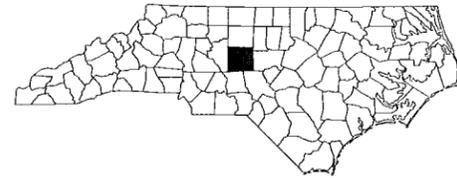


**PROJECT: BP-5500P**

**CONTRACT:**

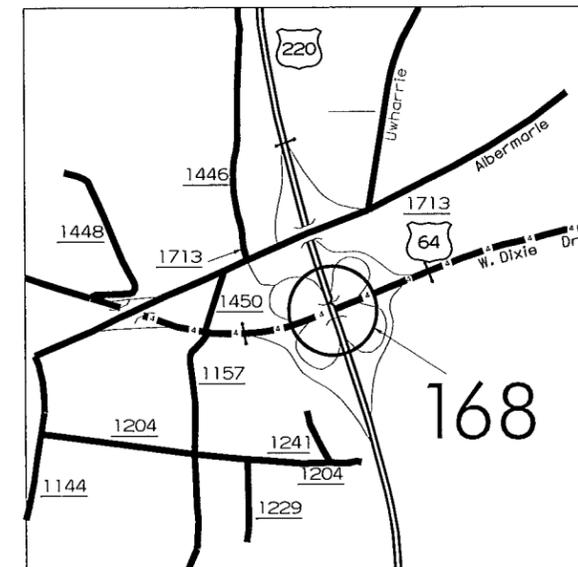
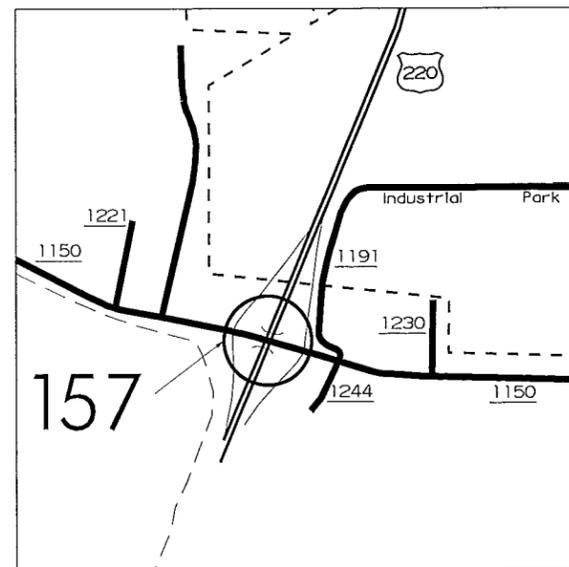
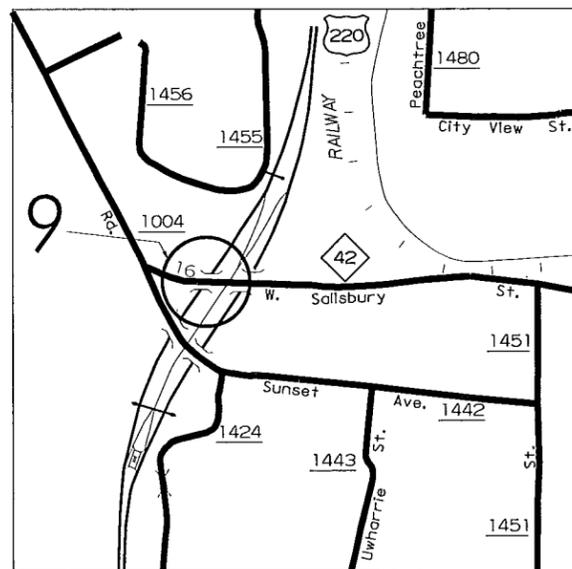


STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
**RANDOLPH COUNTY**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP-5500P	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
50070.1.1		P.E.	
50070.3.FR16	BRSTP-0042(57)	CONST.	

LOCATION: BRIDGE #9 ON NC42 OVER US220 SBL  
 BRIDGE #157 ON SR1150 OVER 17374, US220  
 BRIDGE #168 ON US64 OVER 17374, US220

TYPE OF WORK: BRIDGE PRESERVATION: CONCRETE OVERLAY, LATEX MODIFIED CONCRETE OVERLAY, JOINT REPLACEMENT & SUBSTRUCTURE REPAIR



**DESIGN DATA**

BRIDGE #9 ADT 2010 = 7400  
 BRIDGE #157 ADT 2012 = 5700  
 BRIDGE #168 ADT 2012 = 26,000

**PROJECT LENGTH**

BRIDGE #9 = .0269 MILE  
 BRIDGE #157 = .0415 MILE  
 BRIDGE #168 = .0335 MILE

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

TIMOTHY M. SHERRILL, P.E.  
 PROJECT ENGINEER

2012 STANDARD SPECIFICATIONS

LETTING DATE:  
 SEPTEMBER 24, 2014



FARZIN ASEFNIA, P.E.  
 PROJECT DESIGN ENGINEER

**PROJECT: BP-5500P**

**CONTRACT:**



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**RANDOLPH COUNTY**

LOCATION: BRIDGE #9 ON NC42 OVER US220 SBL  
BRIDGE #157 ON SR1150 OVER I7374, US220  
BRIDGE #168 ON US64 OVER I7374, US220

TYPE OF WORK: BRIDGE PRESERVATION: LATEX MODIFIED CONCRETE  
OVERLAY, JOINT REPLACEMENT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP-5500P	1A	
STATE PROJECT NO.	F. A. PROJ. NO.	DESCRIPTION	
50070.1.1		PE	
50070.3.FR16	BRSTP-0042(57)	CONST.	

<u>SHT#</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
1A	INDEX OF SHEETS
S-1 THRU S-41	STRUCTURAL REHABILITATION PLANS
SN	STANDARD NOTES
TMP-1 THRU TMP-6B	TRAFFIC CONTROL PLANS

**TOTAL BILL OF MATERIAL**

BRIDGE NO.	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	ASPHALT BINDER FOR PLANT MIX	CLASS II SURFACE PREP.	CONCRETE REPAIRS	SHOTCRETE REPAIRS	EPOXY RESIN INJECTION	FOAM JOINT SEAL	LATEX MODIFIED CONCRETE- VERY EARLY STRENGTH	EPOXY COATING	BRIDGE JOINT DEMO.	SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	PLACING & FINISHING LATEX MODIFIED CONCRETE- VERY EARLY STRENGTH	PARTIAL REMOVAL OF EXISTING STRUCTURE	REINFORCED CONCRETE DECK SLAB	CLASS AA CONCRETE (BRIDGE)	REMOVAL OF EXISTING ISLAND	5" MONOLITHIC CONC. ISLANDS (SURFACE MOUNTED)	5" MONOLITHIC CONC. ISLANDS (KEYED IN)	GROOVING BRIDGE FLOORS	
	SO. YDS.	TONS	TON	SO. YDS.	CU. FT.	CU. FT.	LN. FT.	LUMP SUM	CU. YDS.	SO. FT.	SO. FT.	SO. YDS.	SO. YDS.	SO. YDS.	LUMP SUM	SO. FT.	CU. YD.	SO. YDS.	SO. YDS.	SO. YDS.	SO. FT.	
9	1111	93	6	50	14	2.75	80	LUMP SUM	-	927	152	1059	1059	-	-	9656	116	149	127	22	7662	
157	547	46	3	211	13.5	43	71	LUMP SUM	38	119	78	677	677	677	LUMP SUM	-	-	-	-	-	-	5375
168	780	66	4	69.3	32	44.5	196	LUMP SUM	86	1179	255	1548	1548	1548	-	-	-	-	-	-	-	12802
<b>TOTAL</b>	<b>2438</b>	<b>205</b>	<b>13</b>	<b>330.3</b>	<b>70*</b>	<b>90.3</b>	<b>347</b>	<b>LUMP SUM</b>	<b>124</b>	<b>2225</b>	<b>485</b>	<b>3284</b>	<b>3284</b>	<b>2225</b>	<b>LUMP SUM</b>	<b>9656</b>	<b>116</b>	<b>149</b>	<b>127</b>	<b>22</b>	<b>25839</b>	

\* THE ADDITIONAL VOLUME OF CONCRETE IS FOR THE PURPOSE OF REHABING THE UNDERSIDE OF THE OVERHANGS OF THE BRIDGES. THE DAMAGED AREAS SHALL BE IDENTIFIED BY THE ENGINEER.

PROJECT NO. BP-5500P  
 RANDOLPH COUNTY  
 BRIDGE NO. 9, 157 & 168

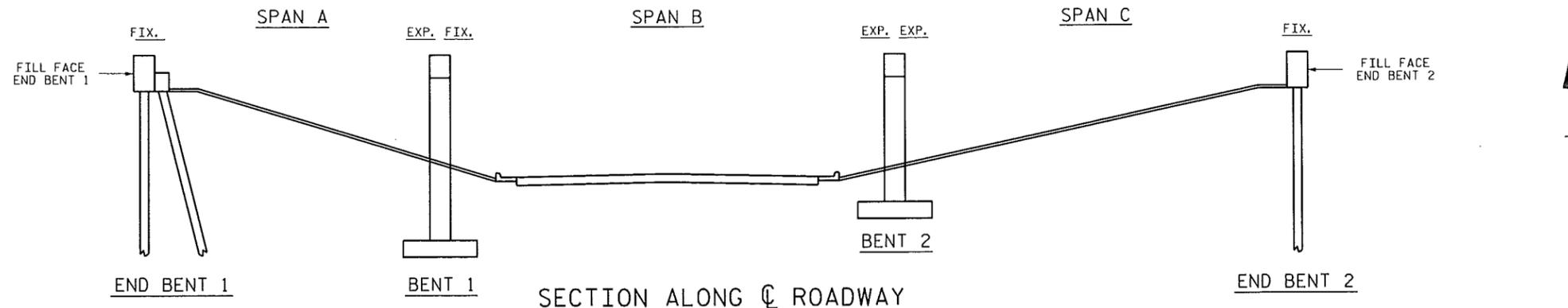
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**TOTAL BILL OF MATERIAL**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-1
1			3			TOTAL SHEETS
2			4			38

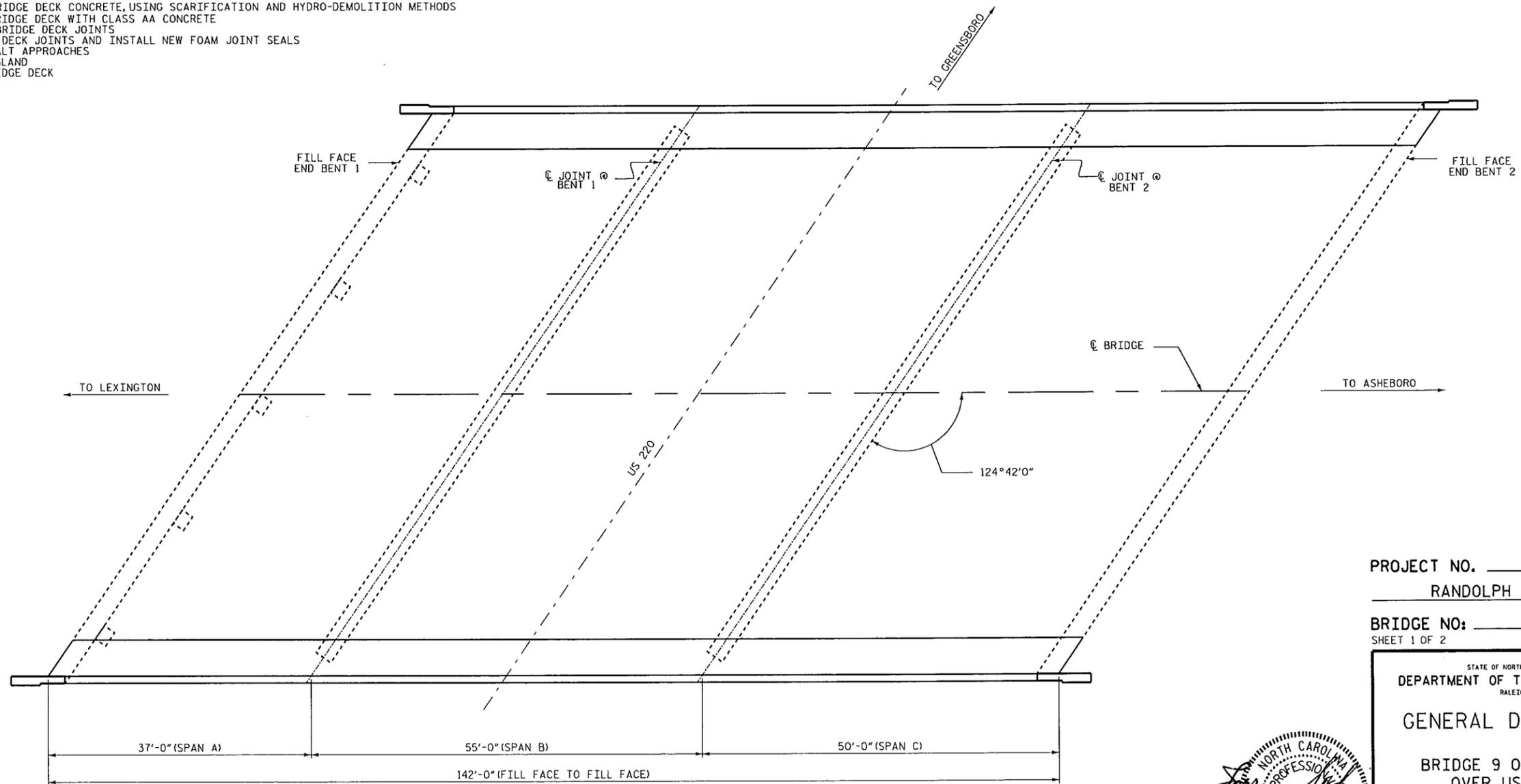


DRAWN BY : M. WELDON DATE : 08/14  
 CHECKED BY : F. ASEFNIA DATE : 08/14



**SCOPE OF WORK:**

- REMOVE EXISTING ISLAND
- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SCARIFICATION AND HYDRO-DEMOLITION METHODS
- OVERLAY PREPARED BRIDGE DECK WITH CLASS AA CONCRETE
- DEMOLISH EXISTING BRIDGE DECK JOINTS
- RECONSTRUCT BRIDGE DECK JOINTS AND INSTALL NEW FOAM JOINT SEALS
- MILL AND PAVE ASPHALT APPROACHES
- REPLACE EXISTING ISLAND
- GROOVE CONCRETE BRIDGE DECK



**PLAN**

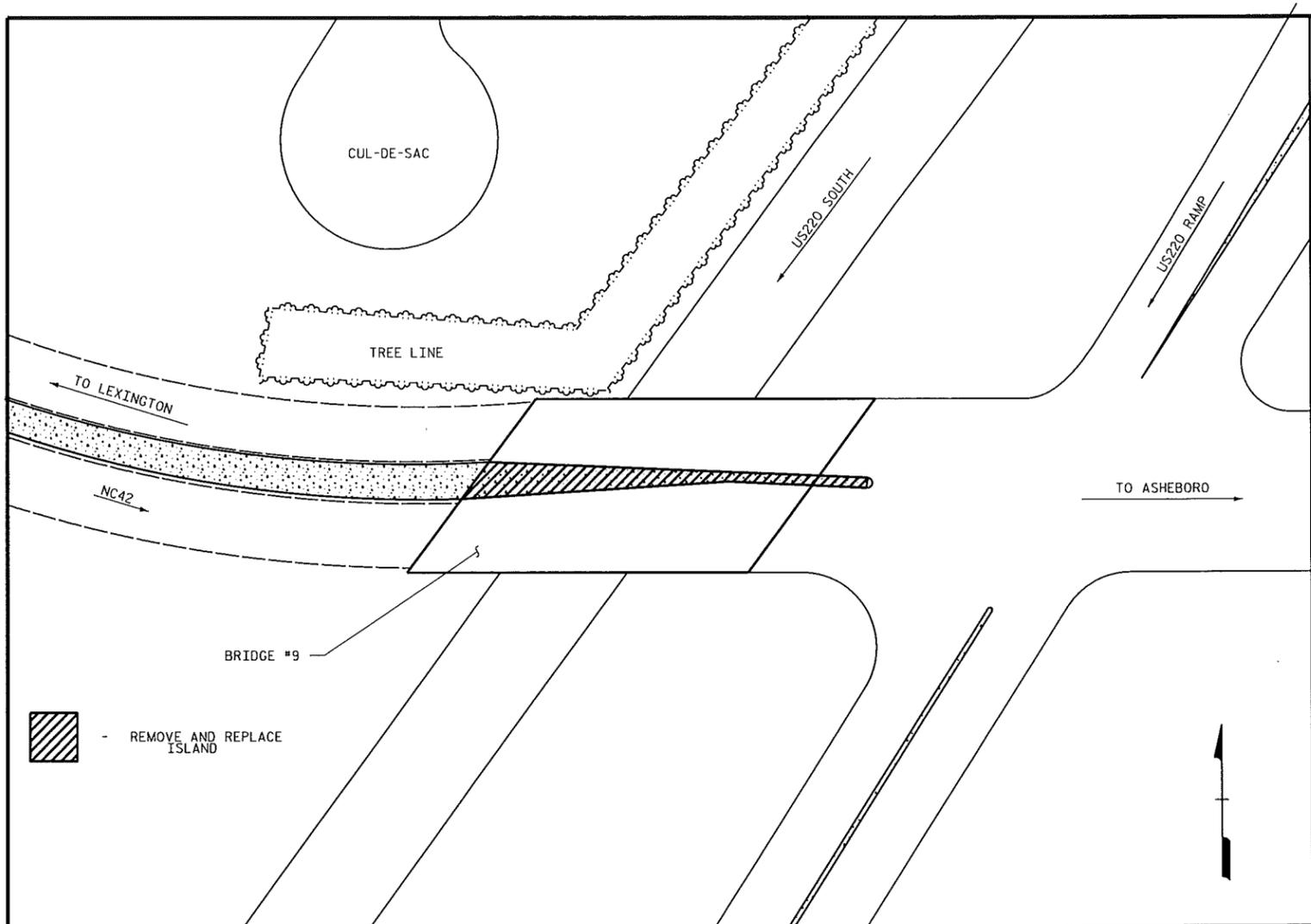
PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO: 9  
 SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 BRIDGE 9 ON NC42  
 OVER US220



DRAWN BY : M.A. LEE/M. WELDON DATE : 2/2014  
 CHECKED BY : D.N. SNOKE DATE : 2/2014  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_

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



LOCATION SKETCH

**NOTES:**

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.

INCIDENTAL MILLING IS INCLUDED TO ENSURE A SMOOTH TRANSITION ONTO THE BRIDGE FLOOR. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL MILL AS REQUIRED TO PROVIDE A SMOOTH TRANSITION TO THE ROADWAY AT BOTH ENDS OF THE BRIDGE.

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

FOR BRIDGE JOINT DEMOLITION, 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 REMOVE AND REPLACE OF ISLAND, SEE SPECIAL PROVISIONS.

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 9  
 SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

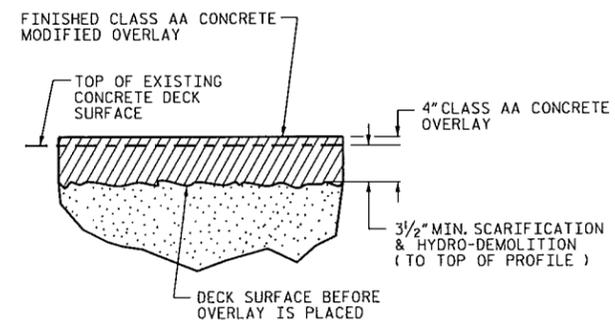
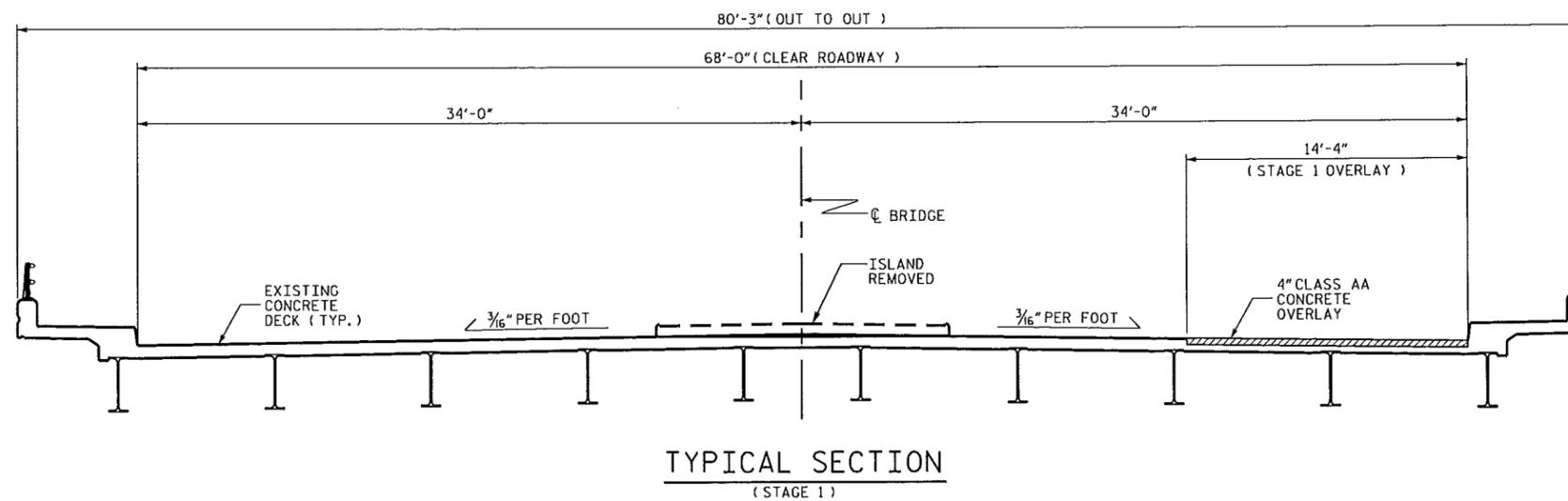
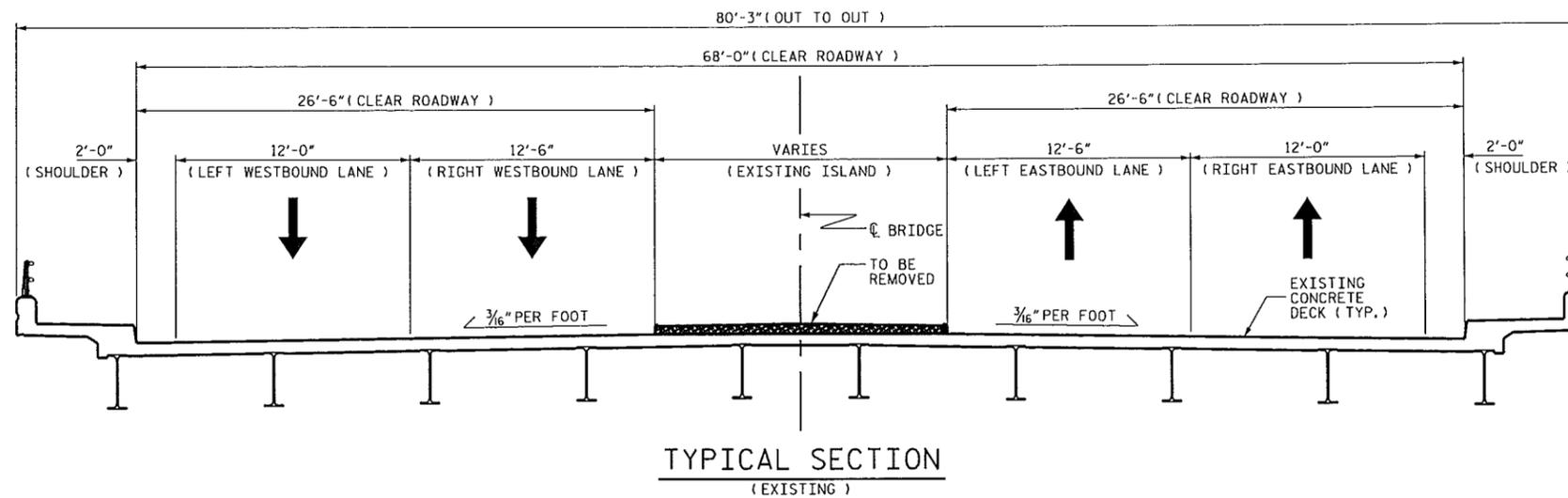
**GENERAL DRAWING**

BRIDGE #9 ON NC42  
 OVER US220.



DRAWN BY : M.A. LEE/M. WELDON DATE : 3/14  
 CHECKED BY : D.N. SNOKE DATE : 3/14  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_

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



**DETAIL FOR CONCRETE OVERLAY**

(FINISHED SURFACE OF THE CLASS AA CONCRETE OVERLAY IS APPROX. 1/2" ABOVE THE SURFACE OF THE EXISTING CONCRETE DECK.)

**NOTES:**

REMOVE ISLAND PRIOR TO DECK SCARIFICATION.  
DECK PAID FOR BY SECTION 420 OF THE STANDARD SPECIFICATIONS. DEPTH OF NEW REINFORCED CONCRETE DECK SHALL BE THE DEPTH OF DEMOLITION PLUS 1/2" AS SHOWN.

NO VEHICLES OR HEAVY EQUIPMENT MAY DRIVE ON AREAS OF EXPOSED REBAR. STAGING OF CONCRETE OVERLAY IS INTENDED TO ACCOMMODATE THIS RESTRICTION.

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 9

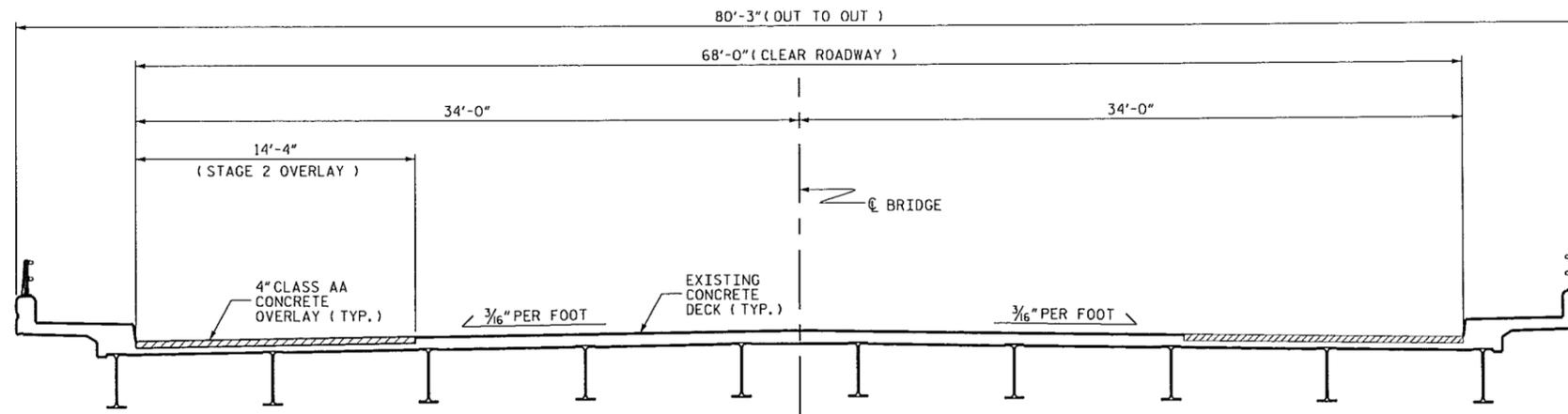
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**TYPICAL SECTION  
 STAGING SEQUENCE**

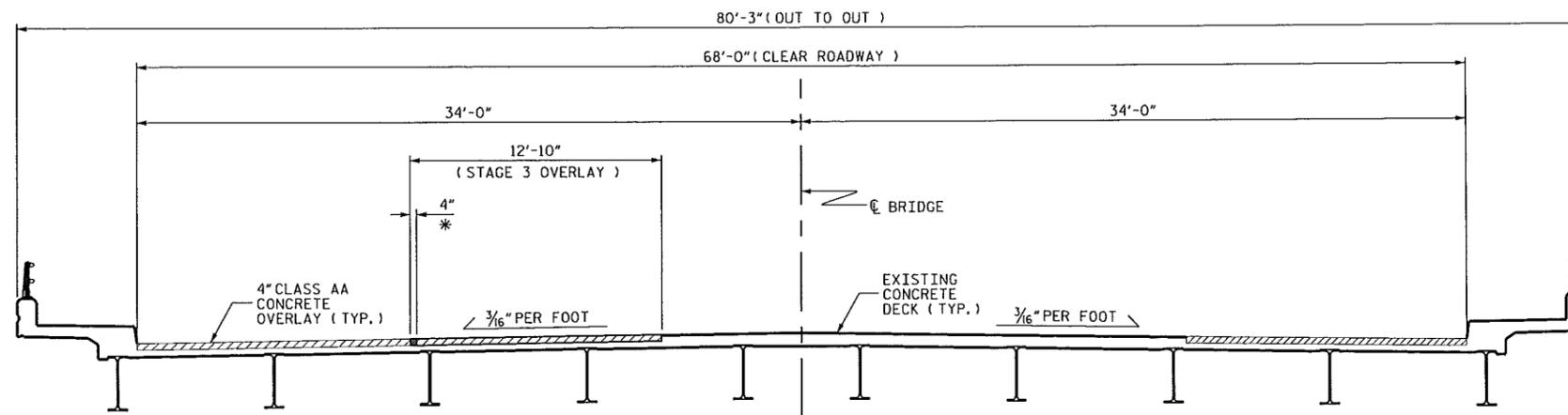
DRAWN BY : M.A.LEE/M.WELDON DATE : 6/2014  
 CHECKED BY : D.N.SNOKE DATE : 6/2014



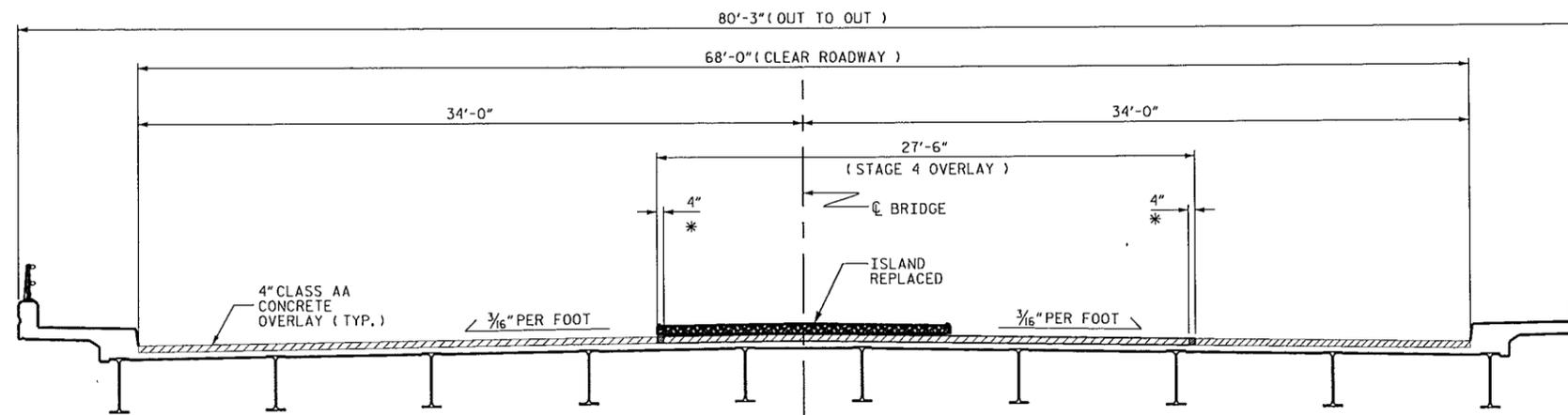
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-4
2			4			38



TYPICAL SECTION  
(STAGE 2)



TYPICAL SECTION  
(STAGE 3)



TYPICAL SECTION  
(STAGE 4)

\* - 4" OVERLAP BETWEEN OVERLAYS  
PREVIOUSLY POURED CLASS AA CONCRETE OVERLAY TO BE HYDRO-DEMOLITIONED & RECAST WITH CLASS AA CONCRETE OVERLAY.

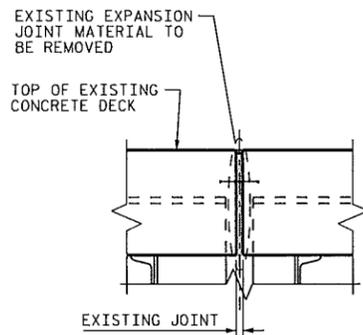
PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
BRIDGE NO. 9

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
TYPICAL SECTION  
STAGING SEQUENCE

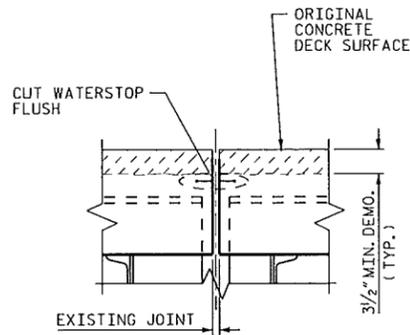


DRAWN BY : M.A.LEE/M.WELDON DATE : 6/2014  
CHECKED BY : D.N.SNOKE DATE : 6/2014

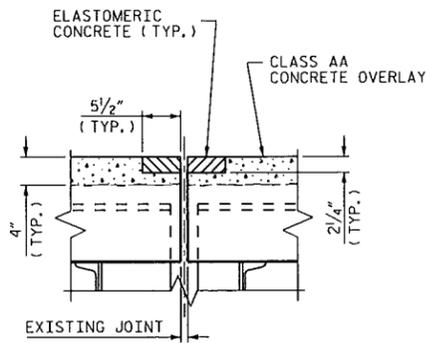
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1			3			TOTAL SHEETS
2			4			38



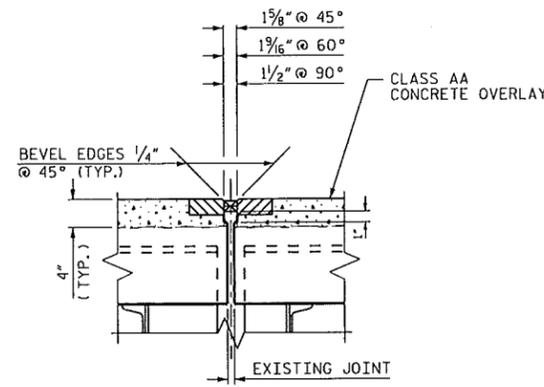
SECTION B-B  
(EXISTING JOINT)



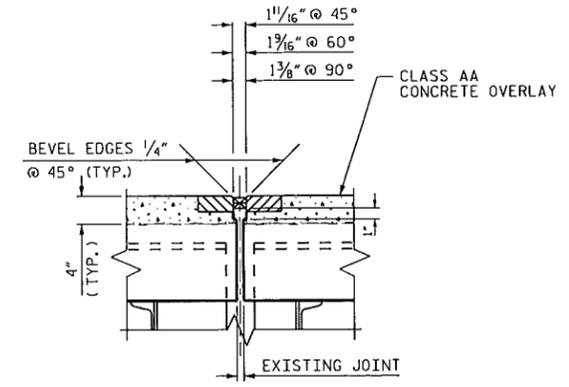
SECTION B-B  
(MINIMUM EXISTING JOINT DEMOLITION)



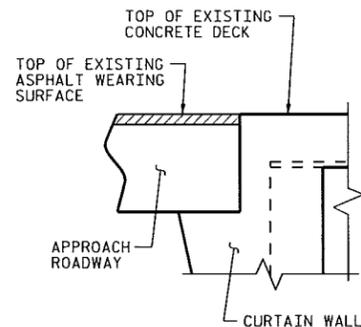
SECTION B-B  
(PROPOSED JOINT PRE-SAWED DIMENSIONS)



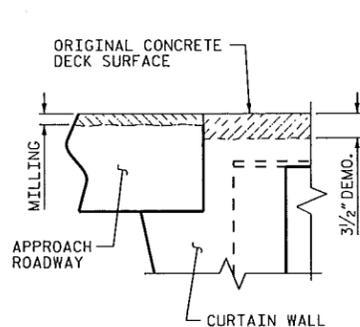
SECTION B-B  
(BENT 1)  
(PROPOSED FOAM JOINT SEAL EXPANSION)



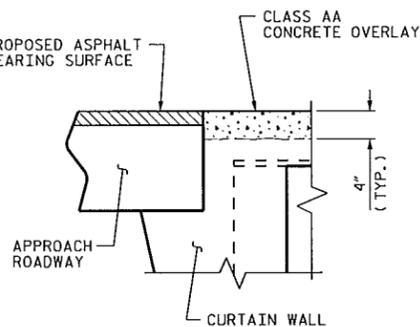
SECTION B-B  
(BENT 2)  
(PROPOSED FOAM JOINT SEAL EXPANSION)



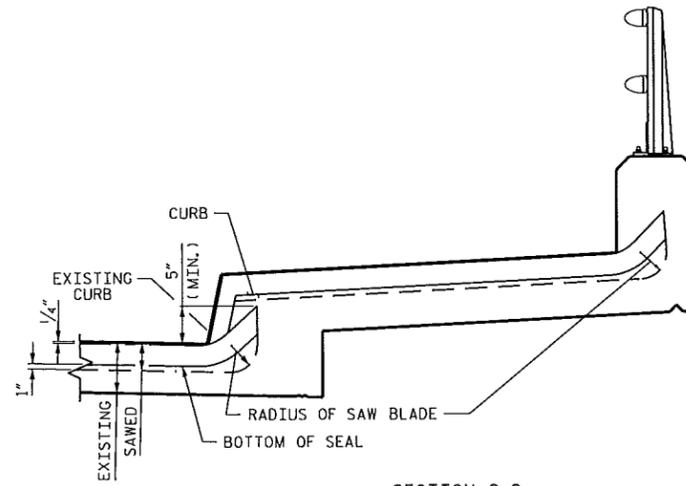
SECTION A-A  
(EXISTING JOINT)



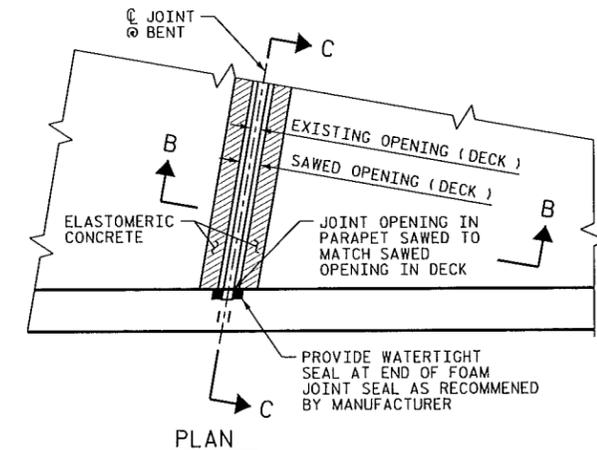
SECTION A-A  
(MINIMUM EXISTING JOINT DEMOLITION)



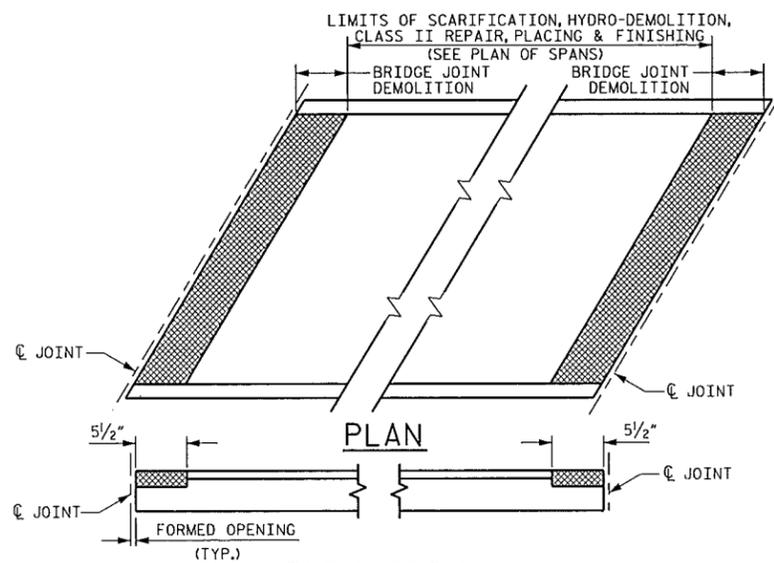
SECTION A-A  
(PROPOSED COLD JOINT)



SECTION C-C



PLAN



PLAN  
ELEVATION

**NOTES:**

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

IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE OR IF UNSOUND CONCRETE IS REMOVED TO WITHIN 2" OF THE WATERSTOP, THE ENTIRE WATERSTOP SHALL BE REMOVED.

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 SEAL, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

THE INSTALLED JOINT SEAL SHALL BE WATER TIGHT.

NOMINAL UNCOMPRESSED WIDTH OF FOAM JOINT SEAL SHALL BE ----- FOR BENT 1 AND BENT 2.

**JOINT SEAL DETAILS AT BENT**

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 9

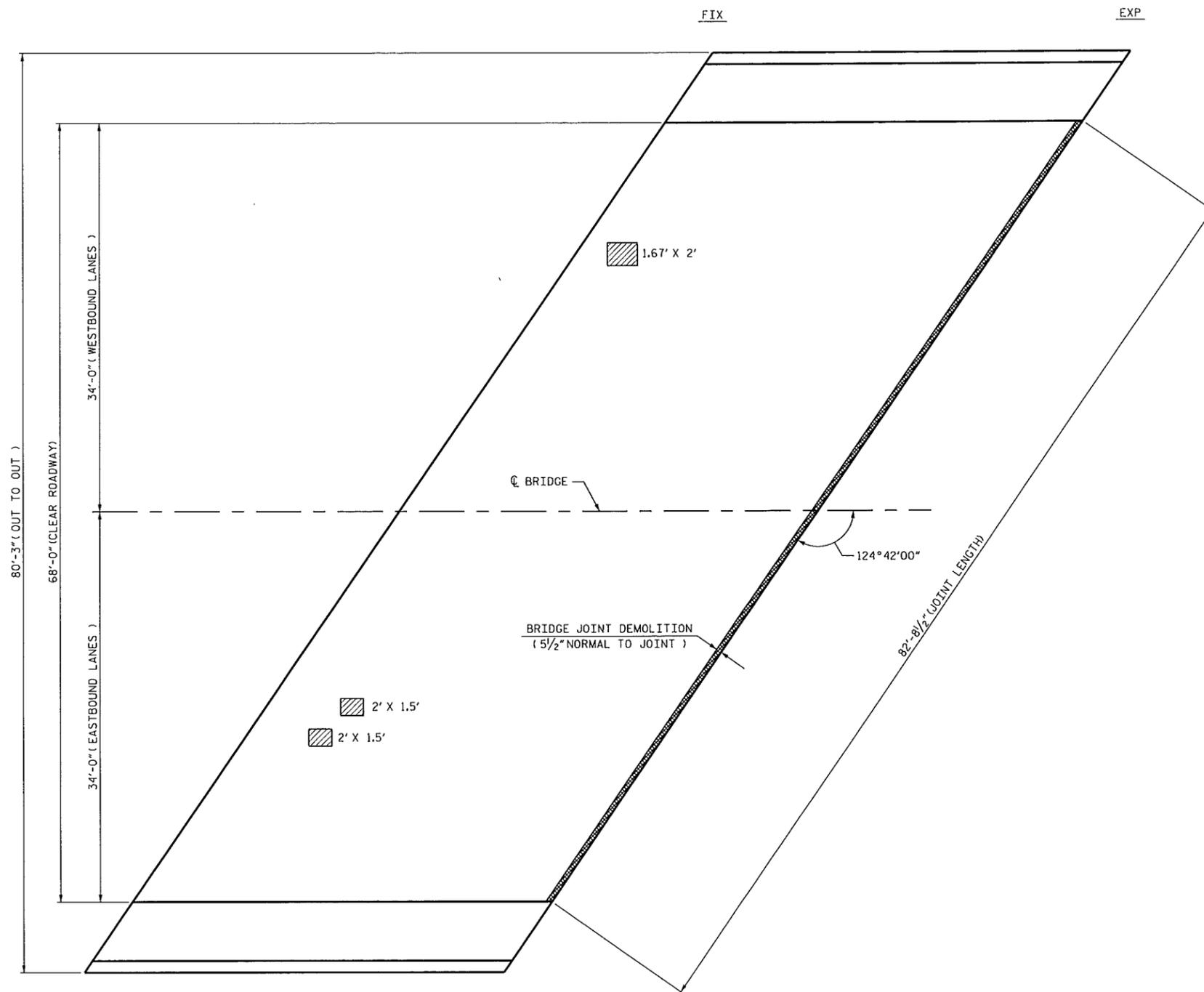
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**JOINT DETAILS**



DRAWN BY: M.A.LEE/M.WELDON DATE: 6/2014  
 CHECKED BY: D.N.SNOKE DATE: 6/2014

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			38



SPAN "A" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	0 SQ. YDS.	
BRIDGE JOINT DEMOLITION	38 SQ. FT.	
SCARIFYING BRIDGE DECK	275 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	275 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
-  JOINT DEMOLITION
-  SCARIFICATION

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO: 9

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 SPAN "A"



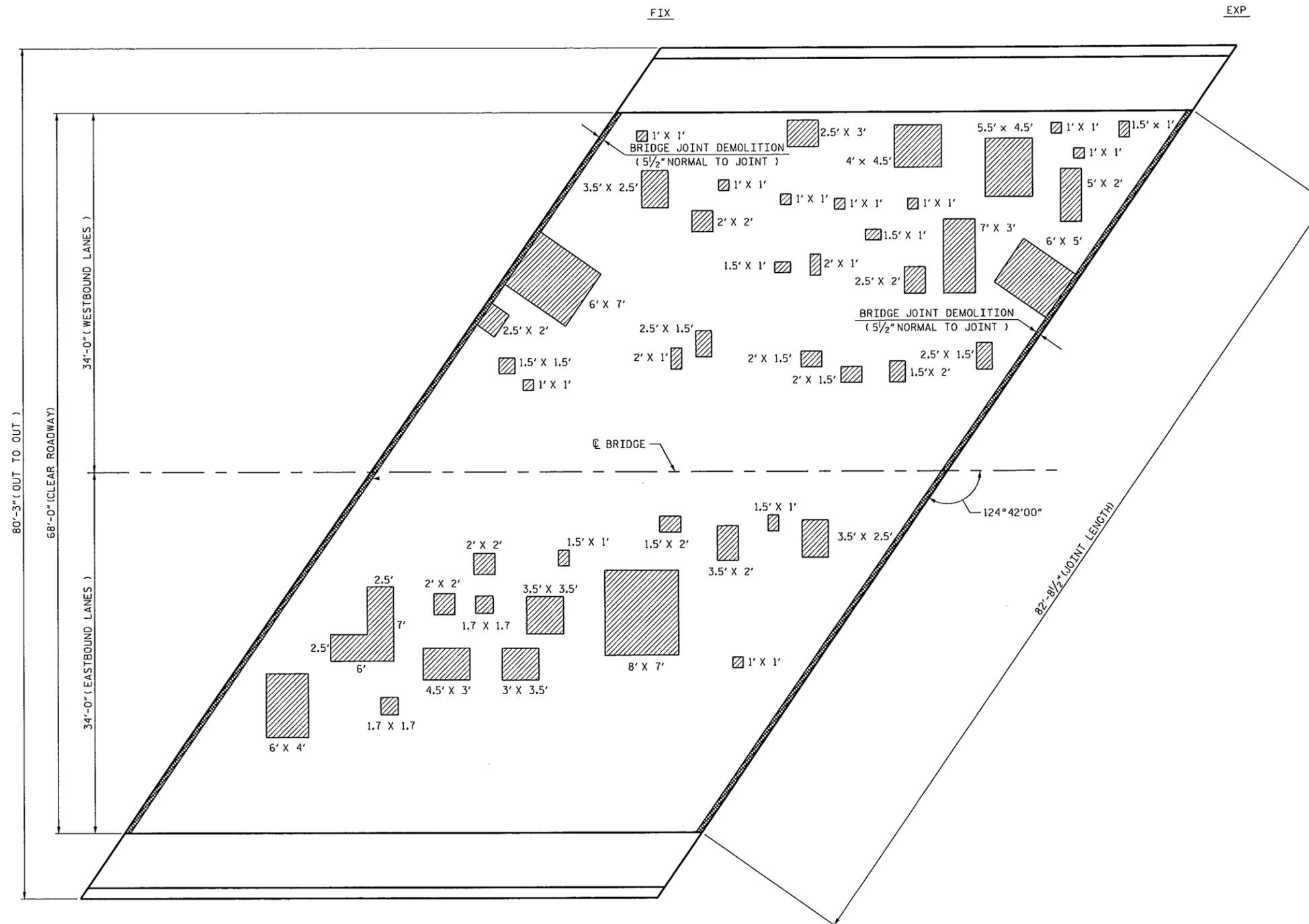
DRAWN BY : M.A.LEE/M. WELDON DATE : 3/2014  
 CHECKED BY : D.N.SNOKE DATE : 3/2014

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-7
2			4			TOTAL SHEETS
						38

SPAN "B" QUANTITIES

	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	42 SQ. YDS.	
CLASS III SURFACE PREPARATION	0 SQ. YDS.	
BRIDGE JOINT DEMOLITION	76 SQ. FT.	
SCARIFYING BRIDGE DECK	407 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	407 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
-  JOINT DEMOLITION
-  SCARIFICATION

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO: 9

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

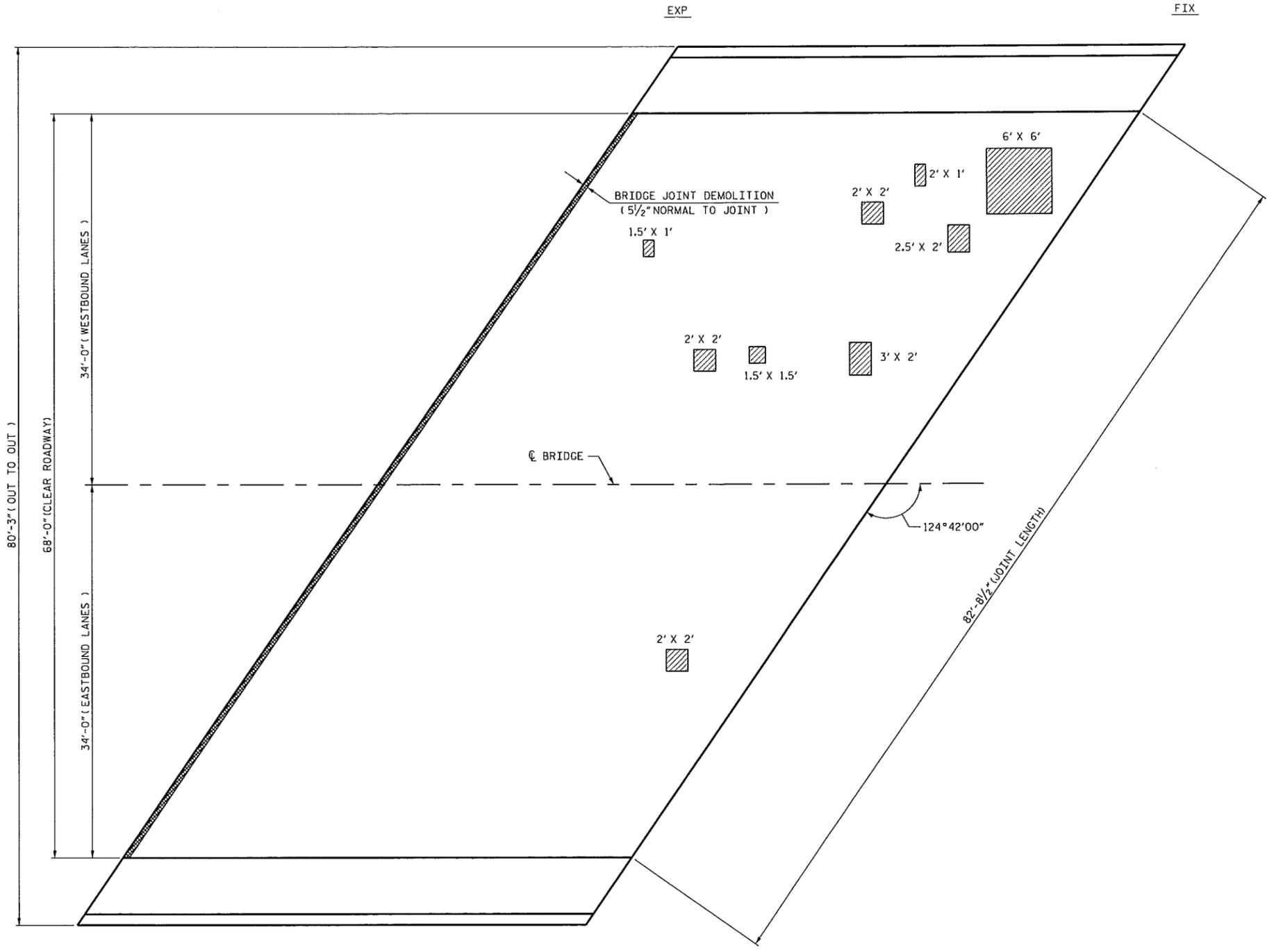


DRAWN BY : M.A.LEE/M.WELDON DATE : 3/2014  
 CHECKED BY : D.N.SNOKE DATE : 3/2014

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			38

SPAN "C" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	7 SQ. YDS.	
CLASS III SURFACE PREPARATION	0 SQ. YDS.	
BRIDGE JOINT DEMOLITION	38 SQ. FT.	
SCARIFYING BRIDGE DECK	350 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	350 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
-  JOINT DEMOLITION
-  SCARIFICATION

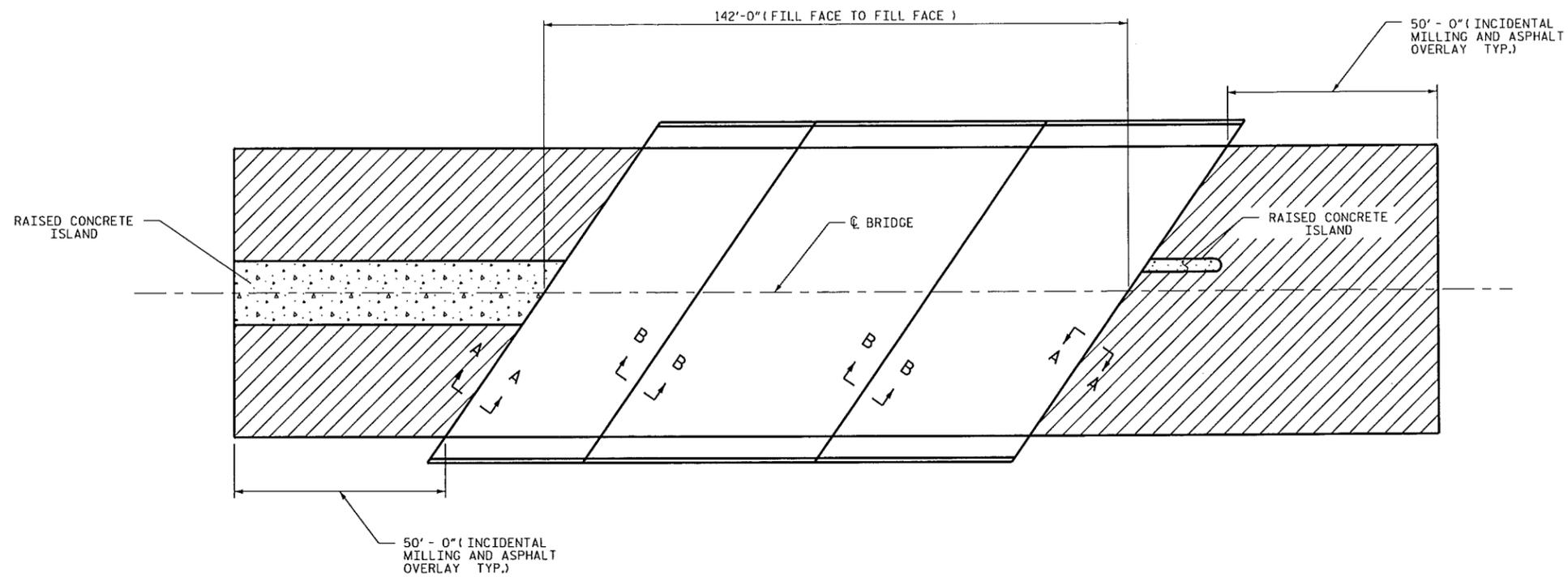
PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO: 9

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 SPAN "C"



DRAWN BY : M.A.LEE/M.WELDON DATE : 3/2014  
 CHECKED BY : D.N.SNOKE DATE : 3/2014

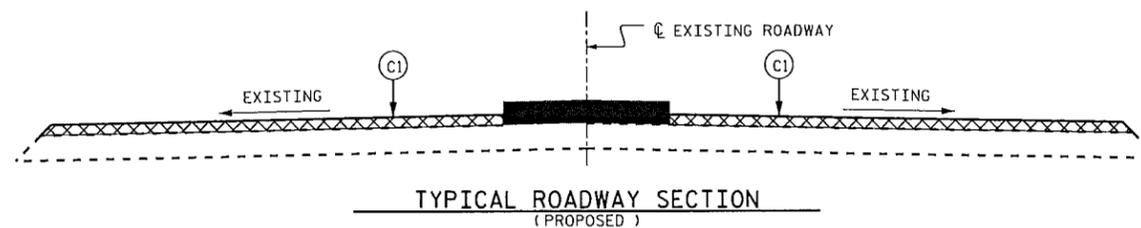
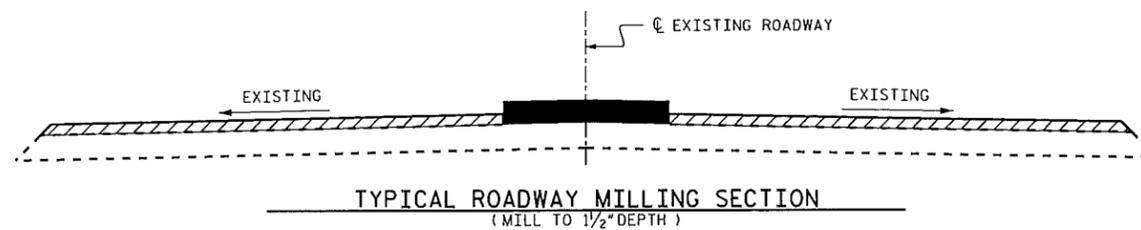
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			38



 INCIDENTAL MILLING

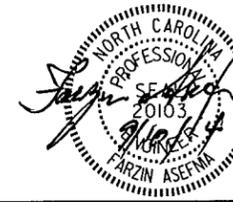
**NOTE:**

INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVING TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1 1/2" DEPTH OF NEW ASPHALT PAVING. PROVIDE NEW ASPHALT PAVING THICKNESS TO CREATE A SMOOTH TRANSITION TO THE BRIDGE DECK, AS SHOWN. NEW ASPHALT PAVING THICKNESS MAY EXCEED 1 1/2" DUE TO SETTLEMENT OF THE EXISTING APPROACH ASPHALT PAVING.



PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 9

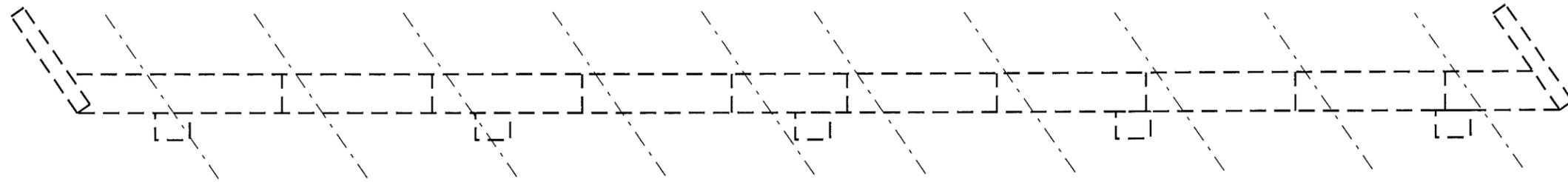
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**APPROACH MILLING  
 AND TYPICAL ROADWAY  
 SECTIONS**



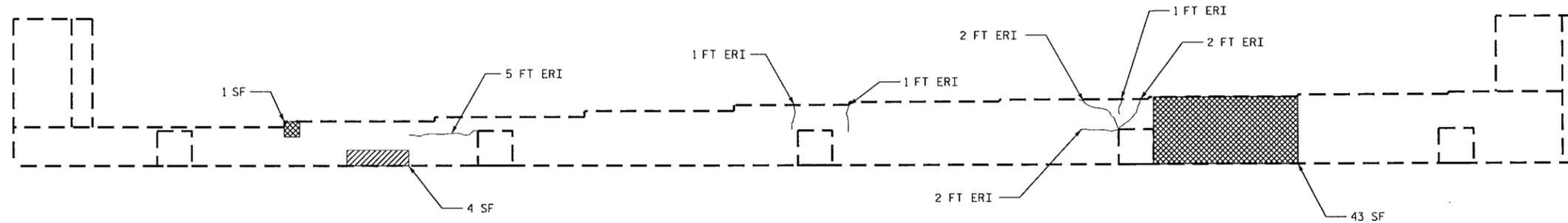
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-10
2			4			38

C1 PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH.

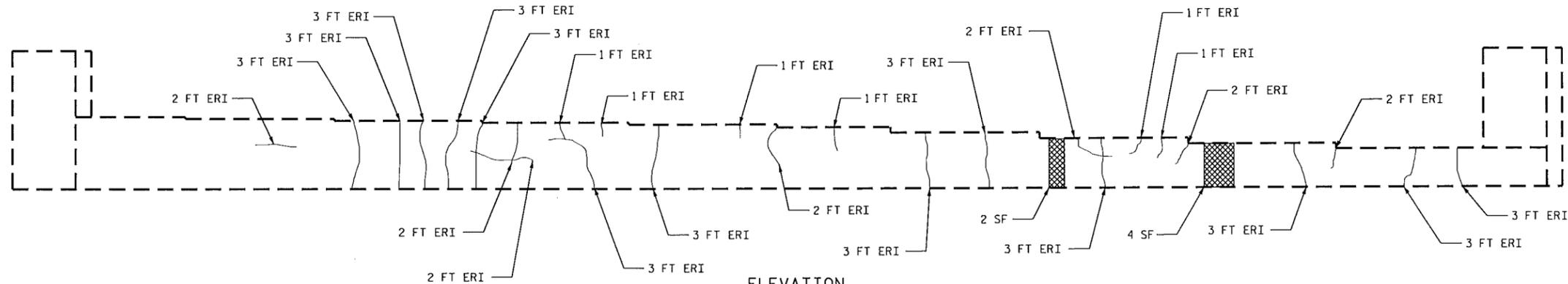
DRAWN BY : M.A. LEE/M. WELDON DATE : 6/2014  
 CHECKED BY : D.N. SNOKE DATE : 6/2014



PLAN  
TOP OF CAP



ELEVATION  
END BENT 1



ELEVATION  
END BENT 2

REPAIR QUANTITY TABLE									
REPAIRS END BENT 1	QUANTITIES				REPAIRS END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL			ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	
SHOTCRETE REPAIRS					SHOTCRETE REPAIRS				
CAP (VERTICAL FACE)	4	1			CAP (VERTICAL FACE)	0	0		
CAP (HORIZONTAL, CORNER)	0	0			CAP (HORIZONTAL, CORNER)	0	0		
CONCRETE REPAIRS	44	11			CONCRETE REPAIRS	6	1.5		
EPOXY RESIN INJECTION			LN. FT	LN. FT	EPOXY RESIN INJECTION			LN. FT	LN. FT
CAP		14			CAP		59		
EPOXY COATING			SO. FT	SO. FT	EPOXY COATING			SO. FT	SO. FT
TOP OF CAP		241			TOP OF CAP		241		

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

NOTES:

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

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.  
FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET S-3B.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARING PAD. SEE ARTICLE 420-1B OF THE STANDARD SPECIFICATIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

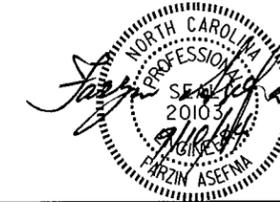
FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

- SHOTCRETE REPAIR
- CONCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO: 9

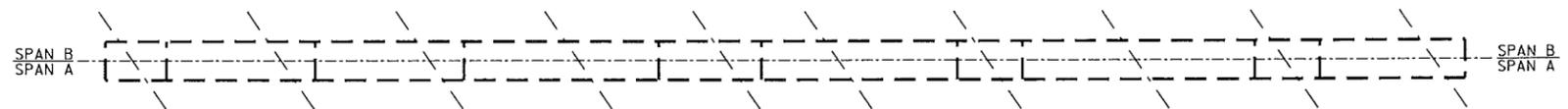
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 END BENTS 1 & 2

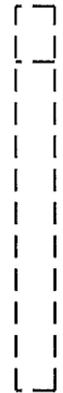


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 CHECKED BY: D.N.SNOKE DATE: 3/2014

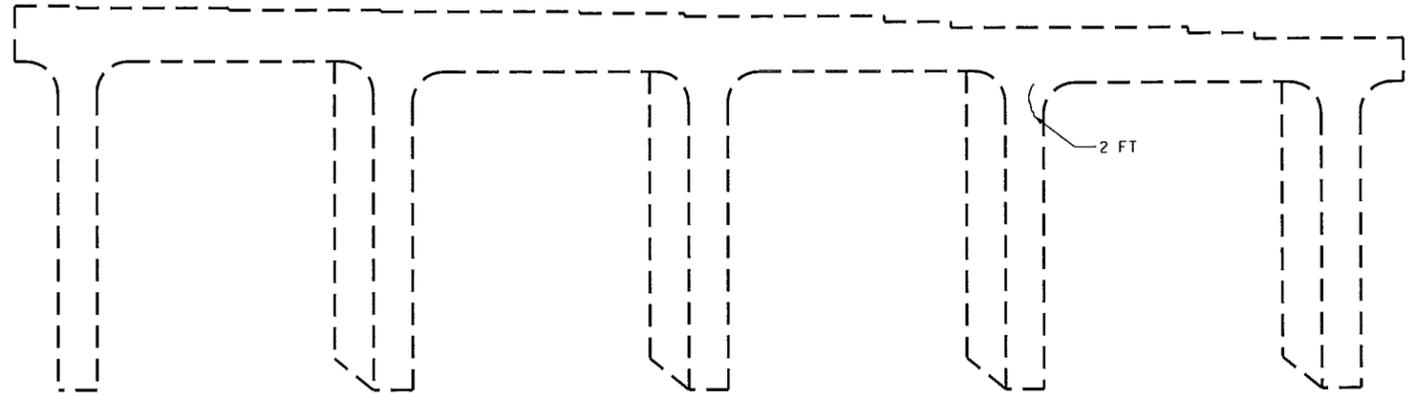
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-11
2			4			TOTAL SHEETS 38



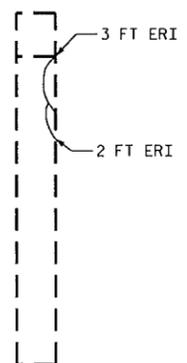
PLAN  
TOP OF CAP



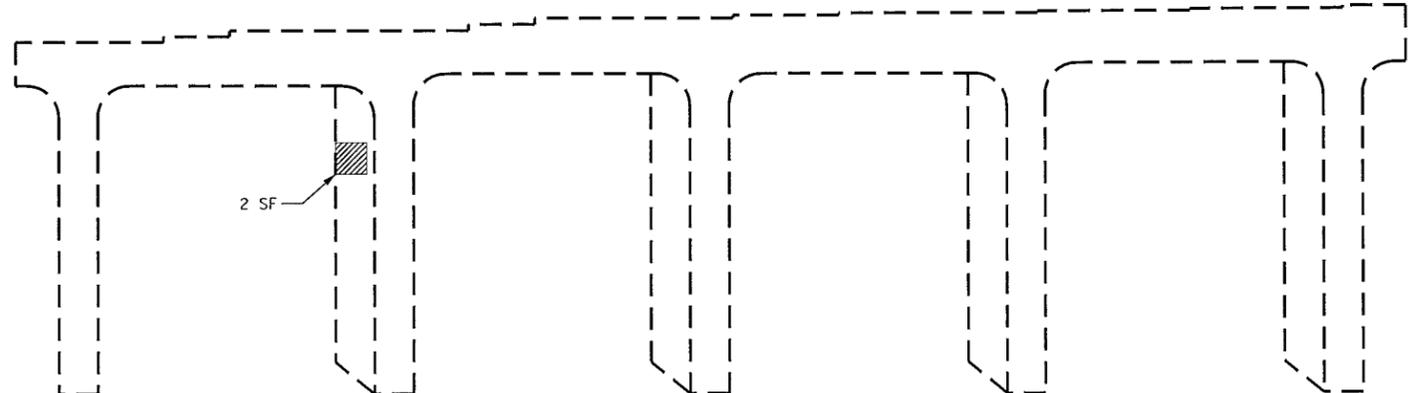
END VIEW  
NORTH SIDE



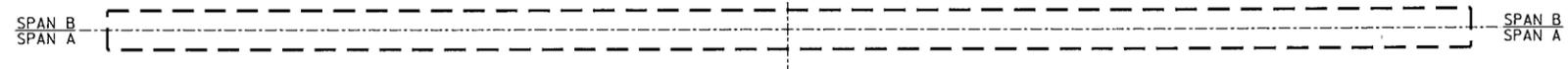
ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE



ELEVATION  
EAST SIDE



PLAN VIEW  
BOTTOM OF CAP

REPAIR QUANTITY TABLE

REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0	0		
CAP (HORIZONTAL, CORNER)	0	0		
COLUMN	2	0.5		
CONCRETE REPAIRS	0	0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0		
COLUMN		7		
EPOXY COATING		SO. FT		SO. FT
TOP OF CAP		222.5		

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

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

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET S-38.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARING PAD. SEE ARTICLE 420-18 OF THE STANDARD SPECIFICATIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

- ▨ - SHOTCRETE REPAIR
- ▣ - CONCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 9

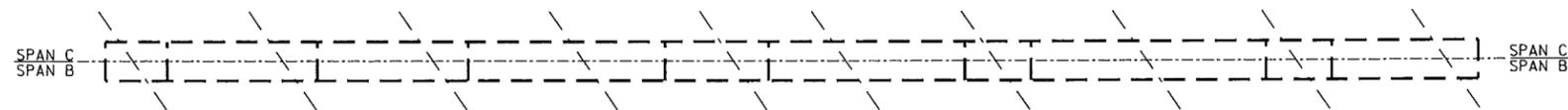
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE  
 BENT 1**



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-12
2			4			38

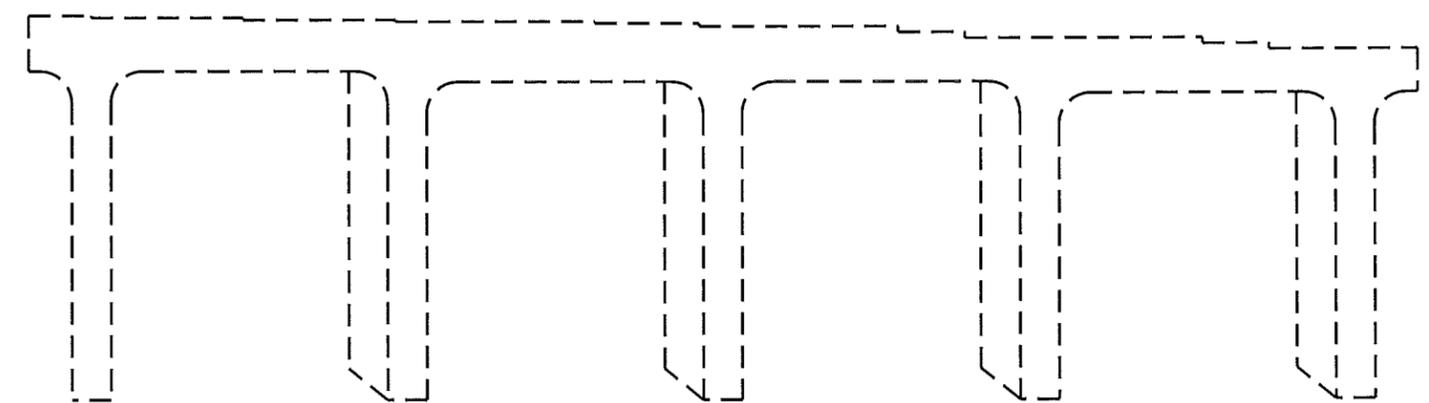
DRAWN BY : M.A.LEE/M.WELDON DATE : 6/2014  
 CHECKED BY : D.N.SNOKE DATE : 6/2014



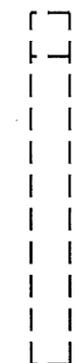
PLAN  
TOP OF CAP



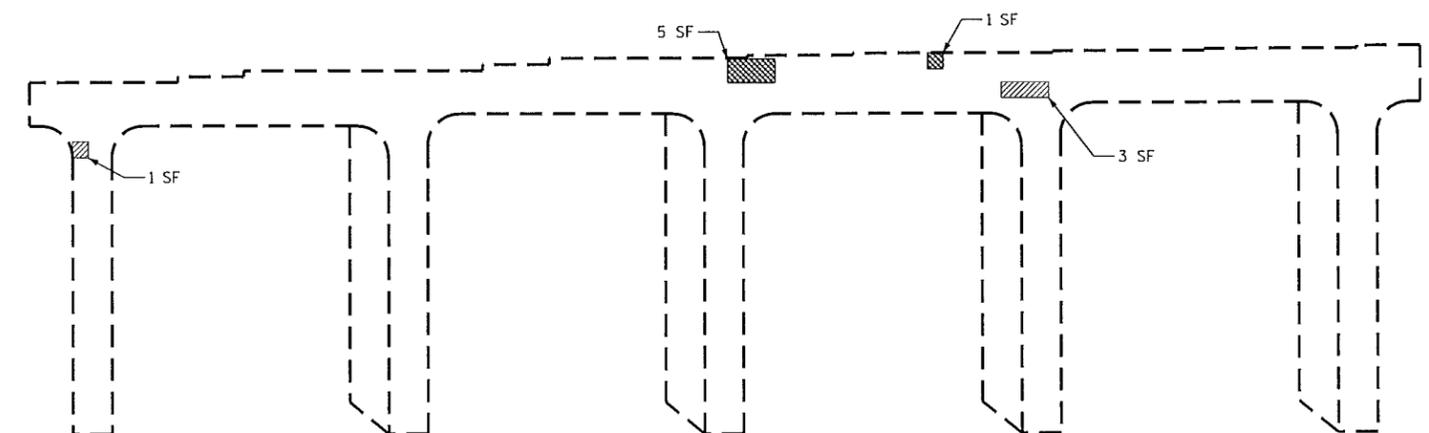
END VIEW  
NORTH SIDE



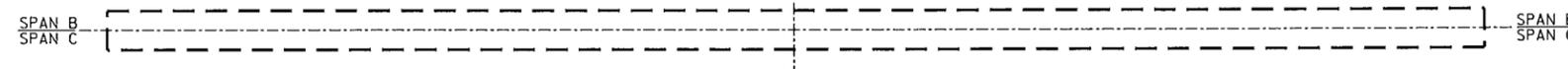
ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE



ELEVATION  
EAST SIDE



PLAN VIEW  
BOTTOM OF CAP

REPAIR QUANTITY TABLE

REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	4	1		
CAP (HORIZONTAL, CORNER)	0	0		
COLUMN	1	0.25		
CONCRETE REPAIRS	6	1.5		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0		
COLUMN		0		
EPOXY COATING		SO. FT		SO. FT
TOP OF CAP		222.5		

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

**NOTES:**  
 REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.  
 CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.  
 FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET S-38.  
 EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARING PAD. SEE ARTICLE 420-18 OF THE STANDARD SPECIFICATIONS.  
 FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.  
 FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.  
 FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

- SHOTCRETE REPAIR
- CONCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 9

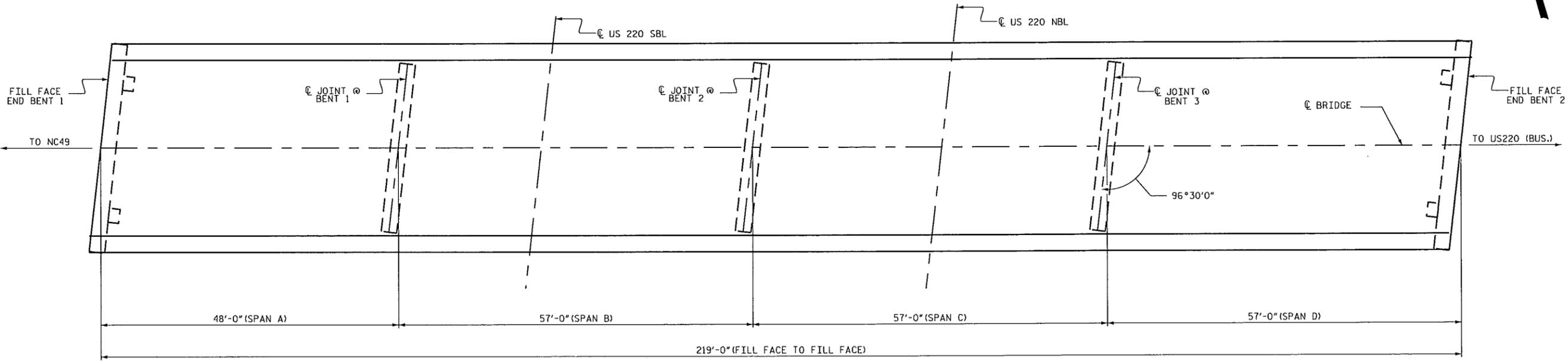
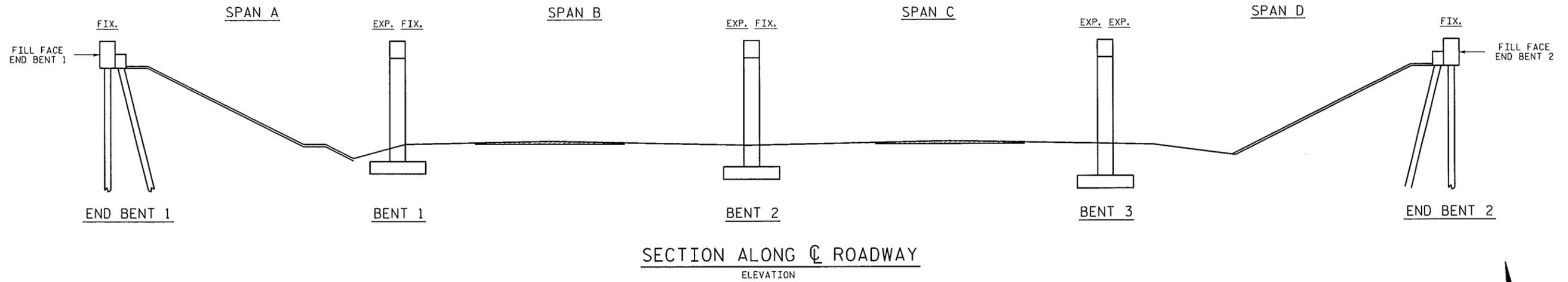
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
BENT 2



DRAWN BY : M.A. LEE/M. WELDON DATE : 6/2014  
 CHECKED BY : D.N. SNOKE DATE : 6/2014

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2			4			38



PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO: 157  
 SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**

BRIDGE 157 ON SR 1150  
 (MCDOWELL RD.)  
 OVER I-73/74, US 220

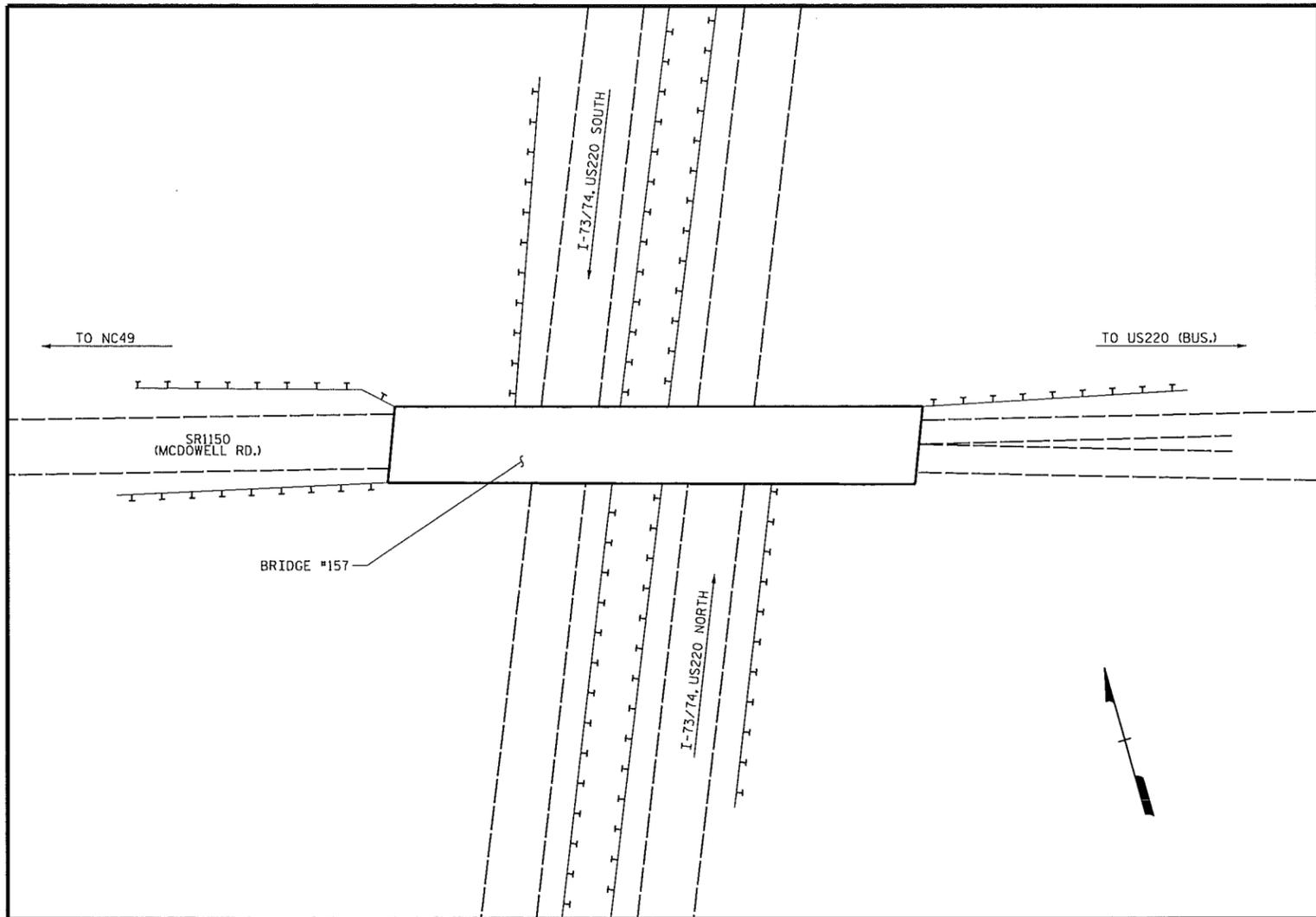
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			38

**SCOPE OF WORK:**

- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SCARIFICATION AND HYDRO-DEMOLITION METHODS
- OVERLAY PREPARED BRIDGE DECK WITH LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH
- DEMOLISH EXISTING BRIDGE DECK JOINTS
- RECONSTRUCT BRIDGE DECK JOINTS AND INSTALL NEW FOAM JOINT SEALS
- MILL AND PAVE ASPHALT APPROACHES
- GROOVE CONCRETE BRIDGE DECK

DRAWN BY : M.A. LEE/M. WELDON DATE : 2/2014  
 CHECKED BY : D.N. SNOKE DATE : 2/2014  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_





LOCATION SKETCH

**NOTES:**

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.

INCIDENTAL MILLING IS INCLUDED TO ENSURE A SMOOTH TRANSITION ONTO THE BRIDGE FLOOR. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL MILL AS REQUIRED TO PROVIDE A SMOOTH TRANSITION TO THE ROADWAY AT BOTH ENDS OF THE BRIDGE.

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR OVERLAY OF BRIDGE DECK WITH 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 CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLAN.

PROJECT NO. BP-5500P

RANDOLPH COUNTY

BRIDGE NO. 157

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

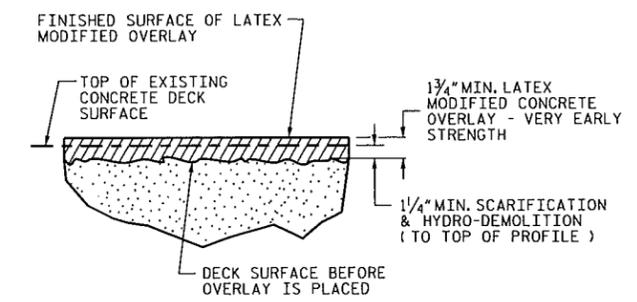
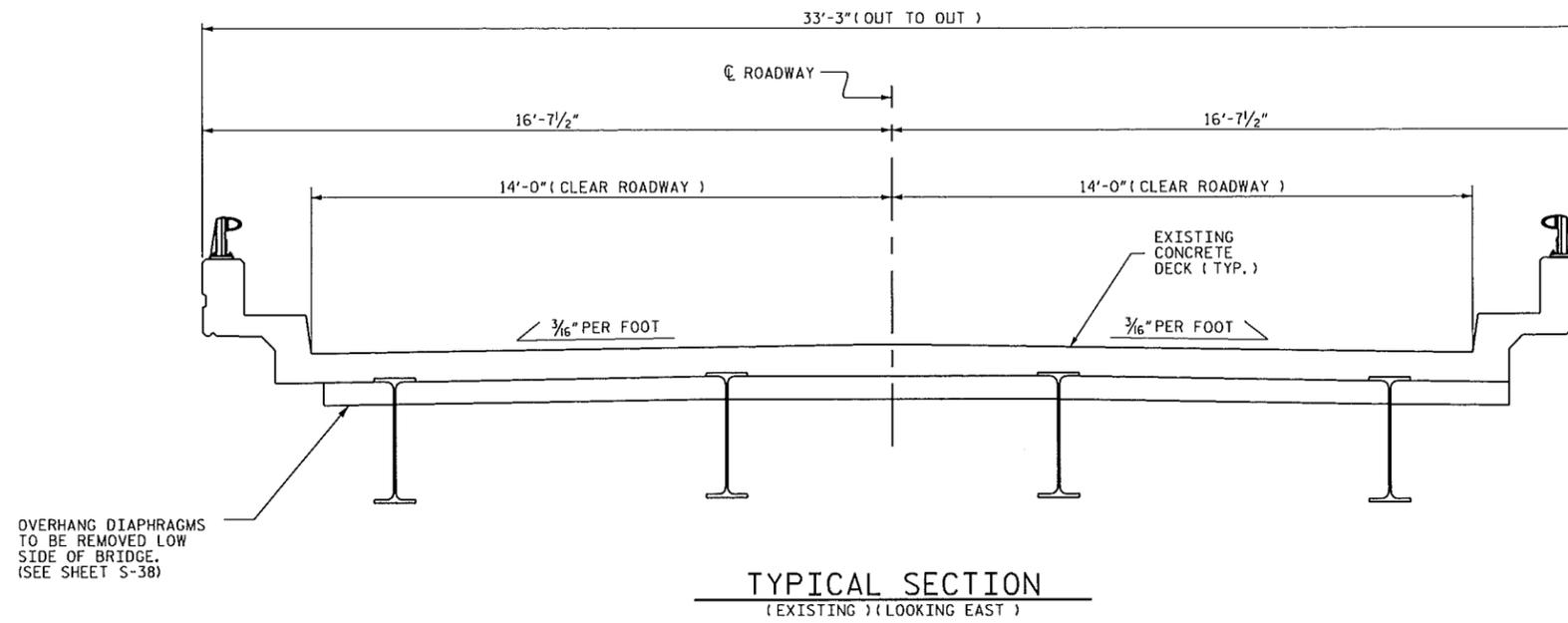
GENERAL DRAWING

BRIDGE #157 ON SR1150  
(MCDOWELL RD.)  
OVER I-73/74, US220.

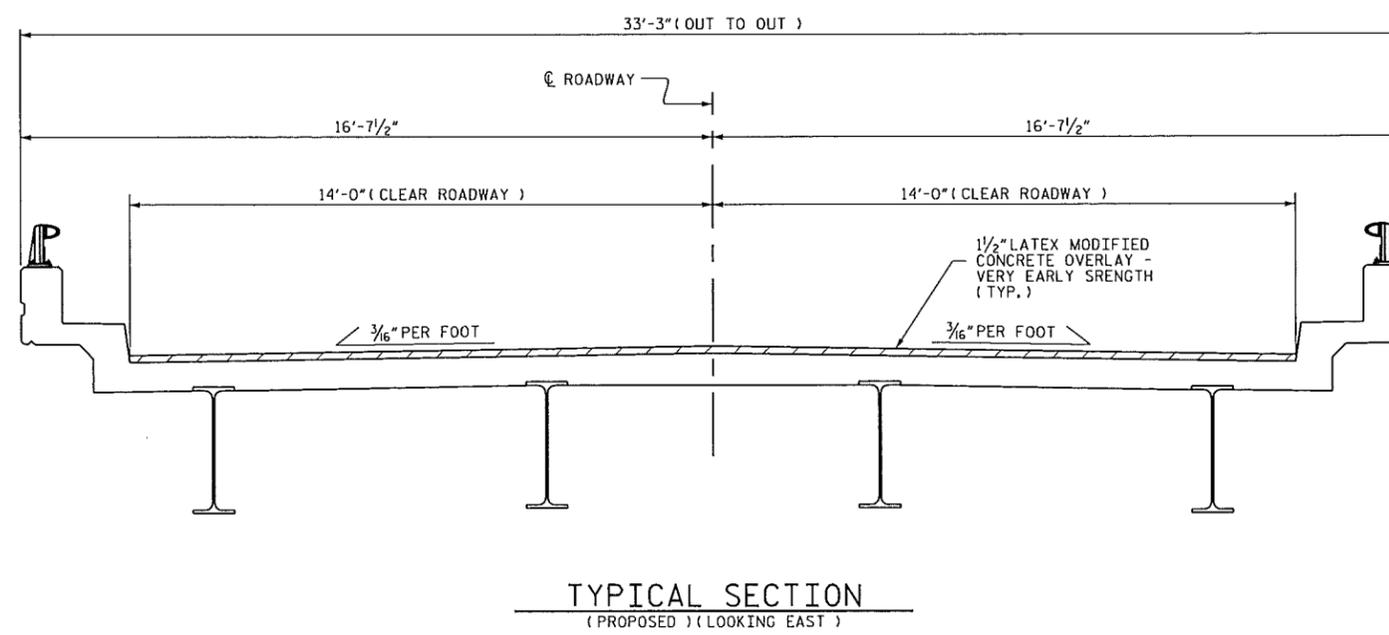


DRAWN BY : M.A.LEE/M. WELDON DATE : 3/2014  
CHECKED BY : D.N.SNOKE DATE : 3/2014  
DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			38



**DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY**  
 (FINISHED SURFACE OF THE LATEX MODIFIED CONCRETE OVERLAY IS APPROX. 1/4" ABOVE THE SURFACE OF THE EXISTING CONCRETE DECK.)

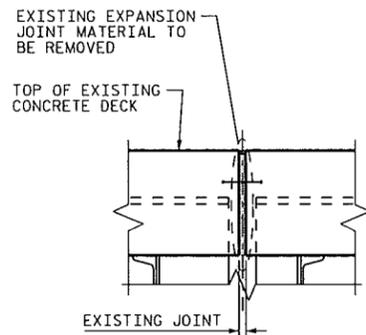


PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 157

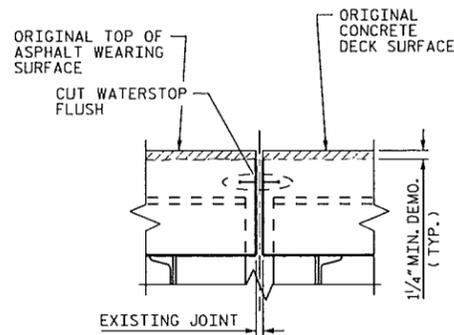
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
<b>TYPICAL SECTION</b>					
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NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 38



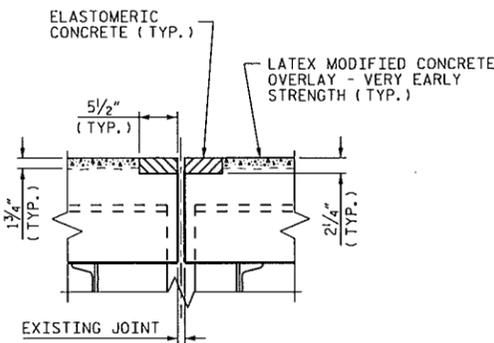
DRAWN BY : M.A.LEE DATE : 6/2014  
 CHECKED BY : D.N.SNOKE DATE : 6/2014  
 DESIGN ENGINEER OF RECORD: D.N.SNOKE DATE : 6/2014



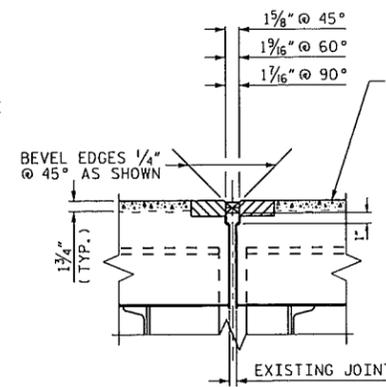
SECTION B-B  
(EXISTING JOINT)



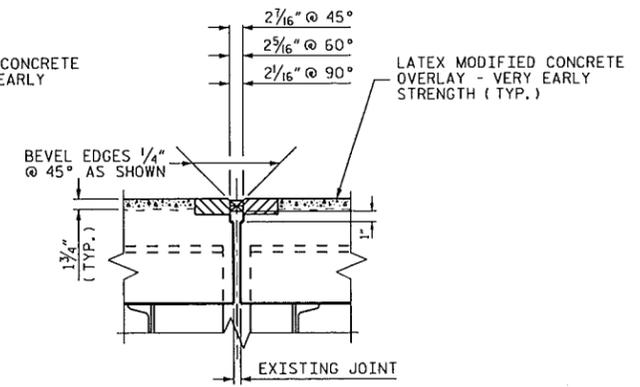
SECTION B-B  
(MINIMUM EXISTING JOINT DEMOLITION)



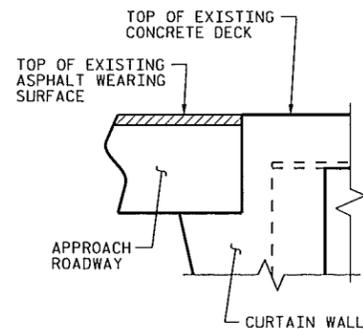
SECTION B-B  
(PROPOSED JOINT PRE-SAWED DIMENSIONS)



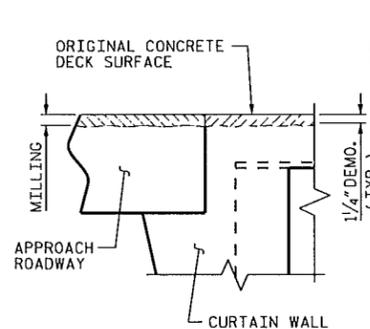
SECTION B-B  
(BENT 1 & 2)  
(PROPOSED FOAM JOINT SEAL EXPANSION)



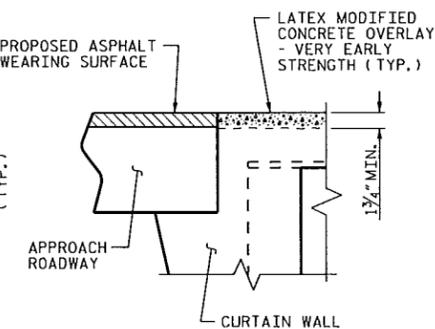
SECTION B-B  
(BENT 3)  
(PROPOSED FOAM JOINT SEAL EXPANSION)



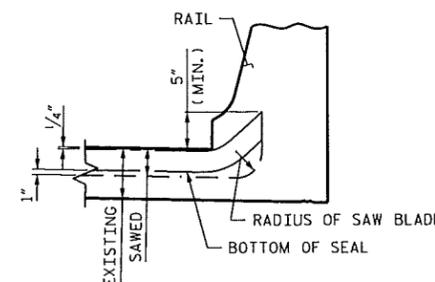
SECTION A-A  
(EXISTING JOINT)



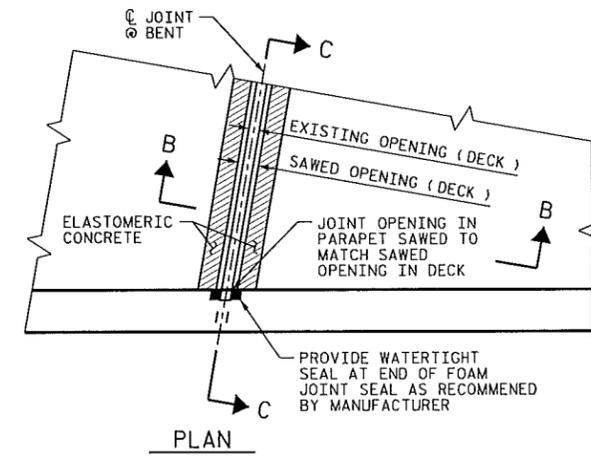
SECTION A-A  
(MINIMUM EXISTING JOINT DEMOLITION)



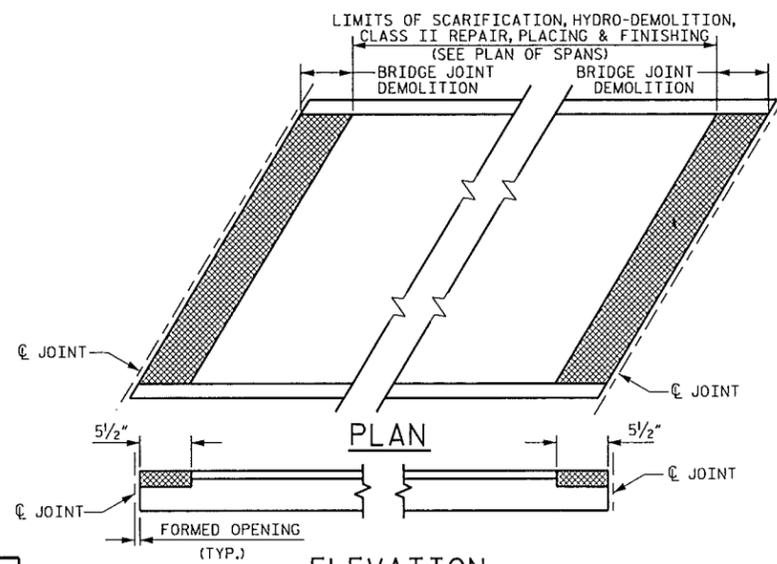
SECTION A-A  
(PROPOSED COLD JOINT)



SECTION C-C



PLAN



ELEVATION

JOINT SEAL DETAILS AT BENT

NOTES:

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

IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE OR IF UNSOUND CONCRETE IS REMOVED TO WITHIN 2" OF THE WATERSTOP, THE ENTIRE WATERSTOP SHALL BE REMOVED.

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 SEAL, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

THE INSTALLED JOINT SEAL SHALL BE WATER TIGHT.

NOMINAL UNCOMPRESSED WIDTH OF FOAM JOINT SEAL SHALL BE ----- FOR BENT 1 AND BENT 2.

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 157

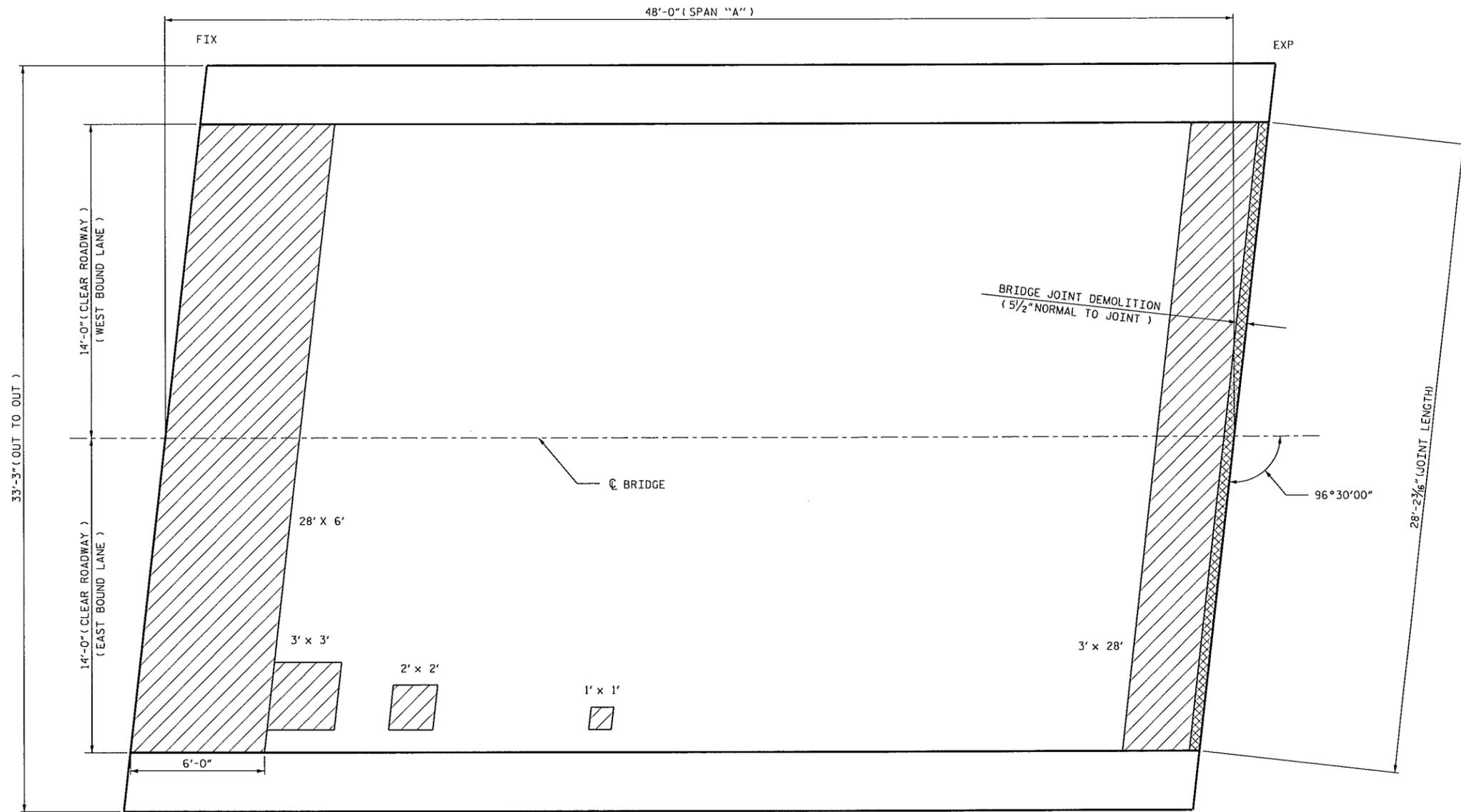
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

JOINT DETAILS



DRAWN BY: M.A. LEE/M. WELDON DATE: 3/2014  
 CHECKED BY: D.N. SNOKE DATE: 3/2014  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE: \_\_\_\_\_

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS 38
2			4			



**PLAN OF SPAN "A"**  
 ( FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET )

SPAN "A" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	30 SQ. YDS.	
CLASS III SURFACE PREPARATION	0 SQ. YDS.	
BRIDGE JOINT DEMOLITION	13 SQ. FT.	
SCARIFYING BRIDGE DECK	149 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	149 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
- JOINT DEMOLITION
- SCARIFYING & HYDRO-DEMOLITION

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO: 157

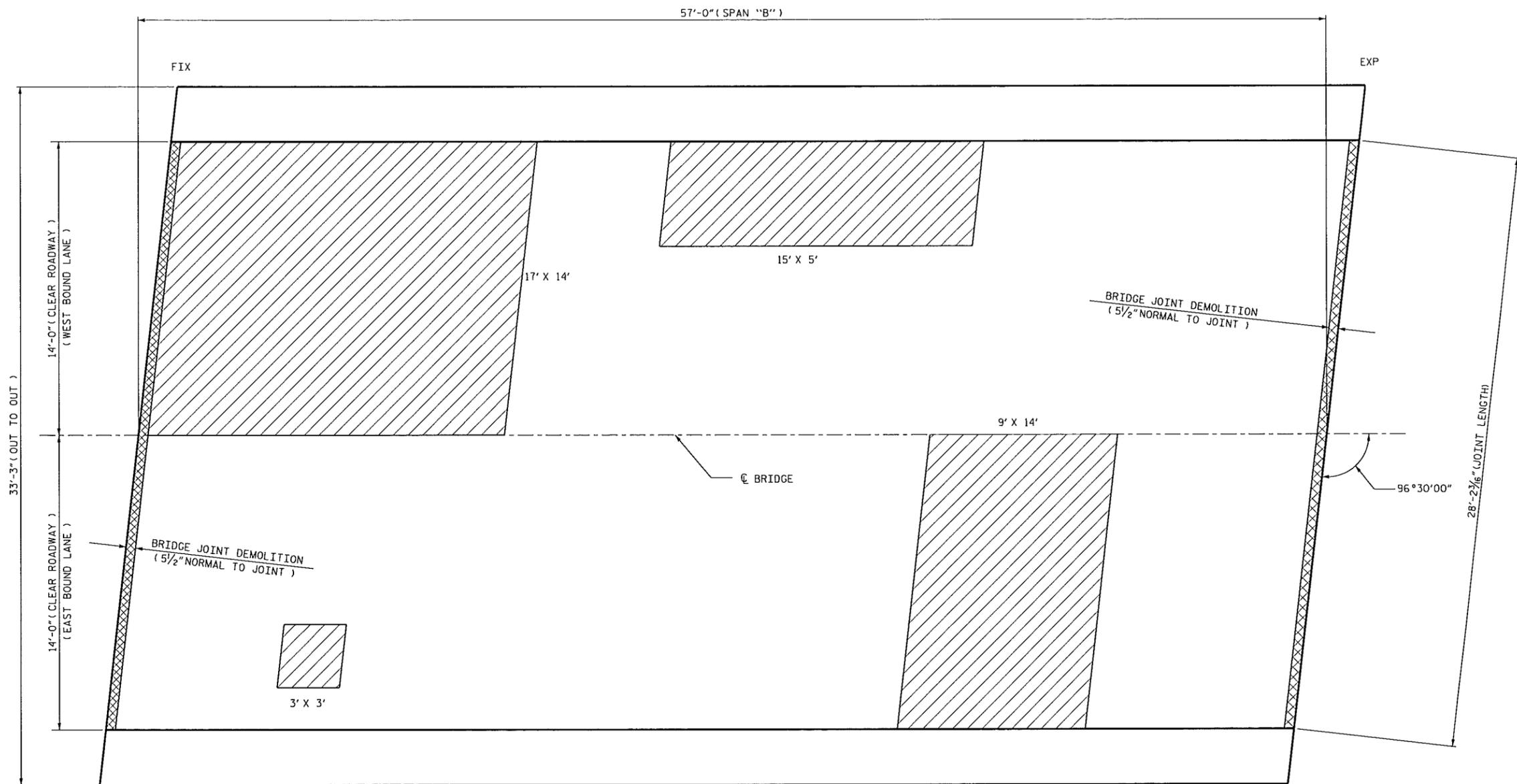
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SURFACE PREPARATION  
 SPAN "A"**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			38



DRAWN BY: M.A.LEE/M.WELDON DATE: 3/2014  
 CHECKED BY: D.N.SNOKE DATE: 3/2014  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE: \_\_\_\_\_



**PLAN OF SPAN "B"**  
( FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET )

SPAN "B" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	50 SQ. YDS.	
CLASS III SURFACE PREPARATION	0 SQ. YDS.	
BRIDGE JOINT DEMOLITION	26 SQ. FT.	
SCARIFYING BRIDGE DECK	176 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	176 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
- JOINT DEMOLITION
- SCARIFICATION & HYDRO-DEMOLITION

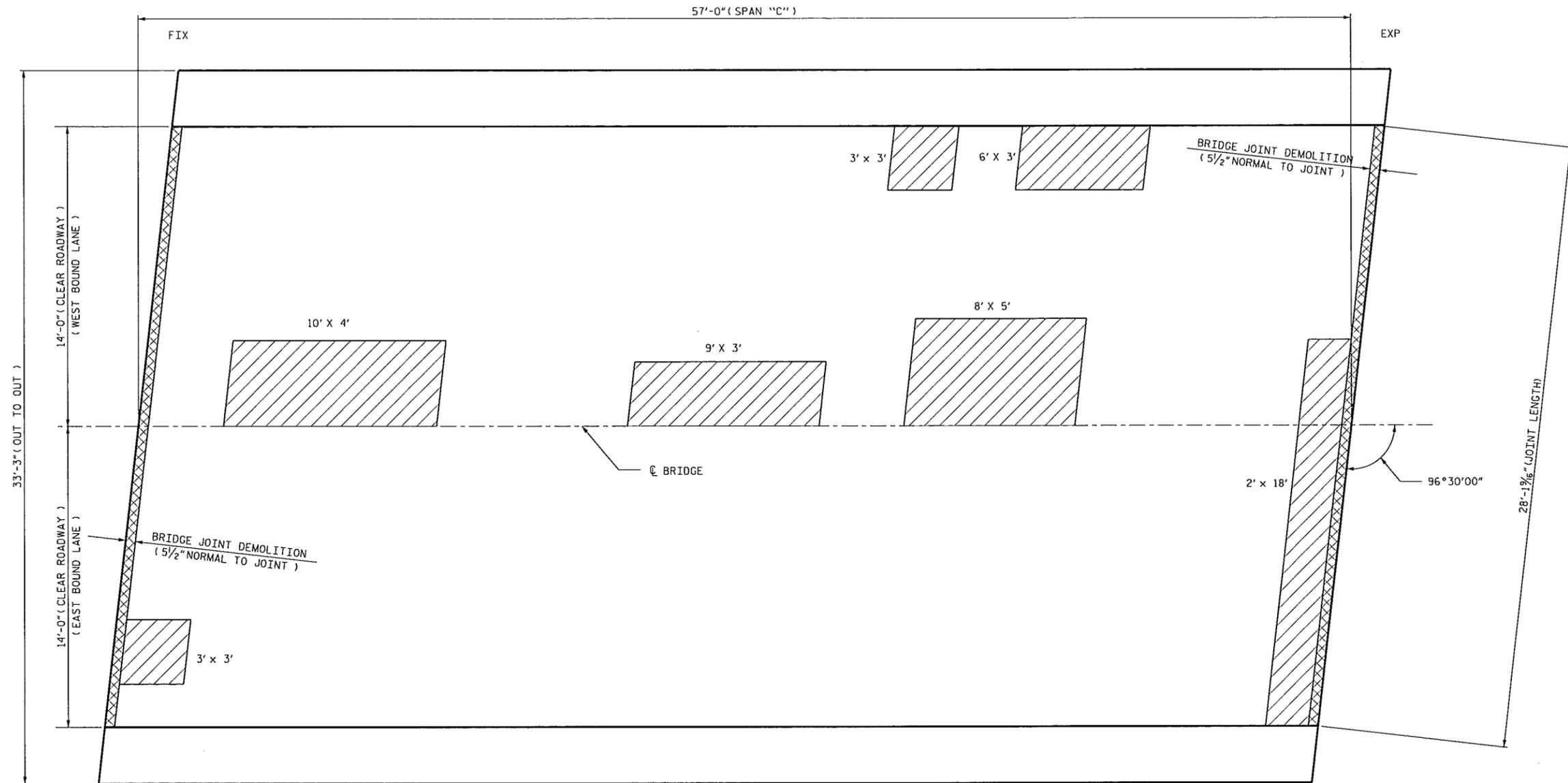
PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO: 157

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



DRAWN BY : M.A.LEE/M.WELDON DATE : 3/2014  
 CHECKED BY : D.N.SNOKE DATE : 3/2014  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			41



**PLAN OF SPAN "C"**  
(FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET)

SPAN "C" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	20 SQ. YDS.	
CLASS III SURFACE PREPARATION	0 SQ. YDS.	
BRIDGE JOINT DEMOLITION	26 SQ. FT.	
SCARIFYING BRIDGE DECK	175 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	175 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
-  JOINT DEMOLITION
-  SCARIFICATION & HYDRO-DEMOLITION

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO: 157

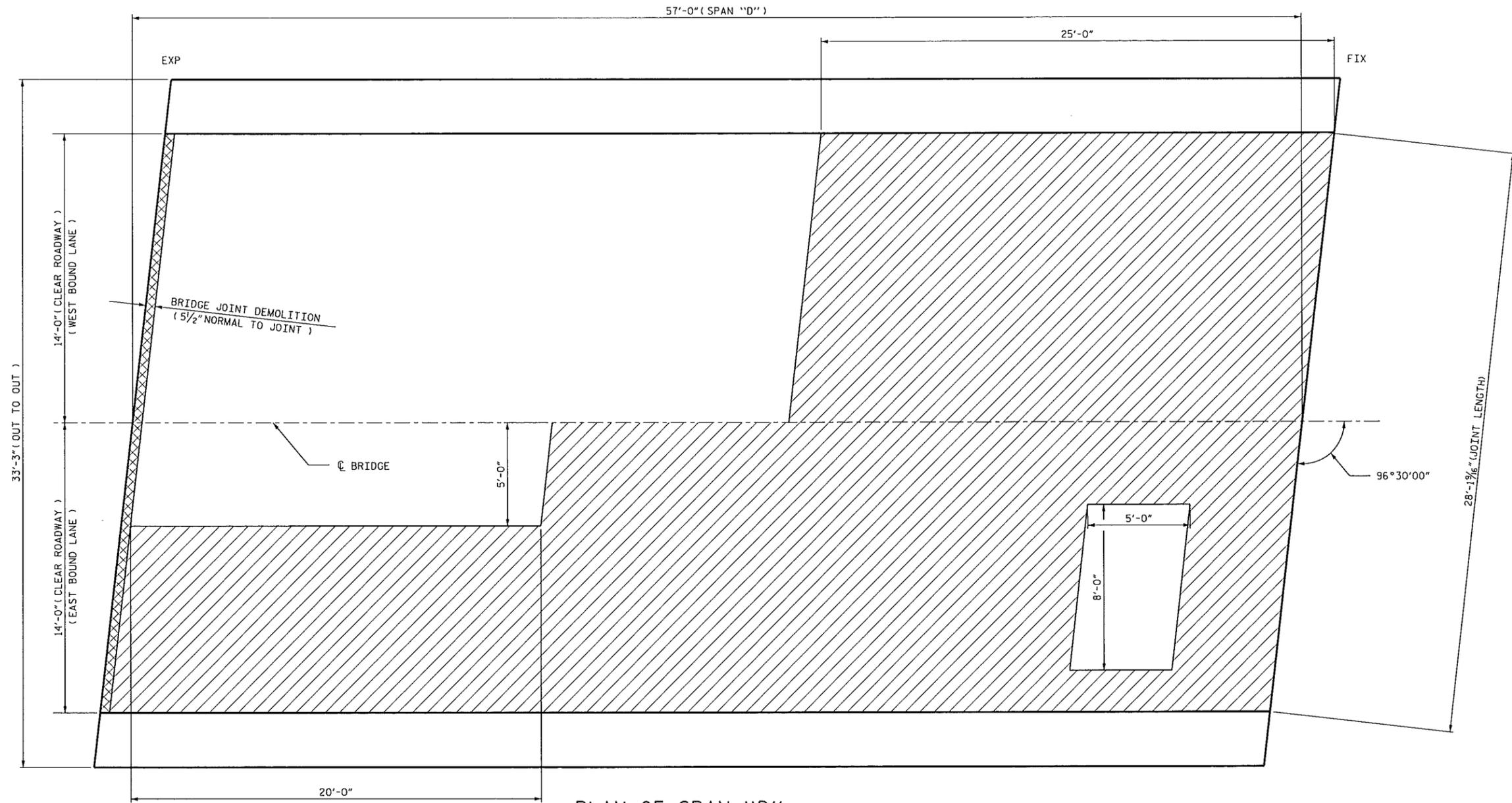
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SURFACE PREPARATION  
 SPAN "C"**



DRAWN BY: M.A.LEE/M. WELDON DATE: 3/2014  
 CHECKED BY: D.N.SNOKE DATE: 3/2014  
 DESIGN ENGINEER OF RECORD: D.N.SNOKE DATE: 3/2014

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			38



**PLAN OF SPAN "D"**  
 (FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET)

SPAN "D" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	111 SQ. YDS.	
CLASS III SURFACE PREPARATION	0 SQ. YDS.	
BRIDGE JOINT DEMOLITION	13 SQ. FT.	
SCARIFYING BRIDGE DECK	177 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	177 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
- JOINT DEMOLITION
- SCARIFICATION & HYDRO-DEMOLITION

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO: 157

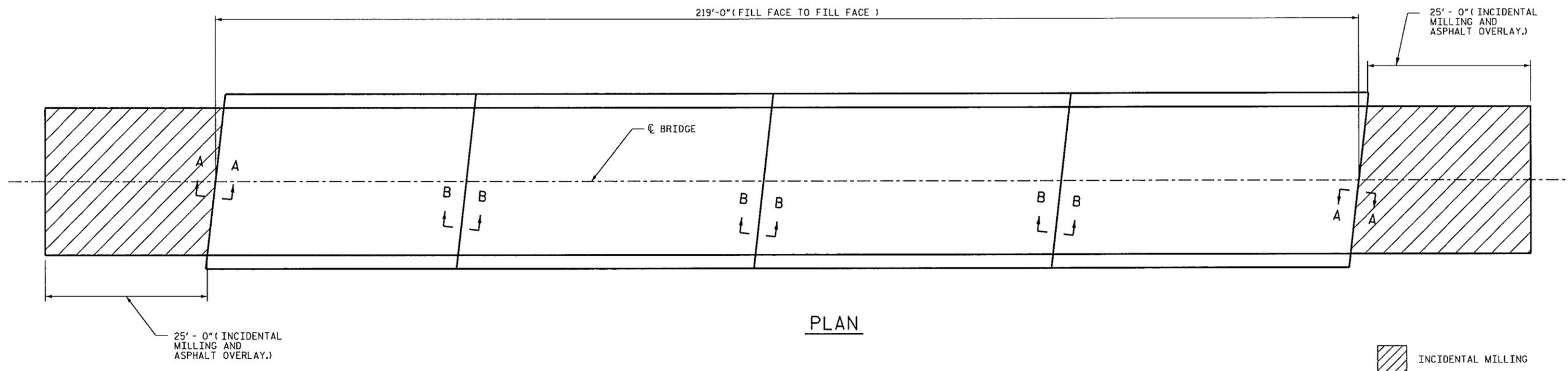
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SURFACE PREPARATION  
 SPAN "D"**

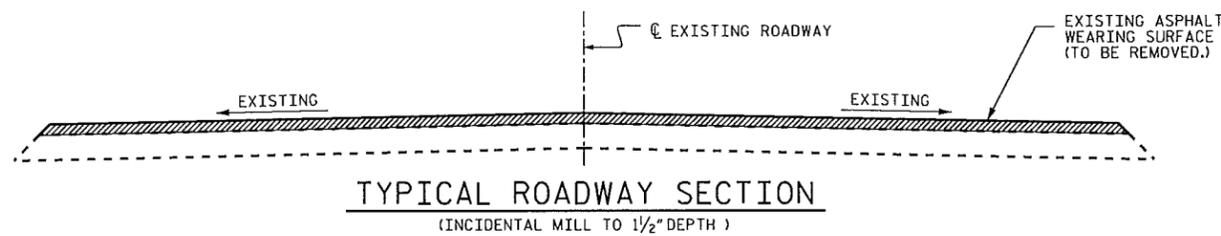
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-21
2			4			TOTAL SHEETS 38



DRAWN BY: M.A. LEE/M. WELDON DATE: 3/2014  
 CHECKED BY: D.N. SNOKE DATE: 3/2014  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE: \_\_\_\_\_

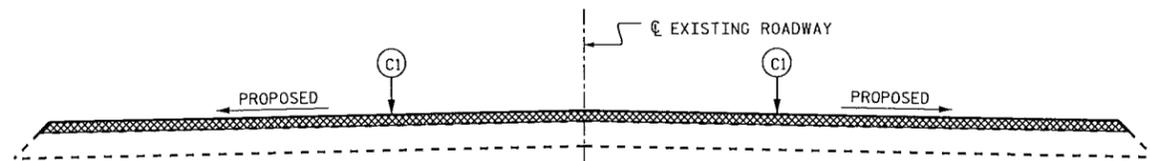


PLAN



TYPICAL ROADWAY SECTION

(INCIDENTAL MILL TO 1/2" DEPTH)



TYPICAL ROADWAY SECTION

(PROPOSED ASPHALT OVERLAY)

NOTE:

INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVING TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1/2" DEPTH OF NEW ASPHALT PAVING. PROVIDE NEW ASPHALT PAVING THICKNESS TO CREATE A SMOOTH TRANSITION TO THE BRIDGE DECK. AS SHOWN NEW ASPHALT PAVING THICKNESS MAY EXCEED 1/2" DUE TO SETTLEMENT OF THE EXISTING APPROACH ASPHALT PAVING.

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 157

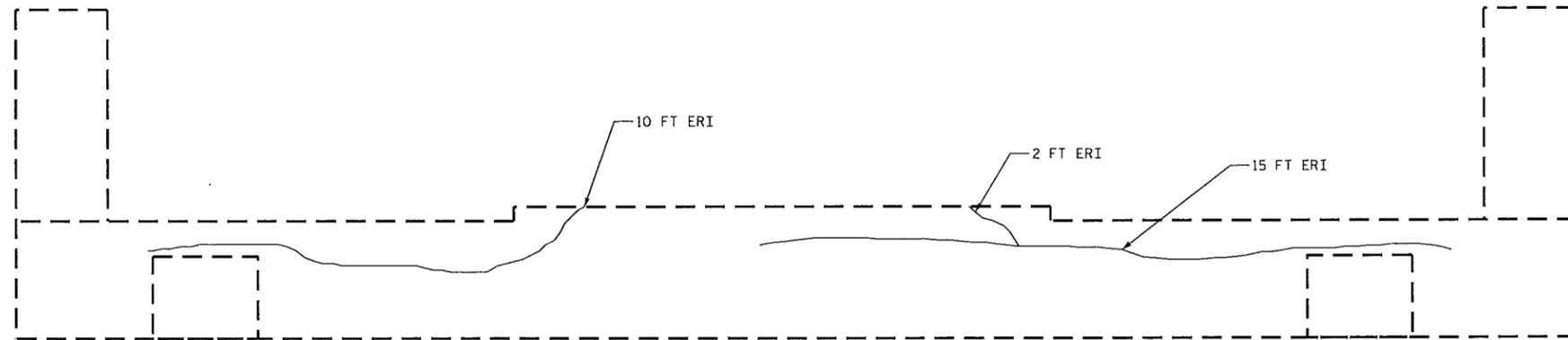
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 INCIDENTAL MILLING  
 AND ASPHALT OVERLAY



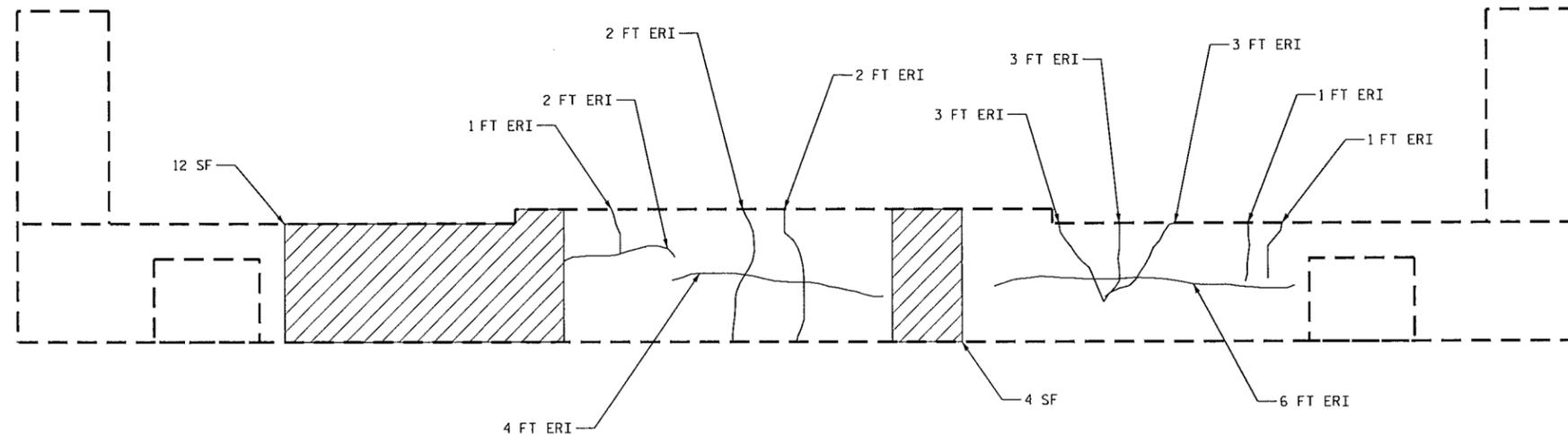
C1 PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH.

DRAWN BY : M.A.LEE/M.WELDON DATE : 5/2014  
 CHECKED BY : D.N.SNOKE DATE : 5/2014  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			38



END BENT 1



END BENT 2



SHOTCRETE REPAIR



CONCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DRAWN BY : M.A.LEE/M.WELDON DATE : 3/2014  
 CHECKED BY : D.N.SNOKE DATE : 3/2014  
 DESIGN ENGINEER OF RECORD: DATE :

REPAIR QUANTITY TABLE

REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0	0		
CAP (HORIZONTAL, CORNER)	0	0		
CONCRETE REPAIRS	0	0		
EPOXY RESIN INJECTION			LN. FT	LN. FT
CAP			27	
EPOXY COATING			SO. FT	SO. FT
TOP OF CAP			83	

REPAIRS END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	16	4		
CAP (HORIZONTAL, CORNER)	0	0		
CONCRETE REPAIRS	0	0		
EPOXY RESIN INJECTION			LN. FT	LN. FT
CAP			28	
EPOXY COATING			SO. FT	SO. FT
TOP OF CAP			83	

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

NOTES:

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

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET S-38.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARING PAD. SEE ARTICLE 420-18 OF THE STANDARD SPECIFICATIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

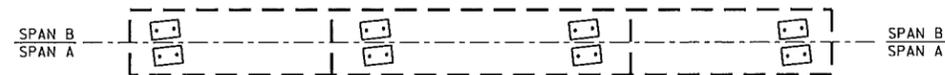
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

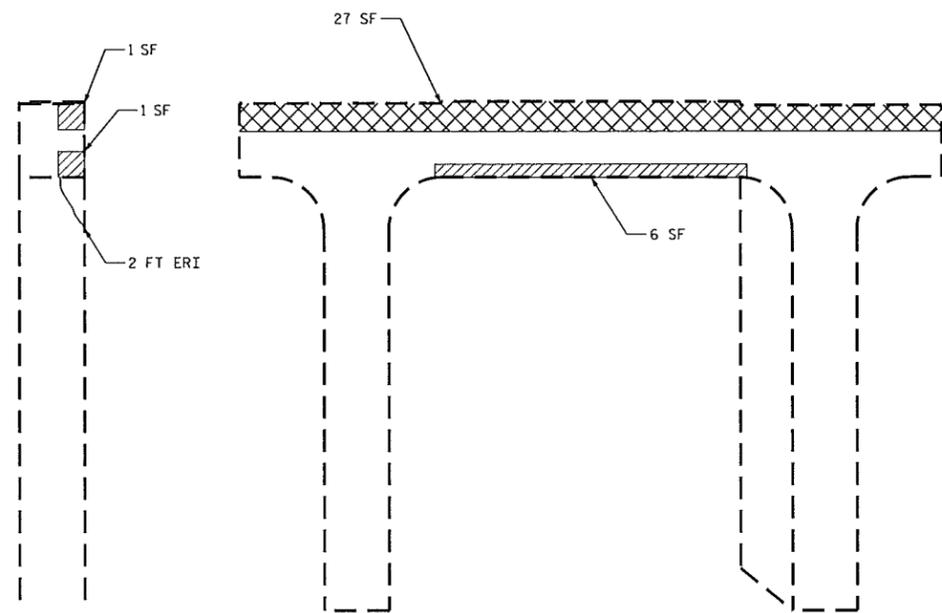
PROJECT NO. BP-5500P  
 RANDOLPH COUNTY  
 BRIDGE NO: 157



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 1 & 2					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-23
					TOTAL SHEETS 38

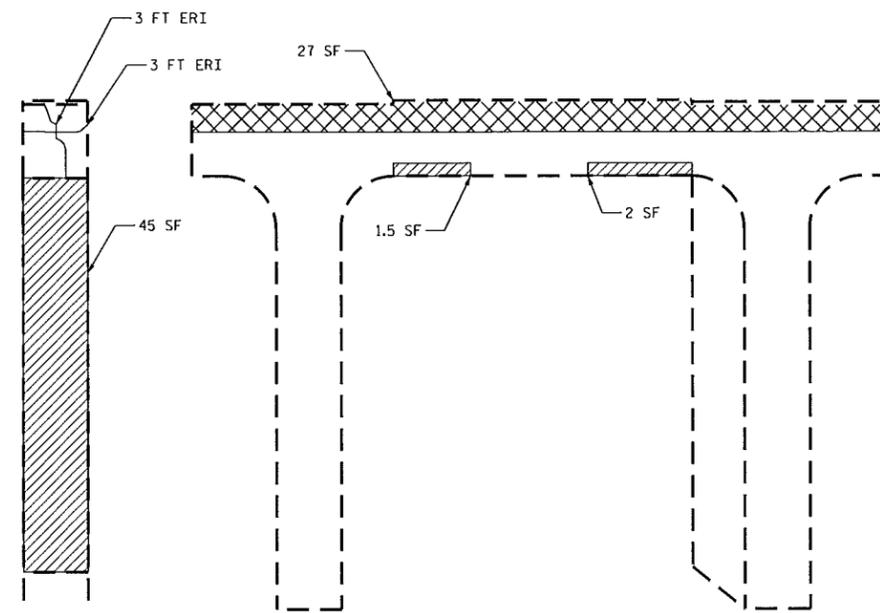


PLAN  
TOP OF CAP



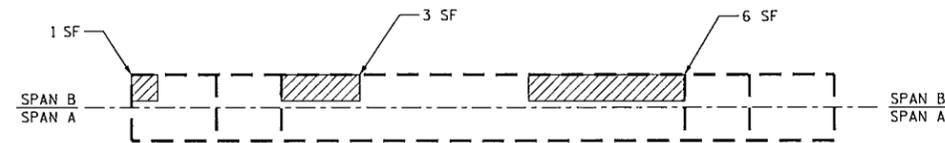
END VIEW  
NORTH SIDE

ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE

ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR

CONCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DRAWN BY : M.A. LEE/M. WELDON DATE : 3/2014  
 CHECKED BY : D.N. SNOXE DATE : 3/2014  
 DESIGN ENGINEER OF RECORD: DATE :

REPAIR QUANTITY TABLE

REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	11.5	2.9		
CAP (HORIZONTAL, CORNER)	10	2.5		
COLUMN	45	11.25		
CONCRETE REPAIRS	54	13.5		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		6		
COLUMN		2		
EPOXY COATING		SO. FT		SO. FT
TOP OF CAP		70		

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

NOTES:

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

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET S-38.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP, THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARING PAD. SEE ARTICLE 420-18 OF THE STANDARD SPECIFICATIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

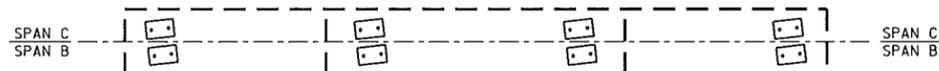
PROJECT NO. BP-5500P  
 RANDOLPH COUNTY  
 BRIDGE NO: 157

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 BENT 1



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-24
2			4			38



PLAN  
TOP OF CAP

REPAIR QUANTITY TABLE				
REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	1	0.25		
CAP (HORIZONTAL, CORNER)	3	0.75		
COLUMN	43	10.75		
CONCRETE REPAIRS	0	0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		6		
COLUMN		2		
EPOXY COATING		SO. FT		SO. FT
TOP OF CAP		70		

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

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

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

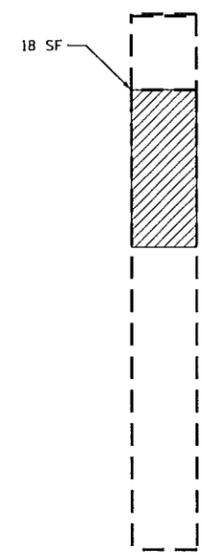
FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET S-38.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARING PAD. SEE ARTICLE 420-18 OF THE STANDARD SPECIFICATIONS.

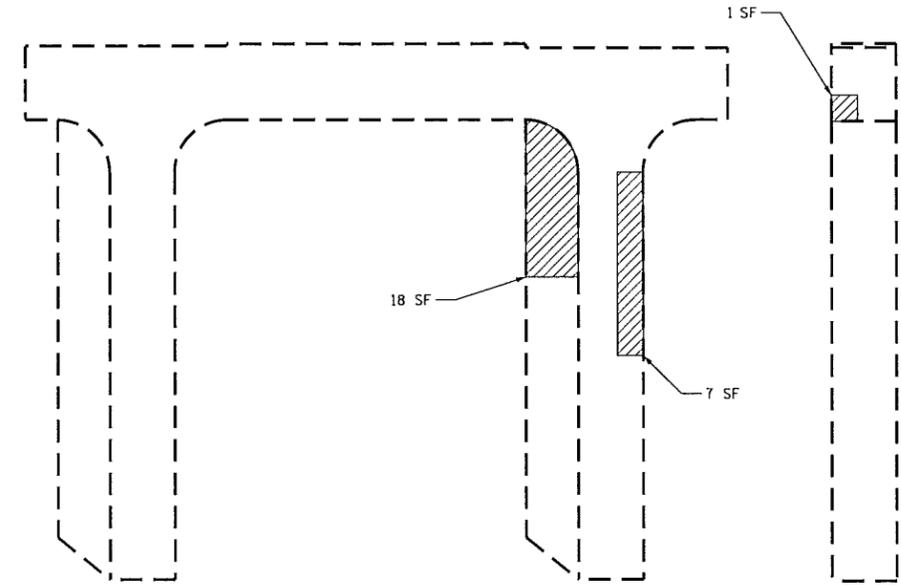
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

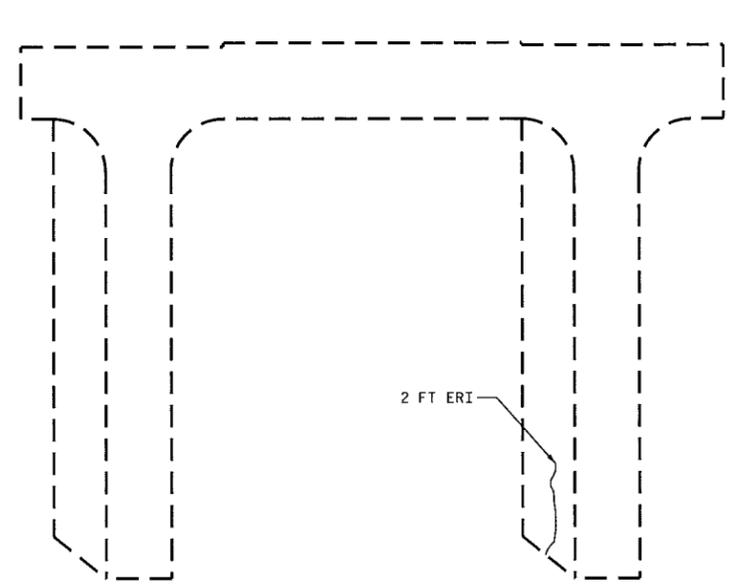
FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.



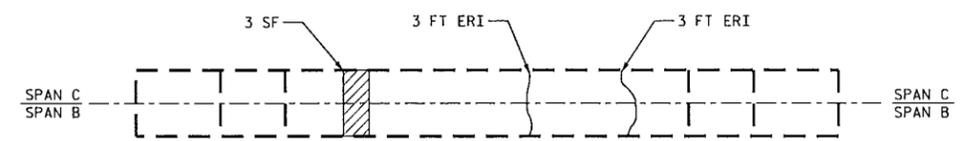
END VIEW  
NORTH SIDE



ELEVATION  
WEST SIDE



ELEVATION  
EAST SIDE



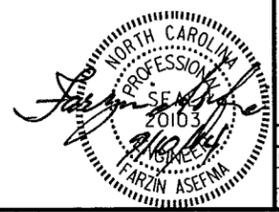
PLAN  
BOTTOM OF CAP

- SHOTCRETE REPAIR
- CONCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO: 157

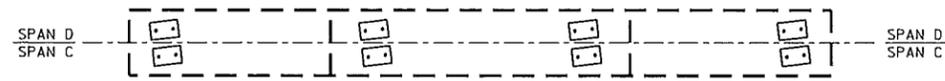
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE  
 BENT 2**

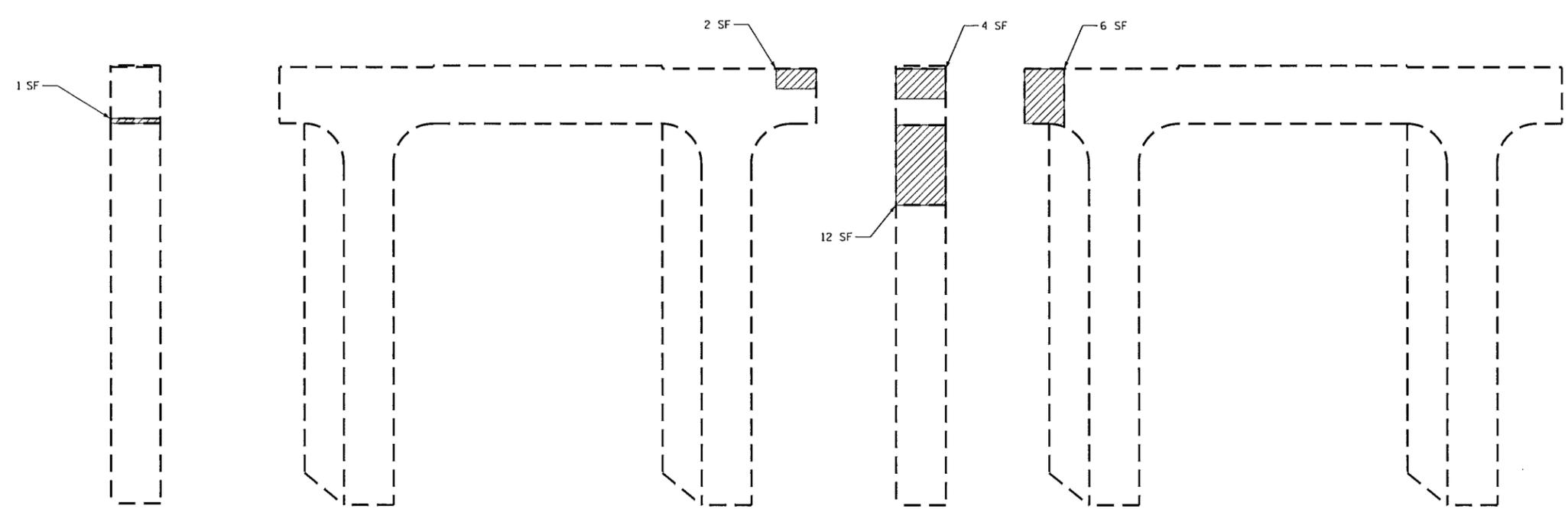


DRAWN BY : M.A. LEE/M. WELDON DATE : 3/2014  
 CHECKED BY : D.N. SNOKE DATE : 3/2014  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_

REVISIONS						SHEET NO. S-25	TOTAL SHEETS 38
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				
2			4				



PLAN  
TOP OF CAP



END VIEW  
NORTH SIDE

ELEVATION  
WEST SIDE

END VIEW  
SOUTH SIDE

ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP



SHOTCRETE REPAIR



CONCRETE REPAIR

ERI - EPOXY RESIN INJECTION

REPAIRS BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	13	3.75		
CAP (HORIZONTAL, CORNER)	15	3.75		
COLUMN	12	3.0		
CONCRETE REPAIRS	0	0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0		
COLUMN		0		
EPOXY COATING		SO. FT		SO. FT
TOP OF CAP		70		

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

NOTES:

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

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET S-38.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARING PAD. SEE ARTICLE 420-18 OF THE STANDARD SPECIFICATIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO: 157

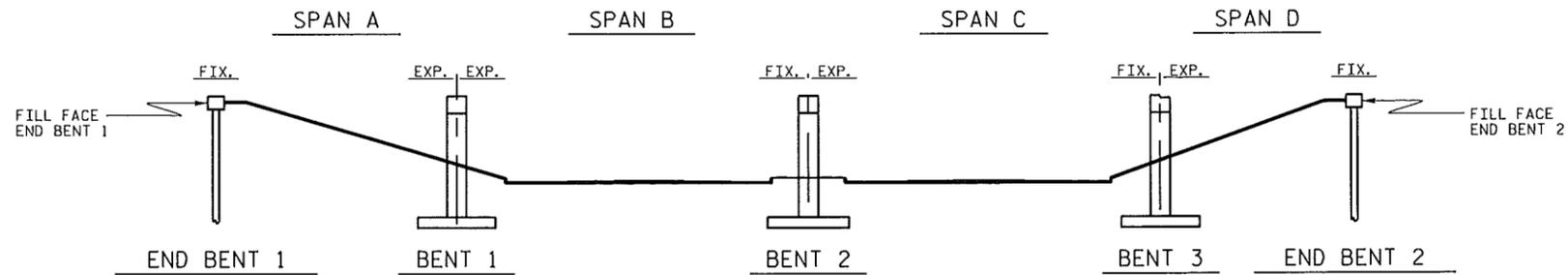
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 BENT 3

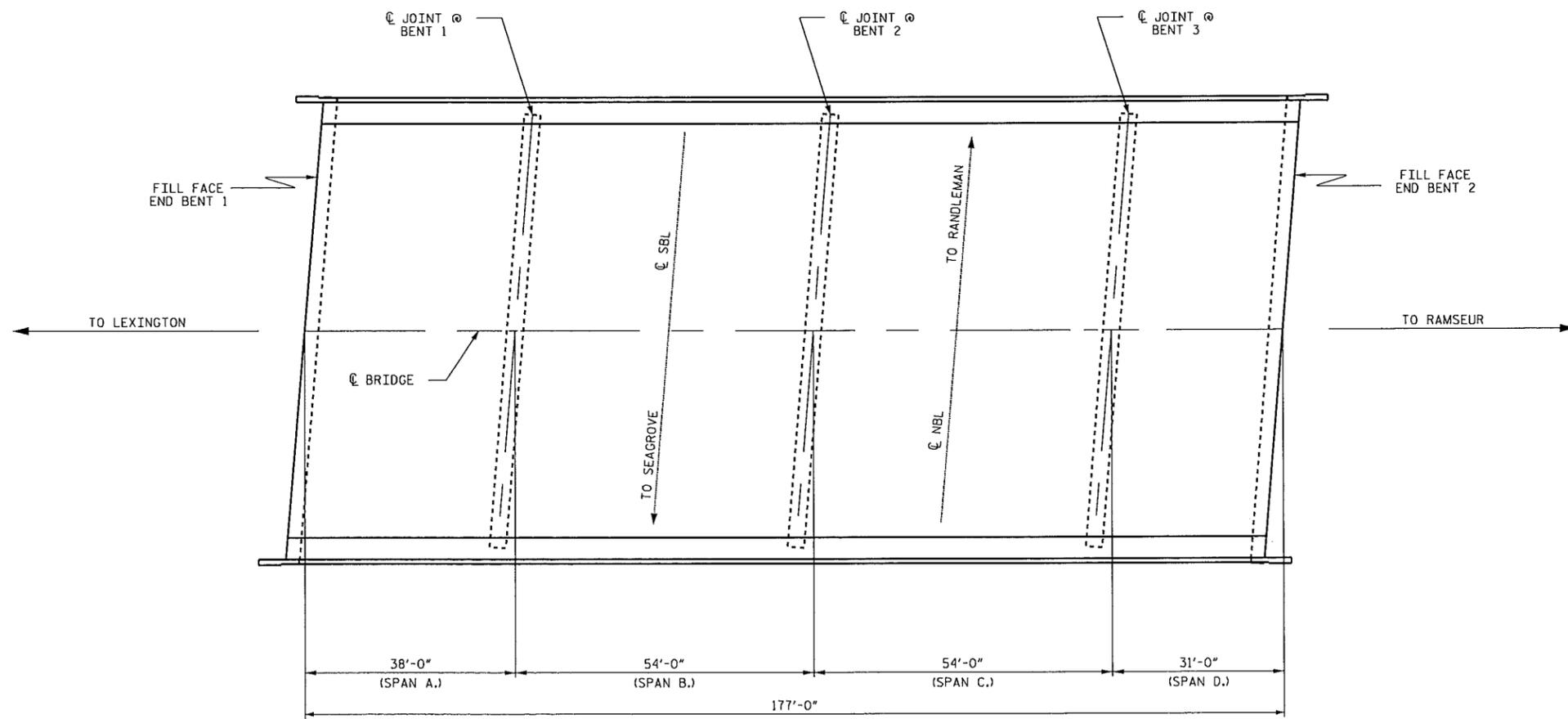


DRAWN BY : M.A.LEE/M.WELDON DATE : 3/2014  
 CHECKED BY : D.N.SNOKE DATE : 3/2014  
 DESIGN ENGINEER OF RECORD: D.N.SNOKE DATE : 3/2014

REVISIONS						SHEET NO. S-26 TOTAL SHEETS 38
NO.	BY	DATE	NO.	BY	DATE	
1			3			
2			4			



SECTION ALONG Q ROADWAY



PLAN OF SPAN

**SCOPE OF WORK:**

- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SCARIFICATION AND HYDRO-DEMOLITION METHODS
- OVERLAY PREPARED BRIDGE DECK WITH LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH
- DEMOLISH EXISTING BRIDGE DECK JOINTS
- RECONSTRUCT BRIDGE DECK JOINTS AND INSTALL NEW FOAM JOINT SEALS
- MILL AND PAVE ASPHALT APPROACHES
- GROOVE CONCRETE BRIDGE DECK

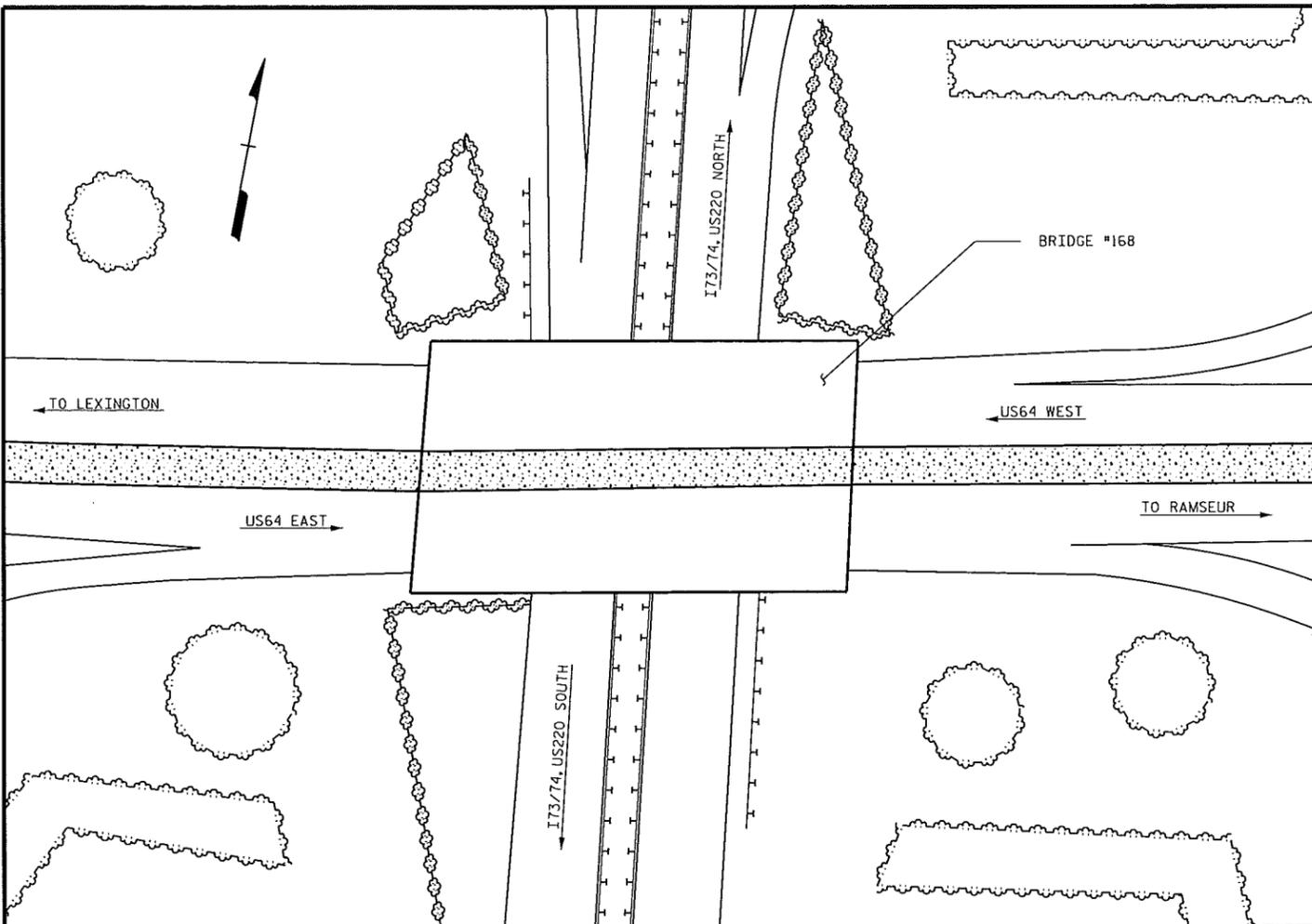
PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 168  
 SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 BRIDGE ON US 64  
 OVER I-73/74, US 220



DRAWN BY : M.A.LEE/M.WELDON DATE : 3/2014  
 CHECKED BY : D.N.SNOKE DATE : 3/2014  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-27
1			3			TOTAL SHEETS
2			4			38



LOCATION SKETCH

**NOTES:**

- 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.
- INCIDENTAL MILLING IS INCLUDED TO ENSURE A SMOOTH TRANSITION ONTO THE BRIDGE FLOOR. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL MILL AS REQUIRED TO PROVIDE A SMOOTH TRANSITION TO THE ROADWAY AT BOTH ENDS OF THE BRIDGE.
- FOR SCARIFYING BRIDGE DECK HYDRO - DEMOLITION OF BRIDGE DECK, AND CLASS II SURFACE PREPARATION SEE OVERLAY SURFACE PREPARATION SPECIAL PROVISION.
- FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.
- FOR OVERLAY OF BRIDGE DECK WITH 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 CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLAN.

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 168  
 SHEET 2 OF 2

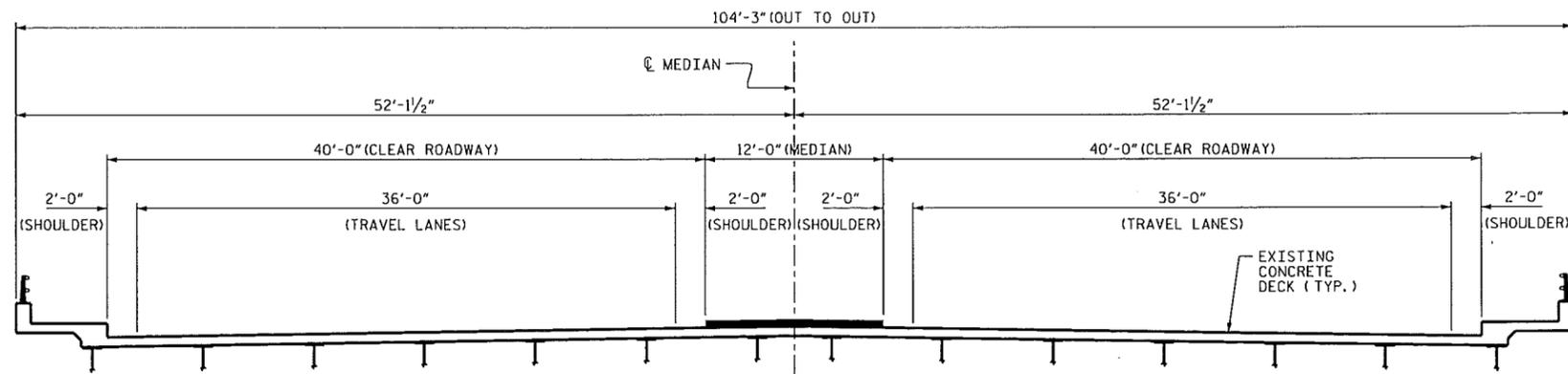
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**GENERAL DRAWING**

BRIDGE ON US 64  
 OVER I-73/74, US 220

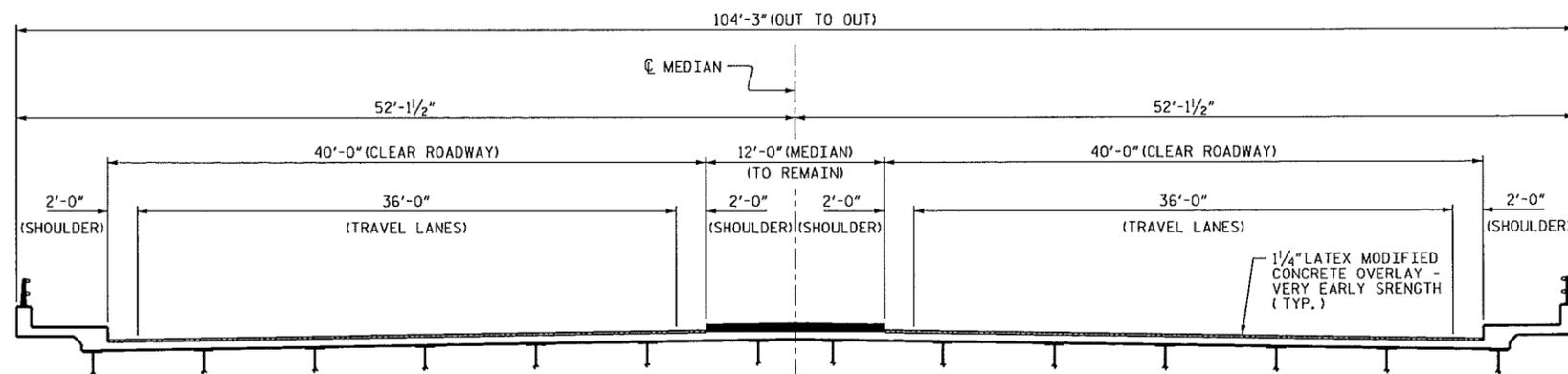


DRAWN BY : M.A. LEE/M. WELDON DATE : 3/2014  
 CHECKED BY : D.N. SNOKE DATE : 3/2014  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_

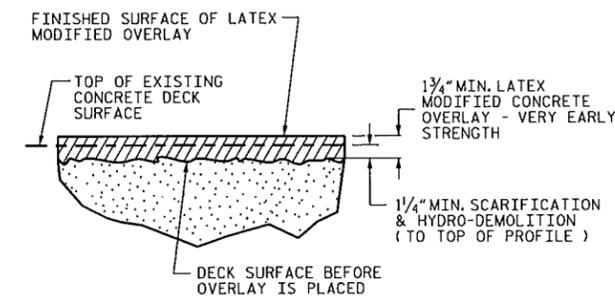
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-28
1			3			TOTAL SHEETS
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TYPICAL SECTION  
(EXISTING) (LOOKING EAST)



TYPICAL SECTION  
(PROPOSED) (LOOKING EAST)



DETAIL FOR LATEX  
MODIFIED CONCRETE OVERLAY  
(FINISHED SURFACE OF THE LATEX MODIFIED CONCRETE  
OVERLAY IS APPROX. 1/4" ABOVE THE SURFACE OF THE  
EXISTING CONCRETE DECK.)

PROJECT NO. BP-5500P  
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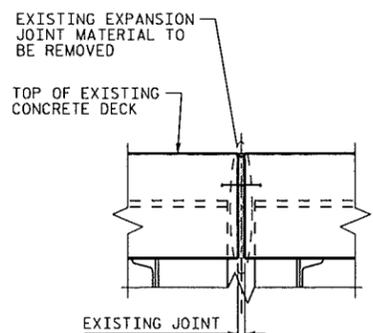
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

TYPICAL SECTION

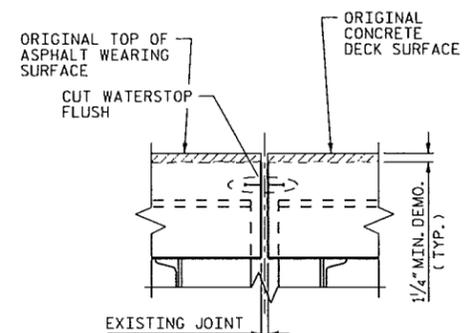
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 CHECKED BY : D.N. SNOXE DATE : 4/2014  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_



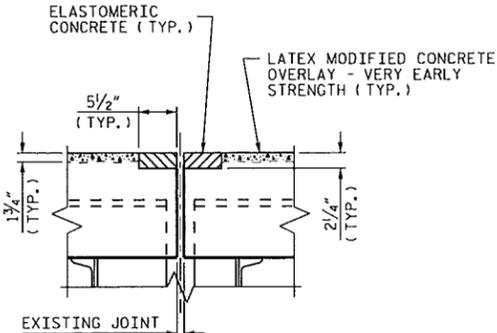
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NO.	BY	DATE	NO.	BY	DATE	S-29
1			3			TOTAL SHEETS
2			4			38



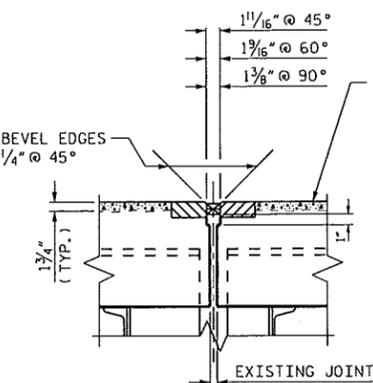
SECTION B-B  
(EXISTING JOINT)



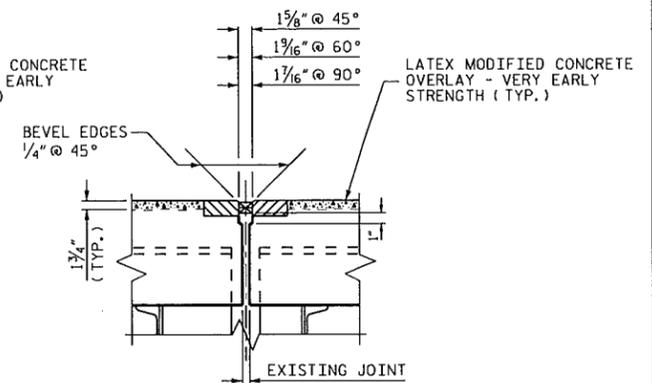
SECTION B-B  
(MINIMUM EXISTING JOINT DEMOLITION)



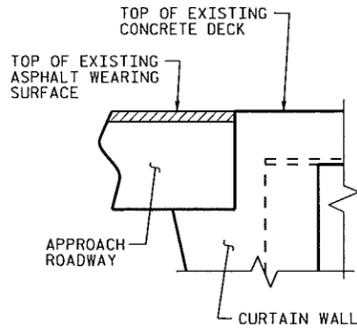
SECTION B-B  
(PROPOSED JOINT PRE-SAWED DIMENSIONS)



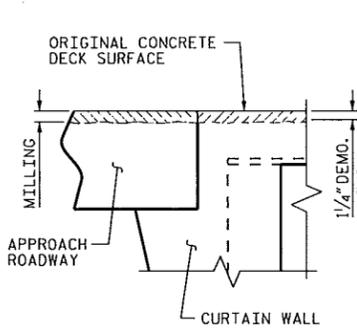
SECTION B-B  
(BENT 1)  
(PROPOSED FOAM JOINT SEAL EXPANSION)



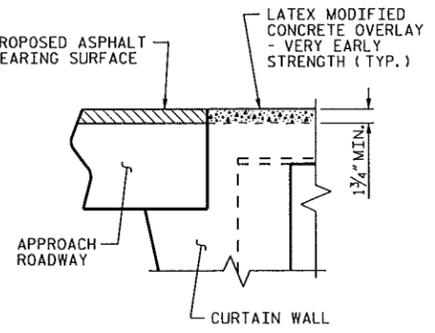
SECTION B-B  
(BENT 2 & 3)  
(PROPOSED FOAM JOINT SEAL EXPANSION)



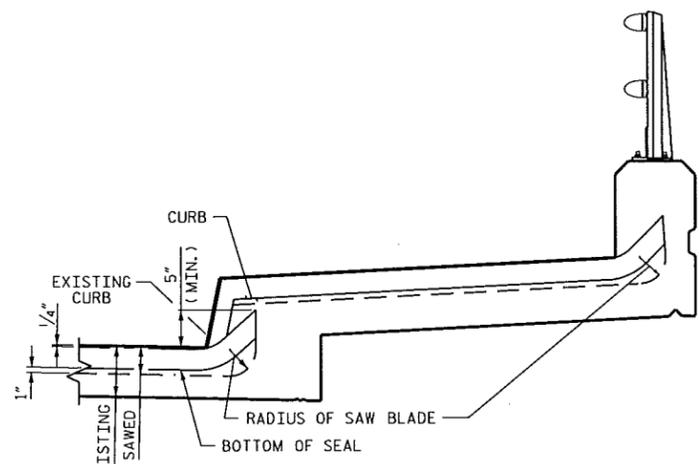
SECTION A-A  
(EXISTING JOINT)



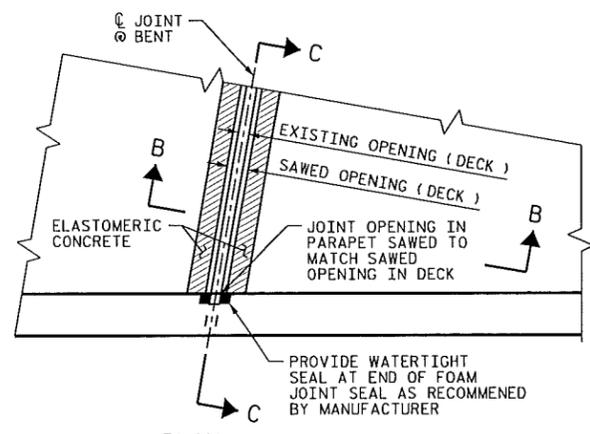
SECTION A-A  
(MINIMUM EXISTING JOINT DEMOLITION)



SECTION A-A  
(PROPOSED COLD JOINT)

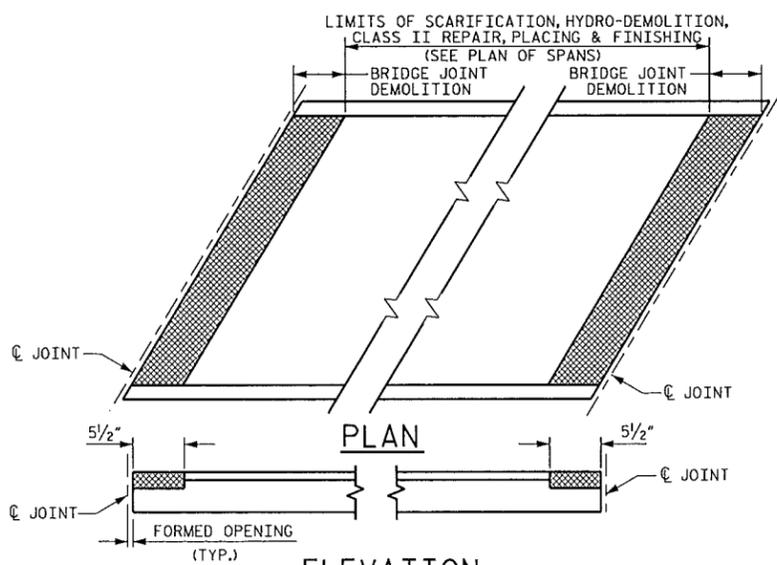


SECTION C-C



PLAN

JOINT SEAL DETAILS AT BENT



PLAN  
ELEVATION

NOTES:

- CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.
- IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE OR IF UNSOUND CONCRETE IS REMOVED TO WITHIN 2" OF THE WATERSTOP, THE ENTIRE WATERSTOP SHALL BE REMOVED.
- 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 SEAL, SEE SPECIAL PROVISIONS.
- FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.
- THE INSTALLED JOINT SEAL SHALL BE WATER TIGHT.
- NOMINAL UNCOMPRESSED WIDTH OF FOAM JOINT SEAL SHALL BE ----- FOR BENT 1 AND BENT 2.

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 BRIDGE NO. 168

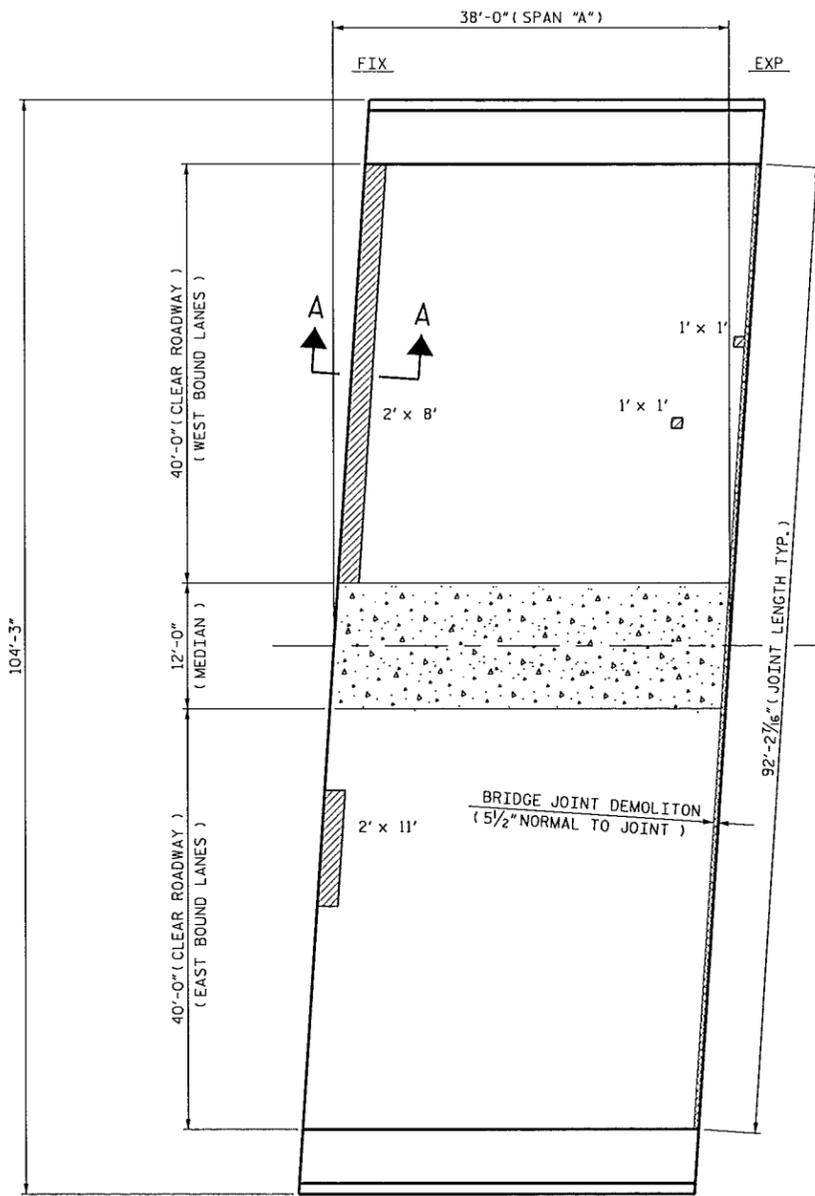
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

JOINT DETAILS

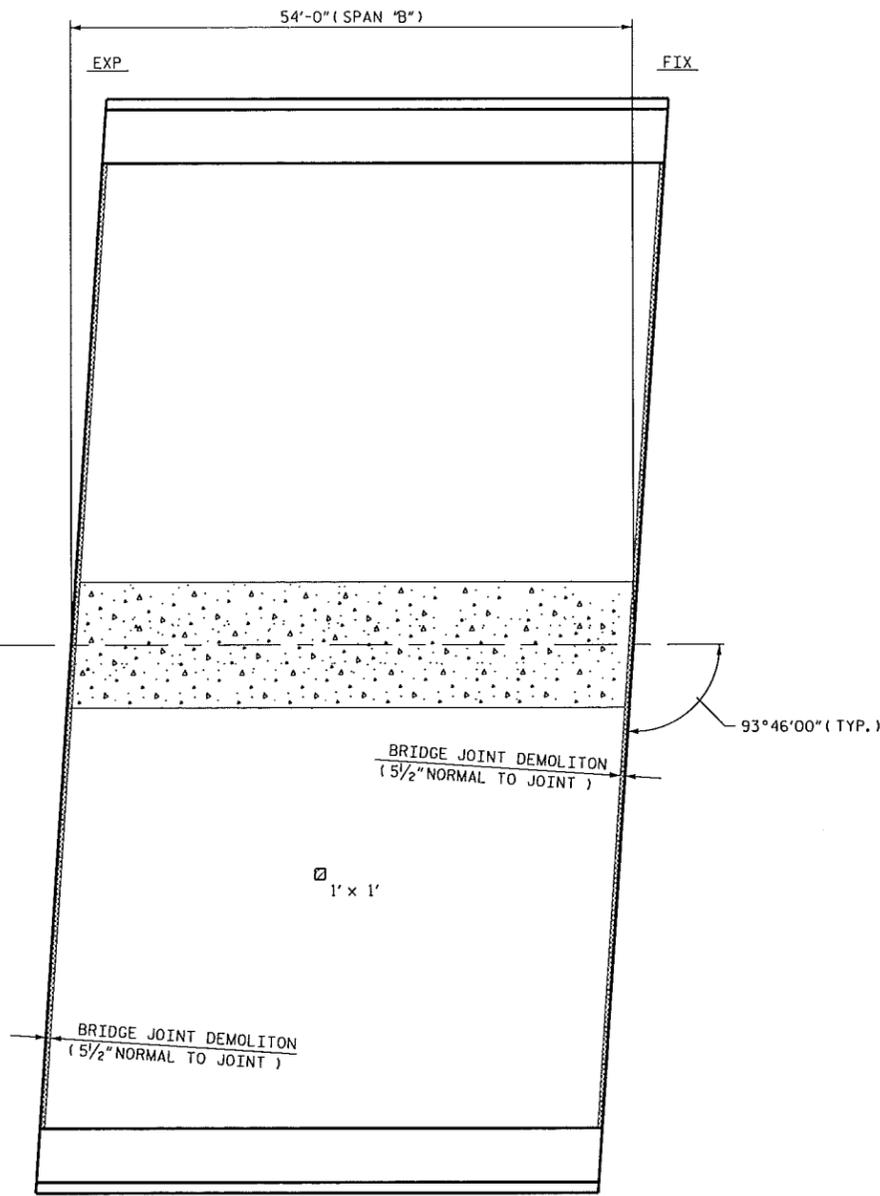
DRAWN BY : M.A. LEE/M. WELDON DATE : 3/2014  
 CHECKED BY : D.N. SNOXE DATE : 3/2014  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_



REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
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PLAN OF SPAN "A"  
(FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET)



PLAN OF SPAN "B"  
(FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET)

SPAN "A" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	4.5 SQ. YDS.	
BRIDGE JOINT DEMOLITION	42.5 SQ. FT.	
SCARIFYING BRIDGE DECK	335 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	335 SQ. YDS.	
SPAN "B" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	0.1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	85 SQ. FT.	
SCARIFYING BRIDGE DECK	471 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	471 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
- JOINT DEMOLITION
- SCARIFICATION
- CONCRETE MEDIAN (TO REMAIN)

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 168

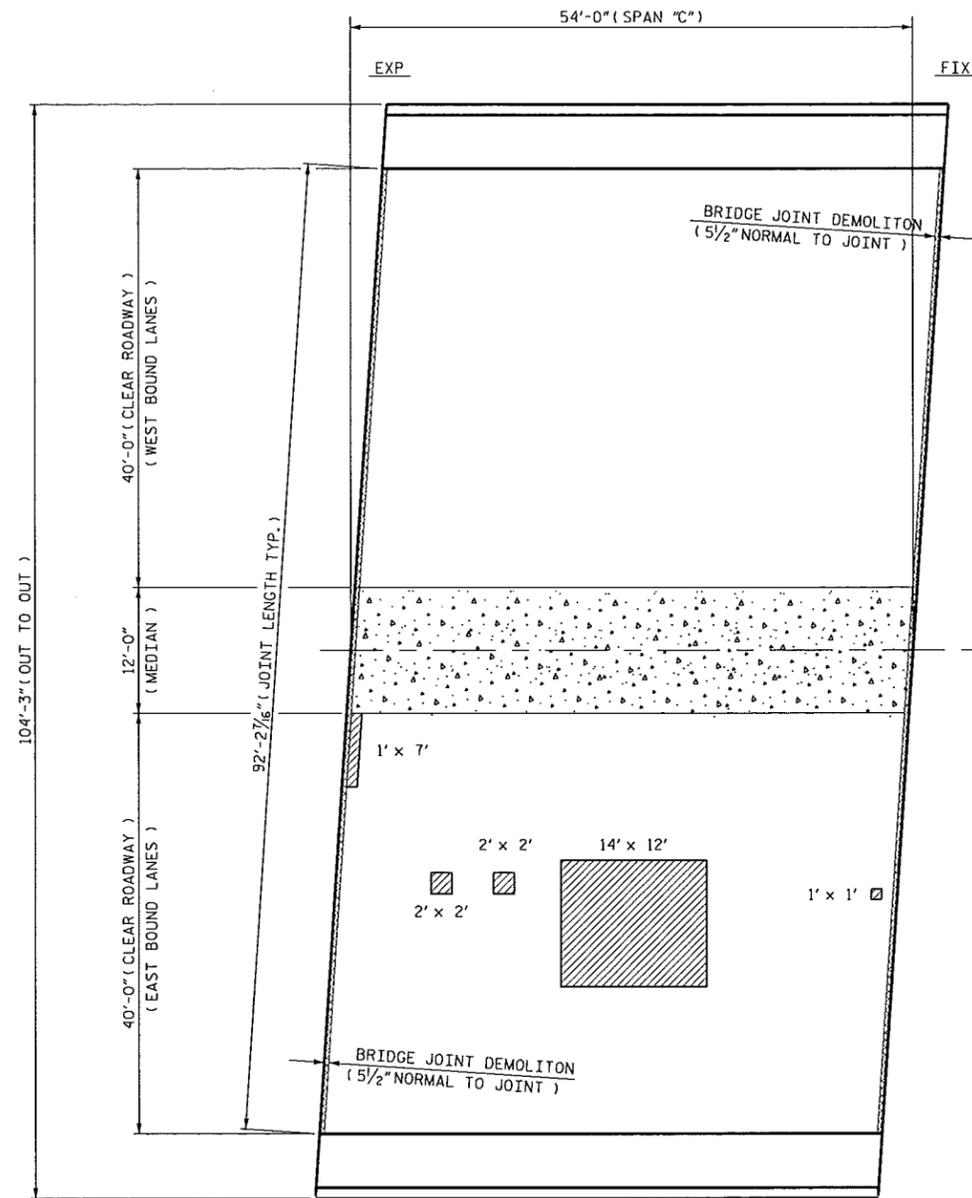
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
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SPANS "A" & "B"

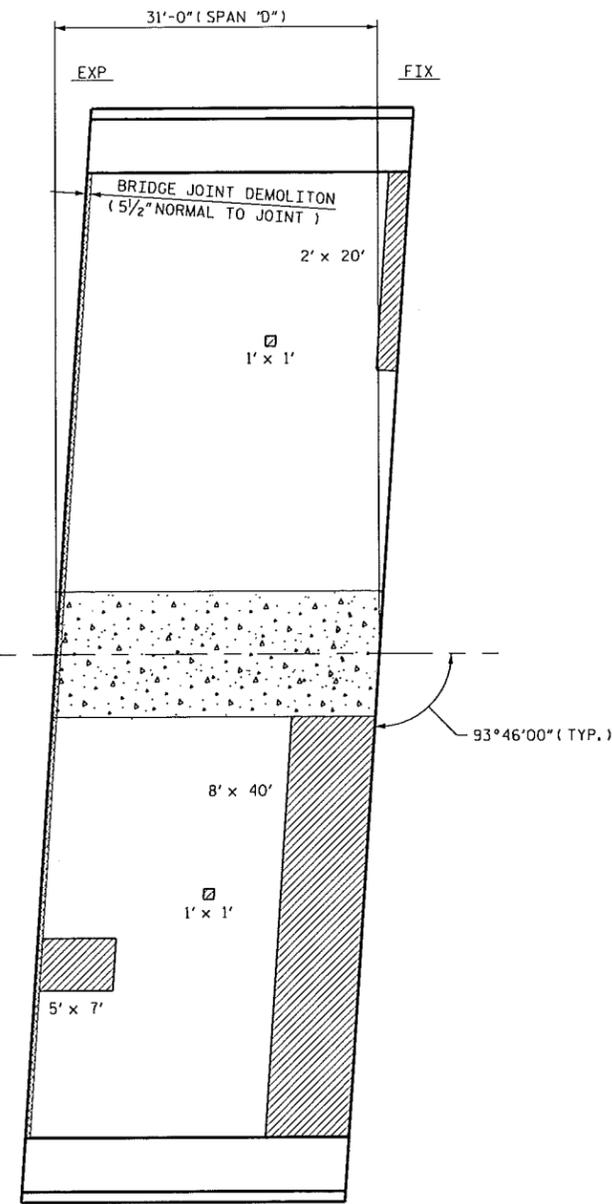


DRAWN BY: M.A.LEE/M.WELDON DATE: 3/2014  
 CHECKED BY: D.N.SNOKE DATE: 3/2014  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
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PLAN OF SPAN "C"  
(FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET)



PLAN OF SPAN "D"  
(FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET)

SPAN "C" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	20.5 SQ. YDS.	
BRIDGE JOINT DEMOLITION	85 SQ. FT.	
SCARIFYING BRIDGE DECK	471 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	471 SQ. YDS.	
SPAN "D" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	44.2 SQ. YDS.	
BRIDGE JOINT DEMOLITION	42.5 SQ. FT.	
SCARIFYING BRIDGE DECK	271 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	271 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
-  JOINT DEMOLITION
-  SCARIFICATION
-  CONCRETE MEDIAN (TO REMAIN)

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 168

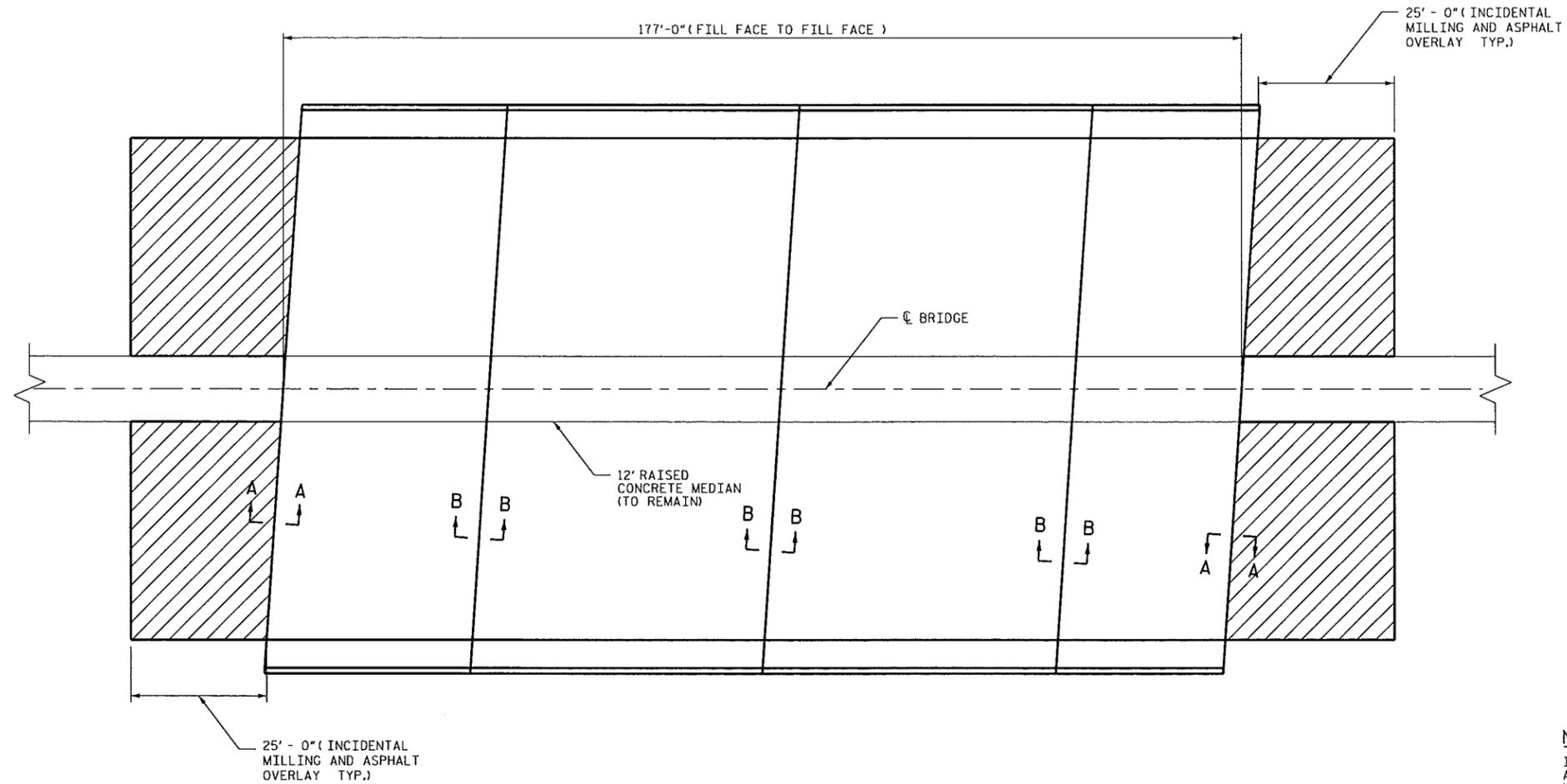
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SPANS "C" & "D"

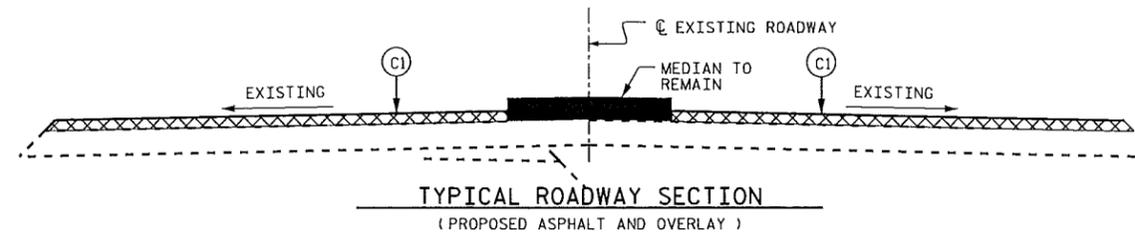
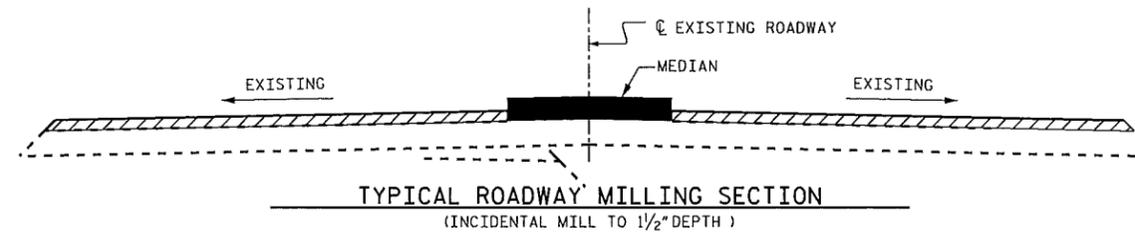
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-32
2			4			TOTAL SHEETS 38



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**NOTE:**  
 INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVING TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1/2" DEPTH OF NEW ASPHALT PAVING. PROVIDE NEW ASPHALT PAVING THICKNESS TO CREATE A SMOOTH TRANSITION TO THE BRIDGE DECK. AS SHOWN, NEW ASPHALT PAVING THICKNESS MAY EXCEED 1/2" DUE TO SETTLEMENT OF THE EXISTING APPROACH ASPHALT PAVING.



PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 168

STATE OF NORTH CAROLINA  
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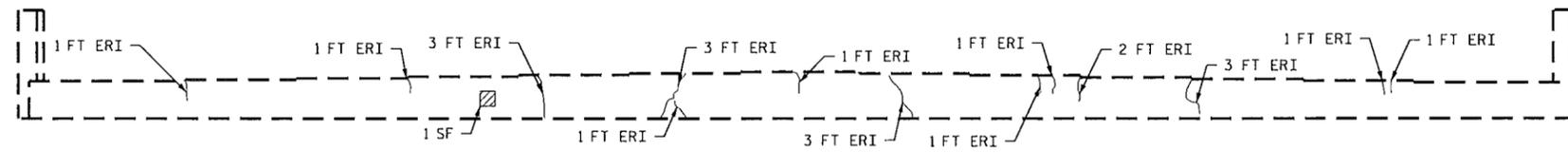
**INCIDENTAL MILLING  
 AND ASPHALT OVERLAY**

C1 PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH.

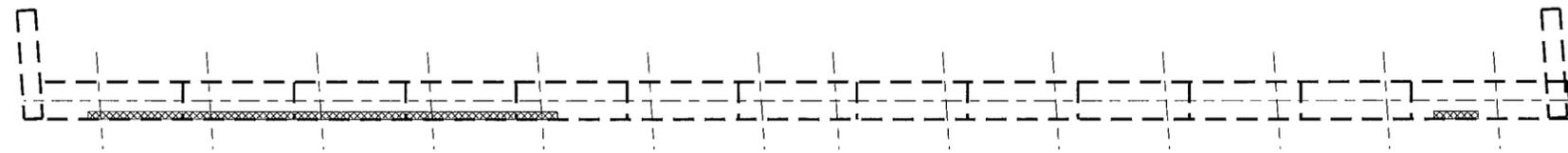
DRAWN BY: M.A. LEE/M. WELDON DATE: 5/2014  
 CHECKED BY: D.N. SNOKE DATE: 5/2014  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE: \_\_\_\_\_



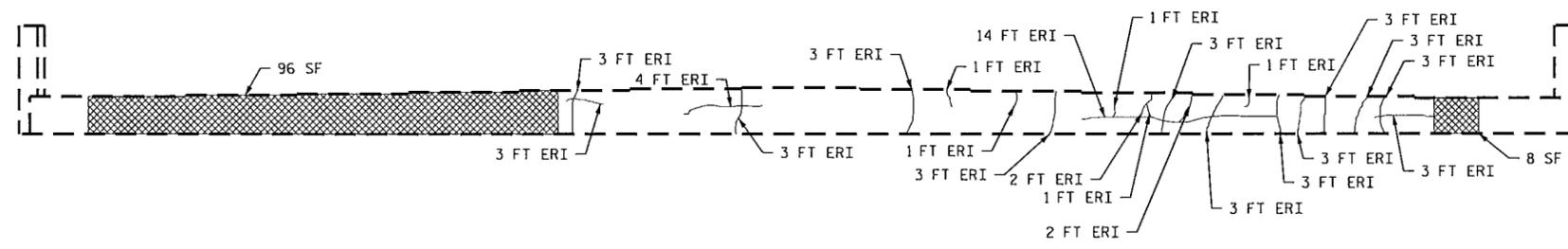
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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END BENT 1  
ELEVATION



PLAN



END BENT 2  
ELEVATION

- ☐ - SHOTCRETE REPAIR
- ▣ - CONCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE									
REPAIRS END BENT 1	QUANTITIES				REPAIRS END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL			ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	AREA SF	VOLUME CF	
SHOTCRETE REPAIRS					SHOTCRETE REPAIRS				
CAP (VERTICAL FACE)	1	0.25			CAP (VERTICAL FACE)	0	0		
CAP (HORIZONTAL, CORNER)	0	0			CAP (HORIZONTAL, CORNER)	0	0		
CONCRETE REPAIRS	0	0			CONCRETE REPAIRS	104	26		
EPOXY RESIN INJECTION		LN. FT		LN. FT	EPOXY RESIN INJECTION		LN. FT	LN. FT	
CAP		22			CAP		66		
EPOXY COATING		SO. FT		SO. FT	EPOXY COATING		SO. FT	SO. FT	
TOP OF CAP		153			TOP OF CAP		153		

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

NOTES:

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

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET S-38.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARING PAD, SEE ARTICLE 420-18 OF THE STANDARD SPECIFICATIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 168

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 END BENT 1 & 2



DRAWN BY : M.A. LEE/M. WELDON DATE : 3/2014  
 CHECKED BY : D.N. SNOKE DATE : 3/2014

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-34
1			3			TOTAL SHEETS
2			4			38

**REPAIR QUANTITY TABLE**

REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	78	20		
CAP (HORIZONTAL, CORNER)	75	18.75		
COLUMN	1	0.5		
CONCRETE REPAIRS	24	6		
EPOXY RESIN INJECTION			LN. FT	LN. FT
CAP			60	
COLUMN			2	
EPOXY COATING			SO. FT	SO. FT
TOP OF CAP			291	

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

**NOTES:**

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

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET S-38.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARING PAD. SEE ARTICLE 420-18 OF THE STANDARD SPECIFICATIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

- ▨ - SHOTCRETE REPAIR
- ▩ - CONCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

PROJECT NO. BP-5500P

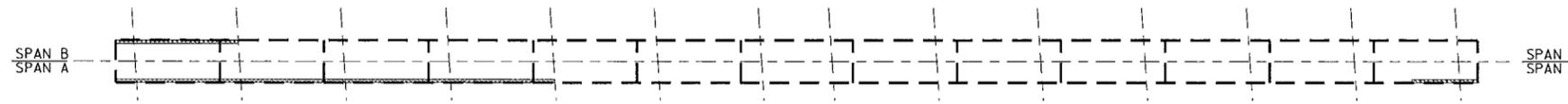
RANDOLPH COUNTY

BRIDGE NO: 168

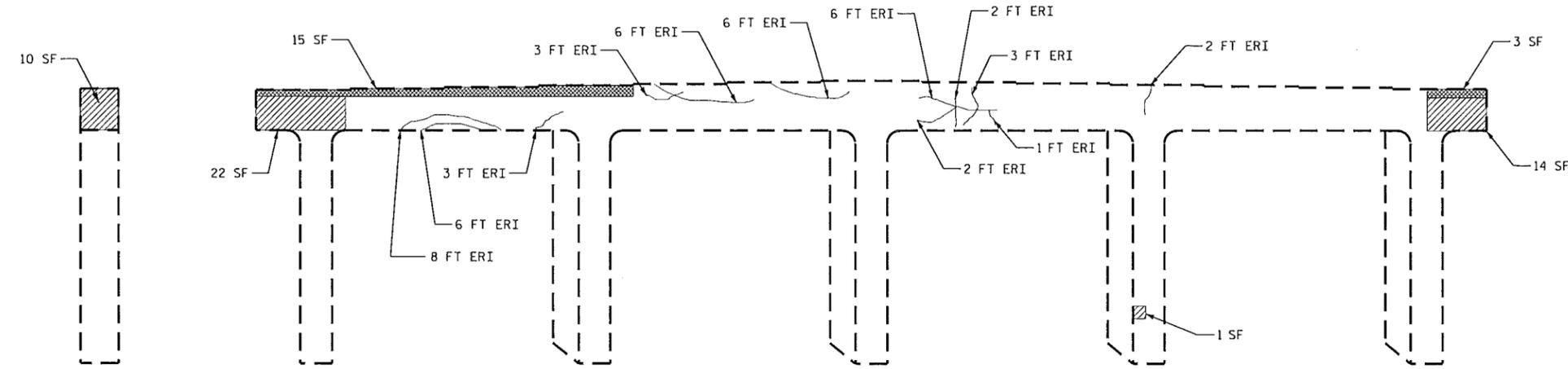
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**SUBSTRUCTURE BENT 1**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-35
1			3			TOTAL SHEETS
2			4			38

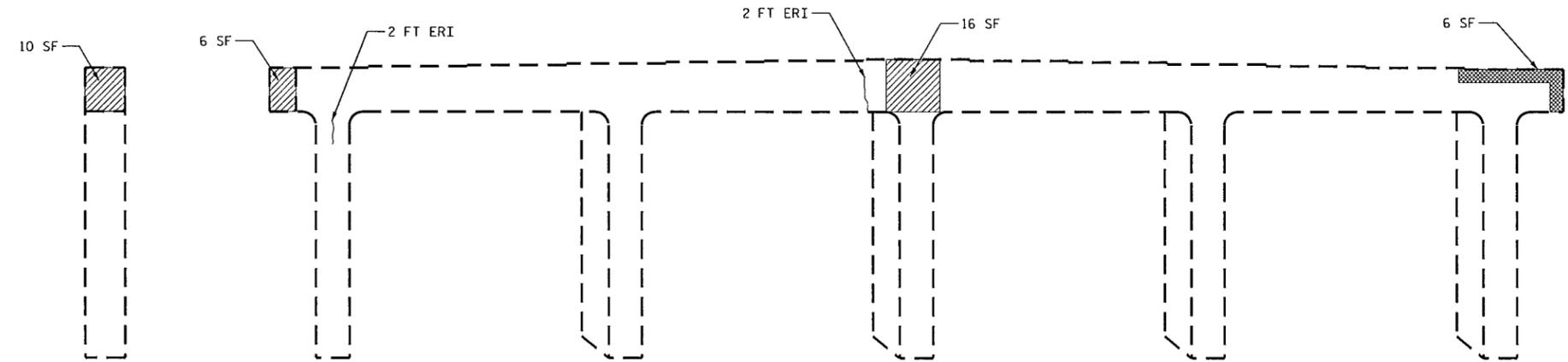


**PLAN**  
TOP OF CAP



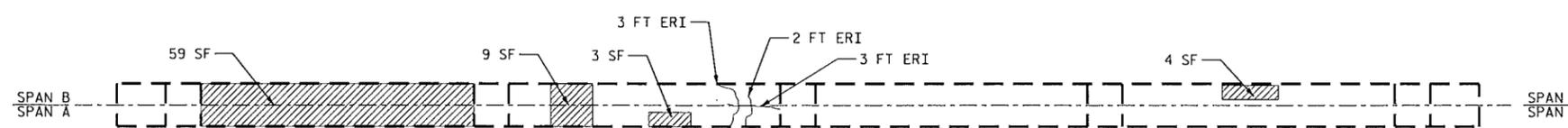
**ELEVATION**  
WEST SIDE

**END VIEW**  
SOUTH SIDE



**ELEVATION**  
EAST SIDE

**END VIEW**  
NORTH SIDE

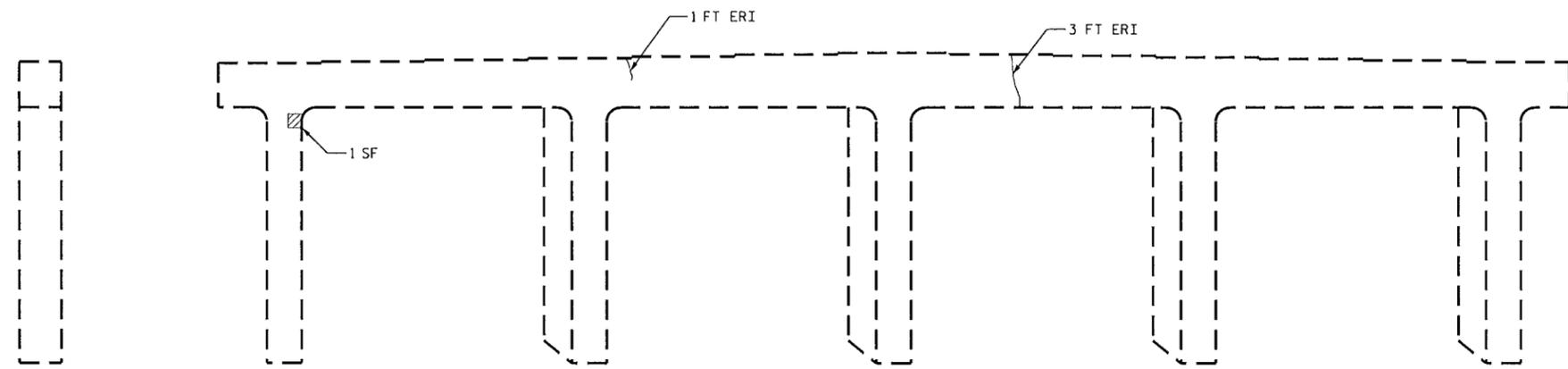


**PLAN**  
BOTTOM OF CAP

DRAWN BY : M.A.LEE/M.WELDON DATE : 3/2014  
 CHECKED BY : D.N.SNOKE DATE : 3/2014  
 DESIGN ENGINEER OF RECORD: DATE :



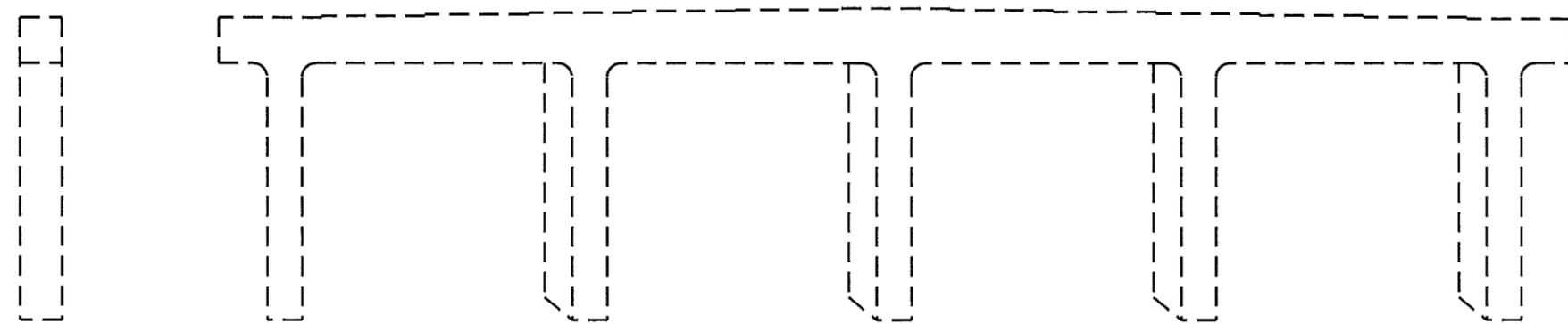
PLAN  
TOP OF CAP



ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE



ELEVATION  
EAST SIDE



END VIEW  
NORTH SIDE



PLAN  
BOTTOM OF CAP

REPAIR QUANTITY TABLE

REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0	0		
CAP (HORIZONTAL, CORNER)	16	4		
COLUMN	1	0.25		
CONCRETE REPAIRS	0	0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		7		
COLUMN		0		
EPOXY COATING		SO. FT		SO. FT
TOP OF CAP		291		

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

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

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

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

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARING PAD. SEE ARTICLE 420-18 OF THE STANDARD SPECIFICATIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

- ▨ - SHOTCRETE REPAIR
- ▣ - CONCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO: 168

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 BENT 2

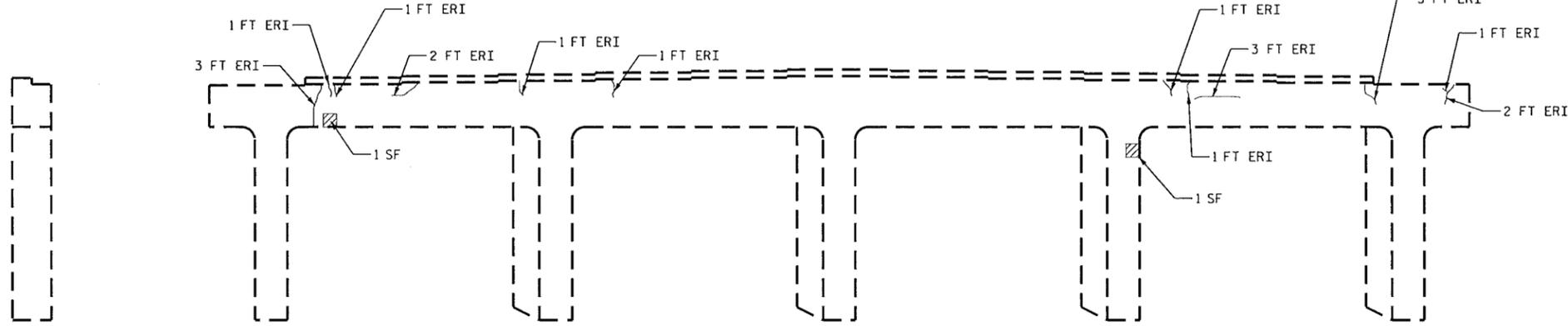


DRAWN BY : M.A.LEE/M. WELDON DATE : 3/2014  
 CHECKED BY : D.N.SNOKE DATE : 3/2014  
 DESIGN ENGINEER OF RECORD: DATE :

REVISIONS						SHEET NO. S-36
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
2			4			

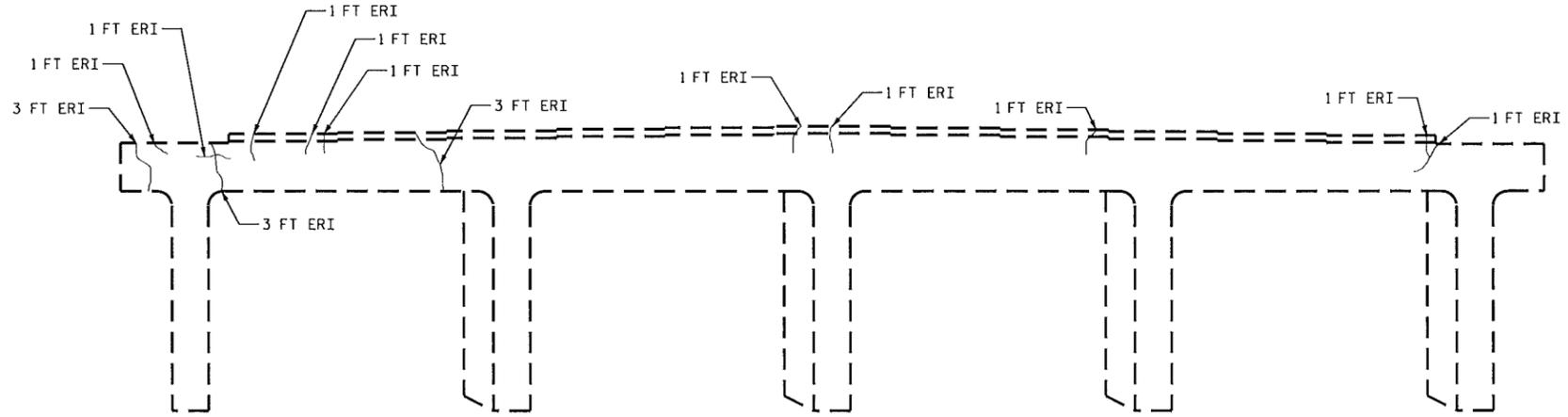


PLAN  
TOP OF CAP



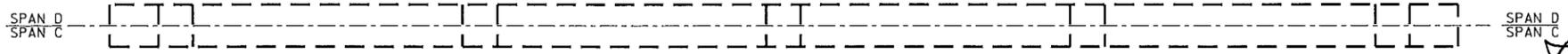
ELEVATION  
WEST SIDE

END VIEW  
SOUTH SIDE



ELEVATION  
EAST SIDE

END VIEW  
NORTH SIDE



PLAN  
BOTTOM OF CAP

REPAIR QUANTITY TABLE

REPAIRS BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	1	0.25		
CAP (HORIZONTAL, CORNER)	0	0		
COLUMN	1	0.5		
CONCRETE REPAIRS	0	0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		39		
COLUMN		0		
EPOXY COATING		SQ. FT		SQ. FT
TOP OF CAP		291		

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

NOTES:

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

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

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

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE CAP, THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARING PAD. SEE ARTICLE 420-18 OF THE STANDARD SPECIFICATIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

- ▨ - SHOTCRETE REPAIR
- ▣ - CONCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO: 168

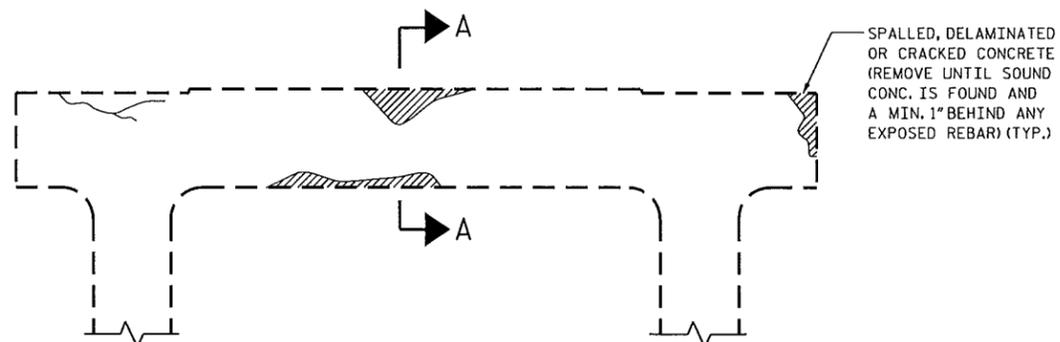
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 BENT 3

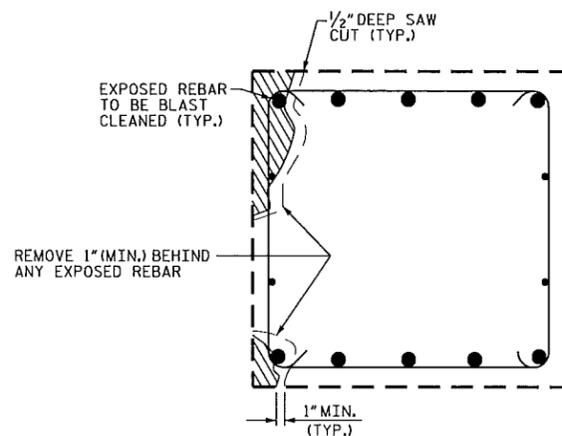
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-37
2			4			38



DRAWN BY: M.A.LEE/M.WELDON DATE: 3/2014  
 CHECKED BY: D.N.SNOKE DATE: 3/2014  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE: \_\_\_\_\_

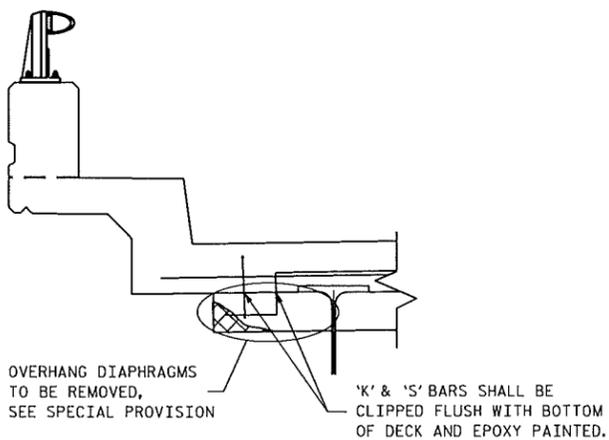


BENT CAP REPAIRS

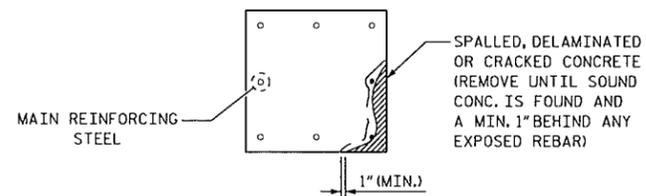


SECTION THRU CAP

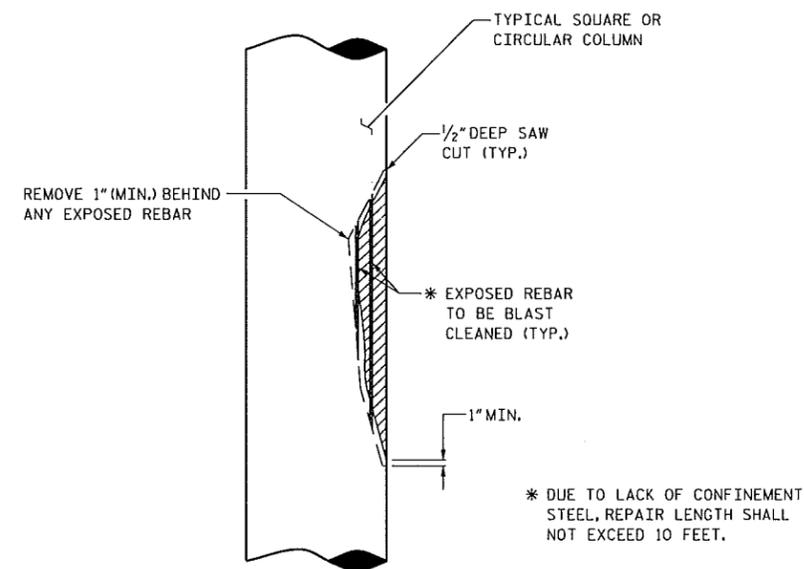
CAP REPAIR



OVERHANG REPAIR DETAIL  
(TYPICAL)



PLAN OF COLUMN



COLUMN REPAIR

PROJECT NO. BP-5500P  
RANDOLPH COUNTY  
 BRIDGE NO. 9,157 & 168

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

TYPICAL  
 CAP AND COLUMN  
 REPAIR DETAILS



DRAWN BY : M.A.LEE/M. WELDON DATE : 5/2014  
 CHECKED BY : D.N.SNOKE DATE : 5/2014  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_

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



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**RANDOLPH COUNTY**



- RANDOLPH CO. BRIDGE #9 – NC 42 (W. SALISBURY ST.) OVER I-73 /I-74 /US 220**
- RANDOLPH CO. BRIDGE #157 – SR 1150 (MCDOWELL RD.) OVER I-73 /I-74 /US 220**
- RANDOLPH CO. BRIDGE #168 – US 64 /NC 49 (W. DIXIE DR.) OVER I-73 /I-74 /US 220**

**INDEX OF SHEETS**

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-2	GENERAL NOTES
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4	RANDOLPH CO. BRIDGE #9 - DETOUR ROUTE
TMP-5	RANDOLPH CO. BRIDGE #157 - SR 1150 WESTBOUND DETOUR ROUTE
TMP-5A	RANDOLPH CO. BRIDGE #157 - SR 1150 EASTBOUND DETOUR ROUTE
TMP-6	RANDOLPH CO. BRIDGE #168 - US 64/NC 49 WESTBOUND DETOUR ROUTE
TMP-6A	RANDOLPH CO. BRIDGE #168 - US 64/NC 49 EASTBOUND DETOUR ROUTE
TMP-6B	RANDOLPH CO. BRIDGE #168 - BRIDGE CLOSURE

SHEET NO.

TMP-1

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**N.C.D.O.T. WORK ZONE TRAFFIC CONTROL**  
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561  
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)  
PHONE: (919) 773-2800 FAX: (919) 771-2745

JOSEPH ISHAK, P.E. **CENTRAL WORK ZONE TRAFFIC CONTROL ENGINEER**

MIKE STEELMAN **TRAFFIC CONTROL PROJECT DESIGN ENGINEER**



**Stantec**

Stantec Consulting Services Inc. Tel: 919.851.8886  
801 Jones Franklin Rd-Suite 300 Fax: 919.851.7024  
Raleigh, NC 27606 www.stantec.com

BETSY L. WATSON, P.E. **TRAFFIC ENGINEER**

GEORGE KARAGEORGE **TRAFFIC ENGINEER**

REGINA CULLEN, E.I. **TRANSPORTATION DESIGNER**

APPROVED: *Betsy L. Watson*  
DATE: 5/15/14

SEAL

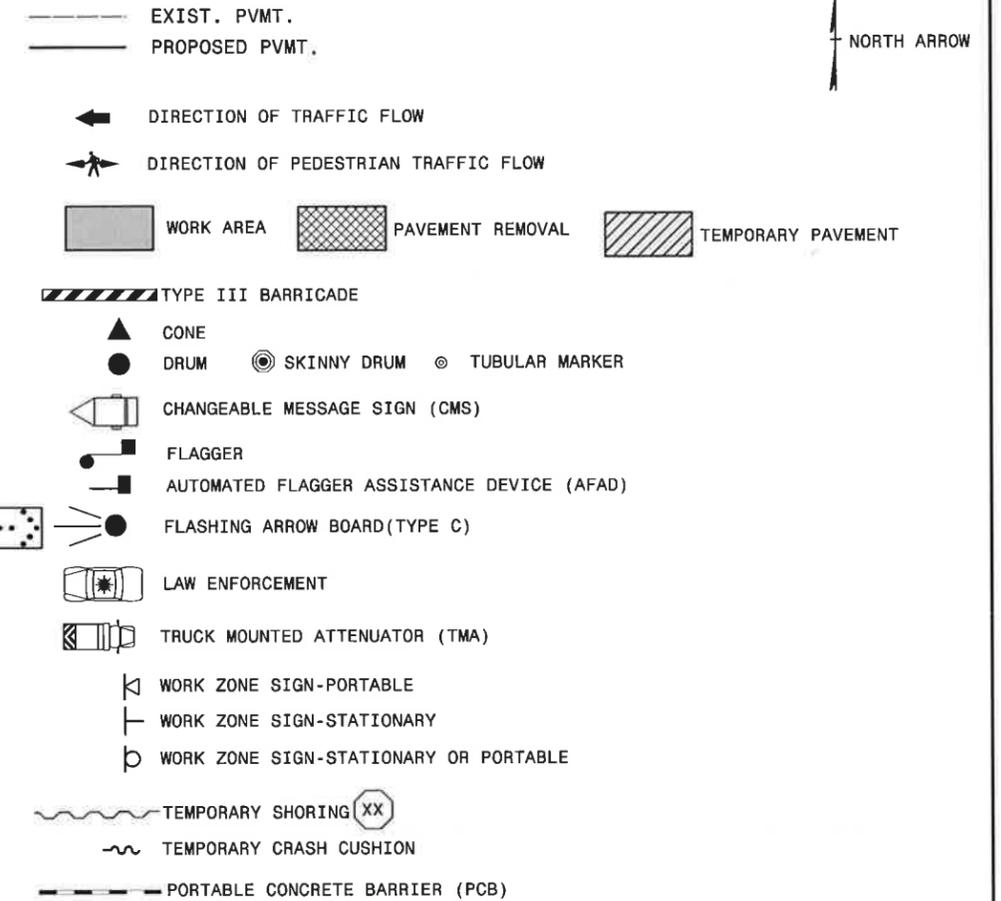
**BP-5500P**

## ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMP
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS
1205.12	PAVEMENT MARKINGS - BRIDGES
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)
1253.01	RAISED PAVEMENT MARKERS - SNOWPLOWABLE
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

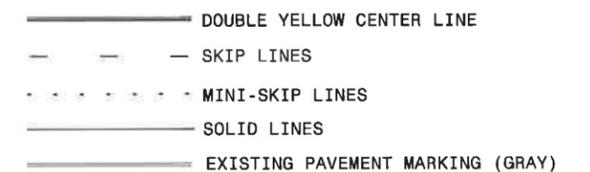
## LEGEND



### SIGNALS



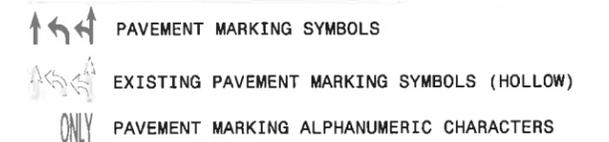
### PAVEMENT MARKINGS



### PAVEMENT MARKERS



### PAVEMENT MARKING SYMBOLS



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<p>Stantec Consulting Services Inc. 801 Jones Franklin Road-Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672</p>	APPROVED: _____ DATE: _____ 	<p>DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL</p>	<b>ROADWAY STANDARD DRAWINGS &amp; LEGEND</b>
	SEAL <i>L. Watson</i> 5/15/14		

# GENERAL NOTES

PROJ. REFERENCE NO.	SHEET NO.
BP-5500P	TMP-2

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
ALL ROADS	7:00 A.M. - 7:00 P.M. MONDAY THRU SUNDAY (EVERY DAY)

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME  
ALL ROADS

HOLIDAY

- 1) FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- 2) FOR NEW YEAR'S, BETWEEN THE HOURS OF 7:00 A.M. DECEMBER 31ST TO 7:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7:00 P.M. THE FOLLOWING TUESDAY.
- 3) FOR EASTER, BETWEEN THE HOURS OF 7:00 A.M. THURSDAY AND 7:00 P.M. MONDAY.
- 4) FOR MEMORIAL DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY.
- 5) FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 7:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE DAY AFTER INDEPENDENCE DAY. IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY; THEN BETWEEN THE HOURS OF 7:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- 6) FOR LABOR DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.
- 7) FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 7:00 A.M. TUESDAY TO 7:00 P.M. MONDAY.
- 8) FOR CHRISTMAS, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- C) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- G) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

TRAFFIC PATTERN ALTERATIONS

H) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- I) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRANSPORTATION MANAGEMENT PLANS.  
AND  
PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRANSPORTATION MANAGEMENT PLANS.
- J) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.  
AND  
COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.
- K) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

- L) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADIUS, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.
- M) PLACE TYPE III BARRICADES WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.
- N) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES (DRUMS, CONES OR SKINNY DRUMS) PERPENDICULAR TO THE EDGE OF TRAVELWAY ON (500 FT) CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

O) IF NEEDED, INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
NC 42	PAINT	TEMPORARY RAISED
SR 1150	PAINT	TEMPORARY RAISED
US 64/NC 49	PAINT	TEMPORARY RAISED

- P) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.
- Q) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- R) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BEFORE OPENING TO TRAFFIC.

MISCELLANEOUS

- S) ENSURE THE OVERSIZED/OVERWEIGHT PERMIT UNIT (919) 733-4740 HAS BEEN ADVISED OF THE ONGOING TRAFFIC OPERATIONS THROUGH THE DIVISION OFFICE.
- T) USE LAW ENFORCEMENT TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND / OR INTERSECTIONS AS SHOWN IN PLANS OR DIRECTED BY THE ENGINEER.

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 <p style="font-size: 8px;">Stantec Consulting Services Inc. 801 Jones Franklin Road-Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672</p>	<p style="font-size: 8px;">APPROVED: _____ DATE: _____</p> <div style="text-align: center;">  </div>	<div style="text-align: center;">  </div>	<h2 style="margin: 0;">GENERAL NOTES</h2>
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## PHASING

DO NOT WORK ON BRIDGE #168 SIMULTANEOUSLY WITH ANY OTHER BRIDGE. BRIDGES #9 AND #157 MAY BE WORKED ON SIMULTANEOUSLY.

FOR ALL BRIDGES, IF LANE CLOSURES ARE NECESSARY ON I-73/ I-74/ US 220, USE RSD 1101.02 SHEETS 4, 6, OR 10 OF 15. REFER TO LANE CLOSURE TIME RESTRICTIONS ON SHEET TMP-2.

RANDOLPH COUNTY BRIDGE #9 - NC 42 (W.SALISBURY ST.)  
OVER I-73 / I-74 / US 220

- STEP 1.  
BEGIN BRIDGE REPAIRS AND SECURE CONTAINMENT. IF NECESSARY, USE OUTSIDE LANE CLOSURES ON NC 42 (W. SALISBURY ST.) BY USING DRUMS TO CHANNELIZE TRAFFIC INTO THE INSIDE LANE AND NOT ORIGINATE THE OUTSIDE LANE.
- STEP 2.  
INSTALL OFFSITE DETOUR SIGNING FOR THE CLOSURE OF NC 42 (W. SALISBURY ST.) ACCORDING TO TMP-4 AND COVER SIGNS AS APPROPRIATE.
- INSTALL ROAD CLOSURE SIGNING ACCORDING TO SHEET TMP-4 AND RSD 1101.03 SHEET 2 OF 9 AND COVER SIGNS AS APPROPRIATE.

INTERMEDIATE CONTRACT TIME:  
COMPLETE THE WORK REQUIRED OF STEPS 3-5 WITHIN A CONSECUTIVE FORTY (40) DAY CALENDAR PERIOD. THIS WORK SHALL NOT BE SUBJECT TO THE LANE CLOSURE TIME RESTRICTIONS STATED IN NOTES A AND B ON SHEET TMP-2.

- STEP 3.  
IN ONE CONTINUOUS WORK PERIOD, UNCOVER OFFSITE DETOUR SIGNS AND ROAD CLOSURE SIGNS, AND INSTALL DEVICES TO CLOSE NC 42 (W. SALISBURY ST.) PER SHEET TMP-4 AND RSD 1101.03 SHEET 2 OF 9. AT THE INTERSECTION OF NC 42 (W. SALISBURY ST.) AT I-73/I-74 RAMPS, PUT SIGNAL IN FLASH OR MODIFY SIGNAL OPERATION AS DIRECTED BY THE ENGINEER.
- STEP 4.  
WITH NC 42 CLOSED TO TRAFFIC, PERFORM CONCRETE OVERLAY AND REPLACE FINAL PAVEMENT MARKINGS AND MARKERS.
- STEP 5.  
REMOVE DEVICES AND SIGNS CLOSING NC 42 (W. SALISBURY ST.) , AND RE-OPEN BRIDGE #9 TO TRAFFIC. REMOVE OFFSITE DETOUR SIGNING AND RESTORE SIGNAL TO NORMAL OPERATION.
- STEP 6.  
COMPLETE ANY REMAINING WORK USING LANE CLOSURES ACCORDING TO THE METHOD DESCRIBED ABOVE IN STEP 1.
- STEP 7.  
REMOVE ALL WORK ZONE TRAFFIC CONTROL SIGNING AND DEVICES.

RANDOLPH COUNTY BRIDGE #157 - SR 1150 (MCDOWELL RD.)  
OVER I-73 / I-74 / US 220

- STEP 1.  
BEGIN BRIDGE REPAIRS AND SECURE CONTAINMENT. IF NECESSARY, USE LANE CLOSURES ON SR 1150 (MCDOWELL RD.) PER RSD 1101.02 SHEET 1 OF 15.
- STEP 2.  
INSTALL OFFSITE DETOUR SIGNING FOR THE CLOSURE OF SR 1150 (MCDOWELL RD.) ACCORDING TO TMP-5 AND TMP-5A AND COVER SIGNS AS APPROPRIATE.
- INSTALL ROAD CLOSURE SIGNING ACCORDING TO RSD 1101.03 SHEET 2 OF 9 AND COVER SIGNS AS APPROPRIATE.

INTERMEDIATE CONTRACT TIME:  
COMPLETE THE WORK REQUIRED OF STEPS 3-5 WITHIN 12 CONSECUTIVE HOURS, BETWEEN THE HOURS OF 7:00PM AND 7:00AM. REPEAT STEPS 3, 4, AND 5 UP TO NINE TIMES, FOR A TOTAL OF TEN CLOSURE PERIODS, TO COMPLETE LMC OVERLAY OF THE ENTIRE BRIDGE.

- STEP 3.  
IN ONE CONTINUOUS WORK PERIOD, UNCOVER OFFSITE DETOUR SIGNS AND ROAD CLOSURE SIGNS, AND INSTALL DEVICES TO CLOSE SR 1150 (MCDOWELL RD.) PER RSD 1101.03 SHEET 2 OF 9. AT THE INTERSECTION OF SR 1150 (MCDOWELL RD.) AT I-73/I-74 SB RAMPS, PUT SIGNAL IN FLASH OR MODIFY SIGNAL OPERATION AS DIRECTED BY THE ENGINEER.
- STEP 4.  
WITH SR 1150 (MCDOWELL RD.) CLOSED TO TRAFFIC, PERFORM LMC OVERLAY AND REPLACE PAVEMENT MARKINGS AND MARKERS FOR A PORTION OF THE BRIDGE THAT CAN BE COMPLETED IN ONE NIGHT.
- STEP 5.  
REMOVE DEVICES AND COVER OR REMOVE SIGNS CLOSING SR 1150 (MCDOWELL RD.) , AND RE-OPEN BRIDGE #157 TO TRAFFIC. COVER OR REMOVE OFFSITE DETOUR SIGNING AND RESTORE SIGNAL TO NORMAL OPERATION.
- STEP 6.  
COMPLETE ANY REMAINING WORK USING LANE CLOSURES ON SR 1150 (MCDOWELL RD.) PER RSD 1101.02 SHEET 1 OF 15.
- STEP 7.  
REMOVE ALL WORK ZONE TRAFFIC CONTROL SIGNING AND DEVICES.

RANDOLPH COUNTY BRIDGE #168 - US 64 / NC 49 (W. DIXIE DR.)  
OVER I-73 / I-74 / US 220

- STEP 1.  
BEGIN BRIDGE REPAIRS AND SECURE CONTAINMENT. IF NECESSARY, USE LANE CLOSURES ON US 64/NC 49 (W. DIXIE DR.) PER RSD 1101.02 SHEET 3 OF 15. IF CLOSURE OF INTERCHANGE LOOPS IS NECESSARY, REFER TO SHEET TMP-6B.
- STEP 2.  
INSTALL OFFSITE DETOUR SIGNING FOR THE CLOSURE OF US 64/NC 49 (W. DIXIE DR.) ACCORDING TO TMP-6 AND TMP-6A AND COVER SIGNS AS APPROPRIATE.
- INSTALL ROAD CLOSURE SIGNING ACCORDING TO SHEET TMP-6B AND RSD 1101.03 SHEET 7 OF 9 AND COVER SIGNS AS APPROPRIATE.

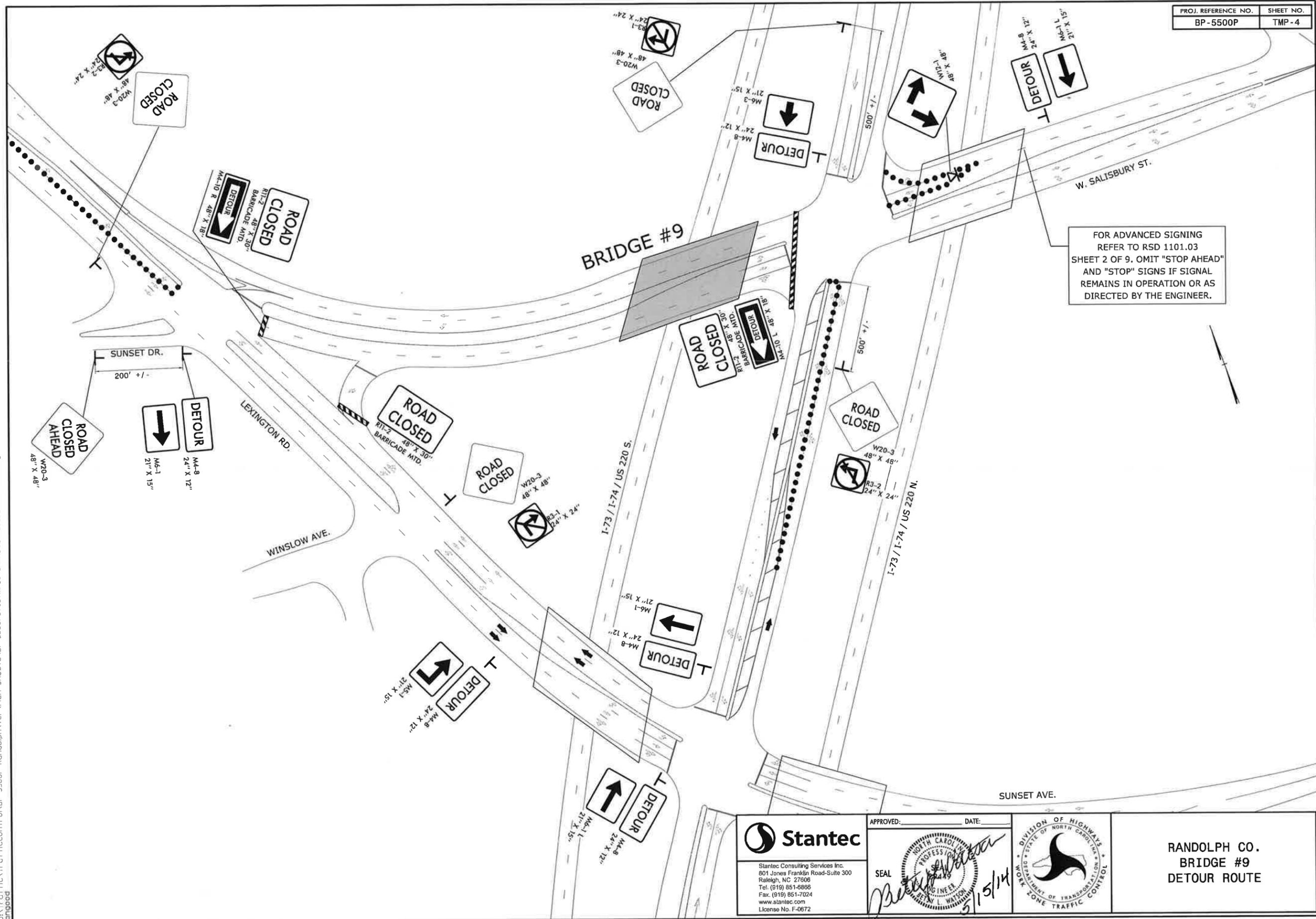
INSTALL SIGNING TO CLOSE BOTH LOOPS FROM I-73/I-74/US 220 ONTO US 64/NC 49 (W. DIXIE DR.) PER TMP-6B AND COVER SIGNS AS APPROPRIATE.

INTERMEDIATE CONTRACT TIME:  
COMPLETE THE WORK REQUIRED OF STEPS 3-5 WITHIN 12 CONSECUTIVE HOURS, BETWEEN THE HOURS OF 7:00PM AND 7:00AM. REPEAT STEPS 3, 4, AND 5 UP TO NINE TIMES, FOR A TOTAL OF TEN CLOSURE PERIODS, TO COMPLETE LMC OVERLAY OF THE ENTIRE BRIDGE.

- STEP 3.  
IN ONE CONTINUOUS WORK PERIOD, UNCOVER OFFSITE DETOUR SIGNS AND ROAD CLOSURE SIGNS, AND INSTALL DEVICES TO CLOSE US 64/NC 49 (W. DIXIE DR.) AND INTERCHANGE LOOPS PER SHEET TMP-6B AND RSD 1101.03 SHEET 7 OF 9.
- STEP 4.  
WITH US 64/NC 49 (W. DIXIE DR.) CLOSED TO TRAFFIC, PERFORM LMC OVERLAY AND REPLACE PAVEMENT MARKINGS AND MARKERS FOR A PORTION OF THE BRIDGE THAT CAN BE COMPLETED IN ONE NIGHT.
- STEP 5.  
REMOVE DEVICES AND COVER OR REMOVE SIGNS CLOSING US 64/NC 49 (W. DIXIE DR.), AND RE-OPEN BRIDGE #168 AND ALL INTERCHANGE LOOPS TO TRAFFIC. COVER OR REMOVE OFFSITE DETOUR SIGNING.
- STEP 6.  
COMPLETE ANY REMAINING WORK USING LANE CLOSURES ON US 64/NC 49 (W. DIXIE DR.) PER RSD 1101.02 SHEET 3 OF 15.
- STEP 7.  
REMOVE ALL WORK ZONE TRAFFIC CONTROL SIGNING AND DEVICES.

9/2/2014  
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 <p style="font-size: small;">Stantec Consulting Services Inc. 801 Jones Franklin Road-Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672</p>	<p>APPROVED: _____ DATE: _____</p> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">  </div> <p style="text-align: right; font-size: x-large;">9/2/14</p>		<h1 style="margin: 0;">PHASING</h1>
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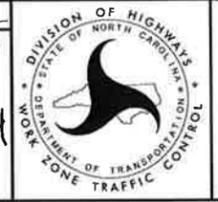


FOR ADVANCED SIGNING  
REFER TO RSD 1101.03  
SHEET 2 OF 9. OMIT "STOP AHEAD"  
AND "STOP" SIGNS IF SIGNAL  
REMAINS IN OPERATION OR AS  
DIRECTED BY THE ENGINEER.

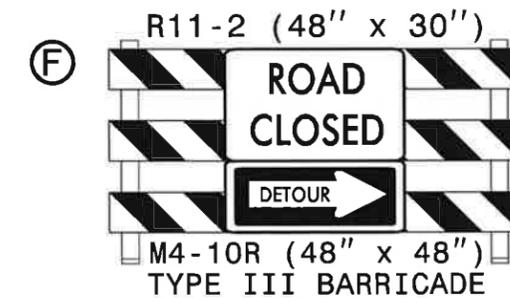
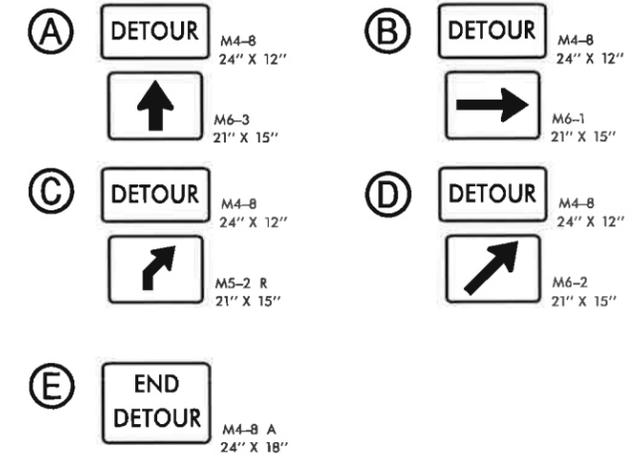
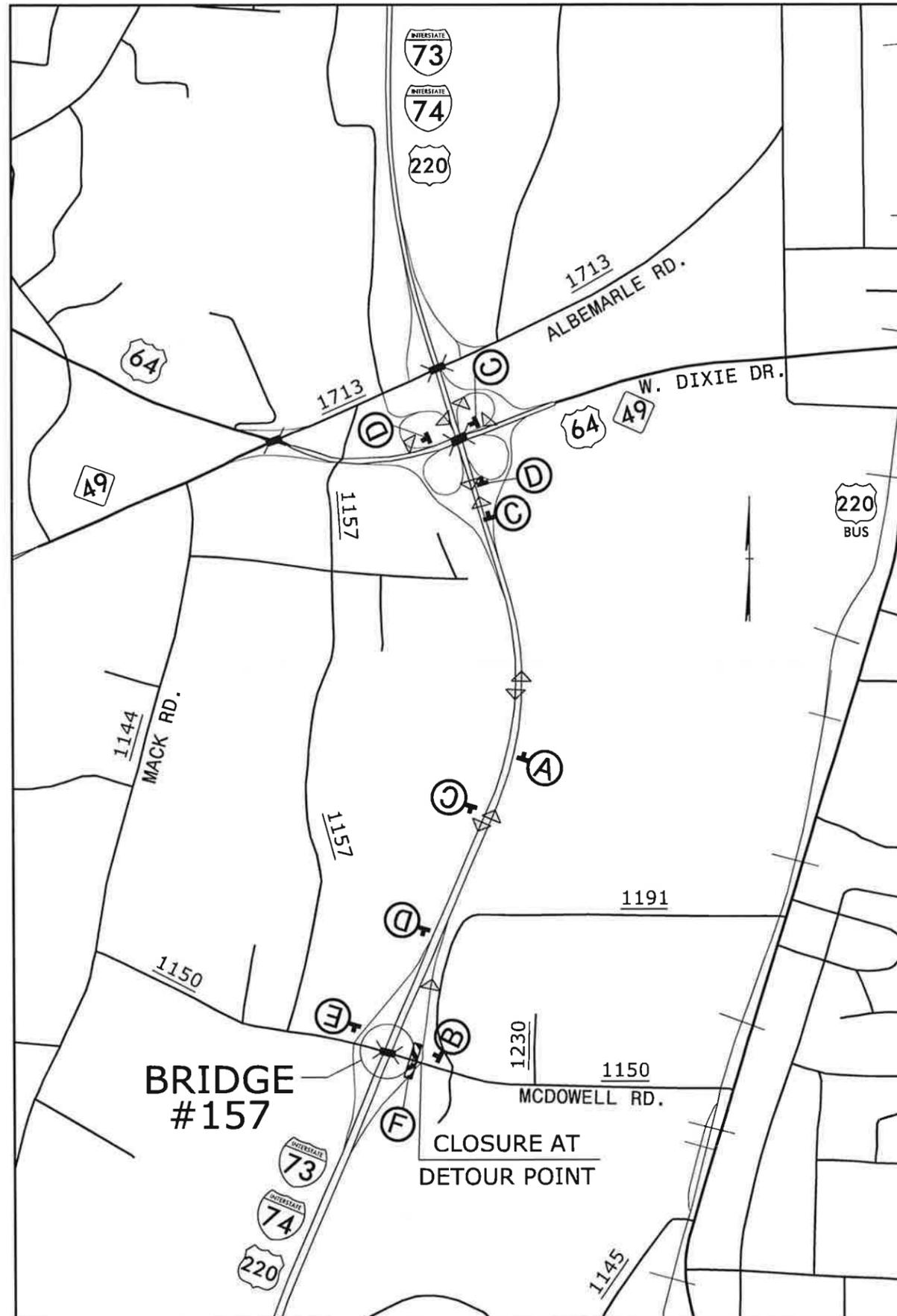
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*[Signature]*  
5/15/14



**RANDOLPH CO.**  
**BRIDGE #9**  
**DETOUR ROUTE**

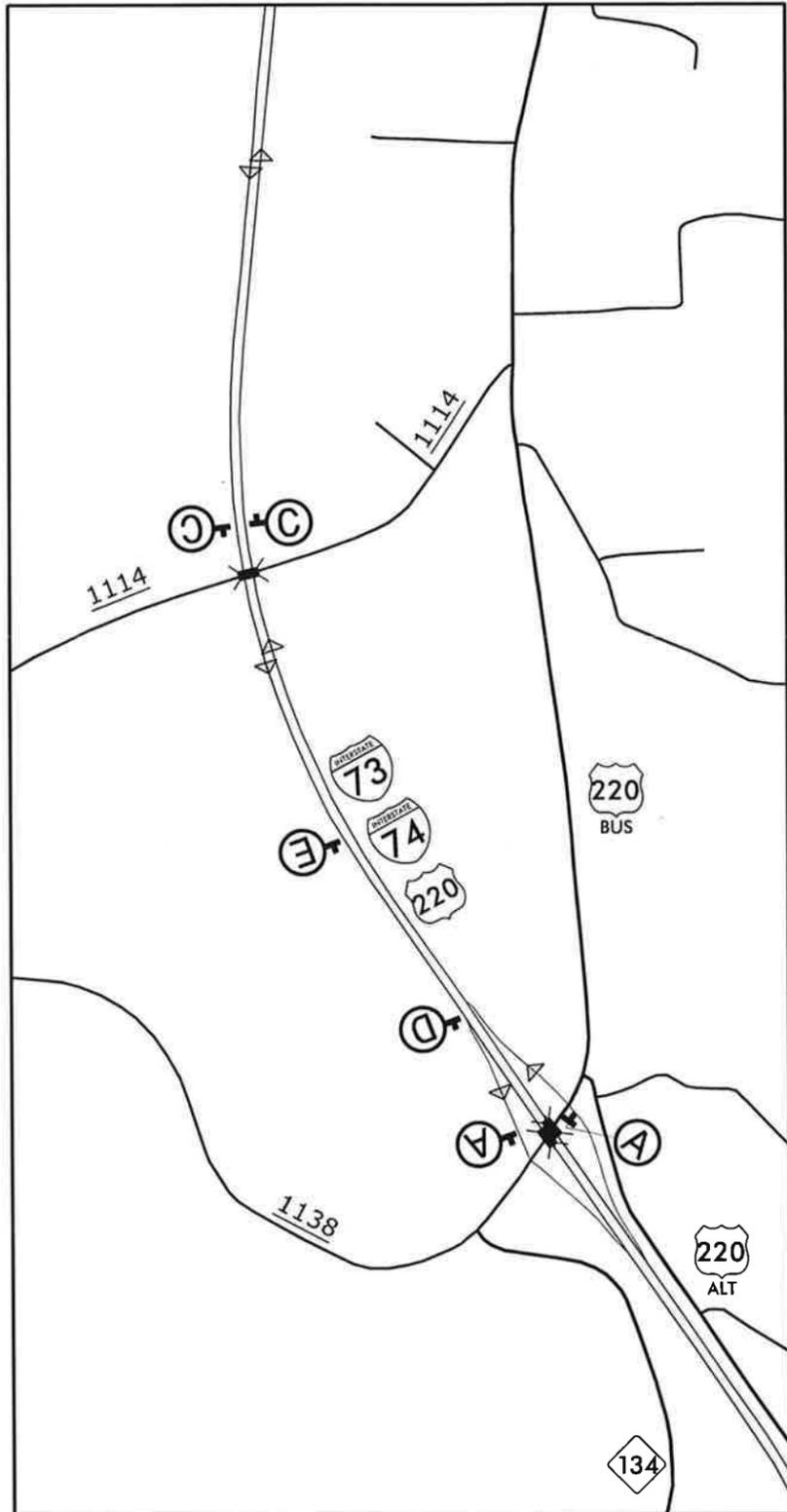
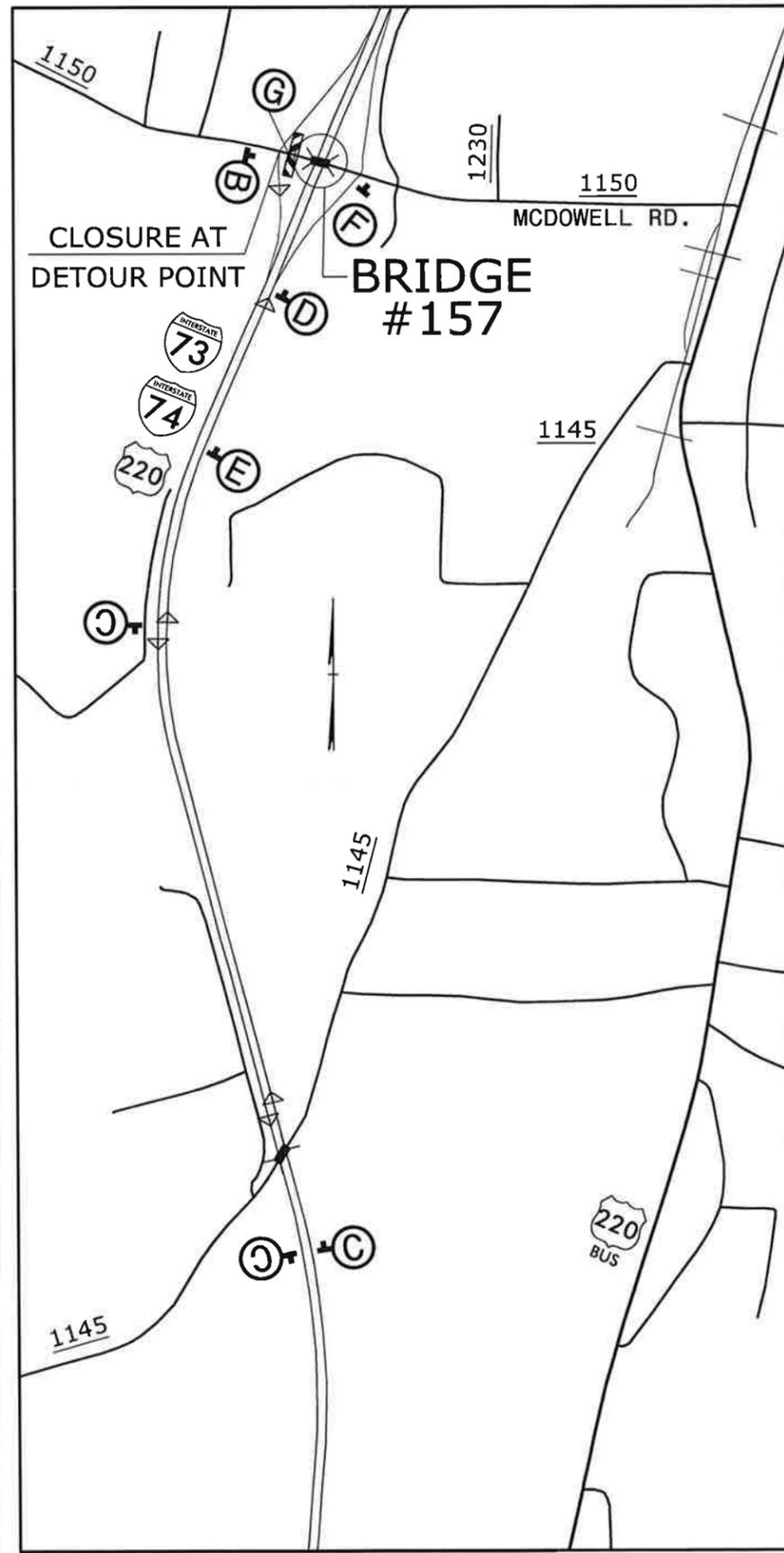


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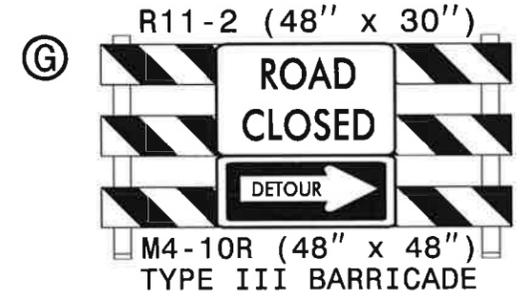
- FOR CLOSURE AT DETOUR POINT, SEE RSD 1101.03 SHEET 2 OF 9.
- DETOUR SIGNS TO BE LOCATED AS DIRECTED BY THE ENGINEER.

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	SEAL			



- |                           |                                 |
|---------------------------|---------------------------------|
| (A) DETOUR M4-8 24" X 12" | (B) DETOUR M4-8 24" X 12"       |
| ← M6-1 L 21" X 15"        | → M6-1 21" X 15"                |
| (C) DETOUR M4-8 24" X 12" | (D) DETOUR M4-8 24" X 12"       |
| ↑ M6-3 21" X 15"          | ↗ M6-2 21" X 15"                |
| (E) DETOUR M4-8 24" X 12" | (F) END DETOUR M4-8 A 24" X 18" |
| ↗ M5-2 R 21" X 15"        |                                 |



**NOTES:**

- FOR CLOSURE AT DETOUR POINT, SEE RSD 1101.03 SHEET 2 OF 9. OMIT "STOP AHEAD" AND "STOP" SIGNS IF SIGNAL REMAINS IN OPERATION OR AS DIRECTED BY THE ENGINEER.
- DETOUR SIGNS TO BE LOCATED AS DIRECTED BY THE ENGINEER.

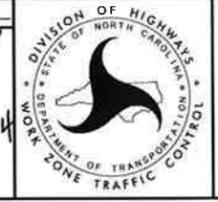
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**Stantec**

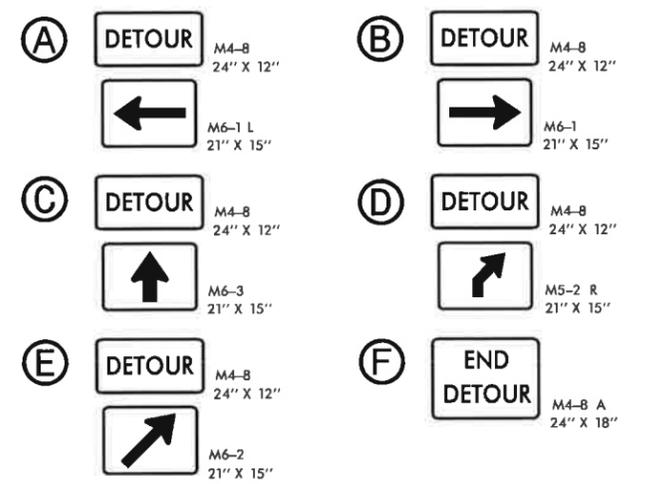
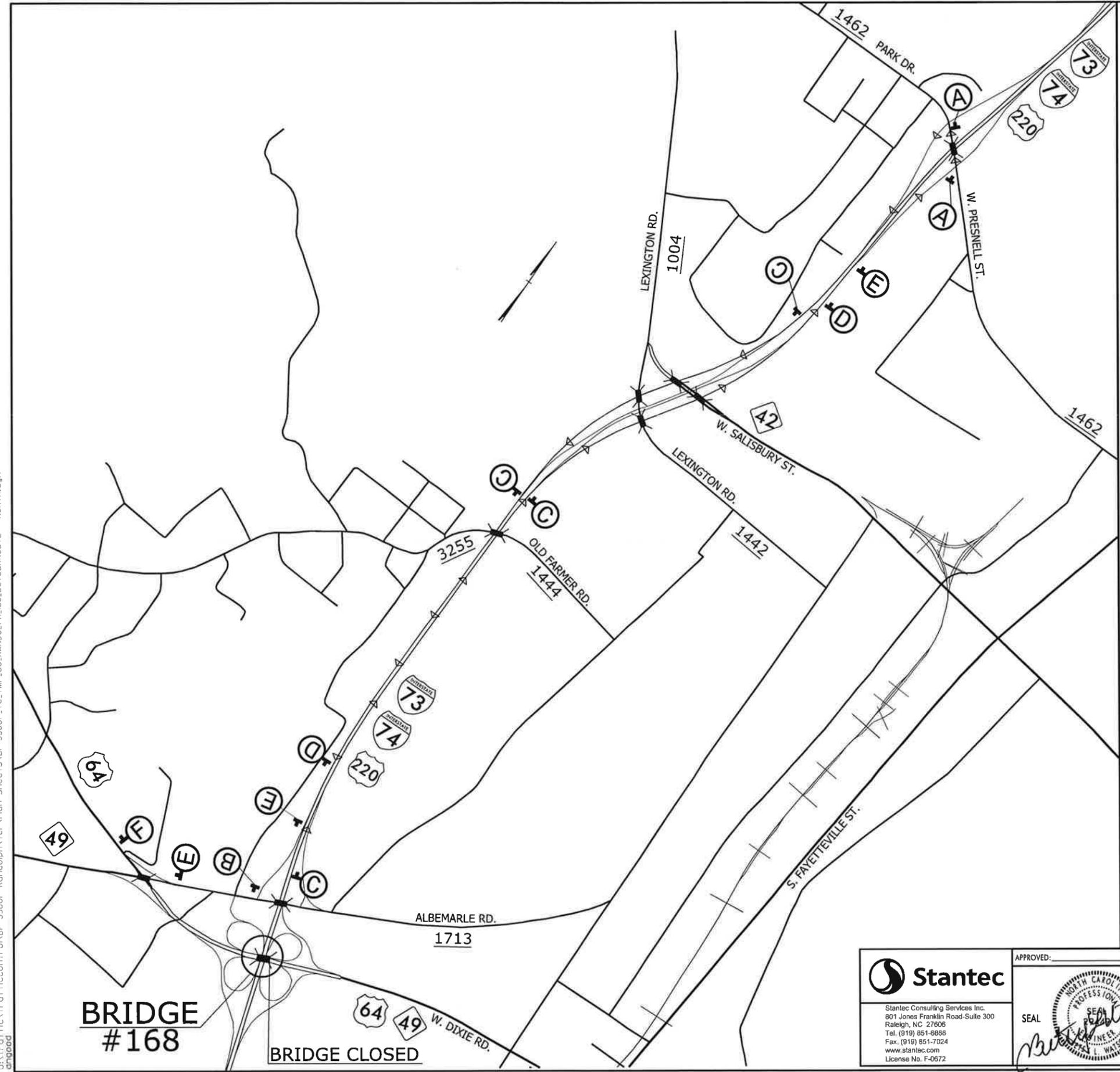
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801 Jones Franklin Road-Suite 300  
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**RANDOLPH CO.  
BRIDGE #157  
SR 1150 EASTBOUND  
DETOUR ROUTE**



**NOTES:**

- FOR CLOSURE OF BRIDGE #168, SEE TMP-6B.
- DETOUR SIGNS TO BE LOCATED AS DIRECTED BY THE ENGINEER.

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**BRIDGE #168**

**BRIDGE CLOSED**

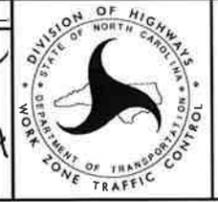
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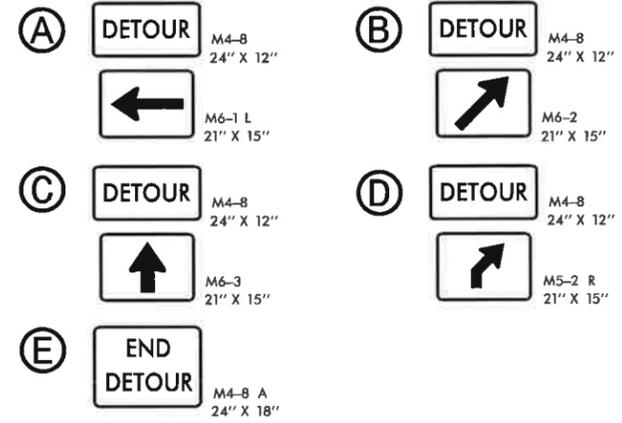
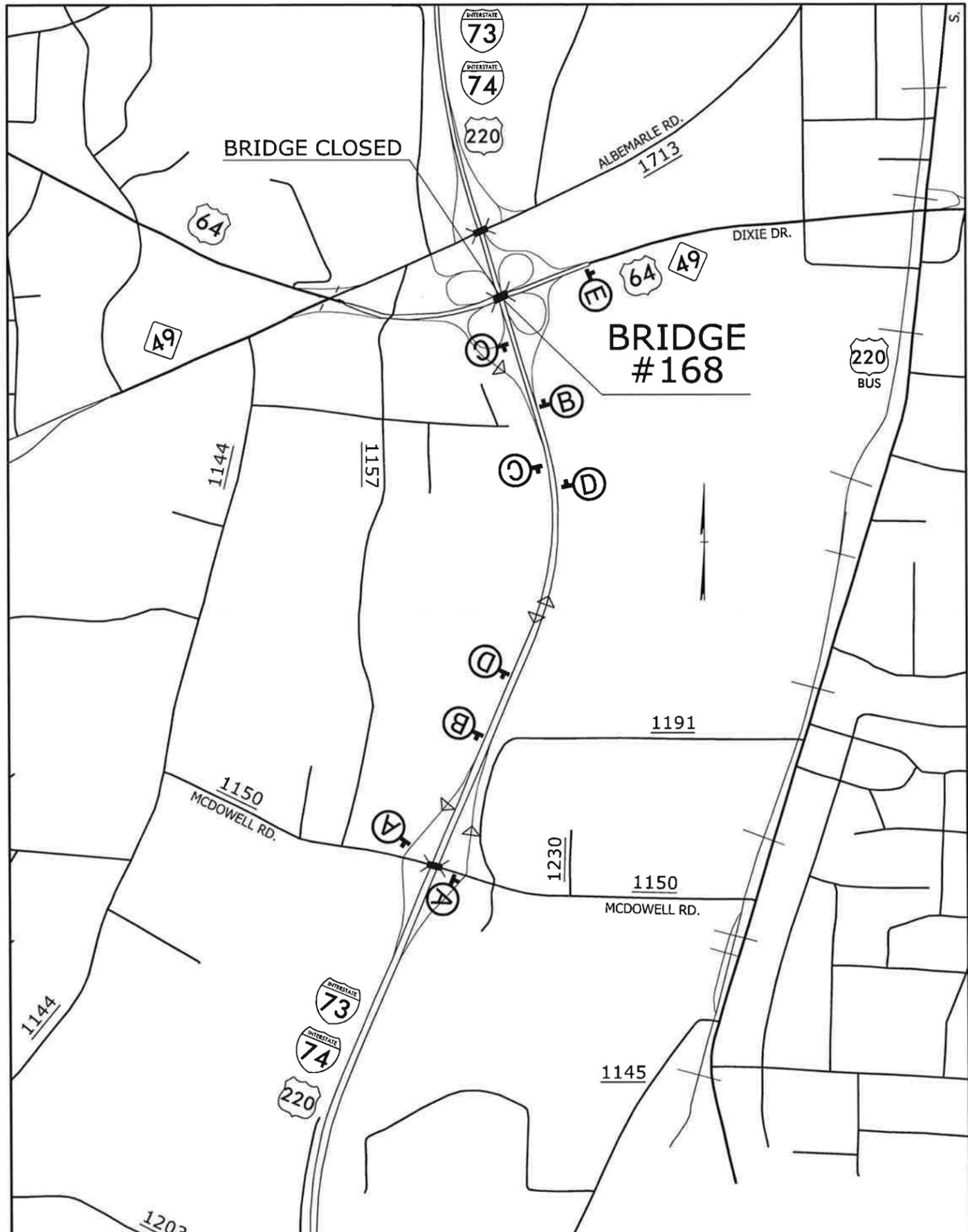
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SEAL

*M. Watson*  
5/15/14



**RANDOLPH CO.  
BRIDGE #168  
US 64 / NC 49 WESTBOUND  
DETOUR ROUTE**



**NOTES:**

- FOR CLOSURE OF BRIDGE #168, SEE TMP-6B.
- DETOUR SIGNS TO BE LOCATED AS DIRECTED BY THE ENGINEER.

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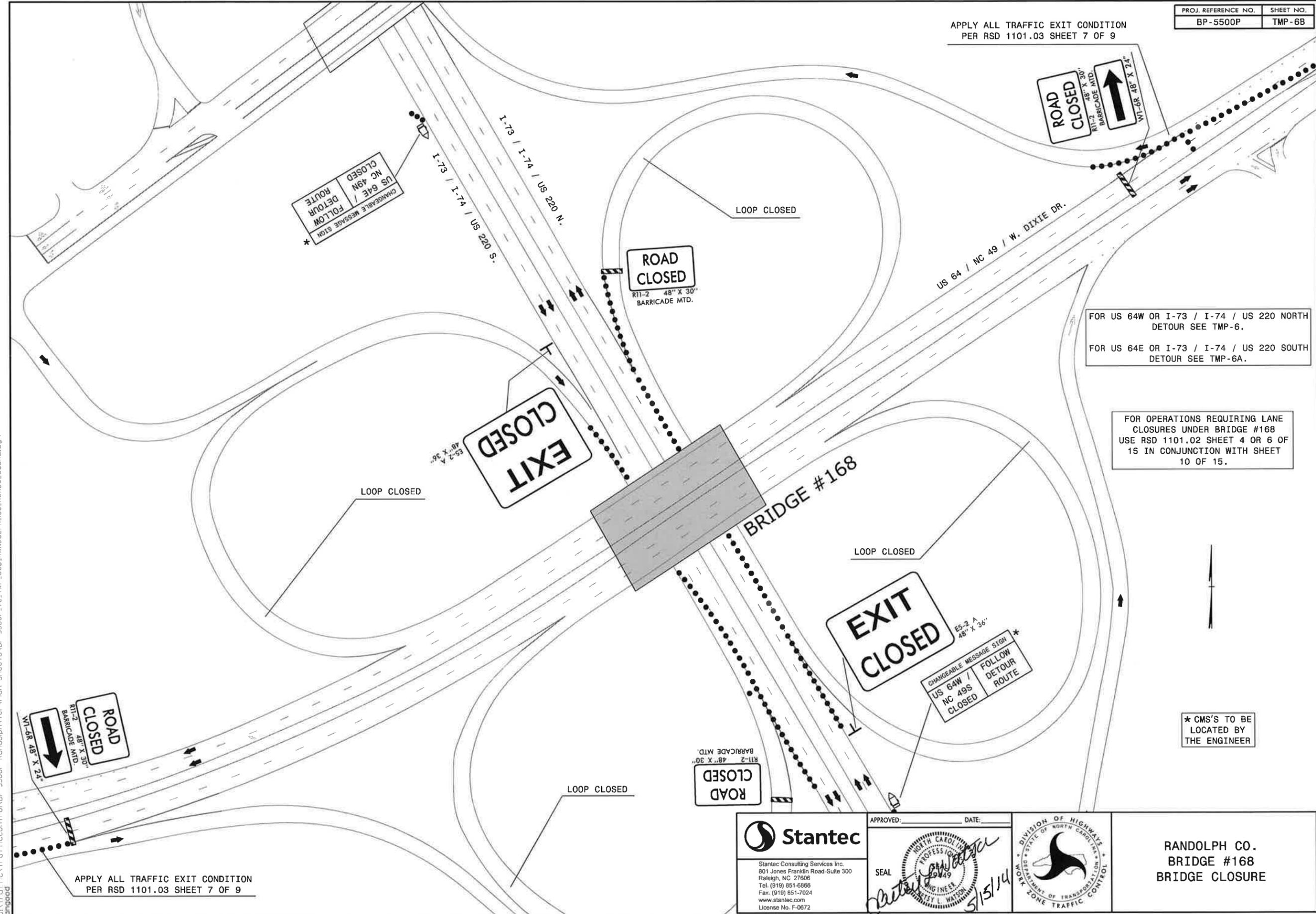
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*Christy L. Watson*  
 5/15/14



**DIVISION OF HIGHWAY**  
 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 WORK ZONE TRAFFIC CONTROL

**RANDOLPH CO.**  
**BRIDGE #168**  
**US 64 / NC 49 EASTBOUND**  
**DETOUR ROUTE**

APPLY ALL TRAFFIC EXIT CONDITION  
PER RSD 1101.03 SHEET 7 OF 9



FOR US 64W OR I-73 / I-74 / US 220 NORTH  
DETOUR SEE TMP-6.  
FOR US 64E OR I-73 / I-74 / US 220 SOUTH  
DETOUR SEE TMP-6A.

FOR OPERATIONS REQUIRING LANE  
CLOSURES UNDER BRIDGE #168  
USE RSD 1101.02 SHEET 4 OR 6 OF  
15 IN CONJUNCTION WITH SHEET  
10 OF 15.

\* CMS'S TO BE  
LOCATED BY  
THE ENGINEER

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APPLY ALL TRAFFIC EXIT CONDITION  
PER RSD 1101.03 SHEET 7 OF 9

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801 Jones Franklin Road-Suite 300  
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APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
SEAL  
*Christy L. Watson*  
5/15/14  
NORTH CAROLINA PROFESSIONAL ENGINEER  
CHRISTY L. WATSON  
09449



RANDOLPH CO.  
BRIDGE #168  
BRIDGE CLOSURE