

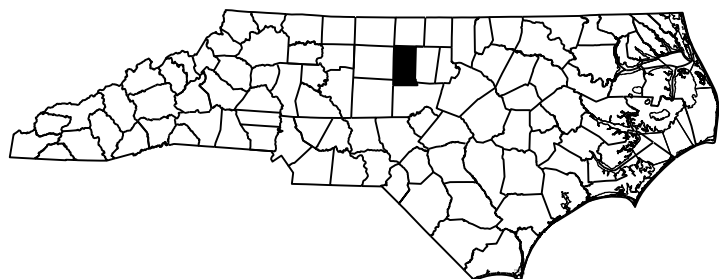
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**This file or an individual page  
shall not be considered a certified document.**

PROJECT: I-5836

CONTRACT NO.: C203786



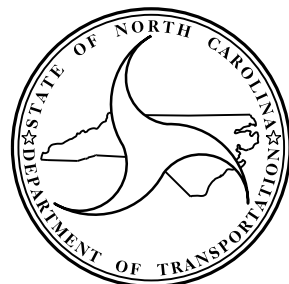
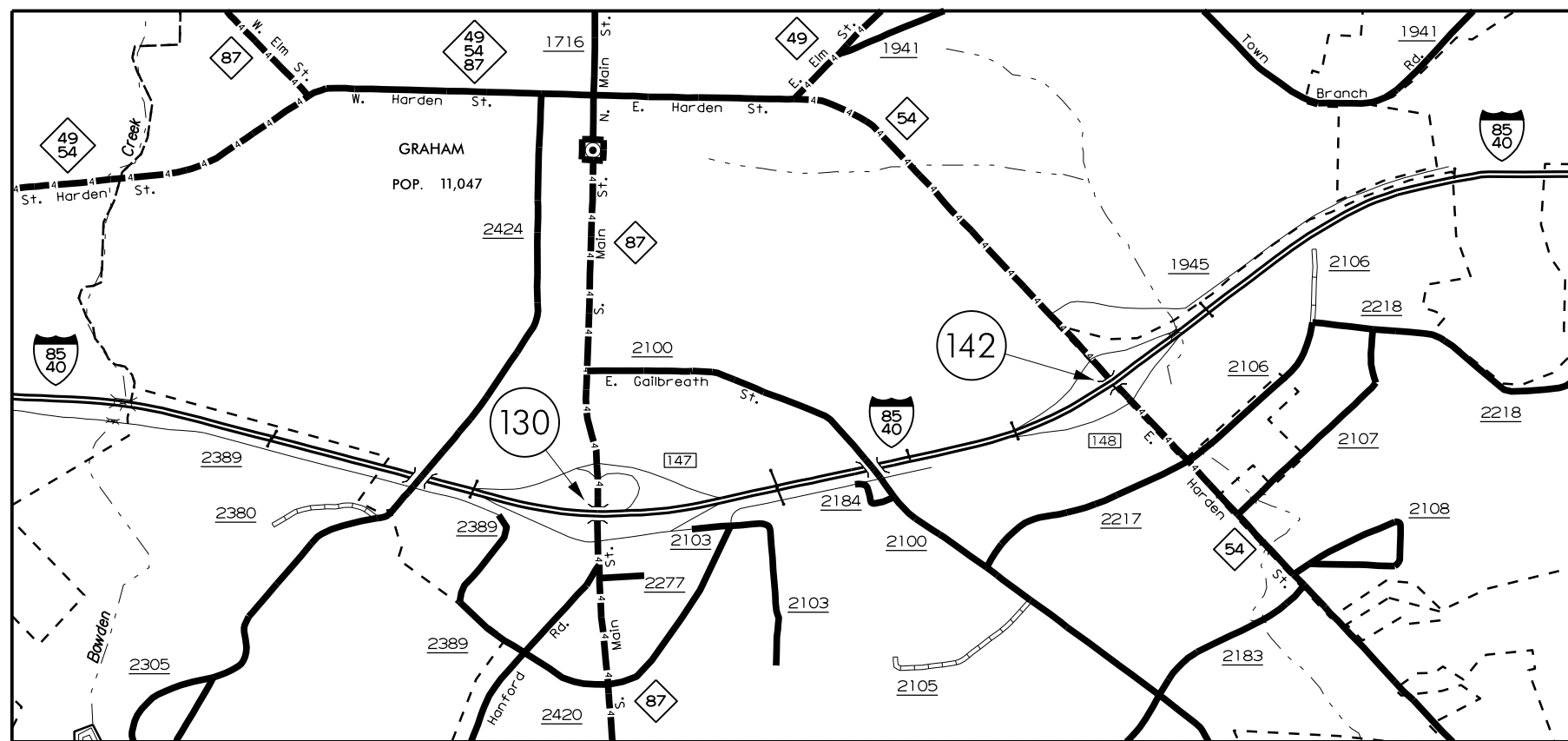
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**ALAMANCE COUNTY**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5836	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
53042.1.1	NHPIM-0040(10)148	PE	
53042.3.1	NHPIM-0040(10)148	CONST	

LOCATION: BRIDGE #130 ON I-40 /I-85 OVER NC 87 (SOUTH MAIN ST.)  
BRIDGE #142 ON I-40 /I-85 OVER NC 54 (EAST HARDEN ST.)

TYPE OF WORK: BRIDGE PRESERVATION - SCARIFICATION, HYDRO-DEMOLITION, DECK REPAIR,  
LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH,  
AND JOINT DEMOLITION



DESIGN DATA

#130 ADT 2013 = 109,000  
#142 ADT 2013 = 109,000

PROJECT LENGTH

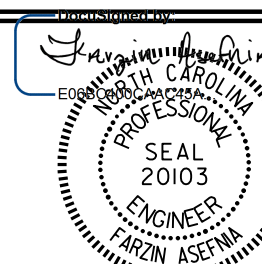
BRIDGE #130 = 0.04 MILE  
BRIDGE #142 = 0.03 MILE

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:  
MARCH 15, 2016

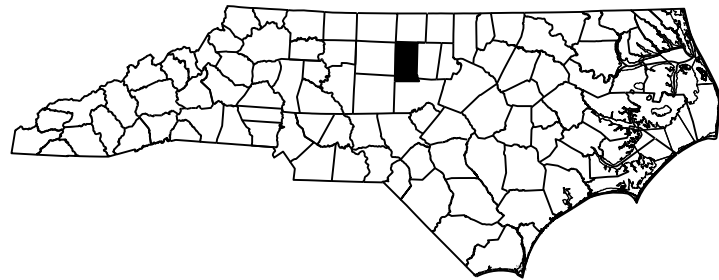


1/13/2016

**FARZIN ASEFNIA, P.E.**  
PROJECT DESIGN ENGINEER

**PROJECT: I-5836**

**CONTRACT NO.: C203786**



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**ALAMANCE COUNTY**

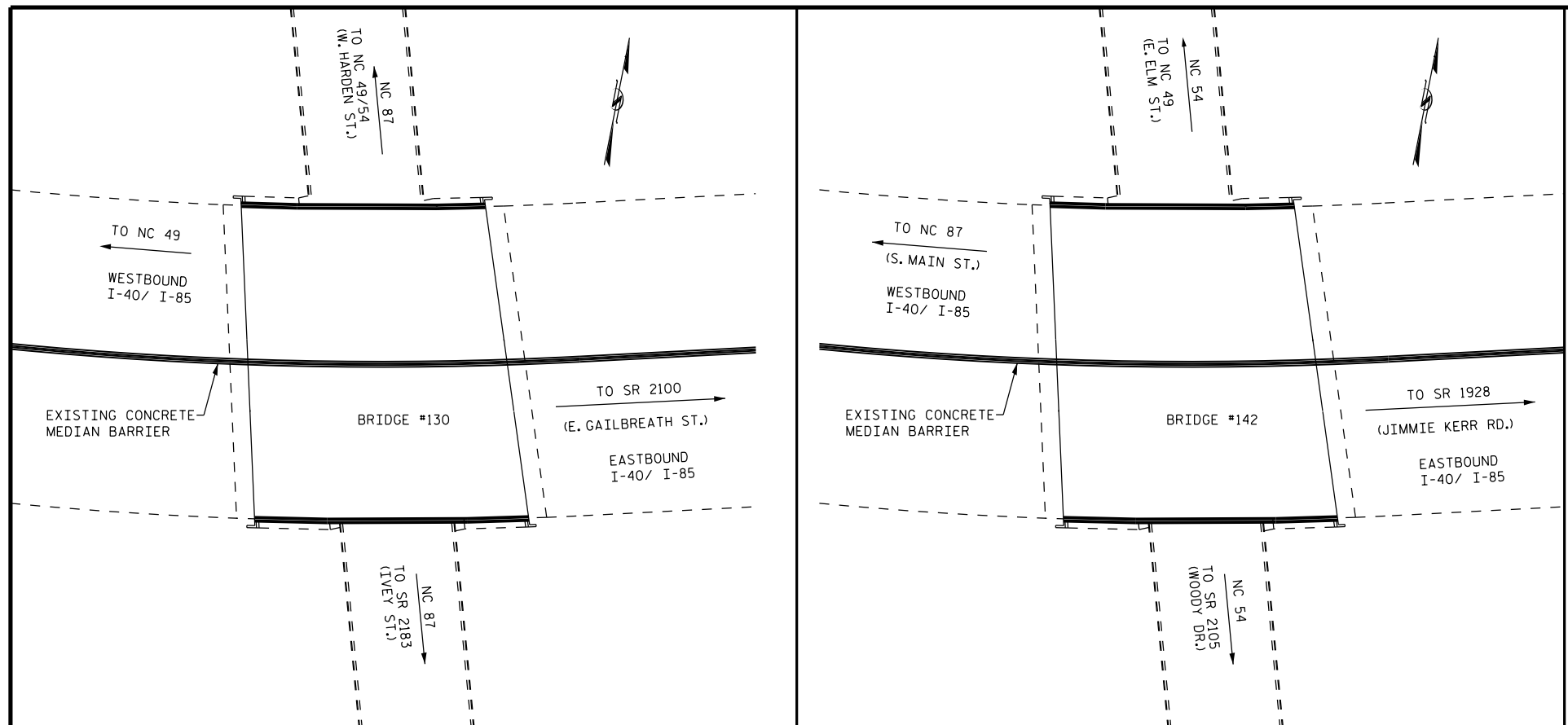
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5836	1A	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
53042.1.1	NHPIM-0040(10)148	P.E.	
53042.3.1	NHPIM-0040(10)148	CONST.	

**LOCATION: BRIDGE #130 ON I-40 /I-85 OVER NC 87 (SOUTH MAIN ST.)  
BRIDGE #142 ON I-40 /I-85 OVER NC 54 (EAST HARDEN ST.)**

**TYPE OF WORK: BRIDGE PRESERVATION - SCARIFICATION, HYDRO-DEMOLITION, DECK REPAIR,  
LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH,  
AND JOINT DEMOLITION**

**INDEX OF SHEETS**

<i>1</i>	<i>TITLE SHEET</i>
<i>1A</i>	<i>INDEX OF SHEETS</i>
<i>S-1 - S-14</i>	<i>STRUCTURAL PLANS</i>
<i>SN</i>	<i>STANDARD NOTES</i>



LOCATION SKETCH

**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 CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLAN.
- 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-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 VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.
- FOR CONCRETE DECK REPAIR, SEE SPECIAL PROVISION.

TOTAL BILL OF MATERIAL											
BRIDGE NO.	GROOVING BRIDGE FLOORS	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	** LATEX MODIFIED CONCRETE OVERLAY -VES	PLACING & FINISHING OF LATEX MODIFIED CONCRETE OVERLAY -VES	FOAM JOINT SEALS	* VOLUMETRIC MIXER	* CONCRETE FOR DECK REPAIR	BRIDGE JOINT DEMOLITION	SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK
	SO. FT.	SO. YDS.	SO. FT.	C.Y.	SO. YDS.	LUMP SUM	LUMP SUM	CU. FT.	SO. FT.	SO. YDS.	SO. YDS.
130	30,320	3	3	148	3,536	LUMP SUM	LUMP SUM	1	264	3,536	3,536
142	24,587	3	3	121	2,888	LUMP SUM	LUMP SUM	1	248	2,888	2,888
TOTAL	54,907	6	6	269	6,424	LUMP SUM	LUMP SUM	2	512	6,424	6,424

\* 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-5836  
ALAMANCE COUNTY  
 BRIDGE NO. 130 & 142

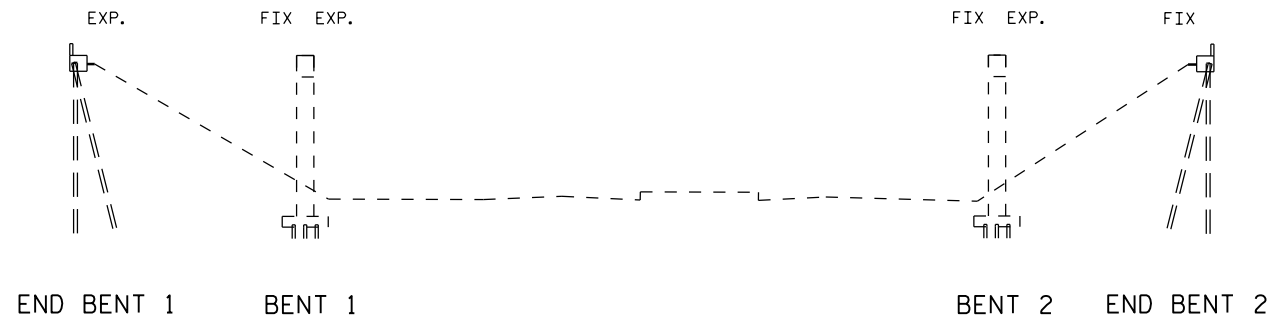
SHEET 1 OF 2

DocuSigned by:  
*Farzin Asefina*  
 ENGINEER  
 F.A. 20103  
 1/13/2016

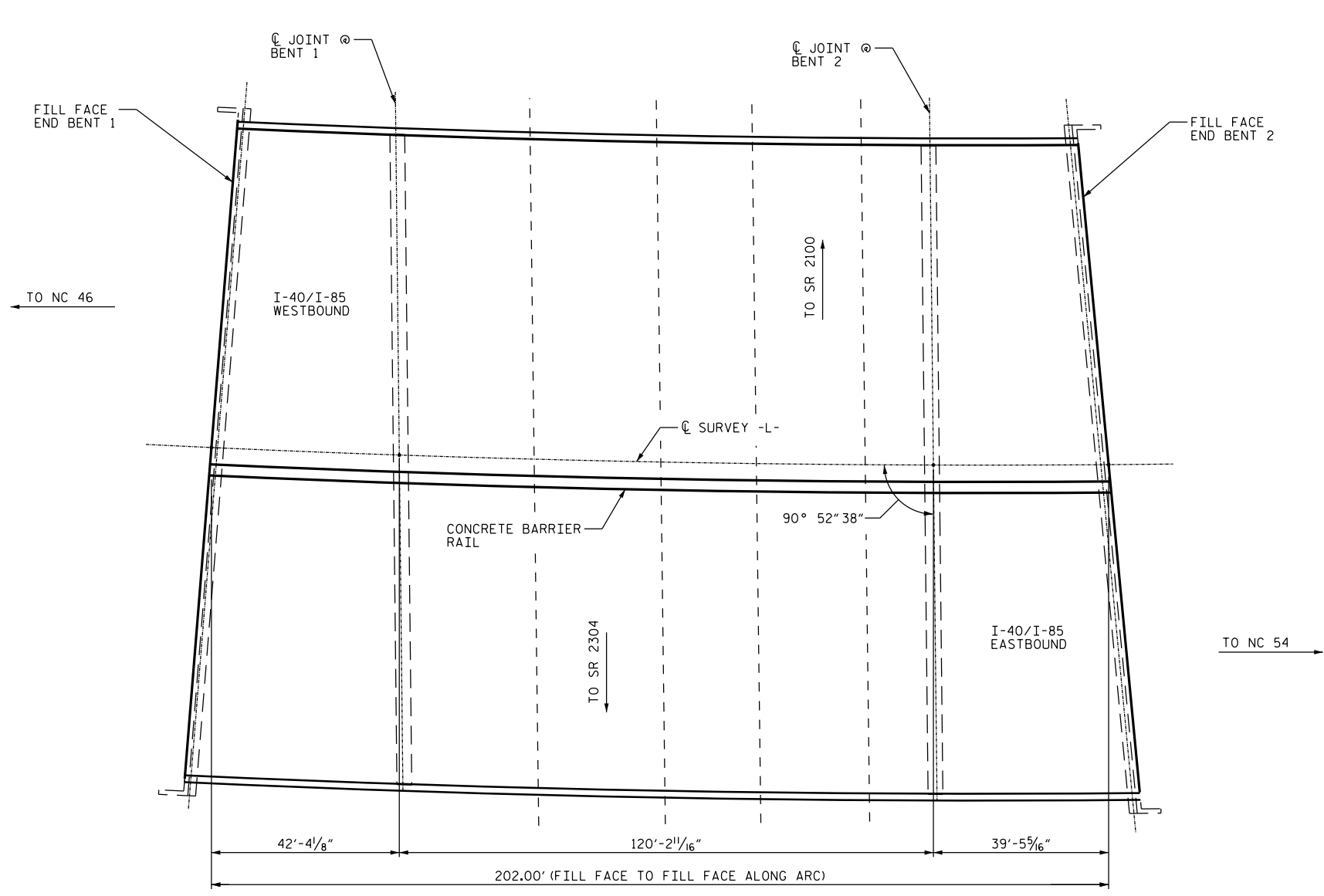
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 BRIDGE #130 ON  
 I-40/I-85 OVER NC 87  
 AND  
 BRIDGE #142 ON  
 I-40/I-85 OVER NC 49

DRAWN BY : D.V. JOYNER DATE : 11/2015  
 CHECKED BY : W. SMITH DATE : 11/2015

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



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



**PLAN**

COLUMNS AND FOOTINGS NOT SHOWN IN PLAN VIEW FOR CLARITY

PROJECT NO. I-5836  
ALAMANCE COUNTY  
 BRIDGE NO. : 130

SHEET 2 OF 2

DocuSigned by:  
*Farzin Asefina*  
 ENGINEER  
 STATE OF NORTH CAROLINA  
 PROFESSIONAL SEAL  
 20103  
 FARZIN ASEFINA  
 1/13/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**

BRIDGE ON I-85  
 OVER NC 87

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

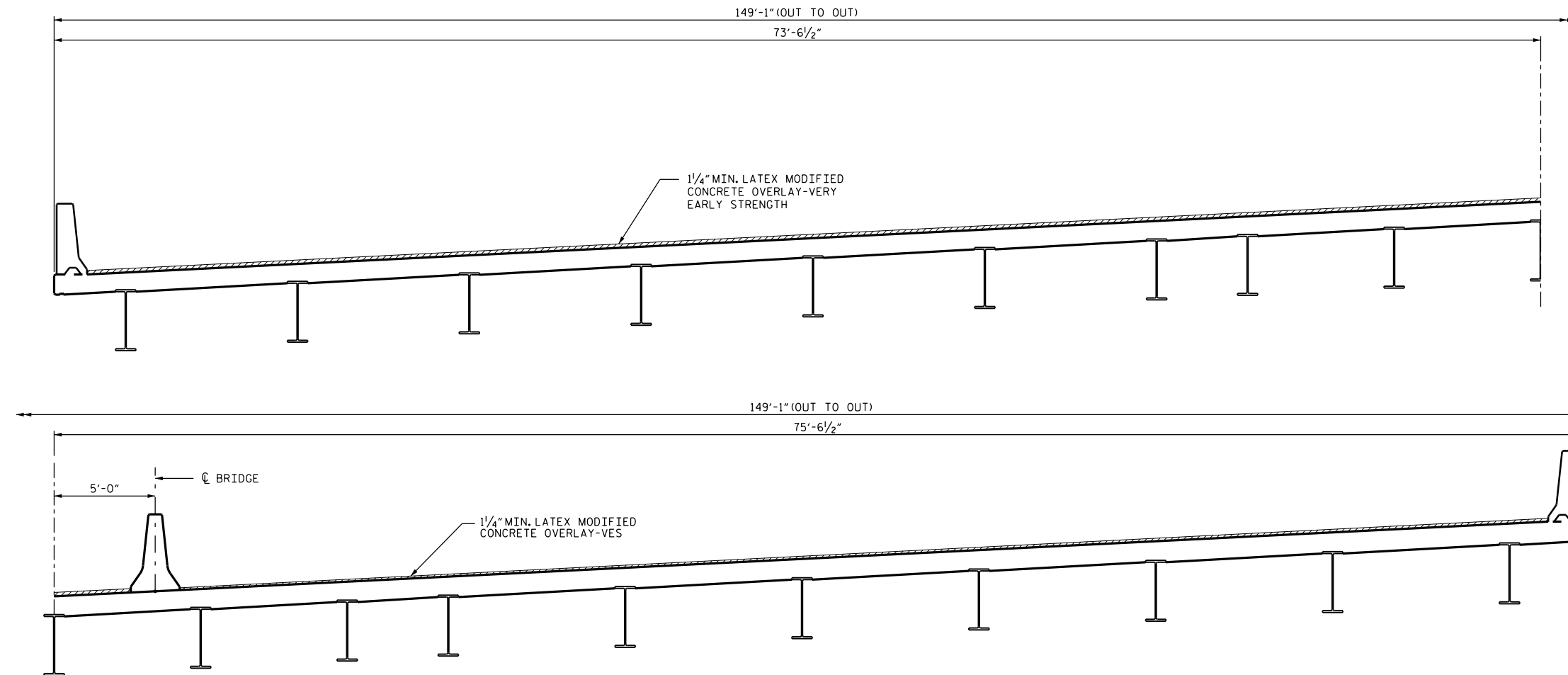
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : M. WELDON DATE : 12/2015  
 CHECKED BY : W. SMITH DATE : 12/2015

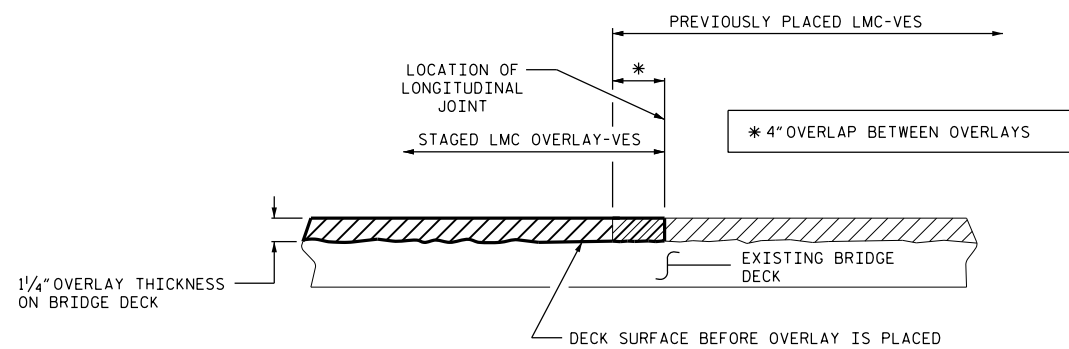
**NOTE:**

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, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND LMC-VES PLACEMENT.



**TYPICAL SECTION**



**SECTION THRU DECK**

**STAGED LMC OVERLAY-VES JOINT**

(AS NEEDED)

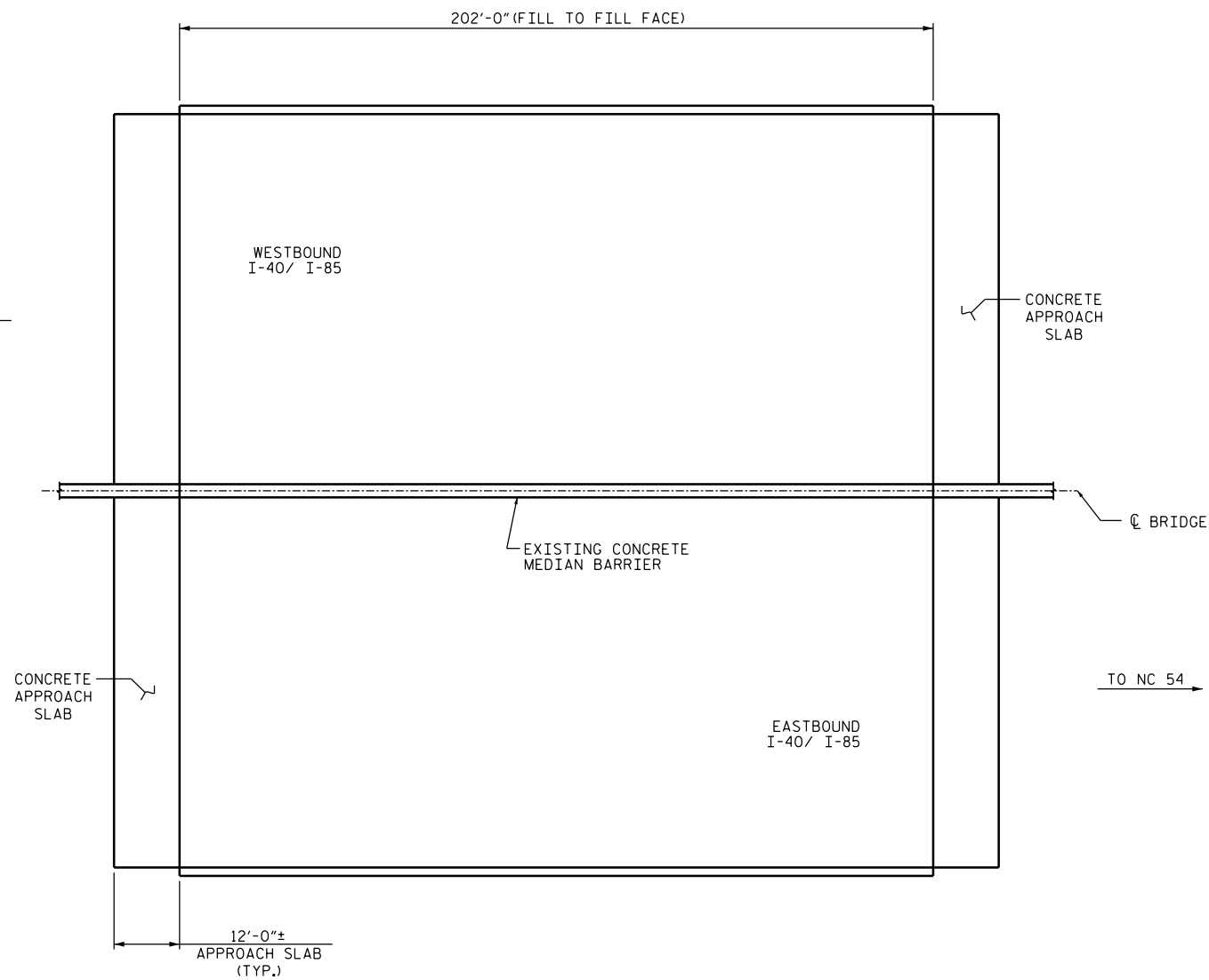
PROJECT NO. I-5836  
ALAMANCE COUNTY  
 BRIDGE NO. 130

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*Farzin Asefina*  
 STATE OF NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 SEAL 20103  
 FARZIN ASEFINA  
 1/13/2016

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
<b>SUPERSTRUCTURE</b>					
TYPICAL SECTION & LATEX MODIFIED CONCRETE-VES DETAILS					
SHEET NO. S-3					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS 14					

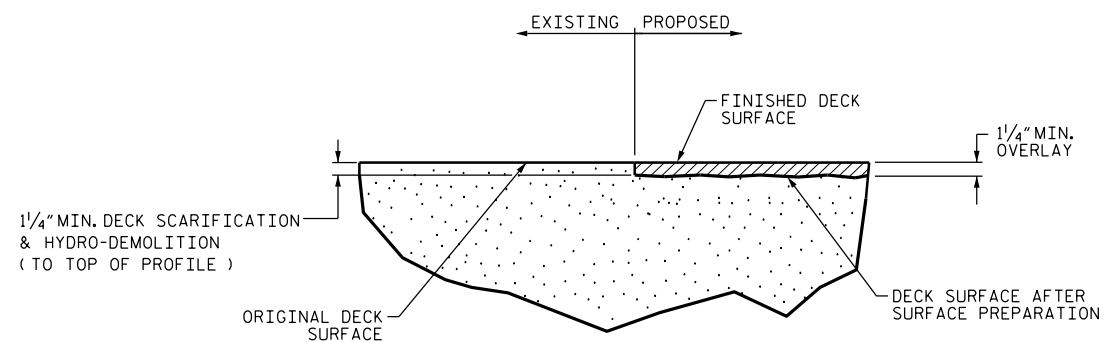
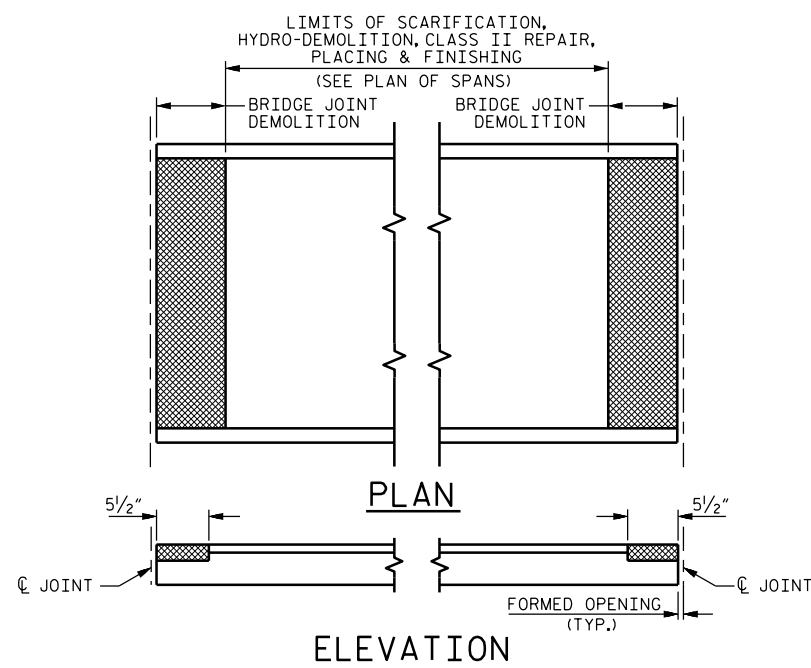
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 SIGNATURES COMPLETED

DRAWN BY : M. WELDON DATE : 12/2015  
 CHECKED BY : W. SMITH DATE : 12/2005



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

**PLAN**



**DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY-VES**

PROJECT NO. I-5836  
ALAMANCE COUNTY  
 BRIDGE NO. 130

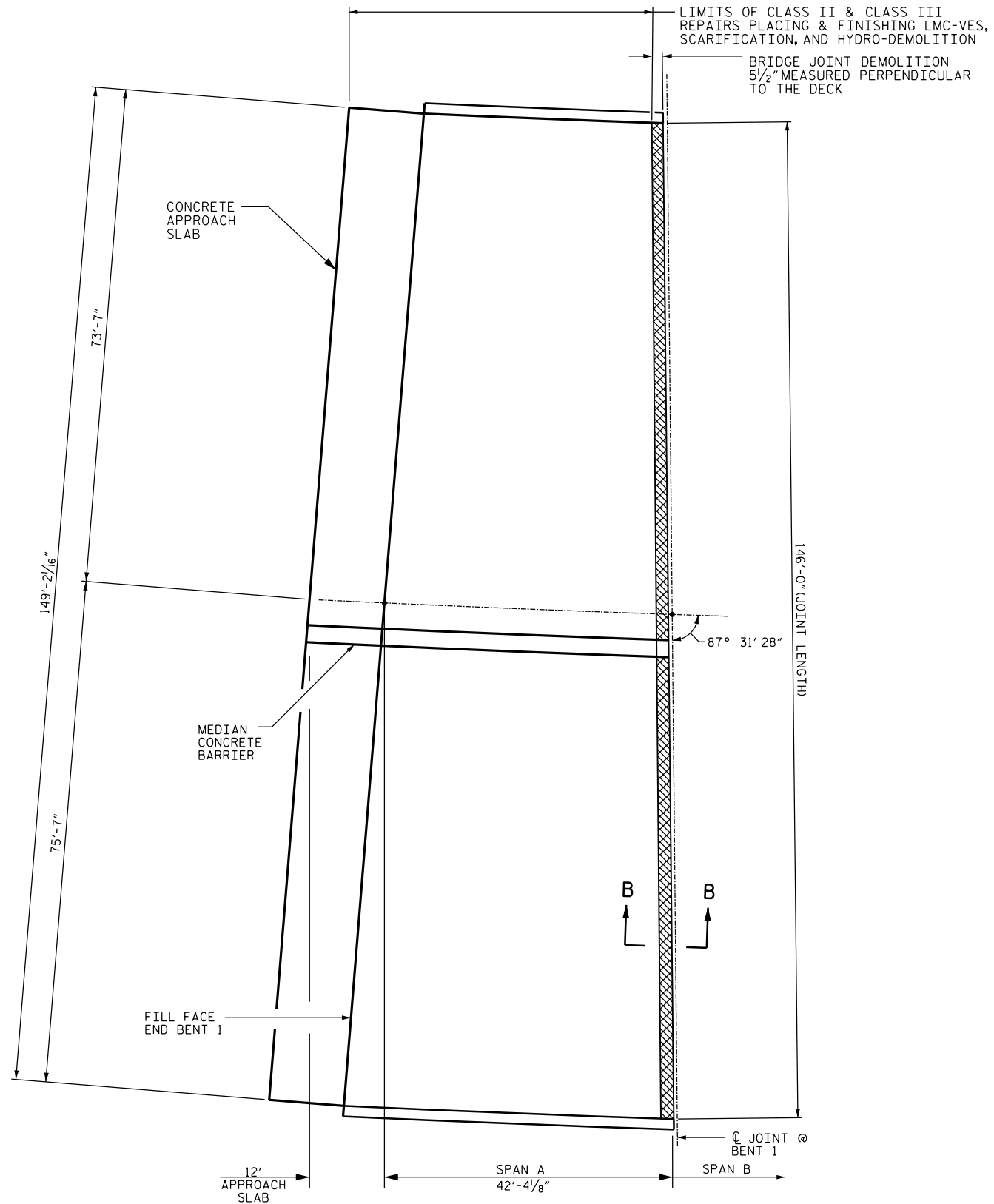
DocuSigned by:  
*Farzin Asefina*  
 PROFESSIONAL ENGINEER  
 SEAL 20103  
 FARZIN ASEFINA  
 1/13/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUPERSTRUCTURE**  
 SURFACE PREPARATION

DRAWN BY : D.V. JOYNER DATE : 10/2015  
 CHECKED BY : W. SMITH DATE : 10/2015

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED




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



**PLAN OF SPAN A**  
(FOR SECTION VIEW, SEE "JOINT DETAIL SHEET S-14")

SPAN "A" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	66.0 SQ. FT.	
SCARIFYING BRIDGE DECK	650.0 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	650.0 SQ. YDS.	
SCARIFYING OF APPROACH SLAB	191.5 SQ. YDS.	
HYDRO-DEMOLITION OF APPROACH SLAB	191.5 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
-  BRIDGE JOINT DEMOLITION
-  SCARIFICATION & HYDRO-DEMOLITION

PROJECT NO. I-5836  
ALAMANCE COUNTY  
 BRIDGE NO. 130

DocuSigned by:  
*Farzin Asefina*  
 ENGINEER  
 NORTH CAROLINA  
 PROFESSIONAL  
 SEAL  
 20103  
 ENGINEER  
 FARZIN ASEFINA  
 1/13/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

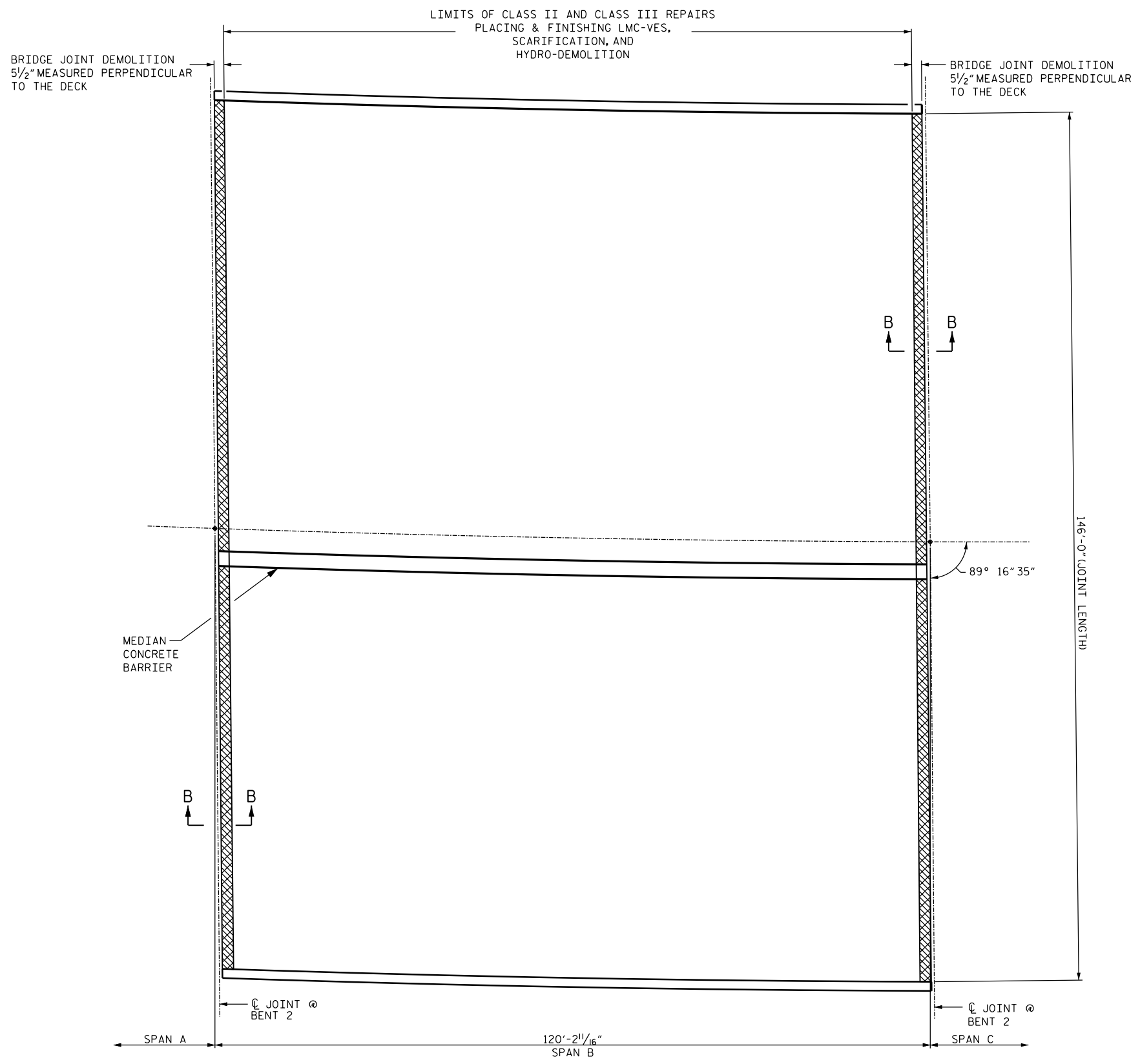
**SURFACE PREPARATION**  
**SPAN A AND**  
**APPROACH SLAB**

DRAWN BY : M. WELDON DATE : 12/2015  
 CHECKED BY : W. SMITH DATE : 12/2015

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


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			14





SPAN "B" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	132.0 SQ. FT.	
SCARIFYING BRIDGE DECK	1,899.0 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	1,899.0 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
-  BRIDGE JOINT DEMOLITION
-  SCARIFICATION & HYDRO-DEMOLITION

PROJECT NO. I-5836  
ALAMANCE COUNTY  
 BRIDGE NO. 130

DocuSigned by:  
*Farzin Asefina*  
 ENGINEER  
 STATE OF NORTH CAROLINA  
 PROFESSIONAL SEAL  
 20103  
 FARZIN ASEFINA  
 1/13/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 SPAN B

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6	
1			3			TOTAL SHEETS	14
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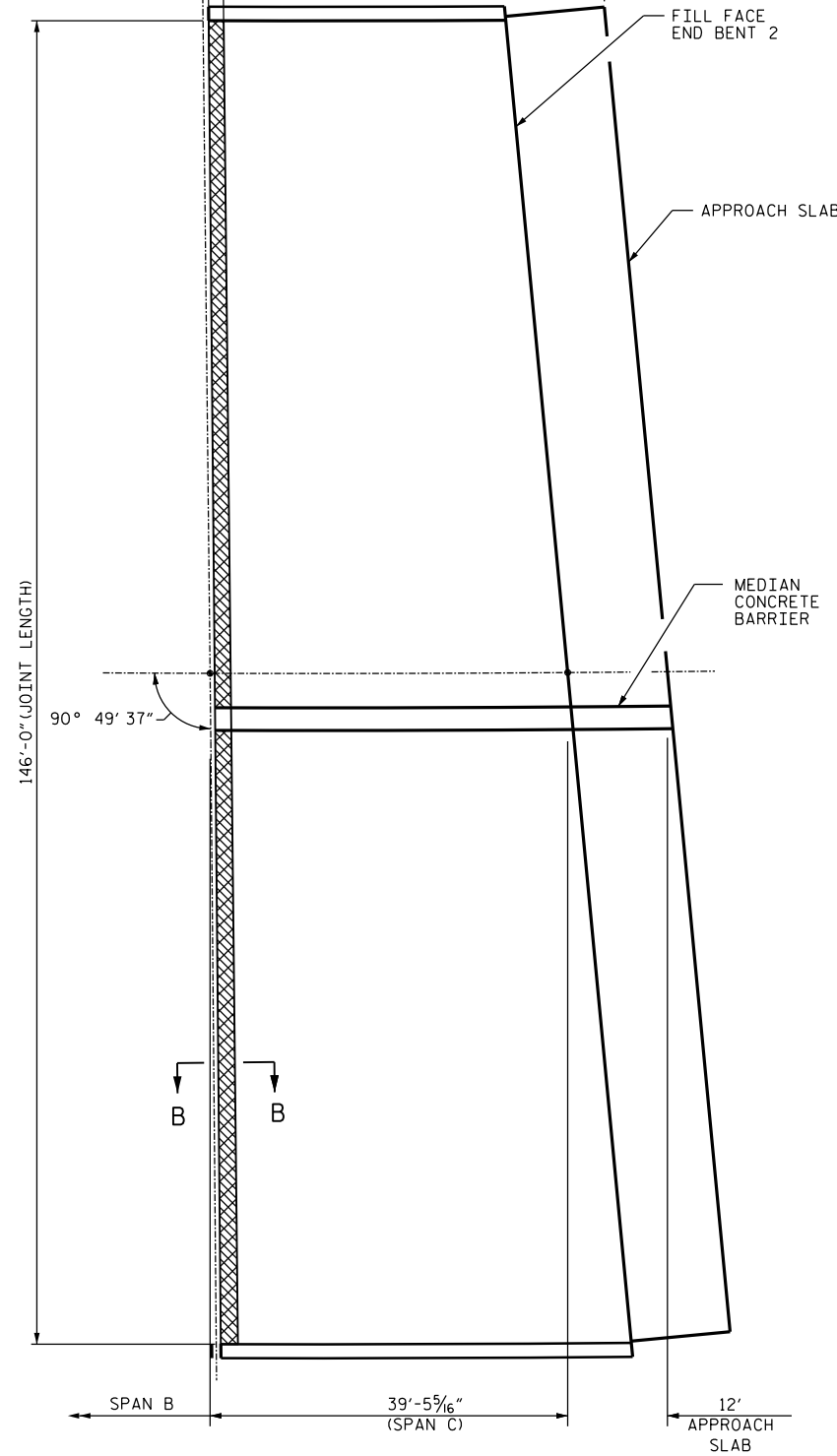
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DRAWN BY: M. WELDON DATE: 12/2015  
 CHECKED BY: W. SMITH DATE: 12/2015

**PLAN OF SPAN B**  
 (FOR SECTION VIEW, SEE JOINT DETAIL SHEET S-14)

LIMITS OF CLASS II & CLASS III REPAIRS PLACING & FINISHING LMC-VES, SCARIFICATION, AND HYDRO-DEMOLITION

BRIDGE JOINT DEMOLITION 5/2" MEASURED PERPENDICULAR TO THE DECK






PLAN OF SPAN C  
(FOR SECTION VIEW, SEE JOINT DETAIL SHEET S-14)

SPAN "C" QUANTITIES

	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	66.0 SQ. FT.	
SCARIFYING BRIDGE DECK	604.0 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	604.0 SQ. YDS.	
SCARIFYING OF APPROACH SLAB	191.5 SQ. YDS.	
HYDRO-DEMOLITION OF APPROACH SLAB	191.5 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
-  BRIDGE JOINT DEMOLITION
-  SCARIFICATION & HYDRO-DEMOLITION

PROJECT NO. I-5836  
ALAMANCE COUNTY  
 BRIDGE NO. 130

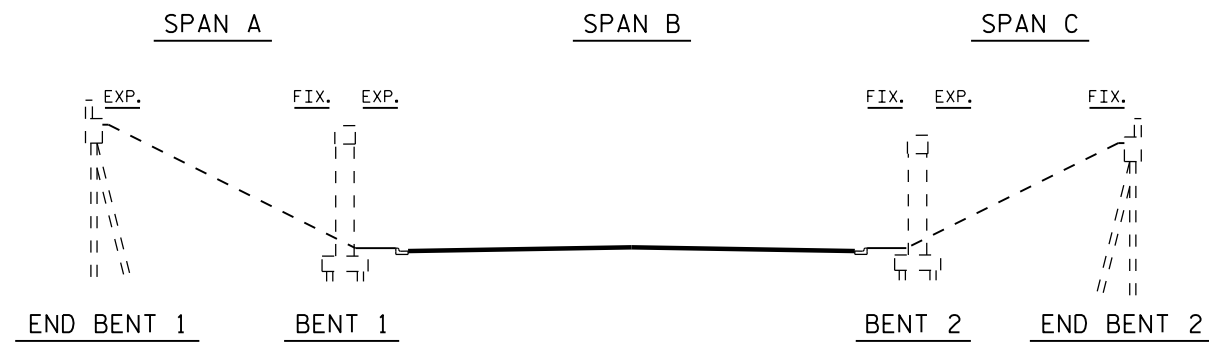
DocuSigned by:  
*Farzin Asefma*  
 E066...  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 20103  
 FARZIN ASEFMA  
 1/13/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 SPAN C AND  
 APPROACH SLAB

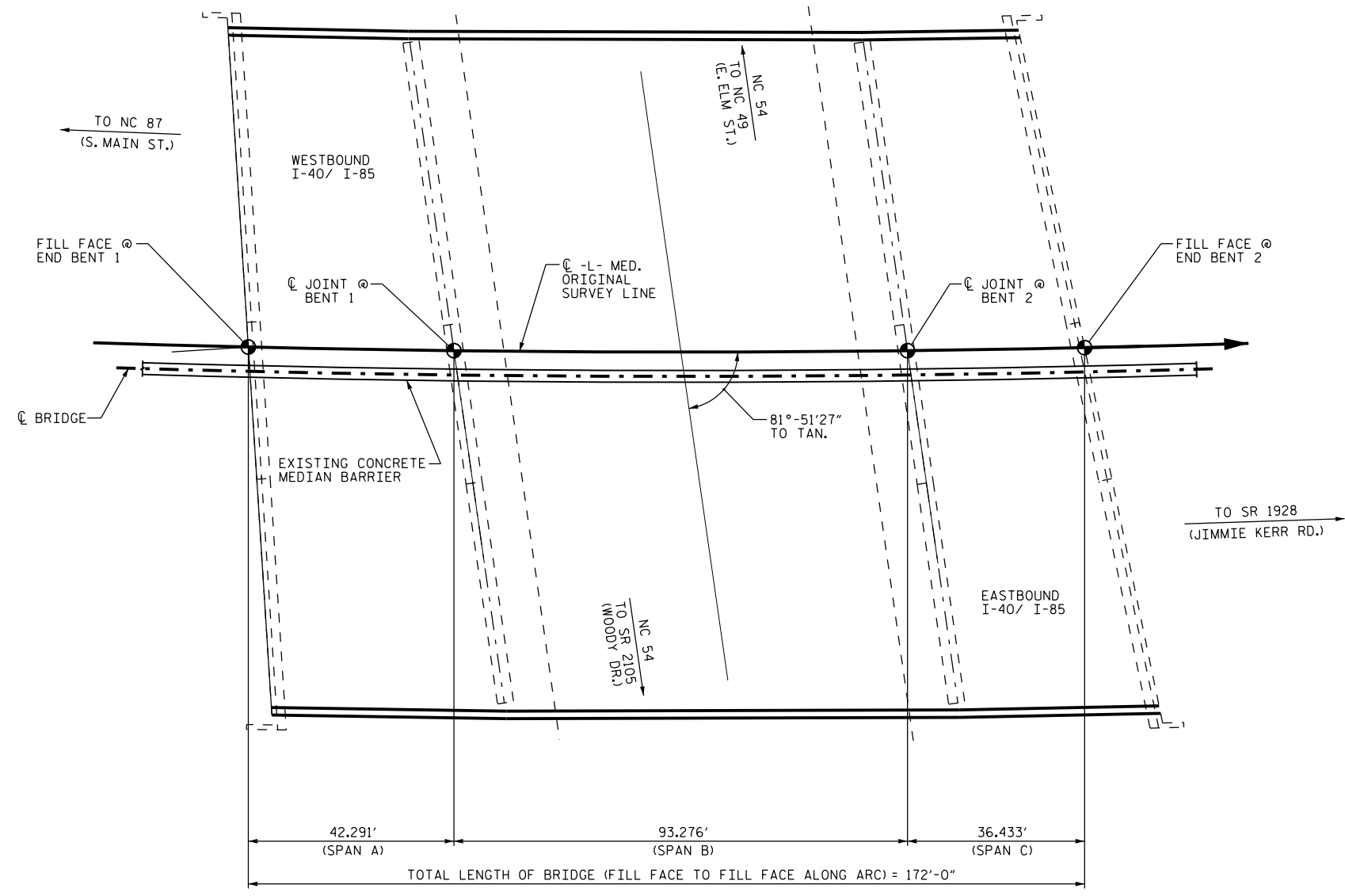
DRAWN BY : M. WELDON DATE : 10/2015  
 CHECKED BY : W. SMITH DATE : 10/2015

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS 14
2			4			



**ELEVATION**  
SECTIONS AT BENTS AND END BENTS ARE AT RIGHT ANGLES



**PLAN**

COLUMNS AND FOOTINGS NOT SHOWN IN PLAN VIEW FOR CLARITY

PROJECT NO. I-5836  
ALAMANCE COUNTY  
 BRIDGE NO.: 142

DocuSigned by:  
*Farzin Asefma*  
 ENGINEER  
 SEAL 20103  
 1/13/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 BRIDGE OVER NC 54  
 ON I-40/I-85  
 BETWEEN NC 87 AND  
 SR 1928

DRAWN BY : D.V. JOYNER DATE : 10/2015  
 CHECKED BY : W. SMITH DATE : 11/2015

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

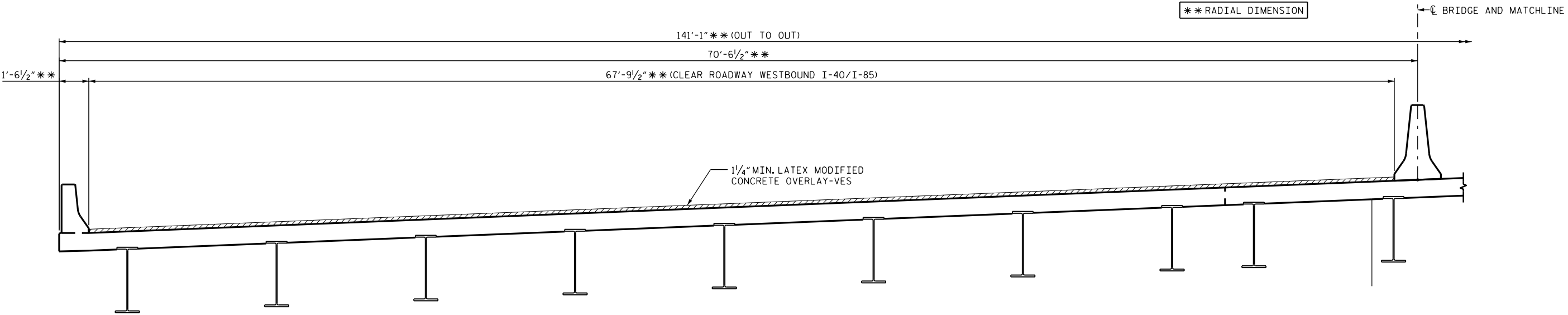
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-8
2			4			14

**NOTE:**

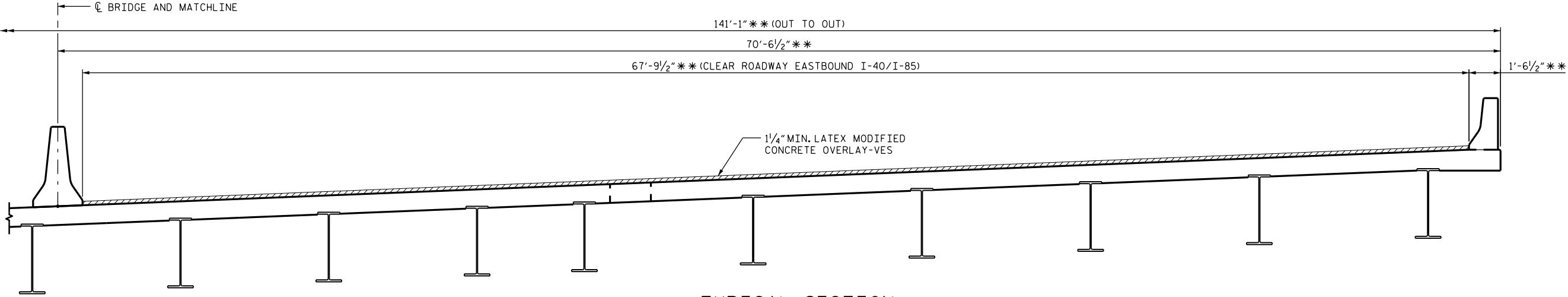
WHEN PREPARING THE SURFACE FOR LMC OVERLAY-VES ADJACENT TO A PREVIOUSLY PLACED LMC-VES STAGE, THE PREVIOUSLY PLACED LMC-VES SHALL BE REMOVED FOR A DISTANCE OF 4-INCHES FROM THE LMC-VES EDGE, THE SURFACE OF THE NEW STAGE AREA, ALONG WITH THE 4 INCH OVERLAY AREA, SHALL BE PREPARED AS PER THE OVERLAY SURFACE 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, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND LMC-VES PLACEMENT.

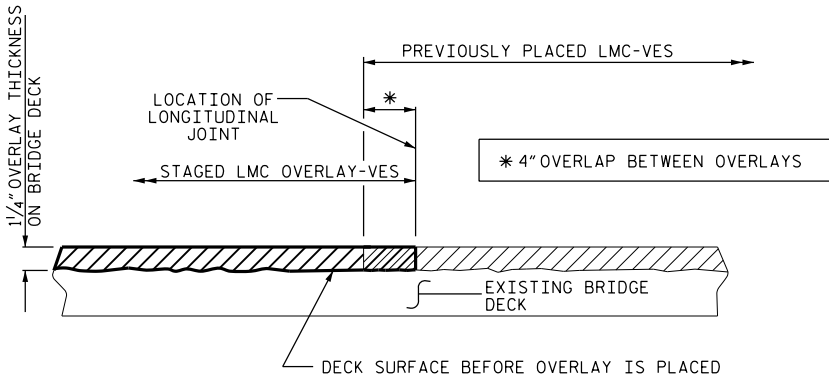
\*\* RADIAL DIMENSION



**TYPICAL SECTION**



**TYPICAL SECTION**



**SECTION THRU DECK  
STAGED LMC OVERLAY-VES JOINT  
(AS NEEDED)**

PROJECT NO. I-5836  
ALAMANCE COUNTY  
 BRIDGE NO. 142

DocuSigned by:  
*Farzin Asefina*  
 NORTH CAROLINA  
 PROFESSIONAL  
 SEAL  
 20103  
 ENGINEER  
 FARZIN ASEFINA  
 1/13/2016

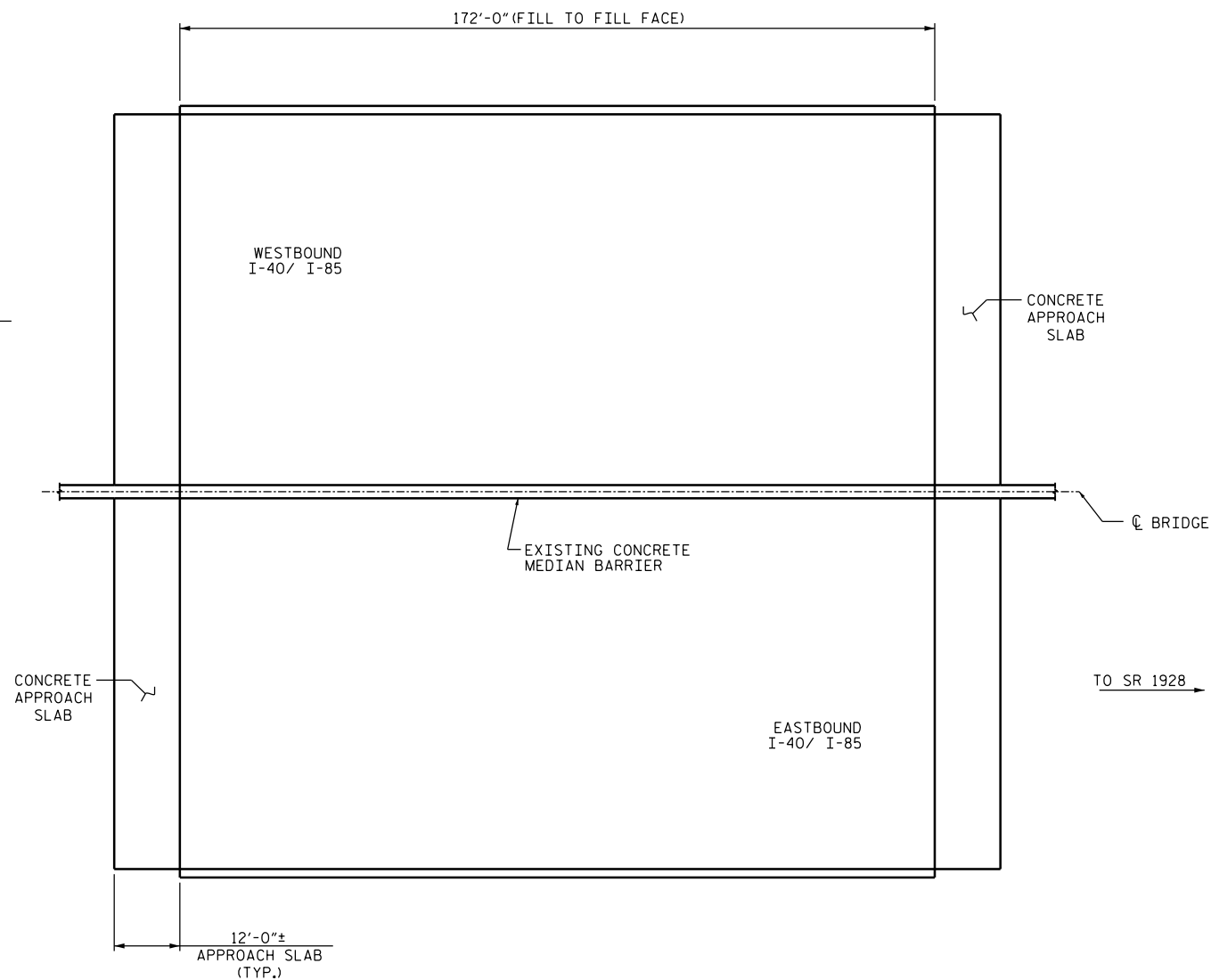
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUPERSTRUCTURE**  
 TYPICAL SECTION  
 & LATEX MODIFIED  
 CONCRETE-VES  
 DETAILS

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			14

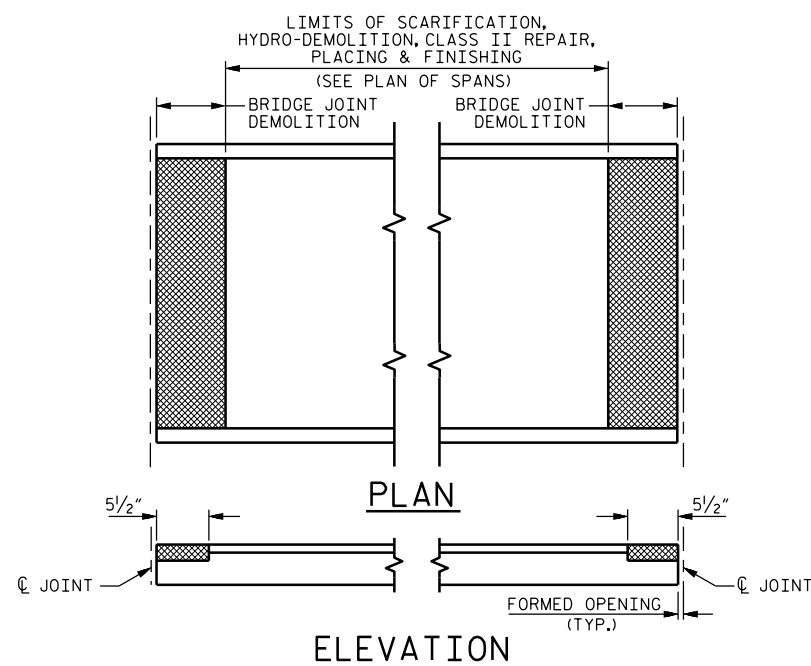
DRAWN BY : D.V. JOYNER DATE : 11/2015  
 CHECKED BY : W. SMITH DATE : 11/2015

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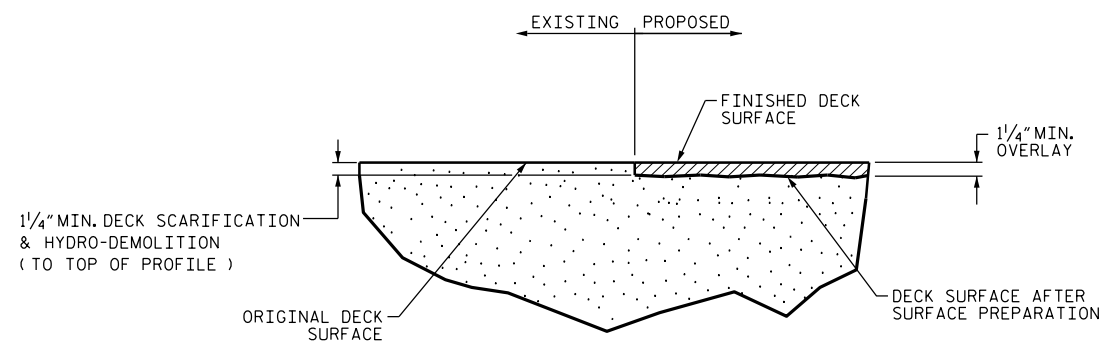


DECK SCARIFICATION,  
HYDRO-DEMOLITION, AND  
LATEX MODIFIED CONCRETE  
OVERLAY-VES

**PLAN**



**ELEVATION**



**DETAIL FOR LATEX  
MODIFIED CONCRETE OVERLAY-VES**

PROJECT NO. I-5836  
ALAMANCE COUNTY  
BRIDGE NO. 142

DocuSigned by:  
*Farzin Asefina*  
ENGINEER  
STATE OF NORTH CAROLINA  
PROFESSIONAL  
SEAL  
20103  
ENGINEER  
FARZIN ASEFINA  
1/13/2016

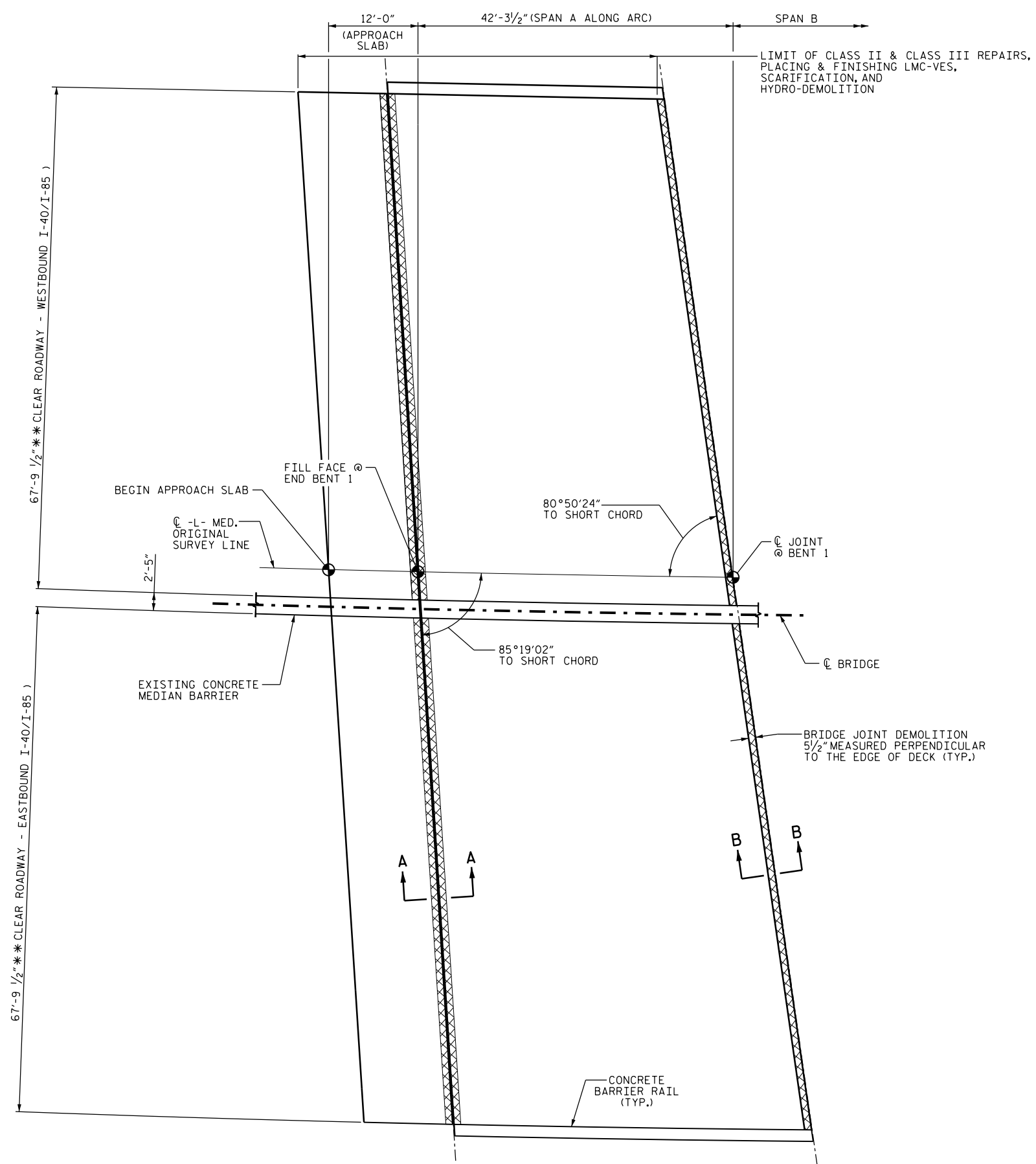
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**SUPERSTRUCTURE  
SURFACE PREPARATION**

DRAWN BY : D.V. JOYNER DATE : 10/2015  
CHECKED BY : W. SMITH DATE : 10/2015

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1			3			TOTAL SHEETS
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SPAN "A" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	62 SQ. FT.	
SCARIFYING BRIDGE DECK	612 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	612 SQ. YDS.	
SCARIFYING APPROACH SLAB	181 SQ. YDS.	
HYDRO-DEMOLITION OF APPROACH SLAB	181 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.

\*\* RADIAL DIMENSION

- CLASS II SURFACE PREPARATION
- BRIDGE JOINT DEMOLITION
- SCARIFICATION & HYDRO-DEMOLITION

PROJECT NO. I-5836  
ALAMANCE COUNTY  
 BRIDGE NO. 142

SHEET 1 OF 3

DocuSigned by:  
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 ENGINEER  
 STATE OF NORTH CAROLINA  
 PROFESSIONAL SEAL  
 20103  
 FARZIN ASEFINA  
 1/13/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

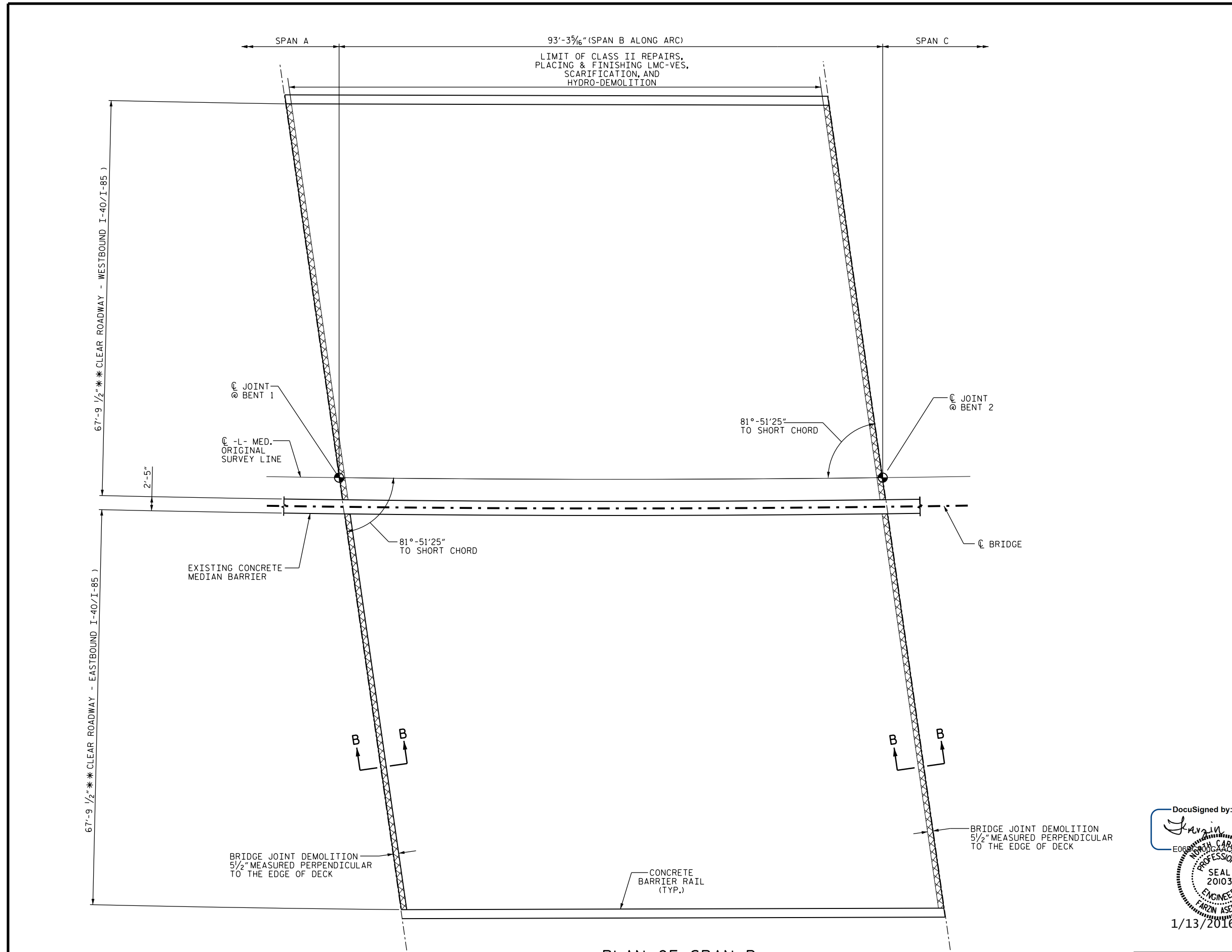
SURFACE PREPARATION  
 SPAN A AND  
 APPROACH SLAB

PLAN OF SPAN A  
 (FOR SECTION VIEW, SEE "JOINT DETAILS" SHEET S-14)

DRAWN BY : D.V. JOYNER DATE : 11/2015  
 CHECKED BY : W. SMITH DATE : 12/2015




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SPAN "B" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	124 SQ. FT.	
SCARIFYING BRIDGE DECK	1388 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	1388 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
-  BRIDGE JOINT DEMOLITION
-  SCARIFICATION & HYDRO-DEMOLITION

PROJECT NO. I-5836  
ALAMANCE COUNTY  
 BRIDGE NO. 142

SHEET 2 OF 3

DocuSigned by:  
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 20103  
 FARZIN ASEFINA  
 1/13/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SURFACE PREPARATION  
 SPAN B

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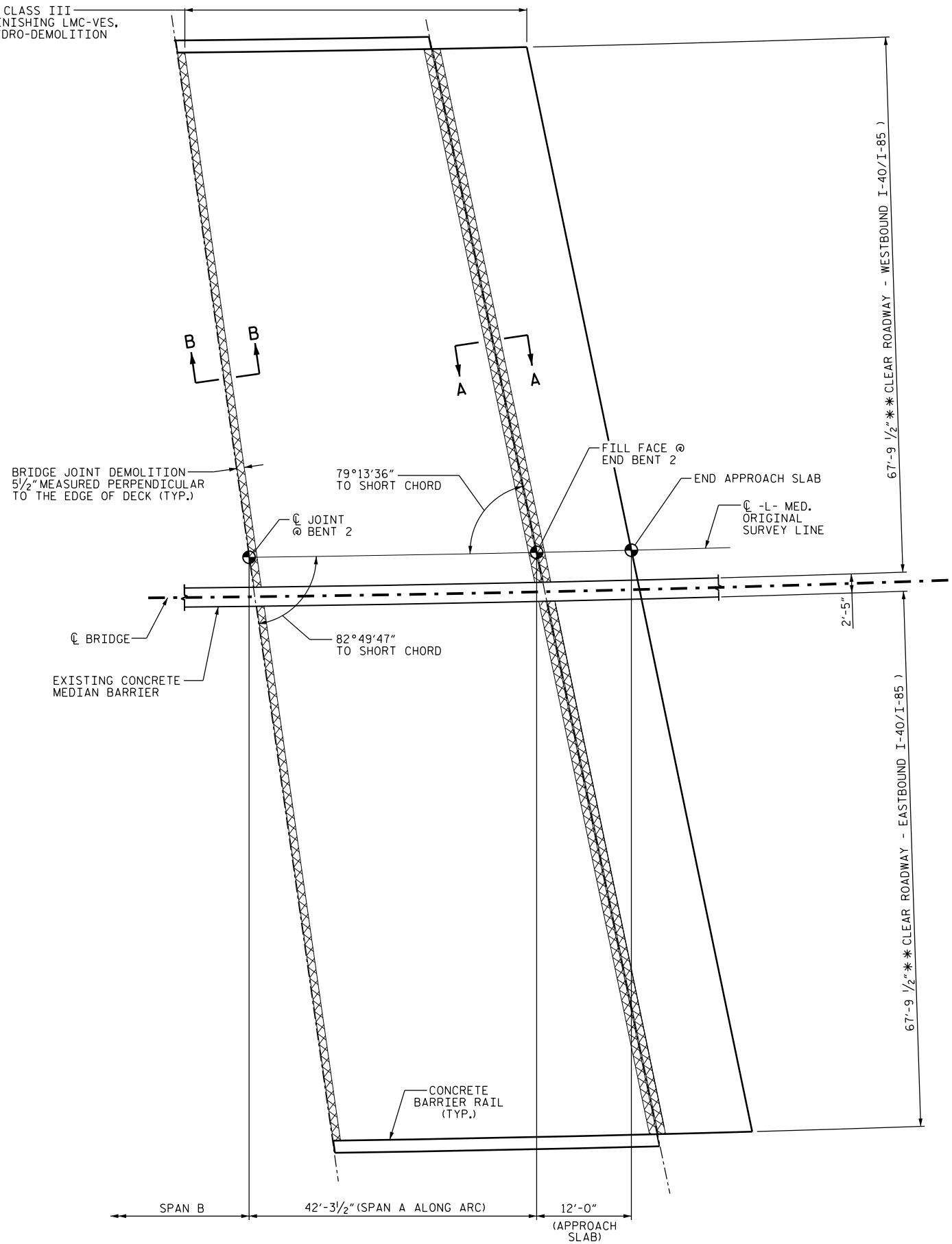
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DRAWN BY : D.V. JOYNER DATE : 11/2015  
 CHECKED BY : W. SMITH DATE : 12/2015

**PLAN OF SPAN B**  
 (FOR SECTION VIEW, SEE "JOINT DETAILS" SHEET S-14)

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LIMIT OF CLASS II & CLASS III REPAIRS, PLACING & FINISHING LMC-VES, SCARIFICATION, AND HYDRO-DEMOLITION






**PLAN OF SPAN C**

(FOR SECTION VIEW, SEE "JOINT DETAILS" SHEET S-14)

SPAN "C" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	62 SQ. FT.	
SCARIFYING BRIDGE DECK	526 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	526 SQ. YDS.	
SCARIFYING APPROACH SLAB	181 SQ. YDS.	
HYDRO-DEMOLITION OF APPROACH SLAB	181 SQ. YDS.	

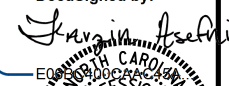
PAYMENT FOR CLASS II & CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE FEET OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE SPECIAL PROVISIONS.

\*\*\*RADIAL DIMENSION

-  CLASS II SURFACE PREPARATION
-  BRIDGE JOINT DEMOLITION
-  SCARIFICATION & HYDRO-DEMOLITION

PROJECT NO. I-5836  
ALAMANCE COUNTY  
 BRIDGE NO. 142

SHEET 3 OF 3

DocuSigned by:  
  
 FARZIN ASEFINA  
 PROFESSIONAL ENGINEER  
 SEAL 2013  
 1/13/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

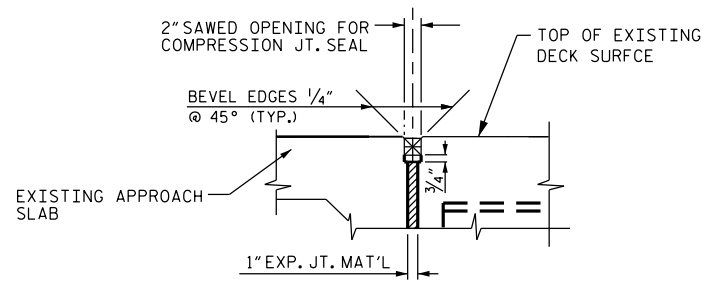
**SURFACE PREPARATION  
 SPAN C AND  
 APPROACH SLAB**

REVISIONS						SHEET NO.
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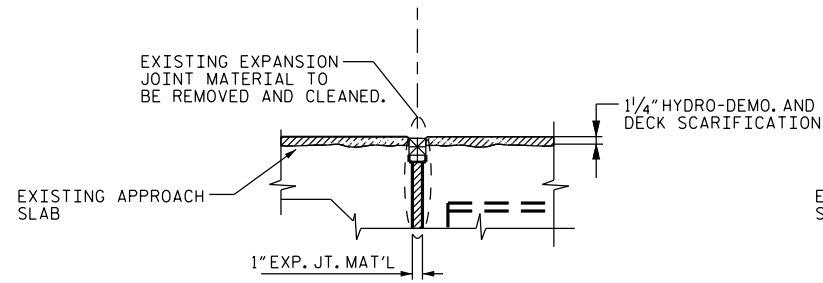
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DRAWN BY : D.V. JOYNER DATE : 11/2015  
 CHECKED BY : W. SMITH DATE : 12/2015

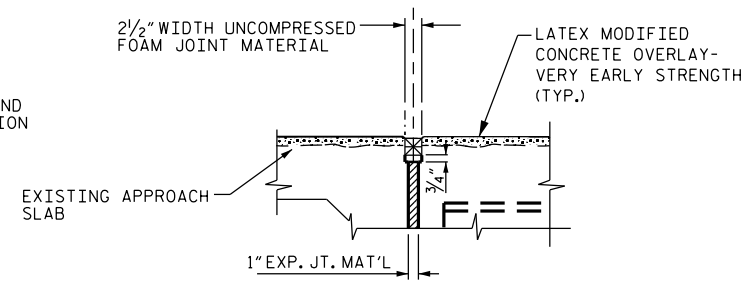




**SECTION A-A**  
(EXISTING JOINT)



**SECTION A-A**  
(MINIMUM EXISTING JOINT DEMOLITION)



**SECTION A-A**  
(PROPOSED JOINT)

**NOTES:**

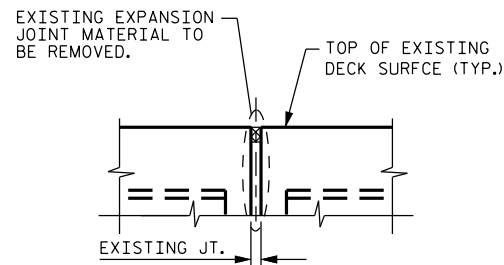
CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.

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.

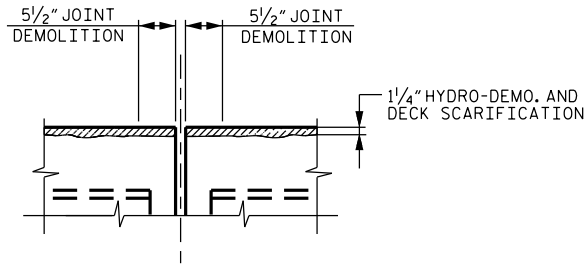
RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.

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

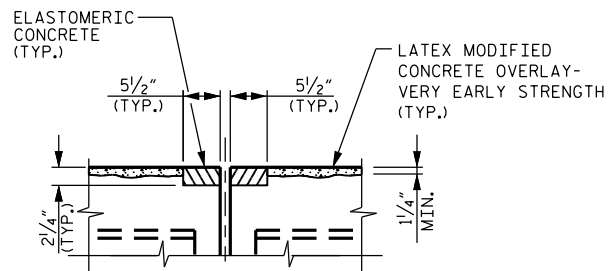
**JOINT INSTALLATION SEQUENCE AT END BENTS**



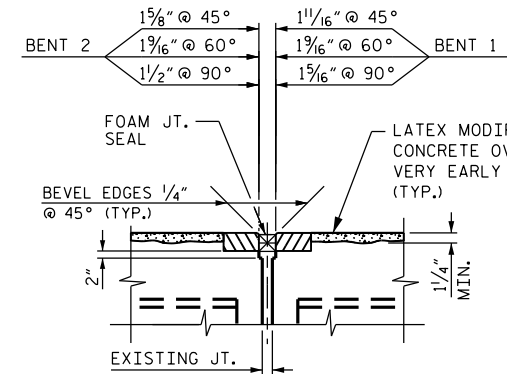
**SECTION B-B**  
(EXISTING JOINT)



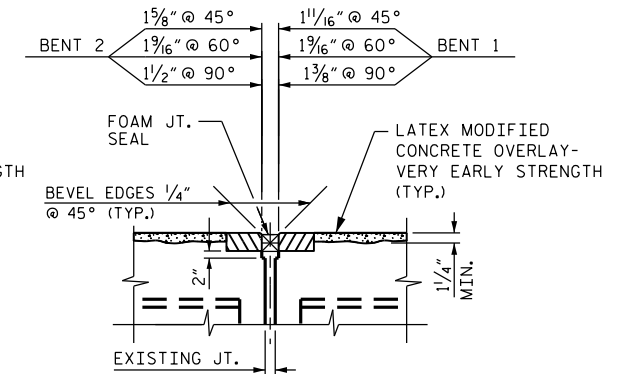
**SECTION B-B**  
(MINIMUM EXISTING JOINT DEMOLITION)



**SECTION B-B**  
(PROPOSED JOINT PRE-SAWED DIMENSIONS)

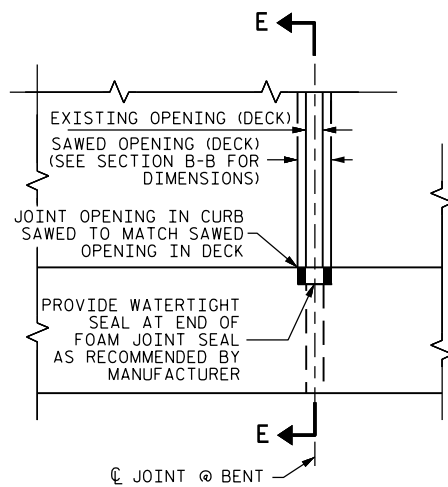


**SECTION B-B**  
(PROPOSED FOAM JOINT SEAL EXPANSION) (BRIDGE 130)

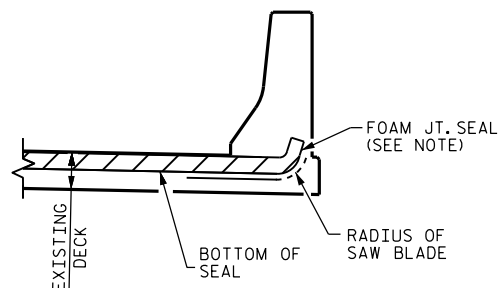


**SECTION B-B**  
(PROPOSED FOAM JOINT SEAL EXPANSION) (BRIDGE 142)

**JOINT INSTALLATION SEQUENCE AT BENTS**



**PLAN**



**SECTION E-E**

ELASTOMERIC CONCRETE	
BRIDGE # 130	55 CU. FT.
BRIDGE # 142	52 CU. FT.

PROJECT NO. I-5836  
ALAMANCE COUNTY  
 BRIDGE NO.: 130 & 142

DocuSigned by:  
*Farzin Asefina*  
 ENGINEER  
 STATE OF NORTH CAROLINA  
 PROFESSIONAL SEAL  
 2013  
 FARZIN ASEFINA  
 1/13/2016

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE JOINT DETAILS**

DRAWN BY : D.V. JOYNER DATE : 12/2015  
 CHECKED BY : W. SMITH DATE : 12/2015

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1			3			S-14
2			4			TOTAL SHEETS 14

## 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. FINIS 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