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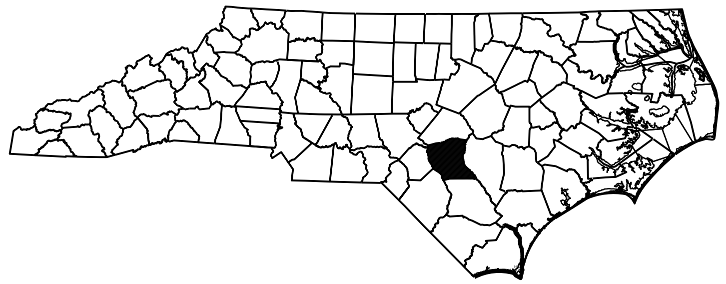
PROJECT: I-5731

CONTRACT NO: C203819

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5731	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
52008.1.1	NHPP-0095(034)	PE
52008.3.FS1	NHPP-0095(034)	CONST

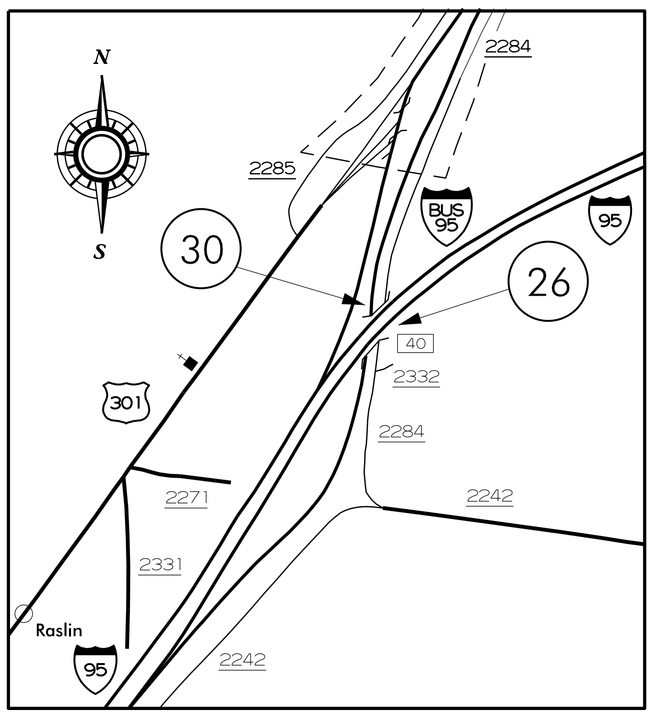
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

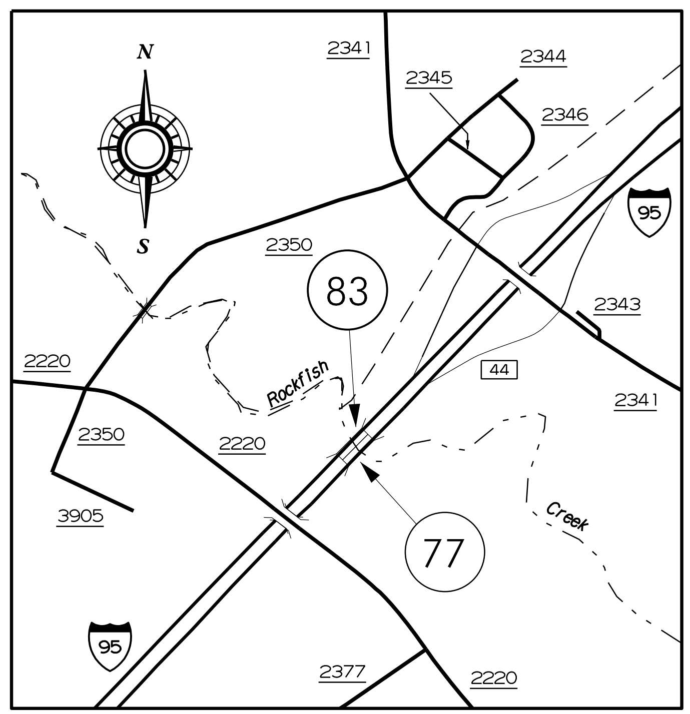


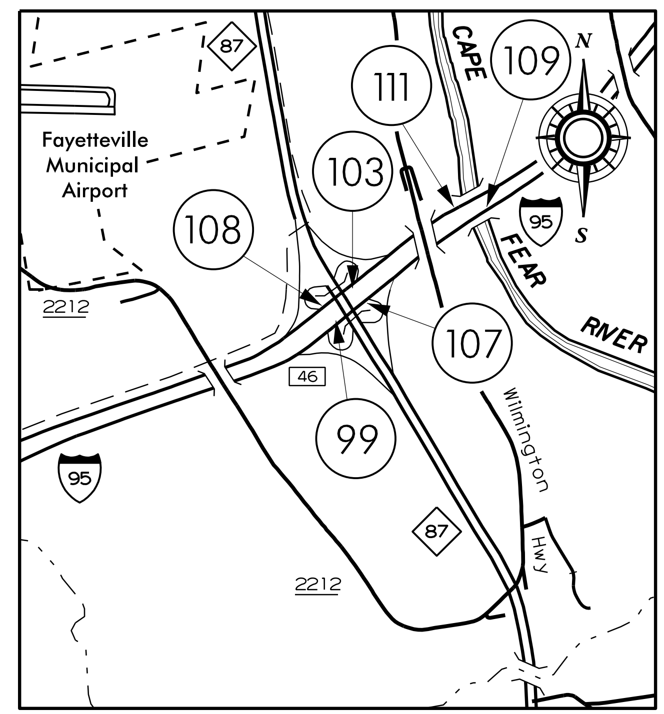
CUMBERLAND COUNTY

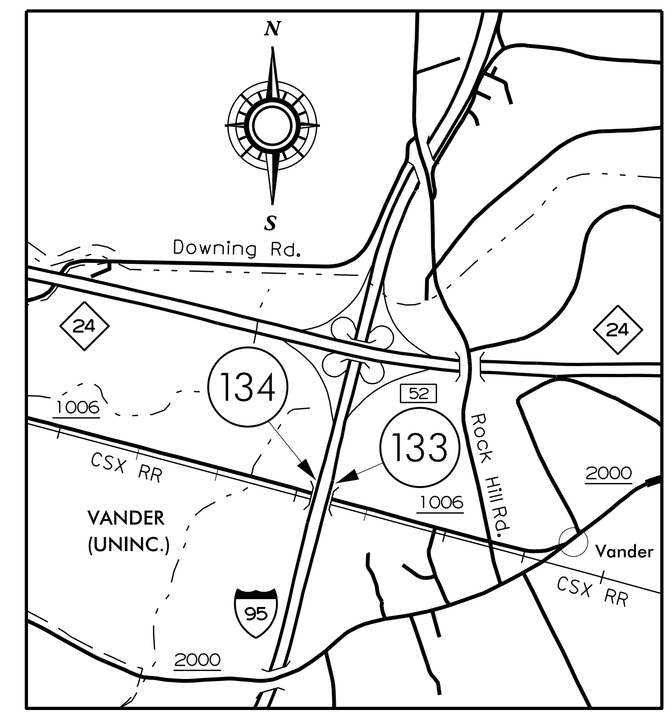
LOCATION: *BRIDGE #26 ON I–95 NBL AND BRIDGE #30 ON I–95 SBL OVER I–95 (BUS) AND SR 2284*
BRIDGE #77 ON I–95 NBL AND BRIDGE #83 ON I–95 SBL OVER ROCKFISH CREEK
BRIDGE #99 ON I–95 NBL AND BRIDGE #103 ON I–95 SBL OVER NC 87
BRIDGE #107 NB COLLECTOR AND BRIDGE #108 SB COLLECTOR ON I–95 OVER NC 87
BRIDGE #109 ON I–95 NBL AND BRIDGE #111 ON I–95 SBL OVER CAPE FEAR RIVER
BRIDGE #133 ON I–95 NBL AND BRIDGE #134 ON I–95 SBL OVER SR 1006 AND CSX RR

TYPE OF WORK: *BRIDGE PRESERVATION – EPOXY OVERLAY, SCARIFICATION, HYDRO–DEMOLITION, DECK REPAIR, LATEX MODIFIED CONCRETE–VERY EARLY STRENGTH, JOINT DEMOLITION, PAINTING EXISTING STRUCTURE AND INCIDENTAL MILLING*









DESIGN DATA

BRIDGE	#26	ADT 2013	=	15,500
BRIDGE	#30	ADT 2013	=	15,500
BRIDGE	#77	ADT 2012	=	19,000
BRIDGE	#83	ADT 2012	=	19,000
BRIDGE	#99	ADT 2012	=	18,000
BRIDGE	#103	ADT 2012	=	21,000
BRIDGE	#107	ADT 2012	=	18,000
BRIDGE	#108	ADT 2012	=	18,000
BRIDGE	#109	ADT 2011	=	21,000
BRIDGE	#111	ADT 2011	=	21,000
BRIDGE	#133	ADT 2010	=	15,000
BRIDGE	#134	ADT 2012	=	18,500

PROJECT LENGTH

BRIDGE	#26	=	0.08 MILE
BRIDGE	#30	=	0.08 MILE
BRIDGE	#77	=	0.05 MILE
BRIDGE	#83	=	0.05 MILE
BRIDGE	#99	=	0.08 MILE
BRIDGE	#103	=	0.08 MILE
BRIDGE	#107	=	0.08 MILE
BRIDGE	#108	=	0.08 MILE
BRIDGE	#109	=	0.13 MILE
BRIDGE	#111	=	0.13 MILE
BRIDGE	#133	=	0.05 MILE
BRIDGE	#134	=	0.05 MILE

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

E. E. MURRAY, P.E.
PROJECT ENGINEER

2012 STANDARD SPECIFICATIONS

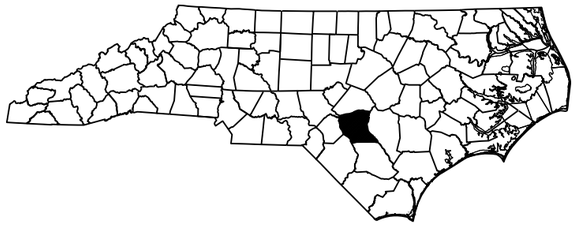
LETTING DATE:
MAY 17, 2016

DocuSigned by:
E06BC4026A4C4A5...
NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA
4/14/2016

FARZIN ASEFNIA, P.E.
PROJECT DESIGN ENGINEER

PROJECT: I-5731

CONTRACT NO: C203819



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5731	1A	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
52008.1.1	NHPP-0095(034)	PE
52008.3.FS1	NHPP-0095(034)	CONST

LOCATION: *BRIDGE #26 ON I-95 NBL AND BRIDGE #30 ON I-95 SBL OVER I-95 (BUS) AND SR 2284*
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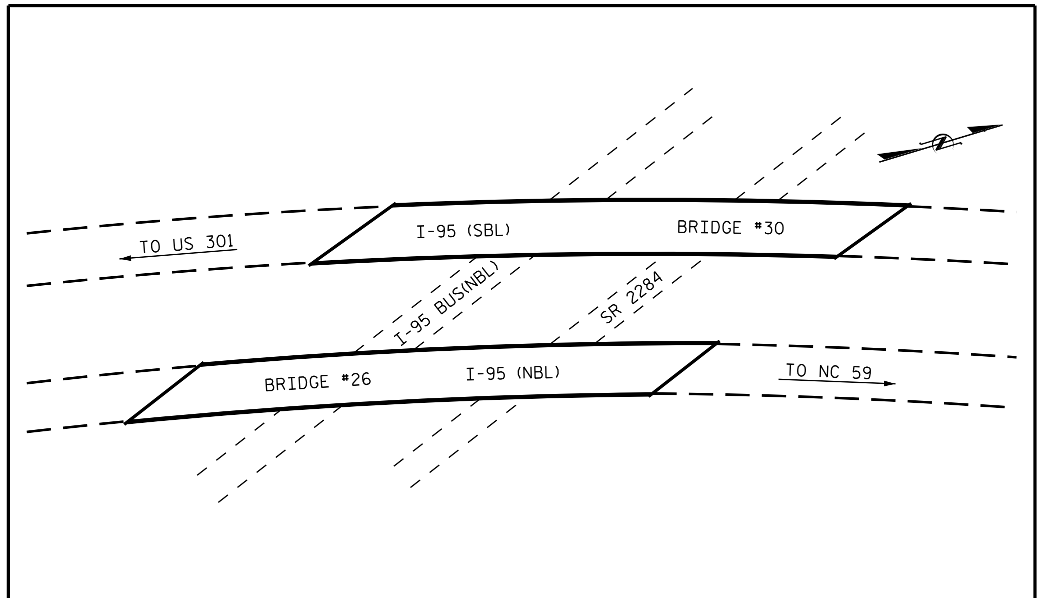
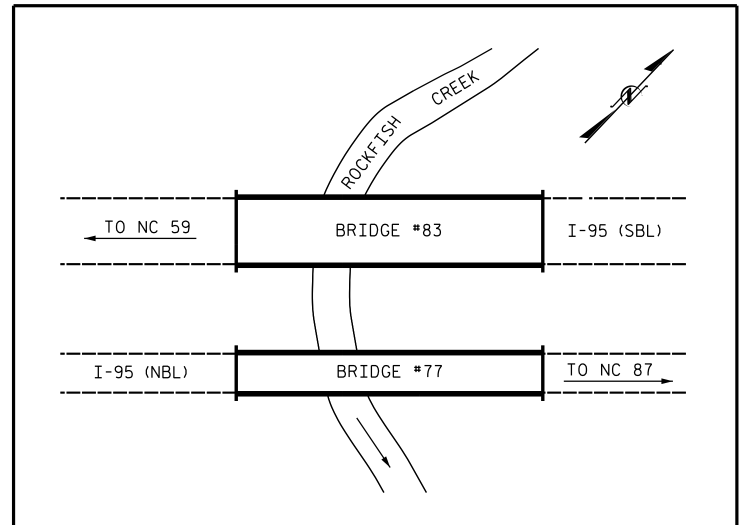
TYPE OF WORK: *BRIDGE PRESERVATION – EPOXY OVERLAY, SCARIFICATION, HYDRO-DEMOLITION, DECK REPAIR, LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH, JOINT DEMOLITION, PAINTING EXISTING STRUCTURE AND INCIDENTAL MILLING*

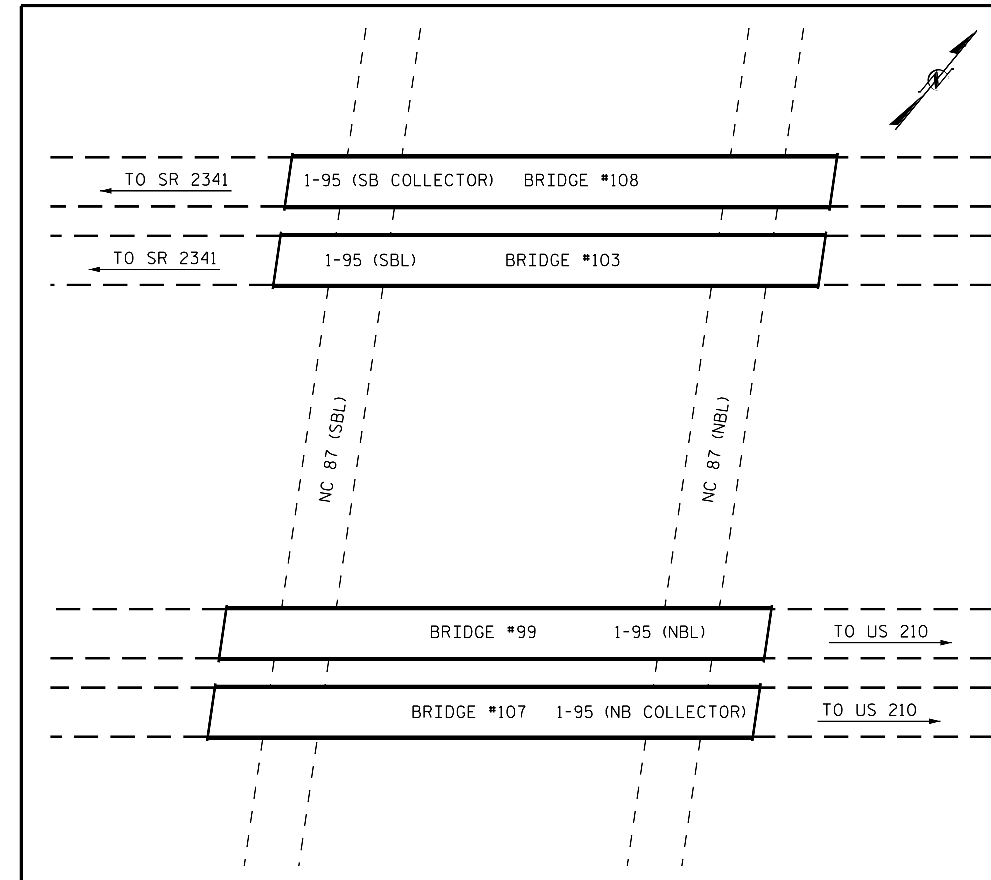
INDEX OF SHEETS



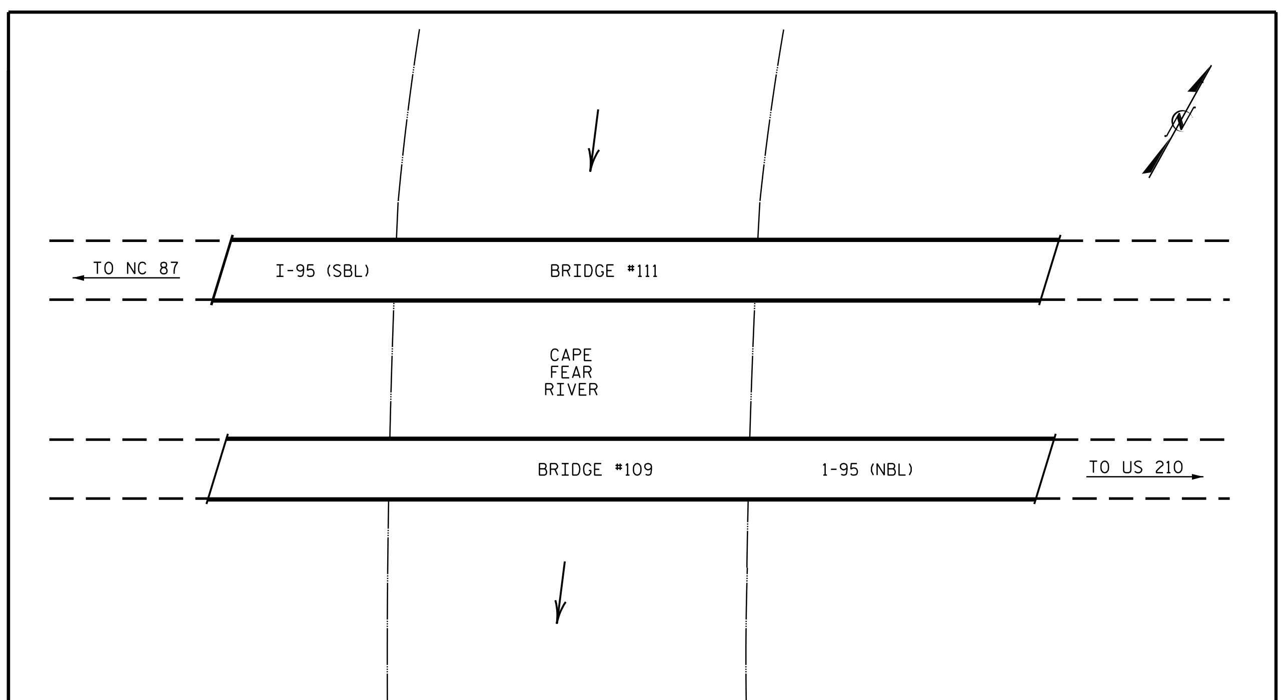
BRIDGES 26 & 30 LOCATION SKETCH



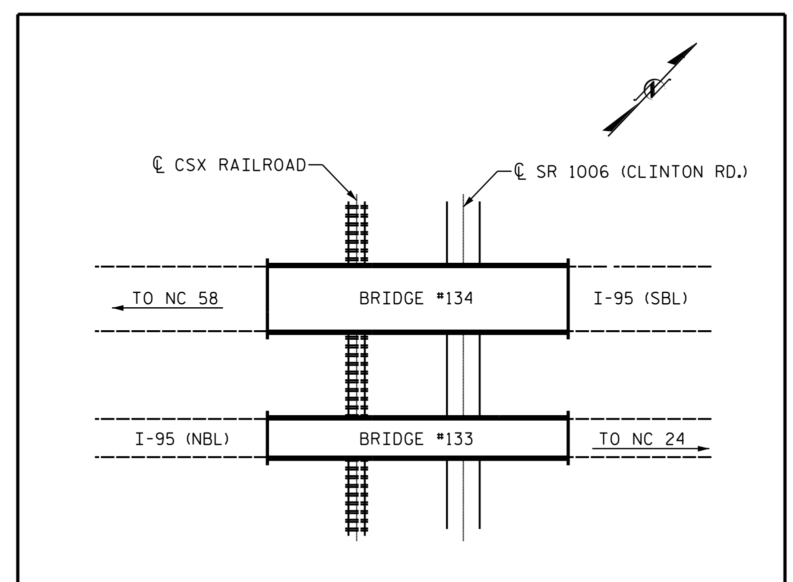
BRIDGES 77 & 83 LOCATION SKETCH



BRIDGES 99, 103, 107, & 108 LOCATION SKETCH



BRIDGES 109 & 111 LOCATION SKETCH



BRIDGES 133 & 134 LOCATION SKETCH

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO.: 26, 30, 77, 83, 99, 103, 107, 108, 109, 111, 133 & 134

DocuSigned by:

SEAL 20103 NORTH CAROLINA PROFESSIONAL ENGINEER FARZIN ASEFNIA

4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LOCATION SKETCHES

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : D.V. JOYNER DATE : 3/2016
CHECKED BY : W. SMITH DATE : 3/2016

14-APR-2016 17:00
R:\Structures\DGN\400_005_I5731_SMU_S1_GD LOC SKCH 99-111.DGN
fasefnia

NOTES:

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

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM 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.

THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS, SEE MANAGING HYDRO-DEMOLITION WATER SPECIAL PROVISION.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF BRIDGE DECK.

DURING CONSTRUCTION, BERMS OR APPROPRIATE MEASURES SHALL BE USED TO ENSURE HYDRO-DEMOLITION WATER DOES NOT FLOW OR MIGRATE INTO ACTIVE TRAVEL LANES.

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

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

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

FOR PAINTING EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISION.

FOR EPOXY OVERLAY SYSTEM - MECHANICALLY DISTRIBUTED, SEE SPECIAL PROVISION.

FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY, SEE SPECIAL PROVISION.

TOTAL BILL OF MATERIAL

BRIDGE NO.	INCIDENTAL MILLING	GROOVING BRIDGE FLOORS	POLLUTION CONTROL	CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	** LATEX MODIFIED CONCRETE-OVERLAY VERY EARLY STRENGTH	PLACING & FINISHING OF LATEX MODIFIED CONCRETE OVERLAY-VES	FOAM JOINT SEALS	CLEANING AND PAINTING EXISTING WEATHERING STEEL BRIDGE NO.___	PAINTING CONTAINMENT FOR BRIDGE NO.___	* VOLUMETRIC MIXER	STRUCTURAL STEEL FOR GIRDER REPAIR	* CONCRETE FOR DECK REPAIR	BRIDGE JOINT DEMOLITION	SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	CONCRETE DECK REPAIR FOR EPOXY OVERLAY	EPOXY OVERLAY SYSTEM - MECHANICALLY DISTRIBUTED	ELASTOMERIC CONCRETE
	SQ.YDS.	SQ. FT.	LUMP SUM	SQ.YDS.	SQ.YDS.	C.Y.	SQ.YDS.	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LBS.	CU. FT.	SQ. FT.	SQ.YDS.	SQ.YDS.	SQ. FT.	SQ. FT.	CU. FT.
26		17,513	LUMP SUM	4	4	89	2102	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM				2102	2102			
30			LUMP SUM						LUMP SUM	LUMP SUM									
77	86							LUMP SUM						80			10	10,683	20
83	54							LUMP SUM						96			10	16,845	24
99	110		LUMP SUM					LUMP SUM	LUMP SUM	LUMP SUM				84			4	18,622	21
103	110		LUMP SUM					LUMP SUM	LUMP SUM	LUMP SUM				124			20	18,630	31
107			LUMP SUM					LUMP SUM	LUMP SUM	LUMP SUM			4	136			4	18,616	39
108	110		LUMP SUM					LUMP SUM	LUMP SUM	LUMP SUM			4	136			4	18,616	39
109	179		LUMP SUM					LUMP SUM	LUMP SUM	LUMP SUM		500	4	276			6	33,687	95
111	148		LUMP SUM					LUMP SUM	LUMP SUM	LUMP SUM		500		56			6	28,154	20
133	97		LUMP SUM					LUMP SUM	LUMP SUM	LUMP SUM							3	12,537	
134	150		LUMP SUM					LUMP SUM	LUMP SUM	LUMP SUM							3	18,805	
TOTAL	1044	17,513	LUMP SUM	4	4	89	2102	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	1000	12	988	2102	2102	70	195,195	289

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

** THE QUANTITY OF LATEX MODIFIED CONCRETE OVERLAY - VES INCLUDES THE 4" OVERLAP BETWEEN OVERLAYS.

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO. 26, 30, 77, 83, 99, 103, 107, 108, 109, 111, 133 & 134

DocuSigned by:
Farzin Asefnia
Engineer
NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA
4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

NOTES

TOTAL BILL OF MATERIAL

DRAWN BY : D.V. JOYNER DATE : 3/2016
CHECKED BY : W. SMITH DATE : 3/2016

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

SHEET NO. S-2

TOTAL SHEETS 37

14-APR-2016 17:00
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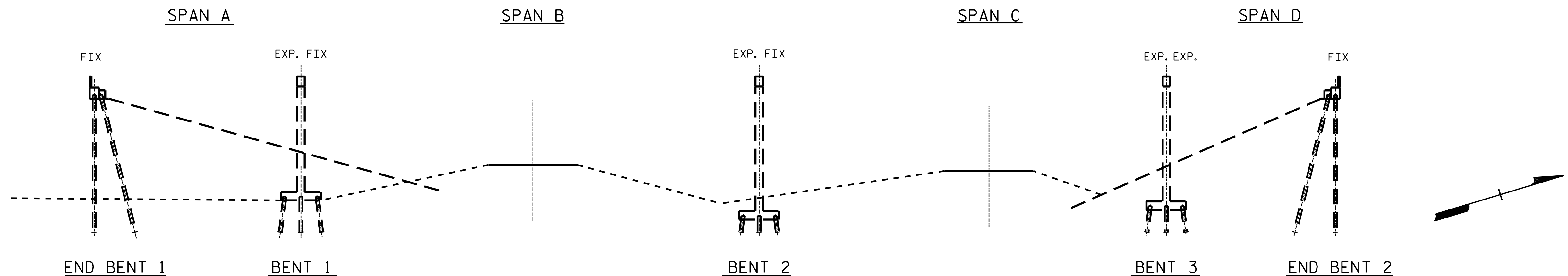
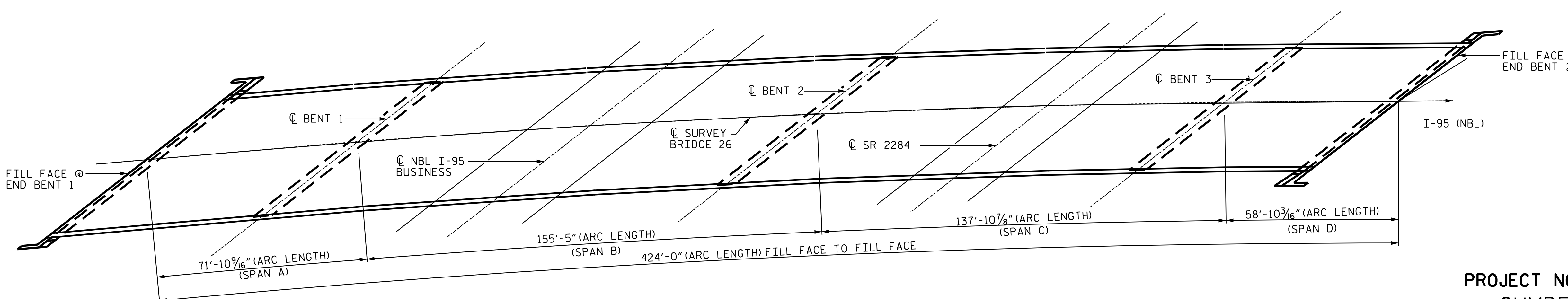


ELEVATION
(SECTION ALONG ℄ ROADWAY)



PLAN
(COLUMNS AND FOOTINGS NOT SHOWN FOR CLARITY)

PROJECT NO. I-5731
CUMBERLAND COUNTY
BRIDGE NO. 26

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGES OVER US 301
& I-95 BUS. ON I-95
BETWEEN FAYETTEVILLE
& ST. PAUL

I hereby cerify that this structure was rehabilitated according to these plans or as noted therein.

Resident Engineer Date

DocuSigned by:
Farzin Asefinia

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFINIA

4/14/2016

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

DRAWN BY : M. WELDON DATE : 10/14
CHECKED BY : F. ASEFINIA DATE : 10/14

14-APR-2016 17:00
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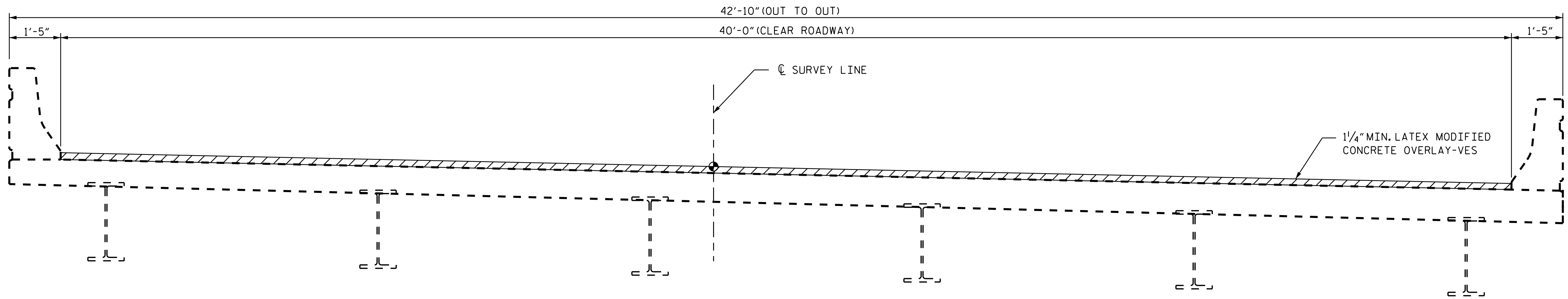
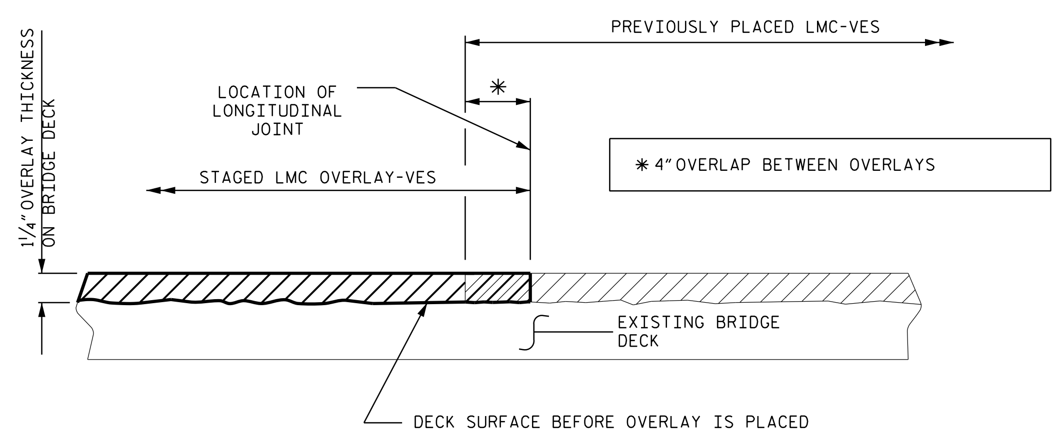
NOTE:

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

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



TYPICAL SECTION



SECTION THRU DECK

STAGED LMC-VES OVERLAY JOINT

(AS NEEDED)

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO. 26

DocuSigned by:

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

4/14/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION & LATEX MODIFIED CONCRETE-VES

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

DRAWN BY : M. WELDON DATE : 02/2016
CHECKED BY : W. SMITH DATE : 02/2016

14-APR-2016 17:00
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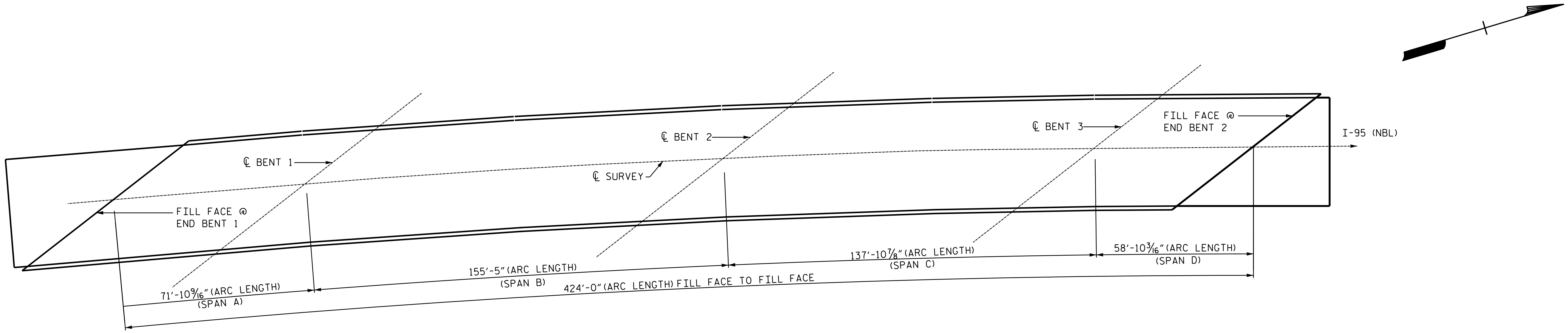
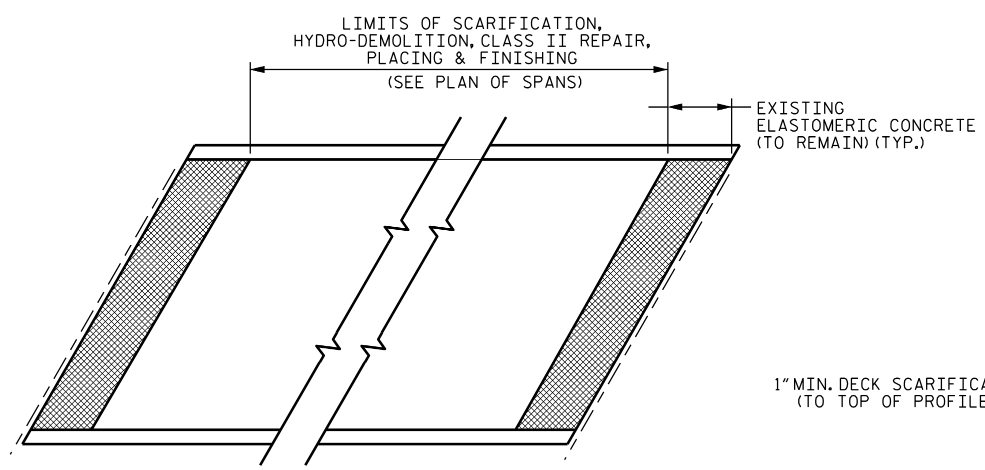
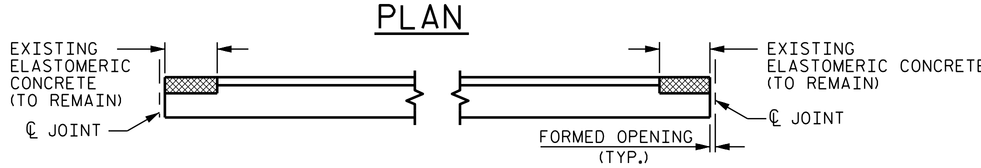


PLAN



PLAN



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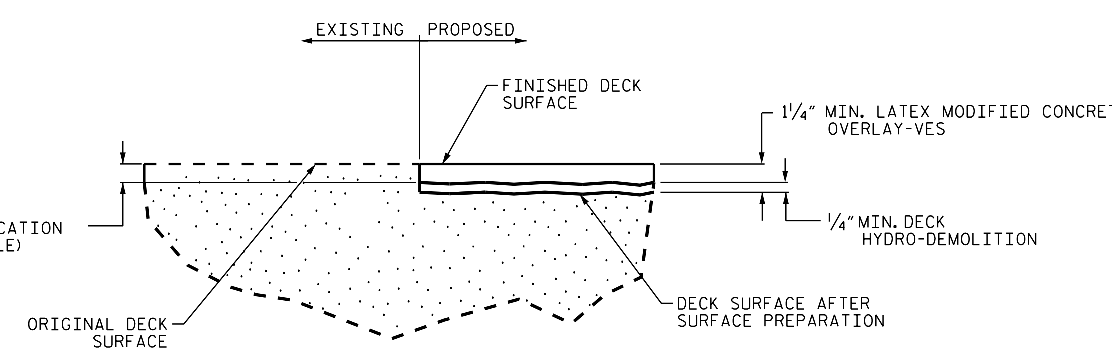

DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY-VES

☐ DECK SCARIFICATION, HYDRO-DEMOLITION, AND LATEX MODIFIED CONCRETE OVERLAY-VES

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO. 26

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

SUFACE PREPARATION

DocuSigned by:
E08BC30652A54A5...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFINIA

4/14/2016

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : M. WELDON DATE : 10/14
CHECKED BY : F. ASEFINIA DATE : 10/14

14-APR-2016 17:00
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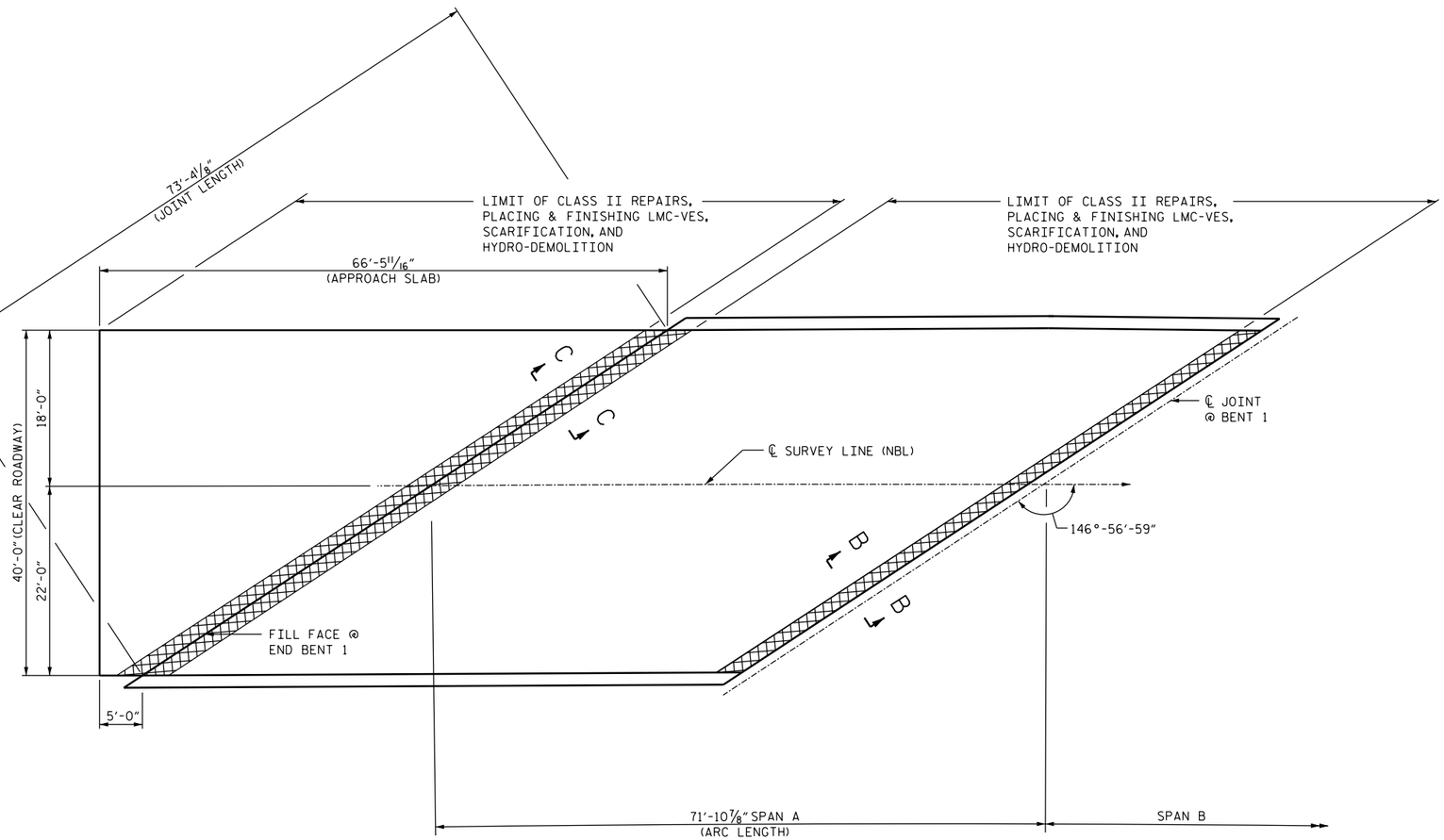
SPAN "A" AND APPROACH SLAB QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1.0 SQ. YDS.	
CLASS III SURFACE PREPARATION	1.0 SQ. YDS.	
BRIDGE JOINT DEMOLITION	0 SQ. FT.	
SCARIFYING BRIDGE DECK	307.0 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	307.0 SQ. YDS.	
SCARIFYING APPROACH SLAB	143.0 SQ. YDS.	
HYDRO-DEMOLITION OF APPROACH SLAB	143.0 SQ. YDS.	

PAYMENT FOR CLASS II & CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE FEET OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE SPECIAL PROVISIONS.



CLASS II SURFACE PREPARATION

EXISTING ELASTOMERIC CONCRETE (TO REMAIN)

SCARIFICATION & HYDRO-DEMOLITION

PLAN OF SPAN A

(FOR SECTION VIEW, SEE "JOINT DETAILS" SHEET S-10)

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO. 26

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION
SPAN A
&
APPROACH SLAB
NBL

DocuSigned by:
ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

4/14/2016

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : M. WELDON DATE : 2/2016
CHECKED BY : W. SMITH DATE : 2/2016

14-APR-2016 17:00
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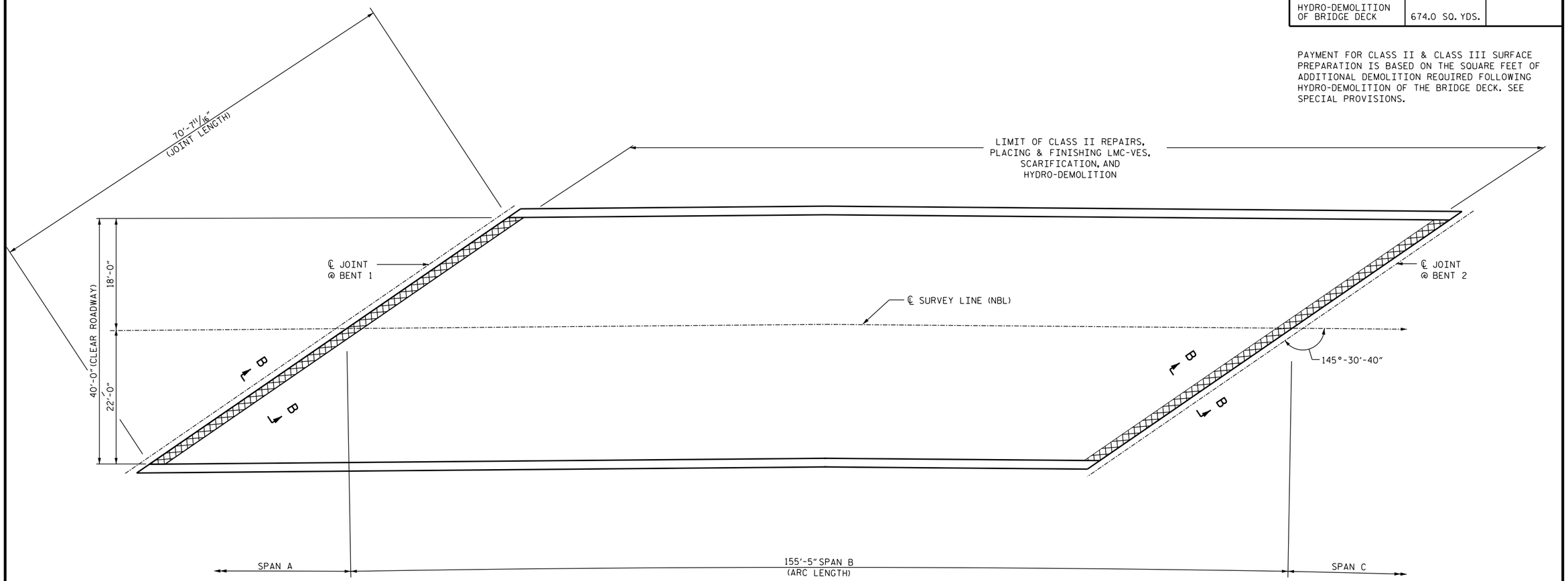
SPAN "B" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1.0 SQ. YDS.	
CLASS III SURFACE PREPARATION	1.0 SQ. YDS.	
BRIDGE JOINT DEMOLITION	0 SQ. FT.	
SCARIFYING BRIDGE DECK	674.0 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	674.0 SQ. YDS.	

PAYMENT FOR CLASS II & CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE FEET OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE SPECIAL PROVISIONS.



PLAN OF SPAN B

(FOR SECTION VIEW, SEE "JOINT DETAILS" SHEET S-10)

CLASS II SURFACE PREPARATION

EXISTNG ELASTOMERIC CONCRETE (TO REMAIN)

SCARIFICATION & HYDRO-DEMOLITION

DocuSigned by:
Farzin Asefnia
ENGINEER'S SEAL
NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA
4/14/2016

PROJECT NO. I-5731
CUMBERLAND COUNTY
BRIDGE NO. 26

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION
SPAN B
NBL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : M. WELDON DATE : 2/2016
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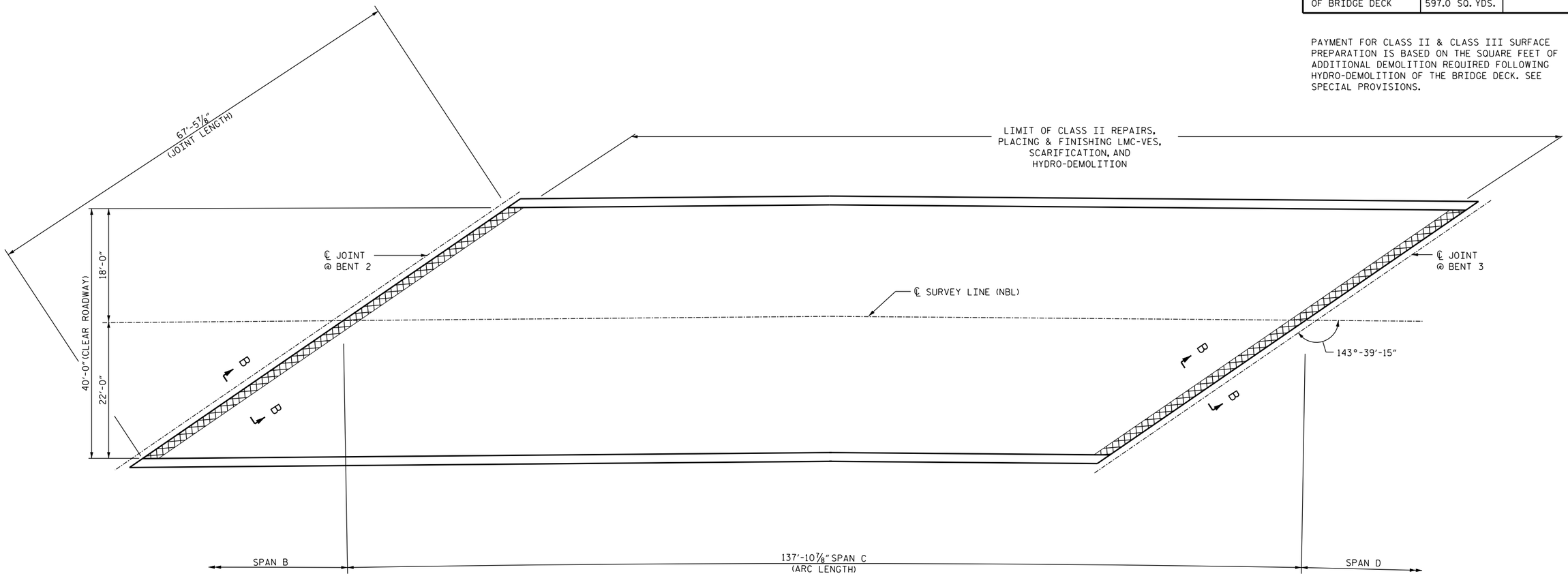
SPAN "C" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1.0 SQ. YDS.	
CLASS III SURFACE PREPARATION	1.0 SQ. YDS.	
BRIDGE JOINT DEMOLITION	0 SQ. FT.	
SCARIFYING BRIDGE DECK	597.0 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	597.0 SQ. YDS.	

PAYMENT FOR CLASS II & CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE FEET OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE SPECIAL PROVISIONS.



PLAN OF SPAN C

(FOR SECTION VIEW, SEE "JOINT DETAILS" SHEET S-10)

CLASS II SURFACE PREPARATION

EXISTING ELASTOMERIC CONCRETE (TO REMAIN)

SCARIFICATION & HYDRO-DEMOLITION

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Farzin Asefnia
NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA
4/14/2016

PROJECT NO. I-5731
CUMBERLAND COUNTY
BRIDGE NO. 26

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION
SPAN C
NBL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			37

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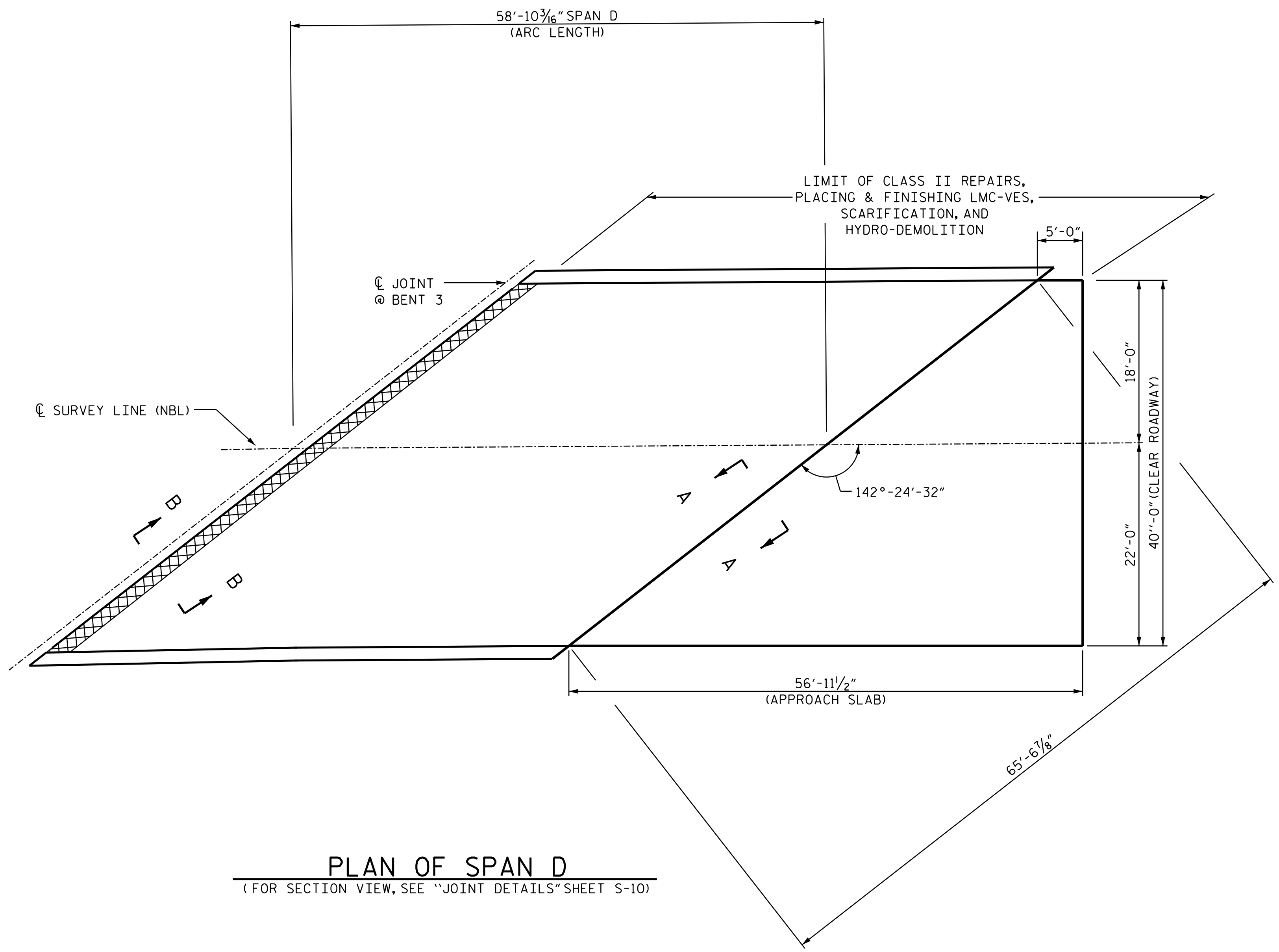
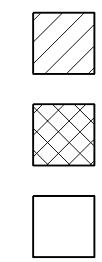
SPAN "D" AND APPROACH SLAB QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1.0 SQ. YDS.	
CLASS III SURFACE PREPARATION	1.0 SQ. YDS.	
BRIDGE JOINT DEMOLITION	0 SQ. FT.	
SCARIFYING BRIDGE DECK	254.0 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	254.0 SQ. YDS.	
SCARIFYING APPROACH SLAB	127.0 SQ. YDS.	
HYDRO-DEMOLITION OF APPROACH SLAB	127.0 SQ. YDS.	

PAYMENT FOR CLASS II & CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE FEET OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE SPECIAL PROVISIONS.



PLAN OF SPAN D

(FOR SECTION VIEW, SEE "JOINT DETAILS" SHEET S-10)



PROJECT NO. I-5731
CUMBERLAND COUNTY
BRIDGE NO. 26

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION
SPAN D
&
APPROACH SLAB
NBL

DocuSigned by:

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

4/14/2016

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-9
1			3					TOTAL SHEETS
2			4					37

DRAWN BY : M. WELDON DATE : 2/2016
CHECKED BY : W. SMITH DATE : 2/2016

14-APR-2016 17:00
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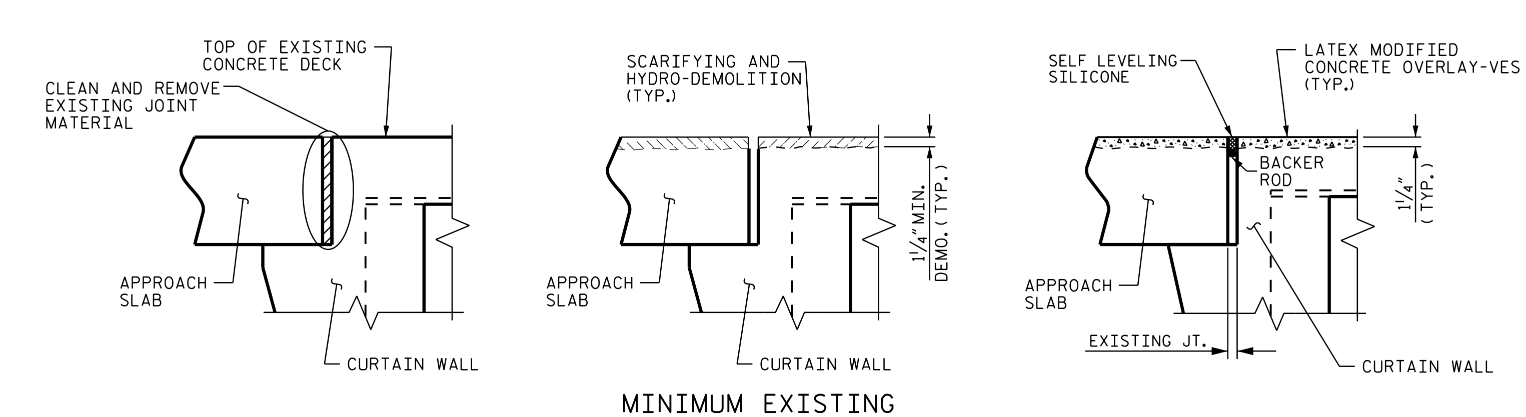


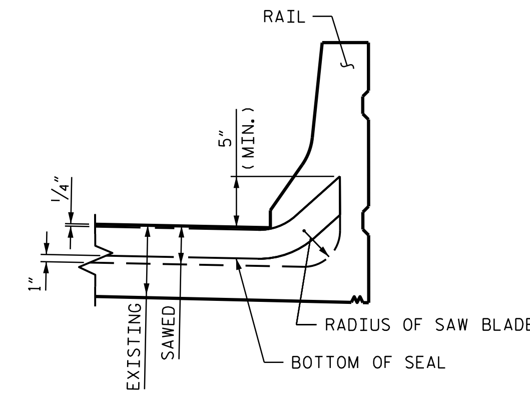
EXISTING JOINT

MINIMUM EXISTING JOINT DEMOLITION

PROPOSED JOINT

JOINT INSTALLATION SEQUENCE AT END BENT 2

SECTION A-A



SECTION D-D

NOTES

CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.

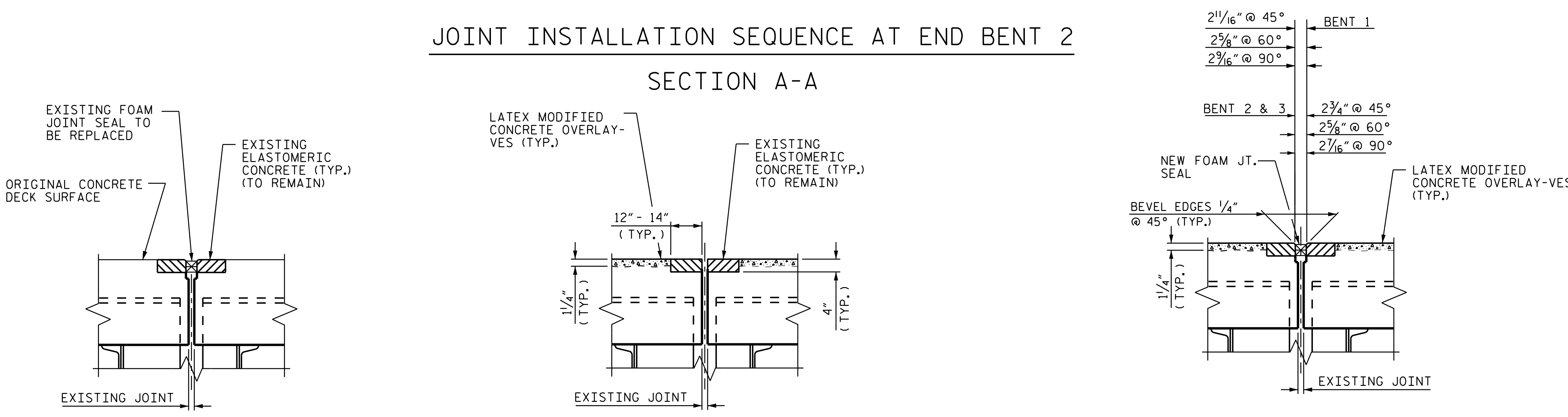
HYDRO-DEMOLITION OR EXCAVATION OF CONCRETE AT THE EXISTING JOINT SHALL RESULT IN THE BOTTOM OF THE EXCAVATION BEING REASONABLY FLAT, TO PROVIDE SUFFICIENT SUBSTRATE FOR PLACEMENT AND SUPPORT OF ELASTOMERIC CONCRETE.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2" FOR END BENT #1, 3" FOR BENT #1, #2 AND #3.



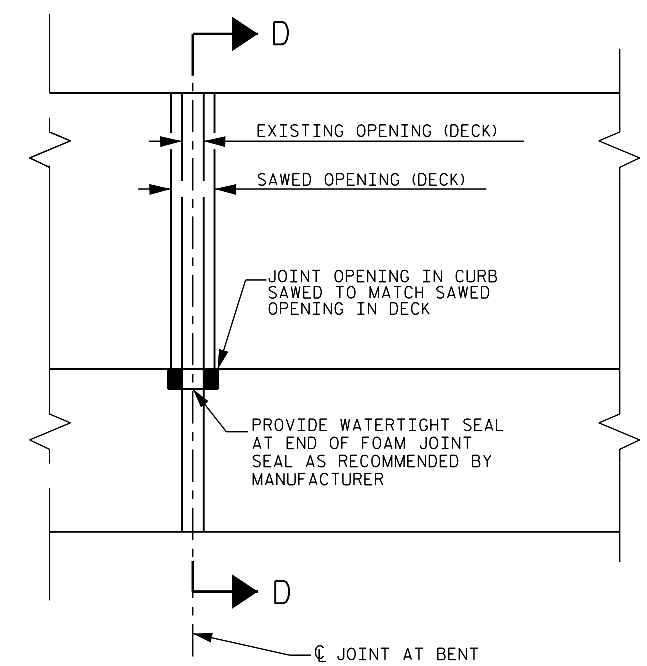
EXISTING JOINT

EXISTING FOAM JOINT SEAL REMOVED

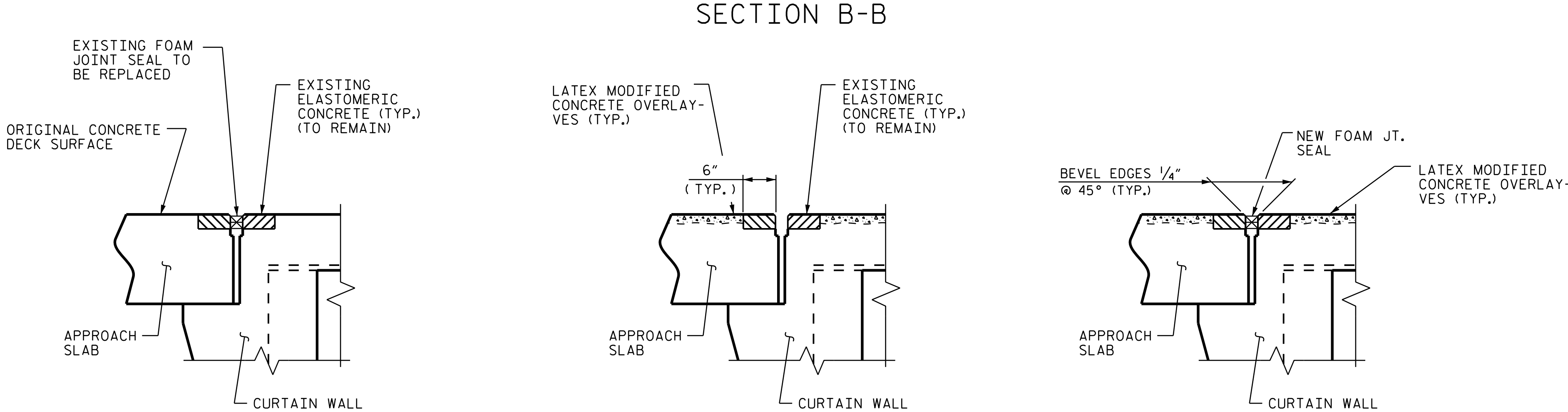
PROPOSED FOAM JOINT SEAL INSTALLATION

JOINT INSTALLATION SEQUENCE AT BENTS

SECTION B-B



PLAN



EXISTING JOINT

EXISTING FOAM JOINT SEAL REMOVED

PROPOSED FOAM JOINT SEAL INSTALLATION

JOINT INSTALLATION SEQUENCE AT END BENT 1

SECTION C-C

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO. 26

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

JOINT REPAIR DETAILS

DocuSigned by:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 20103 FARZIN ASEFNIA

4/14/2016

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-10
1			3					TOTAL SHEETS
2			4					37

DRAWN BY : M. WELDON DATE : 2/2016
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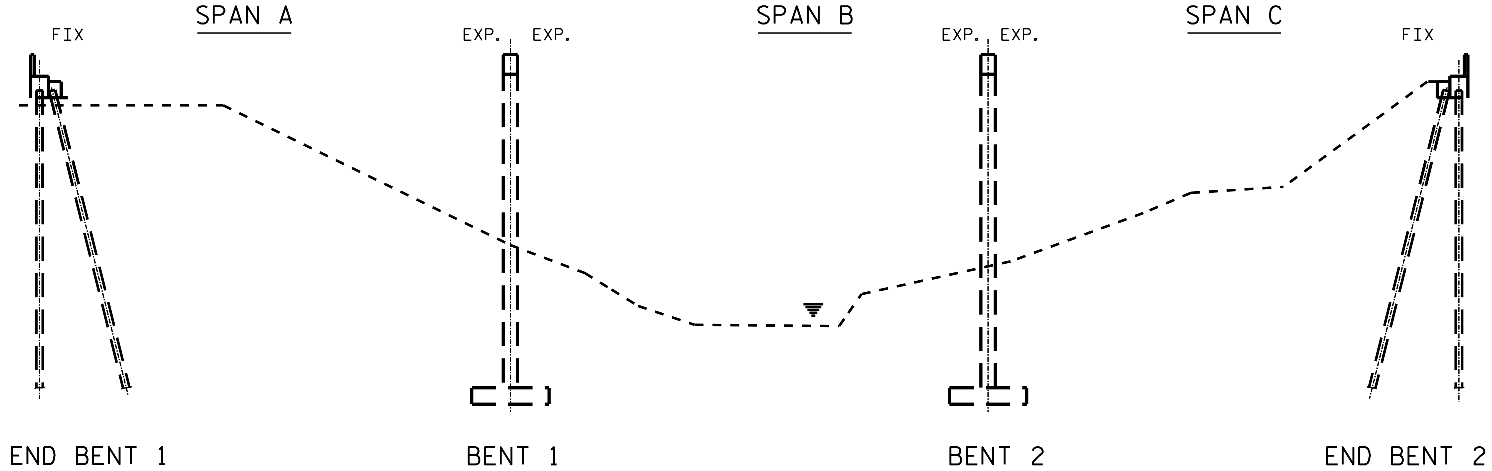
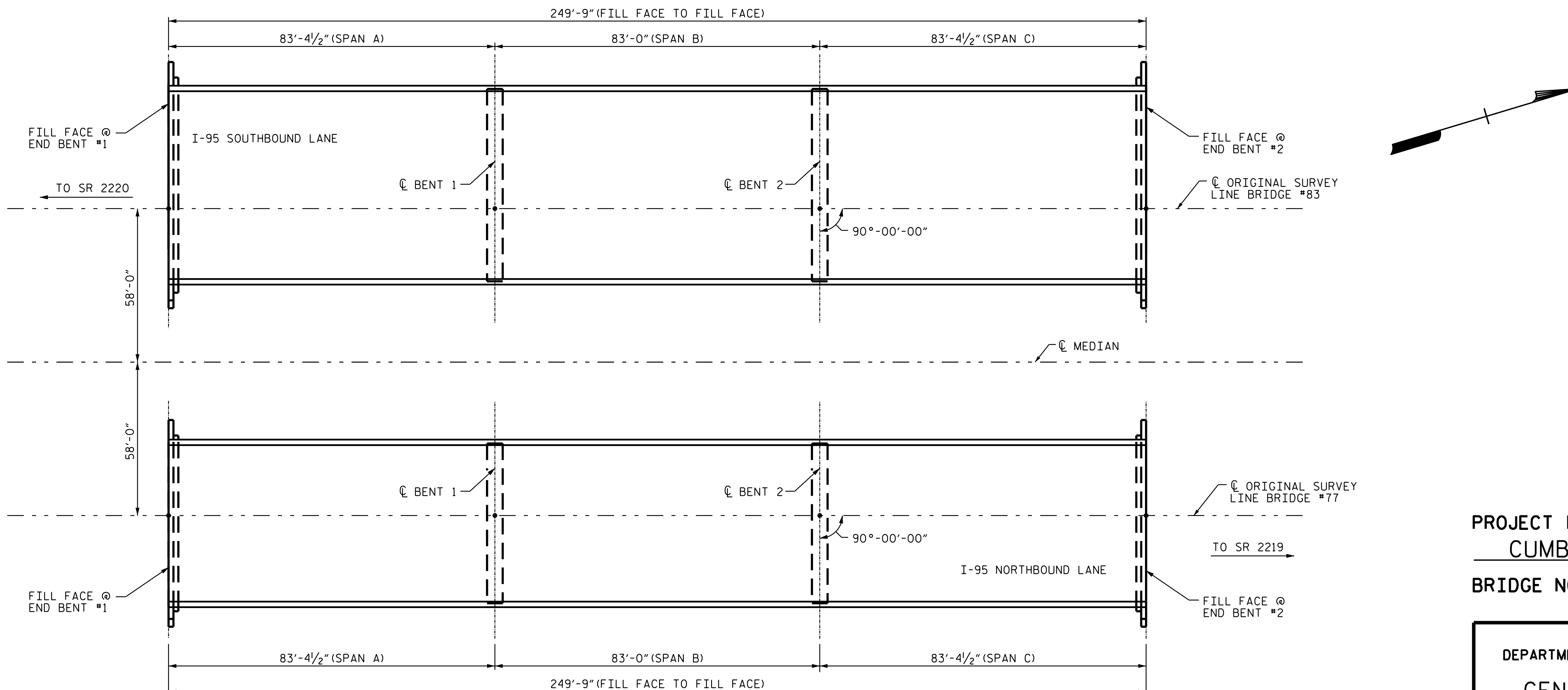


ELEVATION
(SECTION ALONG ℄ ROADWAY)



PLAN
(COLUMNS AND FOOTINGS NOT SHOWN IN PLAN VIEW FOR CLARITY)

PROJECT NO. I-5731
CUMBERLAND COUNTY
BRIDGE NO. 77 & 83

I hereby cerify that this structure was rehabilitated according to these plans or as noted therein.

Resident Engineer Date

DocuSigned by:
NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA
4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGES OVER ROCKFISH CREEK ON I-95 BETWEEN SR 2220 AND SR 2219

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : M. WELDON DATE : 02/2016
CHECKED BY : W. SMITH DATE : 02/2016

14-APR-2016 17:00
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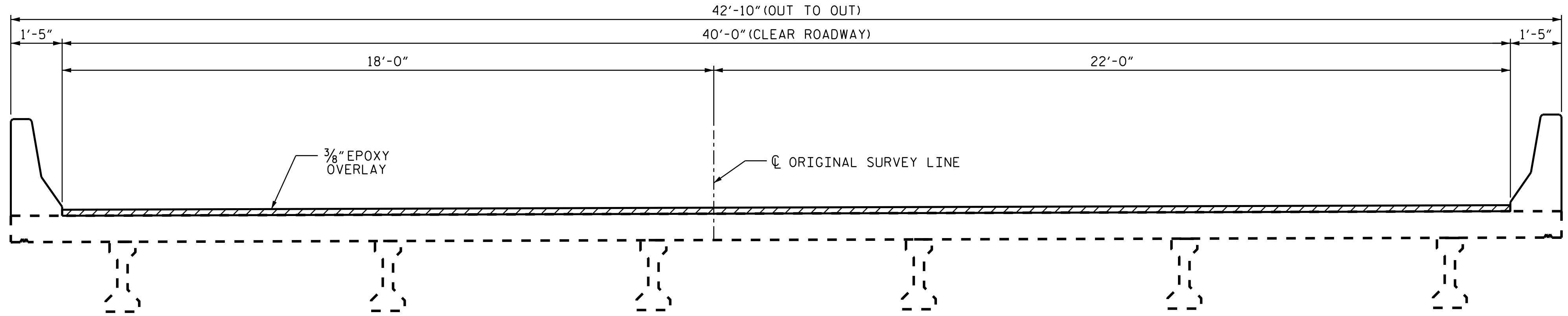
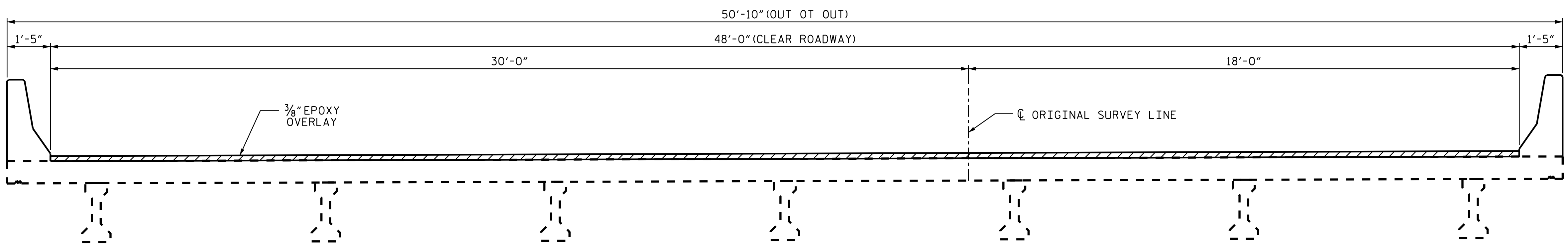
NOTE:

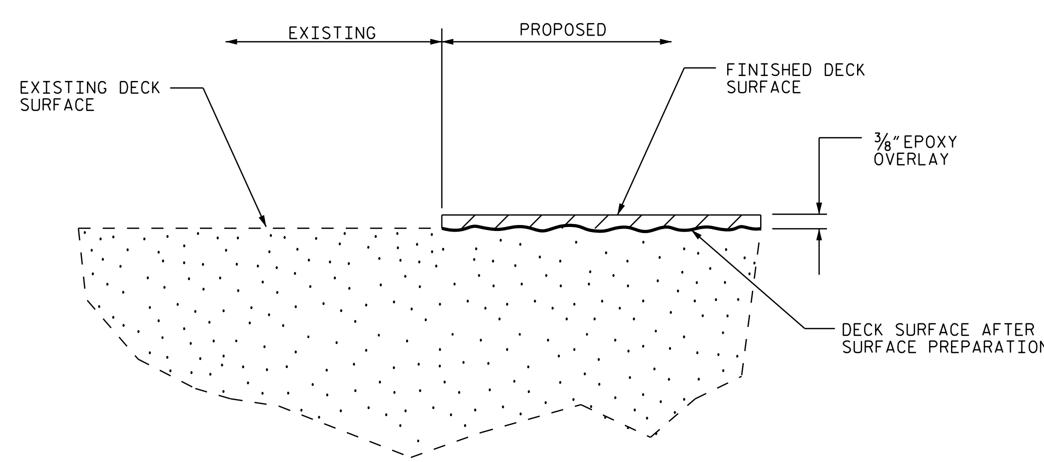
SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF EPOXY OVERLAY SYSTEM AND SURFACE PREPARATION.



TYPICAL SECTION
(BRIDGE #77 NORTHBOUND LANES)



TYPICAL SECTION
(BRIDGE #83 SOUTHBOUND LANES)



DETAIL OF EPOXY OVERLAY

PROJECT NO. I-5731
CUMBERLAND COUNTY
BRIDGE NO. 77 & 83

DocuSigned by:
E0BB490C8A5C45A...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTIONS & EPOXY OVERLAY DETAILS

REVISIONS								SHEET NO.
NO.	BY:	DATE:		NO.	BY:	DATE:		S-12
1				3				TOTAL SHEETS
2				4				37

DRAWN BY : M. WELDON DATE : 02/2016
CHECKED BY : W. C. SMITH DATE : 02/2016

14-APR-2016 17:00
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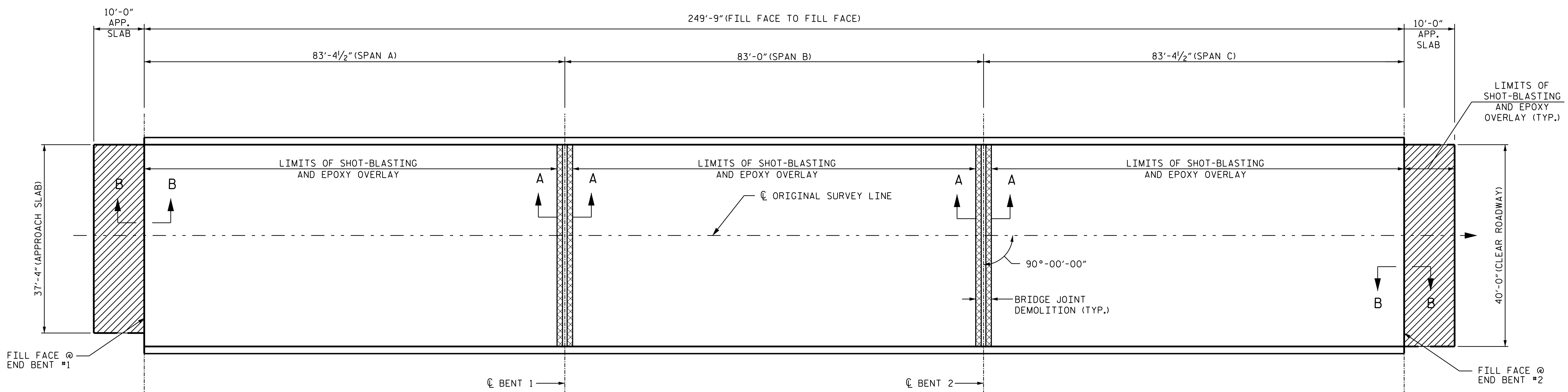
SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	*1 SQ. FT.	
EPOXY OVERLAY SYSTEM	9910 SQ. FT.	
BRIDGE JOINT DEMOLITION	80 SQ. FT.	
APPROACH SLAB FOR EPOXY OVERALY	773 SQ. FT.	
INCIDENTAL MILLING	86 SQ. YD.	

NOTE:

* CONCRETE DECK REPAIR FOR EPOXY OVERLAY IS NOT ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE IN CASE UNANTICIPATED REPAIR AREAS ARE ENCOUNTERED.



PLAN

(FOR SECTION A-A & B-B, SEE JOINT DETAILS SHEET S-15)

Legend	
(blank box)	EPOXY OVERLAY
(cross-hatched box)	BRIDGE JOINT DEMOLITION
(hatched box)	INCIDENTAL MILLING

PROJECT NO. I-5731

CUMBERLAND **COUNTY**

BRIDGE NO. 77

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION & EPOXY OVERLAY
(NORTHBOUND)

DocuSigned by:
Farzin Asefnia
E0C...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

4/14/2016

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : M. WELDON DATE : 02/2016
CHECKED BY : W.C. SMITH DATE : 02/2016

14-APR-2016 17:00
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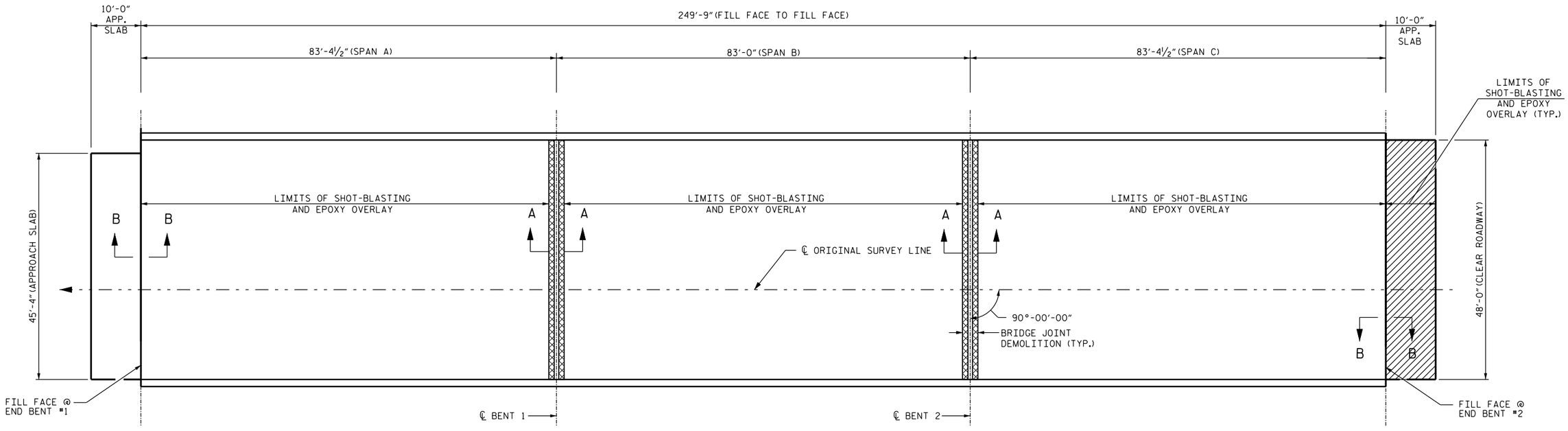
SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	✱1 SQ. FT.	
EPOXY OVERLAY SYSTEM	15912 SQ. FT.	
BRIDGE JOINT DEMOLITION	96 SQ. FT.	
APPROACH SLAB FOR EPOXY OVERALY	933 SQ. FT.	
INCIDENTAL MILLING	54 SQ. FT.	

NOTE:

✱ CONCRETE DECK REPAIR FOR EPOXY OVERLAY IS NOT ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE IN CASE UNANTICIPATED REPAIR AREAS ARE ENCOUNTERED.



PLAN

(FOR SECTION A-A & B-B, SEE JOINT DETAILS SHEET S-15)

EPOXY OVERLAY

BRIDGE JOINT DEMOLITION

INCIDENTAL MILLING

DocuSigned by:
Farzin Asefnia

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

4/14/2016

PROJECT NO. I-5731

CUMBERLAND **COUNTY**

BRIDGE NO. 83

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION & EPOXY OVERLAY

(SOUTHBOUND)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : M. WELDON DATE : 02/2016

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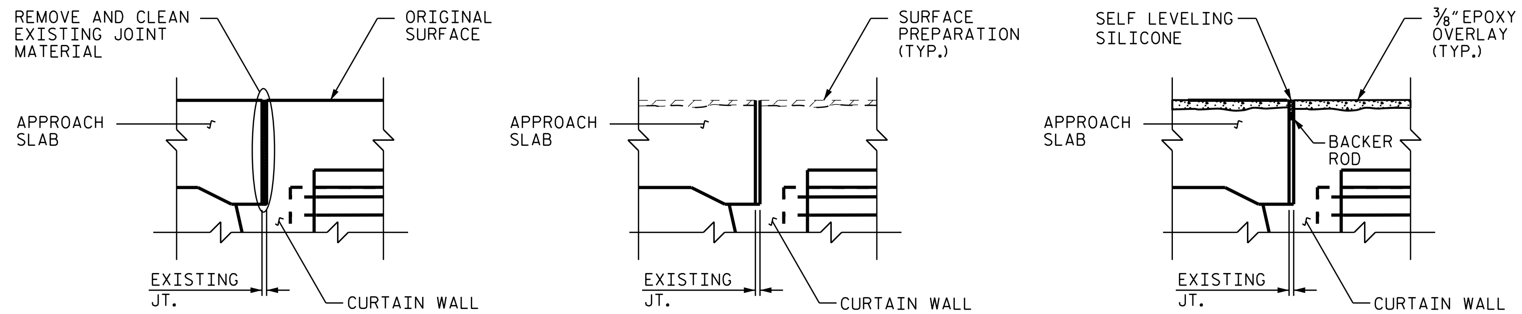


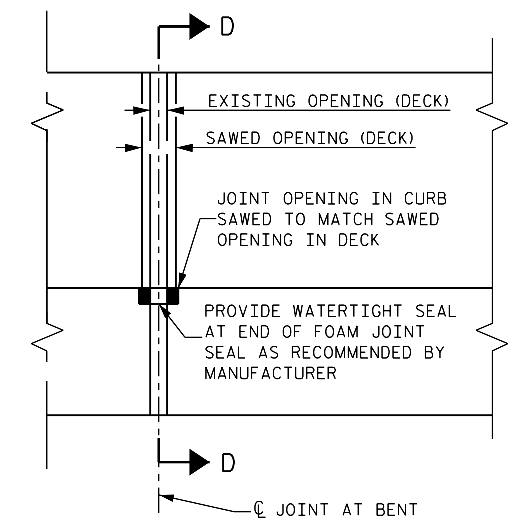
EXISTING JOINT

MINIMUM EXISTING JOINT DEMOLITION

PROPOSED JOINT

JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION B-B



PLAN

NOTES:

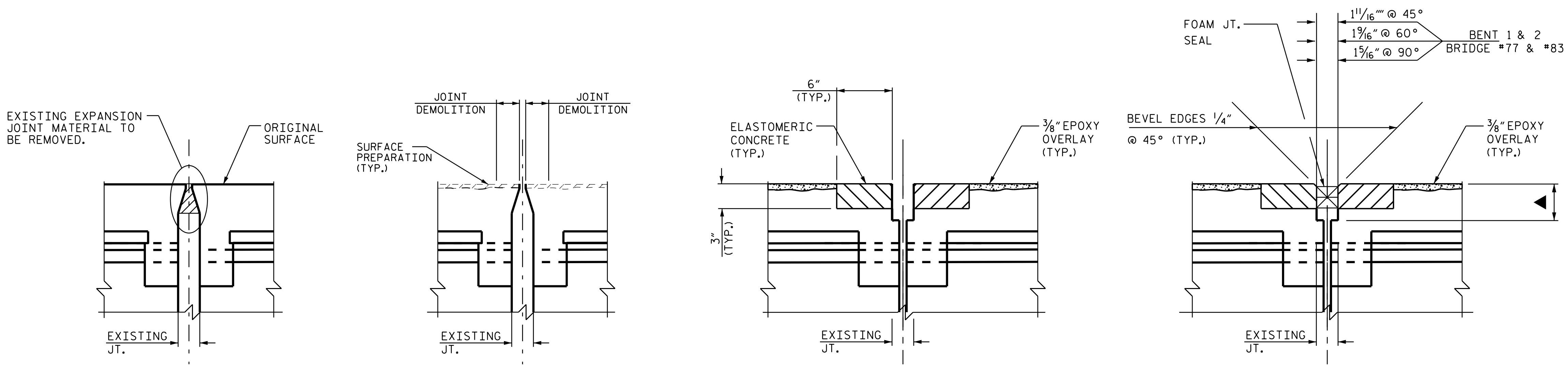
CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.

THE WIDTH OF THE UNCOMPRESSED FOAM JOINT MATERIAL SHALL BE 2".



EXISTING JOINT

MINIMUM EXISTING JOINT DEMOLITION

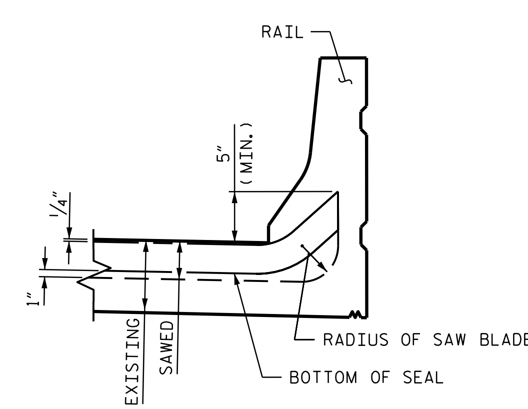
PROPOSED JOINT

PROPOSED FOAM JOINT SEAL EXPANSION

▲ SAW CUT SHALL BE 3/4" BELOW THE BOTTOM OF THE JOINT SEAL. SEE MANUFACTURER RECOMMENDATIONS

JOINT INSTALLATION SEQUENCE AT BENTS

SECTION A-A



SECTION D-D

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO.: 77 & 83

DocuSigned by: Farzin Asefnia

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

JOINT DETAILS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-15
1			3					TOTAL SHEETS
2			4					37

DRAWN BY : M. WELDON DATE : 2/2016
CHECKED BY : W. C. SMITH DATE : 2/2016

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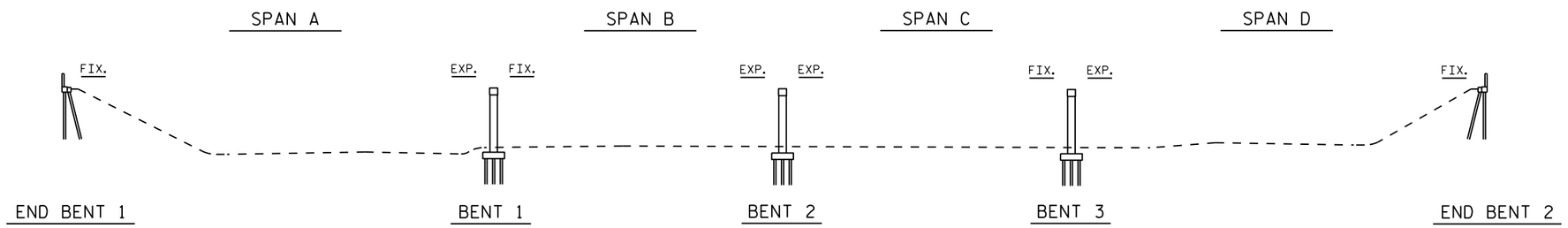
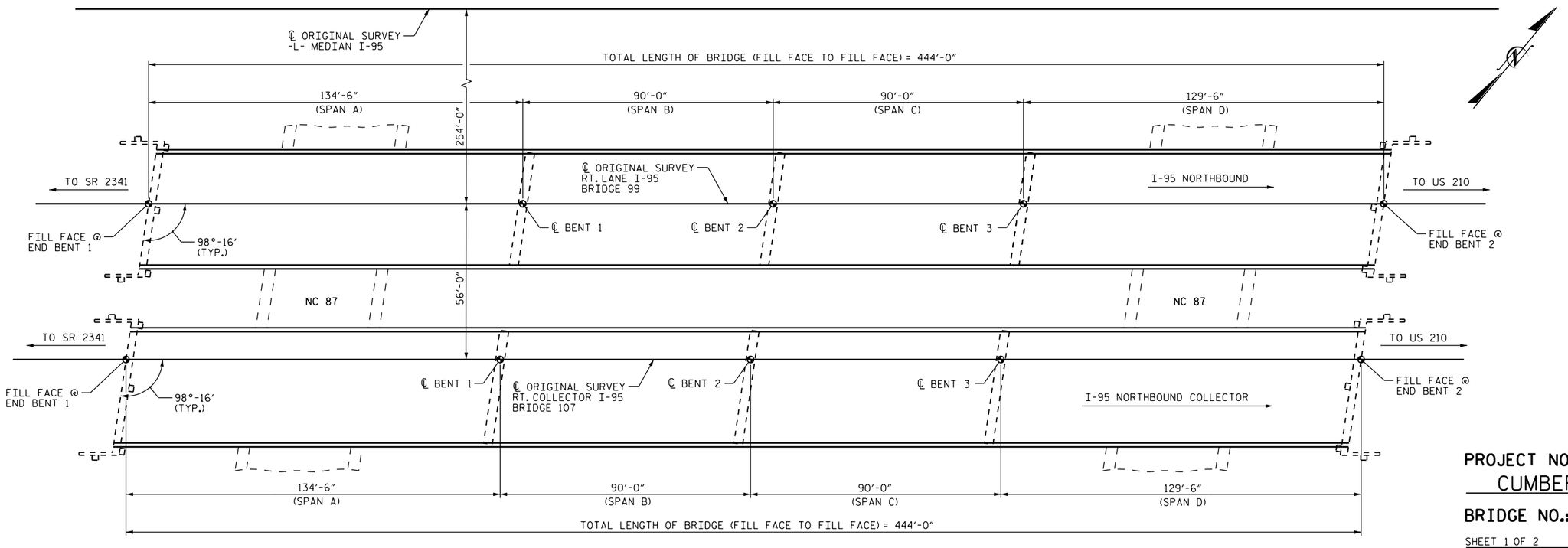


ELEVATION
(SECTION ALONG ℄ ROADWAY)



PLAN
(COLUMNS AND FOOTINGS NOT SHOWN IN PLAN VIEW FOR CLARITY)

I hereby cerify that this structure was rehabilitated according to these plans or as noted therein.

Resident Engineer Date

DocuSigned by:
Farzin Asefnia
Engineer's Signature
NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA
4/14/2016

PROJECT NO. I-5731
CUMBERLAND **COUNTY**
BRIDGE NO.: 99 & 107

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING BRIDGES OVER NC 87 ON I-95 BETWEEN SR 2341 AND US 210

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : D.V. JOYNER DATE : 2/2016
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14-APR-2016 17:01
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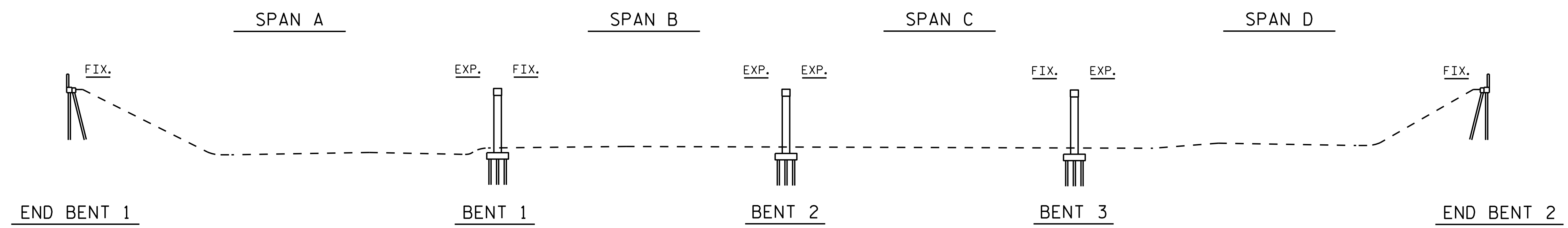
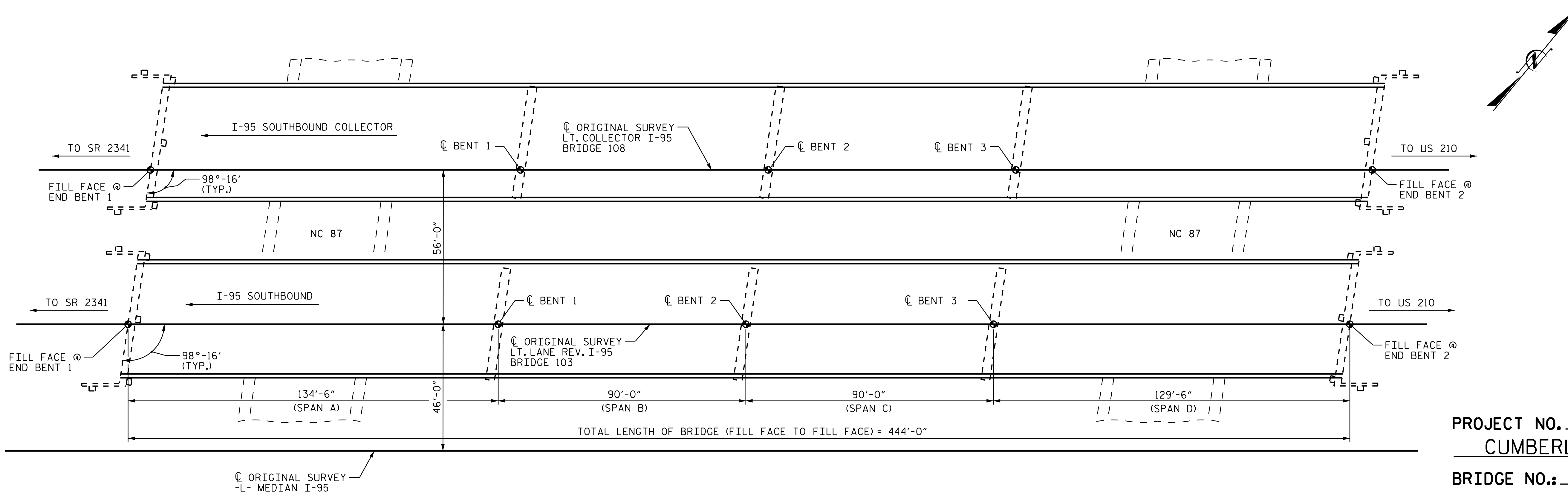
fasefnia



ELEVATION
(SECTION ALONG ℄ ROADWAY)



PLAN
(COLUMNS AND FOOTINGS NOT SHOWN IN PLAN VIEW FOR CLARITY)

PROJECT NO. I-5731
CUMBERLAND COUNTY
BRIDGE NO.: 103 & 108

SHEET 2 OF 2

DocuSigned by:
NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA
4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGES OVER NC 87
ON I-95 BETWEEN
SR 2341 AND US 210

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REVISIONS							SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:		S-17
1			3				TOTAL SHEETS
2			4				36

DRAWN BY : D.V. JOYNER DATE : 2/2016
CHECKED BY : W. SMITH DATE : 2/2016

14-APR-2016 17:01
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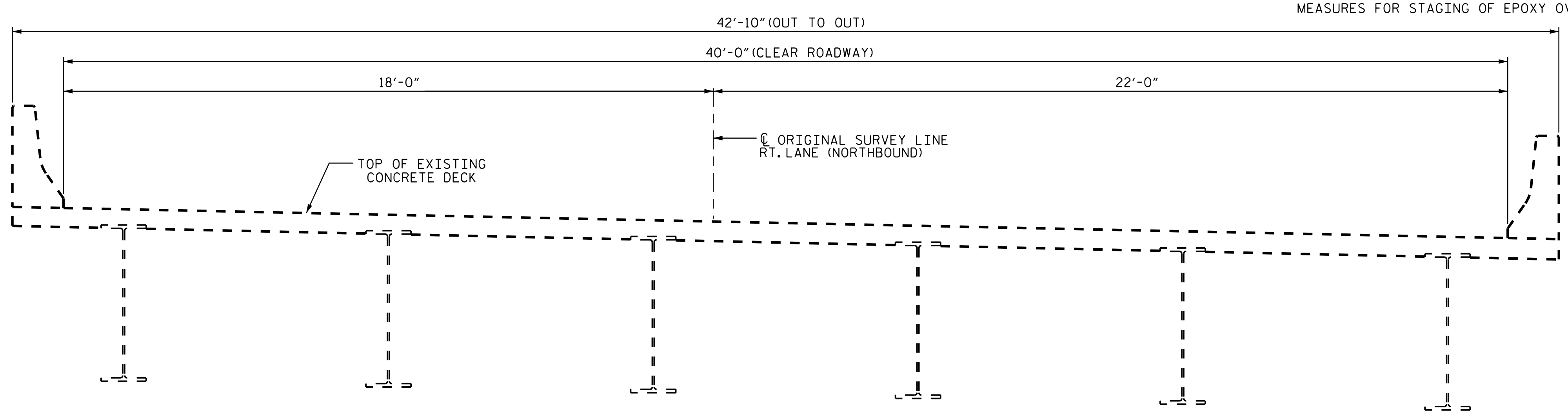
fasefnia

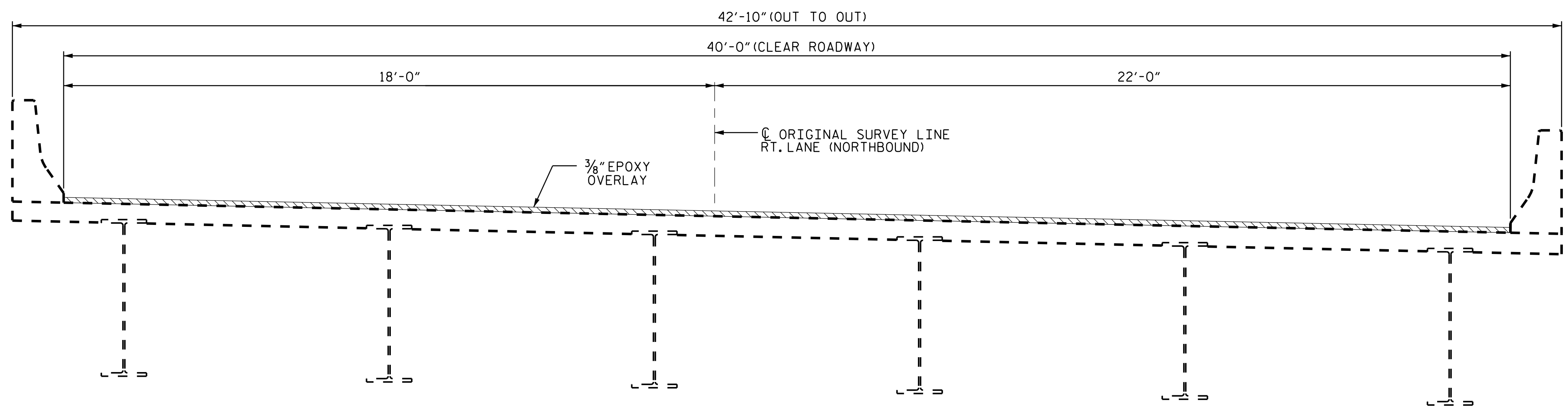
NOTE:

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



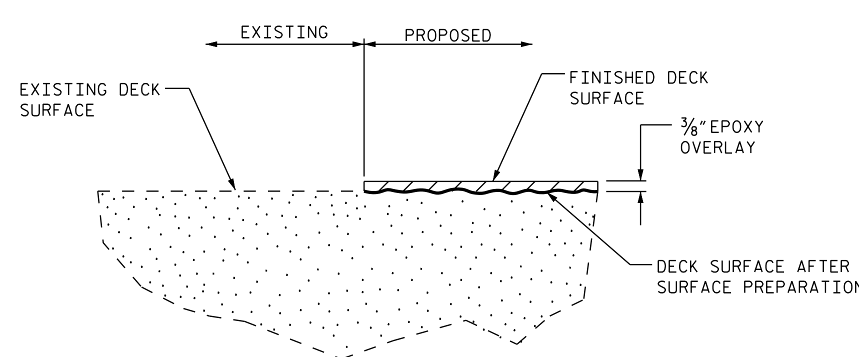
TYPICAL SECTION

(EXISTING BRIDGE 99 NORTHBOUND LANES SHOWN - BRIDGE 103 SOUTHBOUND LANES SIMILAR BY ROTATION)



TYPICAL SECTION

(PROPOSED BRIDGE 99 NORTHBOUND LANES SHOWN - BRIDGE 103 SOUTHBOUND LANES SIMILAR BY ROTATION)



DETAIL OF EPOXY OVERLAY

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO. 99 & 103

DocuSigned by:

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION & EPOXY CONCRETE DETAILS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-18
2			4			TOTAL SHEETS 37

REVISIONS

DRAWN BY : D.V. JOYNER DATE : 2/2016
CHECKED BY : W. SMITH DATE : 2/2016

14-APR-2016 17:01
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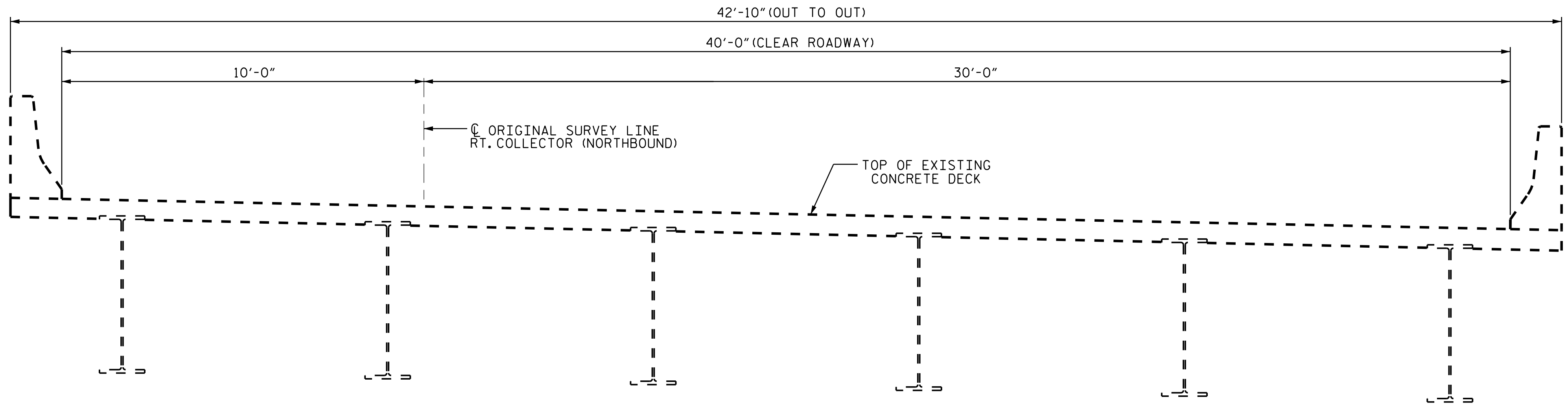
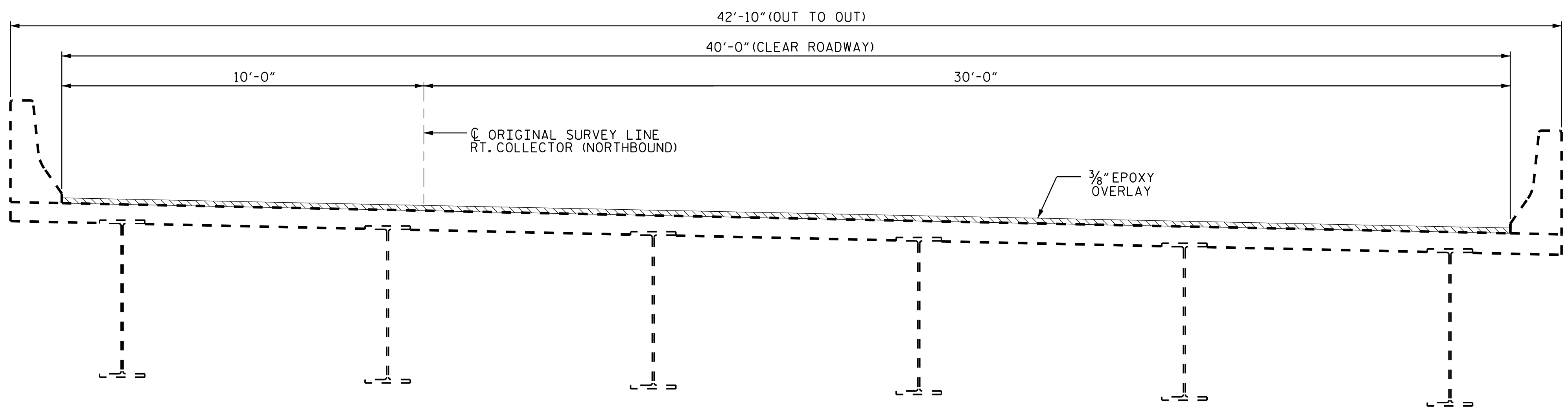
NOTE:

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



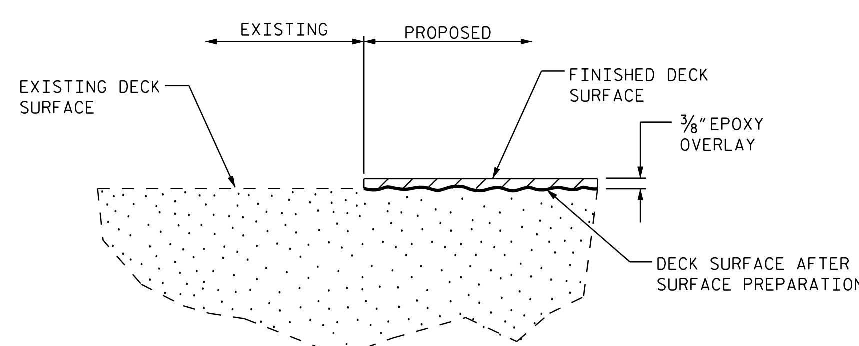
TYPICAL SECTION

(EXISTING BRIDGE 107 NORTHBOUND COLLECTOR SHOWN - BRIDGE 108 SOUTHBOUND COLLECTOR SIMILAR BY ROTATION)



TYPICAL SECTION

(PROPOSED BRIDGE 107 NORTHBOUND COLLECTOR SHOWN - BRIDGE 108 SOUTHBOUND COLLECTOR SIMILAR BY ROTATION)



DETAIL OF EPOXY OVERLAY

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO. 107 & 108

DocuSigned by:

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION & EPOXY CONCRETE DETAILS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : D.V. JOYNER DATE : 2/2016
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14-APR-2016 17:01
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SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	✱1 SQ. FT.	
EPOXY OVERLAY SYSTEM	18,622 SQ. FT.	
BRIDGE JOINT DEMOLITION	84 SQ. FT.	
INCIDENTAL MILLING	110 SQ. YDS.	

NOTE:

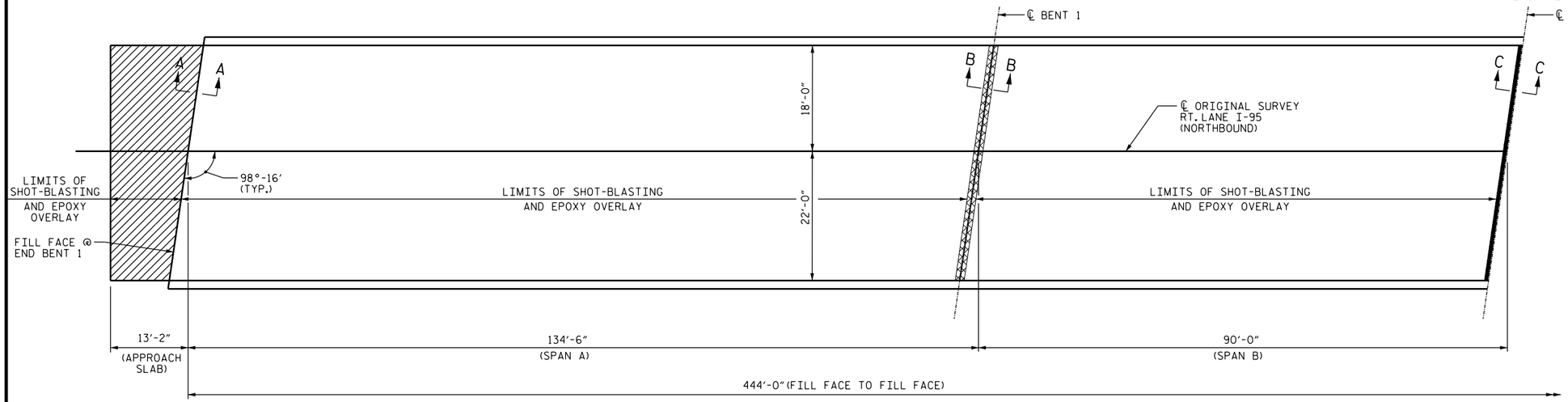
✱ CONCRETE DECK REPAIR FOR EPOXY OVERLAY IS NOT ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE IN CASE UNANTICIPATED REPAIR AREAS ARE ENCOUNTERED.

EPOXY OVERLAY

BRIDGE JOINT DEMOLITION

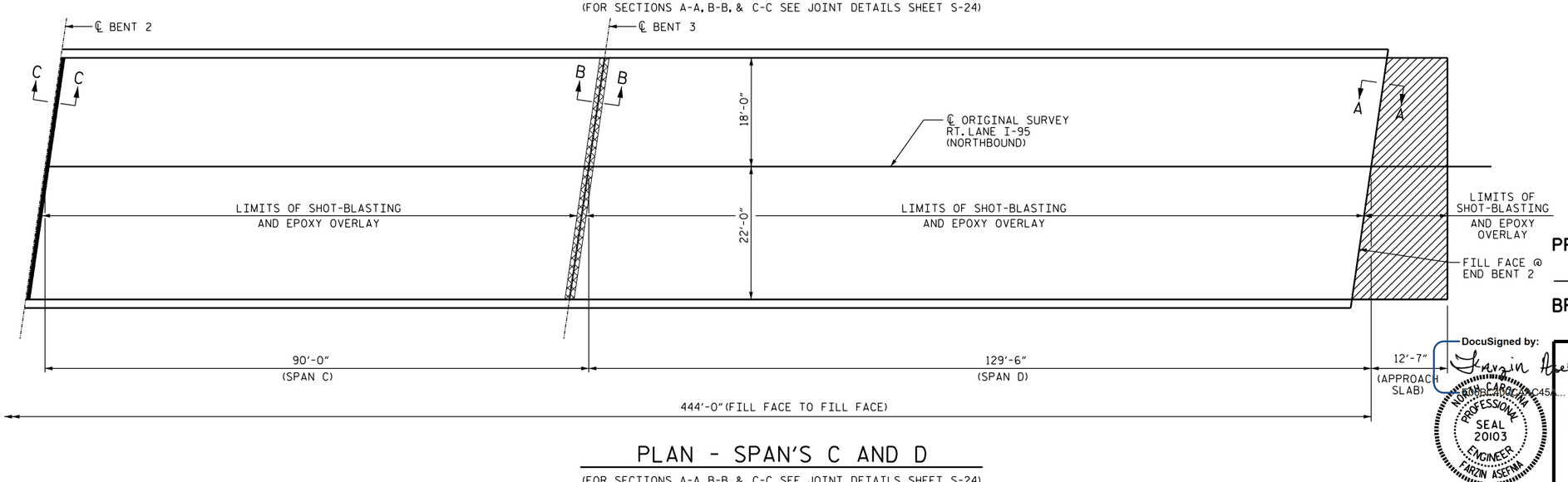
INCIDENTAL MILLING

EXISTING ELASTOMERIC CONCRETE TO REMAIN



PLAN - SPAN'S A AND B

(FOR SECTIONS A-A, B-B, & C-C SEE JOINT DETAILS SHEET S-24)



PLAN - SPAN'S C AND D

(FOR SECTIONS A-A, B-B, & C-C SEE JOINT DETAILS SHEET S-24)

DocuSigned by:
Farzin Asefnia
NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA
4/14/2016

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PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO. 99

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION & EPOXY OVERLAY

(NORTHBOUND)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : D.V. JOYNER DATE : 2/2016

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14-APR-2016 17:01
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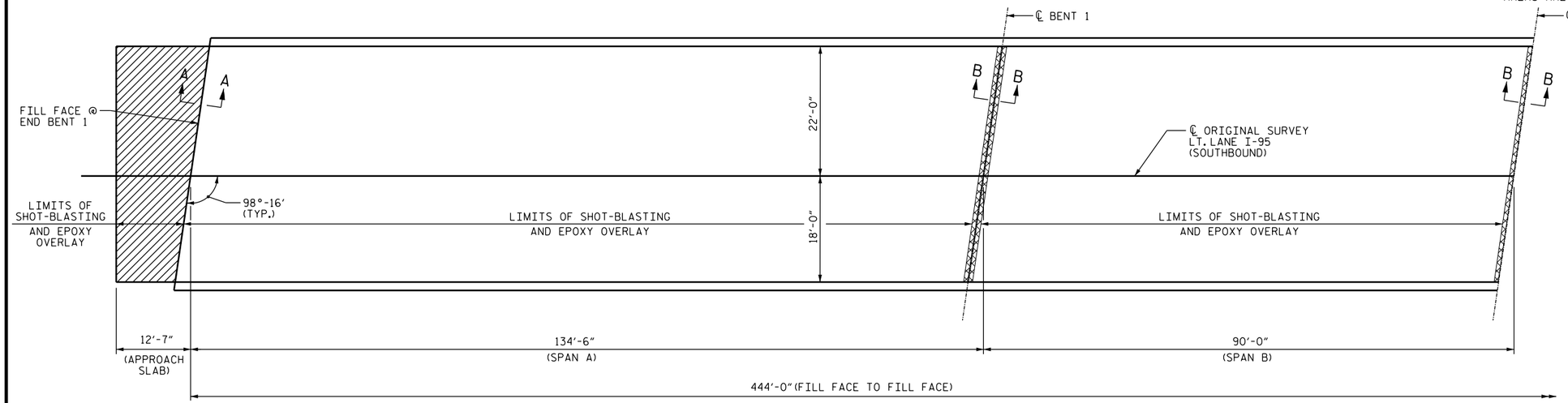
fasefnia

SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	✱1 SQ. FT.	
EPOXY OVERLAY SYSTEM	18,630 SQ. FT.	
BRIDGE JOINT DEMOLITION	124 SQ. FT.	
INCIDENTAL MILLING	110 SQ. YDS.	

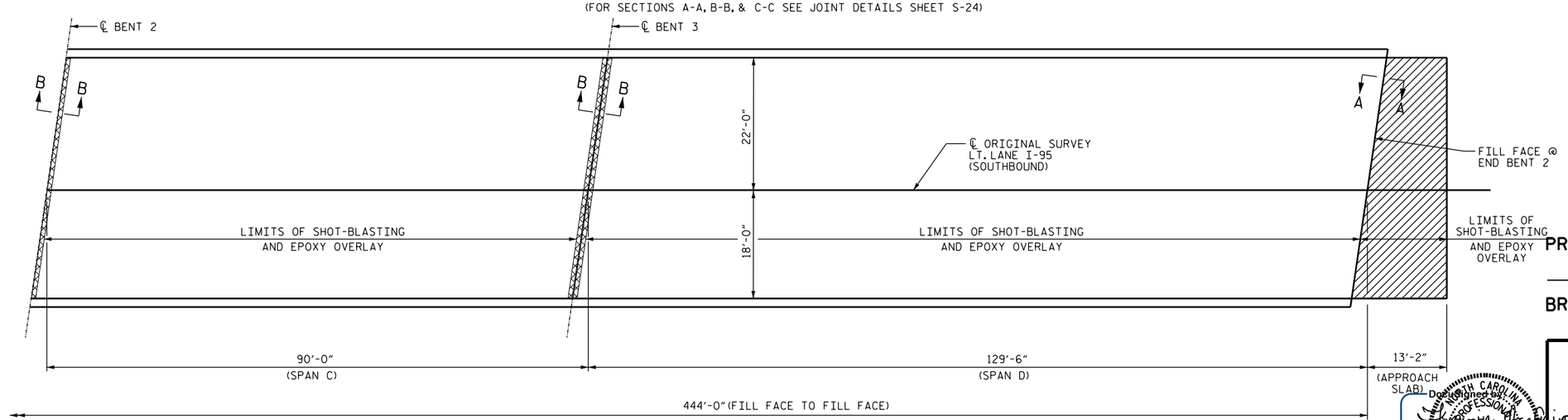
NOTE:

✱ CONCRETE DECK REPAIR FOR EPOXY OVERLAY IS NOT ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE IN CASE UNANTICIPATED REPAIR AREAS ARE ENCOUNTERED.



PLAN - SPAN'S A AND B

(FOR SECTIONS A-A, B-B, & C-C SEE JOINT DETAILS SHEET S-24)



PLAN - SPAN'S C AND D

(FOR SECTIONS A-A, B-B, & C-C SEE JOINT DETAILS SHEET S-24)

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO. 103

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION & EPOXY OVERLAY

(SOUTHBOUND)

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

Documents not considered final for bidding or construction purposes.

4/14/2016

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : D.V. JOYNER DATE : 2/2016
CHECKED BY : W.C. SMITH DATE : 2/2016

14-APR-2016 17:01
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SUMMARY OF QUANTITIES

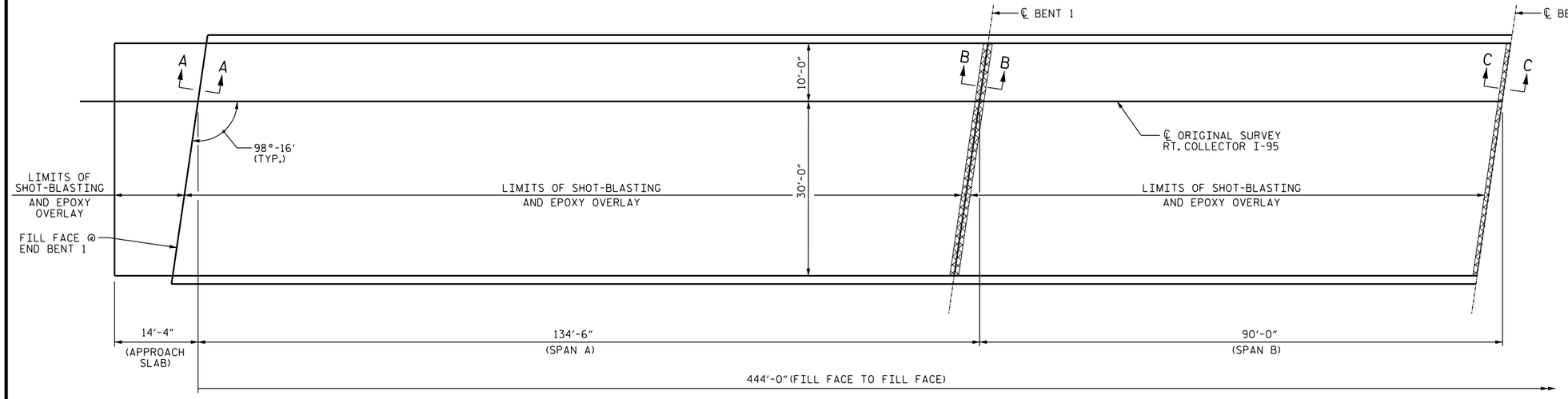
	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	*1 SQ. FT.	
EPOXY OVERLAY SYSTEM	18,616 SQ. FT.	
BRIDGE JOINT DEMOLITION	136 SQ. FT.	

EPOXY OVERLAY

BRIDGE JOINT DEMOLITION

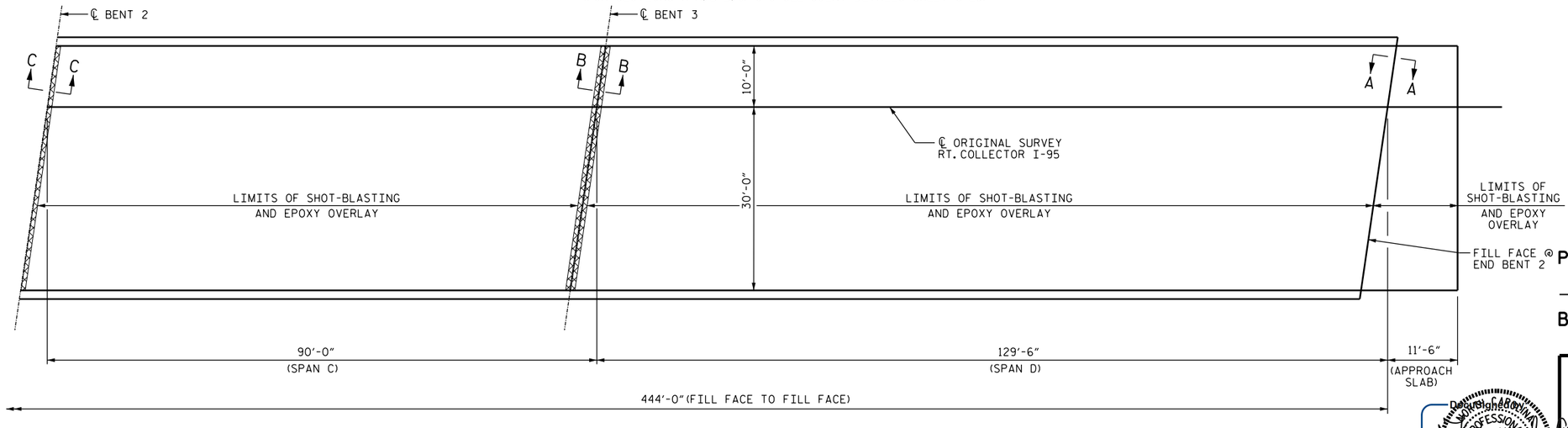
NOTE:

* CONCRETE DECK REPAIR FOR EPOXY OVERLAY IS NOT ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE IN CASE UNANTICIPATED REPAIR AREAS ARE ENCOUNTERED.



PLAN - SPAN'S A AND B

(FOR SECTIONS A-A, B-B, & C-C SEE JOINT DETAILS SHEET S-25)



PLAN - SPAN'S C AND D

(FOR SECTIONS A-A, B-B, & C-C SEE JOINT DETAILS SHEET S-25)

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO. 107

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION & EPOXY OVERLAY

(NORTHBOUND)

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

Digitally signed by Farzin Asefnia
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4/14/2016

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			37

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SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	* 1 SQ. FT	
EPOXY OVERLAY SYSTEM	18,616 SQ. FT.	
BRIDGE JOINT DEMOLITION	136 SQ. FT.	
INCIDENTAL MILLING	110 SQ. YDS.	

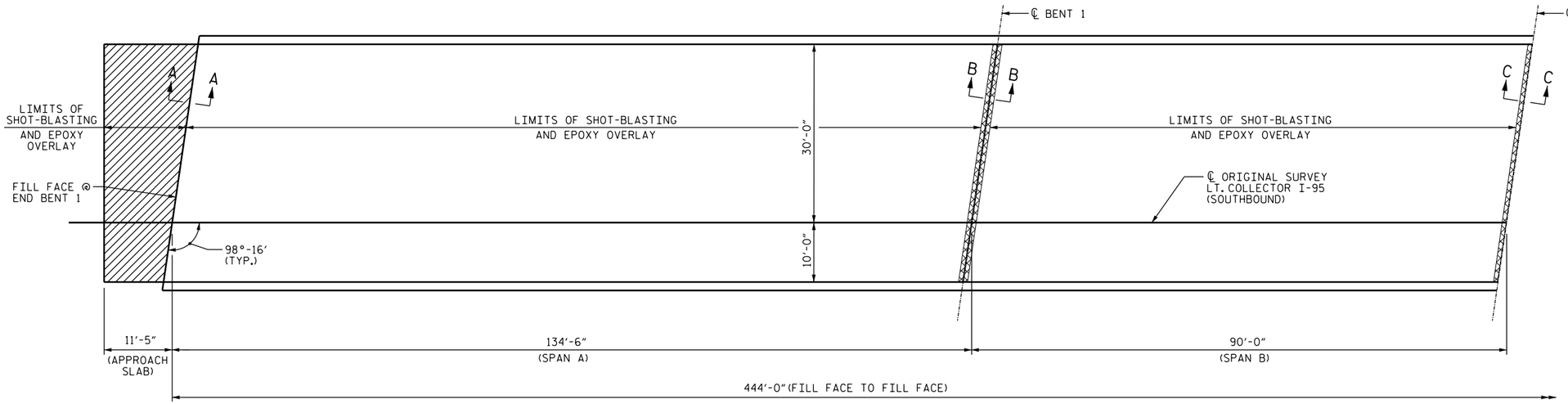
EPOXY OVERLAY

BRIDGE JOINT DEMOLITION

INCIDENTAL MILLING

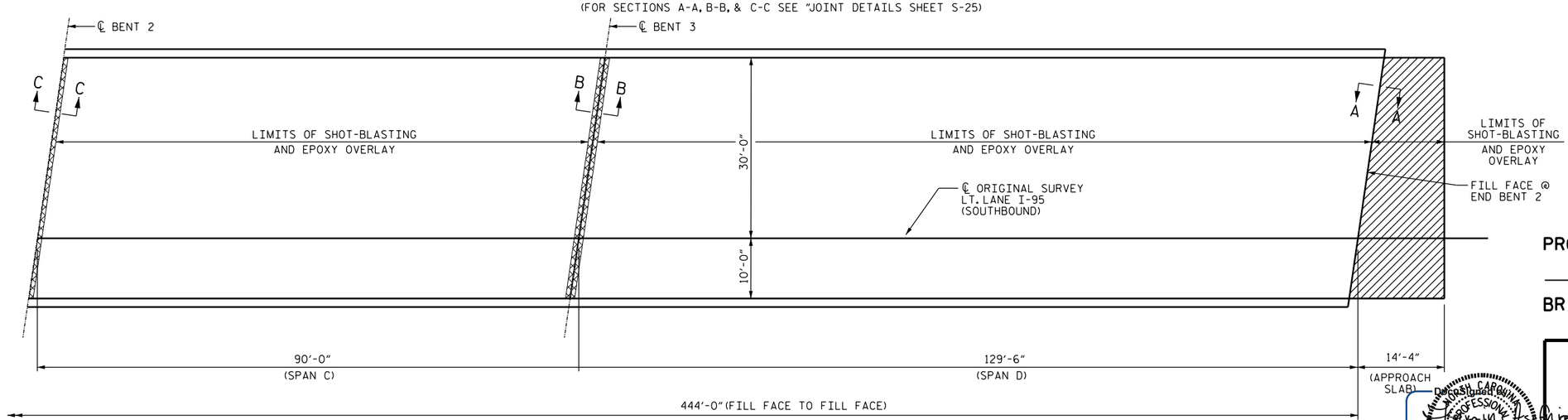
NOTE:

* CONCRETE DECK REPAIR FOR EPOXY OVERLAY IS NOT ANTICIPATED, TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE IN CASE UNANTICIPATED REPAIR AREAS ARE ENCOUNTERED.



PLAN - SPAN'S A AND B

(FOR SECTIONS A-A, B-B, & C-C SEE "JOINT DETAILS SHEET S-25)



PLAN - SPAN'S C AND D

(FOR SECTIONS A-A, B-B, & C-C SEE "JOINT DETAILS SHEET S-25)

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO. 108

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION & EPOXY OVERLAY

(SOUTHBOUND)

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 20103 FARZIN ASEFNIA

4/14/2016

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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			37

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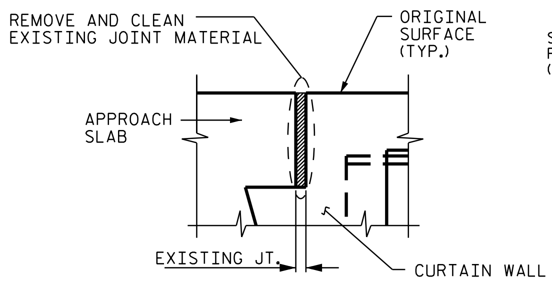
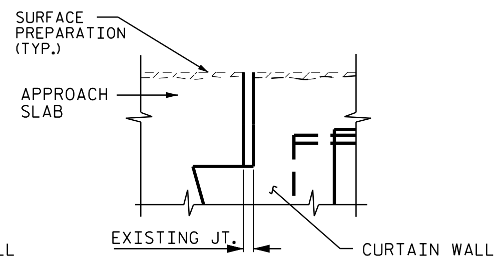
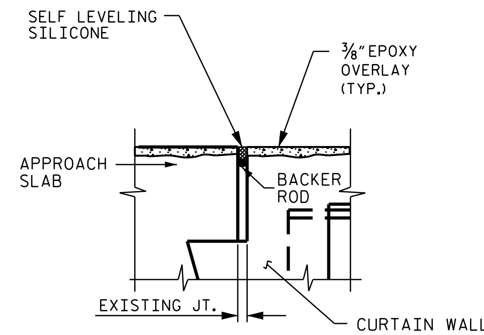


EXISTING JOINT



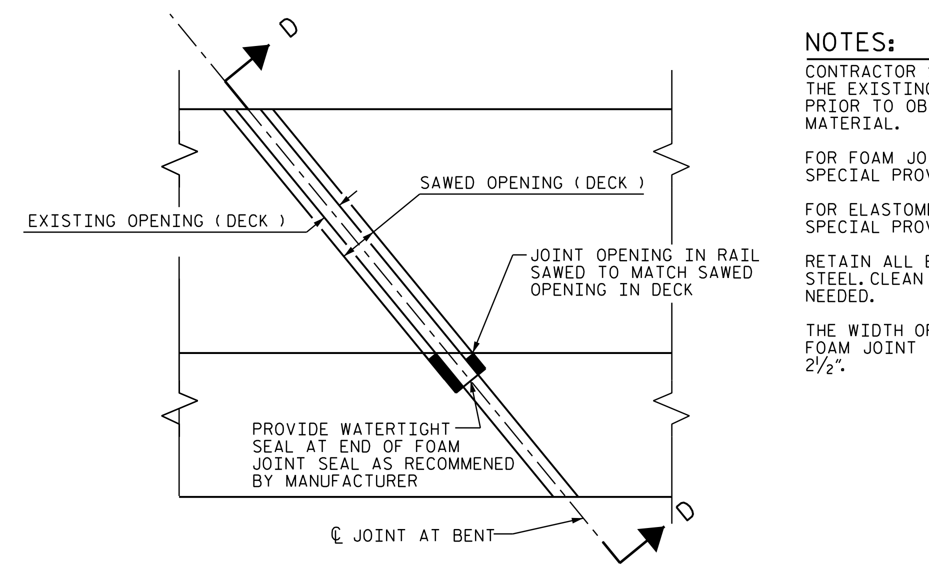
MINIMUM EXISTING JOINT DEMOLITION



PROPOSED JOINT

JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION A-A



PLAN

NOTES:

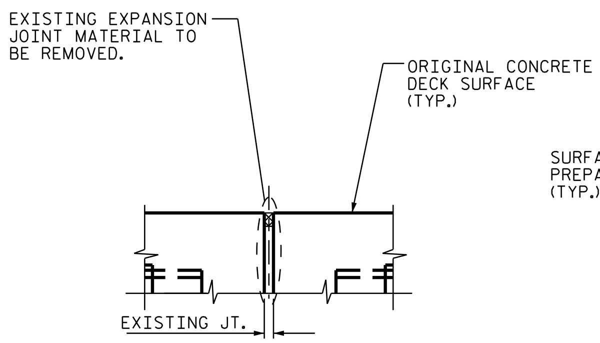
CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

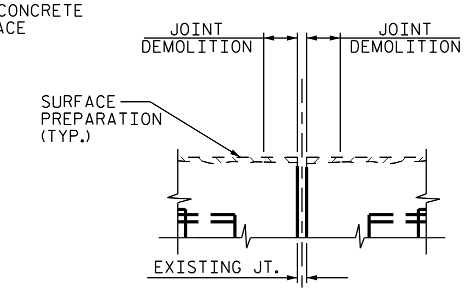
FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.

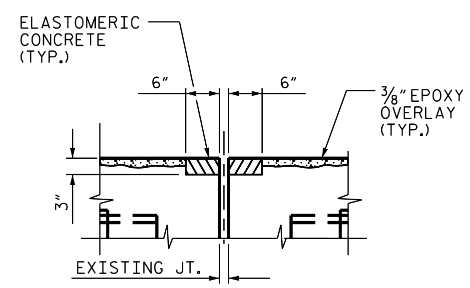
THE WIDTH OF THE UNCOMPRESSED FOAM JOINT MATERIAL SHALL BE 2½".



EXISTING JOINT



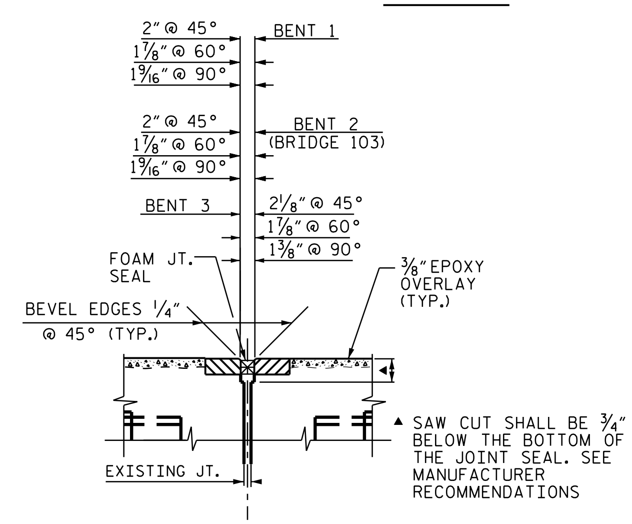
MINIMUM EXISTING JOINT DEMOLITION



PROPOSED JOINT PRE-SAWED DIMENSIONS

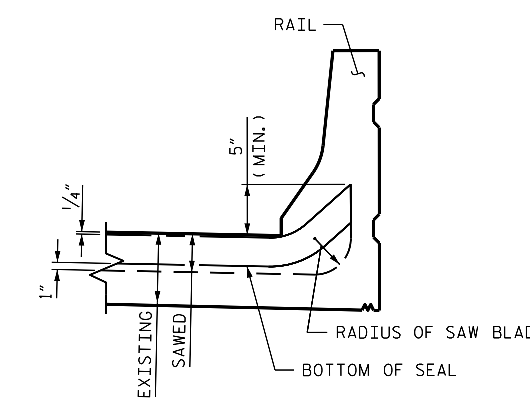
JOINT INSTALLATION SEQUENCE AT BENTS

SECTION B-B

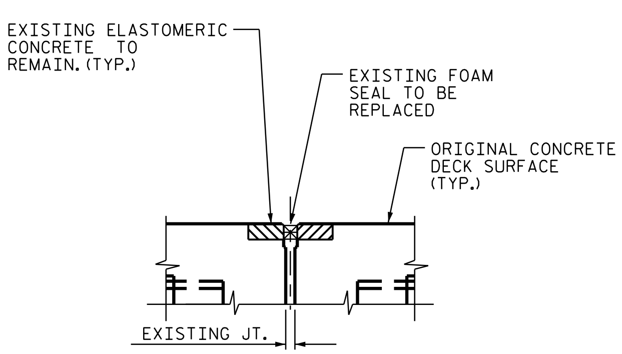


PROPOSED FOAM JOINT SEAL EXPANSION

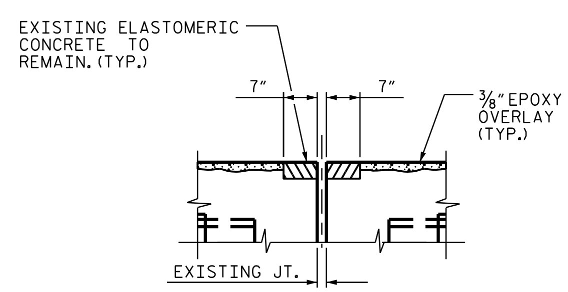
BENT #1 (BRIDGES 99 & 103)
BENT #2 (BRIDGE 103)
BENT #3 (BRIDGES 99 & 103)



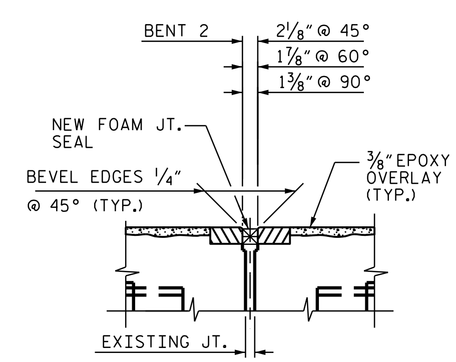
SECTION D-D



EXISTING JOINT



EXISTING FOAM JOINT SEAL REMOVED



PROPOSED FOAM JOINT SEAL INSTALLATION

BENT #2 (BRIDGE 99)

JOINT INSTALLATION SEQUENCE AT BENT

SECTION C-C

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO.: 99 & 103

DocuSigned by: Farzin Asefnia

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
JOINT DETAILS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-24
1			3					TOTAL SHEETS
2			4					37

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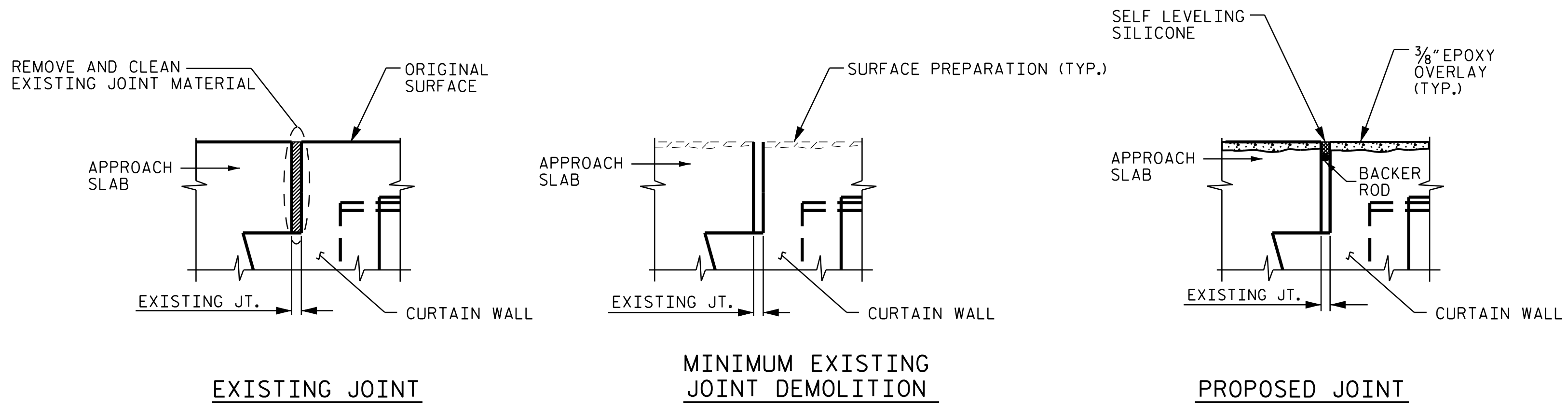
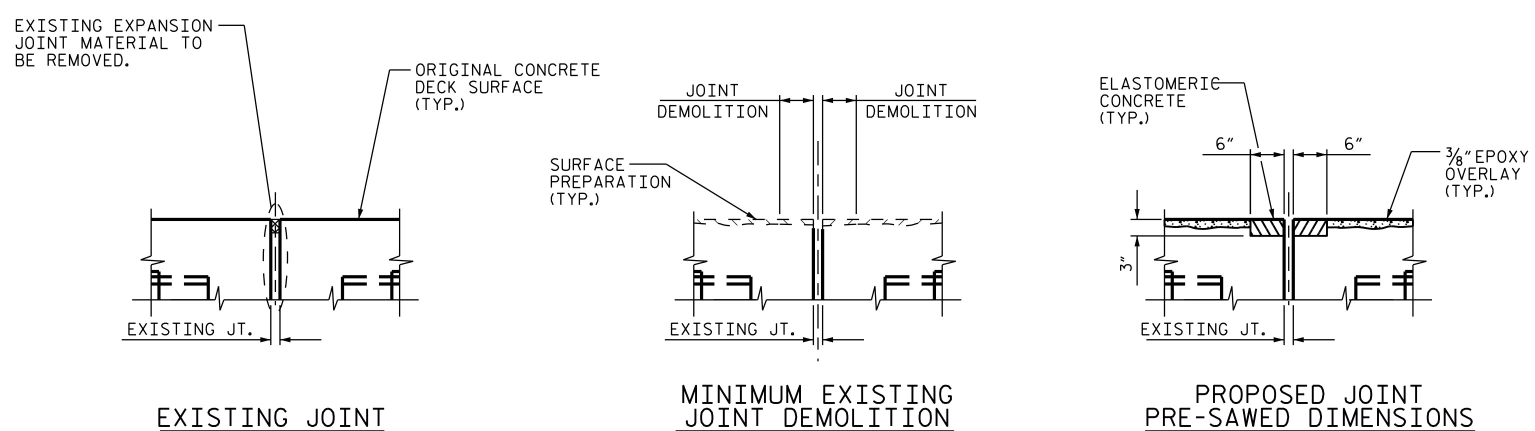


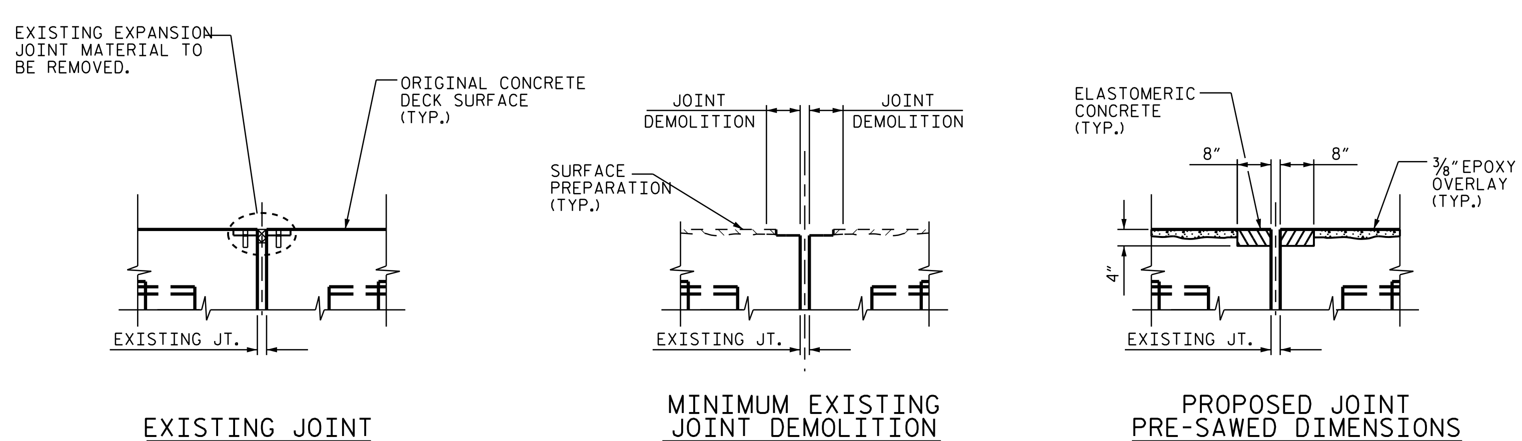
JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION A-A



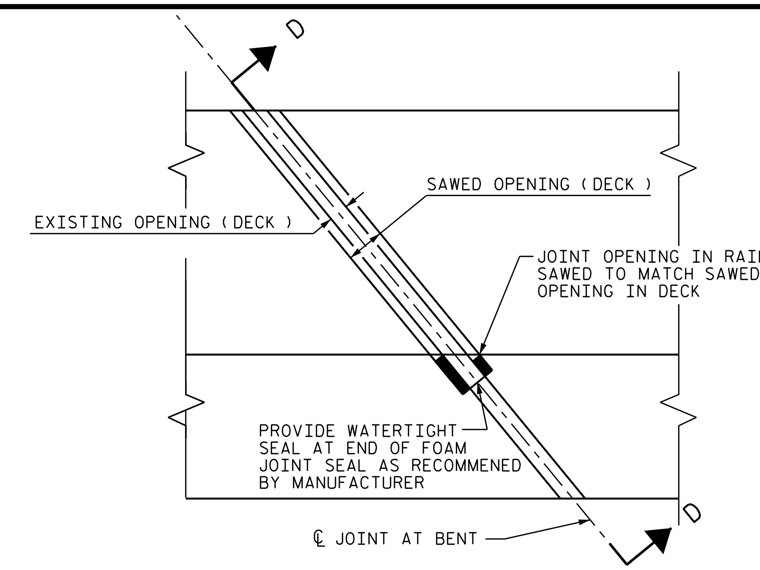
JOINT INSTALLATION SEQUENCE AT BENT #1 & #3

SECTION B-B



JOINT INSTALLATION SEQUENCE AT BENT #2

SECTION C-C



PLAN

NOTES:

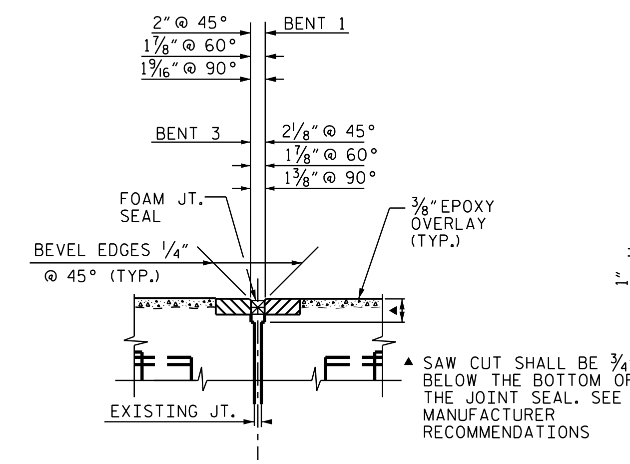
CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

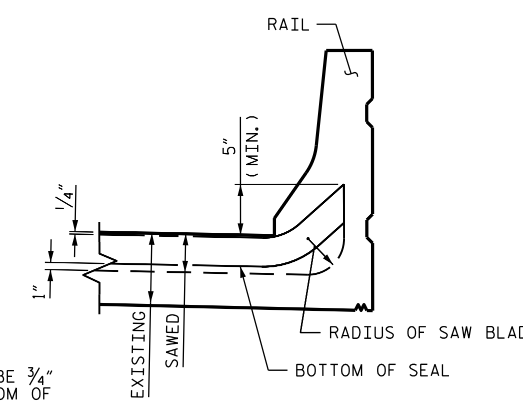
RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.

THE WIDTH OF THE UNCOMPRESSED FOAM JOINT MATERIAL SHALL BE 2½".

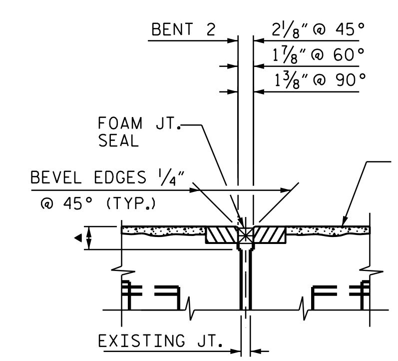


PROPOSED FOAM JOINT SEAL EXPANSION

BENT #1 (BRIDGES 107 & 108)
BENT #3 (BRIDGES 107 & 108)



SECTION D-D



PROPOSED FOAM JOINT SEAL EXPANSION

BENT #2 (BRIDGES 107 & 108)

▲ SAW CUT SHALL BE ¾" BELOW THE BOTTOM OF THE JOINT SEAL. SEE MANUFACTURER RECOMMENDATIONS

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO.: 107 & 108

DocuSigned by:

SEAL 20103 NORTH CAROLINA PROFESSIONAL ENGINEER FARZIN ASEFNIA

4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

JOINT DETAILS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-25
1			3					TOTAL SHEETS
2			4					37

DRAWN BY : D.V. JOYNER DATE : 1/2016
CHECKED BY : F. ASEFNIA DATE : 1/2016

14-APR-2016 17:01
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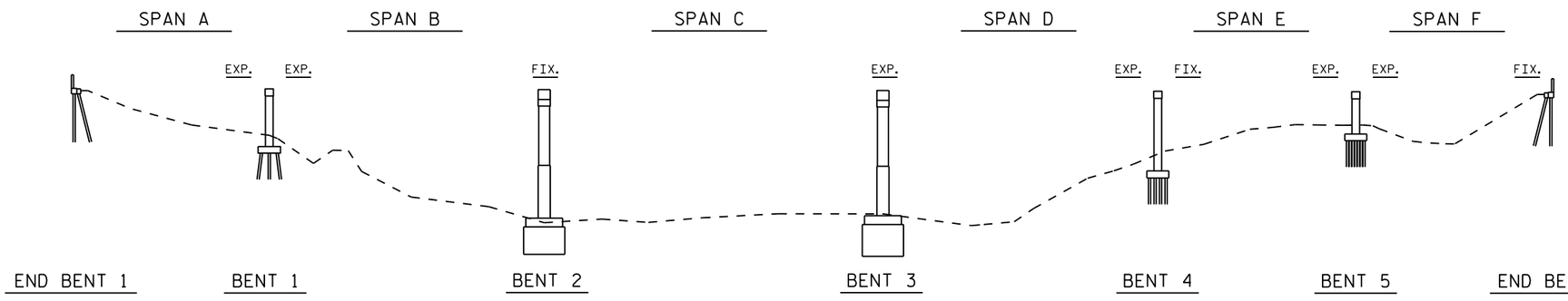
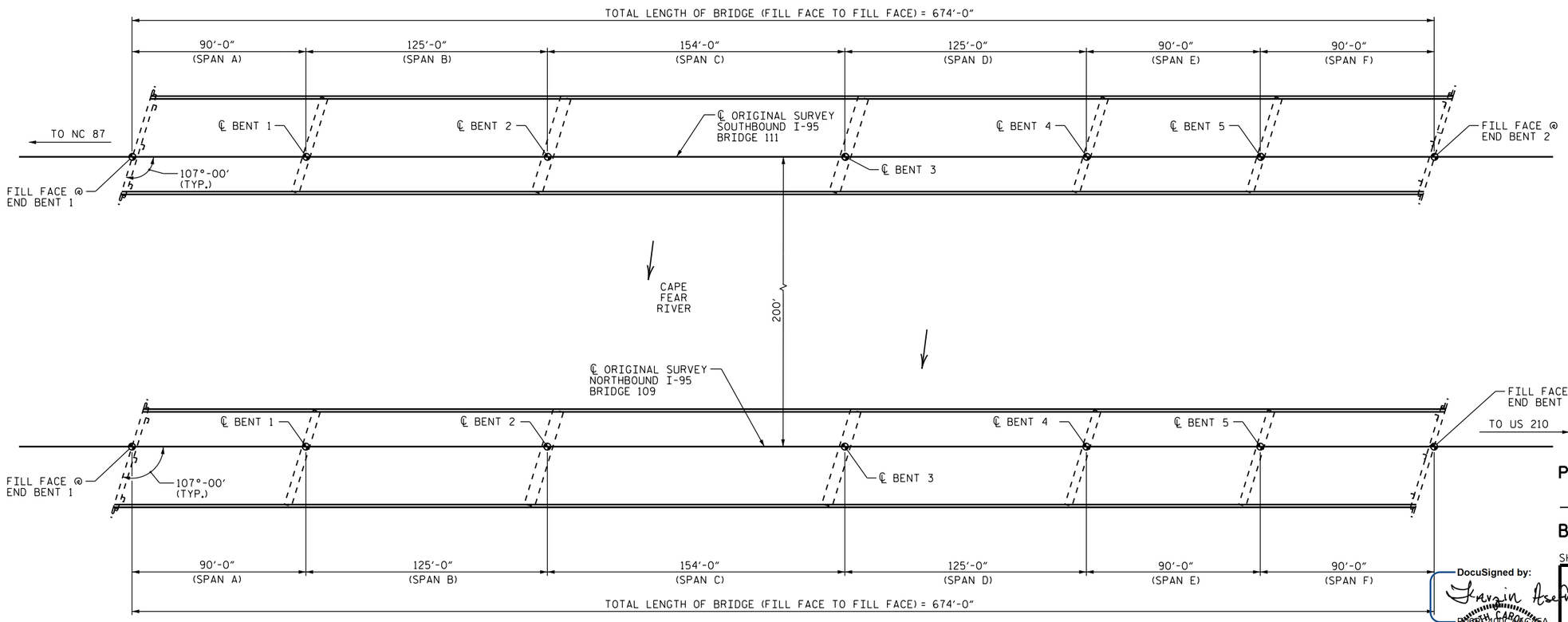


ELEVATION

(SECTION ALONG ℄ ROADWAY)



PLAN

(COLUMNS AND FOOTINGS NOT SHOWN IN PLAN VIEW FOR CLARITY)

DocuSigned by:
Farzin Aseffa
NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFFA
4/14/2016

I hereby cerify that this structure was rehabilitated according to these plans or as noted therein.

Resident Engineer Date

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO.: 109 & 111

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING BRIDGE OVER THE CAPE REAR RIVER ON I-95 BETWEEN NC 87 AND US 210

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-26
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : D.V. JOYNER DATE : 2/2016
CHECKED BY : W. SMITH DATE : 2/2016

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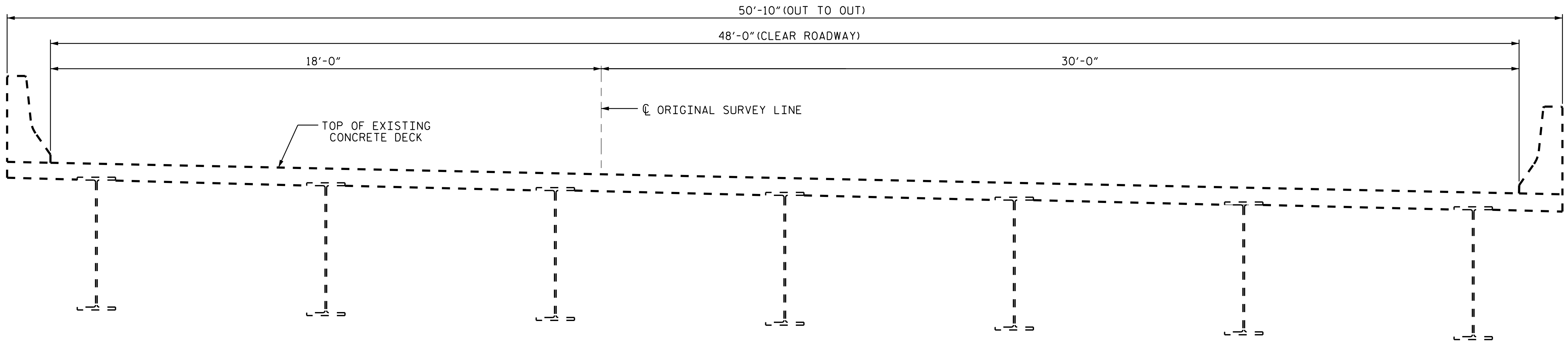
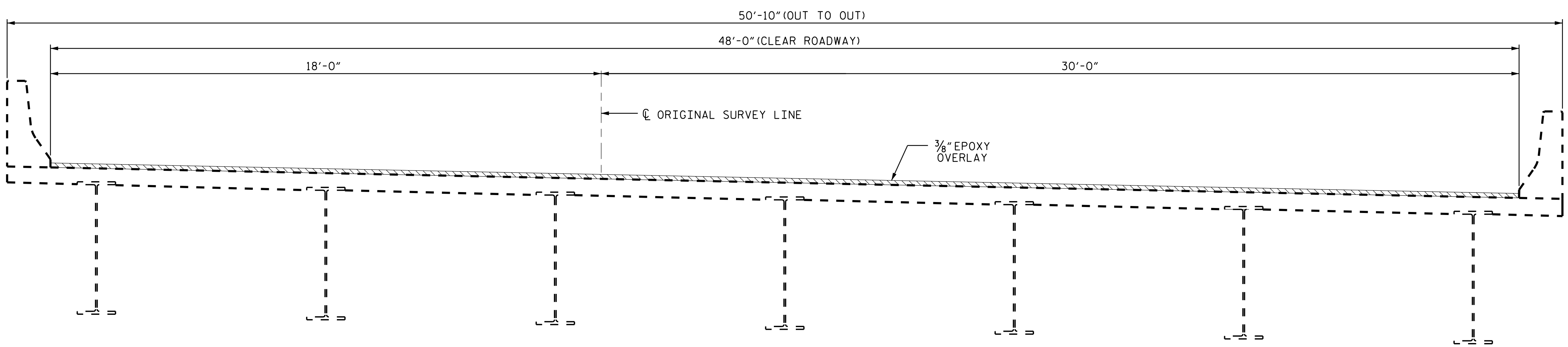
fasefnla



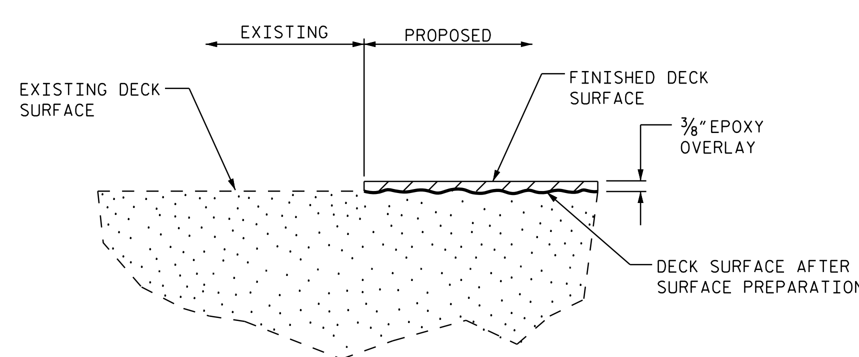
TYPICAL SECTION

(BRIDGE 109 NORTHBOUND LANES SHOWN - BRIDGE 111 SOUTHBOUND LANES SIMILAR BY ROTATION)



TYPICAL SECTION

(BRIDGE 109 NORTHBOUND LANES SHOWN - BRIDGE 111 SOUTHBOUND LANES SIMILAR BY ROTATION)



DETAIL OF EPOXY OVERLAY

PROJECT NO. I-5731
CUMBERLAND COUNTY
BRIDGE NO. 109 & 111

DocuSigned by:
NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA
4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
TYPICAL SECTION & EPOXY CONCRETE DETAILS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-27
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : D.V. JOYNER DATE : 2/2016
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14-APR-2016 17:01
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SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	✱1 SQ. FT.	
EPOXY OVERLAY SYSTEM	33,687 SQ. FT.	
BRIDGE JOINT DEMOLITION	276 SQ. FT.	
INCIDENTAL MILLING	179 SQ. YDS.	

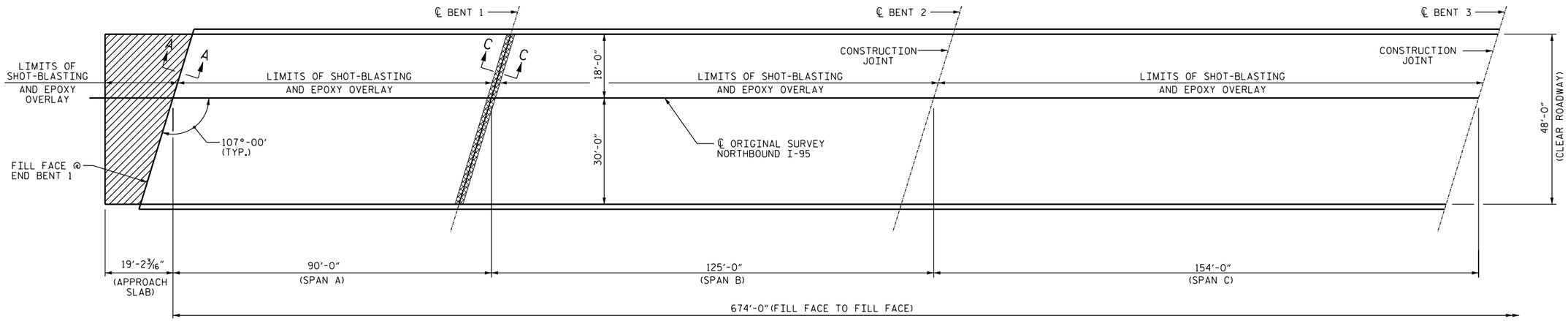
EPOXY OVERLAY

BRIDGE JOINT DEMOLITION

INCIDENTAL MILLING

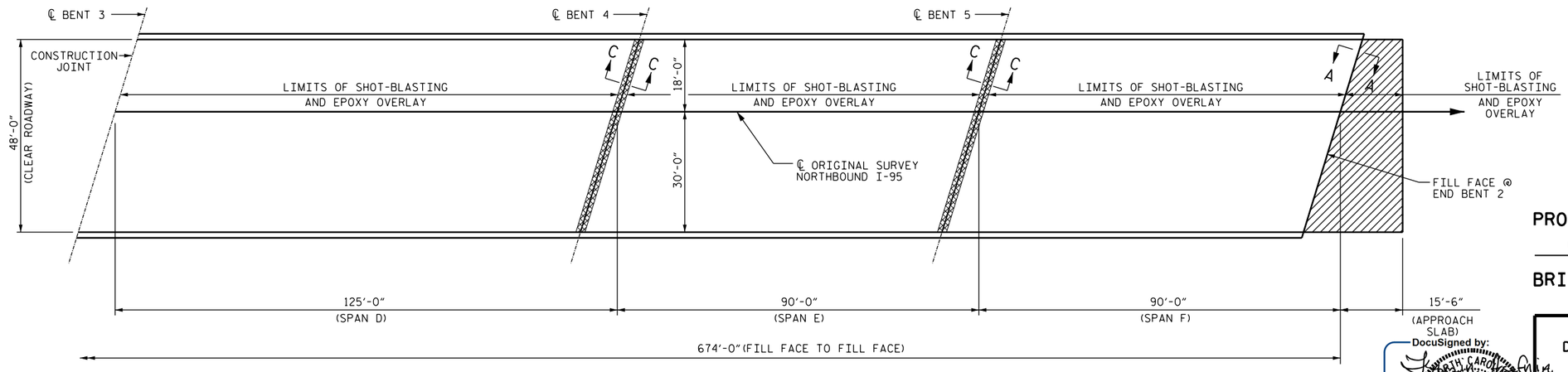
NOTE:

✱ CONCRETE DECK REPAIR FOR EPOXY OVERLAY IS NOT ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE IN CASE UNANTICIPATED REPAIR AREAS ARE ENCOUNTERED.



PLAN - SPAN'S A, B, AND C

(FOR SECTIONS A-A, B-B, & C-C, SEE JOINT DETAILS SHEET S-30)



PLAN - SPAN'S D, E, AND F

(FOR SECTIONS A-A, B-B, & C-C, SEE JOINT DETAILS SHEET S-30)

PROJECT NO. I-5731

CUMBERLAND **COUNTY**

BRIDGE NO. 109

DocuSigned by:
FB6BC400CAAC45A...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION & EPOXY OVERLAY

(NORTHBOUND)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-28
1			3			TOTAL SHEETS
2			4			37

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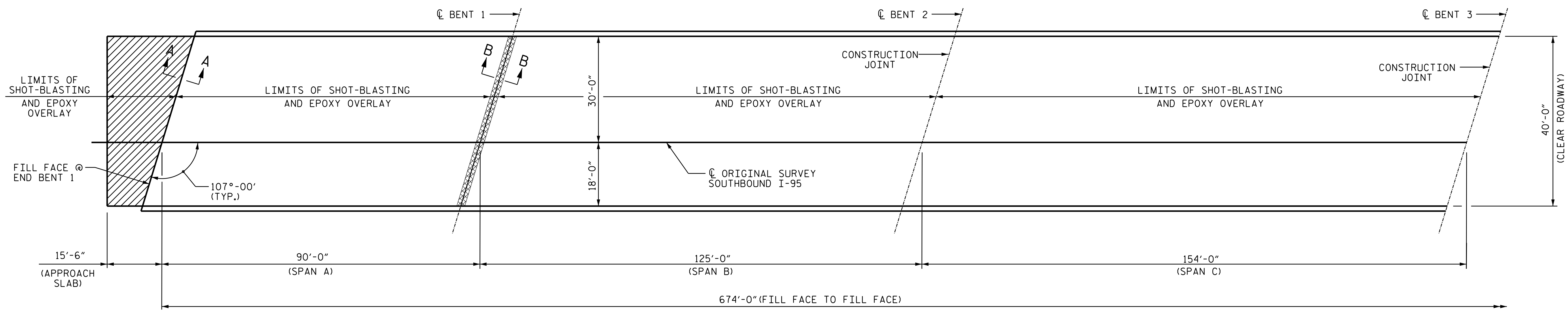
| EPOXY OVERLAY |
| BRIDGE JOINT DEMOLITION |
| INCIDENTAL MILLING |

SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	*1 SQ. FT.	
EPOXY OVERLAY SYSTEM	28,154 SQ. FT.	
BRIDGE JOINT DEMOLITION	56 SQ. FT.	
INCIDENTAL MILLING	148 SQ. YDS.	

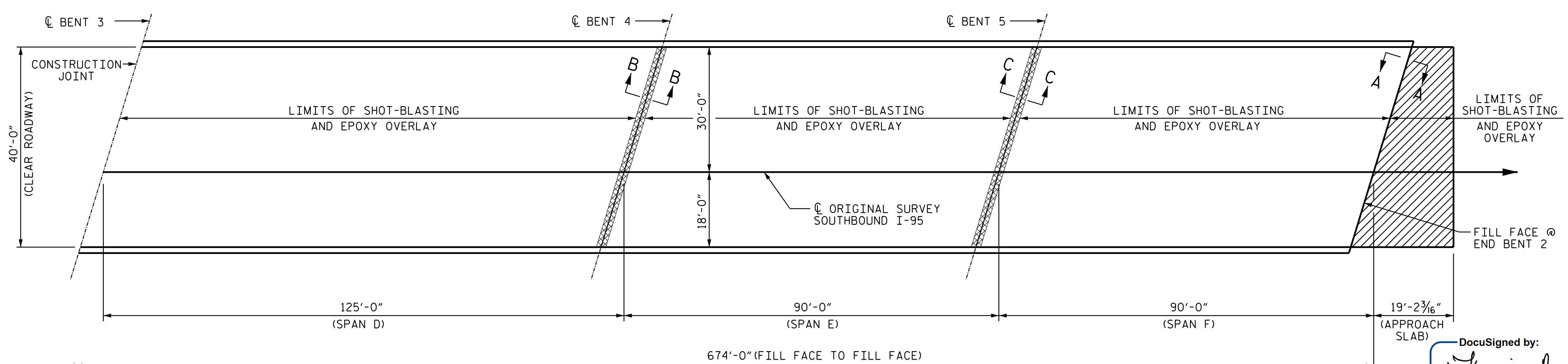
NOTE:

* CONCRETE DECK REPAIR FOR EPOXY OVERLAY IS NOT ANTICIPATED, TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE IN CASE UNANTICIPATED REPAIR AREAS ARE ENCOUNTERED.



PLAN - SPAN'S A, B, AND C

(FOR SECTIONS A-A, B-B, & C-C, SEE JOINT DETAILS SHEET S-30)



PLAN - SPAN'S D, E, AND F

(FOR SECTIONS A-A, B-B, & C-C, SEE JOINT DETAILS SHEET S-30)

PROJECT NO. I-5731
CUMBERLAND COUNTY
BRIDGE NO. 111

DocuSigned by:
NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA
4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION & EPOXY OVERLAY
(SOUTHBOUND)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : D.V. JOYNER DATE : 2/2016
CHECKED BY : W.C. SMITH DATE : 2/2016

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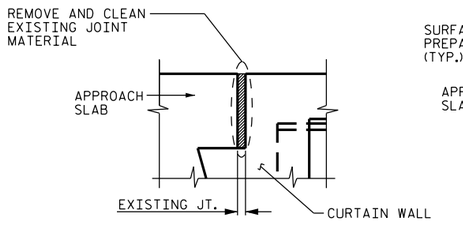
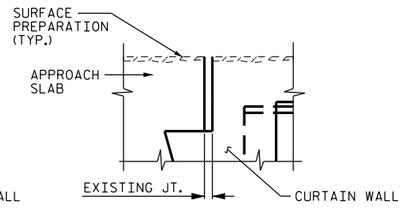
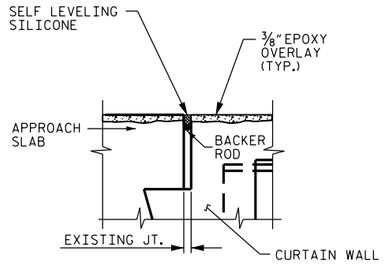


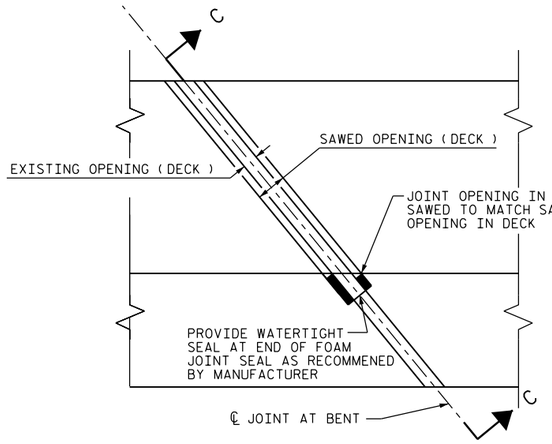
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION



PROPOSED JOINT



PLAN

NOTES:

CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

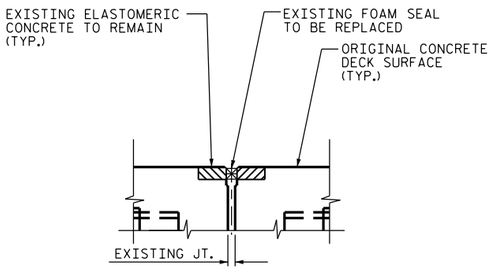
FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.

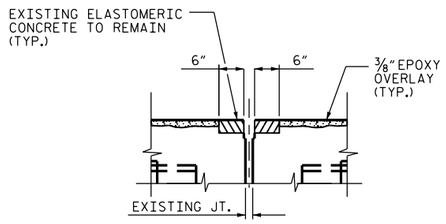
THE WIDTH OF THE UNCOMPRESSED FOAM JOINT MATERIAL SHALL BE 3" FOR BENT 1 OF BRIDGE 111, 2 3/4" FOR BENT 4 OF BOTH BRIDGES AND 2 1/2" FOR BENTS 1 OF BRIDGE 109 AND BENT 5 OF BOTH BRIDGES.

JOINT INSTALLATION SEQUENCE AT END BENTS

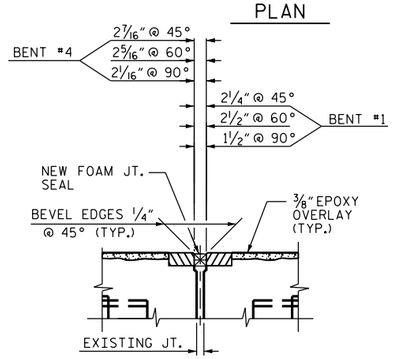
SECTION A-A



EXISTING JOINT

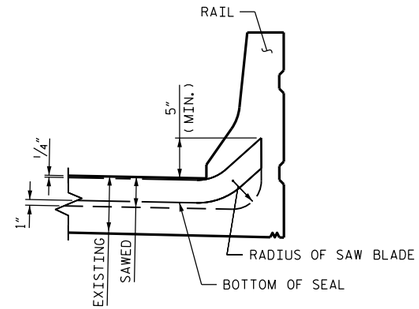


EXISTING FOAM JOINT SEAL REMOVED



PROPOSED FOAM JOINT SEAL INSTALLATION

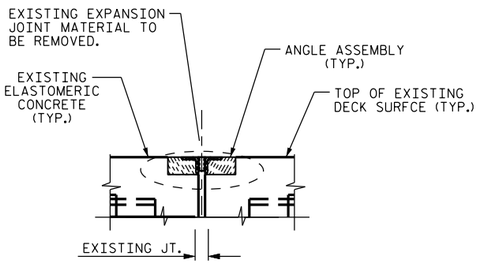
BENT #1 & #4 (BRIDGE 111)



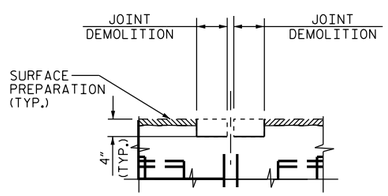
SECTION C-C

JOINT INSTALLATION SEQUENCE AT BENTS

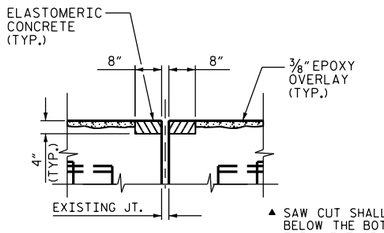
SECTION B-B



EXISTING JOINT

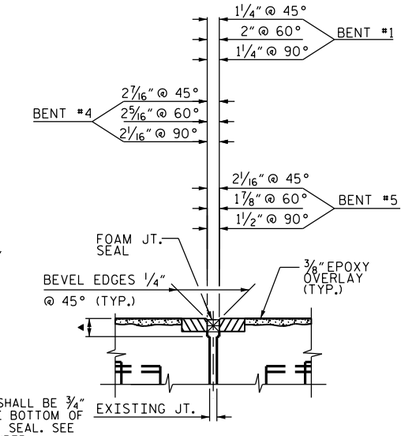


MINIMUM EXISTING JOINT DEMOLITION



PROPOSED JOINT

▲ SAW CUT SHALL BE 3/4" BELOW THE BOTTOM OF THE JOINT SEAL. SEE MANUFACTURER RECOMMENDATIONS



PROPOSED FOAM JOINT SEAL EXPANSION

BENT #1, #4 & #5 (BRIDGE 109)
BENT #5 (BRIDGE 111)

JOINT INSTALLATION SEQUENCE AT BENTS

SECTION C-C

DocuSigned by:
Farzin Asefnia
4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

PROJECT NO. I-5731
CUMBERLAND COUNTY
BRIDGE NO.: 109 & 111

SUPERSTRUCTURE

JOINT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-30
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : D.V. JOYNER DATE : 1/2016
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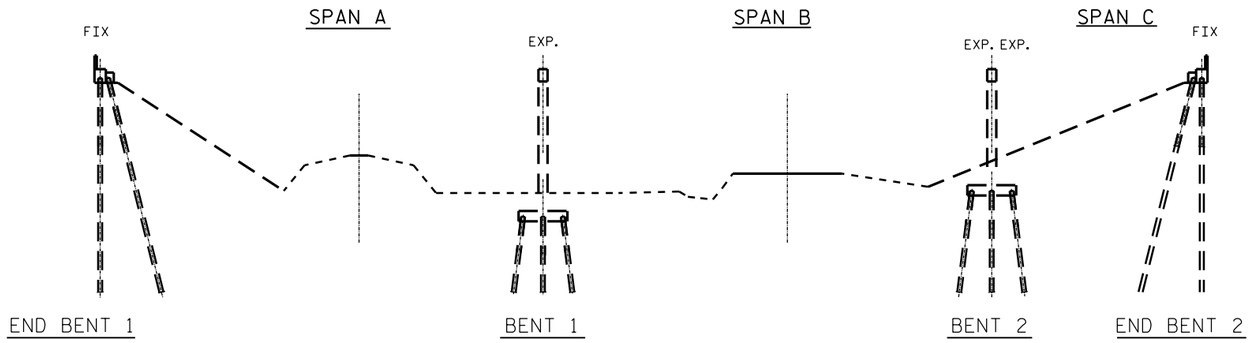
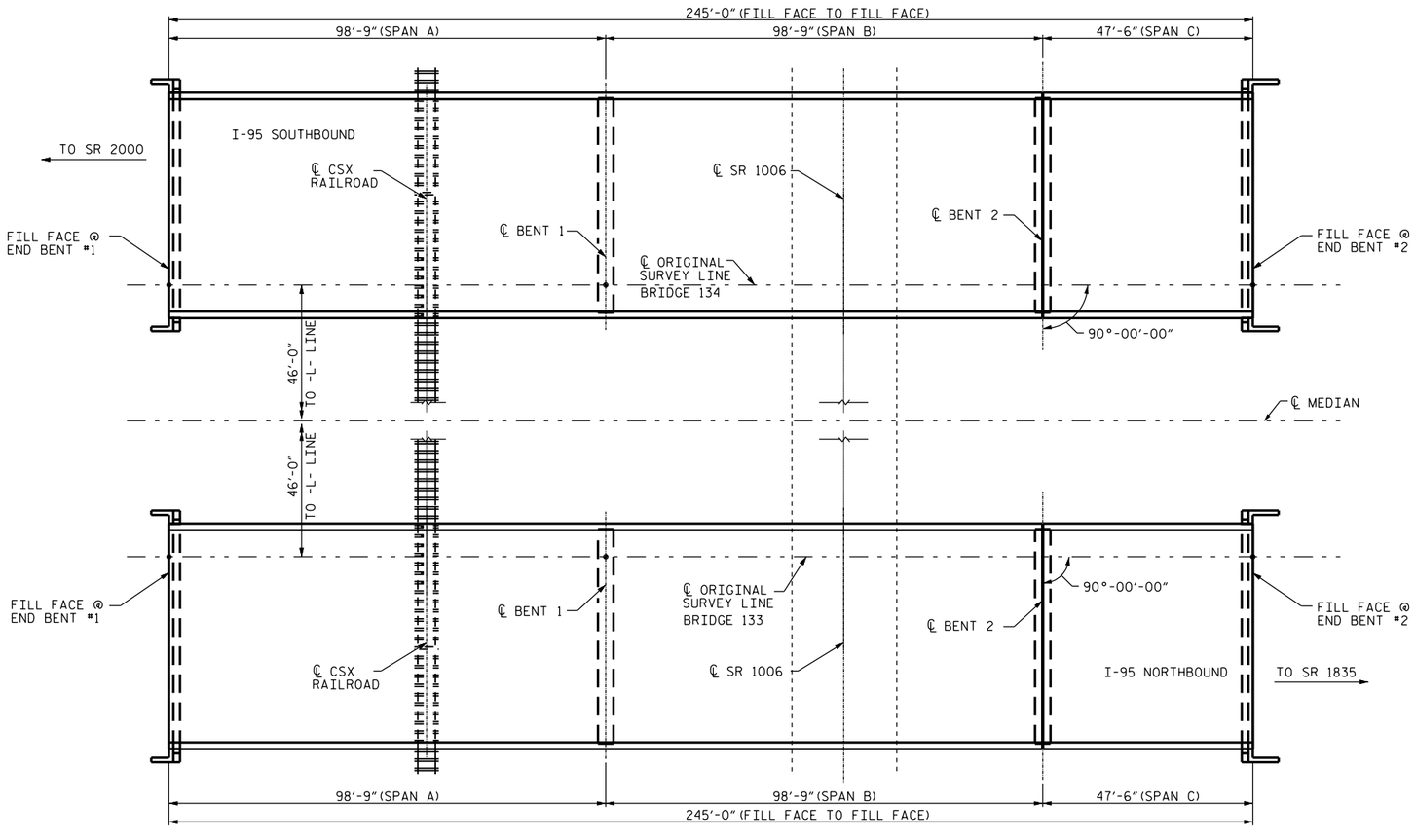


ELEVATION
(SECTION ALONG ℄ ROADWAY)



PLAN
(COLUMNS AND FOOTINGS NOT SHOWN FOR CLARITY)

I hereby cerify that this structure was rehabilitated according to these plans or as noted therein.

Resident Engineer Date

4/14/2016

DocuSigned by:
Farin Asefnia
E...C48A...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARIN ASEFNIA

PROJECT NO. I-5731
CUMBERLAND COUNTY
BRIDGE NO. 133 & 134

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGES OVER SR 1006 & CSX RR ON I-95 BETWEEN NC 24 AND NC 53

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-31
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : M. WELDON DATE : 10/14
CHECKED BY : F. ASEFINIA DATE : 10/14

14-APR-2016 17:01
R:\Structures\DGN\405_001_I5731_SMU_S31_GD 133 134.DGN
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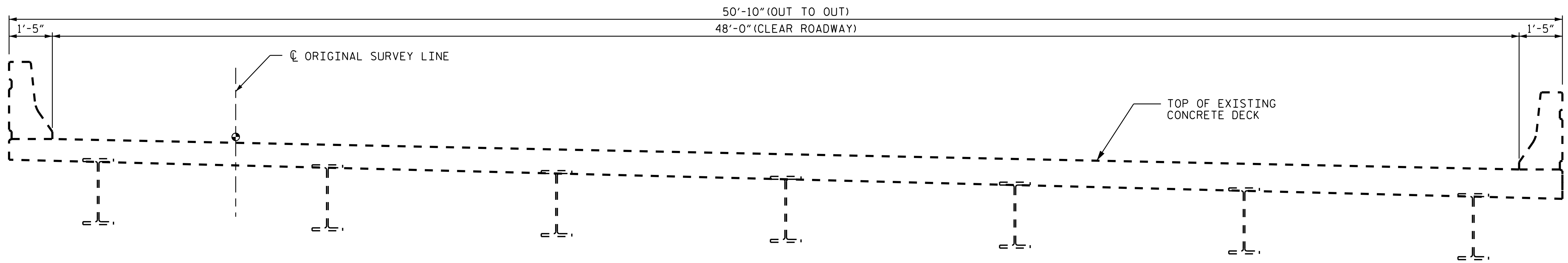
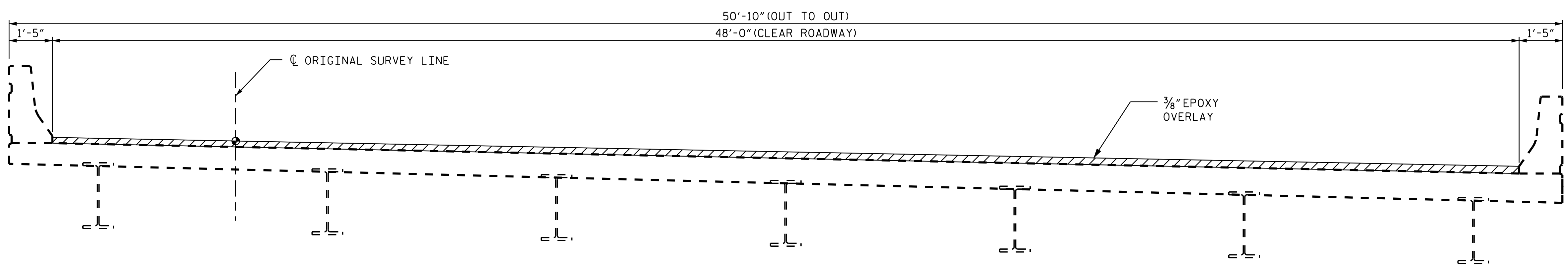
NOTE:

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



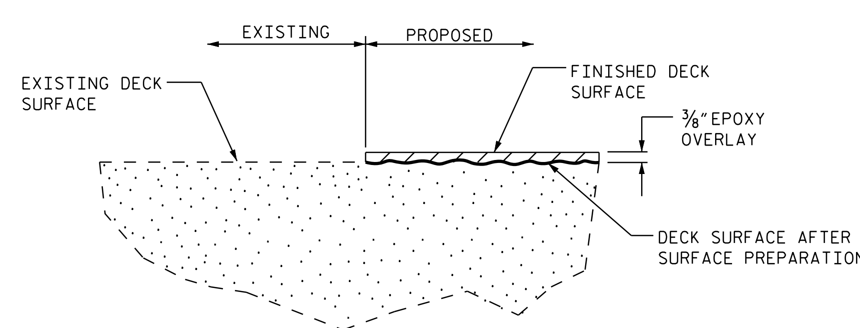
TYPICAL SECTION

(EXISTING BRIDGE 133 NORTHBOUND LANES SHOWN)



TYPICAL SECTION

(PROPOSED EPOXY OVERLAY)



DETAIL OF EPOXY OVERLAY

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO. 133

DocuSigned by:

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

4/14/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION & EPOXY OVERLAY DETAILS

REVISIONS							SHEET NO.
NO.	BY:	DATE:		NO.	BY:	DATE:	S-32
1				3			TOTAL SHEETS
2				4			37

DRAWN BY : M. WELDON DATE : 01/2016
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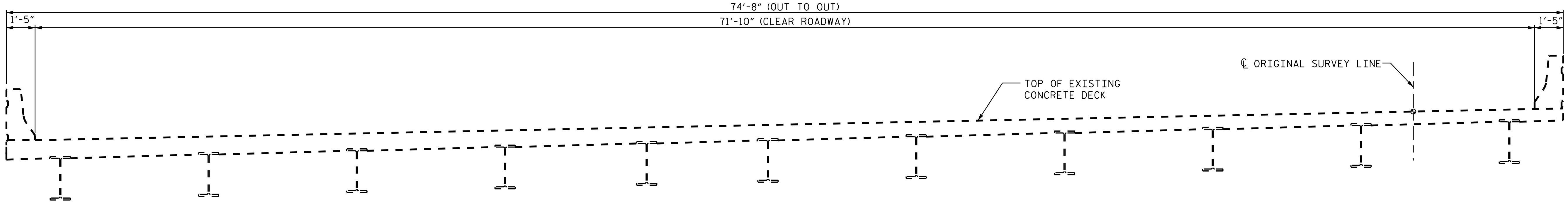
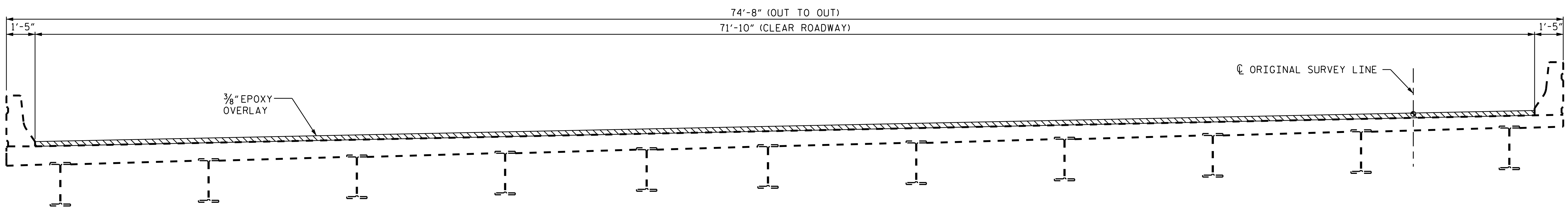
NOTE:

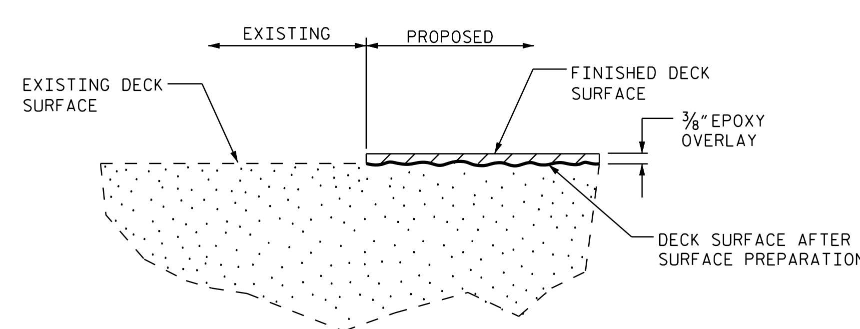
SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF EPOXY OVERLAY SYSTEM AND SURFACE PREPARATION.



TYPICAL SECTION
(EXISTING BRIDGE 134 SOUTHBOUND LANES SHOWN)



TYPICAL SECTION
(PROPOSED EPOXY OVERLAY)

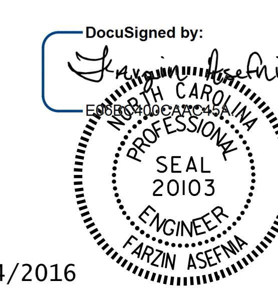


DETAIL OF EPOXY OVERLAY

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO. 134



4/14/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION & EPOXY OVERLAY DETAILS

REVISIONS							SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:		S-33
1			3				TOTAL SHEETS
2			4				37

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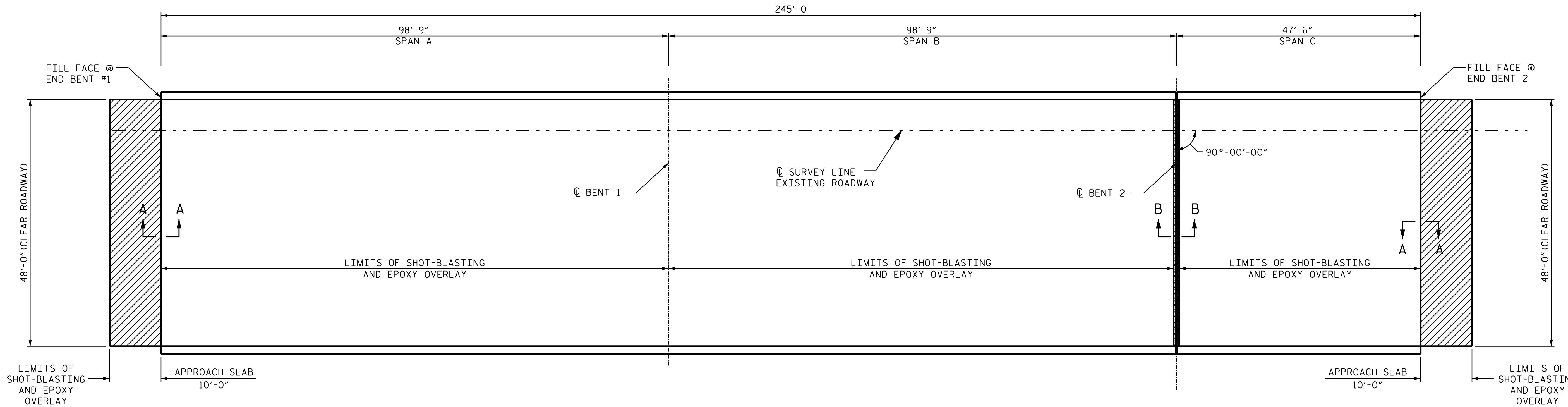
SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	*1 SQ. FT.	
EPOXY OVERLAY SYSTEM	12,537 SQ. FT.	
BRIDGE JOINT DEMOLITION	0 SQ. FT.	
INCIDENTAL MILLING	97 SQ. YDS.	

NOTE:

* CONCRETE DECK REPAIR FOR EPOXY OVERLAY IS NOT ANTICIPATED, TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE IN CASE UNANTICIPATED REPAIR AREAS ARE ENCOUNTERED.



PLAN

(FOR SECTIONS A-A & B-B, SEE "JOINT DETAILS SHEET S-36)

EPOXY OVERLAY

EXISTING ELASTOMERIC CONCRETE (TO REMAIN)

INCIDENTAL MILLING

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO. 133

DocuSigned by: Farzin Asefnia

SEAL 20103 NORTH CAROLINA PROFESSIONAL ENGINEER FARZIN ASEFNIA

4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION & EPOXY OVERLAY

(NORTHBOUND)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-34
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : M. WELDON DATE : 1/13/16
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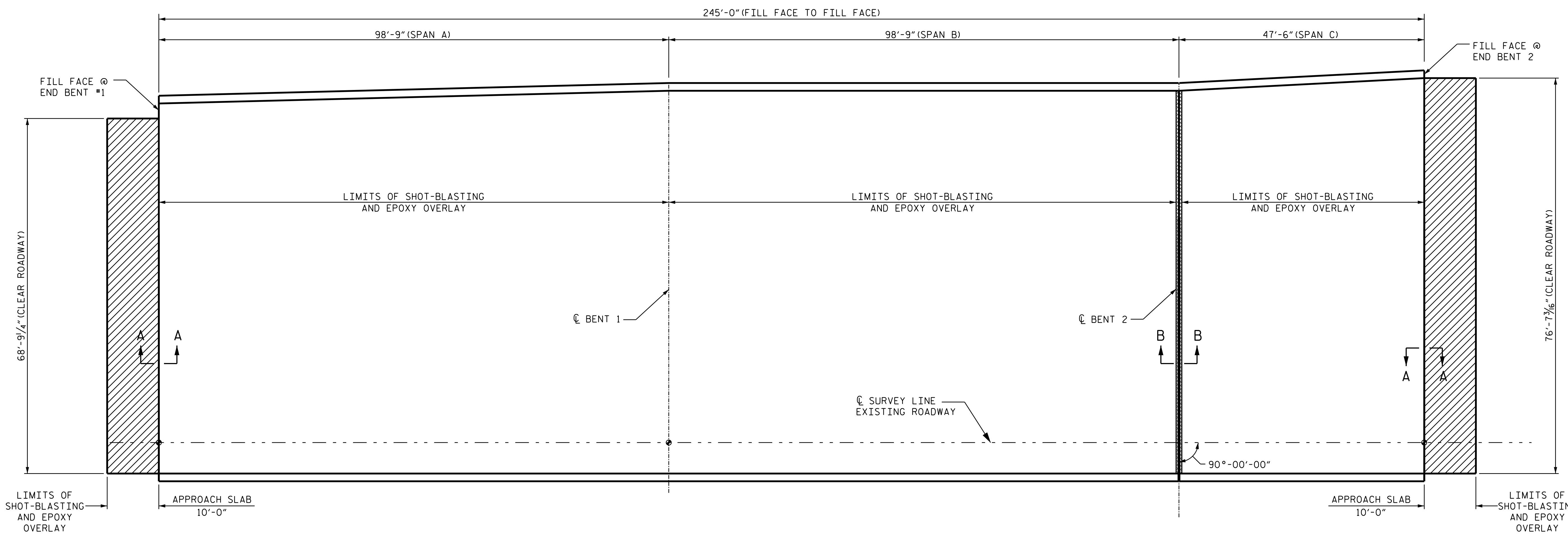
SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	*1 SQ. FT.	
EPOXY OVERLAY SYSTEM	18805 SQ. FT.	
BRIDGE JOINT DEMOLITION	0 SQ. FT.	
INCIDENTAL MILLING	150 SQ. YDS.	

NOTE:

* CONCRETE DECK REPAIR FOR EPOXY OVERLAY IS NOT ANTICIPATED, TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE IN CASE UNANTICIPATED REPAIR AREAS ARE ENCOUNTERED.



PLAN

(FOR SECTIONS A-A & B-B SEE "JOINT DETAILS SHEET S-36)

EPOXY OVERLAY

EXISTING ELASTOMERIC CONCRETE (TO REMAIN)

INCIDENTAL MILLING

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO. 134

DocuSigned by:

E06C...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION & EPOXY OVERLAY

(SOUTHBOUND)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-35
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : M. WELDON DATE : 1/13/16
CHECKED BY : W.C. SMITH DATE : 1/20/16

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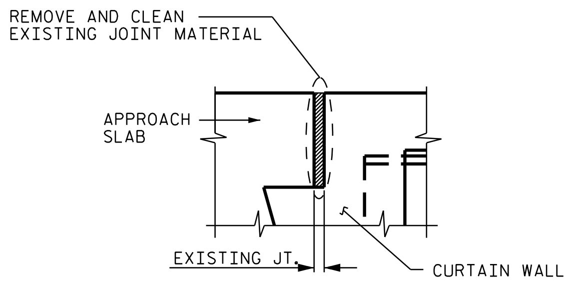
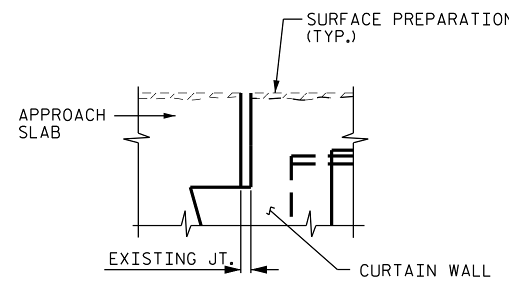
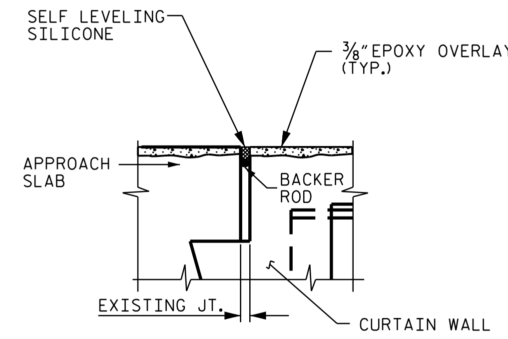


EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION



PROPOSED JOINT

NOTES:

CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

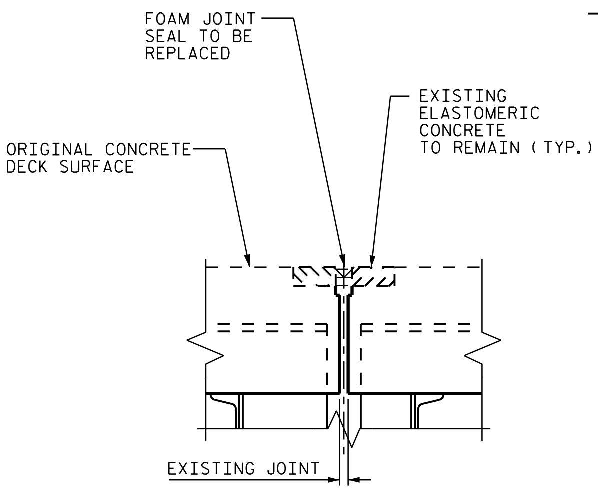
FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.

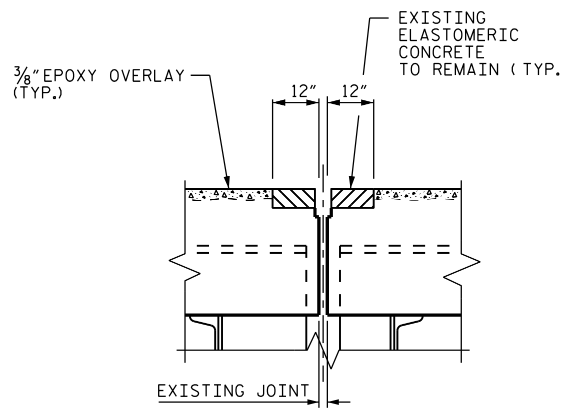
THE WIDTH OF THE UNCOMPRESSED FOAM JOINT MATERIAL SHALL BE 2 3/4".

JOINT INSTALLATION SEQUENCE AT END BENTS

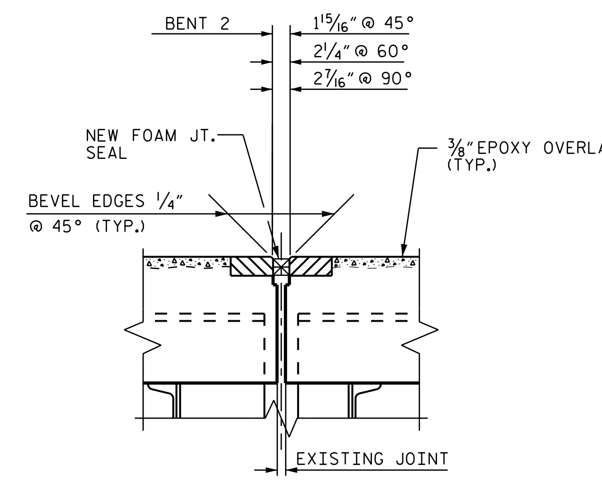
SECTION A-A



EXISTING JOINT



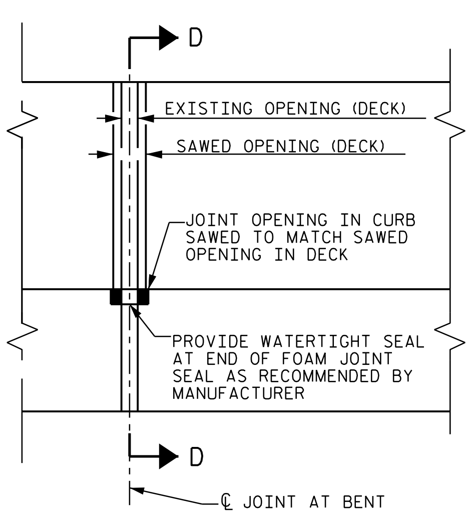
EXISTING FOAM JOINT SEAL REMOVED



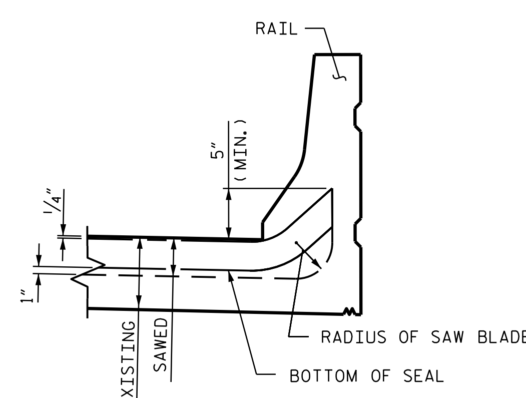
PROPOSED FOAM JOINT SEAL INSTALLATION

JOINT INSTALLATION SEQUENCE AT BENTS

SECTION B-B



PLAN



SECTION D-D

PROJECT NO. I-5731

CUMBERLAND COUNTY

BRIDGE NO.: 133 & 134

DocuSigned by: [signature]

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

JOINT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-36
1			3			TOTAL SHEETS
2			4			37

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : D.V. JOYNER DATE : 1/2016
CHECKED BY : W. SMITH DATE : 1/2016

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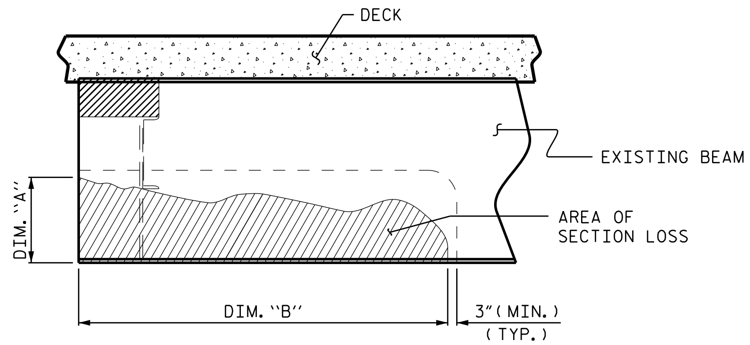
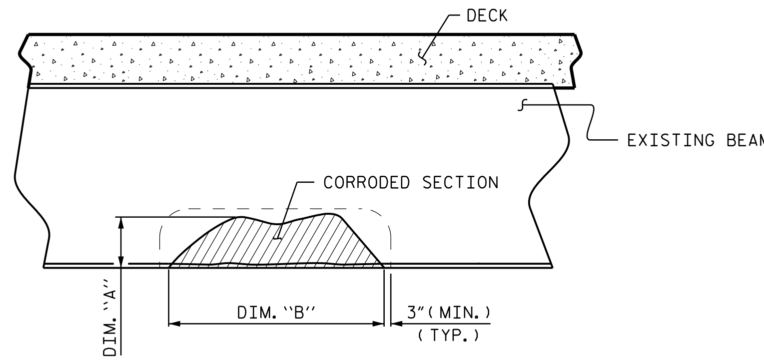
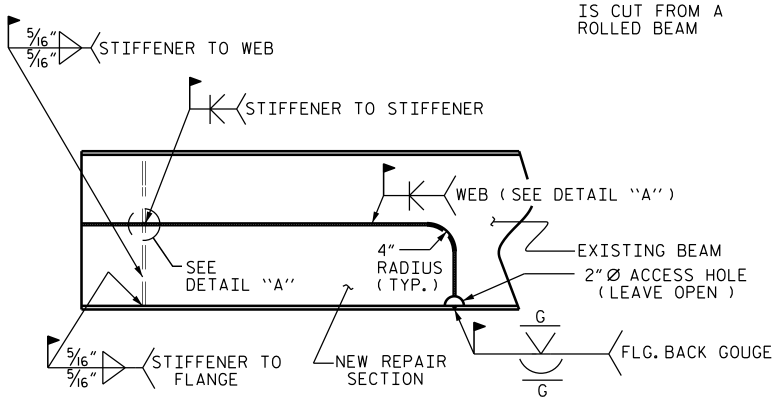


SECTION LOSS
BEAM END REPAIR

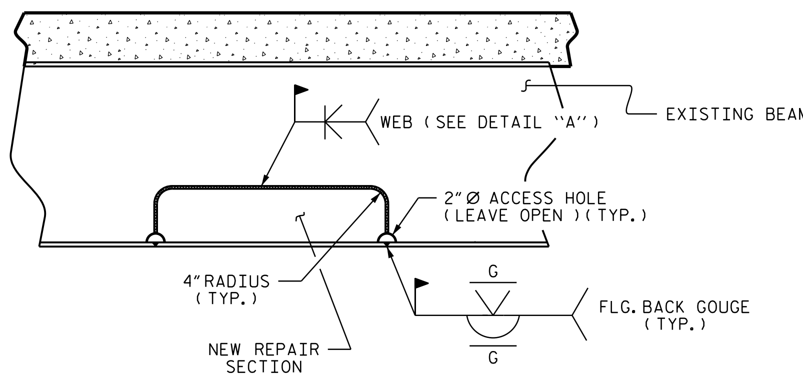
∗ NOT NEEDED IF REPAIRED SECTION IS CUT FROM A ROLLED BEAM



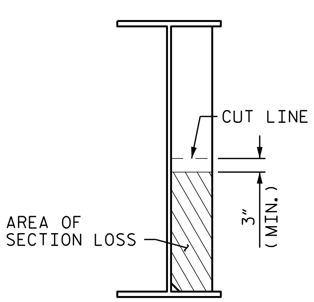
SECTION LOSS
INTERMEDIATE BEAM REPAIR



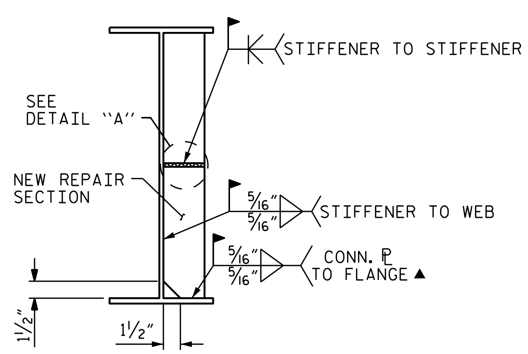
SECTION LOSS BEAM
END REPAIR SECTION



SECTION LOSS INTERMEDIATE
BEAM REPAIR SECTION

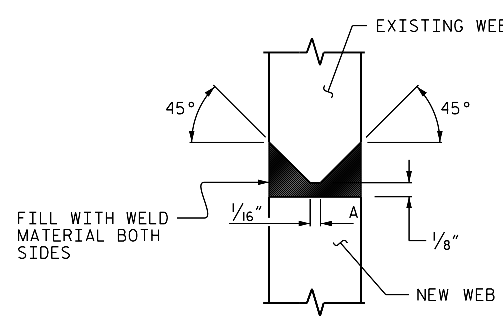


SECTION LOSS
STIFFENER/CONN. ℙ
REPAIR



SECTION LOSS
STIFFENER/CONN. ℙ
REPAIR SECTION

▲ FOR STIFFENERS, MILL TO BEAR AND DO NOT WELD



DETAIL "A"

BEAM REPAIR

AFTER THE STRUCTURAL STEEL HAS BEEN BLASTED AND PRIMED, THE STRUCTURAL STEEL AND BEARING SHALL BE INSPECTED FOR EXCESSIVE SECTION LOSS. AREAS OF THE WEB AND STIFFENERS THAT EXHIBIT IN EXCESS OF 25% SECTION LOSS AND AREAS OF FLANGES THAT EXHIBIT IN EXCESS OF 35% SECTION LOSS SHALL BE REVIEWED BY THE ENGINEER TO DETERMINE IF AREA OF SECTION LOSS SHOULD BE REPAIRED.

PRIOR TO ORDERING MATERIALS AND BEGINNING REPAIR WORK, THE CONTRACTOR AND ENGINEER SHALL DETERMINE ACTUAL LOCATIONS AND DIMENSIONS OF STEEL AREAS TO BE REMOVED AND REPLACED.

THOSE REPAIR AREAS SELECTED SHALL BE REMOVED AND THE BEAMS SHALL BE REPAIRED AS INDICATED ON THIS PLAN SHEET. REMOVE CONCRETE BENT DIAPHRAGMS AS NEEDED TO EVALUATE LIMITS OF REPAIR.

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

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

FOR GIRDER REPAIR, SEE SPECIAL PROVISIONS.

REPAIR SEQUENCE:

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

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

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

IF BEAM DETERIORATION EXTENDS INTO THE CONCRETE DIAPHRAGM CHIP AWAY CONCRETE ON EACH SIDE OF THE BEAM 6" ± FROM THE FACE OF THE WEB TO DETERMINE THE EXTENT OF THE DAMAGE. ADDITIONAL CONCRETE MAY BE REMOVED IS NECESSARY. CUT OUT BY APPROPRIATE MEANS THE DAMAGED BEAM AREA AND/OR BEARING STIFFENER.

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

REPLACEMENT CUT-TO-FIT BEAM SECTION SHALL BE NEW AND FROM SIMILAR SIZE ROLLED BEAM OR PLATES. THE GRADE OF STEEL SHALL BE AASHTO M270, GRADE 50W OR BETTER.

WELDING OF BOTTOM FLANGES PLATE TO WEB PLATE IN THE REPAIR SECTION SHALL MATCH THE EXISTING FLANGE TO WEB WELD.

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

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

ALL WELDS WILL BE INSPECTED, TESTED, AND APPROVED 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 SATISFACTORY WELDS FLUSH, THOROUGHLY CLEAN AREA TO REMOVE DEBRIS AND OILS FROM REPAIR PROCESS.

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

FOR CLEANING AND PAINTING, SEE PROJECT SPECIAL PROVISIONS.

AFTER GIRDERS 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 GIRDER REPAIR.

LOWER SPAN TO BEAR; CHECK FOR DISTRESS.

REMOVE JACKING EQUIPMENT AND TEMPORARY SUPPORTS.

REMOVE ALL TRAFFIC CONTROL DEVICES.

PROJECT NO. I-5731
CUMBERLAND COUNTY
BRIDGE NO. 109 & 111

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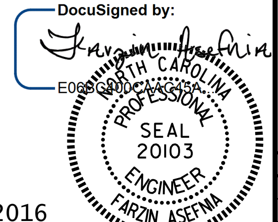

4/14/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BEAM END AND INTERMEDIATE REPAIR DETAILS

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

DRAWN BY : M. WELDON DATE : 3/16
CHECKED BY : W. SMITH DATE : 3/16

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STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

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