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PROJECT: I-5892

CONTRACT: C203873

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BUNCOMBE COUNTY

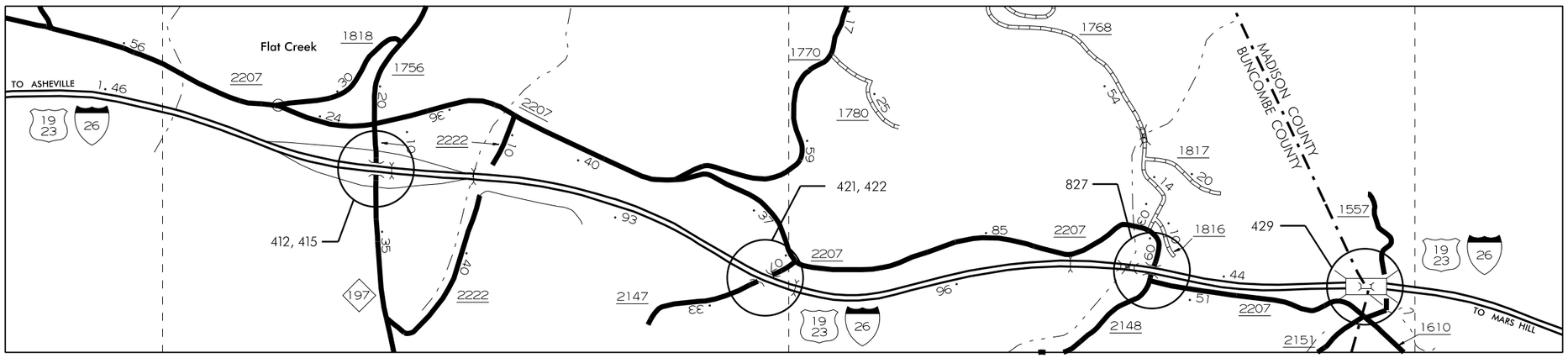
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5892	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
46413.1.1	NHPP-0026(007)	P.E.
46413.3.1	NHPP-0026(007)	CONST.

LOCATION: ***BUNCOMBE COUNTY:***

BRIDGE #412 ON INTERSTATE 26 WEST BOUND OVER NC 197 (JUPITER ROAD)
BRIDGE #415 ON INTERSTATE 26 EAST BOUND OVER NC 197 (JUPITER ROAD)
BRIDGE #421 ON INTERSTATE 26 WEST BOUND OVER SR 2147 (WHITT ROAD)
BRIDGE #422 ON INTERSTATE 26 EAST BOUND OVER SR 2147 (WHITT ROAD)
BRIDGE #429 ON INTERSTATE 26 OVER IVY CREEK AND SR 1557 (LONG RIDGE ROAD)
BRIDGE #827 ON INTERSTATE 26 OVER SR 2148 (OLD BURNSVILLE ROAD)

TYPE OF WORK: ***BRIDGE PRESERVATION – DECK REPAIR, SUBSTRUCTURE REPAIR, STRUCTURAL STEEL REPAIR, AND PAINTING OF EXISTING BRIDGE STRUCTURES.***



VICINITY MAP – BUNCOMBE CO.

DESIGN DATA

BUNCOMBE COUNTY
#412 ADT 2013 =14,500
#415 ADT 2013 =14,500
#421 ADT 2013 =12,000
#422 ADT 2013 =12,000
#429 ADT 2013 =23,000
#827 ADT 2013 =23,000

PROJECT LENGTH

BUNCOMBE COUNTY
– #412 = 0.028 MILE
– #415 = 0.028 MILE
– #421 = 0.031 MILE
– #422 = 0.029 MILE
– #429 = 0.076 MILE
– #827 = 0.027 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

RICK NELSON, P.E.
PROJECT ENGINEER

2012 STANDARD SPECIFICATIONS

LETTING DATE:
MARCH 21, 2017

DocuSigned by:
John A. Yannaccone
7BC36E90E2B54EE...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/27/2017

JOHN A. YANNACCONE, P.E.
PROJECT DESIGN ENGINEER

PROJECT: I-5892

CONTRACT: –

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BUNCOMBE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5892	1A	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
46413.1.1	NHPP–0026(007)	P.E.
46413.3.1	NHPP–0026(007)	CONST.

LOCATION: ***BUNCOMBE COUNTY:***

BRIDGE #412 ON INTERSTATE 26 WEST BOUND OVER NC 197 (JUPITER ROAD)
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BRIDGE #827 ON INTERSTATE 26 OVER SR 2148 (OLD BURNSVILLE ROAD)

TYPE OF WORK: ***BRIDGE PRESERVATION – DECK REPAIRS, SUBSTRUCTURE REPAIRS, STRUCTURAL STEEL REPAIRS, AND PAINTING OF EXISTING BRIDGE STRUCTURES.***

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

BRIDGE NO.	GROOVING BRIDGE FLOORS	CLASS II. SURFACE PREPARATION	CLASS III. SURFACE PREPARATION	LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY - VERY EARLY STRENGTH	◆ CONCRETE REPAIRS	◆ SHOTCRETE REPAIRS	EPOXY RESIN INJECTION	FOAM JOINT SEALS	EXPANSION JOINT SEAL REPAIR	CLEANING & REPAINTING OF BRIDGE #__	CLEANING AND PAINTING EXISTING WEATHERING STEEL FOR BRIDGE #__	POLLUTION CONTROL	PAINTING CONTAINMENT FOR BRIDGE #__	VOLUMETRIC MIXER	CONCRETE FOR DECK REPAIR	ELASTOMERIC CONCRETE	BEAM REPAIR	EPOXY COATING	BRIDGE JOINT DEMOLITION	SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	REMOVE AND RESET BEARINGS	BRIDGE JACKING
	SQ. FT.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	CU. FT.	CU. FT.	LIN. FT.	LUMP SUM	LIN. FT.	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	CU. FT.	CU. FT.	LBS.	SQ. FT.	SQ. FT.	SQ. YDS.	SQ. YDS.	EA.	EA.
412	5,430	66.0	2.0	36.5	657	——	6.5	8.0	——	——	LUMP SUM	——	LUMP SUM	LUMP SUM	LUMP SUM	12.0	——	——	——	——	657	657	——	——
415	5,430	66.0	2.0	36.5	657	——	——	12.0	——	——	LUMP SUM	——	LUMP SUM	LUMP SUM	LUMP SUM	12.0	——	——	——	——	657	657	——	——
421	5,834	70.0	1.5	39.3	708	39.6	67.7	9.7	LUMP SUM	——	LUMP SUM	——	LUMP SUM	LUMP SUM	LUMP SUM	9.0	24.5	860	296	98	708	708	——	2
422	5,552	65.0	1.5	37.4	673	12.8	37.8	——	LUMP SUM	——	LUMP SUM	——	LUMP SUM	LUMP SUM	LUMP SUM	9.0	24.5	2,115	300	99	673	673	——	5
429	——	——	——	——	——	86.8	1,056.5	42.5	——	——	LUMP SUM	——	LUMP SUM	LUMP SUM	——	——	——	130	1,132	——	——	——	12	15
827	——	——	——	——	——	——	——	——	——	88.5	——	LUMP SUM	LUMP SUM	LUMP SUM	——	——	——	——	——	——	——	——	——	——
TOTALS	22,246	267.0	7.0	149.7	2,695	139.2	1,168.5	72.2	LUMP SUM	88.5	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	42.0	49.0	3,105	1,728	197	2,695	2,695	12	22

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

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 412,415,421,422
429,827

DocuSigned by:
John A. Yannaccone
7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/31/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TOTAL BILL OF MATERIAL

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

DRAWN BY : S. WANCE DATE : 10/16
CHECKED BY : J. YANNACCONE DATE : 12/16

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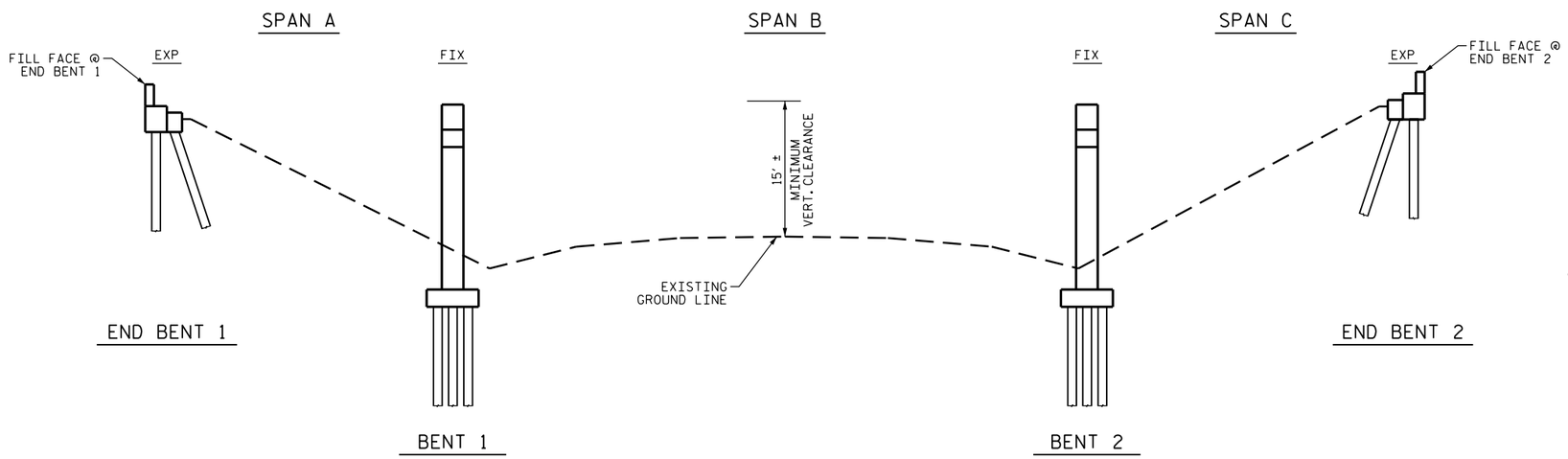
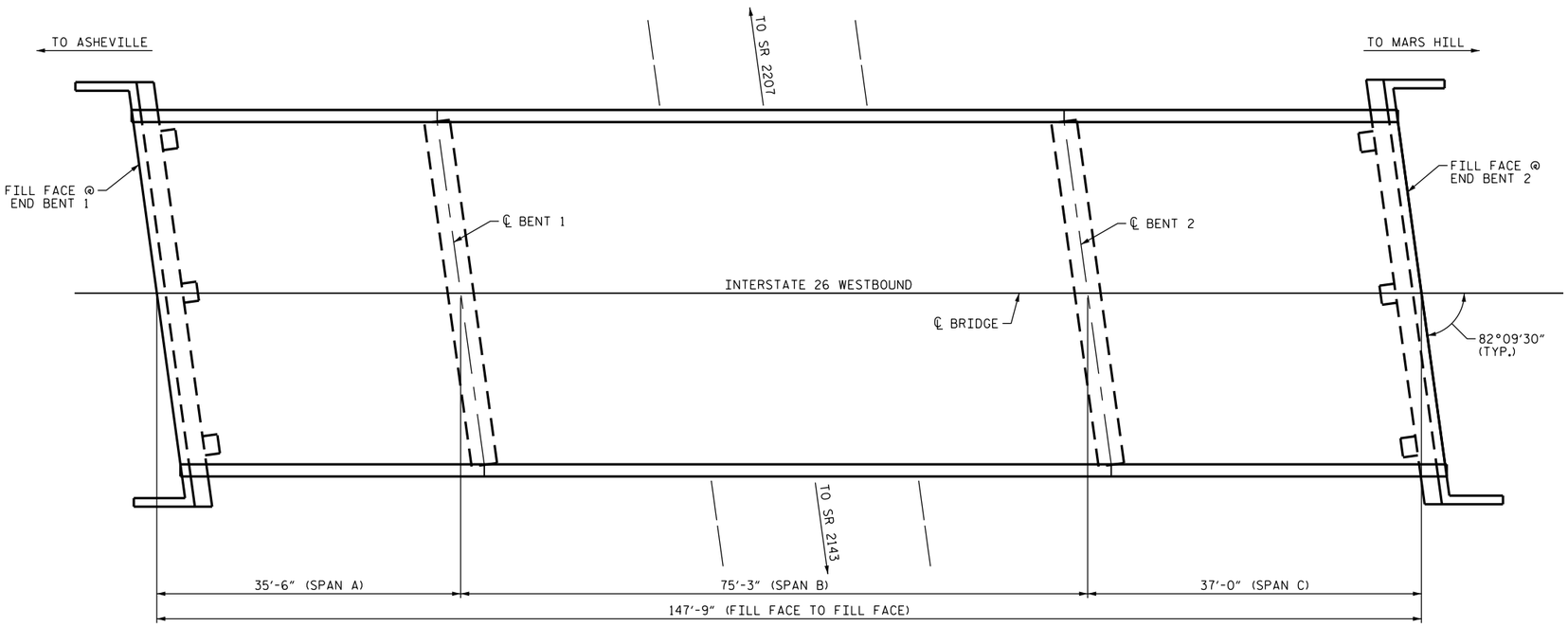


SECTION ALONG ℄ ROADWAY



PLAN

NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 01/27/2015.

BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- CLEAN AND PAINT STEEL I-BEAMS AND BEARINGS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- PERFORM SHOTCRETE REPAIRS IN PREPARED AREAS.
- REMOVE ASPHALT WEARING SURFACE AND PARTIALLY REMOVE BRIDGE DECK CONCRETE BY SCARIFICATION AND HYDRO-DEMOLITION METHODS.
- OVERLAY PREPARED BRIDGE DECK WITH LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH.
- GROOVE LATEX MODIFIED CONCRETE BRIDGE DECK.

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

RESIDENT ENGINEER DATE

DocuSigned by:
John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

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DRAWN BY : R.L.PUTEK DATE : 05/16
CHECKED BY : S.WANCE DATE : 06/16

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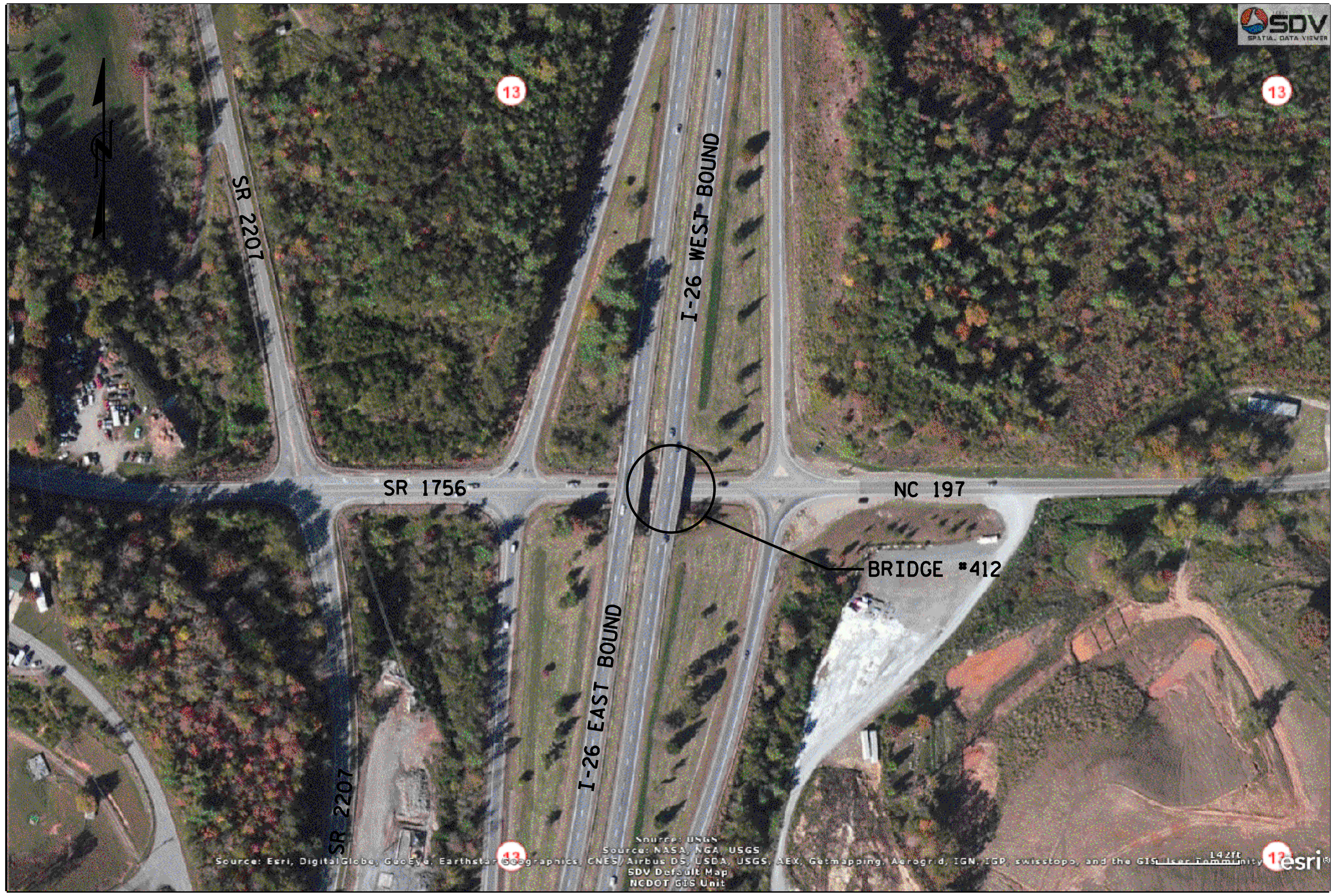
PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 412

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR BRIDGE ON I-26 WBL OVER NC 197 (JUPITER ROAD)

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



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

THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK.

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

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

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

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

DURING CONSTRUCTION, BERMS OR APPROPRIATE MEASURES TO CONTROL RUN-OFF SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

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

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 EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

LOCATION SKETCH

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

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 412

SHEET 2 OF 2

DocuSigned by:
John A. Yannaccone
7BC3...

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 32492 JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-26 WBL
OVER NC 197
(JUPITER ROAD)

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

DRAWN BY : R.L.PUTEK DATE : 05/16
CHECKED BY : S. WANCE DATE : 06/16

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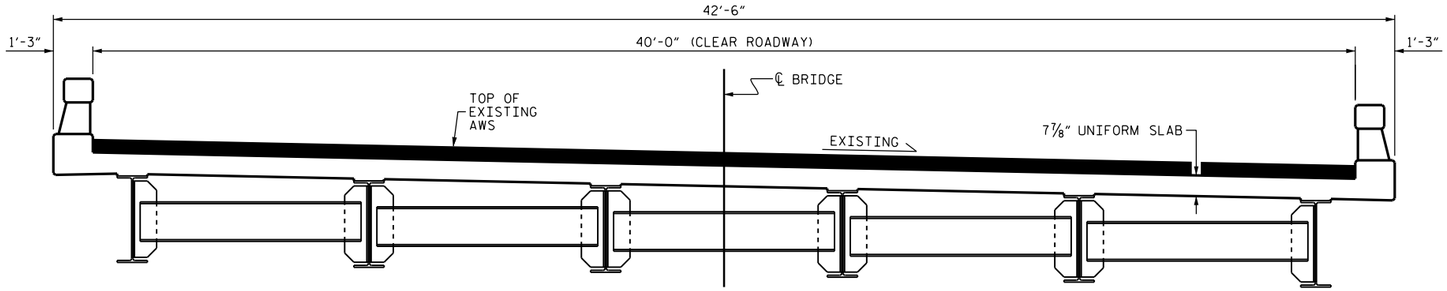
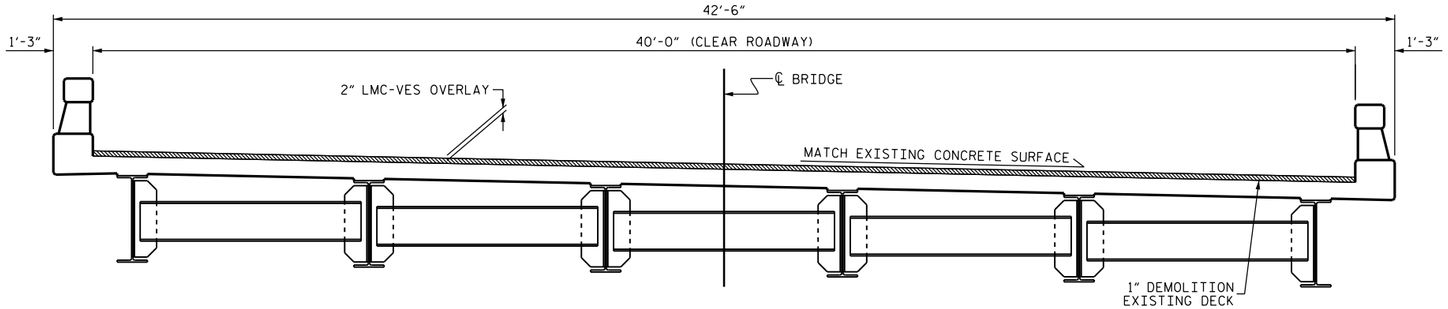
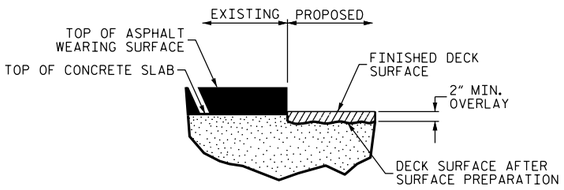


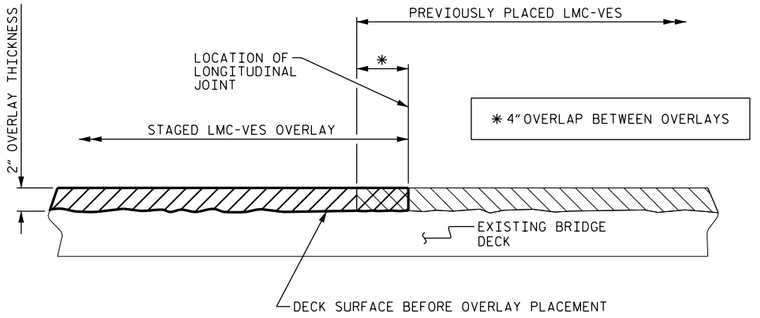
TYPICAL SECTION
(EXISTING)



TYPICAL SECTION
(PROPOSED)



DETAIL FOR LMC-VES OVERLAY

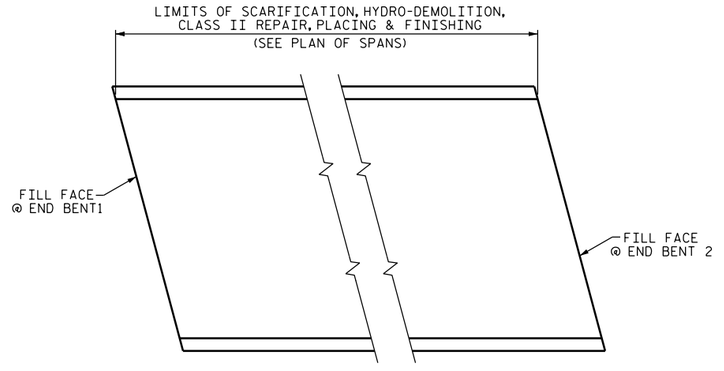


STAGED LMC-VES OVERLAY CONSTRUCTION JOINT
(AS NEEDED)

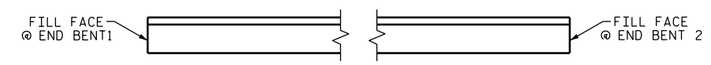
NOTES

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

WHEN PREPARING THE SURFACE FOR AN LMC-VES OVERLAY ADJACENT TO A PREVIOUSLY PLACED LMC-VES STAGE, THE PREVIOUSLY PLACED LMC-VES SHALL BE REMOVED FOR A DISTANCE OF 4 INCHES FROM THE EDGE OF THE LMC-VES. THE SURFACE OF THE NEW STAGE AREA, ALONG WITH THE 4 INCH OVERLAY AREA, SHALL BE PREPARED AS PER THE OVERLAY SURFACE PREPARATION SPECIAL PROVISION. NEW LMC-VES SHALL BE PLACED IN THE 4 INCH OVERLAP AS PART OF THE NEW LMC-VES STAGE PLACEMENT.



PLAN



ELEVATION

PAY LIMITS FOR OVERLAY BID ITEMS

PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 412

DocuSigned by:
John A. Yannaccone
7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION AND SURFACE PREPARATION DETAILS

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

DRAWN BY : R.L.PUTEK DATE : 06/16
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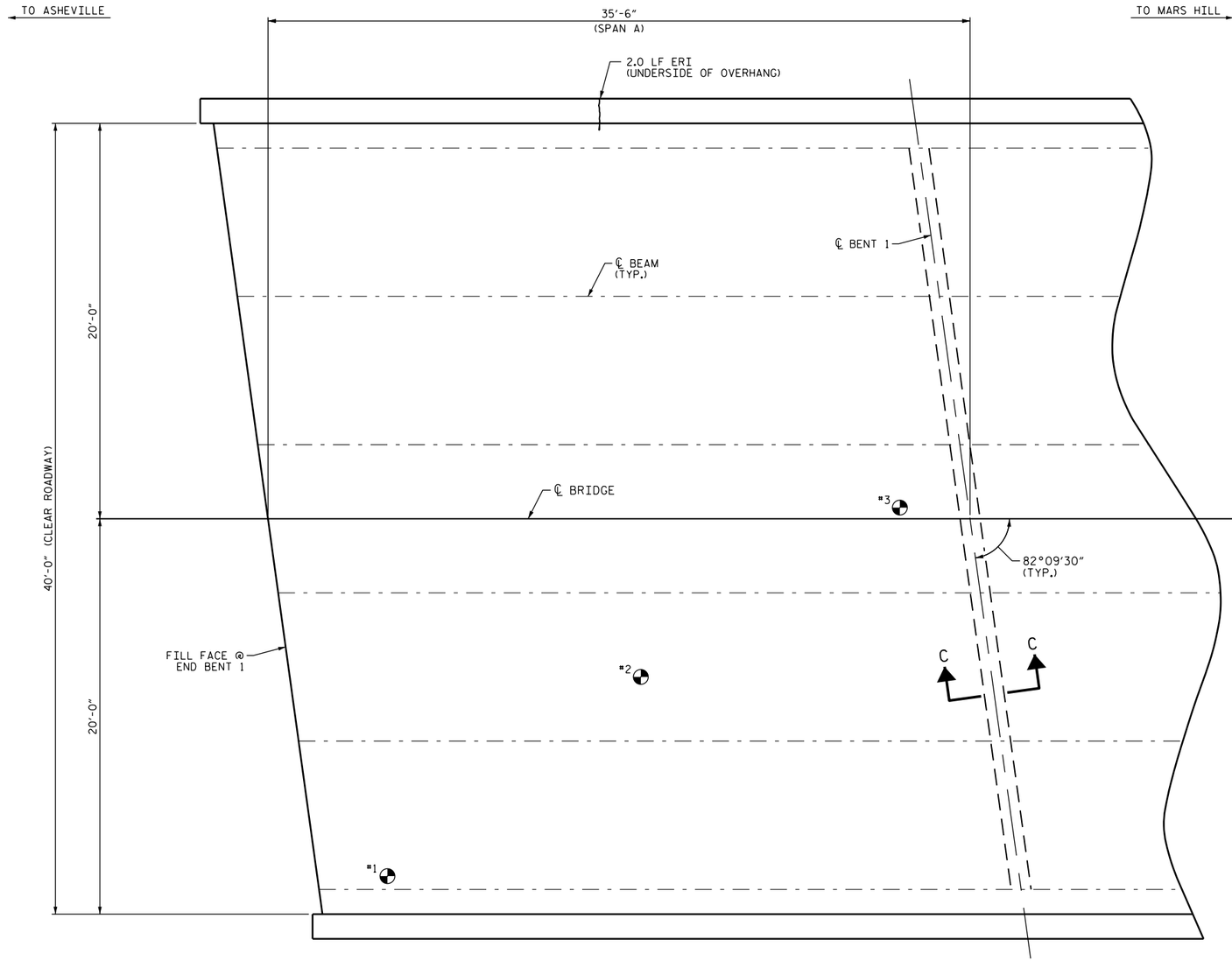

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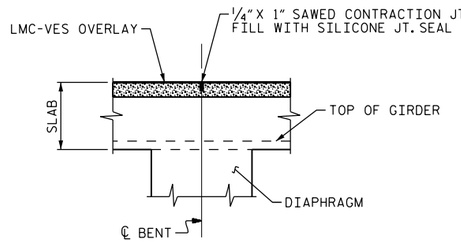

SECTION C-C

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	158 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	158 SY	
CLASS II SURFACE PREPARATION	16.0 SY *	
CLASS III SURFACE PREPARATION	0.5 SY *	
BRIDGE JOINT DEMOLITION	0.0 SF	
EPOXY RESIN INJECTION	0.0 LF	
CONCRETE FOR DECK REPAIR	3.0 CF *	

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	0.0	0.0		
CONCRETE CURB AND RAIL	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, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. SEE REPAIR DETAILS.

- APPROX. CLASS II AREA
- APPROX. CLASS III AREA
- UNDERSIDE REPAIR
- DIAPHRAGM REPAIR
- CURB AND RAIL REPAIR
- #1 TEST LOCATION
- ERI EPOXY RESIN INJECTION

TEST LOCATION	ASPHALT THICKNESS (INCH)	CONCRETE STRENGTH (PSI)
#1	5"	*
#2	5 3/4"	*
#3	5 1/2"	*

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 4/25/2016.
* CONCRETE COMPRESSIVE STRENGTH COULD NOT BE TESTED DUE TO THE PRESENCE OF ASPHALT OVERLAY.

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.

CONCRETE COVER FOR TOP BARS IN THE DECK SLAB IS 1 1/2" PER THE EXISTING BRIDGE PLANS.

PRIOR TO PLACEMENT OF THE LMC-VES OVERLAY ACROSS THE CONTINUOUS DECK SPANS, THE CONTRACTOR SHALL SUBMIT A POUR SEQUENCE FOR APPROVAL BY THE ENGINEER.

FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

* CLASS II SURFACE PREPARATION, CLASS III SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR ARE NOT ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSES IN CASE UNANTICIPATED CLASS II OR CLASS III AREAS ARE ENCOUNTERED.

DocuSigned by:
John A Yannaccone
7BC[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

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PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 412

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPAN
SPAN A

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : R.L.PUTEK DATE : 05/16
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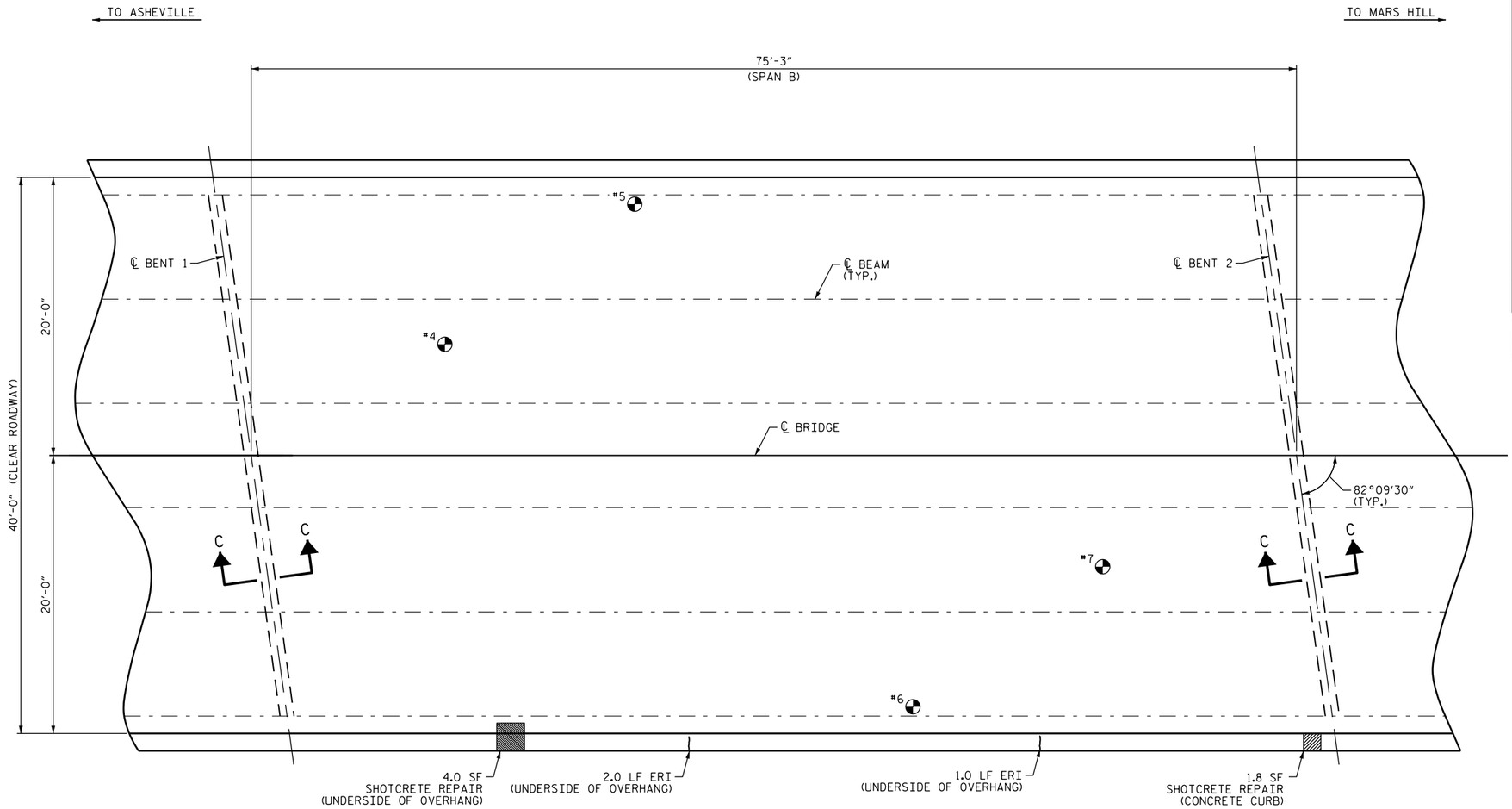

PLAN

TEST LOCATION	ASPHALT THICKNESS (INCH)	CONCRETE STRENGTH (PSI)
#4	5½"	*
#5	5½"	*
#6	4½"	*
#7	5½"	*

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 4/25/2016.
* CONCRETE COMPRESSIVE STRENGTH COULD NOT BE TESTED DUE TO THE PRESENCE OF ASPHALT OVERLAY.

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	335 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	335 SY	
CLASS II SURFACE PREPARATION	34.0 SY *	
CLASS III SURFACE PREPARATION	1.0 SY *	
BRIDGE JOINT DEMOLITION	0.0 SF	
EPOXY RESIN INJECTION	0.0 LF	
CONCRETE FOR DECK REPAIR	6.0 CF *	

UNDERSIDE OF DECK REPAIRS

SHOTCRETE REPAIRS	ESTIMATE AREA SF	ESTIMATE VOLUME CF	ACTUAL AREA SF	ACTUAL VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	4.0	3.0 ♦		
INTERIOR DIAPHRAGMS	0.0	0.0		
CONCRETE CURB AND RAIL	1.8	1.3 ♦		

	ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION	3.0 LF	

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

- APPROX. CLASS II AREA
- APPROX. CLASS III AREA
- UNDERSIDE REPAIR
- DIAPHRAGM REPAIR
- CURB AND RAIL REPAIR
- #1 TEST LOCATION
- ERI 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 AS-BUILT REPAIR QUANTITY TABLE.

CONCRETE COVER FOR TOP BARS IN THE DECK SLAB IS 1½" PER THE EXISTING BRIDGE PLANS.

PRIOR TO PLACEMENT OF THE LMC-VES OVERLAY ACROSS THE CONTINUOUS DECK SPANS, THE CONTRACTOR SHALL SUBMIT A POUR SEQUENCE FOR APPROVAL BY THE ENGINEER.

FOR SECTION C-C, SEE SHEET 1 OF 3.

FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

* CLASS II SURFACE PREPARATION, CLASS III SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR ARE NOT ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSES IN CASE UNANTICIPATED CLASS II OR CLASS III AREAS ARE ENCOUNTERED.

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

DocuSigned by:
John A. Yannaccone
7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

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PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 412

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPAN
SPAN B

REVISIONS						SHEET NO.
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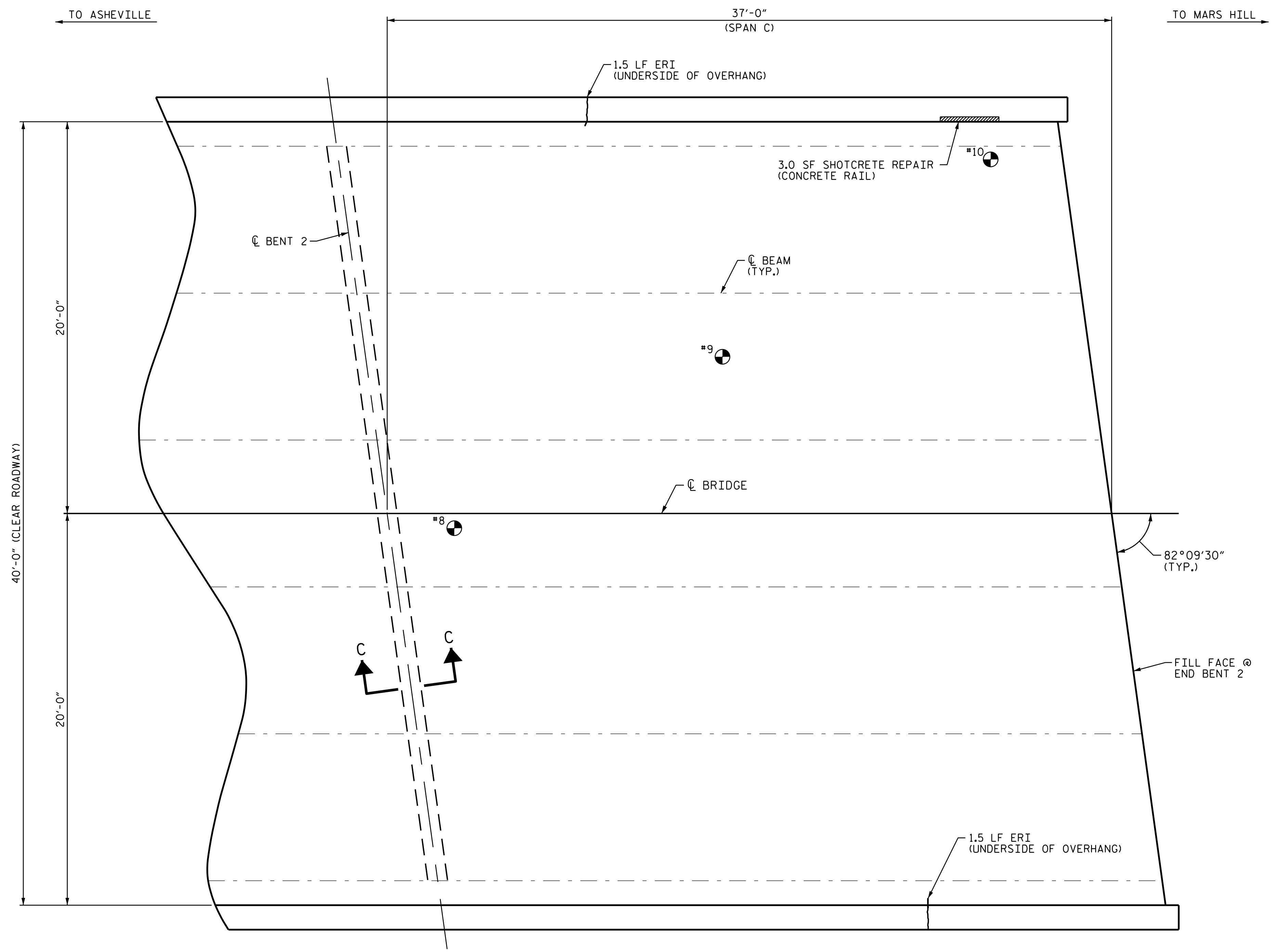

PLAN

TEST LOCATION	ASPHALT THICKNESS (INCH)	CONCRETE STRENGTH (PSI)
#8	5¼"	✱
#9	5¼"	✱
#10	4"	✱

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 4/25/2016.
✱ CONCRETE COMPRESSIVE STRENGTH COULD NOT BE TESTED DUE TO THE PRESENCE OF ASPHALT OVERLAY.

NOTES

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AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	164 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	164 SY	
CLASS II SURFACE PREPARATION	16.0 SY ✱	
CLASS III SURFACE PREPARATION	0.5 SY ✱	
BRIDGE JOINT DEMOLITION	0.0 SF	
EPOXY RESIN INJECTION	0.0 LF	
CONCRETE FOR DECK REPAIR	3.0 CF ✱	

UNDERSIDE OF DECK REPAIRS

SHOTCRETE REPAIRS	ESTIMATE AREA SF	ESTIMATE VOLUME CF	ACTUAL AREA SF	ACTUAL VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	0.0	0.0		
INTERIOR DIAPHRAGMS	0.0	0.0		
CONCRETE CURB AND RAIL	3.0	2.2 ♦		

	ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION	3.0 LF	

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

APPROX. CLASS II AREA
APPROX. CLASS III AREA
UNDERSIDE REPAIR
DIAPHRAGM REPAIR
CURB AND RAIL REPAIR
#1 TEST LOCATION
ERI EPOXY RESIN INJECTION

PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 412
SHEET 3 OF 3

DocuSigned by:
John A. Yannaccone
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NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE
1/21/2017

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPAN
SPAN C

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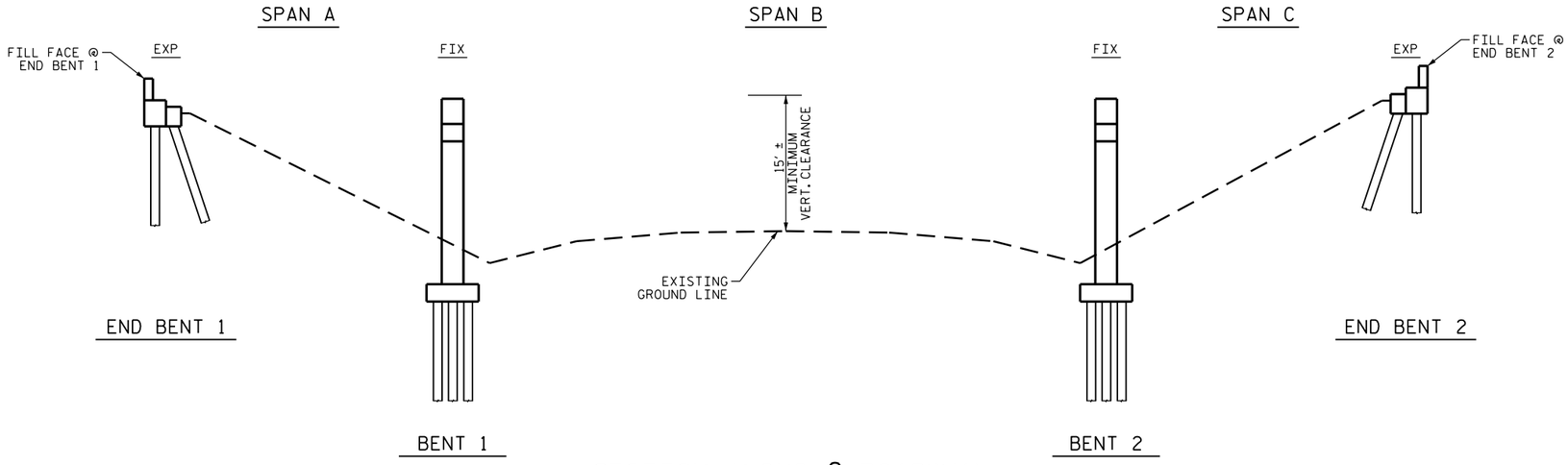
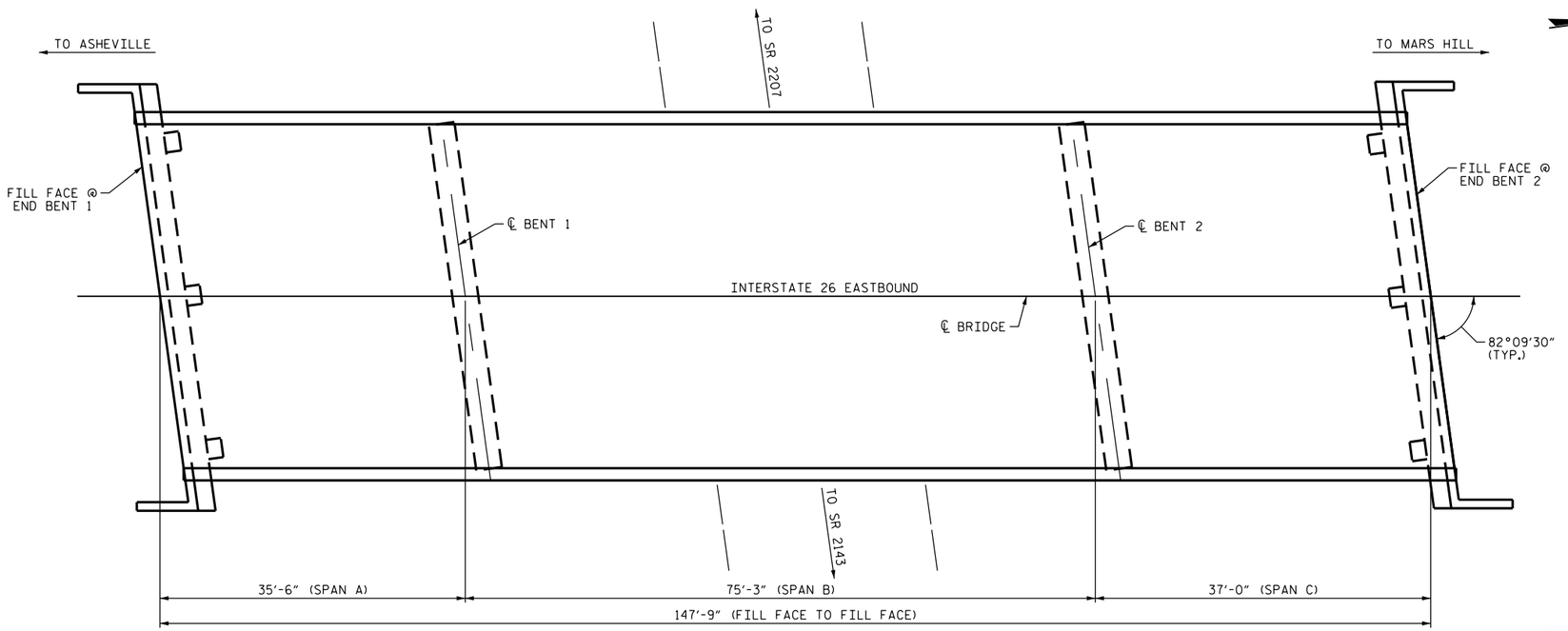


SECTION ALONG ℄ ROADWAY



PLAN

NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 01/27/2015.

BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- CLEAN AND PAINT STEEL I-BEAMS AND BEARINGS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- PERFORM SHOTCRETE REPAIRS IN PREPARED AREAS.
- REMOVE ASPHALT WEARING SURFACE AND PARTIALLY REMOVE BRIDGE DECK CONCRETE BY SCARIFICATION AND HYDRO-DEMOLITION METHODS.
- OVERLAY PREPARED BRIDGE DECK WITH LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH.
- GROOVE LATEX MODIFIED CONCRETE BRIDGE DECK.

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

RESIDENT ENGINEER DATE

DocuSigned by:
John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

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PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 415

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR BRIDGE ON I-26 EBL OVER NC 197 (JUPITER ROAD)

REVISIONS						SHEET NO.
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LOCATION SKETCH

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

NOTES

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION 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 OVERLAY OF BRIDGE WITH LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK.

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

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

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

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

DURING CONSTRUCTION, BERMS OR APPROPRIATE MEASURES TO CONTROL RUN-OFF SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

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

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 EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 415

SHEET 2 OF 2

DocuSigned by:
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7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-26 EBL OVER NC 197 (JUPITER ROAD)

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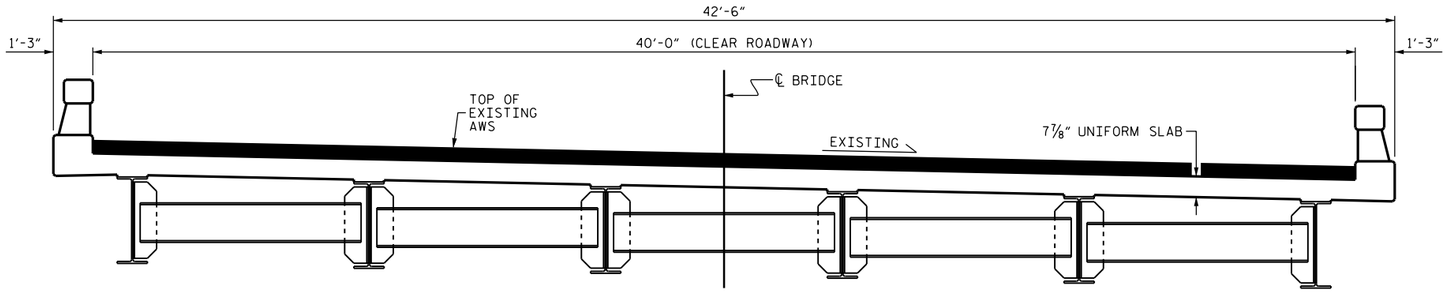
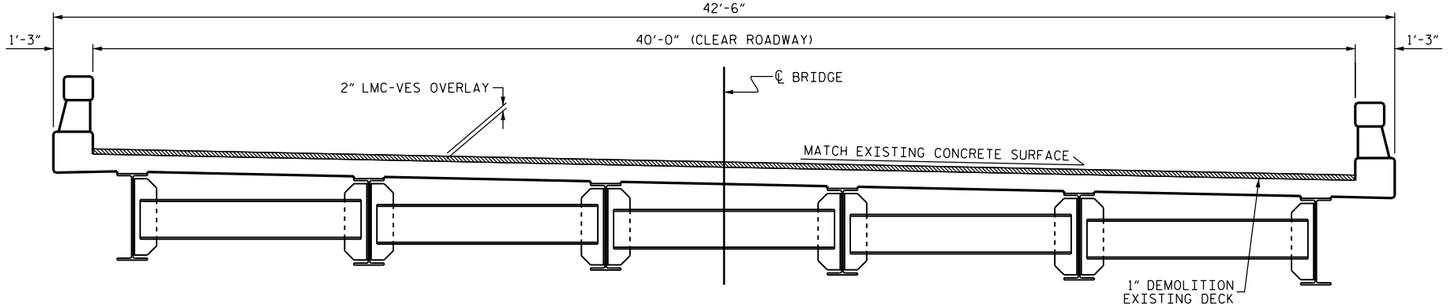


TYPICAL SECTION
(EXISTING)



TYPICAL SECTION
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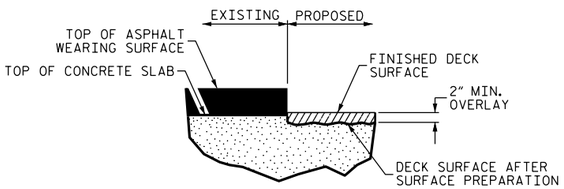
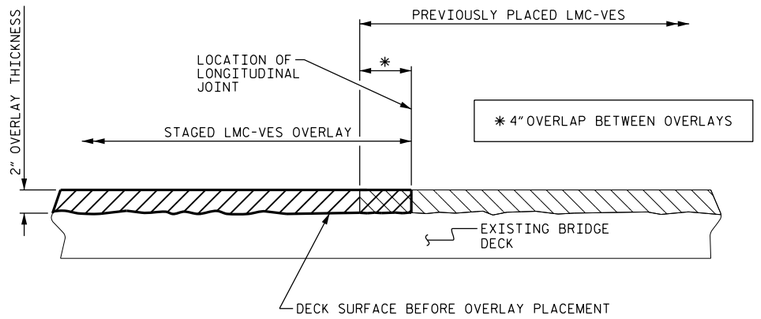


DETAIL FOR LMC-VES OVERLAY

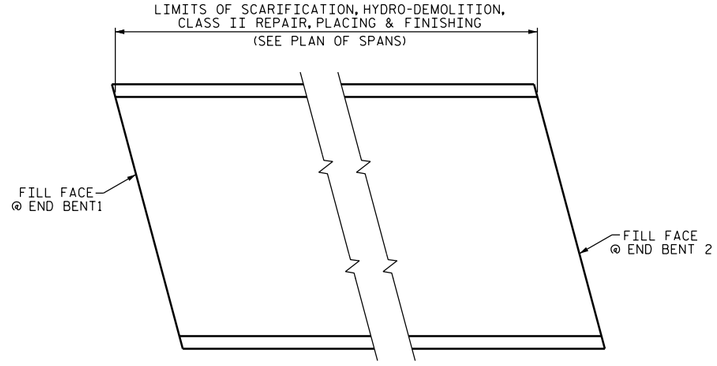


STAGED LMC-VES OVERLAY CONSTRUCTION JOINT
(AS NEEDED)

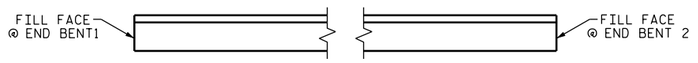
NOTES

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

WHEN PREPARING THE SURFACE FOR AN LMC-VES OVERLAY ADJACENT TO A PREVIOUSLY PLACED LMC-VES STAGE, THE PREVIOUSLY PLACED LMC-VES SHALL BE REMOVED FOR A DISTANCE OF 4 INCHES FROM THE EDGE OF THE LMC-VES. THE SURFACE OF THE NEW STAGE AREA, ALONG WITH THE 4 INCH OVERLAY AREA, SHALL BE PREPARED AS PER THE OVERLAY SURFACE PREPARATION SPECIAL PROVISION. NEW LMC-VES SHALL BE PLACED IN THE 4 INCH OVERLAP AS PART OF THE NEW LMC-VES STAGE PLACEMENT.



PLAN



ELEVATION

PAY LIMITS FOR OVERLAY BID ITEMS

PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 415

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NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION AND SURFACE PREPARATION DETAILS

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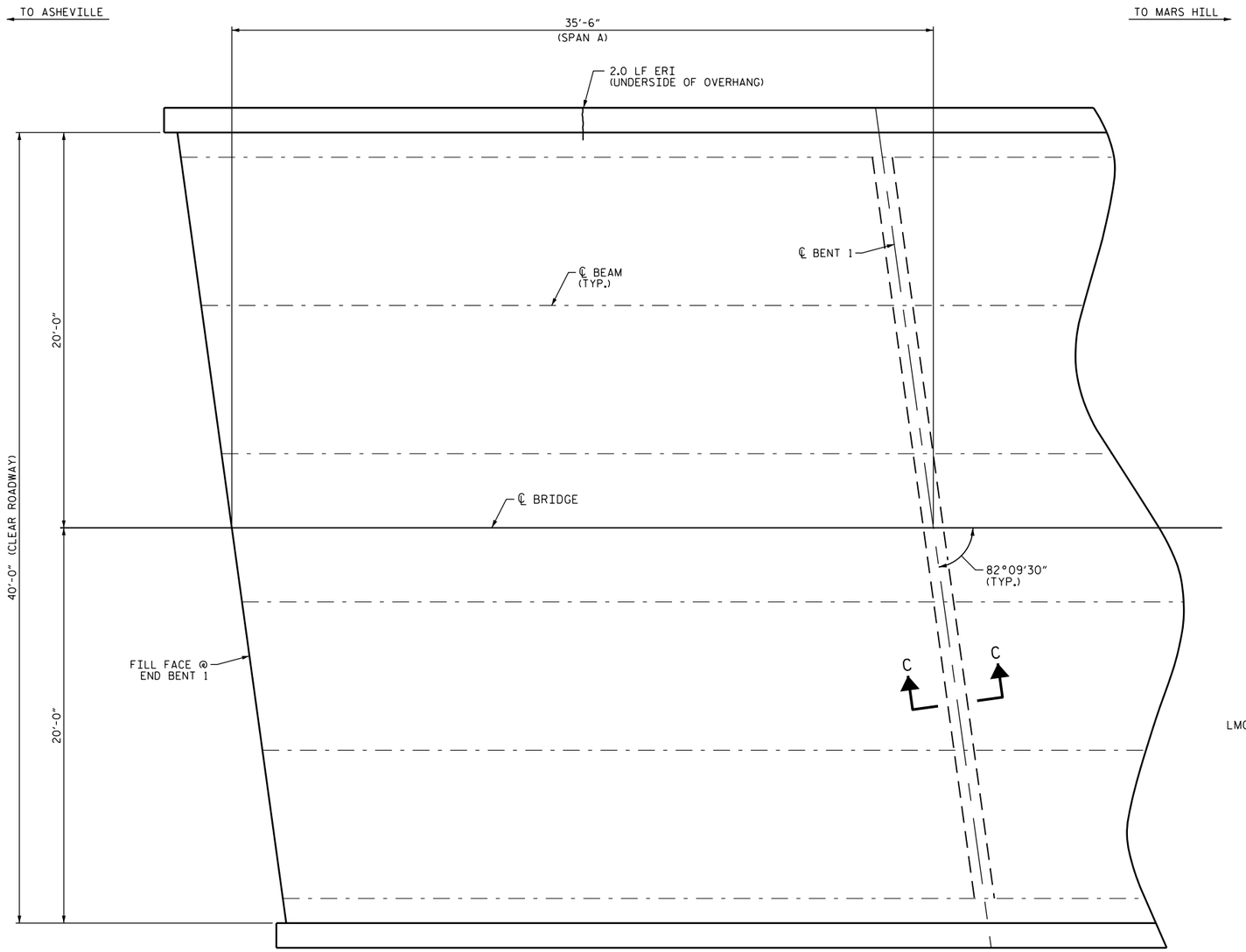


PLAN

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	158 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	158 SY	
CLASS II SURFACE PREPARATION	16.0 SY ✳	
CLASS III SURFACE PREPARATION	0.5 SY ✳	
BRIDGE JOINT DEMOLITION	0.0 SF	
EPOXY RESIN INJECTION	0.0 LF	
CONCRETE FOR DECK REPAIR	3.0 CF ✳	

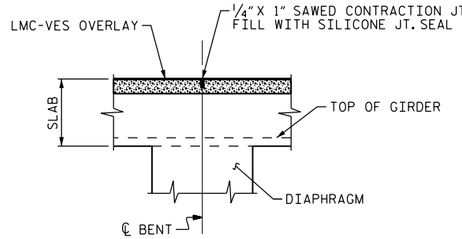
UNDERSIDE OF DECK REPAIRS

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	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, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. SEE REPAIR DETAILS.

- APPROX. CLASS II AREA
- APPROX. CLASS III AREA
- UNDERSIDE REPAIR
- DIAPHRAGM REPAIR
- CURB AND RAIL REPAIR
- #1 TEST LOCATION
- ERI EPOXY RESIN INJECTION



SECTION C-C

NOTES

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1/21/2017

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PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 415

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPAN
SPAN A

REVISIONS						SHEET NO.
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2			4			68

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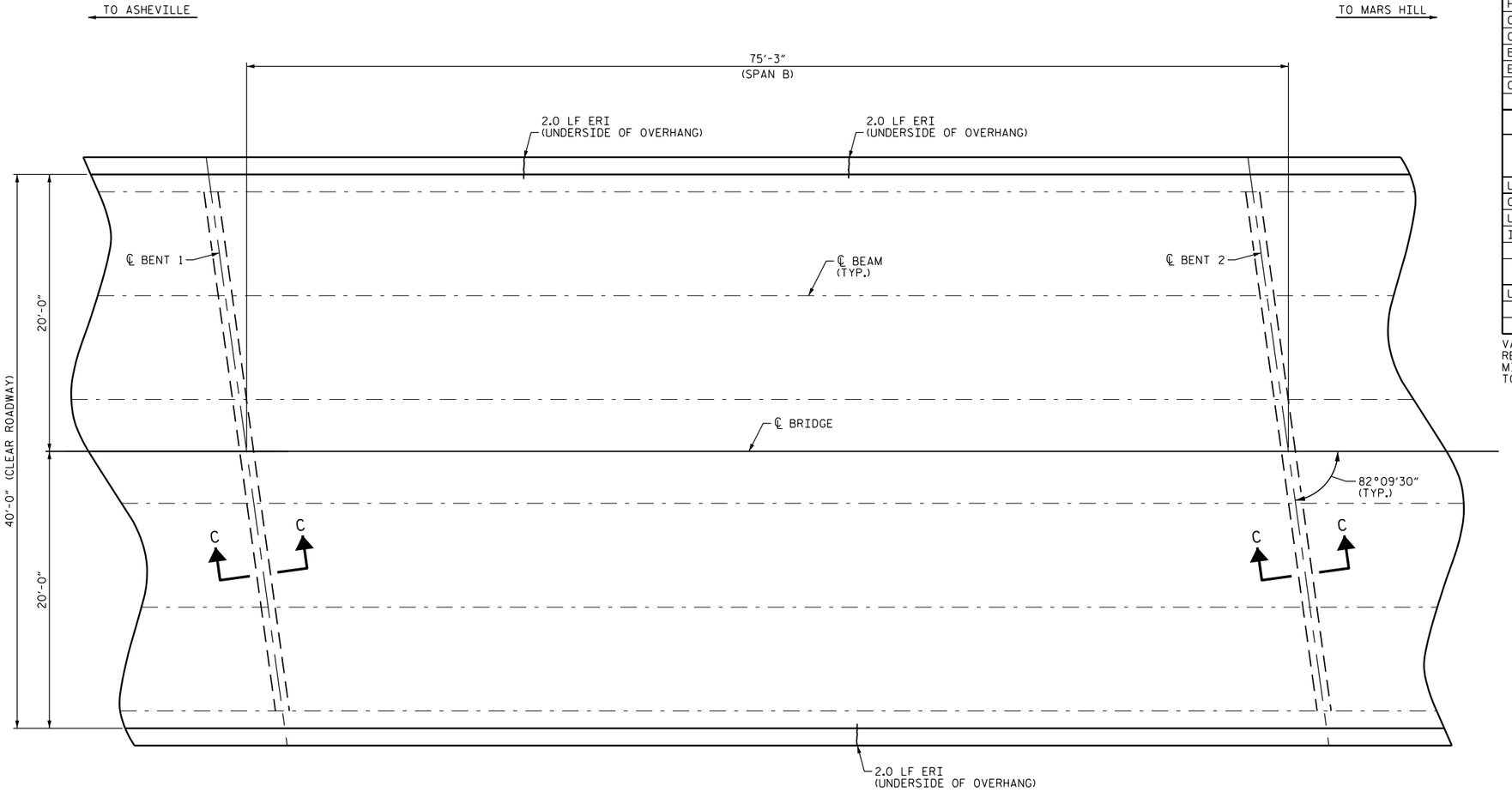

PLAN

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	335 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	335 SY	
CLASS II SURFACE PREPARATION	34.0 SY *	
CLASS III SURFACE PREPARATION	1.0 SY *	
BRIDGE JOINT DEMOLITION	0.0 SF	
EPOXY RESIN INJECTION	0.0 LF	
CONCRETE FOR DECK REPAIR	6.0 CF *	

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	0.0	0.0		

	ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION	6.0 LF	

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

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- CURB AND RAIL REPAIR
- #1 TEST LOCATION
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NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 415

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPAN
SPAN B

REVISIONS						SHEET NO.
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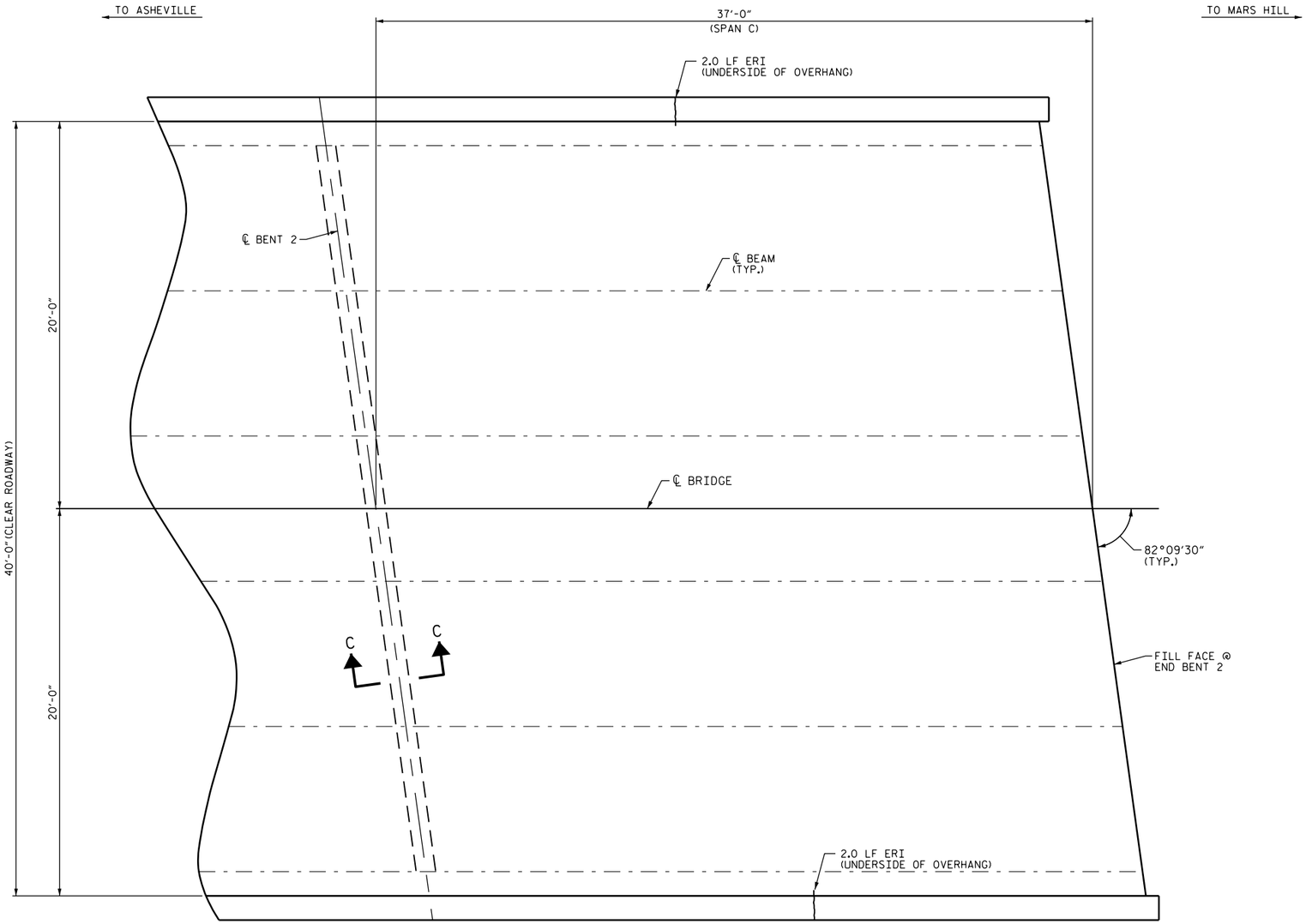

PLAN

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	164 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	164 SY	
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BRIDGE JOINT DEMOLITION	0.0 SF	
EPOXY RESIN INJECTION	0.0 LF	
CONCRETE FOR DECK REPAIR	3.0 CF ✱	

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	0.0	0.0		

	ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION	4.0 LF	

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

- APPROX. CLASS II AREA
- APPROX. CLASS III AREA
- UNDERSIDE REPAIR
- DIAPHRAGM REPAIR
- CURB AND RAIL REPAIR
- #1 TEST LOCATION
- ERI 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 AS-BUILT REPAIR QUANTITY TABLE.

CONCRETE COVER FOR TOP BARS IN THE DECK SLAB IS 1½" PER THE EXISTING BRIDGE PLANS.

PRIOR TO PLACEMENT OF THE LMC-VES OVERLAY ACROSS THE CONTINUOUS DECK SPANS, THE CONTRACTOR SHALL SUBMIT A POUR SEQUENCE FOR APPROVAL BY THE ENGINEER.

FOR SECTION C-C, SEE SHEET 1 OF 3.

FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

✱ CLASS II SURFACE PREPARATION, CLASS III SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR ARE NOT ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSES IN CASE UNANTICIPATED CLASS II OR CLASS III AREAS ARE ENCOUNTERED.

DocuSigned by:
John A. Yannaccone
7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

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PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 415

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPAN
SPAN C

REVISIONS						SHEET NO.
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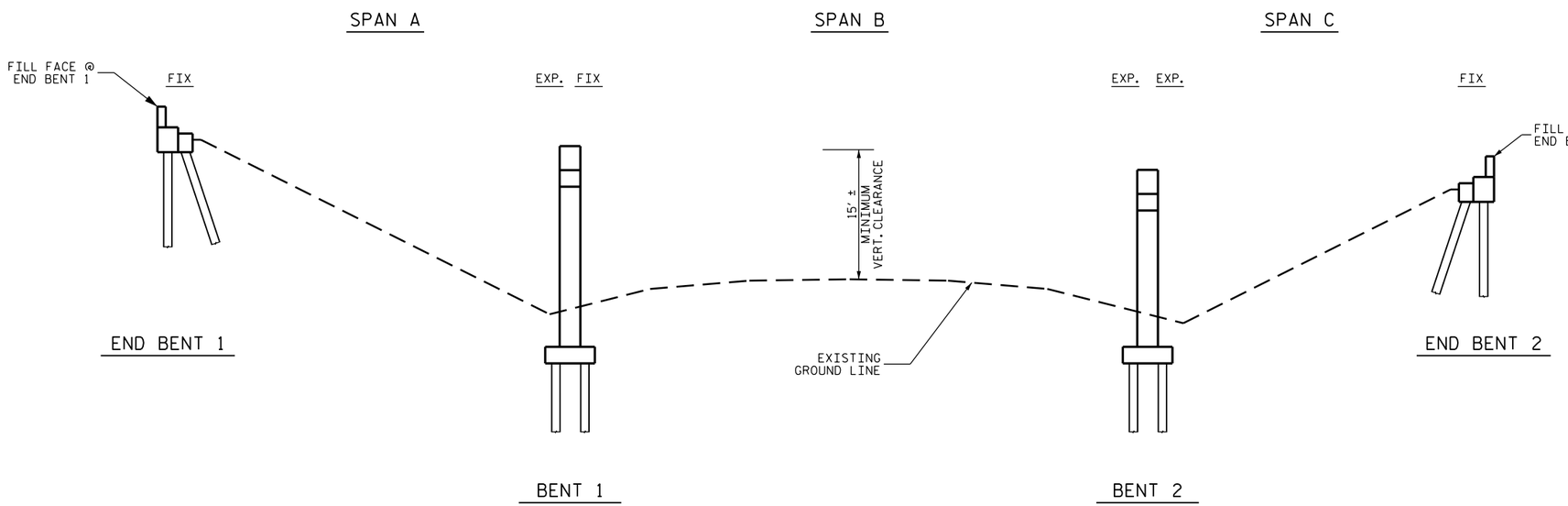
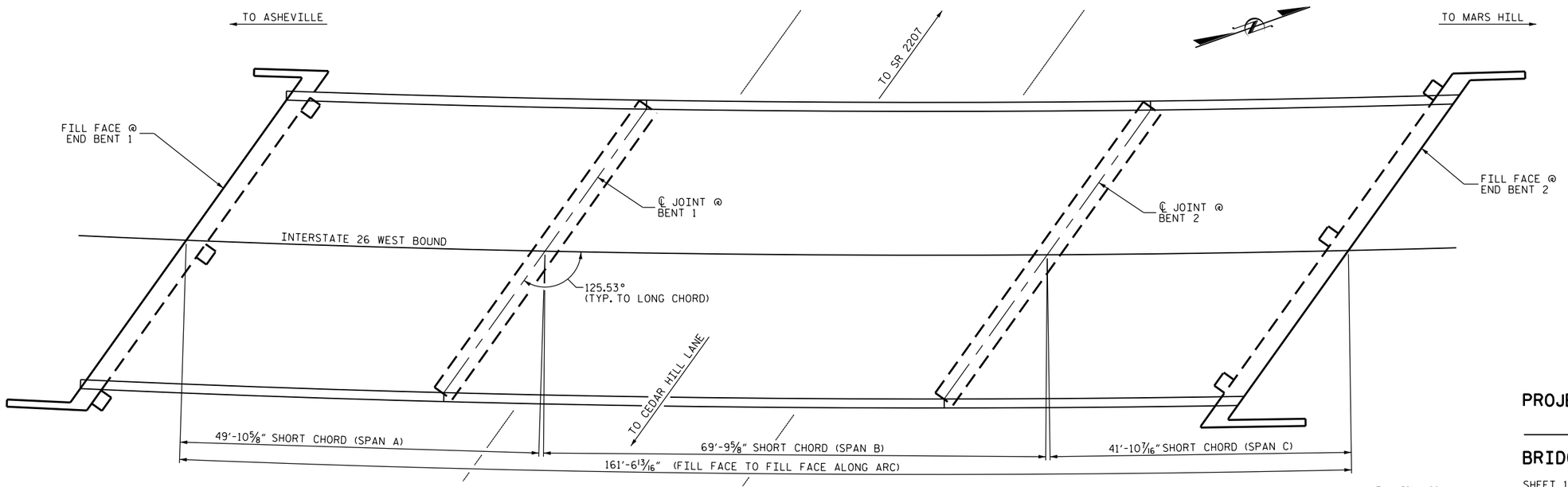


SECTION ALONG ℄ ROADWAY



PLAN

NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 01/28/2015.

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 AND CONCRETE REPAIRS IN PREPARED AREAS.
- PARTIALLY REMOVE ASPHALT WEARING SURFACE AND BRIDGE DECK CONCRETE BY SCARIFICATION AND HYDRO-DEMOLITION METHODS.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- OVERLAY PREPARED BRIDGE DECK WITH LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH.
- RECONSTRUCT BRIDGE JOINTS AND INSTALL JOINT SEALS.
- GROOVE LATEX MODIFIED CONCRETE BRIDGE DECK.
- 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
7BC3...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

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PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 421

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR BRIDGE ON I-26 OVER SR 2147 (WHITT ROAD)

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1			3			TOTAL SHEETS
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LOCATION SKETCH

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

NOTES

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION 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 OVERLAY OF BRIDGE WITH LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK.

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

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

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

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

DURING CONSTRUCTION, BERMS OR APPROPRIATE MEASURES TO CONTROL RUN-OFF SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISONS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISONS.

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

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISONS.

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-5892

BUNCOMBE COUNTY

BRIDGE NO. 421

SHEET 2 OF 2

DocuSigned by:
John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-26
OVER SR 2147
(WHITT ROAD)

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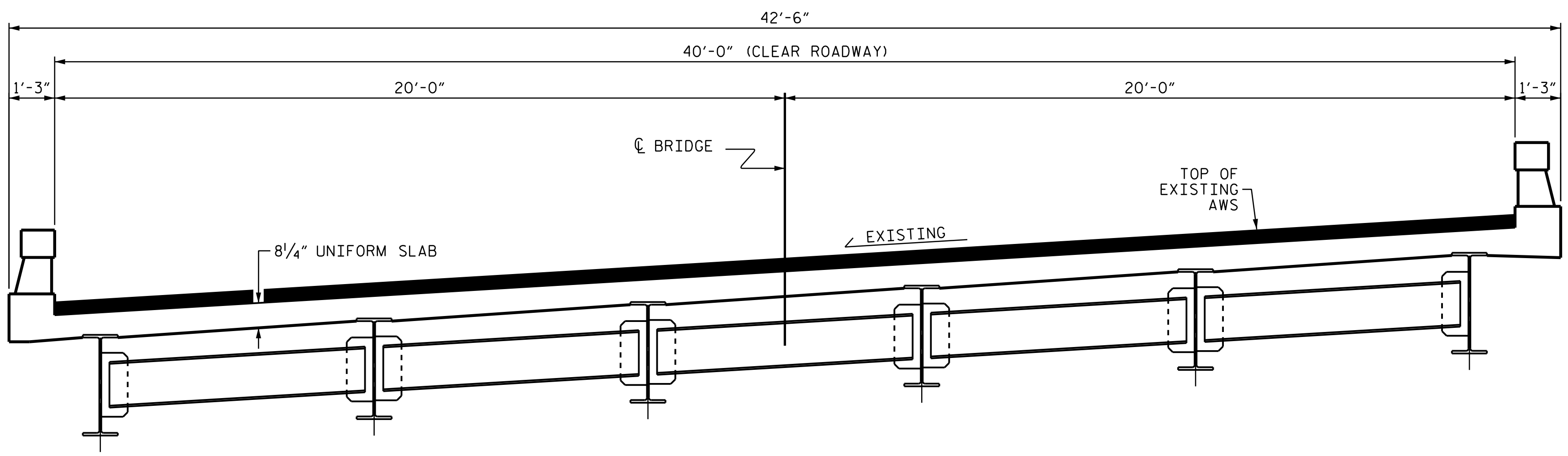
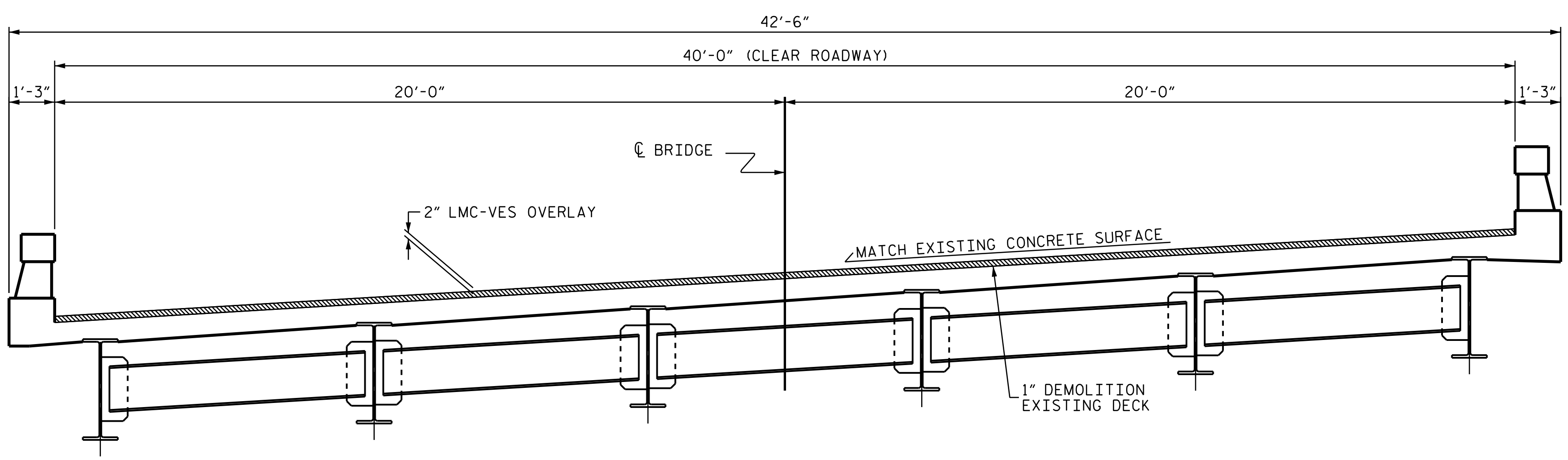


TYPICAL SECTION
(EXISTING)

HORIZONTAL ROADWAY DIMENSIONS ARE RADIAL

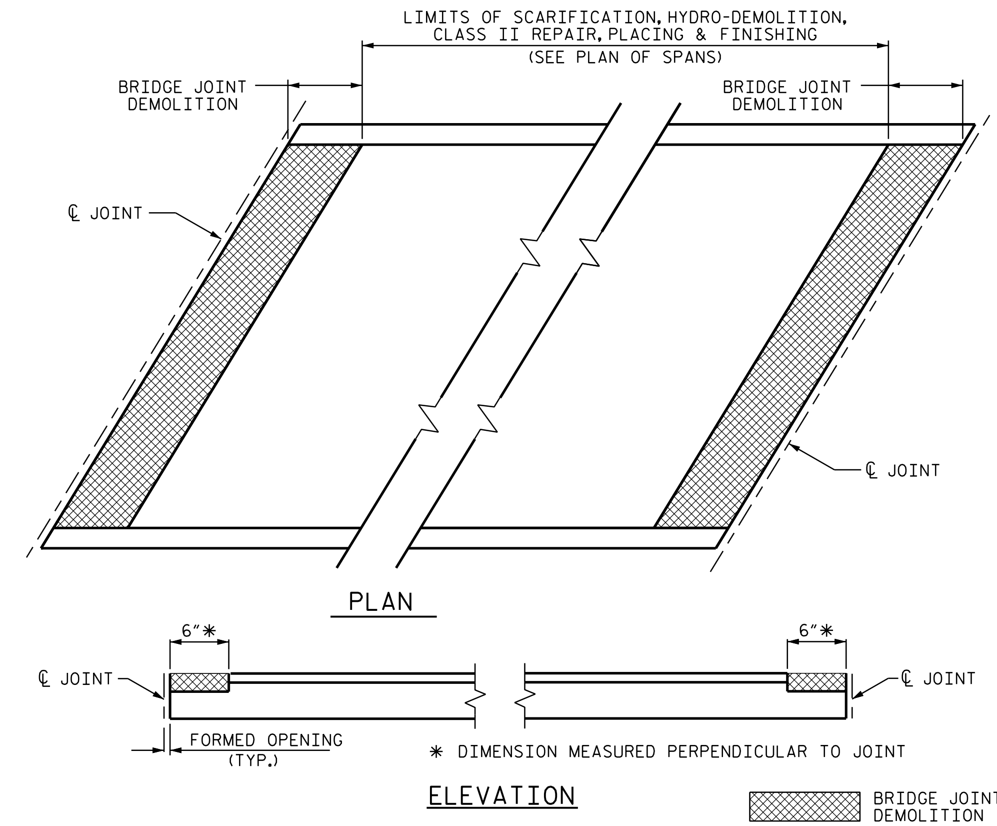


TYPICAL SECTION
(PROPOSED)

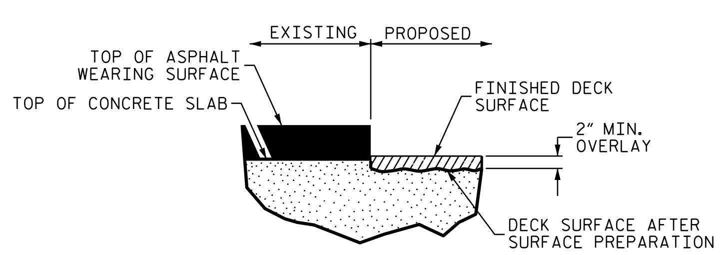
NOTES

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

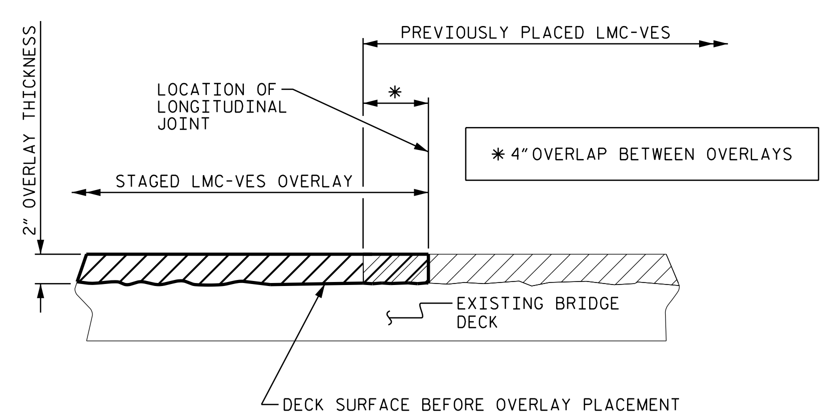
WHEN PREPARING THE SURFACE FOR AN LMC-VES OVERLAY ADJACENT TO A PREVIOUSLY PLACED LMC-VES STAGE, THE PREVIOUSLY PLACED LMC-VES SHALL BE REMOVED FOR A DISTANCE OF 4 INCHES FROM THE EDGE OF THE LMC-VES. THE SURFACE OF THE NEW STAGE AREA, ALONG WITH THE 4 INCH OVERLAY AREA, SHALL BE PREPARED AS PER THE OVERLAY SURFACE PREPARATION SPECIAL PROVISION. NEW LMC-VES SHALL BE PLACED IN THE 4 INCH OVERLAP AS PART OF THE NEW LMC-VES STAGE PLACEMENT.



PAY LIMITS FOR OVERLAY BID ITEMS



DETAIL FOR LMC-VES OVERLAY



STAGED LMC-VES OVERLAY CONSTRUCTION JOINT
(AS NEEDED)

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO: 421

DocuSigned by: John A. Yannaccone
7BC3...

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 32492 JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION AND SURFACE PREPARATION DETAILS

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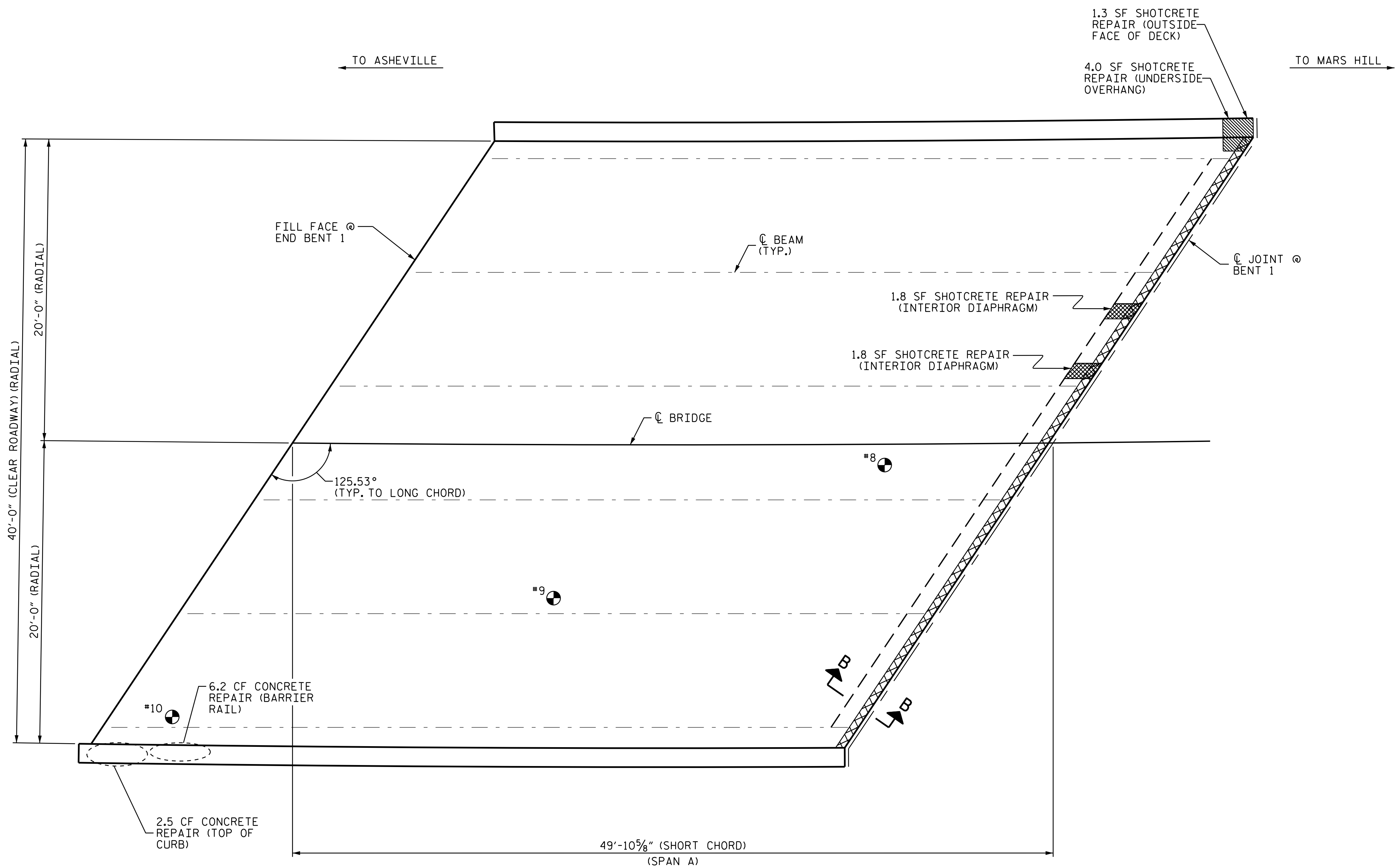

PLAN

AS-BUILT REPAIR QUANTITY TABLE		
TOP OF DECK REPAIRS		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	219 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	219 SY	
CLASS II SURFACE PREPARATION	20.0 SY ✱	
CLASS III SURFACE PREPARATION	0.5 SY ✱	
BRIDGE JOINT DEMOLITION	24.3 SF	
CONCRETE FOR DECK REPAIR	3.0 CF ✱	
CONCRETE REPAIRS (RAIL AND CURB)	8.7 CF	

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	4.0	2.5 ♦		
INTERIOR DIAPHRAGMS	3.6	2.2 ♦		
OUTSIDE FACE OF DECK	1.3	0.8 ♦		

	ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION	0.0 LF	

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

- APPROX. CLASS II AREA
- APPROX. CLASS III AREA
- BRIDGE JOINT DEMOLITION
- UNDERSIDE REPAIR
- DIAPHRAGM REPAIR
- #1 TEST LOCATION
- ERI EPOXY RESIN INJECTION

TEST LOCATION	ASPHALT THICKNESS (INCH)	CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#8	5"	1 1/2" ★	■
#9	5 3/4"	1 1/2" ★	■
#10	4 1/2"	1 1/2" ★	■

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 4/25/2016.
★ CONCRETE COVER FOR TOP BARS IN THE DECK IS PER THE EXISTING BRIDGE PLANS.
■ CONCRETE COMPRESSIVE STRENGTH COULD NOT BE TESTED DUE TO THE PRESENCE OF ASPHALT OVERLAY.

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 SECTION B-B, SEE "JOINT DETAILS" SHEET.

FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

✱ CLASS II SURFACE PREPARATION, CLASS III SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR ARE NOT ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSES IN CASE UNANTICIPATED CLASS II OR CLASS III AREAS ARE ENCOUNTERED.

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

DocuSigned by: John A. Yannaccone
7BC3...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

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PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 421
SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPANS
SPAN A

REVISIONS								SHEET NO.
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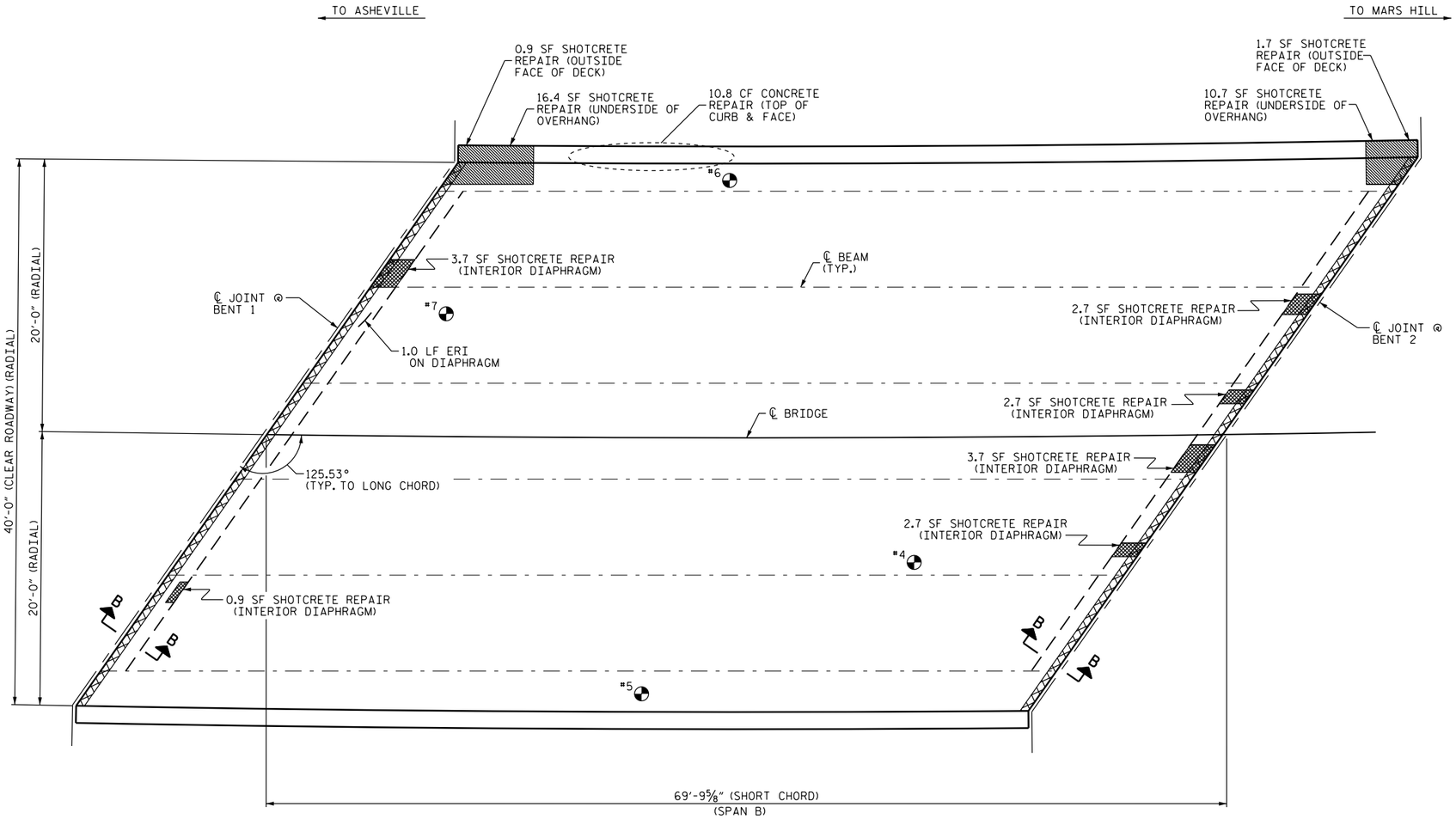

PLAN

TEST LOCATION	ASPHALT THICKNESS (INCH)	CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#4	5¼"	1½" ★	■
#5	5¾"	1½" ★	■
#6	5¼"	1½" ★	■
#7	5"	1½" ★	■

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 4/25/2016.
★ CONCRETE COVER FOR TOP BARS IN THE DECK IS PER THE EXISTING BRIDGE PLANS.
■ CONCRETE COMPRESSIVE STRENGTH COULD NOT BE TESTED DUE TO THE PRESENCE OF ASPHALT OVERLAY.

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	305 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	305 SY	
CLASS II SURFACE PREPARATION	30.0 SY ✳	
CLASS III SURFACE PREPARATION	0.5 SY ✳	
BRIDGE JOINT DEMOLITION	48.9 SF	
CONCRETE FOR DECK REPAIR	3.0 CF ✳	
CONCRETE REPAIRS (RAIL AND CURB)	10.8 CF	

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	27.1	17.0 ♦		
INTERIOR DIAPHRAGMS	16.4	10.3 ♦		
OUTSIDE FACE OF DECK	2.6	1.6 ♦		

	ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION	1.0 LF	

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

- APPROX. CLASS II AREA
- APPROX. CLASS III AREA
- BRIDGE JOINT DEMOLITION
- UNDERSIDE REPAIR
- DIAPHRAGM REPAIR
- #1 TEST LOCATION
- ERI 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 AS-BUILT REPAIR QUANTITY TABLE.

FOR SECTION B-B, SEE "JOINT DETAILS" SHEET.

FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

✳ CLASS II SURFACE PREPARATION, CLASS III SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR ARE NOT ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSES IN CASE UNANTICIPATED CLASS II OR CLASS III AREAS ARE ENCOUNTERED.

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

DocuSigned by:
John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

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PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 421

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPANS
SPAN B

REVISIONS						SHEET NO.
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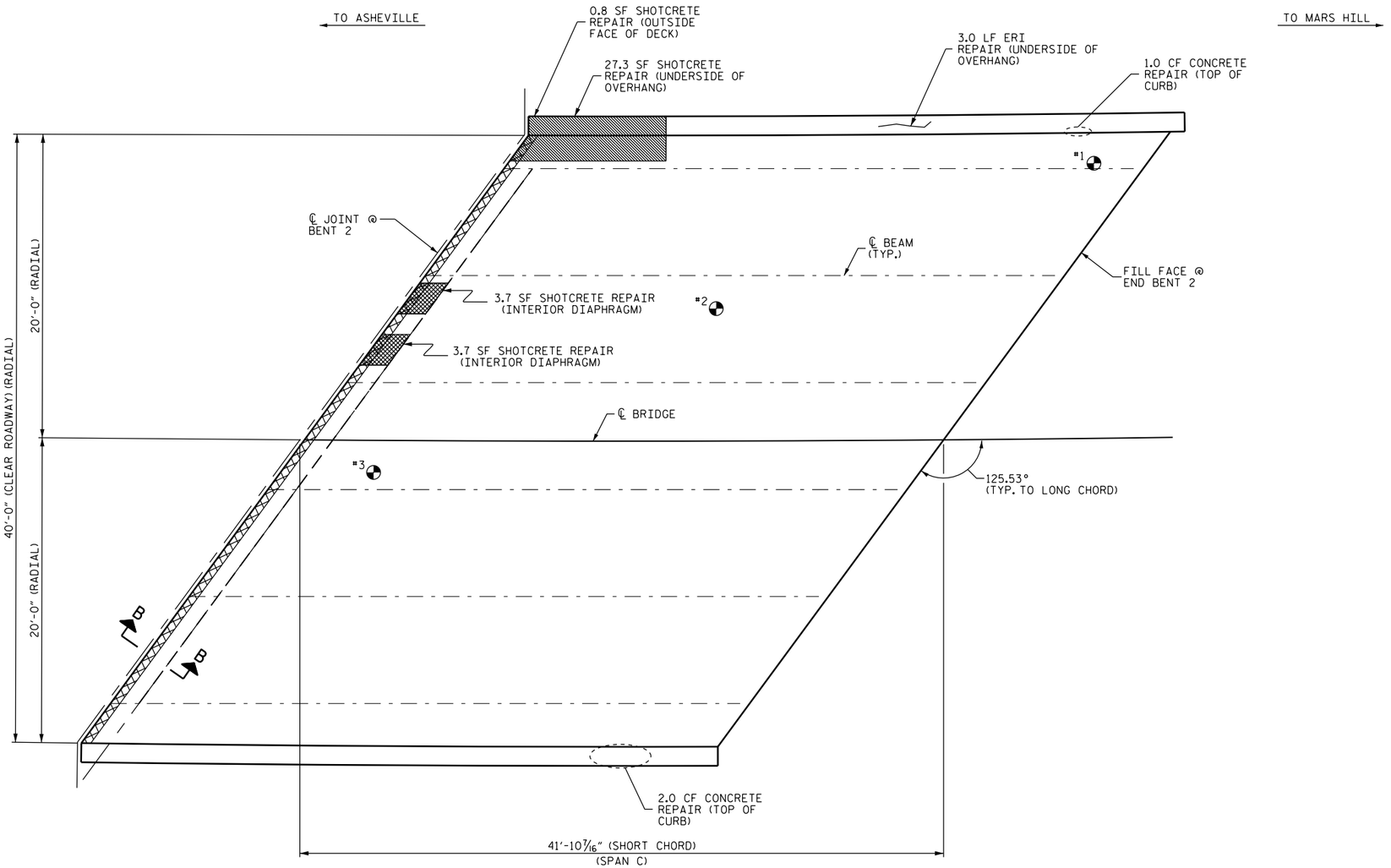
1			3			TOTAL SHEETS
2			4			68



PLAN

TEST LOCATION	ASPHALT THICKNESS (INCH)	CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#1	4¾"	1½" ★	■
#2	5½"	1½" ★	■
#3	5"	1½" ★	■

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 4/25/2016.
★ CONCRETE COVER FOR TOP BARS IN THE DECK IS PER THE EXISTING BRIDGE PLANS.
■ CONCRETE COMPRESSIVE STRENGTH COULD NOT BE TESTED DUE TO THE PRESENCE OF ASPHALT OVERLAY.

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	184 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	184 SY	
CLASS II SURFACE PREPARATION	20.0 SY ✳	
CLASS III SURFACE PREPARATION	0.5 SY ✳	
BRIDGE JOINT DEMOLITION	24.7 SF	
CONCRETE FOR DECK REPAIR	3.0 CF ✳	
CONCRETE REPAIRS (RAIL AND CURB)	3.0 CF	

UNDERSIDE OF DECK REPAIRS

SHOTCRETE REPAIRS	ESTIMATE AREA SF	ESTIMATE VOLUME CF	ACTUAL AREA SF	ACTUAL VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	27.3	17.2♦		
INTERIOR DIAPHRAGMS	7.4	4.7♦		
OUTSIDE FACE OF DECK	0.8	0.5♦		

	ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION	3.0 LF	

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

- APPROX. CLASS II AREA
- APPROX. CLASS III AREA
- BRIDGE JOINT DEMOLITION
- UNDERSIDE REPAIR
- DIAPHRAGM REPAIR
- #1 TEST LOCATION
- ERI EPOXY RESIN INJECTION

NOTES

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FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

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

DocuSigned by:
John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

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PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 421
SHEET 3 OF 3

STATE OF NORTH CAROLINA
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RALEIGH

PLAN OF SPANS
SPAN C

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NOTES

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

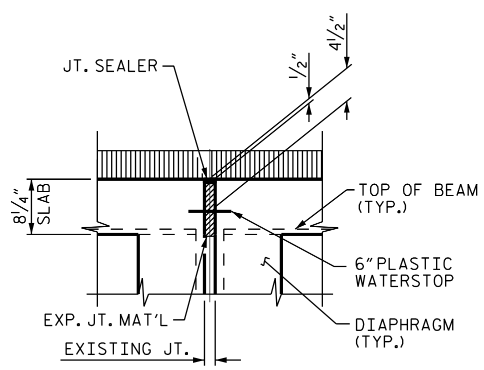
THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.

NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2″ AT BENTS 1 AND 2.

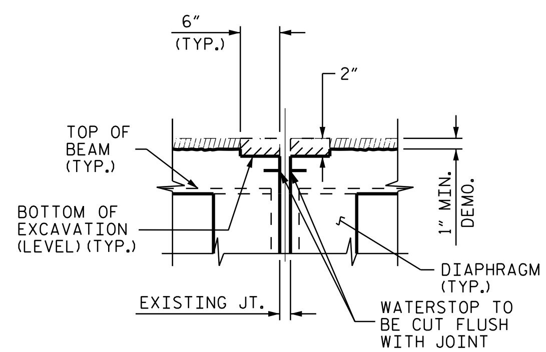
THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.

ELASTOMERIC CONCRETE		
BENT 1	12.1	(CU. FT.)
BENT 2	12.4	(CU. FT.)
∗ TOTAL	24.5	(CU. FT.)

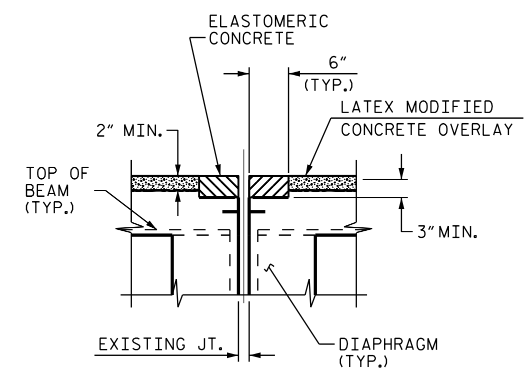
∗ BASED ON THE MINIMUM BLOCKOUT SHOWN.



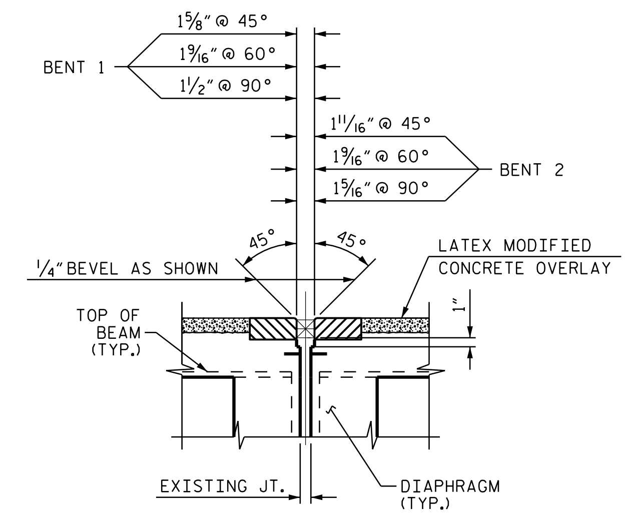
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION



PROPOSED JOINT PRE-SAWED

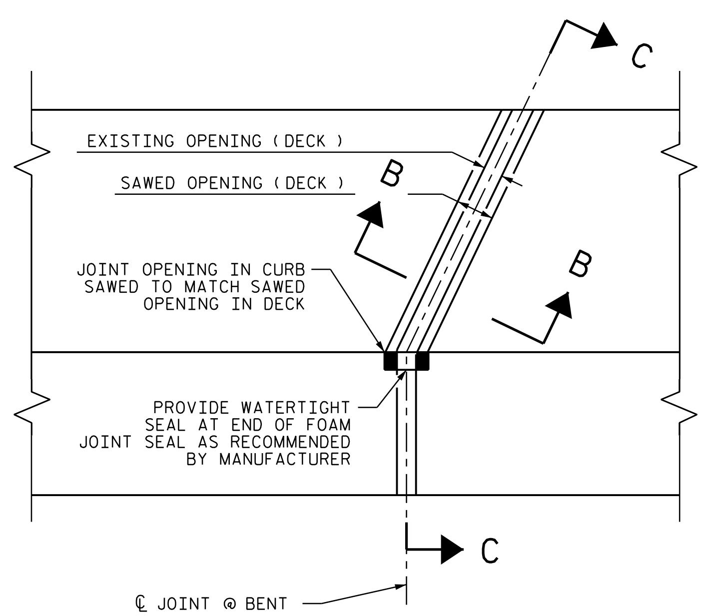


PROPOSED FOAM JOINT SEAL

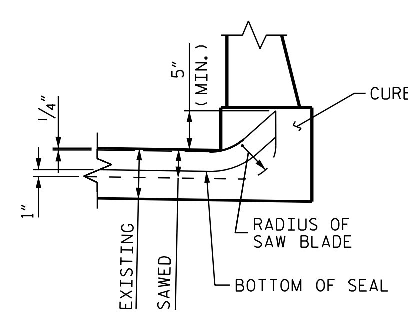
SECTION B-B

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

DEMOLISH BRIDGE JOINT AREA TO THE NECESSARY DEPTH, SUCH THAT ELASTOMERIC CONCRETE SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE, NOT LATEX MODIFIED CONCRETE.



PLAN



SECTION C-C

FOAM JOINT SEAL SHALL BE FACTORY FORMED OR CUT, HEAT WELDED AND TURNED UP PARALLEL TO FACE OF CURB.

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 421

DocuSigned by:
John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

JOINT DETAILS

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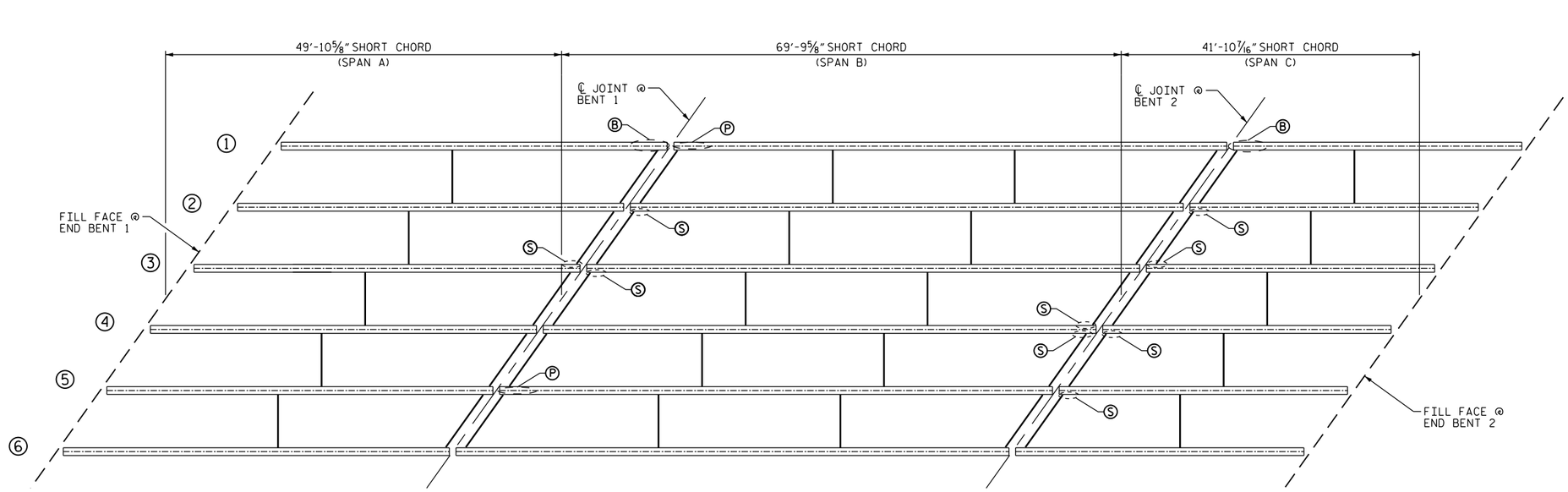

BEAM REPAIR LOCATIONS

(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	6"	5'-0"	—	—
A	3	BENT 1	6"	—	—	—
B	1	BENT 1	1'-2"	2'-9"	—	—
B	2	BENT 1	6"	—	—	—
B	3	BENT 1	8"	—	—	—
B	5	BENT 1	2'-6"	6"	—	—
B	4	BENT 2	5"	—	—	—
B	4	BENT 2	6"	—	—	—
C	1	BENT 2	2-6"	1'-4"	1'-2"	2'-8"
C	2	BENT 2	4"	—	—	—
C	3	BENT 2	3"	—	—	—
C	4	BENT 2	5"	—	—	—
C	5	BENT 2	4"	—	—	—

① BEAM NUMBER
Ⓑ BEAM END REPAIR
Ⓟ PLATING REPAIR
Ⓢ STIFFENER REPAIR
Ⓓ DIAPHRAGM REPAIR

NOTES

FOR BEAM REPAIR DETAILS, SEE "BEAM END AND INTERMEDIATE REPAIR DETAILS" AND "BEAM PLATING REPAIR DETAILS" SHEETS.

FOR BRIDGE JACKING DETAILS, SEE "JACKING 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 EXTENT OF REPAIR AREAS PRIOR TO STEEL FABRICATION.

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

BEAM REPAIR QUANTITY TABLE

BEAM END REPAIR		PLATING REPAIR		STIFFENER REPAIR		DIAPHRAGM REPAIR	
LBS.		LBS.		LBS.		LBS.	
ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
585		220		55		—	

PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 421

DocuSigned by:
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BEAM REPAIR LOCATIONS

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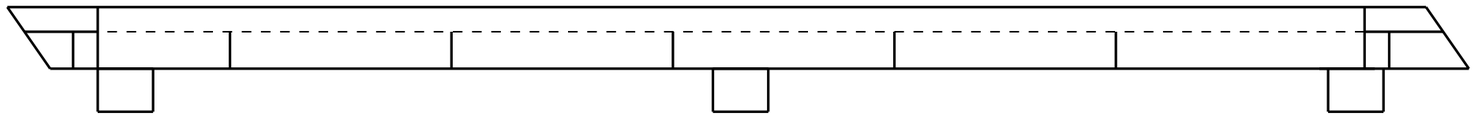
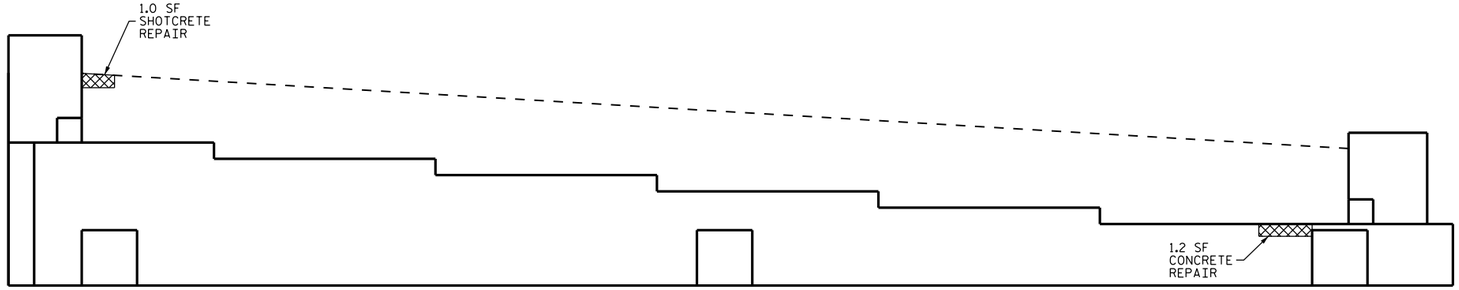
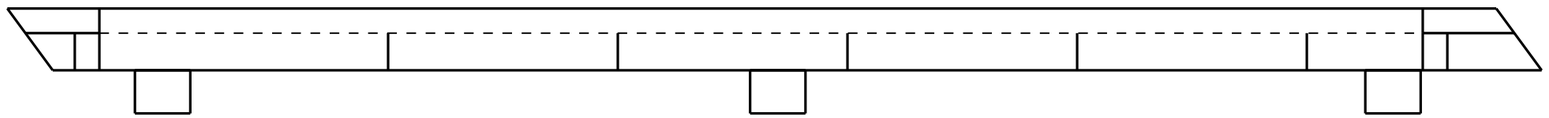


PLAN



ELEVATION

END BENT 1



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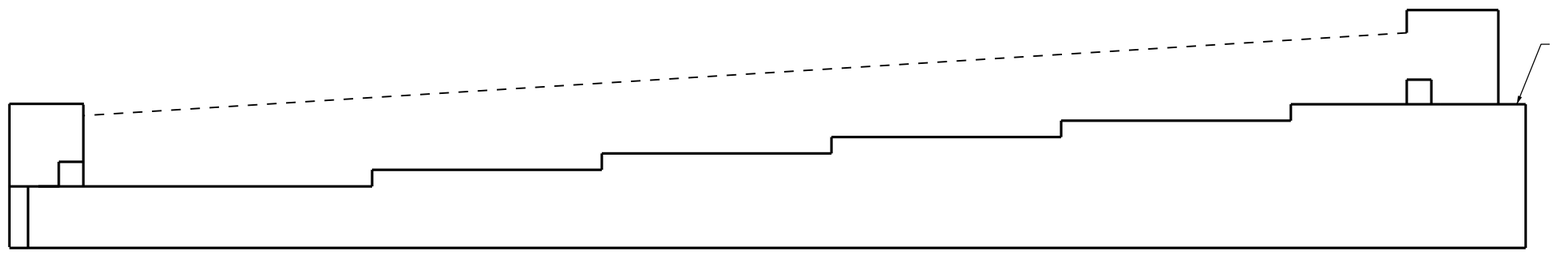

ELEVATION

END BENT 2

AS-BUILT REPAIR QUANTITY TABLE

END BENT 1 REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	1.0	0.5 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	1.2	1.0 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0.0		

END BENT 2 REPAIRS	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	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		2.0		

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

NOTES:

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

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

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

* 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-5892

BUNCOMBE COUNTY

BRIDGE NO. 421

DocuSigned by:
John A. Yannaccone
7BC3[illegible]345C...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENTS 1 & 2

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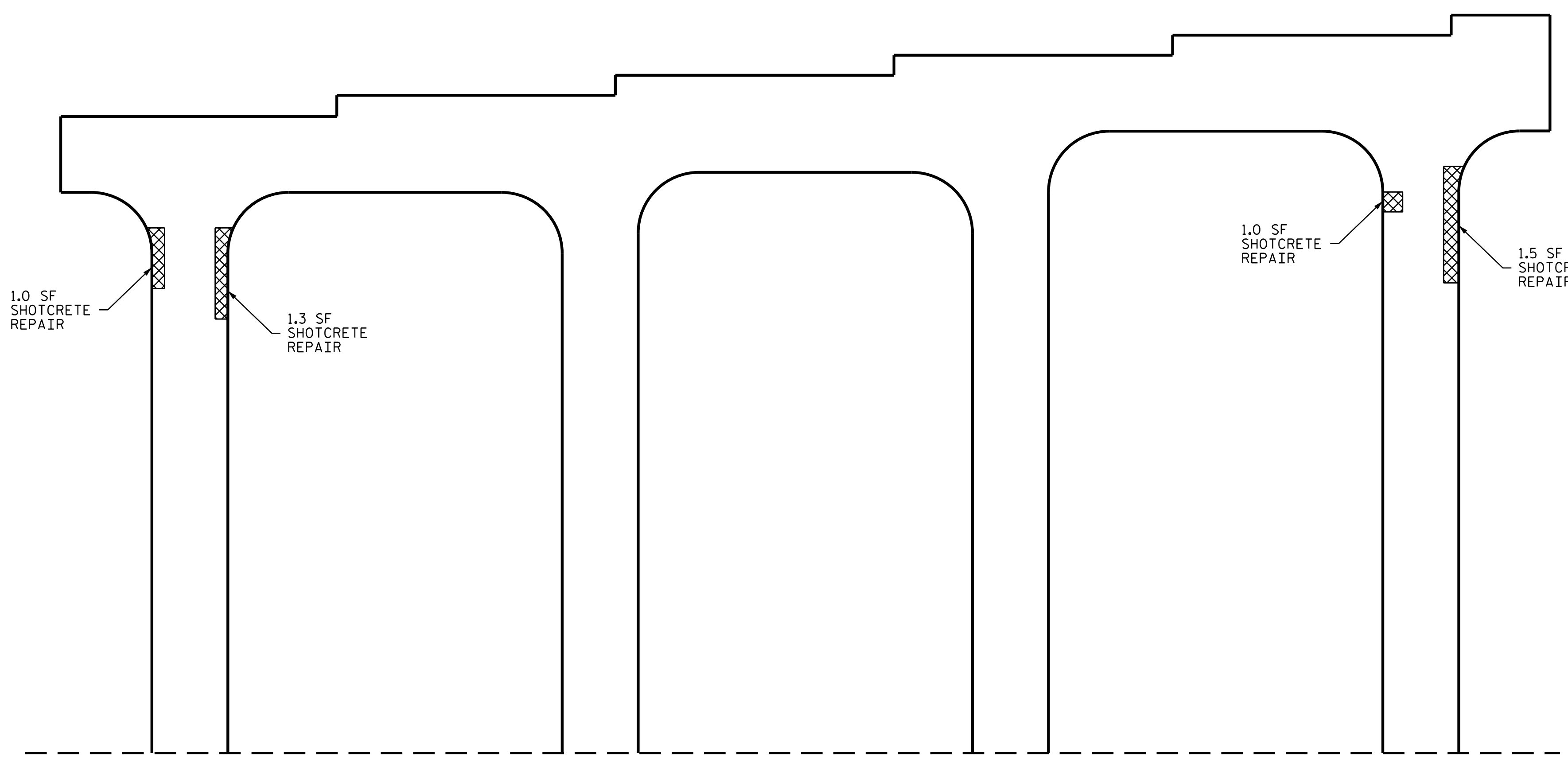
jayannaccone

TOP OF CAP

AS-BUILT REPAIR QUANTITY TABLE

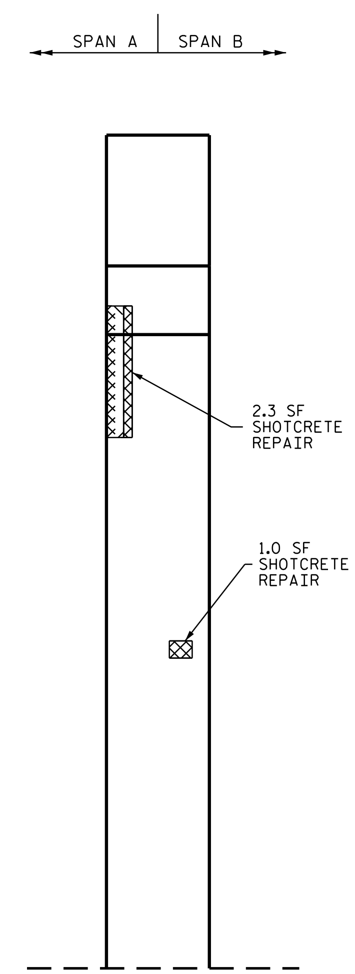
BENT 1 REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	11.1	6.9 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	1.0	0.5 *		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		1.0		
COLUMN		1.7		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		147		

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



ELEVATION
(SPAN A FACE)

BENT 1



END VIEW

NOTES:

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. 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 PROVISION.

* 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-5892

BUNCOMBE COUNTY

BRIDGE NO. 421

SHEET 1 OF 4

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

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BENT 1
SPAN A FACE

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NOTES:

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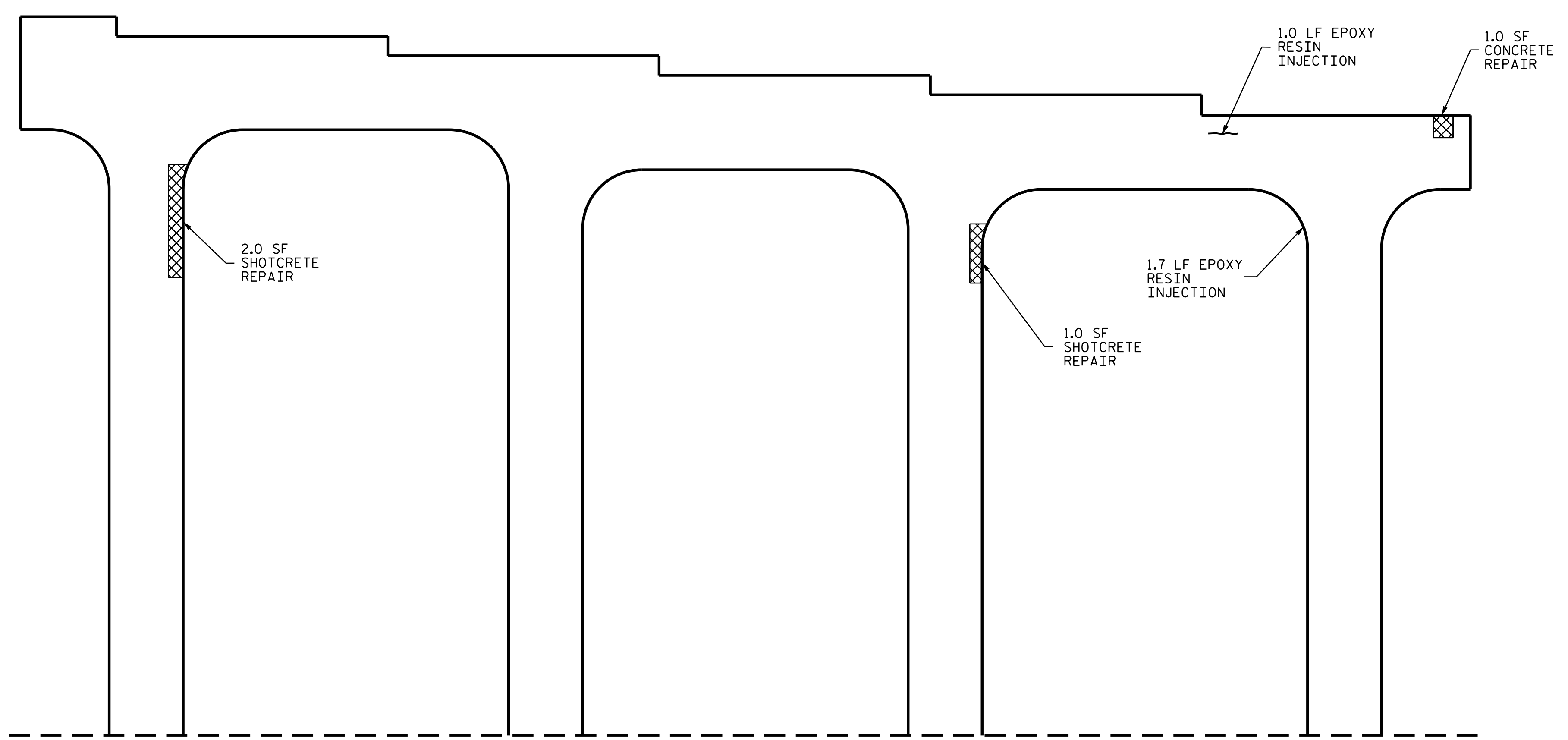
BOTTOM OF CAP

SPAN B
SPAN A

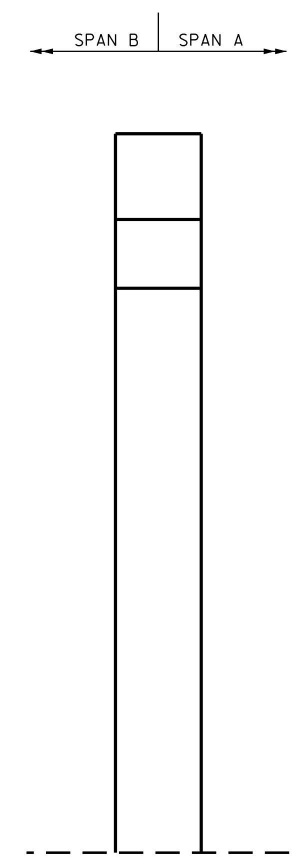
DAMAGED AREA

EPOXY RESIN INJECTION



ELEVATION
(SPAN B FACE)

BENT 1



END VIEW

PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 421
SHEET 2 OF 4

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John A. Yannaccone
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1/21/2017

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BENT 1
SPAN B FACE

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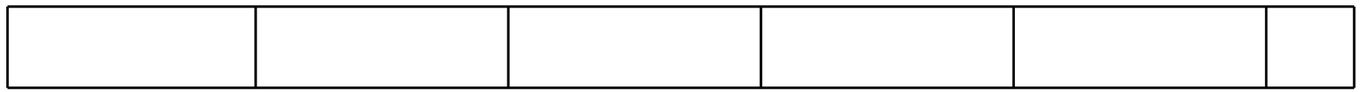
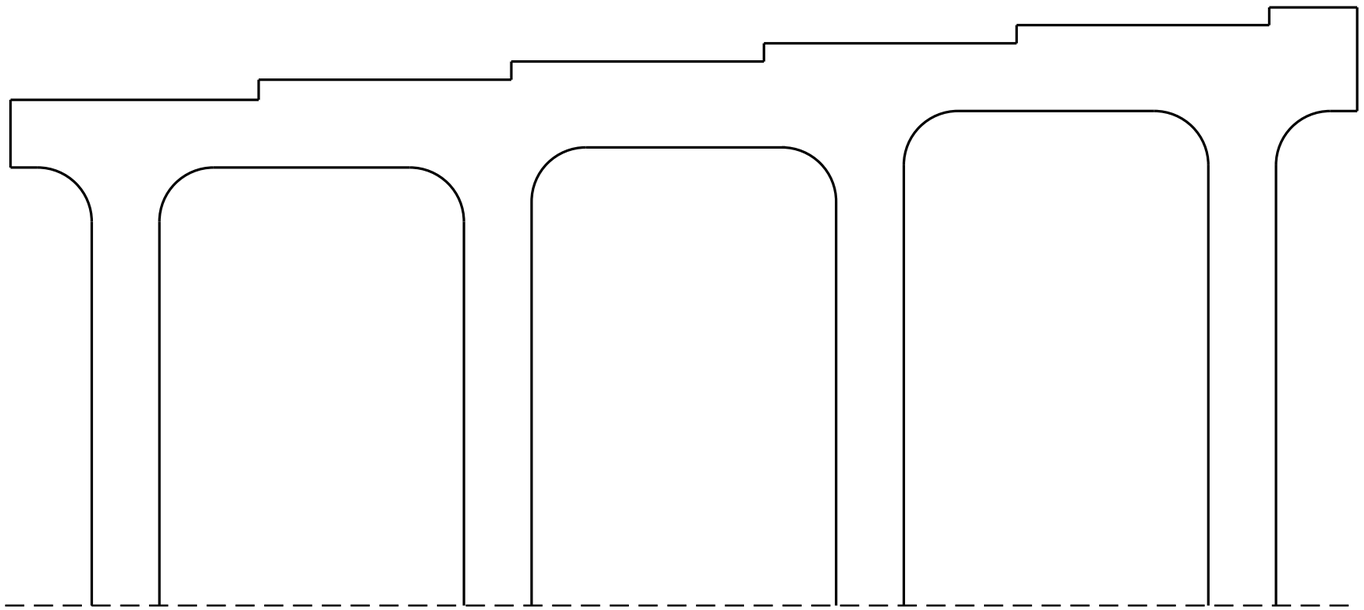
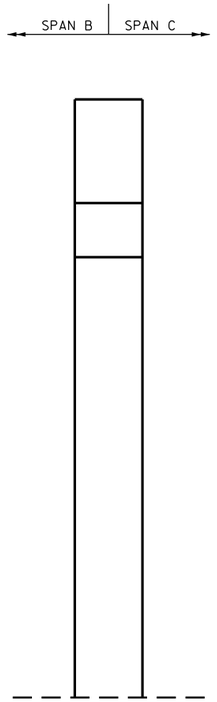


TOP OF CAP



ELEVATION
(SPAN B FACE)

BENT 2



END VIEW

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

AS-BUILT REPAIR QUANTITY TABLE

BENT 2 REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	5.5	3.5 *		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	24.9	15.6 *		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0.0		
COLUMN		1.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		149		

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

NOTES:

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

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. 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 PROVISION.

* 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-5892
BUNCOMBE **COUNTY**
BRIDGE NO. 421

SHEET 3 OF 4

DocuSigned by:
John A. Yannaccone
7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2
SPAN B FACE

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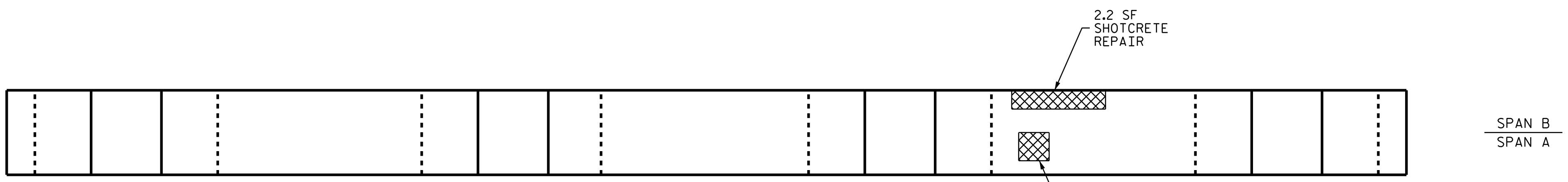

BOTTOM OF CAP

NOTES:

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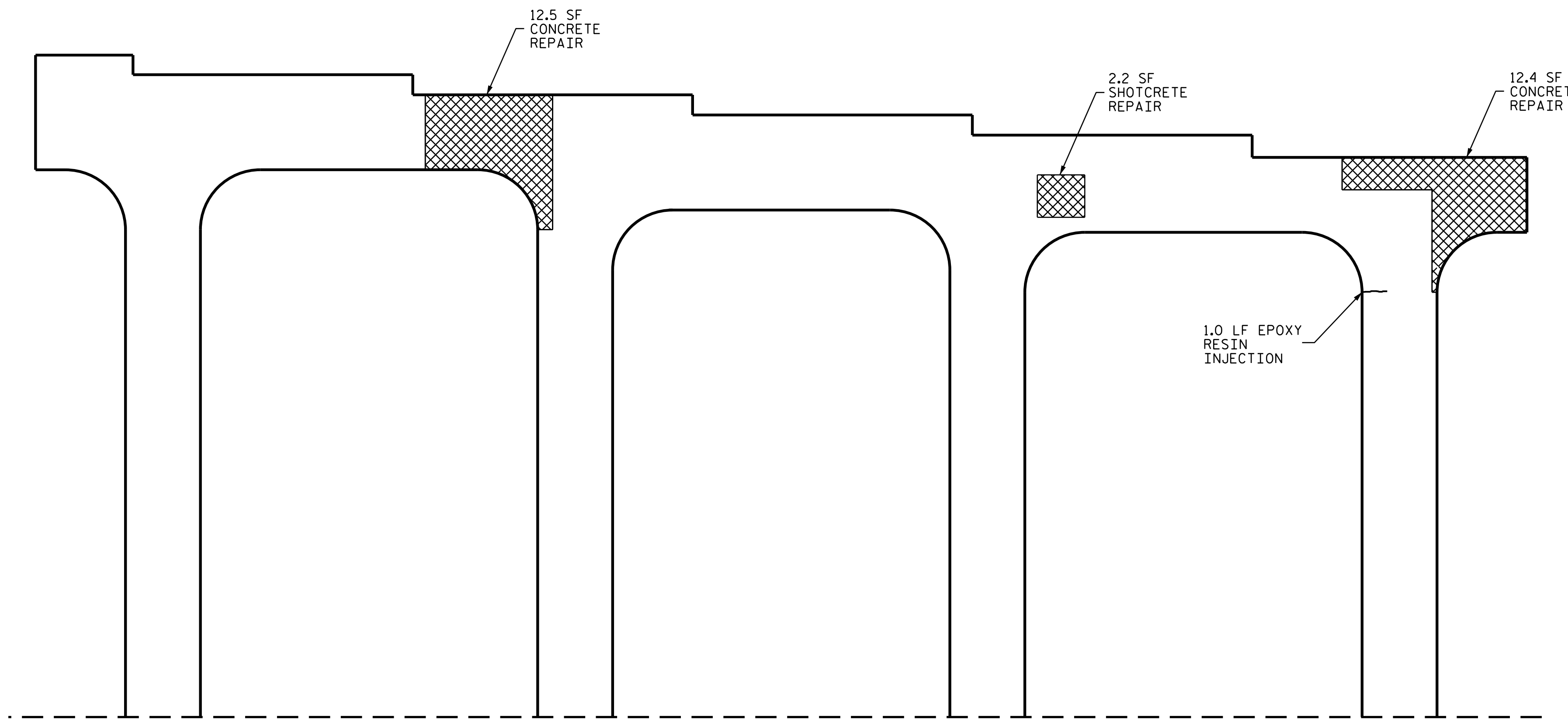
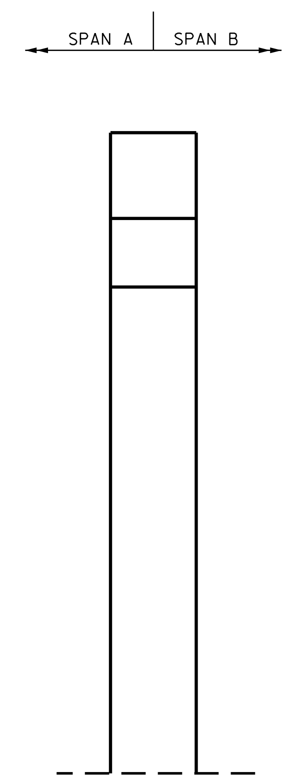
DAMAGED AREA

EPOXY RESIN INJECTION



ELEVATION
(SPAN C FACE)



END VIEW

BENT 2

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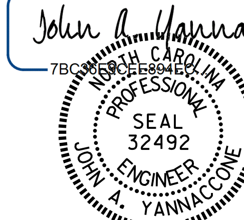
John A. Yannaccone
7BC...



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PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 421
SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2
SPAN C FACE

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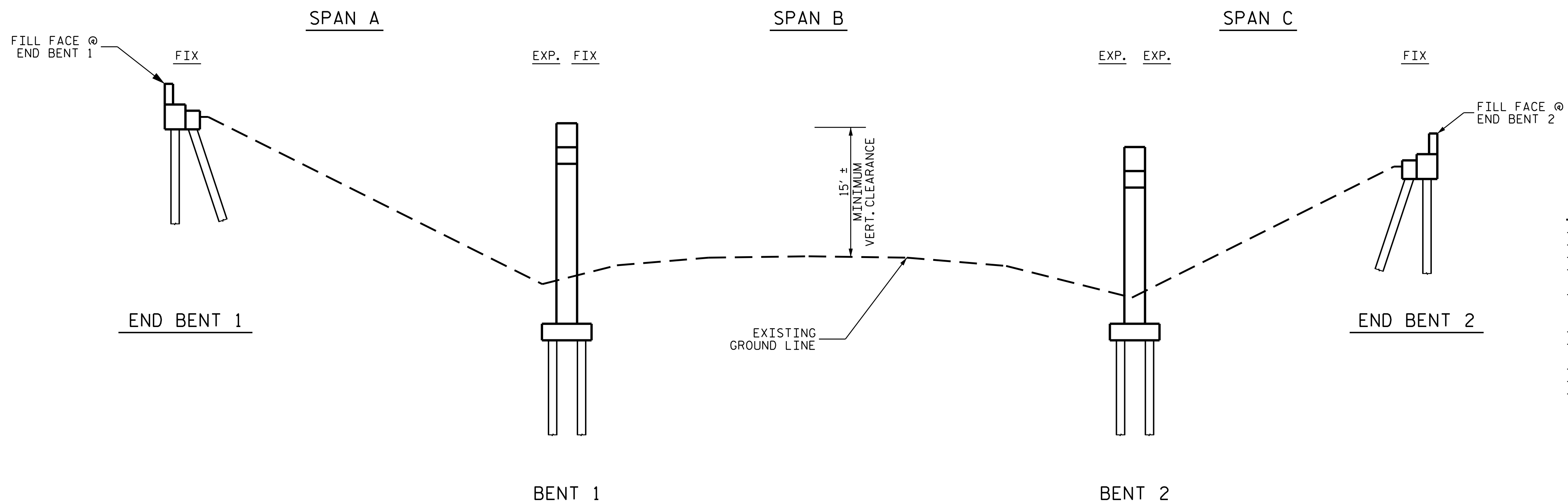
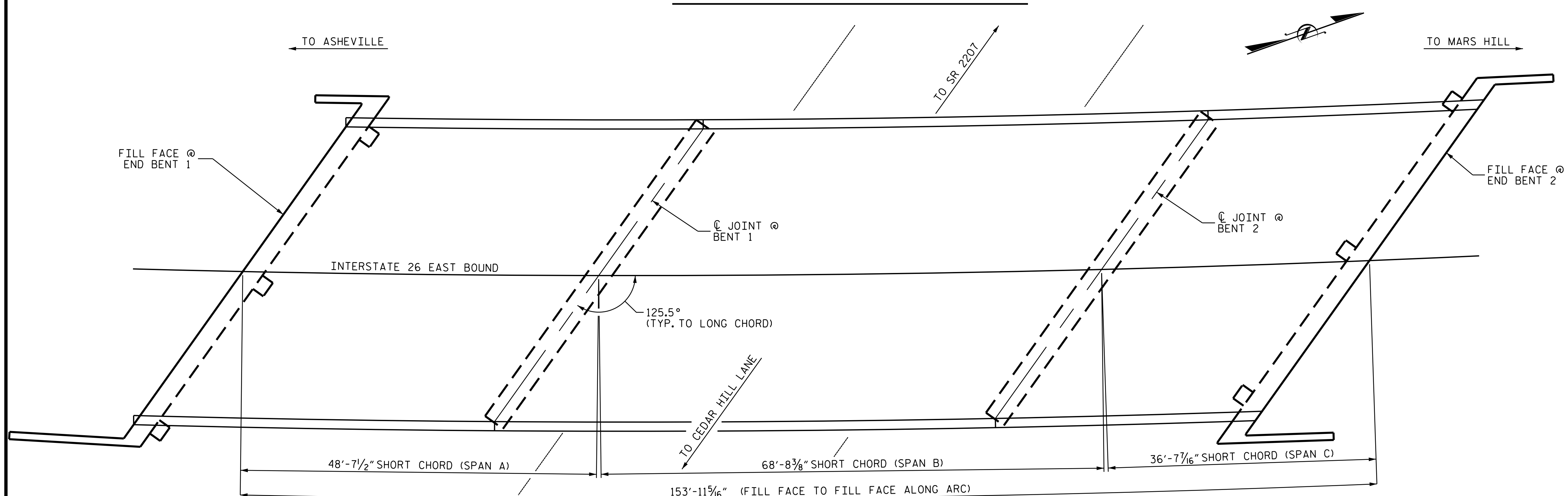


SECTION ALONG ℄ ROADWAY



PLAN

NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 01/28/2015.

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 AND CONCRETE REPAIRS IN PREPARED AREAS.
- PARTIALLY REMOVE ASPHALT WEARING SURFACE AND BRIDGE DECK CONCRETE BY SCARIFICATION AND HYDRO-DEMOLITION METHODS.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- OVERLAY PREPARED BRIDGE DECK WITH LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH.
- RECONSTRUCT BRIDGE JOINTS AND INSTALL JOINT SEALS.
- GROOVE LATEX MODIFIED CONCRETE BRIDGE DECK.
- 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-5892

BUNCOMBE **COUNTY**

BRIDGE NO. 422

SHEET 1 OF 2

DocuSigned by: John A. Yannaccone
7BC2...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-26
OVER SR 2147
(WHITT ROAD)

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LOCATION SKETCH

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

NOTES

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION 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 OVERLAY OF BRIDGE WITH LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK.

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

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

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

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

DURING CONSTRUCTION, BERMS OR APPROPRIATE MEASURES TO CONTROL RUN-OFF SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISONS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISONS.

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

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISONS.

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-5892

BUNCOMBE COUNTY

BRIDGE NO. 422

SHEET 2 OF 2

DocuSigned by:
John A. Yannaccone
7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-26 EBL OVER SR 2147 (WHITT ROAD)

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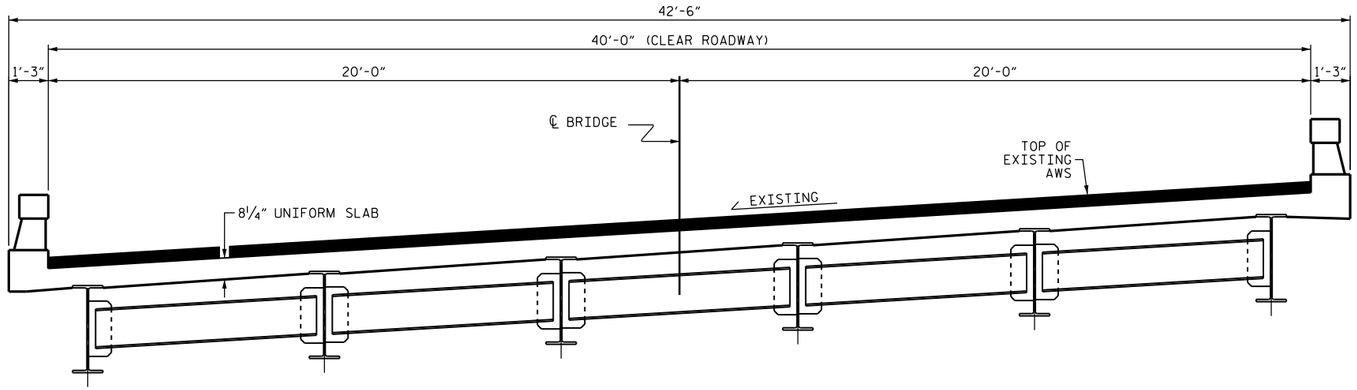
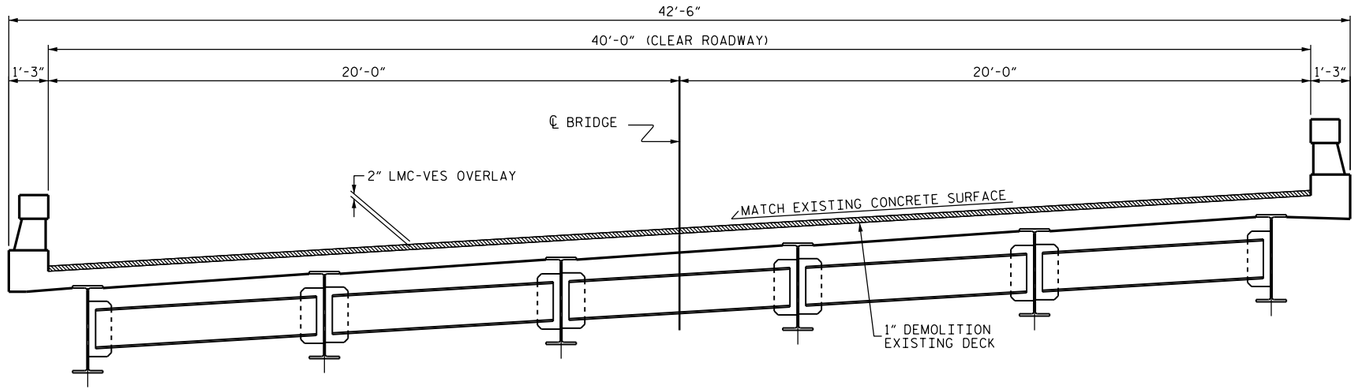


TYPICAL SECTION
(EXISTING)

HORIZONTAL ROADWAY DIMENSIONS ARE RADIAL

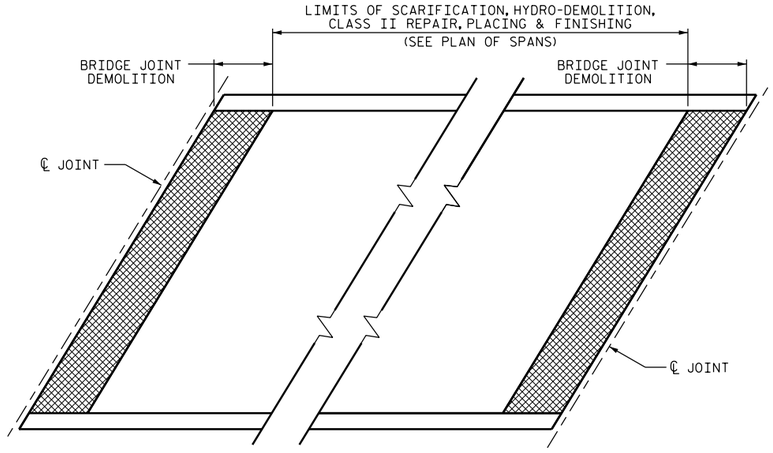


TYPICAL SECTION
(PROPOSED)

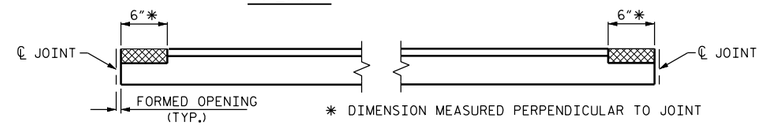
NOTES

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

WHEN PREPARING THE SURFACE FOR AN LMC-VES OVERLAY ADJACENT TO A PREVIOUSLY PLACED LMC-VES STAGE, THE PREVIOUSLY PLACED LMC-VES SHALL BE REMOVED FOR A DISTANCE OF 4 INCHES FROM THE EDGE OF THE LMC-VES. THE SURFACE OF THE NEW STAGE AREA, ALONG WITH THE 4 INCH OVERLAY AREA, SHALL BE PREPARED AS PER THE OVERLAY SURFACE PREPARATION SPECIAL PROVISION. NEW LMC-VES SHALL BE PLACED IN THE 4 INCH OVERLAP AS PART OF THE NEW LMC-VES STAGE PLACEMENT.



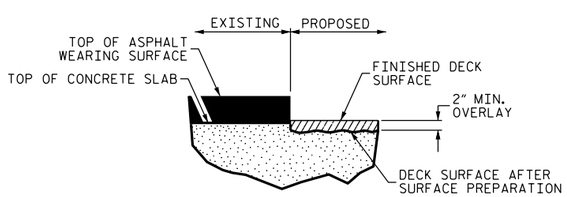
PLAN



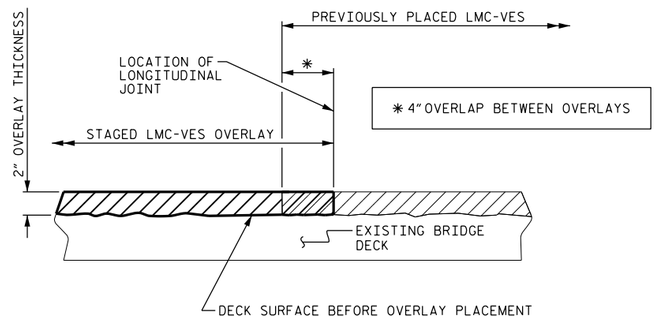
ELEVATION

BRIDGE JOINT DEMOLITION

PAY LIMITS FOR OVERLAY BID ITEMS



DETAIL FOR LMC-VES OVERLAY



STAGED LMC-VES OVERLAY CONSTRUCTION JOINT
(AS NEEDED)

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO: 422

DocuSigned by:
John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION AND SURFACE PREPARATION DETAILS

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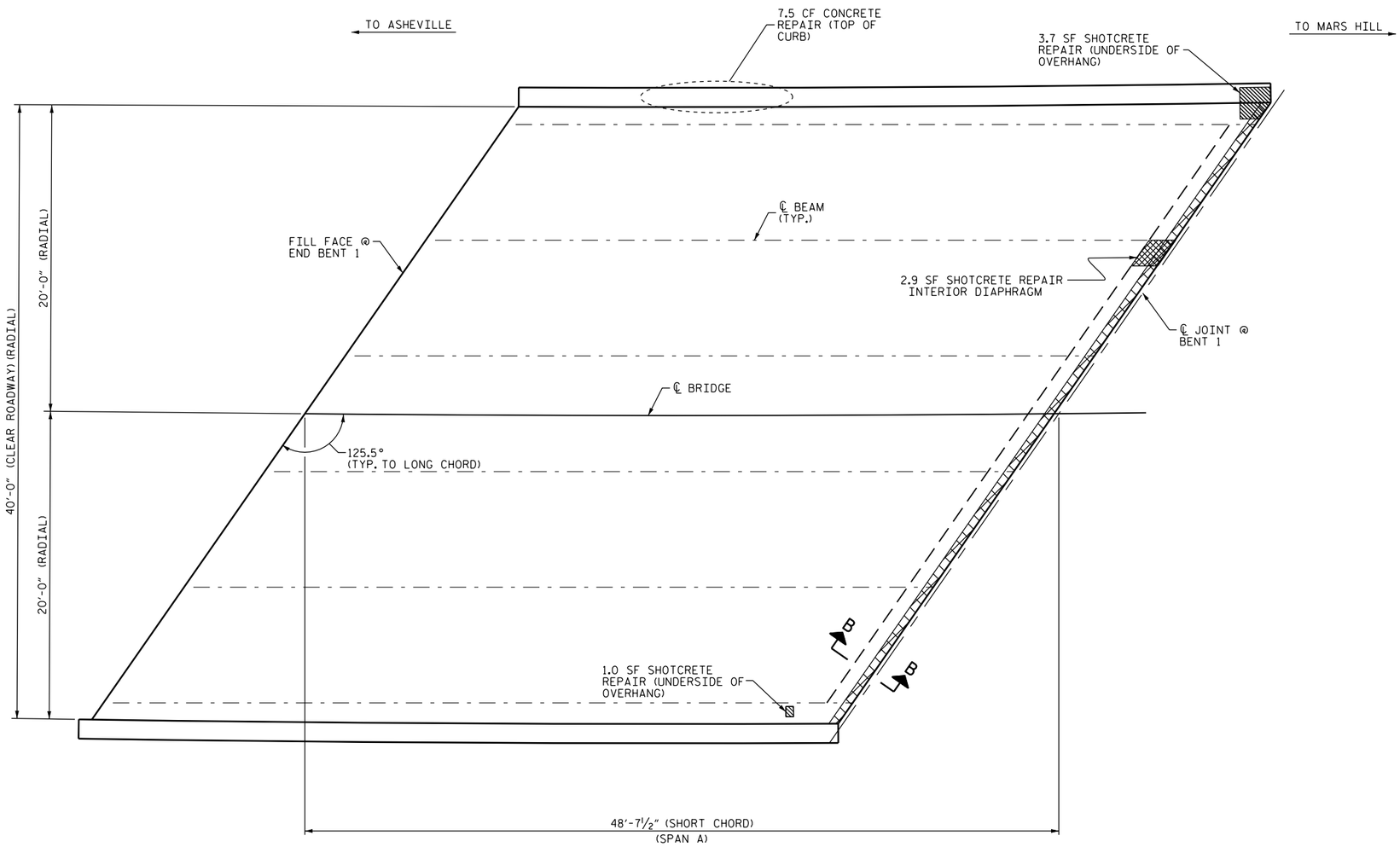

PLAN

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	213 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	213 SY	
CLASS II SURFACE PREPARATION	20.0 SY ✳	
CLASS III SURFACE PREPARATION	0.5 SY ✳	
BRIDGE JOINT DEMOLITION	24.6 SF	
CONCRETE FOR DECK REPAIR	3.0 CF ✳	
CONCRETE REPAIRS (TOP OF CURB)	7.5 CF	

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	4.7	3.0 ♦		
INTERIOR DIAPHRAGMS	2.9	1.8 ♦		

	ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION	0.0 LF	

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

- APPROX. CLASS II AREA
- APPROX. CLASS III AREA
- BRIDGE JOINT DEMOLITION
- UNDERSIDE REPAIR
- DIAPHRAGM REPAIR
- #1 TEST LOCATION
- ERI EPOXY RESIN INJECTION

NOTES

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 SECTION B-B, SEE "JOINT DETAILS" SHEET.

FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

✳ CLASS II SURFACE PREPARATION, CLASS III SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR ARE NOT ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSES IN CASE UNANTICIPATED CLASS II OR CLASS III AREAS ARE ENCOUNTERED.

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

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 422

SHEET 1 OF 3

DocuSigned by:
John A. Yannaccone
7BC[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPANS
SPAN A

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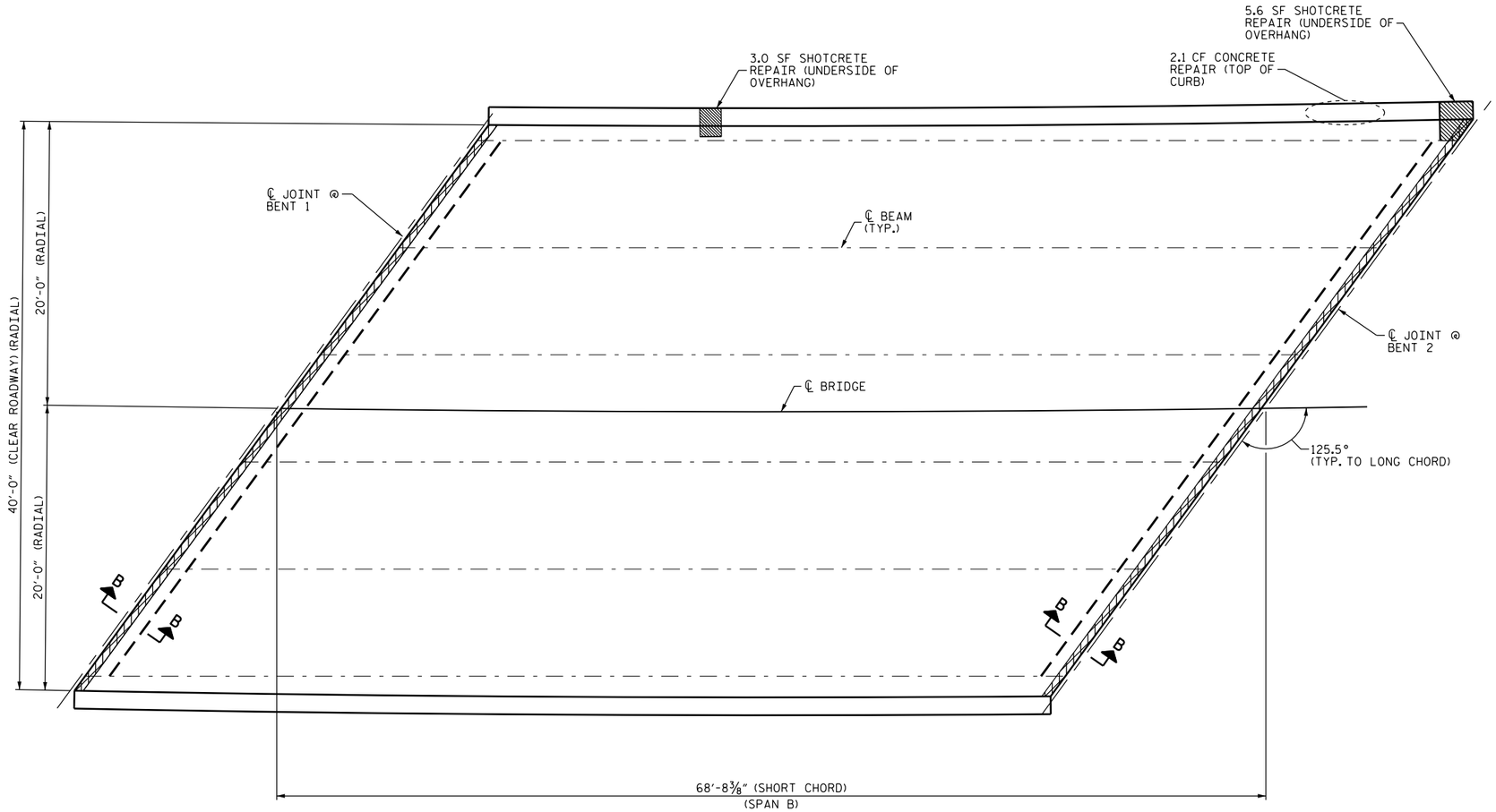

PLAN

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	300 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	300 SY	
CLASS II SURFACE PREPARATION	30.0 SY ✳	
CLASS III SURFACE PREPARATION	0.5 SY ✳	
BRIDGE JOINT DEMOLITION	49.6 SF	
CONCRETE FOR DECK REPAIR	3.0 CF ✳	
CONCRETE REPAIRS (TOP OF CURB)	2.1 CF	

UNDERSIDE OF DECK REPAIRS

SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	8.6	5.4 ♦		
INTERIOR DIAPHRAGMS	0.0	0.0		

	ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION	0.0 LF	

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

- APPROX. CLASS II AREA
- APPROX. CLASS III AREA
- BRIDGE JOINT DEMOLITION
- UNDERSIDE REPAIR
- DIAPHRAGM REPAIR
- #1 TEST LOCATION
- ERI 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 AS-BUILT REPAIR QUANTITY TABLE.

FOR SECTION B-B, SEE "JOINT DETAILS" SHEET.

FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

✳ CLASS II SURFACE PREPARATION, CLASS III SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR ARE NOT ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSES IN CASE UNANTICIPATED CLASS II OR CLASS III AREAS ARE ENCOUNTERED.

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

DocuSigned by:
John A. Yannaccone
7BC0[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

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PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 422

SHEET 2 OF 3

STATE OF NORTH CAROLINA
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RALEIGH

PLAN OF SPANS
SPAN B

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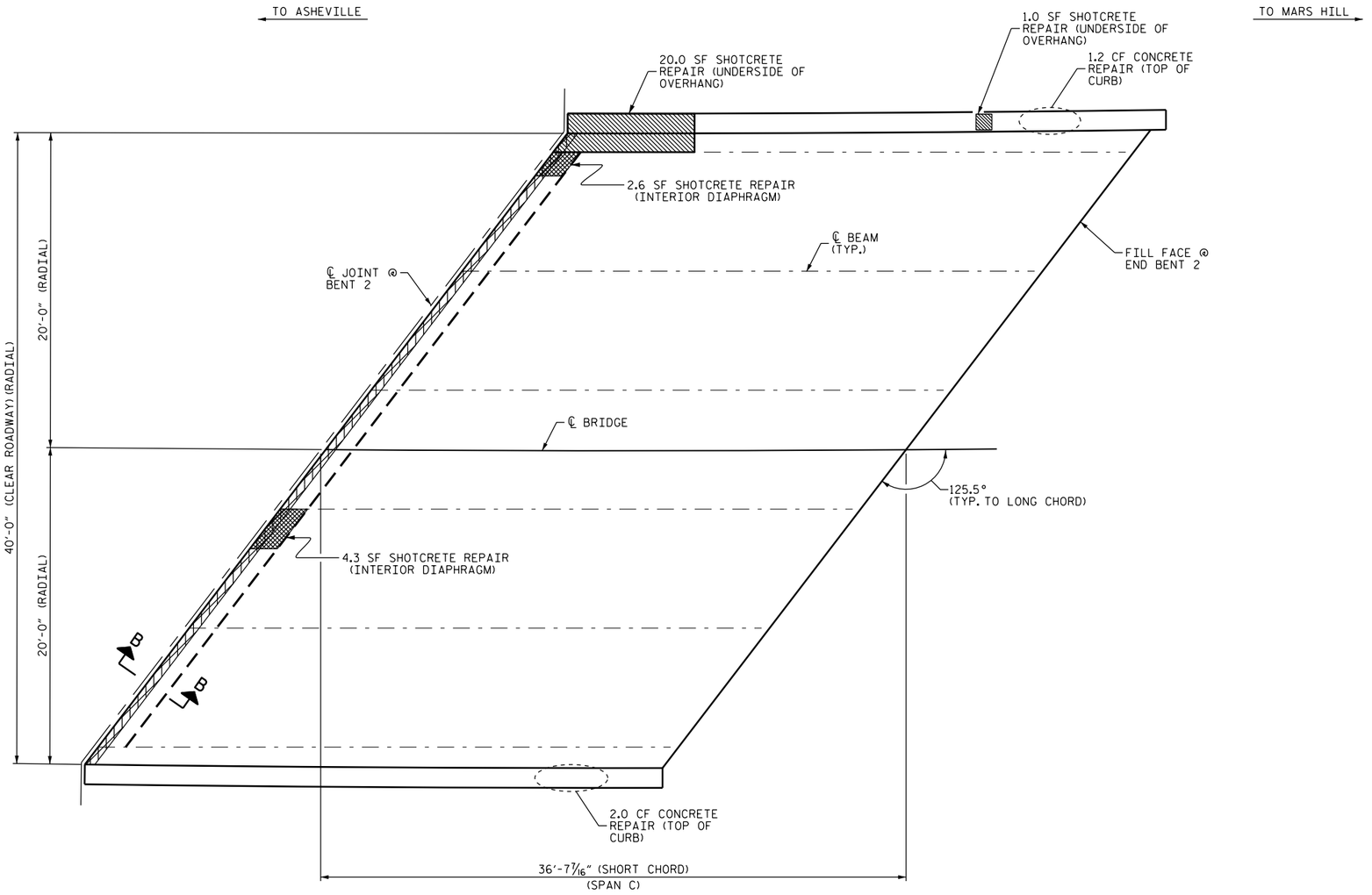

PLAN

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	160 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	160 SY	
CLASS II SURFACE PREPARATION	15.0 SY ✳	
CLASS III SURFACE PREPARATION	0.5 SY ✳	
BRIDGE JOINT DEMOLITION	25.3 SF	
CONCRETE FOR DECK REPAIR	3.0 CF ✳	
CONCRETE REPAIRS (TOP OF CURB)	3.2 CF	

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	21.0	13.2♦		
INTERIOR DIAPHRAGMS	6.9	4.3♦		

	ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION	0.0 LF	

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

- APPROX. CLASS II AREA
- APPROX. CLASS III AREA
- BRIDGE JOINT DEMOLITION
- UNDERSIDE REPAIR
- DIAPHRAGM REPAIR
- #1 TEST LOCATION
- ERI EPOXY RESIN INJECTION

NOTES 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 SECTION B-B, SEE "JOINT DETAILS" SHEET.

FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

✳ CLASS II SURFACE PREPARATION, CLASS III SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR ARE NOT ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSES IN CASE UNANTICIPATED CLASS II OR CLASS III AREAS ARE ENCOUNTERED.

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

DocuSigned by:
John A. Yannaccone
7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

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PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 422

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPANS
SPAN C

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ELASTOMERIC CONCRETE		
BENT 1	12.1	(CU. FT.)
BENT 2	12.4	(CU. FT.)
* TOTAL	24.5	(CU. FT.)

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

NOTES

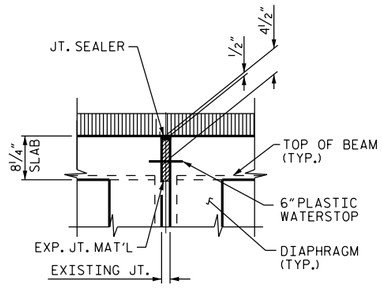
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

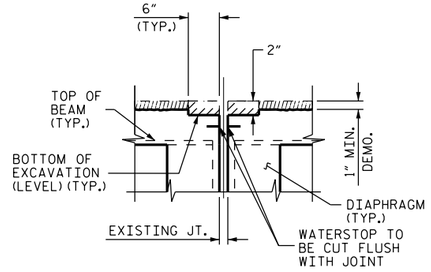
THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.

NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2" AT BENTS 1 AND 2.

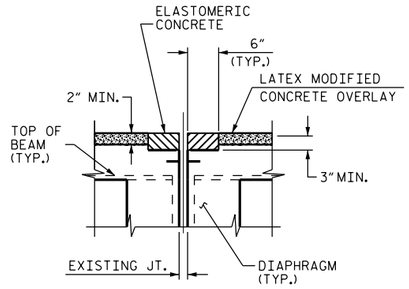
THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.



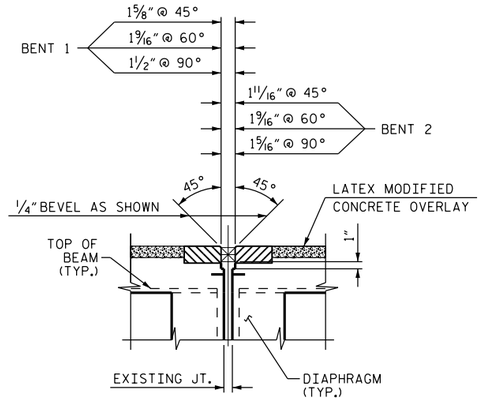
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION



PROPOSED JOINT PRE-SAWED

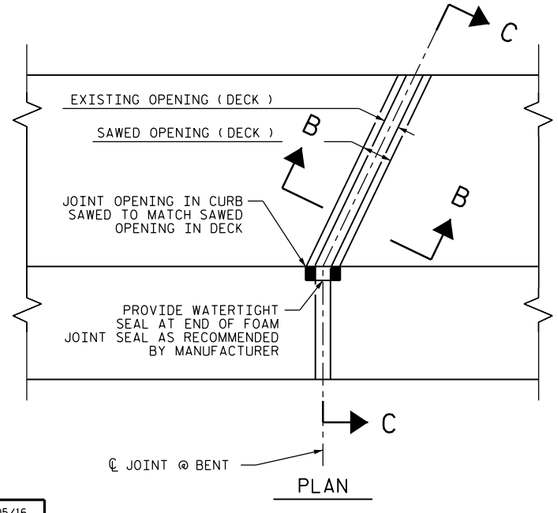


PROPOSED FOAM JOINT SEAL

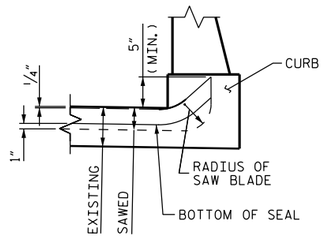
SECTION B-B

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

DEMOLISH BRIDGE JOINT AREA TO THE NECESSARY DEPTH, SUCH THAT ELASTOMERIC CONCRETE SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE, NOT LATEX MODIFIED CONCRETE.



PLAN



SECTION C-C

FOAM JOINT SEAL SHALL BE FACTORY FORMED OR CUT, HEAT WELDED AND TURNED UP PARALLEL TO FACE OF CURB.

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 422

DocuSigned by:
John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

JOINT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-33
1			3			TOTAL SHEETS
2			4			68

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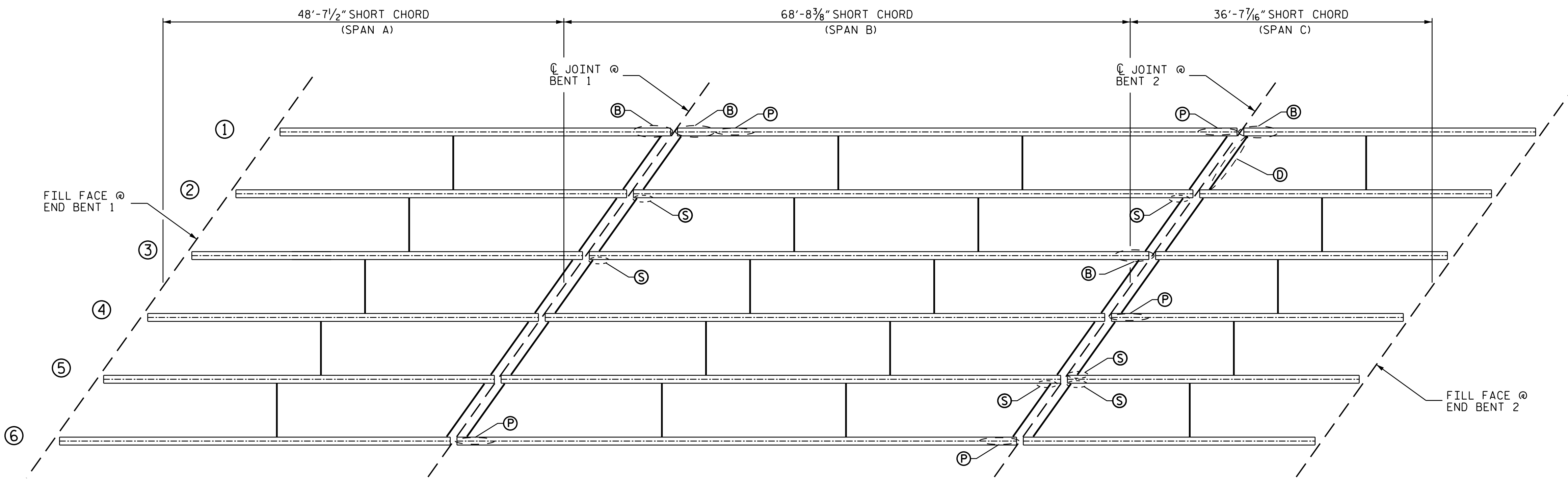

BEAM REPAIR LOCATIONS

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

- ① BEAM NUMBER
- Ⓑ BEAM END REPAIR
- Ⓟ PLATING REPAIR
- Ⓢ STIFFENER REPAIR
- Ⓓ DIAPHRAGM REPAIR

NOTES

FOR BEAM REPAIR DETAILS, SEE "BEAM END AND INTERMEDIATE REPAIR DETAILS" AND "BEAM PLATING REPAIR DETAILS" SHEETS.

FOR BRIDGE JACKING DETAILS, SEE "JACKING 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 EXTENT OF REPAIR AREAS PRIOR TO STEEL FABRICATION.

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

ANTICIPATED BEAM REPAIR LOCATIONS

SPAN	BEAM	LOCATION	DIM "A"	DIM "B"	DIM "C"	DIM "D"
A	1	BENT 1	6"	2'-0"	——	——
B	1	BENT 1	2'-6"	1'-0"	1'-6"	2'-4"
B	1	BENT 1	8"	9'-2"	——	——
B	2	BENT 1	3"	——	——	——
B	3	BENT 1	3"	——	——	——
B	6	BENT 1	10"	2'-6"	——	——
B	1	BENT 2	2'-6"	10"	10"	3'-4"
B	2	BENT 2	5"	——	——	——
B	3	BENT 2	6"	2'-6"	——	——
B	5	BENT 2	3"	——	——	——
B	6	BENT 2	2'-6"	10"	6"	2'-0"
C	1	BENT 2	2'-6"	4'-0"	6"	3'-0"
C	4	BENT 2	6"	2'-7"	——	——
C	5	BENT 2	3"	——	——	——
C	5	BENT 2	3"	——	——	——
C	1 & 2	BENT 2	REPLACE EXISTING STEEL CHANNEL DIAPHRAGM WITH C15 X 33.9			

BEAM REPAIR QUANTITY TABLE

BEAM END REPAIR		STIFFENER REPAIR		PLATING REPAIR		DIAPHRAGM REPAIR	
LBS.		LBS.		LBS.		LBS.	
ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
1,110		35		685		305	

PROJECT NO. I-5892

BUNCOMBE **COUNTY**

BRIDGE NO. 422

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

1/21/2017

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DEPARTMENT OF TRANSPORTATION
RALEIGH

BEAM REPAIR LOCATIONS

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
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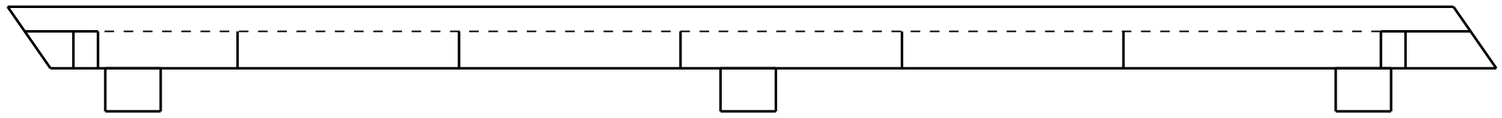
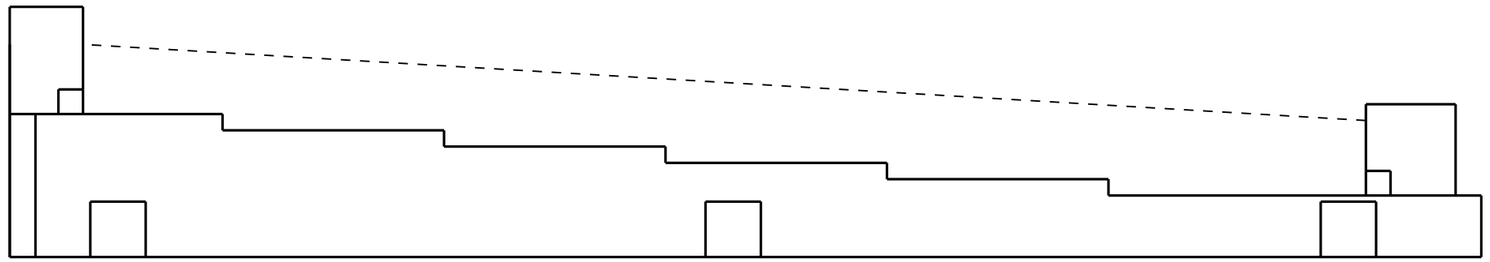
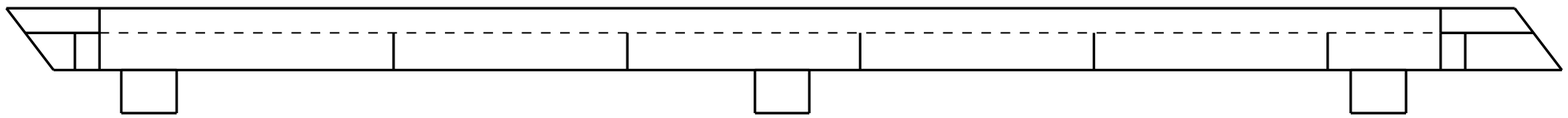


PLAN

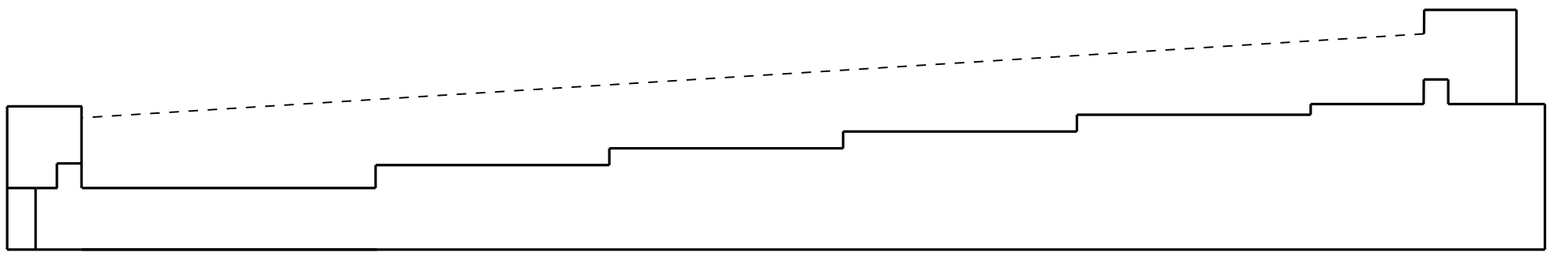


ELEVATION

END BENT 1



PLAN



ELEVATION

END BENT 2

NO REPAIRS NOTED FOR END BENTS 1 AND 2 DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT END BENTS 1 AND 2 PRIOR TO BEGINNING WORK.

AS-BUILT REPAIR QUANTITY TABLE

END BENT 1 REPAIRS	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	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0.0		

END BENT 2 REPAIRS	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	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		

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

NOTES:

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

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

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5892

BUNCOMBE **COUNTY**

BRIDGE NO. 422

DocuSigned by:
John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENTS 1 & 2

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-35
1			3			TOTAL SHEETS
2			4			68

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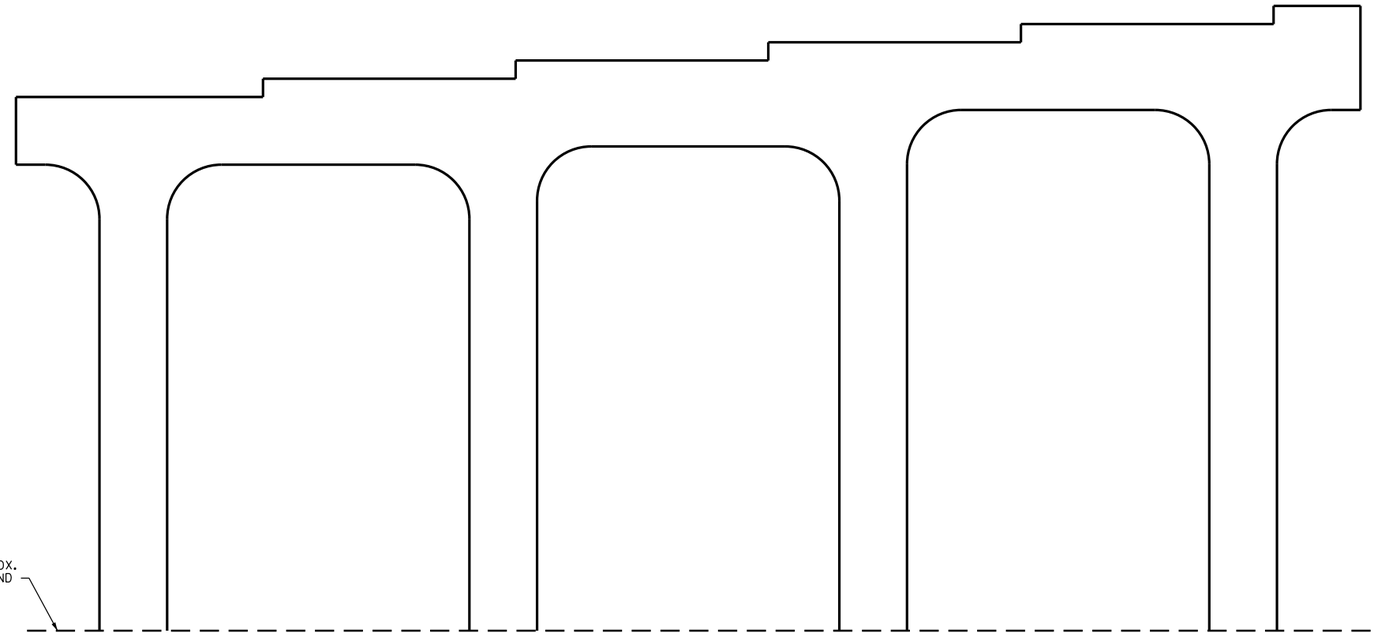
jayannaccone

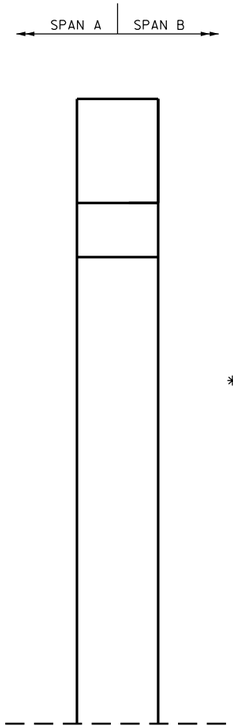
SPAN B
SPAN A

TOP OF CAP



ELEVATION
(SPAN A FACE)

BENT 1



END VIEW

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

AS-BUILT REPAIR QUANTITY TABLE

BENT 1 REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	2.0	1.2 *		
COLUMN	1.0	0.6 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		149		

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

NOTES:

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

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. 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 PROVISION.

* 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-5892
BUNCOMBE COUNTY
BRIDGE NO. 422

SHEET 1 OF 4

DocuSigned by:
John A. Yannaccone
7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1
SPAN A FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-36
1			3			TOTAL SHEETS
2			4			68

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SPAN B
SPAN A

BOTTOM OF CAP

NOTES:

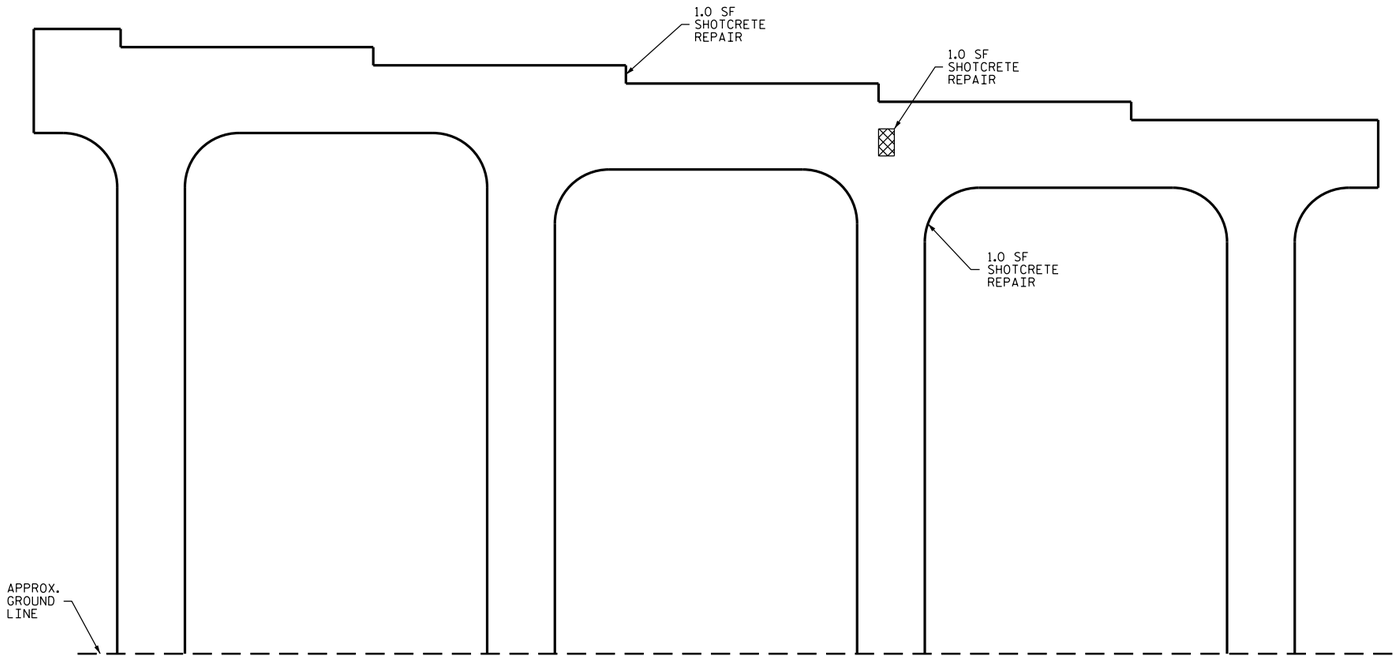
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES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

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. 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 PROVISION.

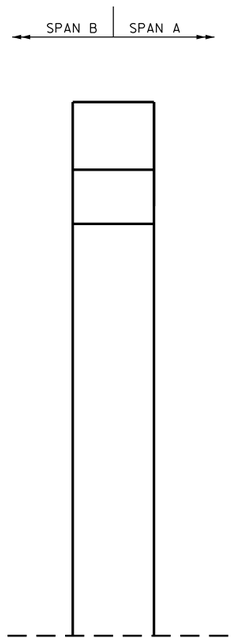
DAMAGED AREA

EPOXY RESIN INJECTION



ELEVATION
(SPAN B FACE)

BENT 1



END VIEW

DocuSigned by:
John A. Yannaccone
7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 422

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1
SPAN B FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-37
1			3			TOTAL SHEETS
2			4			68

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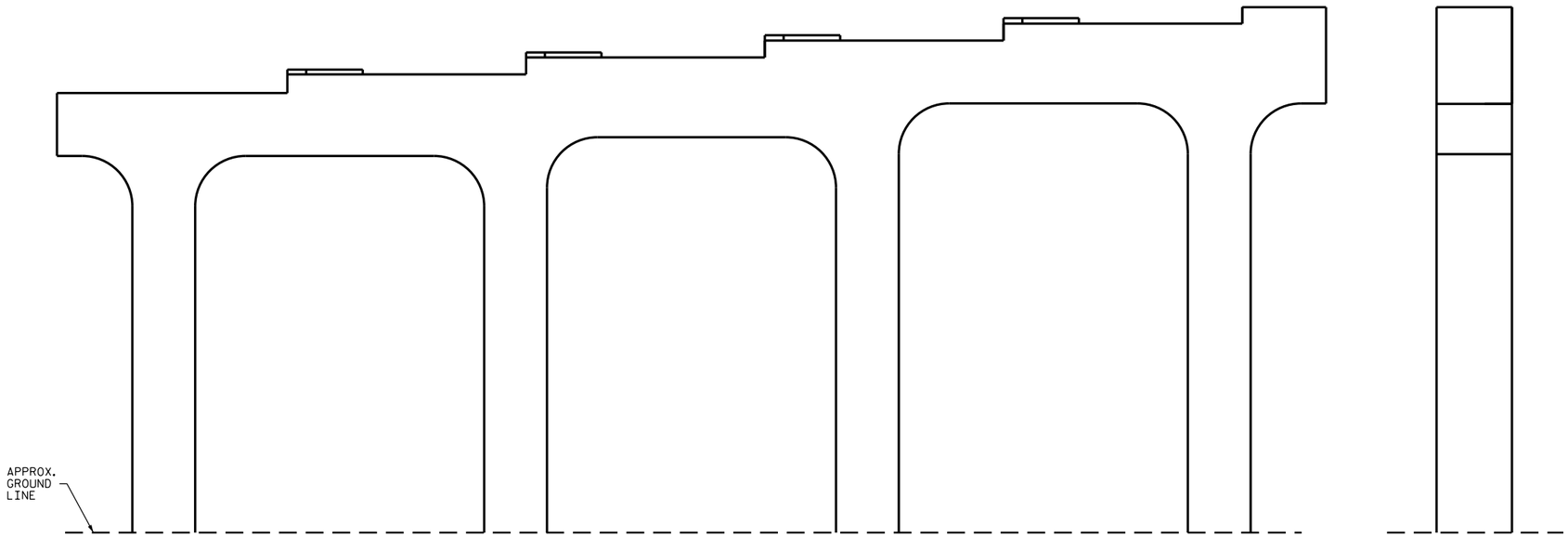
SPAN C
SPAN B

TOP OF CAP

SPAN B | SPAN C



ELEVATION
(SPAN B FACE)

END VIEW

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

BENT 2

AS-BUILT REPAIR QUANTITY TABLE

BENT 2 REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	13.3	8.3 ✳		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		151		

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

NOTES:

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

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. 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 PROVISION.

✳ 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-5892
BUNCOMBE COUNTY
BRIDGE NO. 422

SHEET 3 OF 4

DocuSigned by:
John A. Yannaccone
7BC0[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2
SPAN B FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-38
1			3			TOTAL SHEETS
2			4			68

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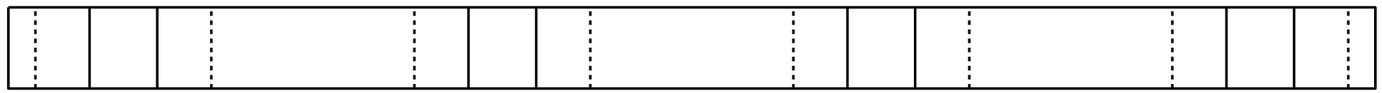


SPAN C
SPAN B

BOTTOM OF CAP

NOTES:

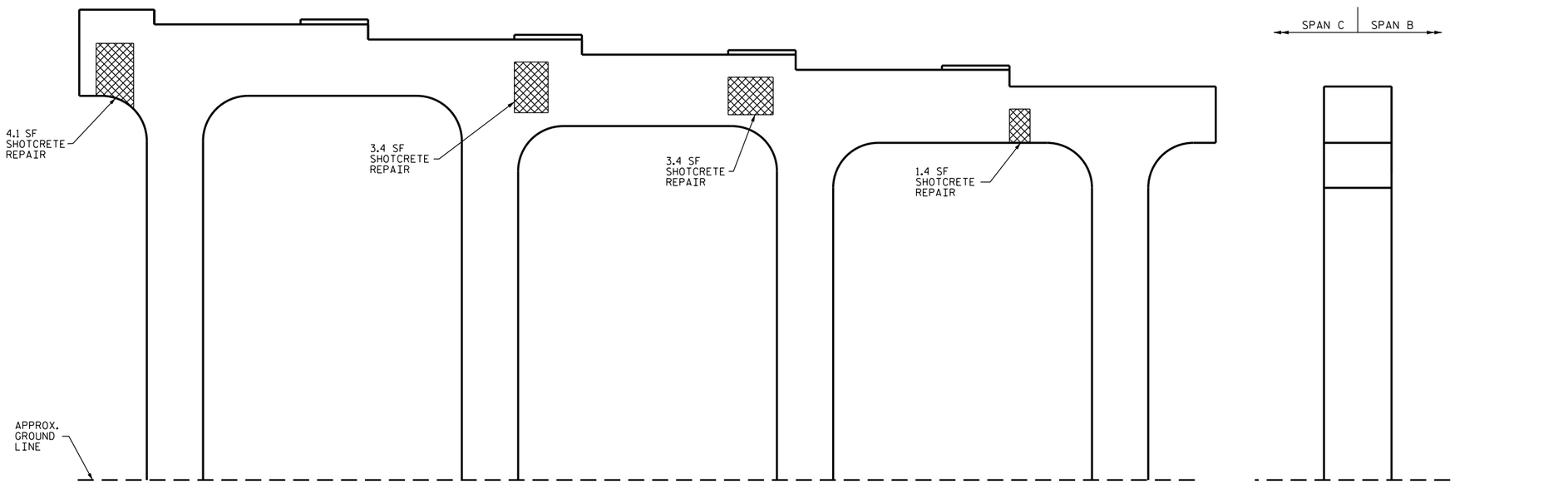
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES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

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. 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 PROVISION.

DAMAGED AREA

EPOXY RESIN INJECTION



ELEVATION
(SPAN C FACE)

END VIEW

BENT 2

DocuSigned by:
John A Yannaccone
7BC38F8CEE8944E...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 422

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2
SPAN C FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-39
1			3			TOTAL SHEETS
2			4			68

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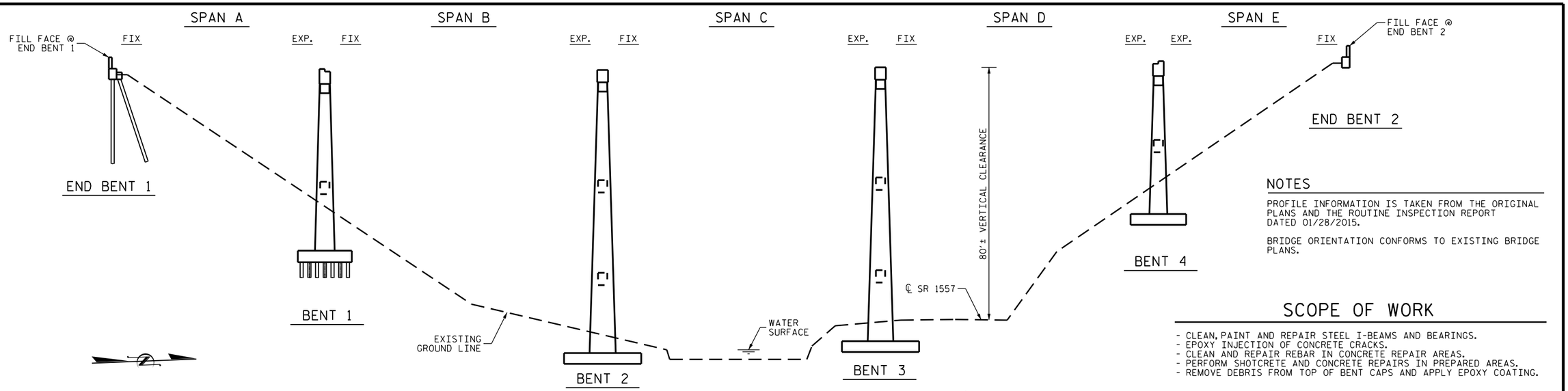
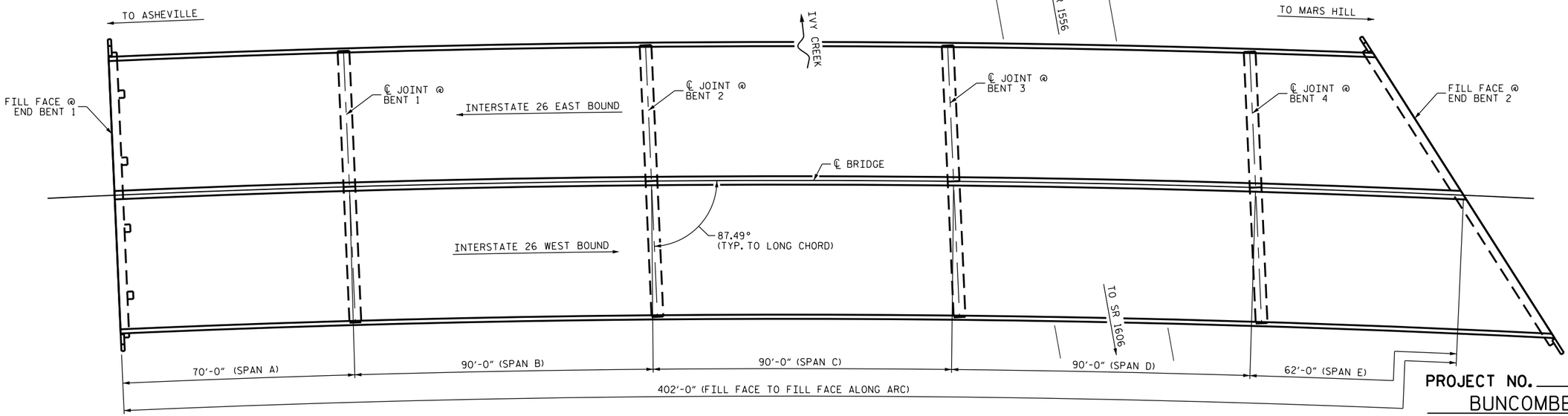


SECTION ALONG ℄ OF ROADWAY



PLAN

NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 01/28/2015.

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 AND CONCRETE REPAIRS IN PREPARED AREAS.
- REMOVE DEBRIS FROM TOP OF BENT CAPS AND APPLY EPOXY CODING.

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

RESIDENT ENGINEER DATE

DocuSigned by:
John A. Yannaccone
7BC3...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

DRAWN BY : R.PUTEK DATE : 10/15
CHECKED BY : S. WANCE DATE : 10/16

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PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 429
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR BRIDGE ON I-26 OVER IVY CREEK AND SR 1557 (LONG RIDGE ROAD)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-40
1			3			TOTAL SHEETS
2			4			68

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

FOR PAINTING CONTAINMENT, 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 REMOVE AND RESET BEARINGS, SEE SPECIAL PROVISIONS.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 429

SHEET 2 OF 2

DocuSigned by:
John A. Yannaccone
7BC2[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR BRIDGE ON I-26 OVER IVY CREEK AND SR 1557 (LONG RIDGE ROAD)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-41
1			3			TOTAL SHEETS
2			4			68

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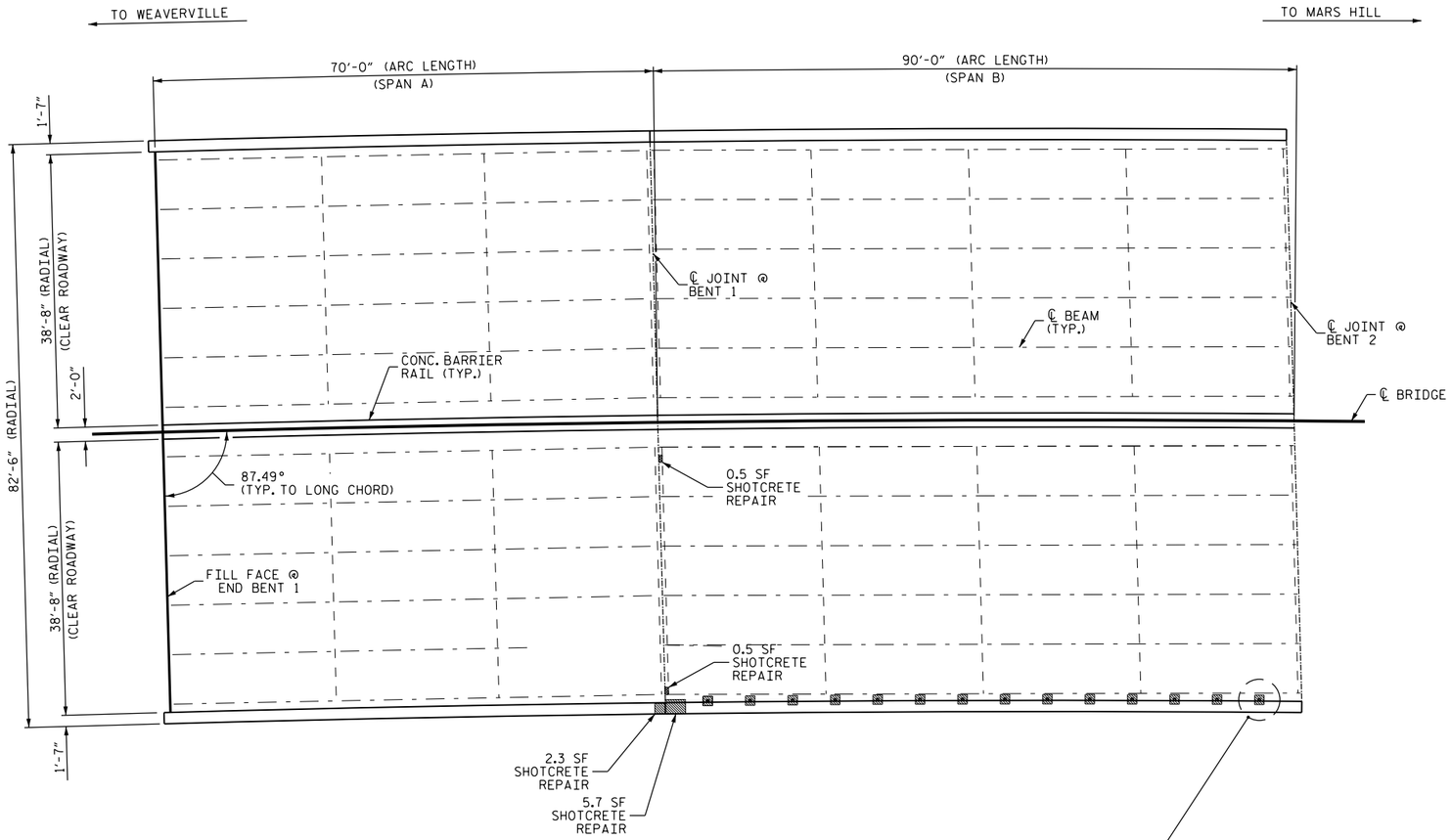
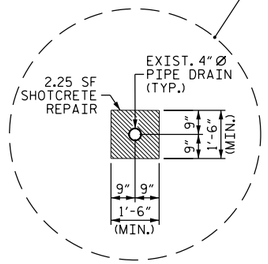


PLAN



DETAIL "A"
4" Ø DECK DRAIN
(SPANS B, C, & D - 14 PER SPAN)

AS-BUILT REPAIR QUANTITY TABLE

UNDERSIDE OF DECK REPAIRS

SHOTCRETE REPAIRS	ESTIMATE AREA SF	ESTIMATE VOLUME CF	ACTUAL AREA SF	ACTUAL VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	133.3	83.9 *		
INTERIOR DIAPHRAGMS	4.3	2.6 *		
	ESTIMATE		ACTUAL	
UNDERSIDE EPOXY RESIN INJECTION	0.0 LF			

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

UNDERSIDE REPAIR

DIAPHRAGM REPAIR

ERI 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 AS-BUILT REPAIR QUANTITY TABLE.

FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL 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-5892

BUNCOMBE COUNTY

BRIDGE NO. 429

SHEET 1 OF 2

DocuSigned by:
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1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPANS
SPANS A & B

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-42
1			3			TOTAL SHEETS
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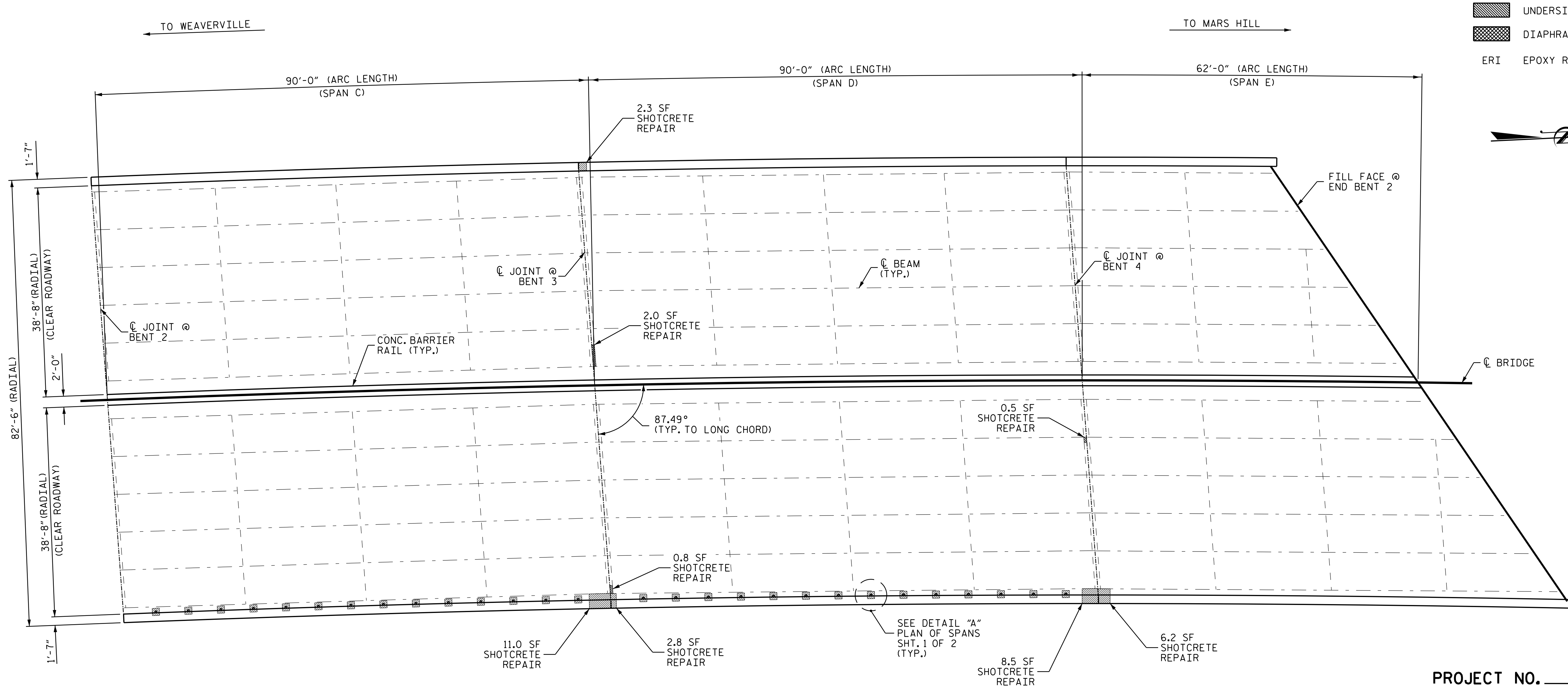
NOTES

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

FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

UNDERSIDE REPAIR
DIAPHRAGM REPAIR
ERI EPOXY RESIN INJECTION



PLAN

PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 429
SHEET 2 OF 2

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7BC...

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 32492 JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPANS
SPANS C, D, & E

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REVISIONS							SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:		S-43
1			3				TOTAL SHEETS
2			4				68

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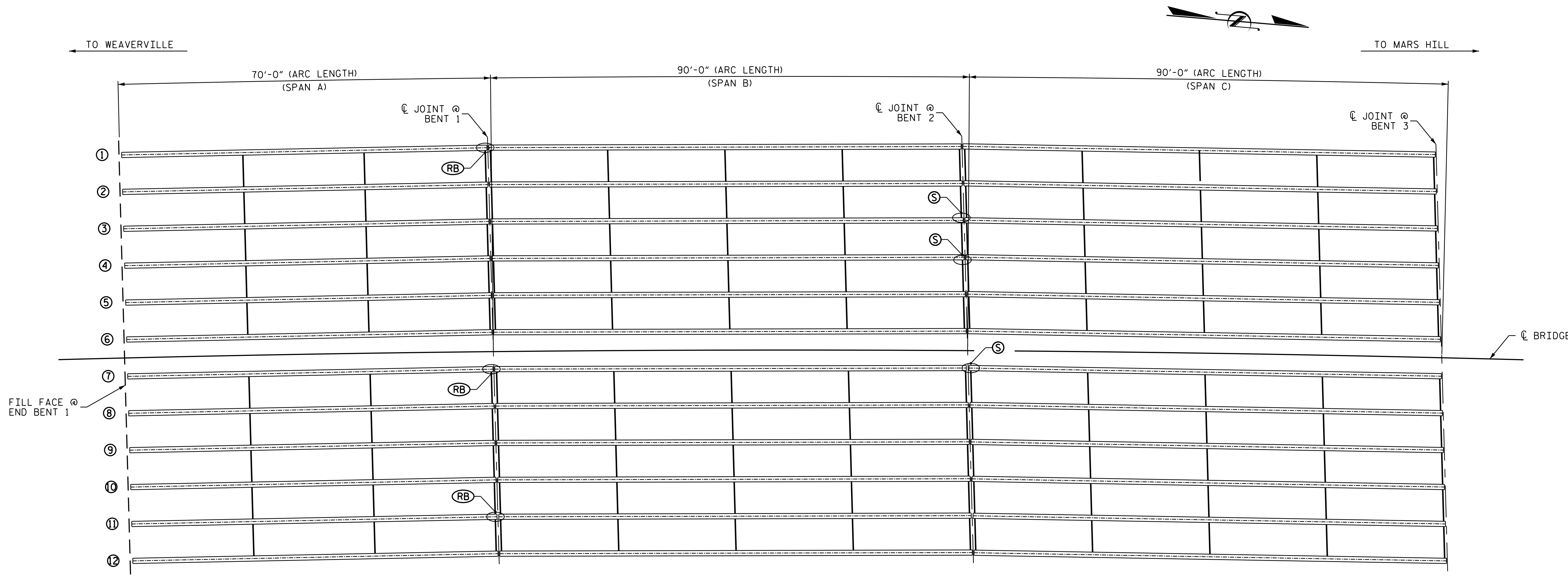

BEAM & BEARING REPAIR LOCATIONS

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

①	BEAM NUMBER
Ⓑ	BEAM END REPAIR
Ⓟ	PLATING REPAIR
Ⓢ	STIFFENER REPAIR
Ⓓ	DIAPHRAGM REPAIR
(RB)	REMOVE & RESET BEARINGS

NOTES

FOR BEAM REPAIR DETAILS, SEE "BEAM END AND INTERMEDIATE REPAIR DETAILS" AND "BEAM PLATING REPAIR DETAILS" SHEETS.

FOR BRIDGE JACKING DETAILS, SEE "JACKING 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 EXTENT OF REPAIR AREAS PRIOR TO STEEL FABRICATION.

ALL BEARINGS REMOVED FOR CONCRETE REPAIRS TO THE BENT SHALL BE CLEANED, PAINTED AND RESET, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK WILL BE PAID UNDER THE CONTRACT UNIT PRICE FOR "REMOVE AND RESET BEARINGS".

ALL ANCHOR BOLTS, WASHERS, NUTS, SPACERS AND SLEEVES SHALL BE REMOVED AND REPLACED WHERE BEARINGS ARE REMOVED AND RESET, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK WILL BE PAID UNDER THE CONTRACT UNIT PRICE FOR "REMOVE AND RESET BEARINGS".

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

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

BEAM REPAIR QUANTITY TABLE

BEAM END REPAIR		PLATING REPAIR		STIFFENER REPAIR		DIAPHRAGM REPAIR	
LBS.		LBS.		LBS.		LBS.	
ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
—		—		130		—	

REMOVE & RESET BEARINGS

EACH	
ESTIMATE	ACTUAL
12	

ANTICIPATED BEAM REPAIR LOCATIONS

SPAN	BEAM	LOCATION	DIM "A"	DIM "B"	DIM "C"	DIM "D"
B	3	BENT 2	1'-8"	—	—	—
B	4	BENT 2	1'-7"	—	—	—
C	7	BENT 2	1'-9"	—	—	—

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 429

SHEET 1 OF 2

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1/21/2017

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BEAM AND BEARING REPAIRS SPANS A, B, & C

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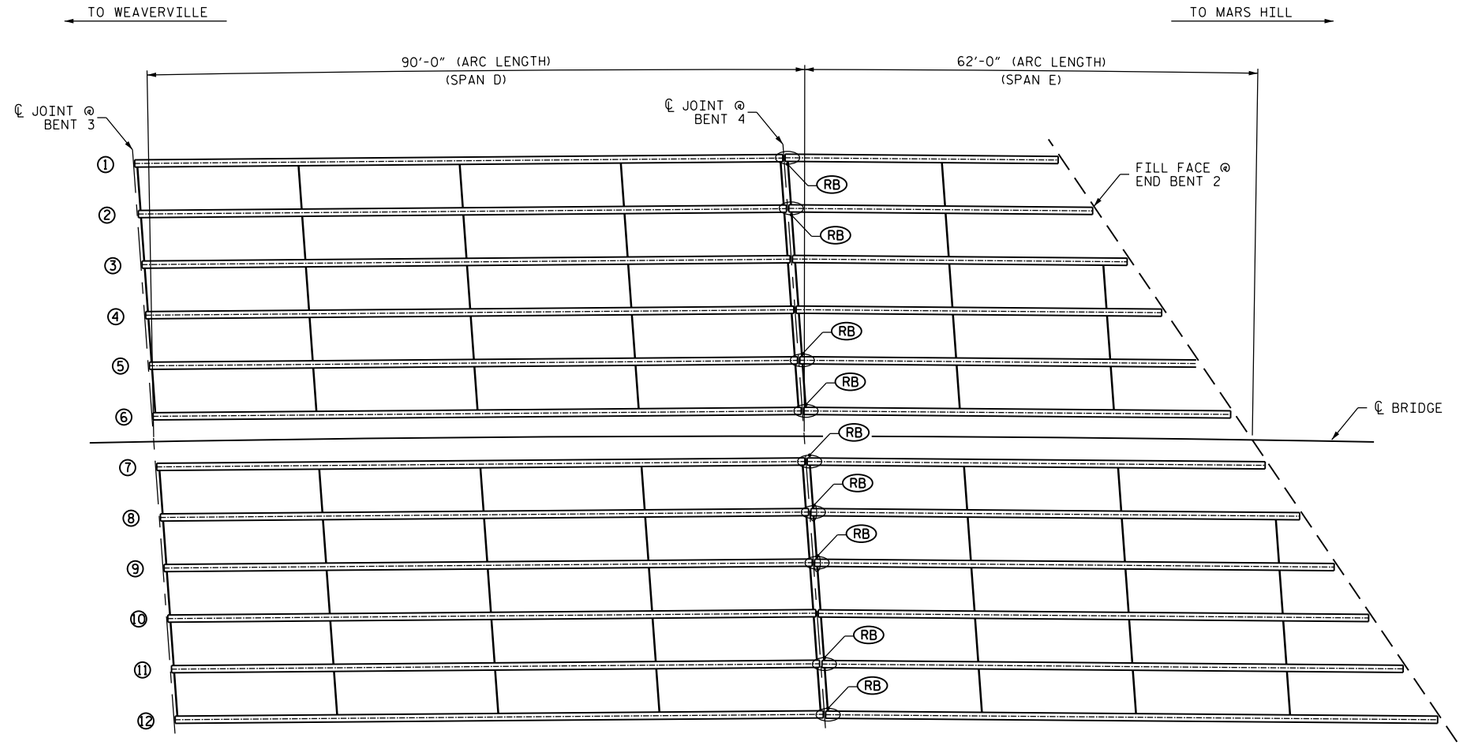

BEAM & BEARING REPAIR LOCATIONS

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

- (1) BEAM NUMBER
- (B) BEAM END REPAIR
- (P) PLATING REPAIR
- (S) STIFFENER REPAIR
- (D) DIAPHRAGM REPAIR
- (RB) REMOVE & RESET BEARINGS

NOTES

FOR BEAM REPAIR DETAILS, SEE "BEAM END AND INTERMEDIATE REPAIR DETAILS" AND "BEAM PLATING REPAIR DETAILS" SHEETS.

FOR BRIDGE JACKING DETAILS, SEE "JACKING DETAILS" SHEET.

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ALL BEARINGS REMOVED FOR CONCRETE REPAIRS TO THE BENTS SHALL BE CLEANED, PAINTED AND RESET, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK WILL BE PAID UNDER THE CONTRACT UNIT PRICE FOR "REMOVE AND RESET BEARINGS".

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

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 429

SHEET 2 OF 2

DocuSigned by:
John A. Yannaccone
7BC3B0CE5B3D4FC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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BEAM AND BEARING REPAIRS SPANS D & E

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1			3			TOTAL SHEETS
2			4			68

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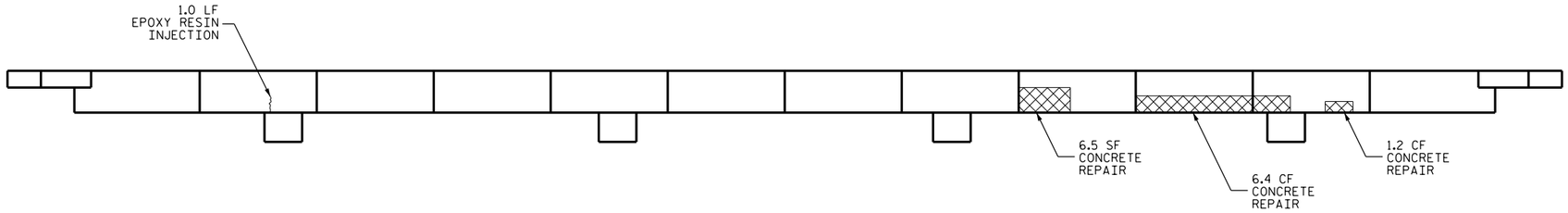

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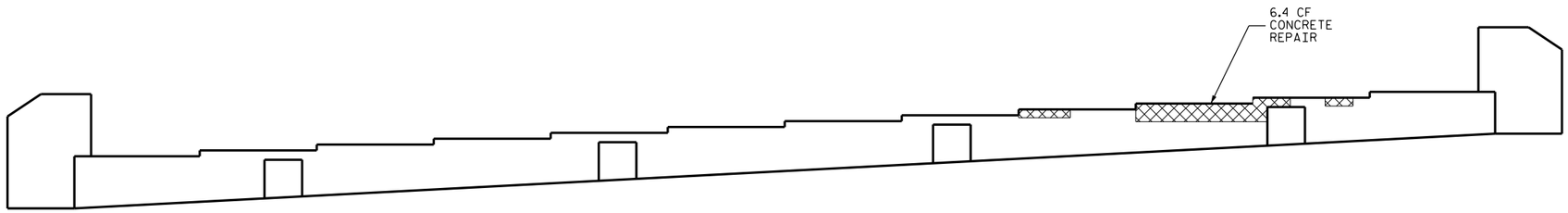

ELEVATION

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	20.5	15.3 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		1.0		

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

NOTES:

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

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

* 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-5892

BUNCOMBE COUNTY

BRIDGE NO. 429

DocuSigned by:
John A. Yannaccone
7BC[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

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END BENT 1

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1			3			TOTAL SHEETS
2			4			68

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NOTES:

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

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FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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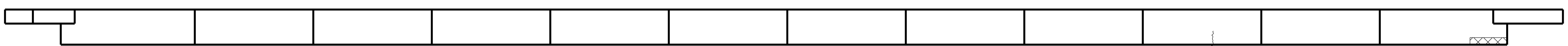

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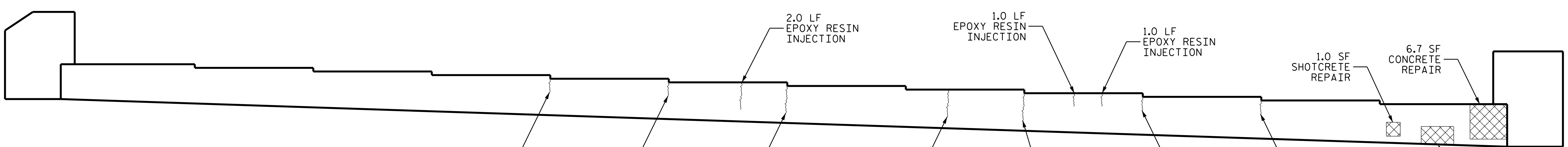

ELEVATION

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	4.0	3.0 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	6.7	5.0 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		13.5		

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 429

DocuSigned by:
John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENT 2

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-47
1			3			TOTAL SHEETS
2			4			68

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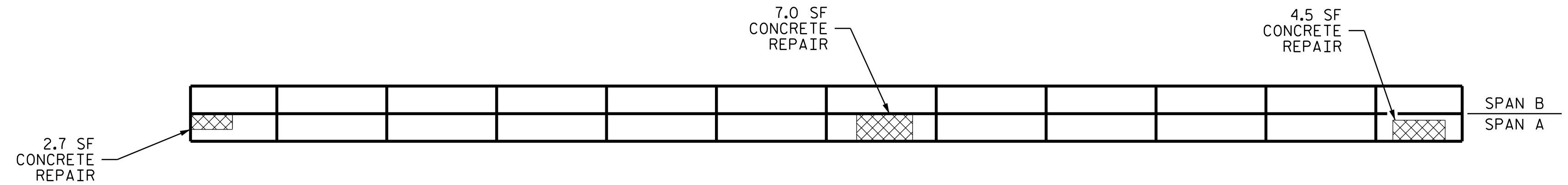
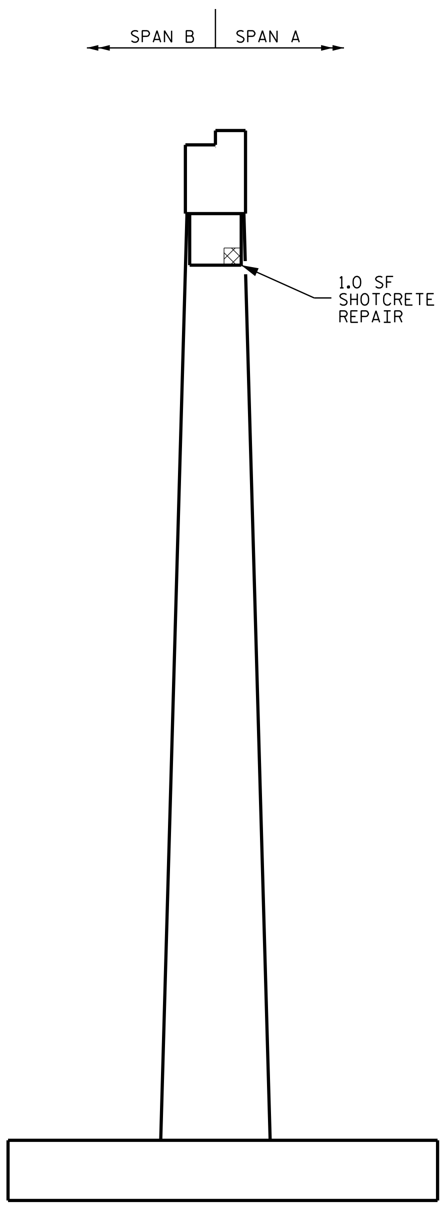
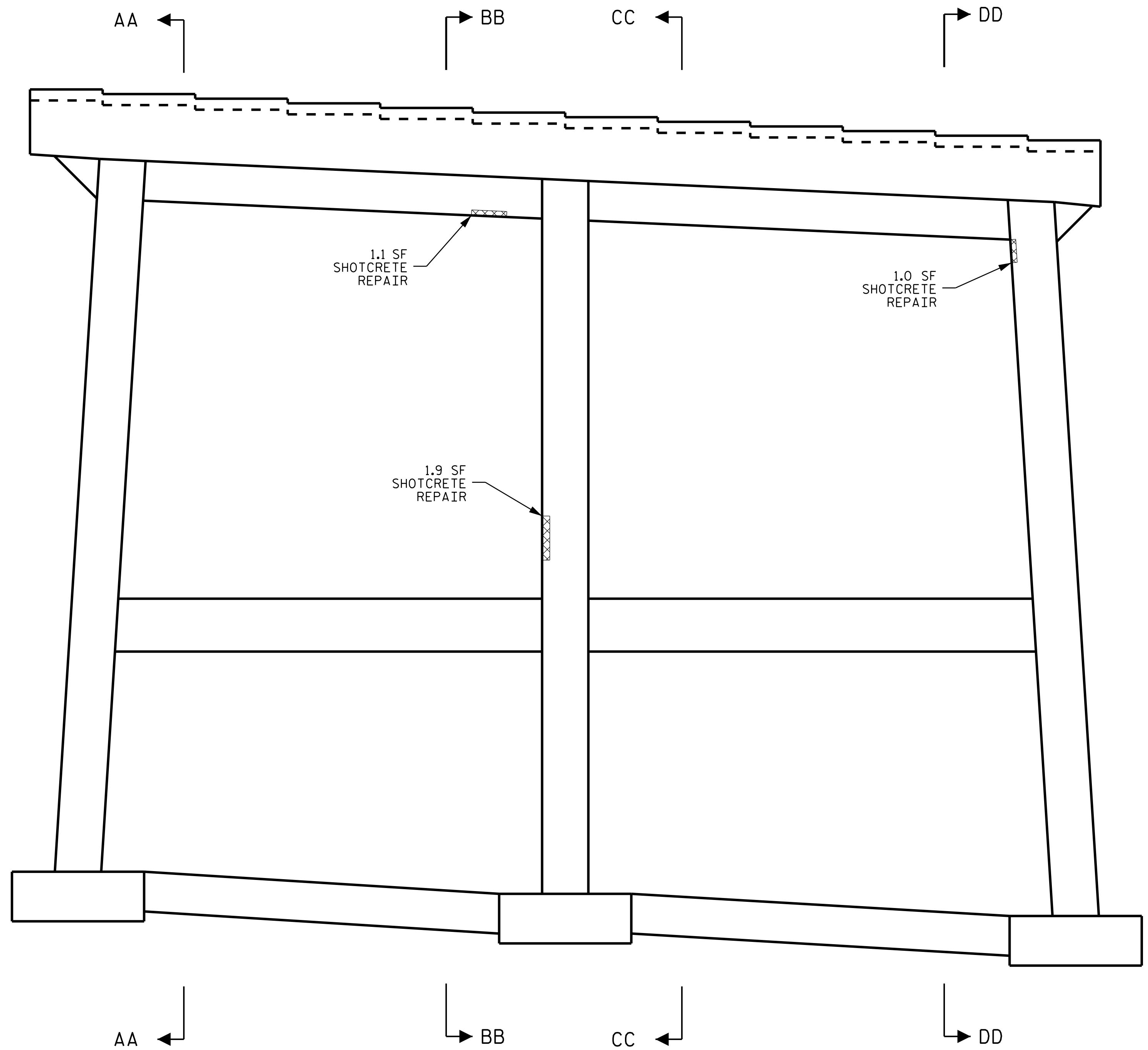


TOP OF CAP



END VIEW



ELEVATION
(SPAN A FACE)

BENT 1

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	95.6	59.8 ✱		
COLUMNS AND STRUTS	220.0	137.5 ✱		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	14.2	8.9 ✱		
COLUMNS AND STRUTS	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		3.0		
COLUMNS AND STRUTS		15.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		28		

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

NOTES:

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

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE THE AREA OF THE CAP BENEATH THE MASONRY PLATES.

FOR EPOXY COATING, SEE SPECIAL PROVISION.

FOR COLUMN SIDE VIEWS, SEE SHEET 3 OF 3.

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 429
SHEET 1 OF 3

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

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1
SPAN A FACE

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NO.	BY:	DATE:	NO.	BY:	DATE:			S-48
1			3					TOTAL SHEETS
2			4					68

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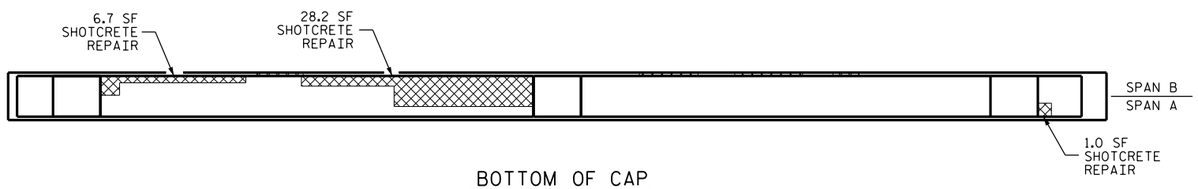

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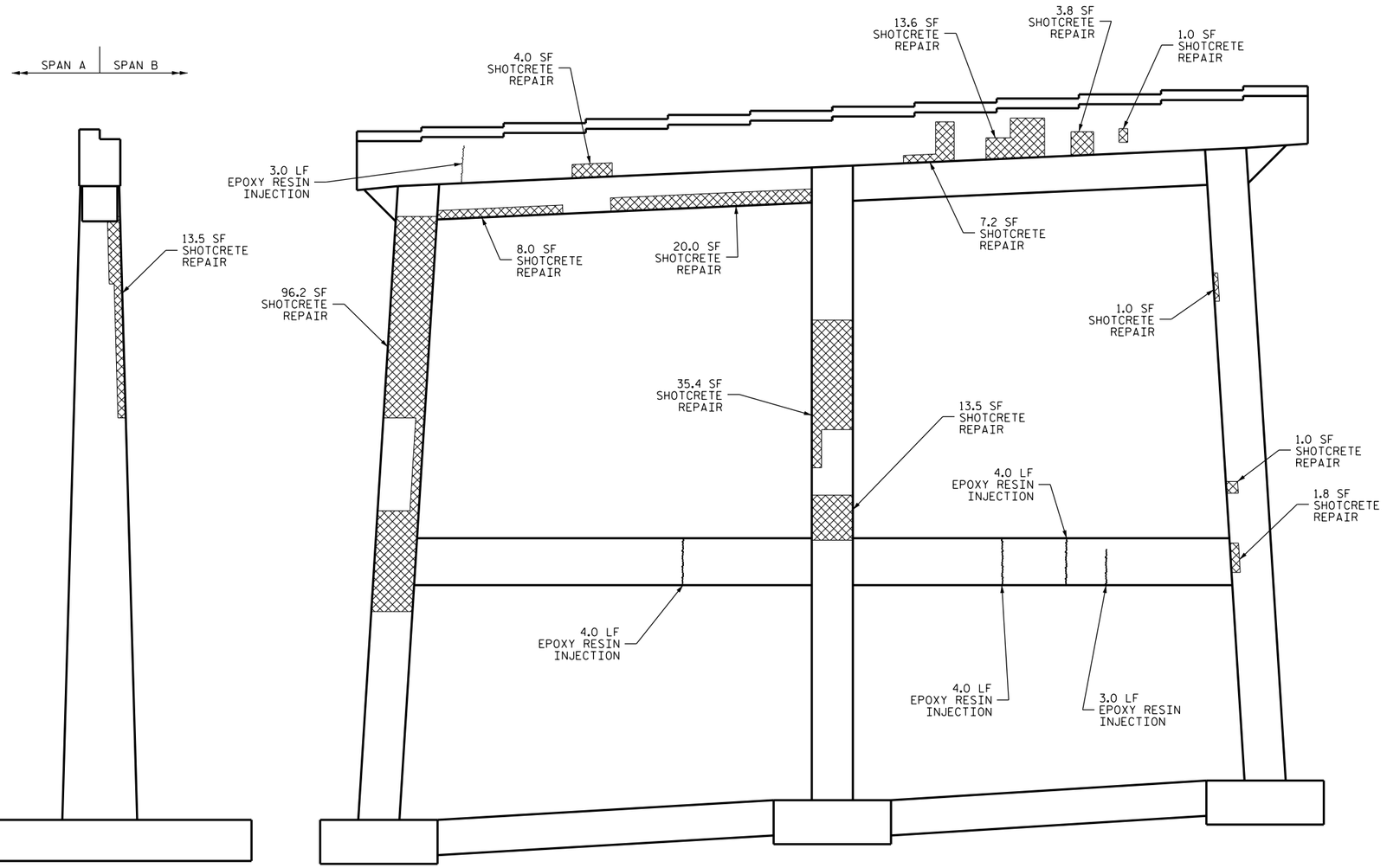

END VIEW

ELEVATION
(SPAN B FACE)

BENT 1

NOTES:

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FOR EPOXY COATING, SEE SPECIAL PROVISION.

FOR COLUMN SIDE VIEWS, SEE SHEET 3 OF 3.

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 429

SHEET 2 OF 3

DocuSigned by:
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7BC8[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1
SPAN B FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-49
1			3			TOTAL SHEETS
2			4			68

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NOTES:

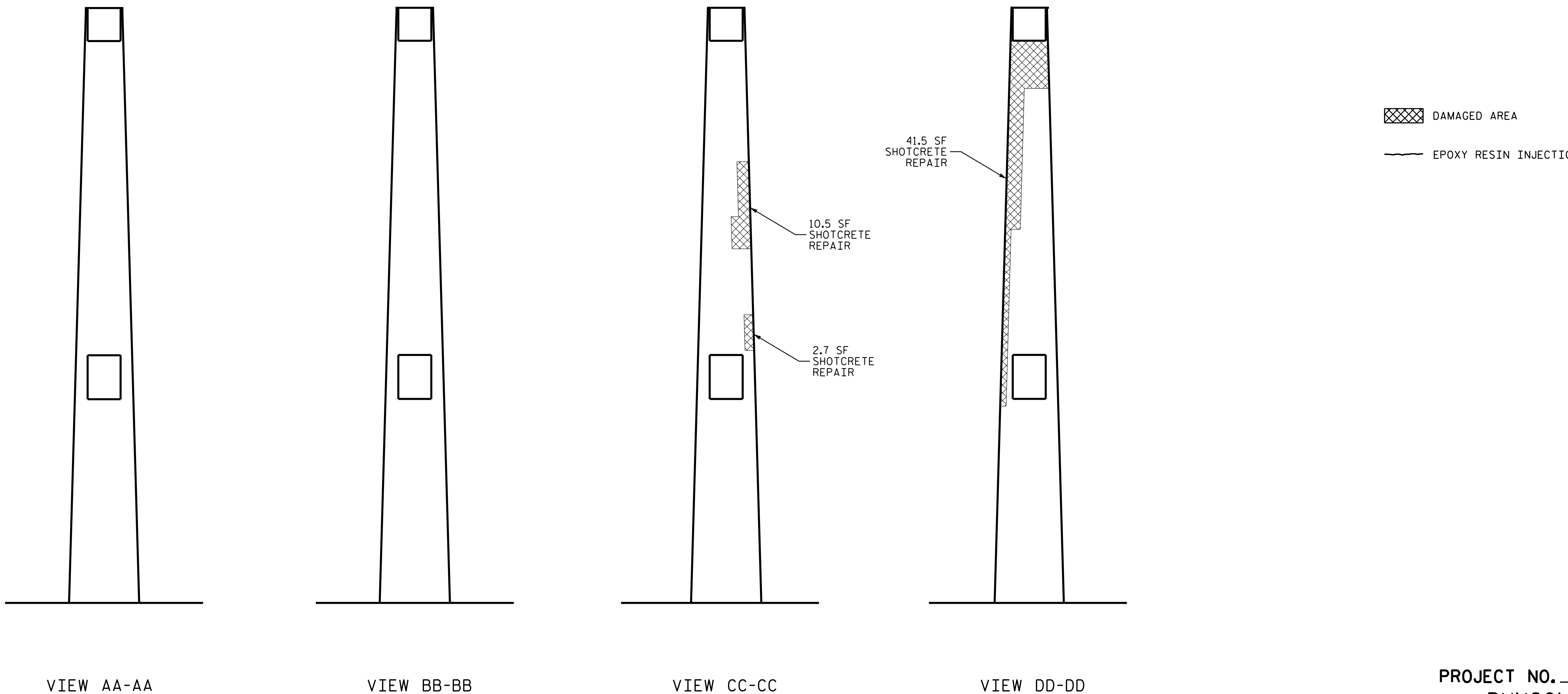
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES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

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE THE AREA OF THE CAP BENEATH THE MASONRY PLATES.

FOR EPOXY COATING, SEE SPECIAL PROVISION.

FOR LOCATION OF COLUMN SIDE VIEWS, SEE SHEET 1 OF 3.



BENT 1

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 429

SHEET 3 OF 3

DocuSigned by: John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1
COLUMN SIDE VIEWS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-50
1			3			TOTAL SHEETS
2			4			68

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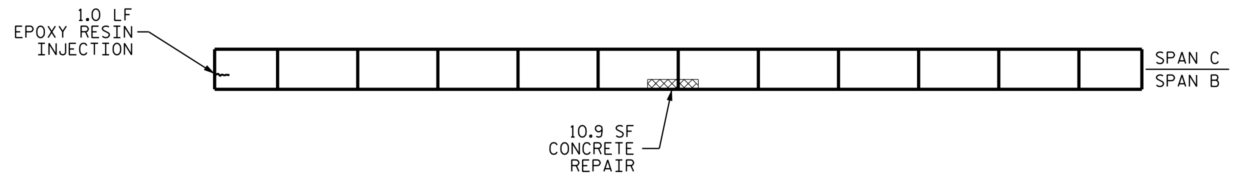
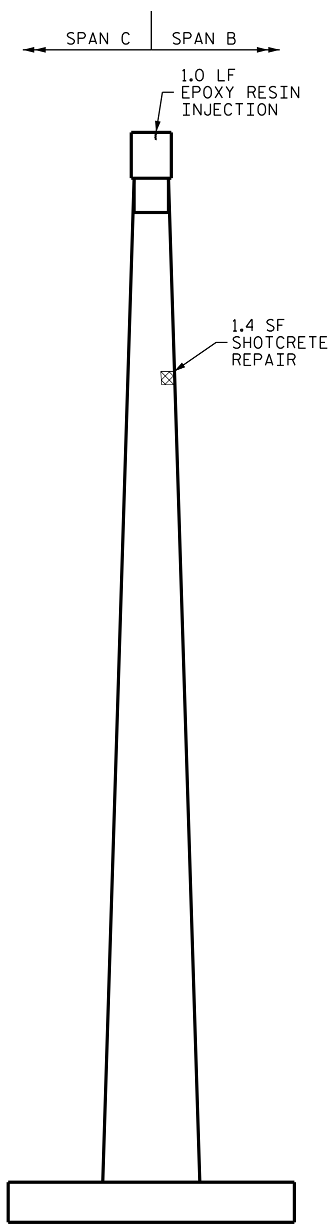


TOP OF CAP



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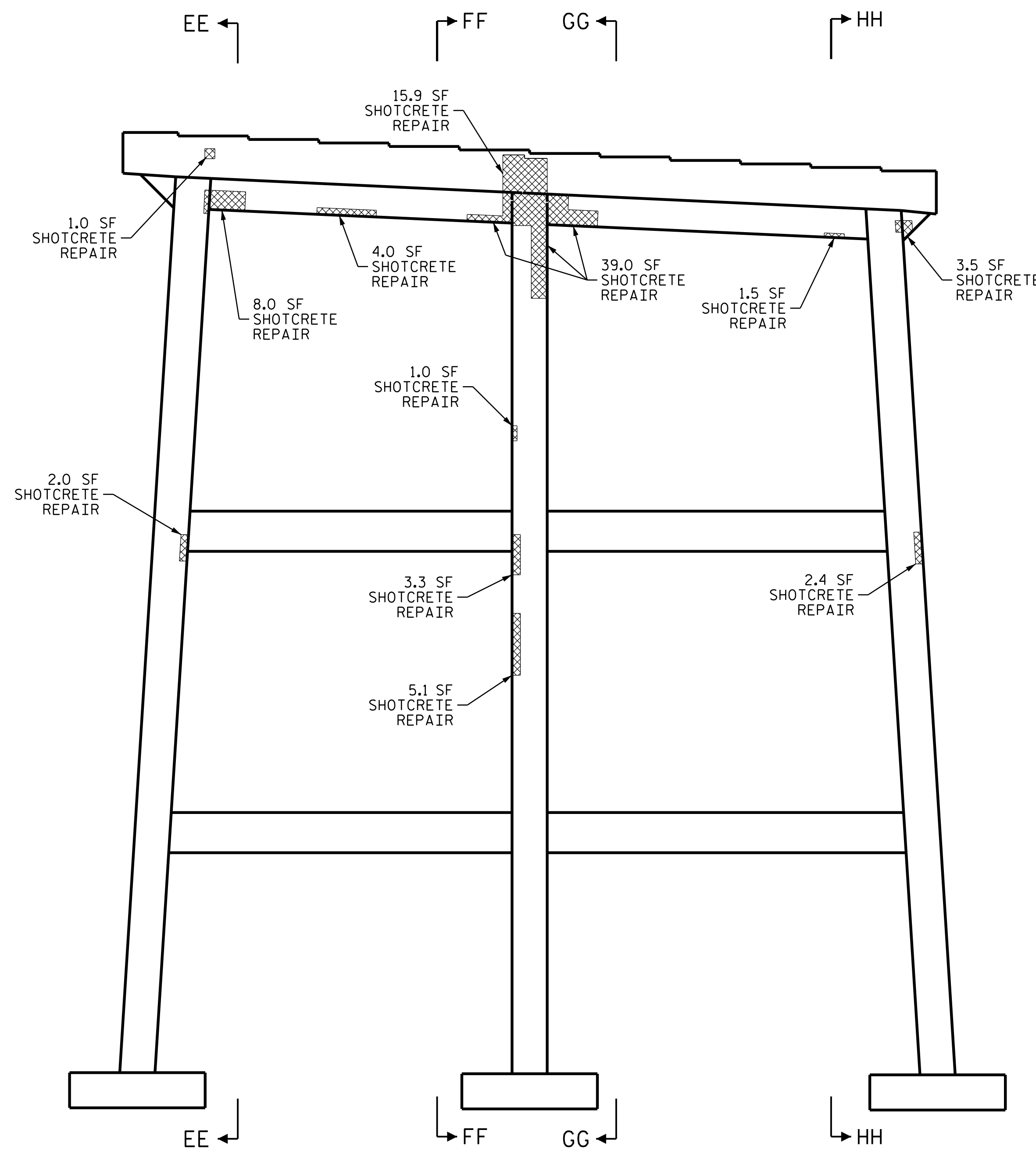

ELEVATION
(SPAN B FACE)

BENT 2

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	102.5	64.1 *		
COLUMNS AND STRUTS	45.9	28.7 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	4.3	2.7 *		
COLUMNS AND STRUTS	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		4.0		
COLUMNS AND STRUTS		0.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		283		

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

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FOR EPOXY COATING, SEE SPECIAL PROVISION.

FOR COLUMN SIDE VIEWS, SEE SHEET 3 OF 3.

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 429

SHEET 1 OF 3

DocuSigned by: John A. Yannaccone

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2
SPAN B FACE

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-51
1			3			TOTAL SHEETS
2			4			68

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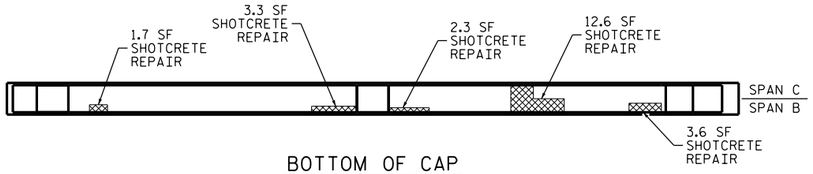
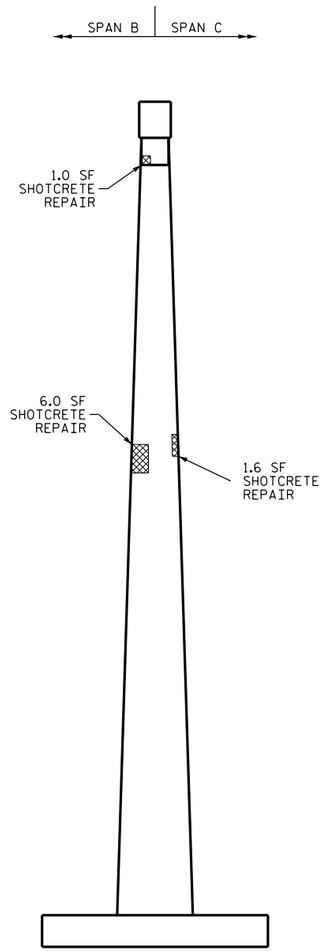


BOTTOM OF CAP



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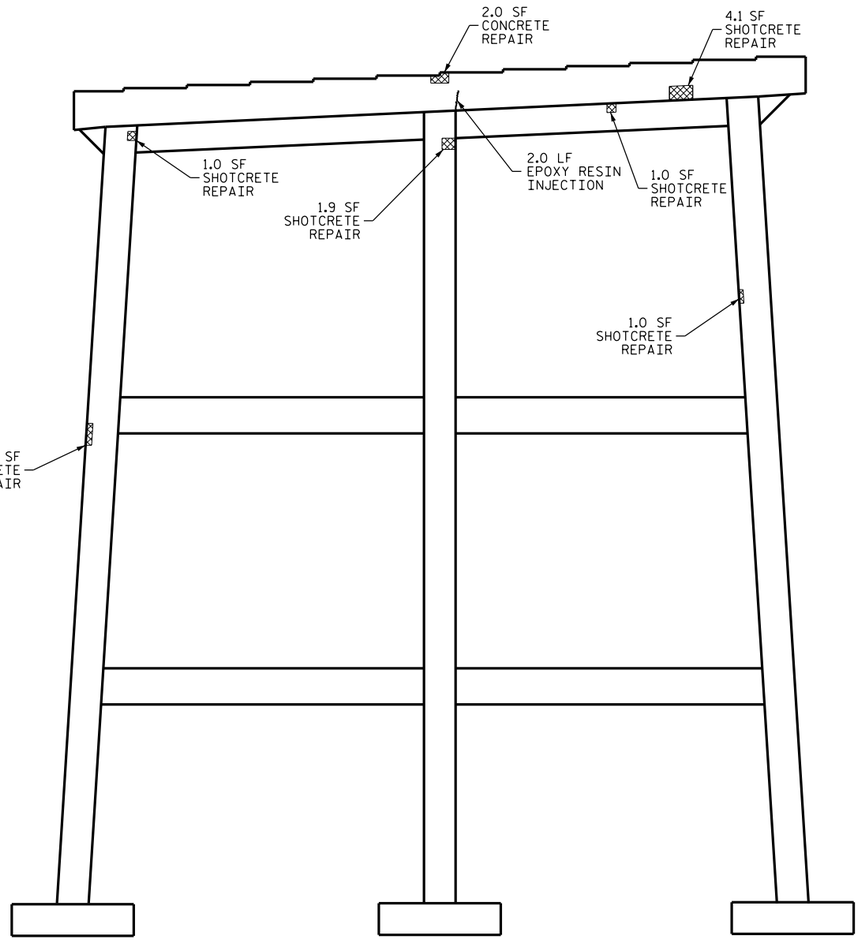

ELEVATION
(SPAN C FACE)

BENT 2

NOTES:

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE THE AREA OF THE CAP BENEATH THE MASONRY PLATES.

FOR EPOXY COATING, SEE SPECIAL PROVISION.

FOR COLUMN SIDE VIEWS, SEE SHEET 3 OF 3.

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 429

SHEET 2 OF 3

DocuSigned by:
John A. Yannaccone
7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2
SPAN C FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-52
1			3			TOTAL SHEETS
2			4			68

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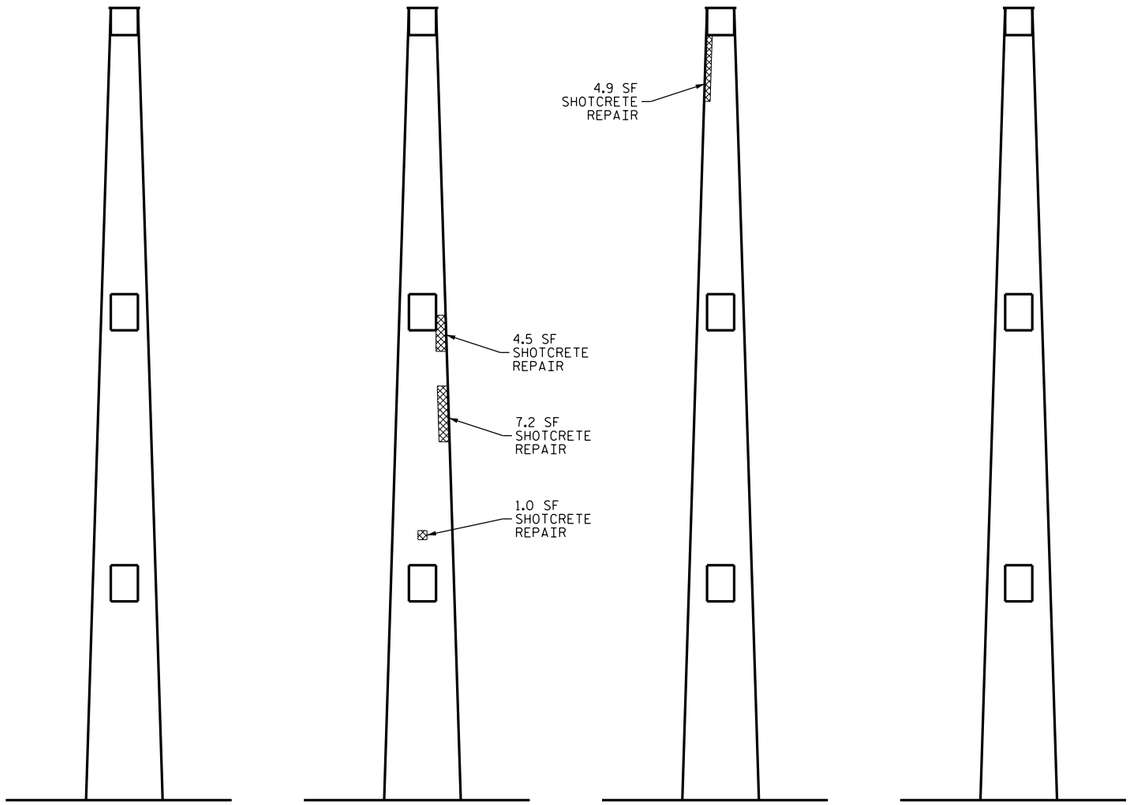
FOR EPOXY COATING, SEE SPECIAL PROVISION.

FOR LOCATION OF COLUMN SIDE VIEWS, SEE SHEET 1 OF 3.

DAMAGED AREA

EPOXY RESIN INJECTION



VIEW EE-EE | VIEW FF-FF | VIEW GG-GG | VIEW HH-HH

BENT 3

DocuSigned by:
John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 429

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2
COLUMN SIDE VIEWS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-53
1			3			TOTAL SHEETS
2			4			68

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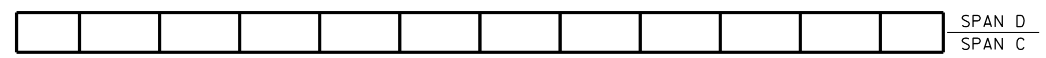
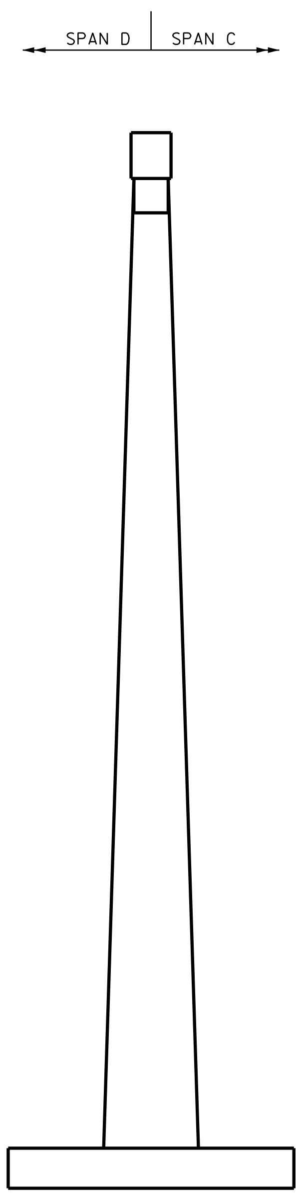
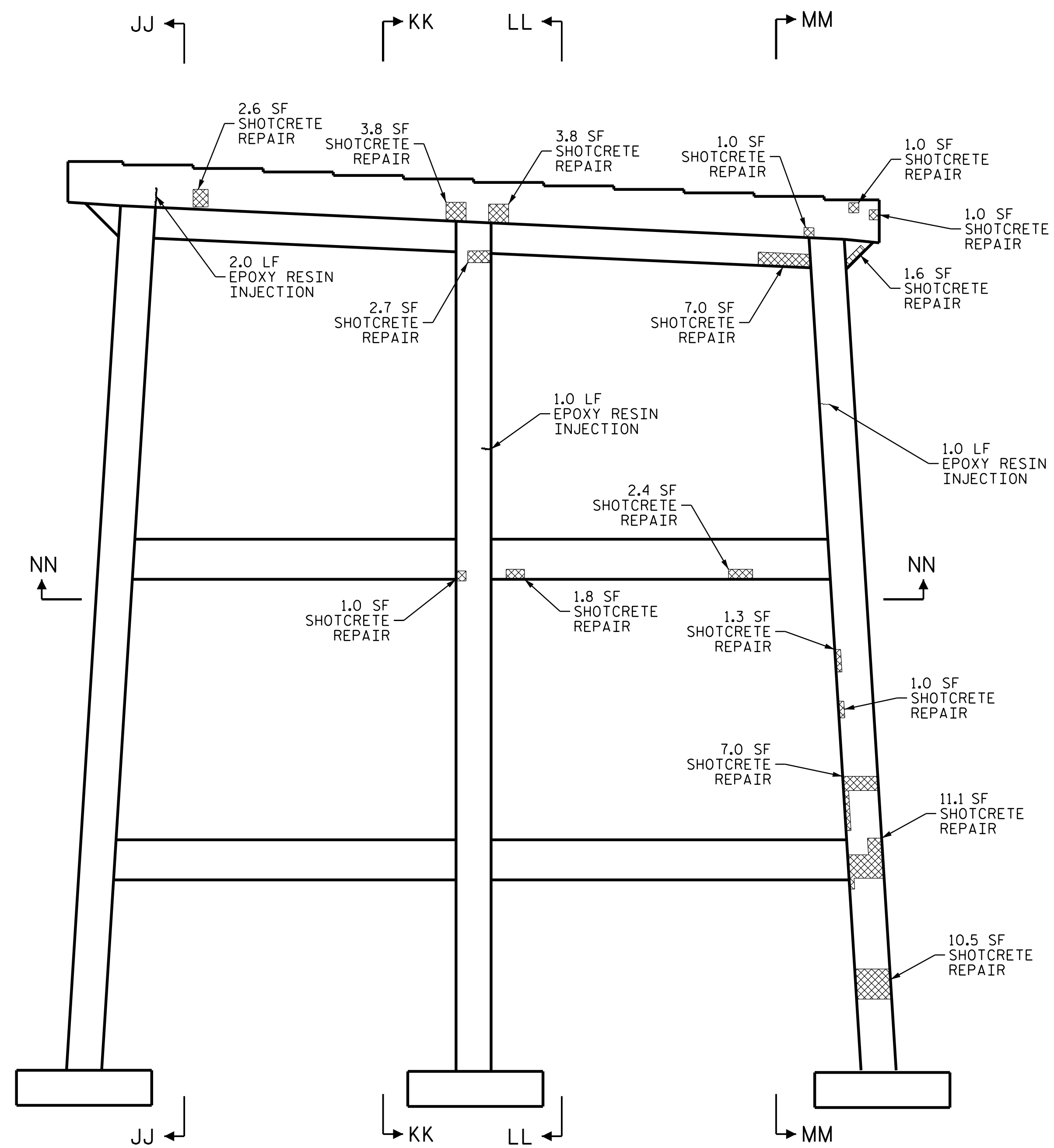


TOP OF CAP



END VIEW



BENT 3
(SPAN C VIEW)

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	67.0	41.9 *		
COLUMNS AND STRUTS	291.3	182.1 *		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMNS AND STRUTS	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		4.0		
COLUMNS AND STRUTS		2.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		284		

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

NOTES:

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FOR EPOXY COATING, SEE SPECIAL PROVISION.

FOR COLUMN SIDE VIEWS, SEE SHEET 3 OF 3.

FOR SECTION NN-NN, SEE SHEET 3 OF 3.

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 429
SHEET 1 OF 3

DocuSigned by:
John A. Yannaccone
7BC...

SEAL 32492 NORTH CAROLINA PROFESSIONAL ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 3
SPAN C FACE

REVISIONS							SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:		S-54
1			3				TOTAL SHEETS
2			4				68

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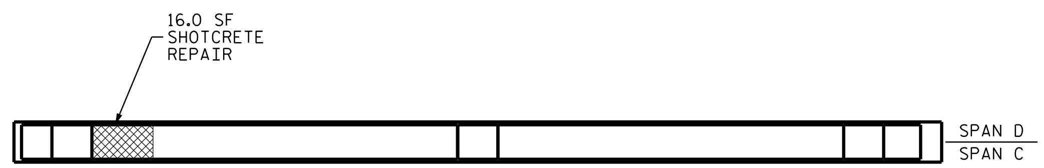
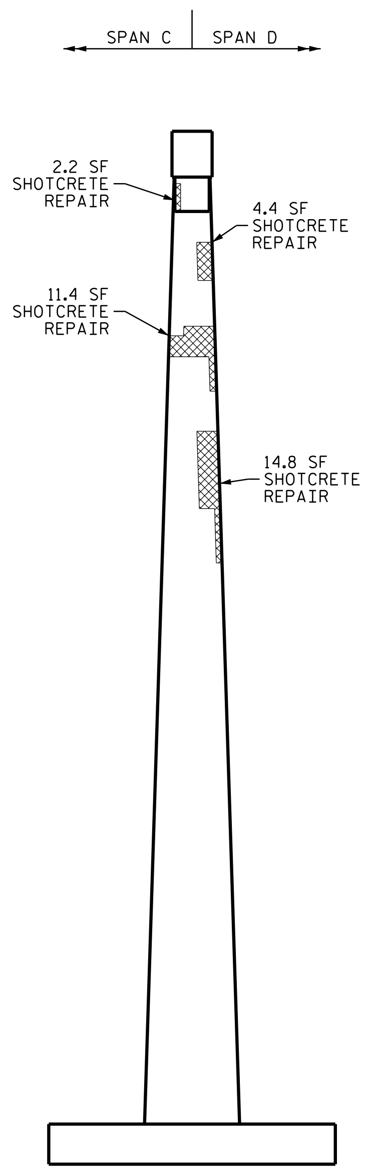


BOTTOM OF CAP



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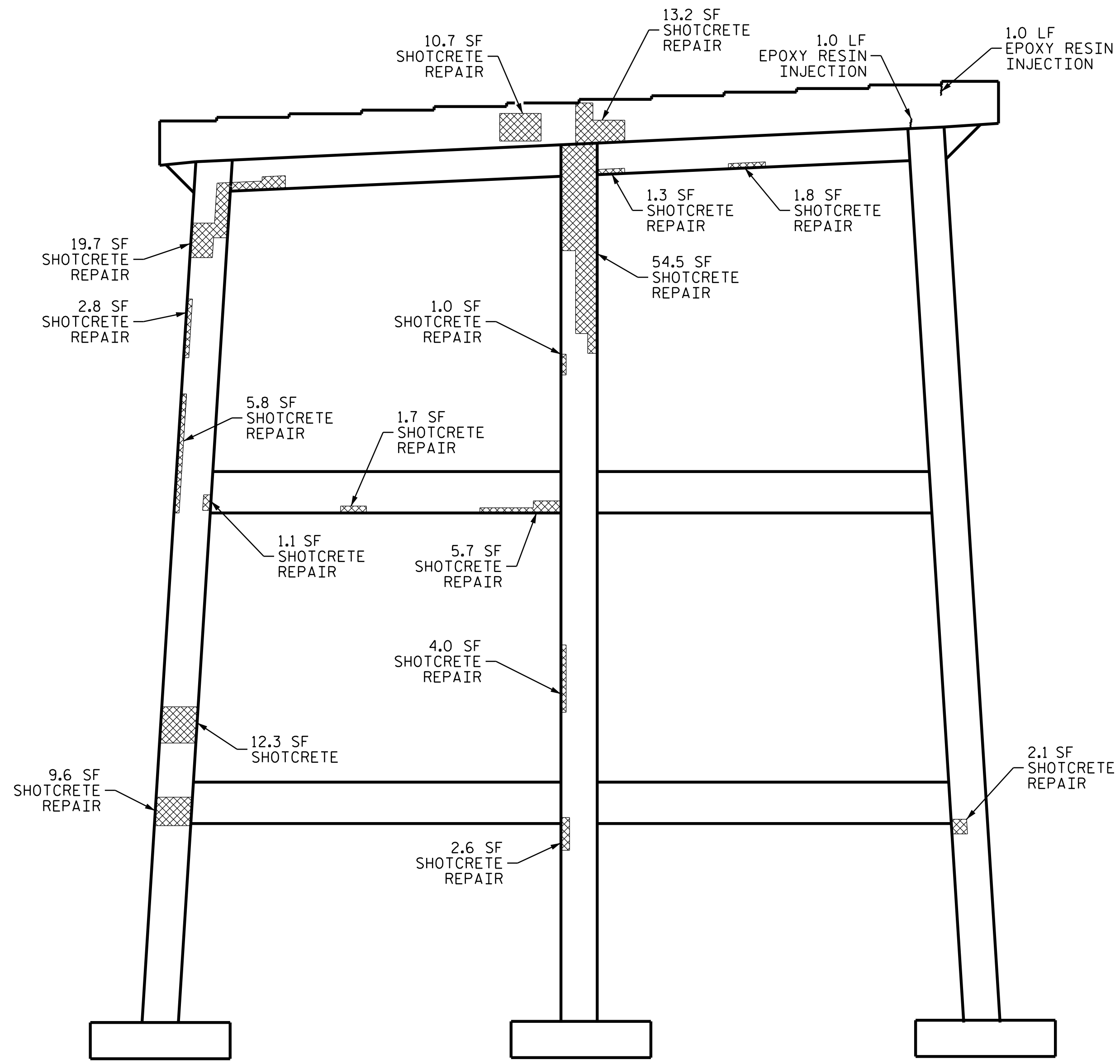

BENT 3
(SPAN D VIEW)

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FOR EPOXY COATING, SEE SPECIAL PROVISION.

FOR COLUMN SIDE VIEWS, SEE SHEET 3 OF 3.

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 429
SHEET 2 OF 3

DocuSigned by:
John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 3
SPAN D FACE

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1			3				TOTAL SHEETS
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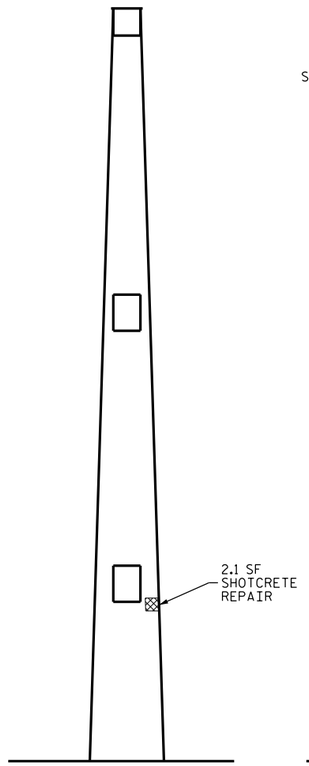
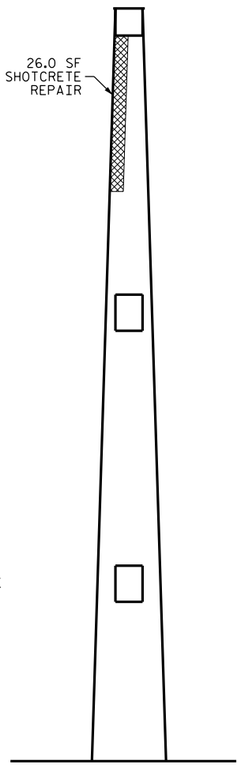
FOR LOCATION OF COLUMN SIDE VIEWS, SEE SHEET 1 OF 3.

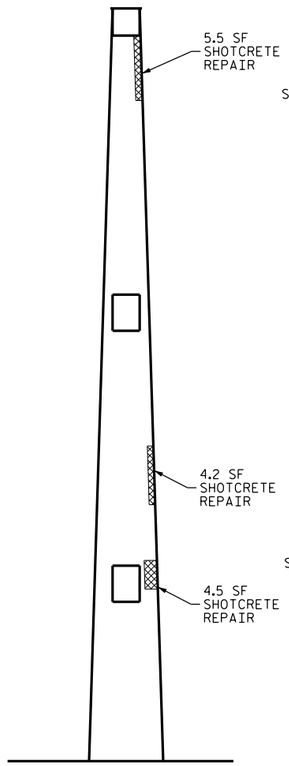
FOR LOCATION OF VIEW NN-NN, SEE SHEET 1 OF 3.



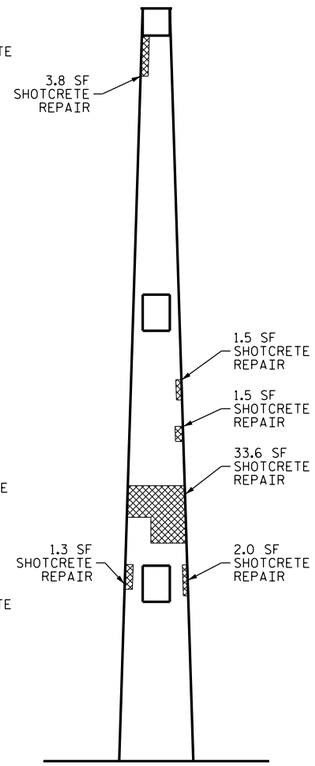
VIEW JJ-JJ



VIEW KK-KK



VIEW LL-LL

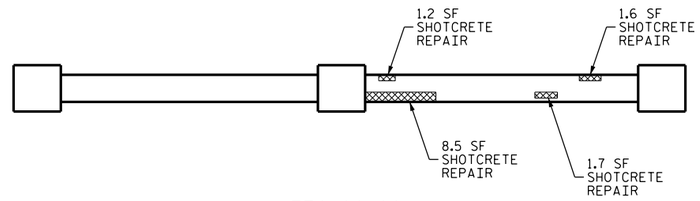


VIEW MM-MM

BENT 3

DAMAGED AREA

EPOXY RESIN INJECTION



VIEW NN-NN
(BOTTOM OF TOP STRUT)

PROJECT NO. I-5892
BUNCOMBE COUNTY
BRIDGE NO. 429

SHEET 3 OF 3

DocuSigned by:
John A. Yannaccone
7BC4[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 3
COLUMN SIDE VIEWS

DRAWN BY : R.L.PUTEK DATE : 06/16
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1			3			TOTAL SHEETS
2			4			68

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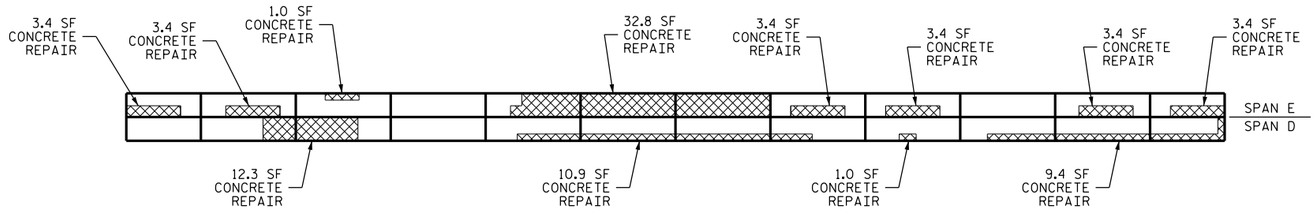
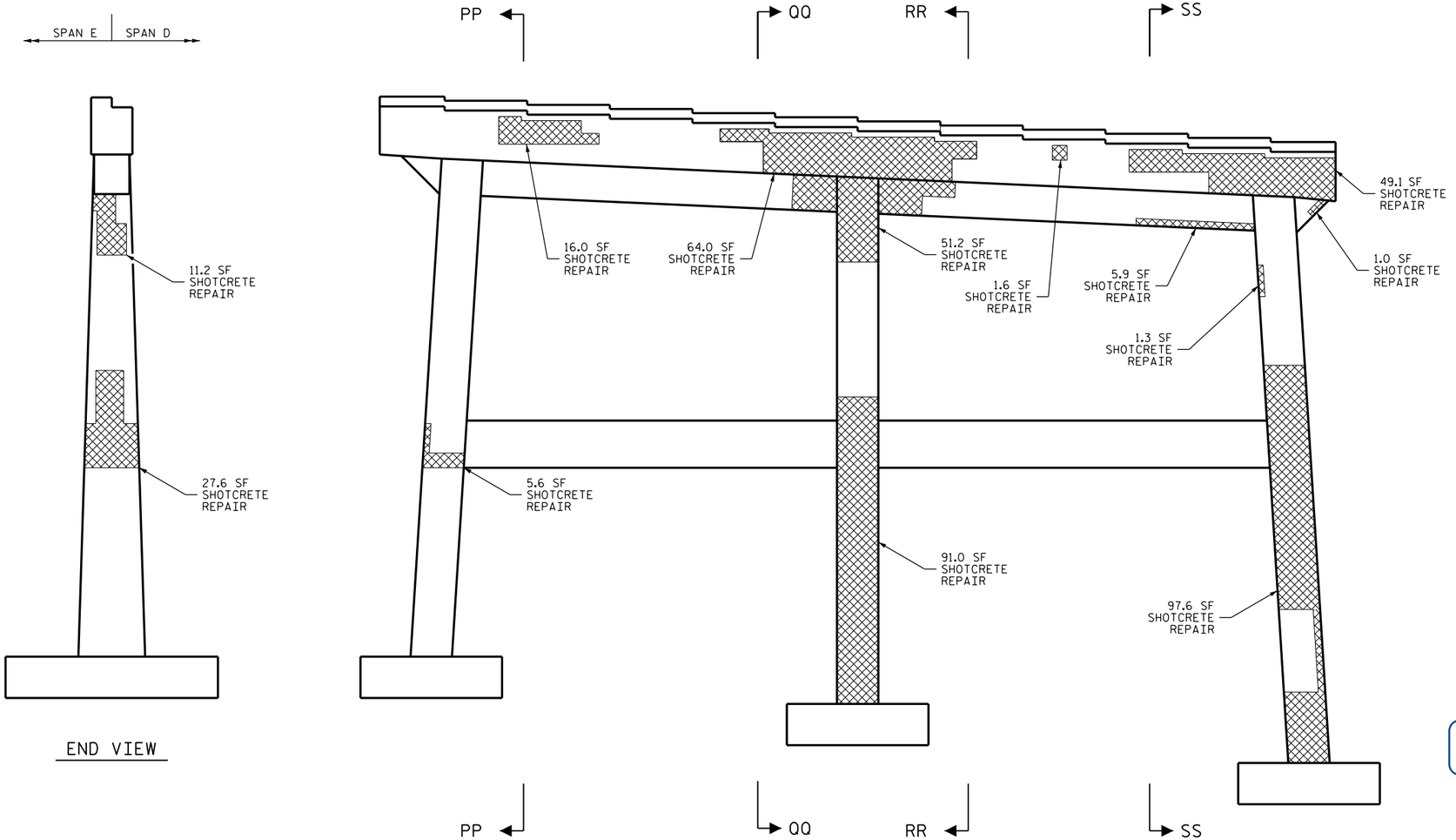


TOP OF CAP



END VIEW

ELEVATION
(SPAN D FACE)

BENT 4

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 4	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	248.5	155.3 ✳		
COLUMN AND STRUTS	476.1	297.6 ✳		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	87.8	54.9 ✳		
COLUMN AND STRUTS	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0.0		
COLUMN AND STRUTS		0.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		283		

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

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

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FOR EPOXY COATING, SEE SPECIAL PROVISION.

FOR COLUMN SIDE VIEWS, SEE SHEET 3 OF 3.

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 429

SHEET 1 OF 3

DocuSigned by:
John A. Yannaccone
7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 4
SPAN D FACE

DRAWN BY : R.L.PUTEK DATE : 06/16
CHECKED BY : S. WANCE DATE : 11/16

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-57
1			3			TOTAL SHEETS
2			4			68

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NOTES:

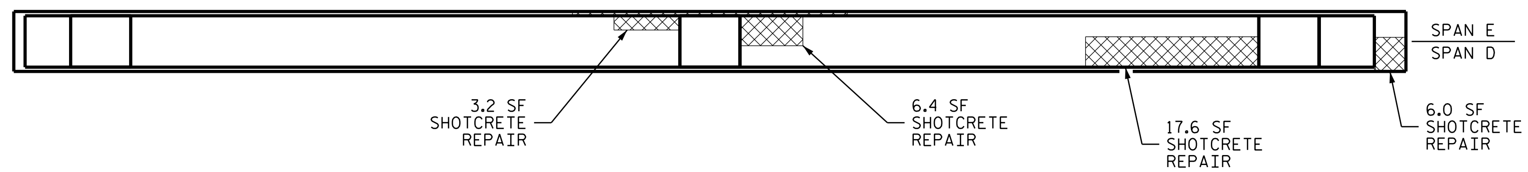
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES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

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE THE AREA OF THE CAP BENEATH THE MASONRY PLATES.

FOR EPOXY COATING, SEE SPECIAL PROVISION.

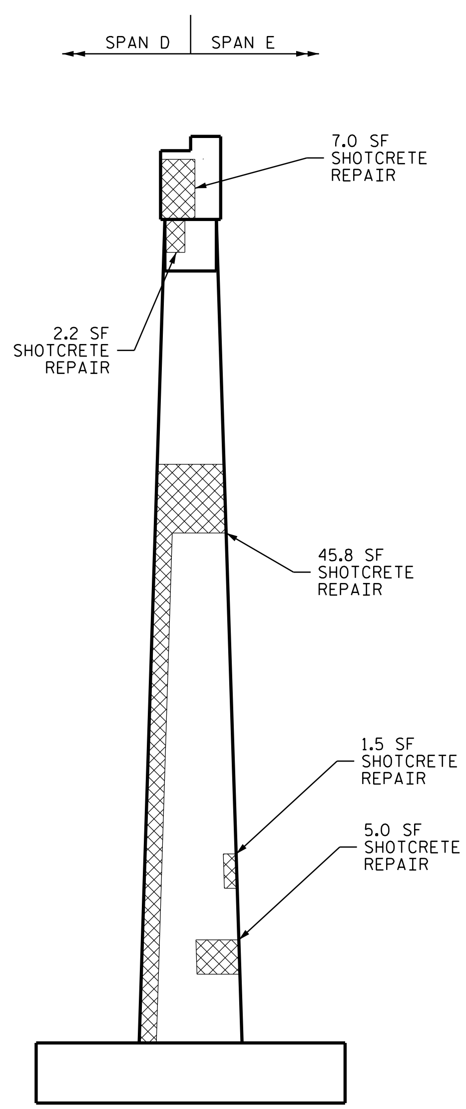
FOR COLUMN SIDE VIEWS, SEE SHEET 3 OF 3.



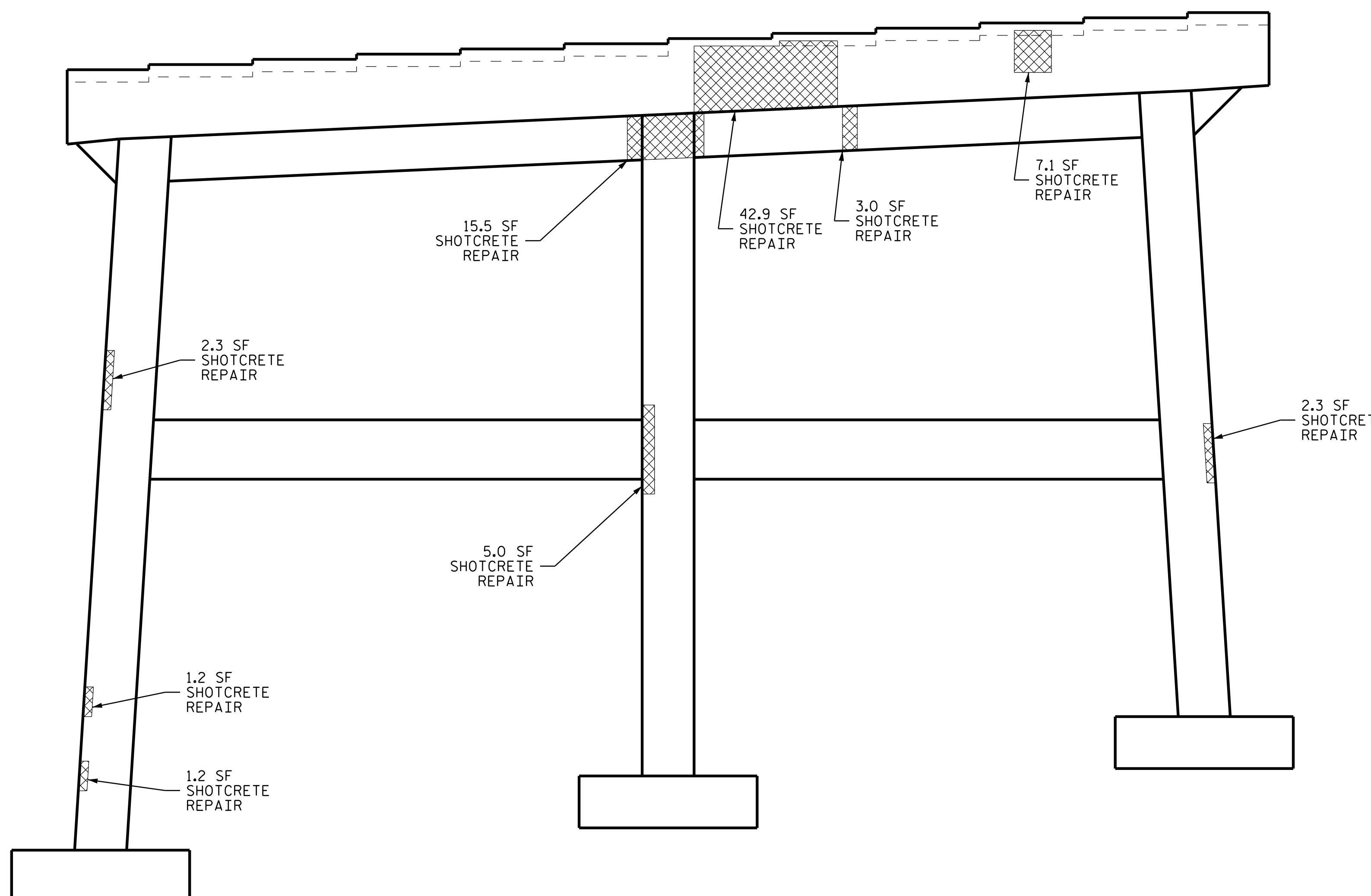
BOTTOM OF CAP

DAMAGED AREA

EPOXY RESIN INJECTION



END VIEW



ELEVATION
(SPAN E FACE)

BENT 4

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 429

SHEET 2 OF 3

DocuSigned by:
John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 4
SPAN E FACE

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NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-58

TOTAL SHEETS 68

DRAWN BY : R.L.PUTEK DATE : 06/16
CHECKED BY : S. WANCE DATE : 11/16

21-JAN-2017 14:07
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NOTES:

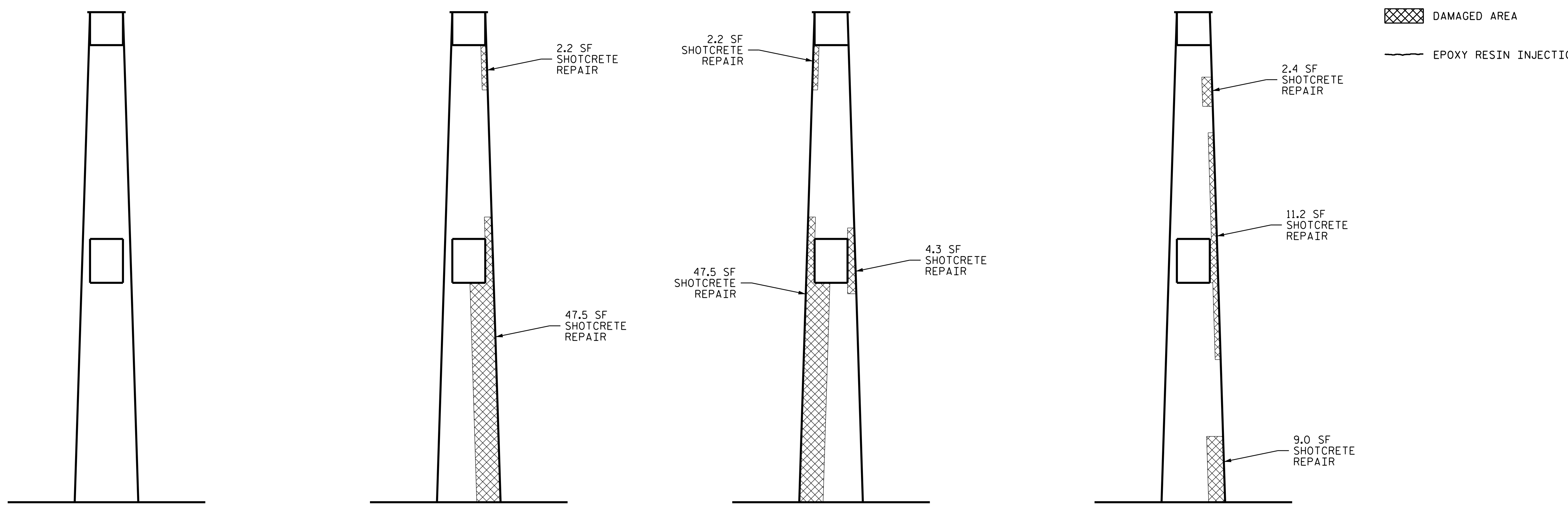
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES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

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE THE AREA OF THE CAP BENEATH THE MASONRY PLATES.

FOR EPOXY COATING, SEE SPECIAL PROVISION.

FOR LOCATION OF COLUMN SIDE VIEWS, SEE SHEET 1 OF 3.



VIEW PP-PP　　VIEW QQ-QQ　　VIEW RR-RR　　VIEW SS-SS

BENT 4

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 429

SHEET 3 OF 3

DocuSigned by:
John A. Yannaccone
7BC3...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 4
COLUMN SIDE VIEWS

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-59
1			3			TOTAL SHEETS
2			4			68

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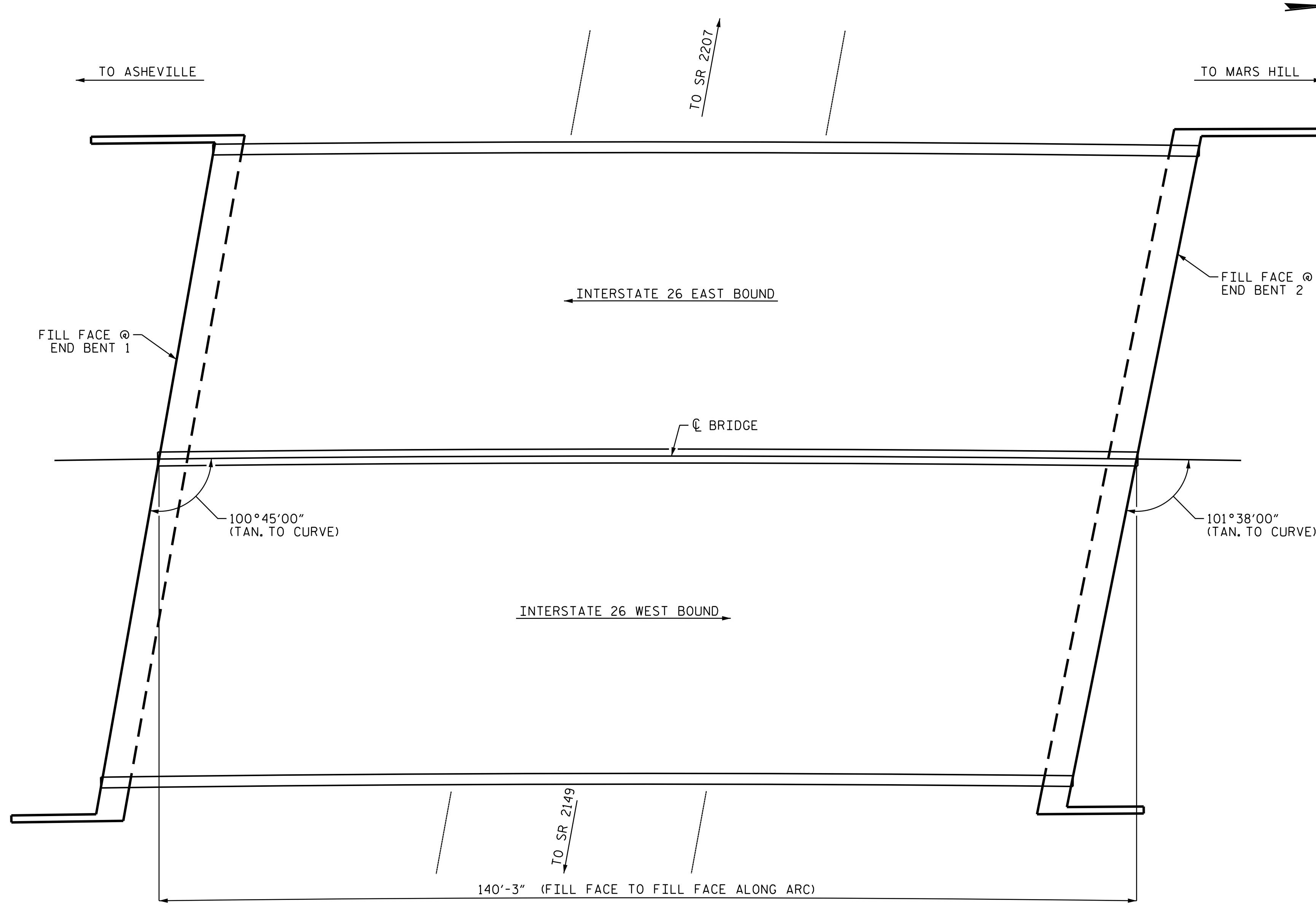
SECTION ALONG ℄ ROADWAY



PLAN

NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 01/27/2015.

BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- CLEAN AND PAINT STEEL GIRDERS AND BEARINGS.
- ZONE PAINTING OF STEEL GIRDERS.
- REPLACE EXPANSION JOINT SEAL.

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

RESIDENT ENGINEER DATE

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 827

SHEET 1 OF 2

DocuSigned by:
John A. Yannaccone
7BC2...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-26
OVER SR 2148
(OLD BURNSVILLE ROAD)

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-60
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : R.L.PUTEK DATE : 05/16
CHECKED BY : J.YANNACCONE DATE : 07/16

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LOCATION SKETCH

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

NOTES

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION 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 CLEANING AND REPAINTING OF BRIDGE, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR CLEANING AND PAINTING EXISTING WEATHERING STEEL, SEE PAINTING EXISTING WEATHERING STEEL STRUCTURE SPECIAL PROVISION.

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE AND PAINTING EXISTING WEATHERING STEEL STRUCTURE SPECIAL PROVISIONS.

FOR POLLUTION CONTROL, SEE PAINTING EXISTING STRUCTURE AND PAINTING EXISTING WEATHERING STEEL STRUCTURE SPECIAL PROVISIONS.

FOR EXPANSION JOINT SEAL, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 827

SHEET 2 OF 2

DocuSigned by:
John A. Yannaccone
7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR BRIDGE ON I-26 OVER SR 2148 (OLD BURNSVILLE ROAD)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-61
1			3			TOTAL SHEETS
2			4			68

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CHECKED BY : J.YANNACCONE DATE : 7/16

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NOTES

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 EXTENT OF REPAIR AREAS PRIOR TO BEGINNING WORK.

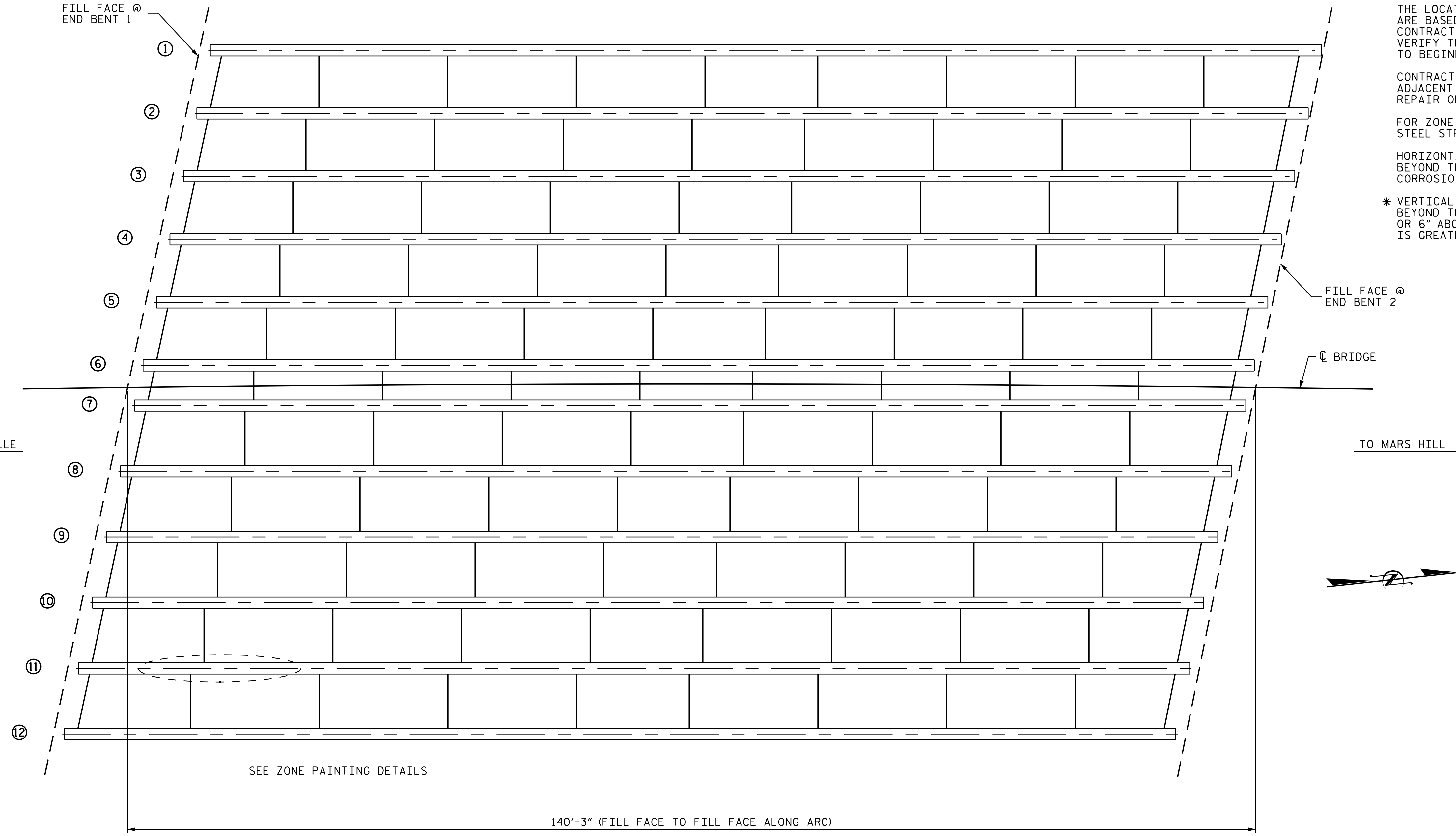
CONTRACTOR SHALL ENSURE THAT EXISTING UTILITIES ADJACENT TO THE BRIDGE ARE NOT DAMAGED DURING THE REPAIR OPERATIONS.

FOR ZONE PAINTING, SEE PAINTING EXISTING WEATHERING STEEL STRUCTURE SPECIAL PROVISION.

HORIZONTAL LIMITS OF ZONE PAINTING SHALL EXTEND 12" BEYOND THE MAXIMUM HORIZONTAL EXTENT OF WEB/FLANGE CORROSION.

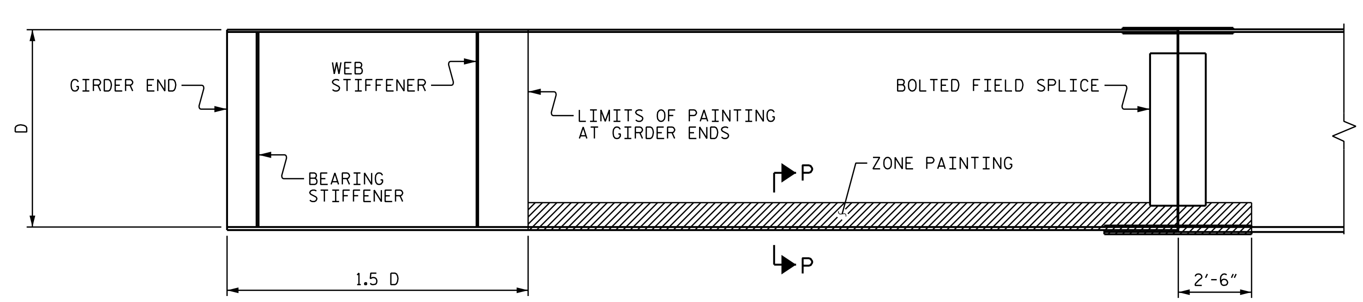
* VERTICAL LIMITS OF ZONE PAINTING SHALL EXTEND 3" BEYOND THE MAXIMUM VERTICAL EXTENT OF WEB CORROSION OR 6" ABOVE THE TOP OF THE BOTTOM FLANGE, WHICHEVER IS GREATER.

① BEAM NUMBER

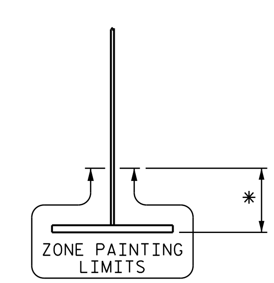


PLAN VIEW

(OTHER LOCATIONS MAY EXIST, SEE NOTES)



GIRDER ELEVATION



SECTION P-P

ZONE PAINTING DETAILS

PROJECT NO. I-5892

BUNCOMBE COUNTY

STATION: 827

DocuSigned by: John A. Yannaccone

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ZONE PAINTING LOCATIONS

REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.	S-62
1			3			TOTAL SHEETS	68
2			4				

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DRAWN BY : CL BRIGHT DATE : 06/16
CHECKED BY : S. WANCE DATE : 10/16

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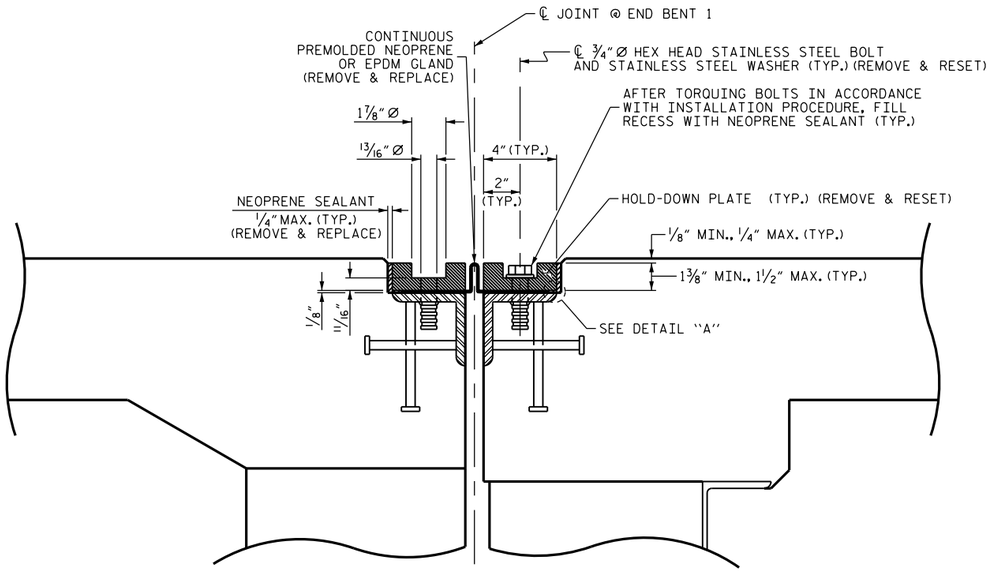


EXPANSION JOINT DETAILS

(SECTION NORMAL TO JOINT -- STEEL SUPERSTRUCTURE)

REPAIR INSTALLATION PROCEDURE

LOOSEN THE EXISTING BOLTS AND HOLD DOWN PLATES TO REMOVE AND REPLACE THE EXISTING GLAND. REMOVE THE EXISTING NEOPRENE SEALANT AND CLEAN THE EXISTING BASE ANGLE OF OIL, GREASE AND OTHER LATENTS.

LAY THE NEW GLAND ON THE BASE ANGLE AND FIELD MARK THE NEW GLAND FOR THE BOLT HOLES. HOLES IN THE NEW GLAND SHALL BE PUNCHED ⅞" IN DIAMETER WITH A HAND PUNCH.

IN ORDER TO CHECK FOR PROPER ALIGNMENT, PLACE THE NEW GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. DO NOT APPLY NEW NEOPRENE SEALANT. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE, BUT DO NOT TIGHTEN. THE ENGINEER WILL INSPECT THE JOINT SEAL DEVICE FOR PROPER ALIGNMENT.

AFTER INSPECTION, REMOVE THE HOLD-DOWN PLATES AND NEW GLAND. APPLY NEW NEOPRENE SEALANT TO THE BASE ANGLE IN ACCORDANCE WITH THE "INSTALLATION SKETCH". PLACE NEW GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE ASSEMBLY AND TORQUE THE BOLTS TO 88 FT-LBS WITH A TORQUE WRENCH. CHECK THE TORQUE AFTER THREE (3) HOURS AND, IF NECESSARY, RETIGHTEN TO 88 FT-LBS. A FINAL CHECK SHALL BE MADE AT SEVEN (7) DAYS. TORQUE SHALL NOT BE LESS THAN 80 FT-LBS AFTER SEVEN (7) DAYS.

AFTER PROPER TORQUING, CLEAN THE BOLT HOLE RECESSES AND THE RECESS BETWEEN THE JOINT SEAL DEVICE AND CONCRETE. COMPLETELY FILL THESE RECESSES WITH NEW NEOPRENE SEALANT.

GENERAL NOTES

ALL HOLD-DOWN BOLTS SHALL CONFORM TO ASTM F593 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL CONFORM TO ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

A PREMOLDED CORRUGATED OR NON-CORRUGATED GLAND SHALL BE USED FOR JOINTS SKEWED BETWEEN 50° THRU 130°.

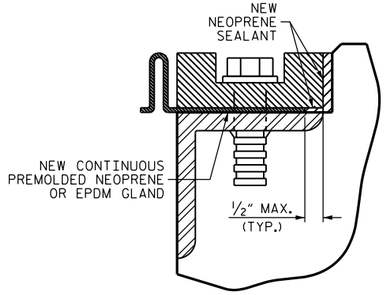
THE FINISHED EXPANSION SEAL DEVICE SHALL BE A MINIMUM ⅛" AND A MAXIMUM OF ¼" BELOW THE TOP OF SLAB.

FOR EXPANSION JOINT SEAL REPAIR, SEE SPECIAL PROVISIONS.

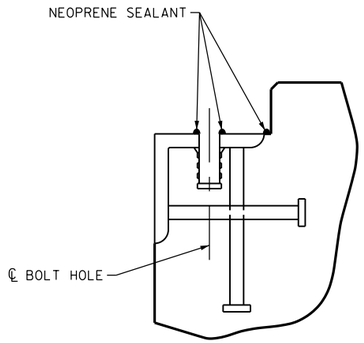
NO SEPARATE PAYMENT WILL BE MADE FOR REMOVING AND REINSTALLING MEDIAN AND BARRIER RAIL COVER PLATES. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "EXPANSION JOINT SEALS".

MOVEMENT AND SETTING AT JOINT

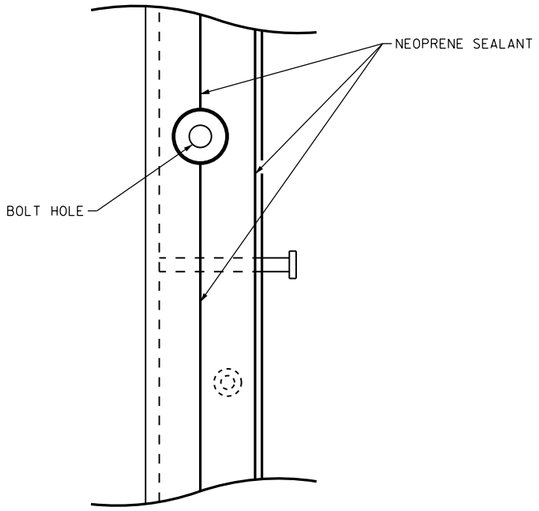
LOCATION	SKEW ANGLE	TOTAL MOVEMENT (ALONG ℄ RDWY)	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
END BENT 1	100°45'00"	1⅝"	2¼"	1 13/16"	1⅜"



DETAIL "A"



CROSS SECTION



PLAN VIEW

INSTALLATION SKETCH

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 827

DocuSigned by:
John A. Yannaccone
7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/23/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXPANSION JOINT SEAL REPAIR DETAILS

DRAWN BY : R.L.PUTEK DATE : 07/16
CHECKED BY : J.YANNACCONE DATE : 07/16

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1			3			TOTAL SHEETS
2			4			68

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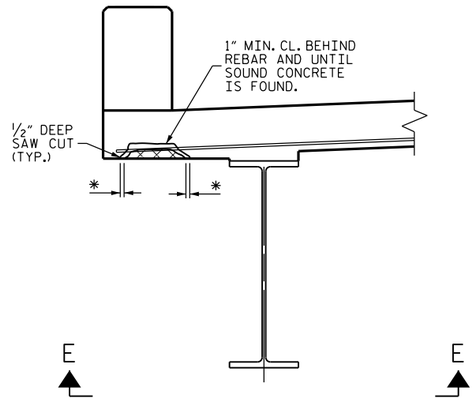
NOTE: OVERHANG DIAPHRAGMS TO BE REMOVED AND REPLACED, ARE SHOWN ON "PLAN OF SPAN" SHEETS. OVERHANG DIAPHRAGMS SHALL BE REMOVED PRIOR TO CLEANING AND PAINTING OF BEAMS AND REPLACED AFTER BEAM REPAIRS AND PAINTING ARE COMPLETE.



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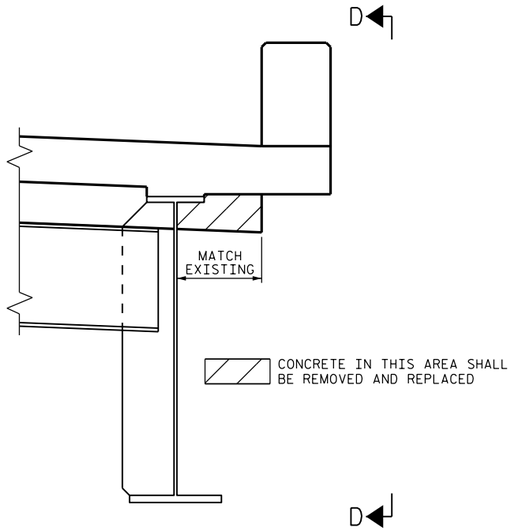

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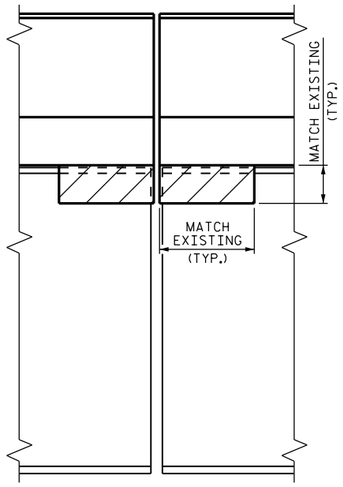
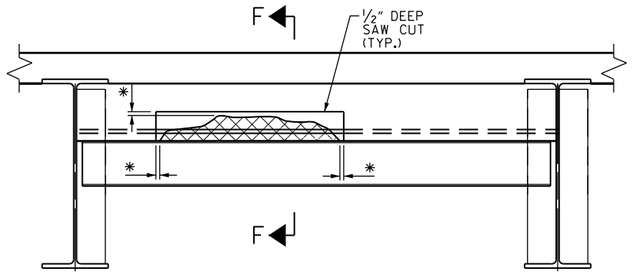


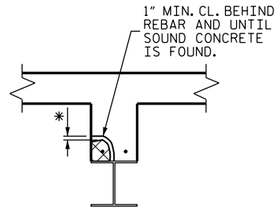
SECTION D-D

OVERHANG DIAPHRAGM REPLACEMENT DETAILS



TYPICAL SECTION

* REMOVE CONCRETE UNTIL SOUND CONCRETE IS FOUND (2" MIN. CL.)



DAMAGED AREA

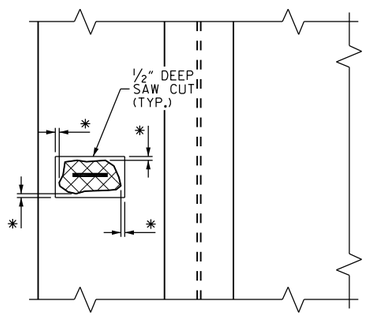
NOTE:
EXISTING REBAR TO REMAIN IN PLACE. CLEAN AND REPAIR AS NECESSARY.

SECTION F-F

INTERIOR DIAPHRAGM REPAIR DETAILS

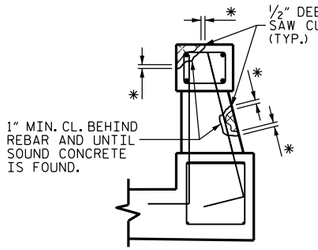
DAMAGED AREA

* REMOVE CONCRETE UNTIL SOUND CONCRETE IS FOUND (2" MIN. CL.)

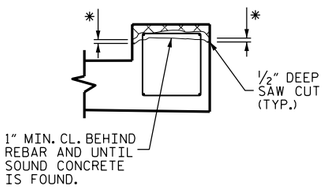


SECTION E-E

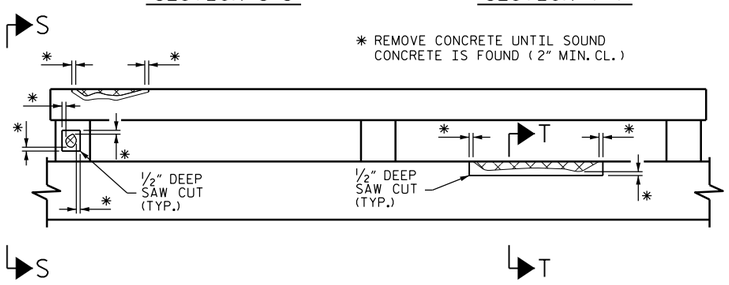
OVERHANG DETAILS



SECTION S-S



SECTION T-T



BRIDGE RAIL AND CURB REPAIR DETAILS

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 412, 415, 421, 422, 429, 827

DocuSigned by:
John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-64
1			3			TOTAL SHEETS
2			4			68

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

21-JAN-2017 14:07
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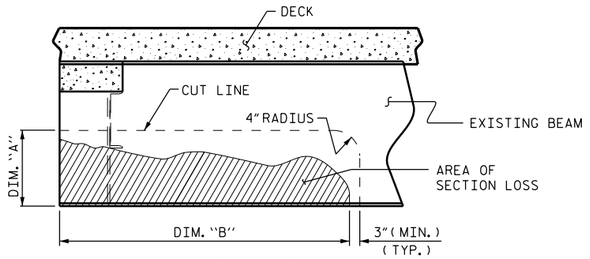
BEAM END SECTION REPAIR



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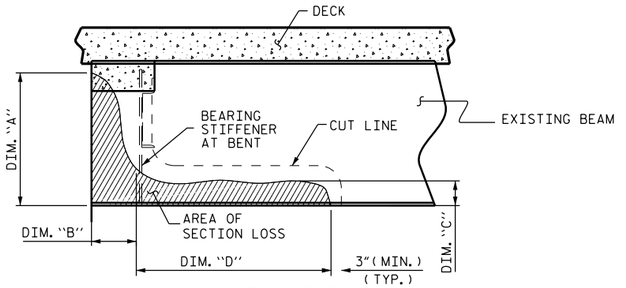

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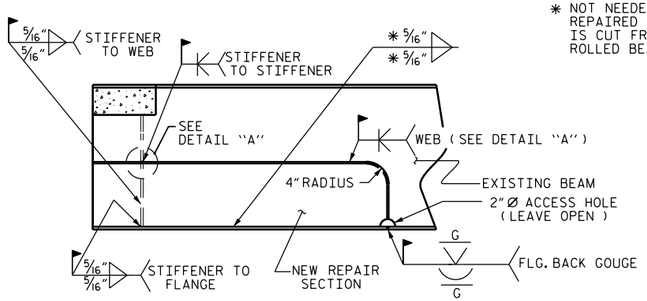
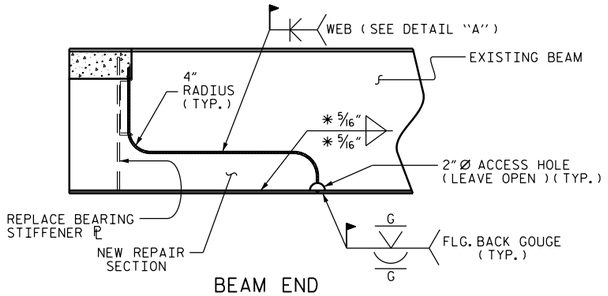


* NOT NEEDED IF REPAIRED SECTION IS CUT FROM A ROLLED BEAM

BEAM END SECTION REPAIR



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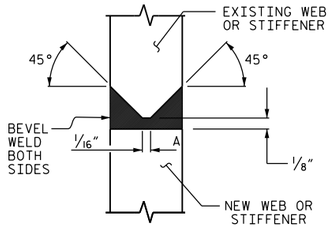

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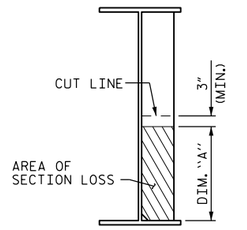
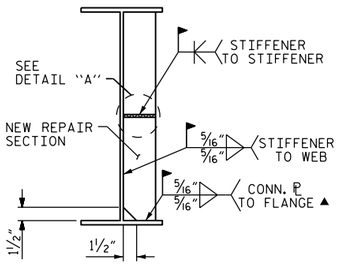


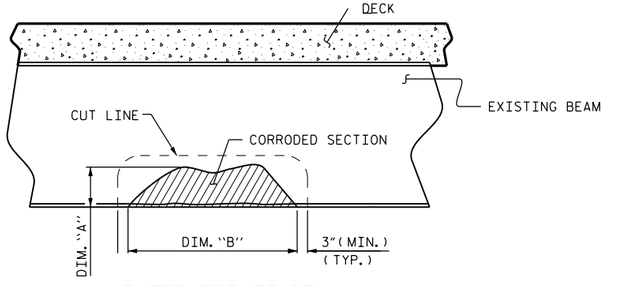
STIFFENER/CONN. ℄ SECTION LOSS



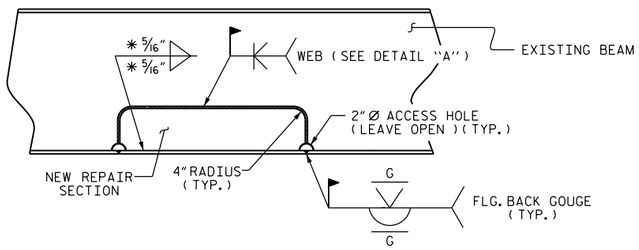
STIFFENER/CONN. ℄ SECTION REPAIR

▲ FOR STIFFENERS, MILL TO BEAR AND DO NOT WELD

STIFFENER/CONNECTOR PLATE REPAIR



INTERMEDIATE BEAM SECTION LOSS



INTERMEDIATE BEAM SECTION REPAIR

INTERMEDIATE BEAM SECTION REPAIR

BEAM SECTION REPAIR NOTES

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 RESET 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 SPLICED WITH A SIMLAR 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-5892

BUMCOMBE COUNTY

BRIDGE NO. 412, 415, 421, 422, 429, 827

DocuSigned by:
John A. Yannaccone
7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BEAM SECTION REPAIR DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-65
1			3			TOTAL SHEETS
2			4			68

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CHECKED BY : J. A. YANNACCONE DATE : 12/2014

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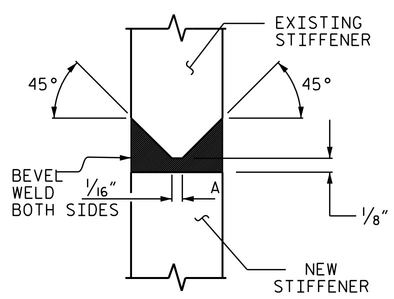

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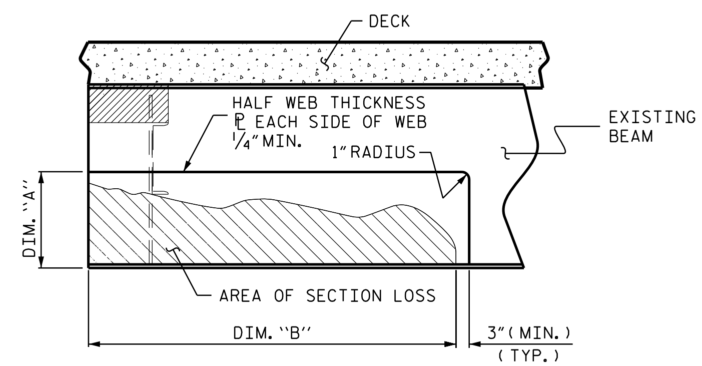
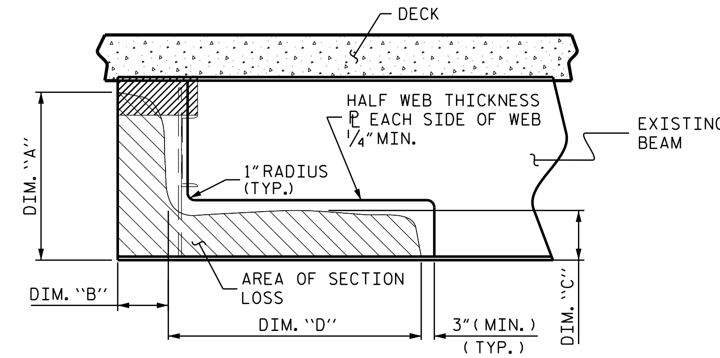


BEAM END SECTION LOSS AND PLATING REPAIR



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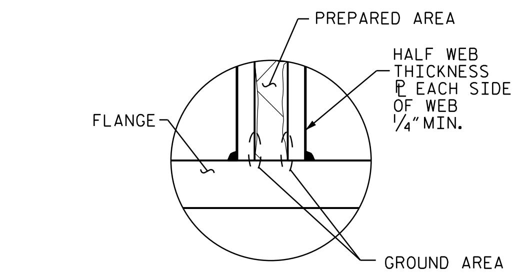

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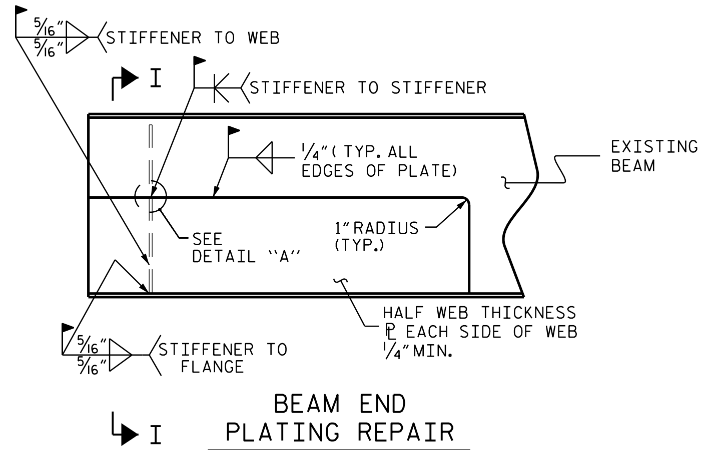

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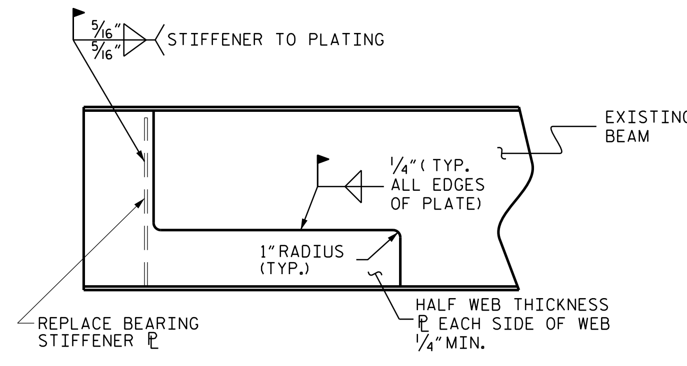
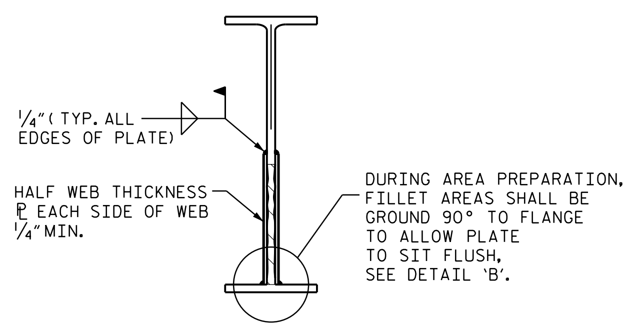
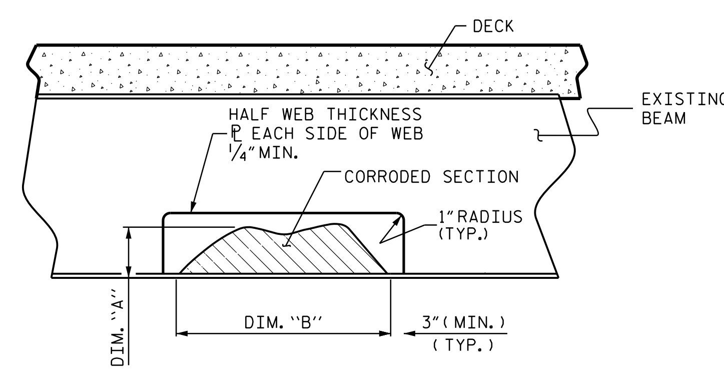


BEAM END PLATING REPAIR

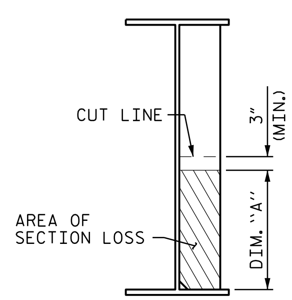
BEAM END PLATING REPAIR



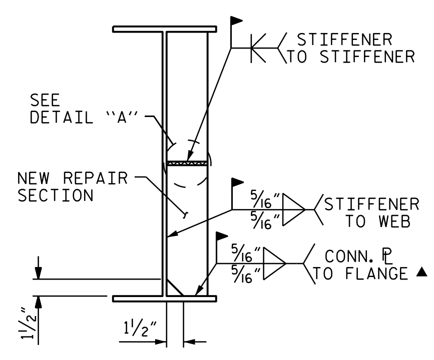
SECTION I-I



INTERMEDIATE SECTION LOSS BEAM PLATING REPAIR



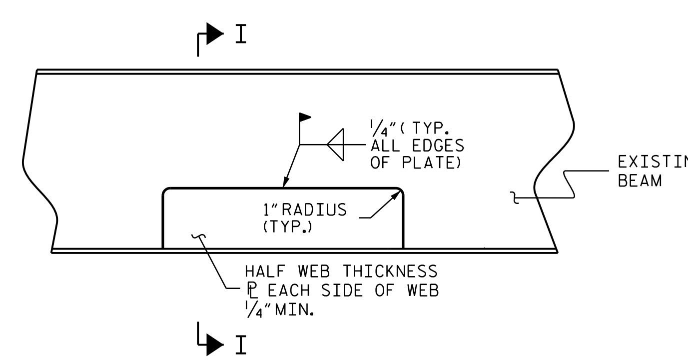
STIFFENER/CONN. ℙ SECTION LOSS



STIFFENER/CONN. ℙ SECTION REPAIR

▲ FOR STIFFENERS, MILL TO BEAR AND DO NOT WELD

STIFFENER/CONNECTOR PLATE REPAIR



INTERMEDIATE SECTION LOSS BEAM PLATING REPAIR

INTERMEDIATE BEAM PLATING REPAIR

BEAM PLATING REPAIR NOTES

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 SPLICED 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-5892

BUMCOMBE COUNTY

BRIDGE NO. 412, 415, 421, 422, 429, 827

DocuSigned by:
John A. Yannaccone
7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BEAM PLATING REPAIR DETAILS

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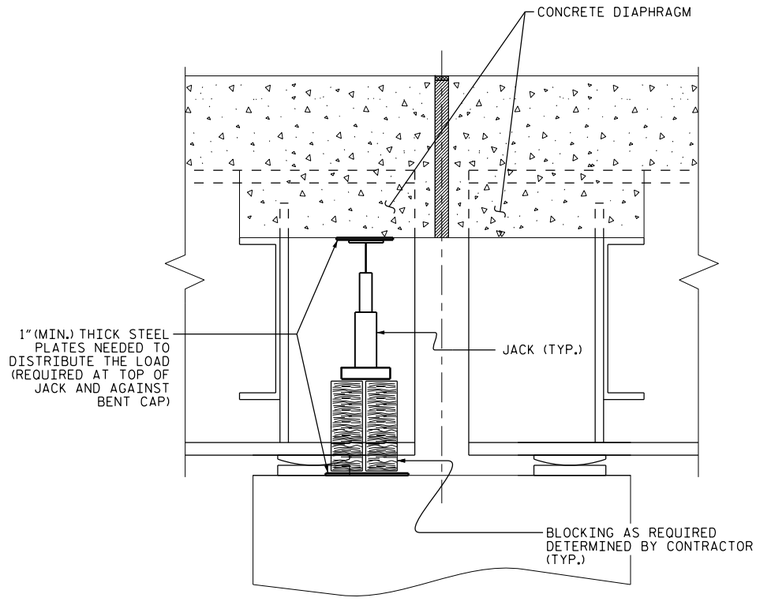

SECTION THRU DIAPHRAGM

JACKING NOTES:

THE CONTRACTOR SHALL SUMIT 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 $\frac{1}{8}$".

PROJECT NO. I-5892

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1/21/2017

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JACKING DETAILS

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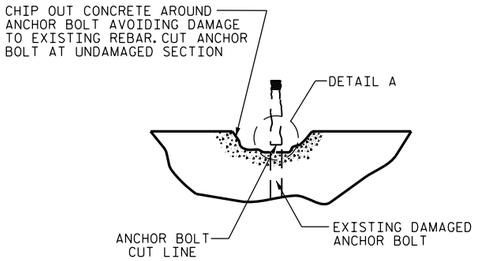

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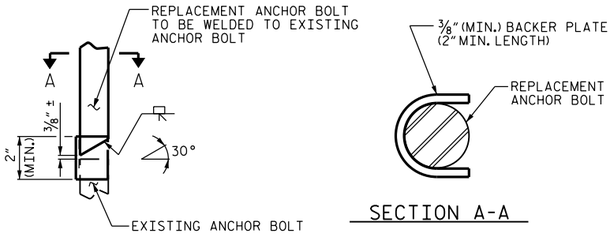


DETAIL A

SECTION A-A

ANCHOR BOLT WELD DETAIL

CONSTRUCTION SEQUENCE:

JACK BRIDGE AND CHIP OUT AROUND DAMAGED ANCHOR BOLT. REMOVE CONCRETE BELOW UNDAMAGED AREA ENOUGH TO CUT AND PREPARE FOR WELDING.

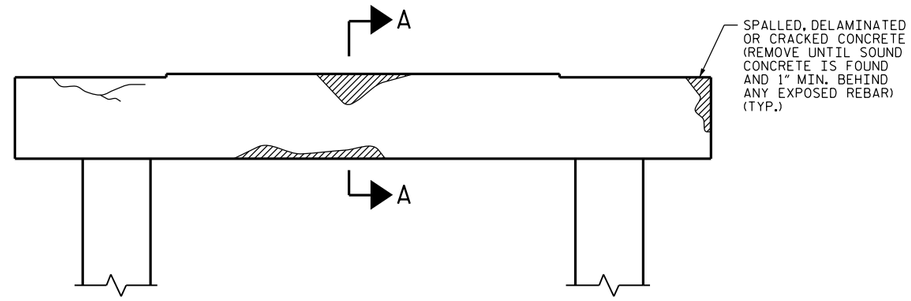
WELD ANCHOR BOLT AS SHOWN ABOVE.

ALL WELDS NEED TO BE APPROVED BY THE NCDOT MATERIALS AND TEST UNIT BEFORE RECASTING CONCRETE AT BRIDGE SEAT.

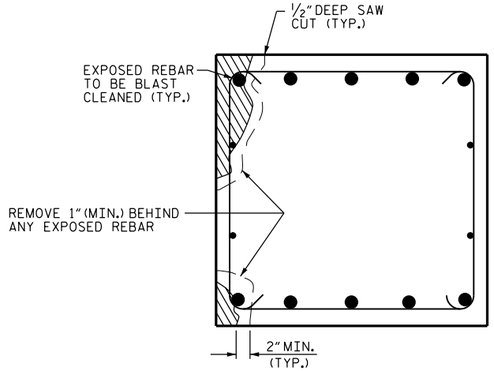
REPAIR BRIDGE SEAT IN ACCORDANCE WITH THE SPECIAL PROVISION FOR CONCRETE REPAIR.

REMOVE JACKS.

ANCHOR BOLT REPAIR

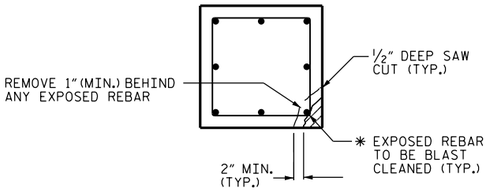


BENT CAP REPAIRS

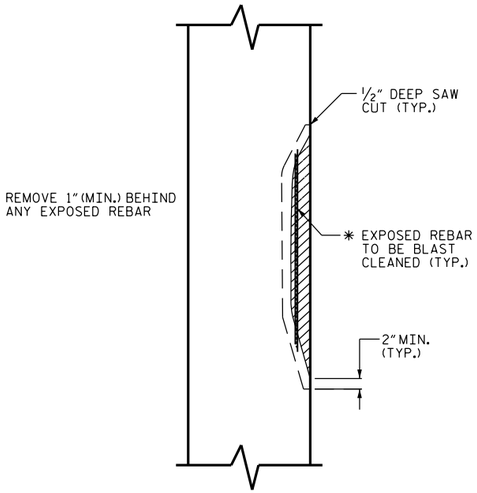


SECTION A-A

CAP REPAIR



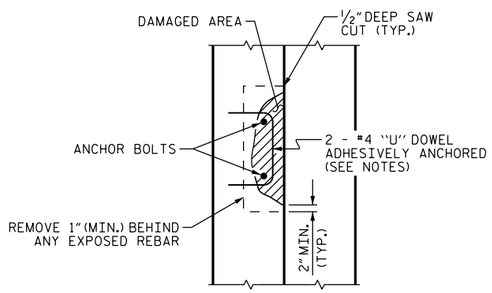
PLAN OF COLUMN



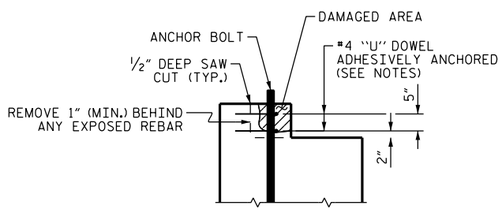
* REPAIR LENGTH SHALL NOT EXCEED 10 FEET.

ELEVATION OF COLUMN

COLUMN REPAIR



PLAN



ELEVATION

PEDESTAL WALL REPAIR

NOTE

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

THE #4 "U" DOWELS ARE REQUIRED ONLY AROUND THE ANCHOR BOLTS. THE EXISTING REINFORCING STEEL IN THE PEDESTAL WALL SHALL BE CLEANED, STRAIGHTENED AND REMAIN IN PLACE.

FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS.

DocuSigned by:
John A. Yannaccone
7BC3[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

1/21/2017

PROJECT NO. I-5892

BUNCOMBE COUNTY

BRIDGE NO. 412, 415, 421, 422, 429, 827

STATE OF NORTH CAROLINA
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RALEIGH

TYPICAL CAP AND COLUMN REPAIR DETAILS

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STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

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

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

REV. 6-16-95 EEM (/) RGW REV. 5-7-03 RWW (/) JTE REV. 10-1-11 MAA (/) GM
REV. 8-16-99 RWW (/) LES REV. 5-1-06 TLA (/) GM
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