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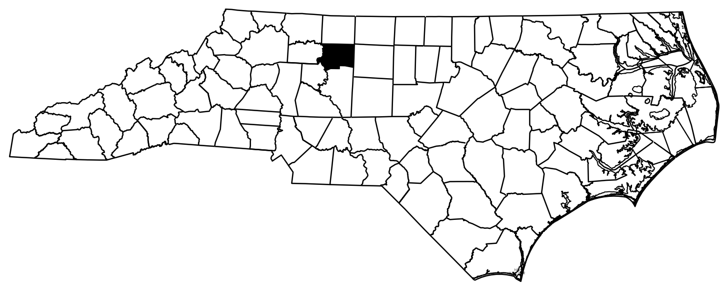
PROJECT: BP-5500R

CONTRACT NO:



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP-5500R	1	

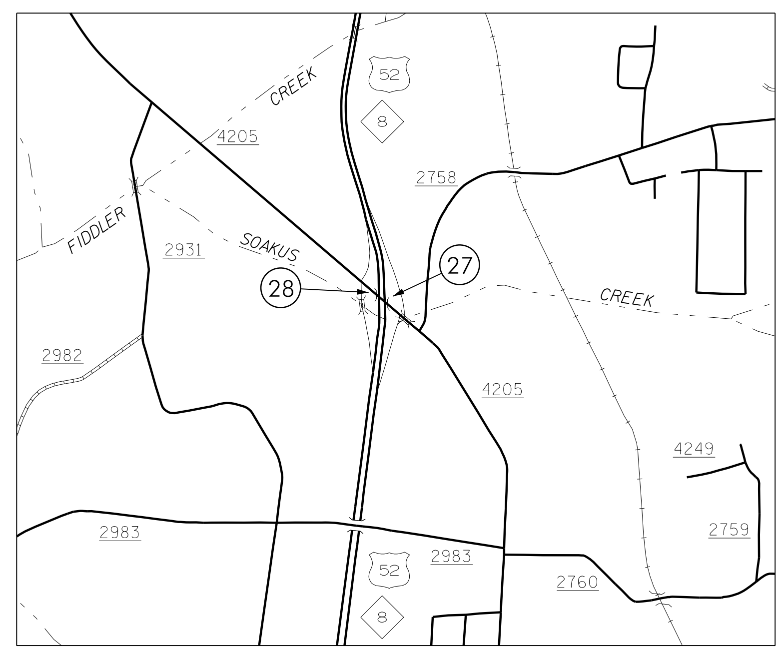
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
50070.1.1		PE
50070.3.18		CONST

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

LOCATION: BRIDGE #27 ON US 52 NORTH OVER SOUTH MAIN ST. (SR 4205) & SOAKUS CREEK
BRIDGE #28 ON US 52 SOUTH OVER SOUTH MAIN ST. (SR 4205) & SOAKUS CREEK

TYPE OF WORK: BRIDGE PRESERVATION – SCARIFICATION, HYDRO–DEMOLITION, DECK REPAIR,
LATEX MODIFIED CONCRETE OVERLAY–VERY EARLY STRENGTH, AND JOINT DEMOLITION;
SUBSTRUCTURE REPAIR USING SHOTCRETE AND EPOXY RESIN INJECTION;
STRUCTURAL STEEL REPAIR, PAINTING STRUCTURAL STEEL, BRIDGE JACKING;
AND INCIDENTIAL MILLING



N

S

DESIGN DATA

#27 ADT 2012 = 17,500
#28 ADT 2012 = 17,500

PROJECT LENGTH

BRIDGE #27 = 0.05 MILE
BRIDGE #28 = 0.05 MILE

Prepared In the Office of:

DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURES MANAGEMENT UNIT
1000 BIRCH RIDGE DR. RALEIGH, N.C. 27610

J. M. BAILEY, P.E.
PROJECT ENGINEER

2012 STANDARD SPECIFICATIONS

LETTING DATE:
SEPTEMBER 23, 2015

DocuSigned by:
E06BC400E4AC45A...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

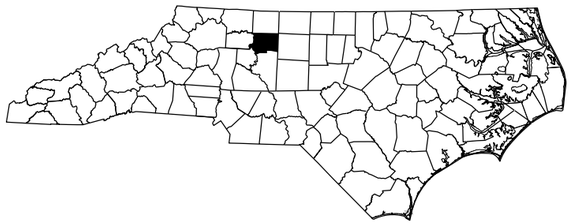
FARZIN ASEFNIA, P.E.
PROJECT DESIGN ENGINEER

PROJECT: BP–5500R

CONTRACT NO:

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP-5500R	1A	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
50070.1.1		PE
50070.3.18		CONST



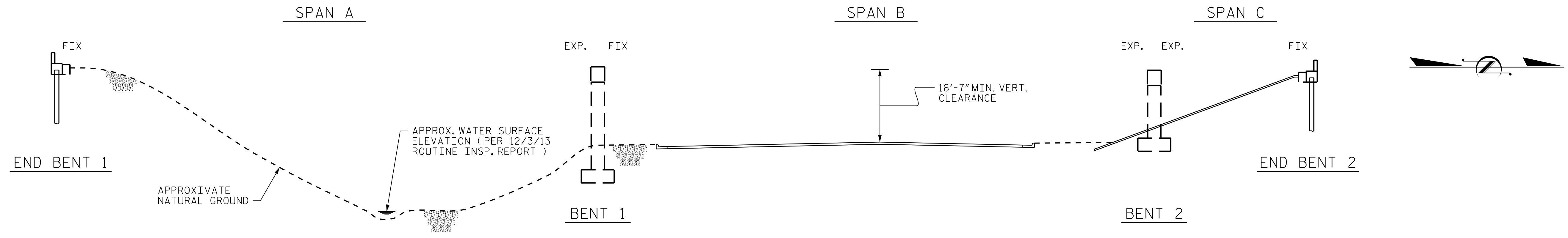
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

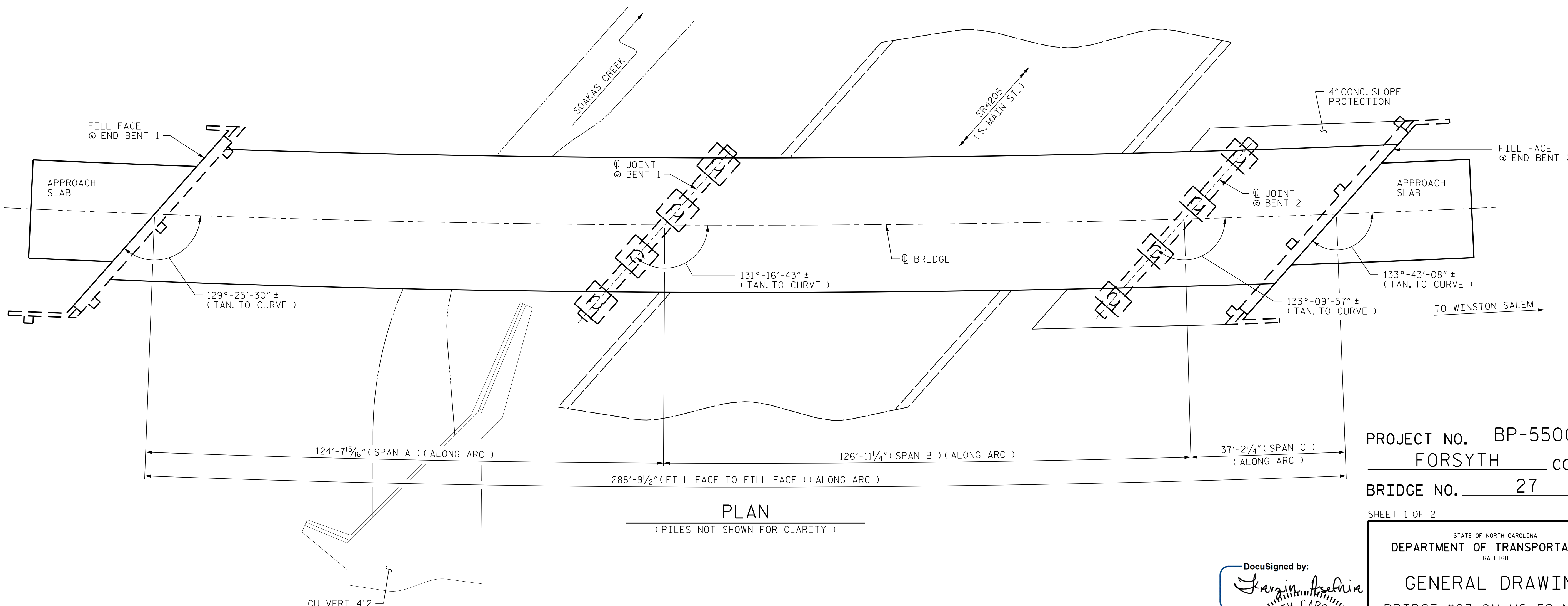
LOCATION: *BRIDGE #27 ON US 52 NORTH OVER SOUTH MAIN ST. (SR 4205) & SOAKUS CREEK*
BRIDGE #28 ON US 52 SOUTH OVER SOUTH MAIN ST. (SR 4205) & SOAKUS CREEK

TYPE OF WORK: *BRIDGE PRESERVATION – SCARIFICATION, HYDRO–DEMOLITION, DECK REPAIR, LATEX MODIFIED CONCRETE OVERLAY–VERY EARLY STRENGTH, AND JOINT DEMOLITION; SUBSTRUCTURE REPAIR USING SHOTCRETE AND EPOXY RESIN INJECTION; STRUCTURAL STEEL REPAIR, PAINTING STRUCTURAL STEEL, BRIDGE JACKING; AND INCIDENTIAL MILLING*

INDEX OF SHEETS



SECTION ALONG ℄ TRAVEL LANES
(SECTIONS TAKEN AT RIGHT ANGLES)



PLAN
(PILES NOT SHOWN FOR CLARITY)

PROJECT NO. BP-5500R
FORSYTH COUNTY
BRIDGE NO. 27
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE #27 ON US 52 NORTH OVER SR 4205 (SOUTH MAIN ST.) AND SOAKAS CREEK

DocuSigned by: Farzin Asefnia
E06BE480CA4C4...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

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

DRAWN BY : P.C. BREWER DATE : 3/14
CHECKED BY : B.L. GREEN DATE : 7/14

28-AUG-2015 09:29
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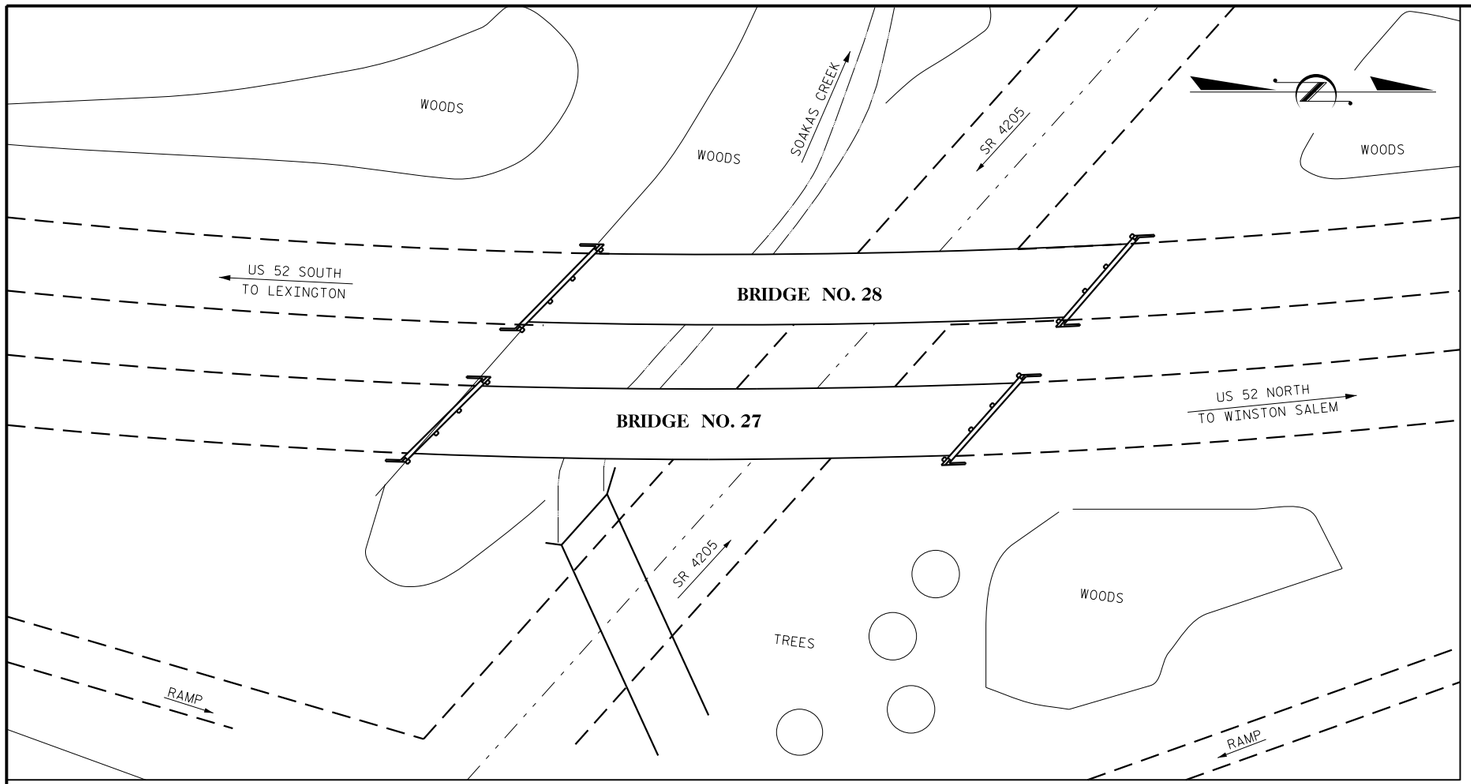
mweldon



LOCATION SKETCH

NOTES:

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

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

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

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

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

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

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

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

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

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

FOR PAINTING EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR, SEE SPECIAL PROVISION.

TOTAL BILL OF MATERIAL

BRIDGE NO.	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B	ASPHALT BINDER FOR PLANT MIX	GROOVING BRIDGE FLOORS & SLABS	POLLUTION CONTROL	CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	LATEX MODIFIED CONCRETE-OVERLAY VERY EARLY STRENGTH	PLACING & FINISHING OF LATEX MODIFIED CONCRETE OVERLAY-VES	SHOTCRETE REPAIR	EPOXY RESIN INJECTION	FOAM JOINT SEALS	CLEANING AND PAINTING EXISTING WEATHERING STEEL BRIDGE NO.___	PAINT CONTAINMENT FOR BRIDGE NO.___	* VOLUMETRIC MIXER	STRUCTURAL STEEL FOR BEAM REPAIR	* CONCRETE FOR DECK REPAIR	BRIDGE JOINT DEMOLITION	EPOXY COATING	SCARIFYING BRIDGE DECK & SLABS	HYDRO-DEMOLITION OF BRIDGE DECK & SLABS	BRIDGE JACKING	UNDER STRUCTURE WORK PLATFORM
	SQ.YDS.	TONS	TONS	SQ. FT.	LUMP SUM	SQ.YDS.	SQ. FT.	C.Y.	SQ.YDS.	CU. FT.	LN. FT.	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LBS.	CU. FT.	SQ. FT.	SQ. FT.	SQ.YDS.	SQ.YDS.	EACH	LUMP SUM
27	118	13	0.8	14,398	LUMP SUM	3	3	93	1718	88.6	287	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	1000	1	98	353	1718	1718	0	LUMP SUM
28	106	12	0.7	14,209	LUMP SUM	3	3	92	1697	20.2	30	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	0	1	101	353	1697	1697	1	LUMP SUM
TOTAL	224	25	1.5	28,607	LUMP SUM	6	6	185	3415	108.8	317	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	1000	2	199	706	3415	3415	1	LUMP SUM

* CLASS III SURFACE PREPARATION IS NOT ANTICIPATED.
TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSES.
IN CASE UNANTICIPATED CLASS III SURFACE PREPARATION AREAS ARE ENCOUNTERED.

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 27 & 28

SHEET 2 OF 2

DocuSigned by:
Farzin Asefnia
E06BC400CA4C46A...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE #27 & #28 ON US 52 NORTH & SOUTH OVER SR 4205 (SOUTH MAIN ST.) AND SOAKAS CREEK

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

SHEET NO. S-2

TOTAL SHEETS 27

DRAWN BY : M. WELDON DATE : 2/2015
CHECKED BY : F. ASEFNIA DATE : 2/2015

28-AUG-2015 09:29
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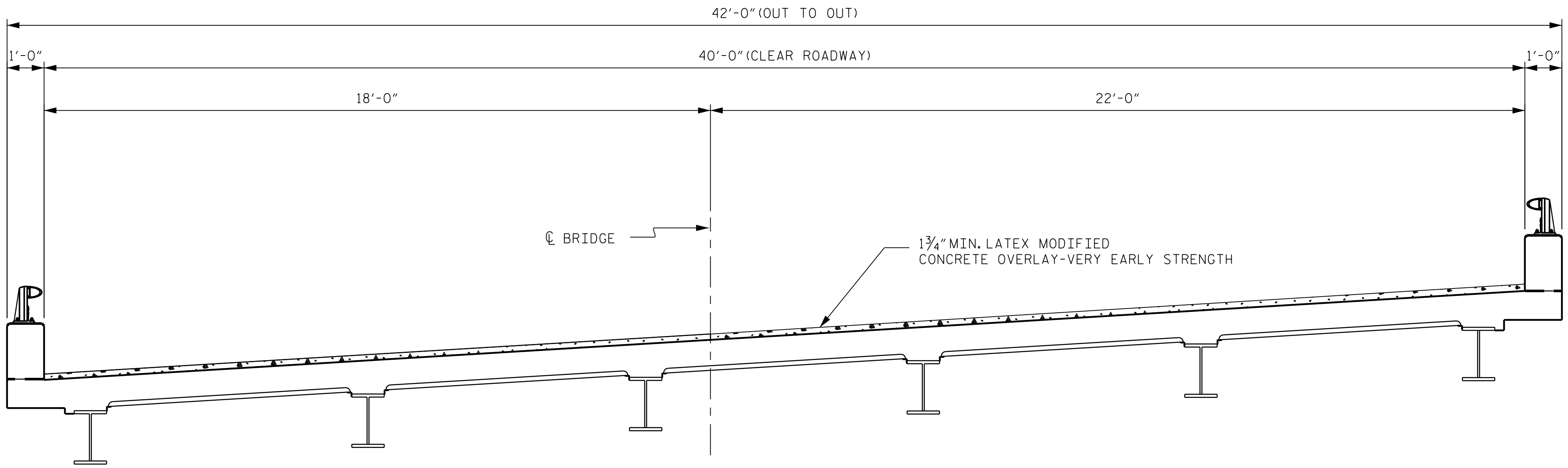
mweldon

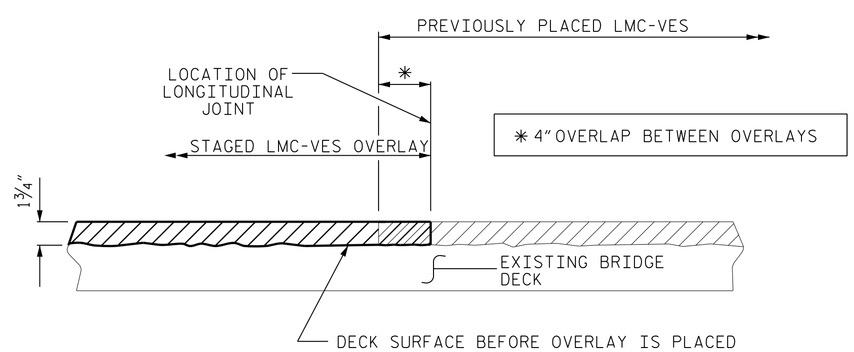
NOTE:

STAGING OF LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH OVERLAY (LMC-VES) IS NOT INDICATED ON STRUCTURE PLANS. IN THE EVENT STAGED CONSTRUCTION IS UTILIZED OR IF LONGITUDINAL JOINTS ARE NECESSARY, LONGITUDINAL CONSTRUCTION JOINTS OF LMC-VES SHALL BE LOCATED ALONG CENTERLINE OR EDGE OF TRAVEL LANES. WHEN PREPARING THE SURFACE FOR LMC-VES OVERLAY ADJACENT TO A PREVIOUSLY PLACED LMC-VES STAGE, THE PREVIOUSLY PLACED LMC-VES SHALL BE REMOVED FOR A DISTANCE OF 4-INCHES FROM THE LMC-VES EDGE. THE SURFACE OF THE NEW STAGE AREA, ALONG WITH THE 4 INCH OVERLAP AREA, SHALL BE PREPARED AS PER THE OVERLAY SURFACE PREPARATION SPECIAL PROVISIONS. NEW LMC-VES SHALL BE PLACED IN THE 4-INCH OVERLAP, AS PART OF NEW LMC-VES STAGE PLACEMENT.



TYPICAL SECTION

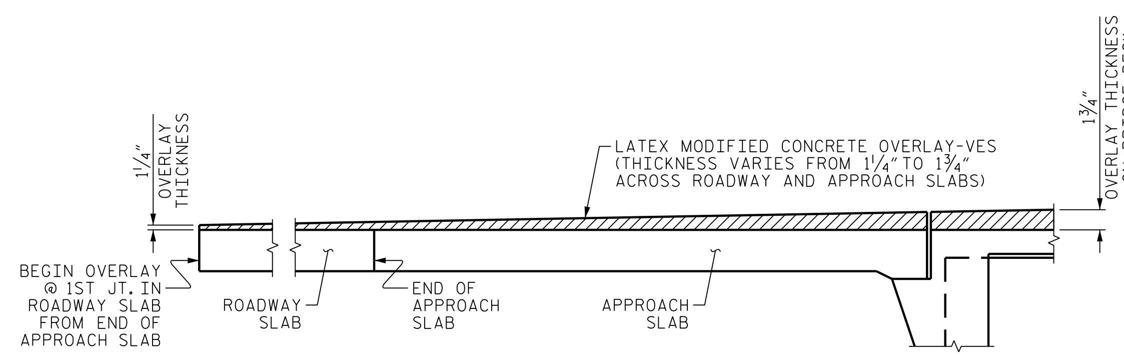
(PROPOSED LOOKING NORTH)



SECTION THRU DECK

STAGED LMC-VES OVERLAY JOINT

(AS NEEDED)



OVERLAY THICKNESS DETAIL

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 27

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION & LATEX MODIFIED CONCRETE OVERLAY-VES DETAILS

DocuSigned by: Farzin Asefnia
E06BC400E4AC49A...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

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

DRAWN BY : P.C. BREWER DATE : 5/14

CHECKED BY : B.L. GREEN DATE : 7/14

28-AUG-2015 09:29
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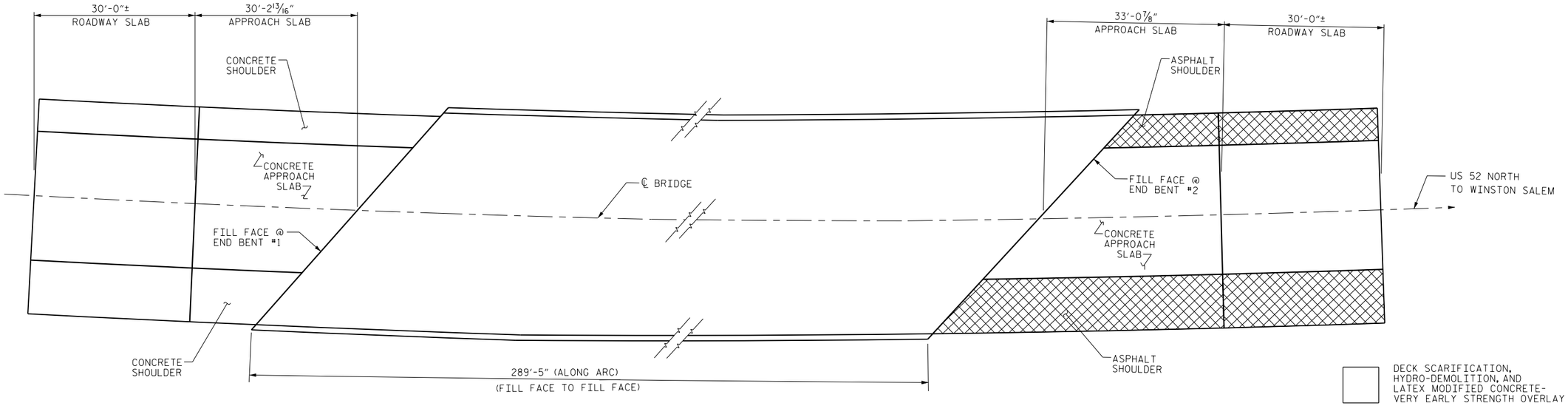
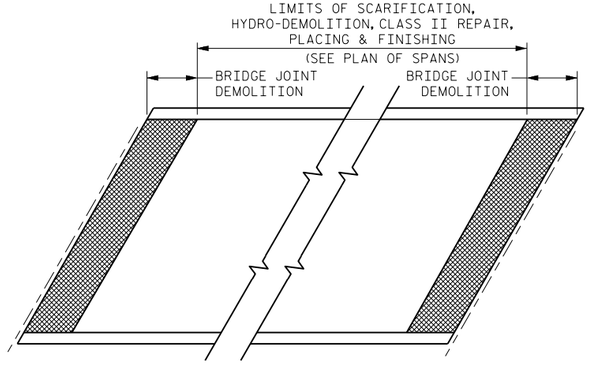
NOTE:

INCIDENTAL MILLING - EXISTING ASPHALT PAVING APPROACH SHOULDERS TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1½" DEPTH OF NEW ASPHALT PAVING. PROVIDE NEW ASPHALT PAVING THICKNESS TO CREATE A SMOOTH TRANSITION TO THE BRIDGE DECK AND APPROACH SLAB, AS SHOWN. NEW ASPHALT PAVING THICKNESS MAY EXCEED 1½" DUE TO SETTLEMENT OF THE EXISTING ASPHALT PAVED APPROACH SHOULDER.

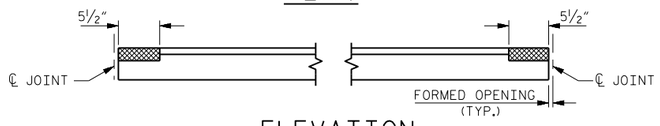


DECK SCARIFICATION, HYDRO-DEMOLITION, AND LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH OVERLAY

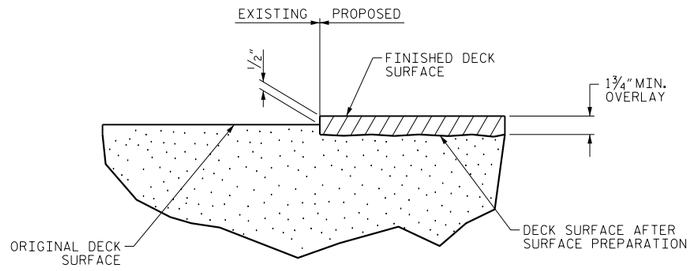
INCIDENTAL MILLING



PLAN



ELEVATION



DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY-VES

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 27

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

SURFACE PREPARATION

DocuSigned by:
E06B...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

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

DRAWN BY : D.V. JOYNER DATE : 03/2015
CHECKED BY : F. ASEFNIA DATE : 04/2015

28-AUG-2015 09:29
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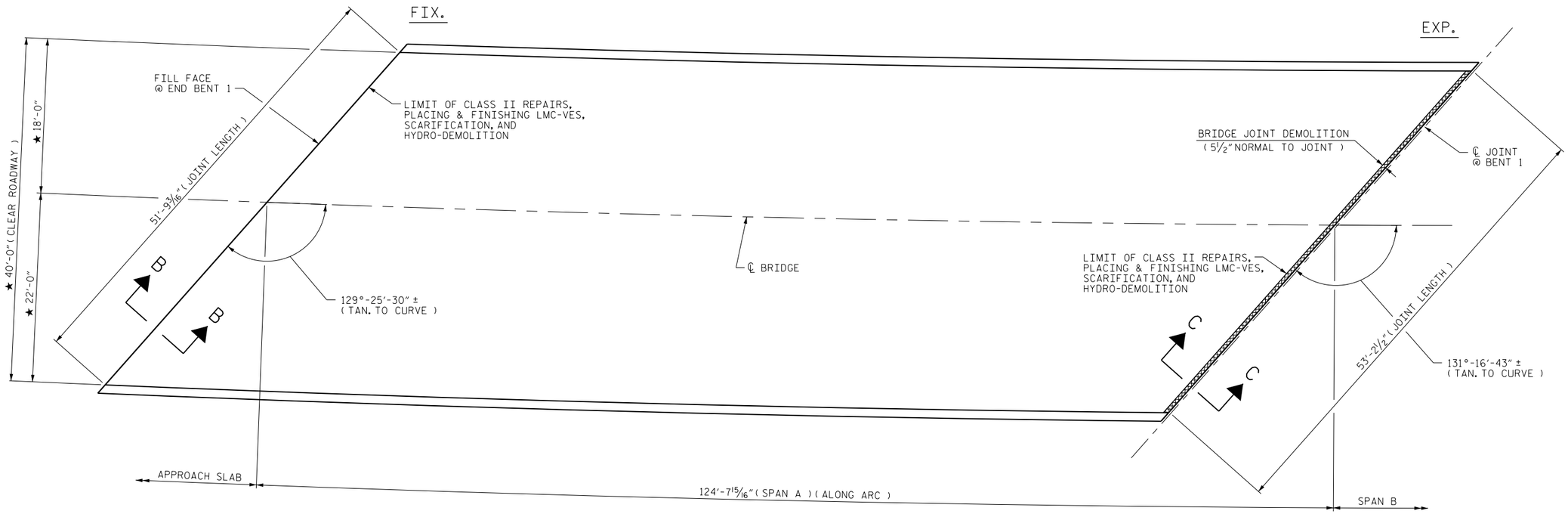
CLASS II SURFACE PREPARATION

JOINT DEMOLITION

SCARIFICATION & HYDRO-DEMOLITION

SPAN "A" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	25 SQ. FT.	
SCARIFYING BRIDGE DECK	551 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	551 SQ. YDS.	

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



★ RADIAL DIMENSION

PLAN OF SPAN A

(FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET S-9)

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 27

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION

SPAN A

DocuSigned by:
E06B...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			27

DRAWN BY : P.C. BREWER DATE : 4/14
CHECKED BY : B.L. GREEN DATE : 7/14

28-AUG-2015 09:29
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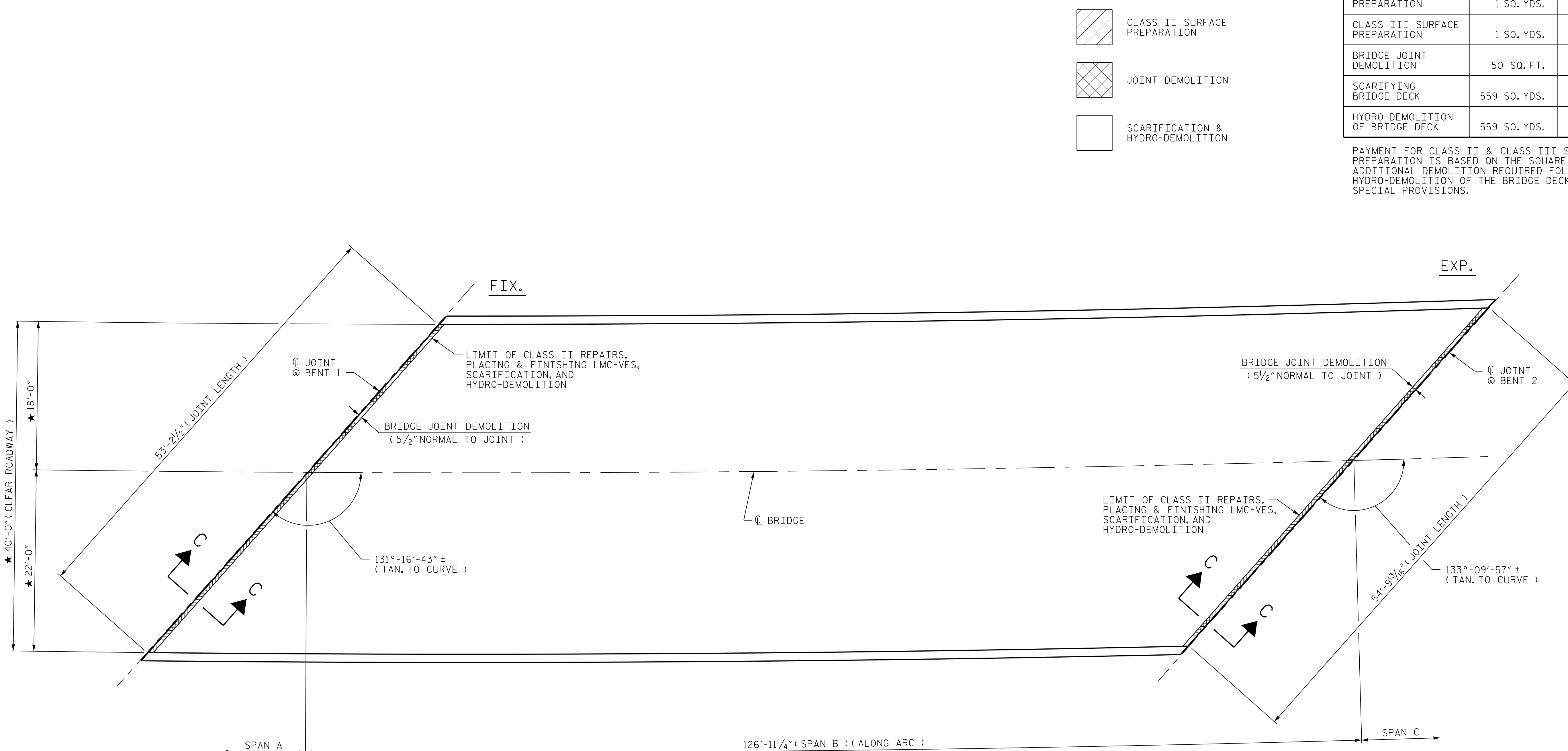
SPAN "B" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	50 SQ. FT.	
SCARIFYING BRIDGE DECK	559 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	559 SQ. YDS.	

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



★ RADIAL DIMENSION

PLAN OF SPAN B

(FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET S-9)

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 27

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION

SPAN B

DocuSigned by:
E06C...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

REVISIONS								SHEET NO.
NO.	BY:	DATE:		NO.	BY:	DATE:		S-6
1				3				TOTAL SHEETS
2				4				27

DRAWN BY :	P.C. BREWER	DATE :	4/14
CHECKED BY :	B.L. GREEN	DATE :	7/14

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mweldon

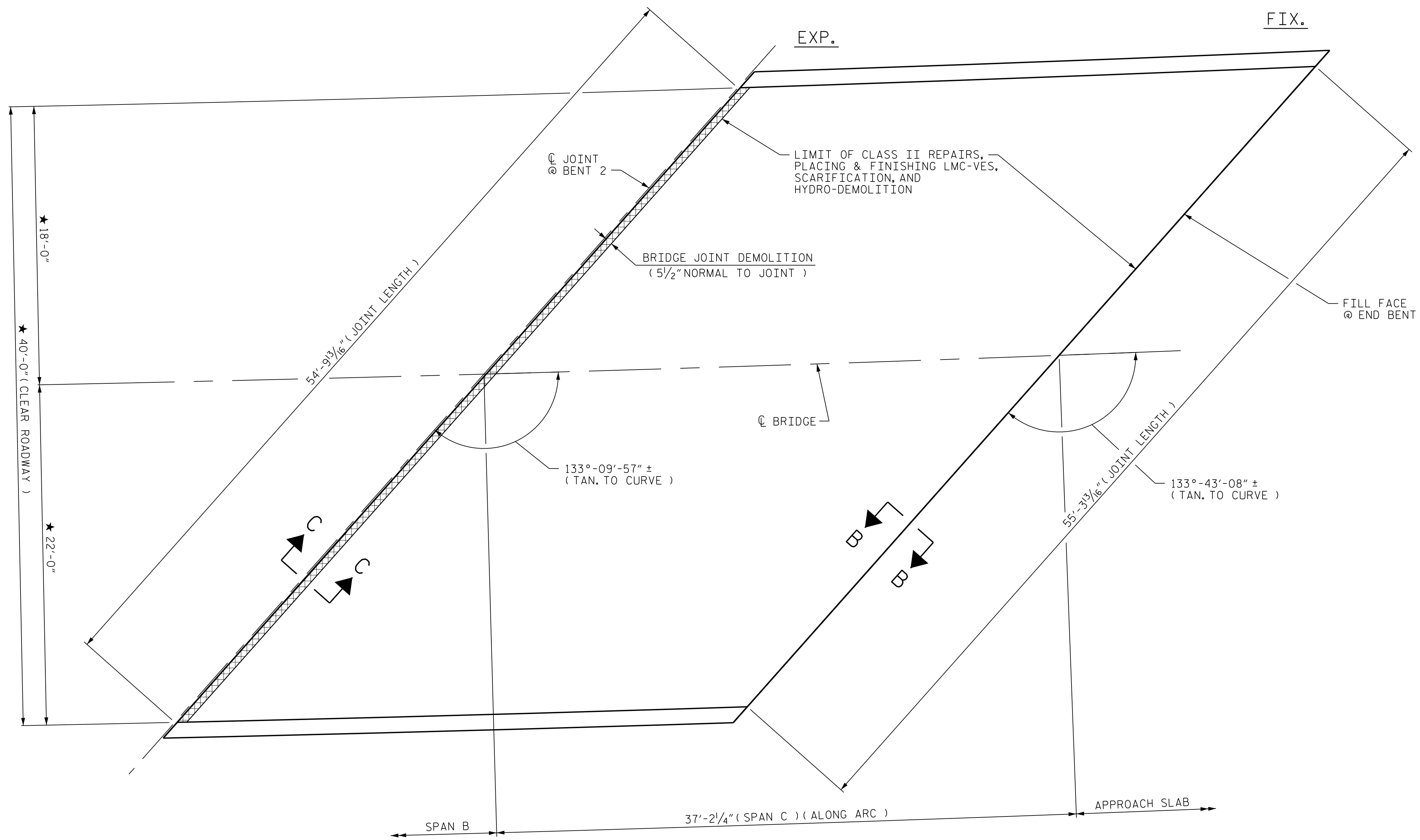
SPAN "C" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	25 SQ. FT.	
SCARIFYING BRIDGE DECK	165 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	165 SQ. YDS.	

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



★ RADIAL DIMENSION

PLAN OF SPAN C

(FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET S-9)

PROJECT NO. BP-5500R
FORSYTH COUNTY
BRIDGE NO. 27

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION
SPAN C

DocuSigned by:
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NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			27

DRAWN BY : P.C. BREWER DATE : 4/14
CHECKED BY : B.L. GREEN DATE : 7/14

28-AUG-2015 09:29
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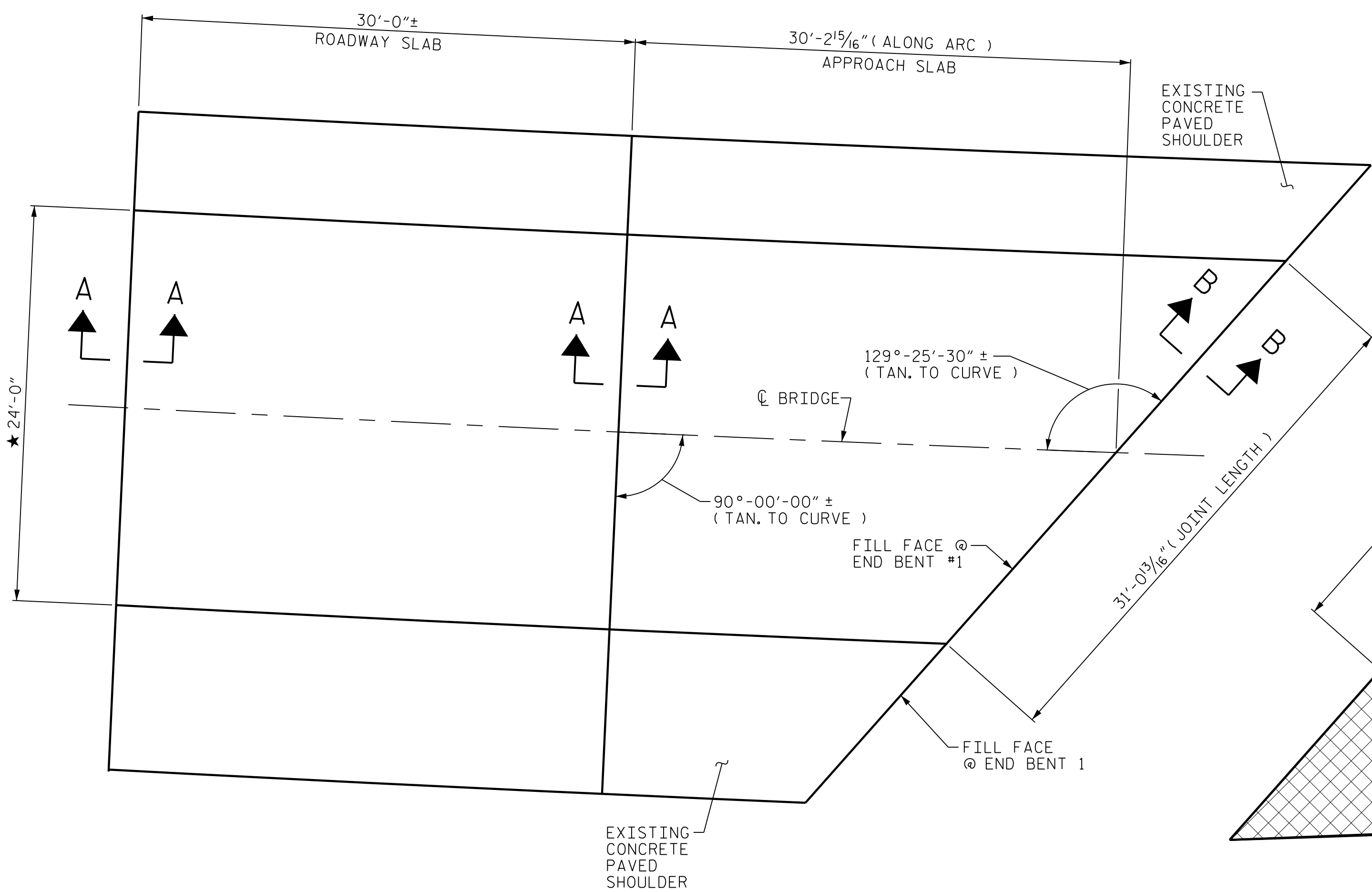
ROADWAY & BRIDGE APPROACH SLAB QUANTITIES					
AT END BENT 1			AT END BENT 2		
	ESTIMATE	ACTUAL		ESTIMATE	ACTUAL
SCARIFYING APPROACH SLAB	161 SQ. YDS.		SCARIFYING APPROACH SLAB	168 SQ. YDS.	
HYDRO-DEMOLITION OF APPROACH SLAB	161 SQ. YDS.		HYDRO-DEMOLITION OF APPROACH SLAB	168 SQ. YDS.	
SCARIFYING CONCRETE SHOULDER	114 SQ. YDS.		INCIDENTAL MILLING	118 SQ. YDS.	
HYDRO-DEMOLITION OF CONCRETE SHOULDER	114 SQ. YDS.				

INCIDENTAL MILLING

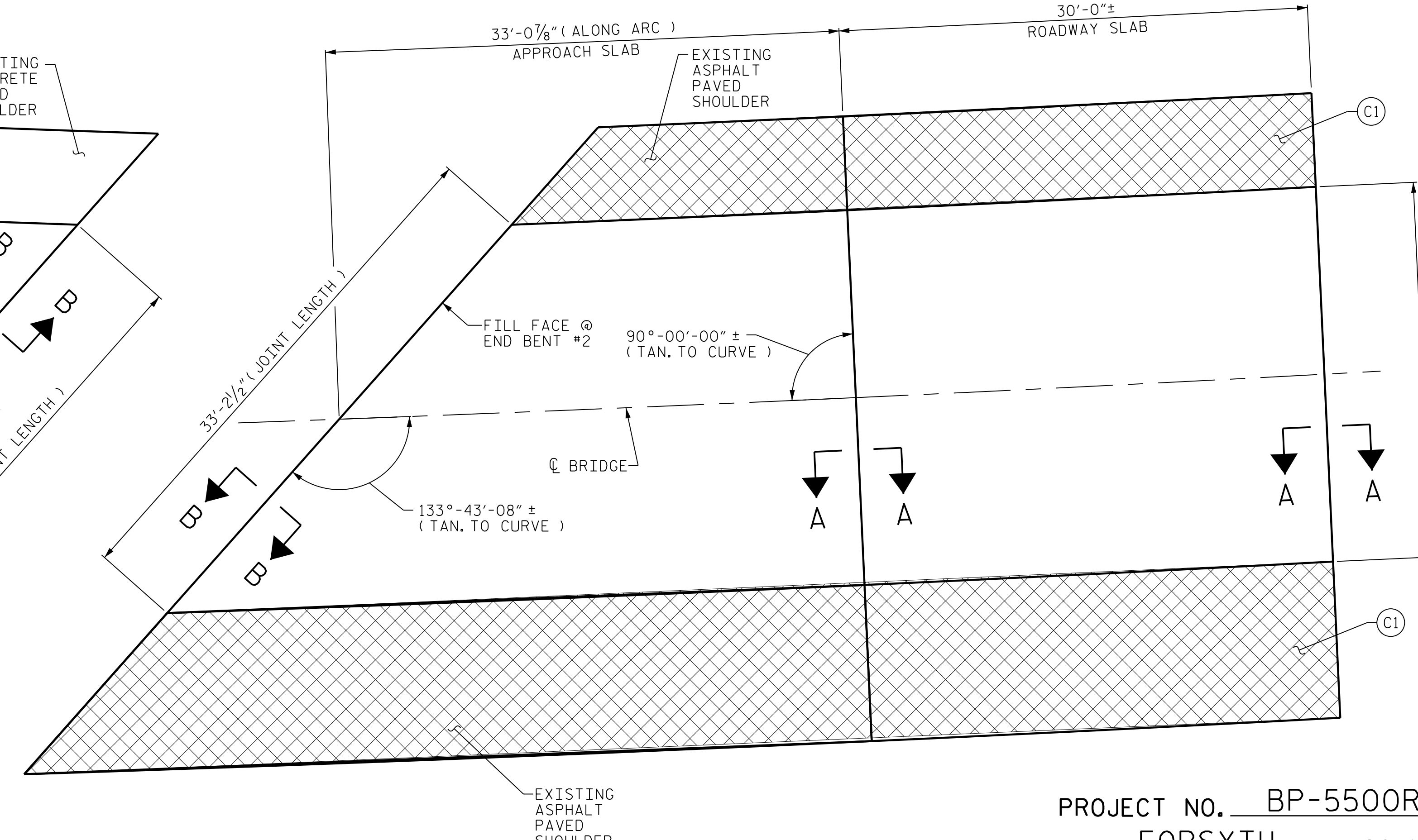
SCARIFICATION & HYDRO-DEMOLITION

C1 — PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH.



ROADWAY & BRIDGE APPROACH SLAB AT END BENT 1

(FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET S-9)



ROADWAY & BRIDGE APPROACH SLAB AT END BENT 2

(FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET S-9)

★ RADIAL DIMENSION

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 27

SHEET 4 OF 4

DocuSigned by:

8/31/2015

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ROADWAY & BRIDGE APPROACH SLABS

SURFACE PREPARATION

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			27

DRAWN BY : P.C. BREWER DATE : 4/14
CHECKED BY : B.L. GREEN DATE : 7/14

28-AUG-2015 09:29
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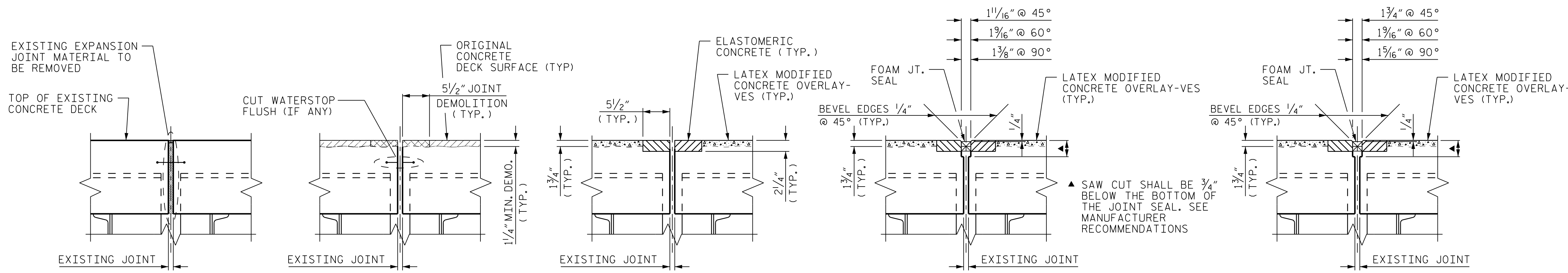


EXISTING JOINT

MINIMUM EXISTING JOINT DEMOLITION

PROPOSED JOINT PRE-SAWED DIMENSIONS

PROPOSED FOAM JOINT SEAL EXPANSION (BENT 1)

PROPOSED FOAM JOINT SEAL EXPANSION (BENT 2)

JOINT INSTALLATION SEQUENCE AT BENTS

SECTION C-C

NOTES:

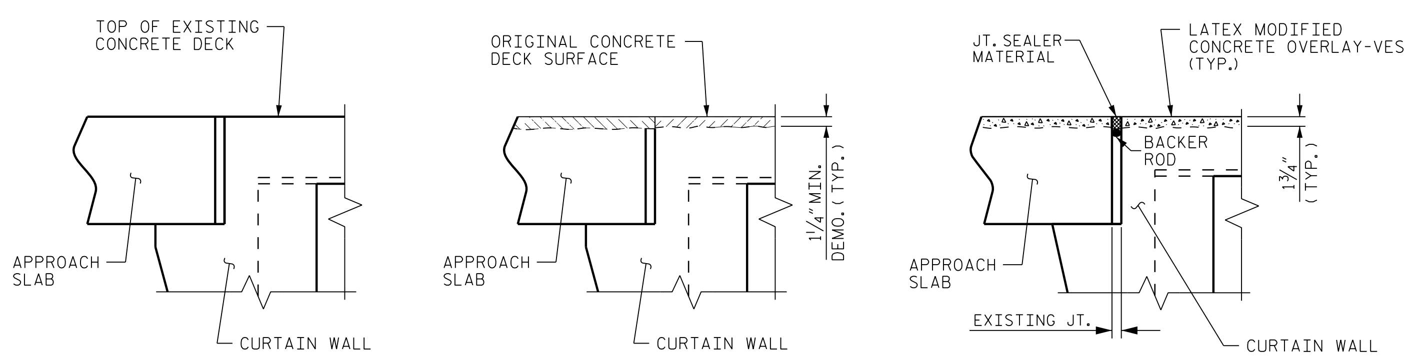
CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.

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.

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

THE WIDTH OF THE UNCOMPRESSED FOAM JOINT MATERIAL SHALL BE 2¼".



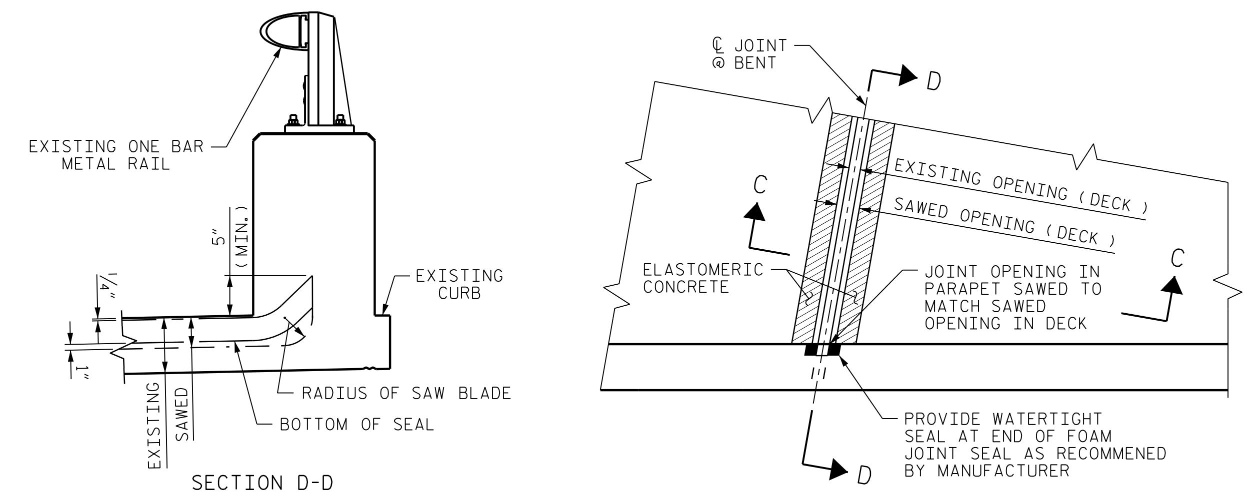
EXISTING COLD JOINT

MINIMUM EXISTING JOINT DEMOLITION

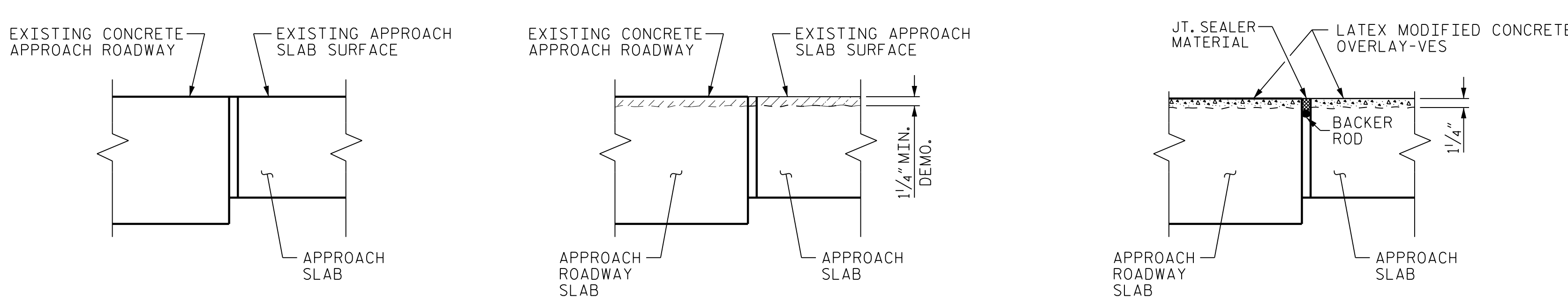
PROPOSED JOINT

JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION B-B



JOINT SEAL DETAILS AT BENT



EXISTING

MINIMUM EXISTING JOINT DEMOLITION & APPROACH MILLING

PROPOSED

ROADWAY APPROACH SLAB DETAILS

SECTION A-A

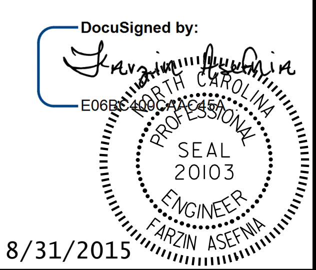
ELASTOMERIC CONCRETE	
BRIDGE 27	23 CU. FT.
BRIDGE 28	23 CU. FT.
* TOTAL	46 CU. FT.

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 27 & 28



8/31/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

JOINT DETAILS

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-9
1			3					TOTAL SHEETS
2			4					27

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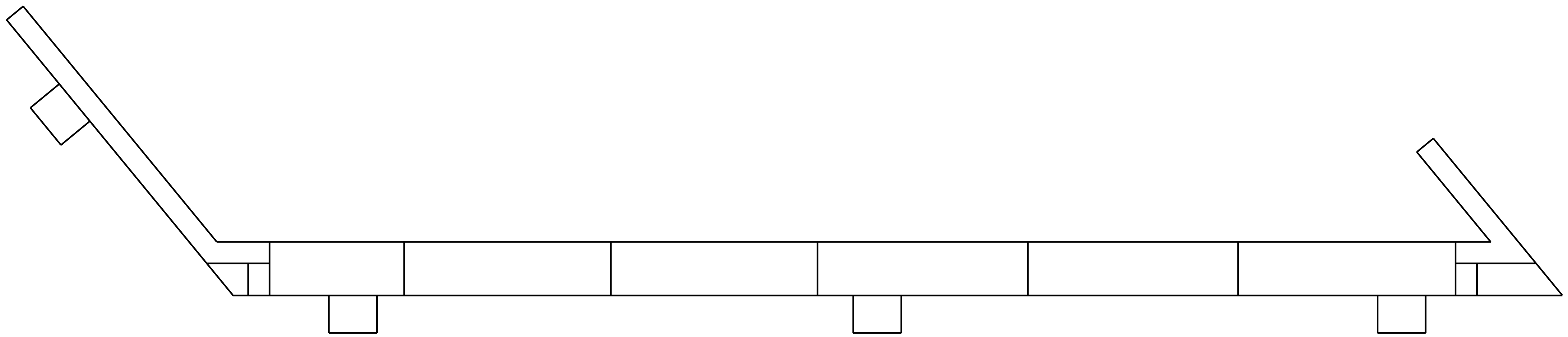
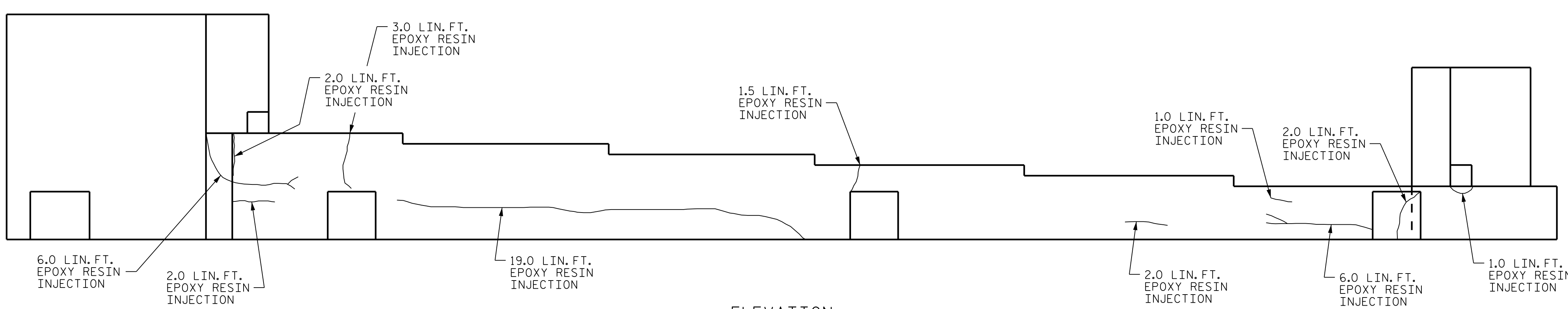
REPAIR QUANTITY TABLE

REPAIRS END BENT 1	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0	0			
CAP (HORIZONTAL, CORNER)	0	0			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		45.5			

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.



PLAN



ELEVATION

END BENT 1 - LOOKING SOUTH

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.

BENT DIAPHRAGMS AND OTHER CONCRETE COMPONENTS MAY BE REPAIRED UNDER SHOTCRETE REPAIRS OR CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

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

CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 27

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENT 1

DocuSigned by:
E08C40CAC45A...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			27

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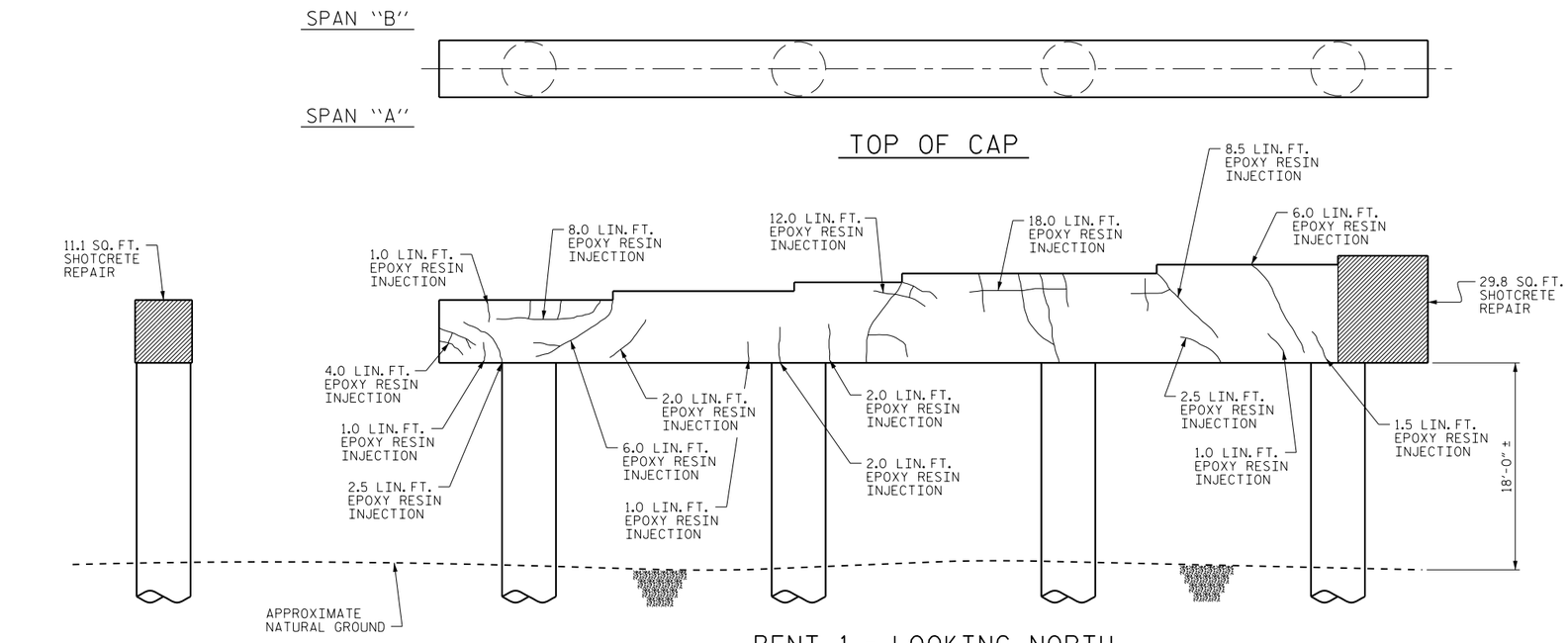

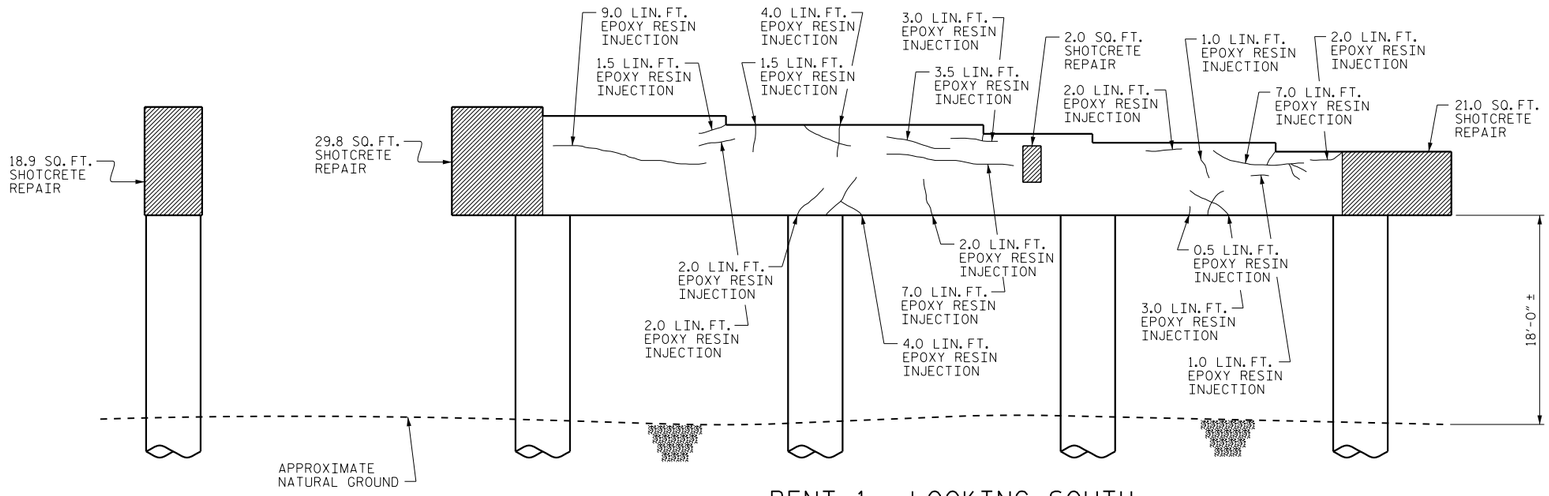

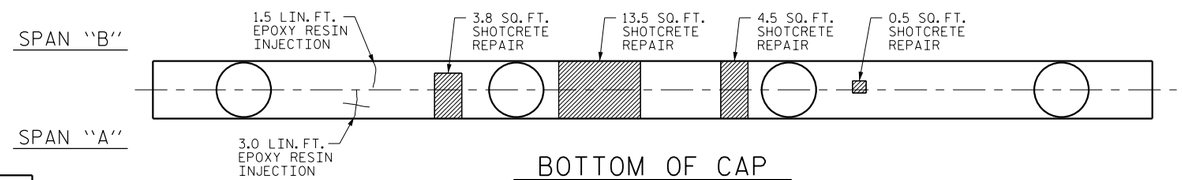

REPAIR QUANTITY TABLE

REPAIRS BENT 1	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	112.6	46.9			
CAP (HORIZONTAL, CORNER)	22.3	9.3			
COLUMN	0	0			

EPOXY RESIN INJECTION	LN. FT		LN. FT
CAP	137.0		
COLUMN	0		

EPOXY COATING	AREA SF	
CAP	174	

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.

FOR ADDITIONAL NOTES AND TYPICAL SUBSTRUCTURE REPAIR DETAIL, SEE SHEET S-27.

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 27

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1

DocuSigned by:
E06B...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			27

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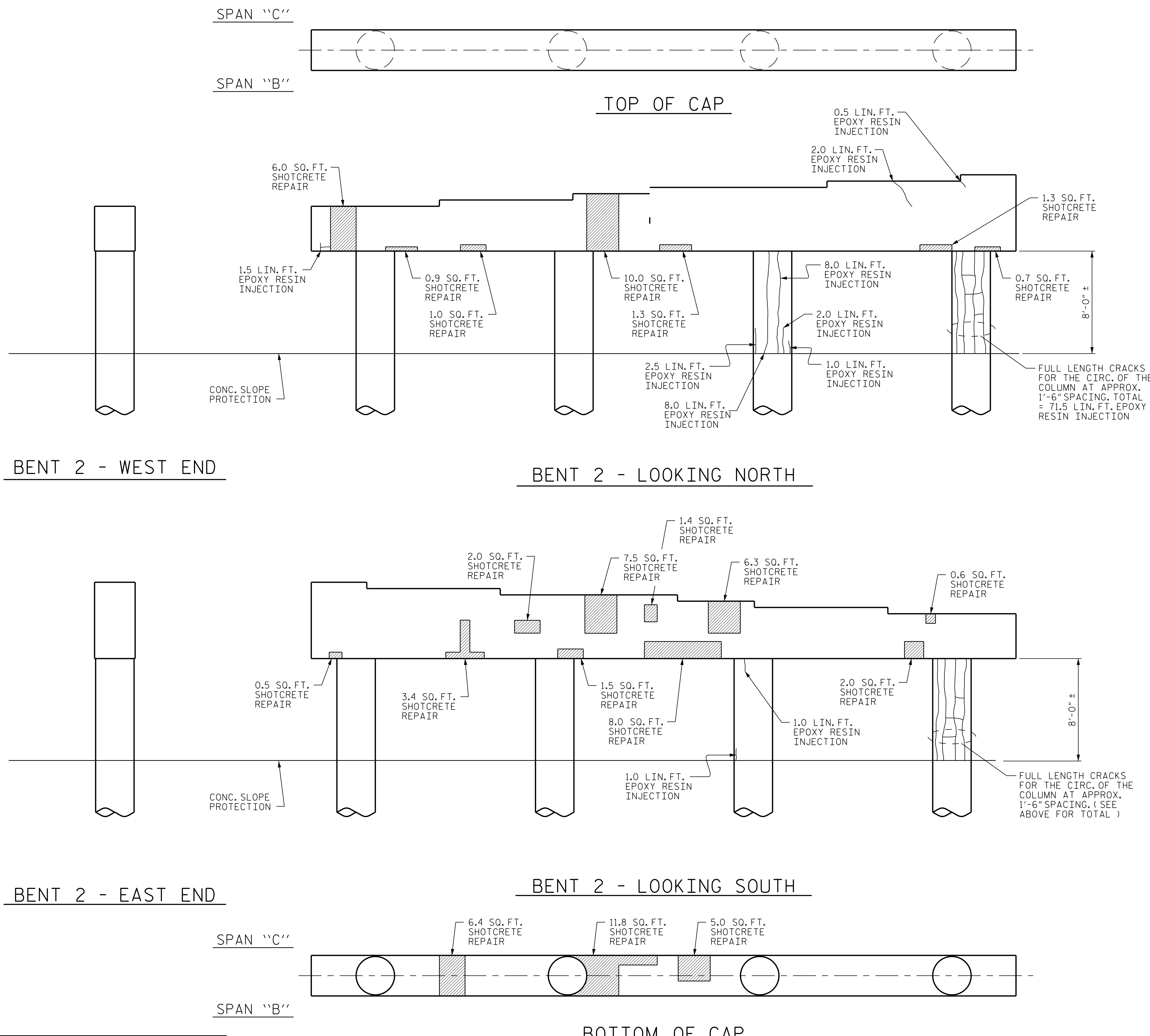

REPAIR QUANTITY TABLE

REPAIRS BENT 2	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	54.4	22.7			
CAP (HORIZONTAL, CORNER)	23.2	9.7			
COLUMN	0	0			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		4.0			
COLUMN		95.0			
EPOXY COATING	AREA SF				
CAP	179				

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.

FOR ADDITIONAL NOTES AND TYPICAL SUBSTRUCTURE REPAIR DETAIL, SEE SHEET S-27.

PROJECT NO. BP-5500R
FORSYTH COUNTY
BRIDGE NO. 27
SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2

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NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			27

DRAWN BY : P.C. BREWER DATE : 5/14
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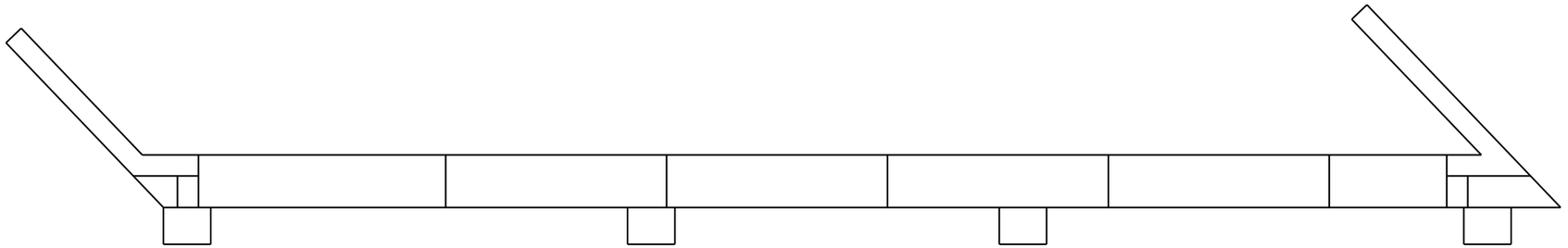
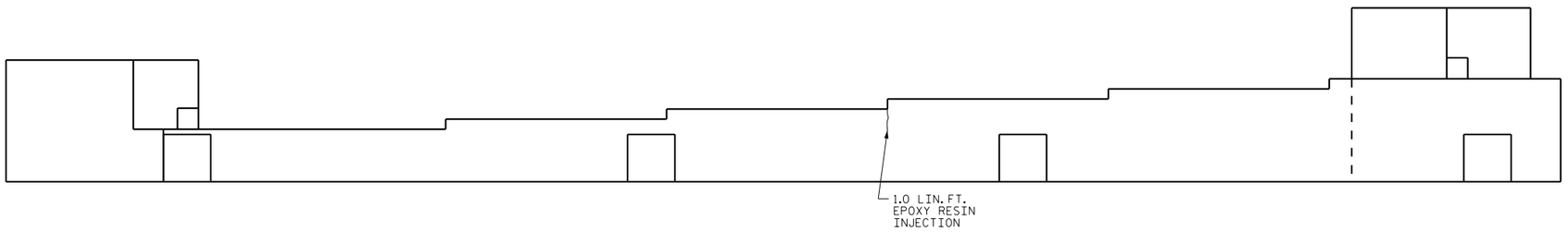


PLAN



ELEVATION

END BENT 2 - LOOKING NORTH

REPAIR QUANTITY TABLE

REPAIRS END BENT 2	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0	0			
CAP (HORIZONTAL, CORNER)	0	0			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		1.0			

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.

FOR ADDITIONAL NOTES AND TYPICAL SUBSTRUCTURE REPAIR DETAIL, SEE SHEET S-27.

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 27

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENT 2

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E06F...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			27

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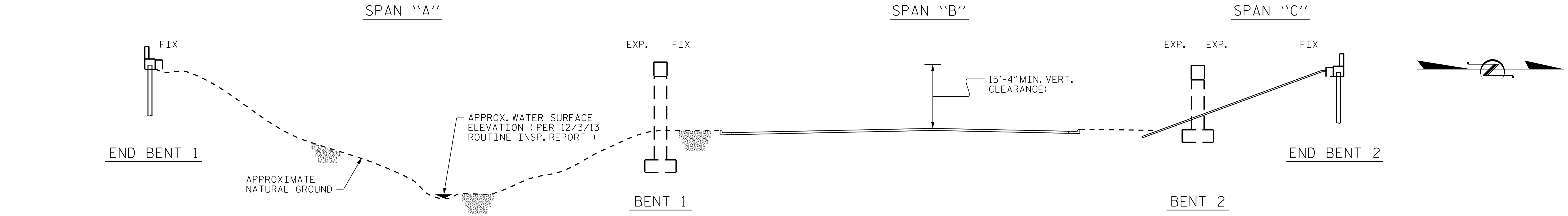
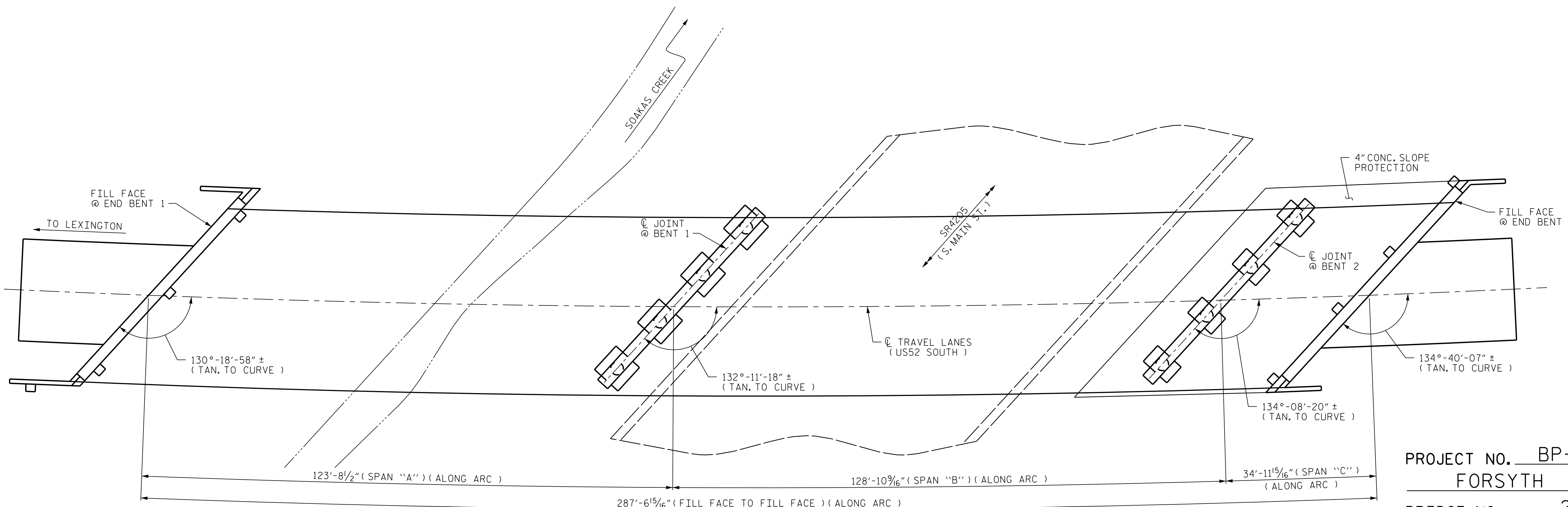


SECTION ALONG ℄ TRAVEL LANES

(SECTIONS TAKEN AT RIGHT ANGLES)



PLAN

(PILES NOT SHOWN FOR CLARITY)

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 28

DocuSigned by:

E06B[illegible]

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

GENERAL DRAWING

BRIDGE #28 ON US52 SOUTH OVER SR4205 (SOUTH MAIN ST.) AND SOAKAS CREEK

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-14
1			3					TOTAL SHEETS
2			4					27

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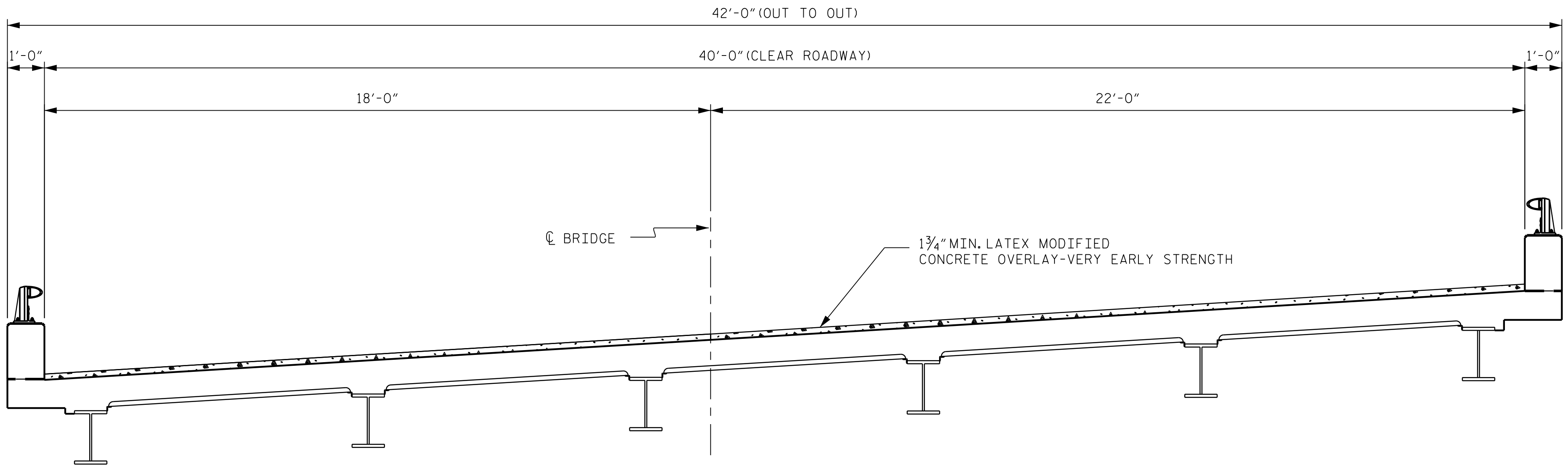
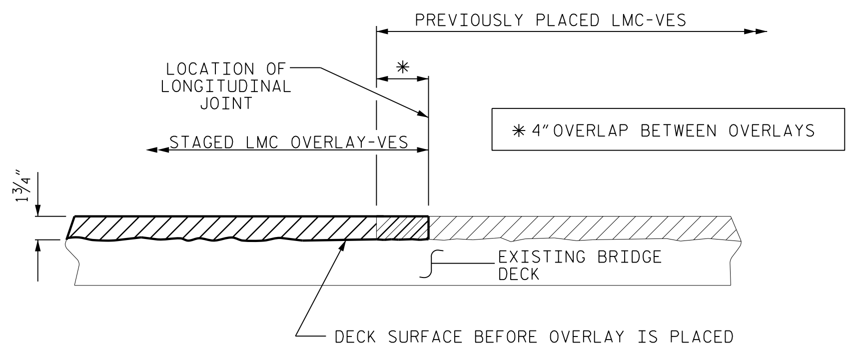
NOTE:

STAGING OF LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH (LMC-VES) IS NOT INDICATED ON STRUCTURE PLANS. IN THE EVENT STAGED CONSTRUCTION IS UTILIZED OR IF LONGITUDINAL JOINTS ARE NECESSARY, LONGITUDINAL CONSTRUCTION JOINTS OF LMC-VES SHALL BE LOCATED ALONG CENTERLINE OR EDGE OF TRAVEL LANES. WHEN PREPARING THE SURFACE FOR LMC-VES OVERLAY ADJACENT TO A PREVIOUSLY PLACED LMC-VES STAGE, THE PREVIOUSLY PLACED LMC-VES SHALL BE REMOVED FOR A DISTANCE OF 4-INCHES FROM THE LMC-VES EDGE. THE SURFACE OF THE NEW STAGE AREA, ALONG WITH THE 4 INCH OVERLAY AREA, SHALL BE PREPARED AS PER THE OVERLAY SURFACE PREPARATION SPECIAL PROVISIONS. NEW LMC-VES SHALL BE PLACED IN THE 4-INCH OVERLAP, AS PART OF NEW LMC-VES STAGE PLACEMENT.

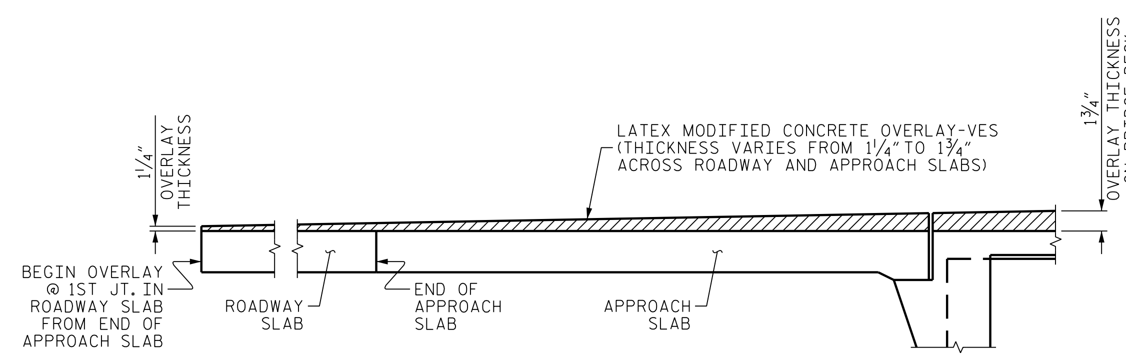


TYPICAL SECTION
(PROPOSED LOOKING NORTH)



SECTION THRU DECK

STAGED LMC OVERLAY-VES JOINT
(AS NEEDED)



OVERLAY THICKNESS DETAIL

PROJECT NO. BP-5500R
FORSYTH COUNTY
BRIDGE NO. 28

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION & LATEX MODIFIED CONCRETE OVERLAY-VES DETAILS

DocuSigned by: Farzin Asefnia
E0BC406CAE3F...
NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA
8/31/2015

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			27

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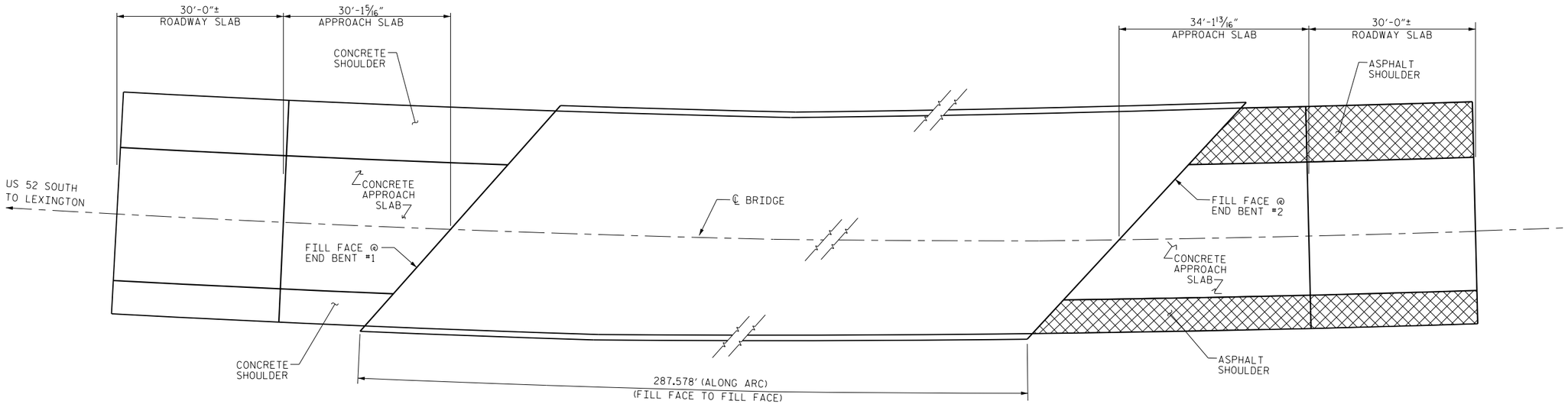
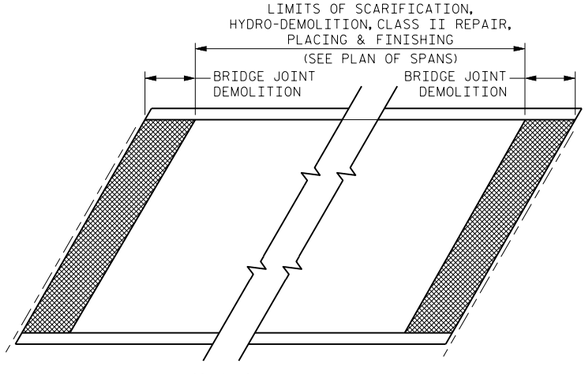
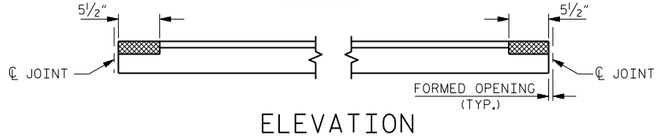
NOTE:

INCIDENTAL MILLING - EXISTING ASPHALT PAVING APPROACH SHOULDERS TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1½" DEPTH OF NEW ASPHALT PAVING. PROVIDE NEW ASPHALT PAVING THICKNESS TO CREATE A SMOOTH TRANSITION TO THE BRIDGE DECK AND APPROACH SLAB, AS SHOWN. NEW ASPHALT PAVING THICKNESS MAY EXCEED 1½" DUE TO SETTLEMENT OF THE EXISTING ASPHALT PAVED APPROACH SHOULDER.

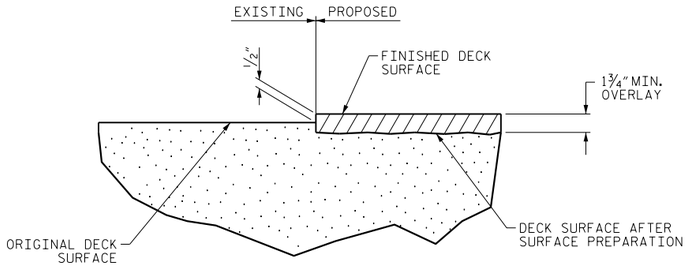




PLAN



ELEVATION



DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY-VES

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

INCIDENTAL MILLING

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 28

DocuSigned by:
E06F...

NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

SURFACE PREPARATION

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			27

DRAWN BY : D.V. JOYNER DATE : 03/2015
CHECKED BY : W. SMITH DATE : 04/2015

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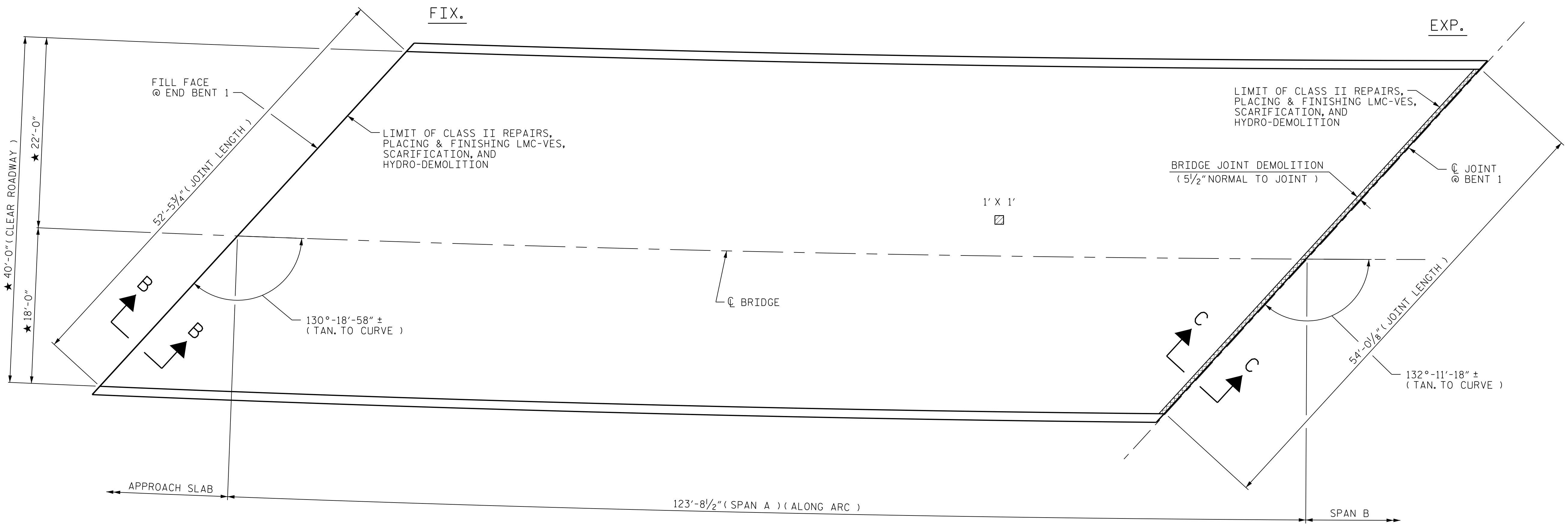
SPAN "A" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	25 SQ. FT.	
SCARIFYING BRIDGE DECK	547 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	547 SQ. YDS.	

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



★ RADIAL DIMENSION

PLAN OF SPAN A

(FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET S-9)

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 28

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION

SPAN A

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NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

REVISIONS							SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:		S-17
1			3				TOTAL SHEETS
2			4				27

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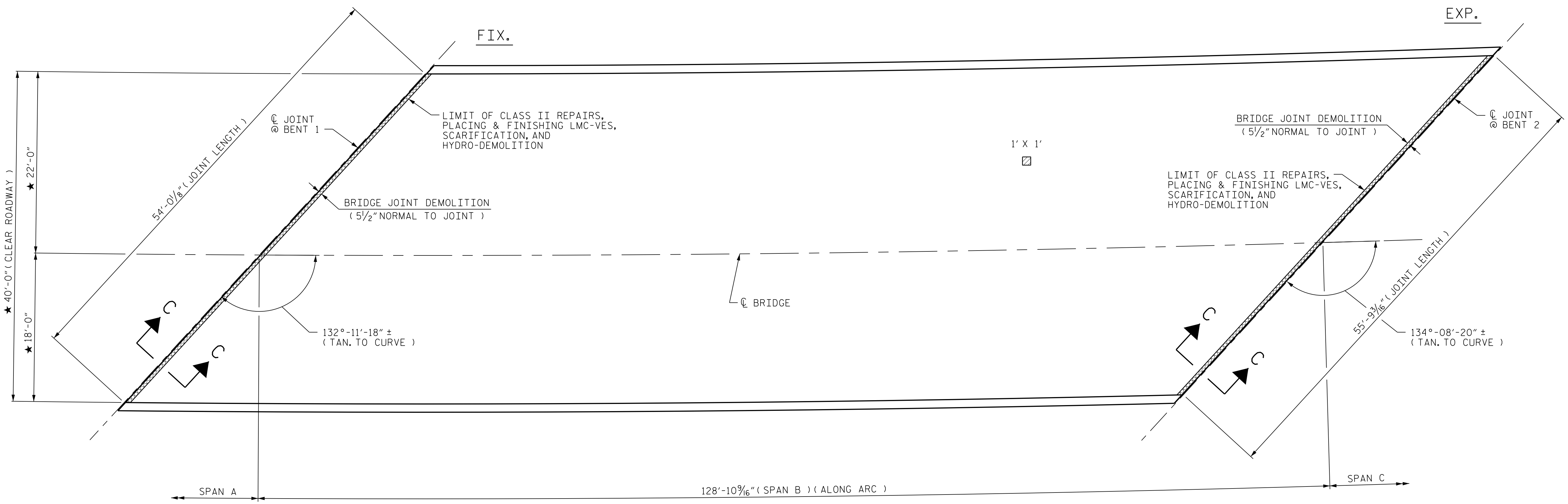
SPAN "B" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	51 SQ. FT.	
SCARIFYING BRIDGE DECK	567 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	567 SQ. YDS.	

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



★ RADIAL DIMENSION

PLAN OF SPAN B

(FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET S-9)

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 28

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION
SPAN B

DocuSigned by:
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NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

REVISIONS							SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:		S-18
1			3				TOTAL SHEETS
2			4				27

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SPAN "C" QUANTITIES

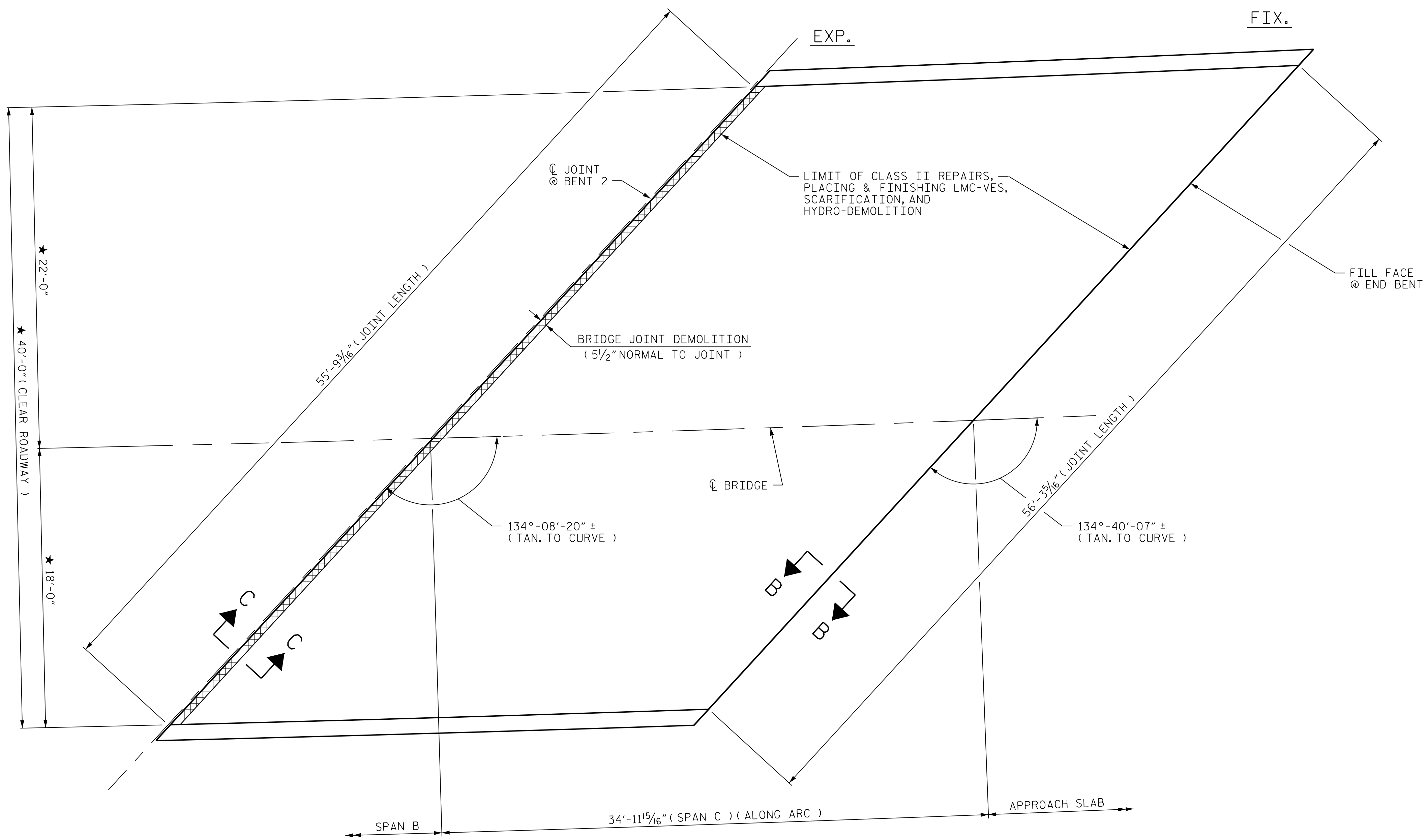
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	26 SQ. FT.	
SCARIFYING BRIDGE DECK	153 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	153 SQ. YDS.	

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

CLASS II SURFACE PREPARATION

JOINT DEMOLITION

SCARIFICATION & HYDRO-DEMOLITION



★ RADIAL DIMENSION

PLAN OF SPAN C

(FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET S-9)

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 28

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION
SPAN C

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8/31/2015

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1			3			TOTAL SHEETS
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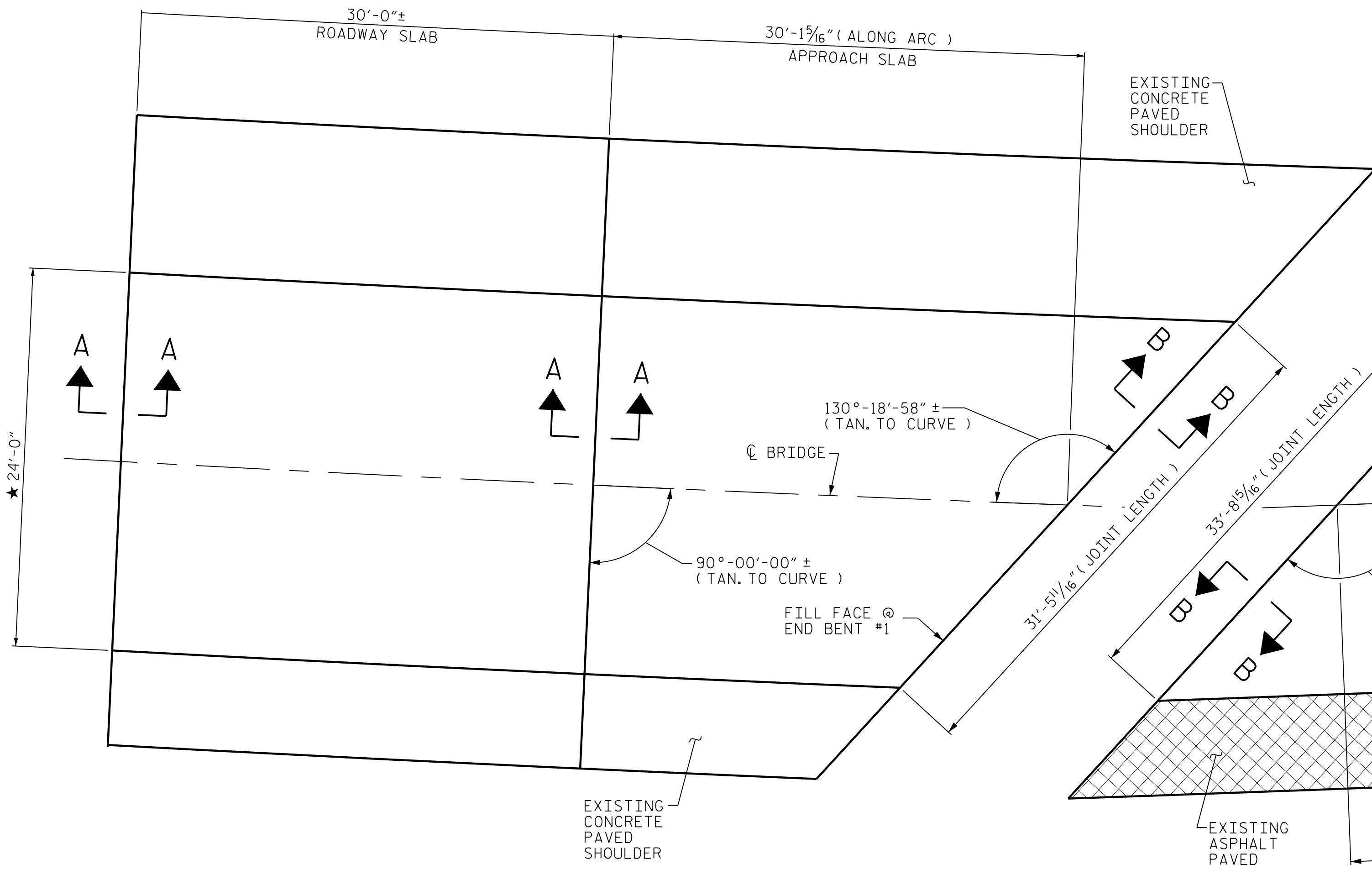
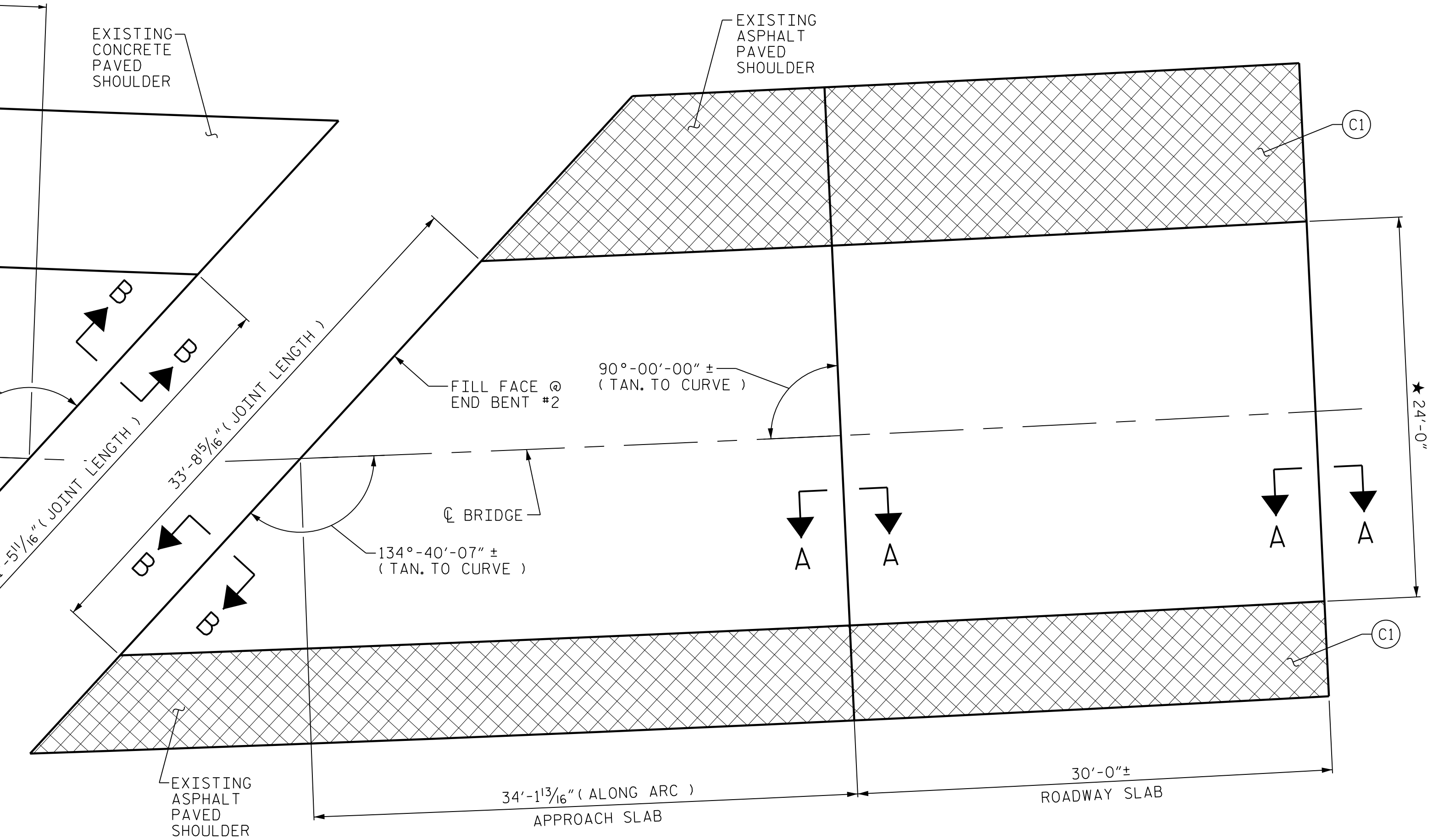
ROADWAY & BRIDGE APPROACH SLAB QUANTITIES					
AT END BENT 1			AT END BENT 2		
	ESTIMATE	ACTUAL		ESTIMATE	ACTUAL
SCARIFYING APPROACH SLAB	160 SQ. YDS.		SCARIFYING APPROACH SLAB	171 SQ. YDS.	
HYDRO-DEMOLITION OF APPROACH SLAB	160 SQ. YDS.		HYDRO-DEMOLITION OF APPROACH SLAB	171 SQ. YDS.	
SCARIFYING CONCRETE SHOULDER	99 SQ. YDS.		INCIDENTAL MILLING	106 SQ. YDS.	
HYDRO-DEMOLITION OF CONCRETE SHOULDER	99 SQ. YDS.				

INCIDENTAL MILLING

SCARIFICATION & HYDRO-DEMOLITION

C1 PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH.





ROADWAY & BRIDGE APPROACH SLAB AT END BENT 1
(FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET S-9)

ROADWAY & BRIDGE APPROACH SLAB AT END BENT 2
(FOR SECTION VIEWS, SEE "JOINT DETAILS" SHEET S-9)

★ RADIAL DIMENSION

PROJECT NO. BP-5500R
FORSYTH COUNTY
BRIDGE NO. 28
SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ROADWAY & BRIDGE APPROACH SLABS
SURFACE PREPARATION

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NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA
8/31/2015

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1			3			TOTAL SHEETS
2			4			27

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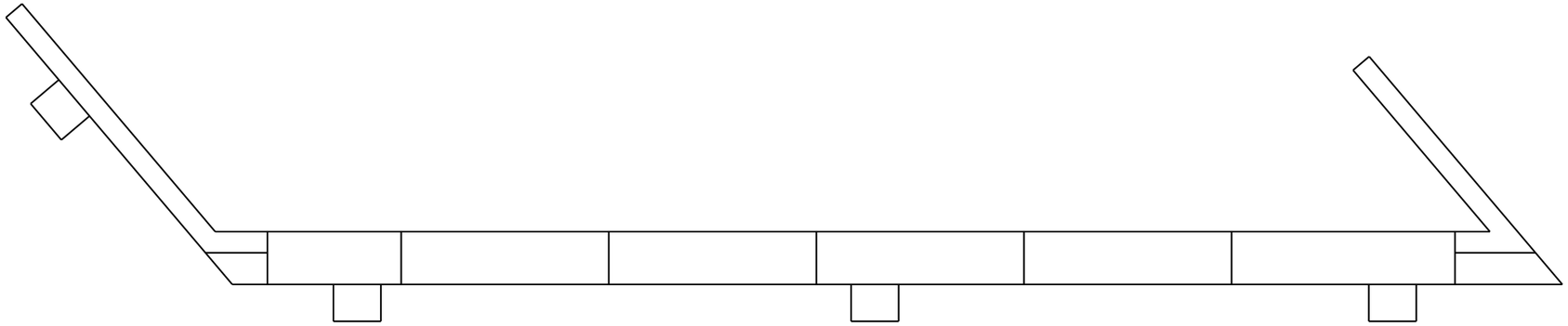
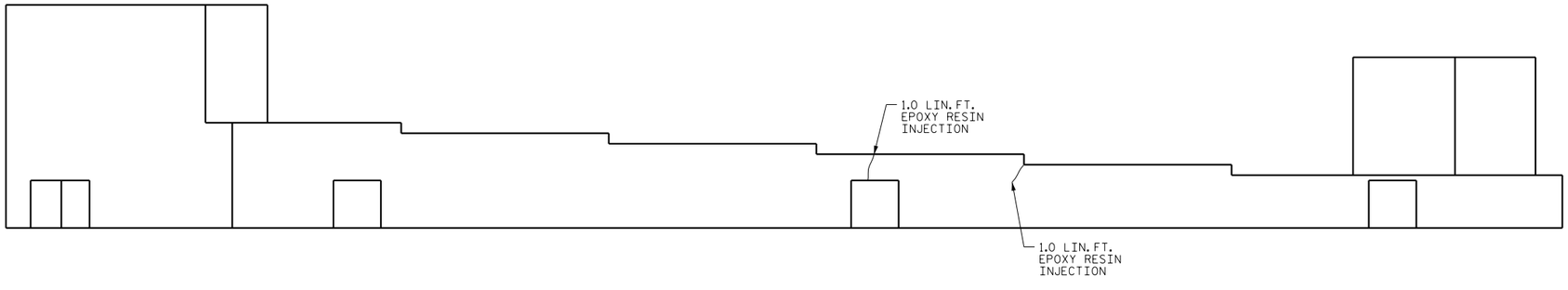


PLAN



ELEVATION

END BENT 1 - LOOKING SOUTH

REPAIR QUANTITY TABLE

REPAIRS END BENT 1	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0	0			
CAP (HORIZONTAL, CORNER)	0	0			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		2.0			

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.

BENT DIAPHRAGMS AND OTHER CONCRETE COMPONENTS MAY BE REPAIRED UNDER SHOTCRETE REPAIRS OR CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF ½" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 28

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENT 1

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NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

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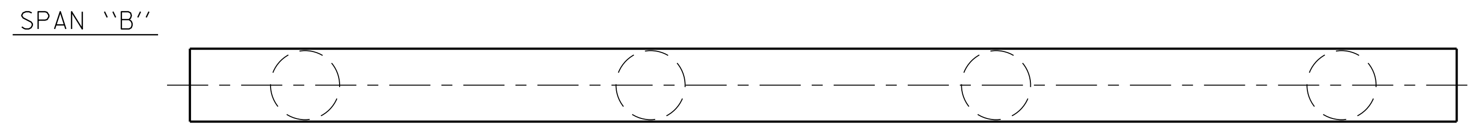

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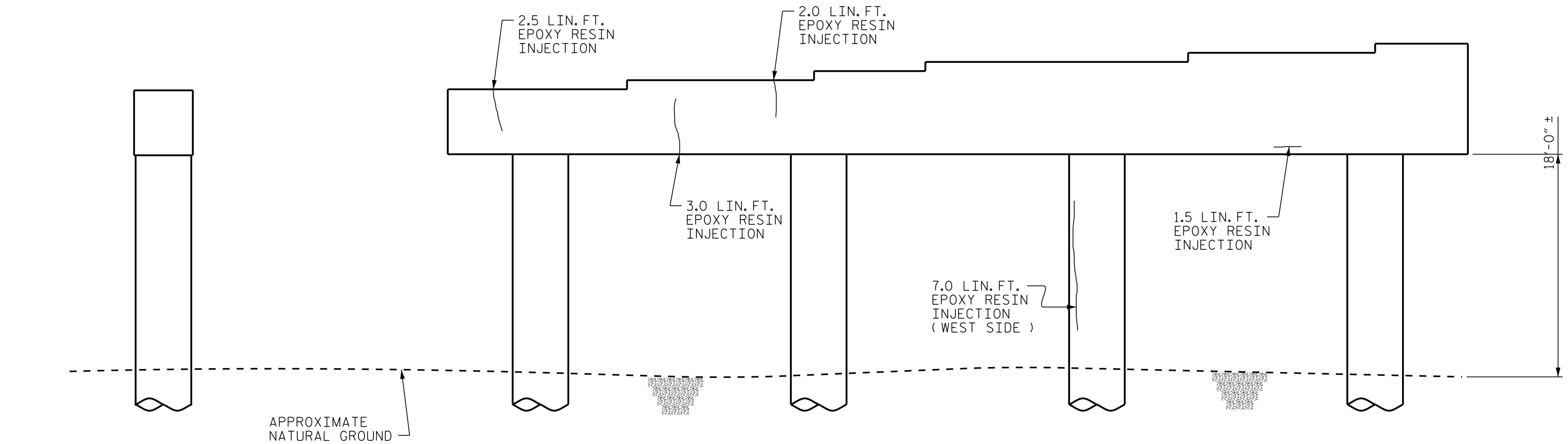
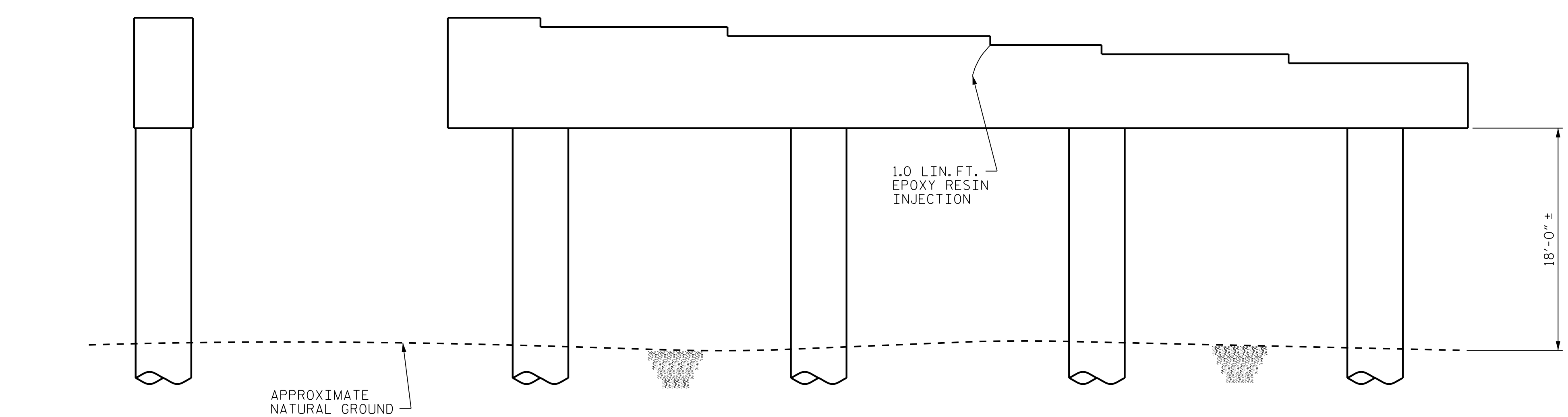


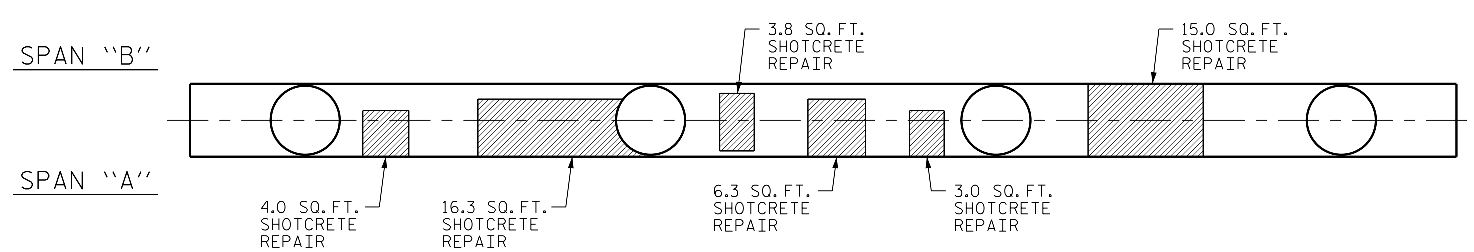
BENT 1 - WEST END

BENT 1 - LOOKING NORTH



BENT 1 - EAST END

BENT 1 - LOOKING SOUTH



BOTTOM OF CAP

REPAIR QUANTITY TABLE

REPAIRS BENT 1	QUANTITIES: ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0	0			
CAP (HORIZONTAL, CORNER)	48.4	20.2			
COLUMN	0	0			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		10.0			
COLUMN		7.0			
EPOXY COATING	AREA SF				
CAP	174				

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:

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FOR ADDITIONAL NOTES AND TYPICAL SUBSTRUCTURE REPAIR DETAIL, SEE SHEET S-27.

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 28

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1

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NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			27

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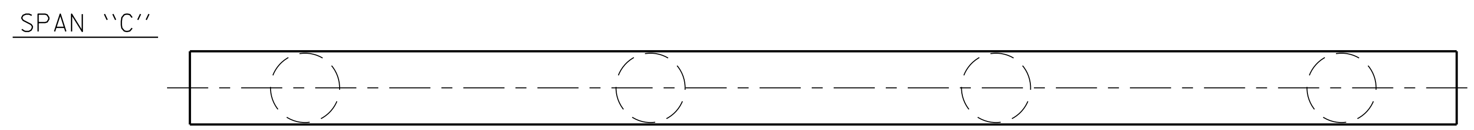

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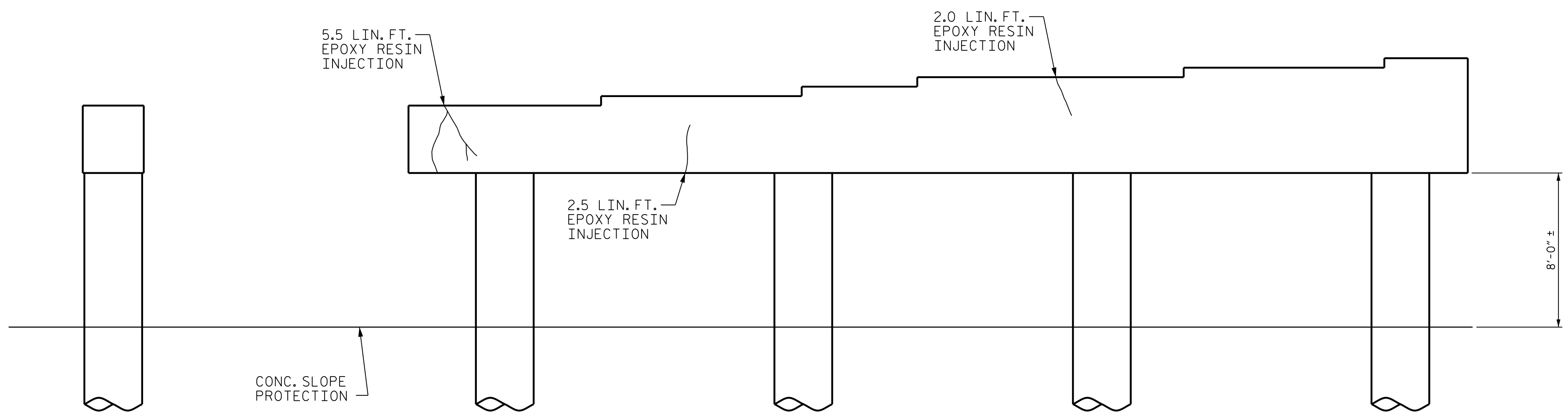
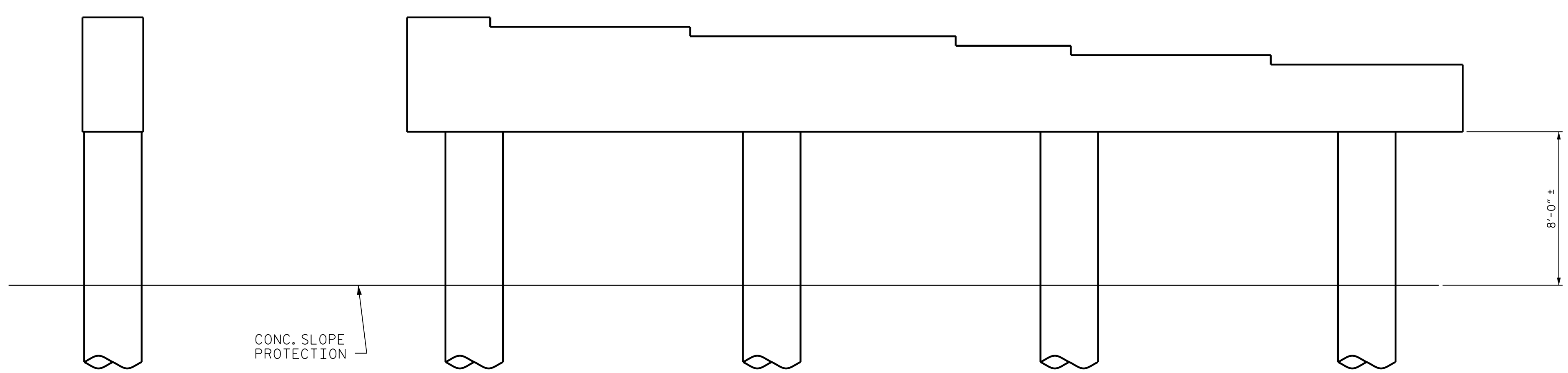


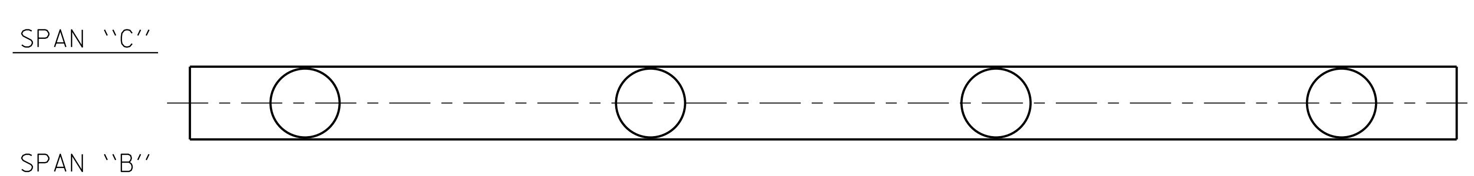
BENT 2 - WEST END

BENT 2 - LOOKING NORTH



BENT 2 - EAST END

BENT 2 - LOOKING SOUTH



BOTTOM OF CAP

REPAIR QUANTITY TABLE

REPAIRS BENT 2	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0	0			
CAP (HORIZONTAL, CORNER)	0	0			
COLUMN	0	0			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		10.0			
COLUMN		0			
EPOXY COATING	AREA SF				
CAP	174				

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.

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FOR ADDITIONAL NOTES AND TYPICAL SUBSTRUCTURE REPAIR DETAIL, SEE SHEET S-27.

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 28

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2

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8/31/2015

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
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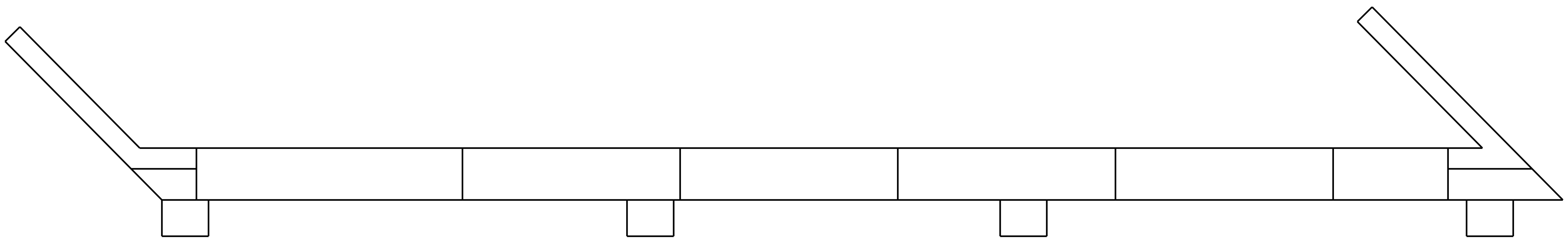
REPAIR QUANTITY TABLE

REPAIRS END BENT 2	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0	0			
CAP (HORIZONTAL, CORNER)	0	0			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		1.0			

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.



PLAN

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.

FOR ADDITIONAL NOTES AND TYPICAL SUBSTRUCTURE REPAIR DETAIL, SEE SHEET S-27.

ELEVATION

END BENT 2 - LOOKING NORTH

PROJECT NO. BP-5500R
FORSYTH COUNTY
BRIDGE NO. 28

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENT 2

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8/31/2015

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			27

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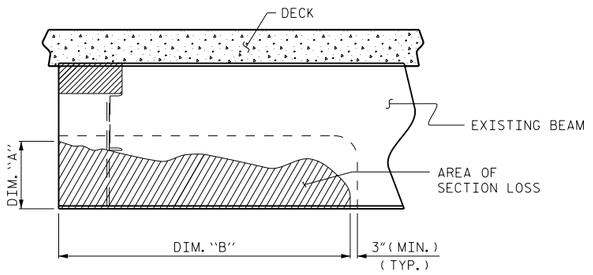
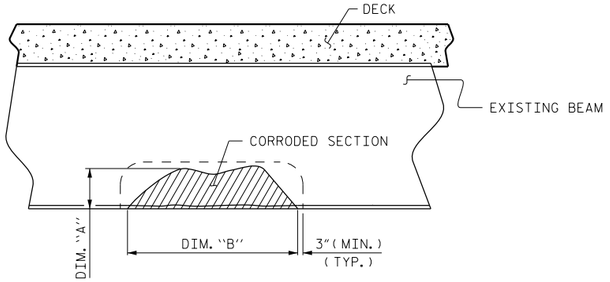
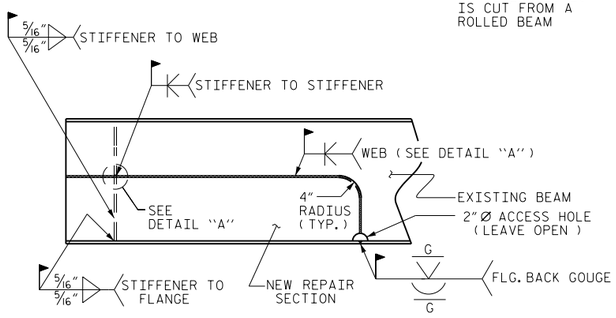


SECTION LOSS
BEAM END REPAIR

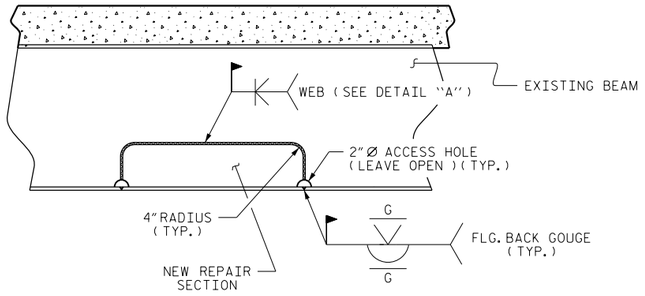
✱NOT NEEDED IF REPAIRED SECTION IS CUT FROM A ROLLED BEAM



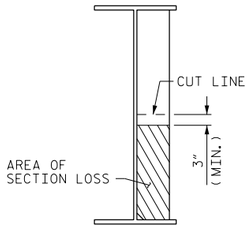
SECTION LOSS
INTERMEDIATE BEAM REPAIR



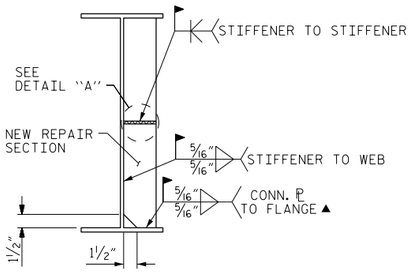
SECTION LOSS BEAM
END REPAIR SECTION



SECTION LOSS INTERMEDIATE
BEAM REPAIR SECTION

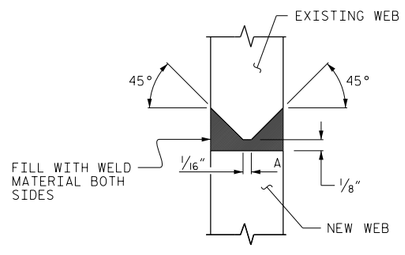


SECTION LOSS
STIFFENER/CONN. ℄
REPAIR



SECTION LOSS
STIFFENER/CONN. ℄
REPAIR SECTION

▲ FOR STIFFENERS, MILL TO BEAR AND DO NOT WELD



DETAIL "A"

BEAM REPAIR

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

PRIOR TO ORDERING MATERIALS AND BEGINNING REPAIR WORK, THE CONTRACTOR AND ENGINEER SHALL DETERMINE ACTUAL LOCATIONS AND DIMENSIONS OF STEEL AREAS TO BE REMOVED AND REPLACED. THE LOCATIONS AND DIMENSIONS OF THE REPAIR AREAS MAY BE RECORDED ON THE TABLES ON SHEET S-26.

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

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

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

FOR BEAM REPAIR, SEE SPECIAL PROVISIONS.

REPAIR SEQUENCE:

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

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

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

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

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

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

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

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

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

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

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

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

FOR CLEANING AND PAINTING, SEE PROJECT SPECIAL PROVISIONS.

AFTER GIRDERS ARE REPAIRED AND PAINTED, ANY CONCRETE REMOVED FROM THE BENT DIAPHRAGMS SHALL BE CAST BACK. ANY REINFORCING STEEL CUT DURING THE REMOVAL PROCESS SHALL BE SPLICED WITH A SIMILAR SIZE BAR WITH AT LEAST A ONE FOOT SPLICE TO THE EXISTING STEEL. NO SEPARATE PAYMENT SHALL BE MADE FOR CONCRETE AND REINFORCING STEEL AS THIS IS CONSIDERED INCIDENTAL TO THE PAY ITEM GIRDER REPAIR.

LOWER SPAN TO BEAR; CHECK FOR DISTRESS.

REMOVE JACKING EQUIPMENT AND TEMPORARY SUPPORTS.

REMOVE ALL TRAFFIC CONTROL DEVICES.

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 27 & 28

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BEAM END AND INTERMEDIATE REPAIR DETAILS

DocuSigned by:
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NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			27

DRAWN BY : P.C. BREWER DATE : 5/14
CHECKED BY : B.L. GREEN DATE : 6/14

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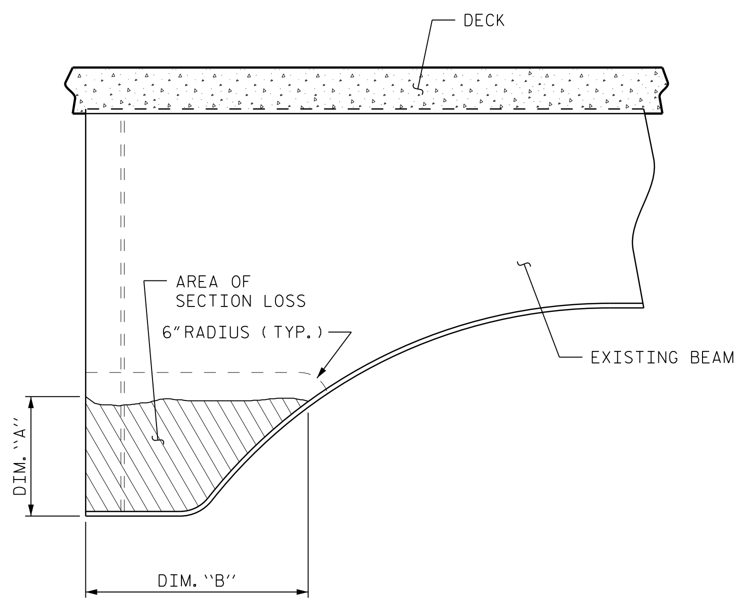
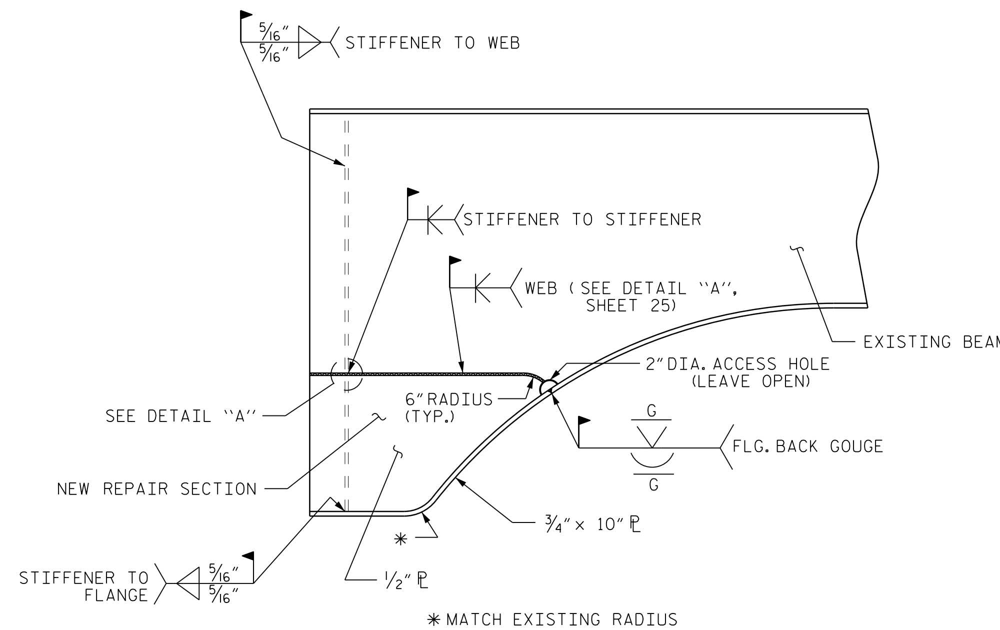


SECTION LOSS BEAM END REPAIR



SECTION LOSS BEAM END REPAIR SECTION

NOTES:

DIMENSIONS ON THESE PLANS ARE BASED ON ORIGINAL PLANS. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

TRAFFIC SHALL BE REMOVED FROM THE SHOULDER AND RIGHT LANE OF THE BRIDGE DURING BEAM END REPAIRS. SEE TRAFFIC CONTROL PLANS.

REMOVE REPAIR AREA, AS INDICATED. RETAIN EXISTING SOLE PLATE AND BEARING.

MECHANICALLY CLEAN RUST AND SCALE AND ANY EXISTING PAINT TO AT LEAST 4" BEYOND REPAIR AREA LIMITS.

REPLACEMENT BEAM SECTION SHALL BE CUT FROM NEW STEEL PLATES AND SHALL BE AASHTO M270, GRADE 50W, WITH A MINIMUM YIELD STRENGTH OF 50 KSI.

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

INSTALL CUT-TO-FIT SECTION, FULLY WELD ALONG TOP AND SIDES OF PLATE.

WHEN FIELD WELDING THE EXISTING SOLE PLATE TO THE REPAIRED GIRDER FLANGE, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°27/64F. TEMPERATURES ABOVE THIS MAY DAMAGE THE BEARING ELASTOMER.

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

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

AFTER REPAIR, GRIND ALL WELDS FLUSH, THROUGHLY CLEAN AREA TO REMOVE DEBRIS AND OILS FROM REPAIR PROCESS.

BEAM END REPAIRS SHALL BE COMPLETED PRIOR TO CLEANING AND REPAINTING OF THE BRIDGE.

CLEANING AND PAINTING OF REPAIRED STRUCTURAL STEEL SHALL BE PERFORMED AS PART OF THE OVERALL CLEANING AND PAINTING OF BRIDGES 27 & 28.

HAUNCHED BEAM REPAIR LOCATIONS

SPAN	BEAM	LOCATION	DIM. "A"	DIM. "B"
C	3	BENT 2	1'-0"	2'-0"
C	4	BENT 2	1'-0"	2'-0"

PROJECT NO. BP-5500R
FORSYTH COUNTY
BRIDGE NO. 28
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

HAUNCHED BEAM REPAIR DETAILS

DocuSigned by: Farzin Asefnia
NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA
8/31/2015

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

SHEET NO. S-26
TOTAL SHEETS 27

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NOTE

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

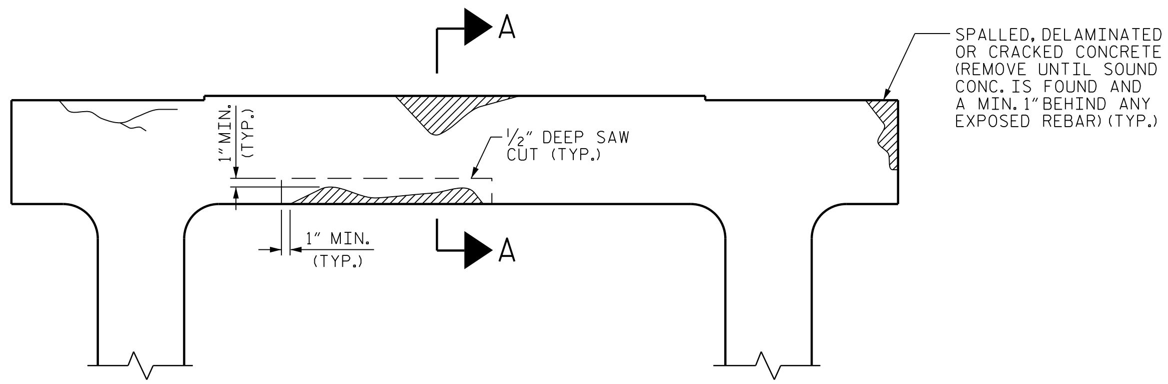
CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

CONTRACTOR SHALL SAW CUT THE REPAIR AREAS SO THAT THE CORNERS ARE SQUARE AS INDICATED ON THE DETAILS.

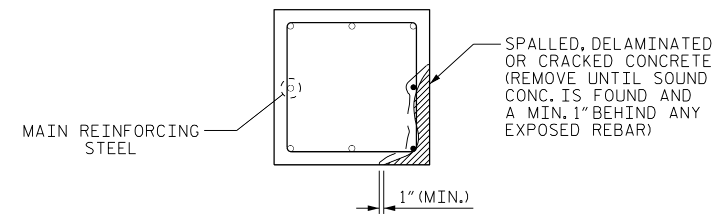
CONCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

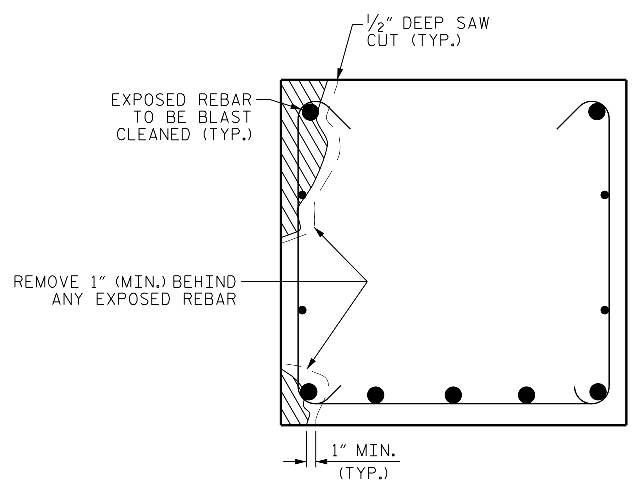
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.



BENT CAP REPAIRS

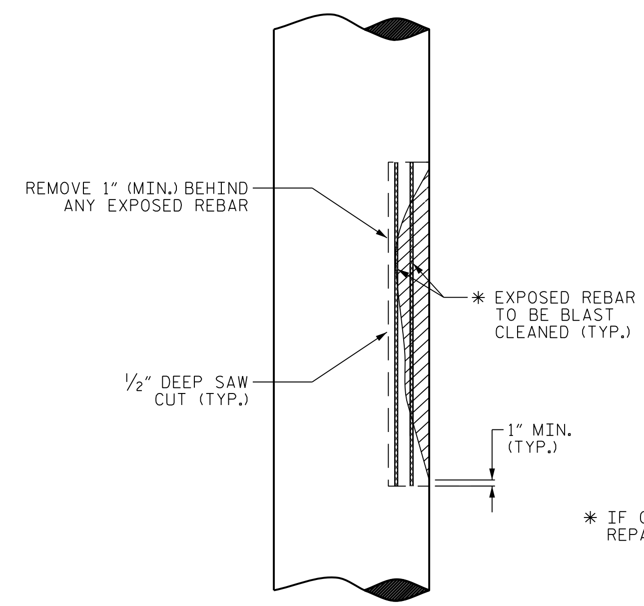


PLAN OF COLUMN



SECTION THRU CAP

(EXAMPLE ONLY. ACTUAL REBAR SIZES & LOCATIONS MAY VARY)



* IF CONFINEMENT STEEL IS NOT PRESENT, THEN REPAIR LENGTH SHALL NOT EXCEED 10 FEET.

ELEVATION OF CAP

CAP REPAIR

COLUMN REPAIR

PROJECT NO. BP-5500R

FORSYTH COUNTY

BRIDGE NO. 27 & 28

DocuSigned by:

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NORTH CAROLINA PROFESSIONAL SEAL 20103 ENGINEER FARZIN ASEFNIA

8/31/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

TYPICAL CAP AND COLUMN REPAIR DETAILS

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

DRAWN BY : R. WEISZ DATE : 11/14

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STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

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

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