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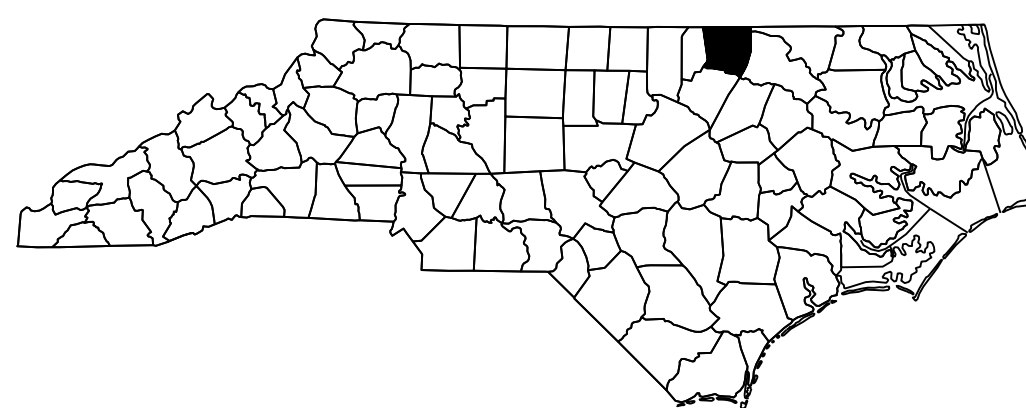
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PROJECT: 15BPR.2

CONTRACT: DE00238

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

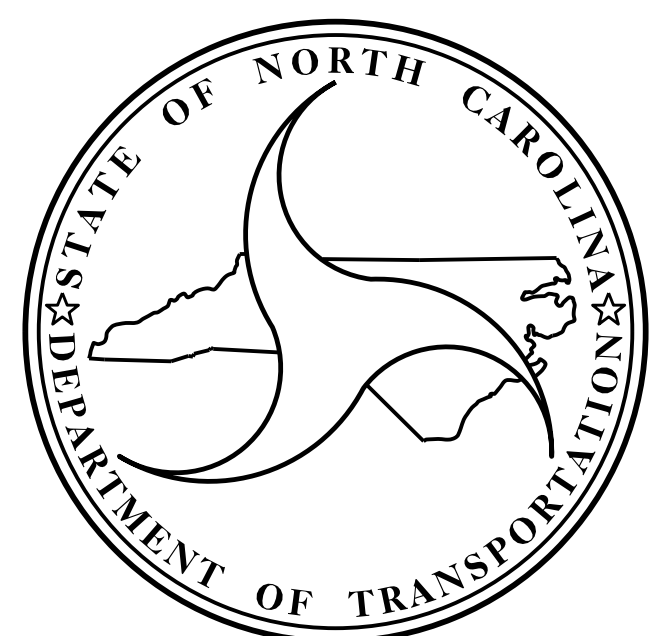
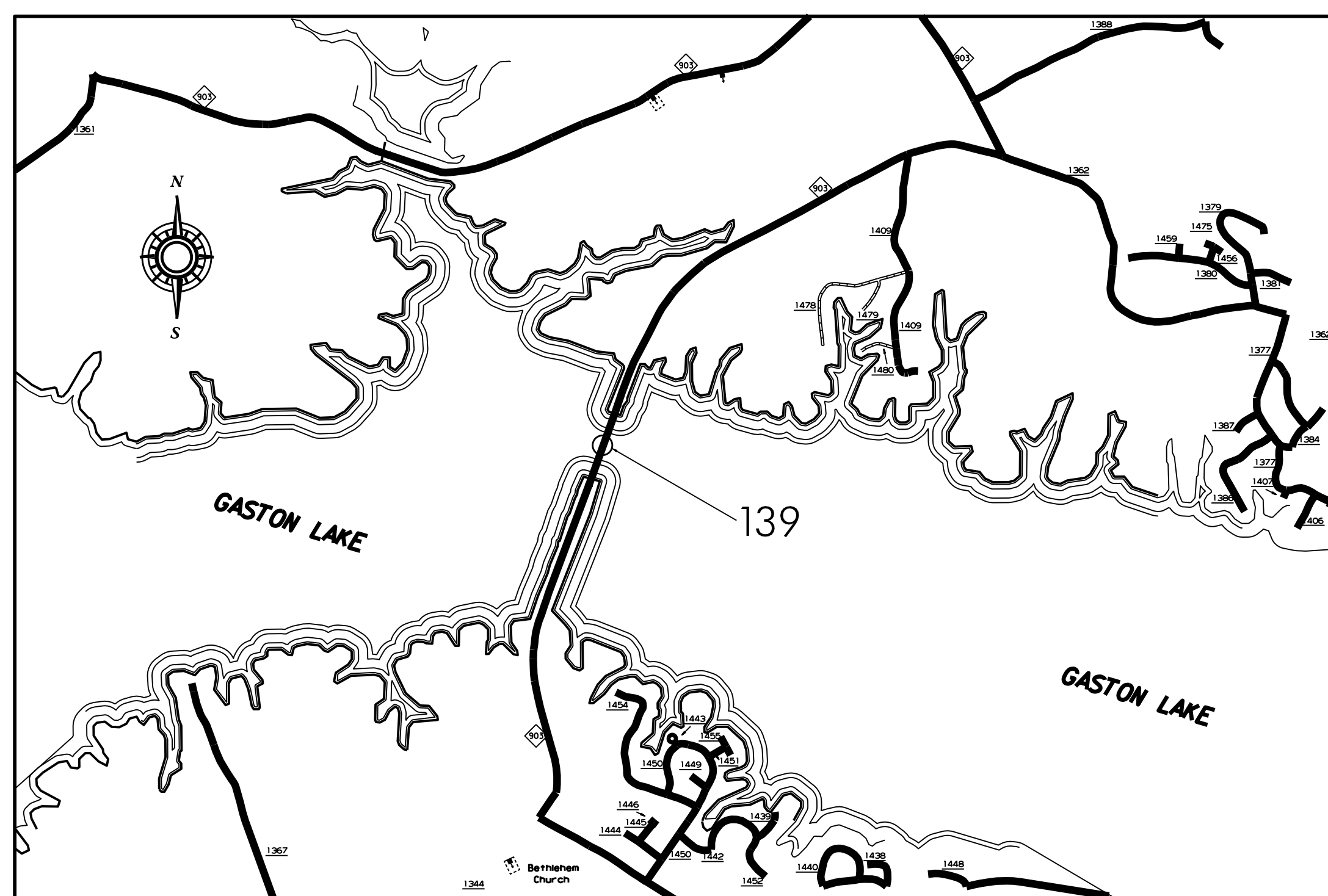
WARREN COUNTY



LOCATION: BRIDGE #139 ON NC 903 OVER GASTON LAKE

TYPE OF WORK: BRIDGE PRESERVATION - DECK REHABILITATION BY SCARIFYING, SHOT BLAST CLEANING, AND PLACEMENT OF POLYESTER POLYMER CONCRETE, REMOVAL AND RECONSTRUCTION OF BRIDGE DECK FINGER JOINTS, INSTALLATION OF SILICONE JOINT SEALS, SUBSTRUCTURE REPAIR USING SHOTCRETE AND EPOXY RESIN INJECTION, PAINTING STRUCTURAL STEEL, MILLING, AND APPROACH STABILIZATION.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15BPR.2	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



DESIGN DATA

BRIDGE #139 - ADT - 2600

PROJECT LENGTH

BRIDGE #139 - .247 MILE

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

G.W. DICKEY, P. E.
PROJECT ENGINEER

2018 STANDARD SPECIFICATIONS

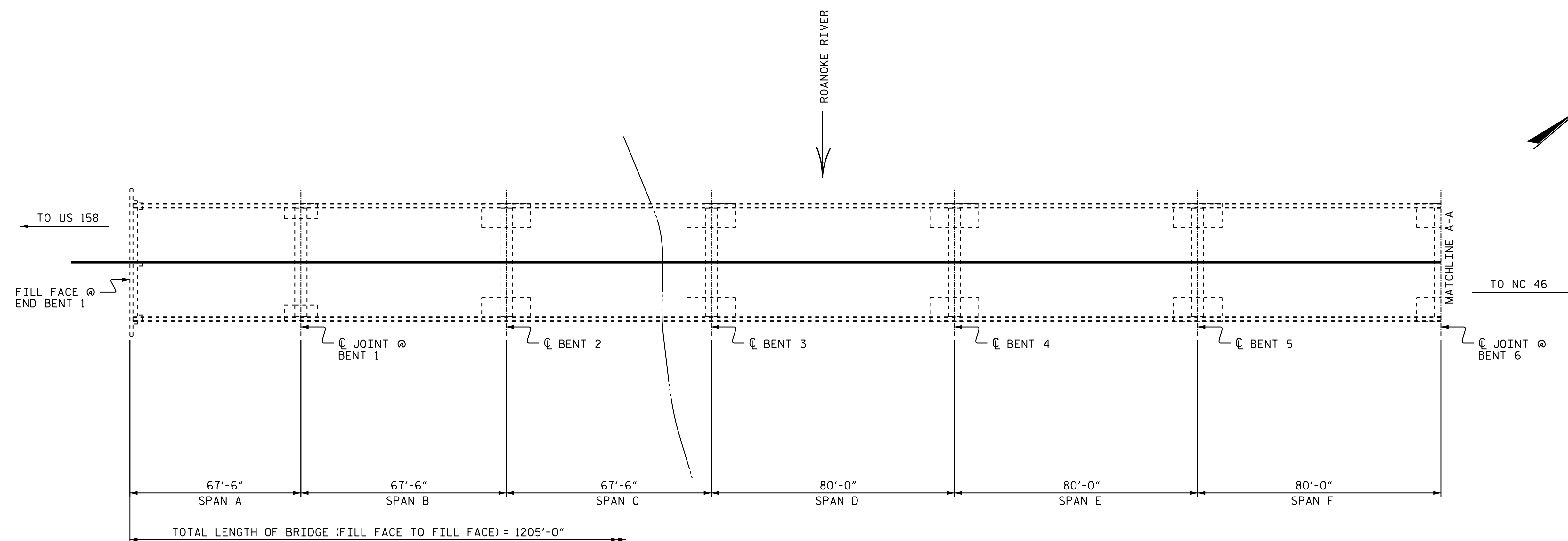
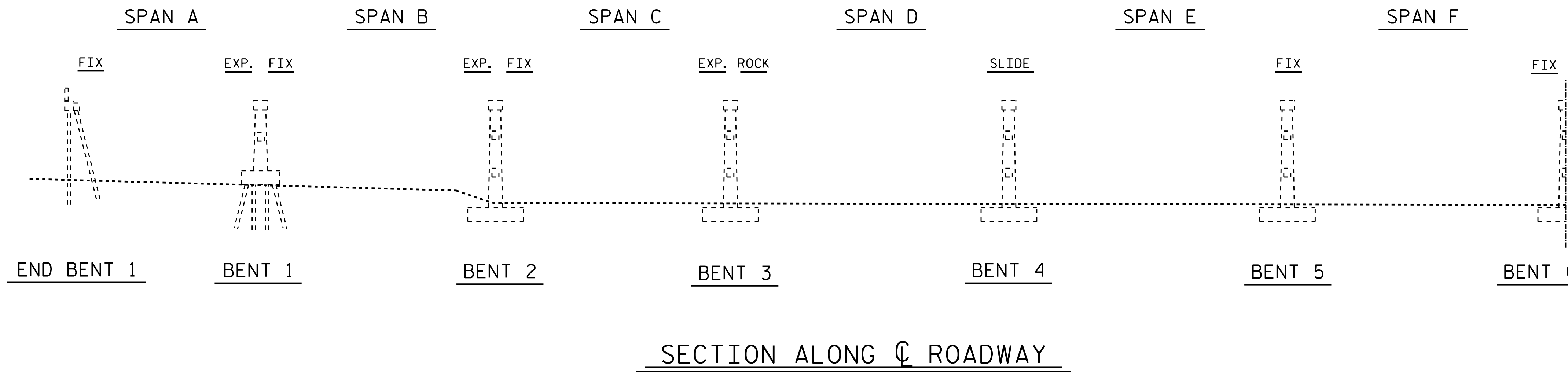
LETTING DATE:
MAY 9, 2018



K.W. ALFORD, P.E.
PROJECT DESIGN ENGINEER

SCOPE OF WORK

- PARTIALLY REMOVE BRIDGE DECK CONCRETE BY SCARIFICATION AND SHOTBLASTING METHODS.
- DEMOLISH EXISTING BRIDGE DECK FINGER JOINTS AND REPLACE WITH RUBBER PLATE TYPE EXPANSION JOINTS.
- PERFORM DECK REPAIRS IN PREPARED AREAS.
- OVERLAY PREPARED BRIDGE DECK WITH POLYESTER POLYMER CONCRETE.
- REMOVE EXISTING BRIDGE JOINTS AND INSTALL SILICONE JOINT SEALS.
- GROOVE POLYESTER POLYMER CONCRETE.
- SUBSTRUCTURE REPAIRS USING EPOXY RESIN INJECTION AND SHOTCRETE.
- EPOXY COATING OF TOP OF CAPS.
- PAINTING EXISTING STEEL GIRDERS.
- CLEANING AND PAINTING BEARINGS
- MILLING
- SUBGRADE STABILIZATION
- PAVING



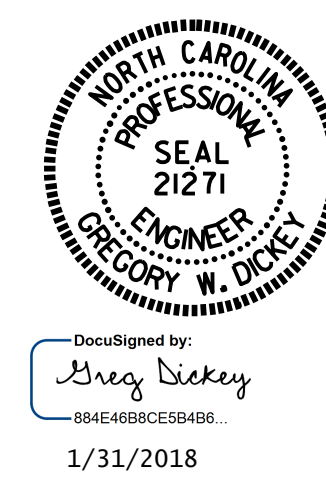
I hereby certify that this structure was rehabilitated according to these plans or as noted therein.

Resident Engineer _____ Date _____

PLAN

PROJECT NO. 15BPR.2
 WARREN COUNTY
 BRIDGE NO. 139

SHEET 1 OF 4

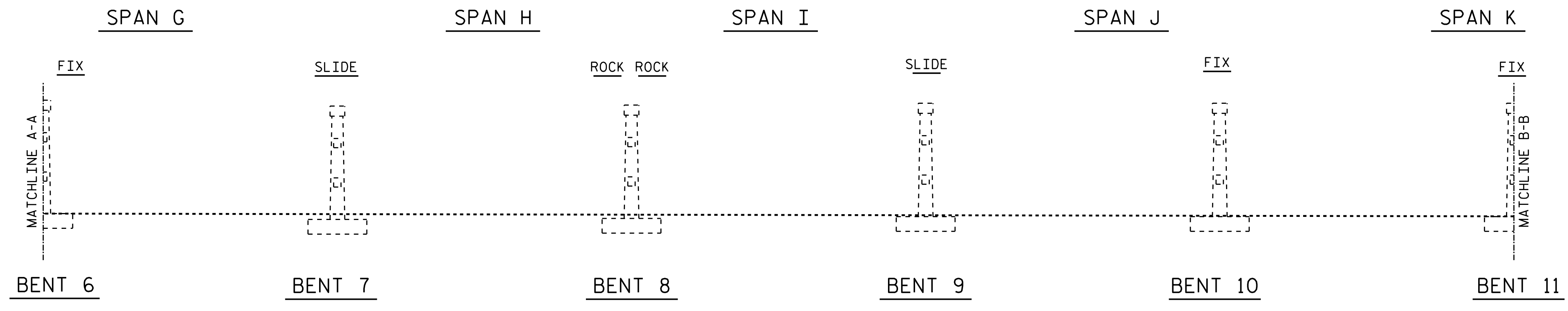


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE OVER
 GASTON LAKE
 ON NC 903 BETWEEN
 US 158 AND NC 46

DRAWN BY : J.D. HAWK DATE : 8/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

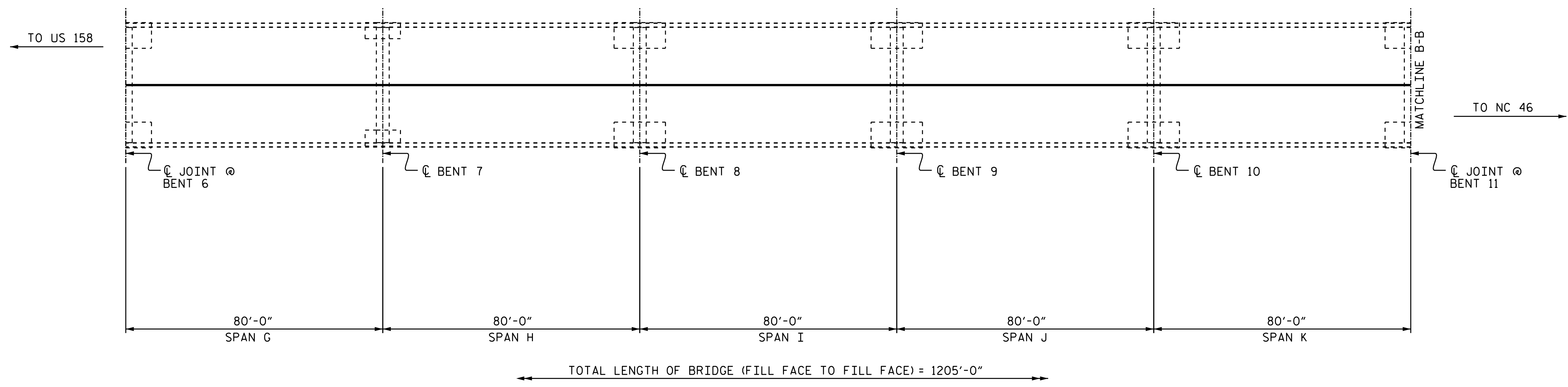
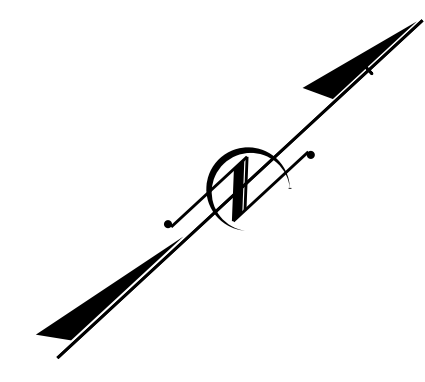
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REVISIONS						SHEET NO.
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2			4			42



SECTION ALONG C ROADWAY

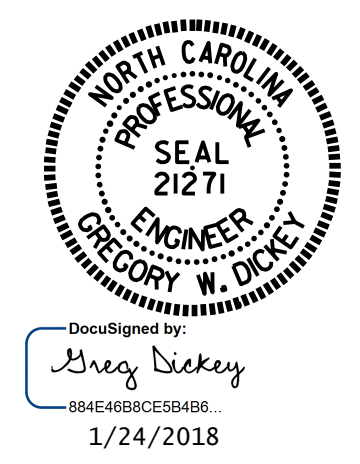
ROANOKE RIVER



PLAN

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139

SHEET 2 OF 4

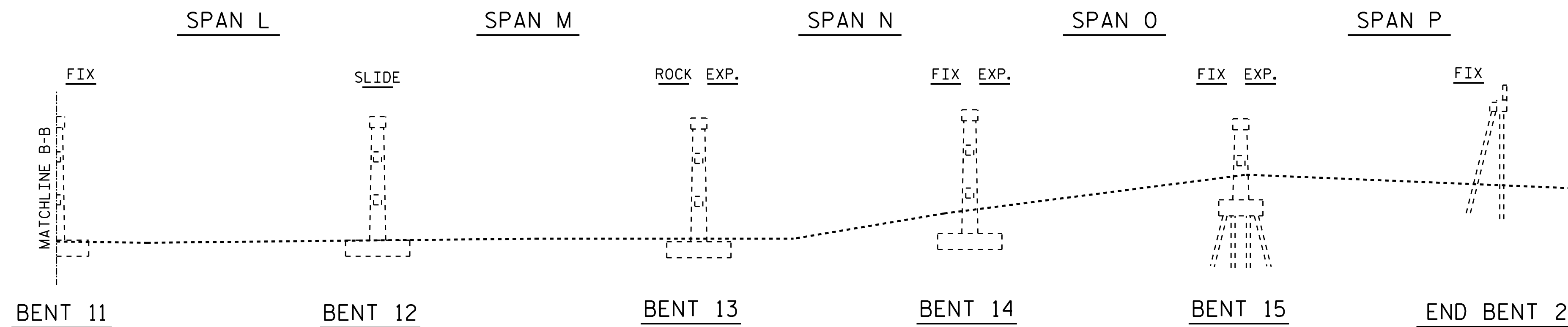


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE OVER
 GASTON LAKE
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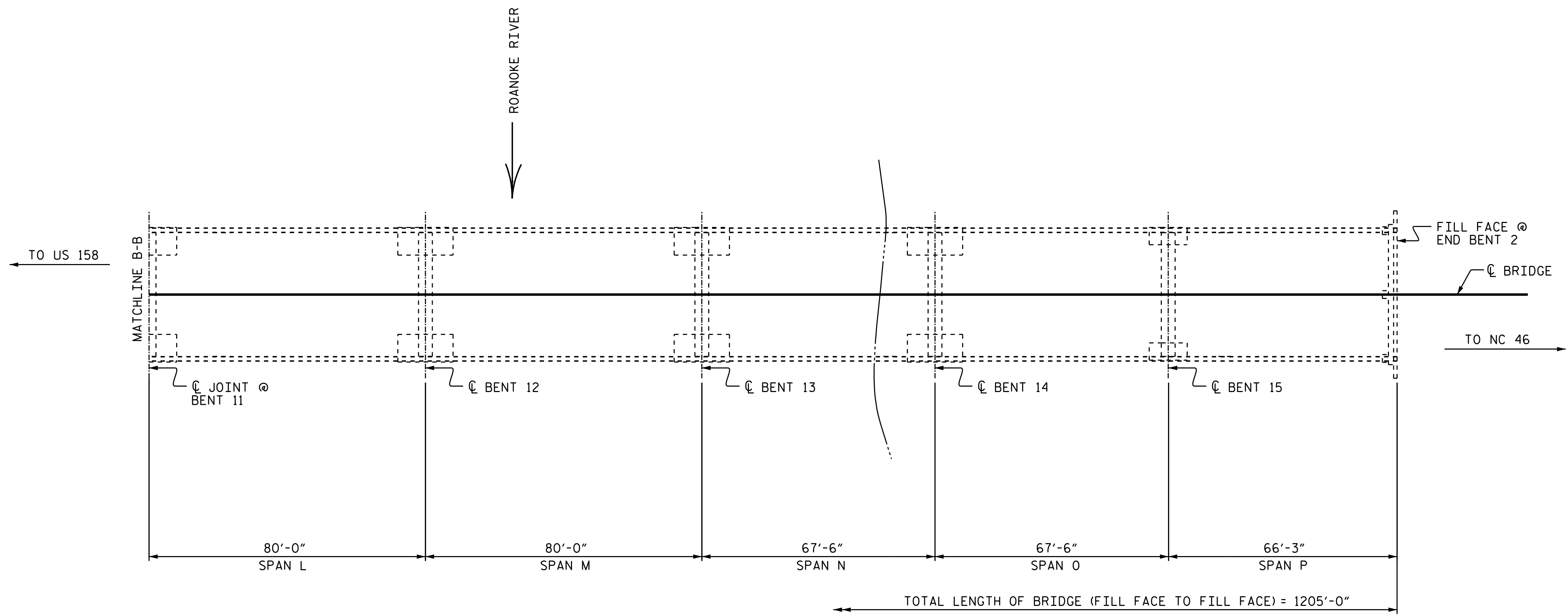
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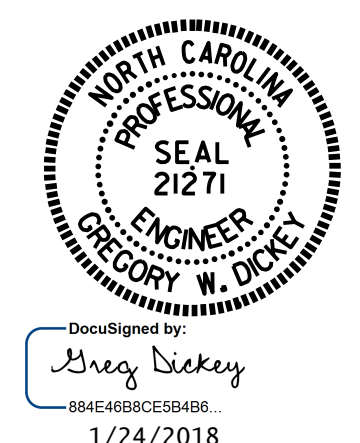
SECTION ALONG ϕ ROADWAY



PLAN

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139

SHEET 3 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE OVER
 GASTON LAKE
 ON NC 903 BETWEEN
 US 158 AND NC 46

DRAWN BY : J.D. HAWK DATE : 8/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

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REVISIONS						SHEET NO.
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2			4			42

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LOCATION SKETCH

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

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.
- 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 CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLAN.
- 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 CLEANING AND REPAINTING OF BRIDGE #920139, POLLUTION CONTROL, AND PAINTING CONTAINMENT FOR BRIDGE #920139, SEE "PAINTING EXISTING STRUCTURE" SPECIAL PROVISION.
- FOR CONCRETE DECK REPAIR FOR PPC OVERLAY, PPC MATERIALS, PLACING AND FINISHING PPC OVERLAY, SEE "POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY" SPECIAL PROVISION.
- FOR SCARIFYING BRIDGE DECK, SHOTBLASTING BRIDGE DECK, AND CLASS II SURFACE PROTECTION, SEE "OVERLAY SURFACE PREPARATION FOR POLYESTER POLYMER CONCRETE" SPECIAL PROVISION.
- FOR JOINT REPAIR AND MOLDED RUBBER SEGMENTAL EXPANSION JOINT, SEE "JOINT REPAIR" SPECIAL PROVISION.
- FOR CLEANING AND PAINTING EXISTING BEARINGS WITH HRCSA, SEE SPECIAL PROVISIONS.
- FOR SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.
- FOR EPOXY COATING, SEE SPECIAL PROVISIONS.
- FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
- FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

CLEANING AND PAINTING OF BEARINGS SEQUENCE:

CLEAN AND PAINT ALL EXPOSED AREAS OF PLATES, NUTS, BOLTS, AND WASHERS AT EACH BEARING IN ACCORDANCE WITH PROJECT SPECIAL PROVISIONS FOR CLEANING AND PAINTING OF EXISTING BEARING PLATES WITH HRCSA.

DURING ALL CLEANING AND PAINTING OPERATIONS, THE CONTRACTOR SHALL ISOLATE THE WORK AREA WITH APPROPRIATE CONTAINMENT DEVICES IN ORDER TO PREVENT ANY GENERATED DEBRIS FROM CAUSING VIOLATIONS OF CURRENT FEDERAL, STATE AND LOCAL AIR AND WATER POLLUTION REGULATIONS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEGAL DISPOSAL OF ALL DEBRIS COLLECTED BY THE CONTAINMENT DEVICES.

PROJECT NO. 15BPR.2
 WARREN COUNTY
 BRIDGE NO. 139

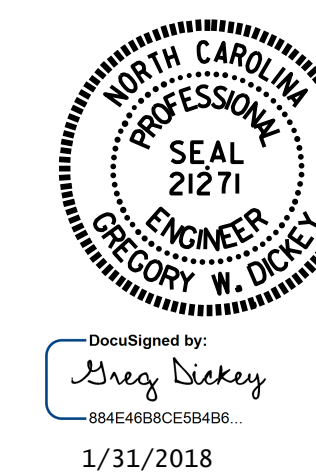
SHEET 4 OF 4

TOTAL BILL OF MATERIAL															
BRIDGE NO.	SHALLOW UNDERCUT	CLASS IV SUBGRADE STABILIZATION	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B	ASPHALT BINDER FOR PLANT MIX	GEOTEXTILE FOR SOIL STABILIZATION	GROOVING BRIDGE FLOORS	POLLUTION CONTROL	CLASS II SURFACE PREPARATION	SHOTCRETE REPAIRS	EPOXY RESIN INJECTION	CLEANING AND REPAINTING OF BRIDGE #139	PAINTING CONTAINMENT FOR BRIDGE #139	MOLDED RUBBER SEGMENTAL EXPANSION JOINT	SILICONE JOINT SEALANT
	CU. YDS.	TON	SO. YDS.	TON	TON	SO. YDS.	SO. FT.	LUMP SUM	SO. YDS.	CU. FT.	LIN. FT.	LUMP SUM	LUMP SUM	LUMP SUM	LIN. FT.
139	18.0	117.0	312.0	25.7	8.0	160.0	29,798.4	LUMP SUM	14.2	86.75	595.0	LUMP SUM	LUMP SUM	LUMP SUM	421.5
TOTAL	18.0	117.0	312.0	25.7	8.0	160.0	29,798.4	LUMP SUM	14.2	86.75	595.0	LUMP SUM	LUMP SUM	LUMP SUM	421.5

TOTAL BILL OF MATERIAL								
BRIDGE NO.	PPC MATERIALS	EPOXY COATING	JOINT REPAIR	CONCRETE DECK REPAIR FOR PPC OVERLAY	PLACING AND FINISHING PPC OVERLAY	SCARIFYING BRIDGE DECK	SHOTBLASTING BRIDGE DECK	CLEANING AND PAINTING OF EXISTING BEARINGS WITH HRCSA
	CU. YDS.	SO. FT.	SO. FT.	SO. YDS.	SO. YDS.	SO. YDS.	SO. YDS.	EACH
139	103.2	1280.0	97.3	14.2	3,720.8	3,720.8	3720.8	96
TOTAL	103.2	1280.0	97.3	14.2	3,720.8	3,720.8	3720.8	96

DRAWN BY : J.D. HAWK DATE : 8/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

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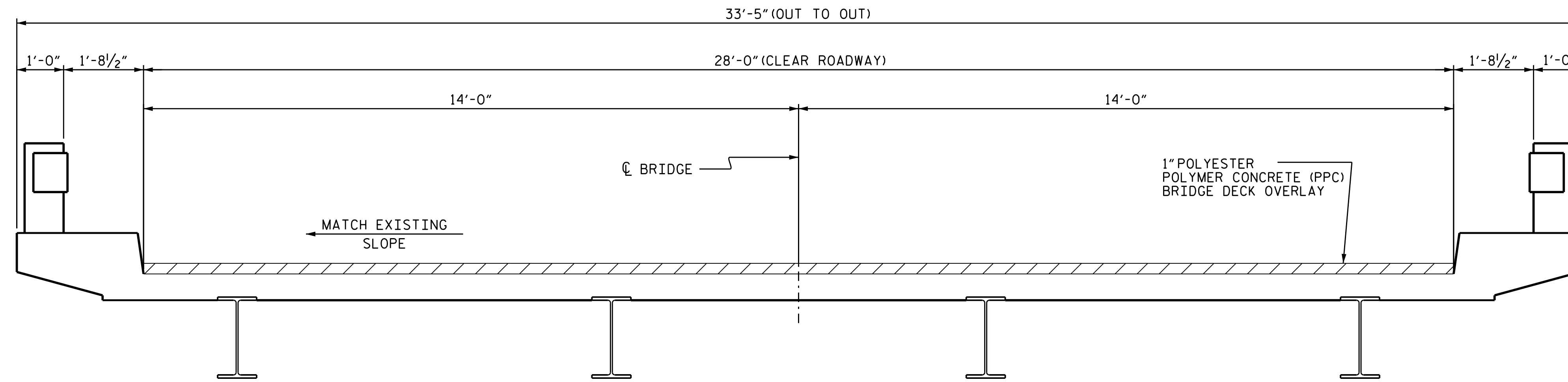
DocuSigned by:
 Gregory W. Dickey
 88468BCE848B
 1/31/2018

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1			3			TOTAL SHEETS
2			4			42

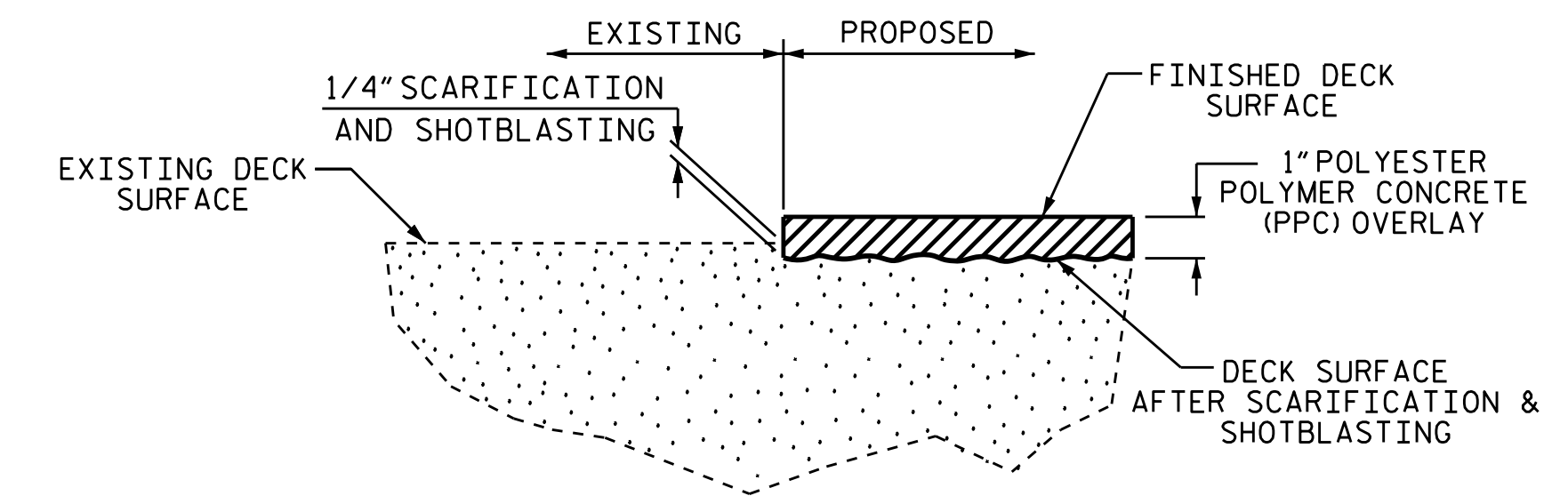
NOTE:

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

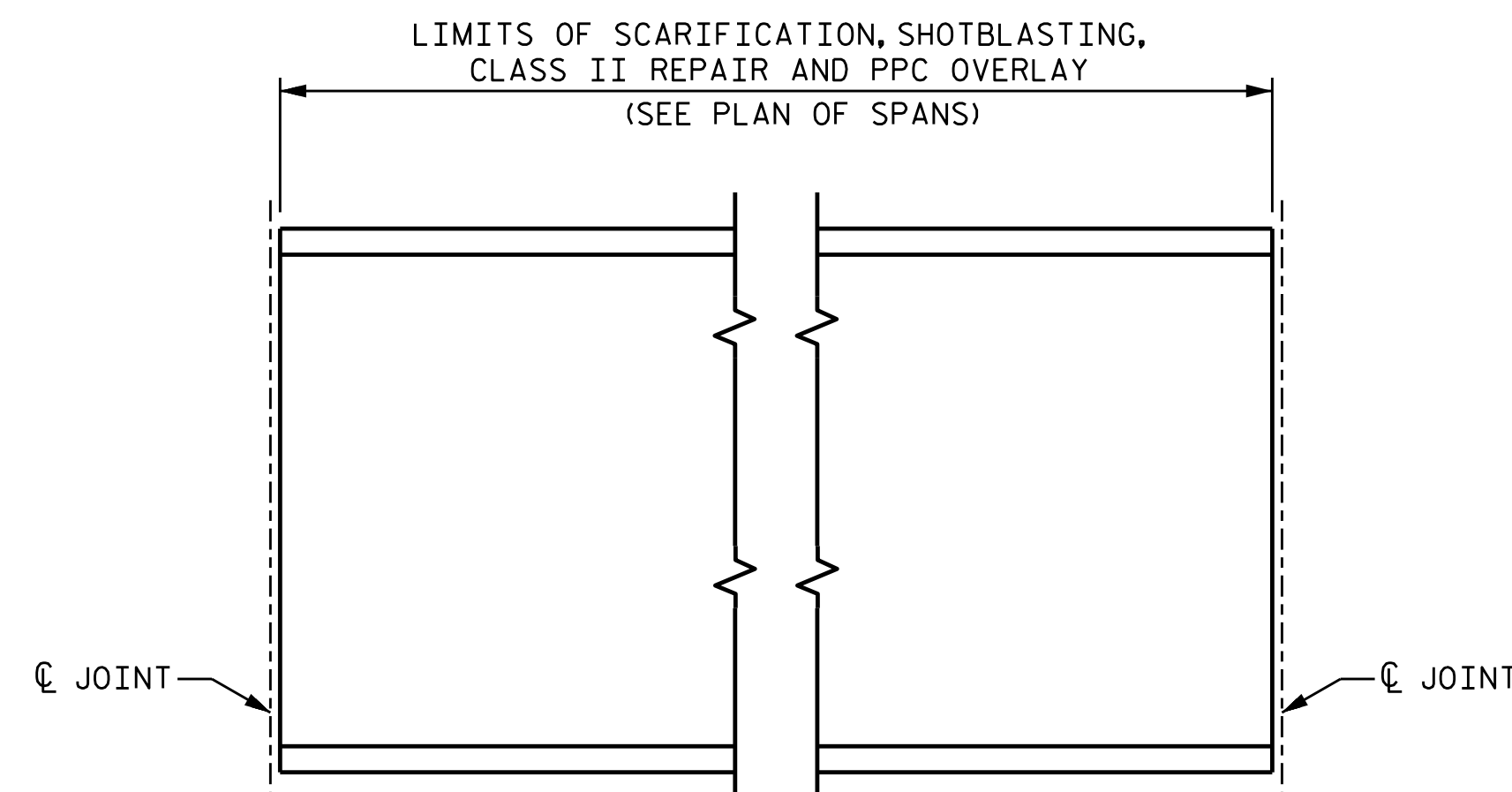


TYPICAL SECTION

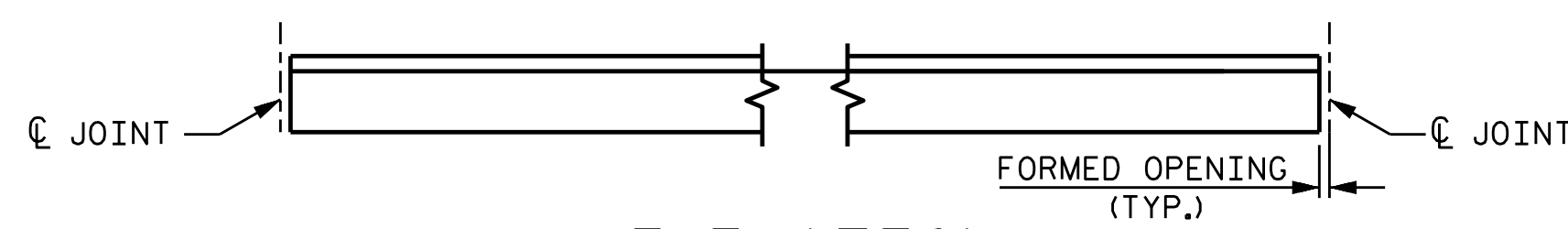
(PROPOSED LOOKING NORTH)



DETAIL OF POLYESTER POLYMER CONCRETE OVERLAY

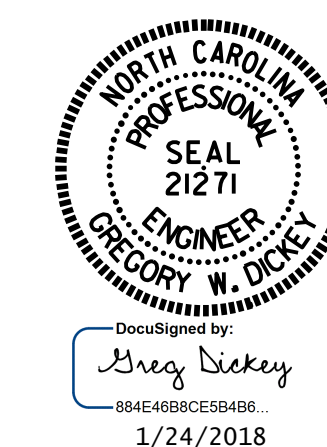


PLAN



ELEVATION

PROJECT NO. 15BPR.2
 WARREN COUNTY
 BRIDGE NO. 139



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUPERSTRUCTURE
 TYPICAL SECTION
 & POLYESTER POLYMER CONCRETE DETAILS

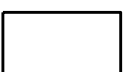

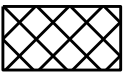
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 CHECKED BY : G.W. DICKEY DATE : 10/17

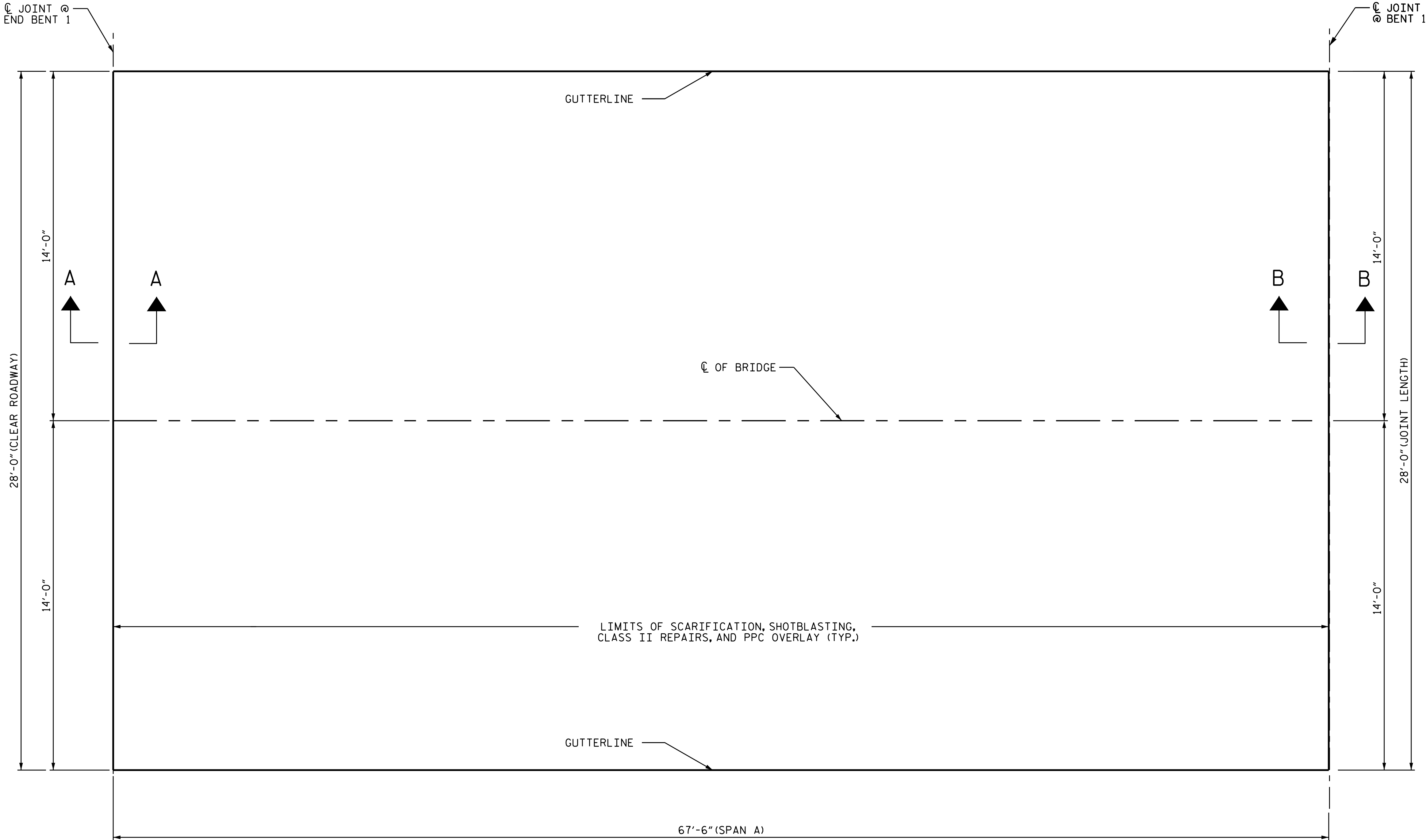
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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			42

SPAN A QUANTITIES		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	210.0 S.Y.	
CLASS II SURFACE PREPARTION	0.5 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.5 S.Y.	
SHOTBLASTING BRIDGE DECK	210.0 S.Y.	
PPC MATERIALS	5.8 C.Y.	
PLACING AND FINISHING PPC OVERLAY	210.0 S.Y.	
GROOVING BRIDGE FLOORS	1679.2 S.F.	

CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN AMOUNT IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED AREAS ARE ENCOUNTERED.

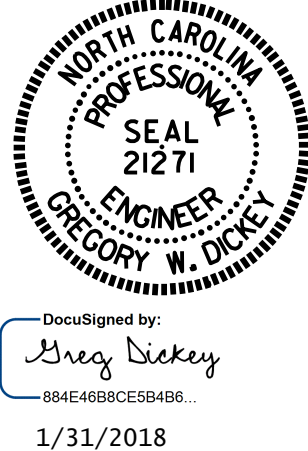
-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR



PLAN OF SPAN A

(FOR SECTIONS A-A & B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 SPAN A**




DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

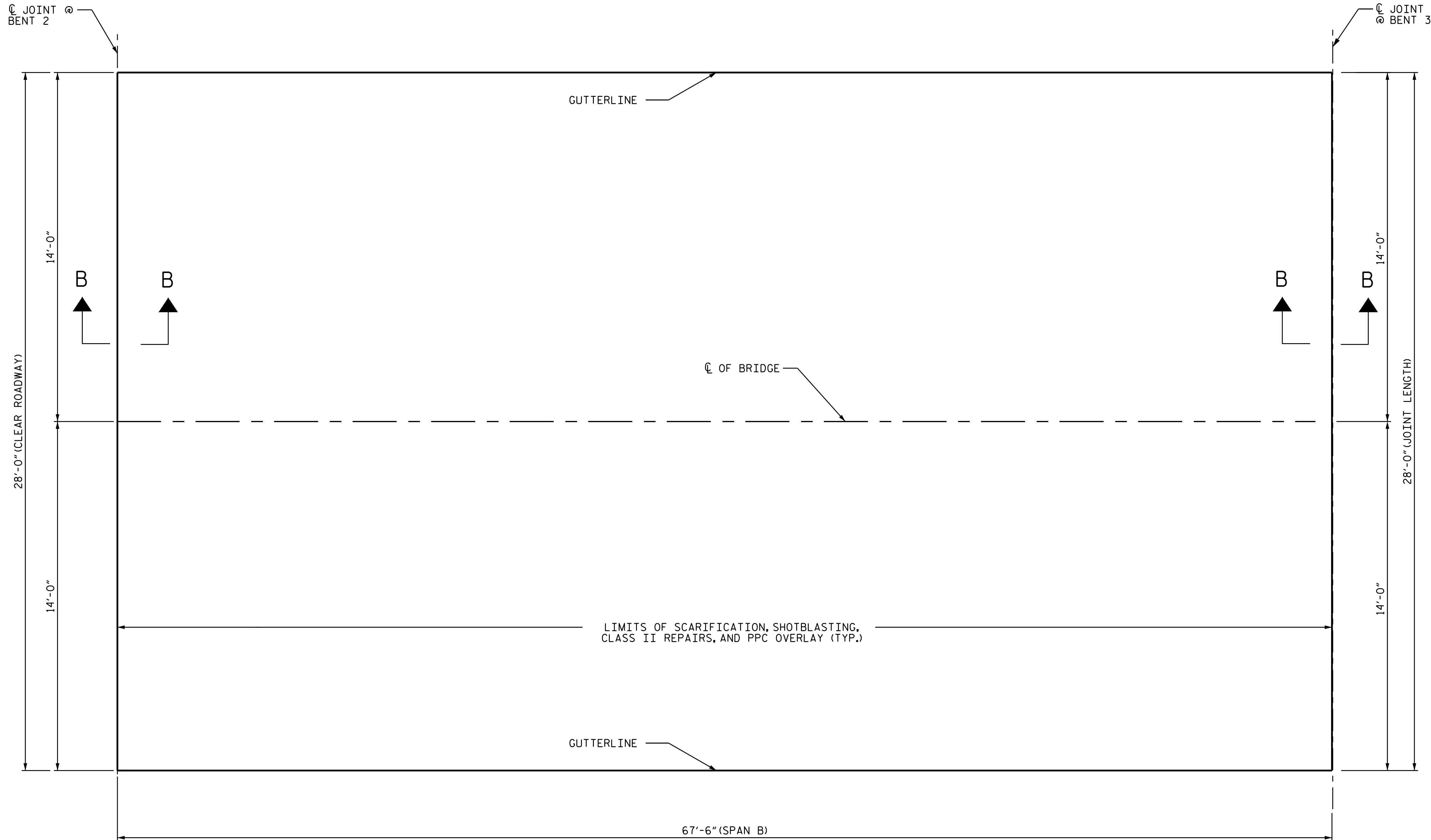
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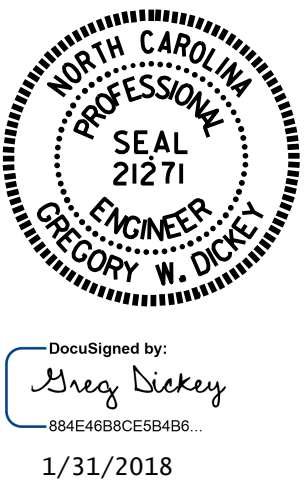
SPAN B QUANTITIES		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	210.0 S.Y.	
CLASS II SURFACE PREPARTION	0.5 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.5 S.Y.	
SHOTBLASTING BRIDGE DECK	210.0 S.Y.	
PPC MATERIALS	5.8 C.Y.	
PLACING AND FINISHING PPC OVERLAY	210.0 S.Y.	
GROOVING BRIDGE FLOORS	1679.2 S.F.	

CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN AMOUNT IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED AREAS ARE ENCOUNTERED.

-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR



PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



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

PLAN OF SPAN B
 (FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

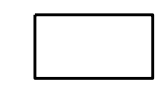
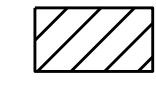

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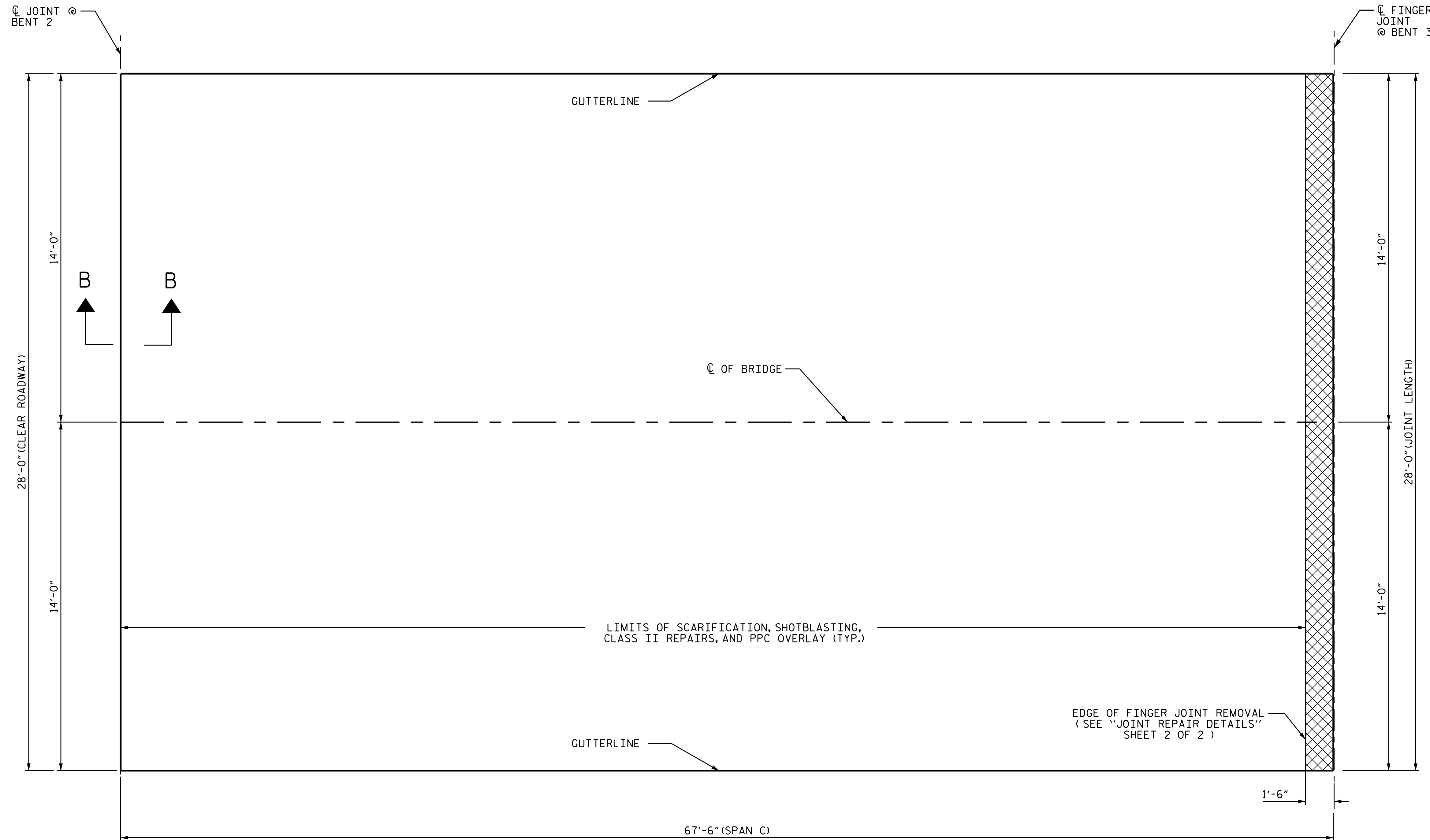
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2			4			42

SPAN C QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	205.3 S.Y.	
CLASS II SURFACE PREPARTION	0.5 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.5 S.Y.	
SHOTBLASTING BRIDGE DECK	205.3 S.Y.	
PPC MATERIALS	5.7 C.Y.	
PLACING AND FINISHING PPC OVERLAY	205.3 S.Y.	
GROOVING BRIDGE FLOORS	1646.9 S.F.	

CLASS II SURFACE PREPARTION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN AMOUNT IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED AREAS ARE ENCOUNTERED.

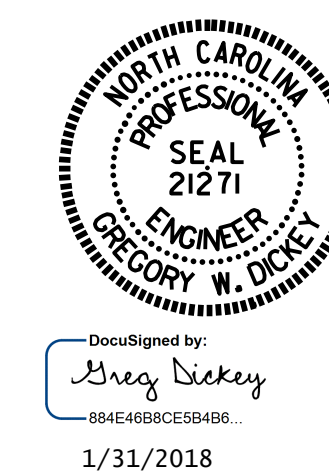
-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR



PLAN OF SPAN C

(FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

PROJECT NO. 15BPR.2
 WARREN COUNTY
 BRIDGE NO. 139



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

DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

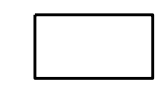
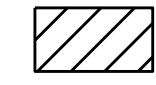

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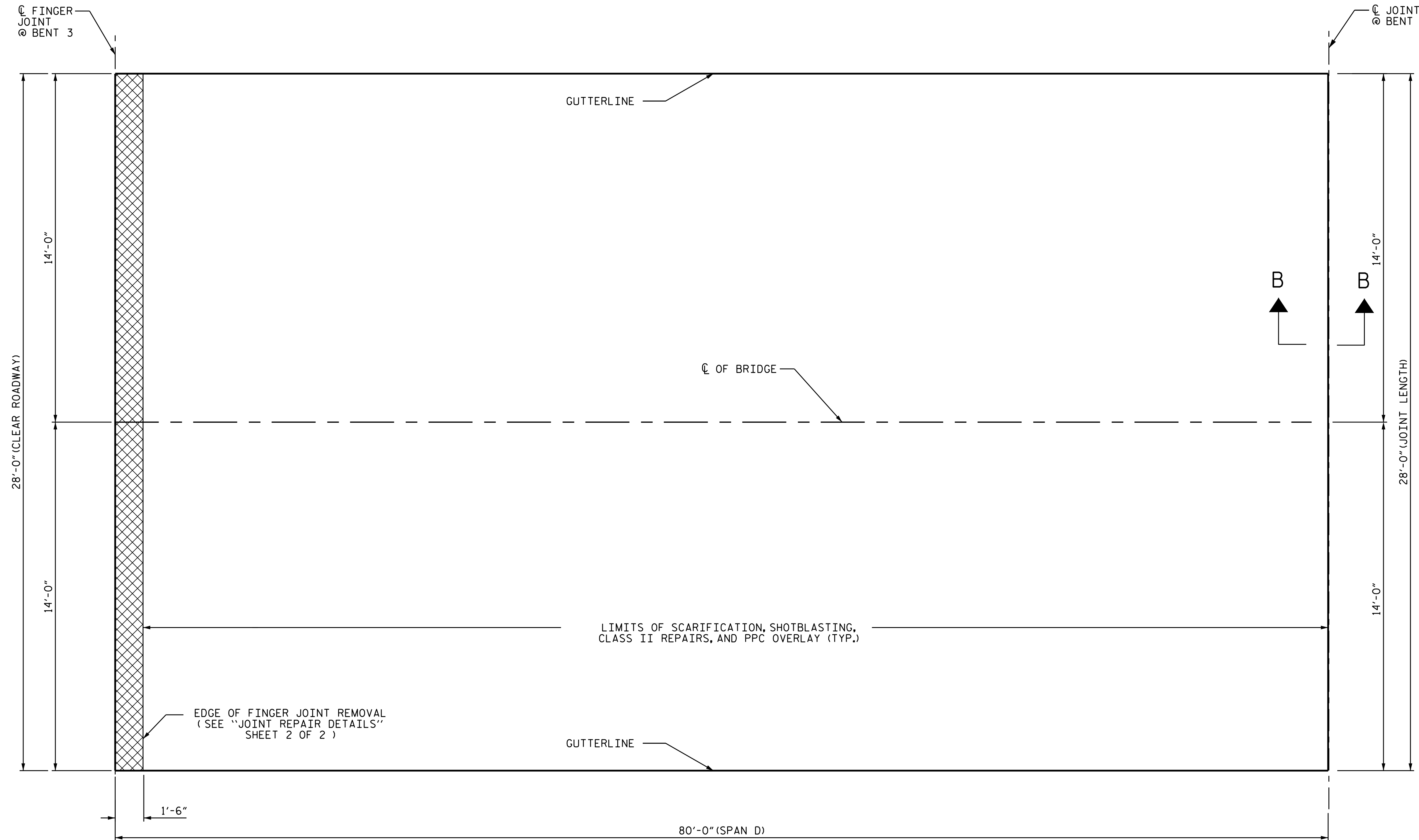
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			42

SPAN D QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	244.2 S.Y.	
CLASS II SURFACE PREPARTION	0.5 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.5 S.Y.	
SHOTBLASTING BRIDGE DECK	244.2 S.Y.	
PPC MATERIALS	6.8 C.Y.	
PLACING AND FINISHING PPC OVERLAY	244.2 S.Y.	
GROOVING BRIDGE FLOORS	1959.4 S.F.	

CLASS II SURFACE PREPARTION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN AMOUNT IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED AREAS ARE ENCOUNTERED.

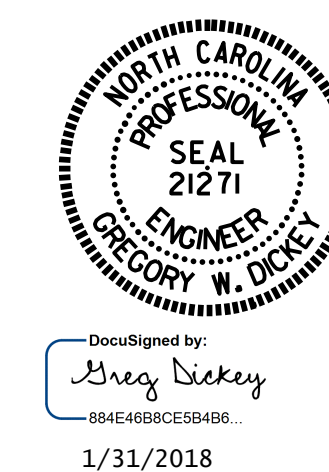
-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR



PLAN OF SPAN D

(FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SURFACE PREPARATION
 SPAN D**

DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

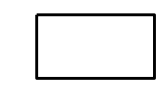
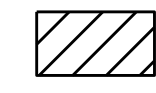
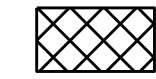
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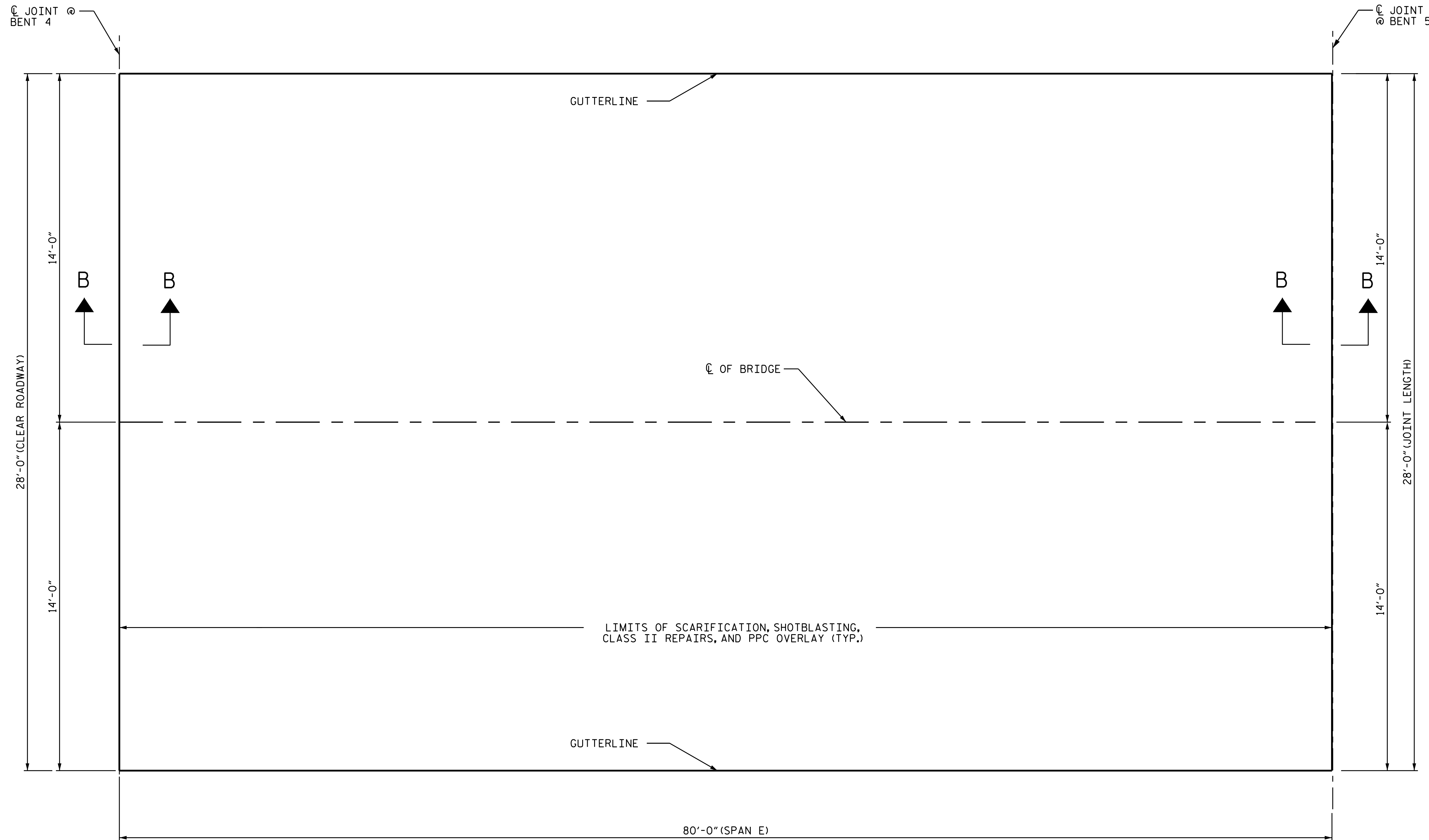
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			42

SPAN E QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	248.9 S.Y.	
CLASS II SURFACE PREPARTION	0.5 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.5 S.Y.	
SHOTBLASTING BRIDGE DECK	248.9 S.Y.	
PPC MATERIALS	6.9 C.Y.	
PLACING AND FINISHING PPC OVERLAY	248.9 S.Y.	
GROOVING BRIDGE FLOORS	1991.7 S.F.	

CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN AMOUNT IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED AREAS ARE ENCOUNTERED.

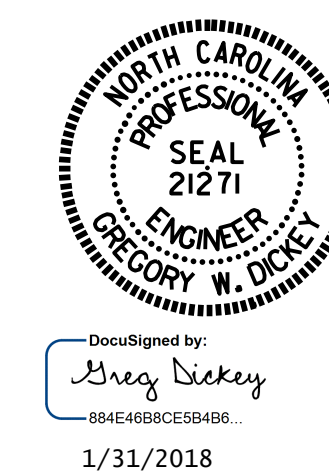
-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR



PLAN OF SPAN E

(FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SURFACE PREPARATION
 SPAN E**

DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

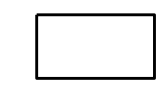
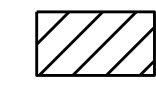
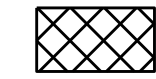
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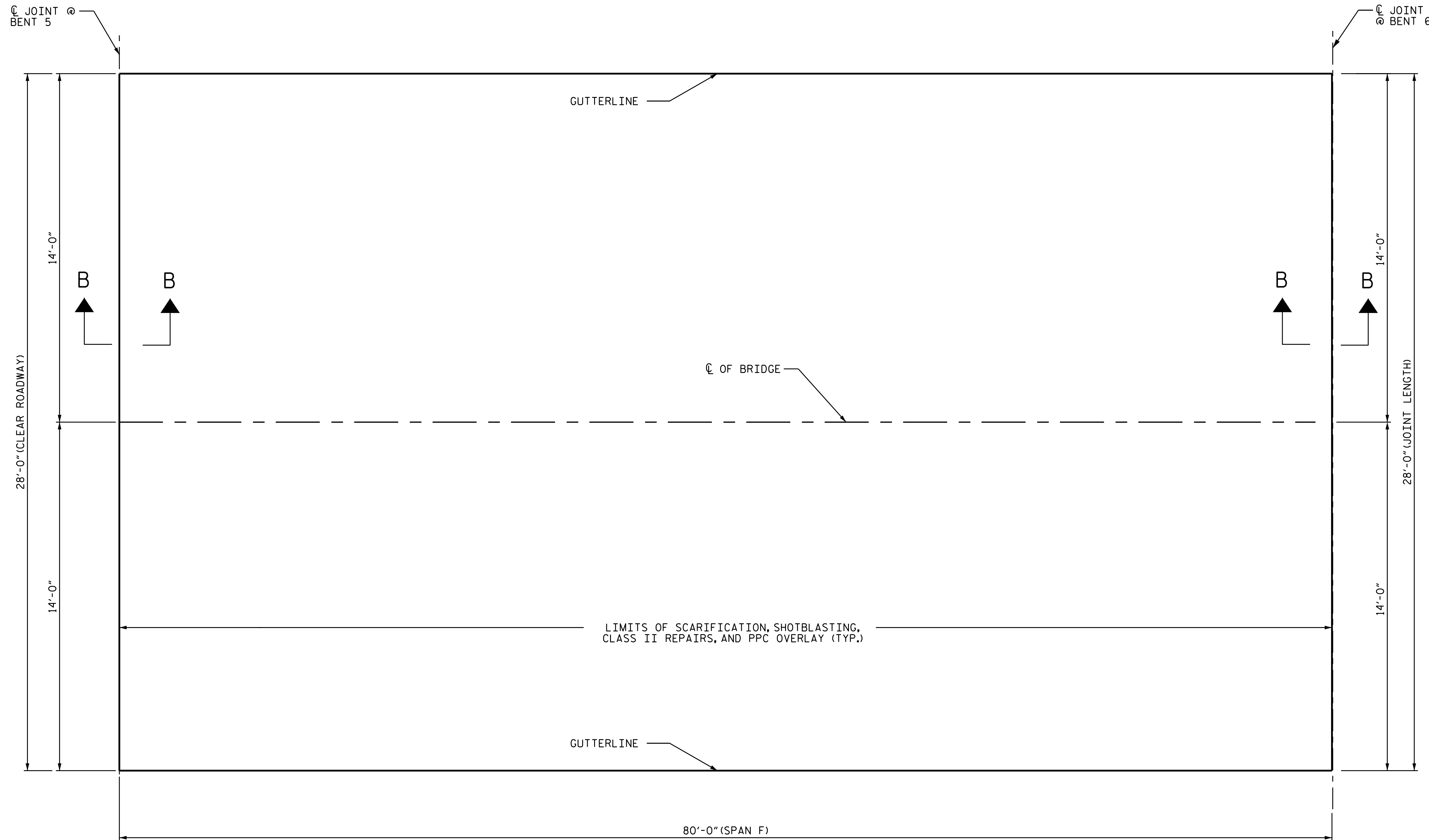
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-10
2			4			42

SPAN F QUANTITIES

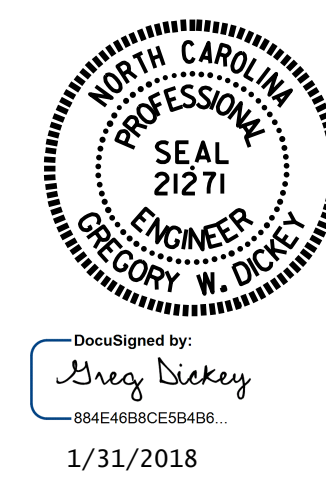
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	248.9 S.Y.	
CLASS II SURFACE PREPARTION	0.5 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.5 S.Y.	
SHOTBLASTING BRIDGE DECK	248.9 S.Y.	
PPC MATERIALS	6.9 C.Y.	
PLACING AND FINISHING PPC OVERLAY	248.9 S.Y.	
GROOVING BRIDGE FLOORS	1991.7 S.F.	

CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN AMOUNT IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED AREAS ARE ENCOUNTERED.

-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR



PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 SPAN F**

PLAN OF SPAN F
 (FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

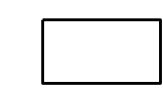
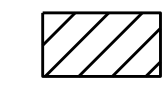
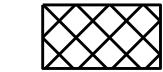
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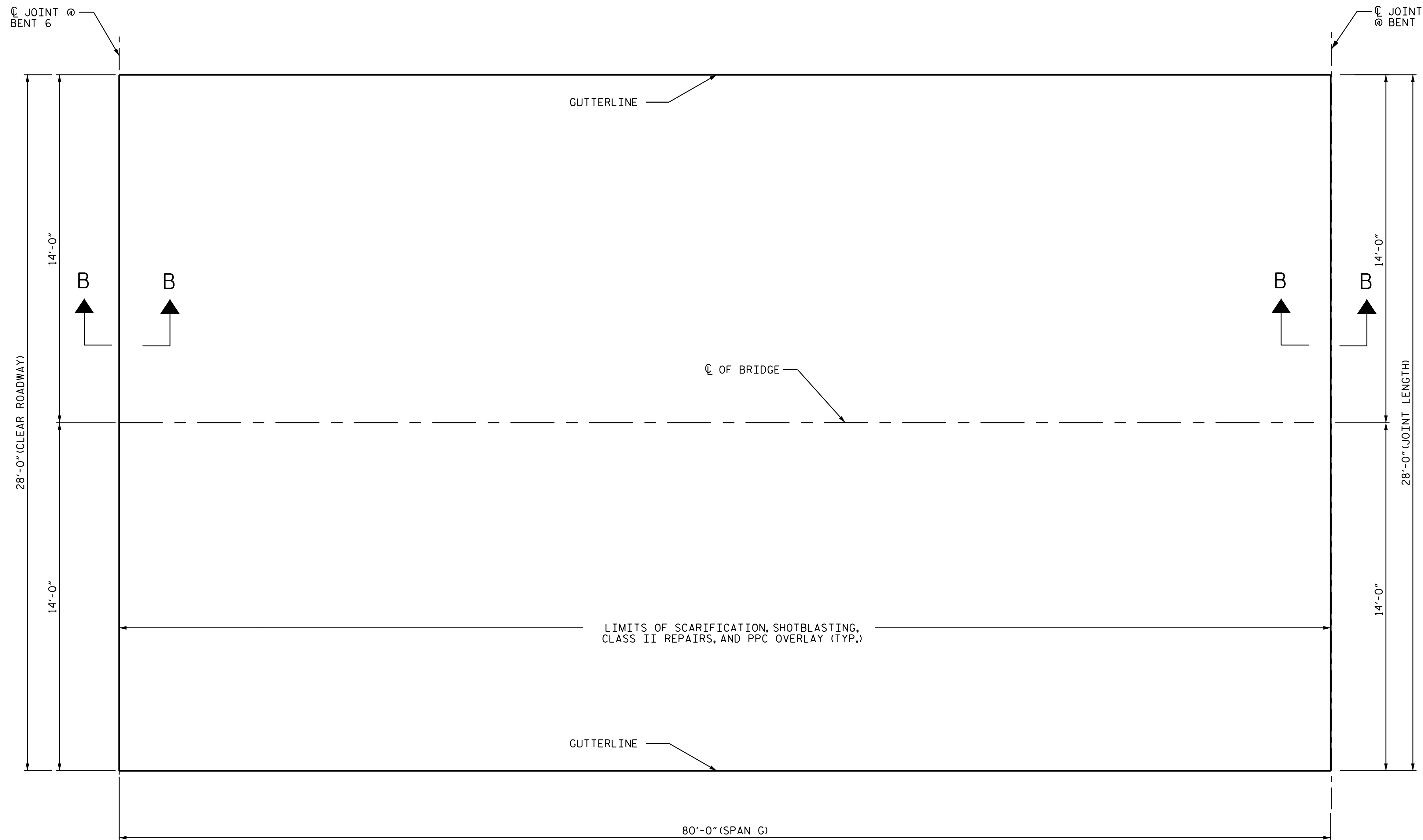
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			42

SPAN G QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	248.9 S.Y.	
CLASS II SURFACE PREPARTION	0.5 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.5 S.Y.	
SHOTBLASTING BRIDGE DECK	248.9 S.Y.	
PPC MATERIALS	6.9 C.Y.	
PLACING AND FINISHING PPC OVERLAY	248.9 S.Y.	
GROOVING BRIDGE FLOORS	1991.7 S.F.	

CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN AMOUNT IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED AREAS ARE ENCOUNTERED.

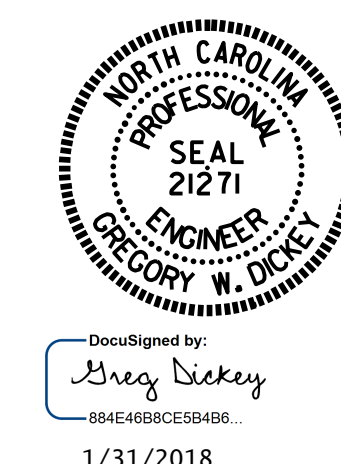
-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR



PLAN OF SPAN G

(FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 SPAN G**

DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

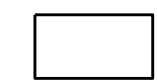
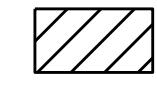

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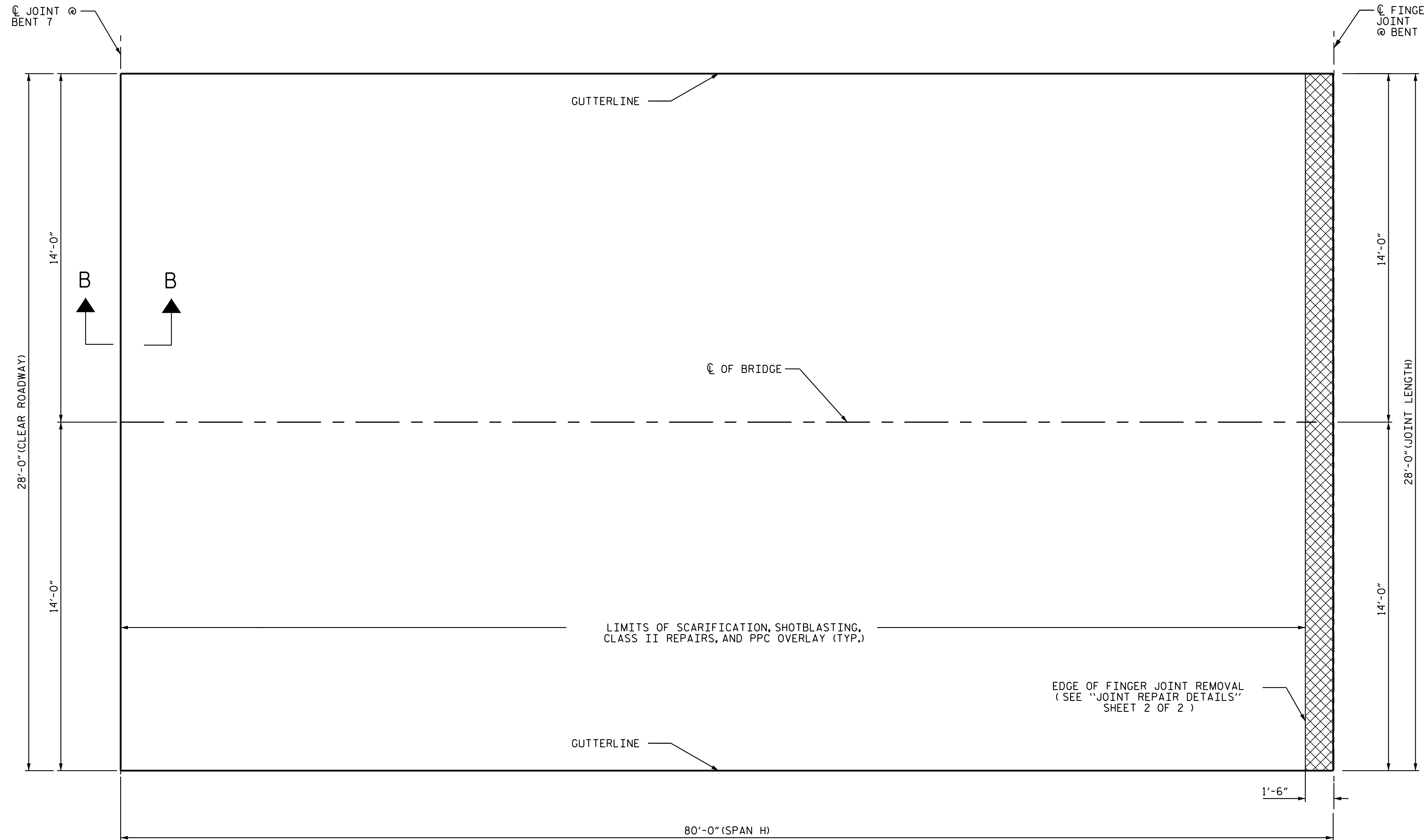
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-12
2			4			42

SPAN H QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	244.2 S.Y.	
CLASS II SURFACE PREPARTION	0.5 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.5 S.Y.	
SHOTBLASTING BRIDGE DECK	244.2 S.Y.	
PPC MATERIALS	6.8 C.Y.	
PLACING AND FINISHING PPC OVERLAY	244.2 S.Y.	
GROOVING BRIDGE FLOORS	1959.4 S.F.	

CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN AMOUNT IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED AREAS ARE ENCOUNTERED.

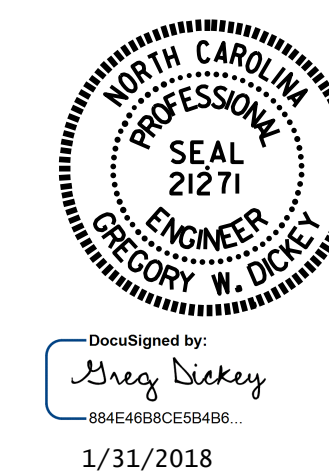
-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR



PLAN OF SPAN H

(FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SURFACE PREPARATION
 SPAN H**

DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

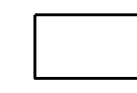
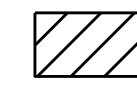
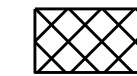
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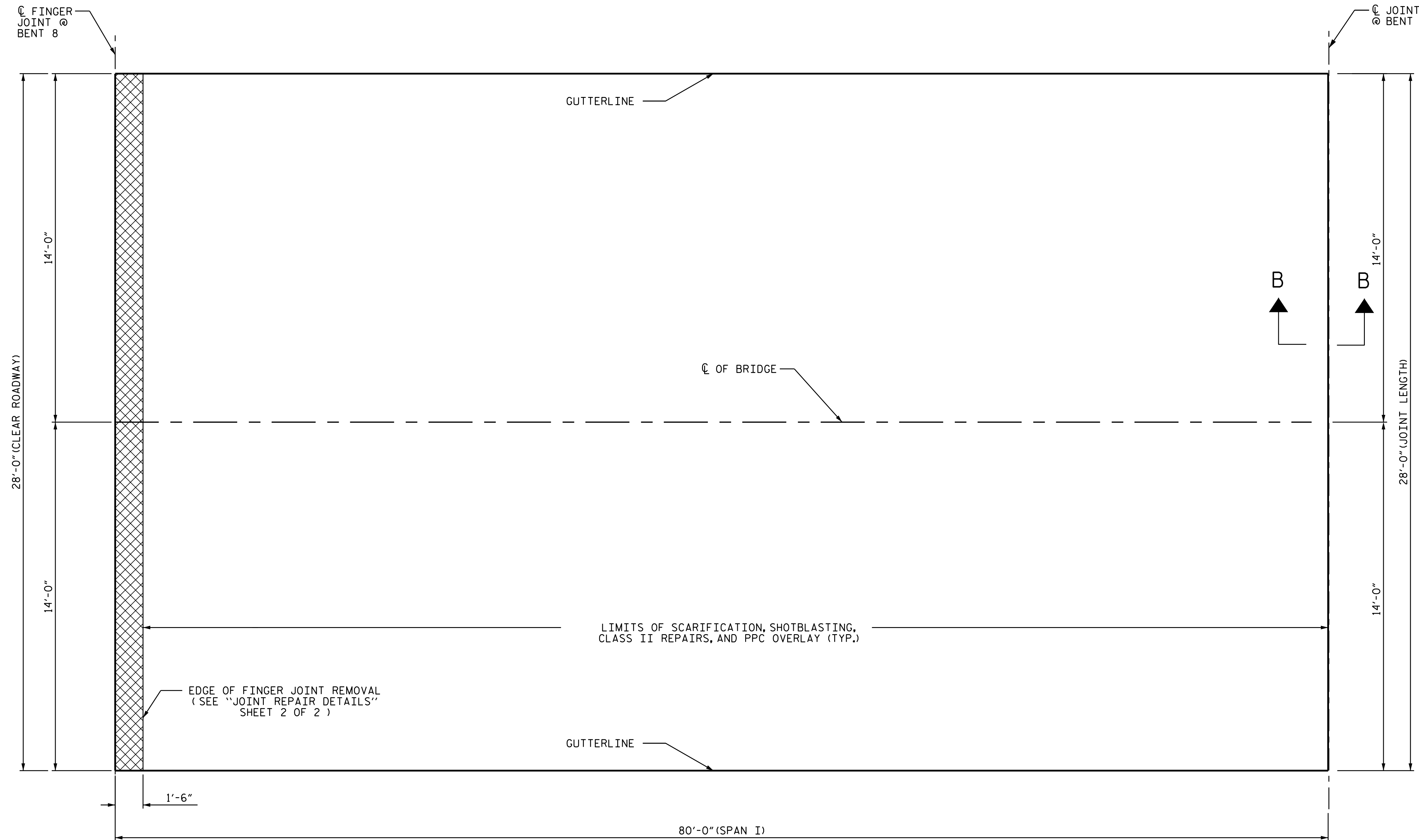
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-13
2			4			42

SPAN I QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	244.2 S.Y.	
CLASS II SURFACE PREPARTION	0.5 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.5 S.Y.	
SHOTBLASTING BRIDGE DECK	244.2 S.Y.	
PPC MATERIALS	6.8 C.Y.	
PLACING AND FINISHING PPC OVERLAY	244.2 S.Y.	
GROOVING BRIDGE FLOORS	1959.4 S.F.	

CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN AMOUNT IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED AREAS ARE ENCOUNTERED.

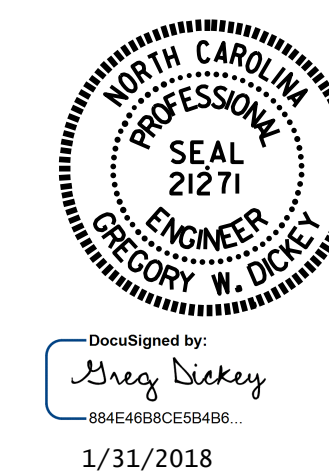
-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR



PLAN OF SPAN I

(FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 SPAN I**

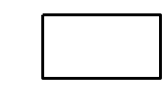
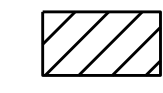
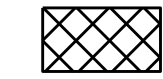
DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

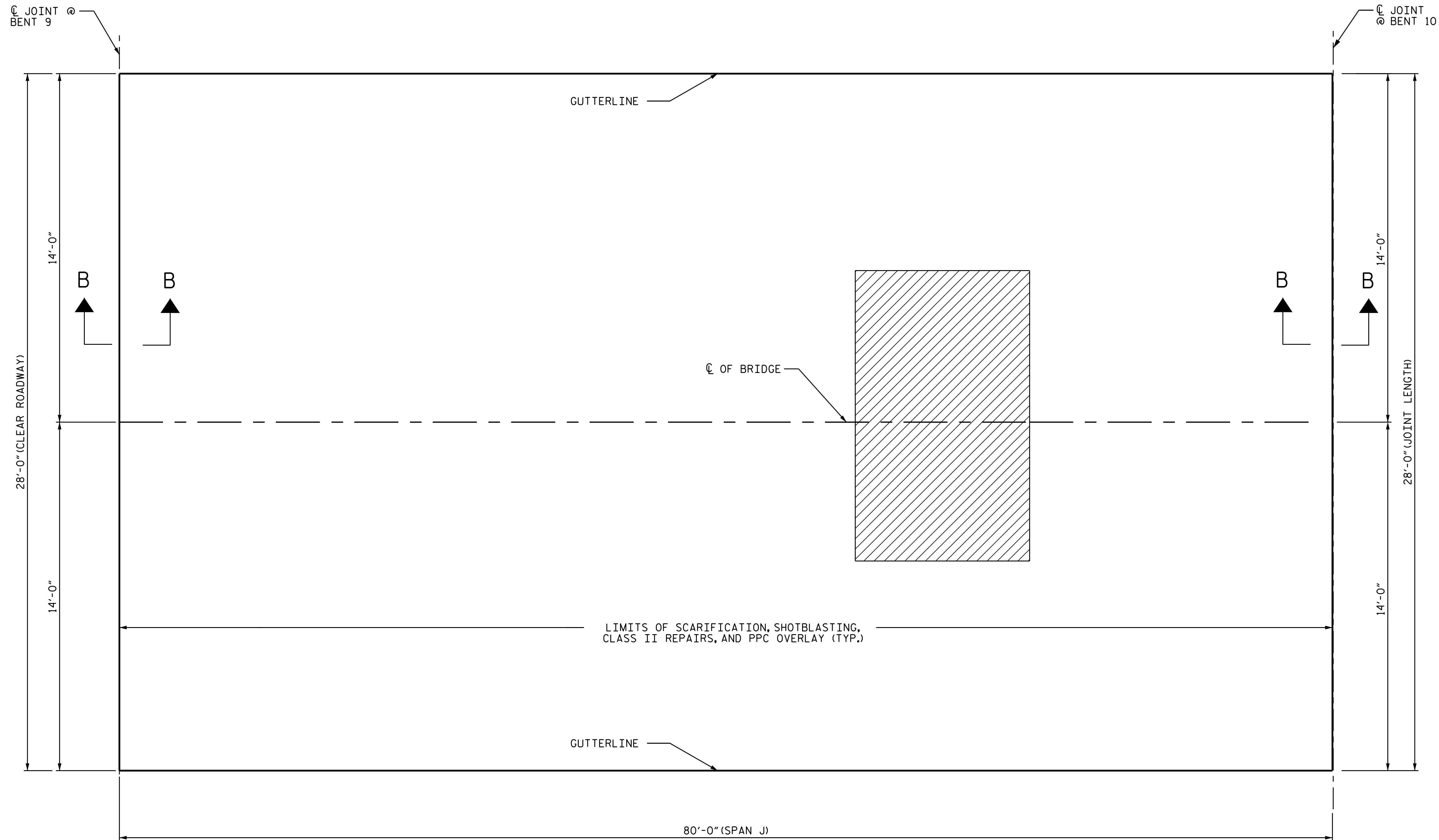
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-14
2			4			42

SPAN J QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	248.9 S.Y.	
CLASS II SURFACE PREPARTION	6.7 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	6.7 S.Y.	
SHOTBLASTING BRIDGE DECK	248.9 S.Y.	
PPC MATERIALS	6.9 C.Y.	
PLACING AND FINISHING PPC OVERLAY	248.9 S.Y.	
GROOVING BRIDGE FLOORS	1991.7 S.F.	

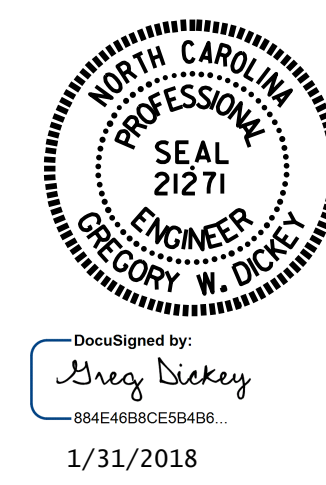
-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR



PLAN OF SPAN J

(FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 SPAN J**

DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17



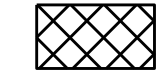
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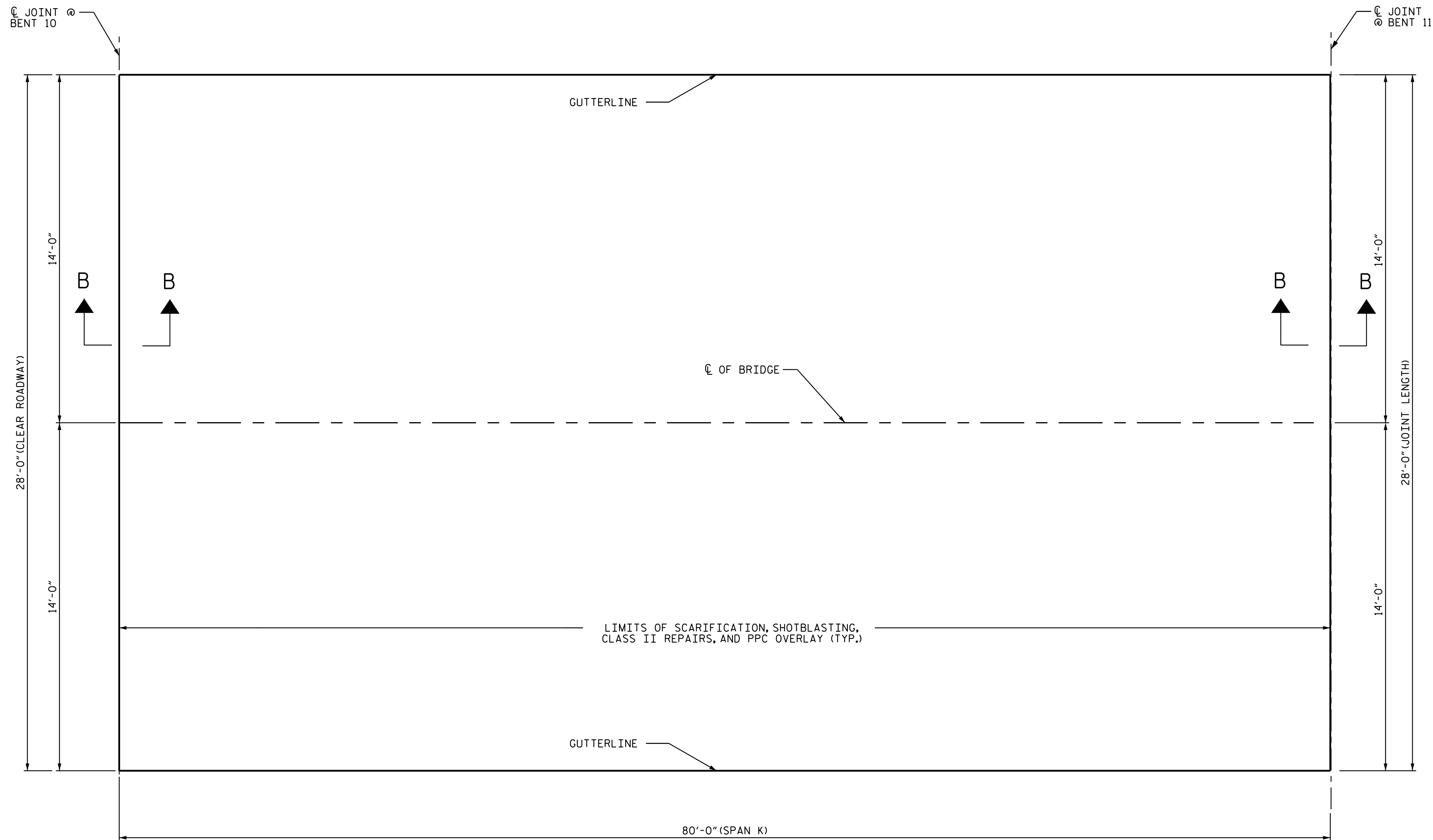
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-15
2			4			42

SPAN K QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	248.9 S.Y.	
CLASS II SURFACE PREPARTION	0.5 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.5 S.Y.	
SHOTBLASTING BRIDGE DECK	248.9 S.Y.	
PPC MATERIALS	6.9 C.Y.	
PLACING AND FINISHING PPC OVERLAY	248.9 S.Y.	
GROOVING BRIDGE FLOORS	1991.7 S.F.	

CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN AMOUNT IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED AREAS ARE ENCOUNTERED.

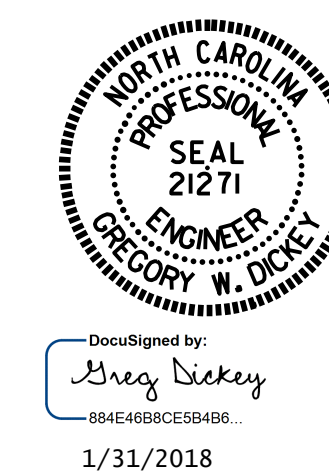
-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR



PLAN OF SPAN K

(FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



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

DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

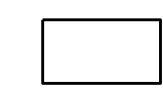
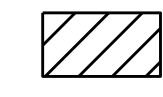
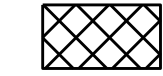
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 FINAL UNLESS ALL
 SIGNATURES COMPLETED

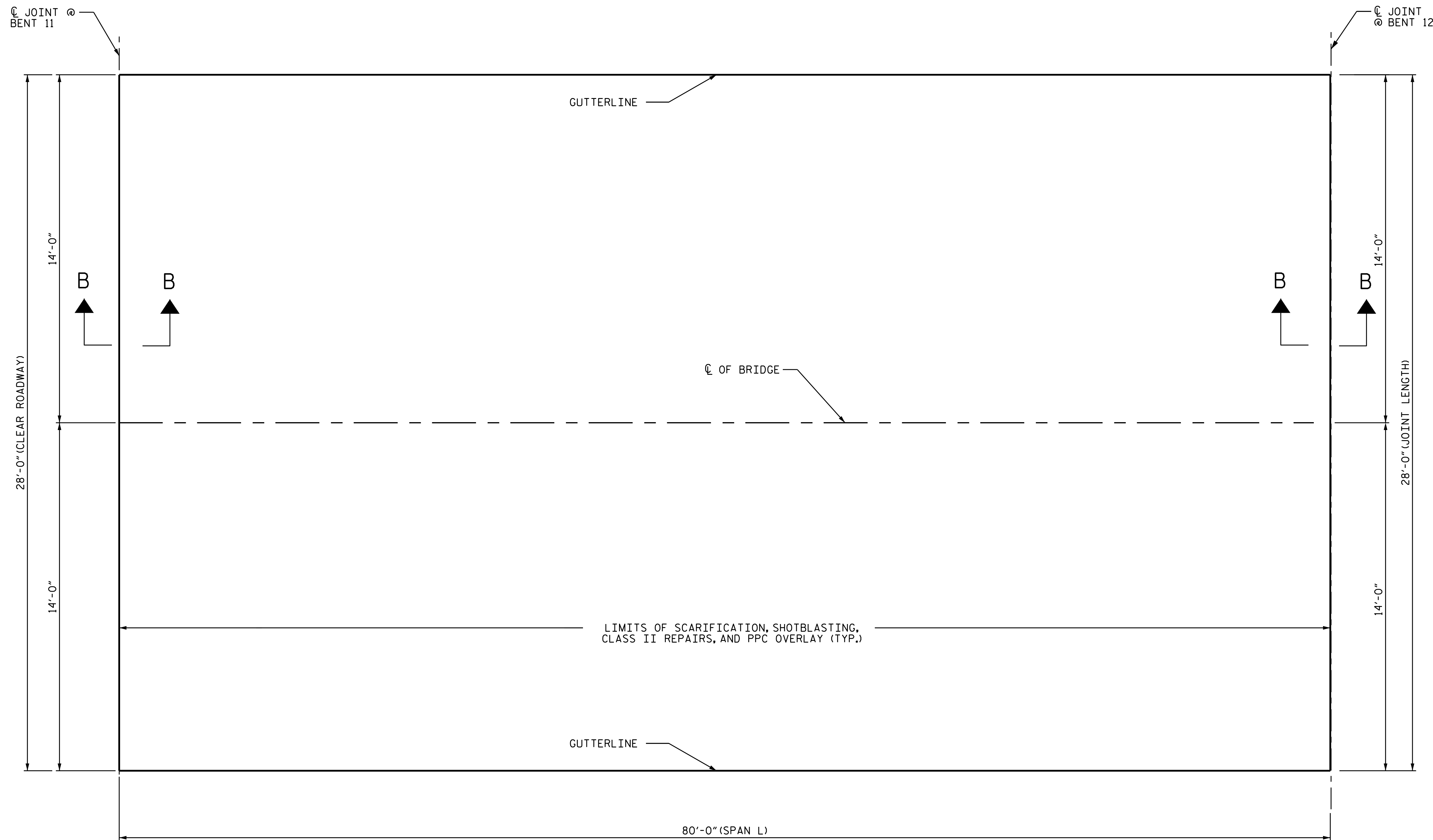
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			42

SPAN L QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	248.9 S.Y.	
CLASS II SURFACE PREPARTION	0.5 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.5 S.Y.	
SHOTBLASTING BRIDGE DECK	248.9 S.Y.	
PPC MATERIALS	6.9 C.Y.	
PLACING AND FINISHING PPC OVERLAY	248.9 S.Y.	
GROOVING BRIDGE FLOORS	1991.7 S.F.	

CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN AMOUNT IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED AREAS ARE ENCOUNTERED.

-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR

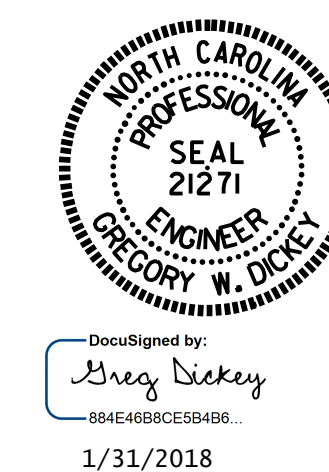


LIMITS OF SCARIFICATION, SHOTBLASTING, CLASS II REPAIRS, AND PPC OVERLAY (TYP.)

PLAN OF SPAN L

(FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 SPAN L**

DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

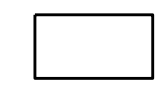
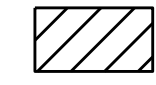

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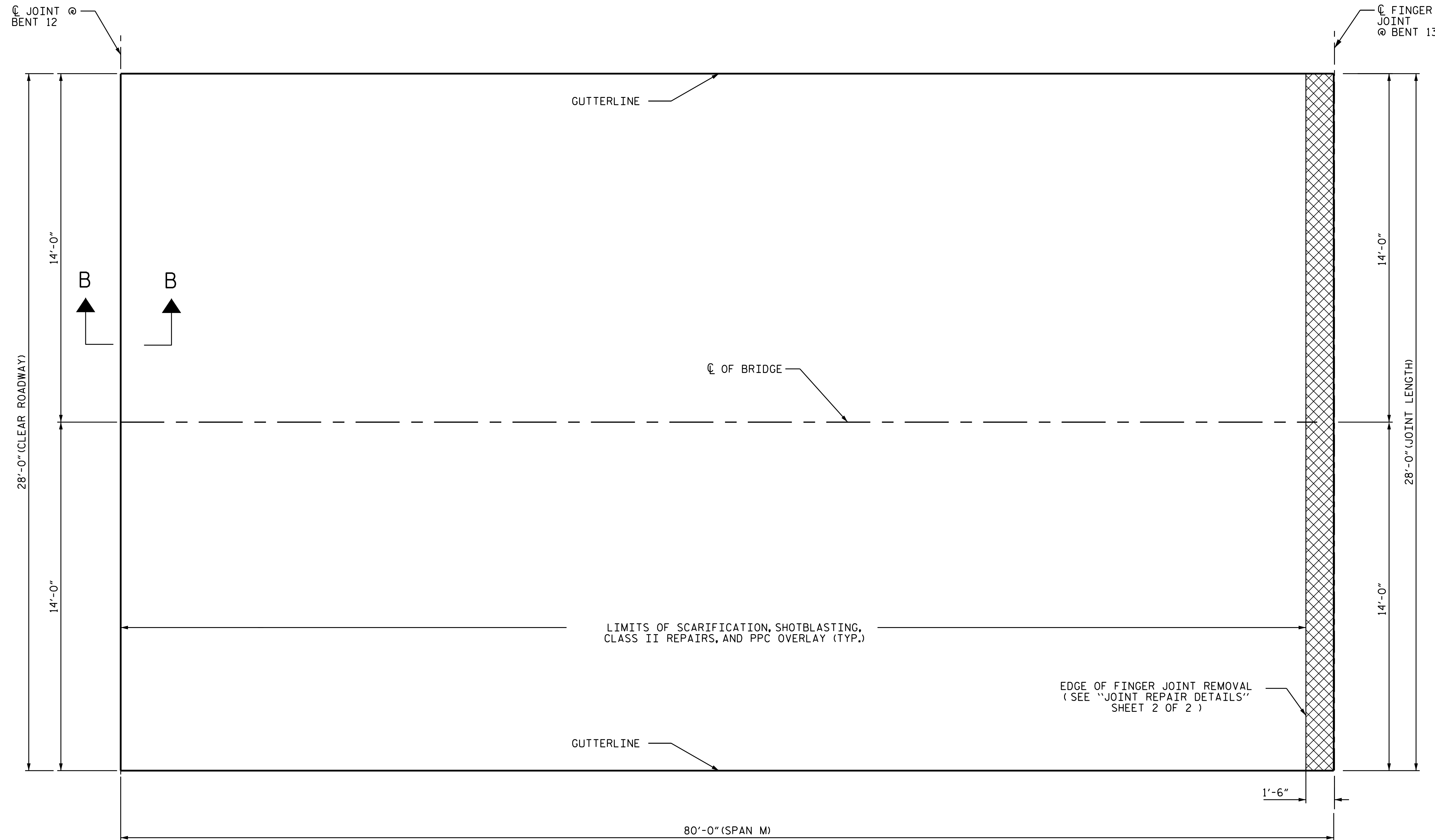
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-17
2			4			42

SPAN M QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	244.2 S.Y.	
CLASS II SURFACE PREPARTION	0.5 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.5 S.Y.	
SHOTBLASTING BRIDGE DECK	244.2 S.Y.	
PPC MATERIALS	6.8 C.Y.	
PLACING AND FINISHING PPC OVERLAY	244.2 S.Y.	
GROOVING BRIDGE FLOORS	1959.4 S.F.	

CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN AMOUNT IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED AREAS ARE ENCOUNTERED.

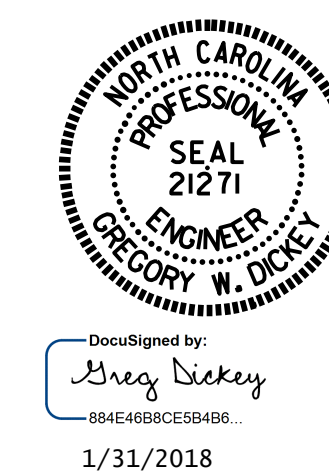
-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR



PLAN OF SPAN M

(FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



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

DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

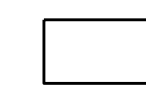
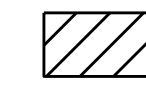
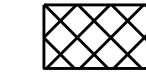
DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

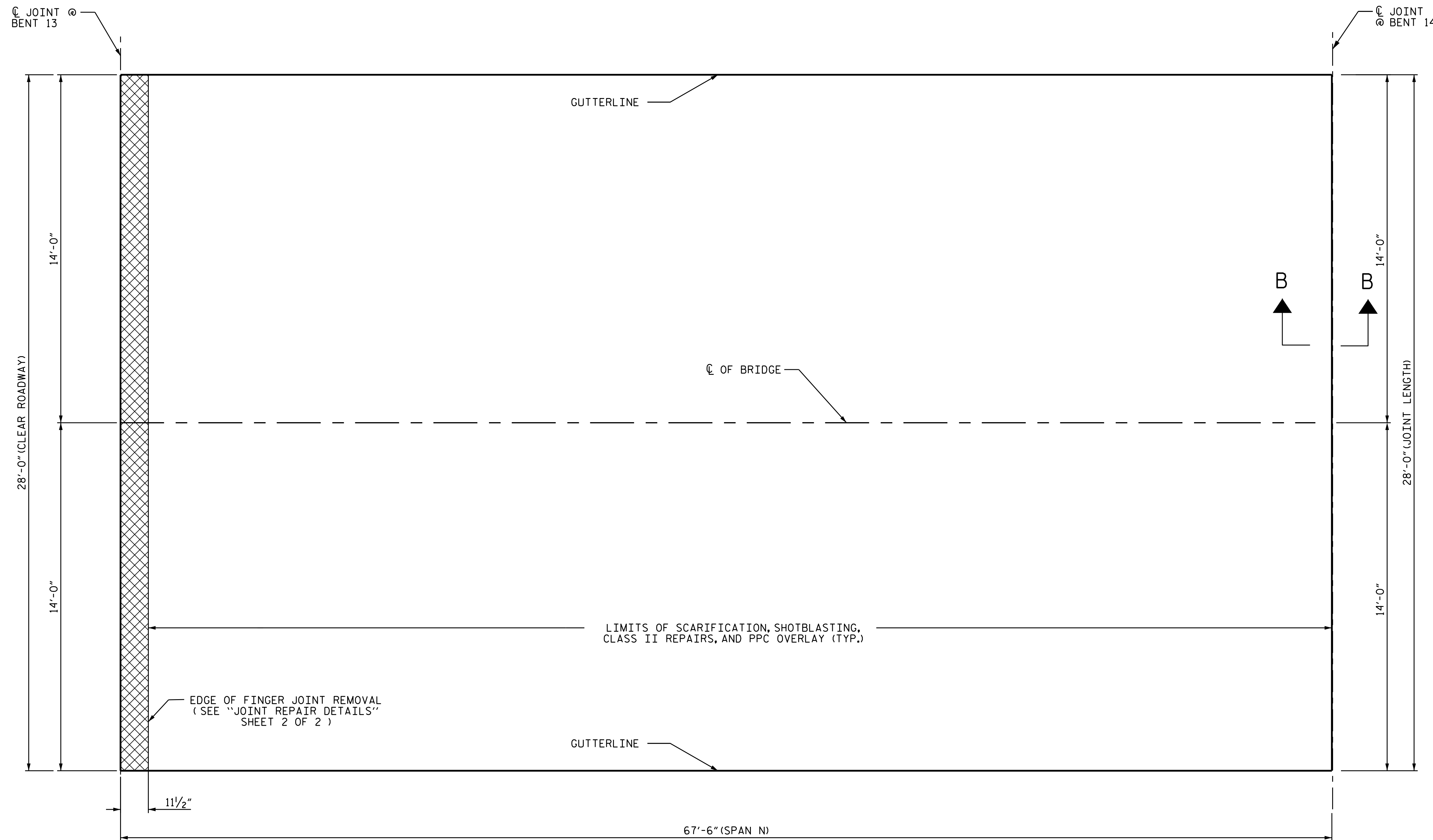
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-18
2			4			42

SPAN N QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	205.3 S.Y.	
CLASS II SURFACE PREPARTION	0.5 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.5 S.Y.	
SHOTBLASTING BRIDGE DECK	205.3 S.Y.	
PPC MATERIALS	5.7 C.Y.	
PLACING AND FINISHING PPC OVERLAY	205.3 S.Y.	
GROOVING BRIDGE FLOORS	1646.9 S.F.	

CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN AMOUNT IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED AREAS ARE ENCOUNTERED.

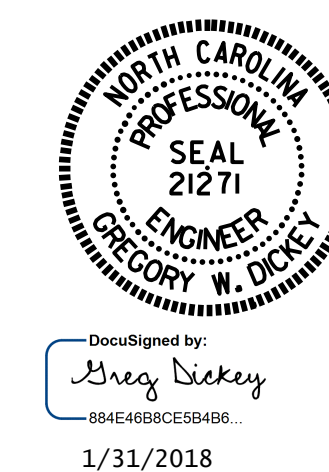
-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR



PLAN OF SPAN N

(FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



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

DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

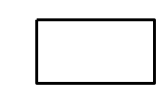
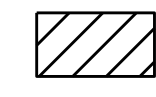
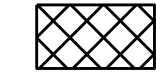
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 FINAL UNLESS ALL
 SIGNATURES COMPLETED

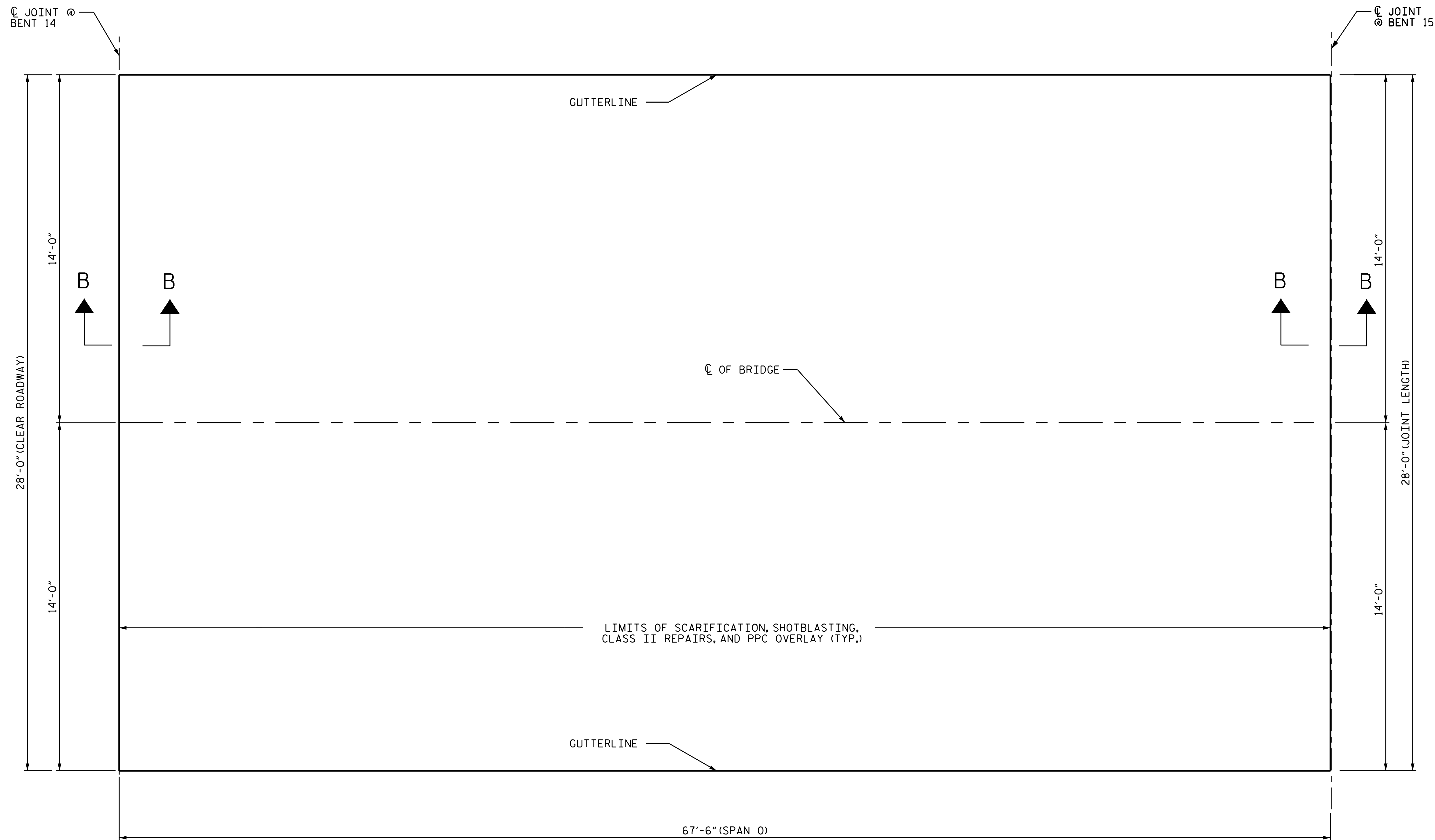
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-19
2			4			42

SPAN 0 QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	210.0 S.Y.	
CLASS II SURFACE PREPARTION	0.5 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.5 S.Y.	
SHOTBLASTING BRIDGE DECK	210.0 S.Y.	
PPC MATERIALS	5.8 C.Y.	
PLACING AND FINISHING PPC OVERLAY	210.0 S.Y.	
GROOVING BRIDGE FLOORS	1679.2 S.F.	

CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN AMOUNT IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED AREAS ARE ENCOUNTERED.

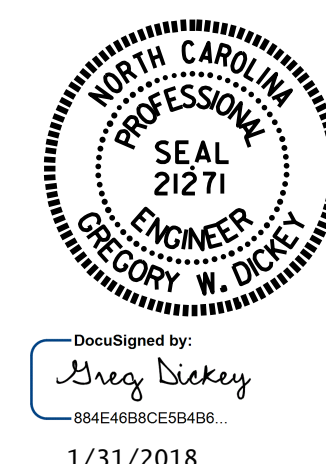
-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR



PLAN OF SPAN 0

(FOR SECTION B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 SPAN 0**

DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

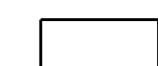
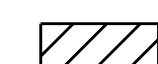

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
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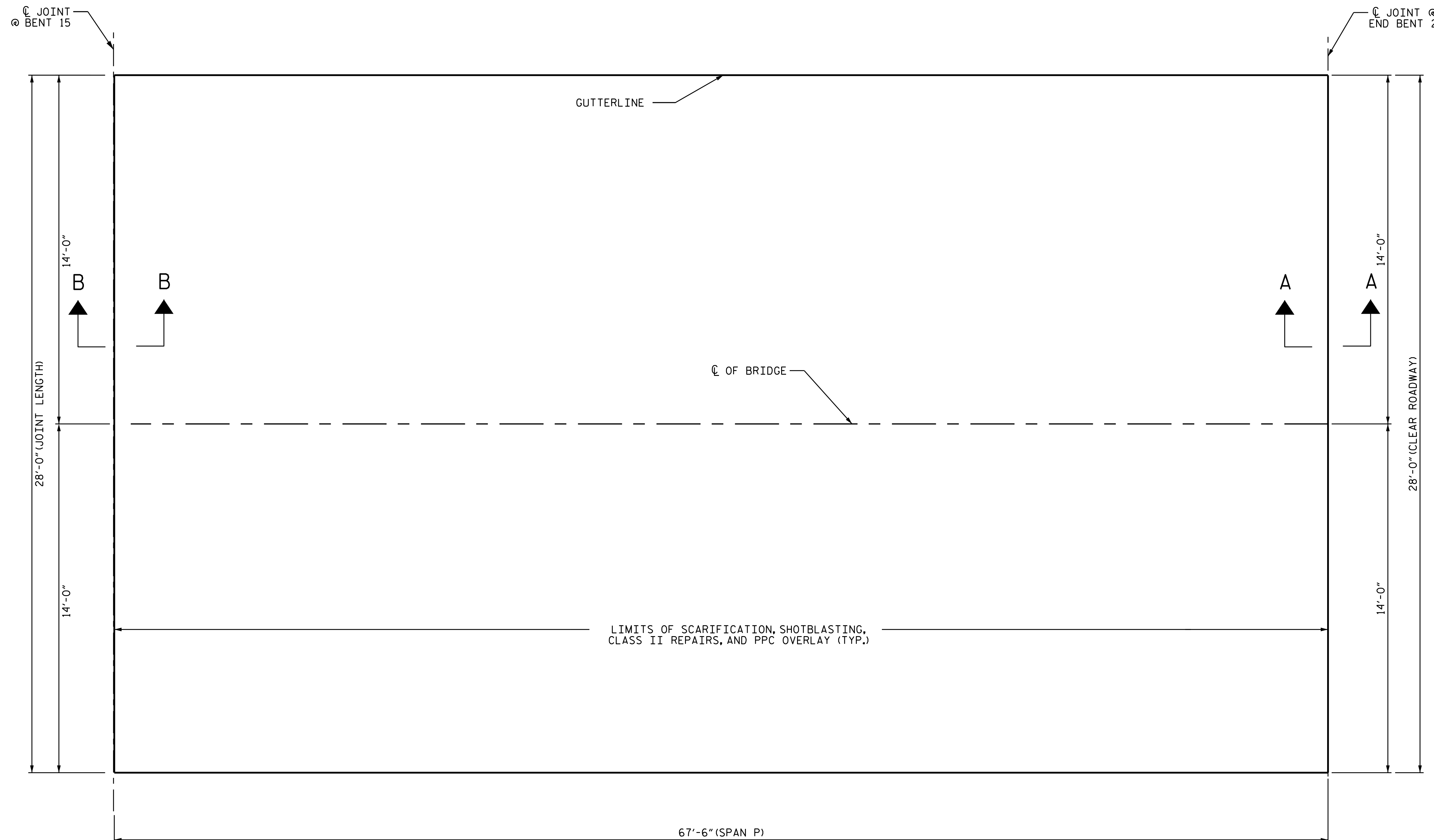
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-20
2			4			42

SPAN P QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	210.0 S.Y.	
CLASS II SURFACE PREPARTION	0.5 S.Y.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.5 S.Y.	
SHOTBLASTING BRIDGE DECK	210.0 S.Y.	
PPC MATERIALS	5.8 C.Y.	
PLACING AND FINISHING PPC OVERLAY	210.0 S.Y.	
GROOVING BRIDGE FLOORS	1679.2 S.F.	

CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN AMOUNT IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED AREAS ARE ENCOUNTERED.

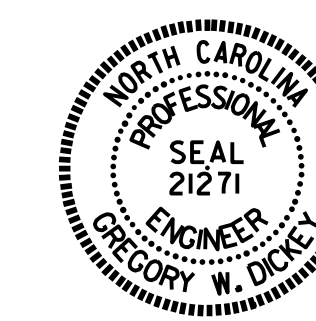
-  SCARIFICATION, SHOTBLASTING AND POLYESTER POLYMER CONCRETE (PPC) OVERLAY
-  CLASS II SURFACE PREPARTION & CONCRETE DECK REPAIR FOR PPC OVERLAY
-  JOINT REPAIR



PLAN OF SPAN P

(FOR SECTIONS A-A & B-B, SEE "JOINT REPAIR DETAILS" SHEET 1 OF 2)

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



DocuSigned by:
 Gregory W. Dickey
 884E468CE5B4DB
 1/31/2018

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION
 SPAN P

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			42

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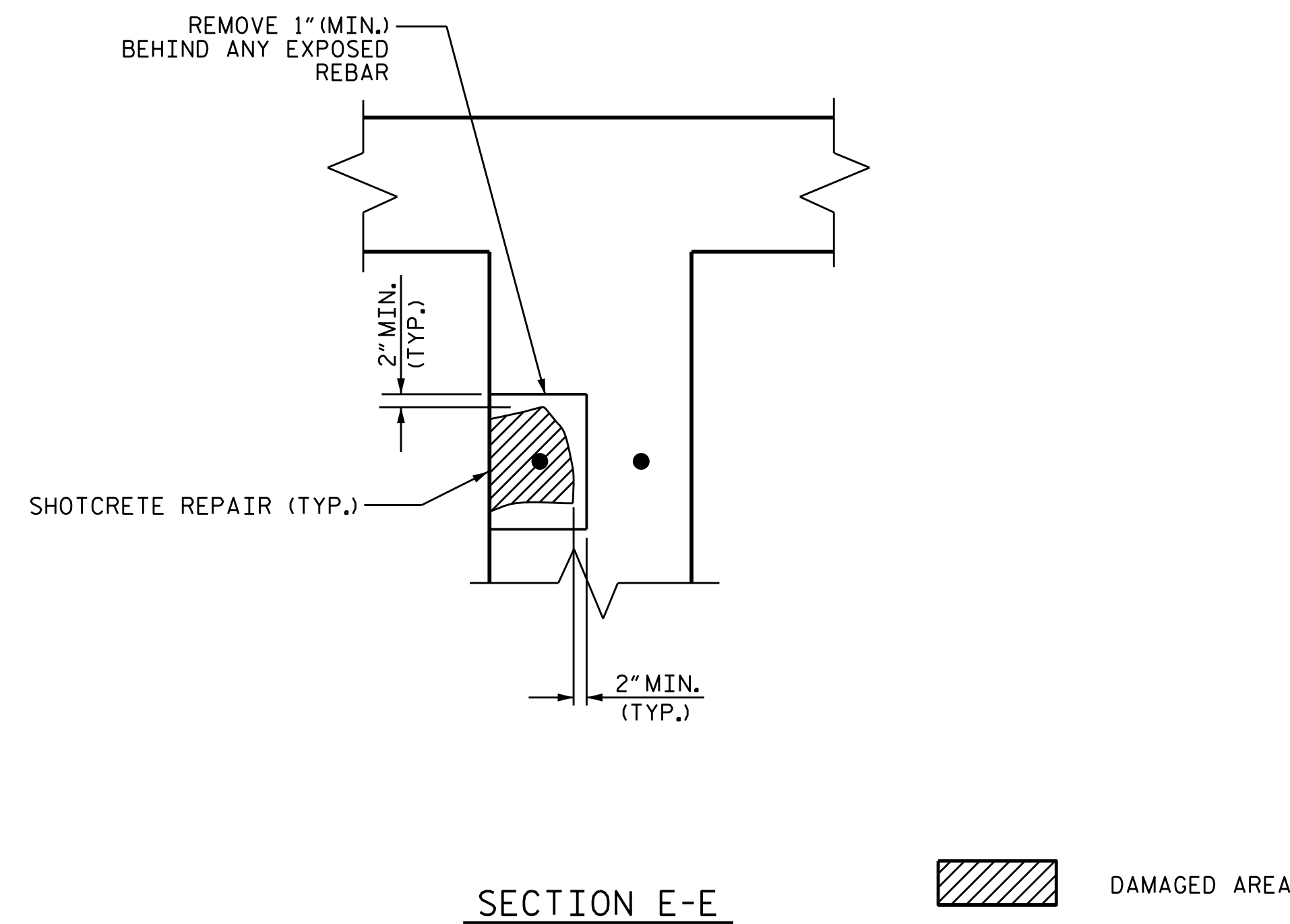
DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

NOTES

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

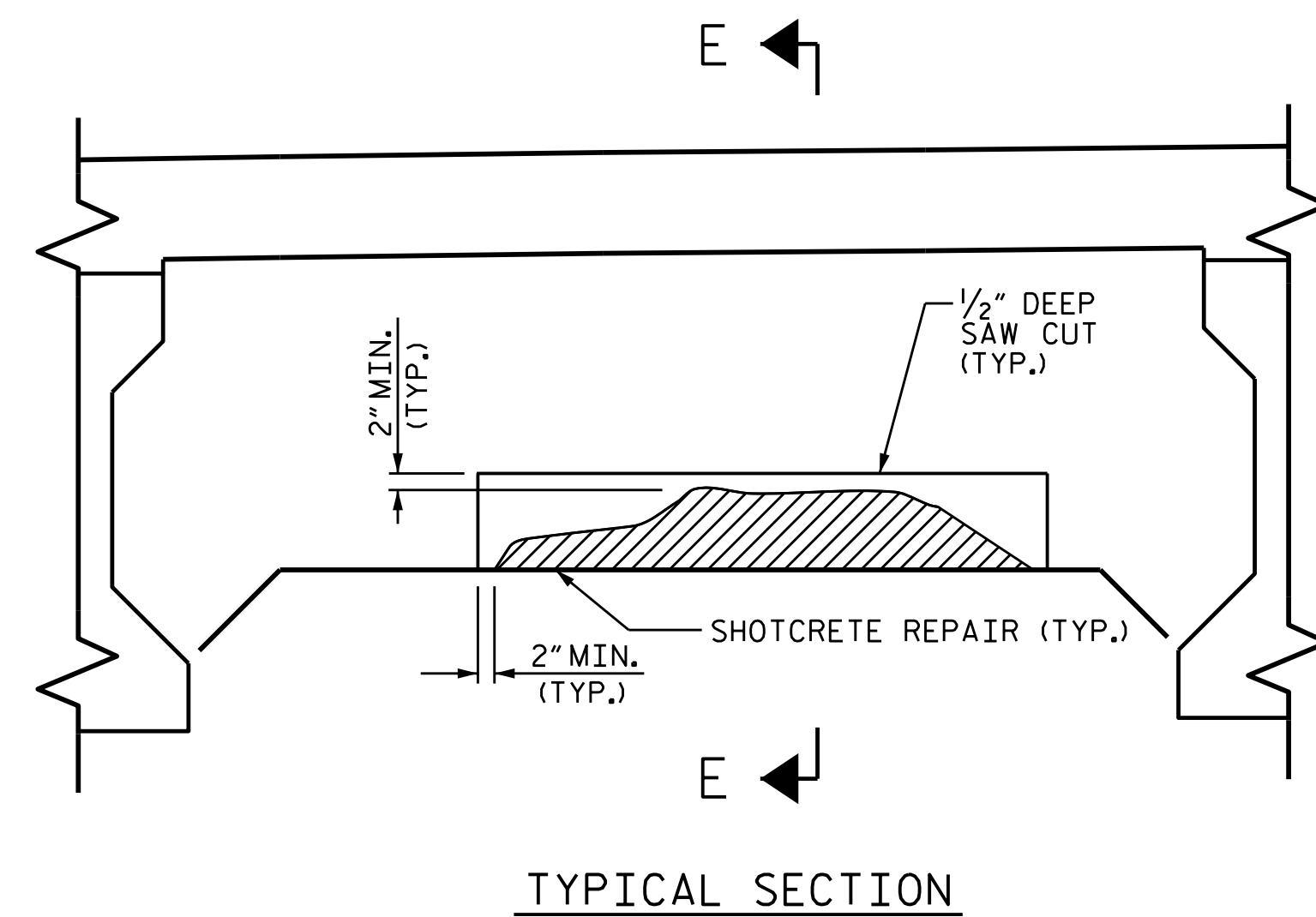
CONTRACTOR SHALL SAW CUT THE REPAIR AREAS SO THAT THE CORNERS ARE SQUARE AS INDICATED ON THE DETAILS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.



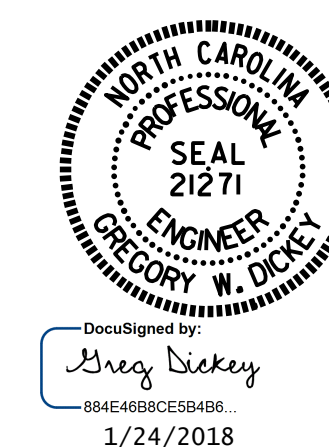
INTERIOR DIAPHRAGM REPAIR LOCATIONS					
SPAN	BENT #	SHOTCRETE REPAIRS			
		ESTIMATE		ACTUAL	
		AREA SF	VOLUME CF	AREA SF	VOLUME CF
E	5	16	4		
F	5	16	4		
F	6	16	4		
G	6	16	4		
G	7	16	4		
H	7	16	4		
H	8	16	4		
I	8	16	4		
K	11	16	4		
L	11	16	4		
L	12	16	4		
M	12	16	4		

ALL DIAPHRAGMS IN ALL BAYS FOR BENTS LISTED TO BE REPAIRED



INTERIOR DIAPHRAGM REPAIR DETAILS

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TYPICAL DIAPHRAGM REPAIR DETAILS

DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

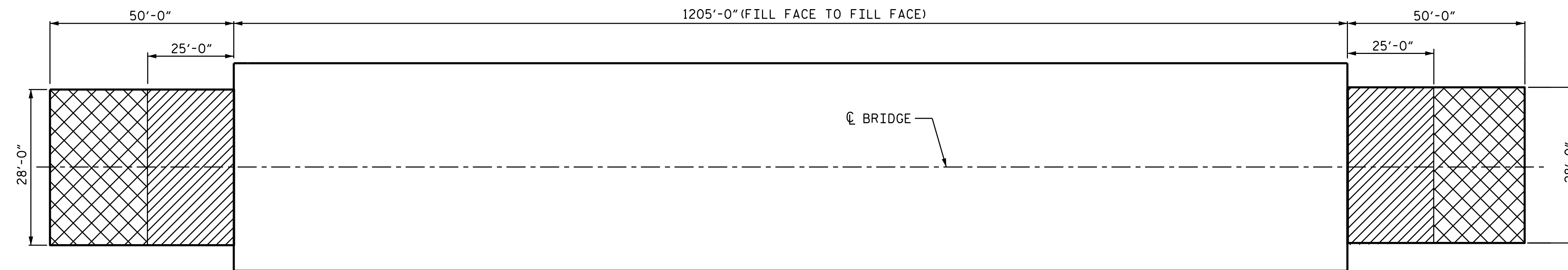
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			42

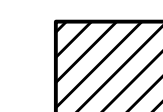
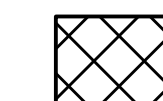
NOTES:

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

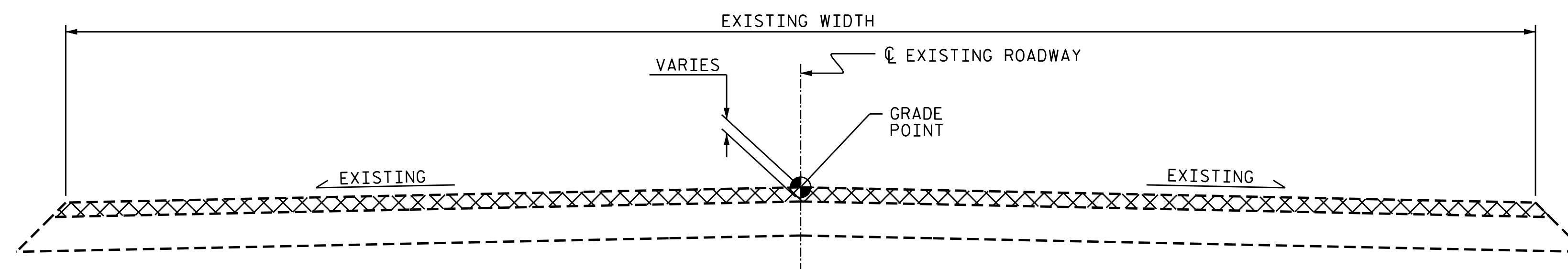
FOR AGGREGATE SUBGRADE, SEE SPECIAL SPECIFICATIONS.



PLAN

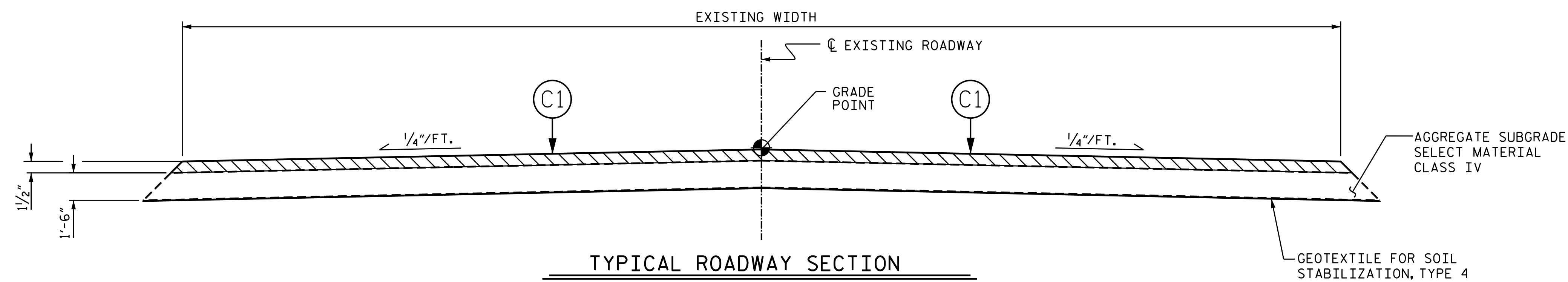
-  UNDERCUT STABILIZATION
-  INCIDENTAL MILLING

C1 PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF 9.5B AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1/2" IN DEPTH.



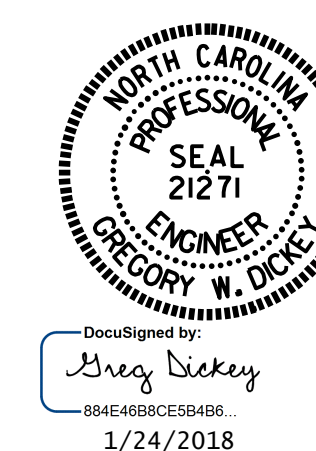
TYPICAL ROADWAY MILLING SECTION

SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
INCIDENTAL MILLING	312 SQ. YDS.	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B	25.7 TONS	
SHALLOW UNDERCUT	18 CU. YDS.	
CLASS IV SUBGRADE STABILIZATION	117 TONS	
GEOTEXTILE FOR SOIL STABILIZATION	160 SQ. YDS.	



TYPICAL ROADWAY SECTION

PROJECT NO. 15BPR.2
 WARREN COUNTY
 BRIDGE NO. 139

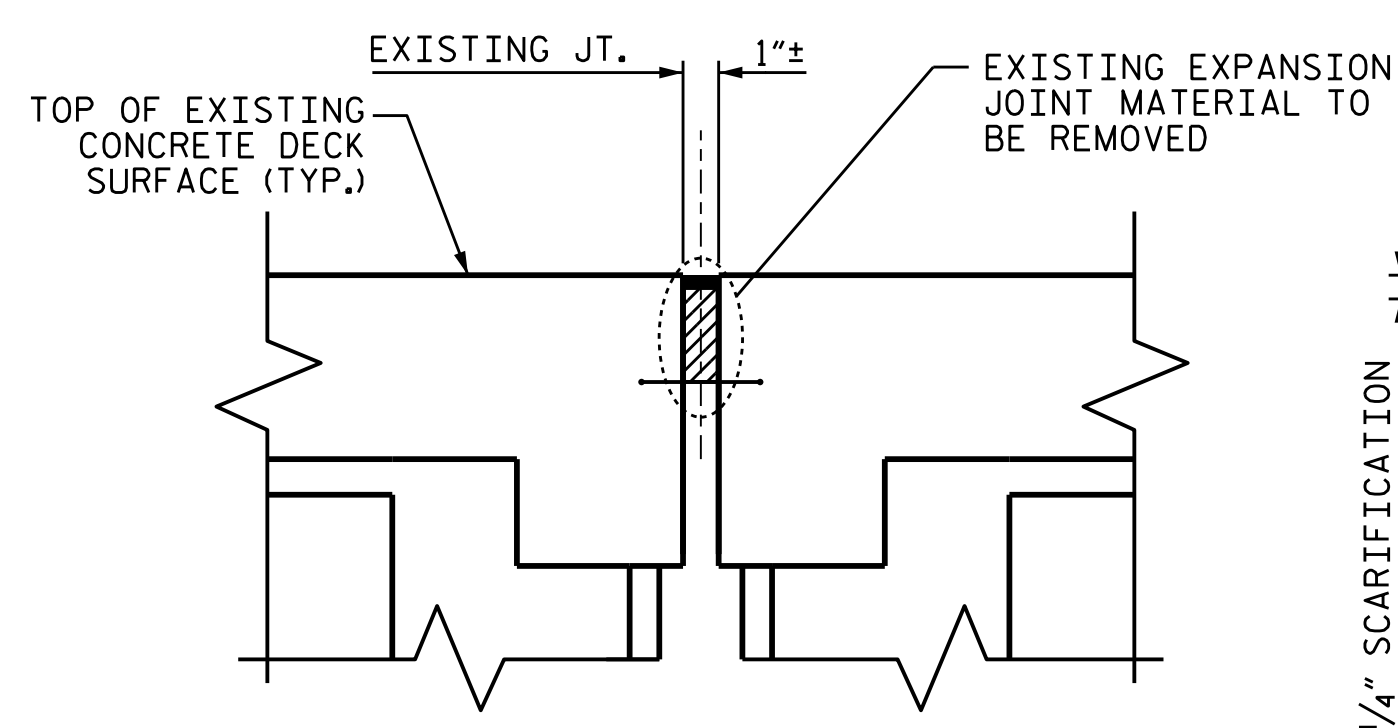


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUPERSTRUCTURE
APPROACH MILLING

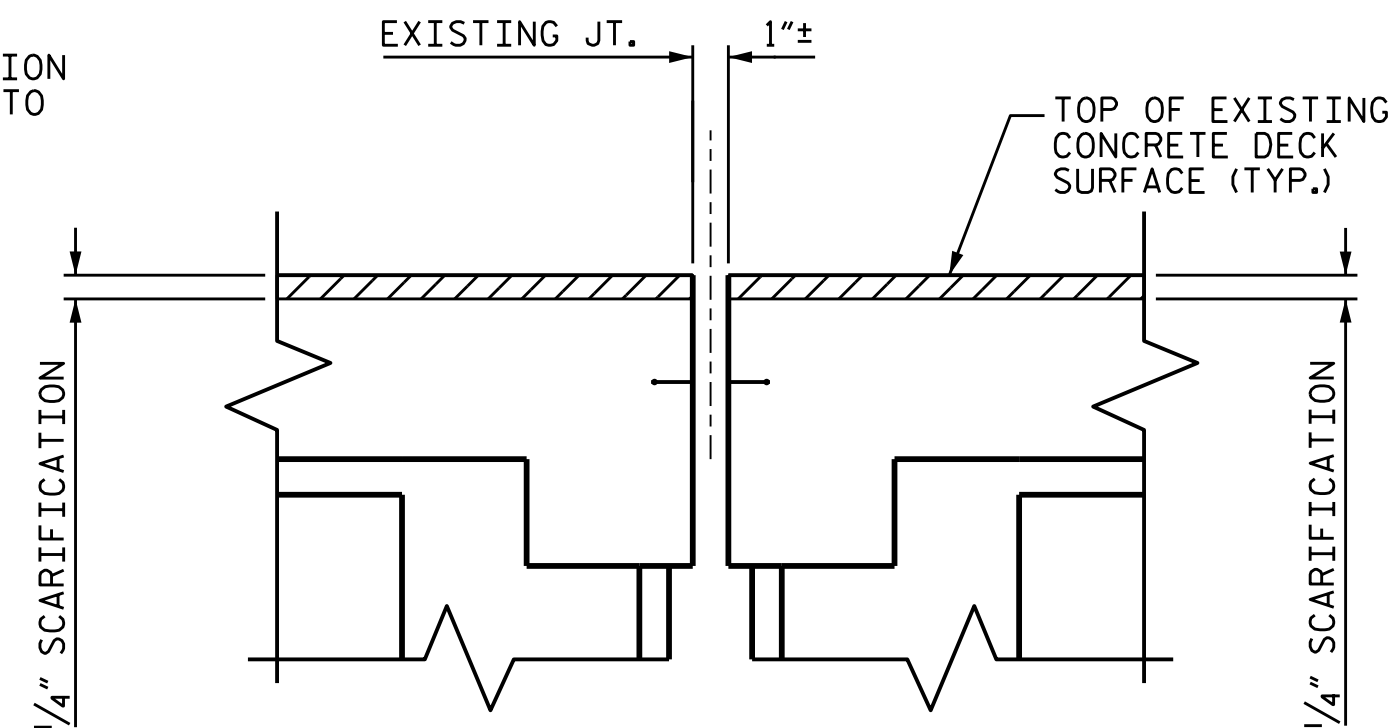
DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

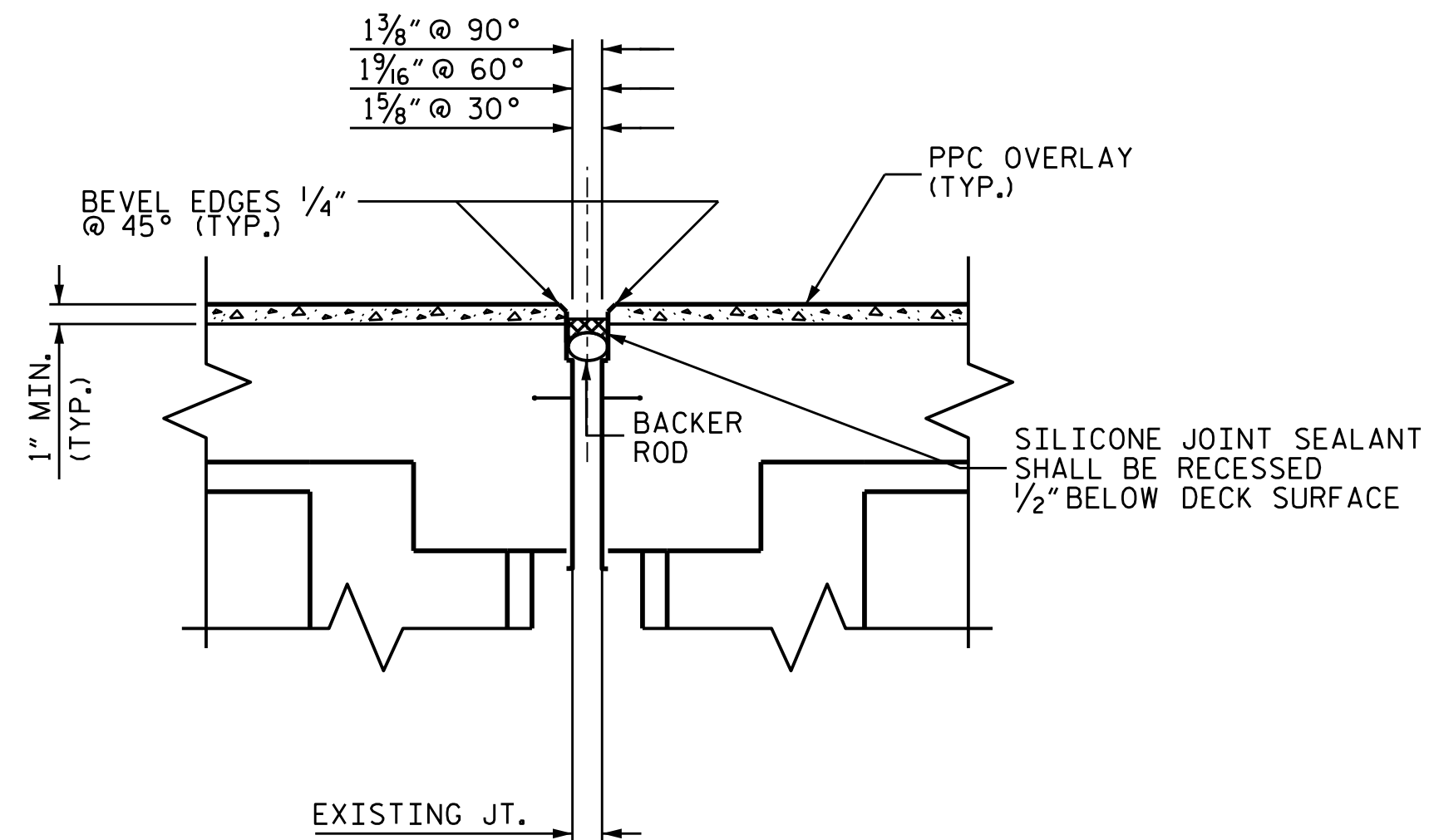
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-23
2			4			42



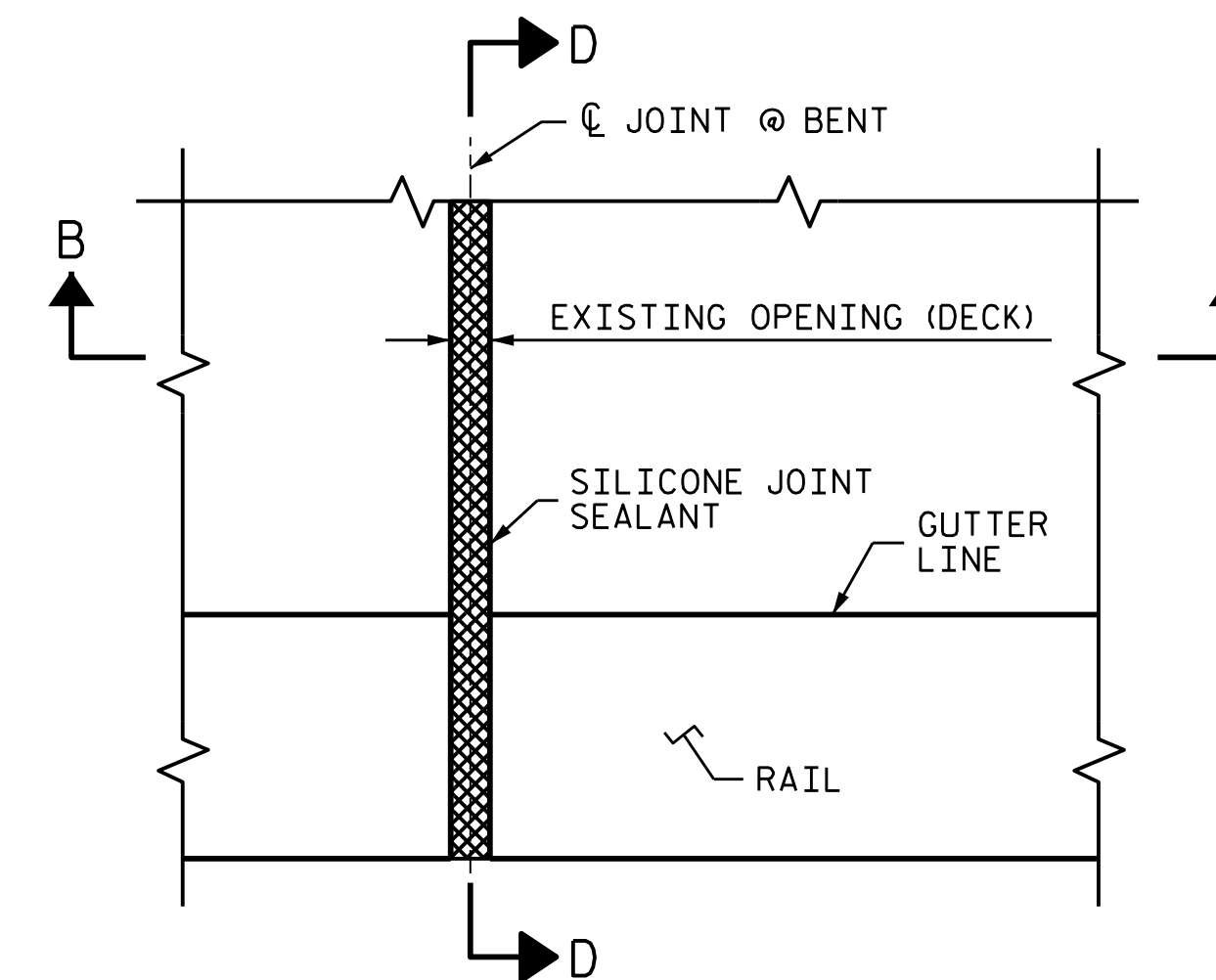
EXISTING



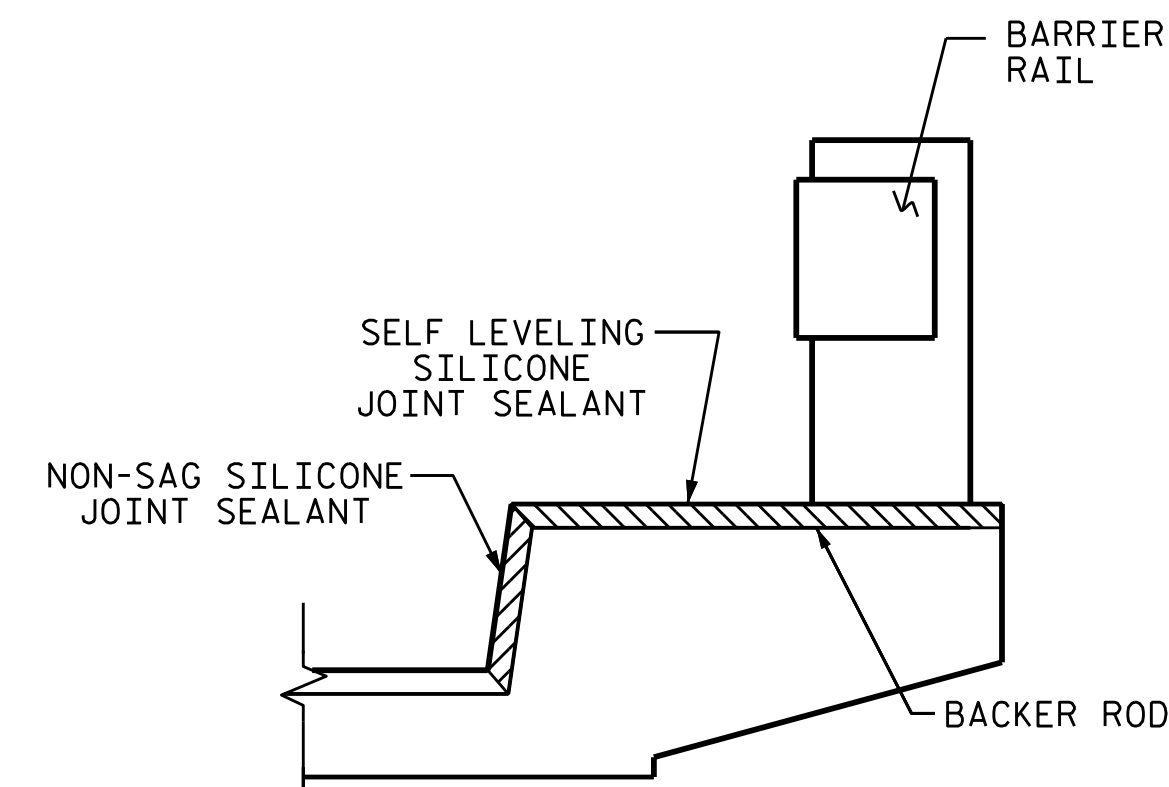
MINIMUM EXISTING JOINT DEMOLITION



PROPOSED SILICONE JOINT SEAL
FOR ALL BENTS EXCEPT #3, #8, AND #13



PLAN

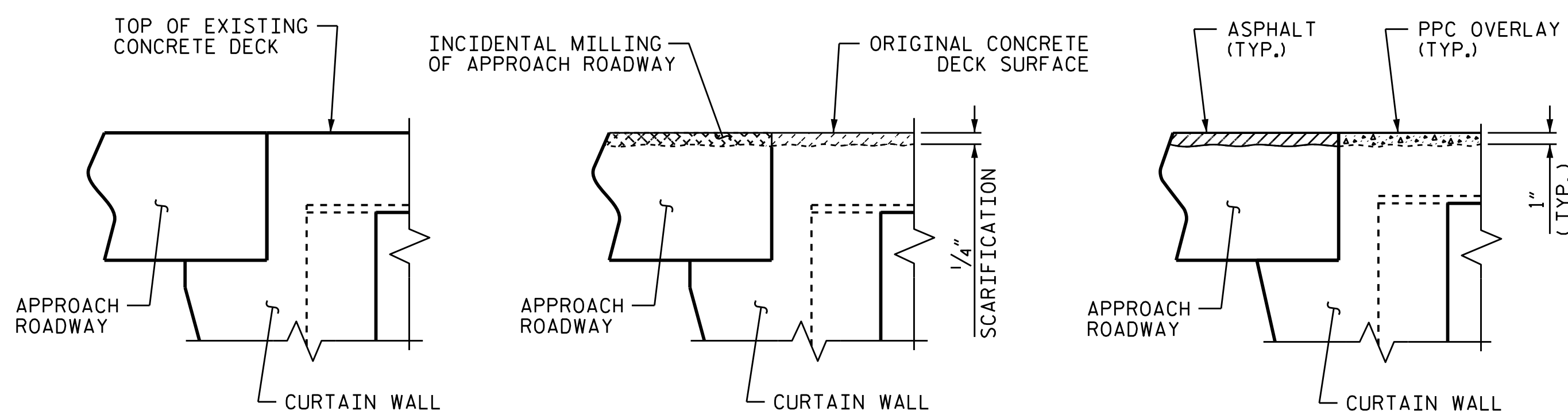


SECTION D-D

EXISTING BRIDGE JOINT REMOVAL	SILICONE JOINT SEALANT
LIN. FT.	LIN. FT.
421.5	421.5

JOINT INSTALLATION SEQUENCE AT BENTS

SECTION B-B



EXISTING COLD JOINT

MINIMUM EXISTING JOINT DEMOLITION

PROPOSED JOINT

JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION A-A

DRAWN BY : J.D. HAWK DATE : 9/17
CHECKED BY : G.W. DICKEY DATE : 10/17

24-JAN-2018 09:17
R:\Structures\920139\DCGN\400.051.15BPR2.SMU.S24.JT.DGN
kaiford

NOTES

SILICONE JOINT SEALANT AND BACKER ROD SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.

FOR SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

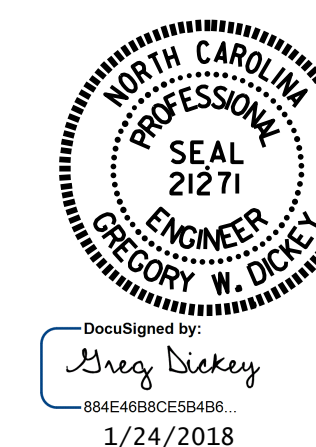
THE INSTALLED SILICONE JOINT SEALANT SHALL BE WATER TIGHT.

THE SILICONE JOINT SEALANT 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.

PROJECT NO. 15BPR.2
WARREN COUNTY
BRIDGE NO. 139

SHEET 1 OF 2

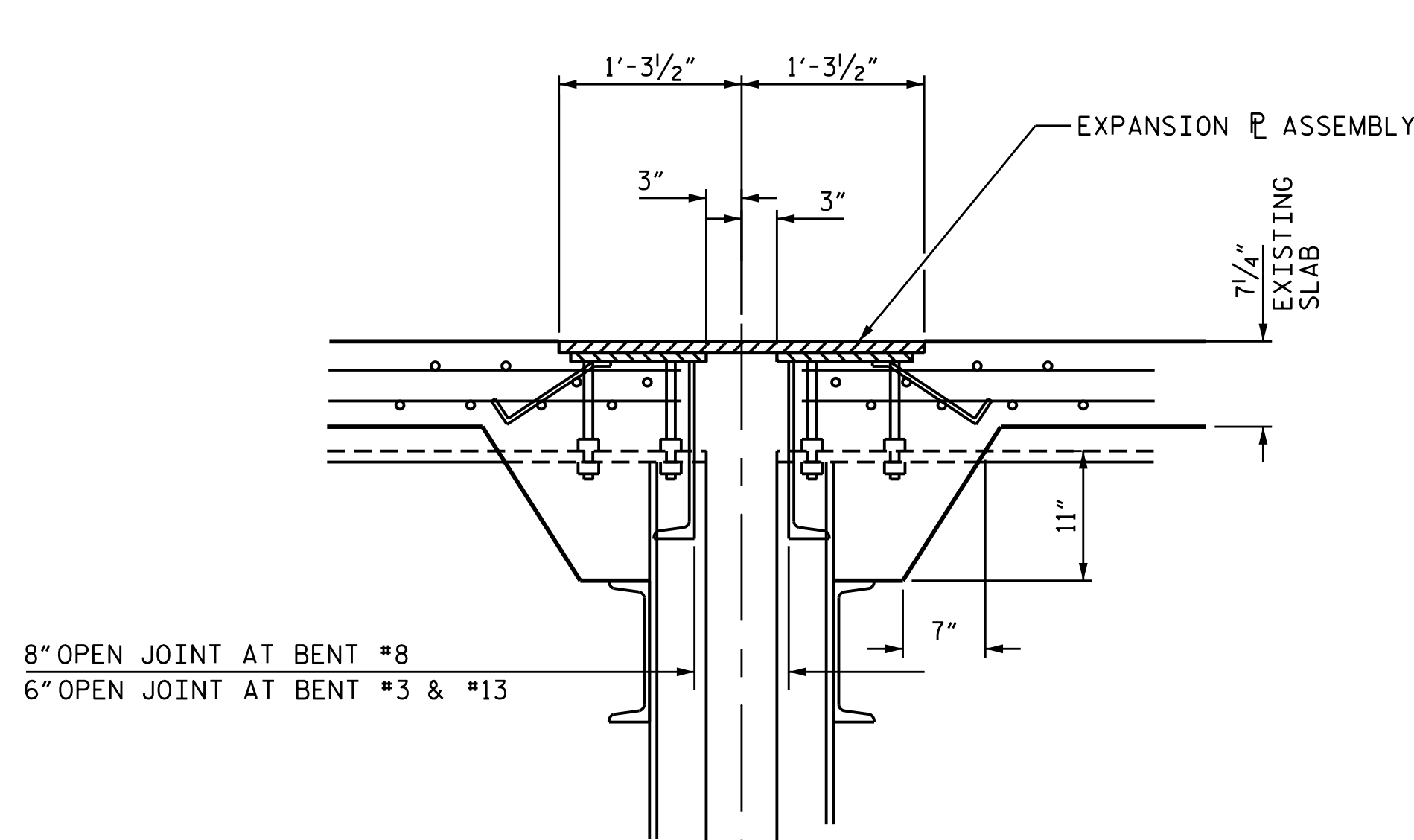


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

JOINT REPAIR DETAILS

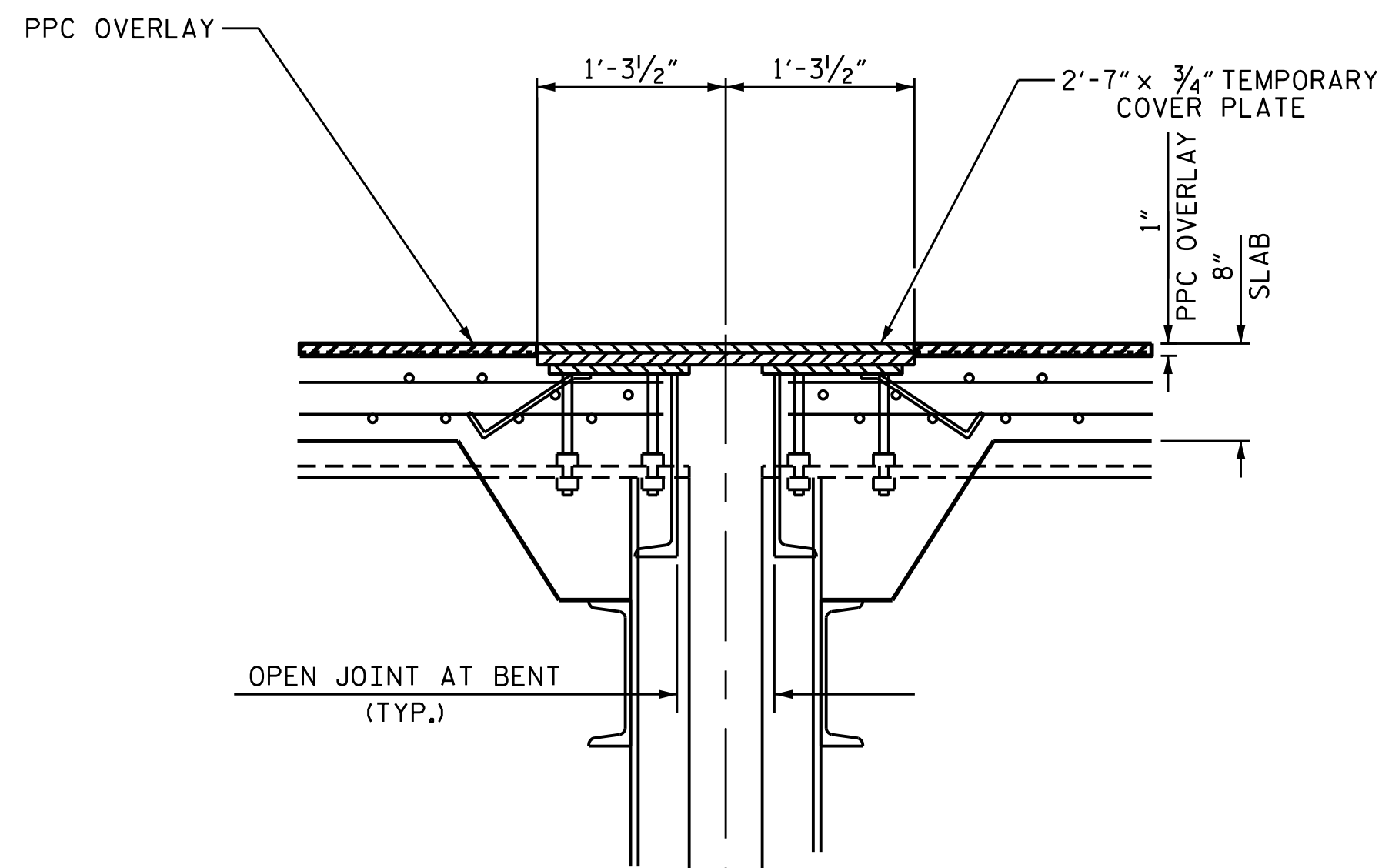
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			42



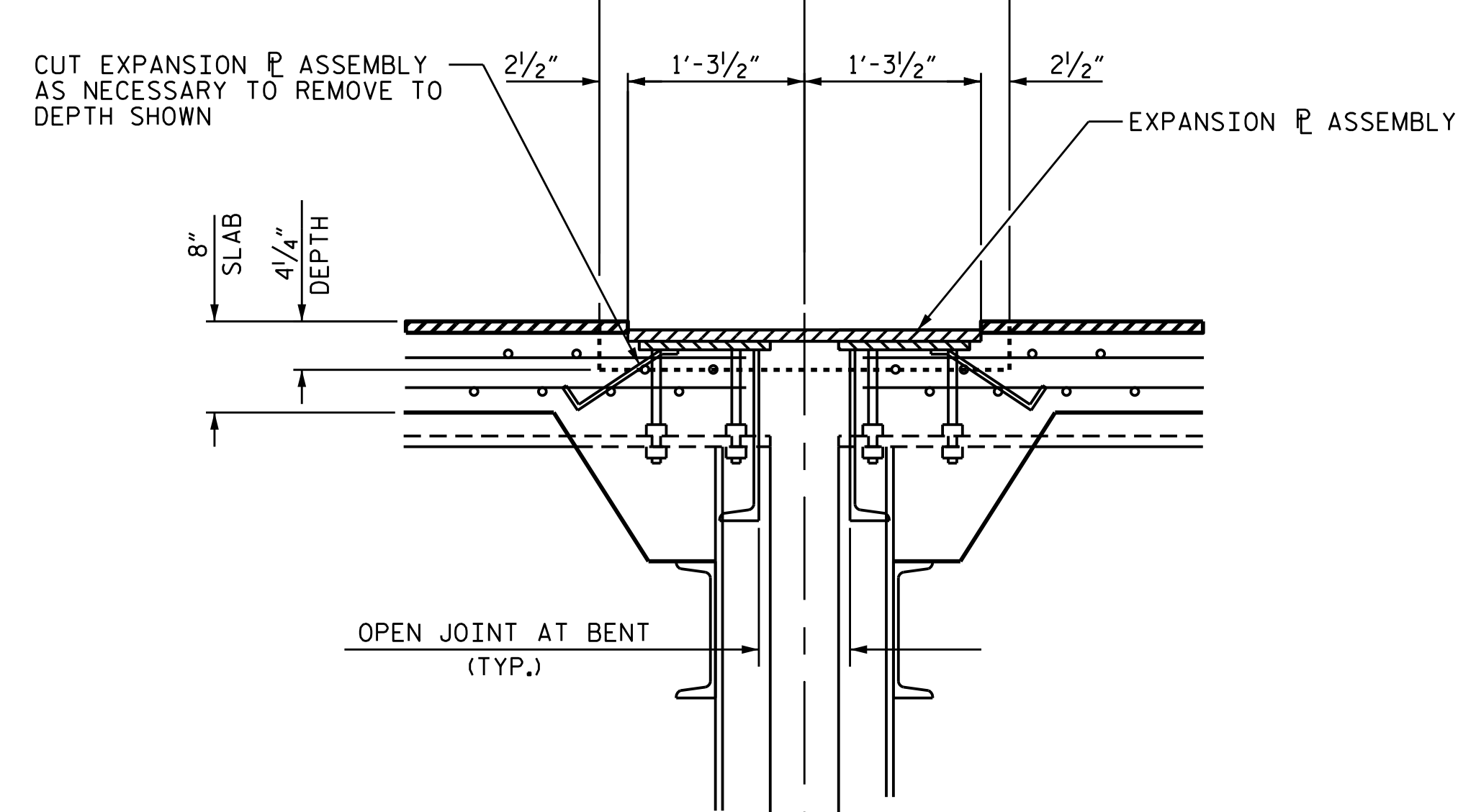
8" OPEN JOINT AT BENT #8
6" OPEN JOINT AT BENT #3 & #13

EXISTING
FINGER JOINT



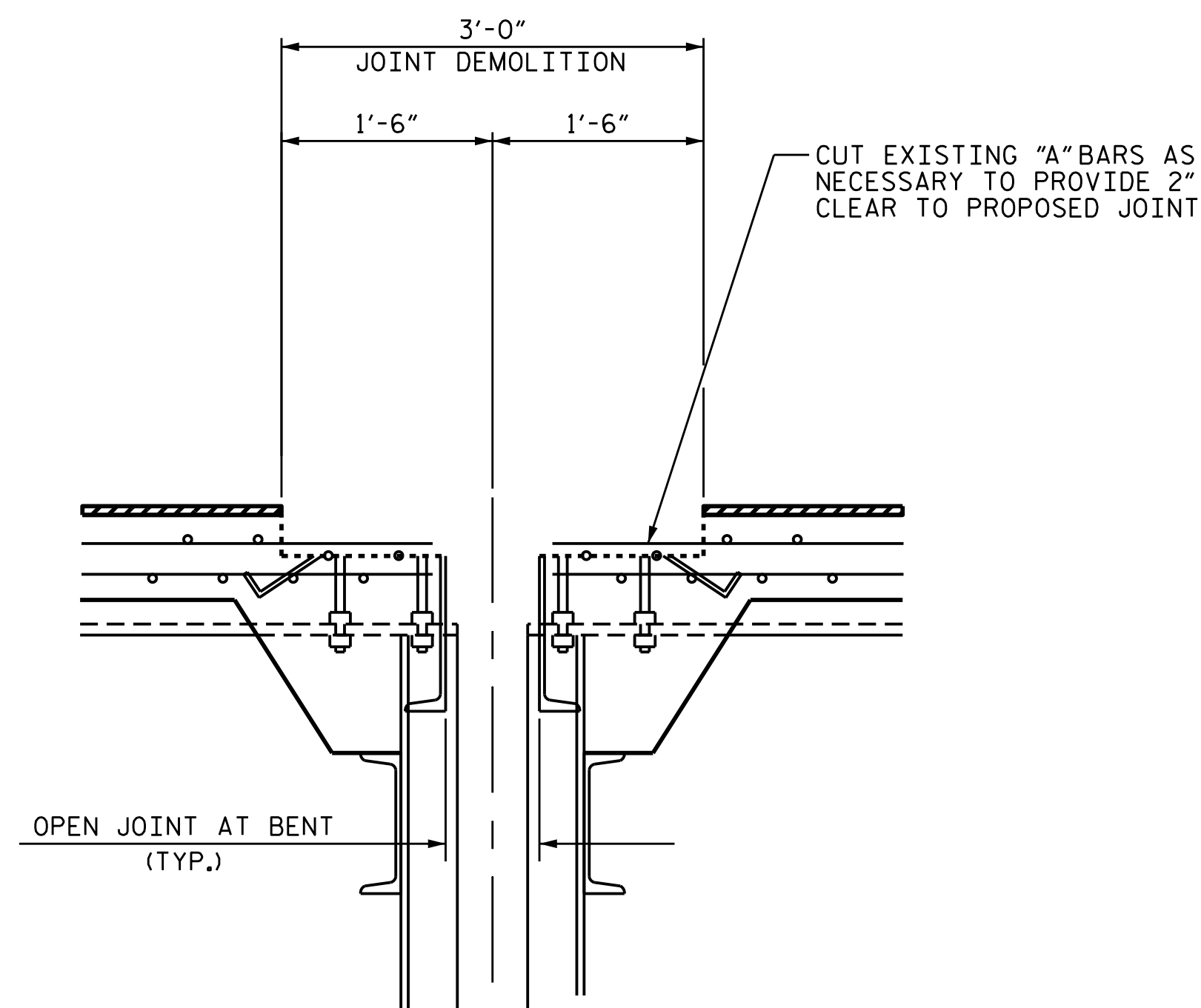
OPEN JOINT AT BENT
(TYP.)

PPC OVERLAY



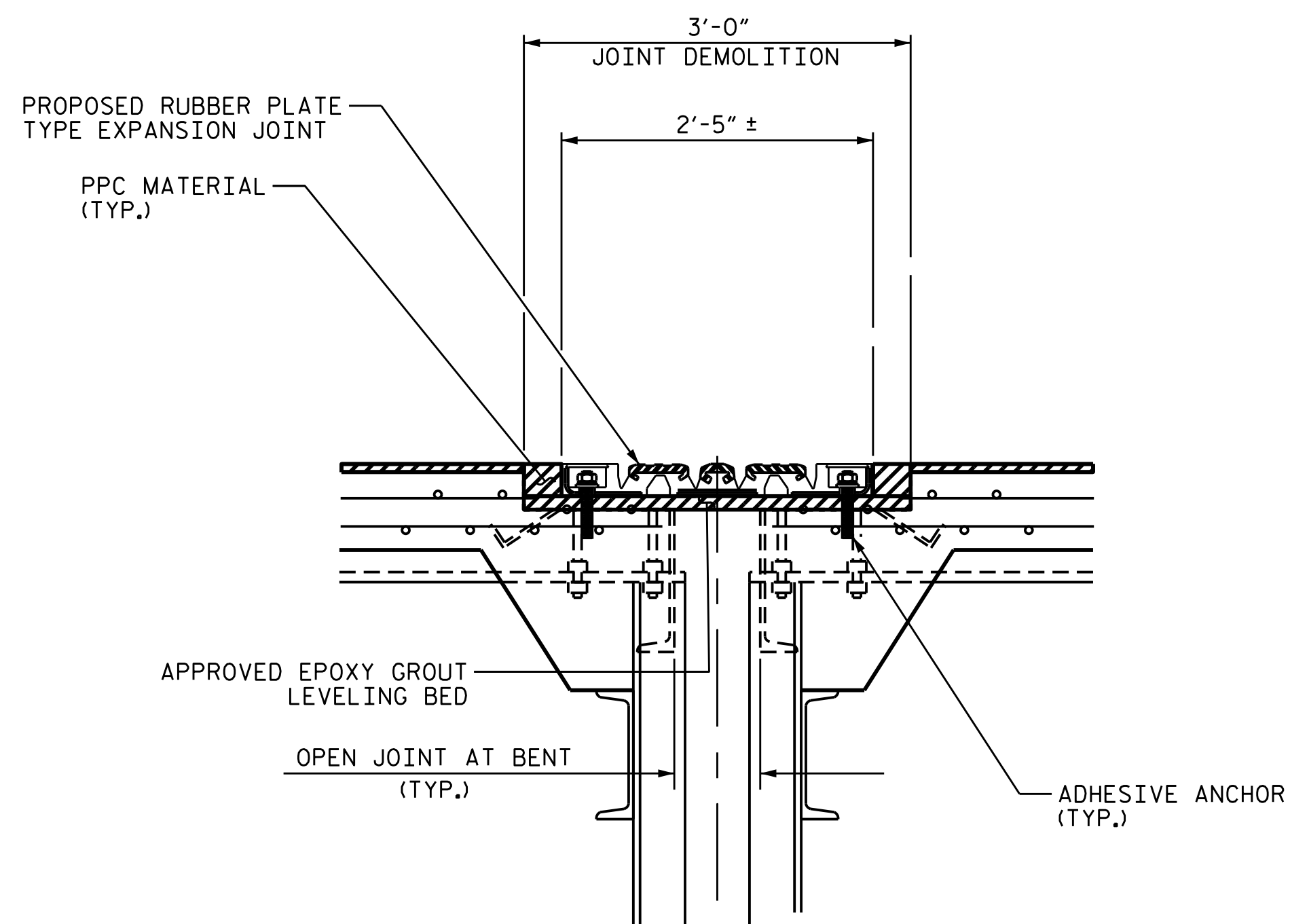
OPEN JOINT AT BENT
(TYP.)

FINGER JOINT DEMOLITION
STAGE 1



OPEN JOINT AT BENT
(TYP.)

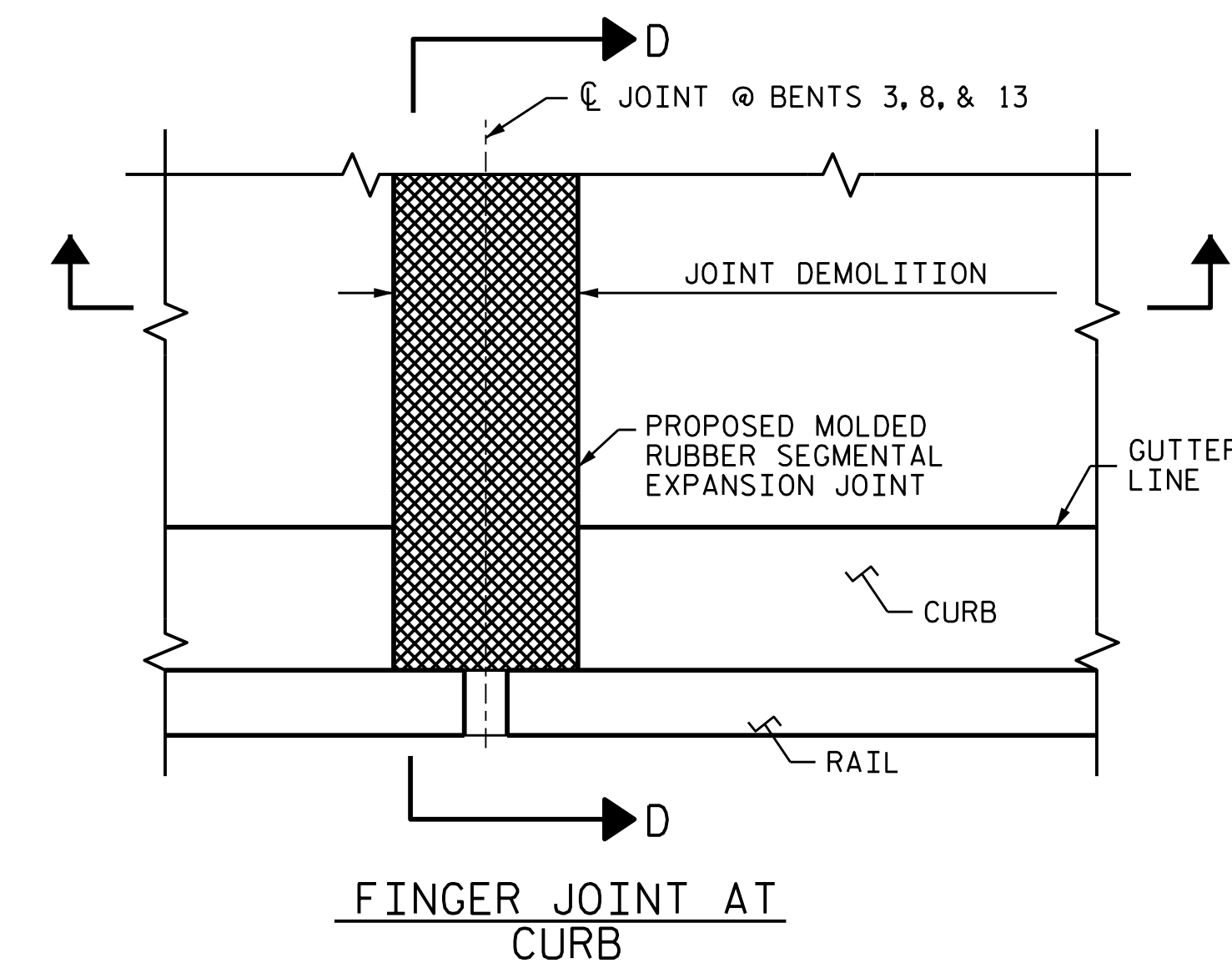
FINGER JOINT DEMOLITION
STAGE 2



APPROVED EPOXY GROUT
LEVELING BED
OPEN JOINT AT BENT
(TYP.)

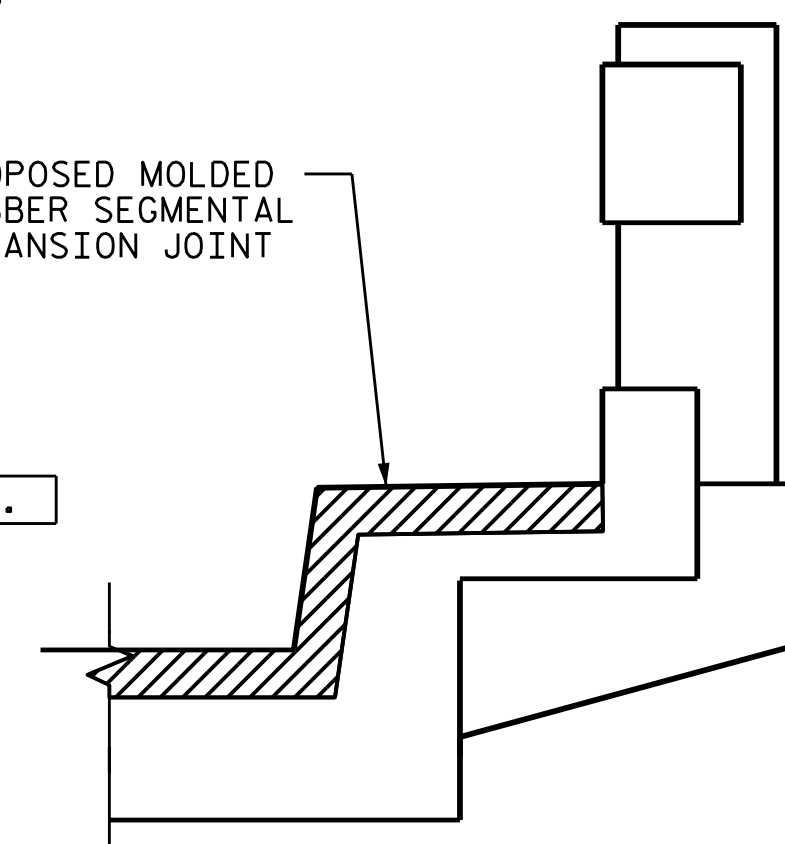
ADHESIVE ANCHOR
(TYP.)

MOLDED RUBBER SEGMENTAL
EXPANSION JOINT



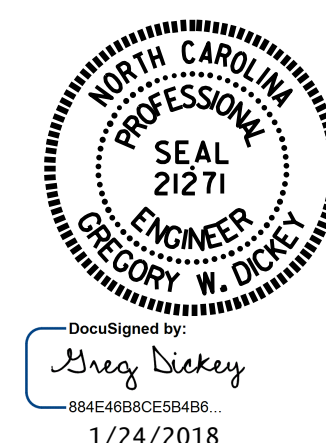
FINGER JOINT AT
CURB

JOINT REPAIR = 97.3 SQ. FT.



SECTION D-D

THE SEQUENCE OF FINGER JOINT REPAIRS SHOWN ARE AS FOLLOWS:
1) PREPARE DECK SURFACE
2) APPLY PPC OVERLAY AND INSTALL TEMPORARY JOINT COVER PLATE
3) DEMO FINGER JOINT
4) INSTALL MOLDED RUBBER SEGMENTAL EXPANSION JOINT
THE CONTRACTOR MAY SUBMIT FOR REVIEW AN ALTERNATIVE REPAIR SEQUENCE.



PROJECT NO. 15BPR.2
WARREN COUNTY
STATION: 139
SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-25	
JOINT REPAIR DETAILS						TOTAL SHEETS 42	
REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				
2			4				

DRAWN BY : G. DICKEY DATE : 1/18
CHECKED BY : K.W. ALFORD DATE : 1/18

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REPAIR QUANTITY TABLE

REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL, CORNER)	0.0	0.0		
EPOXY RESIN INJECTION			LN. FT.	LN. FT.
CAP			0.0	
EPOXY COATING		SO. FT.	SO. FT.	
TOP OF CAP		70.0		
REPAIRS END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL, CORNER)	0.0	0.0		
EPOXY RESIN INJECTION			LN. FT.	LN. FT.
CAP			4.0	
EPOXY COATING		SO. FT.	SO. FT.	
TOP OF CAP		70.0		

NOTES:

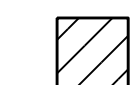
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE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

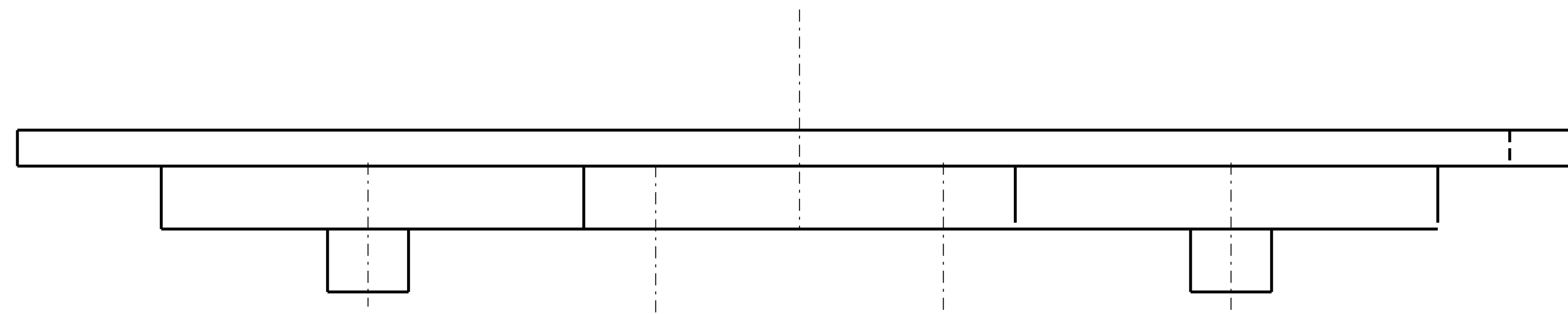
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.

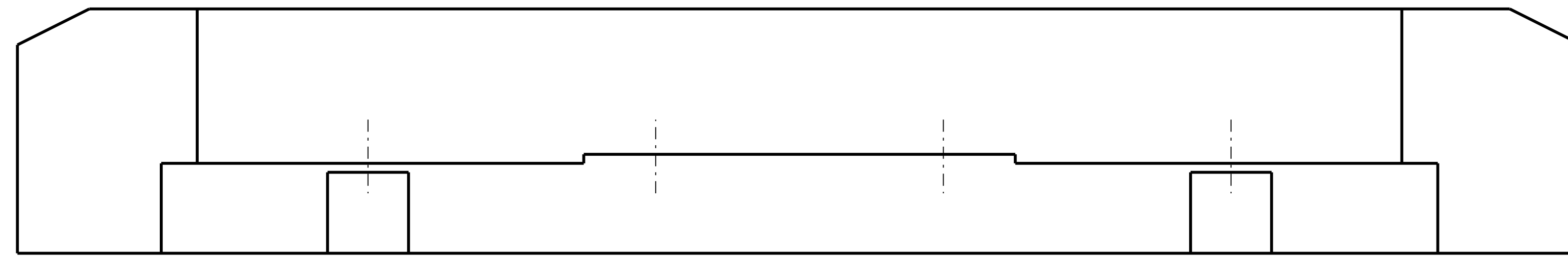
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CAP & COLUMN REPAIR SEE "TYPICAL CAP & COLUMN REPAIR DETAILS" SHEET.

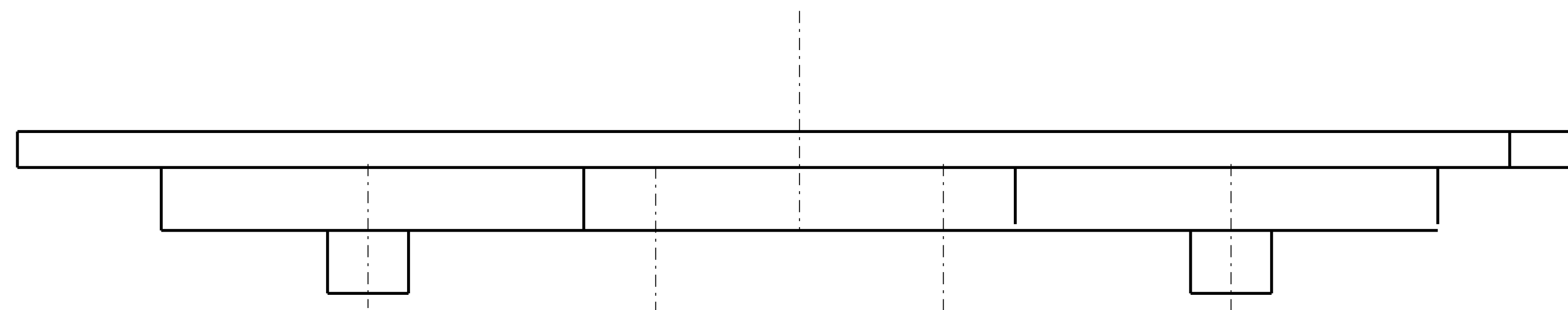
 - SHOTCRETE REPAIR
 ERI - EPOXY RESIN INJECTION



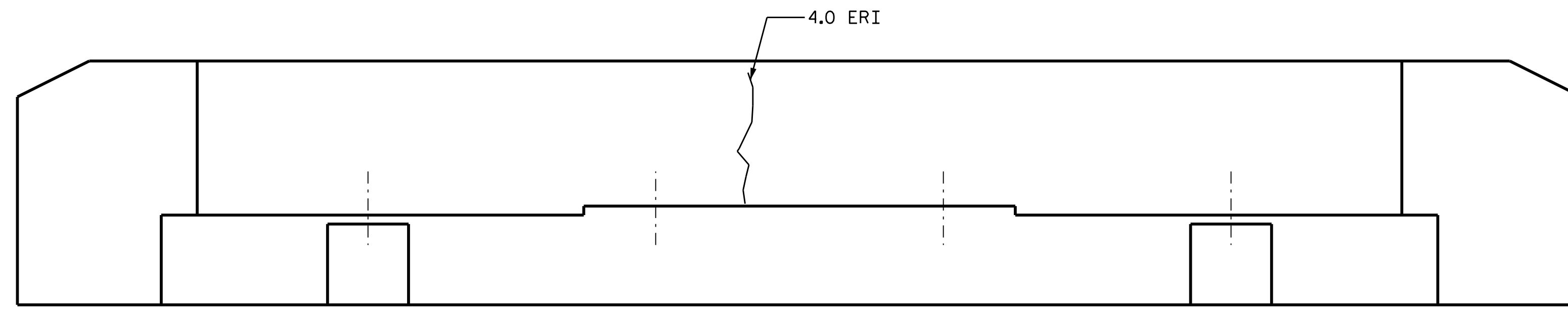
PLAN
END BENT 1



ELEVATION
END BENT 1



PLAN
END BENT 2



ELEVATION
END BENT 2

PROJECT NO. 15BPR.2
 WARREN COUNTY
 BRIDGE NO. 139



DocuSigned by:
 Gregory Dickey
 884E468CE5B466
 1/24/2018

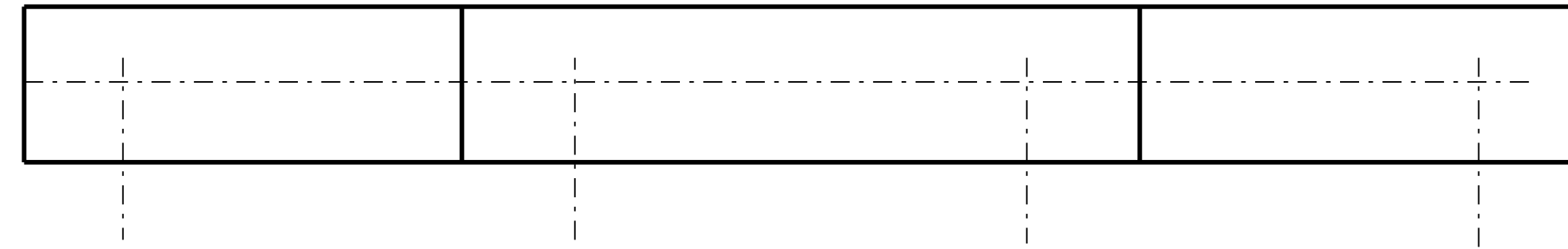
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

END BENT 1 & 2

DRAWN BY : J.D. HAWK DATE : 8/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-26
1			3			TOTAL SHEETS
2			4			42



PLAN
TOP OF CAP

SPAN B
SPAN A

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 EPOXY COATING, SEE SPECIAL PROVISIONS.

FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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

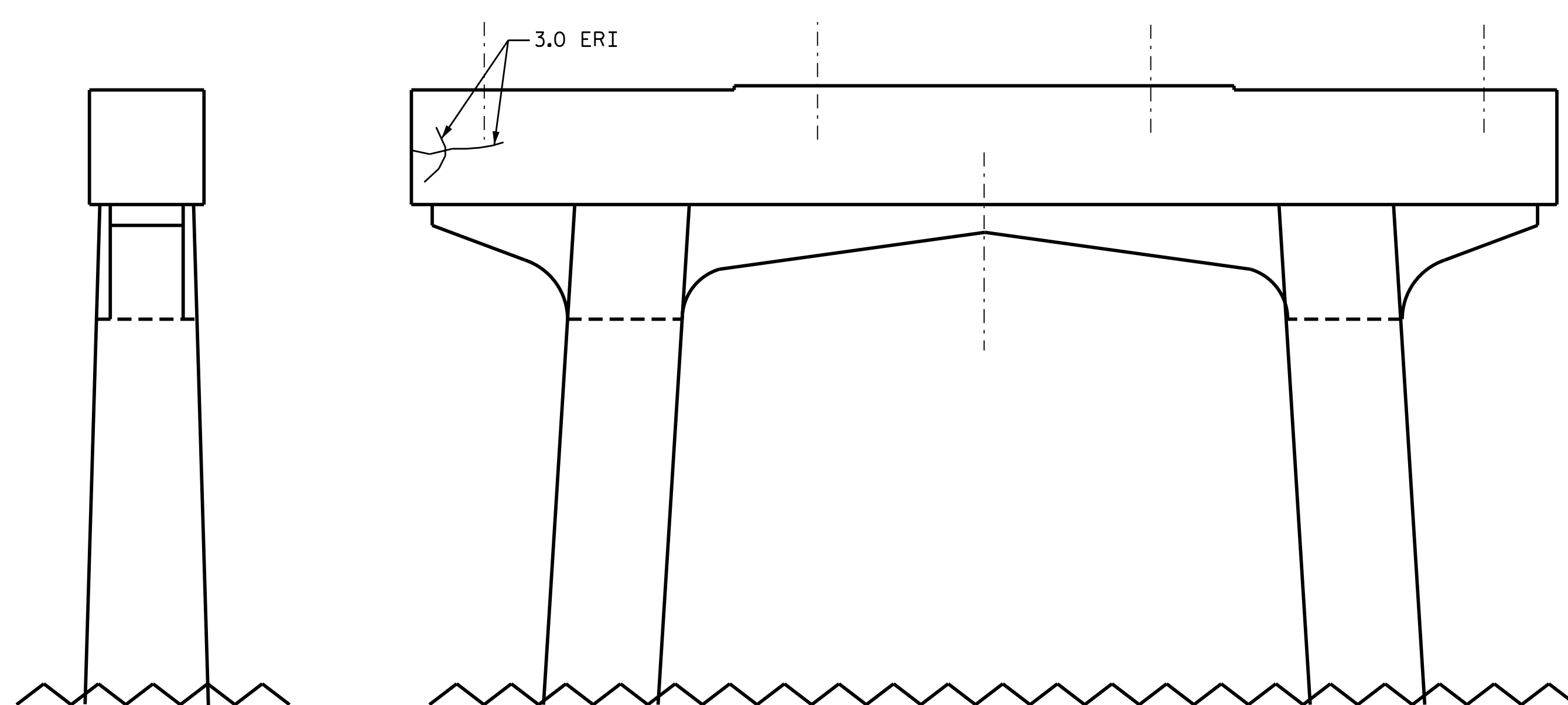
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

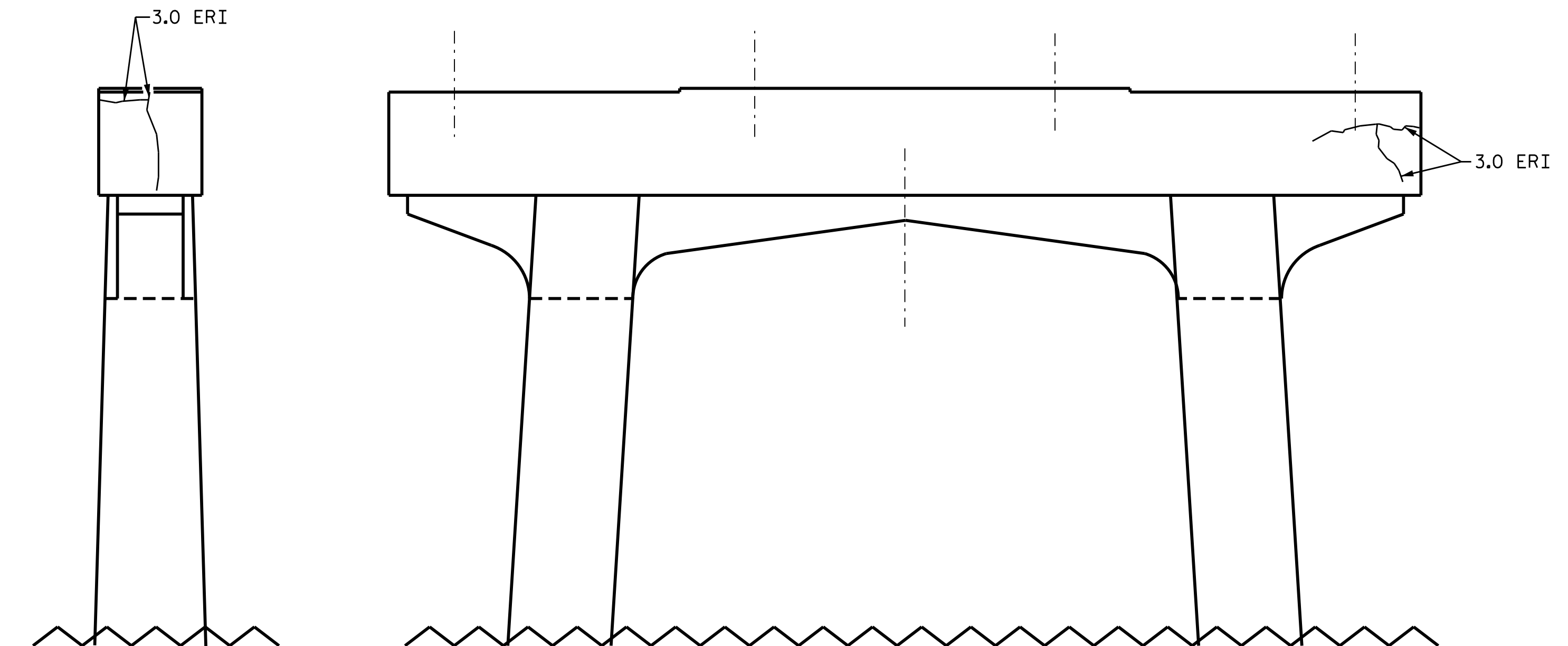
REPAIR QUANTITY TABLE

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)	0	0			
COLUMN	0	0			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		9.0			
COLUMN		0			
EPOXY COATING		AREA SF			
TOP OF CAP		76.0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



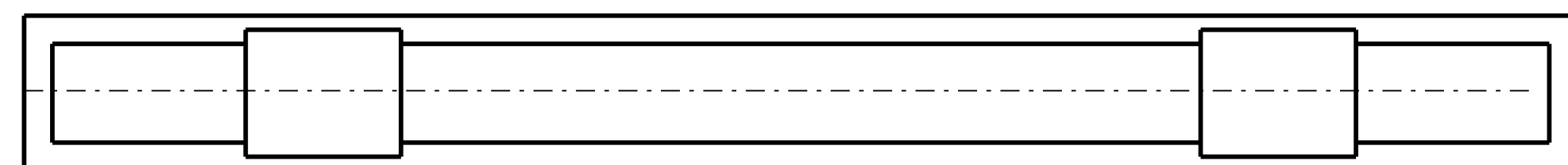
ELEVATION
SPAN A



ELEVATION
SPAN B

END VIEW
WEST SIDE

END VIEW
EAST SIDE

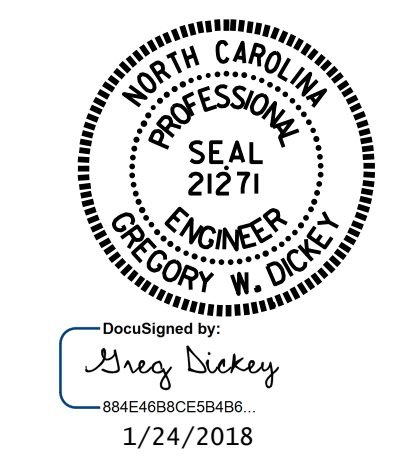


PLAN
BOTTOM OF CAP
(LOOKING UP)

SPAN P
SPAN O

▨ - SHOTCRETE REPAIR
ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.2
WARREN COUNTY
BRIDGE NO. 139

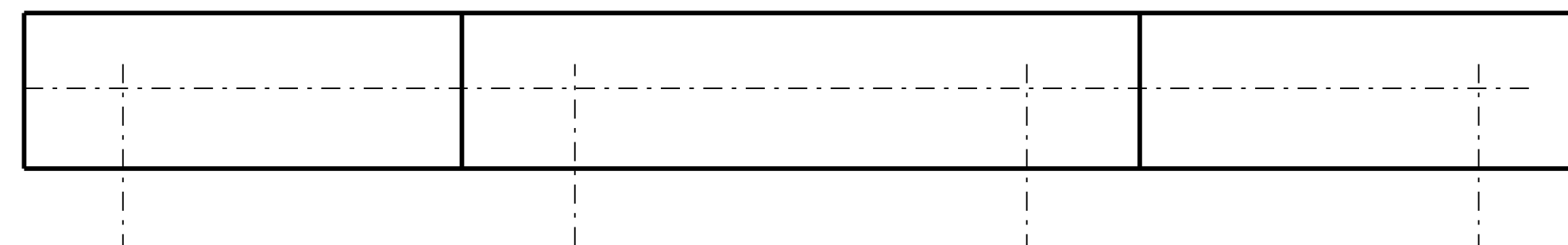


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1

DRAWN BY : J.D. HAWK DATE : 8/17
CHECKED BY : G.W. DICKEY DATE : 10/17

NO.	REVISIONS			NO.	REVISIONS			SHEET NO.
	BY:	DATE:			BY:	DATE:		
1				3			S-27	
2				4			TOTAL SHEETS 42	



PLAN
TOP OF CAP

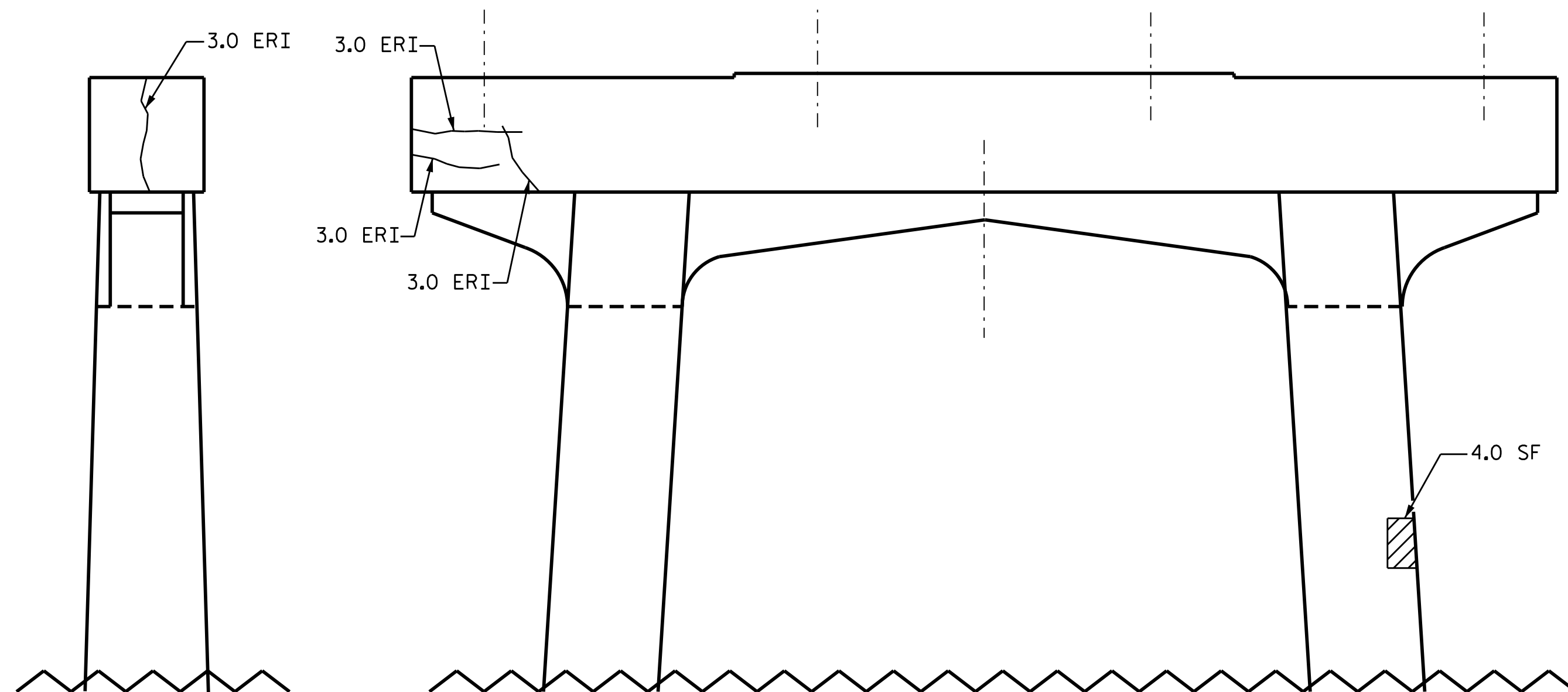
SPAN C
SPAN B

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 EPOXY COATING, SEE SPECIAL PROVISIONS.
FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
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.
THE CONTRACTOR SHALL EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

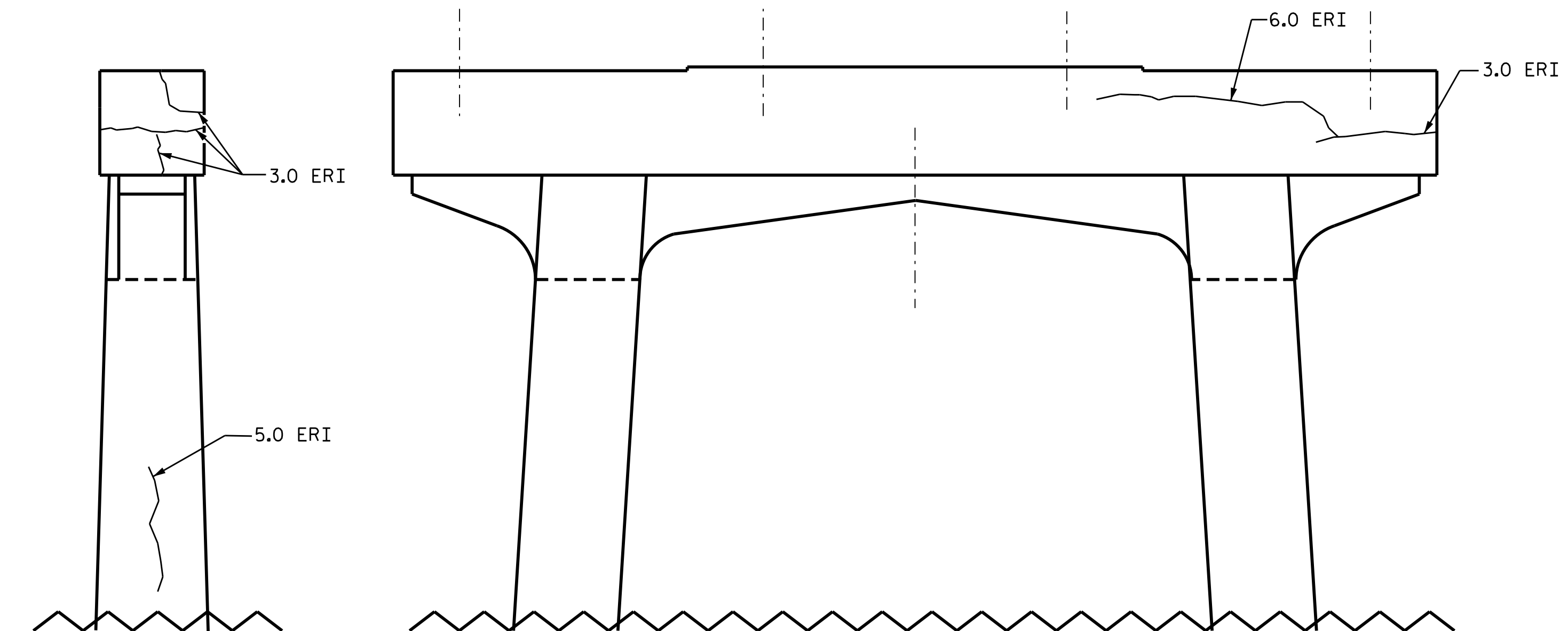
REPAIR QUANTITY TABLE					
REPAIRS BENT 2	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0	0			
CAP (HORIZONTAL, CORNER)	0	0			
COLUMN	4.0	1.0			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		24.0			
COLUMN		5.0			
EPOXY COATING		AREA SF			
TOP OF CAP		76.0			
FOOTINGS		0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



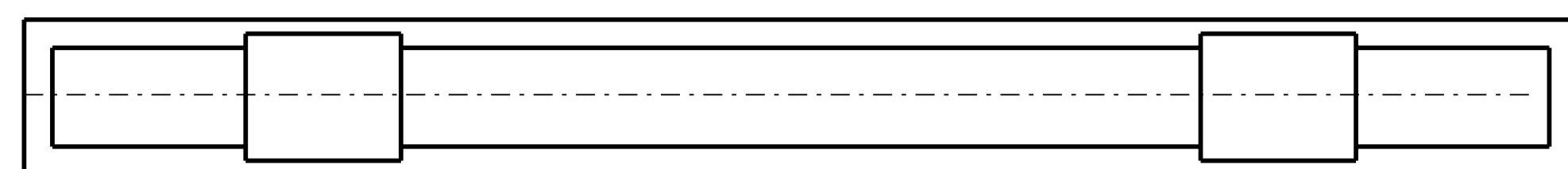
END VIEW
WEST SIDE

ELEVATION
SPAN B



END VIEW
EAST SIDE

ELEVATION
SPAN C

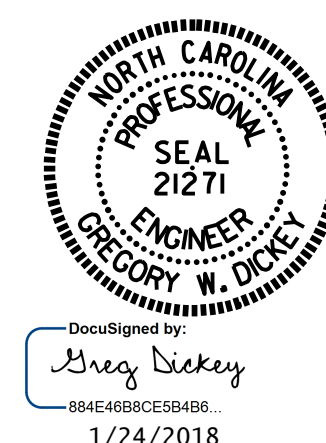


PLAN
BOTTOM OF CAP
(LOOKING UP)

SPAN C
SPAN B

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

PROJECT NO. 15BPR.2
WARREN COUNTY
BRIDGE NO. 139



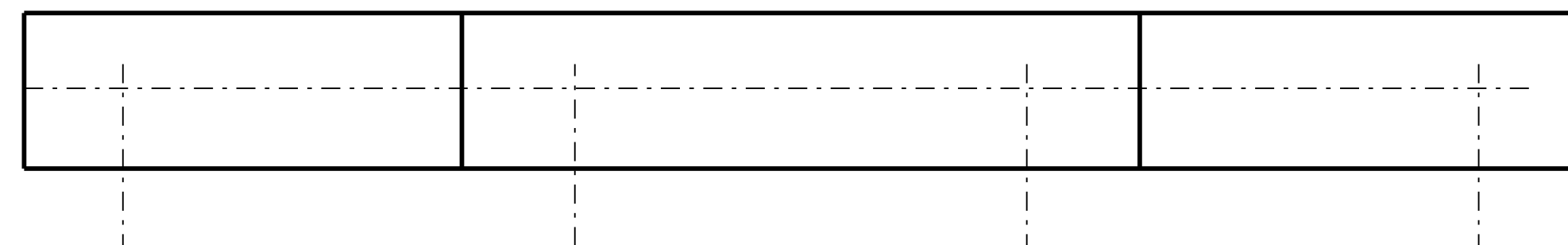
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2

DRAWN BY : J.D. HAWK DATE : 8/17
CHECKED BY : G.W. DICKEY DATE : 10/17

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-28
1			3			TOTAL SHEETS
2			4			42



PLAN
TOP OF CAP

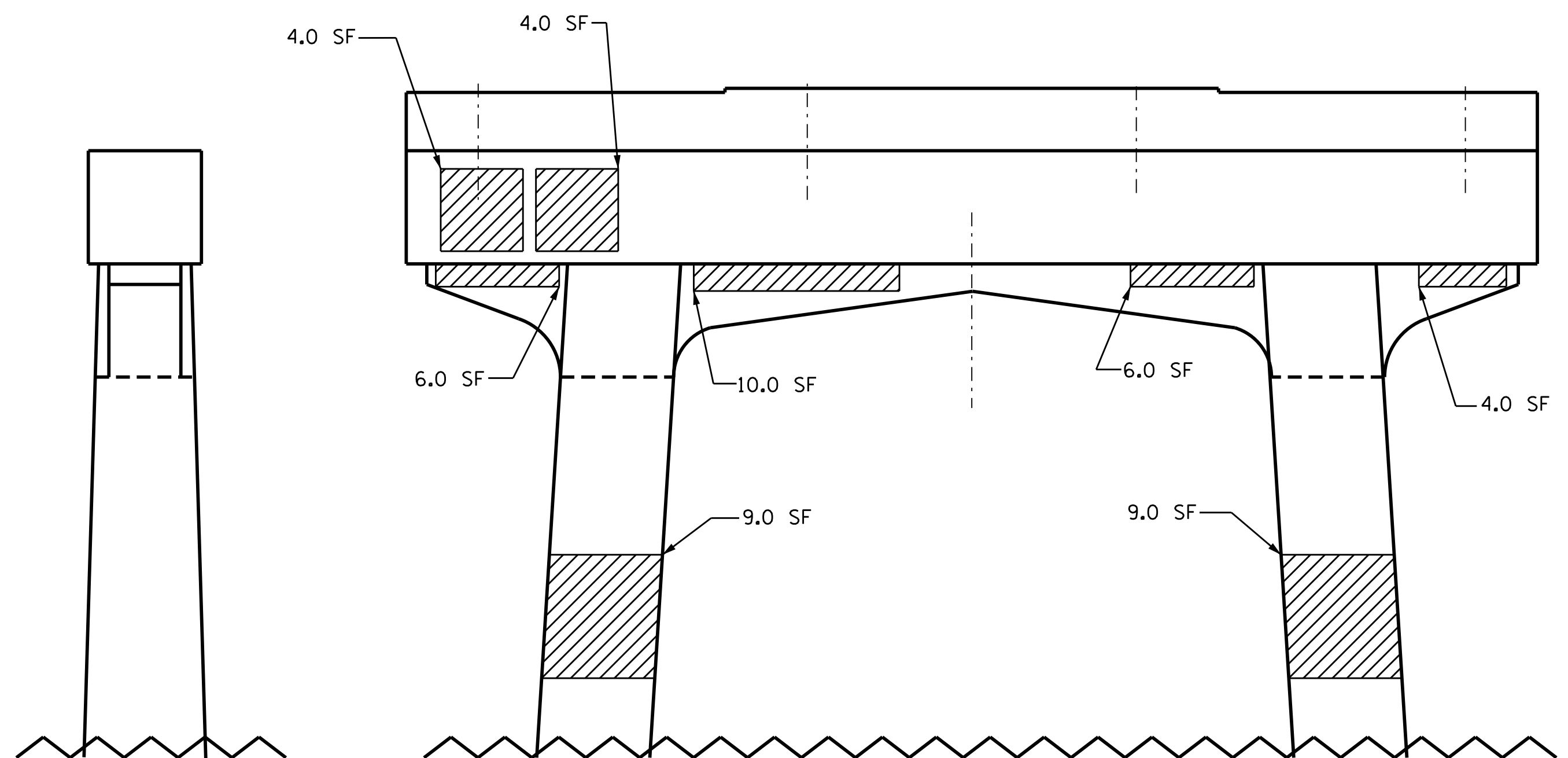
SPAN D
SPAN C

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.

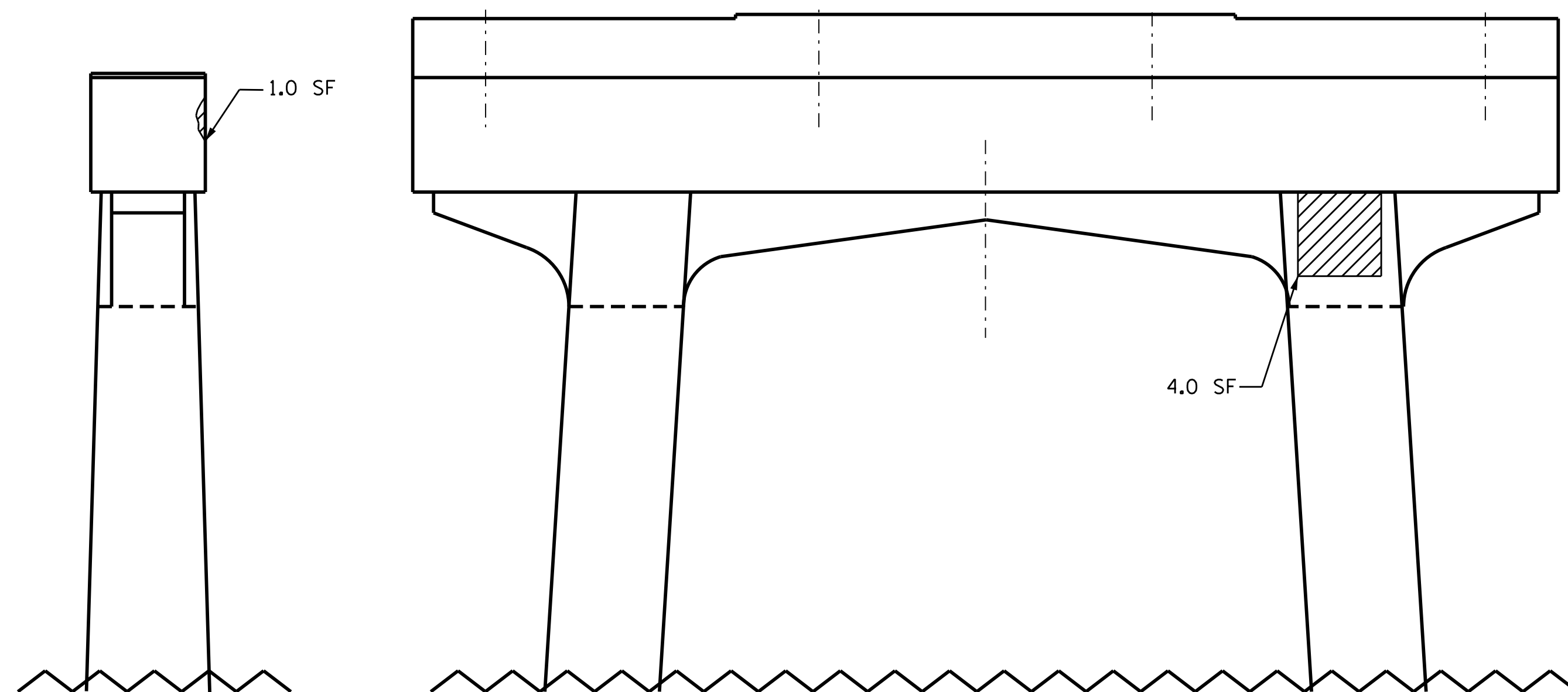
FOR EPOXY COATING, SEE SPECIAL PROVISIONS.
FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.
CONTRACTOR SHALL REMOVE SURFACE CONCRETE 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.
THE CONTRACTOR SHALL EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

REPAIR QUANTITY TABLE					
REPAIRS BENT 3	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	9.0	2.25			
CAP (HORIZONTAL, CORNER)	0	0			
COLUMN	48.0	12.0			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		0			
COLUMN		0			
EPOXY COATING		AREA SF			
TOP OF CAP		76.0			
FOOTINGS		0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



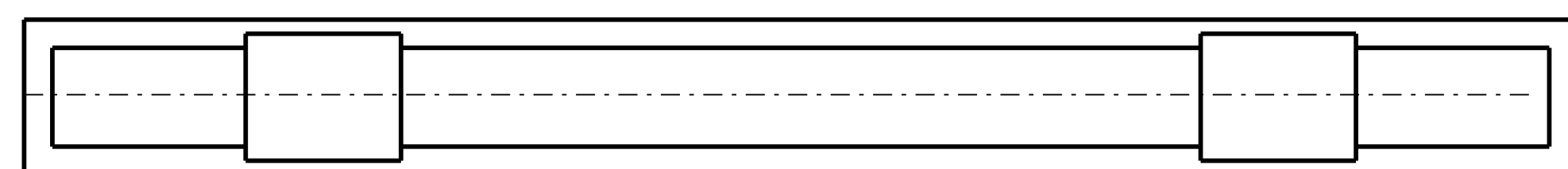
ELEVATION
SPAN C



ELEVATION
SPAN D

END VIEW
WEST SIDE

END VIEW
EAST SIDE

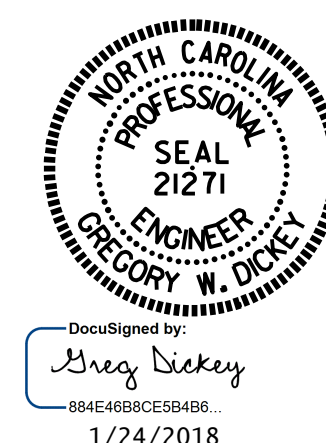


PLAN
BOTTOM OF CAP
(LOOKING UP)

SPAN D
SPAN C

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

PROJECT NO. 15BPR.2
WARREN COUNTY
BRIDGE NO. 139



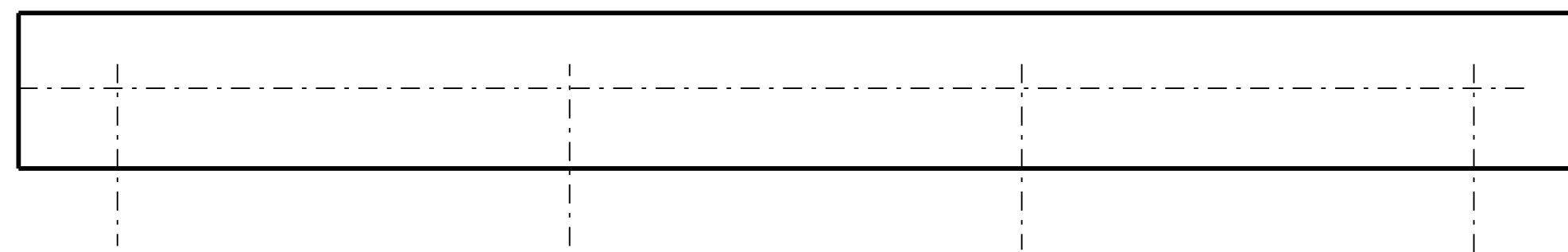
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 3

DRAWN BY : J.D. HAWK DATE : 8/17
CHECKED BY : G.W. DICKEY DATE : 10/17

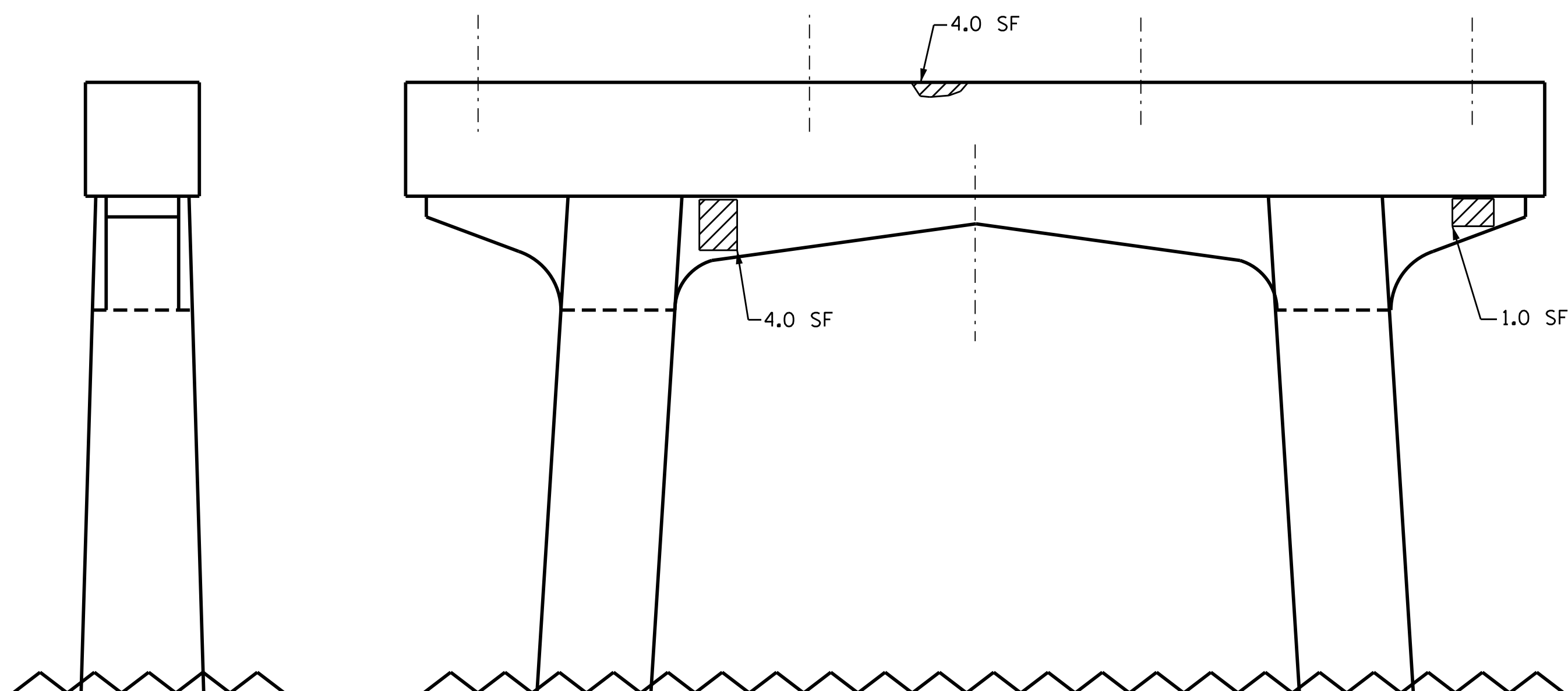
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29	
1			3			TOTAL SHEETS	42
2			4				



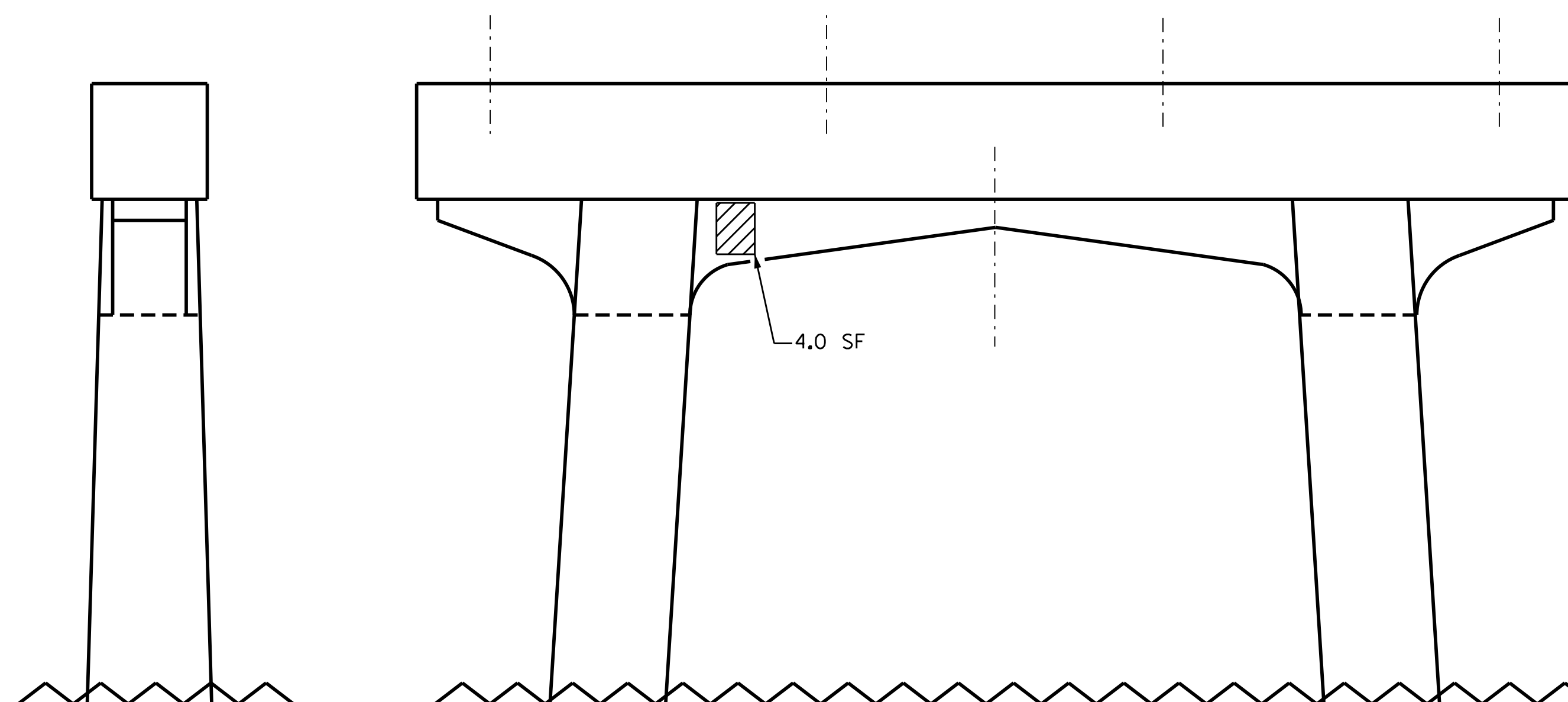
PLAN
TOP OF CAP

SPAN E
SPAN D



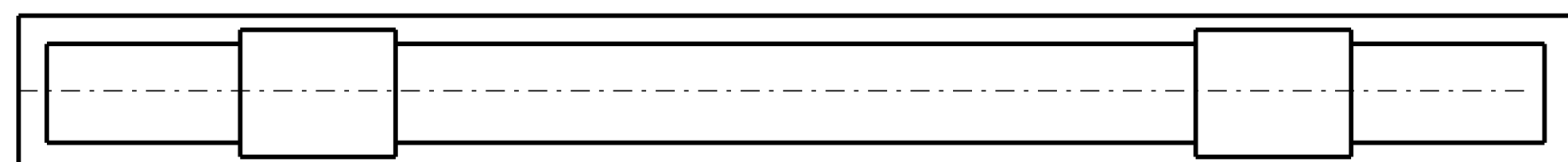
END VIEW
WEST SIDE

ELEVATION
SPAN D



END VIEW
EAST SIDE

ELEVATION
SPAN E



PLAN
BOTTOM OF CAP
(LOOKING UP)

SPAN E
SPAN D

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

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 EPOXY COATING, SEE SPECIAL PROVISIONS.

FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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.

THE CONTRACTOR SHALL EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

REPAIR QUANTITY TABLE

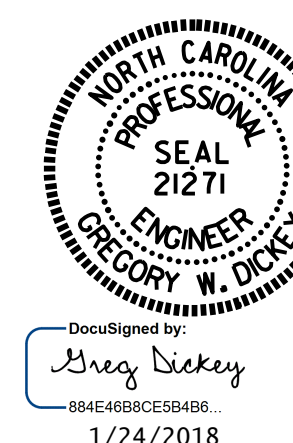
REPAIRS BENT 4	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	4.0	1.0			
CAP (HORIZONTAL, CORNER)	0	0			
COLUMN	9.0	2.25			
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
	0	0			
EPOXY RESIN INJECTION			LN. FT		
CAP			0		
COLUMN			0		
EPOXY COATING			AREA SF		
TOP OF CAP			76.0		
FOOTINGS			0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

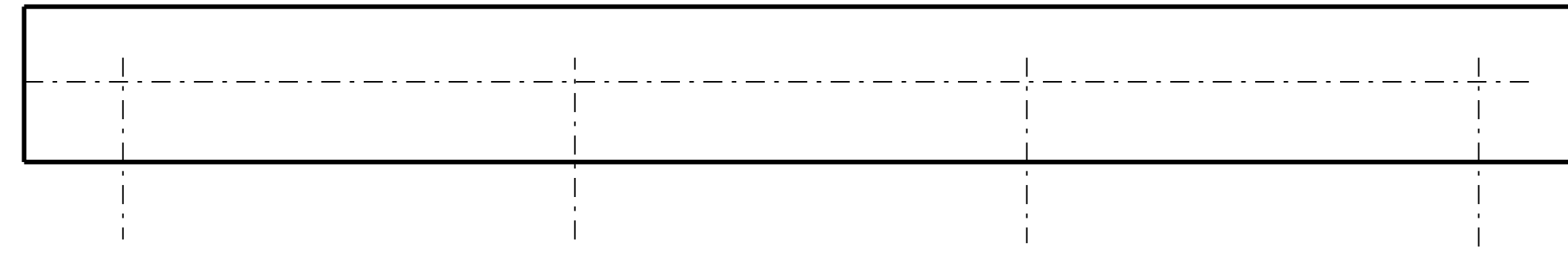
BENT 4



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-30
1			3			TOTAL SHEETS
2			4			42

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DRAWN BY : J.D. HAWK DATE : 8/17
 CHECKED BY : G.W. DICKEY DATE : 10/17



PLAN
TOP OF CAP

SPAN F
SPAN E

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 EPOXY COATING, SEE SPECIAL PROVISIONS.

FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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.

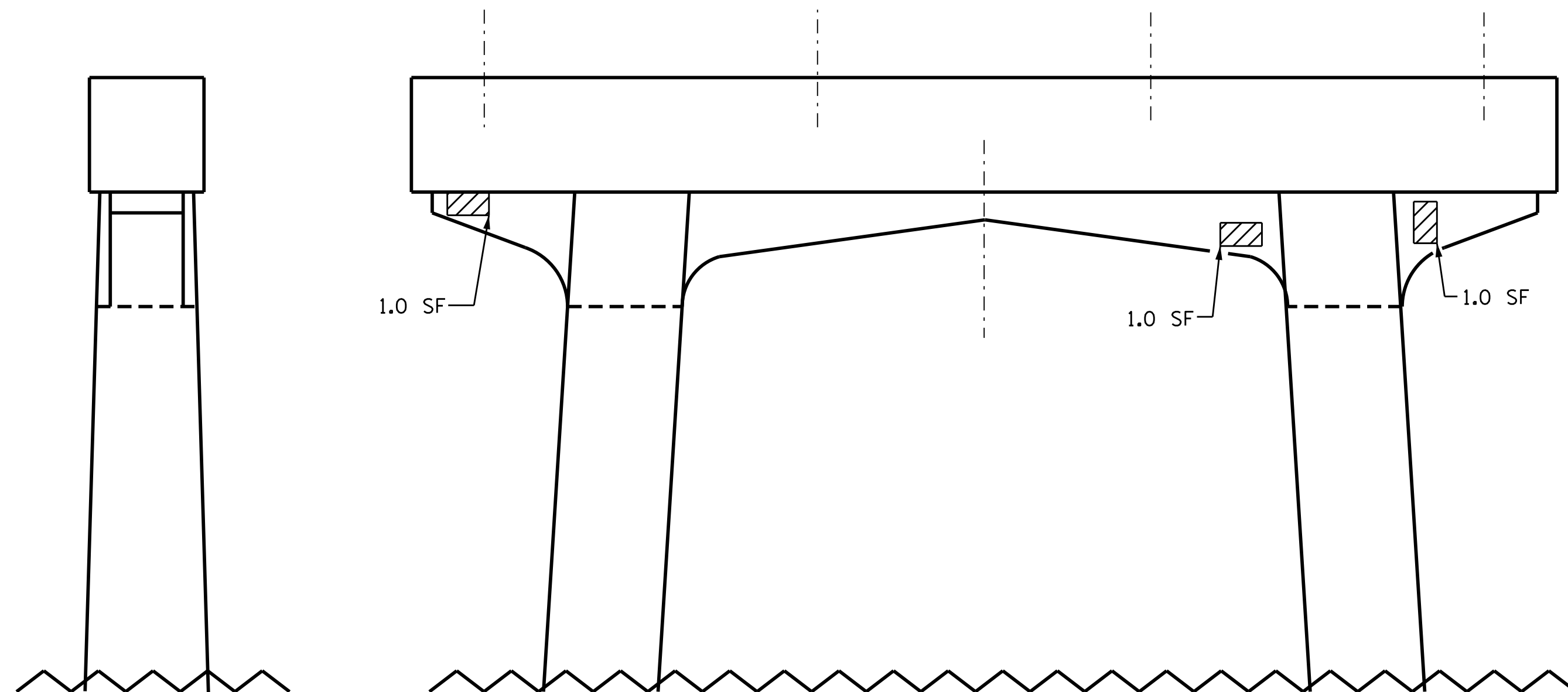
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

REPAIR QUANTITY TABLE

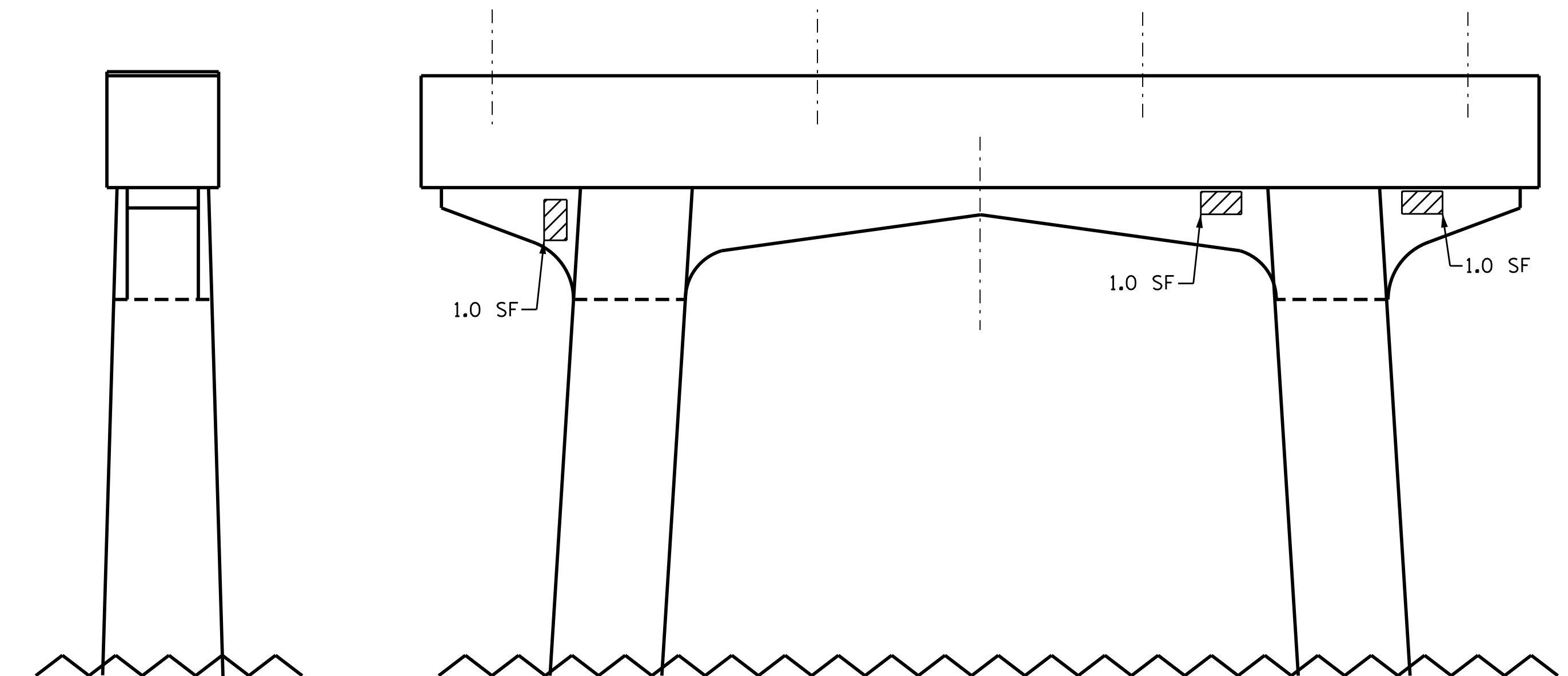
REPAIRS BENT 5	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0	0			
CAP (HORIZONTAL, CORNER)	0	0			
COLUMN	6.0	1.5			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		0			
COLUMN		0			
EPOXY COATING		AREA SF			
TOP OF CAP		76.0			
FOOTINGS		0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



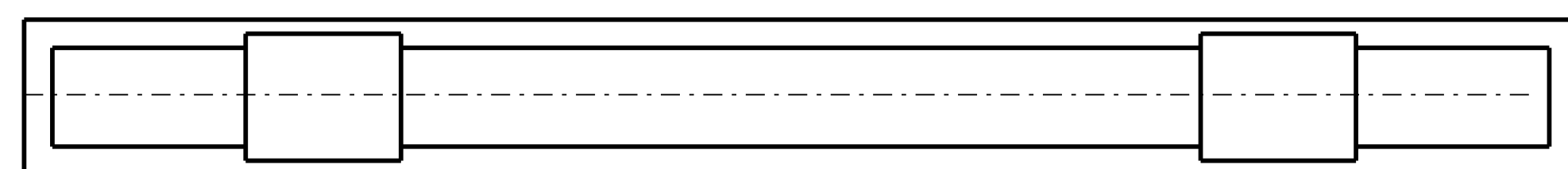
END VIEW
WEST SIDE

ELEVATION
SPAN E



END VIEW
EAST SIDE

ELEVATION
SPAN F

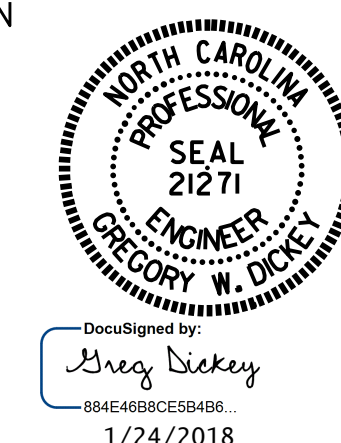


PLAN
BOTTOM OF CAP
(LOOKING UP)

SPAN F
SPAN E

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

PROJECT NO. 15BPR.2
WARREN COUNTY
BRIDGE NO. 139



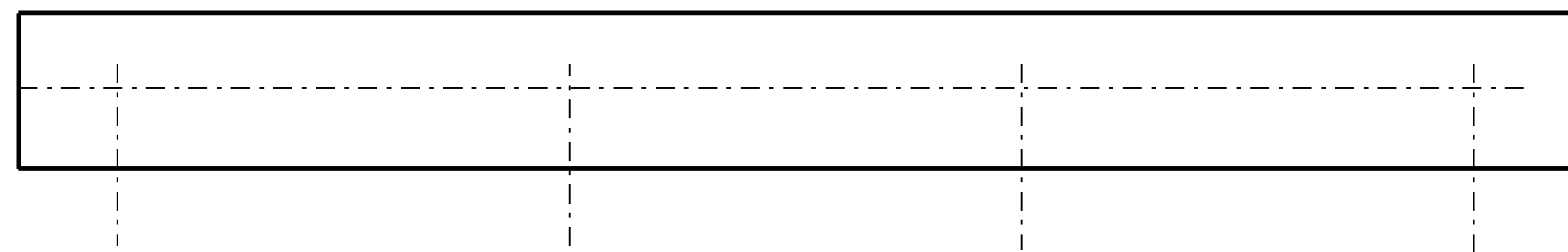
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 5

DRAWN BY : J.D. HAWK DATE : 8/17
CHECKED BY : G.W. DICKEY DATE : 10/17

NO.	REVISIONS		NO.	REVISIONS		SHEET NO.
	BY:	DATE:		BY:	DATE:	
1			3			S-31
2			4			TOTAL SHEETS 42

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PLAN
TOP OF CAP

SPAN G
SPAN F

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 EPOXY COATING, SEE SPECIAL PROVISIONS.

FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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.

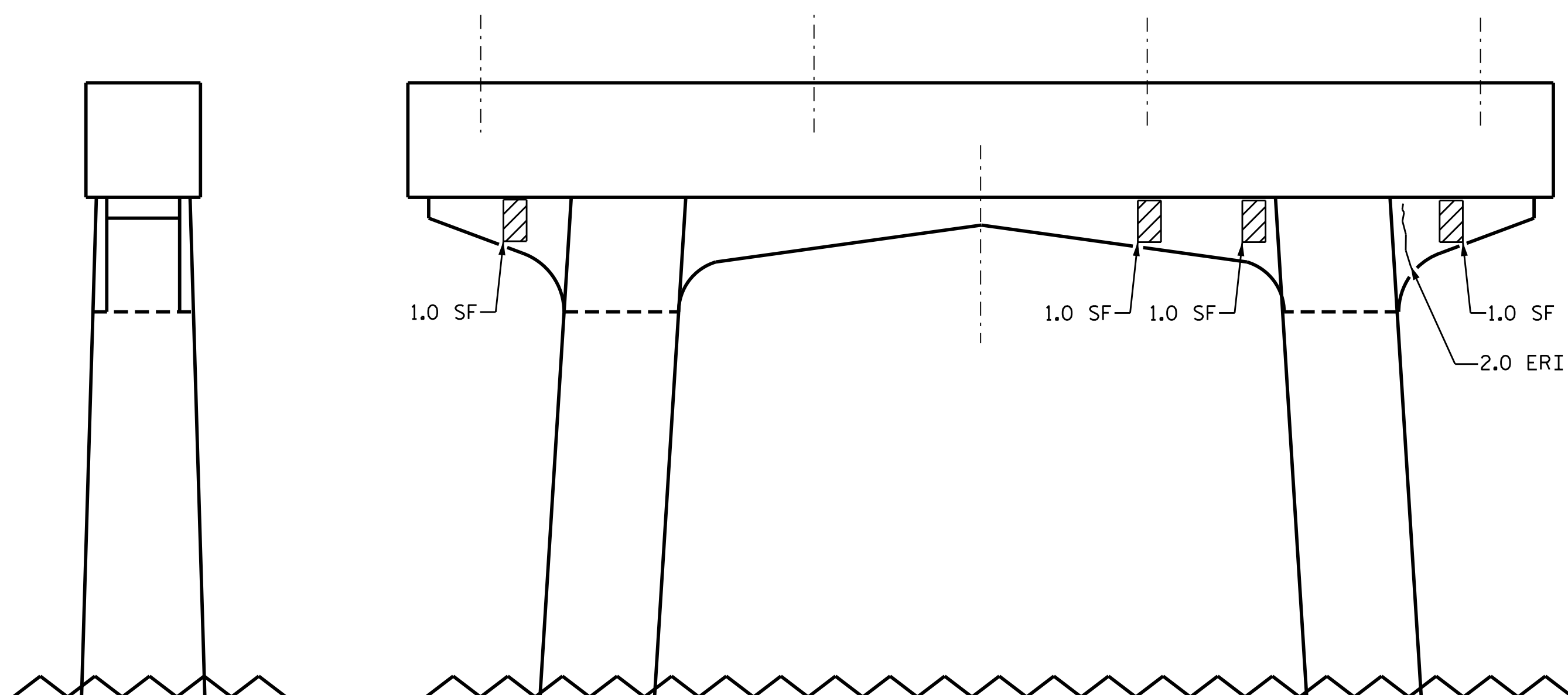
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

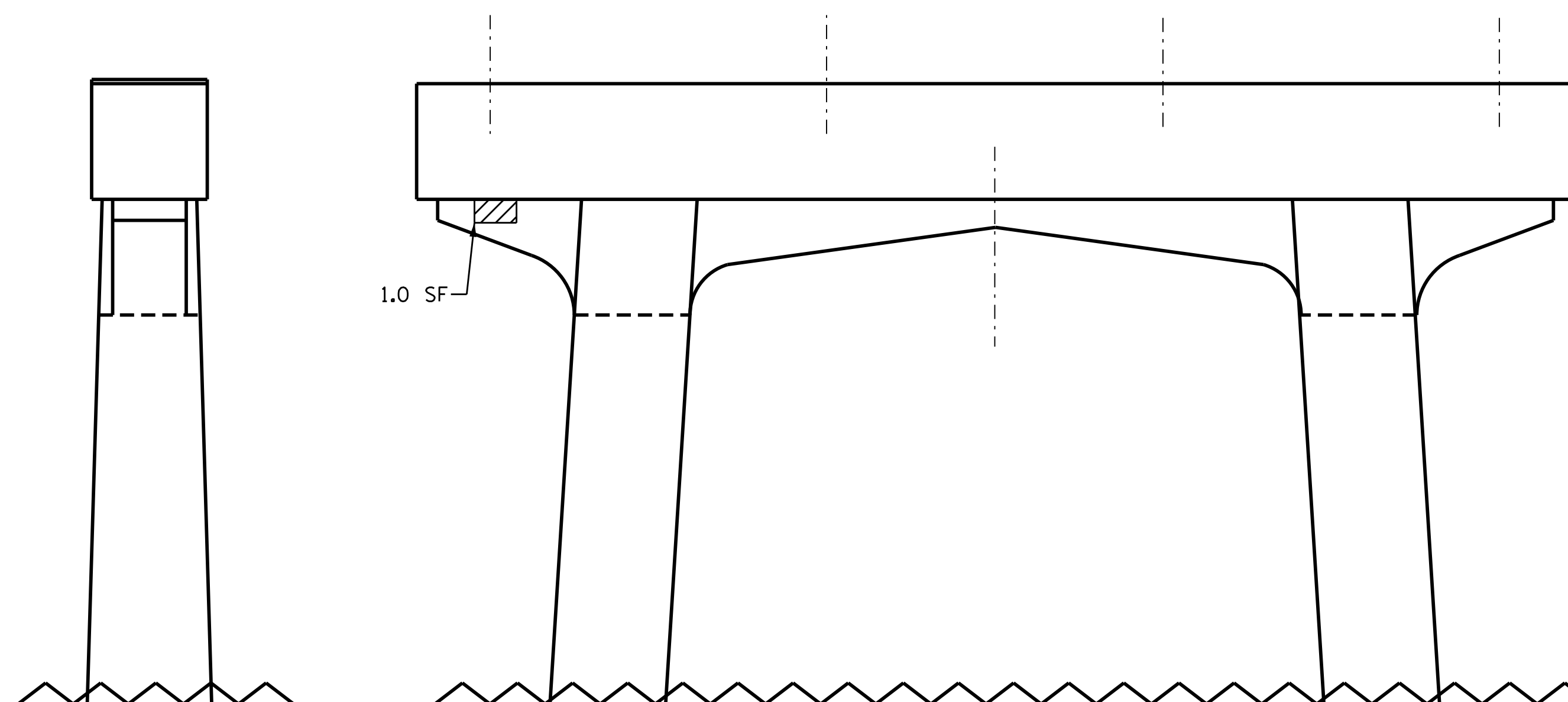
REPAIR QUANTITY TABLE

REPAIRS BENT 6	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	5.0	1.25			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		0			
COLUMN		2.0			
EPOXY COATING		AREA SF			
TOP OF CAP		76.0			
FOOTINGS		0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



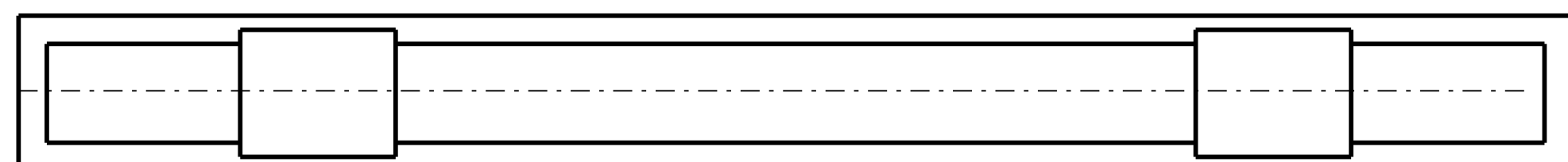
ELEVATION
SPAN F



ELEVATION
SPAN G

END VIEW
WEST SIDE

END VIEW
EAST SIDE

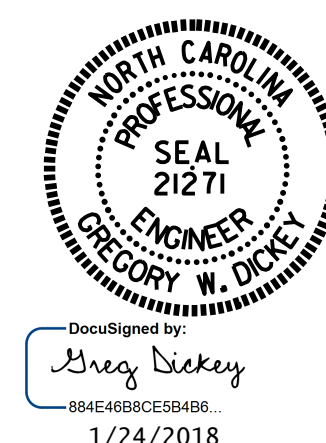


PLAN
BOTTOM OF CAP
(LOOKING UP)

SPAN G
SPAN F

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

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



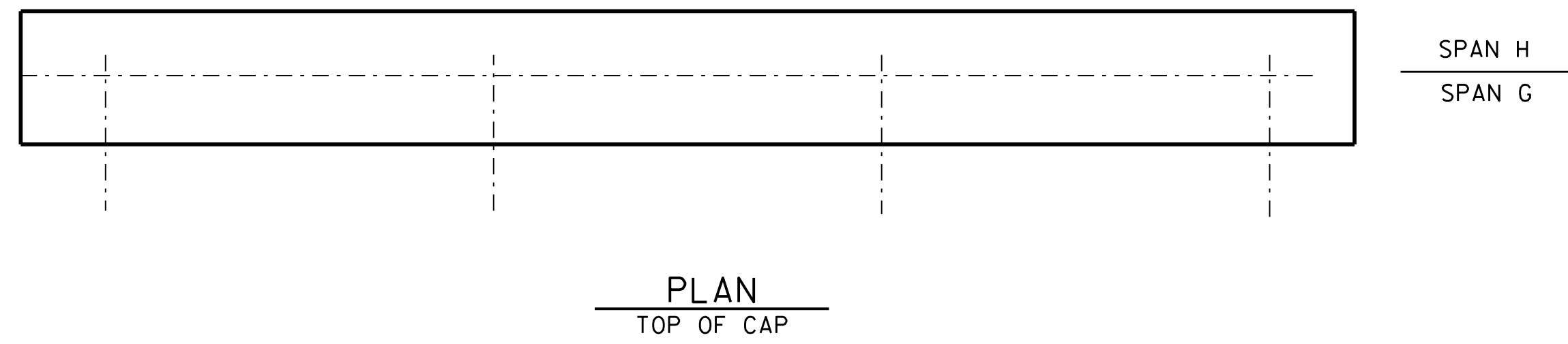
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 6

DRAWN BY : J.D. HAWK DATE : 8/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-32
1			3			TOTAL SHEETS
2			4			42

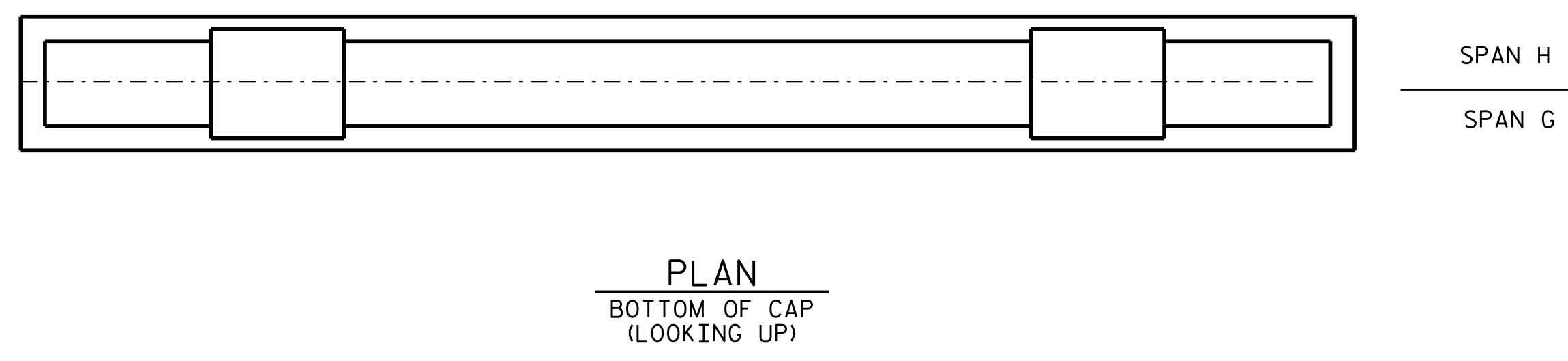
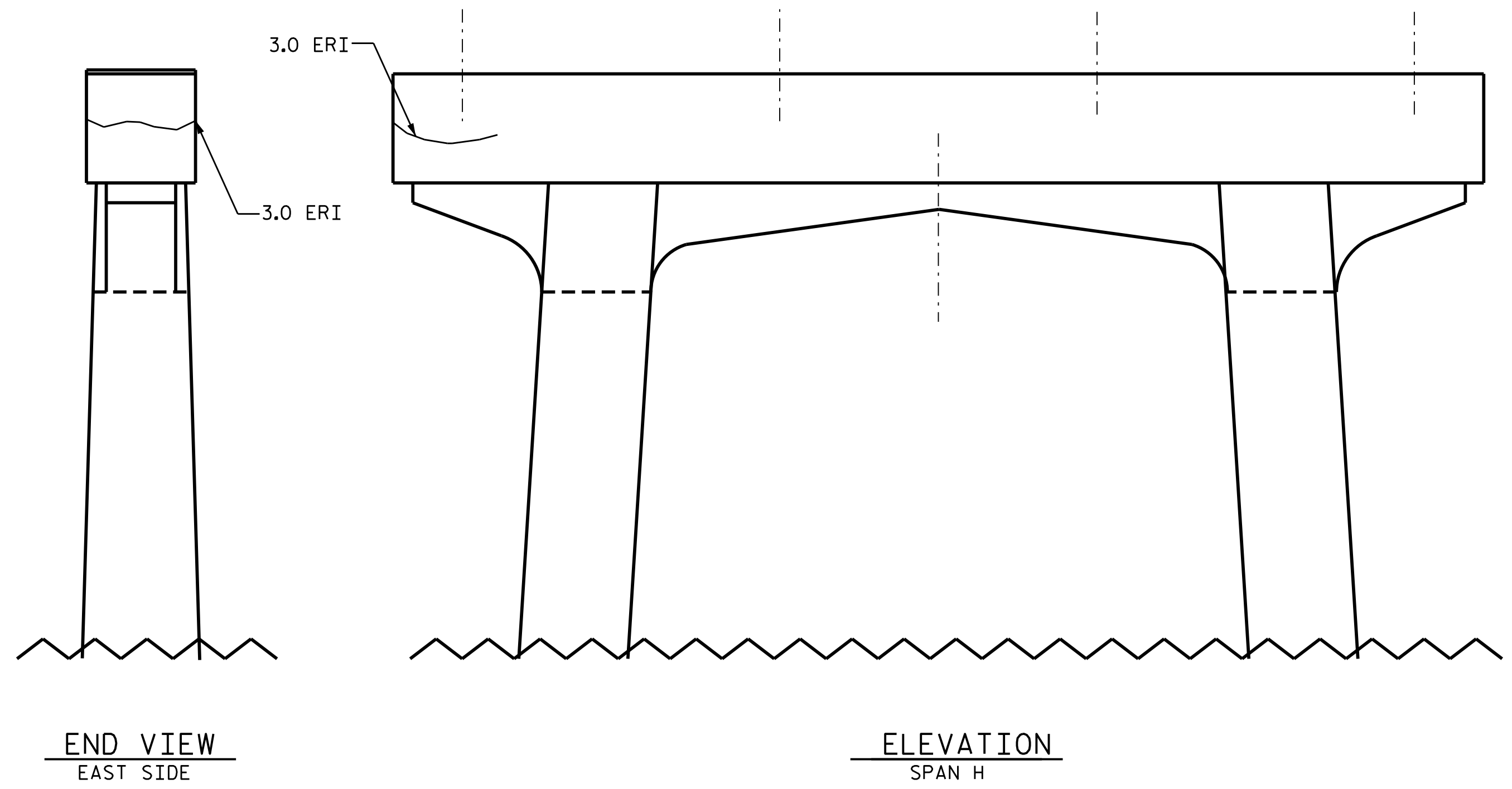
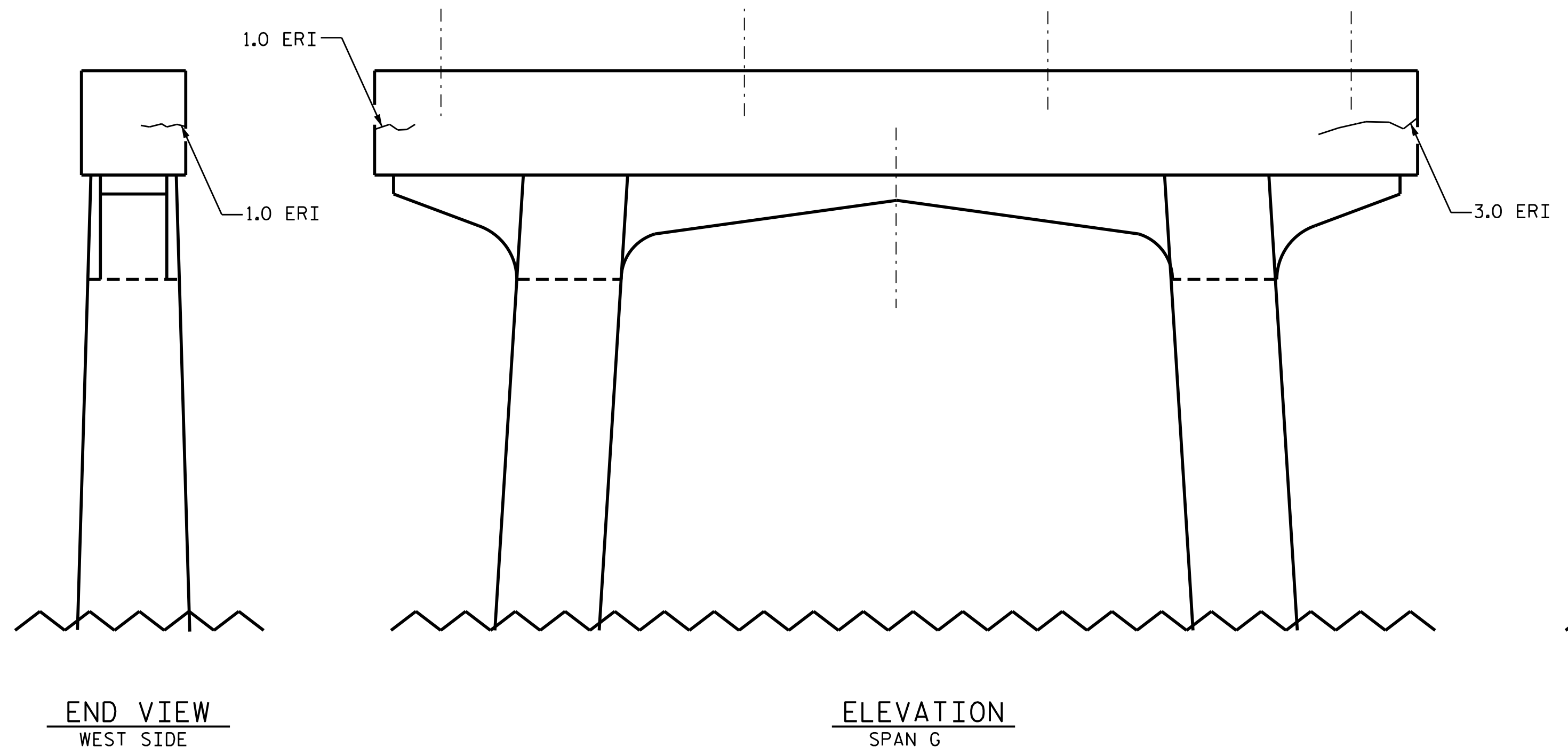


NOTES:
 REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST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

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.
 FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.
 FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
 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.
 THE CONTRACTOR SHALL EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

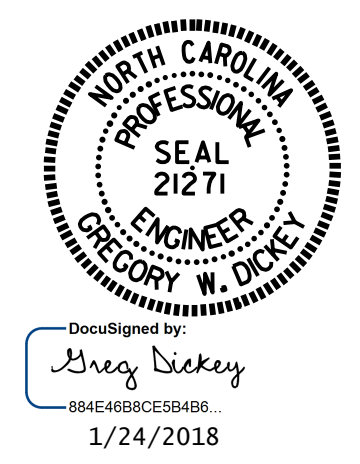
REPAIR QUANTITY TABLE					
REPAIRS BENT 7	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0	0			
CAP (HORIZONTAL, CORNER)	0	0			
COLUMN	0	0			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		11.0			
COLUMN		0			
EPOXY COATING		AREA SF			
TOP OF CAP		76.0			
FOOTINGS		0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



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

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



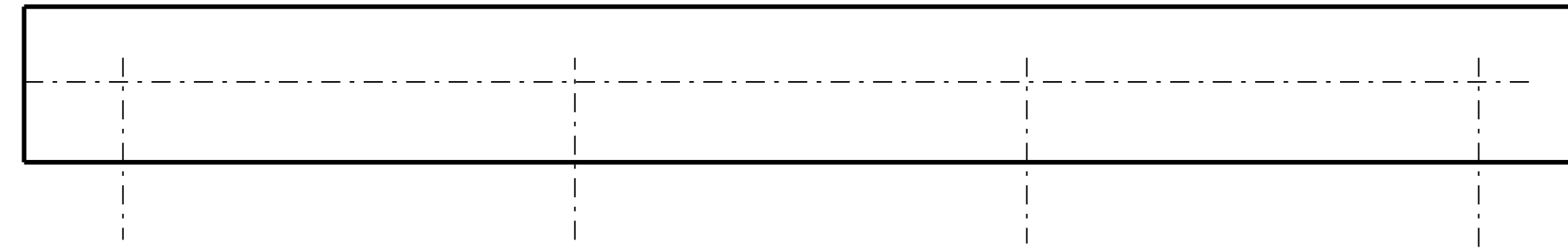
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 7

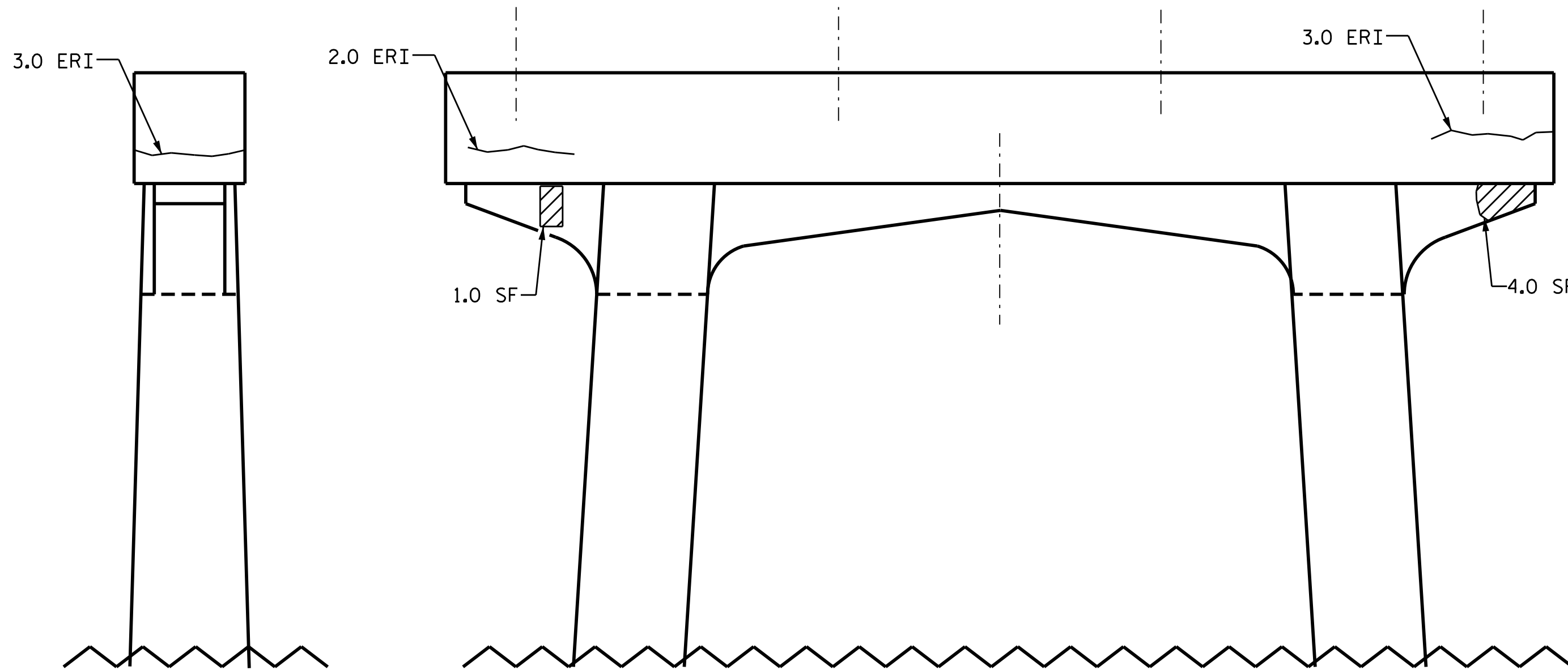
DRAWN BY : J.D. HAWK DATE : 8/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

NO.	REVISIONS			NO.	REVISIONS			SHEET NO. S-33
	BY:	DATE:	DESCRIPTION		BY:	DATE:	DESCRIPTION	
1				3			TOTAL SHEETS	
2				4			42	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

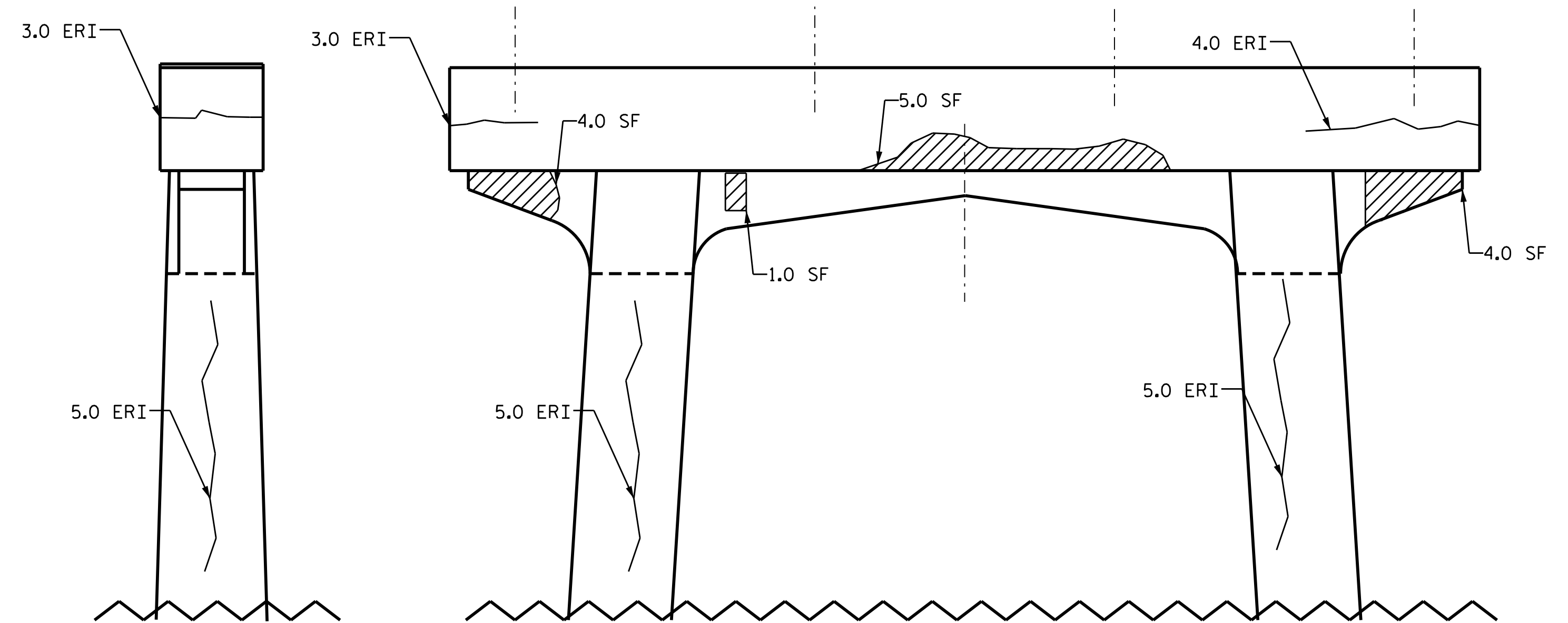


PLAN
TOP OF CAP



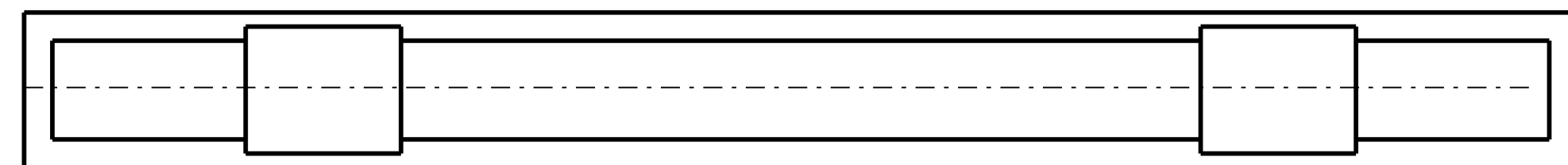
END VIEW
WEST SIDE

ELEVATION
SPAN H



END VIEW
EAST SIDE

ELEVATION
SPAN I



PLAN
BOTTOM OF CAP
(LOOKING UP)

SPAN I
SPAN H

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

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 EPOXY COATING, SEE SPECIAL PROVISIONS.

FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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.

THE CONTRACTOR SHALL EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

REPAIR QUANTITY TABLE

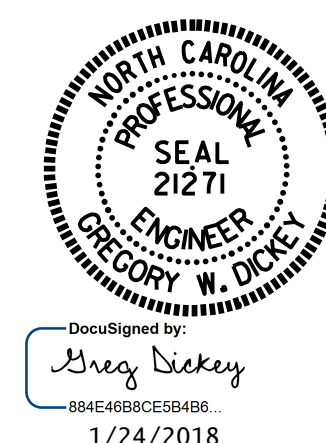
REPAIRS BENT 8	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	5.0	1.25			
CAP (HORIZONTAL, CORNER)	0	0			
COLUMN	14.0	3.5			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		18.0			
COLUMN		15.0			
EPOXY COATING		AREA SF			
TOP OF CAP		76.0			
FOOTINGS		0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

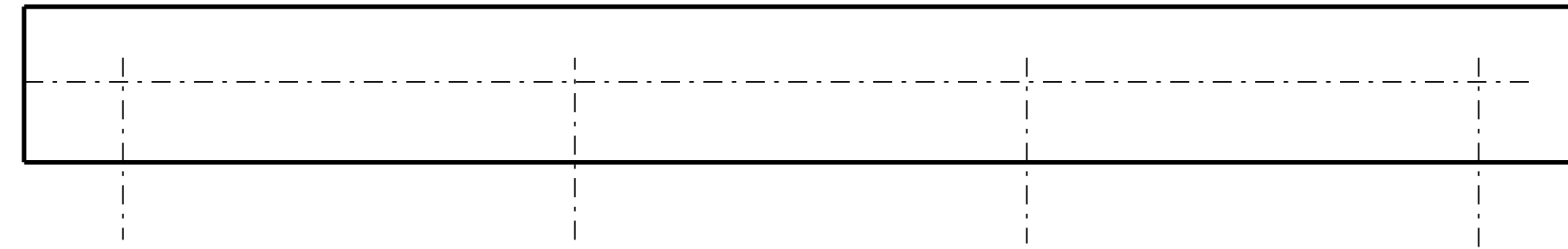
BENT 8



DRAWN BY : J.D. HAWK DATE : 8/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

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			42



PLAN
TOP OF CAP

SPAN J
SPAN I

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 EPOXY COATING, SEE SPECIAL PROVISIONS.

FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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.

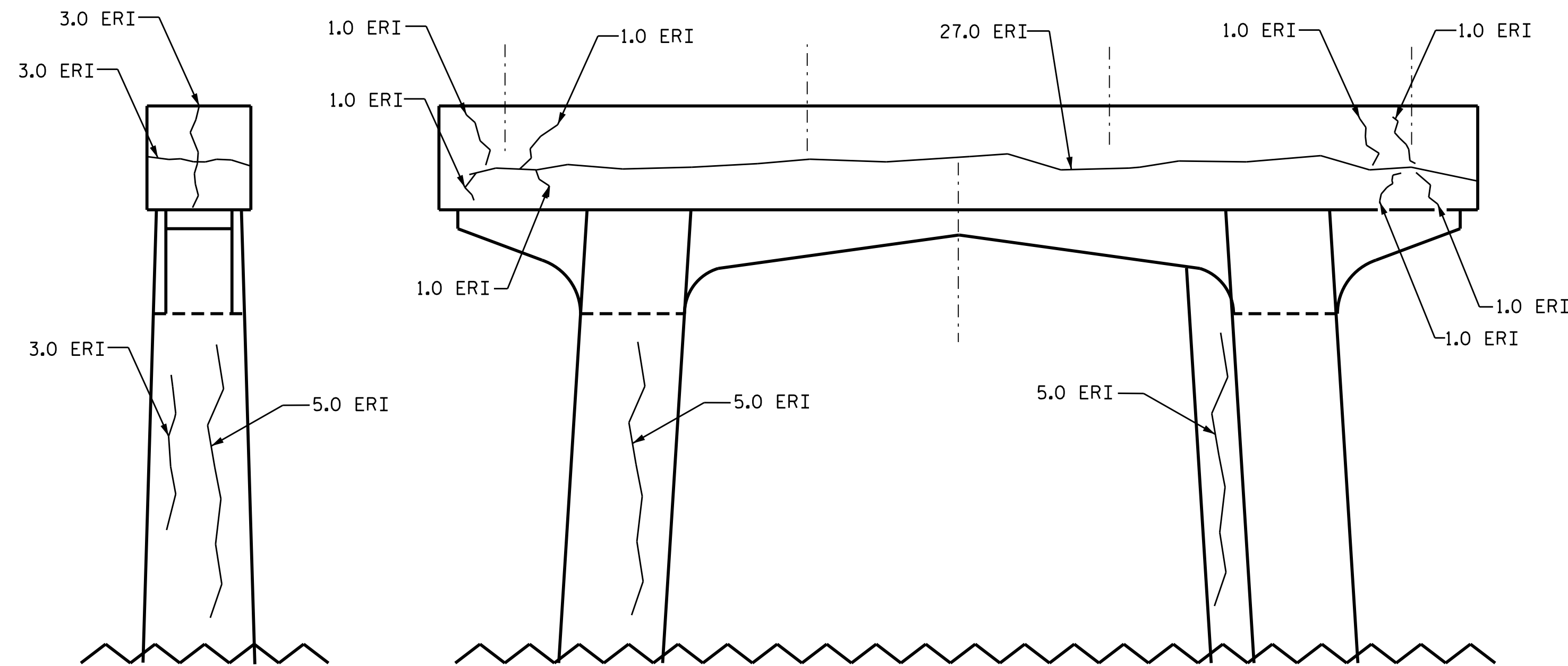
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

REPAIR QUANTITY TABLE

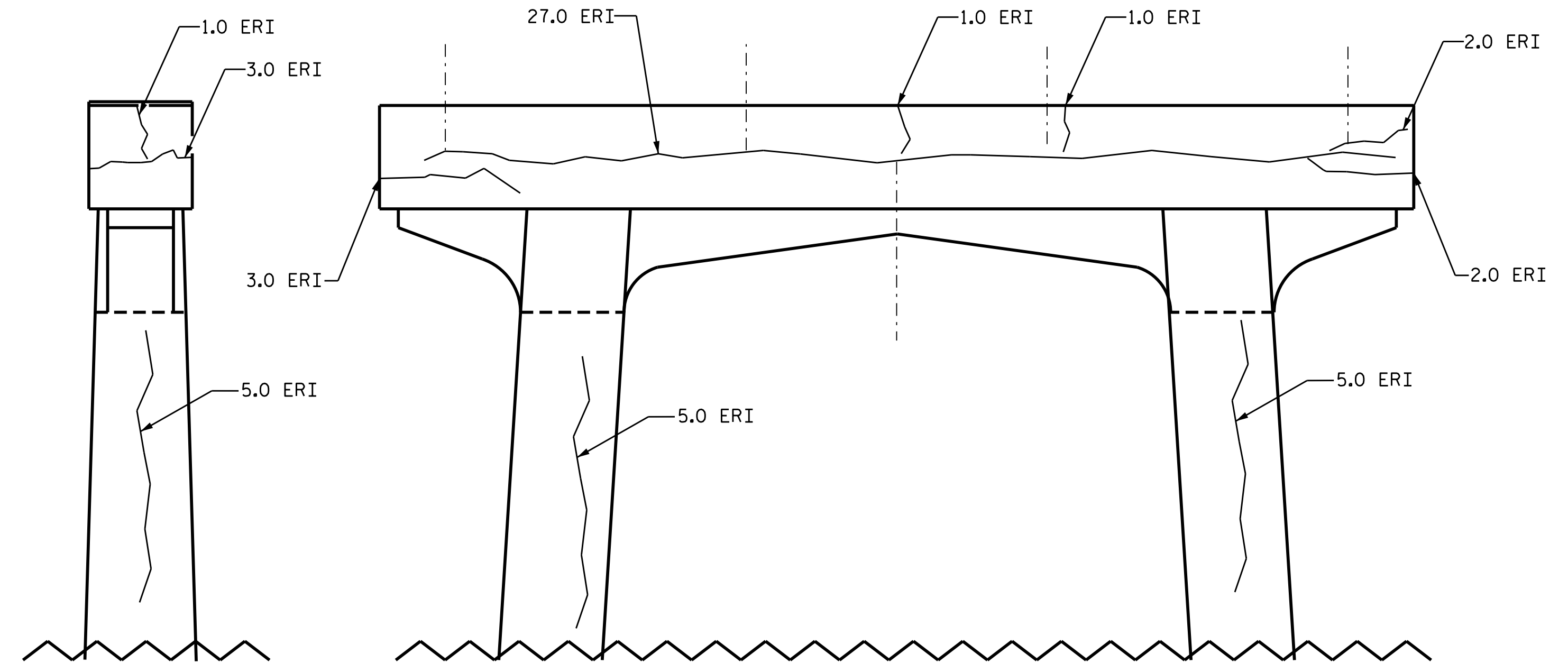
REPAIRS BENT 9	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0	0			
CAP (HORIZONTAL, CORNER)	0	0			
COLUMN	0	0			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		81.0			
COLUMN		33.0			
EPOXY COATING		AREA SF			
TOP OF CAP		76.0			
FOOTINGS		0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



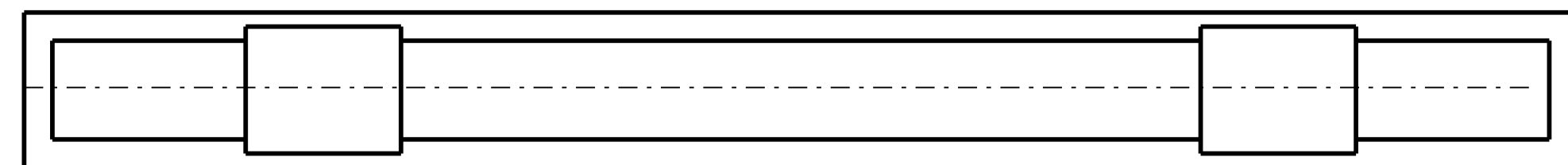
END VIEW
WEST SIDE

ELEVATION
SPAN I



END VIEW
EAST SIDE

ELEVATION
SPAN J

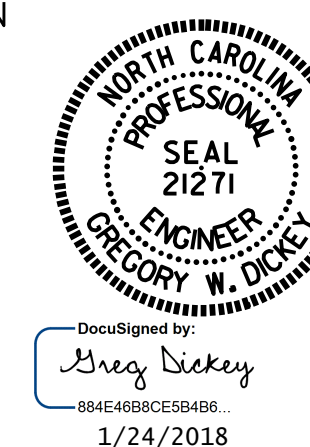


PLAN
BOTTOM OF CAP
(LOOKING UP)

SPAN J
SPAN I

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

PROJECT NO. 15BPR.2
WARREN COUNTY
BRIDGE NO. 139



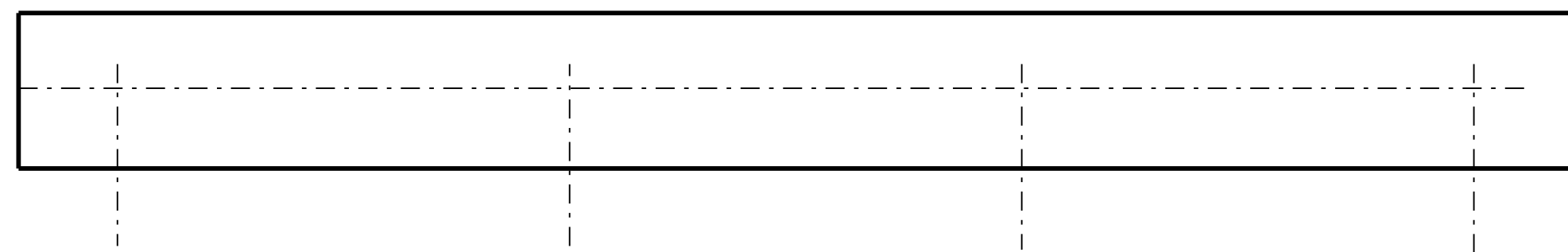
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 9

DRAWN BY : J.D. HAWK DATE : 8/17
CHECKED BY : G.W. DICKEY DATE : 10/17

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-35
1			3			TOTAL SHEETS
2			4			42



PLAN
TOP OF CAP

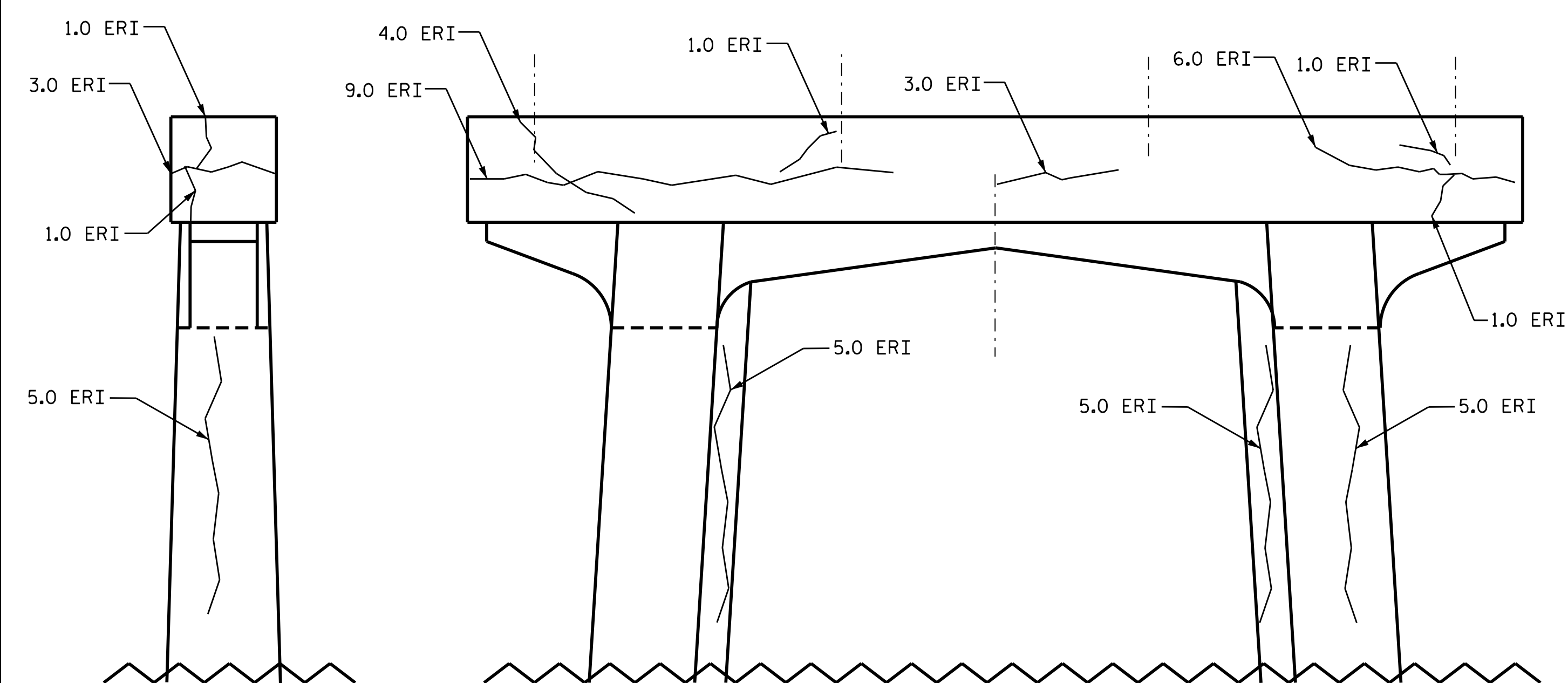
SPAN K
SPAN J

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 EPOXY COATING, SEE SPECIAL PROVISIONS.
FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
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.
THE CONTRACTOR SHALL EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

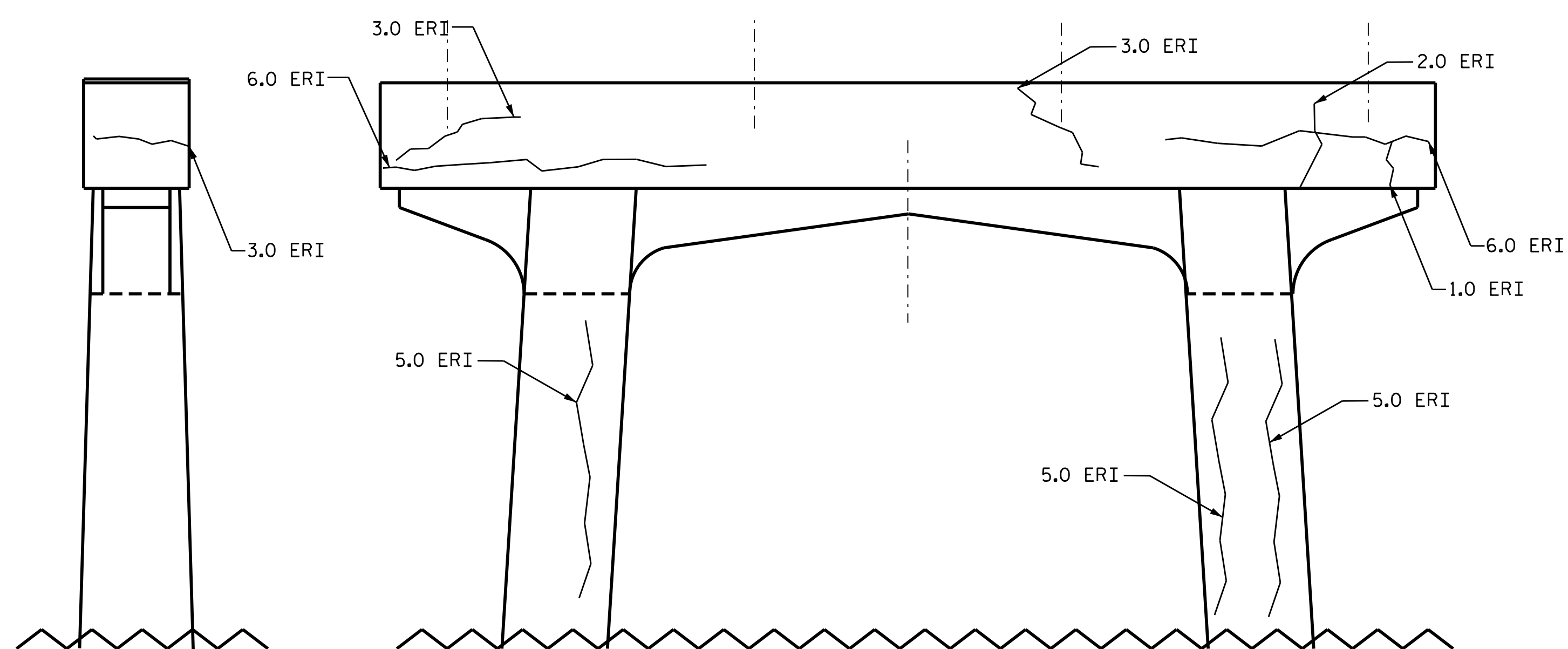
REPAIR QUANTITY TABLE					
REPAIRS BENT 10	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0	0			
CAP (HORIZONTAL, CORNER)	0	0			
COLUMN	0	0			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		54.0			
COLUMN		35.0			
EPOXY COATING		AREA SF			
TOP OF CAP		76.0			
FOOTINGS		0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



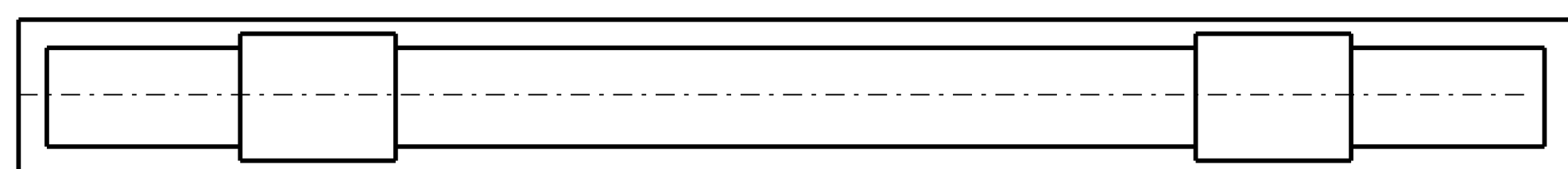
END VIEW
WEST SIDE

ELEVATION
SPAN J



END VIEW
EAST SIDE

ELEVATION
SPAN K

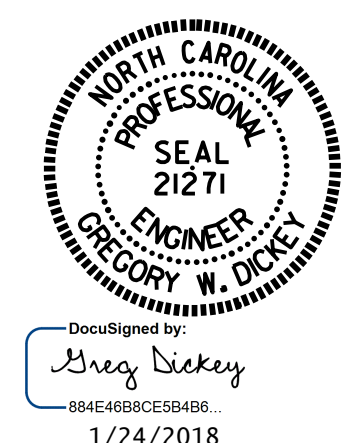


PLAN
BOTTOM OF CAP
(LOOKING UP)

SPAN K
SPAN J

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

PROJECT NO. 15BPR.2
WARREN COUNTY
BRIDGE NO. 139



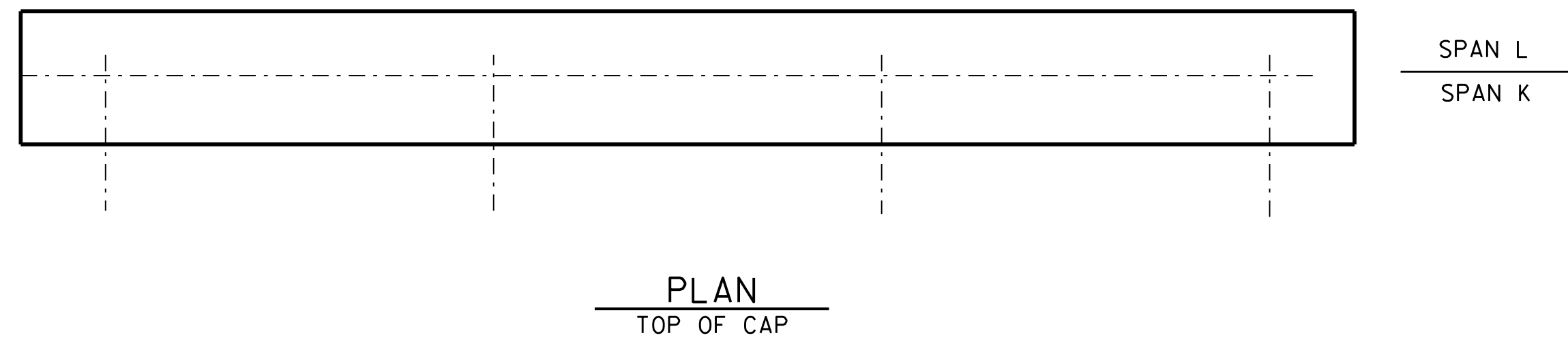
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 10

DRAWN BY : J.D. HAWK DATE : 8/17
CHECKED BY : G.W. DICKEY DATE : 10/17

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-36	
1			3			TOTAL SHEETS	42
2			4				

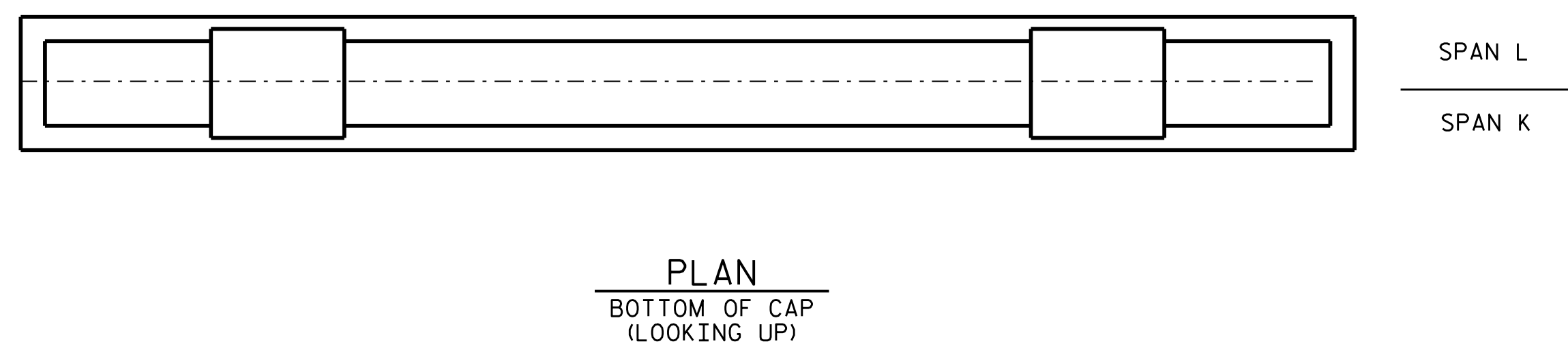
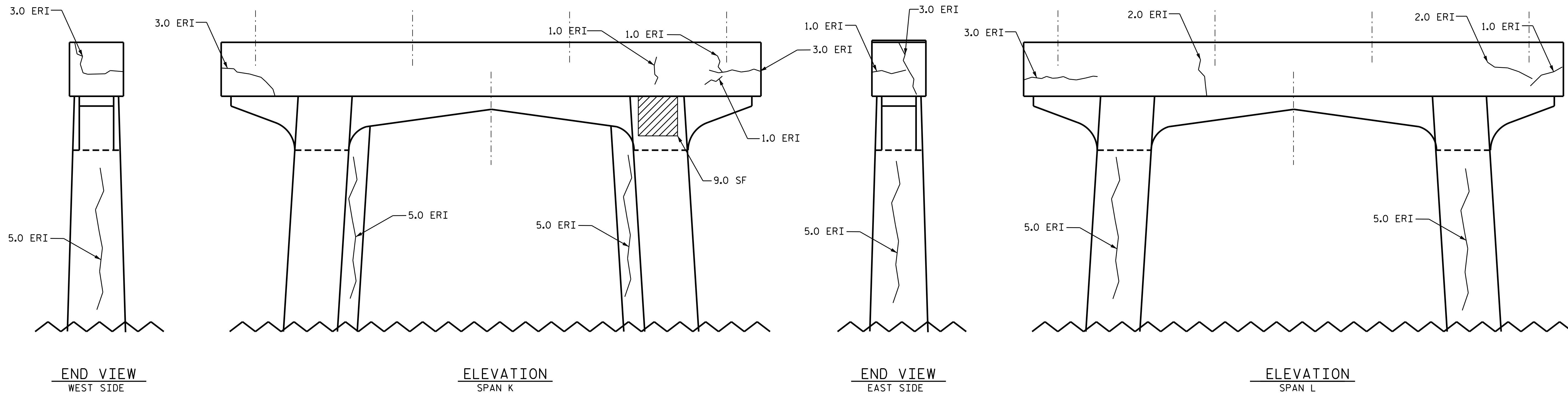


NOTES:
 REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST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

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.
 FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.
 FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
 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.
 THE CONTRACTOR SHALL EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

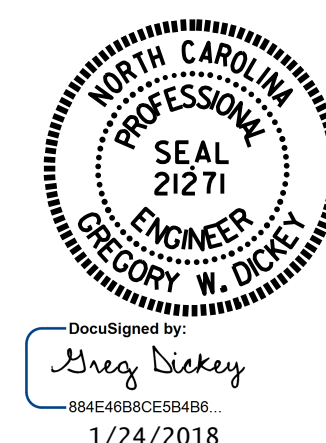
REPAIR QUANTITY TABLE					
REPAIRS BENT 11	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0	0			
CAP (HORIZONTAL, CORNER)	0	0			
COLUMN	9.0	2.25			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		24.0			
COLUMN		30.0			
EPOXY COATING		AREA SF			
TOP OF CAP		76.0			
FOOTINGS		0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



- SHOTCRETE REPAIR
 - CONCRETE REPAIR
 ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.2
 WARREN COUNTY
 BRIDGE NO. 139

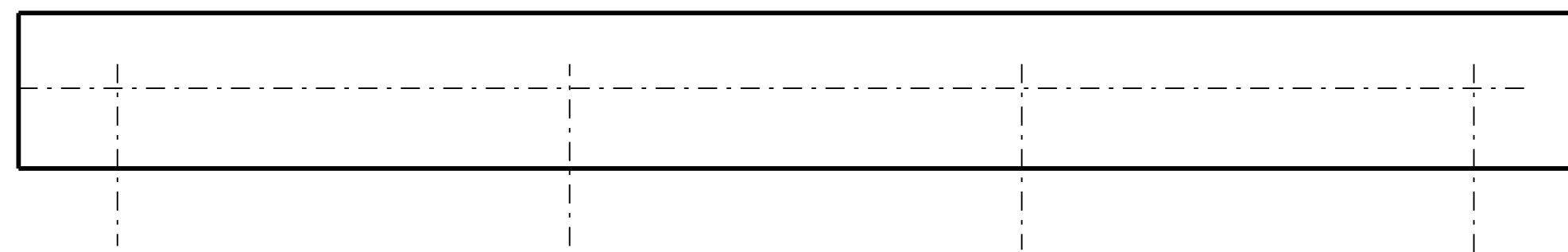


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 11

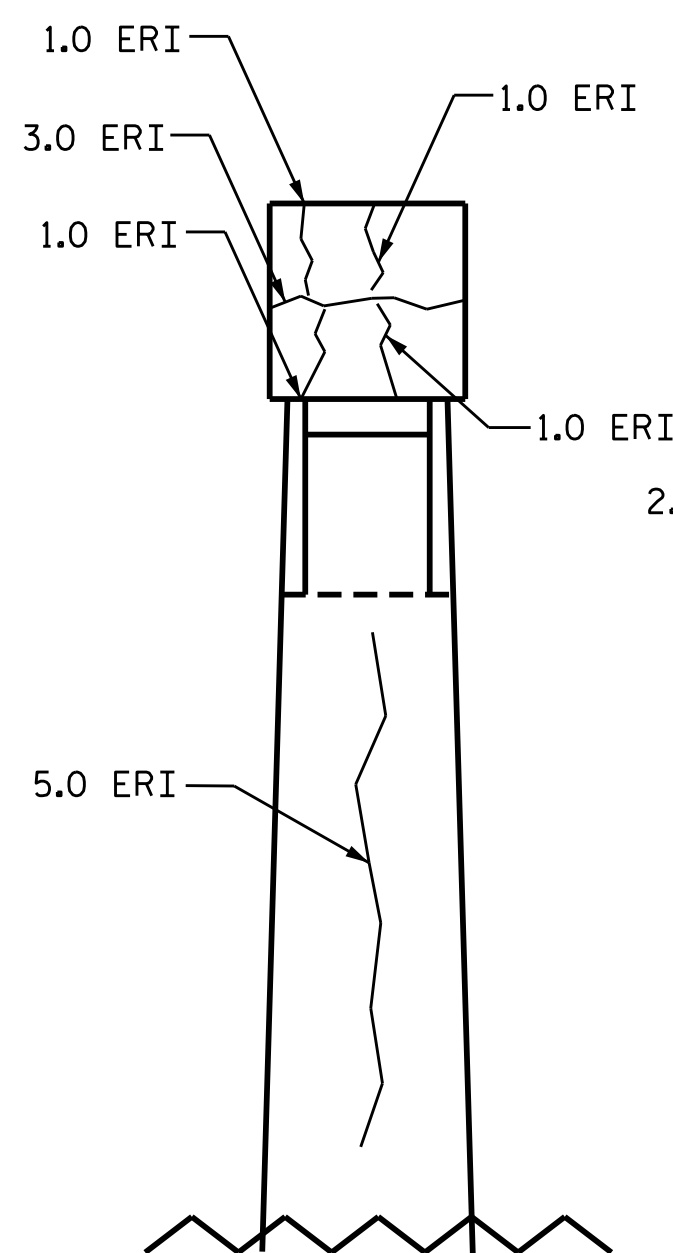
DRAWN BY : J.D. HAWK DATE : 8/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

NO.	REVISIONS		NO.	REVISIONS		SHEET NO. S-37
	BY:	DATE:		BY:	DATE:	
1			3			TOTAL SHEETS 42
2			4			

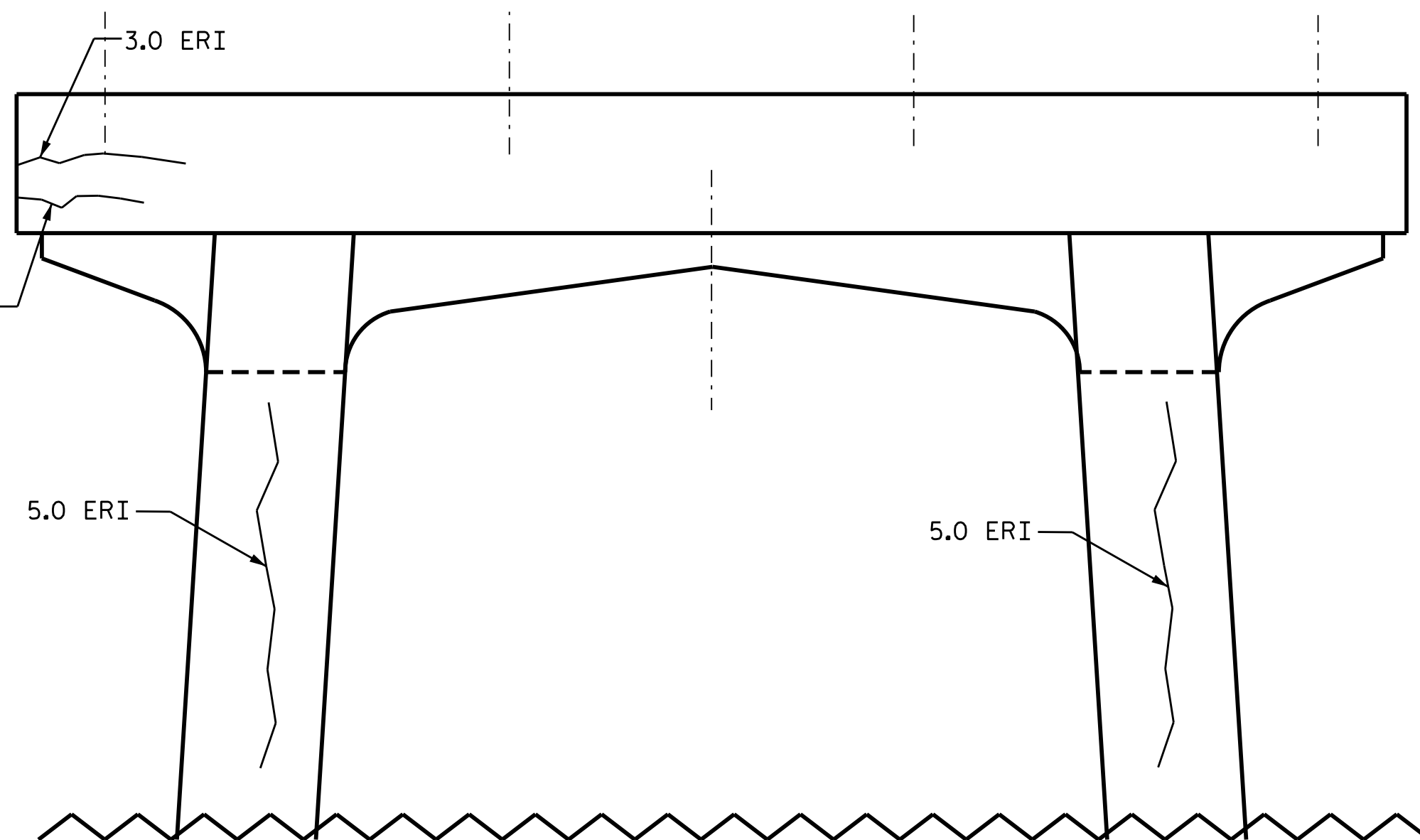


PLAN
TOP OF CAP

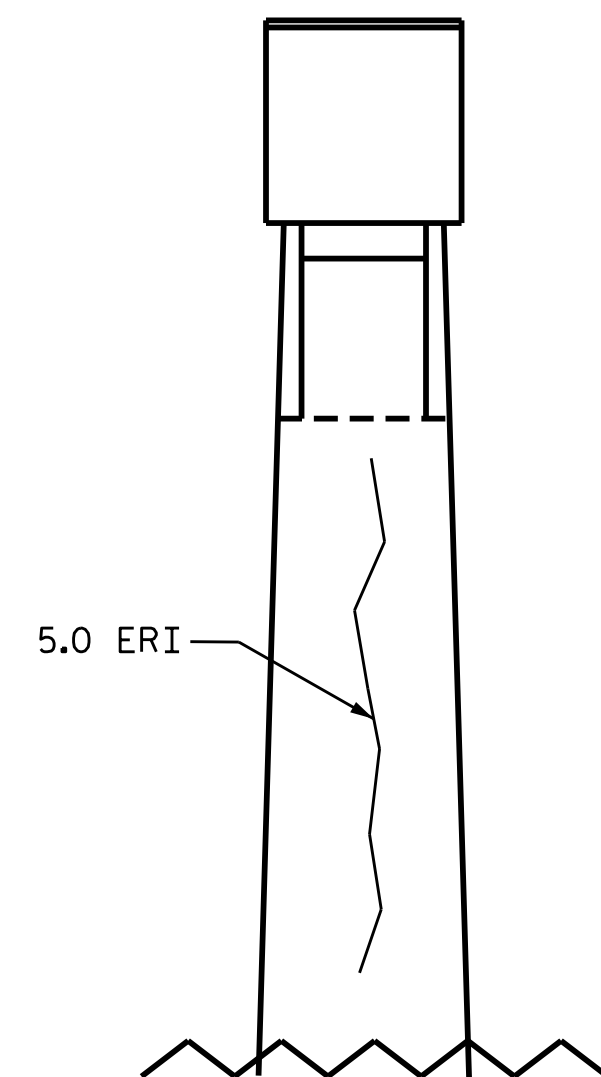
SPAN M
SPAN L



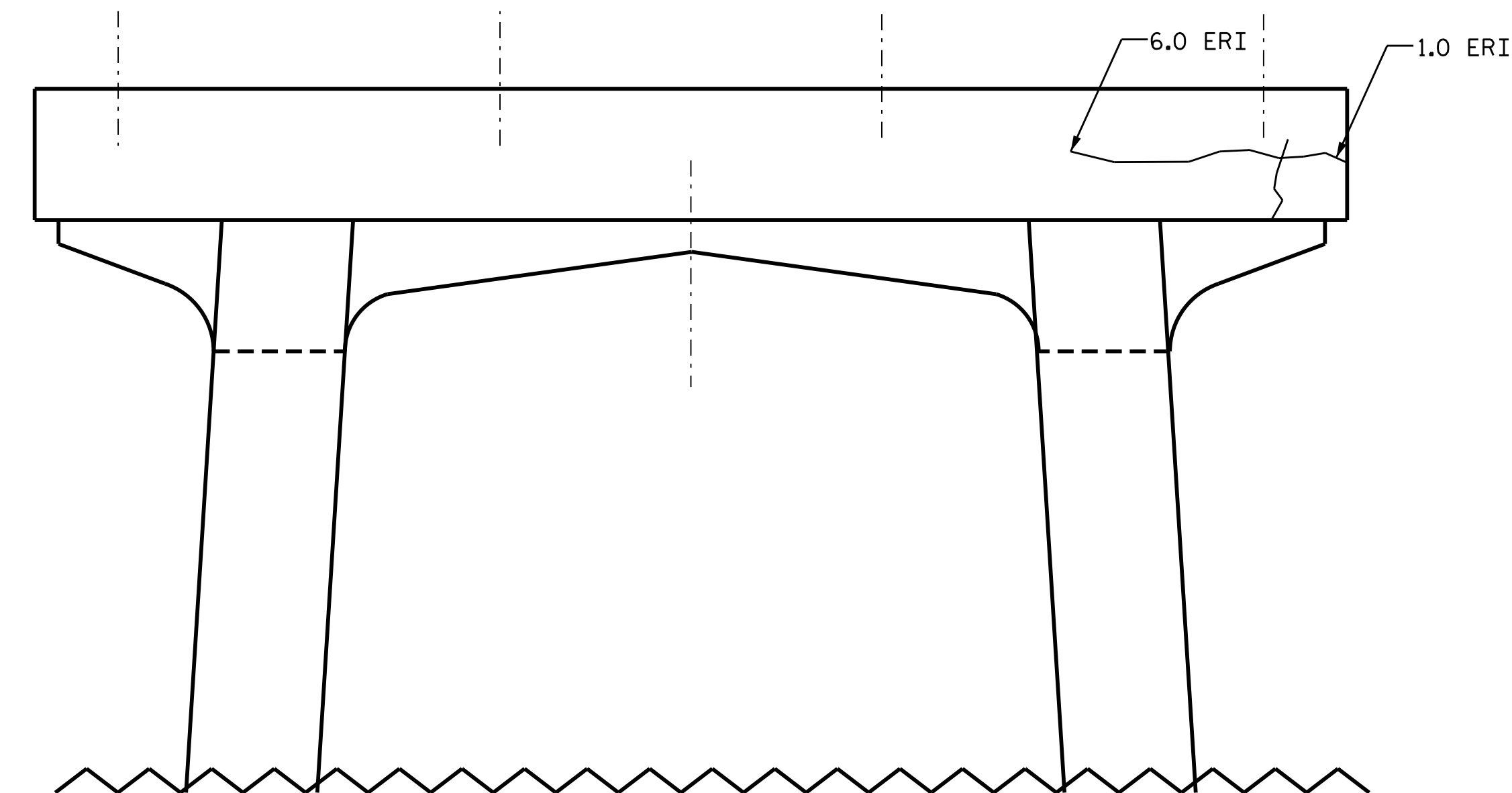
END VIEW
WEST SIDE



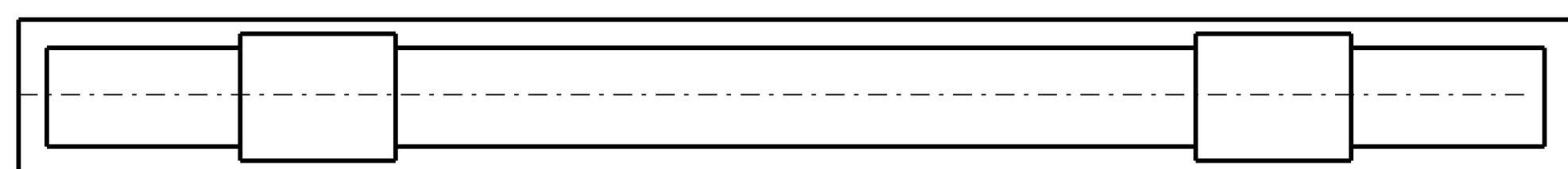
ELEVATION
SPAN L



END VIEW
EAST SIDE



ELEVATION
SPAN M



PLAN
BOTTOM OF CAP
(LOOKING UP)

SPAN M
SPAN L

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

NOTES:
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FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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.

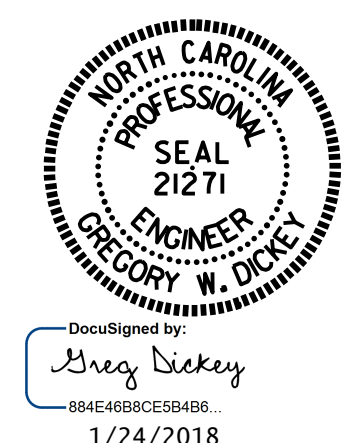
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

REPAIR QUANTITY TABLE					
REPAIRS BENT 12	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		19.0			
COLUMN		20.0			
EPOXY COATING		AREA SF			
TOP OF CAP		76.0			
FOOTINGS		0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



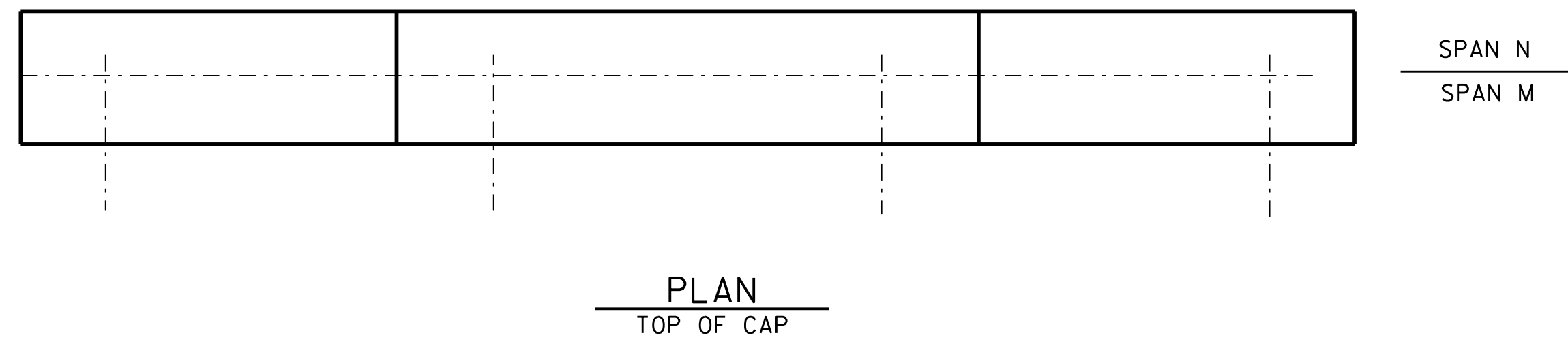
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 12

DRAWN BY : J.D. HAWK DATE : 8/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

NO.	REVISIONS			NO.	REVISIONS			SHEET NO. S-38
	BY:	DATE:			BY:	DATE:		
1				3			TOTAL SHEETS 42	
2				4				

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

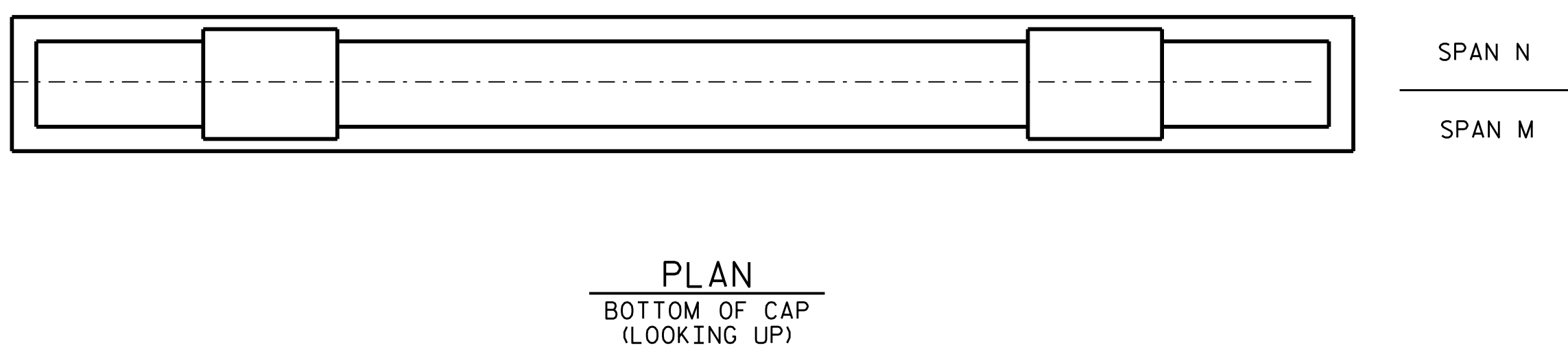
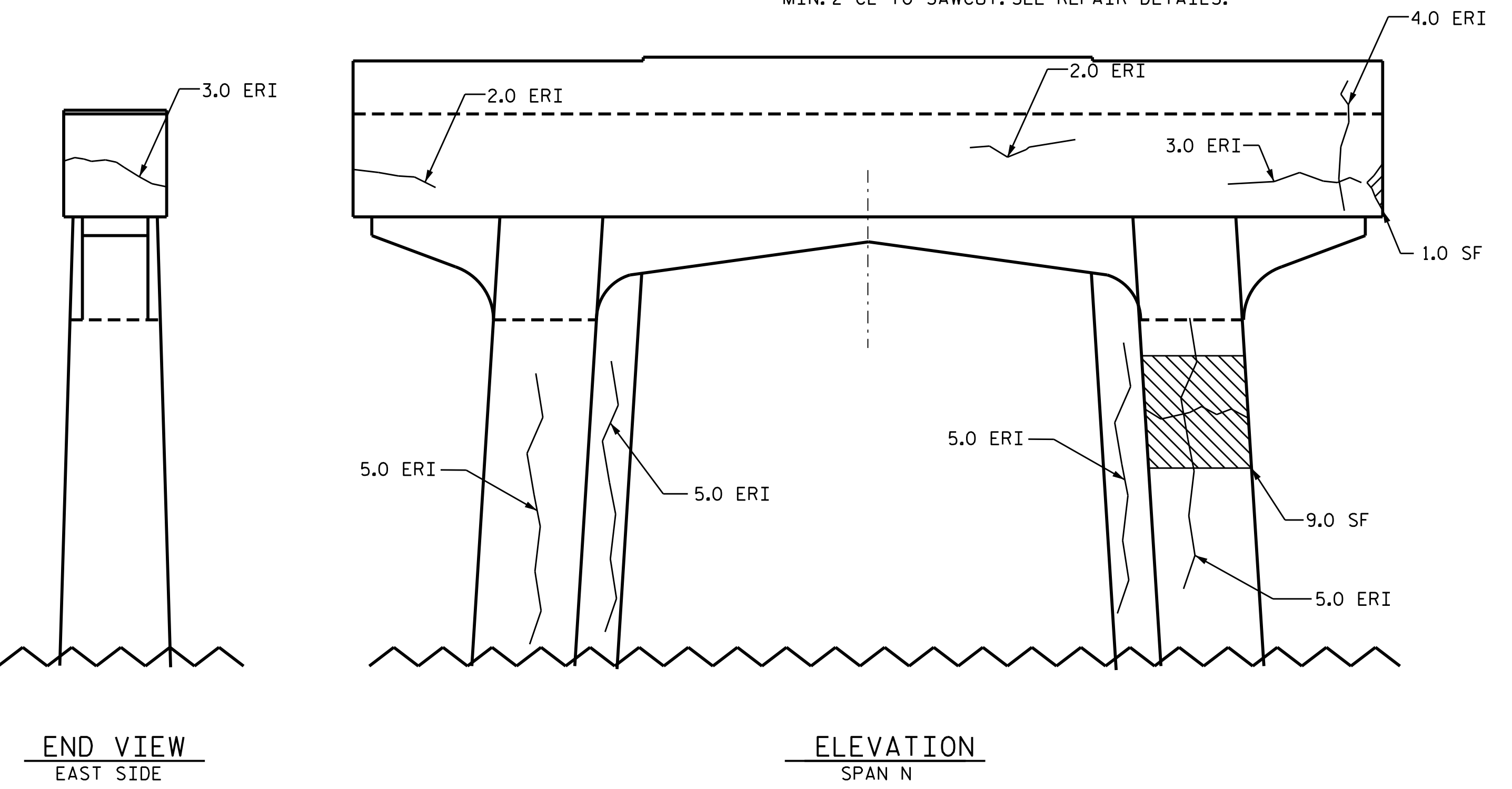
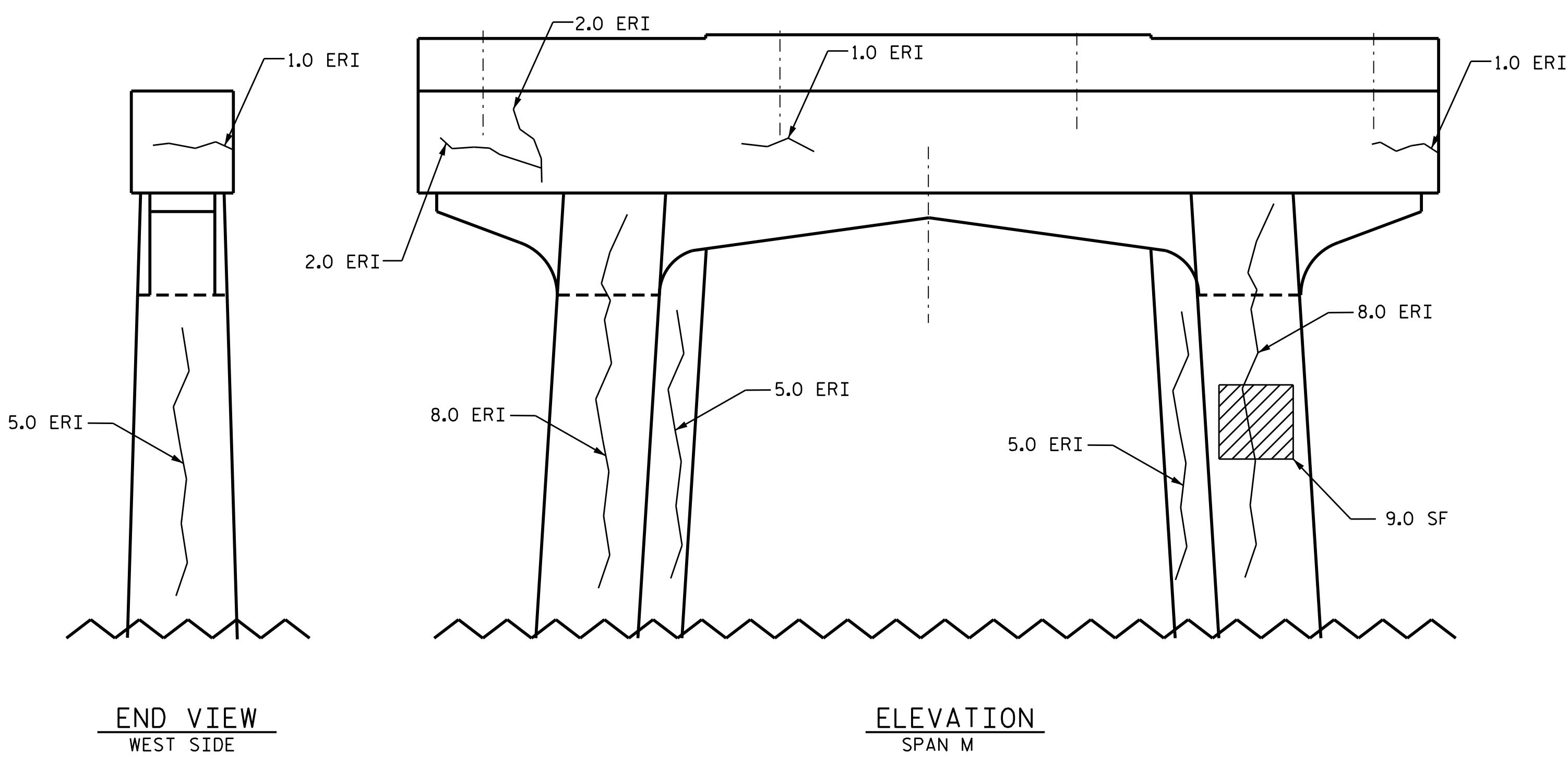


NOTES:
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST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

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.
FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
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.
THE CONTRACTOR SHALL EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

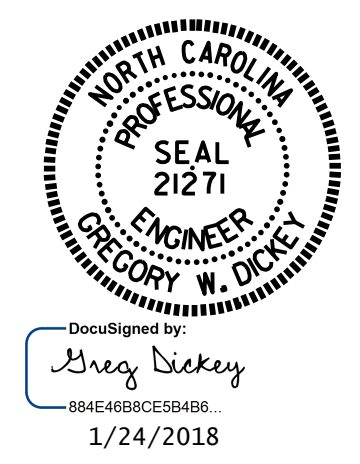
REPAIR QUANTITY TABLE					
REPAIRS BENT 13	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	1.0	0.25			
CAP (HORIZONTAL, CORNER)	18.0	4.5			
COLUMN	9.0	2.25			
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
	0.0	0.0			
EPOXY RESIN INJECTION			LN. FT		
CAP			21.0		
COLUMN			51.0		
EPOXY COATING			AREA SF		
TOP OF CAP			76.0		
FOOTINGS			0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



- SHOTCRETE REPAIR
 - CONCRETE REPAIR
 ERI - EPOXY RESIN INJECTION

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139



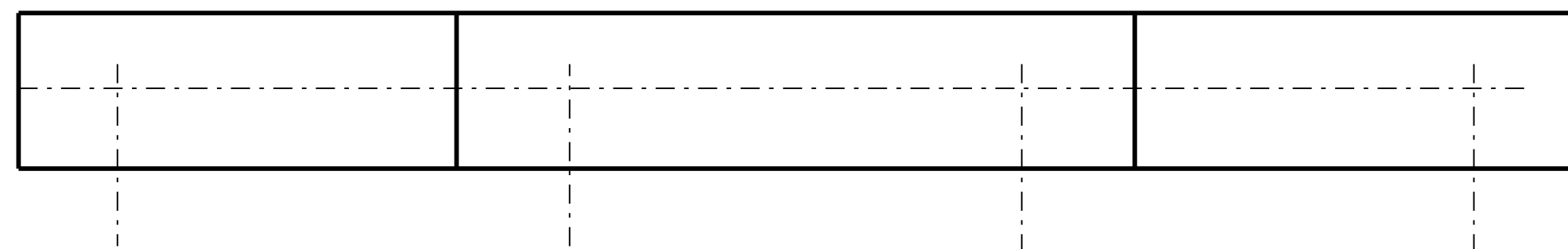
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 13

DRAWN BY : J.D. HAWK DATE : 8/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

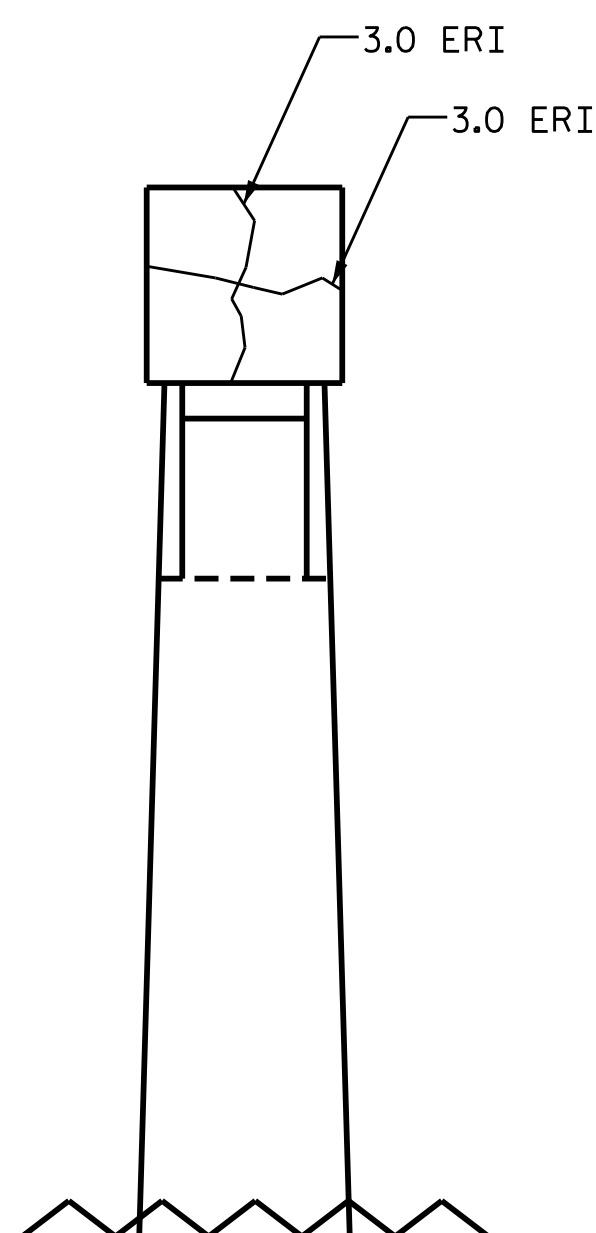
NO.	REVISIONS			NO.	REVISIONS			SHEET NO. S-39
	BY:	DATE:			BY:	DATE:		
1				3			TOTAL SHEETS 42	
2				4				

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

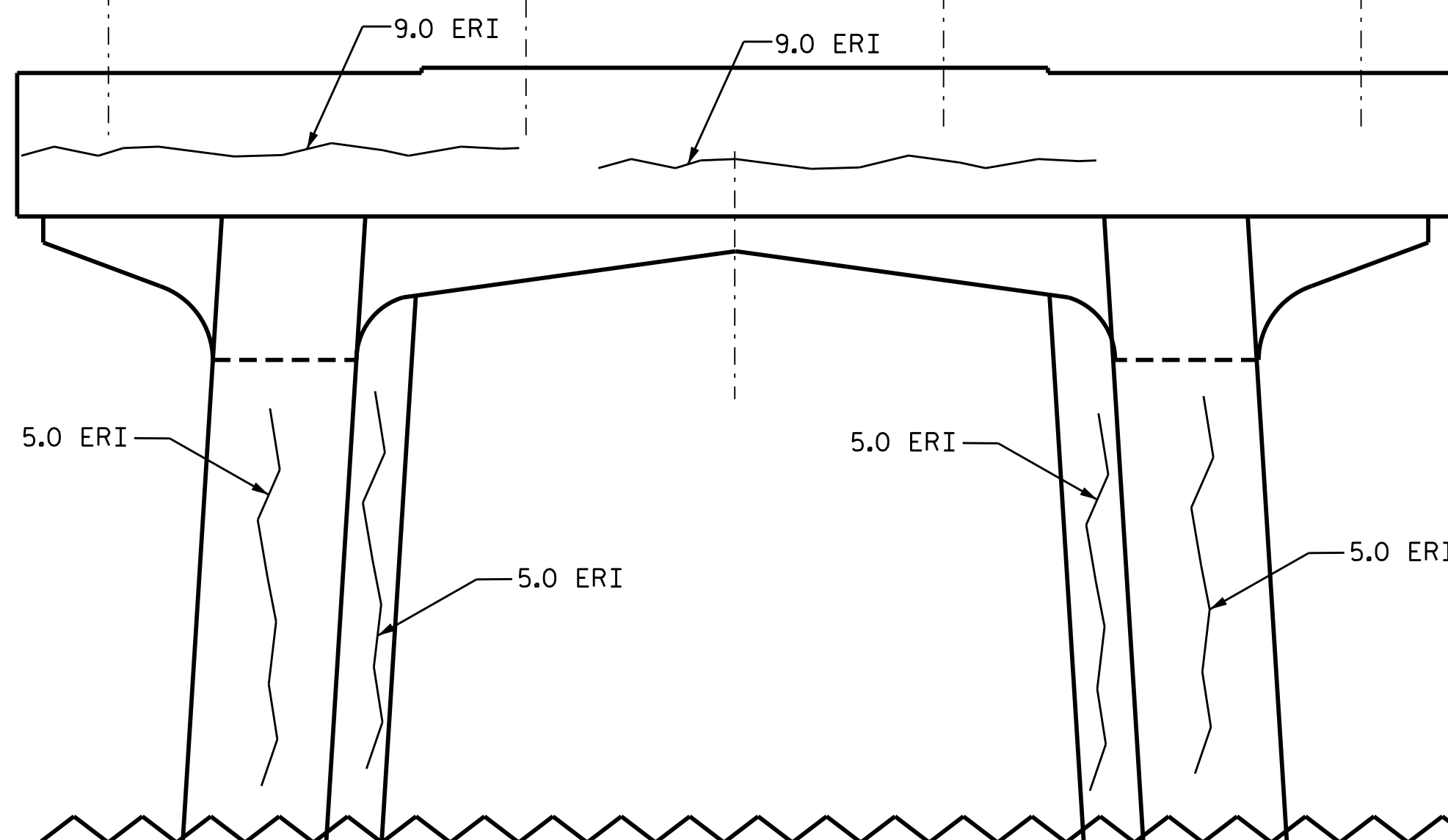


PLAN
TOP OF CAP

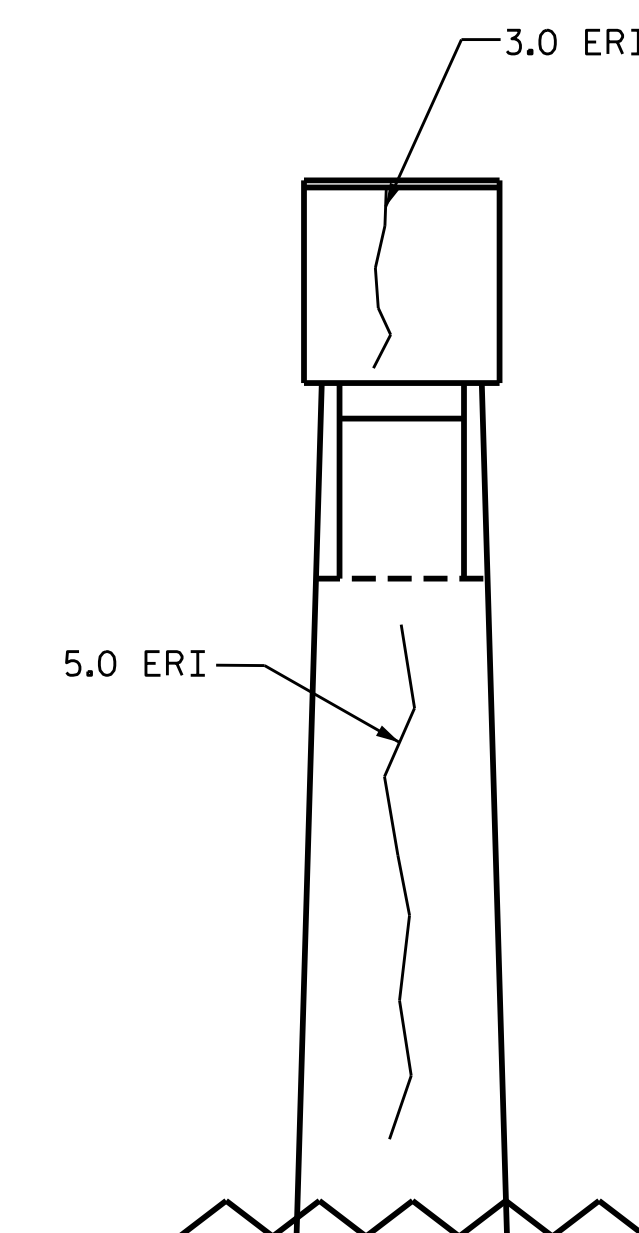
SPAN O
SPAN N



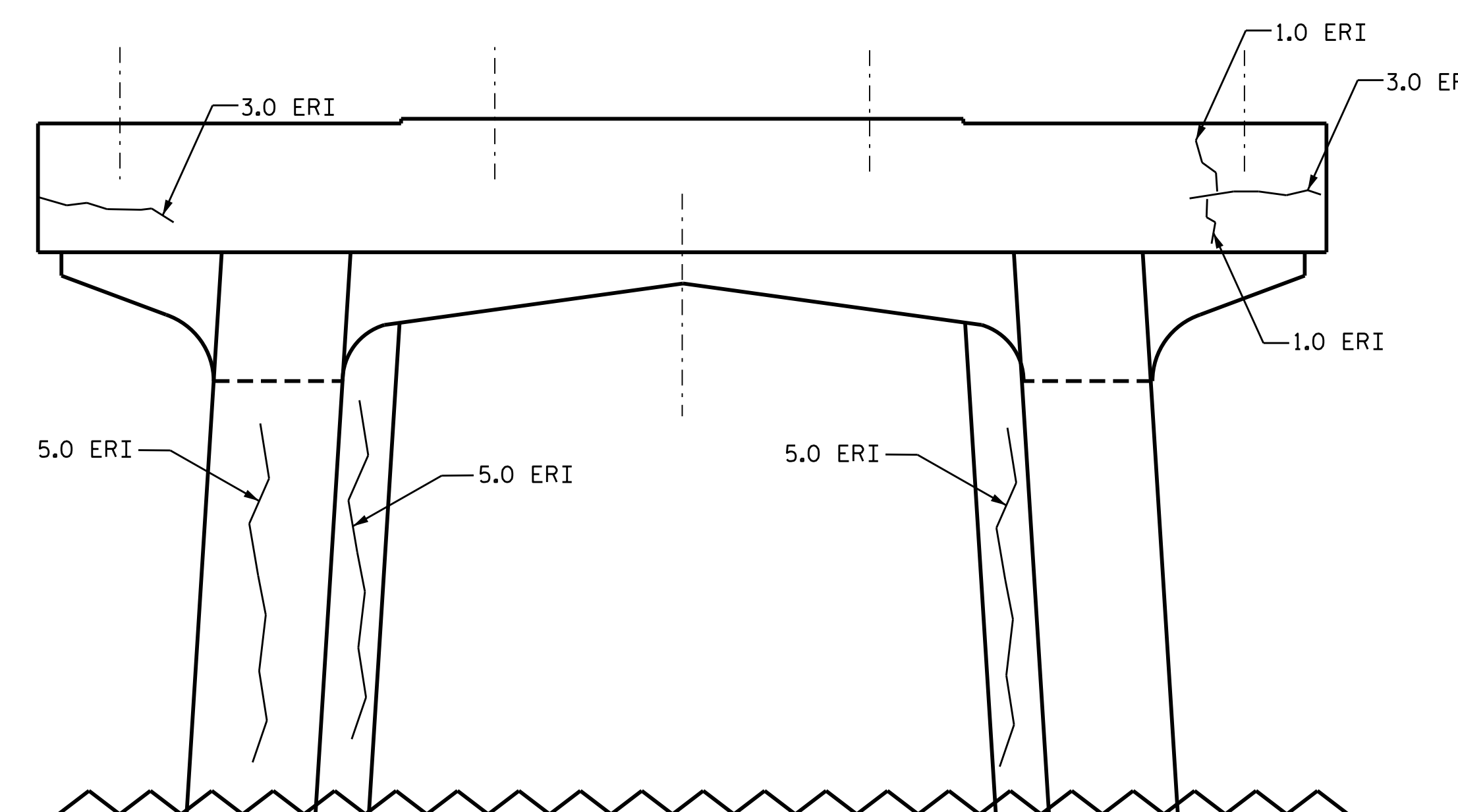
END VIEW
WEST SIDE



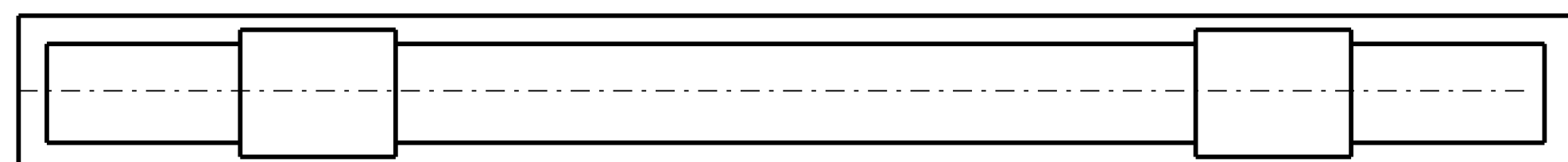
ELEVATION
SPAN N



END VIEW
EAST SIDE



ELEVATION
SPAN O



PLAN
BOTTOM OF CAP
(LOOKING UP)

SPAN O
SPAN N

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

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 EPOXY COATING, SEE SPECIAL PROVISIONS.

FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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

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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

REPAIR QUANTITY TABLE

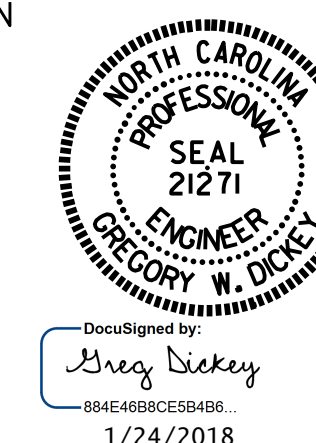
REPAIRS BENT 14	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0	0			
CAP (HORIZONTAL, CORNER)	0	0			
COLUMN	0	0			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		35.0			
COLUMN		40.0			
EPOXY COATING		AREA SF			
TOP OF CAP		76.0			
FOOTINGS		0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. 15BPR.2
WARREN COUNTY
 BRIDGE NO. 139

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

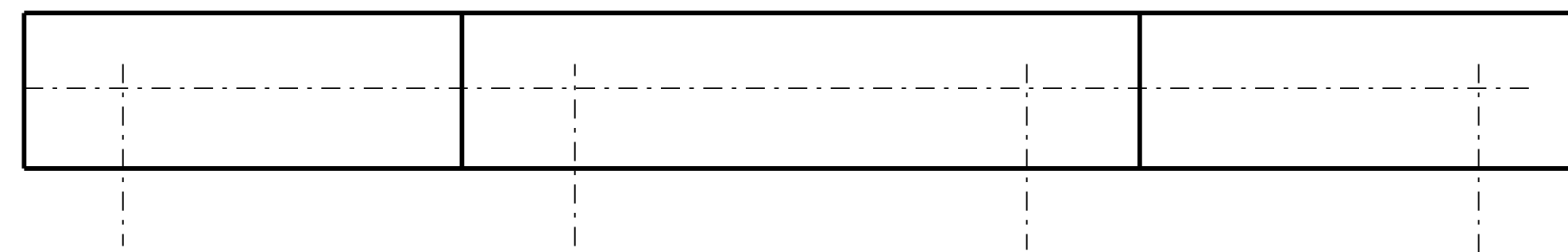
BENT 14



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-40
1			3			TOTAL SHEETS
2			4			42

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DRAWN BY : J.D. HAWK DATE : 8/17
 CHECKED BY : G.W. DICKEY DATE : 10/17



PLAN
TOP OF CAP

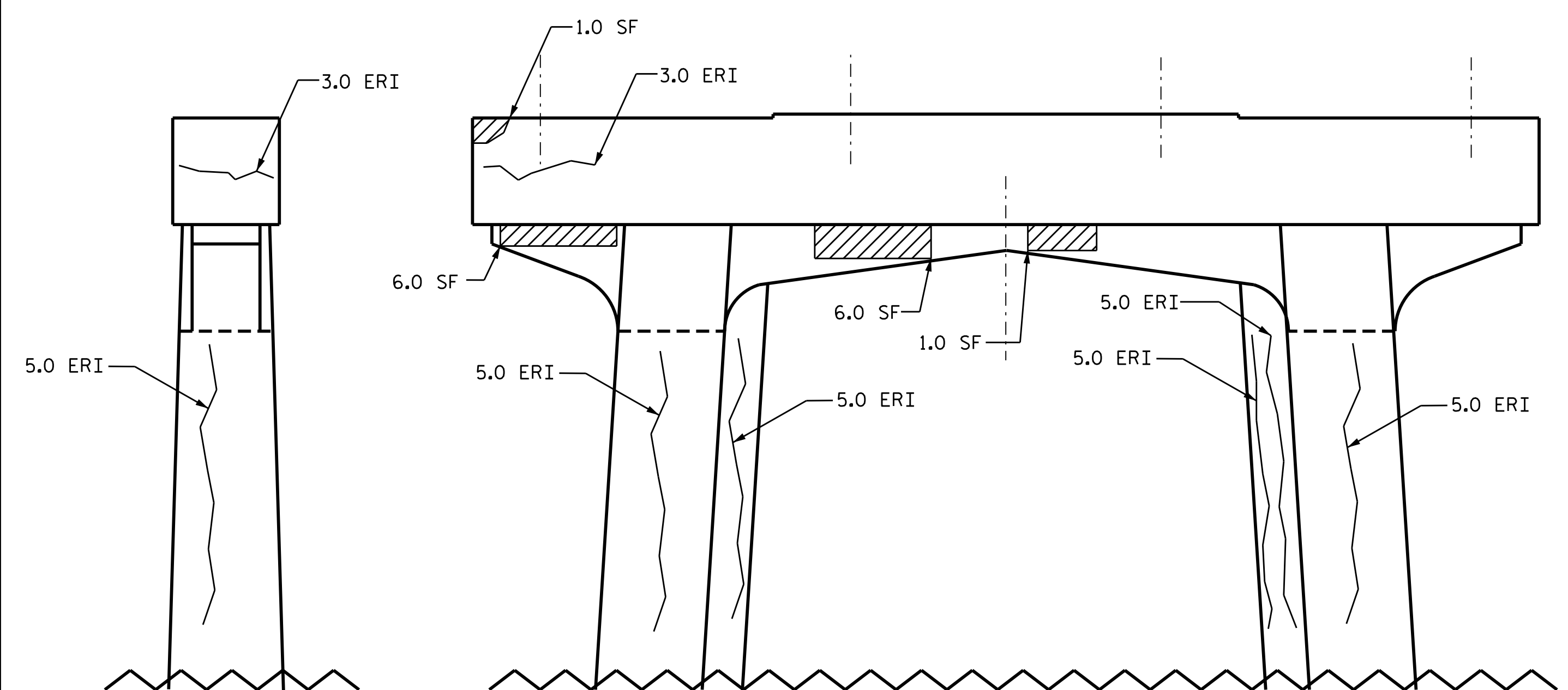
SPAN P
SPAN O

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.

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FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
THE CONTRACTOR SHALL EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

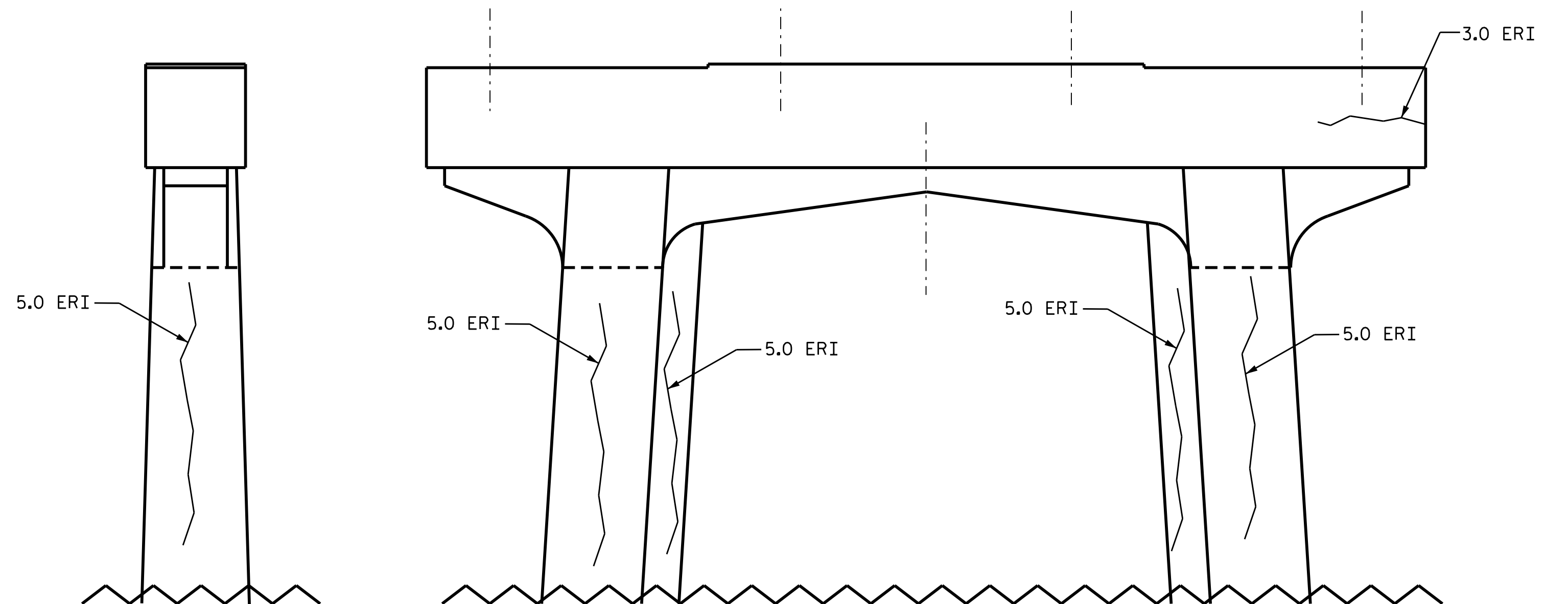
REPAIR QUANTITY TABLE					
REPAIRS BENT 15	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0	0			
CAP (HORIZONTAL, CORNER)	1.0	0.25			
COLUMN	13.0	3.25			
EPOXY RESIN INJECTION		LN. FT			LN. FT
CAP		9.0			
COLUMN		55.0			
EPOXY COATING		AREA SF			
TOP OF CAP		76.0			
FOOTINGS		0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



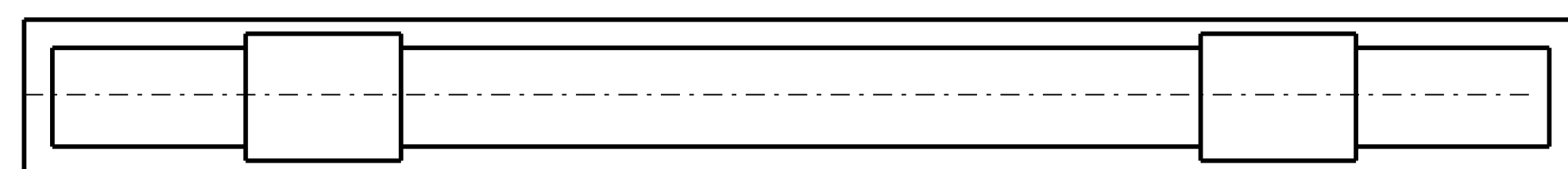
END VIEW
WEST SIDE

ELEVATION
SPAN N



END VIEW
EAST SIDE

ELEVATION
SPAN O

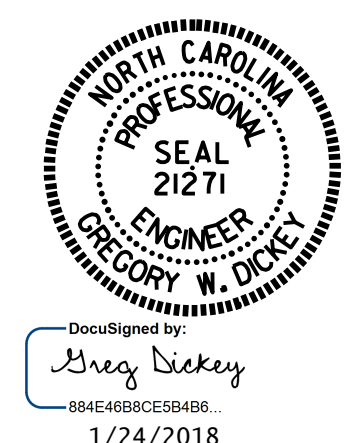


PLAN
BOTTOM OF CAP
(LOOKING UP)

SPAN O
SPAN N

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

PROJECT NO. 15BPR.2
WARREN COUNTY
BRIDGE NO. 139



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 15

DRAWN BY : J.D. HAWK DATE : 8/17
CHECKED BY : G.W. DICKEY DATE : 10/17

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-41
1			3			TOTAL SHEETS
2			4			42

NOTE

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

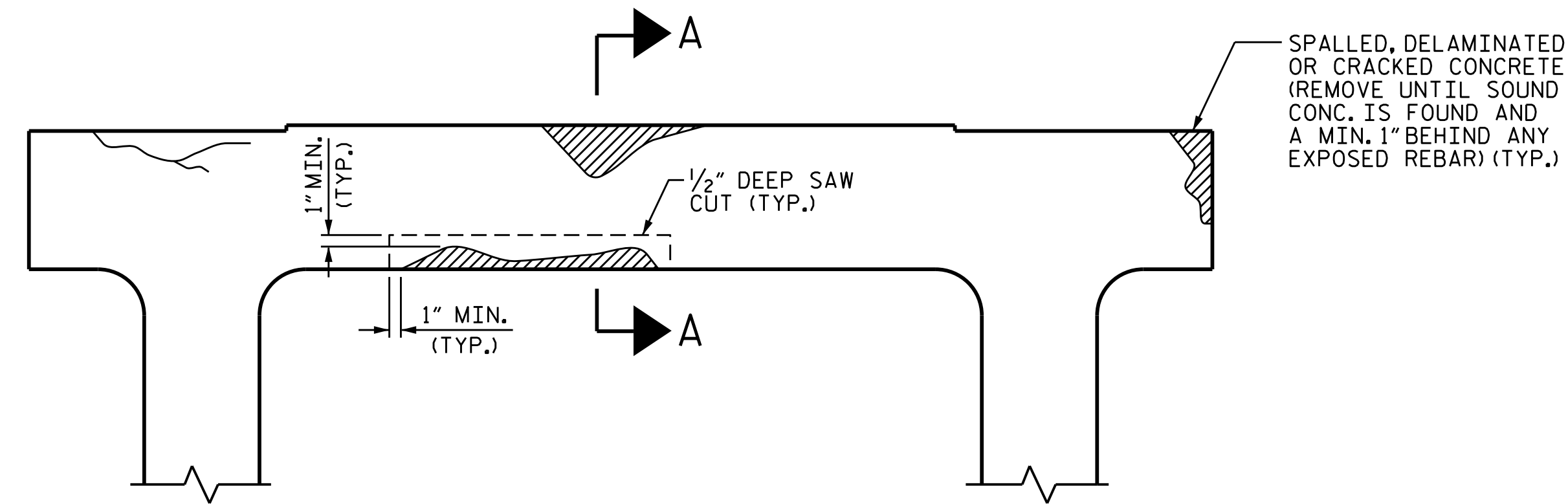
CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

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

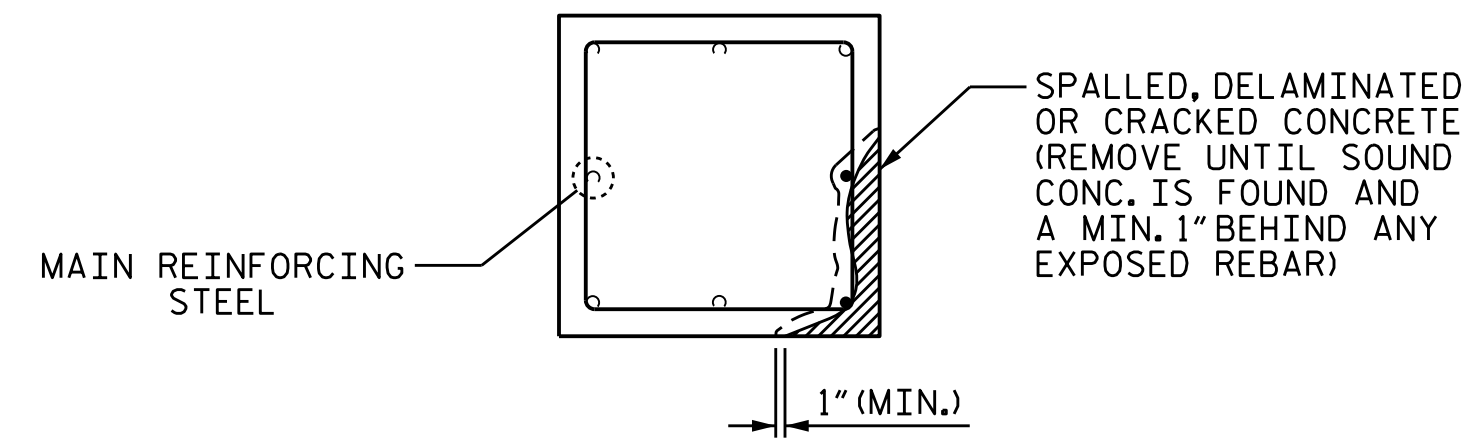
CONCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

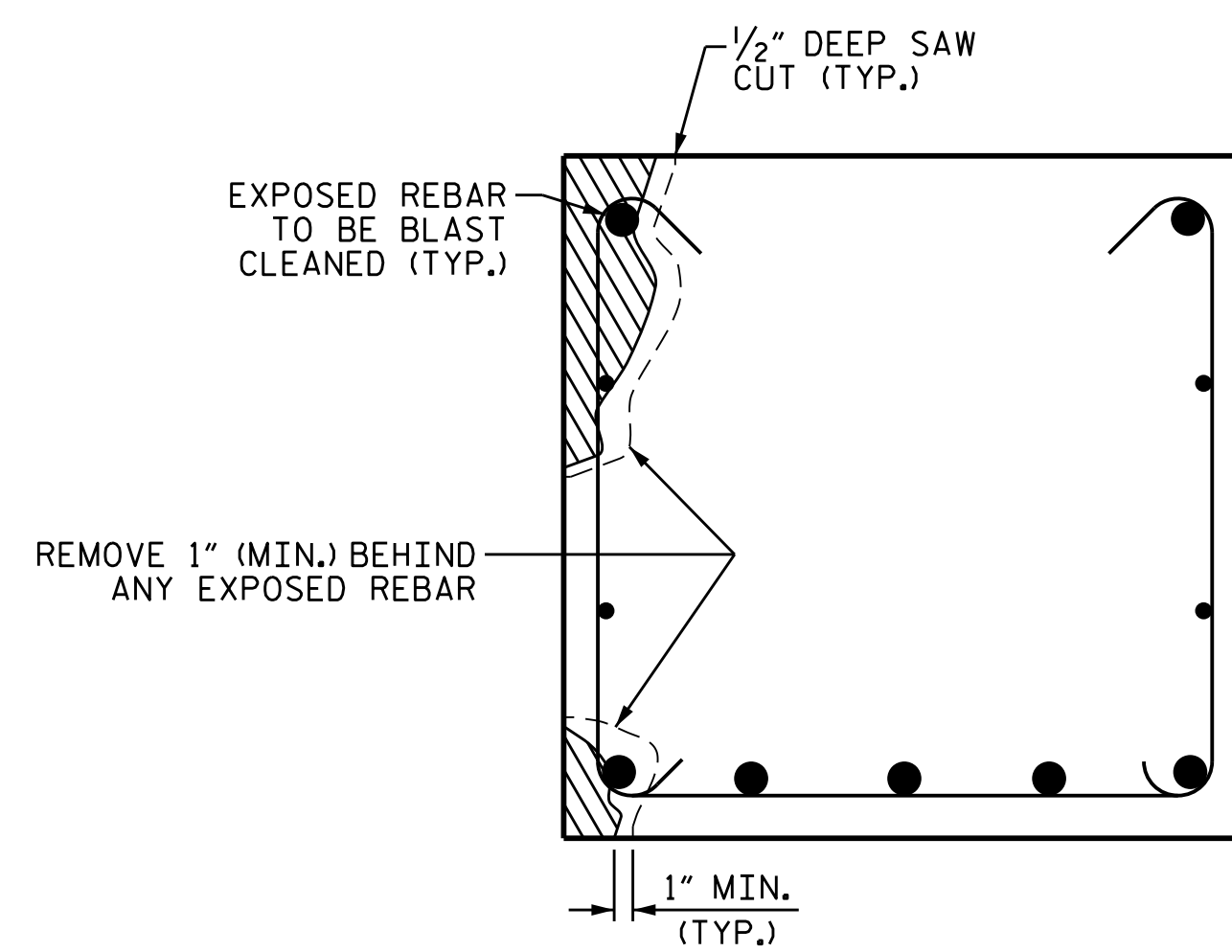
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.



BENT CAP REPAIRS

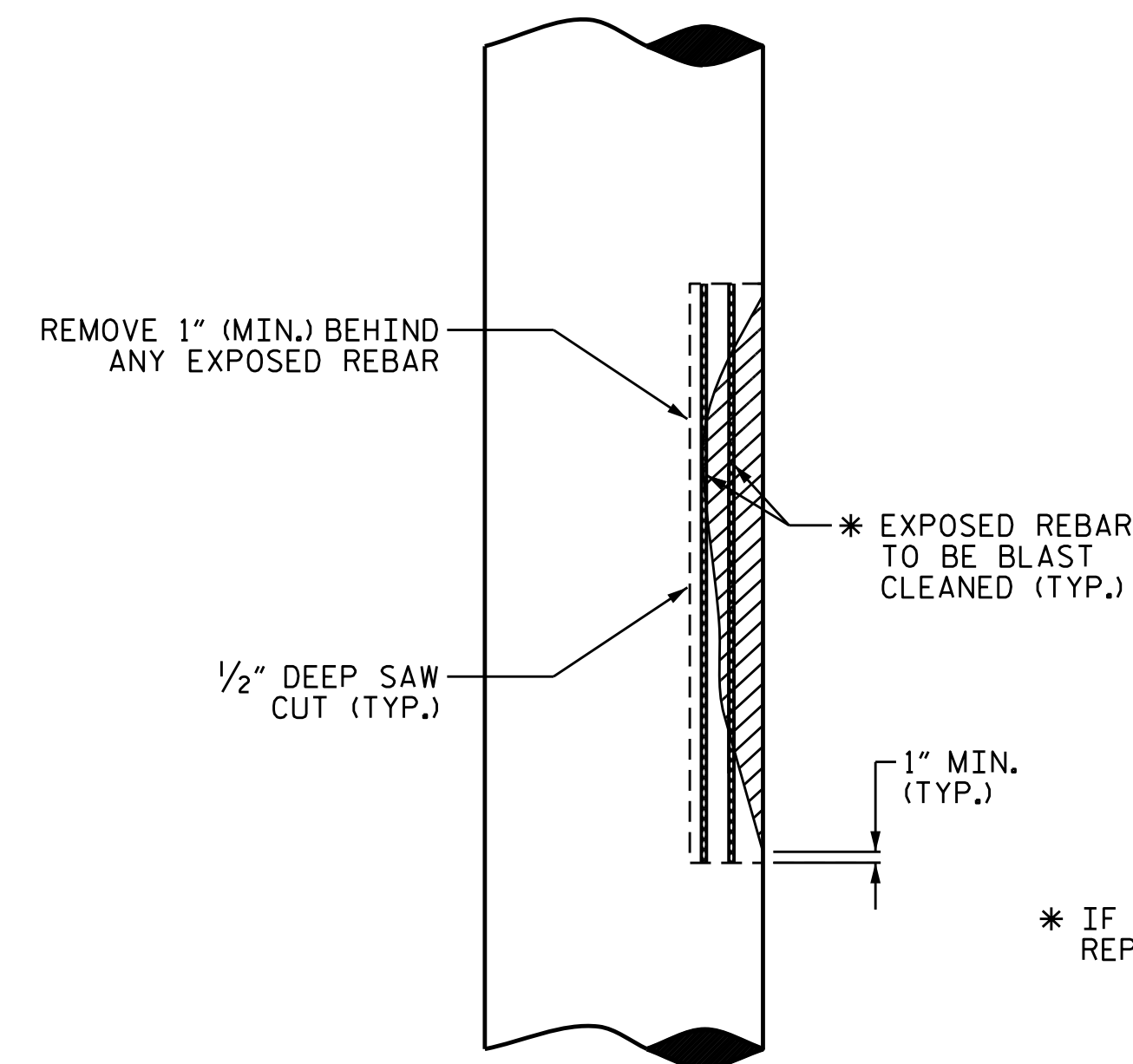


PLAN OF COLUMN



SECTION THRU CAP
(EXAMPLE ONLY, ACTUAL REBAR SIZES & LOCATIONS MAY VARY)

CAP REPAIR

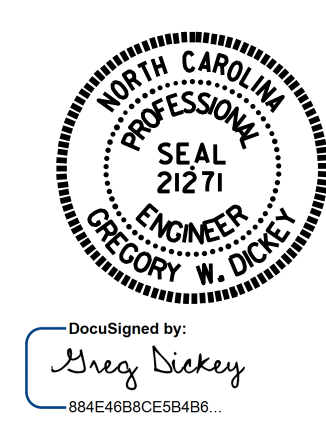


ELEVATION OF CAP

COLUMN REPAIR

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

PROJECT NO. 15B.13.45
WARREN COUNTY
 BRIDGE NO. 139



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 TYPICAL CAP &
 COLUMN REPAIR
 DETAILS**

DRAWN BY : J.D. HAWK DATE : 9/17
 CHECKED BY : G.W. DICKEY DATE : 10/17

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-42
1			3			TOTAL SHEETS
2			4			42

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 2018 "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 $\frac{3}{4}$ " WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO $\frac{1}{2}$ " RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A $\frac{1}{4}$ " 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 $\frac{1}{4}$ " 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 $\frac{7}{8}$ " \emptyset SHEAR STUDS FOR THE $\frac{3}{4}$ " \emptyset STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF $\frac{7}{8}$ " \emptyset STUDS ALONG THE BEAM AS SHOWN FOR $\frac{3}{4}$ " \emptyset STUDS BASED ON THE RATIO OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset 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 $\frac{5}{16}$ " 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 $\frac{1}{16}$ " 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.

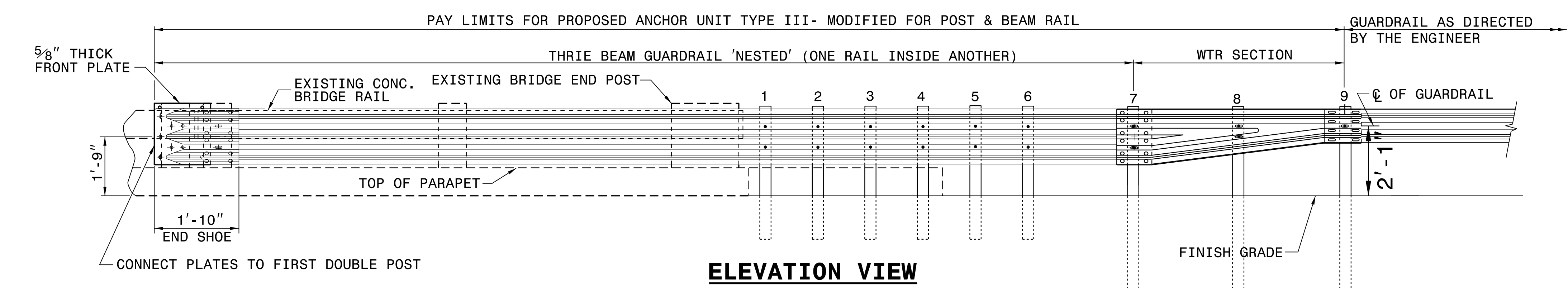
METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL 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:

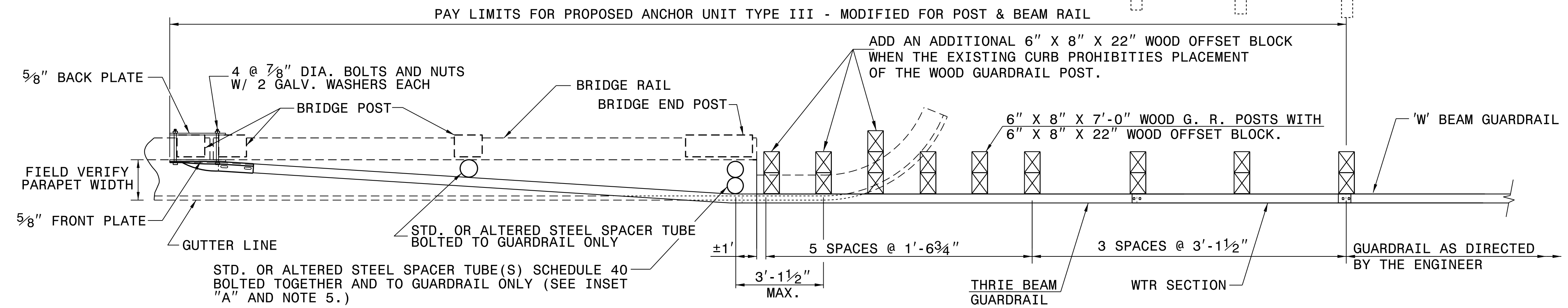
GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

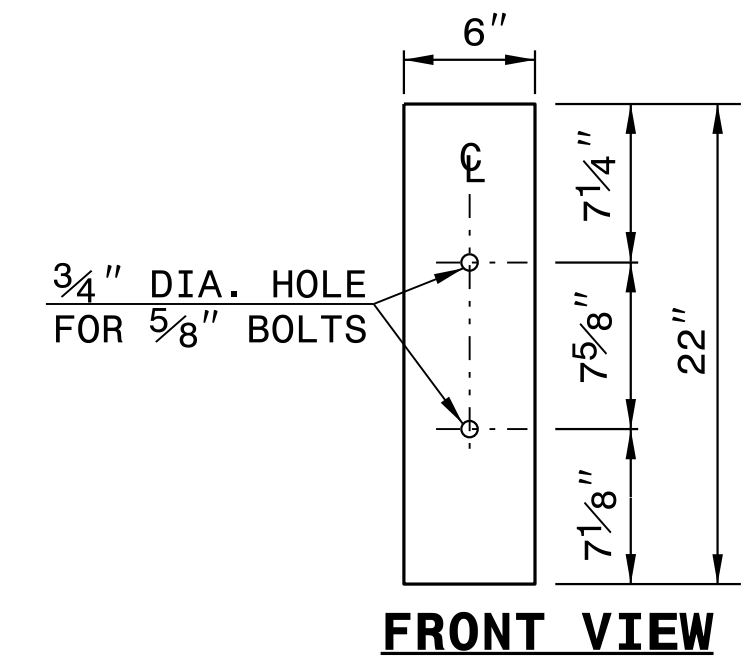
JANUARY, 1990



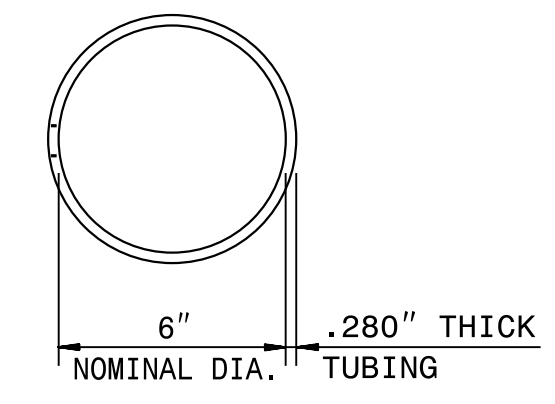
ELEVATION VIEW



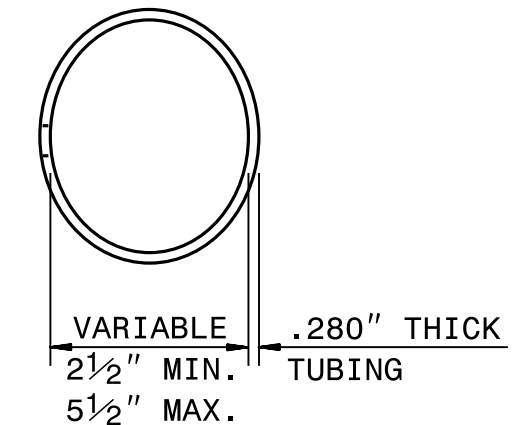
PLAN VIEW



FRONT VIEW

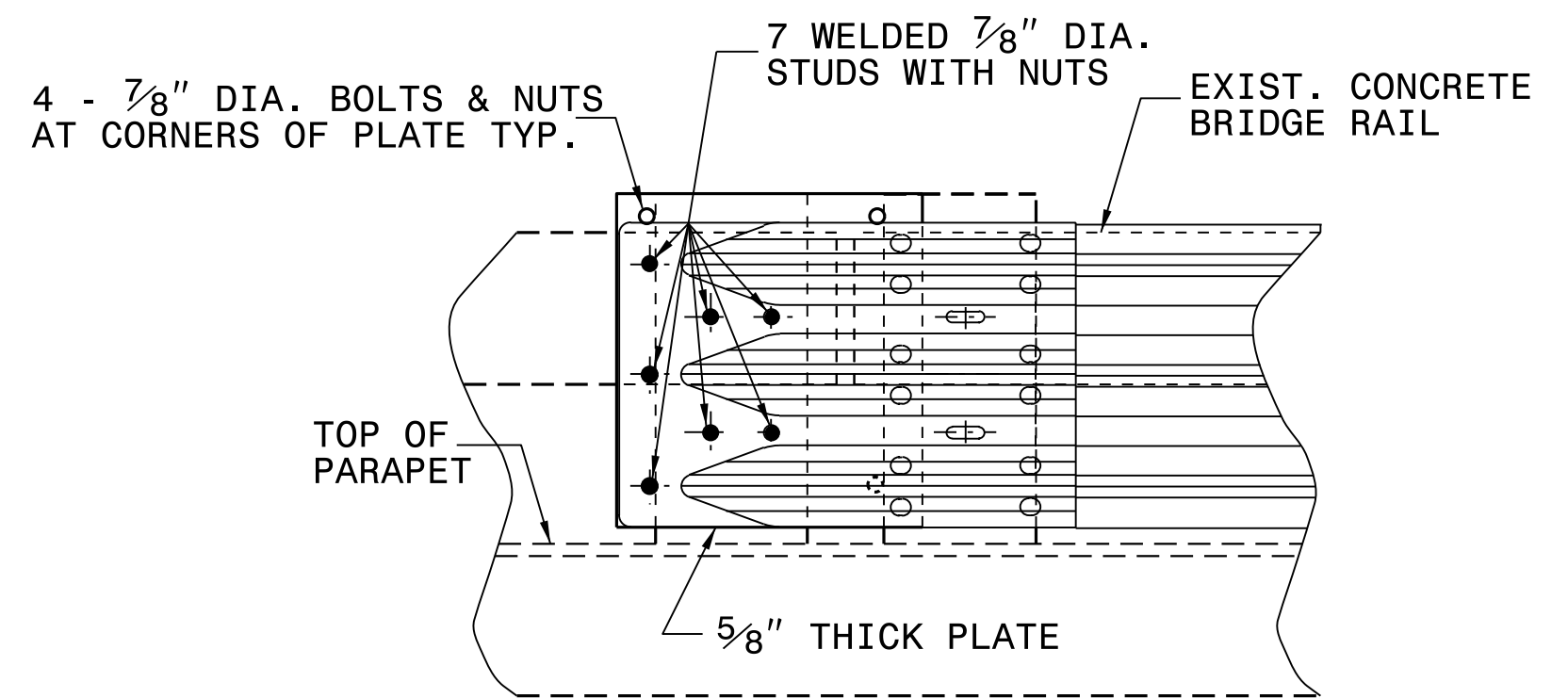


PLAN VIEW

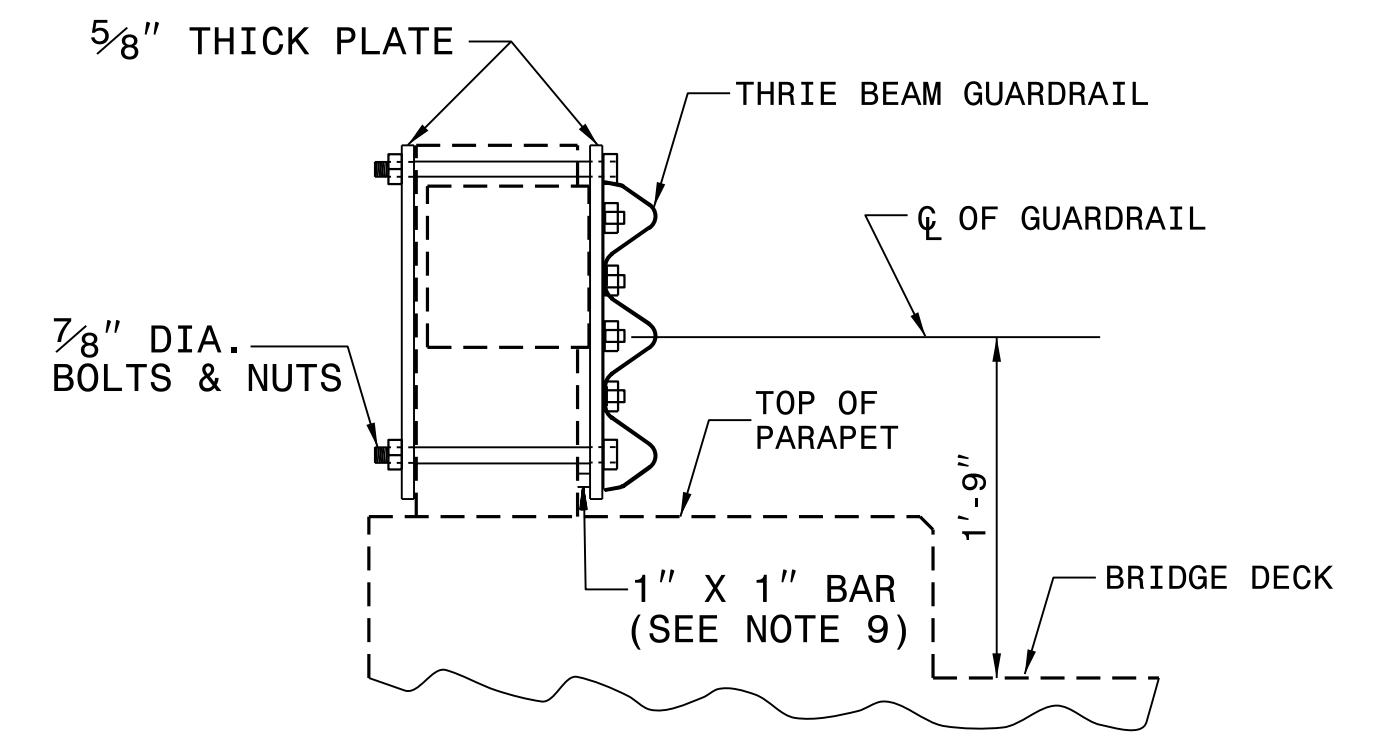


**PLAN VIEW
INSET "A"**

STEEL SPACER TUBE



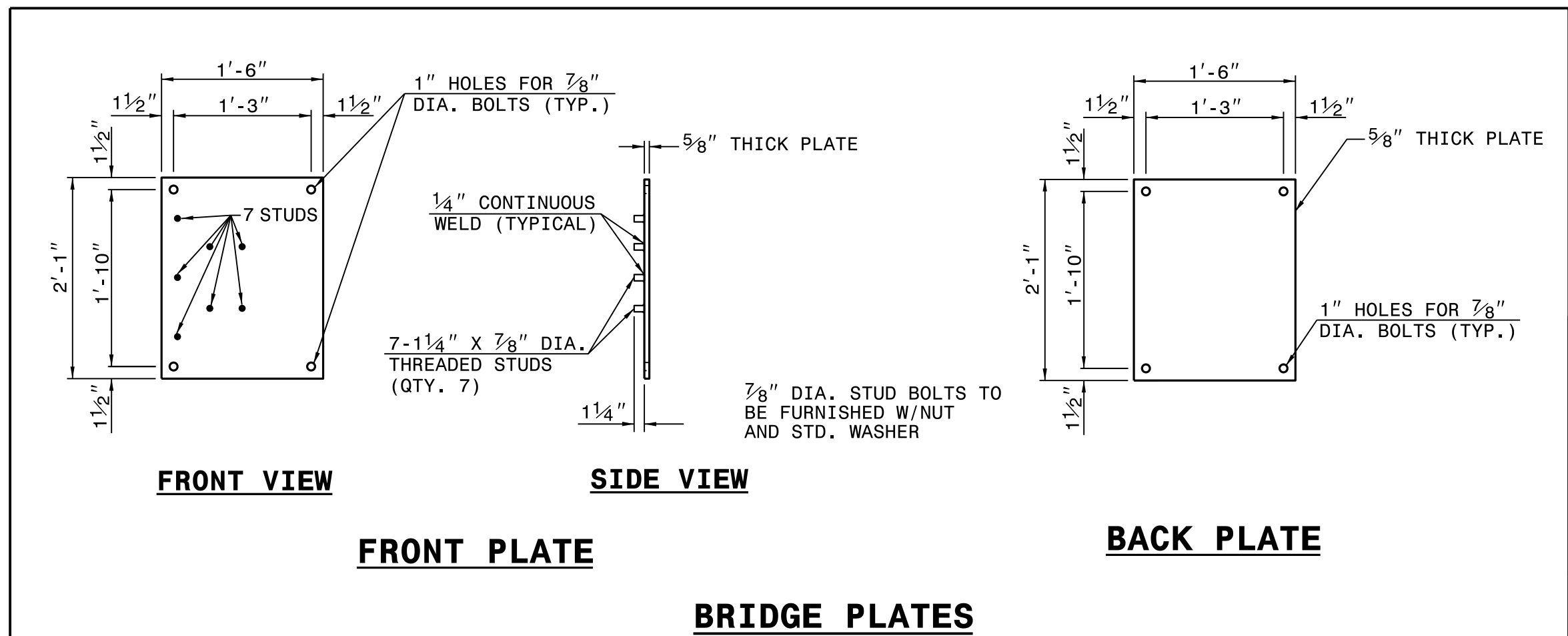
ELEVATION VIEW



SECTION VIEW

GENERAL NOTES:

1. USE NUTS, BOLTS, AND WASHERS CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-307 AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF STAND. SPECS.
2. TAP NUTS FOR THE 7/8" DIA. STUDS AND BOLTS AFTER GALVANIZING SEE A.S.T.M. A-563.
3. USE PLATES AND TUBES CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-36 AND GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SECTION 1076 OF STAND. SPECS.
4. ADDITIONAL FIELD HOLES MAY BE DRILLED IN STEEL RAIL AS DIRECTED BY THE ENGINEER.
5. INSTALL FACE OF GUARDRAIL AS NEAR AS POSSIBLE TO PLUMB WITH THE PARAPET FACE AT BRIDGE END POST SPACER TUBE LOCATION BY USING STANDARD OR ALTERED SPACER TUBES OR A COMBINATION THEREOF OR AS DIRECTED BY THE ENGINEER. FOR VERY SMALL PARAPET WIDTHS, GUARDRAIL MAY BE INSTALLED AGAINST BRIDGE RAIL WITHOUT SPACER TUBES.
6. DO NOT DRILL BRIDGE RAIL IN ORDER TO INSTALL GUARDRAIL ANCHOR UNIT.
7. USE THIS DETAIL ONLY FOR BRIGES WITH POST AND BEAM TYPE RAIL.
8. ATTACH 1" X 1" BAR AND THREADED STUDS TO PLATE WITH 1/4" WELDS ALL AROUND.
9. 1" X 1" BAR MAY NOT BE NEEDED ON BRIDGE RAILS WHERE FACE OF RAIL DOES NOT PROJECT BEYOND FACE OF POST.
10. PROVIDE SHOP DRAWINGS OF THE PLATES TO THE ENGINEER FOR APPROVAL BEFORE FABRICATING THE PLATES.
11. LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
12. SEE ROADWAY STANDARD DRAWING 862.03 SHEET 3 FOR ADDITIONAL INFORMATION ON THE TYPE III ANCHOR UNIT



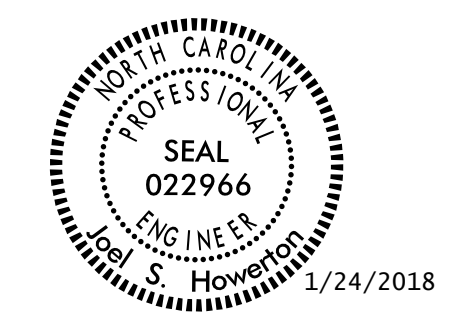
FRONT VIEW

SIDE VIEW

FRONT PLATE

BACK PLATE

BRIDGE PLATES



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
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**TYPE III MODIFIED
FOR POST AND BEAM RAIL**

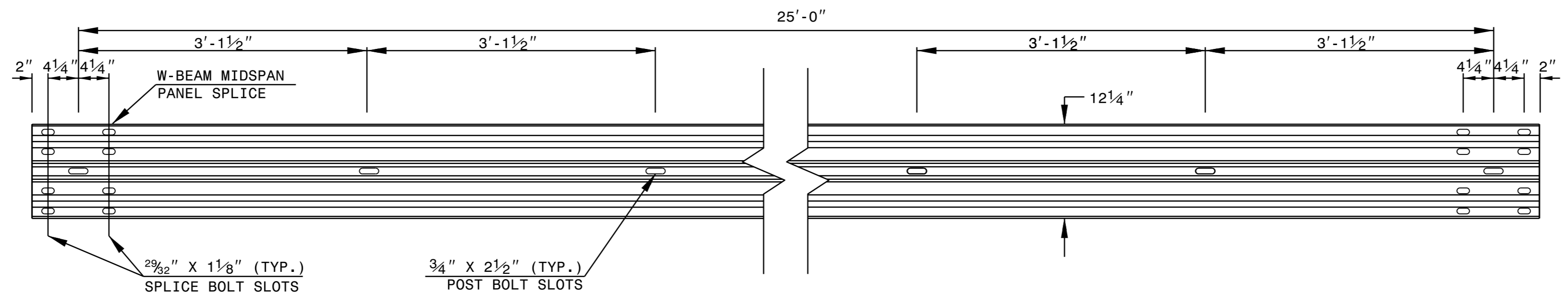
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MODIFIED BY: JS Howerton DATE: 01-18
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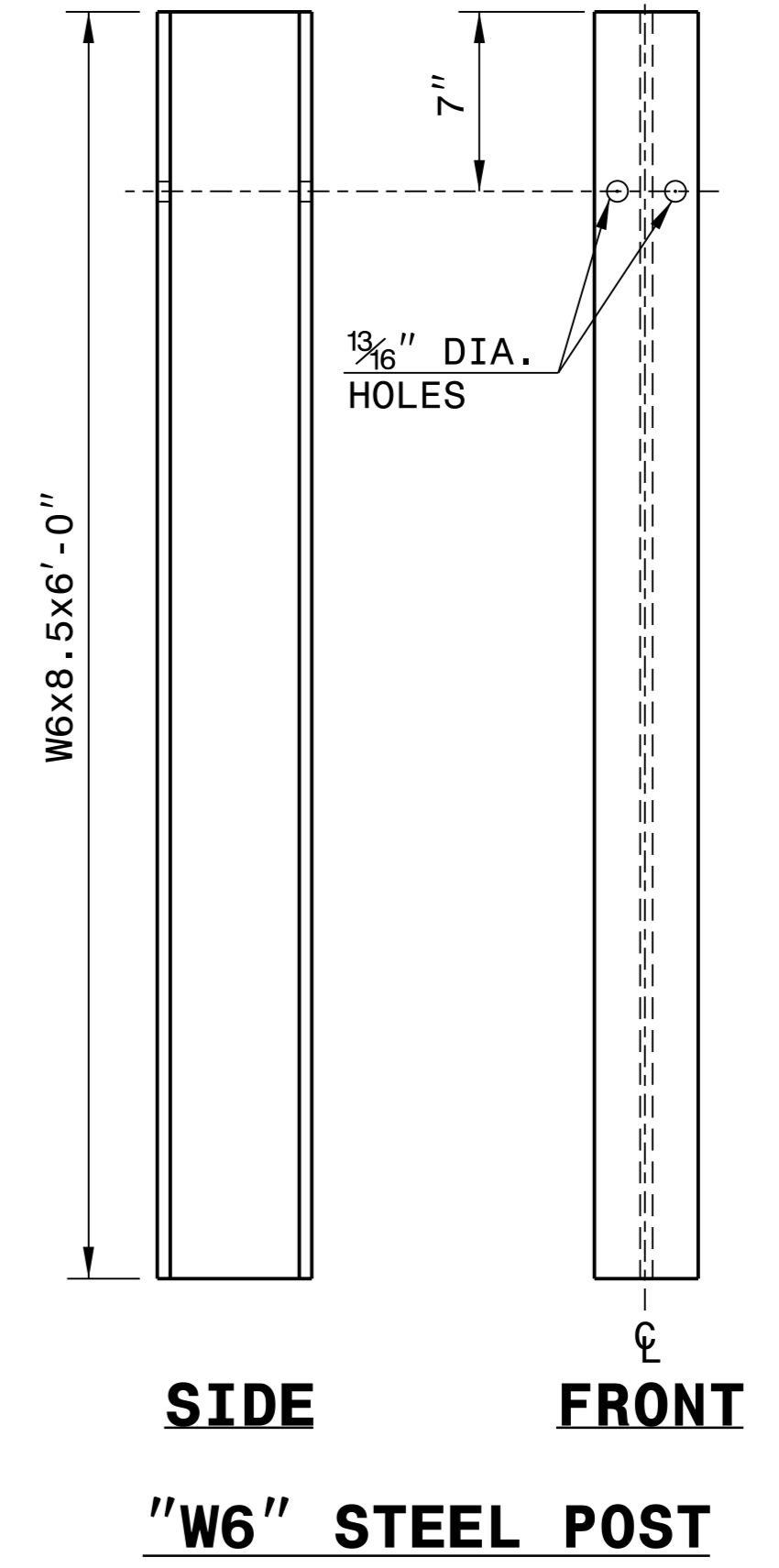
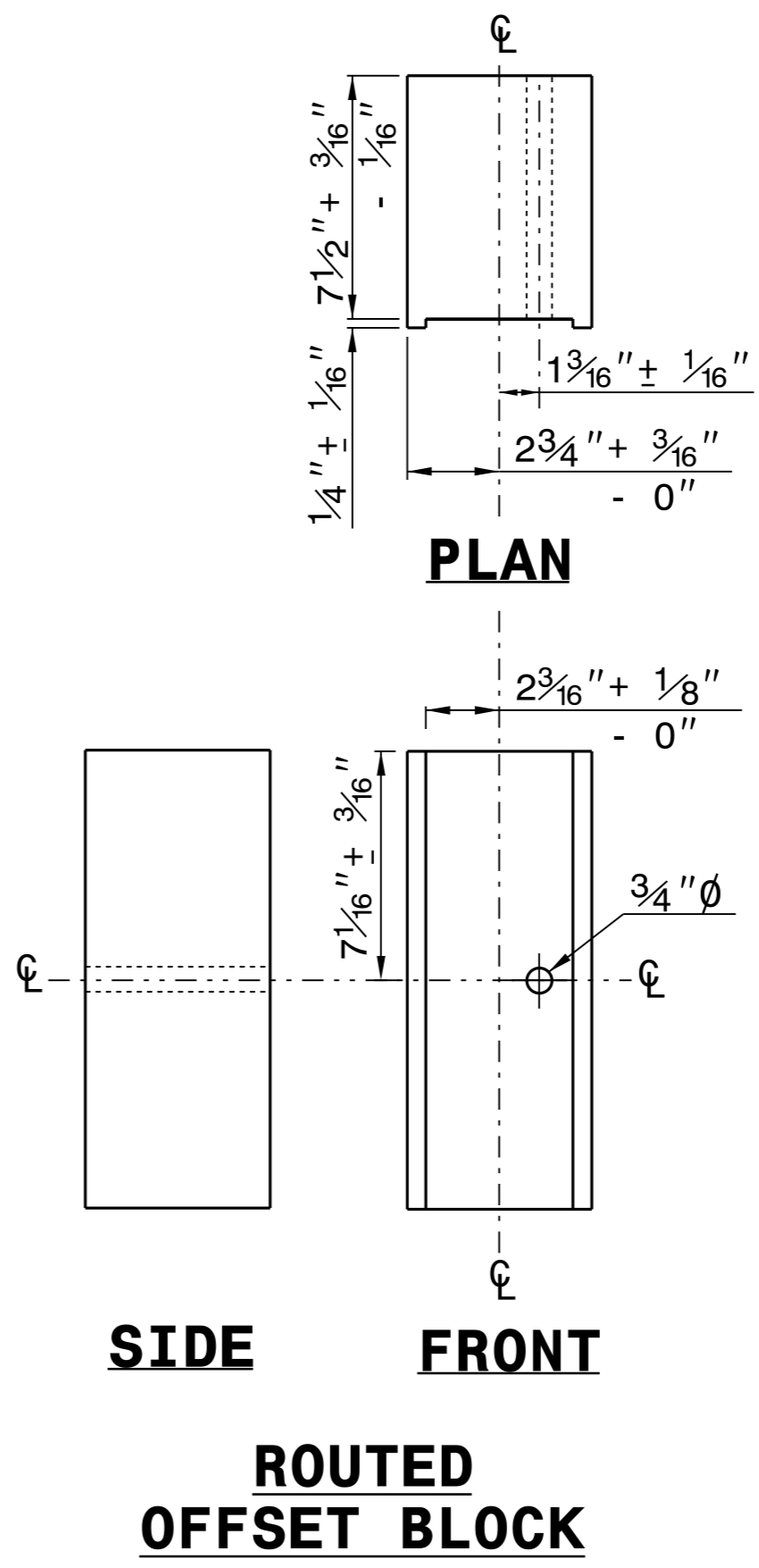
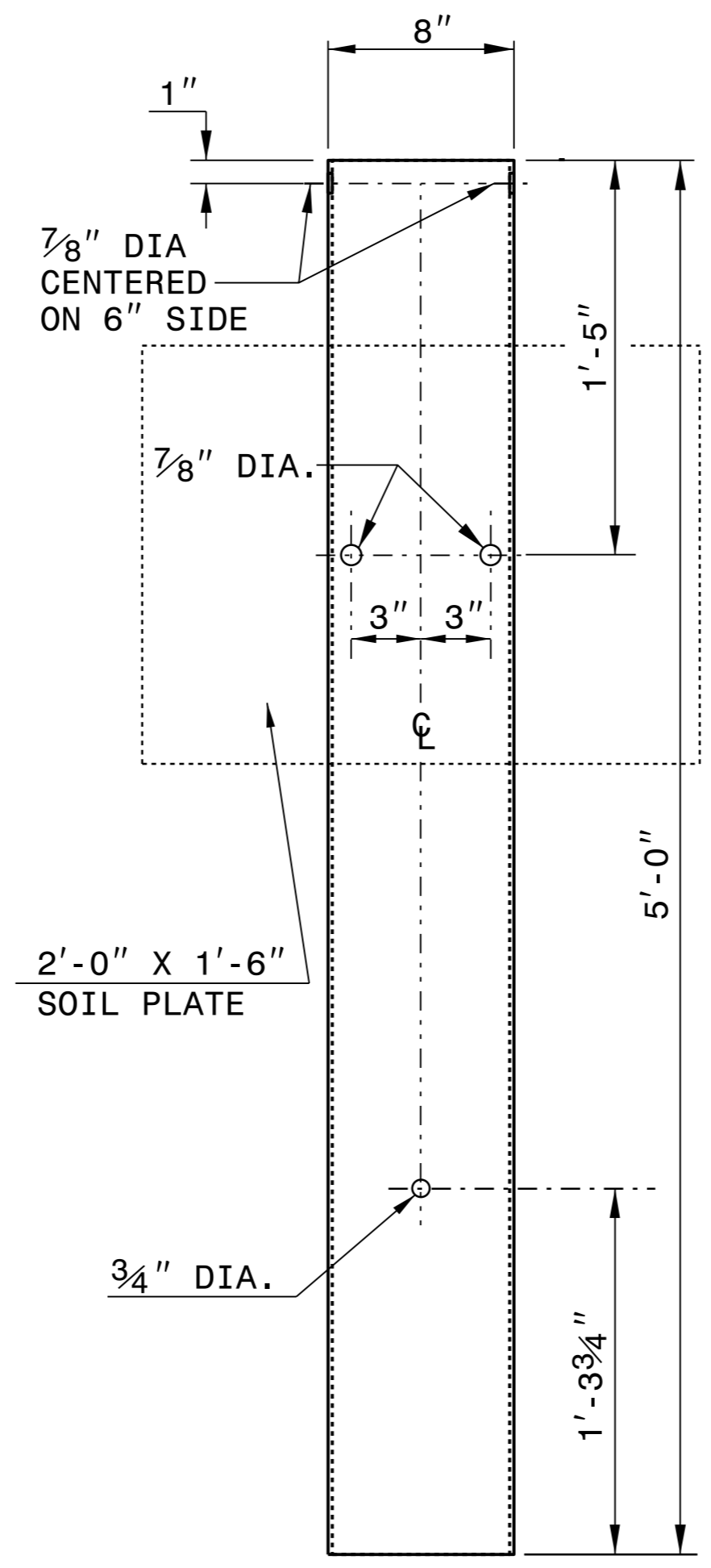
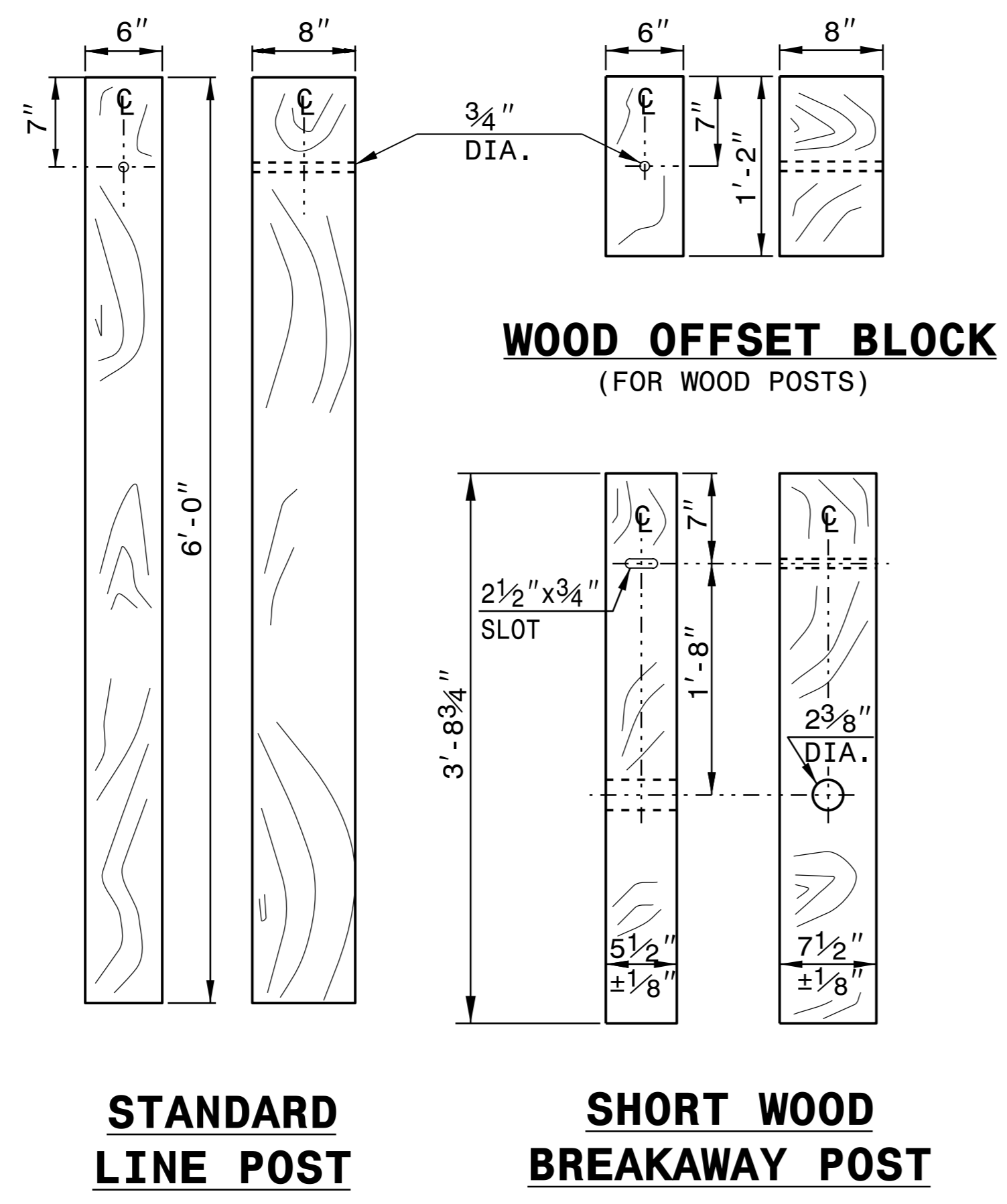
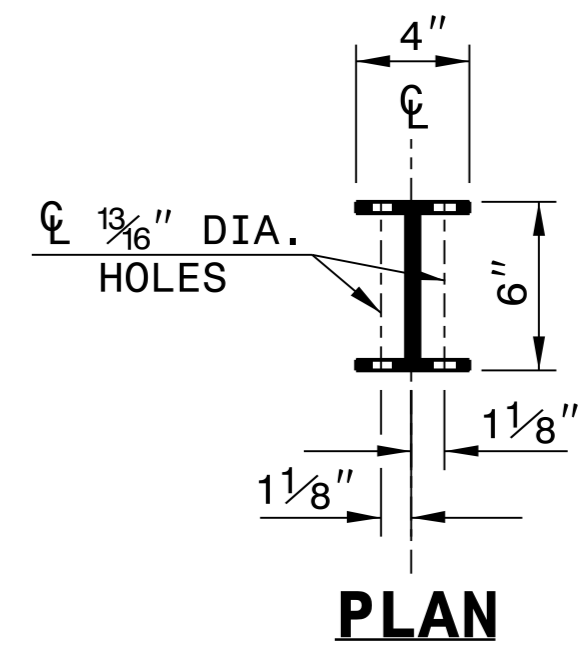
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



STANDARD W-BEAM GUARDRAIL



SYSTEM PARTS

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DIVISION OF HIGHWAYS
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ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



4/16/2018

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