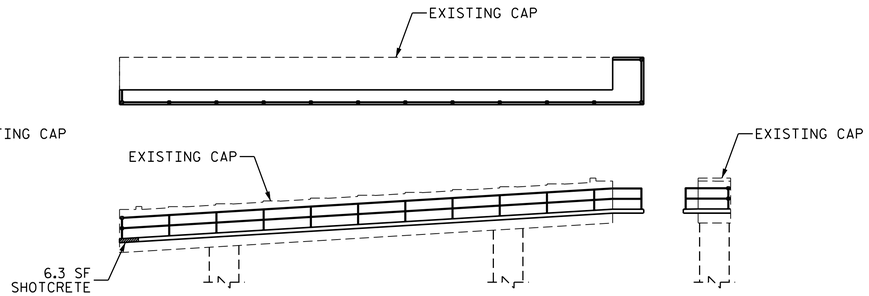

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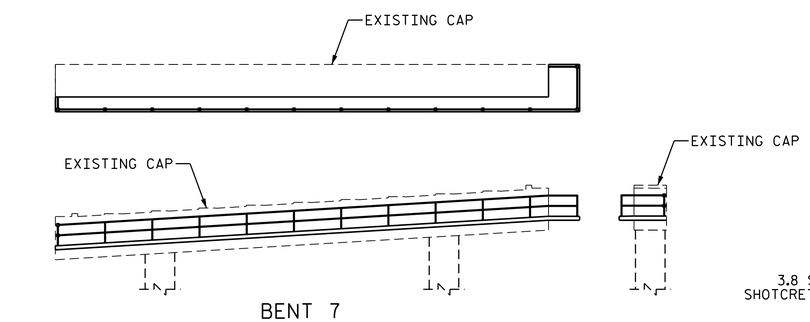

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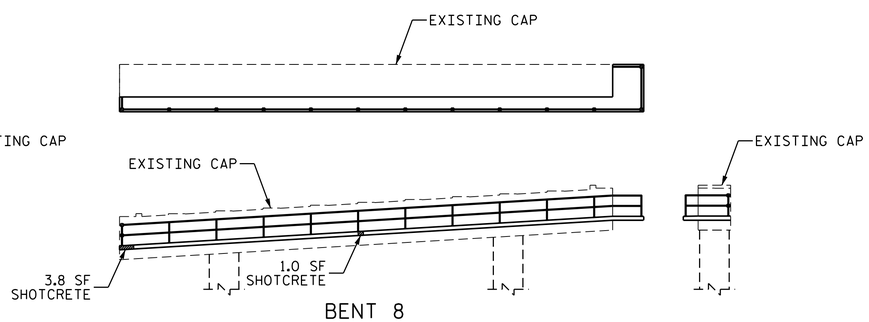

BENT 8

AS-BUILT REPAIR QUANTITY TABLE

SHOTCRETE REPAIRS

	ESTIMATE		ACTUAL	
	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
BENT 1	14.7	4.9		
BENT 2	0.0	0.0		
BENT 3	0.0	0.0		
BENT 4	6.0	2.0		
BENT 5	5.2	1.7		
BENT 6	6.3	2.1		
BENT 7	0.0	0.0		
BENT 8	4.8	1.6		

EPOXY RESIN INJECTION

	LIN. FT.	LIN. FT.
BENT 1	6.0	
BENT 2	7.3	
BENT 3	20.0	
BENT 4	20.0	
BENT 5	25.0	
BENT 6	25.0	
BENT 7	12.8	
BENT 8	5.7	

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

SHOTCRETE REPAIR AREA

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CATWALK REPAIR

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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3/29/2018

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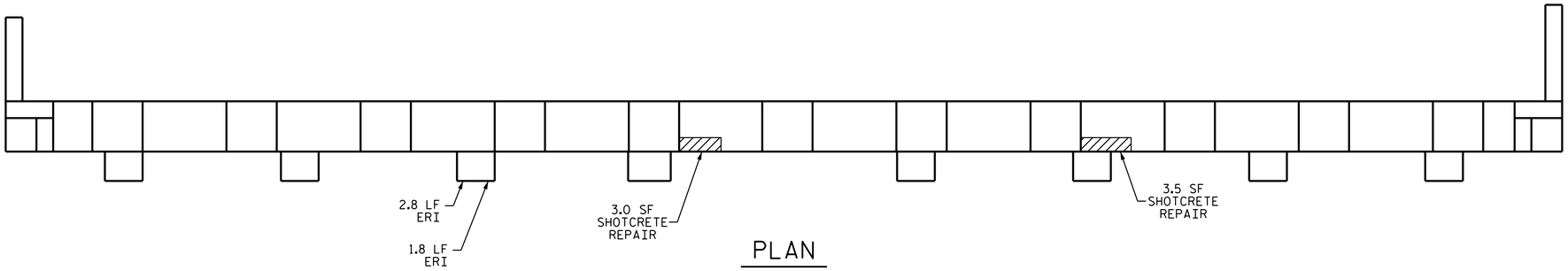

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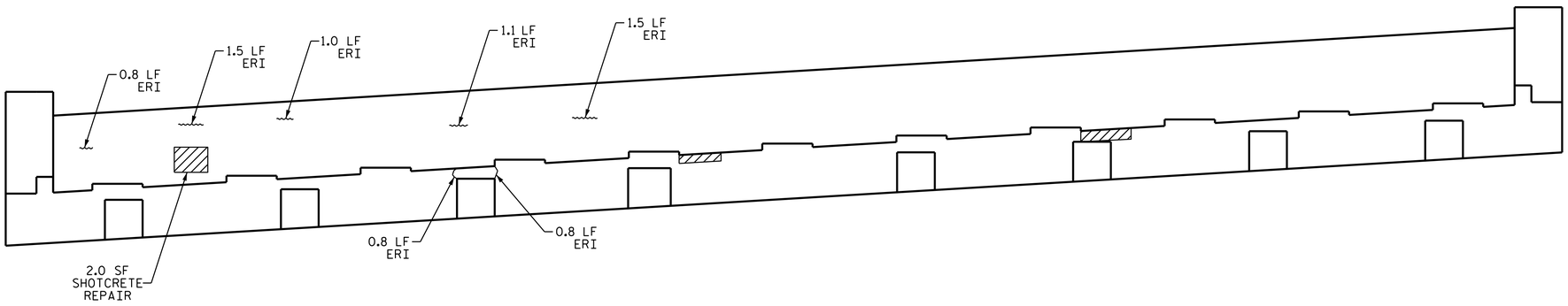

ELEVATION

AS-BUILT REPAIR QUANTITY TABLE

END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	6.5	3.3		
CURTAIN WALL	2.0	1.0		
WING WALL	0.0	0.0		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.0	0.0		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	6.2			
CURTAIN WALL	5.9			
EPOXY COATING	SQ. FT.		SQ. FT.	
TOP OF END BENT CAP	222			

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 "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

NOTES

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING TO THE TOP SURFACES OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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END BENT 2

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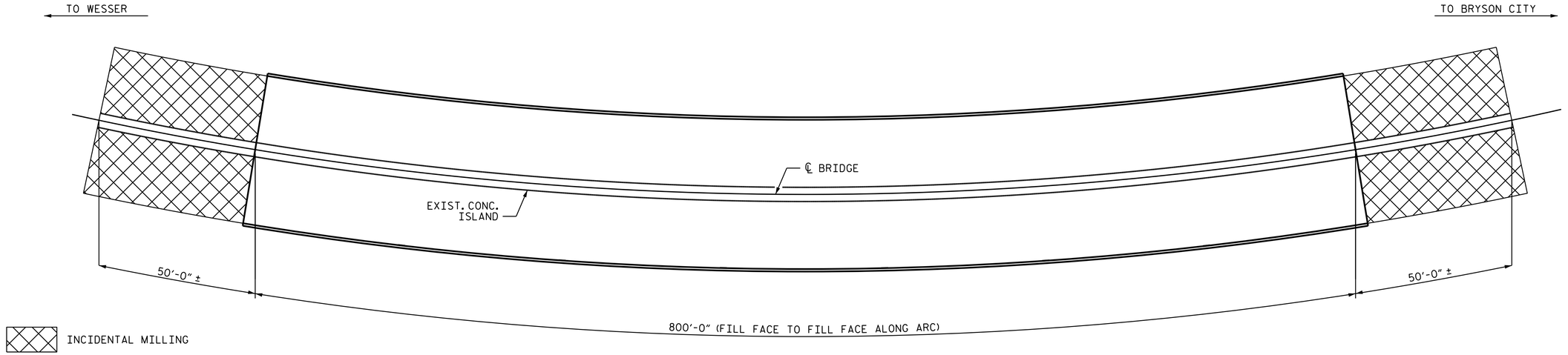
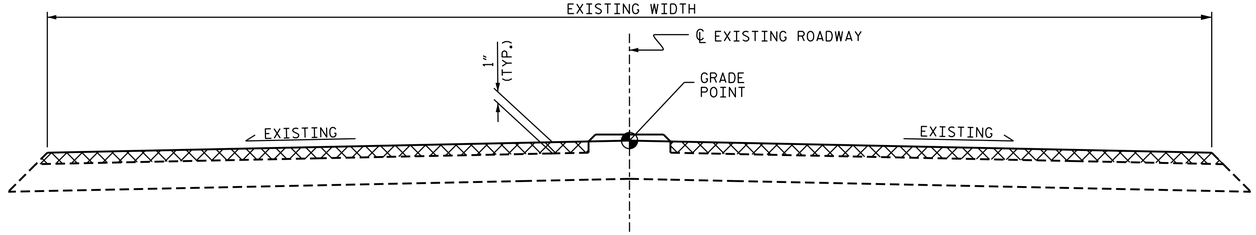
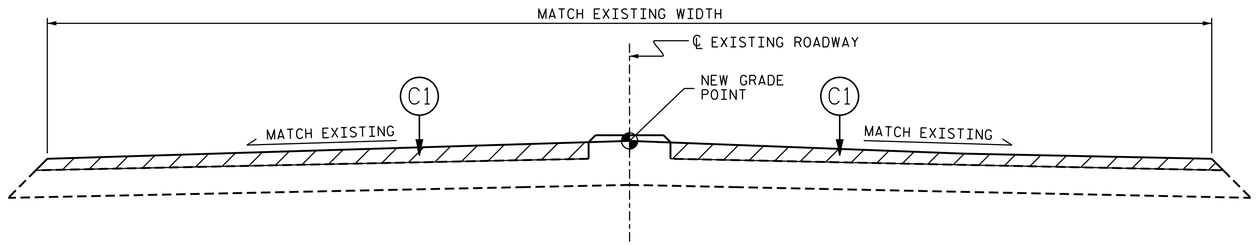




TYPICAL ROADWAY MILLING SECTION

(MILL TO 1½" DEPTH)

C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH.



TYPICAL ROADWAY SECTION

NOTES

INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVEMENT TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1½" 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 1½" DUE TO SETTLEMENT OF THE EXISTING APPROACH.

SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
INCIDENTAL MILLING	887 SQ. YDS.	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B	80 TONS	
ASPHALT BINDER FOR PLANT MIX	6 TONS	

PROJECT NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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3/29/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

APPROACH MILLING & TYPICAL ROADWAY SECTIONS

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CHECKED BY : A. M. LEE DATE : 3/18

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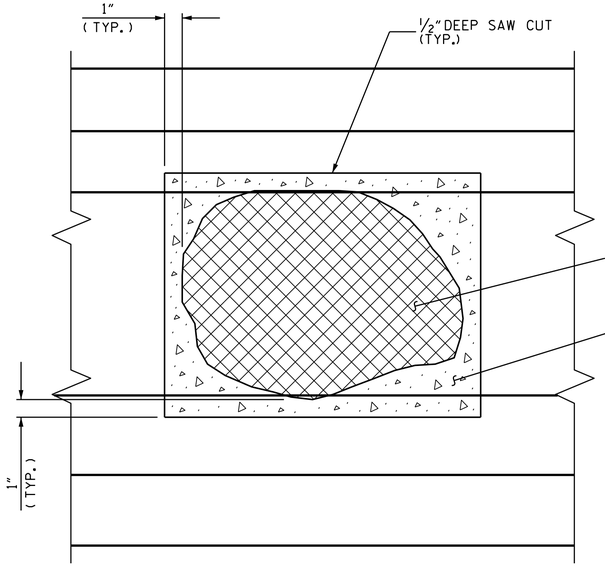

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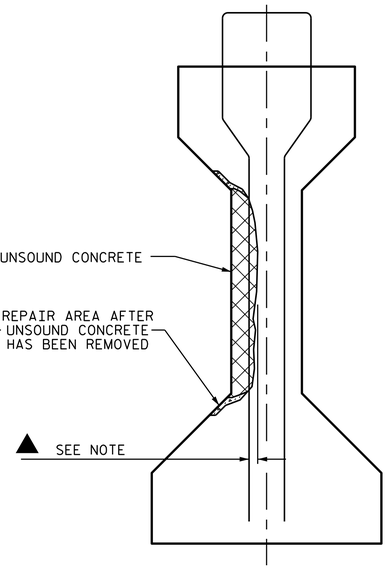
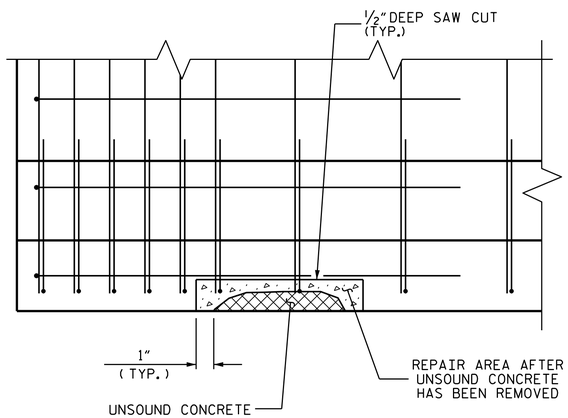


SECTION

GIRDER WEB REPAIR



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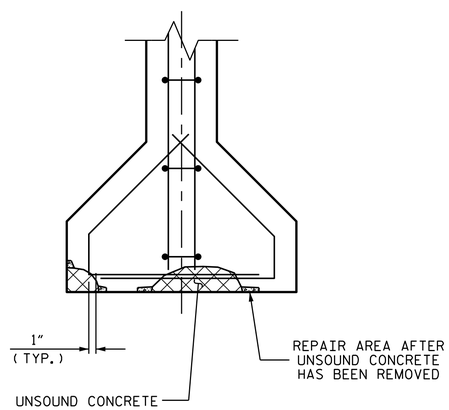


SECTION

GIRDER FLANGE REPAIR

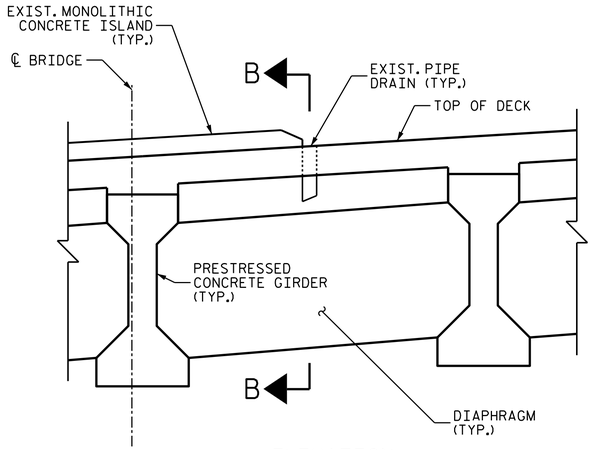
NOTES

FOR REPAIRS TO PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.

▲ ALL UNSOUND CONCRETE MUST BE REMOVED, HOWEVER, PRESTRESSED STRANDS SHOULD NOT BE DISTURBED UNLESS ABSOLUTELY NECESSARY. THE CONTRACTOR SHALL USE EXTREME CARE TO NOT DAMAGE STRANDS.

EXTEND PIPE DRAIN WHEN PIPE DRAIN IS ABOVE THE CONCRETE DIAPRAHGM.

NO SEPARATE PAYMENT WILL BE MADE FOR PIPE DRAIN EXTENSIONS. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE DIAPHRAGM REPAIRS.



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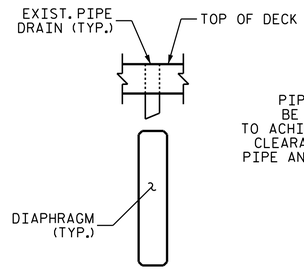
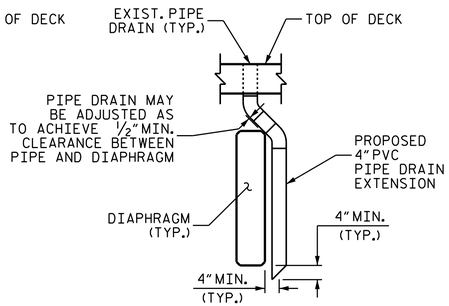


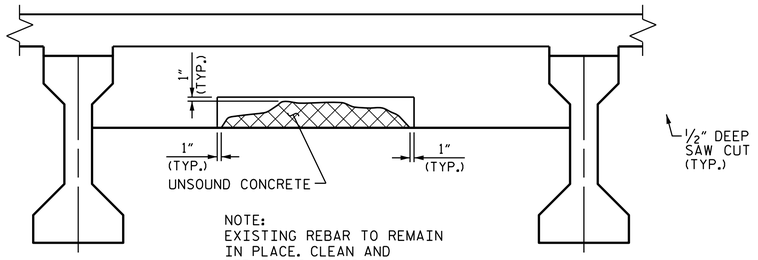
EXISTING PIPE DRAIN



PROPOSED PIPE DRAIN

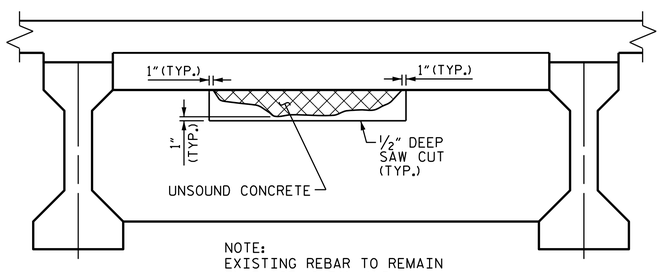
SECTION B-B

PIPE DRAIN EXTENSION



NOTE:
EXISTING REBAR TO REMAIN IN PLACE. CLEAN AND REPAIR AS NECESSARY.

BENT DIAPHRAGM REPAIR



NOTE:
EXISTING REBAR TO REMAIN IN PLACE. CLEAN AND REPAIR AS NECESSARY.

INTERMEDIATE DIAPHRAGM REPAIR

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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BRIDGE NO. 8

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PRESTRESSED GIRDER & DIAPHRAGM REPAIR DETAILS

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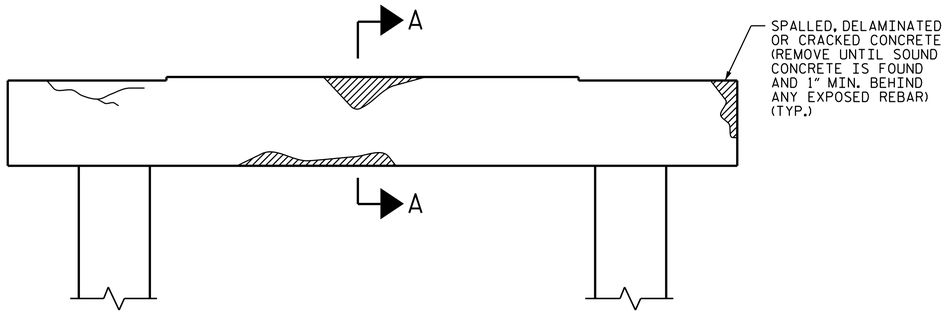
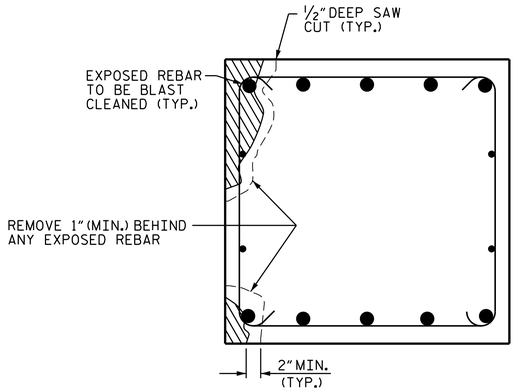
NOTES

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

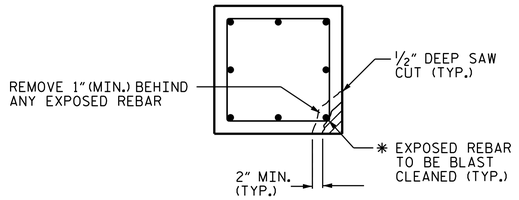


BENT CAP REPAIRS

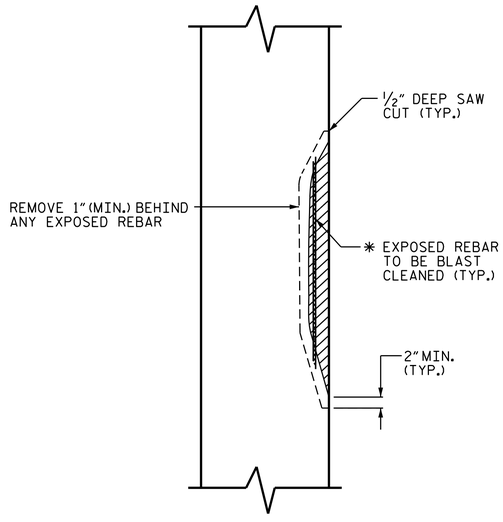


SECTION A-A

CAP REPAIR



PLAN OF COLUMN



* REPAIR LENGTH SHALL NOT EXCEED 10 FEET.

ELEVATION OF COLUMN

COLUMN REPAIR

PROJ. NO. 15BPR.9

SWAIN COUNTY

BRIDGE NO. 8

STATE OF NORTH CAROLINA
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TYPICAL CAP AND COLUMN REPAIR DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 031021 ENGINEER AMBER M. LEE

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STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A ¼" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE ⅞" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞" Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾" Ø STUDS BASED ON THE RATIO OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

ENGLISH

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