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PROJECT: I-5750

CONTRACT: DM00184



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**BUNCOMBE COUNTY**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5750	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
52028.1.1	-	P.E.	
52028.3.1	NHPP-0040(025)	CONST.	

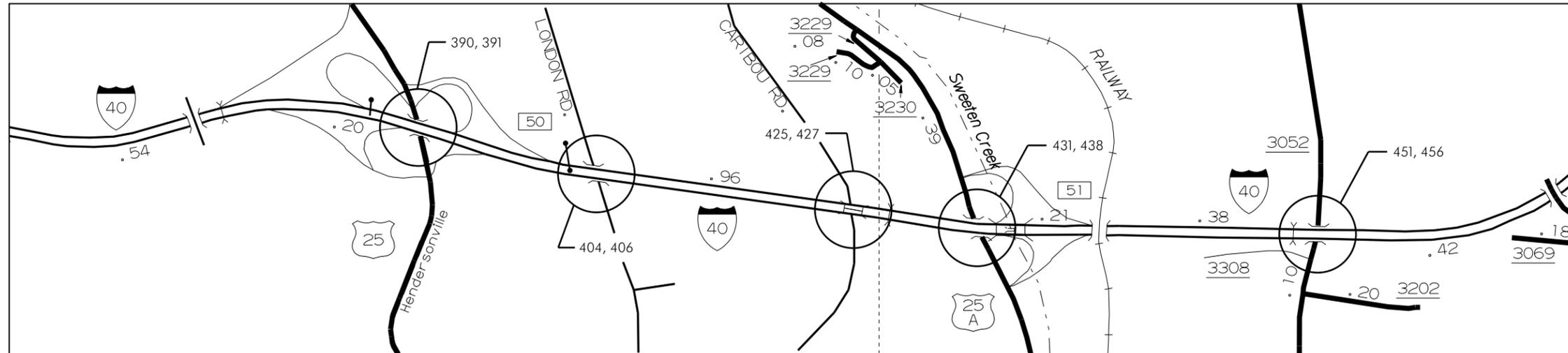
**LOCATION:**

**BUNCOMBE COUNTY:**

- BRIDGE #390 ON INTERSTATE 40 EASTBOUND OVER US 25 (HENDERSONVILLE ROAD)
- BRIDGE #391 ON INTERSTATE 40 WESTBOUND OVER US 25 (HENDERSONVILLE ROAD)
- BRIDGE #404 ON INTERSTATE 40 EASTBOUND OVER LONDON ROAD
- BRIDGE #406 ON INTERSTATE 40 WESTBOUND OVER LONDON ROAD
- BRIDGE #425 ON INTERSTATE 40 EASTBOUND OVER CARIBOU ROAD
- BRIDGE #427 ON INTERSTATE 40 WESTBOUND OVER CARIBOU ROAD
- BRIDGE #431 ON INTERSTATE 40 EASTBOUND OVER US 25A (SWEETEN CREEK ROAD)
- BRIDGE #438 ON INTERSTATE 40 WESTBOUND OVER US 25A (SWEETEN CREEK ROAD)
- BRIDGE #451 ON INTERSTATE 40 EASTBOUND OVER SR 3052 (SCHOOL ROAD EAST)
- BRIDGE #456 ON INTERSTATE 40 WESTBOUND OVER SR 3052 (SCHOOL ROAD EAST)

**TYPE OF WORK:**

**BRIDGE PRESERVATION - UNDERSIDE OF DECK REPAIR, SUBSTRUCTURE REPAIR, STRUCTURAL STEEL REPAIR, AND PAINTING OF EXISTING BRIDGE STRUCTURES.**



VICINITY MAP - BUNCOMBE CO.



**DESIGN DATA**

BUNCOMBE COUNTY			
#390 ADT 2013 =17,000	#427 ADT 2012 =22,000		
#391 ADT 2012 =17,000	#431 ADT 2012 =22,000		
#404 ADT 2012 =22,000	#438 ADT 2012 =22,000		
#406 ADT 2012 =22,000	#451 ADT 2012 =30,000		
#425 ADT 2012 =22,000	#456 ADT 2012 =30,000		

**PROJECT LENGTH**

BUNCOMBE COUNTY			
- #390 = 0.048 MILE	- #427 = 0.038 MILE		
- #391 = 0.054 MILE	- #431 = 0.027 MILE		
- #404 = 0.035 MILE	- #438 = 0.027 MILE		
- #406 = 0.037 MILE	- #451 = 0.027 MILE		
- #425 = 0.033 MILE	- #456 = 0.026 MILE		

Prepared In the Office of:  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
 STRUCTURES MANAGEMENT UNIT - PRESERVATION & REPAIR GROUP  
 1000 BIRCH RIDGE DR. RALEIGH, N.C. 27610

**DOUGLAS R. CALHOUN, P.E.**  
 PROJECT ENGINEER

2012 STANDARD SPECIFICATIONS

LETTING DATE:  
 SEPTEMBER 21, 2016

DocuSigned by:

John A. Yannaccone



8/9/2016

**JOHN A. YANNACONE, P.E.**  
 PROJECT DESIGN ENGINEER

**PROJECT: I-5750**

**CONTRACT: DM00184**



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**BUNCOMBE COUNTY**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5750	1A	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
52028.1.1	-	P.E.	
52028.3.1	NHPP-0040(025)	CONST.	

**LOCATION:**

**BUNCOMBE COUNTY:**

- BRIDGE #390 ON INTERSTATE 40 WESTBOUND OVER US 276 (JONATHAN CREEK RD.)
- BRIDGE #391 ON INTERSTATE 40 EASTBOUND OVER SR 1364 (COLEMAN MOUNTAIN RD.)
- BRIDGE #404 ON INTERSTATE 40 EASTBOUND OVER LONDON ROAD
- BRIDGE #406 ON INTERSTATE 40 WESTBOUND OVER LONDON ROAD
- BRIDGE #425 ON INTERSTATE 40 EASTBOUND OVER CARIBOU ROAD
- BRIDGE #427 ON INTERSTATE 40 WESTBOUND OVER CARIBOU ROAD
- BRIDGE #431 ON INTERSTATE 40 EASTBOUND OVER US 25A (SWEETEN CREEK ROAD)
- BRIDGE #438 ON INTERSTATE 40 WESTBOUND OVER US 25A (SWEETEN CREEK ROAD)
- BRIDGE #451 ON INTERSTATE 40 EASTBOUND OVER SR 3052 (SCHOOL ROAD EAST)
- BRIDGE #456 ON INTERSTATE 40 WESTBOUND OVER SR 3052 (SCHOOL ROAD EAST)

**TYPE OF WORK:**

BRIDGE PRESERVATION - UNDERSIDE OF DECK REPAIR, SUBSTRUCTURE REPAIR, STRUCTURAL STEEL REPAIR, AND PAINTING OF EXISTING BRIDGE STRUCTURES.

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- SN

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- INDEX OF SHEETS
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- STRUCTURAL PLANS - BRIDGE NO. 391
- STRUCTURAL PLANS - BRIDGE NO. 404
- STRUCTURAL PLANS - BRIDGE NO. 406
- STRUCTURAL PLANS - BRIDGE NO. 425
- STRUCTURAL PLANS - BRIDGE NO. 427
- STRUCTURAL PLANS - BRIDGE NO. 431
- STRUCTURAL PLANS - BRIDGE NO. 438
- STRUCTURAL PLANS - BRIDGE NO. 451
- STRUCTURAL PLANS - BRIDGE NO. 456
- STRUCTURAL PLANS - TYPICAL REPAIR AND JACKING DETAILS
- STANDARD NOTES

**TOTAL BILL OF MATERIAL**

BRIDGE NO.	◆ SHOTCRETE REPAIRS	◆ CONCRETE REPAIRS	EPOXY RESIN INJECTION	CLEANING & REPAINTING OF BRIDGE #_	PAINTING CONTAINMENT FOR BRIDGE #_	POLLUTION CONTROL	BEAM REPAIR	BRIDGE JACKING	EPOXY COATING
	CU. FT.	CU. FT.	LIN. FT.	LUMP SUM	LUMP SUM	LUMP SUM	LBS.	EA.	SO. FT.
390	35.0	1.0	8.0	LUMP SUM	LUMP SUM	LUMP SUM	925	2	—
391	66.3	4.0	6.0	LUMP SUM	LUMP SUM	LUMP SUM	1,235	3	—
404	333.5	20.0	1.0	LUMP SUM	LUMP SUM	LUMP SUM	1,830	5	266
406	418.0	12.0	18.0	LUMP SUM	LUMP SUM	LUMP SUM	1,775	10	280
425	237.0	25.5	22.5	LUMP SUM	LUMP SUM	LUMP SUM	210	—	302
427	239.0	38.0	14.0	LUMP SUM	LUMP SUM	LUMP SUM	10	—	302
431	4.0	15.5	71.5	—	—	—	—	—	—
438	1.5	—	82.5	—	—	—	—	—	—
451	278.5	50.0	1.0	LUMP SUM	LUMP SUM	LUMP SUM	2,160	12	246
456	197.0	2.0	4.5	LUMP SUM	LUMP SUM	LUMP SUM	2,165	7	246
<b>TOTAL</b>	<b>1,809.8</b>	<b>168.0</b>	<b>229.0</b>	<b>LUMP SUM</b>	<b>LUMP SUM</b>	<b>LUMP SUM</b>	<b>10,310</b>	<b>39</b>	<b>1,642</b>

◆ QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 390, 391, 404, 406,  
425, 427, 431, 438, 451, 456

DocuSigned by:  
*John A. Yannaccone*  
 7BC38808E8945E  
  
 8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

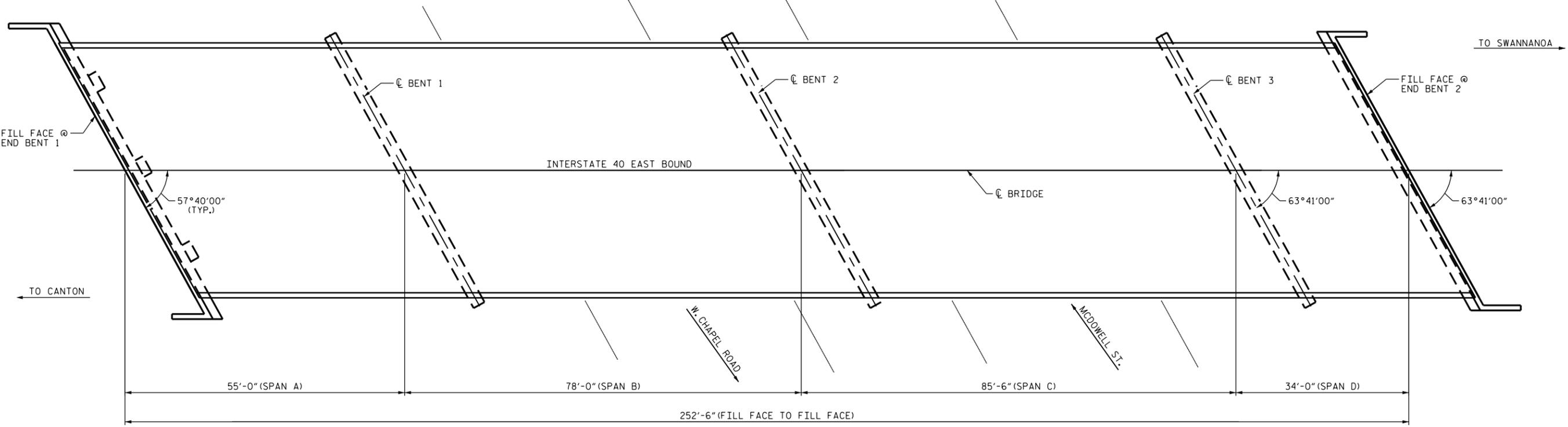
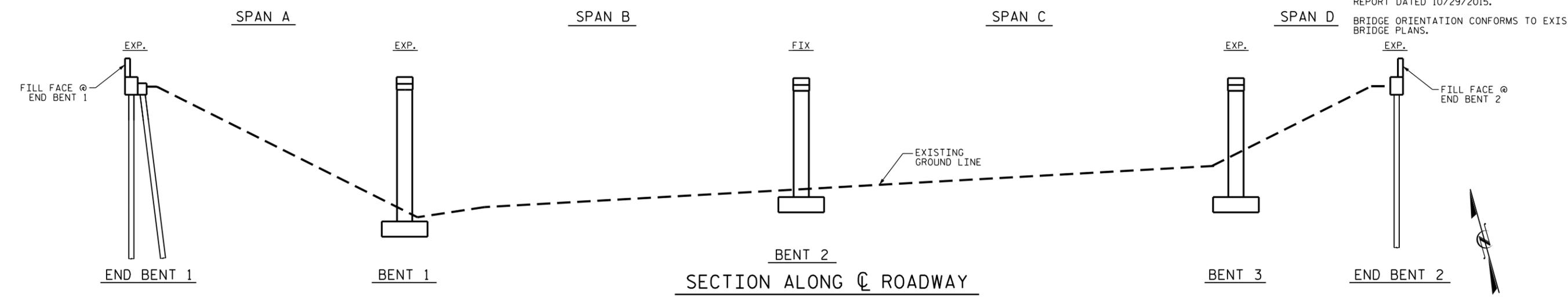
**TOTAL BILL OF MATERIAL**

DRAWN BY : J. YANNAKONE DATE : 05/16  
 CHECKED BY : T.L.CLELLAND DATE : 06/16

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 SIGNATURES COMPLETED

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

**NOTES**  
 PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 10/29/2015.  
 BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



**PLAN**

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 390

SHEET 1 OF 2

**SCOPE OF WORK**

- CLEAN, PAINT AND REPAIR STEEL I-BEAMS AND BEARINGS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- CLEAN AND REPAIR REBAR IN CONCRETE REPAIR AREAS.
- PERFORM SHOTCRETE REPAIRS IN PREPARED AREAS.

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

DocuSigned by:  
*John A. Yannaccone*  
 7BC3800E8945  
 STATE OF NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 SEAL  
 32492  
 JOHN A. YANNACCONE  
 8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 GENERAL DRAWING  
 FOR BRIDGE ON I-40 EBL  
 OVER US 25  
 (HENDERSONVILLE ROAD)

DRAWN BY : D. SHACKELFORD DATE : 04/2016  
 CHECKED BY : T.L. CLELLAND DATE : 05/2016

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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 AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

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

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

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR CLEANING AND REPAINTING OF BRIDGE, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR POLLUTION CONTROL, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR BEAM REPAIR, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 390

SHEET 2 OF 2

DocuSigned by:  
*John A. Yannaccone*  
 7BC36...  
 8/5/2016



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL DRAWING  
 FOR BRIDGE ON I-40 EBL  
 OVER US 25  
 (HENDERSONVILLE ROAD)

DRAWN BY : D. SHACKELFORD DATE : 04/2016  
 CHECKED BY : T.L. CLELLAND DATE : 05/2016

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2			4			TOTAL SHEETS 81

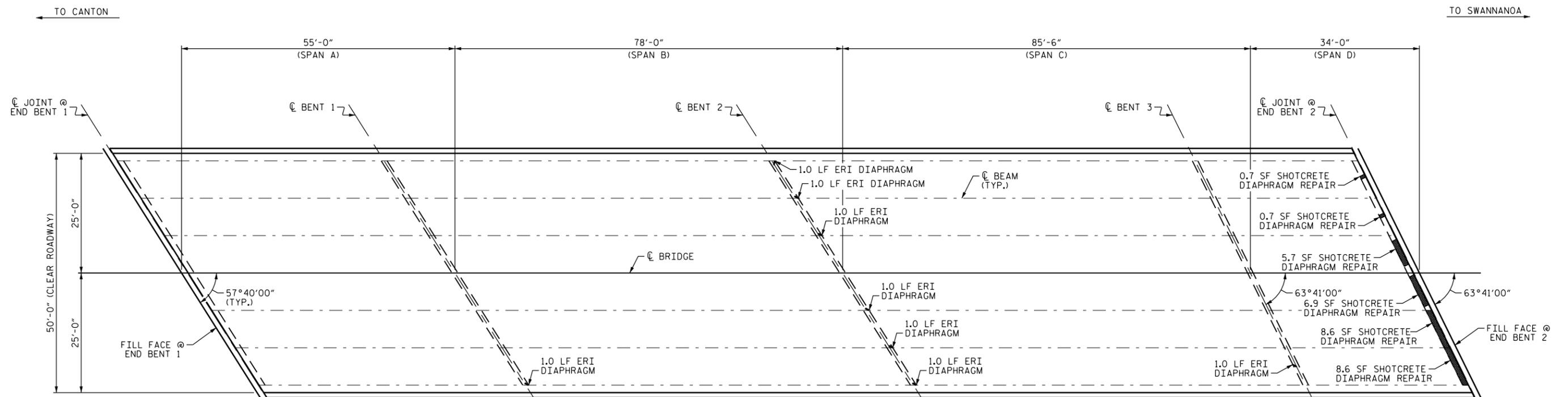
AS-BUILT REPAIR QUANTITY TABLE

UNDERSIDE OF DECK REPAIRS

SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	0.0	0.0		
INTERIOR DIAPHRAGMS	31.2	19.5*		
	ESTIMATE		ACTUAL	
UNDERSIDE EPOXY RESIN INJECTION	8.0 LF			

VALUES IN CHARTS REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, 1" MIN. BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

-  UNDERSIDE REPAIR
-  DIAPHRAGM REPAIR
- ERI EPOXY RESIN INJECTION



PLAN

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 390

NOTES

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

FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG & DIAPHRAGM REPAIRS DETAILS" SHEET.

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

DocuSigned by:  
*John A. Yannaccone*



8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

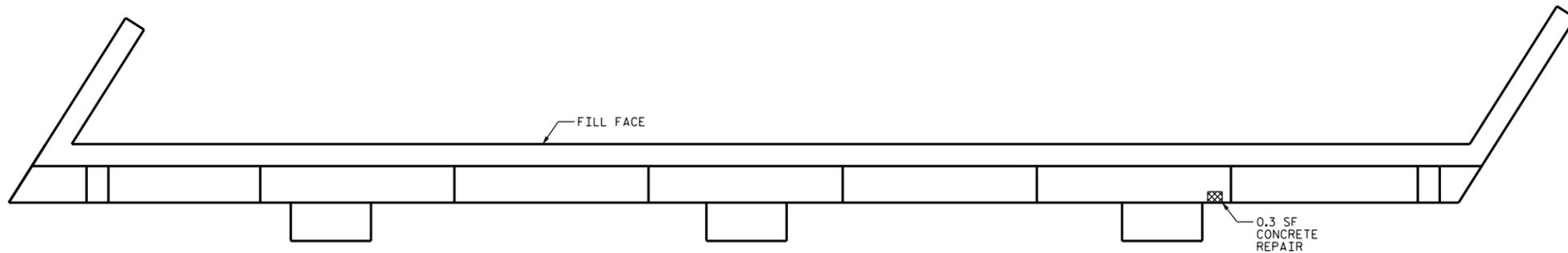
PLAN OF SPANS

DRAWN BY : D. SHACKELFORD DATE : 04/2016  
 CHECKED BY : J. YANNACCONE DATE : 06/2016

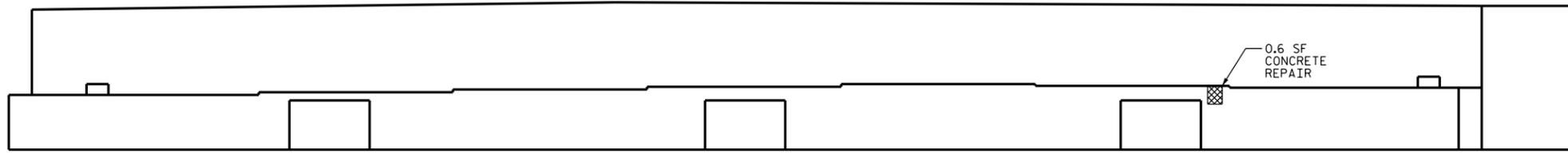
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	REVISIONS						SHEET NO. <b>S-4</b> TOTAL SHEETS <b>81</b>
	NO.	BY:	DATE:	NO.	BY:	DATE:	
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	2			4			





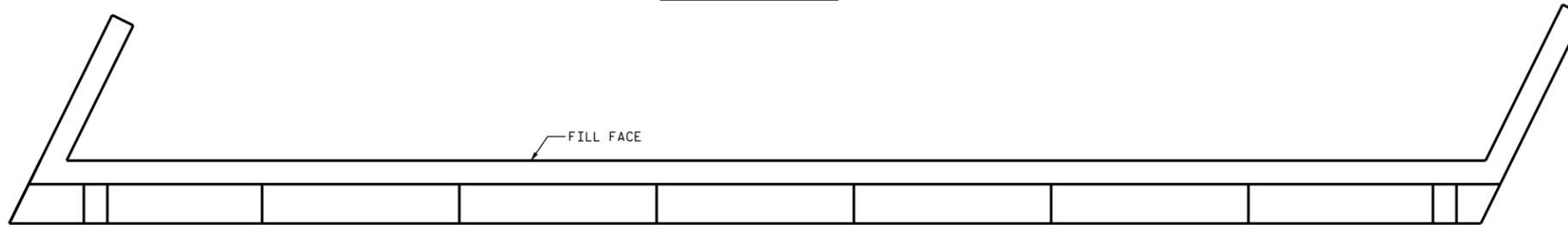


PLAN



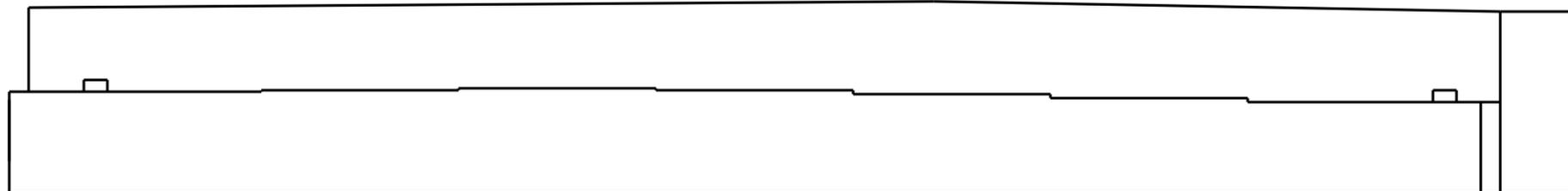
ELEVATION

END BENT 1



PLAN

NO REPAIRS NOTED FOR END BENT 2 DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE BENT PRIOR TO BEGINNING WORK.



ELEVATION

END BENT 2

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.9	0.5 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0		
REPAIRS END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

NOTES

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

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

\* QUANTITIES HAVE BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO: 390

DocuSigned by:  
*John A. Yannaccone*  
 7BC30E8B-8945-45E5-9945-739945739945

8/5/2016

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

DRAWN BY : D. SHACKELFORD DATE : 04/2016  
 CHECKED BY : T.L. CLELLAND DATE : 05/2016

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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
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AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	2.6	1.5 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0		
COLUMN		0		
EPOXY COATING		SO. FT.		SO. FT.
TOP OF BENT CAP		0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

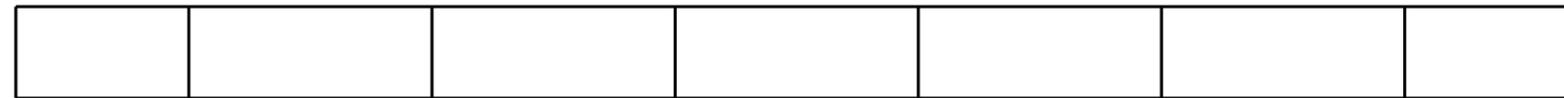
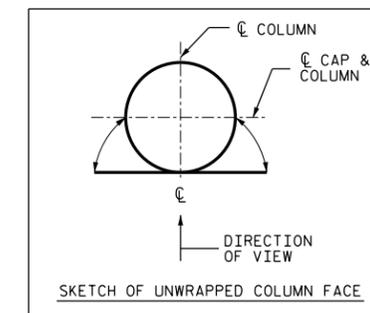
**NOTES**

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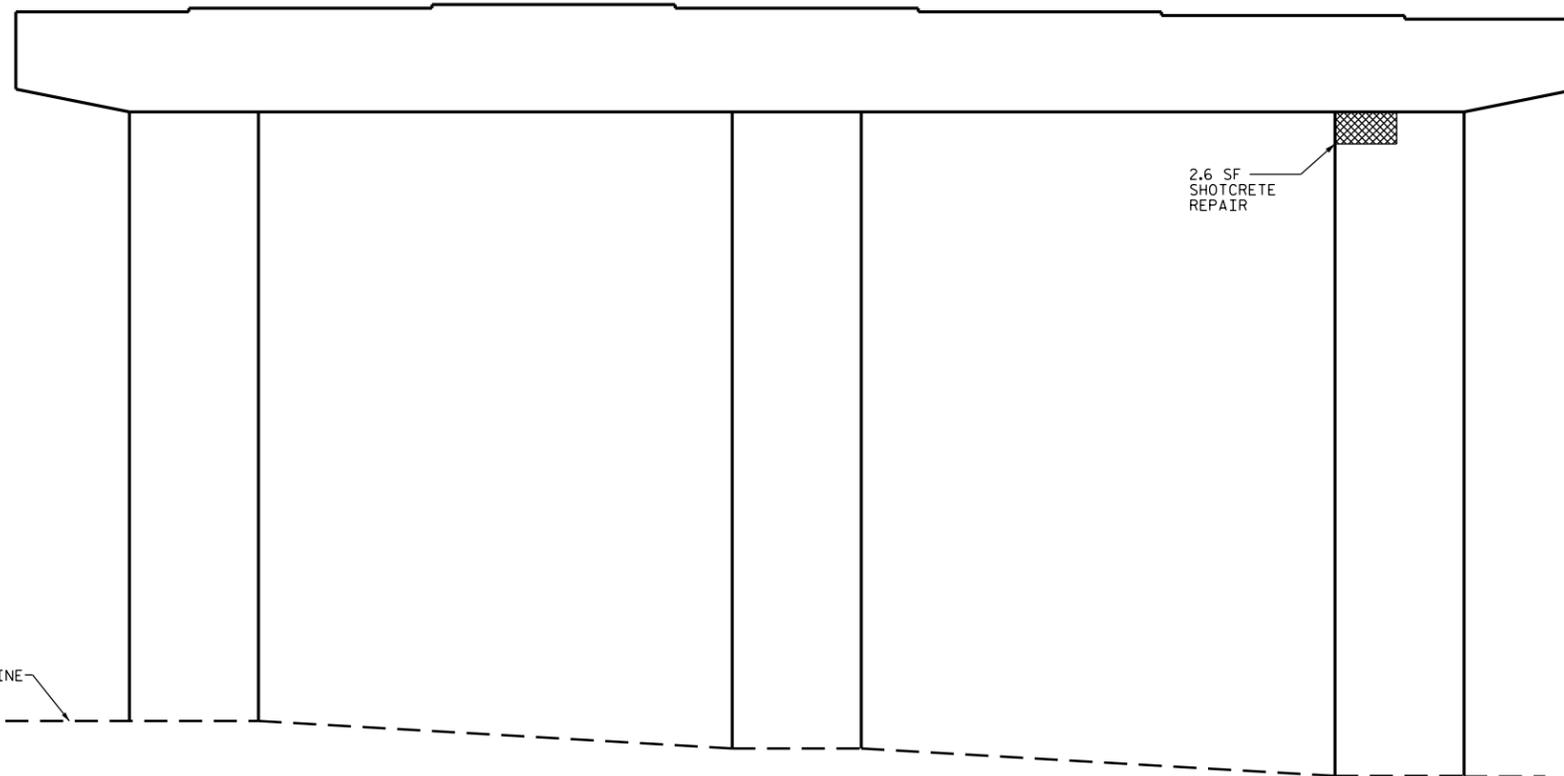
SHOTCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

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

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.



TOP OF CAP



ELEVATION  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)



END VIEW  
NORTH FACE

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
BRIDGE NO: 390

SHEET 1 OF 6

DocuSigned by:  
*John A. Yannaccone*  
7BC36...  
STATE OF NORTH CAROLINA  
PROFESSIONAL ENGINEER  
SEAL 32492  
JOHN A. YANNACCONE

8/5/2016

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

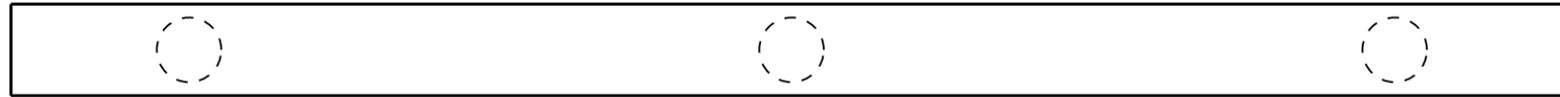
**BENT 1  
SPAN A FACE**

DRAWN BY : D. SHACKELFORD DATE : 04/2016  
CHECKED BY : T.L. CLELLAND DATE : 05/2016

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1			3			81
2			4			

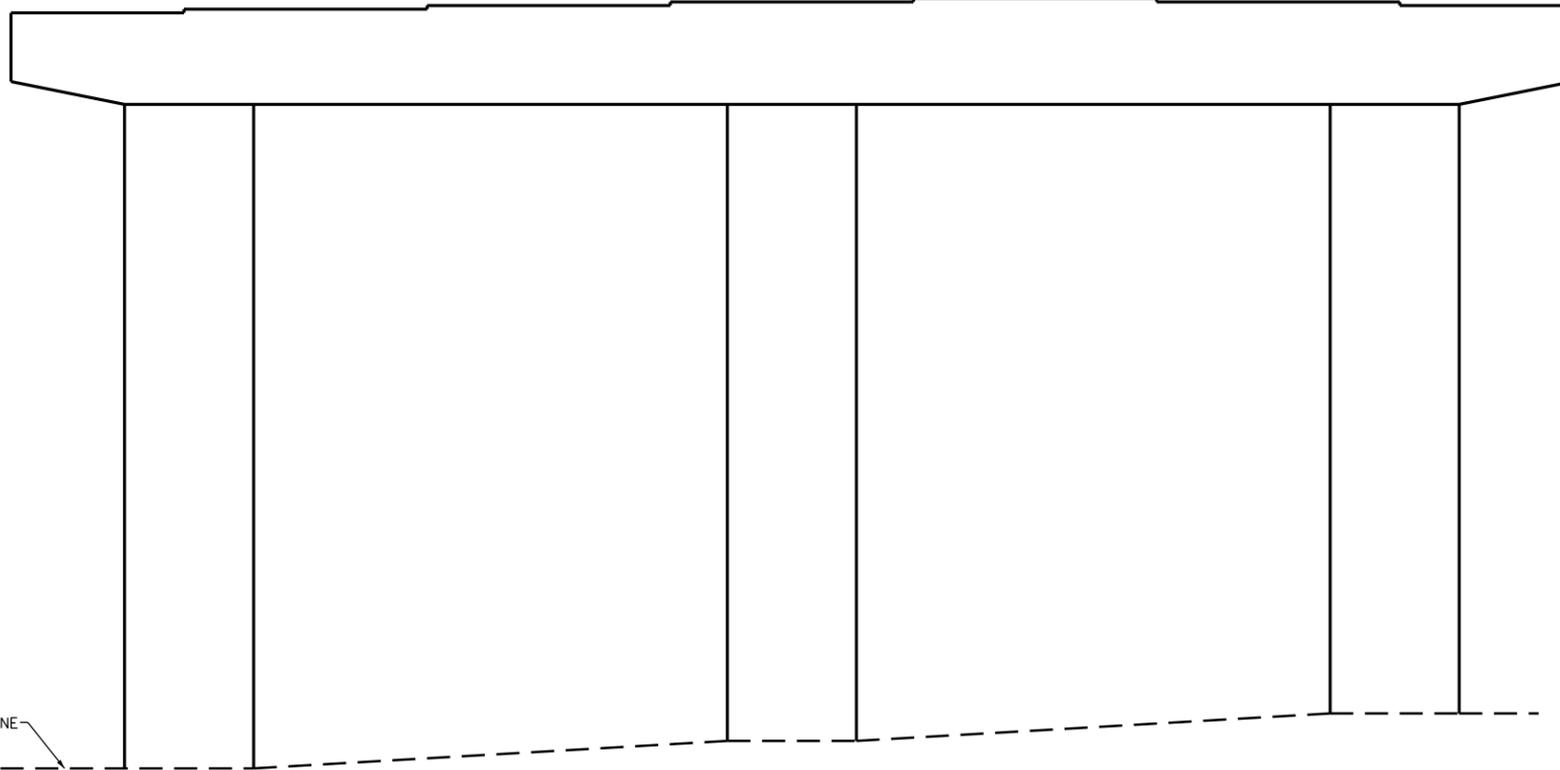
 DAMAGED AREA  
 EPOXY RESIN INJECTION



UNDERSIDE OF CAP



END VIEW  
SOUTH FACE



APPROX. GROUND LINE

ELEVATION  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

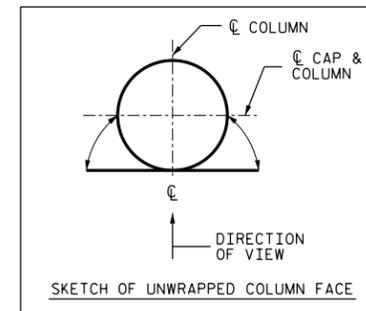
NOTES

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

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

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.



PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO: 390

SHEET 2 OF 6

DocuSigned by:  
*John A. Yannaccone*  
 7BC36...  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 SEAL  
 32492  
 JOHN A. YANNACCONI  
 8/5/2016

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BENT 1 SPAN B FACE					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 81

DRAWN BY : D. SHACKELFORD DATE : 04/2016  
 CHECKED BY : T.L. CLELLAND DATE : 05/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	22.8	14.0 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.6	0.5 *		
COLUMN	0	0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0		
COLUMN		0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF BENT CAP		0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

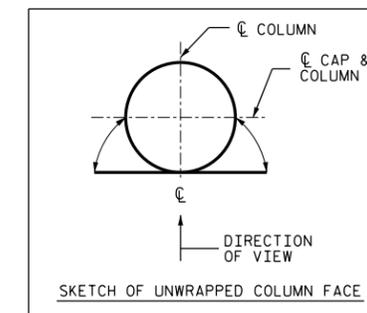
**NOTES**

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

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

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

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.



PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO: 390

SHEET 3 OF 6

DocuSigned by:  
*John A. Yannaccone*  
 7BC30E8E-8E8E-408E-908E-8E8E8E8E8E8E

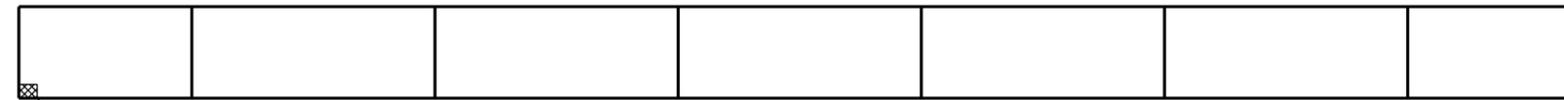


8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

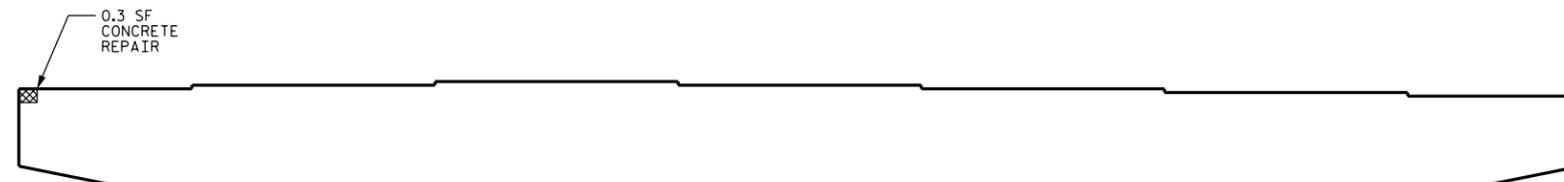
**BENT 2  
 SPAN B FACE**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-10
2			4			TOTAL SHEETS 81

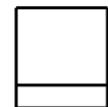


0.3 SF CONCRETE REPAIR

TOP OF CAP



0.3 SF CONCRETE REPAIR

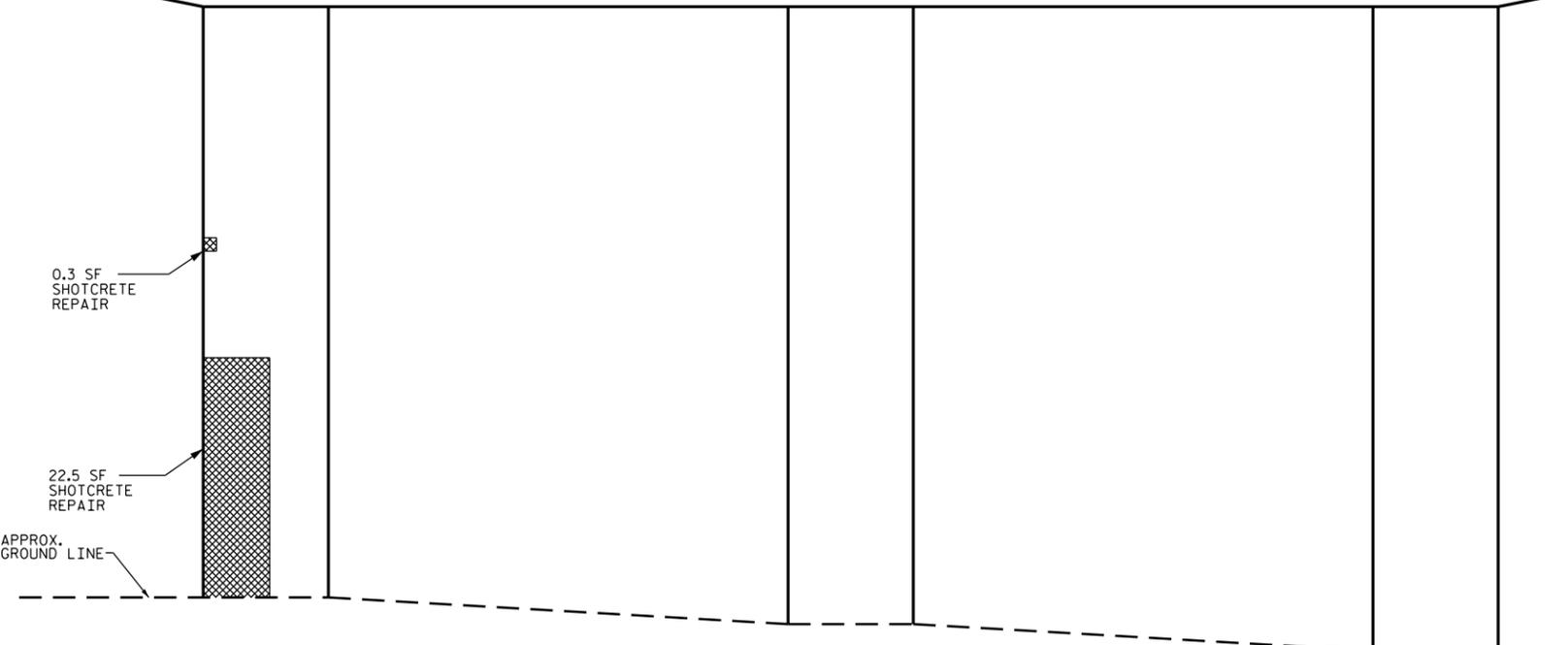


END VIEW  
NORTH FACE

0.3 SF SHOTCRETE REPAIR

22.5 SF SHOTCRETE REPAIR

APPROX. GROUND LINE

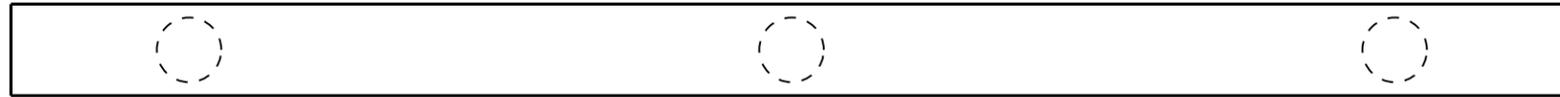


ELEVATION  
 (COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

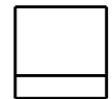
DRAWN BY : D. SHACKELFORD DATE : 04/2016  
 CHECKED BY : T.L. CLELLAND DATE : 05/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

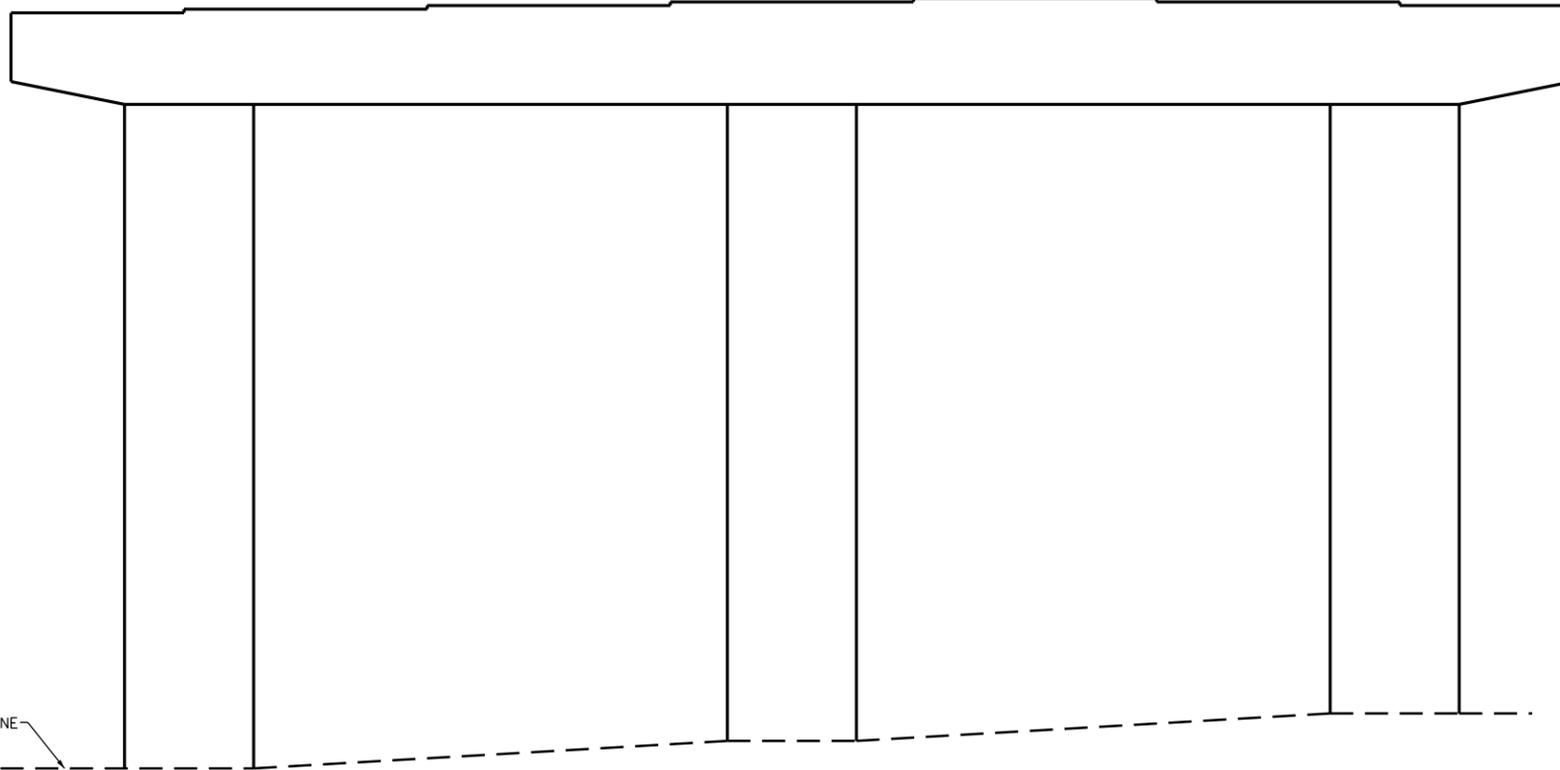
 DAMAGED AREA  
 EPOXY RESIN INJECTION



UNDERSIDE OF CAP



END VIEW  
SOUTH FACE



APPROX. GROUND LINE

ELEVATION  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

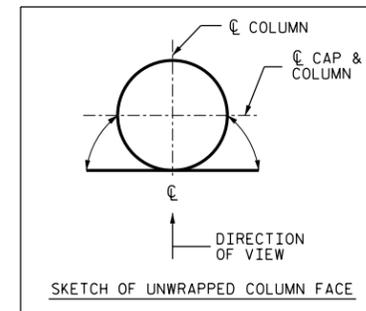
NOTES

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

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.



PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO: 390

SHEET 4 OF 6

DocuSigned by:

*John A. Yannaccone*



8/5/2016

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**BENT 2  
SPAN C FACE**

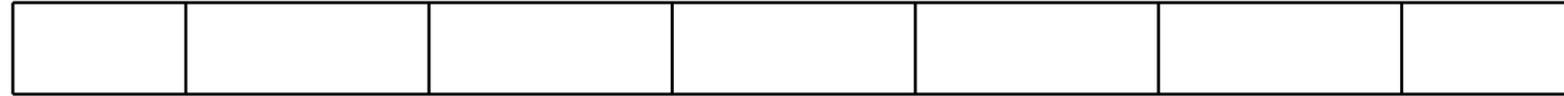
DRAWN BY : D. SHACKELFORD DATE : 04/2016  
 CHECKED BY : T.L. CLELLAND DATE : 05/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

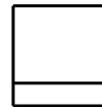
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			81

NO REPAIRS NOTED FOR BENT 3 DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE BENT PRIOR TO BEGINNING WORK.

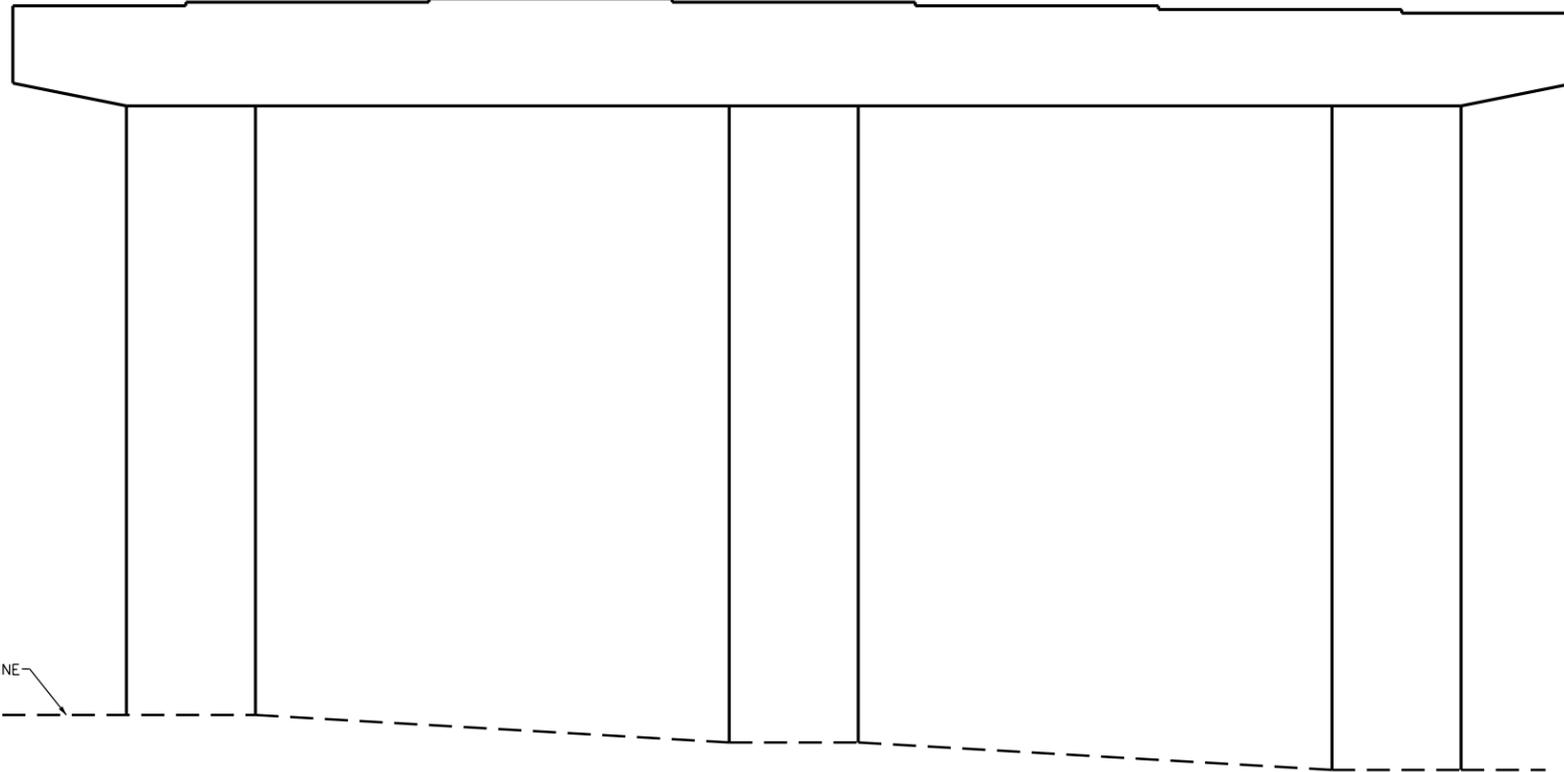
 DAMAGED AREA  
 EPOXY RESIN INJECTION



TOP OF CAP



END VIEW  
NORTH FACE



ELEVATION  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

**AS-BUILT REPAIR QUANTITY TABLE**

REPAIRS BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0		
COLUMN		0		
EPOXY COATING		SO. FT.		SO. FT.
TOP OF BENT CAP		0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

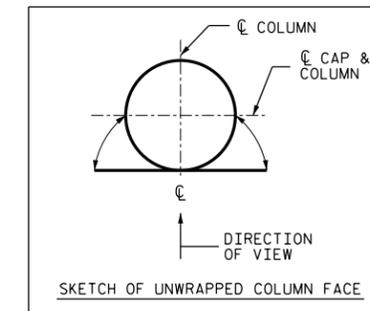
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PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO: 390

SHEET 5 OF 6

DocuSigned by:

*John A. Yannaccone*



8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 3  
 SPAN C FACE**

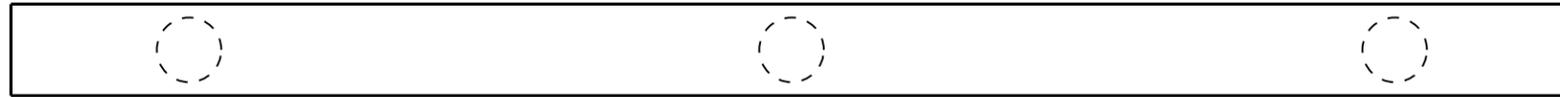
DRAWN BY : D. SHACKELFORD DATE : 04/2016  
 CHECKED BY : T.L. CLELLAND DATE : 05/2016

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-12
2			4			TOTAL SHEETS 81

NO REPAIRS NOTED FOR BENT 3 DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE BENT PRIOR TO BEGINNING WORK.

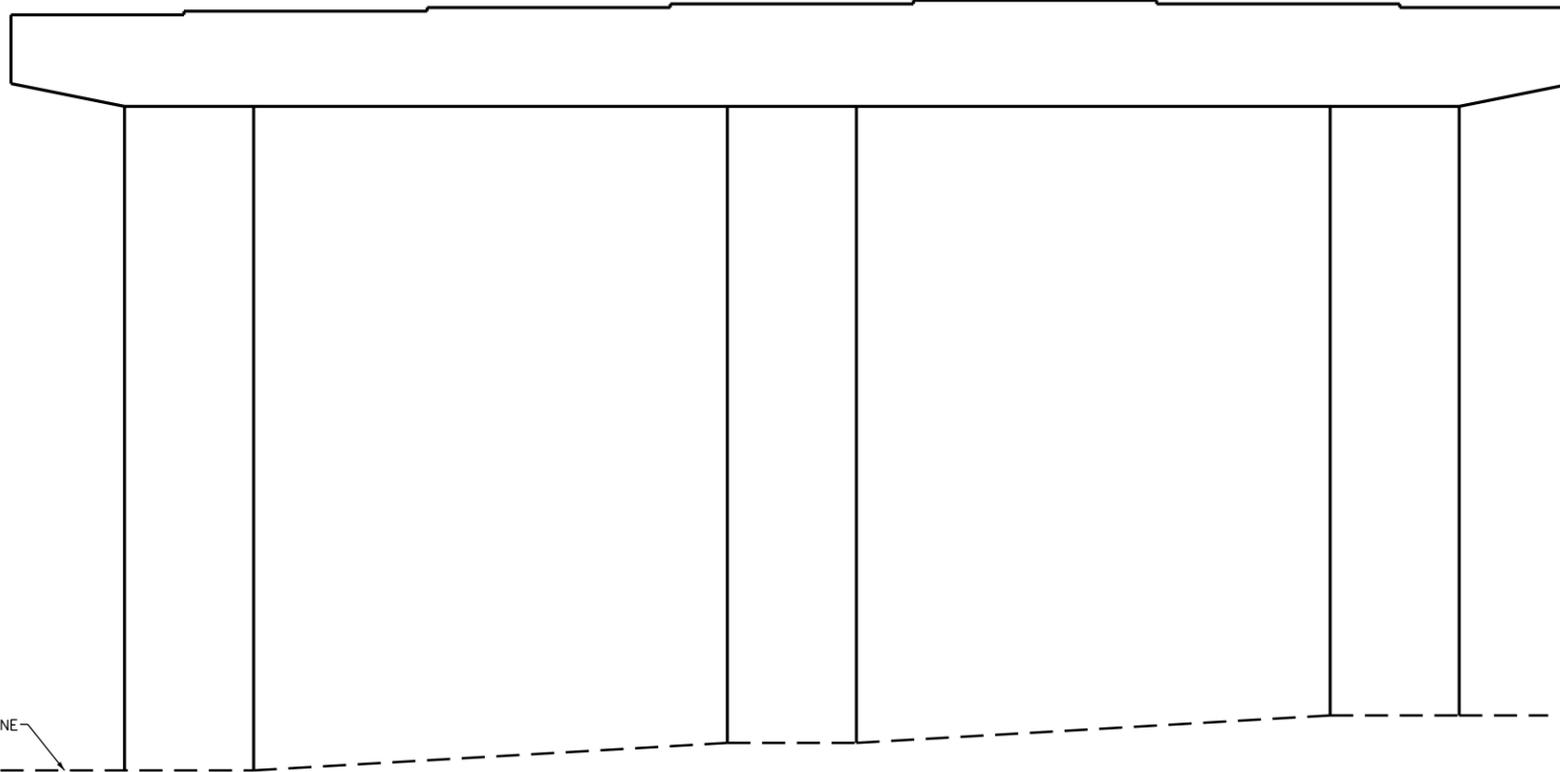
 DAMAGED AREA  
 EPOXY RESIN INJECTION



UNDERSIDE OF CAP



END VIEW  
SOUTH FACE



APPROX. GROUND LINE

ELEVATION  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

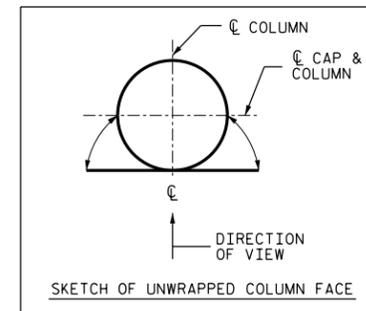
NOTES

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PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO: 390

SHEET 6 OF 6

DocuSigned by:

*John A. Yannaccone*



8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

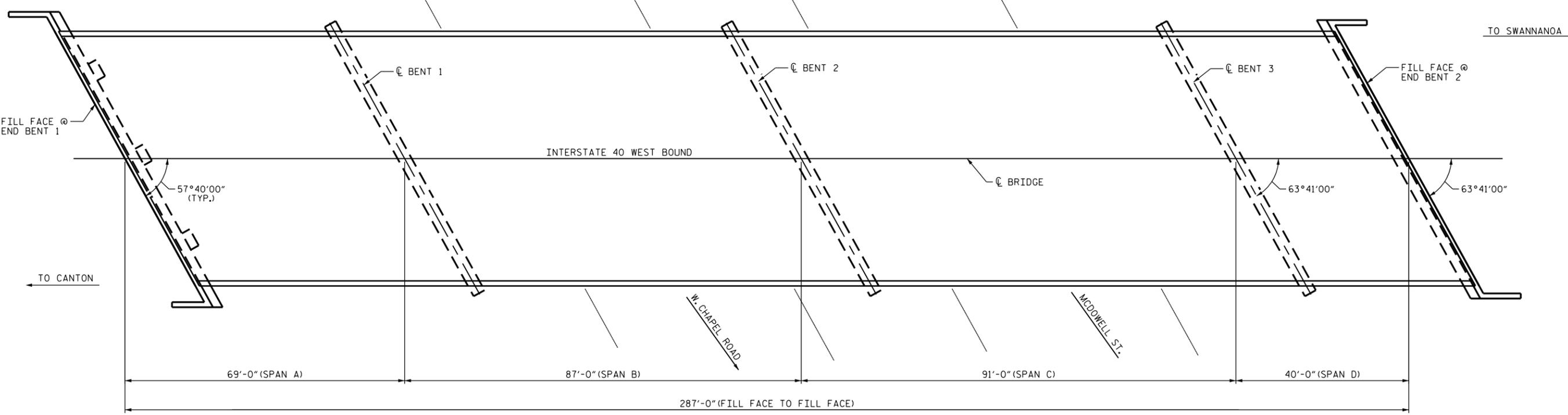
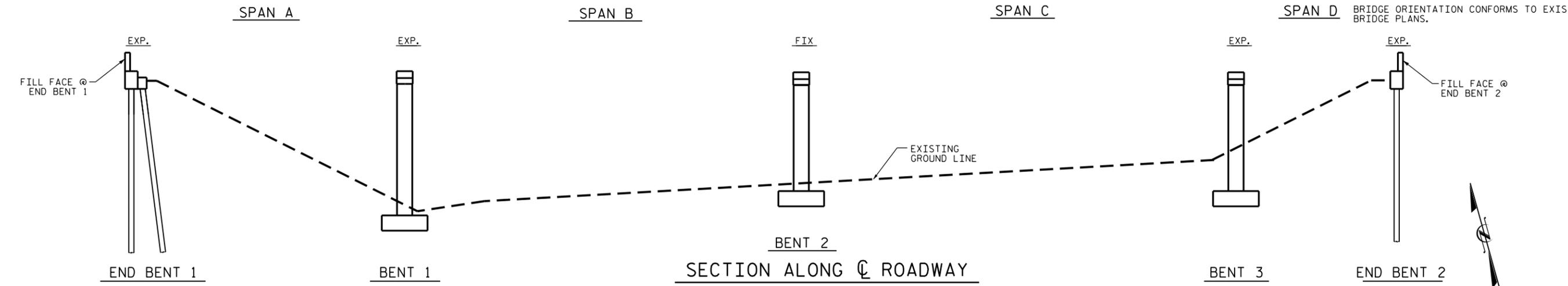
BENT 3  
 SPAN D FACE

DRAWN BY : D. SHACKELFORD DATE : 04/2016  
 CHECKED BY : T.L. CLELLAND DATE : 05/2016

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-13 TOTAL SHEETS 81
2			4			

**NOTES**  
 PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 10/29/2015.  
 BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



**PLAN**

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 391

SHEET 1 OF 2

**SCOPE OF WORK**

- CLEAN/PAINTE STEEL I- BEAMS AND BEARINGS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- CLEAN AND REPAIR REBAR IN CONCRETE REPAIR AREAS.
- PERFORM SHOTCRETE REPAIRS IN PREPARED AREAS.

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

DocuSigned by:  
*John A. Yannaccone*  
 7BC3...  
 STATE OF NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 SEAL  
 32492  
 JOHN A. YANNACCONE  
 8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR BRIDGE ON I-40 WBL  
 OVER US 25  
 (HENDERSONVILLE ROAD)

DRAWN BY : D. SHACKELFORD DATE : 04/2016  
 CHECKED BY : T.L. CLELLAND DATE : 05/2016

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-14
2			4			81

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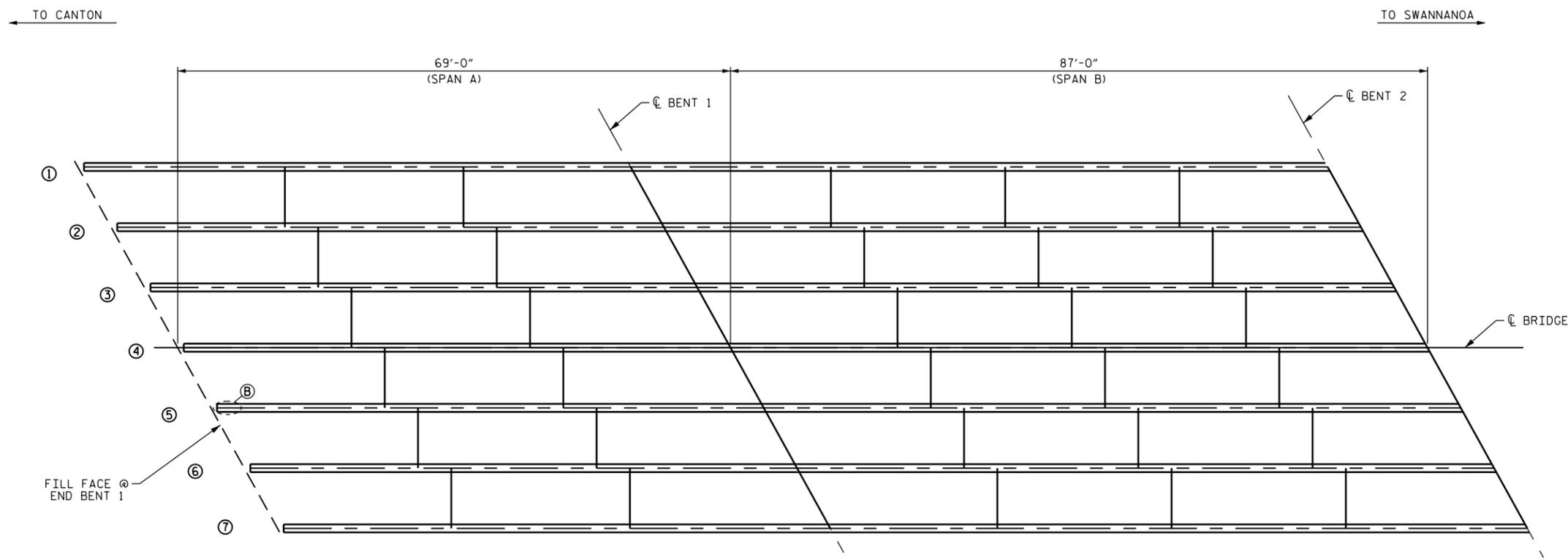
**NOTES**

FOR BEAM END REPAIRS AND STIFFENER REPAIRS, SEE "BEAM END AND INTERMEDIATE REPAIR DETAILS" SHEET.

FOR PLATE REPAIRS AND DIAPHRAGM REPAIRS, SEE "BEAM PLATING REPAIR DETAILS" SHEET.

THE LOCATIONS AND DIMENSIONS OF THE AREAS FOR REPAIR ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, SHALL VERIFY THE LOCATION AND EXTENTS OF REPAIR AREAS PRIOR TO STEEL FABRICATION.

CONTRACTOR SHALL ENSURE THAT EXISTING UTILITIES ADJACENT TO THE BRIDGE ARE NOT DAMAGED DURING REPAIR OPERATIONS.



- ① BEAM NUMBER
- Ⓟ BEAM END REPAIR
- Ⓞ DIAPHRAGM REPAIR
- Ⓟ PLATE REPAIR
- Ⓢ STIFFENER REPAIR

**BEAM REPAIR LOCATIONS**

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

BEAM REPAIR							
BEAM END REPAIR		PLATE REPAIR		STIFFENER REPAIR		DIAPHRAGM REPAIR	
LBS.		LBS.		LBS.		LBS.	
ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
780		420		—		35	

ANTICIPATED BEAM REPAIR LOCATIONS						
SPAN	BEAM	LOCATION	DIM "A"	DIM "B"	DIM "C"	DIM "D"
A	5	END BENT 1	1'-0"	8"	6"	2'-0"

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 391

SHEET 1 OF 2

DocuSigned by:  
*John A. Yannaccone*  
 7BC30940-4E8F-40E0-9000-000000000000  
 STATE OF NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 SEAL 32492  
 JOHN A. YANNACCONI  
 8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**BEAM PLATING AND REPAIR LOCATIONS SPANS A & B**

DRAWN BY : N. SHORT DATE : 04/16  
 CHECKED BY : D. SHACKELFORD DATE : 05/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-17
2			4			TOTAL SHEETS 81

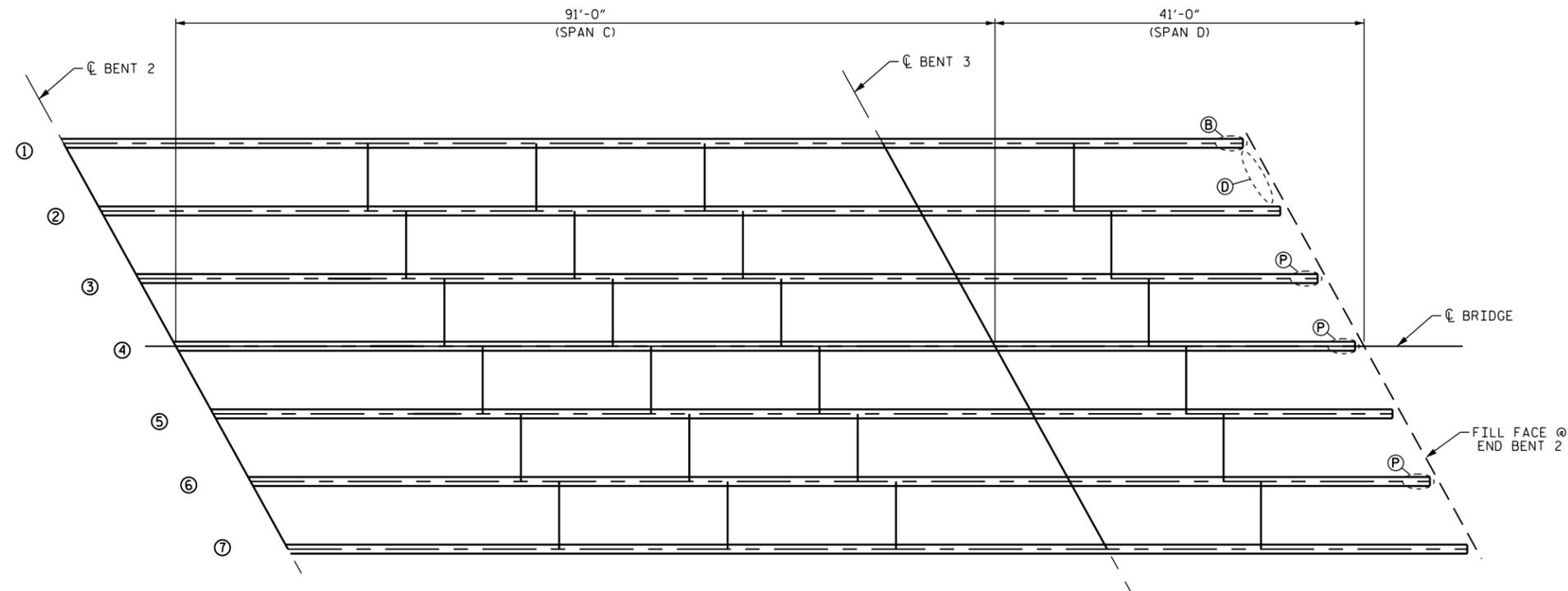
**NOTES**

FOR BEAM END REPAIRS AND STIFFENER REPAIRS, SEE "BEAM END AND INTERMEDIATE REPAIR DETAILS" SHEET.

FOR PLATE REPAIRS AND DIAPHRAGM REPAIRS, SEE "BEAM PLATING REPAIR DETAILS" SHEET.

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- ① BEAM NUMBER
- ⓑ BEAM END REPAIR
- ⓓ DIAPHRAGM REPAIR
- Ⓟ PLATE REPAIR
- Ⓢ STIFFENER REPAIR

**BEAM REPAIR LOCATIONS**

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

ANTICIPATED BEAM REPAIR LOCATIONS						
SPAN	BEAM	LOCATION	DIM "A"	DIM "B"	DIM "C"	DIM "D"
D	1	END BENT 2	2'-11"	3'-0"	6"	1'-6"
D	1 & 2	END BENT 2	1'-1" X 1'-6" X 3/8" DIAPHRAGM PLATE REPAIR			
D	3	END BENT 2	8"	4'-5"	---	---
D	4	END BENT 2	8"	4'-6"	---	---
D	6	END BENT 2	8"	4'-10"	---	---

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 391

SHEET 2 OF 2

DocuSigned by:

*John A. Yannaccone*



8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BEAM PLATING AND REPAIR LOCATIONS SPANS C & D**

DRAWN BY : N. SHORT DATE : 04/16  
 CHECKED BY : D. SHACKELFORD DATE : 05/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-18
2			4			TOTAL SHEETS 81

**AS-BUILT REPAIR QUANTITY TABLE**

REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0		
REPAIRS END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

**NOTES**

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- FOR CAP REPAIRS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.
- \* QUANTITIES HAVE BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.
- SHOTCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

-  DAMAGED AREA
-  EPOXY RESIN INJECTION

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO: 391

DocuSigned by:  
*John A. Yannaccone*  
 7BC30680-0000-404E-994E-7B3068000000  

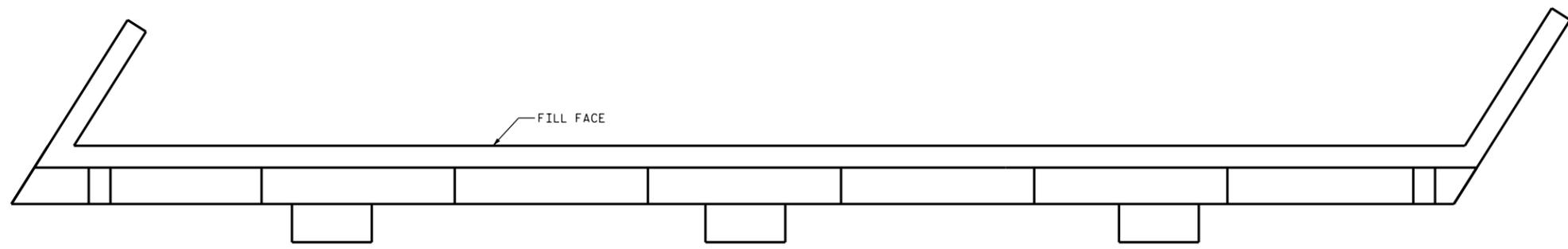

8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**END BENT 1 & 2**

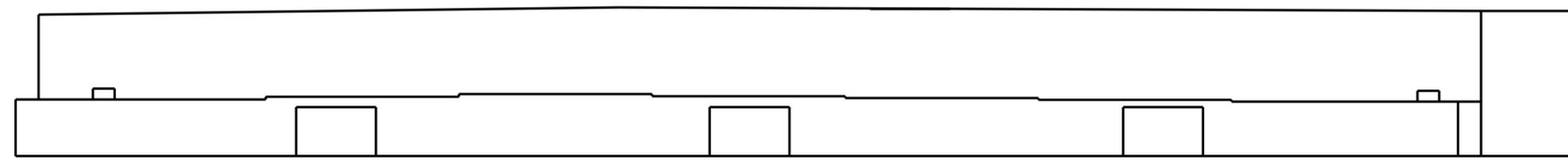
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			81
2			4			

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



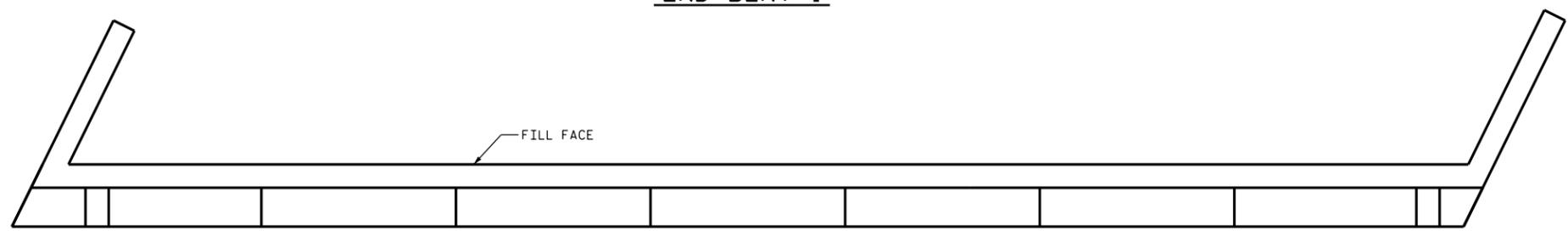
PLAN

NO REPAIRS NOTED FOR END BENT 1 DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE END BENT PRIOR TO BEGINNING WORK.



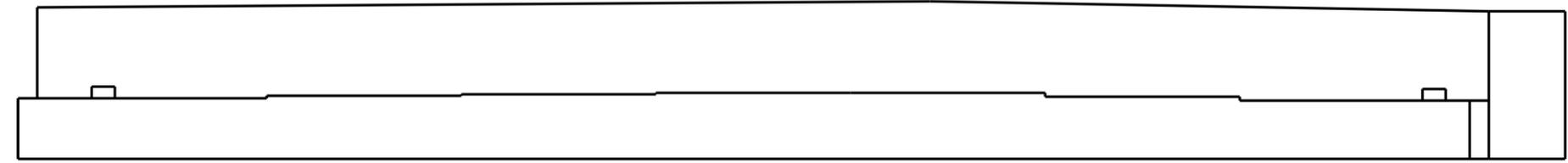
ELEVATION

END BENT 1



PLAN

NO REPAIRS NOTED FOR END BENT 2 DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE END BENT PRIOR TO BEGINNING WORK.



ELEVATION

END BENT 2

DRAWN BY : N. SHORT DATE : 04/2016  
 CHECKED BY : D. SHACKELFORD DATE : 05/2016

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	3.5	2.0 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	6.5	4.0 *		
COLUMN	0	0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0		
COLUMN		0		
EPOXY COATING		SO. FT.		SO. FT.
TOP OF BENT CAP		0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

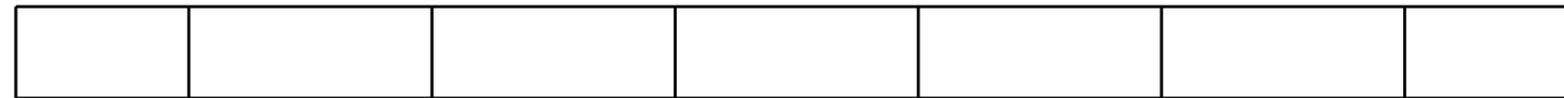
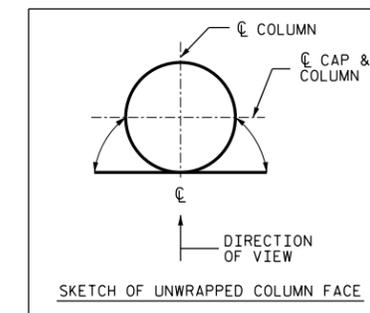
**NOTES**

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

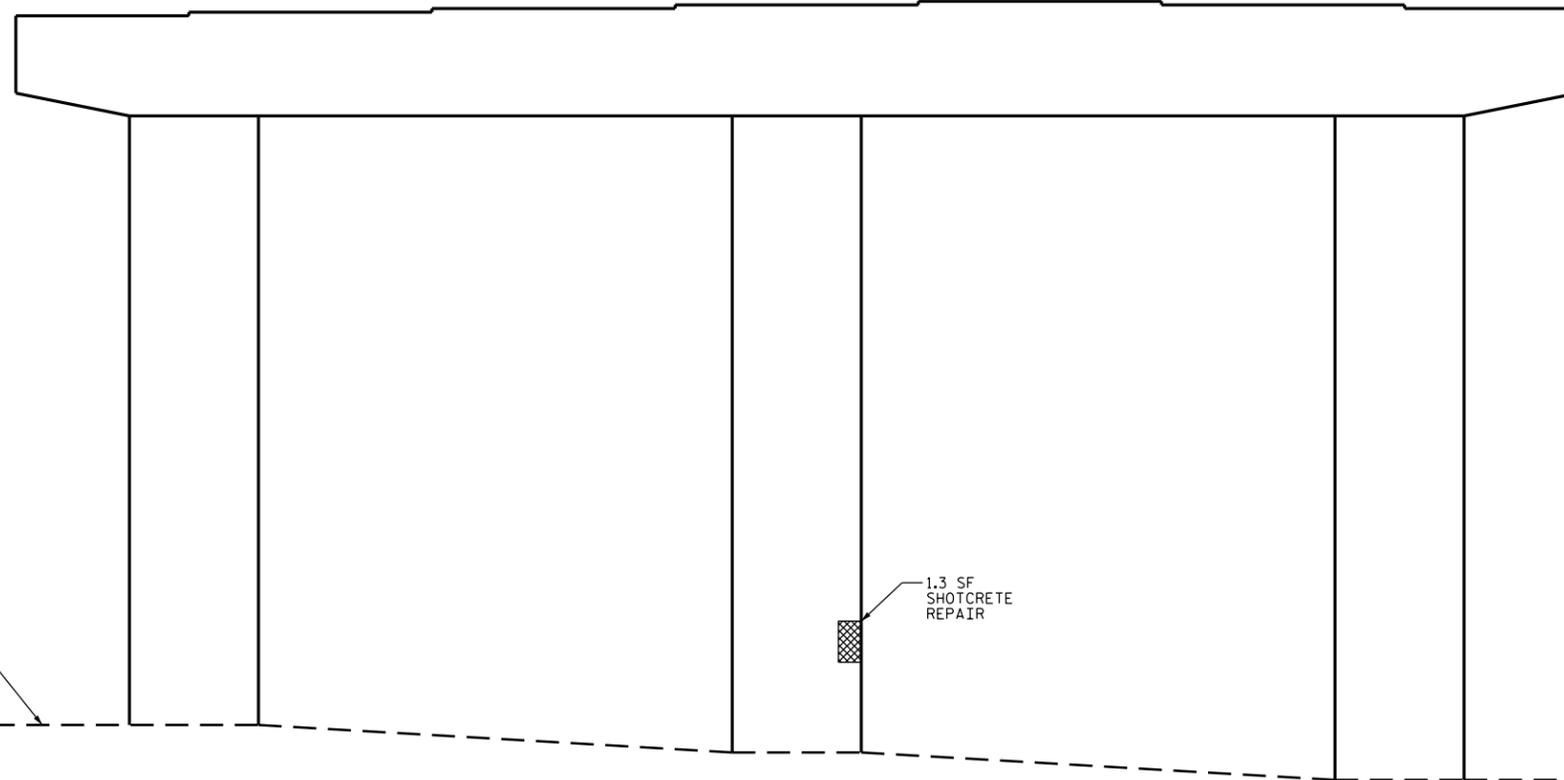
SHOTCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

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

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.



TOP OF CAP



ELEVATION  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)



END VIEW  
NORTH FACE

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
BRIDGE NO. 391

SHEET 1 OF 6

DocuSigned by:

*John A. Yannaccone*  
7BC30E0E894E  
STATE OF NORTH CAROLINA  
PROFESSIONAL ENGINEER  
SEAL  
32492  
JOHN A. YANNACCONE

8/5/2016

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

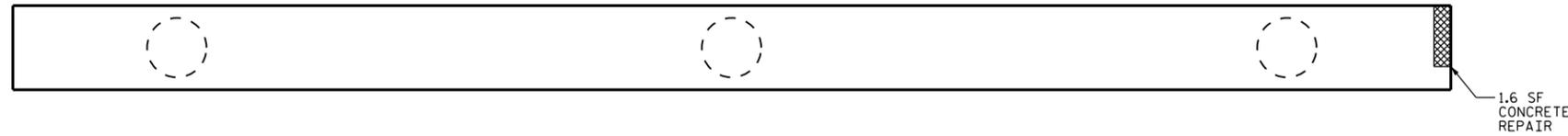
**BENT 1  
SPAN A FACE**

DRAWN BY : N. SHORT DATE : 04/2016  
CHECKED BY : D. SHACKELFORD DATE : 05/2016

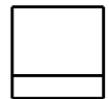
DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

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

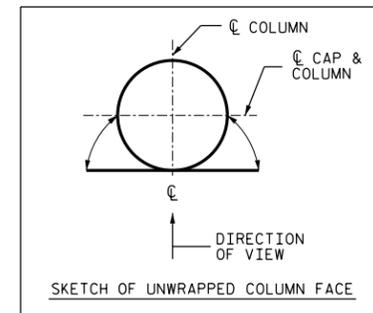
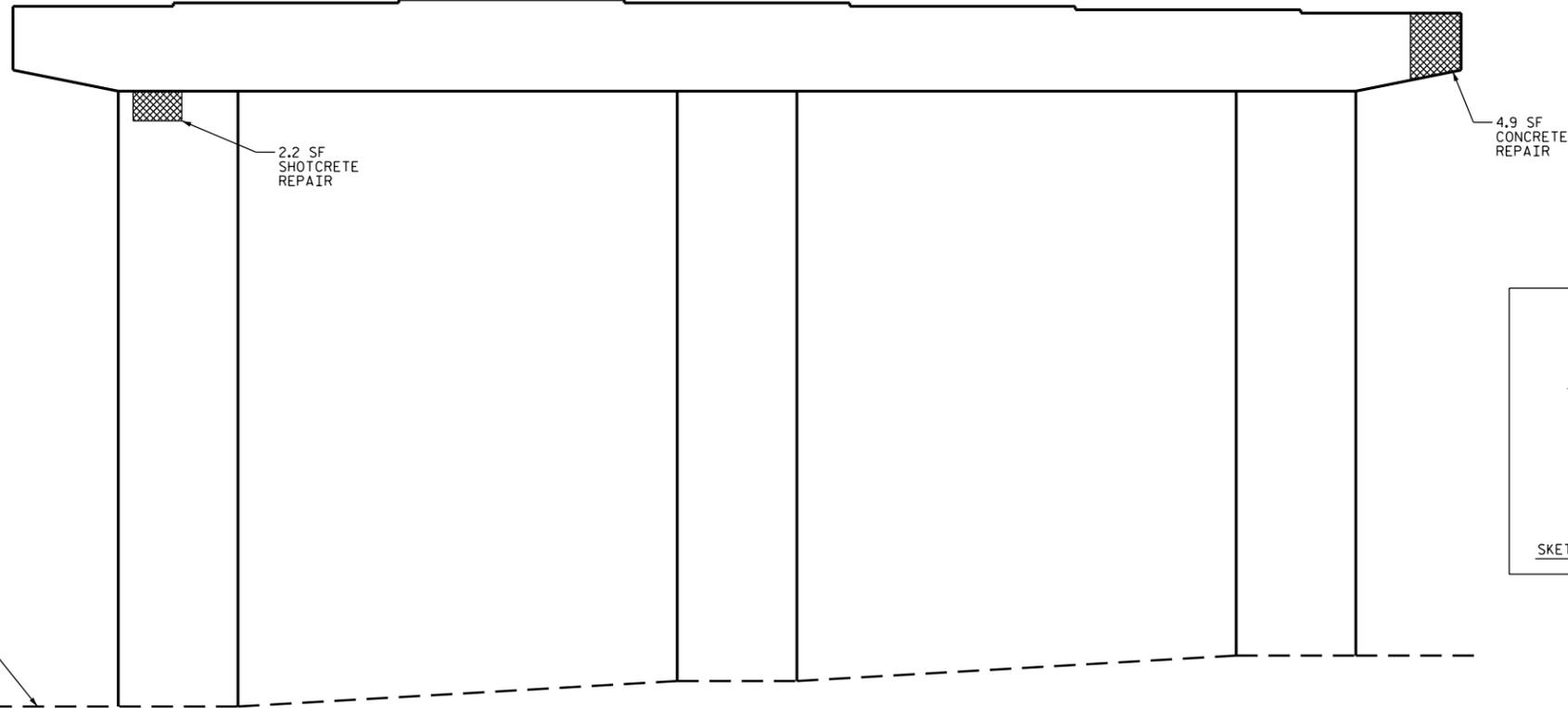
 DAMAGED AREA  
 EPOXY RESIN INJECTION



UNDERSIDE OF CAP



END VIEW  
SOUTH FACE



NOTES

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

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

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 391

SHEET 2 OF 6

DocuSigned by:  
*John A. Yannaccone*  
 7BC36...  
 STATE OF NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 SEAL  
 32492  
 JOHN A. YANNACCONI  
 8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 BENT 1  
 SPAN B FACE

ELEVATION  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

DRAWN BY : N. SHORT DATE : 04/2016  
 CHECKED BY : D. SHACKELFORD DATE : 05/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-21
2			4			TOTAL SHEETS 81

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.6	0.5 *		
COLUMN	66.8	41.8 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0		
COLUMN		0		
EPOXY COATING		SO. FT.		SO. FT.
TOP OF BENT CAP		0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

**NOTES**

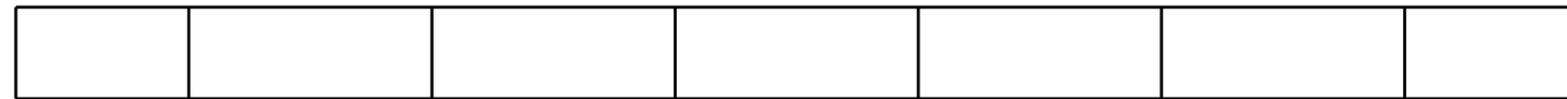
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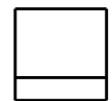
FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

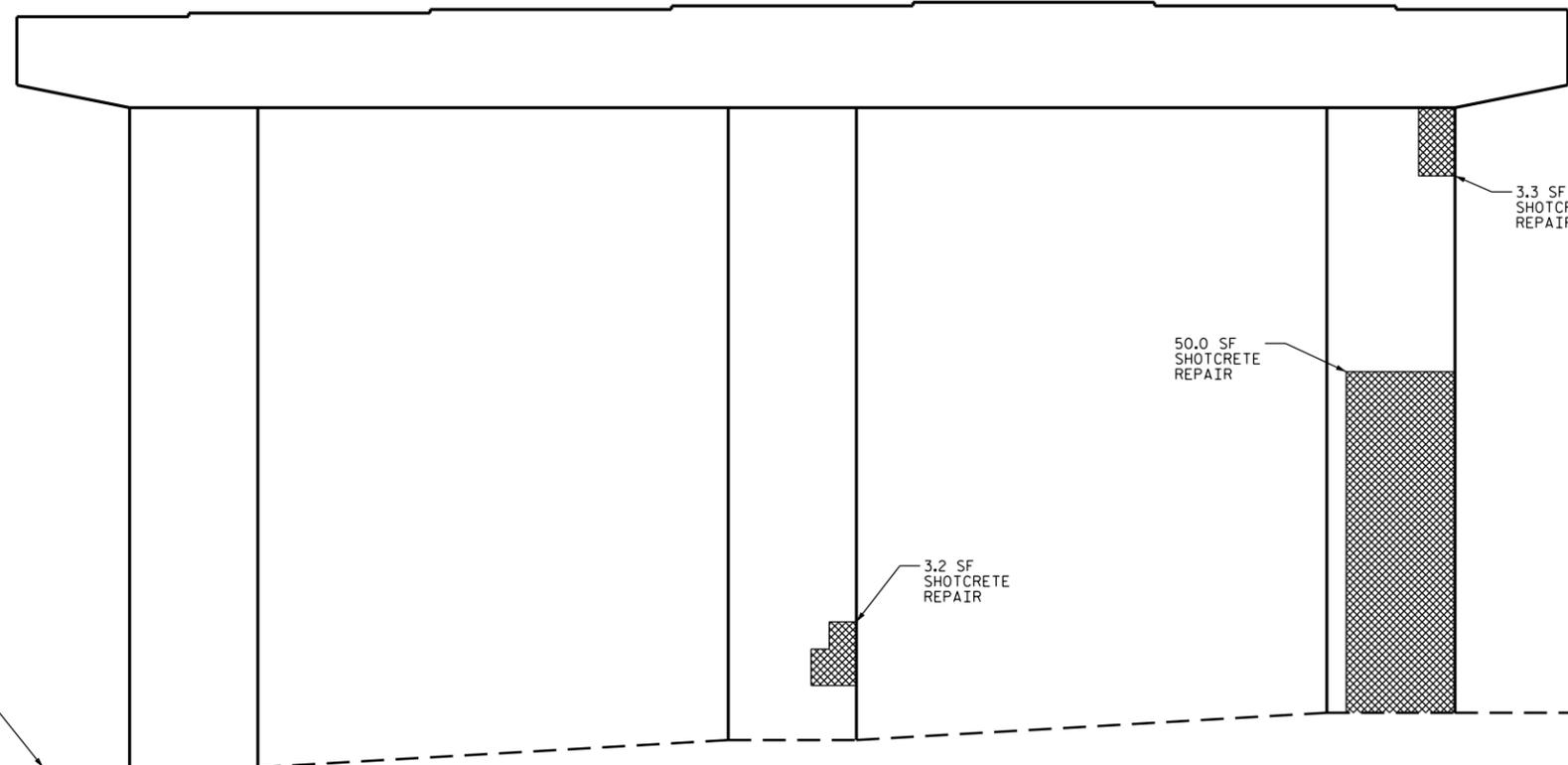
 DAMAGED AREA  
 EPOXY RESIN INJECTION



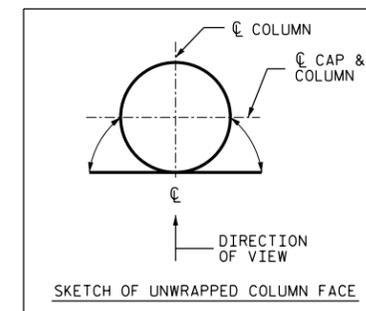
TOP OF CAP



END VIEW  
NORTH FACE



ELEVATION  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)



PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 391

SHEET 3 OF 6

DocuSigned by:  
*John A. Yannaccone*  
 7BC36008-0000-4000-9000-000000000000  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 SEAL  
 32492  
 JOHN A. YANNACCONI

8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 2  
SPAN B FACE**

DRAWN BY : N. SHORT DATE : 04/2016  
 CHECKED BY : D. SHACKELFORD DATE : 05/2016

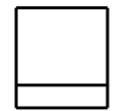
DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-22
2			4			TOTAL SHEETS 81

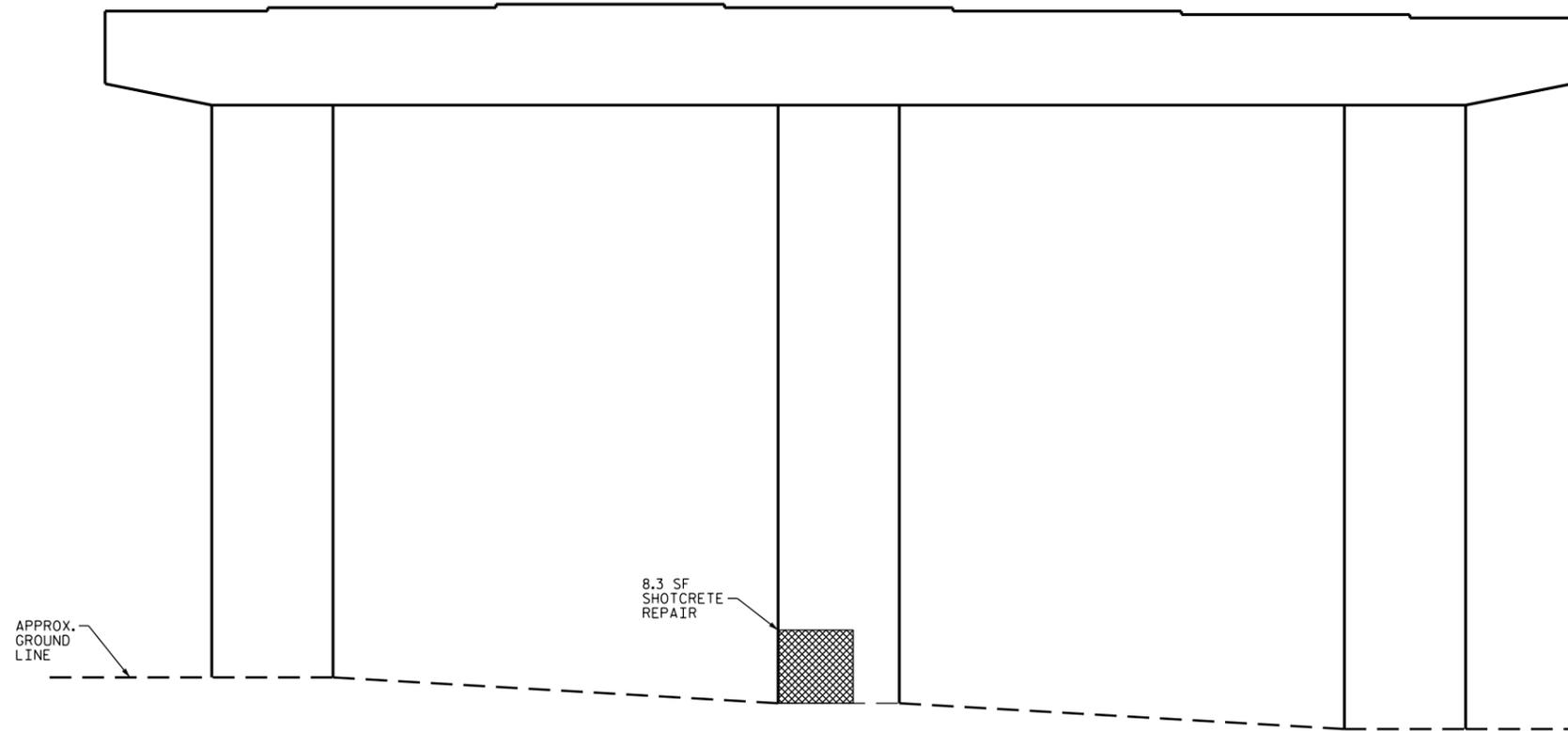
 DAMAGED AREA  
 EPOXY RESIN INJECTION



UNDERSIDE OF CAP



END VIEW  
SOUTH FACE



ELEVATION  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

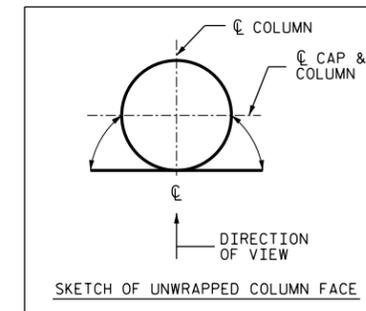
NOTES

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

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.



PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 391

SHEET 4 OF 6

DocuSigned by:  
*John A. Yannaccone*  
7BC30680-0000-404E-8000-000000000000  


8/5/2016

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**BENT 2  
SPAN C FACE**

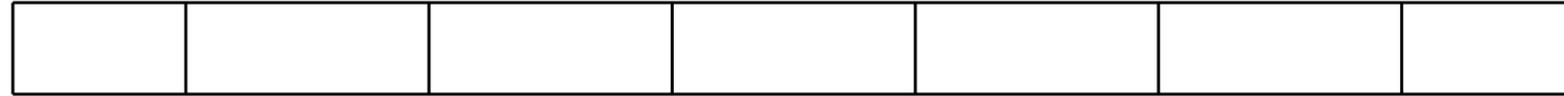
DRAWN BY : N. SHORT DATE : 04/2016  
 CHECKED BY : D. SHACKELFORD DATE : 05/2016

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			81

NO REPAIRS NOTED FOR BENT 3 DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE BENT PRIOR TO BEGINNING WORK.

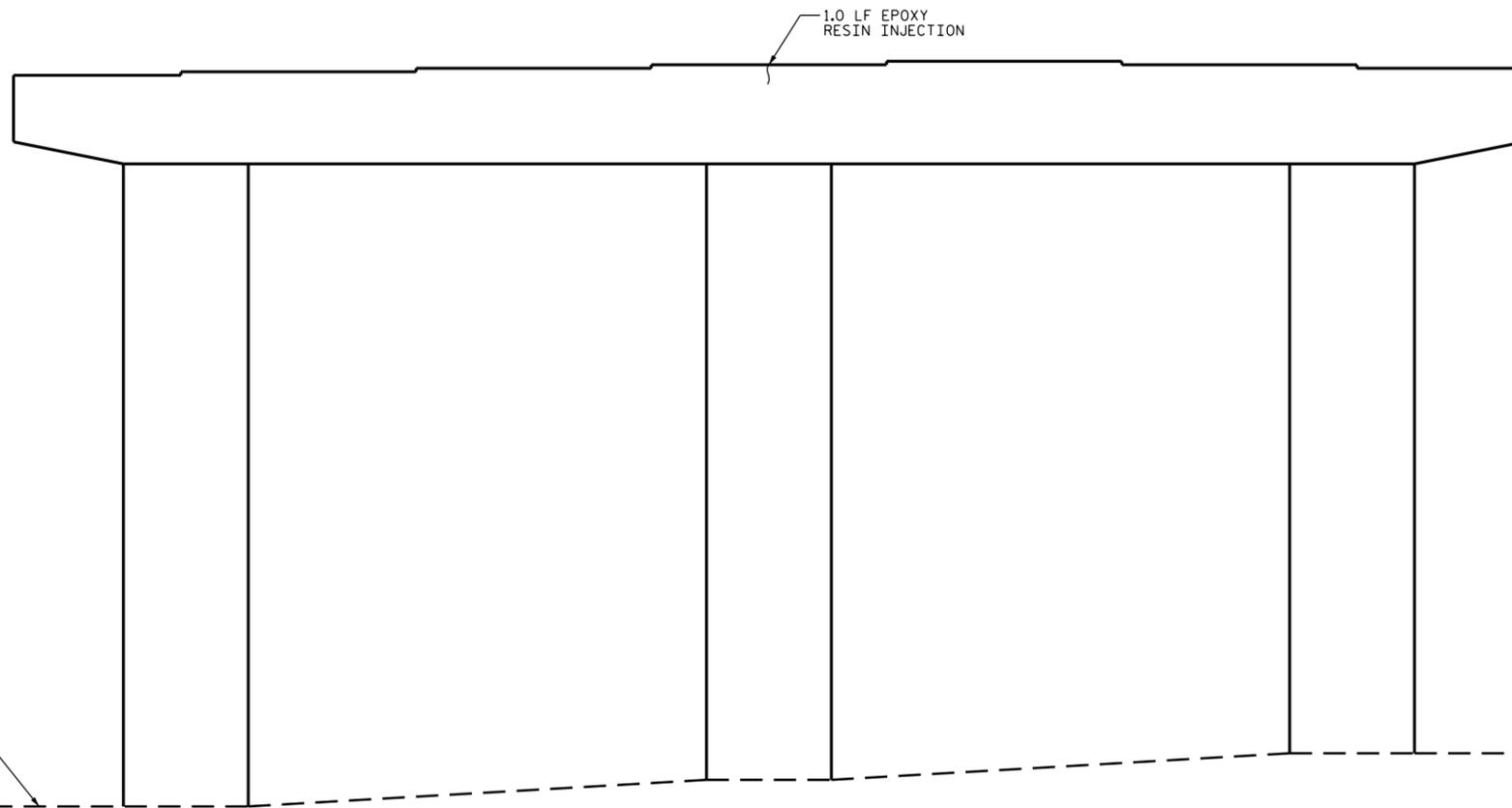
 DAMAGED AREA  
 EPOXY RESIN INJECTION



TOP OF CAP



END VIEW  
NORTH FACE



APPROX. GROUND LINE

ELEVATION  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

**AS-BUILT REPAIR QUANTITY TABLE**

REPAIRS BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		1.0		
COLUMN		0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF BENT CAP		0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

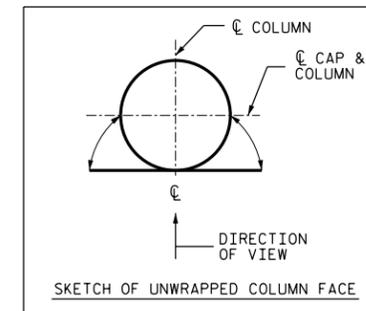
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PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 391

SHEET 5 OF 6

DocuSigned by:

*John A. Yannaccone*  
 7BC30...  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 32492  
 JOHN A. YANNACCONE

8/5/2016

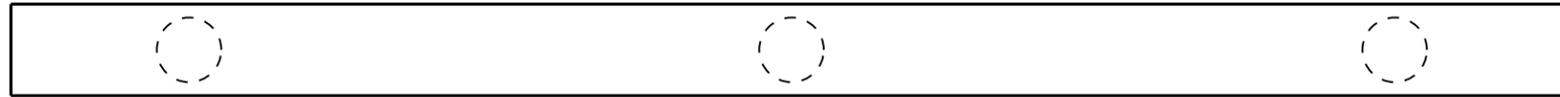
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BENT 3 SPAN C FACE					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					81

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

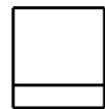
DRAWN BY : N. SHORT DATE : 04/2016  
 CHECKED BY : D. SHACKELFORD DATE : 05/2016

NO REPAIRS NOTED FOR BENT 3 DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE BENT PRIOR TO BEGINNING WORK.

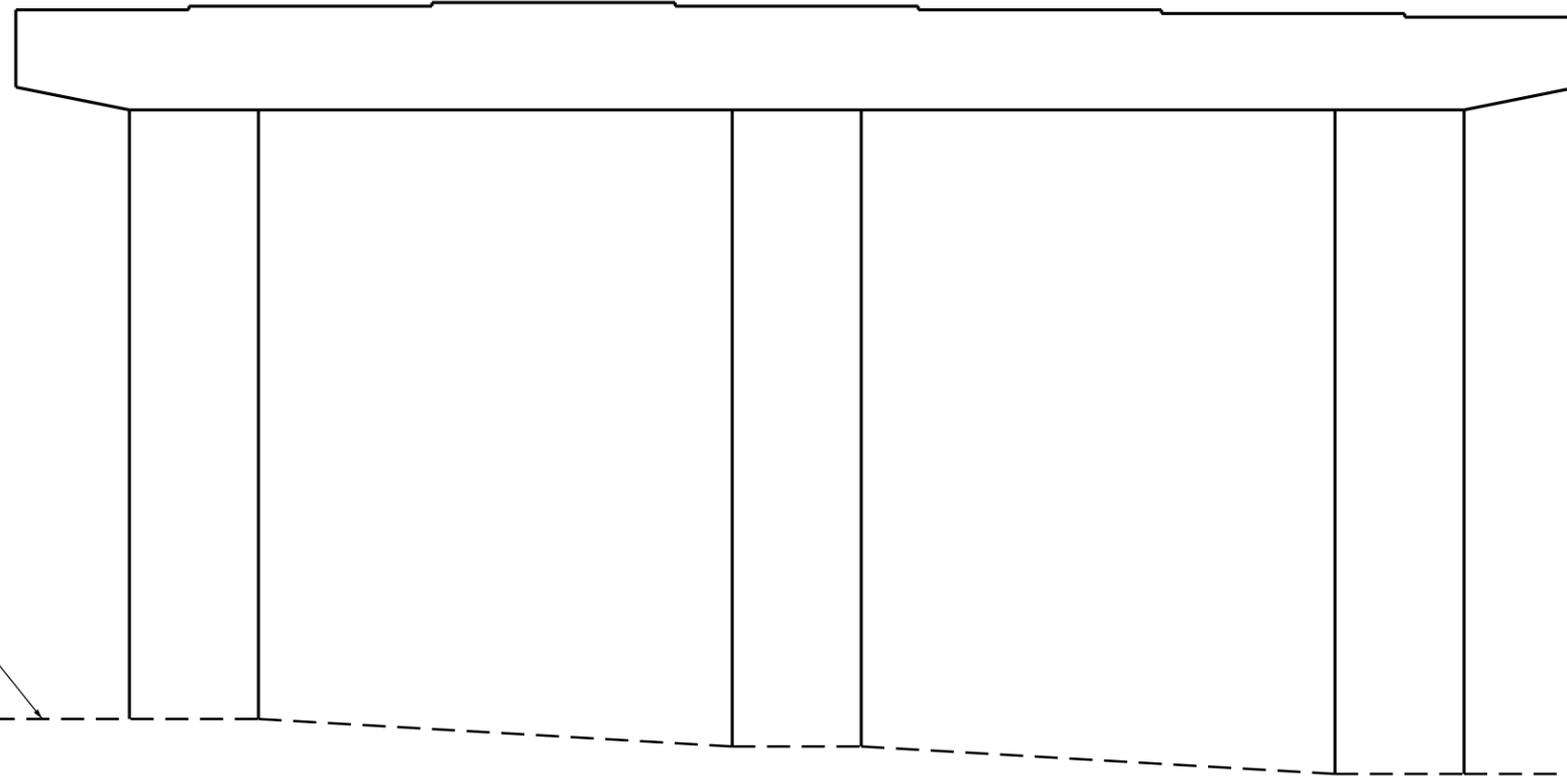
 DAMAGED AREA  
 EPOXY RESIN INJECTION



UNDERSIDE OF CAP



END VIEW  
SOUTH FACE



APPROX. GROUND LINE

ELEVATION  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

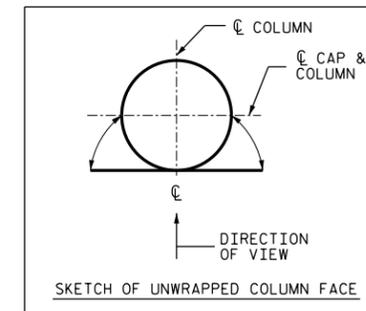
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PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 391

SHEET 6 OF 6

DocuSigned by:  
*John A. Yannaccone*  
 7BC38808E8945E  


8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 3  
 SPAN D FACE**

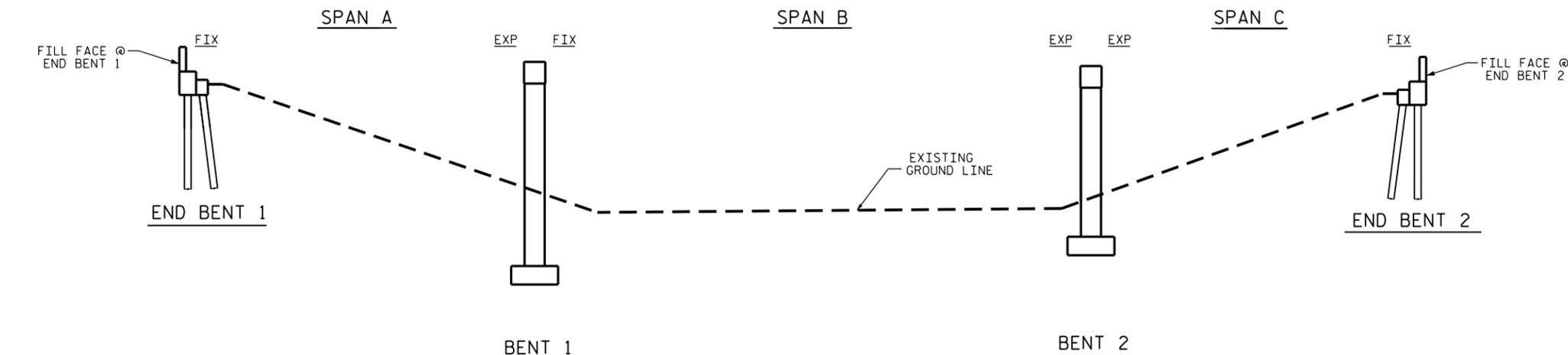
DRAWN BY : N. SHORT DATE : 04/2016  
 CHECKED BY : D. SHACKELFORD DATE : 05/2016

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

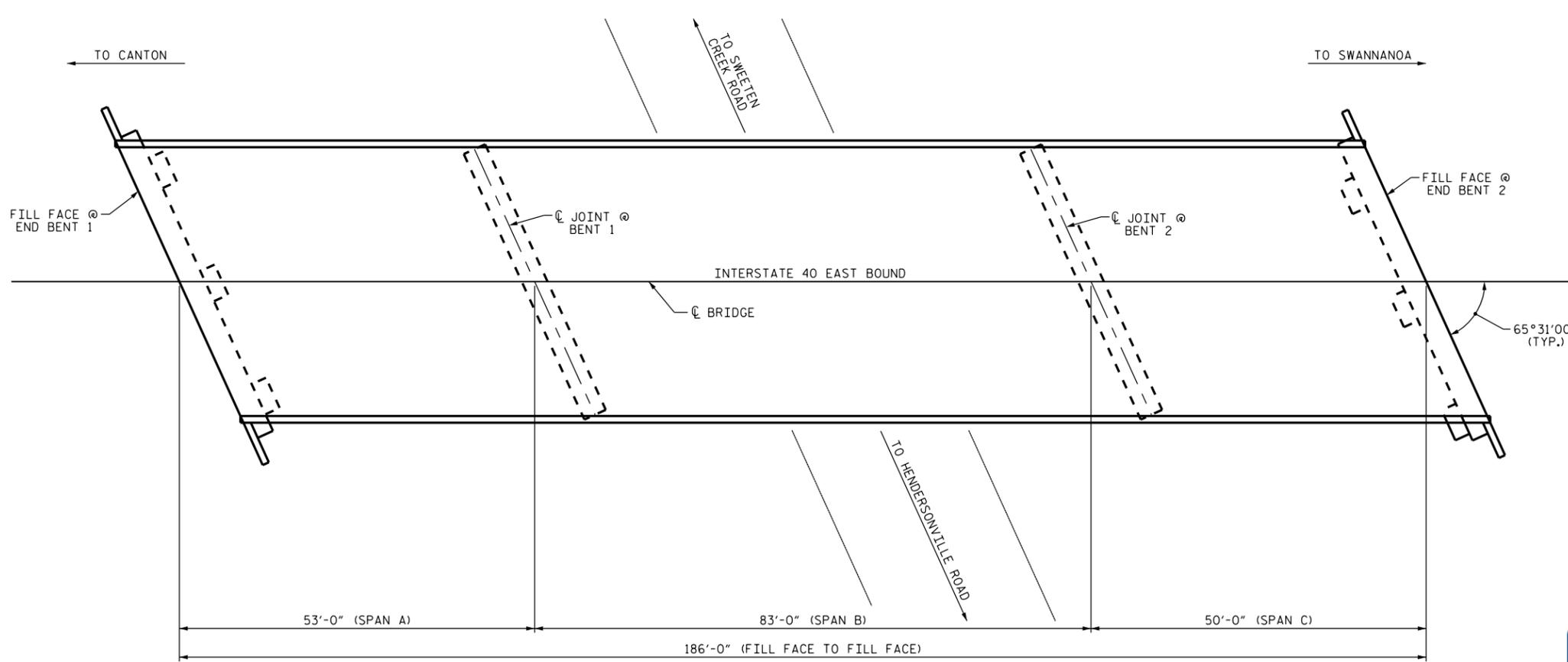
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			81
2			4			

**NOTES**

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 11/03/2015.  
BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



**SECTION ALONG  $\bar{C}$  ROADWAY**



**PLAN**

**SCOPE OF WORK**

- CLEAN, PAINT AND REPAIR STEEL I-BEAMS AND BEARINGS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- CLEAN AND REPAIR REBAR IN CONCRETE REPAIR AREAS.
- PERFORM SHOTCRETE REPAIRS IN PREPARED AREAS.
- REMOVE DEBRIS FROM TOP OF BENT CAPS AND APPLY EPOXY COATING.

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

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

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
BRIDGE NO. 404

SHEET 1 OF 2

DocuSigned by:

*John A. Yannaccone*



8/5/2016

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**GENERAL DRAWING  
FOR BRIDGE ON I-40 EBL  
OVER LONDON ROAD**

DRAWN BY : S.T. CHAMPION DATE : 11/2015  
CHECKED BY : J. YANNACCONE DATE : 11/2015

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-26
2			4			81



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 AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

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

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

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR CLEANING AND REPAINTING OF BRIDGE, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR POLLUTION CONTROL, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR BEAM REPAIR, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

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

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 404

SHEET 2 OF 2

DocuSigned by:  
*John A. Yannaccone*  
 7BC30808E8945E  
 STATE OF NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 SEAL  
 32492  
 JOHN A. YANNACCONE

8/5/2016

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
GENERAL DRAWING FOR BRIDGE ON I-40 EBL OVER LONDON ROAD						S-27
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	81
1			3			
2			4			

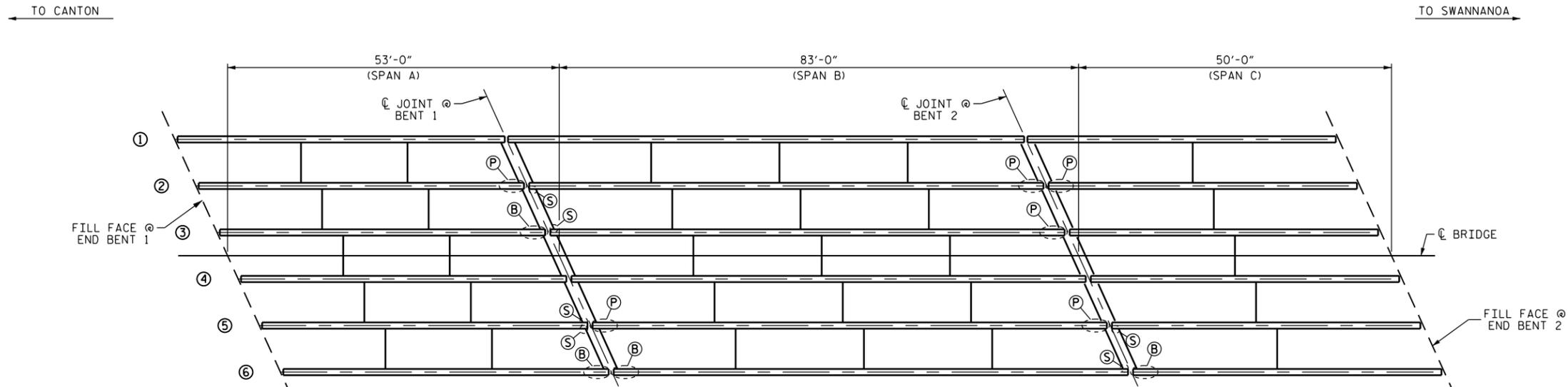
DRAWN BY : W.O. KEITH DATE : 10/15  
 CHECKED BY : J. YANNACCONE DATE : 07/16

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED



**NOTES**

FOR BEAM END REPAIRS AND STIFFENER REPAIRS, SEE "BEAM END AND INTERMEDIATE REPAIR DETAILS" SHEET.  
 FOR PLATE REPAIRS AND DIAPHRAGM REPAIRS, SEE "BEAM PLATING REPAIR DETAILS" SHEET.  
 THE LOCATIONS AND DIMENSIONS OF THE AREAS FOR REPAIR ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, SHALL VERIFY THE LOCATION AND EXTENTS OF REPAIR AREAS PRIOR TO STEEL FABRICATION.  
 CONTRACTOR SHALL ENSURE THAT EXISTING UTILITIES ADJACENT TO THE BRIDGE ARE NOT DAMAGED DURING REPAIR OPERATIONS.



- ① BEAM NUMBER
- Ⓟ BEAM END REPAIR
- Ⓧ DIAPHRAGM REPAIR
- Ⓟ PLATE REPAIR
- Ⓢ STIFFENER REPAIR

**BEAM REPAIR LOCATIONS**  
 (OTHER LOCATIONS MAY EXIST, SEE NOTES)

ANTICIPATED BEAM REPAIR LOCATIONS						
SPAN	BEAM	LOCATION	DIM "A"	DIM "B"	DIM "C"	DIM "D"
A	2	BENT 1	4 1/2"	3'-2"	—	—
A	3	BENT 1	5"	9"	3"	1'-10"
A	5	BENT 1	4"	3"	—	—
A	5	BENT 1	5"	3"	—	—
A	6	BENT 1	2'-11"	10"	6"	3'-4"
B	2	BENT 1	5 1/2"	3"	—	—
B	3	BENT 1	3 1/2"	3"	—	—
B	5	BENT 1	6"	2'-7"	—	—
B	6	BENT 1	2'-11"	1'-0"	8"	4'-2"
B	2	BENT 2	6"	4'-4"	—	—
B	3	BENT 2	5 1/2"	4'-2"	—	—
B	5	BENT 2	5 1/2"	2'-6"	—	—
B	6	BENT 2	7"	3"	—	—
C	2	BENT 2	3"	1'-10"	—	—
C	5	BENT 2	6"	6"	—	—
C	6	BENT 2	2'-11"	1'-0"	6"	5'-8"

BEAM REPAIR							
BEAM END REPAIR		PLATE REPAIR		STIFFENER REPAIR		DIAPHRAGM REPAIR	
LBS.		LBS.		LBS.		LBS.	
ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
1,350		440		40		—	

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 404

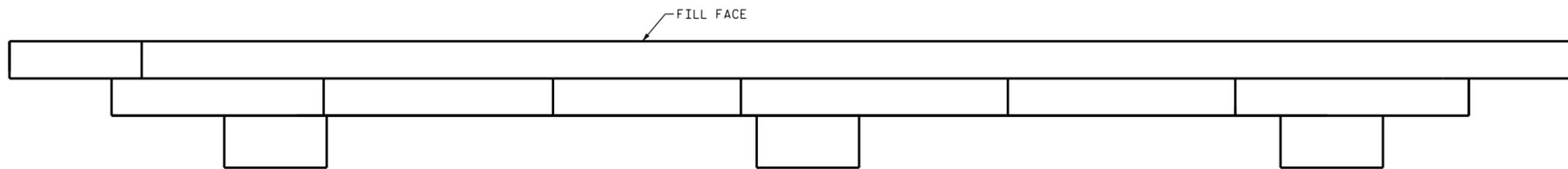
DocuSigned by:  
*John A. Yannaccone*  
 7BC308E8E804E  
  
 8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**BEAM PLATING  
 AND  
 REPAIR LOCATIONS**

DRAWN BY : O. PUIGCERVER DATE : 2/16  
 CHECKED BY : T.L. CLELLAND DATE : 5/16

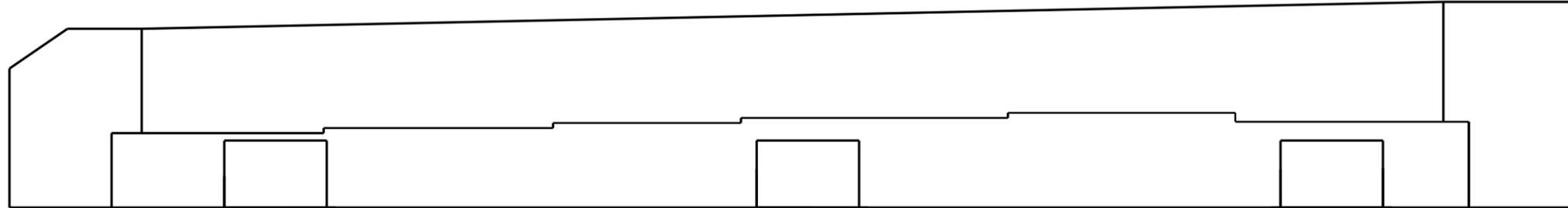
DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-29
2			4			TOTAL SHEETS 81



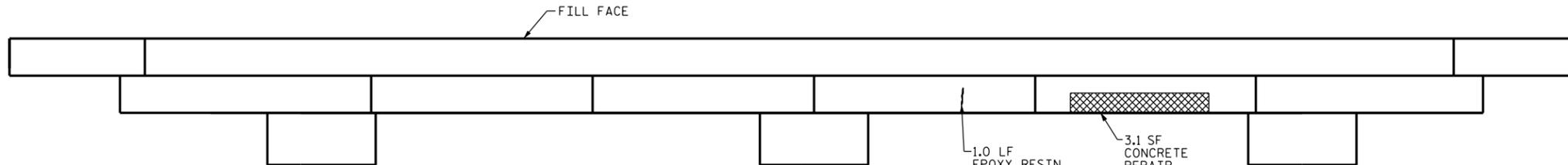
PLAN

NO REPAIRS NOTED FOR END BENT 1 DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE END BENT PRIOR TO BEGINNING WORK.

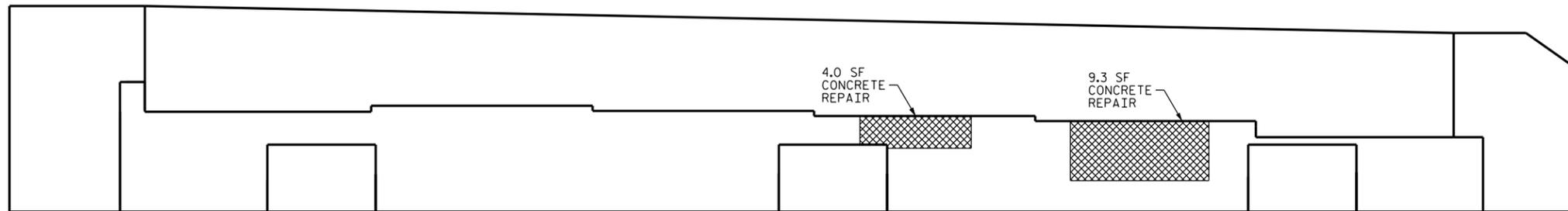


ELEVATION

END BENT 1



PLAN



ELEVATION

END BENT 2

 DAMAGED AREA  
 EPOXY RESIN INJECTION

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0		
REPAIRS END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	16.4	10.0 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		1.0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

NOTES

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

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

\* QUANTITIES HAVE BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

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

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 404

DocuSigned by:

*John A. Yannaccone*



8/5/2016

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
END BENT 1 & 2					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-30
					TOTAL SHEETS 81

DRAWN BY : O. PUIGSERVER DATE : 3/16  
 CHECKED BY : T. L. CLELLAND DATE : 5/16

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

### AS-BUILT REPAIR QUANTITY TABLE

REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
<b>BENT 1</b>				
<b>SHOTCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	69.2	43.0 *		
COLUMN	100.5	62.5 *		
<b>CONCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0	0		
<b>EPOXY RESIN INJECTION</b>		LN. FT		LN. FT
CAP		0		
COLUMN		0		
<b>EPOXY COATING</b>		SQ. FT.		SQ. FT.
TOP OF BENT CAP		133		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

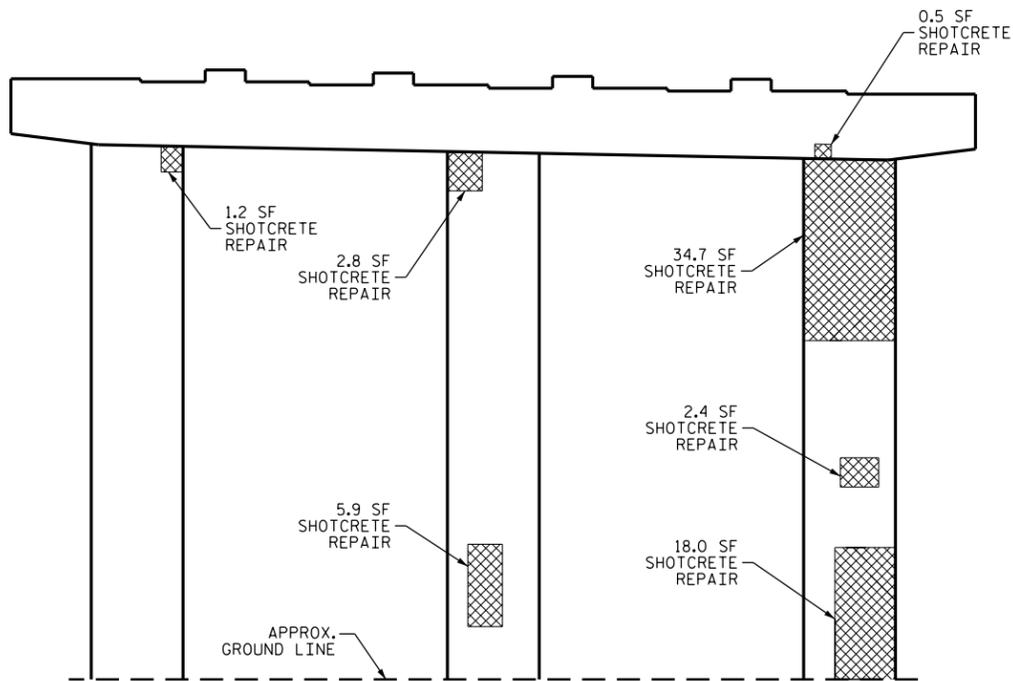


TOP OF CAP



BOTTOM OF CAP

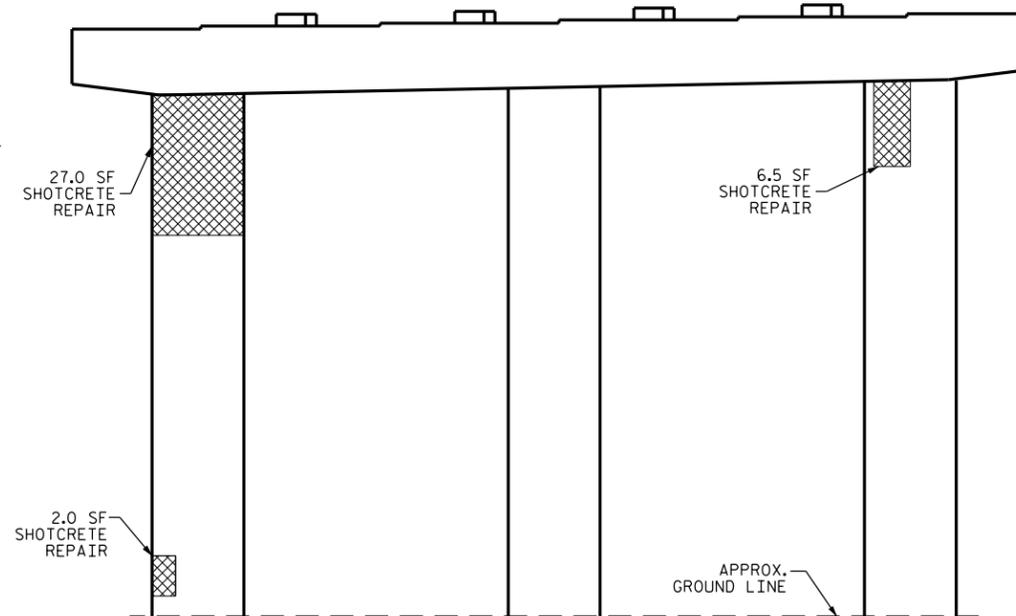
### PLAN



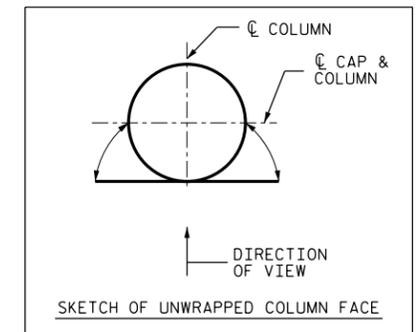
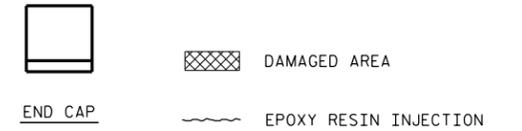
SPAN A FACE

### ELEVATION

(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)



SPAN B FACE



### NOTES

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

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

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.

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

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 404

SHEET 1 OF 2

DocuSigned by:

*John A. Yannaccone*  
 7BC30688-8E99-4594-945E-773068888888  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 32492  
 JOHN A. YANNACCONE

8/5/2016

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

DRAWN BY : R.L. PUTTEK/O. PUIGSERVER DATE : 2/16  
 CHECKED BY : T.L. CLELLAND DATE : 5/16

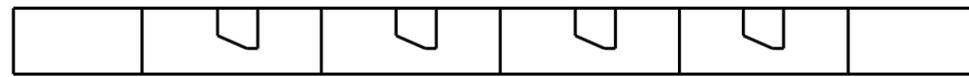
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-31
2			4			TOTAL SHEETS 81

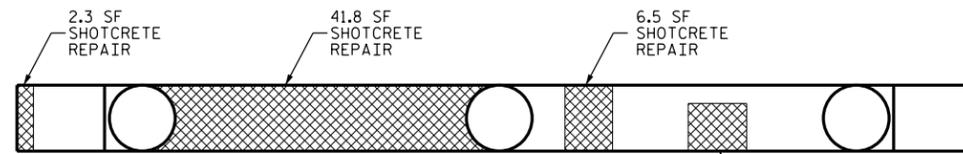
### AS-BUILT REPAIR QUANTITY TABLE

REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
<b>BENT 2</b>				
<b>SHOTCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	69.0	43.0 *		
COLUMN	288.8	180.5 *		
<b>CONCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	16.0	10.0 *		
COLUMN	0	0		
<b>EPOXY RESIN INJECTION</b>		LN. FT		LN. FT
CAP		0		
COLUMN		0		
<b>EPOXY COATING</b>		SQ. FT.		SQ. FT.
TOP OF BENT CAP		133		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

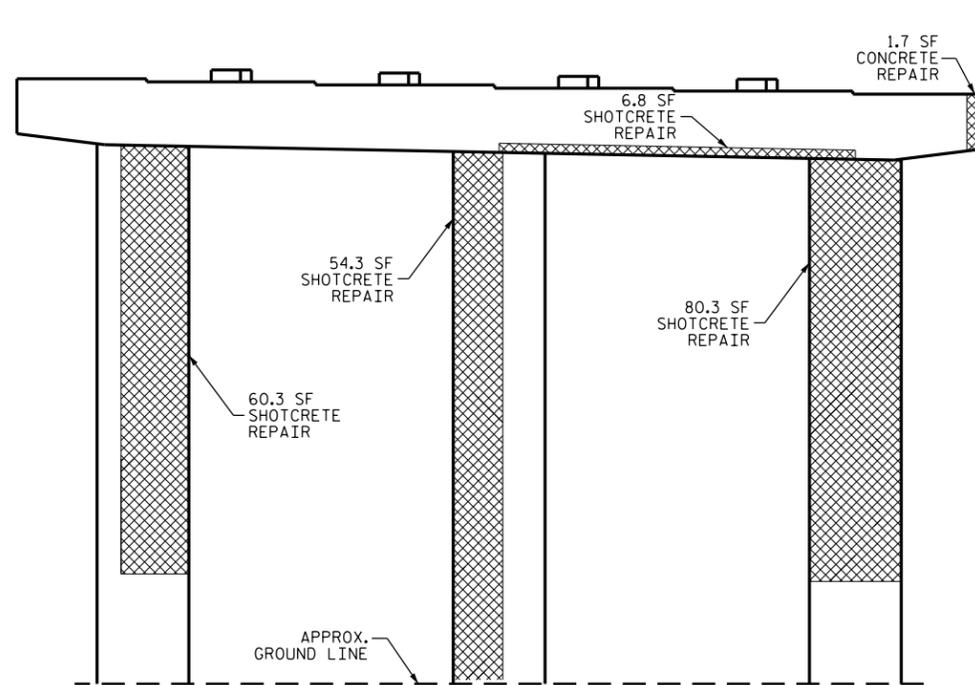


TOP OF CAP

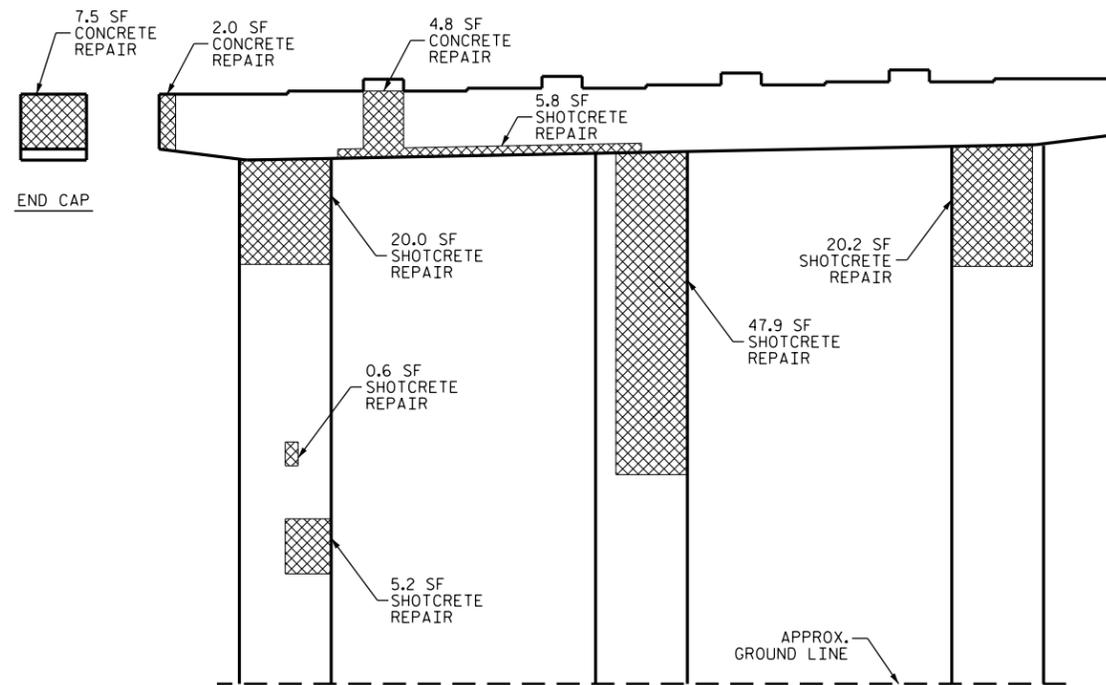


BOTTOM OF CAP

PLAN



SPAN B FACE



SPAN C FACE

ELEVATION

(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

#### NOTES

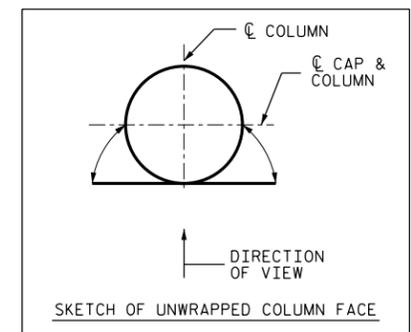
REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES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

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

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.

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

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.



PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 404

SHEET 2 OF 2

DocuSigned by:  
*John A. Yannaccone*  
 7BC3088E894E



8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

## BENT 2

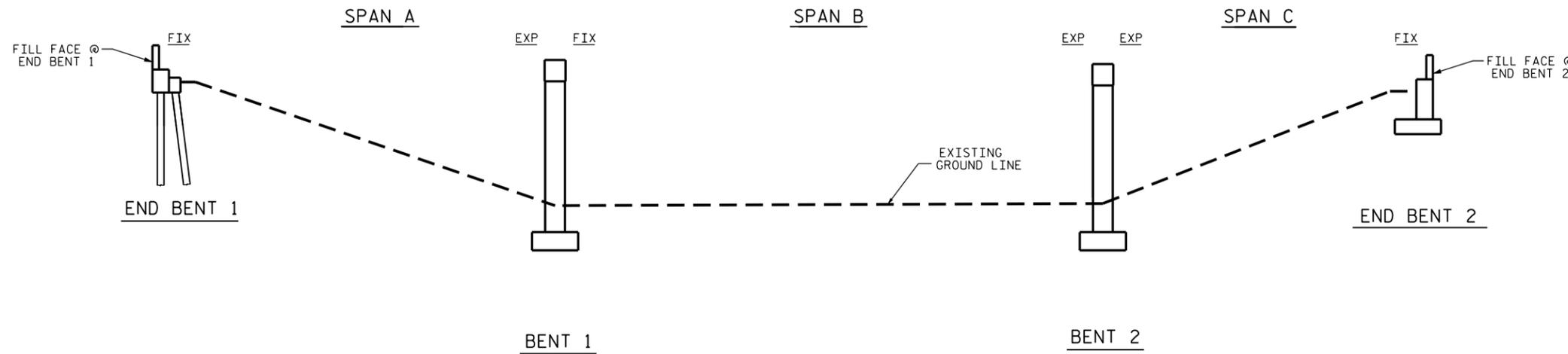
DRAWN BY : R.L. PUTTEK/O. PUIGSERVER DATE : 2/16  
 CHECKED BY : T.L. CLELLAND DATE : 5/16

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

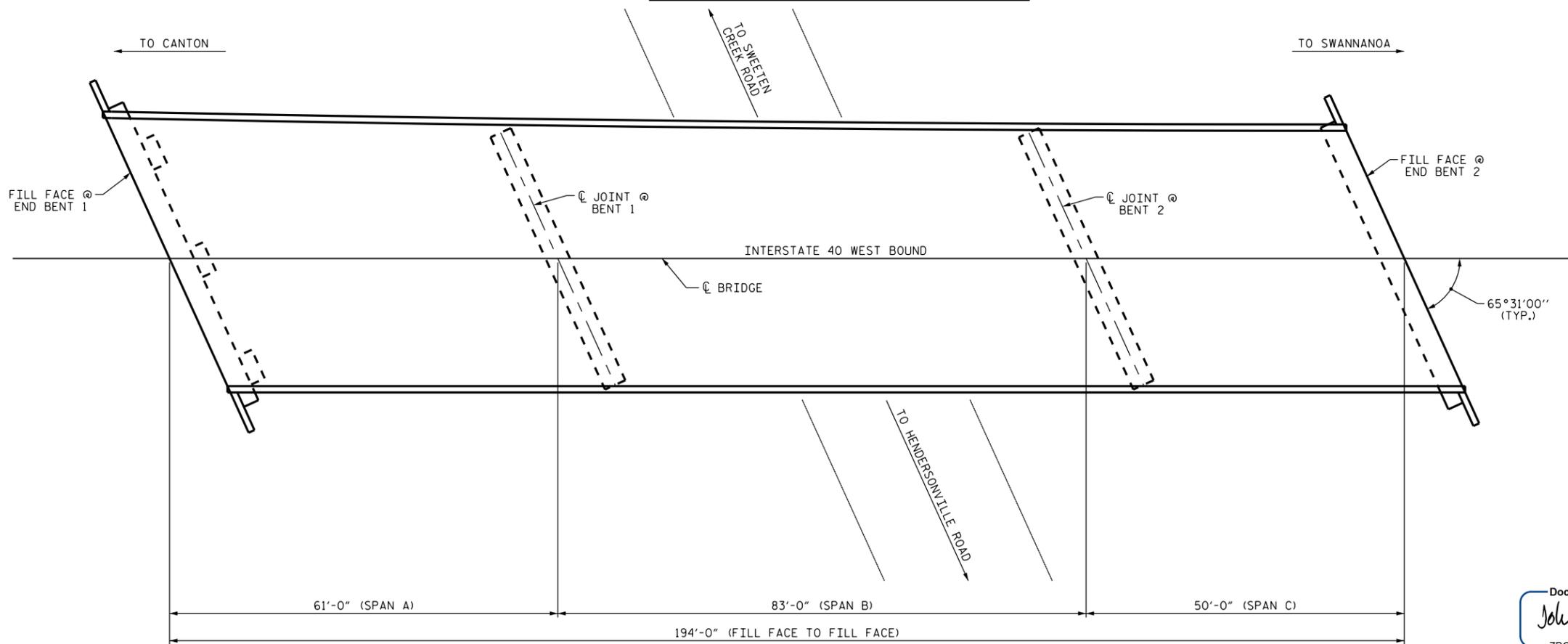
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-32
2			4			TOTAL SHEETS 81

**NOTES**

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 11/03/2015.  
BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



**SECTION ALONG CL ROADWAY**



**PLAN**

**SCOPE OF WORK**

- CLEAN, PAINT AND REPAIR STEEL I-BEAMS AND BEARINGS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- CLEAN AND REPAIR REBAR IN CONCRETE REPAIR AREAS.
- PERFORM SHOTCRETE REPAIRS IN PREPARED AREAS.
- REMOVE DEBRIS FROM TOP OF BENT CAPS AND APPLY EPOXY COATING.

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

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

DocuSigned by:  
*John A. Yannaccone*  
7BC30888-8945-4045-9045-9045  
SEAL  
32492  
ENGINEER  
JOHN A. YANNACCONE

8/5/2016

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
BRIDGE NO. 406

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**GENERAL DRAWING  
FOR BRIDGE ON I-40 WBL  
OVER LONDON ROAD**

DRAWN BY : S.T. CHAMPION DATE : 11/2015  
CHECKED BY : J. YANNACCONE DATE : 11/2015

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

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



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 AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

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

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

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR CLEANING AND REPAINTING OF BRIDGE, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR POLLUTION CONTROL, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR BEAM REPAIR, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

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

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 406

SHEET 2 OF 2

DocuSigned by:

*John A. Yannaccone*  
 7BC38000000000000000000000000000  
 NORTH CAROLINA  
 PROFESSIONAL  
 SEAL  
 32492  
 ENGINEER  
 JOHN A. YANNACCONE

8/5/2016

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
GENERAL DRAWING FOR BRIDGE ON I-40 WBL OVER LONDON ROAD						S-34
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	81
1			3			
2			4			

DRAWN BY : W.O. KEITH DATE : 10/15  
 CHECKED BY : J. YANNACCONE DATE : 07/16

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

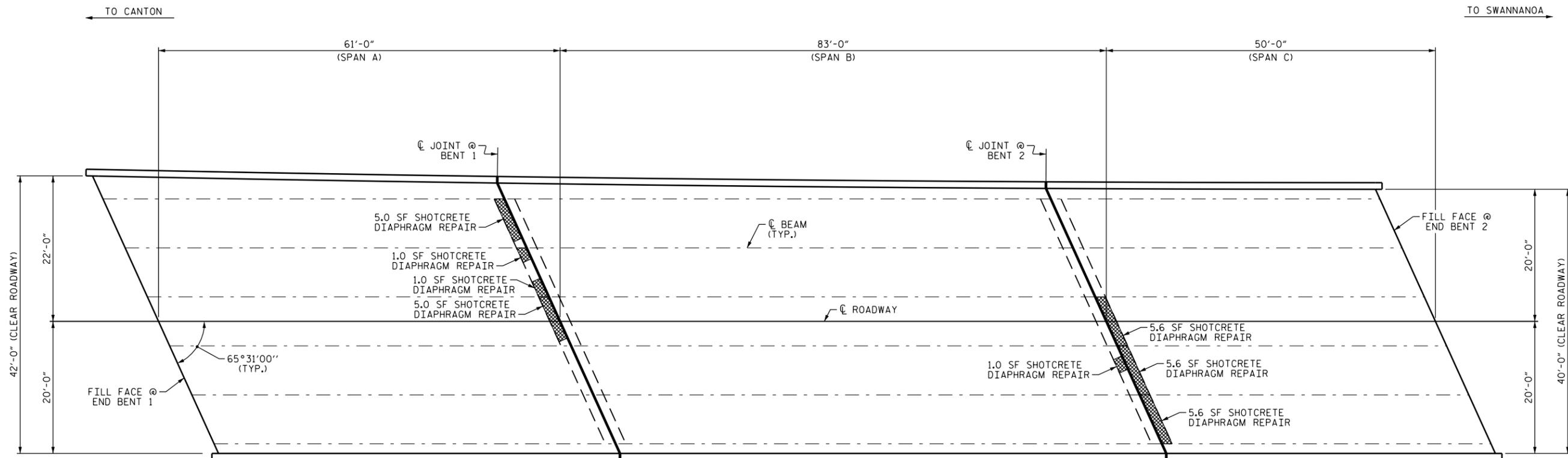
AS-BUILT REPAIR QUANTITY TABLE

UNDERSIDE OF DECK REPAIRS

SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	0.0	0.0		
INTERIOR DIAPHRAGMS	29.8	18.5*		
	ESTIMATE		ACTUAL	
UNDERSIDE EPOXY RESIN INJECTION	0.0 LF			

VALUES IN CHARTS REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, 1" MIN. BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

-  UNDERSIDE REPAIR
-  DIAPHRAGM REPAIR
- ERI EPOXY RESIN INJECTION



PLAN

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 406

NOTES

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

FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG & DIAPHRAGM REPAIRS DETAILS" SHEET.

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

DocuSigned by:  
*John A. Yannaccone*  
 7BC38...  

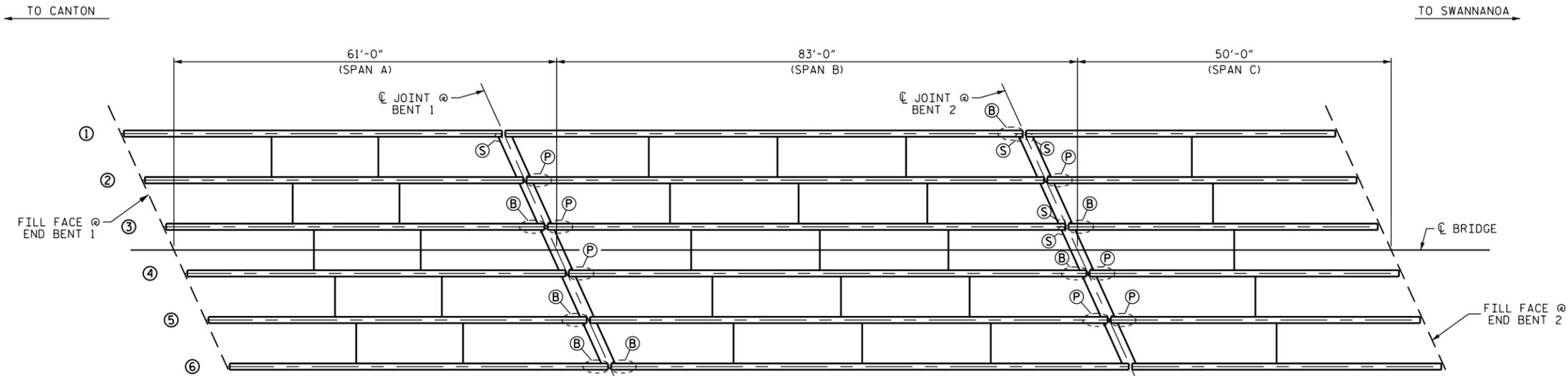

8/5/2016

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN OF SPANS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED					TOTAL SHEETS 81

DRAWN BY : O. PUIGSERVER DATE : 03/16  
 CHECKED BY : J. YANNACCONE DATE : 05/16

**NOTES**

FOR BEAM END REPAIRS AND STIFFENER REPAIRS, SEE "BEAM END AND INTERMEDIATE REPAIR DETAILS" SHEET.  
 FOR PLATE REPAIRS AND DIAPHRAGM REPAIRS, SEE "BEAM PLATING REPAIR DETAILS" SHEET.  
 THE LOCATIONS AND DIMENSIONS OF THE AREAS FOR REPAIR ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, SHALL VERIFY THE LOCATION AND EXTENTS OF REPAIR AREAS PRIOR TO STEEL FABRICATION.  
 CONTRACTOR SHALL ENSURE THAT EXISTING UTILITIES ADJACENT TO THE BRIDGE ARE NOT DAMAGED DURING REPAIR OPERATIONS.



**BEAM REPAIR LOCATIONS**  
 (OTHER LOCATIONS MAY EXIST, SEE NOTES)

ANTICIPATED BEAM REPAIR LOCATIONS						
SPAN	BEAM	LOCATION	DIM "A"	DIM "B"	DIM "C"	DIM "D"
A	1	BENT 1	3"	1'-0"	---	---
A	3	BENT 1	2'-5"	11"	6 1/2"	2'-5"
A	5	BENT 1	2'-5"	11"	---	---
A	6	BENT 1	1"	1'-3"	---	---
B	2	BENT 1	8"	3'-11"	---	---
B	3	BENT 1	6"	3'-8"	---	---
B	4	BENT 1	6"	2'-1"	---	---
B	6	BENT 1	1"	1'-3"	---	---
B	1	BENT 2	1"	2'-0"	---	---
B	1	BENT 2	4"	---	---	---
B	3	BENT 2	2"	---	---	---
B	3	BENT 2	8"	---	---	---
B	4	BENT 2	2'-5"	11"	7"	2'-2"
B	5	BENT 2	7"	2'-6"	---	---
C	1	BENT 2	7"	---	---	---
C	2	BENT 2	5"	2'-10"	---	---
C	3	BENT 2	2'-5"	9"	4"	2'-11"
C	4	BENT 2	4 1/2"	6'-8"	---	---
C	5	BENT 2	4 1/2"	2'-10"	---	---

BEAM REPAIR							
BEAM END REPAIR		PLATE REPAIR		STIFFENER REPAIR		DIAPHRAGM REPAIR	
LBS.		LBS.		LBS.		LBS.	
ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
1,140		600		35		---	

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 406

DocuSigned by:  
*John A. Yannaccone*  
 7BC30E8E894E  
 NORTH CAROLINA  
 PROFESSIONAL  
 SEAL  
 32492  
 ENGINEER  
 JOHN A. YANNACCONI  
 8/5/2016

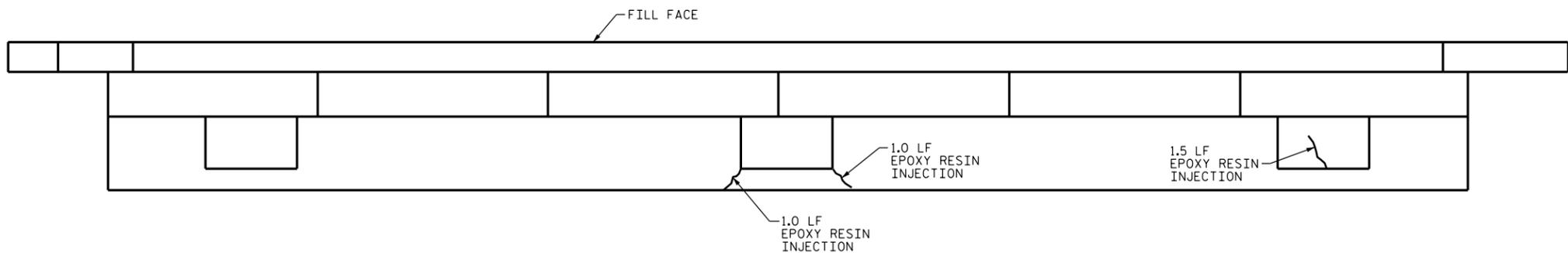
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BEAM PLATING  
 AND  
 REPAIR LOCATIONS**

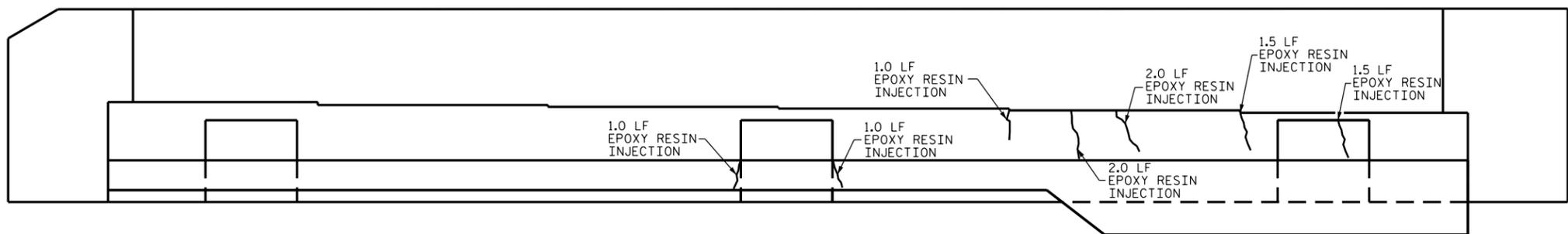
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-36
2			4			TOTAL SHEETS 81

DRAWN BY : O. PUIGCERVER DATE : 2/16  
 CHECKED BY : T.L. CLELLAND DATE : 5/16

DOCUMENT NOT CONSIDERED  
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 SIGNATURES COMPLETED

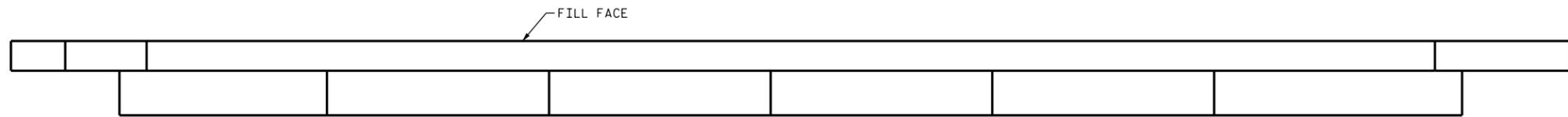


PLAN



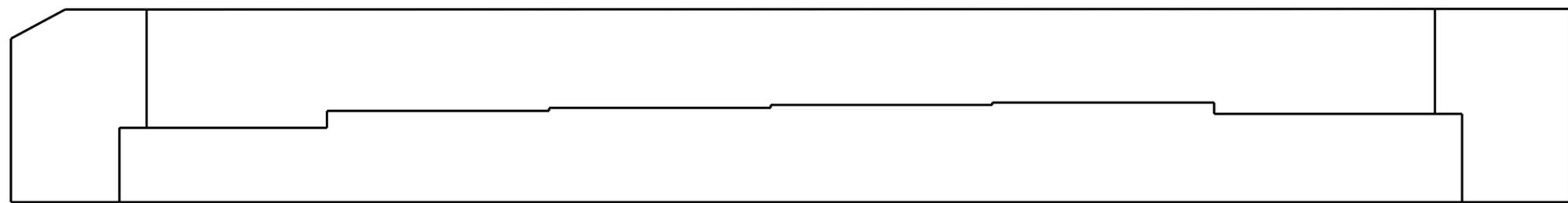
ELEVATION

END BENT 1



PLAN

NO REPAIRS NOTED FOR END BENT 2 DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE END BENT PRIOR TO BEGINNING WORK.



ELEVATION

END BENT 2

DAMAGED AREA  
 EPOXY RESIN INJECTION

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		13.5		
REPAIRS END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

NOTES

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

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

\* QUANTITIES HAVE BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

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

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 406

DocuSigned by:  
*John A. Yannaccone*  
 7BC...  
  
 8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

END BENT 1 & 2

DRAWN BY : O. PUIGCERVER DATE : 3/16  
 CHECKED BY : T.L. CLELLAND DATE : 5/16

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

### AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	93.1	58.0 *		
COLUMN	248.3	155.0*		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	1.7	1.5 *		
COLUMN	0	0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		1.0		
COLUMN		0		
EPOXY COATING		SO. FT.		SO. FT.
TOP OF BENT CAP		140		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

### NOTES

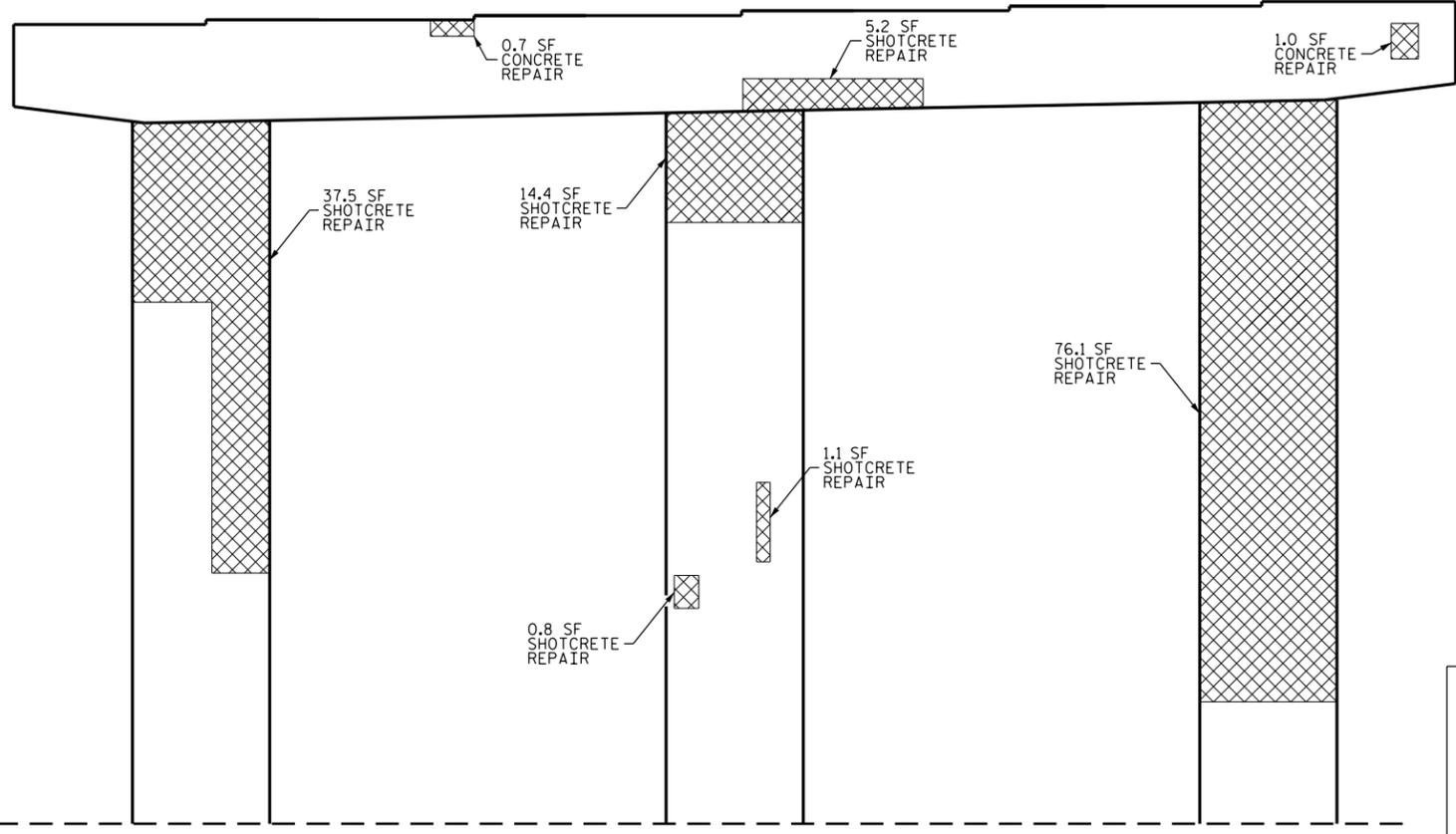
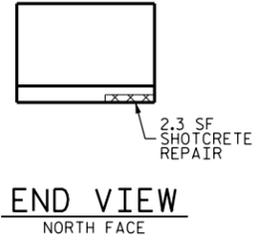
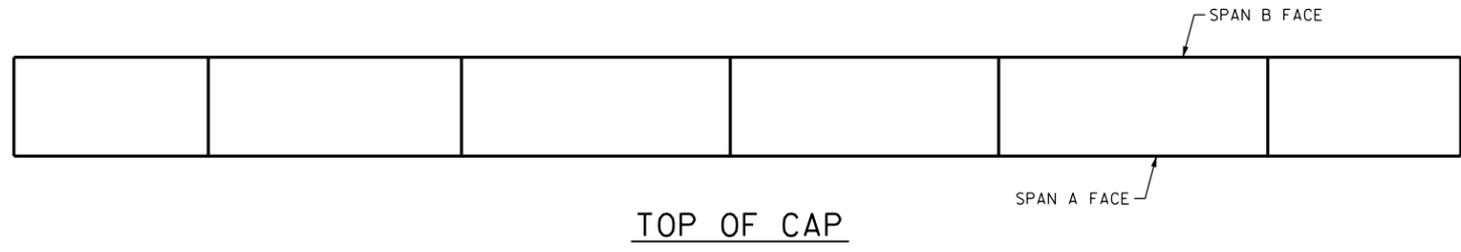
REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES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

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

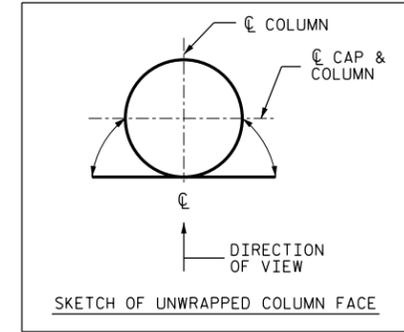
FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

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.

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.



**ELEVATION**  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)



DAMAGED AREA  
 EPOXY RESIN INJECTION

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
BRIDGE NO. 406

SHEET 1 OF 4

DocuSigned by:  
*John A. Yannaccone*  
7BC368...  
STATE OF NORTH CAROLINA  
PROFESSIONAL ENGINEER  
SEAL 32492  
JOHN A. YANNACCONE  
8/5/2016

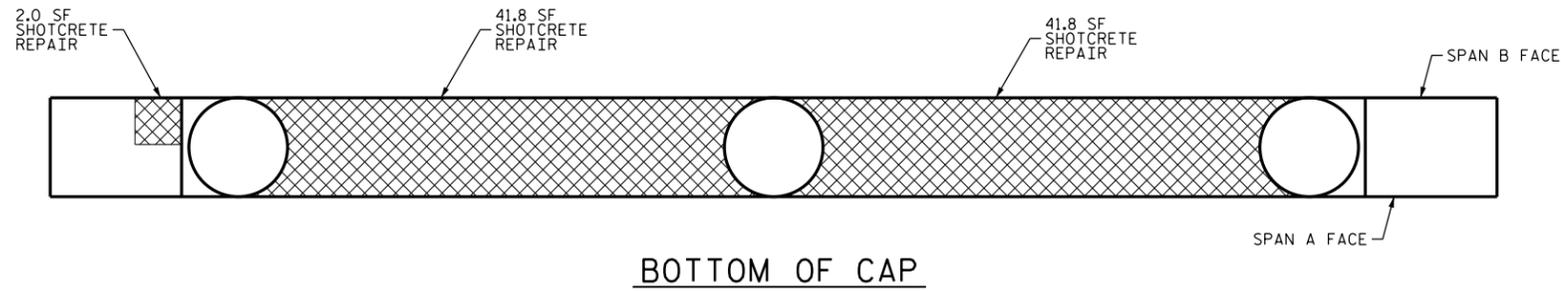
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**BENT 1  
SPAN A FACE**

DRAWN BY : O. PUIGCERVER DATE : 2/16  
CHECKED BY : T.L. CLELLAND DATE : 5/16

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

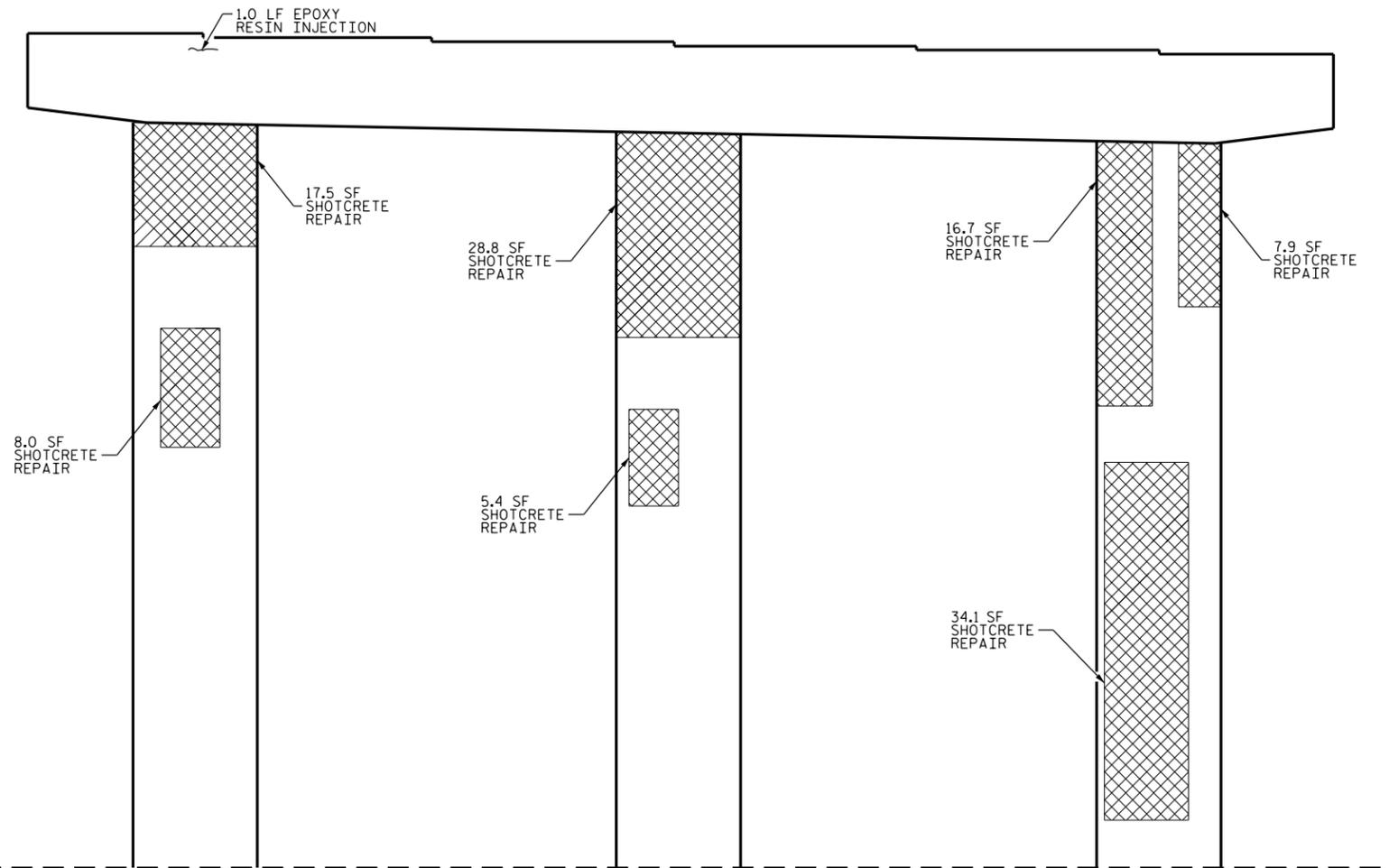
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-38
2			4			TOTAL SHEETS 81



**BOTTOM OF CAP**



**END VIEW**  
SOUTH FACE



**ELEVATION**  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

**NOTES**

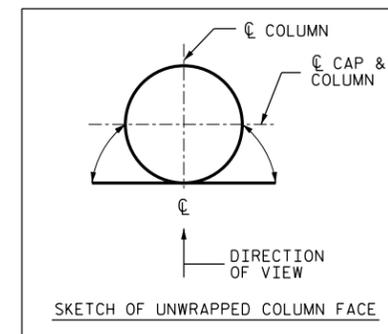
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\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.



DAMAGED AREA  
 EPOXY RESIN INJECTION

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
BRIDGE NO. 406

SHEET 2 OF 4

DocuSigned by:  
*John A. Yannaccone*  
7BC36000000000000000000000000000  
STATE OF NORTH CAROLINA  
PROFESSIONAL ENGINEER  
SEAL  
32492  
JOHN A. YANNACCONE  
8/5/2016

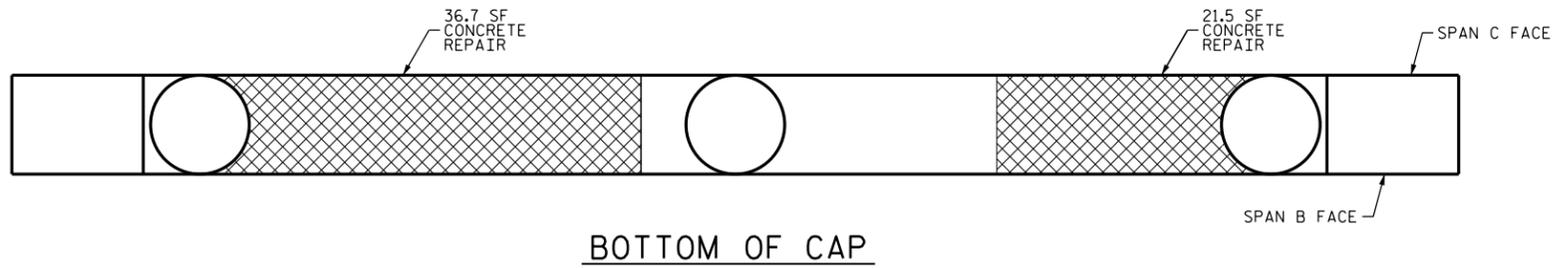
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**BENT 1**  
**SPAN B FACE**

DRAWN BY : O. PUIGCERVER DATE : 2/16  
CHECKED BY : T. L. CLELLAND DATE : 5/16

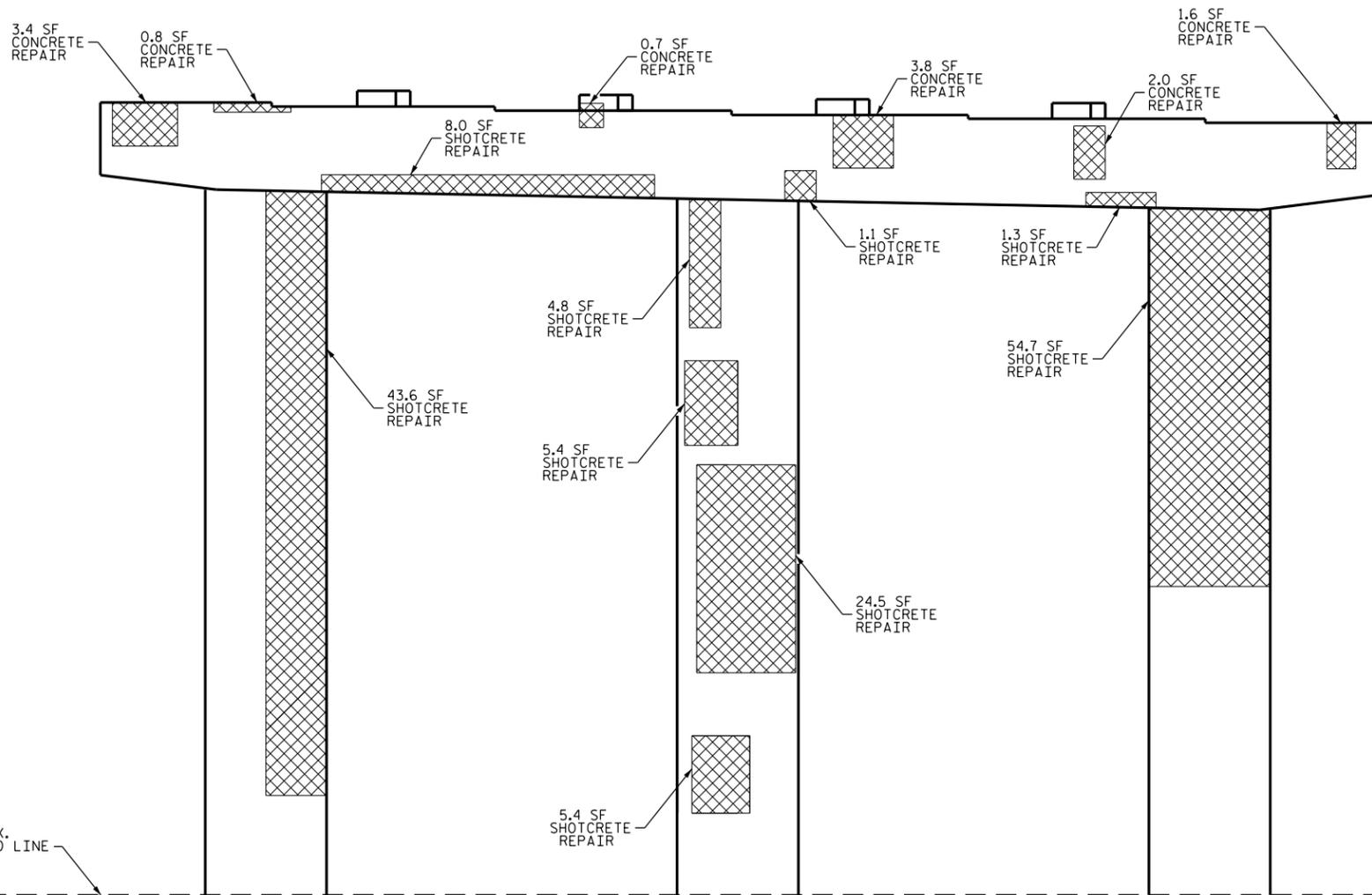
DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			81
2			4			

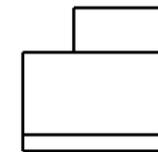




**BOTTOM OF CAP**



**END VIEW**  
SOUTH FACE



**ELEVATION**  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

**NOTES**

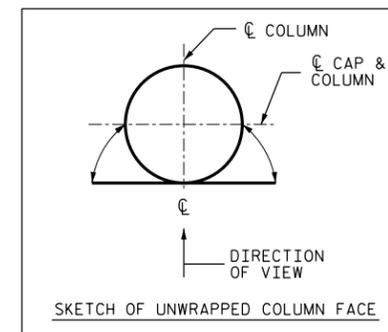
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\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.



DAMAGED AREA  
 EPOXY RESIN INJECTION

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
BRIDGE NO. 406

SHEET 4 OF 4

DocuSigned by:  
*John A. Yannaccone*  
7BC36000000000000000000000000000  
STATE OF NORTH CAROLINA  
PROFESSIONAL ENGINEER  
SEAL  
32492  
JOHN A. YANNACCONE

8/5/2016

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

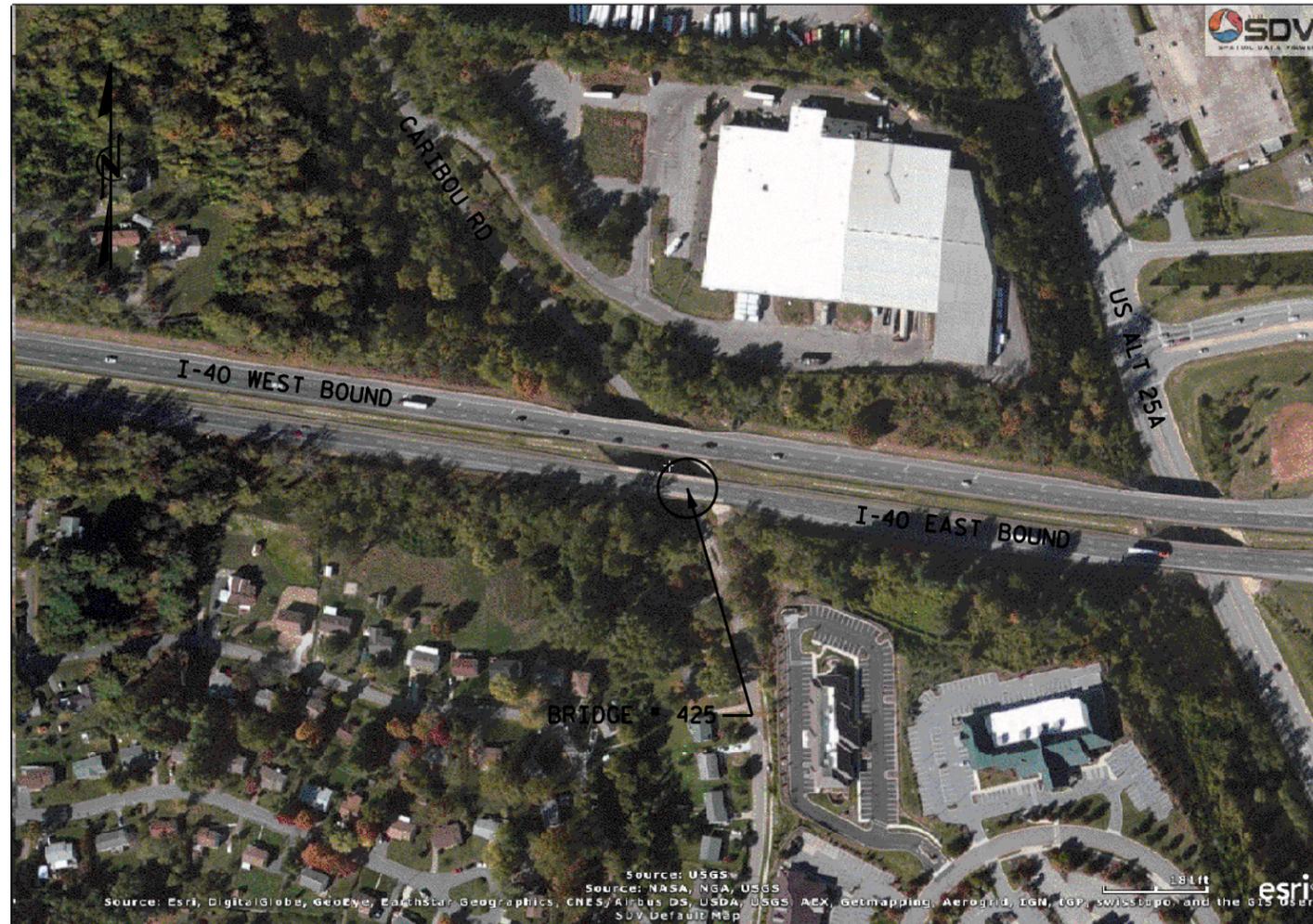
**BENT 2**  
**SPAN C FACE**

DRAWN BY : O. PUIGCERVER DATE : 2/16  
CHECKED BY : T.L. CLELLAND DATE : 5/16

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





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 AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

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

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

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR CLEANING AND REPAINTING OF BRIDGE, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR POLLUTION CONTROL, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR BEAM REPAIR, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

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

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 425

SHEET 1 OF 2

DocuSigned by:  
*John A. Yannaccone*  
 7BC30802E6987C  
 NORTH CAROLINA  
 PROFESSIONAL  
 SEAL  
 32492  
 ENGINEER  
 JOHN A. YANNACCONE  
 8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 GENERAL DRAWING  
 FOR BRIDGE ON I-40 EBL  
 OVER CARIBOU ROAD

DRAWN BY : W.O. KEITH DATE : 10/15  
 CHECKED BY : J. YANNACCONE DATE : 06/16

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

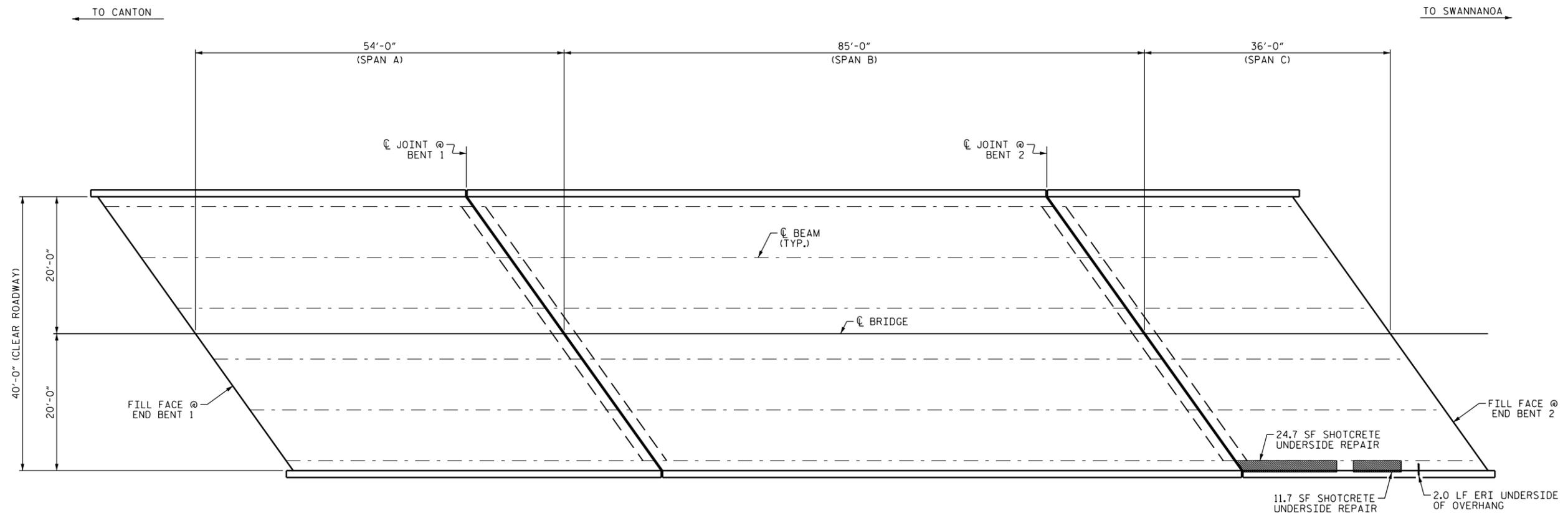
AS-BUILT REPAIR QUANTITY TABLE

UNDERSIDE OF DECK REPAIRS

SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	36.4	22.5*		
INTERIOR DIAPHRAGMS	0.0	0.0		
			ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION		2.0 LF		

VALUES IN CHARTS REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, 1" MIN. BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

-  UNDERSIDE REPAIR
-  DIAPHRAGM REPAIR
- ERI EPOXY RESIN INJECTION



PLAN

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 425

NOTES

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

FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG & DIAPHRAGM REPAIRS DETAILS" SHEET.

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

DocuSigned by:  
*John A. Yannaccone*  
 7BC3800E394E  
  
 8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS

DRAWN BY : O. PUIGCERVER DATE : 03/16  
 CHECKED BY : J. YANNACCONE DATE : 05/16

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-44
2			4			TOTAL SHEETS 81

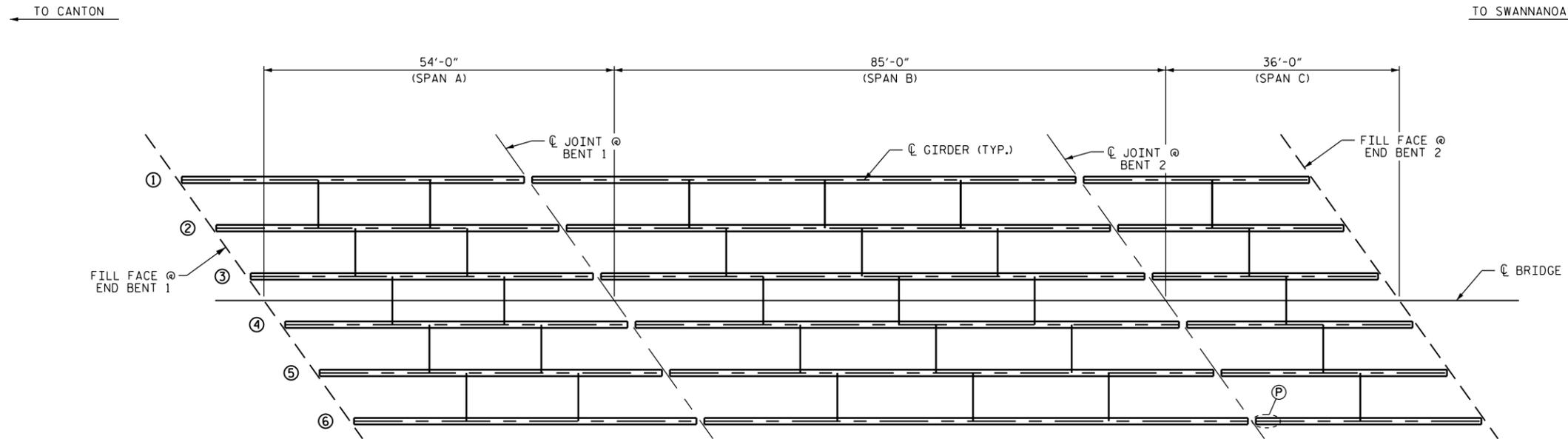
**NOTES**

FOR BEAM END REPAIRS AND STIFFENER REPAIRS, SEE "BEAM END AND INTERMEDIATE REPAIR DETAILS" SHEET.

FOR PLATE REPAIRS AND DIAPHRAGM REPAIRS, SEE "BEAM PLATING REPAIR DETAILS" SHEET.

THE LOCATIONS AND DIMENSIONS OF THE AREAS FOR REPAIR ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, SHALL VERIFY THE LOCATION AND EXTENTS OF REPAIR AREAS PRIOR TO STEEL FABRICATION.

CONTRACTOR SHALL ENSURE THAT EXISTING UTILITIES ADJACENT TO THE BRIDGE ARE NOT DAMAGED DURING REPAIR OPERATIONS.



- ① BEAM NUMBER
- ② BEAM END REPAIR
- ③ DIAPHRAGM REPAIR
- ④ PLATE REPAIR
- ⑤ STIFFENER REPAIR

**BEAM REPAIR LOCATIONS**

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

BEAM REPAIR							
BEAM END REPAIR		PLATE REPAIR		STIFFENER REPAIR		DIAPHRAGM REPAIR	
LBS.		LBS.		LBS.		LBS.	
ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
—		210		—		—	

**ANTICIPATED BEAM REPAIR LOCATIONS**

SPAN	BEAM	LOCATION	DIM "A"	DIM "B"	DIM "C"	DIM "D"
C	6	BENT 2	8"	7'-2"	—	—

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 425

DocuSigned by:  
*John A. Yannaccone*  
 7BC3808E884E0  
  
 8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

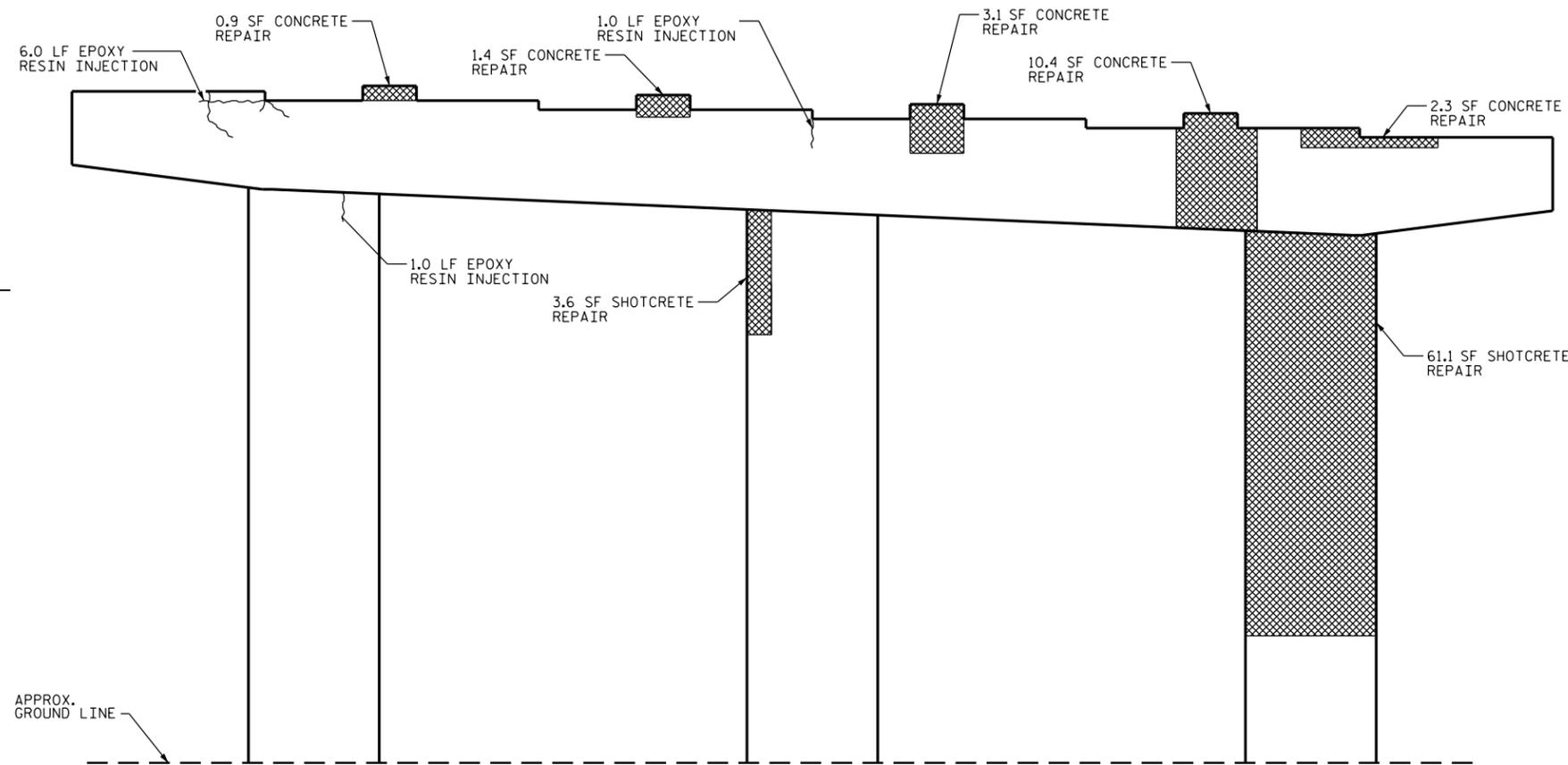
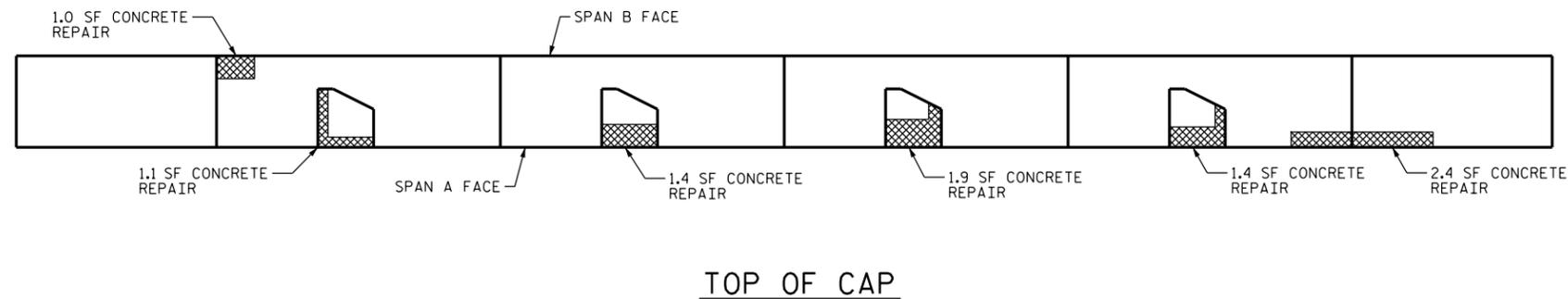
**BEAM PLATING  
 AND  
 REPAIR LOCATIONS**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-45
2			4			81

DRAWN BY : W.O. KEITH DATE : 10/15  
 CHECKED BY : J. YANNACCONE DATE : 01/15

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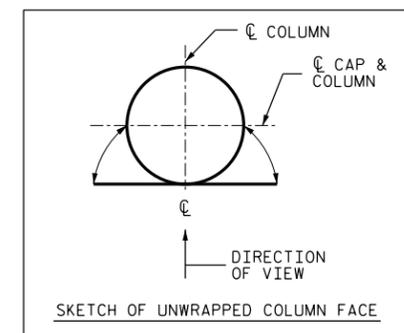




AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	102.0	63.5 *		
COLUMN	128.9	80.5 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	29.8	18.5 *		
COLUMN	0	0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		7.0		
COLUMN		1.0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF BENT CAP		151		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

DAMAGED AREA  
 EPOXY RESIN INJECTION



**ELEVATION**  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

**NOTES**

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PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 425

SHEET 1 OF 4

DocuSigned by:  
*John A. Yannaccone*  
 7BC3088E-8E8E-4E8E-8E8E-8E8E8E8E8E8E  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 32492  
 JOHN A. YANNACCONE  
 8/5/2016

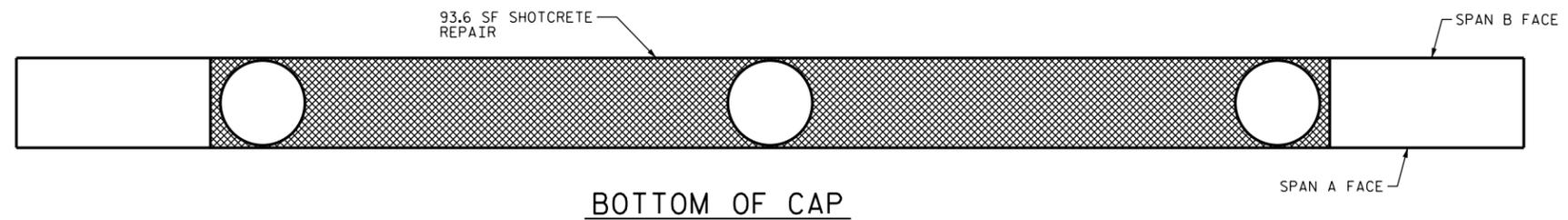
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 1  
 SPAN A FACE**

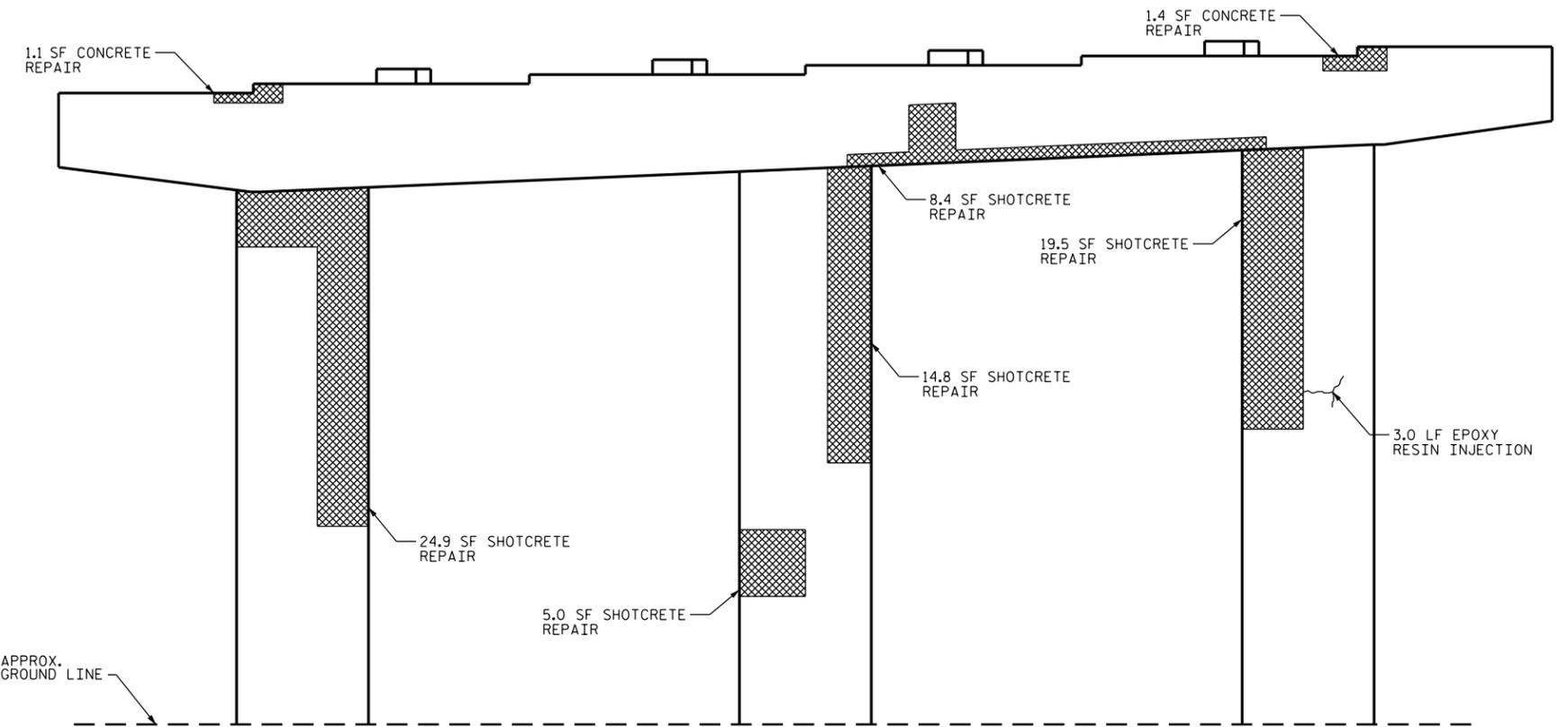
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-47
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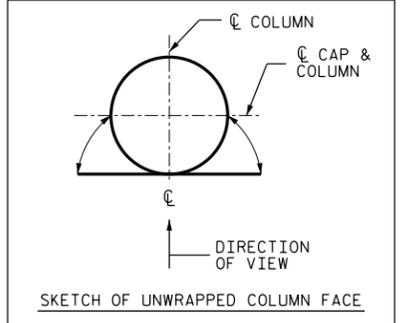
DRAWN BY : D. SHACKELFORD DATE : 04/2016  
 CHECKED BY : T.L. CLELLAND DATE : 05/2016



BOTTOM OF CAP



 DAMAGED AREA  
 EPOXY RESIN INJECTION



ELEVATION

(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

NOTES

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PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 425

SHEET 2 OF 4

DocuSigned by:  
*John A. Yannaccone*  
 7BC38E80E894E6  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 32492  
 JOHN A. YANNACCONI  
 8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 1  
 SPAN B FACE**

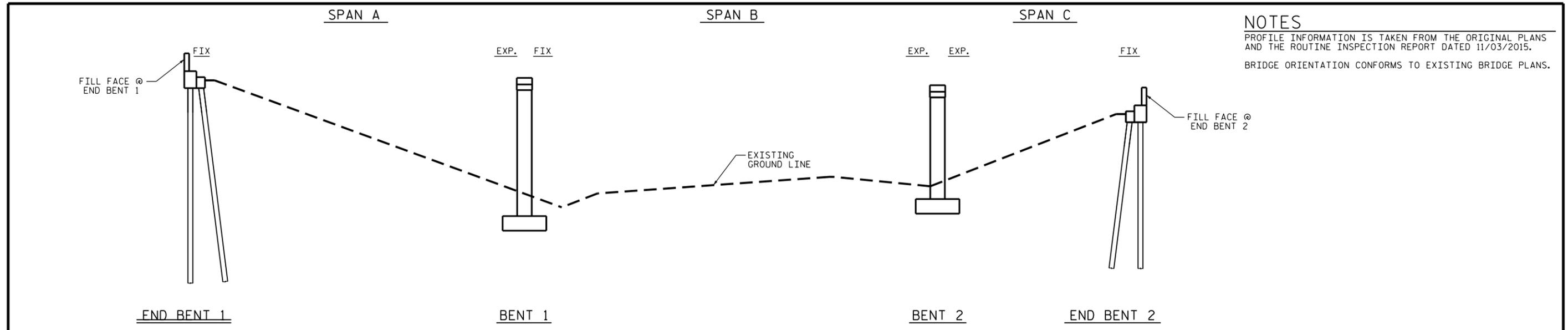
DRAWN BY : D. SHACKELFORD DATE : 04/2016  
 CHECKED BY : T.L. CLELLAND DATE : 05/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-48
1			3			TOTAL SHEETS
2			4			81

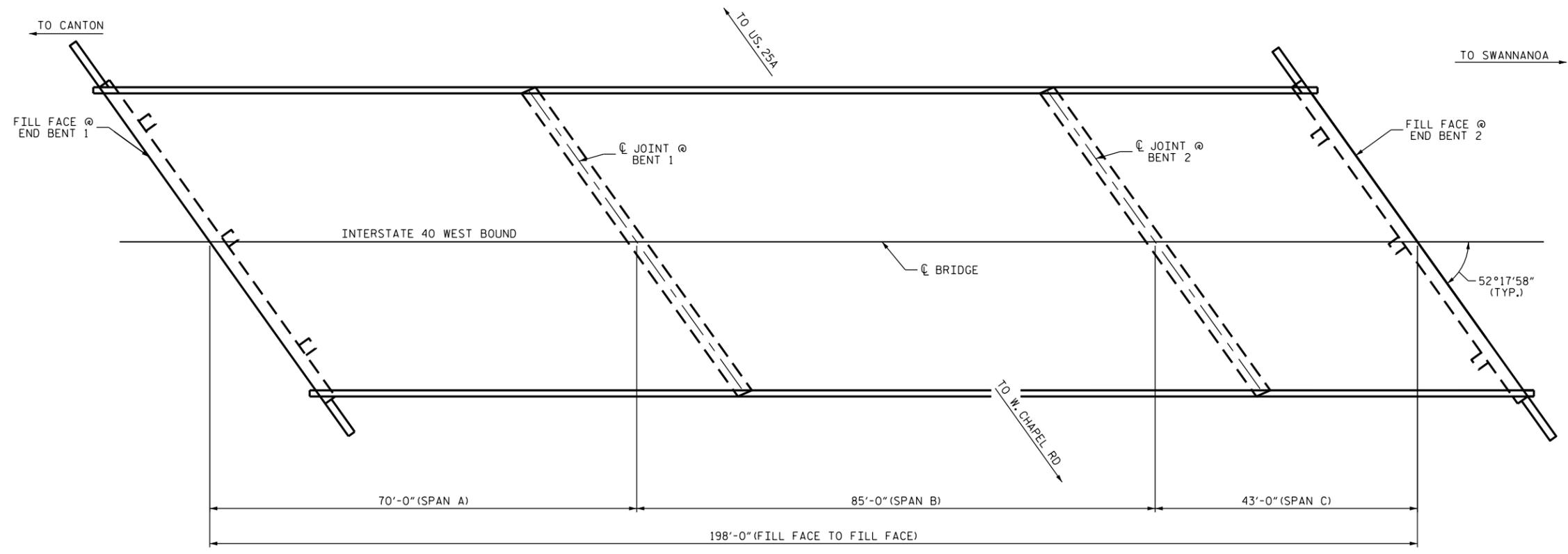






**NOTES**  
 PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 11/03/2015.  
 BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

**SECTION ALONG C ROADWAY**



**PLAN**

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 427

SHEET 1 OF 2

DocuSigned by:  
*John A. Yannaccone*  
 7BC38000000000000000000000000000  
 STATE OF NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 SEAL  
 32492  
 JOHN A. YANNACCONE

8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING  
 FOR BRIDGE ON I-40 WBL  
 OVER LONDON ROAD**

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

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

**SCOPE OF WORK**

- CLEAN, PAINT AND REPAIR STEEL I-BEAMS AND BEARINGS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- CLEAN AND REPAIR REBAR IN CONCRETE REPAIR AREAS.
- PERFORM SHOTCRETE REPAIRS IN PREPARED AREAS.
- REMOVE DEBRIS FROM TOP OF BENT CAPS AND APPLY EPOXY COATING.

DRAWN BY : W.O. KEITH DATE : 10/15  
 CHECKED BY : J.YANNACCONE DATE : 06/16

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-51
2			4			81

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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 AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

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

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

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR CLEANING AND REPAINTING OF BRIDGE, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR POLLUTION CONTROL, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR BEAM REPAIR, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

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

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 427

SHEET 2 OF 2

DocuSigned by:  
*John A. Yannaccone*  
 7BC30E00E8E8945E  
 NORTH CAROLINA  
 PROFESSIONAL  
 SEAL  
 32492  
 ENGINEER  
 JOHN A. YANNACCONE

8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 GENERAL DRAWING  
 FOR BRIDGE ON I-40 WBL  
 OVER CARIBOU ROAD

DRAWN BY : W.O. KEITH DATE : 10/15  
 CHECKED BY : J. YANNACCONE DATE : -

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

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

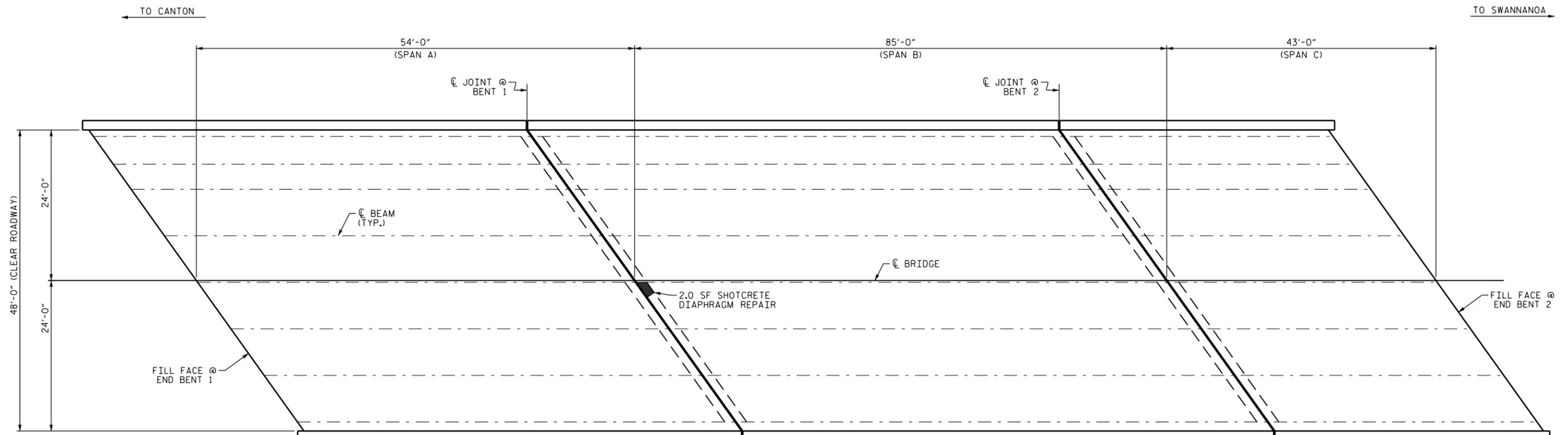
AS-BUILT REPAIR QUANTITY TABLE

UNDERSIDE OF DECK REPAIRS

SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	0.0	0.0		
INTERIOR DIAPHRAGMS	2.0	1.5 *		
			ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION		0.0 LF		

VALUES IN CHARTS REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, 1" MIN. BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

-  UNDERSIDE REPAIR
-  DIAPHRAGM REPAIR
- ERI EPOXY RESIN INJECTION



PLAN

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 427

NOTES

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

FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG & DIAPHRAGM REPAIRS DETAILS" SHEET.

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

DocuSigned by:  
*John A. Yannaccone*  
 7BC36964-2016-800F-4000-000000000000  


8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS

DRAWN BY : W.O. KEITH DATE : 10/2015  
 CHECKED BY : J. YANNACCONE DATE : 06/2016

DOCUMENT NOT CONSIDERED  
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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-53
2			4			81

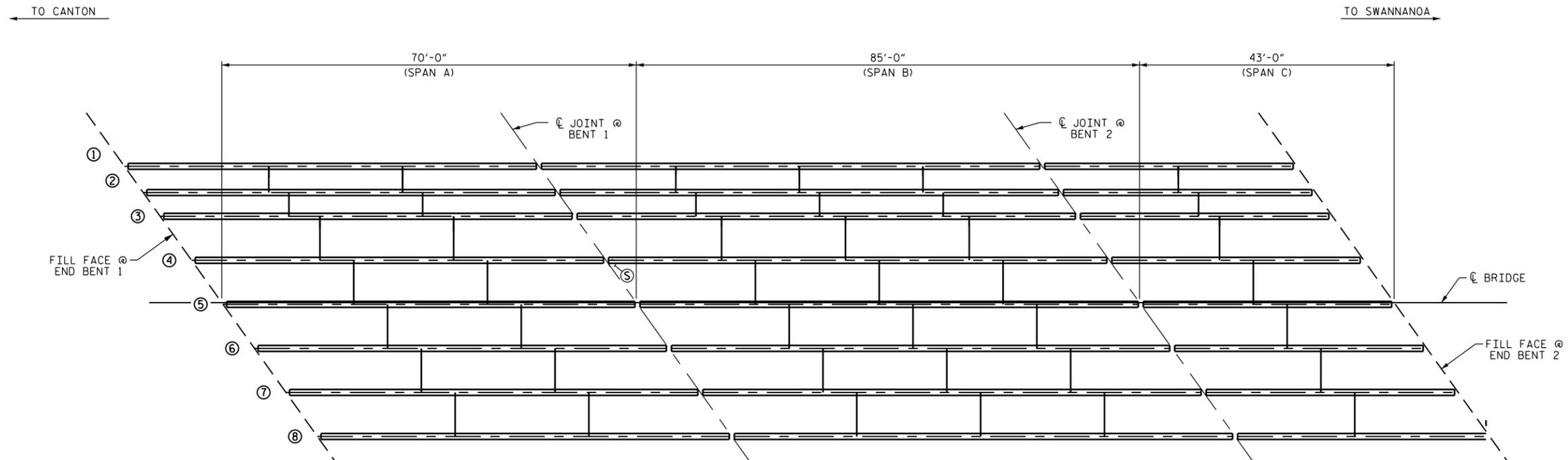
**NOTES**

FOR BEAM END REPAIRS AND STIFFENER REPAIRS, SEE "BEAM END AND INTERMEDIATE REPAIR DETAILS" SHEET.

FOR PLATE REPAIRS AND DIAPHRAGM REPAIRS, SEE "BEAM PLATING REPAIR DETAILS" SHEET.

THE LOCATIONS AND DIMENSIONS OF THE AREAS FOR REPAIR ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, SHALL VERIFY THE LOCATION AND EXTENTS OF REPAIR AREAS PRIOR TO STEEL FABRICATION.

CONTRACTOR SHALL ENSURE THAT EXISTING UTILITIES ADJACENT TO THE BRIDGE ARE NOT DAMAGED DURING REPAIR OPERATIONS.



- ① BEAM NUMBER
- ② BEAM END REPAIR
- ③ DIAPHRAGM REPAIR
- ④ PLATE REPAIR
- ⑤ STIFFENER REPAIR

**BEAM REPAIR LOCATIONS**

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

BEAM REPAIR							
BEAM END REPAIR		PLATE REPAIR		STIFFENER REPAIR		DIAPHRAGM REPAIR	
LBS.		LBS.		LBS.		LBS.	
ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
—	—	—	—	10	—	—	—

**ANTICIPATED BEAM REPAIR LOCATIONS**

SPAN	BEAM	LOCATION	DIM "A"	DIM "B"	DIM "C"	DIM "D"
B	4	BENT 1	4"	—	—	—

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 427

DocuSigned by:  
*John A. Yannaccone*



8/5/2016

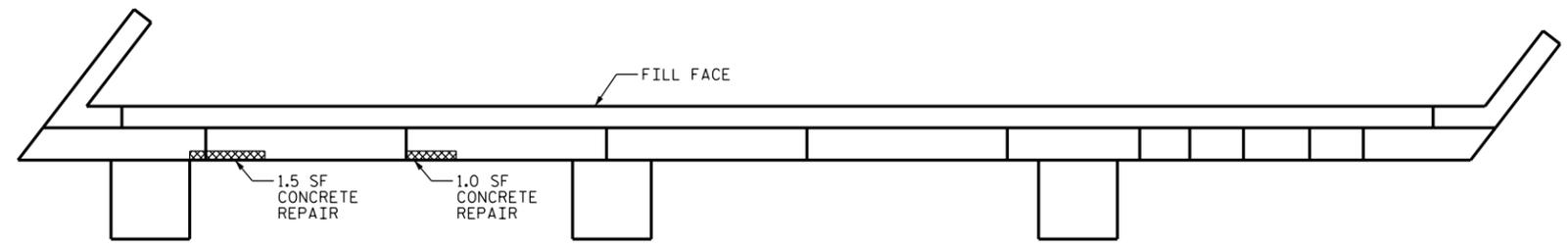
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BEAM PLATING  
 AND  
 REPAIR LOCATIONS**

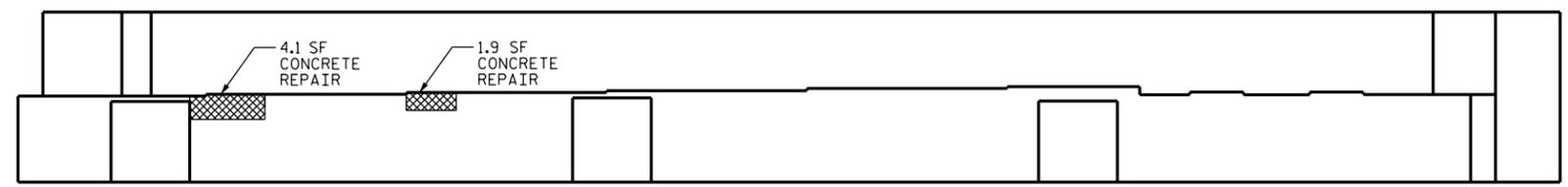
DRAWN BY : W.O. KEITH DATE : 10/15  
 CHECKED BY : J. YANNAKONE DATE : 01/15

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-54
2			4			TOTAL SHEETS 81



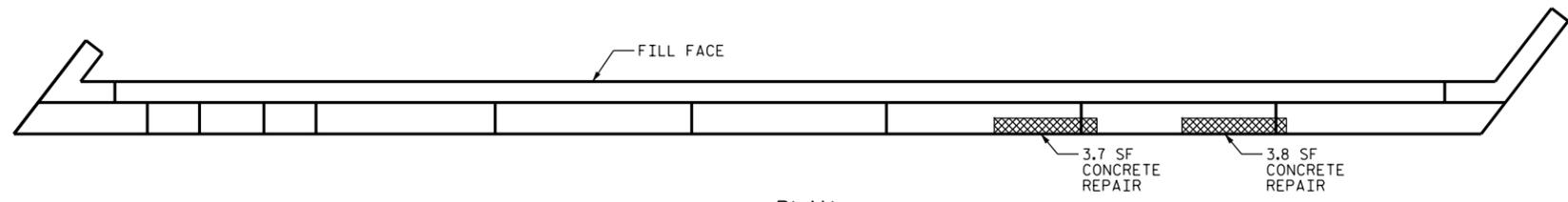
PLAN



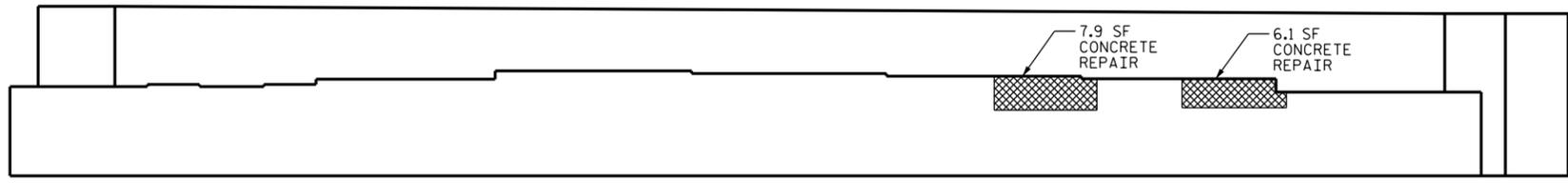
ELEVATION

END BENT 1

DAMAGED AREA  
 EPOXY RESIN INJECTION



PLAN



ELEVATION

END BENT 2

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	8.5	5.5 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0		
REPAIRS END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	21.5	13.5 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

NOTES

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

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

\* QUANTITIES HAVE BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

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

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 427

DocuSigned by:  
*John A. Yannaccone*  
 7BC36084-0004-4094-8000-000000000000  
  
 8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

END BENT 1 & 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-55
2			4			TOTAL SHEETS 81

DRAWN BY : D. SHACKELFORD DATE : 04/2016  
 CHECKED BY : T.L. CLELLAND DATE : 05/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

**NOTES**

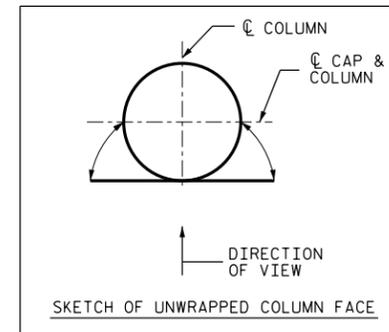
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SHOTCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

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

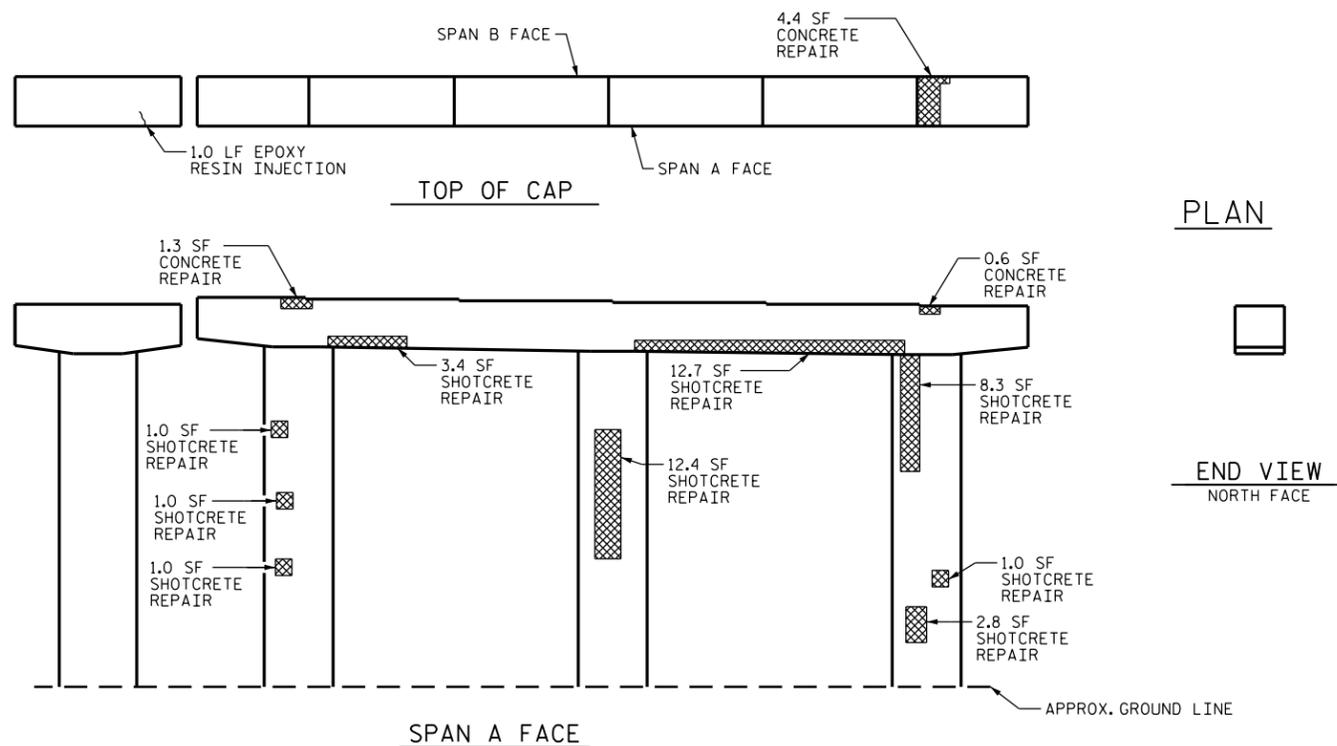
EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

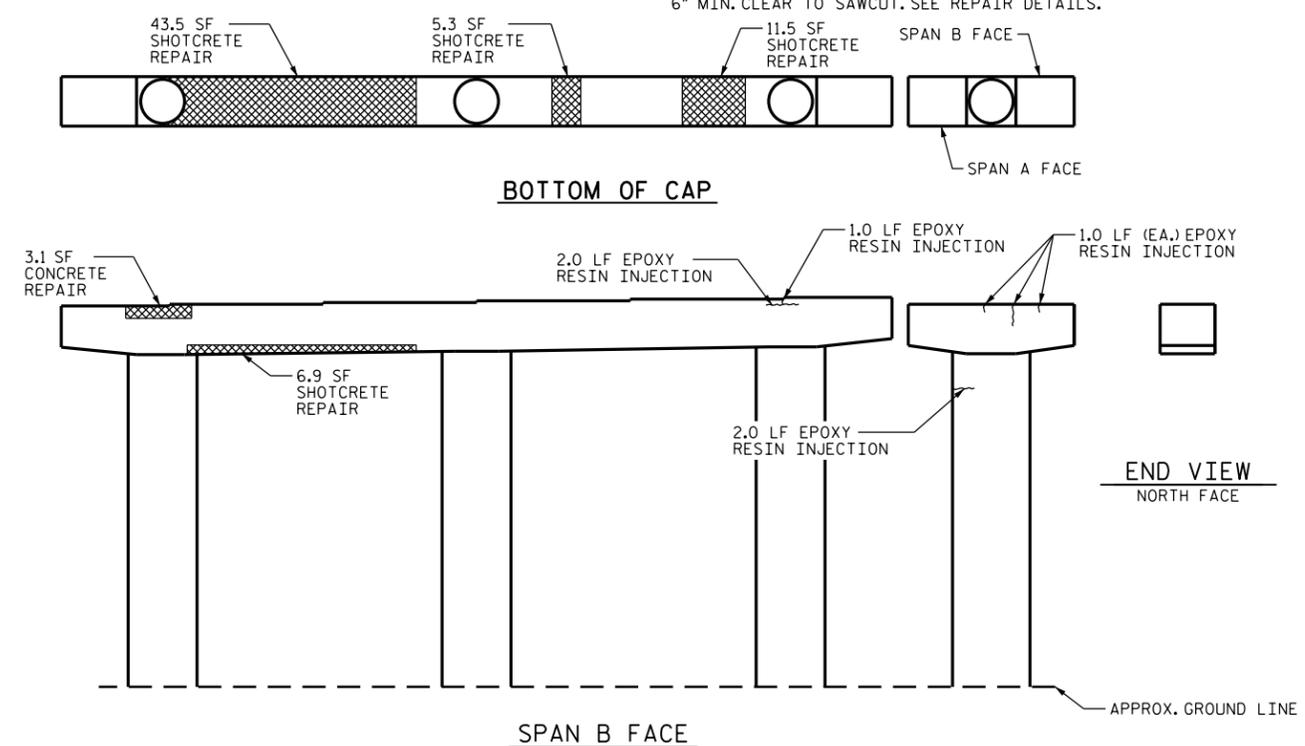


AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	83.3	52.0 *		
COLUMN	27.5	17.0 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	9.4	5.5 *		
COLUMN	0	0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		7.0		
COLUMN		2.0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF BENT CAP		151		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.



**ELEVATION**  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)



PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 427

SHEET 1 OF 2

DocuSigned by:  
*John A. Yannaccone*  
 7BC3088E-8E39-45E1-9045-730E3945E1

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 1**

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : D. SHACKELFORD DATE : 04/2016  
 CHECKED BY : T.L. CLELLAND DATE : 05/2016

**NOTES**

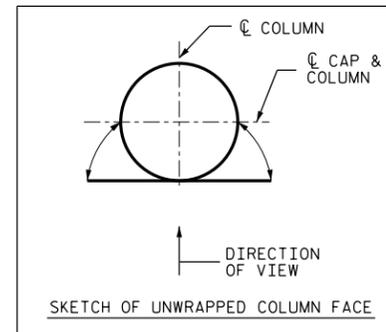
REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES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

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

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

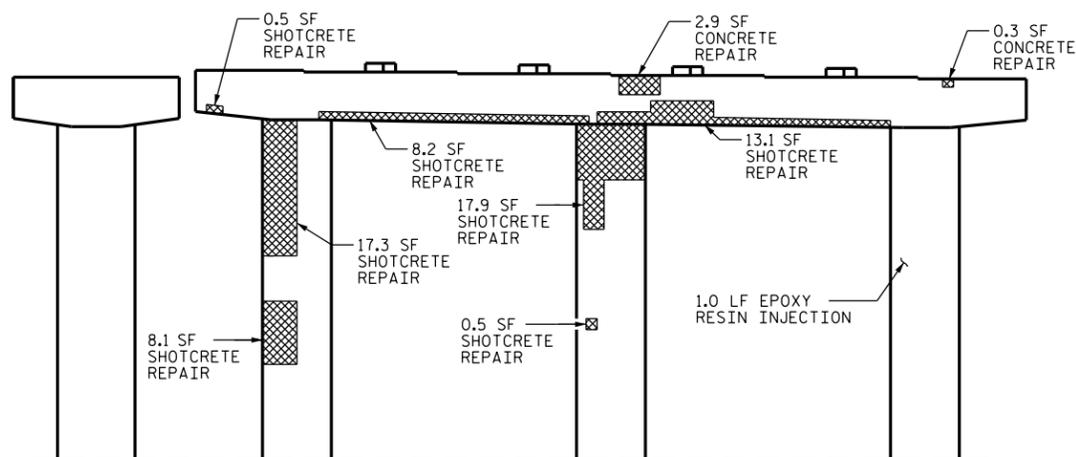
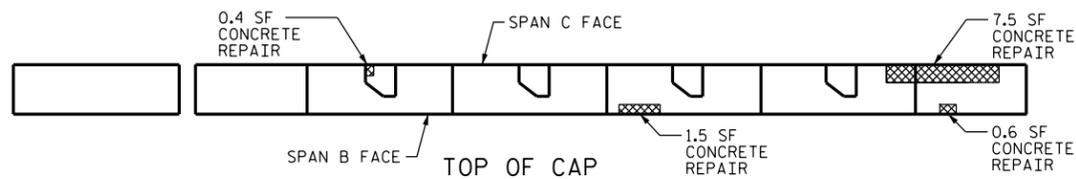
EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.



AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	154.1	96.0 *		
COLUMN	116.5	72.5 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	21.9	13.5 *		
COLUMN	0	0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		4.0		
COLUMN		1.0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF BENT CAP		151		

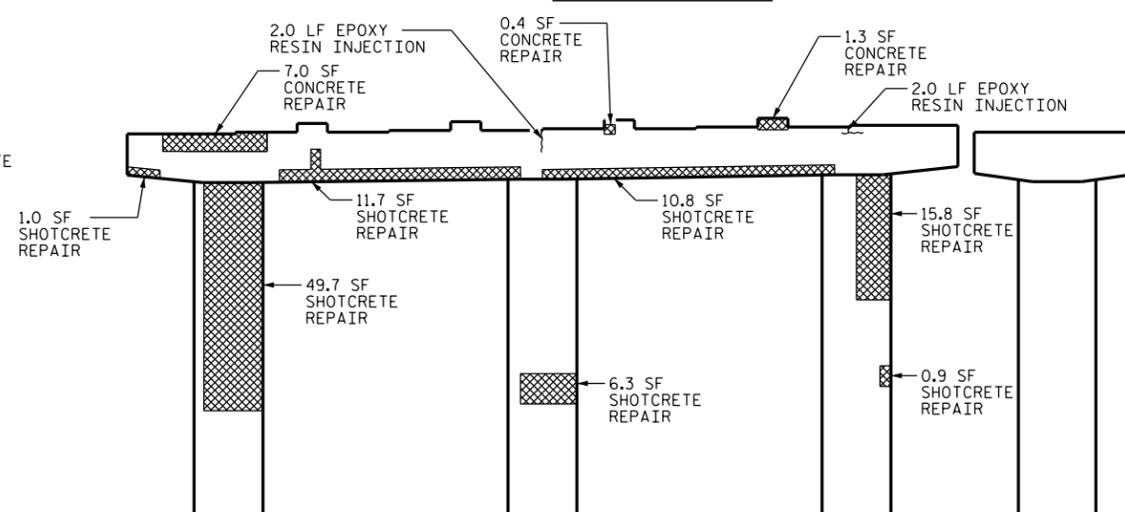
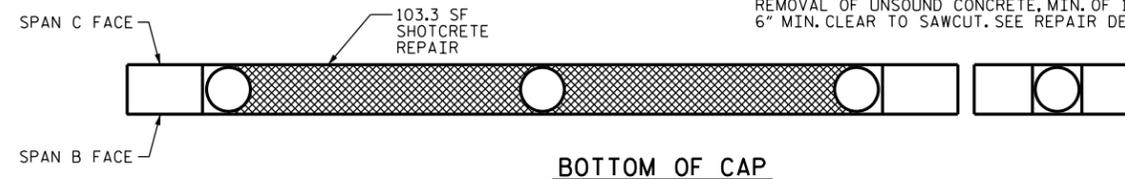
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.



**PLAN**



END VIEW  
NORTH FACE



**ELEVATION**  
(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 427

SHEET 2 OF 2

DAMAGED AREA  
 EPOXY RESIN INJECTION

DocuSigned by:

*John A. Yannaccone*  
 JOHN A. YANNACCONE  
 PROFESSIONAL ENGINEER  
 SEAL 32492  
 8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 2**

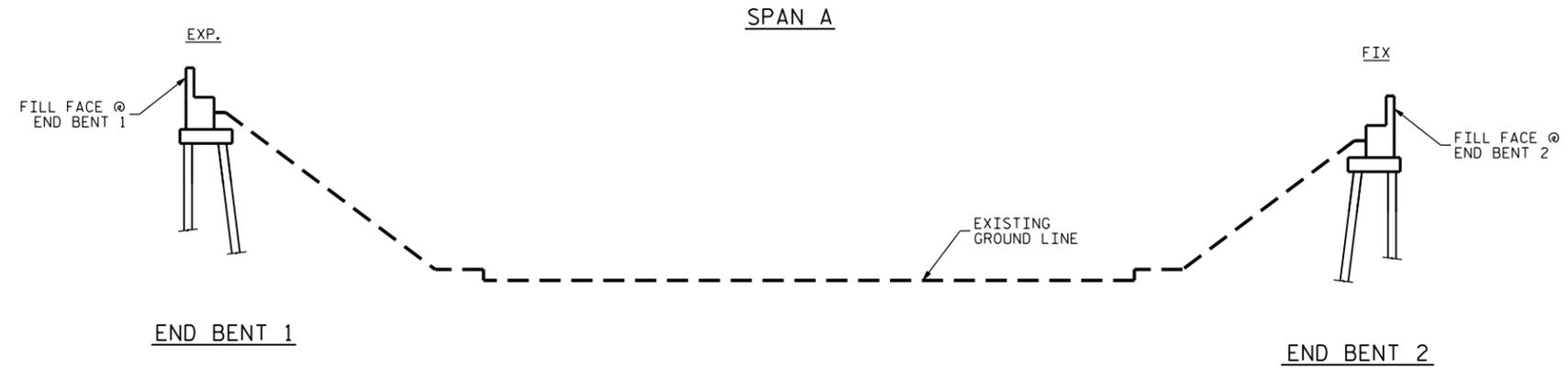
DRAWN BY : D. SHACKELFORD DATE : 04/2016  
 CHECKED BY : T.L. CLELLAND DATE : 05/2016

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

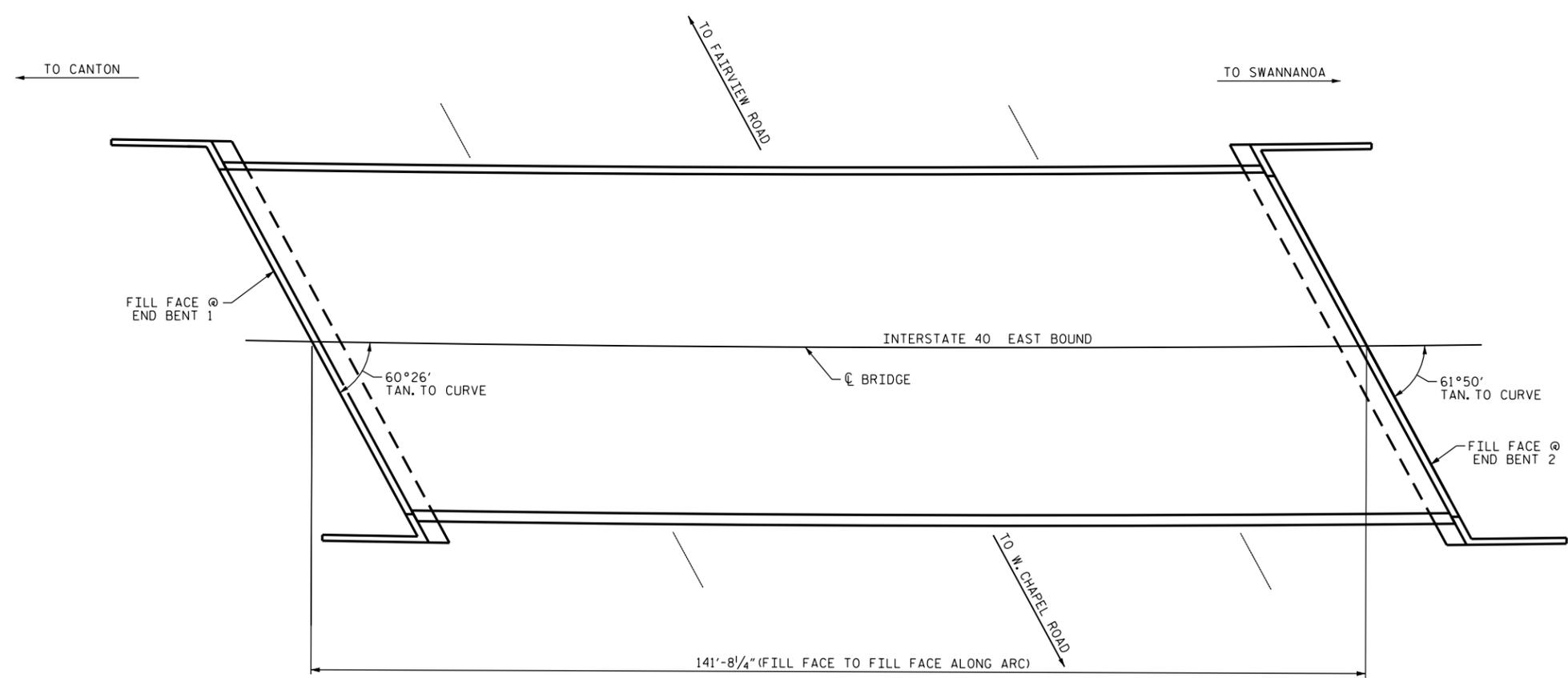
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-57
2			4			TOTAL SHEETS 81

**NOTES**

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 11/04/2015.  
BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



**SECTION ALONG  $\phi$  ROADWAY**



**PLAN**

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
BRIDGE NO. 431

SHEET 1 OF 2

DocuSigned by:  
*John A. Yannaccone*  
7BC3600E894E7  
SEAL  
32492  
ENGINEER  
JOHN A. YANNACCONE

8/5/2016

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**GENERAL DRAWING  
FOR BRIDGE ON I-40 EBL  
OVER US 25A  
(SWEETEN CREEK ROAD)**

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

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

**SCOPE OF WORK**

- EPOXY INJECTION OF CONCRETE CRACKS.
- CLEAN AND REPAIR REBAR IN CONCRETE REPAIR AREAS.
- PERFORM SHOTCRETE REPAIRS IN PREPARED AREAS.

DRAWN BY : S. WANCE DATE : 11/15  
CHECKED BY : J. YANNACCONE DATE : 05/16

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

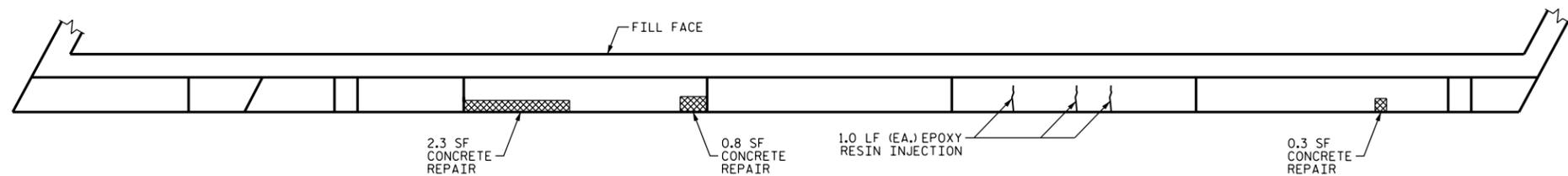


**AS-BUILT REPAIR QUANTITY TABLE**

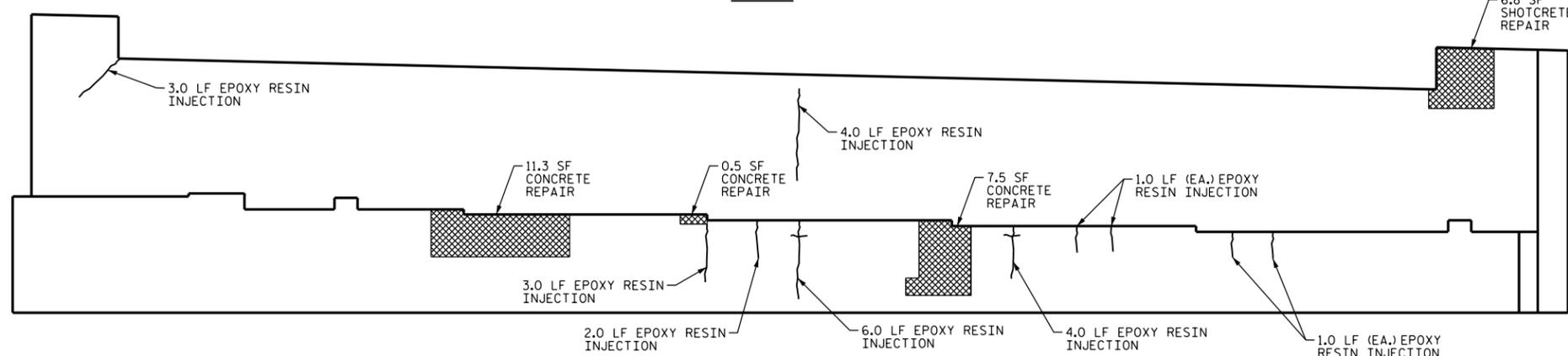
REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	6.8	4.0 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	22.7	14.0 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		29.0		
REPAIRS END BENT 2	QUANTITIES			
SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	2.3	1.5 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		42.5		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

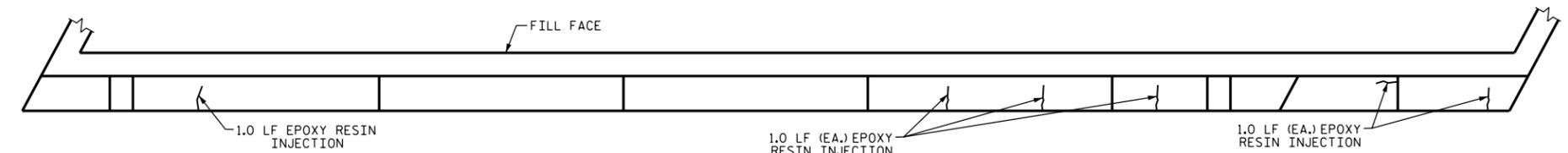
**NOTES**  
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 FOR CAP REPAIRS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.  
 \* QUANTITIES HAVE BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.  
 SHOTCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.



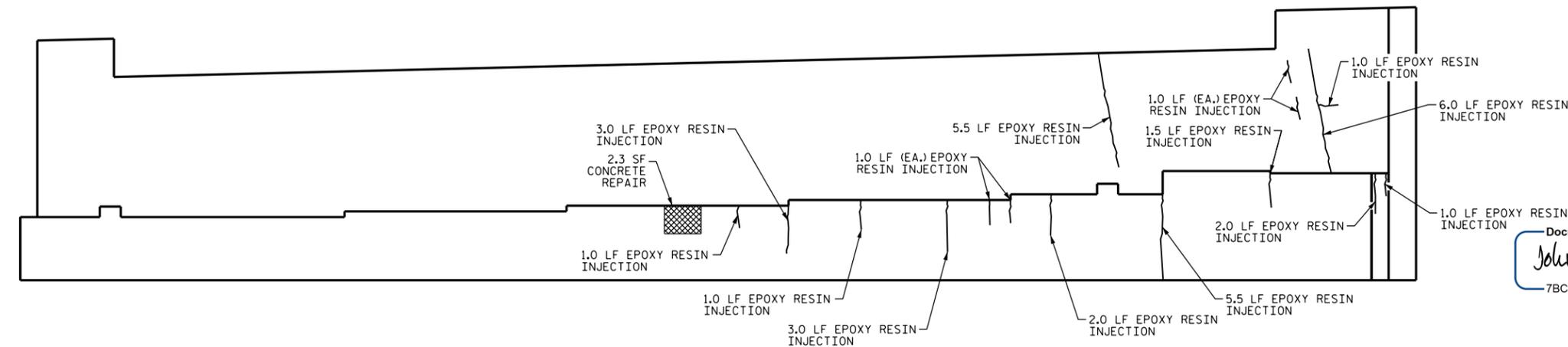
PLAN



ELEVATION  
 END BENT 1



PLAN



ELEVATION  
 END BENT 2

DAMAGED AREA  
 EPOXY RESIN INJECTION

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 431

DocuSigned by:  
  
 7BC368  
  
 8/5/2016

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

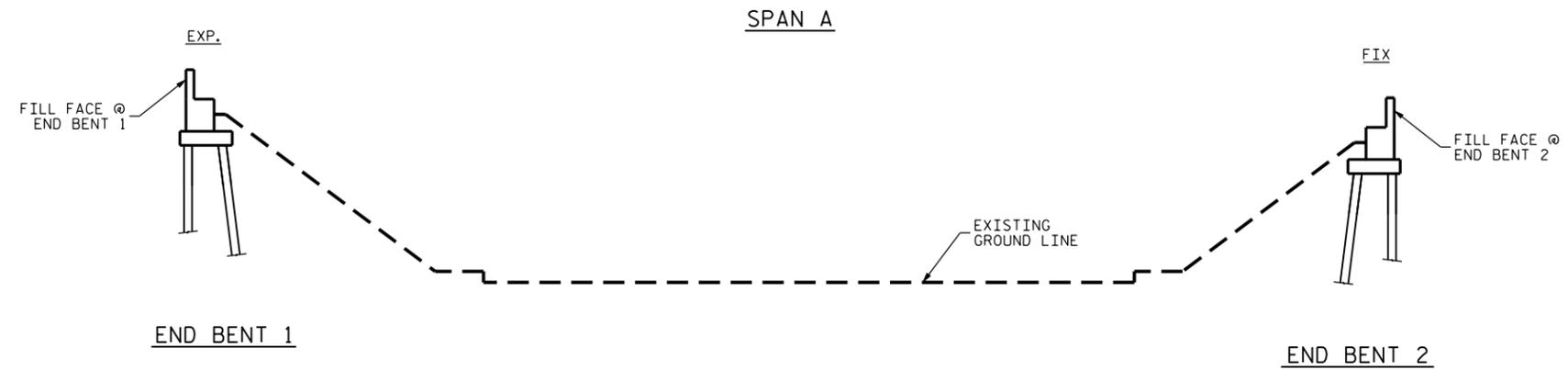
DRAWN BY : S. WANCE DATE : 11/15  
 CHECKED BY : J. YANNAKONE DATE : 11/15

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

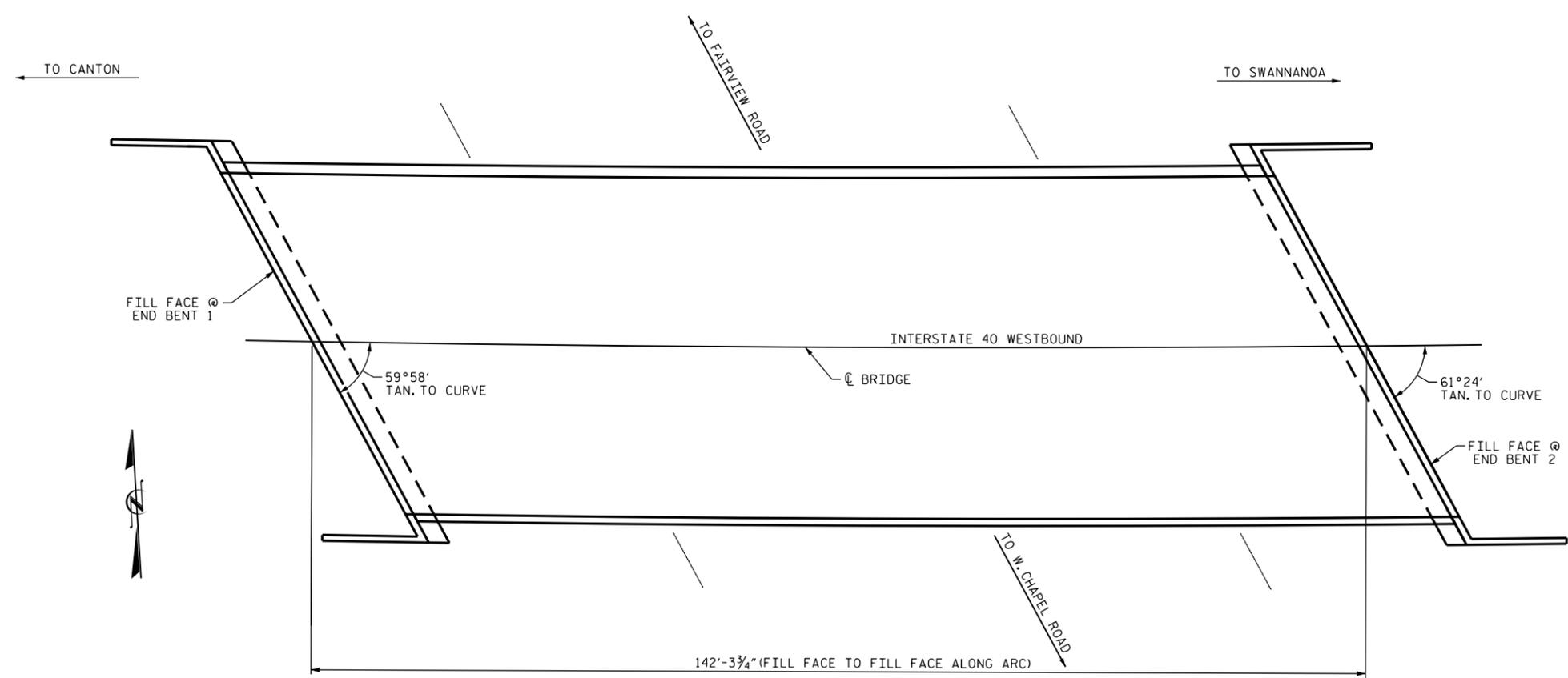
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			81
2			4			

NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 11/04/2015.  
BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



SECTION ALONG  $\phi$  ROADWAY



PLAN

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
BRIDGE NO. 438

SHEET 1 OF 2

DocuSigned by:  
*John A. Yannaccone*  
7BC3620E809E  
SEAL  
32492  
ENGINEER  
JOHN A. YANNACCONE

8/5/2016

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

GENERAL DRAWING  
FOR BRIDGE ON I-40 WBL  
OVER US 25A  
(SWEETEN CREEK ROAD)

- SCOPE OF WORK**
- EPOXY INJECTION OF CONCRETE CRACKS.
  - CLEAN AND REPAIR REBAR IN CONCRETE REPAIR AREAS.
  - PERFORM SHOTCRETE REPAIRS IN PREPARED AREAS.

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

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

DRAWN BY : S. WANCE DATE : 11/15  
CHECKED BY : J. YANNACCONE DATE : 06/16

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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



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 AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

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

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

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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 438

SHEET 2 OF 2

DocuSigned by:  
*John A. Yannaccone*  
 7BC30E08A7E594E5  
 NORTH CAROLINA  
 PROFESSIONAL  
 SEAL  
 32492  
 ENGINEER  
 JOHN A. YANNACCONE

8/5/2016

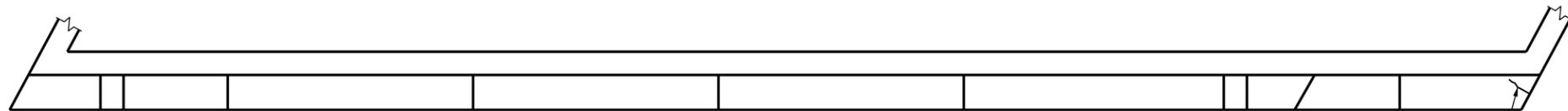
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 GENERAL DRAWING  
 FOR BRIDGE ON I-40 WBL  
 OVER US 25A  
 (SWEETEN CREEK ROAD)

DRAWN BY : S. WANCE DATE : 05/16  
 CHECKED BY : J. YANNACCONE DATE : 06/16

04-AUG-2016 14:06  
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2			4			



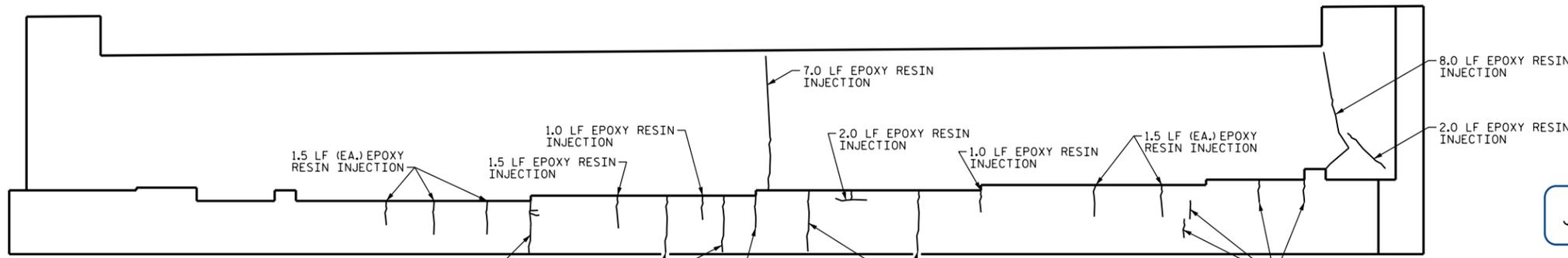
PLAN



ELEVATION  
END BENT 1



PLAN



ELEVATION  
END BENT 2

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	1.8	1.5 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		26.0		
REPAIRS END BENT 2	QUANTITIES			
REPAIRS END BENT 2	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
SHOTCRETE REPAIRS				
CAP	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		56.5		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

NOTES

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

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

\* QUANTITIES HAVE BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

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

- DAMAGED AREA
- EPOXY RESIN INJECTION

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 438

DocuSigned by:  
*John A. Yannaccone*  
 7BC36  


8/5/2016

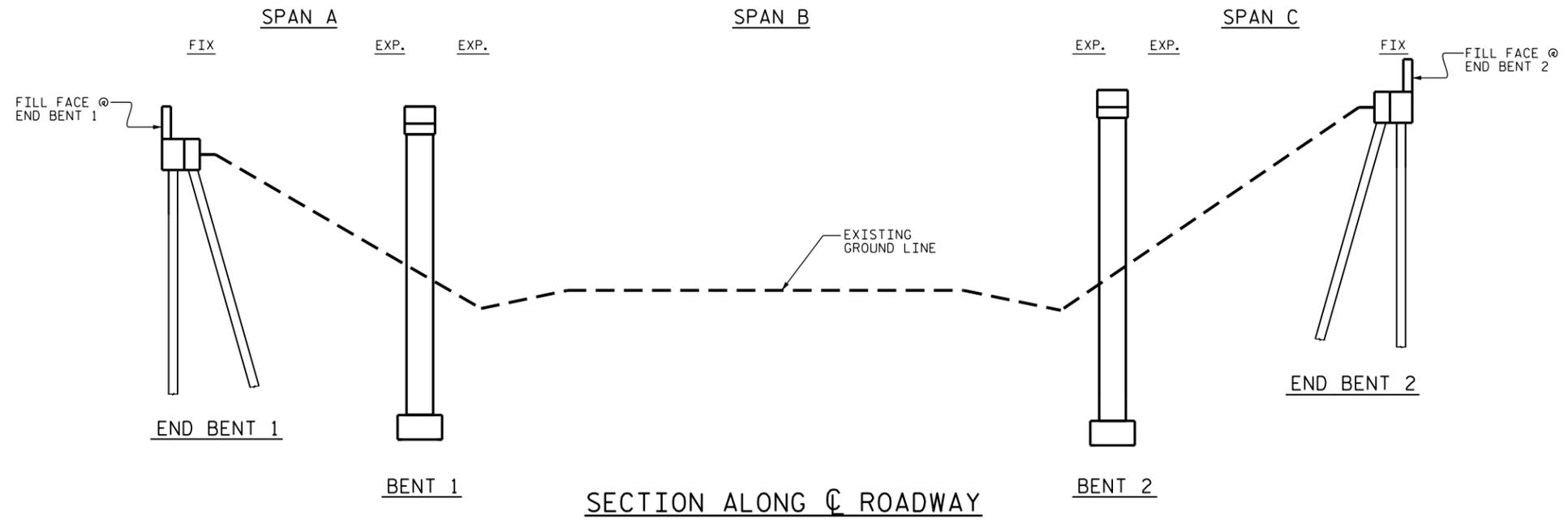
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

END BENT 1 & 2

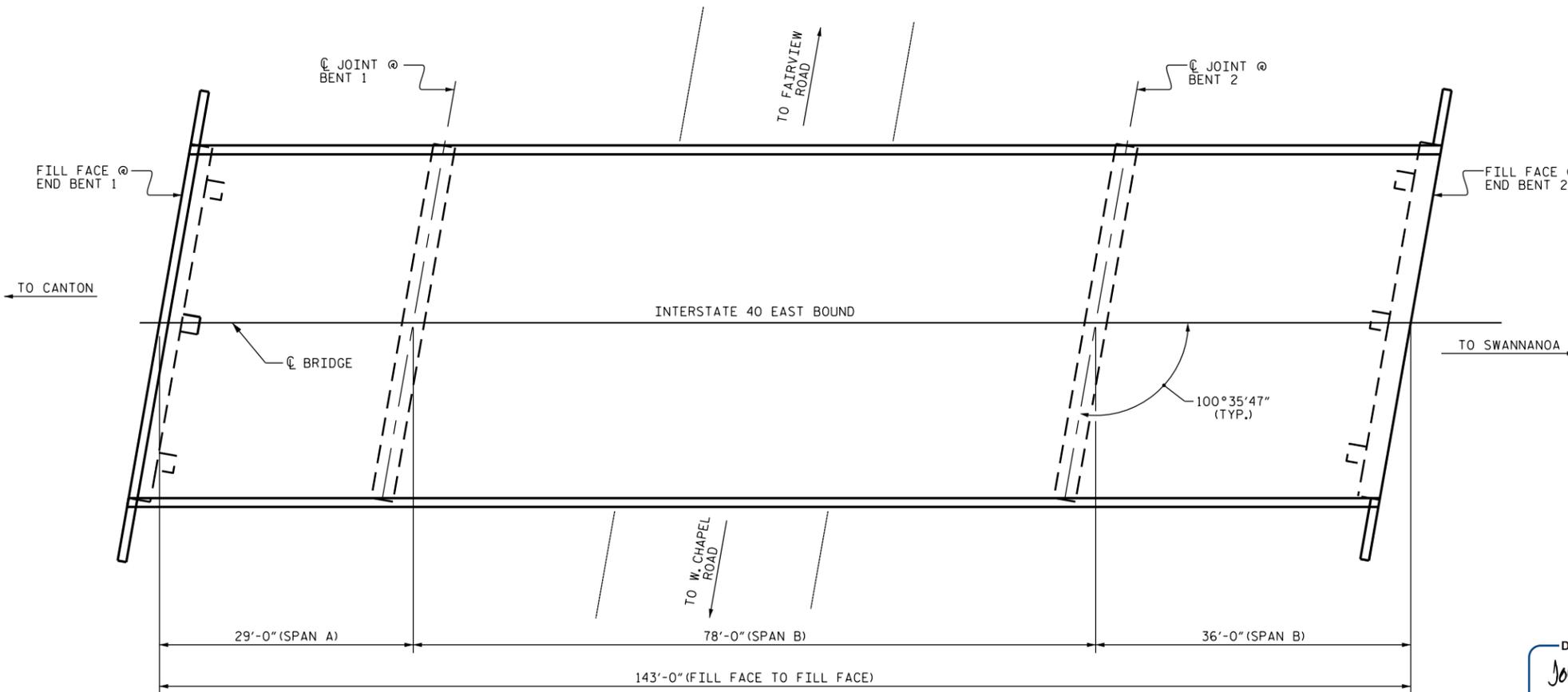
DRAWN BY : S. WANCE DATE : 12/15  
 CHECKED BY : J. YANNAKONE DATE : 06/16

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 SIGNATURES COMPLETED

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



**NOTES**  
 PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 11/05/2015.  
 BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



**SCOPE OF WORK**

- CLEAN, PAINT AND REPAIR STEEL I-BEAMS AND BEARINGS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- CLEAN AND REPAIR REBAR IN CONCRETE REPAIR AREAS.
- PERFORM SHOTCRETE REPAIRS IN PREPARED AREAS.
- REMOVE DEBRIS FROM TOP OF BENT CAPS AND APPLY EPOXY COATING.

**PLAN**

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

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

DocuSigned by:  
*John A. Yannaccone*  
 SEAL  
 32492  
 JOHN A. YANNACCONE  
 8/5/2016

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 451

SHEET 1 OF 2  
 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 GENERAL DRAWING  
 FOR BRIDGE ON I-40 EBL  
 OVER SR 3052  
 (SCHOOL ROAD EAST)

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-64	
1			3			TOTAL SHEETS	
2			4			81	

DRAWN BY : M.D.PISO DATE : 05/2016  
 CHECKED BY : J.YANNACCONE DATE : 06/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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 AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

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

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

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR CLEANING AND REPAINTING OF BRIDGE, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR POLLUTION CONTROL, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR BEAM REPAIR, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

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

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 451

SHEET 2 OF 2

DocuSigned by:  
*John A. Yannaccone*  
 7BC30608E59945

8/5/2016



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL DRAWING  
 FOR BRIDGE ON I-40 EBL  
 OVER SR 3052  
 (SCHOOL ROAD EAST)

DRAWN BY : W.O. KEITH DATE : 11/15  
 CHECKED BY : J. YANNACCONE DATE : 06/16

DOCUMENT NOT CONSIDERED  
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 SIGNATURES COMPLETED

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2			4			

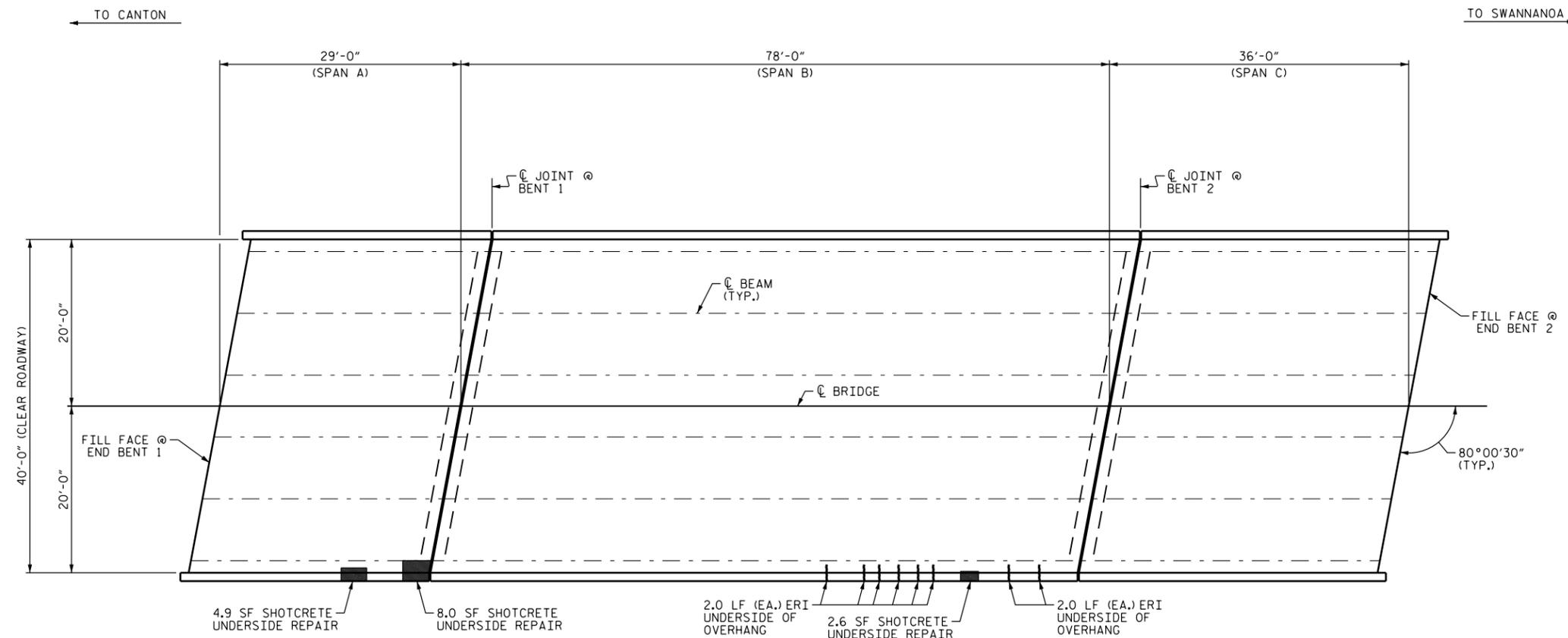
AS-BUILT REPAIR QUANTITY TABLE

UNDERSIDE OF DECK REPAIRS

SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	15.5	9.5*		
INTERIOR DIAPHRAGMS	0.0	0.0		
			ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION		16.0 LF		

VALUES IN CHARTS REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, 1" MIN. BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

-  UNDERSIDE REPAIR
-  DIAPHRAGM REPAIR
- ERI EPOXY RESIN INJECTION



PLAN

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 451

NOTES

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

FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG & DIAPHRAGM REPAIRS DETAILS" SHEET.

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

DocuSigned by:

*John A. Yannaccone*



8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS

DRAWN BY : O. PUIGCERVER DATE : 03/16  
 CHECKED BY : J. YANNAKONE DATE : 05/16

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL
1			3			81
2			4			82



**AS-BUILT REPAIR QUANTITY TABLE**

REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	4.9	3.0 *		
EPOXY RESIN INJECTION	LN. FT		LN. FT	
CAP	0			
REPAIRS END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	4.8	3.0 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	2.9	2.0 *		
EPOXY RESIN INJECTION	LN. FT		LN. FT	
CAP	0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

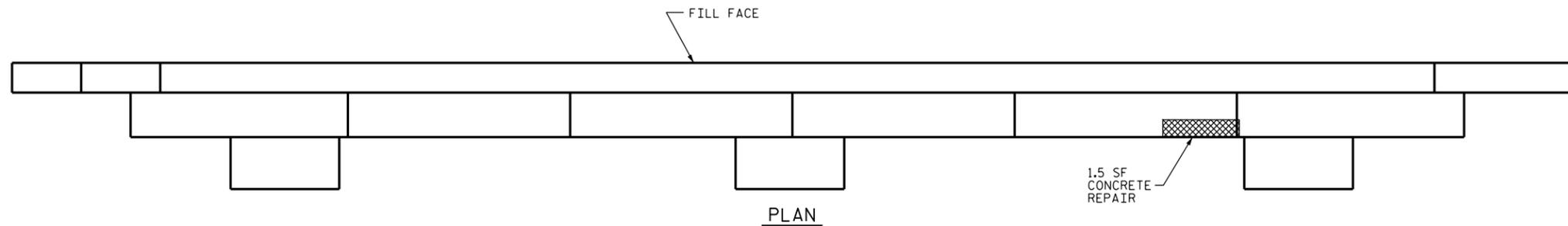
**NOTES**

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

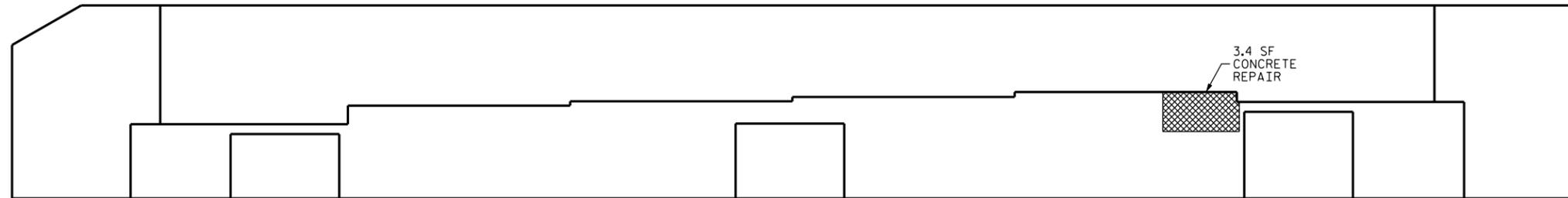
FOR CAP REPAIRS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

\* QUANTITIES HAVE BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

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

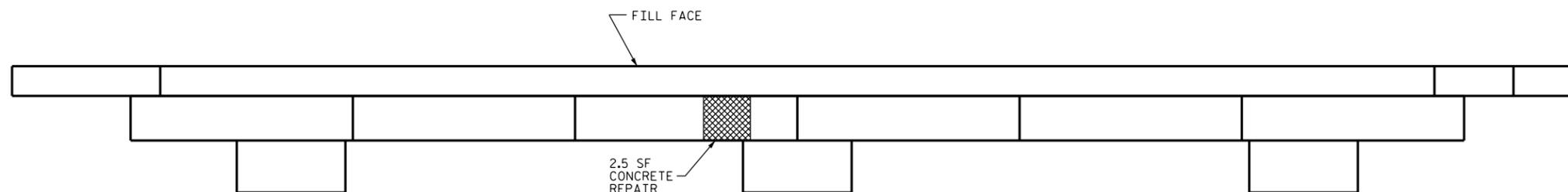


PLAN

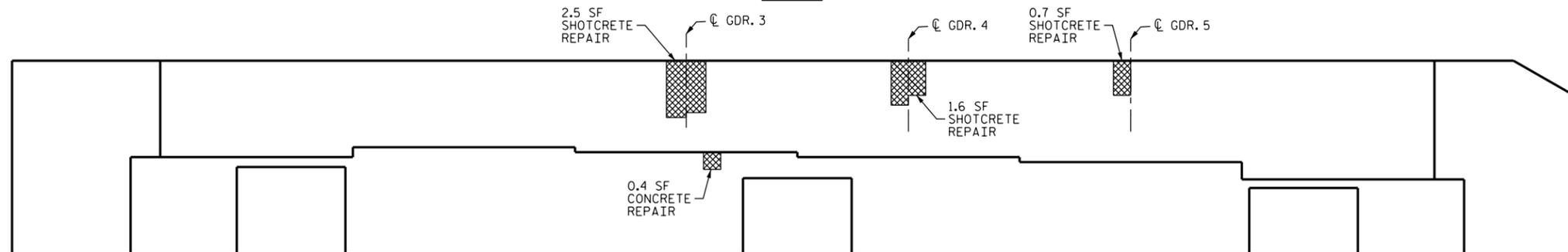


ELEVATION

**END BENT 1**



PLAN



ELEVATION

**END BENT 2**

▨ DAMAGED AREA

~ EPOXY RESIN INJECTION

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 451

DocuSigned by:

*John A. Yannaccone*



8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

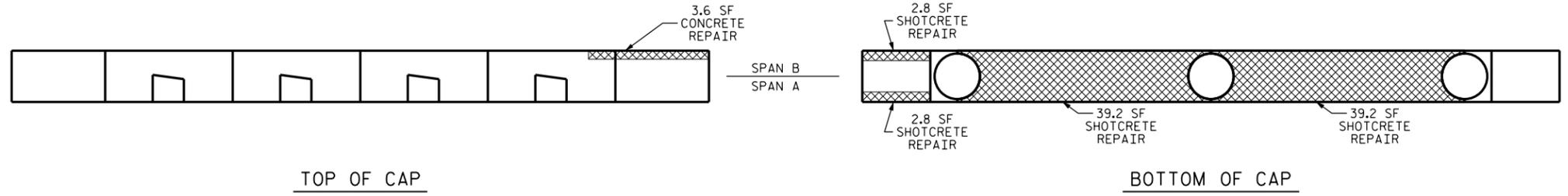
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 CHECKED BY : T.L. CLELLAND DATE : 6/16

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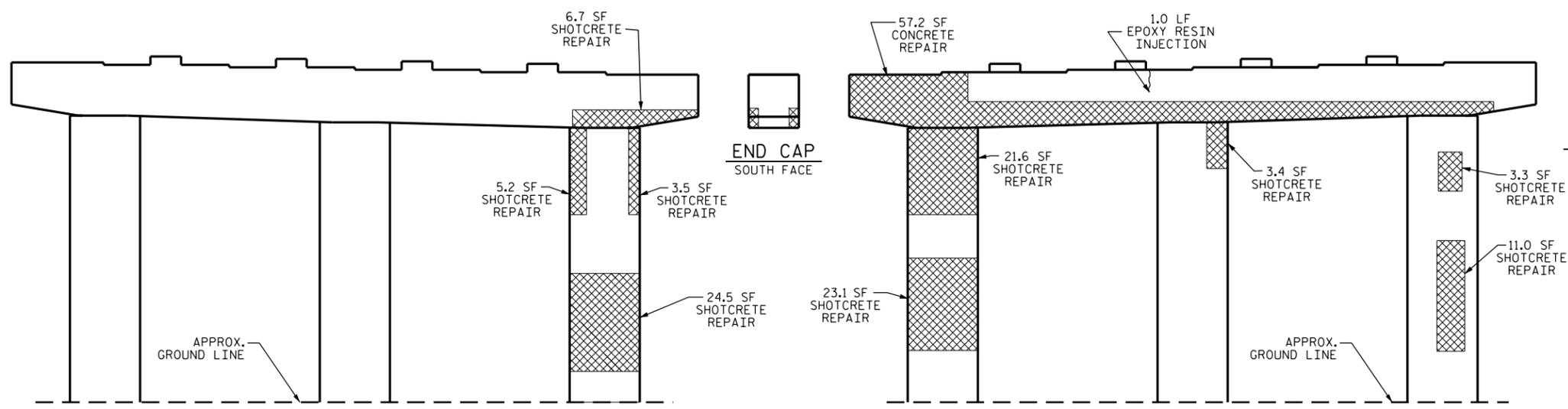
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2			4			



TOP OF CAP

BOTTOM OF CAP

PLAN



SPAN A FACE

SPAN B FACE

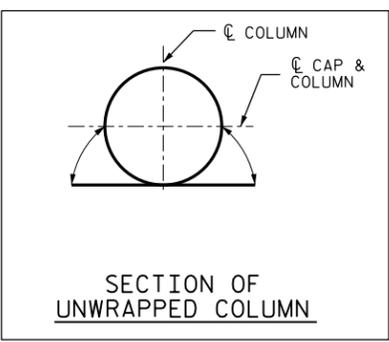
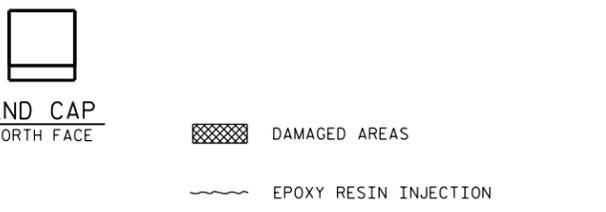
ELEVATION

(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	90.7	56.5 *		
COLUMN	95.6	59.5 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	60.8	38.0 *		
COLUMN	0	0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		1.0		
COLUMN		0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF BENT CAP		123		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.



NOTES

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

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

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

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.

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 451

SHEET 1 OF 2

DocuSigned by:  
*John A. Yannaccone*  
 7BC3609C-894E-4894-804E-804E804E804E  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 SEAL  
 32492  
 JOHN A. YANNACCONE

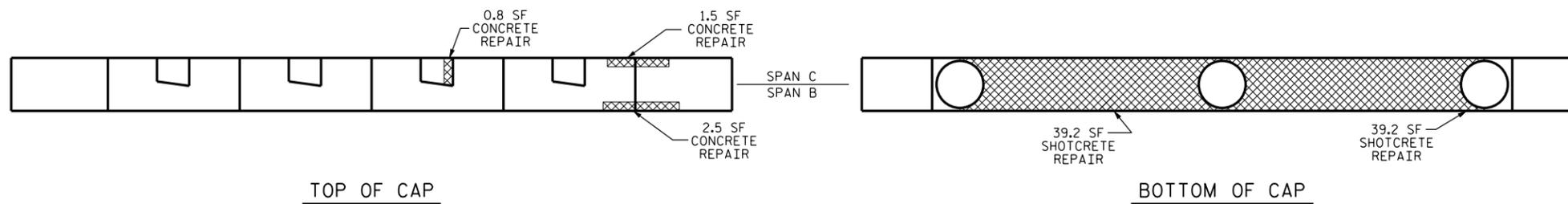
8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

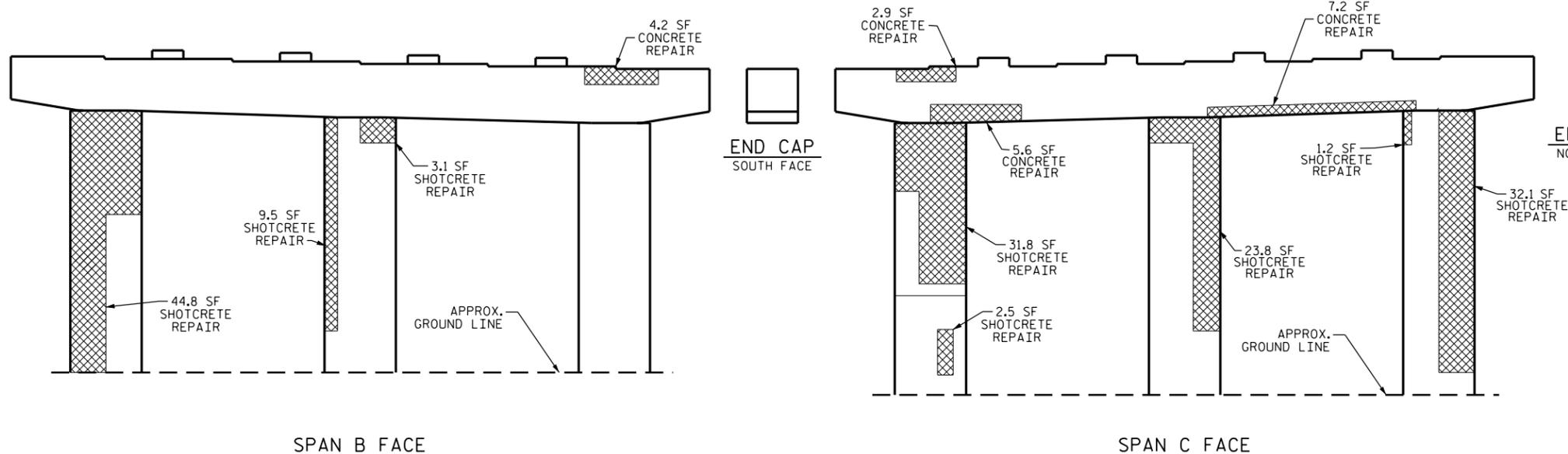
**BENT 1**

DRAWN BY : D. PUIGCERVER DATE : 6/16  
 CHECKED BY : T.L. CLELLAND DATE : 6/16

REVISIONS						SHEET NO.
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2			4			TOTAL SHEETS 81



PLAN



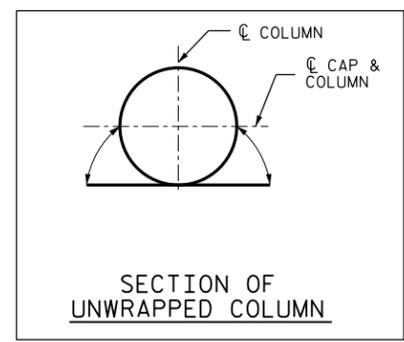
ELEVATION

(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	91.2	57.0 *		
COLUMN	148.8	93.0 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	11.9	7.0 *		
COLUMN	0	0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0		
COLUMN		0		
EPOXY COATING		SO. FT.		SO. FT.
TOP OF BENT CAP		123		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.

DAMAGED AREAS  
 EPOXY RESIN INJECTION



NOTES

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

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

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

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.

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 451

SHEET 2 OF 2

DocuSigned by:  
*John A. Yannaccone*  
 7BC3650C-80E8-402E-802E-802E802E802E

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 2**

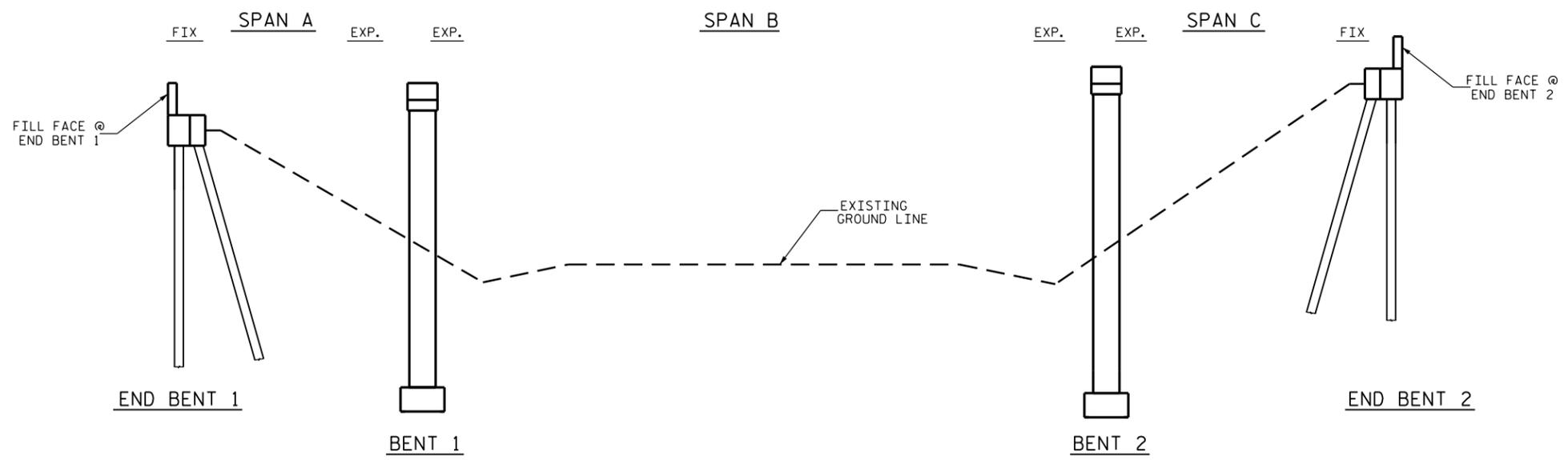


8/5/2016

DRAWN BY : O. PUIGCERVER DATE : 6/16  
 CHECKED BY : T.L. CLELLAND DATE : 6/16

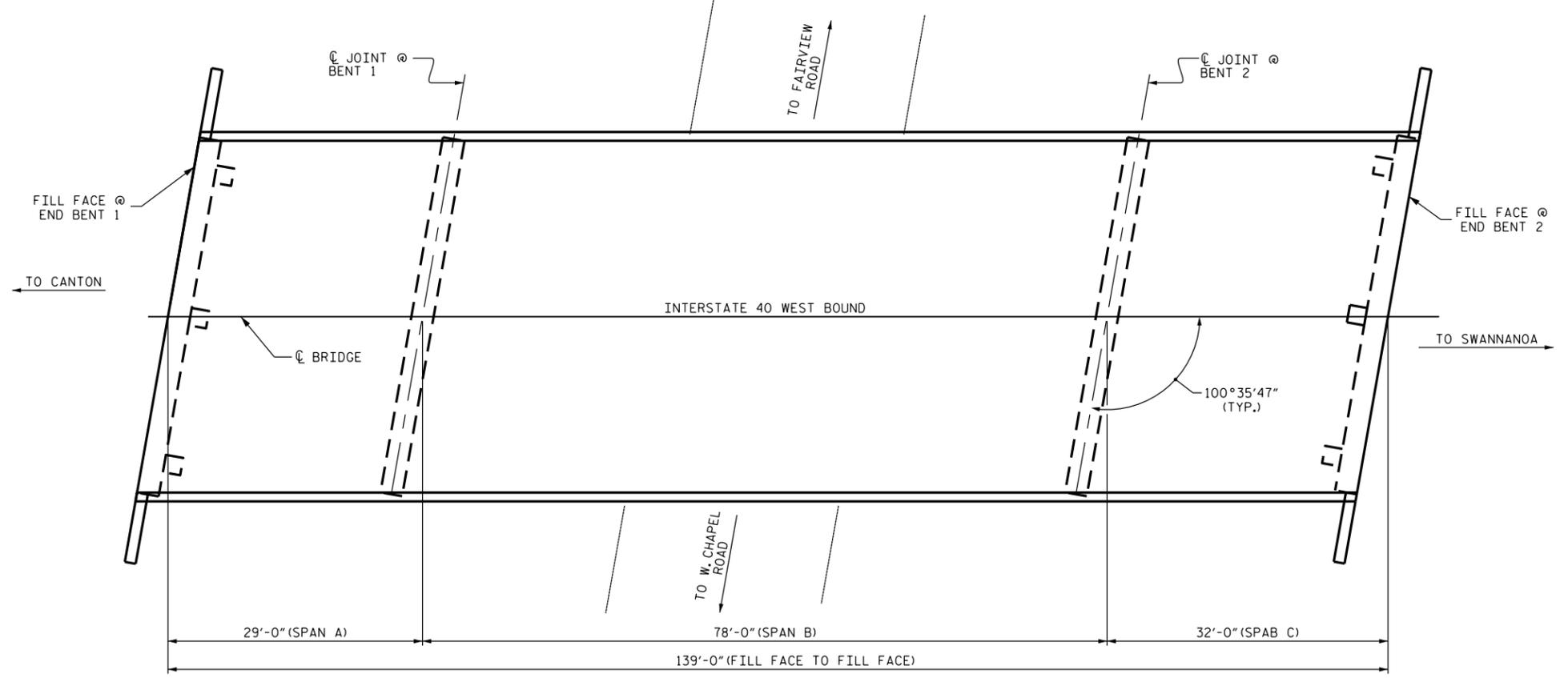
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-70
2			4			81

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



**NOTES**  
 PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 11/05/2015.  
 BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

**SECTION ALONG C ROADWAY**



**PLAN**

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 456

SHEET 1 OF 2

DocuSigned by:  
*John A. Yannaccone*  
 7BC30E0E894E  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 32492  
 JOHN A. YANNACCONE  
 8/5/2016

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

**SCOPE OF WORK**

- CLEAN, PAINT AND REPAIR STEEL I-BEAMS AND BEARINGS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- CLEAN AND REPAIR REBAR IN CONCRETE REPAIR AREAS.
- PERFORM SHOTCRETE REPAIRS IN PREPARED AREAS.
- REMOVE DEBRIS FROM TOP OF BENT CAPS AND APPLY EPOXY COATING.

DRAWN BY : T.L.CLELLAND DATE : 5/16  
 CHECKED BY : J.YANNACCONE DATE : 5/16

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-71
1			3			TOTAL SHEETS
2			4			81









TOP OF CAP

SPAN B  
SPAN A

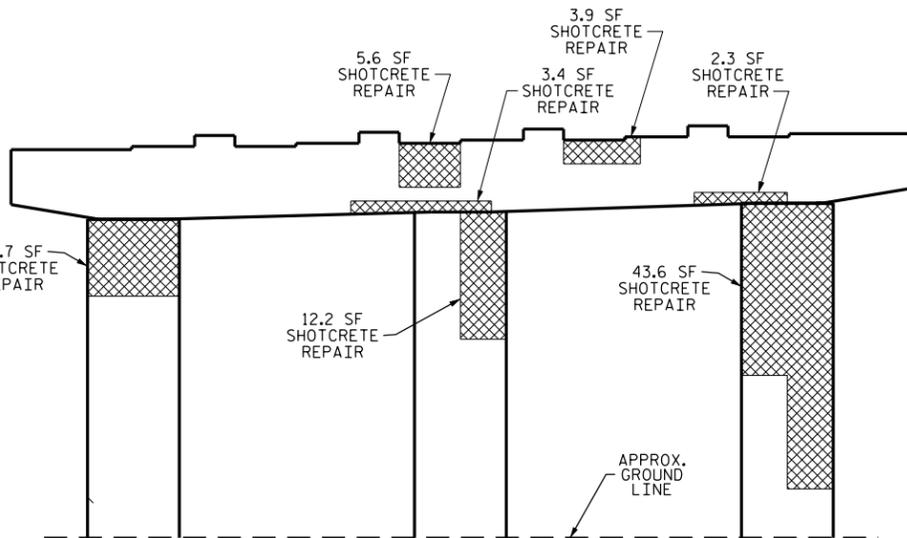


BOTTOM OF CAP

13.5 SF  
SHOTCRETE  
REPAIR

10.5 SF  
SHOTCRETE  
REPAIR

PLAN



SPAN A FACE

14.7 SF  
SHOTCRETE  
REPAIR

12.2 SF  
SHOTCRETE  
REPAIR

5.6 SF  
SHOTCRETE  
REPAIR

3.4 SF  
SHOTCRETE  
REPAIR

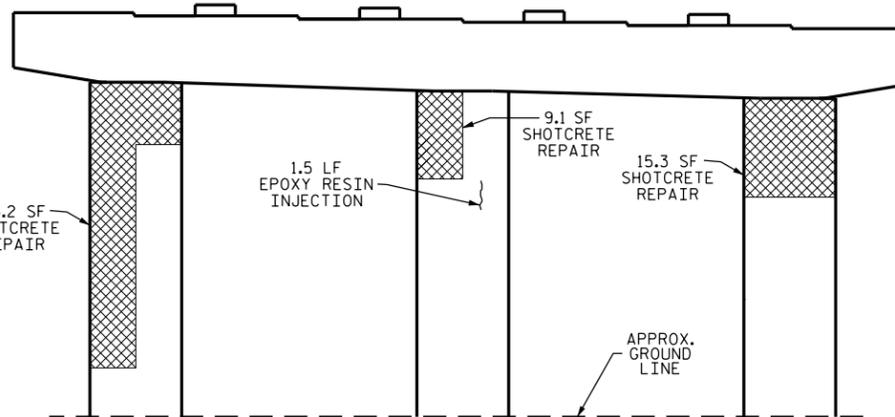
3.9 SF  
SHOTCRETE  
REPAIR

2.3 SF  
SHOTCRETE  
REPAIR

APPROX.  
GROUND  
LINE

43.6 SF  
SHOTCRETE  
REPAIR

END CAP  
SOUTH FACE



SPAN B FACE

33.2 SF  
SHOTCRETE  
REPAIR

1.5 LF  
EPOXY RESIN  
INJECTION

9.1 SF  
SHOTCRETE  
REPAIR

15.3 SF  
SHOTCRETE  
REPAIR

APPROX.  
GROUND  
LINE

END CAP  
NORTH FACE

DAMAGED AREAS

EPOXY RESIN INJECTION

ELEVATION

(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

NOTES

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

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

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

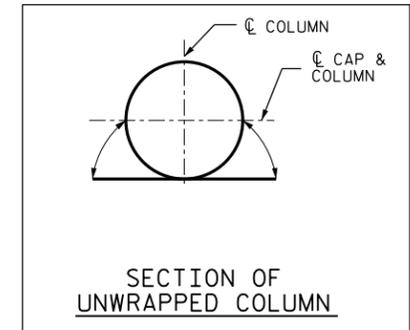
EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
SHOTCRETE REPAIRS				
CAP	39.2	24.5 *		
COLUMN	128.1	80.0 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0		
COLUMN		1.5		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF BENT CAP		123		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.



SECTION OF UNWRAPPED COLUMN

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
BRIDGE NO. 456

SHEET 1 OF 2

DocuSigned by:

John A. Yannaccone



8/5/2016

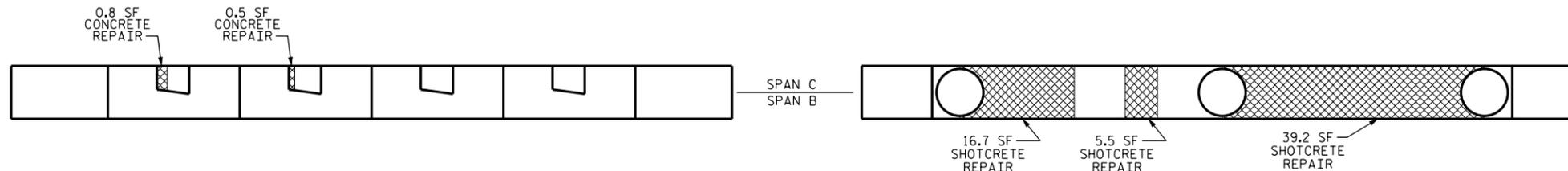
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

BENT 1

DRAWN BY : O. PUIGCERVER DATE : 6/16  
CHECKED BY : T.L. CLELLAND DATE : 6/16

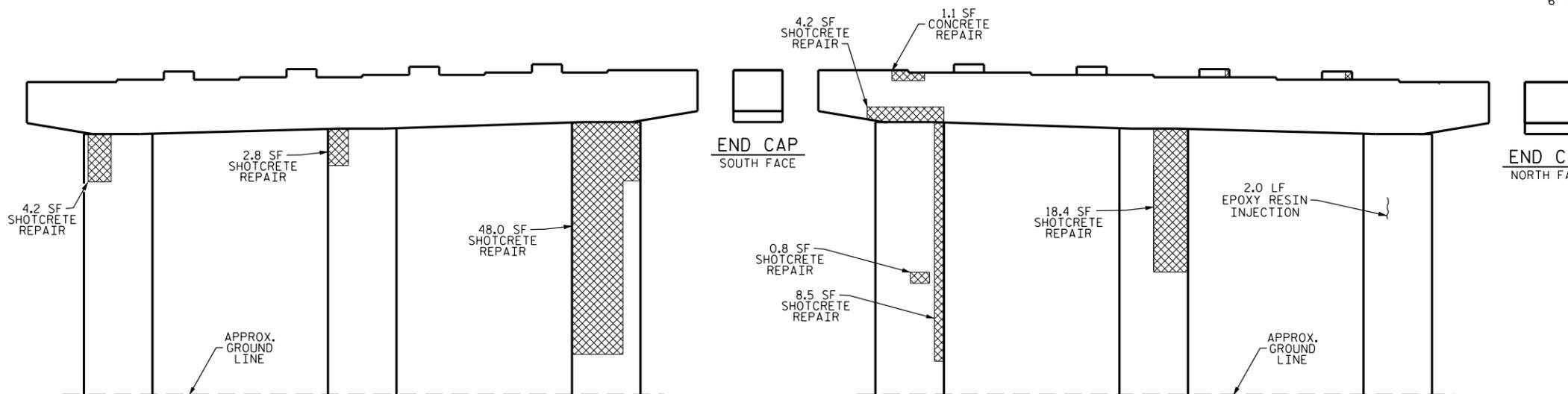
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-75
2			4			TOTAL SHEETS 81



TOP OF CAP

PLAN



SPAN B FACE

SPAN C FACE

ELEVATION

(COLUMN FACE IS SHOWN UNWRAPPED FOR CLARITY)

NOTES

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

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

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

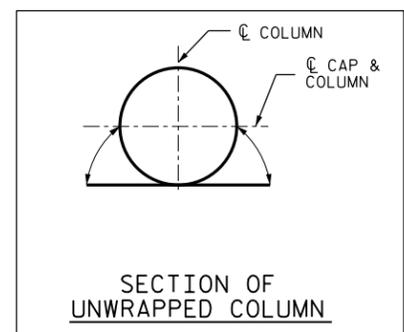
EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

\* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	65.6	41.0 *		
COLUMN	82.7	51.5 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	3.4	2.0 *		
COLUMN	0	0		
EPOXY RESIN INJECTION	LN. FT.		LN. FT.	
CAP	0			
COLUMN	2.0			
EPOXY COATING	SQ. FT.		SQ. FT.	
TOP OF BENT CAP	123			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND 6" MIN. CLEAR TO SAWCUT. SEE REPAIR DETAILS.



PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 456

SHEET 2 OF 2

DocuSigned by:  
*John A. Yannaccone*  
 7BC36681-0000-4000-9000-000000000000  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 32492  
 JOHN A. YANNACCONE

8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

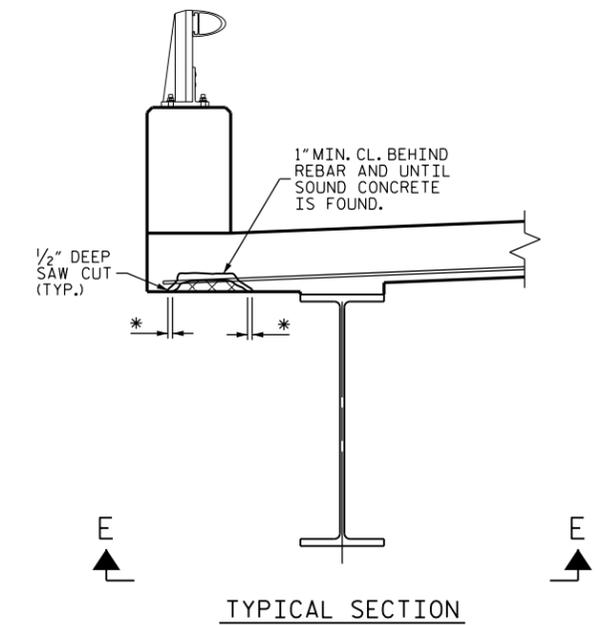
**BENT 2**

DRAWN BY : O. PUIGCERVER DATE : 6/16  
 CHECKED BY : T.L. CLELLAND DATE : 6/16

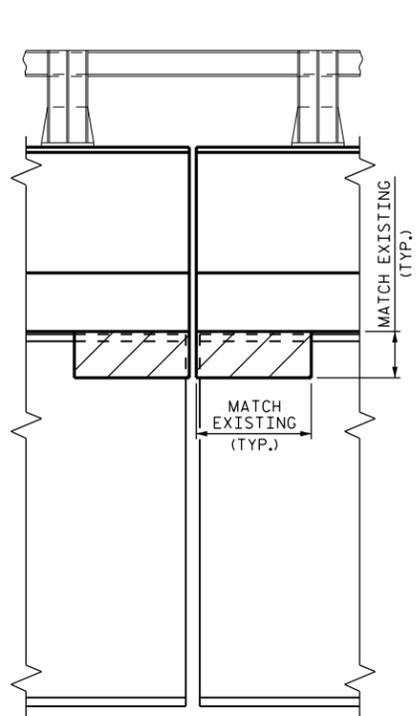
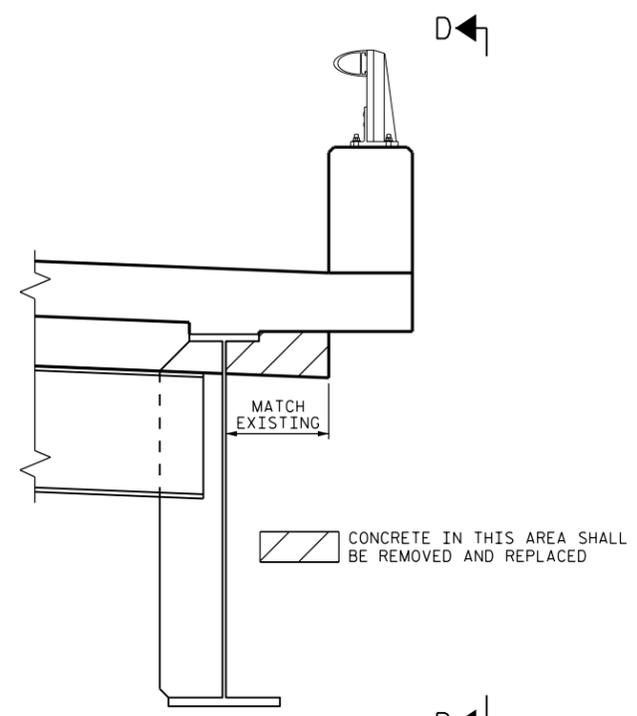
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2			4			TOTAL SHEETS 81

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

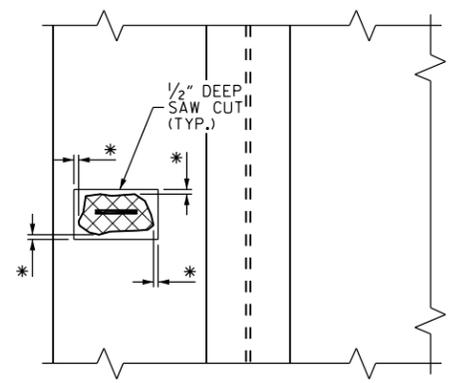
NOTE: OVERHANG DIAPHRAGMS TO BE REMOVED AND REPLACED, ARE SHOWN ON "PLAN OF SPAN" SHEETS. OVERHANG DIAPHRAGMS SHALL BE REMOVED PRIOR TO CLEANING AND PAINTING OF BEAMS AND REPLACED AFTER BEAM REPAIRS AND PAINTING ARE COMPLETE.



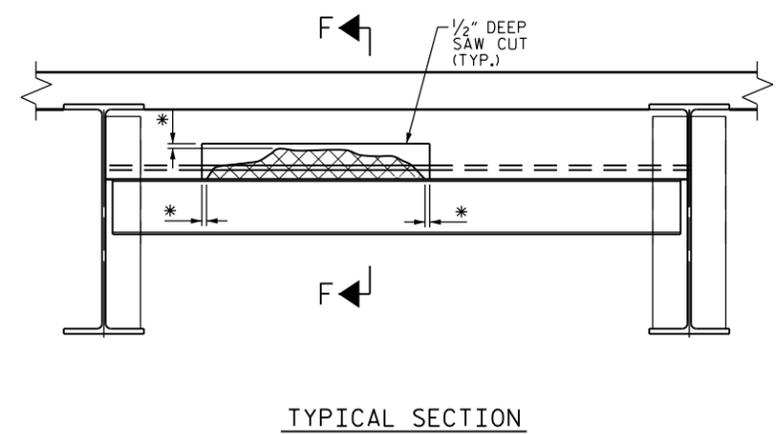
DAMAGED AREA \* REMOVE CONCRETE UNTIL SOUND CONCRETE IS FOUND (1" MIN. DEPTH)



OVERHANG DIAPHRAGM REPLACEMENT DETAILS



OVERHANG DETAILS



1" MIN. CL. BEHIND REBAR AND UNTIL SOUND CONCRETE IS FOUND.

\* REMOVE CONCRETE UNTIL SOUND CONCRETE IS FOUND (1" MIN. DEPTH)

DAMAGED AREA

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

SECTION F-F

INTERIOR DIAPHRAGM REPAIR DETAILS

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 390, 391, 404, 406,  
425, 427, 431, 438, 451, 456

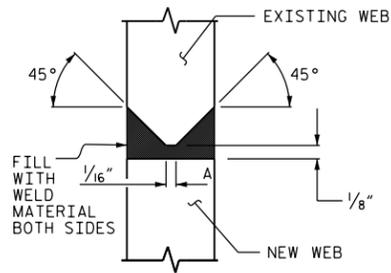
DocuSigned by:  
*John A. Yannaccone*  
 7BC36684E59945  
 NORTH CAROLINA  
 PROFESSIONAL  
 SEAL  
 32492  
 ENGINEER  
 JOHN A. YANNACCONI  
 8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**OVERHANG & DIAPHRAGM  
 REPAIR DETAILS**

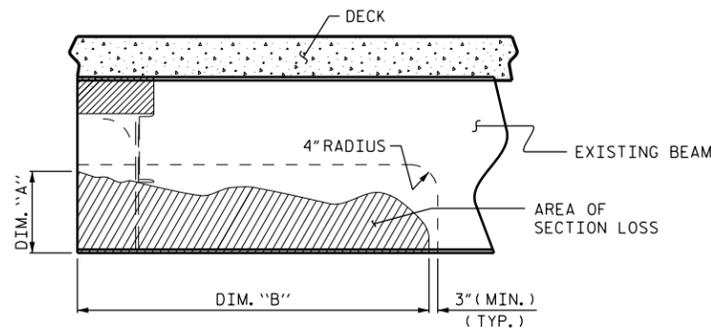
DRAWN BY : C. BRIGHT DATE : 12/14  
 CHECKED BY : J. YANNACCONI DATE : 01/15

DOCUMENT NOT CONSIDERED  
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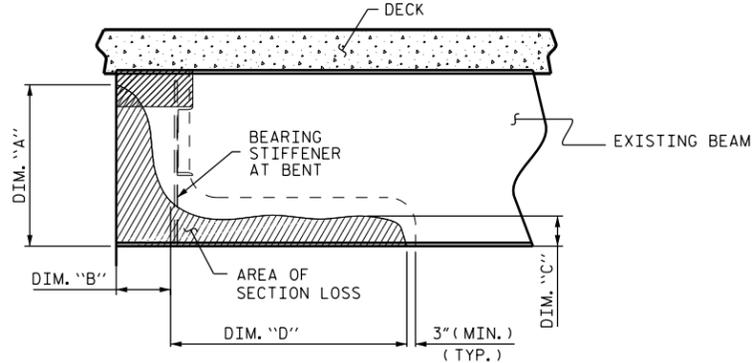
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			81
2			4			



DETAIL "A"

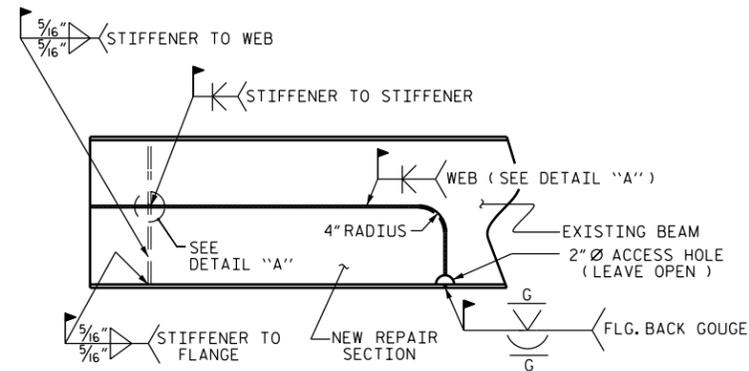


SECTION LOSS BEAM END REPAIR

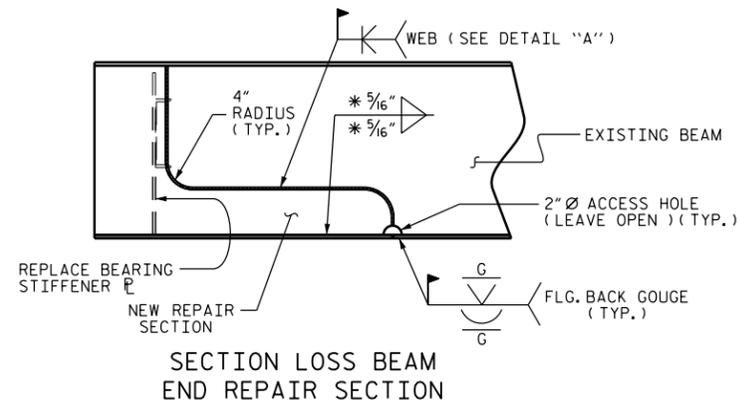


SECTION LOSS BEAM END REPAIR

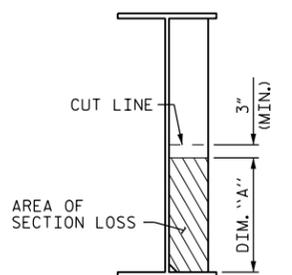
\*NOT NEEDED IF REPAIRED SECTION IS CUT FROM A ROLLED BEAM



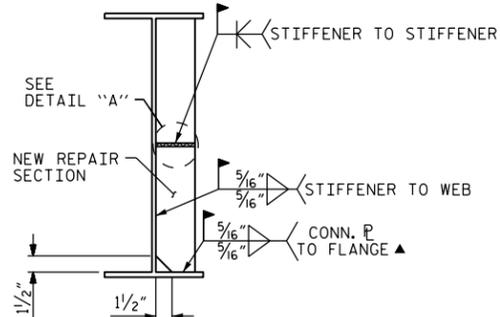
SECTION LOSS BEAM END REPAIR SECTION



SECTION LOSS BEAM END REPAIR SECTION

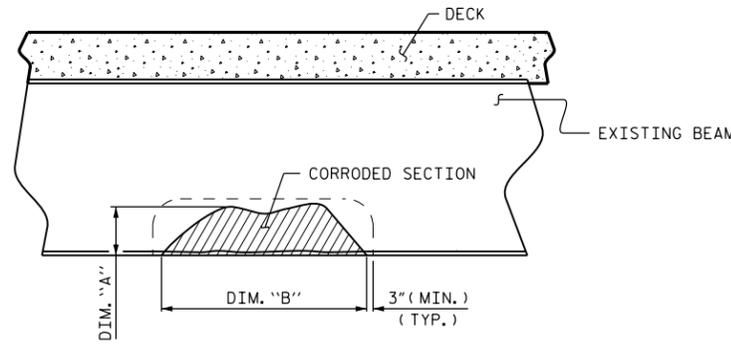


SECTION LOSS STIFFENER/CONN. REPAIR

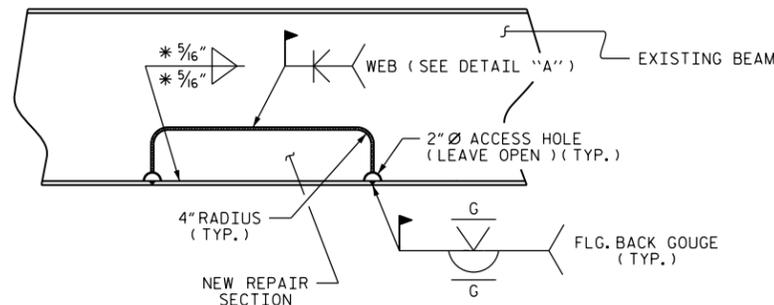


SECTION LOSS STIFFENER/CONN. REPAIR SECTION

▲ FOR STIFFENERS, MILL TO BEAR AND DO NOT WELD



SECTION LOSS INTERMEDIATE BEAM REPAIR



SECTION LOSS INTERMEDIATE BEAM REPAIR SECTION

BEAM REPAIR

AFTER THE STRUCTURAL STEEL HAS BEEN BLASTED AND PRIMED, THE STRUCTURAL STEEL AND BEARING SHALL BE INSPECTED FOR EXCESSIVE SECTION LOSS. AREAS THAT EXHIBIT AN EXCESS OF 35% SECTION LOSS SHALL BE REVIEWED BY THE ENGINEER TO DETERMINE IF AREA OF SECTION LOSS SHOULD BE REPAIRED.

AS DETERMINED BY THE ENGINEER, AREAS WITH EXCESSIVE SECTION LOSS OR AREAS WITH TEMPORARY REPAIRS SHALL BE REMOVED AND THE BEAMS SHALL BE REPAIRED AS INDICATED ON THIS PLAN SHEET. CONTRACTOR AND ENGINEER TO DETERMINE ACTUAL DIMENSIONS OF AREA TO BE REMOVED AND REPLACED. REMOVE CONCRETE BENT DIAPHRAGMS AS NEEDED TO EVALUATE LIMITS OF REPAIR.

PAYMENT FOR THE SECTION REPAIR SHALL BE BASED ON THAT AMOUNT OF REPAIR ACTUALLY PERFORMED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

GOUGES AND INDENTIONS FROM IMPACT ON GIRDERS SHALL BE GROUND SMOOTH PRIOR TO BLASTING AND PAINTING OPERATION.

REPAIR SEQUENCE:

REMOVE LIVE LOAD FROM REPAIR AREA BY EITHER CLOSING BRIDGE TO TRAFFIC OR SHIFTING TRAFFIC AWAY FROM REPAIR AREA.

REMOVE DEAD LOAD FROM BEAM BY JACKING AND BLOCKING. CONTRACTOR SHALL SUBMIT JACKING PLAN FOR APPROVAL, PRIOR TO BEGINNING WORK. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

STEEL DIAPHRAGM CHANNELS AND/OR STIFFENERS MAY BE TEMPORARILY REMOVED, IF NECESSARY, AND REPLACED AFTER BEAM REPAIR.

IF BEAM DETERIORATION EXTENDS INTO THE CONCRETE DIAPHRAGM THEN CHIP AWAY CONCRETE TO DETERMINE THE EXTENT OF THE DAMAGE. CUT OUT BY APPROPRIATE MEANS THE DAMAGED BEAM AREA AND/OR BEARING STIFFENER.

MECHANICALLY CLEAN RUST, SCALE, AND EXISTING PAINT TO AT LEAST 3" BEYOND REPAIR AREA.

REPLACEMENT CUT-TO-FIT BEAM SECTION SHALL BE NEW AND FROM SIMILAR SIZE ROLLED BEAM OR APPROVED EQUIVALENT PLATES. THE GRADE OF STEEL SHALL BE AASHTO M270, GRADE 36 OR BETTER.

INSTALL THE CUT-TO-FIT SECTION, FULLY WELD ALONG TOP AND SIDES OF PLATE USING FULL PENETRATION WELDS.

ALL WELDING SHALL BE IN ACCORDANCE WITH CURRENT APPLICABLE AWS AND NCDOT STANDARD SPECIFICATIONS.

ALL WELDS WILL BE INSPECTED AND TESTED BY THE NCDOT MATERIALS AND TEST UNIT IN ACCORDANCE WITH THE CURRENT AWS BRIDGE WELDING CODE AND STANDARD SPECIFICATIONS.

IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, AFTER REPAIR, GRIND ALL WELDS FLUSH, THOROUGHLY CLEAN AREA TO REMOVE DEBRIS AND OILS FROM REPAIR PROCESS.

CLEANING AND PAINTING OF REPAIRED STRUCTURAL STEEL SHALL BE PERFORMED AS PART OF THE OVERALL CLEANING AND PAINTING CONTRACT.

FOR CLEANING AND PAINTING, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISIONS.

AFTER BEAMS ARE REPAIRED AND PAINTED, ANY CONCRETE REMOVED FROM THE BENT DIAPHRAGMS SHALL BE CAST BACK. ANY REINFORCING STEEL CUT DURING THE REMOVAL PROCESS SHALL BE SPICED WITH A SIMILAR SIZE BAR WITH AT LEAST A ONE FOOT SPLICE TO THE EXISTING STEEL. NO SEPARATE PAYMENT SHALL BE MADE FOR CONCRETE AND REINFORCING STEEL AS THIS IS CONSIDERED INCIDENTAL TO THE PAY ITEM "BEAM REPAIR". FOR BEAM REPAIR, SEE SPECIAL PROVISIONS.

LOWER SPAN TO BEAR; CHECK FOR DISTRESS.

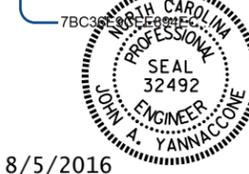
REMOVE JACKING EQUIPMENT AND TEMPORARY SUPPORTS.

REMOVE ALL TRAFFIC CONTROL DEVICES.

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 390, 391, 404, 406,  
425, 427, 431, 438, 451, 456

DocuSigned by:

*John A. Yannaccone*

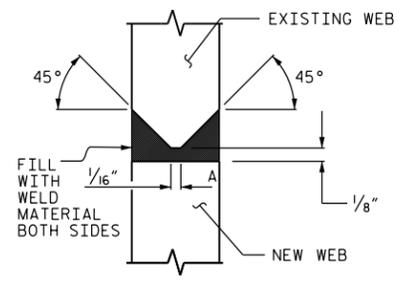


8/5/2016

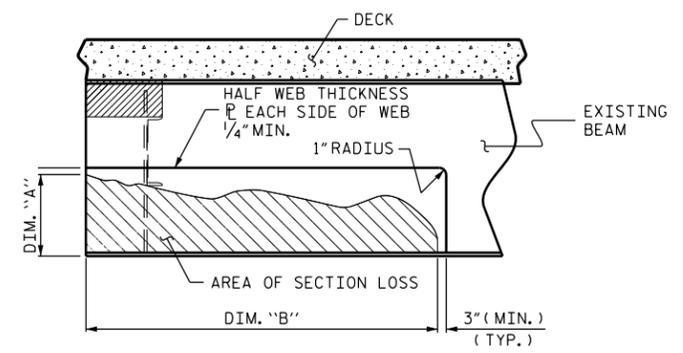
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 BEAM END AND INTERMEDIATE REPAIR DETAILS

DRAWN BY : S. T. SANDOR DATE : 11/2014  
 CHECKED BY : J. A. YANNACCONE DATE : 12/2014

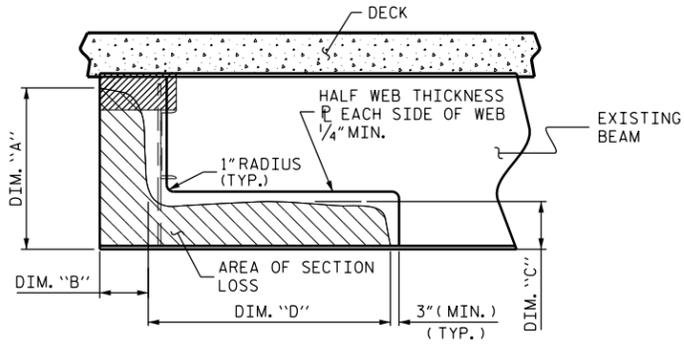
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-78	
1			3			TOTAL SHEETS	
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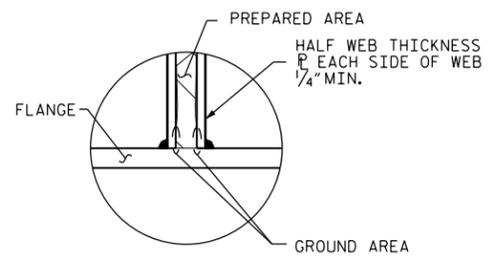
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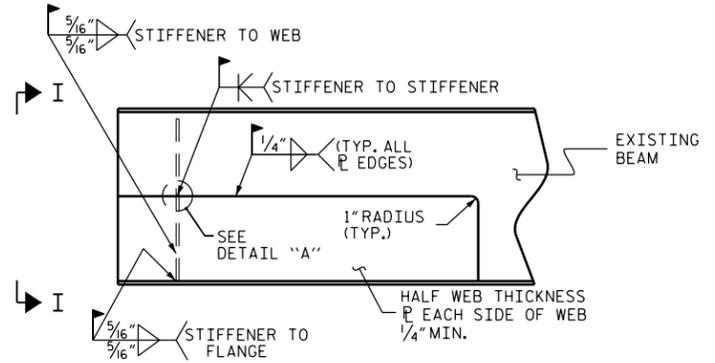
SECTION LOSS BEAM PLATING REPAIR



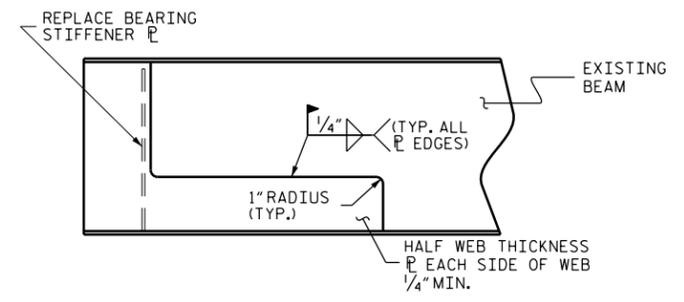
SECTION LOSS BEAM PLATING REPAIR



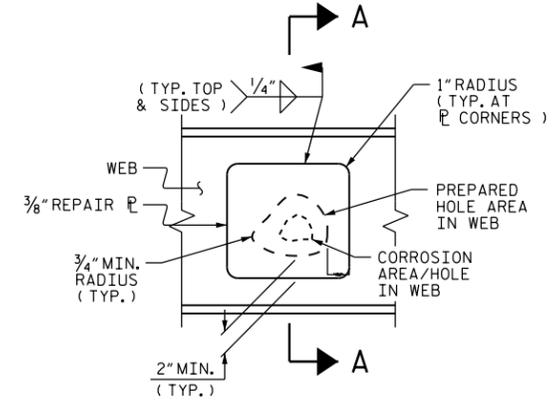
DETAIL "B"



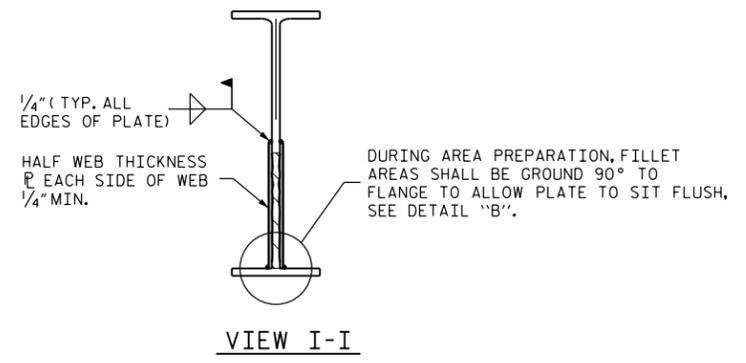
SECTION LOSS BEAM PLATING REPAIR



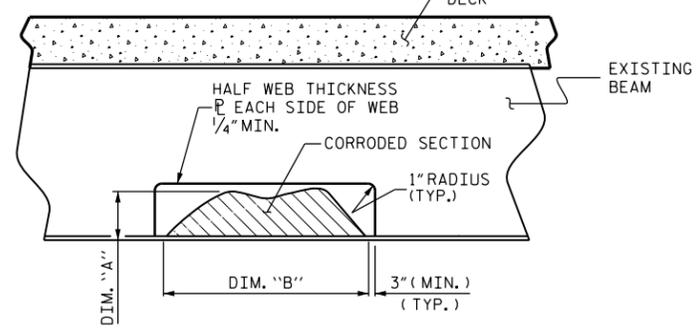
SECTION LOSS BEAM PLATING REPAIR



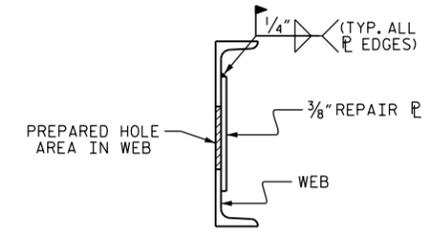
DIAPHRAGM REPAIR ELEVATION



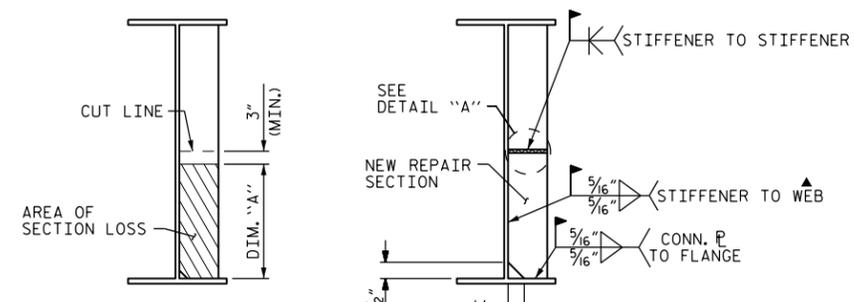
VIEW I-I



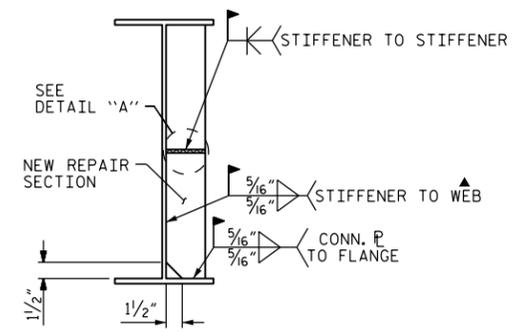
SECTION LOSS INTERMEDIATE BEAM PLATING REPAIR



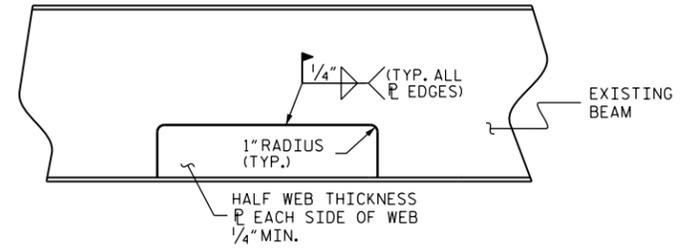
SECTION A-A



SECTION LOSS STIFFENER/CONN. REPAIR



SECTION LOSS STIFFENER/CONN. REPAIR SECTION



SECTION LOSS INTERMEDIATE BEAM PLATING REPAIR

BEAM REPAIR

ALL CONDITIONS AND DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION OR INSTALLATION OF ANY COMPONENTS.

REPAIR PLATES SHALL BE MINIMUM 36 KSI STEEL.

REPAIR SEQUENCE:

COORDINATE WITH MATERIALS AND TEST UNIT AT LEAST 4 DAYS PRIOR TO ANTICIPATED WORK.

REMOVE LIVE LOAD FROM REPAIR AREA BY EITHER CLOSING BRIDGE TO TRAFFIC OR SHIFTING TRAFFIC AWAY FROM REPAIR AREA.

IF NECESSARY, REMOVE EXISTING STIFFENER TO INSTALL WELDED PLATE REPAIR. REPLACE WITH A NEW STIFFENER PLATE OF SIMILAR SIZE.

IF BEAM DETERIORATION EXTENDS INTO THE CONCRETE DIAPHRAGM THEN CHIP AWAY CONCRETE TO DETERMINE THE EXTENT OF THE DAMAGE.

MECHANICALLY CLEAN RUST, SCALE, AND EXISTING PAINT TO AT LEAST 3" BEYOND REPAIR AREA.

PRIME ENTIRE REPAIR AREA AND REPAIR PLATES WITH AN ORGANIC ZINC PRIMER PRIOR TO WELDING NEW PLATES. REMOVE PRIMER IN WELD AREA.

ONE PLATE SHALL BE PLACED, AS INDICATED ON EACH SIDE OF THE BEAM WEB.

EACH PLATE SHALL BE APPROXIMATELY ONE-HALF THE ORIGINAL THICKNESS OF THE BEAM WEB.

FULLY WELD ALONG TOP AND SIDES OF THE PLATES AS SHOWN.

ALL WELDING SHALL BE IN ACCORDANCE WITH CURRENT APPLICABLE AWS AND NCDOT STANDARD SPECIFICATIONS.

ALL WELDS SHALL BE INSPECTED AND TESTED BY THE NCDOT MATERIALS AND TEST UNIT IN ACCORDANCE WITH THE CURRENT AWS BRIDGE WELDING CODE AND STANDARD SPECIFICATIONS.

IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, AFTER REPAIR, GRIND ALL WELDS FLUSH, THOROUGHLY CLEAN AREA TO REMOVE DEBRIS AND OILS FROM THE REPAIR PROCESS.

CLEANING AND PAINTING OF REPAIRED STRUCTURAL STEEL SHALL BE PERFORMED AS PART OF THE OVERALL CLEANING AND PAINTING CONTRACT.

FOR CLEANING AND PAINTING, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISIONS.

AFTER BEAMS ARE REPAIRED AND PAINTED, ANY CONCRETE REMOVED FROM THE BENT DIAPHRAGMS SHALL BE CAST BACK. ANY REINFORCING STEEL CUT DURING THE REMOVAL PROCESS SHALL BE SPICED WITH A SIMILAR SIZE BAR WITH AT LEAST A ONE FOOT SPLICE TO THE EXISTING STEEL. NO SEPARATE PAYMENT SHALL BE MADE FOR CONCRETE AND REINFORCING STEEL AS THIS IS CONSIDERED INCIDENTAL TO THE PAY ITEM "BEAM REPAIR". FOR BEAM REPAIR, SEE SPECIAL PROVISIONS.

REMOVE ALL TRAFFIC CONTROL DEVICES.

PROJECT NO. I-5750  
BUMCOMBE COUNTY  
 BRIDGE NO. 390, 391, 404, 406,  
425, 427, 431, 438, 451, 456

DocuSigned by:  
*John A. Yannaccone*  
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 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 32492  
 JOHN A. YANNACCONE

8/5/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 BEAM PLATING  
 REPAIR DETAILS

DRAWN BY : CL BRIGHT DATE : 06/16  
 CHECKED BY : J. A. YANNACCONE DATE : 06/16

04-AUG-2016 14:06  
 R:\Structures\Final Drawings\I5750.SMU.BEAM\_PLATING.dgn  
 Jayannaccone

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-79	
1			3			TOTAL SHEETS	
2			4			81	

**JACKING NOTES:**

THE CONTRACTOR SHALL SUBMIT JACKING PLANS AND CALCULATIONS FOR REVIEW AND APPROVAL PRIOR TO MATERIAL PURCHASE OR FABRICATION OF THE JACKING SYSTEM.

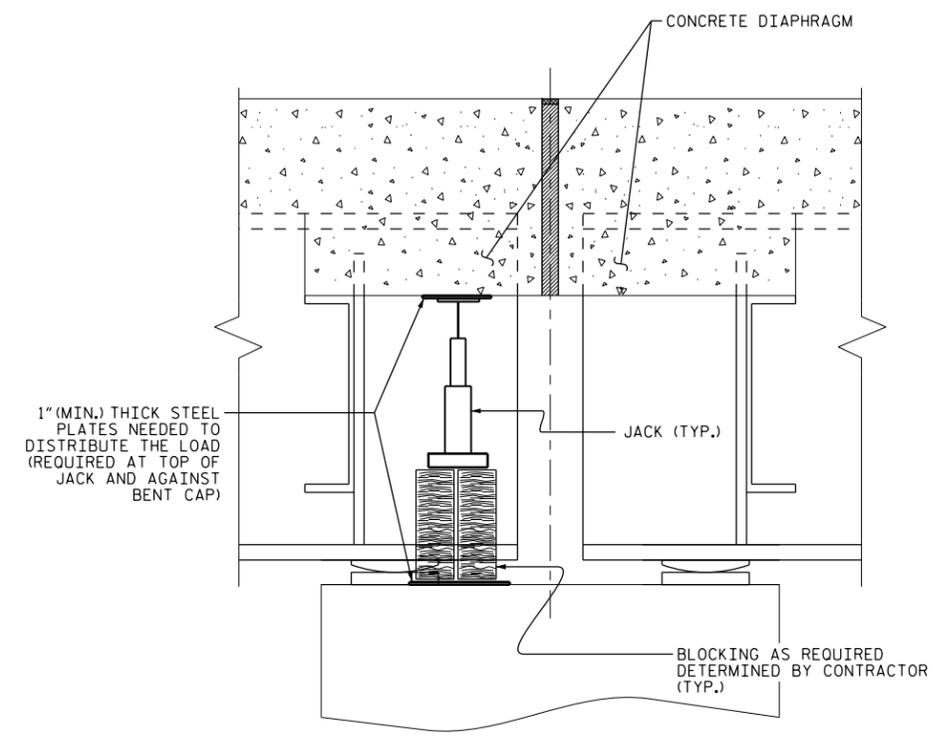
THE BEAM SHALL BE LIFTED ENOUGH THAT THE BEAM CLEAR THE BEARINGS AND ALL LOAD IS SUPPORTED BY THE JACKS. AFTER JACKING IS COMPLETE THE CONTRACTOR SHALL PROVIDE A METHOD TO SUPPORT THE BEAM FOR DEAD AND LIVE LOADS AND REMOVE THE JACKS DURING THE REPAIR OPERATIONS. IF THE JACKS REMAIN IN PLACE DURING THE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

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

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

ALL ADJACENT BEARINGS OF BEAMS NOT BEING JACKED MAY BE LOOSENED TO DECREASE THE RESISTANCE OF THE DECK SLAB DURING JACKING. ALL BEARINGS LOOSENED SHALL BE TIGHTENED BACK AFTER REPAIR OPERATIONS ARE COMPLETED AND THE JACKS AND BLOCKING HAVE BEEN REMOVED.

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



SECTION THRU DIAPHRAGM

PROJECT NO. I-5750  
BUNCOMBE COUNTY  
 BRIDGE NO. 390, 391, 404, 406,  
425, 427, 431, 438, 451, 456

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8/5/2016

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 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**JACKING DETAILS**

DRAWN BY : J. YANNACCONI DATE : 1/16  
 CHECKED BY : S. WANCE DATE : 1/16

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			81
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