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PROJECT: I-5809

CONTRACT: -

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

McDOWELL COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5809	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
50452.1.1	NHPP-0040(027)	P.E.
50452.3.1	NHPP-0040(027)	CONST.

LOCATION: ***McDOWELL COUNTY:***

BRIDGE #138 ON INTERSTATE 40 EASTBOUND OVER NC 226
BRIDGE #143 ON INTERSTATE 40 WESTBOUND OVER NC 226
BRIDGE #146 ON INTERSTATE 40 EASTBOUND OVER SR 1741 (FAIRVIEW ROAD)
BRIDGE #149 ON INTERSTATE 40 WESTBOUND OVER SR 1741 (FAIRVIEW ROAD)
BRIDGE #151 ON INTERSTATE 40 EASTBOUND OVER SR 1760 (HARMONY GROVE ROAD)
BRIDGE #152 ON INTERSTATE 40 WESTBOUND OVER SR 1760 (HARMONY GROVE ROAD)
BRIDGE #155 ON INTERSTATE 40 WESTBOUND OVER SR 1803 (SOUTH CREEK ROAD)

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

VICINITY MAP – McDOWELL CO.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DESIGN DATA

McDOWELL COUNTY

#138 ADT 2012	=13,000	#151 ADT 2012	=13,000
#143 ADT 2012	=13,000	#152 ADT 2012	=15,000
#146 ADT 2013	=15,500	#155 ADT 2012	=15,000
#149 ADT 2012	=15,000		

PROJECT LENGTH

McDOWELL COUNTY

#138 =	0.038 MILE	#151 =	0.041 MILE
#143 =	0.038 MILE	#152 =	0.041 MILE
#146 =	0.052 MILE	#155 =	0.045 MILE
#149 =	0.052 MILE		

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

DOUGLAS R. CALHOUN, P.E.
PROJECT ENGINEER

2012 STANDARD SPECIFICATIONS

LETTING DATE:
FEBRUARY 21, 2017

DocuSigned by:
John A. Yannaccone
7BC36E9...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

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

PROJECT: I–5809

CONTRACT: –

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

McDOWELL COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5809	1A	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
50452.1.1	NHPP–0040(027)	P.E.
50452.3.1	NHPP–0040(027)	CONST.

LOCATION: ***McDOWELL COUNTY:***

BRIDGE #138 ON INTERSTATE 40 EASTBOUND OVER NC 226
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BRIDGE #152 ON INTERSTATE 40 WESTBOUND OVER SR 1760 (HARMONY GROVE ROAD)
BRIDGE #155 ON INTERSTATE 40 WESTBOUND OVER SR 1803 (SOUTH CREEK ROAD)

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

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

BRIDGE NO.	EPOXY OVERLAY SYSTEM - MECHANICALLY DISTRIBUTED	CONCRETE DECK REPAIR FOR EPOXY OVERLAY	GROOVING BRIDGE FLOORS	CLASS II, SURFACE PREPARATION	CLASS III, SURFACE PREPARATION	LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH	PLACING AND FINISHING OF LATEX MODIFIED CONC. OVERLAY - VERY EARLY STRENGTH	SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	◆ CONCRETE REPAIRS	EPOXY RESIN INJECTION	CLEANING & REPAINTING OF BRIDGE #_	PAINTING CONTAINMENT FOR BRIDGE #_	POLLUTION CONTROL	VOLUMETRIC MIXER	CONCRETE FOR DECK REPAIR	FOAM JOINT SEALS	ELASTOMERIC CONCRETE	BRIDGE JOINT DEMOLITION	BEAM REPAIR	BRIDGE JACKING	EPOXY COATING
	SQ. FT.	SQ. FT.	SQ. FT.	SQ. YDS.	SQ. YDS.	CU. YD.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. FT.	LIN. FT.	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	CU. FT.	LUMP SUM	CU. FT.	SQ. FT.	LBS.	EA.	SQ. FT.
138	9,304	2.0	——	——	——	——	——	——	——	38.1	36.0	LUMP SUM	LUMP SUM	LUMP SUM	——	——	LUMP SUM	48.4	193	——	6	258
143	9,304	——	——	——	——	——	——	——	——	51.3	38.0	LUMP SUM	LUMP SUM	LUMP SUM	——	——	LUMP SUM	48.4	193	——	4	258
146	10,526	3.8	——	——	——	——	——	——	——	26.0	26.0	LUMP SUM	LUMP SUM	LUMP SUM	——	——	LUMP SUM	100.8	402	55	——	768
149	10,526	3.5	——	——	——	——	——	——	——	58.0	33.0	LUMP SUM	LUMP SUM	LUMP SUM	——	——	LUMP SUM	100.8	402	——	2	768
151	10,164	0.5	——	——	——	——	——	——	——	38.8	38.0	LUMP SUM	LUMP SUM	LUMP SUM	——	——	LUMP SUM	69.5	277	——	5	386
152	8,470	——	——	——	——	——	——	——	——	31.0	29.0	LUMP SUM	LUMP SUM	LUMP SUM	——	——	LUMP SUM	58.0	231	——	2	339
155	——	——	8,057	45	2.0	51.3	978	978	978	——	——	——	——	——	LUMP SUM	11.6	LUMP SUM	27.6	110	——	——	——
TOTAL	58,294	9.8	8,057	45	2.0	51.3	978	978	978	243.2	200.0	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	11.6	LUMP SUM	453.5	1,808	55	19	2,777

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

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 138, 143, 146, 149, 151, 152, 155

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TOTAL BILL OF MATERIAL

DRAWN BY : J. YANNACCONE DATE : 10/15
CHECKED BY : S. WANCE DATE : 1/16

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1			3			TOTAL SHEETS
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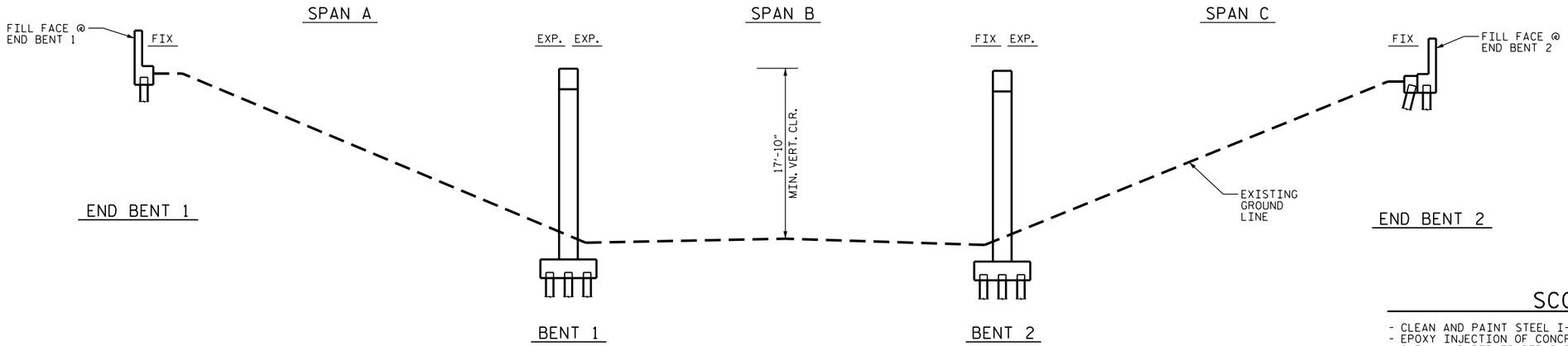


SECTION ALONG ℄ ROADWAY

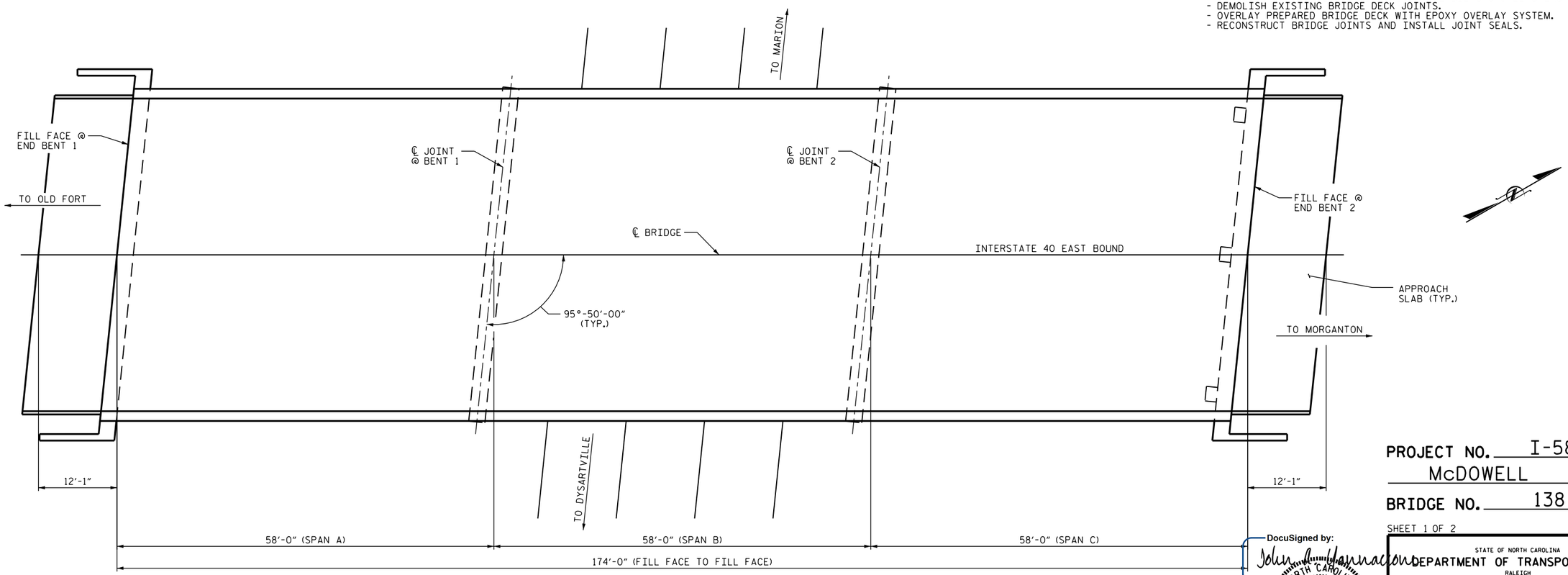
NOTES

PROFILE INFOMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 04/14/2014.

BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- CLEAN AND PAINT STEEL I-BEAMS AND BEARINGS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- CLEAN AND REPAIR REBAR IN CONCRETE REPAIR AREAS.
- PERFORM CONCRETE REPAIRS IN PREPARED AREAS.
- REMOVE DEBRIS FROM TOP OF BENT CAPS AND APPLY EPOXY COATING.
- PARTIALLY REMOVE BRIDGE DECK CONCRETE USING SHOTBLASTING METHODS.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- OVERLAY PREPARED BRIDGE DECK WITH EPOXY OVERLAY SYSTEM.
- RECONSTRUCT BRIDGE JOINTS AND INSTALL JOINT SEALS.



PLAN

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 138

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-40 EBL OVER NC 226

DocuSigned by:
John A. Yannaccone
78F...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

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

RESIDENT ENGINEER DATE

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

DRAWN BY : W.F. PARKER DATE : 05/16

CHECKED BY : J.P. ADAMS DATE : 6/2016

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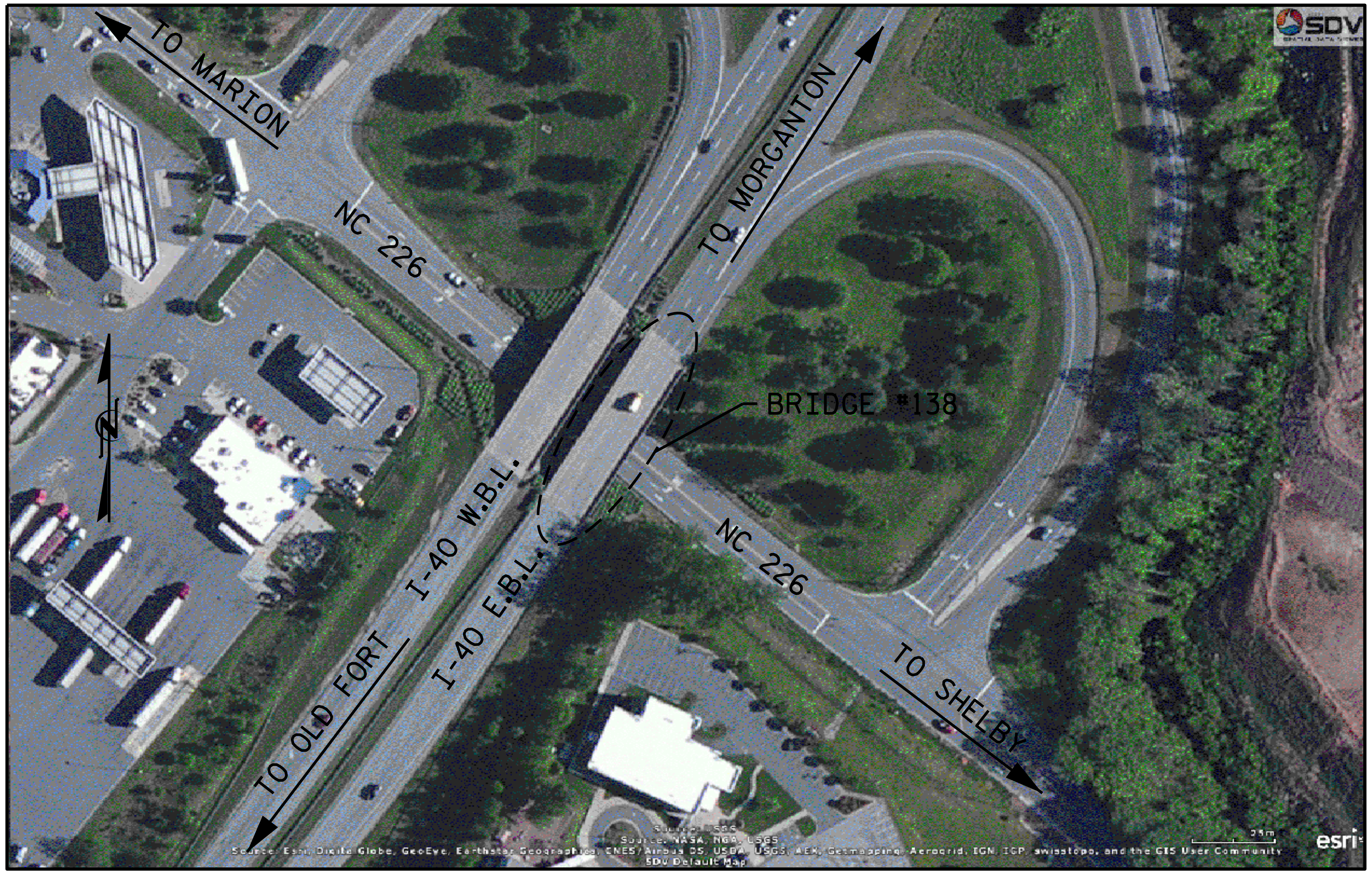

LOCATION SKETCH

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 EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.

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

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR CLEANING AND REPAINTING OF BRIDGE, SEE SPECIAL PROVISIONS.

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR POLLUTION CONTROL, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 138
SHEET 2 OF 2

DocuSigned by:
John A. Yannaccone
7BC36E9CEE894EC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-40 EBL OVER NC 226

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			68

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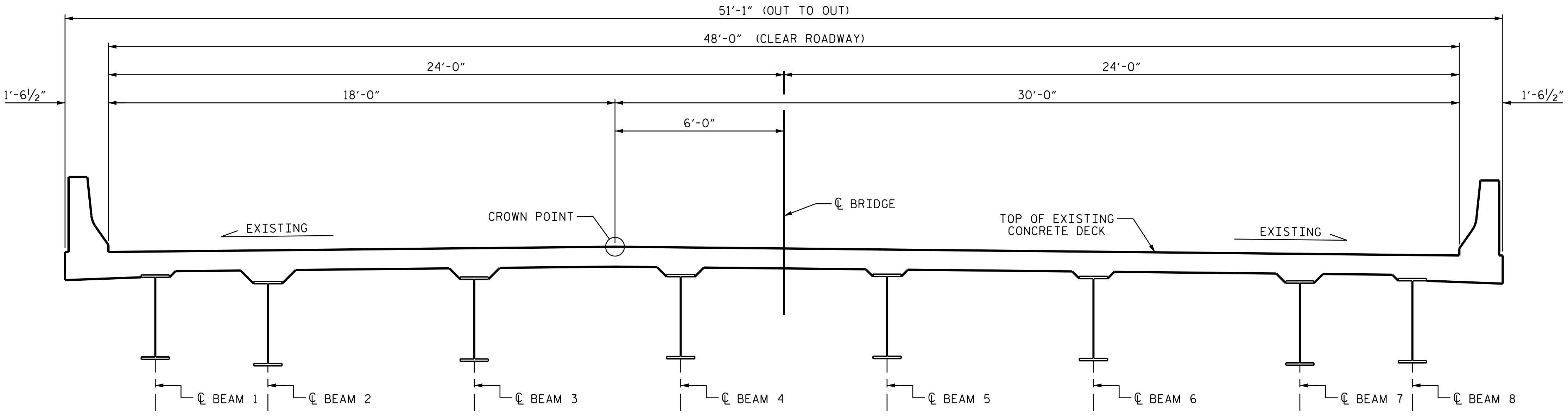
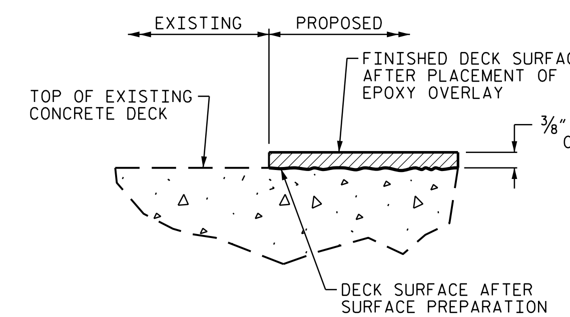


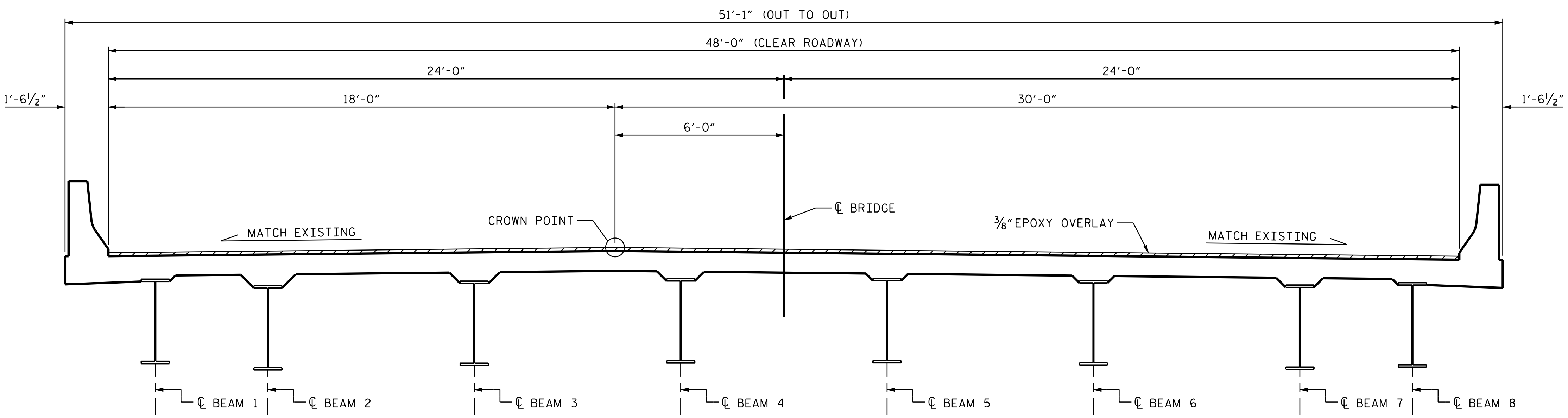
TYPICAL SECTION
(EXISTING)

NOTE:

SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF EPOXY OVERLAY SYSTEM AND SURFACE PREPARATION.



DETAIL FOR EPOXY OVERLAY



TYPICAL SECTION
(PROPOSED)

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 138

DocuSigned by:
John A. Yannaccone
NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE
9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION & EPOXY OVERLAY DETAIL

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1			3				TOTAL SHEETS
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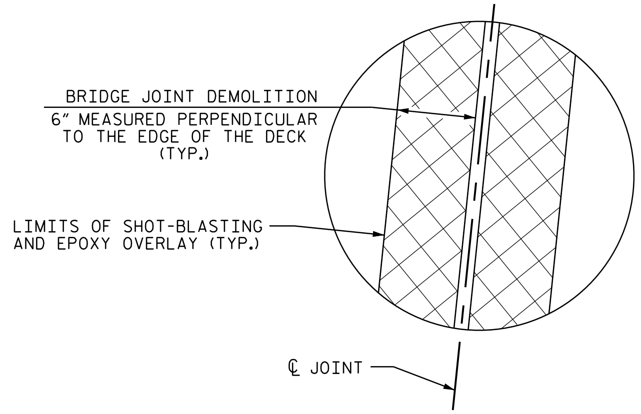


DETAIL "A"

SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	2.0 SQ. FT.	
BRIDGE JOINT DEMOLITION	193 SQ. FT.	
EPOXY OVERLAY SYSTEM	9304 SQ. FT.	
UNDERSIDE EPOXY RESIN INJECTION	7.0 LIN. FT.	

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

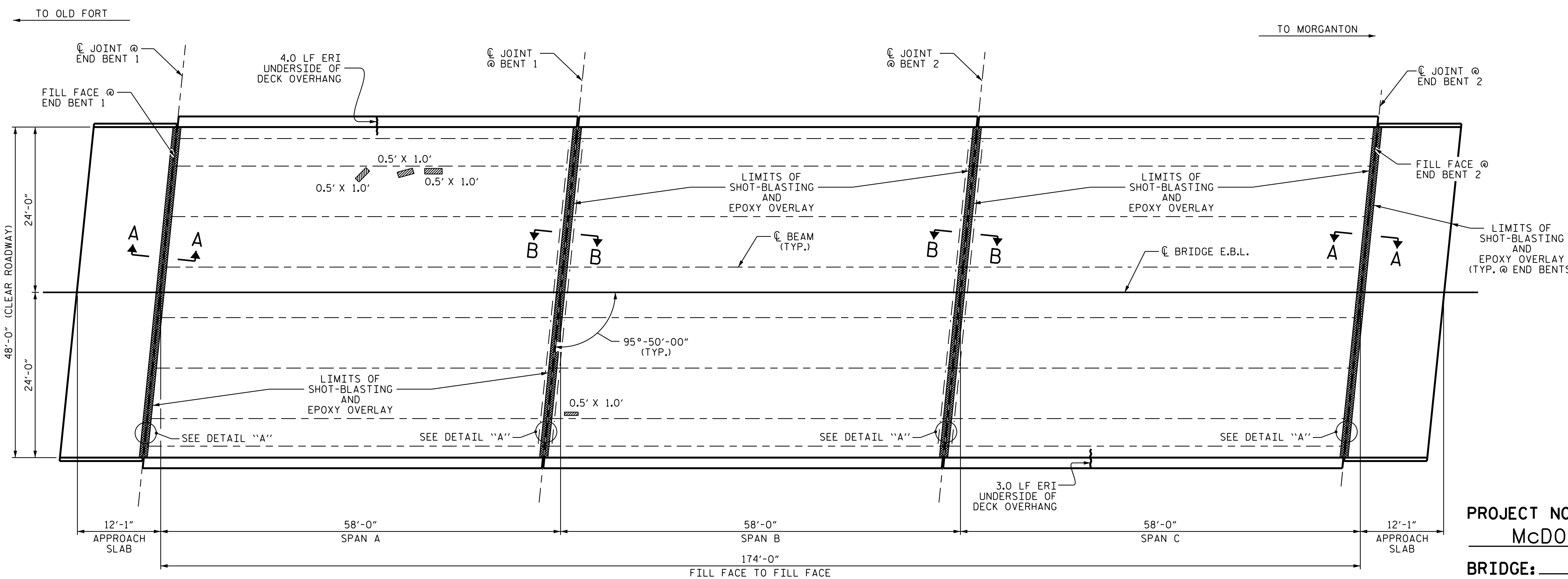
NOTES:

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

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

FOR BRIDGE JOINT DEMOLITION, SEE "JOINT DETAILS" SHEET.

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



PLAN OF SPANS

(hatched)	CONCRETE DECK REPAIR FOR EPOXY OVERLAY
(blank)	EPOXY OVERLAY
(cross-hatched)	BRIDGE JOINT DEMOLITION
ERI	EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE: 138

DocuSigned by: John A. Yannaccone

7B...

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 32492 JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION, UNDERSIDE REPAIR AND EPOXY OVERLAY

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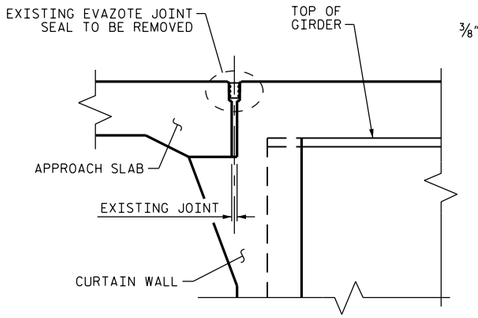
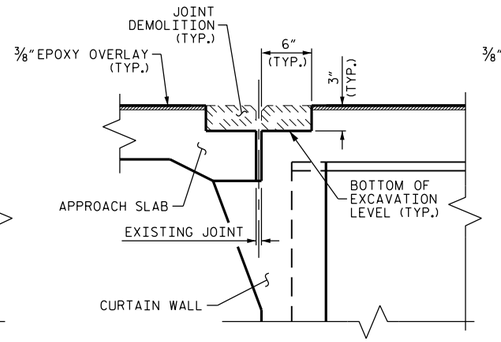
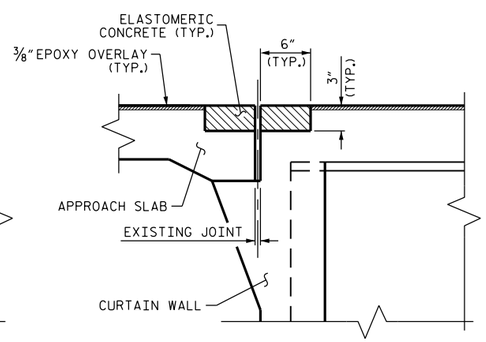


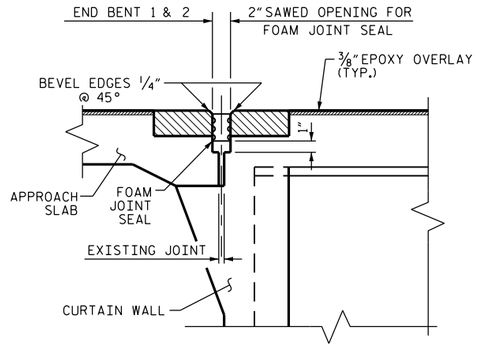
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION

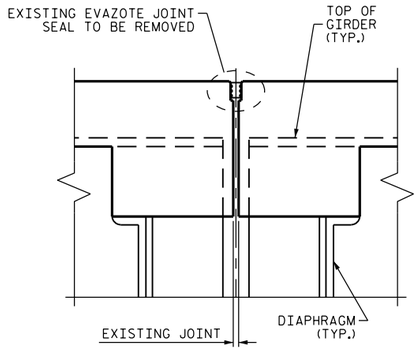


PROPOSED PRE-SAWED JOINT

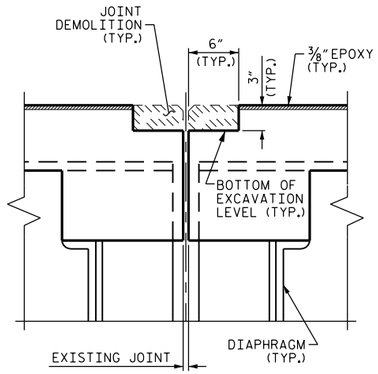


PROPOSED FOAM JOINT SEAL

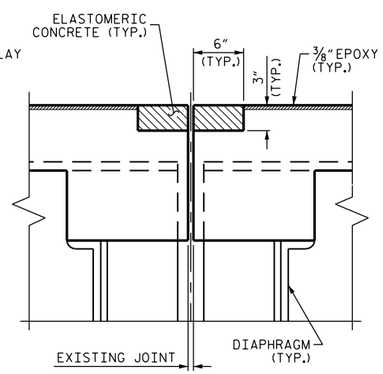
SECTION A-A



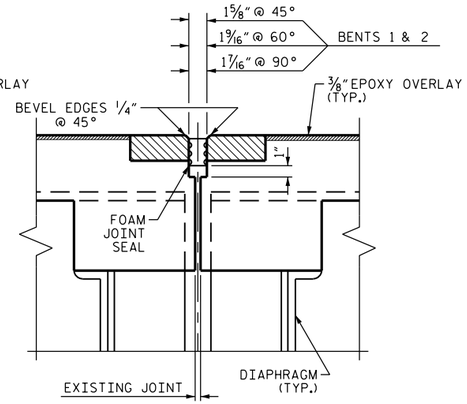
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION



PROPOSED PRE-SAWED JOINT



PROPOSED FOAM JOINT SEAL

SECTION B-B

ELASTOMERIC CONCRETE		
END BENT 1	12.1	(CU. FT.)
BENT 1	12.1	(CU. FT.)
BENT 2	12.1	(CU. FT.)
END BENT 2	12.1	(CU. FT.)
* TOTAL	48.4	(CU. FT.)

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

NOTES:

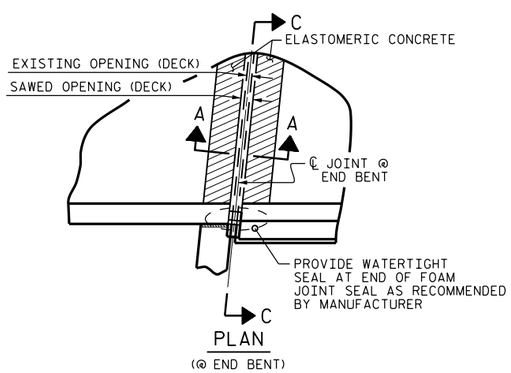
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

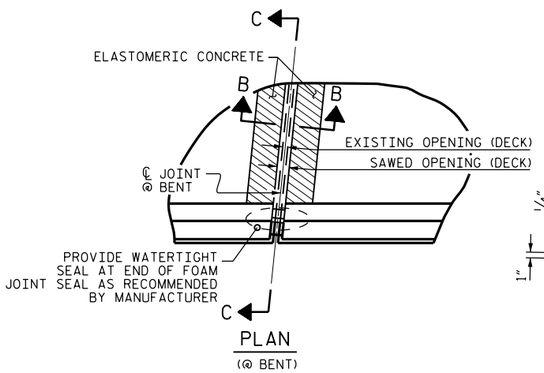
NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2½" AT THE END BENTS AND 2" AT THE BENTS.

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

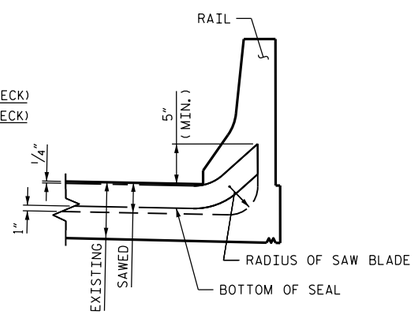
FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



PLAN
(@ END BENT)



PLAN
(@ BENT)



SECTION C-C

JOINT SEAL DETAILS

DocuSigned by:
John A. Yannaccone
78...

STATE OF NORTH CAROLINA
NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 138

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

JOINT DETAILS

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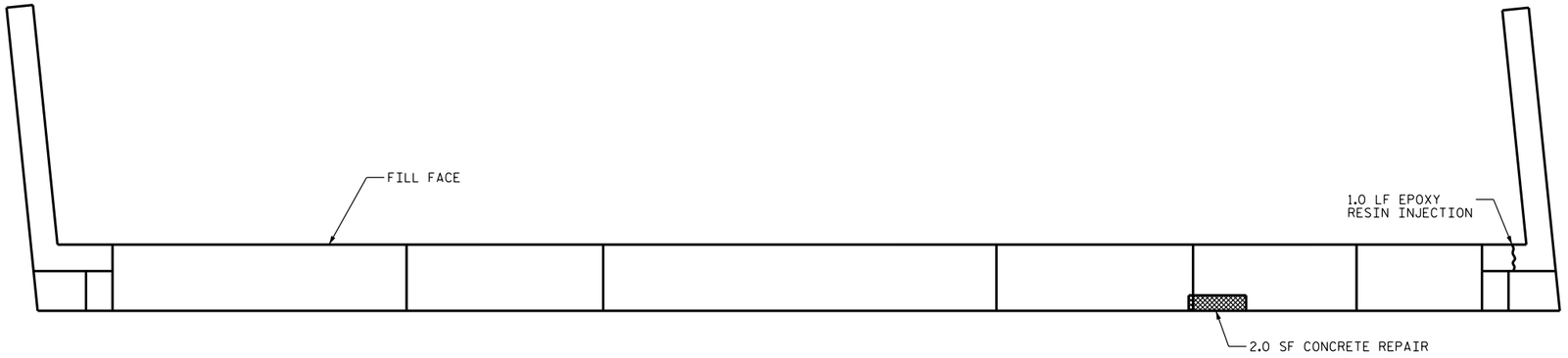
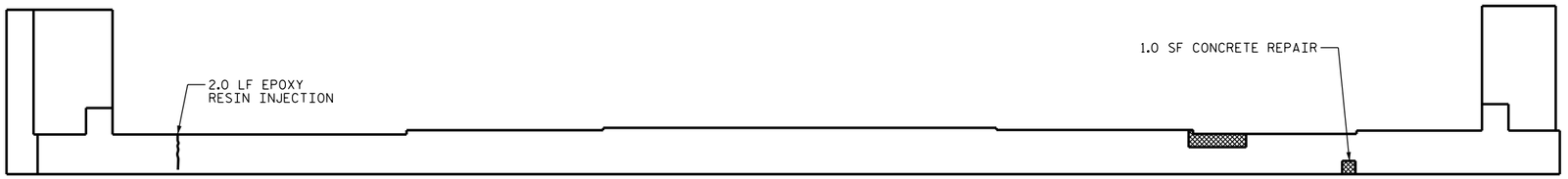
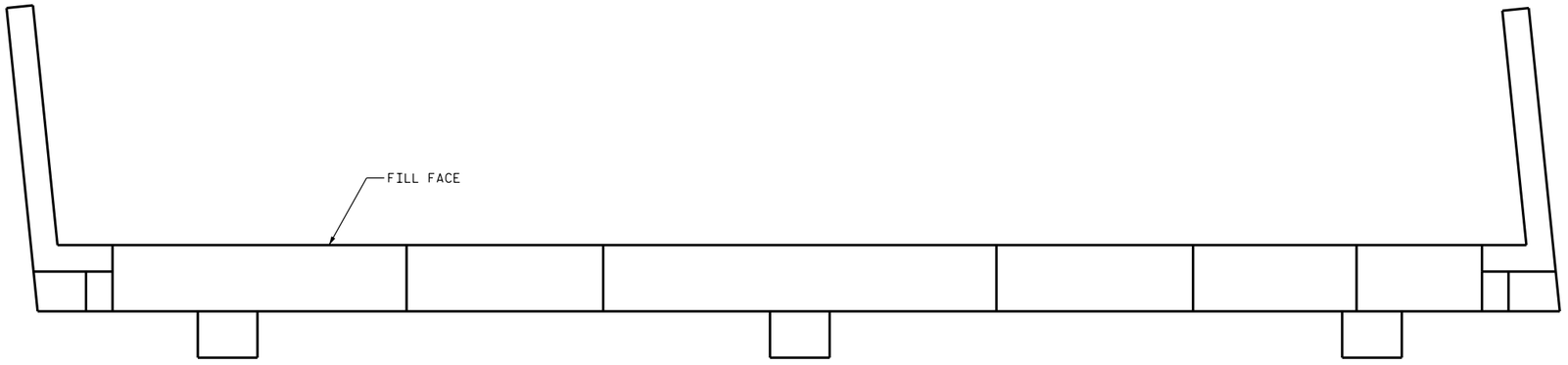


PLAN



ELEVATION

END BENT 1



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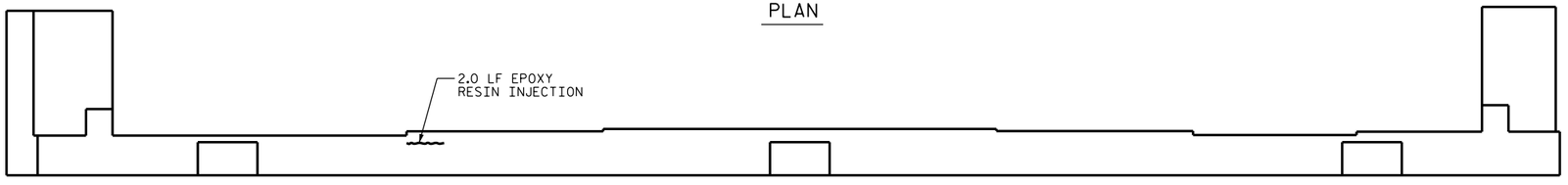

ELEVATION

END BENT 2

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	3.0	2.0 *		
EPOXY RESIN INJECTION		LN. FT.		
CAP		3.0		

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS END BENT 2	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.		
CAP		2.0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEAR 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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL **COUNTY**

BRIDGE: 138

DocuSigned by:
John A. Yannaccone
78C...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENTS 1 & 2

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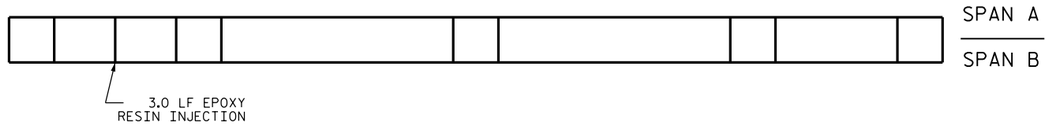
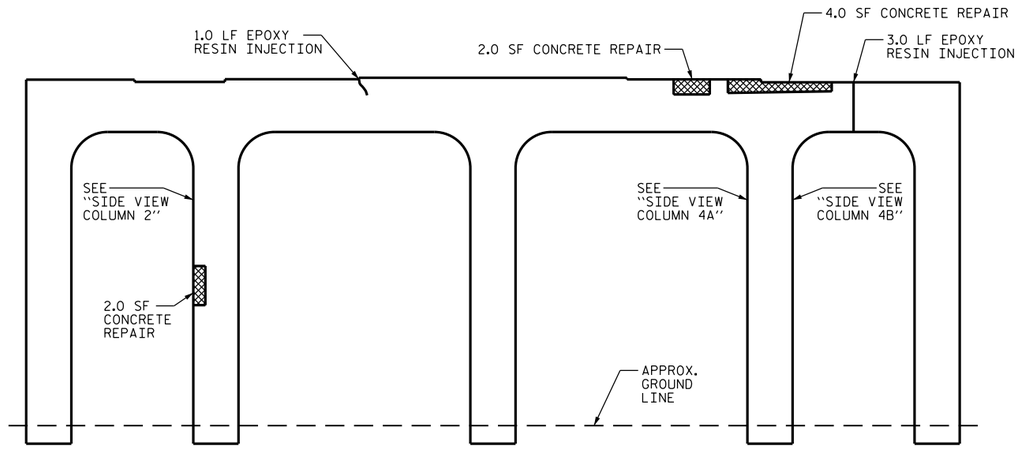
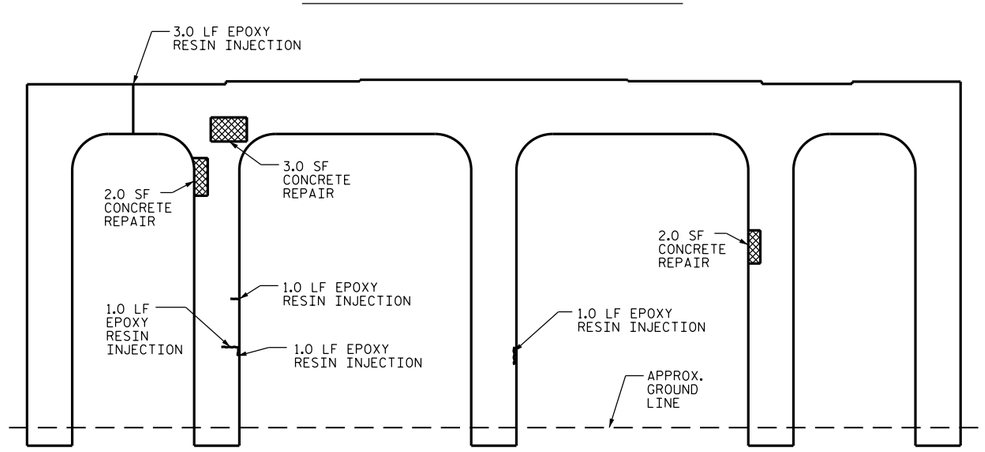
PLAN - TOP OF CAP



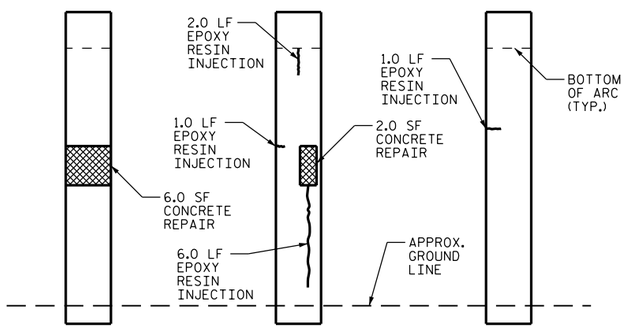
PLAN - BOTTOM OF CAP



SPAN A VIEW - ELEVATION



SPAN B VIEW - ELEVATION



SIDE VIEW COLUMN 2 | SIDE VIEW COLUMN 4A | SIDE VIEW COLUMN 4B

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	12.9	8.1 *		
COLUMN	14.0	9.0 *		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		10.0		
COLUMN		14.0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF BENT CAP		129		

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

DAMAGED AREA

EPOXY RESIN INJECTION

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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

CLEAN AND REMOVE DEBRIS FROM TOP OF 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 PROVISIONS.

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

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

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

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 138

SHEET 1 OF 2

DocuSigned by:
John A. Yannaccone
7B0[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1

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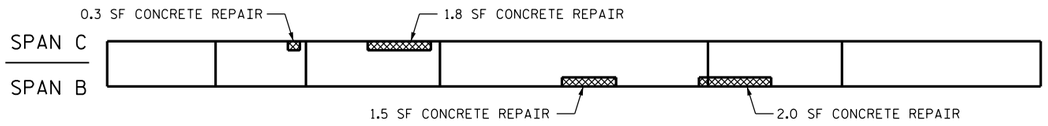
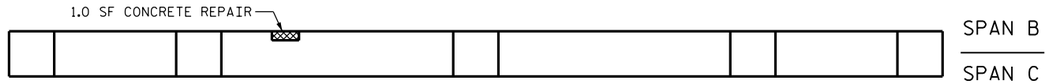
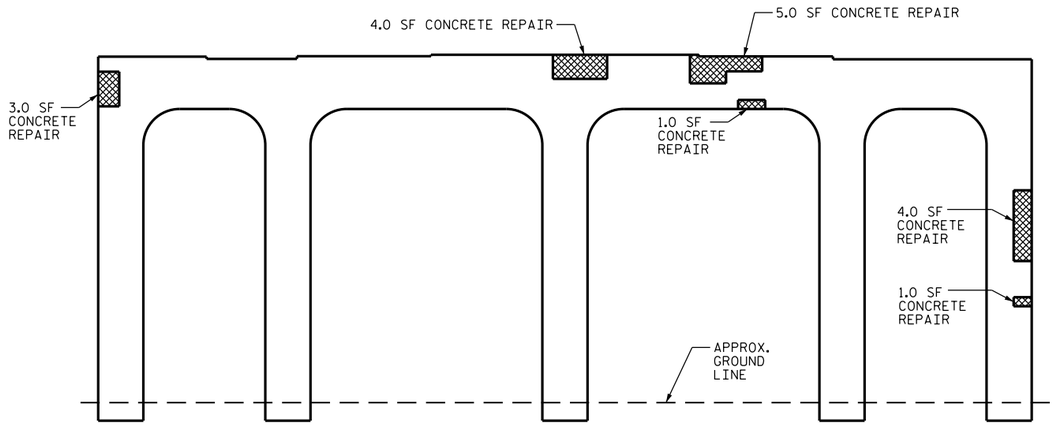


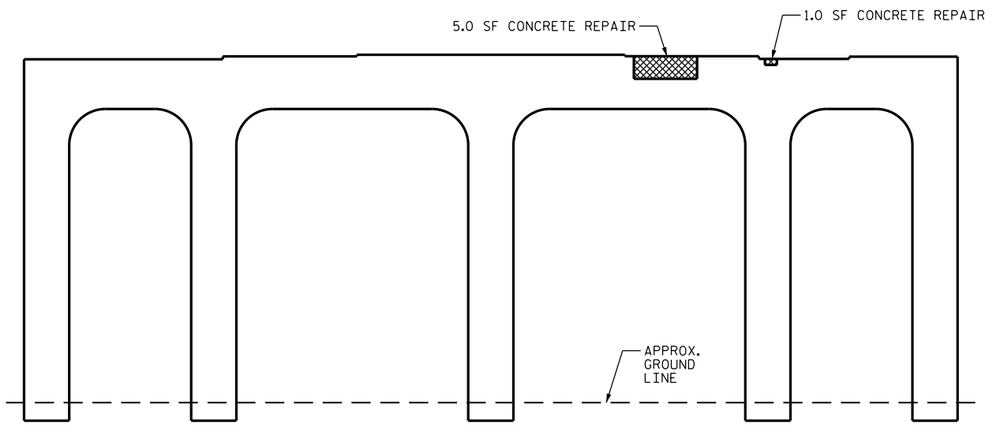
PLAN - TOP OF CAP



PLAN - BOTTOM OF CAP



SPAN B VIEW - ELEVATION



SPAN C VIEW - ELEVATION

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	25.6	16.0 *		
COLUMN	5.0	3.0 *		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF BENT CAP		129		

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

DAMAGED AREA

EPOXY RESIN INJECTION

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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

CLEAN AND REMOVE DEBRIS FROM TOP OF 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 PROVISIONS.

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

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

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

DocuSigned by:
John A. Yannaccone
7B6[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 138

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2

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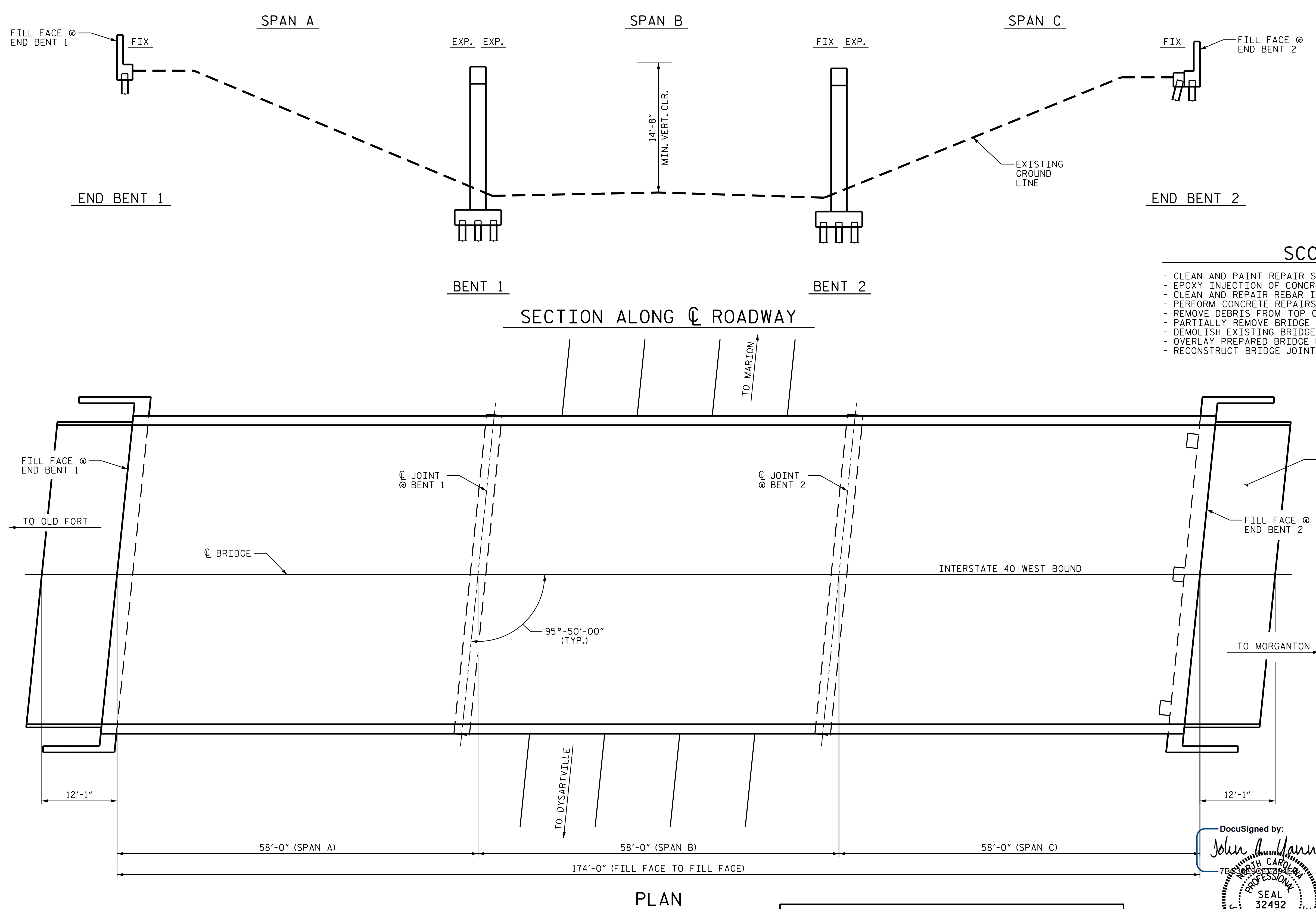

NOTES

PROFILE INFOMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE ISPECTION REPORT DATED 04/14/2014.

BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- CLEAN AND PAINT REPAIR STEEL I-BEAMS AND BEARINGS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- CLEAN AND REPAIR REBAR IN CONCRETE REPAIR AREAS.
- PERFORM CONCRETE REPAIRS IN PREPARED AREAS.
- REMOVE DEBRIS FROM TOP OF BENT CAPS AND APPLY EPOXY COATING.
- PARTIALLY REMOVE BRIDGE DECK CONCRETE USING SHOTBLASTING METHODS.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- OVERLAY PREPARED BRIDGE DECK WITH EPOXY OVERLAY SYSTEM.
- RECONSTRUCT BRIDGE JOINTS AND INSTALL JOINT SEALS.

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

RESIDENT ENGINEER DATE

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

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PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 143
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-40 WBL OVER NC 226

REVISIONS								SHEET NO.
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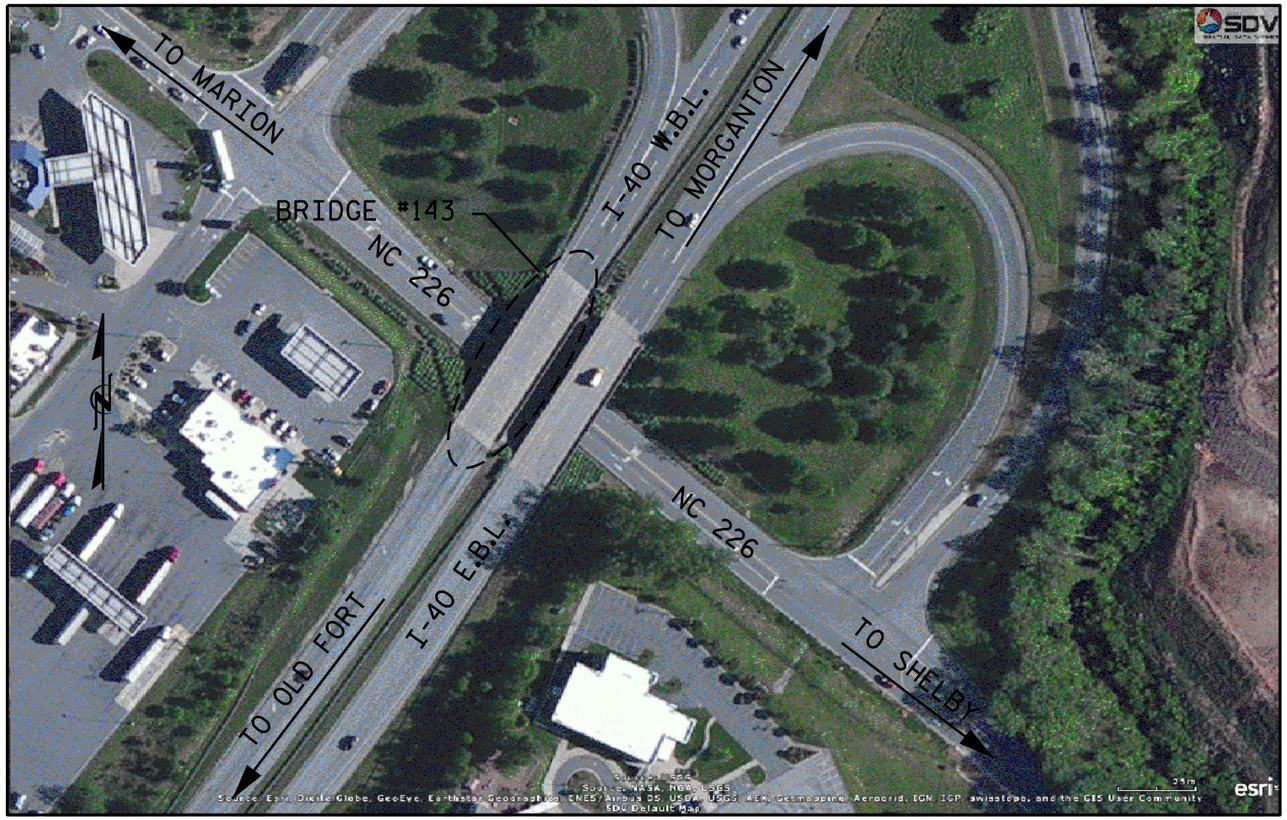

LOCATION SKETCH

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

FOR EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.

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

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR CLEANING AND REPAINTING OF BRIDGE, SEE SPECIAL PROVISIONS.

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR POLLUTION CONTROL, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 143

SHEET 2 OF 2

DocuSigned by:
John A Yannaccone
7B[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-40 WBL
OVER NC 226

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1			3			TOTAL SHEETS
2			4			68

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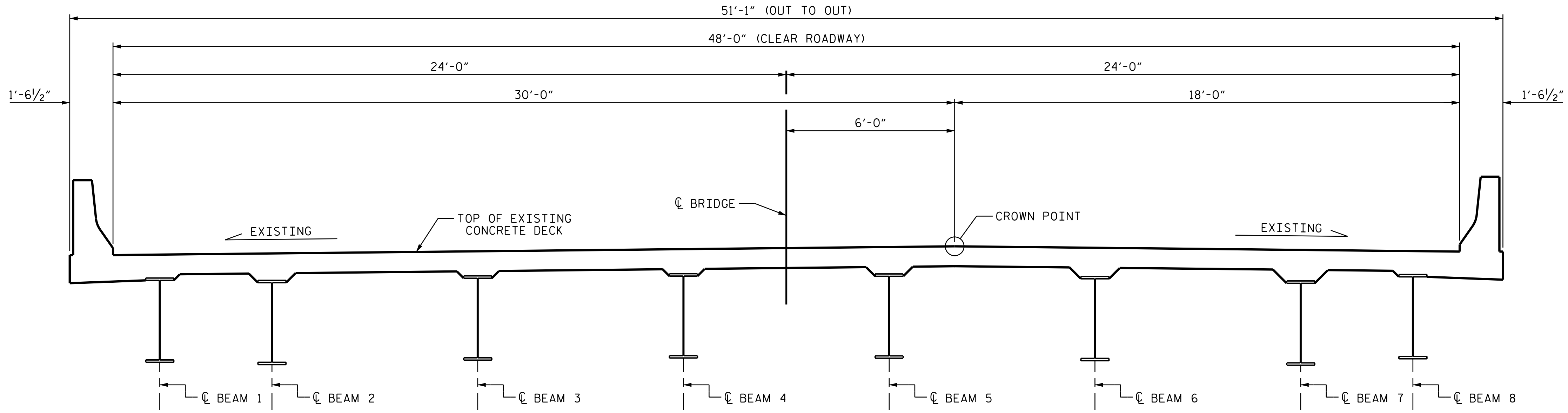
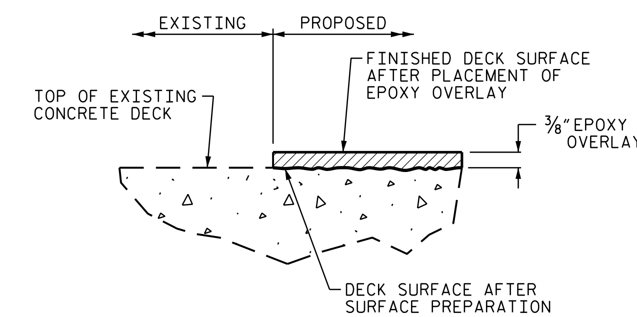
NOTE:

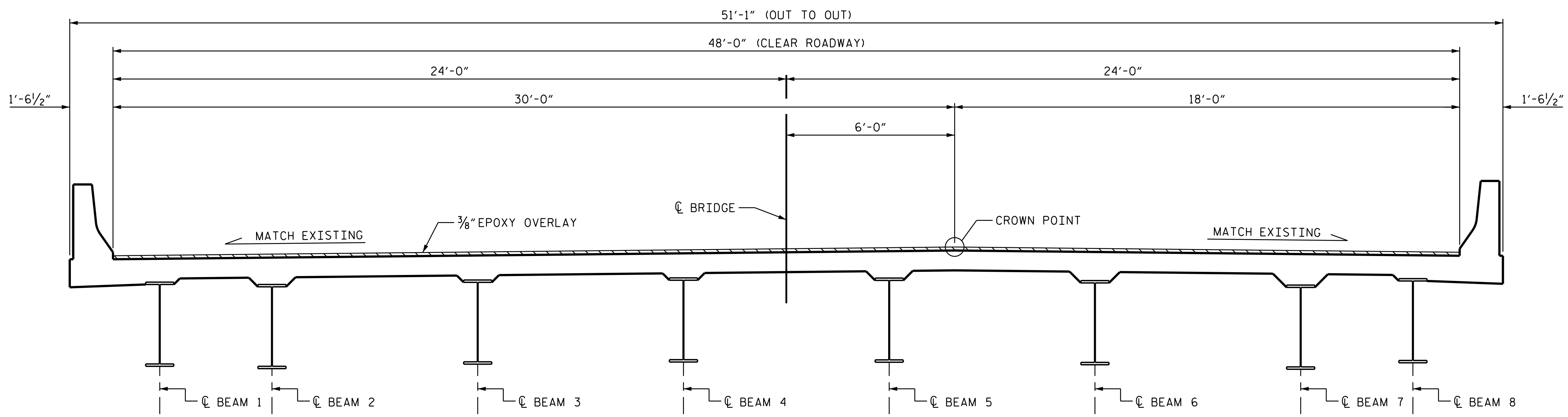
SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF EPOXY OVERLAY SYSTEM AND SURFACE PREPARATION.



TYPICAL SECTION
(EXISTING)



DETAIL FOR EPOXY OVERLAY



TYPICAL SECTION
(PROPOSED)

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 143

DocuSigned by:
John A. Yannaccone

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION & EPOXY OVERLAY DETAIL

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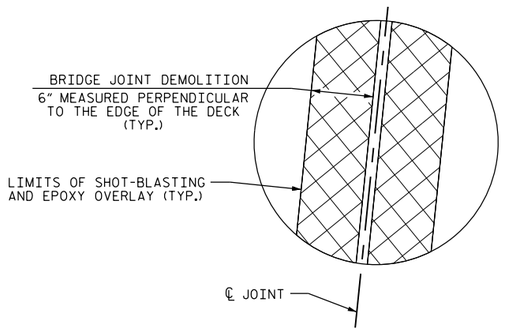


DETAIL "A"

SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	0.0 SQ. FT.	
BRIDGE JOINT DEMOLITION	193 SQ. FT.	
EPOXY OVERLAY SYSTEM	9304 SQ. FT.	
UNDERSIDE EPOXY RESIN INJECTION	16.0 LIN. FT.	

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.

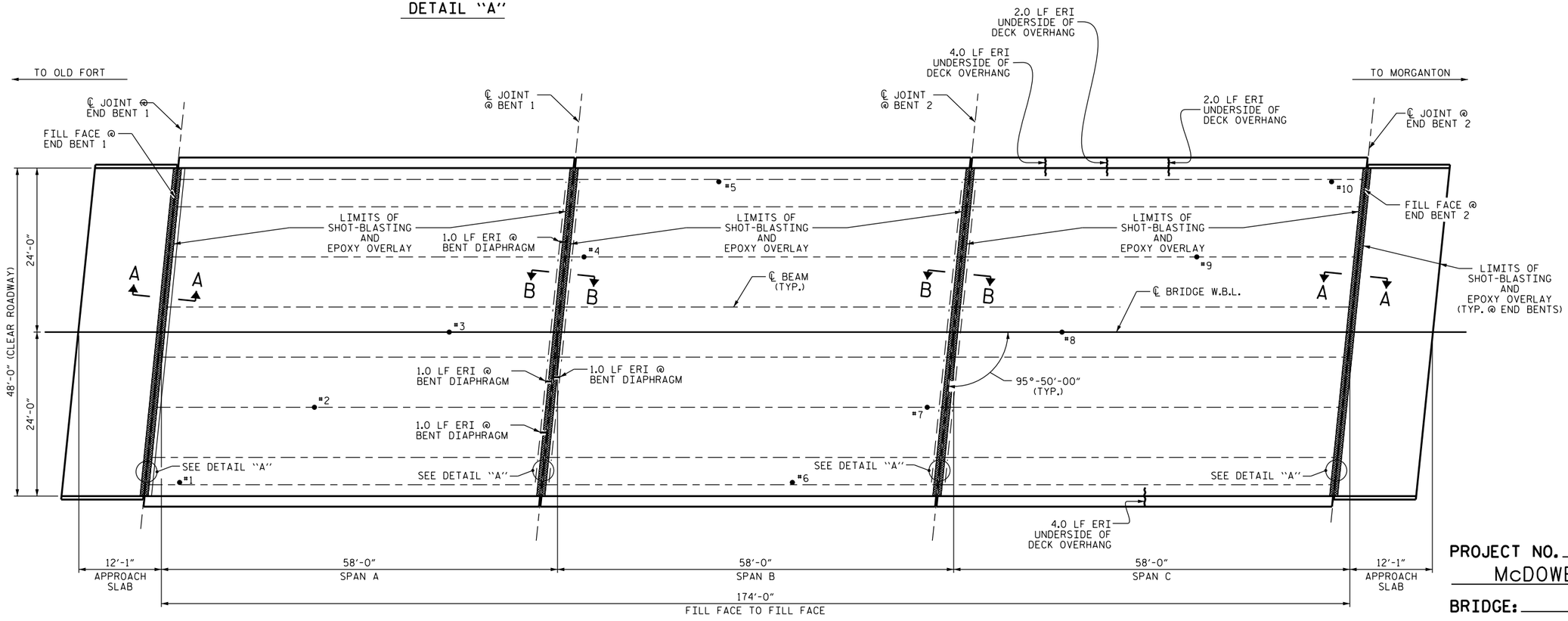
NOTES:

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 AND DIAPHRAGM REPAIRS DETAILS" SHEET.

FOR BRIDGE JOINT DEMOLITION, SEE "JOINT DETAILS" SHEET.

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



PLAN OF SPANS

CONCRETE DECK REPAIR FOR EPOXY OVERLAY

EPOXY OVERLAY

BRIDGE JOINT DEMOLITION

ERI EPOXY RESIN INJECTION

•#1 TEST LOCATION

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John A. Yannaccone
7B9[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE: 143

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION, UNDERSIDE REPAIR AND EPOXY OVERLAY

DRAWN BY : W.F.PARKER DATE : 05/16
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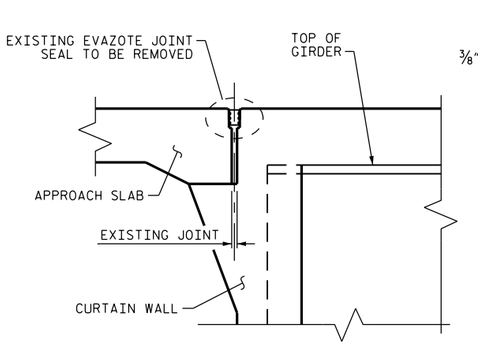
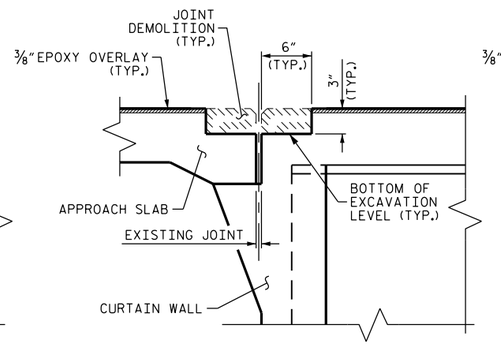
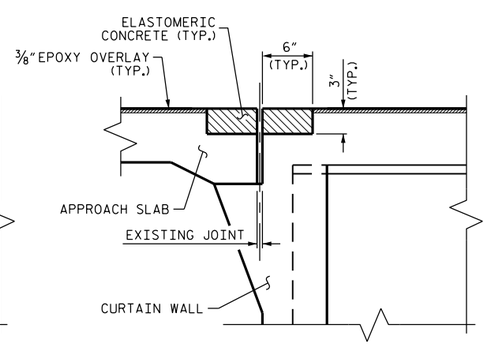


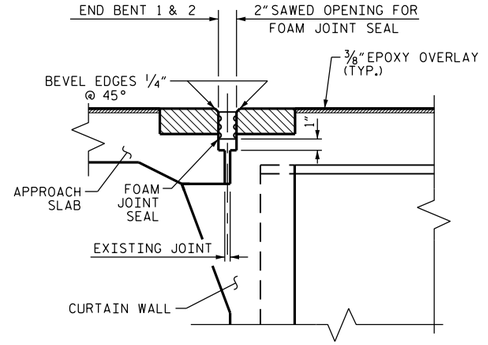
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION

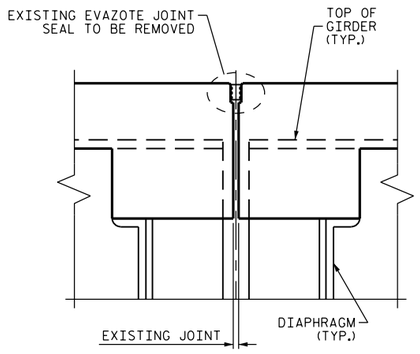


PROPOSED PRE-SAWED JOINT

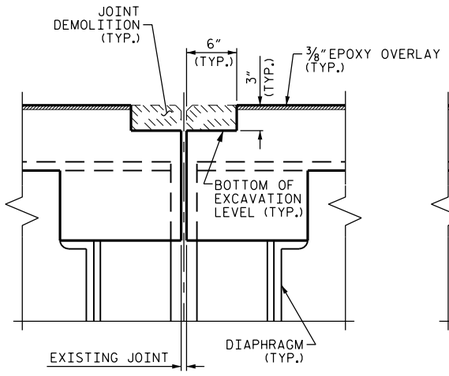


PROPOSED FOAM JOINT SEAL

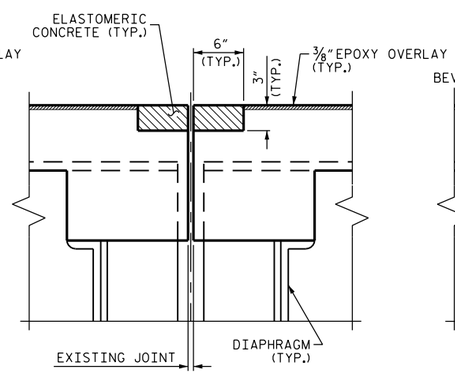
SECTION A-A



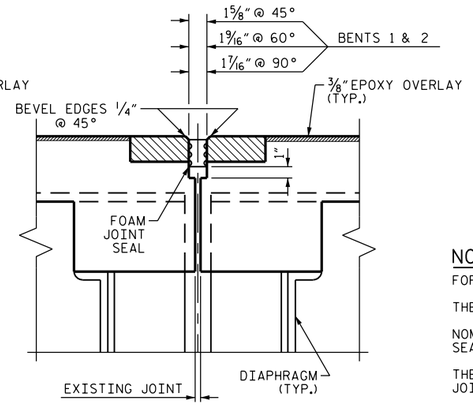
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION



PROPOSED PRE-SAWED JOINT



PROPOSED FOAM JOINT SEAL

SECTION B-B

ELASTOMERIC CONCRETE		
END BENT 1	12.1	(CU. FT.)
BENT 1	12.1	(CU. FT.)
BENT 2	12.1	(CU. FT.)
END BENT 2	12.1	(CU. FT.)
* TOTAL	48.4	(CU. FT.)

*BASED ON THE MINIMUM BLOCKOUT SHOWN.

NOTES:

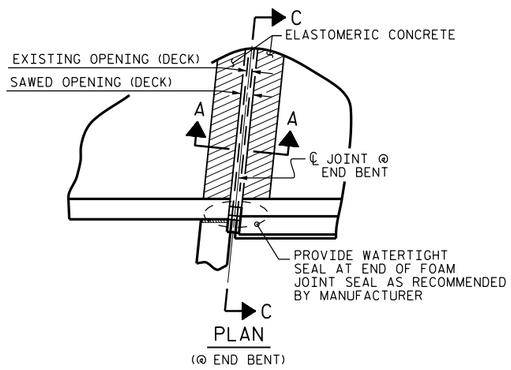
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

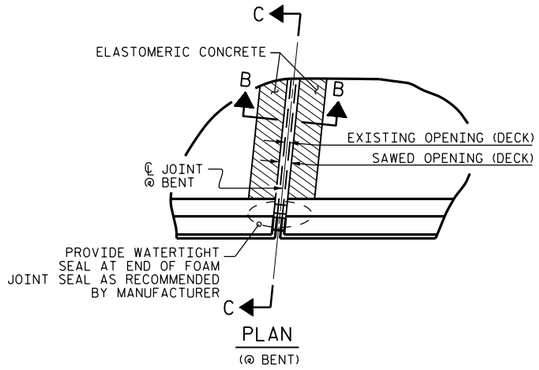
NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2½" AT THE END BENTS AND 2" AT THE BENTS.

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

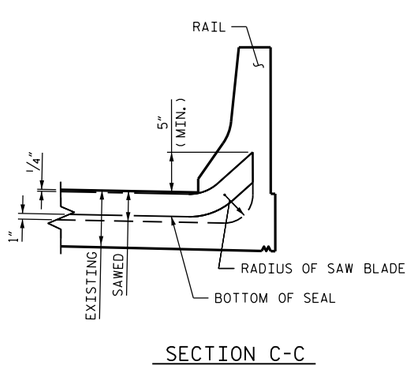
FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



PLAN
(@ END BENT)



PLAN
(@ BENT)



SECTION C-C

JOINT SEAL DETAILS

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 143

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John A. Yannaccone
78...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

JOINT DETAILS

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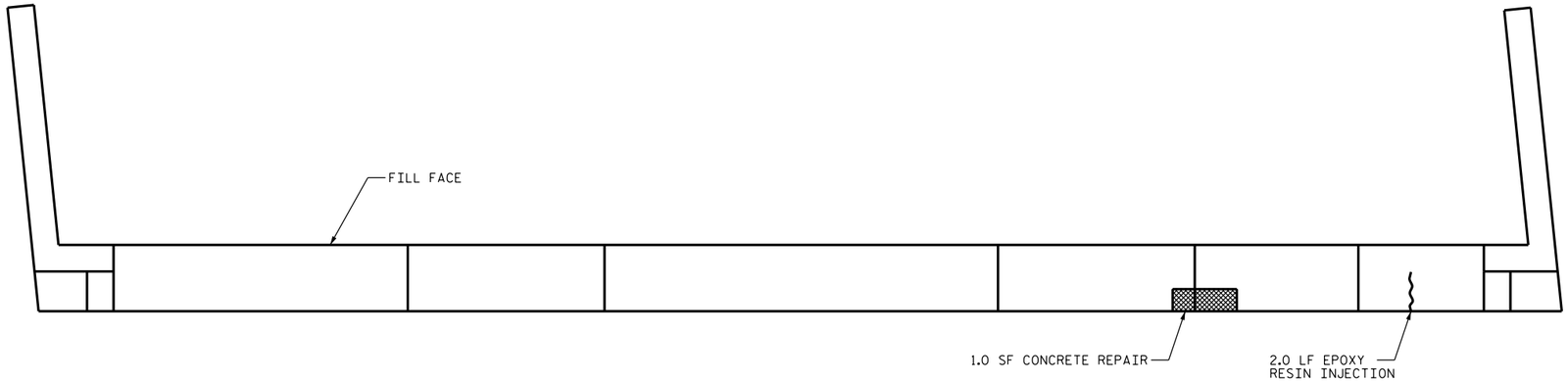
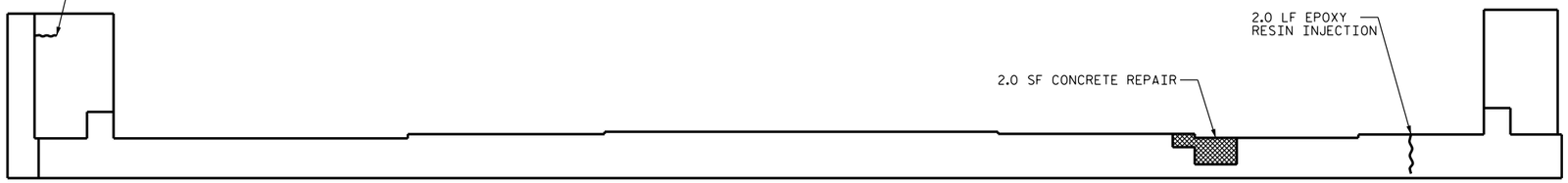
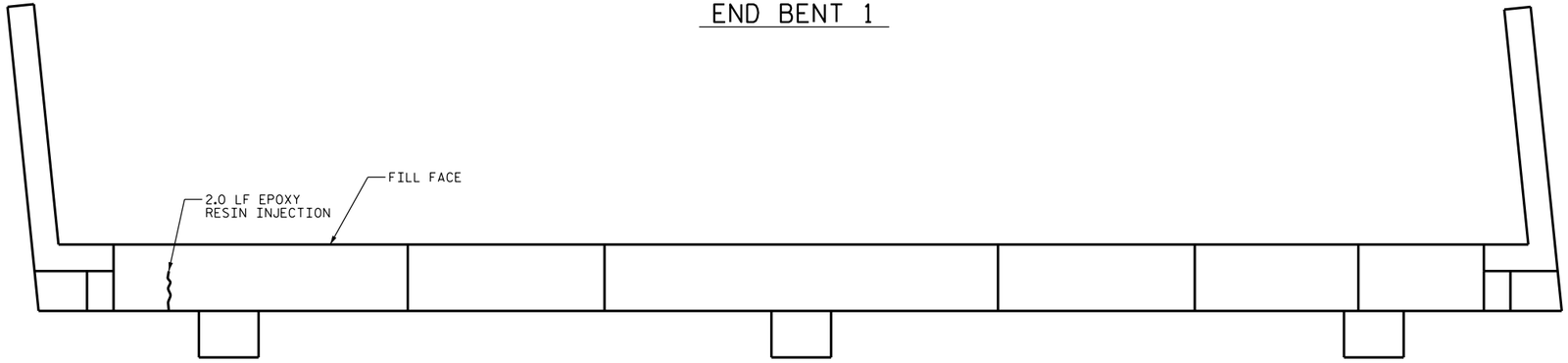


PLAN

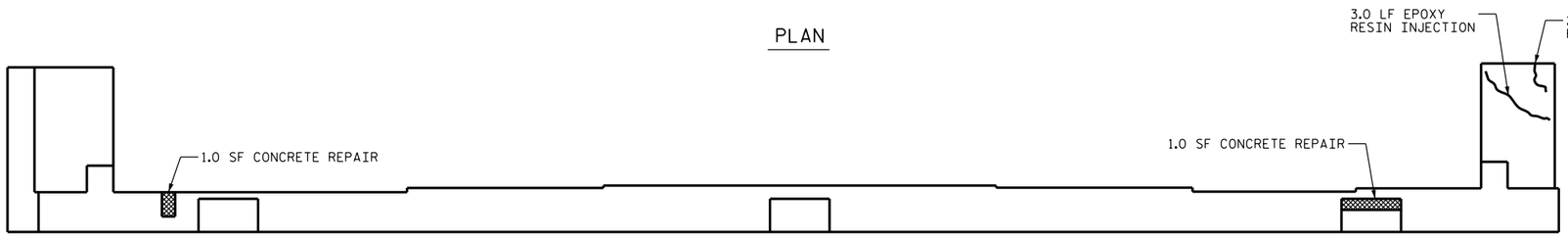


ELEVATION

END BENT 1



PLAN



ELEVATION

END BENT 2

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	3.0	2.0 *		
EPOXY RESIN INJECTION		LN. FT.		
CAP		5.0		

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS END BENT 2	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	2.0	2.0 *		
EPOXY RESIN INJECTION		LN. FT.		
CAP		7.0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEAR 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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE: 143

DocuSigned by:
John A. Yannaccone
76...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENTS 1 & 2

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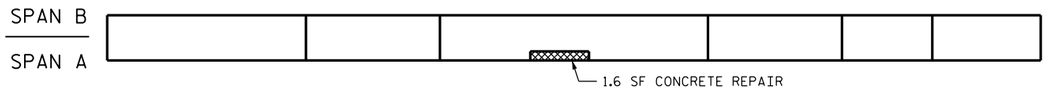
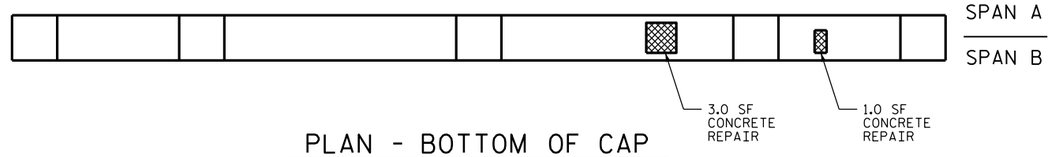
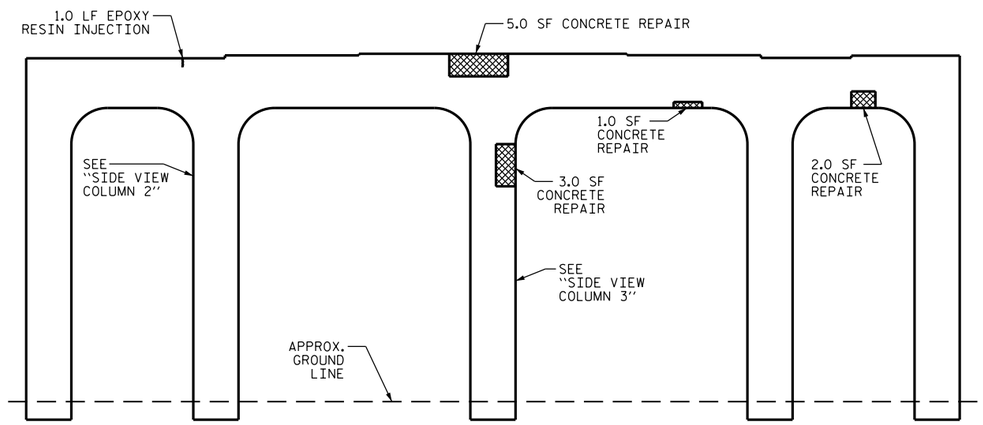


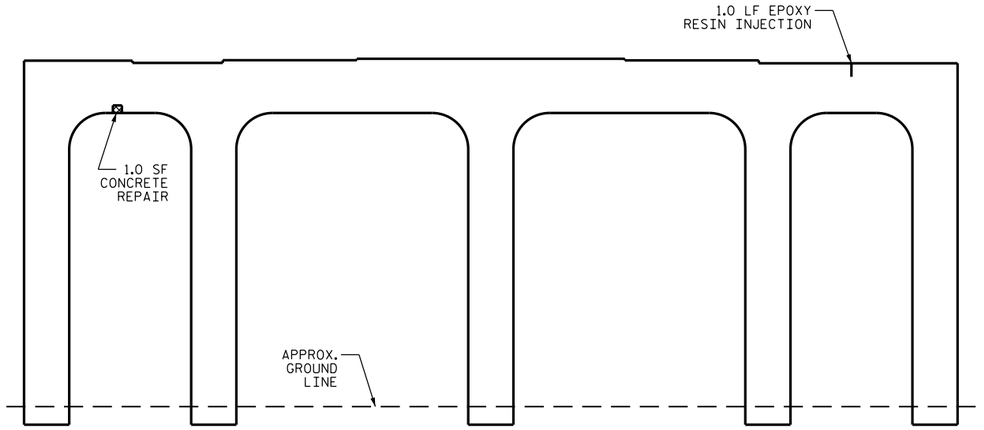
PLAN - TOP OF CAP



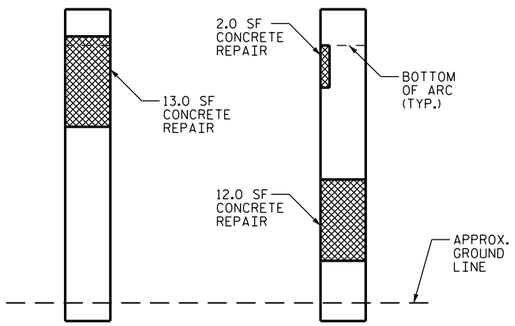
PLAN - BOTTOM OF CAP



SPAN A VIEW - ELEVATION



SPAN B VIEW - ELEVATION



SIDE VIEW COLUMN 2

SIDE VIEW COLUMN 3

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	14.6	9.1 *		
COLUMN	30.0	19.0 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		2.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		129		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEAR 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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

CLEAN AND REMOVE DEBRIS FROM TOP OF 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 PROVISIONS.

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 143

SHEET 1 OF 2

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1

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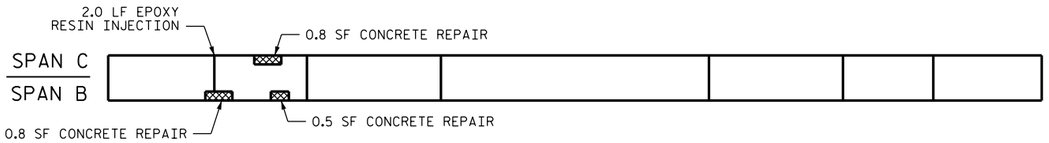
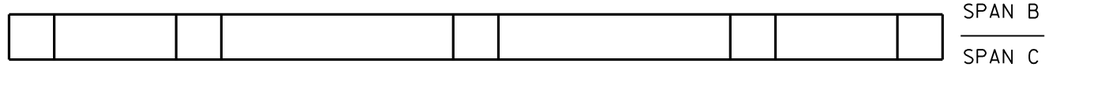
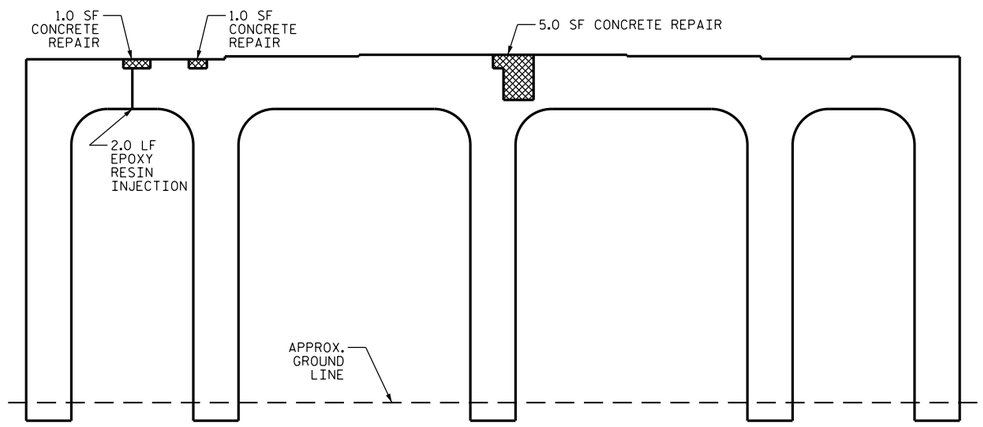


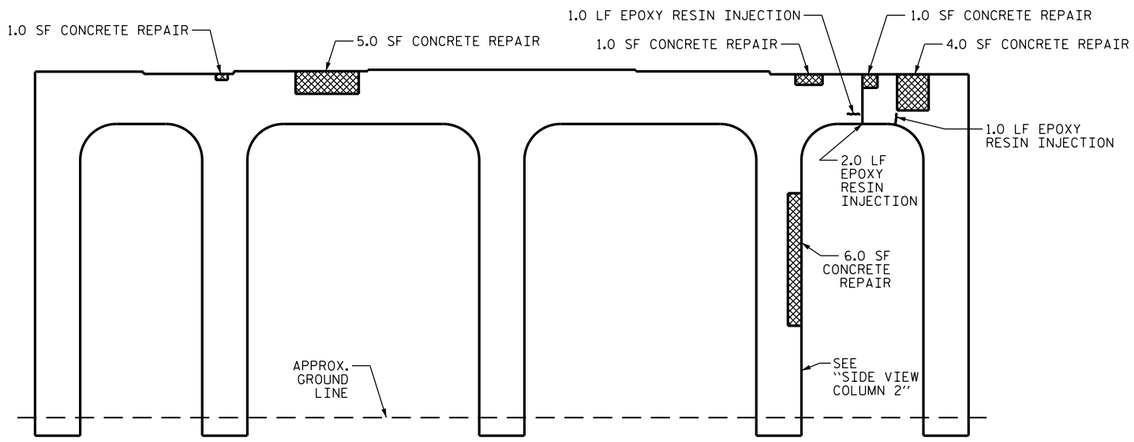
PLAN - TOP OF CAP



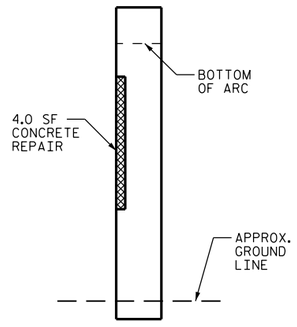
PLAN - BOTTOM OF CAP



SPAN B VIEW - ELEVATION



SPAN C VIEW - ELEVATION



SIDE VIEW COLUMN 2

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	21.1	13.2 *		
COLUMN	10.0	6.0 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		8.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		129		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEAR 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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

CLEAN AND REMOVE DEBRIS FROM TOP OF 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 PROVISIONS.

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

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 143

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2

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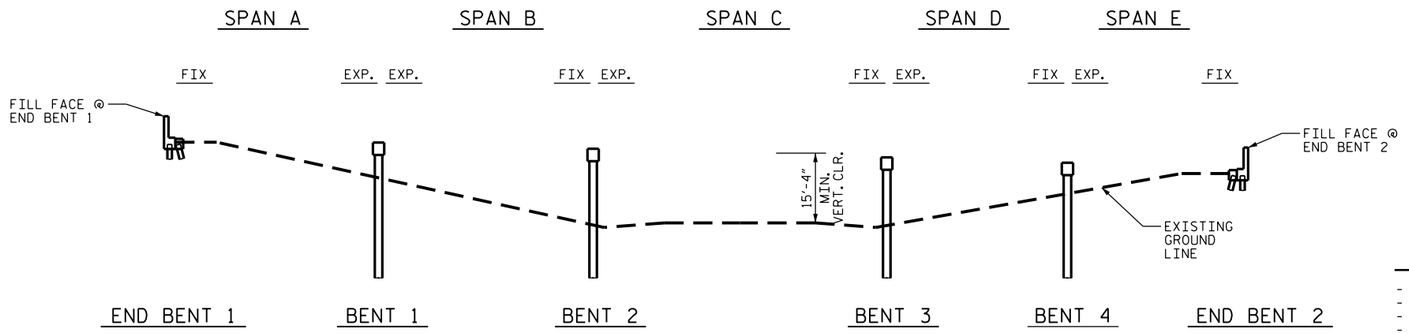
NOTES

PROFILE INFOMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 04/14/2014.

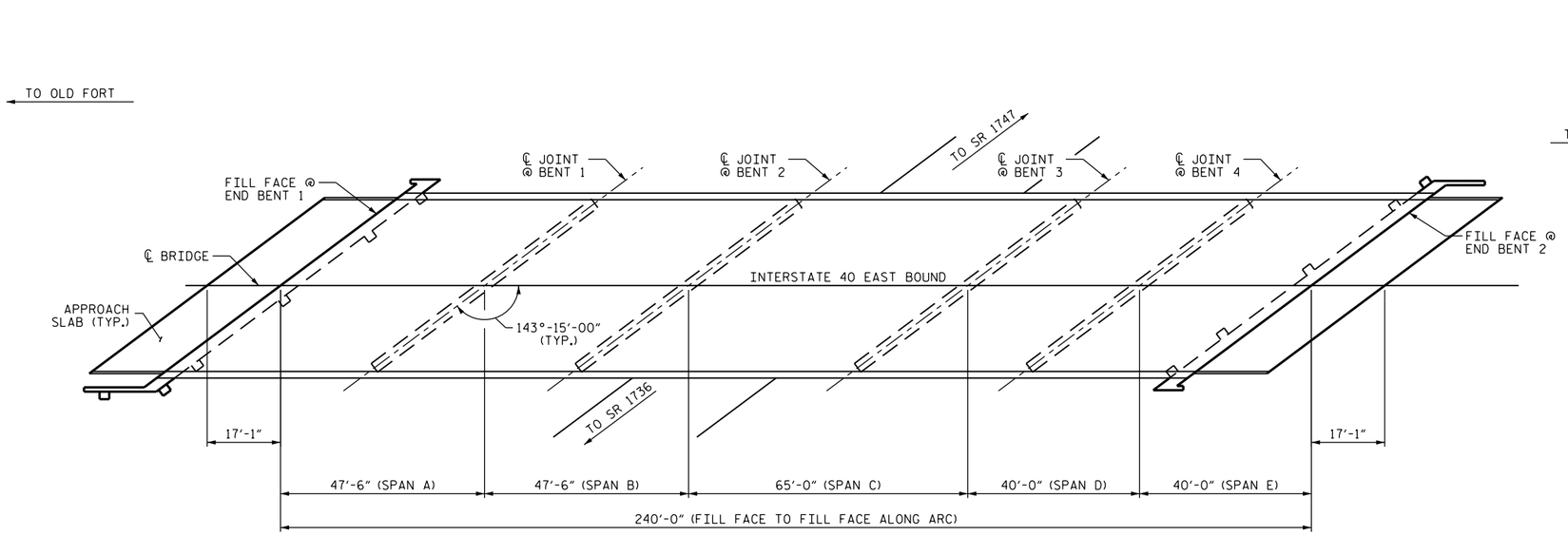
BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



SECTION ALONG ℄ ROADWAY

SCOPE OF WORK

- CLEAN AND PAINT STEEL I-BEAMS AND BEARINGS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- CLEAN AND REPAIR REBAR IN CONCRETE REPAIR AREAS.
- PERFORM CONCRETE REPAIRS IN PREPARED AREAS.
- REMOVE DEBRIS FROM TOP OF BENT CAPS AND APPLY EPOXY COATING.
- PARTIALLY REMOVE BRIDGE DECK CONCRETE USING SHOTBLASTING METHODS.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- OVERLAY PREPARED BRIDGE DECK WITH EPOXY OVERLAY SYSTEM.
- RECONSTRUCT BRIDGE JOINTS AND INSTALL JOINT SEALS.



PLAN

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 146

SHEET 1 OF 2

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

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

RESIDENT ENGINEER DATE

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-40 EBL OVER SR 1741 (FAIRVIEW 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 CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLANS.

FOR EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.

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

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR CLEANING AND REPAINTING OF BRIDGE, SEE SPECIAL PROVISIONS.

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR POLLUTION CONTROL, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 146

SHEET 2 OF 2

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

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-40 EBL
OVER SR 1741
(FAIRVIEW ROAD)

DRAWN BY : W.F. PARKER DATE : 05/16
CHECKED BY : J.P. ADAMS DATE : 6/2016

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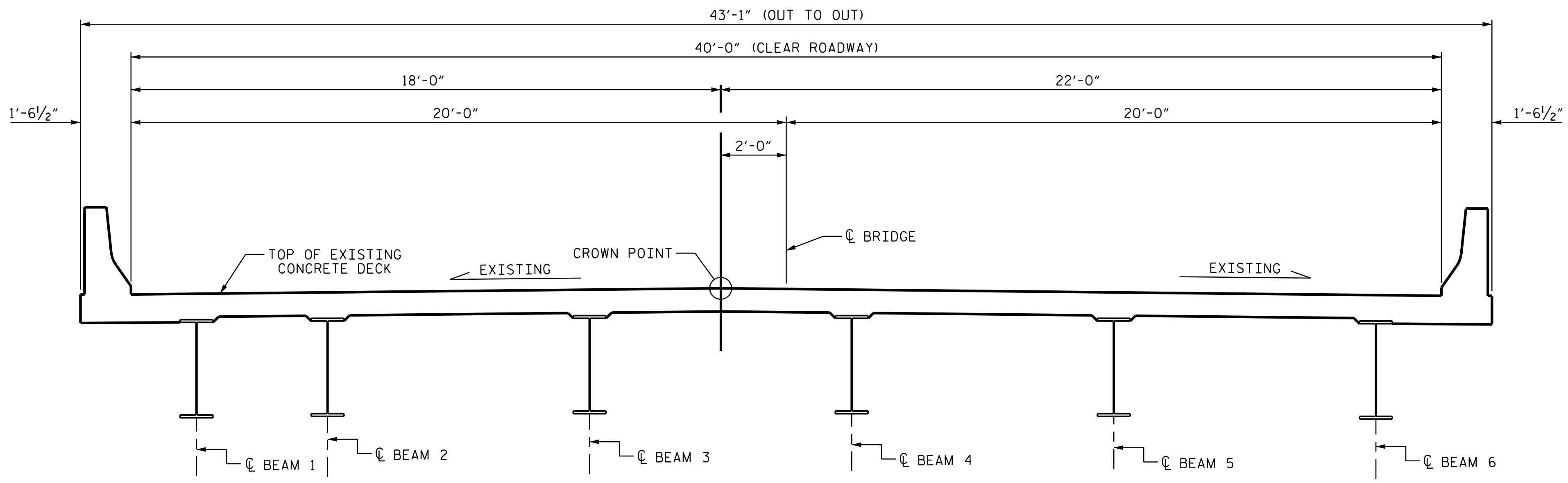
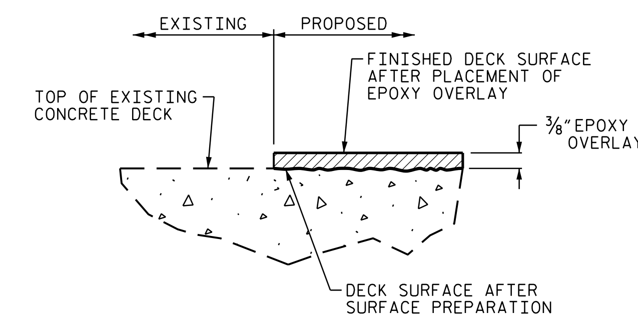
NOTE:

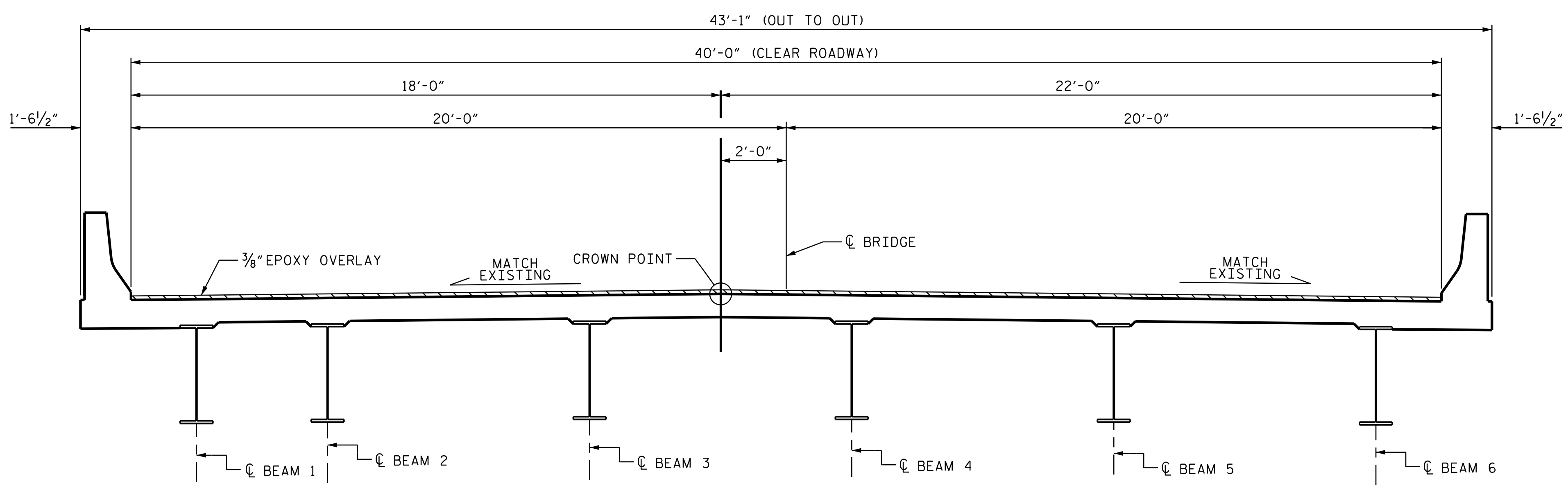
SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF EPOXY OVERLAY SYSTEM AND SURFACE PREPARATION.



TYPICAL SECTION
(EXISTING)



DETAIL FOR EPOXY OVERLAY



TYPICAL SECTION
(PROPOSED)

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 146

DocuSigned by: John A. Yannaccone
7B...
NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE
9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION & EPOXY OVERLAY DETAIL

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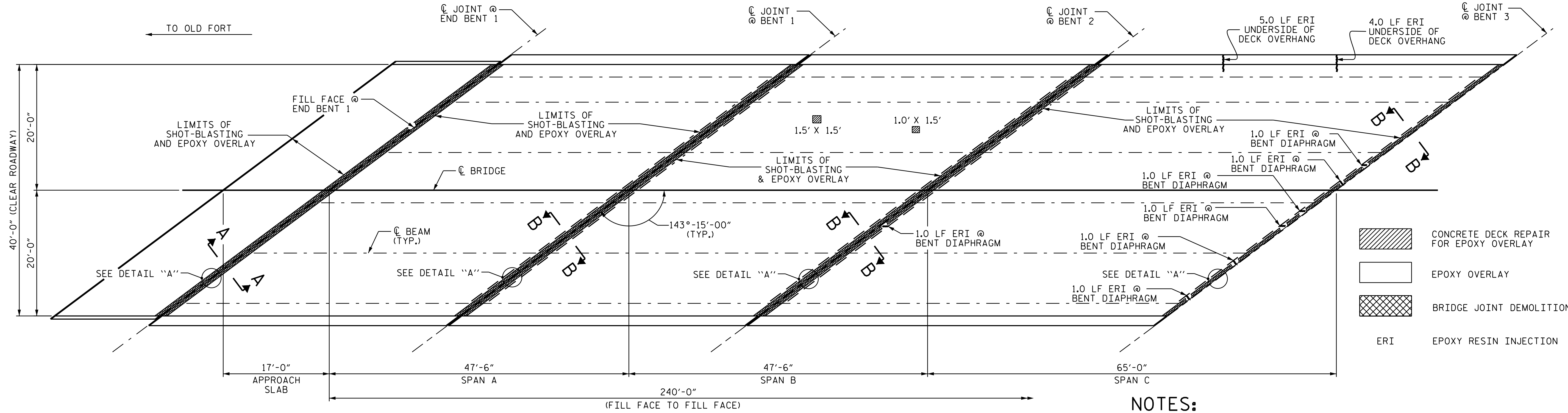


(hatched)	CONCRETE DECK REPAIR FOR EPOXY OVERLAY
(blank)	EPOXY OVERLAY
(cross-hatched)	BRIDGE JOINT DEMOLITION
ERI	EPOXY RESIN INJECTION

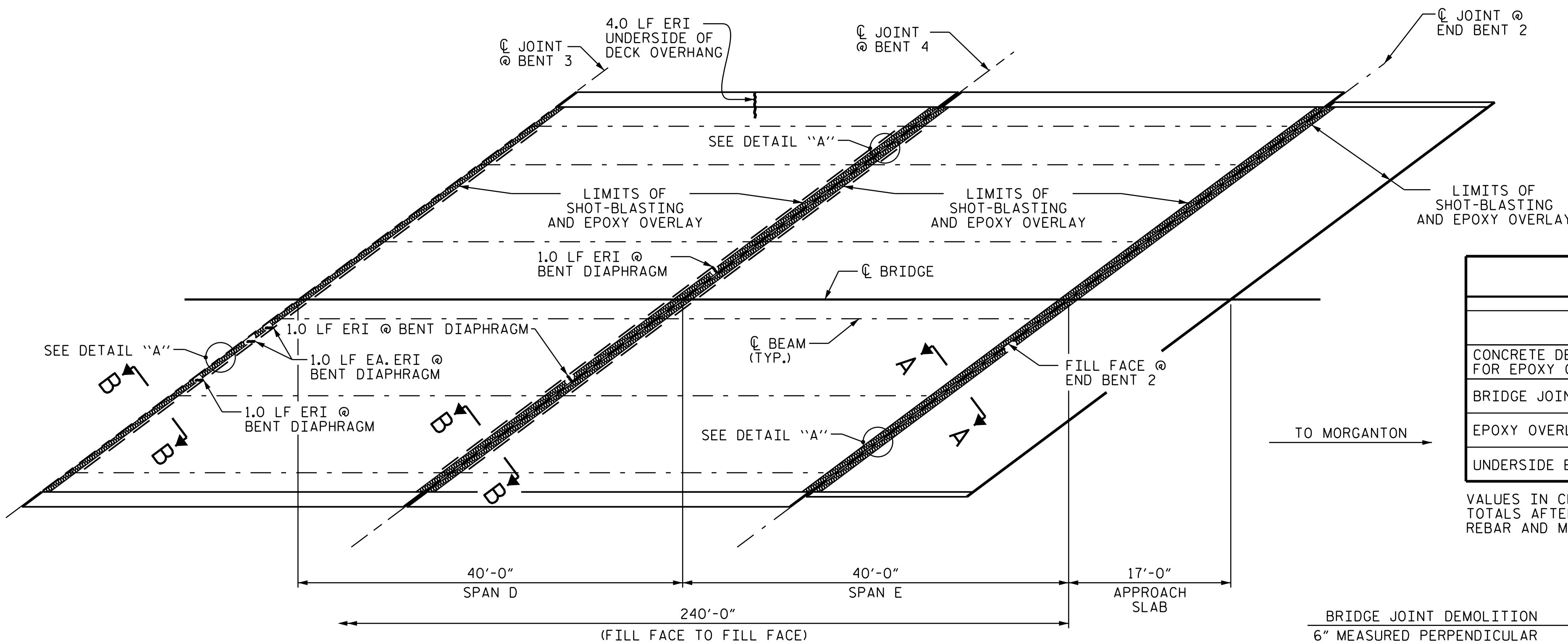
NOTES:

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 DESRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR TABLE

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

FOR BRIDGE JOINT DEMOLITION, SEE "JOINT DETAILS" SHEET.

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

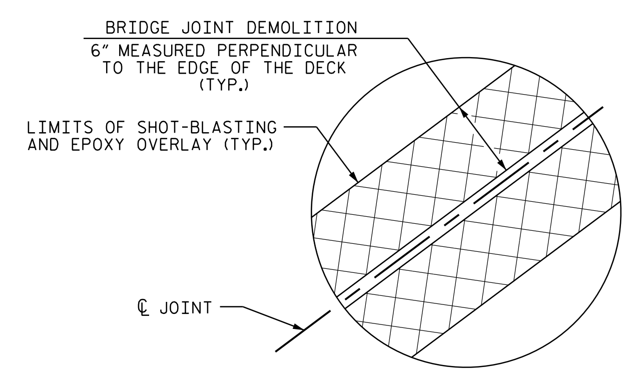


PLAN OF SPANS

SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	3.8 SQ.FT.	
BRIDGE JOINT DEMOLITION	402 SQ.FT.	
EPOXY OVERLAY SYSTEM	10,526 SQ.FT.	
UNDERSIDE EPOXY RESIN INJECTION	23.0 LIN.FT.	

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.



DETAIL "A"

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE: 146

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9/27/2016

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RALEIGH

SURFACE PREPARATION, UNDERSIDE REPAIR AND EPOXY OVERLAY

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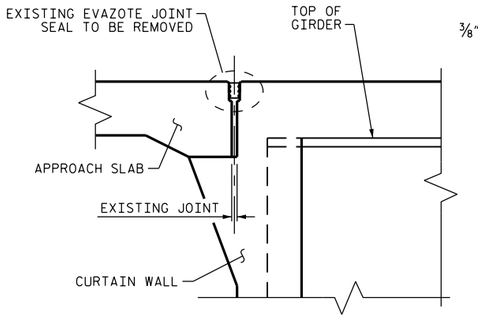
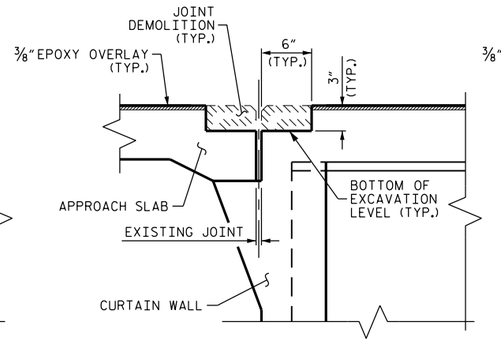
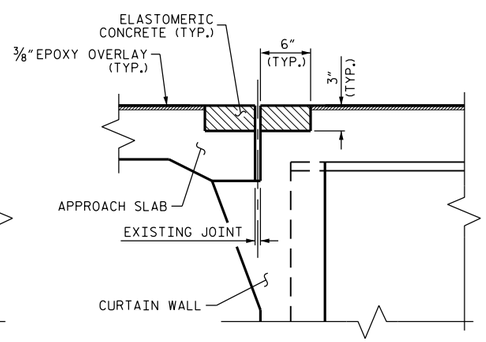


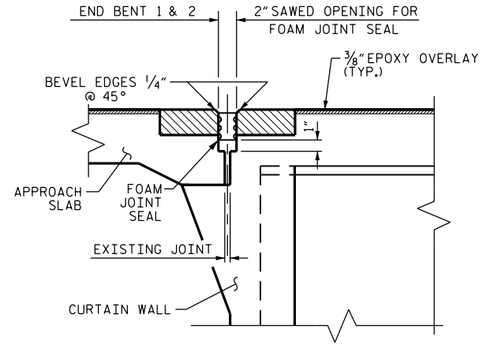
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION

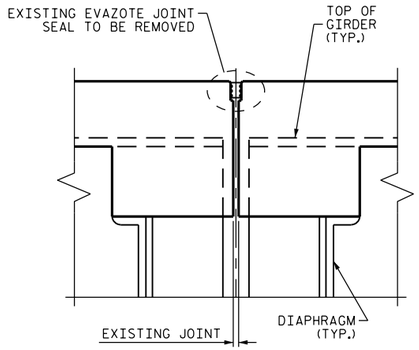


PROPOSED PRE-SAWED JOINT

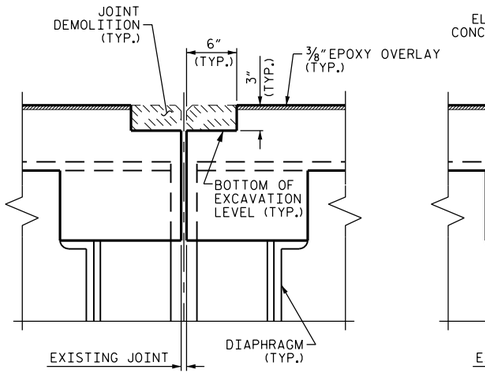


PROPOSED FOAM JOINT SEAL

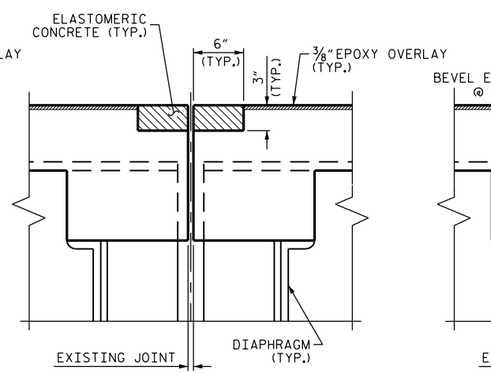
SECTION A-A



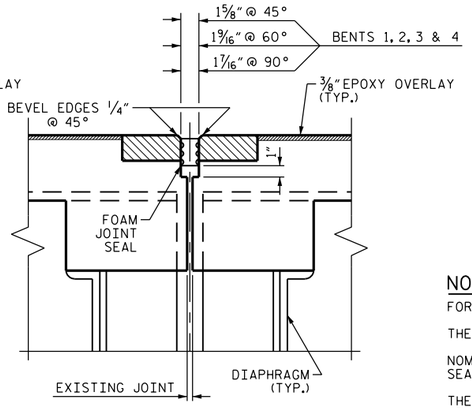
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION



PROPOSED PRE-SAWED JOINT



PROPOSED FOAM JOINT SEAL

SECTION B-B

ELASTOMERIC CONCRETE		
END BENT 1	16.8	(CU. FT.)
BENT 1	16.8	(CU. FT.)
BENT 2	16.8	(CU. FT.)
BENT 3	16.8	(CU. FT.)
BENT 4	16.8	(CU. FT.)
END BENT 2	16.8	(CU. FT.)
* TOTAL	100.8	(CU. FT.)

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

NOTES:

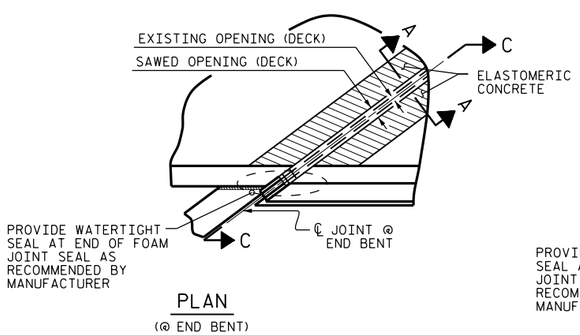
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

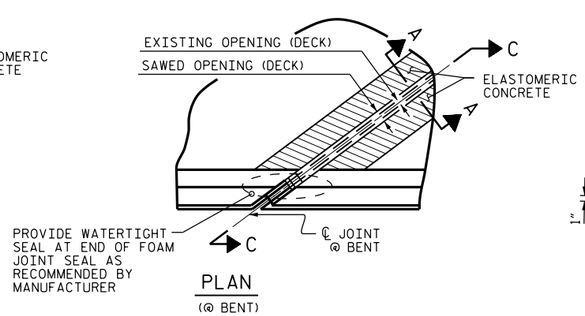
NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2½" AT THE END BENTS AND 2" AT THE BENTS.

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

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



PLAN
(@ END BENT)



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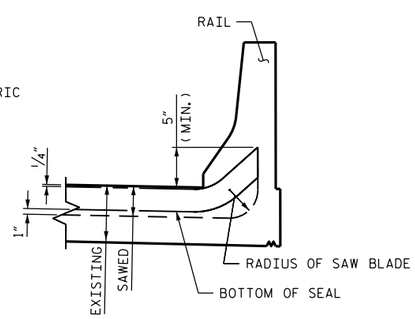
(@ BENT)



SECTION C-C

JOINT SEAL DETAILS

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7B0...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 146

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

JOINT DETAILS

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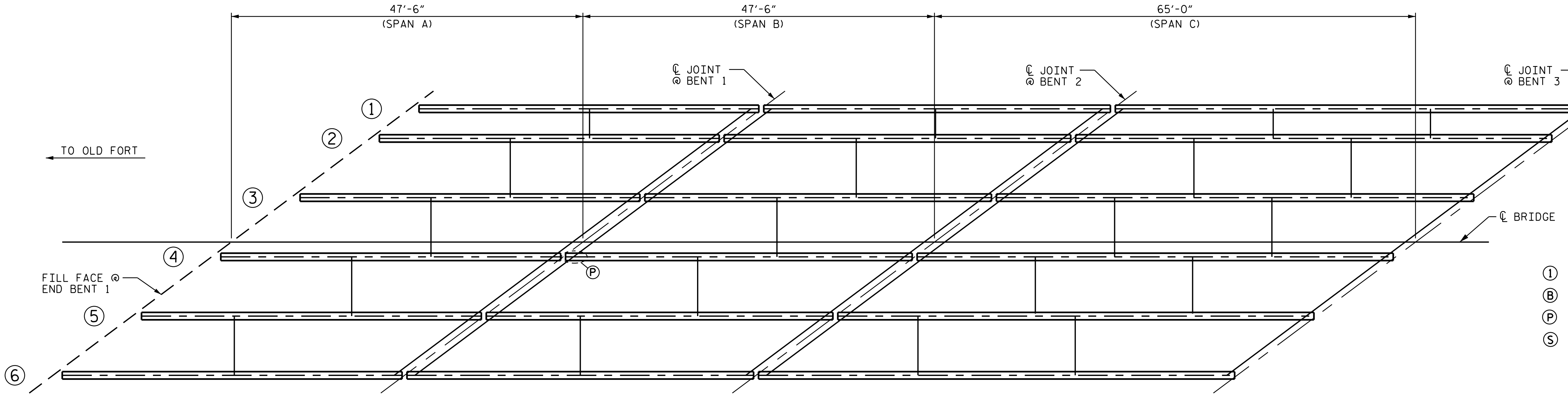
NOTES

FOR BEAM REPAIR DETAILS, SEE "BEAM PLATING REPAIR DETAILS" SHEET.

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

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

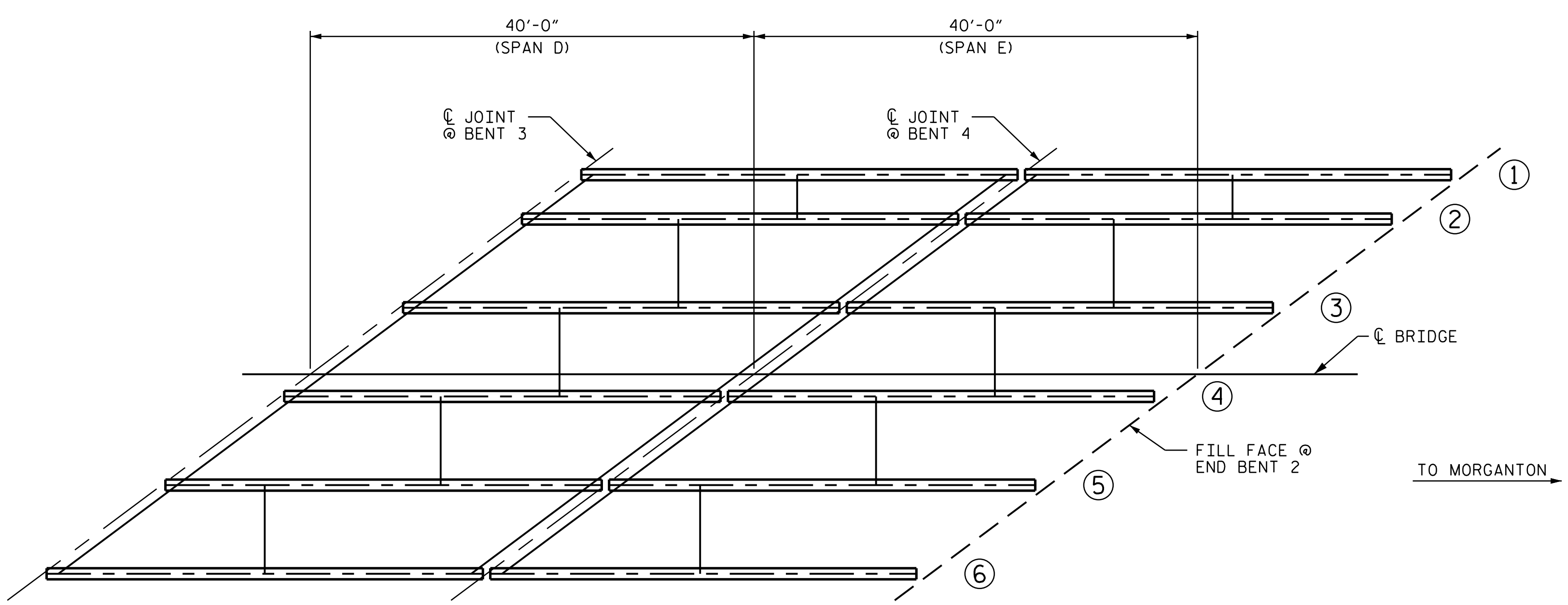


① BEAM NUMBER

Ⓑ BEAM END REPAIR

Ⓟ PLATING REPAIR

Ⓢ STIFFNER REPAIR



ANTICIPATED BEAM REPAIR LOCATIONS

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

BEAM REPAIR LOCATIONS

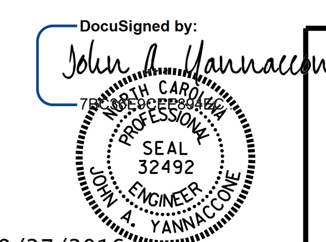
(OTHER LOCATIONS MAY EXIST, SEE NOTES)

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

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE: 146



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RALEIGH

BEAM PLATING AND REPAIR LOCATIONS

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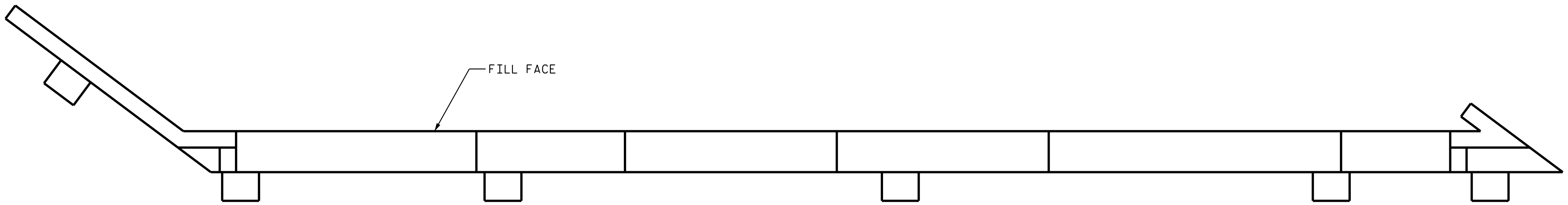
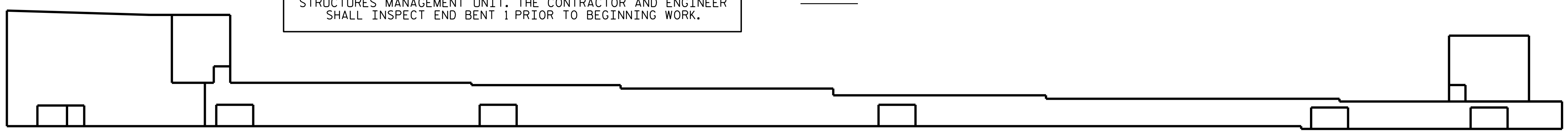
jayannaccone



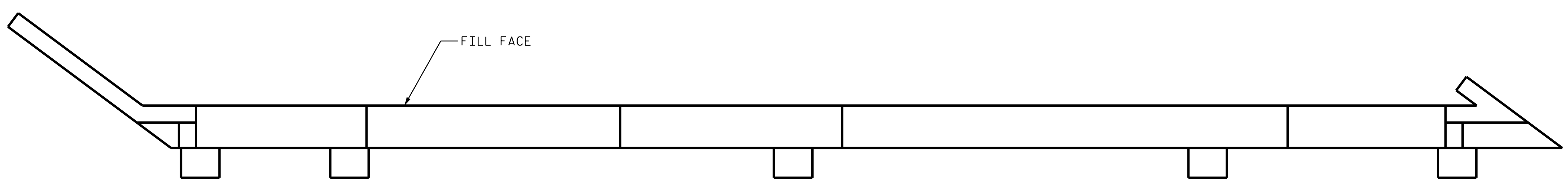
NO REPAIRS NOTED FOR END BENT 1 DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT END BENT 1 PRIOR TO BEGINNING WORK.

PLAN

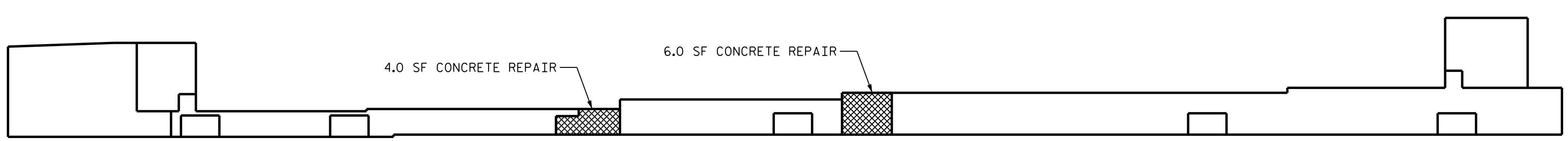


ELEVATION

END BENT 1



PLAN



ELEVATION

END BENT 2

AS-BUILT REPAIR QUANTITY TABLE

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

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS END BENT 2	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	10.0	6.0 *		
EPOXY RESIN INJECTION		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" CLEAR 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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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

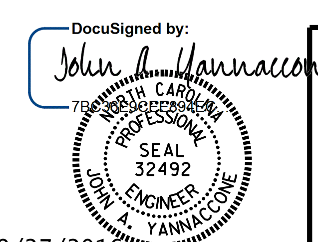
FOR REPAIRS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE: 146

DocuSigned by:



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENTS 1 & 2

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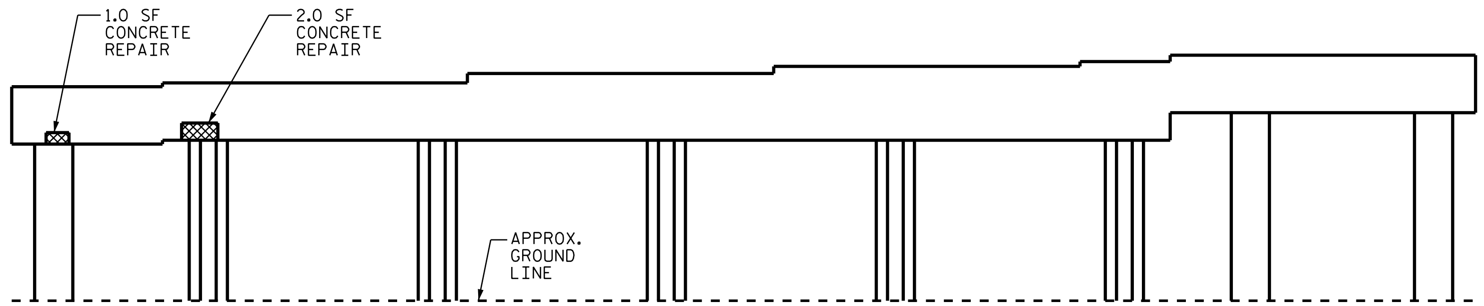
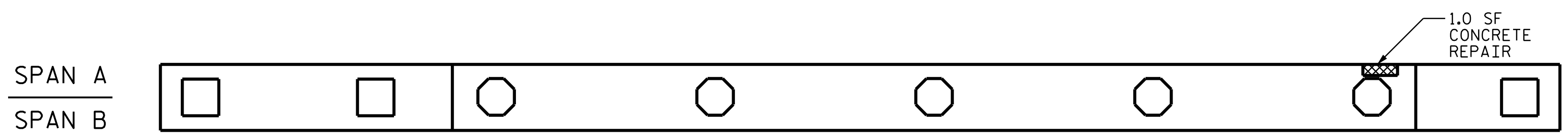
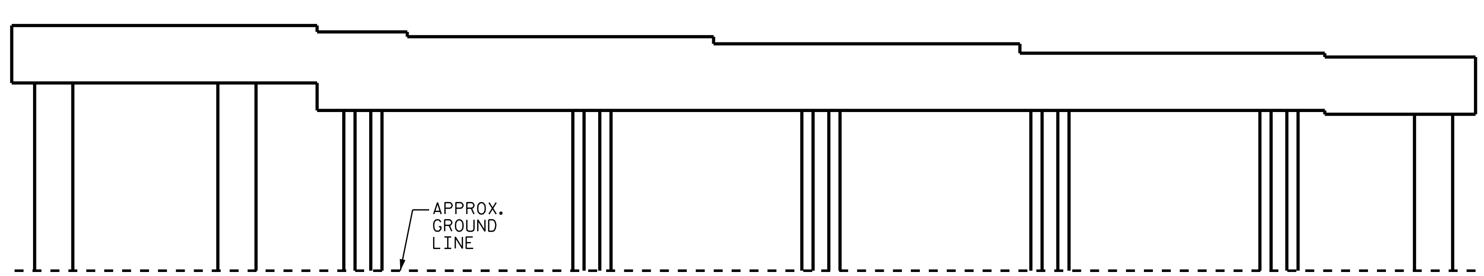
PLAN - TOP OF CAP



SPAN A VIEW - ELEVATION



PLAN - BOTTOM OF CAP



SPAN B VIEW - ELEVATION

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	4.0	3.0 *		
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		192		

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

NOTES:

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CLEAN AND REMOVE DEBRIS FROM TOP OF 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 PROVISIONS.

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 146

SHEET 1 OF 4

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

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 32492 JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1

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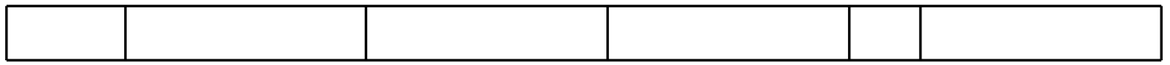
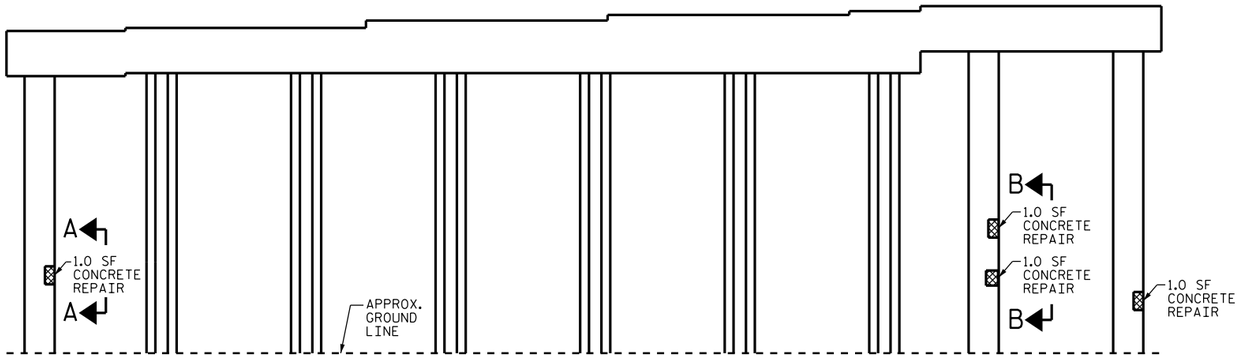


PLAN - TOP OF CAP



SPAN B VIEW - ELEVATION

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	4.0	3.0 *		
COLUMN	7.0	5.0 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		3.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		192		

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

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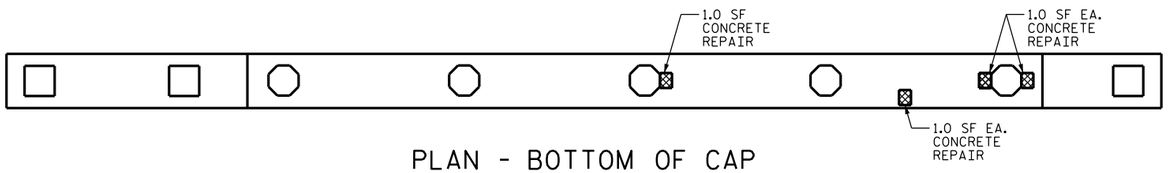
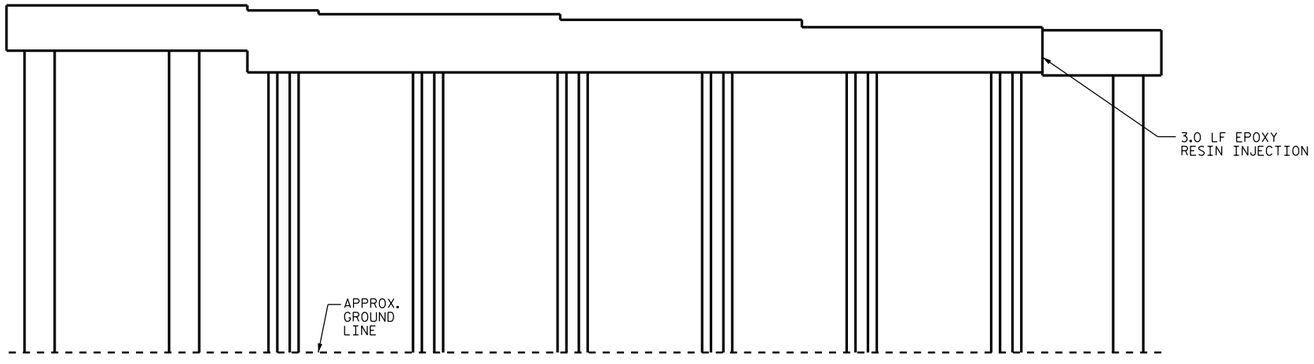
CLEAN AND REMOVE DEBRIS FROM TOP OF CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

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

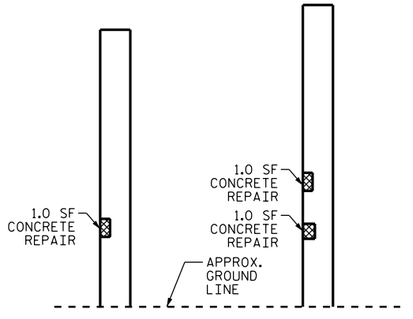
FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.



PLAN - BOTTOM OF CAP



SPAN C VIEW - ELEVATION



VIEW A-A VIEW B-B

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 146

SHEET 2 OF 4

DocuSigned by:
John A. Yannaccone
7B0...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2

DRAWN BY : W.F.PARKER DATE : 05/16
CHECKED BY : J.P. ADAMS DATE : 6/2016

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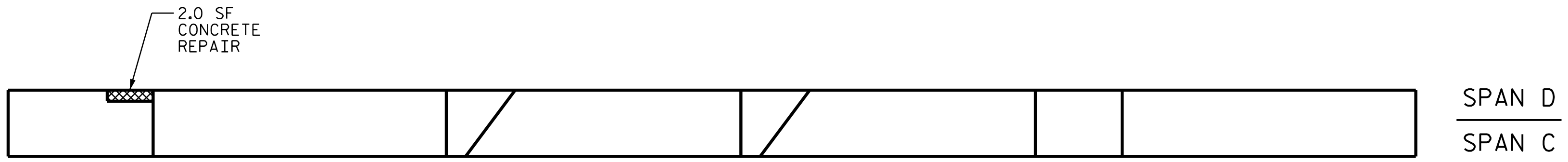

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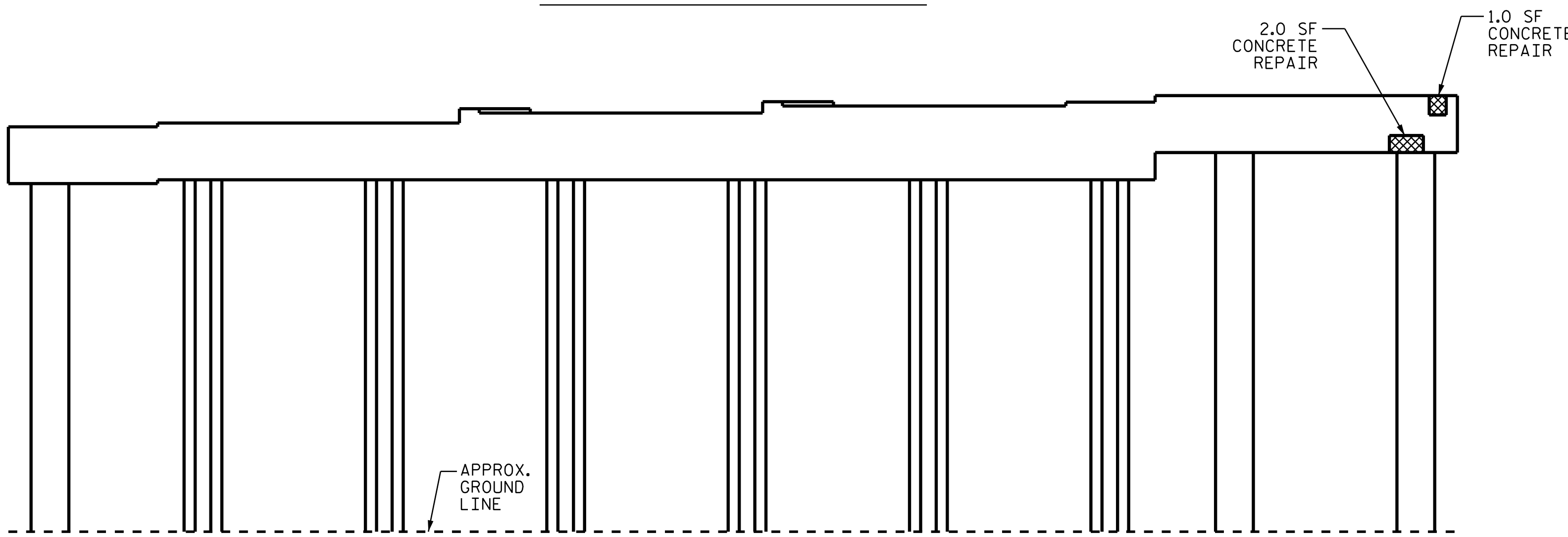

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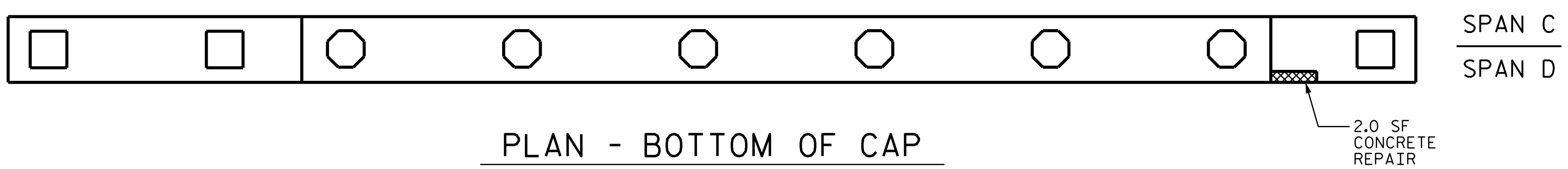
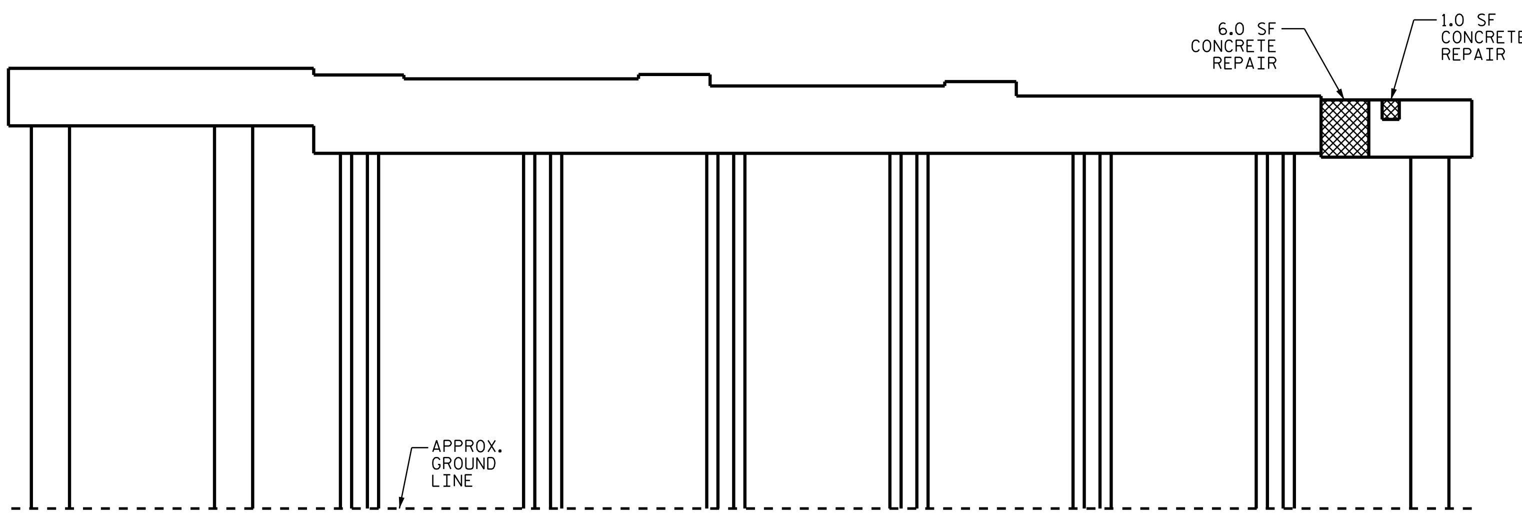


PLAN - BOTTOM OF CAP



SPAN D VIEW - ELEVATION

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	14.0	9.0 ✱		
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		192		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEAR 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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

CLEAN AND REMOVE DEBRIS FROM TOP OF 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 PROVISIONS.

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 146

SHEET 3 OF 4

DocuSigned by: John A. Yannaccone

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

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RALEIGH

BENT 3

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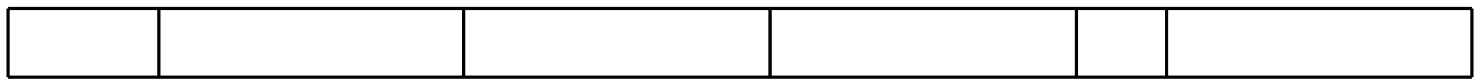
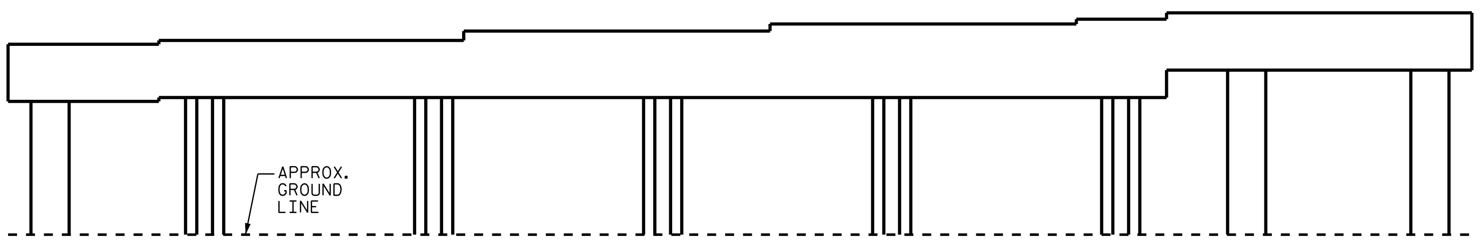


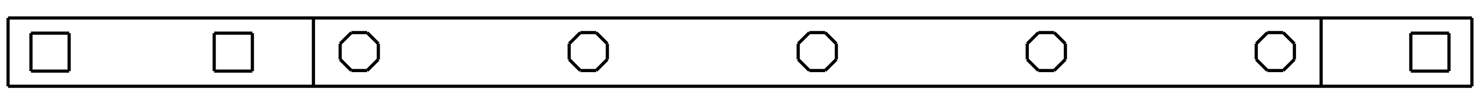
SPAN E

SPAN D

PLAN - TOP OF CAP



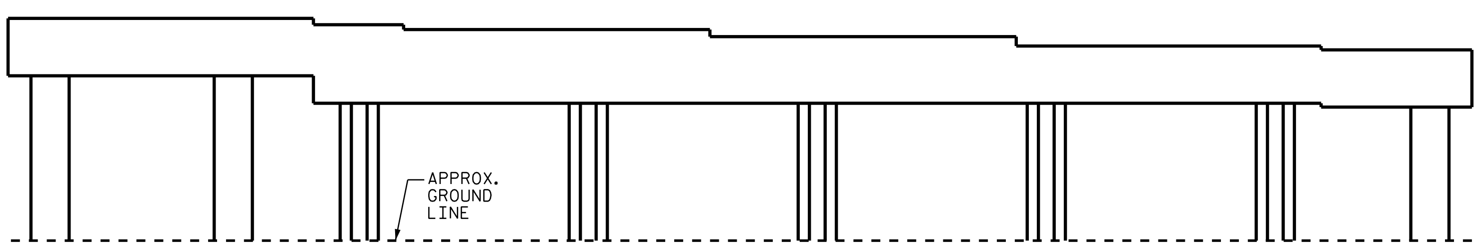
SPAN D VIEW - ELEVATION



SPAN D

SPAN E

PLAN - BOTTOM OF CAP



SPAN E VIEW - ELEVATION

NO REPAIRS NOTED FOR BENT 4 DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT BENT 4 PRIOR TO BEGINNING WORK.

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 4	QUANTITIES ESTIMATE		QUANTITIES ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
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		192		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEAR 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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

CLEAN AND REMOVE DEBRIS FROM TOP OF 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 PROVISIONS.

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

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

DAMAGED AREA

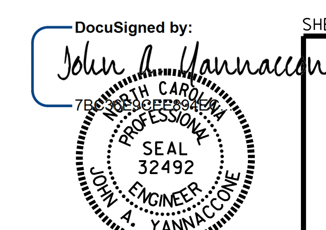
EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 146

SHEET 4 OF 4



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DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 4

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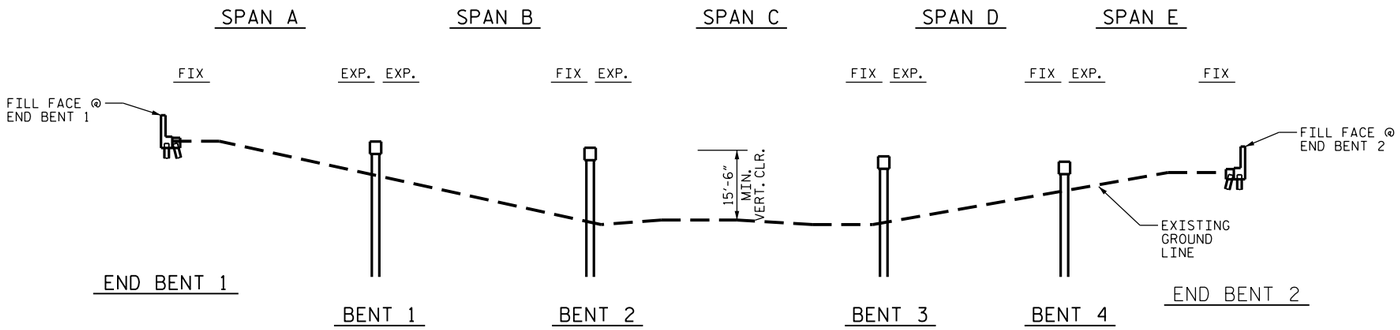
NOTES

PROFILE INFOMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 04/14/2014.

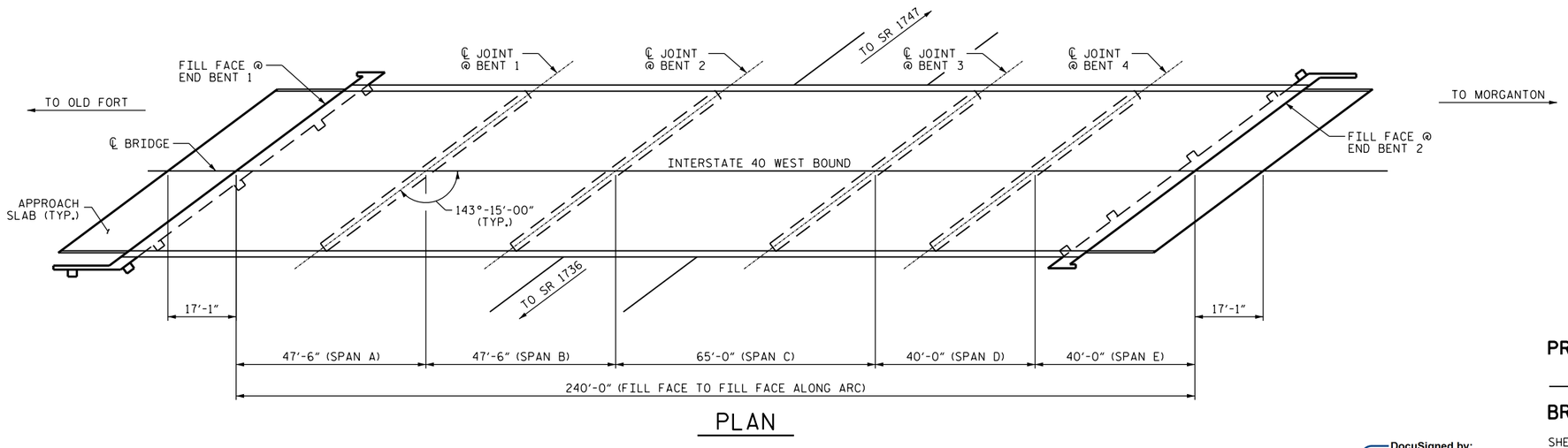
BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



SECTION ALONG ℄ ROADWAY

SCOPE OF WORK

- CLEAN AND PAINT STEEL I-BEAMS AND BEARINGS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- CLEAN AND REPAIR REBAR IN CONCRETE REPAIR AREAS.
- PERFORM CONCRETE REPAIRS IN PREPARED AREAS.
- REMOVE DEBRIS FROM TOP OF BENT CAPS AND APPLY EPOXY COATING.
- PARTIALLY REMOVE BRIDGE DECK CONCRETE USING SHOTBLASTING METHODS.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- OVERLAY PREPARED BRIDGE DECK WITH EPOXY OVERLAY SYSTEM.
- RECONSTRUCT BRIDGE JOINTS AND INSTALL JOINT SEALS.



PLAN

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 149

SHEET 1 OF 2

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

RESIDENT ENGINEER DATE

DocuSigned by:
John A. Yannaccone
78E...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

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RALEIGH

GENERAL DRAWING FOR BRIDGE ON I-40 WBL OVER SR 1741 (FAIRVIEW 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 CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLANS.

FOR EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.

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

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR CLEANING AND REPAINTING OF BRIDGE, SEE SPECIAL PROVISIONS.

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR POLLUTION CONTROL, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 149

SHEET 2 OF 2

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-40 WBL
OVER SR 1741
(FAIRVIEW ROAD)

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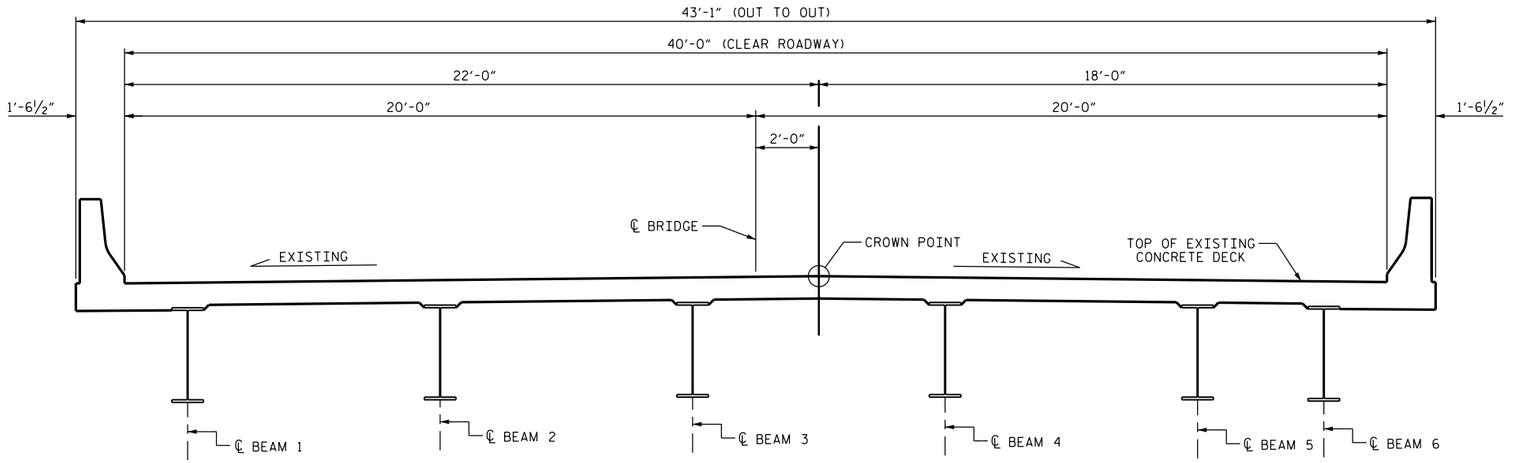
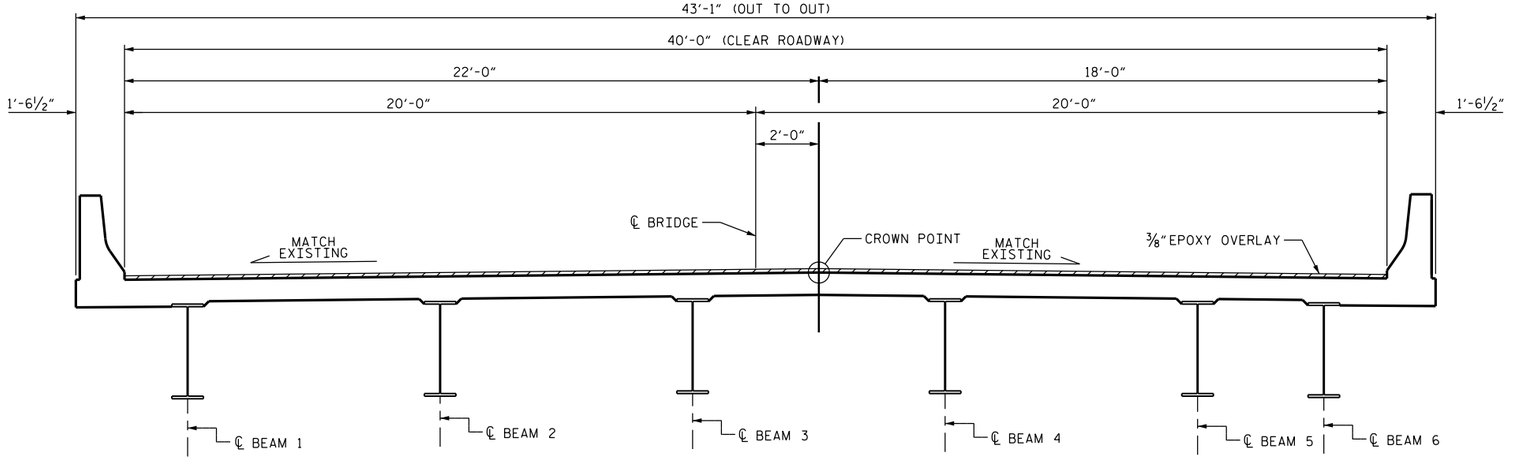


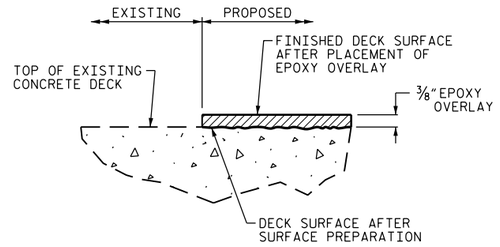
TYPICAL SECTION
(EXISTING)



TYPICAL SECTION
(PROPOSED)

NOTE:

SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF EPOXY OVERLAY SYSTEM AND SURFACE PREPARATION.



DETAIL FOR EPOXY OVERLAY

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 149

DocuSigned by:
John A Yannaccone
7B...

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9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION & EPOXY OVERLAY DETAIL

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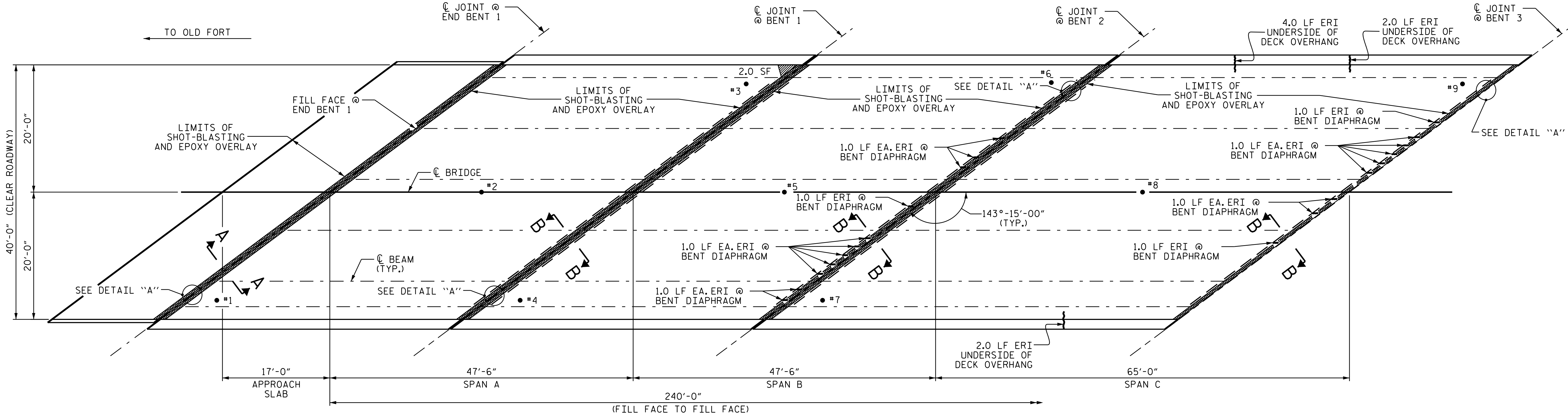
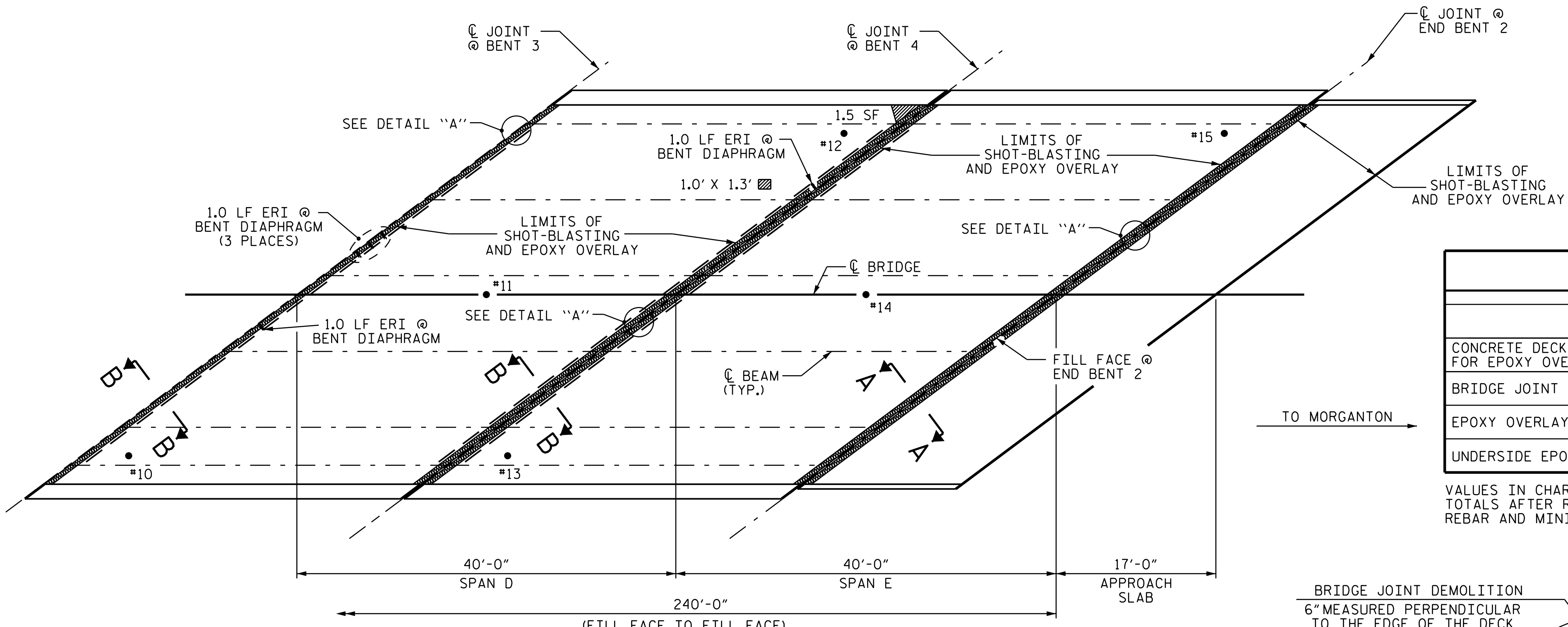




PLAN OF SPANS

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 DESRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR TABLE

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

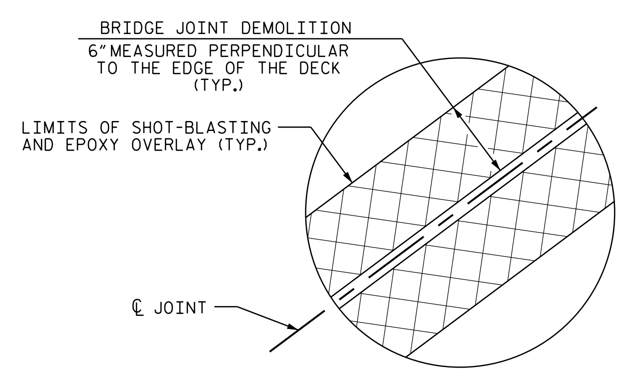
FOR BRIDGE JOINT DEMOLITION, SEE "JOINT DETAILS" SHEET.

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

SUMMARY OF QUANTITIES	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	3.5 SQ. FT.	
BRIDGE JOINT DEMOLITION	402 SQ. FT.	
EPOXY OVERLAY SYSTEM	10,526 SQ. FT.	
UNDERSIDE EPOXY RESIN INJECTION	30.0 LIN. FT.	

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.

- CONCRETE DECK REPAIR FOR EPOXY OVERLAY
- EPOXY OVERLAY
- BRIDGE JOINT DEMOLITION
- ERI — EPOXY RESIN INJECTION
- •#1 — TEST LOCATION



DETAIL "A"

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE: 149

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RALEIGH

SURFACE PREPARATION, UNDERSIDE REPAIR AND EPOXY OVERLAY

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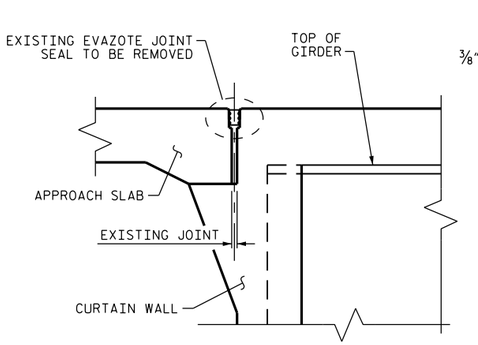
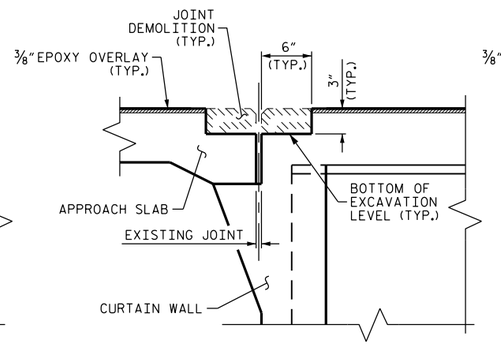
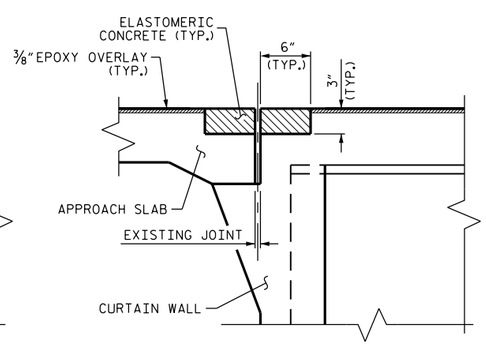


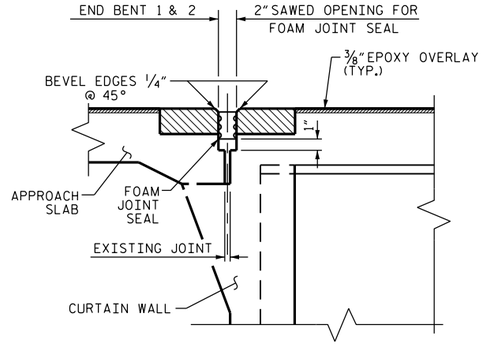
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION

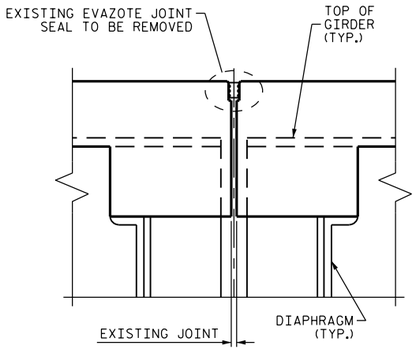


PROPOSED PRE-SAWED JOINT



PROPOSED FOAM JOINT SEAL

SECTION A-A



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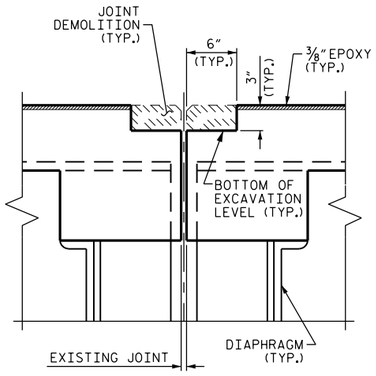
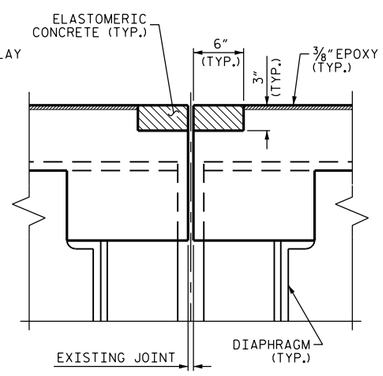
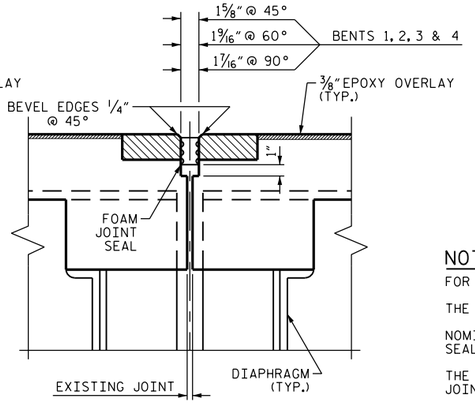


MINIMUM EXISTING JOINT DEMOLITION



PROPOSED PRE-SAWED JOINT



PROPOSED FOAM JOINT SEAL

SECTION B-B

ELASTOMERIC CONCRETE		
END BENT 1	16.8	(CU. FT.)
BENT 1	16.8	(CU. FT.)
BENT 2	16.8	(CU. FT.)
BENT 3	16.8	(CU. FT.)
BENT 4	16.8	(CU. FT.)
END BENT 2	16.8	(CU. FT.)
* TOTAL	100.8	(CU. FT.)

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

NOTES:

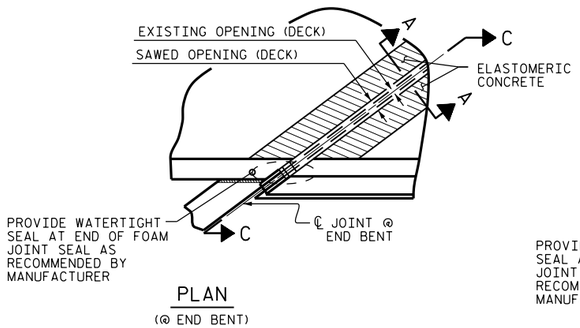
FOR FOAM JOINT SEALS SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

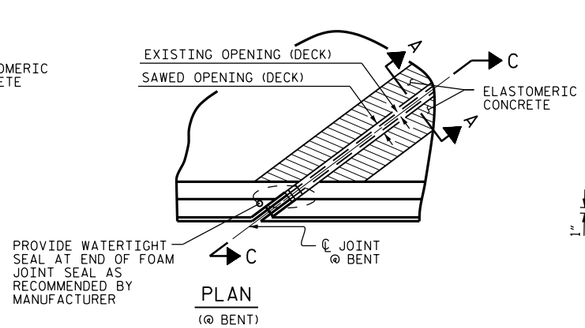
NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2½" AT THE END BENTS AND 2" AT THE BENTS.

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

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



PLAN
(@ END BENT)



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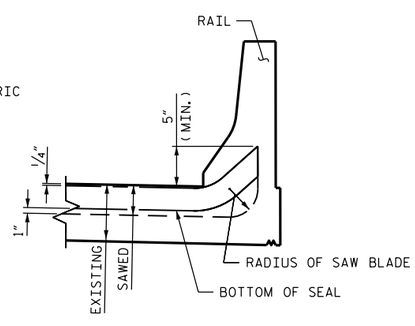

SECTION C-C

JOINT SEAL DETAILS

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 149

DocuSigned by:
John A Yannaccone
7E...

STATE OF NORTH CAROLINA
NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE
9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

JOINT DETAILS

DRAWN BY : W.F. PARKER DATE : 05/16
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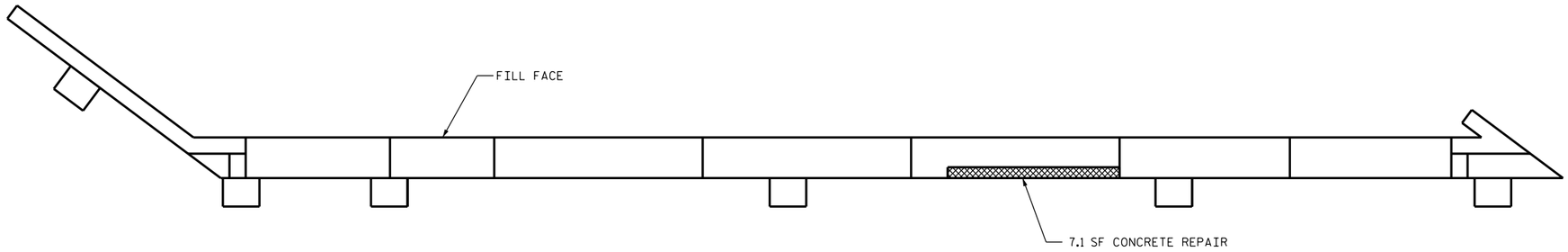

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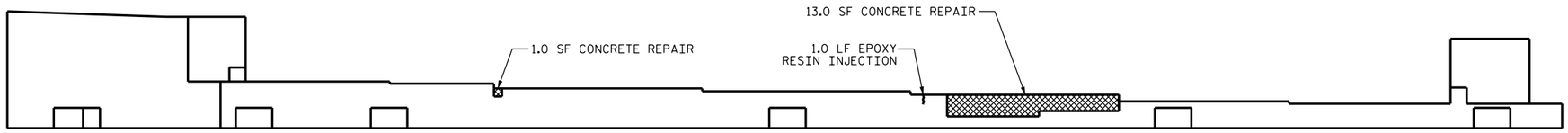
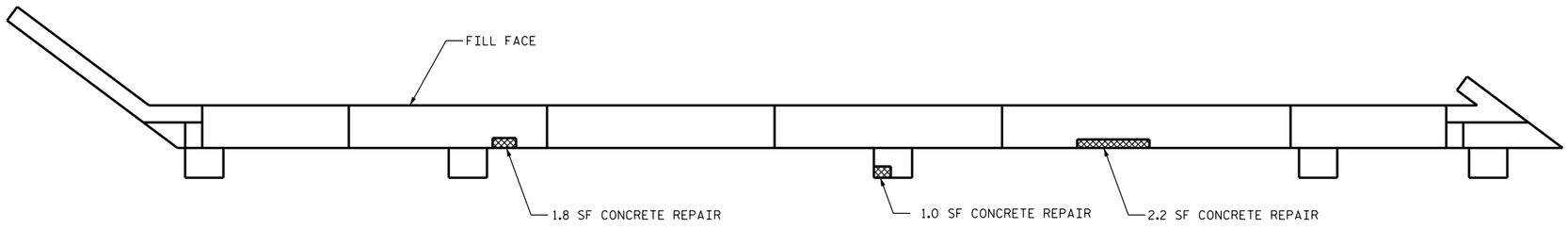


ELEVATION

END BENT 1



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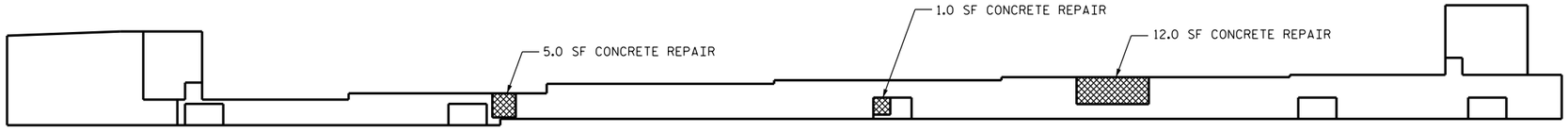

ELEVATION

END BENT 2

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	21.1	13.2 *		
EPOXY RESIN INJECTION		LN. FT.		
CAP		1.0		

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS END BENT 2	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	23.0	14.0 *		
EPOXY RESIN INJECTION		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" CLEAR 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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE: 149

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

DRAWN BY : W.F.PARKER DATE : 05/16

CHECKED BY : J.P. ADAMS DATE : 6/2016

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DEPARTMENT OF TRANSPORTATION
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END BENTS 1 & 2

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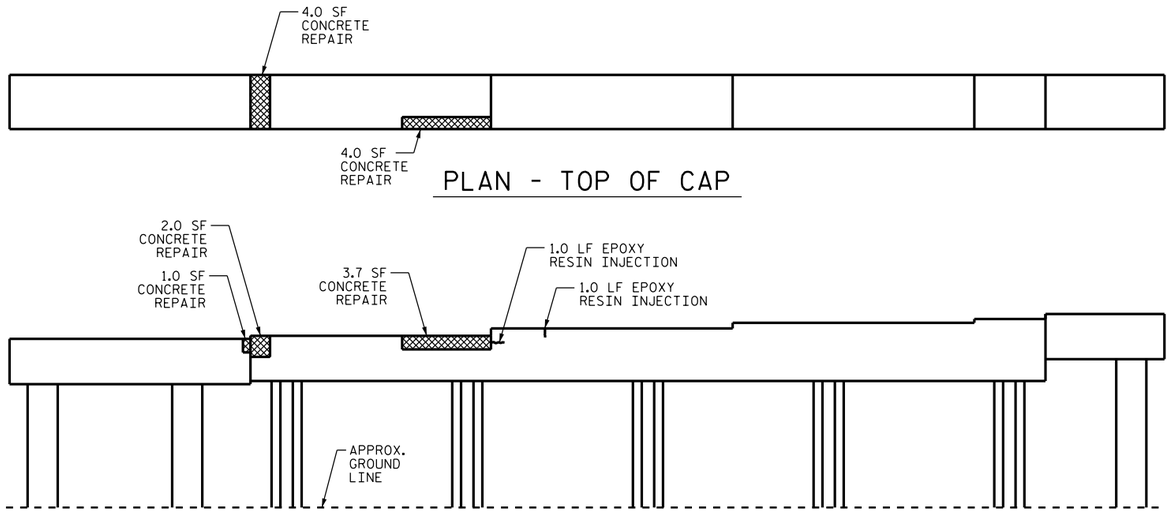
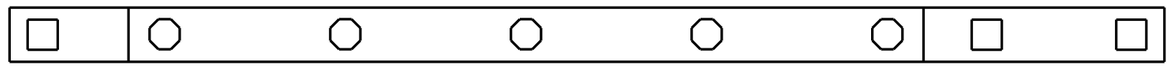


PLAN - TOP OF CAP

SPAN A VIEW - ELEVATION

SPAN B

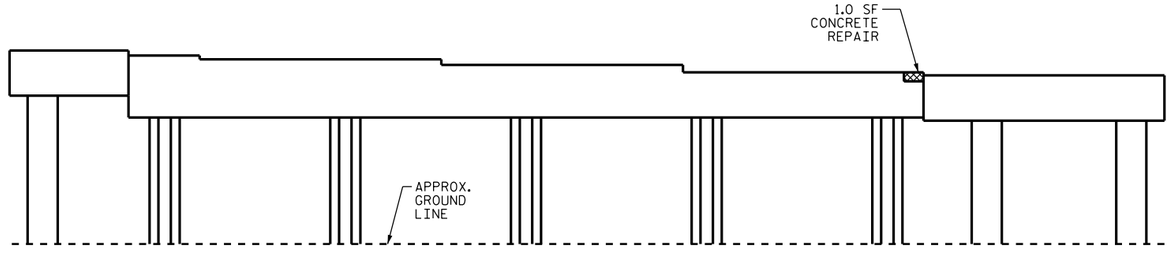
SPAN A



PLAN - BOTTOM OF CAP

SPAN A

SPAN B



SPAN B VIEW - ELEVATION

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	15.7	9.8 *		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		2.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		192		

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

NOTES:

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CLEAN AND REMOVE DEBRIS FROM TOP OF 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 PROVISIONS.

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

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 149

SHEET 1 OF 4

DocuSigned by:
John A Yannaccone
7BC3...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1

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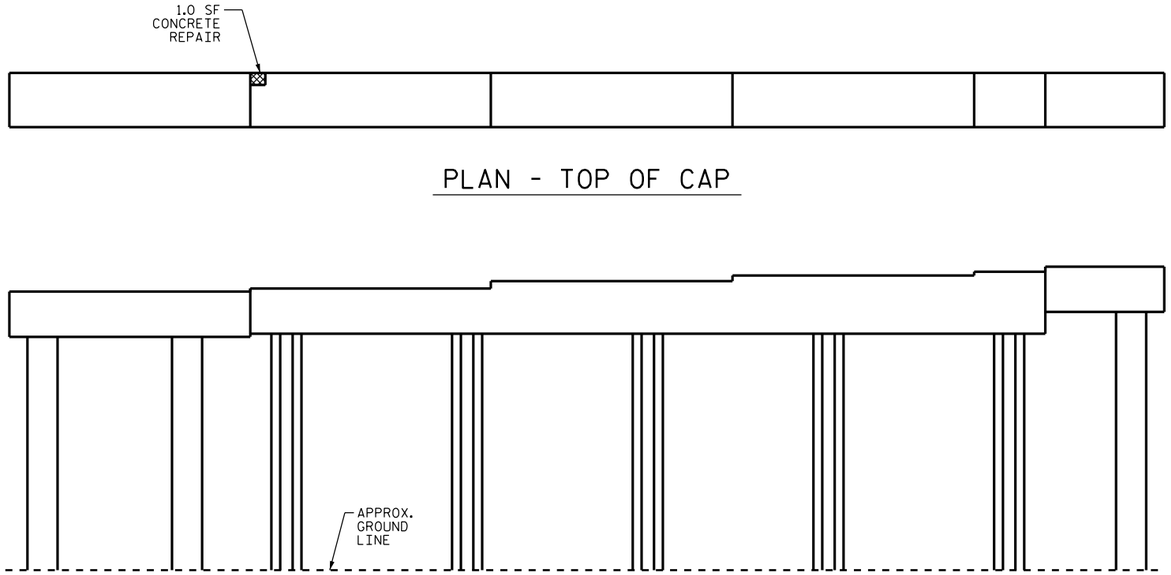
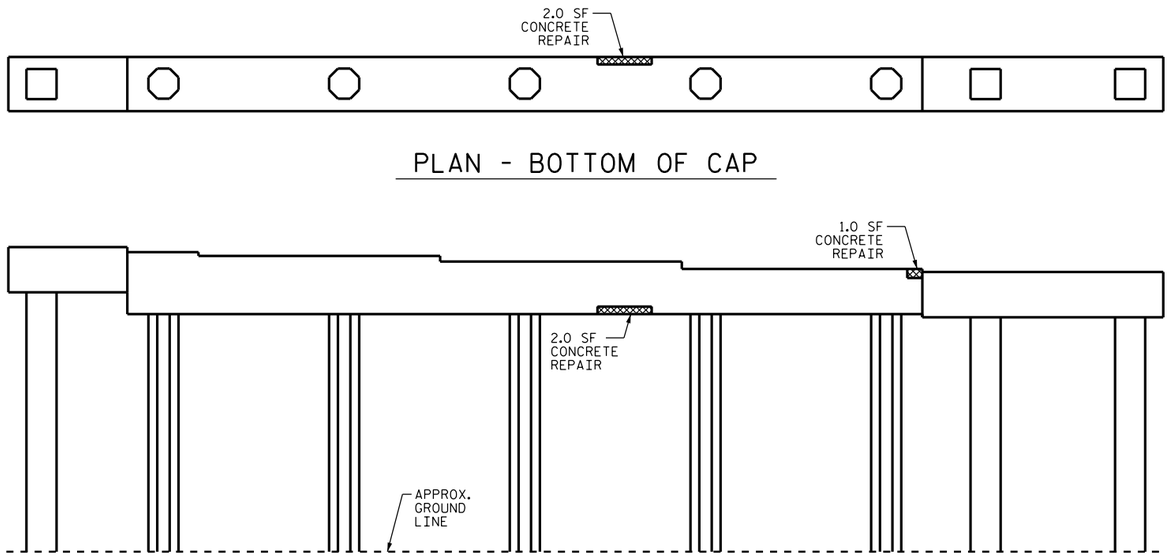


PLAN - TOP OF CAP

SPAN B VIEW - ELEVATION

SPAN C

SPAN B



PLAN - BOTTOM OF CAP

SPAN C VIEW - ELEVATION

SPAN B

SPAN C

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	6.0	4.0 *		
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		192		

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 149

SHEET 2 OF 4

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John A. Yannaccone
7BC...

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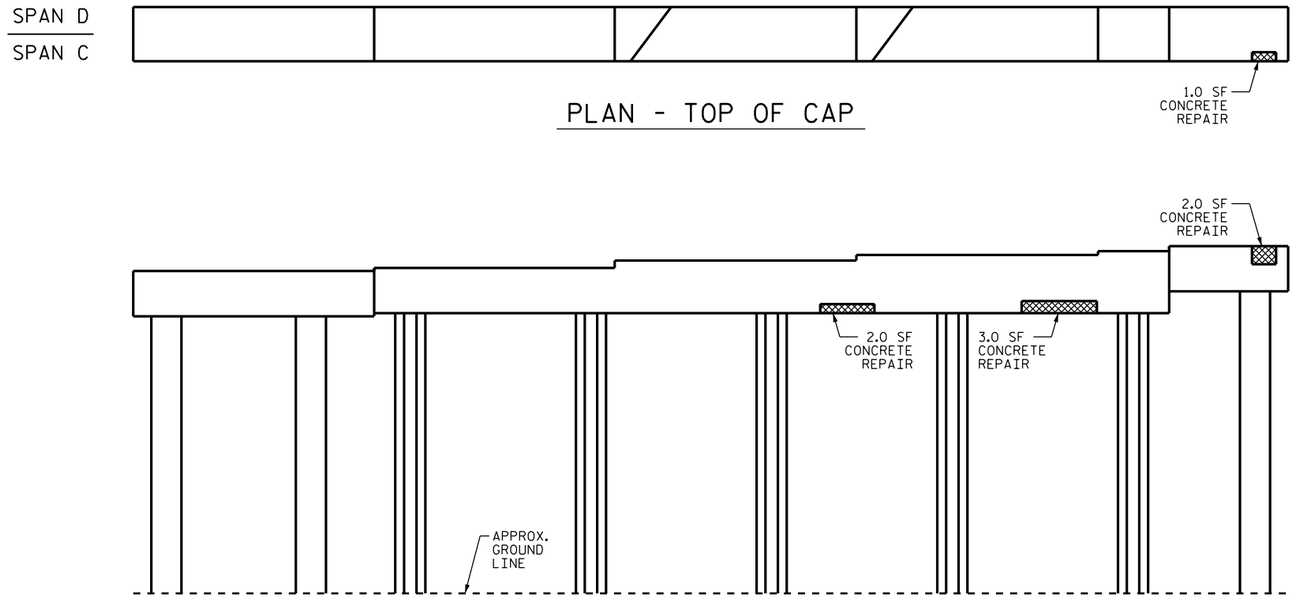

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	22.0	14.0 *		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		192		

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

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 149

SHEET 3 OF 4

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

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9/27/2016

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RALEIGH

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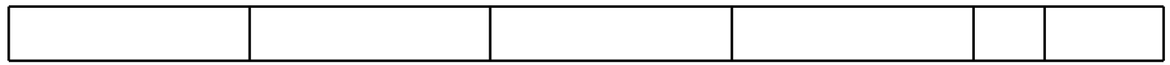
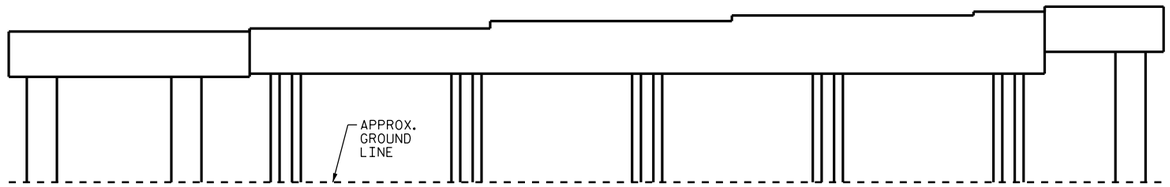


PLAN - TOP OF CAP

SPAN E
SPAN D



SPAN D VIEW - ELEVATION

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 4	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	5.0	3.0 *		
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		192		

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

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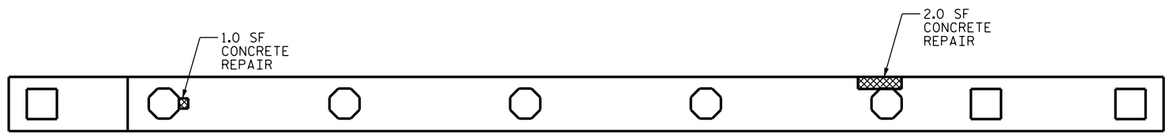
FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

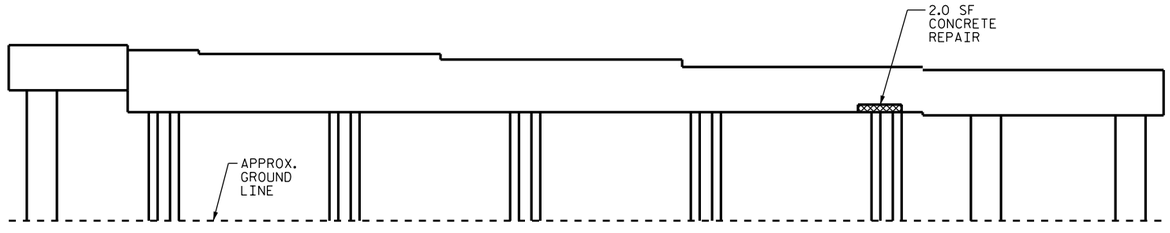


PLAN - BOTTOM OF CAP

SPAN D
SPAN E

DAMAGED AREA

EPOXY RESIN INJECTION



SPAN E VIEW - ELEVATION

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 149

SHEET 4 OF 4

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

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DEPARTMENT OF TRANSPORTATION
RALEIGH

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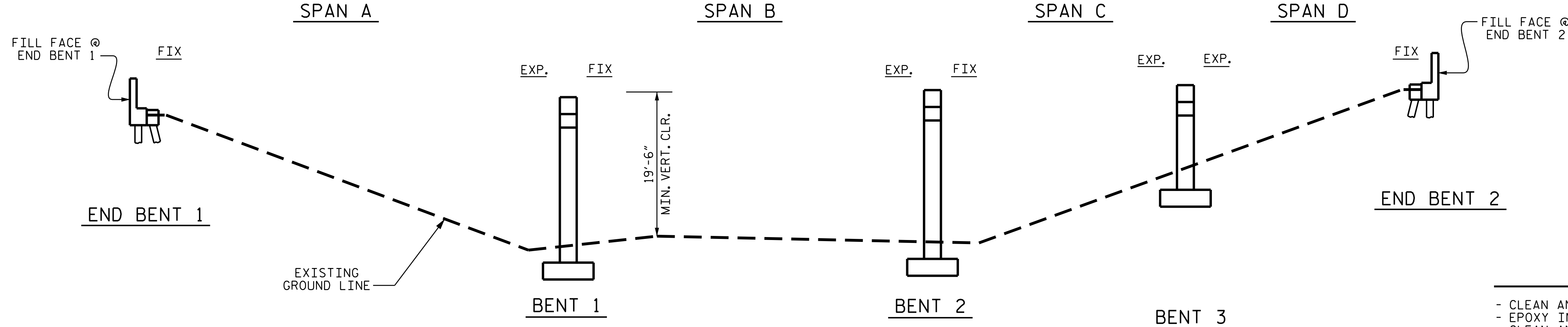
NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 04/15/2014.

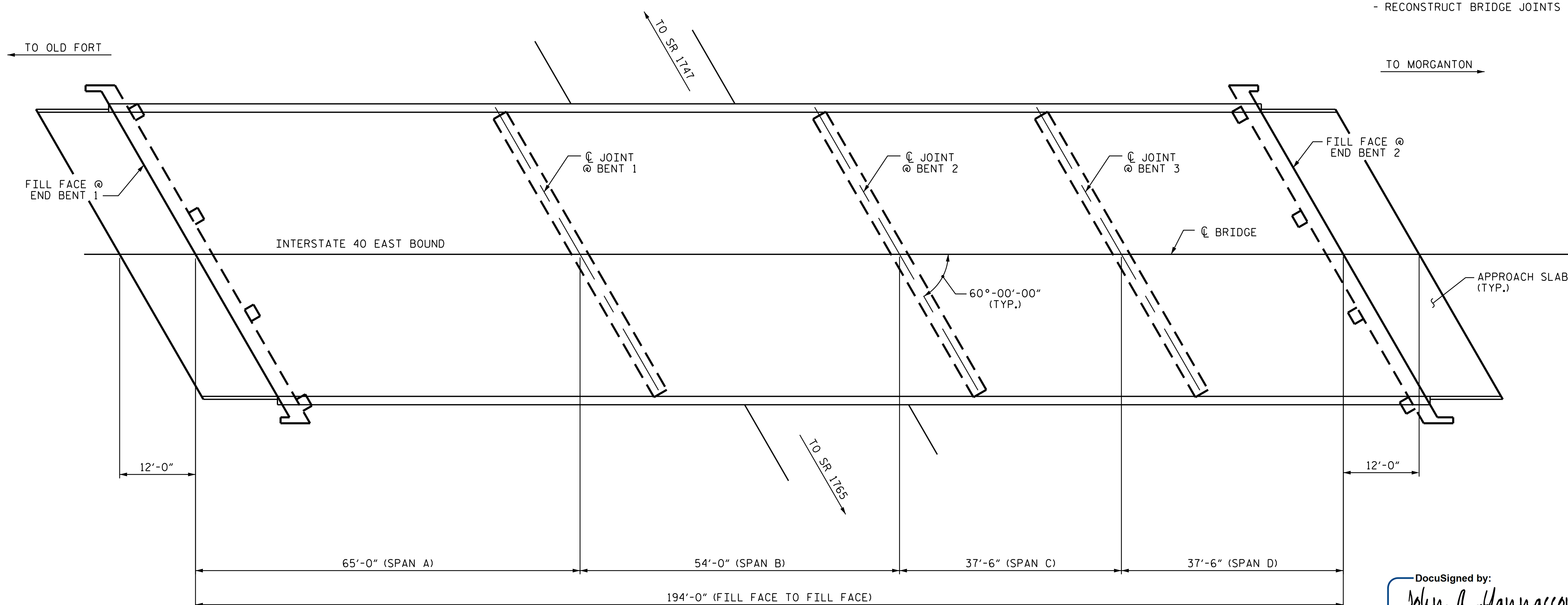
BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



SECTION ALONG EBL GRADE LINE

SCOPE OF WORK

- CLEAN AND PAINT STEEL I-BEAMS AND BEARINGS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- CLEAN AND REPAIR REBAR IN CONCRETE REPAIR AREAS.
- PERFORM CONCRETE REPAIRS IN PREPARED AREAS.
- REMOVE DEBRIS FROM TOP OF BENT CAPS AND APPLY EPOXY COATING.
- PARTIALLY REMOVE BRIDGE DECK CONCRETE USING SHOTBLASTING METHODS.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- OVERLAY PREPARED BRIDGE DECK WITH EPOXY OVERLAY SYSTEM.
- RECONSTRUCT BRIDGE JOINTS AND INSTALL JOINT SEALS.



PLAN

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 151

SHEET 1 OF 2

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

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 32492 JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-40 EBL OVER SR 1760 (HARMONY GROVE ROAD)

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

RESIDENT ENGINEER DATE

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REVISIONS						SHEET NO.
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DRAWN BY : J.P. ADAMS DATE : 5/2016
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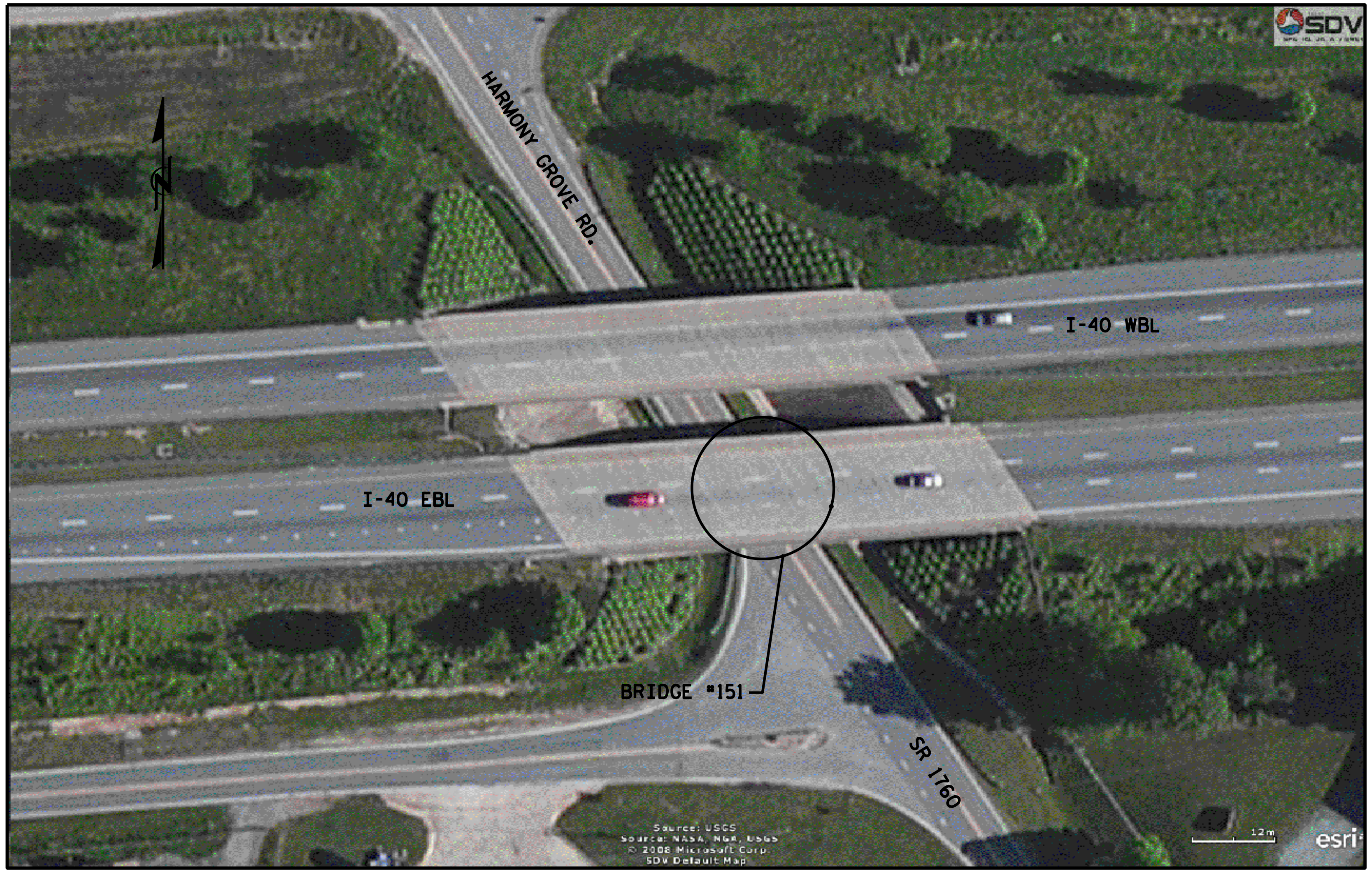

LOCATION SKETCH

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 EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.

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

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR CLEANING AND REPAINTING OF BRIDGE, SEE SPECIAL PROVISIONS.

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR POLLUTION CONTROL, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 151

SHEET 2 OF 2

DocuSigned by:
John A. Yannaccone
7BC36E9CEE894EC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-40 EBL
OVER SR 1760
(HARMONY GROVE ROAD)

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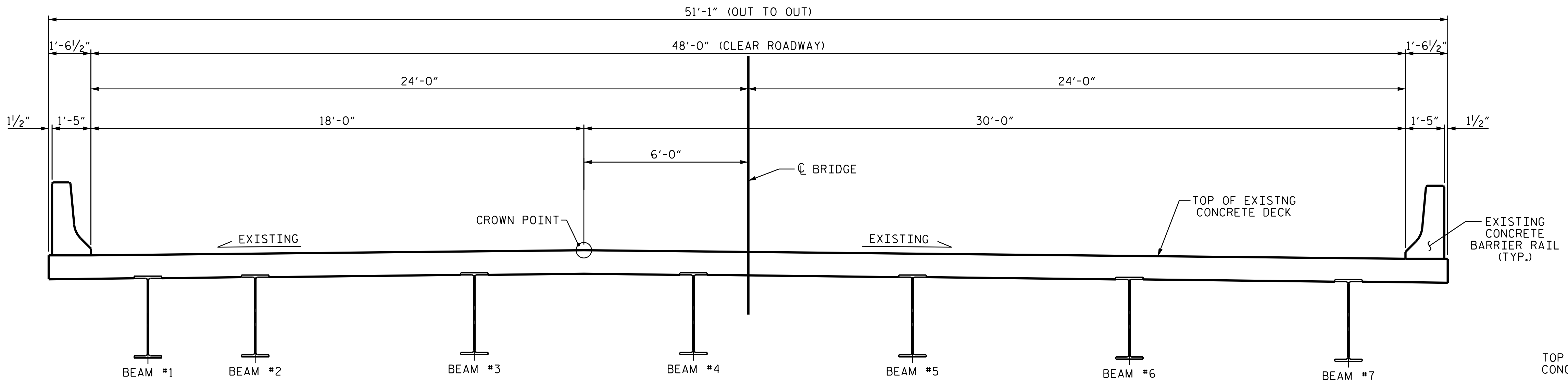
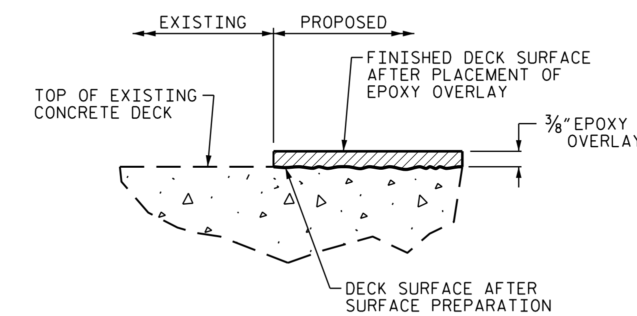
NOTE:

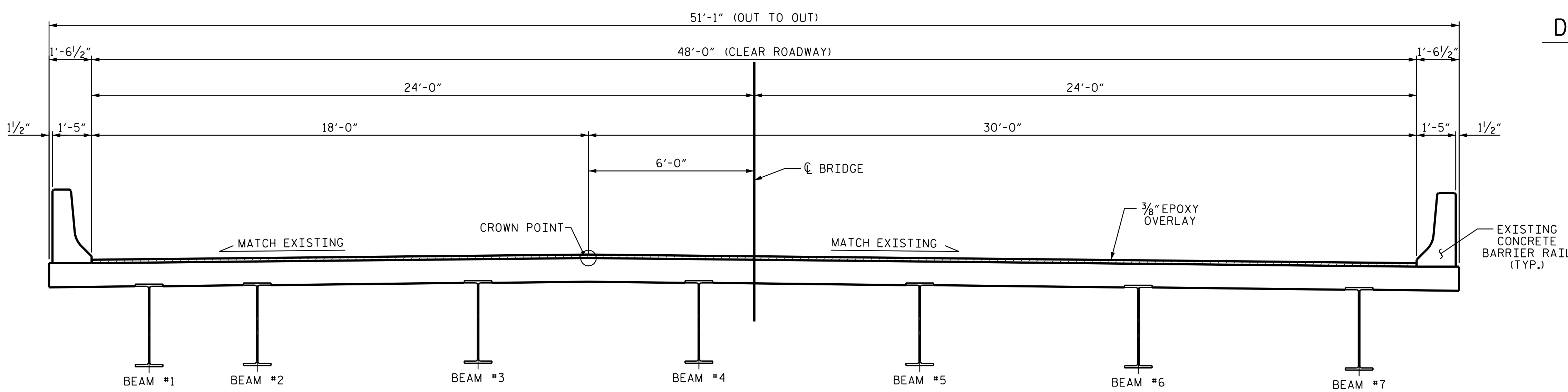
SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF EPOXY OVERLAY SYSTEM AND SURFACE PREPARATION.



TYPICAL SECTION
(EXISTING)



DETAIL FOR EPOXY OVERLAY



TYPICAL SECTION
(PROPOSED)

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 151

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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TYPICAL SECTION
&
EPOXY OVERLAY DETAIL

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SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	0.5 SQ. FT.	
BRIDGE JOINT DEMOLITION	277 SQ. FT.	
EPOXY OVERLAY SYSTEM	10,164 SQ. FT.	
UNDERSIDE EPOXY RESIN INJECTION	29.0 LIN. FT.	

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.

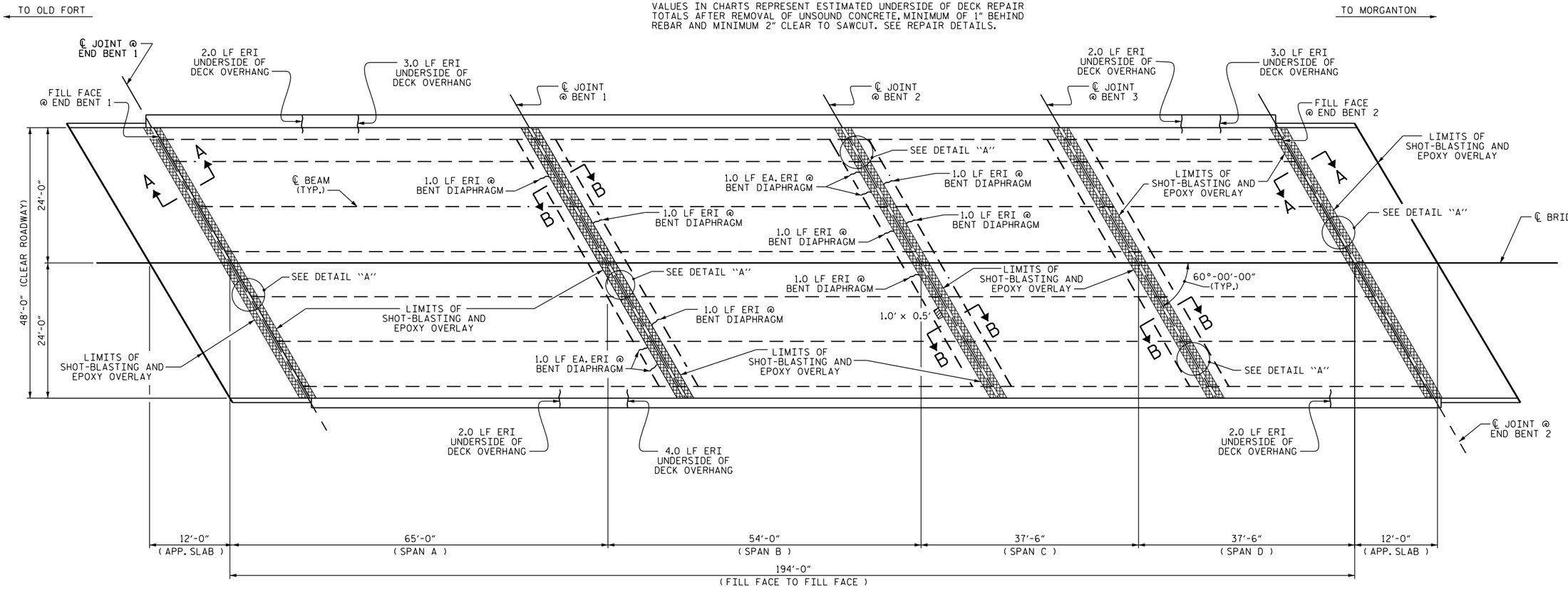
NOTES:

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 DESRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR TABLE

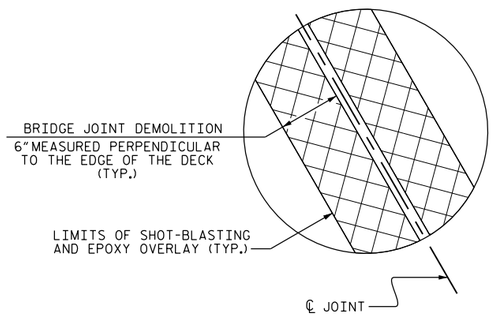
FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG AND DIAPHRAGM REPAIRS DETAILS" SHEET.

FOR BRIDGE JOINT DEMOLITION, SEE "JOINT DETAILS" SHEET.

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



PLAN OF SPANS



DETAIL "A"

CONCRETE DECK REPAIR FOR EPOXY OVERLAY

BRIDGE JOINT DEMOLITION

EPOXY OVERLAY

ERI EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 151

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION, UNDERSIDE REPAIR AND EPOXY OVERLAY

DRAWN BY : J.P. ADAMS DATE : 5/2016
CHECKED BY : T.L. AVERETTE DATE : 5/2016

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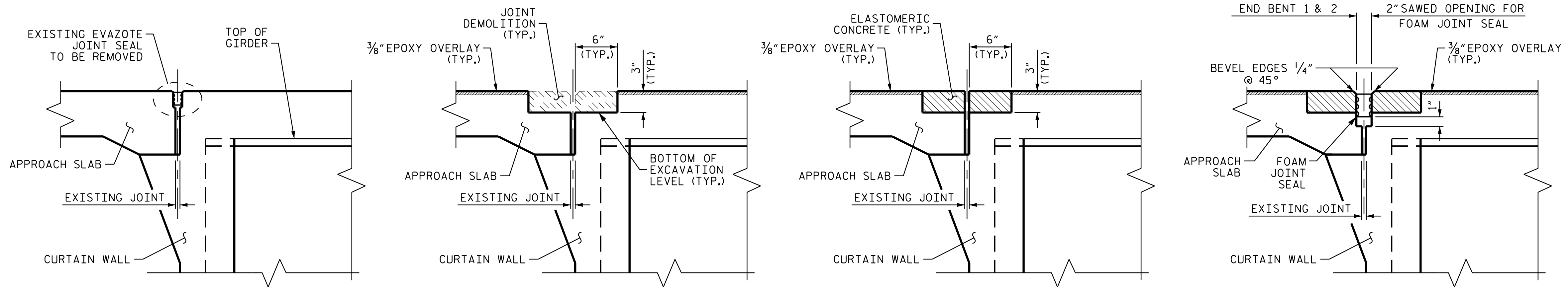
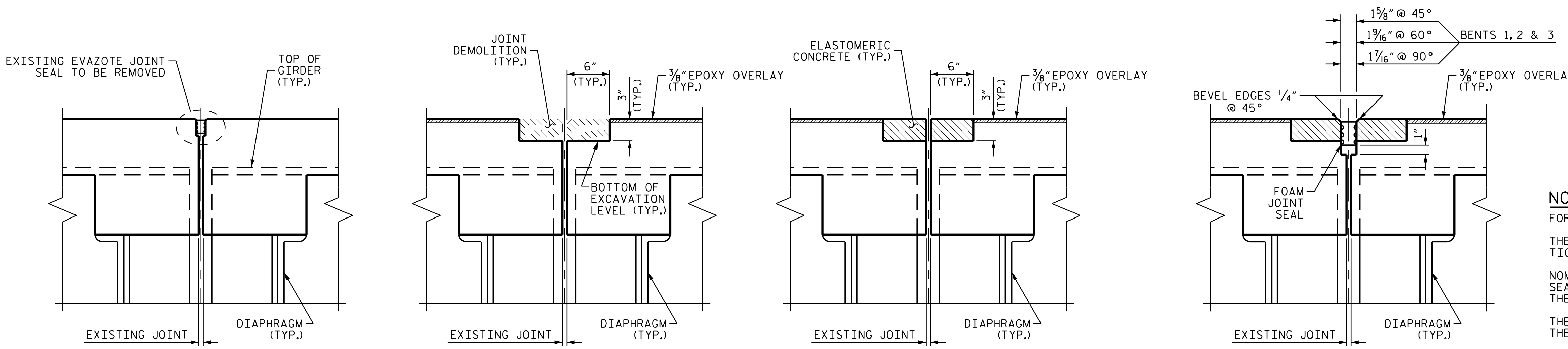


EXISTING JOINT | MINIMUM EXISTING JOINT DEMOLITION | PROPOSED JOINT PRE-SAWED | PROPOSED FOAM JOINT SEAL

SECTION A-A



EXISTING JOINT | MINIMUM EXISTING JOINT DEMOLITION | PROPOSED JOINT PRE-SAWED | PROPOSED FOAM JOINT SEAL

SECTION B-B

ELASTOMERIC CONCRETE		
END BENT 1	13.9	(CU. FT.)
BENT 1	13.9	(CU. FT.)
BENT 2	13.9	(CU. FT.)
BENT 3	13.9	(CU. FT.)
END BENT 2	13.9	(CU. FT.)
* TOTAL	69.5	(CU. FT.)

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

NOTES:

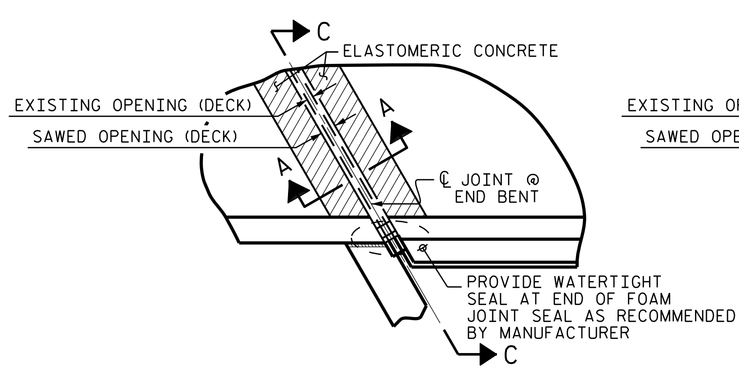
FOR FOAM JOINT SEALS SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

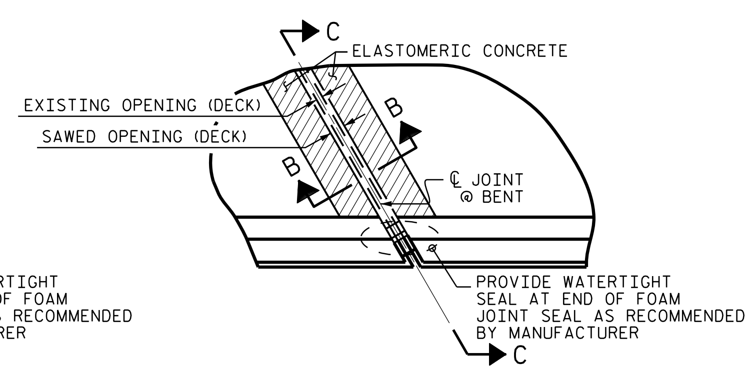
NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2 1/2" AT THE END BENTS AND 2" AT THE BENTS.

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

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



PLAN
(@ END BENT)



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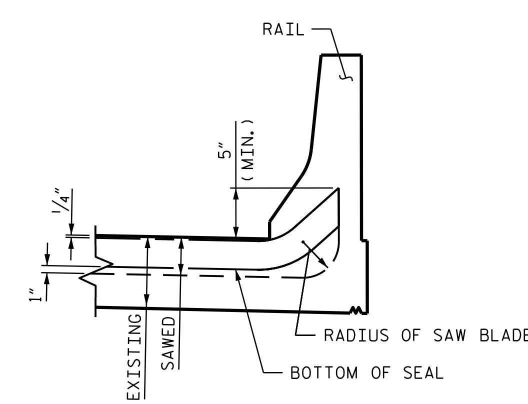
(@ BENT)



SECTION C-C

JOINT SEAL DETAILS

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 151

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7BC3...
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JOINT DETAILS

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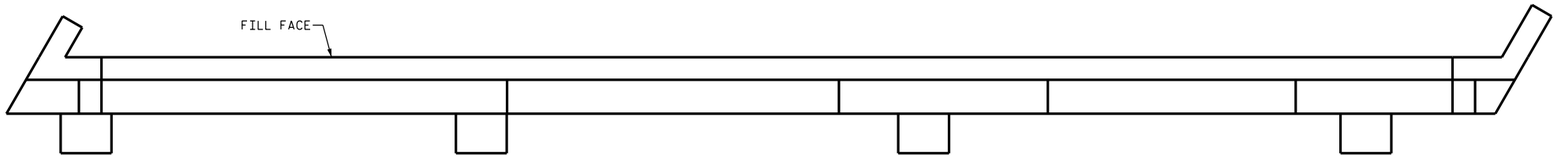
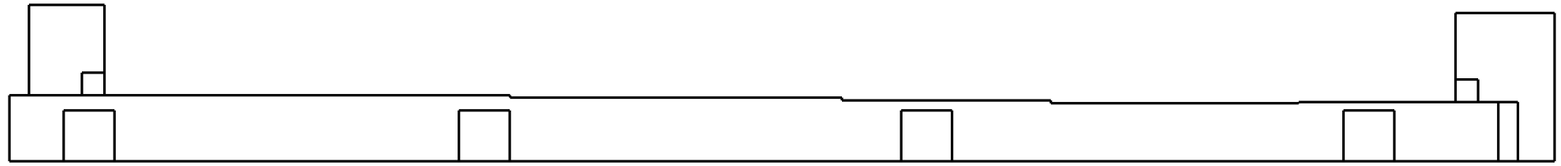


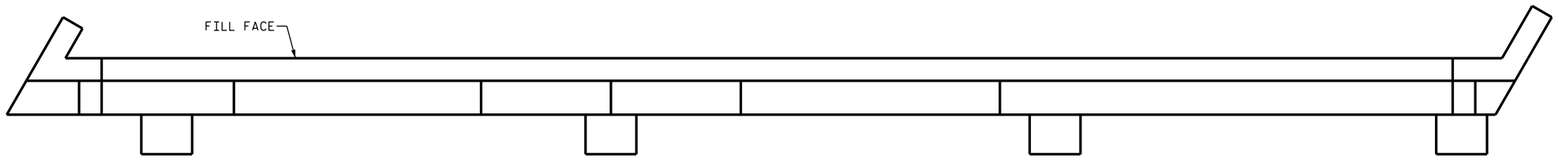
PLAN

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

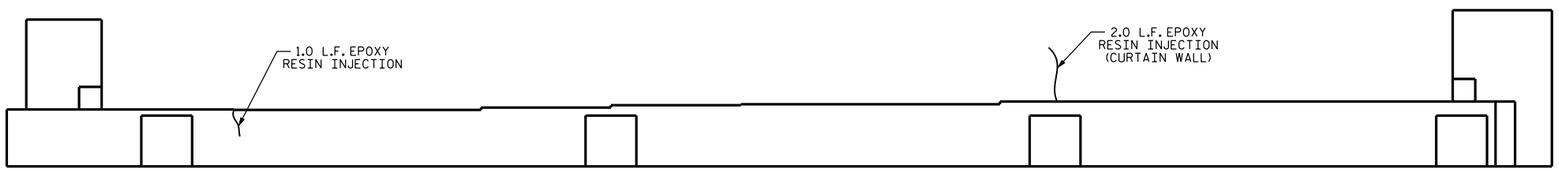


ELEVATION

END BENT 1



PLAN



ELEVATION

END BENT 2

AS-BUILT REPAIR QUANTITY TABLE

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

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS END BENT 2	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.		
CAP		3.0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEAR 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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL **COUNTY**

BRIDGE: 151

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENTS 1 & 2

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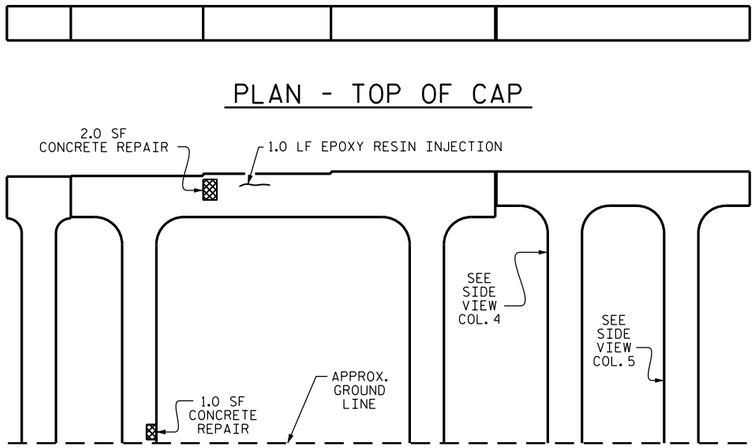


SPAN B
SPAN A

PLAN - TOP OF CAP

SPAN A VIEW - ELEVATION

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	15.0	10.0 *		
COLUMN	4.0	2.0 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		1.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		136		

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

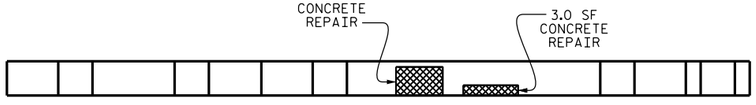
NOTES:

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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

CLEAN AND REMOVE DEBRIS FROM TOP OF 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 PROVISIONS.

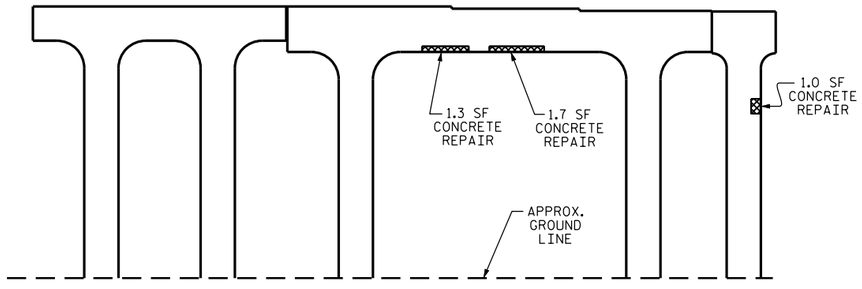
* QUANTITY HAS BEEN INCREASED DUE TO THE POTENTIAL FOR FURTHER DETERIORATION SINCE THE FIELD INSPECTION BY STRUCTURES MANAGEMENT UNIT.

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

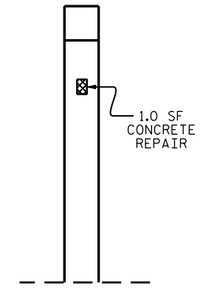


SPAN A
SPAN B

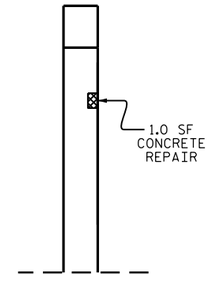
PLAN - BOTTOM OF CAP



SPAN B VIEW - ELEVATION



SIDE VIEW
COLUMN 4



SIDE VIEW
COLUMN 5

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 151

SHEET 1 OF 3

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1

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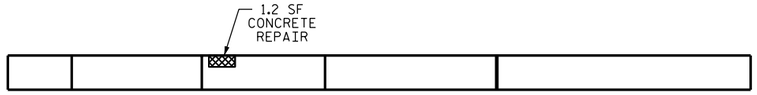
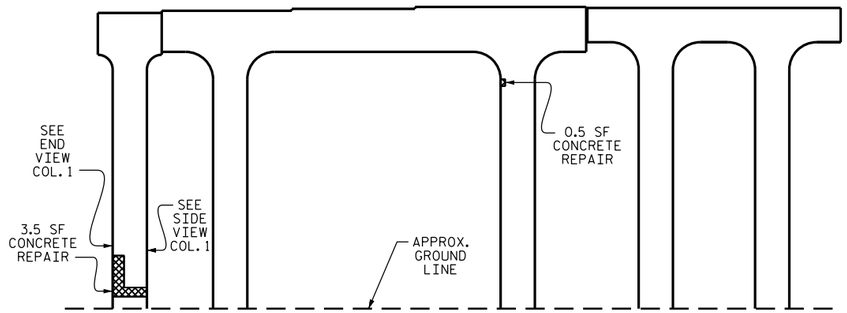
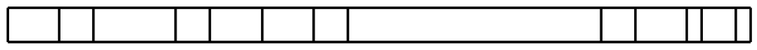


SPAN C
SPAN B

PLAN - TOP OF CAP

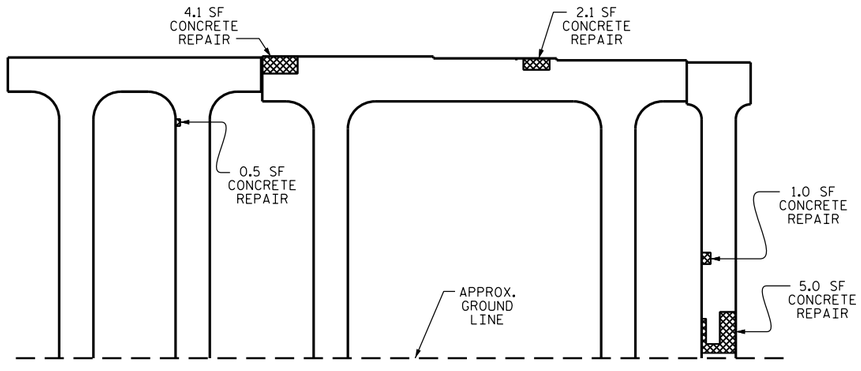


SPAN B VIEW - ELEVATION

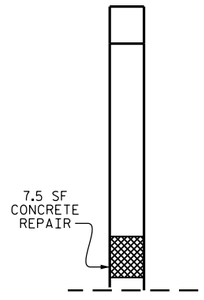


SPAN B
SPAN C

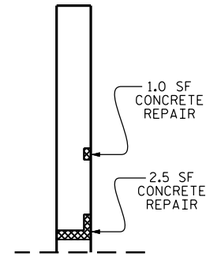
PLAN - BOTTOM OF CAP



SPAN C VIEW - ELEVATION



END VIEW
COLUMN 1



SIDE VIEW
COLUMN 1

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	8.4	5.3 *		
COLUMN	21.5	14.0 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		125		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEAR 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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

CLEAN AND REMOVE DEBRIS FROM TOP OF 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 PROVISIONS.

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

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 151

SHEET 2 OF 3

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2

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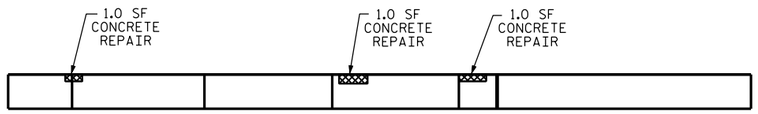
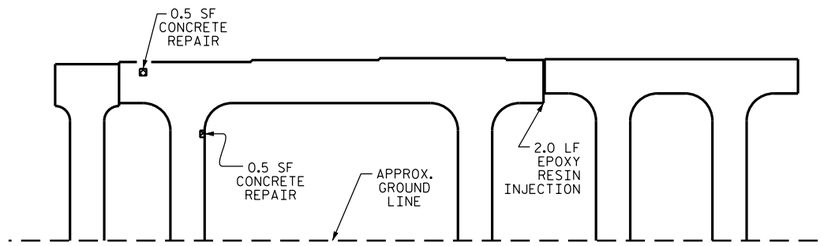
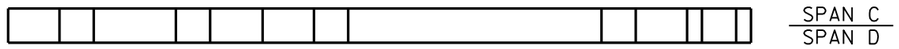


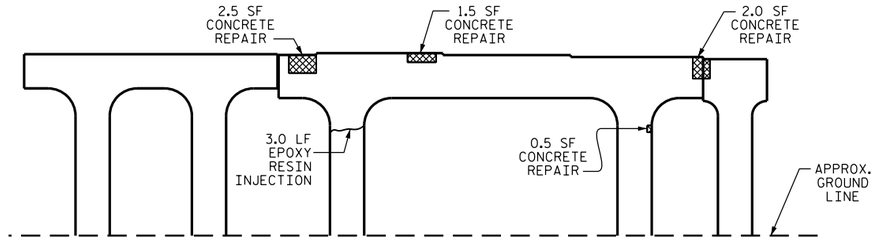
PLAN - TOP OF CAP



SPAN C VIEW - ELEVATION



PLAN - BOTTOM OF CAP



SPAN D VIEW - ELEVATION

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	9.5	6.0 *		
COLUMN	1.0	1.5 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		5.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		125		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEAR 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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

CLEAN AND REMOVE DEBRIS FROM TOP OF 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 PROVISIONS.

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

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 151

SHEET 3 OF 3

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 3

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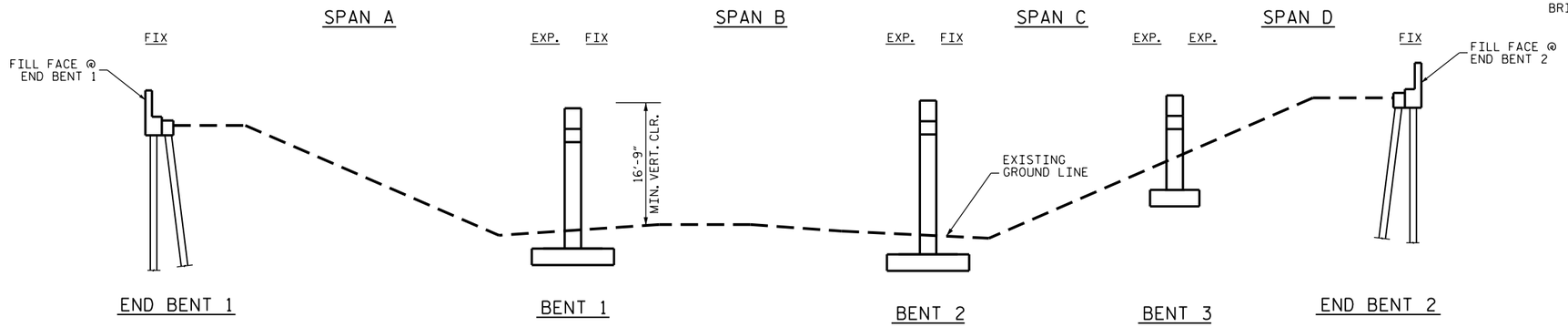
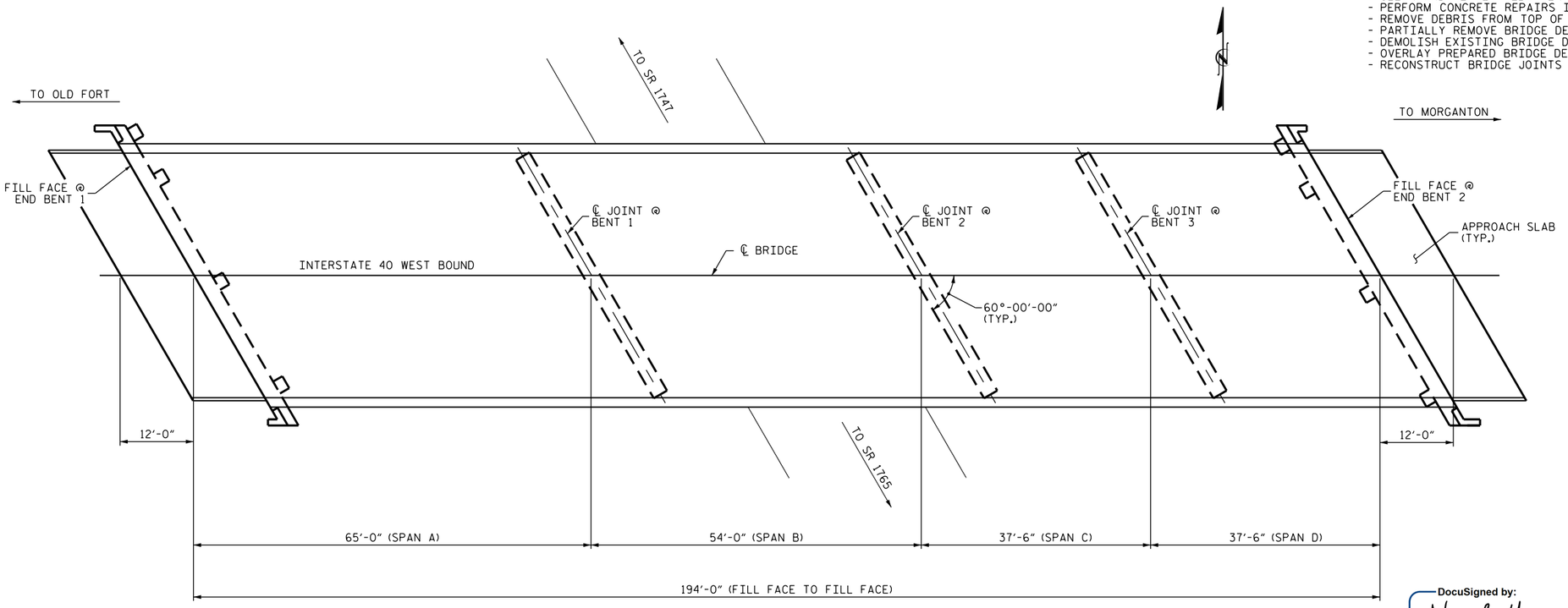
NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 04/15/2014.

BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



SECTION ALONG WBL GRADE LINE



SCOPE OF WORK

- CLEAN AND PAINT STEEL I-BEAMS AND BEARINGS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- CLEAN AND REPAIR REBAR IN CONCRETE REPAIR AREAS.
- PERFORM CONCRETE REPAIRS IN PREPARED AREAS.
- REMOVE DEBRIS FROM TOP OF BENT CAPS AND APPLY EPOXY COATING.
- PARTIALLY REMOVE BRIDGE DECK CONCRETE USING SHOTBLASTING METHODS.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- OVERLAY PREPARED BRIDGE DECK WITH EPOXY OVERLAY SYSTEM.
- RECONSTRUCT BRIDGE JOINTS AND INSTALL JOINT SEALS.

PLAN

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

RESIDENT ENGINEER DATE

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 152

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-40 WBL OVER SR 1760 (HARMONY GROVE 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 CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLANS.

FOR EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.

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

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR CLEANING AND REPAINTING OF BRIDGE, SEE SPECIAL PROVISIONS.

FOR PAINTING CONTAINMENT, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR POLLUTION CONTROL, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 152
SHEET 2 OF 2

DocuSigned by:
John A. Yannaccone
7BC36E9CEE894EC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-40 WBL
OVER SR 1760
(HARMONY GROVE ROAD)

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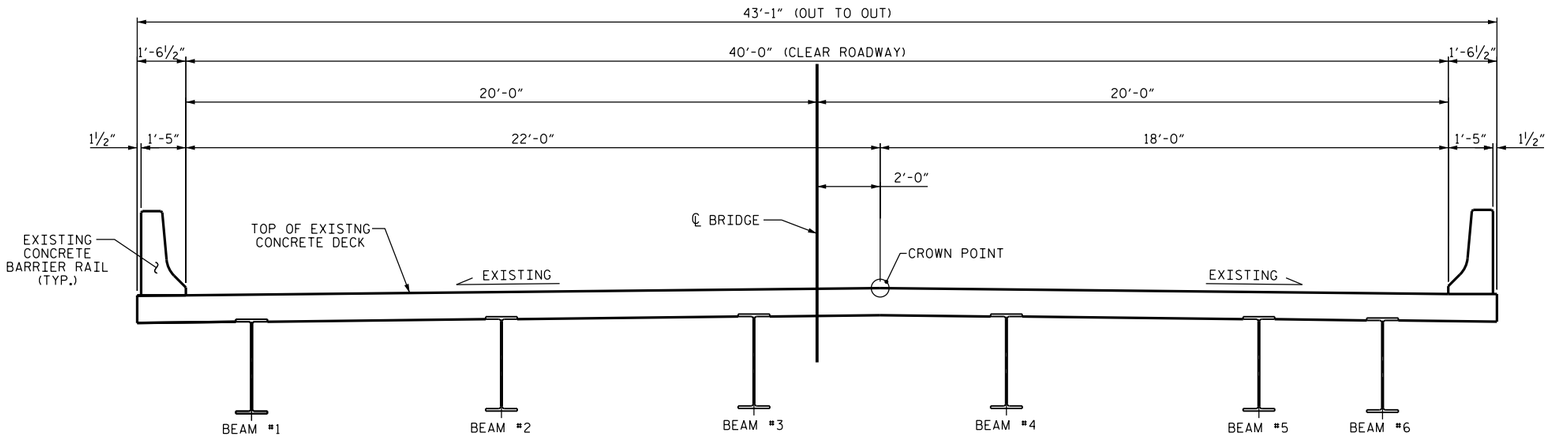
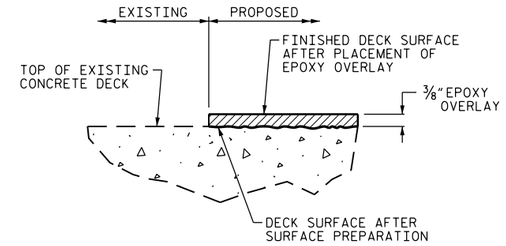
NOTE:

SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF EPOXY OVERLAY SYSTEM AND SURFACE PREPARATION.

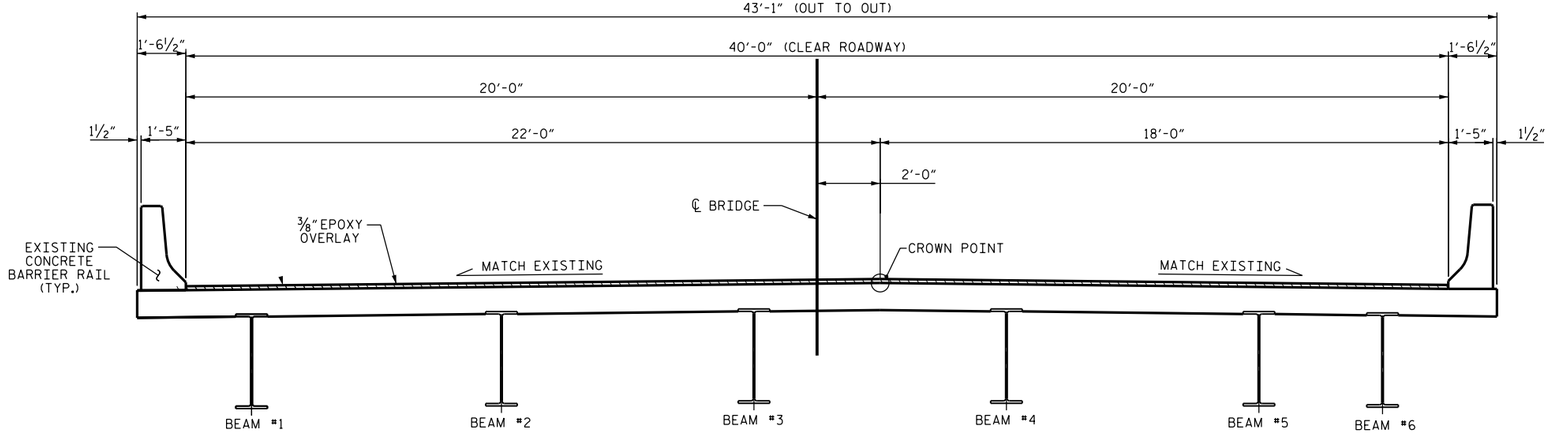


TYPICAL SECTION

(EXISTING)



DETAIL FOR EPOXY OVERLAY



TYPICAL SECTION

(PROPOSED)

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 152

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION AND EPOXY OVERLAY DETAIL

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SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	0.0 SQ. FT.	
BRIDGE JOINT DEMOLITION	231 SQ. FT.	
EPOXY OVERLAY SYSTEM	8,470	
UNDERSIDE EPOXY RESIN INJECTION	18.0 LIN. FT.	

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.

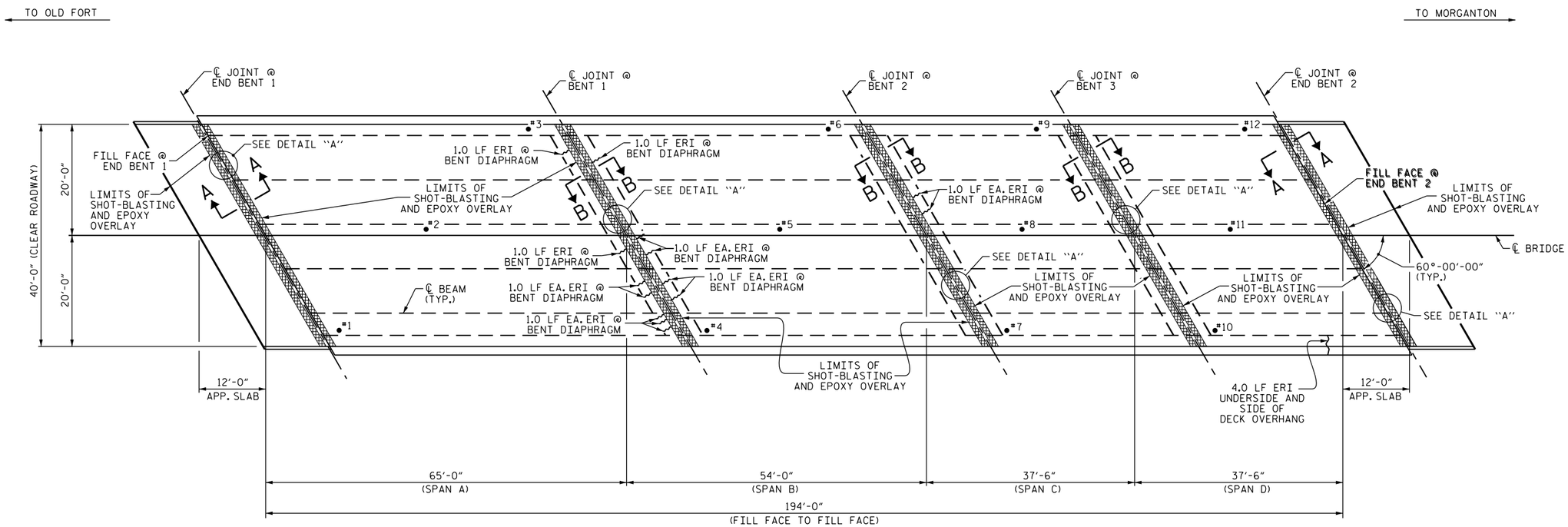
NOTES:

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 DESRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR TABLE

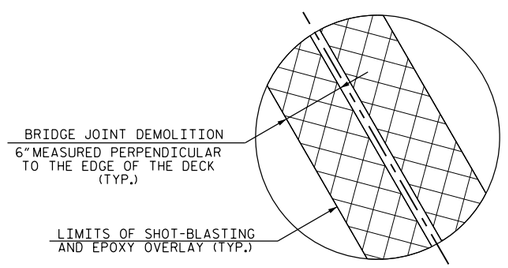
FOR UNDERSIDE OF DECK AND DIAPHRAGM REPAIRS, SEE "OVERHANG AND DIAPHRAGM REPAIRS DETAILS" SHEET.

FOR BRIDGE JOINT DEMOLITION, SEE "JOINT DETAILS" SHEET.

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



PLAN OF SPANS



DETAIL "A"

CONCRETE DECK REPAIR FOR EPOXY OVERLAY

BRIDGE JOINT DEMOLITION

EPOXY OVERLAY

ERI EPOXY RESIN INJECTION

#1 TEST LOCATION

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John A. Yannaccone
7BC8[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 152

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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SURFACE PREPARATION, UNDERSIDE REPAIR AND EPOXY OVERLAY

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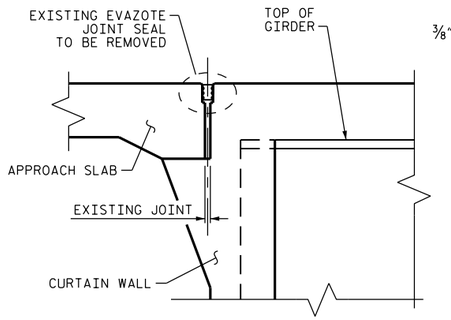
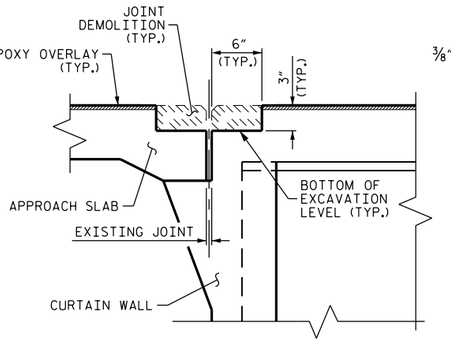
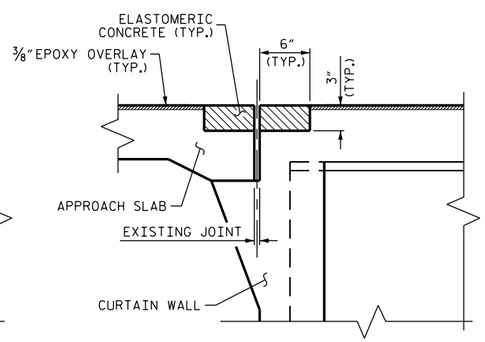


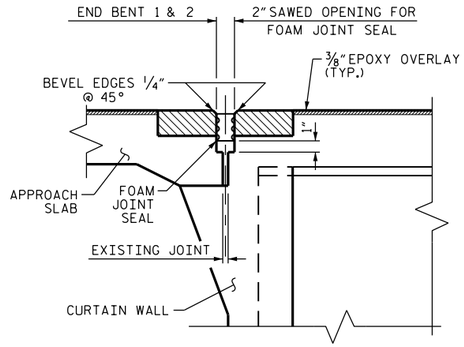
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION



PROPOSED JOINT PRE-SAWED

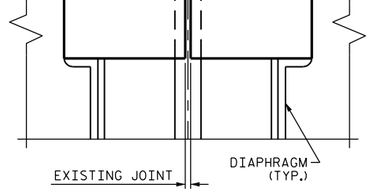


PROPOSED FOAM JOINT SEAL

SECTION A-A

ELASTOMERIC CONCRETE		
END BENT 1	11.6	(CU. FT.)
BENT 1	11.6	(CU. FT.)
BENT 2	11.6	(CU. FT.)
BENT 3	11.6	(CU. FT.)
END BENT 2	11.6	(CU. FT.)
* TOTAL	58.0	(CU. FT.)

* BASED ON THE MINIMUM BLOCKOUT SHOWN.



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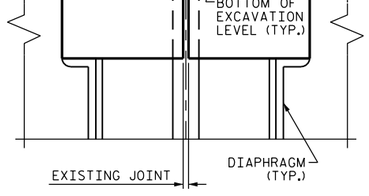
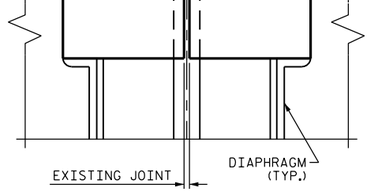


MINIMUM EXISTING JOINT DEMOLITION



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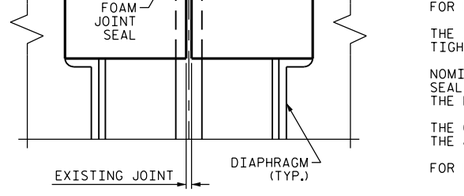


PROPOSED FOAM JOINT SEAL

SECTION B-B

NOTES:

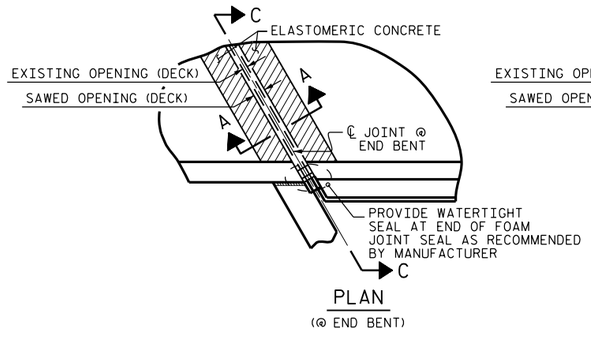
FOR FOAM JOINT SEALS SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

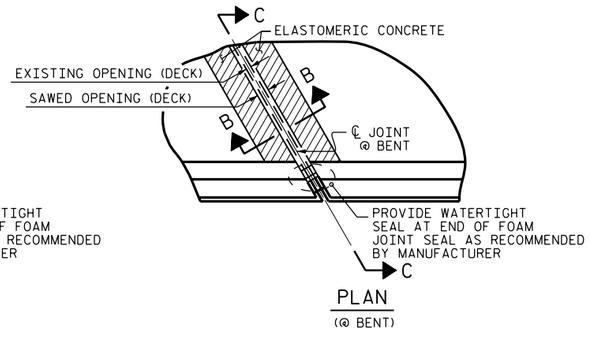
NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2½" AT THE END BENTS AND 2" AT THE BENTS.

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

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



PLAN
(@ END BENT)



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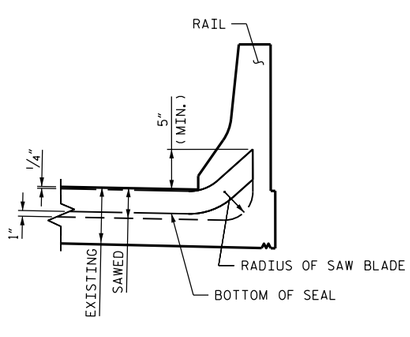

SECTION C-C

JOINT SEAL DETAILS

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 152

STATE OF NORTH CAROLINA
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RALEIGH

JOINT DETAILS

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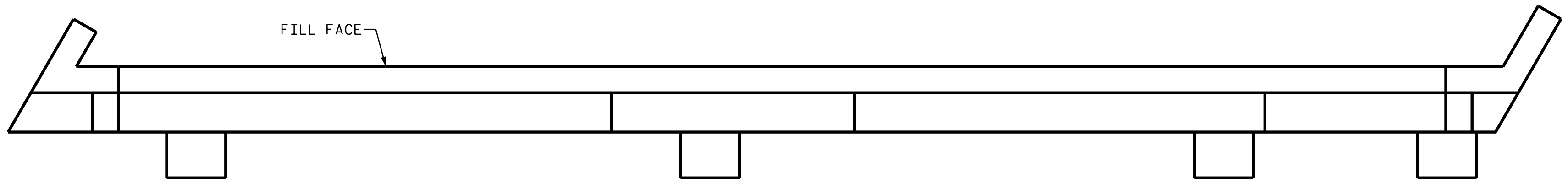
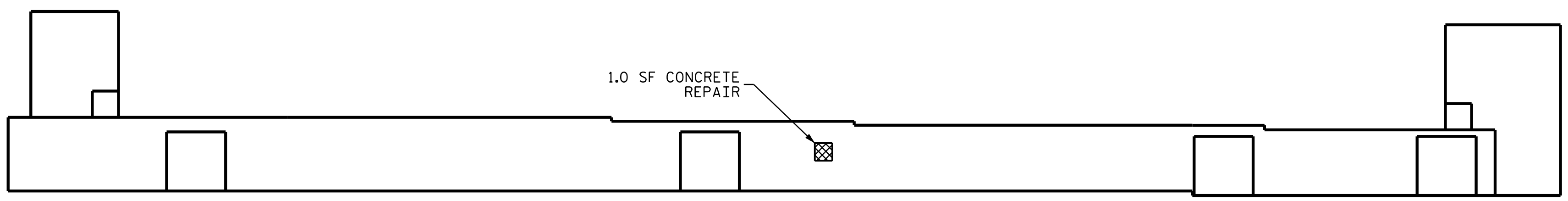
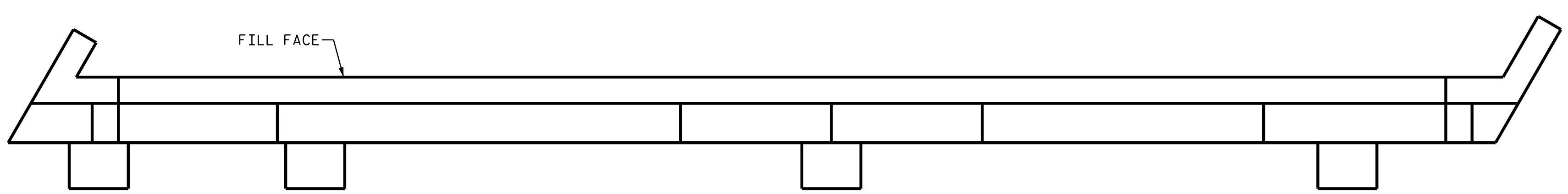


PLAN

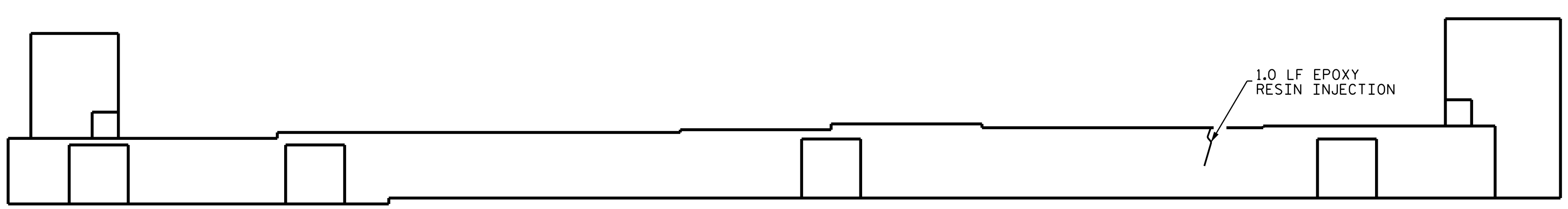


ELEVATION

END BENT 1



PLAN



ELEVATION

END BENT 2

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS END BENT 1	QUANTITIES ESTIMATE		QUANTITIES 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	1.0	1.0 *		
EPOXY RESIN INJECTION		LN. FT.		
CAP		0.0		

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS END BENT 2	QUANTITIES ESTIMATE		QUANTITIES 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.		
CAP		1.0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEAR 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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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

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

DAMAGED AREA

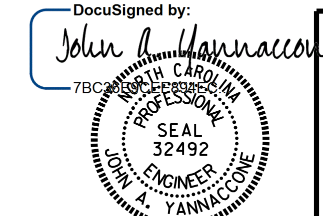
EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE: 152

DocuSigned by:



9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENTS 1 & 2

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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			68

DRAWN BY : W.F.PARKER DATE : 05/16
CHECKED BY : J.P. ADAMS DATE : 6/2016

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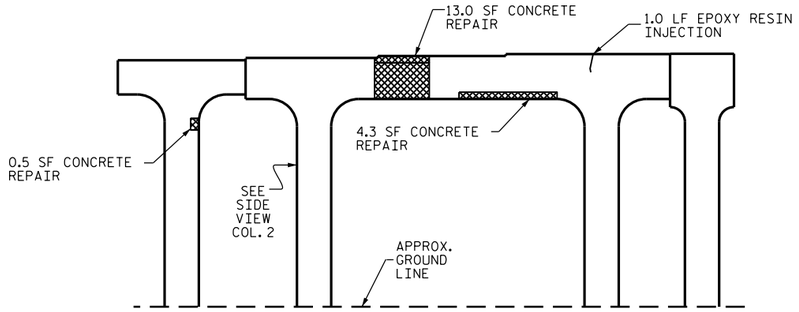
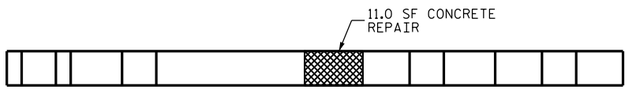
SPAN B
SPAN A

PLAN - TOP OF CAP

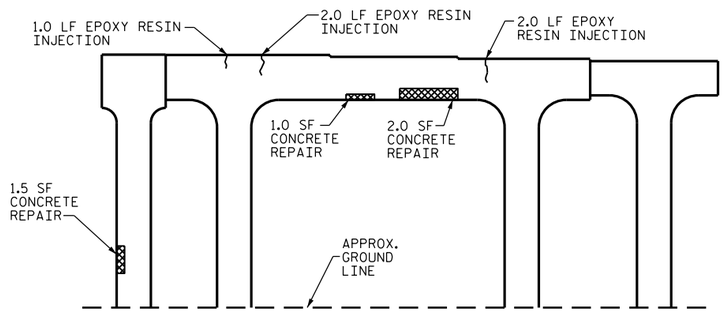


SPAN A VIEW - ELEVATION

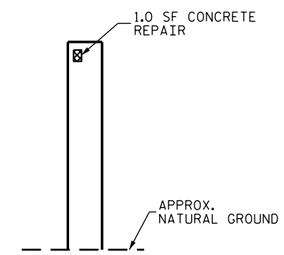


SPAN A
SPAN B

PLAN - BOTTOM OF CAP



SPAN B VIEW - ELEVATION



SIDE VIEW
COLUMN 2

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	31.3	20.0 *		
COLUMN	3.0	2.0 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		6.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		113		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEAR 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 WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

CLEAN AND REMOVE DEBRIS FROM TOP OF 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 PROVISIONS.

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 152

SHEET 1 OF 3

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1

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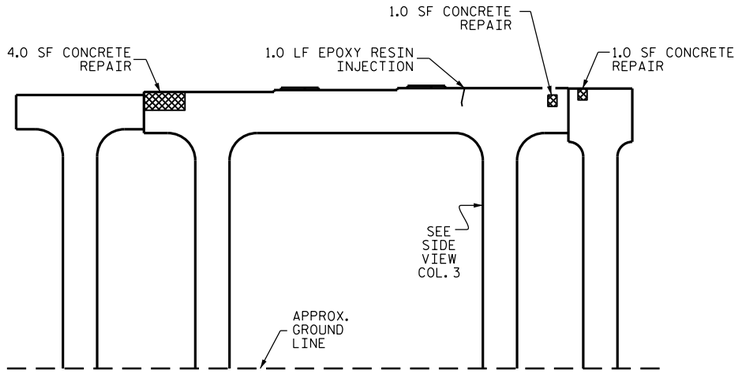
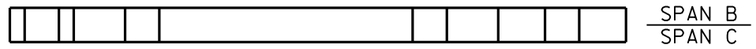
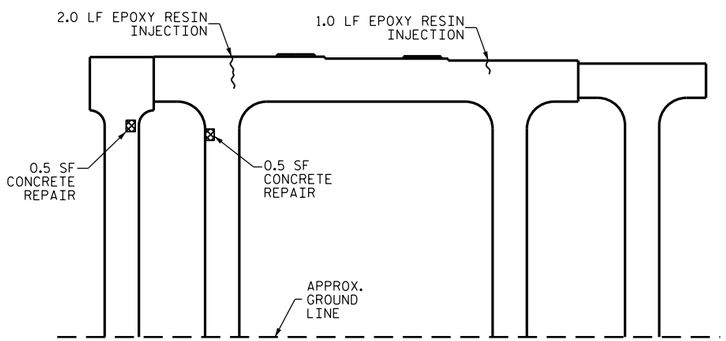
PLAN - TOP OF CAP



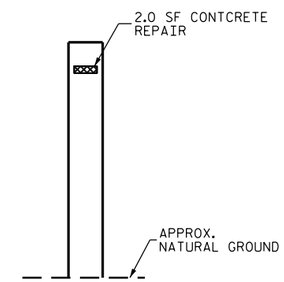
SPAN B VIEW - ELEVATION



PLAN - BOTTOM OF CAP



SPAN C VIEW - ELEVATION



SIDE VIEW
COLUMN 3

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	7.0	4.0 *		
COLUMN	3.0	2.0 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		4.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		113		

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

NOTES:

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CLEAN AND REMOVE DEBRIS FROM TOP OF 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 PROVISIONS.

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

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 152

SHEET 2 OF 3

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2

DRAWN BY : T.L. AVERETTE DATE : 5/2016
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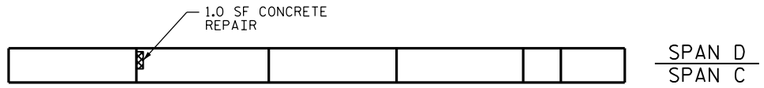
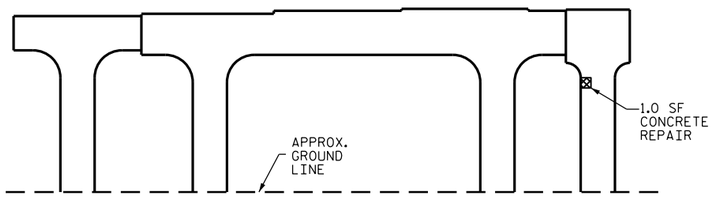
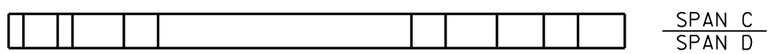
1			3			TOTAL SHEETS
2			4			68



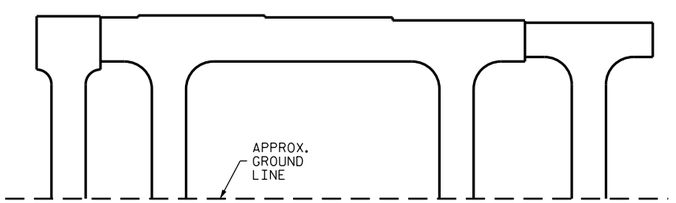
PLAN - TOP OF CAP



SPAN C VIEW - ELEVATION



PLAN - BOTTOM OF CAP



SPAN D VIEW - ELEVATION

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	1.0	1.0 *		
COLUMN	1.0	1.0 *		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF BENT CAP		113		

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

NOTES:

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CLEAN AND REMOVE DEBRIS FROM TOP OF 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 PROVISIONS.

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

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

DAMAGED AREA

EPOXY RESIN INJECTION

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 152

SHEET 3 OF 3

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 3

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1			3			TOTAL SHEETS
2			4			68

DRAWN BY : T.L. AVERETTE DATE : 5/2016
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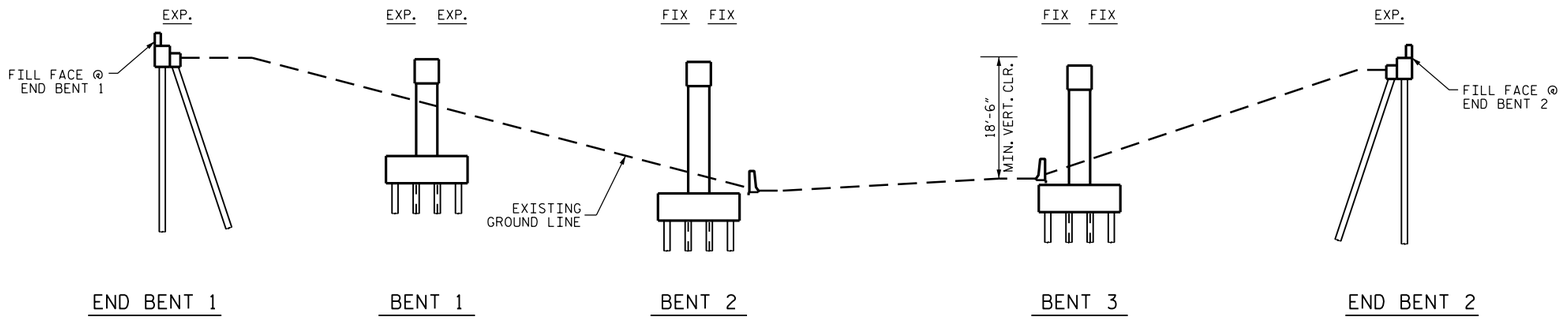


NOTES

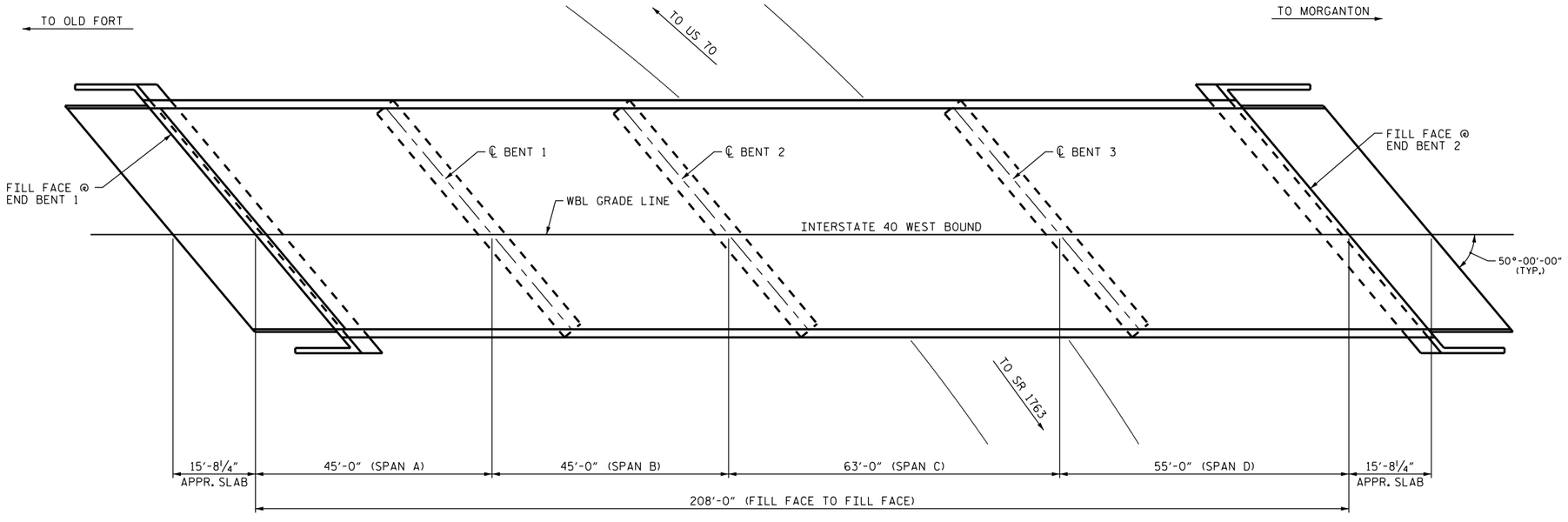
PLAN INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 05/02/2016.

BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- PARTIALLY REMOVE BRIDGE DECK CONCRETE USING SCARIFICATION AND HYDRO-DEMOLITION METHODS.
- DEMOLISH EXISTING BRIDGE JOINTS AT END BENTS.
- OVERLAY PREPARED BRIDGE DECK WITH LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH.
- RECONSTRUCT BRIDGE JOINTS AND INSTALL FOAM JOINT SEALS AT END BENTS.
- GROOVE LMC-VES BRIDGE DECK.

SECTION ALONG WBL GRADE LINE



PLAN

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

RESIDENT ENGINEER DATE

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

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PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 155

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR BRIDGE ON I-40 WBL OVER SR 1803 (SOUTH CREEK ROAD)

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

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

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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.

DURING CONSTRUCION, BERMS OR APPROPRIATE MEASURES SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

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

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

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

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

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

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR, 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-5809

McDOWELL COUNTY

BRIDGE NO. 155

SHEET 2 OF 2

DocuSigned by: John A. Yannaccone

7BC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-40
OVER SR 1803
(SOUTH CREEK ROAD)

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1			3			TOTAL SHEETS
2			4			68

DRAWN BY : J. YANNACCONE DATE : 05/16
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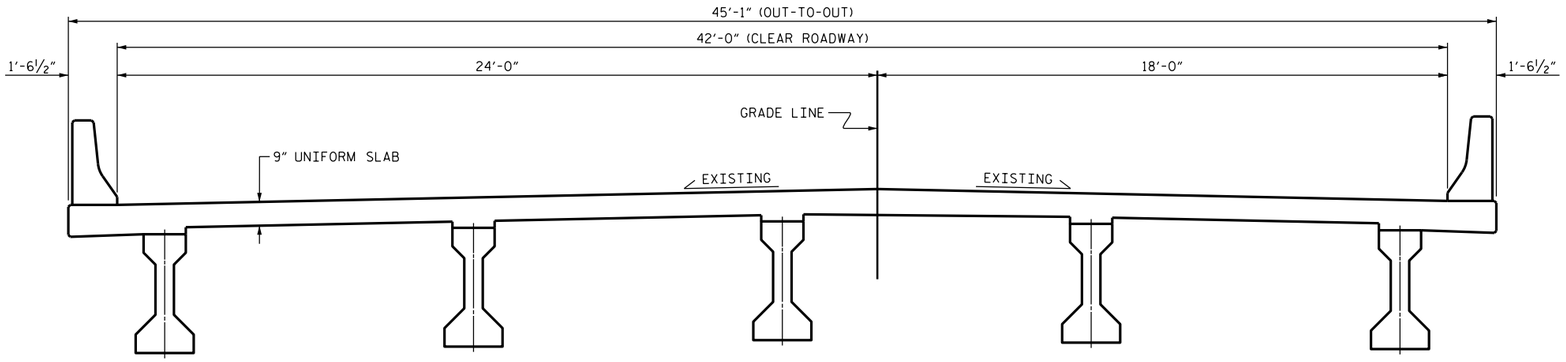
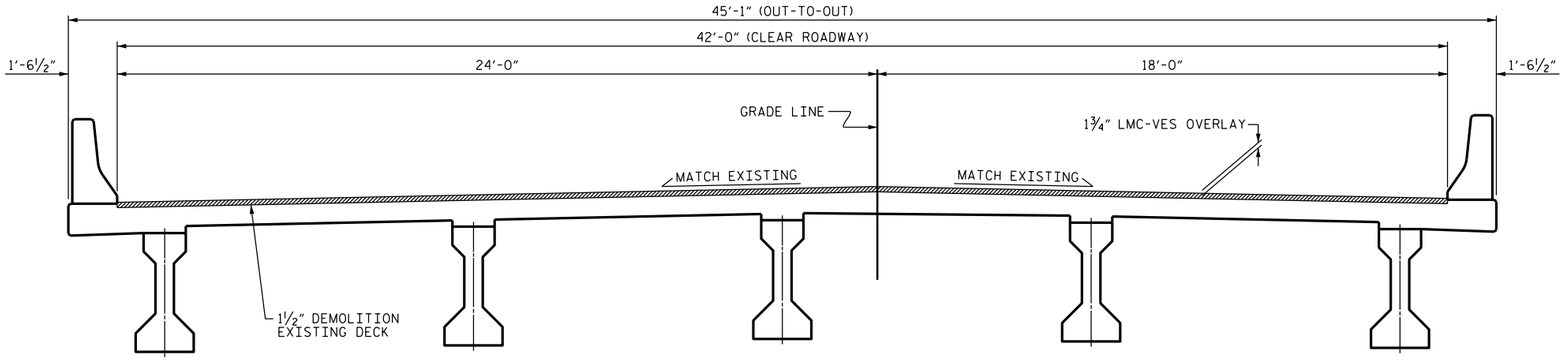


TYPICAL SECTION
(EXISTING)

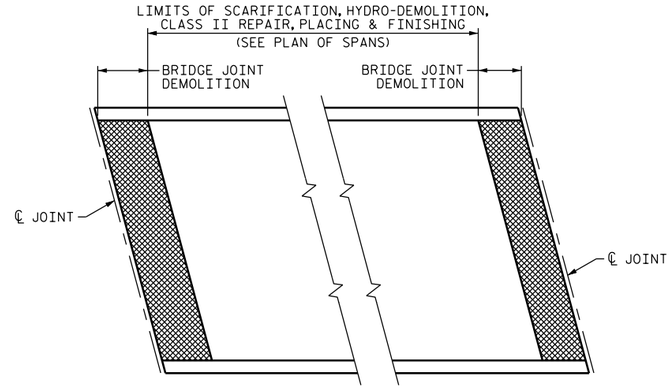


TYPICAL SECTION
(PROPOSED)

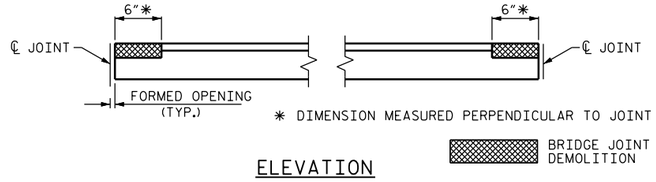
NOTES

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.

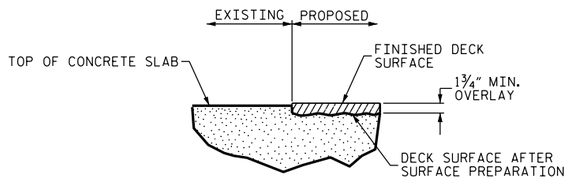


PLAN

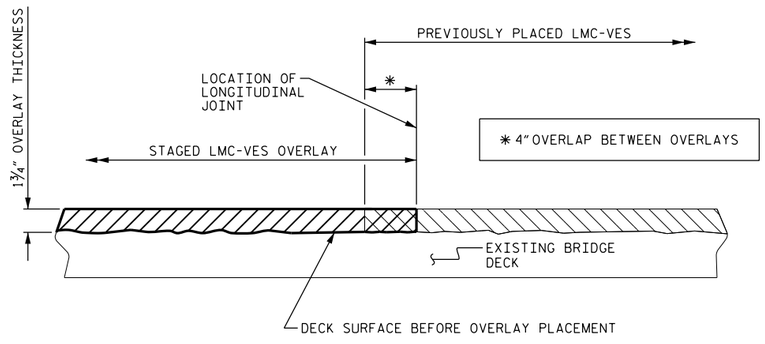


ELEVATION

PAY LIMITS FOR OVERLAY BID ITEMS



DETAIL FOR LMC-VES OVERLAY



STAGED LMC-VES OVERLAY JOINT
(AS NEEDED)

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 155

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION AND SURFACE PREPARATION DETAILS

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

DRAWN BY : J. YANNACCONE DATE : 07/16
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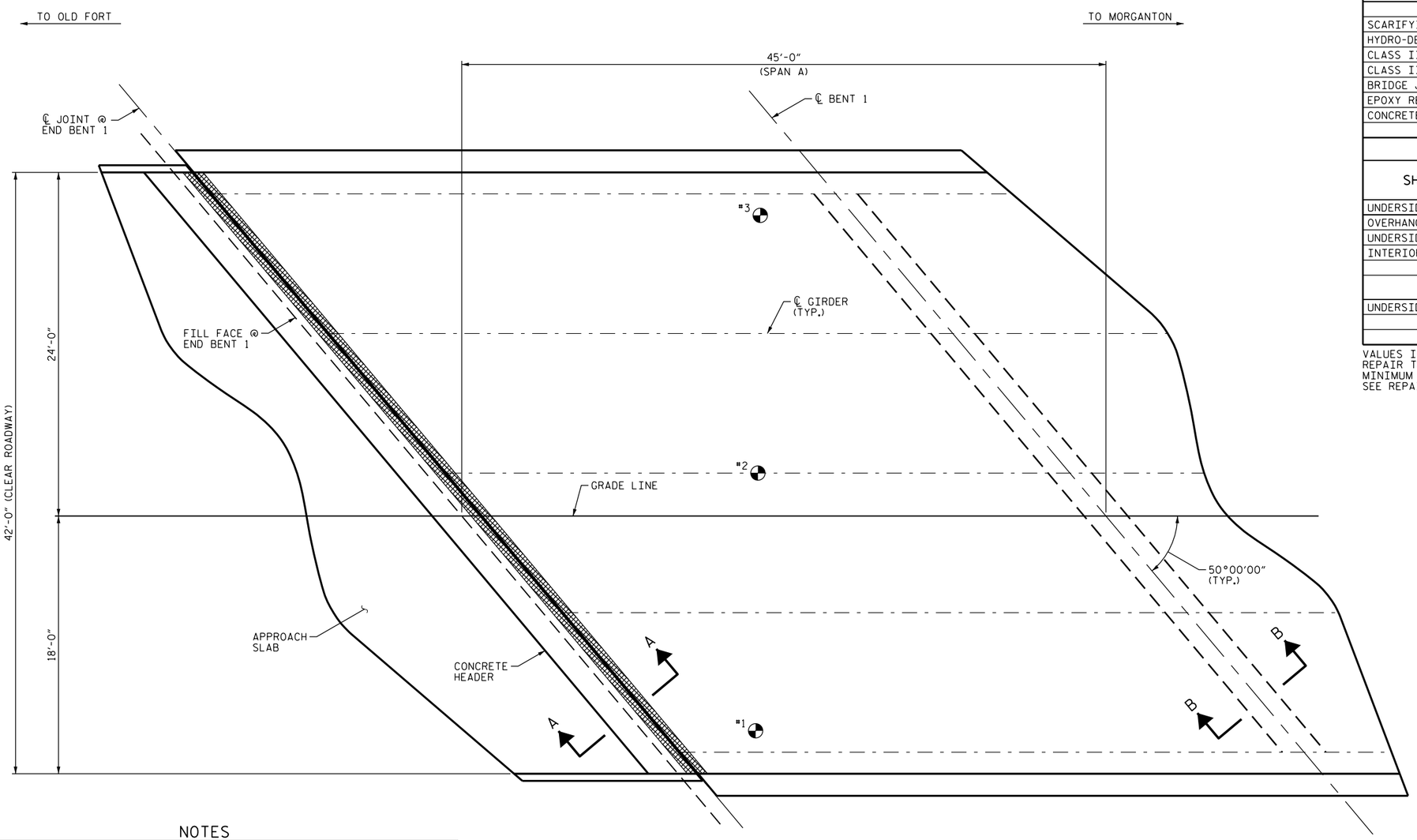

PLAN

NOTES

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

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 B-B, SEE "JOINT DETAILS" SHEET.

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

TEST LOCATION	CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#1	2½" ★	4,040
#2	2½" ★	4,400
#3	2½" ★	3,960

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 5/2/2016.
★ CONCRETE COVER FOR TOP BARS IN THE DECK IS PER THE EXISTING BRIDGE PLANS.

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	214 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	214 SY	
CLASS II SURFACE PREPARATION	10.0 SY ✱	
CLASS III SURFACE PREPARATION	0.5 SY ✱	
BRIDGE JOINT DEMOLITION	55.0 SF	
EPOXY RESIN INJECTION	0.0 LF	
CONCRETE FOR DECK REPAIR	2.9 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	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

DocuSigned by:
John A. Yannaccone
7BC08F8CEE894EC...

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

DRAWN BY : J. YANNACCONE DATE : 07/16
CHECKED BY : S. WANCE DATE : 07/16

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PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 155

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPAN
SPAN A

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

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	210 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	210 SY	
CLASS II SURFACE PREPARATION	10.0 SY *	
CLASS III SURFACE PREPARATION	0.5 SY *	
BRIDGE JOINT DEMOLITION	0.0 SF	
EPOXY RESIN INJECTION	0.0 LF	
CONCRETE FOR DECK REPAIR	2.9 CF *	

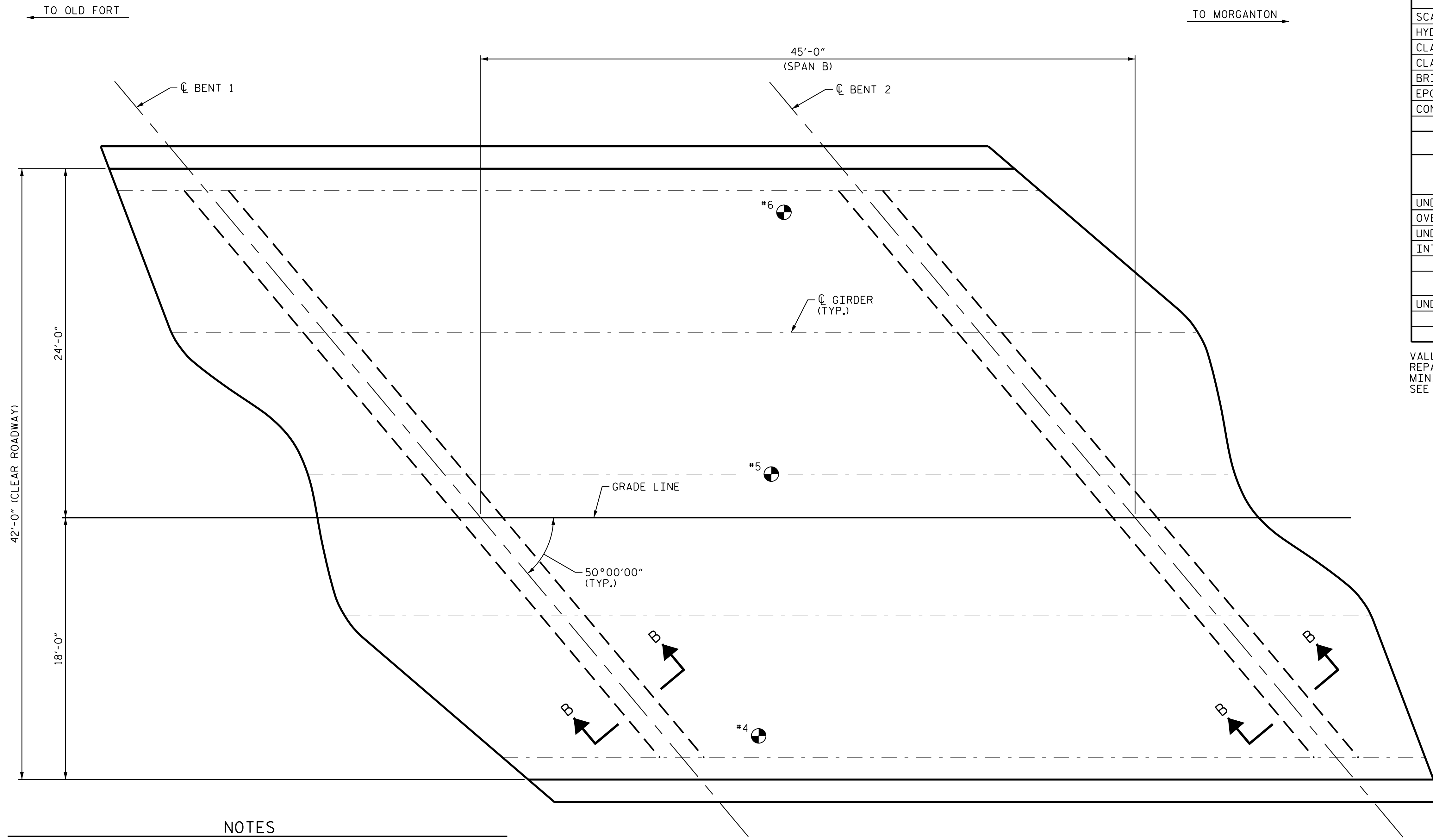
UNDERSIDE OF DECK REPAIRS

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	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.

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



PLAN

NOTES

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

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 B-B, SEE "JOINT DETAILS" SHEET.

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

TEST LOCATION	CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#4	2½" ★	4,000
#5	2½" ★	4,320
#6	2½" ★	3,840

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 5/2/2016.
★ CONCRETE COVER FOR TOP BARS IN THE DECK IS PER THE EXISTING BRIDGE PLANS.

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

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PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 155

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPAN
SPAN B

REVISIONS						SHEET NO.
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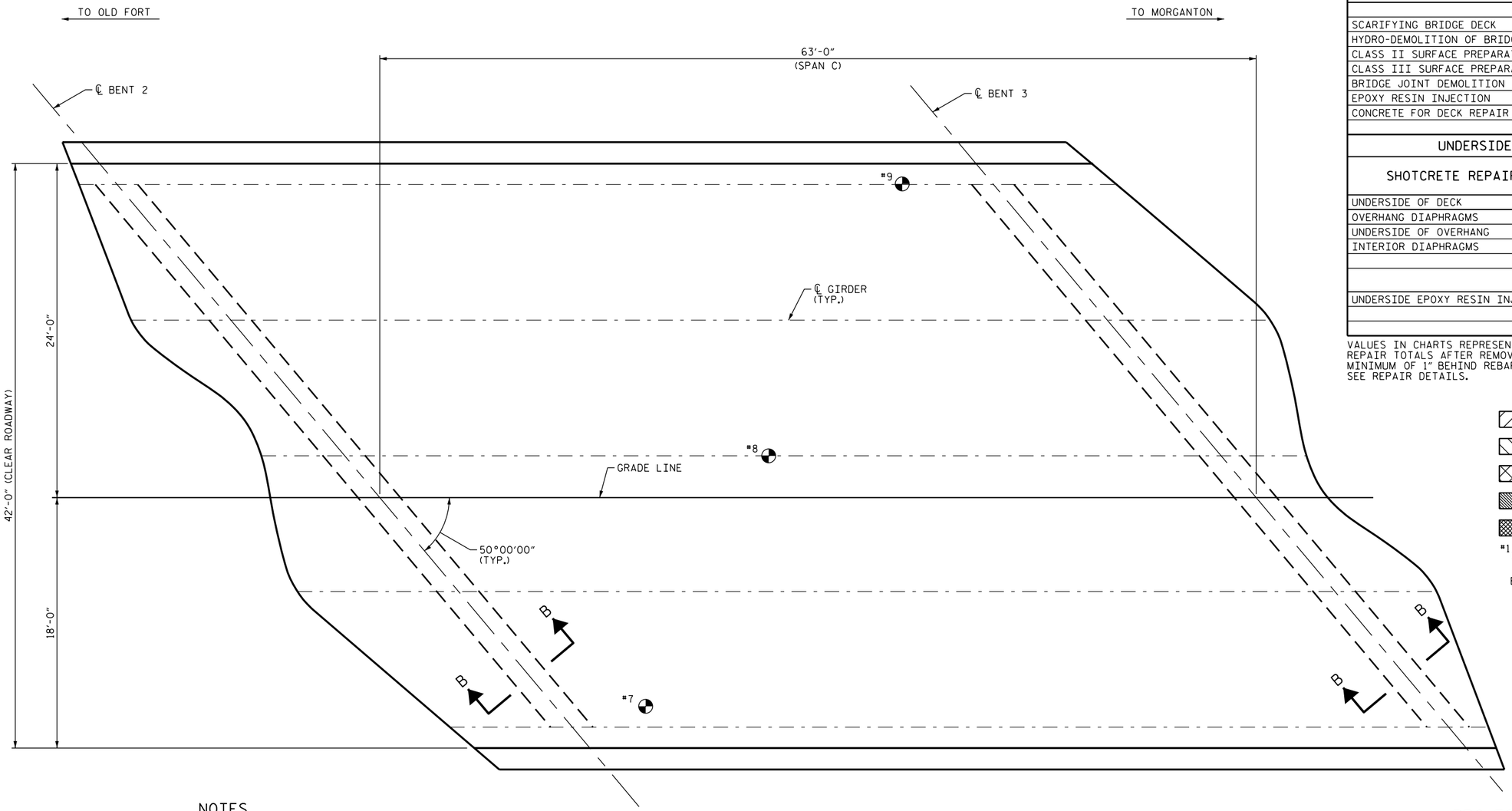

PLAN

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	294 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	294 SY	
CLASS II SURFACE PREPARATION	15.0 SY ✳	
CLASS III SURFACE PREPARATION	0.5 SY ✳	
BRIDGE JOINT DEMOLITION	0.0 SF	
EPOXY RESIN INJECTION	0.0 LF	
CONCRETE FOR DECK REPAIR	2.9 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	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

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.

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 B-B, SEE "JOINT DETAILS" SHEET.

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

TEST LOCATION	CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#7	2½" ★	3,880
#8	2½" ★	4,400
#9	2½" ★	4,000

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 5/2/2016.
★ CONCRETE COVER FOR TOP BARS IN THE DECK IS PER THE EXISTING BRIDGE PLANS.

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 155
SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPAN
SPAN C

DRAWN BY : J. YANNACCONE DATE : 07/16
CHECKED BY : S. WANCE DATE : 07/16

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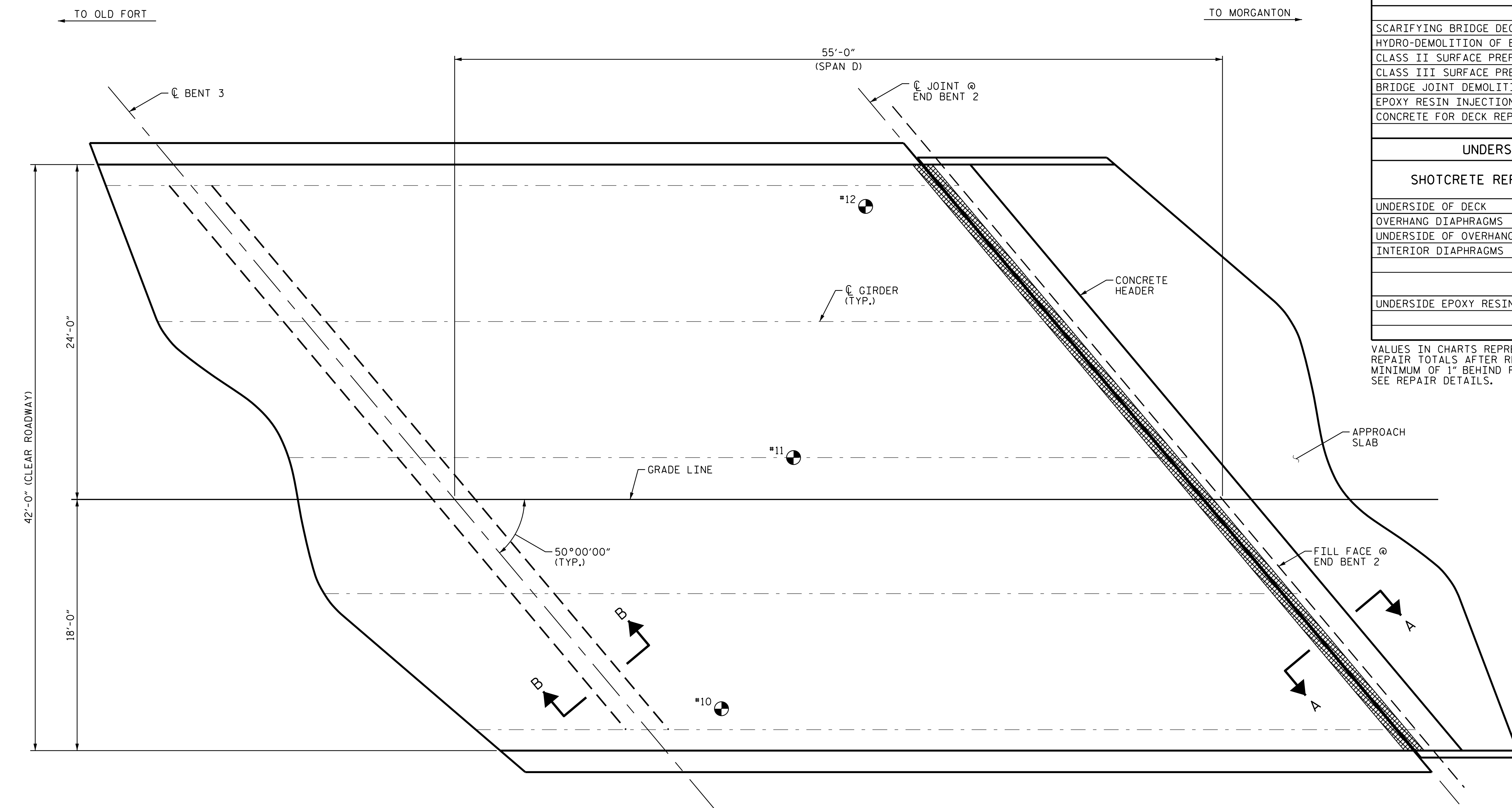

PLAN

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	260 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	260 SY	
CLASS II SURFACE PREPARATION	10.0 SY ✱	
CLASS III SURFACE PREPARATION	0.5 SY ✱	
BRIDGE JOINT DEMOLITION	55.0 SF	
EPOXY RESIN INJECTION	0.0 LF	
CONCRETE FOR DECK REPAIR	2.9 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	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

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.

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 A-A AND B-B, SEE "JOINT DETAILS" SHEET.

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

TEST LOCATION	CONCRETE COVER (INCH)	CONCRETE STRENGTH (PSI)
#10	2½" ★	4,160
#11	2½" ★	4,400
#12	2½" ★	3,920

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 5/2/2016.
★ CONCRETE COVER FOR TOP BARS IN THE DECK IS PER THE EXISTING BRIDGE PLANS.

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

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

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PROJECT NO. I-5809
McDOWELL COUNTY
BRIDGE NO. 155

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPAN
SPAN D

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-63
1			3			TOTAL SHEETS
2			4			68

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NOTES

FOR FOAM JOINT SEAL, SEE SPECIAL PROVISIONS.

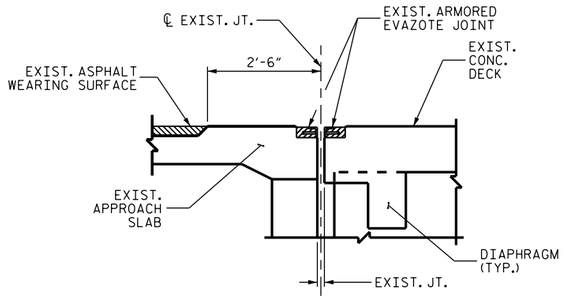
THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.

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

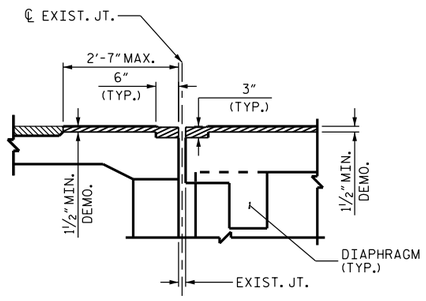
THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.

ELASTOMERIC CONCRETE		
END BENT 1	13.8	(CU. FT.)
END BENT 2	13.8	(CU. FT.)
* TOTAL	27.6	(CU. FT.)

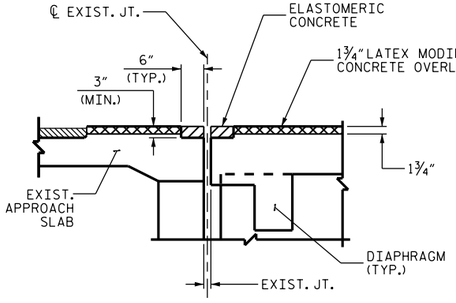
* BASED ON THE MINIMUM BLOCKOUT SHOWN.



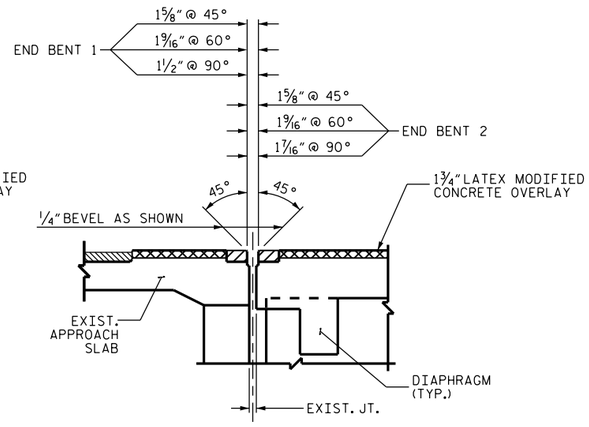
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION



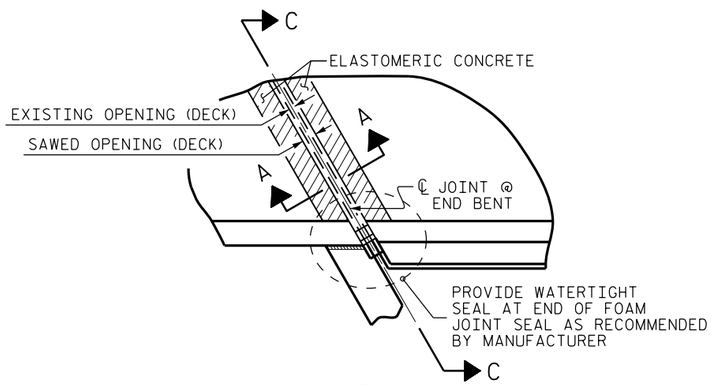
PROPOSED JOINT PRE-SAWED



PROPOSED FOAM JOINT SEAL

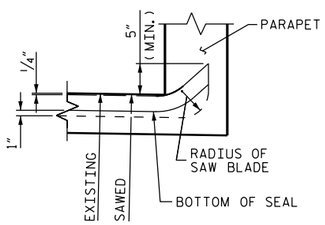
SECTION A-A

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.



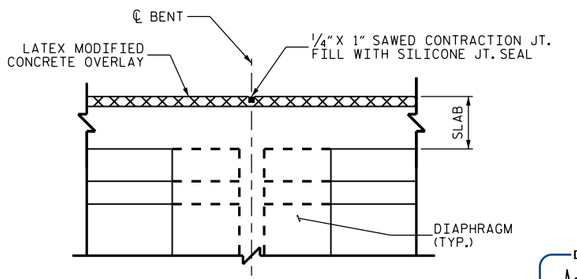
PLAN

(@ END BENT)



SECTION C-C

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



SECTION B-B

PROPOSED CONTRACTION JOINT SEAL @ ℄ BENTS 1, 2, & 3

DocuSigned by:
John A. Yannaccone
7BC8[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

PROJECT NO. I-5809

McDOWELL COUNTY

STATION: 155

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

JOINT DETAILS

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

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CHECKED BY : J. YANNACCONE DATE : 07/16

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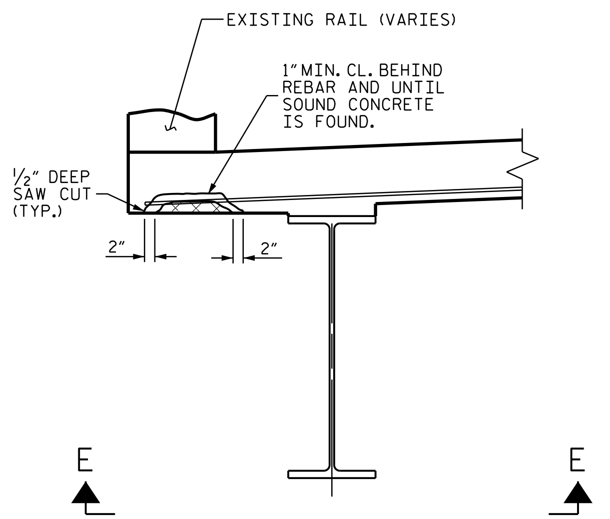
NOTES:

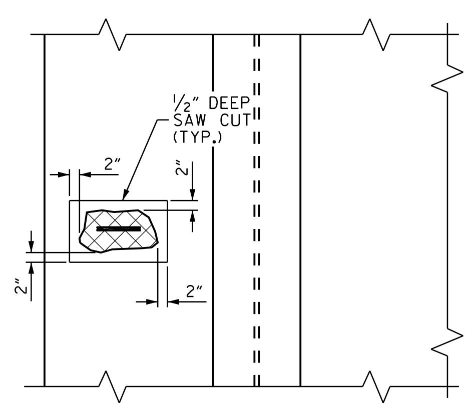
EXISTING REBAR TO REMAIN IN PLACE. CLEAN AND REPAIR AS NECESSARY.

REMOVE UNSOUND CONCRETE UNTIL SOUND CONCRETE IS FOUND, 1" MINIMUM DEPTH.



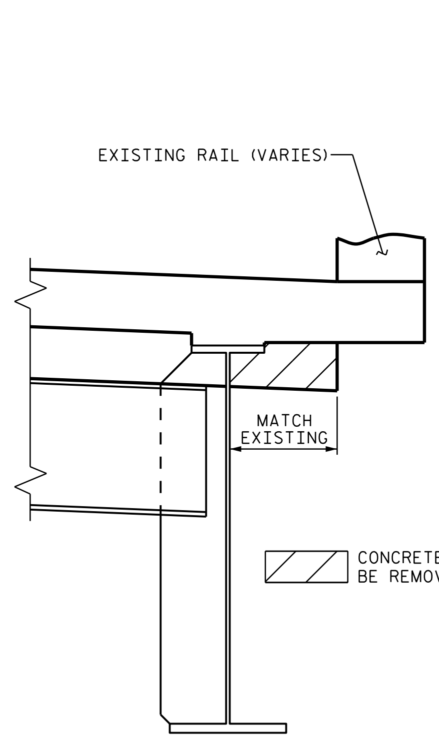
TYPICAL SECTION

DAMAGED AREA



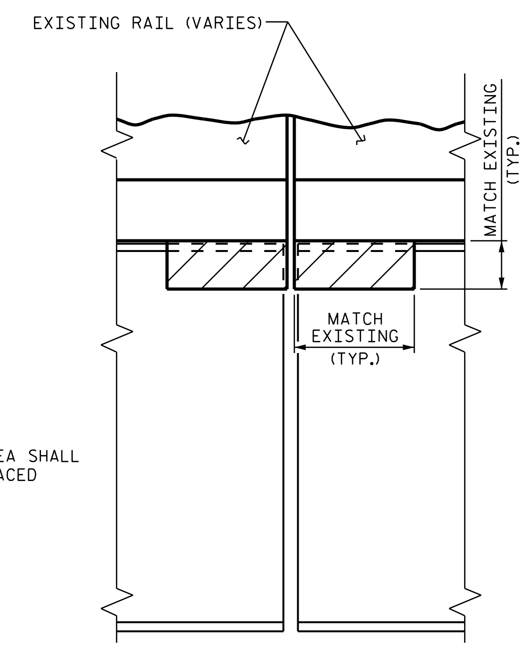
SECTION E-E

OVERHANG DETAILS



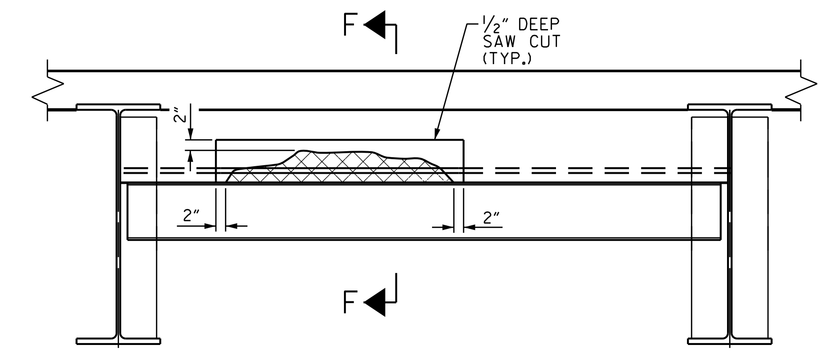
TYPICAL SECTION

CONCRETE IN THIS AREA SHALL BE REMOVED AND REPLACED

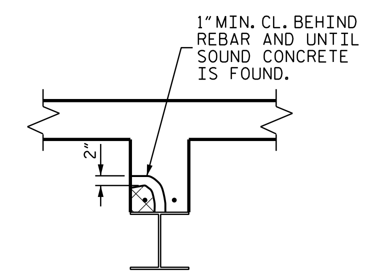


SECTION D-D

OVERHANG DIAPHRAGM REPLACEMENT DETAILS



TYPICAL SECTION



DAMAGED AREA

SECTION F-F

INTERIOR DIAPHRAGM REPAIR DETAILS

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 138, 143, 146, 149, 151, 152, 155

DocuSigned by: John A. Yannaccone

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 32492 JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

OVERHANG AND DIAPHRAGM REPAIR DETAILS

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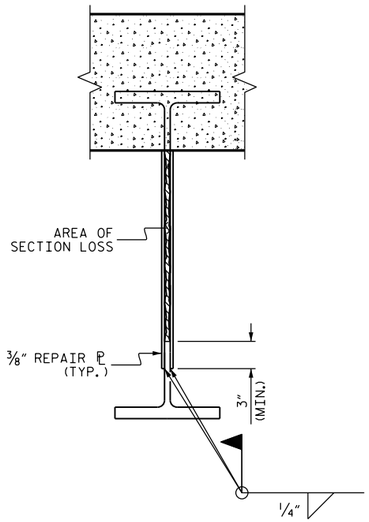

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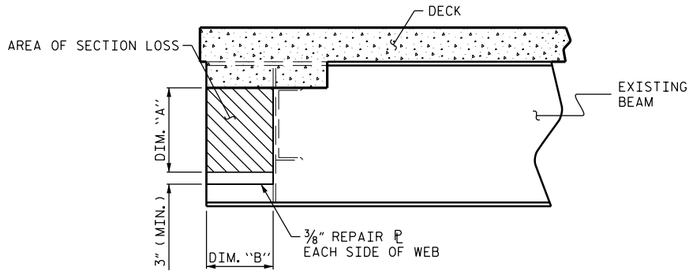
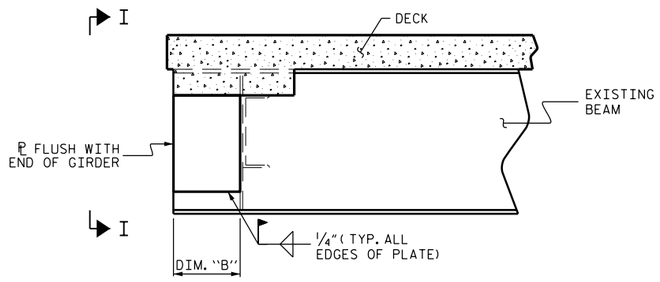


BEAM END SECTION LOSS
AND PLATING REPAIR



BEAM END SECTION LOSS
AND PLATING REPAIR

BEAM END PLATING REPAIR

BEAM PLATING REPAIR

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

REPAIR PLATES SHALL BE MINIMUM 36 KSI STEEL.

REPAIR SEQUENCE:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

AFTER BEAMS ARE REPAIRED AND PAINTED, ANY CONCRETE REMOVED FROM THE BENT DIAPHRAGMS SHALL BE CAST BACK. ANY REINFORCING STEEL CUT DURING THE REMOVAL PROCESS SHALL BE 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-5809

McDOWELL COUNTY

BRIDGE NO. 138, 143, 146, 149, 151, 152

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9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BEAM PLATING
REPAIR DETAILS

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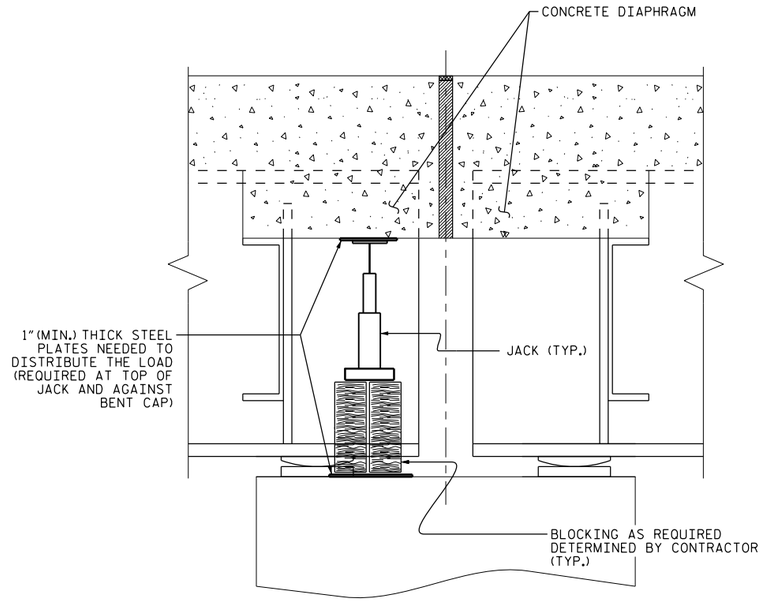

SECTION THRU DIAPHRAGM

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-5809

McDOWELL COUNTY

BRIDGE NO. 138, 143, 146, 149, 151, 152

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JACKING DETAILS

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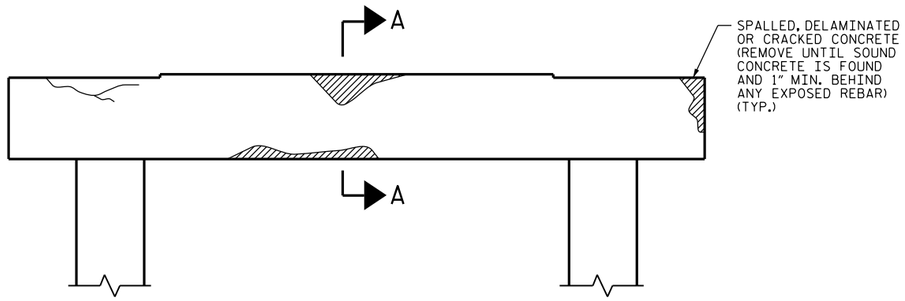
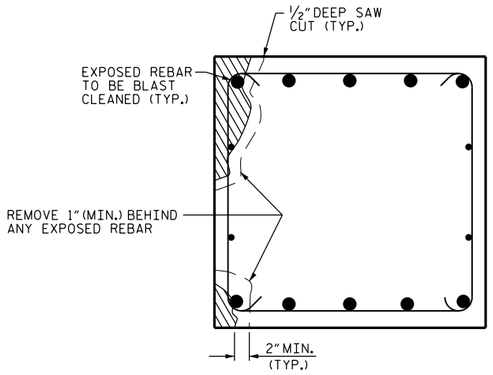
NOTE

TYPICAL REPAIRS FOR ROUND-COLUMNED BENTS ARE SHOWN. REPAIR DETAILS SIMILAR FOR END BENT CAPS AND SQUARE-COLUMNED BENTS.

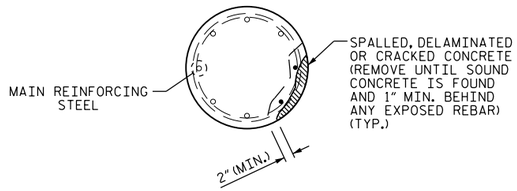


BENT CAP REPAIRS

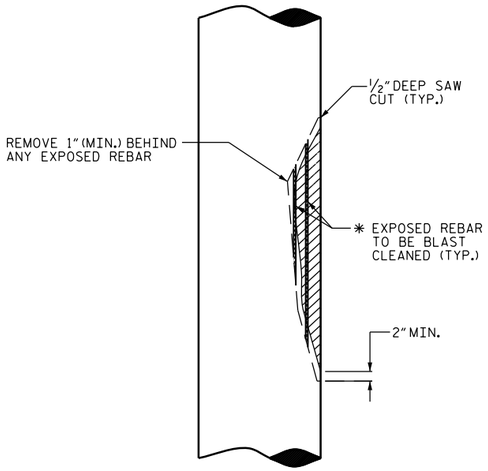


SECTION A-A

CAP REPAIR



PLAN OF COLUMN



ELEVATION OF CAP

COLUMN REPAIR

PROJECT NO. I-5809

McDOWELL COUNTY

BRIDGE NO. 138, 143, 146, 149, 151, 152

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NORTH CAROLINA PROFESSIONAL SEAL 32492 ENGINEER JOHN A. YANNACCONE

9/27/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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 (c) RGW REV. 5-7-03 RWW (c) JTE REV. 10-1-11 MAA (c) GM
REV. 8-16-99 RWW (c) LES REV. 5-1-06 TLA (c) GM

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