

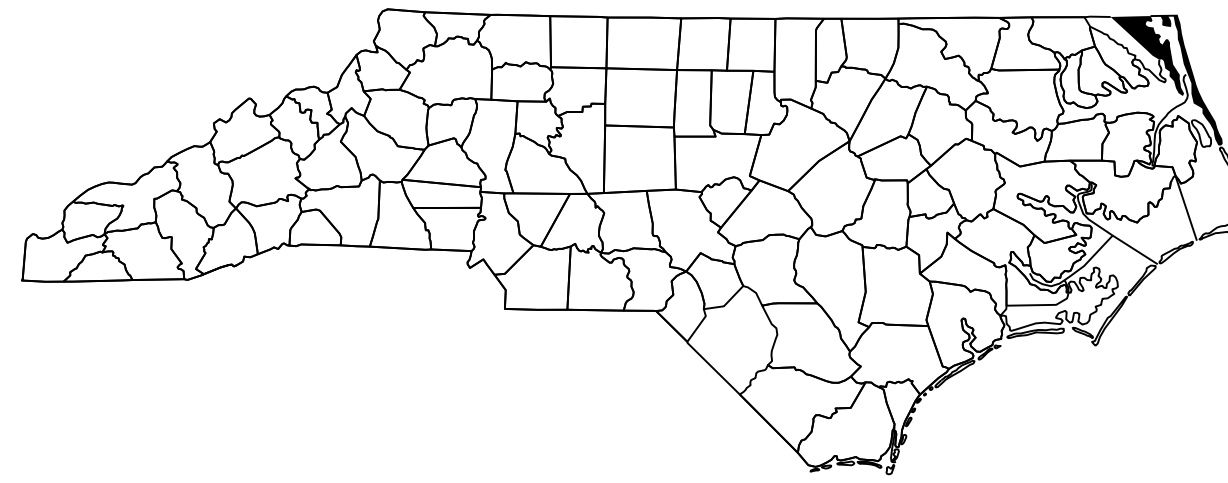
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PROJECT: 15BPR.7

CONTRACT: C204171



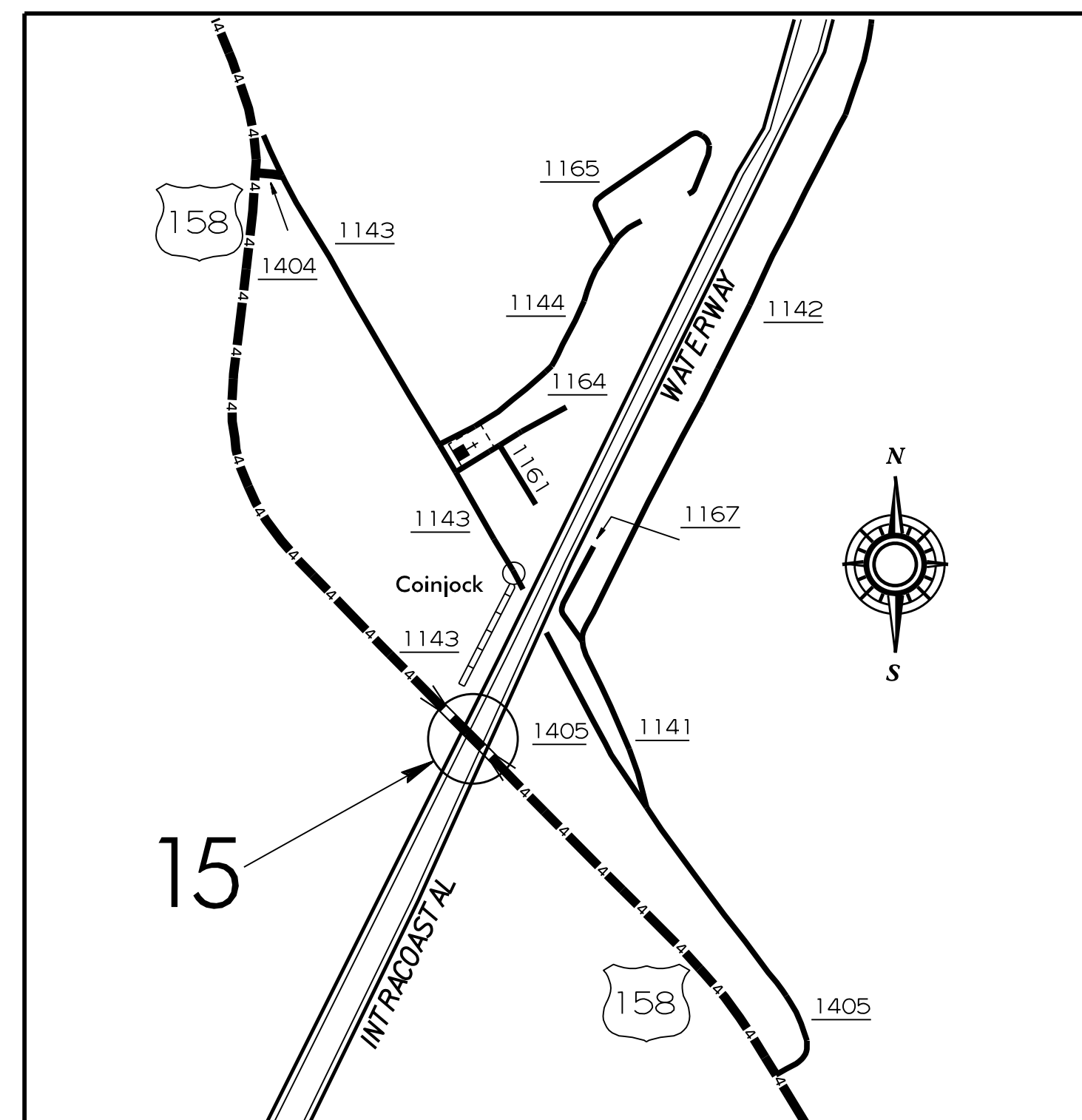
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**CURRITUCK COUNTY**

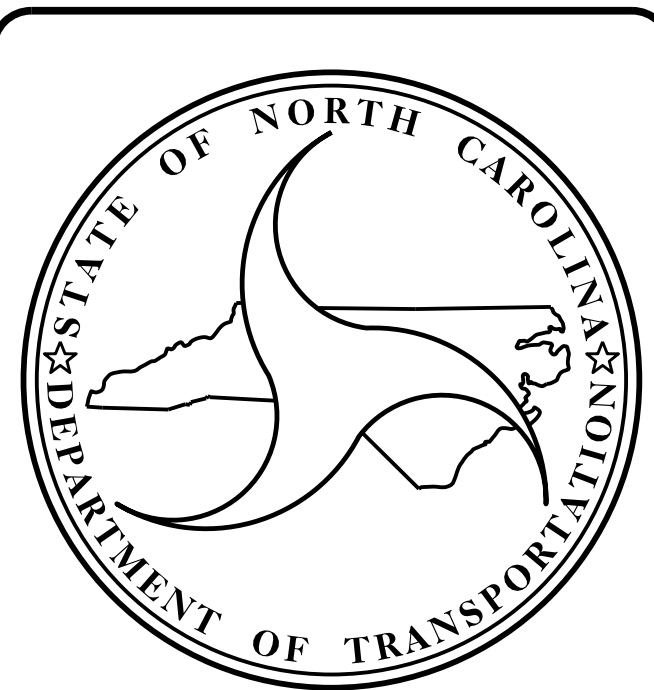
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15BPR.7	1	84
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
15BPR.7		P.E.	
15BPR.7		CONST.	

**LOCATION:** BRIDGE #15 ON US HIGHWAY 158 OVER INTRACOASTAL WATERWAY

**TYPE OF WORK:** BRIDGE PRESERVATION – DECK REPAIR, POLYESTER POLYMER CONCRETE (PPC) DECK OVERLAY, JOINT REPLACEMENT, GIRDER REPAIR, SUBSTRUCTURE REPAIR, FENDER SYSTEM REPLACEMENT.



VICINITY MAP – CURRITUCK CO.



**DESIGN DATA**  
CURRITUCK COUNTY  
BRIDGE #15 ADT 2013 = 12,000

**PROJECT LENGTH**  
PROJECT 15BPR.7 = 0.48 MILE

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

2018 STANDARD SPECIFICATIONS

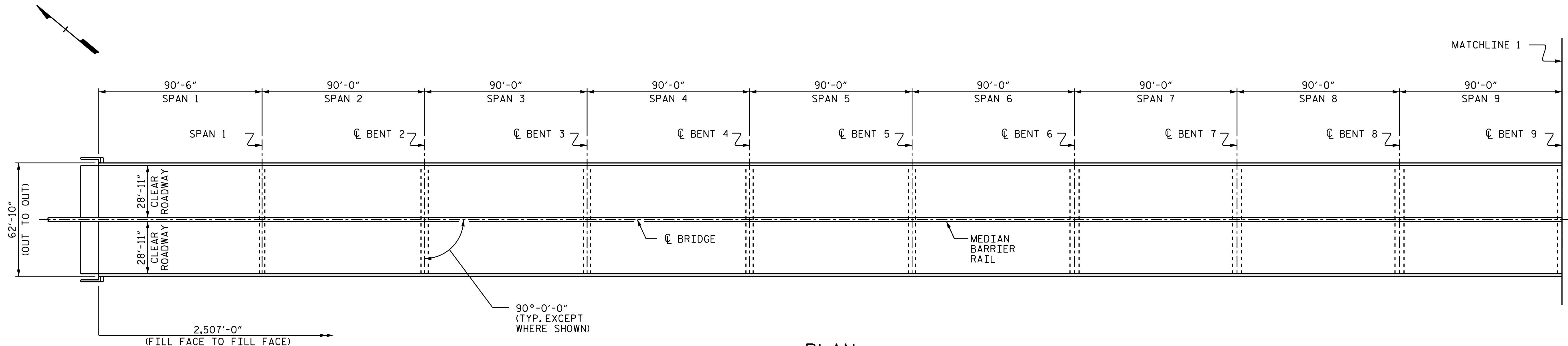
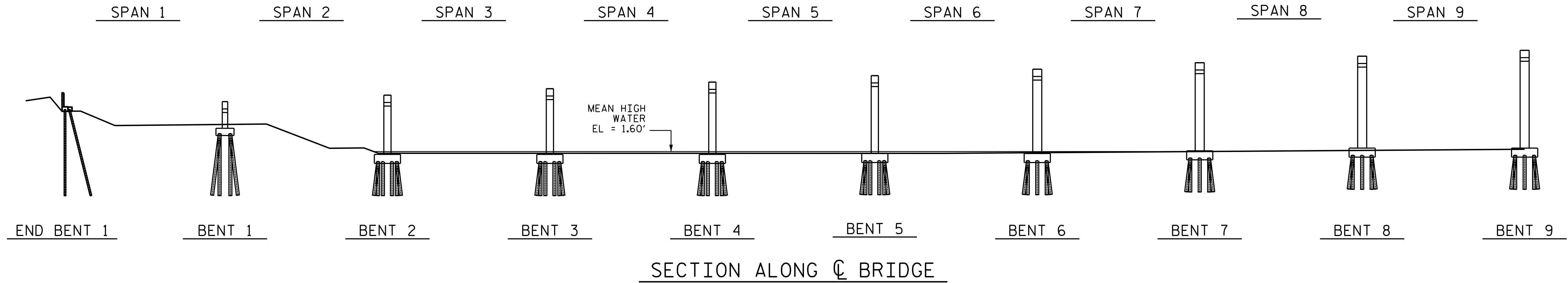
LETTING DATE :  
MAY 15, 2018

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

P. KOREY NEWTON, P.E.  
PROJECT DESIGN ENGINEER

**SCOPE OF WORK**

- PARTIALLY REMOVE BRIDGE DECK CONCRETE BY SCARIFICATION AND SHOTBLASTING METHODS.
- CLEAN AND REMOVE EXISTING BRIDGE DECK JOINT MATERIAL.
- PERFORM DECK REPAIRS IN PREPARED AREAS.
- OVERLAY PREPARED BRIDGE DECK WITH POLYESTER POLYMER CONCRETE.
- INSTALL BACKER ROD AND SILICONE JOINT SEALANT.
- GROOVE POLYESTER POLYMER CONCRETE.
- SUBSTRUCTURE REPAIRS USING EPOXY RESIN INJECTION, SHOTCRETE, AND CONCRETE REPAIR.

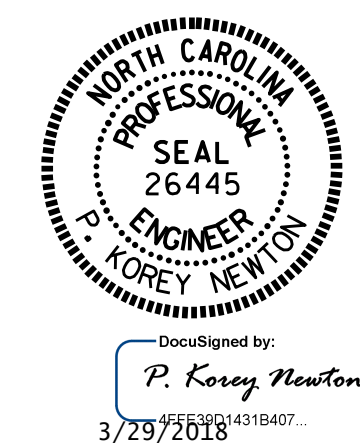


**PLAN**

(FOOTINGS & PILES NOT SHOWN FOR CLARITY)

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO.: 15

SHEET 1 OF 3

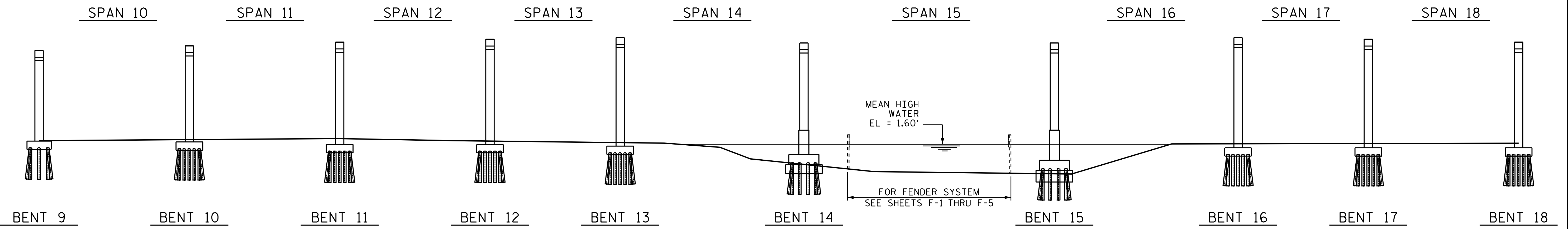


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 BRIDGE 15 ON US158  
 OVER INTRACOASTAL  
 WATERWAY

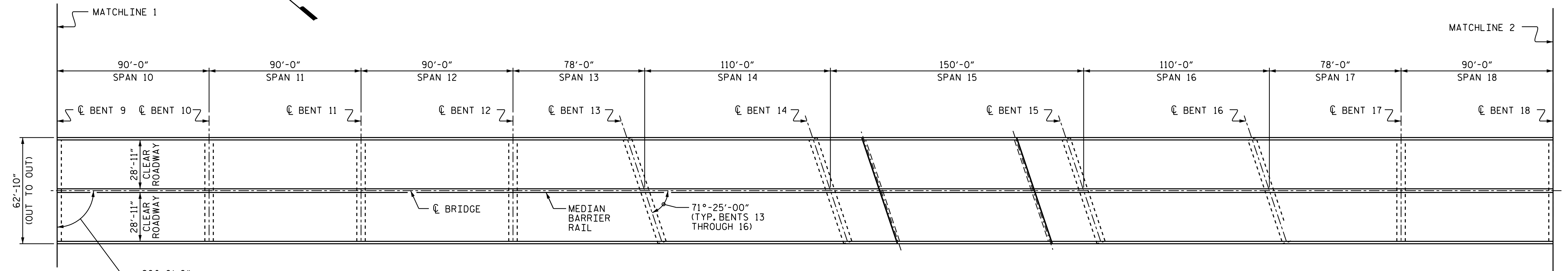
DRAWN BY : P.D. BRYANT DATE : 12/2017  
 CHECKED BY : P. K. NEWTON DATE : 01/2018

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1			3			TOTAL SHEETS
2			4			84



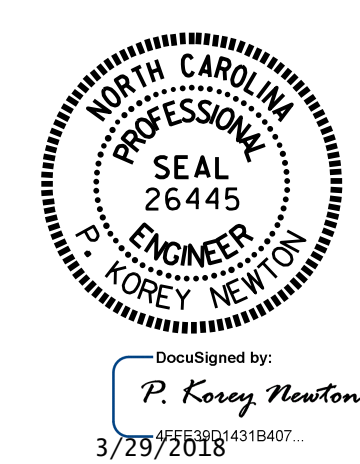
**SECTION ALONG CL BRIDGE**  
 (SECTIONS AT BENTS 13 THROUGH 16 TAKEN AT RIGHT ANGLES)



**PLAN**  
 (FOOTINGS & PILES NOT SHOWN FOR CLARITY)

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO.: 15

SHEET 2 OF 3

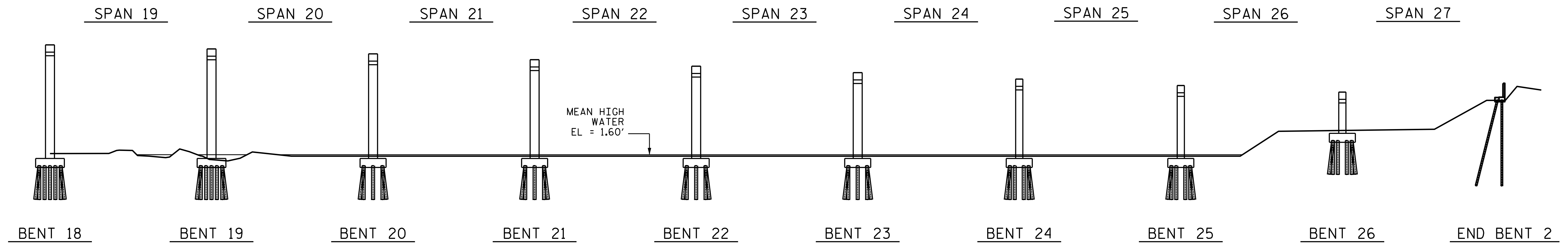


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 BRIDGE 15 ON US158  
 OVER INTRACOASTAL  
 WATERWAY

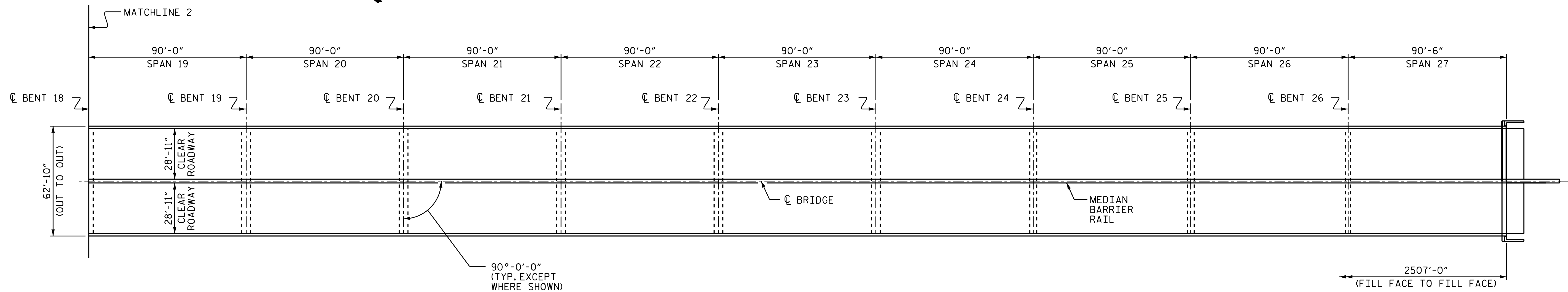
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1			3			TOTAL SHEETS
2			4			84



SECTION ALONG C BRIDGE

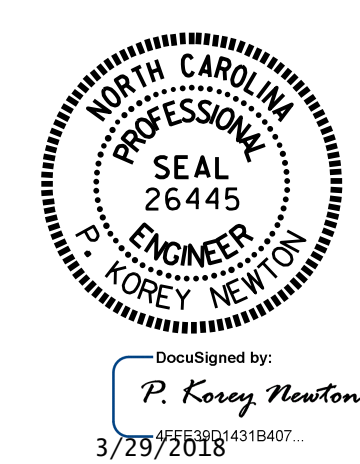


PLAN

(FOOTINGS & PILES NOT SHOWN FOR CLARITY)

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO.: 15

SHEET 3 OF 3



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 GENERAL DRAWING  
 BRIDGE 15 ON US158  
 OVER INTRACOASTAL  
 WATERWAY

DRAWN BY : P.D. BRYANT DATE : 12/2017  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			84



TOTAL BILL OF MATERIAL													
CURRITUCK BRIDGE NO. 15	MOBILIZATION	GROOVING BRIDGE FLOORS	SHOTCRETE REPAIRS	CLASS II SURFACE PREPARATION	SCARIFYING BRIDGE DECK	SHOTBLASTING BRIDGE DECK	PPC MATERIALS	PLACING AND FINISHING PPC OVERLAY	SILICONE JOINT SEALANT	REPAIRS TO PRESTRESSED CONCRETE GIRDERS	EPOXY RESIN INJECTION	CONCRETE DECK REPAIR FOR PPC OVERLAY	HARDWARE
	LUMP SUM	SQ. FT.	CU. FT.	SQ. YD.	SQ. YD.	SQ. YD.	CU. YD.	SQ. YD.	LIN. FT.	CU. FT.	LIN. FT.	SQ. YD.	LBS.
TOTAL	LUMP SUM	138435.4	4870.5	30.9	16223.4	16223.4	450.65	16223.4	1632	18.4	294.0	30.9	8115

TOTAL BILL OF MATERIAL			
REMOVAL OF EXISTING FENDER SYSTEM	12" Ø TREATED TIMBER PILES	10" X 10" TREATED LUMBER	8" X 8" TREATED LUMBER
LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.
LUMP SUM	12300	3332	516

### GENERAL NOTES

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

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

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

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

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

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR OVERLAY SURFACE PREPARATION FOR POLYESTER POLYMER CONCRETE, SEE SPECIAL PROVISIONS.

FOR POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY, SEE SPECIAL PROVISIONS.

WORK ON BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL BELOW. THE CONTRACTOR SHALL SUBMIT PLANS FOR CONSTRUCTION IN ACCORDANCE TO ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES DATED JANUARY 2018 AND THE PROJECT SPECIAL PROVISIONS.

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

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

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

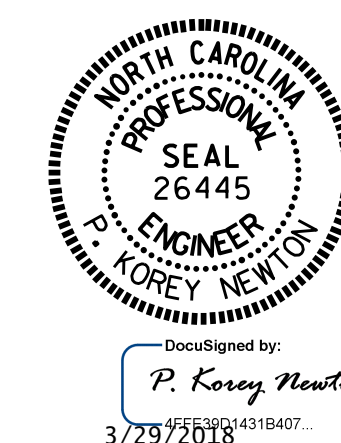
FOR SCARIFYING BRIDGE DECK, SHOTBLASTING, AND CLASS II SURFACE PREPARATION SEE OVERLAY SURFACE PREPARATION SPECIAL PROVISION.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR FOR PPC OVERLAY, SEE SPECIAL PROVISIONS.

FOR REPAIRS TO PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

### GENERAL NOTES & TOTAL BILL OF MATERIAL

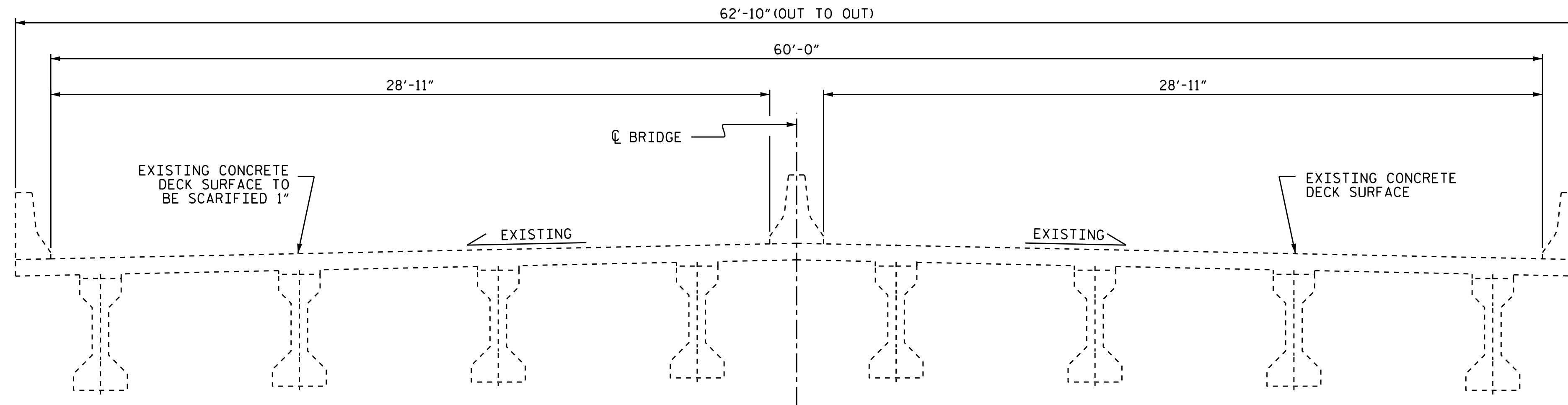
DRAWN BY : P.D. BRYANT DATE : 12/2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

DOCUMENT NOT CONSIDERED  
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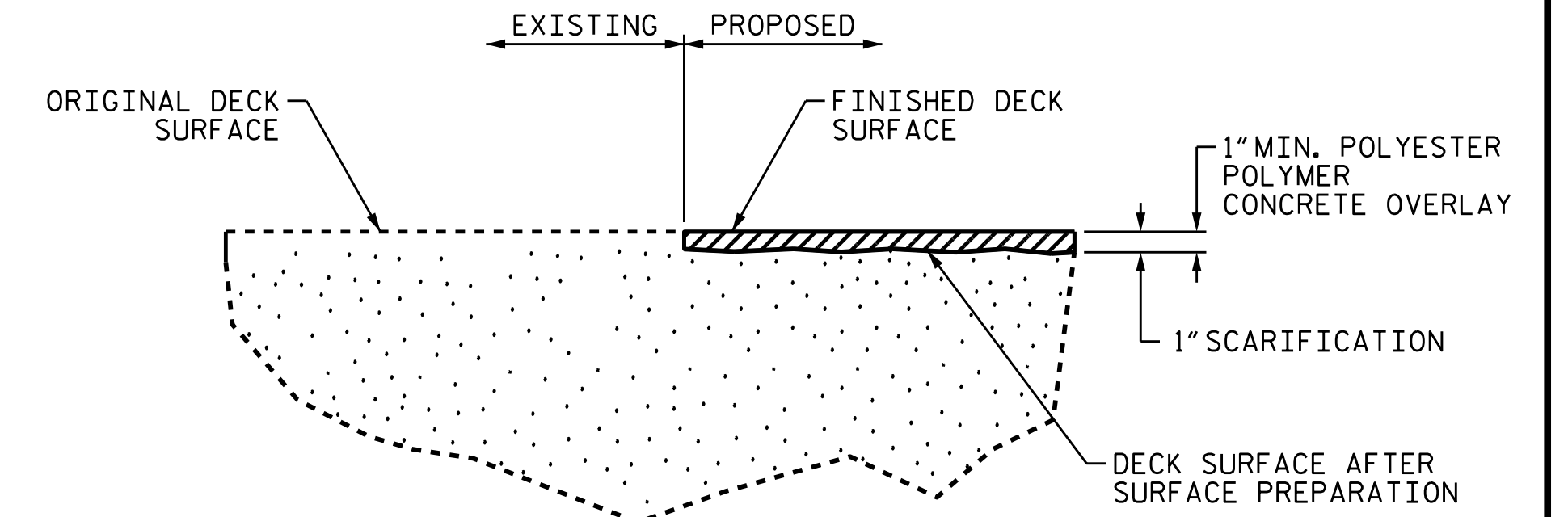
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2			4			84

**NOTES:**

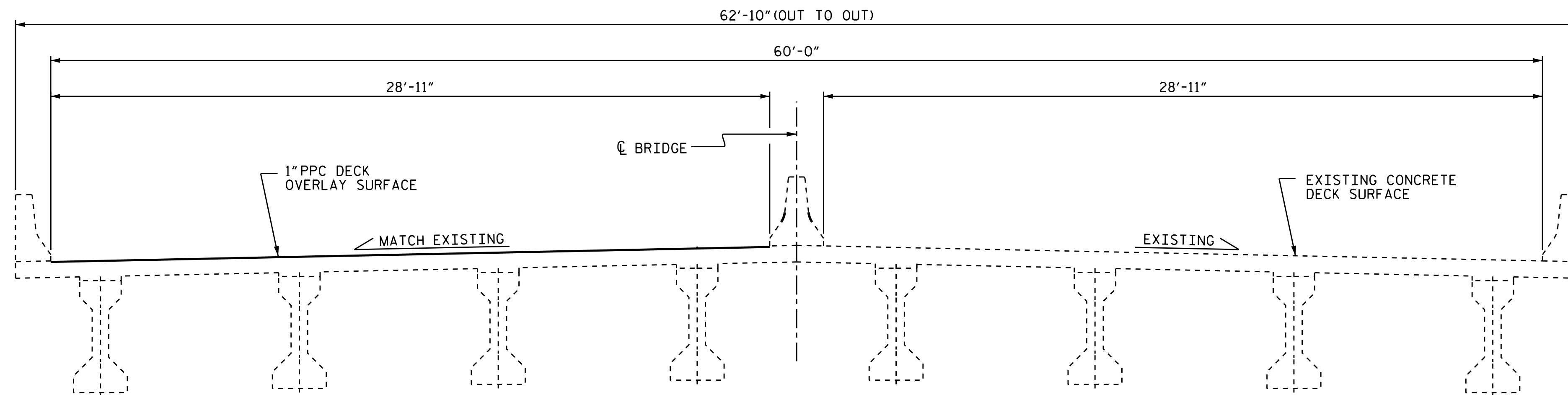
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND POLYESTER POLYMER CONCRETE PLACEMENT.



**TYPICAL SECTION**  
(LOOKING EAST)



**DETAIL FOR POLYESTER  
POLYMER CONCRETE OVERLAY**

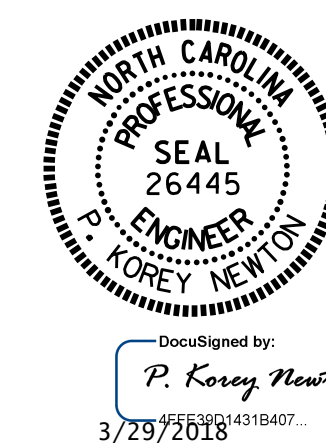


**TYPICAL SECTION**  
(PROPOSED--LOOKING EAST)

**PHASE I**

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 1 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**TYPICAL SECTION  
AND PPC OVERLAY  
DETAILS  
PHASE I**

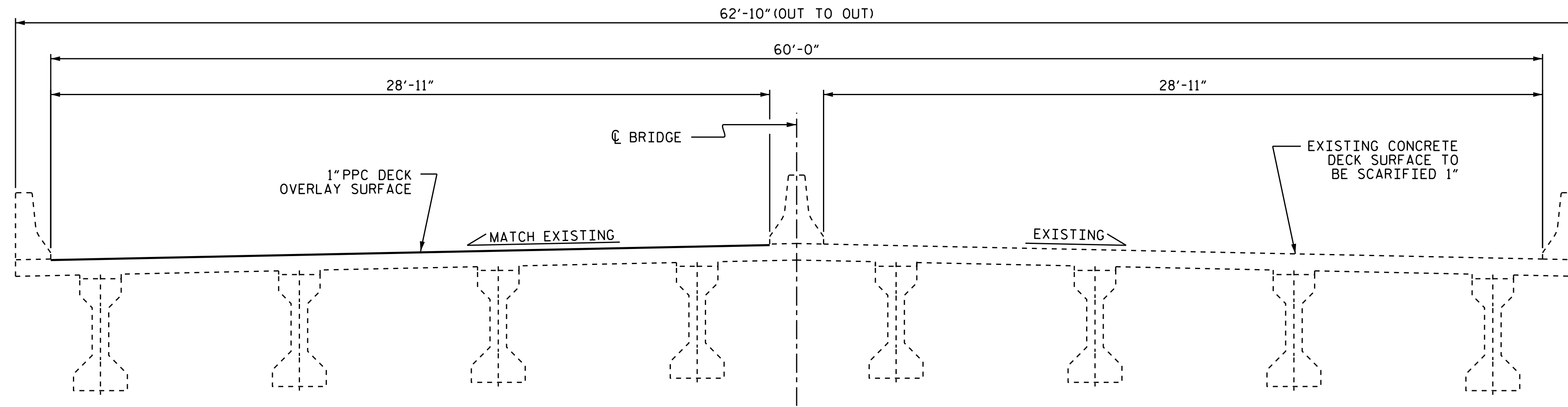
DRAWN BY : P.D. BRYANT DATE : 12/2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

DOCUMENT NOT CONSIDERED  
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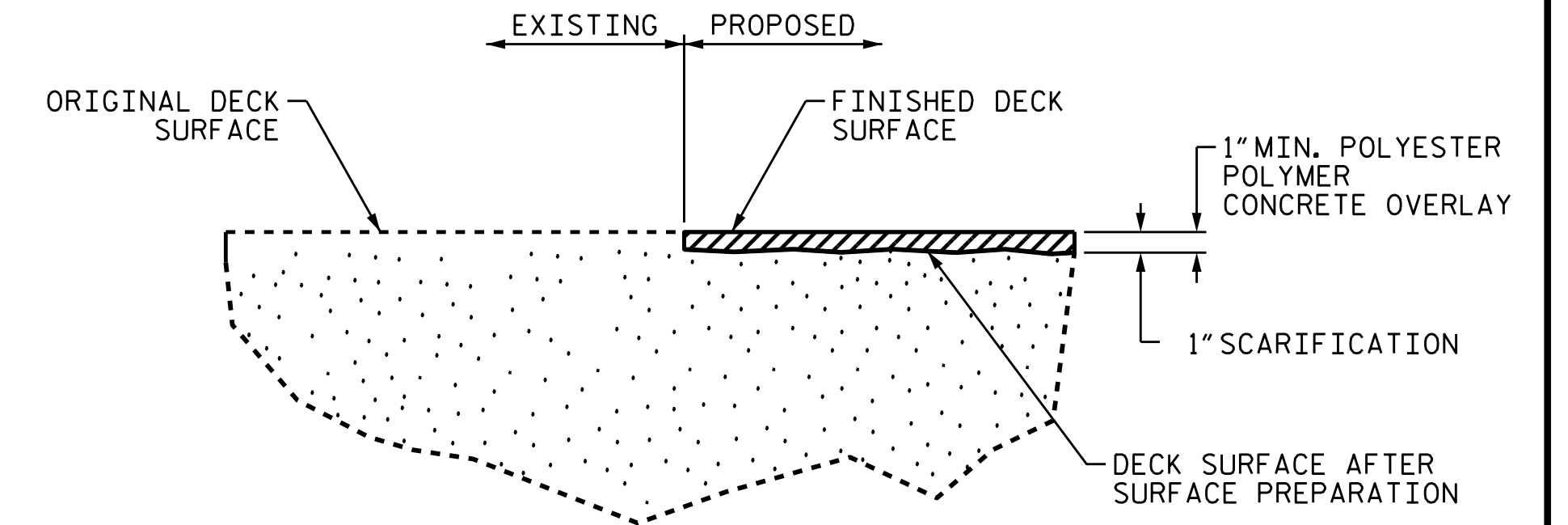
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**NOTES:**

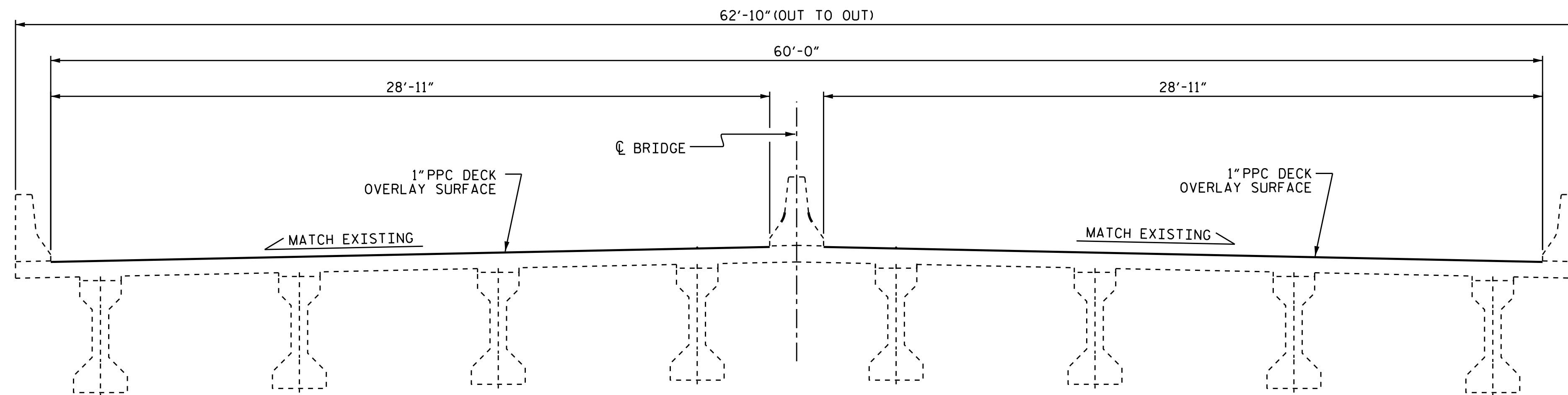
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE, PREPARATION AND POLYESTER POLYMER CONCRETE PLACEMENT.



**TYPICAL SECTION**  
(EXISTING--LOOKING EAST)



**DETAIL FOR POLYESTER  
POLYMER CONCRETE OVERLAY**

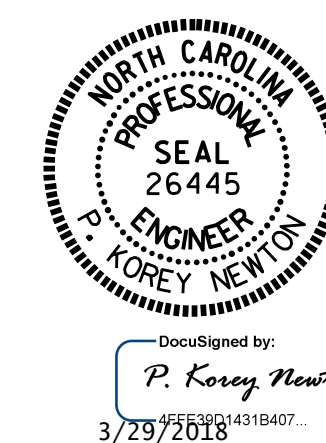


**TYPICAL SECTION**  
(PROPOSED--LOOKING EAST)

**PHASE II**

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
BRIDGE NO. 15

SHEET 2 OF 2



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

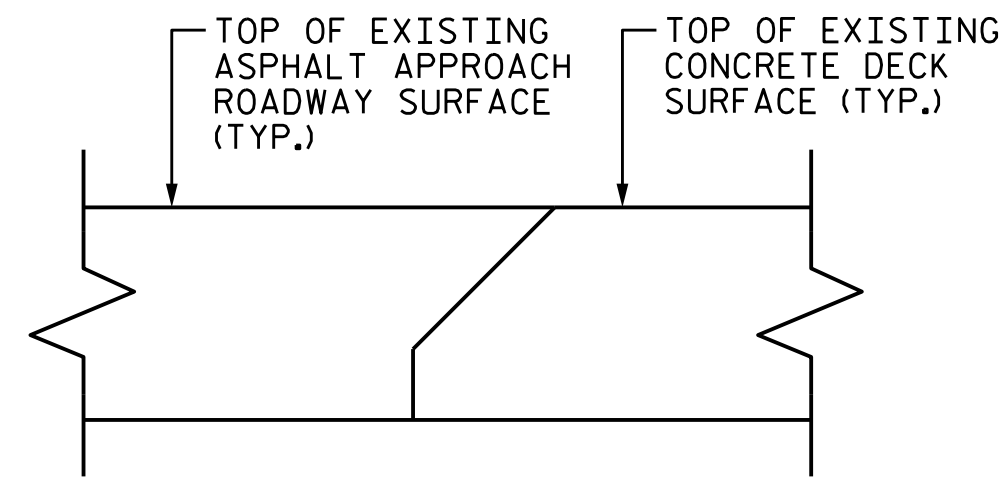
**TYPICAL SECTION  
AND PPC OVERLAY  
DETAILS  
PHASE II**

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CHECKED BY : P.K. NEWTON DATE : 01/2018

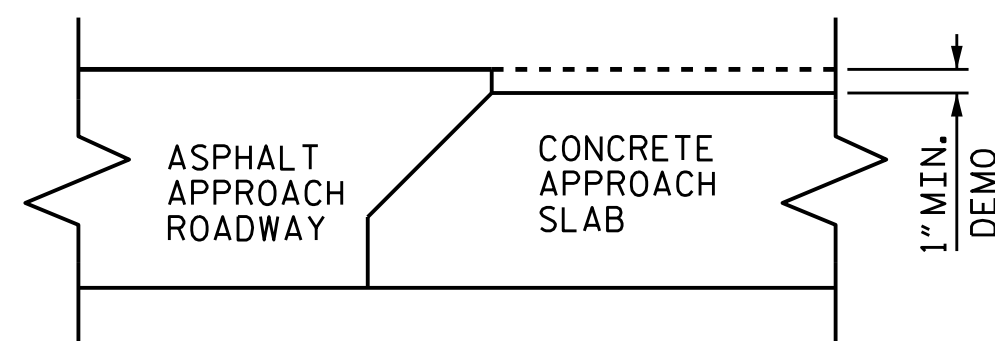
DOCUMENT NOT CONSIDERED  
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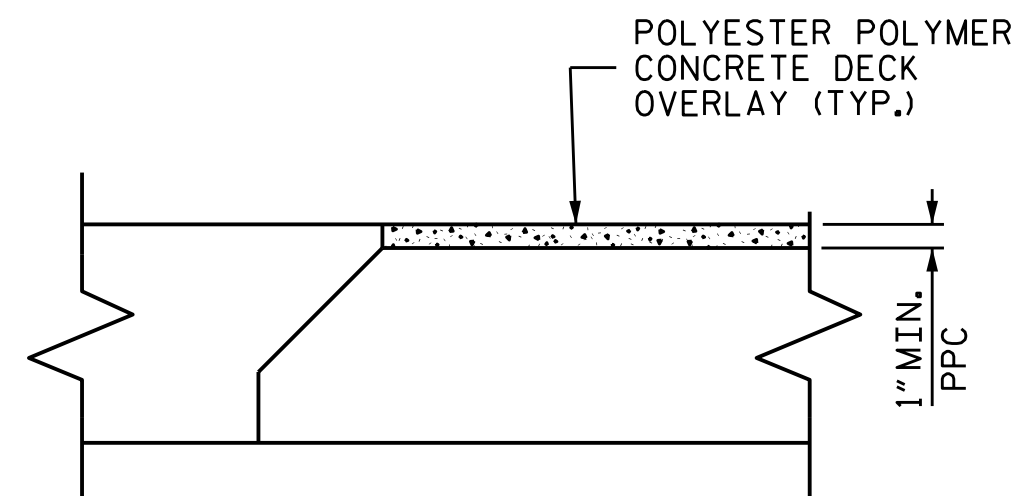




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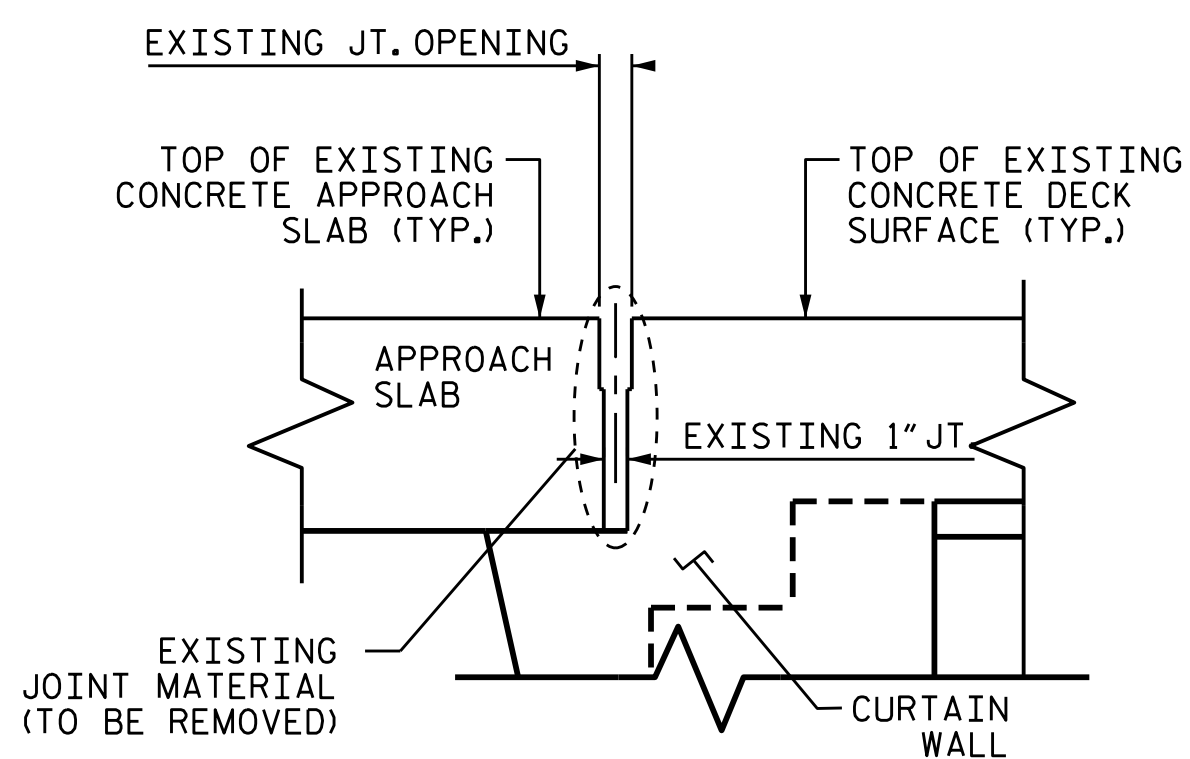


MINIMUM EXISTING JOINT DEMOLITION

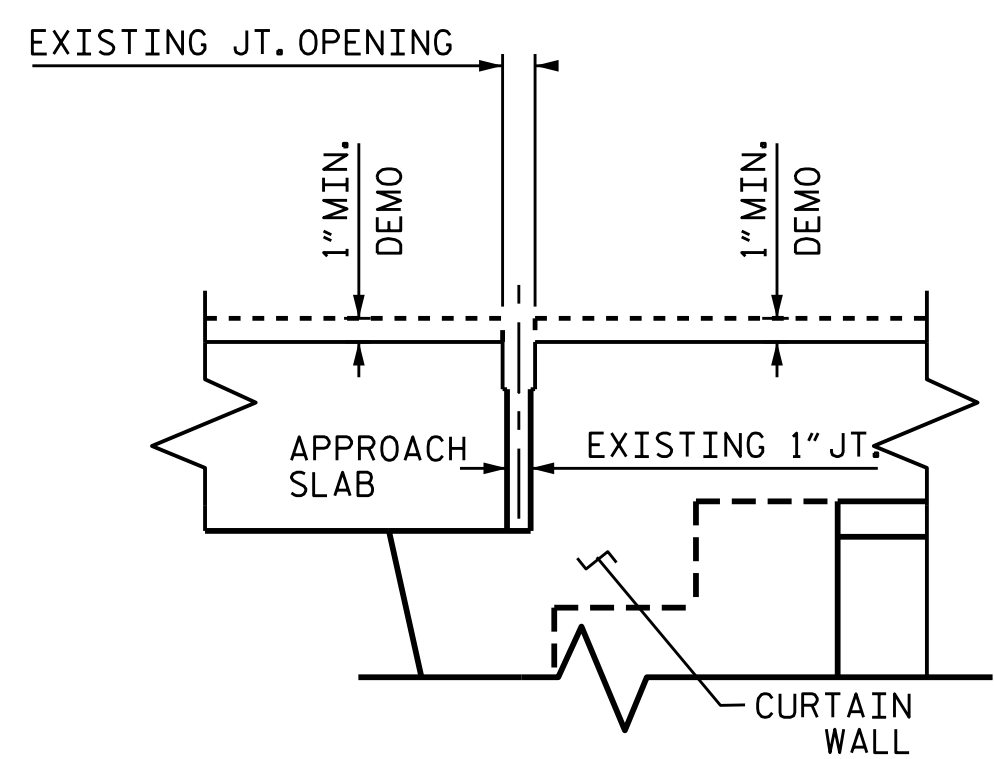


PROPOSED

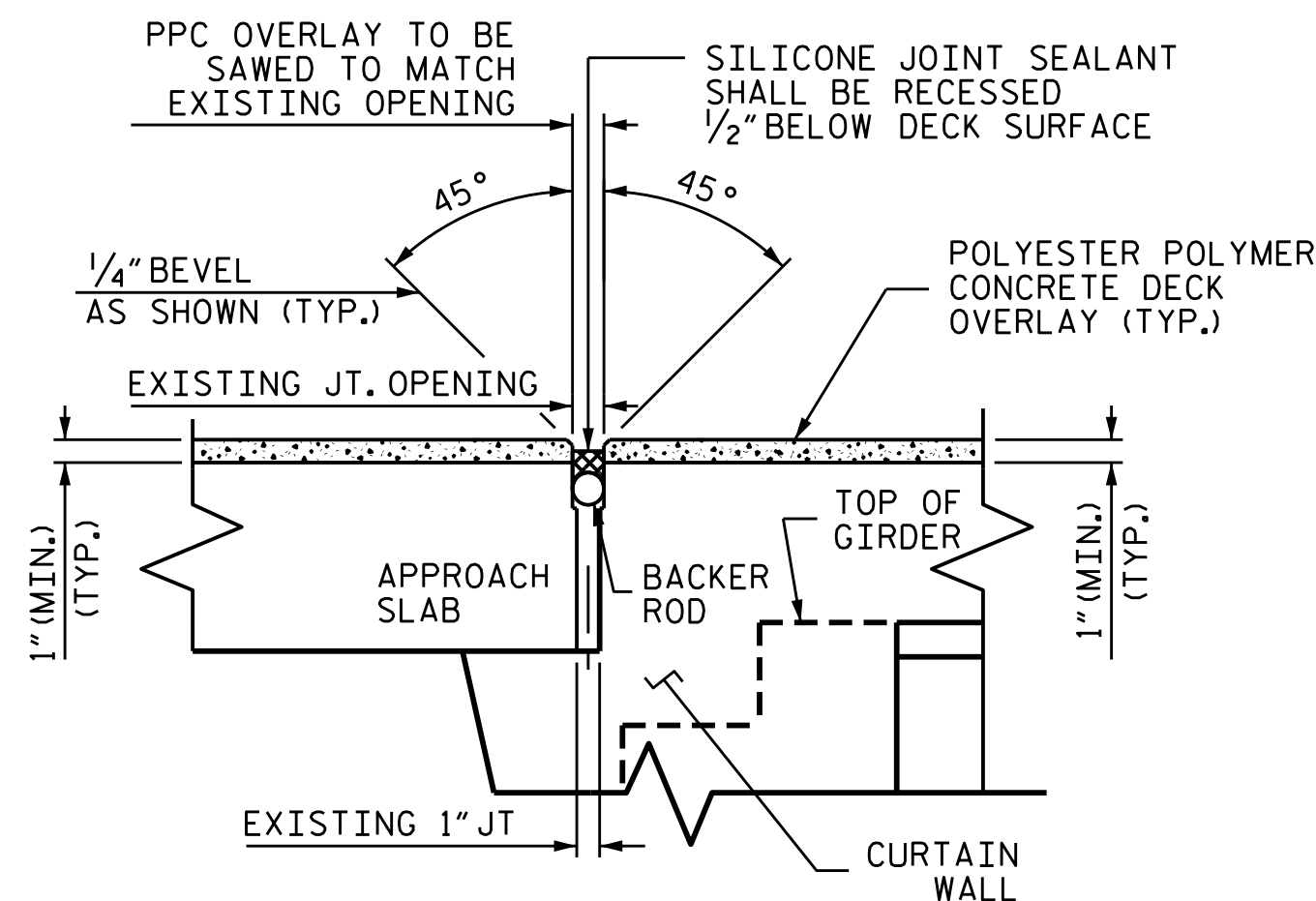
SECTION A-A



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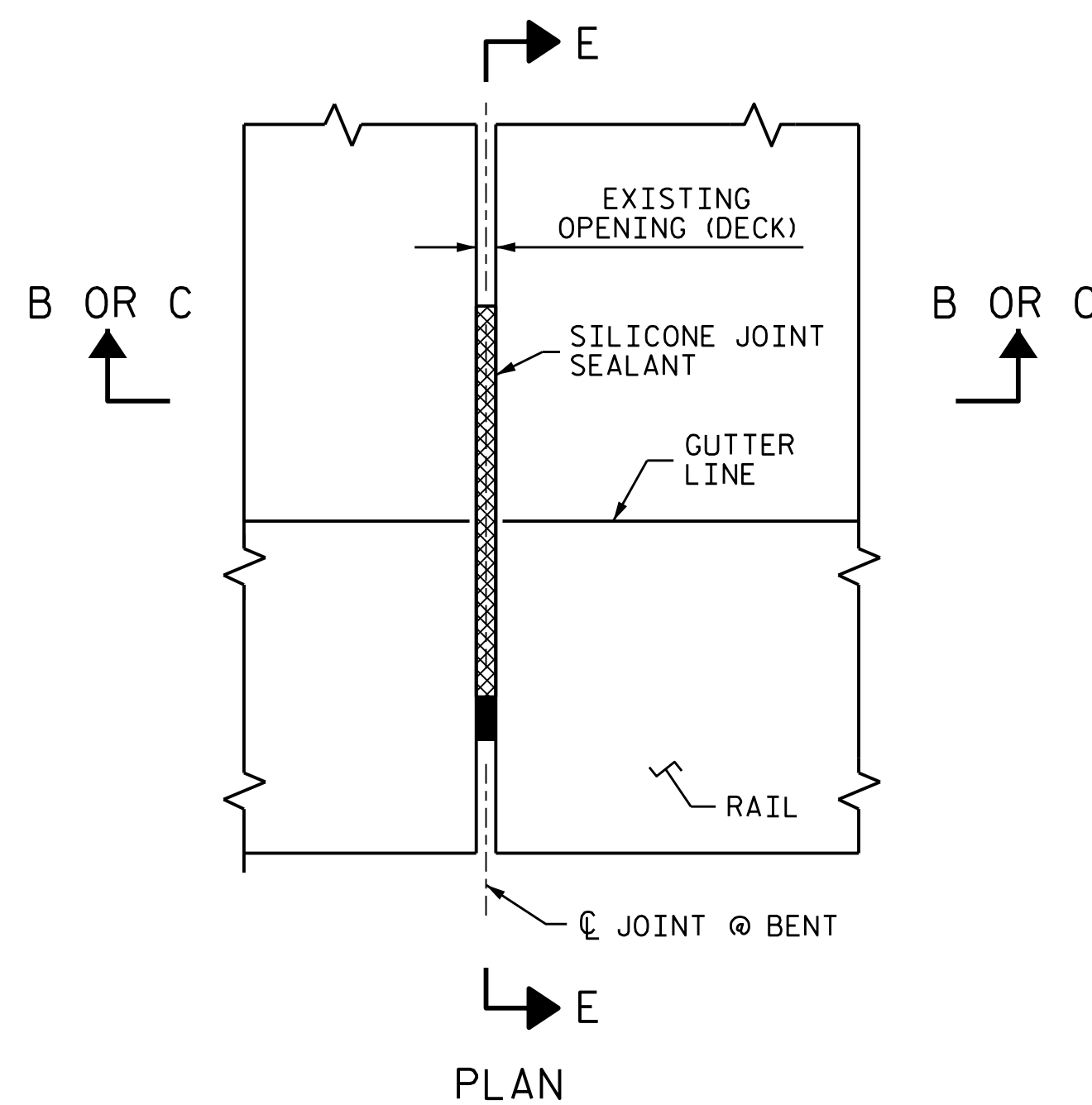


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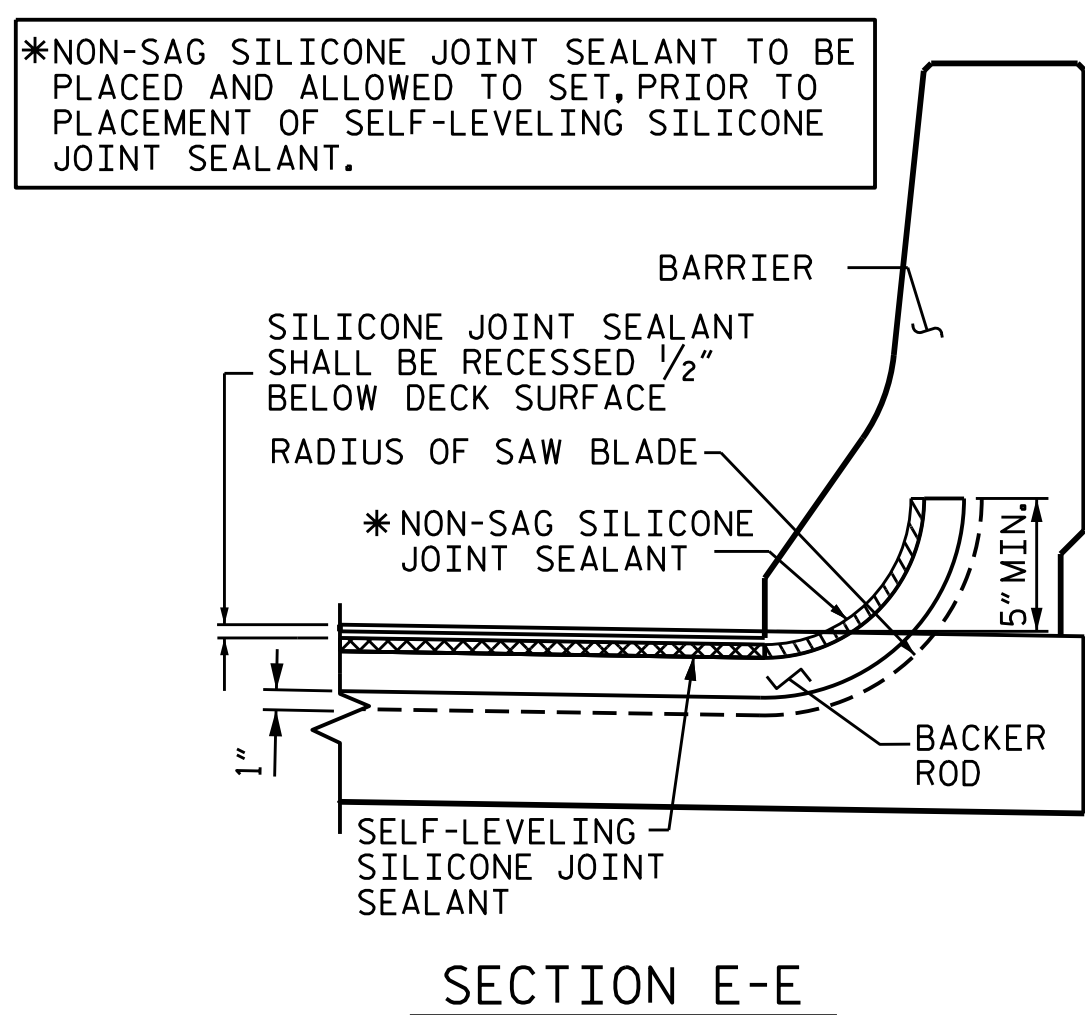


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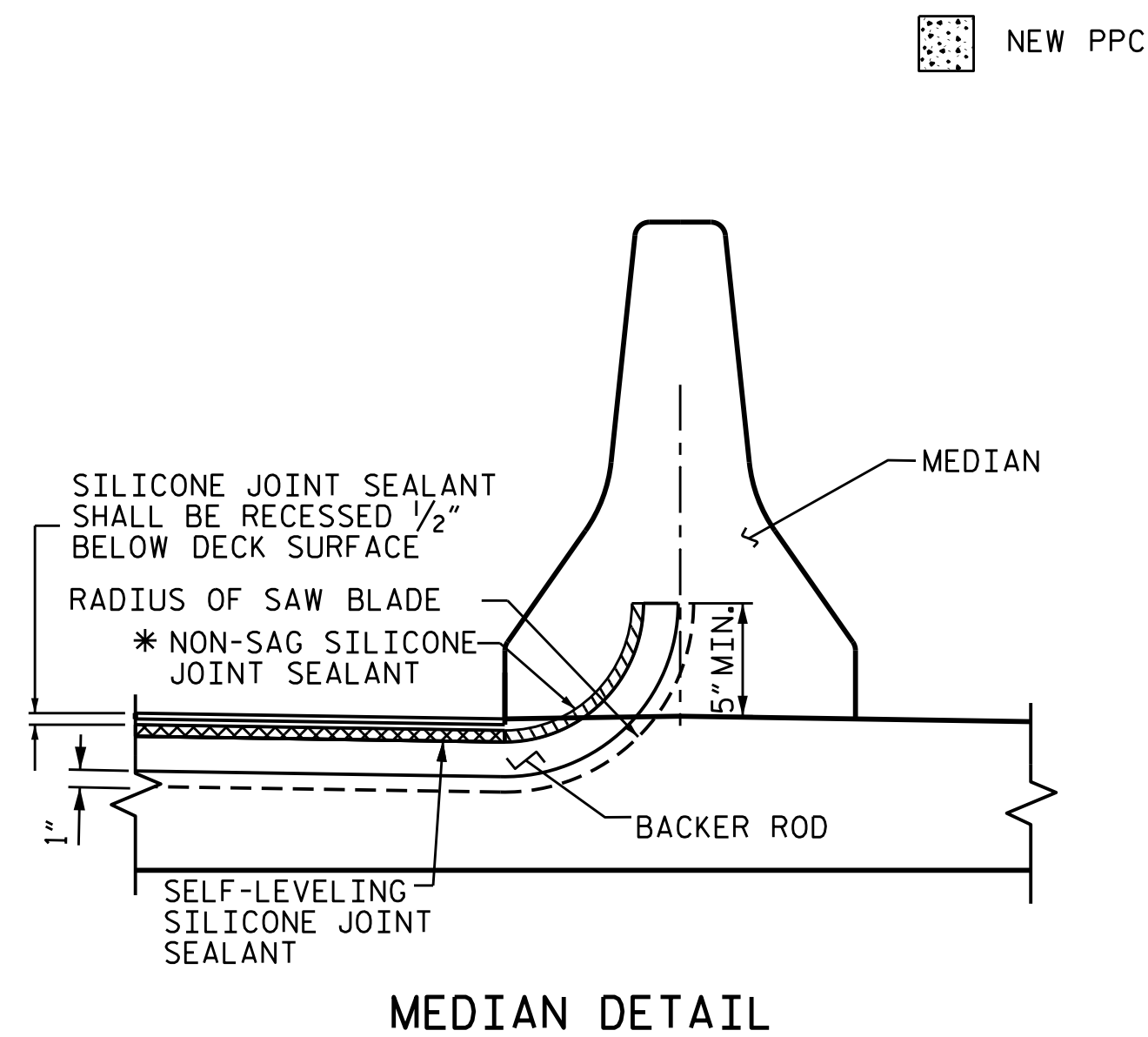
SECTION B-B



PLAN



SECTION E-E



MEDIAN DETAIL

NOTES

FOR SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.  
 THE INSTALLED SILICONE JOINT SEALS SHALL BE WATERTIGHT.  
 THE CONTRACTOR SHALL NOTE THE EXISTING JOINT OPENINGS PRIOR TO OVERLAYING THE PPC. THE FINAL JOINT OPENINGS SHALL BE SAW CUT TO MATCH THE EXISTING OPENINGS.  
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT OPENING IN LIEU OF SAWING THE JOINT

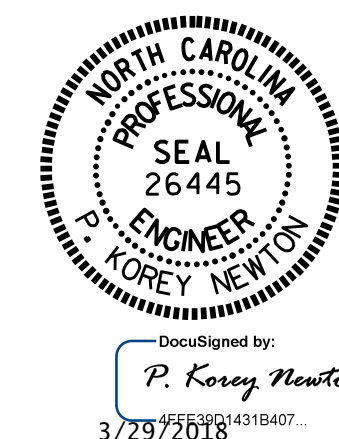
SILICONE JOINT SEALANT
LIN. FT
1632

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

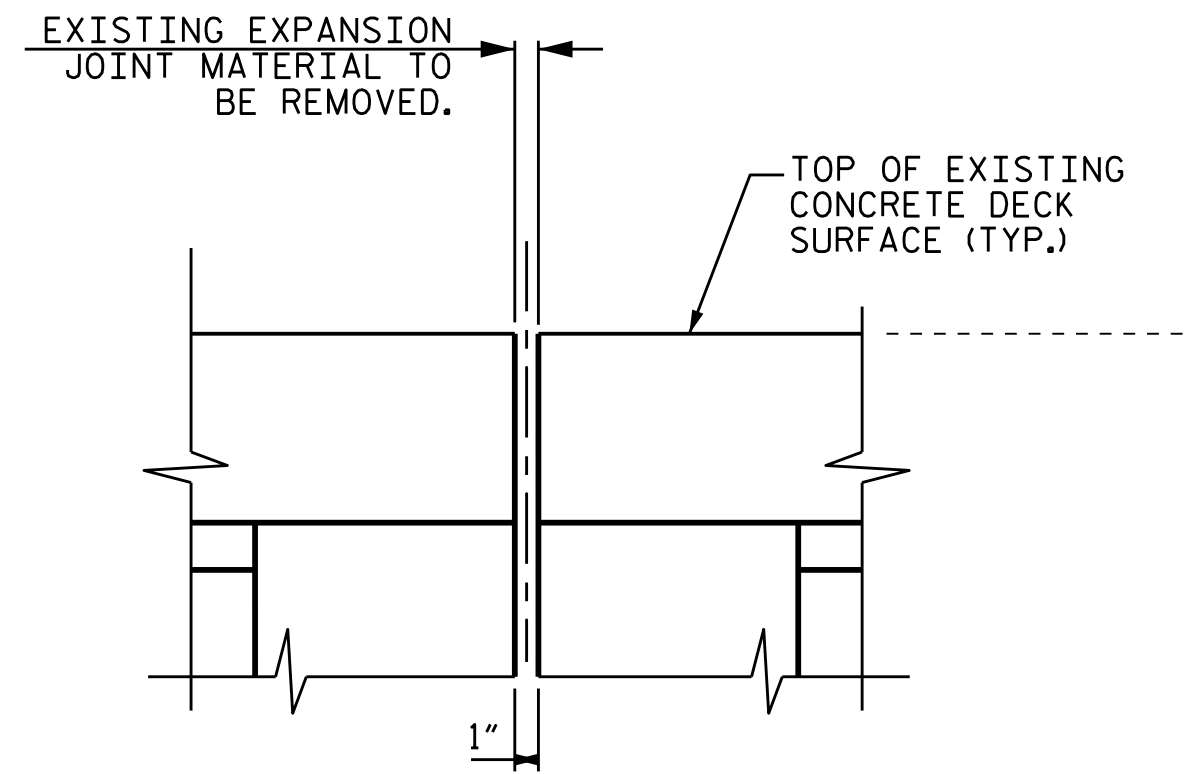
JOINT DETAILS



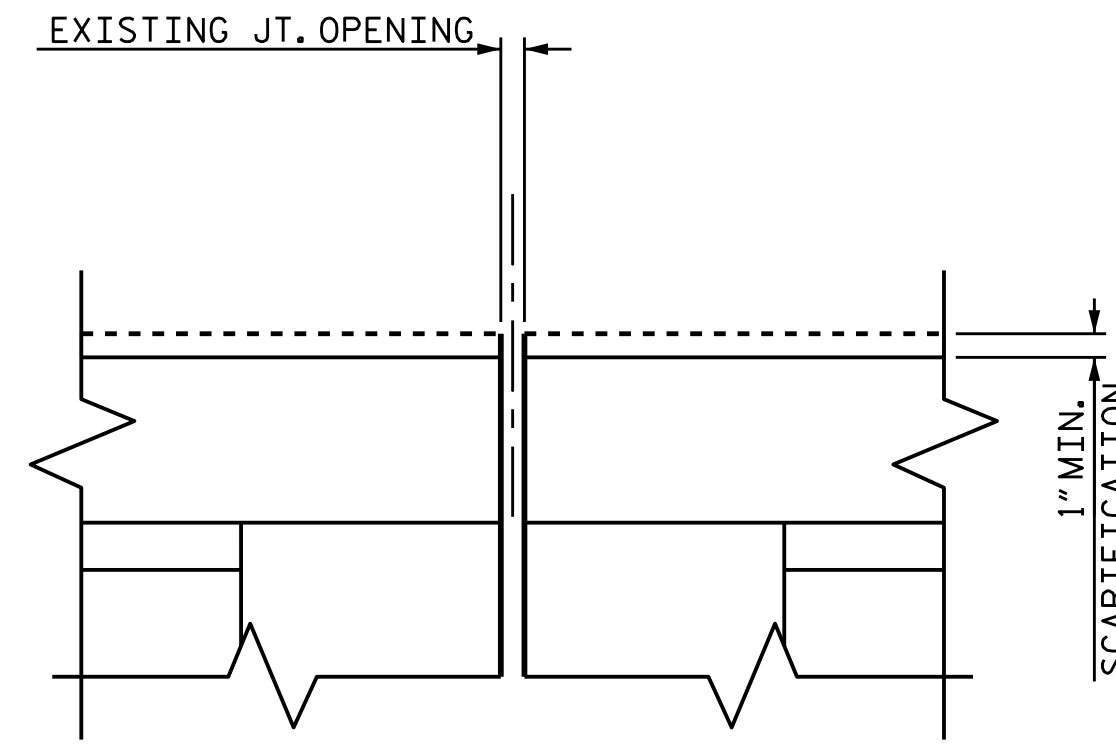
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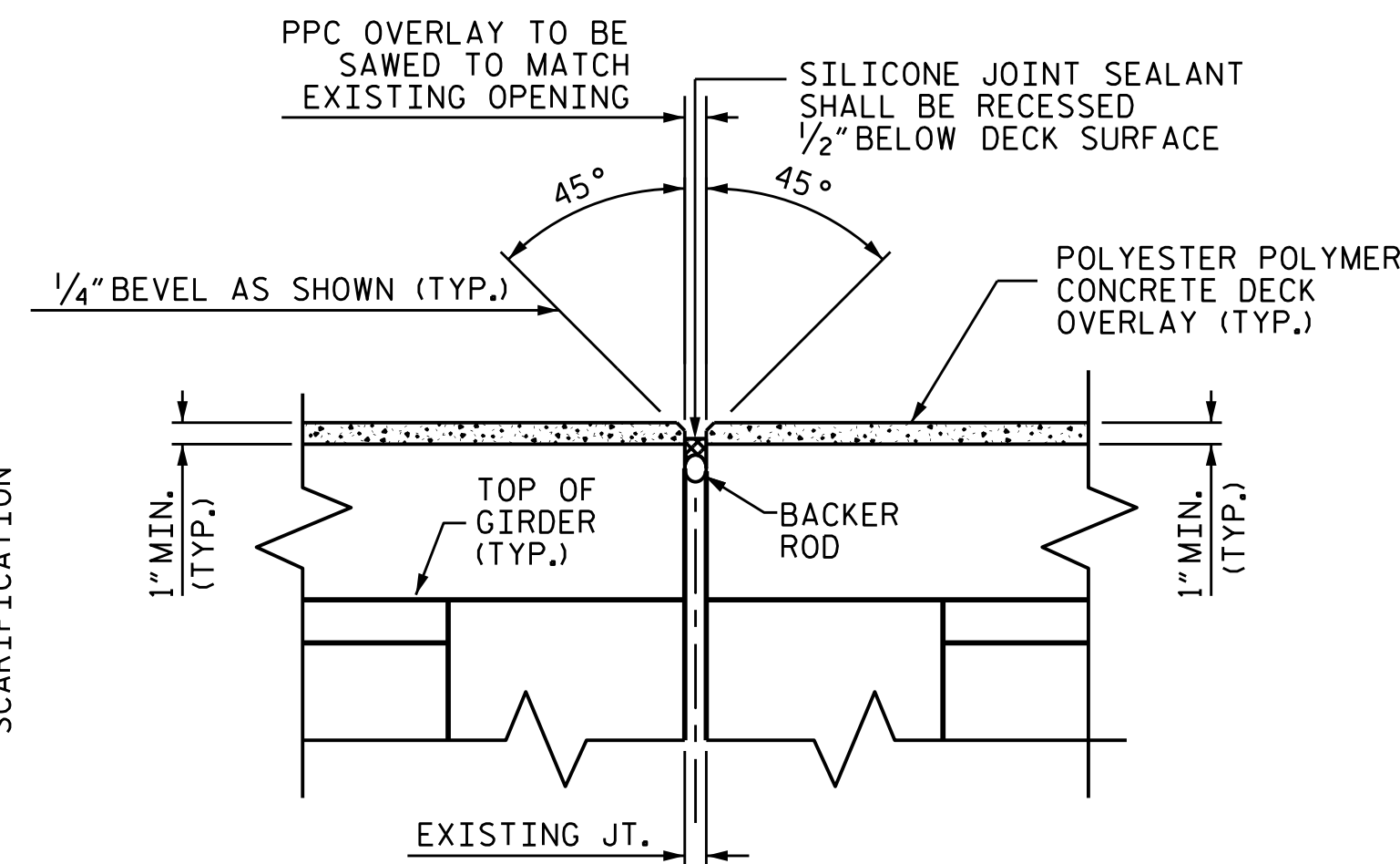
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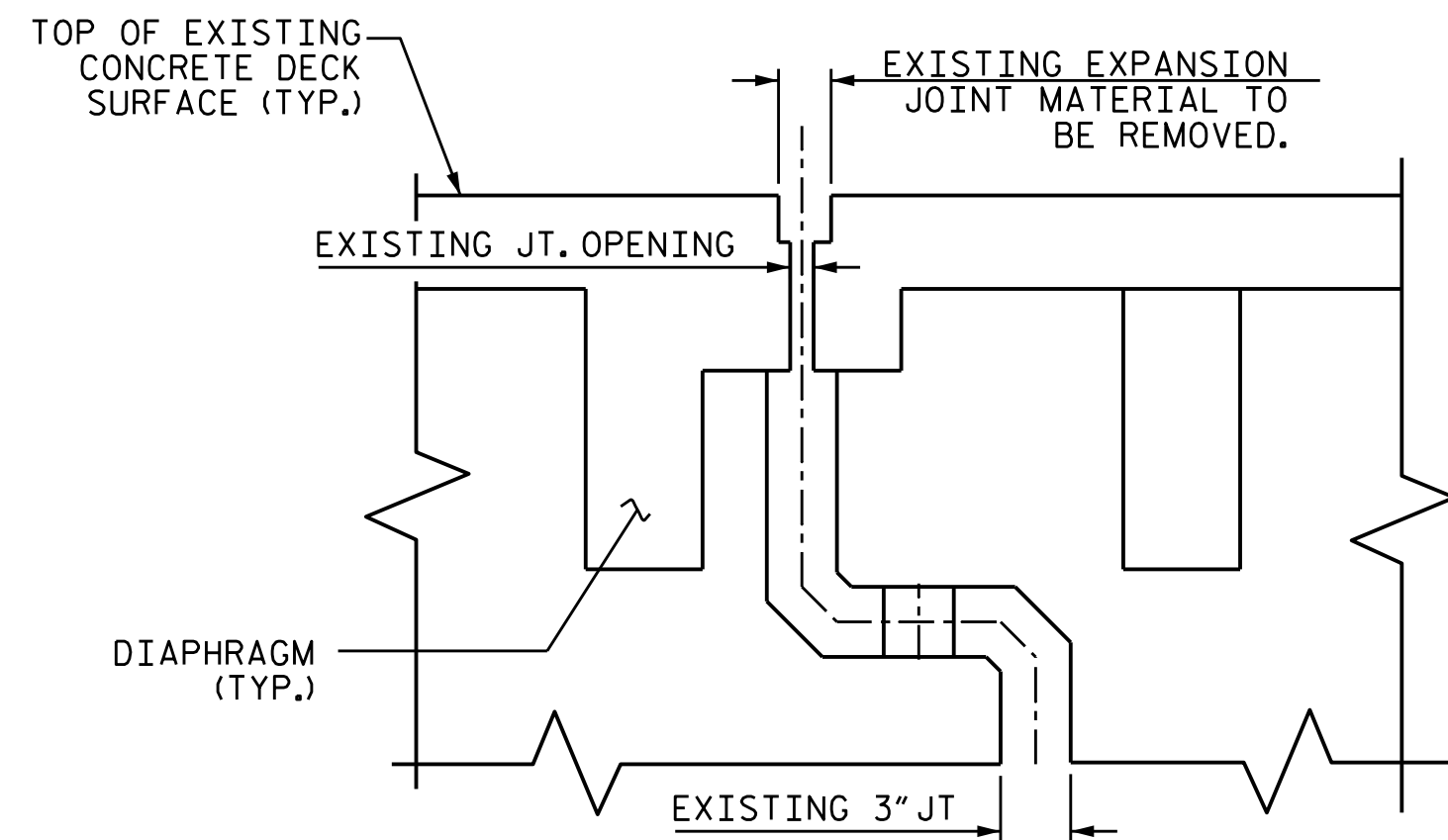


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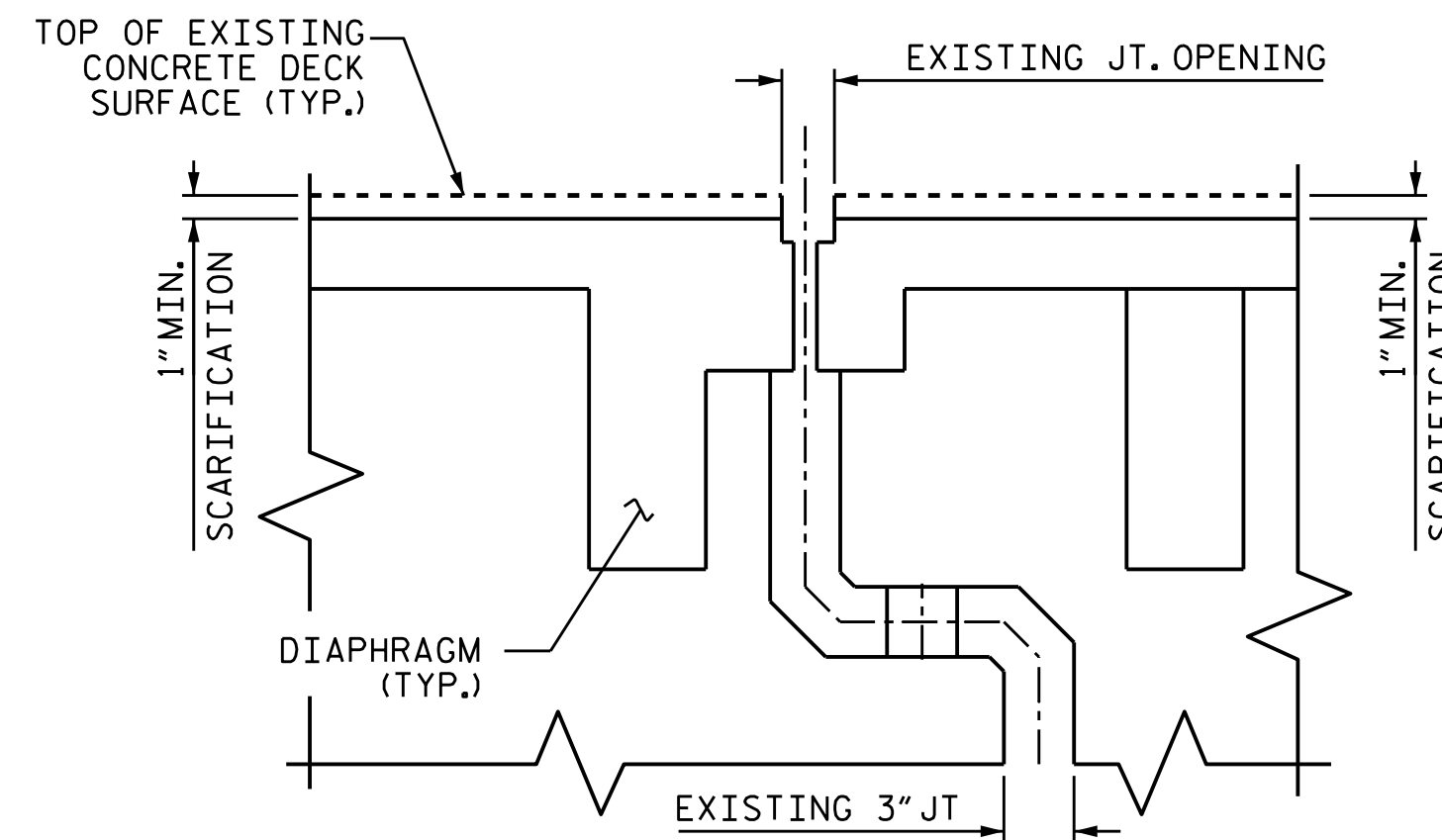


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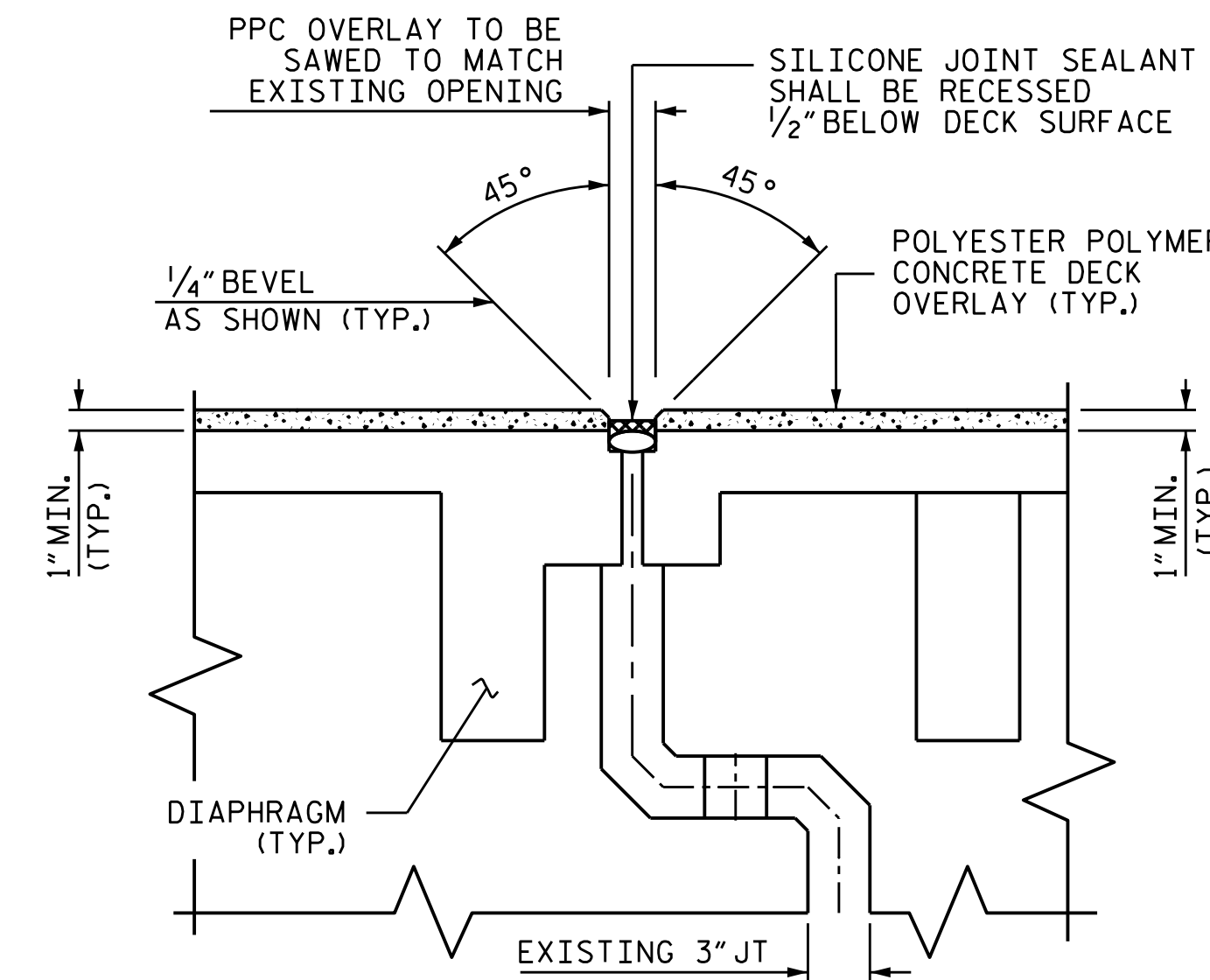
SECTION C-C



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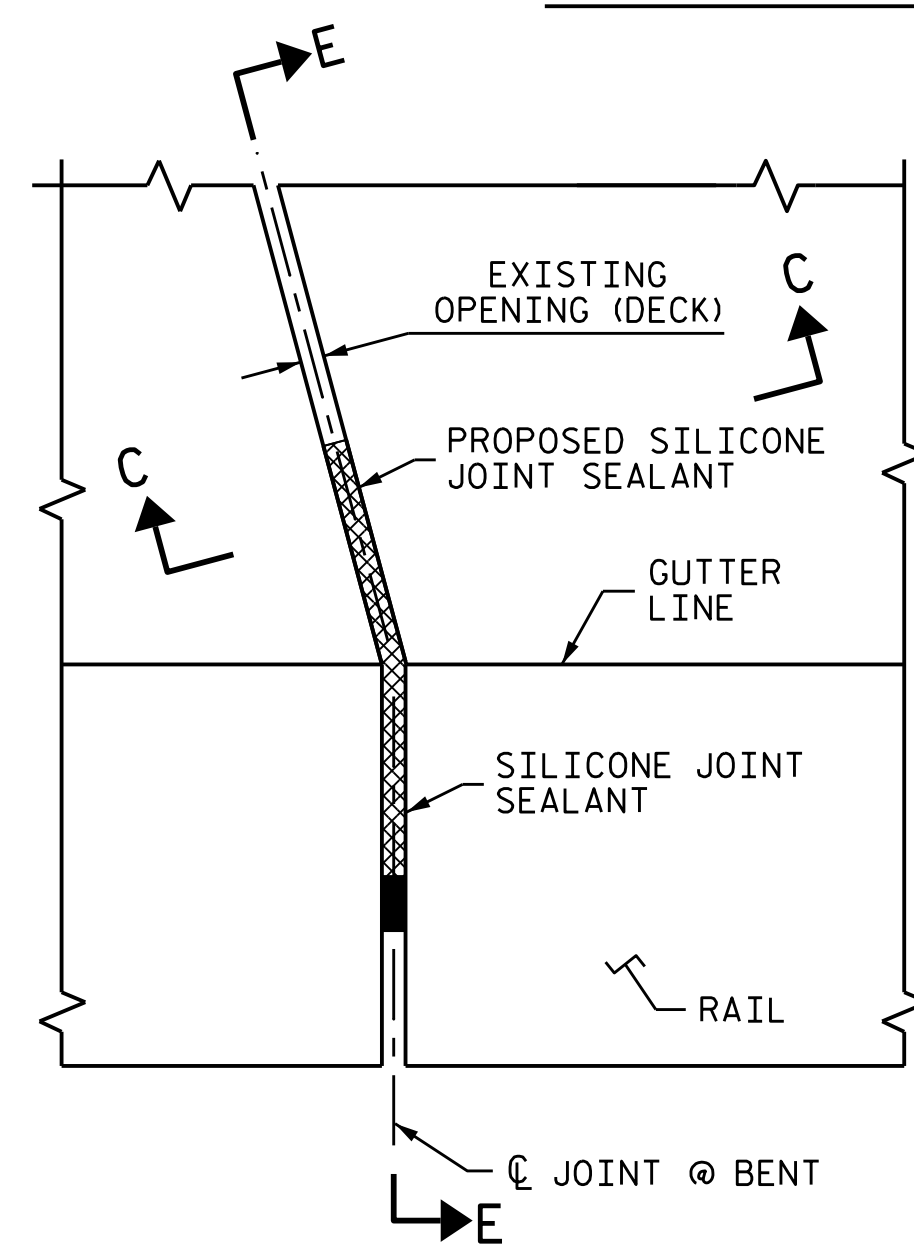


MINIMUM EXISTING JOINT DEMOLITION

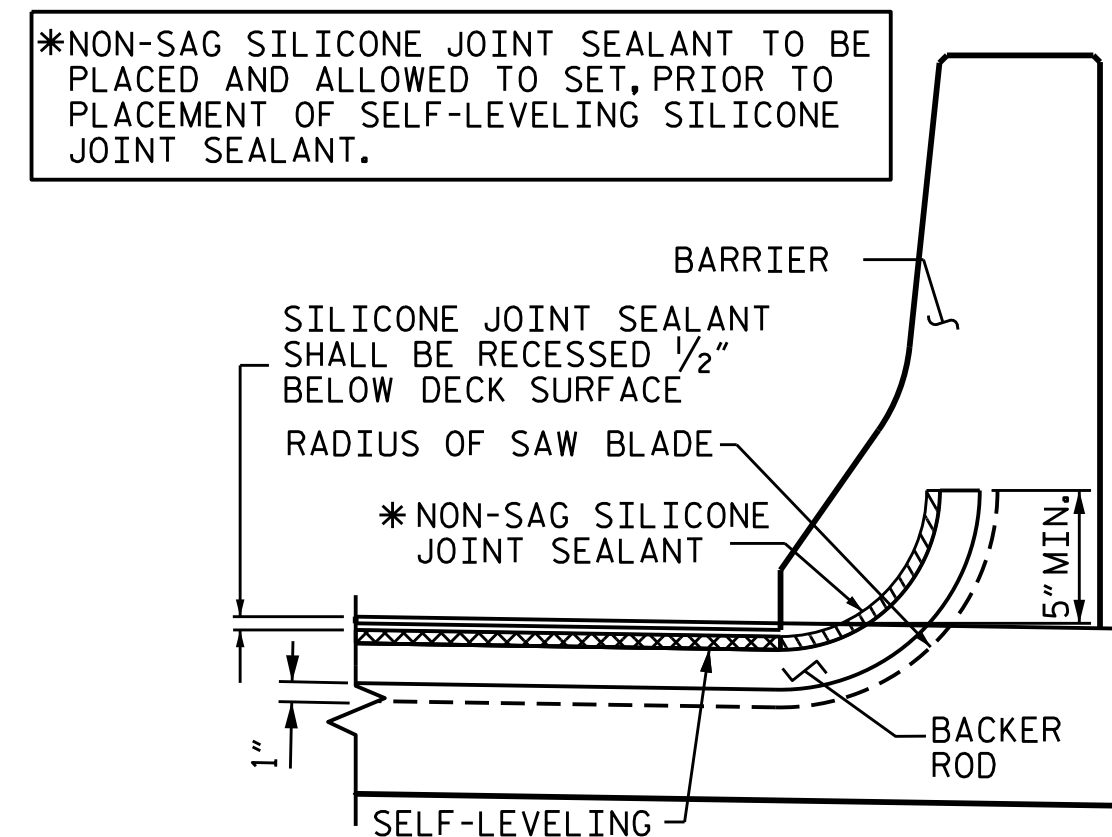


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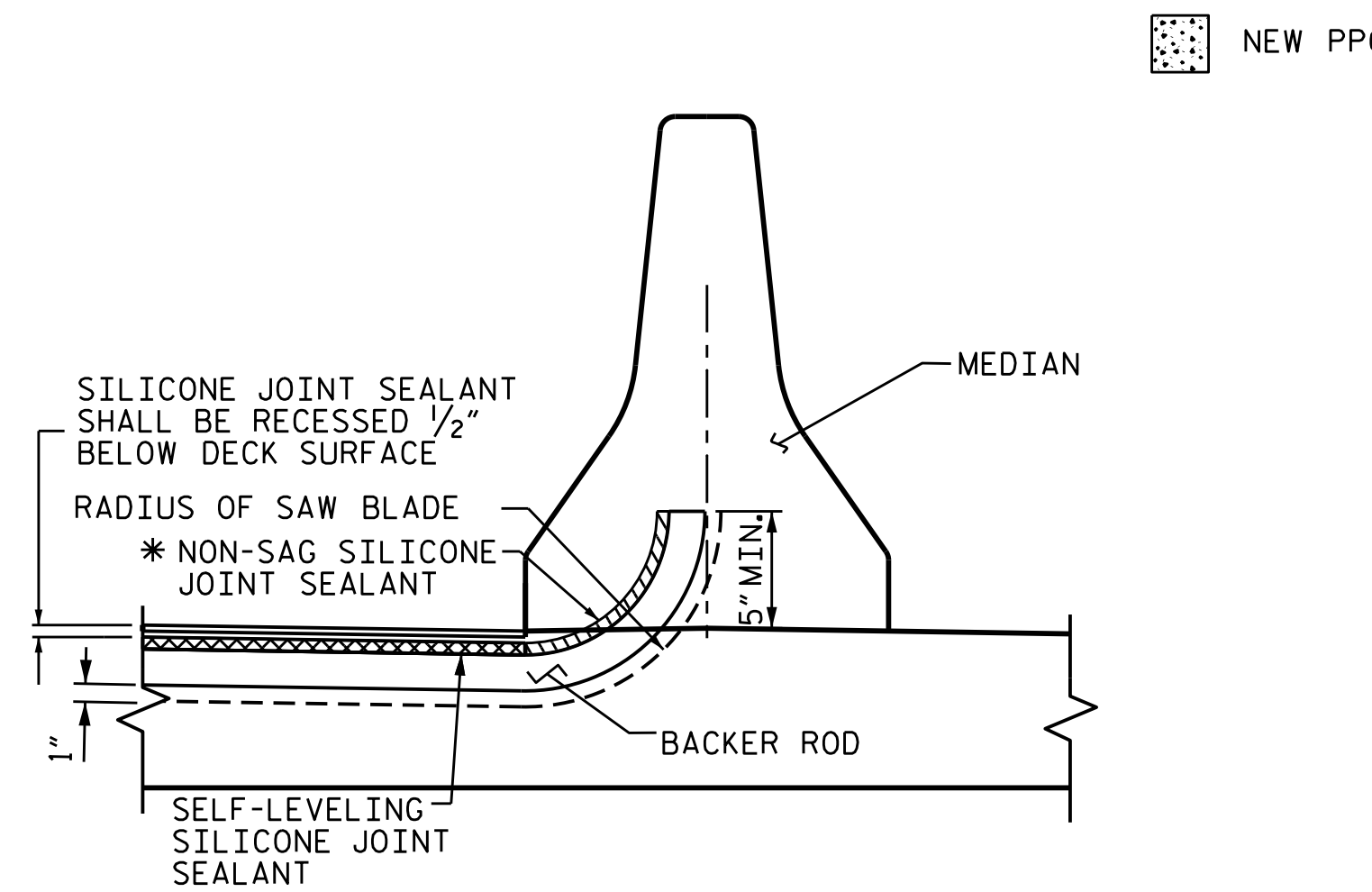
SECTION D-D (AT DROP-IN SECTION)



PLAN



SECTION E-E



MEDIAN DETAIL



DocuSigned by:  
P. Corey Newton  
3/29/2018

NOTES

FOR SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.  
THE INSTALLED SILICONE JOINT SEALS SHALL BE WATERTIGHT.  
THE CONTRACTOR SHALL NOTE THE EXISTING JOINT OPENINGS PRIOR TO OVERLAYING THE PPC. THE FINAL JOINT OPENINGS SHALL BE SAW CUT TO MATCH THE EXISTING OPENINGS.  
THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT OPENING IN LIEU OF SAWING THE JOINT.

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
BRIDGE NO. 15  
SHEET 2 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

JOINT DETAILS

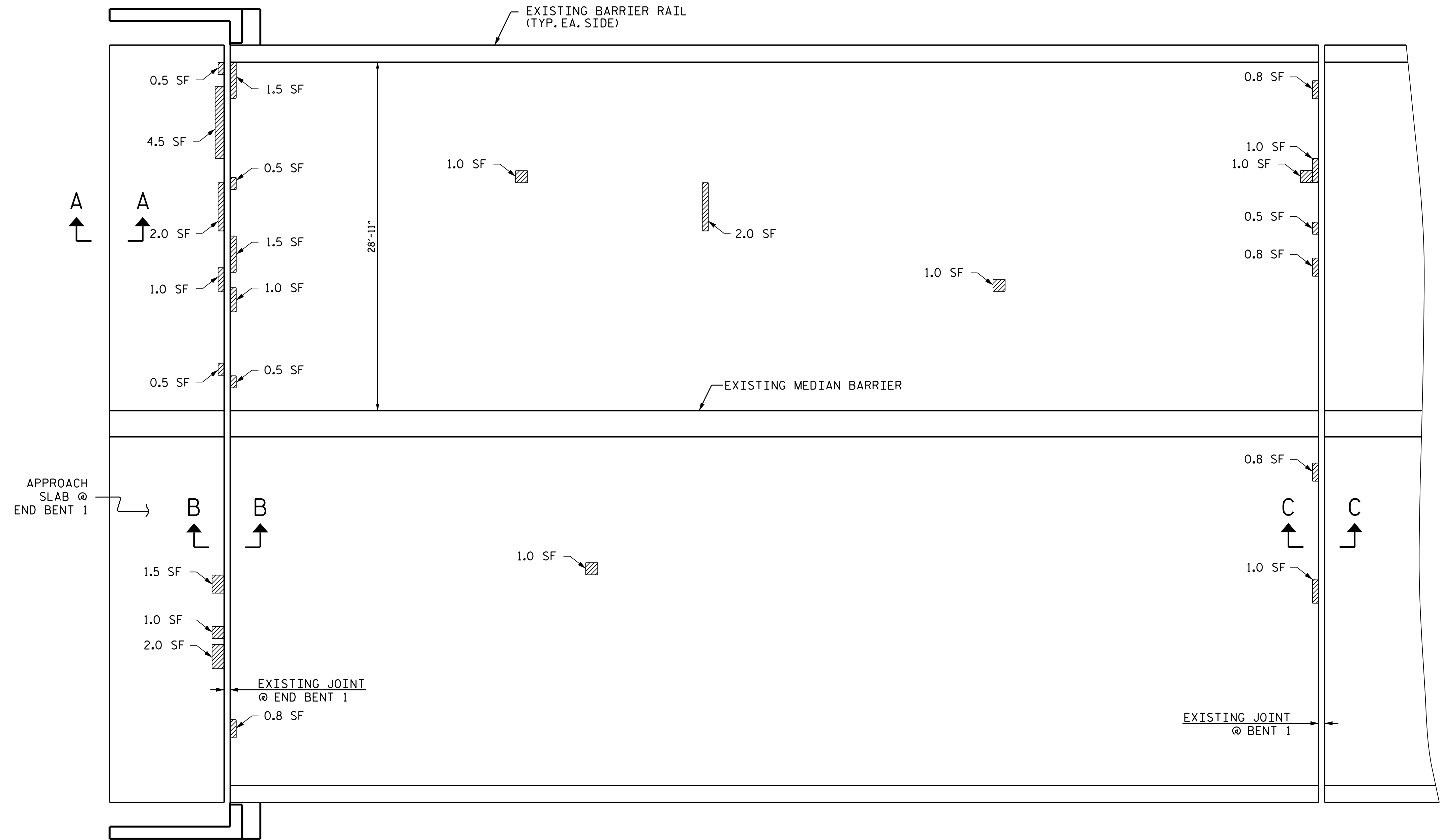
DRAWN BY : P.D. BRYANT DATE : 12/2017  
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1			3			TOTAL SHEETS
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glickey

AS-BUILT REPAIR QUANTITY TABLE		
TOP OF DECK REPAIRS		
APPROACH SLAB #1		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	64.0 SY	
CLASS II SURFACE PREPARATION	1.5 SY	
SHOTBLASTING BRIDGE DECK	64.0 SY	
PPC MATERIALS	1.78 CY	
PLACING & FINISHING PPC OVERLAY	64.0 SY	
BRIDGE DECK GROOVING	546.0 SF	
CONCRETE FOR DECK REPAIR	1.5 SY	
SPAN 1		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	581.0 SY	
CLASS II SURFACE PREPARATION	1.9 SY	
SHOTBLASTING BRIDGE DECK	581.0 SY	
PPC MATERIALS	16.14 CY	
PLACING & FINISHING PPC OVERLAY	581.0 SY	
BRIDGE DECK GROOVING	4958.0 SF	
CONCRETE FOR DECK REPAIR	1.9 SY	



PLAN

**NOTES**  
 FOR SECTION A-A, B-B AND C-C, SEE "JOINT DETAILS" SHEET.

- CLASS II SURFACE PREPARATION

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 1 OF 27



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 A.S.#1 & SPAN 1

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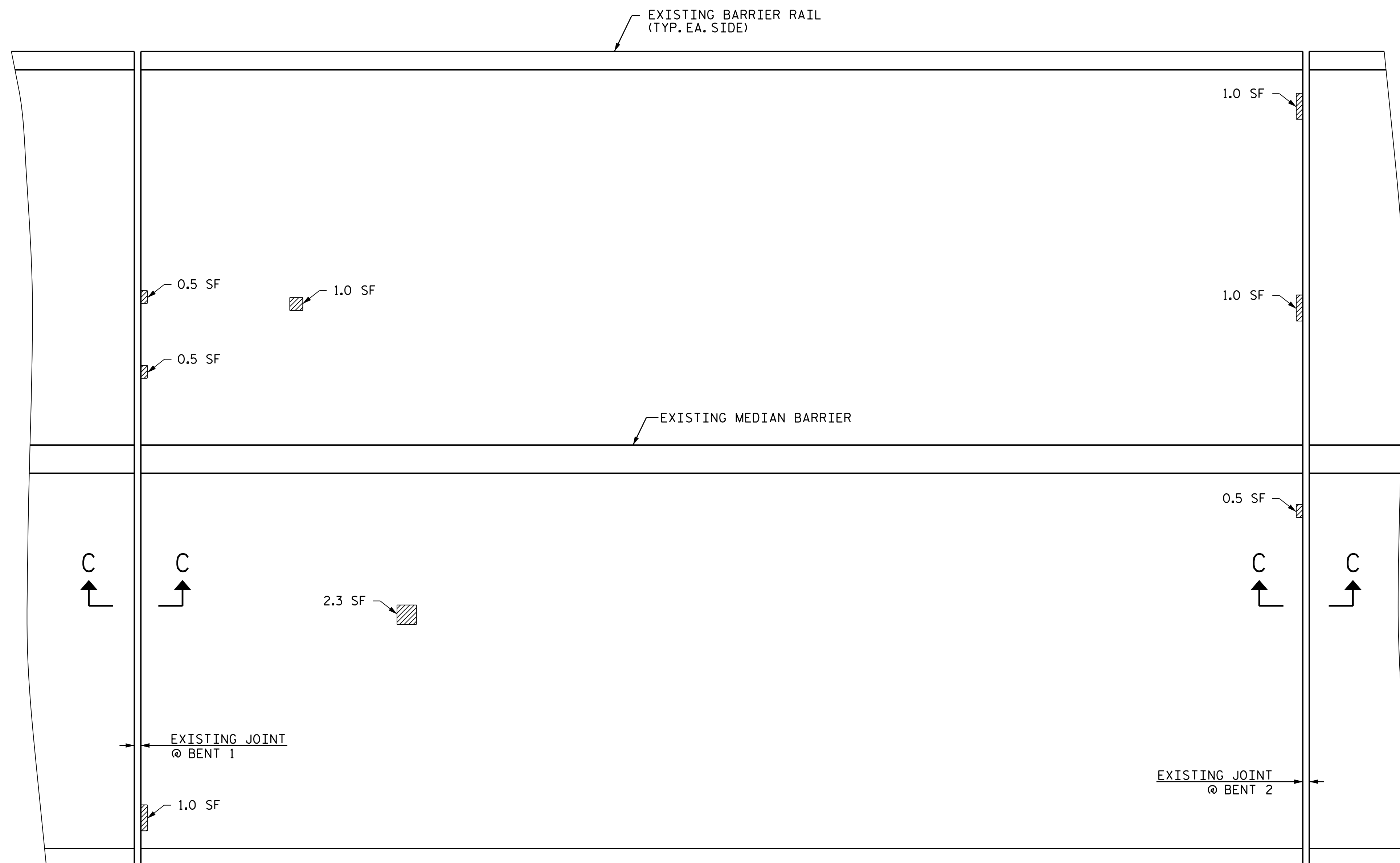


AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 2		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	0.9 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	0.9 SY	

NOTES

FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.

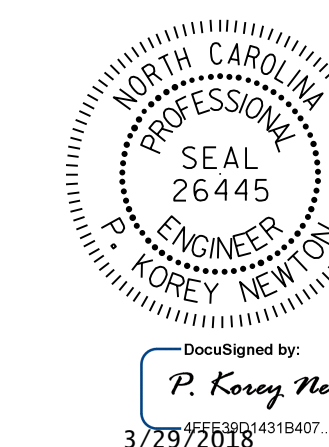


 - CLASS II SURFACE PREPARATION

PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 2 OF 27



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
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 PPC OVERLAY  
 SPAN 2

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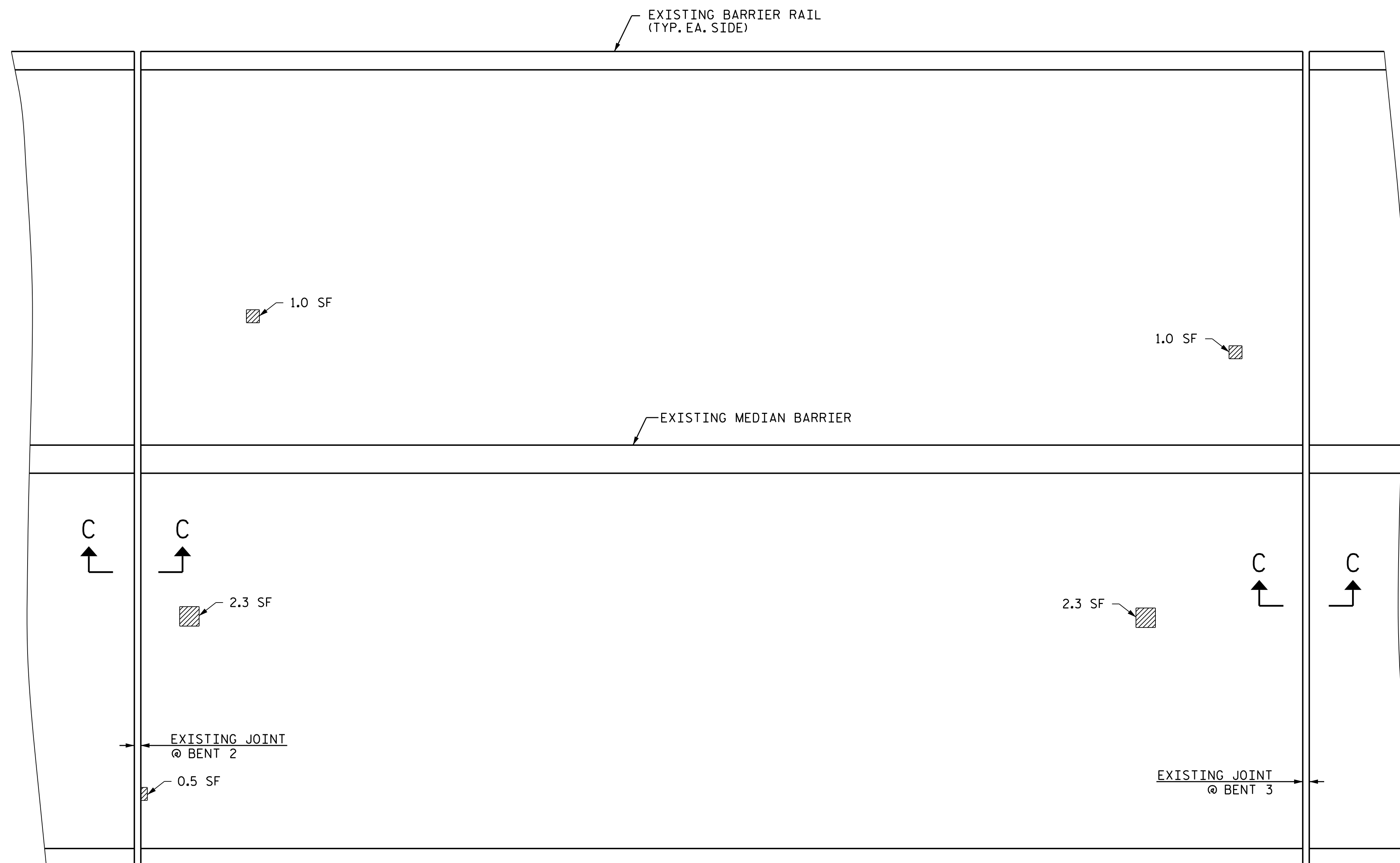


AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 3		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	0.8 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	0.8 SY	

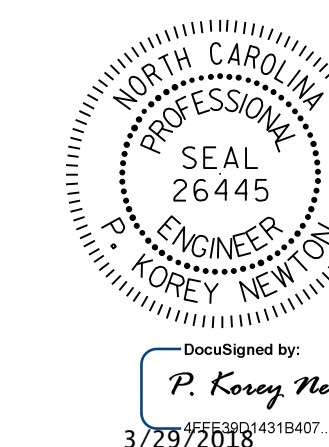
NOTES

FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.



PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 3

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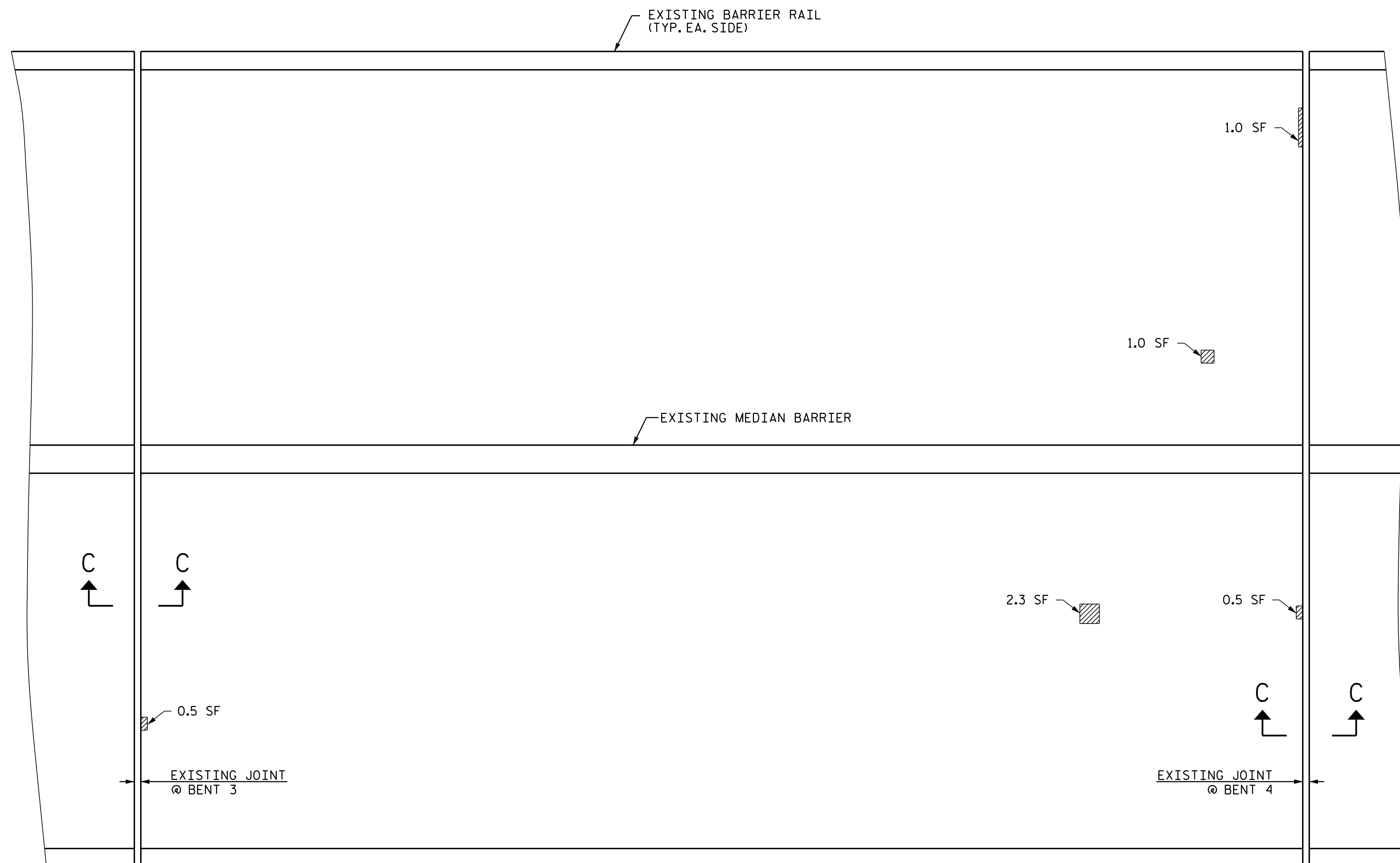
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AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 4		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	0.6 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	0.6 SY	

NOTES

FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.



- CLASS II SURFACE PREPARATION

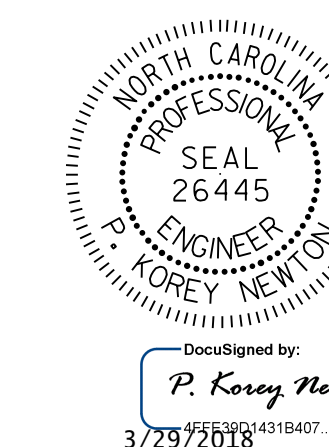
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PROJECT NO. 15BPR.7

CURRITUCK COUNTY

BRIDGE NO. 15

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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 4

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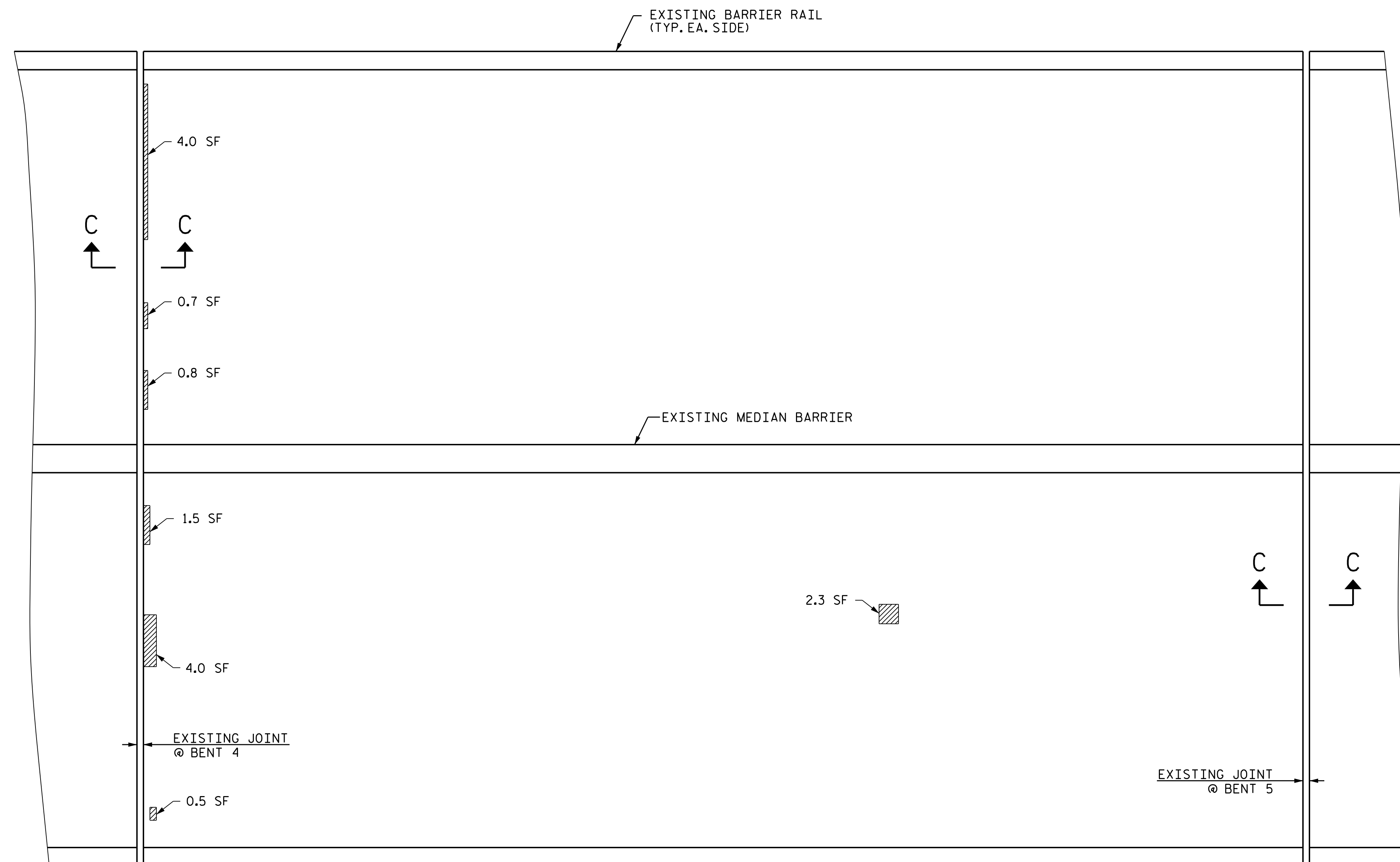
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AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 5		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	1.6 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	1.6 SY	

NOTES

FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.

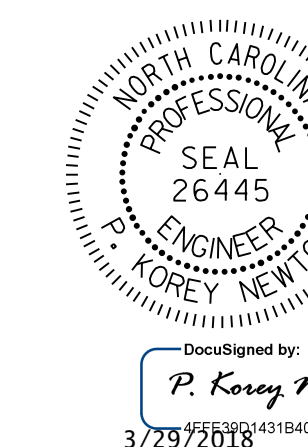


 - CLASS II SURFACE PREPARATION

PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 5 OF 27



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STATE OF NORTH CAROLINA  
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 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 5

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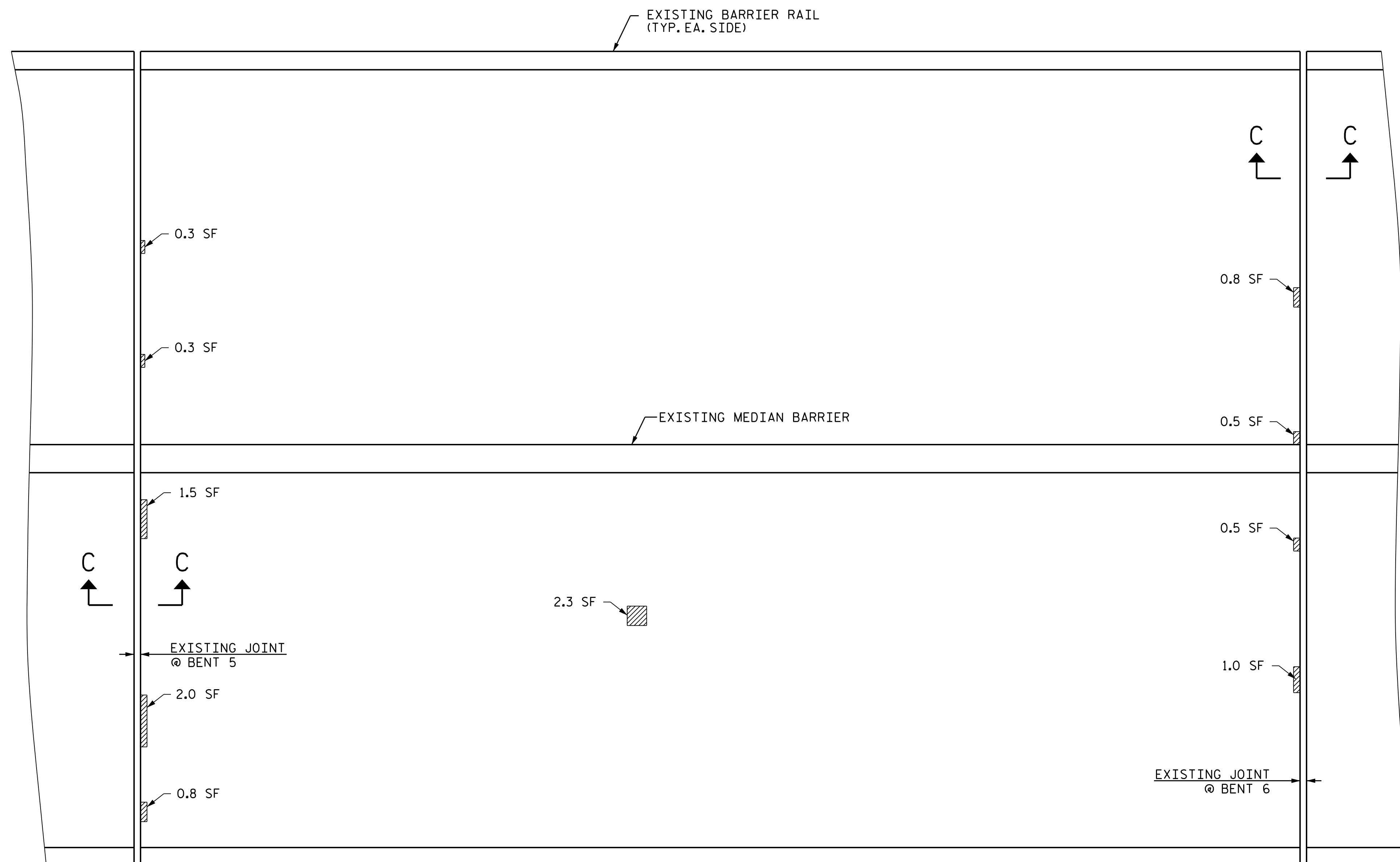
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AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 6		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	1.2 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	1.2 SY	

NOTES

FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.



PLAN

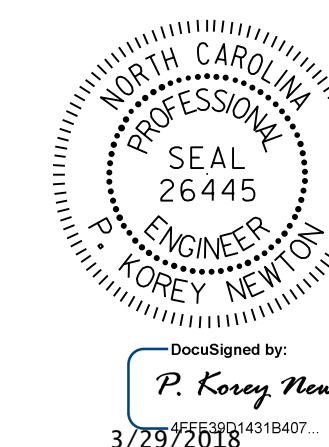
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PROJECT NO. 15BPR.7

CURRITUCK COUNTY

BRIDGE NO. 15

SHEET 6 OF 27



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STATE OF NORTH CAROLINA  
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RALEIGH  
SURFACE PREPARATION  
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PPC OVERLAY  
SPAN 6

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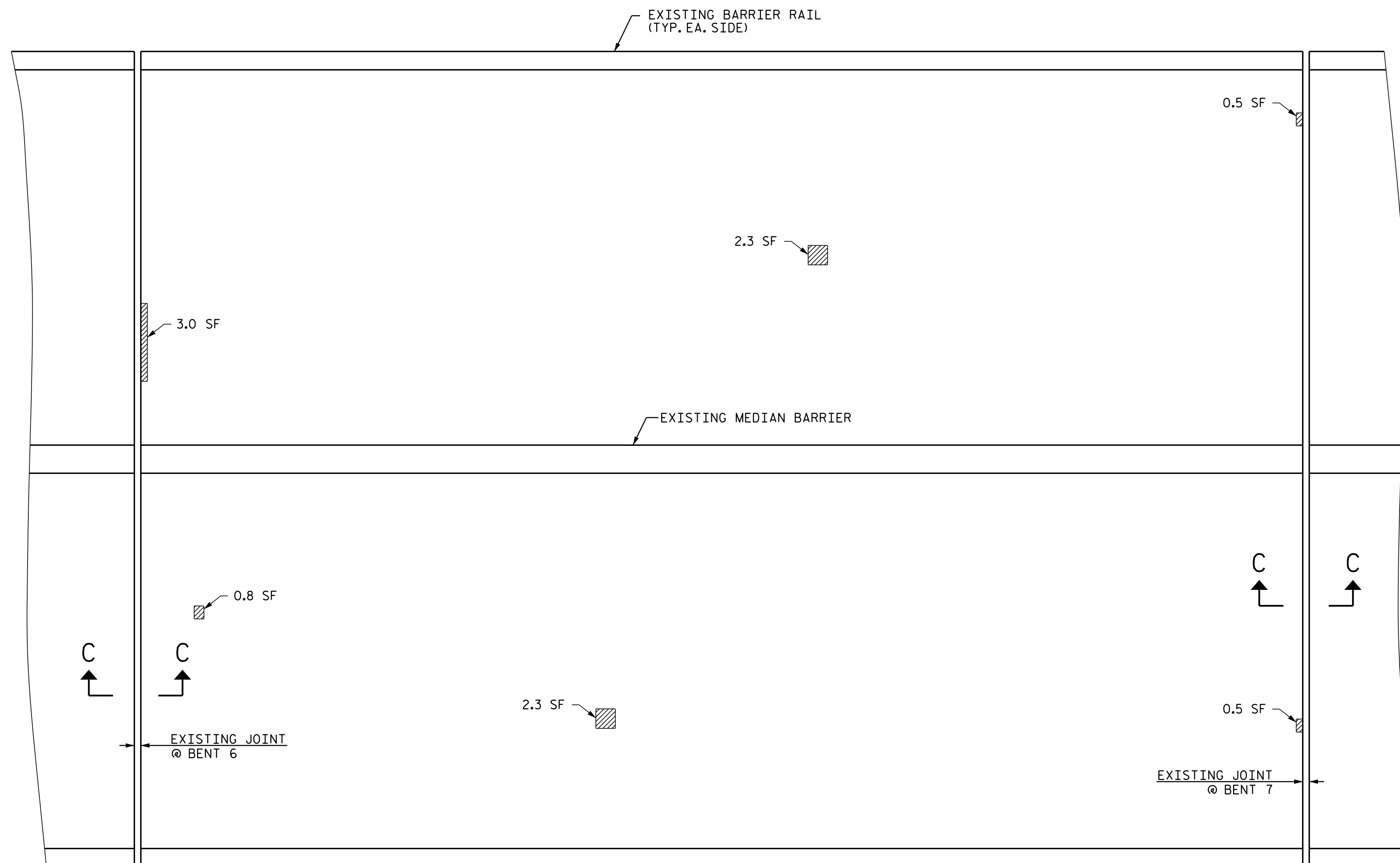


AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 7		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	1.1 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	1.1 SY	

NOTES

FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.

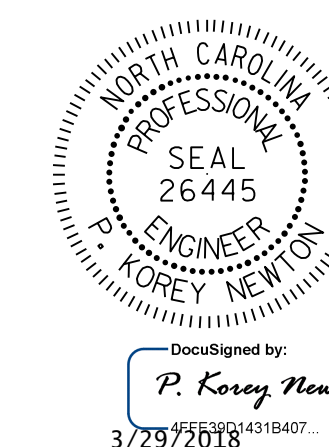


 - CLASS II SURFACE PREPARATION

PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 7 OF 27



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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 7

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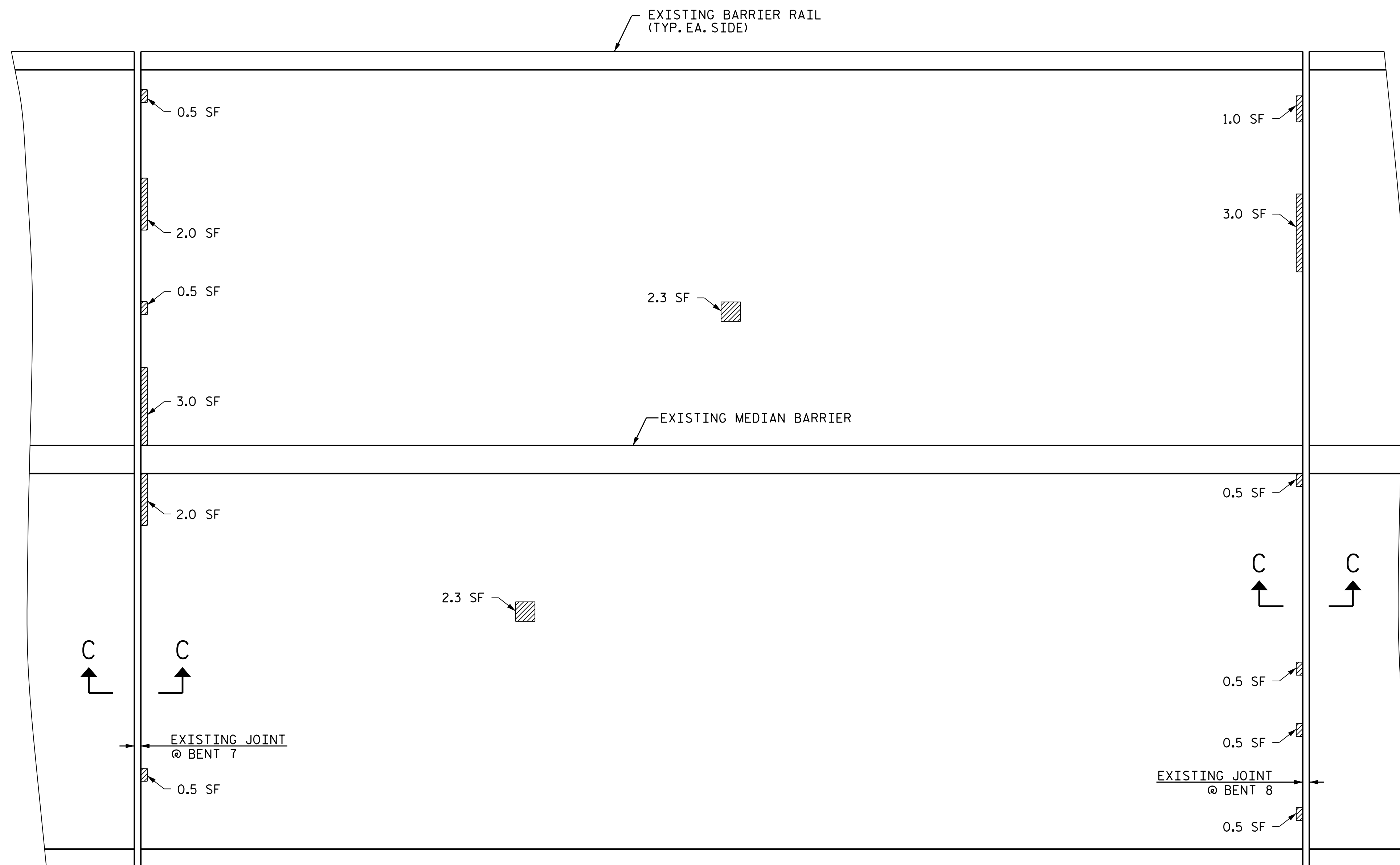
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AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 8		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	2.2 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	2.2 SY	

NOTES

FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.



PLAN

- CLASS II SURFACE PREPARATION

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
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 SHEET 8 OF 27



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 8

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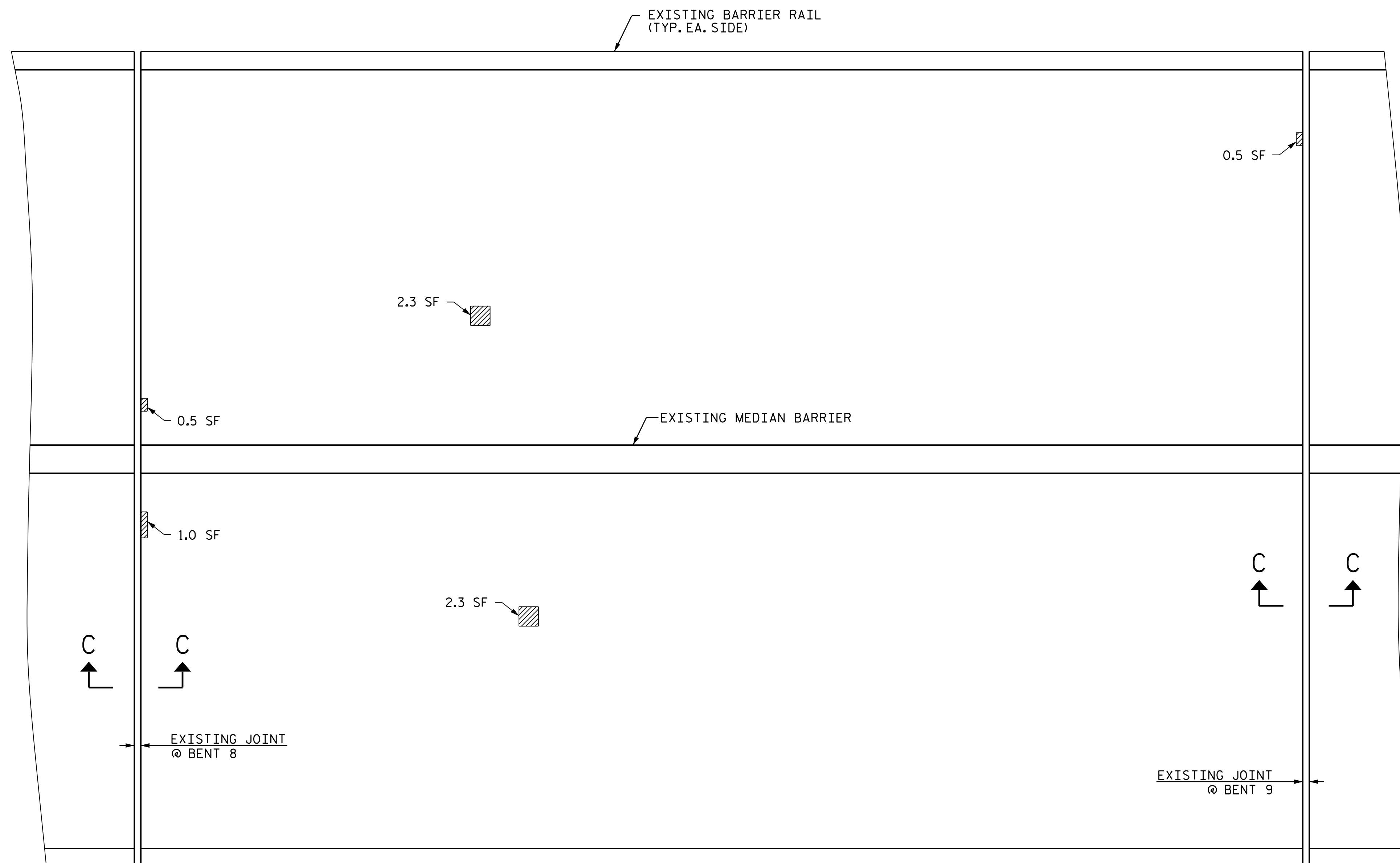
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AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 9		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	0.8 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	0.8 SY	

NOTES

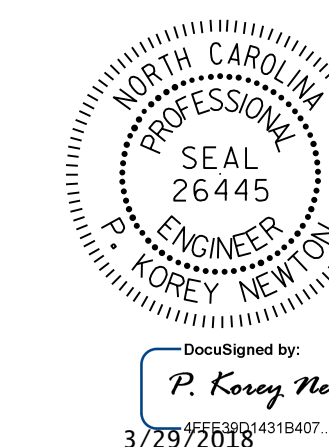
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PLAN

- CLASS II SURFACE PREPARATION

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 9

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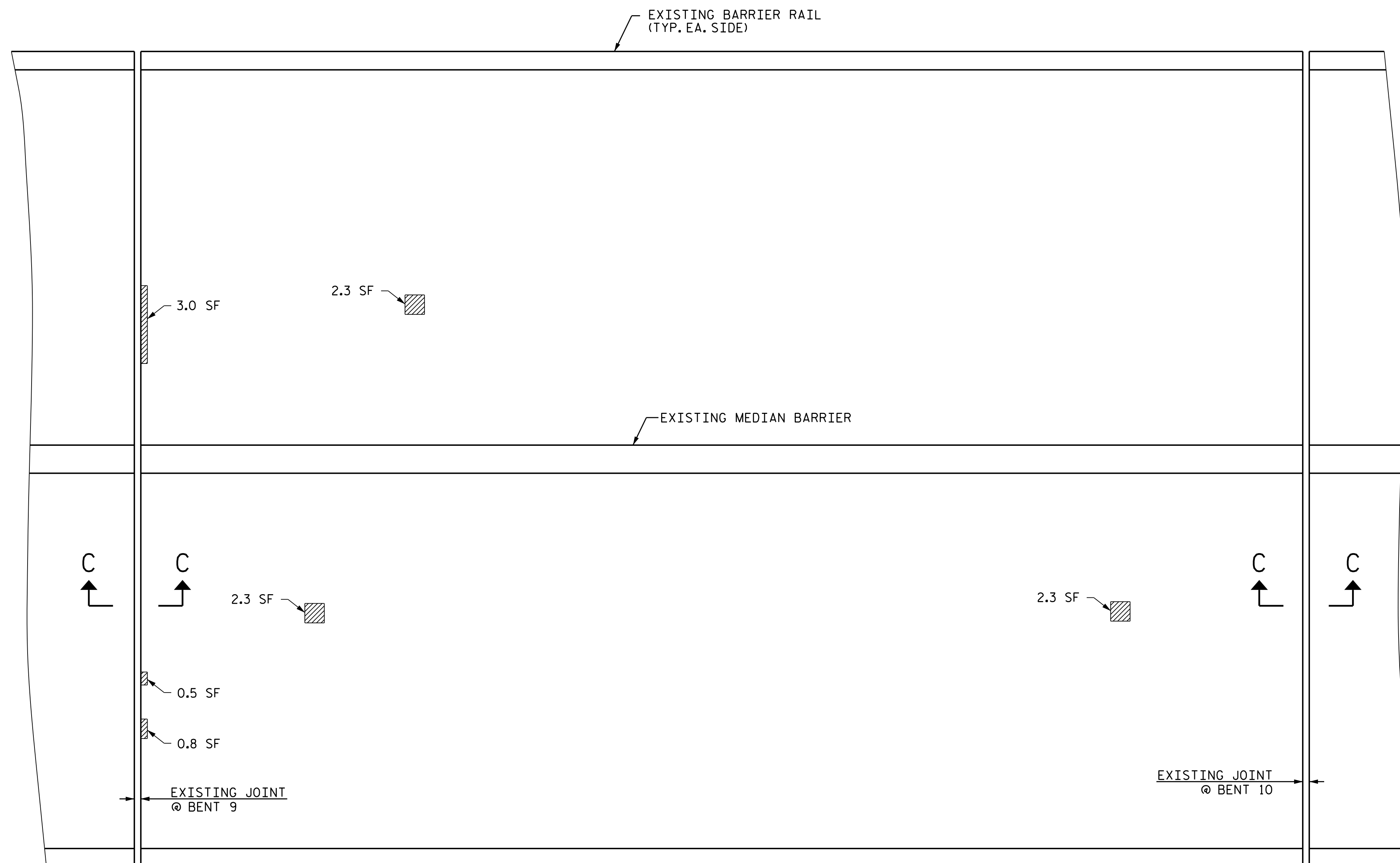
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AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 10		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	1.3 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	1.3 SY	

NOTES

FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.

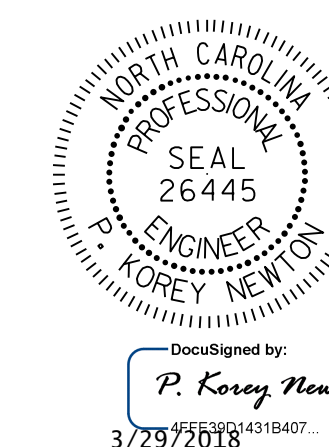


 - CLASS II SURFACE PREPARATION

PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 10 OF 27



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 10

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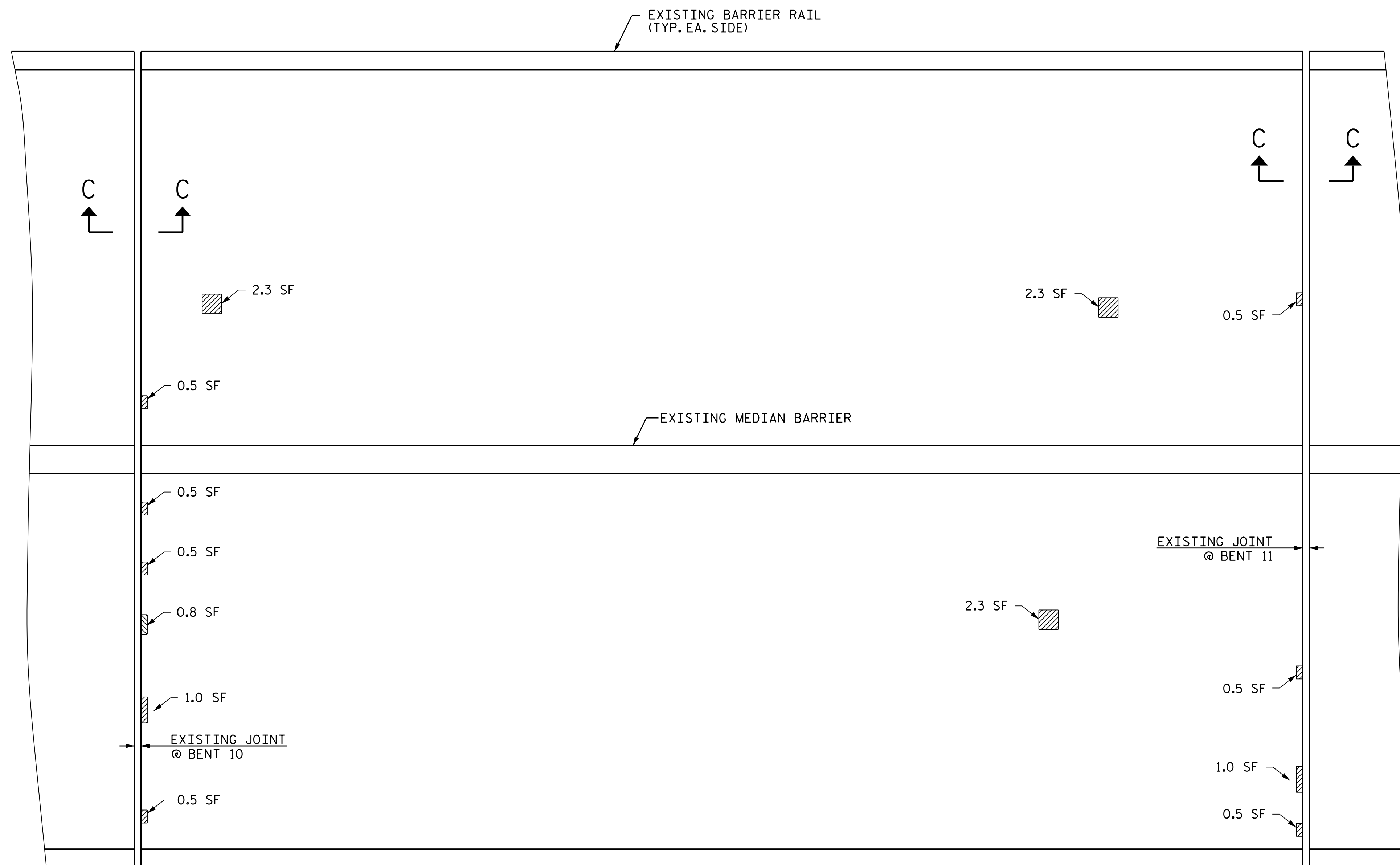


AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 11		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	1.5 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	1.5 SY	

NOTES

FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.

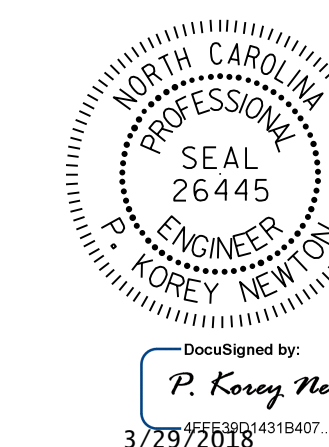


 - CLASS II SURFACE PREPARATION

PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 11**

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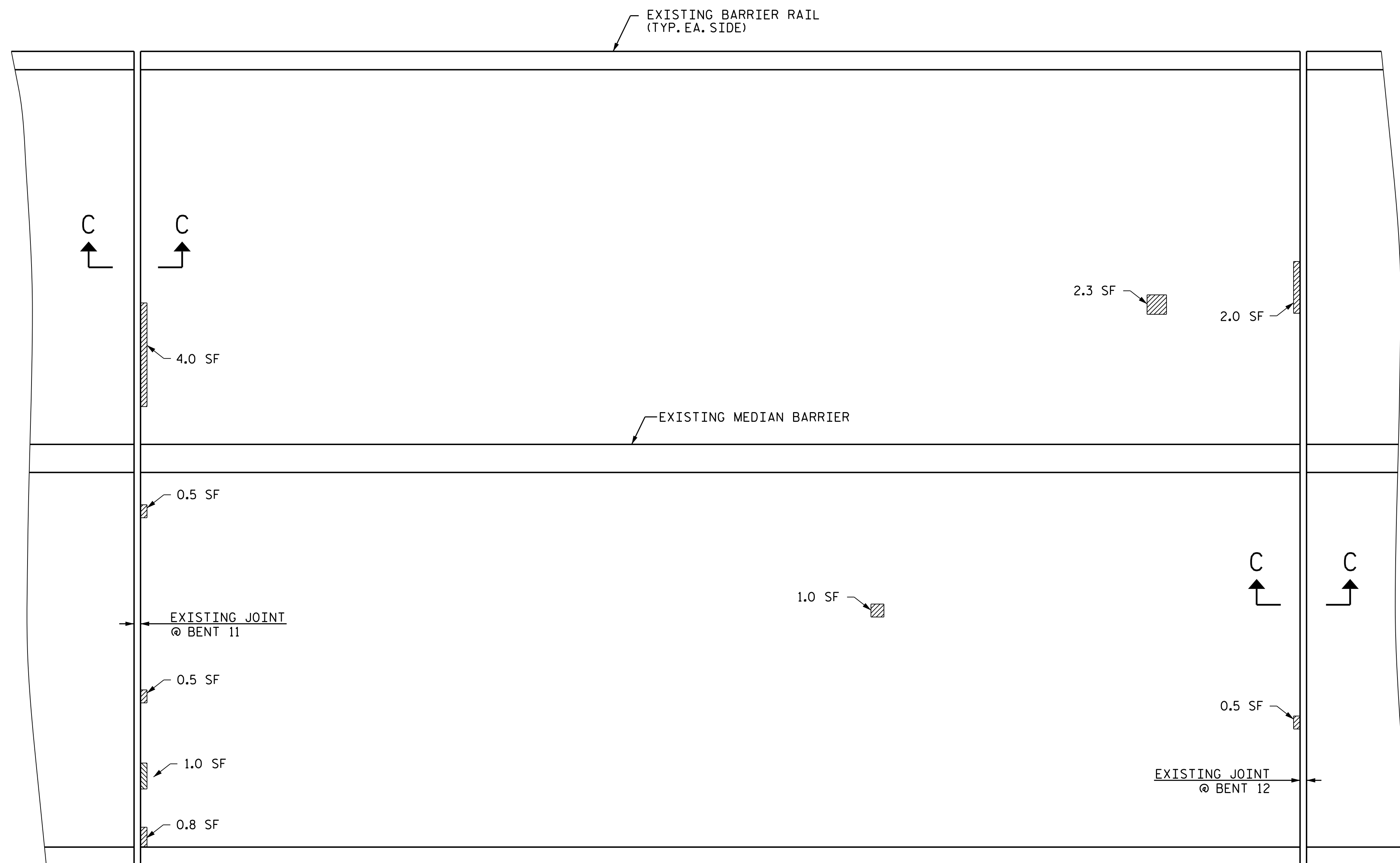
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AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 12		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	1.4 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	1.4 SY	

NOTES

FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.



- CLASS II SURFACE PREPARATION

PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 12

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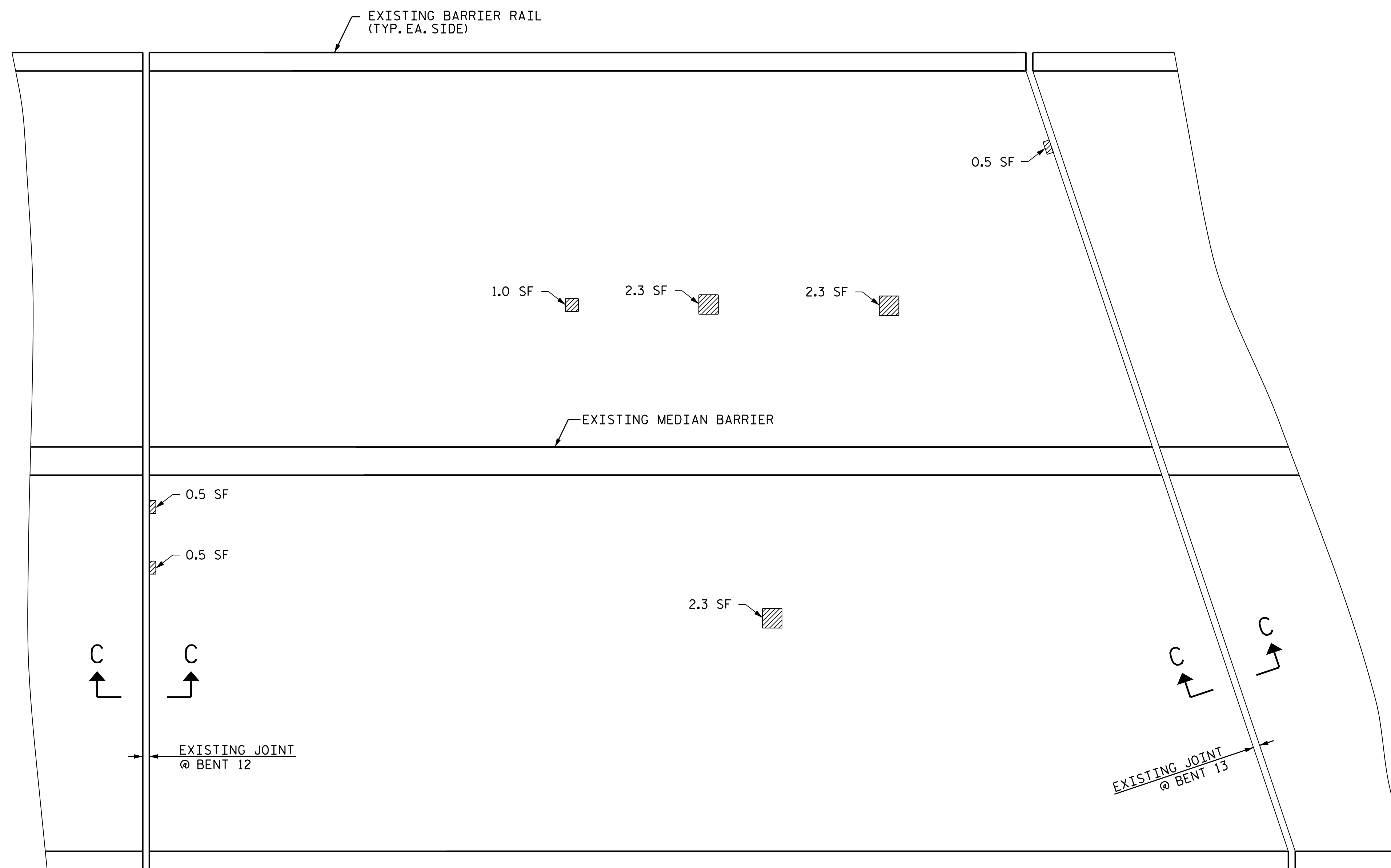
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AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 13		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	500.7 SY	
CLASS II SURFACE PREPARATION	1.1 SY	
SHOTBLASTING BRIDGE DECK	500.7 SY	
PPC MATERIALS	13.91 CY	
PLACING & FINISHING PPC OVERLAY	500.7 SY	
BRIDGE DECK GROOVING	4272.4 SF	
CONCRETE FOR DECK REPAIR	1.1 SY	

NOTES

FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.

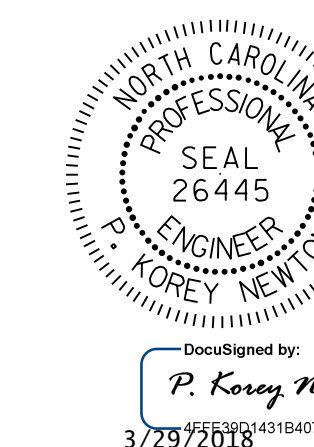


- CLASS II SURFACE PREPARATION

PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 13

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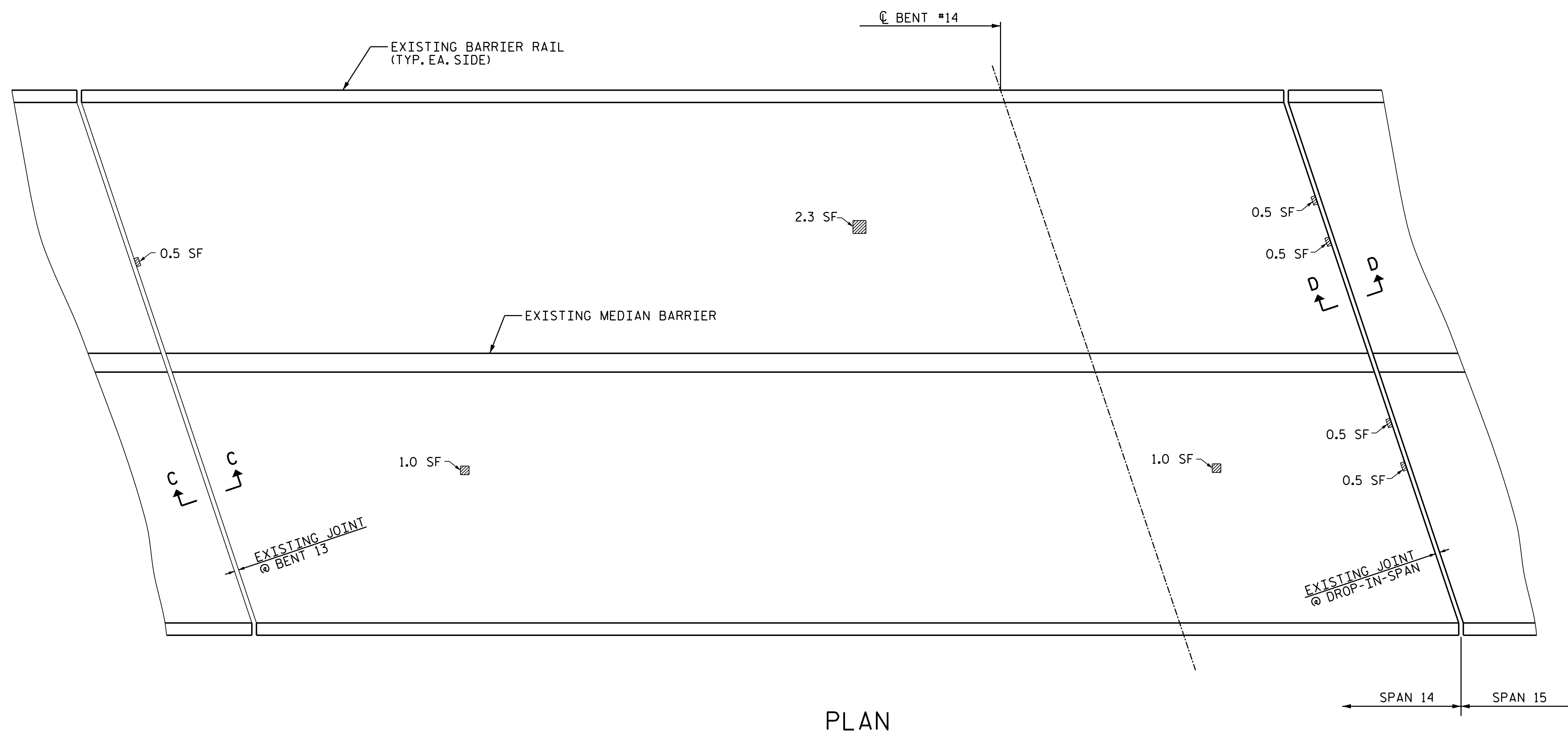
AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 14		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	899.1 SY	
CLASS II SURFACE PREPARATION	0.8 SY	
SHOTBLASTING BRIDGE DECK	899.1 SY	
PPC MATERIALS	24.97 CY	
PLACING & FINISHING PPC OVERLAY	899.1 SY	
BRIDGE DECK GROOVING	7672.1 SF	
CONCRETE FOR DECK REPAIR	0.8 SY	

NOTES

FOR SECTION C-C & D-D, SEE "JOINT DETAILS" SHEET.

 - CLASS II SURFACE PREPARATION



PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SURFACE PREPARATION  
 AND  
 PPC OVERLAY**  
 SPAN 14

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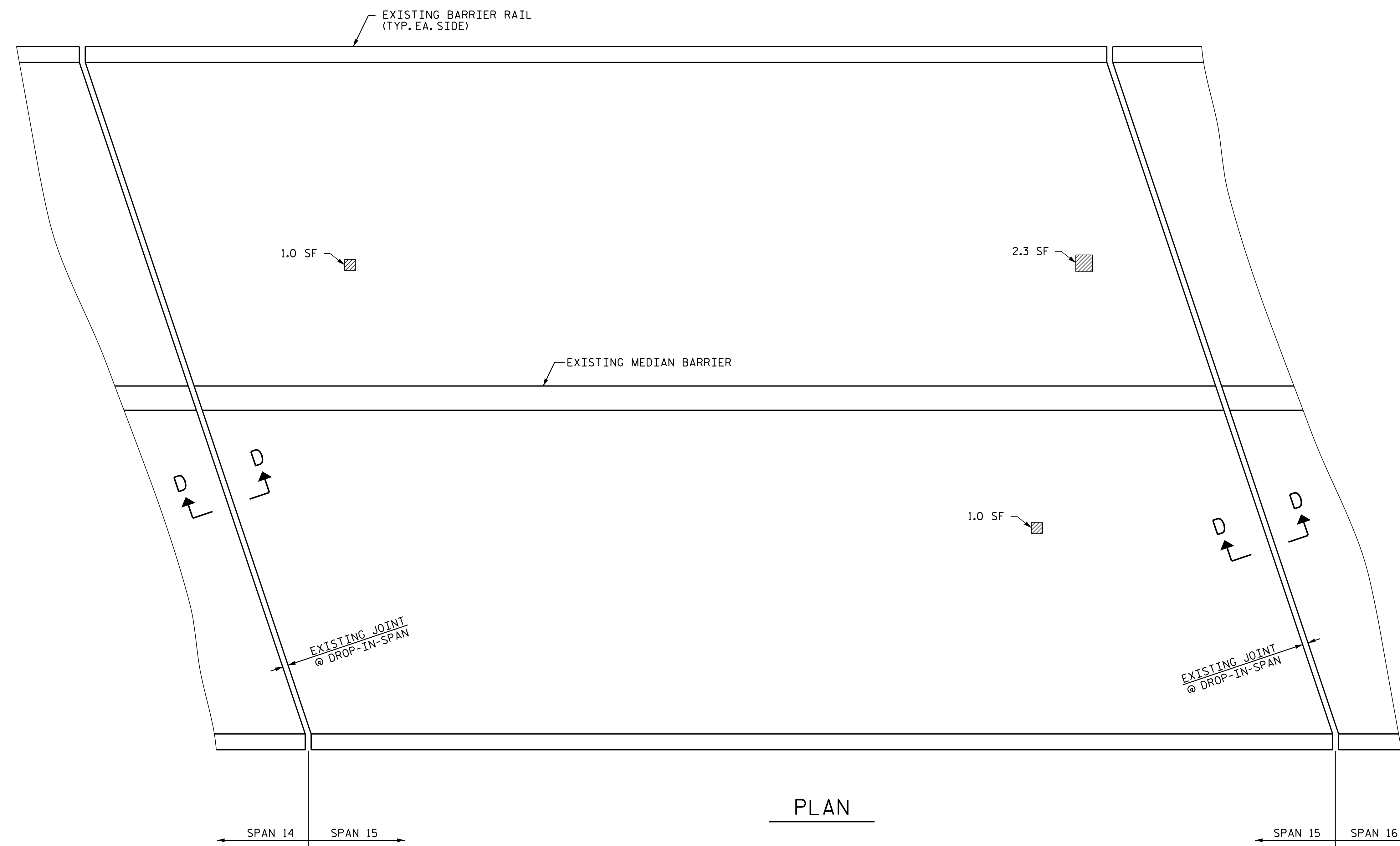


AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 15		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	0.5 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	0.5 SY	

NOTES

FOR SECTION D-D, SEE "JOINT DETAILS" SHEET.



- CLASS II SURFACE PREPARATION

PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 15**

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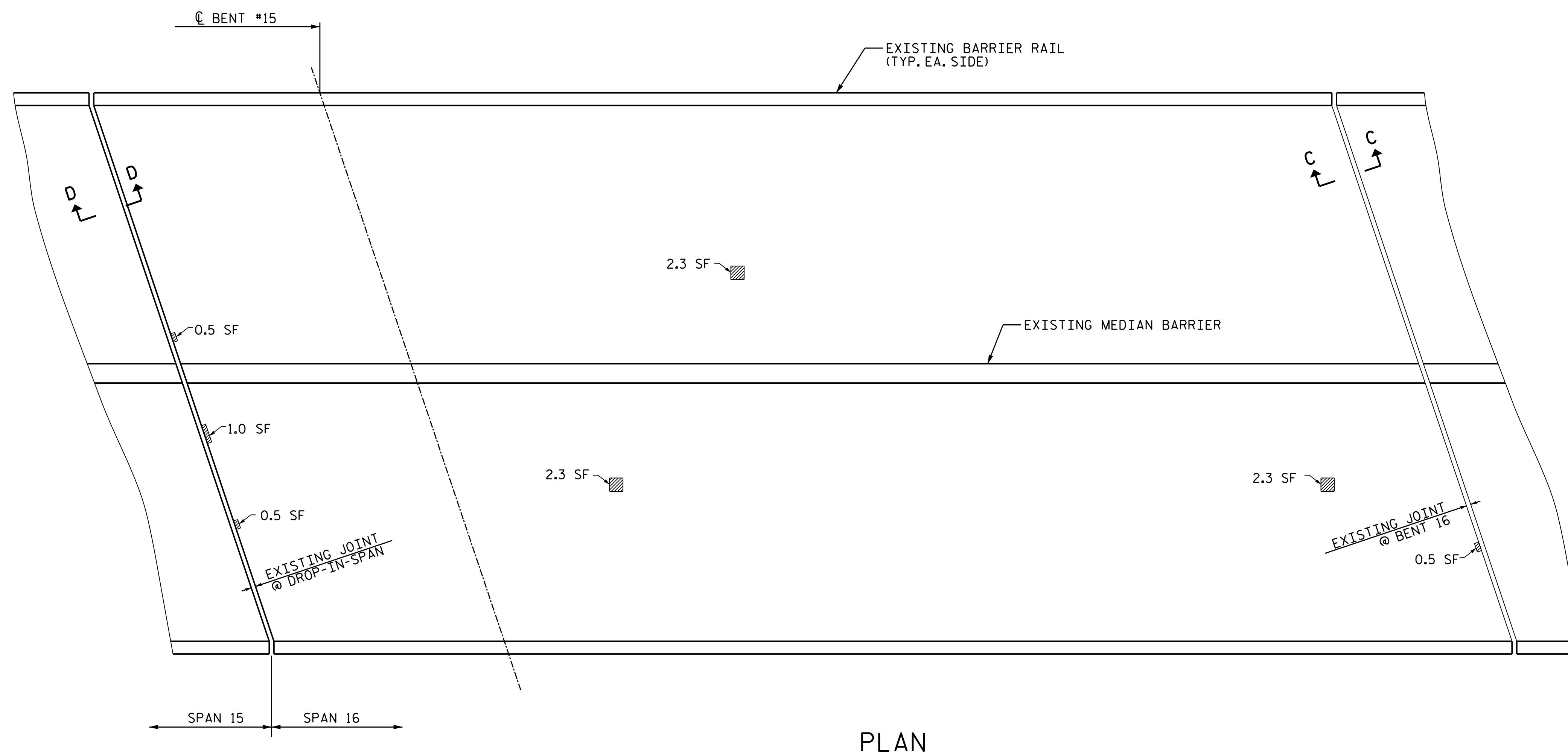
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AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 16		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	899.1 SY	
CLASS II SURFACE PREPARATION	1.1 SY	
SHOTBLASTING BRIDGE DECK	899.1 SY	
PPC MATERIALS	24.97 CY	
PLACING & FINISHING PPC OVERLAY	899.1 SY	
BRIDGE DECK GROOVING	7672.1 SF	
CONCRETE FOR DECK REPAIR	1.1 SY	

NOTES

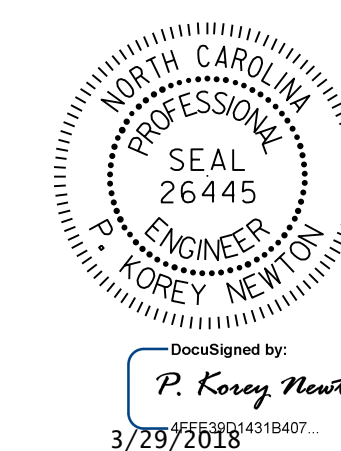
FOR SECTION C-C & D-D, SEE "JOINT DETAILS" SHEET.



- CLASS II SURFACE PREPARATION

PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
 SHEET 16 OF 27



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 16

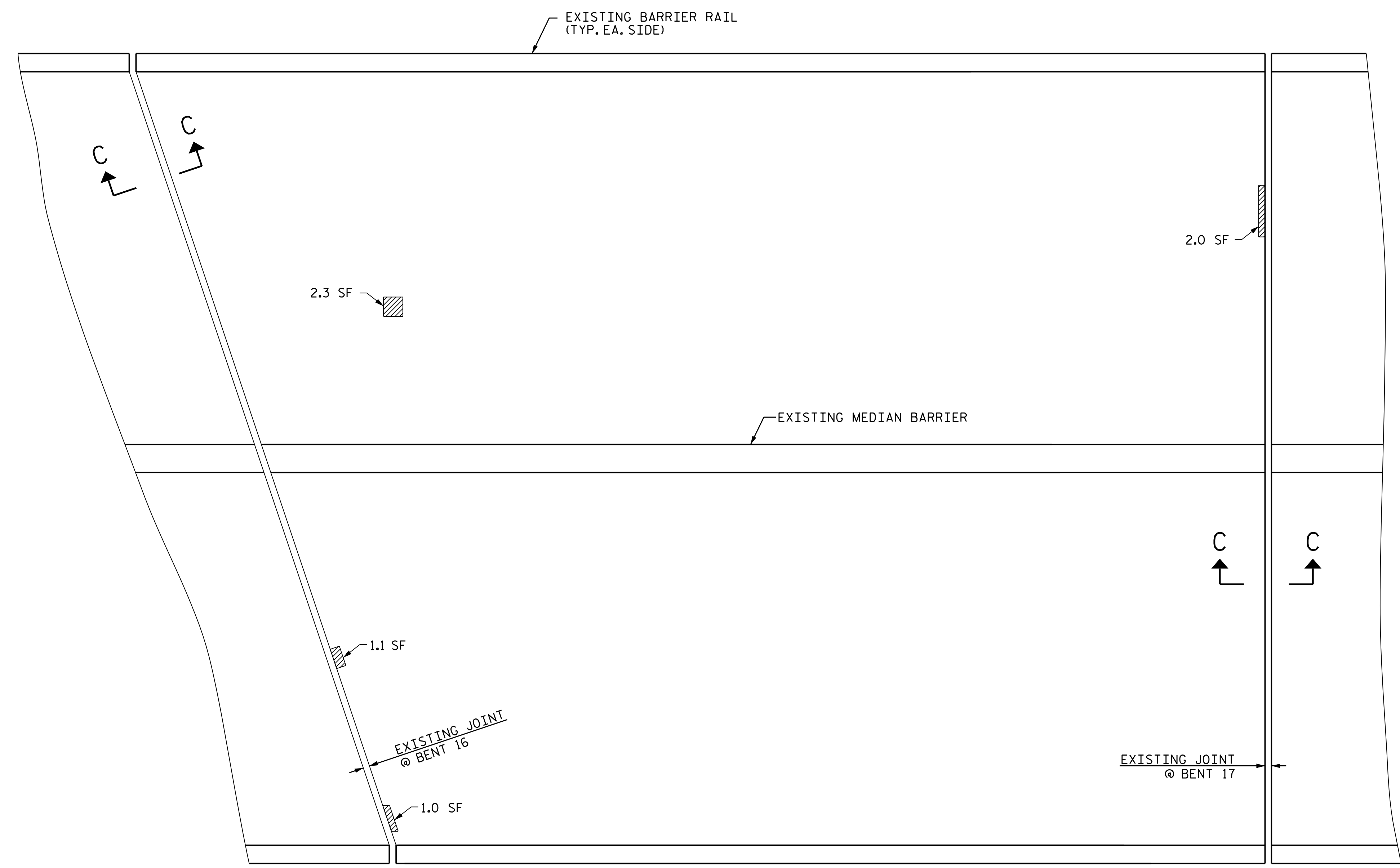
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1			3			S-24
2			4			84

AS-BUILT REPAIR QUANTITY TABLE		
TOP OF DECK REPAIRS		
SPAN 17		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	500.7 SY	
CLASS II SURFACE PREPARATION	0.8 SY	
SHOTBLASTING BRIDGE DECK	500.7 SY	
PPC MATERIALS	13.91 CY	
PLACING & FINISHING PPC OVERLAY	500.7 SY	
BRIDGE DECK GROOVING	4272.4 SF	
CONCRETE FOR DECK REPAIR	0.8 SY	

**NOTES**  
 FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.



- CLASS II SURFACE PREPARATION

PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 17**

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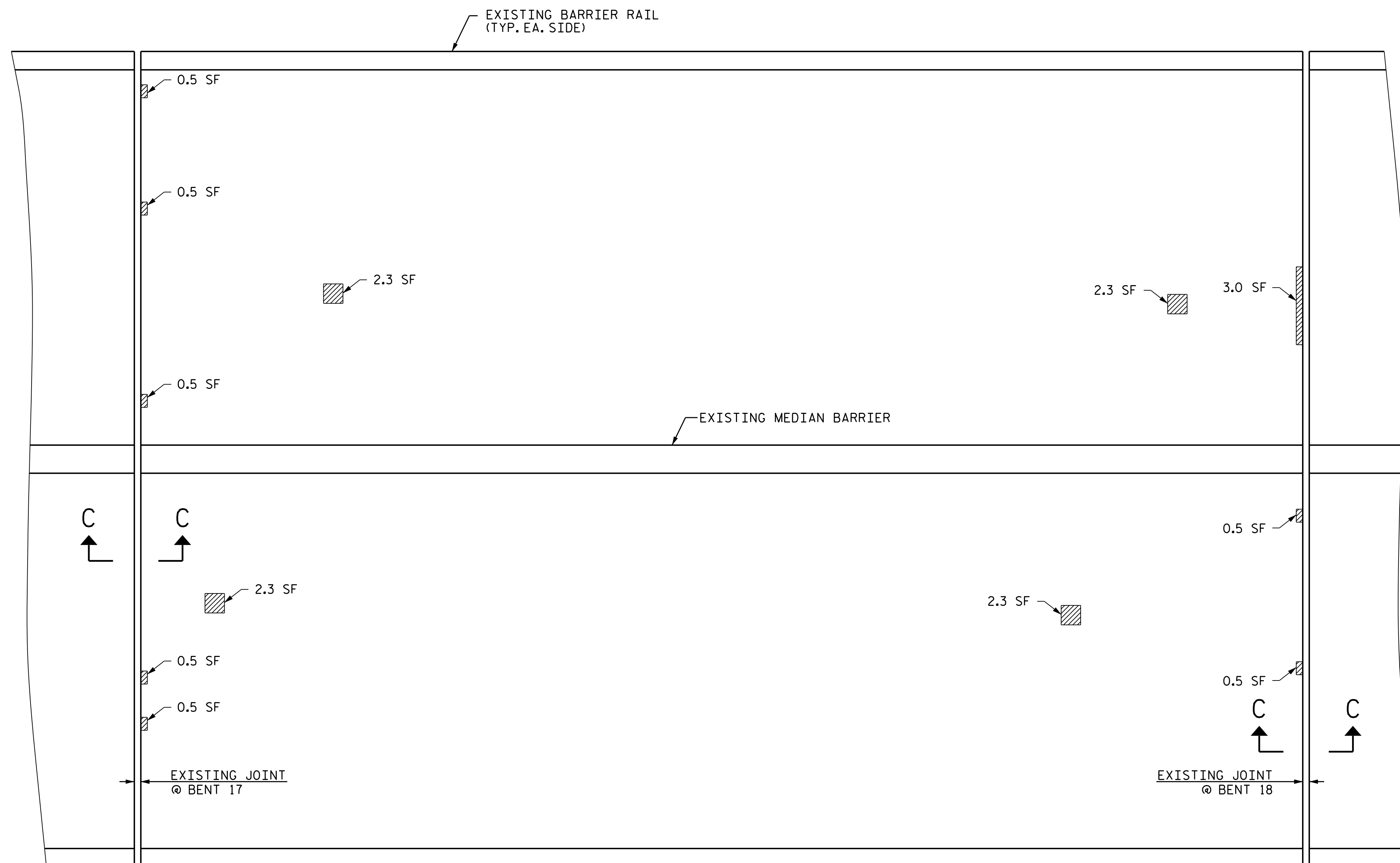
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	BY:	DATE:		BY:	DATE:	
1			3			S-25
2			4			TOTAL SHEETS 84

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 18		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	1.8 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	1.8 SY	

NOTES

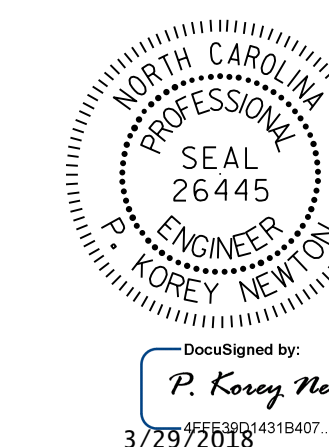
FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.



PLAN

 - CLASS II SURFACE PREPARATION

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
 SHEET 18 OF 27



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*P. Korey Newton*  
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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 18

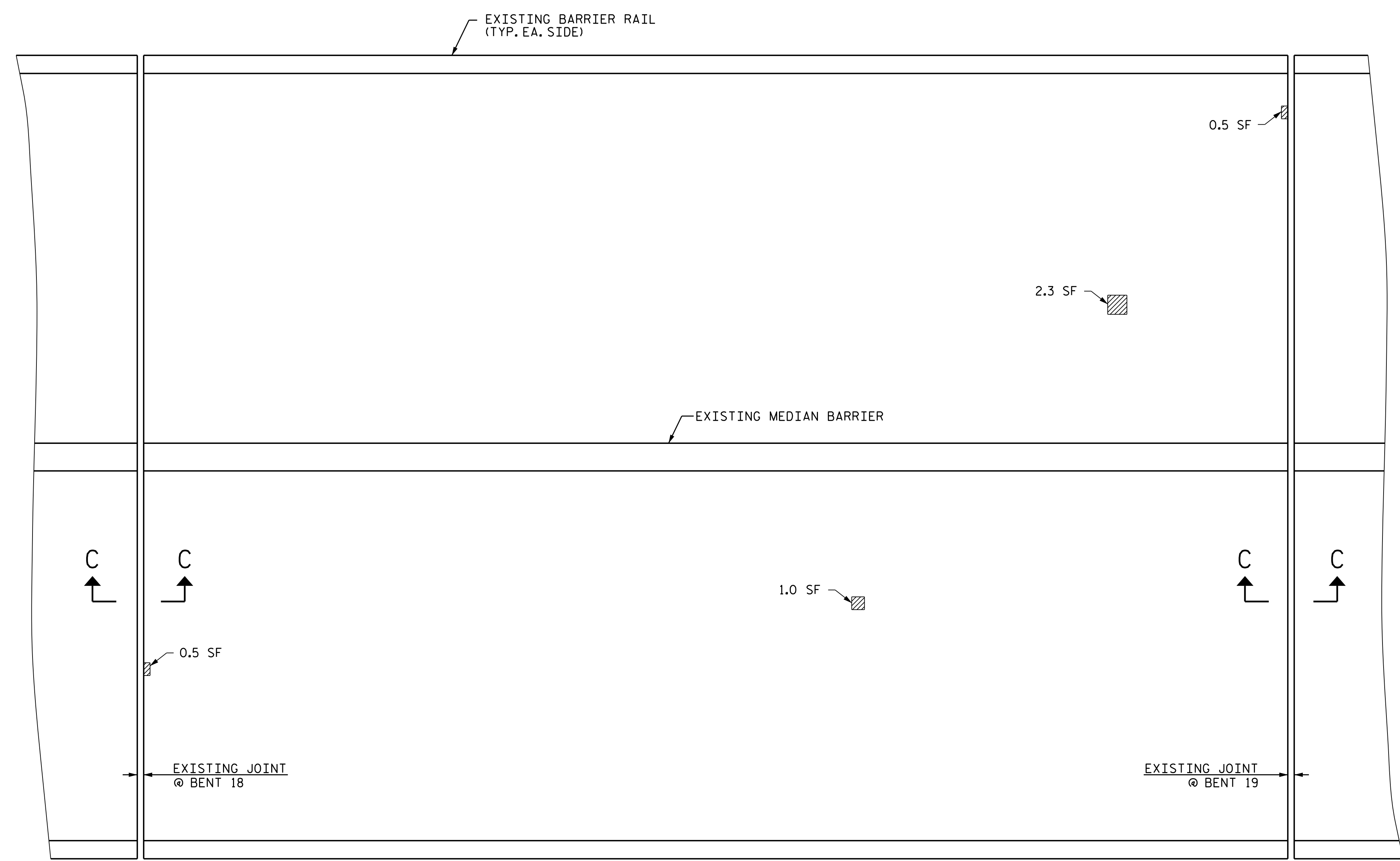
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1			3			S-26
2			4			84

AS-BUILT REPAIR QUANTITY TABLE		
TOP OF DECK REPAIRS		
SPAN 19		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	0.5 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	0.5 SY	

**NOTES**  
 FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.



 - CLASS II SURFACE PREPARATION

PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 19 OF 27



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 19**

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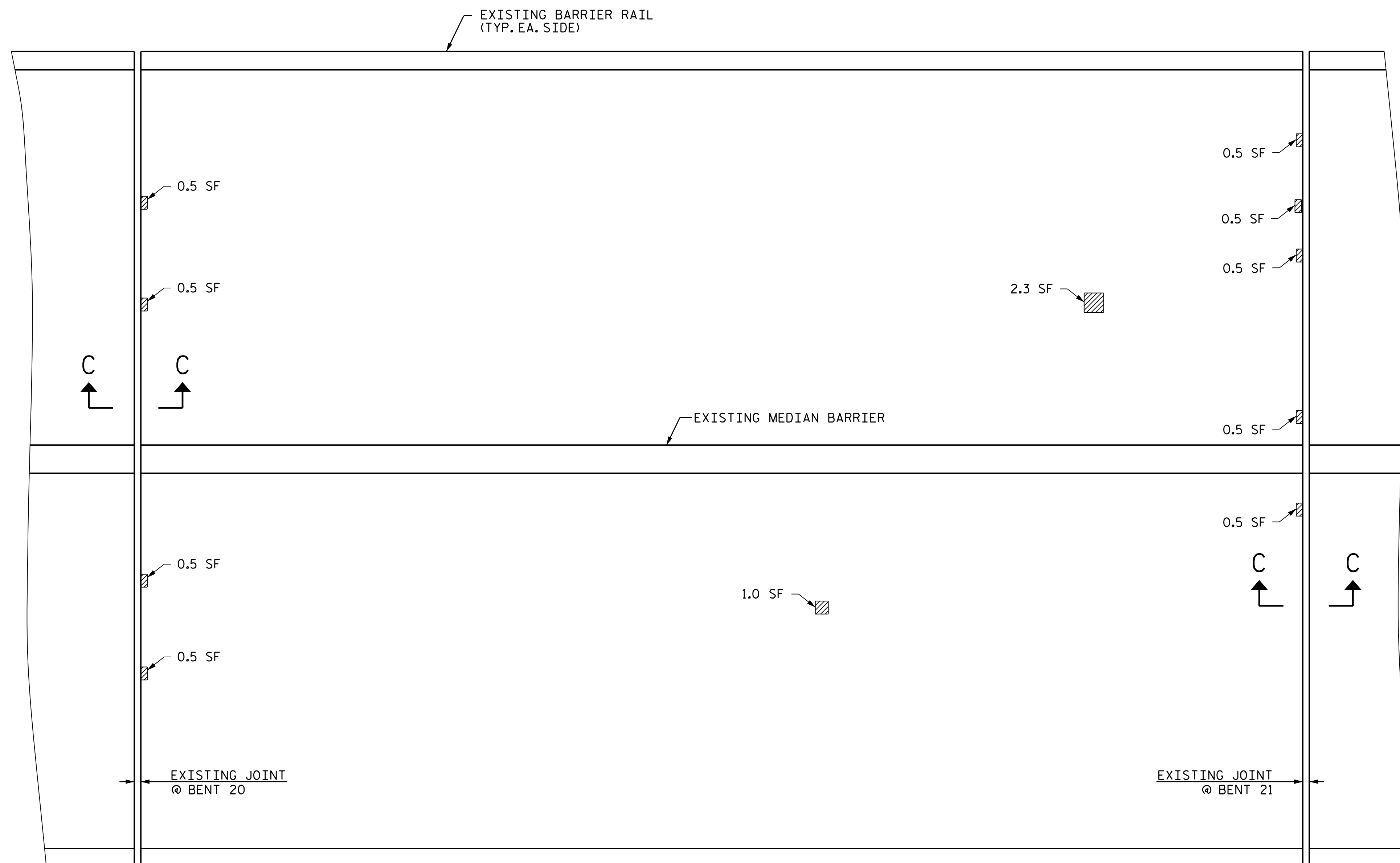


AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 20		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	0.9 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	0.9 SY	

NOTES

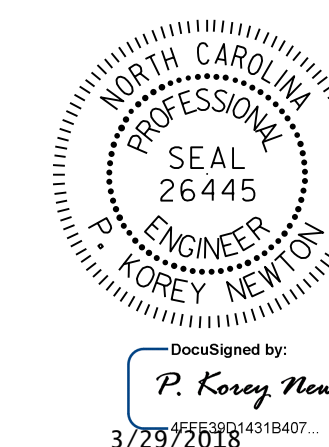
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 - CLASS II SURFACE PREPARATION

PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 20

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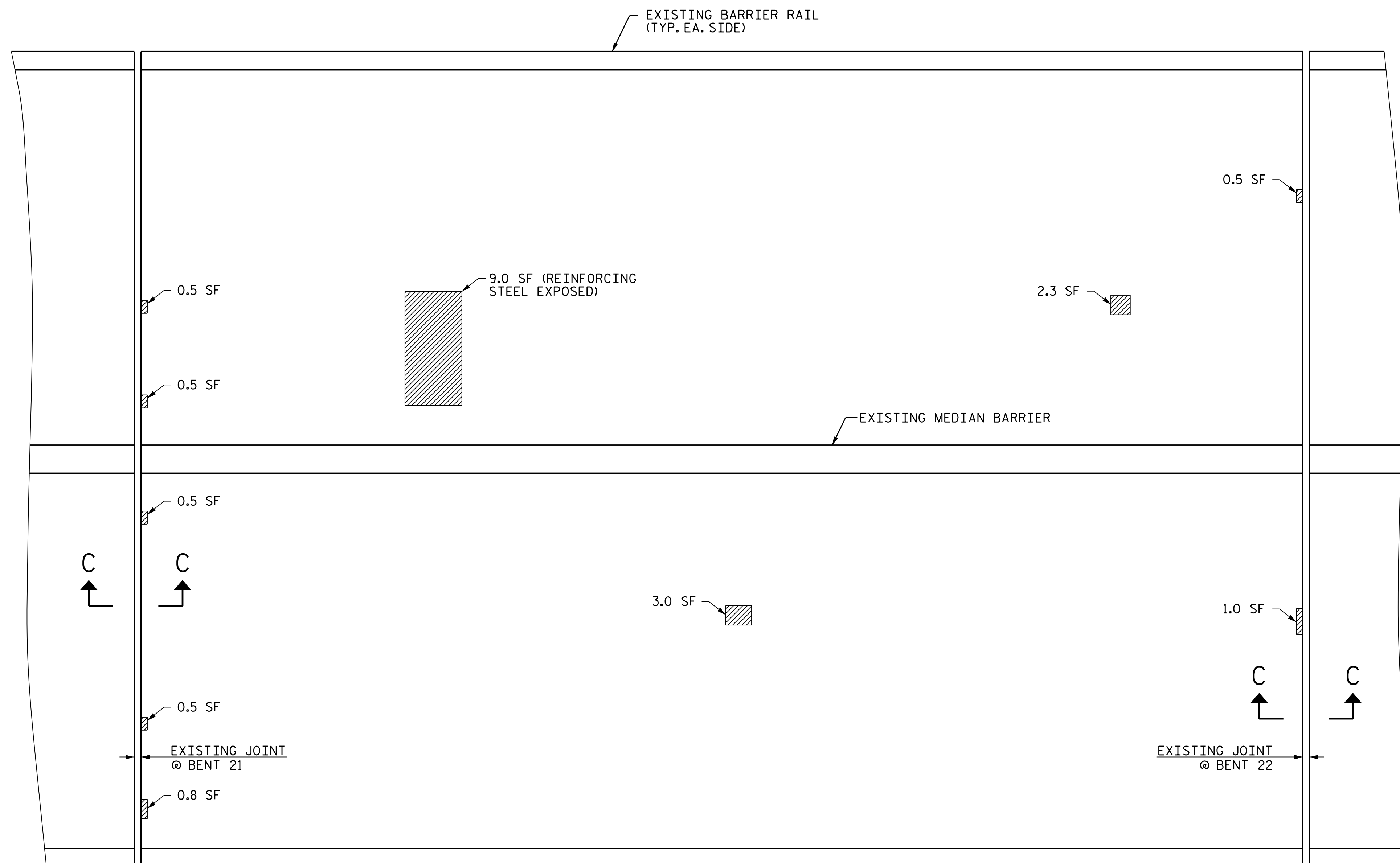
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-28
2			4			84

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 21		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	2.1 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	2.1 SY	

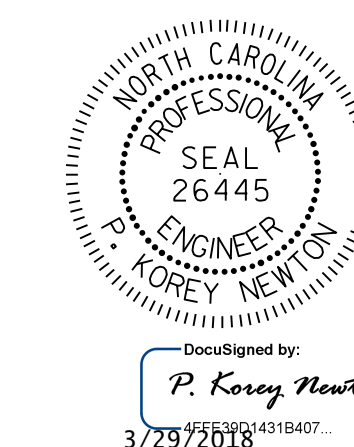
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FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.



PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
 SHEET 21 OF 27



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**P. Corey Newton**  
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 RALEIGH  
**SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 21**

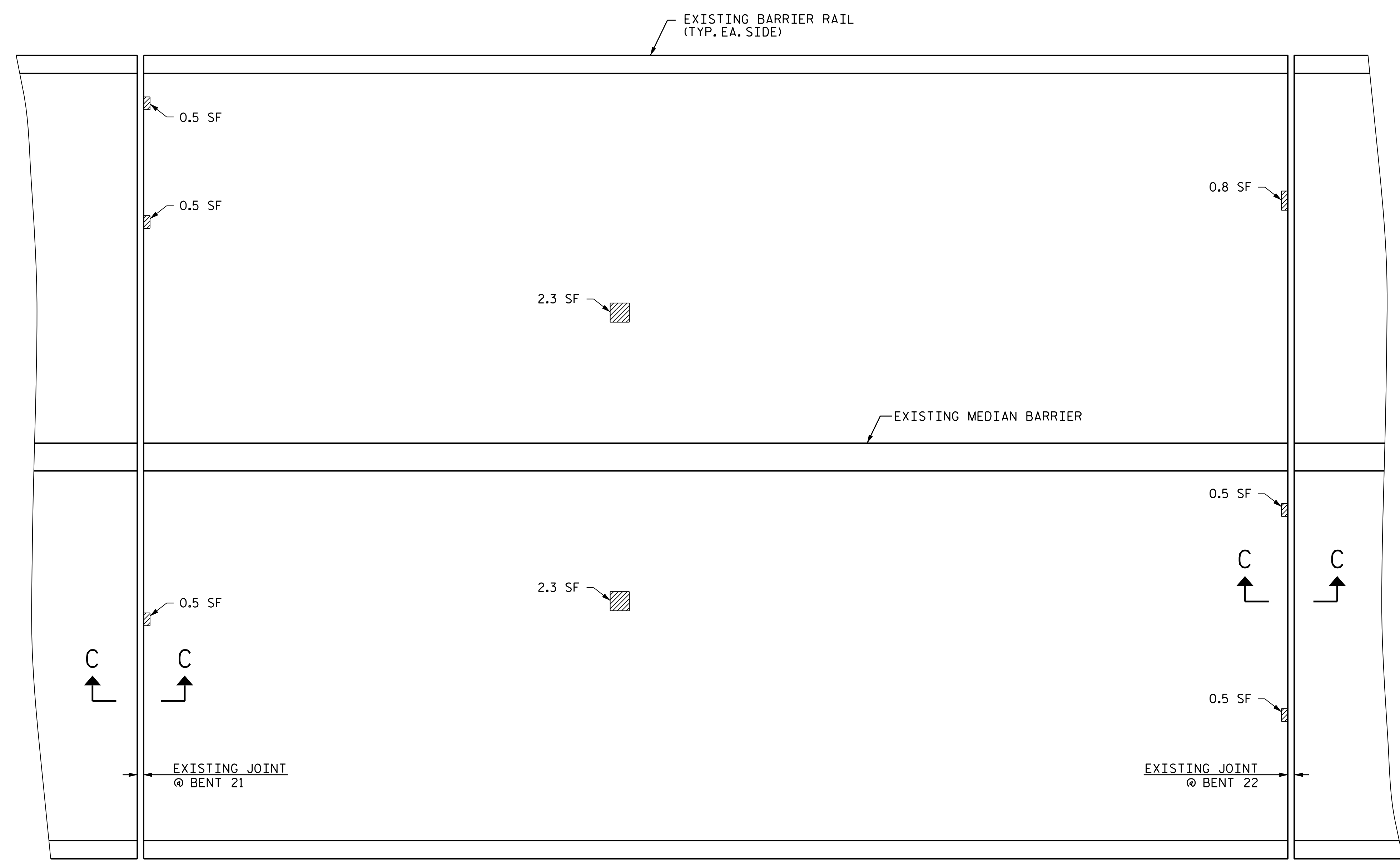
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1			3			S-29
2			4			84

AS-BUILT REPAIR QUANTITY TABLE		
TOP OF DECK REPAIRS		
SPAN 22		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	0.9 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	0.9 SY	

**NOTES**  
 FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.



- CLASS II SURFACE PREPARATION

PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 22**

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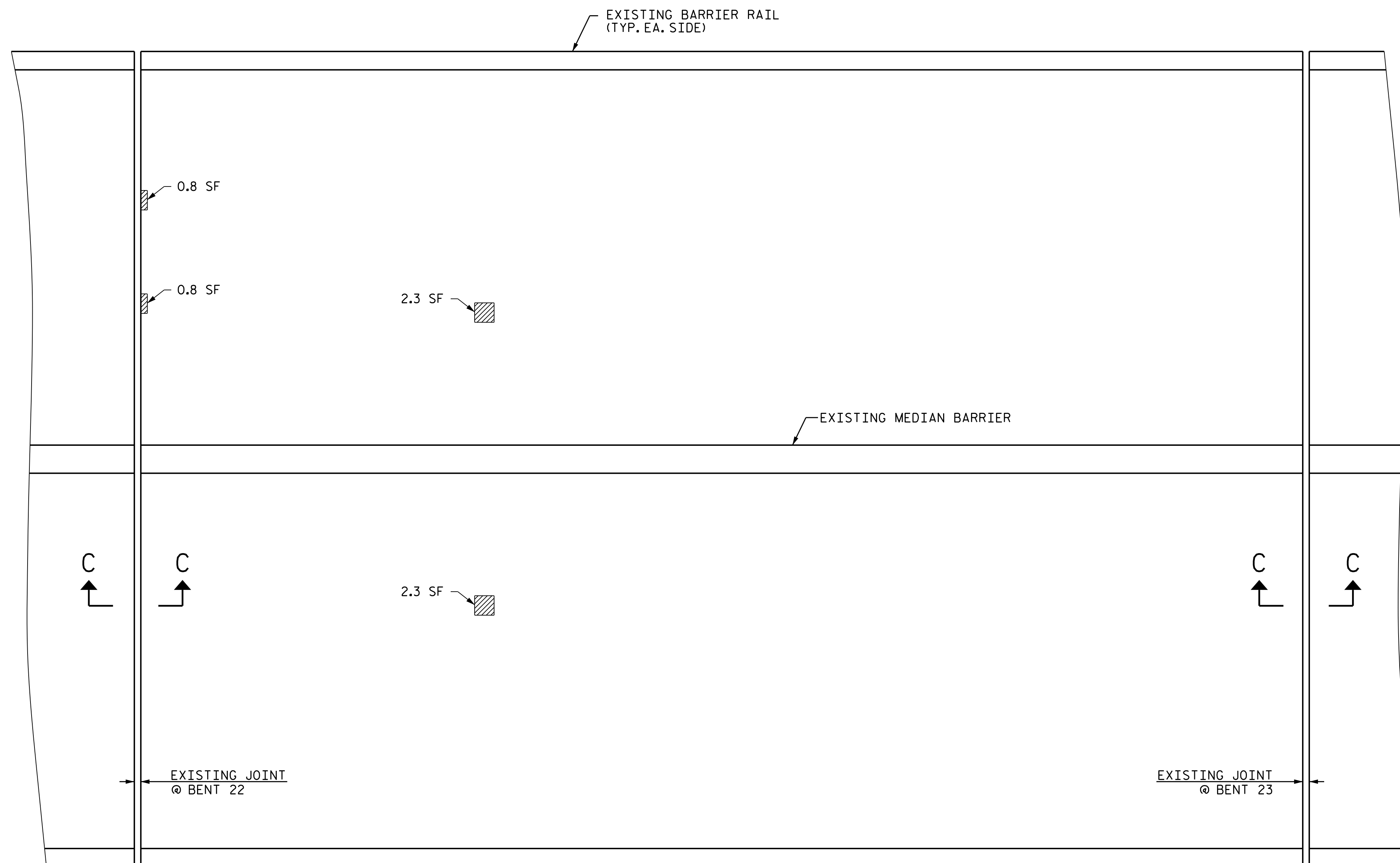
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AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 23		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	0.7 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	0.7 SY	

NOTES

FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.

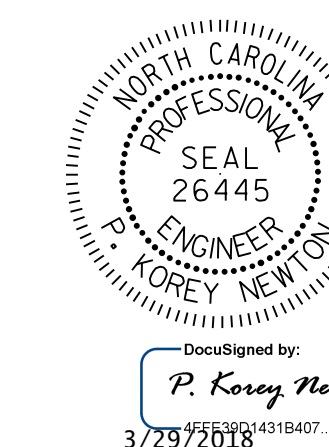


 - CLASS II SURFACE PREPARATION

PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 23 OF 27



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*P. Korey Newton*  
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STATE OF NORTH CAROLINA  
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 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 23

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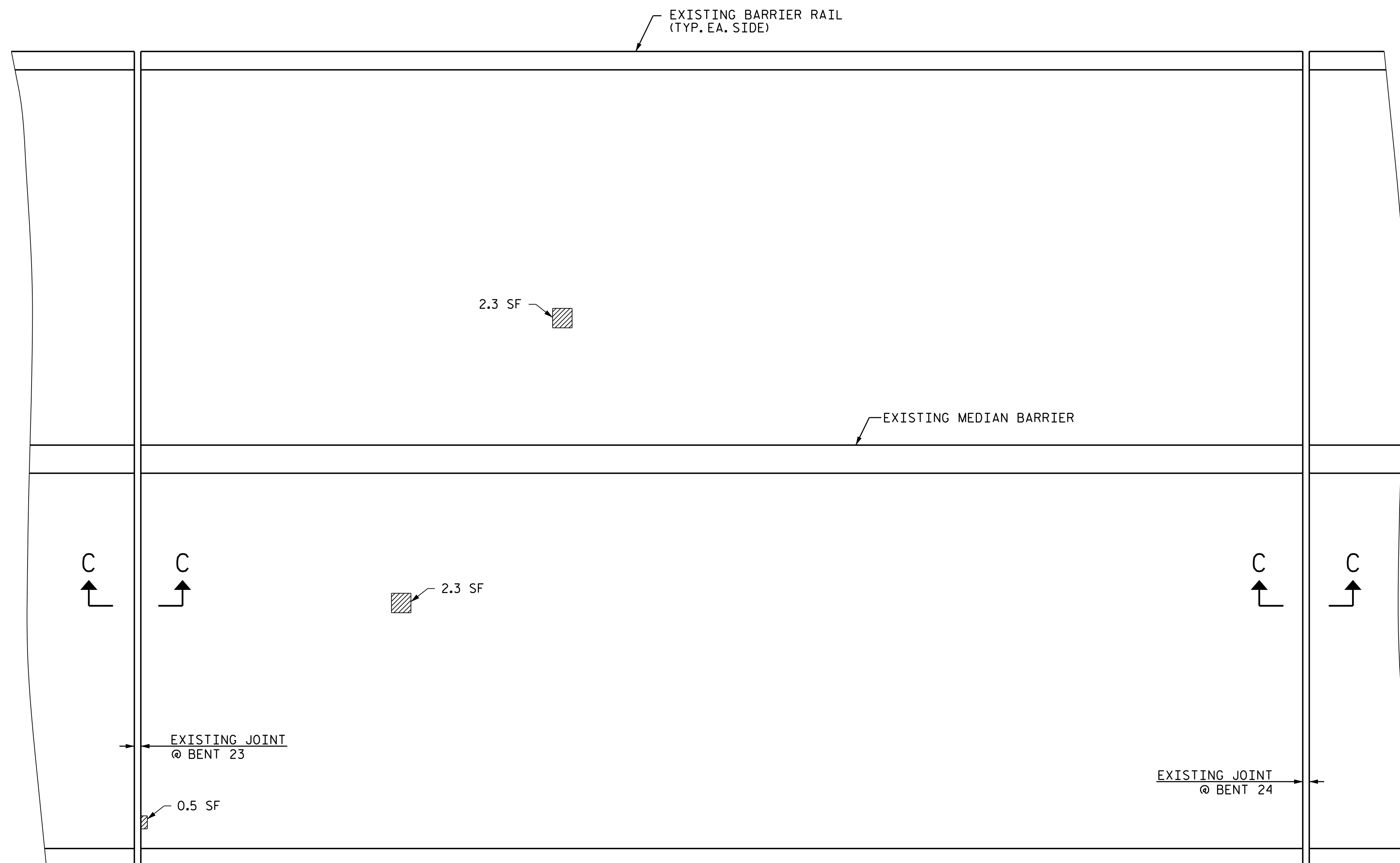
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1			3			TOTAL SHEETS
2			4			84

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 24		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	0.6 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	0.6 SY	

NOTES

FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.



 - CLASS II SURFACE PREPARATION

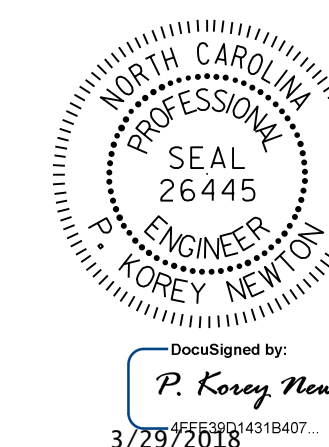
PLAN

PROJECT NO. 15BPR.7

CURRITUCK COUNTY

BRIDGE NO. 15

SHEET 24 OF 27



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 24

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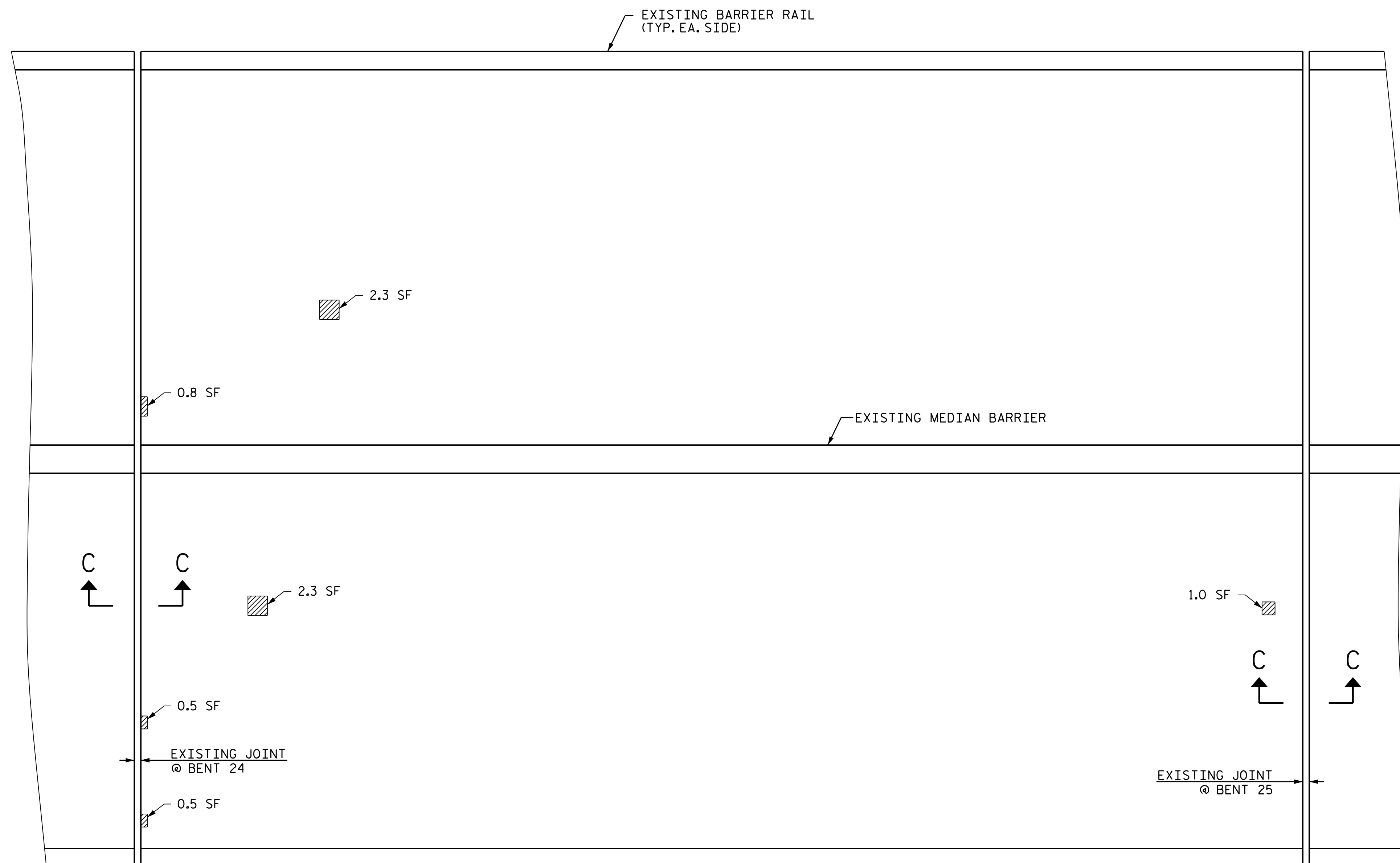


AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 25		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	0.9 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	0.9 SY	

NOTES

FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.

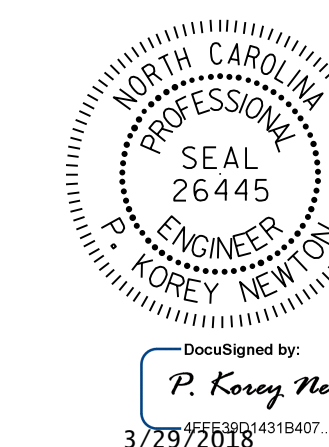


- CLASS II SURFACE PREPARATION

PLAN

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 25 OF 27



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 25

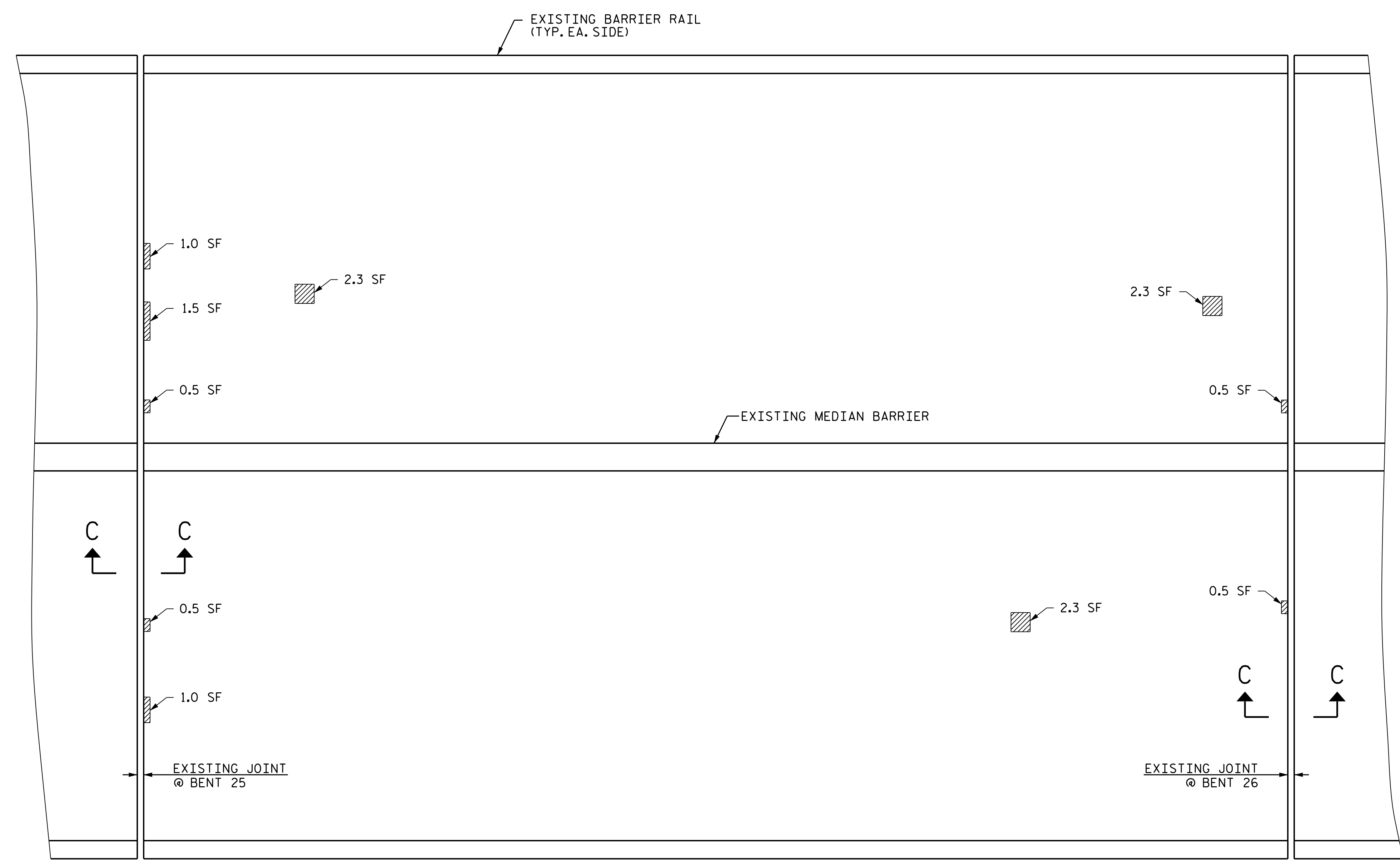
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1			3			S-33
2			4			84

AS-BUILT REPAIR QUANTITY TABLE		
TOP OF DECK REPAIRS		
SPAN 26		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	577.8 SY	
CLASS II SURFACE PREPARATION	1.4 SY	
SHOTBLASTING BRIDGE DECK	577.8 SY	
PPC MATERIALS	16.05 CY	
PLACING & FINISHING PPC OVERLAY	577.8 SY	
BRIDGE DECK GROOVING	4930.4 SF	
CONCRETE FOR DECK REPAIR	1.4 SY	

**NOTES**  
 FOR SECTION C-C, SEE "JOINT DETAILS" SHEET.



- CLASS II SURFACE PREPARATION

PLAN

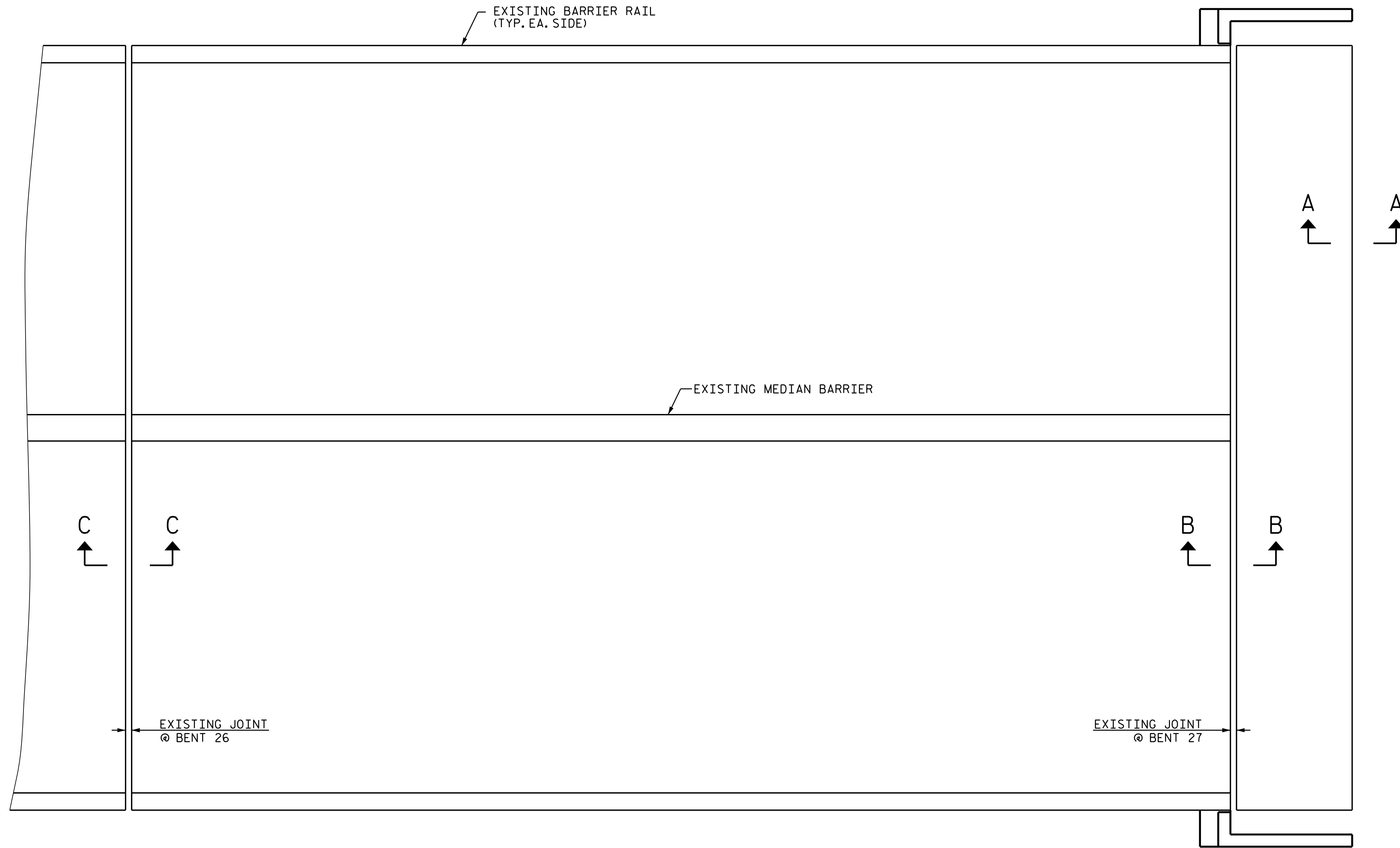
PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
 SHEET 26 OF 27



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 26**

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1			3			S-34
2			4			TOTAL SHEETS 84



PLAN

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN 27		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	581.0 SY	
CLASS II SURFACE PREPARATION	0.0 SY	
SHOTBLASTING BRIDGE DECK	581.0 SY	
PPC MATERIALS	16.14 CY	
PLACING & FINISHING PPC OVERLAY	581.0 SY	
BRIDGE DECK GROOVING	4958.0 SF	
CONCRETE FOR DECK REPAIR	0.0 SY	
APPROACH SLAB #2		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	64.0 SY	
CLASS II SURFACE PREPARATION	0.0 SY	
SHOTBLASTING BRIDGE DECK	64.0 SY	
PPC MATERIALS	1.78 CY	
PLACING & FINISHING PPC OVERLAY	64.0 SY	
BRIDGE DECK GROOVING	546.0 SF	
CONCRETE FOR DECK REPAIR	0.0 SY	

NOTES  
 FOR SECTION A-A, B-B AND C-C, SEE "JOINT DETAILS" SHEET.

- CLASS II SURFACE PREPARATION

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 27 OF 27

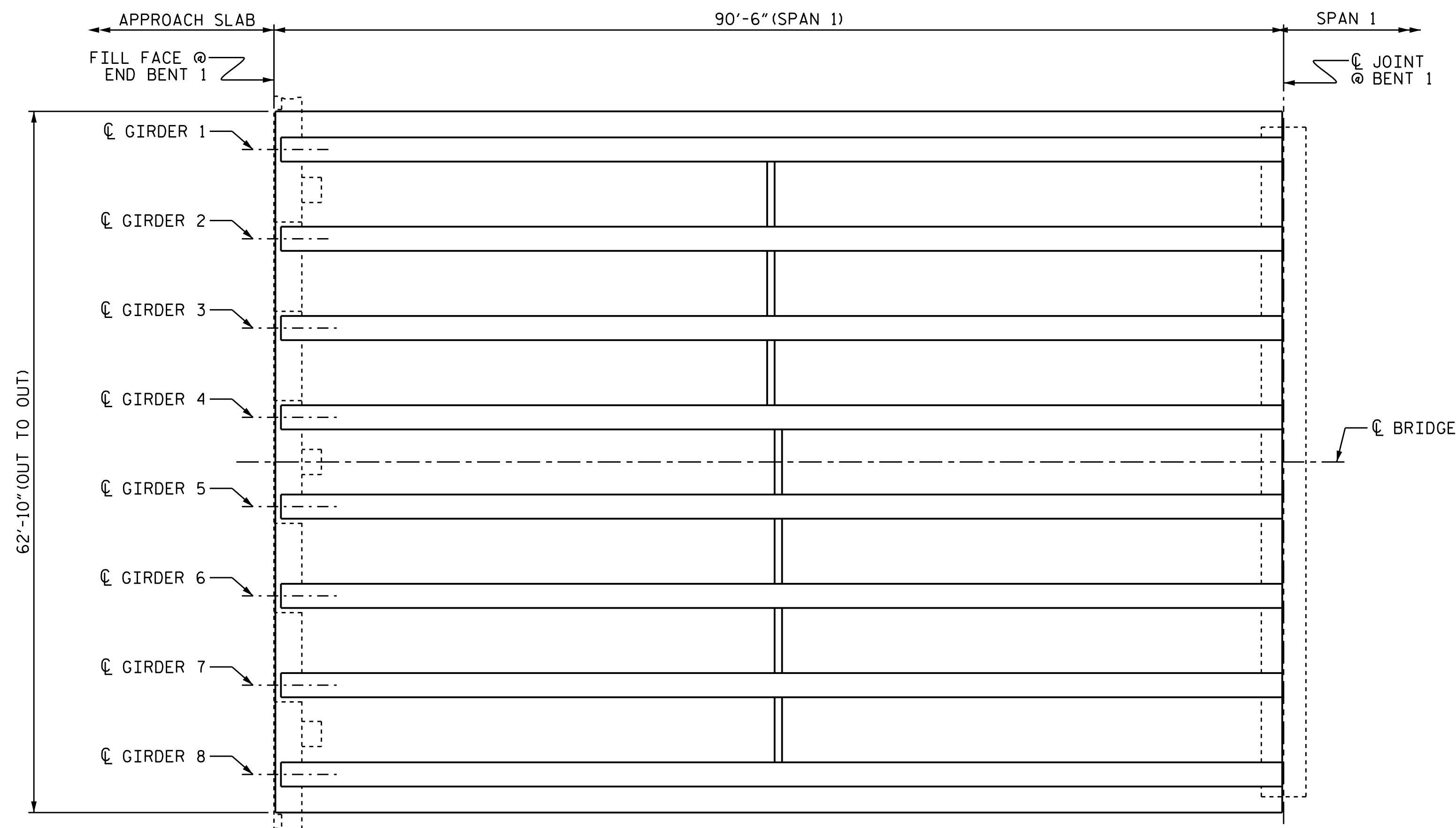


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SURFACE PREPARATION  
 AND  
 PPC OVERLAY  
 SPAN 27 & A.S.#2

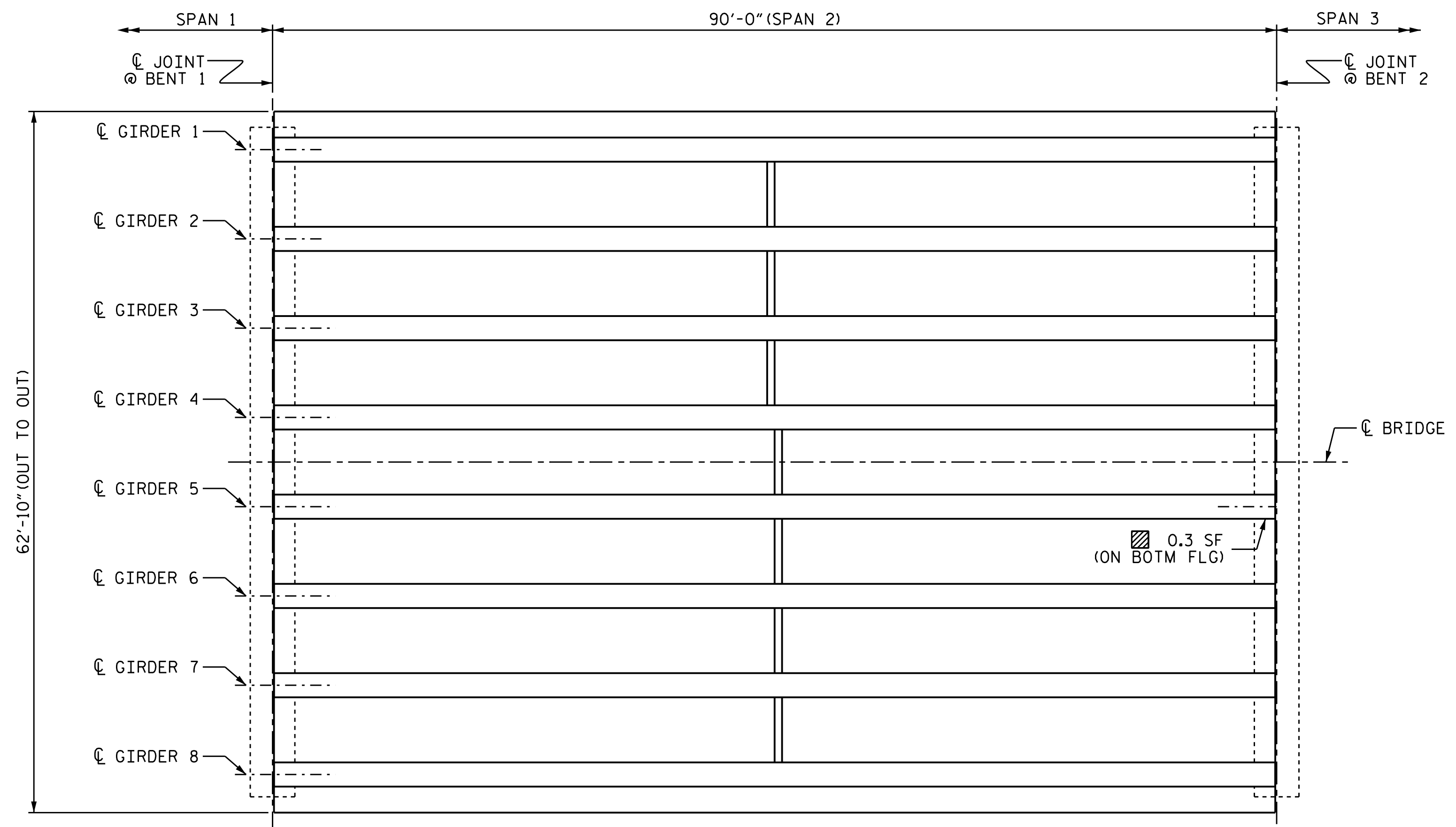
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SPAN 1 - UNDERSIDE



SPAN 2 - UNDERSIDE

REPAIR QUANTITY TABLE

REPAIRS SPAN 1	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.0	0.0		

REPAIRS SPAN 2	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.3	0.1		

NOTES:

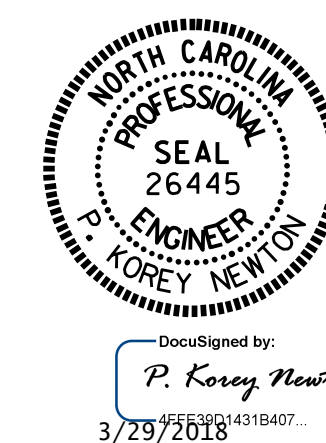
FOR CONCRETE GIRDER REPAIR DETAILS, SEE SHEET S-50

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE TO REPAIR DEPTH AND MIN. 1" CLEARANCE TO SAW CUT.

DAMAGED AREAS ARE ON THE VERTICAL FACE OF THE BOTTOM FLANGE OR WEB UNLESS OTHERWISE NOTED.

- PRESTRESSED CONCRETE GIRDER REPAIR

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
 SHEET 1 OF 14



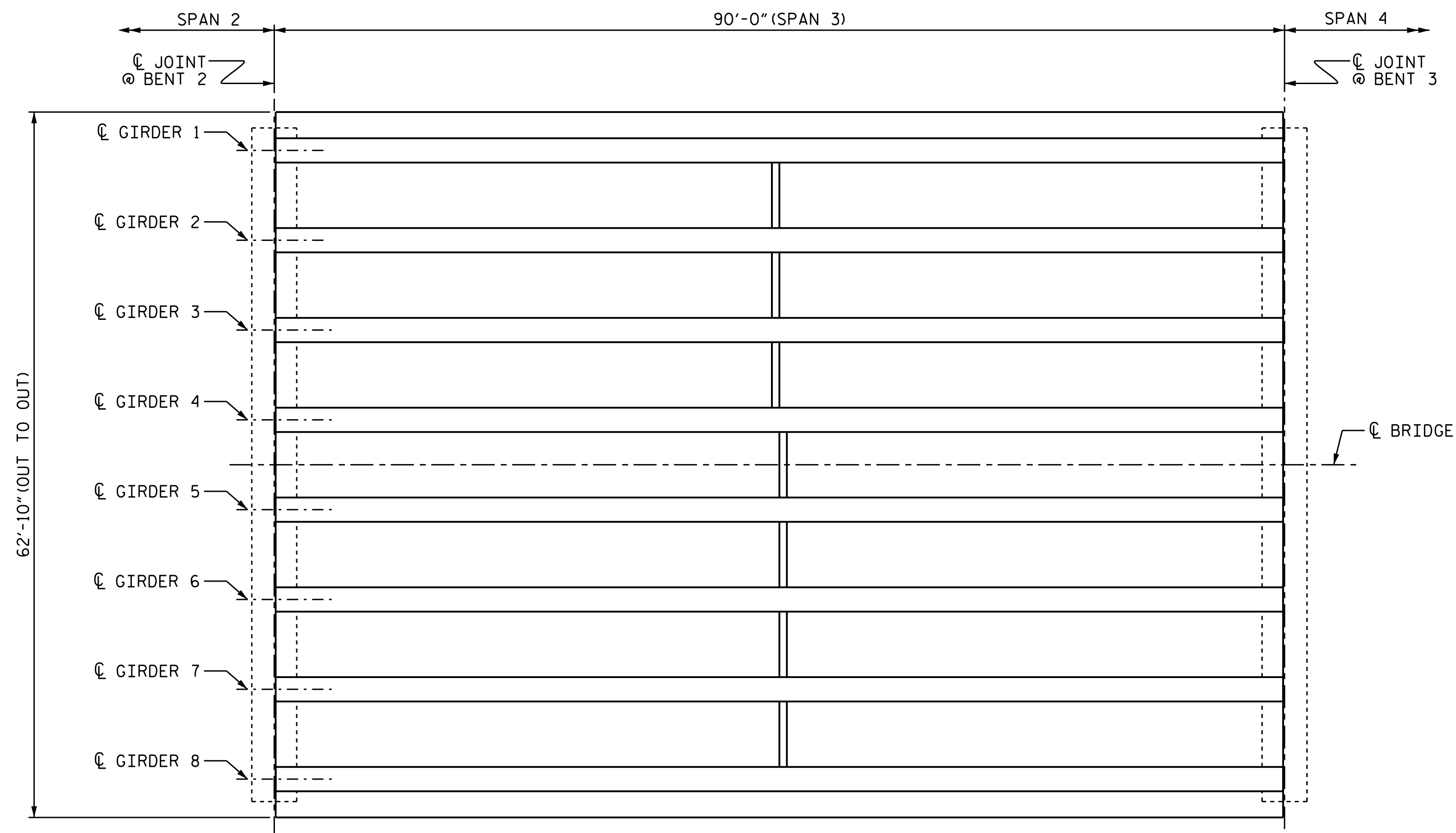
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

FRAMING PLAN  
 SPANS 1 & 2

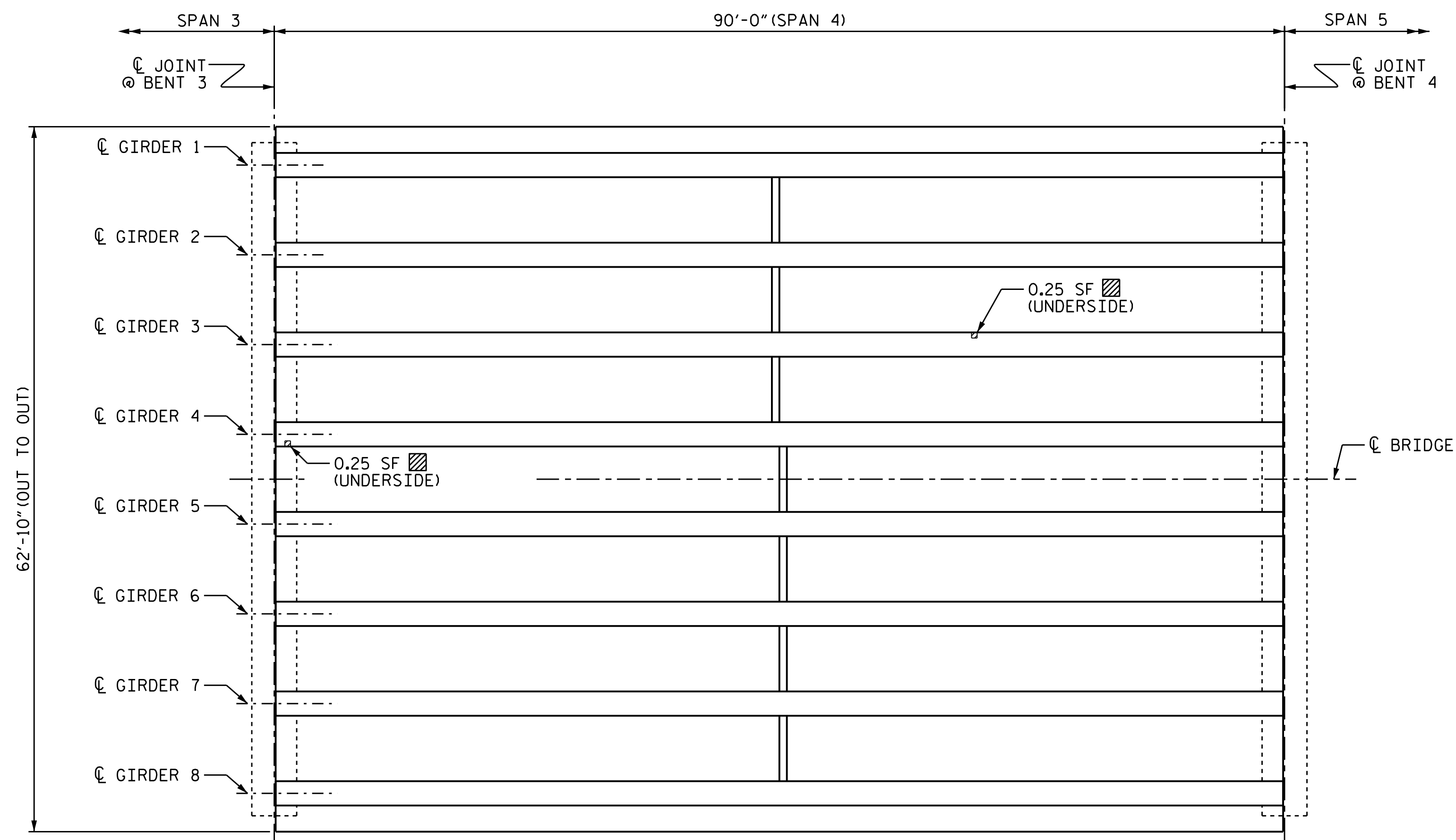
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1			3			S-36
2			4			84



SPAN 3 - UNDERSIDE



SPAN 4 - UNDERSIDE

REPAIR QUANTITY TABLE

REPAIRS SPAN 3	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.0	0.0		

REPAIRS SPAN 4	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.5	0.3		

NOTES:

FOR CONCRETE GIRDER REPAIR DETAILS, SEE SHEET S-50

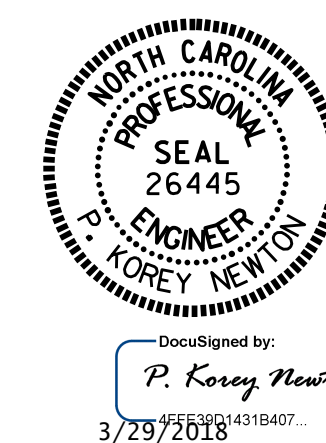
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE TO REPAIR DEPTH AND MIN. 1" CLEARANCE TO SAW CUT.

DAMAGED AREAS ARE ON THE VERTICAL FACE OF THE BOTTOM FLANGE OR WEB UNLESS OTHERWISE NOTED.

- PRESTRESSED CONCRETE GIRDER REPAIR

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 2 OF 14



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

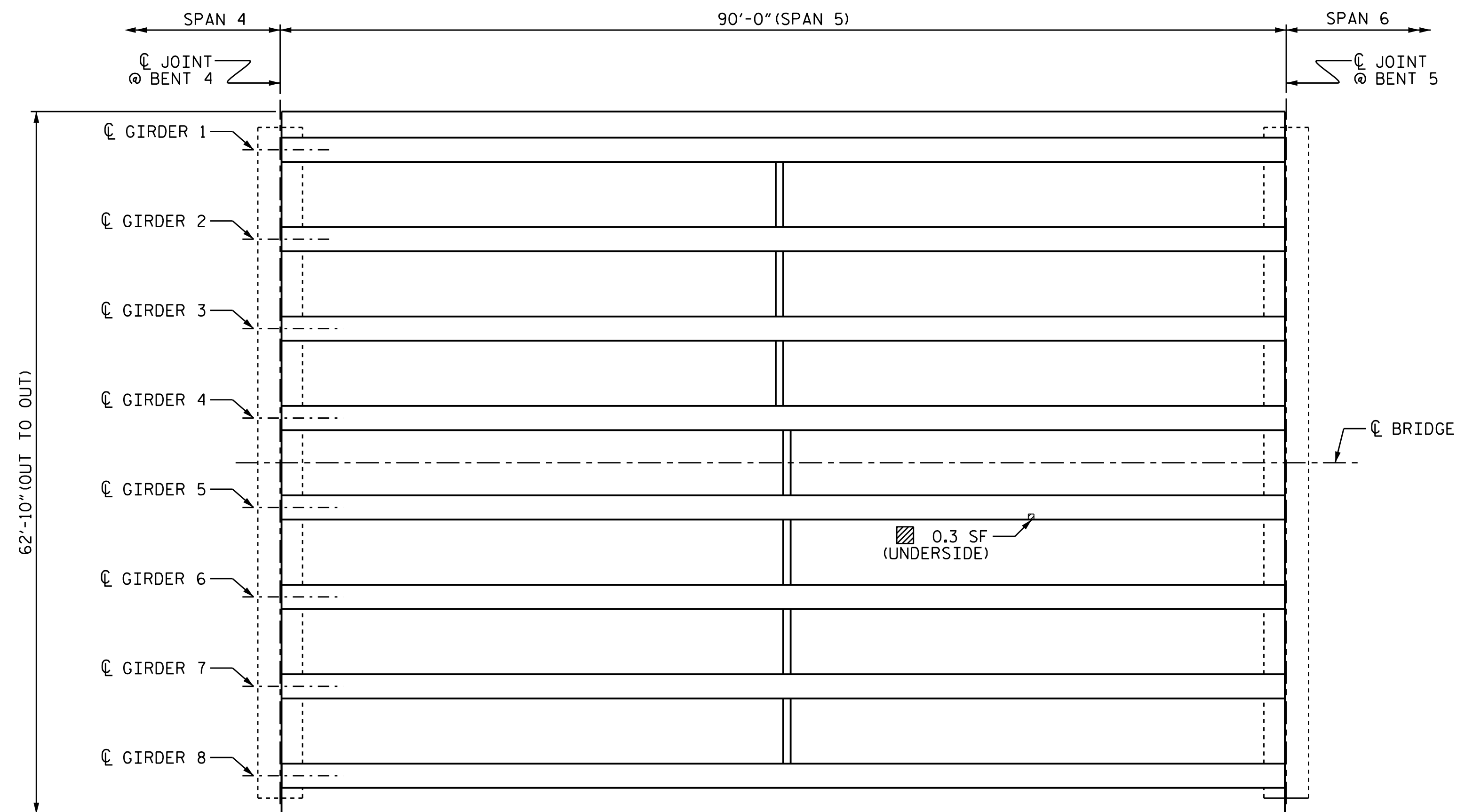
FRAMING PLAN  
 SPANS 3 & 4

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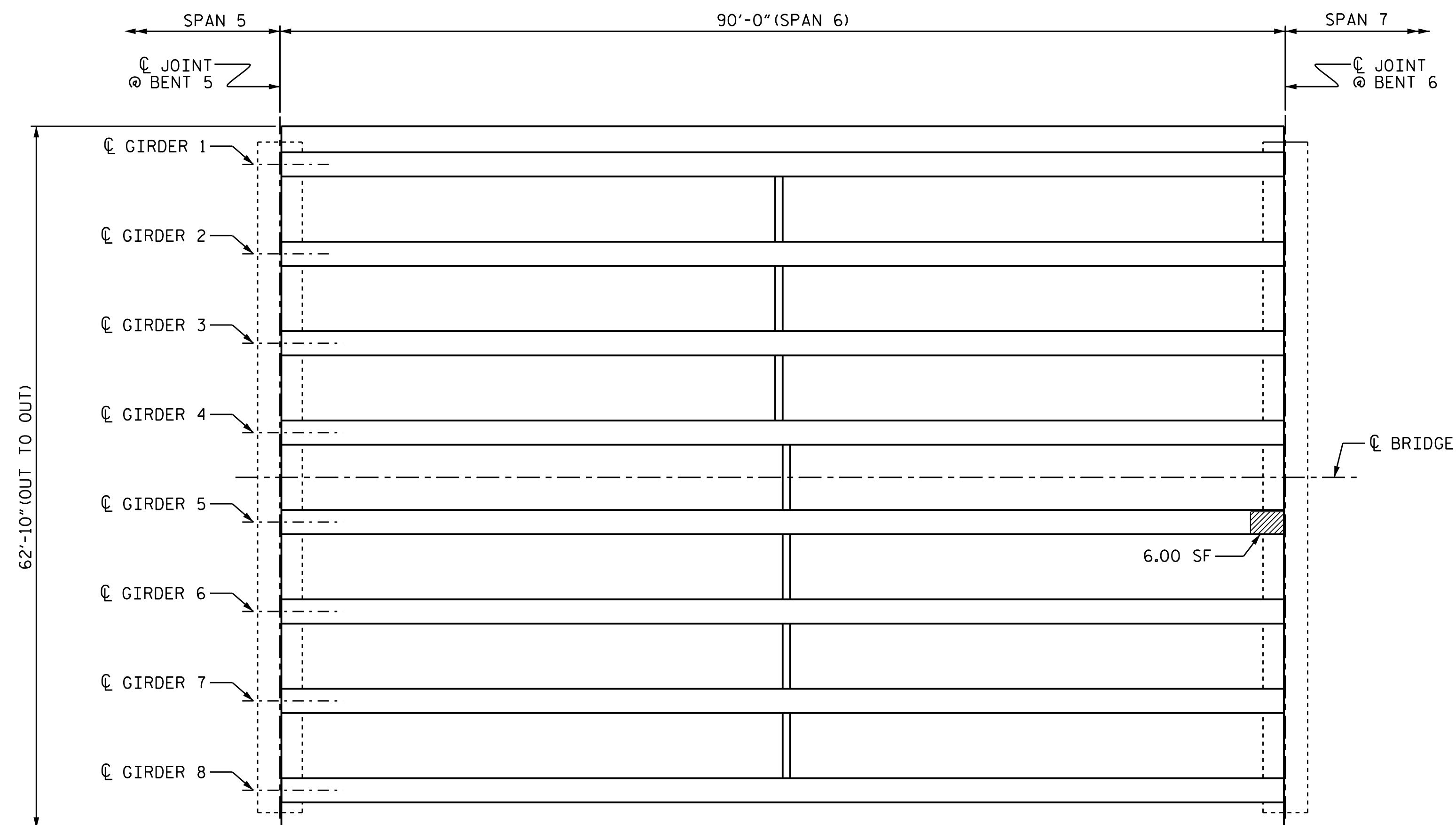
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1			3			TOTAL SHEETS
2			4			84





SPAN 5 - UNDERSIDE



SPAN 6 - UNDERSIDE

REPAIR QUANTITY TABLE

REPAIRS SPAN 5	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.3	0.1		

REPAIRS SPAN 6	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	6.0	3.0		

NOTES:

FOR CONCRETE GIRDER REPAIR DETAILS, SEE SHEET S-50

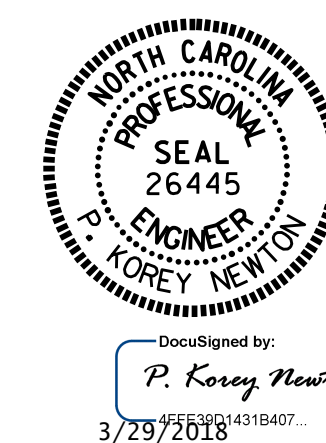
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE TO REPAIR DEPTH AND MIN. 1" CLEARANCE TO SAW CUT.

DAMAGED AREAS ARE ON THE VERTICAL FACE OF THE BOTTOM FLANGE OR WEB UNLESS OTHERWISE NOTED.

- PRESTRESSED CONCRETE GIRDER REPAIR

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 3 OF 14



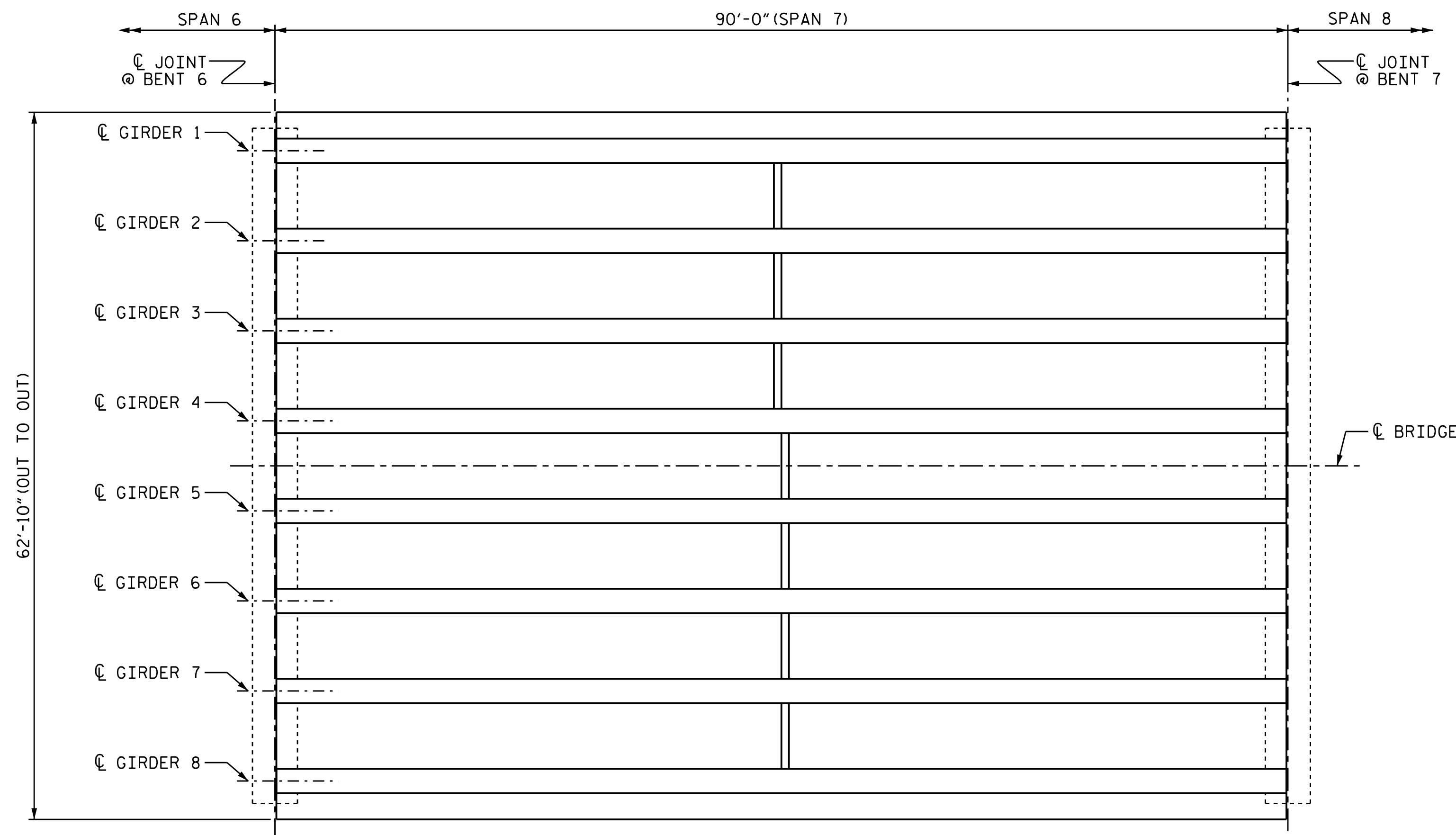
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

FRAMING PLAN  
 SPANS 5 & 6

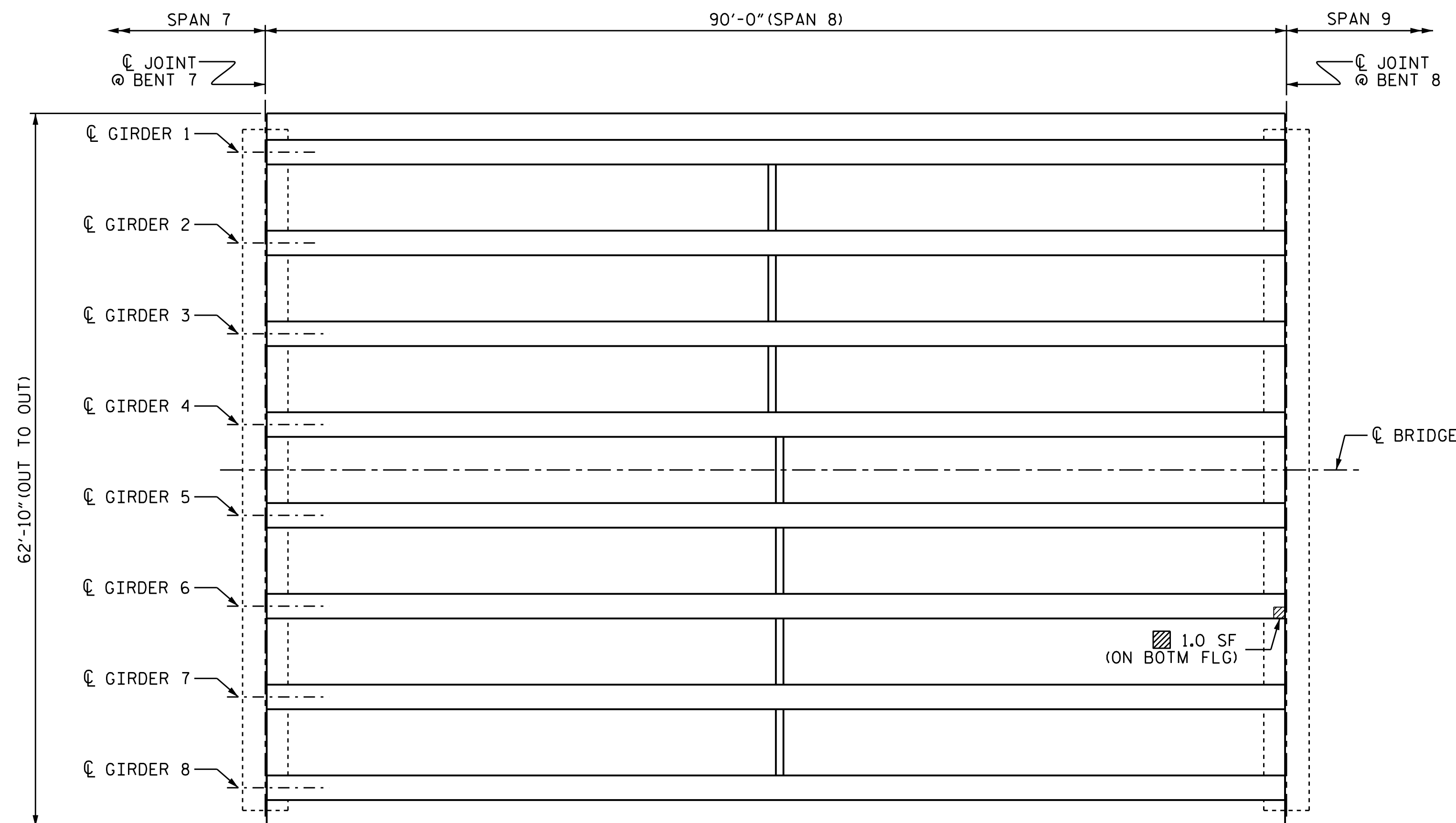
DRAWN BY : P. D. BRYANT DATE : 12/2017  
 CHECKED BY : P. K. NEWTON DATE : 01/2018

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-38
2			4			84



SPAN 7 - UNDERSIDE



SPAN 8 - UNDERSIDE

REPAIR QUANTITY TABLE

REPAIRS SPAN 7	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.0	0.0		

REPAIRS SPAN 8	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	1.0	0.5		

NOTES:

FOR CONCRETE GIRDER REPAIR DETAILS, SEE SHEET S-50

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE TO REPAIR DEPTH AND MIN. 1" CLEARANCE TO SAW CUT.

DAMAGED AREAS ARE ON THE VERTICAL FACE OF THE BOTTOM FLANGE OR WEB UNLESS OTHERWISE NOTED.

- PRESTRESSED CONCRETE GIRDER REPAIR

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 4 OF 14



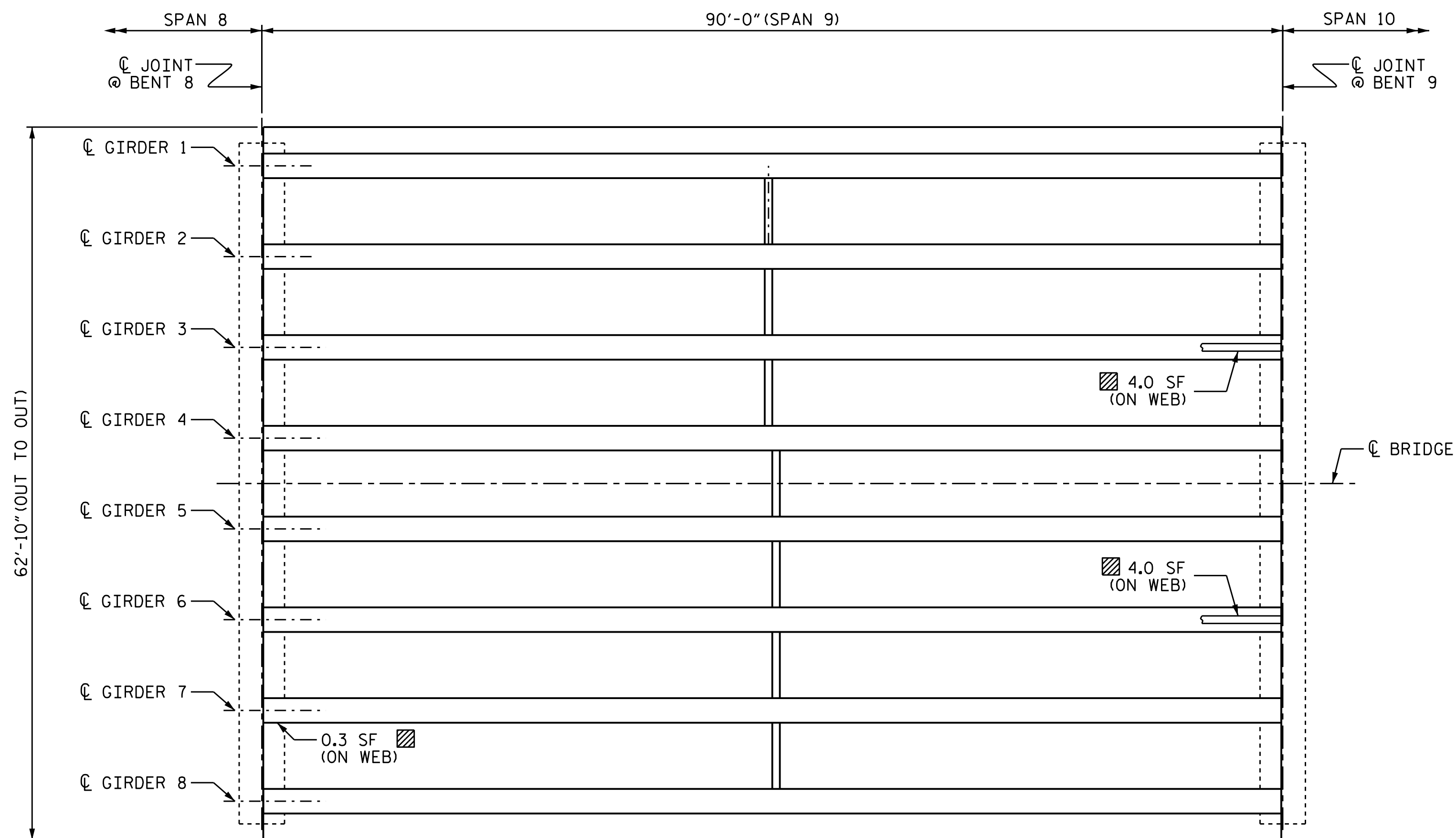
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

FRAMING PLAN  
 SPANS 7 & 8

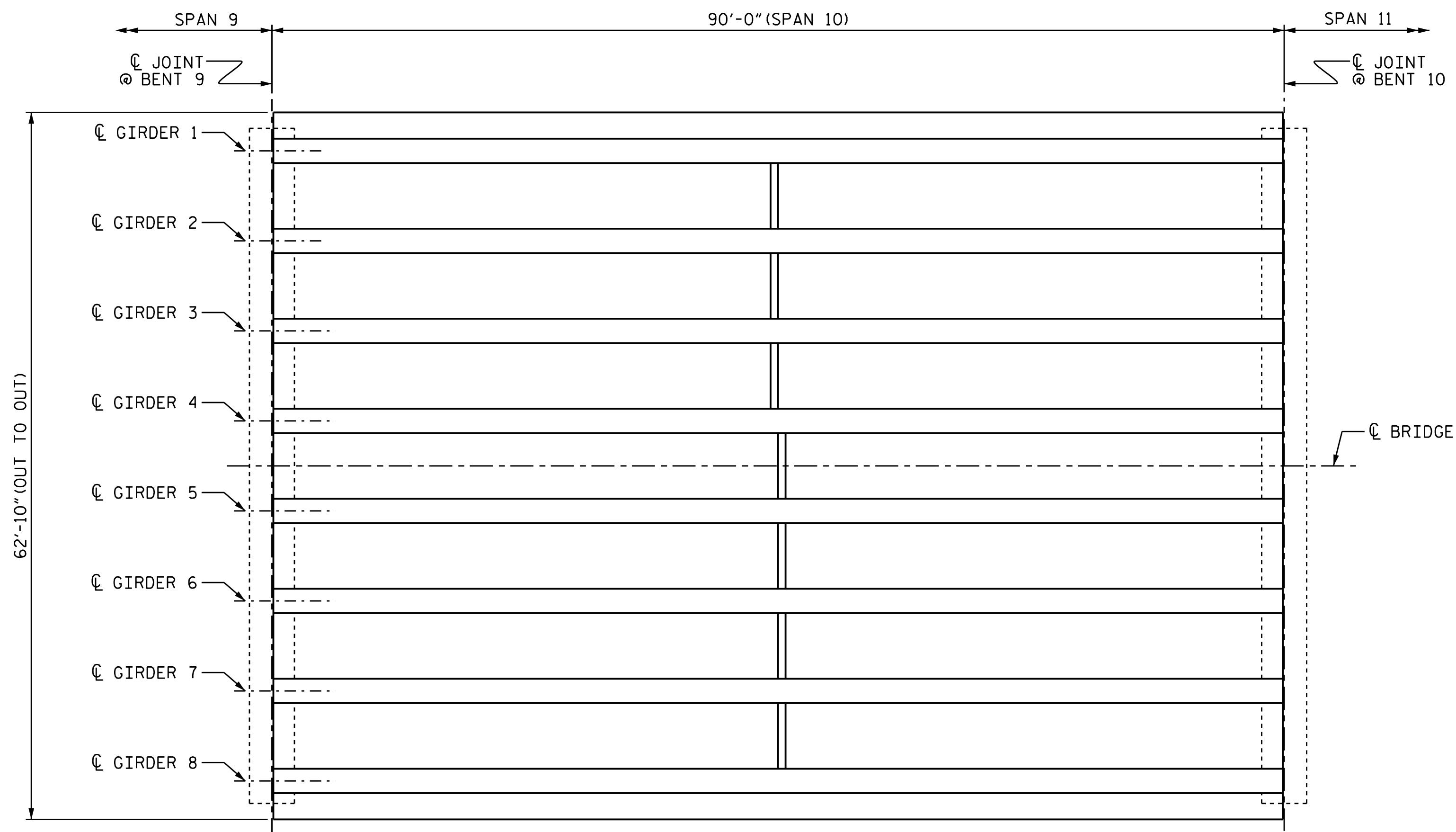
DRAWN BY : P. D. BRYANT DATE : 12/2017  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-39
1			3			TOTAL SHEETS
2			4			84



SPAN 9 - UNDERSIDE



SPAN 10 - UNDERSIDE

REPAIR QUANTITY TABLE

REPAIRS SPAN 9	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	8.3	4.1		

REPAIRS SPAN 10	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.0	0.0		

NOTES:

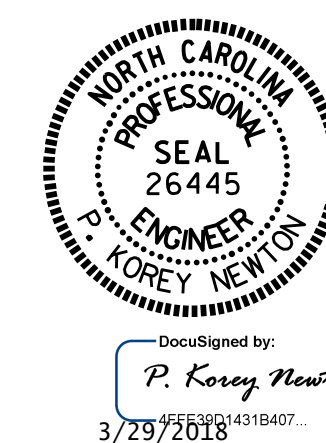
FOR CONCRETE GIRDER REPAIR DETAILS, SEE SHEET S-50

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE TO REPAIR DEPTH AND MIN. 1" CLEARANCE TO SAW CUT.

DAMAGED AREAS ARE ON THE VERTICAL FACE OF THE BOTTOM FLANGE OR WEB UNLESS OTHERWISE NOTED.

- PRESTRESSED CONCRETE GIRDER REPAIR

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
 SHEET 5 OF 14



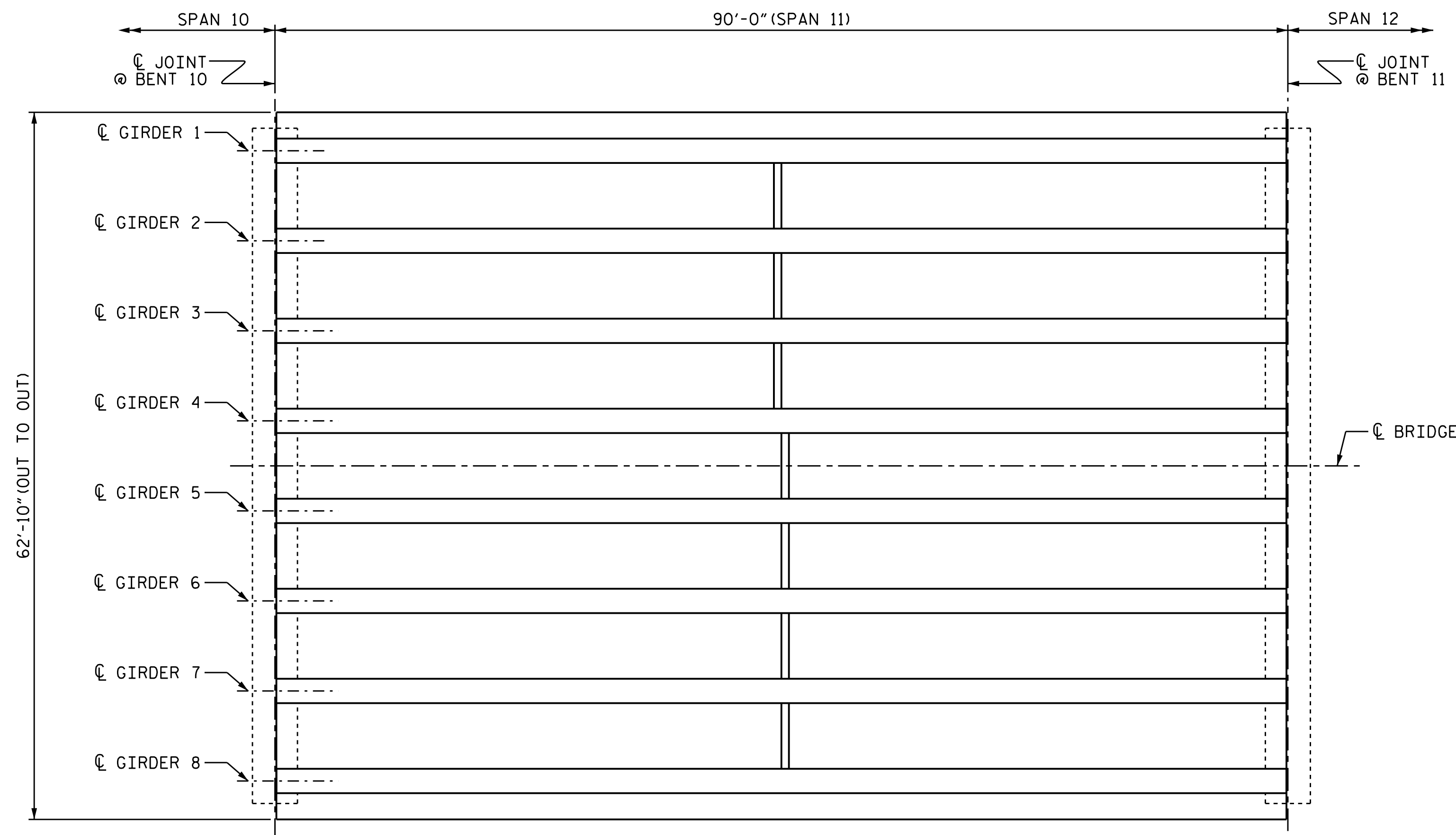
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

FRAMING PLAN  
 SPANS 9 & 10

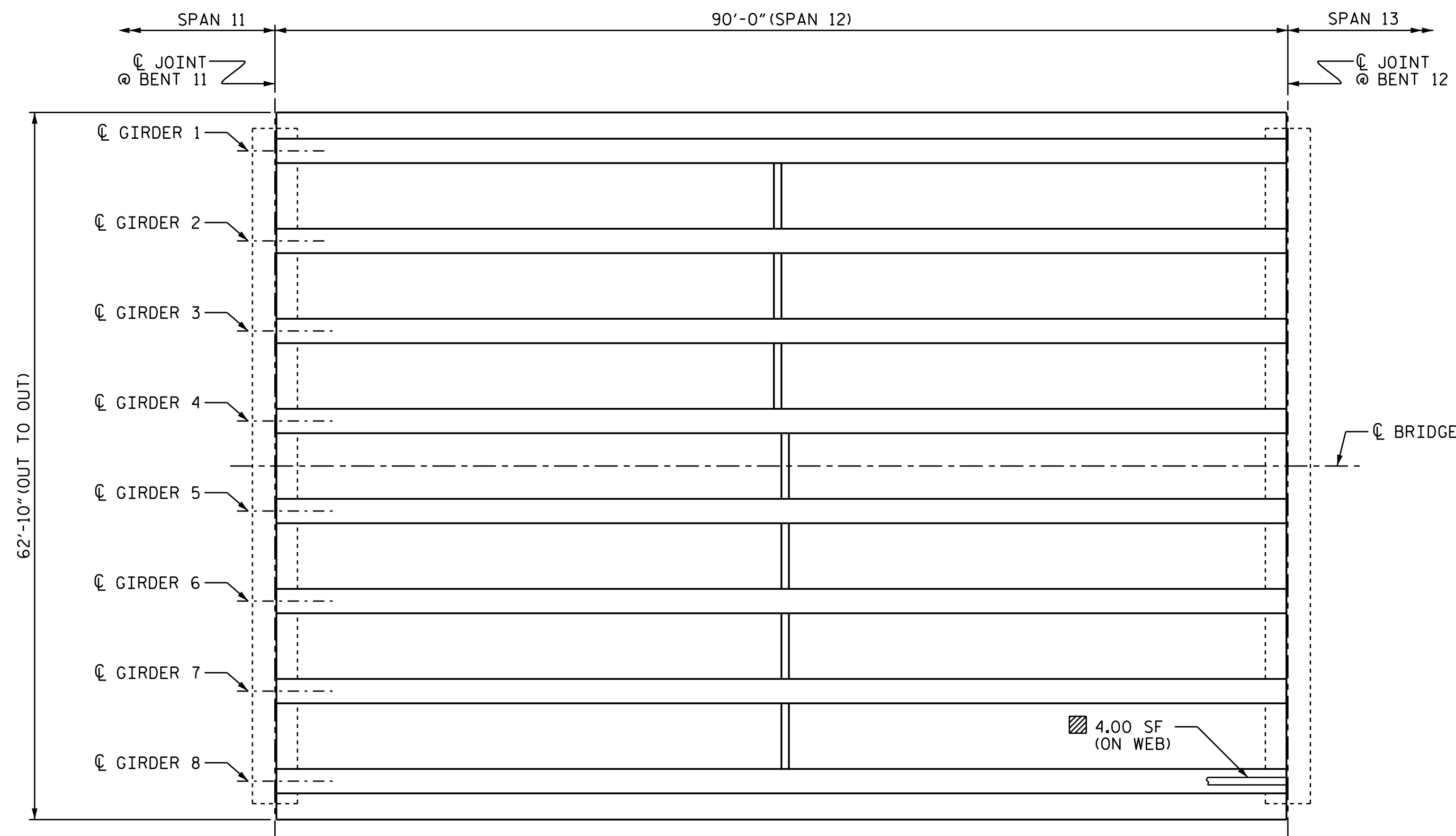
DRAWN BY : P. D. BRYANT DATE : 12/2017  
 CHECKED BY : P. K. NEWTON DATE : 01/2018

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-40
2			4			84



SPAN 11 - UNDERSIDE



SPAN 12 - UNDERSIDE

REPAIR QUANTITY TABLE

REPAIRS SPAN 11	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.0	0.0		

REPAIRS SPAN 12	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	4.0	2.0		

NOTES:

FOR CONCRETE GIRDER REPAIR DETAILS, SEE SHEET S-50

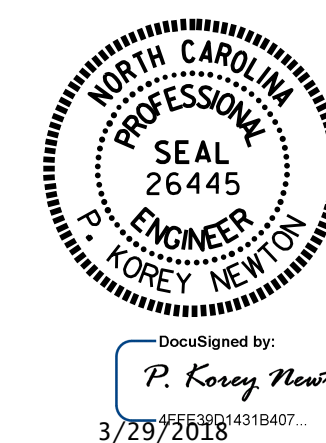
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE TO REPAIR DEPTH AND MIN. 1" CLEARANCE TO SAW CUT.

DAMAGED AREAS ARE ON THE VERTICAL FACE OF THE BOTTOM FLANGE OR WEB UNLESS OTHERWISE NOTED.

- PRESTRESSED CONCRETE GIRDER REPAIR

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 6 OF 14



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

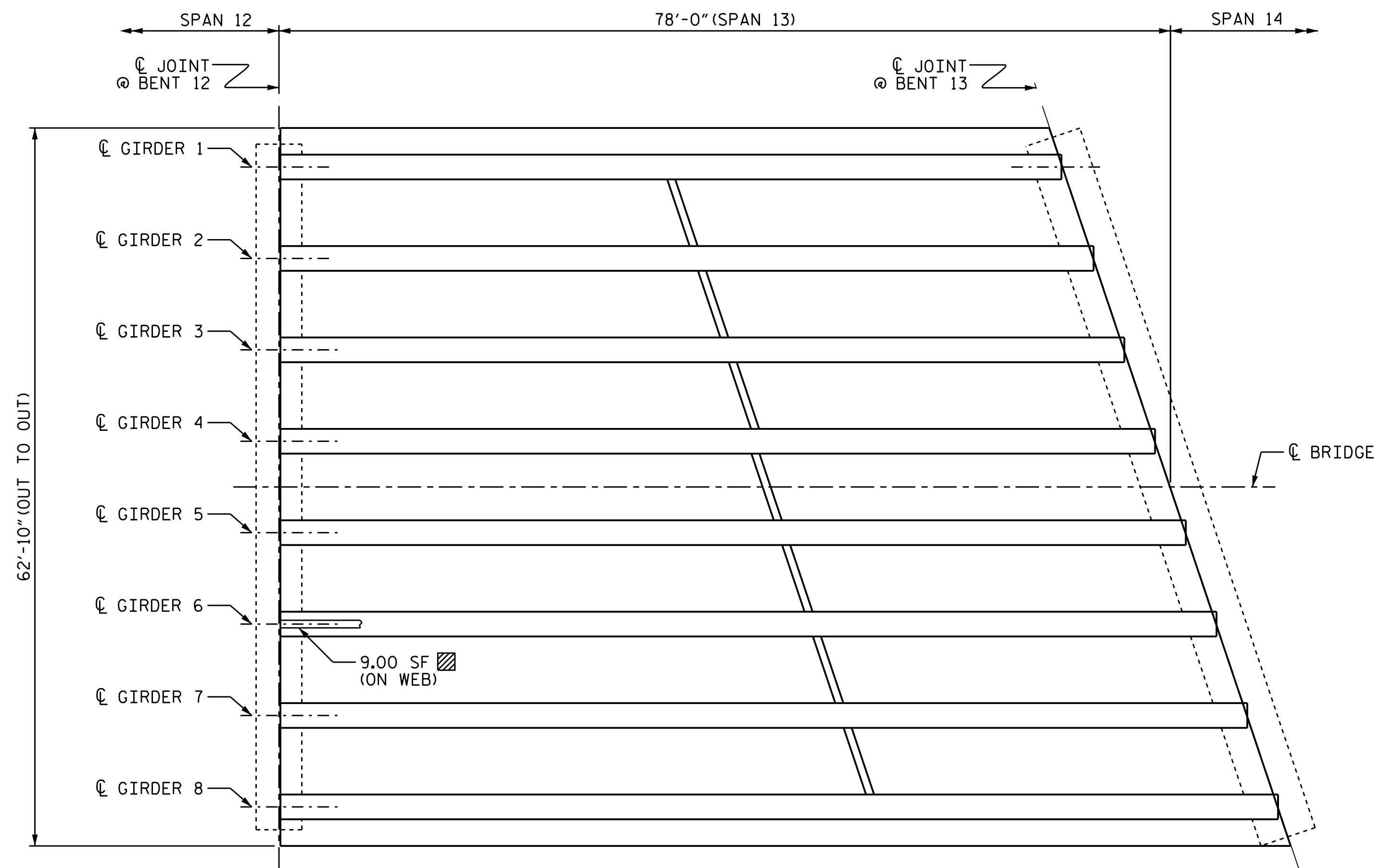
FRAMING PLAN  
 SPANS 11 & 12

DRAWN BY : P. D. BRYANT DATE : 12/2017  
 CHECKED BY : P. K. NEWTON DATE : 01/2018

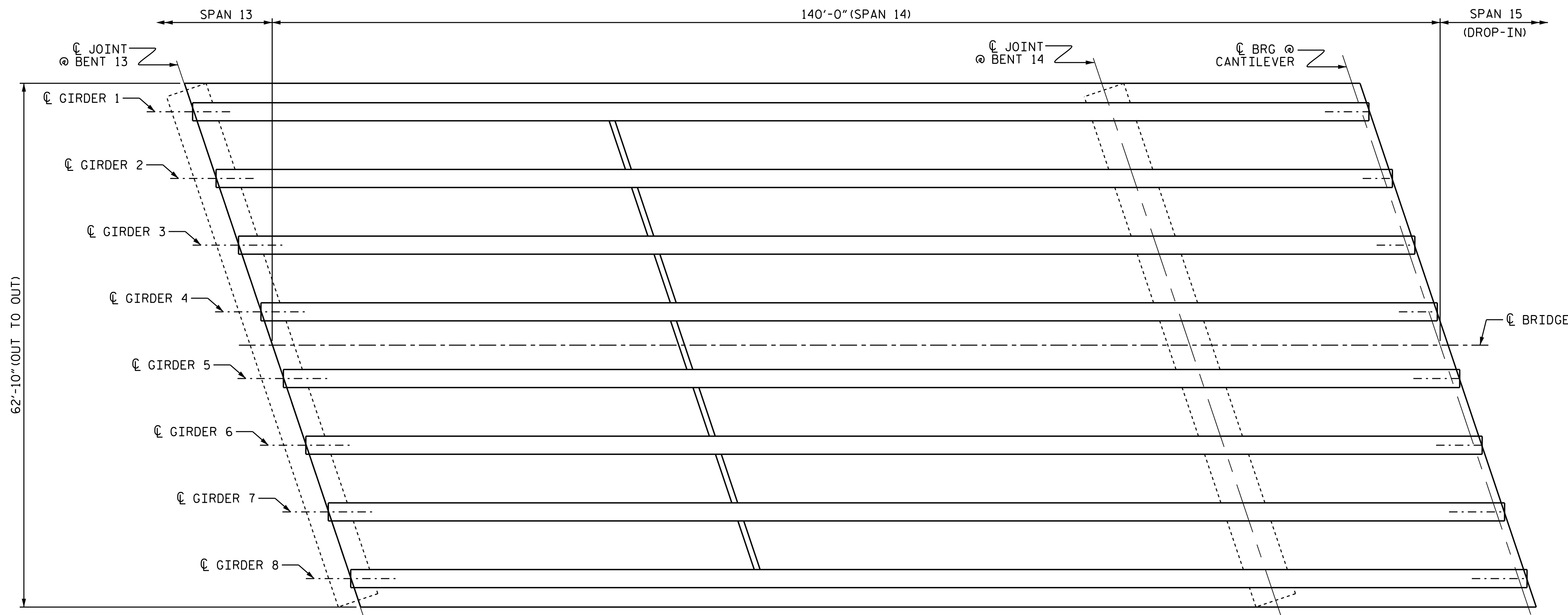
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NO.	REVISIONS		NO.	REVISIONS		SHEET NO.
	BY:	DATE:		BY:	DATE:	
1			3			S-41
2			4			TOTAL SHEETS 84





SPAN 13 - UNDERSIDE



SPAN 14- UNDERSIDE

REPAIR QUANTITY TABLE

REPAIRS SPAN 13	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	9.0	4.5		

REPAIRS SPAN 14	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.0	0.0		

NOTES:

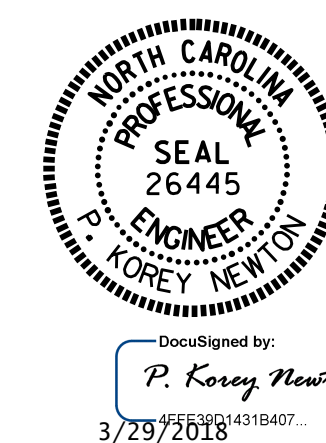
FOR CONCRETE GIRDER REPAIR DETAILS, SEE SHEET S-50

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE TO REPAIR DEPTH AND MIN. 1" CLEARANCE TO SAW CUT.

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- PRESTRESSED CONCRETE GIRDER REPAIR

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
 SHEET 7 OF 14



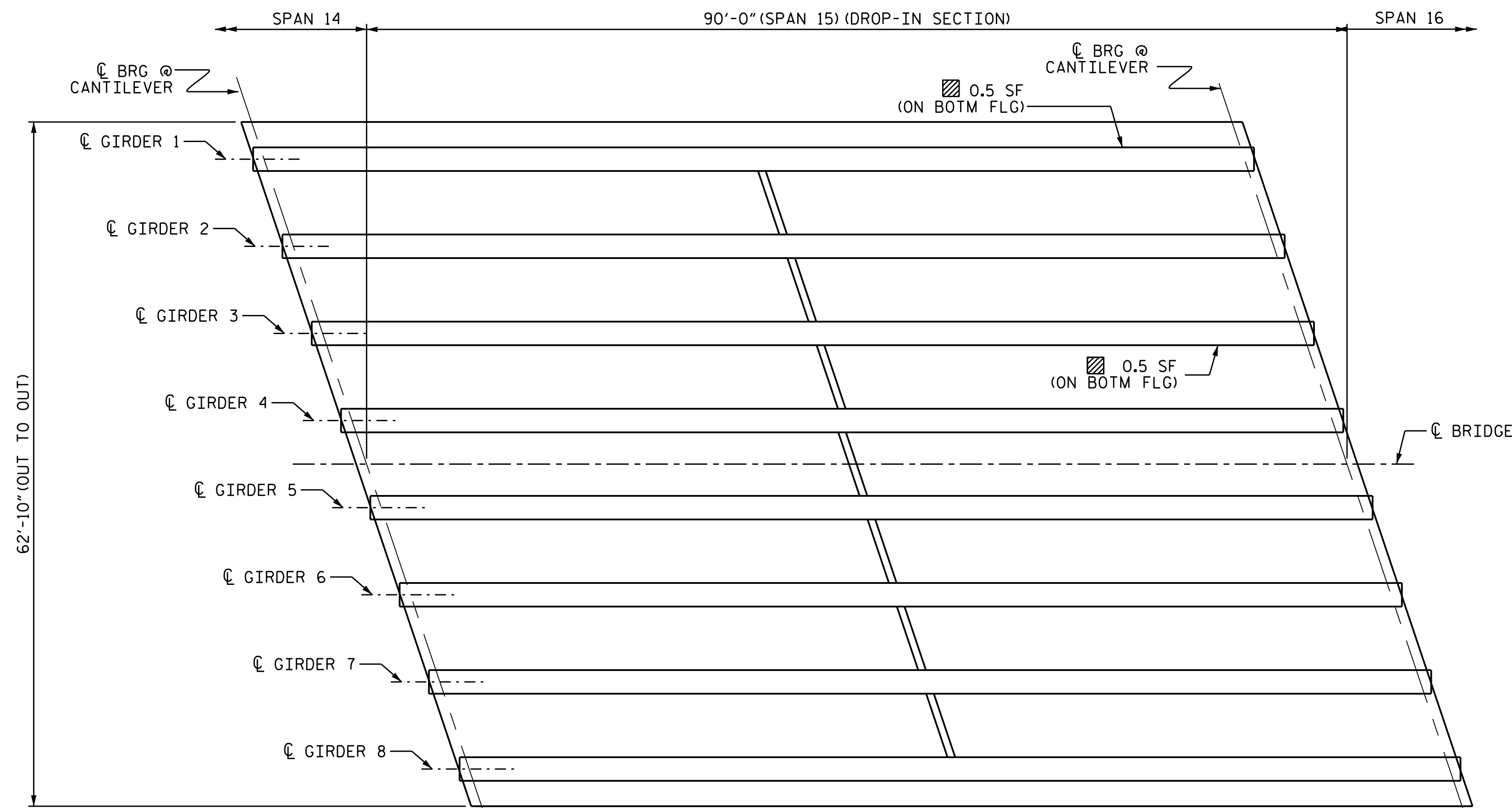
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 FRAMING PLAN  
 SPANS 13 & 14

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 CHECKED BY : P. K. NEWTON DATE : 01/2018

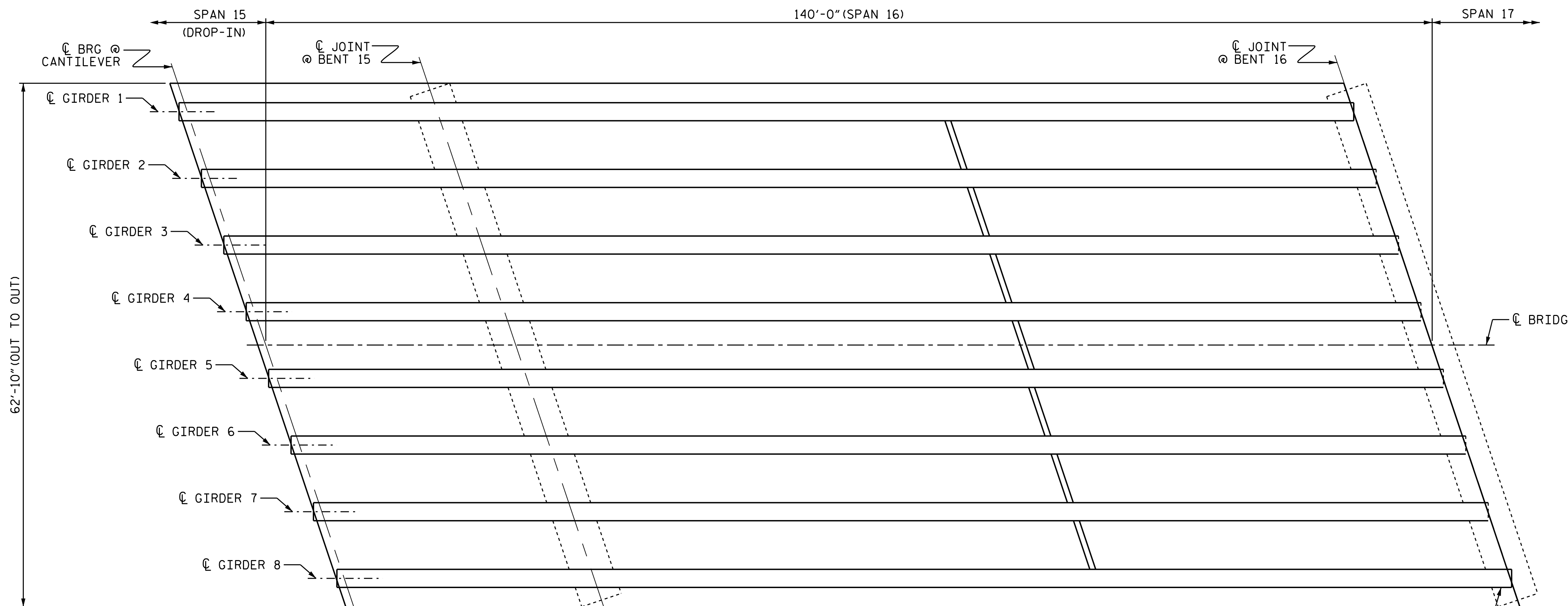
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-42
1			3			TOTAL SHEETS
2			4			84





SPAN 15- UNDERSIDE



SPAN 16- UNDERSIDE

REPAIR QUANTITY TABLE

REPAIRS SPAN 15	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	1.0	0.5		

REPAIRS SPAN 16	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	2.0	1.0		

NOTES:

FOR CONCRETE GIRDER REPAIR DETAILS, SEE SHEET S-50

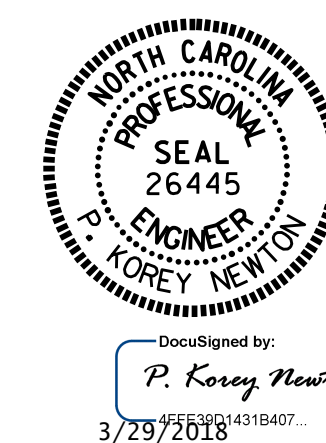
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE TO REPAIR DEPTH AND MIN. 1" CLEARANCE TO SAW CUT.

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- PRESTRESSED CONCRETE GIRDER REPAIR

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29-MAR-2018 08:53  
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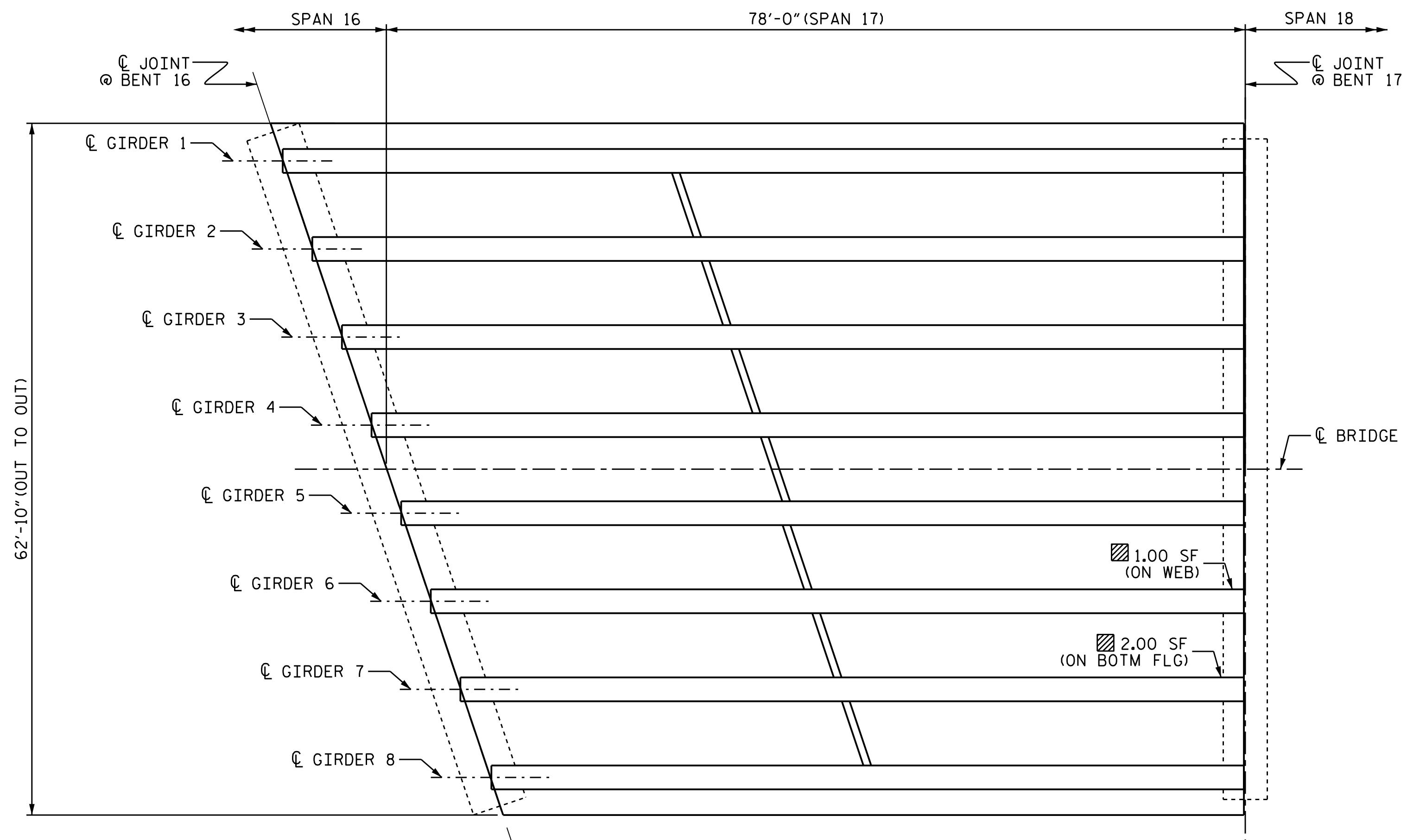
PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
 SHEET 8 OF 14

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

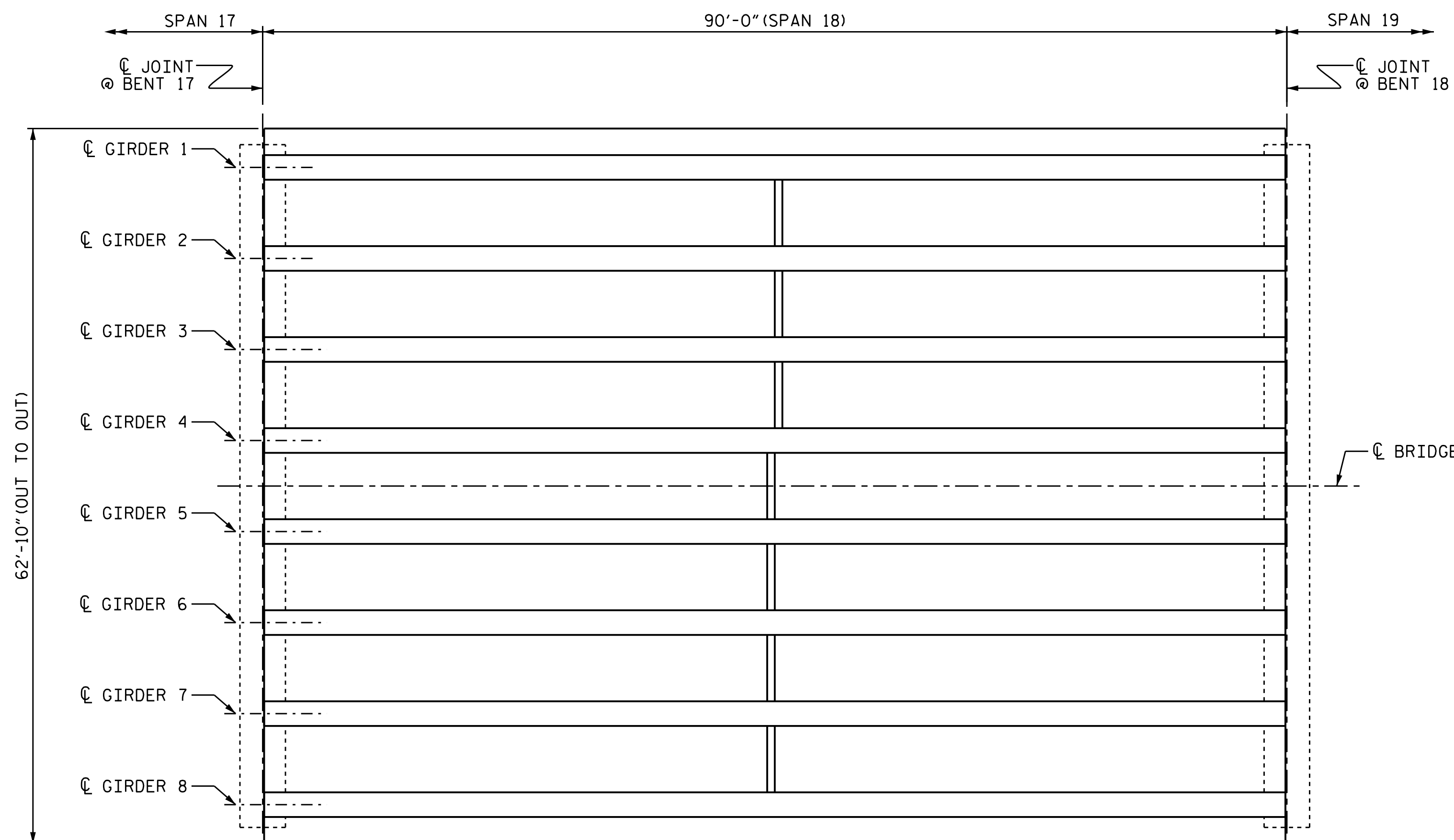
FRAMING PLAN  
 SPAN 15 & 16

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-43
1			3			TOTAL SHEETS
2			4			84



SPAN 17 - UNDERSIDE



SPAN 18 - UNDERSIDE

REPAIR QUANTITY TABLE

REPAIRS SPAN 17	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	3.0	1.5		

REPAIRS SPAN 18	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.0	0.0		

NOTES:

FOR CONCRETE GIRDER REPAIR DETAILS, SEE SHEET S-50

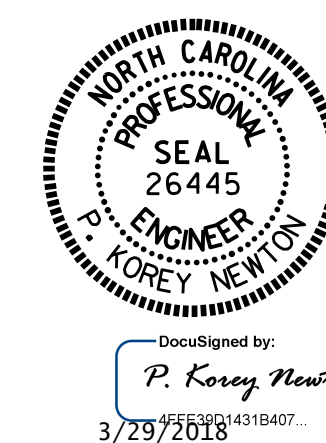
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- PRESTRESSED CONCRETE GIRDER REPAIR

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 9 OF 14



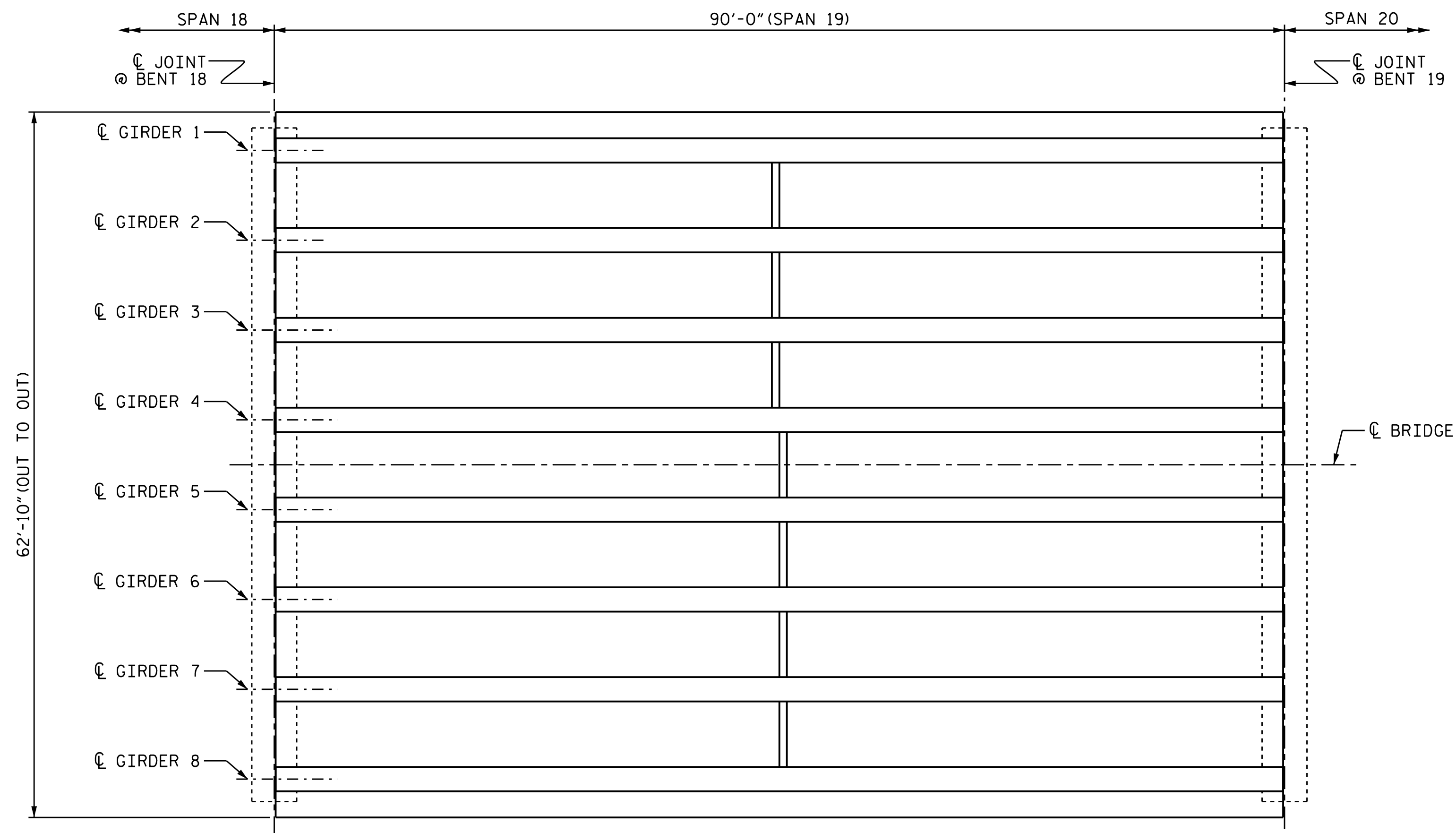
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

FRAMING PLAN  
 SPANS 17 & 18

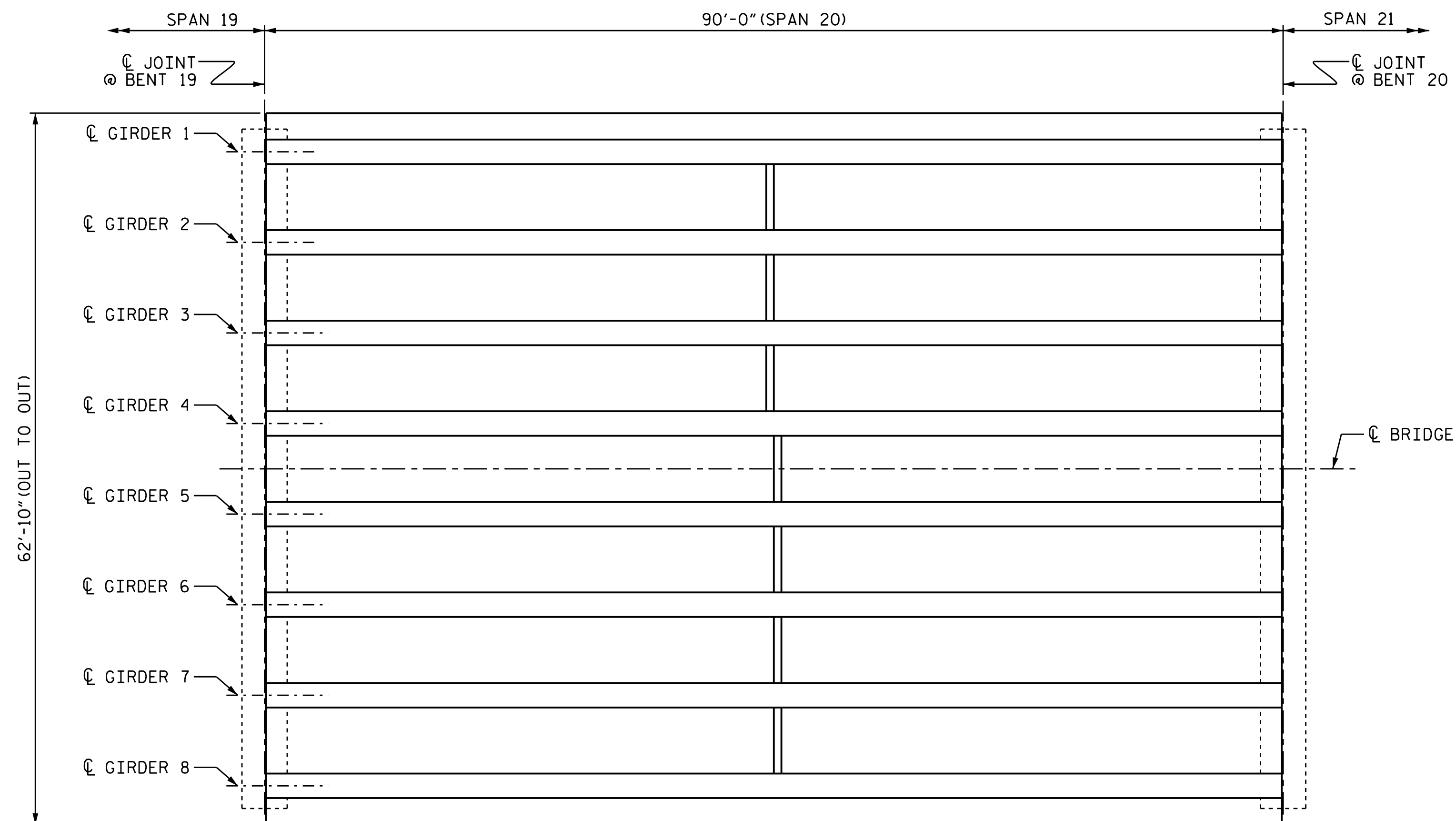
DRAWN BY : P. D. BRYANT DATE : 12/2017  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-44
2			4			84



SPAN 19 - UNDERSIDE



SPAN 20 - UNDERSIDE

REPAIR QUANTITY TABLE

REPAIRS SPAN 19	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.0	0.0		

REPAIRS SPAN 20	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.0	0.0		

NOTES:

FOR CONCRETE GIRDER REPAIR DETAILS, SEE SHEET S-50

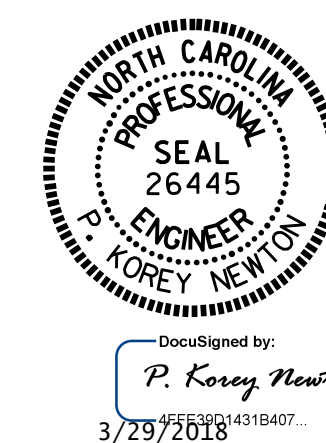
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE TO REPAIR DEPTH AND MIN. 1" CLEARANCE TO SAW CUT.

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- PRESTRESSED CONCRETE GIRDER REPAIR

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 10 OF 14



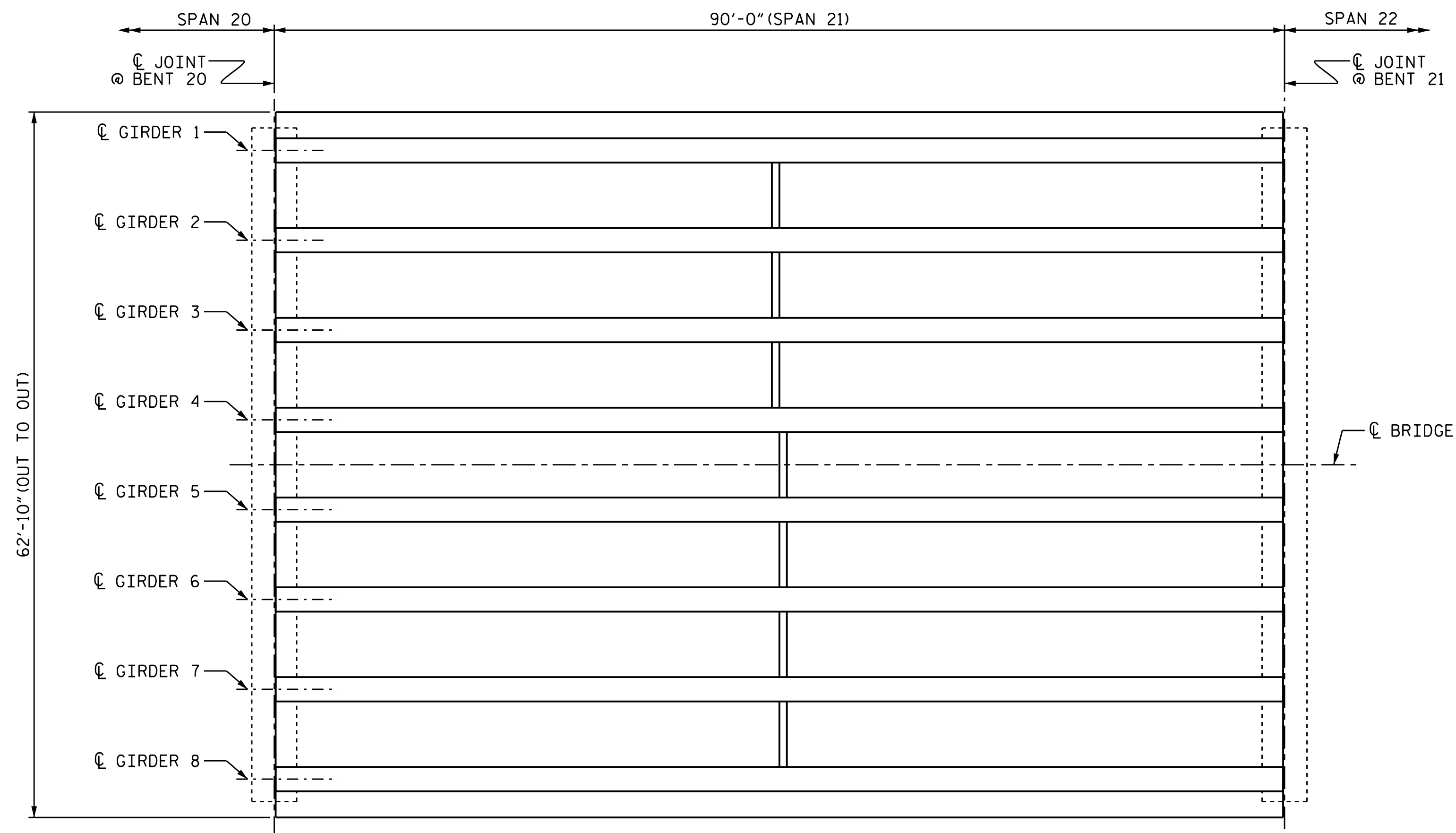
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

FRAMING PLAN  
 SPANS 19 & 20

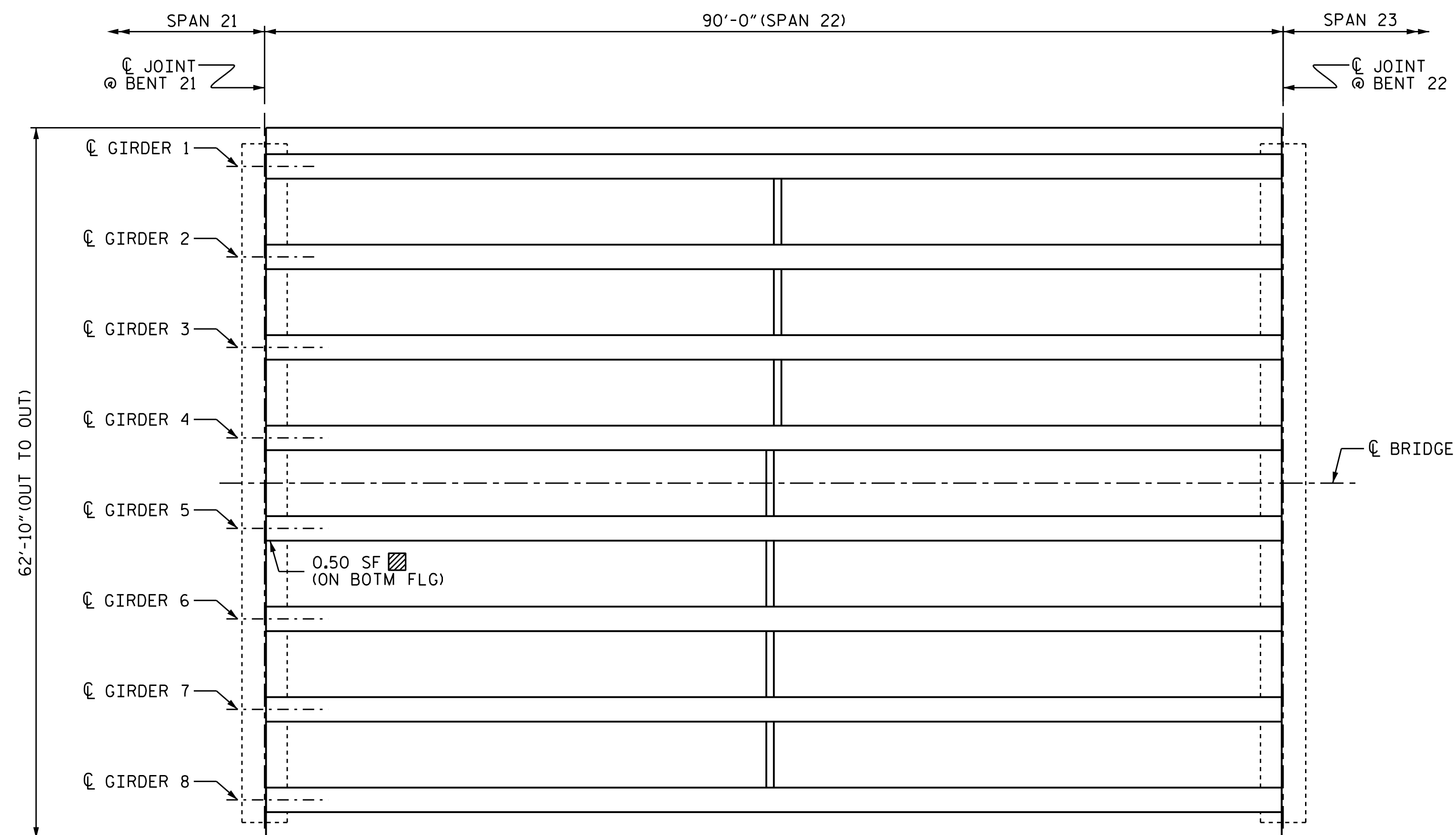
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 CHECKED BY : P. K. NEWTON DATE : 01/2018

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-45
2			4			84



SPAN 21 - UNDERSIDE



SPAN 22 - UNDERSIDE

REPAIR QUANTITY TABLE

REPAIRS SPAN 21	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.0	0.0		

REPAIRS SPAN 22	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.5	0.3		

NOTES:

FOR CONCRETE GIRDER REPAIR DETAILS, SEE SHEET S-50

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE TO REPAIR DEPTH AND MIN. 1" CLEARANCE TO SAW CUT.

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- PRESTRESSED CONCRETE GIRDER REPAIR

PROJECT NO. 15BPR.7

CURRITUCK COUNTY

BRIDGE NO. 15

SHEET 11 OF 14

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

FRAMING PLAN  
SPANS 21 & 22



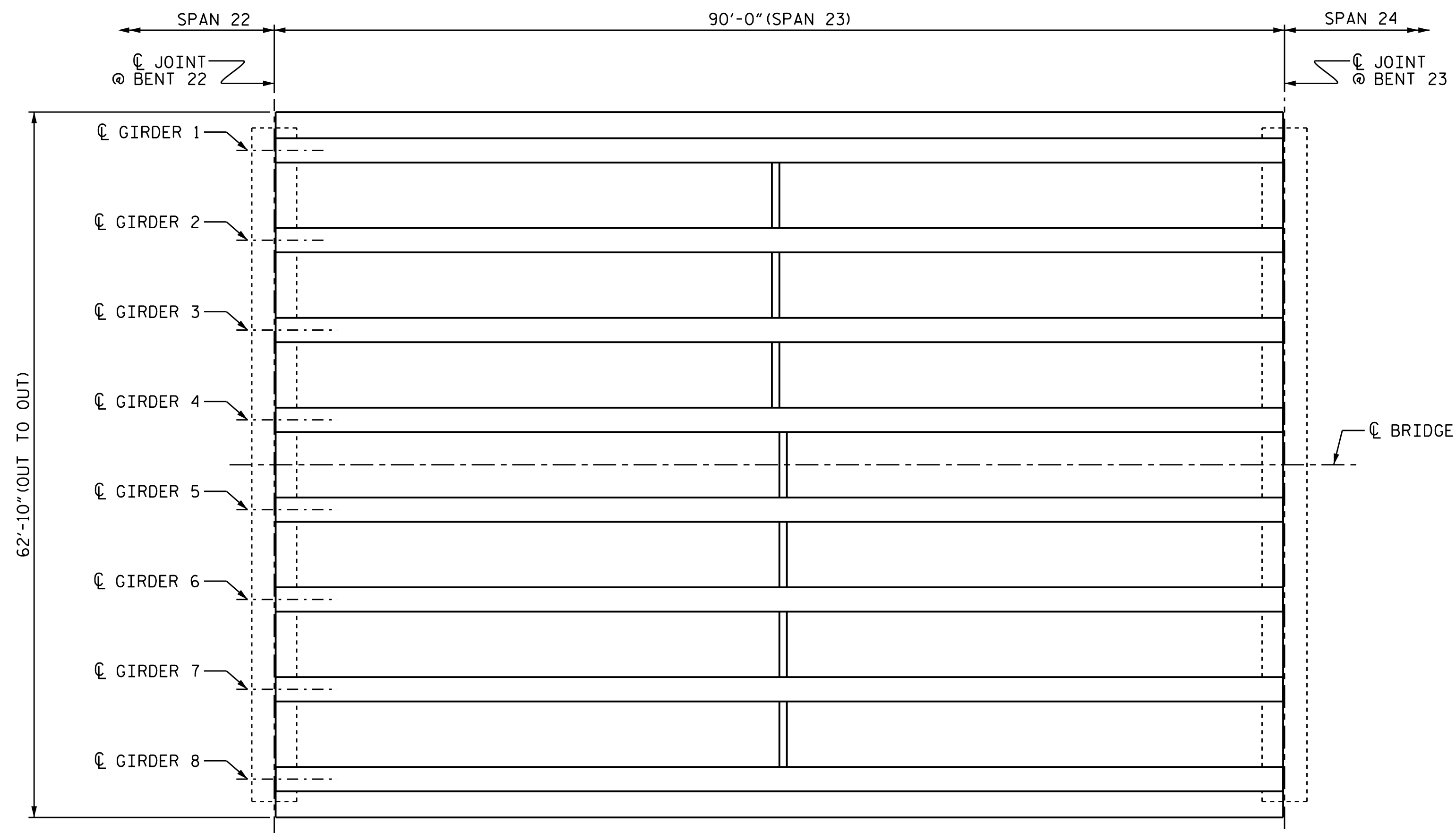
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P. Corey Newton  
3/29/2018

DRAWN BY : P. D. BRYANT DATE : 12/2017  
CHECKED BY : P. K. NEWTON DATE : 01/2018

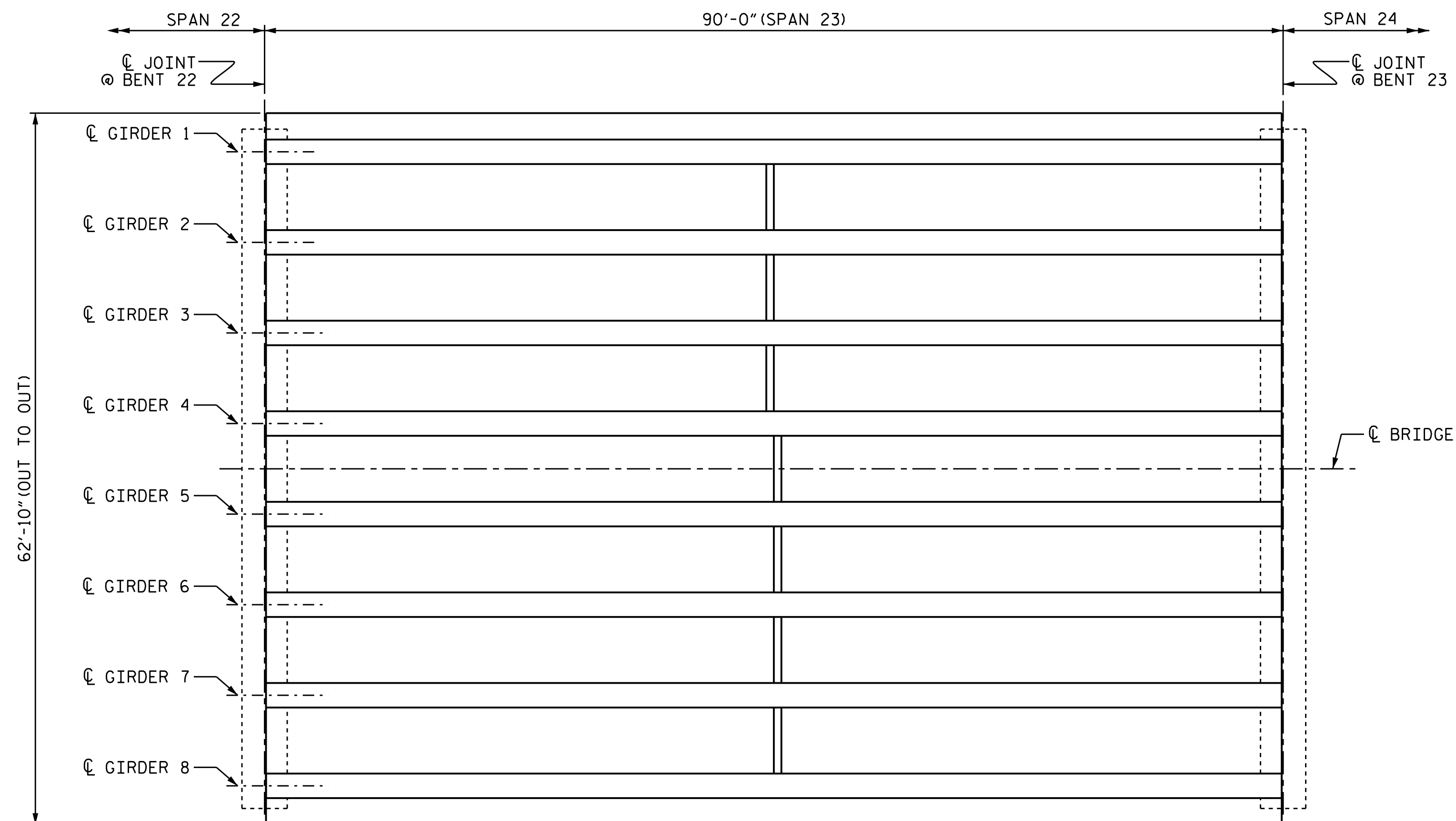
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-46
2			4			84





SPAN 23 - UNDERSIDE



SPAN 24 - UNDERSIDE

REPAIR QUANTITY TABLE

REPAIRS SPAN 23	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.0	0.0		

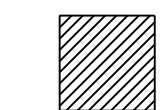
REPAIRS SPAN 24	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	0.0	0.0		

NOTES:

FOR CONCRETE GIRDER REPAIR DETAILS, SEE SHEET S-50

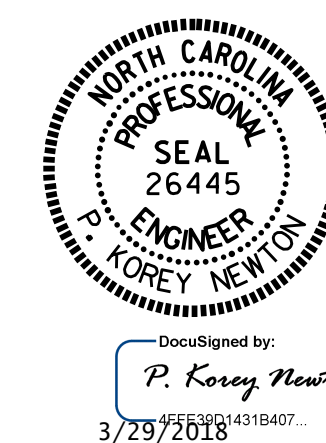
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE TO REPAIR DEPTH AND MIN. 1" CLEARANCE TO SAW CUT.

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 - PRESTRESSED CONCRETE GIRDER REPAIR

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 12 OF 14



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

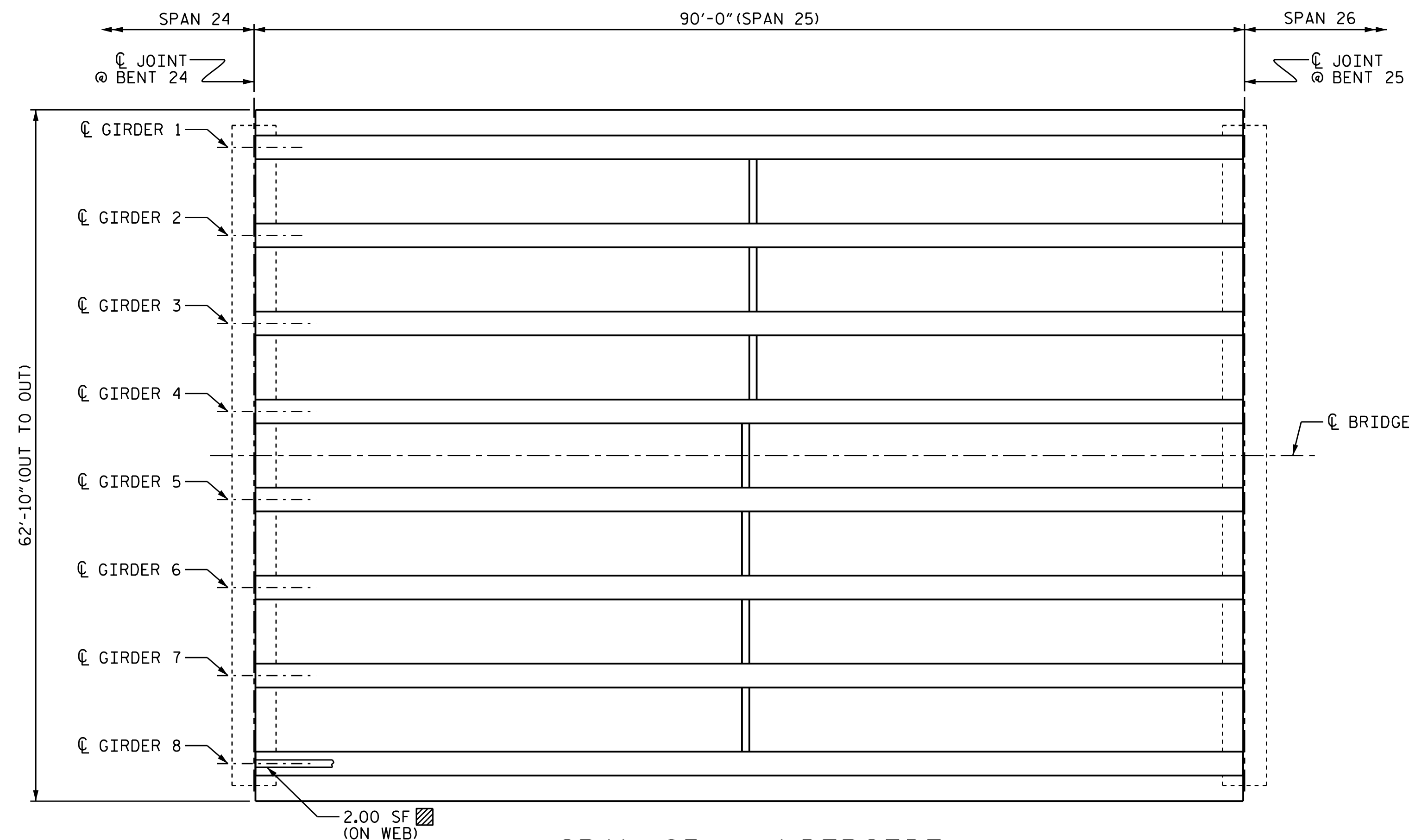
FRAMING PLAN  
 SPANS 23 & 24

DRAWN BY : P. D. BRYANT DATE : 12/2017  
 CHECKED BY : P. K. NEWTON DATE : 01/2018

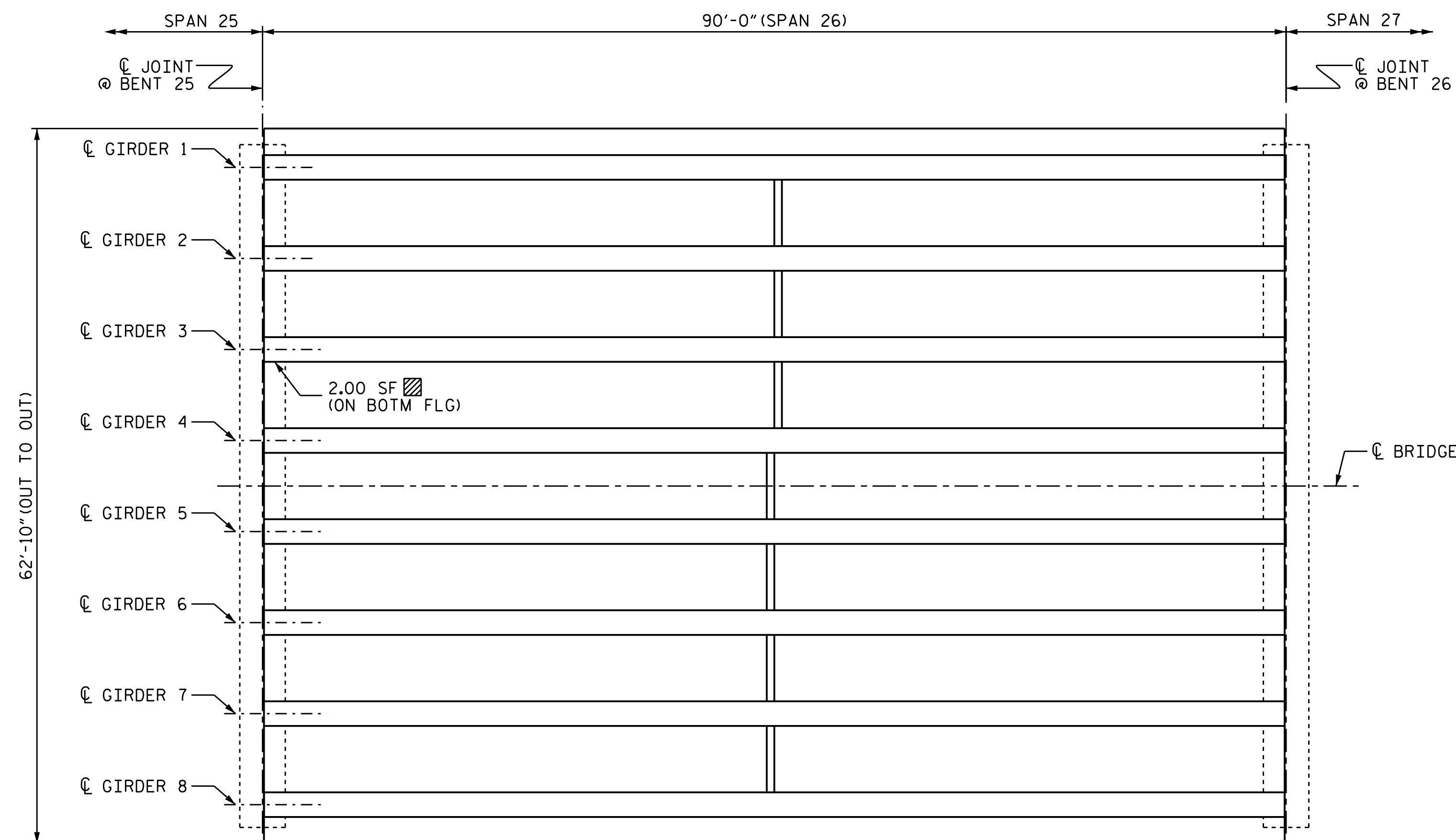
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	BY:	DATE:		BY:	DATE:	
1			3			S-47
2			4			TOTAL SHEETS 84





SPAN 25 - UNDERSIDE



SPAN 26 - UNDERSIDE

REPAIR QUANTITY TABLE

REPAIRS SPAN 25	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	2.0	1.0		

REPAIRS SPAN 26	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE GIRDER REPAIRS	2.0	1.0		

NOTES:

FOR CONCRETE GIRDER REPAIR DETAILS, SEE SHEET S-50

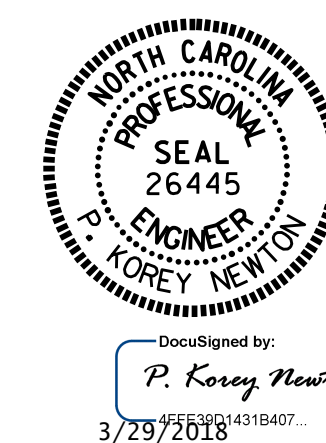
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE TO REPAIR DEPTH AND MIN. 1" CLEARANCE TO SAW CUT.

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- PRESTRESSED CONCRETE GIRDER REPAIR

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 13 OF 14



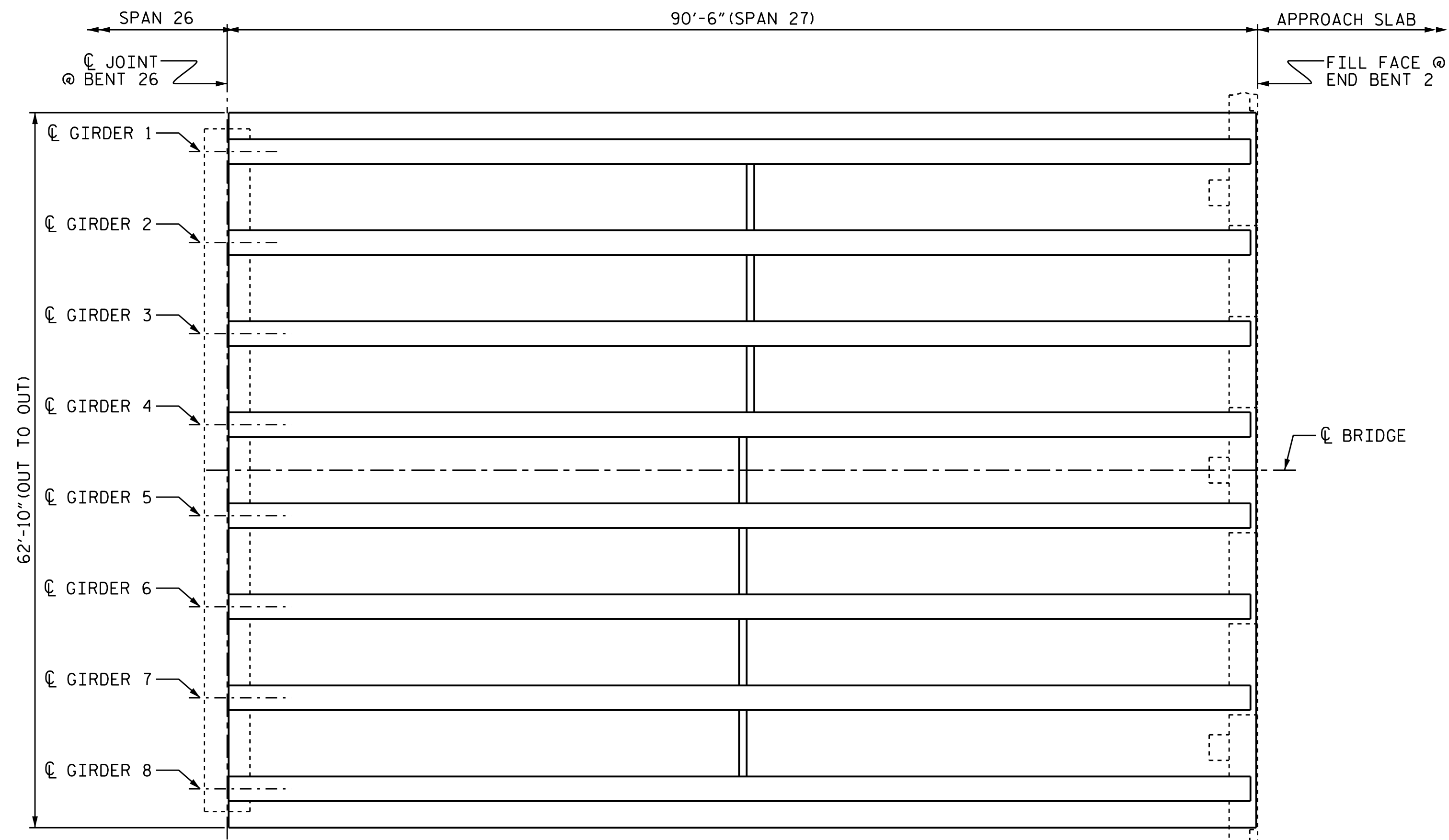
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

FRAMING PLAN  
 SPANS 25 & 26

DRAWN BY : P. D. BRYANT DATE : 12/2017  
 CHECKED BY : P. K. NEWTON DATE : 01/2018

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NO.	REVISIONS		NO.	REVISIONS		SHEET NO.
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1			3			S-48
2			4			TOTAL SHEETS 84



SPAN 27 - UNDERSIDE

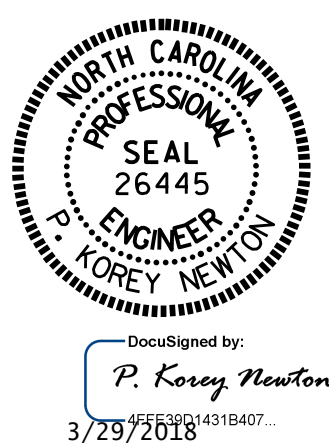
REPAIR QUANTITY TABLE				
REPAIRS SPAN 27	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
SHOTCRETE REPAIRS	0.0	0.0		
PRESTRESSED CONCRETE GIRDER REPAIRS	0.0	0.0		

**NOTES:**  
 FOR CONCRETE GIRDER REPAIR DETAILS, SEE SHEET S-50  
 VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE TO REPAIR DEPTH AND MIN. 1" CLEARANCE TO SAW CUT.  
 DAMAGED AREAS ARE ON THE VERTICAL FACE OF THE BOTTOM FLANGE OR WEB UNLESS OTHERWISE NOTED.

- PRESTRESSED CONCRETE GIRDER REPAIR

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 14 OF 14



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**FRAMING PLAN  
 SPAN 27**

DRAWN BY : P. D. BRYANT DATE : 12/2017  
 CHECKED BY : P. K. NEWTON DATE : 01/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-49
2			4			84

**NOTES**

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

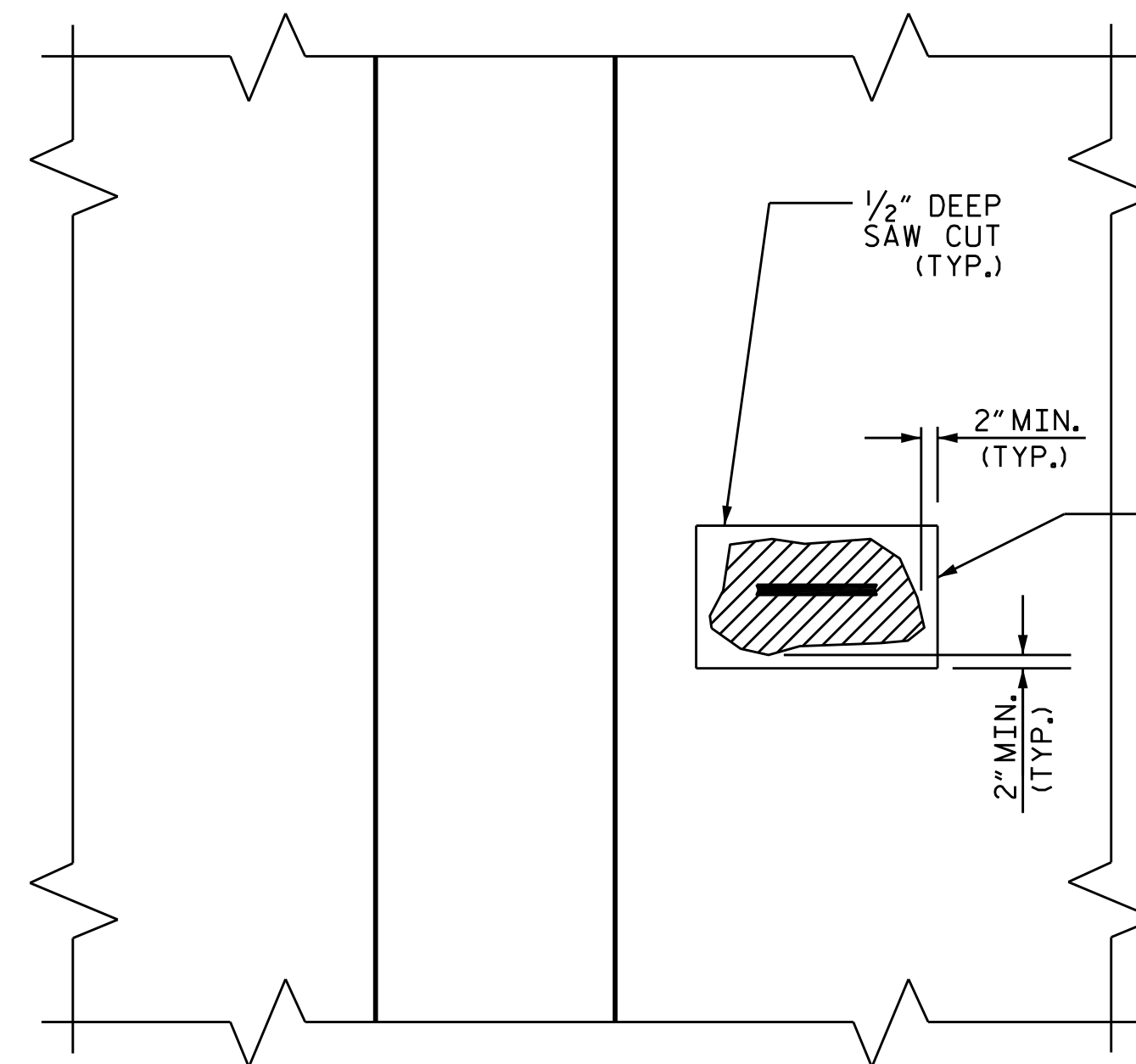
CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL AND PRESTRESSED STRANDS SHALL NOT BE DAMAGED.

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

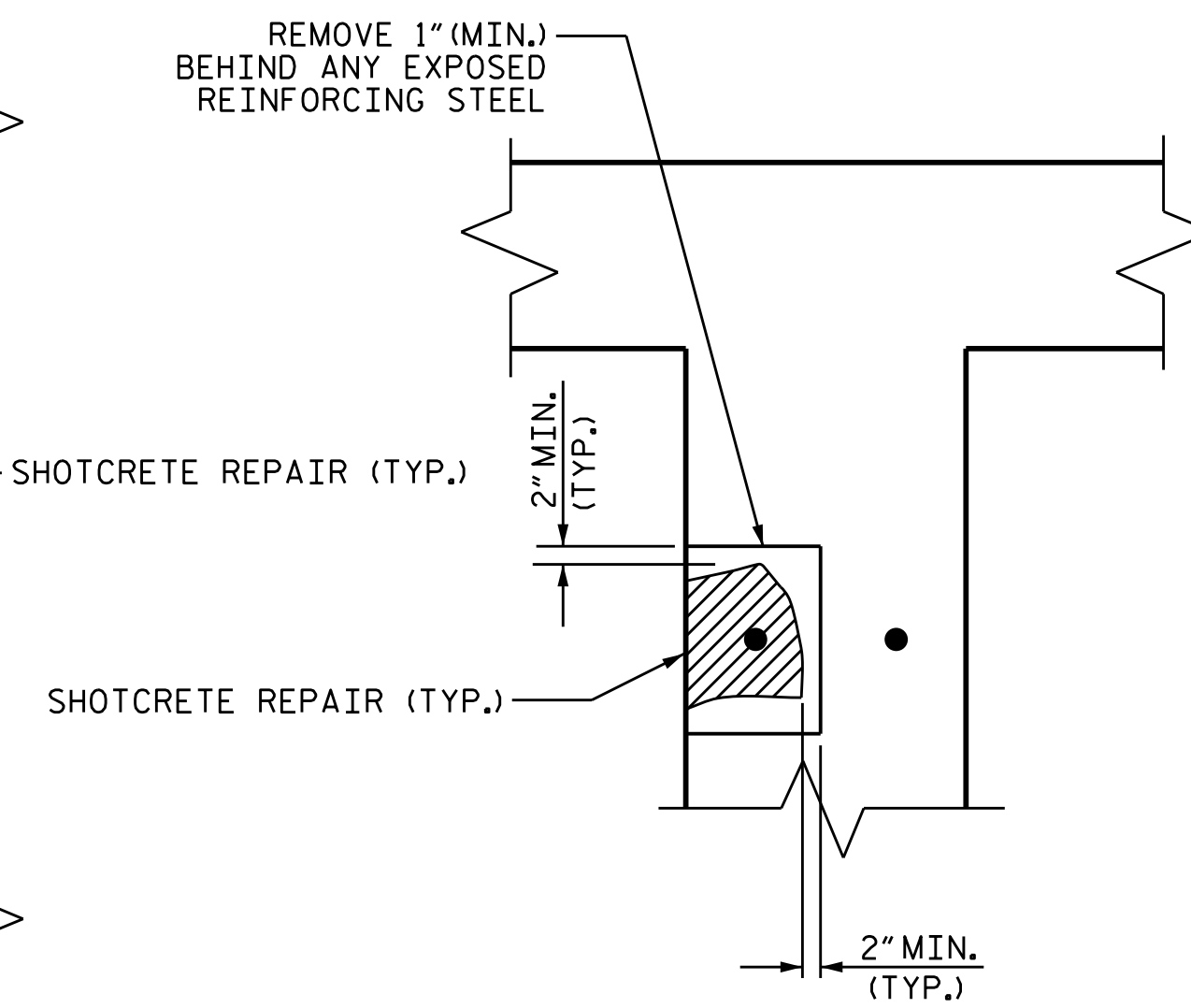
FOR PRESTRESSED CONCRETE GIRDER REPAIR, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

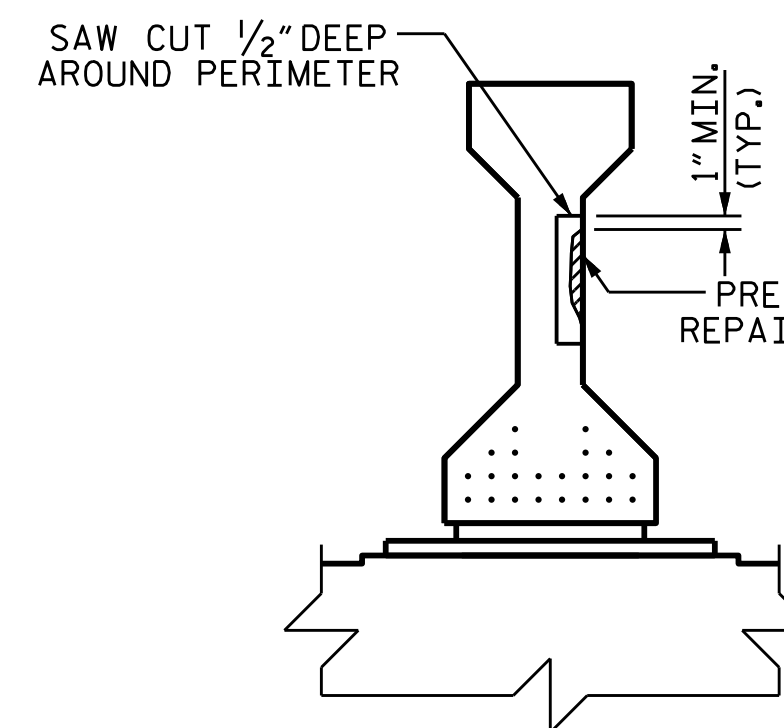
 DAMAGED AREA



SECTION D-D

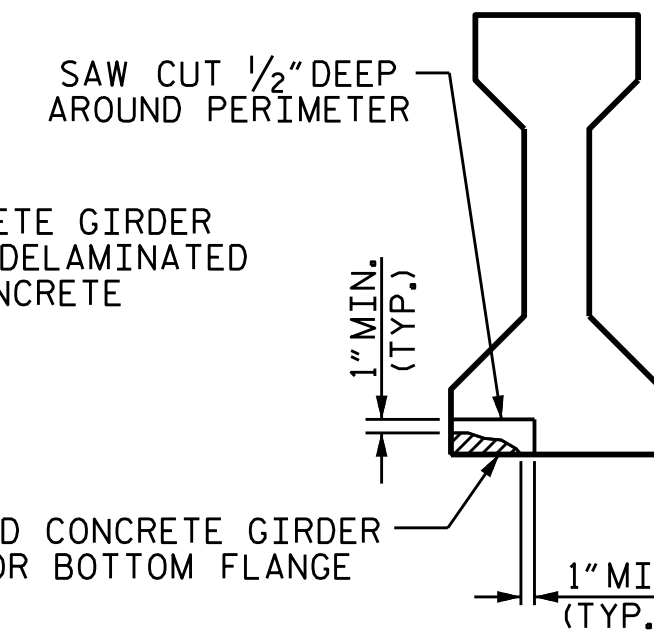


SECTION E-E



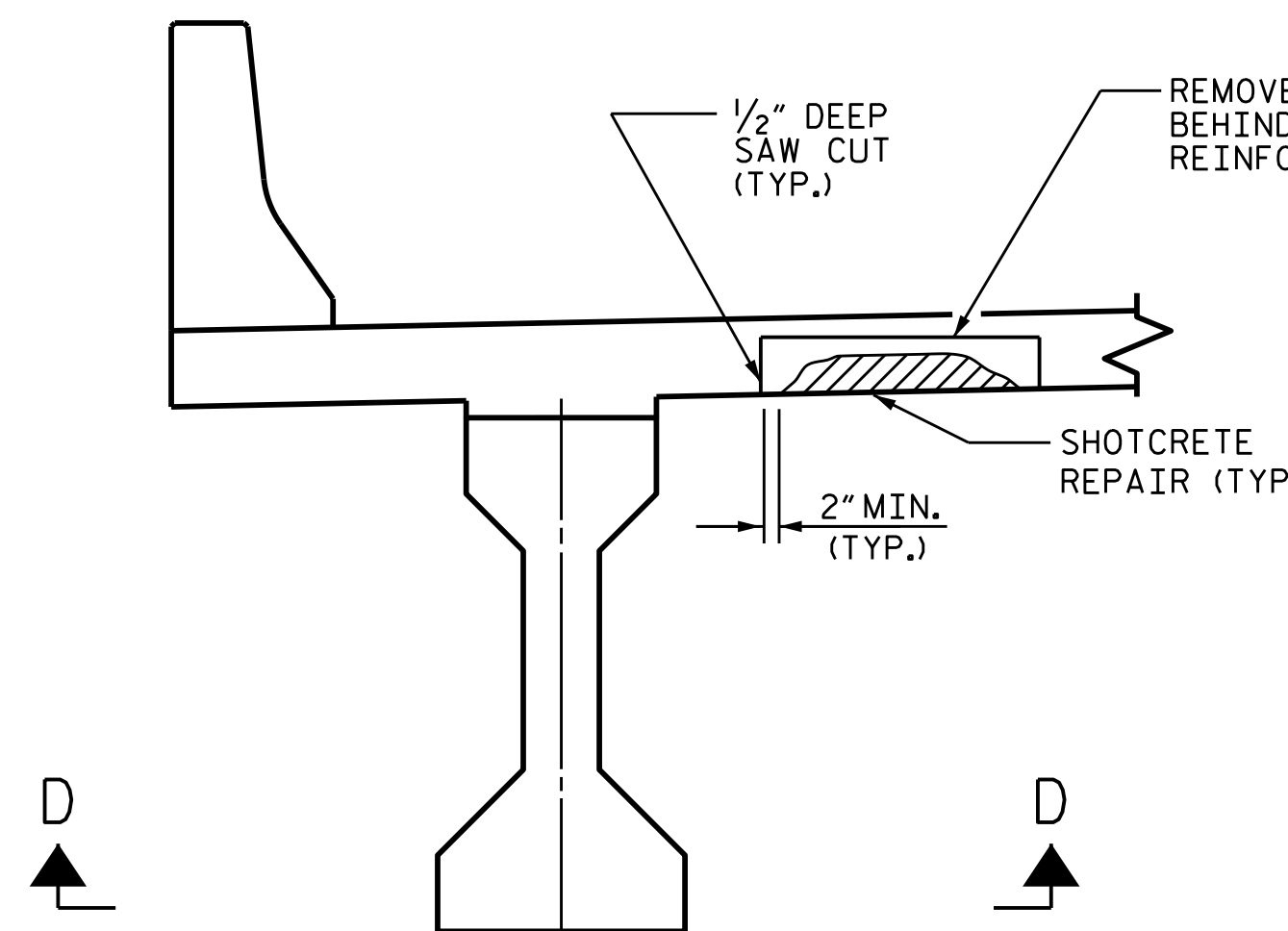
SECTION B-B

(IF MORE THAN HALF THE CIRCUMFERENCE OF REINFORCING STEEL IS EXPOSED DURING THIS PROCESS, REMOVE ADDITIONAL CONCRETE BEHIND THE BAR. THIS DOES NOT APPLY TO PRESTRESSED STRANDS.)



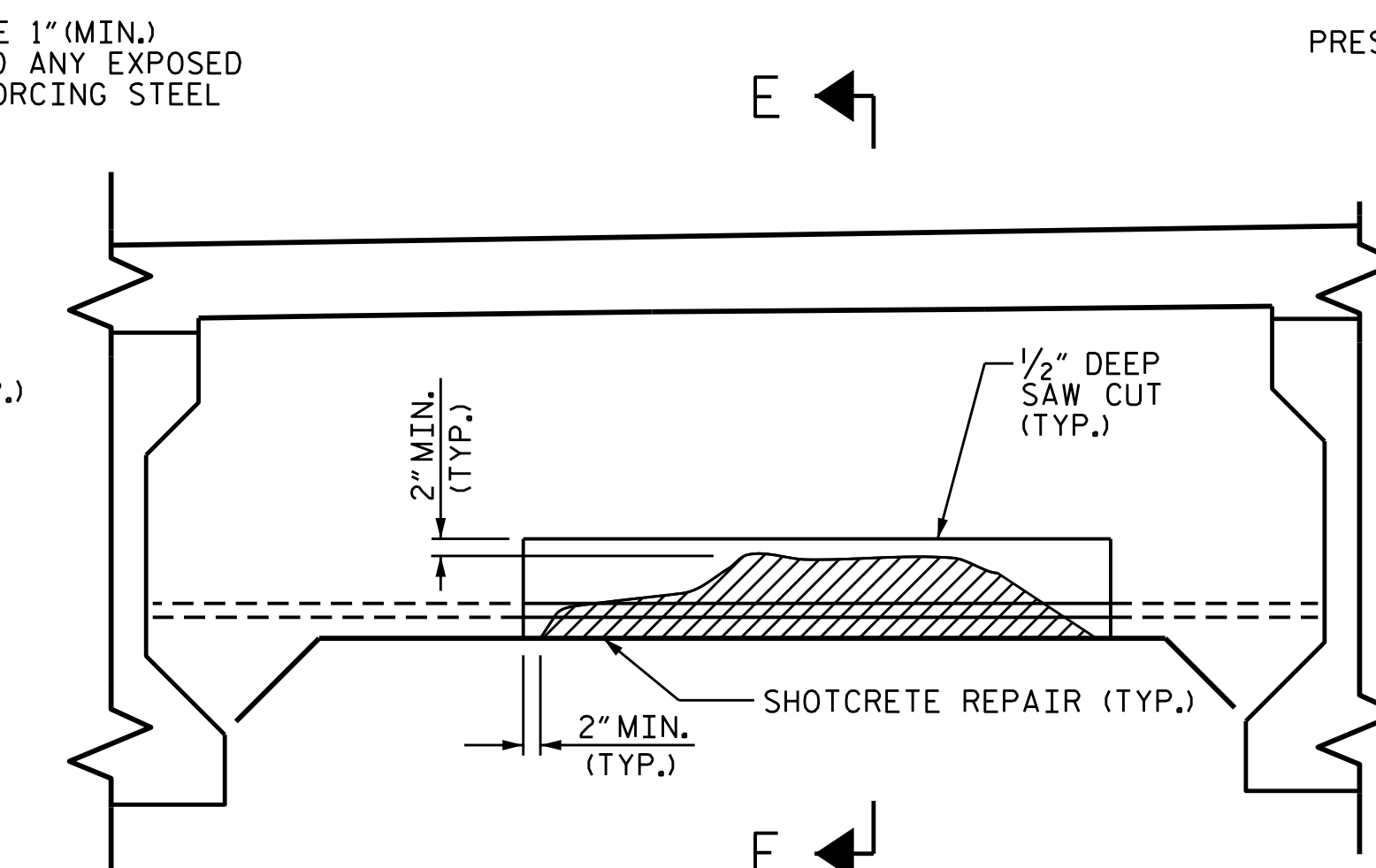
SECTION C-C

(ALL UNSOUND CONCRETE MUST BE REMOVED. USE EXTREME CARE TO NOT DAMAGE STRANDS. PRESTRESSED STRANDS NOT SHOWN FOR CLARITY.)



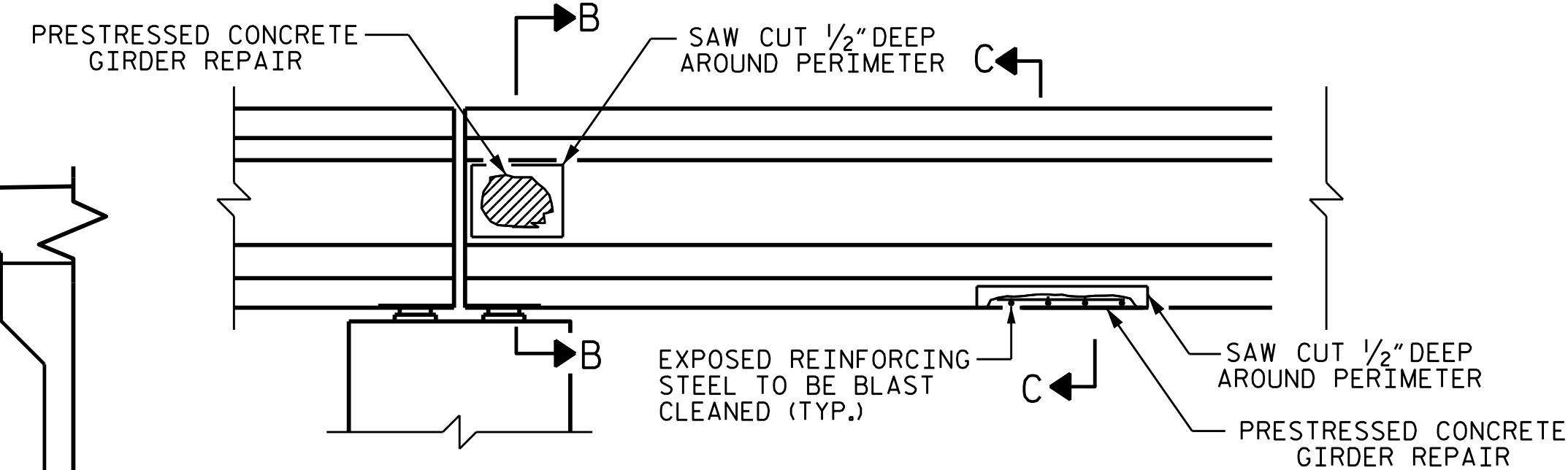
TYPICAL SECTION

UNDERDECK DETAILS



TYPICAL SECTION

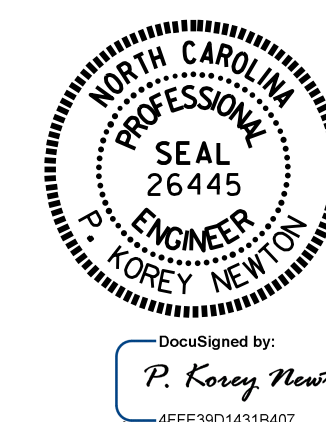
INTERIOR DIAPHRAGM REPAIR DETAILS



ELEVATION

PRESTRESSED CONCRETE GIRDER REPAIR DETAIL

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**TYPICAL GIRDER,  
 UNDERDECK &  
 DIAPHRAGM  
 REPAIR DETAILS**

DRAWN BY : P.D. BRYANT DATE : 12/2017  
 CHECKED BY : P. K. NEWTON DATE : 01/2018

DOCUMENT NOT CONSIDERED  
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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-50
2			4			84

## REPAIR QUANTITY TABLE

END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA S.F.	VOLUME CF	AREA S.F.	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
CURTAIN WALL	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0.0		
CURTAIN WALL		0.0		

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

### NOTES:

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

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

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

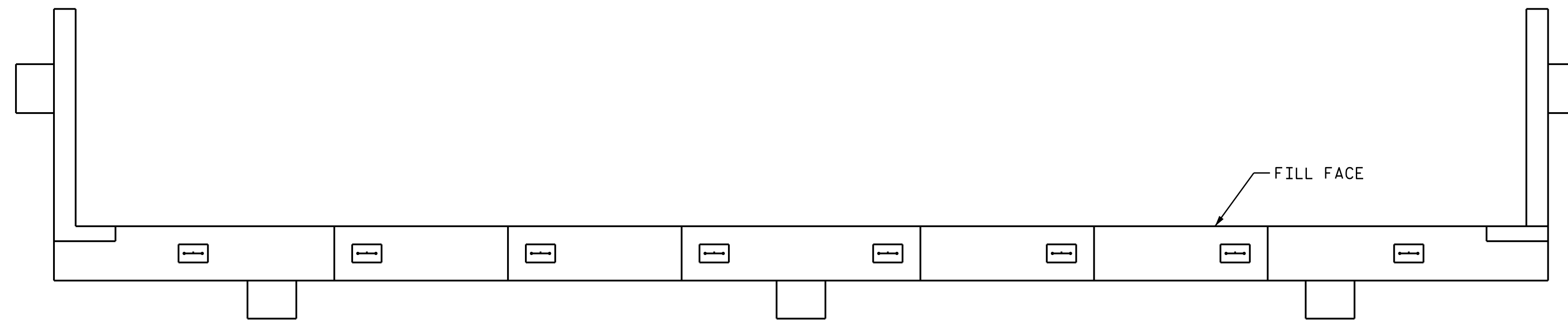
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

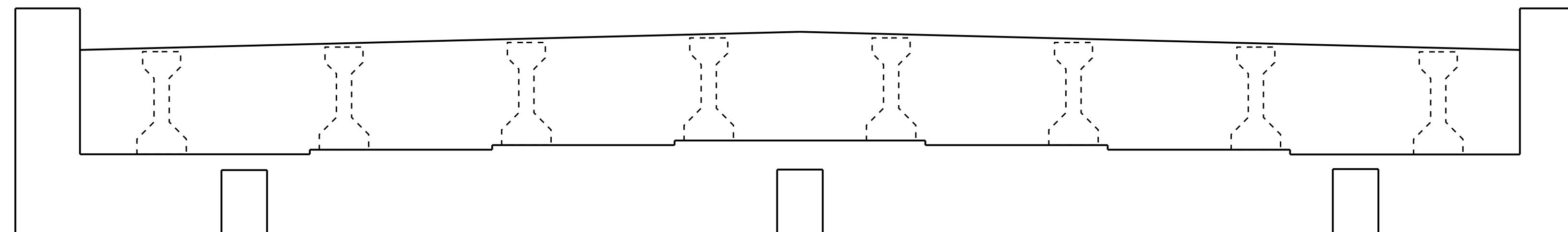
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



PLAN OF CAP  
TOP OF CAP

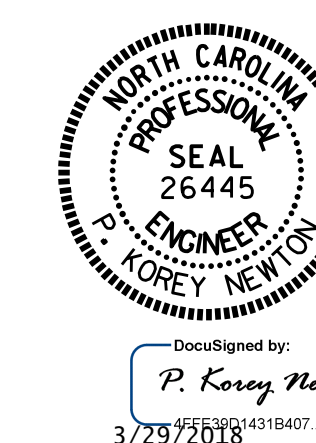


ELEVATION  
EAST SIDE

SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO.: 15

SHEET 1 OF 28



DocuSigned by:  
P. Corey Newton  
3/29/2018

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE  
END BENT 1

DRAWN BY : P.D. BRYANT DATE : 12/2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

29-MAR-2018 08:53  
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SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-51
2			4			84



## REPAIR QUANTITY TABLE

BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	96.0	48.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN	58.0	40.0		
EPOXY RESIN INJECTION		LF		LF
CAP		0.0		
COLUMN		0.0		

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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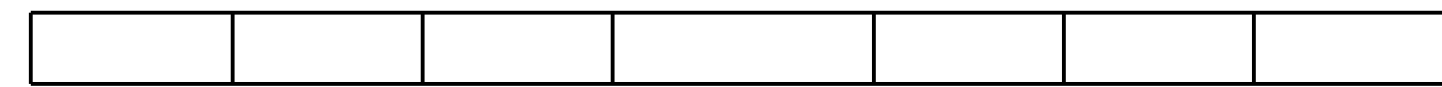
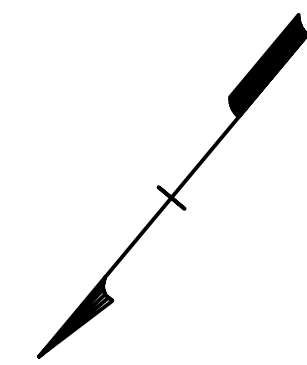
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

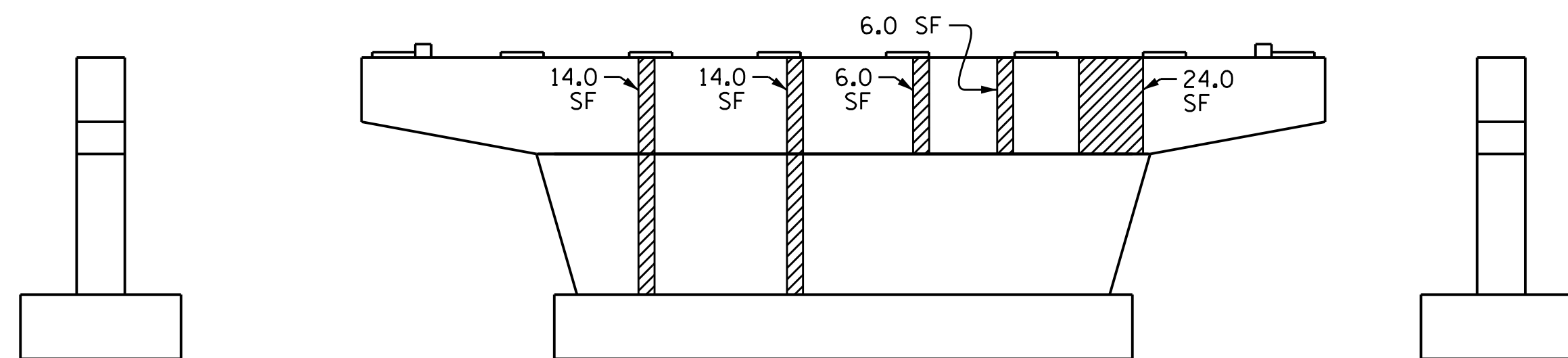
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



PLAN  
TOP OF CAP

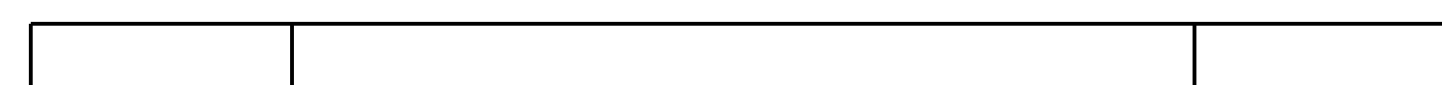


END VIEW  
NORTH SIDE

ELEVATION  
WEST SIDE

END VIEW  
SOUTH SIDE

ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP

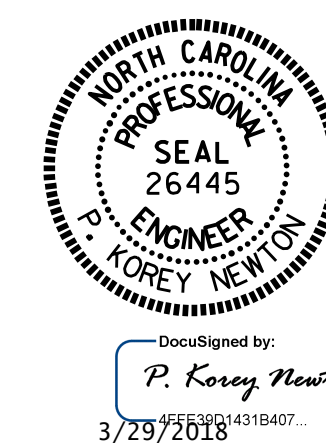
SHOTCRETE REPAIR

ERI EPOXY RESIN INJECTION

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY

BRIDGE NO. 15

SHEET 2 OF 28



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE

BENT #1

DRAWN BY : P.D. BRYANT DATE : 12-2017  
CHECKED BY : P.K. NEWTON DATE : 01-2018

29-MAR-2018 08:54  
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gdckey

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SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-52
2			4			84



## REPAIR QUANTITY TABLE

BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	142.0	71.0		
CAP (HORIZONTAL FACE)	136.0	68.0		
COLUMN	116.0	58.0		
EPOXY RESIN INJECTION		LF		LF
CAP		8.0		
COLUMN		0.0		

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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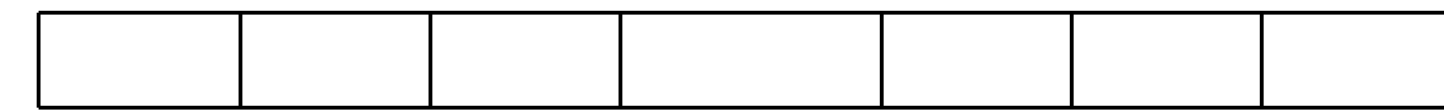
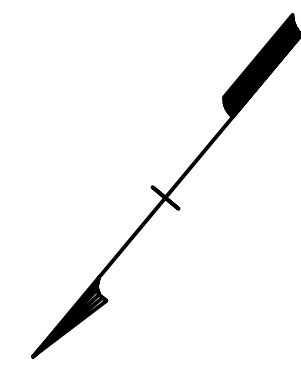
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

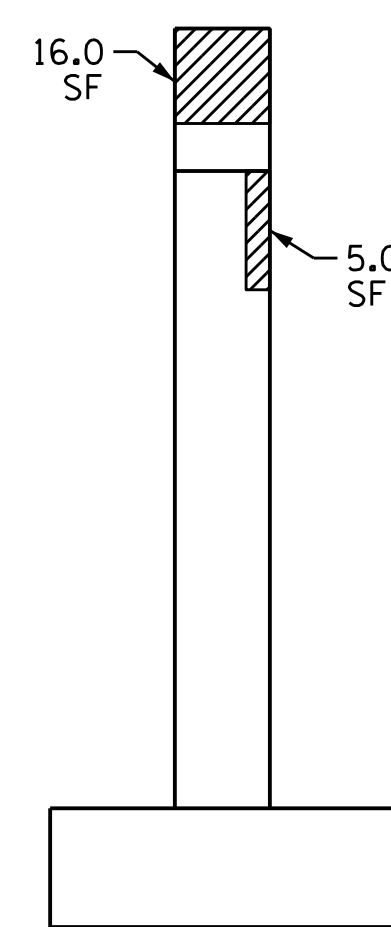
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

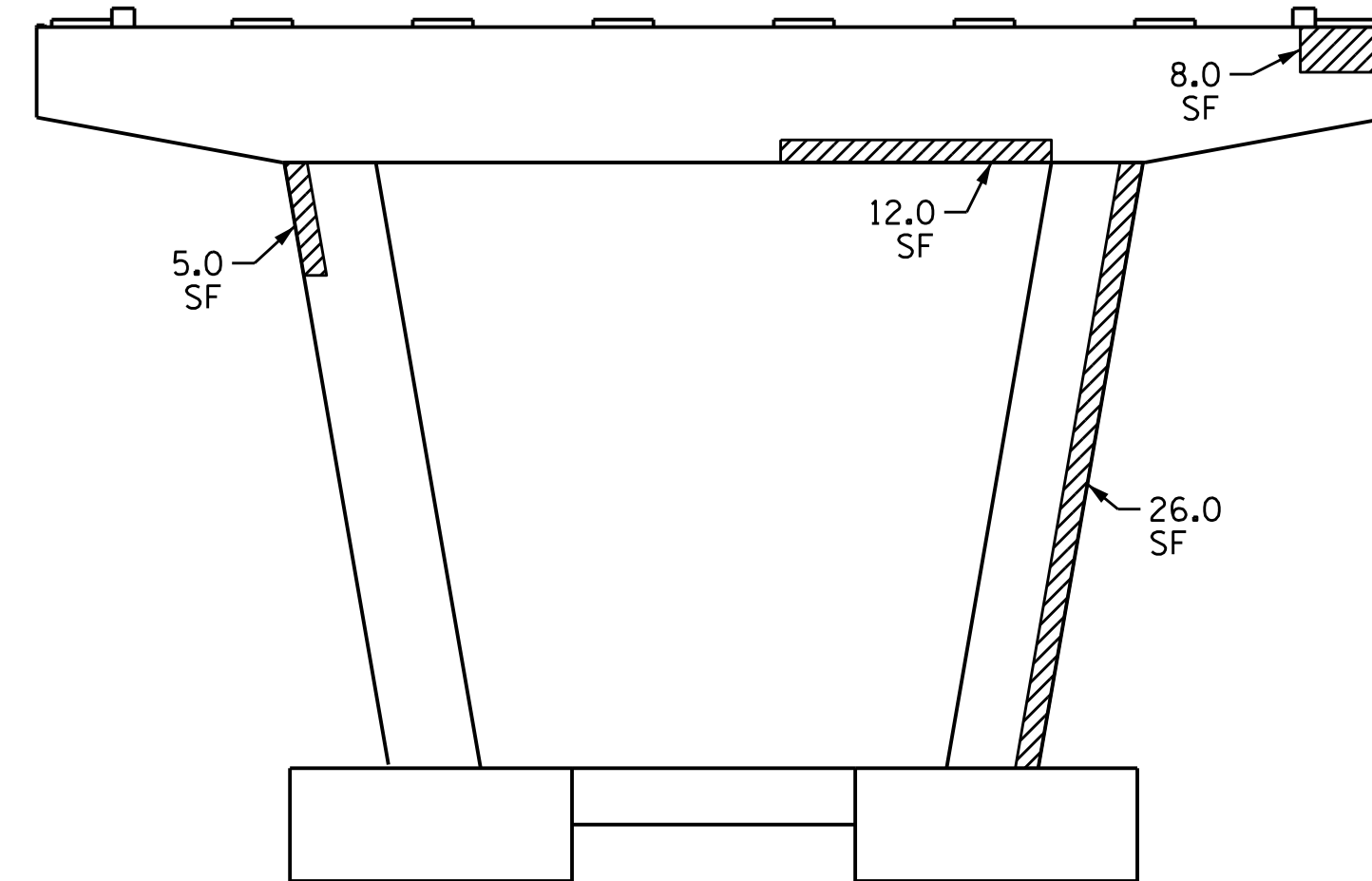
FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



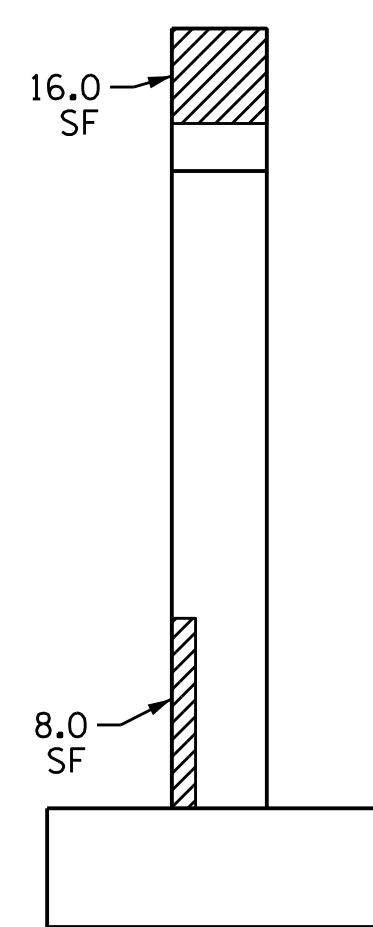
PLAN  
TOP OF CAP



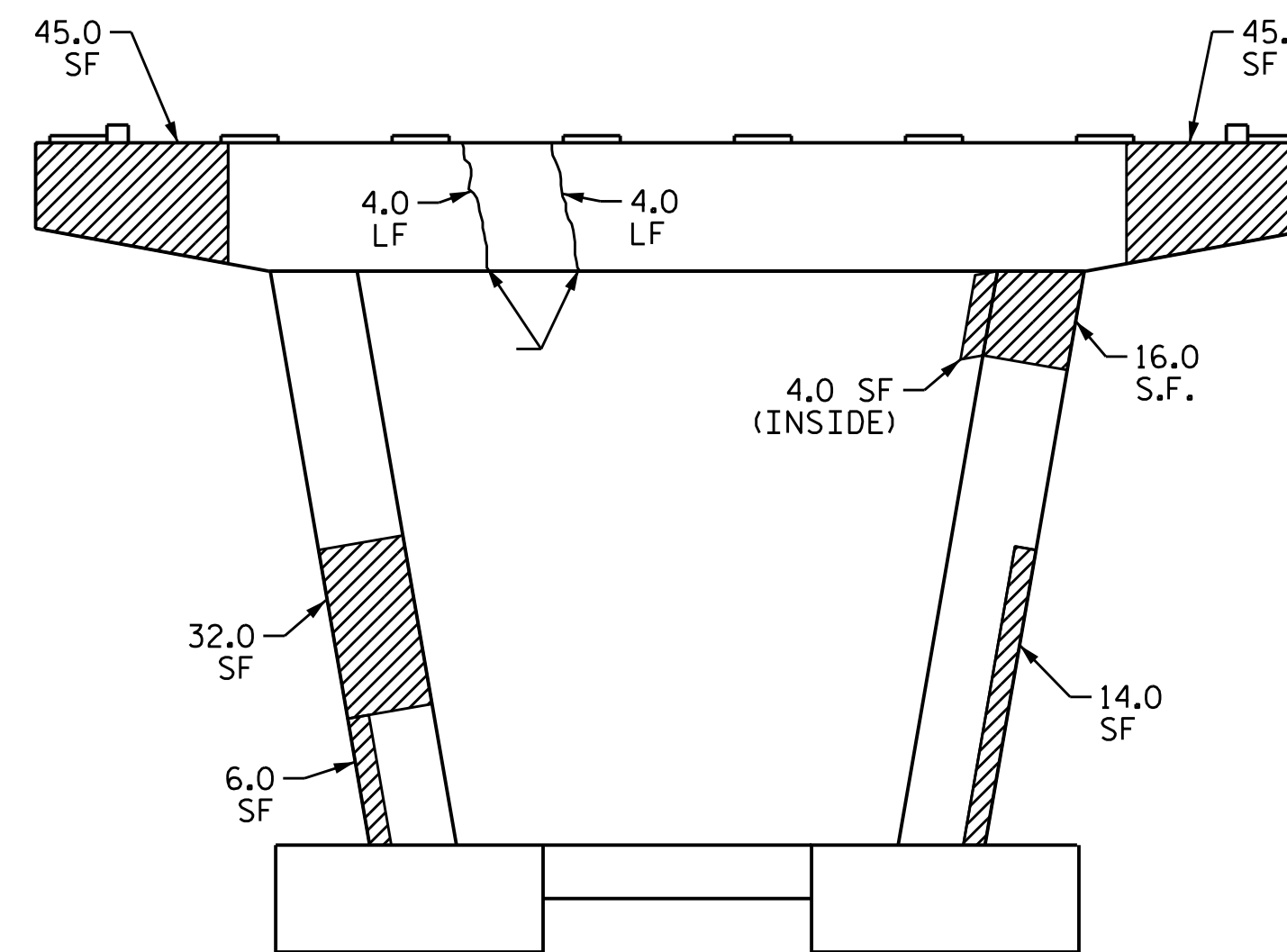
END VIEW  
NORTH SIDE



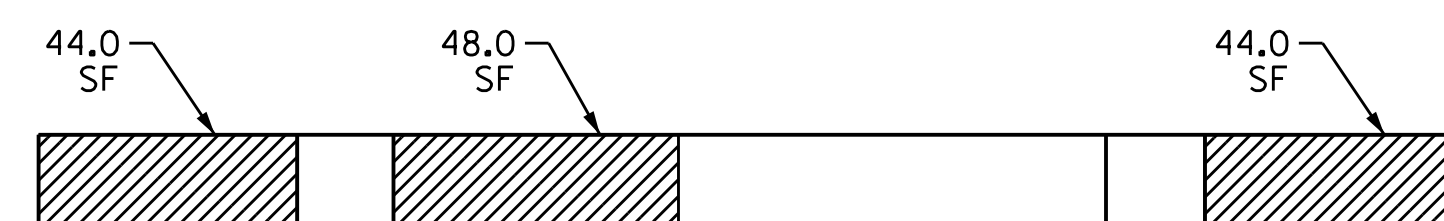
ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE

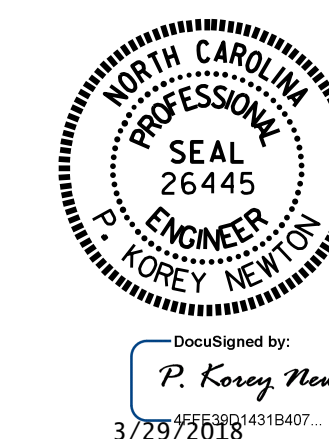


ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR  
ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 3 OF 28

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE**  
 BENT #2

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

DOCUMENT NOT CONSIDERED  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-53
2			4			84

## REPAIR QUANTITY TABLE

BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	14.0	7.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN	166.0	83.0		
EPOXY RESIN INJECTION			LF	LF
CAP			7.0	
COLUMN			0.0	

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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

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

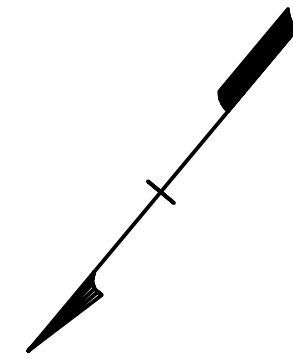
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

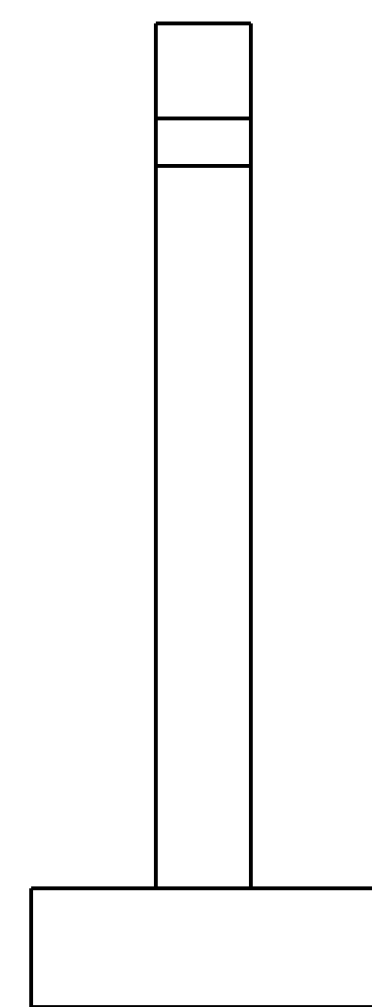
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

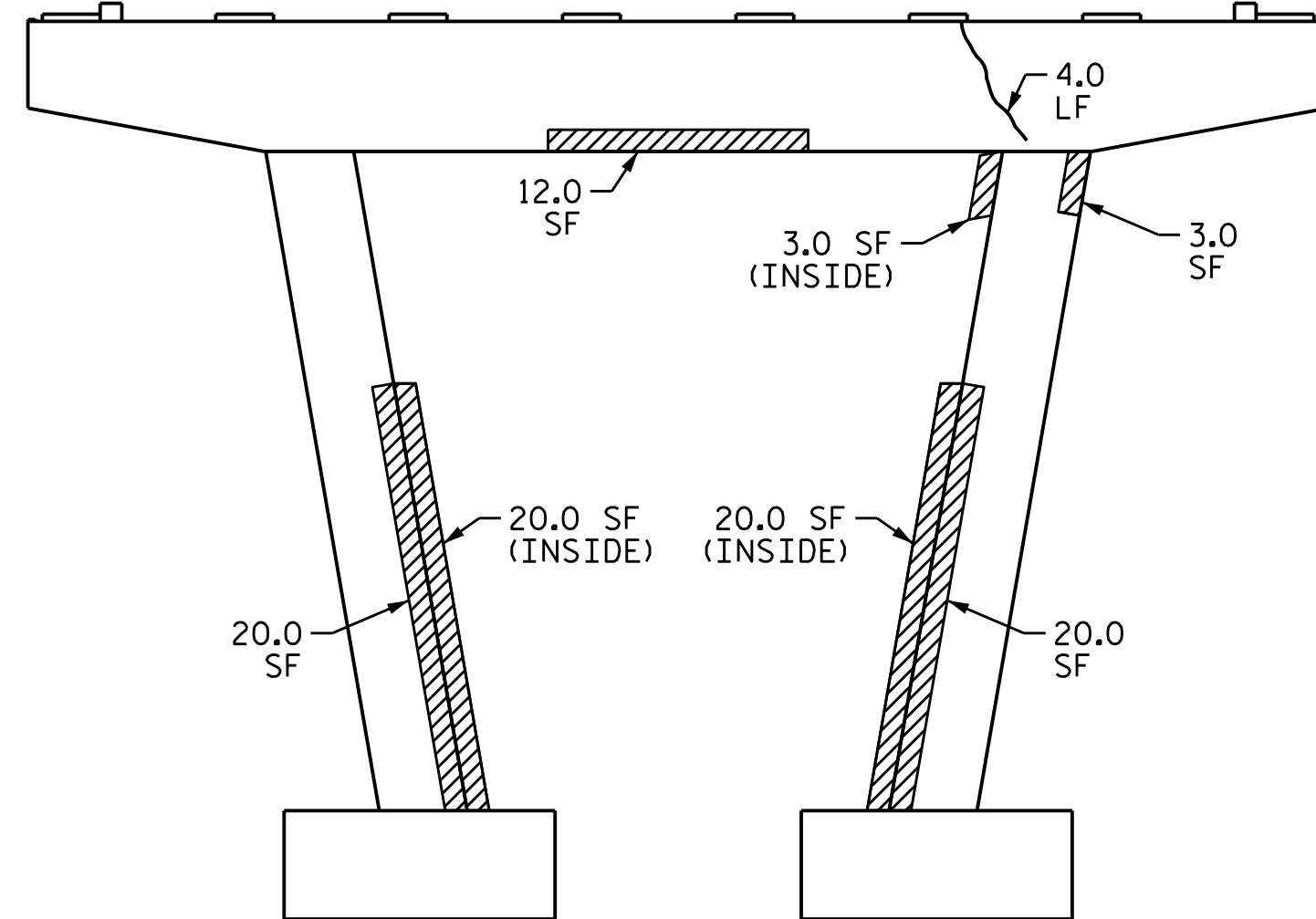
FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



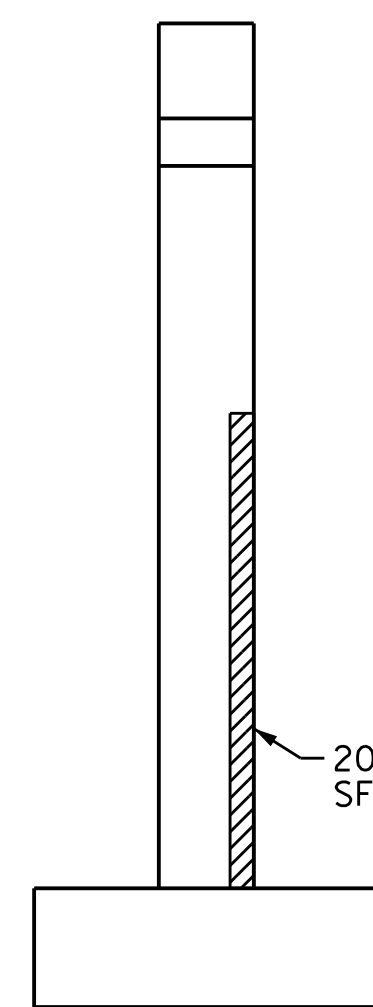
PLAN  
TOP OF CAP



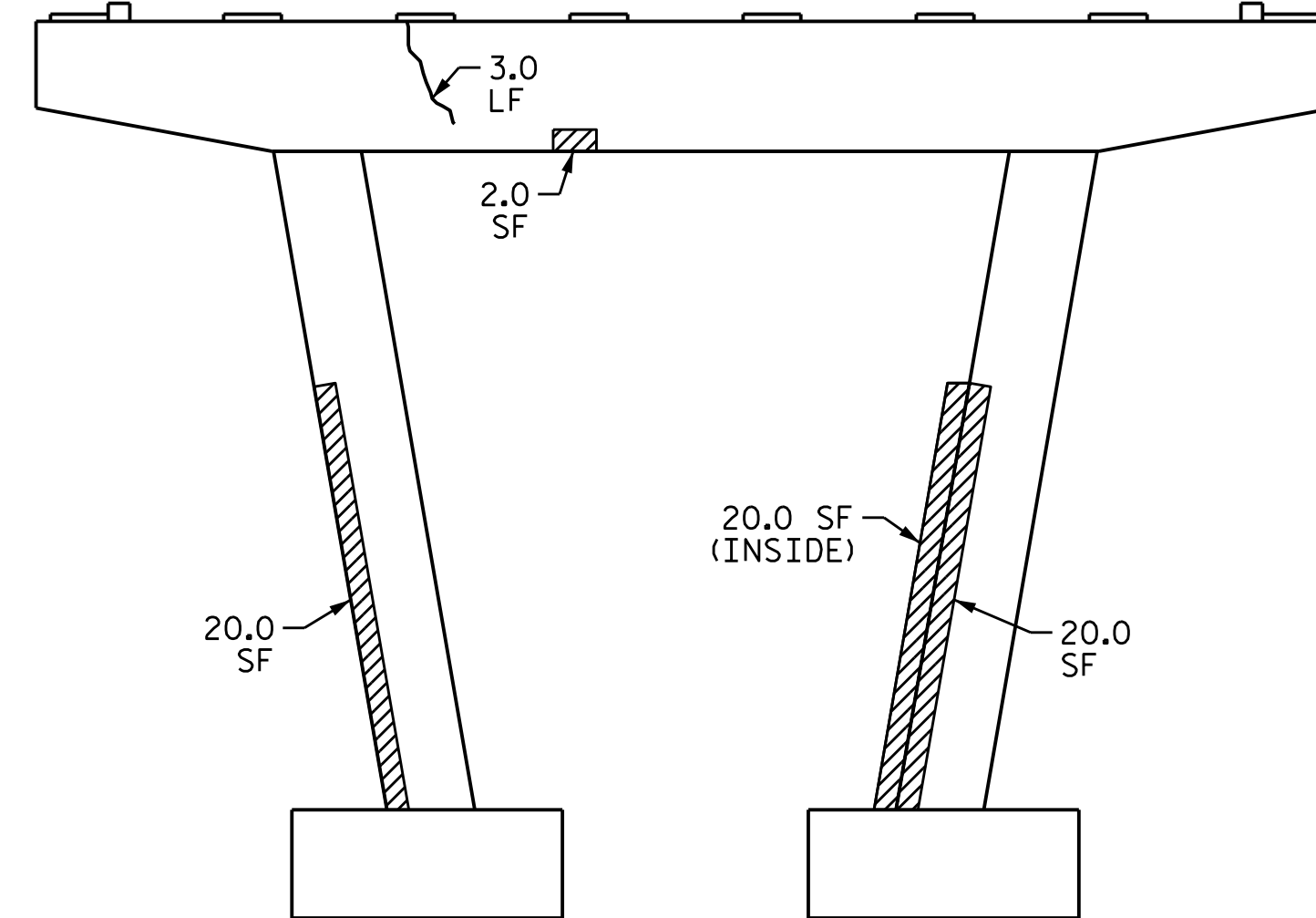
END VIEW  
NORTH SIDE



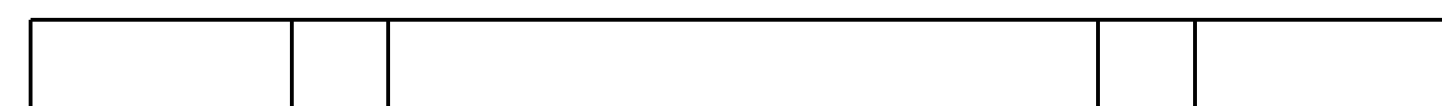
ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE

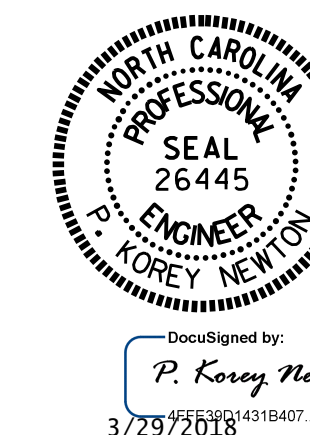


ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 4 OF 28

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE

BENT #3

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

29-MAR-2018 08:54  
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 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-54
2			4			84

## REPAIR QUANTITY TABLE

BENT 4	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	85.0	42.5		
CAP (HORIZONTAL FACE)	40.0	20.0		
COLUMN	121.0	60.5		
EPOXY RESIN INJECTION			LF	LF
CAP			0.0	
COLUMN			0.0	

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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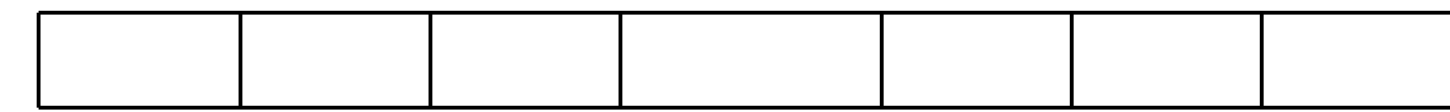
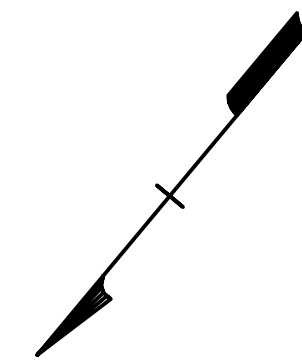
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

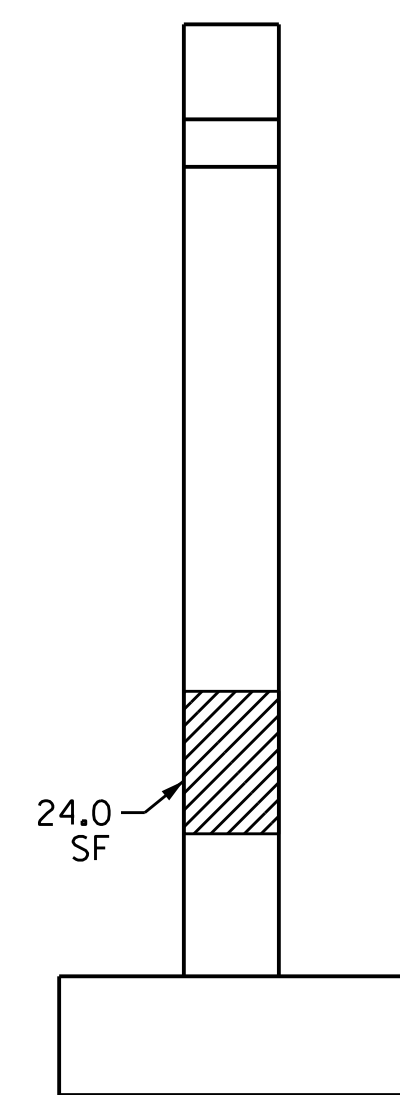
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

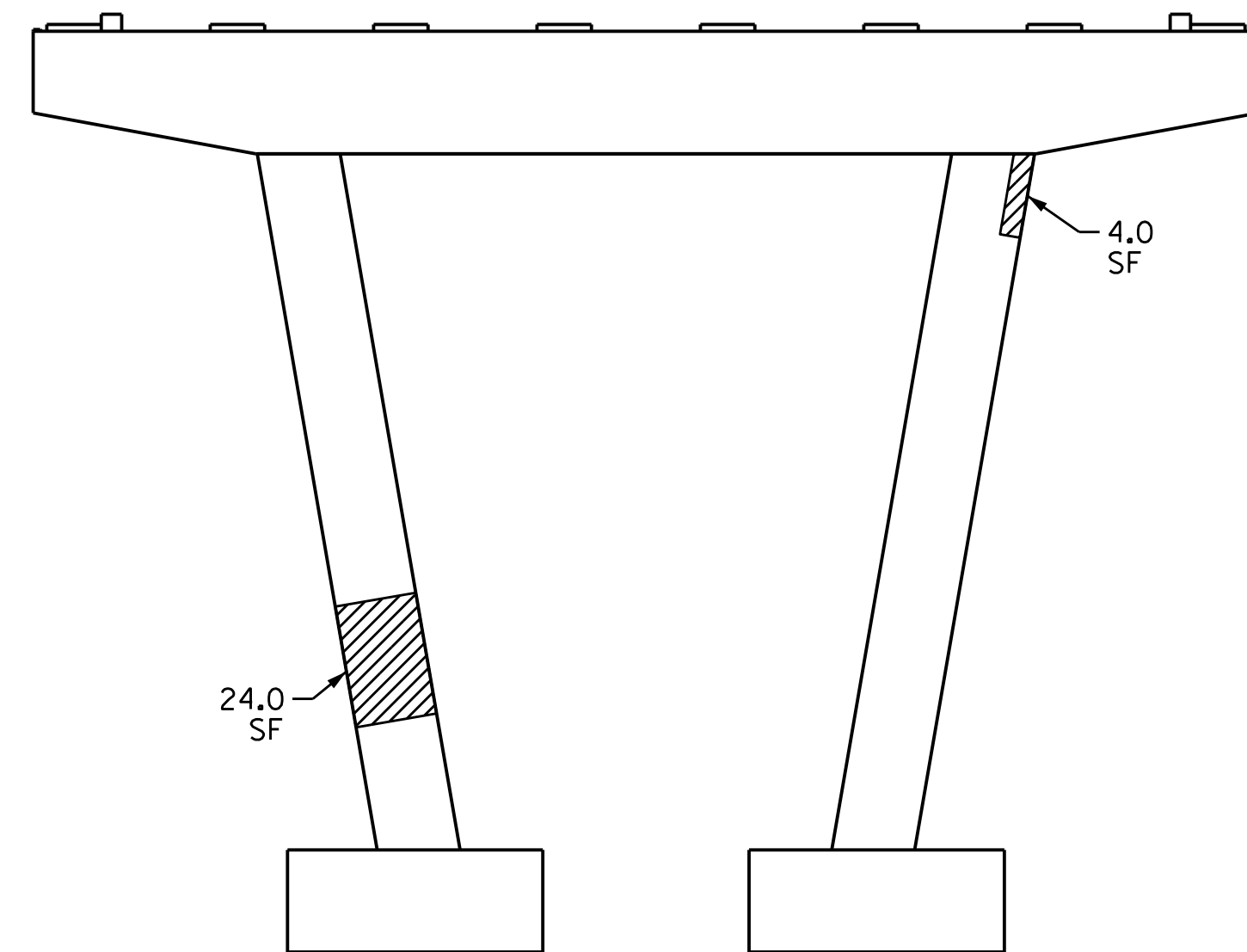
FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



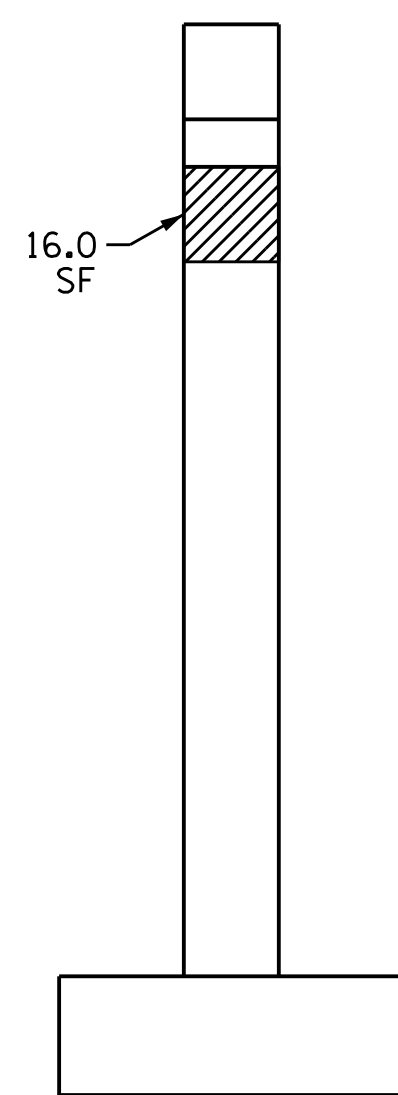
PLAN  
TOP OF CAP



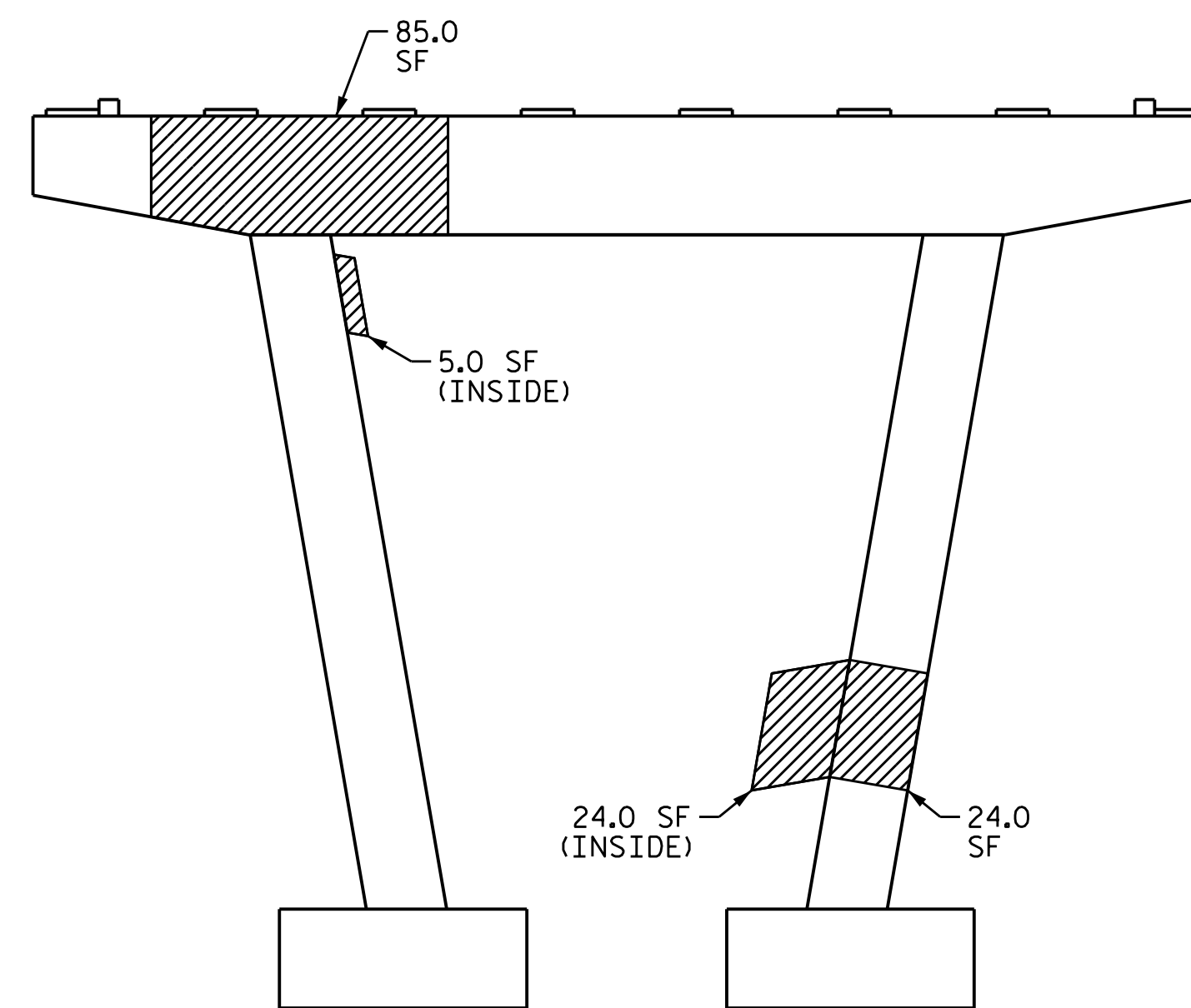
END VIEW  
NORTH SIDE



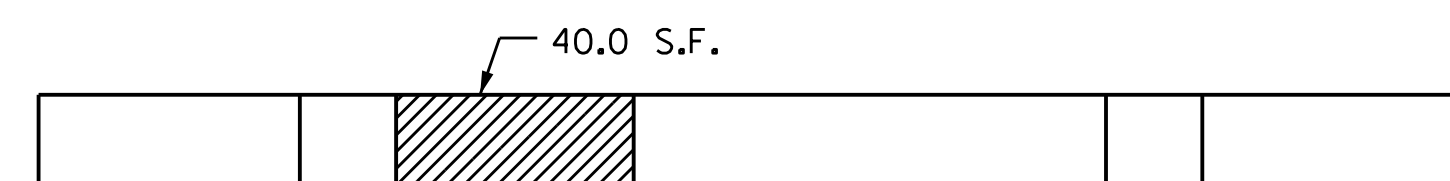
ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE



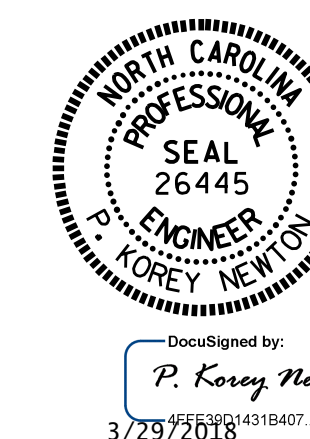
ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR

ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 5 OF 28

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE

BENT #4

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-55
1			3			TOTAL SHEETS 84
2			4			



## REPAIR QUANTITY TABLE

BENT 5	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	35.0	17.5		
CAP (HORIZONTAL FACE)	11.0	5.5		
COLUMN	263.0	131.5		
EPOXY RESIN INJECTION			LF	LF
CAP			0.0	
COLUMN			0.0	

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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

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

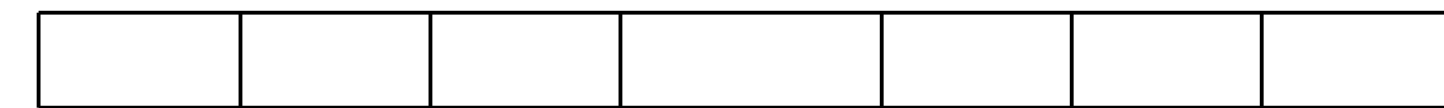
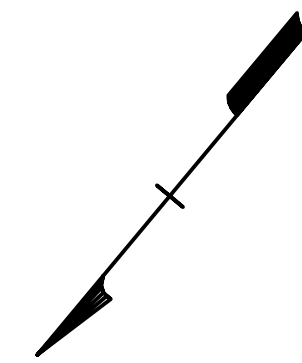
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

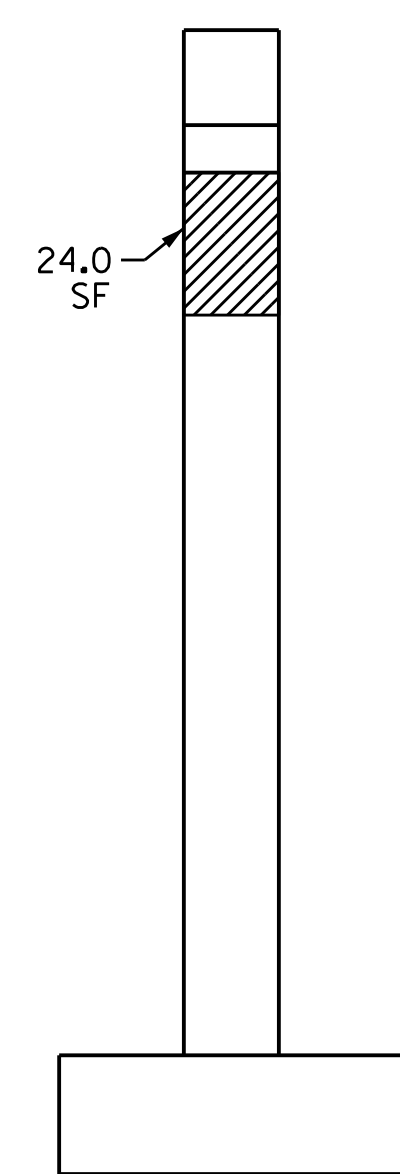
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

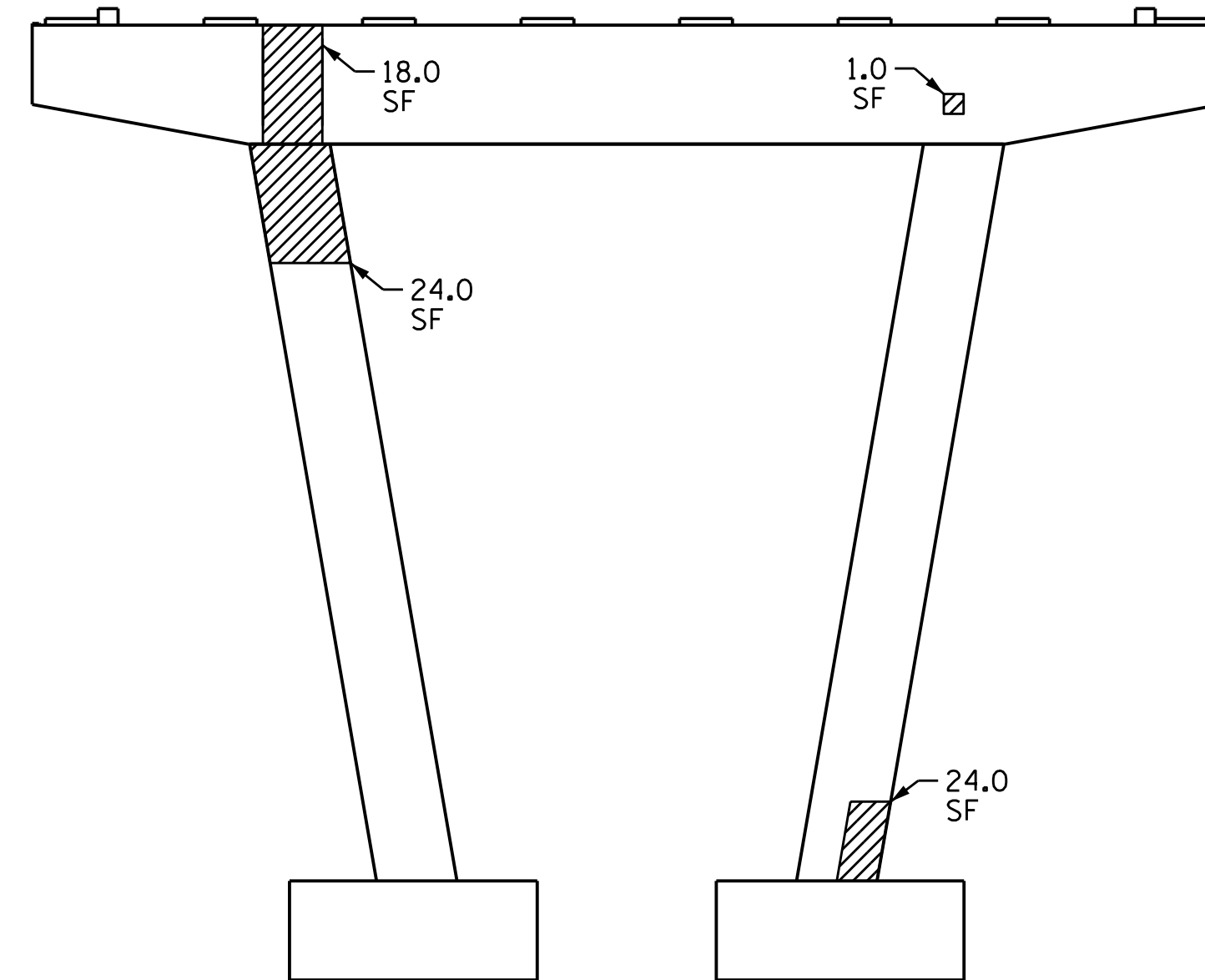
FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



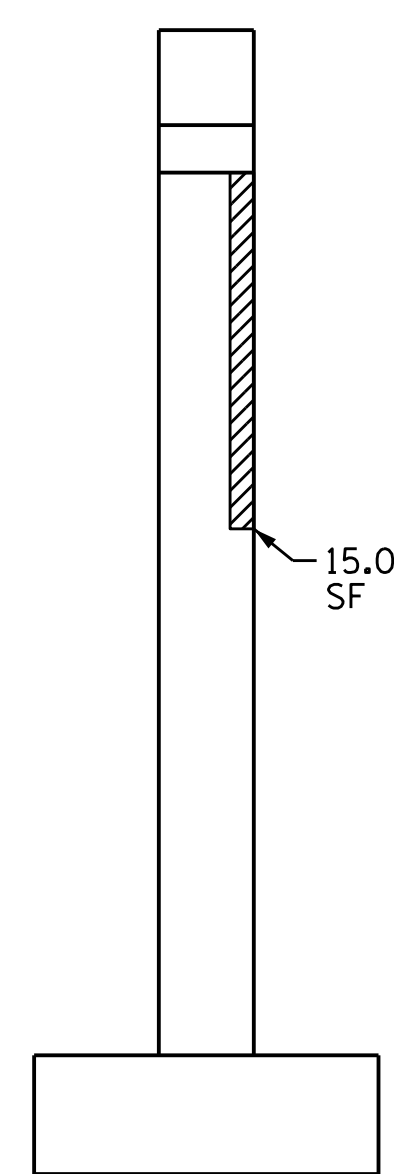
PLAN  
TOP OF CAP



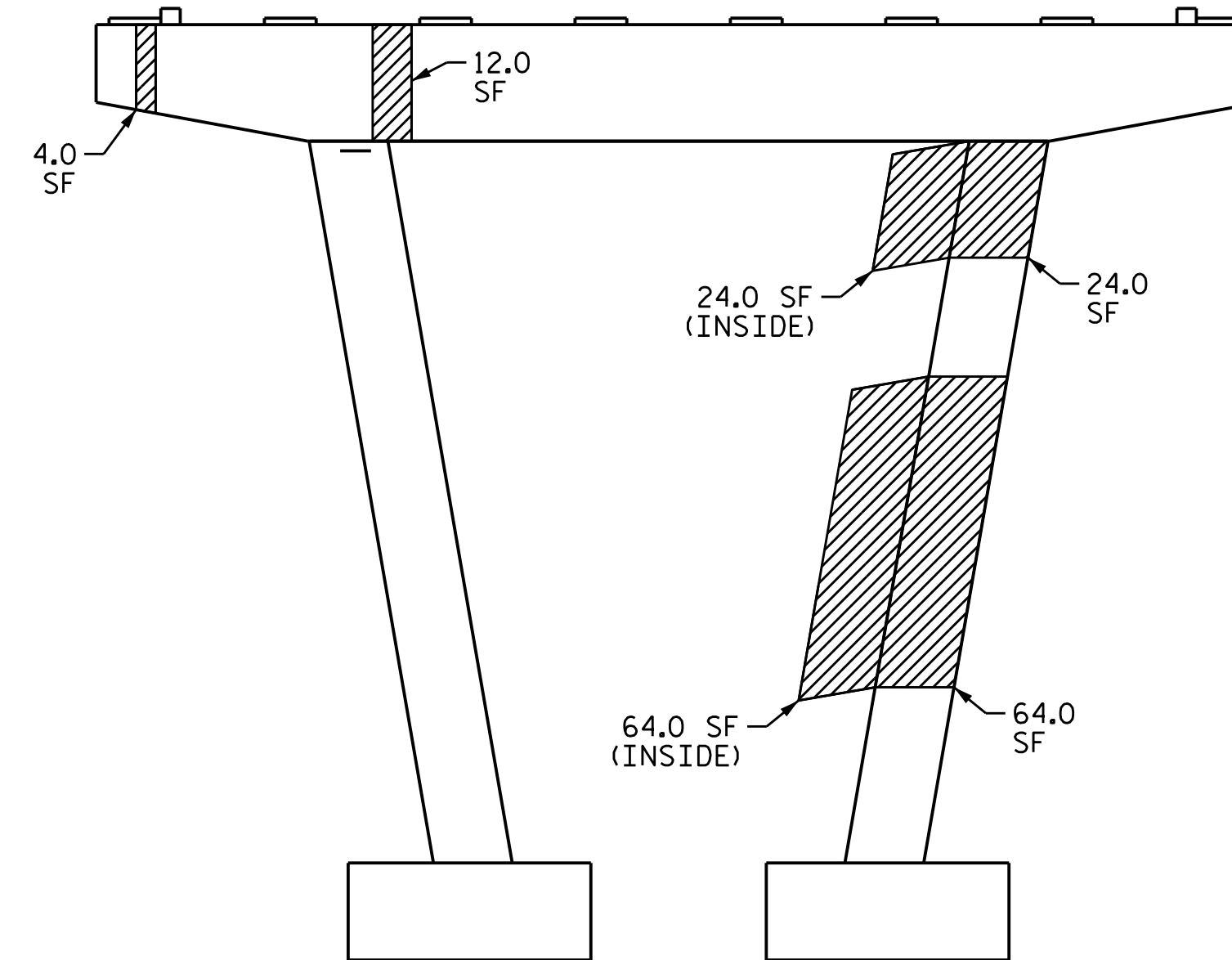
END VIEW  
NORTH SIDE



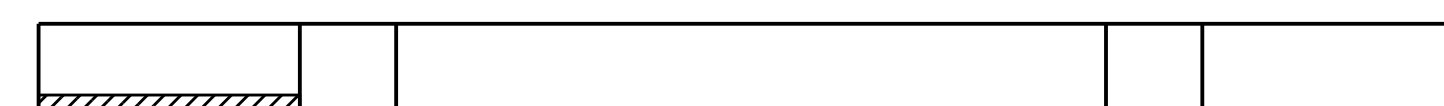
ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE

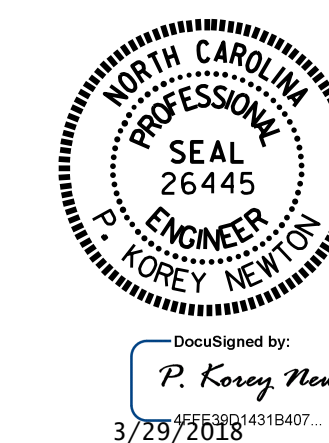


ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR  
ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
BRIDGE NO. 15

SHEET 6 OF 28

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE

BENT #5

DRAWN BY : P.D. BRYANT DATE : 12-2017  
CHECKED BY : P.K. NEWTON DATE : 01/2018

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-56
2			4			84

## REPAIR QUANTITY TABLE

BENT 6	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	79.0	39.5		
CAP (HORIZONTAL FACE)	1.0	0.5		
COLUMN	180.0	90.0		
EPOXY RESIN INJECTION			LF	LF
CAP			0.0	
COLUMN			0.0	

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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

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

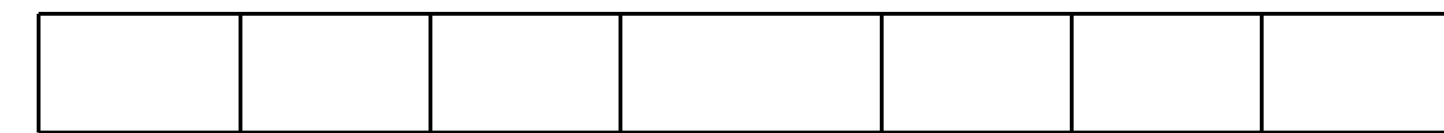
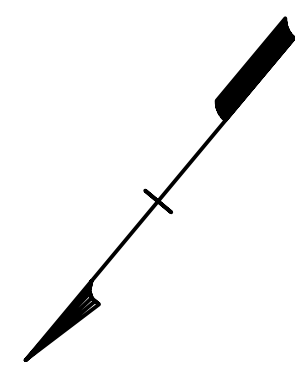
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

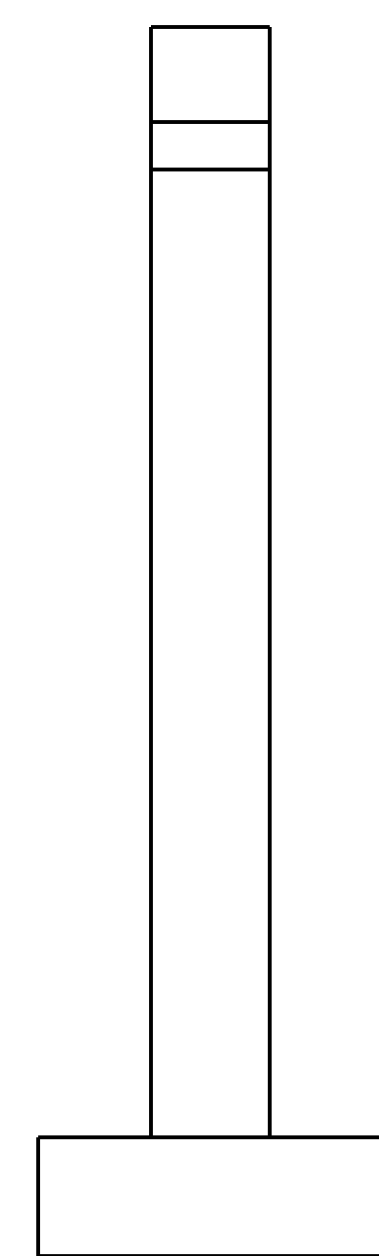
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

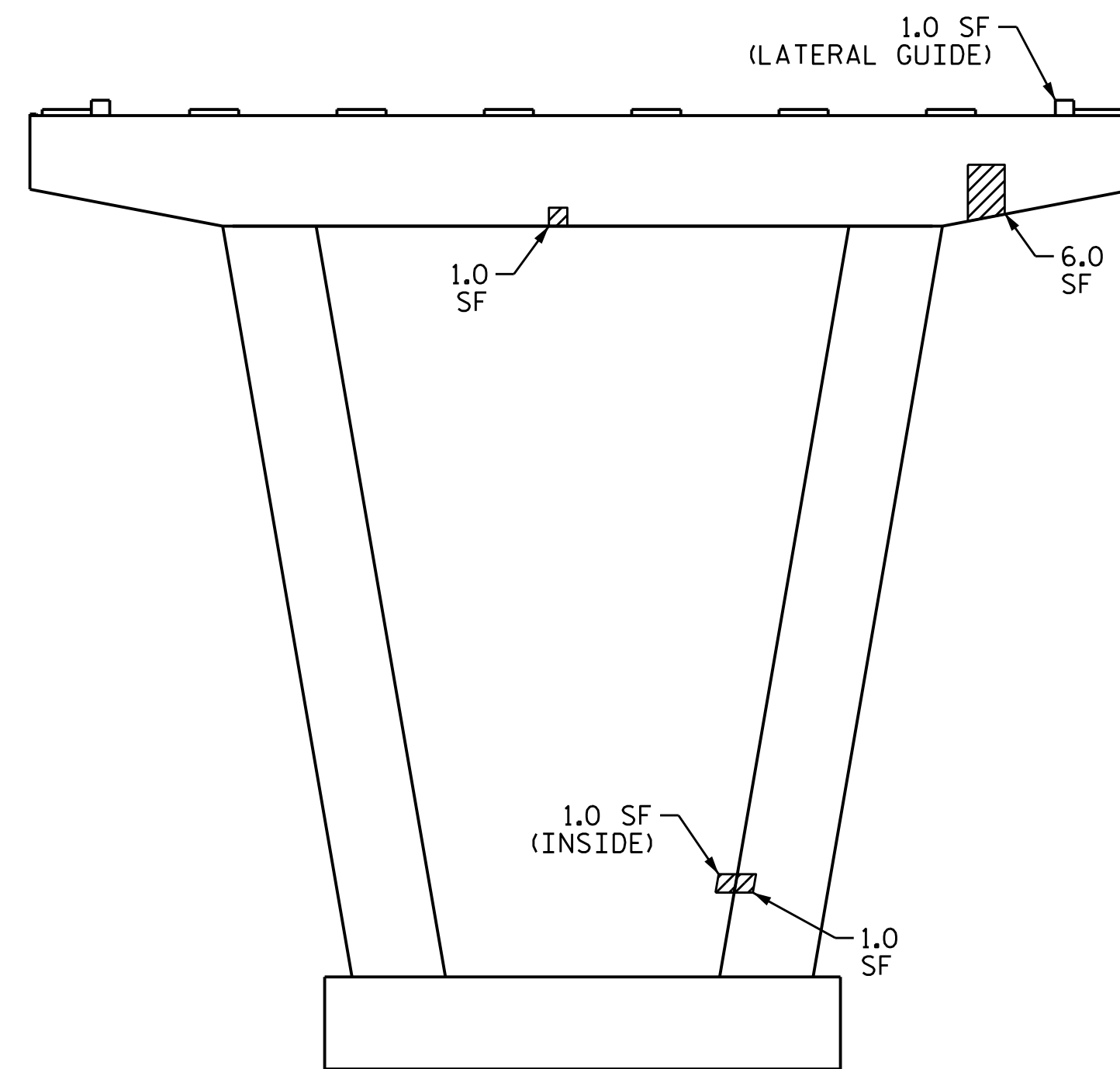
FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



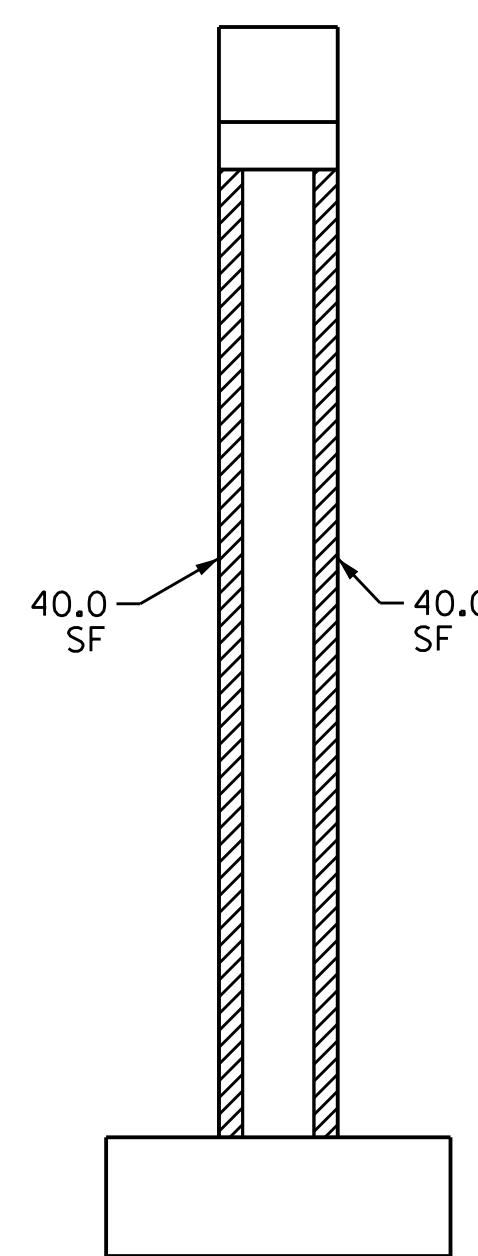
PLAN  
TOP OF CAP



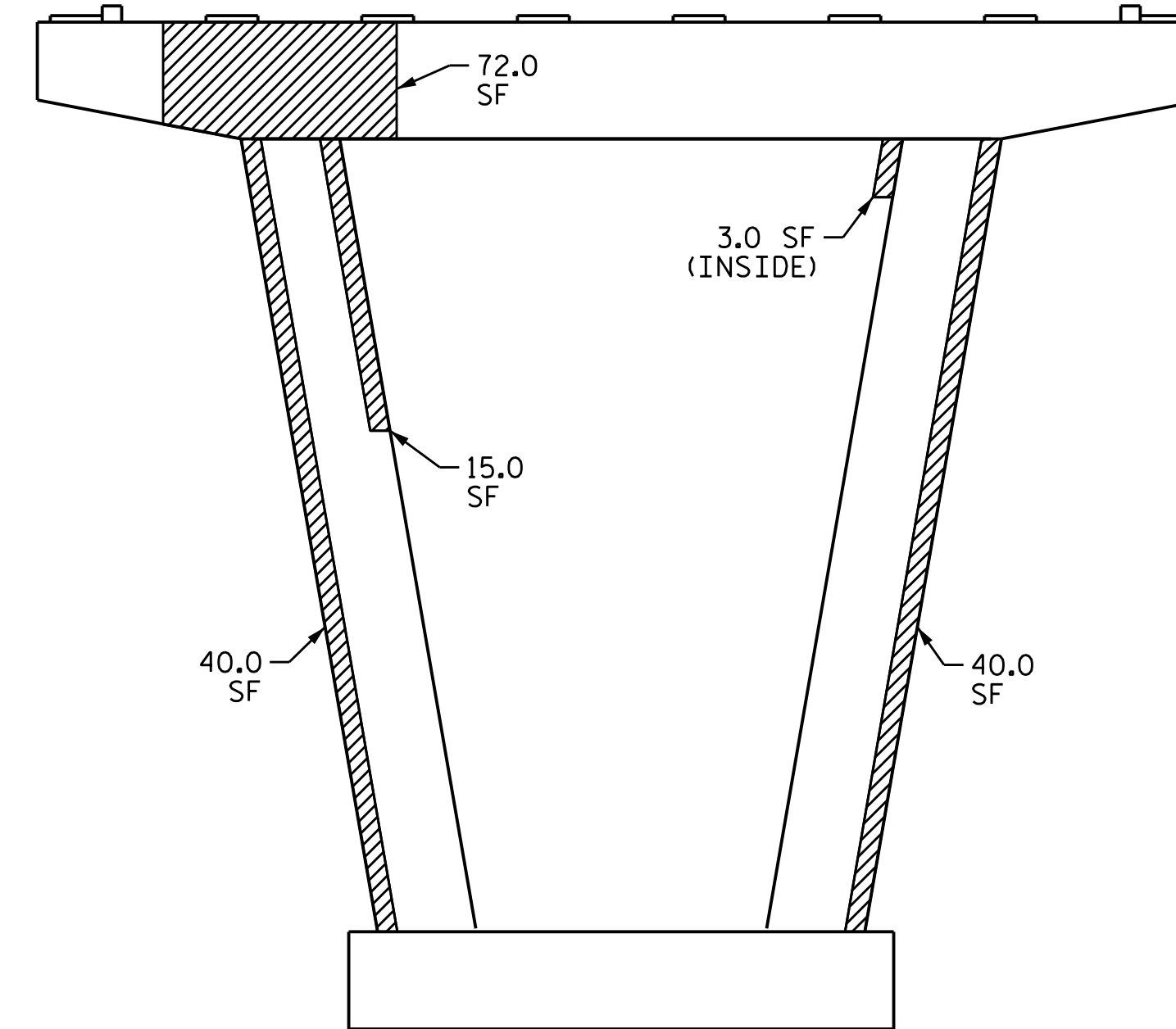
END VIEW  
NORTH SIDE



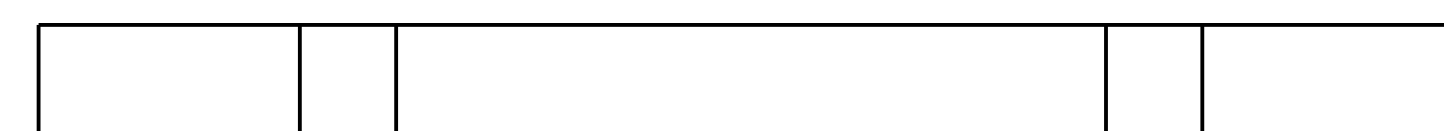
ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE



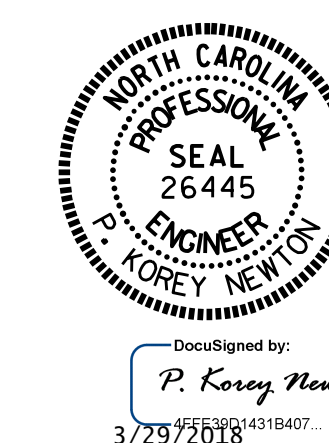
ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR

ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 7 OF 28

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE

BENT #6

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-57
2			4			84



## REPAIR QUANTITY TABLE

BENT 7	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN	186.0	93.0		
EPOXY RESIN INJECTION			LF	LF
CAP			7.0	
COLUMN			0.0	

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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

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

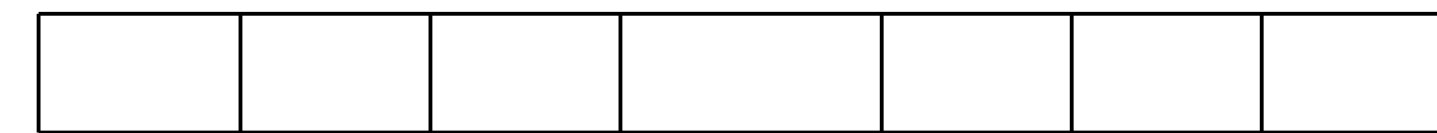
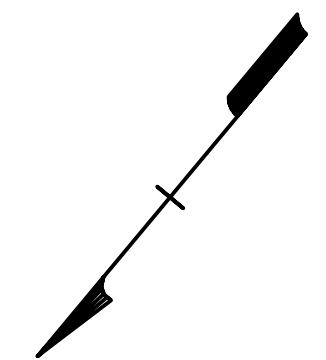
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

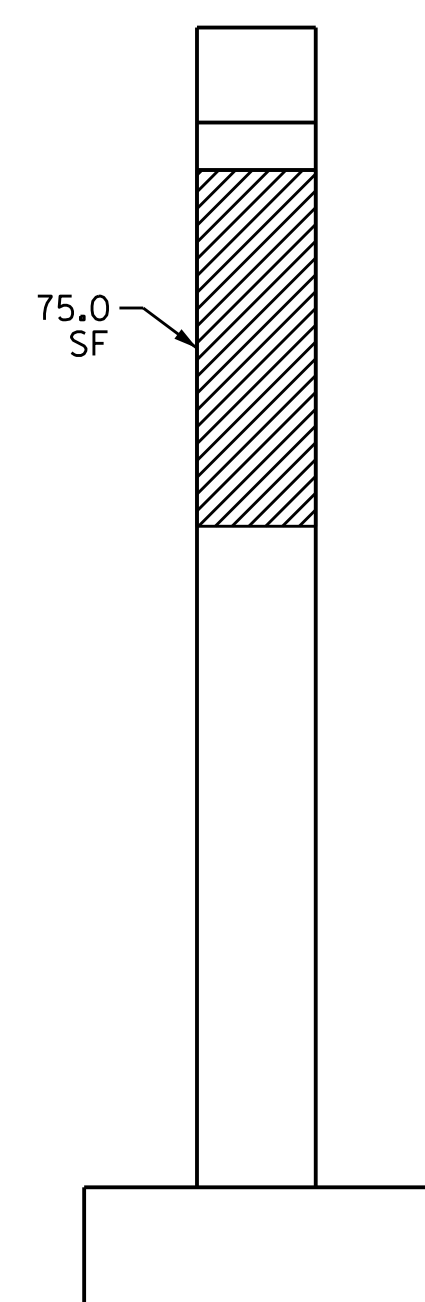
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

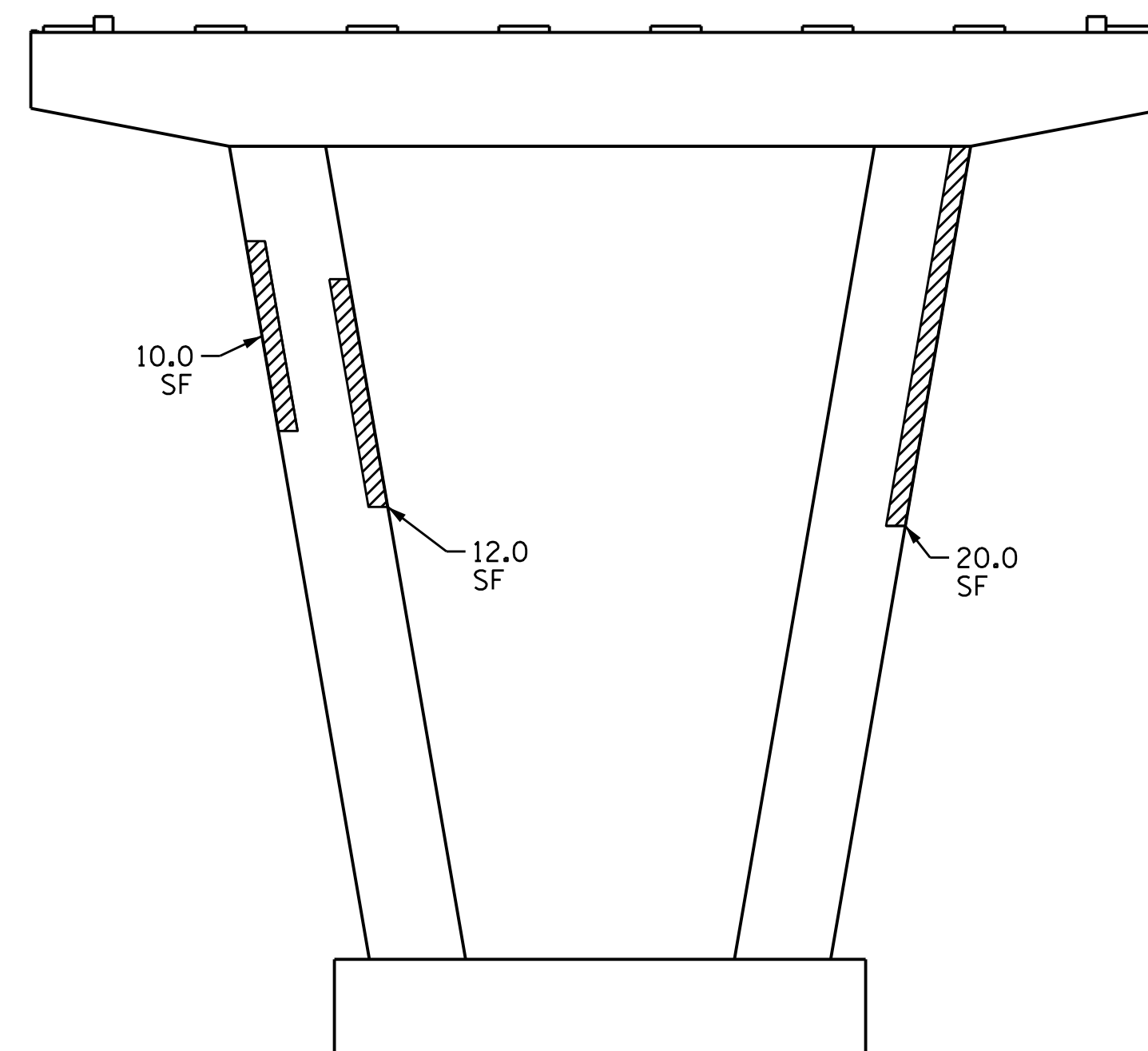
FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



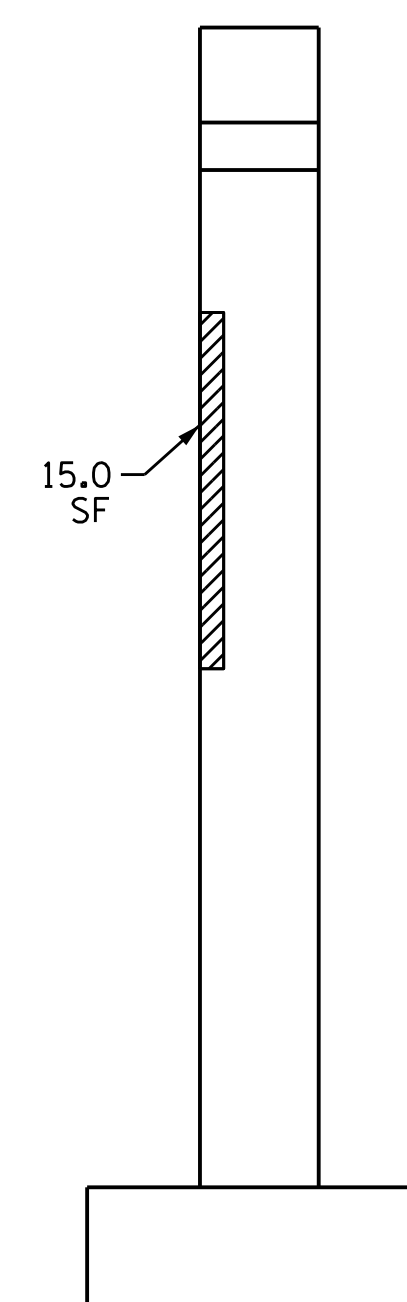
PLAN  
TOP OF CAP



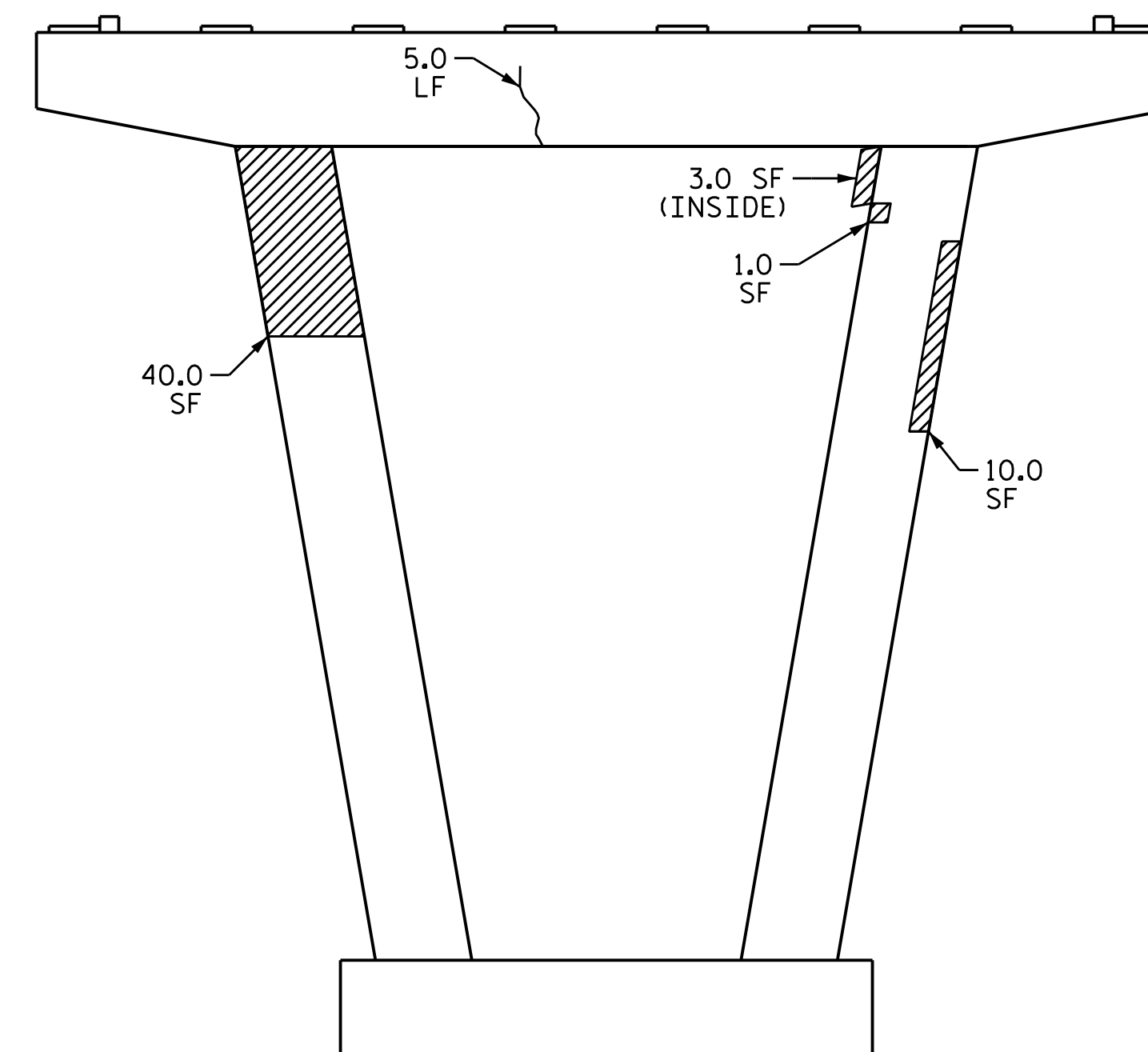
END VIEW  
NORTH SIDE



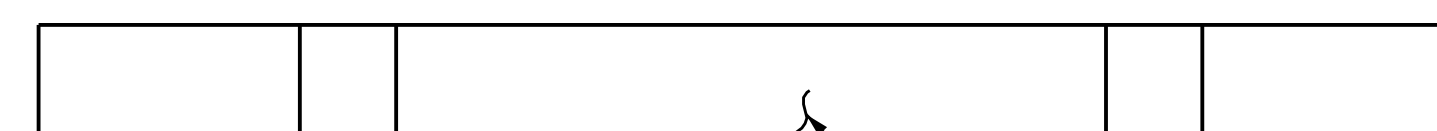
ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE

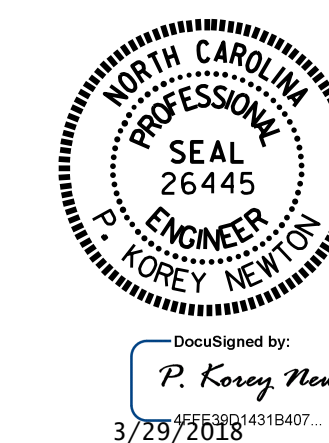


ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 8 OF 28

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

## SUBSTRUCTURE

### BENT #7

DRAWN BY : P.D. BRYANT      DATE : 12-2017  
 CHECKED BY : P.K. NEWTON      DATE : 01/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-58
2			4			84

## REPAIR QUANTITY TABLE

BENT 8	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN	50.0	25.0		
EPOXY RESIN INJECTION			LF	LF
CAP			3.0	
COLUMN			0.0	

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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

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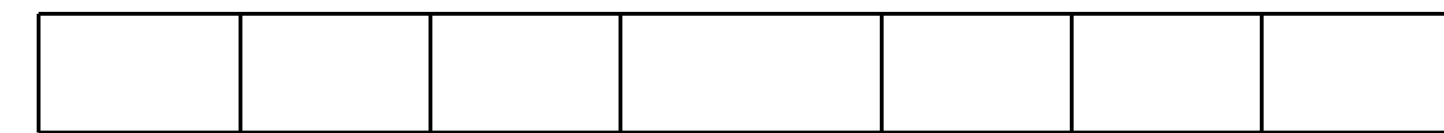
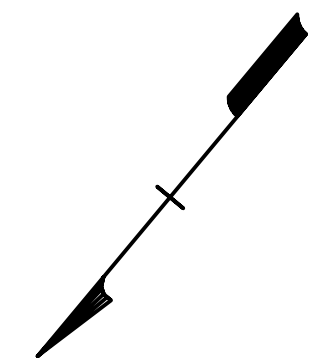
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

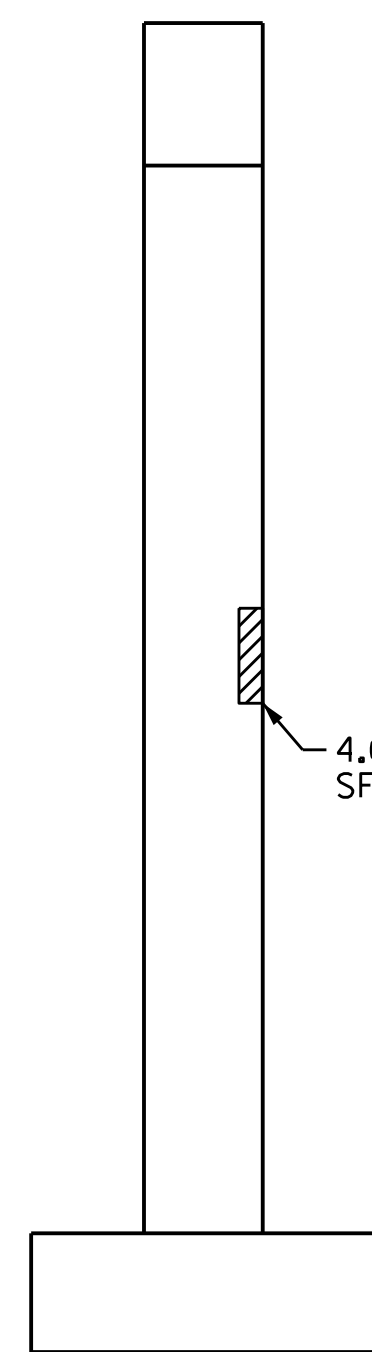
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

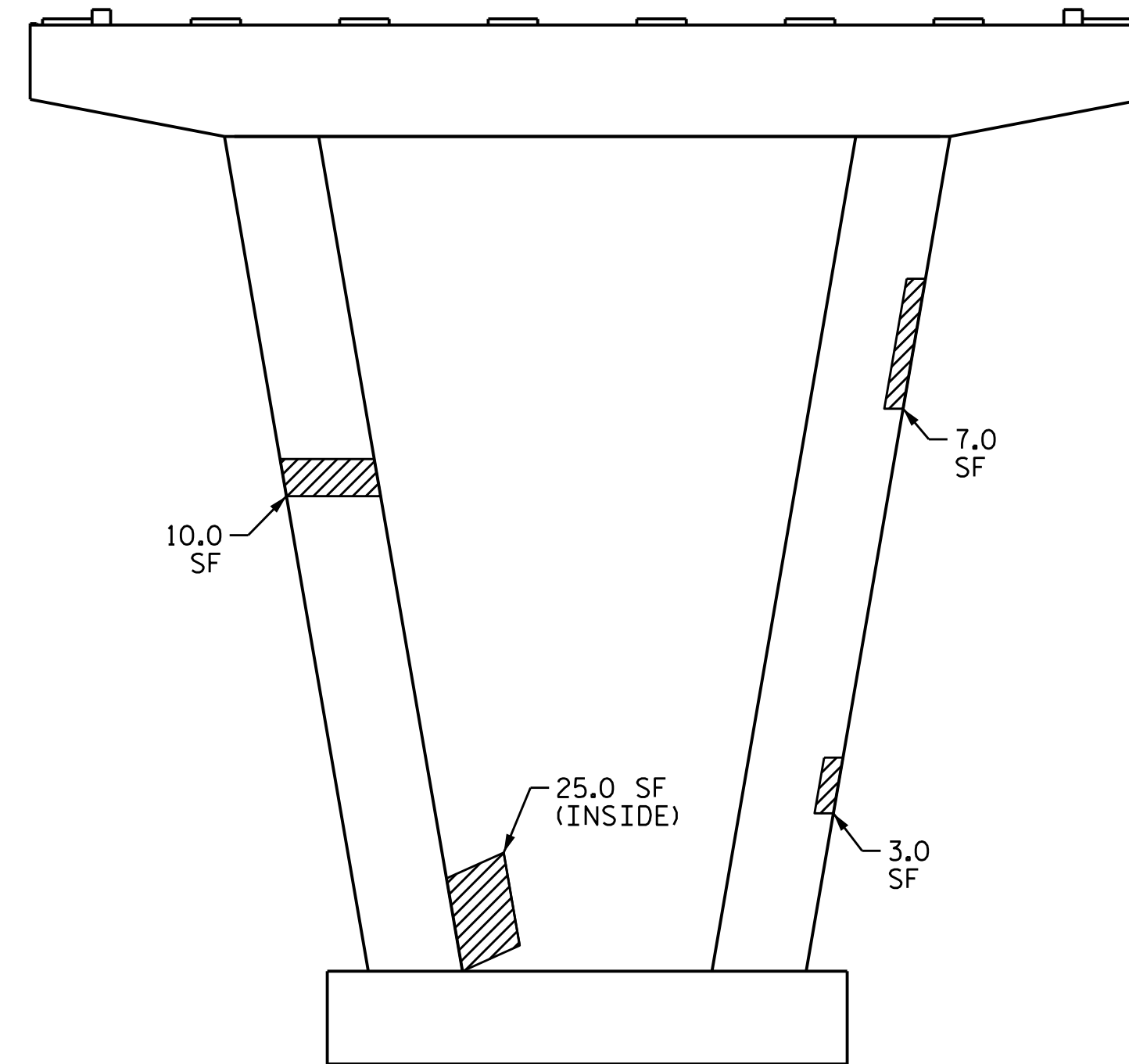
FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



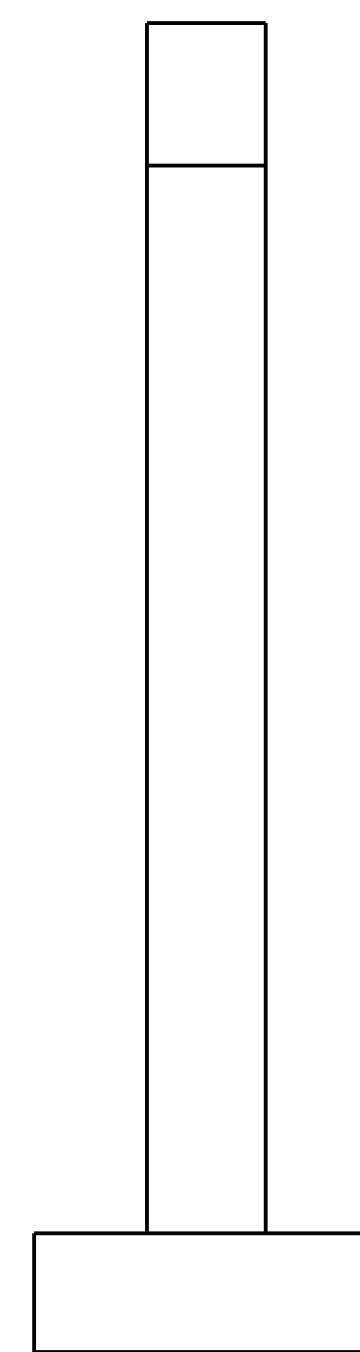
PLAN  
TOP OF CAP



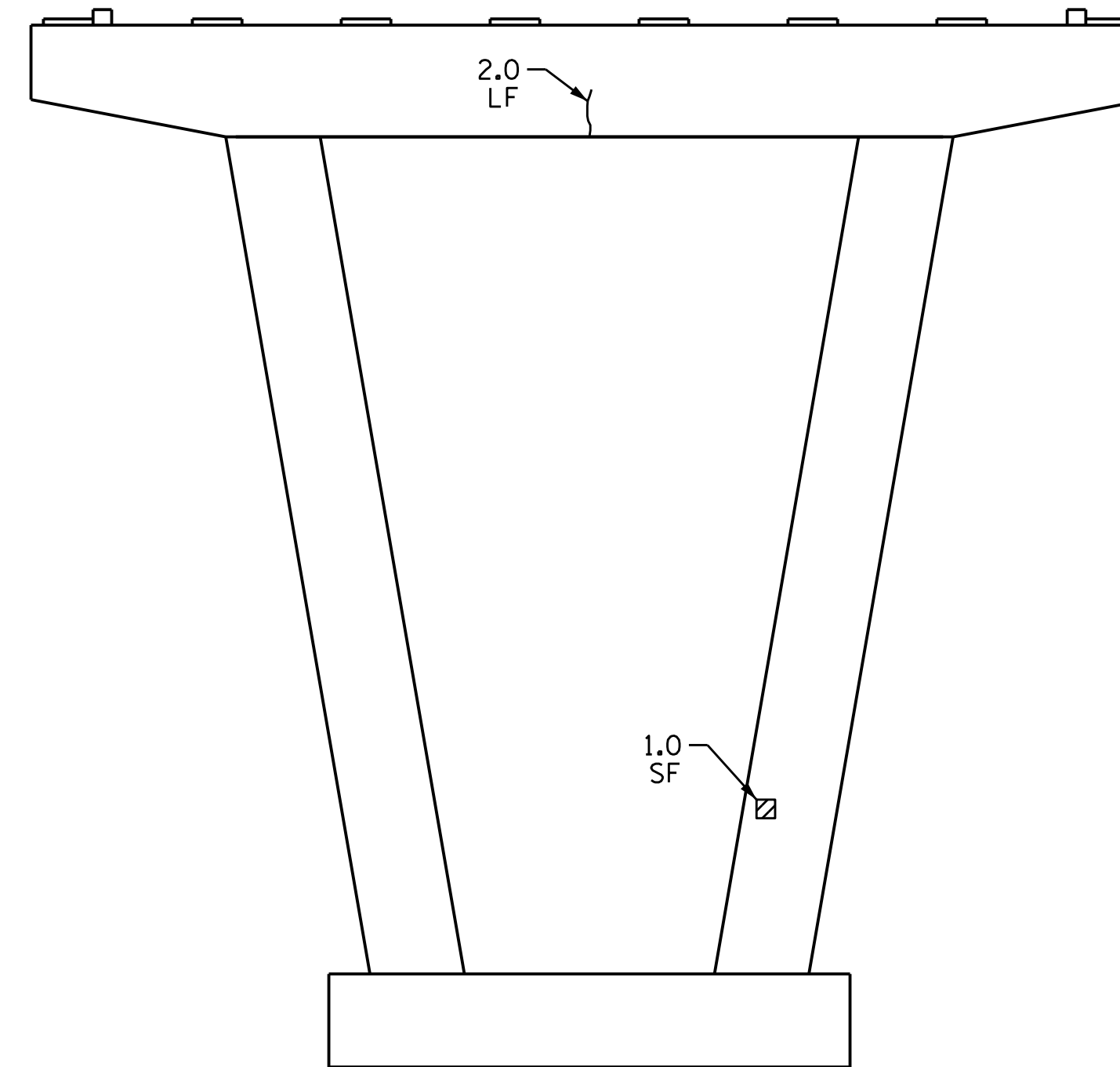
END VIEW  
NORTH SIDE



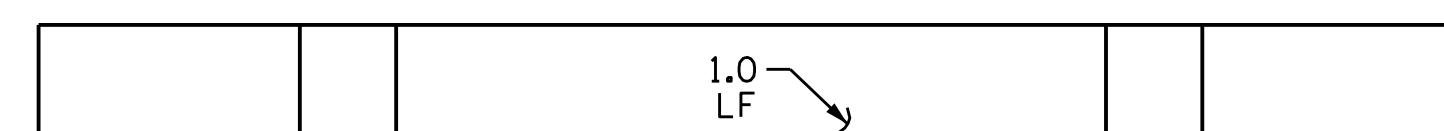
ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE

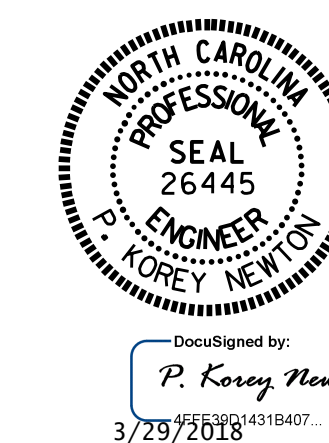


ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR  
ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
BRIDGE NO. 15

SHEET 9 OF 28

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**SUBSTRUCTURE**  
BENT #8

DRAWN BY : P.D. BRYANT DATE : 12-2017  
CHECKED BY : P.K. NEWTON DATE : 01/2018

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-59
1			3			TOTAL SHEETS
2			4			84

## REPAIR QUANTITY TABLE

BENT 9	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	56.0	28.0		
CAP (HORIZONTAL FACE)	30.0	15.0		
COLUMN	95.0	47.5		
EPOXY RESIN INJECTION			LF	LF
CAP		0.0		
COLUMN		0.0		

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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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.

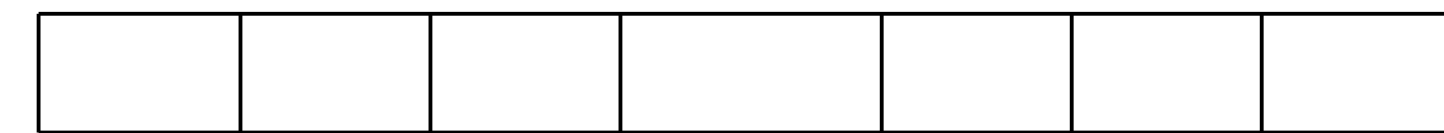
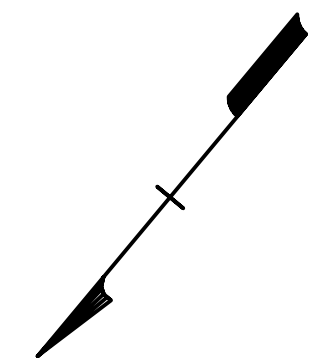
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

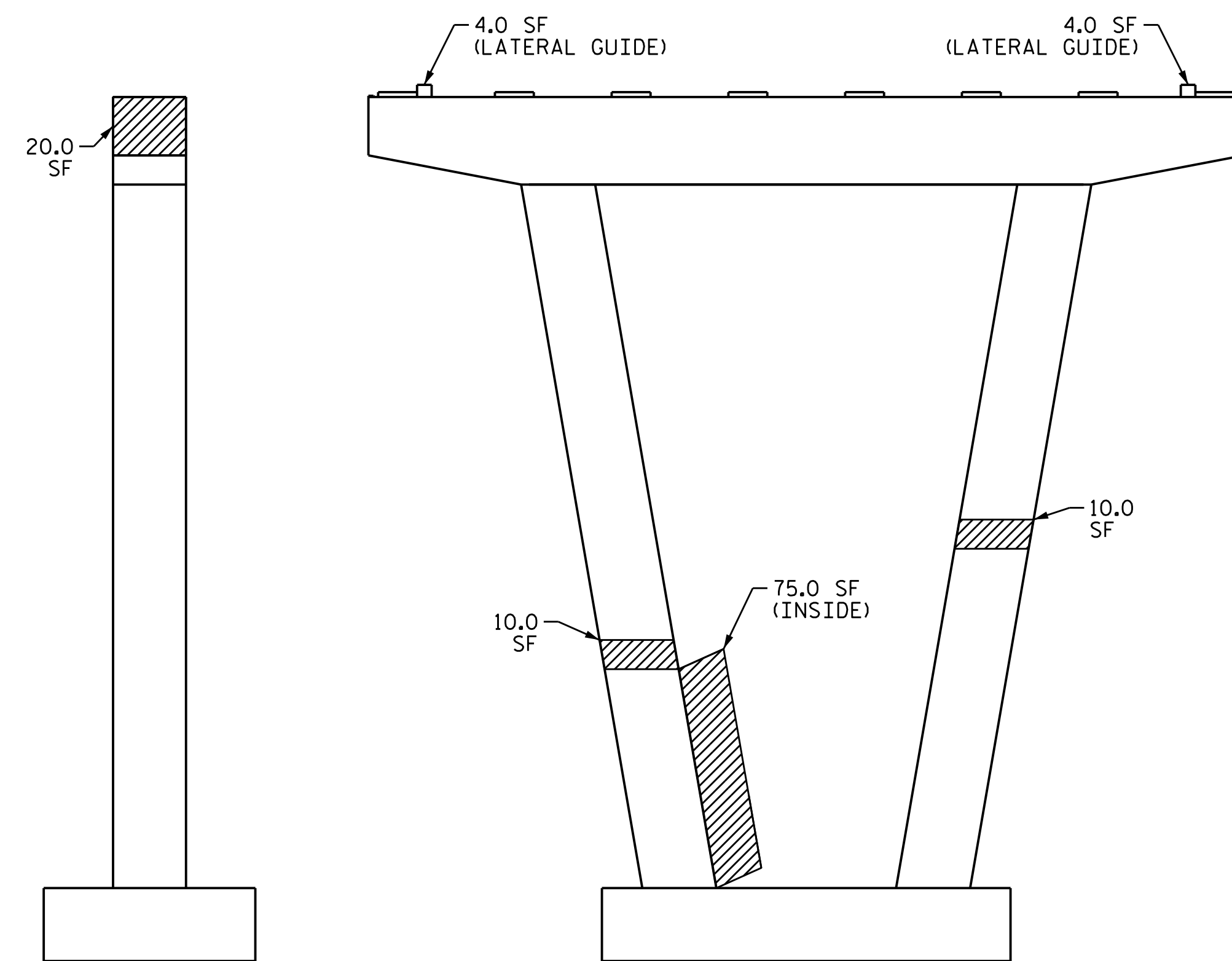
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.

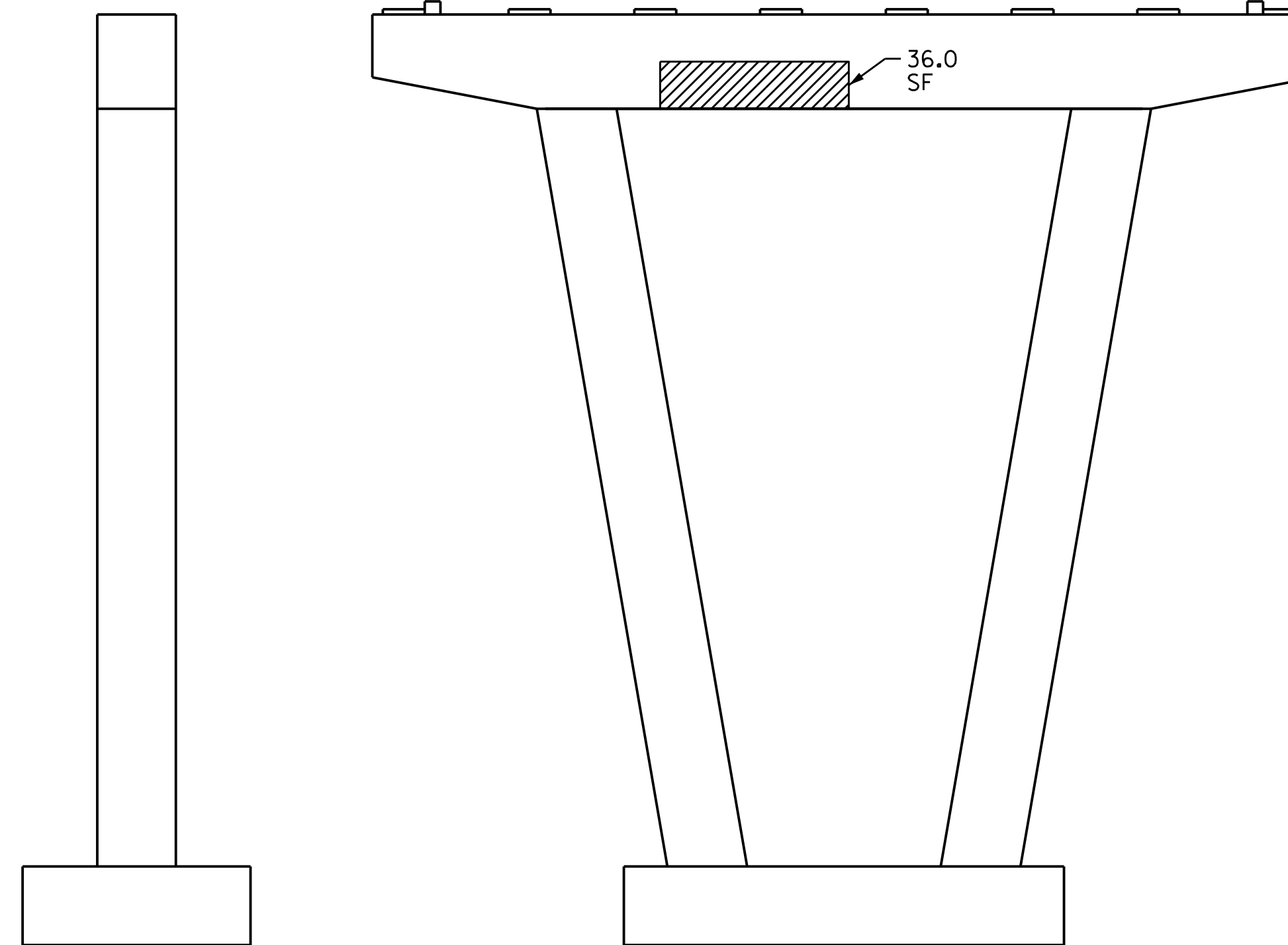


PLAN  
TOP OF CAP



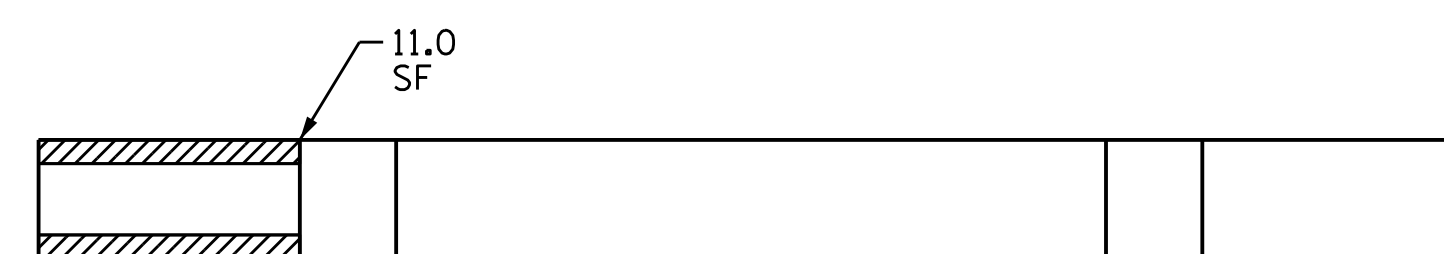
END VIEW  
NORTH SIDE

ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE

ELEVATION  
EAST SIDE

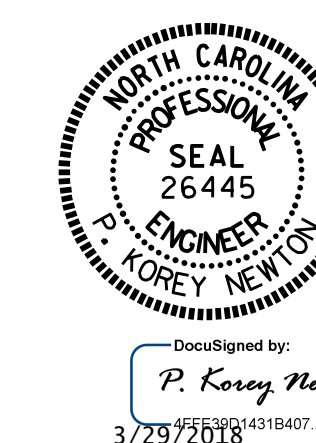


PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 10 OF 28



STATE OF NORTH CAROLINA  
**DEPARTMENT OF TRANSPORTATION**  
RALEIGH  
**SUBSTRUCTURE**  
**BENT #9**

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-60
2			4			84



## REPAIR QUANTITY TABLE

BENT 10	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	21.0	10.5		
CAP (HORIZONTAL FACE)	4.0	2.0		
COLUMN	338.0	169.0		
EPOXY RESIN INJECTION			LF	LF
CAP			0.0	
COLUMN			0.0	

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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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.

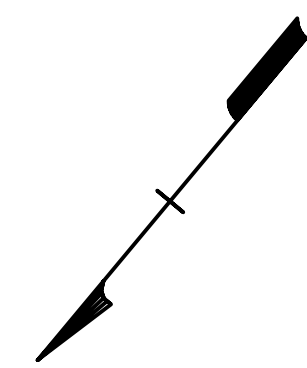
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

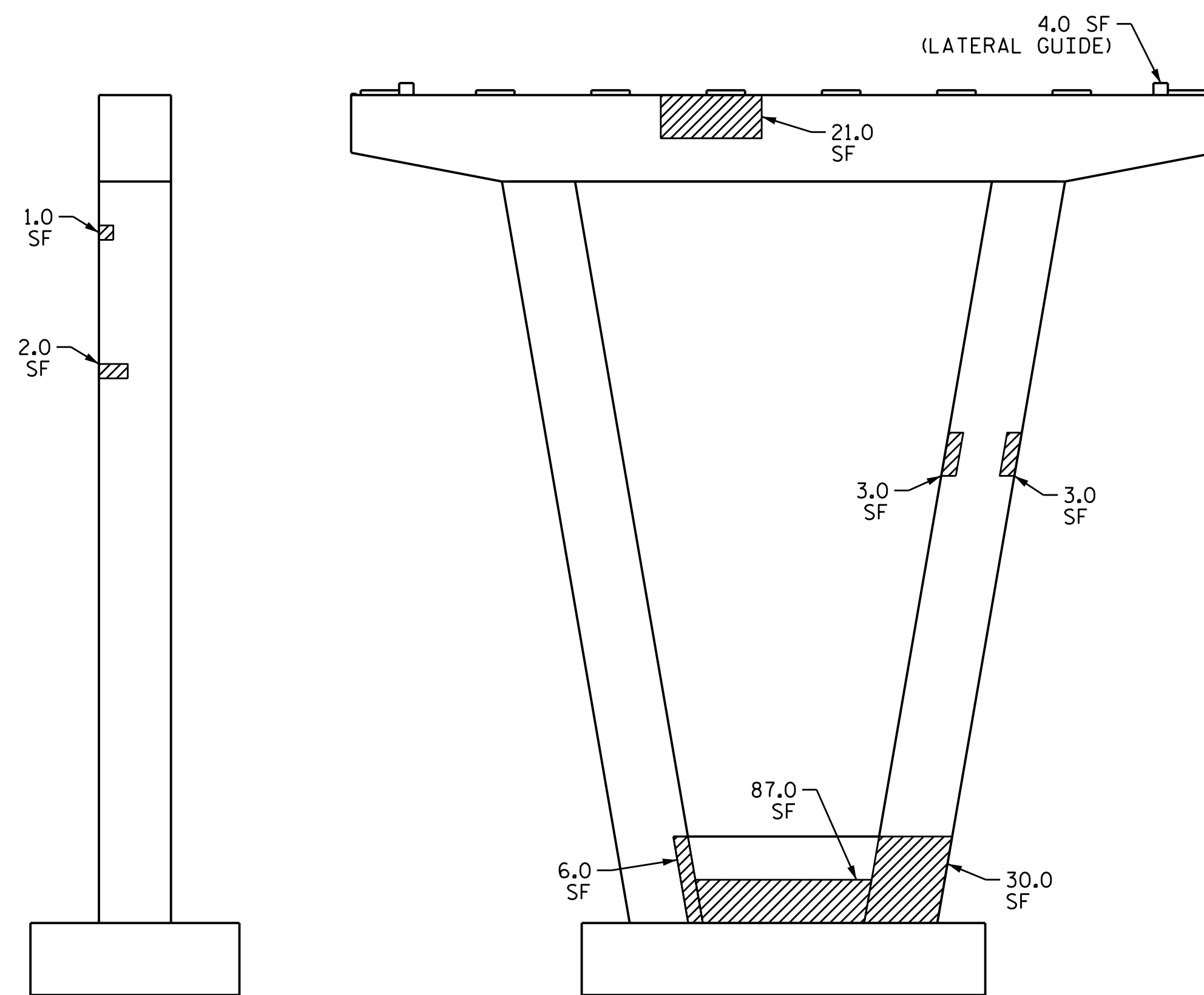
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.

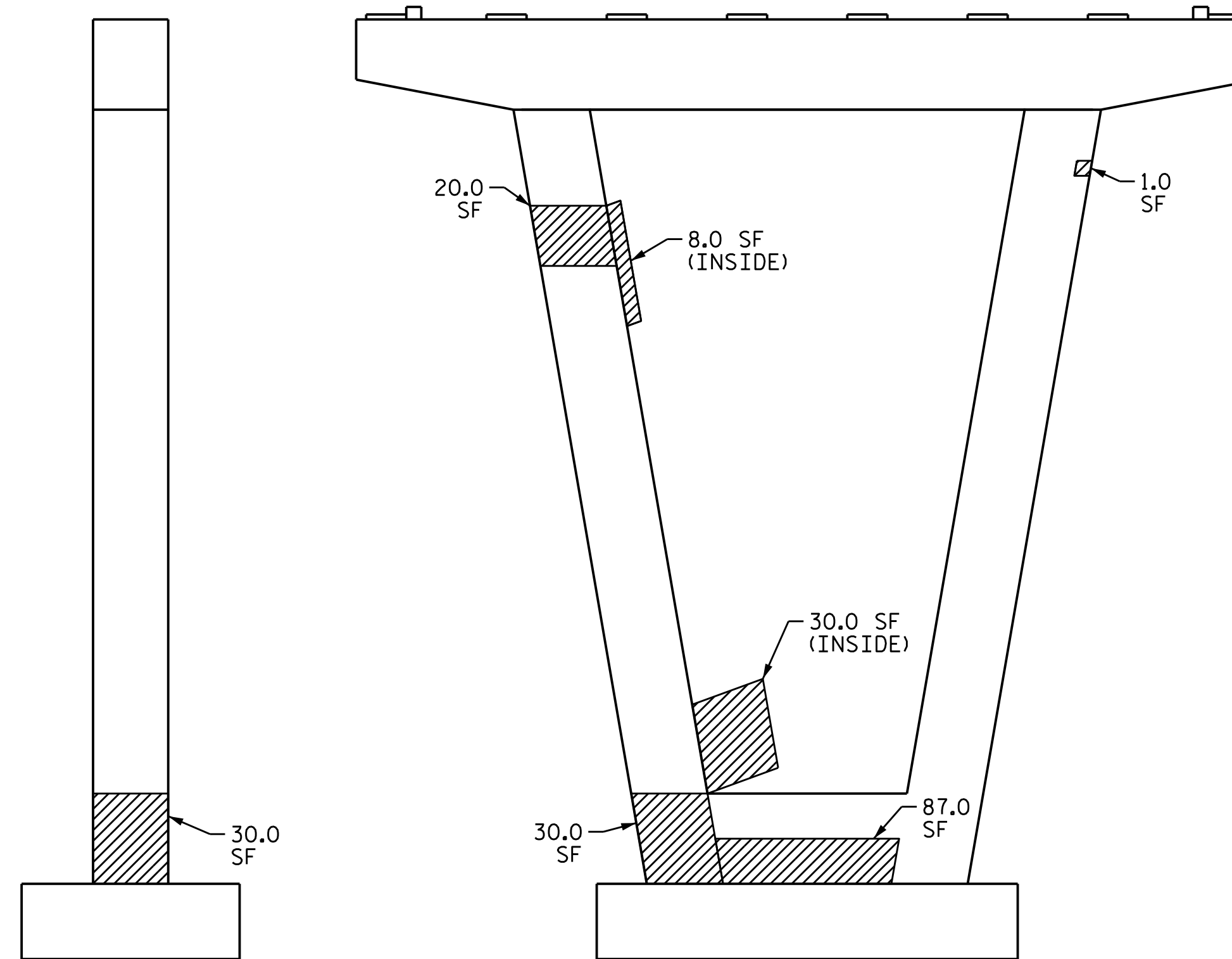


PLAN  
TOP OF CAP



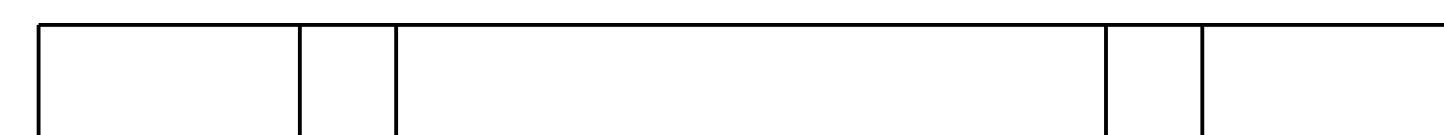
END VIEW  
NORTH SIDE

ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE

ELEVATION  
EAST SIDE

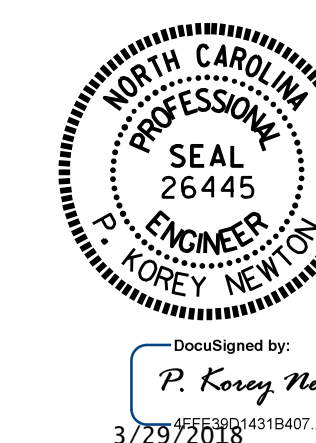


PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 11 OF 28



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE

BENT #10

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

29-MAR-2018 08:54  
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 gdickey

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-61
2			4			84

## REPAIR QUANTITY TABLE

BENT 11	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	101.0	50.5		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN	338.0	169.0		
EPOXY RESIN INJECTION		LF		LF
CAP		0.0		
COLUMN		0.0		

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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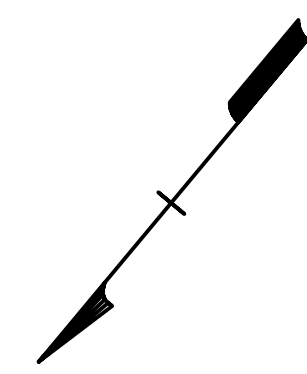
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

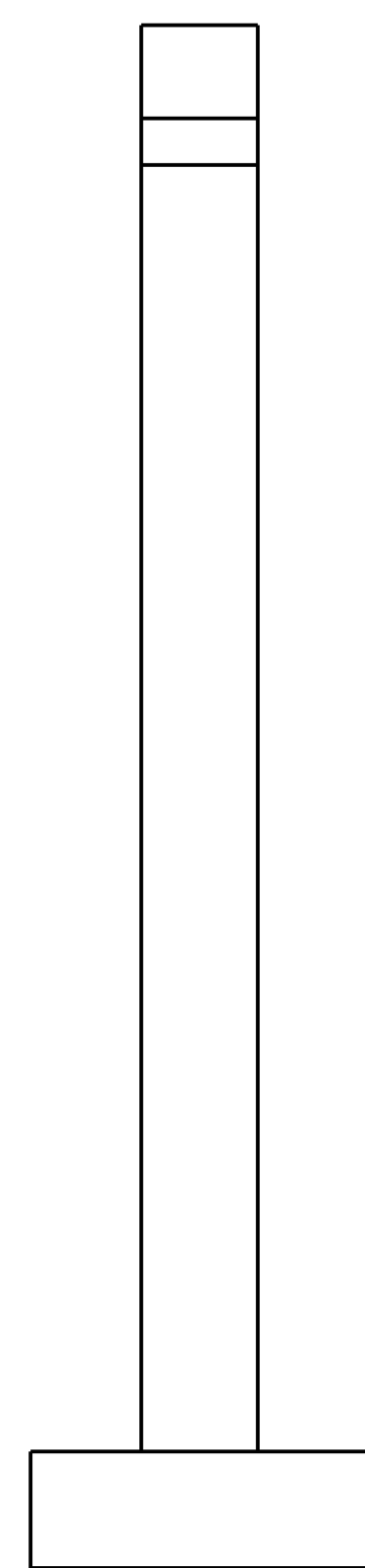
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

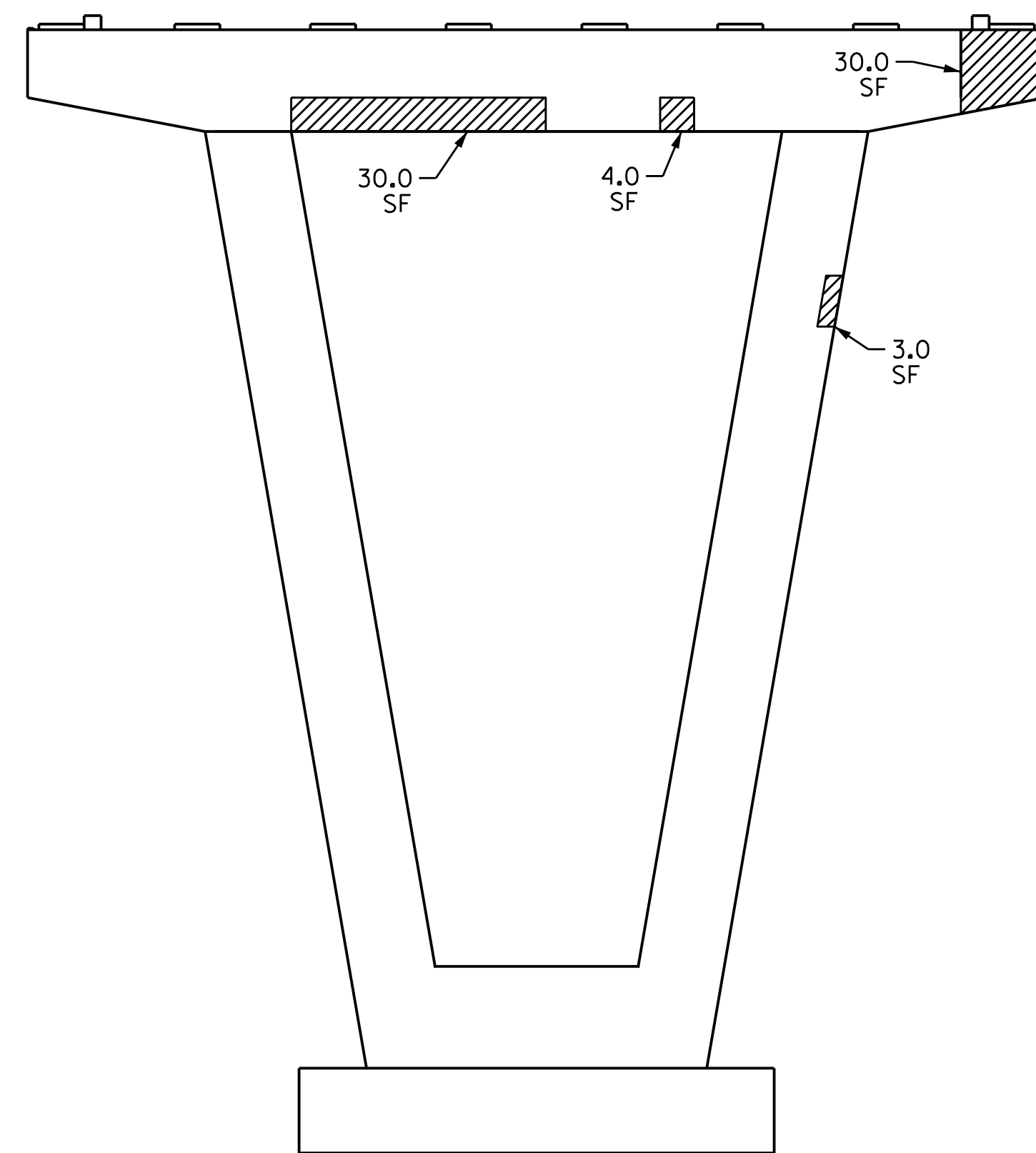
FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



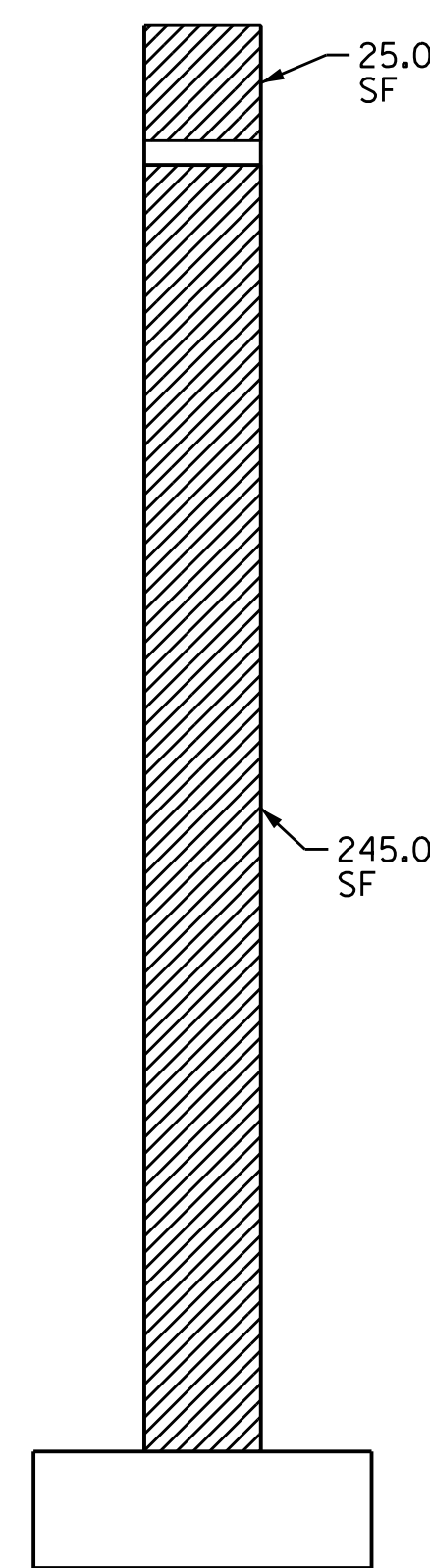
PLAN  
TOP OF CAP



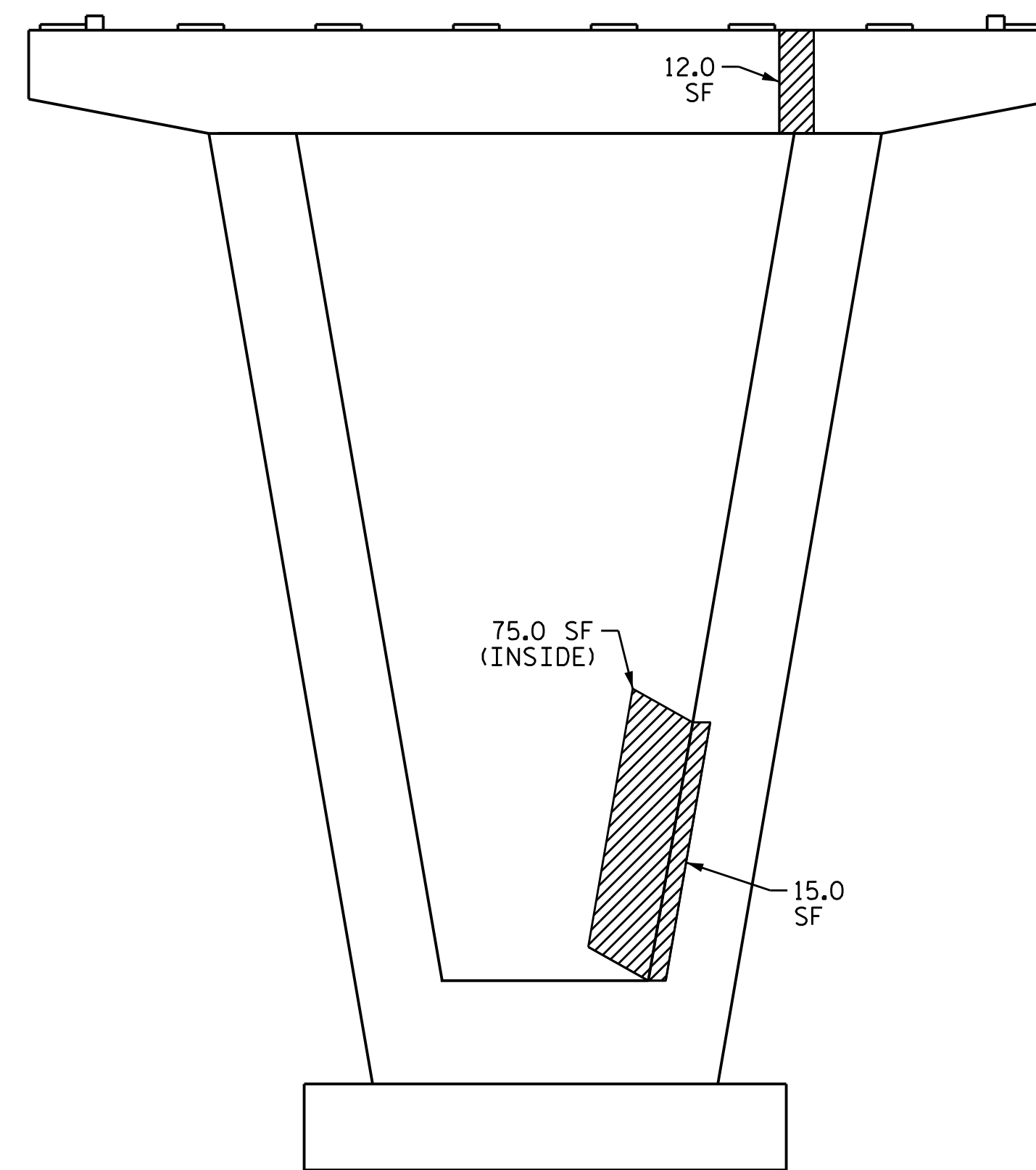
END VIEW  
NORTH SIDE



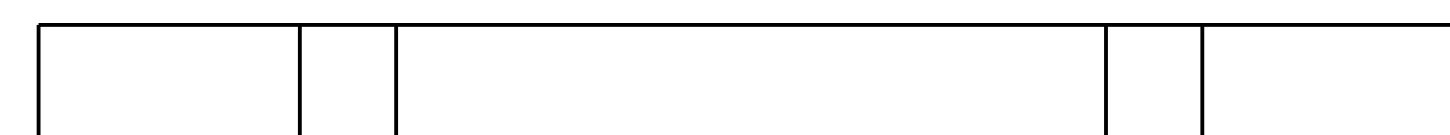
ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE



ELEVATION  
EAST SIDE

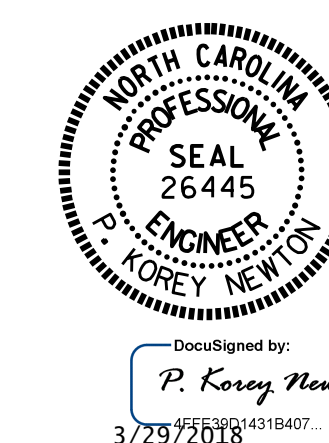


PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 12 OF 28



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

## SUBSTRUCTURE

### BENT #11

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-62 TOTAL SHEETS 84
1			3			
2			4			



## REPAIR QUANTITY TABLE

BENT 12	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	28.0	14.0		
CAP (HORIZONTAL FACE)	4.0	2.0		
COLUMN	103.0	51.5		
EPOXY RESIN INJECTION		LF		LF
CAP		0.0		
COLUMN		0.0		

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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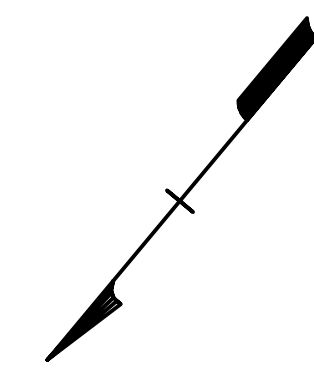
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

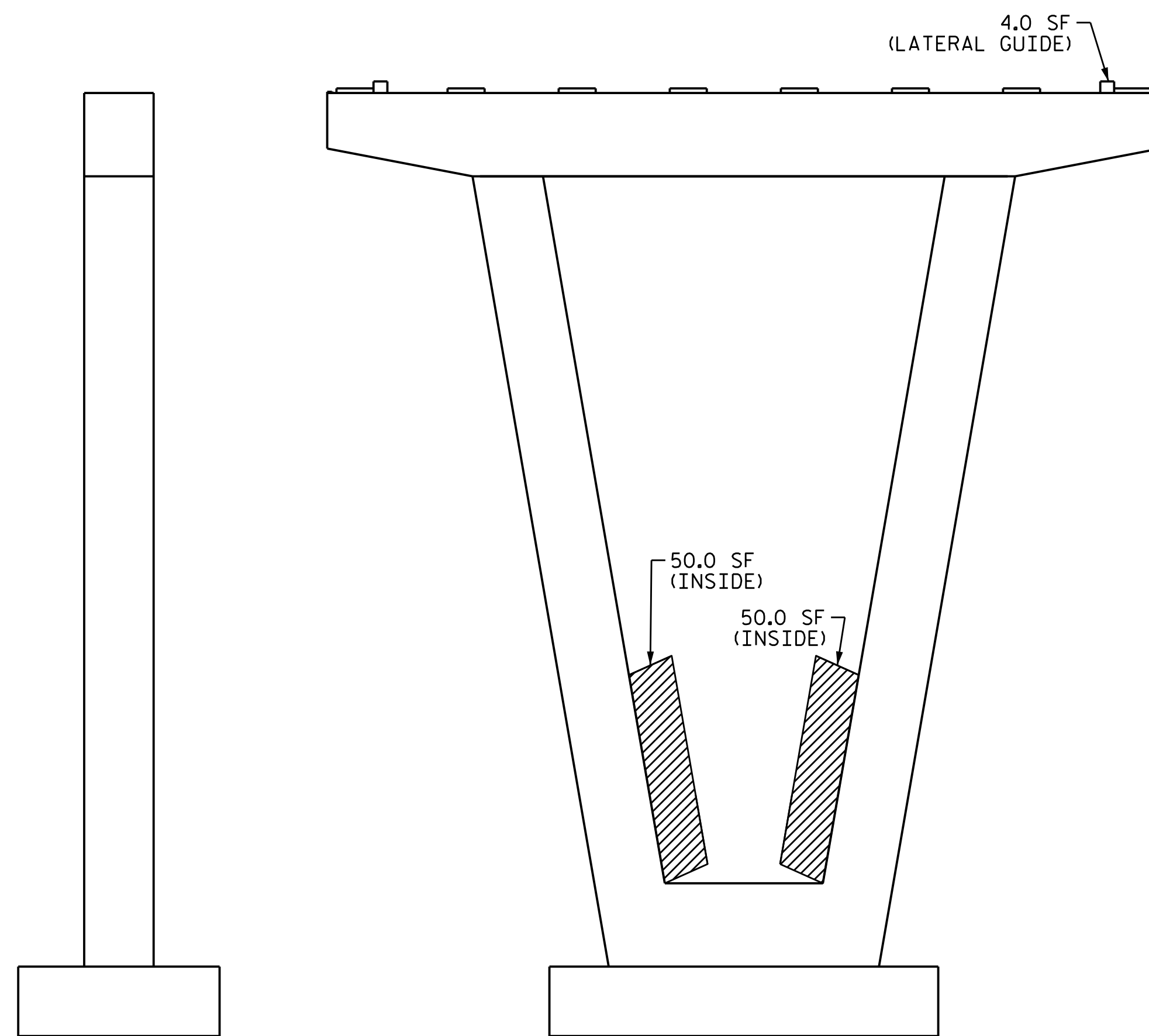
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



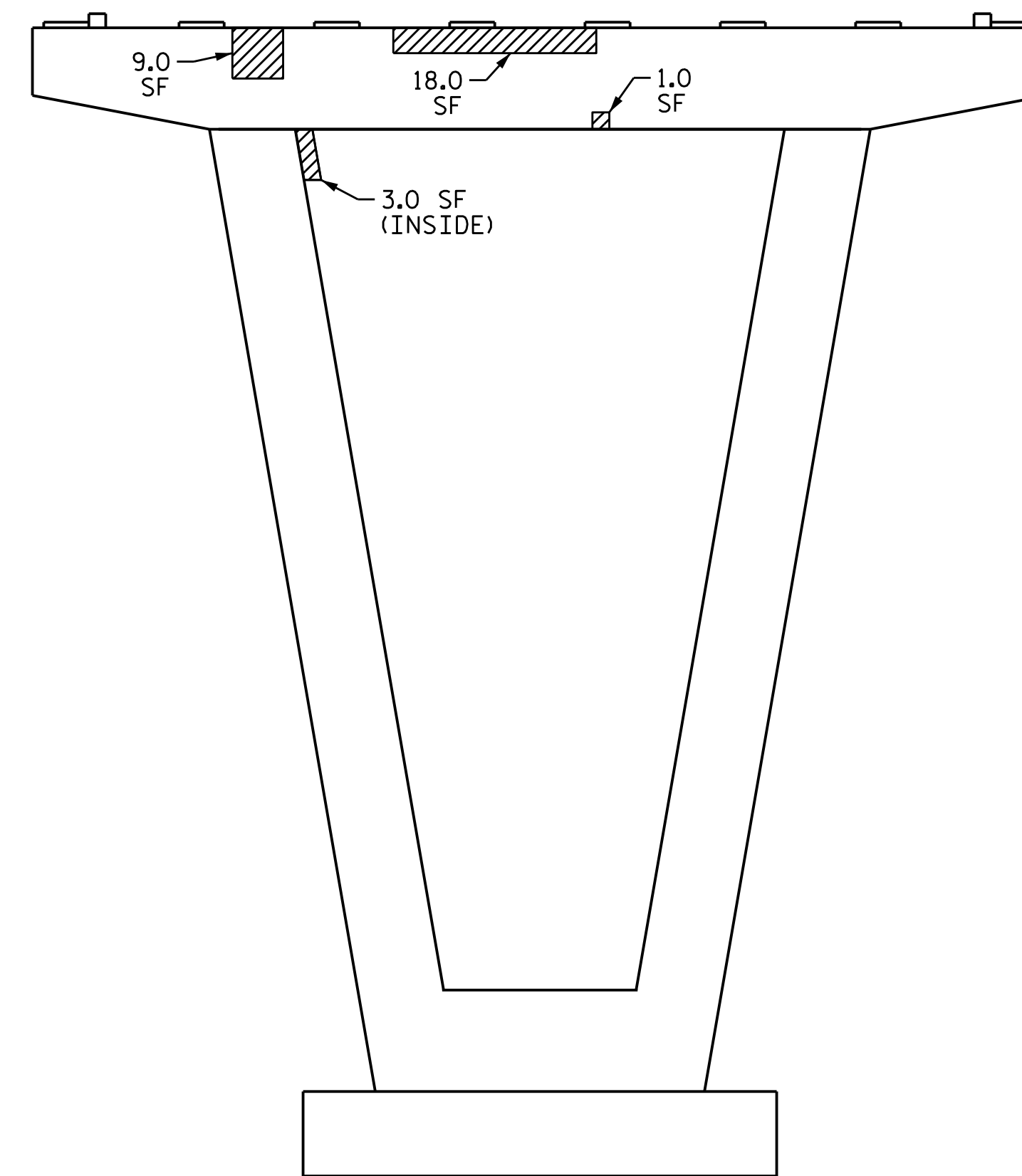
PLAN  
TOP OF CAP



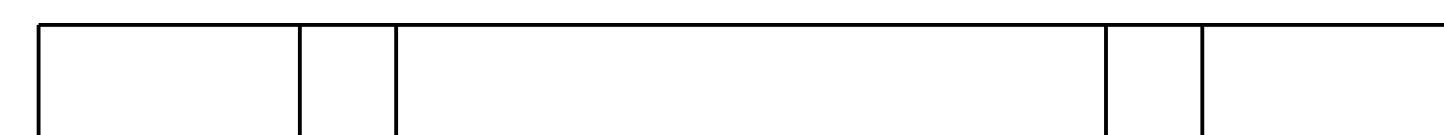
END VIEW  
NORTH SIDE

ELEVATION  
WEST SIDE

END VIEW  
SOUTH SIDE



ELEVATION  
EAST SIDE

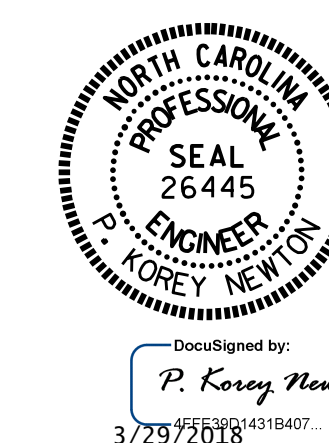


PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 13 OF 28



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE

BENT #12

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

29-MAR-2018 08:54  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-63
1			3			TOTAL SHEETS
2			4			84

# REPAIR QUANTITY TABLE

BENT 13	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	278.0	139.0		
CAP (HORIZONTAL FACE)	159.0	79.5		
COLUMN	265.00	132.5		
EPOXY RESIN INJECTION		LF		LF
CAP		0.0		
COLUMN		10.0		

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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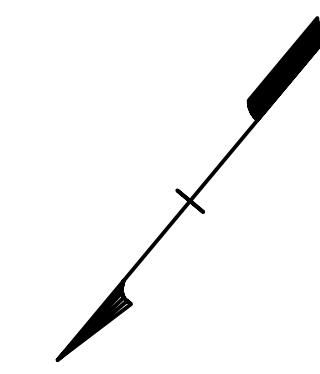
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

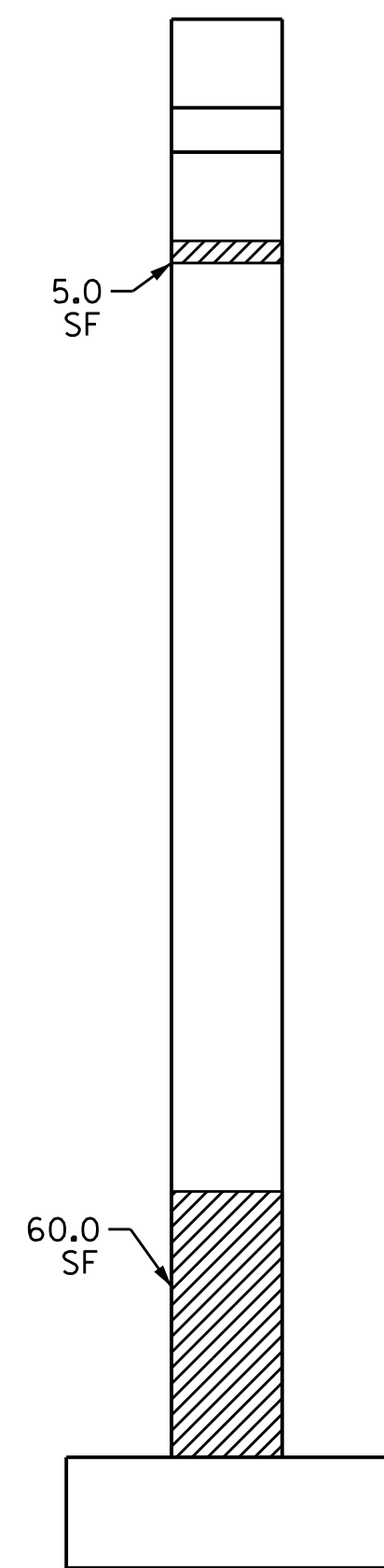
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

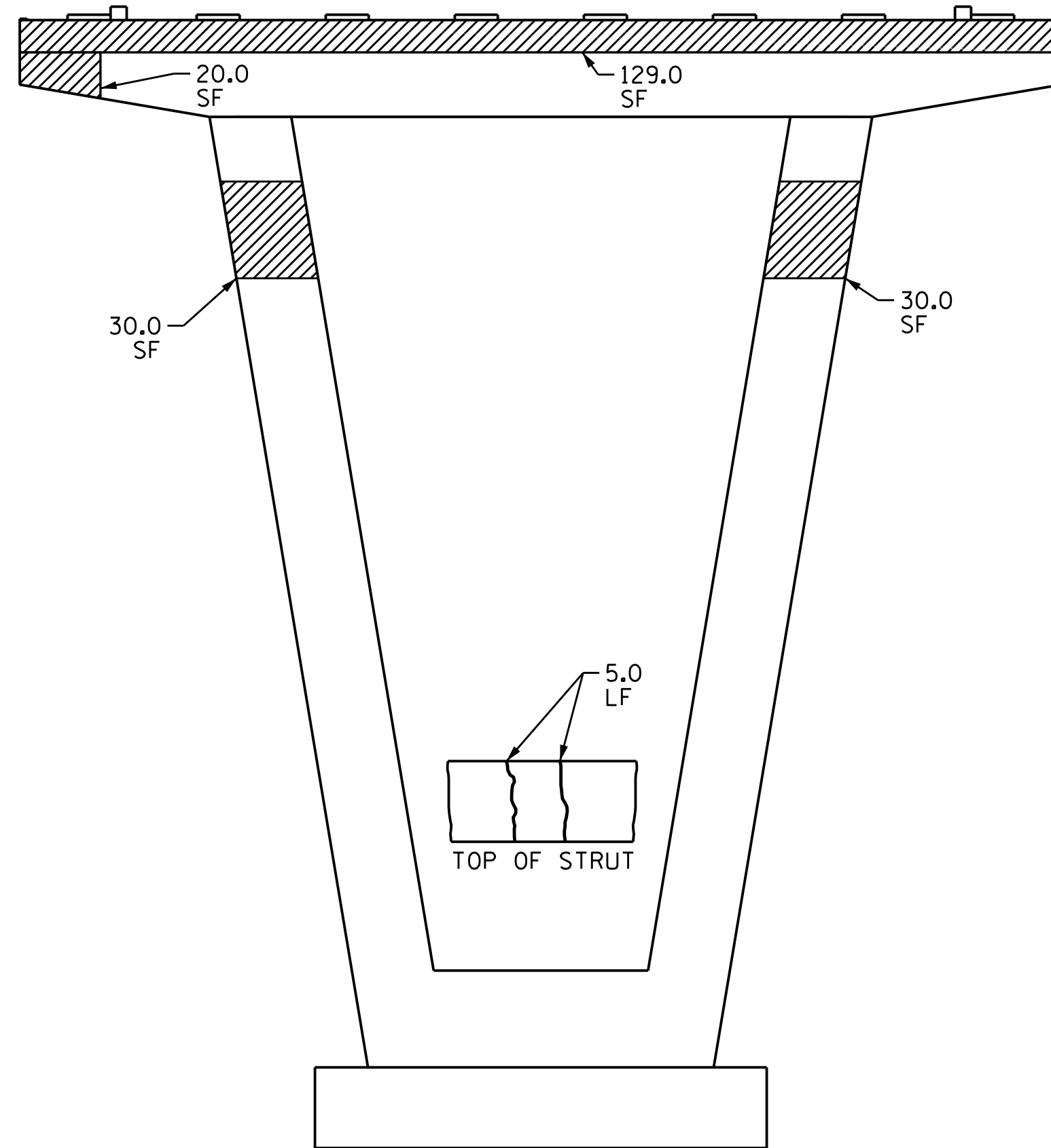
FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



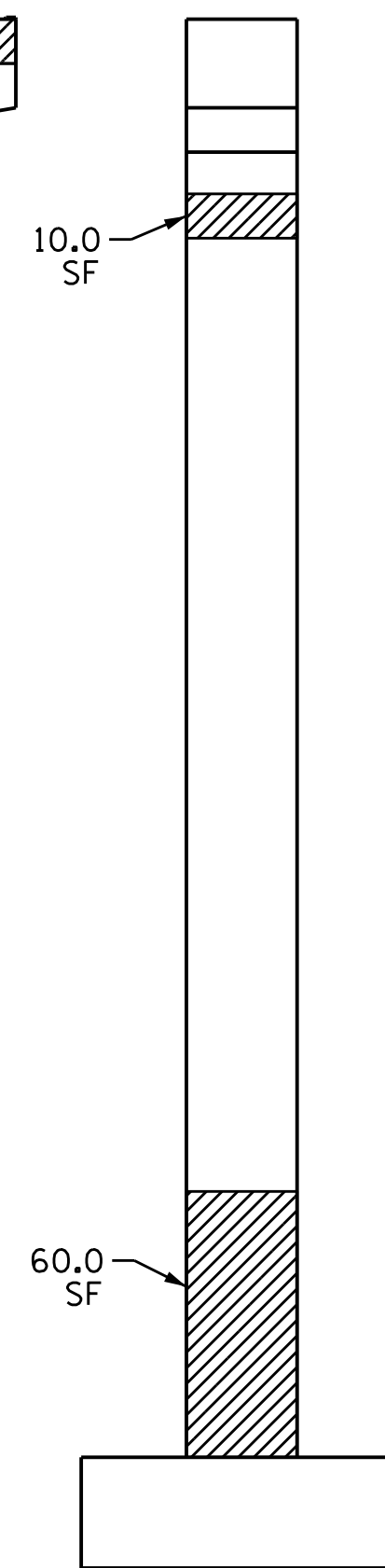
PLAN  
TOP OF CAP



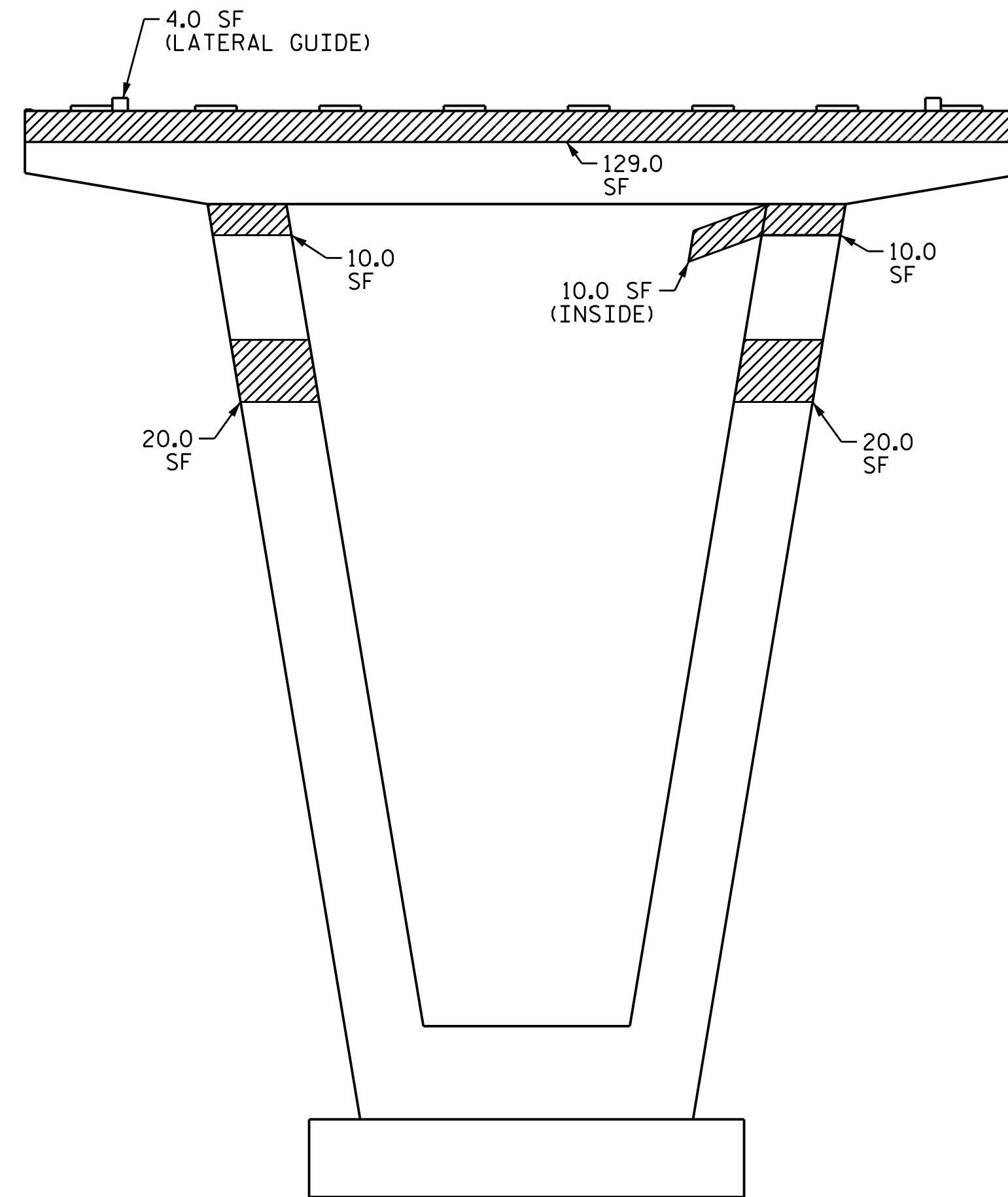
END VIEW  
NORTH SIDE



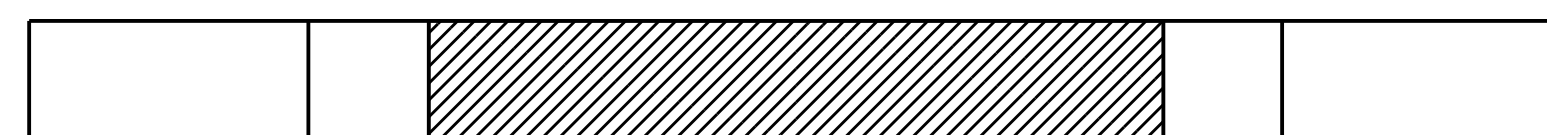
ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE

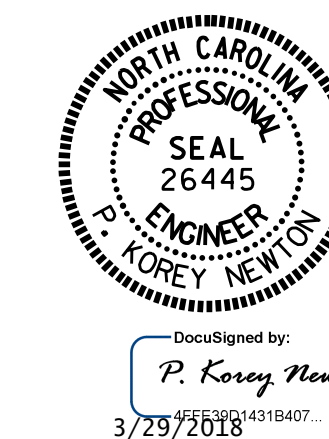


ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 14 OF 28

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE

BENT #13

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

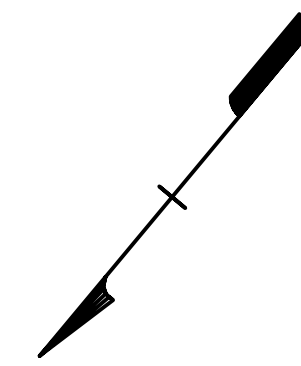
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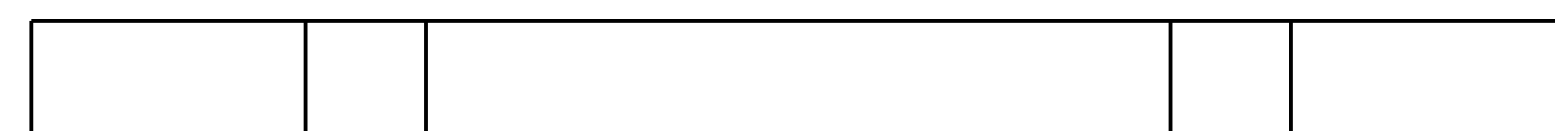
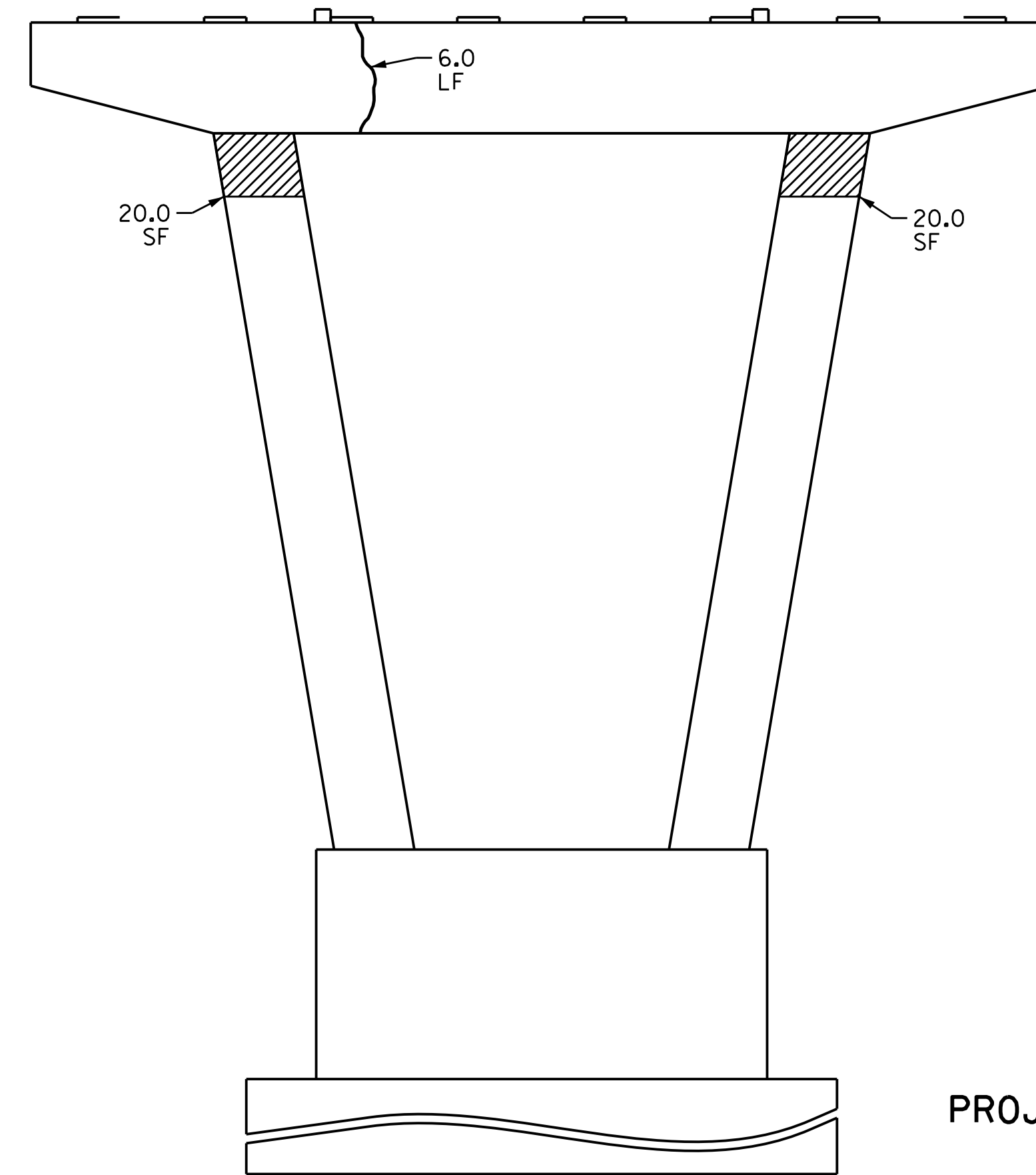
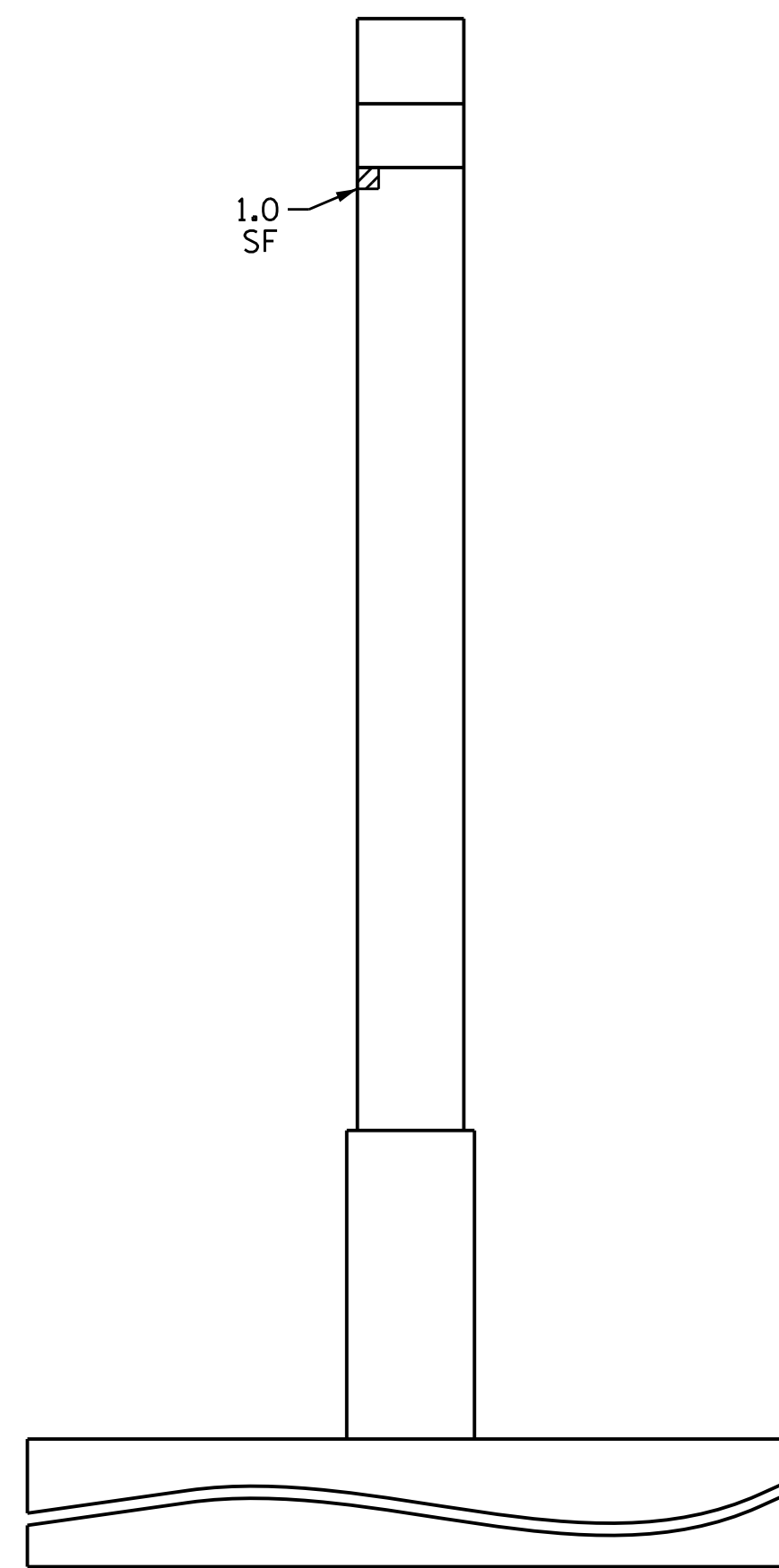
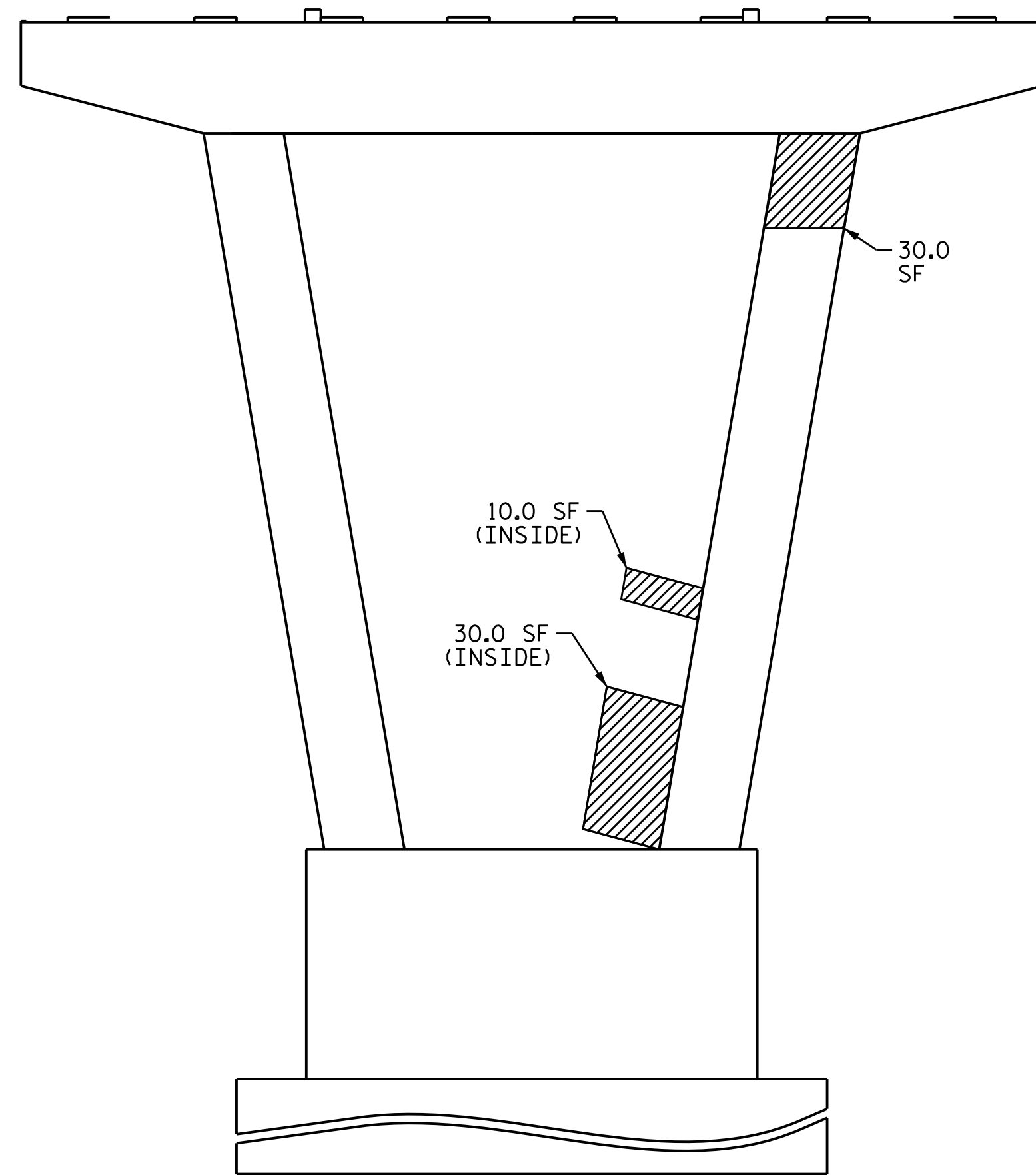
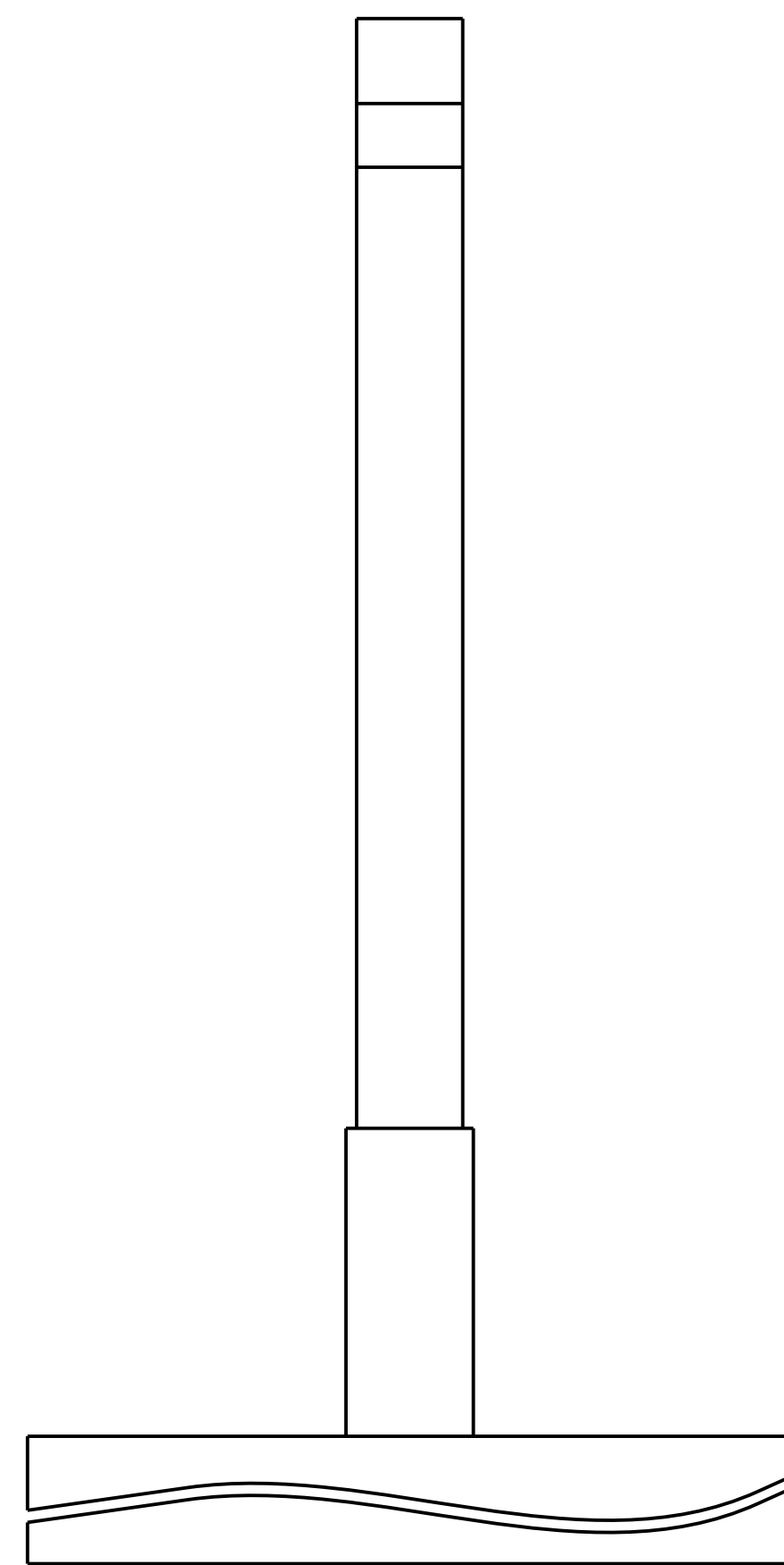
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-64
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VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"



PLAN  
TOP OF CAP



PLAN  
BOTTOM OF CAP

**NOTES:**

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

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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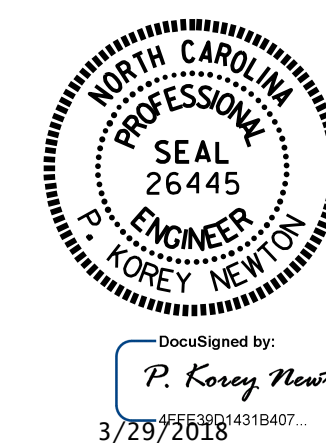
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.

**REPAIR QUANTITY TABLE**

BENT 14	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA S.F.	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN	111.0	55.5		
EPOXY RESIN INJECTION		LF		LF
CAP		6.0		
COLUMN		0.0		

SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
 SHEET 15 OF 28

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**SUBSTRUCTURE**

**BENT #14**

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

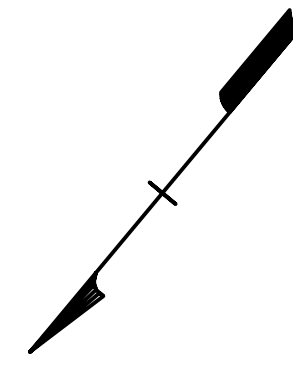
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-65
2			4			84

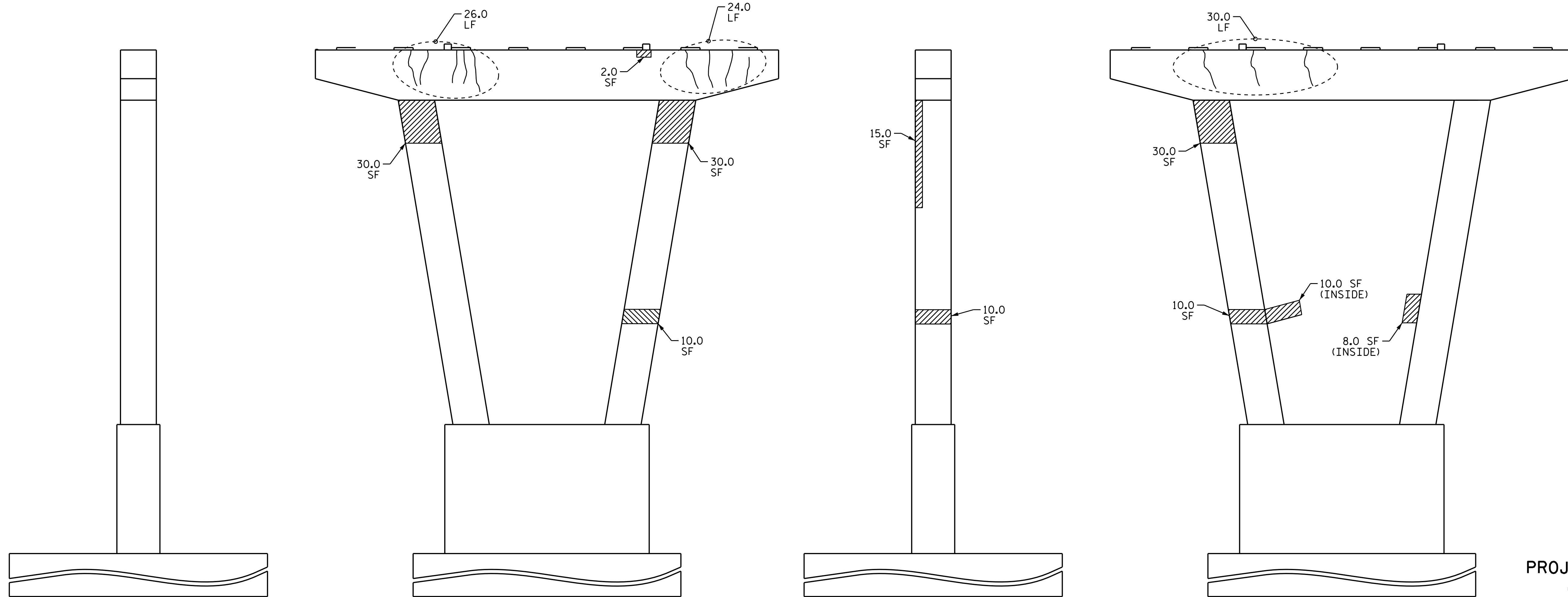


VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"



PLAN  
TOP OF CAP



PLAN  
BOTTOM OF CAP

NOTES:

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FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.

REPAIR QUANTITY TABLE

BENT 15	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	2.0	1.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN	153.0	76.5		
EPOXY RESIN INJECTION		LF		LF
CAP		80.0		
COLUMN		0.0		

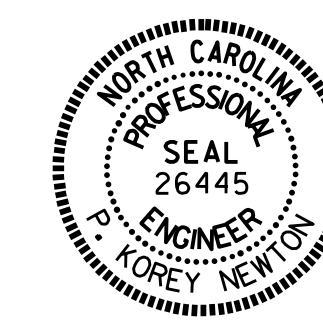
PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 16 OF 28

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE

BENT #15



DocuSigned by:  
 P. Corey Newton  
 3/29/2018

▨ SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

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 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-66
2			4			84

## REPAIR QUANTITY TABLE

BENT 16	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	30.0	15.0		
COLUMN	1074.0	537.0		
EPOXY RESIN INJECTION		LF		LF
CAP		20.0		
COLUMN		0.0		

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

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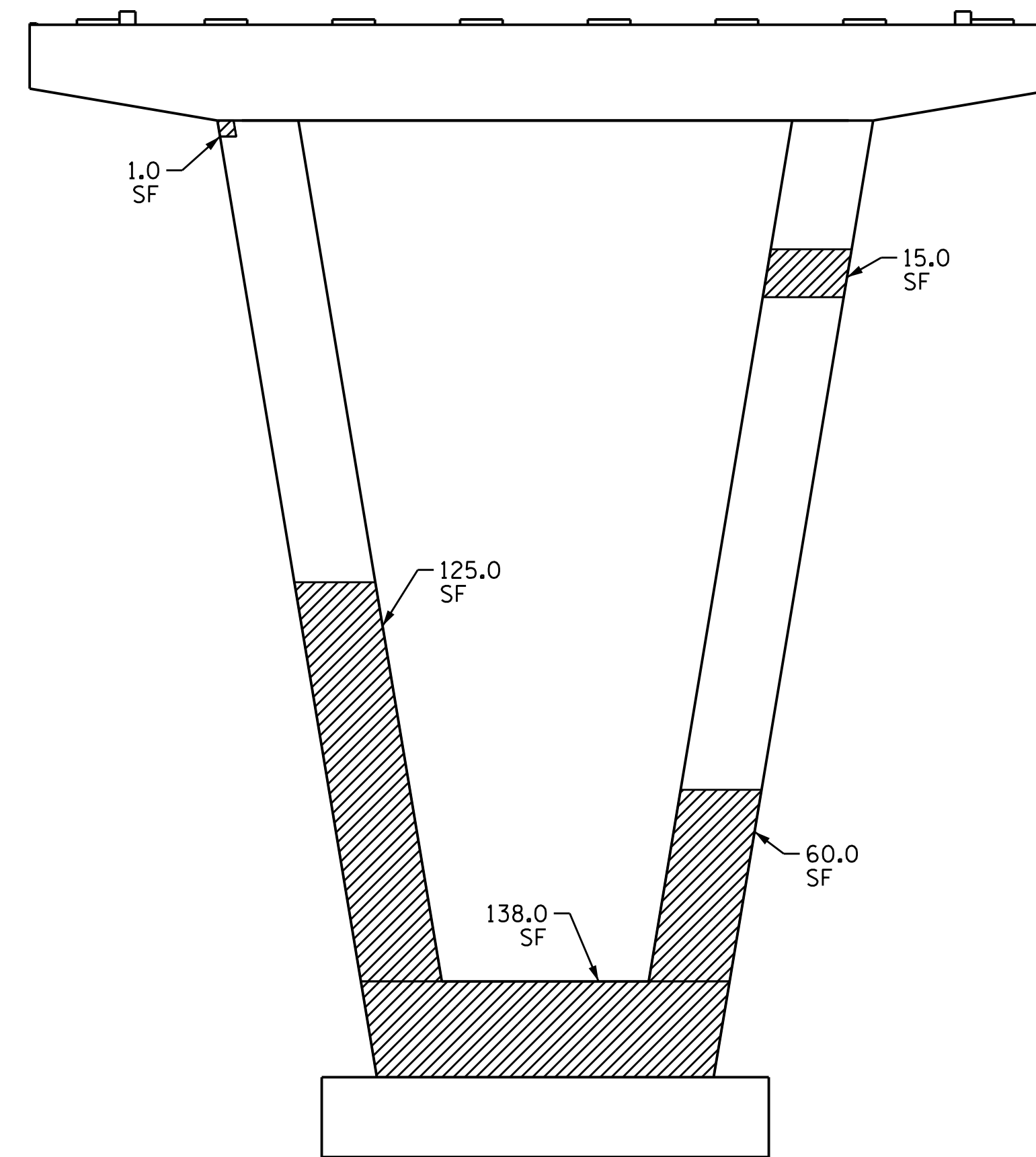
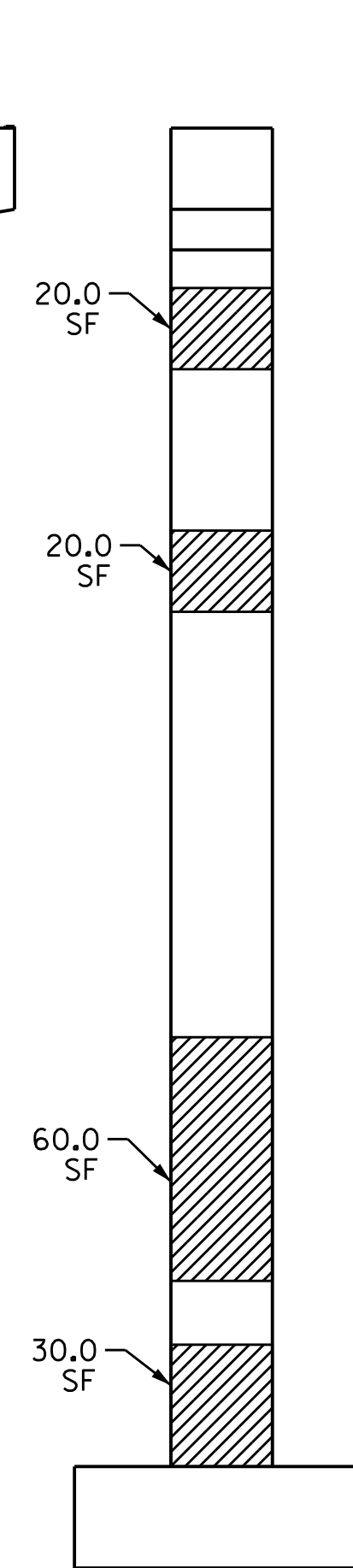
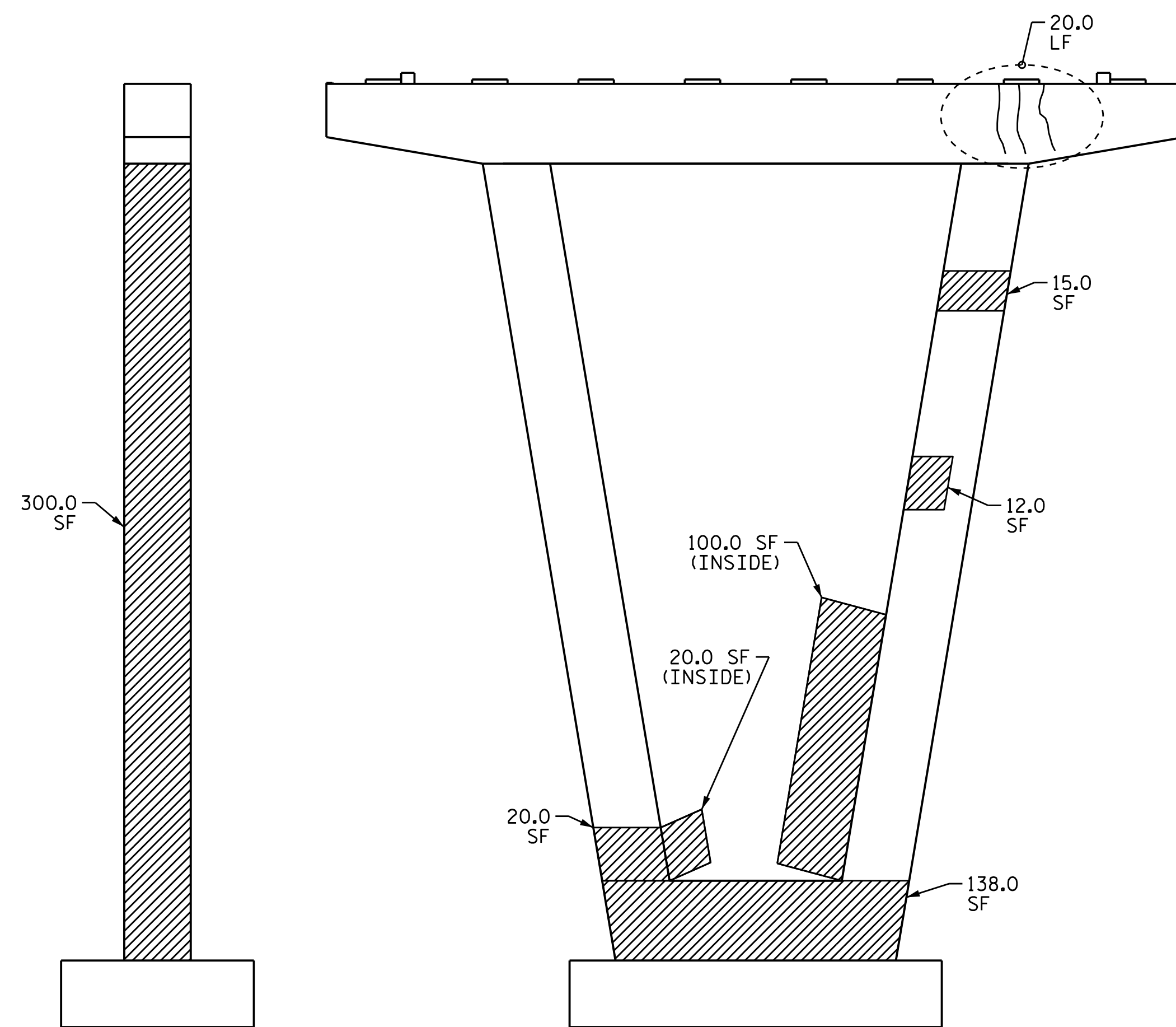
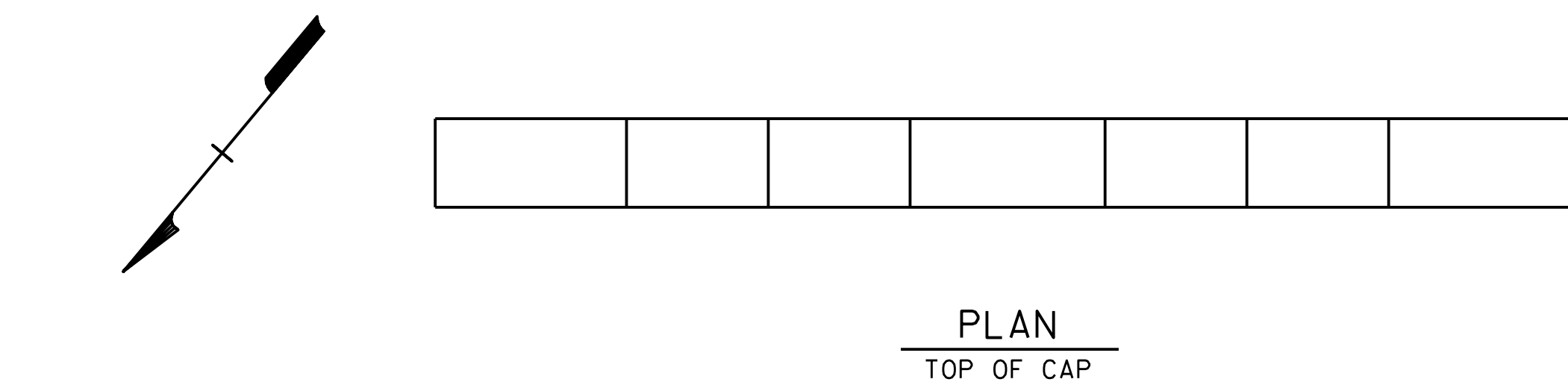
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.

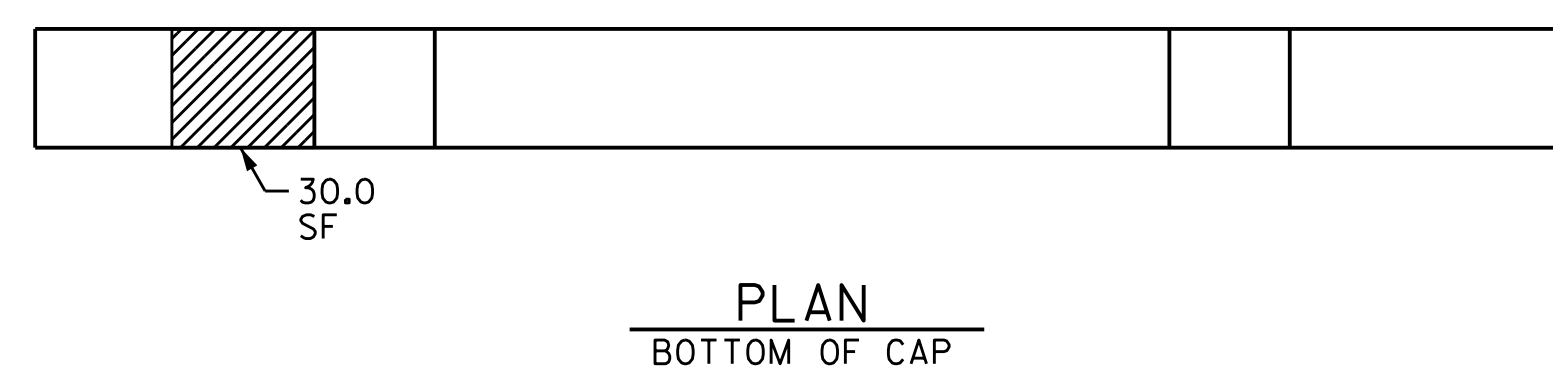


END VIEW  
NORTH SIDE

ELEVATION  
WEST SIDE

END VIEW  
SOUTH SIDE

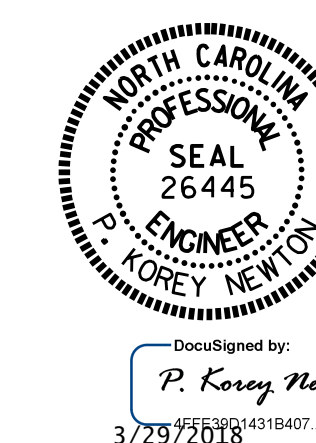
ELEVATION  
EAST SIDE



SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 17 OF 28



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE

BENT #16

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

29-MAR-2018 08:54  
 B:\Spec\15BPR7\Structures\Plans\15BPR.7\_SMU.B1-26.260015.dgn  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-67
1			3			TOTAL SHEETS
2			4			84



## REPAIR QUANTITY TABLE

BENT 17	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	20.0	10.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN	350.0	175.0		
EPOXY RESIN INJECTION		LF		LF
CAP		12.0		
COLUMN		0.0		

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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

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

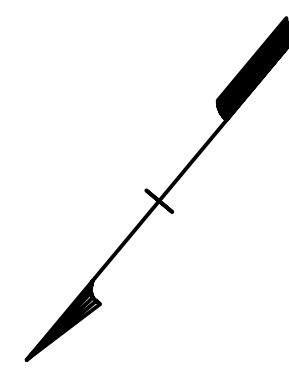
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

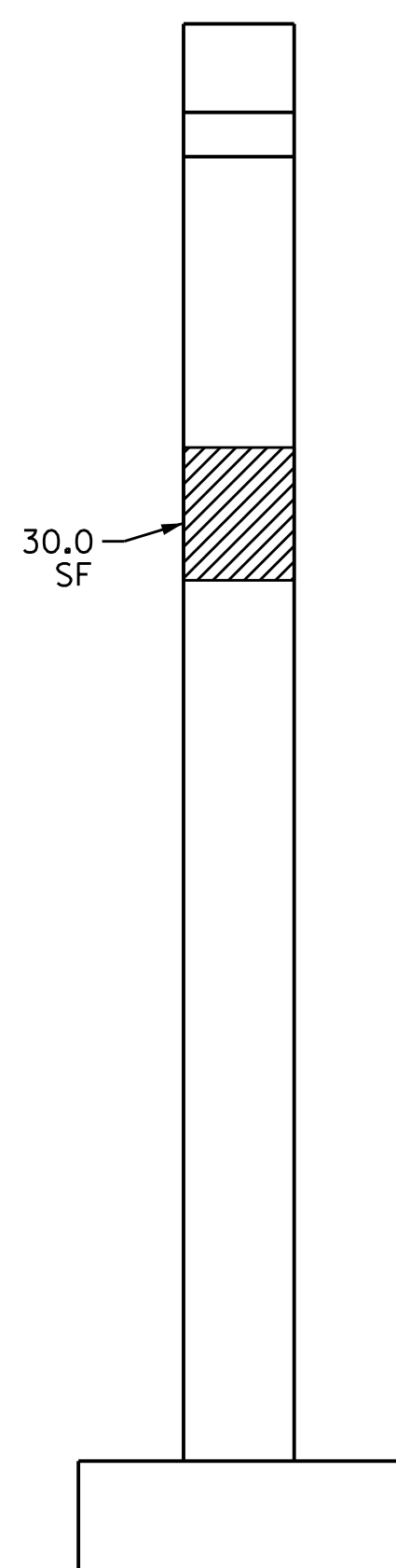
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

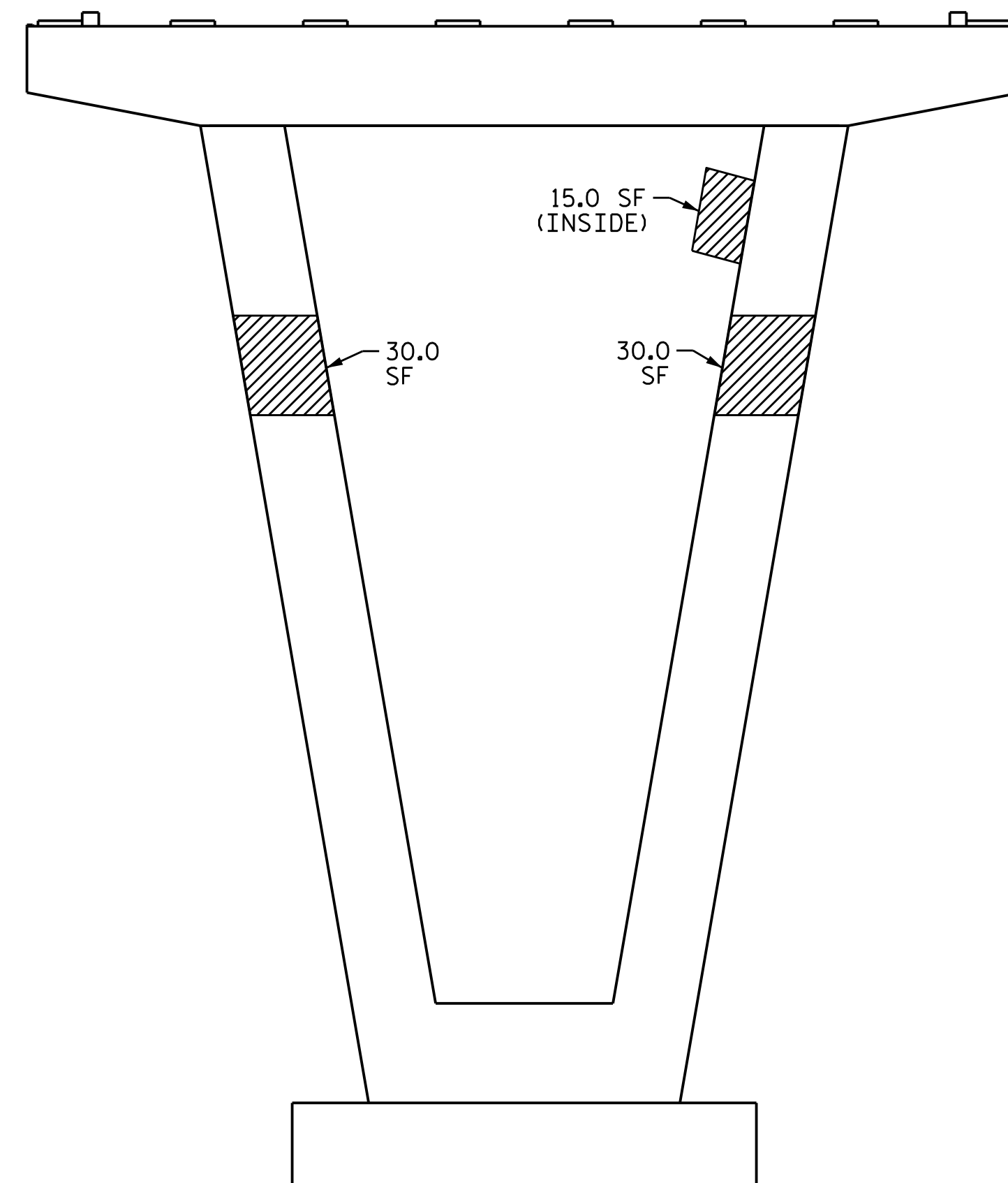
FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



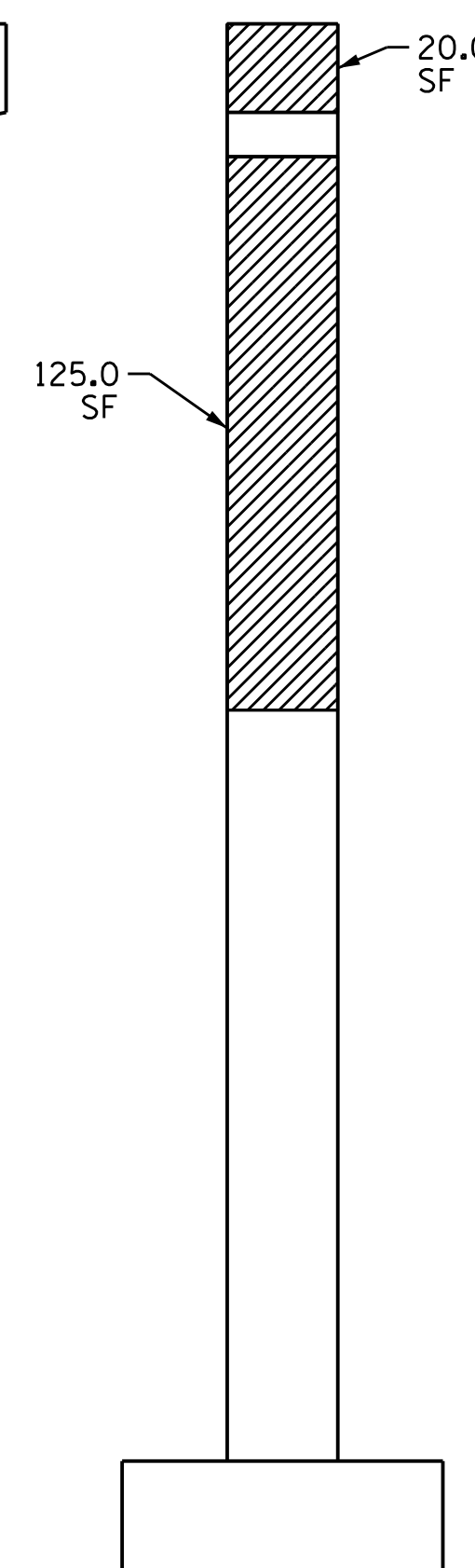
PLAN  
TOP OF CAP



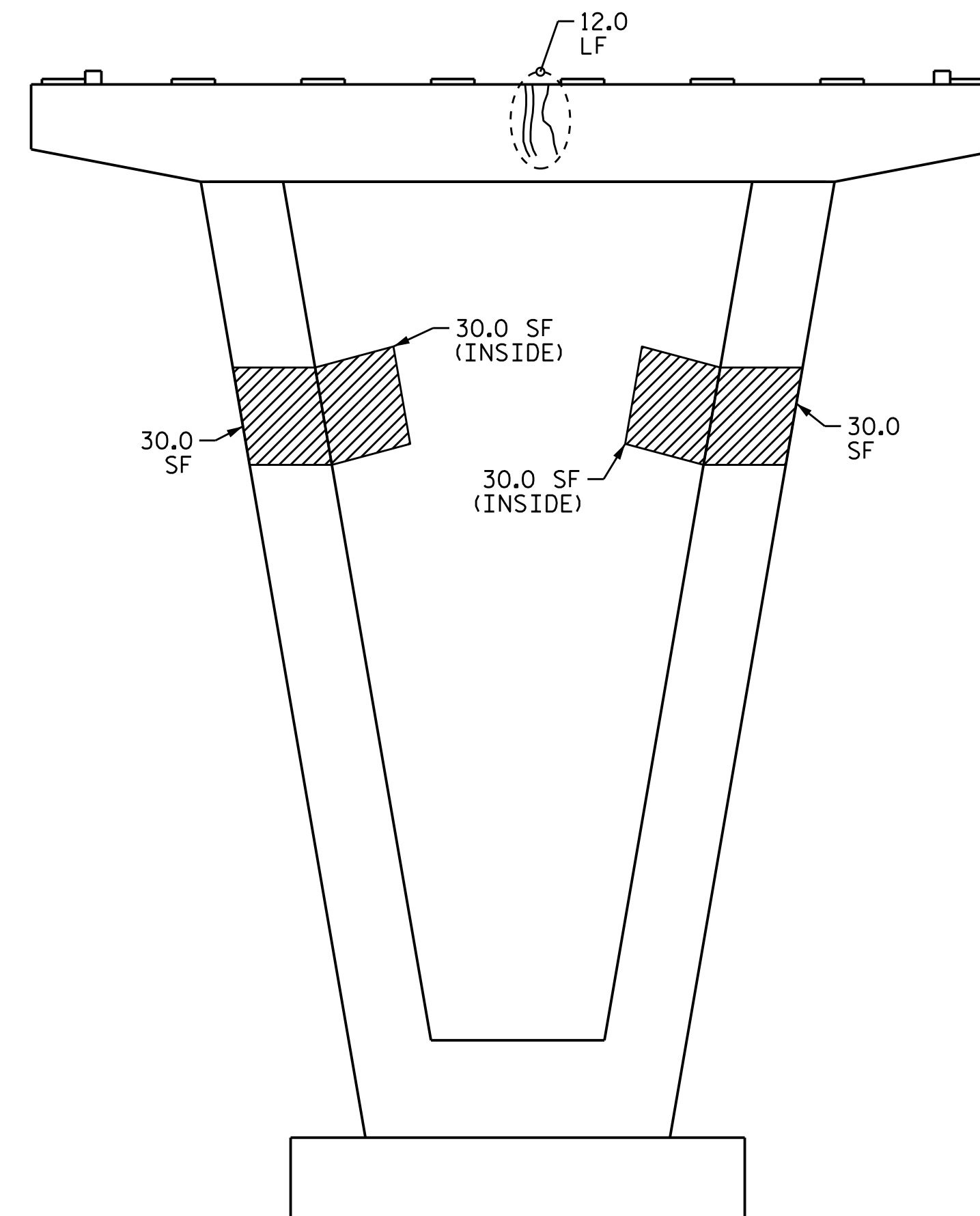
END VIEW  
NORTH SIDE



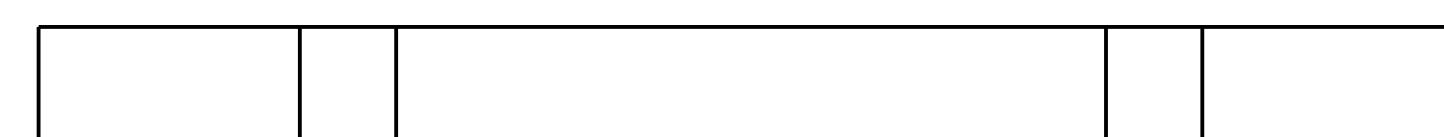
ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE

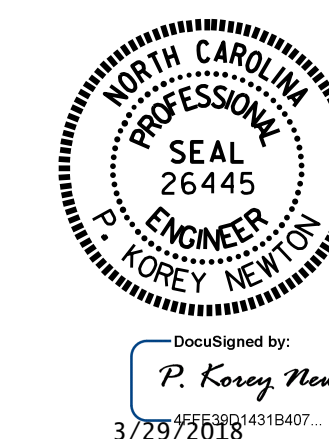


ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 18 OF 28

STATE OF NORTH CAROLINA  
**DEPARTMENT OF TRANSPORTATION**  
RALEIGH  
**SUBSTRUCTURE**  
**BENT #17**

DRAWN BY : P.D. BRYANT      DATE : 12-2017  
 CHECKED BY : P.K. NEWTON      DATE : 01/2018

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-68
1			3			TOTAL SHEETS 84
2			4			

## REPAIR QUANTITY TABLE

BENT 18	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	25.0	12.5		
COLUMN	100.0	50.0		
EPOXY RESIN INJECTION		LF		LF
CAP		24.0		
COLUMN		0.0		

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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

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

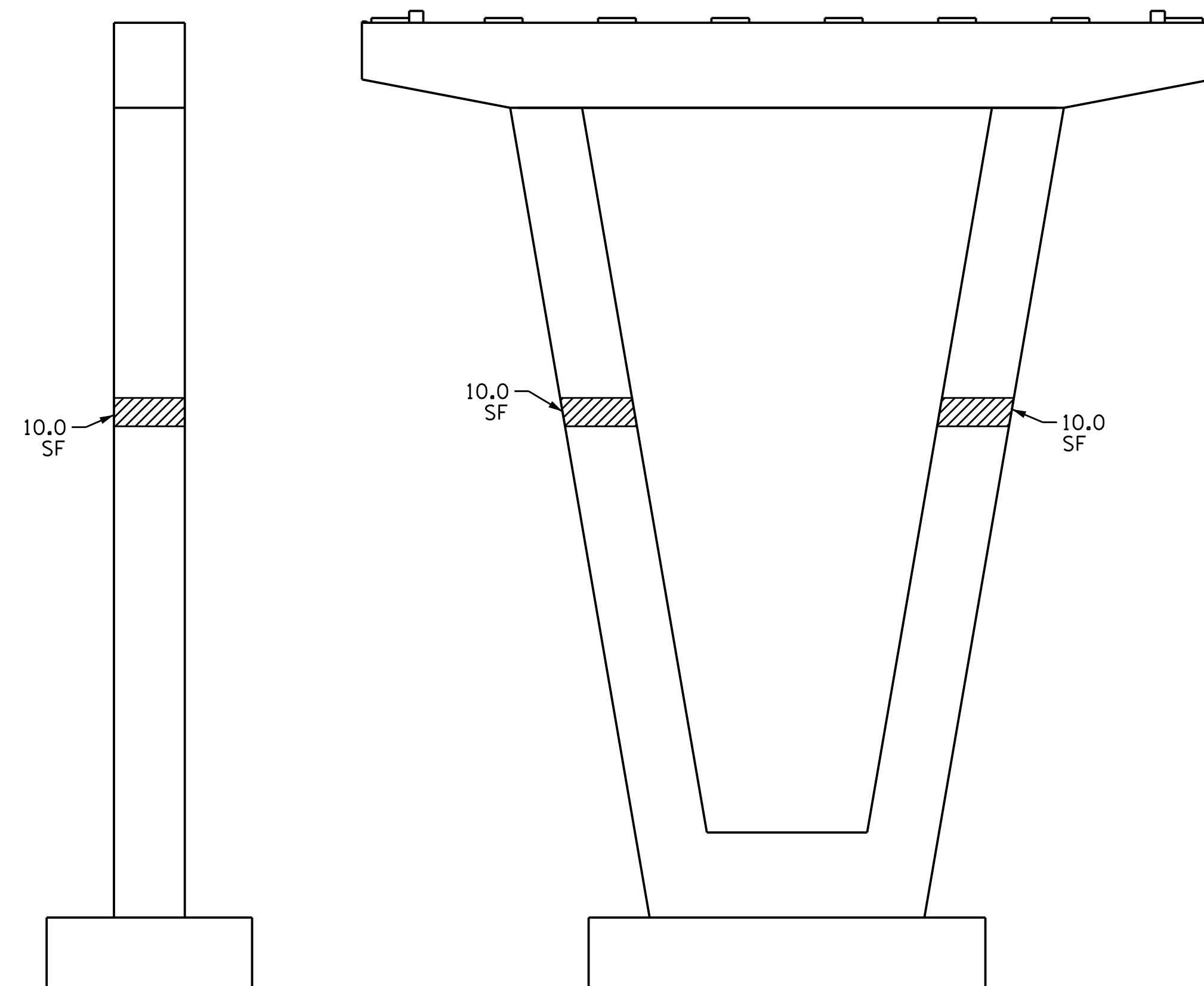
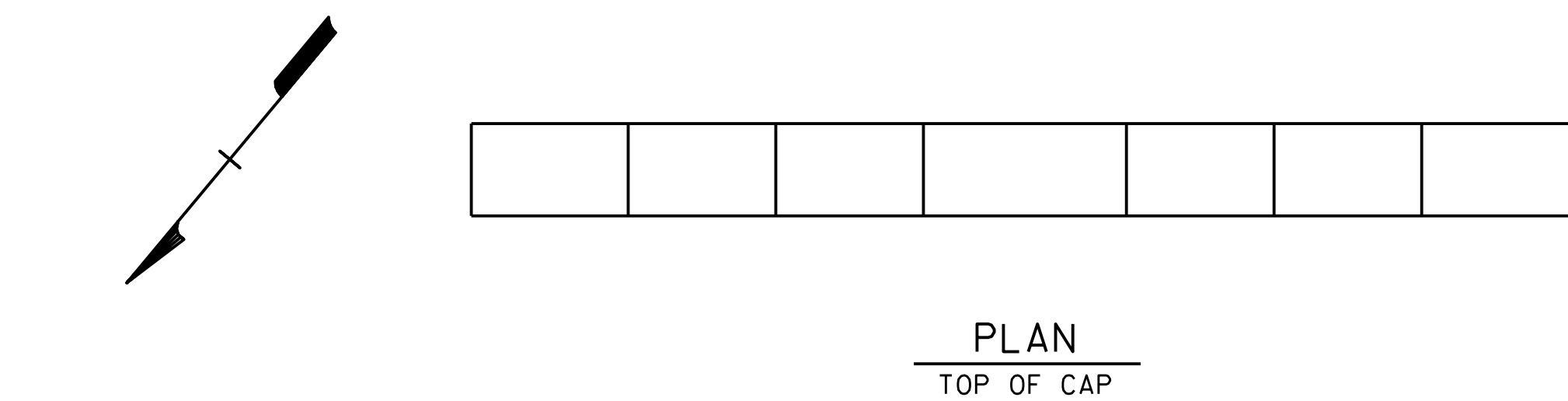
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

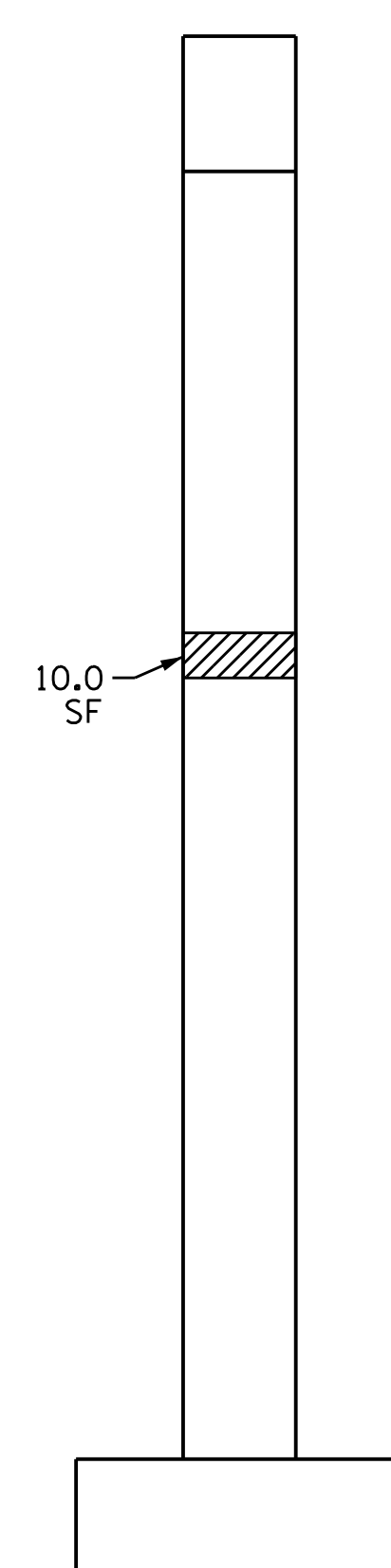
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.

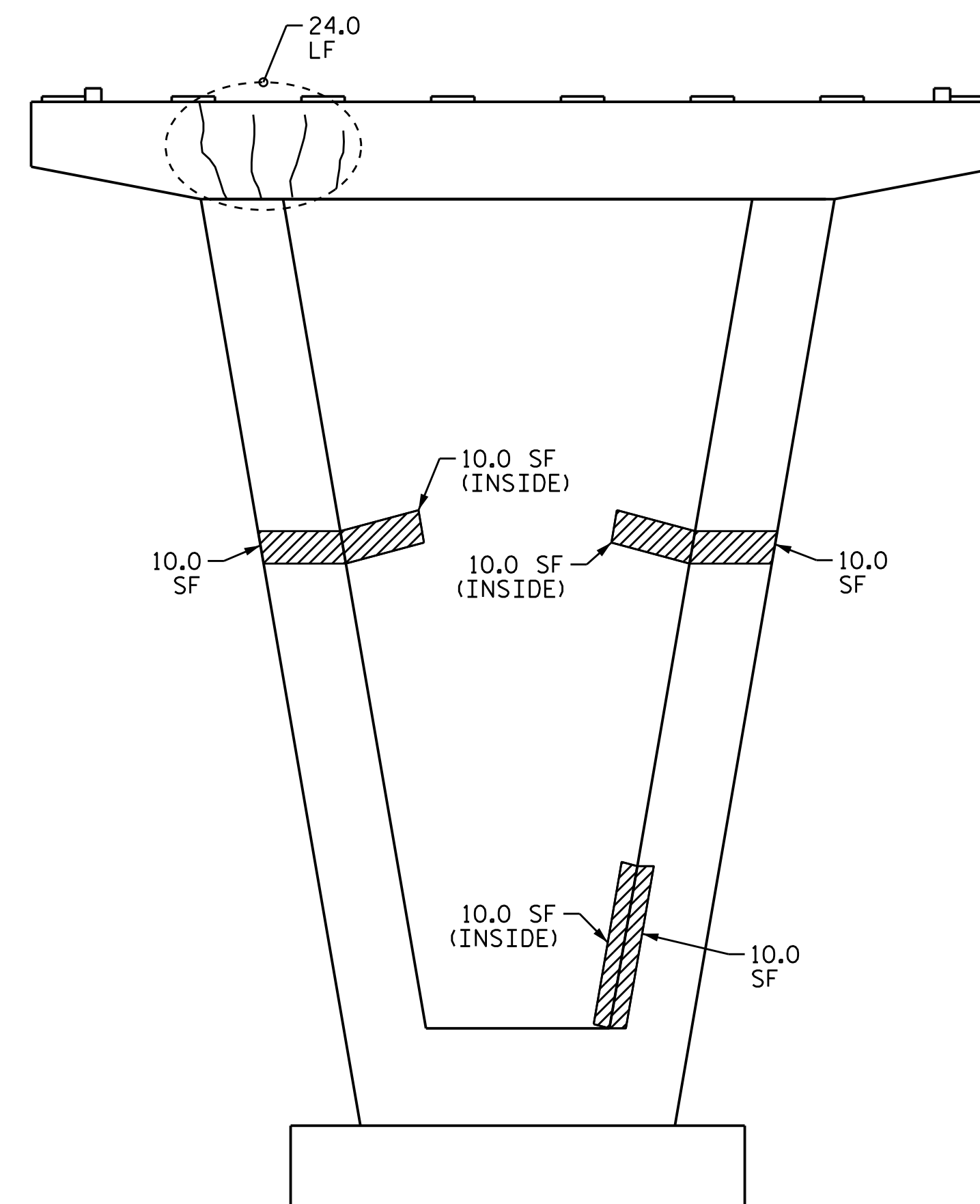


END VIEW  
NORTH SIDE

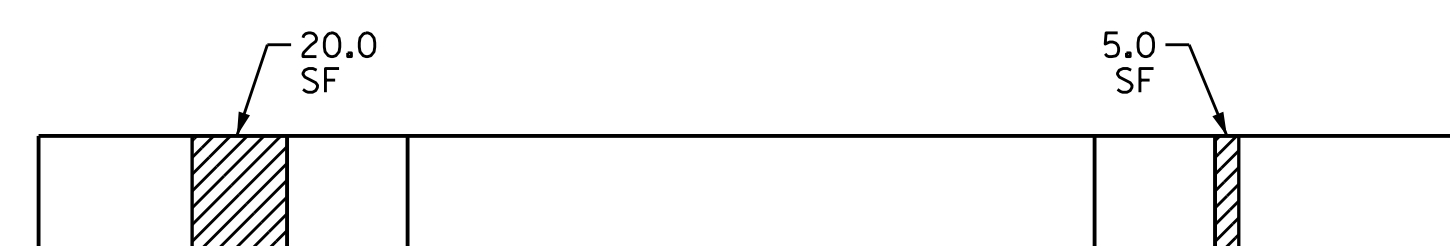
ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE

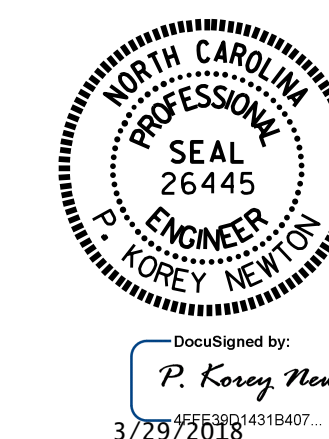


ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 19 OF 28

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE

BENT #18

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

29-MAR-2018 08:54  
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 gdickey

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-69
2			4			84

## REPAIR QUANTITY TABLE

BENT 19	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	55.0	27.5		
CAP (HORIZONTAL FACE)	44.0	22.0		
COLUMN	806.0	403.0		
EPOXY RESIN INJECTION			LF	LF
CAP		22.0		
COLUMN		0.0		

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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

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

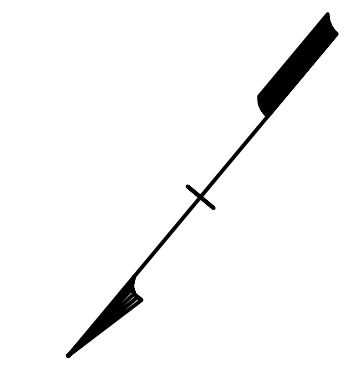
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

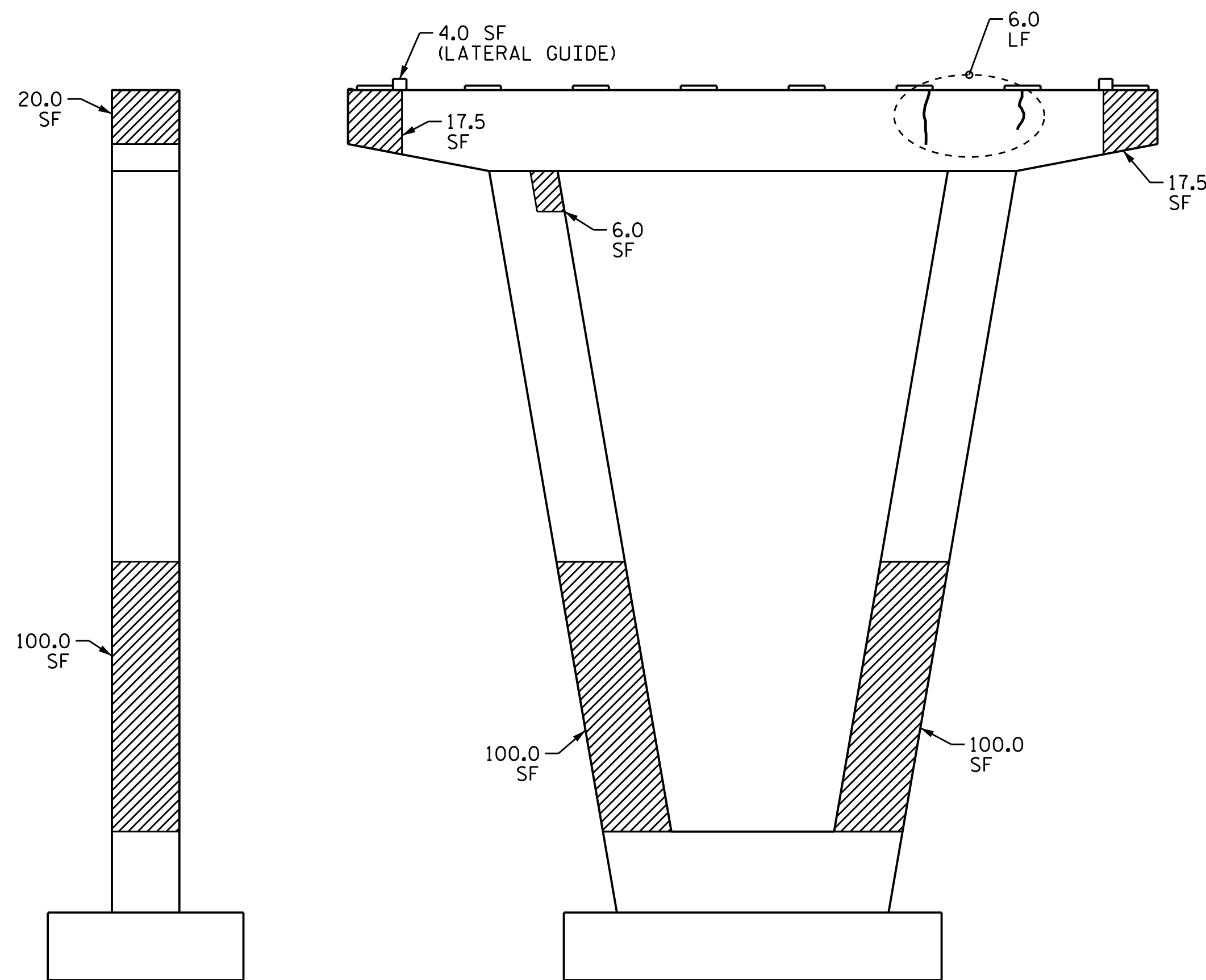
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



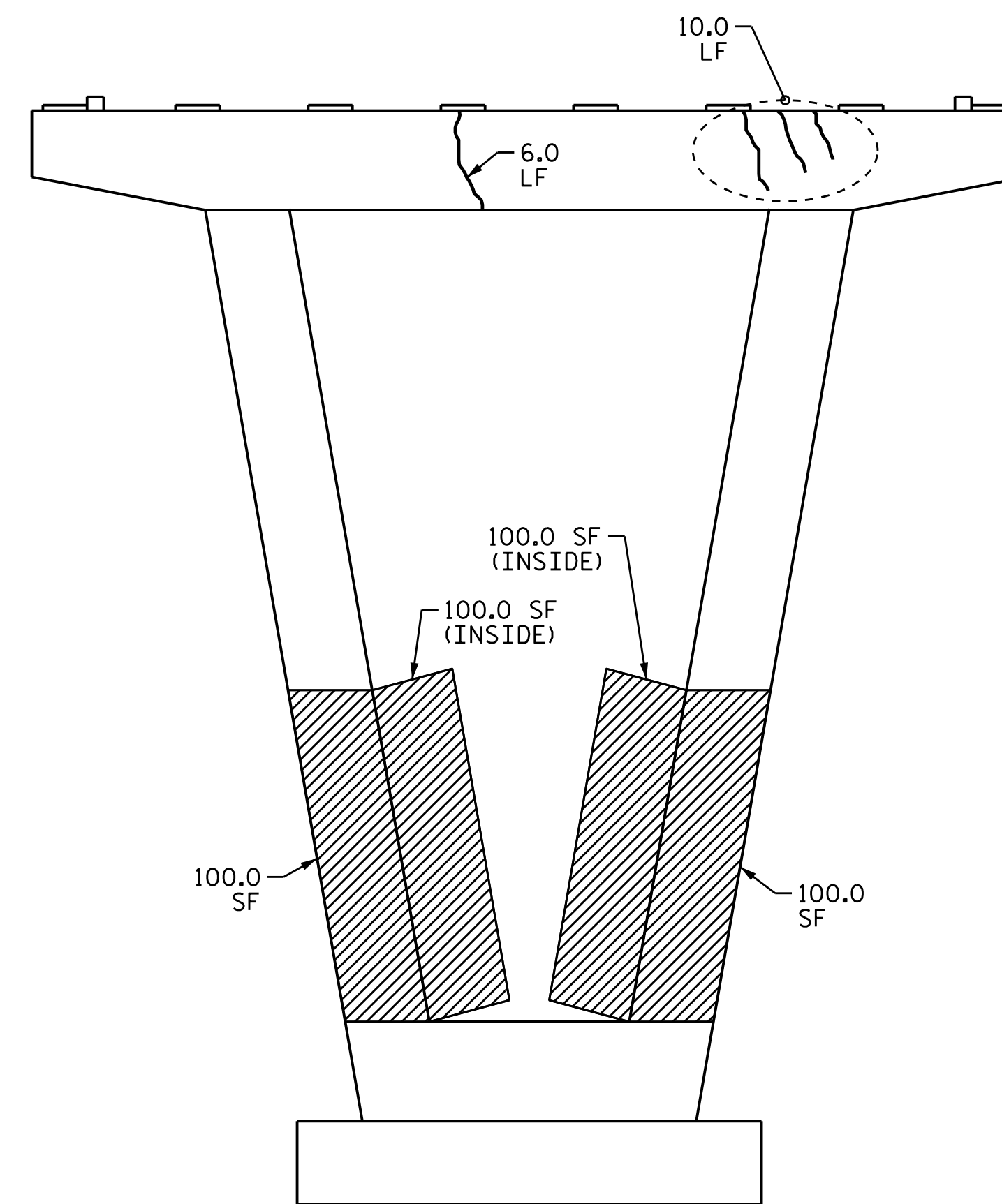
PLAN  
TOP OF CAP



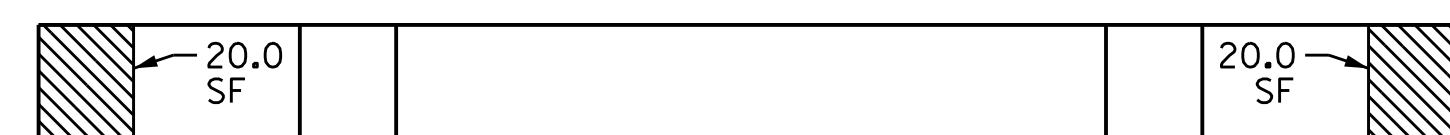
END VIEW  
NORTH SIDE

ELEVATION  
WEST SIDE

END VIEW  
SOUTH SIDE

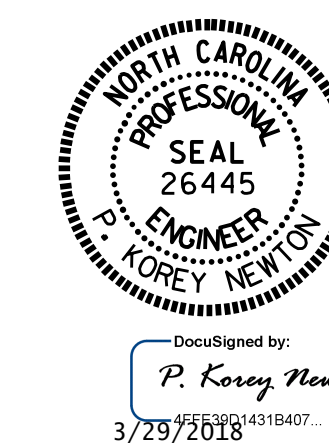


ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
 SHEET 20 OF 28

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE**  
 BENT #19

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-70
1			3			TOTAL SHEETS
2			4			84



## REPAIR QUANTITY TABLE

BENT 20	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN	346.0	173.0		
EPOXY RESIN INJECTION			LF	LF
CAP			0.0	
COLUMN			0.0	

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

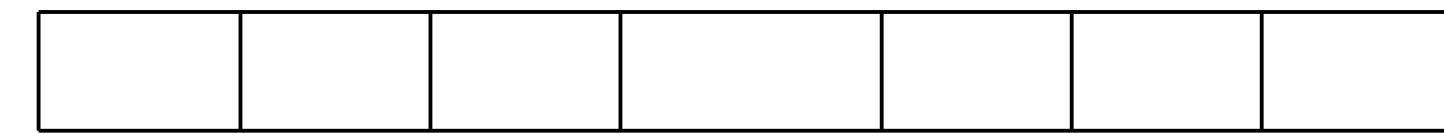
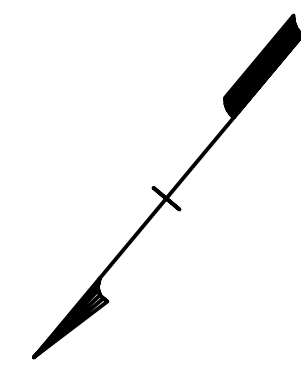
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

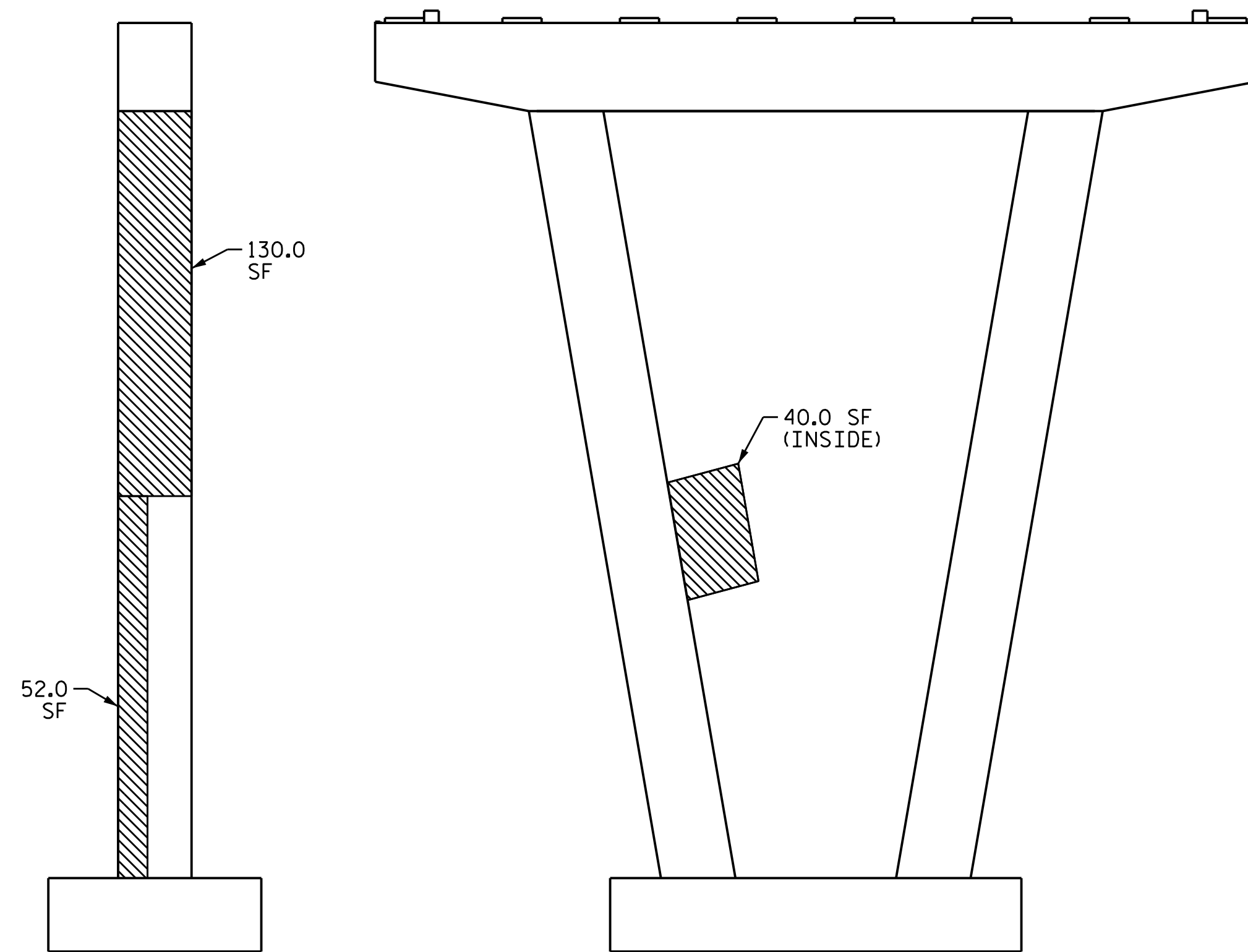
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.

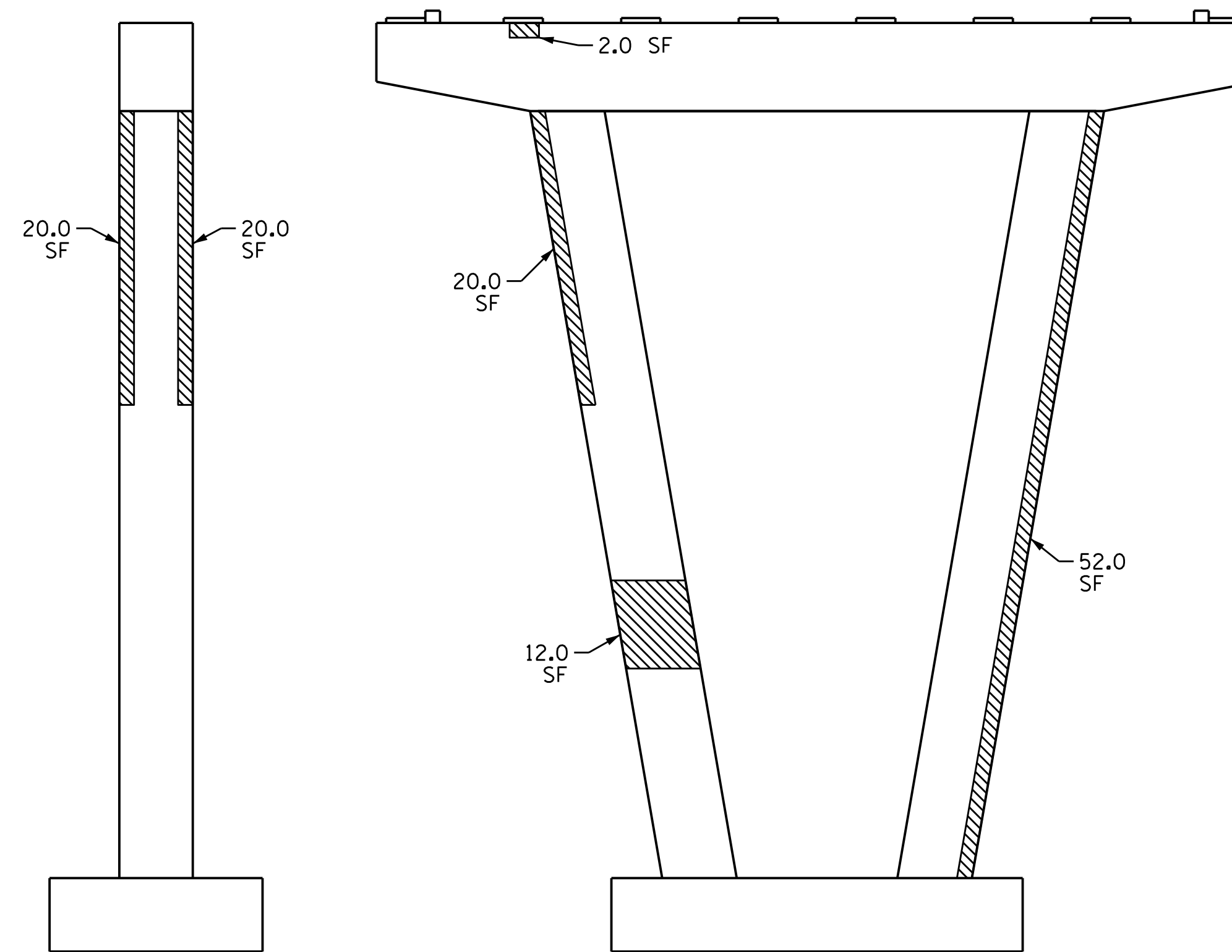


PLAN  
TOP OF CAP



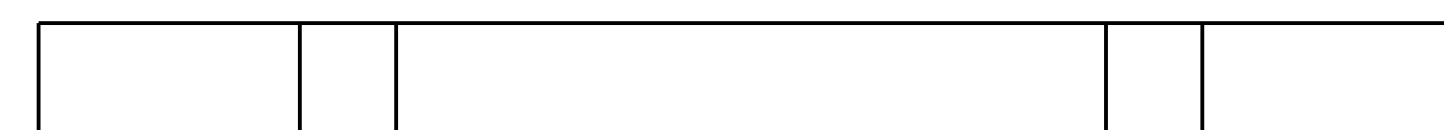
END VIEW  
NORTH SIDE

ELEVATION  
WEST SIDE



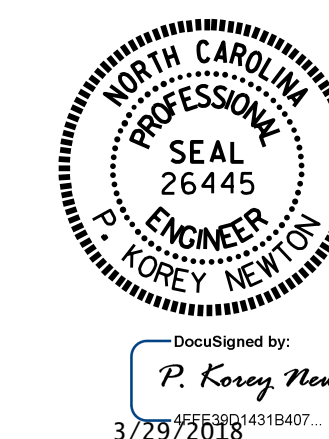
END VIEW  
SOUTH SIDE

ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR  
ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 21 OF 28

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE

BENT #20

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-71
1			3			TOTAL SHEETS
2			4			84

## REPAIR QUANTITY TABLE

BENT 21	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	20.0	10.0		
CAP (HORIZONTAL FACE)	8.0	4.0		
COLUMN	308.0	154.0		
EPOXY RESIN INJECTION			LF	LF
CAP			0.0	
COLUMN			0.0	

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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

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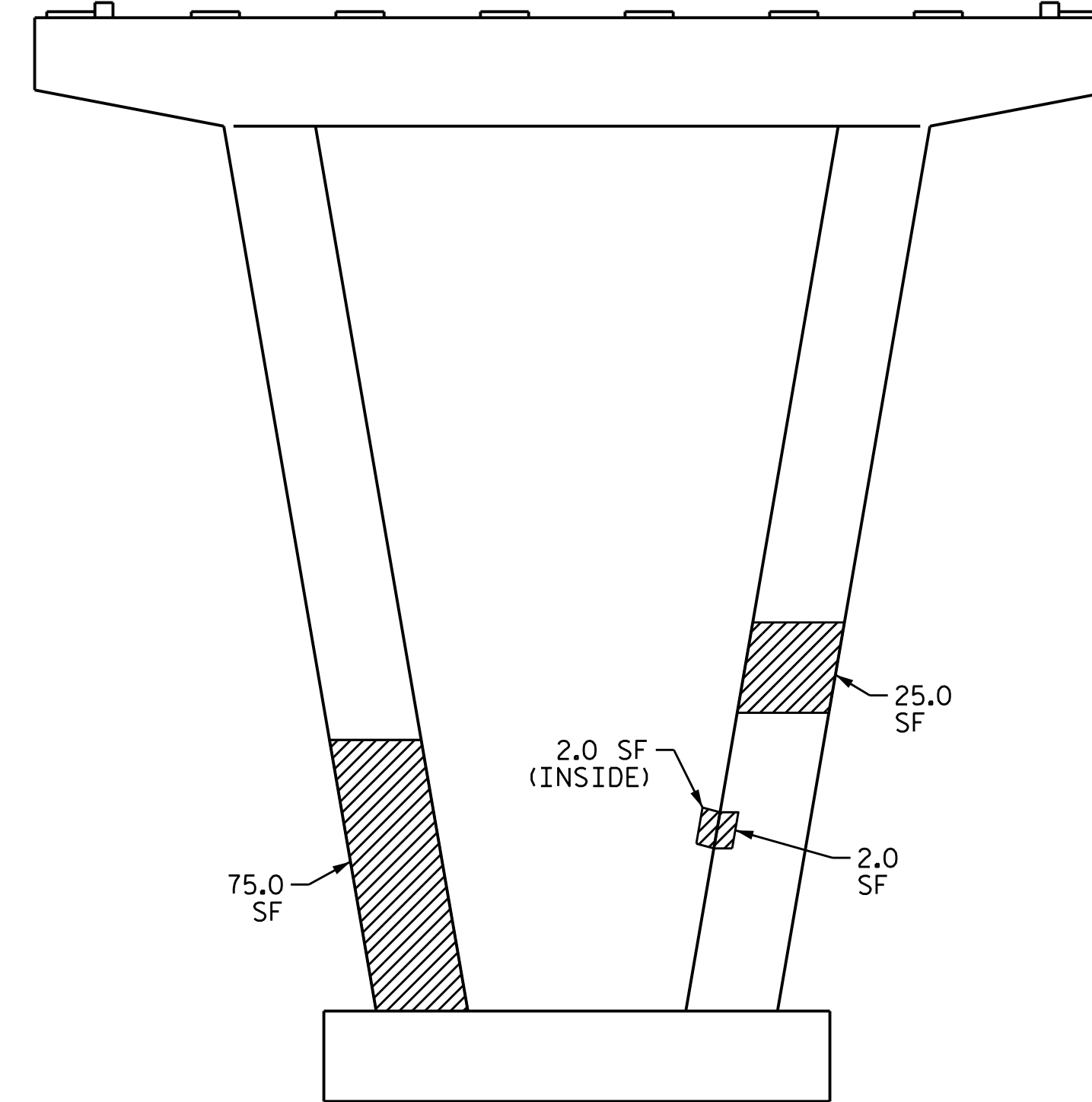
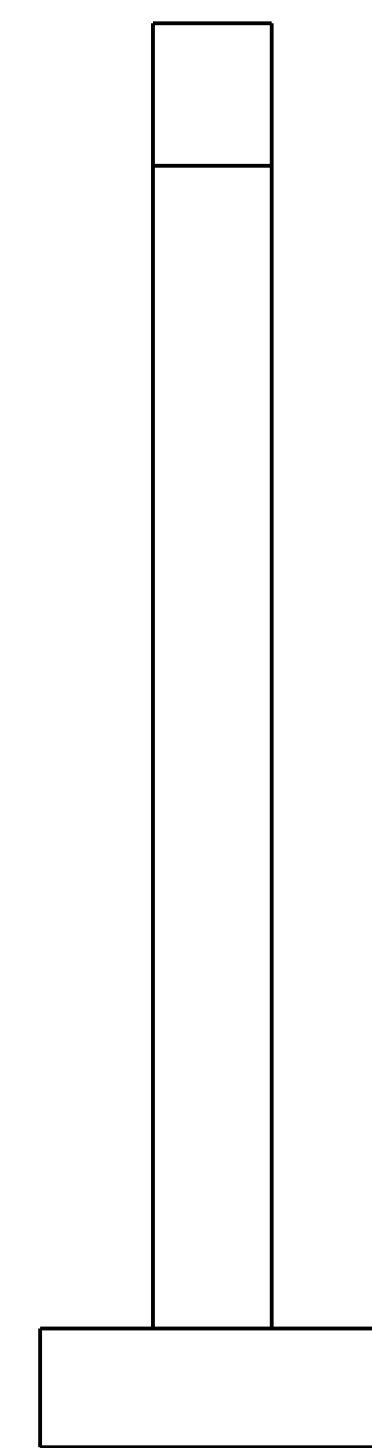
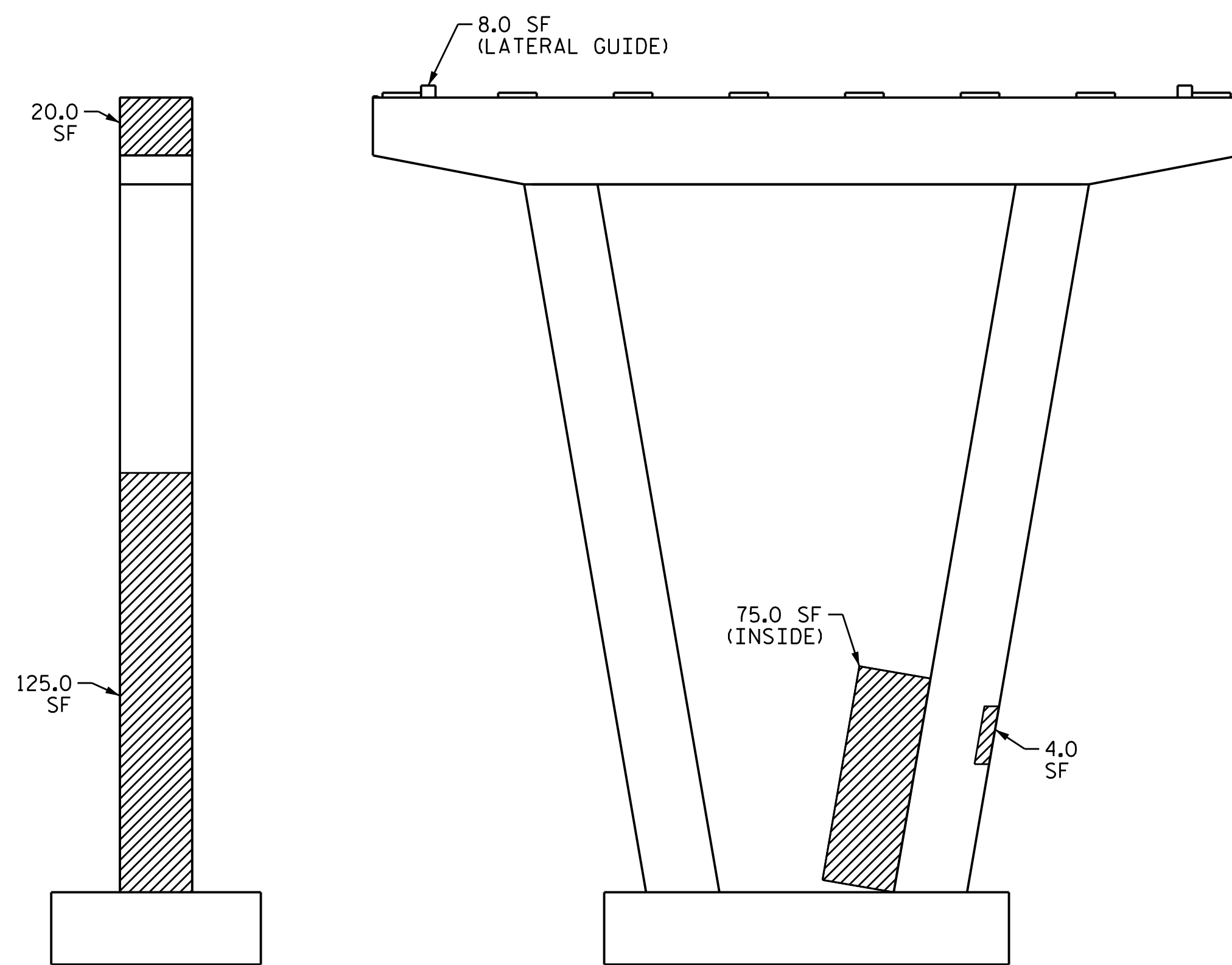
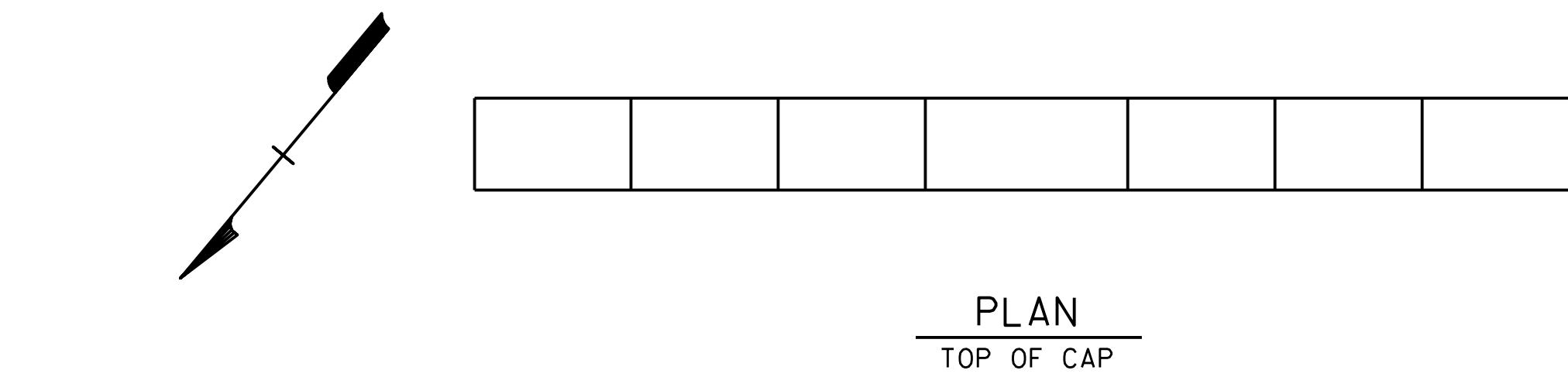
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



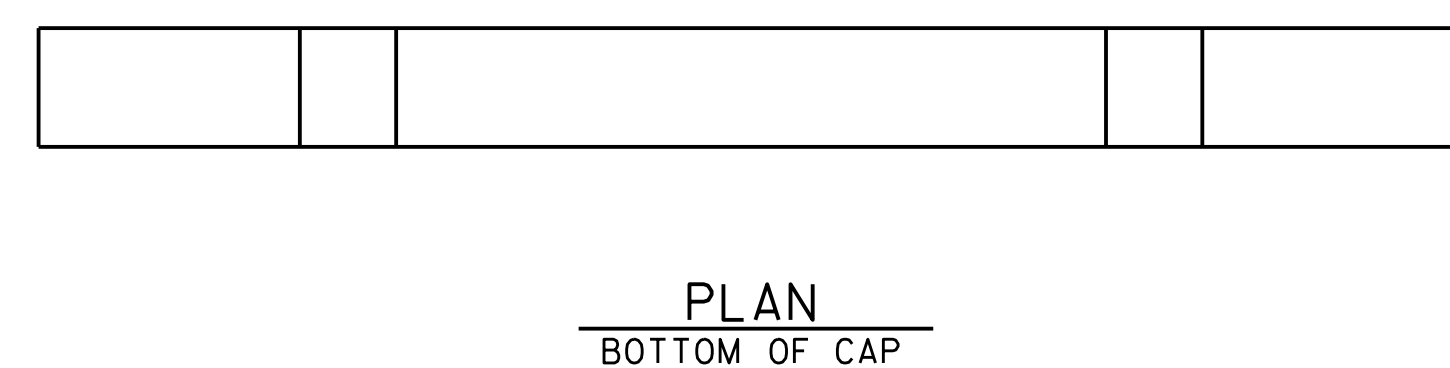
**END VIEW**  
NORTH SIDE

**ELEVATION**  
WEST SIDE

**END VIEW**  
SOUTH SIDE

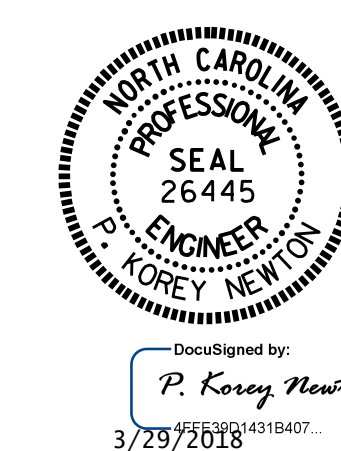
**ELEVATION**  
EAST SIDE

SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 22 OF 28



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

## SUBSTRUCTURE

### BENT #21

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-72
2			4			84



## REPAIR QUANTITY TABLE

BENT 22	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	20.0	10.0		
CAP (HORIZONTAL FACE)	203.5	101.8		
COLUMN	690.0	345.0		
EPOXY RESIN INJECTION			LF	LF
CAP		0.0		
COLUMN		0.0		

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

### NOTES:

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

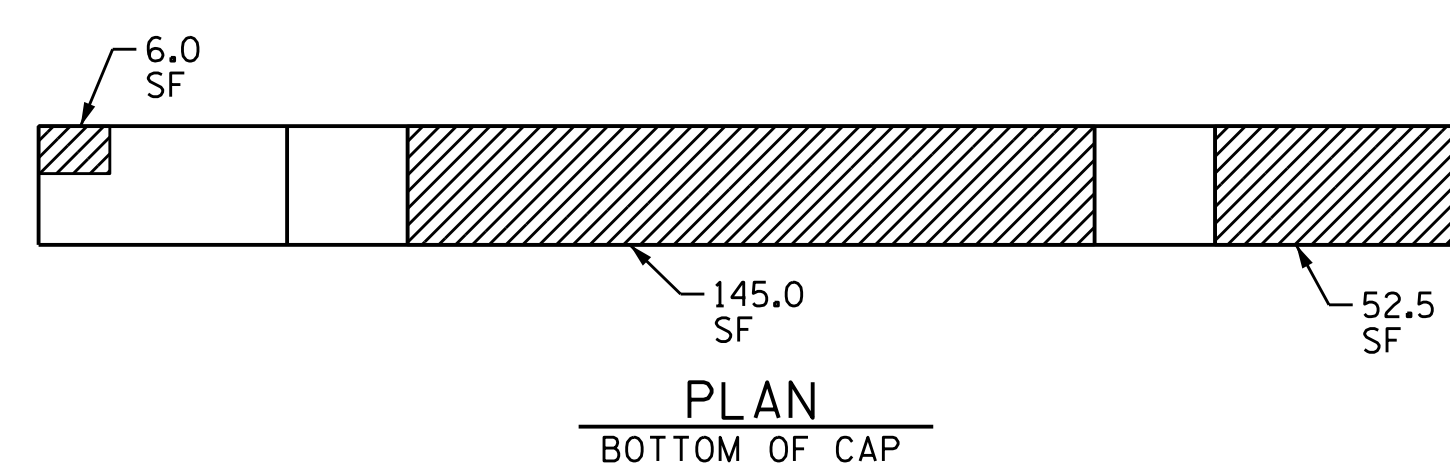
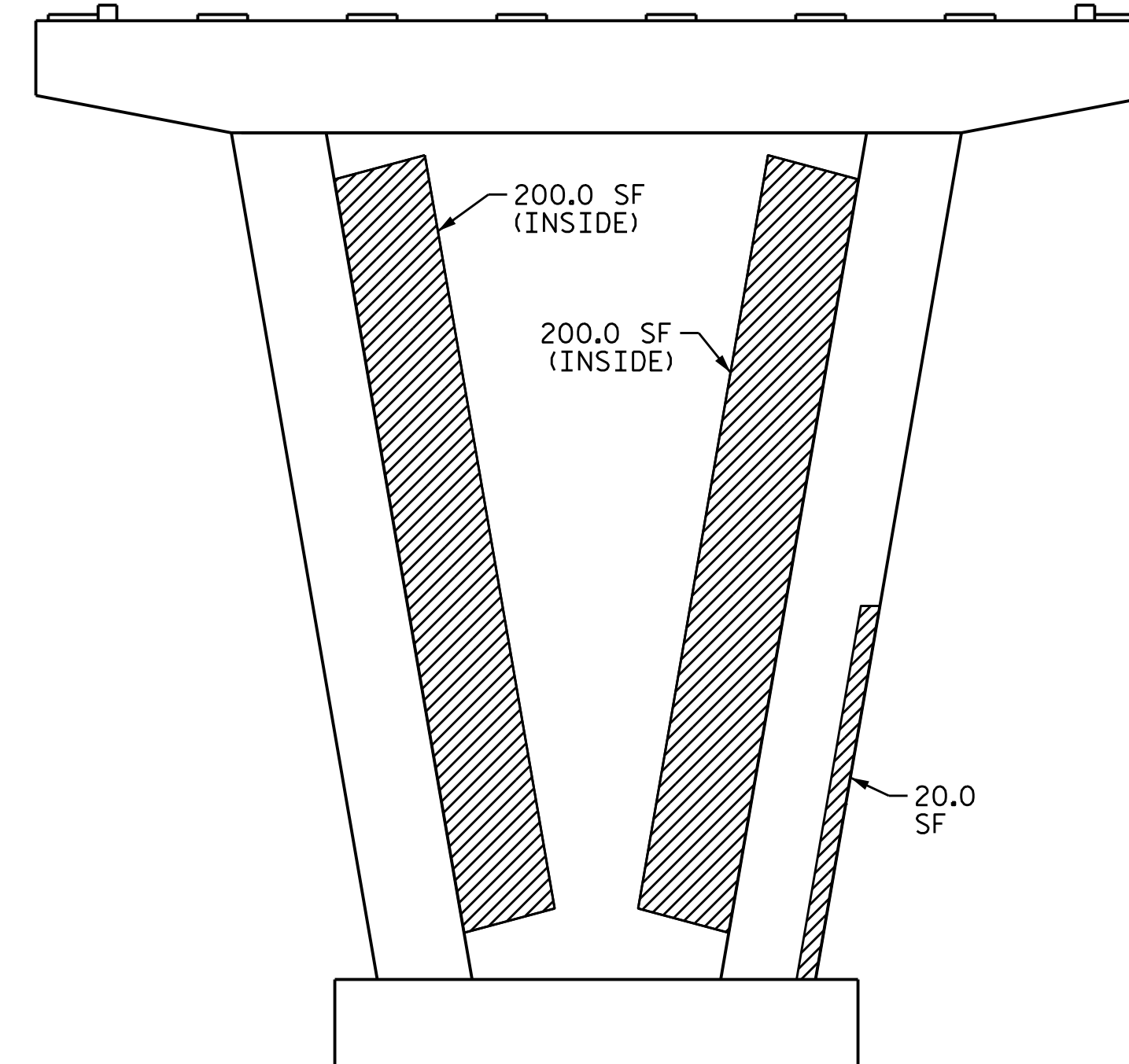
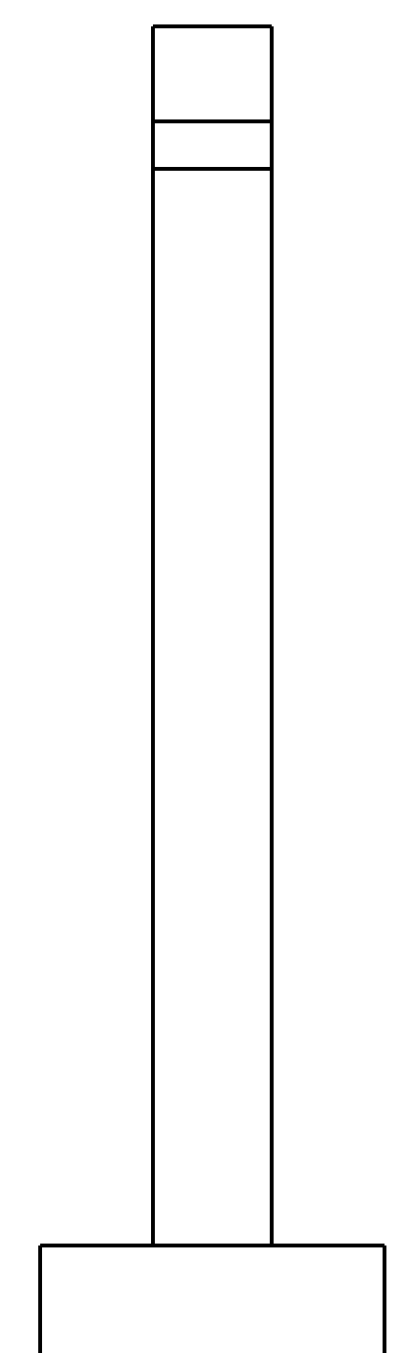
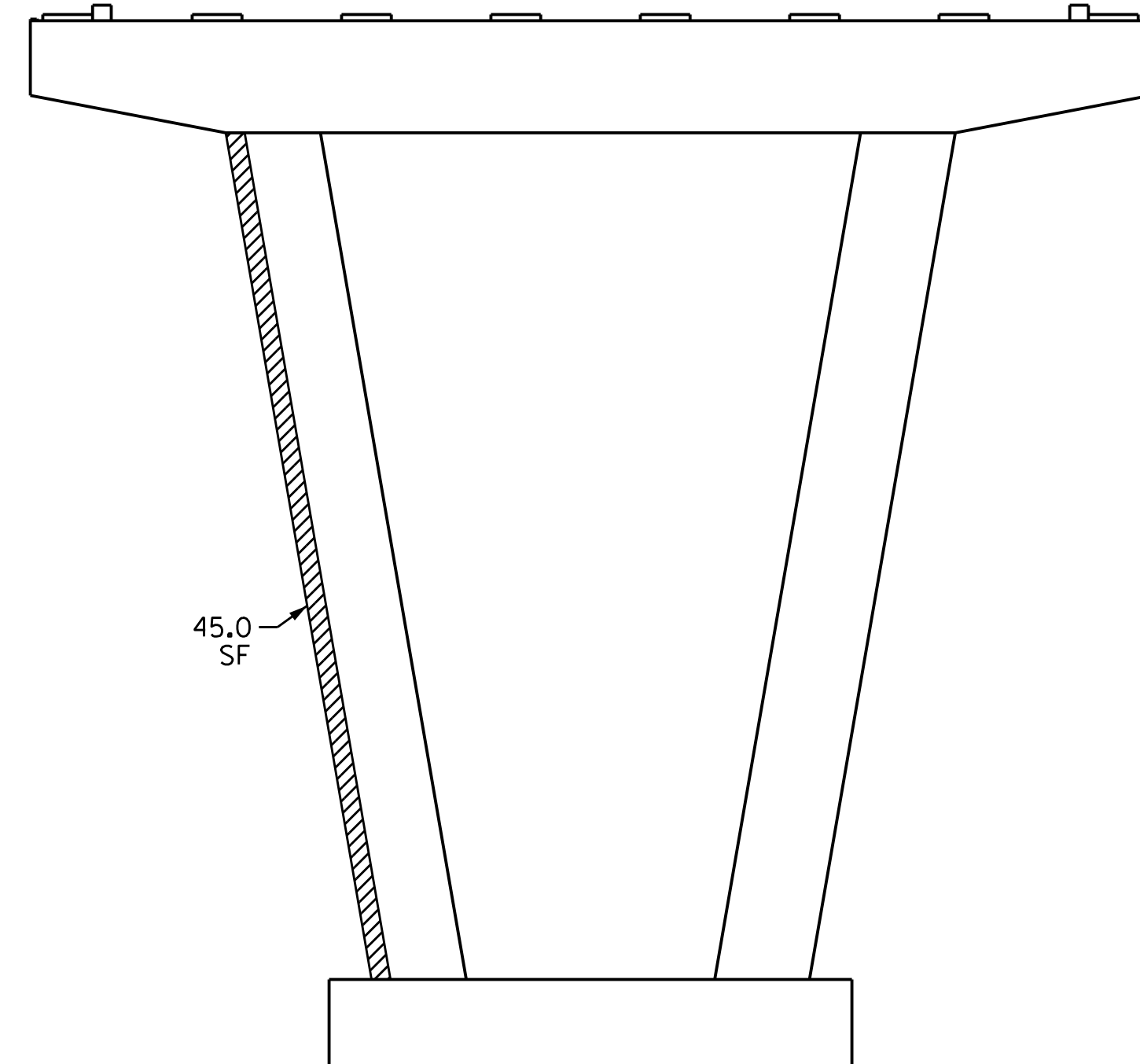
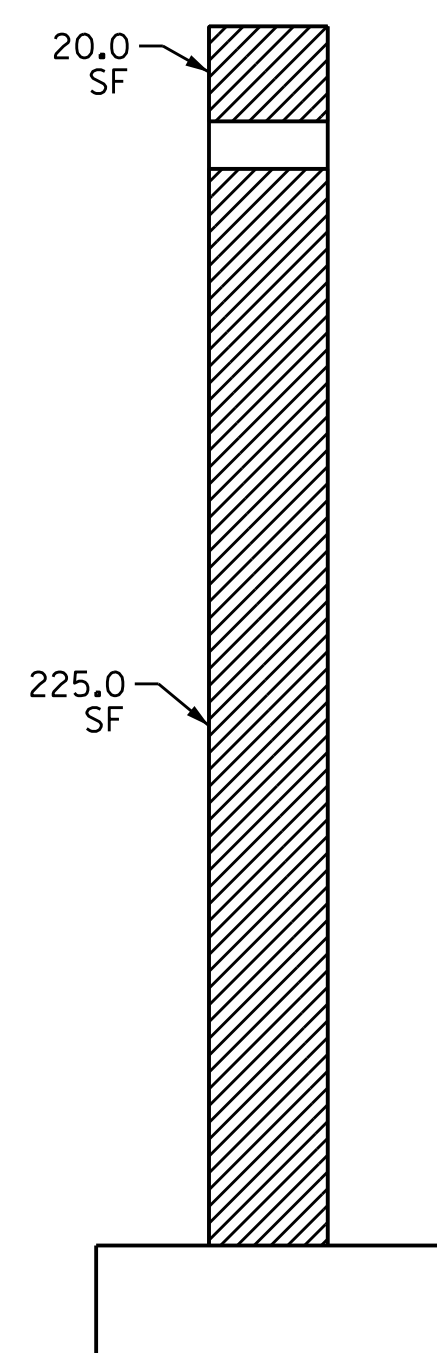
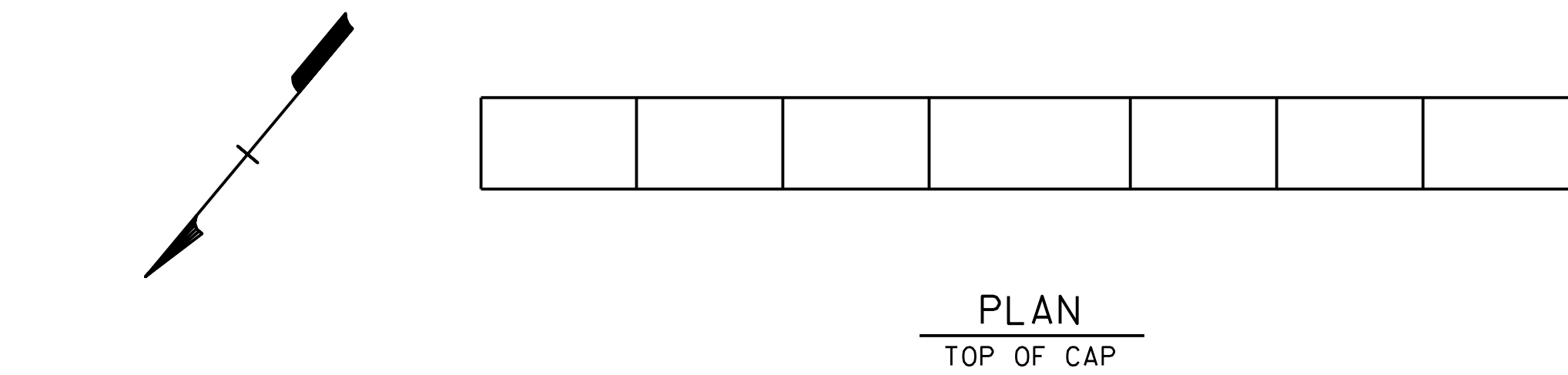
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

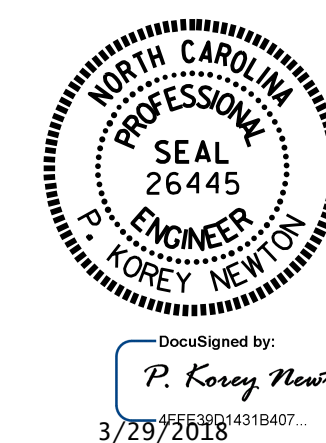
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



SHOTCRETE REPAIR  
ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
 SHEET 23 OF 28

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

## SUBSTRUCTURE

### BENT #22

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-73 TOTAL SHEETS 84
1			3			
2			4			

## REPAIR QUANTITY TABLE

BENT 23	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	55.0	27.5		
COLUMN	1260.0	630.0		
EPOXY RESIN INJECTION			LF	LF
CAP			21.0	
COLUMN			0.0	

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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

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

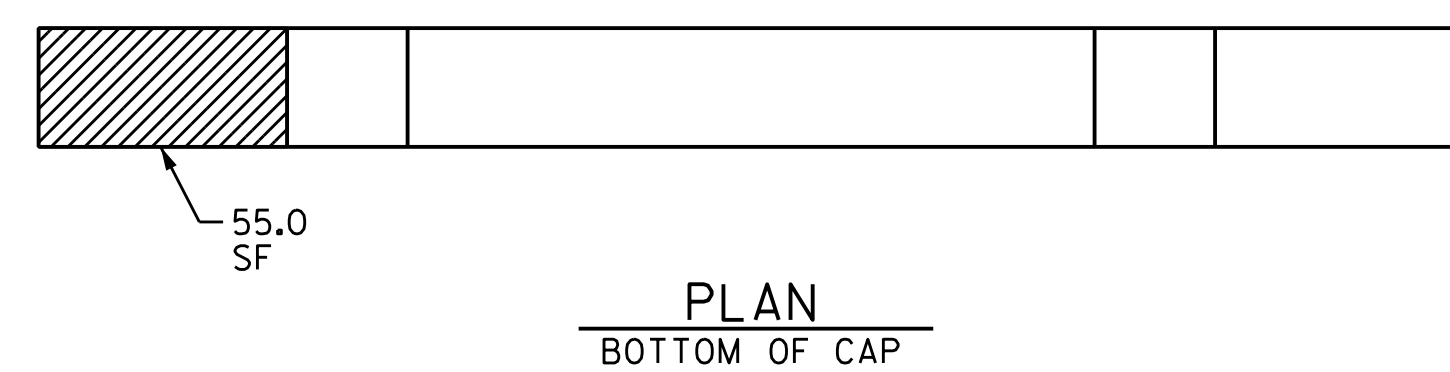
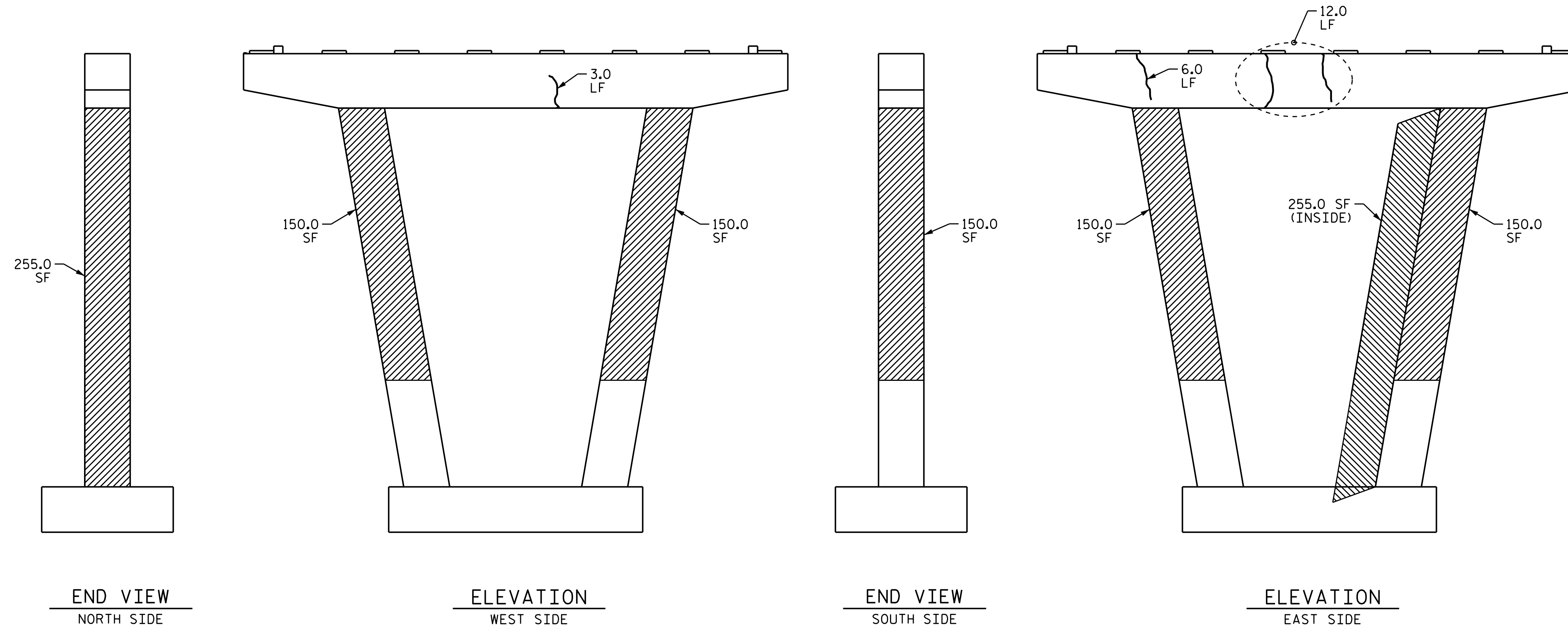
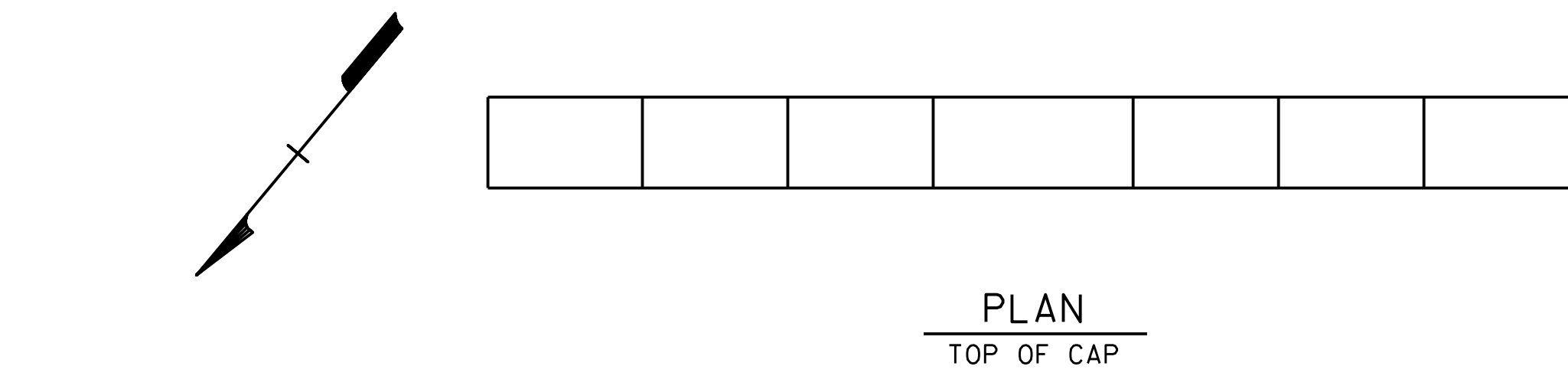
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

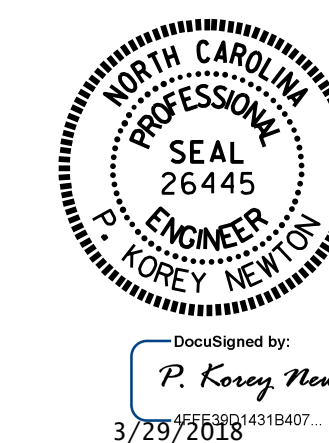
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



SHOTCRETE REPAIR  
ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
 SHEET 24 OF 28

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE**  
 BENT #23

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-74
1			3			TOTAL SHEETS
2			4			84

## REPAIR QUANTITY TABLE

BENT 24	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	32.0	16.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN	247.0	123.5		
EPOXY RESIN INJECTION			LF	LF
CAP		12.0		
COLUMN		0.0		

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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

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

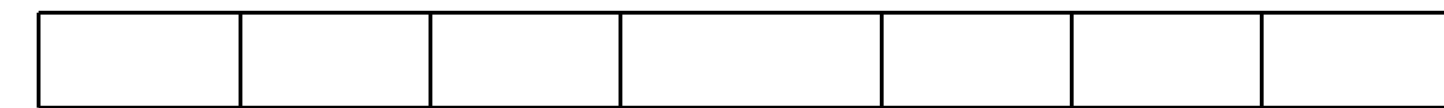
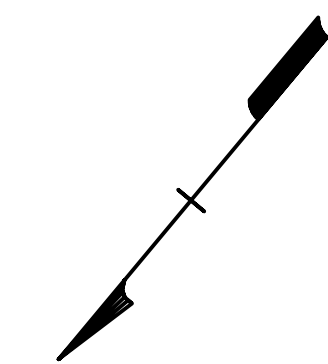
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

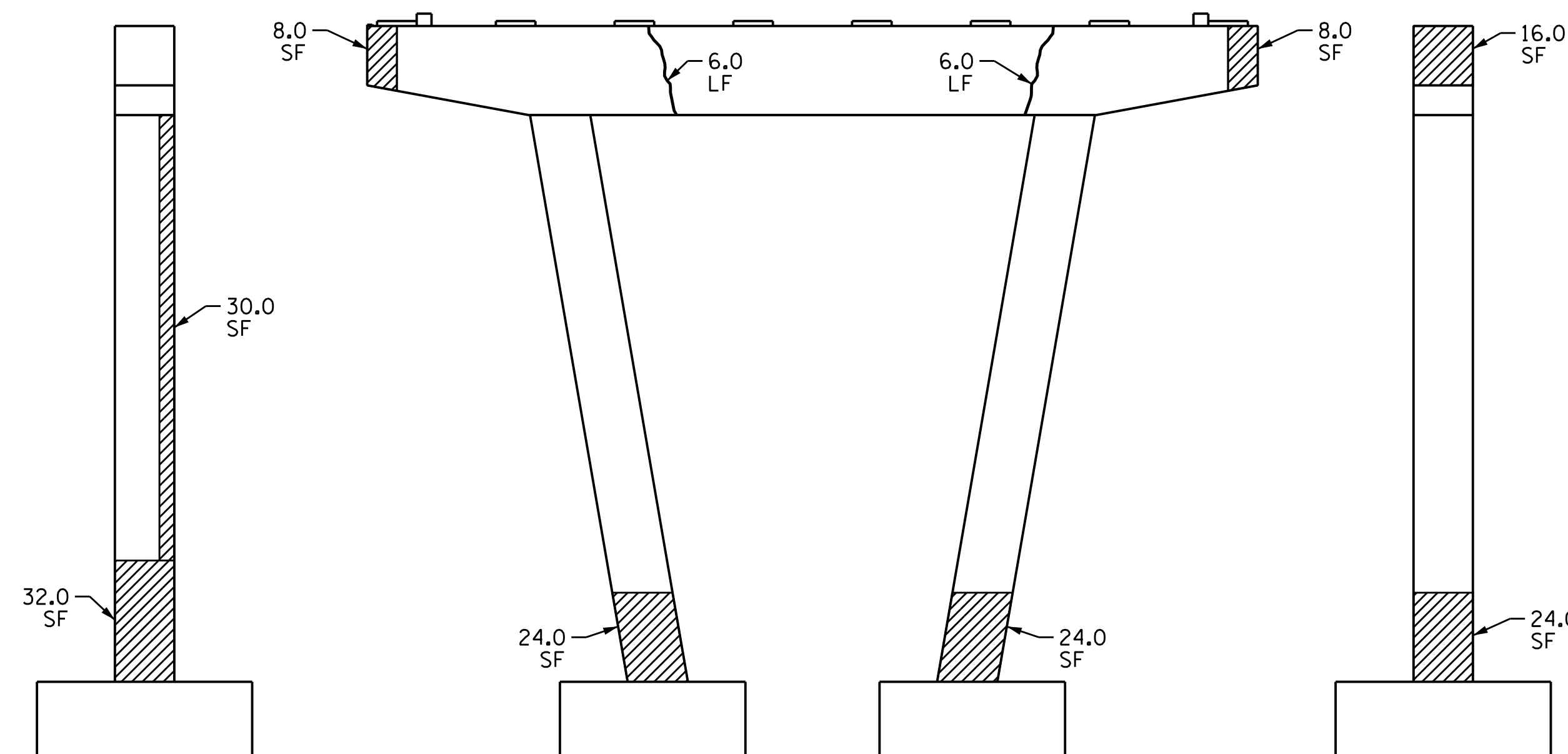
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



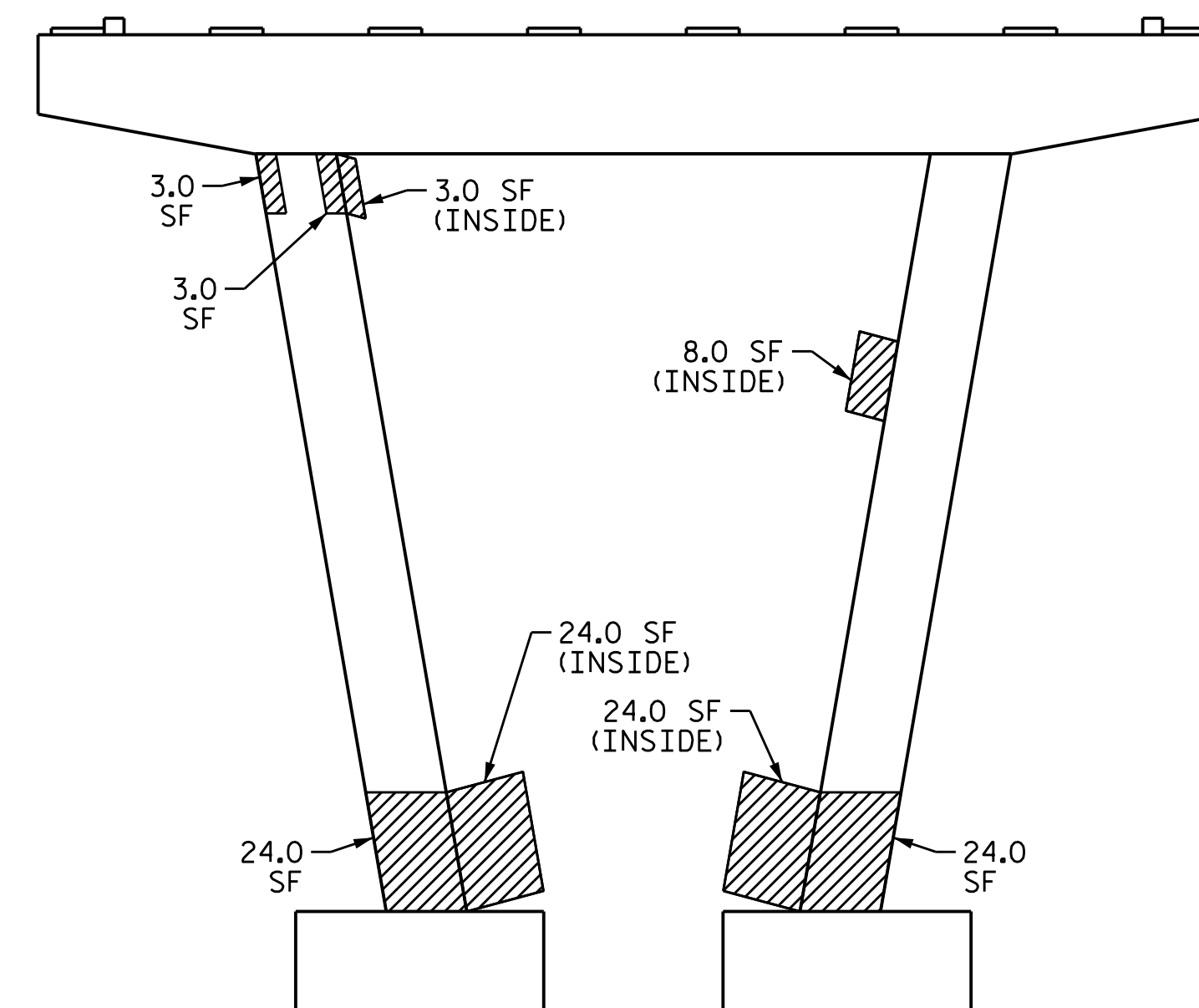
PLAN  
TOP OF CAP



END VIEW  
NORTH SIDE

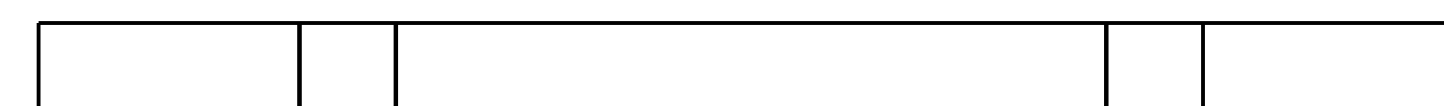
ELEVATION  
WEST SIDE

END VIEW  
SOUTH SIDE



ELEVATION  
EAST SIDE

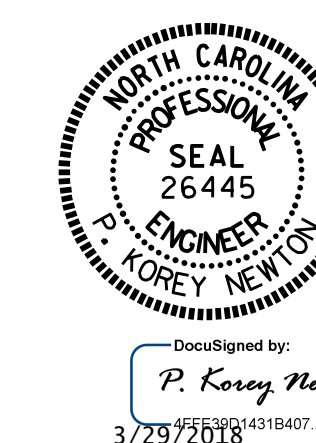
SHOTCRETE REPAIR  
ERI EPOXY RESIN INJECTION



PLAN  
BOTTOM OF CAP

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
BRIDGE NO. 15

SHEET 25 OF 28



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE

BENT #24

DRAWN BY : P.D. BRYANT DATE : 12-2017  
CHECKED BY : P.K. NEWTON DATE : 01/2018

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-75
2			4			84



## REPAIR QUANTITY TABLE

BENT 25	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	25.0	12.5		
CAP (HORIZONTAL FACE)	44.0	22.0		
COLUMN	54.0	27.0		
EPOXY RESIN INJECTION		LF		LF
CAP		0.0		
COLUMN		2.0		

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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

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

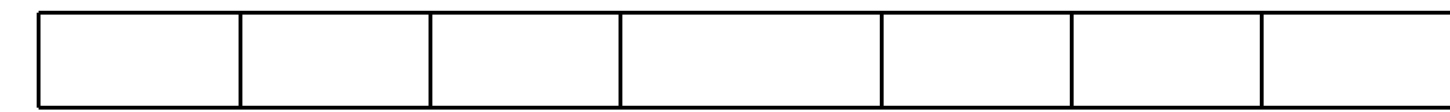
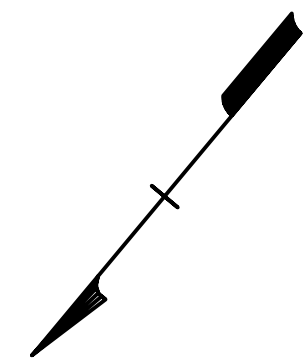
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

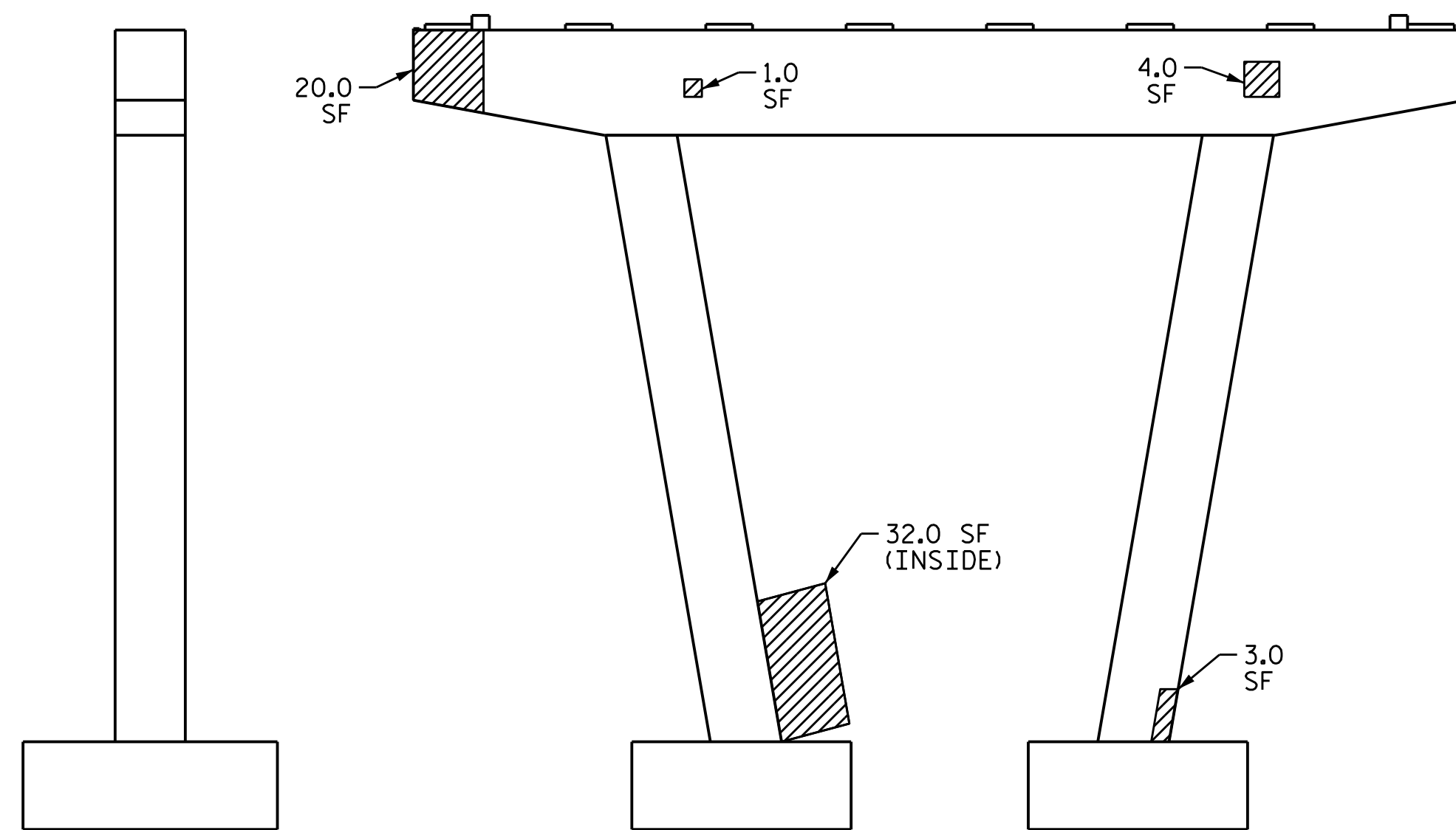
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.

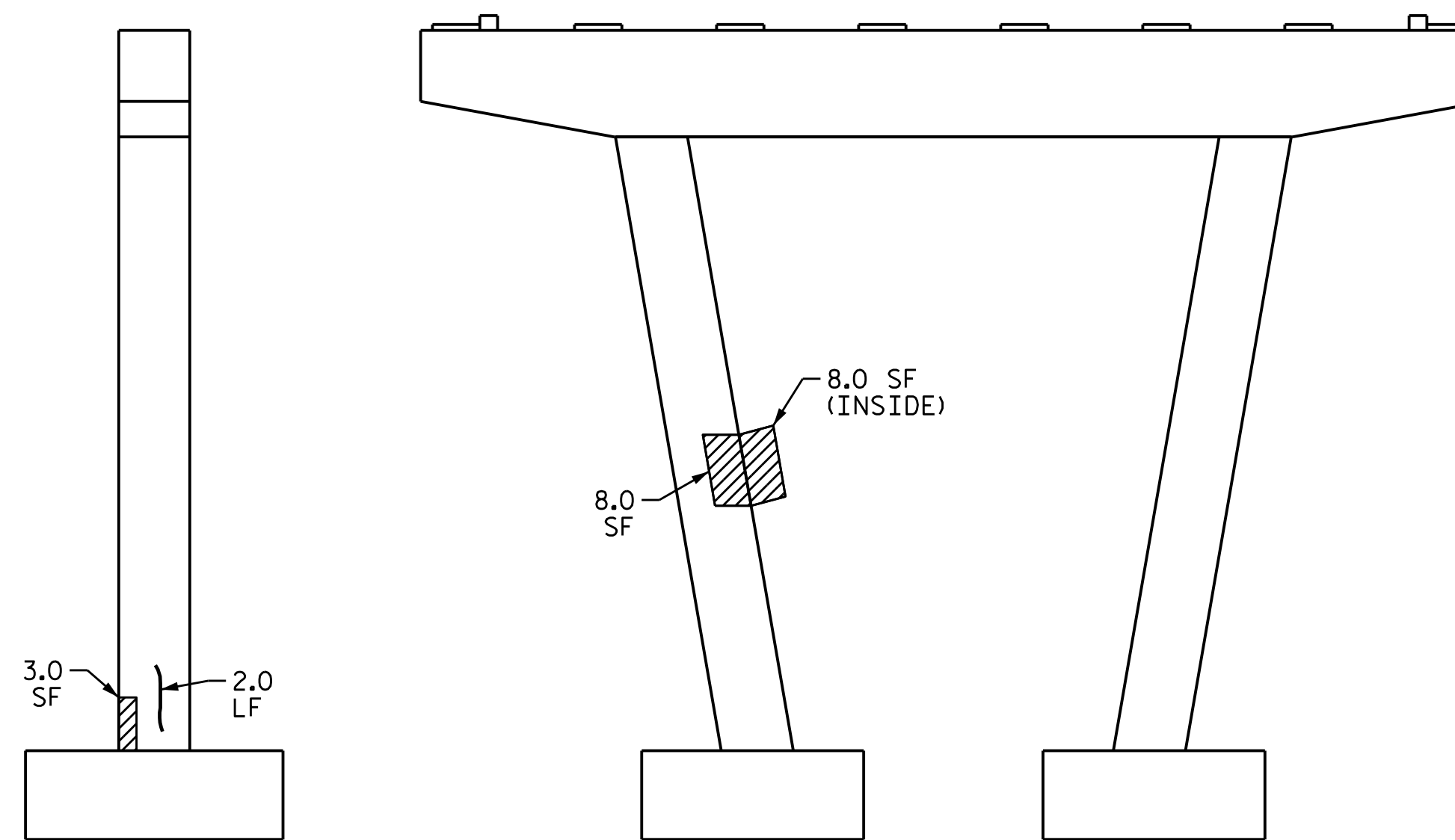


PLAN  
TOP OF CAP



END VIEW  
NORTH SIDE

ELEVATION  
WEST SIDE

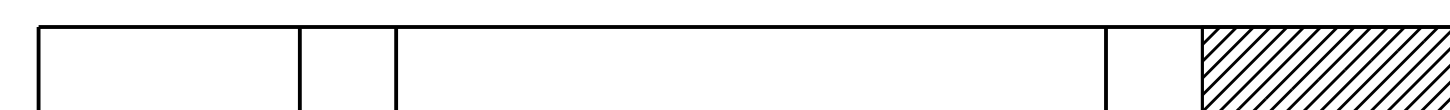


END VIEW  
SOUTH SIDE

ELEVATION  
EAST SIDE

SHOTCRETE REPAIR

ERI EPOXY RESIN INJECTION



PLAN  
BOTTOM OF CAP

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY

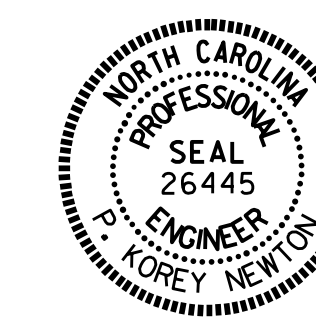
BRIDGE NO. 15

SHEET 26 OF 28

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE

BENT #25



DocuSigned by:  
*P. Corey Newton*  
3/29/2018

DRAWN BY : P.D. BRYANT DATE : 12-2017  
CHECKED BY : P.K. NEWTON DATE : 01/2018

29-MAR-2018 08:54  
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DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-76
2			4			84



## REPAIR QUANTITY TABLE

BENT 26	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	3.0	1.5		
CAP (HORIZONTAL FACE)	34.0	17.0		
COLUMN	19.0	9.5		
EPOXY RESIN INJECTION			LF	LF
CAP		0.0		
COLUMN		0.0		

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

LATERAL GUIDE REPAIR MATERIAL IS INCLUDED IN THE LINE ITEM TITLED "CAP (HORIZONTAL FACES)"

### NOTES:

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

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

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

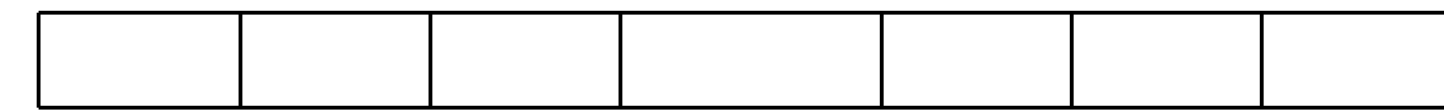
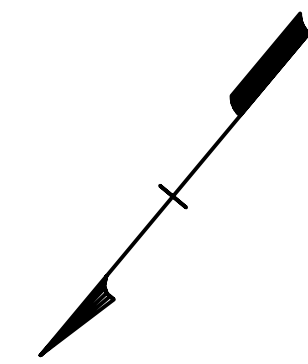
CONCRETE REPAIRS MAY BE USED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

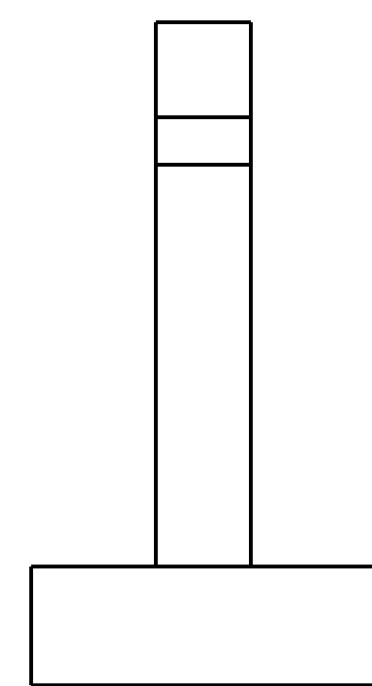
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

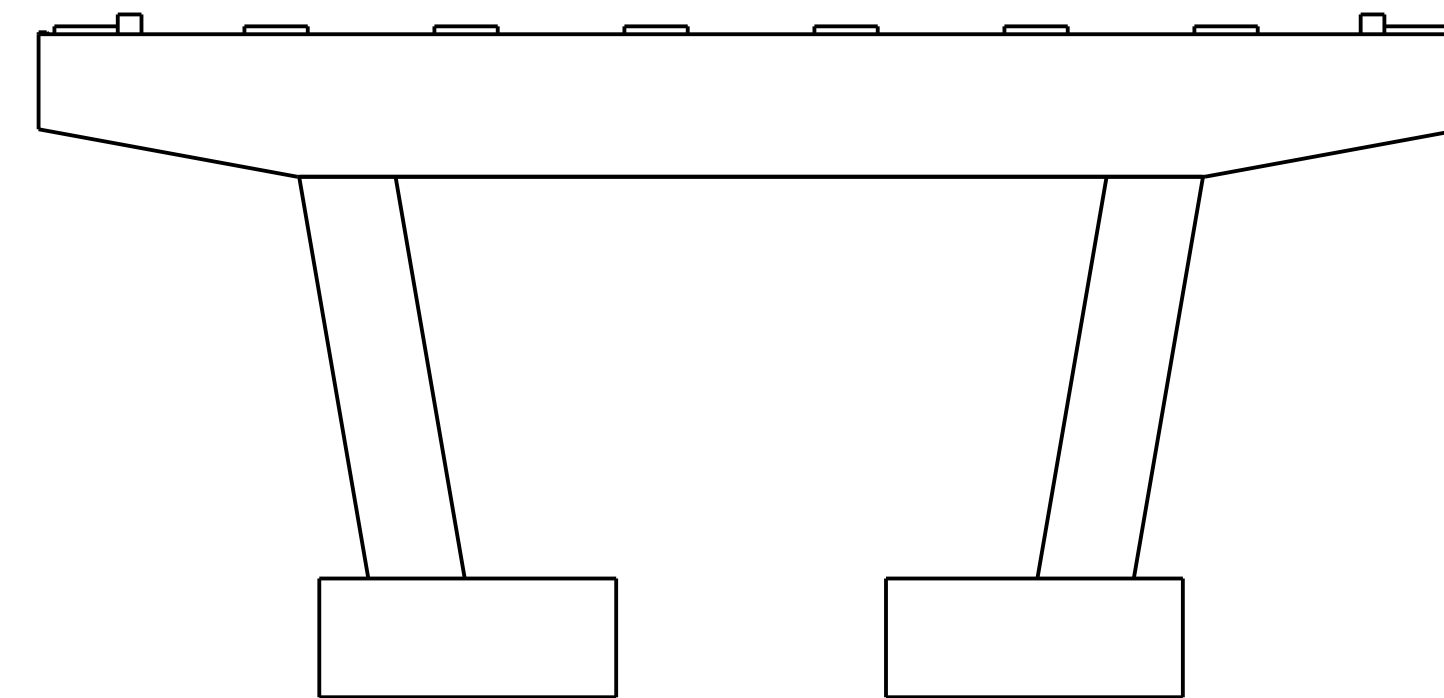
FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.



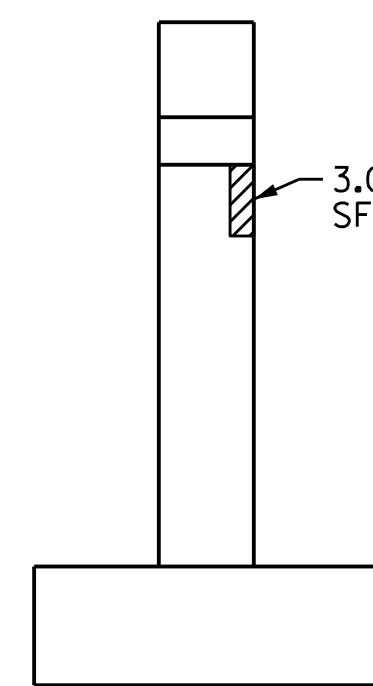
PLAN  
TOP OF CAP



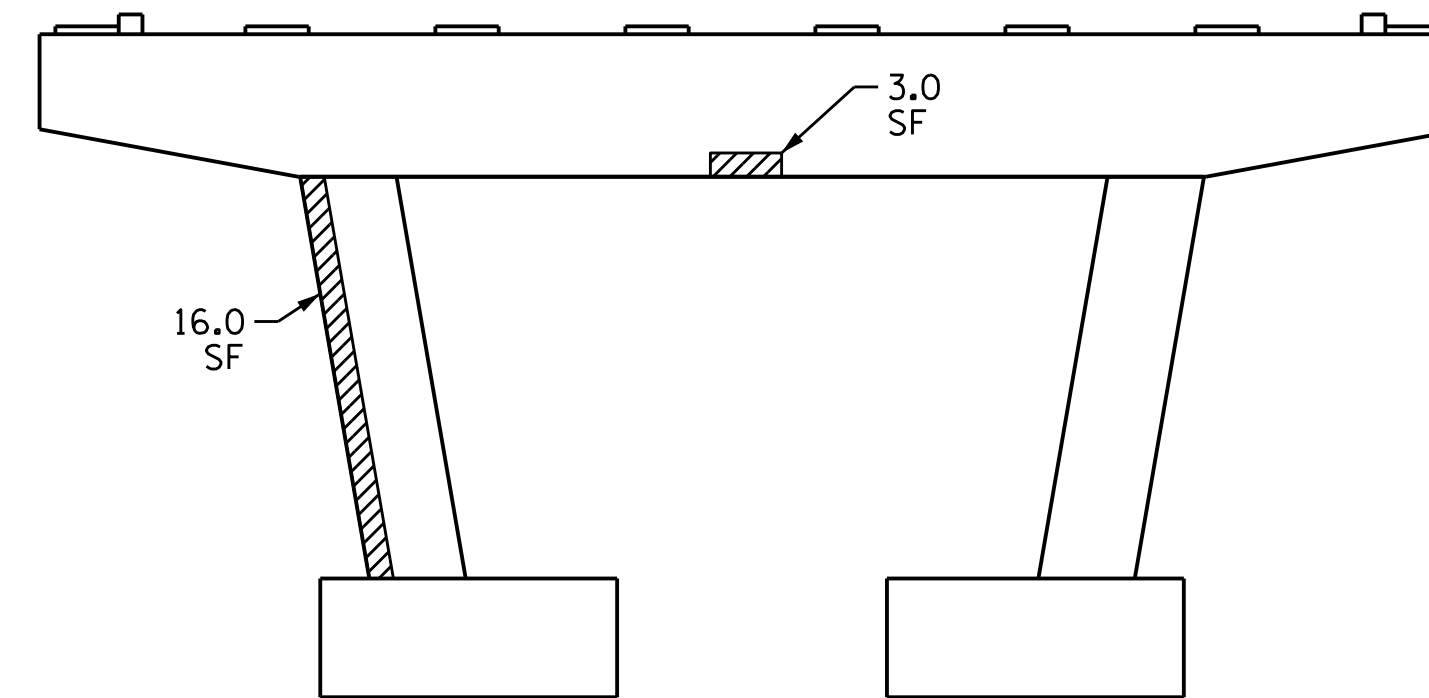
END VIEW  
NORTH SIDE



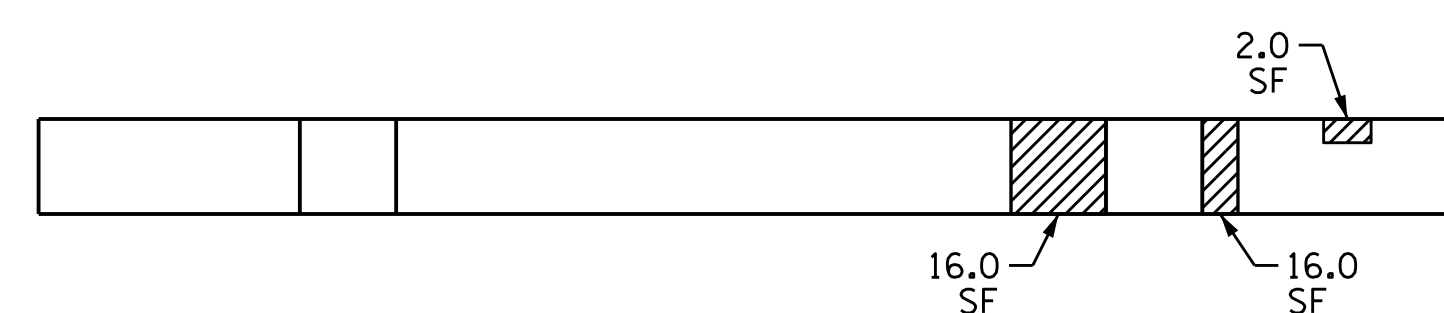
ELEVATION  
WEST SIDE



END VIEW  
SOUTH SIDE

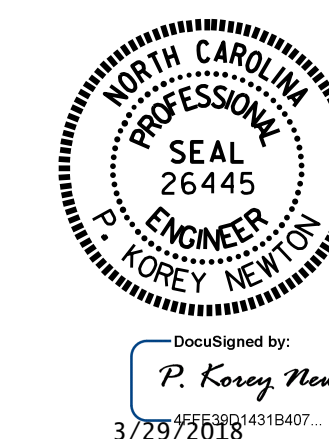


ELEVATION  
EAST SIDE



PLAN  
BOTTOM OF CAP

SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION



PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15  
 SHEET 27 OF 28

STATE OF NORTH CAROLINA  
**DEPARTMENT OF TRANSPORTATION**  
RALEIGH  
**SUBSTRUCTURE**  
**BENT #26**

DRAWN BY : P.D. BRYANT DATE : 12-2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

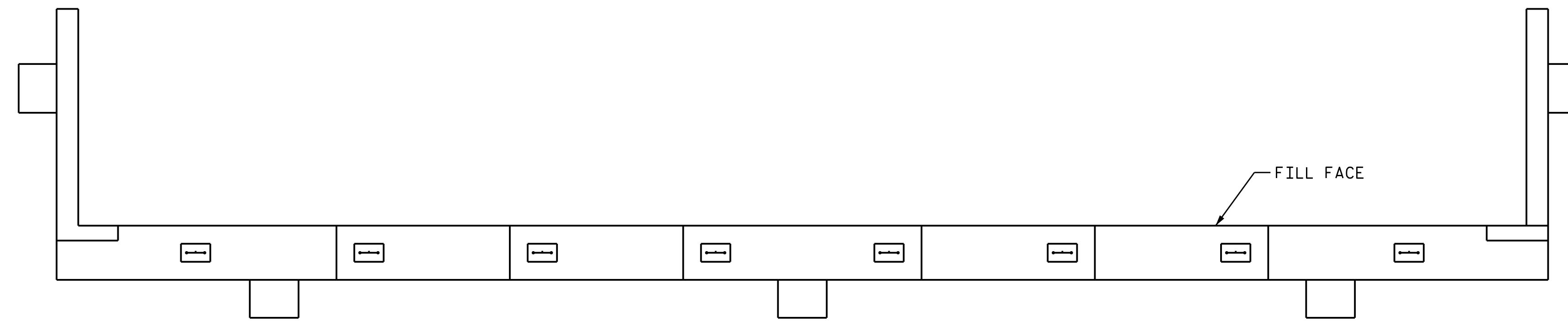
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-77
1			3			TOTAL SHEETS 84
2			4			

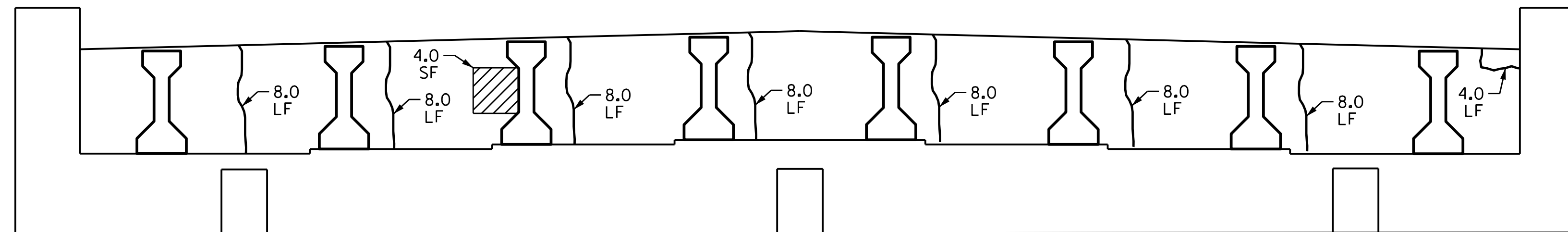
## REPAIR QUANTITY TABLE

END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIR	AREA S.F.	VOLUME CF	AREA S.F.	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
CURTAIN WALL	4.0	2.0		
EPOXY RESIN INJECTION		LN. FT		LN. FT
CAP		0.0		
CURTAIN WALL		60.0		

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



PLAN  
TOP OF CAP



ELEVATION  
WEST SIDE

SHOTCRETE REPAIR  
 ERI EPOXY RESIN INJECTION

**NOTES:**

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

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

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

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

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

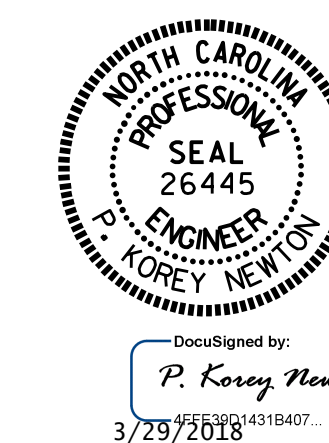
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL SUBSTRUCTURE REPAIR DETAILS SHEET.

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY

BRIDGE NO.: 15

SHEET 28 OF 28



DocuSigned by:  
*P. Corey Newton*  
 3/29/2018

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE

END BENT #2

DRAWN BY : P.D. BRYANT DATE : 12/2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

29-MAR-2018 08:54  
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DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-78
2			4			84

**NOTES**

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

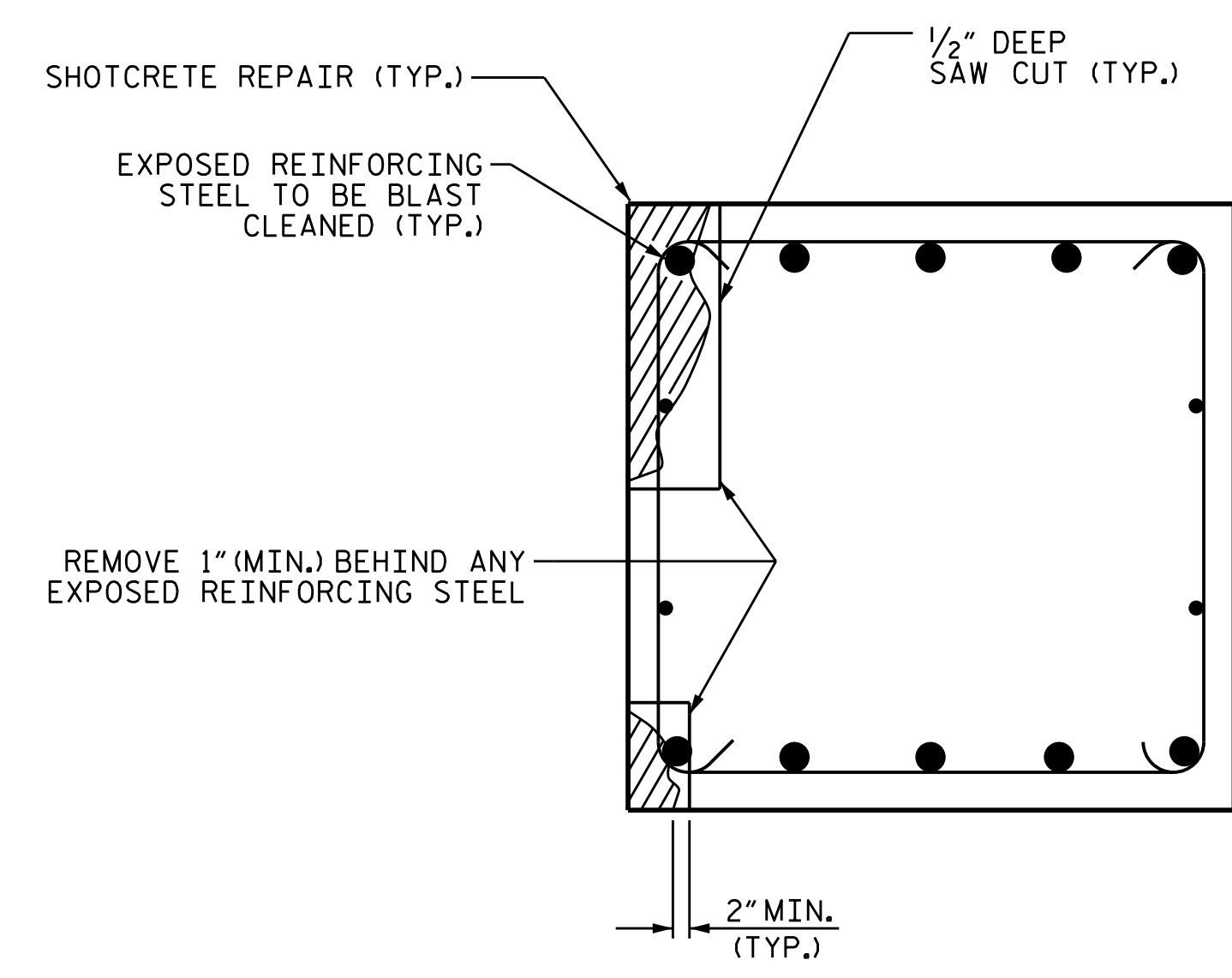
CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

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

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

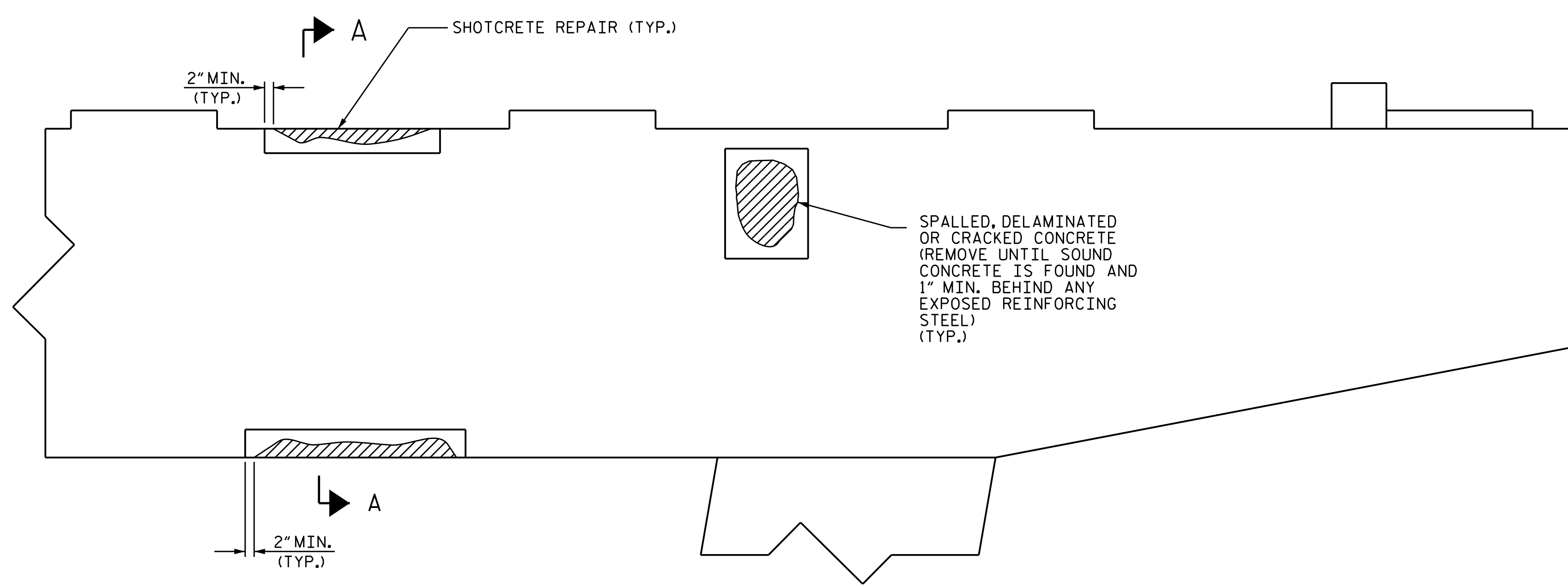
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.



 DAMAGED AREA

**SECTION A-A**

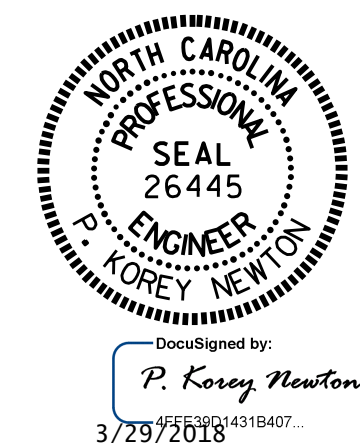


**CAP REPAIR**

(COLUMN & FOOTING REPAIRS SIMILAR)

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 1 OF 1



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

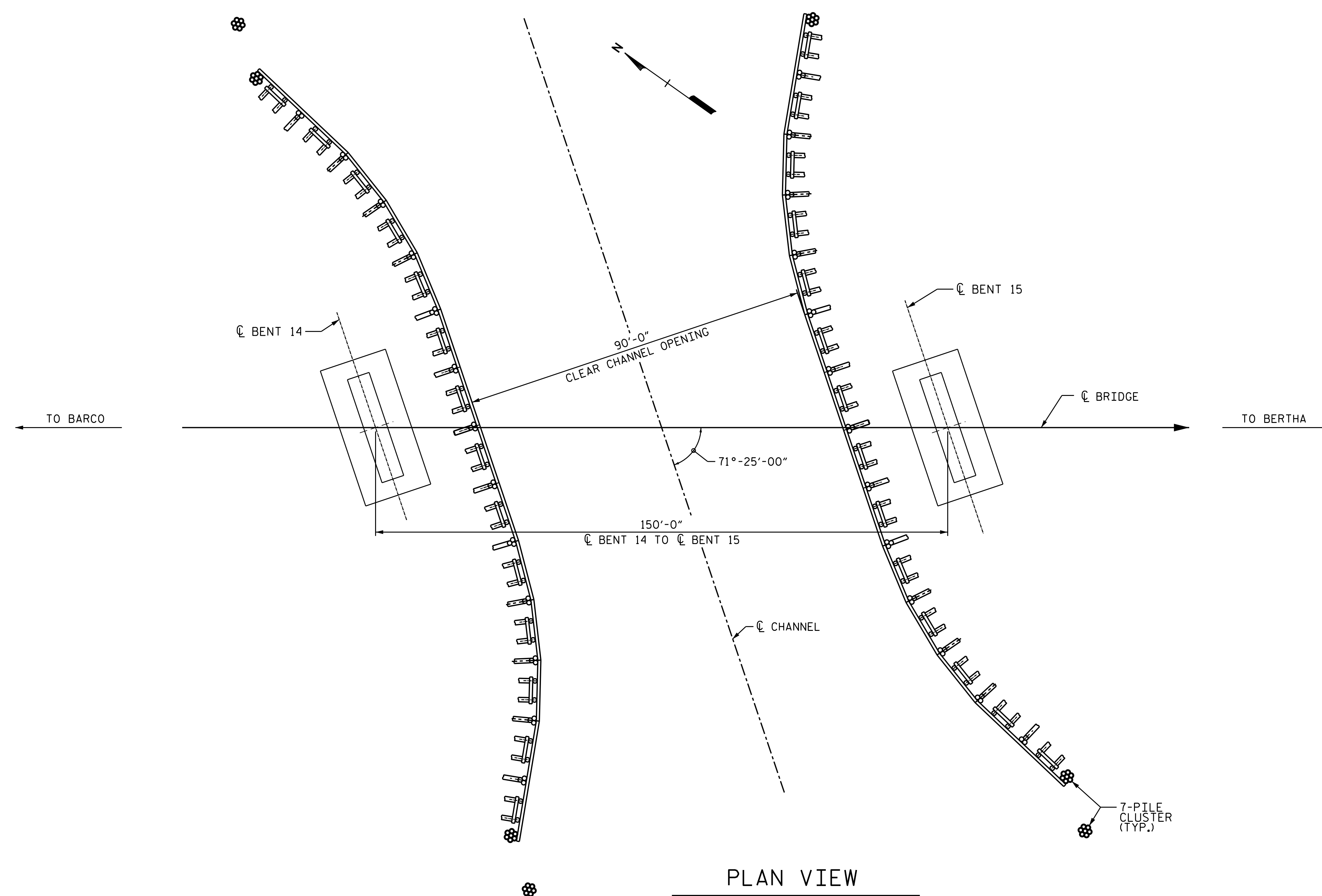
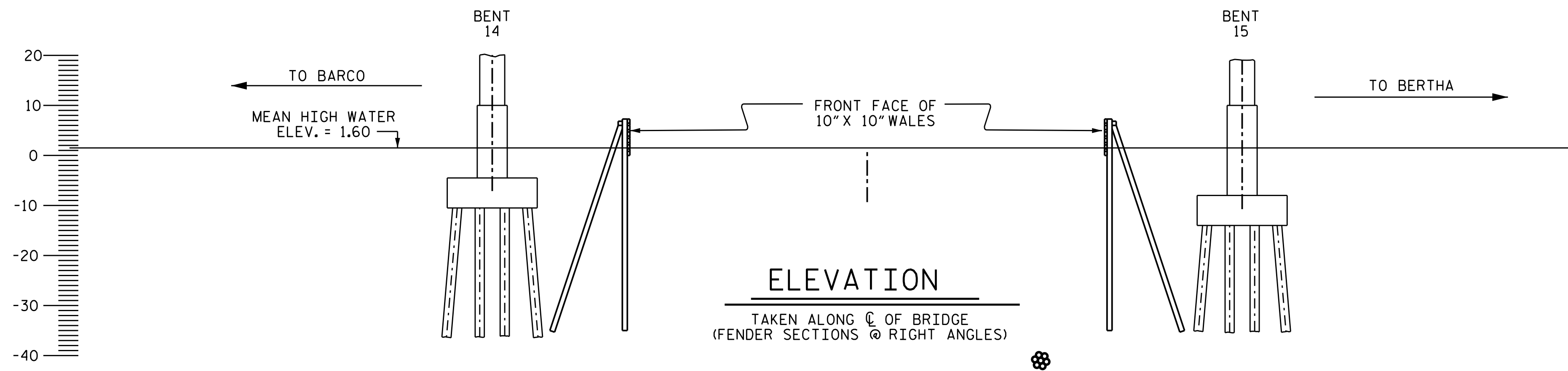
**TYPICAL  
 SUBSTRUCTURE  
 REPAIR DETAILS**

DRAWN BY : P.D. BRYANT DATE : 12/2017  
 CHECKED BY : P. K. NEWTON DATE : 01/2018

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2			4			84



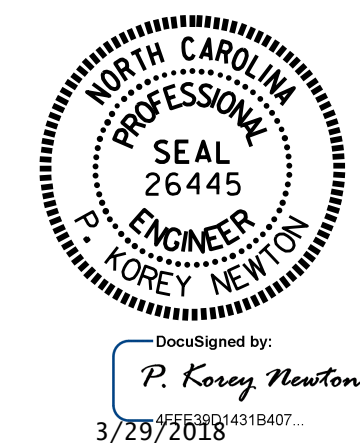


**NOTES**

- FOR MAINTENANCE OF WATER TRAFFIC, SEE SPECIAL PROVISIONS.
- FOR WORK IN, OVER OR ADJACENT TO NAVIGABLE WATERS, SEE SPECIAL PROVISIONS.
- FOR SECURING OF VESSELS, SEE SPECIAL PROVISIONS.
- FOR COORDINATION WITH THE U.S. COAST GUARD, SEE SPECIAL PROVISIONS.
- FOR NAVIGATIONAL LIGHTS, SEE SPECIAL PROVISION FOR "COORDINATION WITH THE U.S. COAST GUARD".
- THE CONTRACTOR SHALL RELOCATE THE CLEARANCE MARKER AT BOTH ENDS OF THE FENDER SYSTEM TO THE LOCATION DESIGNATED BY THE ENGINEER.
- FOR REMOVAL OF EXISTING FENDER SYSTEM, SEE SPECIAL PROVISIONS.
- FOR PILE DRIVING EQUIPMENT DATA SUBMITTAL, SEE SPECIAL PROVISIONS FOR "SUBMITTAL OF WORKING DRAWINGS".
- MINIMUM PILE TIP ELEVATION FOR ALL PILES IN FENDER SYSTEM SHALL BE ELEV -35.00 FT
- ALL THE BOLTS, WASHERS, NUTS, AND ALL OTHER HARDWARE SHALL BE GALVANIZED AND SHALL CONFORM TO ASTM A307.
- GALVANIZING SHALL BE DONE IN ACCORDANCE WITH SECTION 1076 OF NCDOT STANDARD SPECIFICATIONS FOR ROAD AND STRUCTURES DATED JANUARY 2018.
- ALL O.G. WASHERS SHALL CONFORM TO ASTM A47 CLASS 30.
- ALL DOME HEAD TIMBER BOLTS SHALL BE FASTENED SO THAT THEIR HEADS AND WASHERS ARE IN FULL CONTACT WITH THE COMPONENTS THEY CONNECT.
- ALL TIMBER SPIKE HEADS MUST BE IN FULL CONTACT WITH THE SURFACE OF THE TIMBER WALES.
- ALL TREATED LUMBER SHALL CONFORM TO SECTION 1082 OF THE STANDARD SPECIFICATIONS OR AS NOTED ON THE PLANS.
- FOR LOCATION OF NEW FENDER SYSTEM, SEE SPECIAL PROVISIONS.
- AT LOCATIONS WHERE EXISTING AND PROPOSED PILING COINCIDE, SOME OR ALL OF THE EXISTING PILING MAY BE REQUIRED TO BE FULLY REMOVED. IF THE EXISTING PILING BREAKS UPON INITIAL EXTRACTION, WITH THE ENGINEER'S APPROVAL, THE PROPOSED PILING MAY BE SHIFTED NOMINALLY TO AVOID THE BROKEN, EXISTING PILES.

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

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STATE OF NORTH CAROLINA  
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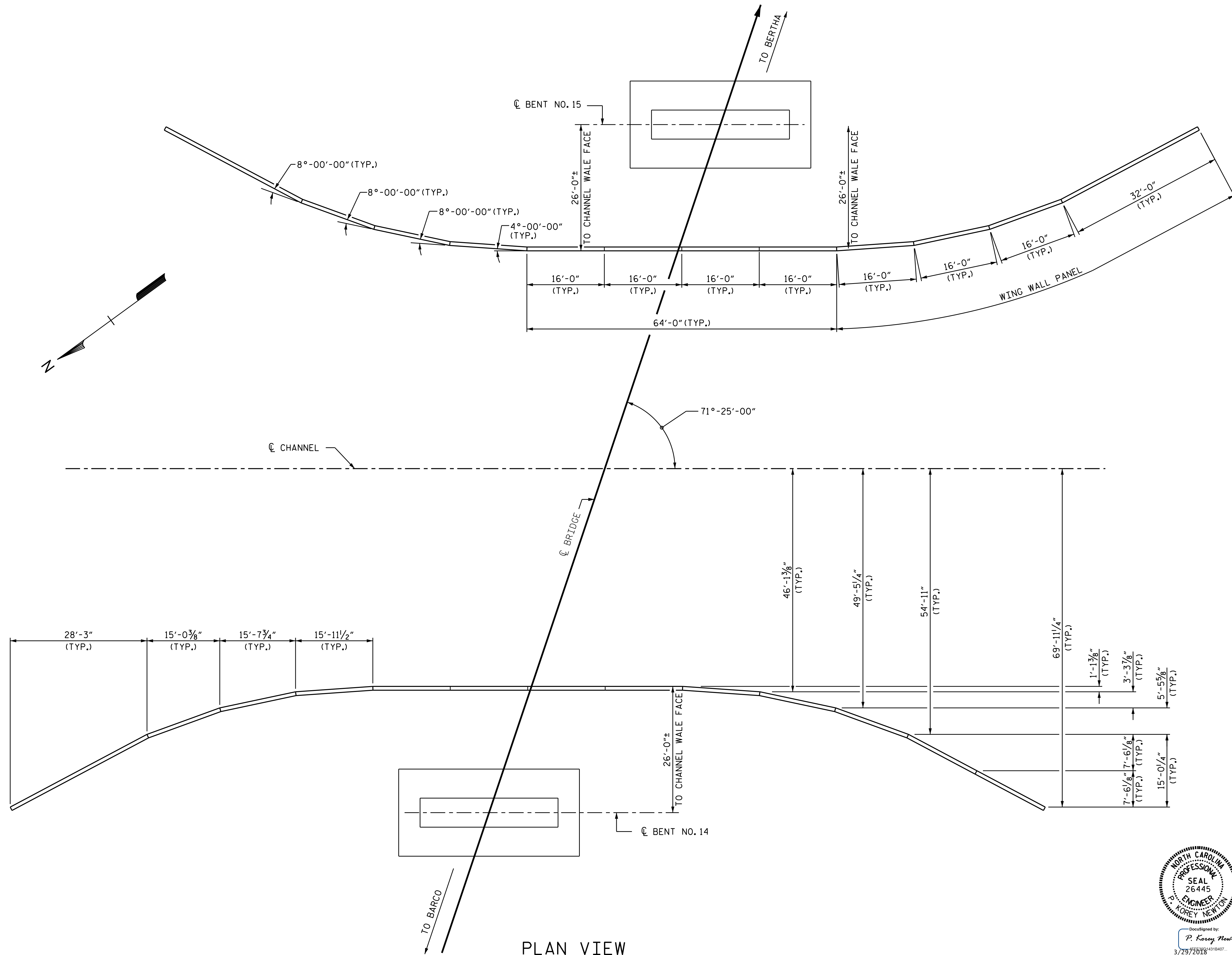
## FENDER LAYOUT PLAN

DRAWN BY : P. BRYANT DATE : 12/2017  
 CHECKED BY : P.K. NEWTON DATE : 01/2018

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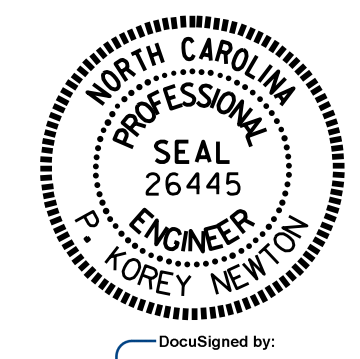




PLAN VIEW

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
 BRIDGE NO. 15

SHEET 2 OF 5



DocuSigned by:  
 P. Corey Newton  
 3/29/2018

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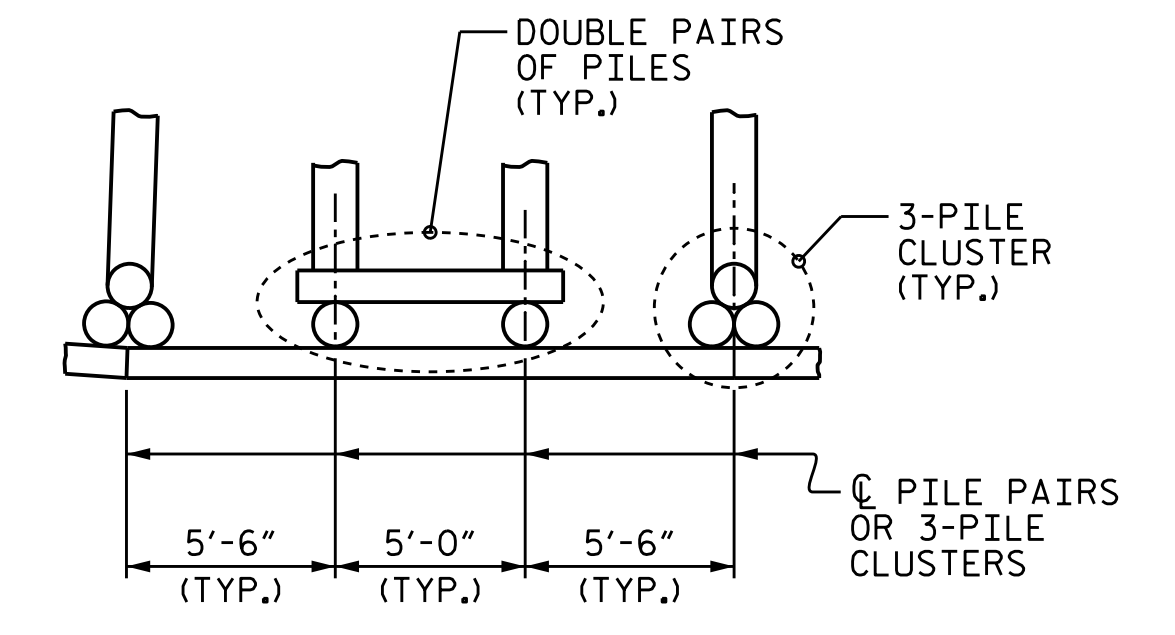
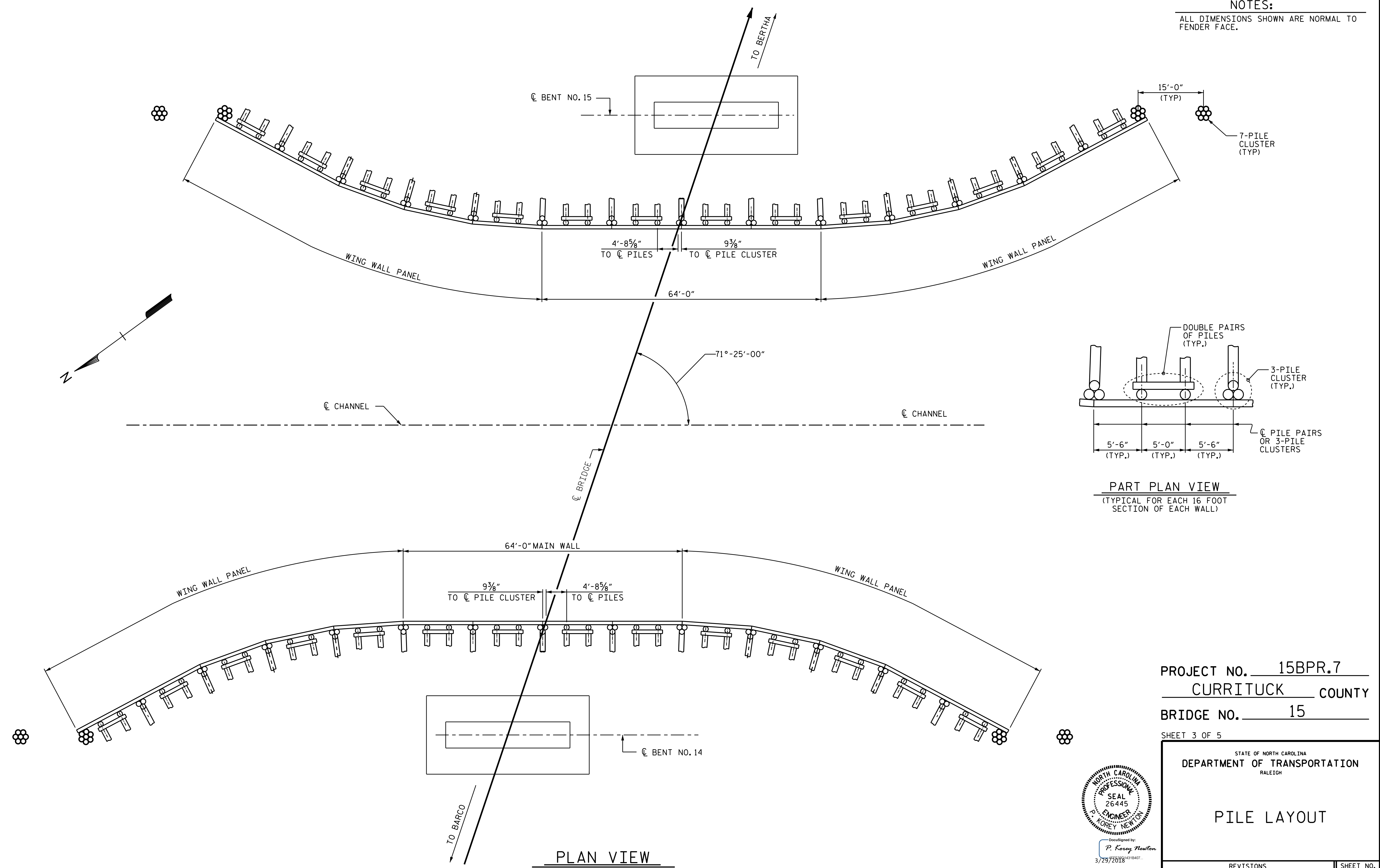
FENDER LAYOUT

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NOTES:  
ALL DIMENSIONS SHOWN ARE NORMAL TO FENDER FACE.

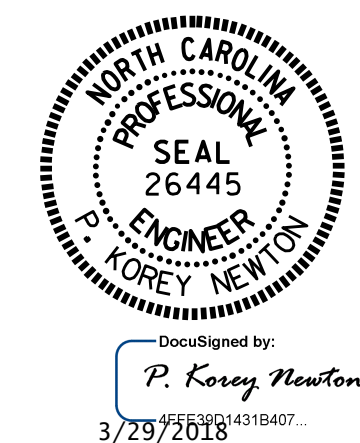


PART PLAN VIEW  
(TYPICAL FOR EACH 16 FOOT SECTION OF EACH WALL)

PLAN VIEW

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
BRIDGE NO. 15

SHEET 3 OF 5



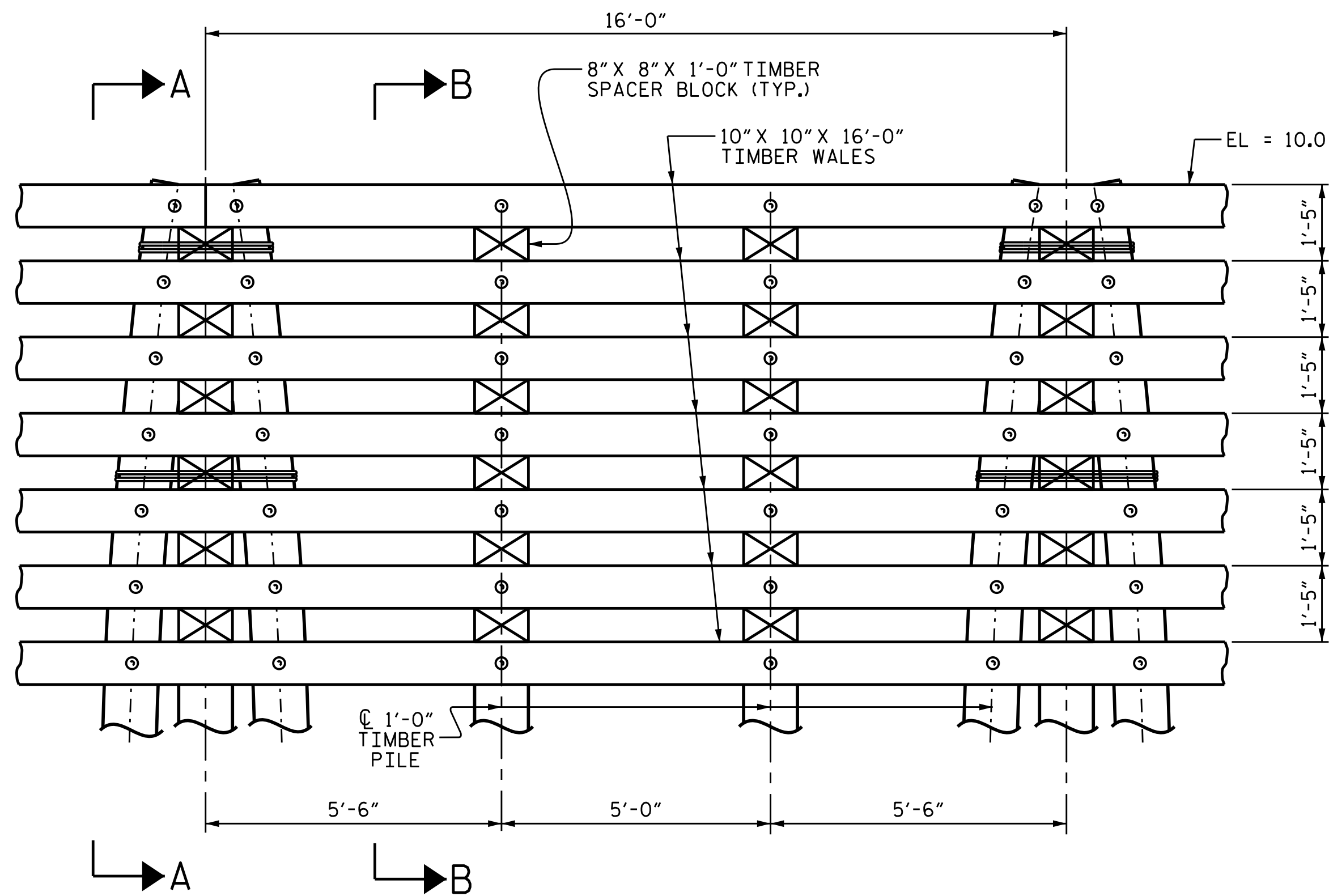
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PILE LAYOUT

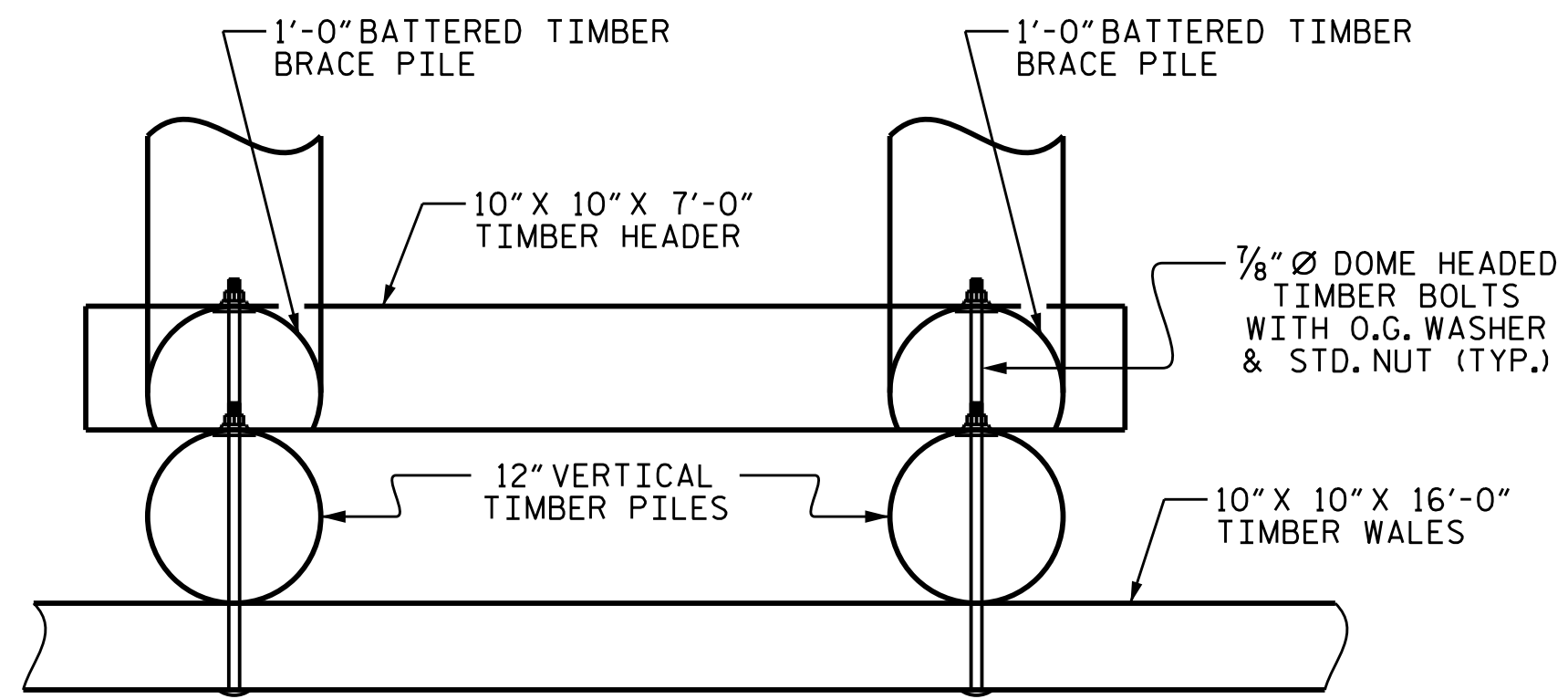
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ELEVATION VIEW OF PANEL



VIEW Y-Y

AVERAGE PILE DIA IS ASSUMED TO BE 1'-0"

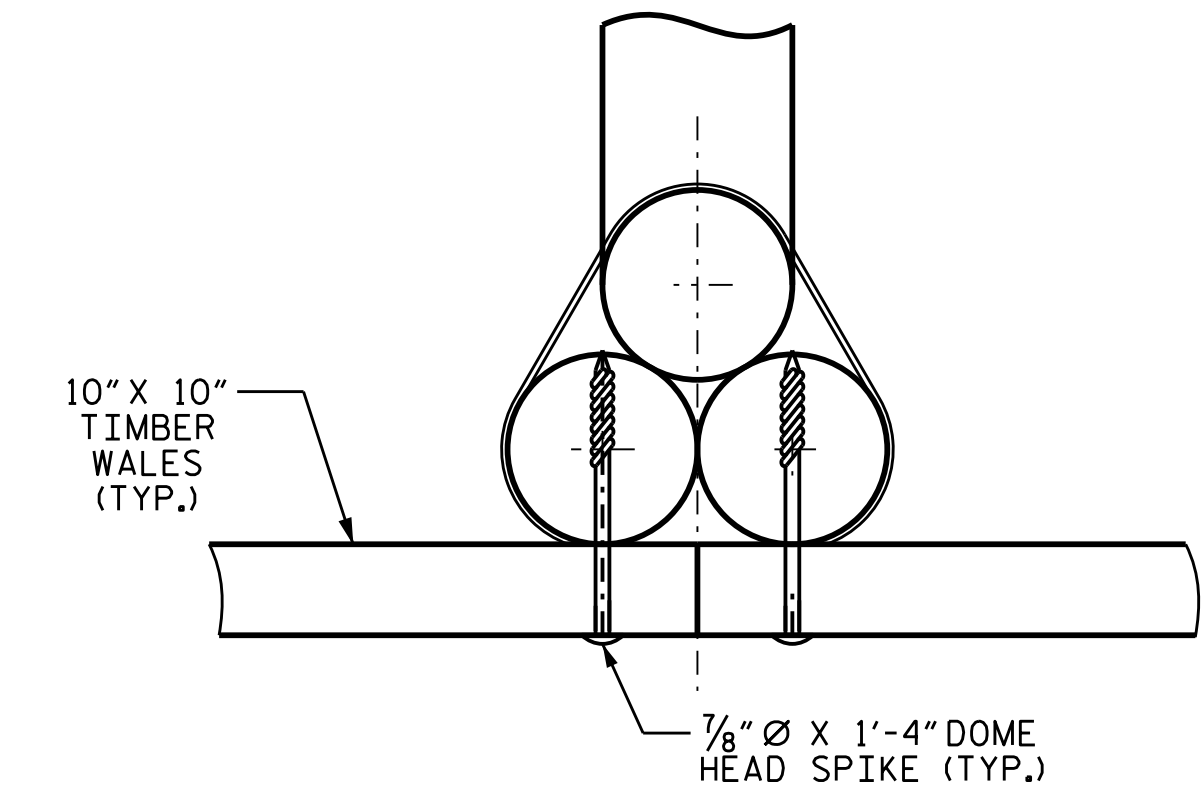
**NOTES:**

ALL BOLT TYPES ARE 7/8" Ø DOME HEADED TIMBER BOLTS WITH O.G. WASHER & STANDARD NUT.

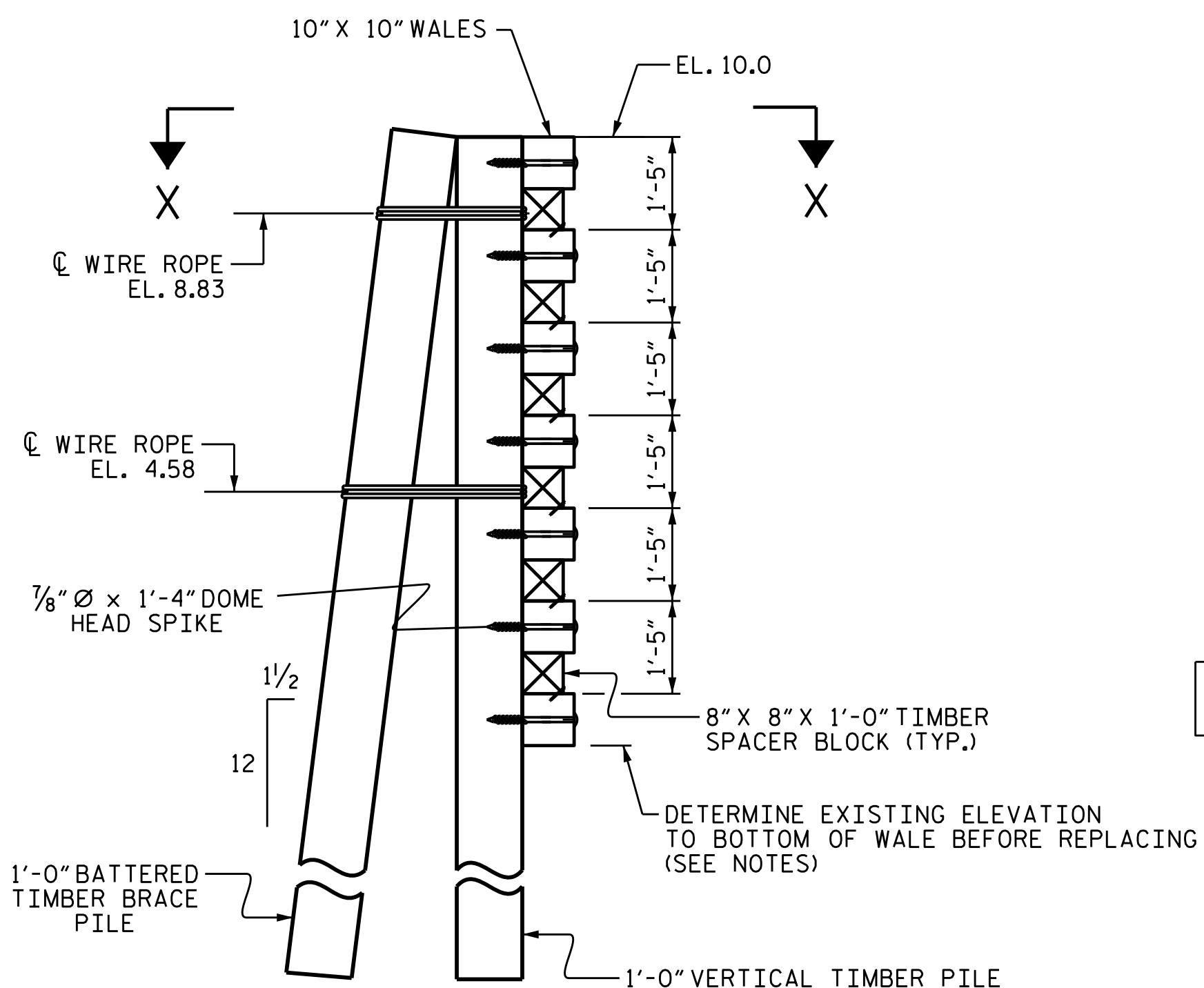
ALL DOME HEADS SHALL BE LOCATED AT THE FRONT FACE OF THE FENDER SYSTEM.

ON THE BACK SIDE OF FENDER SYSTEM THE BOLTS GOING THROUGH VERTICAL AND BATTERED PILES SHALL BE RECESSED TO ALLOW THE WASHER/NUT TO LIE FLUSH AGAINST THE PILE.

IF ANY WALES REQUIRE REPLACEMENT, DO NOT REMOVE THEM UNTIL THE EXISTING ELEVATION AT THE BOTTOM OF THE LOWEST WALES HAVE BEEN DETERMINED. THIS IS TO ENSURE THAT ANY NEW WALES ARE INSTALLED AT THE SAME ELEVATION AS THOSE THEY REPLACED.

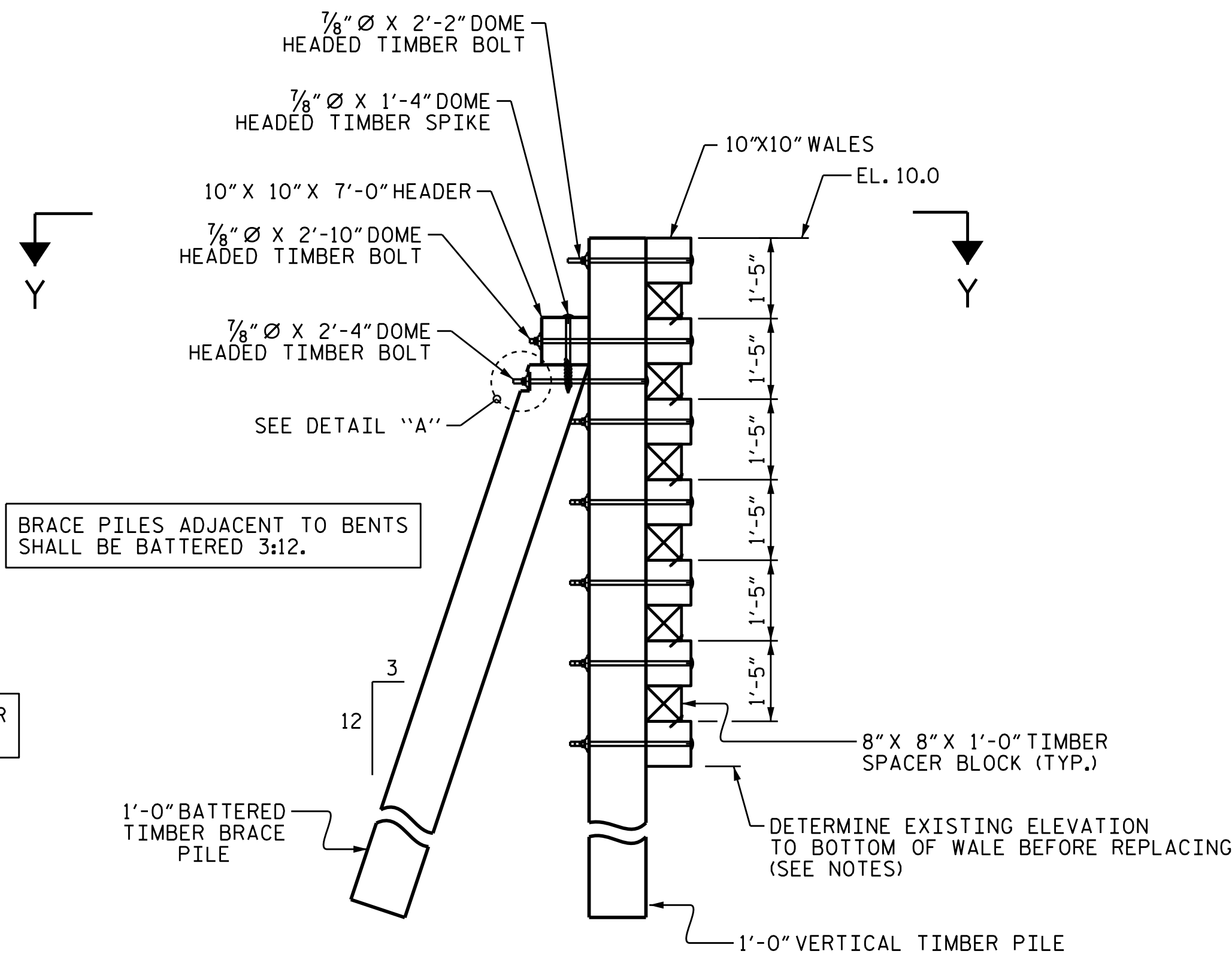


VIEW X-X

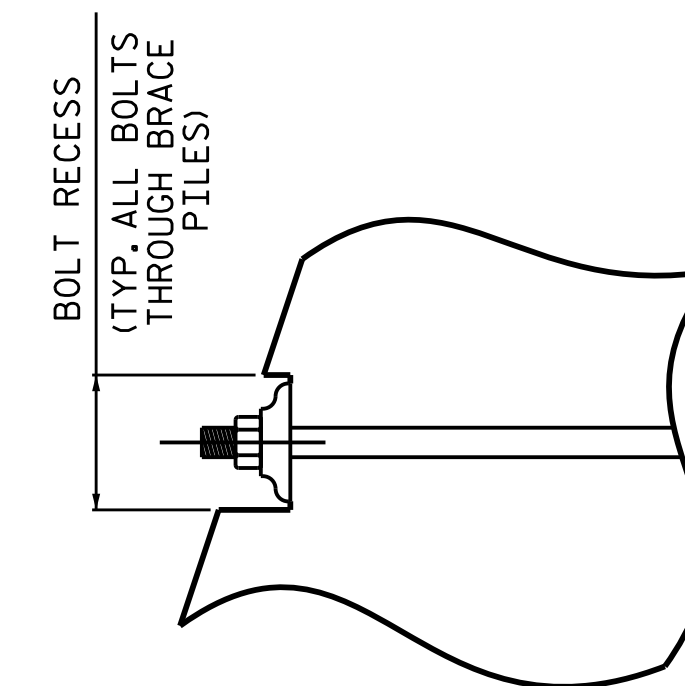


SECTION A-A  
3-PILE CLUSTER

MEAN HIGH WATER ELEV. = 1.60



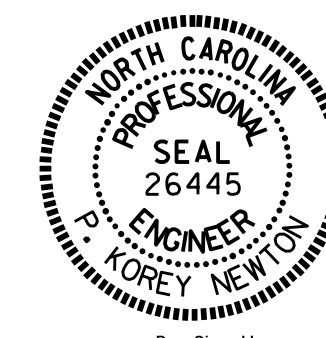
SECTION B-B  
DOUBLE PAIRS OF PILES



DETAIL "A"

PROJECT NO. 15BPR.7  
CURRITUCK COUNTY  
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SHEET 4 OF 5



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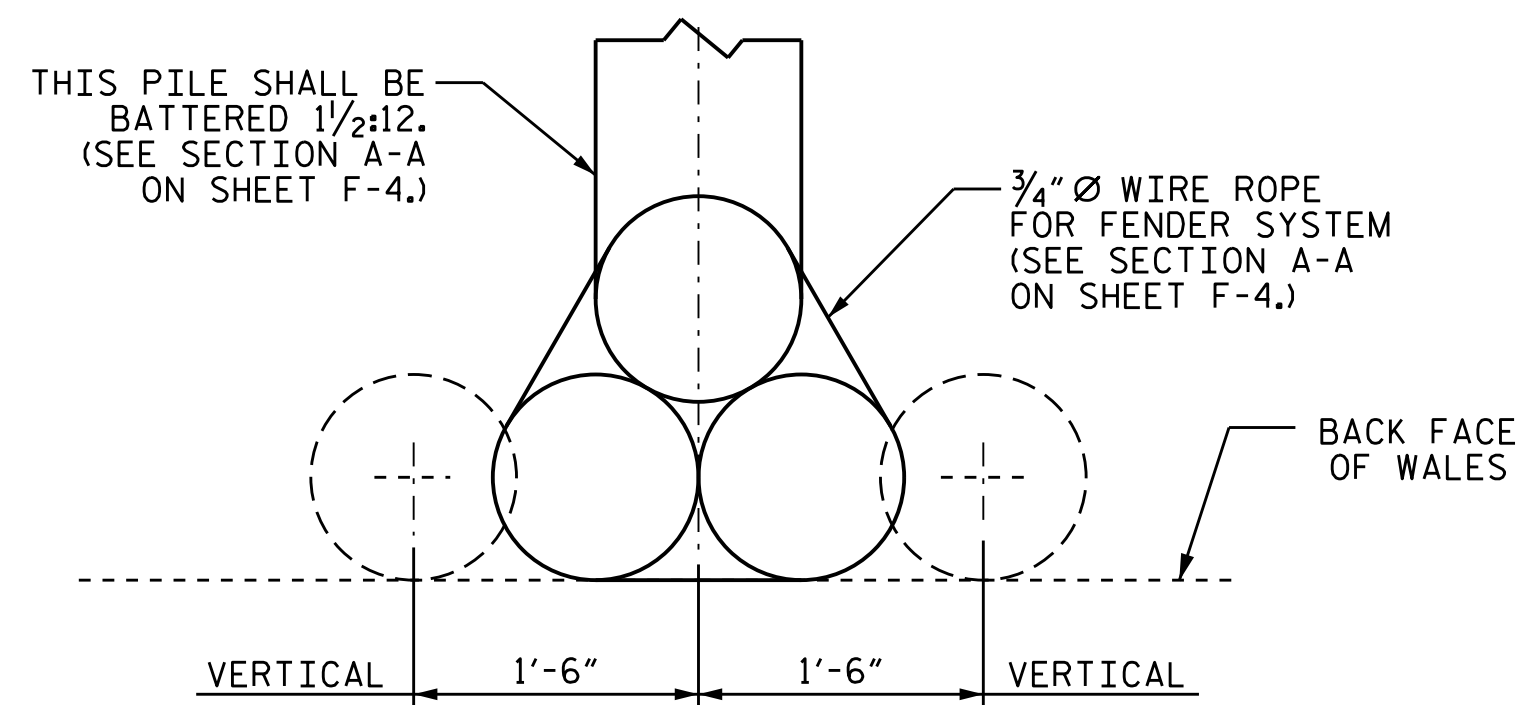
FENDER SYSTEM  
DETAILS

DRAWN BY: P. BRYANT DATE: 12/2017  
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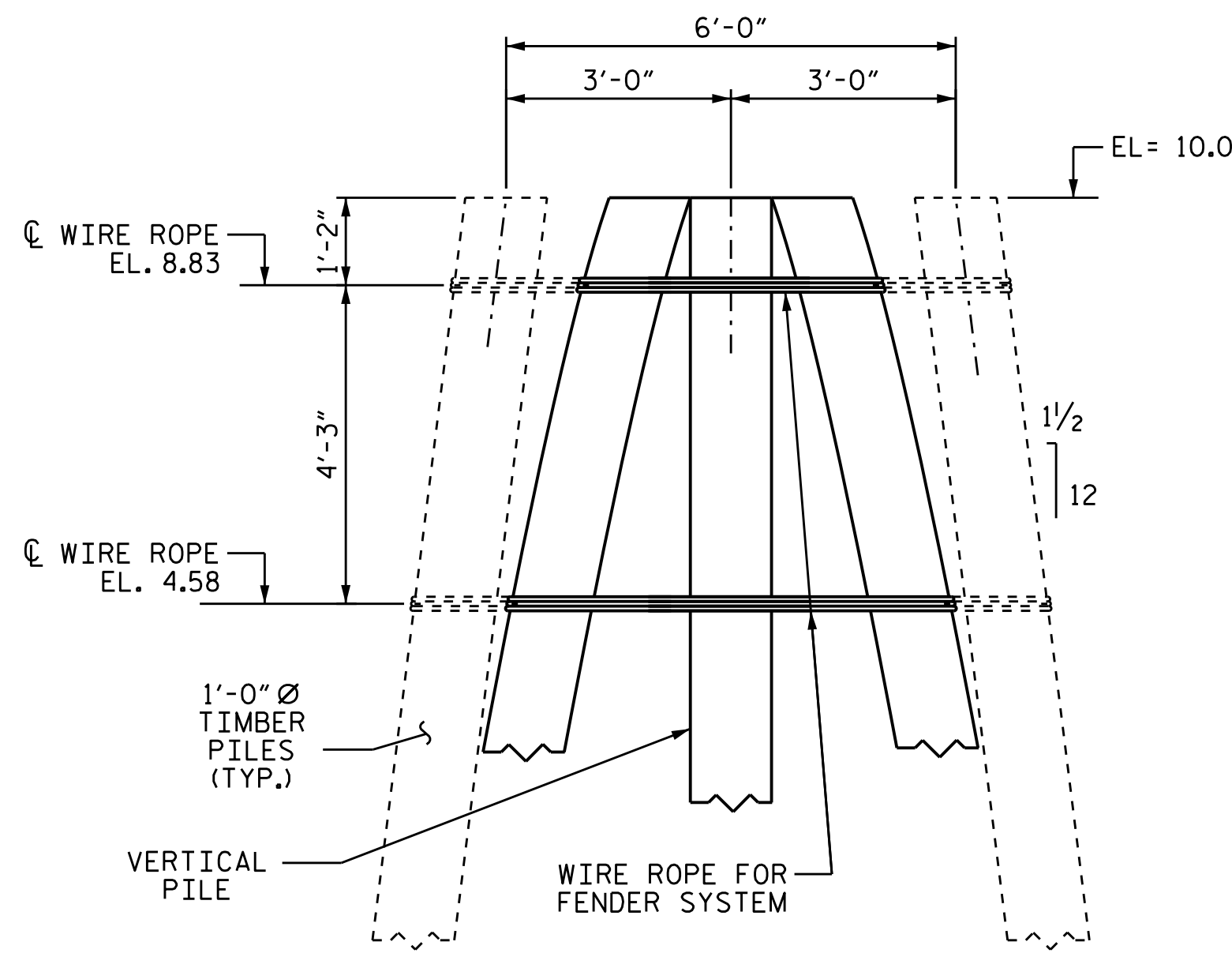
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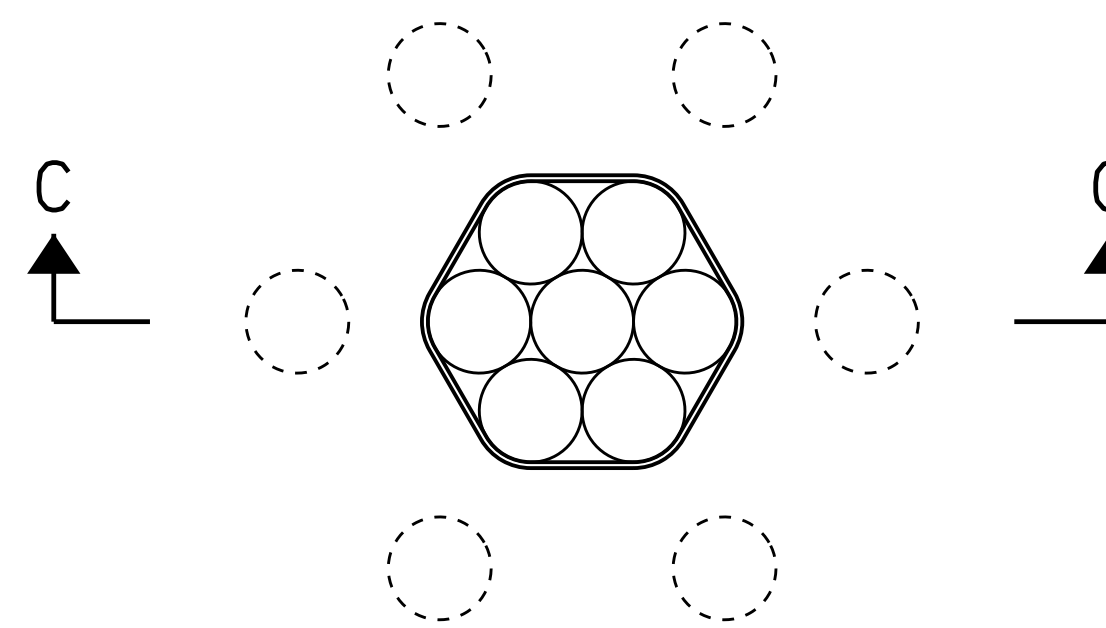


### DETAIL OF 3-PILE CLUSTERS

THREE PILES TO BE DRIVEN AS SHOWN, DRAWN TOGETHER AT THE TOP AND WRAPPED WITH THREE TURNS OF WIRE ROPE FOR FENDER SYSTEM AT TWO LOCATIONS AS SHOWN. WIRE ROPE FOR FENDER SYSTEM SHALL BE SECURED WITH 3/8" X 4" GALVANIZED STAPLES AND THREE GALVANIZED CABLE CLAMPS AT EACH END. WIRE ROPE AND FASTENINGS SHALL BE GALVANIZED AND INCLUDED AS HARDWARE. TWO PILES TO BE DRIVEN VERTICAL; ONE PILE TO BE BATTERED AS SHOWN.

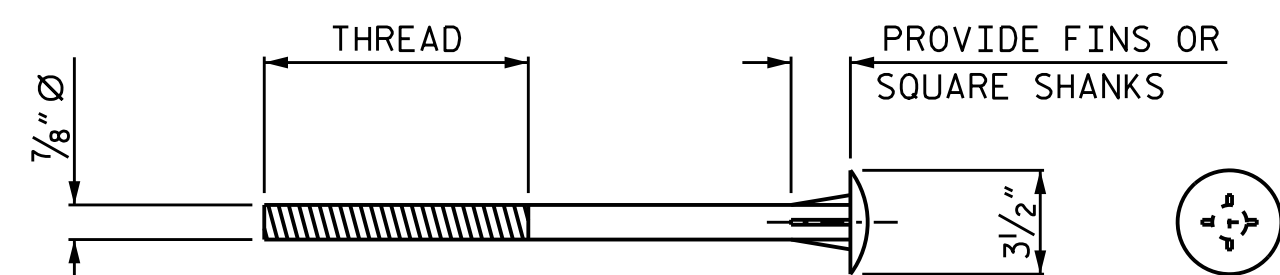


### SECTION C-C



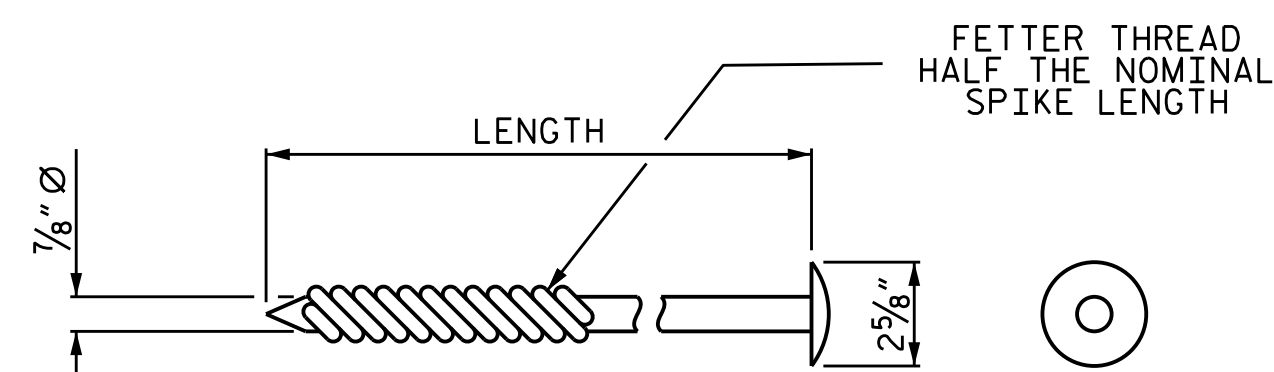
### DETAIL OF 7-PILE CLUSTERS

SIX (6) OUTSIDE PILES TO BE EQUALLY SPACED ON A 6 FOOT CIRCLE, DRAWN TOGETHER AT THE TOP, AND WRAPPED WITH 3 TURNS OF WIRE ROPE FOR FENDER SYSTEM AT TWO LOCATIONS AS SHOWN. WIRE ROPE FOR FENDER SYSTEM SHALL BE SECURED WITH 3/8" X 4" GALVANIZED STAPLES AND THREE GALVANIZED CABLE CLAMPS AT EACH END.



### TYPICAL DOME HEAD TIMBER BOLT

ALL BOLT HEADS MUST BE IN FULL CONTACT WITH THE SURFACE OF THE TIMBER PILES OR WALES.



### TYPICAL DOME HEAD DRIVE SPIKE

ALL DRIVE SPIKE HEADS MUST BE IN FULL CONTACT WITH THE SURFACE OF THE TIMBER PILES OR WALES.

### NOTES:

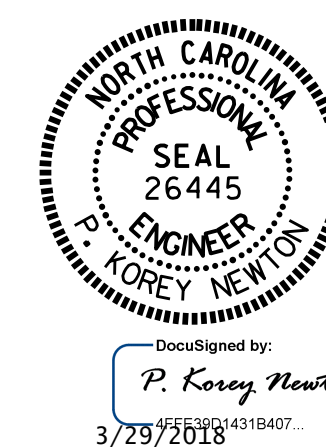
LENGTHS OF BOLTS, SPIKES AND WIRE ROPE ARE DETERMINED USING AN AVERAGE PILE DIAMETER OF 1'-1".

STRUCTURAL TIMBER					
ITEM	NO.	SIZE	SURFACE TO	LENGTH	TOTAL
TIMBER WALES	196	10" X 10"	S4S 9 1/2" X 9 1/2"	16'-0"	3136
TIMBER HEADER	28	10" X 10"	S4S 9 1/2" X 9 1/2"	7'-0"	196
SPACER BLOCK	516	8" X 8"	S4S 7 1/2" X 7 1/2"	1'-0"	516
TIMBER PILE	246	1'-0"	---	50'-0"	12300

STRUCTURAL HARDWARE (GALVANIZED)			
ITEM	UNIT	NO.	TOTAL
WIRE ROPE FOR FENDER SYSTEM	LIN. FT.	3100	3100 LBS
3/4" Ø CABLE CLAMPS	LBS.	408	625 LBS
3/8" X 4" STAPLES	LBS.	882	441 LBS
1/8" Ø X 1'-4" DOME HEAD TIMBER SPIKE	LBS.	476	1737 LBS
16d COMMON NAILS	LBS.	17	17 LBS
1/8" Ø X 2'-2" DOME HEAD TIMBER BOLT	LBS.	336	984 LBS
1/8" Ø X 2'-4" DOME HEAD TIMBER BOLT	LBS.	56	206 LBS
1/8" Ø X 2'-10" DOME HEAD TIMBER BOLT	LBS.	56	248 LBS
1/8" Ø O.G. WASHER	LBS.	448	672 LBS
1/8" Ø STANDARD NUT	LBS.	448	85 LBS

PROJECT NO. 15BPR.7  
 CURRITUCK COUNTY  
 STATION: 15

SHEET 5 OF 5



STATE OF NORTH CAROLINA  
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### FENDER SYSTEM DETAILS

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