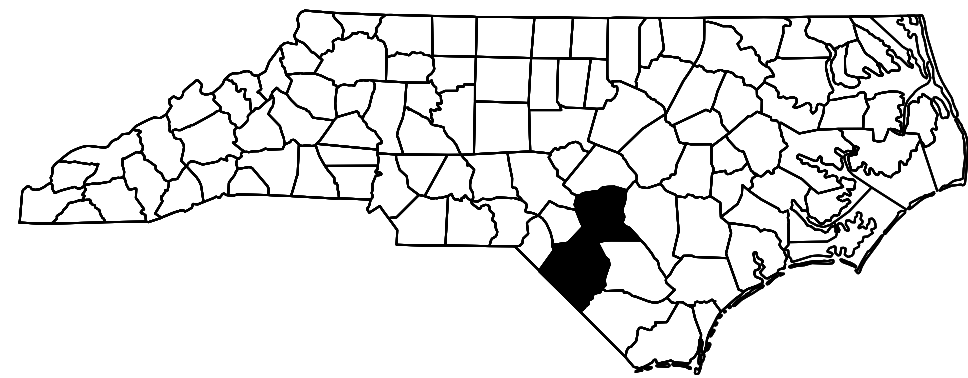


PROJECT: I-5850A

CONTRACT: DF00182



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

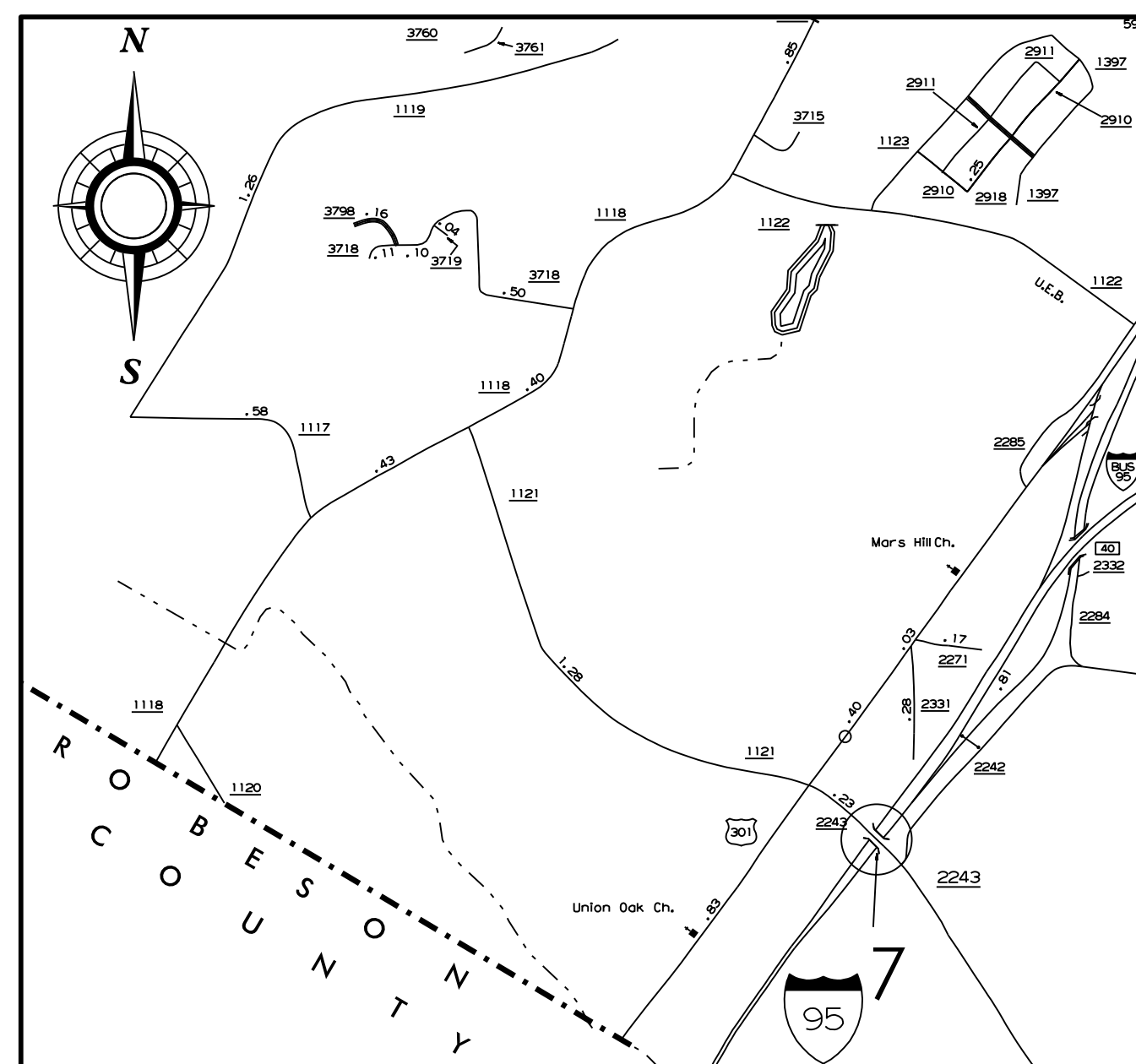
**CUMBERLAND & ROBESON COUNTIES**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5850A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
53055.1.2	NHPIM-0095(051)	P.E.	
53055.3.2	NHPIM-0095(051)	CONST.	

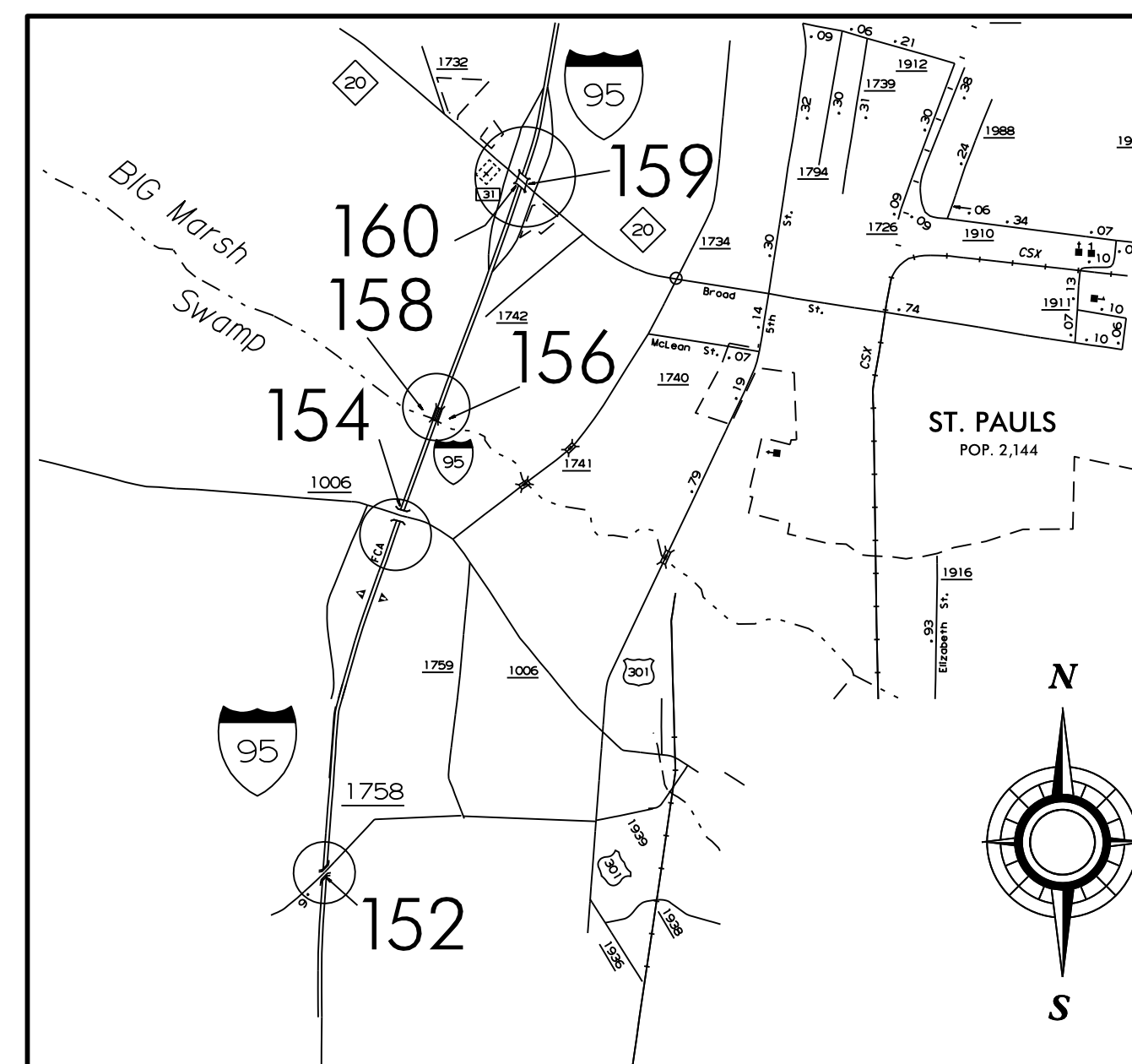
LOCATION: CUMBERLAND COUNTY: BRIDGE #007 ON SR 2243 OVER I-95.

ROBESON COUNTY: BRIDGE #152 ON SR-1758 OVER I-95.  
 BRIDGE #154 ON SR 1006 OVER I-95.  
 BRIDGE #156 ON I-95 NBL OVER BIG MARSH SWAMP.  
 BRIDGE #158 ON I-95 SBL OVER BIG MARSH SWAMP.  
 BRIDGE #159 ON I-95 NBL OVER NC-20.  
 BRIDGE #160 ON I-95 SBL OVER NC-20.  
 BRIDGE #164 ON I-95 NBL OVER LITTLE MARSH SWAMP.  
 BRIDGE #165 ON I-95 SBL OVER LITTLE MARSH SWAMP.

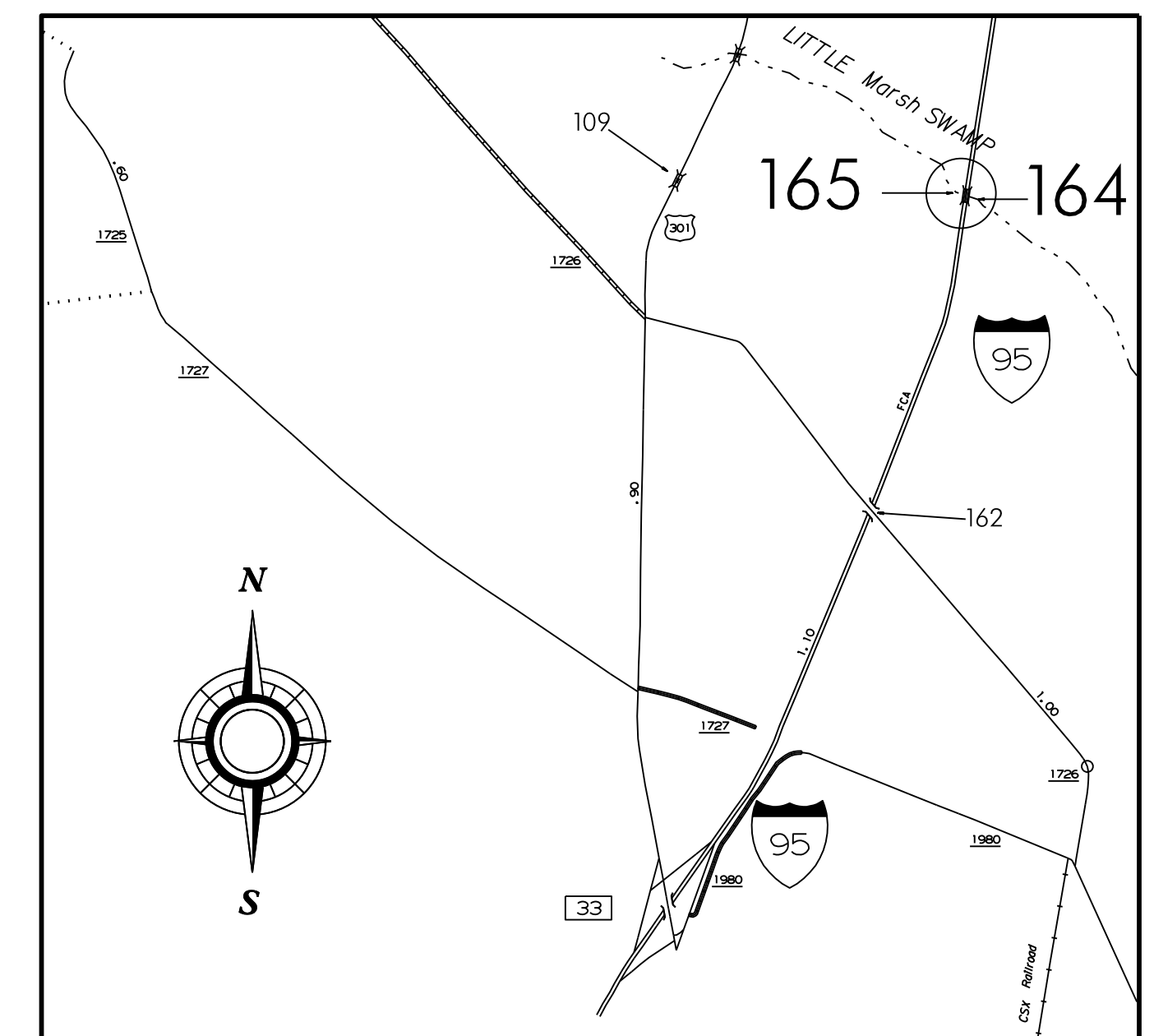
TYPE OF WORK: BRIDGE PRESERVATION WITH POLYESTER POLYMER CONCRETE OVERLAY, JOINT DEMOLITION, ASPHALT ROADWAY MILLING AND CONCRETE BRIDGE DECK EPOXY OVERLAY SYSTEM.



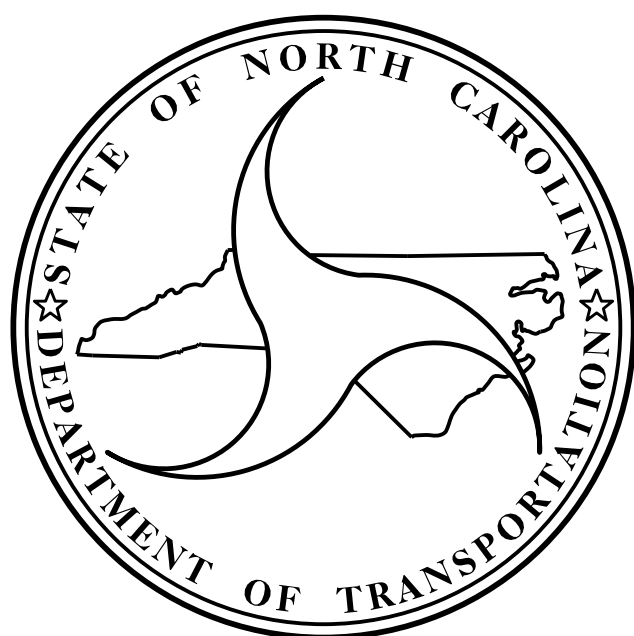
VICINITY MAP : CUMBERLAND COUNTY



VICINITY MAP : ROBESON COUNTY



VICINITY MAP : ROBESON COUNTY



**DESIGN DATA**

**CUMBERLAND COUNTY**

BRIDGE #007 ADT 2012 = 2,100

**ROBESON COUNTY**

BRIDGE #152 ADT 2013 = 390  
 BRIDGE #154 ADT 2012 = 3,200  
 BRIDGE #156 ADT 2013 = 19,500  
 BRIDGE #158 ADT 2013 = 19,500  
 BRIDGE #159 ADT 2013 = 19,500  
 BRIDGE #160 ADT 2013 = 19,500  
 BRIDGE #164 ADT 2013 = 19,500  
 BRIDGE #165 ADT 2013 = 19,500

**PROJECT LENGTH**

**CUMBERLAND COUNTY**

BRIDGE #007 = 0.053 MILES

**ROBESON COUNTY**

BRIDGE #152 = 0.062 MILES  
 BRIDGE #154 = 0.036 MILES  
 BRIDGE #156 = 0.026 MILES  
 BRIDGE #158 = 0.026 MILES  
 BRIDGE #159 = 0.034 MILES  
 BRIDGE #160 = 0.034 MILES  
 BRIDGE #164 = 0.028 MILES  
 BRIDGE #165 = 0.028 MILES

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

**GREGORY W. DICKEY, P.E.**  
 PROJECT ENGINEER

2012 STANDARD SPECIFICATIONS

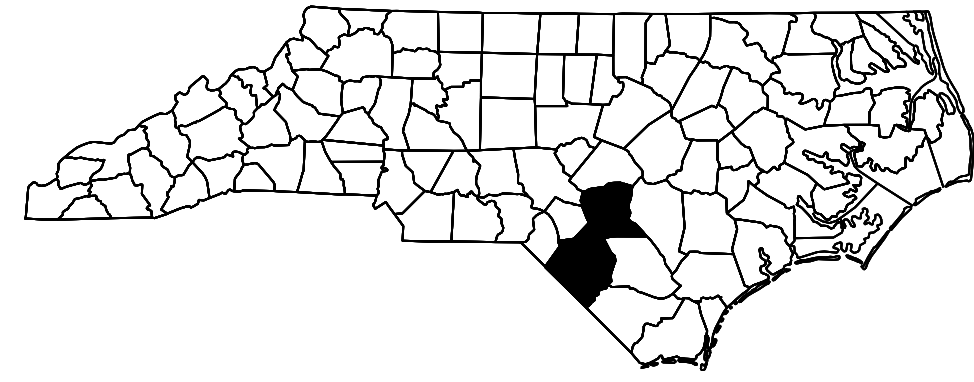
LETTING DATE:  
 SEPTEMBER 20, 2017

DocuSigned by:  
 Aster G. Abraha  
 8/29/2017

**ASTER G. ABRAHA, P.E.**  
 PROJECT DESIGN ENGINEER

**PROJECT: I-5850A**

**CONTRACT: DF00182**



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**CUMBERLAND & ROBESON COUNTIES**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5850A	1A	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
53055.1.2	NHPIM-0095(051)	P.E.	
53055.3.2	NHPIM-0095(051)	CONST.	

**LOCATION: CUMBERLAND COUNTY: BRIDGE #007 ON SR 2242 OVER I-95.**

**ROBESON COUNTY:**

- BRIDGE #152 ON SR-1758 OVER I-95.**
- BRIDGE #154 ON SR 1006 OVER I-95.**
- BRIDGE #156 ON I-95 NBL OVER BIG MARSH SWAMP.**
- BRIDGE #158 ON I-95 SBL OVER BIG MARSH SWAMP.**
- BRIDGE #159 ON I-95 NBL OVER NC-20.**
- BRIDGE #160 ON I-95 SBL OVER NC-20.**
- BRIDGE #164 ON I-95 NBL OVER LITTLE MARSH SWAMP.**
- BRIDGE #165 ON I-95 SBL OVER LITTLE MARSH SWAMP.**

**TYPE OF WORK: BRIDGE PRESERVATION WITH POLYESTER POLYMER CONCRETE OVERLAY, JOINT DEMOLITION, AND CONCRETE BRIDGE DECK EPOXY OVERLAY SYSTEM.**

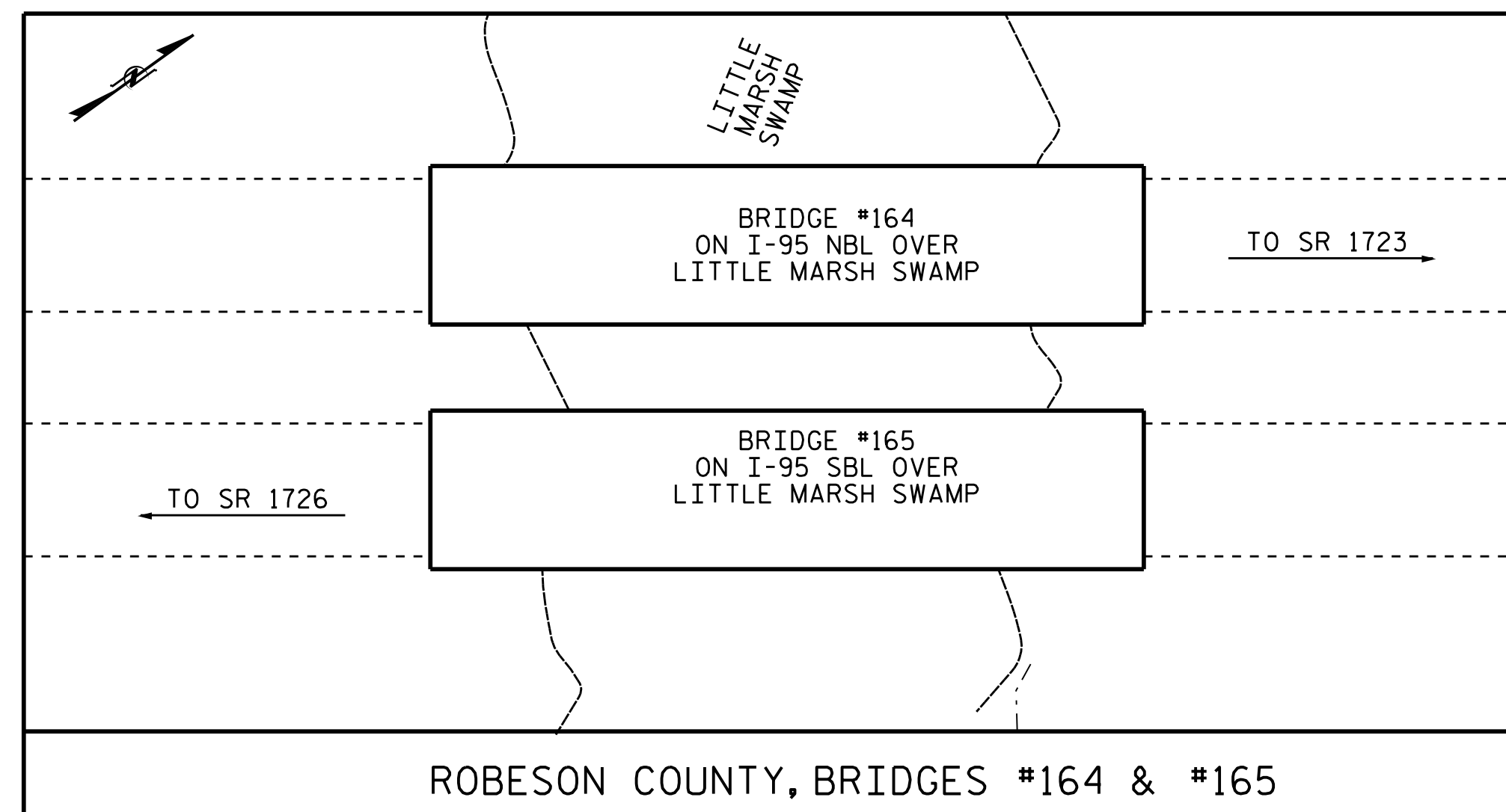
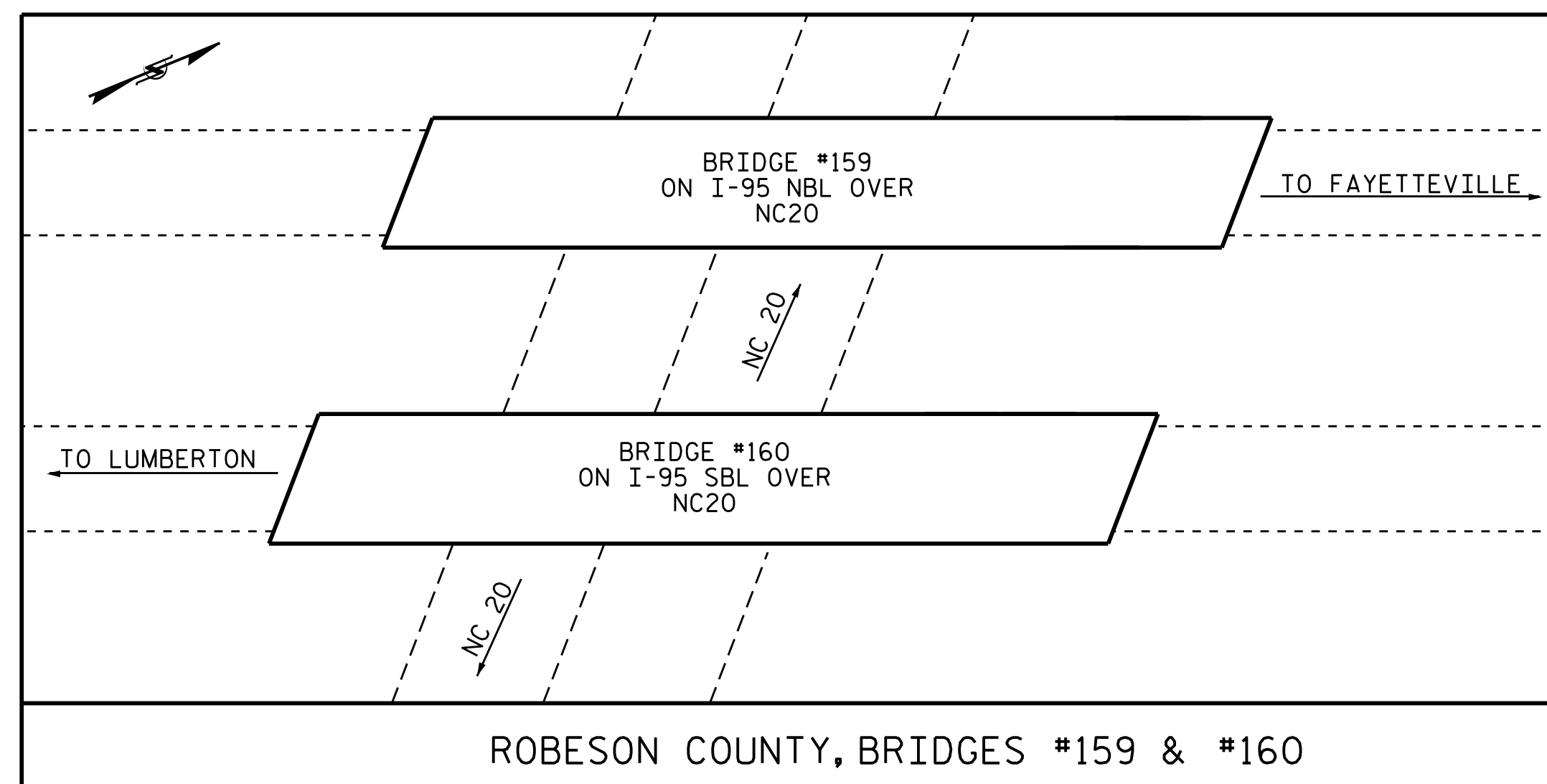
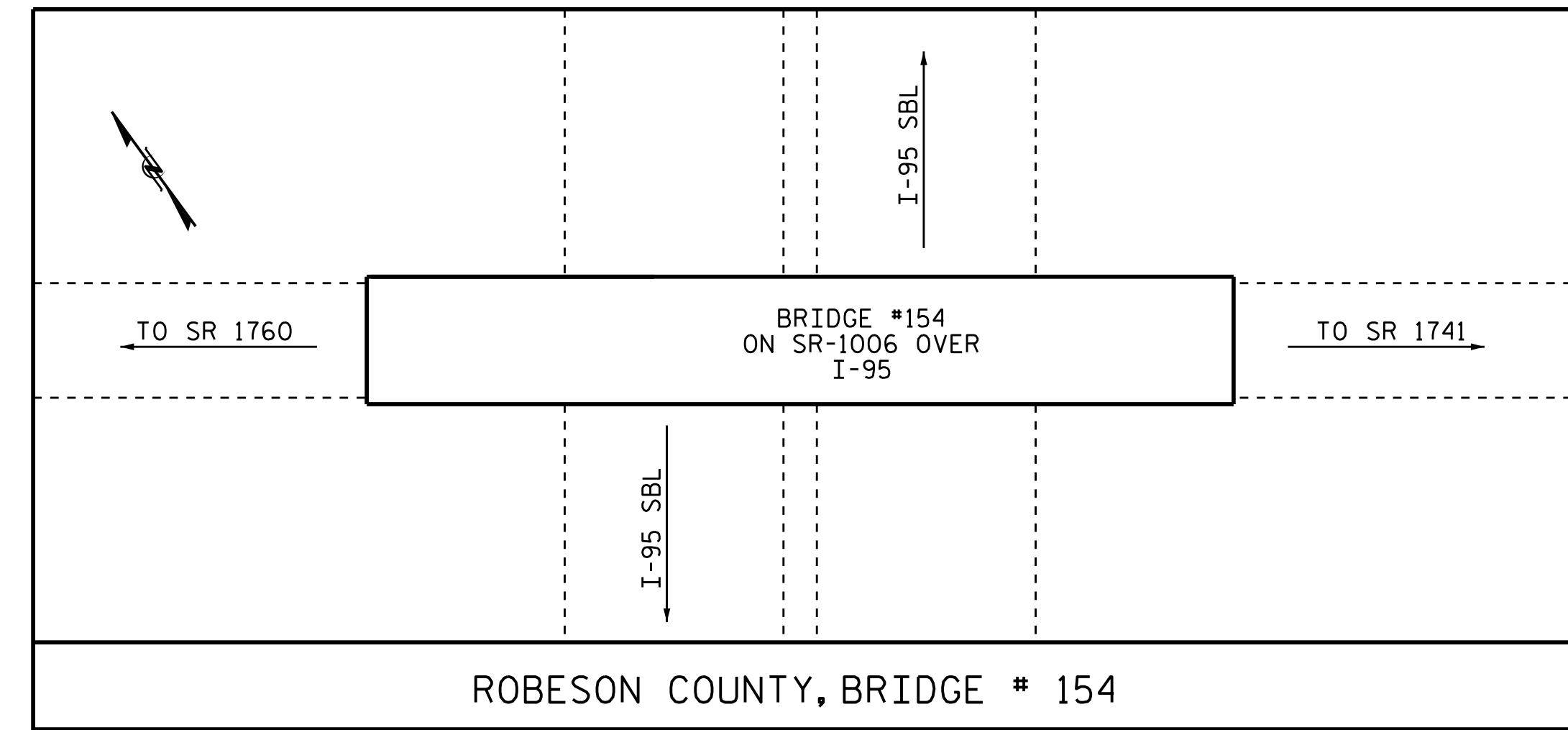
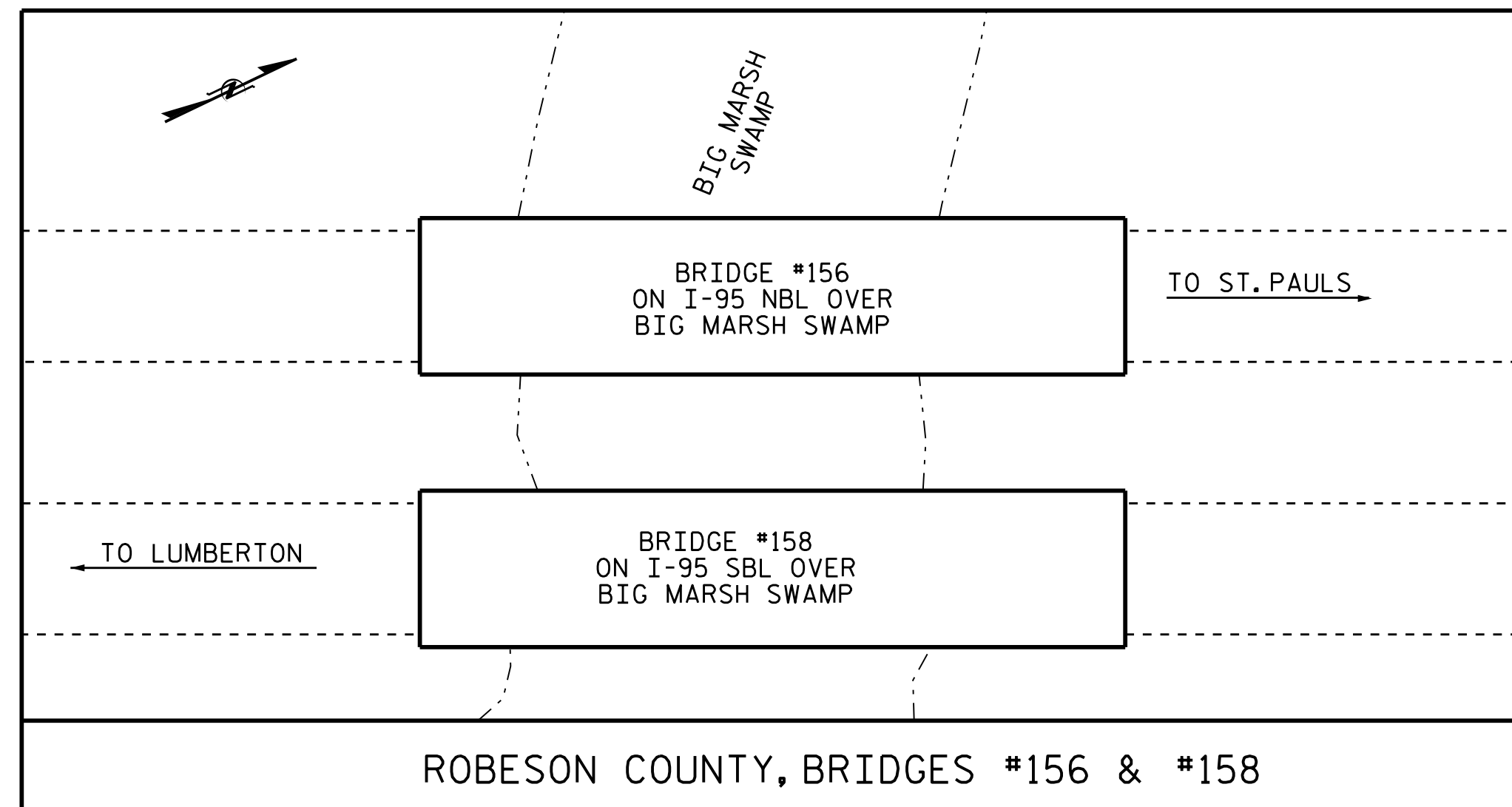
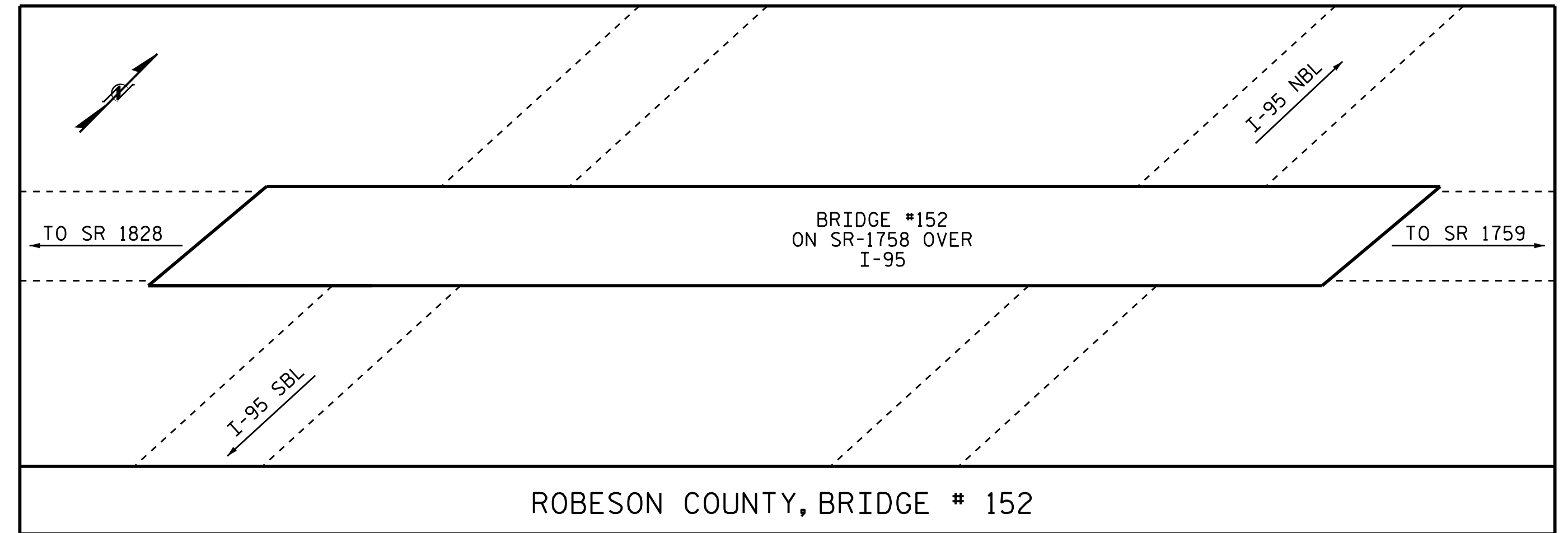
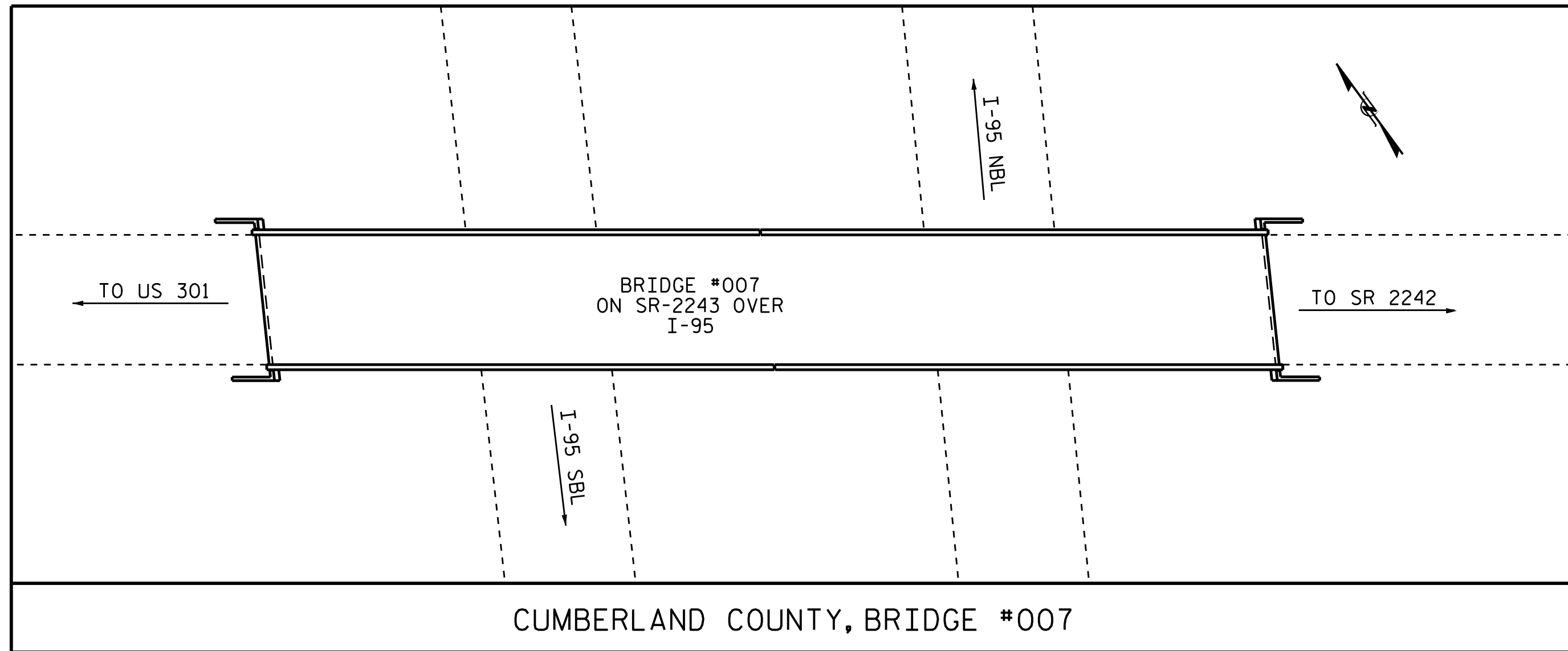
**INDEX OF SHEETS**

**SHEET NO.**

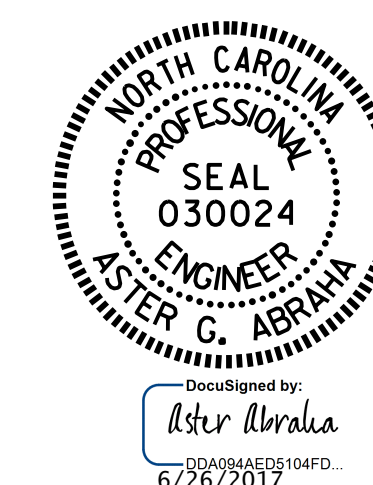
**DESCRIPTION**

<b>1</b>	<b>TITLE SHEET</b>
<b>1A</b>	<b>INDEX OF SHEETS</b>
<b>S-1</b>	<b>LOCATION SKETCHES</b>
<b>S-2</b>	<b>TOTAL BILL OF MATERIALS</b>
<b>S-3 THRU S-6</b>	<b>STRUCTURAL PLANS - BRIDGE #007</b>
<b>S-7 THRU S-11</b>	<b>STRUCTURAL PLANS - BRIDGE #152</b>
<b>S-12 THRU S-15</b>	<b>STRUCTURAL PLANS - BRIDGE #154</b>
<b>S-16 THRU S-20</b>	<b>STRUCTURAL PLANS - BRIDGES #156 &amp; #158</b>
<b>S-21</b>	<b>JOINT DETAILS - BRIDGES #156 &amp; #158</b>
<b>S-22</b>	<b>APPROACH MILLING - BRIDGES #156 &amp; #158</b>
<b>S-23 THRU S-28</b>	<b>STRUCTURAL PLANS - BRIDGES #159 &amp; #160</b>
<b>S-29 THRU S-33</b>	<b>STRUCTURAL PLANS - BRIDGES #164 &amp; #165</b>
<b>S-34</b>	<b>JOINT DETAILS - BRIDGES #164 &amp; #165</b>
<b>S-35</b>	<b>APPROACH MILLING - BRIDGES #164 &amp; #165</b>
<b>SN</b>	<b>STANDARD NOTES</b>





PROJECT NO. I-5850A  
CUMBERLAND &  
ROBESON COUNTIES  
 BRIDGE NO. 007, 152, 154, 156,  
158, 159, 16, 164, & 165



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 GENERAL DRAWING  
 LOCATION SKETCHES

**LOCATION SKETCHES**

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.

DRAWN BY : S. T. SANDOR DATE : 06/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

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

**— TOTAL BILL OF MATERIAL —**

COUNTY	BRIDGE NO.	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	ASPHALT BINDER FOR PLANT MIX	GROOVING BRIDGE FLOORS	REPLACEMENT OF FOAM JOINT SEALS	* CLASS II SURFACE PREPARATION	SCARIFYING BRIDGE DECK	SHOTBLASING BRIDGE DECK	* CONCRETE DECK REPAIR FOR EPOXY OVERLAY	* CONCRETE DECK REPAIR FOR PPC OVERLAY	PPC MATERIALS	PLACING AND FINISHING PPC OVERLAY	BRIDGE JOINT DEMOLITION	EPOXY OVERLAY SYSTEM	ELASTOMERIC CONCRETE	FOAM JOINT SEALS	VOLUMETRIC MIXER
		SQ. YD.	TONS	TONS	SQ. FT.	LN. FT.	SQ. YD.	SO. YD.	SO. YD.	SQ. FT.	SQ. YD.	CU. YD.	SO. YD.	SO. FT.	SO. FT.	CU. FT.	LUMP SUM	LUMP SUM
CUMBERLAND	007	-			-	36.25	-	-	1216.0	10.0	-	-	-	72.5	10,944.0	18.1	LUMP SUM	LUMP SUM
ROBESON	152	-			-	174.0	-	-	1030.6	10.0	-	-	-	-	9,275.0	-	-	LUMP SUM
	154	-			-	84.0	-	-	592.7	10.0	-	-	-	-	5,334.0	-	-	LUMP SUM
	156	622	52.3	3.2	3750.0	-	10.0	469.0	469.0	-	10.0	39.0	469.0	-	-	-	LUMP SUM	-
	158	622	52.3	3.2	3750.0	-	10.0	469.0	469.0	-	10.0	39.0	469.0	-	-	-	LUMP SUM	-
	159	622	52.3	3.2	4508.0	-	10.0	567.0	567.0	-	10.0	55.1	567.0	-	-	-	LUMP SUM	-
	160	622	52.3	3.2	4508.0	-	10.0	567.0	567.0	-	10.0	55.1	567.0	-	-	-	LUMP SUM	-
	164	622	52.3	3.2	3742.0	-	10.0	469.0	469.0	-	10.0	39.0	469.0	-	-	-	LUMP SUM	-
165	622	52.3	3.2	3742.0	-	10.0	469.0	469.0	-	10.0	39.0	469.0	-	-	-	LUMP SUM	-	
TOTAL		3732.0	313.8	19.2	24,000.0	294.25	60.0	3010.0	5849.3	30.0	60.0	266.2	3010.0	72.5	25,553.0	18.1	LUMP SUM	LUMP SUM

\* TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED CONCRETE REPAIRS ARE ENCOUNTERED.

**GENERAL NOTES:**

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

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.

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

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, 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 EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISION.

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

FOR CONCRETE REPAIR FOR PPC OVERLAY, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALANT, SEE SPECIAL PROVISIONS.

FOR REPLACEMENT OF FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

ALL PROPOSED EXPANSION JOINT DIMENSIONS, OPENINGS AND BLOCKOUTS ARE SHOWN AT 60°F. CONTRACTOR SHALL FOLLOW MANUFACTURER'S INSTALLATION GUIDELINES AND MAKE ANY NECESSARY ADJUSTMENTS.

TOTAL THERMAL MOVEMENT MEASURED PARALLEL TO THE CENTERLINE OF THE ROADWAY IS (EXPANSION AND CONTRACTION).

WORK ON BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL BELOW. THE CONTRACTOR SHALL SUBMIT PLANS FOR CONSTRUCTION IN ACCORDANCE TO ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS AND THE PROJECT SPECIAL PROVISIONS.

PRIOR TO BEGINNING WORK, CONTRACTOR SHALL SUBMIT FOR REVIEW AND APPROVAL A COMPLETE SEQUENCE OF TASKS FOR EACH OPERATION AFFECTING THE BRIDGE SURFACE AND/OR TRAFFIC.

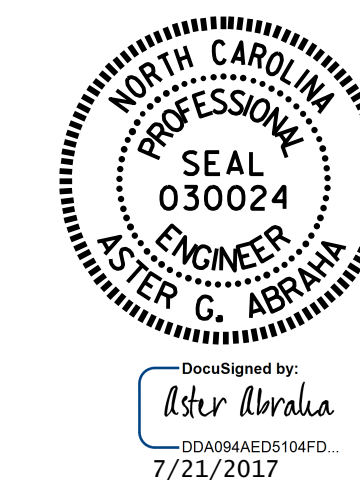
CONTRACTOR SHALL DETERMINE EXTENT OF WORKING AREA, STAGING PROCESS, AND INSTALL COVER & ASSEMBLY AS NECESSARY TO MEET THE REQUIREMENTS OF TRAFFIC MANAGEMENT PLANS.

ANY DAMAGE TO EXISTING REINFORCING STEEL, DURING CONTRACTOR'S OPERATIONS, SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AND PERFORMED AT NO ADDITIONAL COST.

FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.

FOR BRIDGE JOINT SEAL, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5850A  
CUMBERLAND &  
ROBESON COUNTIES  
 BRIDGE NO. 007, 152, 154, 156,  
158, 159, 160, 164 & 165



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL NOTES**  
 &  
**TOTAL BILL OF MATERIAL**

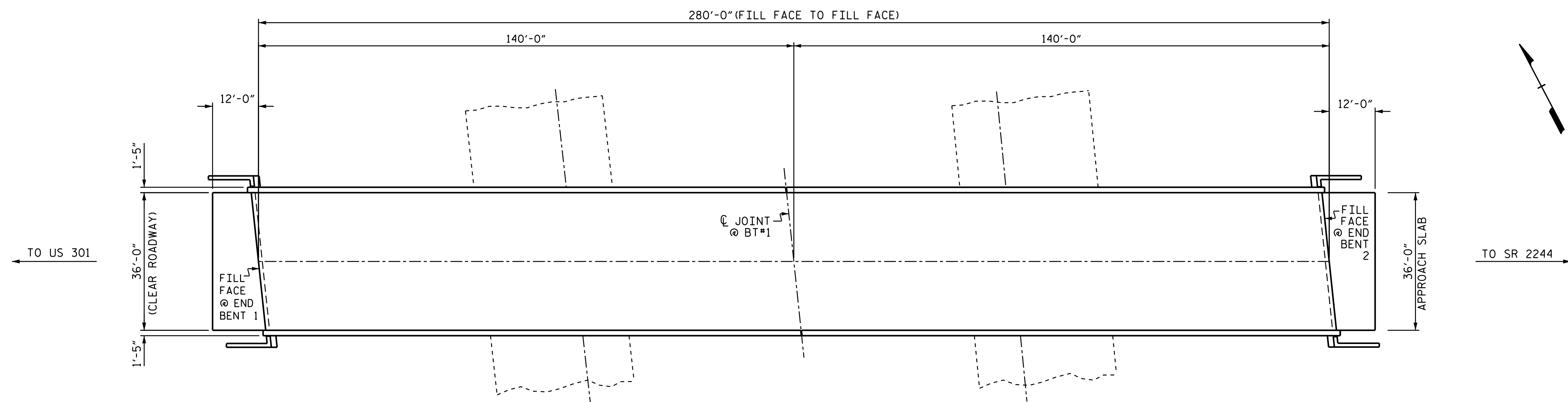
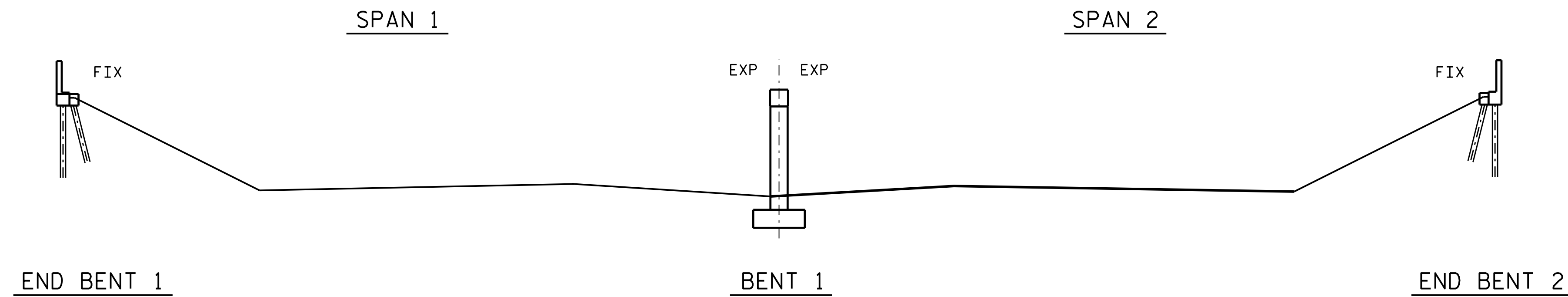
DRAWN BY : S. T. SANDOR DATE : 06/2017  
 CHECKED BY : A. G. ABARAH DATE : 06/2017

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

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

**SCOPE OF WORK:**

- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SHOTBLAST METHOD.
- OVERLAY PREPARED BRIDGE DECK WITH EPOXY OVERLAY SYSTEM.
- DEMOLISH BRIDGE DECK JOINTS AT END BENTS AND RECONSTRUCT JOINTS WITH ELASTOMERIC HEADERS AND FOAM JOINT SEALS.
- REMOVE FOAM JOINT SEAL AT BENT AND REPAIR FOAM SEAL.



PROJECT NO. I-5850A  
CUMBERLAND COUNTY  
 BRIDGE NO. 7

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

Resident Engineer \_\_\_\_\_ Date \_\_\_\_\_



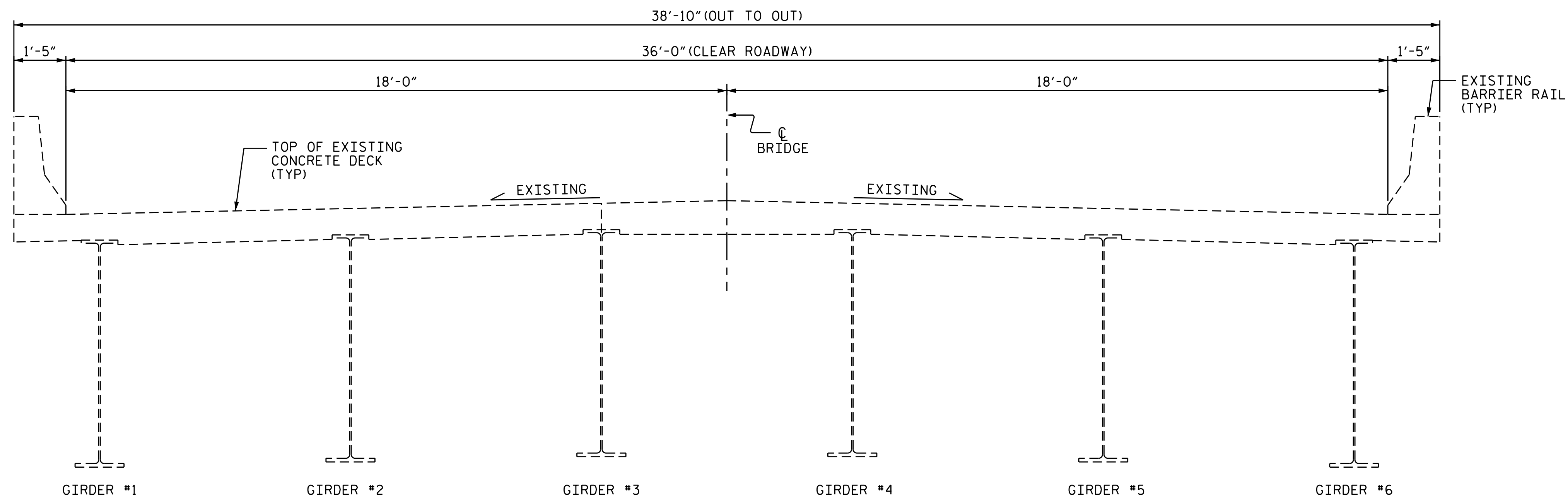
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 GENERAL DRAWING  
 BRIDGE #7 ON SR 2243  
 OVER I-95

DRAWN BY : P.D. BRYANT DATE : 06/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

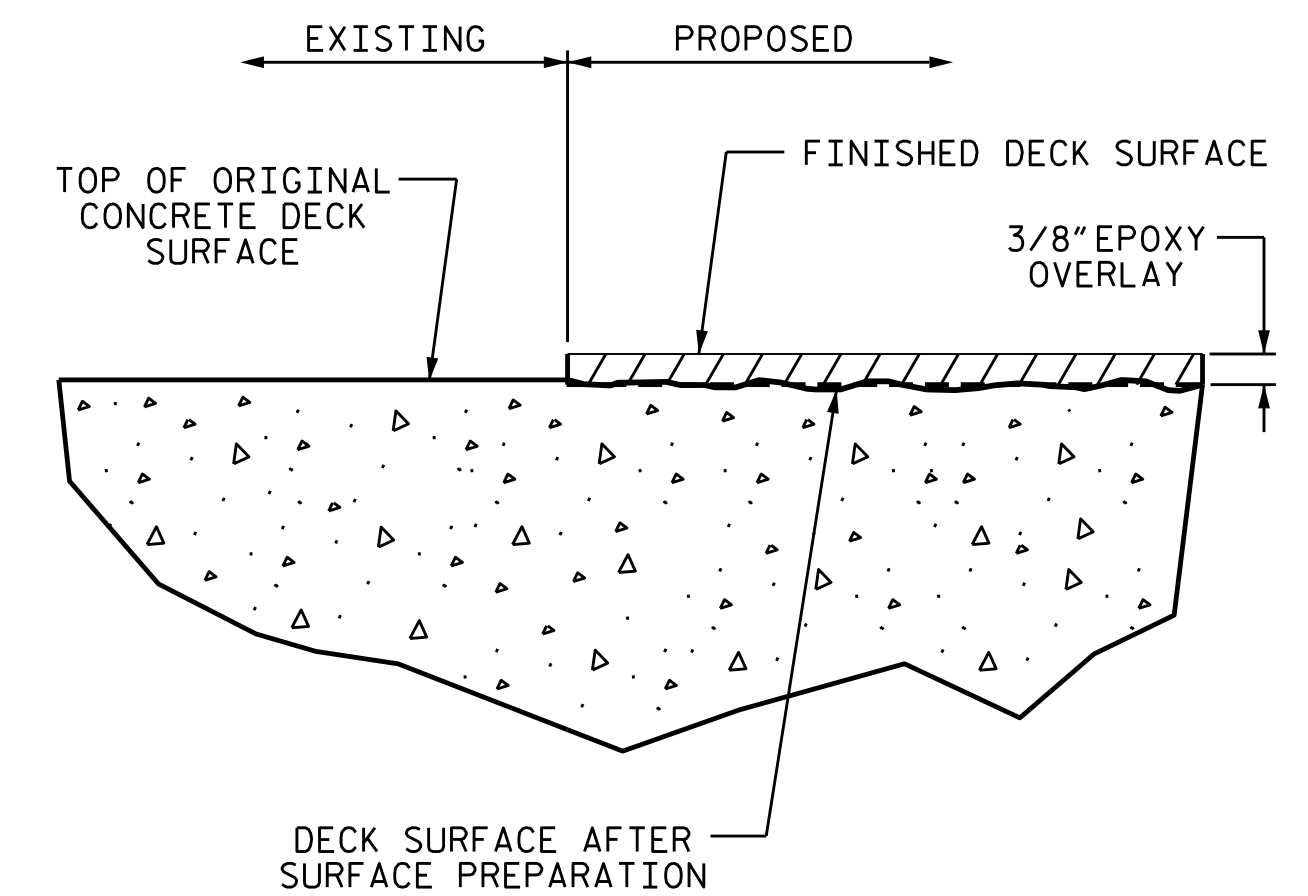
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

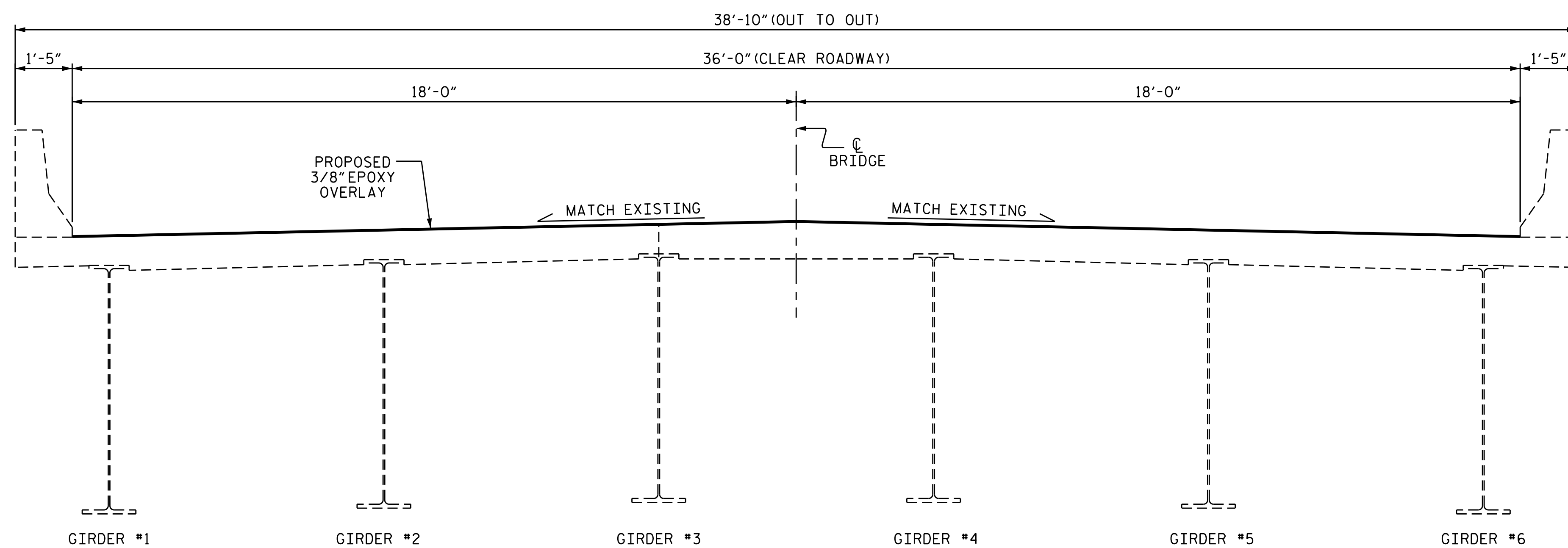




**TYPICAL SECTION**  
(EXISTING)

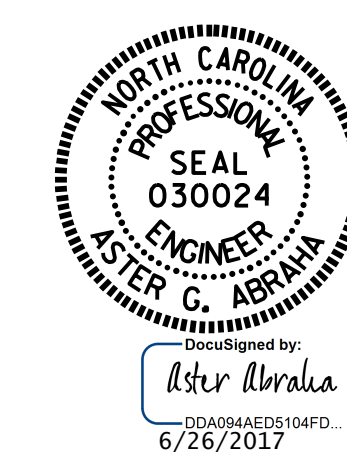


**DETAIL OF EPOXY OVERLAY**



**TYPICAL SECTION**  
(PROPOSED)

PROJECT NO. I-5850A  
CUMBERLAND COUNTY  
 BRIDGE NO. 7



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUPERSTRUCTURE**  
 TYPICAL SECTION  
 &  
 EPOXY OVERLAY DETAILS

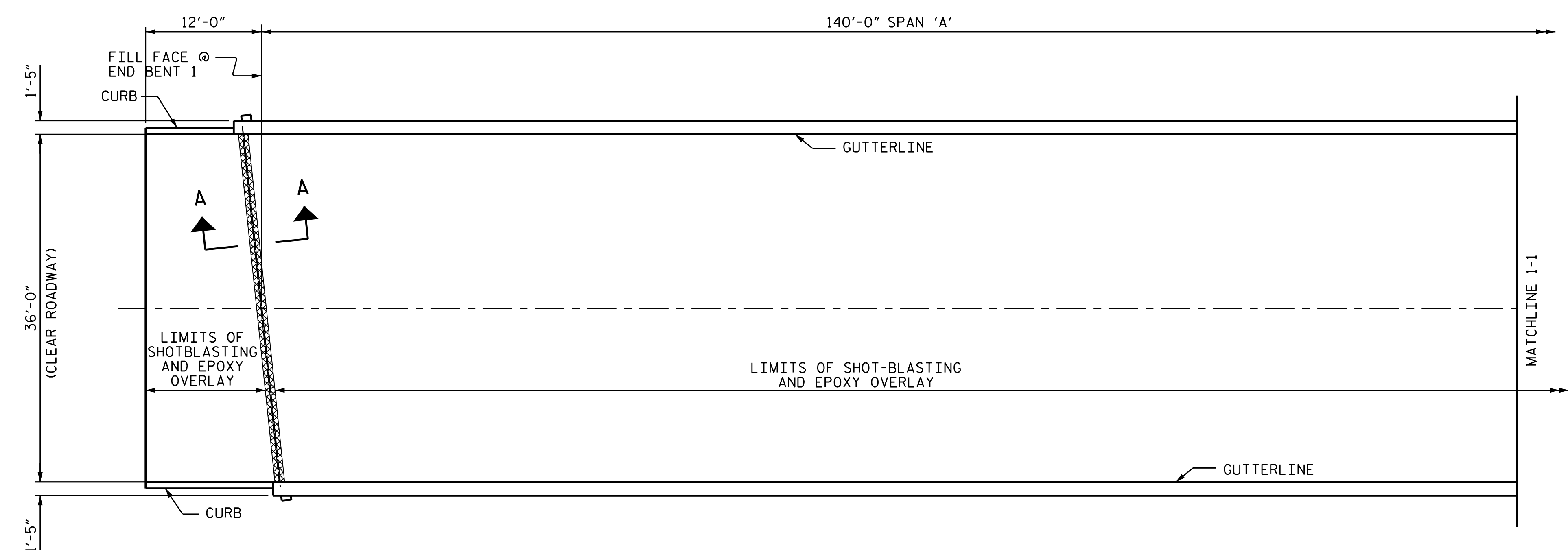
DRAWN BY : P.D. BRYANT DATE : 06/2017  
 CHECKED BY : A.G. ABRAHA DATE : 06/2017

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

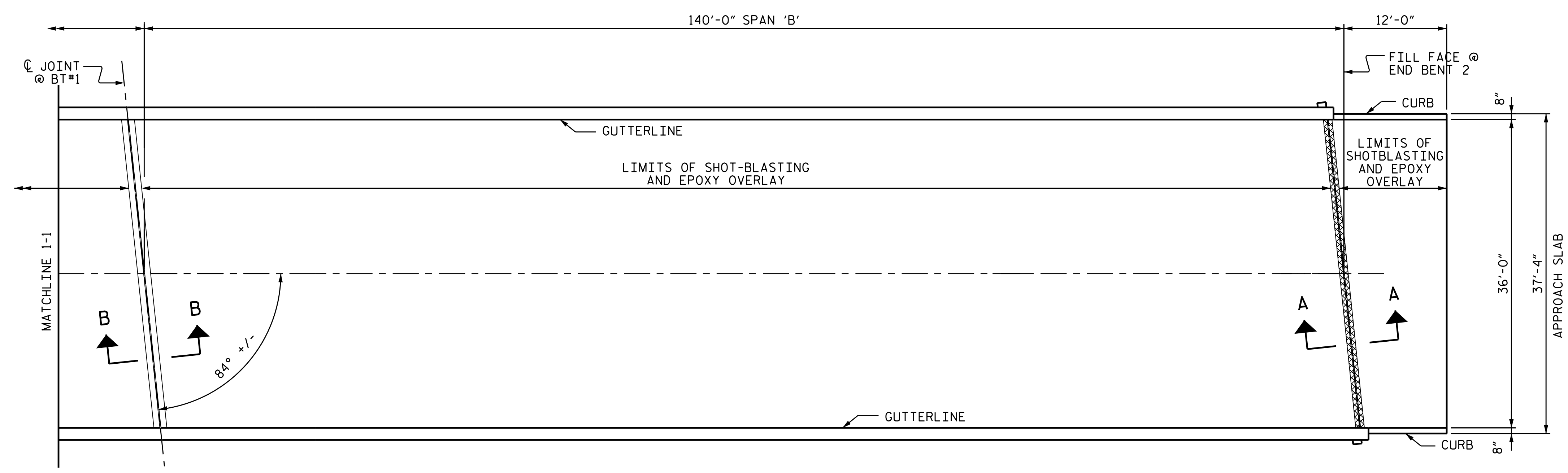
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			35

SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	* 10.0 SF	
SHOTBLASTING BRIDGE DECK FOR EPOXY OVERLAY	1,216.0 SY	
BRIDGE JOINT DEMOLITION	72.5 SF	
EPOXY OVERLAY SYSTEM	10,944.0 SF	
BRIDGE JOINT SEAL REMOVAL	36.25 LF	

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



**PLAN**



**PLAN**  
 (FOR SECTION A-A & B-B, SEE JOINT DETAIL SHEET S-XX)

- EPOXY OVERLAY
- BRIDGE JOINT DEMOLITION

PROJECT NO. I-5850A  
CUMBERLAND COUNTY  
 BRIDGE NO. 7



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUPERSTRUCTURE**  
 SURFACE PREPARATION  
 AND  
 EPOXY OVERLAY

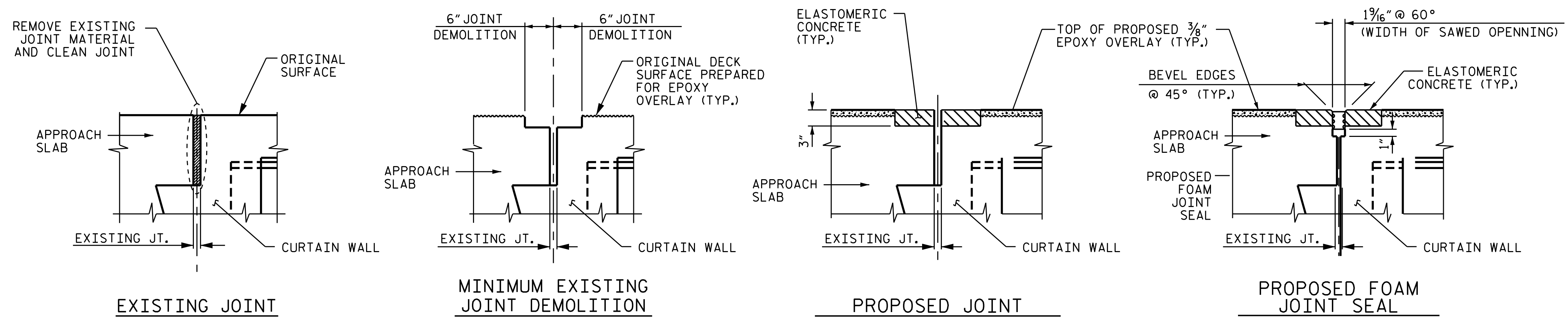
DRAWN BY : P. D. BRYANT DATE : 06/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			35

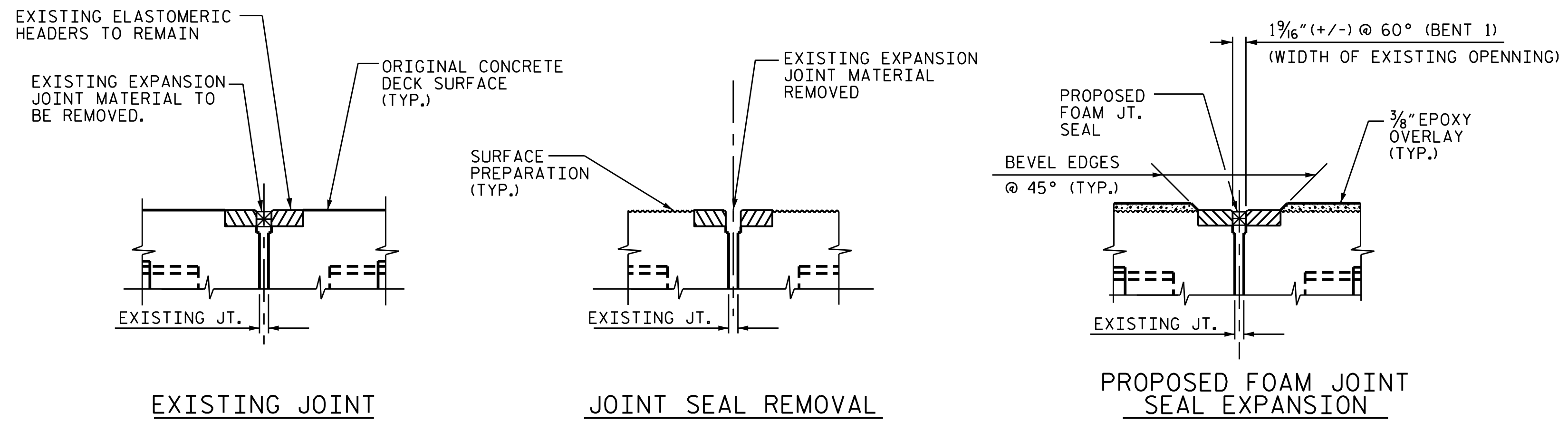
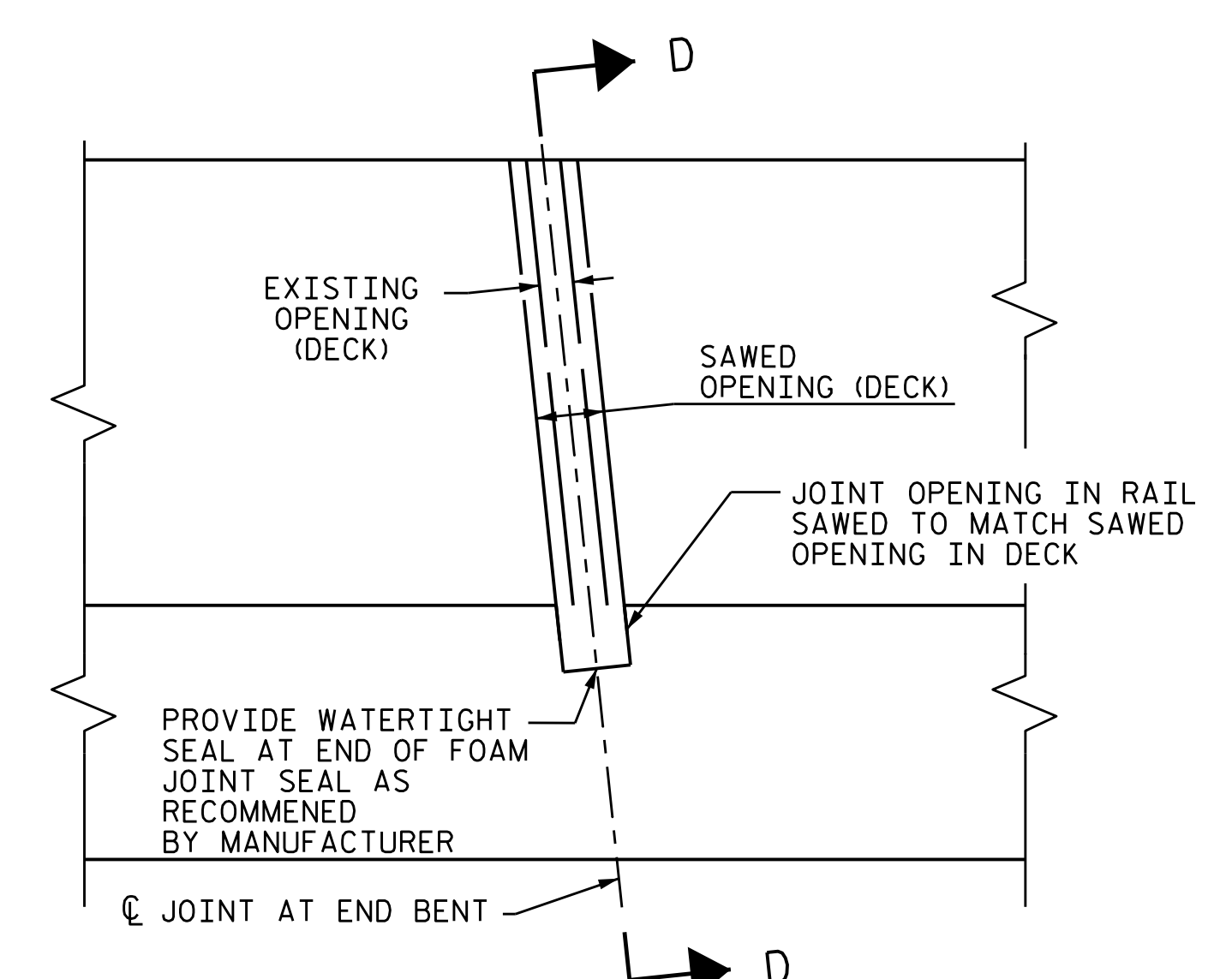
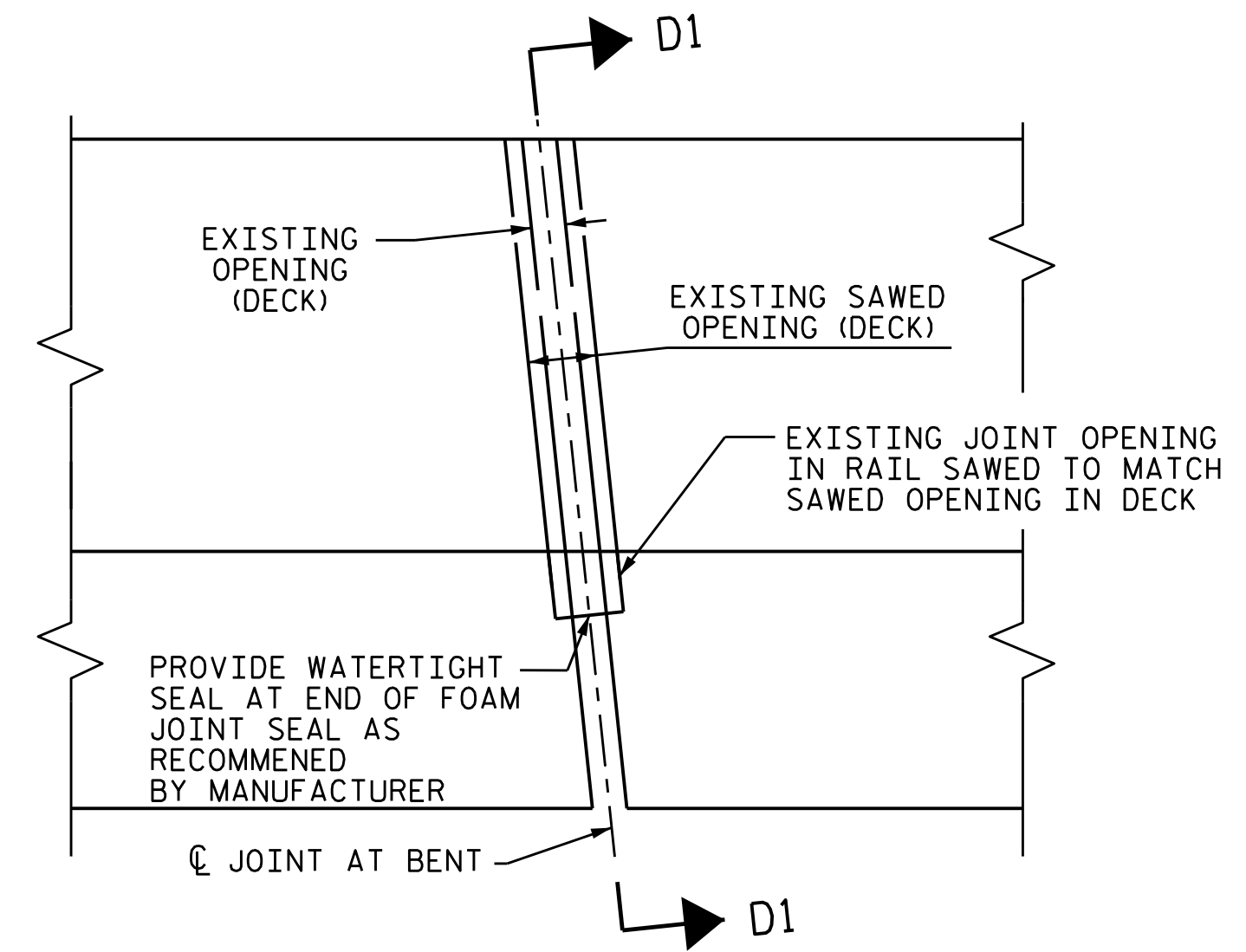
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

**NOTES:**

NONIMAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2".  
 FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.  
 FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.  
 RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.



**JOINT INSTALLATION SEQUENCE AT END BENTS**  
SECTION A-A

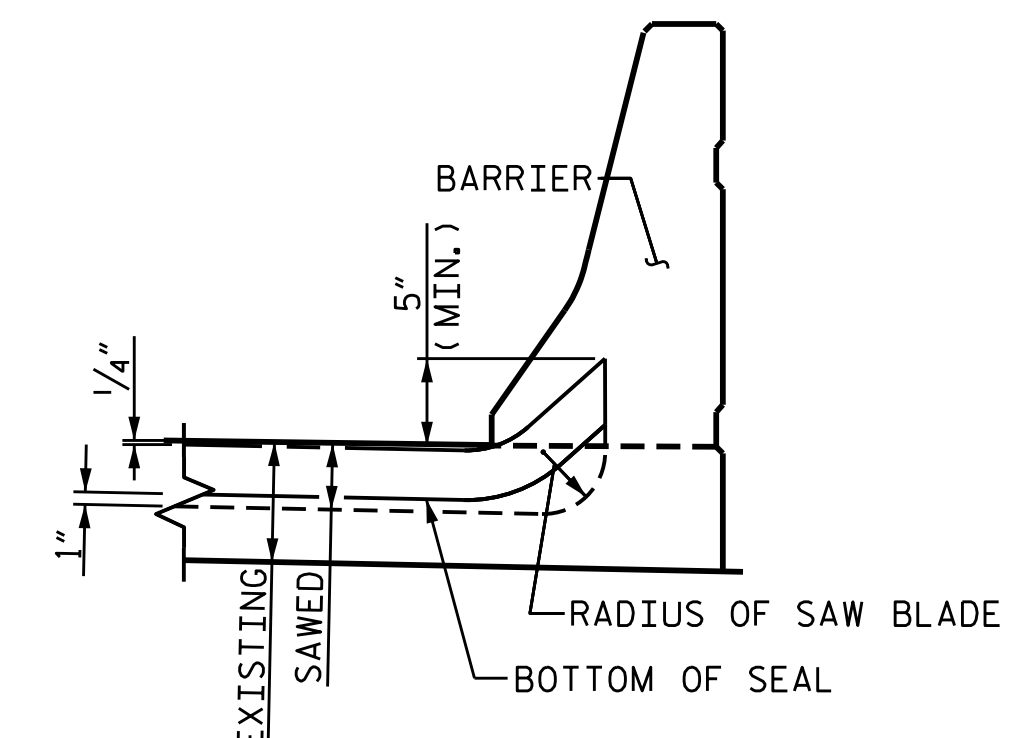


**JOINT INSTALLATION SEQUENCE AT BENT #1**  
SECTION B-B

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

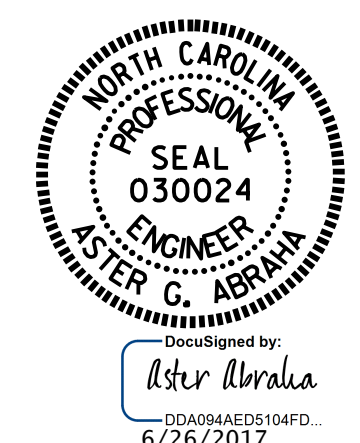
REMOVAL OF CONCRETE AT THE EXISTING JOINT SHALL RESULT IN THE BOTTOM OF THE EXCAVATION BEING REASONABLY FLAT AND LEVEL, TO PROVIDE SUFFICIENT SUBSTRATE FOR PLACEMENT AND SUPPORT OF ELASTOMERIC OR REPAIR CONCRETE.

ELASTOMERIC CONCRETE	CU. FT.
END BENT 1	9.05
END BENT 2	9.05
TOTAL	18.1



**JOINT SEAL DETAILS**  
SECTION D-D & D1-D1

PROJECT NO. I-5850A  
CUMBERLAND COUNTY  
 BRIDGE NO.: 7



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**JOINT DETAILS**

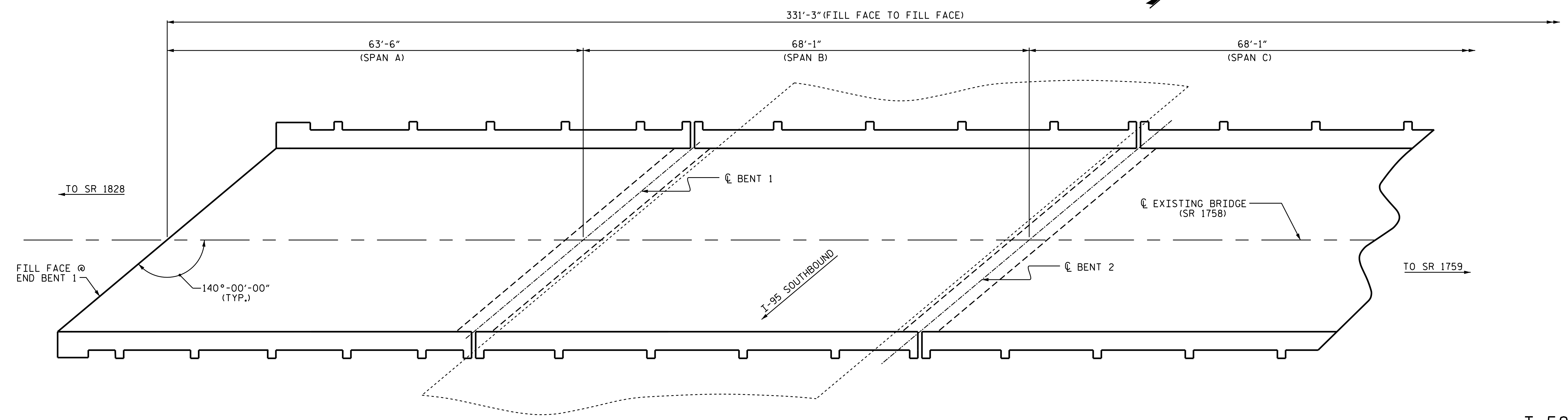
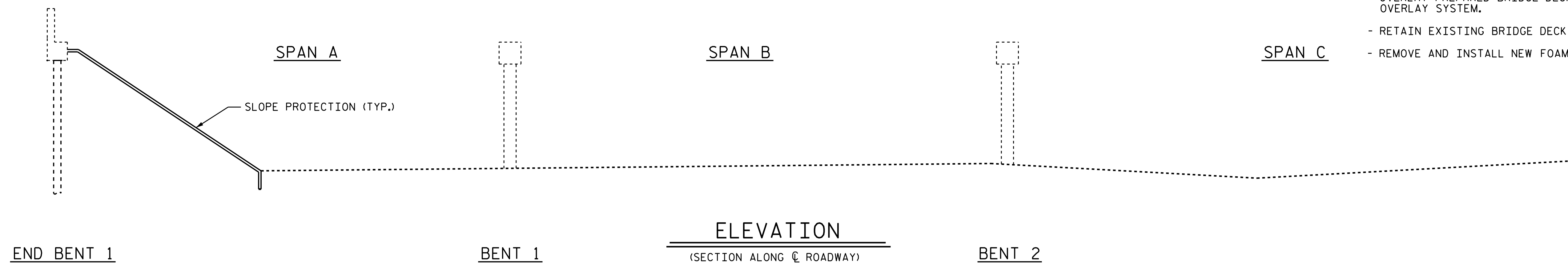
DRAWN BY : P.D. BRYANT DATE : 05/2017  
 CHECKED BY : A.G. ABRAHA DATE : 06/2017

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			35



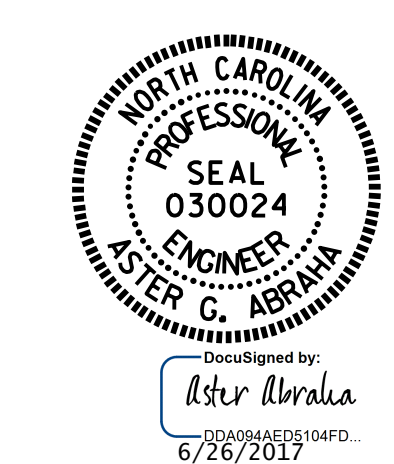
**SCOPE OF WORK**

- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SHOTBLAST METHOD.
- OVERLAY PREPARED BRIDGE DECK WITH EPOXY OVERLAY SYSTEM.
- RETAIN EXISTING BRIDGE DECK JOINTS HEADERS.
- REMOVE AND INSTALL NEW FOAM JOINT SEALS.



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

Resident Engineer \_\_\_\_\_ Date \_\_\_\_\_



PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 152

SHEET 1 OF 2

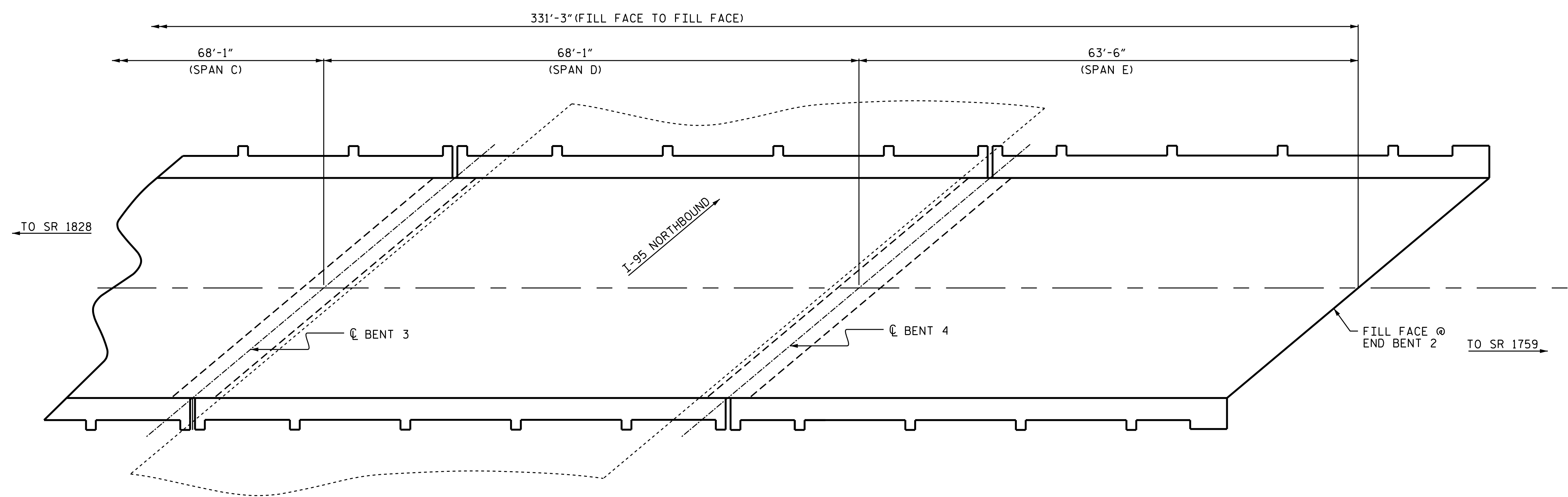
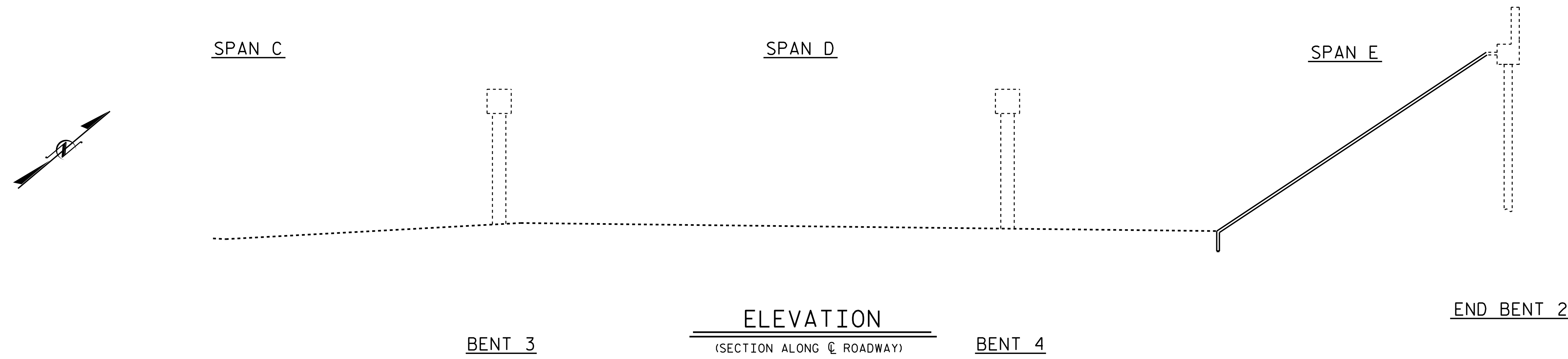
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**  
 FOR BRIDGE ON SR 1758  
 OVER I-95 BETWEEN  
 SR 1759 & SR 1828

DRAWN BY : S. B. WILLIAMS / S. SANDOR DATE : 05/2017  
 CHECKED BY : A. G. ABRAHA DATE : \_\_\_\_\_

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			35



PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 152

SHEET 2 OF 2



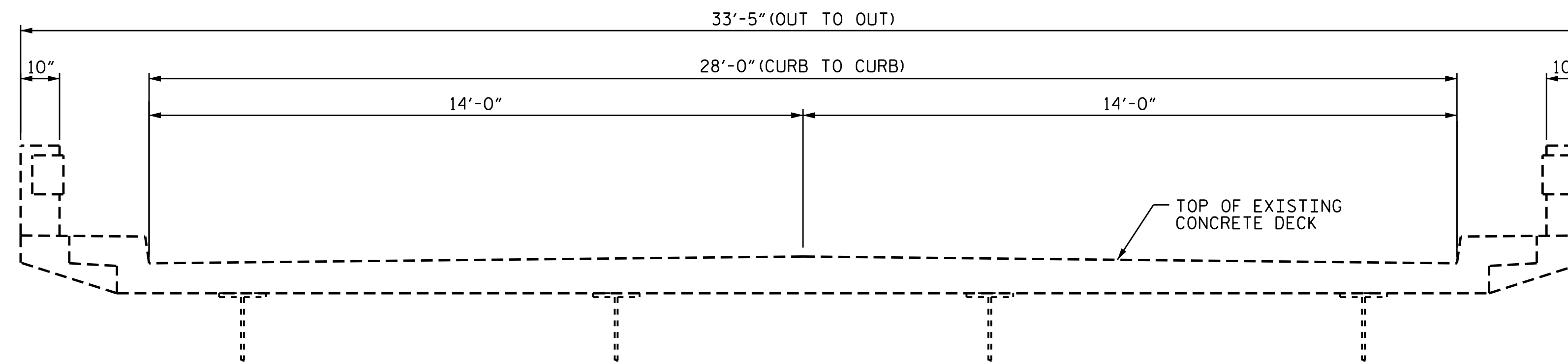
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**  
 FOR BRIDGE ON SR 1758  
 OVER I-95 BETWEEN  
 SR 1759 & SR 1758

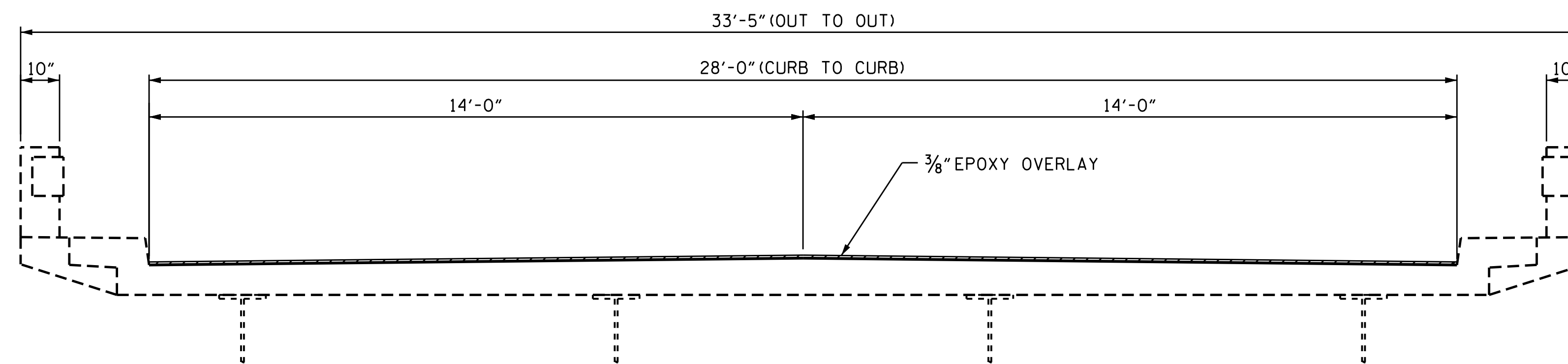
DRAWN BY : S. B. WILLIAMS / S. SANDOR DATE : 05/2017  
 CHECKED BY : A. G. ABRAHA DATE : -

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

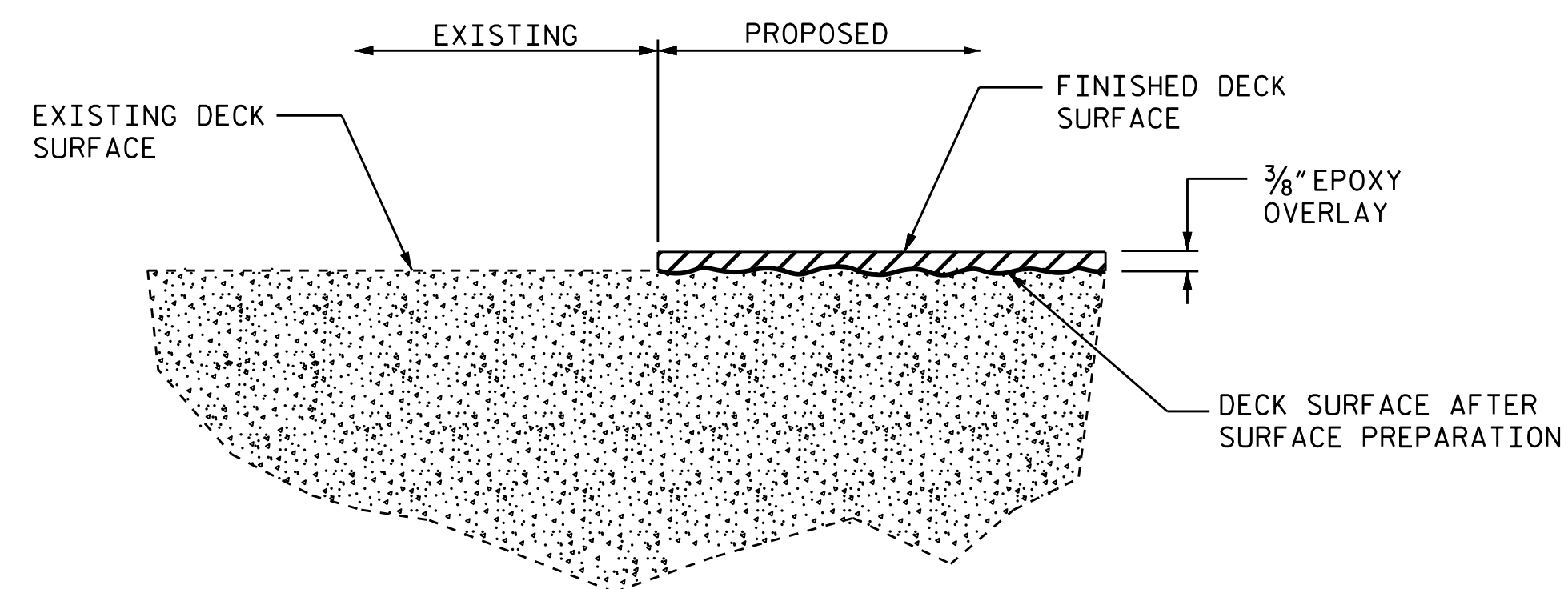
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			35



**TYPICAL SECTION**  
(EXISTING)



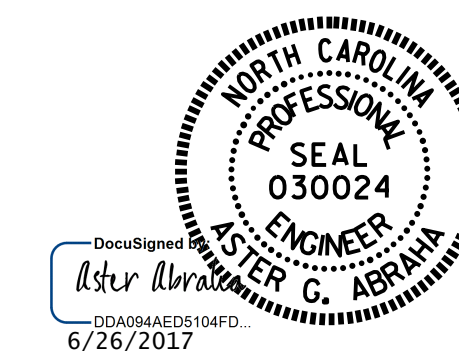
**TYPICAL SECTION**  
(SHOWING PROPOSED  $\frac{3}{8}$ " EPOXY OVERLAY)



**DETAIL OF EPOXY OVERLAY**

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 152

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUPERSTRUCTURE**  
 TYPICAL SECTIONS &  
 EPOXY OVERLAY DETAILS



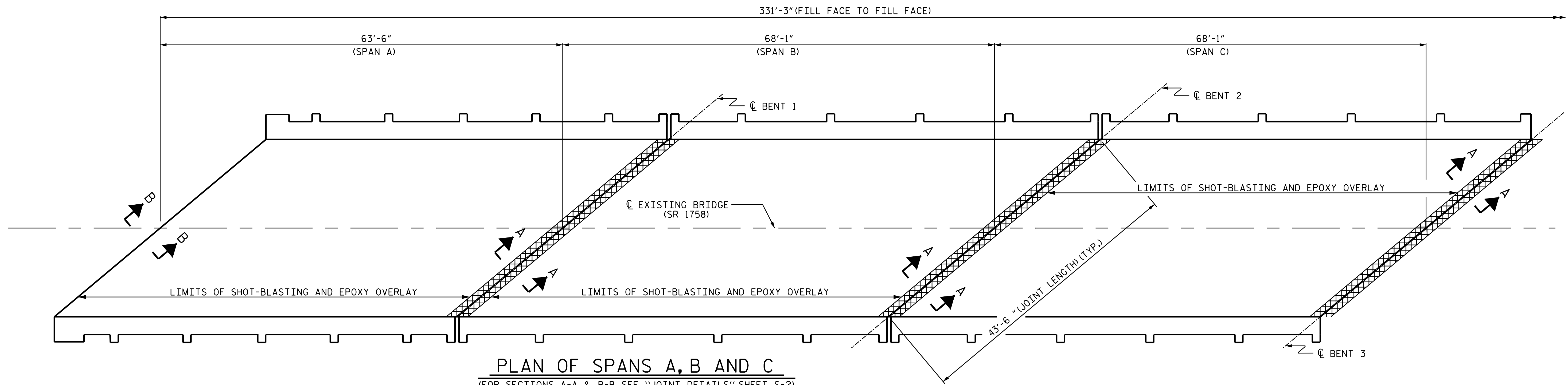
DRAWN BY : S. B. WILLIAMS / S. T. SANDOR DATE : 05/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

26-JUN-2017 16:18  
 R:\Structures\Plans\402.003.I5850.SMU. TS.770152.59.dgn  
 aabrana

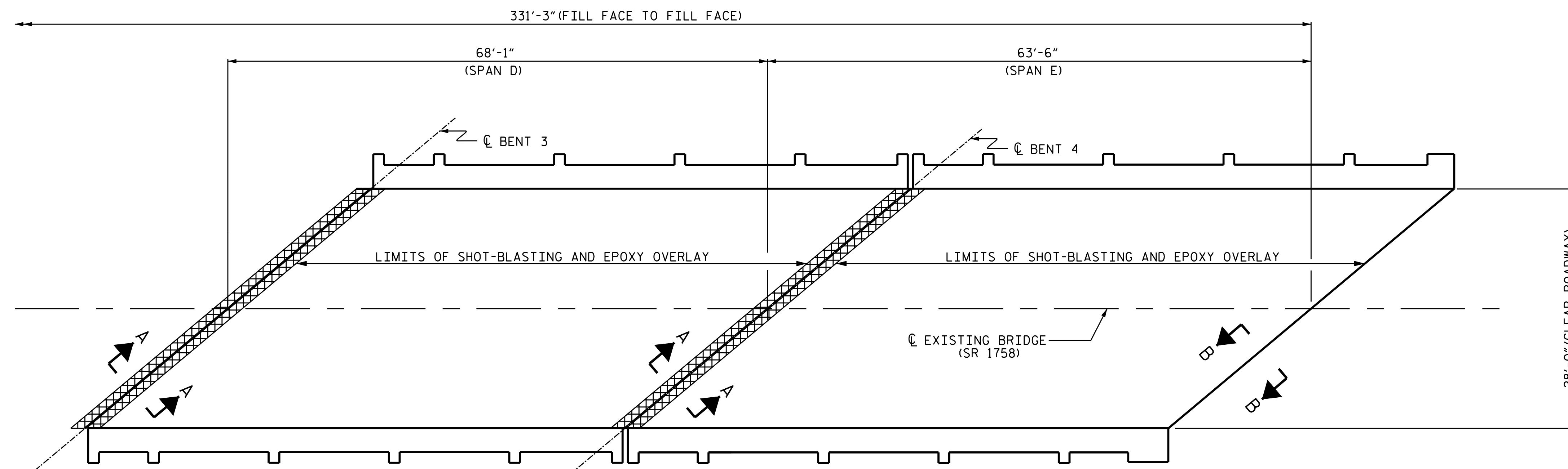
DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			35





**PLAN OF SPANS A, B AND C**  
 (FOR SECTIONS A-A & B-B, SEE "JOINT DETAILS" SHEET S-?)



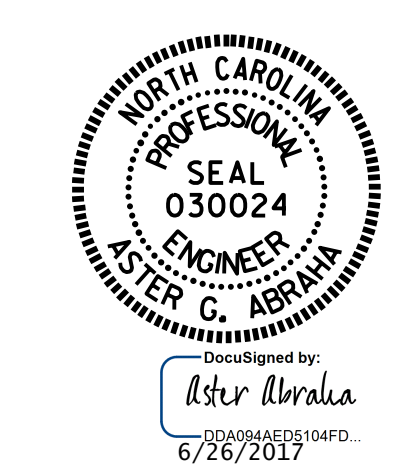
**PLAN OF SPANS D AND E**  
 (FOR SECTIONS A-A & B-B, SEE "JOINT DETAILS" SHEET S-11)

SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
EPOXY OVERLAY SYSTEM	9,275.0 SQ. FT.	
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	* 10 SQ. FT.	
SHOT BLASTING BRIDGE DECK	1,030.6 SQ. YD.	
REPLACEMENT OF JOINT SEAL	174.0 LN. FT.	

**NOTE**  
 \* CONCRETE DECK REPAIR FOR DECK CRACK SEALING IS NOT ANTICIPATED. TOKEN PAY ITEM IS INDICATED FOR PRICING PURPOSE IN CASE UNANTICIPATED REPAIR AREAS ARE ENCOUNTERED.

- EPOXY OVERLAY
- EXISTING JOINT

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 152



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE**  
 SURFACE PREPARATION  
 & EPOXY OVERLAY

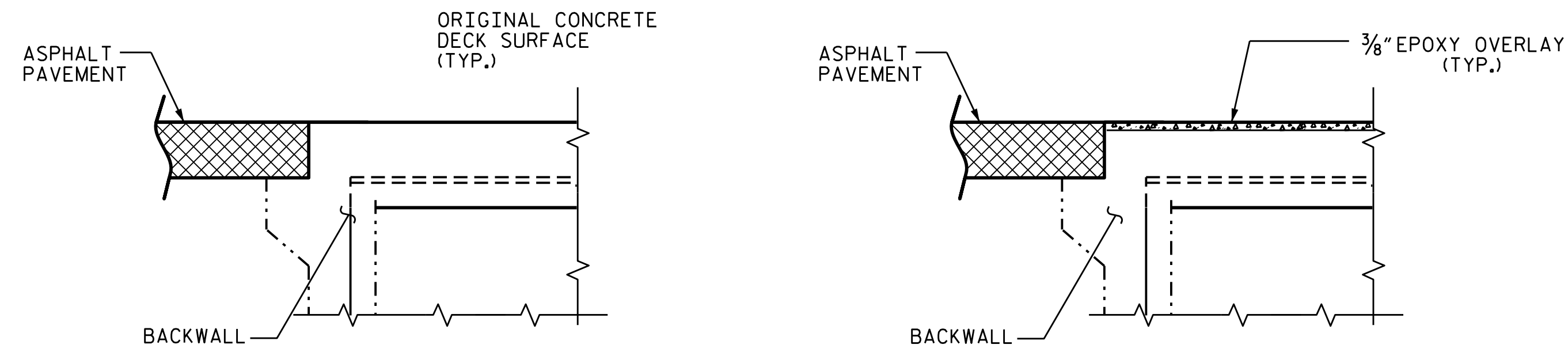
DRAWN BY : S. B. WILLIAMS / S. T. SANDOR DATE : 05/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-10
2			4			TOTAL SHEETS 35

**NOTES:**

FOR FOAM JOINT SEALS SEE SPECIAL PROVISIONS.  
 UNLESS NOTED OTHERWISE RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.  
 NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2".

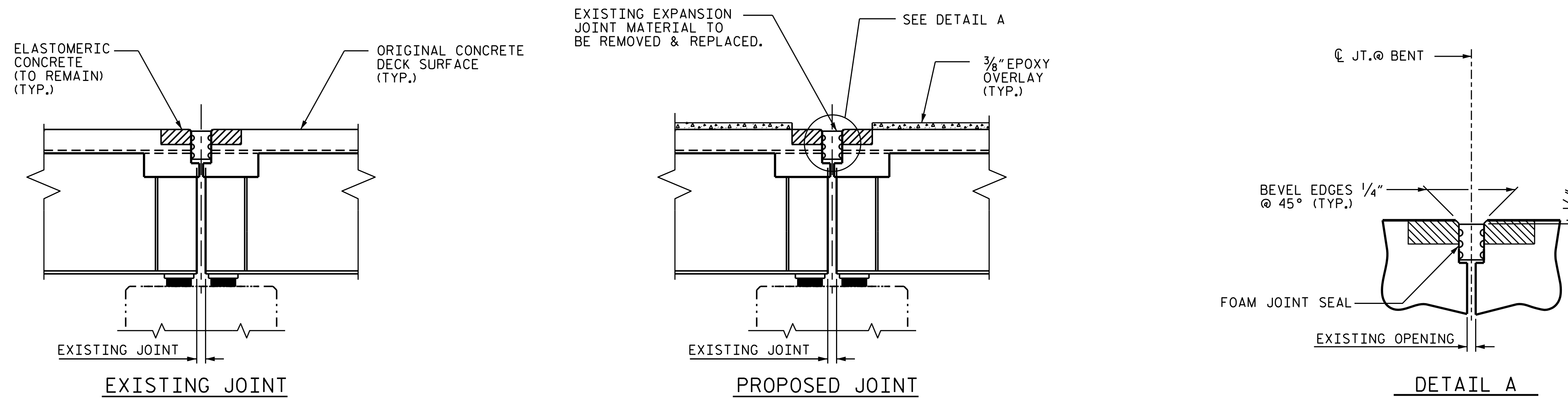


EXISTING JOINT

PROPOSED JOINT

JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION B-B

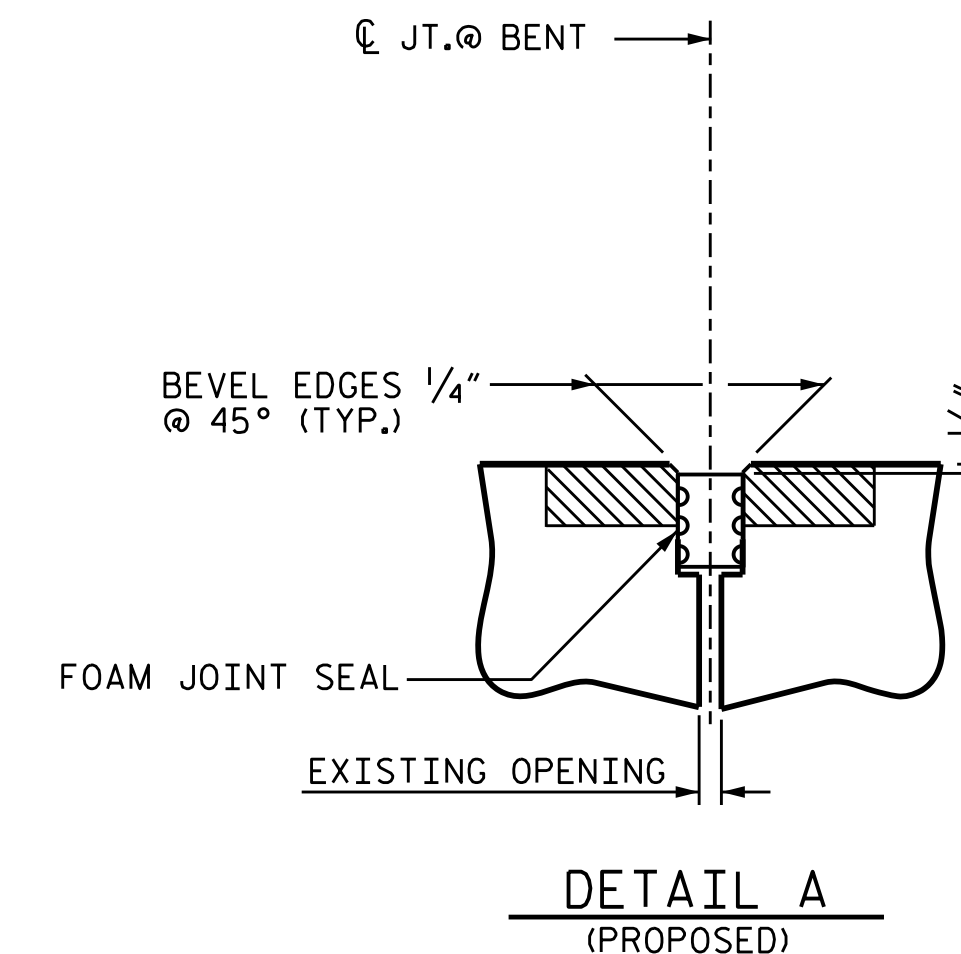


EXISTING JOINT

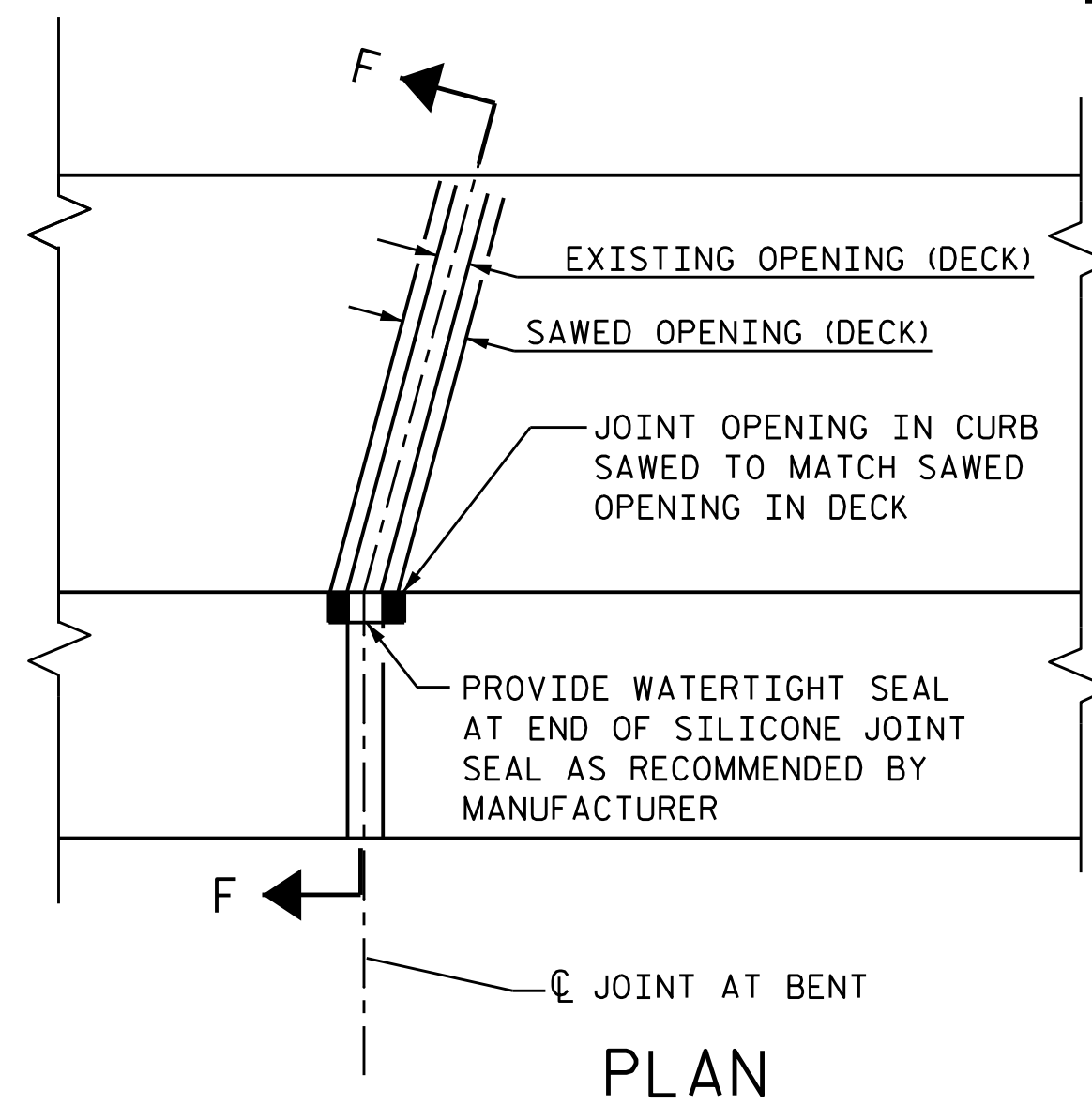
PROPOSED JOINT

JOINT INSTALLATION SEQUENCE AT BENTS

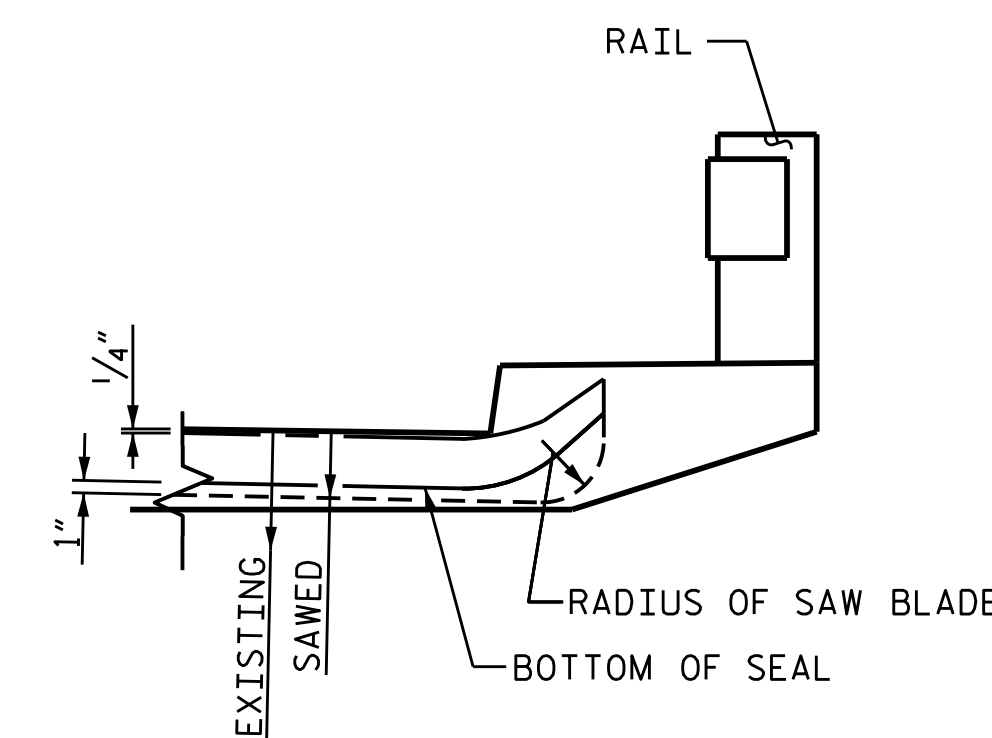
SECTION A-A



DETAIL A  
(PROPOSED)



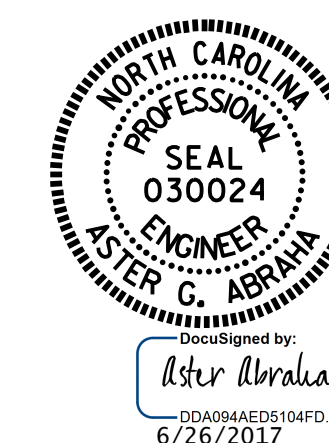
PLAN



SECTION F-F

JOINT SEAL DETAILS AT BENT

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 152



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE  
 JOINT DETAILS**

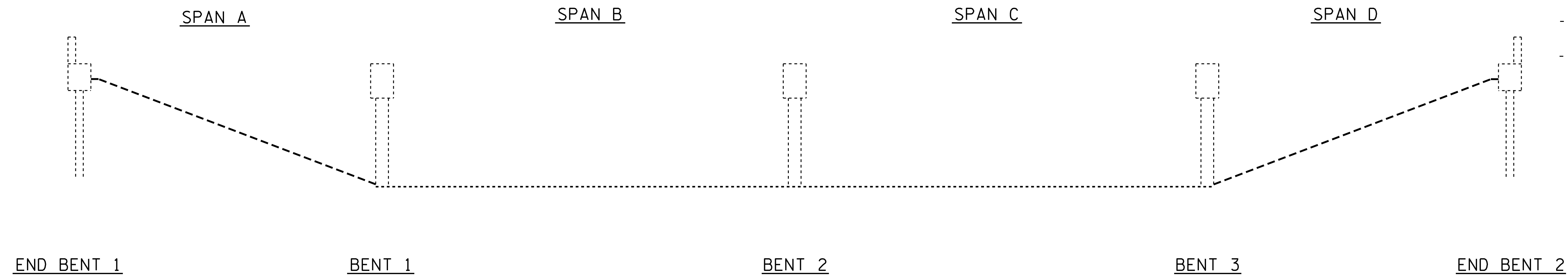
DRAWN BY : S. T. SANDOR DATE : 04/2017  
 CHECKED BY : A. G. ABRAHA DATE : \_\_\_\_\_

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			35

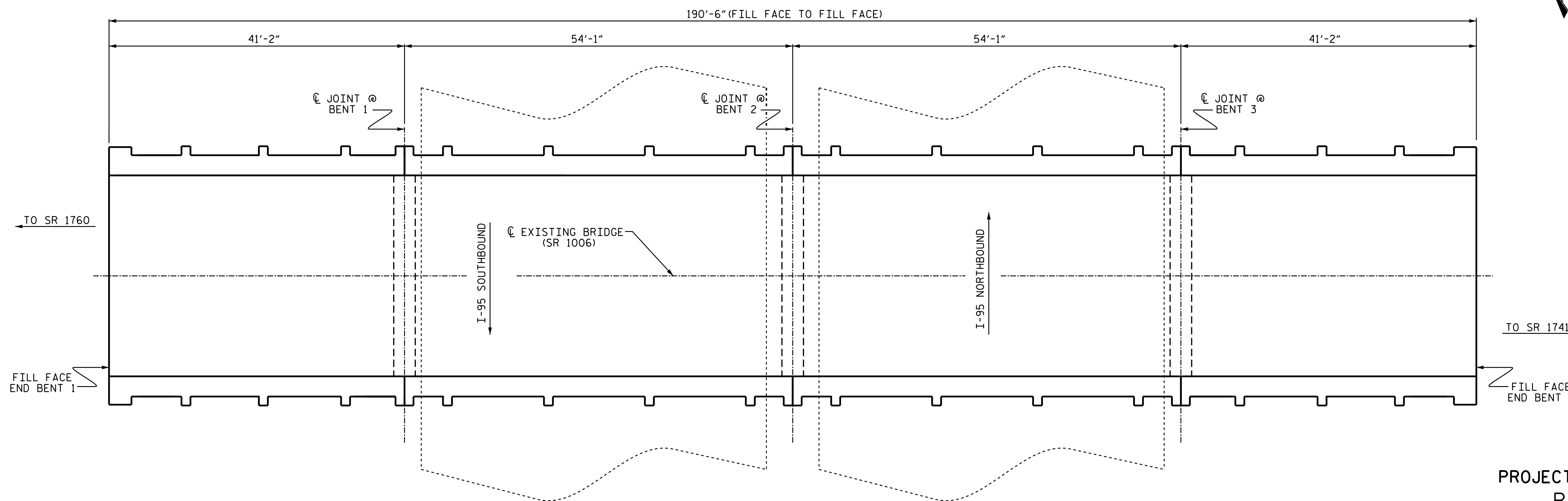
**SCOPE OF WORK**

- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SHOTBLAST METHOD.
- OVERLAY PREPARED BRIDGE DECK WITH EPOXY OVERLAY SYSTEM.
- RETAIN EXISTING BRIDGE DECK JOINTS HEADERS.
- REMOVE AND INSTALL NEW FOAM JOINT SEALS.



**ELEVATION**

(SECTION ALONG  $\text{C}$  ROADWAY)



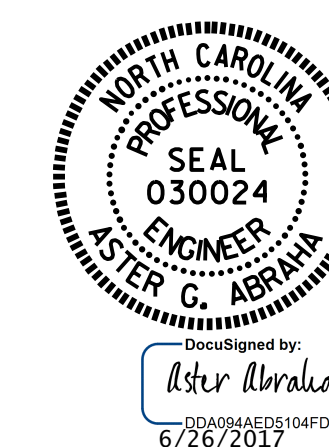
**PLAN**

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

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

Resident Engineer \_\_\_\_\_ Date \_\_\_\_\_

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 154



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**

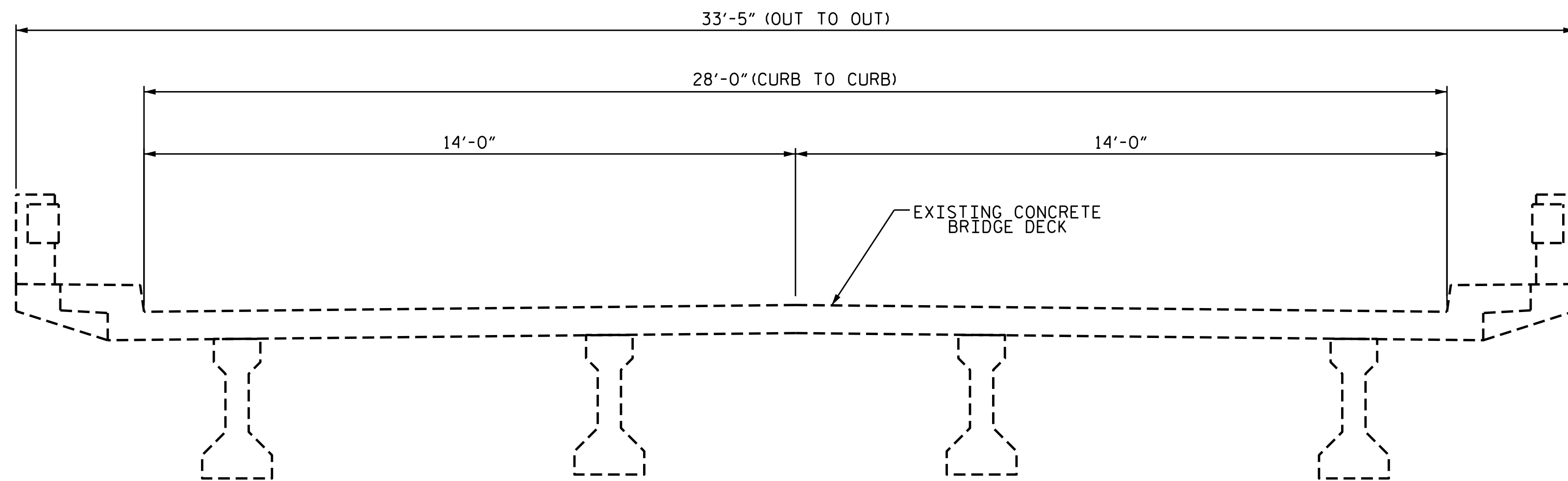
FOR BRIDGE ON SR 1006  
 OVER I-95 BETWEEN  
 SR 1741 & SR 1760

DRAWN BY : S. B. WILLIAMS / S. SANDOR DATE : 05/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

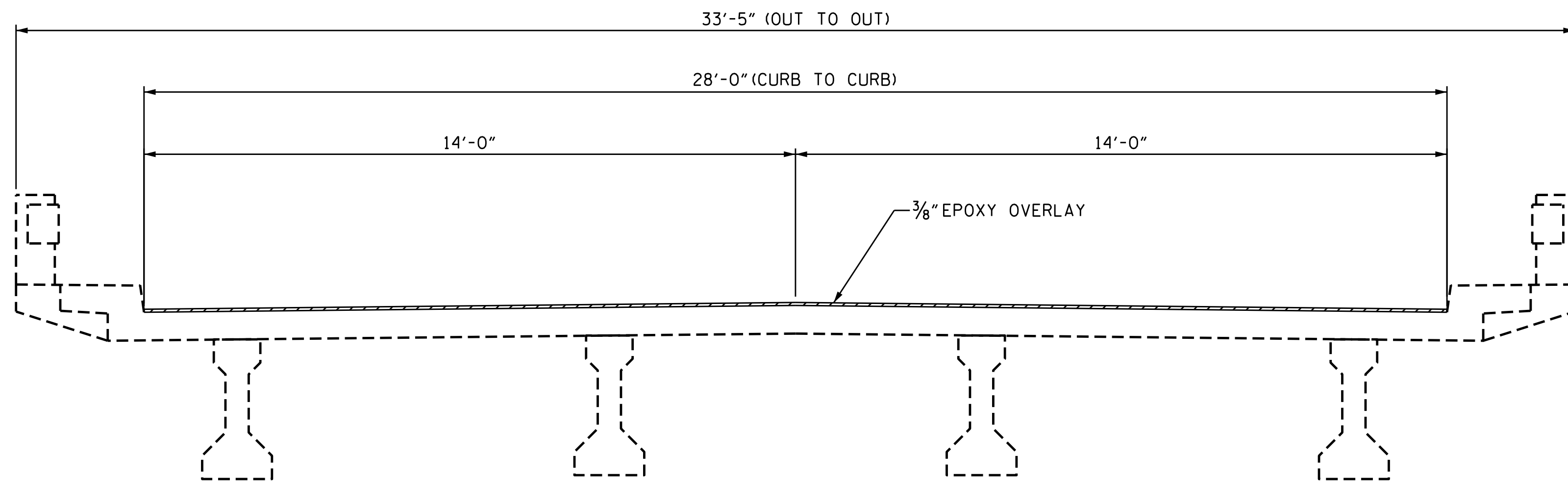
DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-12
2			4			35

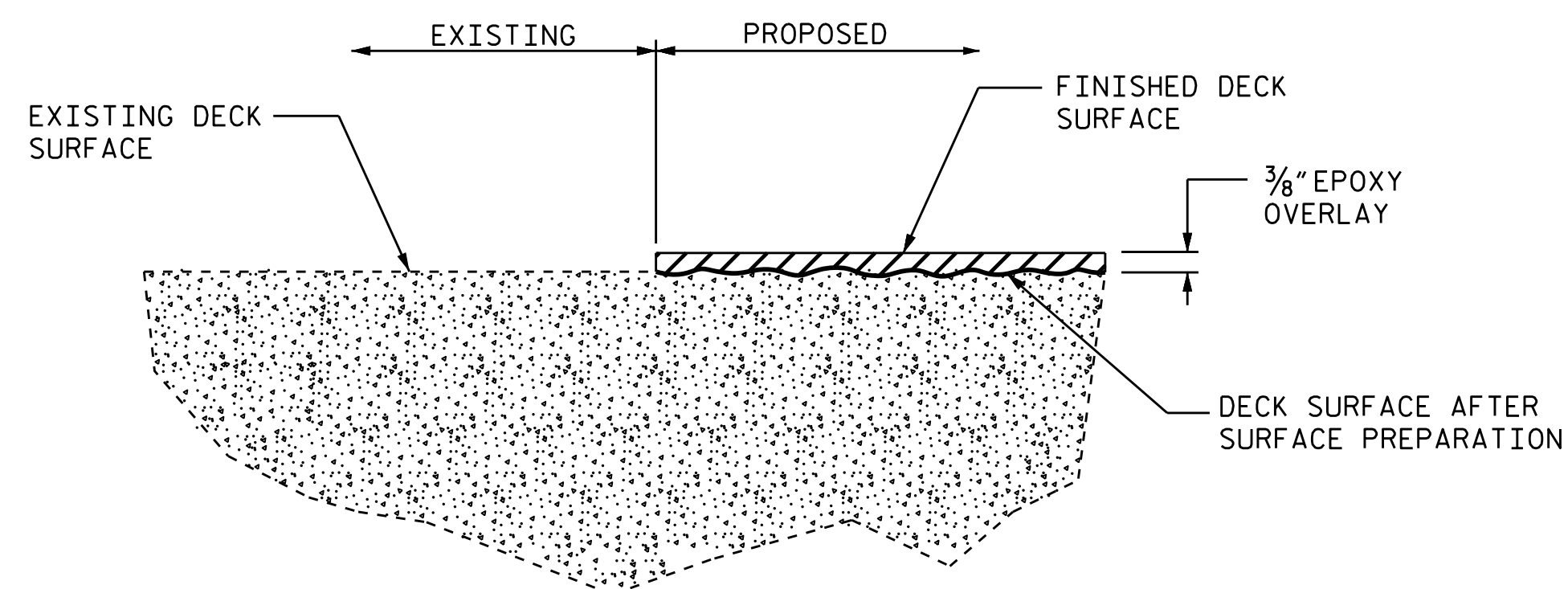




**TYPICAL SECTION**  
(EXISTING)



**TYPICAL SECTION**  
(SHOWING PROPOSED 3/8" EPOXY OVERLAY)

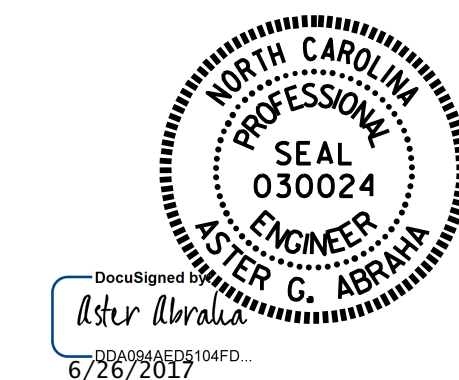


**DETAIL OF EPOXY OVERLAY**

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 154

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**TYPICAL SECTION**  
**EPOXY DECK**  
**OVERLAY DETAILS**



DRAWN BY : S. T. SANDOR DATE : 06/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

26-JUN-2017 16:18  
 R:\Structures\Plans\403.021.I5850.SMU. TS. 770154\_S13.dgn  
 aabrana

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

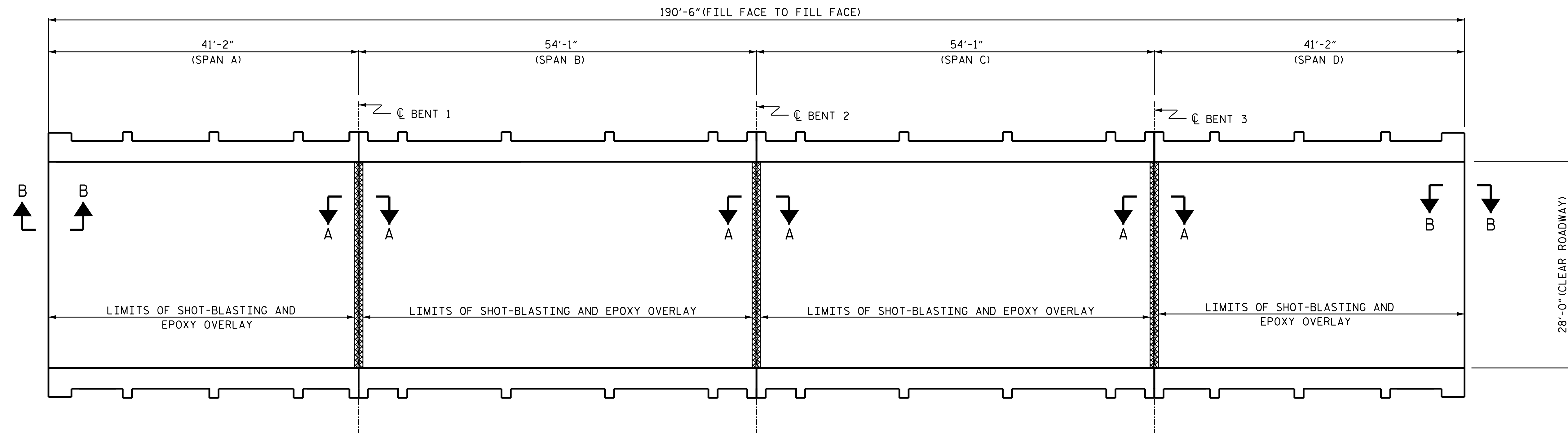
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			35

SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
EPOXY OVERLAY SYSTEM	5,334.0 SQ. FT.	
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	* 10.0 SQ. FT.	
REPLACEMENT OF FOAM JOINT SEALS	84.0 LN. FT.	
SHOT BLASTING BRIDGE DECK	592.7 SQ. YD.	

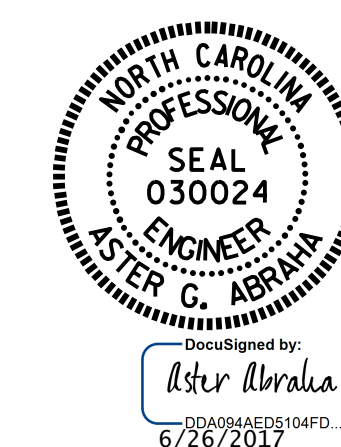
NOTE

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



PLAN OF SPANS A, B, C, & D  
(FOR SECTIONS A-A & B-B SEE "JOINT DETAILS" SHEET S-15)

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 154

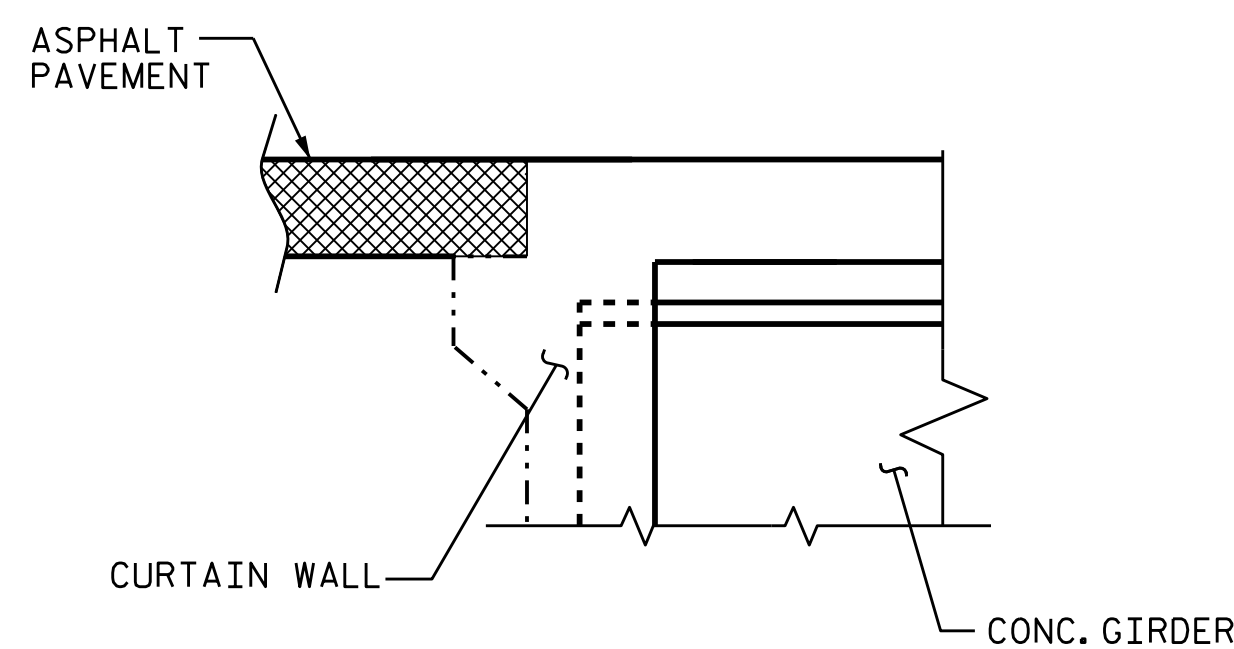


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUPERSTRUCTURE**  
**SURFACE PREPARATION**  
**& EPOXY OVERLAY**

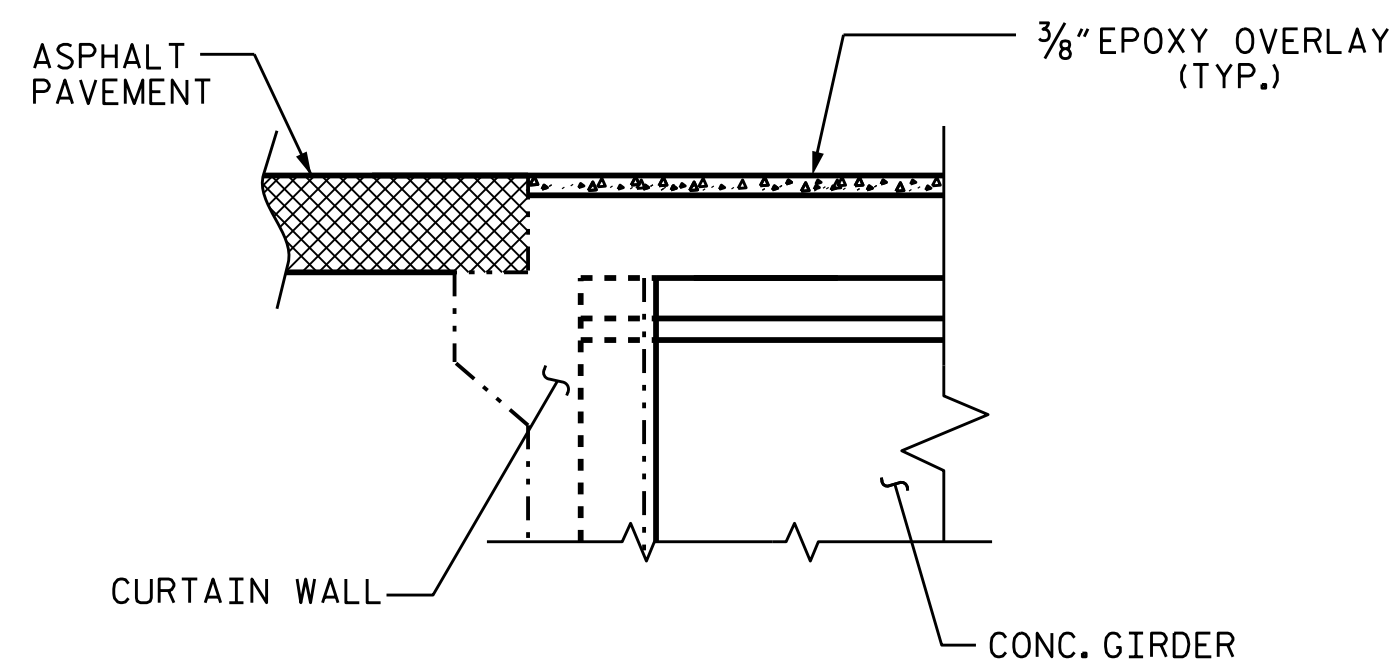
DRAWN BY : S. B. WILLIAMS / S. T. SANDOR DATE : 05/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-14
2			4			TOTAL SHEETS 35



EXISTING JOINT



PROPOSED JOINT

JOINT INSTALLATION SEQUENCE AT END BENTS

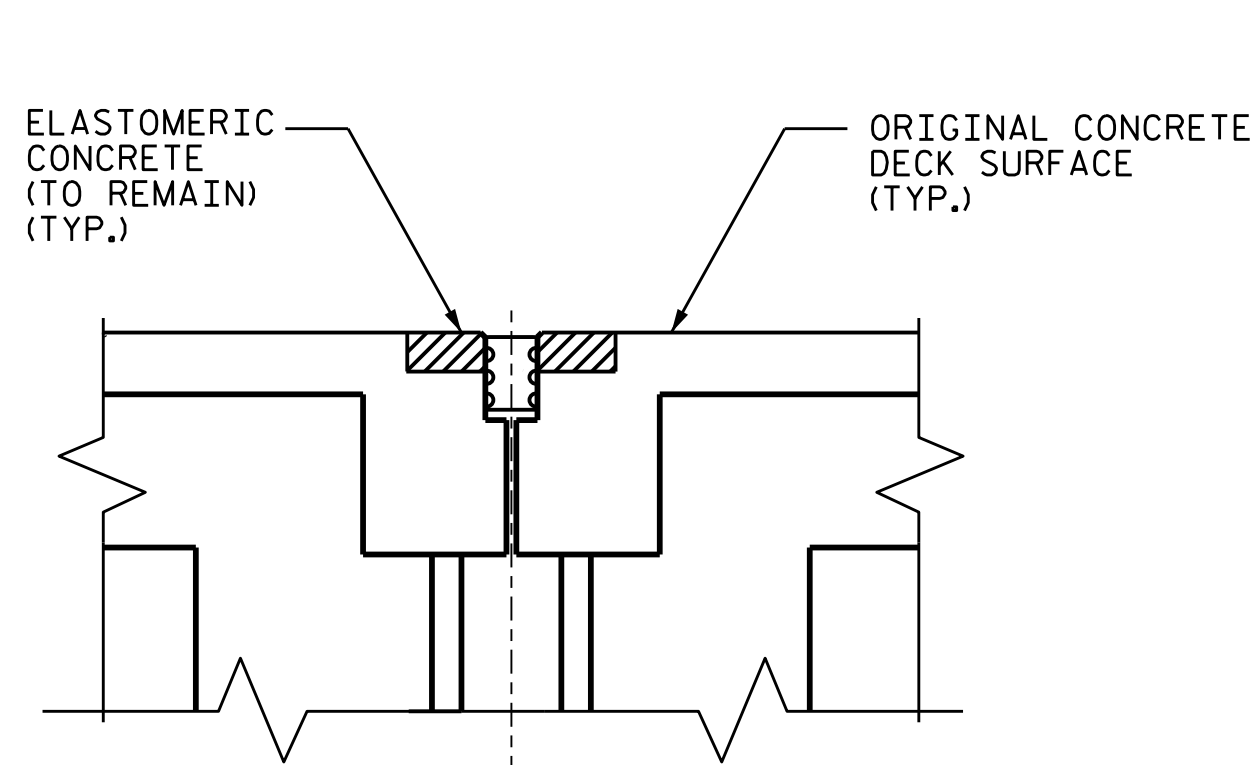
SECTION B-B

NOTES:

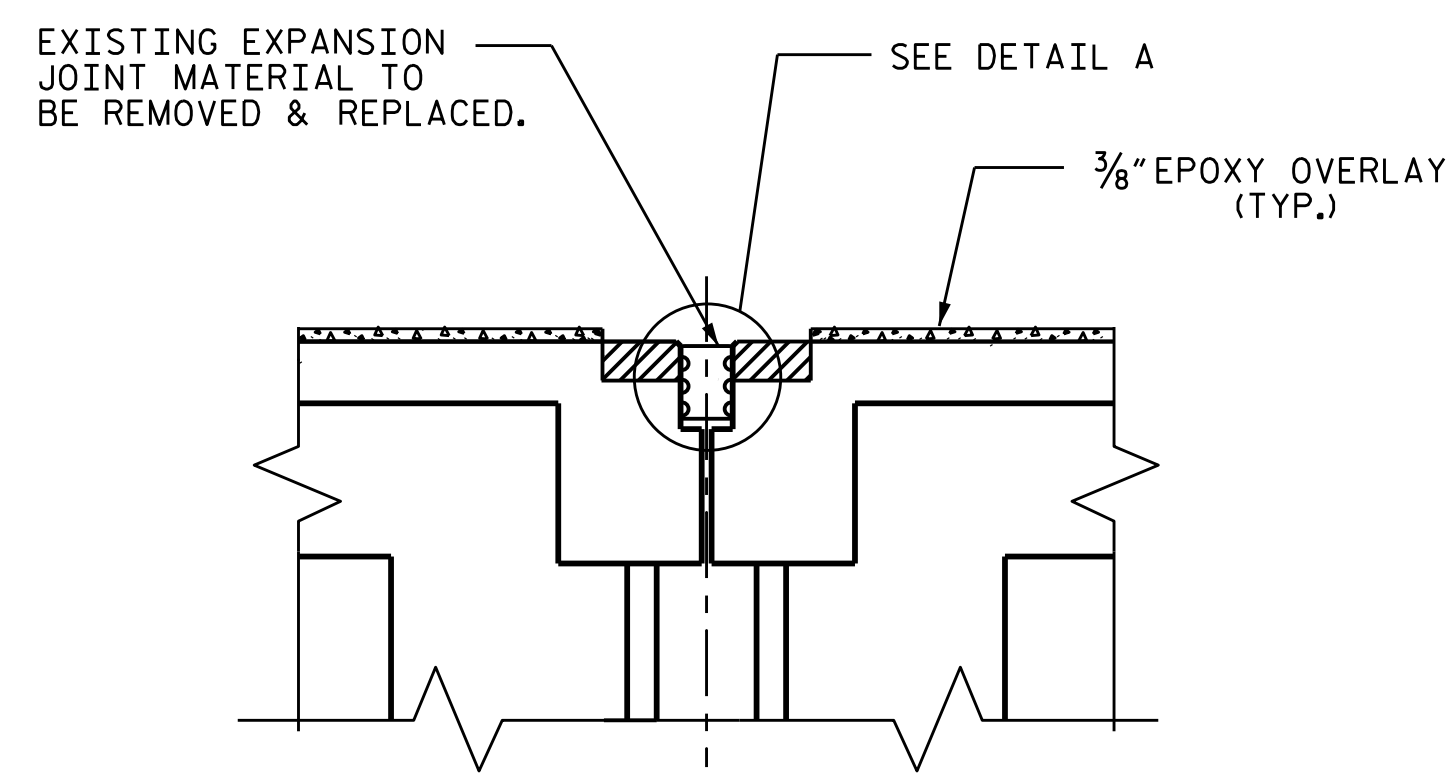
FOR FOAM JOINT SEALS SEE SPECIAL PROVISIONS.

UNLESS NOTED OTHERWISE RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.

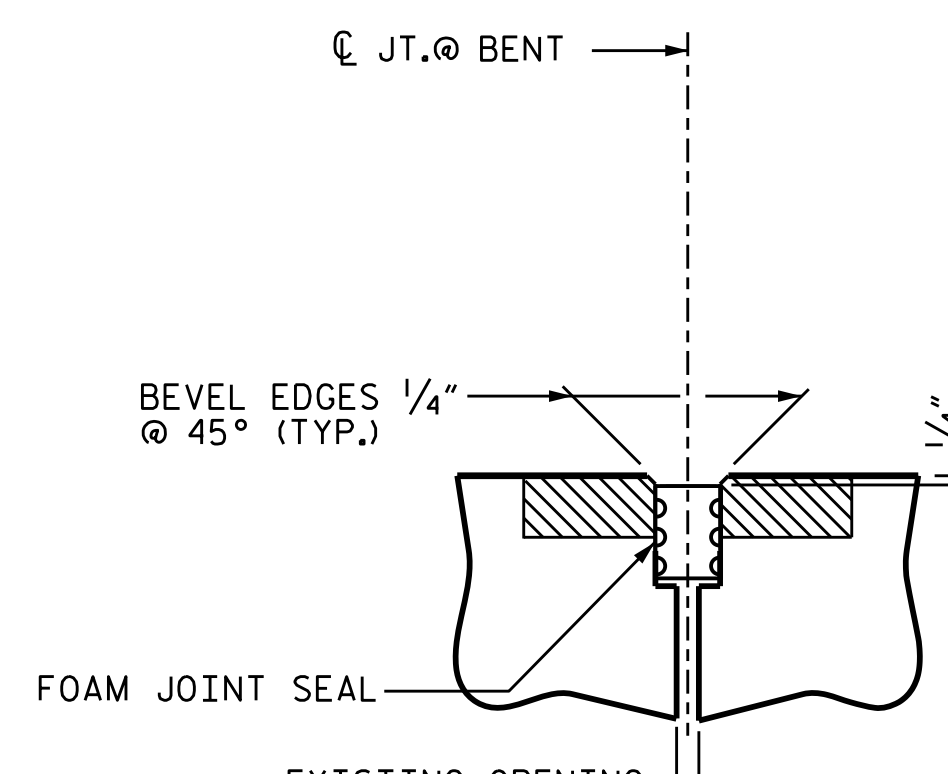
NONIMAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2".



EXISTING JOINT



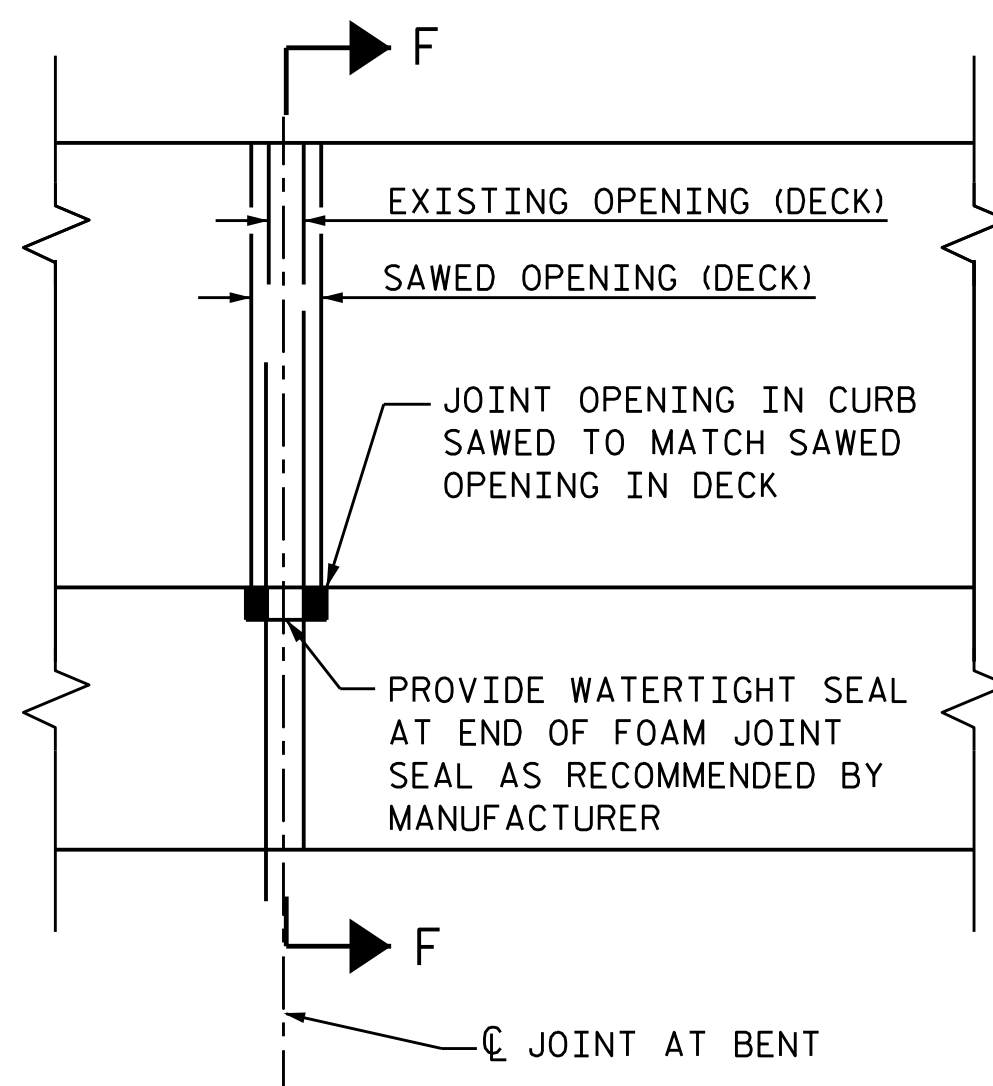
PROPOSED JOINT



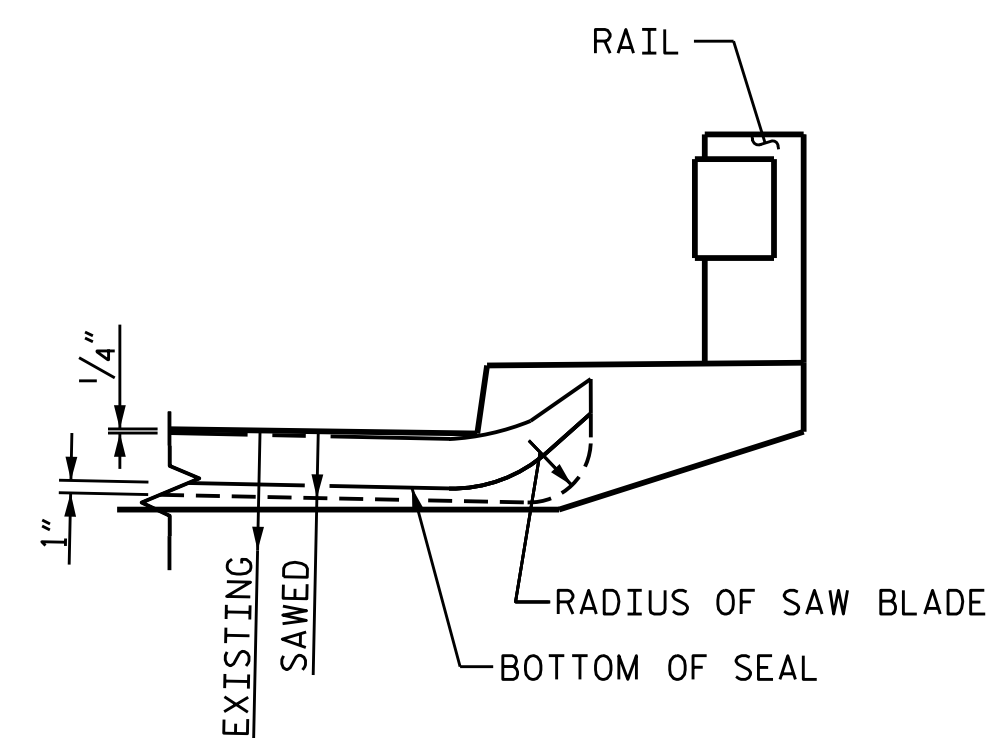
DETAIL A  
(PROPOSED)

JOINT INSTALLATION SEQUENCE AT BENTS

SECTION A-A



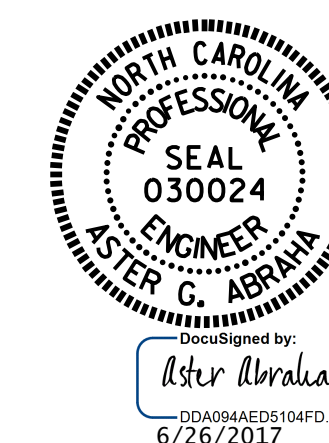
PLAN



SECTION F-F

JOINT SEAL DETAILS AT BENT

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 154



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE  
 JOINT DETAILS**

DRAWN BY : S. T. SANDOR DATE : 04/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

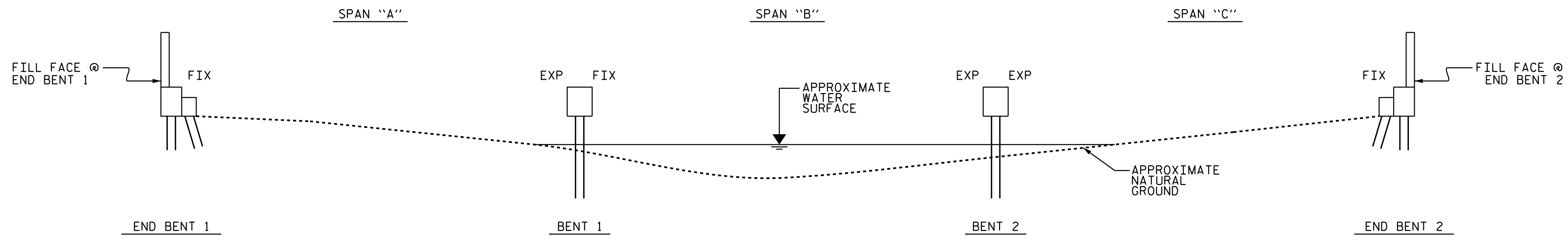
DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			35

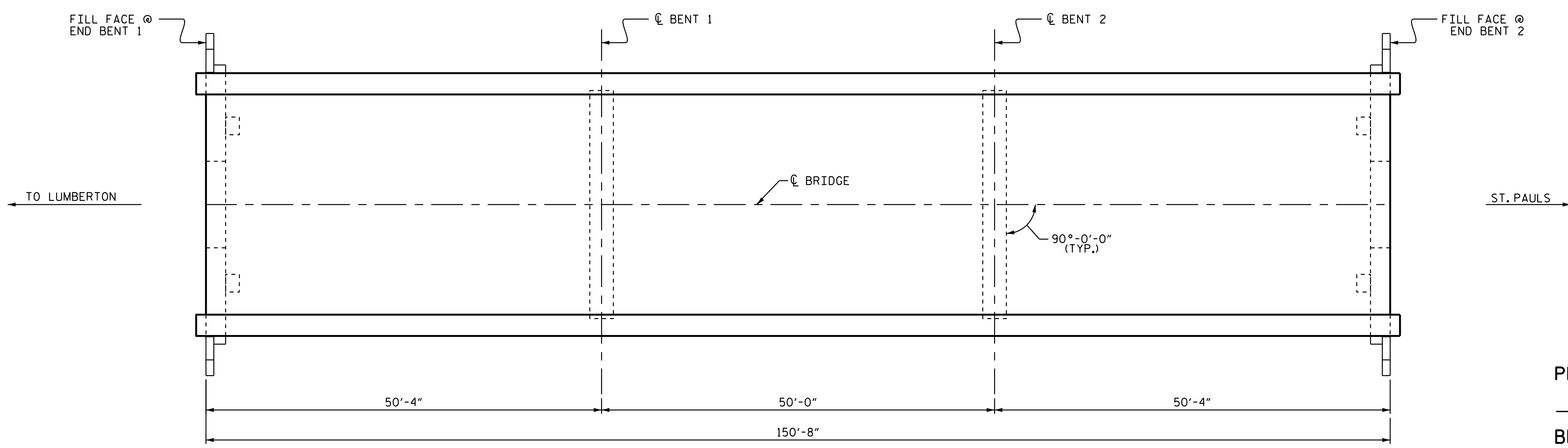


**SCOPE OF WORK:**

- REMOVE ASPHALT WEARING SURFACE.
- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SCARIFICATION METHODS FOR PREPARING A DECK FOR POLYESTER POLYMER CONCRETE OVERLAY.
- OVERLAY PREPARED BRIDGE DECK WITH POLYESTER POLYMER CONCRETE.
- RECONSTRUCT BRIDGE DECK JOINTS AND INSTALL NEW FOAM JOINT SEALS.
- GROOVE CONCRETE BRIDGE DECK
- MILL APPROACHES



**SECTION ALONG CL ROADWAY**

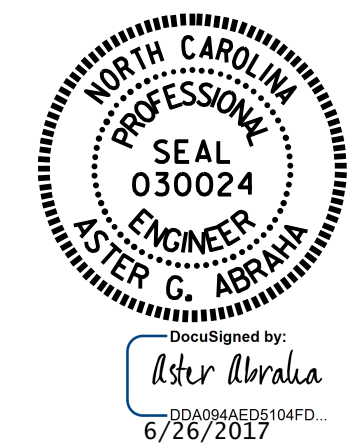


**PLAN**

(PILES NOT SHOWN FOR CLARITY)

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

Resident Engineer \_\_\_\_\_ Date \_\_\_\_\_



PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 156

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

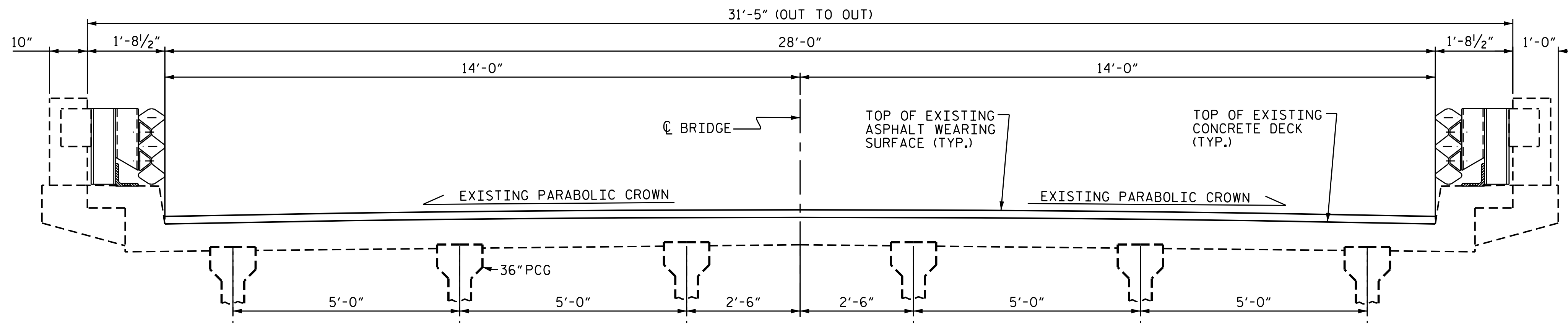
**GENERAL DRAWING**

BRIDGE #156  
 ON I-95 OVER  
 BIG MARSH SWAMP

DRAWN BY : M.A. LEE / P.D. BRYANT DATE : 06/2017  
 CHECKED BY : A.G. ABRAHA DATE : 06/2017

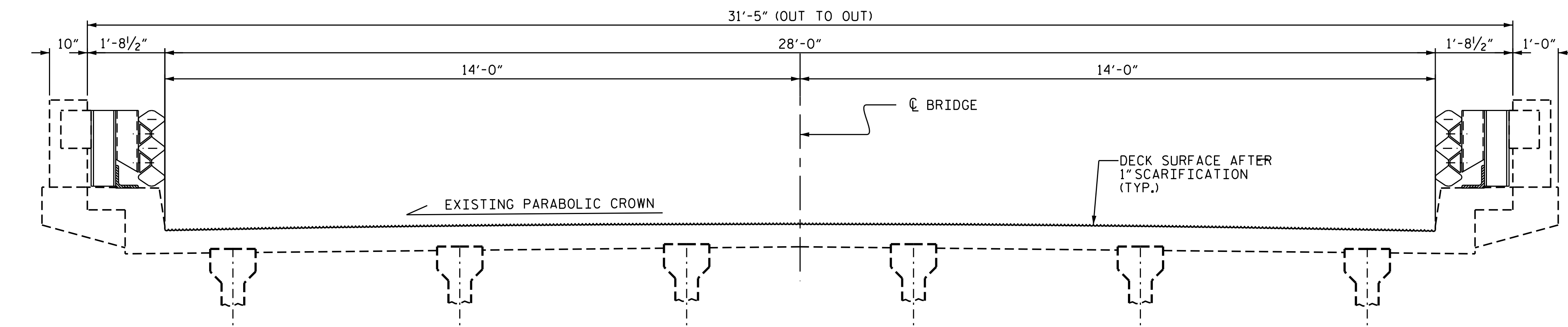
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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



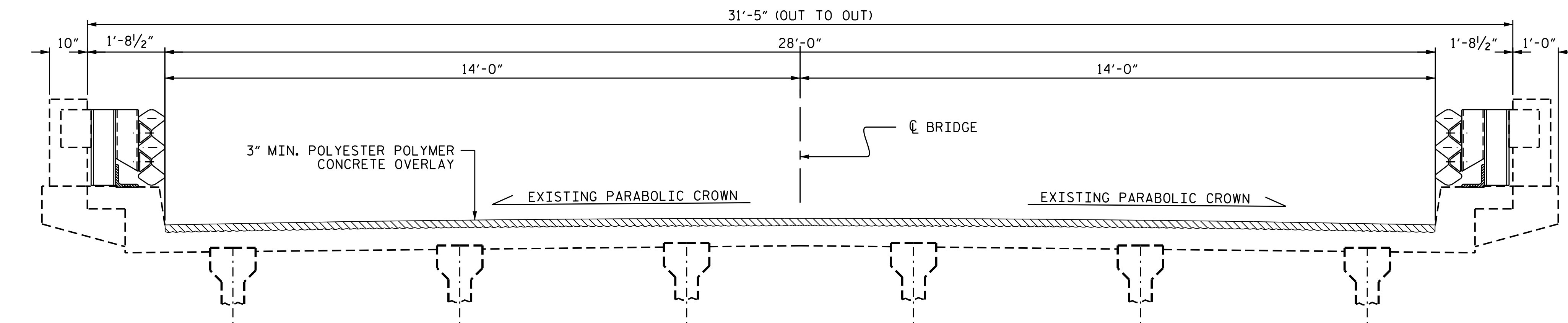
TYPICAL SECTION

EXISTING



TYPICAL SECTION

AFTER EXISTING ASPHALT WEARING SURFACE REMOVED DOWN TO ORIGINAL CONCRETE DECK SURFACE AND DECK HAS BEEN SCARIFIED 1".

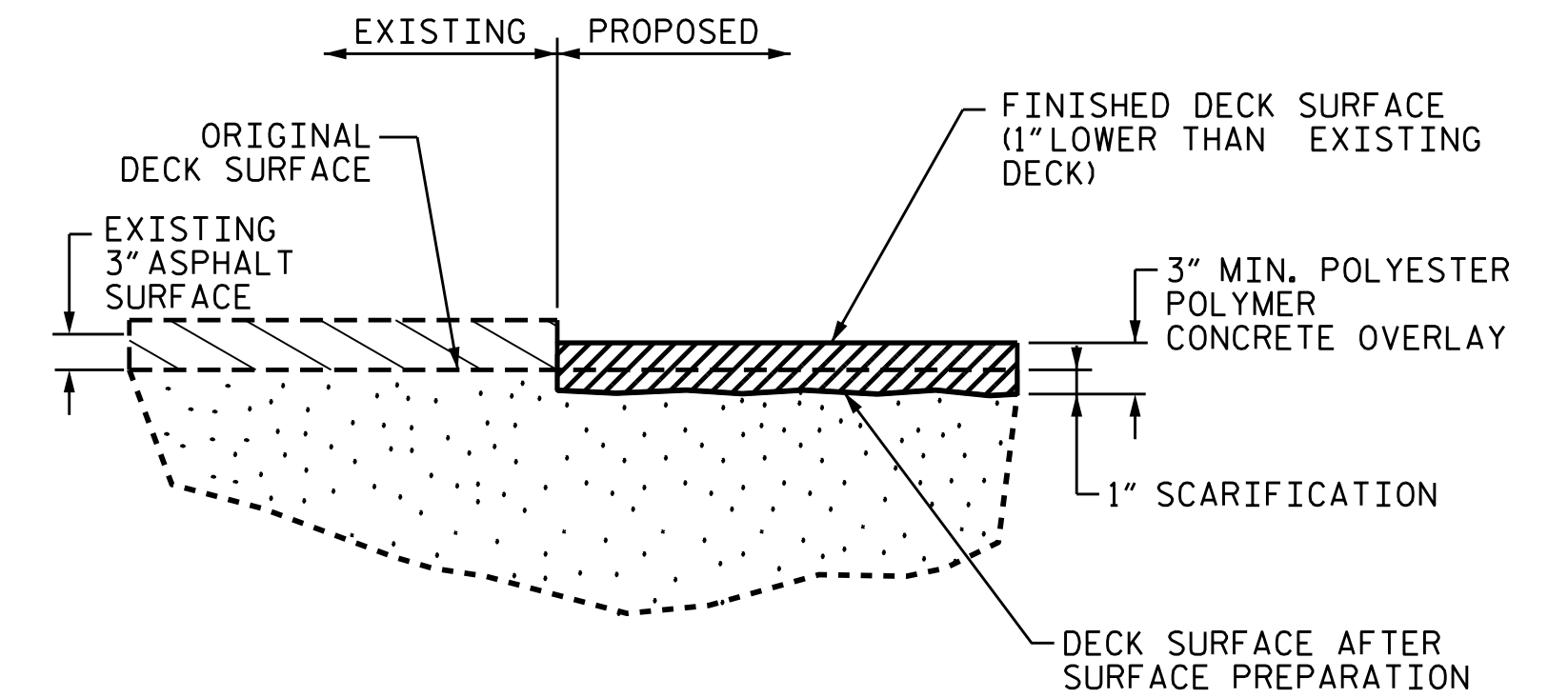


TYPICAL SECTION

AFTER PPC OVERLAY PLACED, NOTE THAT TOP OF PPC IS AT SAME ELEVATION AS EXISTING CONCRETE DECK, AND IS 3' LOWER THAN EXISTING ASPHALT WS.

NOTE:

FOLLOWING ASPHALT WEARING SURFACE REMOVAL, THE CONTRACTOR SHALL DETERMINE THE CONCRETE COVER TO THE TOP MAT OF STEEL AND SUBMIT TO THE ENGINEER FOR VERIFICATION OF FINAL GRADE.



DETAIL FOR POLYESTER POLYMER CONCRETE OVERLAY

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 156



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUPERSTRUCTURE  
 TYPICAL SECTION  
 &  
 OVERLAY DETAILS

DRAWN BY : M.A. LEE / P.D. BRYANT DATE : 06/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

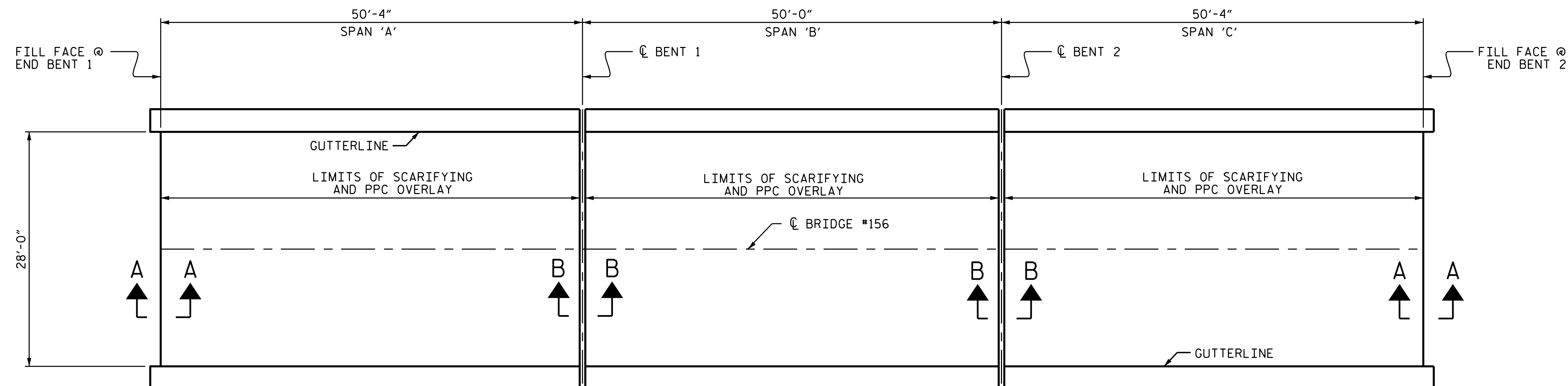
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			35

SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	469.0 SY	
CLASS II SURFACE PREPARATION	* 10.0 SY	
SHOTBLASTING BRIDGE DECK	469.0 SY	
PPC MATERIALS	39.0 CY	
PLACING & FINISHING PPC OVERLAY	469.0 SY	
BRIDGE DECK GROOVING	3,750.0 SF	

\* CLASS II SURFACE PREPARATION FOR PPC OVERLAY IS ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE FOR REPAIR AREAS THAT ARE ENCOUNTERED.



□ - MILLING, SCARIFICATION AND PPC OVERLAY

PLAN OF SPANS

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

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 156



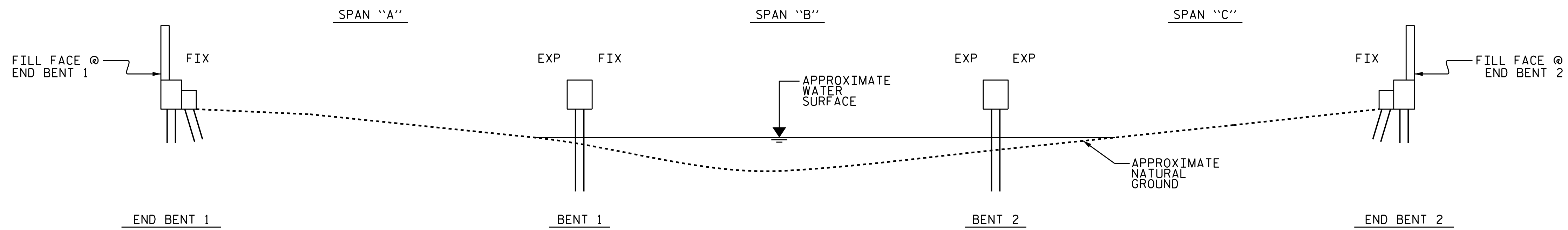
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 SURFACE PREPARATION  
 & PPC OVERLAY

DRAWN BY : M.A. LEE / P.D. BRYANT DATE : 6/2017  
 CHECKED BY : A.G. ABRAHA DATE : 06/2017

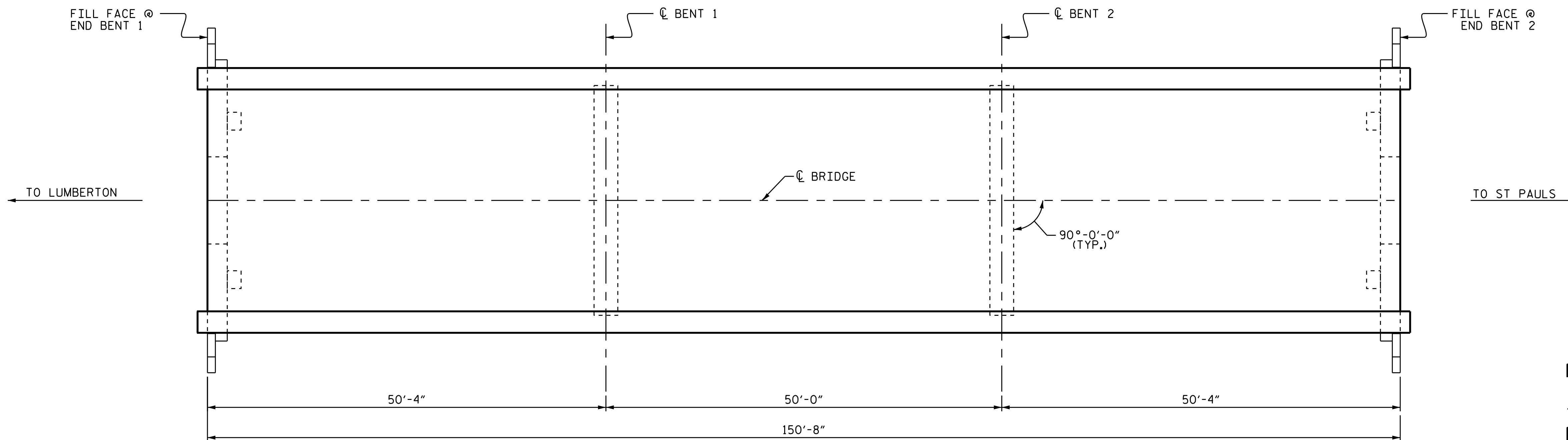
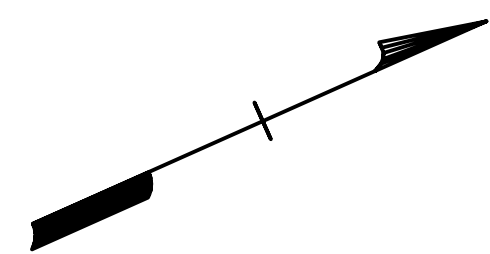
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-18
2			4			TOTAL SHEETS 35





SECTION ALONG C ROADWAY



PLAN

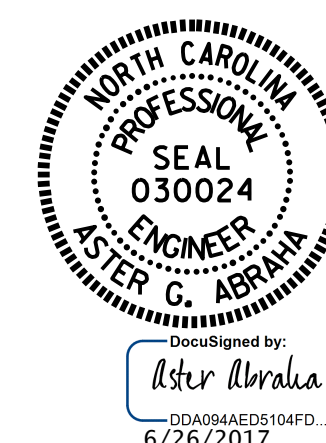
(PILES NOT SHOWN FOR CLARITY)

**SCOPE OF WORK:**

- REMOVE ASPHALY WEARING SURFACE.
- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SCARIFICATION METHODS FOR PREPARING A DECK FOR POLYESTER POLYMER CONCRETE OVERLAY.
- OVERLAY PREPARED BRIDGE DECK WITH POLYESTER POLYMER CONCRETE.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- RECONSTRUCT BRIDGE DECK JOINTS AND INSTALL NEW FOAM JOINT SEALS.
- GROOVE CONCRETE BRIDGE DECK

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

Resident Engineer Date



PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 158

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL DRAWING

BRIDGE #158  
 ON I-95 OVER  
 BIG MARSH SWAMP

DRAWN BY : M.A. LEE / P.D. BRYANT DATE : 06/2017  
 CHECKED BY : A.G. ABRAHA DATE : 06/2017

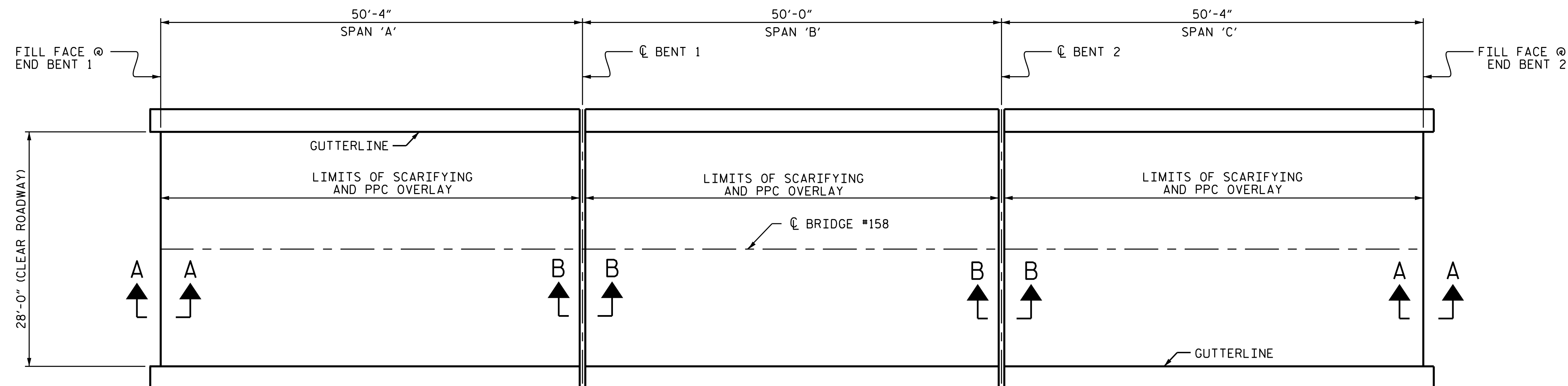
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-19
2			4			35

SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	469.0 SY	
CLASS II SURFACE PREPARATION	* 10.0 SY	
SHOTBLASTING BRIDGE DECK	469.0 SY	
PPC MATERIALS	39.0 CY	
PLACING & FINISHING PPC OVERLAY	469.0 SY	
BRIDGE DECK GROOVING	3,750.0 SF	

\* CLASS II SURFACE PREPARATION FOR PPC OVERLAY IS ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE FOR REPAIR AREAS THAT ARE ENCOUNTERED.

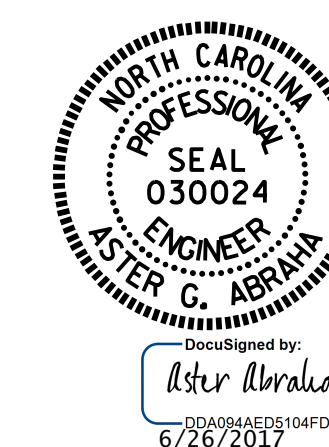


□ - MILLING, SCARIFICATION AND PPC OVERLAY

PLAN OF SPANS

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

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 158

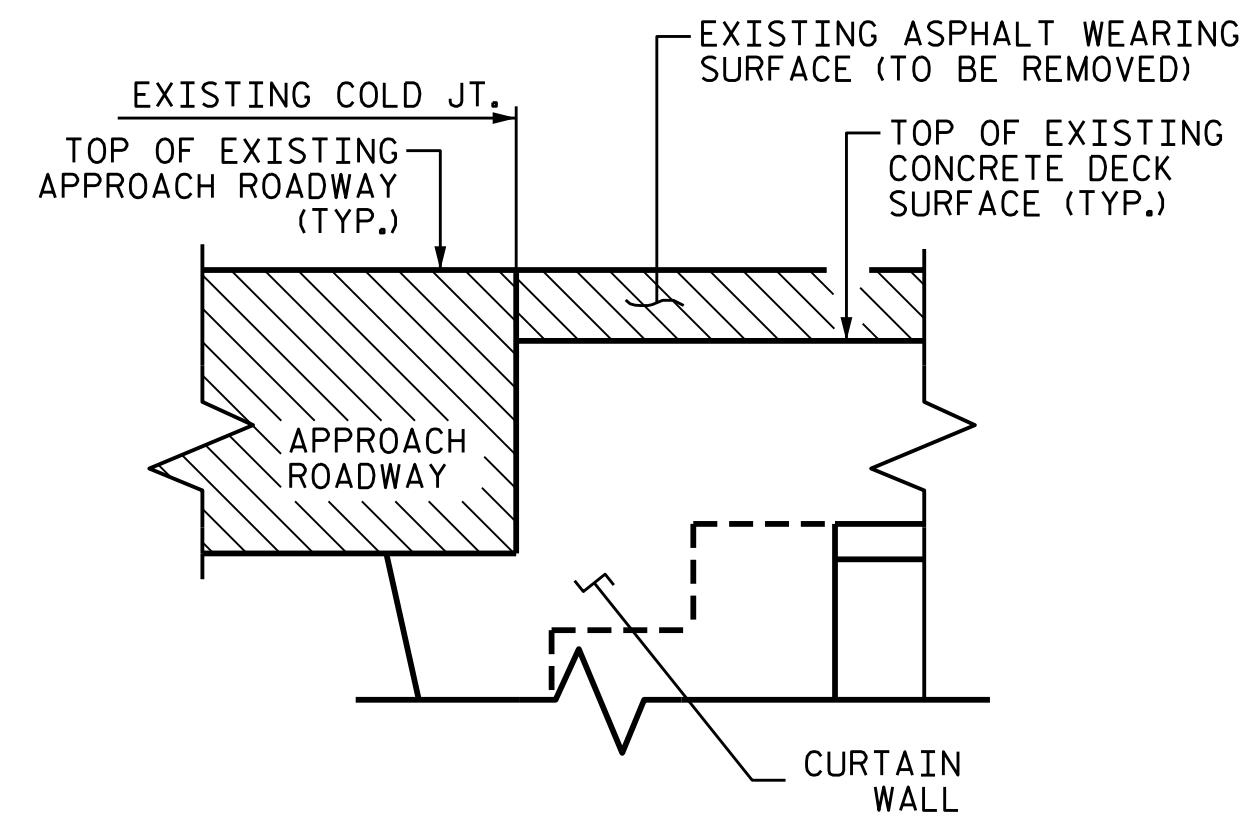


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 GENERAL DRAWING  
 SURFACE PREPARATION  
 & PPC OVERLAY

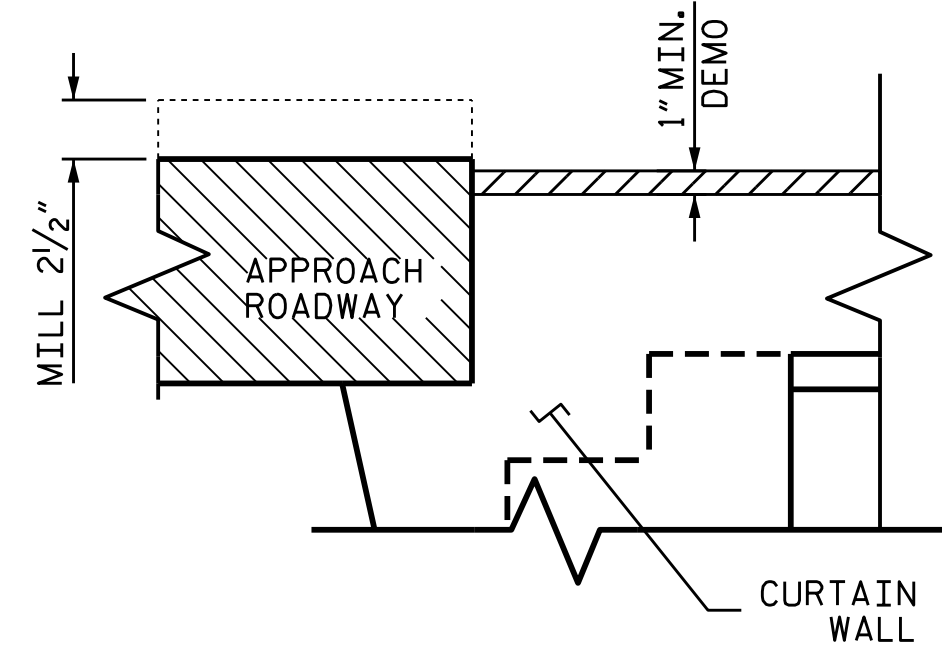
DRAWN BY : M.A. LEE / P.D. BRYANT DATE : 05/2017  
 CHECKED BY : A.G. ABRAHA DATE : 06/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

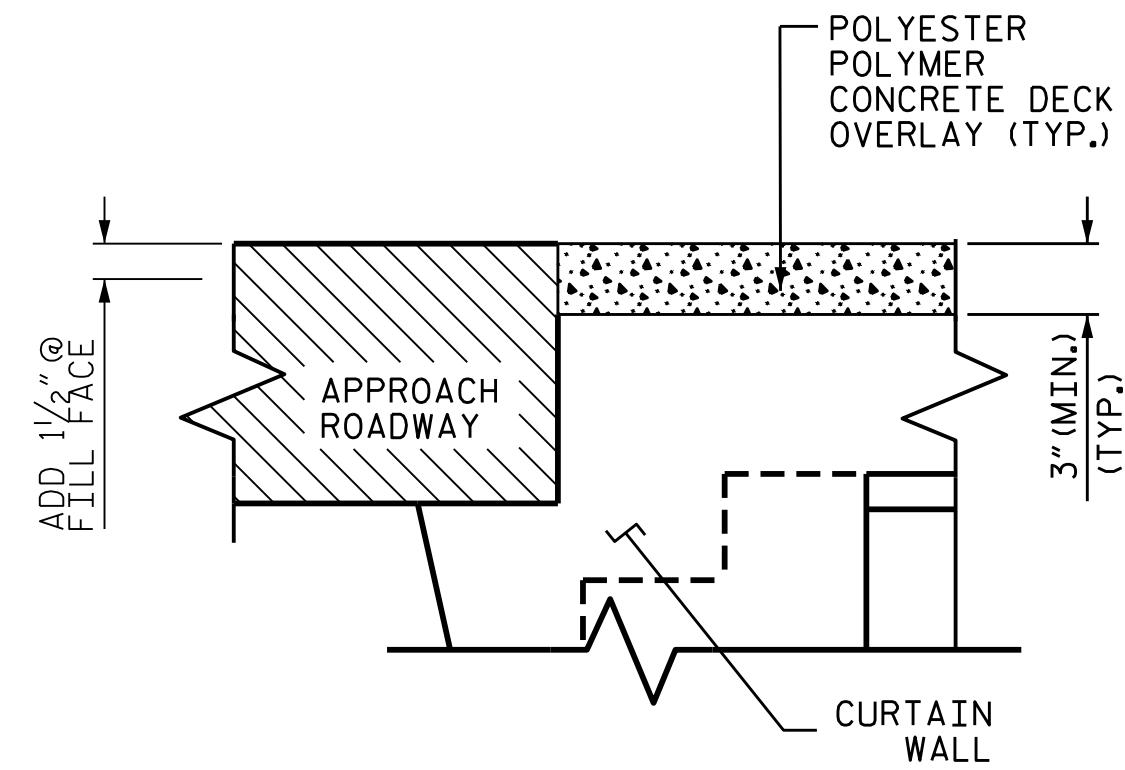
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-20
2			4			TOTAL SHEETS 35



EXISTING

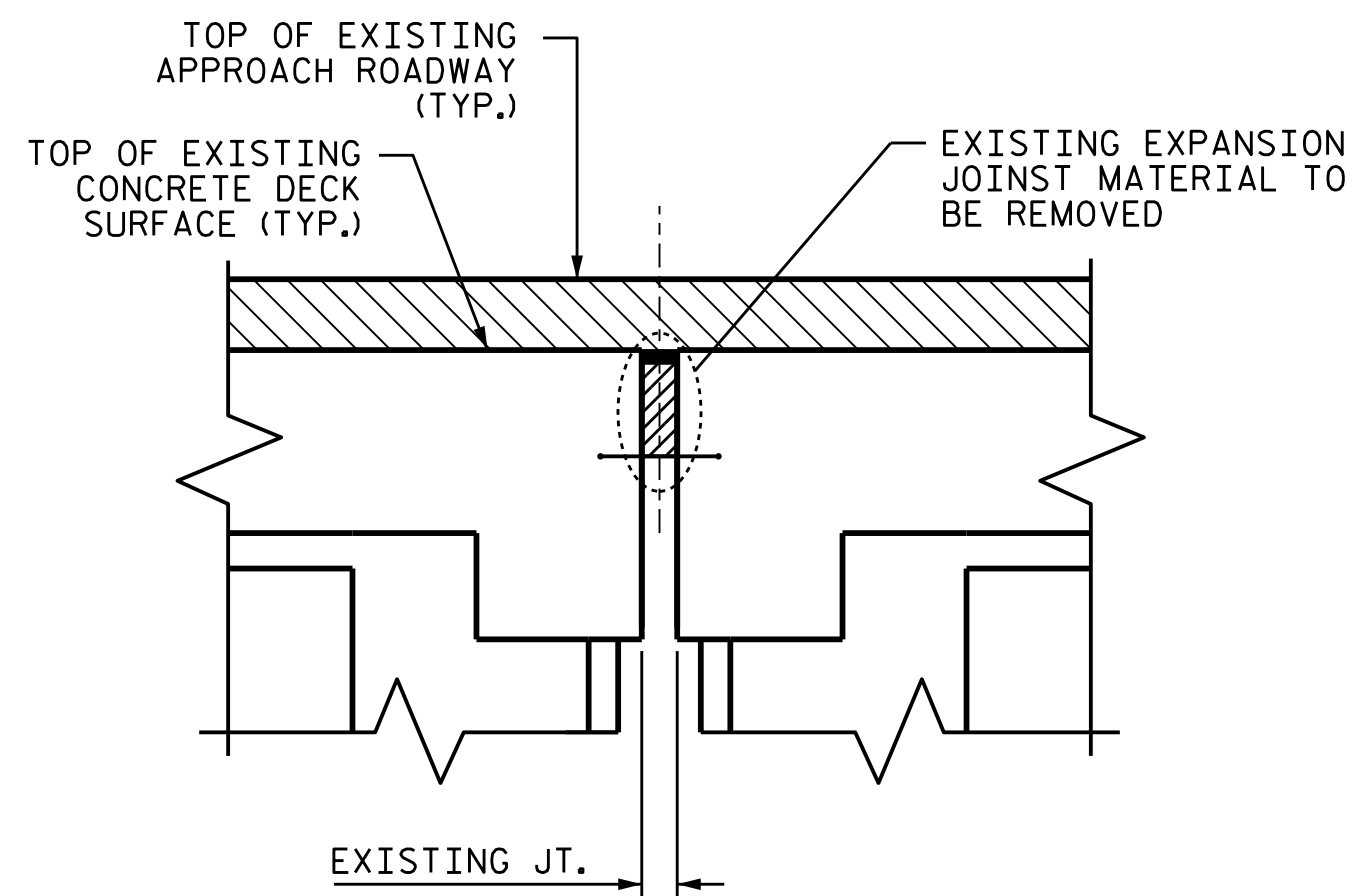


MINIMUM EXISTING JOINT DEMOLITION

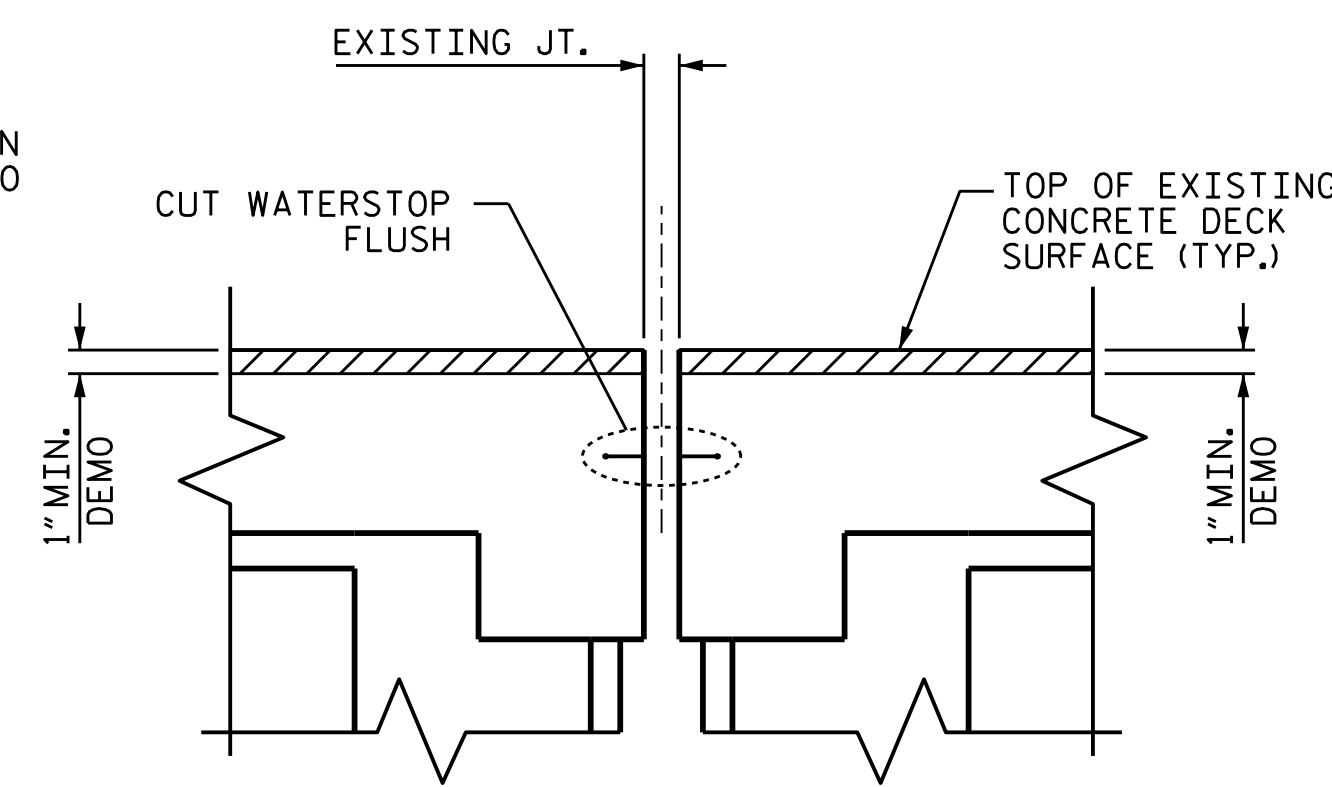


PROPOSED

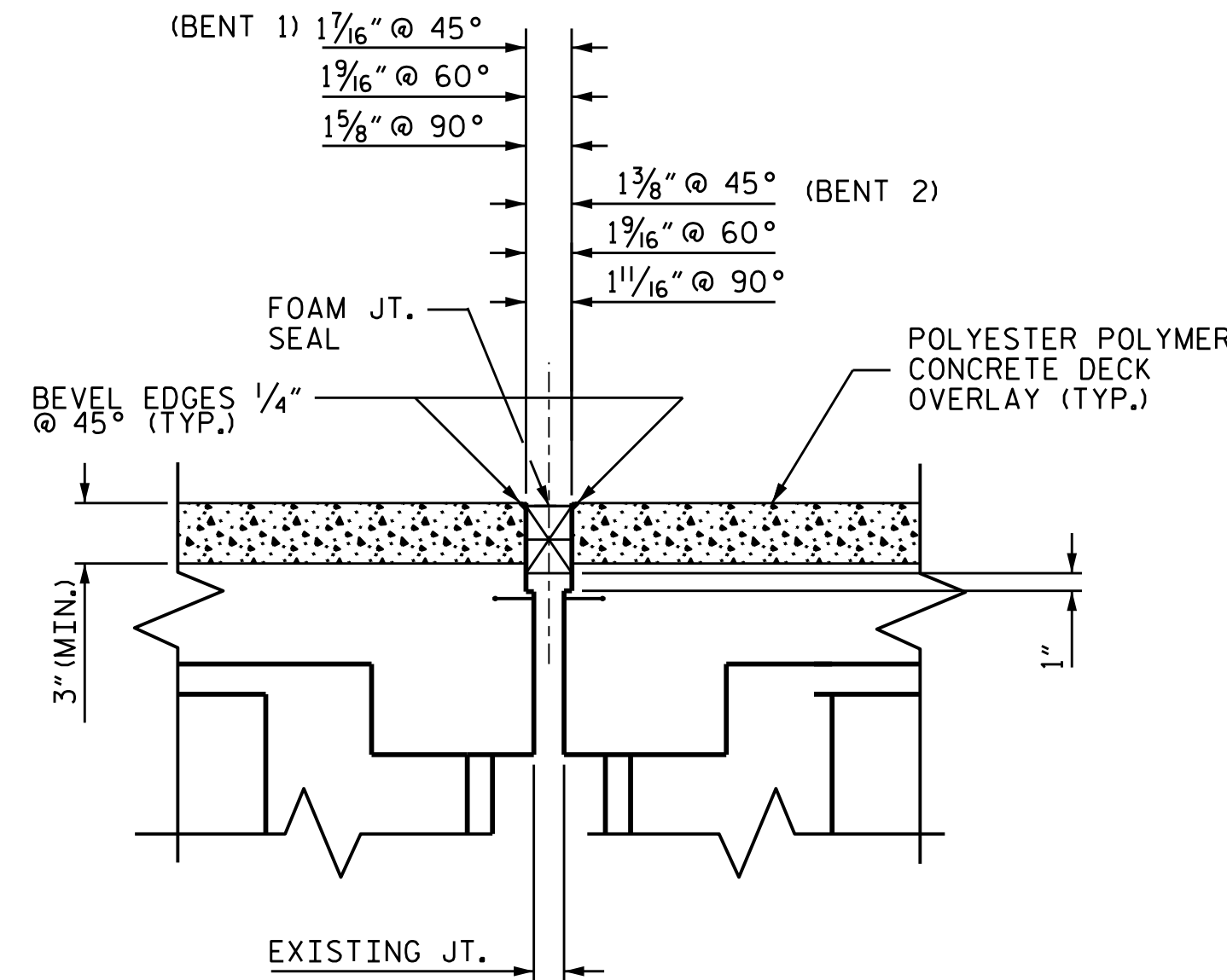
SECTION A-A



EXISTING

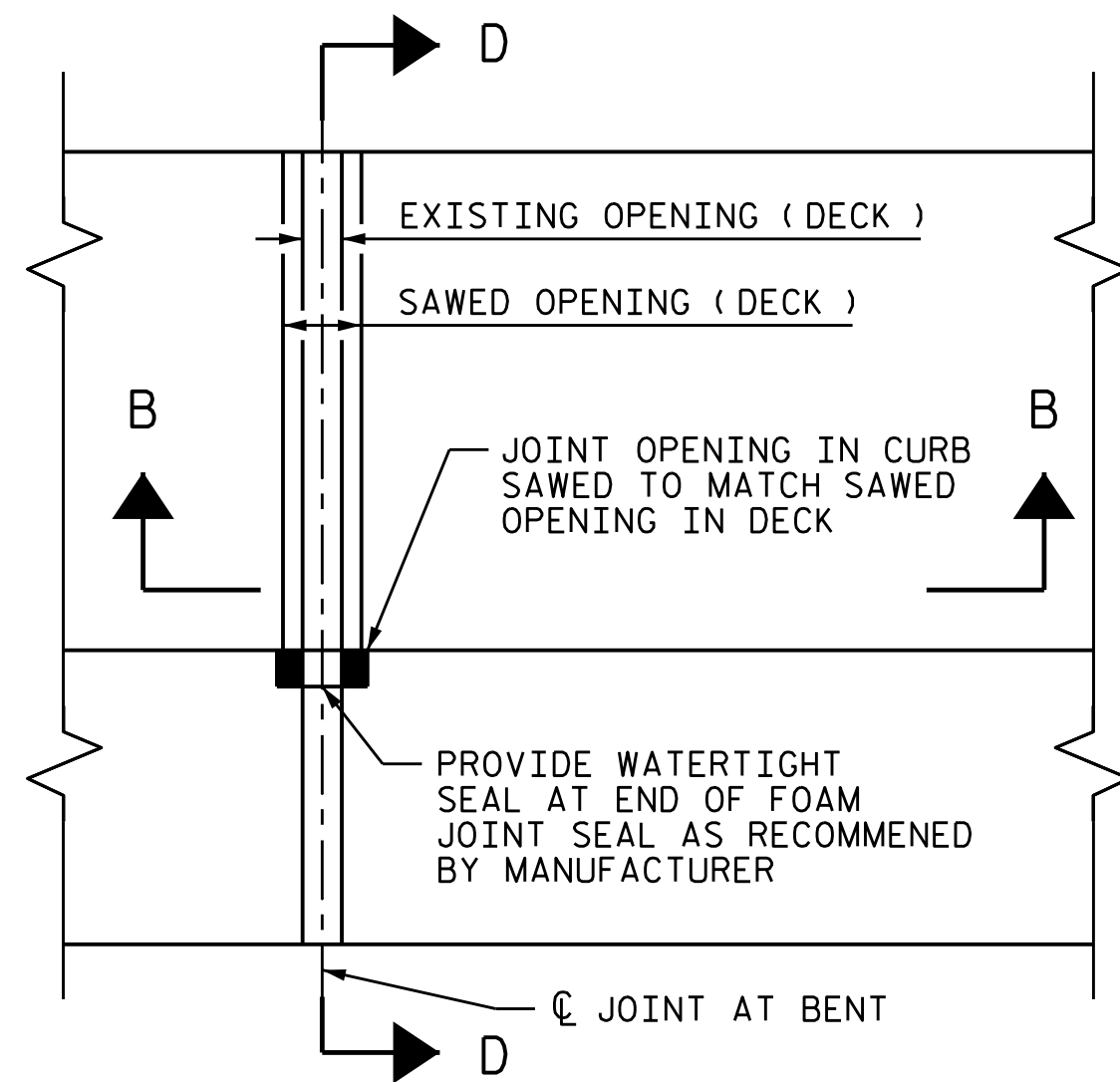


MINIMUM EXISTING JOINT DEMOLITION

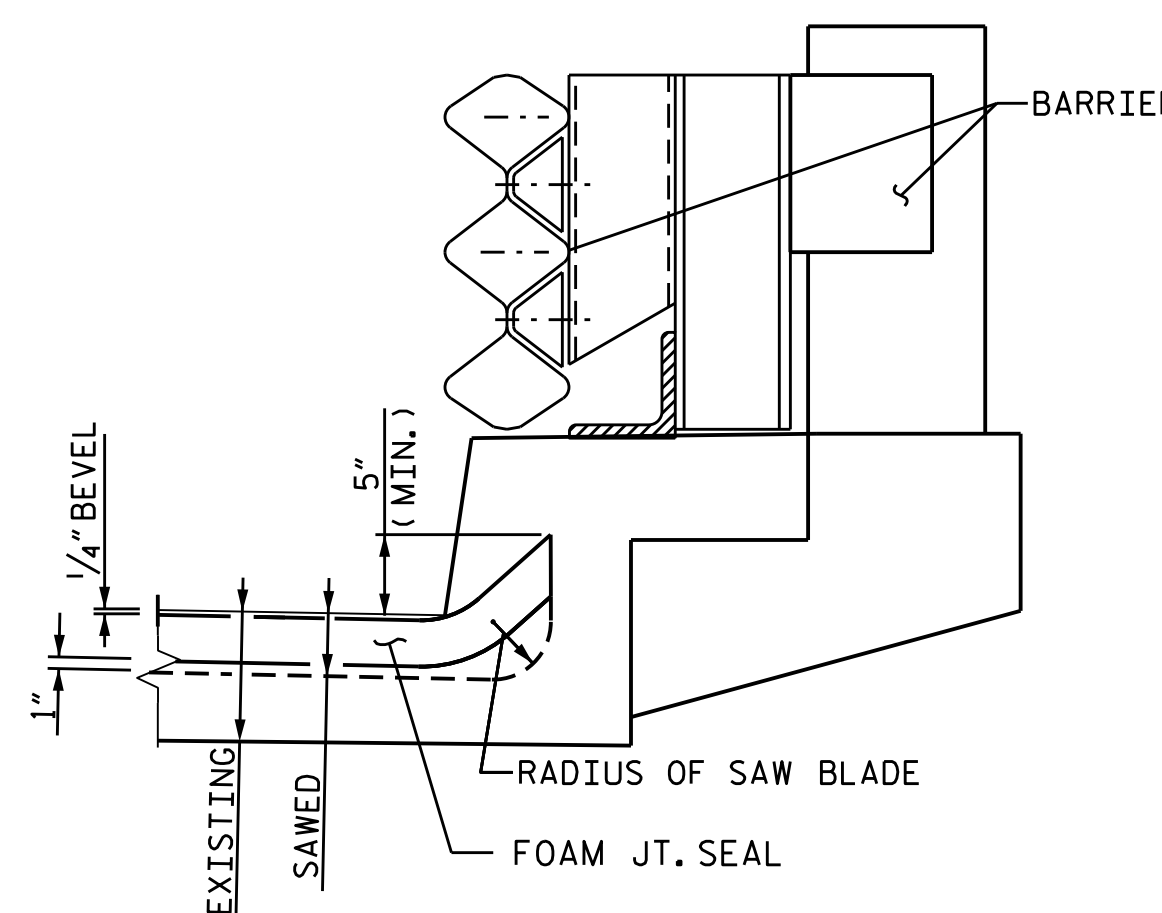


PROPOSED

SECTION B-B



PLAN



SECTION D-D

JOINT SEAL DETAILS AT BENT 1 & 2

NOTES

FOAM JOINTS SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.  
 FOR FOAM JOINTS, SEE SPECIAL PROVISIONS.  
 THE INSTALLED FOAM JOINTS SHALL BE WATER TIGHT.  
 THE FOAM JOINTS SHALL MEET THE MANUFACTURER'S RECOMMENDATION FOR THE SIZE OF OPENING ON THE PLANS, AND ACCOMMODATE THE MINIMUM EXPANSION SHOWN ON THE PLANS.  
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

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

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 156 & 158



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

JOINT DETAILS

DRAWN BY : M.A. LEE / P.D. BRYANT DATE : 06/2017  
 CHECKED BY : A.G. ABRAHA DATE : 06/2017

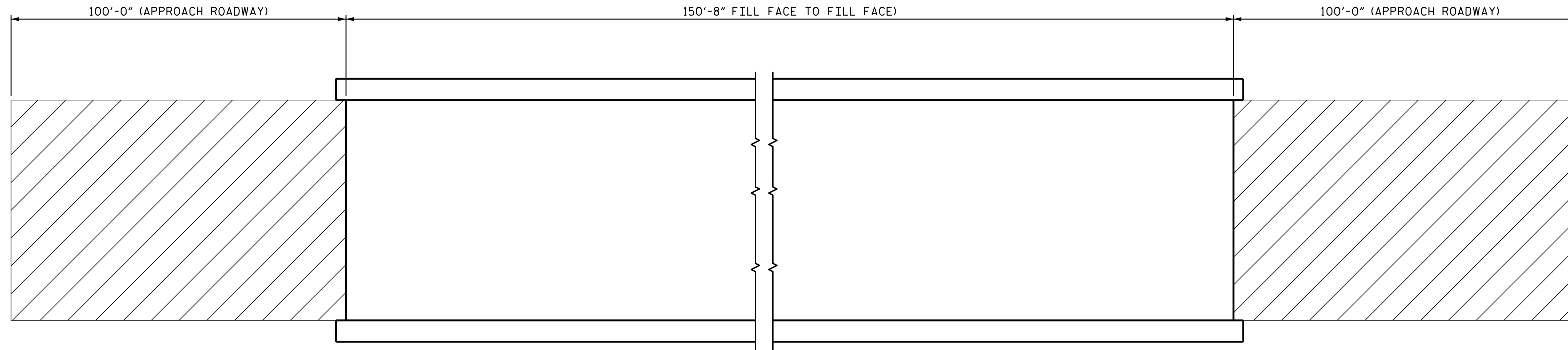
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			35

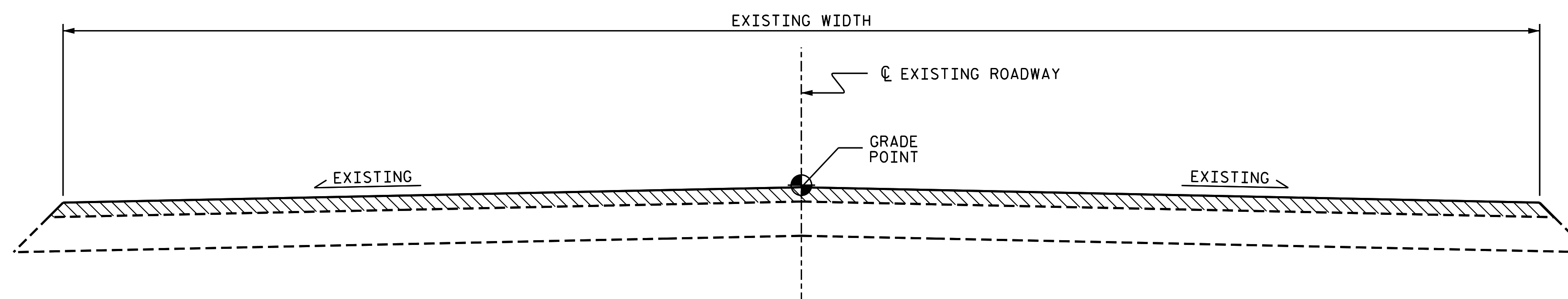


**NOTES:**

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 BETWEEN THE ROADWAY AND THE BRIDGE DECK. NEW ASPHALT PAVING THICKNESS MAY EXCEED 1/2" DUE TO SETTLEMENT OF THE EXISTING APPROACH ASPHALT PAVING.

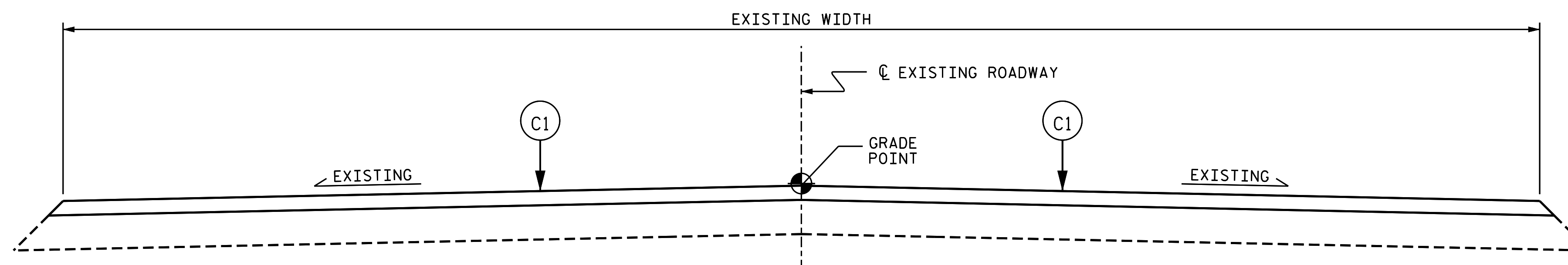


PLAN

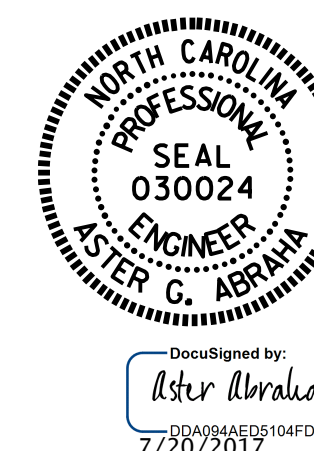


TYPICAL ROADWAY MILLING SECTION

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.



TYPICAL PROPOSED ROADWAY SECTION



DocuSigned by:  
 Aster Abraha  
 7/20/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			35

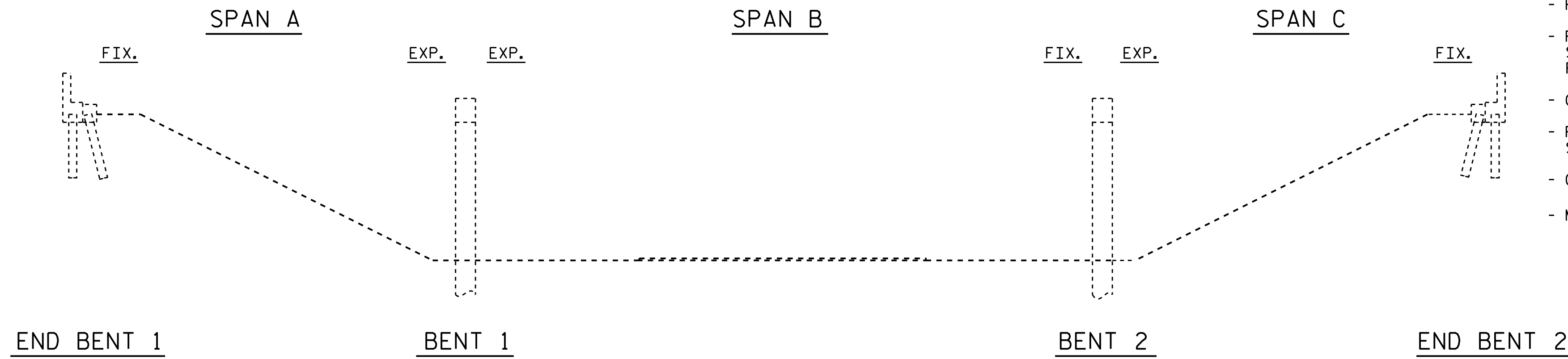
	ESTIMATE	ACTUAL
INCIDENTAL MILLING	622.0 SQ. YDS.	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	52.3 TONS	
ASPHALT BINDER FOR PLANT MIX	3.2 TONS	

	ESTIMATE	ACTUAL
INCIDENTAL MILLING	622.0 SQ. YDS.	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	52.3 TONS	
ASPHALT BINDER FOR PLANT MIX	3.2 TONS	

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 156 & 158

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

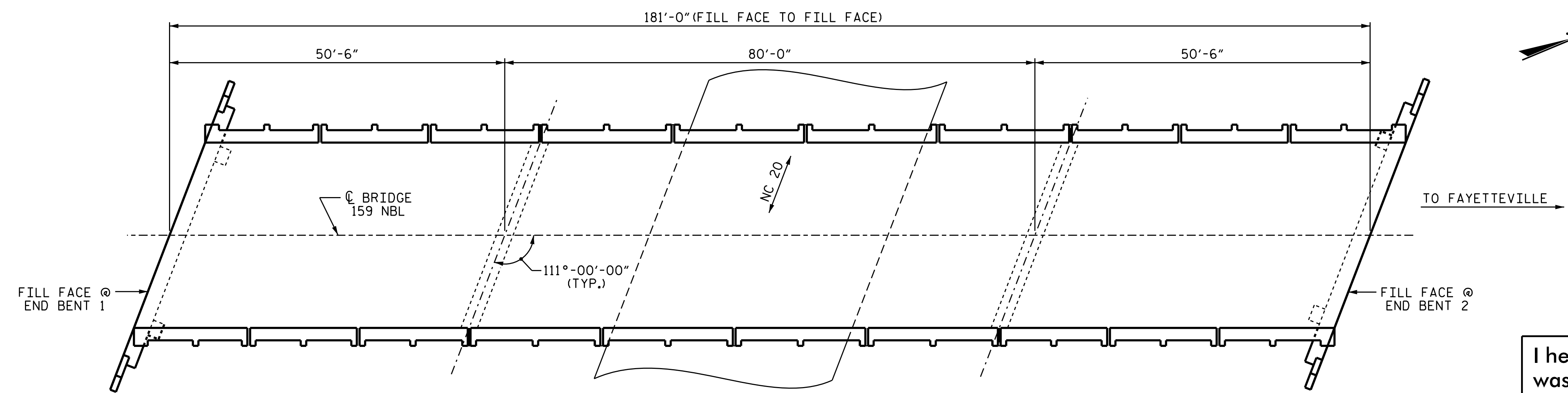
DRAWN BY : S.T. SANDOR / P.D. BRYANT      DATE : 06/2017  
 CHECKED BY : A.G. ABRAHA      DATE : 06/2017



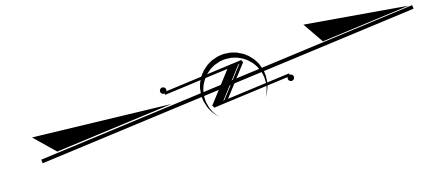
**ELEVATION**  
(SECTION ALONG C ROADWAY)

**SCOPE OF WORK:**

- REMOVE ASPHALY WEARING SURFACE.
- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SCARIFICATION AND SHOT-BLASTING METHODS FOR PREPARING DECK FOR POLYESTER POLYMER CONCRETE OVERLAY.
- OVERLAY PREPARED BRIDGE DECK WITH POLYESTER POLYMER CONCRETE.
- RECONSTRUCT BRIDGE DECK JOINTS AND INSTALL NEW FOAM JOINT SEALS.
- GROOVE CONCRETE BRIDGE DECK
- MILL AND PAVE ASPHALT APPROACHES.

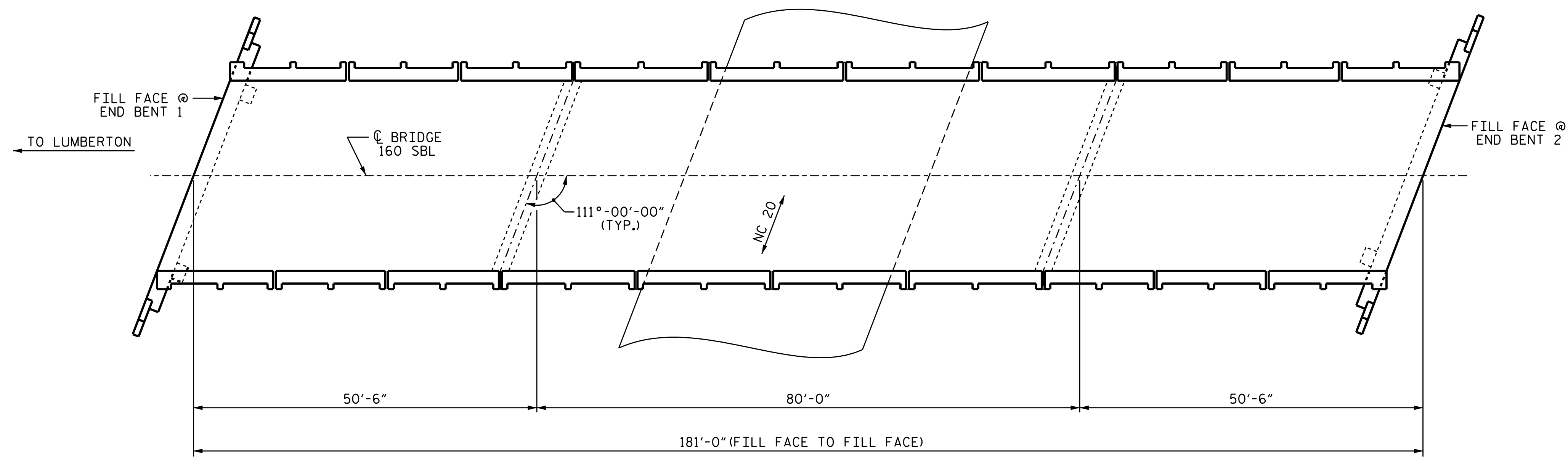


**PLAN**  
(BRIDGE 159 NBL)



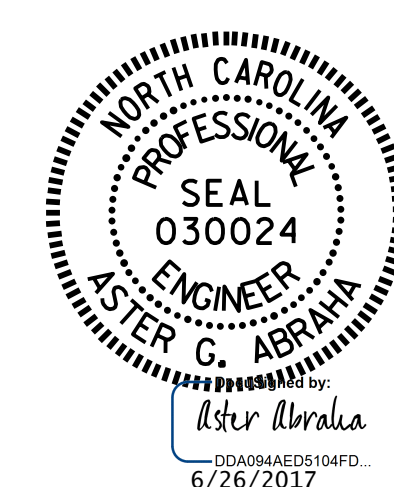
I hereby certify that this structure was rehabilitated according to these plans or as noted therein.

Resident Engineer \_\_\_\_\_ Date \_\_\_\_\_



**PLAN**  
(BRIDGE 160 SBL)

PROJECT NO. I-5850A  
ROBESON COUNTY  
BRIDGE NO. 159 & 160



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**GENERAL DRAWING**  
BRIDGE 159 & 160  
ON I-95 OVER  
NC 20

DRAWN BY : M.K. BEARD DATE : 5/11/17  
CHECKED BY : A. G. ABRAHA DATE : 06/2017

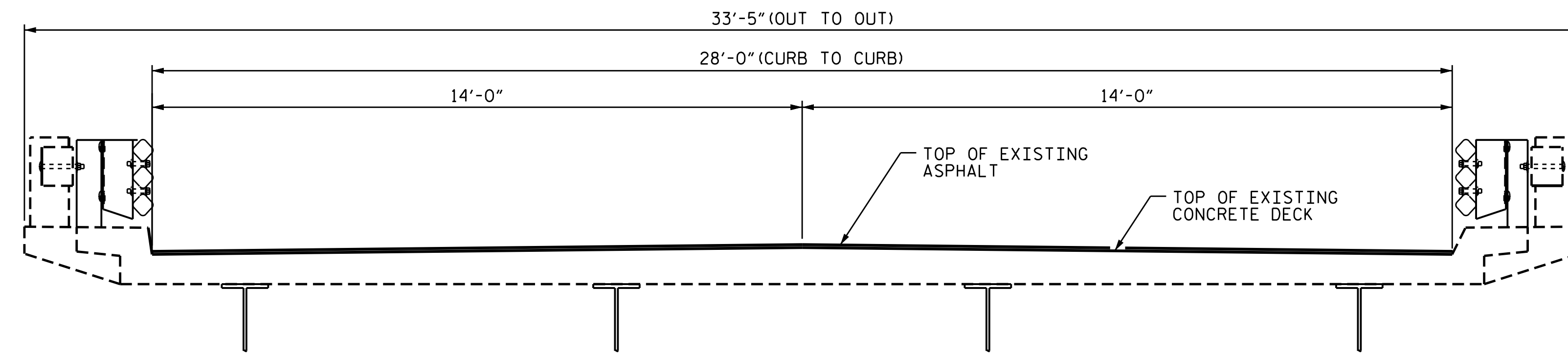
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-23
2			4			35

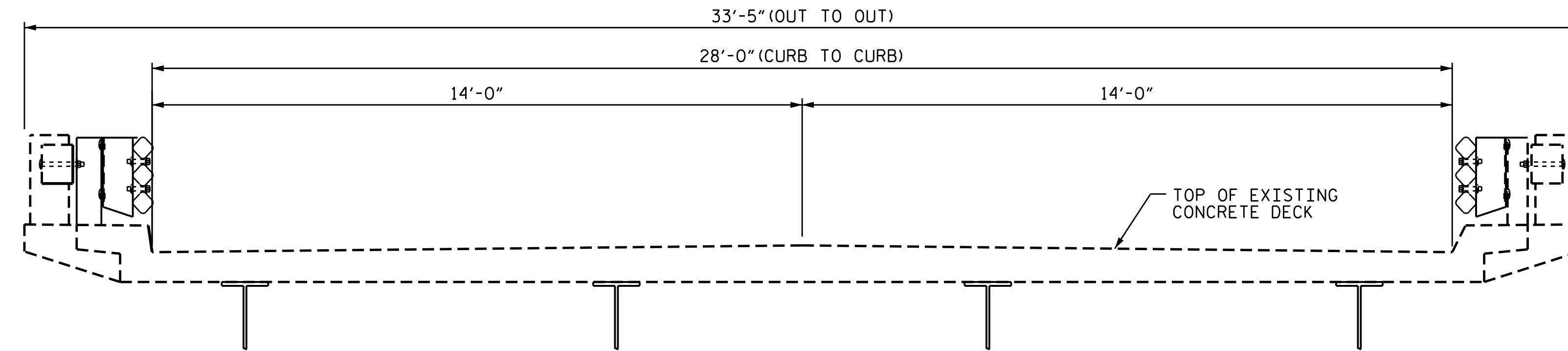
**NOTES**

SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF POLYESTER POLYMER CONCRETE (PPC) SYSTEM AND SURFACE PREPARATION.

EXISTING BRIDGE IS COVERED WITH ASPHALT OVERLAY, INCIDENTAL MILLING IS REQUIRED.

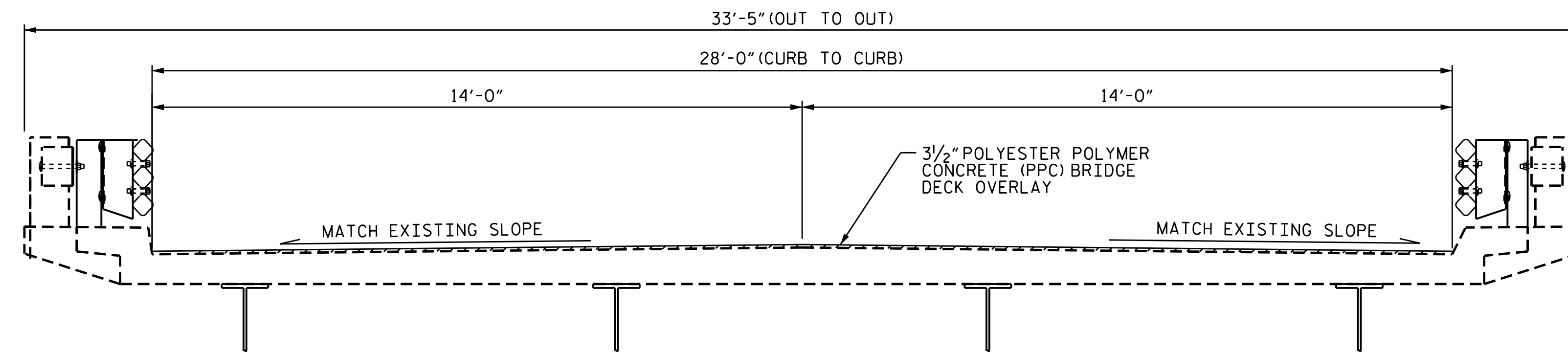


**TYPICAL SECTION**  
(EXISTING)

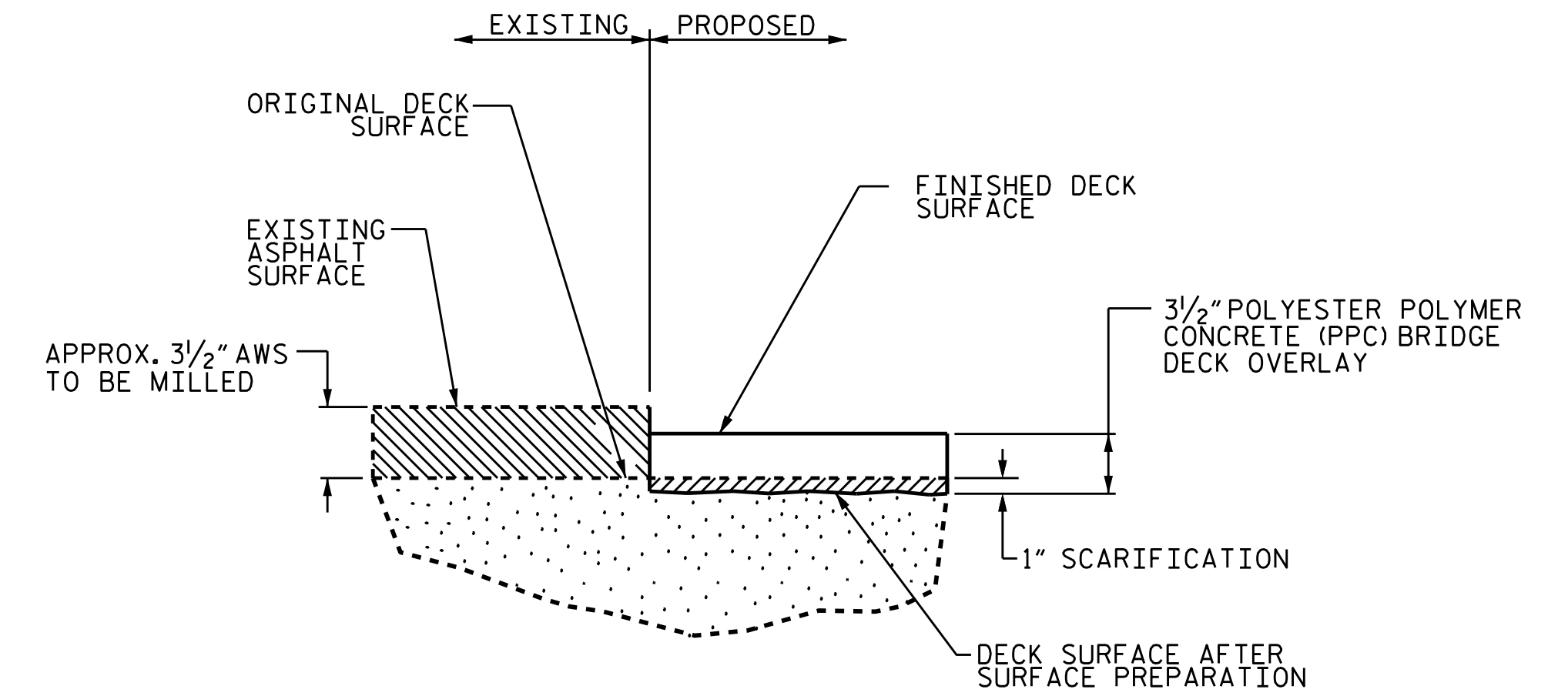


**TYPICAL SECTION**

(AFTER EXISTING ASPHALT REMOVED DOWN TO ORIGINAL CONCRETE DECK SURFACE)

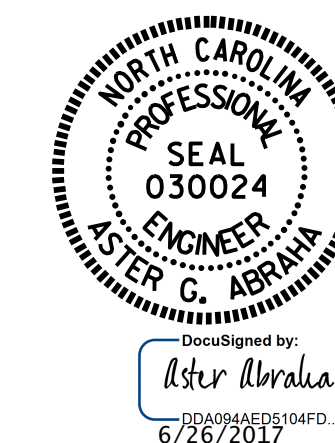


**TYPICAL SECTION**



**DETAIL FOR POLYESTER POLYMER CONCRETE OVERLAY**

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 159 & 160



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE**  
**TYPICAL SECTION**

DRAWN BY : M. K. BEARD / S. T. SANDOR DATE : 05/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

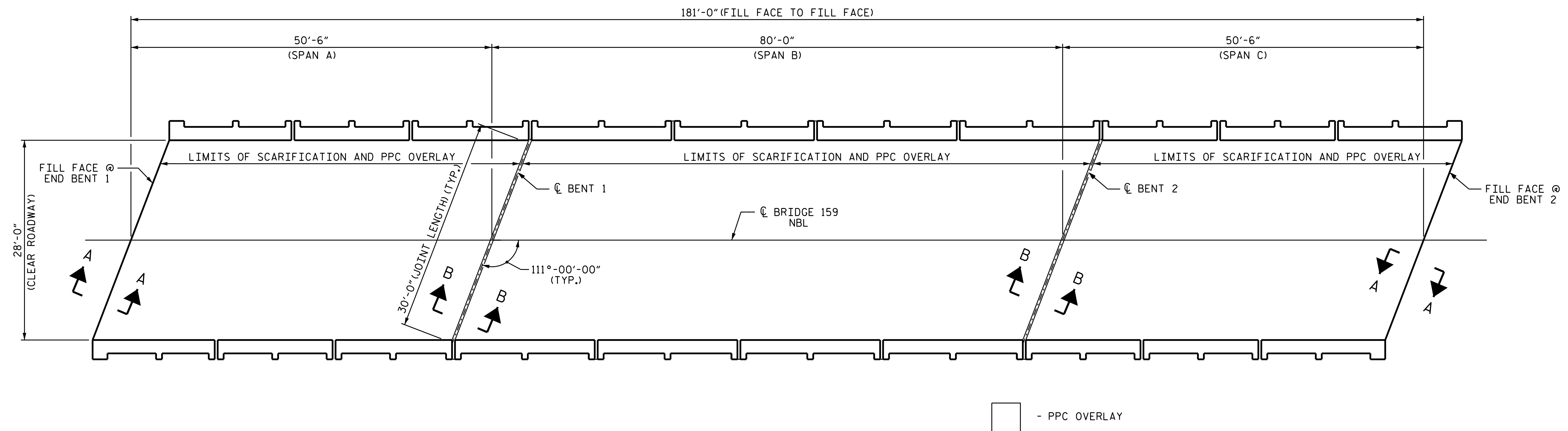
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			35



SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	567.0 SY	
CLASS II SURFACE PREPARATION	* 10.0 SY	
SHOTBLASTING BRIDGE DECK	567.0 SY	
PPC MATERIALS	55.1 CY	
PLACING & FINISHING PPC OVERLAY	567.0 SY	
BRIDGE DECK GROOVING	4,508.0 SF	

\* CLASS II SURFACE PREPARATION FOR PPC OVERLAY IS ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE FOR REPAIR AREAS THAT ARE ENCOUNTERED.



**PLAN OF SPANS**  
(FOR SECTIONS A-A & B-B,  
SEE "JOINT DETAILS" SHEET S-27)

PROJECT NO. I-5850A  
ROBESON COUNTY  
BRIDGE NO. 159



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**SUPERSTRUCTURE**  
**SURFACE PREPARATION**  
**& PPC OVERLAY**

DRAWN BY : M.K. BEARD / S. T. SANDOR DATE : 05/2017  
CHECKED BY : A.G. ABRAHA DATE : 06/2017

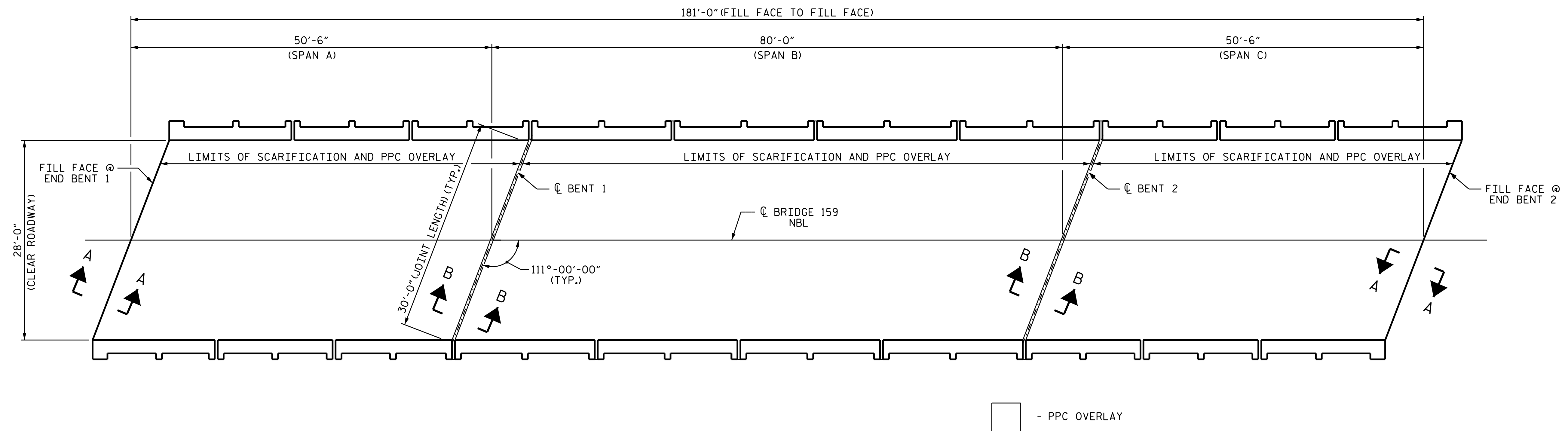
DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-25
2			4			35

SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	567.0 SY	
CLASS II SURFACE PREPARATION	* 10.0 SY	
SHOTBLASTING BRIDGE DECK	567.0 SY	
PPC MATERIALS	55.1 CY	
PLACING & FINISHING PPC OVERLAY	567.0 SY	
BRIDGE DECK GROOVING	4,508.0 SF	

\* CLASS II SURFACE PREPARATION FOR PPC OVERLAY IS ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE FOR REPAIR AREAS THAT ARE ENCOUNTERED.



**PLAN OF SPANS**  
 (FOR SECTIONS A-A & B-B,  
 SEE "JOINT DETAILS" SHEET S-27)

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 160



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUPERSTRUCTURE**  
**SURFACE PREPARATION**  
**& PPC OVERLAY**

DRAWN BY : M.K. BEARD / S. T. SANDOR DATE : 05/2017  
 CHECKED BY : A.G. ABRAHA DATE : 06/2017

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-26
2			4			35

**NOTES:**

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

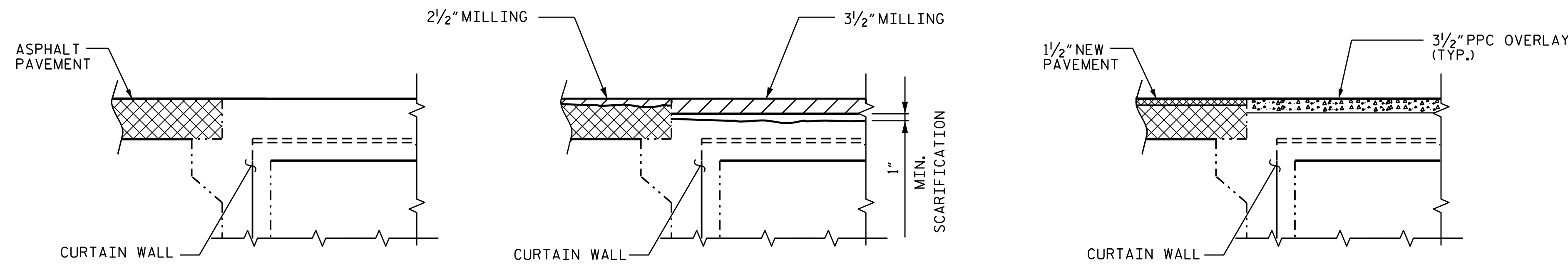
FOR FOAM JOINT SEALS SEE SPECIAL PROVISIONS.

UNLESS NOTED OTHERWISE RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.

ALL EXPOSED ENDS OF CUT BARS SHALL BE COATED WITH EPOXY PRIOR TO THE NEW JOINT MATERIAL INSTALLATION.

FOR POURABLE COLD JOINT SEALS, SEE SPECIAL PROVISIONS.

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



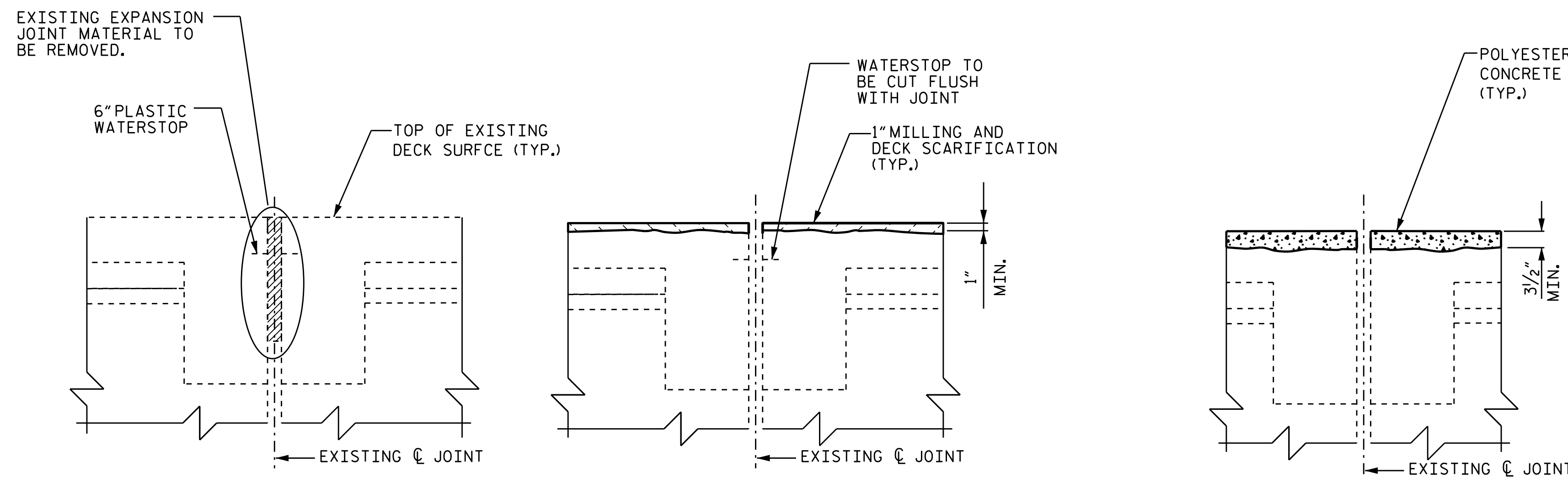
EXISTING JOINT

MINIMUM EXISTING JOINT DEMOLITION

PROPOSED JOINT

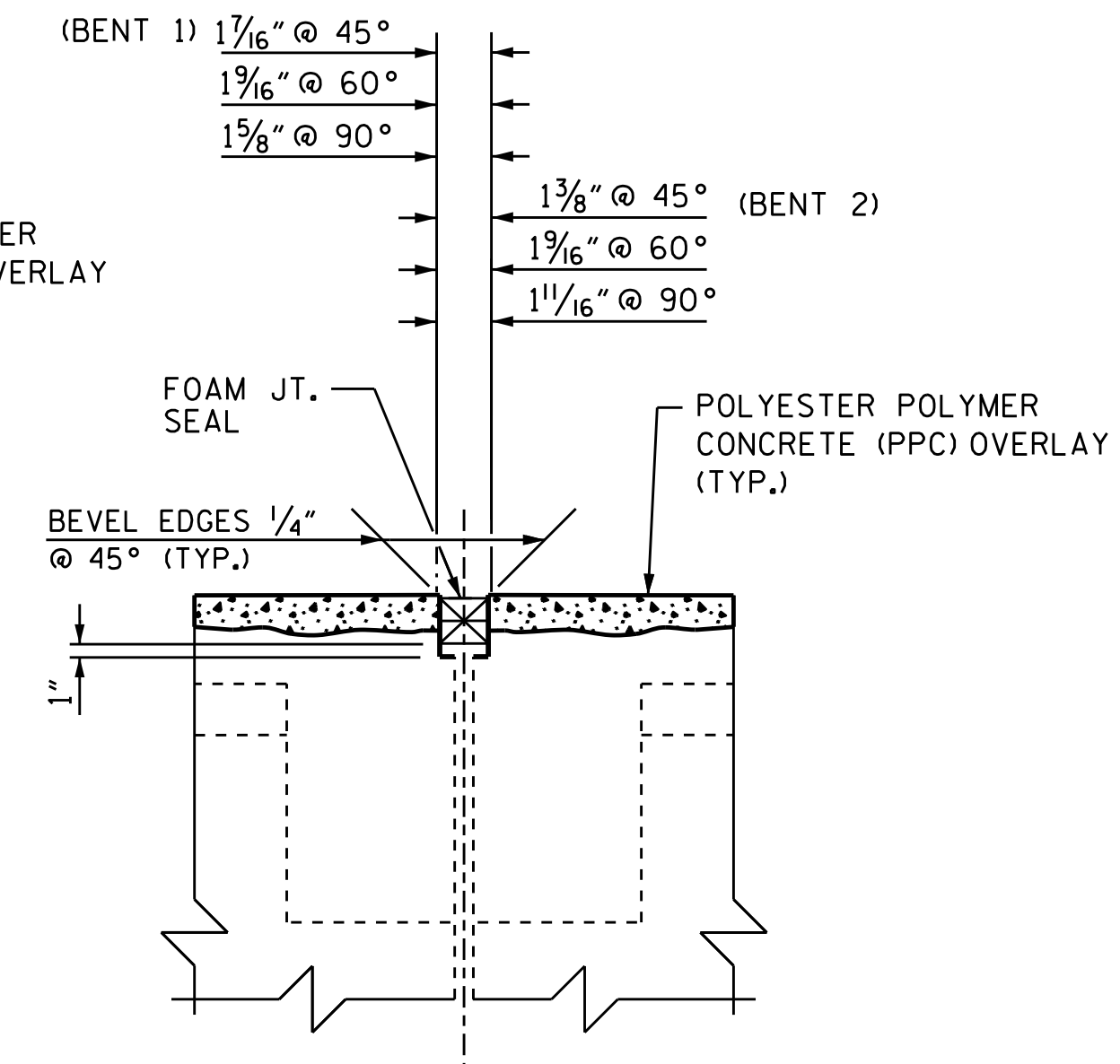
JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION B-B



EXISTING JOINT

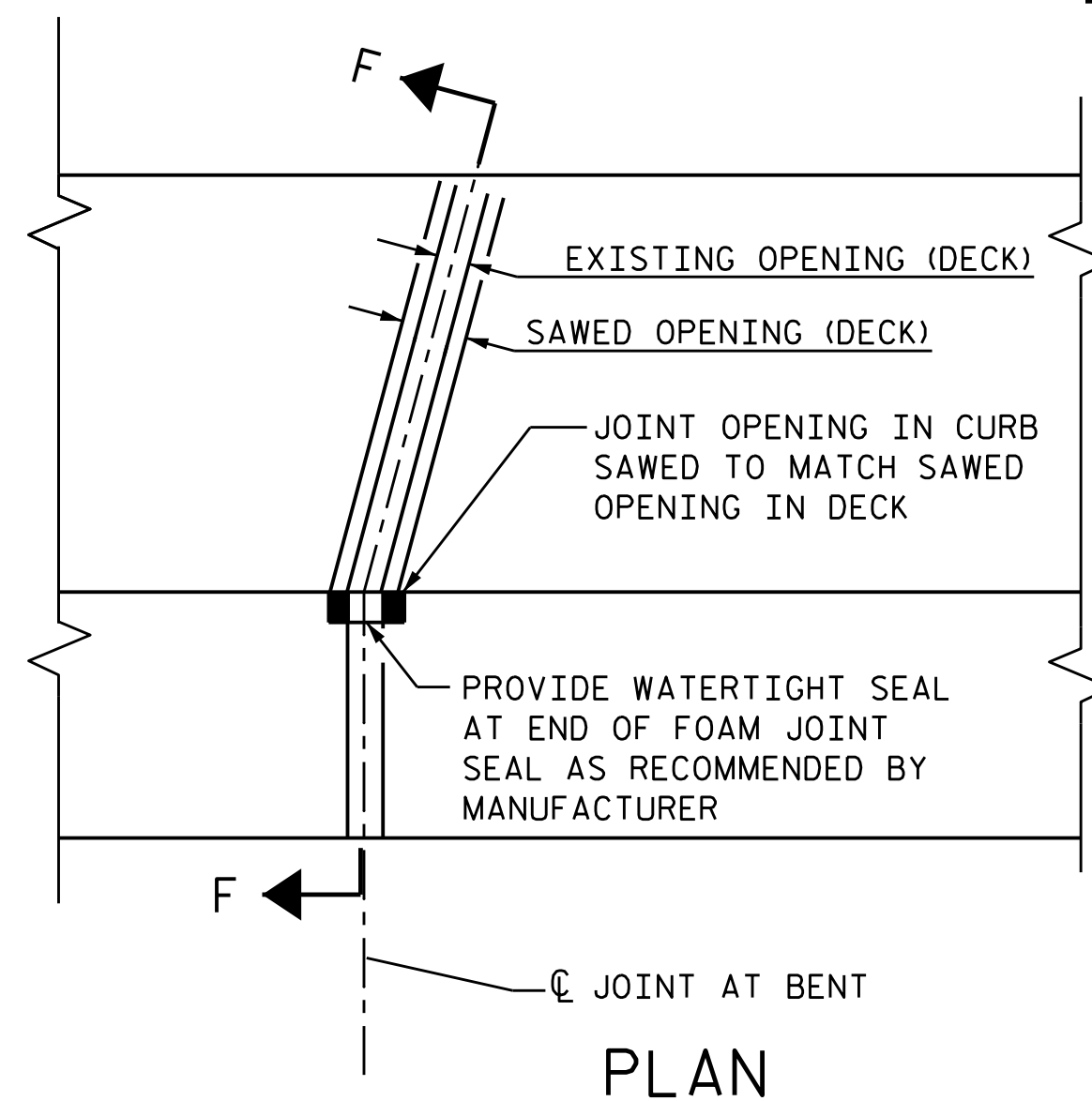
MINIMUM EXISTING JOINT DEMOLITION



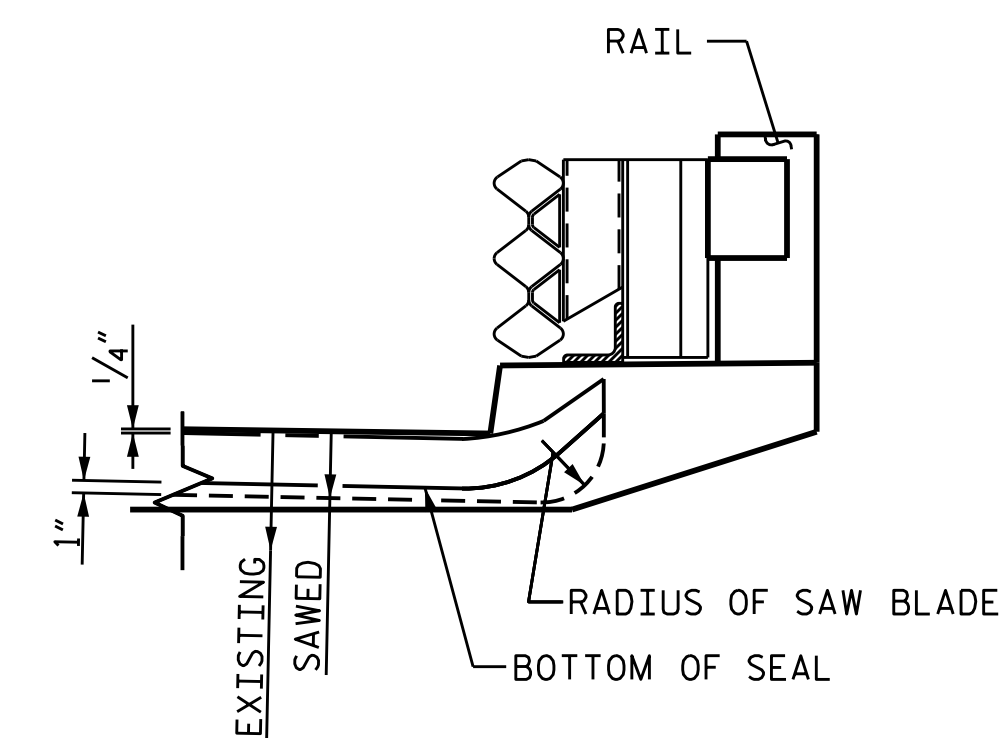
PROPOSED FOAM JOINT SEAL EXPANSION

JOINT INSTALLATION SEQUENCE AT BENTS

SECTION A-A



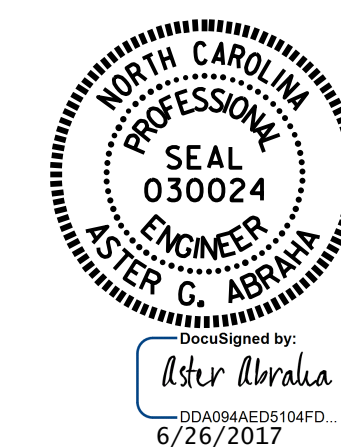
PLAN



SECTION F-F

JOINT SEAL DETAILS AT BENT

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 159 & 160



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE  
 JOINT DETAILS**

DRAWN BY : S. I. SANDOR DATE : 04/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

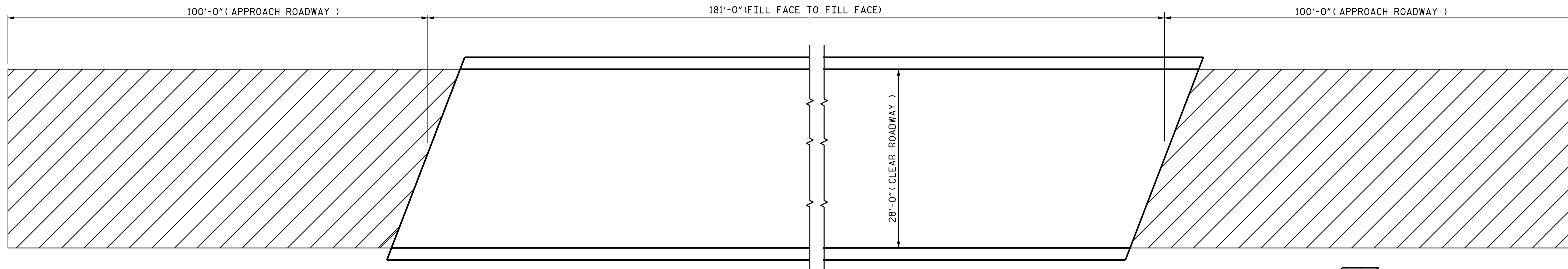
DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-27
1			3			TOTAL SHEETS
2			4			35



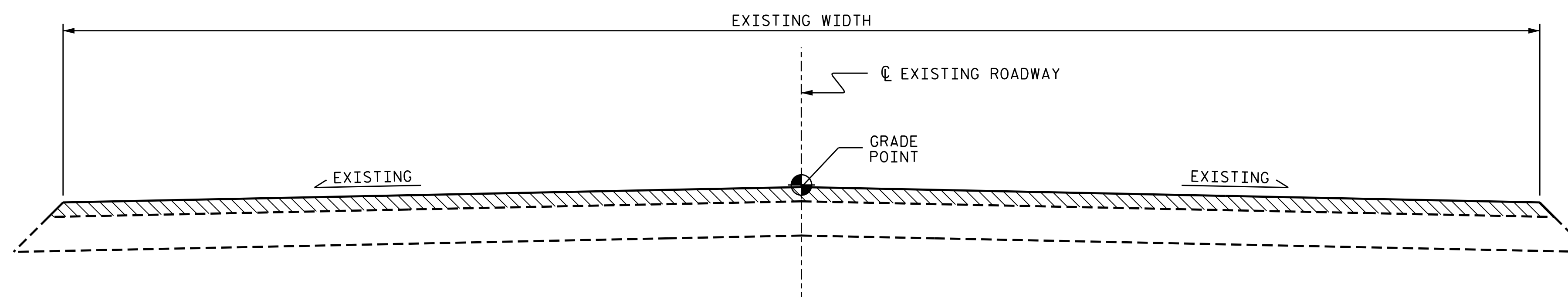
**NOTES:**

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 BETWEEN THE ROADWAY AND THE BRIDGE DECK. NEW ASPHALT PAVING THICKNESS MAY EXCEED 1/2" DUE TO SETTLEMENT OF THE EXISTING APPROACH ASPHALT PAVING.



INCIDENTAL MILLING

**PLAN**

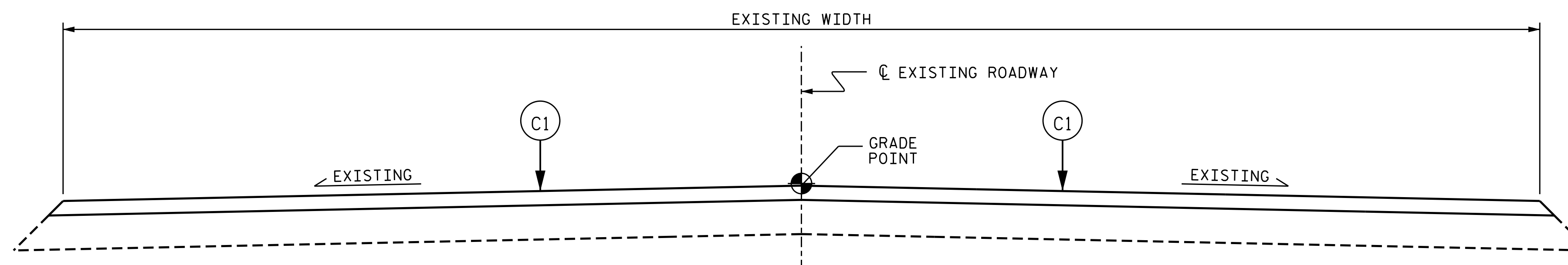


**TYPICAL ROADWAY MILLING SECTION**

SUMMARY OF QUANTITIES BRIGE #159		
	ESTIMATE	ACTUAL
INCIDENTAL MILLING	622.0 SQ. YDS.	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	52.3 TONS	
ASPHALT BINDER FOR PLANT MIX	3.2 TONS	

SUMMARY OF QUANTITIES BRIGE #160		
	ESTIMATE	ACTUAL
INCIDENTAL MILLING	622.0 SQ. YDS.	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	52.3 TONS	
ASPHALT BINDER FOR PLANT MIX	3.2 TONS	

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.



**TYPICAL PROPOSED ROADWAY SECTION**

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 159 & 160



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

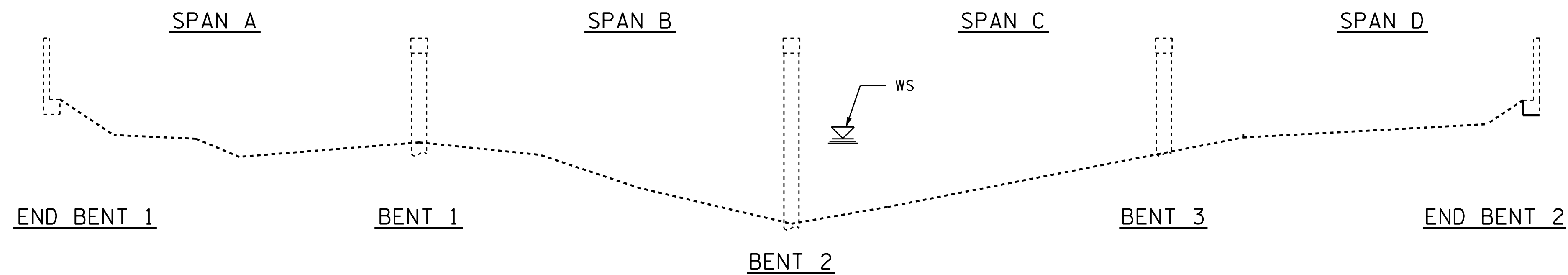
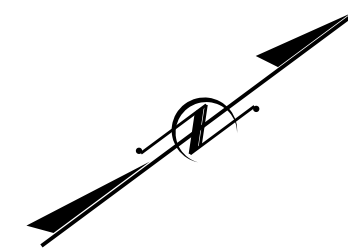
**APPROACH MILLING AND TYPICAL ROADWAY SECTIONS**

DRAWN BY : S. T. SANDOR DATE : 06/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

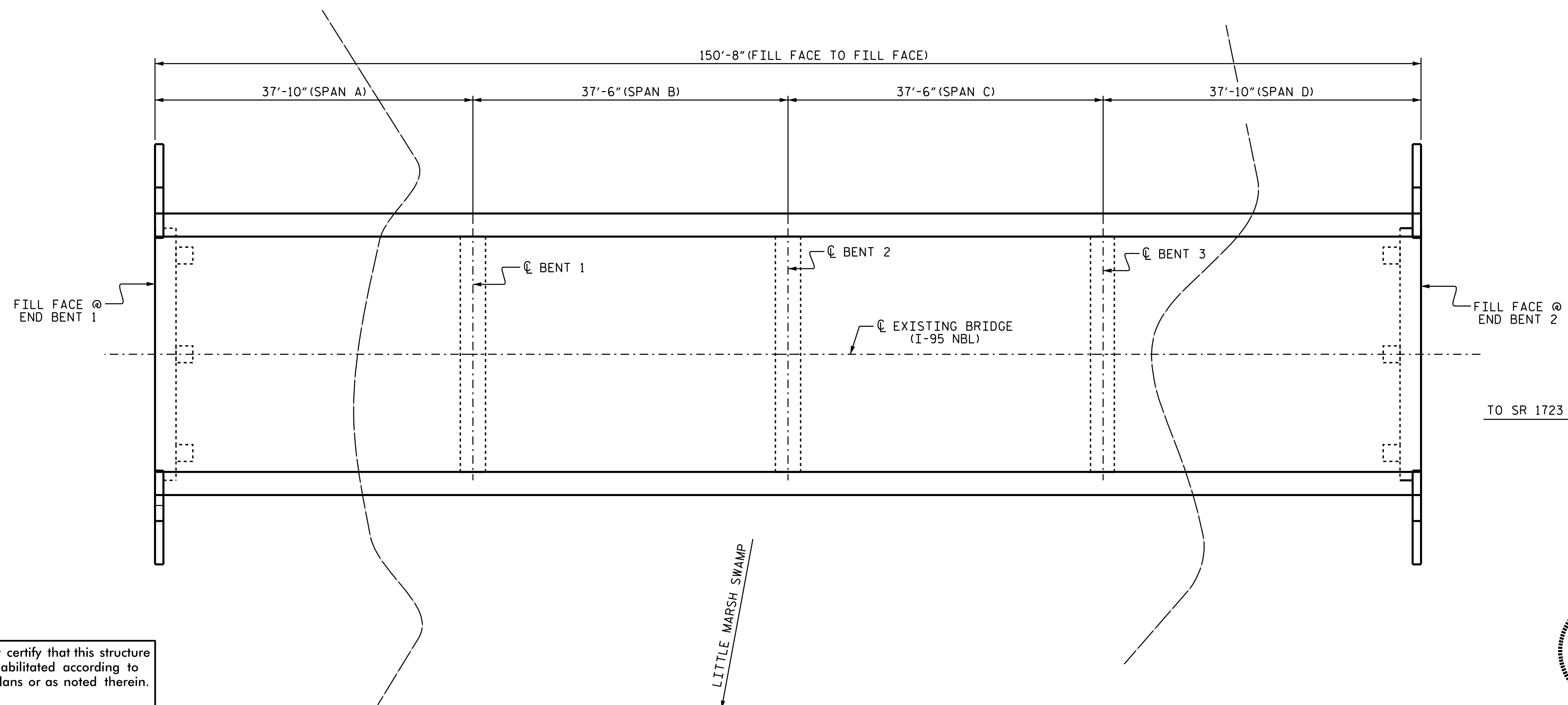
SHEET NO.  
 S-28  
 TOTAL SHEETS  
 35



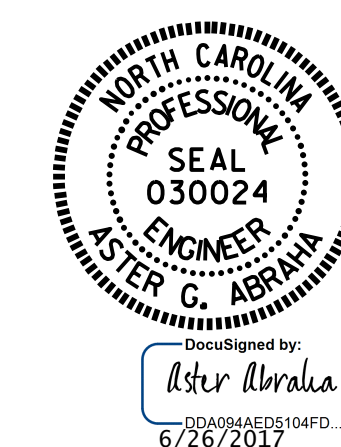
**ELEVATION**  
(SECTION ALONG  $\bar{C}$  ROADWAY)

**SCOPE OF WORK**

- REMOVE ASPHALT WEARING SURFACE.
- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SCARIFICATION AND SHOT-BLASTING METHODS FOR PREPARING DECK FOR POLYESTER POLYMER CONCRETE OVERLAY.
- OVERLAY PREPARED BRIDGE DECK WITH POLYESTER POLYMER CONCRETE.
- RECONSTRUCT BRIDGE DECK JOINTS AND INSTALL NEW FOAM JOINT SEALS.
- GROOVE CONCRETE BRIDGE DECK
- MILL AND PAVE ASPHALT APPROACHES.



PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE No. 164



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 BRIDGE OVER  
 LITTLE MARSH SWAMP  
 ON I-95 NBL BETWEEN  
 SR 1723 & SR 1726

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

Resident Engineer \_\_\_\_\_ Date \_\_\_\_\_

DRAWN BY : S. T. SANDOR DATE : 04/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

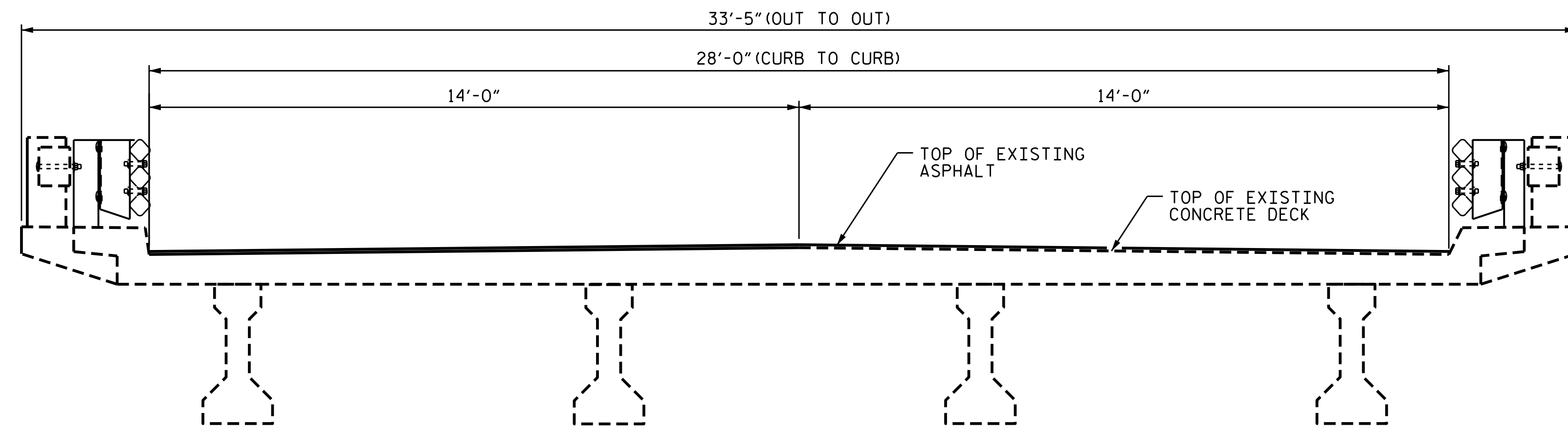
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS
2			4			35

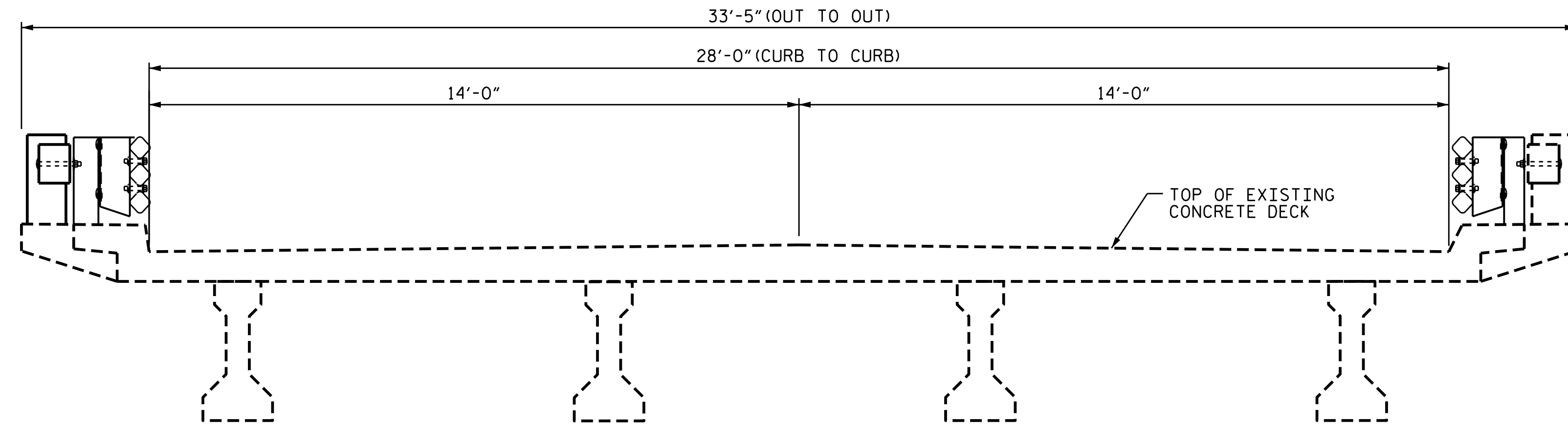
**NOTES**

SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF POLYESTER POLYMER CONCRETE (PPC) SYSTEM AND SURFACE PREPARATION.

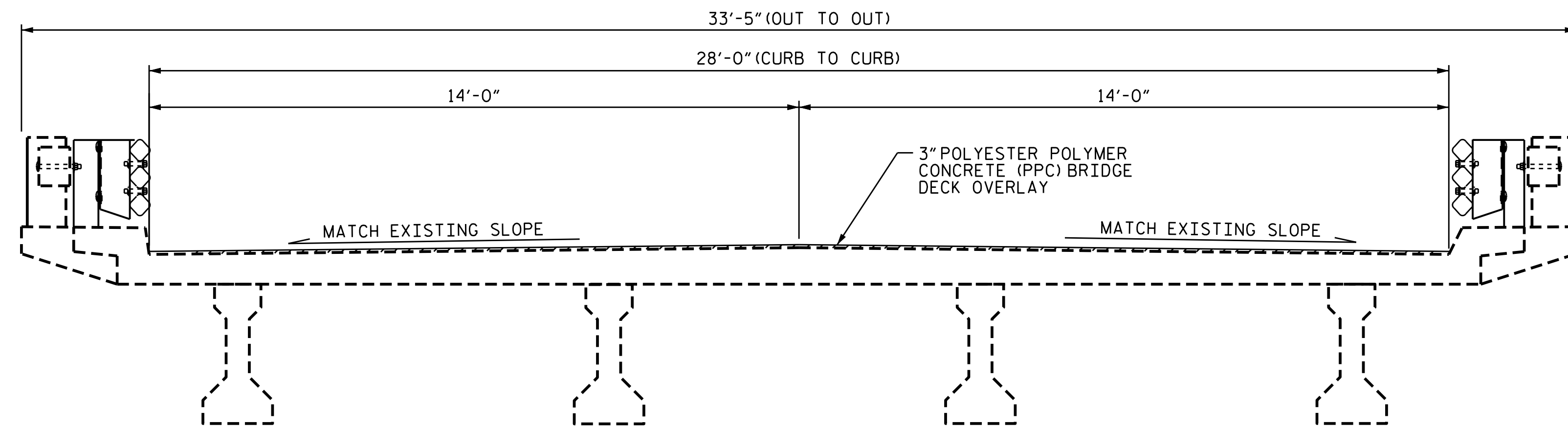
EXISTING BRIDGE IS COVERED WITH ASPHALT OVERLAY, INCIDENTAL MILLING IS REQUIRED.



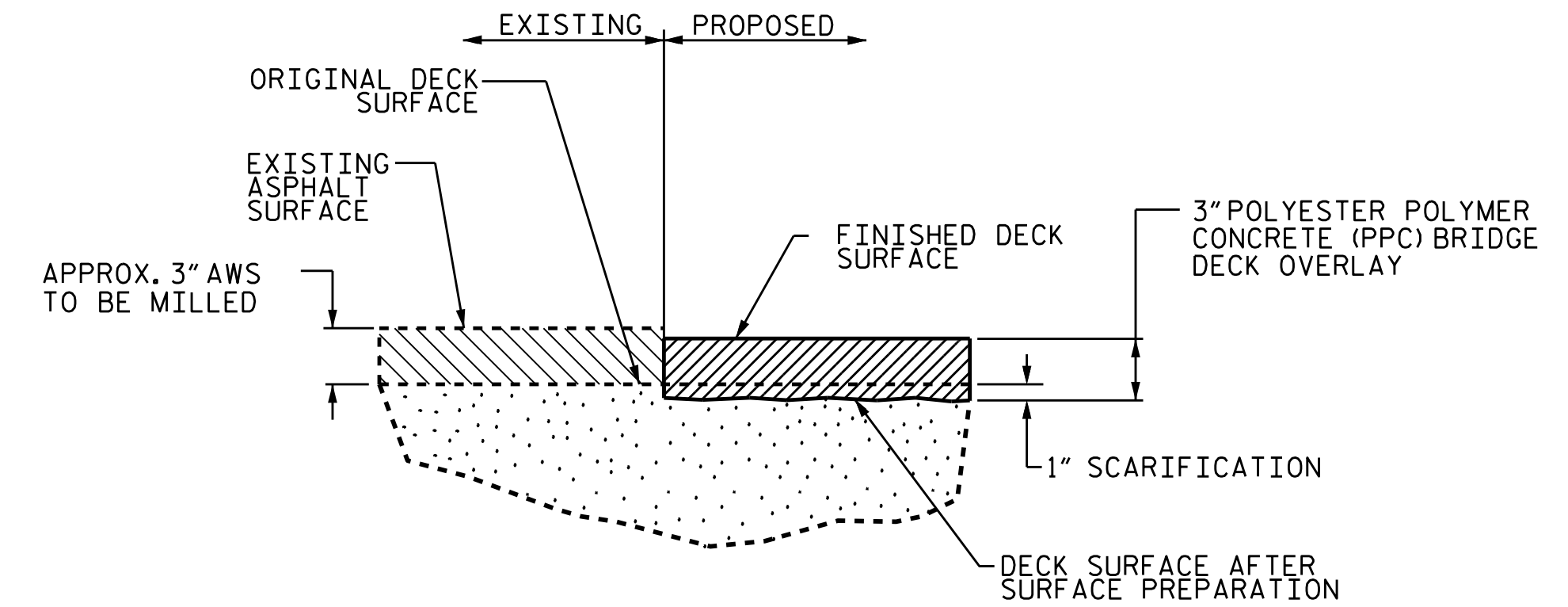
**TYPICAL SECTION**  
(EXISTING)



**TYPICAL SECTION**  
(AFTER EXISTING ASPHALT REMOVED DOWN TO ORIGINAL CONCRETE DECK SURFACE)

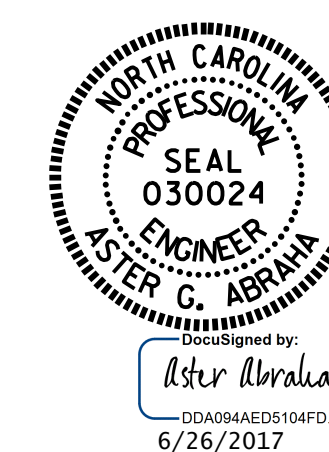


**TYPICAL SECTION**



**DETAIL FOR POLYESTER POLYMER CONCRETE OVERLAY**

PROJECT NO. I-5850  
ROBESON COUNTY  
 BRIDGE NO. 164 & 165



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE**  
**TYPICAL SECTION**

DRAWN BY : M. K. BEARD / S. T. SANDOR DATE : 05/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

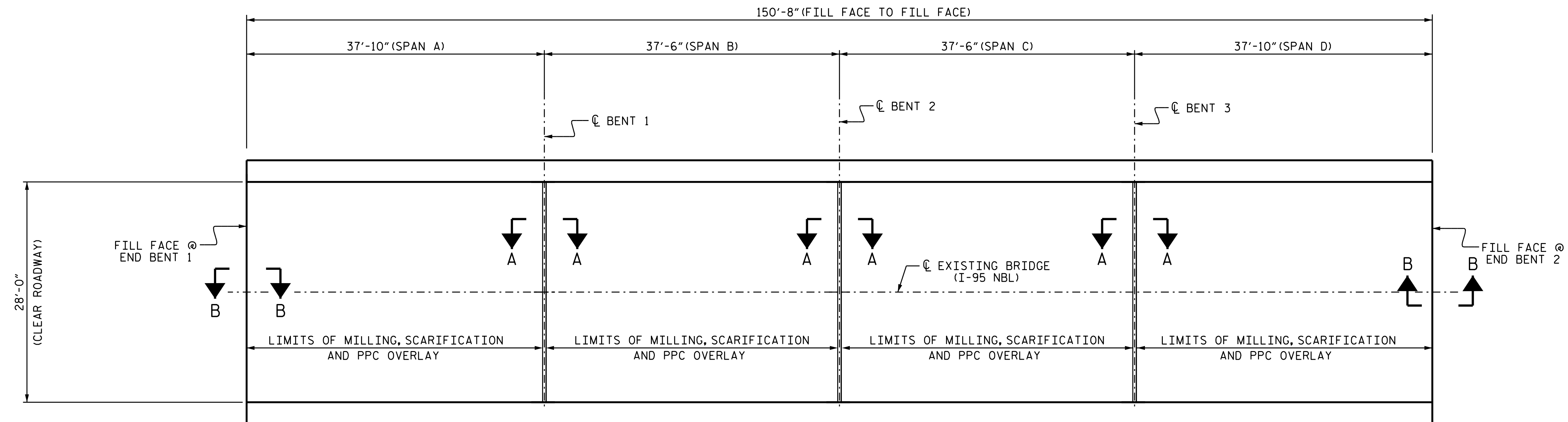
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-30
1			3			TOTAL SHEETS
2			4			35



SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	469.0 SY	
CLASS II SURFACE PREPARATION	* 10.0 SY	
SHOTBLASTING BRIDGE DECK	469.0 SY	
PPC MATERIALS	39.0 CY	
PLACING & FINISHING PPC OVERLAY	469.0 SY	
BRIDGE DECK GROOVING	3,742.0 SF	

\* CLASS II SURFACE PREPARATION FOR PPC OVERLAY IS ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE FOR REPAIR AREAS THAT ARE ENCOUNTERED.

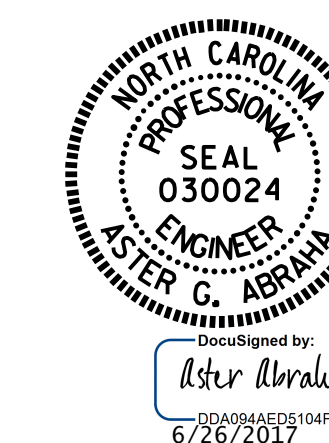


□ - MILLING, SCARIFICATION AND PPC OVERLAY

PLAN OF SPANS

(FOR SECTIONS A-A & B-B,  
SEE "JOINT DETAILS" SHEET S-34)

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE No. 164



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUPERSTRUCTURE  
 SURFACE PREPARATION  
 & PPC OVERLAY

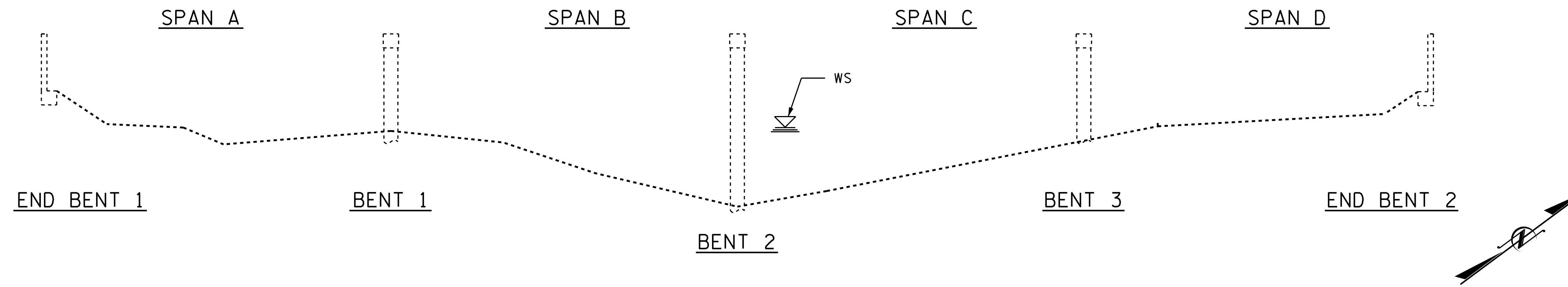
DRAWN BY : S. T. SANDOR DATE : 06/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

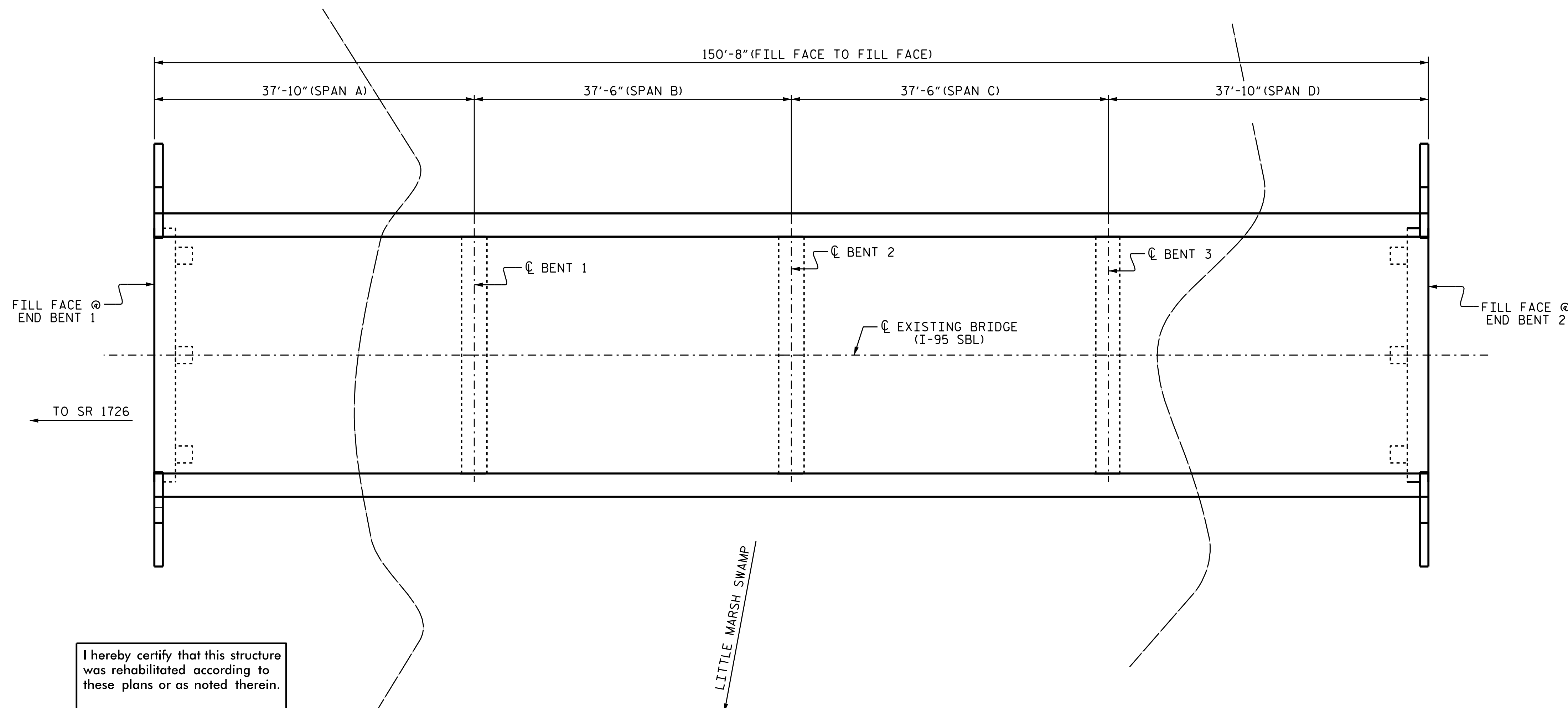
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-31
2			4			TOTAL SHEETS 35

SCOPE OF WORK

- REMOVE ASPHALT WEARING SURFACE.
- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SCARIFICATION AND SHOT-BLASTING METHODS FOR PREPARING DECK FOR POLYESTER POLYMER CONCRETE OVERLAY.
- OVERLAY PREPARED BRIDGE DECK WITH POLYESTER POLYMER CONCRETE.
- RECONSTRUCT BRIDGE DECK JOINTS AND INSTALL NEW FOAM JOINT SEALS.
- GROOVE CONCRETE BRIDGE DECK
- MILL AND PAVE ASPHALT APPROACHES.



ELEVATION  
(SECTION ALONG  $\bar{C}$  ROADWAY)



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

Resident Engineer \_\_\_\_\_ Date \_\_\_\_\_

DRAWN BY : S. T. SANDOR DATE : 04/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

26-JUN-2017 16:19  
 R:\Structures\Plans\409\_001\_I5850.SMU. GD.770165.532.dgn  
 aabrana

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE No. 165



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 BRIDGE OVER  
 LITTLE MARSH SWAMP  
 ON I-95 SBL BETWEEN  
 SR 1723 & SR 1276

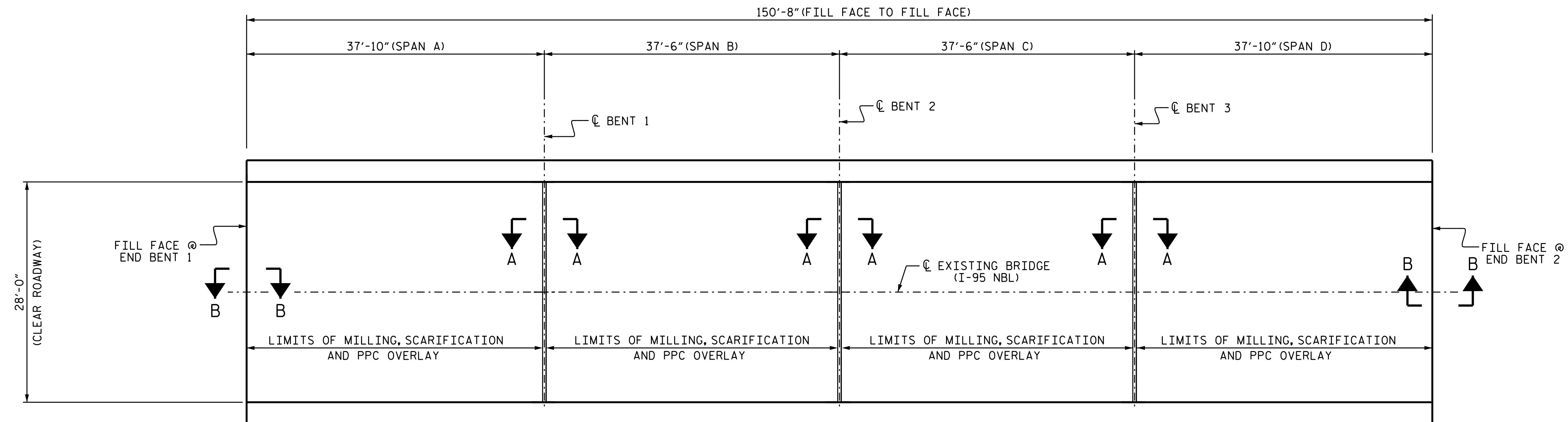
NO.	REVISIONS		NO.	REVISIONS		SHEET NO.
	BY:	DATE:		BY:	DATE:	
1			3			S-32
2			4			TOTAL SHEETS 35

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	469.0 SY	
CLASS II SURFACE PREPARATION	* 10.0 SY	
SHOTBLASTING BRIDGE DECK	469.0 SY	
PPC MATERIALS	39.0 CY	
PLACING & FINISHING PPC OVERLAY	469.0 SY	
BRIDGE DECK GROOVING	3742.0 SF	

\* CLASS II SURFACE PREPARATION FOR PPC OVERLAY IS ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSE FOR REPAIR AREAS THAT ARE ENCOUNTERED.



□ - MILLING, SCARIFICATION AND PPC OVERLAY

PLAN OF SPANS

(FOR SECTIONS A-A & B-B,  
SEE "JOINT DETAILS" SHEET S-34)

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE No. 165



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUPERSTRUCTURE  
 SURFACE PREPARATION  
 & PPC OVERLAY

DRAWN BY : S. T. SANDOR DATE : 06/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-33
1			3			TOTAL SHEETS
2			4			35



**NOTES:**

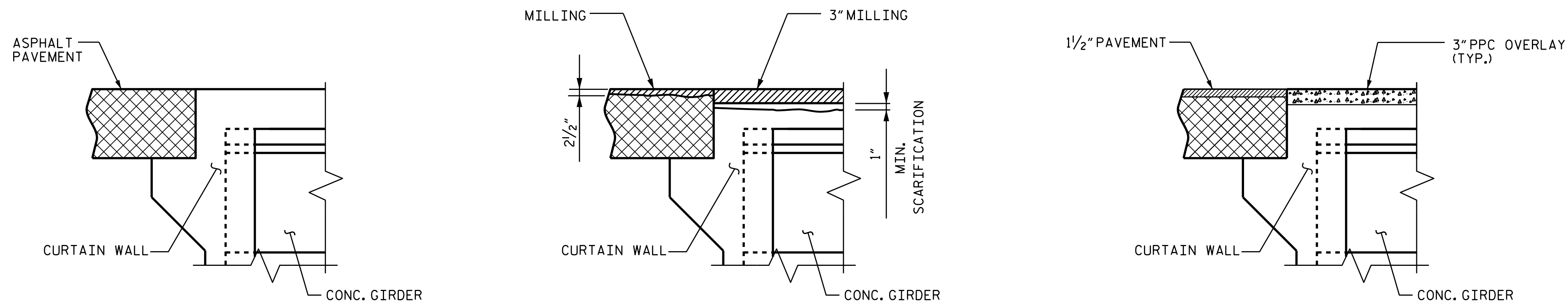
CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.

FOR FOAM JOINT SEALS SEE SPECIAL PROVISIONS.

UNLESS NOTED OTHERWISE RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.

ALL EXPOSED ENDS OF CUT BARS SHALL BE COATED WITH EPOXY PRIOR TO THE NEW JOINT MATERIAL INSTALLATION.

FOR POURABLE COLD JOINT SEALS, SEE SPECIAL PROVISIONS.



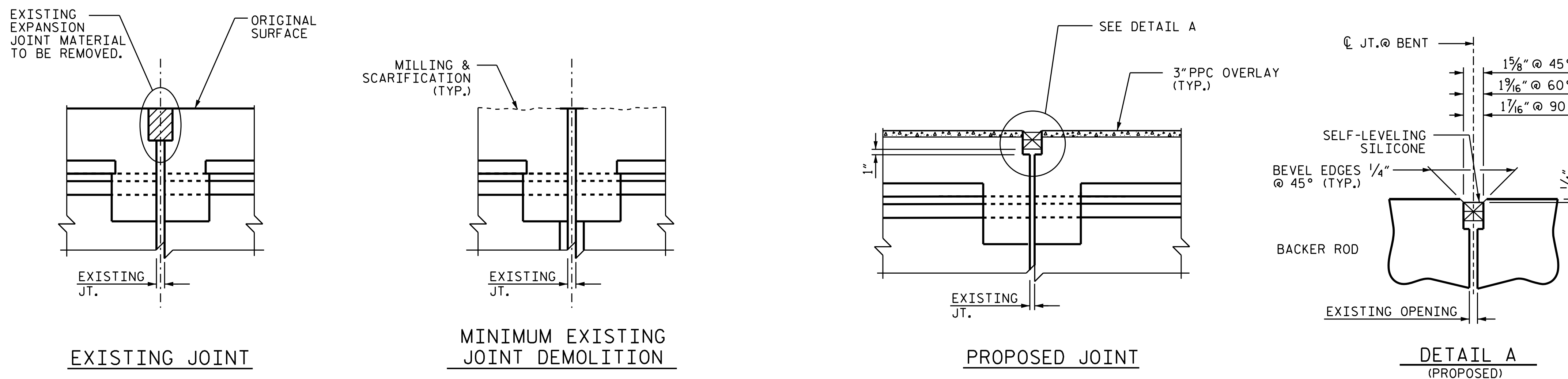
EXISTING JOINT

MINIMUM EXISTING JOINT DEMOLITION

PROPOSED JOINT

JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION B-B



EXISTING JOINT

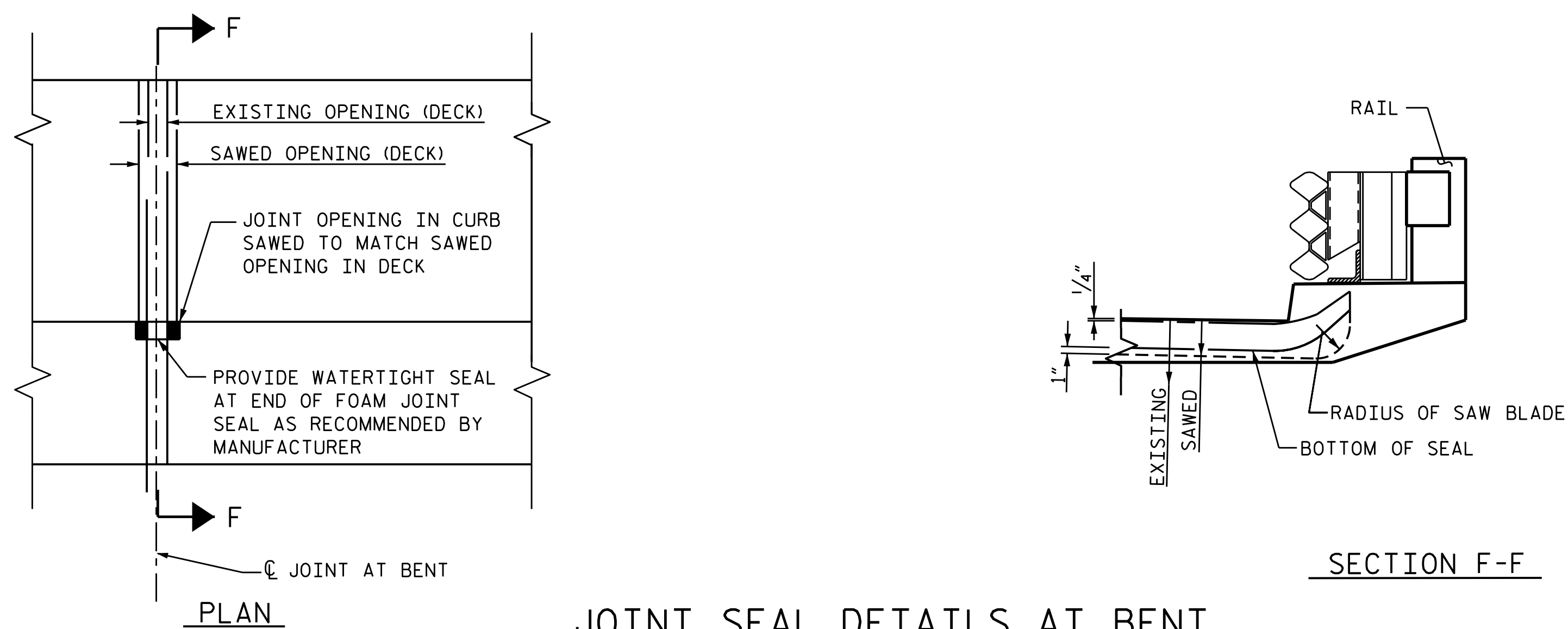
MINIMUM EXISTING JOINT DEMOLITION

PROPOSED JOINT

DETAIL A (PROPOSED)

JOINT INSTALLATION SEQUENCE AT BENTS

SECTION B-B

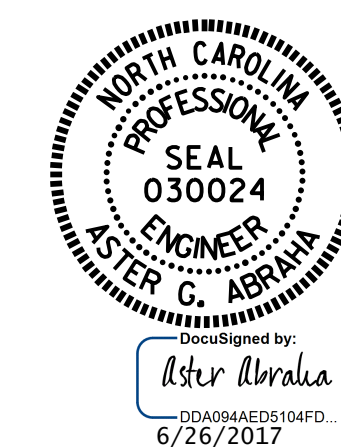


PLAN

SECTION F-F

JOINT SEAL DETAILS AT BENT

PROJECT NO. I-5850  
ROBESON COUNTY  
 BRIDGE NO. 164 & 165



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

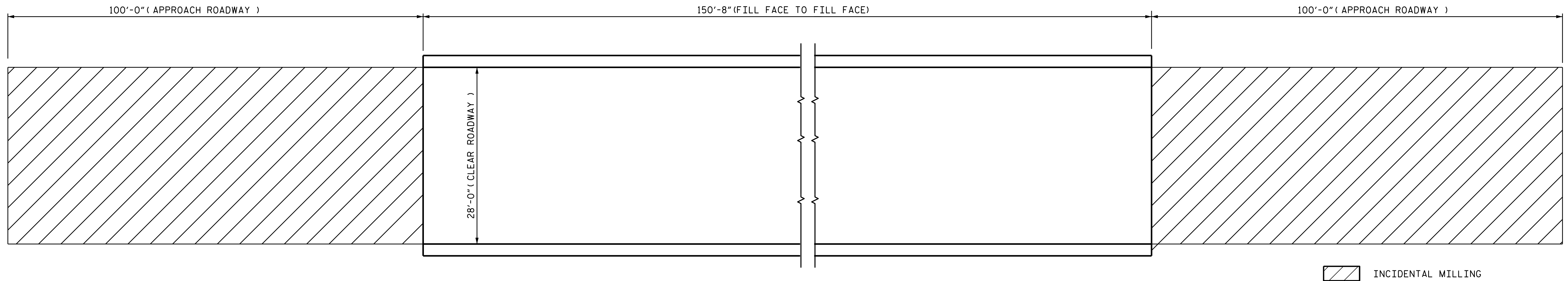
**SUPERSTRUCTURE  
 JOINT DETAILS**

DRAWN BY : S. I. SANDOR DATE : 04/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

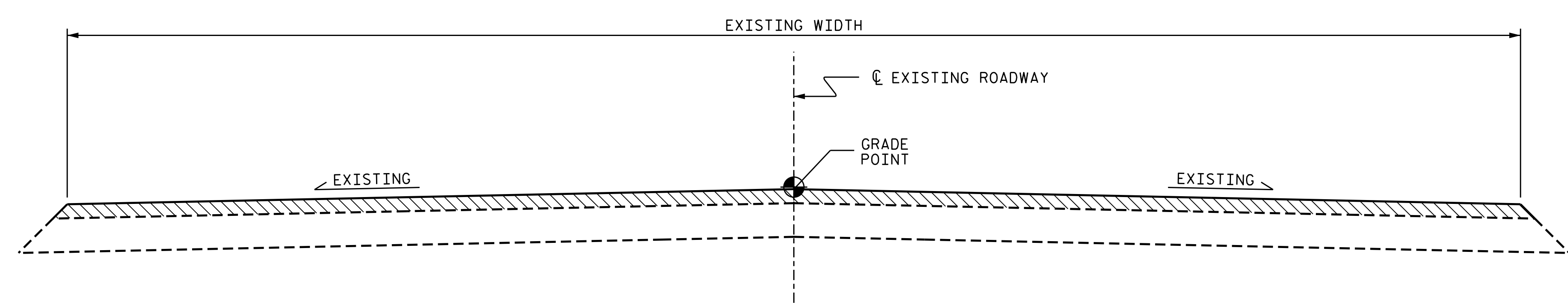
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-34
1			3			TOTAL SHEETS
2			4			35

**NOTES:**  
 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 BETWEEN THE ROADWAY AND THE BRIDGE DECK. NEW ASPHALT PAVING THICKNESS MAY EXCEED 1/2" DUE TO SETTLEMENT OF THE EXISTING APPROACH ASPHALT PAVING.



INCIDENTAL MILLING

**PLAN**

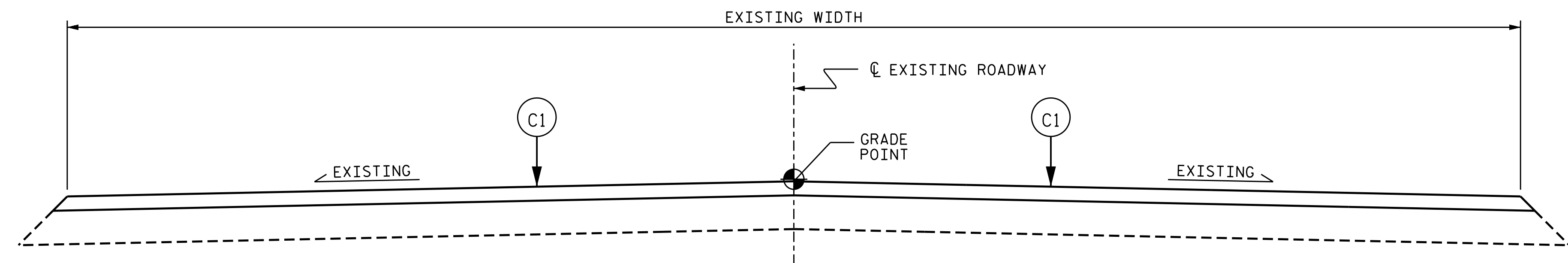


**TYPICAL ROADWAY MILLING SECTION**

SUMMARY OF QUANTITIES SRIDGE #164		
	ESTIMATE	ACTUAL
INCIDENTAL MILLING	622.0 SQ. YDS.	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	52.3 TONS	
ASPHALT BINDER FOR PLANT MIX	3.2 TONS	

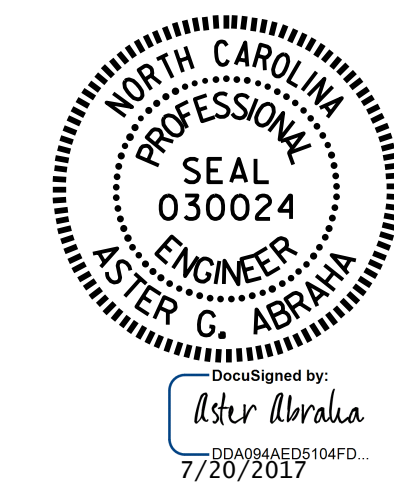
SUMMARY OF QUANTITIES SRIDGE #165		
	ESTIMATE	ACTUAL
INCIDENTAL MILLING	622.0 SQ. YDS.	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	52.3 TONS	
ASPHALT BINDER FOR PLANT MIX	3.2 TONS	

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.



**TYPICAL PROPOSED ROADWAY SECTION**

PROJECT NO. I-5850A  
ROBESON COUNTY  
 BRIDGE NO. 164 & 165



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**APPROACH MILLING AND TYPICAL ROADWAY SECTIONS**

DRAWN BY : S. T. SANDOR DATE : 06/2017  
 CHECKED BY : A. G. ABRAHA DATE : 06/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

## STANDARD NOTES

### DESIGN DATA:

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

### MATERIAL AND WORKMANSHIP:

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

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

### CONCRETE:

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

### CONCRETE CHAMFERS:

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

### DOWELS:

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

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

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.  
ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.  
IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.  
DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

### REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.  
WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

### STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".  
EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.  
WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

### HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.  
METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

### SPECIAL NOTES:

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

# ENGLISH

JANUARY, 1990

STD. NO. SN