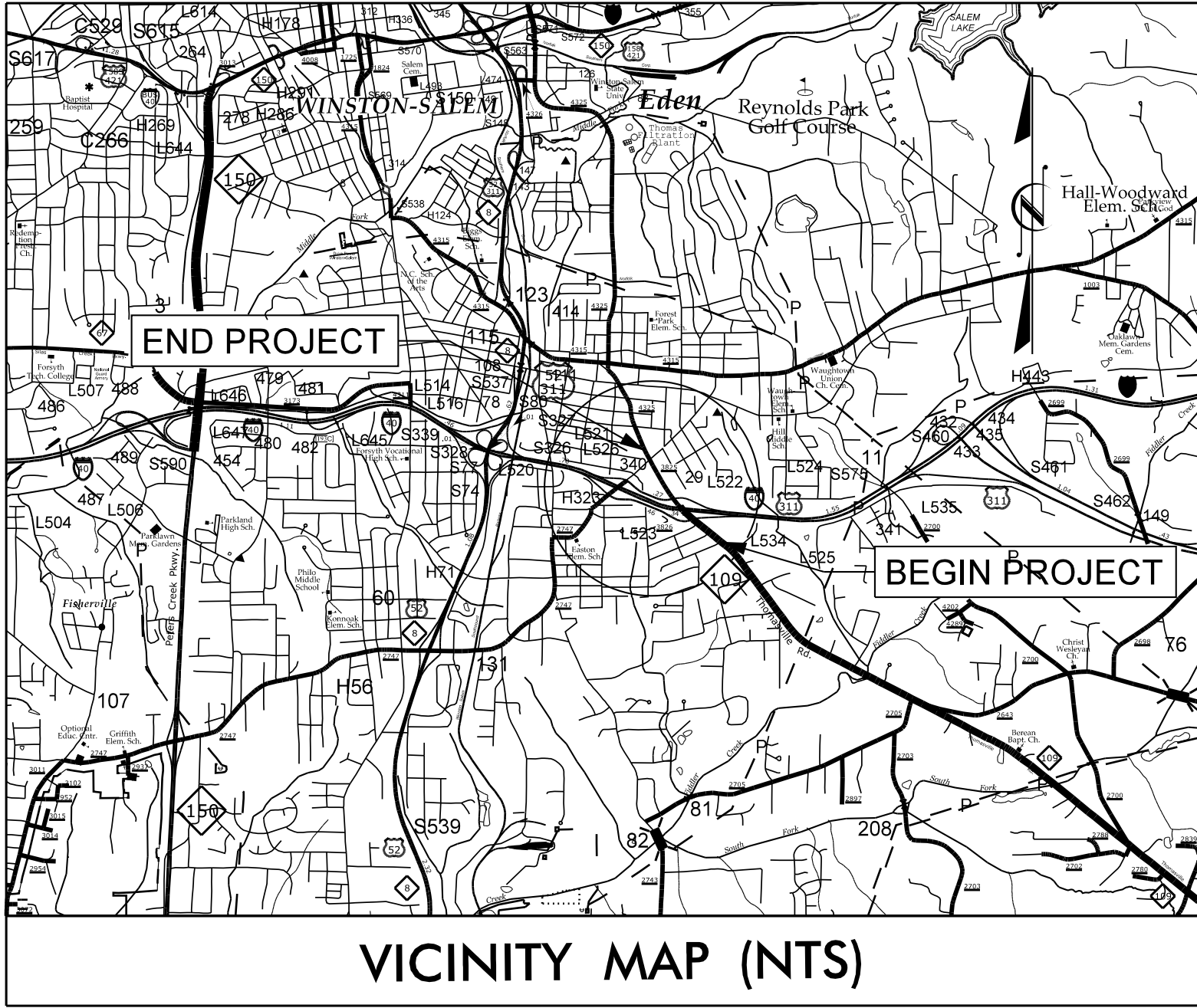


TIP PROJECT: I-5880

CONTRACT: C204975



VICINITY MAP (NTS)

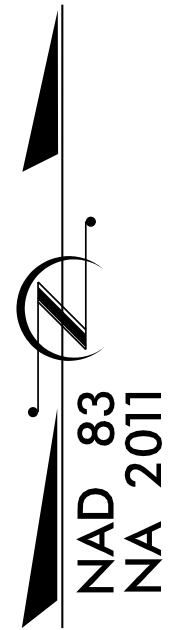
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

LOCATION: I-40 /NC 109 INTERCHANGE PROJECT
IN WINSTON-SALEM, NC

TYPE OF WORK: GRADING, DRAINAGE, PAVING,
STRUCTURES, SIGNALS AND SIGNING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5880		
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
53080.1.1		PE	
53080.2.1	5308001	RW	
53080.2.2	5308001	UTL	
53080.3.1	5308001	CONST	



BEGIN TIP PROJECT I-5880
-L- STA. 27 + 75.00

BEGIN BRIDGE
-L- STA. 38 + 80.16 (LT. WIDENING)
-L- STA. 38 + 11.36 (RT. WIDENING)

END BRIDGE
-L- STA. 40 + 55.70 (LT. WIDENING)
-L- STA. 39 + 86.88 (RT. WIDENING)

END TIP PROJECT I-5880
-L- STA. 71 + 00.00

STRUCTURES

DESIGN DATA

ADT 2025 = 117,240
ADT 2045 = 145,440
K = 9 %
D = 60 %
T = 11 % *
V = 70 MPH
* TTST = 8% DUAL 3%
FUNC CLASS =
INTERSTATE
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-5880 = 0.786 MILES
LENGTH OF STRUCTURE I-5880 = 0.033 MILES
TOTAL LENGTH OF TIP PROJECT I-5880 = 0.819 MILES

NCDOT POINT OF CONTACT:

RYAN NEWCOMB, PE
PROJECT ENGINEER

Prepared in the Office of:



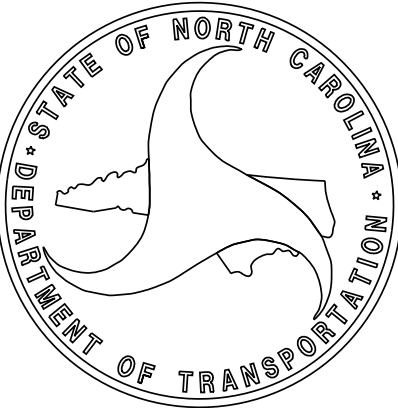
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4700 Falls of Neuse Rd, Suite 100,
Raleigh, NC, 27609
License No. C-3097

2024 STANDARD SPECIFICATIONS

LETTING DATE:
AUGUST 19, 2025

GWEN F. WILSON, PE
PROJECT ENGINEER

STEPHEN T. CHAMPION, PE
PROJECT DESIGN ENGINEER



PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS
AND ROUTINE INSPECTION REPORT DATED 8/16/2022.

BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

ALL WORK REQUIRING BRIDGE JACKING SHALL BE COMPLETED
AND JACKING REMOVED PRIOR TO PERFORMING ANY BRIDGE
DECK AND JOINT WORK.

REMOVE CONCRETE MEDIAN PRIOR TO BRIDGE DECK
SCARIFICATION, SHOTBLASTING, AND PLACEMENT OF PC
OVERLAY. REPLACE MEDIAN AFTER THE PC OVERLAY HAS
BEEN COMPLETED AND FULLY CURED.

PARTIALLY REMOVE TOP OF BRIDGE DECK AND APPROACH
SLAB CONCRETE BY SCARIFICATION AND SHOTBLASTING
METHODS.

OVERLAY PREPARED TOP OF BRIDGE DECK AND APPROACH
SLABS WITH POLYMER CONCRETE (PC).

GROOVE POLYMER CONCRETE BRIDGE DECK.

REMOVE EXISTING JOINT MATERIAL AT END BENTS AND
BENTS AND INSTALL FOAM JOINTS.

CONCRETE REPAIR OF SPALLED AREAS ON THE SIDEWALK AND
RAIL BASE.

INJECT CONCRETE CRACKS WITH EPOXY RESIN.

REMOVE UNSOUND CONCRETE AND PROPERLY PREPARE
EXISTING END BENT AND BENT AREAS FOR SHOTCRETE AND
CONCRETE REPAIRS.

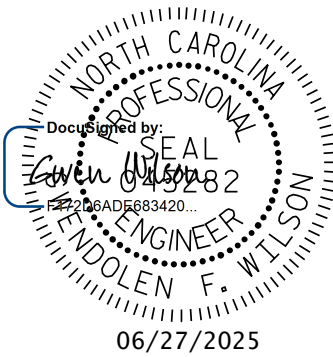
PROPERLY PREPARE SPALLED AREAS IN EXISTING END BENT AND BENTS AND PERFORM SHOTCRETE AND CONCRETE REPAIRS.

REMOVE DEBRIS FROM TOP OF EXISTING END BENT AND
BENT CAPS AND APPLY EPOXY COATING.

REPLACE SPAN B BEAM 1 FAR SIDE BEARING PLATE.

INSTALL STEEL BEARING KEEPER ANGLE ASSEMBLIES AT EACH EXPANSION BEARING THAT IS OUT OF PLUMB AT BENT 1, 2, AND 3.

CLEAN AND PAINT WEATHERING STEEL AT THE INTERIOR BENTS.



SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON NC 109
OVER I-40 BETWEEN
LEONA ST. AND
CLEMMONSVILLE RD.

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-1
1			3			TOTAL SHEETS 21
2			4			

DWN. BY: BC DATE: 10/2024
CHKD. BY: GFW DATE: 11/2024

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BC:\c029\p01\p01-jwt-jaw-0\Documents\Pro\10-jaw-00036-00\Design\Structures\Bridges\330029-2_Plan\4 Final Plans\401_003_15880_GD02_002
DATE: 6/24/2025 TIME: 6:24/2025



LATITUDE	36°-3'-30.42" N
LONGITUDE	80°-12'-48.82" W
BRIDGE NO. 330029	

LOCATION SKETCH

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

TOTAL BILL OF MATERIAL

GROOVING BRIDGE FLOORS	CLASS AA CONCRETE	EPOXY COATED REINFORCING STEEL	POLLUTION CONTROL	CLASS II SURFACE PREPARATION	SHOTCRETE REPAIRS	EPOXY RESIN INJECTION	CLEANING AND PAINTING EXISTING WEATHERING STEEL FOR BRIDGE #29	PAINTING CONTAINMENT FOR BRIDGE #29	FOAM JOINT SEALS FOR PRESERVATION
SQ. FT.	CU. YD.	LBS.	LUMP SUM	SQ. YD.	CU. FT.	LIN. FT.	LUMP SUM	LUMP SUM	LIN. FT.
27230	13.2	853	LUMP SUM	57.7	16.5	89.8	LUMP SUM	LUMP SUM	513.8

TOTAL BILL OF MATERIAL

EPOXY POLYMER CONCRETE MATERIALS (ALTERNATE)	POLYESTER POLYMER CONCRETE MATERIALS	EPOXY COATING	CONCRETE DECK REPAIR FOR POLYMER CONCRETE OVERLAY	PLACING & FINISHING OF POLYMER CONCRETE OVERLAY	SCARIFYING BRIDGE DECK	SHOTBLASTING BRIDGE DECK	BEARING REPLACEMENT	STEEL BEARING KEEPER ANGLE ASSEMBLY	TYPE I BRIDGE JACKING FOR BRIDGE #29
CU. YD.	CU. YD.	SQ. FT.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	EA.	EA.	EA.
88.0	88.0	1927.1	57.7	3167.9	3167.9	3167.9	1	5	1

SAMPLE BAR REPLACEMENT	
#3	6'-2"
#4	7'-4"
#5	8'-6"
#6	9'-8"
#7	10'-10"
#8	12'-0"
#9	13'-2"
#10	14'-6"
#11	15'-10"

NOTES

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.

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

ALL REFERENCES IN THE PLANS AND SPECIAL PROVISIONS TO THE STANDARD SPECS ARE TO THE 2024 "NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES". ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

EXISTING JOINTS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECK.

FOR CONCRETE DECK REPAIR FOR POLYMER CONCRETE OVERLAY, PLACING AND FINISHING POLYMER CONCRETE OVERLAY, GROOVING BRIDGE FLOORS, POLYESTER POLYMER CONCRETE MATERIALS, AND EPOXY POLYMER CONCRETE MATERIALS, SEE "POLYMER CONCRETE BRIDGE DECK OVERLAY" SPECIAL PROVISION.

FOR SCARIFYING BRIDGE DECK, SHOTBLASTING OF BRIDGE DECK, AND CLASS II AND CLASS III SURFACE PREPARATION, SEE "OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE" SPECIAL PROVISION.

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

FOR CLEANING AND PAINTING EXISTING WEATHERING STEEL, POLLUTION CONTROL AND PAINTING CONTAINMENT, SEE "PAINTING EXISTING WEATHERING STEEL STRUCTURE" SPECIAL PROVISION.

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

WORK ON THE BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL BELOW, EXCEPT WHERE THE CONTRACTOR PLANS TO USE PLATFORMS, NETS, SCREENS OR OTHER PROTECTIVE DEVICES TO CATCH THE MATERIAL. THE CONTRACTOR SHALL SUBMIT PLANS FOR CONSTRUCTION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS AND THE PROJECT SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT THE EXISTING STRUCTURE WHICH IS TO REMAIN IN PLACE WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY PART OF THE EXISTING STRUCTURE WHICH IS TO REMAIN IN PLACE, THE DAMAGED AREA SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER AT NO ADDITIONAL COST TO THE DEPARTMENT.

THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON THE DIFFERENCES BETWEEN WHAT IS SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

FOR CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE ELSEWHERE IN THE CONTRACT DOCUMENTS.

FOR SUBMITTAL OF WORKING DRAWINGS, FALSEWORK AND FORMWORK, GROUT FOR STRUCTURES, CRANE SAFETY, VOLUMETRIC MIXER, CONCRETE REPAIRS, SHOTCRETE REPAIRS, EPOXY RESIN INJECTION, AND FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: ONE 30 INCH SAMPLE OF EACH SIZE BAR USED. THE SAMPLE BARS SHOULD COME FROM STEEL ACTUALLY USED IN THE PROJECT AND THE SAMPLE BARS SHOULD BE REPLACED BY SPICED BARS AS SPECIFIED IN THE SAMPLE BAR REPLACEMENT CHART. PAYMENT FOR THE SAMPLE BARS AND REPLACEMENT REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

FOR STEEL BEARING KEEPER ANGLE ASSEMBLY, SEE SPECIAL PROVISIONS.

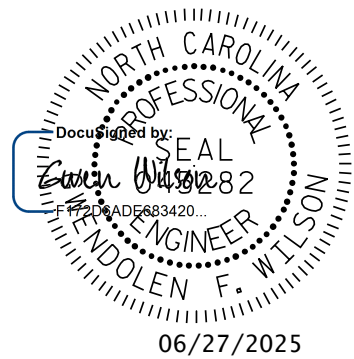
AT THE TIME OF PREPARATION OF THESE PLANS, IT WAS NOT ANTICIPATED THAT ITEMS LISTED BELOW WOULD BE REQUIRED. HOWEVER, IT MAY BE DETERMINED IN THE FIELD THAT THESE ITEMS, OR OTHER WORK WILL BE NECESSARY TO COMPLETE THE INTENDED BRIDGE PRESERVATION/REHABILITATION WORK. THE CONTRACTOR SHALL BE PREPARED TO PERFORM SUCH WORK IN A TIMELY MANNER, AS DETERMINED IN THE FIELD, SUCH WORK SHALL BE CONSIDERED EXTRA WORK AND SHALL BE ADDRESSED AS PER ARTICLE 104-7 OF THE STANDARD SPECIFICATIONS. PROJECT SPECIAL PROVISIONS THAT OUTLINE REQUIREMENTS FOR THESE POTENTIAL ADDITIONAL WORK ITEMS HAVE BEEN PROVIDED IN PROJECT DOCUMENTS, BUT NO QUANTITIES HAVE BEEN LISTED, ACTUAL PAY ITEMS, QUANTITIES, AND COSTS WILL BE ESTABLISHED, AS REQUIRED, IF EXTRA WORK IS ENCOUNTERED.

UNANTICIPATED ITEMS:

ITEM NO.	DESCRIPTION	UNIT
1	CLASS III SURFACE PREPARATION	SQ. YDS.
2	CONCRETE REPAIR	CU. FT.
3	VOLUMETRIC MIXER	LUMP SUM
4	TYPE II BRIDGE JACKING FOR BRIDGE #29	EA.

PROJECT NO. I-5880
FORSYTH COUNTY
BRIDGE: 330029

SHEET 2 OF 2



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RALEIGH

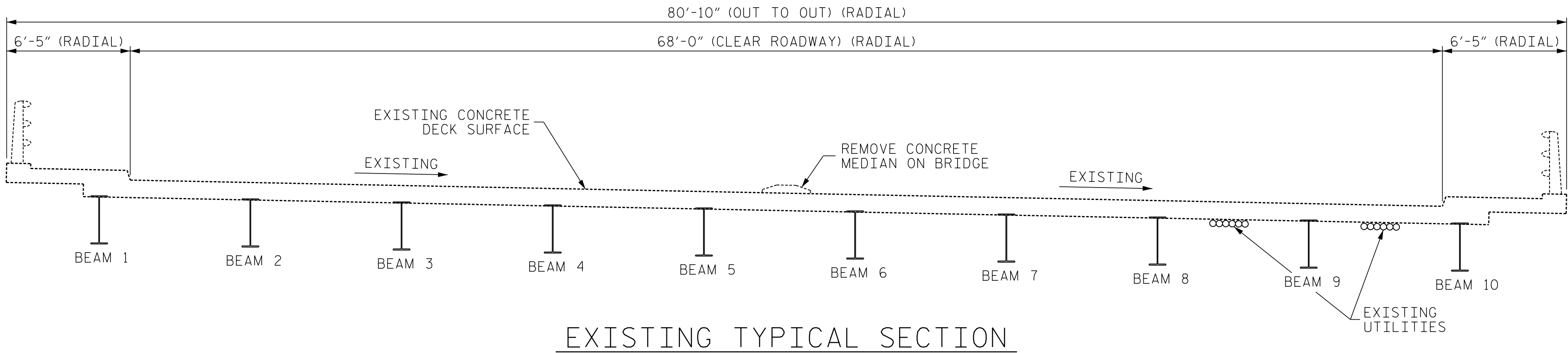
GENERAL DRAWING
FOR BRIDGE ON NC 109
OVER I-40 BETWEEN
LEONA ST. AND
CLEMMONSVILLE RD.

REVISIONS						SHEET NO. S1-2
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 21
2			4			

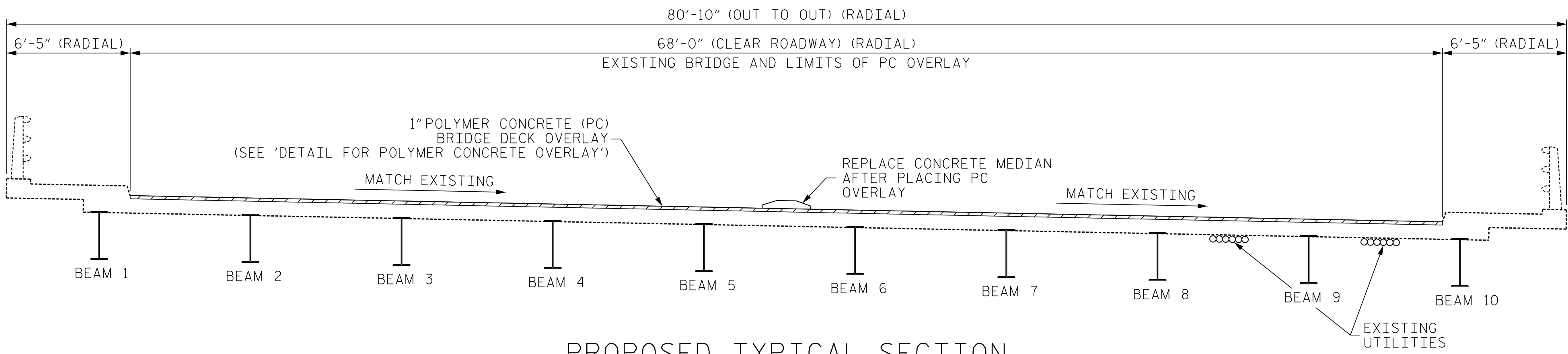
DWN. BY: BC	DATE: 10/2024
CHKD. BY: GFW	DATE: 11/2024

NOTES

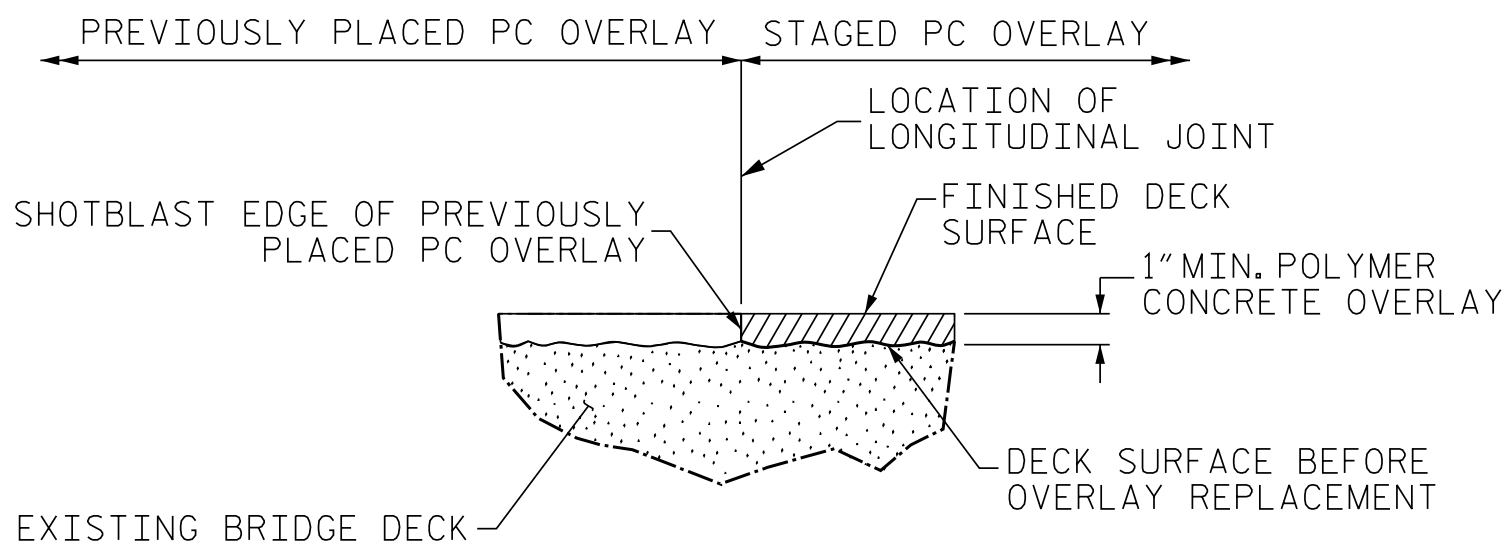
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND POLYMER CONCRETE PLACEMENT.



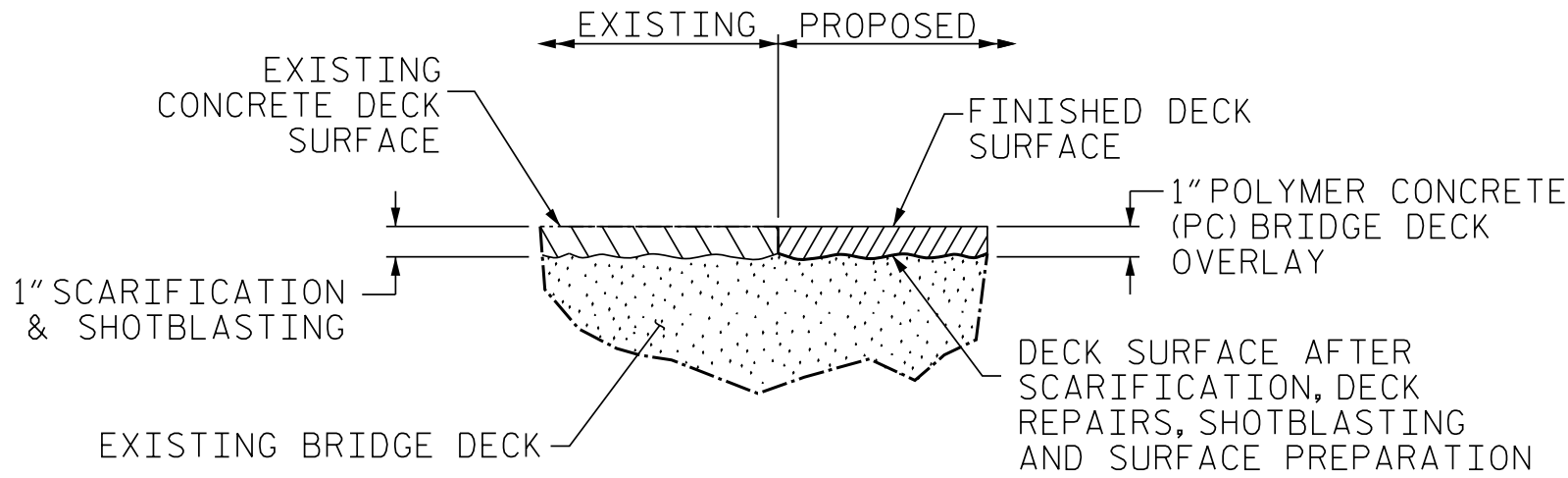
EXISTING TYPICAL SECTION



PROPOSED TYPICAL SECTION



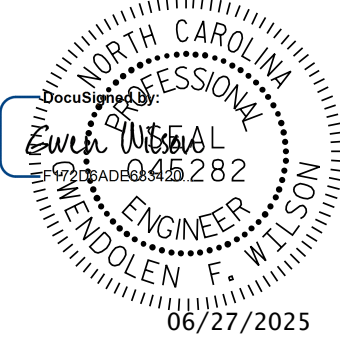
STAGED PC OVERLAY JOINT
(AS NEEDED)



DETAIL FOR
POLYMER CONCRETE OVERLAY

FINISHED SURFACE ELEVATION SHALL MATCH EXISTING CONCRETE SURFACE ELEVATION. ACTUAL THICKNESS OF PC OVERLAY MAY VARY.

PROJECT NO. I-5880
FORSYTH COUNTY
BRIDGE: 330029



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
TYPICAL SECTION
AND SURFACE
PREPARATION DETAILS

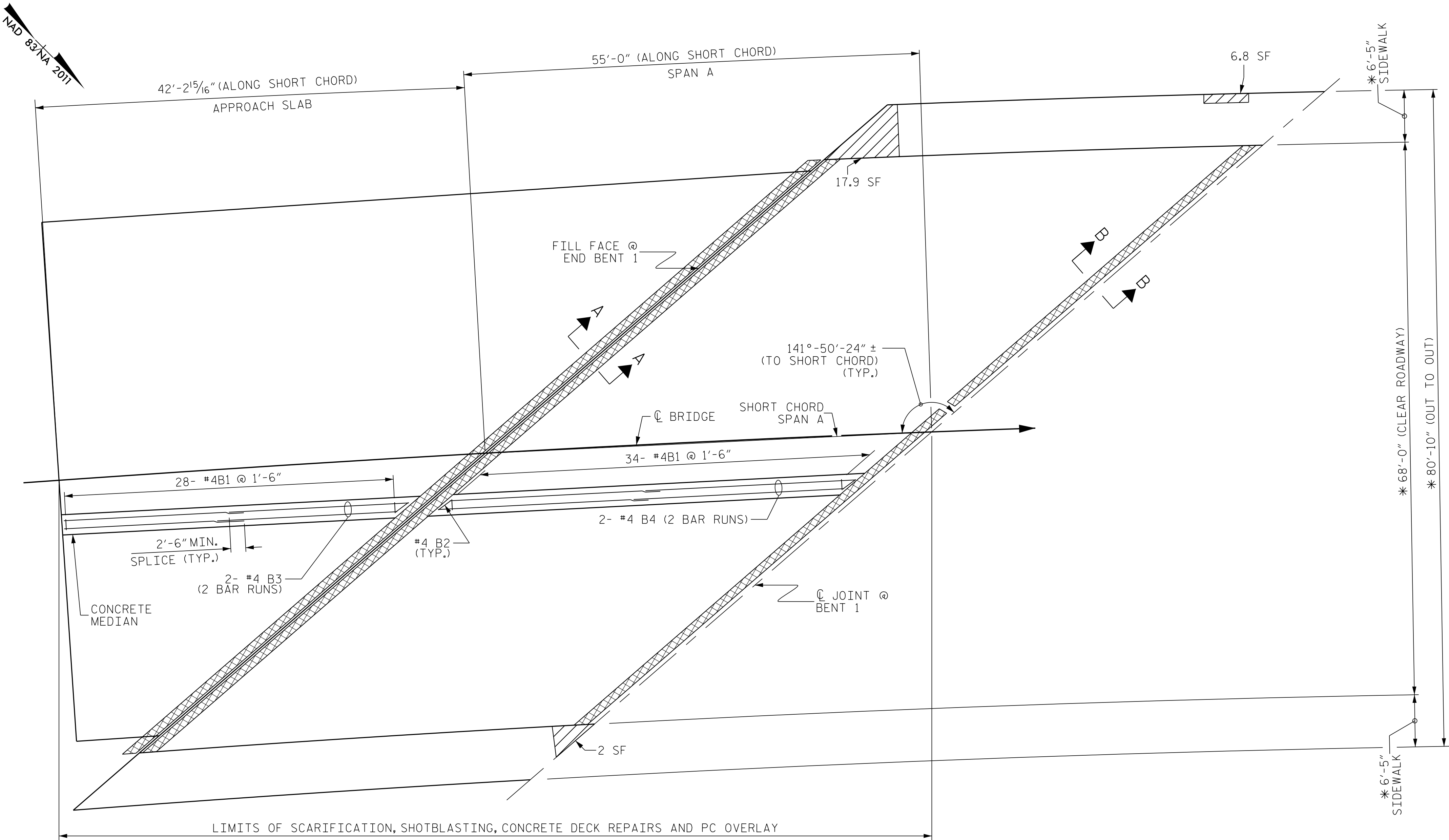
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1			3			TOTAL SHEETS 21
2			4			

BC:10/2024
DWN: 10/2024
CHKD: 11/2024
TIME: 6/24/2025

DWN, BY: BC
CHKD, BY: GFW
DATE: 10/2024
DATE: 11/2024



PLAN OF SPAN A

NOTES

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

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE CONCRETE MEDIAN STRIP IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FEET TO 10 FEET BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.

THE CONCRETE MEDIAN IS TO BE REMOVED PRIOR TO PLACEMENT OF PC OVERLAY AND REBUILT ONCE THE PC OVERLAY HAS BEEN COMPLETED AND FULLY CURED.

* - RADIAL DIMENSIONS

AS-BUILT QUANTITY REPAIR TABLE

TOP OF DECK REPAIRS	APPROACH SLAB 1		SPAN A	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
GROOVING BRIDGE FLOORS	3204 SQ. FT.		3575 SQ. FT.	
CLASS II SURFACE PREPARATION	6.1 SQ. YDS.		12.2 SQ. YDS.	
CLASS III SURFACE PREPARATION	0 SQ. YDS.		0 SQ. YDS.	
EPOXY RESIN INJECTION	0 LN. FT.		4.0 LN. FT.	
POLYMER CONCRETE MATERIALS	10.4 CU. YDS.		11.5 CU. YDS.	
CONCRETE DECK REPAIR FOR PC OVERLAY	6.1 SQ. YDS.		12.2 SQ. YDS.	
PLACING & FINISHING PC OVERLAY	373.5 SQ. YDS.		415.7 SQ. YDS.	
SCARIFYING BRIDGE DECK	373.5 SQ. YDS.		415.7 SQ. YDS.	
SHOTBLASTING OF BRIDGE DECK	373.5 SQ. YDS.		415.7 SQ. YDS.	
SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
SIDEWALK	19.9	3.3		
CONCRETE BARRIER RAIL	6.8	1.1		

EPOXY RESIN INJECTION REPAIRS OCCURS AT LEFT AND RIGHT END POST.

- SHOTCRETE REPAIRS
- CLASS II SURFACE PREPARATION
- SCARIFYING, SHOTBLASTING, AND POLYMER CONCRETE OVERLAY

BILL OF MATERIAL FOR CONCRETE MEDIAN

APPROACH SLAB AND SPAN A					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	62	#4	STR.	1'-5"	59
* B2	3	#4	STR.	2'-0"	4
* B3	4	#4	STR.	23'-3"	62
* B4	4	#4	STR.	27'-10"	74
EPOXY COATED REINFORCING STEEL				199 LBS	
CLASS AA CONCRETE				3.1 CY	

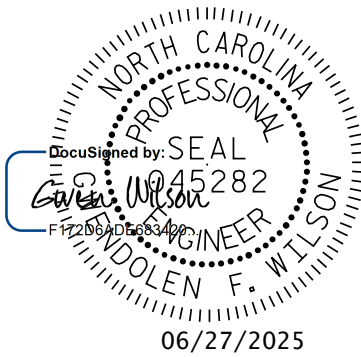
* INDICATES EPOXY COATED REINFORCING STEEL

PROJECT NO. I-5880
FORSYTH COUNTY
BRIDGE: 330029

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPAN
SPAN A

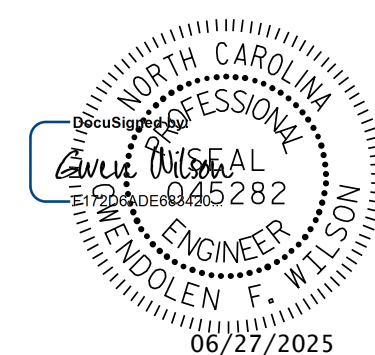


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2			4			



* INDICATES EPOXY COATED REINFORCING STEEL

	SHOTCRETE REPAIRS
	CLASS II SURFACE PREPARATION
	SCARIFYING, SHOTBLASTING, AND POLYMER CONCRETE OVERLAY

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

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE CONCRETE MEDIAN STRIP IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FEET TO 10 FEET BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.

THE CONCRETE MEDIAN IS TO BE REMOVED PRIOR TO PLACEMENT OF PC OVERLAY AND REBUILT ONCE THE PC OVERLAY HAS BEEN COMPLETED AND FULLY CURED.

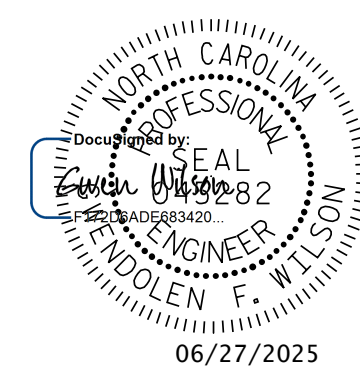
PROJECT NO. I-5880
FORSYTH COUNTY
 BRIDGE: 330029

SHEET 2 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						
PLAN OF SPAN SPAN B						
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			SHEET NO. S1-5 TOTAL SHEETS 21
2			4			

DWN. BY: BC	DATE: 10/2024
CHKD. BY: GFW	DATE: 11/2024

* INDICATES EPOXY COATED REINFORCING STEEL



NOTES

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

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE CONCRETE MEDIAN STRIP IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FEET TO 10 FEET BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.

THE CONCRETE MEDIAN IS TO BE REMOVED PRIOR TO PLACEMENT OF PC OVERLAY AND REBUILT ONCE THE PC OVERLAY HAS BEEN COMPLETED AND FULLY CURED.

	SHOTCRETE REPAIRS
	CLASS II SURFACE PREPARATION
	SCARIFYING, SHOTBLASTING, AND POLYMER CONCRETE OVERLAY

 SHOTCRETE REPAIRS

 CLASS II SURFACE PREPARATION

☐ SCARIFYING, SHOTBLASTING, AND
POLYMER CONCRETE OVERLAY

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SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPAN
SPAN C

REVISONS						SHEET NO. S1-6
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 21
2			4			

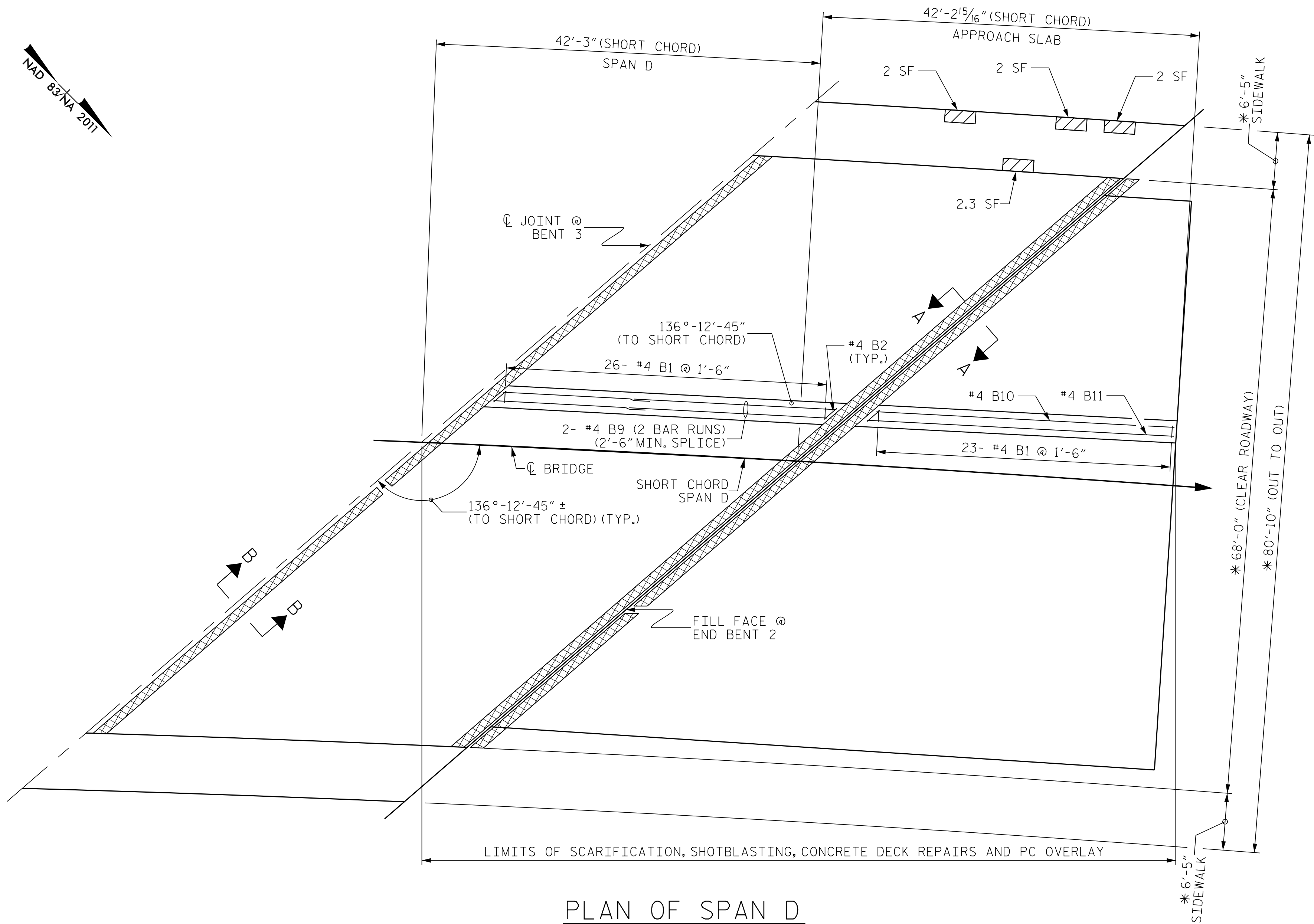
DWN. BY: BC	DATE: 10/2024
CHKD. BY: GFW	DATE: 11/2024

NOTES

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

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE CONCRETE MEDIAN STRIP IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FEET TO 10 FEET BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.

THE CONCRETE MEDIAN IS TO BE REMOVED PRIOR TO PLACEMENT OF PC OVERLAY AND REBUILT ONCE THE PC OVERLAY HAS BEEN COMPLETED AND FULLY CURED.



PLAN OF SPAN D

* - RADIAL DIMENSIONS

AS-BUILT QUANTITY REPAIR TABLE					
TOP OF DECK REPAIRS	SPAN D		APPROACH SLAB 2		
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	
GROOVING BRIDGE FLOORS	2746 SQ. FT.		2577 SQ. FT.		
CLASS II SURFACE PREPARATION	10.9 SQ. YDS.		5.5 SQ. YDS.		
CLASS III SURFACE PREPARATION	0 SQ. YDS.		0 SQ. YDS.		
EPOXY RESIN INJECTION	5.0 LN. FT.		0 LN. FT.		
POLYMER CONCRETE MATERIALS	8.9 CU. YDS.		8.3 CU. YDS.		
CONCRETE DECK REPAIR FOR PC OVERLAY	10.9 SQ. YDS.		5.5 SQ. YDS.		
PLACING & FINISHING PC OVERLAY	319.3 SQ. YDS.		300.4 SQ. YDS.		
SCARIFYING BRIDGE DECK	319.3 SQ. YDS.		300.4 SQ. YDS.		
SHOTBLASTING OF BRIDGE DECK	319.3 SQ. YDS.		300.4 SQ. YDS.		
SHOTCRETE REPAIRS	ESTIMATE		ACTUAL		
	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.	
SIDEWALK	0.0	0.0			
CONCRETE BARRIER RAIL	8.3	2.2			

EPOXY RESIN INJECTION REPAIRS OCCURS AT LEFT AND RIGHT END POST.

- SHOTCRETE REPAIRS
- CLASS II SURFACE PREPARATION
- SCARIFYING, SHOTBLASTING, AND POLYMER CONCRETE OVERLAY

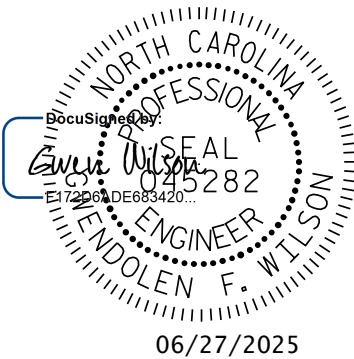
BILL OF MATERIAL FOR CONCRETE MEDIAN					
SPAN D AND APPROACH SLAB					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	49	#4	STR.	1'-5"	46
* B2	3	#4	STR.	1'-11"	4
* B9	4	#4	STR.	21'-5"	57
* B10	1	#4	STR.	34'-9"	23
* B11	1	#4	STR.	35'-7"	24
EPOXY COATED REINFORCING STEEL					154 LBS
CLASS AA CONCRETE					2.4 CY

* INDICATES EPOXY COATED REINFORCING STEEL

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PROJECT NO. I-5880
FORSYTH COUNTY
BRIDGE: 330029

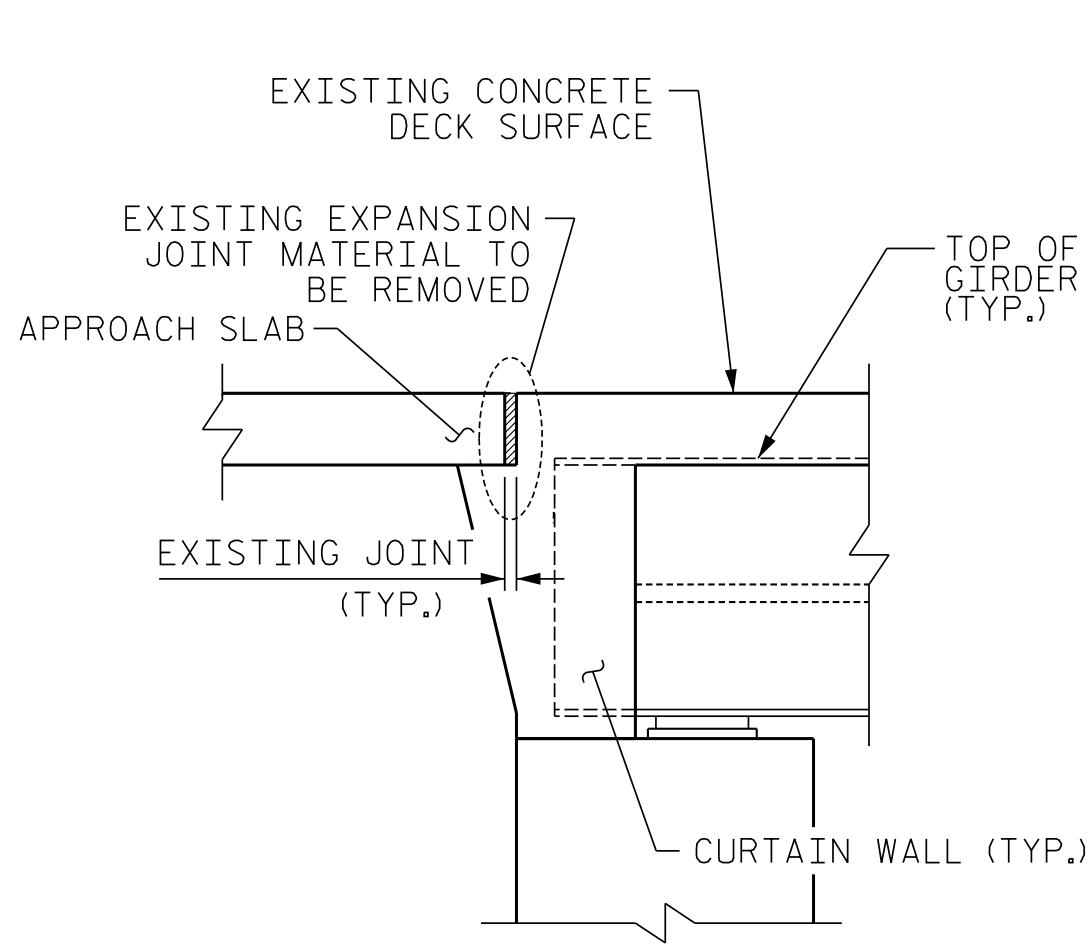
SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

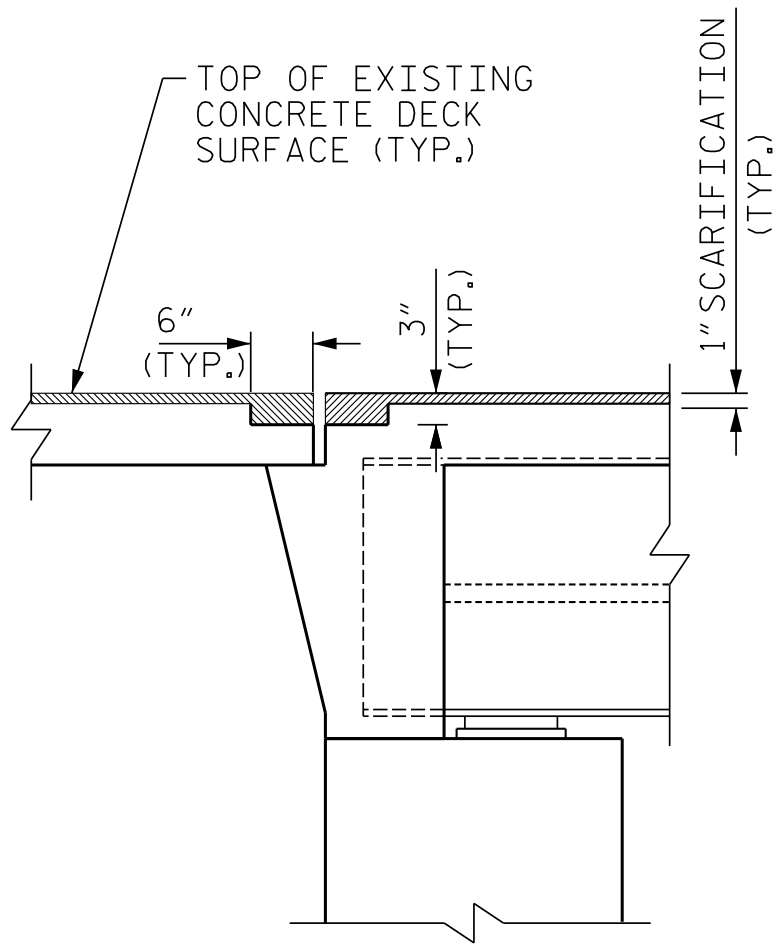
PLAN OF SPAN
SPAN D

REVISIONS						SHEET NO. S1-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 21
2			4			

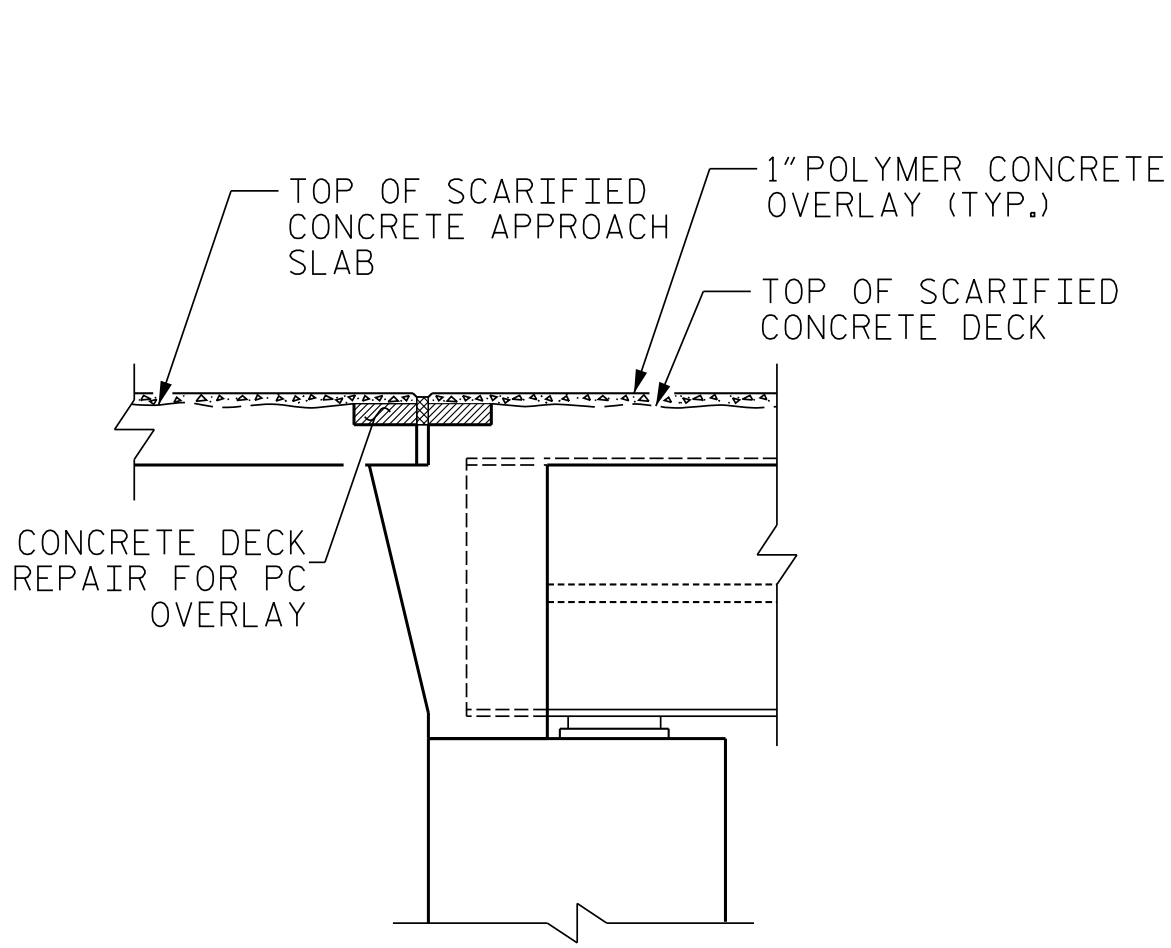
DWN. BY: BC DATE: 10/2024
CHKD. BY: GFW DATE: 11/2024



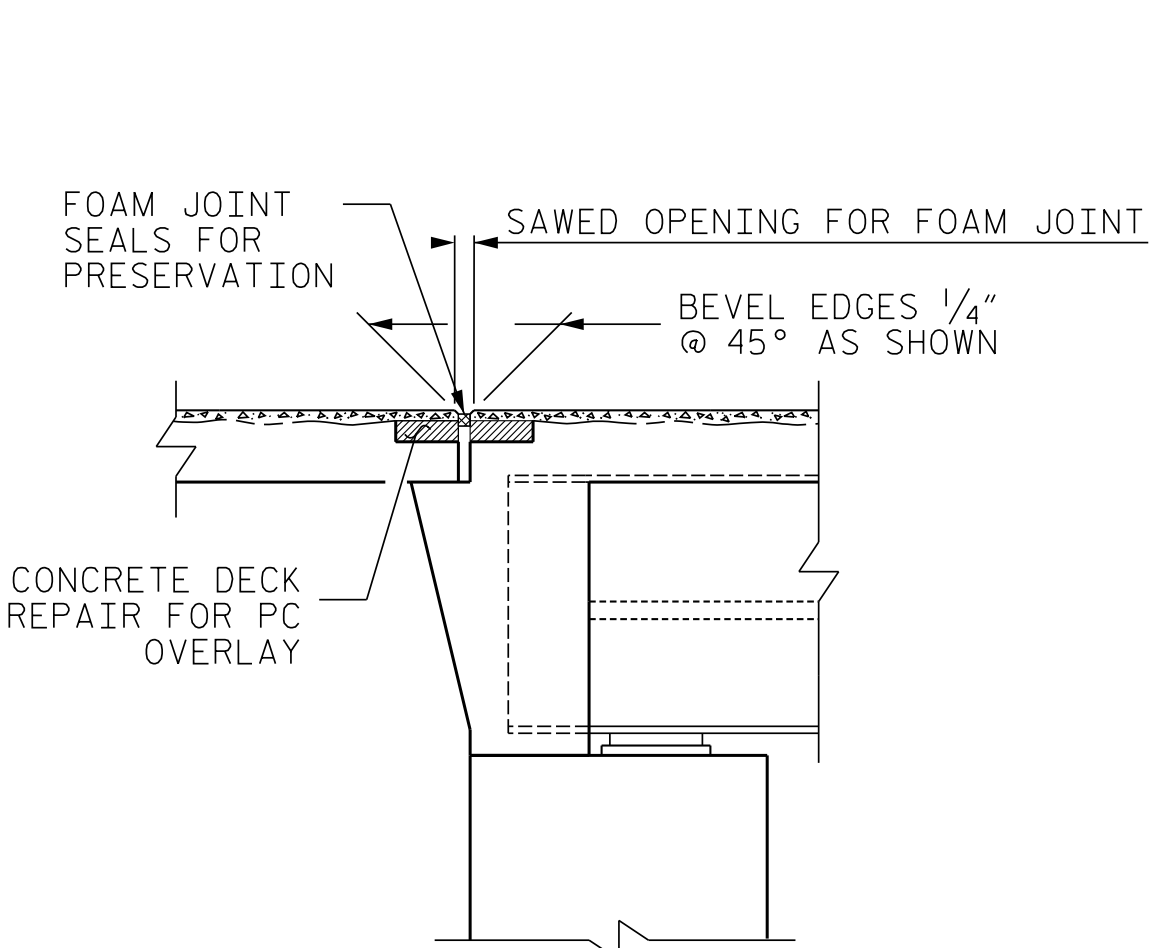
EXISTING JOINT



MINIMUM EXISTING JOINT
DEMOLITION AND SCARIFICATION



PROPOSED JOINT REPAIR



PROPOSED FOAM JOINT SEAL

NOTES

FOR CLASS II SURFACE PREPARATION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEALS SHALL BE 2\"/>

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE.

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

DURING THE JOINT INSTALLATION PROCEDURE, THE JOINT AND SURROUNDING AREA SHALL BE KEPT CLEAN AND FREE OF DEBRIS.

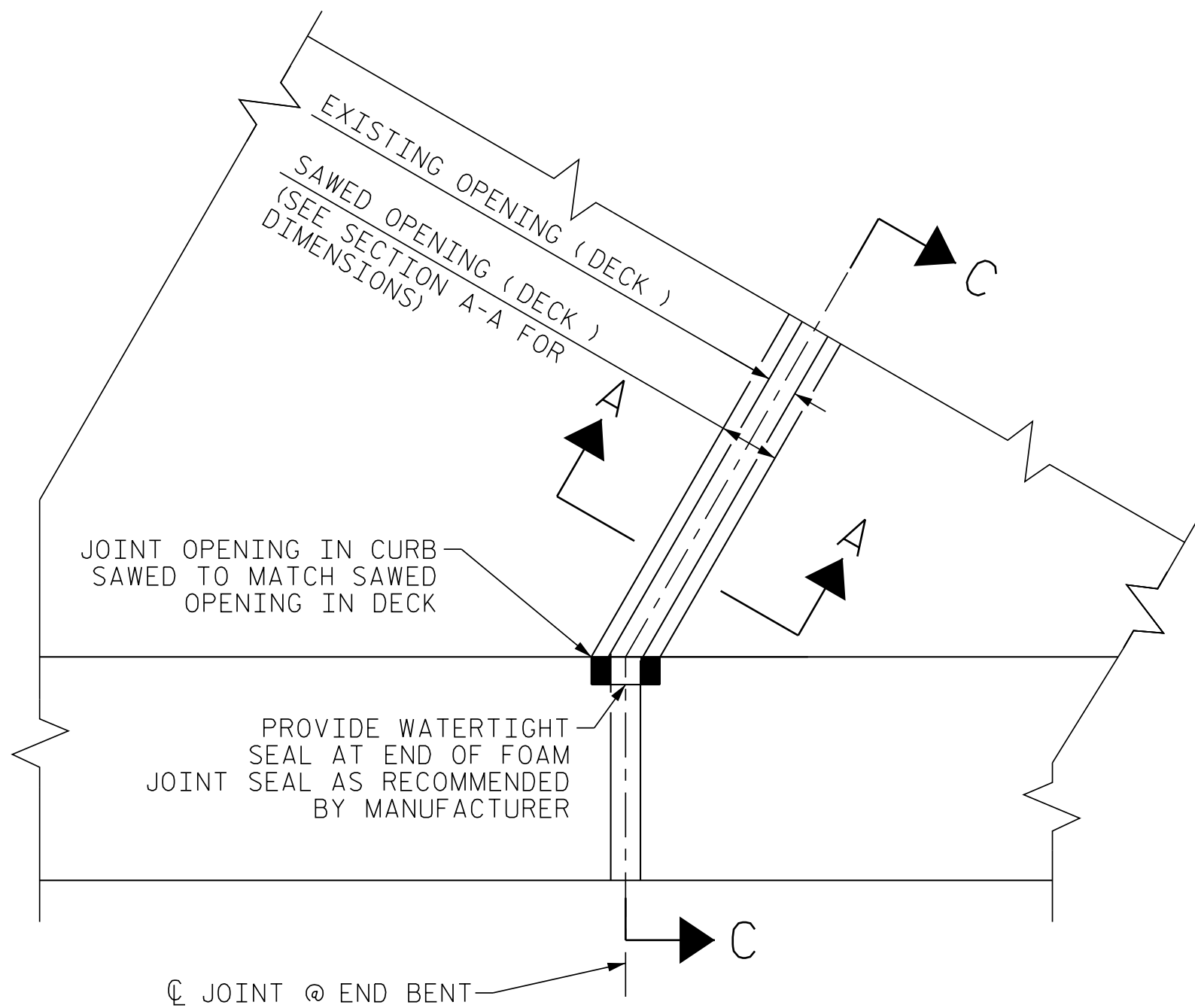
A MANUFACTURER'S CERTIFIED TRAINED REPRESENTATIVE SHALL BE PRESENT DURING THE INSTALLATION OF THE FIRST JOINT OF THE PROJECT, OR UNTIL THE ENGINEER IS SATISFIED WITH THE INSTALLATION PROCESS.

FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE DECK REPAIR FOR PC OVERLAY SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.

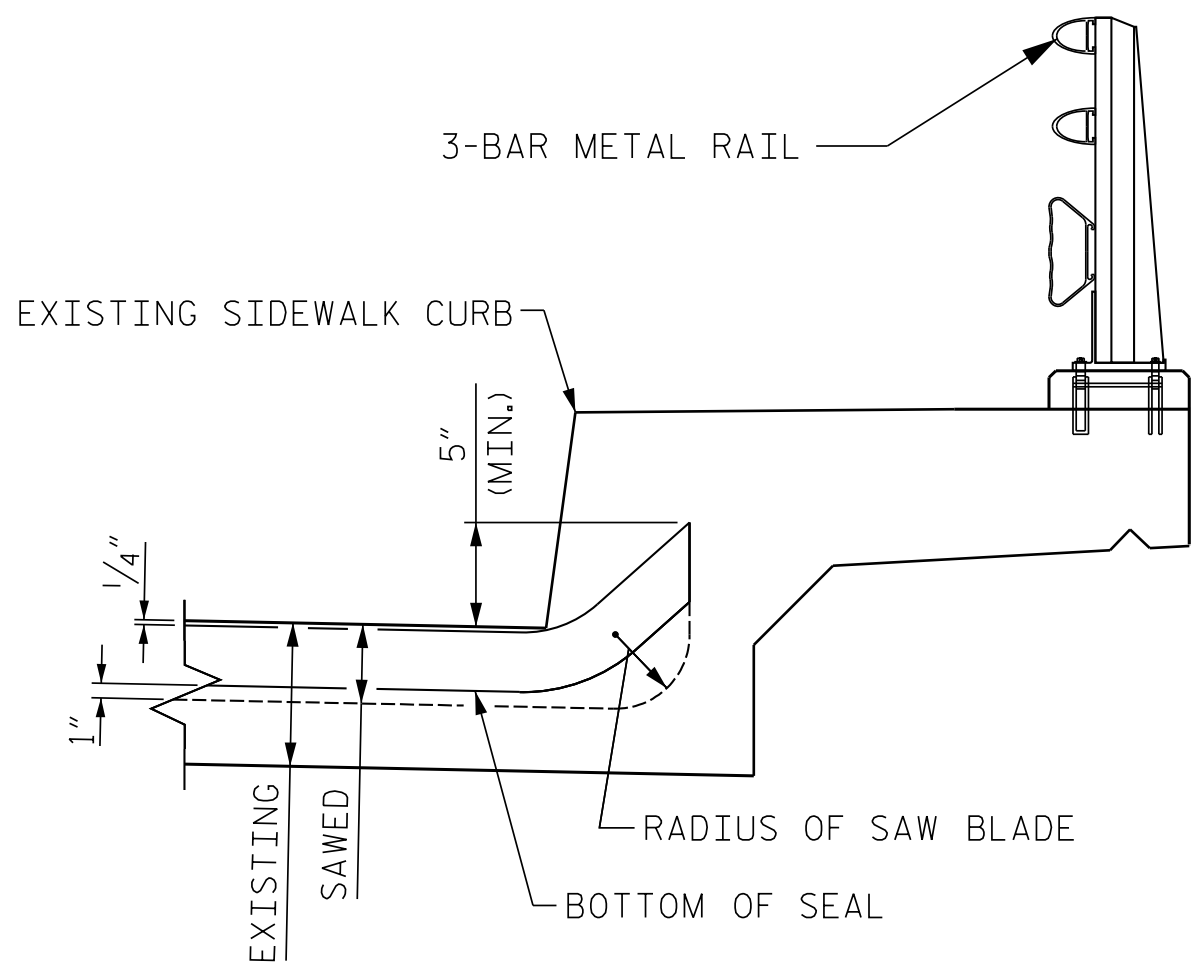
FOAM JOINTS SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION.

JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION A-A



PLAN
AT END BENT



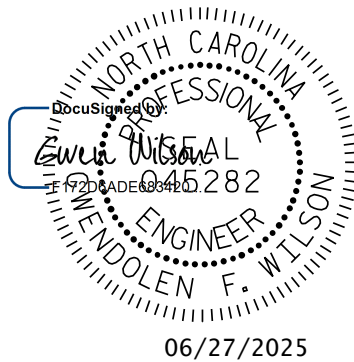
SECTION C-C

PROJECT NO. I-5880
FORSYTH COUNTY
BRIDGE: 330029

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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JOINT DETAILS



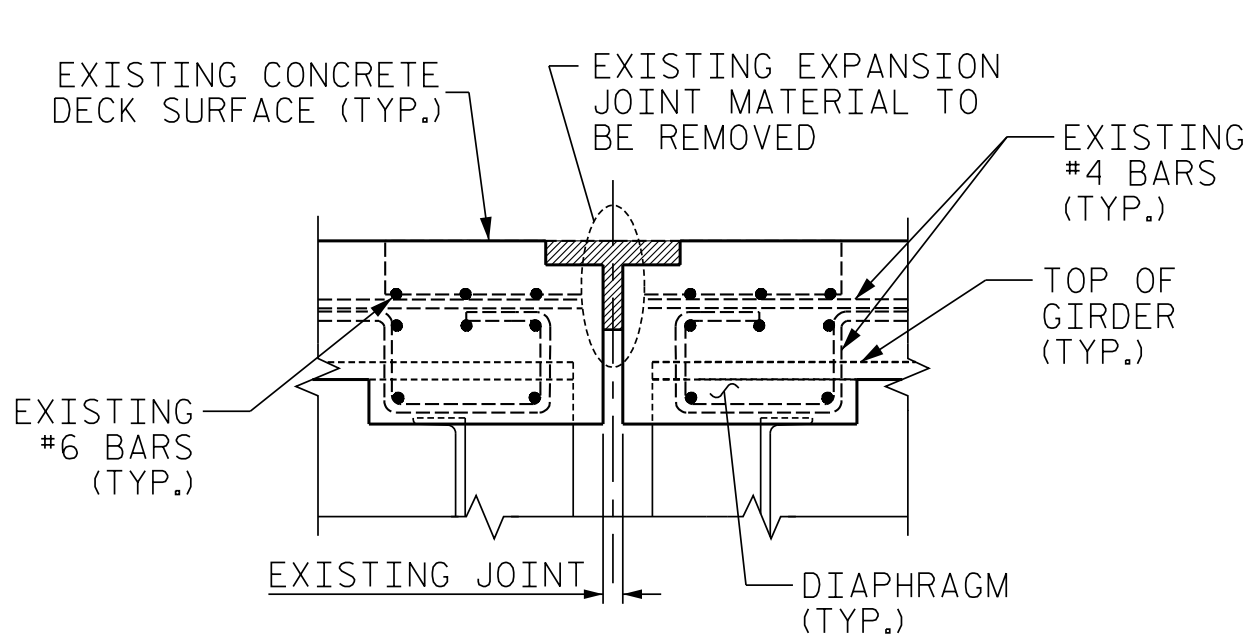
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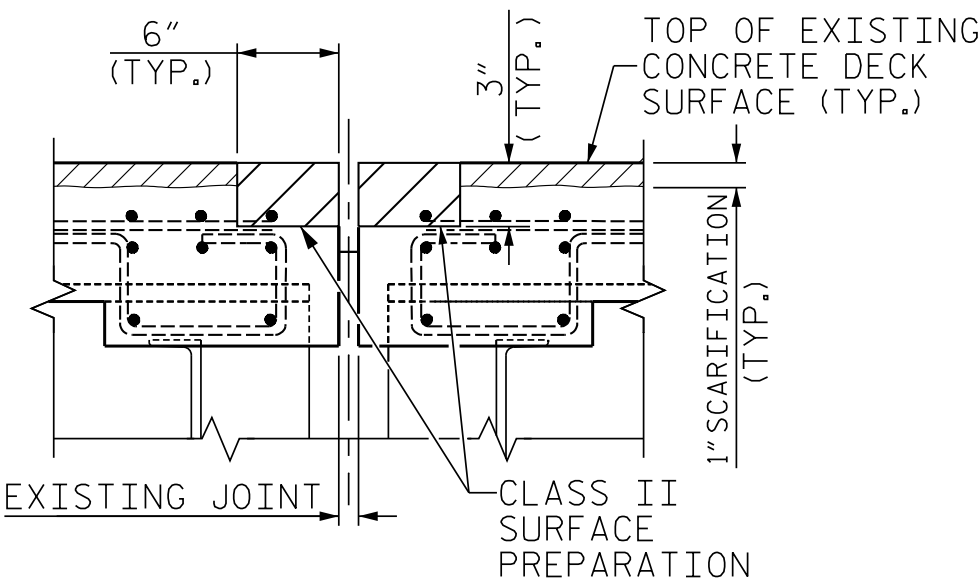
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REVISIONS						SHEET NO. S1-8
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1			3			TOTAL SHEETS 21
2			4			

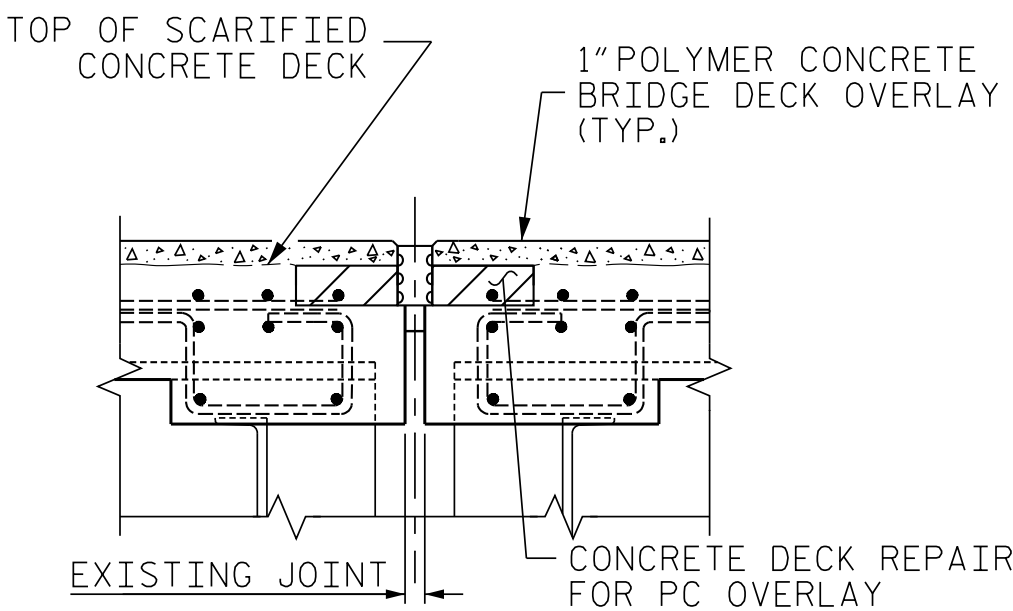
DWN. BY: DATE: 10/2024
CHKD. BY: DATE: 11/2024



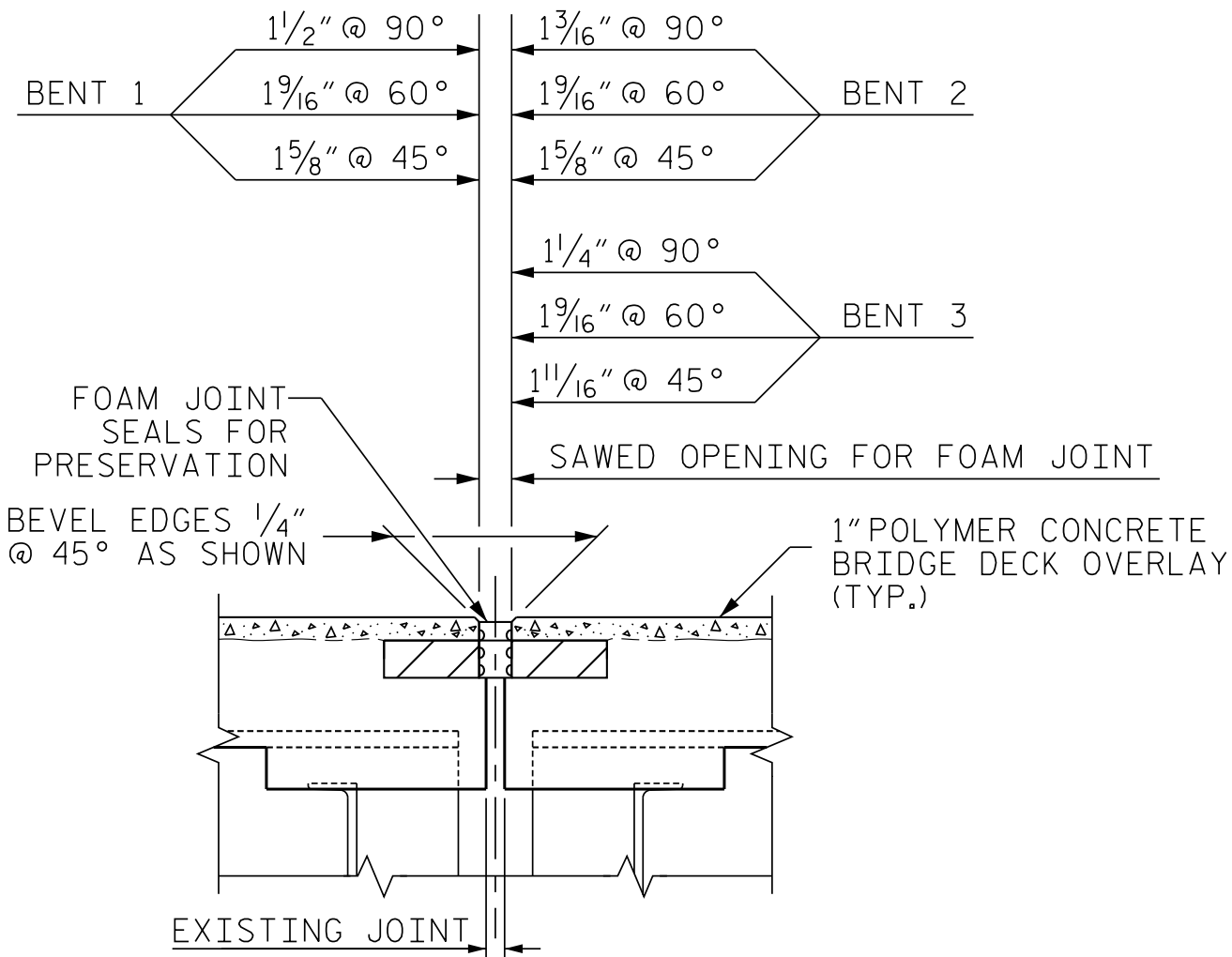
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION AND SCARIFICATION



PROPOSED JOINT REPAIR



PROPOSED FOAM JOINT SEAL

NOTES

FOR CLASS II SURFACE PREPARATION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEALS SHALL BE 2".

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE.

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

DURING THE JOINT INSTALLATION PROCEDURE, THE JOINT AND SURROUNDING AREA SHALL BE KEPT CLEAN AND FREE OF DEBRIS.

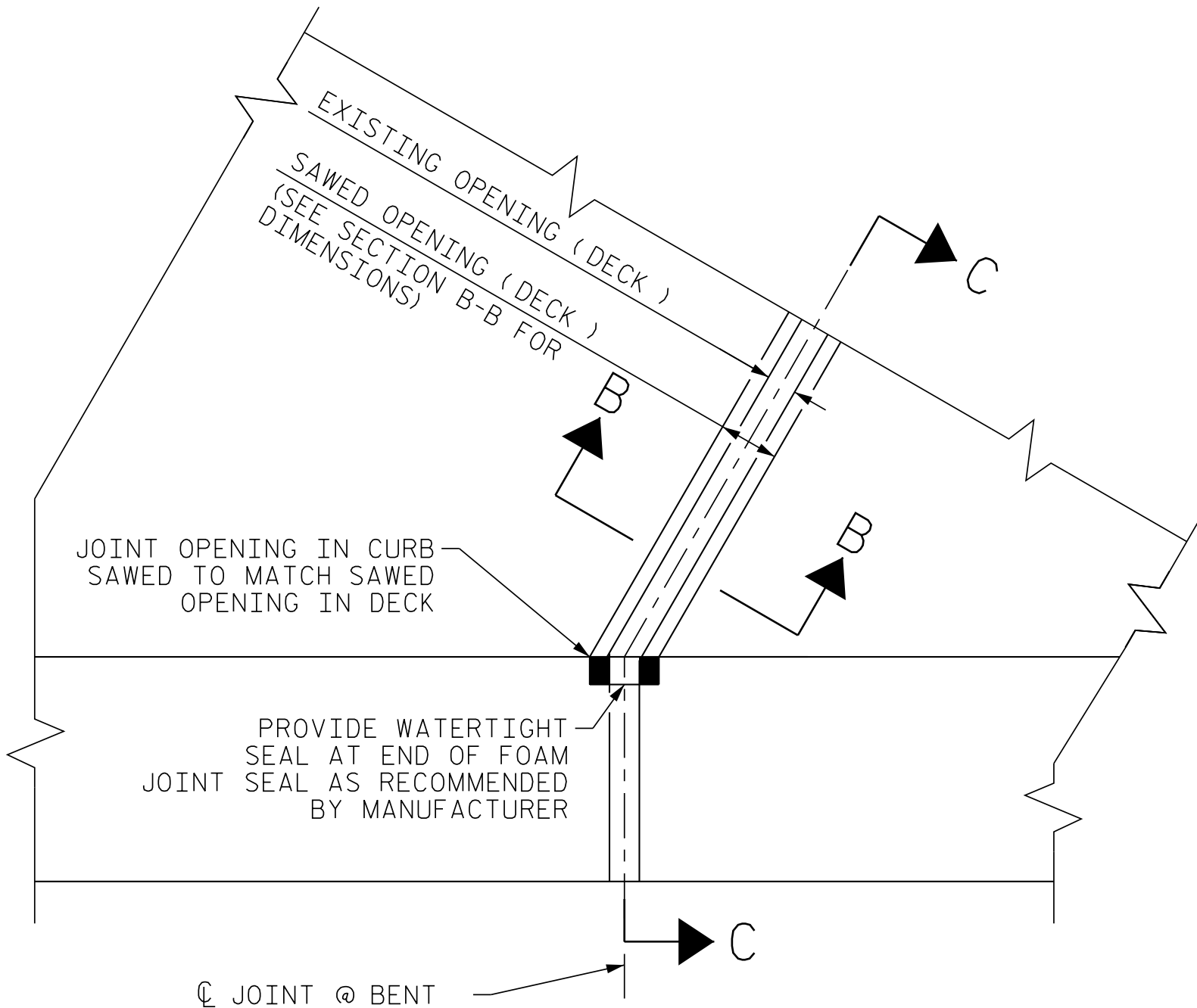
A MANUFACTURER'S CERTIFIED TRAINED REPRESENTATIVE SHALL BE PRESENT DURING THE INSTALLATION OF THE FIRST JOINT OF THE PROJECT, OR UNTIL THE ENGINEER IS SATISFIED WITH THE INSTALLATION PROCESS.

FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE DECK REPAIR FOR PC OVERLAY SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.

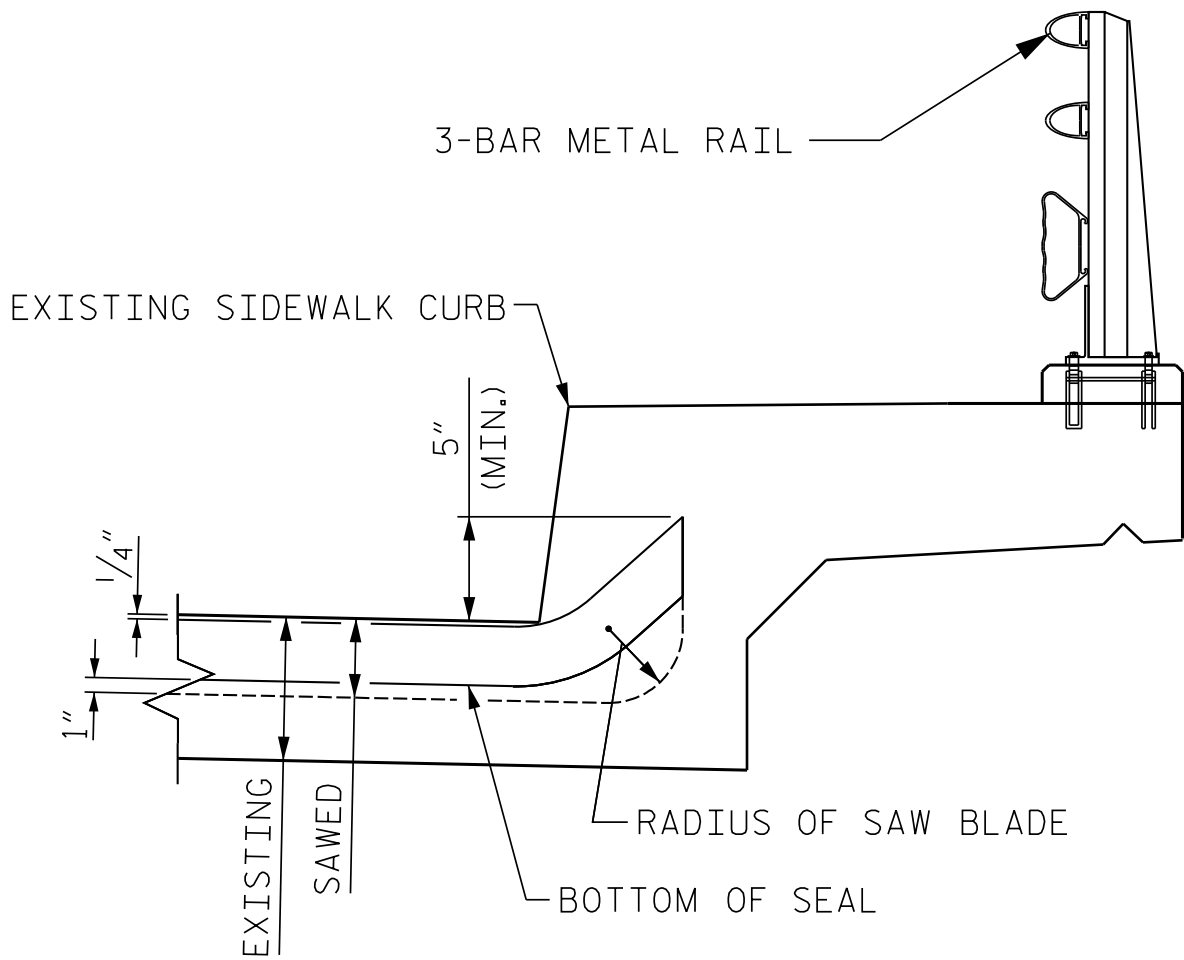
FOAM JOINTS SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION.

JOINT INSTALLATION SEQUENCE AT BENTS

SECTION B-B



PLAN AT BENT



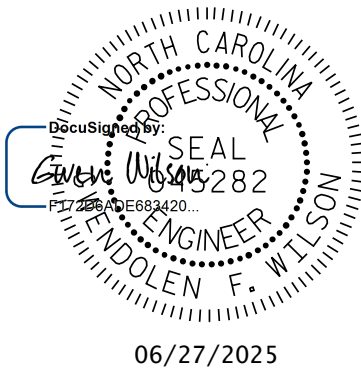
SECTION C-C

LOCATION	FOAM JOINT SEALS FOR PRESERVATION
	LIN. FT.
END BENT 1	110.1
BENT 1	106.0
BENT 2	101.2
BENT 3	98.3
END BENT 2	98.3
* TOTAL	513.8

* BASED ON THE MINIMUM BLOCKOUT SHOWN

PROJECT NO. I-5880
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BRIDGE: 330029

SHEET 2 OF 2



STATE OF NORTH CAROLINA
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JOINT DETAILS

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1			3			TOTAL SHEETS 21
2			4			

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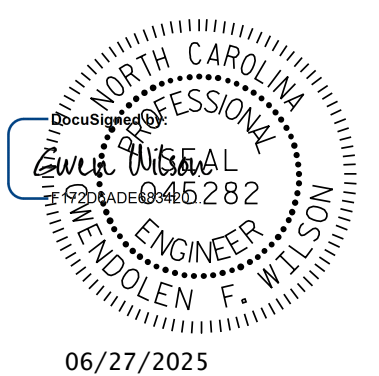
CONCRETE MEDIAN AT
END OF APPROACH SLAB

CONCRETE MEDIAN AT END BENT

CONCRETE MEDIAN AT BENT

CONCRETE MEDIAN

THE DIMENSIONS SHOWN FOR THE PROPOSED CONCRETE MEDIAN
PLACEMENT ARE FROM THE BEST INFORMATION AVAILABLE. IT IS
THE CONTRACTORS RESPONSIBILITY TO CAREFULLY MEASURE AND
RECORD THE LENGTH, SIZE AND LOCATION OF THE EXISTING
CONCRETE MEDIAN PRIOR TO REMOVAL. AFTER THE COMPLETION OF
THE BRIDGE DECK OVERLAY, THE CONTRACTOR WILL PLACE THE NEW
CONCRETE MEDIAN TO MATCH THE LENGTH, SIZE AND LOCATION OF
THE CONCRETE MEDIAN THAT WAS REMOVED.



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RALEIGH

CONCRETE MEDIAN

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CHKD. BY: GFW	DATE: 11/2024

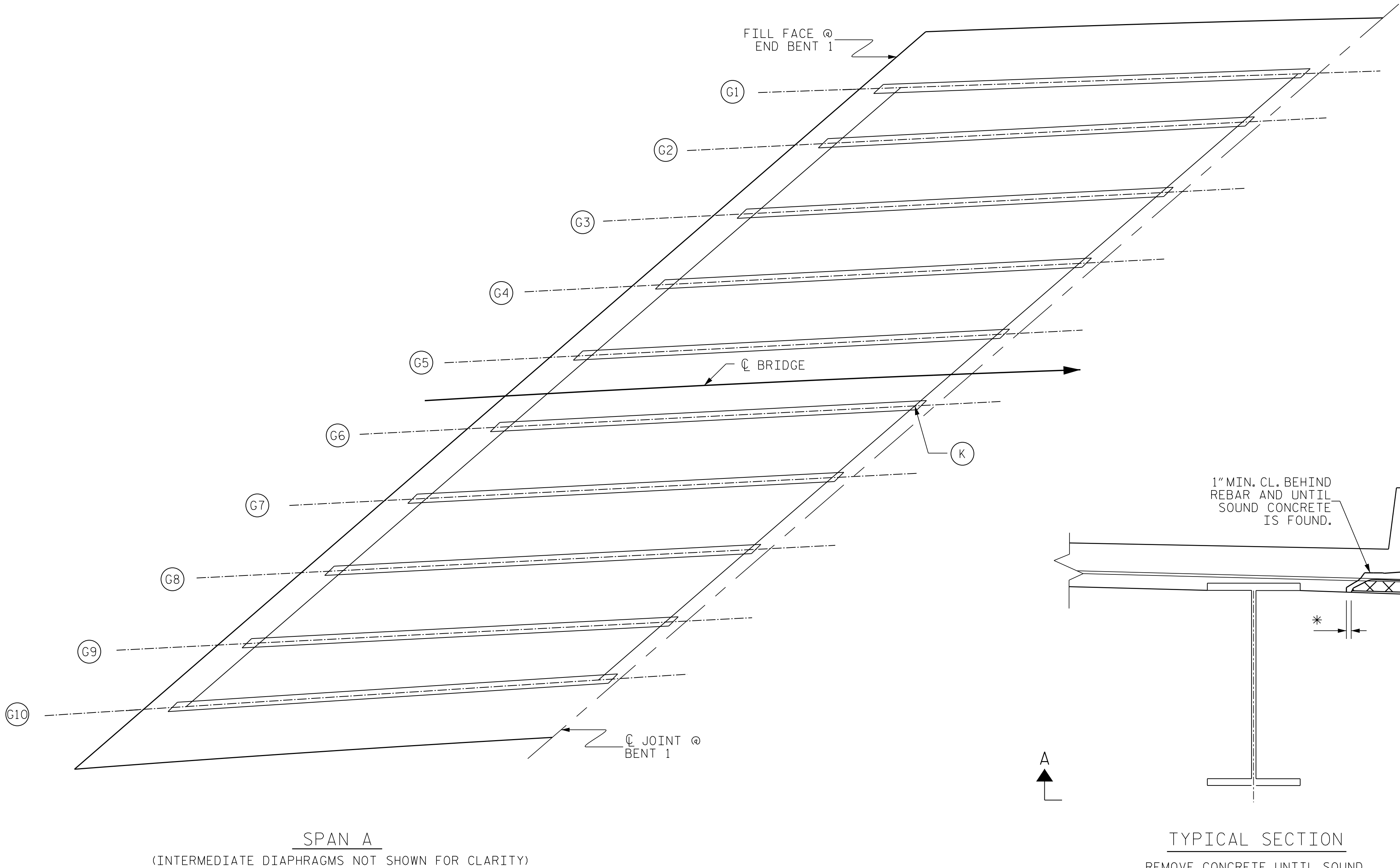
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	1			3			TOTAL SHEETS 21
	2			4			

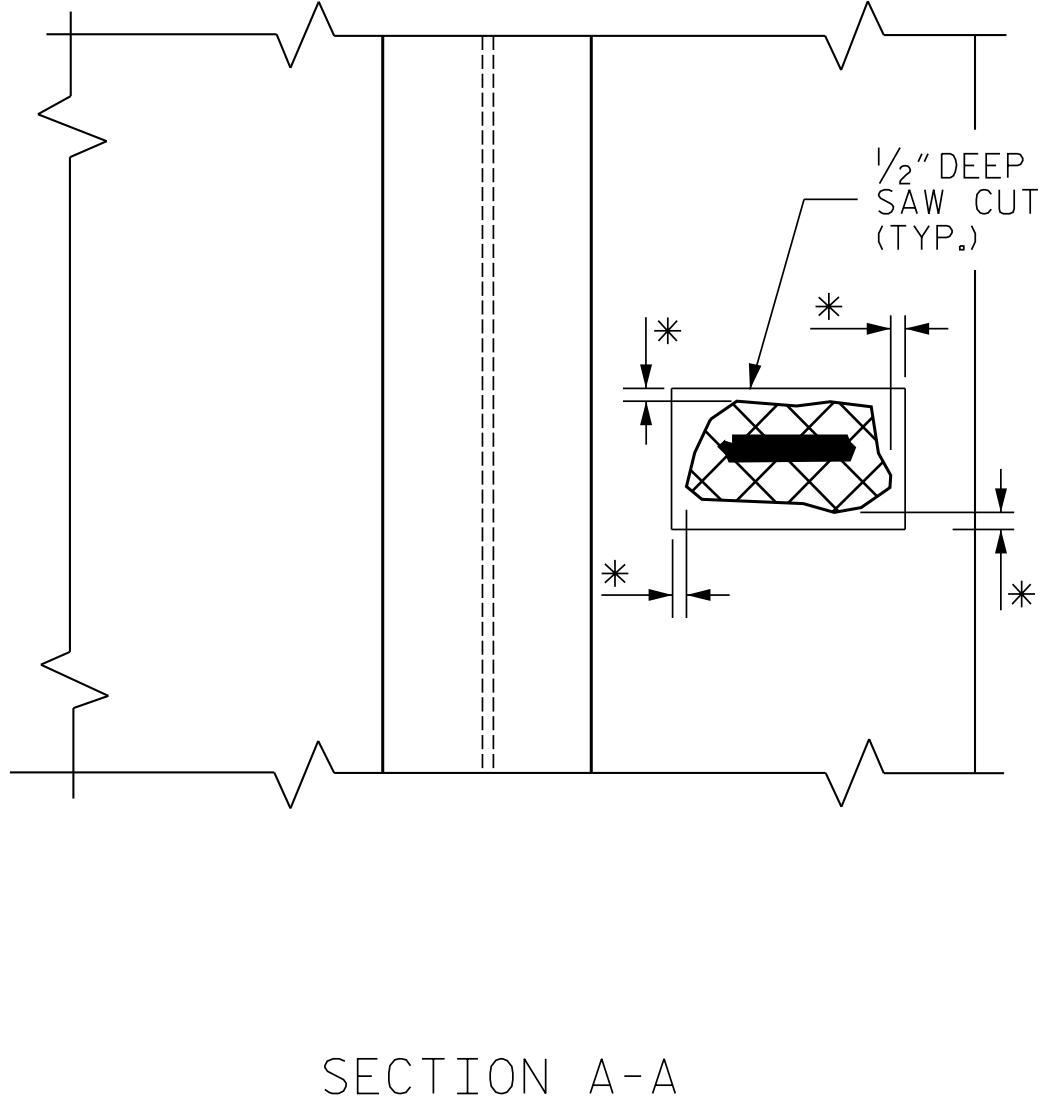
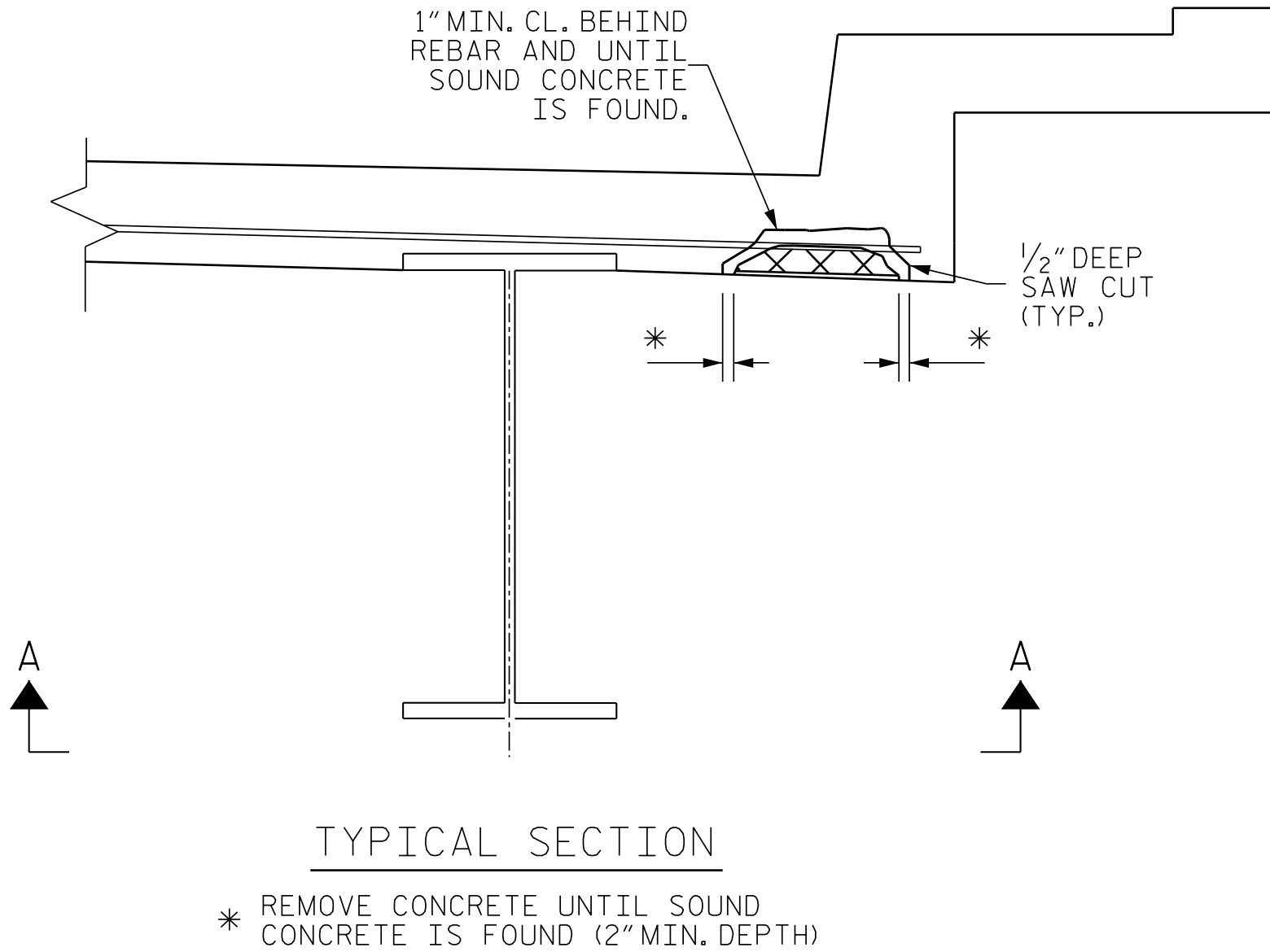
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DATE: 5/5/2025
TIME: 5/5/2025



AS-BUILT QUANTITY REPAIR TABLE				
DECK UNDERSIDE REPAIRS-SPAN A				
SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
UNDERSIDE OF DECK	0.0	0.0		
UNDERSIDE OF OVERHANG	0.0	0.0		
DIAPHRAGM	0.0	0.0		
OTHER REPAIRS		ESTIMATE	ACTUAL	

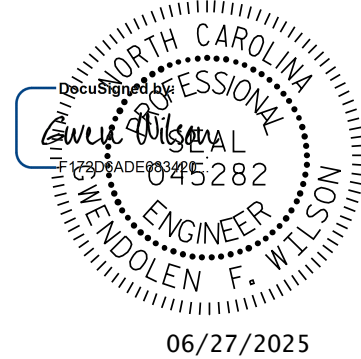
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. SEE REPAIR DETAILS.

- # GIRDER NUMBER
- (K) STEEL BEARING KEEPER ANGLE ASSEMBLY
- SHOTCRETE REPAIRS
- BEARING REPLACEMENT



OVERHANG REPAIR DETAILS

BEAM REPAIR QUANTITY TABLE			
BEARING REPLACEMENT		STEEL BEARING KEEPER ANGLE ASSEMBLY	
EA.		EA.	
ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
0		1	



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BRIDGE: 330029

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK UNDERSIDE REPAIR
SPAN A

REVISIONS						SHEET NO. S1-11
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 21
2			4			

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CHKD. BY: GFW DATE: 11/2024

NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

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

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

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

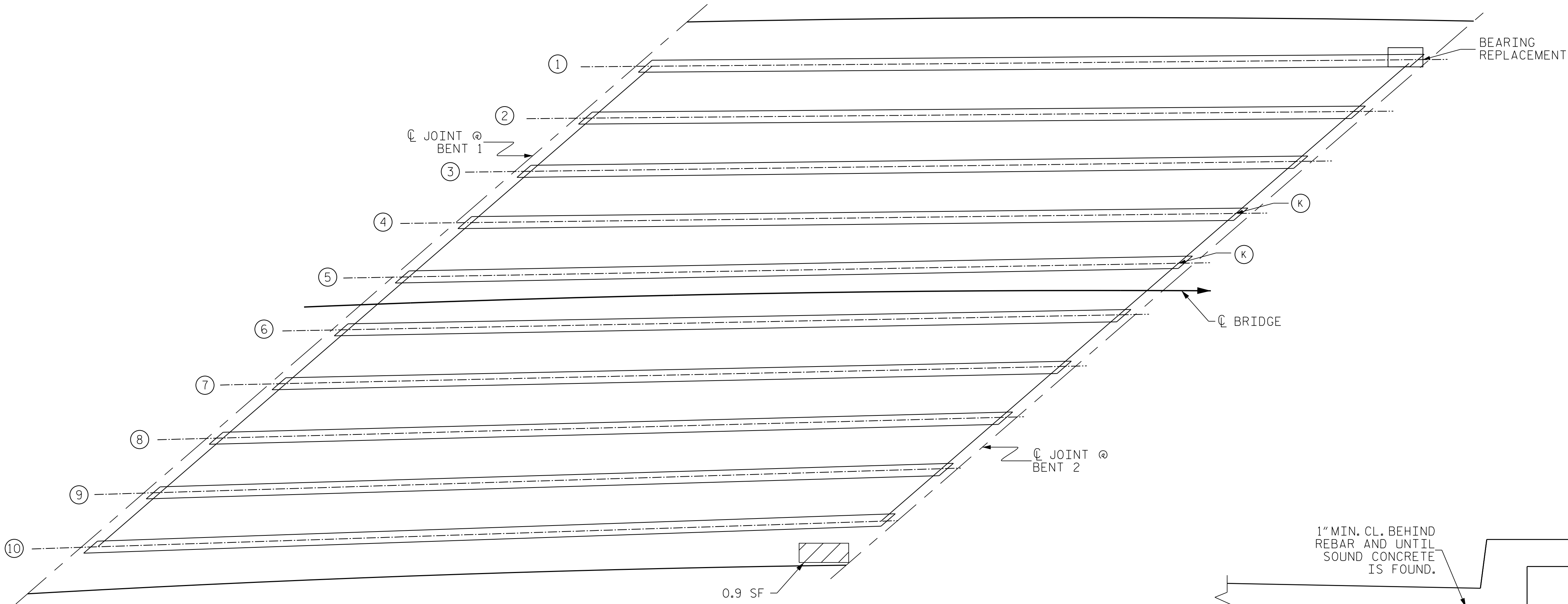
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR STEEL BEARING KEEPER ANGLE ASSEMBLY, SEE SPECIAL PROVISIONS.

FOR STEEL BEARING KEEPER ANGLE ASSEMBLY DETAILS, SEE "STEEL BEARING KEEPER ANGLE ASSEMBLY DETAILS" SHEET.

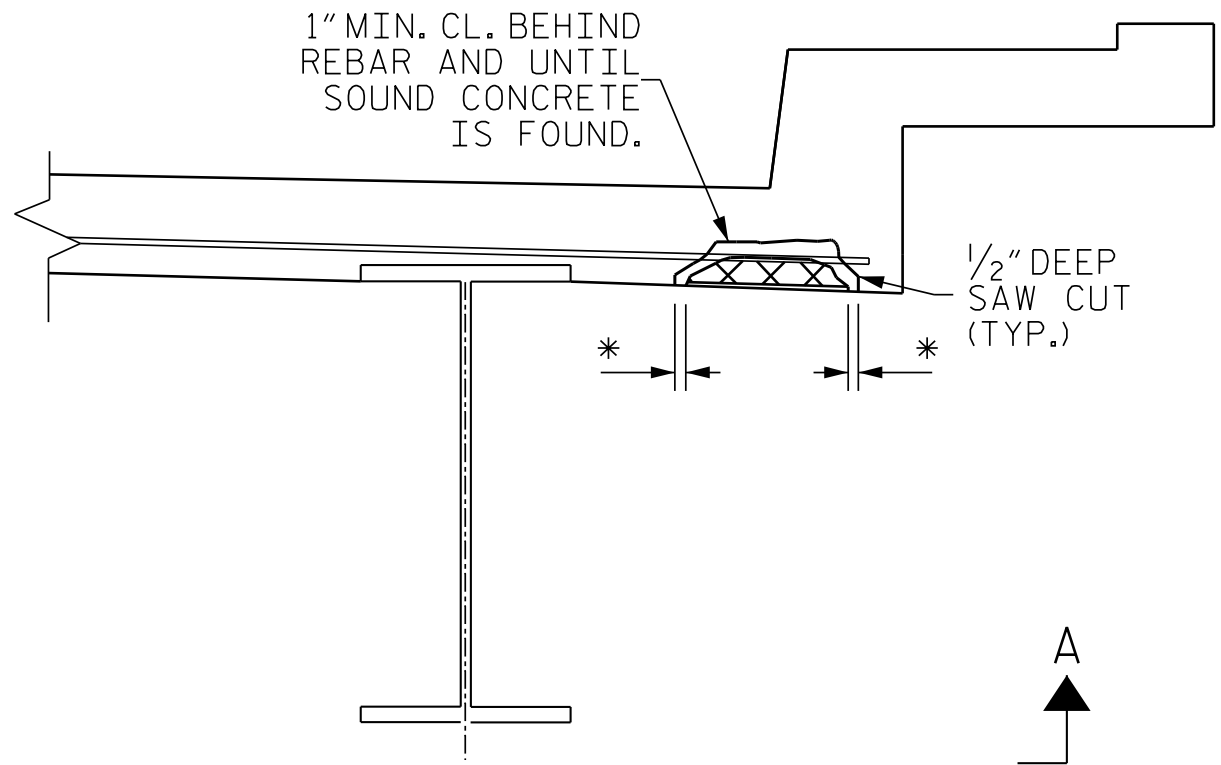
FOR SHOTCRETE REPAIRS LOCATED IN THE UNDERSIDE OF THE DECK OVERHANG, SEE "OVERHANG REPAIR DETAILS."

FOR BEARING REPLACEMENT, SEE SPECIAL PROVISIONS.



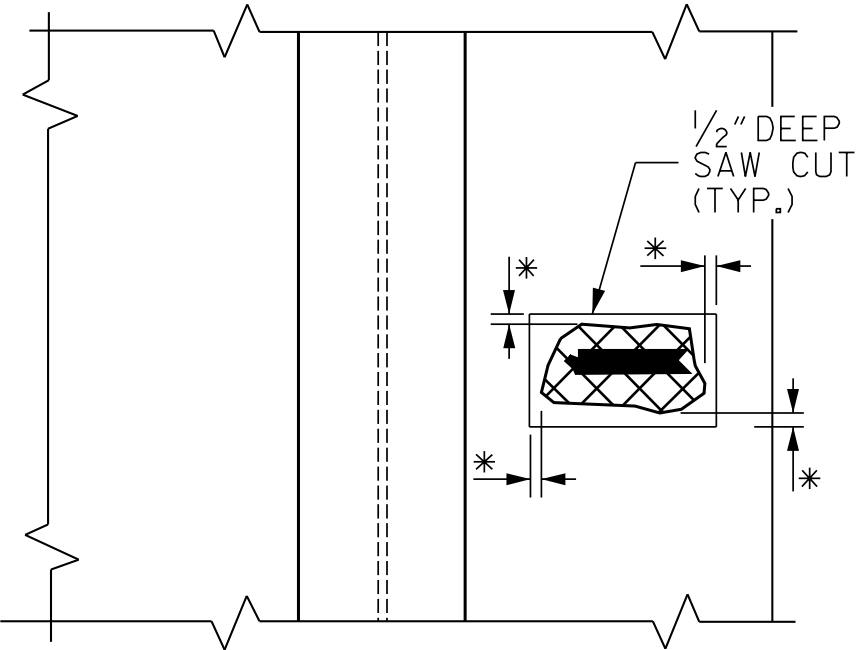
SPAN B

(INTERMEDIATE DIAPHRAGMS NOT SHOWN FOR CLARITY)



TYPICAL SECTION

* REMOVE CONCRETE UNTIL SOUND CONCRETE IS FOUND (2" MIN. DEPTH)



SECTION A-A

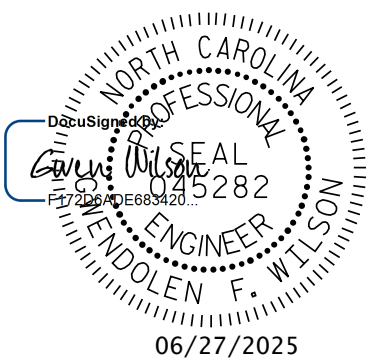
OVERHANG REPAIR DETAILS

AS-BUILT QUANTITY REPAIR TABLE				
DECK UNDERSIDE REPAIRS-SPAN B				
SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
UNDERSIDE OF DECK	0.0	0.0		
UNDERSIDE OF OVERHANG	0.9	0.2		
DIAPHRAGM	0.0	0.0		
OTHER REPAIRS	ESTIMATE		ACTUAL	

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

- # GIRDER NUMBER
- (K) STEEL BEARING KEEPER ANGLE ASSEMBLY
- [Hatched Box] SHOTCRETE REPAIRS
- [Solid Box] BEARING REPLACEMENT

BEAM REPAIR QUANTITY TABLE			
BEARING REPLACEMENT		STEEL BEARING KEEPER ANGLE ASSEMBLY	
EA.		EA.	
ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
1		2	



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BRIDGE: 330029

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK UNDERSIDE REPAIR
SPAN B

REVISIONS						SHEET NO. S1-12
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 21
2			4			

NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

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

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

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

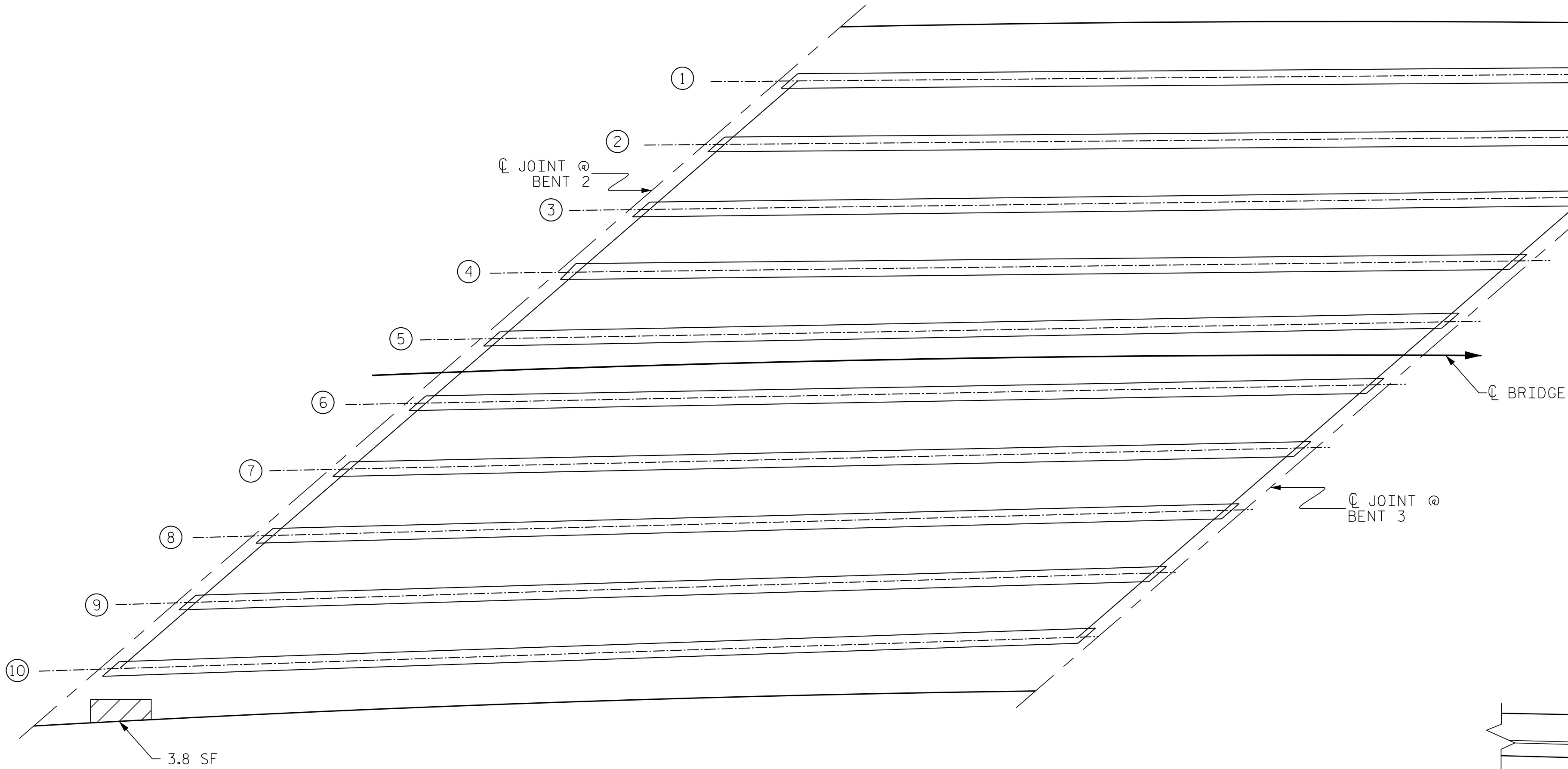
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR STEEL BEARING KEEPER ANGLE ASSEMBLY, SEE SPECIAL PROVISIONS.

FOR STEEL BEARING KEEPER ANGLE ASSEMBLY DETAILS, SEE "STEEL BEARING KEEPER ANGLE ASSEMBLY DETAILS" SHEET.

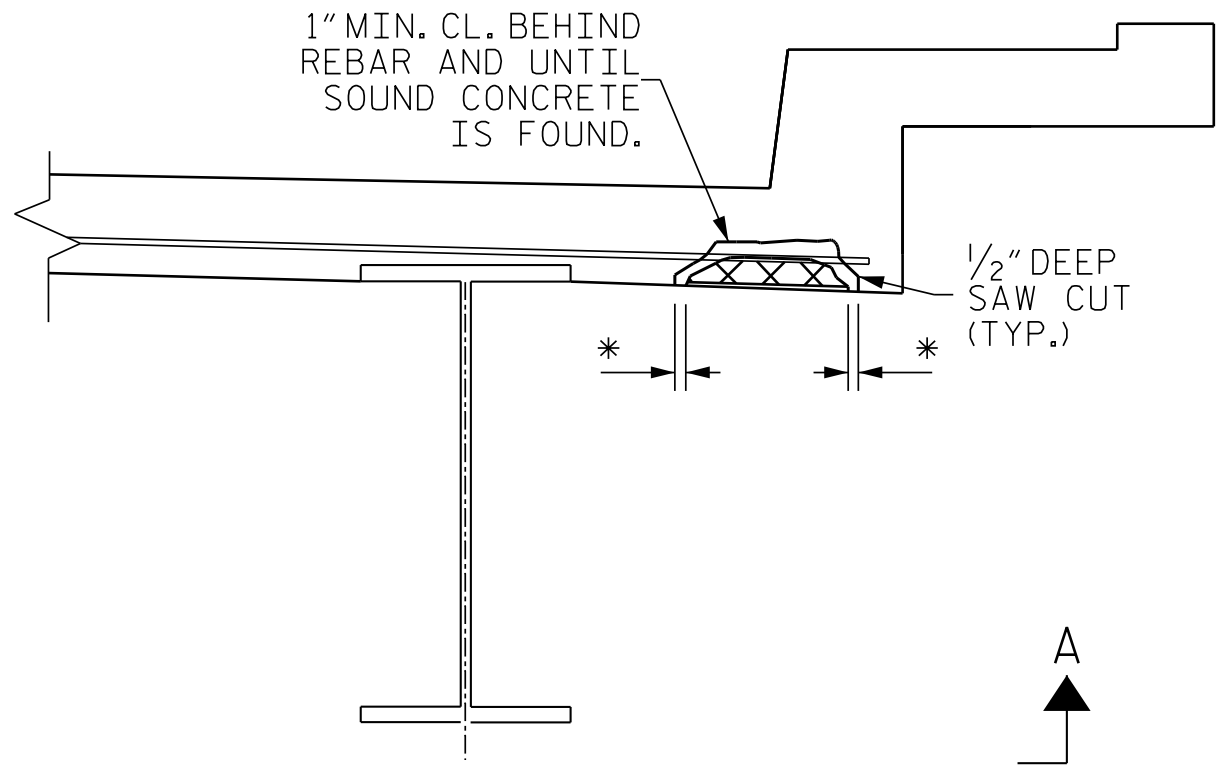
FOR SHOTCRETE REPAIRS LOCATED IN THE UNDERSIDE OF THE DECK OVERHANG, SEE "OVERHANG REPAIR DETAILS".

FOR BEARING REPLACEMENT, SEE SPECIAL PROVISIONS.



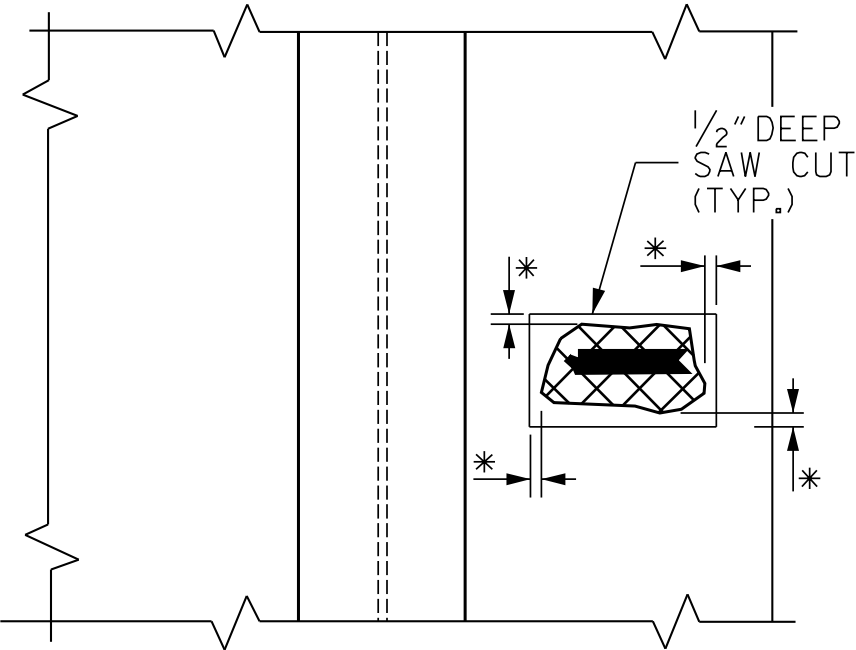
SPAN C

(INTERMEDIATE DIAPHRAGMS NOT SHOWN FOR CLARITY)



TYPICAL SECTION

* REMOVE CONCRETE UNTIL SOUND CONCRETE IS FOUND (2" MIN. DEPTH)



SECTION A-A

OVERHANG REPAIR DETAILS

AS-BUILT QUANTITY REPAIR TABLE				
DECK UNDERSIDE REPAIRS-SPAN C				
SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
UNDERSIDE OF DECK	0.0	0.0		
UNDERSIDE OF OVERHANG	3.8	0.6		
DIAPHRAGM	0.0	0.0		
OTHER REPAIRS	ESTIMATE		ACTUAL	

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

- *

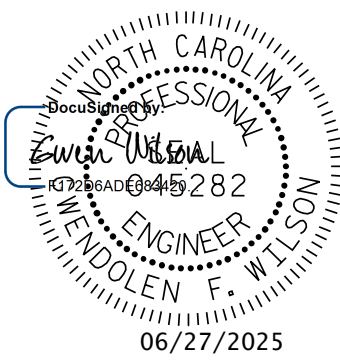
GIRDER NUMBER
- K

STEEL BEARING KEEPER ANGLE ASSEMBLY
- SHOTCRETE REPAIRS
- BEARING REPLACEMENT

BEAM REPAIR QUANTITY TABLE			
BEARING REPLACEMENT		STEEL BEARING KEEPER ANGLE ASSEMBLY	
EA.		EA.	
ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
0		0	

PROJECT NO. I-5880
FORSYTH COUNTY
BRIDGE: 330029

SHEET 3 OF 4



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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DECK UNDERSIDE REPAIR
SPAN C

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1			3		
2			4		

SHEET NO.
S1-13
TOTAL
SHEETS
21

DWN. BY: BC DATE: 10/2024
CHKD. BY: GFW DATE: 11/2024

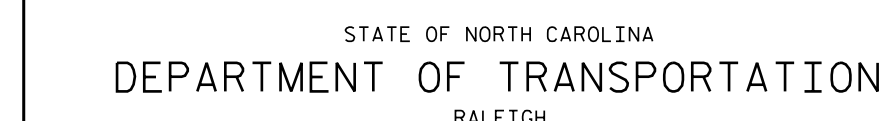


VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. SEE REPAIR DETAILS.

- | BEAM REPAIR QUANTITY TABLE | | | |
|----------------------------|--------|--|--------|
| BEARING REPLACEMENT | | STEEL BEARING KEEPER
ANGLE ASSEMBLY | |
| EA. | | EA. | |
| ESTIMATE | ACTUAL | ESTIMATE | ACTUAL |
| 0 | | 2 | |

OVERHANG REPAIR DETAILS

SHEET 4 OF 4



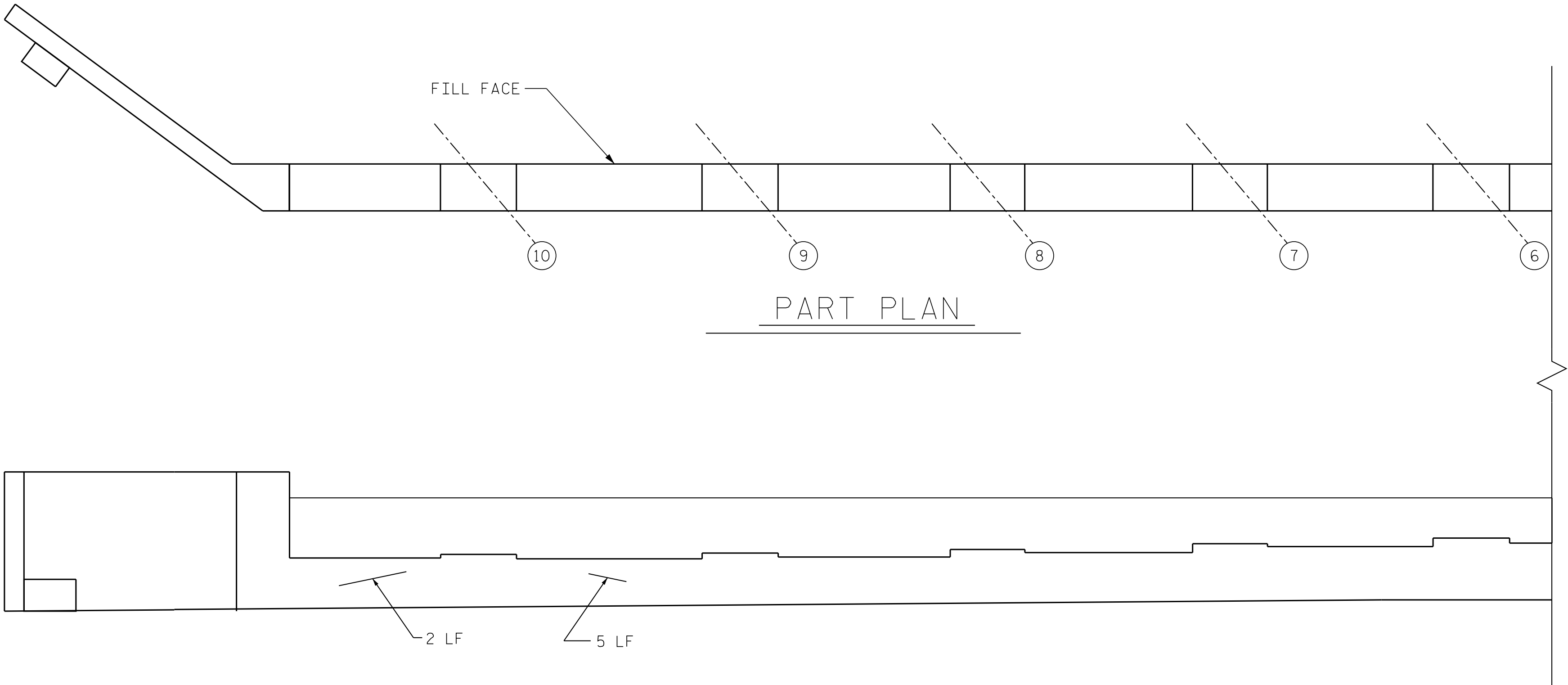
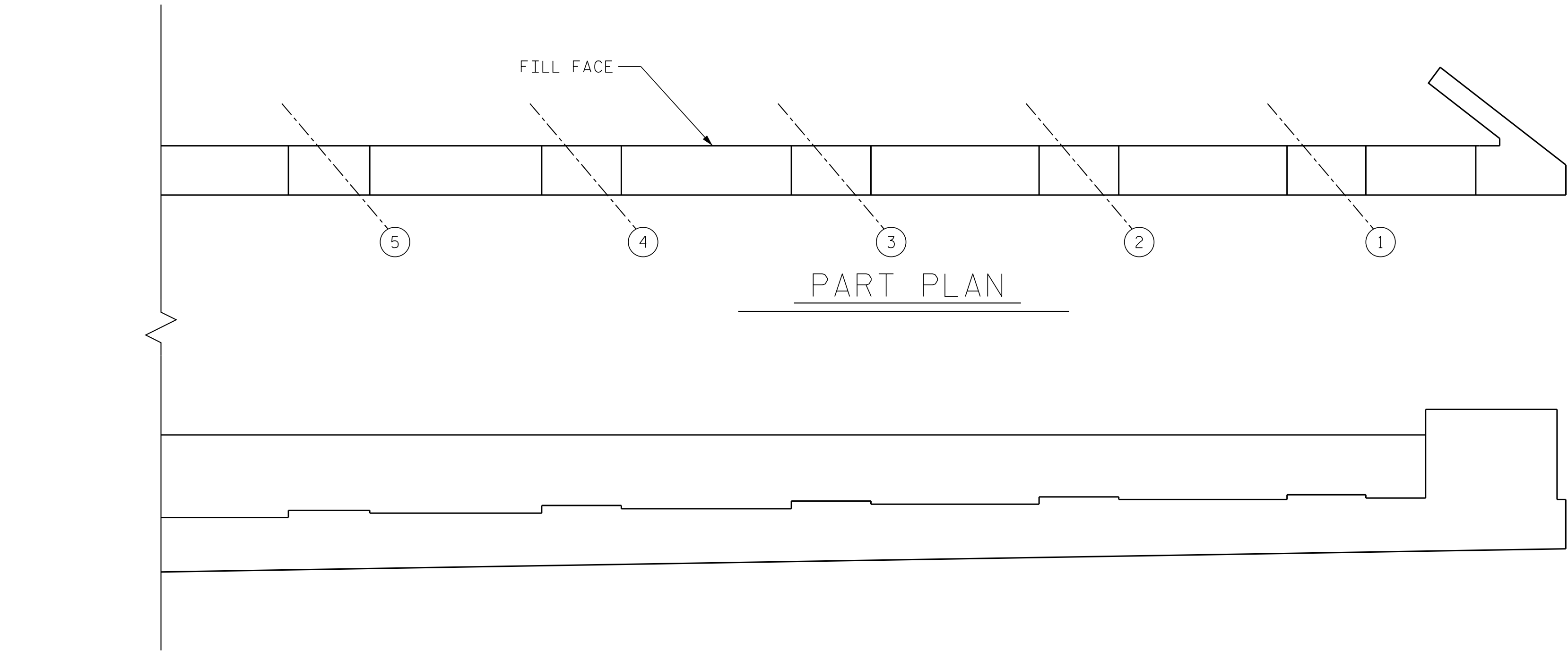
DECK UNDERSIDE REPAIR
SPAN D

DWN. BY: BC	DATE: 10/2024
CHKD. BY: GFW	DATE: 11/2024

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REVISIONS						SHEET NO. S1-14
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1			3			TOTAL SHEETS 21
2			4			



AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CURTAIN WALL	0.0	0.0		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CURTAIN WALL	0.0	0.0		
EPOXY RESIN INJECTION		LIN. FT.	LIN. FT.	
CAP		7.0		
CURTAIN WALL		0.0		
EPOXY COATING		SQ. FT.	LIN. FT.	
CAP		340.6		

NOTES

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARINGS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

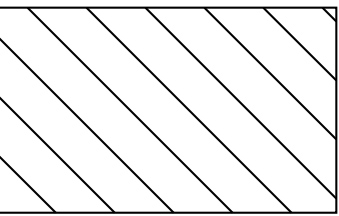
FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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

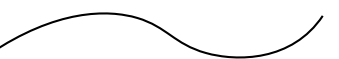
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

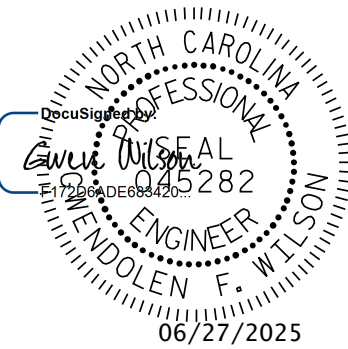


SHOTCRETE REPAIR



EPOXY RESIN INJECTION (ERI)

PROJECT NO. I-5880
FORSYTH COUNTY
BRIDGE: 330029



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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END BENT 1

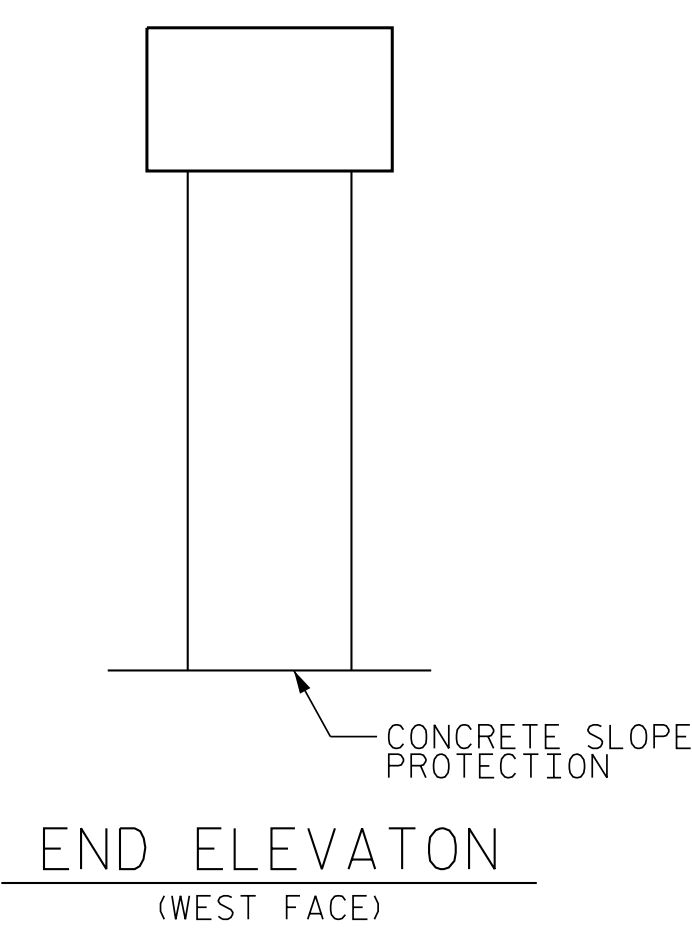
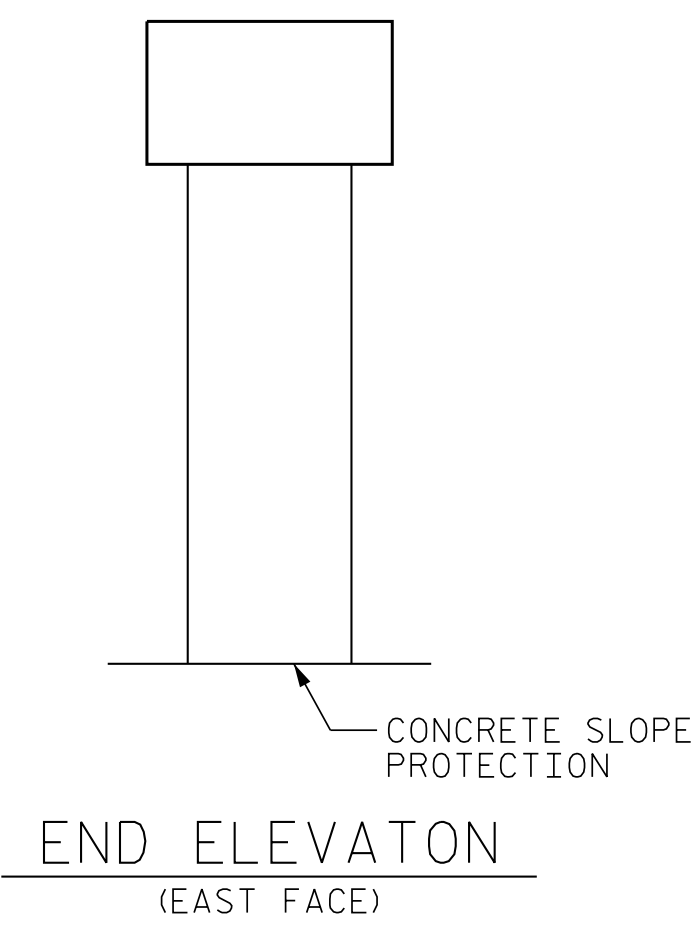
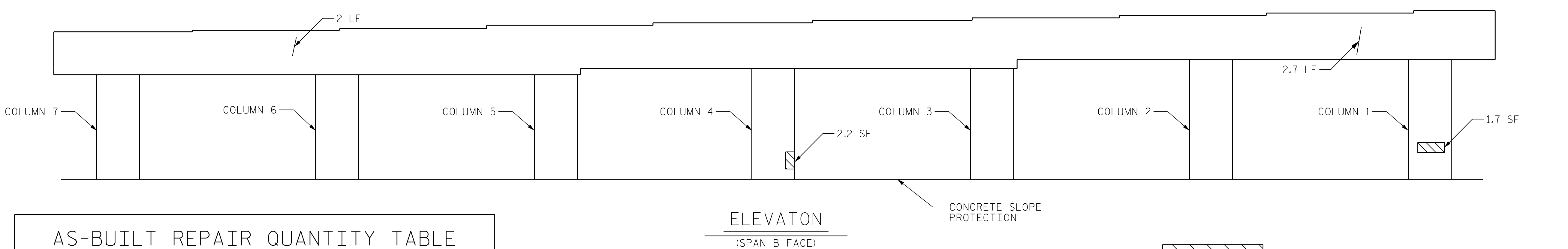
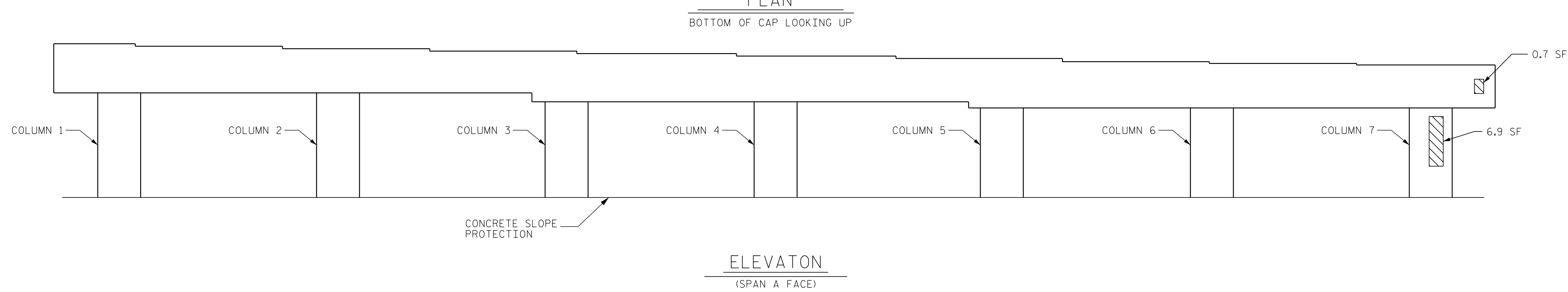
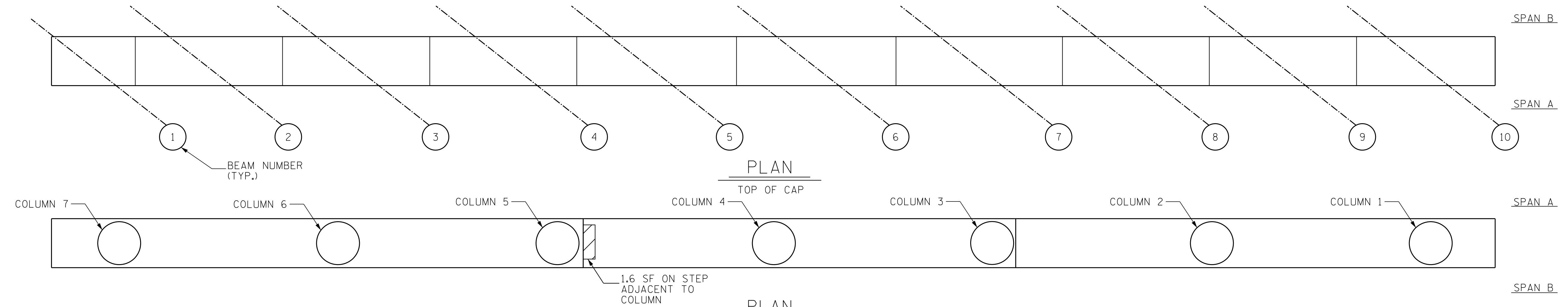
DOCUMENT NOT CONSIDERED FINAL
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1			3			TOTAL SHEETS 21
2			4			

DWN. BY: BC DATE: 10/2024
CHKD. BY: GFW DATE: 11/2024



AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMNS	0.0	0.0		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	2.3	0.5		
COLUMNS	10.8	2.4		
EPOXY RESIN INJECTION		LIN. FT.	LIN. FT.	
CAP		4.7		
COLUMNS		0.0		
EPOXY COATING		SQ. FT.	LIN. FT.	
CAP		450.3		

NOTES

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING.EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP.THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARINGS.

FOR SHOTCRETE REPAIRS,SEE SPECIAL PROVISIONS.

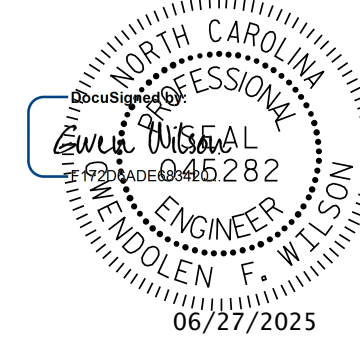
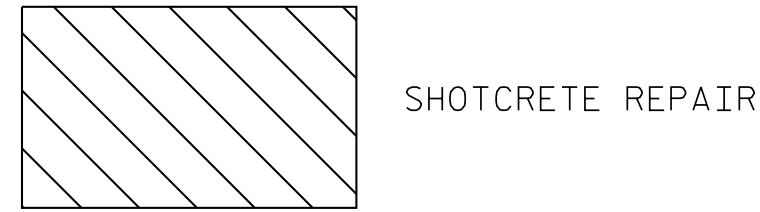
FOR CONCRETE REPAIRS,SEE SPECIAL PROVISIONS.

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

FOR EPOXY RESIN INJECTION,SEE SPECIAL PROVISIONS.

FOR EPOXY COATING,SEE SPECIAL PROVISIONS.

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER,THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.



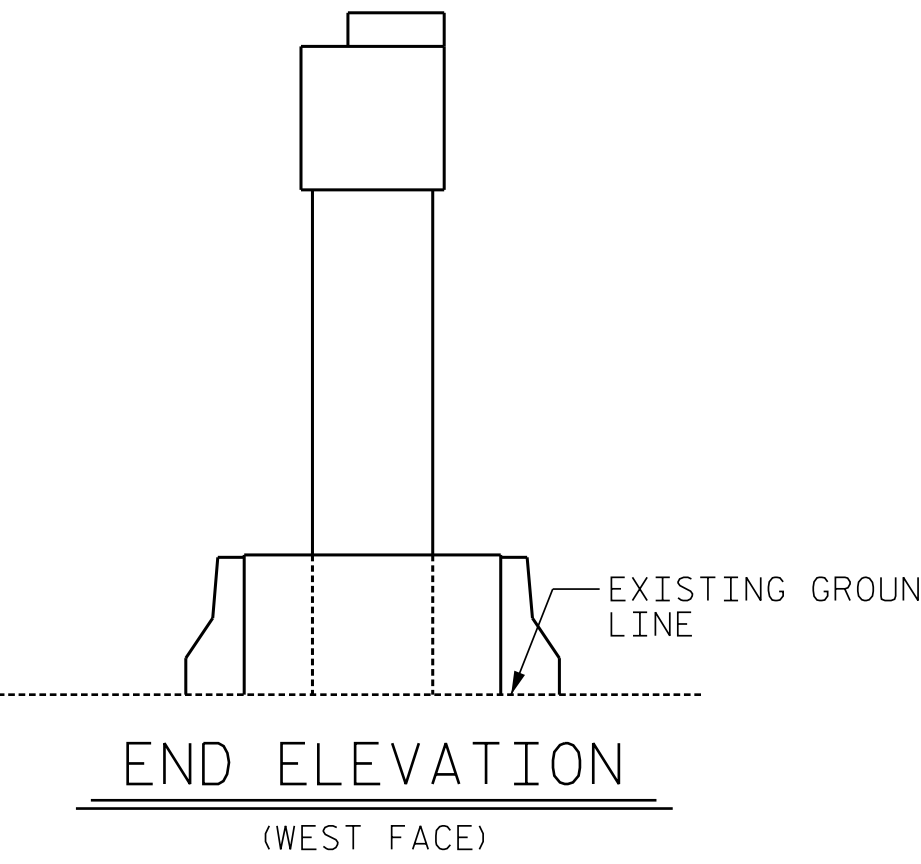
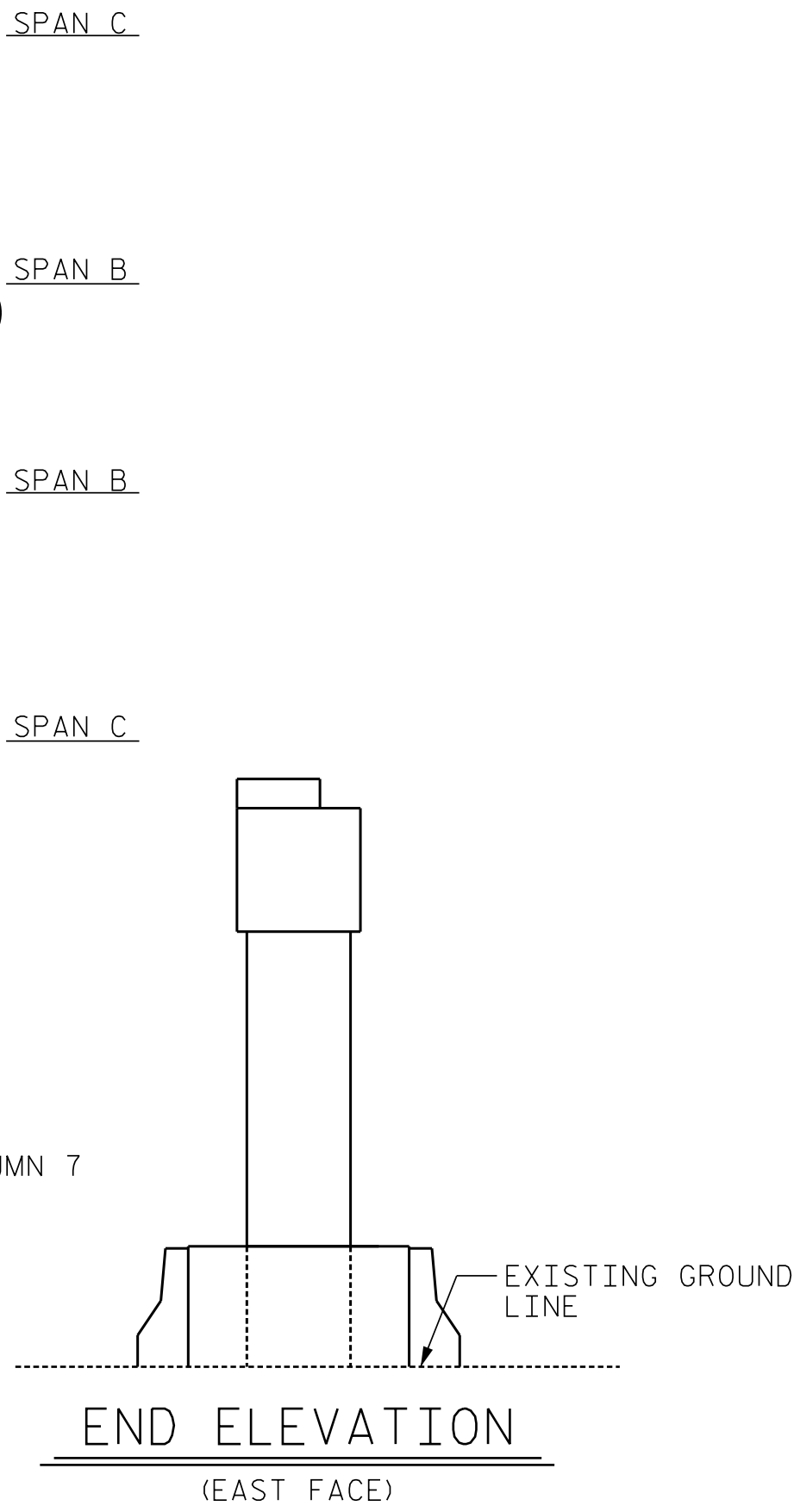
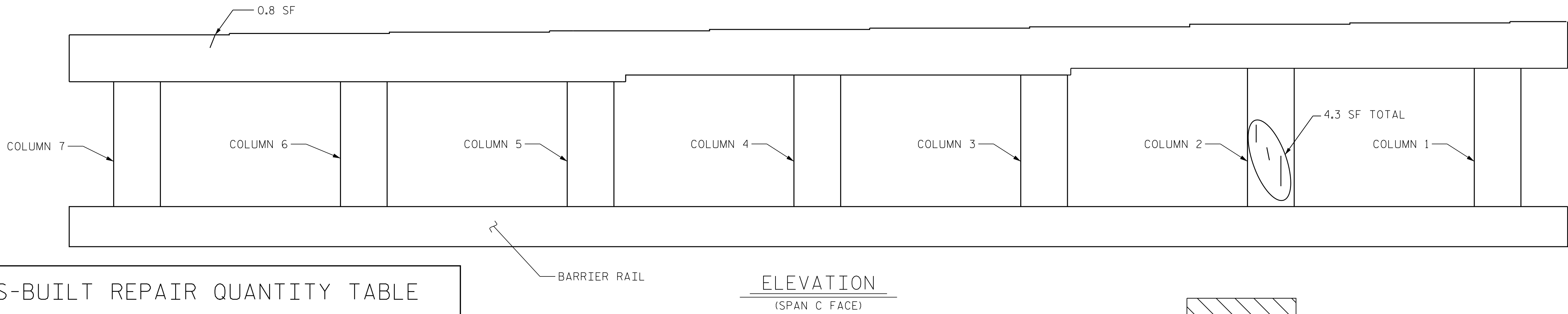
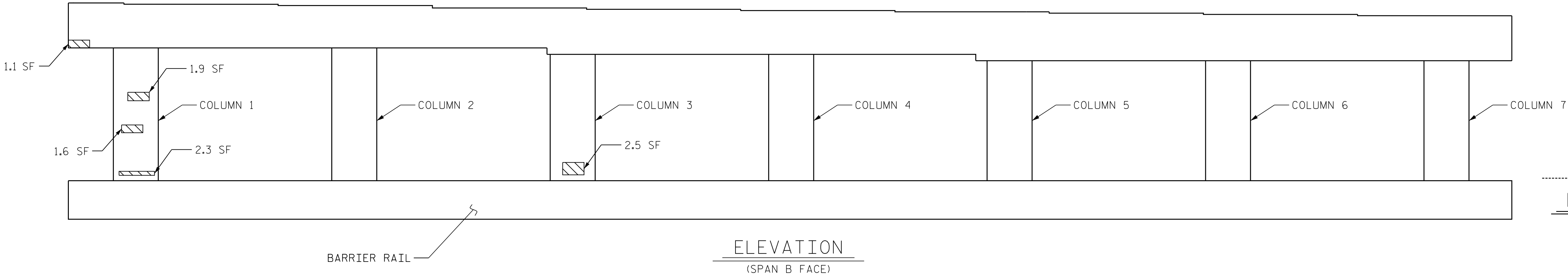
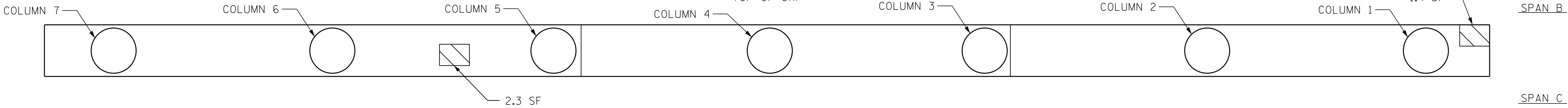
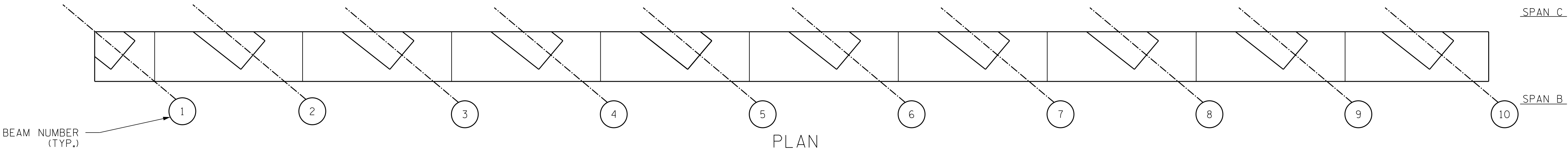
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FORSYTH COUNTY
BRIDGE: 330029

REVISIONS						SHEET NO. S1-16
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1			3			TOTAL SHEETS 21
2			4			



AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMNS	0.0	0.0		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	4.8	1.0		
COLUMNS	8.3	1.4		
EPOXY RESIN INJECTION		LIN. FT.	LIN. FT.	
CAP		0.8		
COLUMNS		4.3		
EPOXY COATING		SQ. FT.	LIN. FT.	
CAP		428.9		

NOTES

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARINGS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

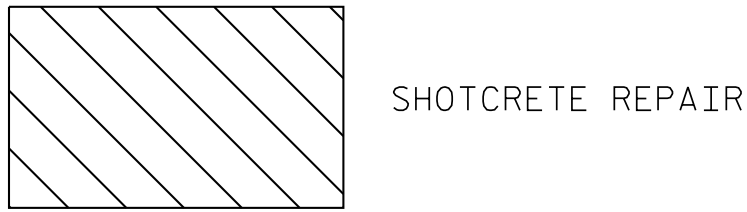
FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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

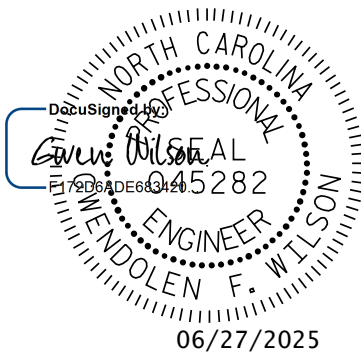
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.



EPOXY RESIN INJECTION (ERI)



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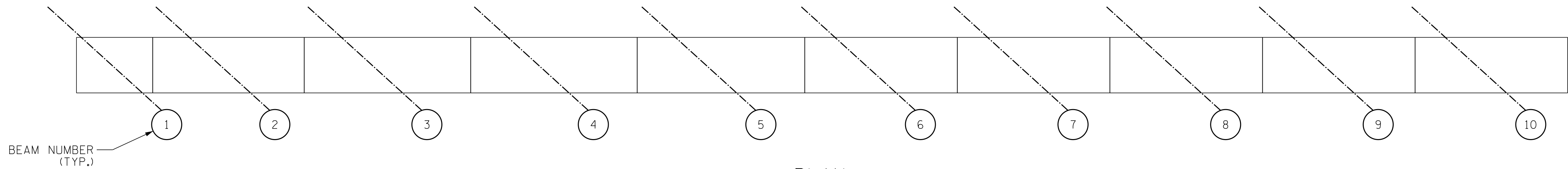
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BRIDGE: 330029

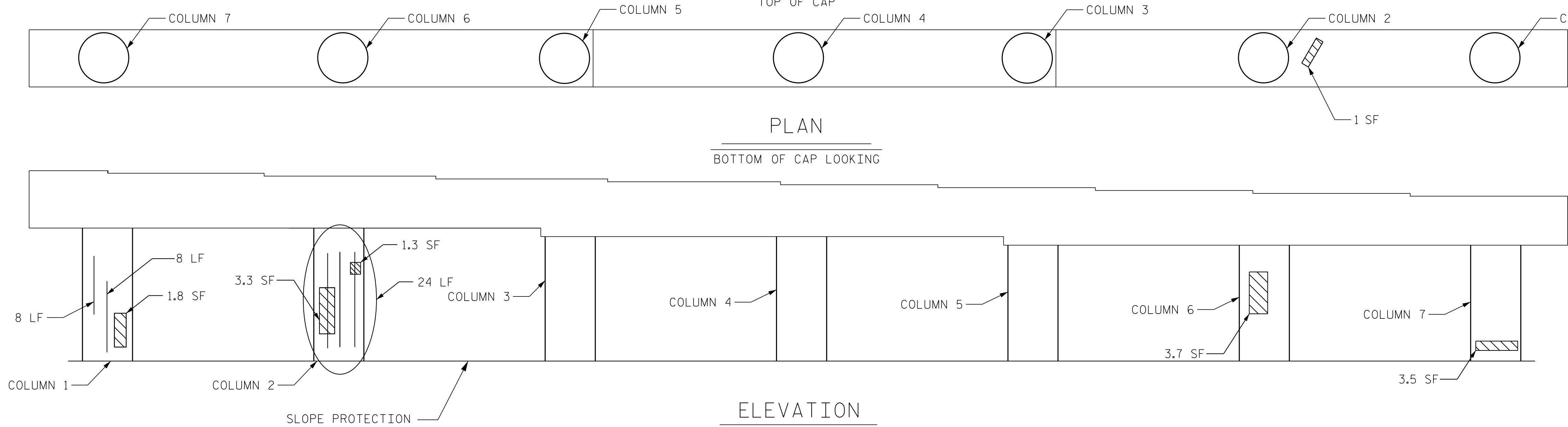
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2

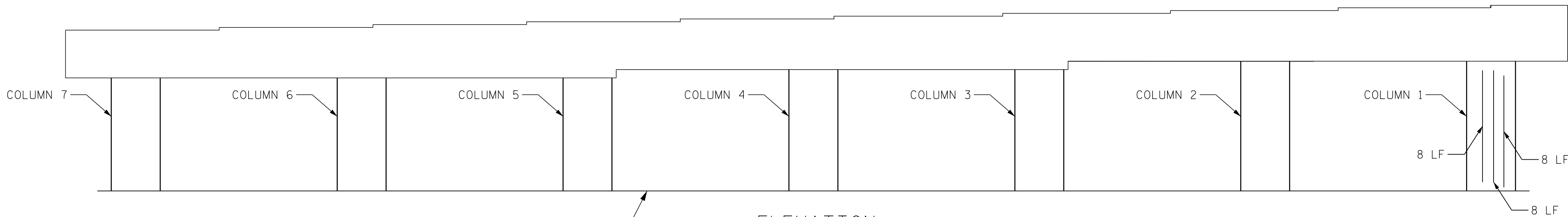
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2			4			



PLAN
TOP OF CAP
PLAN
BOTTOM OF CAP LOOKING



ELEVATION
(SPAN C FACE)



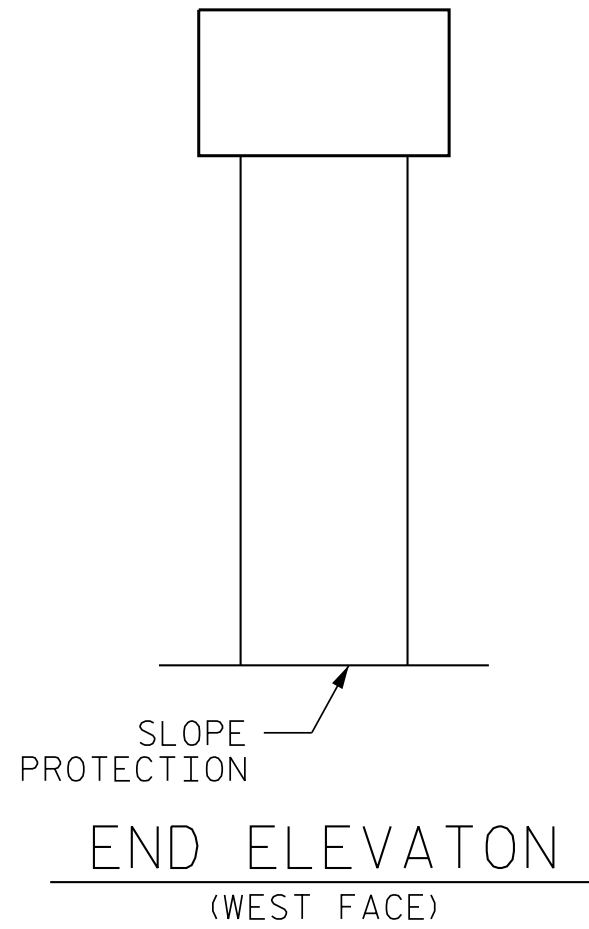
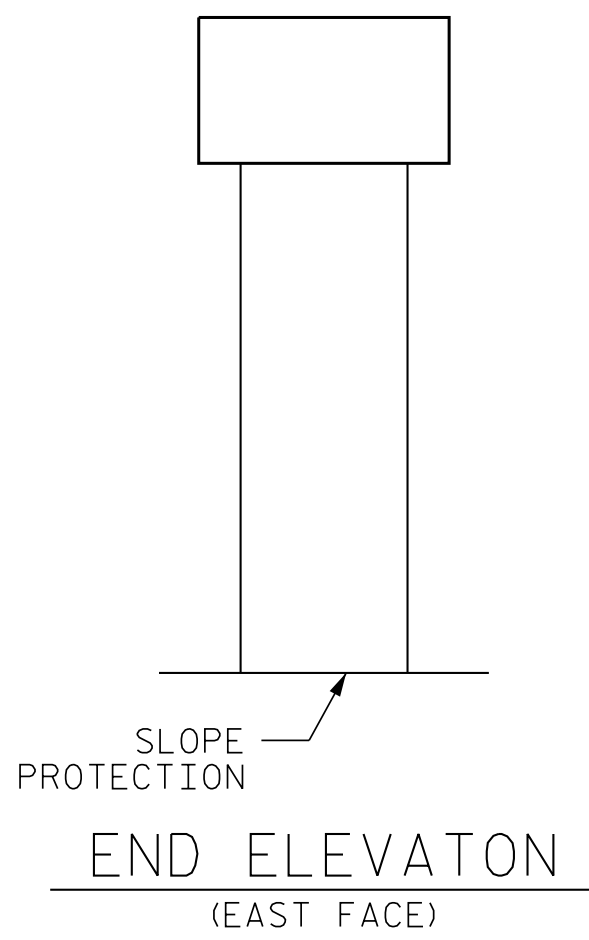
ELEVATION
(SPAN D FACE)

SPAN D

SPAN C

SPAN C

SPAN D



AS-BUILT REPAIR QUANTITY TABLE

REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMNS	0.0	0.0		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	1.0	0.1		
COLUMNS	13.6	2.3		
EPOXY RESIN INJECTION		LIN. FT.	LIN. FT.	
CAP		0.0		
COLUMNS		64.0		
EPOXY COATING		SQ. FT.	LIN. FT.	
CAP		409.6		

NOTES

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARINGS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

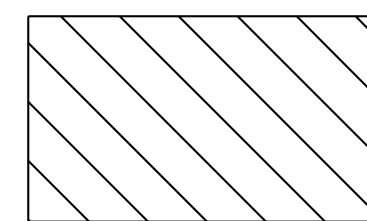
FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

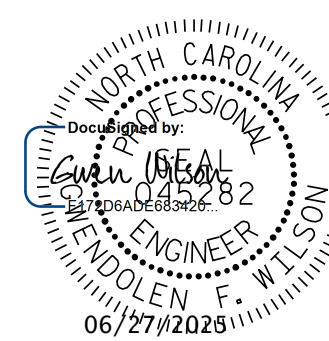
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.



SHOTCRETE REPAIR



EPOXY RESIN INJECTION (ERI)



PROJECT NO. I-5880
FORSYTH COUNTY
BRIDGE: 330029

STATE OF NORTH CAROLINA
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BENT 3

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2			4			



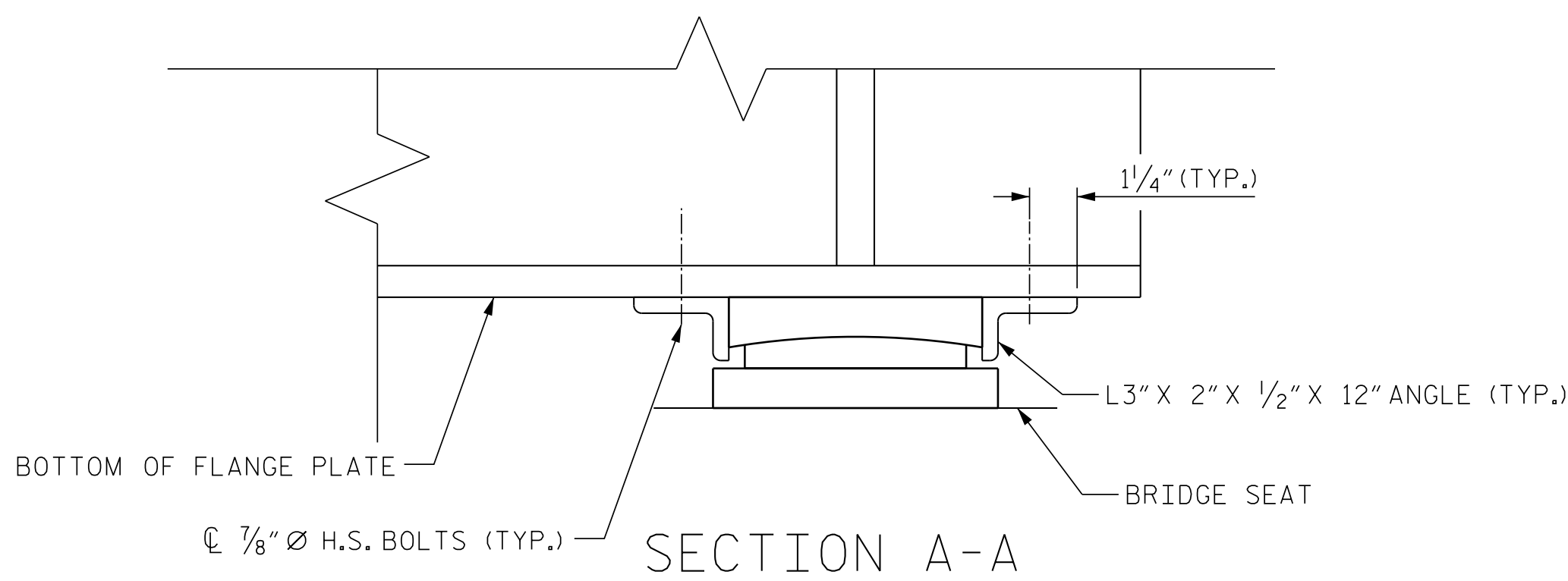
THE DIMENSIONS PROVIDED FOR THE REPLACEMENT BEARING PLATE ARE BASED ON THE 1977 EXISTING PLANS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL PLATE DIMENSIONS FOR ACCURACY.

Diagram illustrating the elevation view of a girder-to-column connection. The girder is shown with a web and a bottom flange plate. The connection is made using L3" X 2" X 1/2" X 12" angles (typical) and 7/8" Ø H.S. bolts (typical). Key dimensions and components are labeled:

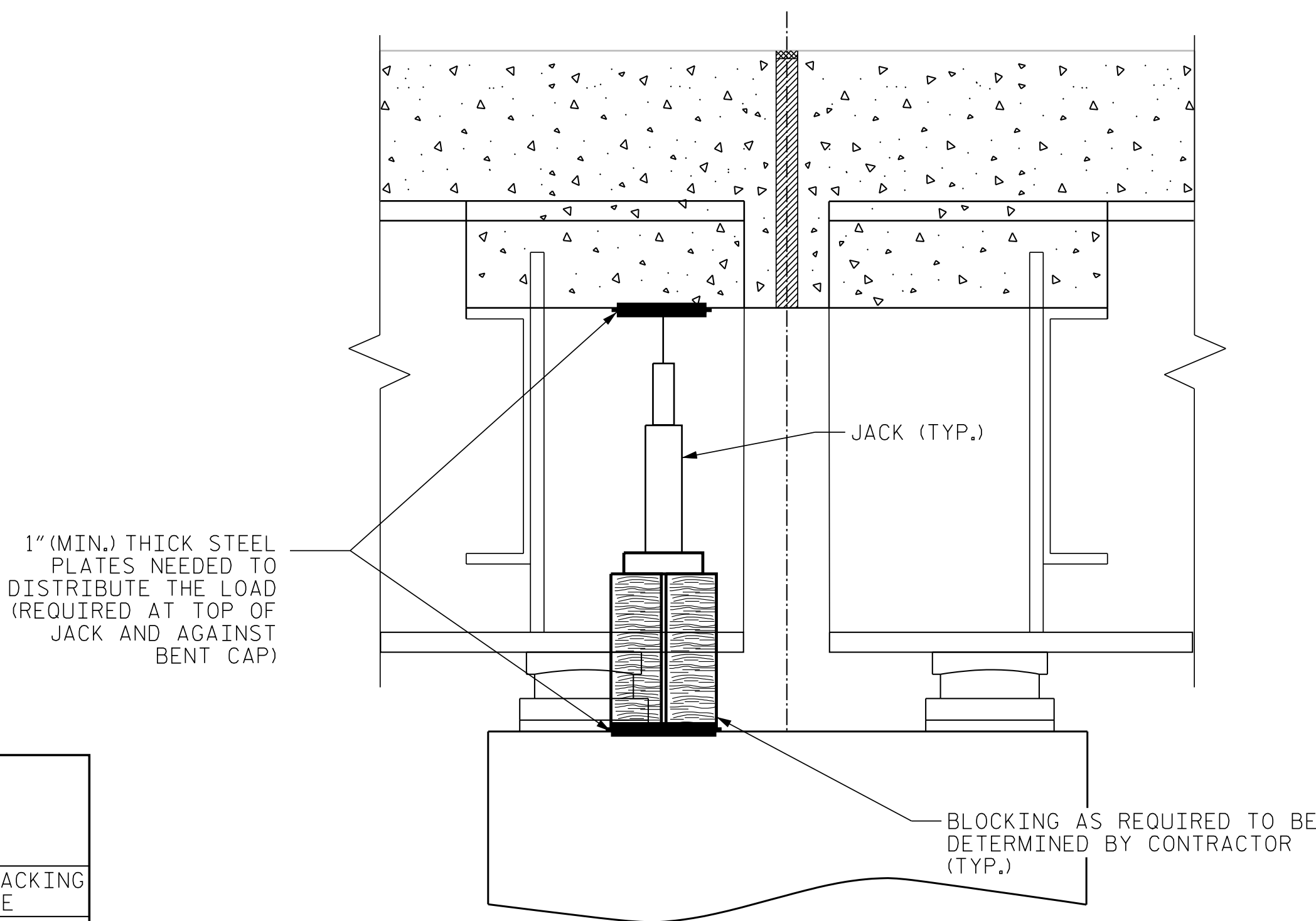
- GIRDER WEB
- BOTTOM FLANGE PLATE
- 1'-4" (Height of flange plate)
- 1'-0" (TYP.) (Width of flange plate)
- 2" (TYP.) (Height of angle)
- 2 1/2" (TYP.) (Spacing between bolts)
- 1 1/4" (TYP.) (Spacing between angles)
- 1/4" (TYP.) (Spacing from edge)
- L3" X 2" X 1/2" X 12" ANGLE (TYP.)
- 7/8" Ø H.S. BOLTS (TYP.)
- Section line A-A

PLAN VIEW OF ANGLE ATTACHMENT
FOR BEARING ASSEMBLY

PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHER AND THICKNESS OF CONNECTION MEMBER PLUS AT LEAST $\frac{1}{4}$ " PROJECTION BEYOND THE NUT. DRILL HOLES THROUGH BOTTOM FLANGE NO LARGER THAN $\frac{3}{16}$ " OF THE NOMINAL BOLT DIAMETER. GALVANIZE THE HIGH STRENGTH BOLTS, NUTS AND WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.



SECTION A-A



SECTION THRU DIAPHRAGM

BRIDGE JACKING NOTES:

THIS DETAIL IS A GENERIC EXAMPLE OF A JACKING SCHEME AND DOES NOT NECESSARILY REPRESENT SPECIFIC CONDITIONS AT A PARTICULAR BRIDGE. ACTUAL BRIDGE GEOMETRIES, DIMENSIONS, AND CONDITIONS MAY DIFFER FROM THIS DETAIL. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL INVESTIGATE THE BRIDGE ON THE PROJECT AND DEVELOP A JACKING PLAN TO BE SUBMITTED FOR REVIEW AND APPROVAL. SEE BRIDGE JACKING SPECIAL PROVISION.

PRIOR TO BRIDGE JACKING OPERATIONS, THE ENGINEER AND CONTRACTOR SHALL INSPECT THE STRUCTURE FOR ANY NOTABLE DEFECTS TO THE PRIMARY AND SECONDARY STRUCTURAL MEMBERS. ALL NOTABLE DEFECTS SHALL BE DOCUMENTED AND REPORTED TO THE AREA BRIDGE MAINTENANCE ENGINEER PRIOR TO COMMENCEMENT OF ANY BRIDGE JACKING. THE CONTRACTOR SHALL PROVIDE SAFE AND SUFFICIENT ACCESS TO ALL STRUCTURAL MEMBERS FOR THE ENGINEER TO ESTABLISH PROPER DOCUMENTATION.

PRIOR TO JACKING, THE CONTRACTOR SHALL ENSURE THERE ARE NO OBSTACLES PREVENTING THE BEAM FROM BEING LIFTED.

THE BEAM SHALL BE LIFTED ENOUGH THAT THE BEAM CLEARS THE BEARINGS AND ALL LOAD IS SUPPORTED BY THE JACKS. AFTER JACKING IS COMPLETE, THE CONTRACTOR SHALL PROVIDE FOR A METHOD TO REMOVE THE JACKS AND SUPPORT THE BEAM FOR DEAD AND LIVE LOAD DURING THE REPAIR OPERATIONS. IF THE JACKS REMAIN IN PLACE DURING THE ENTIRE JACKING AND REPAIR OPERATION, THEY SHALL HAVE MECHANICAL LOCK OFF CAPABILITIES.

IF, DURING THE JACKING PROCESS, OR WHILE THE BEAM IS BEING SUPPORTED, THE BEAM SHIFTS FROM ITS ORIGINAL POSITION, ALL WORK SHALL CEASE AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

BEARINGS ADJACENT TO THE BEAM BEING JACKED MAY BE LOOSENED TO DECREASE THE RESISTANCE OF THE DECK SLAB DURING JACKING. ALL BEARINGS LOOSENED SHALL BE TIGHTENED BACK AFTER REPAIR OPERATIONS ARE COMPLETED AND THE JACKS AND BLOCKING HAVE BEEN REMOVED.

THE MAXIMUM DIFFERENTIAL BETWEEN ADJACENT BEAMS THAT ARE BEING JACKED IS $\frac{1}{8}$ ".

THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS AND CALCULATIONS OF THE JACKING PROCEDURE(S) SEALED BY A PROFESSIONAL ENGINEER IN THE STATE OF NORTH CAROLINA TO THE ENGINEER FOR APPROVAL PRIOR TO BRIDGE JACKING OPERATIONS.

FOR TYPE I OR TYPE II BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR WORKING DRAWING SUBMITTALS, SEE SPECIAL PROVISIONS.

ANY STEEL THAT HAS BEEN WELDED TO THE EXISTING
STRUCTURE SHALL REMAIN IN PLACE.

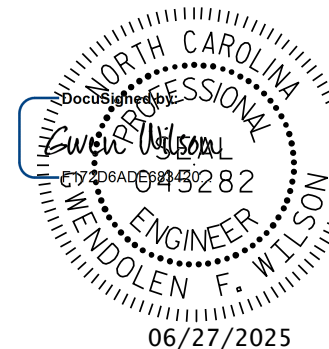
THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED TO THE EXISTING STRUCTURE BY BRIDGE JACKING OPERATIONS AT NO ADDITIONAL COST TO THE DEPARTMENT.

BEARING PLATE (L1) SHALL CONFIRM TO AASHTO M270
GRADE 50W.

THE BEARING REPLACEMENT PAY ITEM AT SPAN B, BENT 2, BEAM 1 INCLUDES THE INSTALLATION OF THE NEW RETAINER ANGLES LOCATED ON THE BOTTOM FLANGE OF BEAM 1.

THE BEARING SHALL BE REPLACED PRIOR TO THE CLEANING AND PAINTING OF THE STEEL.

PROJECT NO. I-5880
FORSYTH COUNTY
 BRIDGE: 330029



STATE OF NORTH CAROLINA
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RALEIGH

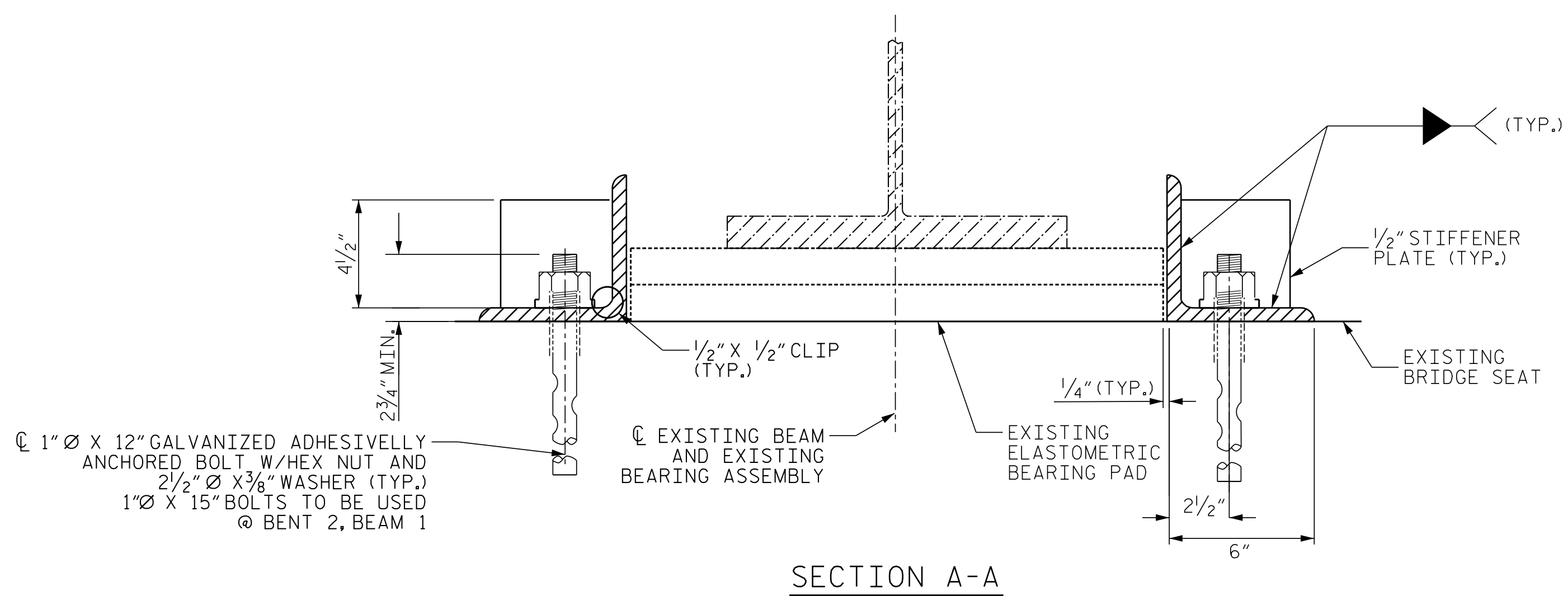
BRIDGE JACKING & BEARING ASSEMBLY

REVISIONS						SHEET NO. S1-20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 21
2			4			

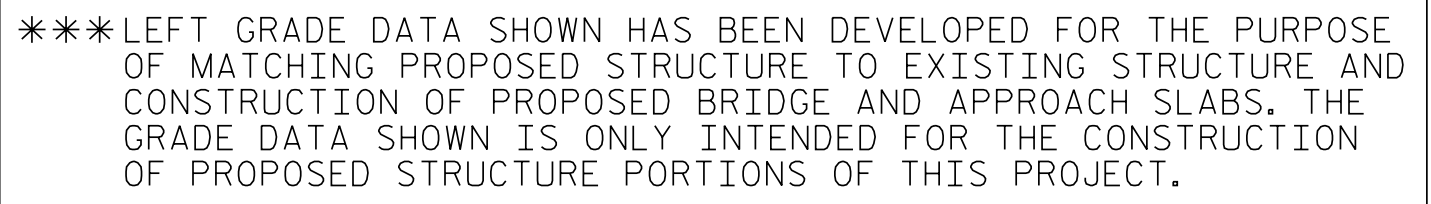
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WIDENING OF
BRIDGE #330340

PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-
15+12.51 -Y2A-
SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER CLEMMONSVILLE RD.
ON I-40/US 311 BETWEEN
I-285/NC 52 AND NC 109 (THOMASVILLE RD)
LEFT WIDENING

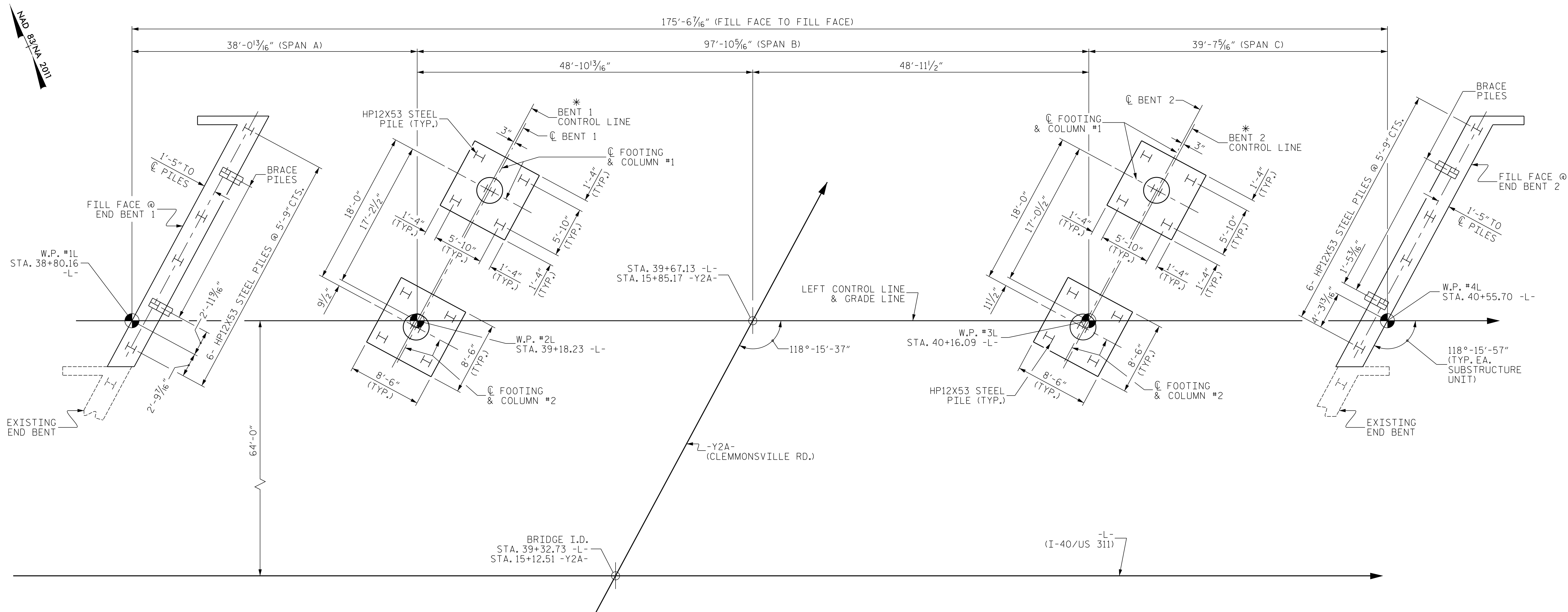
REVISIONS						SHEET NO. S2-1
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024

NOTES:
END BENTS AND BENTS ARE PARALLEL.
HP PILES NOT SHOWN IN PLAN VIEW FOR CLARITY.

wfcrutter
 DFN: jml-pw-001DesignStructuresBridges330340_G001.dgn
 Title: PlansWildering_Plans402_001_15680_330340_G001.dgn
 Date: 6/18/2025





FOUNDATION LAYOUT LEFT WIDENING

BRACE PILES SHALL BE BATTERED AT 3:12.

FOUNDATION NOTES

- FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- OBSERVE A 2 MONTH WAITING PERIOD AFTER CONSTRUCTING THE END BENTS AND BRIDGE APPROACH FILLS BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NOS. 1 AND 2 (WBL AND EBL). FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.
- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 24,000 TO 50,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENTS NO. 1 AND 2 (WBL AND EBL). THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.
- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 45,000 TO 65,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENTS NO. 1 AND 2 (EBL). THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.
- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 30,000 TO 50,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENTS NO. 1 AND 2 (WBL). THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 3 OF 6

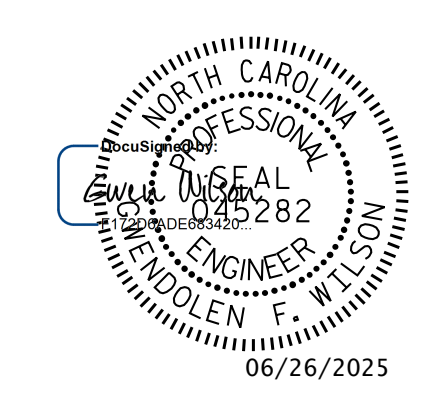
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**GENERAL DRAWING
FOUNDATION LAYOUT**

FOR BRIDGE OVER CLEMMONSVILLE RD.
ON I-40/US 311 BETWEEN
I-285/NC 52 AND NC 109 (THOMASVILLE RD)

LEFT WIDENING

REVISIONS						SHEET NO. S2-3
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

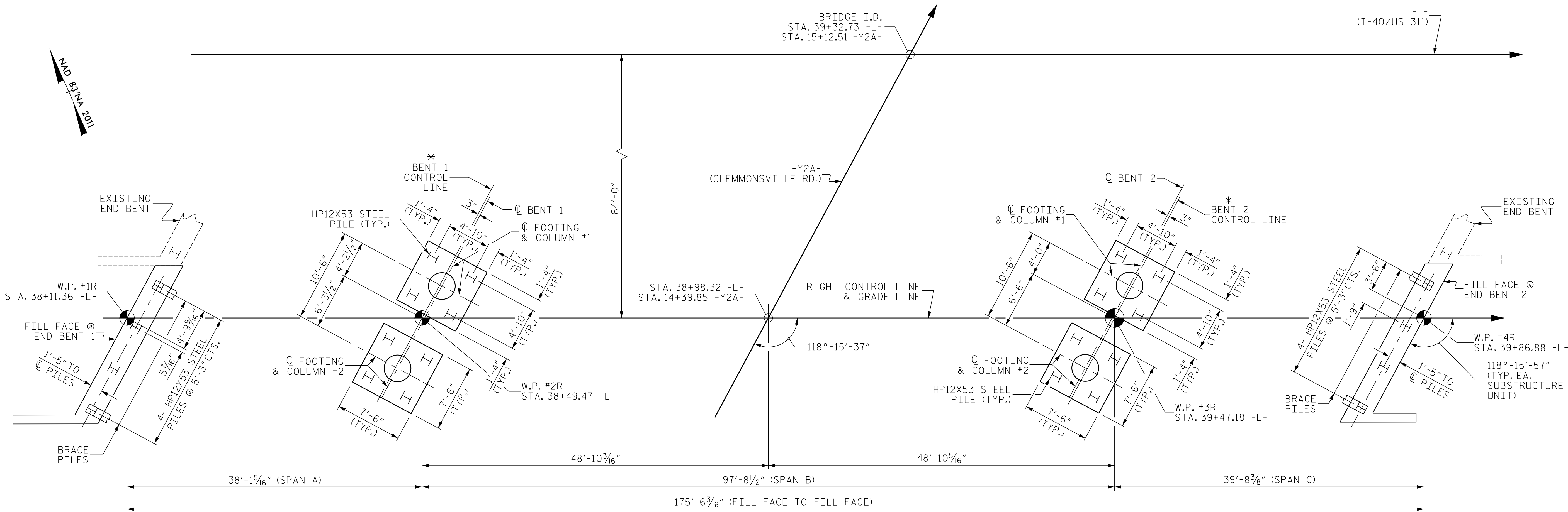


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Raleigh, NC. 27609
License No: C-3097

W:\Projects\2024\I-5880\Drawings\Structures\Bridge\330340\Structures\2_PlaneWidening_Plans\402_005_I5880_330340_F.L.OI.003.dgn
DATE: 6/18/2025
TIME: 6:18/2025

DWN. BY: WDC
CHKD. BY: CFW
DES. EGR. OF RECORD: STC
DATE: 09/2024
DATE: 11/2024
DATE: 09/2024



FOUNDATION LAYOUT
RIGHT WIDENING

BRACE PILES SHALL BE BATTERED AT 3:1.

*ATTENTION IS CALLED TO THE FACT THAT THE BENT CONTROL LINE IS OFFSET 3' FROM THE CENTERLINE OF BENT.

FOUNDATION NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

OBSERVE A 2 MONTH WAITING PERIOD AFTER CONSTRUCTING THE END BENTS AND BRIDGE APPROACH FILLS BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NOS. 1 AND 2 (WBL AND EBL). FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.

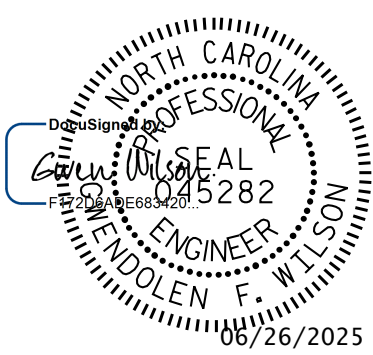
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PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 4 OF 6



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOUNDATION LAYOUT
FOR BRIDGE OVER CLEMMONSVILLE RD.
ON I-40/US 311 BETWEEN
I-285/NC 52 AND NC 109 (THOMASVILLE RD)
RIGHT WIDENING

DWN. BY: WDC	DATE: 09/2024
CHKD. BY: CFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024

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REVISIONS						SHEET NO. S2-4
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

\\cnc\user\pwa\jmt-jmw\Documents\Proj\jmt-jmw\01\Documents\Proj\jmt-jmw\01\Design\Structures\Bridges\330340\Structures\2_PlaneWidening_Plans\402_DOT_J5880_330340_F102_004.dgn
DATE: 6/18/2025 TIME: 6:18/2025

SUMMARY OF PILE INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(#) (e.g., "Bent 1, Piles 1-5")	Number of Piles per Line	Factored Resistance per Pile KIPS	Pile Cut-Off (Top of Pile) Elevation FT	Estimated Pile Length per Pile FT	Scour Critical Elevation FT	Driven Piles			Predrilling for Piles **			Drilled-In Piles		
						Minimum Pile Tip (Tip No Higher Than) Elevation FT	Required Driving Resistance (RDR)* per pile KIPS	Pile Redrives Quantity EACH	Predrilling Length per Pile LIN FT	Predrilling Elevation (Elevation Not To Predrill Below) FT	Maximum Predrilling Diameter INCHES	Pile Excavation (Bottom of Hole) Elevation FT	Pile Excavation Not In Soil per Pile LIN FT	Pile Excavation In Soil per Pile LIN FT
EB1 (WBL) - Piles 1-6	6	140		70			235	3						
B1 (WBL) - Piles 1-10	10	230		75			385	5						
B2 (WBL) - Piles 1-10	10	230		65			385	5						
EB2 (WBL) - Piles 1-6	6	140		65			235	3						
EB1 (EBL) - Piles 1-4	4	110		60			185	2						
B1 (EBL) - Piles 1-8	8	170		60			285	4						
B2 (EBL) - Piles 1-8	8	170		55			285	4						
EB2 (EBL) - Piles 1-4	4	110		60			185	2						
TOTAL QUANTITY:								28						

$$^*RDR = \frac{\text{Factored Resistance} + \text{Factored Drag Load} + \text{Factored Dead Load}}{\text{Dynamic Resistance Factor}} + \text{Nominal Drag Load Resistance} + \text{Nominal Resistance from Scourable Material}$$

**** Predrilling for Piles is required for end bents/bents with a predrilling length and at the Contractor's option for end bents/bents with predrilling information but no predrilling length.**

PILE DESIGN INFORMATION

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Factored Axial Load per Pile KIPS	Factored Drag Load per Pile KIPS	Factored Dead Load * per Pile KIPS	Dynamic Resistance Factor	Nominal Drag Resistance per Pile KIPS	Nominal Scour Resistance per Pile KIPS
EB1 (WBL) - Piles 1-6	140			0.60		
B1 (WBL) - Piles 1-10	230			0.60		
B2 (WBL) - Piles 1-10	230			0.60		
EB2 (WBL) - Piles 1-6	140			0.60		
EB1 (WBL) - Piles 1-4	110			0.60		
B1 (WBL) - Piles 1-8	170			0.60		
B2 (WBL) - Piles 1-8	170			0.60		
EB2 (WBL) - Piles 1-4	110			0.60		

* Factored Dead Load is factored weight of pile above the ground line.

PROJECT NO. I-5880

 FORSYTH COUNTY

STATION: 39+32.51 -L- / 15+12.51 -Y2A-

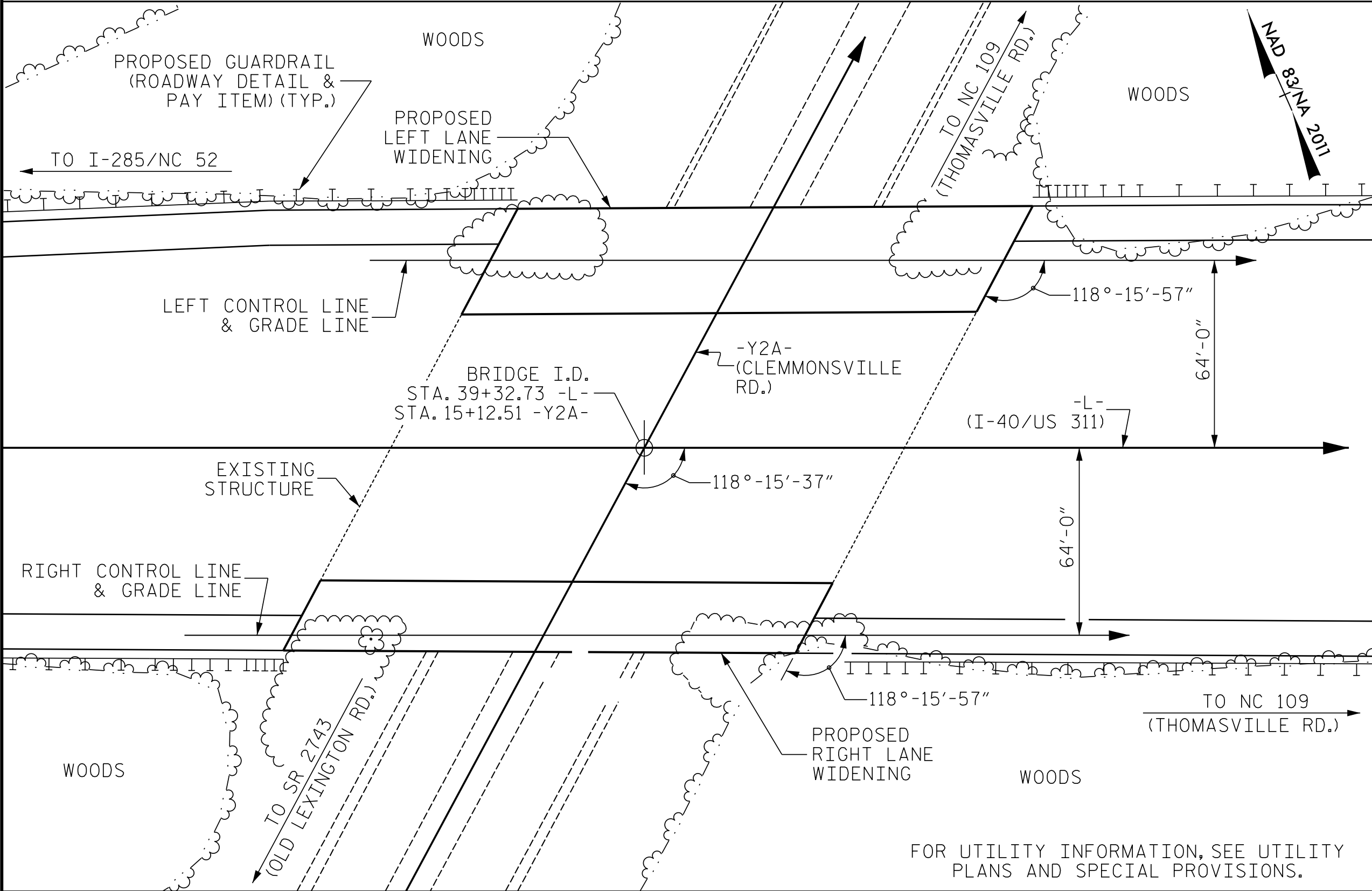
SHEET 5 OF 6

NOTES:

1. The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Michael H. Stephens, PE, #028893) on 09-24-2024.
2. Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, i.e., the number of piles with a Required Driving Resistance.
3. The Engineer may adjust the quantity for DPT Testing and Pipe Pile Plates when necessary.

 06/26/2025	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH PILE FOUNDATION TABLES																												
SIGNATURE _____ DATE _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="6" style="text-align: center;">REVISIONS</th> <th style="text-align: center;">SHEET NO. S2-5</th> </tr> <tr> <td style="width: 10%;">DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</td> <td style="width: 10%;">NO.</td> <td style="width: 10%;">BY:</td> <td style="width: 10%;">DATE:</td> <td style="width: 10%;">NO.</td> <td style="width: 10%;">BY:</td> <td style="width: 10%;">DATE:</td> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td></td> <td></td> <td style="text-align: center;">3</td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">2</td> <td></td> <td></td> <td style="text-align: center;">4</td> <td></td> <td></td> </tr> </table>	REVISIONS						SHEET NO. S2-5	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	NO.	BY:	DATE:	NO.	BY:	DATE:		1			3				2			4		
REVISIONS						SHEET NO. S2-5																							
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	NO.	BY:	DATE:	NO.	BY:	DATE:																							
	1			3																									
	2			4																									

BM#3 - RR SPIKE SET IN BASE OF 32"OAK, 1179' LEFT OF BL STA. 37+39.00,
N 844013 E 1640286, ELEV. 914.65



LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE ELEVATIONS AND CLEARANCES SHOWN ON THE PLANS AT THE POINTS OF MINIMUM VERTICAL CLEARANCE ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE ELEVATIONS ON THE EXISTING PAVEMENT AND CHECK THE CLEARANCE, REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM VERTICAL CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.

FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.

REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W AND PAINTED IN ACCORDANCE WITH SYSTEM 5 OR SYSTEM 6 OF THE STRUCTURAL STEEL SHOP COATINGS PROGRAM AND SECTION 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 39+32.51 -L-."

THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE COST OF THE REINFORCED CONCRETE DECK SLAB.

TEMPORARY SHORING WILL BE REQUIRED IN THE AREA INDICATED IN THE PLAN VIEW OF THE GENERAL DRAWING SHEETS 1 OF 6, AND 2 OF 6.

FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.

STEEL SHEET PILING REQUIRED FOR SHORING SHALL BE HOT ROLLED.

THE EXISTING STRUCTURE CONSISTING OF 3 SPANS; 1 @ 38'-0", 1 @ 97'-6", AND 1 @ 40'-0", WITH A CLEAR ROADWAY WIDTH OF 52'-6" OF REINFORCED CONCRETE DECK ON I-BEAMS AND PLATE GIRDERS, ON END BENTS OF REINFORCED CONCRETE CAP ON STEEL PILES AND BENTS OF REINFORCED CONCRETE POST AND BEAM, LOCATED AT THE PROPOSED STRUCTURE, SHALL BE PARTIALLY REMOVED ON EACH SIDE. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT.

FOR LIMITS OF PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE APPLICABLE SUPERSTRUCTURE AND SUBSTRUCTURE PLAN SHEETS. "REMOVAL OF EXISTING STRUCTURE" INCLUDES THE EXISTING OVERHANG, RAIL, SLAB, AND PARTIAL REMOVAL OF THE END BENTS.

THE EXISTING SINGLE FACED CONCRETE ROADWAY BARRIER RAIL ALONG THE -Y2A- LINE, LOCATED IN FRONT OF THE EXISTING BENTS, SHALL BE SAW-CUT AT THE EDGE OF THE EXTERIOR BENT COLUMNS TO ELIMINATE THE CURVED END. THIS WILL ALLOW THE PROPOSED CONCRETE BARRIER RAIL TO ALIGN WITH THE EXISTING RAIL.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE SAMPLE BARS SHOULD COME FROM STEEL ACTUALLY USED IN THE PROJECT AND THE SAMPLE BARS SHOULD BE REPLACED BY SPLICED BARS AS SPECIFIED IN THE SAMPLE BAR REPLACEMENT CHART. PAYMENT FOR THE SAMPLE BARS AND REPLACEMENT REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

SAMPLE BAR REPLACEMENT					
SIZE	LENGTH	SIZE	LENGTH	SIZE	LENGTH
#3	6'-2"	#6	9'-8"	#9	13'-2"
#4	7'-4"	#7	10'-10"	#10	14'-6"
#5	8'-6"	#8	12'-0"	#11	15'-10"

NOTE: SAMPLE BAR REPLACEMENT LENGTHS BASED ON 30" (SAMPLE LENGTH) PLUS TWO SPLICE LENGTHS AND $f_y = 60\text{ksi}$

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

FOR PC MATERIALS AND PLACING AND FINISHING POLYMER CONCRETE OVERLAY, SEE "POLYMER CONCRETE BRIDGE DECK OVERLAY" IN THE BRIDGE PRESERVATION SPECIAL PROVISIONS.

FOR SHOTBLASTING DECK, SEE "OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE" IN THE BRIDGE PRESERVATION SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL											
	REMOVAL OF EXISTING STRUCTURE	ASBESTOS ASSESSMENT	FOUNDATION EXCAVATION FOR BENT	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	APPROXIMATE 378,816 LBS. STRUCTURAL STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12x53 STEEL PILES
	LUMP SUM	LUMP SUM	LUMP SUM	SQ. FT.	SQ. FT.	CU. YD.	LUMP SUM	LBS.	LBS.	LUMP SUM	EACH
SUPERSTRUCTURE				8821	10,039						
END BENT 1						21.0		3632			10
BENT 1			LUMP SUM			64.8		9797	1323		18
BENT 2			LUMP SUM			64.9		9797	1323		18
END BENT 2						21.0		3626			10
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	8821	10,039	171.7	LUMP SUM	26,852	2646	LUMP SUM	56

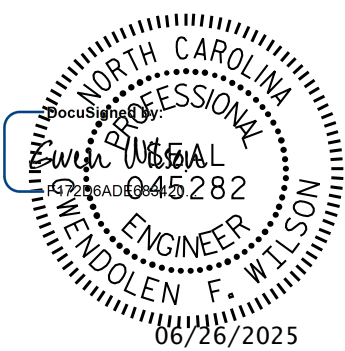
TOTAL BILL OF MATERIAL (CONT.)										
	HP 12 X 53 STEEL PILES	PILE REDRIVES	CONCRETE BARRIER RAIL	4" SLOPE PROTECTION	ELASTOMERIC BEARINGS	FOAM JOINT SEALS	EPOXY POLYMER CONCRETE MATERIALS (ALTERNATE)	POLYESTER POLYMER CONCRETE MATERIALS	PLACING AND FINISHING OF POLYMER CONCRETE OVERLAY	SHOTBLASTING BRIDGE DECK
	NO.	LIN. FT.	EACH	LIN. FT.	SQ. YD.	LUMP SUM	LUMP SUM	CU. YD.	CU. YD.	SQ. YD.
SUPERSTRUCTURE				351.06				35.4	35.4	1265.2
END BENT 1	10	660	5		231					
BENT 1	18	1230	9							
BENT 2	18	1090	9							
END BENT 2	10	630	5		242					
TOTAL	56	3610	28	351.06	473	LUMP SUM	LUMP SUM	35.4	35.4	1265.2

DWN. BY: WDC DATE: 09/2024
CHKD. BY: GFW DATE: 11/2024
DES. EGR. OF RECORD: STC DATE: 09/2024

SEE BRIDGE PRESERVATION PLANS (SHEETS S2-73 THRU S2-81) FOR TOTAL BILL OF MATERIAL FOR PRESERVATION.

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PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING					
FOR BRIDGE OVER CLEMMONSVILLE RD. ON I-40/US 311 BETWEEN I-285/NC 52 AND NC 109 (THOMASVILLE RD) LEFT & RIGHT WIDENING					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S2-6					TOTAL SHEETS 81

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ DC	γ DW
	STRENGTH I	1.25	1.50
	SERVICE II	1.00	1.00

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE II LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE II LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

1. THE ORIGINAL DESIGN AND RATING OF THIS BRIDGE WERE BASED ON AN INFLUENCE SURFACE ANALYSIS. LIVE LOAD DISTRIBUTION FACTORS WERE NOT USED AND ARE NOT PROVIDED.
2. DISTANCE FROM LEFT END OF SPAN IS GIVEN WITH RESPECT TO CENTERLINE OF BEARING AND IS MEASURED ALONG THE CONTROLLING GIRDER.
3. LEAP BRIDGE STEEL VERSION 21.02.00.31 WAS USED FOR INFLUENCE SURFACE ANALYSIS.

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING * *

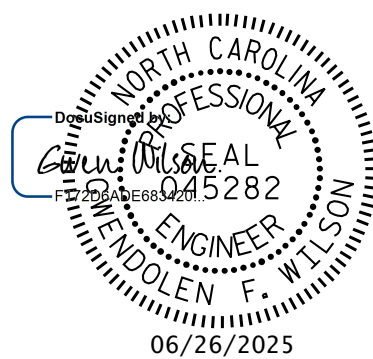
4 EMERGENCY VEHICLE LOAD RATING

* * SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

ELT - EXTERIOR GIRDER LEFT WIDENING
ILT - INTERIOR GIRDER LEFT WIDENING
ERT - EXTERIOR GIRDER RIGHT WIDENING
IRT - INTERIOR GIRDER RIGHT WIDENING
IEXIST - EXISTING GIRDER

PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-



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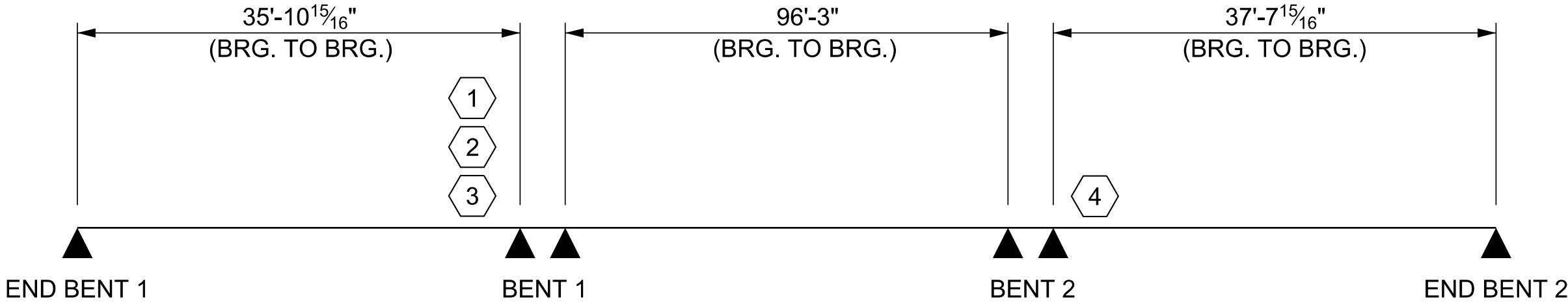
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Raleigh, NC. 27609
License No: C-3097

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
STEEL GIRDERS
(INTERSTATE TRAFFIC)

REVISIONS						SHEET NO. S2-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

STD. NO. LRFR4

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LOAD TYPE		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING Ⓝ	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE								SERVICE II LIMIT STATE								COMMENT NUMBER	
							LIVE-LOAD FACTORS (γ LL)	MOMENT				SHEAR				LIVE-LOAD FACTORS (γ LL)	MOMENT							
								DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)
DESIGN LOAD		HL-93 (INVENTORY)	N/A	Ⓛ1	1.11	—	1.75		2.48	B	IEXIST	48.23		1.11	A	IEXIST	35.80	1.30		2.61	B	IEXIST	48.13	
		HL-93 (OPERATING)	N/A		1.44	—	1.35		3.21	B	IEXIST	48.23		1.44	A	IEXIST	35.80	N/A		—	—	—	—	
		HS-20 (INVENTORY)	36.000	Ⓛ2	1.26	45.36	1.75		3.42	B	IEXIST	48.23		1.26	A	IEXIST	35.80	1.30		3.22	C	IEXIST	21.06	
		HS-20 (OPERATING)	36.000		1.63	58.68	1.35		4.43	B	IEXIST	48.23		1.63	A	IEXIST	35.80	N/A		—	—	—	—	
LEGAL LOAD	SINGLE VEHICLE (SV)	SH	12.500		3.13	39.13	1.40		9.94	C	IEXIST	18.86		3.13	A	IEXIST	35.80	1.30		6.31	C	IEXIST	18.86	
		S3C	21.500		1.94	41.71	1.40		6.00	C	IEXIST	22.61		1.94	C	IEXIST	0.19	1.30		3.83	C	IEXIST	18.86	
		S3A	22.750		1.88	42.77	1.40		5.73	C	IEXIST	22.61		1.88	C	IEXIST	0.19	1.30		3.65	C	IEXIST	18.91	
		S4A	26.750		1.76	47.08	1.40		5.28	B	IEXIST	48.13		1.76	C	IEXIST	0.19	1.30		3.45	C	IEXIST	18.86	
		S5A	30.500		1.77	53.99	1.40		4.69	B	IEXIST	48.13		1.77	C	IEXIST	0.19	1.30		3.06	C	IEXIST	18.86	
		S6A	34.500		1.69	58.31	1.40		4.29	B	IEXIST	48.13		1.69	A	IEXIST	35.80	1.30		2.94	C	IEXIST	18.86	
		S7B	38.500		1.68	64.68	1.40		3.92	B	IEXIST	48.13		1.68	A	IEXIST	35.80	1.30		2.76	C	IEXIST	18.86	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	S7A	40.000		1.67	66.80	1.40		3.80	B	IEXIST	48.13		1.67	C	IEXIST	0.19	1.30		2.70	C	IEXIST	18.86	
		T4A	28.250		1.97	55.65	1.40		5.19	B	IEXIST	48.13		1.97	A	IEXIST	35.80	1.30		3.65	C	IEXIST	21.06	
		T5B	32.000		1.77	56.64	1.40		4.61	B	IEXIST	48.13		1.77	C	IEXIST	0.19	1.30		3.19	C	IEXIST	18.86	
		T6A	36.000		1.78	64.08	1.40		4.25	B	IEXIST	48.13		1.78	C	IEXIST	0.19	1.30		3.09	C	IEXIST	18.91	
		T7A	40.000		1.73	69.20	1.40		3.96	B	IEXIST	48.13		1.73	C	IEXIST	0.19	1.30		3.05	C	IEXIST	22.61	
		T7B	40.000	Ⓛ3	1.60	64.00	1.40		4.12	B	IEXIST	48.13		1.60	A	IEXIST	35.80	1.30		3.24	C	IEXIST	21.06	
FATIGUE		HL-93 (INVENTORY)	N/A		5.79		0.75																	
EMERGENCY VEHICLE (EV)		EV2	28.750		1.80	51.75	1.30		5.40	B	IEXIST	48.13		1.80	C	IEXIST	0.19	1.30		3.46	C	IEXIST	18.86	
		EV3	43.000	Ⓛ4	1.22	52.46	1.30		3.63	B	IEXIST	48.13		1.22	C	IEXIST	0.19	1.30		2.26	C	IEXIST	18.86	



LRFR SUMMARY

FOR PHASING OF TRAFFIC DURING STAGE I
AND STAGE II CONSTRUCTION SEQUENCE,
SEE TRAFFIC MANAGEMENT PLANS.



SEE TRAFFIC MANAGEMENT PLANS FOR LOCATION
AND PAY LIMITS OF THE ANCHORED PORTABLE
CONCRETE BARRIER



SEE TRAFFIC MANAGEMENT PLANS FOR LOCATION
AND PAY LIMITS OF THE ANCHORED PORTABLE
CONCRETE BARRIER

SHEET 1 OF 2

CONSTRUCTION SEQUENCE

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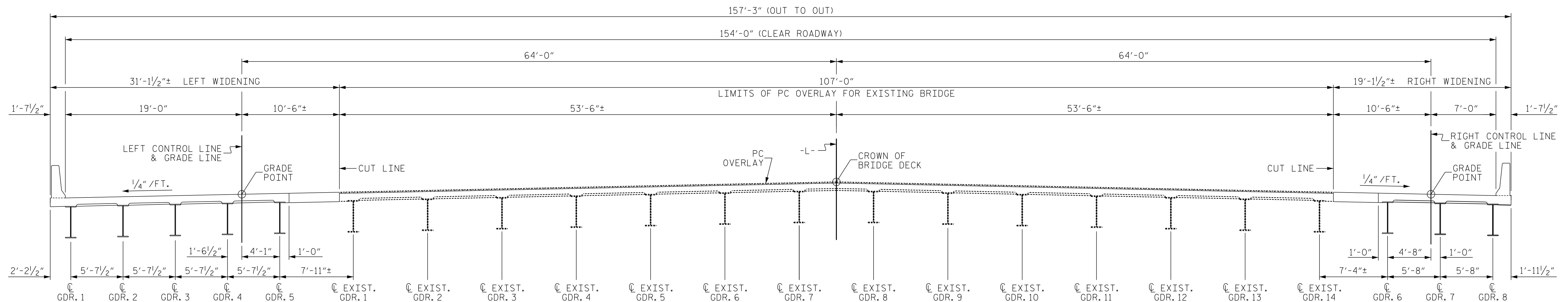


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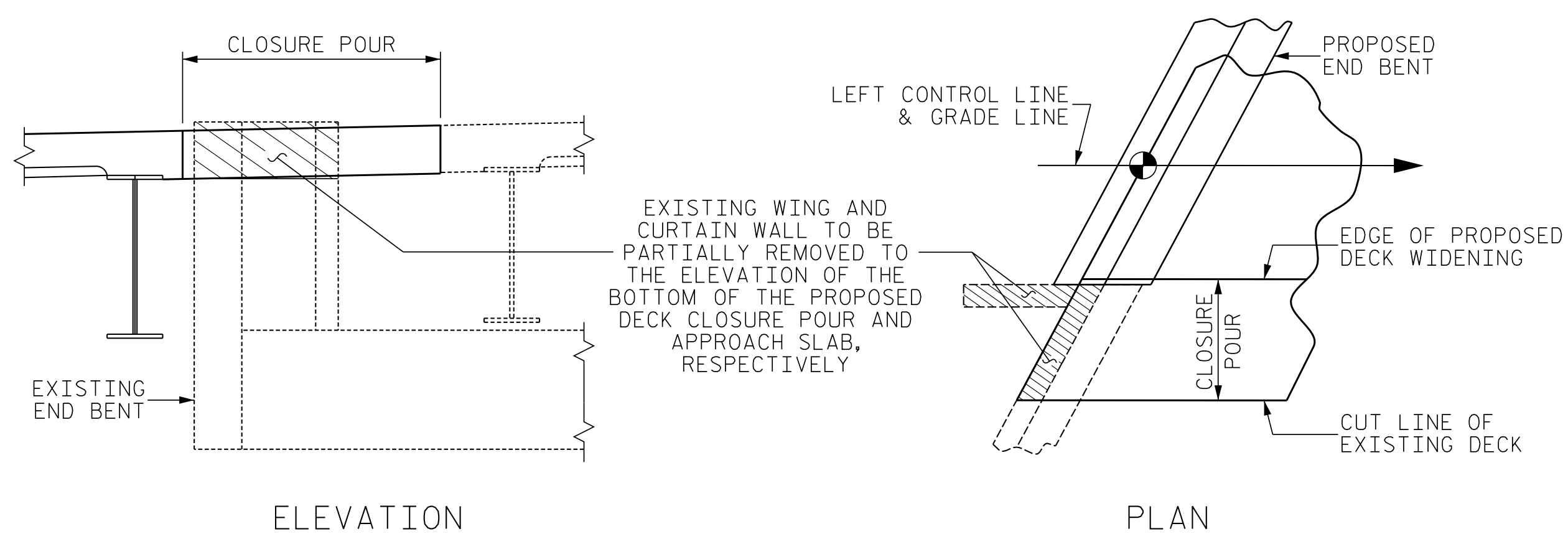
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C.	NO.	BY:	DATE:	NO.	BY:	DATE:	S2-8		
	1			3			TOTAL SHEETS		
	2			4			81		

DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024

FOR PHASING OF TRAFFIC DURING STAGE III
CONSTRUCTION SEQUENCE, SEE TRAFFIC
MANAGEMENT PLANS.



FOR PRESERVATION OF EXISTING BRIDGE
DECK, SEE PRESERVATION PLANS

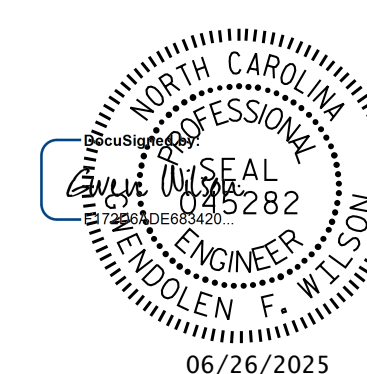


(PARTIAL REMOVAL OF THE EXISTING END BENTS 1 AND 2
IS NECESSARY IN THE AREAS ADJACENT TO THE LEFT
AND RIGHT WIDENING SECTIONS)

(END BENT 1 LEFT WIDENING SHOWN,
END BENT 2 & RIGHT WIDENING SIMILAR)

PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONSTRUCTION SEQUENCE

DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024

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		REVISIONS				SHEET NO.
INC.	NO.	BY:	DATE:	NO.	BY:	S2-9
	1			3		TOTAL SHEETS 81
	2			4		



THE TOTAL BRIDGE DECK THICKNESS IS 9 1/2" AND CONSISTS OF A 8 1/2" REINFORCED CONCRETE DECK AND A 1" POLYMER CONCRETE OVERLAY. THE REINFORCED CONCRETE DECK SHALL RECEIVE A BROOM FINISH THAT RUNS PERPENDICULAR TO THE DIRECTION OF TRAFFIC AND THE DECK SHALL BE SHOTBLASTED PRIOR TO OVERLAY. OVERLAY EACH WIDENING TO THE LIMITS OF THE PLANS AND MATCH THE DECK PROFILE OF THE EXISTING BRIDGE.



06/26/2021

LEFT WIDENING

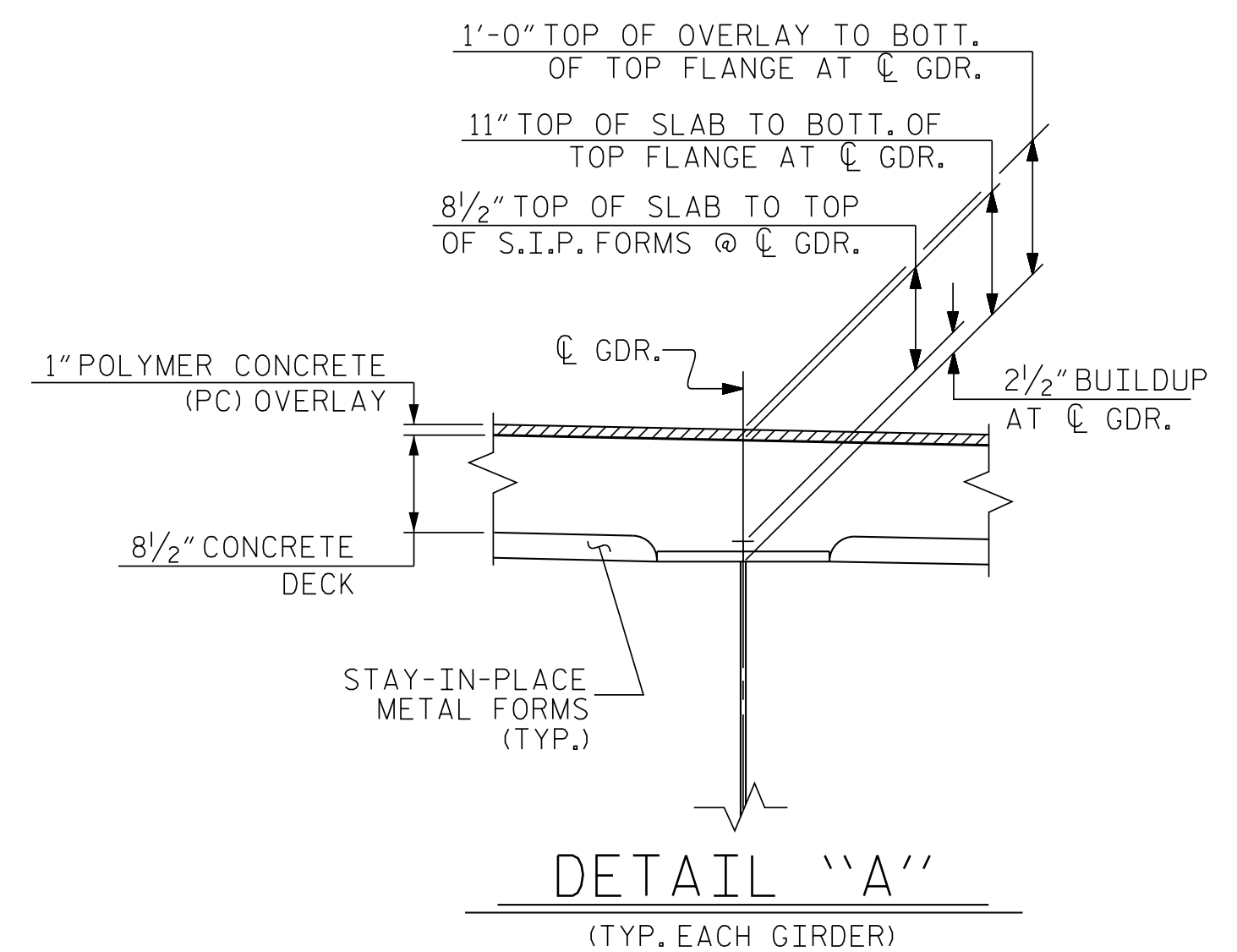
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NO.	BY:	DATE:	NO.	BY:	DATE:				

DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

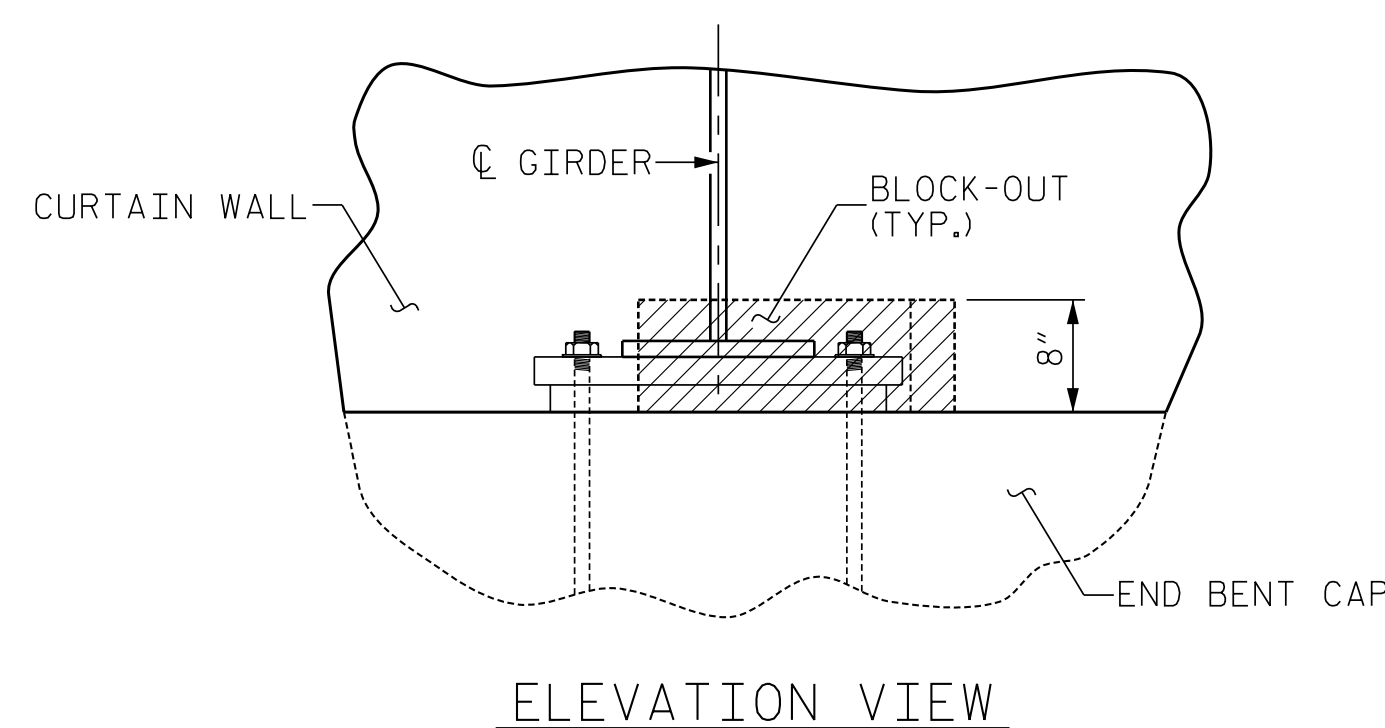


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DETAIL "A"

(TYP. EACH GIRDER)



Technical drawing of a bridge deck cross-section showing a full depth saw cut and closure pour. The drawing includes the following dimensions and labels:

- Top slab width: $5\frac{1}{2}" \pm$ (left), $4'-\#4 \text{ "B" } @ 1'-6" \text{ CTS.}$ (center), $5\frac{1}{2}" \pm$ (right).
- Bottom slab width: $2\frac{3}{4}" \pm$ (left), $8'-\#5 \text{ "B" } @ 8\frac{1}{2}" \text{ CTS.}$ (center), $2\frac{3}{4}" \pm$ (right).
- Centerline spacing: $4'-8"$.
- Left side offset: $2'-7"$.
- Right side offset: $*$.
- Overlays: $1"$ POLYMER CONCRETE (PC) OVERLAY.
- Structural features: CONST. JT. (Construction Joint), PROPOSED DECK, EXISTING DECK, FULL DEPTH SAW CUT, MC 18x42.7 (TYP.) (Main Course).
- Reinforcement: $\#6 \text{ D1}$, $\#6 \text{ D2}$.
- Proposed GDR: $\varnothing$ PROPOSED GDR, 5.
- Existing Beam: $\varnothing$ EXISTING BEAM.
- Bottom dimensions: $1'-0"$, $5'-5" \pm$ CLOSURE POUR, $1'-6"$.

TYPICAL SECTION - LEFT WIDENING - CLOSURE POUR
(INTERMEDIATE DIAPHRAGMS)
(SPANS A & C)

#6 D1 AND #6 D2 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM SLAB REINFORCING STEEL.

SHEET 2 OF 7

SUPERSTRUCTURE
TYPICAL SECTION
(SPANS A & C)
LEFT WIDENING

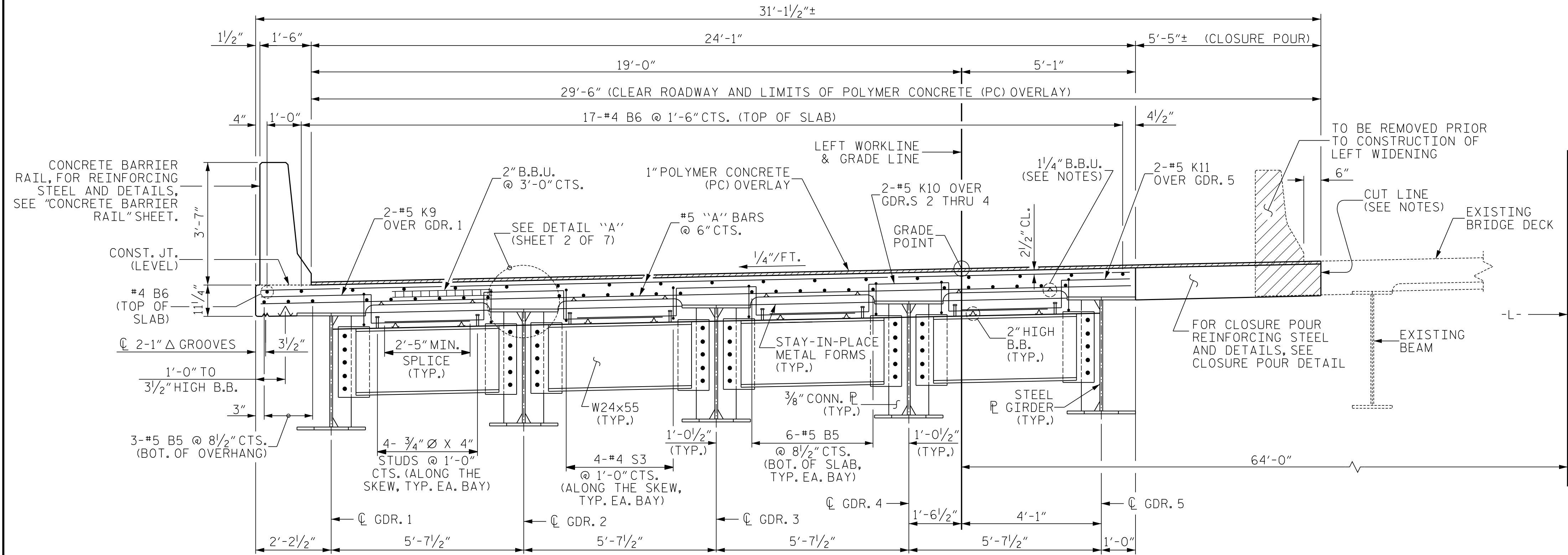
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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-11
1			3			TOTAL SHEETS 81
2			4			

DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024

**DOCUMENT NOT CONSIDERED FINAL
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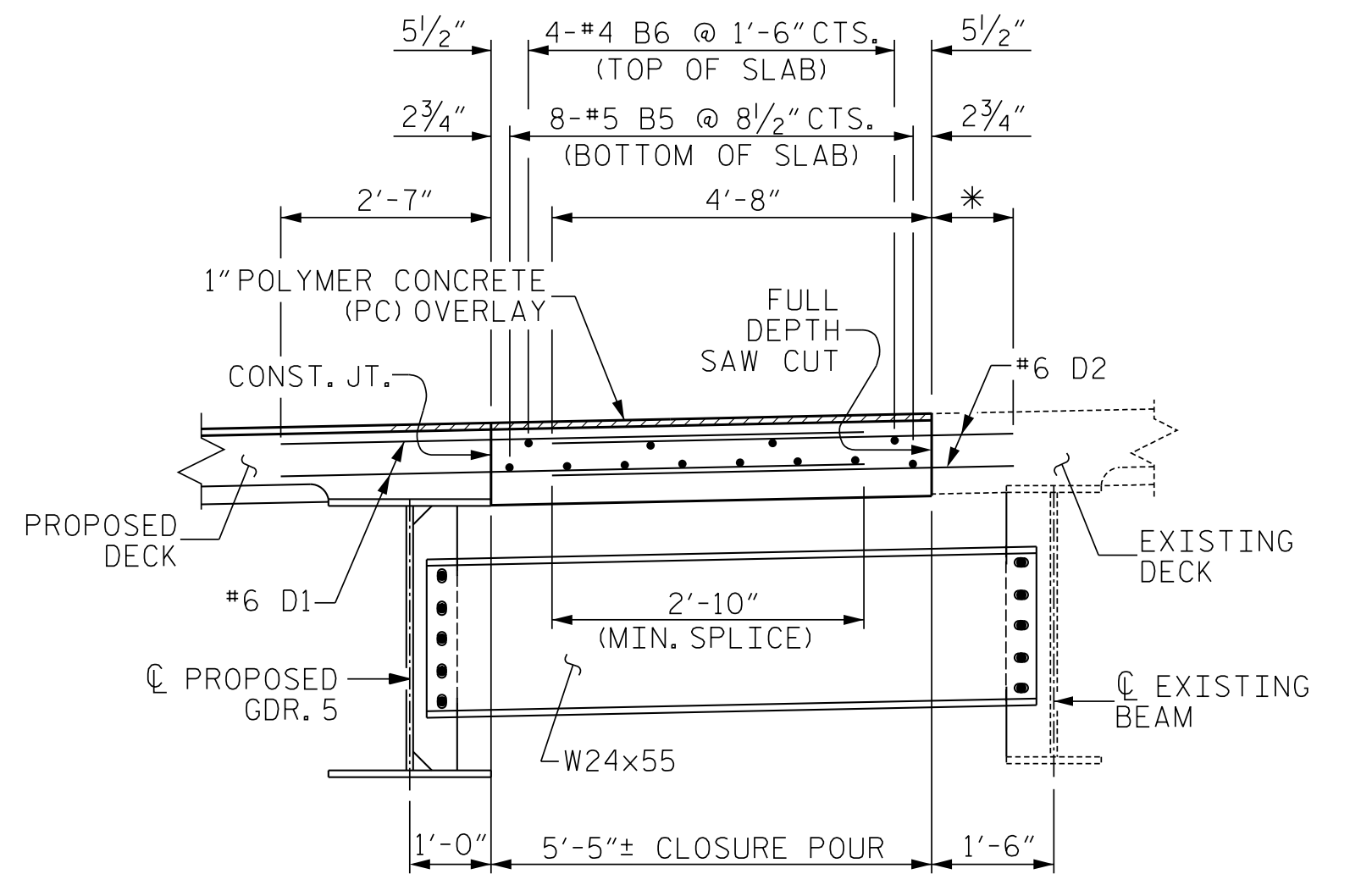


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TYPICAL SECTION - LEFT WIDENING

(BENT DIAPHRAGMS)
(SPAN B)

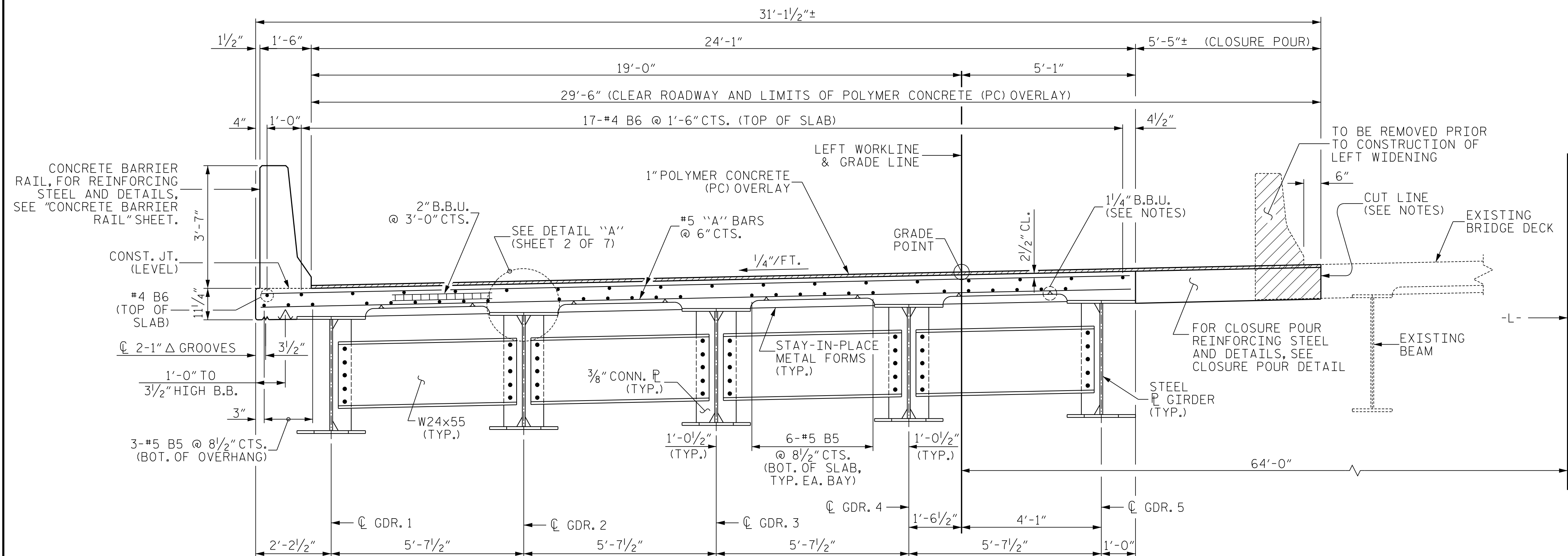


TYPICAL SECTION
LEFT WIDENING - CLOSURE POUR

(INTERMEDIATE DIAPHRAGMS)
(SPAN B)

* #6 D2 DOWELS PLACED IN THE EXISTING DECK SHALL BE INSTALLED USING AN ADHESIVE ANCHORING SYSTEM. LEVEL ONE FIELD TESTING IS REQUIRED AND THE YIELD LOAD OF THE DOWEL IS 13.2 KIPS. OVERALL LENGTH SHALL PROVIDE A 4'-8" MIN. EXTENSION INTO CLOSURE POUR. EMBEDMENT LENGTH TO BE DETERMINED BY THE MANUFACTURER OF THE ADHESIVELY ANCHORED ANCHOR SYSTEM. #6 D2 BAR LENGTH IS BASED ON A 10' EMBEDMENT LENGTH. ADHESIVELY ANCHORED ANCHOR BOLT OR DOWEL TESTING SHALL BE IN ACCORDANCE WITH SECTION 420-13 OF THE STANDARD SPECIFICATIONS.

#6 D1 AND #6 D2 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM SLAB REINFORCING STEEL.



TYPICAL SECTION - LEFT WIDENING

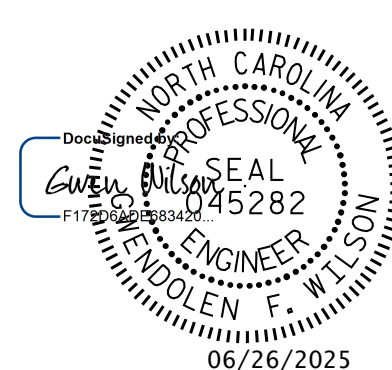
(INTERMEDIATE DIAPHRAGMS)
(SPAN B)

PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 3 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
TYPICAL SECTION
(SPAN B)
LEFT WIDENING



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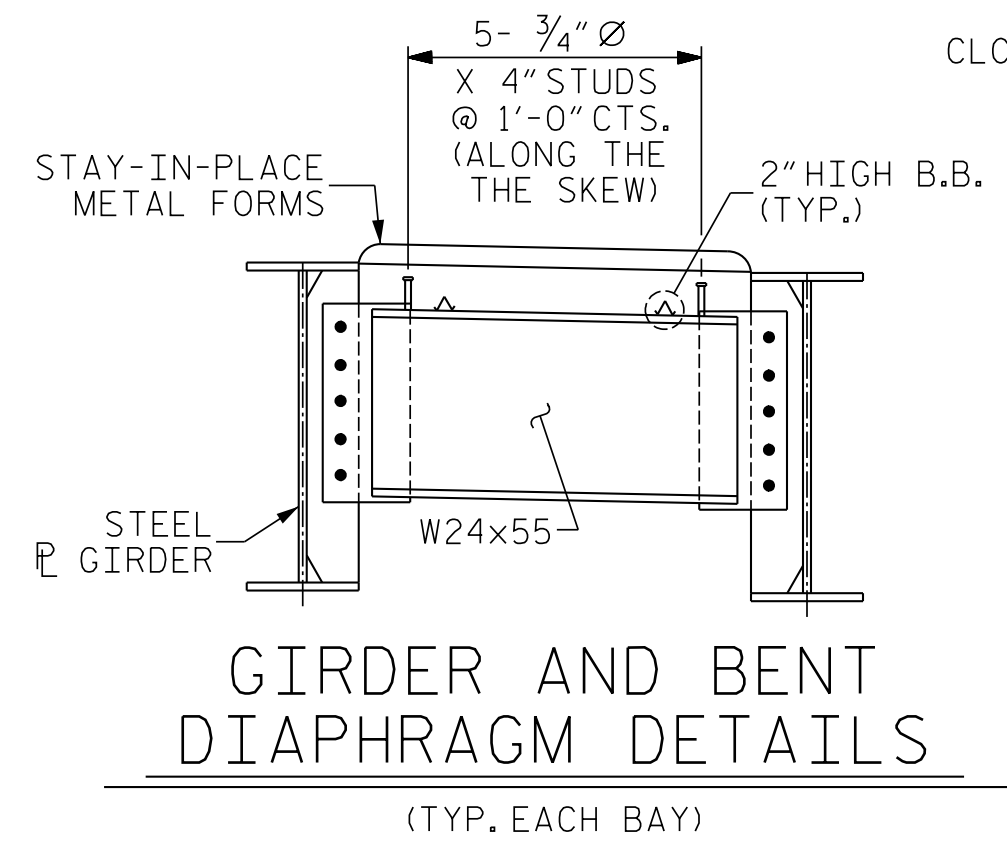


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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S2-12
2			4			

TOTAL
SHEETS
81

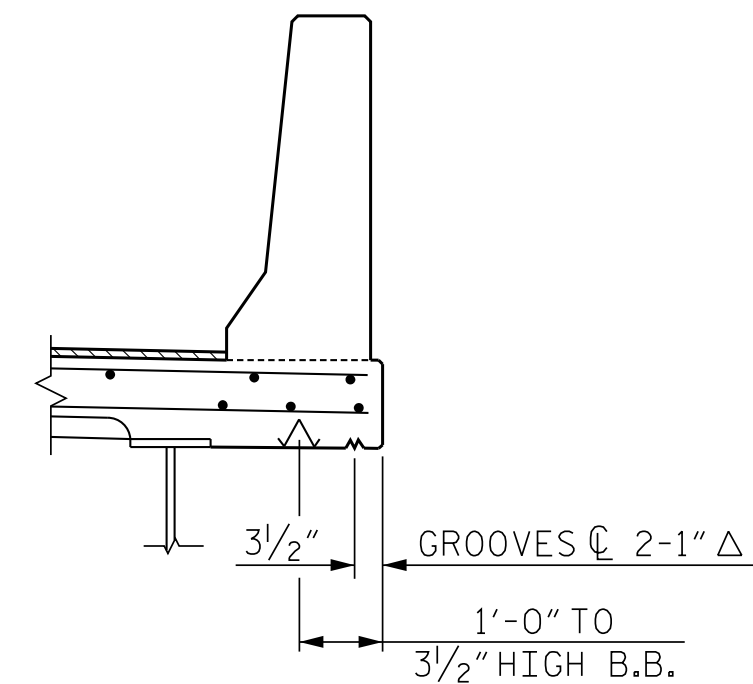
DWN. BY: WDC
CHKD. BY: CFW
DES. EGR. OF RECORD: STC
DATE: 09/2024
DATE: 11/2024
DATE: 09/2024



(CURTAIN WALL @ END BENT)
(SPANS A & C)



THE TOTAL BRIDGE DECK THICKNESS IS 9 1/2" AND CONSISTS OF A 8 1/2" REINFORCED CONCRETE DECK AND A 1" POLYESTER POLYMER CONCRETE OVERLAY. THE REINFORCED CONCRETE DECK SHALL RECEIVE A BROOM FINISH THAT RUNS PERPENDICULAR TO THE DIRECTION OF TRAFFIC AND THE DECK SHALL BE SHOTBLASTED PRIOR TO OVERLAY. OVERLAY EACH WIDENING TO THE LIMITS OF THE PLANS AND MATCH THE DECK PROFILE OF THE EXISTING BRIDGE.



BOTTOM OF
OVERHANG DETAILS

SHEET 4 OF 7

RIGHT WIDENING

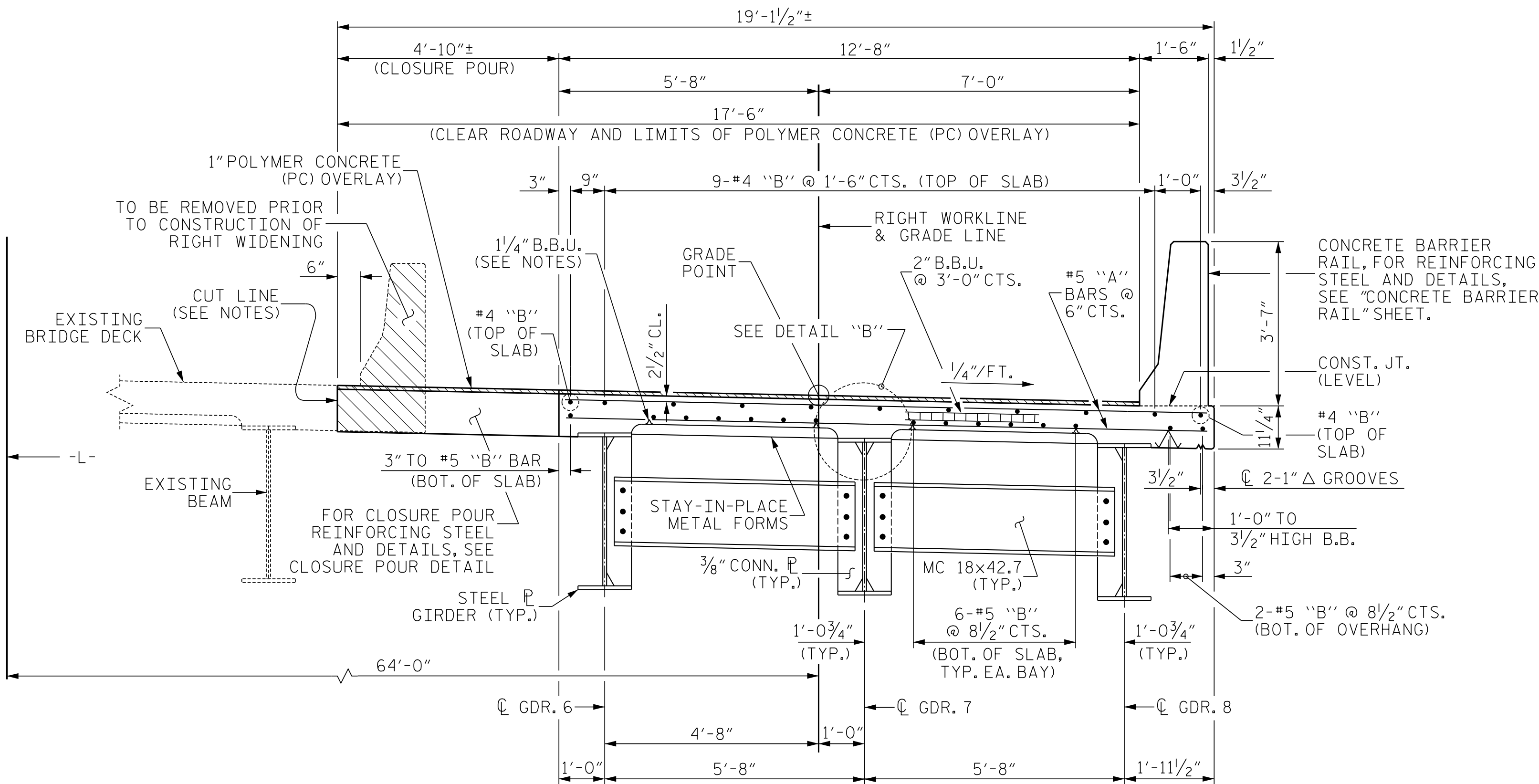
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
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CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024

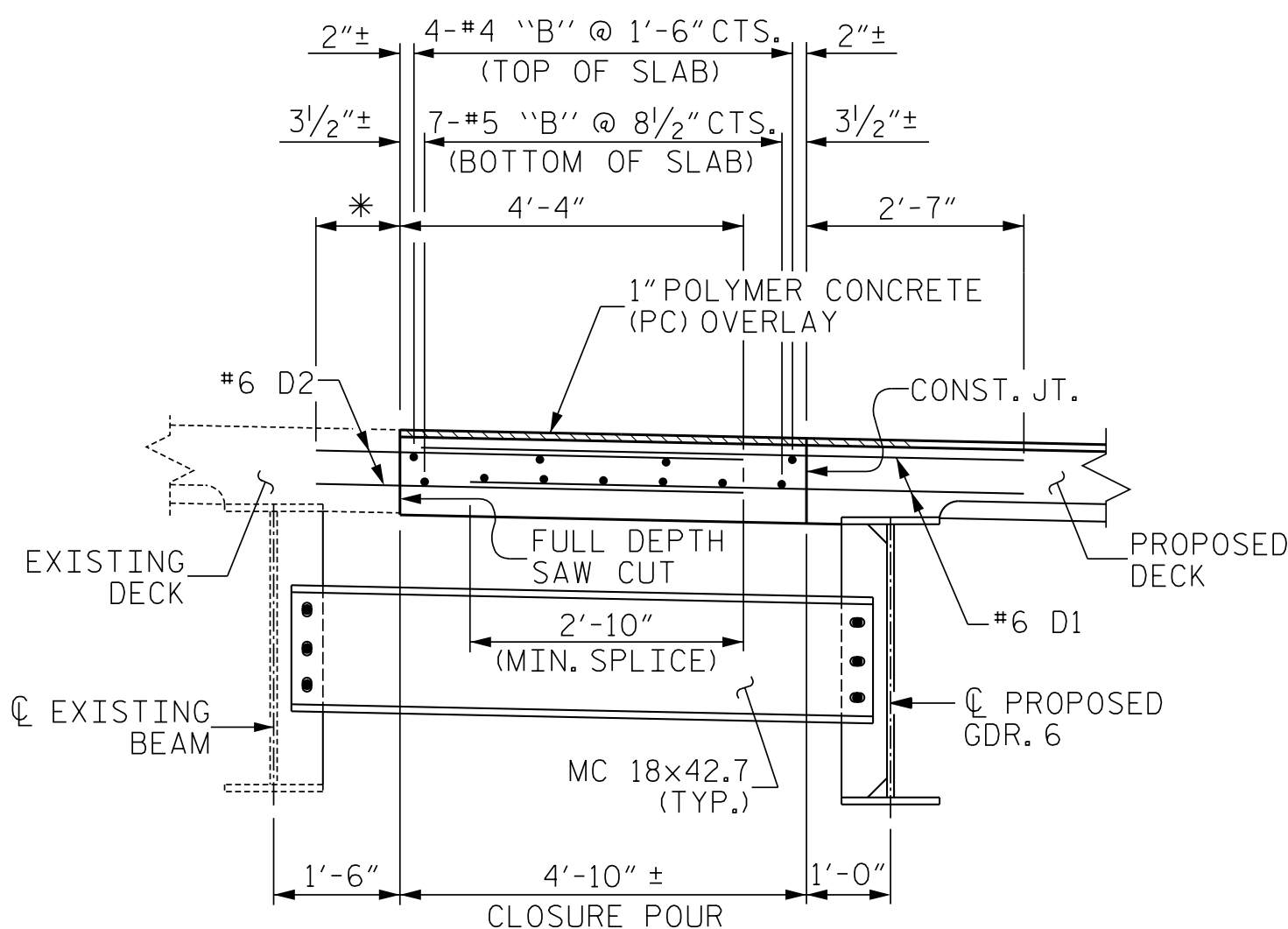
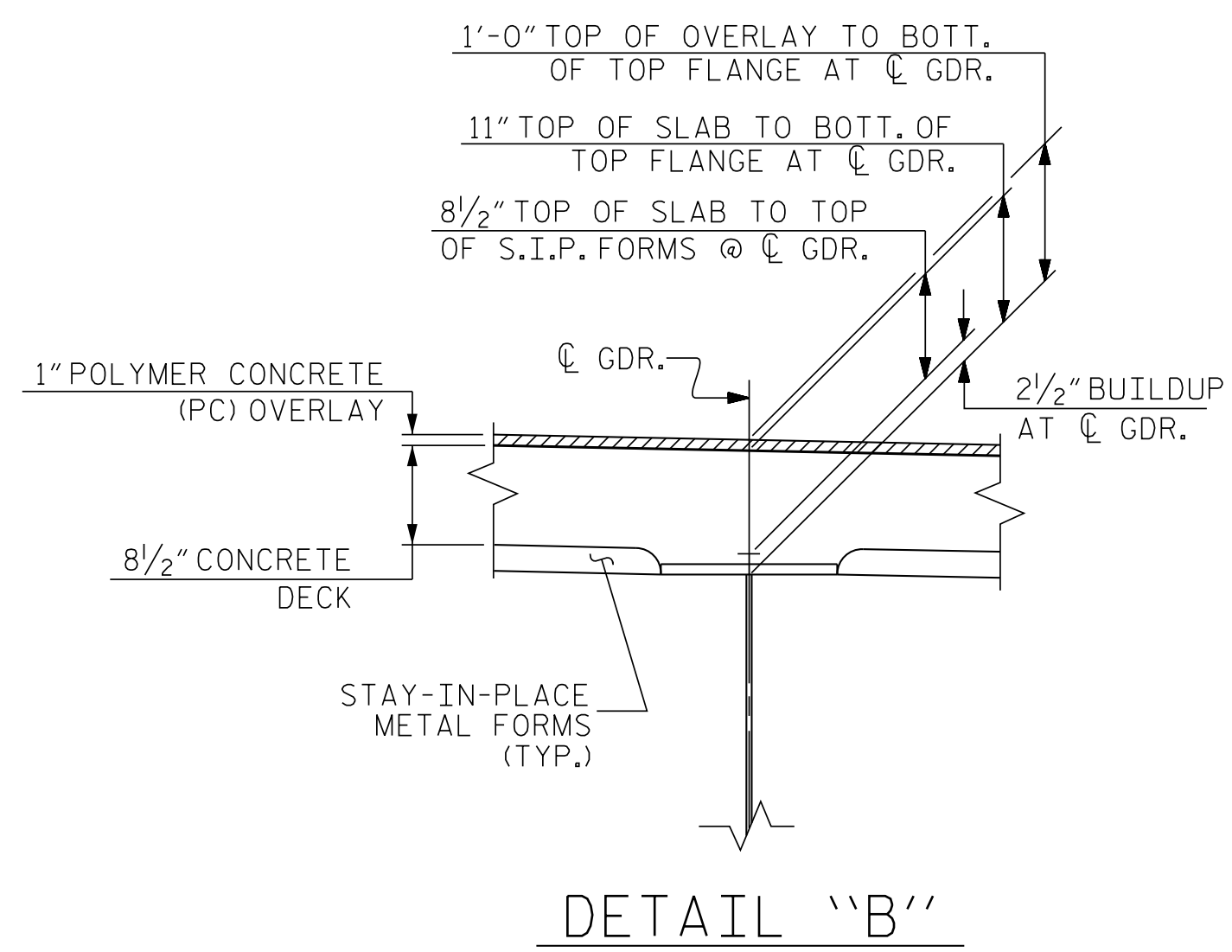
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TYPICAL SECTION - RIGHT WIDENING
(INTERMEDIATE DIAPHRAGMS)
(SPANS A & C)



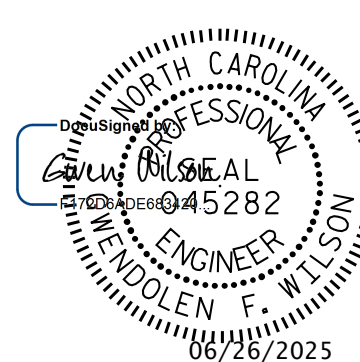
TYPICAL SECTION - RIGHT WIDENING - CLOSURE POUR
(INTERMEDIATE DIAPHRAGMS)
(SPANS A & C)

* #6 D2 DOWELS PLACED IN THE EXISTING DECK SHALL BE INSTALLED USING AN ADHESIVE ANCHORING SYSTEM. LEVEL ONE FIELD TESTING IS REQUIRED AND THE YIELD LOAD OF THE DOWEL IS 13.2 KIPS. OVERALL LENGTH SHALL PROVIDE A 4'-4" MIN. EXTENSION INTO CLOSURE POUR. EMBEDMENT LENGTH TO BE DETERMINED BY THE MANUFACTURER OF THE ADHESIVELY ANCHORED ANCHOR SYSTEM. #6 D2 BAR LENGTH IS BASED ON A 10" EMBEDMENT LENGTH. ADHESIVELY ANCHORED ANCHOR BOLT OR DOWEL TESTING SHALL BE IN ACCORDANCE WITH SECTION 420-13 OF THE STANDARD SPECIFICATIONS.

* #6 D1 AND #6 D2 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM SLAB REINFORCING STEEL.

PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 5 OF 7



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
TYPICAL SECTION
(SPANS A & C)
RIGHT WIDENING

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UNLESS ALL SIGNATURES COMPLETED

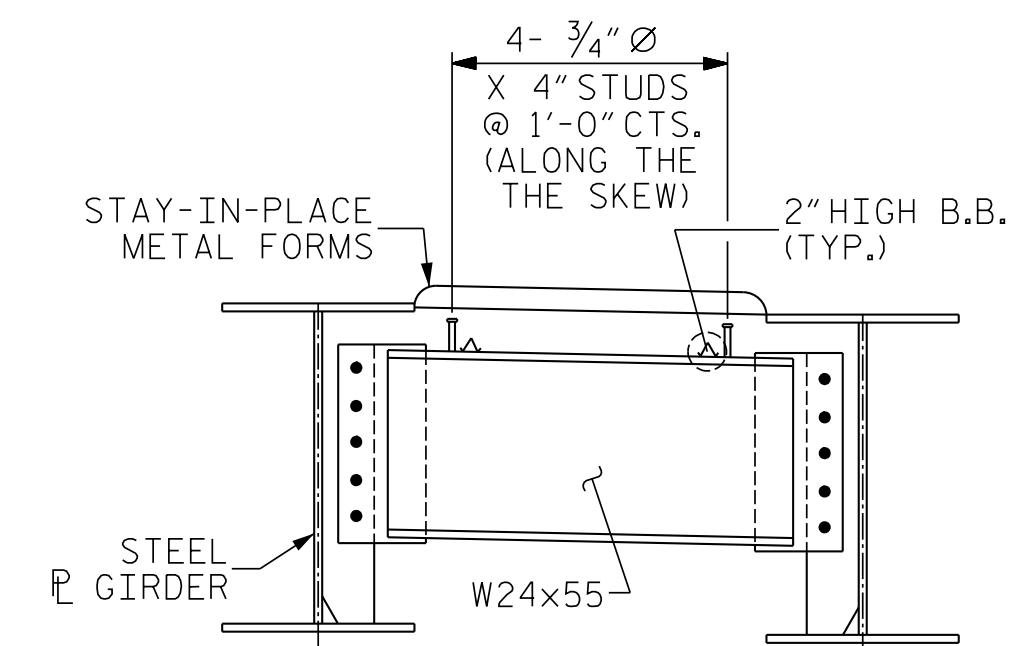


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NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

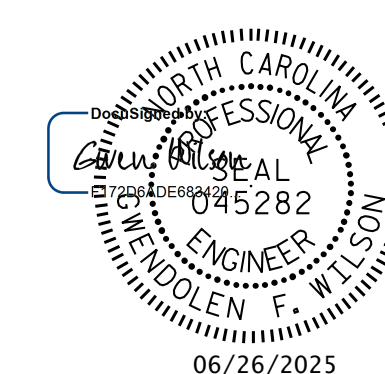
TOTAL SHEETS 81

DWN. BY: WDC DATE: 09/2024
CHKD. BY: CFW DATE: 11/2024
DES. EGR. OF RECORD: STC DATE: 09/2024



(BENT DIAPHRAGMS)
(SPAN B)

(TYP. EACH BAY)



(INTERMEDIATE DIAPHRAGMS)
(SPAN B)

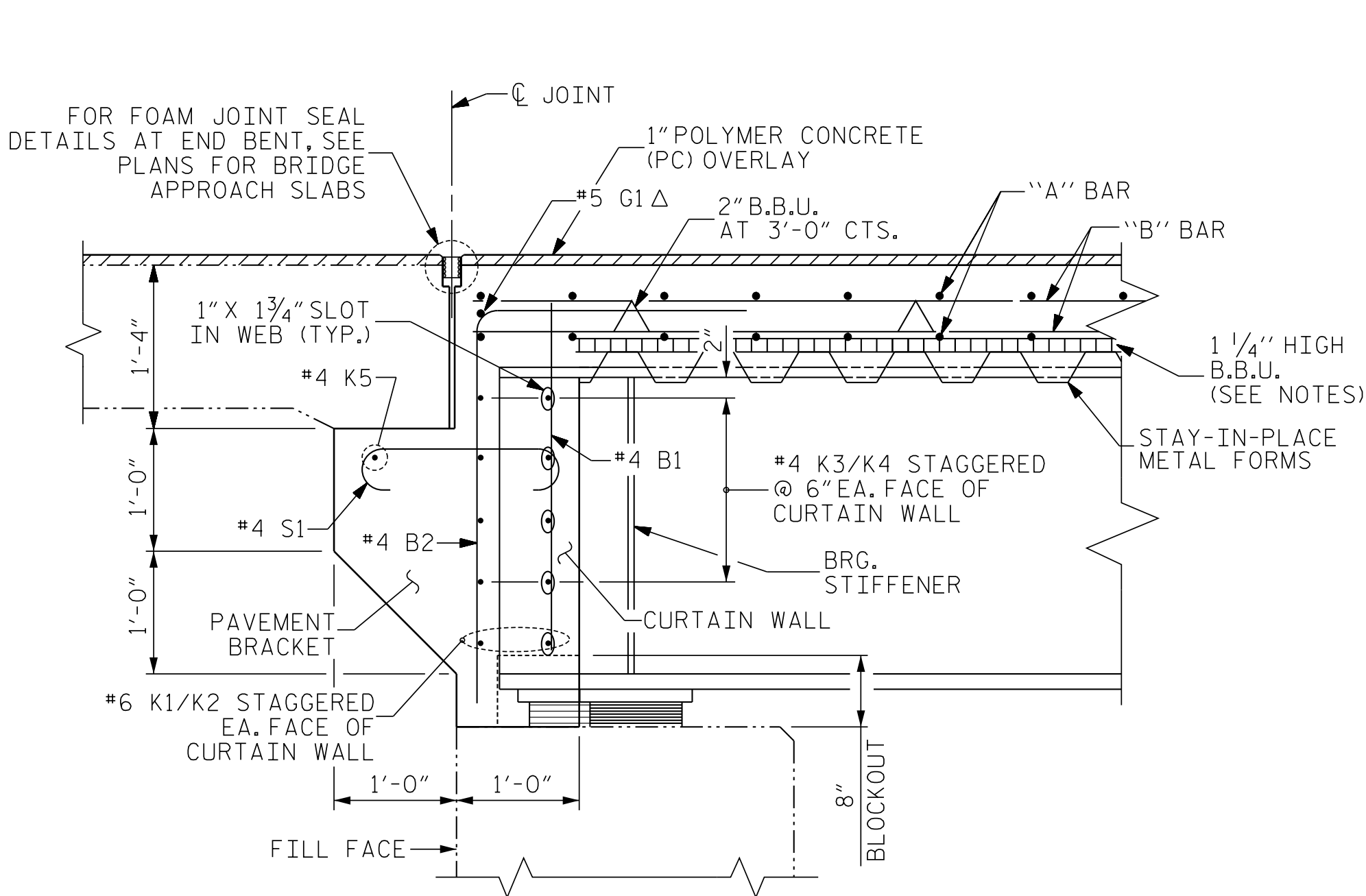
SHEET 6 OF 7

SUPERSTRUCTURE
TYPICAL SECTION
(SPAN B)

RIGHT WIDENING

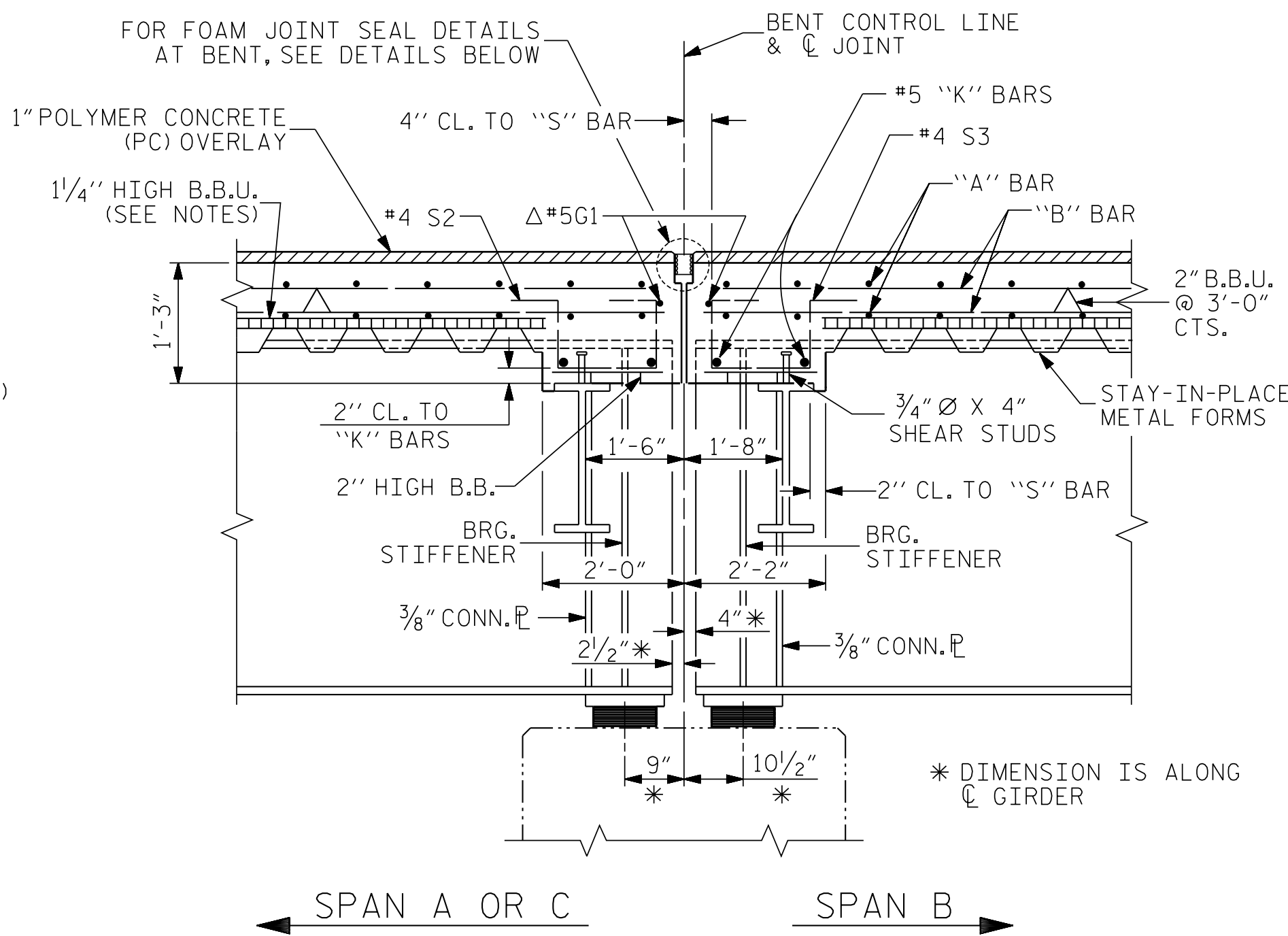
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2			4			

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CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024



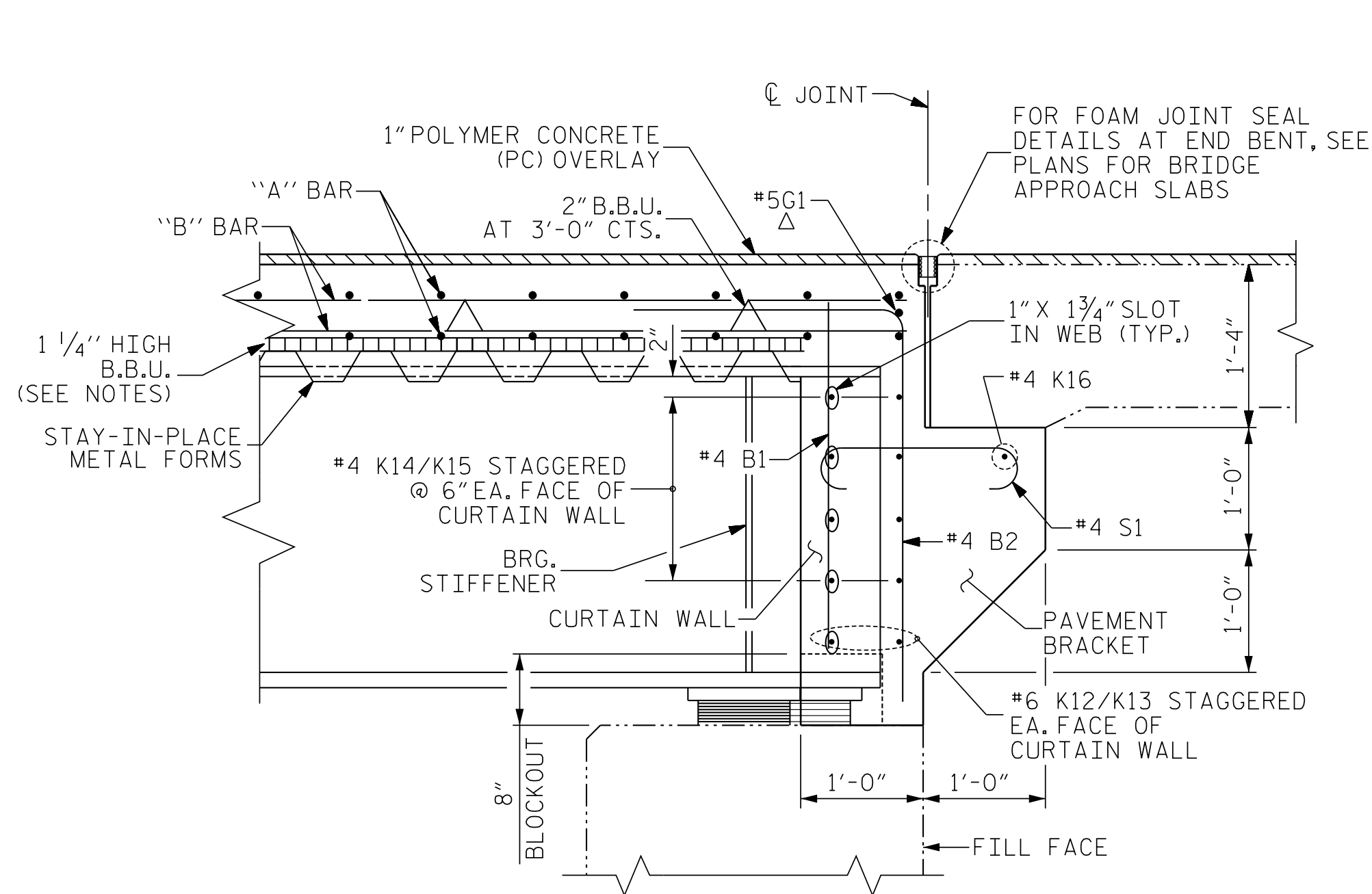
SECTION THRU END BENT 1
CURTAIN WALL AND PAVEMENT BRACKET

Δ #5 GI BAR SHALL BE PARALLEL TO JOINT AND
MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO
CLEAR DIAPHRAGM AND REINFORCING STEEL.



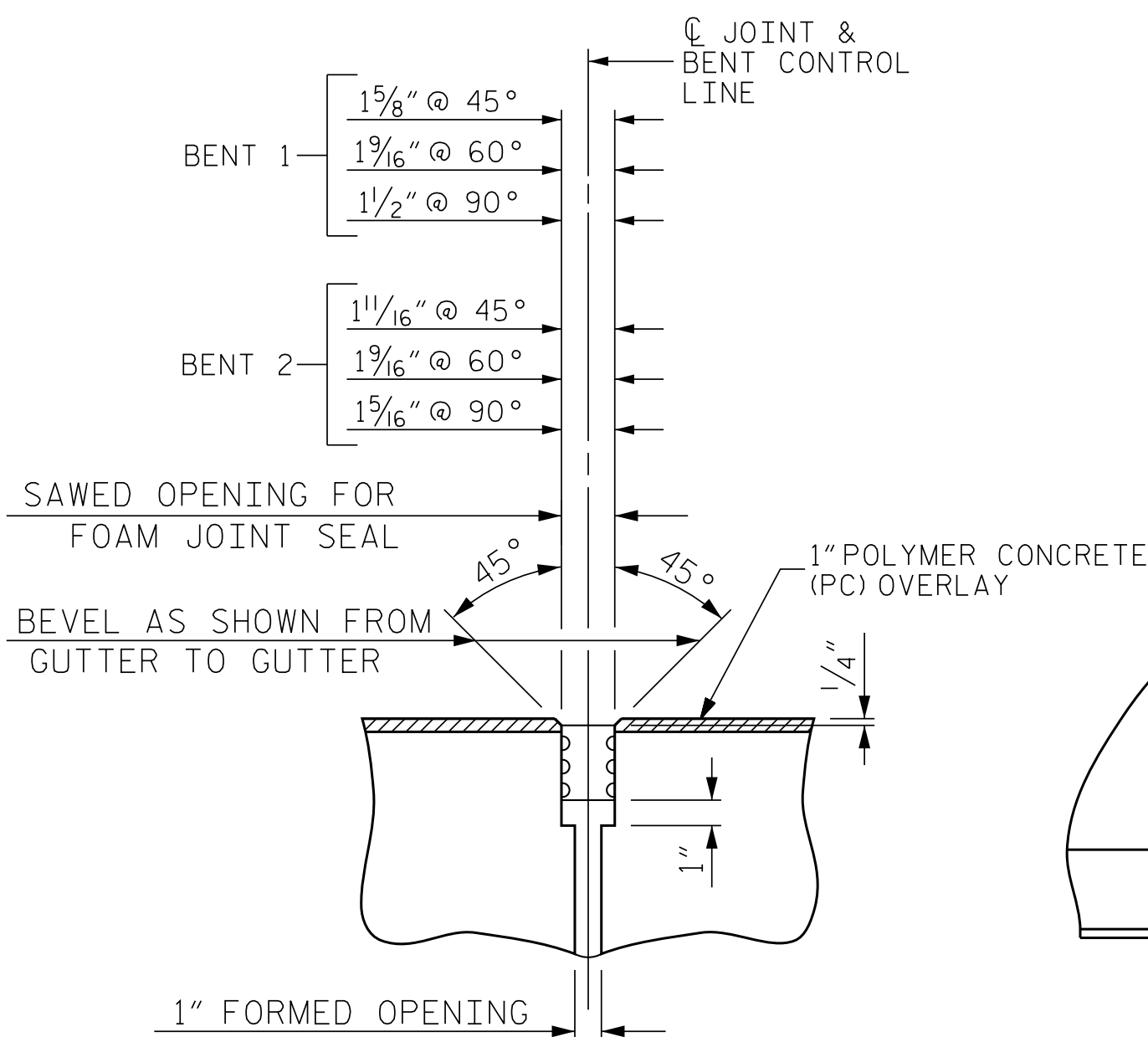
SECTION THRU BENT DIAPHRAGM

Δ #5 GI BAR SHALL BE PARALLEL TO JOINT AND
MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO
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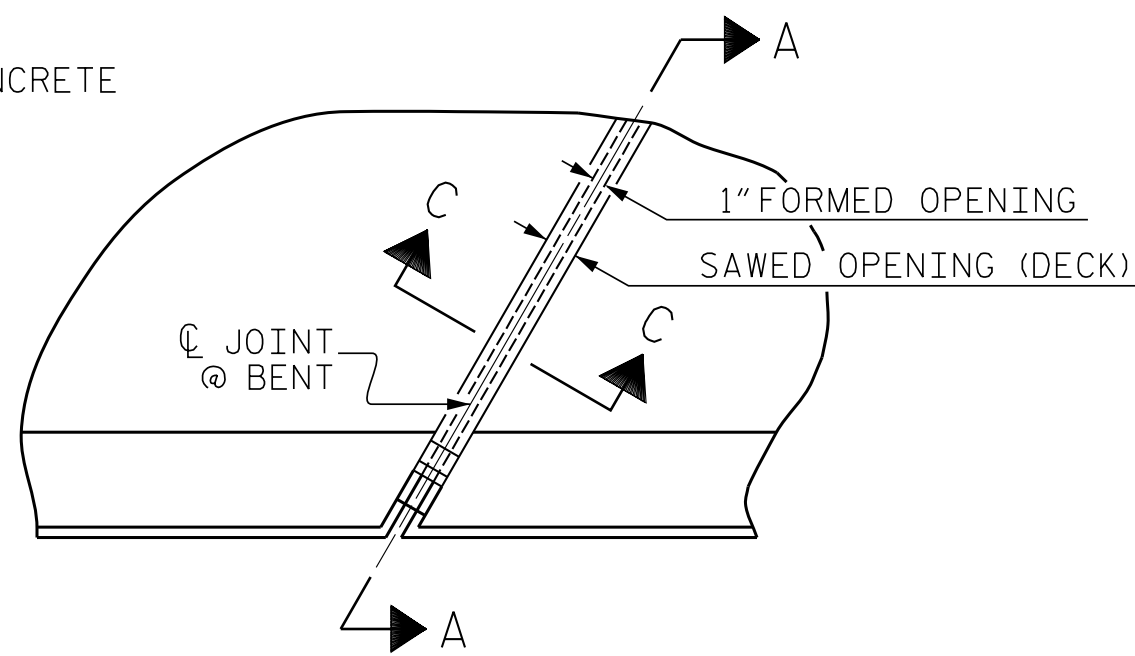


SECTION THRU END BENT 2
CURTAIN WALL AND PAVEMENT BRACKET

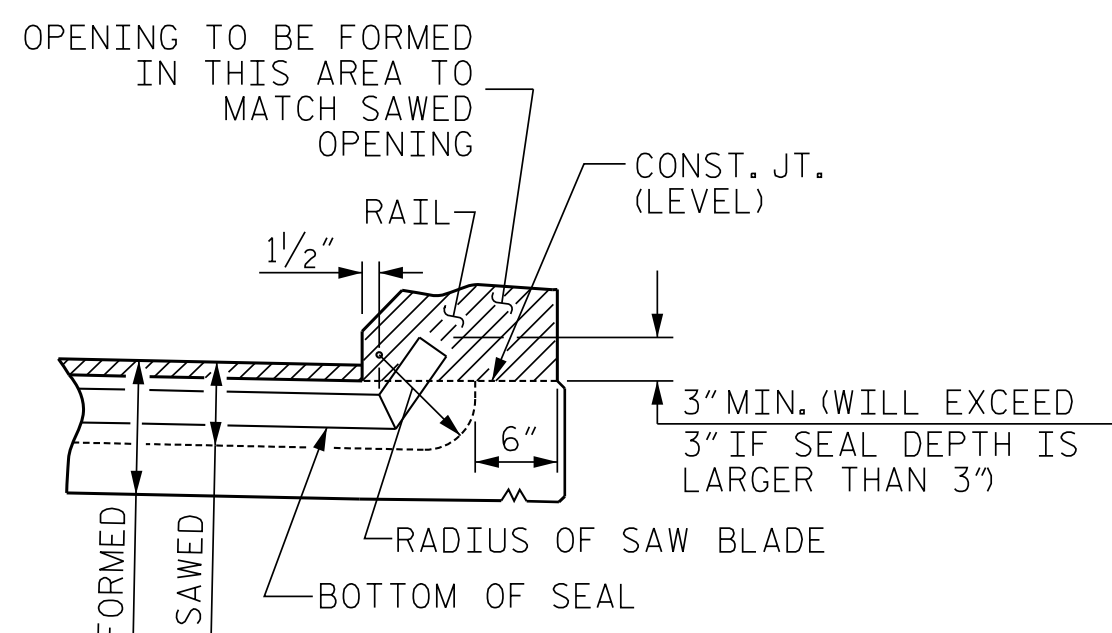
Δ #5 GI BAR SHALL BE PARALLEL TO JOINT AND
MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO
CLEAR DIAPHRAGM AND REINFORCING STEEL.



SECTION C-C
FOAM JOINT SEAL
(EXPANSION)



PLAN



SECTION A-A

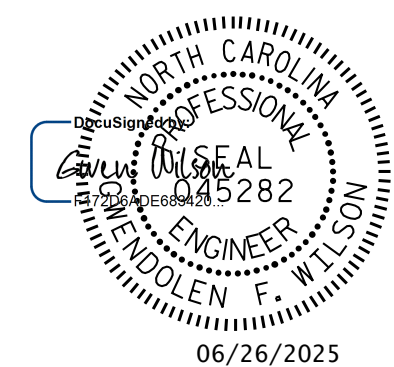
FOAM JOINT SEAL TO BE CUT, HEAT WELDED
AND TURNED UP PARALLEL TO SLOPED
FACE OF THE BARRIER RAIL.

FOAM JOINT SEAL DETAILS AT BENTS

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM
JOINT SEAL SHALL BE 2" AT BENTS 1 AND 2.

THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF
THE BARRIER RAIL.



PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 7 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
TYPICAL SECTION
LEFT & RIGHT
WIDENING

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S2-16
2			4			
						TOTAL SHEETS
						81

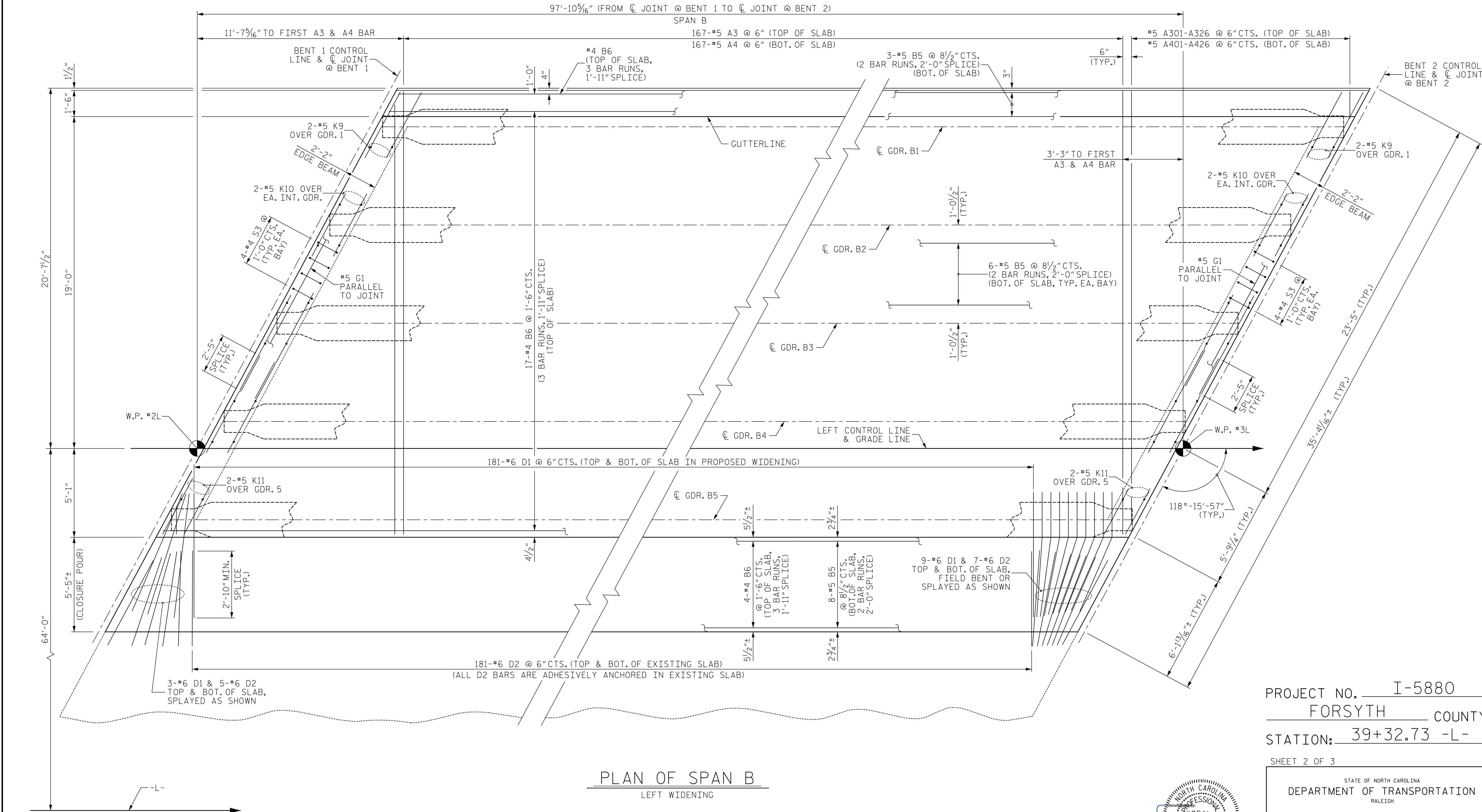
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CHKD. BY: CFW
DES. EGR. OF RECORD: STC
DATE: 09/2024
DATE: 11/2024
DATE: 09/2024

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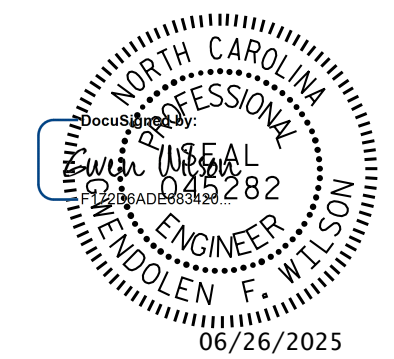
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DATE: 6/18/2025 TIME: 6:18/2025



PLAN OF SPAN B
LEFT WIDENING

PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

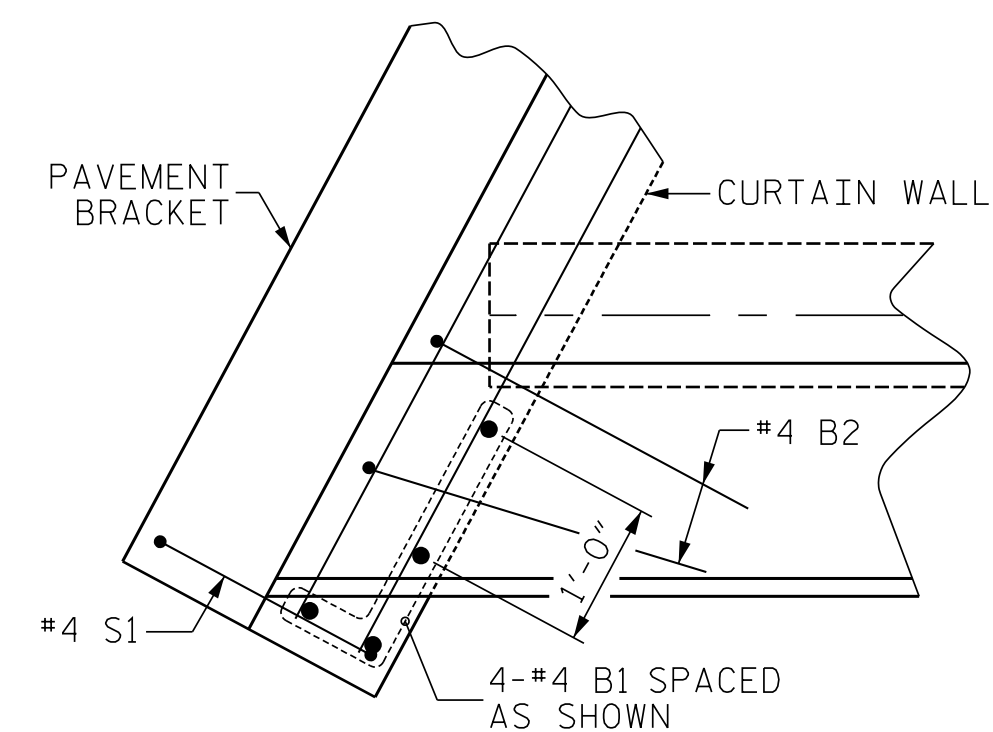
SHEET 2 OF 3					
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE PLAN OF SPAN B LEFT WIDENING					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					81



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CHKD. BY: CFW DATE: 11/2024
DES. EGR. OF RECORD: STC DATE: 09/2024



SHEET 1 OF 3

RIGHT WIDENING

No.	REVISIONS						SHEET NO. S2-20
	NO.	BY:	DATE:	NO.	BY:	DATE:	
	1			3			TOTAL SHEETS 81
	2			4			

DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024

Professional Engineer

NORTH CAROLINA
04282
JUNE 26, 2022
WILSON F. WILSON

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06/26/202

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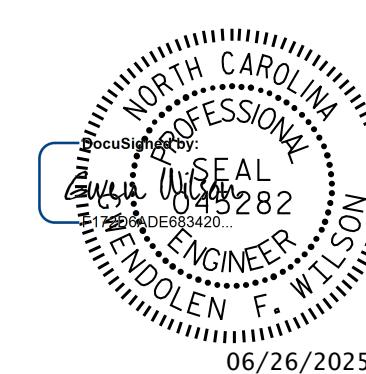
SHEET 2 OF 3

SUPERSTRUCTURE
PLAN OF SPAN B

RIGHT WIDENING

REVISIONS							SHEET NO. S2-21
C.	NO.	BY:	DATE:	NO.	BY:	DATE:	
	1			3			
	2			4			
							TOTAL SHEETS 81

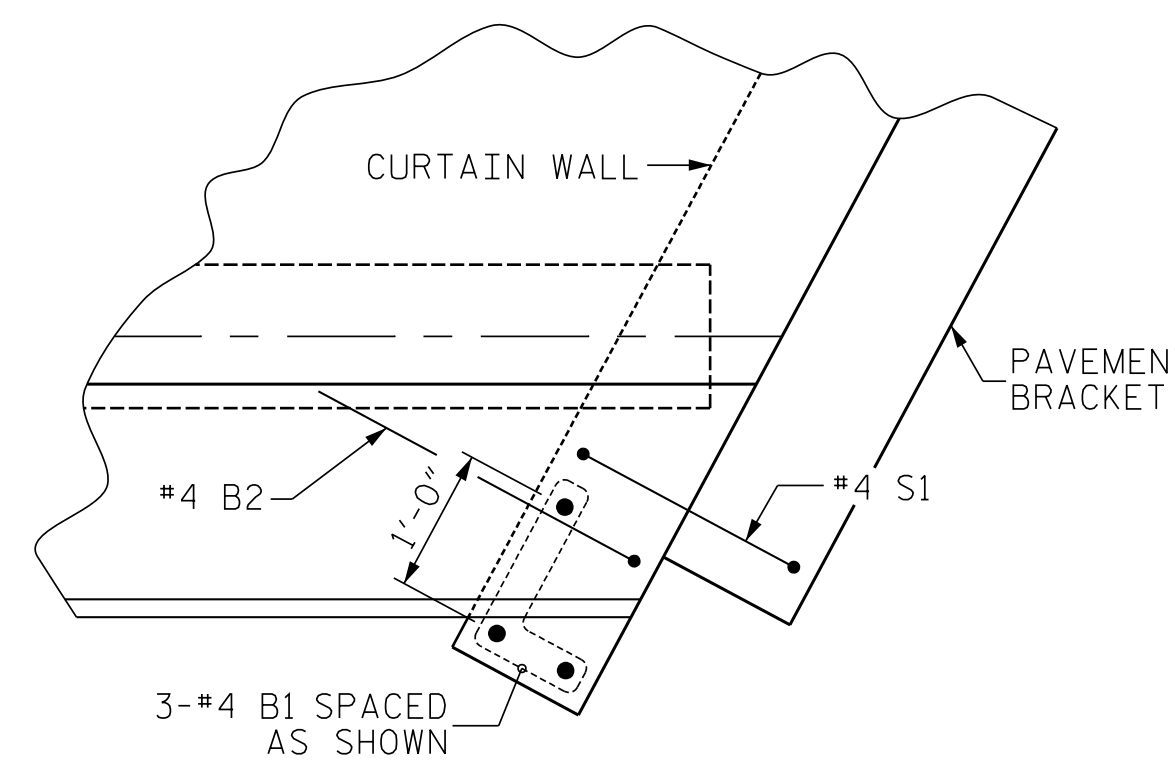
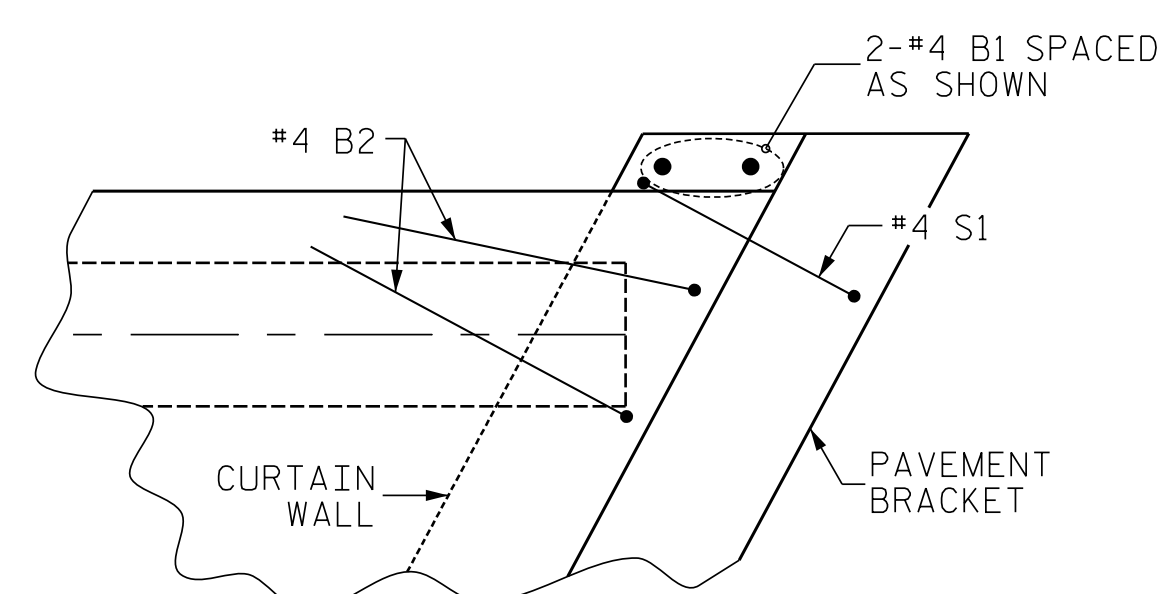
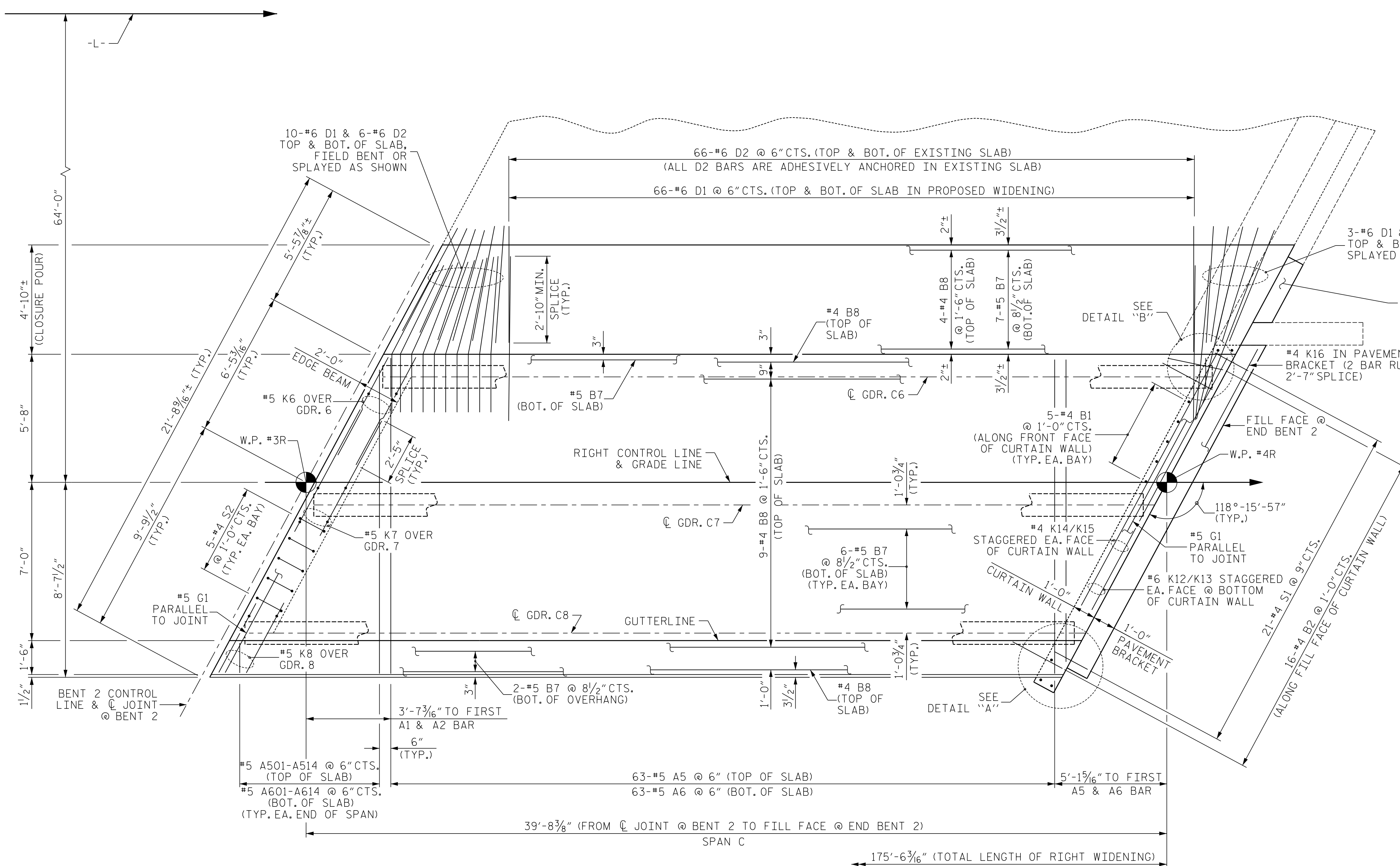
DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024



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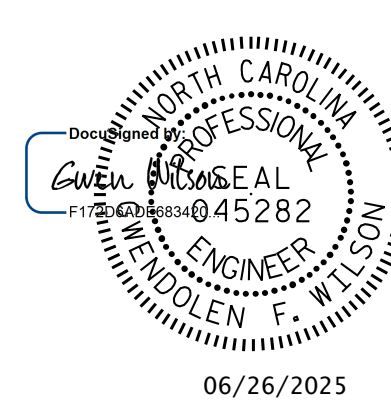
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PLAN OF SPAN C
RIGHT WIDENING

PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 3 OF 3					
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE PLAN OF SPAN C RIGHT WIDENING					
REVISIONS					SHEET NO. S2-22
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS 81					



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DWN. BY: WDC DATE: 09/2024
CHKD. BY: CFW DATE: 11/2024
DES. EGR. OF RECORD: STC DATE: 09/2024

\\c:\p\user\jmt\jmt-jmw\Documents\Pro\jmt-jmw\00\Design\Structures\Bridges\330340\Structures\2_PlaneWidening_Plans\02_043_I5880_330340_P5RC_002.dgn
TIME: 6/18/2025

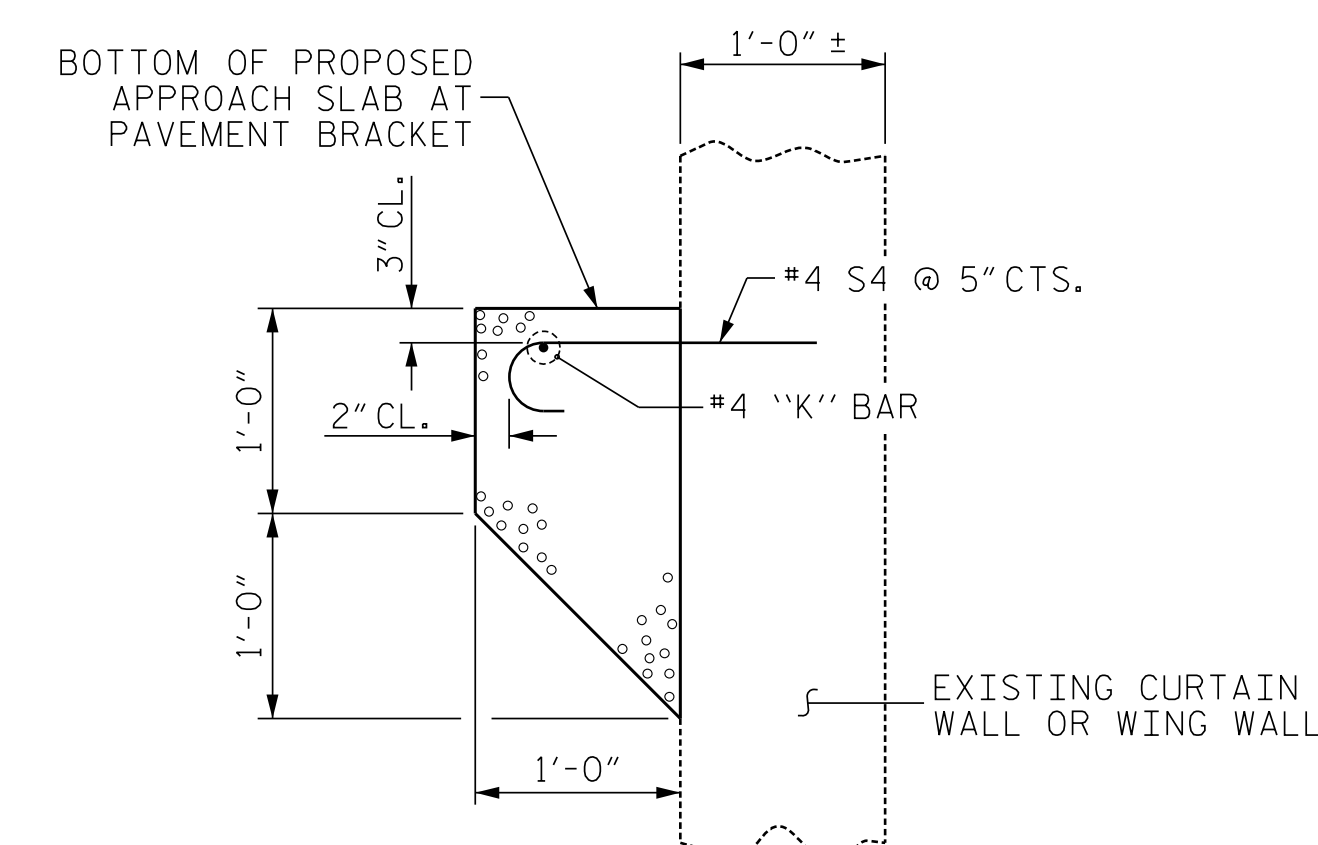
PRIOR TO CONSTRUCTION OF THE PAVEMENT BRACKET EXTENSIONS,
THE CONCRETE OF THE EXISTING CURTAIN WALL SHALL BE PREPARED,
CLEAN, DRY, AND VOID OF DEBRIS.

PAVEMENT BRACKET EXTENSION SHALL NOT BE CONSTRUCTED UNTIL THE PROPOSED END BENT HAS BEEN COMPLETED, AND THE WING AND CURTAIN WALL OF THE OF THE EXISTING END BENT HAS BEEN PARTIALLY REDUCED IN HEIGHT.

*4 S4 BARS USED TO CONNECT THE PAVEMENT BRACKET EXTENSION TO THE EXISTING CURTAIN WALL SHALL BE INSTALLED USING AN ADHESIVE ANCHORING SYSTEM. LEVEL 1 FIELD TESTING IS REQUIRED AND THE YIELD LOAD OF THE *4 BARS IS 6 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SECTION 420-13 OF THE STANDARD SPECIFICATIONS.

FOR REINFORCING STEEL AND CONCRETE QUANTITIES, SEE
SUPERSTRUCTURE BILL OF MATERIAL.

IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE AND INSTALL ADDITIONAL #4 S4 BARS WHEN THE REALIZED LENGTH OF ANY PAVEMENT BRACKET EXTENSION EXCEEDS 5' OVER THAN SHOWN ON THE PLANS. #4 'K' BARS USED SHALL BE OF SUFFICIENT LENGTH TO TIE TO ALL #4 S4 BARS SPACED AS SHOWN. PROVIDE 2" MINIMUM CLEARANCE BETWEEN REINFORCING STEEL AND EXISTING CONCRETE.

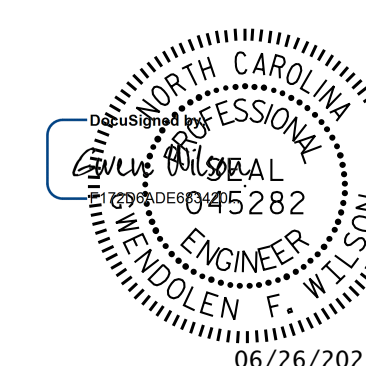


TYPICAL SECTION

(END BENT 1 SHOWN, END BENT 2 SIMILAR)



PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
PAVEMENT BRACKET
EXTENSIONS
LEFT & RIGHT
WIDENING

REVISED							SHEET NO. S2-23
REVISIONS							
INC.	NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 81
	1			3			
	2			4			

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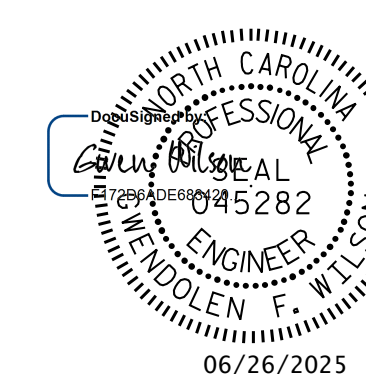
DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024



*ATTENTION IS CALLED TO THE FACT THAT THE BENT CONTROL LINE IS OFFSET 3" FROM THE CENTERLINE OF BENT.

PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
FRAMING PLAN
SPANS A & C
LEFT WIDENING

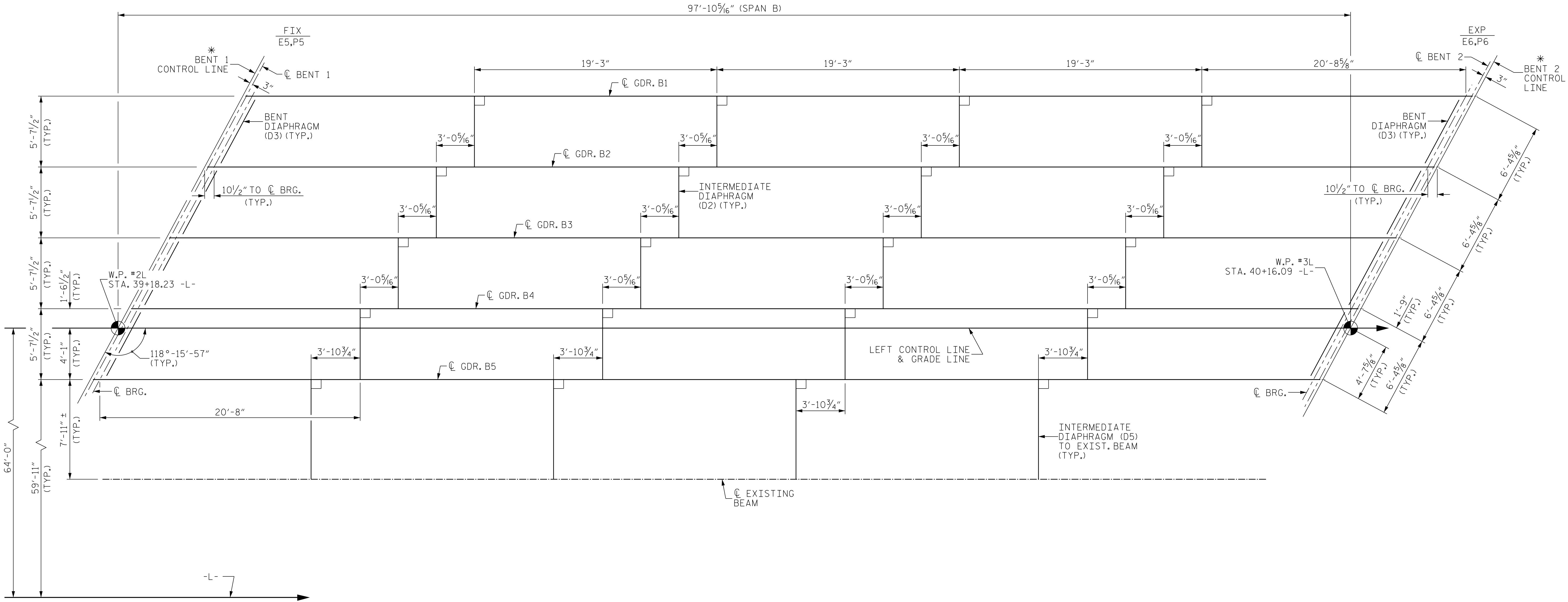
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	NO.	BY:	DATE:	NO.	BY:	DATE:	
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	2			4			

DWN. BY: WDC	DATE: 09/2024
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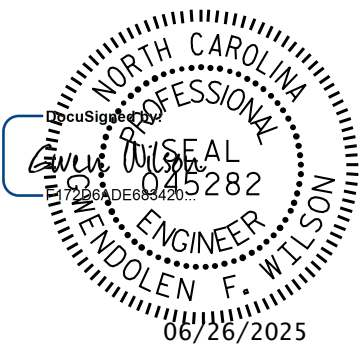


FRAMING PLAN - SPAN B
LEFT WIDENING

*ATTENTION IS CALLED TO THE FACT THAT THE BENT CONTROL LINE IS OFFSET 3" FROM THE CENTERLINE OF BENT.

PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 2 OF 2



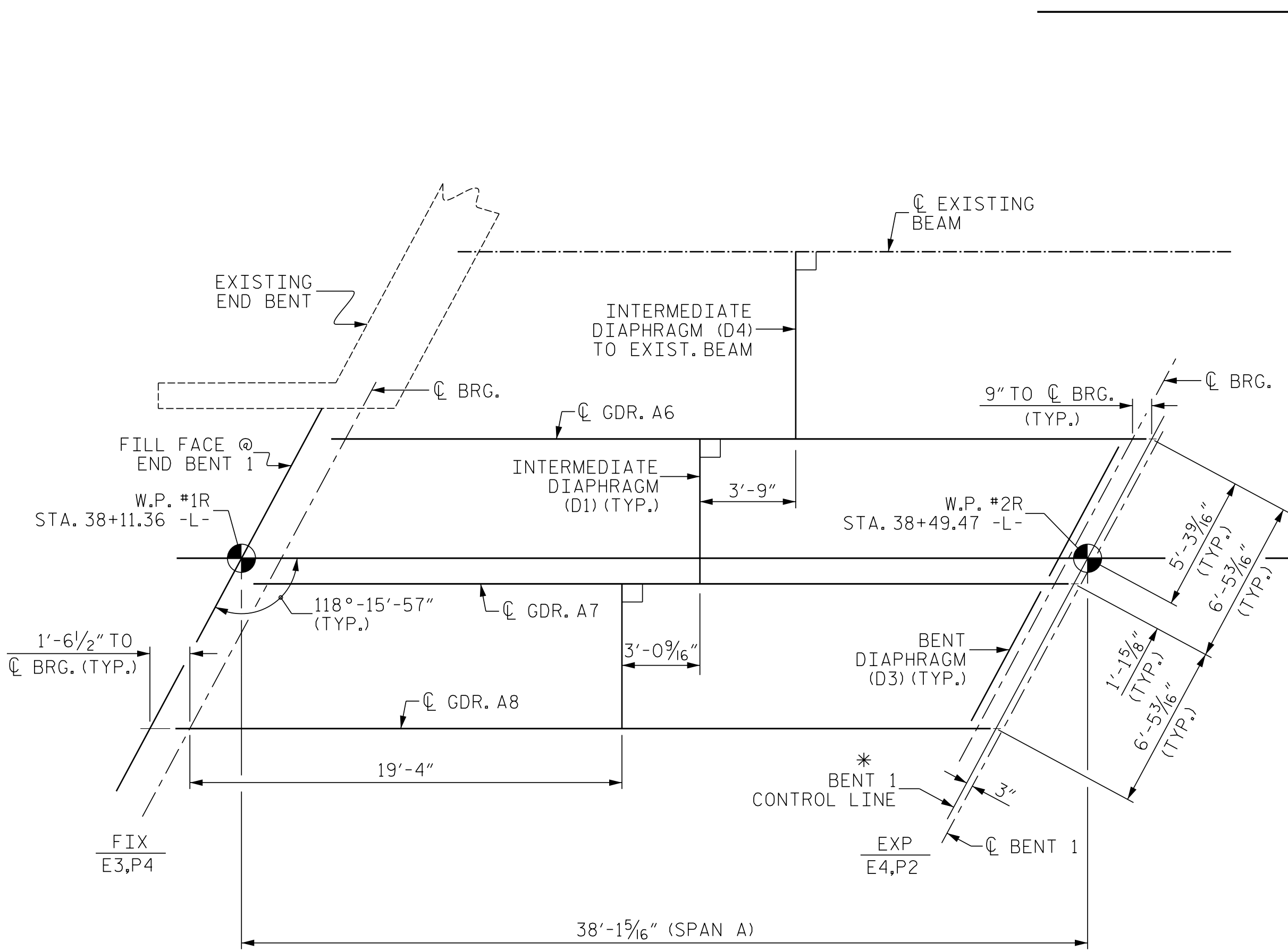
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE FRAMING PLAN SPAN B LEFT WIDENING					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S2-25					TOTAL SHEETS 81

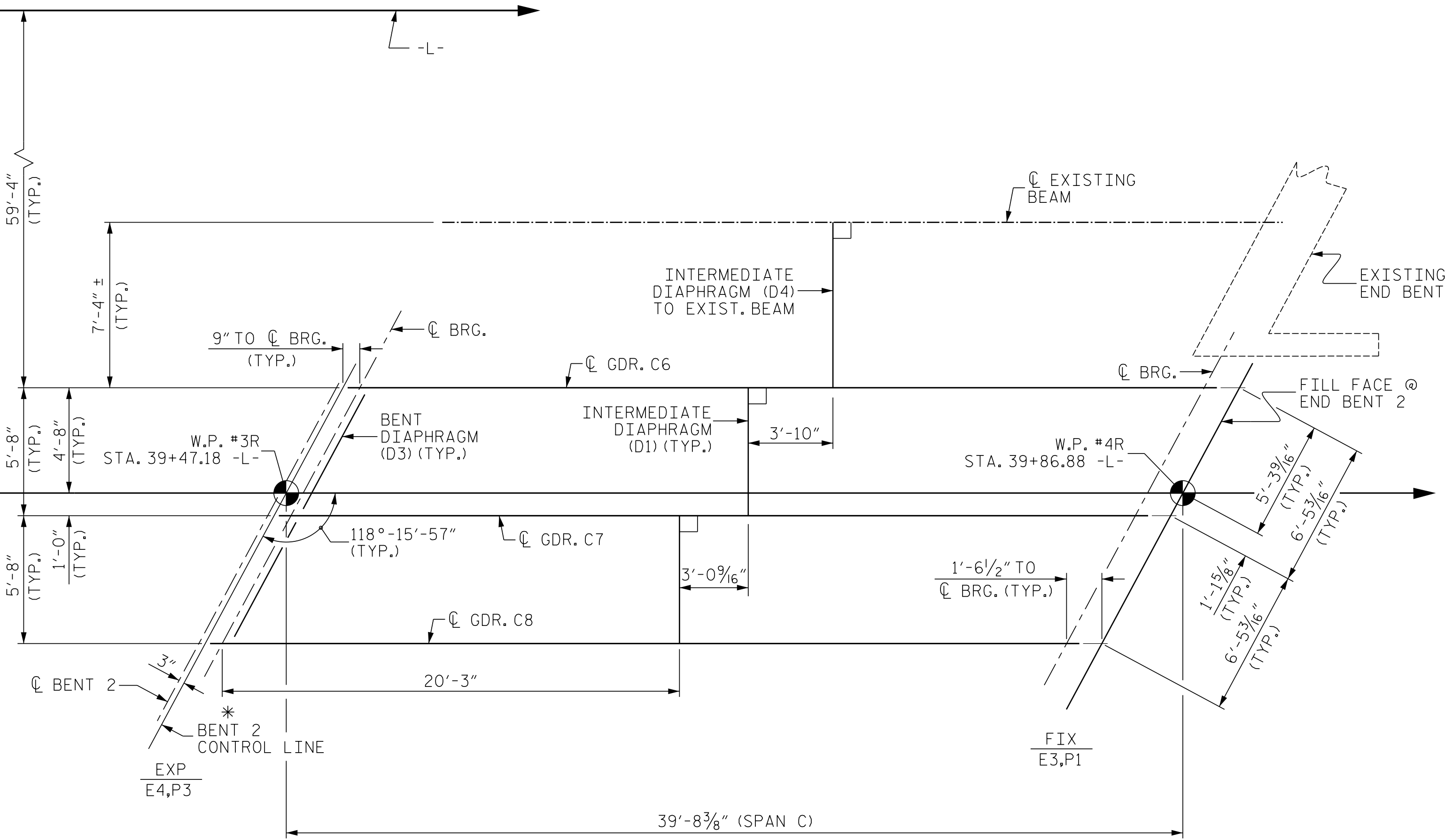
DWN. BY: WDC DATE: 09/2024
CHKD. BY: CFW DATE: 11/2024
DES. EGR. OF RECORD: STC DATE: 09/2024

\\c:\p\user\jmt\jmt-jmw\Documents\Proj\jmt-jmw\01\Documents\Proj\jmt-jmw\01\Design\Structures\Bridges\330340\Structures\2_PlaneWidening_Plans\402_051_I5880_330340_FPL_026.dgn
DATE: 6/18/2025 TIME: 6:18/2025



FRAMING PLAN - SPAN A
RIGHT WIDENING

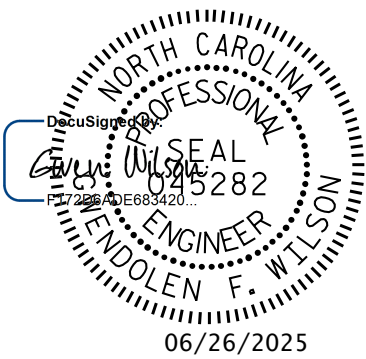
*ATTENTION IS CALLED TO
THE FACT THAT THE BENT
CONTROL LINE IS OFFSET
3" FROM THE CENTERLINE
OF BENT.



FRAMING PLAN - SPAN C
RIGHT WIDENING

PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 1 OF 2



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
FRAMING PLAN
SPANS A & C
RIGHT WIDENING

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S2-26
2			4			
TOTAL SHEETS						81

DWN. BY: WDC DATE: 09/2024
CHKD. BY: CFW DATE: 11/2024
DES. EGR. OF RECORD: STC DATE: 09/2024



PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-

SUPERSTRUCTURE
FRAMING PLAN
SPANS B
RIGHT WIDENING

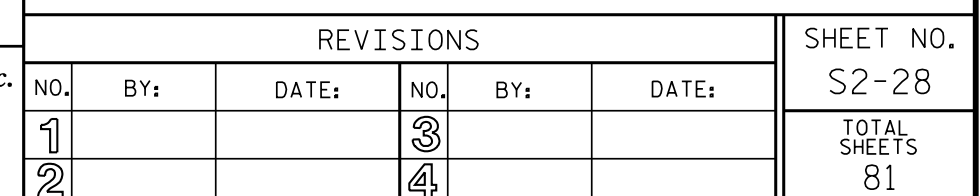
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C.	NO.	BY:	DATE:	NO.	BY:	DATE:	
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	2			4			
							TOTAL SHEETS 81

DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024

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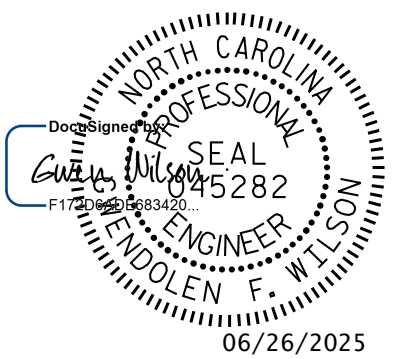
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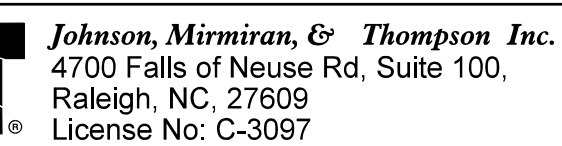
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DES. EGR. OF RECORD: STC	DATE: 09/2024



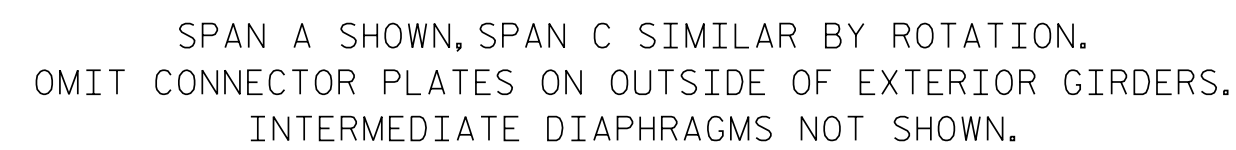
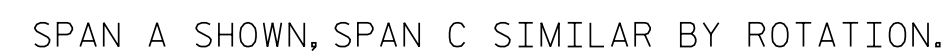
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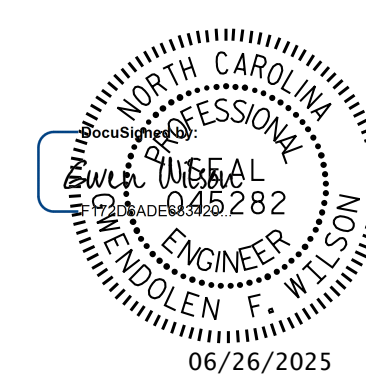
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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-29
1			3			TOTAL SHEETS 81
2			4			



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DES. EGR. OF RECORD: STC	DATE: 09/2024

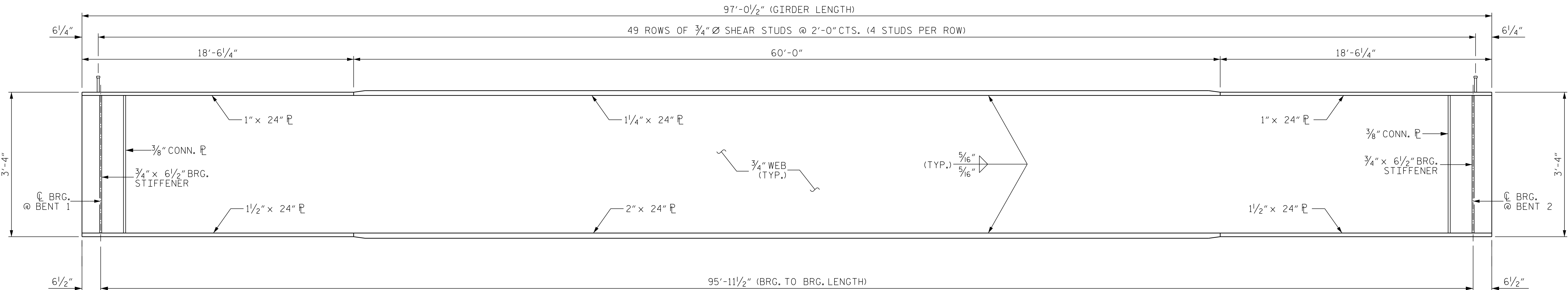


REVISIONS						SHEET NO. S2-30
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

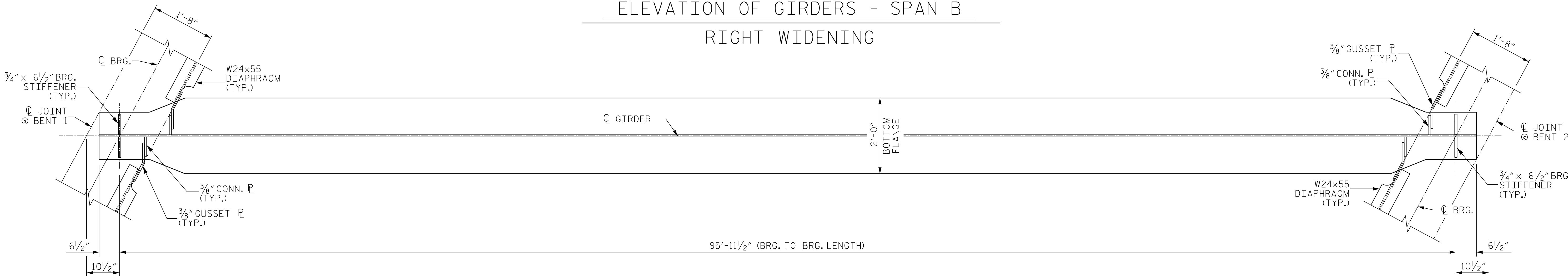


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DES. EGR. OF RECORD: STC	DATE: 09/2024

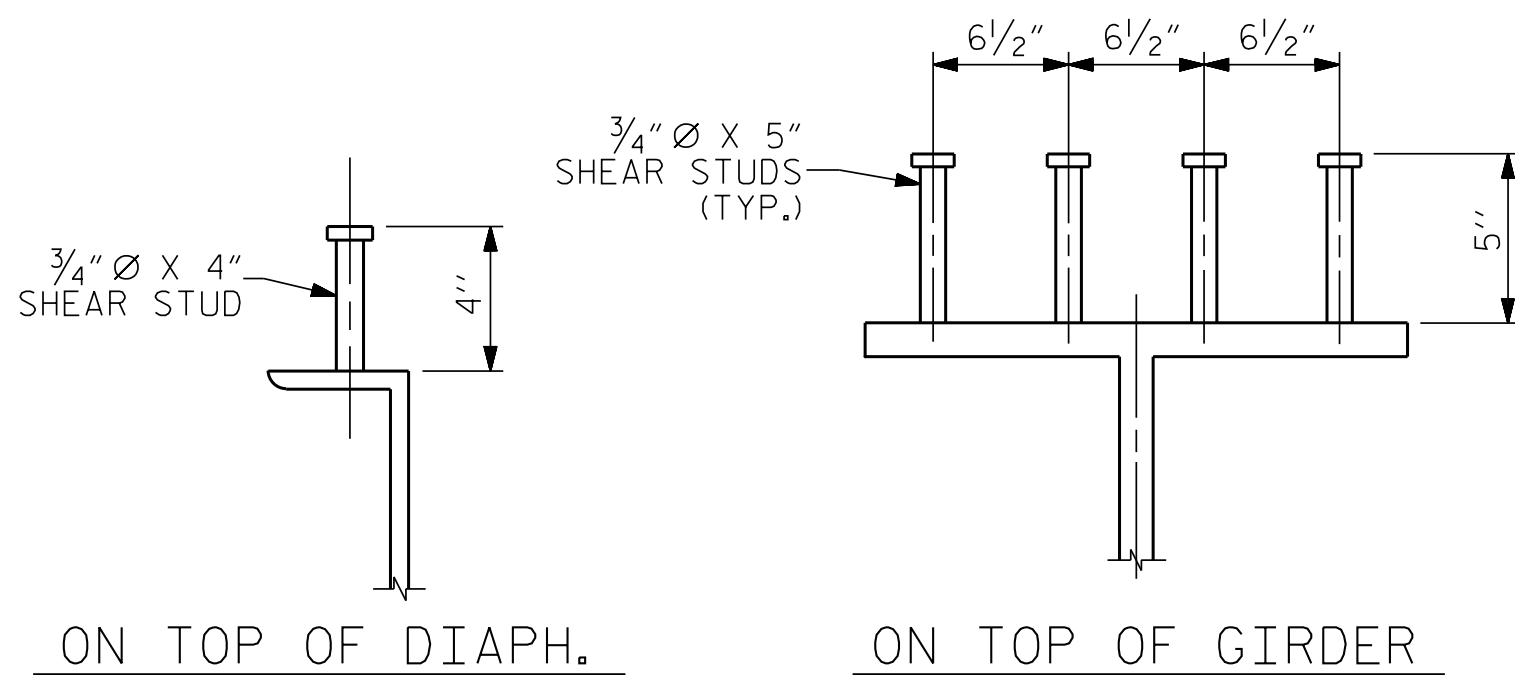


ELEVATION OF GIRDERS - SPAN B
RIGHT WIDENING

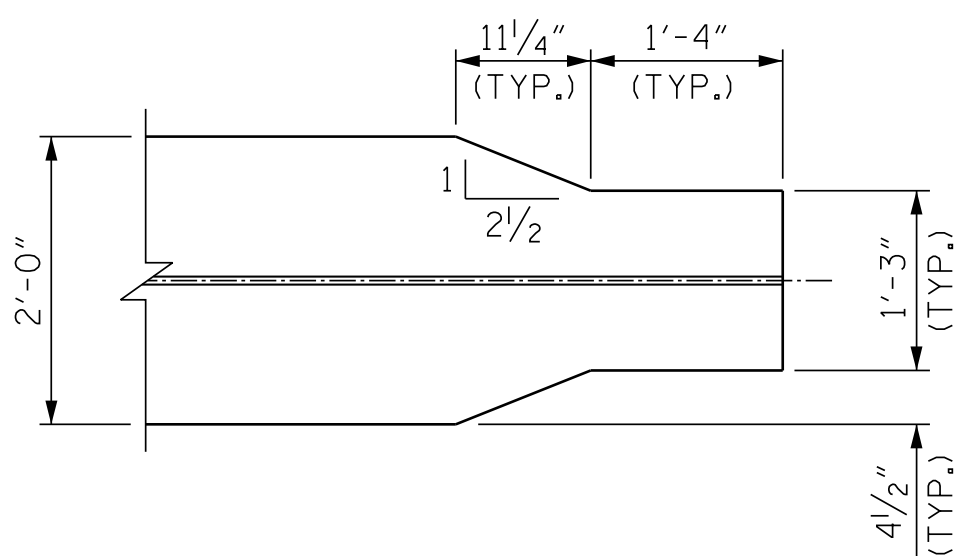


BOTTOM FLANGE DETAILS - SPAN B
RIGHT WIDENING

OMIT CONNECTOR PLATES ON OUTSIDE OF EXTERIOR GIRDERS.
INTERMEDIATE DIAPHRAGMS NOT SHOWN.

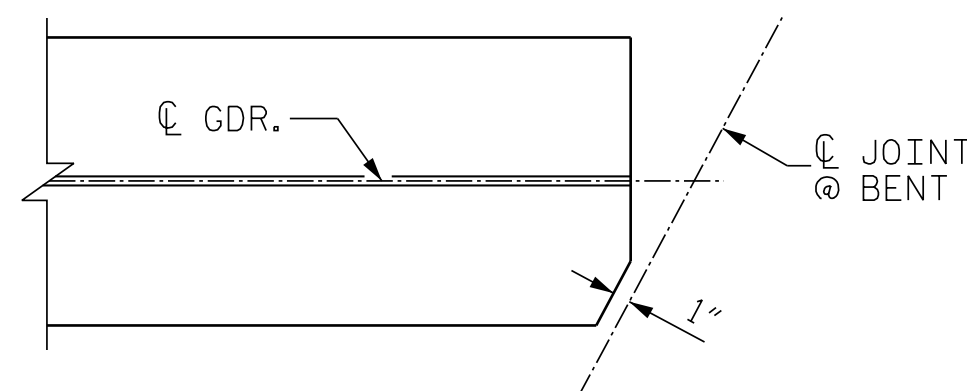


SHEAR STUD DETAILS



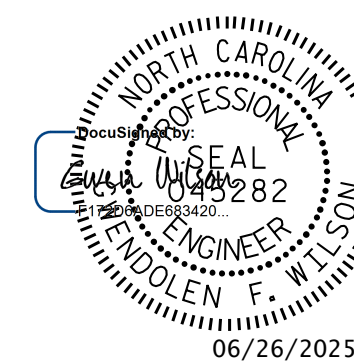
END OF GIRDER DETAIL

(BOTTOM FLANGE ONLY)



TOP FLANGE CLIP DETAIL

(TYP. EACH END)



PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
STRUCTURAL STEEL
DETAILS
RIGHT WIDENING

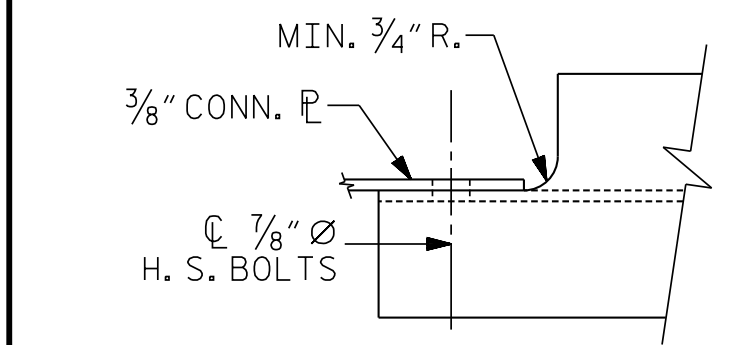
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S2-31
2			4			
TOTAL SHEETS 81						

DWN. BY: WDC DATE: 09/2024
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DES. EGR. OF RECORD: STC DATE: 09/2024

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MIN. $\frac{3}{4}$ " R.

$\frac{3}{8}$ " CONN.

$\frac{7}{8}$ " $\varnothing$

H. S. BOLTS

$\frac{3}{8}$ " WASHER

(LEFT WIDENING SHOWN, RIGHT WIDENING SIMILAR)



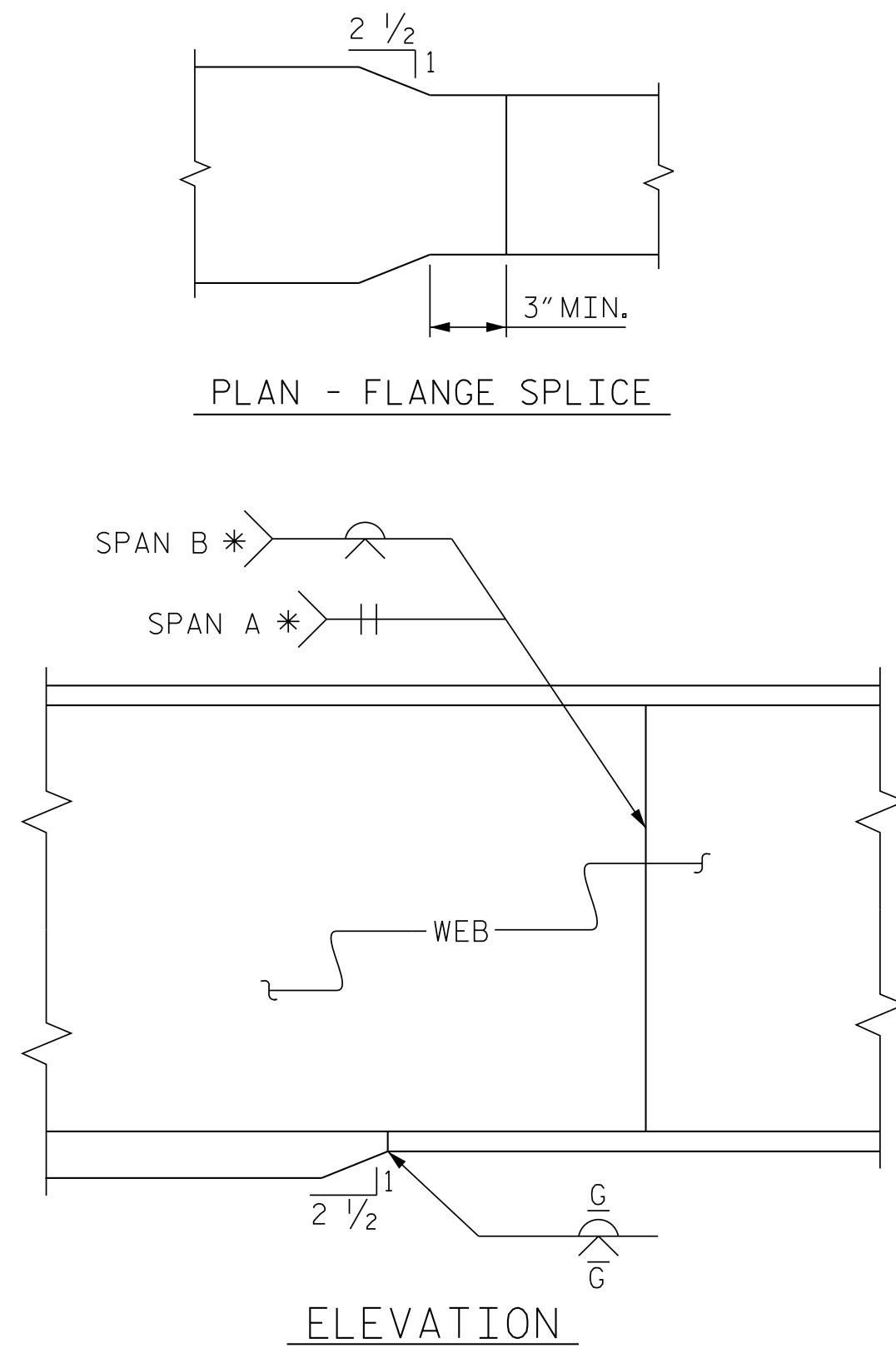
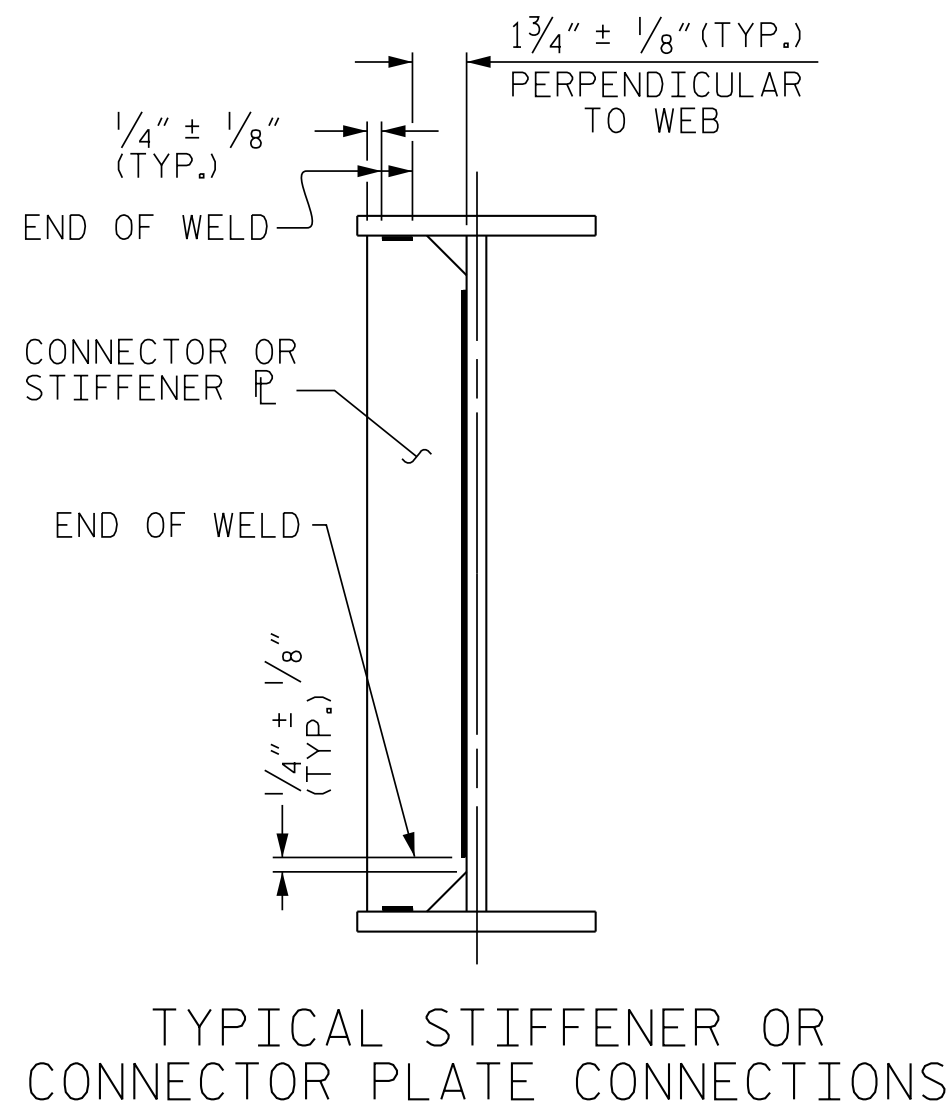
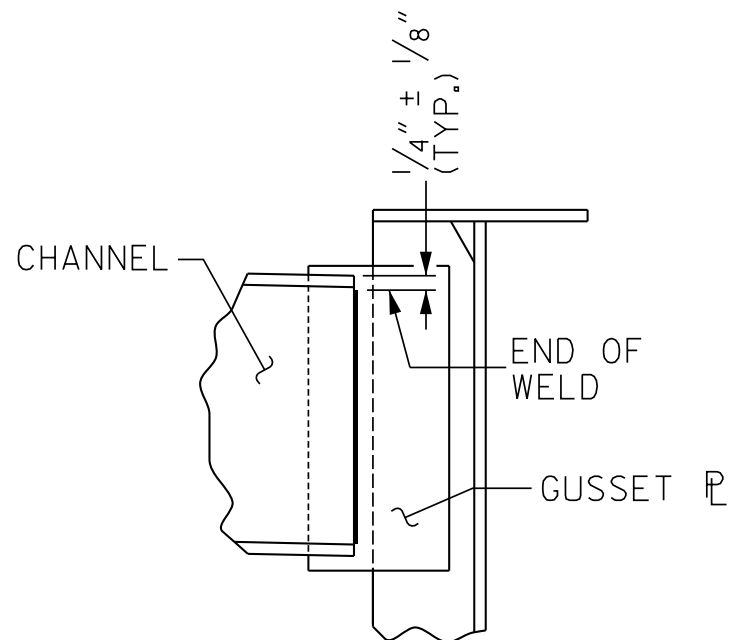
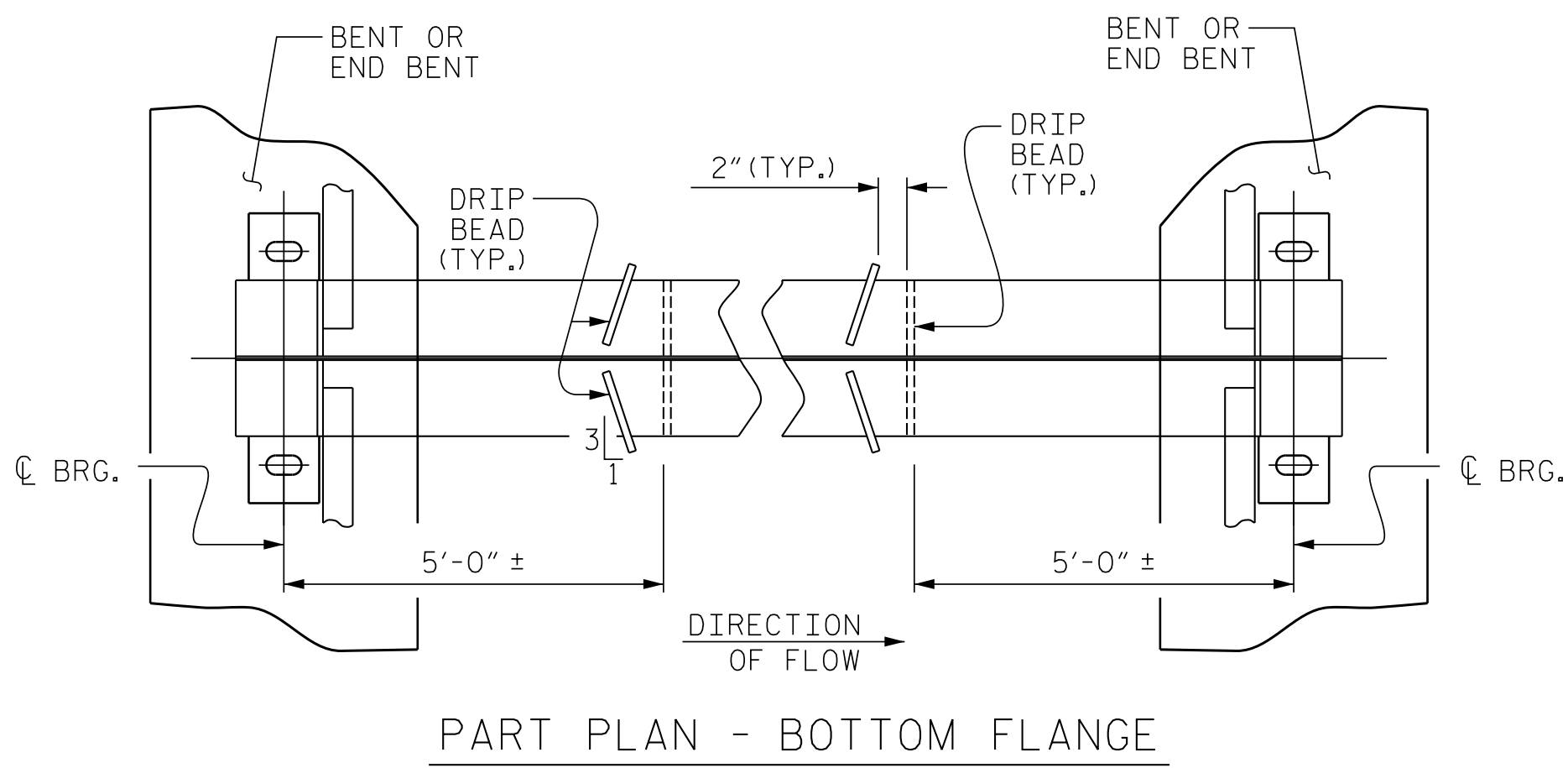
Technical drawing of a rectangular plate with the following specifications:

- Overall Dimensions:** 1'-10" (height) by 4" (width).
- Internal Dimensions:** Two 11" vertical segments and two 2" horizontal segments.
- Holes:** 4 holes, 15/16" diameter, spaced at 4 1/2" center-to-center (CTS).
- Washer:** 3/8" thick washer is indicated on the top edge.

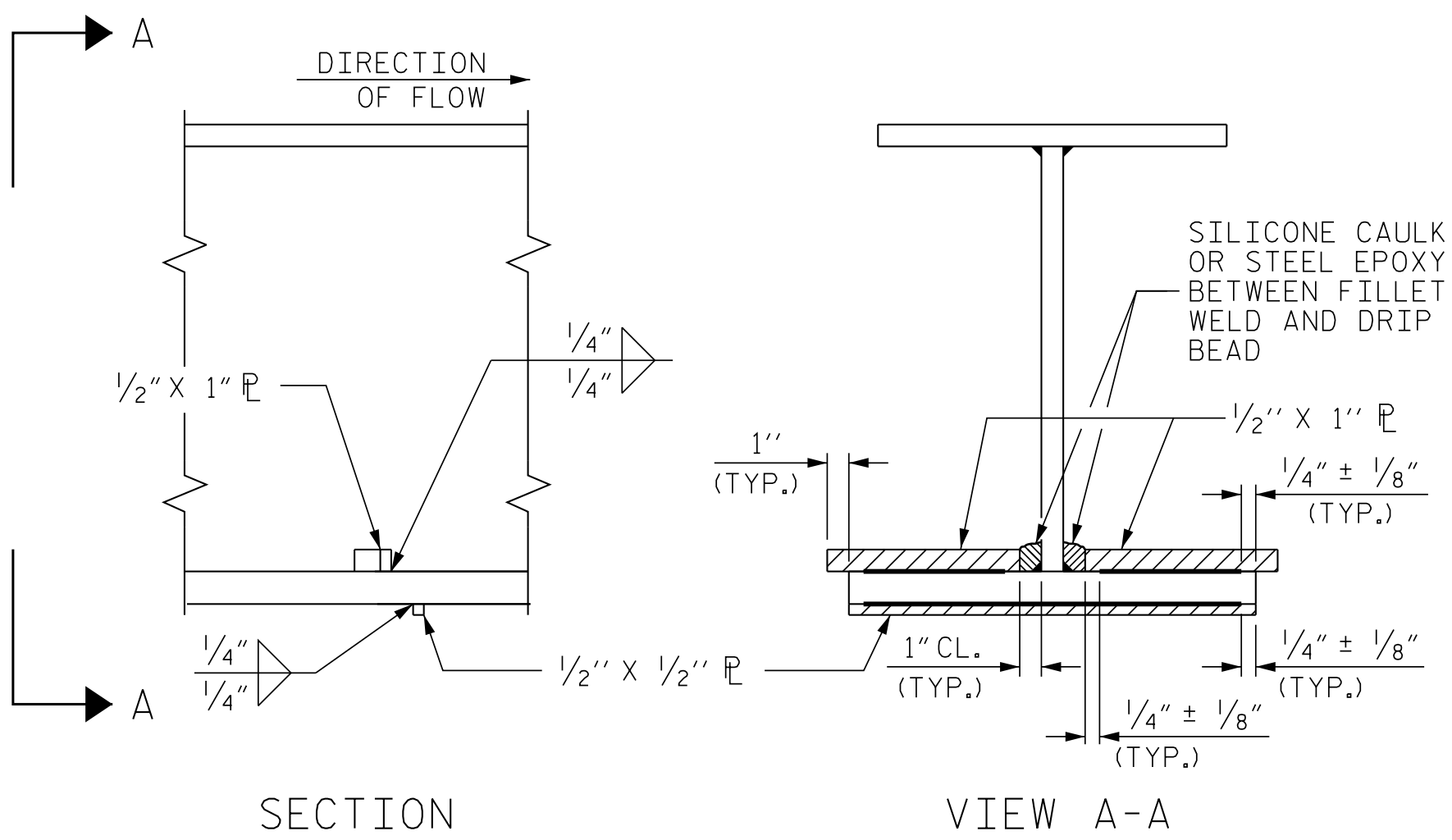
Technical drawing of a 12" x 4" plate. The plate has three holes spaced 8" apart vertically. The holes are 1 5/16" in diameter. A 3/8" thick washer is shown on the left. The plate has a 4" width, with 2" from the centerline to each edge. The holes are 2" apart from the top and bottom edges. The plate is labeled "2 SPA. @ 6" CTS." and "C 1 5/16" Ø HOLES".

WASHER P "A"

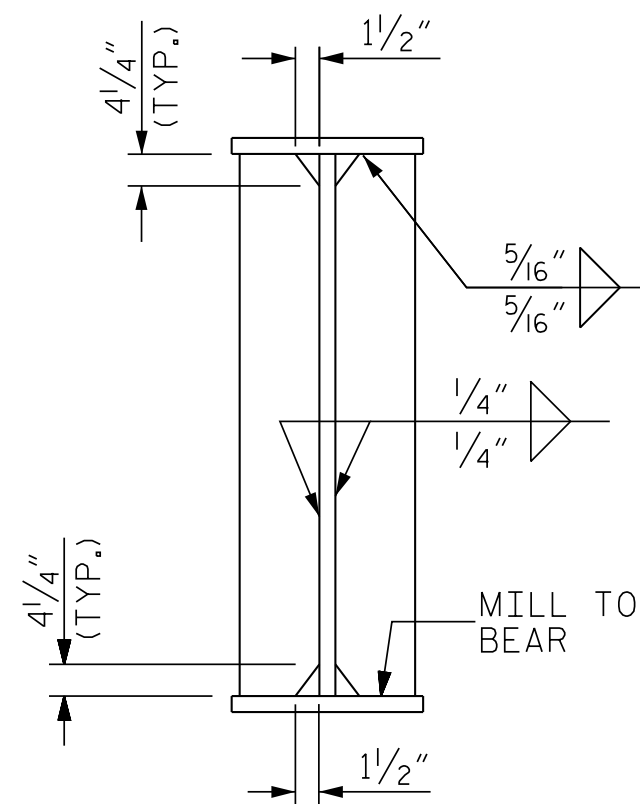
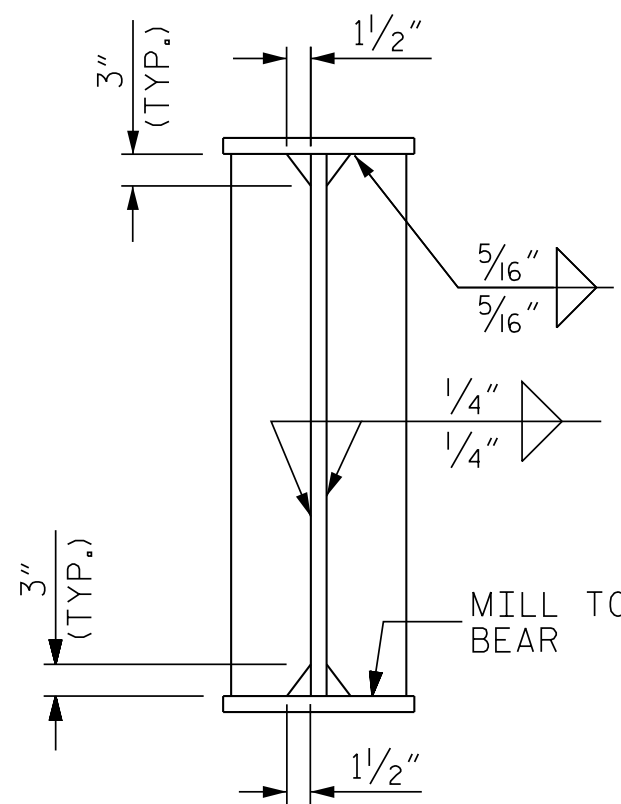
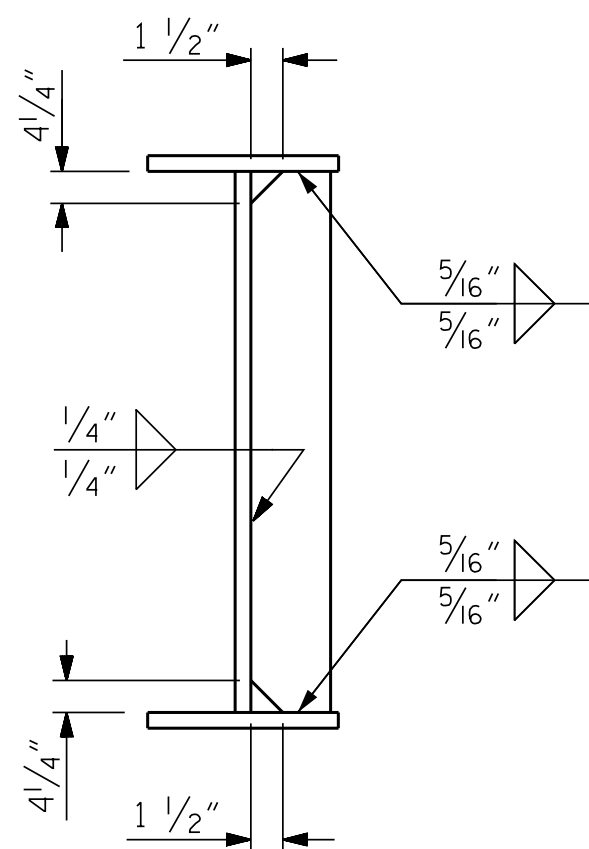
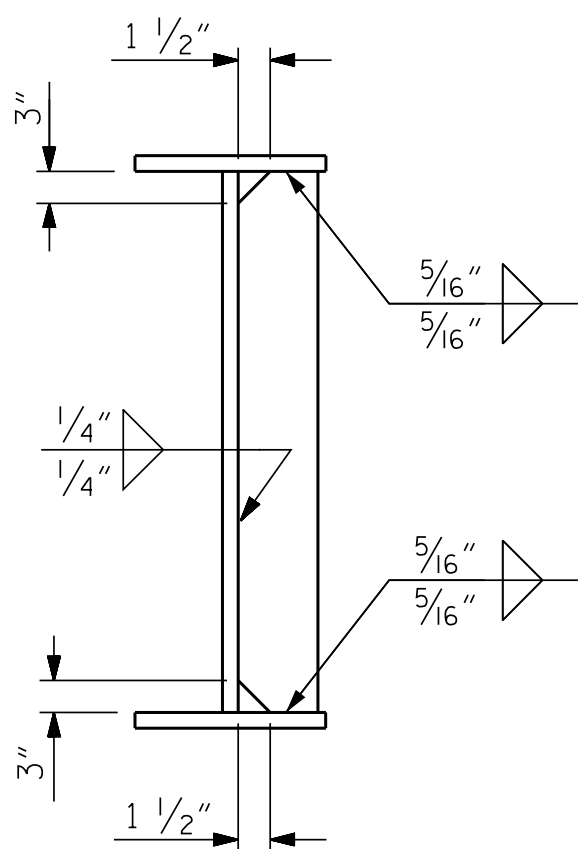
REVISIONS						SHEET NO. S2-32
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			



WELD TERMINATION DETAILS



DRIP BEAD DETAILS

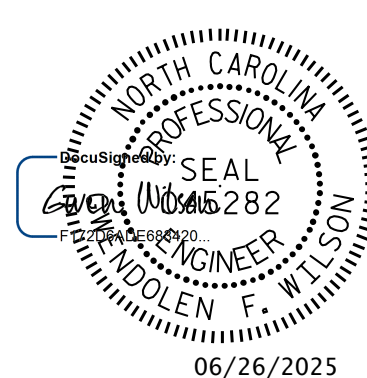


TYPICAL FLANGE AND WEB BUTT JOINT

* GRIND SMOOTH AND FLUSH ON
OUTER FACE OF EXTERIOR
BEAMS /GIRDERS

PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 6 OF 6



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
STRUCTURAL STEEL
DETAILS

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REVISIONS						SHEET NO. S2-33
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

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DATE: 6/18/2025 TIME: 6:18/2025

TWENTIETH POINTS	GIRDER 1																					
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0	
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.000	0.000	
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.002	0.004	0.005	0.006	0.008	0.009	0.009	0.010	0.010	0.010	0.010	0.009	0.009	0.008	0.007	0.006	0.004	0.003	0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL	↓	0.000	0.000	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.000	0.000	
TOTAL DEAD LOAD DEFLECTION	↓	0.000	0.002	0.006	0.007	0.009	0.012	0.013	0.013	0.014	0.015	0.015	0.014	0.013	0.013	0.012	0.010	0.008	0.006	0.005	0.002	0.000
VERTICAL CURVE ORDINATE	↑	0.000	0.002	0.003	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.008	0.008	0.008	0.007	0.007	0.006	0.005	0.004	0.003	0.002	0.000
REQUIRED CAMBER	↑	0	1/16"	1/8"	1/8"	3/16"	3/16"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/16"	3/16"	1/8"	1/8"	1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

TWENTIETH POINTS	GIRDER 2																					
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0	
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.000	0.000	
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.002	0.004	0.006	0.007	0.008	0.009	0.010	0.011	0.011	0.011	0.011	0.010	0.010	0.009	0.008	0.006	0.005	0.003	0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL	↓	0.000	0.000	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.000	0.000	
TOTAL DEAD LOAD DEFLECTION	↓	0.000	0.002	0.006	0.008	0.009	0.011	0.013	0.014	0.015	0.015	0.015	0.015	0.014	0.014	0.013	0.010	0.008	0.007	0.005	0.002	0.000
VERTICAL CURVE ORDINATE	↑	0.000	0.002	0.003	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.008	0.008	0.008	0.007	0.007	0.006	0.005	0.004	0.003	0.002	0.000
REQUIRED CAMBER	↑	0	1/16"	1/8"	1/8"	3/16"	3/16"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/16"	3/16"	1/8"	1/8"	1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

TWENTIETH POINTS		GIRDER 3																				
		0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.000	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.002	0.004	0.006	0.007	0.008	0.009	0.010	0.011	0.011	0.011	0.011	0.010	0.010	0.009	0.008	0.006	0.005	0.003	0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL	↓	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	↓	0.000	0.002	0.006	0.008	0.009	0.011	0.012	0.013	0.014	0.014	0.014	0.014	0.013	0.013	0.012	0.010	0.008	0.007	0.004	0.002	0.000
VERTICAL CURVE ORDINATE	↑	0.000	0.002	0.003	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.008	0.008	0.008	0.007	0.007	0.006	0.005	0.004	0.003	0.002	0.000
REQUIRED CAMBER	↑	0	1/16"	1/8"	1/8"	3/16"	3/16"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/16"	3/16"	1/8"	1/16"	1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

TWENTIETH POINTS	GIRDER 4																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.002	0.004	0.006	0.007	0.008	0.009	0.010	0.011	0.011	0.011	0.011	0.010	0.010	0.009	0.008	0.006	0.005	0.003	0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.002	0.005	0.007	0.008	0.011	0.012	0.013	0.014	0.014	0.014	0.014	0.013	0.013	0.012	0.010	0.007	0.006	0.004	0.002	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.002	0.003	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.008	0.008	0.008	0.007	0.007	0.006	0.005	0.004	0.003	0.002	0.000
REQUIRED CAMBER ↑	0	1/16"	1/8"	1/8"	3/16"	3/16"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/16"	1/8"	1/8"	1/16"	1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

TWENTIETH POINTS	GIRDER 5																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.002	0.005	0.006	0.008	0.010	0.011	0.012	0.013	0.013	0.013	0.013	0.012	0.011	0.010	0.009	0.007	0.006	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.002	0.006	0.007	0.009	0.012	0.013	0.014	0.015	0.015	0.015	0.015	0.014	0.013	0.012	0.010	0.008	0.007	0.005	0.002	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.002	0.003	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.008	0.008	0.008	0.007	0.007	0.006	0.005	0.004	0.003	0.002	0.000
REQUIRED CAMBER ↑	0	1/16"	1/8"	1/8"	3/16"	3/16"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/16"	3/16"	1/8"	1/8"	1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPAN A - LEFT SIDE WIDENING

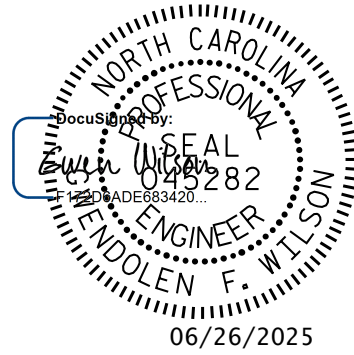
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



Johnson, Mirmiran, & Thompson Inc.
4700 Falls of Neuse Rd, Suite 100,
Raleigh, NC, 27609
License No: C-3097

DWN. BY: WDC
CHKD. BY: GFW
DES. EGR. OF RECORD: STC
DATE: 09/2024
DATE: 11/2024
DATE: 09/2024



PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
DEAD LOAD DEFLECTIONS
AND GIRDER CAMBER
SPAN A
LEFT WIDENING

REVISIONS						SHEET NO. S2-35
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

TWENTIETH POINTS	GIRDER 1																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.010	0.019	0.028	0.037	0.044	0.050	0.055	0.058	0.060	0.060	0.060	0.058	0.055	0.050	0.044	0.037	0.028	0.019	0.010	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.017	0.034	0.049	0.063	0.076	0.086	0.095	0.101	0.104	0.104	0.104	0.101	0.094	0.086	0.076	0.063	0.049	0.034	0.017	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.005	0.010	0.015	0.019	0.023	0.026	0.029	0.030	0.031	0.031	0.031	0.030	0.028	0.026	0.023	0.019	0.015	0.010	0.005	0.000
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.032	0.063	0.092	0.119	0.143	0.162	0.179	0.189	0.195	0.195	0.195	0.189	0.177	0.162	0.143	0.119	0.092	0.063	0.032	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.011	0.021	0.030	0.038	0.044	0.050	0.054	0.057	0.059	0.059	0.059	0.057	0.054	0.050	0.044	0.038	0.030	0.021	0.011	0.000
REQUIRED CAMBER ↑	0	1/2"	1"	1 1/16"	1 7/8"	2 1/4"	2 9/16"	2 13/16"	2 5/16"	3 1/16"	3 1/16"	3 1/16"	2 5/16"	2 3/4"	2 9/16"	2 1/4"	1 7/8"	1 1/16"	1"	1/2"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

TWENTIETH POINTS	GIRDER 2																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.010	0.020	0.029	0.038	0.045	0.051	0.056	0.060	0.062	0.062	0.062	0.060	0.056	0.045	0.045	0.037	0.029	0.020	0.010	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.019	0.038	0.055	0.071	0.084	0.096	0.105	0.112	0.116	0.116	0.116	0.112	0.105	0.084	0.084	0.071	0.055	0.038	0.019	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.004	0.008	0.012	0.015	0.018	0.020	0.023	0.024	0.025	0.025	0.025	0.024	0.023	0.018	0.018	0.015	0.012	0.008	0.004	0.000
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.033	0.066	0.096	0.124	0.147	0.167	0.184	0.196	0.203	0.203	0.203	0.196	0.184	0.147	0.147	0.123	0.096	0.066	0.033	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.011	0.021	0.030	0.038	0.044	0.050	0.054	0.057	0.059	0.059	0.059	0.057	0.054	0.050	0.044	0.038	0.030	0.021	0.011	0.000
REQUIRED CAMBER ↑	0	1/2"	1 1/16"	1 1/2"	1 5/16"	2 5/16"	2 5/8"	2 7/8"	3 1/16"	3 1/8"	3 1/8"	3 1/8"	3 1/16"	2 7/8"	2 3/8"	2 5/16"	1 5/16"	1 1/2"	1 1/16"	1/2"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

TWENTIETH POINTS	GIRDER 3																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.010	0.020	0.029	0.038	0.045	0.051	0.056	0.060	0.062	0.062	0.062	0.060	0.056	0.045	0.045	0.037	0.029	0.020	0.010	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.019	0.038	0.055	0.071	0.085	0.096	0.106	0.112	0.116	0.116	0.116	0.112	0.106	0.084	0.084	0.071	0.055	0.038	0.019	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.003	0.006	0.009	0.011	0.013	0.015	0.017	0.018	0.018	0.018	0.018	0.018	0.017	0.013	0.013	0.011	0.009	0.006	0.003	0.000
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.032	0.064	0.093	0.120	0.143	0.162	0.179	0.190	0.196	0.196	0.196	0.190	0.179	0.142	0.142	0.119	0.093	0.064	0.032	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.011	0.021	0.030	0.038	0.044	0.050	0.054	0.057	0.059	0.059	0.059	0.057	0.054	0.050	0.044	0.038	0.030	0.021	0.011	0.000
REQUIRED CAMBER ↑	0	1/2"	1"	1 1/2"	1 7/8"	2 1/4"	2 9/16"	2 3/16"	2 5/16"	3 1/16"	3 1/16"	3 1/16"	2 5/16"	2 3/16"	2 5/16"	2 1/4"	1 7/8"	1 1/2"	1"	1/2"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

TWENTIETH POINTS	GIRDER 4																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.010	0.020	0.029	0.038	0.045	0.051	0.056	0.060	0.062	0.062	0.062	0.060	0.056	0.045	0.045	0.037	0.029	0.020	0.010	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.019	0.038	0.055	0.071	0.085	0.096	0.106	0.112	0.117	0.117	0.117	0.112	0.106	0.085	0.085	0.071	0.055	0.038	0.019	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.002	0.004	0.005	0.007	0.008	0.009	0.010	0.011	0.011	0.011	0.011	0.011	0.010	0.008	0.008	0.007	0.005	0.004	0.002	0.000
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.031	0.062	0.089	0.116	0.138	0.156	0.172	0.183	0.190	0.190	0.190	0.183	0.172	0.138	0.138	0.115	0.089	0.062	0.031	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.011	0.021	0.030	0.038	0.044	0.050	0.054	0.057	0.059	0.059	0.059	0.057	0.054	0.050	0.044	0.038	0.030	0.021	0.011	0.000
REQUIRED CAMBER ↑	0	1/2"	1"	1 1/16"	1 7/8"	2 3/16"	2 1/2"	2 11/16"	2 7/8"	3"	3"	3"	2 7/8"	2 11/16"	2 1/4"	2 3/16"	1 13/16"	1 7/16"	1"	1/2"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

TWENTIETH POINTS	GIRDER 5																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.010	0.020	0.029	0.038	0.045	0.051	0.056	0.060	0.062	0.063	0.062	0.060	0.056	0.051	0.045	0.038	0.029	0.020	0.010	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.022	0.044	0.065	0.083	0.099	0.113	0.124	0.131	0.136	0.138	0.136	0.131	0.124	0.113	0.099	0.083	0.065	0.044	0.022	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.001	0.002	0.003	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.004	0.004	0.003	0.002	0.002	0.001	0.000
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.033	0.066	0.097	0.124	0.148	0.168	0.185	0.196	0.203	0.206	0.203	0.196	0.185	0.168	0.148	0.124	0.096	0.066	0.033	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.011	0.021	0.030	0.038	0.044	0.050	0.054	0.057	0.059	0.059	0.059	0.057	0.054	0.050	0.044	0.038	0.030	0.021	0.011	0.000
REQUIRED CAMBER ↑	0	1/2"	1/16"	1/2"	1 15/16"	2 5/16"	2 5/8"	2 7/8"	3 1/16"	3 1/8"	3 3/16"	3 1/8"	3 1/16"	2 7/8"	2 5/8"	2 5/16"	1 5/16"	1 1/2"	1 1/16"	1/2"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPAN B - LEFT SIDE WIDENING

ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM),
EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN
INCHES (FRACTION FORM).

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



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4700 Falls of Neuse Rd, Suite 100,
Raleigh, NC, 27609
License No: C-3097

PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-

SHEET 2 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
DEAD LOAD DEFLECTIONS
AND GIRDER CAMBER
SPAN B
LEFT WIDENING

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-36
1			3			TOTAL SHEETS 81
2			4			

wdr\utcher
 DGN: pw:\jml-pw.bentley.com:jml-pw-00\Documents\Projects\2018\VB-00036-00\Design\Structures\Bridges\330340\Structures\2_Plan\Widening_Plan\402_071_L-5880_330340_DBL_035.dgn

DWN. BY: WDC DATE: 09/2024
CHKD. BY: GFW DATE: 11/2024
DES. EGR. OF RECORD: STC DATE: 09/2024

FocusSigner By:
Curtis Wilson
212606DE683420...
06/26/2025

\\cnc\user\DWL\pwn\jmt-jmw\Documents\Pro\jmt-jmw\01\Documents\Pro\jmt-jmw\01\Design\Structures\Bridges\330340\Structures\2_PlaneWidening_Plans\02_073_15880_330340_DLCL_037.dgn
DATE: 6/18/2025 TIME: 6:18/2025

TWENTIETH POINTS	GIRDER 1																					
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0	
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.000	0.000	
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.002	0.003	0.005	0.007	0.008	0.009	0.010	0.011	0.012	0.012	0.012	0.012	0.011	0.010	0.009	0.008	0.006	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL	↓	0.000	0.000	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.001	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	↓	0.000	0.002	0.005	0.007	0.010	0.012	0.013	0.015	0.016	0.017	0.017	0.017	0.017	0.016	0.015	0.013	0.012	0.009	0.006	0.003	0.000
VERTICAL CURVE ORDINATE	↑	0.000	0.002	0.003	0.005	0.006	0.007	0.008	0.008	0.009	0.009	0.009	0.009	0.008	0.008	0.007	0.006	0.005	0.003	0.002	0.000	
REQUIRED CAMBER	↑	0	1/16"	1/8"	1/8"	3/16"	1/4"	1/4"	1/4"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	1/4"	1/4"	3/16"	3/16"	1/8"	1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

TWENTIETH POINTS	GIRDER 2																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.002	0.004	0.006	0.007	0.009	0.010	0.011	0.012	0.013	0.013	0.013	0.013	0.012	0.011	0.010	0.008	0.007	0.005	0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.002	0.006	0.008	0.009	0.013	0.014	0.015	0.016	0.017	0.017	0.017	0.017	0.016	0.015	0.014	0.011	0.009	0.007	0.002	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.002	0.003	0.005	0.006	0.007	0.008	0.008	0.009	0.009	0.009	0.009	0.009	0.008	0.008	0.007	0.006	0.005	0.003	0.002	0.000
REQUIRED CAMBER ↑	0	1/16"	1/8"	1/8"	3/16"	1/4"	1/4"	1/4"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	1/4"	1/4"	3/16"	3/16"	1/8"	1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

TWENTIETH POINTS	GIRDER 3																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.002	0.004	0.006	0.007	0.009	0.010	0.011	0.012	0.013	0.013	0.013	0.013	0.012	0.011	0.010	0.008	0.007	0.005	0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.002	0.006	0.008	0.009	0.012	0.013	0.014	0.016	0.017	0.017	0.017	0.017	0.016	0.014	0.013	0.011	0.009	0.007	0.002	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.002	0.003	0.005	0.006	0.007	0.008	0.008	0.009	0.009	0.009	0.009	0.009	0.008	0.008	0.007	0.006	0.005	0.003	0.002	0.000
REQUIRED CAMBER ↑	0	1/16"	1/8"	1/8"	3/16"	1/4"	1/4"	1/4"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	1/4"	1/4"	3/16"	3/16"	1/8"	1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

TWENTIETH POINTS	GIRDER 4																					
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0	
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.000	0.000	
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.002	0.004	0.006	0.007	0.009	0.010	0.011	0.012	0.013	0.013	0.013	0.013	0.012	0.011	0.010	0.008	0.007	0.005	0.002	
DEFLECTION DUE TO WEIGHT OF RAIL	↓	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	
TOTAL DEAD LOAD DEFLECTION	↓	0.000	0.002	0.005	0.007	0.008	0.012	0.013	0.014	0.015	0.016	0.016	0.016	0.016	0.015	0.014	0.013	0.011	0.008	0.006	0.002	
VERTICAL CURVE ORDINATE	↑	0.000	0.002	0.003	0.005	0.006	0.007	0.008	0.008	0.009	0.009	0.009	0.009	0.008	0.008	0.007	0.006	0.005	0.003	0.002	0.000	
REQUIRED CAMBER	↑	0	1/16"	1/8"	1/8"	3/16"	1/4"	1/4"	1/4"	5/16"	5/16"	5/16"	5/16"	5/16"	1/4"	1/4"	1/4"	3/16"	1/8"	1/8"	1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

TWENTIETH POINTS	GIRDER 5																					
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0	
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.000	0.000	
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.002	0.004	0.007	0.009	0.010	0.012	0.013	0.014	0.015	0.015	0.015	0.015	0.014	0.013	0.012	0.010	0.008	0.005	0.003	
DEFLECTION DUE TO WEIGHT OF RAIL	↓	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
TOTAL DEAD LOAD DEFLECTION	↓	0.000	0.002	0.005	0.008	0.010	0.012	0.014	0.015	0.016	0.018	0.018	0.018	0.018	0.016	0.015	0.014	0.012	0.009	0.006	0.003	
VERTICAL CURVE ORDINATE	↑	0.000	0.002	0.003	0.005	0.006	0.007	0.008	0.008	0.009	0.009	0.009	0.009	0.008	0.008	0.007	0.006	0.005	0.003	0.002	0.000	
REQUIRED CAMBER	↑	0	1/16"	1/8"	1/8"	3/16"	1/4"	1/4"	1/4"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	1/4"	1/4"	3/16"	3/16"	1/8"	1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPAN C - LEFT SIDE WIDENING

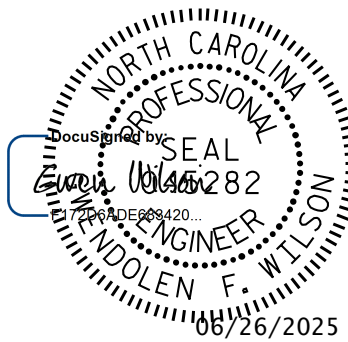
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



Johnson, Mirmiran, & Thompson Inc.
4700 Falls of Neuse Rd, Suite 100,
Raleigh, NC. 27609
License No: C-3097

DWN. BY: WDC
CHKD. BY: GFW
DES. EGR. OF RECORD: STC
DATE: 09/2024
DATE: 11/2024
DATE: 09/2024



PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
DEAD LOAD DEFLECTIONS
AND GIRDER CAMBER
SPAN C
LEFT WIDENING

REVISIONS						SHEET NO. S2-37
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

TWENTIETH POINTS	GIRDER 6																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.002	0.004	0.006	0.008	0.010	0.011	0.012	0.012	0.013	0.013	0.012	0.012	0.011	0.010	0.009	0.007	0.005	0.004	0.002
DEFLECTION DUE TO WEIGHT OF RAIL	↓	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	↓	0.000	0.002	0.006	0.008	0.010	0.013	0.014	0.015	0.015	0.017	0.017	0.015	0.015	0.014	0.013	0.011	0.009	0.007	0.005	0.002
VERTICAL CURVE ORDINATE	↑	0.000	0.002	0.003	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.008	0.008	0.007	0.007	0.006	0.005	0.004	0.003	0.002	0.000
REQUIRED CAMBER	↑	0	1/16"	1/8"	1/8"	3/16"	1/4"	1/4"	1/4"	1/4"	5/16"	5/16"	1/4"	1/4"	1/4"	1/4"	3/16"	3/16"	1/8"	1/8"	1/16"

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.

TWENTIETH POINTS	GIRDER 7																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.000	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.002	0.004	0.006	0.007	0.009	0.010	0.010	0.011	0.011	0.011	0.010	0.010	0.009	0.008	0.006	0.005	0.003	0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL	↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	↓	0.000	0.002	0.006	0.008	0.009	0.013	0.014	0.014	0.015	0.015	0.015	0.014	0.014	0.013	0.010	0.008	0.007	0.005	0.002	0.000
VERTICAL CURVE ORDINATE	↑	0.000	0.002	0.003	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.008	0.008	0.007	0.007	0.006	0.005	0.004	0.003	0.002	0.000
REQUIRED CAMBER	↑	0	1/16"	1/8"	1/8"	3/16"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/16"	3/16"	1/8"	1/8"	1/16"	0

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.

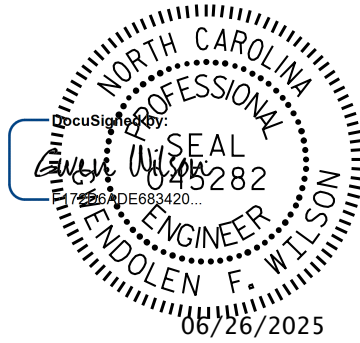
TWENTIETH POINTS	GIRDER 8																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.002	0.003	0.005	0.006	0.007	0.008	0.009	0.009	0.010	0.010	0.009	0.009	0.008	0.008	0.007	0.005	0.004	0.003	0.001
DEFLECTION DUE TO WEIGHT OF RAIL	↓	0.000	0.000	0.001	0.001	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	↓	0.000	0.002	0.005	0.007	0.009	0.011	0.012	0.013	0.014	0.015	0.015	0.014	0.013	0.012	0.010	0.007	0.006	0.005	0.001	0.000
VERTICAL CURVE ORDINATE	↑	0.000	0.002	0.003	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.008	0.008	0.007	0.007	0.006	0.005	0.004	0.003	0.002	0.000
REQUIRED CAMBER	↑	0	1/16"	1/8"	1/8"	3/16"	3/16"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/16"	1/8"	1/8"	1/8"	0	0

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPAN A - RIGHT SIDE WIDENING

ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).



PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
DEAD LOAD DEFLECTIONS
AND GIRDER CAMBER
SPAN A
RIGHT WIDENING

DWN. BY: WDC DATE: 09/2024
CHKD. BY: CFW DATE: 11/2024
DES. EGR. OF RECORD: STC DATE: 09/2024

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

 **Johnson, Mirmiran, & Thompson Inc.**
4700 Falls of Neuse Rd, Suite 100,
Raleigh, NC. 27609
License No: C-3097

REVISIONS						SHEET NO. S2-38
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

\\cnc\user\pwa\jmt-jmw\Documents\Pro Jobs\2019\I-5880\36-000\36-000\DesignStructures\Bridge\330340\Structures\2 Plans\Widening Plans\A02_075_I5880_330340_DLAR_038.dgn
TIME: 6/18/2025

TWENTIETH POINTS	GIRDER 6																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.010	0.020	0.029	0.037	0.045	0.051	0.056	0.059	0.062	0.062	0.062	0.059	0.056	0.051	0.045	0.037	0.029	0.020	0.010	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.021	0.042	0.062	0.079	0.095	0.108	0.118	0.126	0.131	0.132	0.131	0.126	0.118	0.108	0.095	0.079	0.062	0.042	0.021	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.003	0.006	0.009	0.012	0.014	0.016	0.018	0.019	0.020	0.020	0.020	0.019	0.018	0.016	0.014	0.012	0.009	0.006	0.003	0.000
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.034	0.068	0.100	0.128	0.154	0.175	0.192	0.204	0.213	0.214	0.213	0.204	0.192	0.175	0.154	0.128	0.100	0.068	0.034	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.011	0.021	0.030	0.038	0.044	0.050	0.054	0.057	0.059	0.059	0.059	0.057	0.054	0.050	0.044	0.038	0.030	0.021	0.011	0.000
REQUIRED CAMBER ↑	0	9⁄16"	1 1⁄16"	1 3⁄16"	2"	2 3⁄8"	2 11⁄16"	2 15⁄16"	3 1⁄8"	3 1⁄4"	3 1⁄4"	3 1⁄4"	3 1⁄8"	2 15⁄16"	2 11⁄16"	2 3⁄8"	2"	1 9⁄16"	1 1⁄16"	9⁄16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

TWENTIETH POINTS	GIRDER 7																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.010	0.020	0.029	0.037	0.045	0.051	0.056	0.059	0.061	0.062	0.061	0.059	0.056	0.051	0.045	0.037	0.029	0.020	0.010	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.019	0.038	0.055	0.071	0.084	0.096	0.105	0.112	0.116	0.117	0.116	0.112	0.105	0.096	0.084	0.071	0.055	0.038	0.019	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.004	0.009	0.012	0.016	0.019	0.022	0.024	0.025	0.026	0.026	0.026	0.025	0.024	0.021	0.019	0.016	0.012	0.008	0.004	0.000
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.033	0.067	0.096	0.124	0.148	0.169	0.185	0.196	0.203	0.205	0.203	0.196	0.185	0.168	0.148	0.124	0.096	0.066	0.033	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.011	0.021	0.030	0.038	0.044	0.050	0.054	0.057	0.059	0.059	0.059	0.057	0.054	0.050	0.044	0.038	0.030	0.021	0.011	0.000
REQUIRED CAMBER ↑	0	1/2"	1 1/16"	1 1/2"	1 5/16"	2 5/16"	2 5/8"	2 7/8"	3 1/16"	3 1/8"	3 3/16"	3 1/8"	3 1/16"	2 7/8"	2 5/8"	2 5/16"	1 5/16"	1 1/2"	1 1/16"	1/2"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

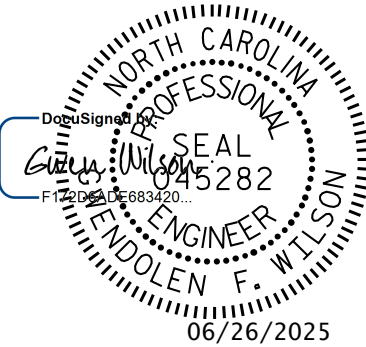
TWENTIETH POINTS	GIRDER 8																					
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0	
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.010	0.019	0.028	0.036	0.043	0.050	0.054	0.058	0.060	0.061	0.060	0.058	0.054	0.050	0.044	0.036	0.028	0.019	0.010	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.016	0.032	0.047	0.061	0.072	0.082	0.090	0.096	0.100	0.101	0.100	0.096	0.090	0.082	0.072	0.061	0.047	0.032	0.016	0.000
DEFLECTION DUE TO WEIGHT OF RAIL	↓	0.000	0.005	0.011	0.016	0.020	0.024	0.027	0.030	0.032	0.033	0.034	0.033	0.032	0.030	0.028	0.024	0.020	0.016	0.011	0.005	0.000
TOTAL DEAD LOAD DEFLECTION	↓	0.000	0.031	0.062	0.091	0.117	0.139	0.159	0.174	0.186	0.193	0.196	0.193	0.186	0.174	0.160	0.140	0.117	0.091	0.062	0.031	0.000
VERTICAL CURVE ORDINATE	↑	0.000	0.011	0.021	0.030	0.038	0.044	0.050	0.054	0.057	0.059	0.059	0.059	0.057	0.054	0.050	0.044	0.038	0.030	0.021	0.011	0.000
REQUIRED CAMBER	↑	0	1/2"	1"	1 1/16"	1 1/8"	2 3/16"	2 1/2"	2 3/4"	2 5/16"	3"	3 1/16"	3"	2 5/16"	2 3/4"	2 1/2"	2 3/16"	1 7/8"	1 1/16"	1"	1/2"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPAN B - RIGHT SIDE WIDENING

ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).



PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
DEAD LOAD DEFLECTIONS
AND GIRDER CAMBER
SPAN B
RIGHT WIDENING

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



Johnson, Mirmiran, & Thompson Inc.
4700 Falls of Neuse Rd, Suite 100,
Raleigh, NC. 27609
License No: C-3097

REVISIONS						SHEET NO. S2-39
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

DWN. BY: WDC DATE: 09/2024
CHKD. BY: CFW DATE: 11/2024
DES. EGR. OF RECORD: STC DATE: 09/2024

TWENTIETH POINTS	GIRDER 6																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.002	0.004	0.006	0.008	0.010	0.012	0.013	0.014	0.015	0.015	0.015	0.014	0.014	0.013	0.011	0.009	0.007	0.005	0.003	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.002	0.006	0.008	0.010	0.013	0.015	0.017	0.018	0.019	0.019	0.019	0.018	0.018	0.017	0.014	0.012	0.009	0.007	0.003	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.002	0.003	0.005	0.006	0.007	0.008	0.008	0.009	0.009	0.009	0.009	0.009	0.008	0.008	0.007	0.006	0.005	0.003	0.002	0.000
REQUIRED CAMBER ↑	0	1/16"	1/8"	1/8"	3/16"	1/4"	1/4"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	1/4"	3/16"	3/16"	1/8"	1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

TWENTIETH POINTS	GIRDER 7																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.002	0.004	0.006	0.007	0.009	0.010	0.011	0.012	0.013	0.013	0.013	0.013	0.012	0.011	0.010	0.008	0.007	0.005	0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION ↓	0.000	0.002	0.006	0.008	0.009	0.013	0.014	0.015	0.016	0.017	0.017	0.017	0.017	0.016	0.015	0.014	0.012	0.009	0.007	0.002	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.002	0.003	0.005	0.006	0.007	0.008	0.008	0.009	0.009	0.009	0.009	0.009	0.008	0.008	0.007	0.006	0.005	0.003	0.002	0.000
REQUIRED CAMBER ↑	0	1/16"	1/8"	1/8"	3/16"	1/4"	1/4"	1/4"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	1/4"	1/4"	3/16"	3/16"	1/8"	1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

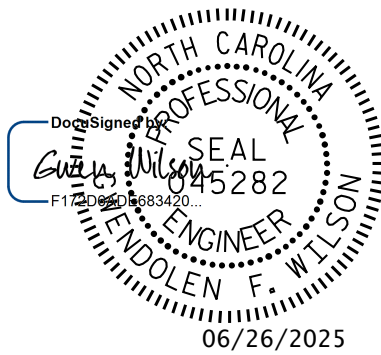
TWENTIETH POINTS	GIRDER 8																					
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0	
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.000	0.000	
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.002	0.003	0.005	0.006	0.008	0.009	0.010	0.011	0.011	0.011	0.011	0.011	0.010	0.009	0.007	0.006	0.004	0.002	0.000	
DEFLECTION DUE TO WEIGHT OF RAIL	↓	0.000	0.000	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.001	0.001	0.000	
TOTAL DEAD LOAD DEFLECTION	↓	0.000	0.002	0.005	0.007	0.009	0.012	0.013	0.015	0.016	0.016	0.016	0.016	0.016	0.015	0.013	0.011	0.009	0.006	0.003	0.000	
VERTICAL CURVE ORDINATE	↑	0.000	0.002	0.003	0.005	0.006	0.007	0.008	0.008	0.009	0.009	0.009	0.009	0.008	0.008	0.007	0.006	0.005	0.003	0.002	0.000	
REQUIRED CAMBER	↑	0	1/16"	1/8"	1/8"	3/16"	1/4"	1/4"	1/4"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	1/4"	1/4"	3/16"	3/16"	1/8"	1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPAN C - RIGHT SIDE WIDENING

ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).



PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
DEAD LOAD DEFLECTIONS
AND GIRDER CAMBER
SPAN C
RIGHT WIDENING

DWN. BY: WDC DATE: 09/2024
CHKD. BY: CFW DATE: 11/2024
DES. EGR. OF RECORD: STC DATE: 09/2024

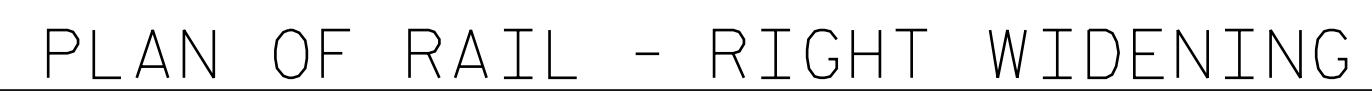
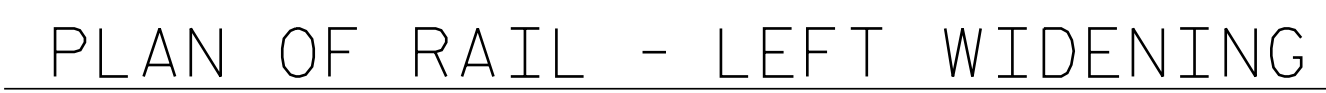
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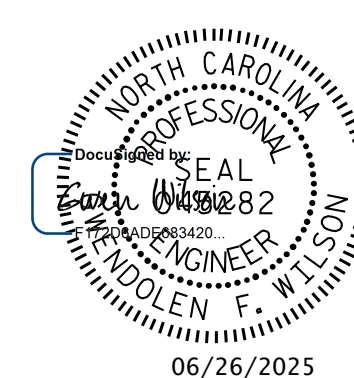
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S2-40
TOTAL SHEETS 81



SHEET 1 OF 3

CONCRETE
BARRIER RAIL



REVISIONS						SHEET NO. S2-41
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024

NOTES

THE BARRIER RAIL IN EACH SPAN SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

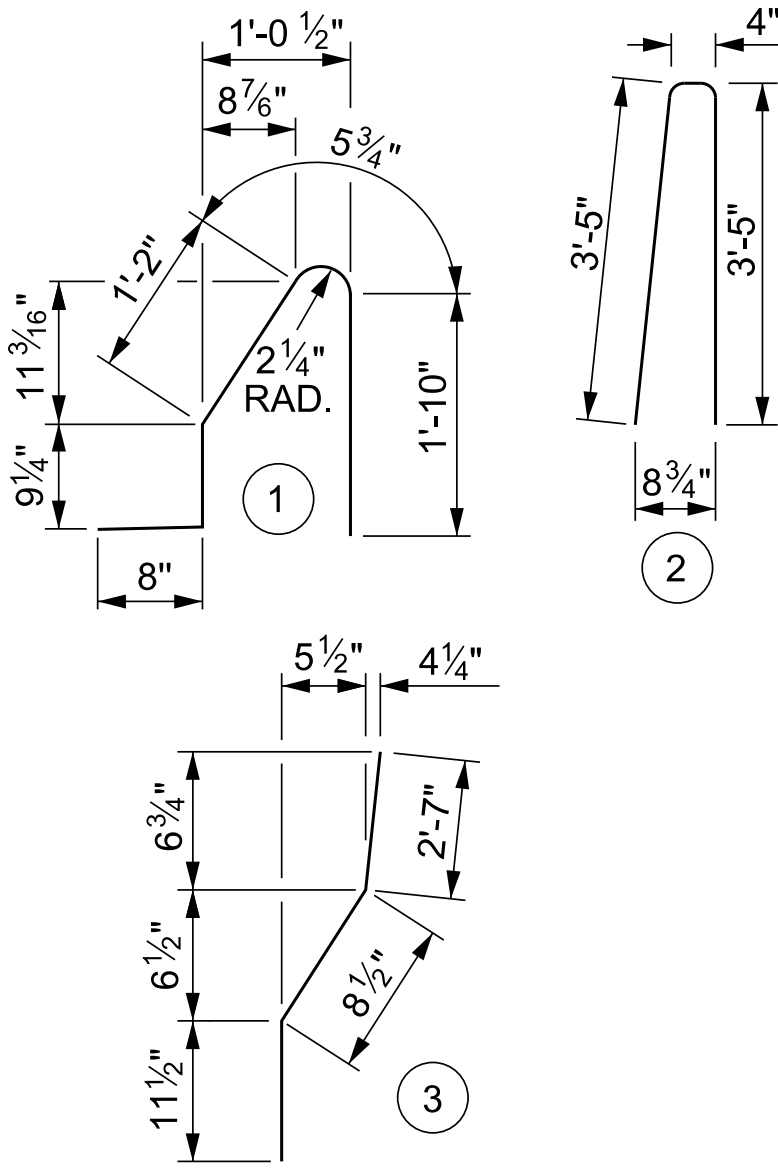
FOAM JOINT SEALS ARE REQUIRED FOR THE JOINTS AT EACH BENT. AT THESE LOCATIONS, THE JOINT IN THE DECK SHALL BE SAWED PRIOR TO THE CASTING OF THE BARRIER RAIL.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

ADJACENT TO THE JOINT AT EACH BENT, THE #5 S3, S4, S5 AND S6 BARS SHALL BE INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM, AFTER SAWING THE JOINT. THE YIELD LOAD FOR THE #5 S3, S4, S5 AND S6 BARS IS 18.6 KIPS. FIELD TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

BAR TYPES

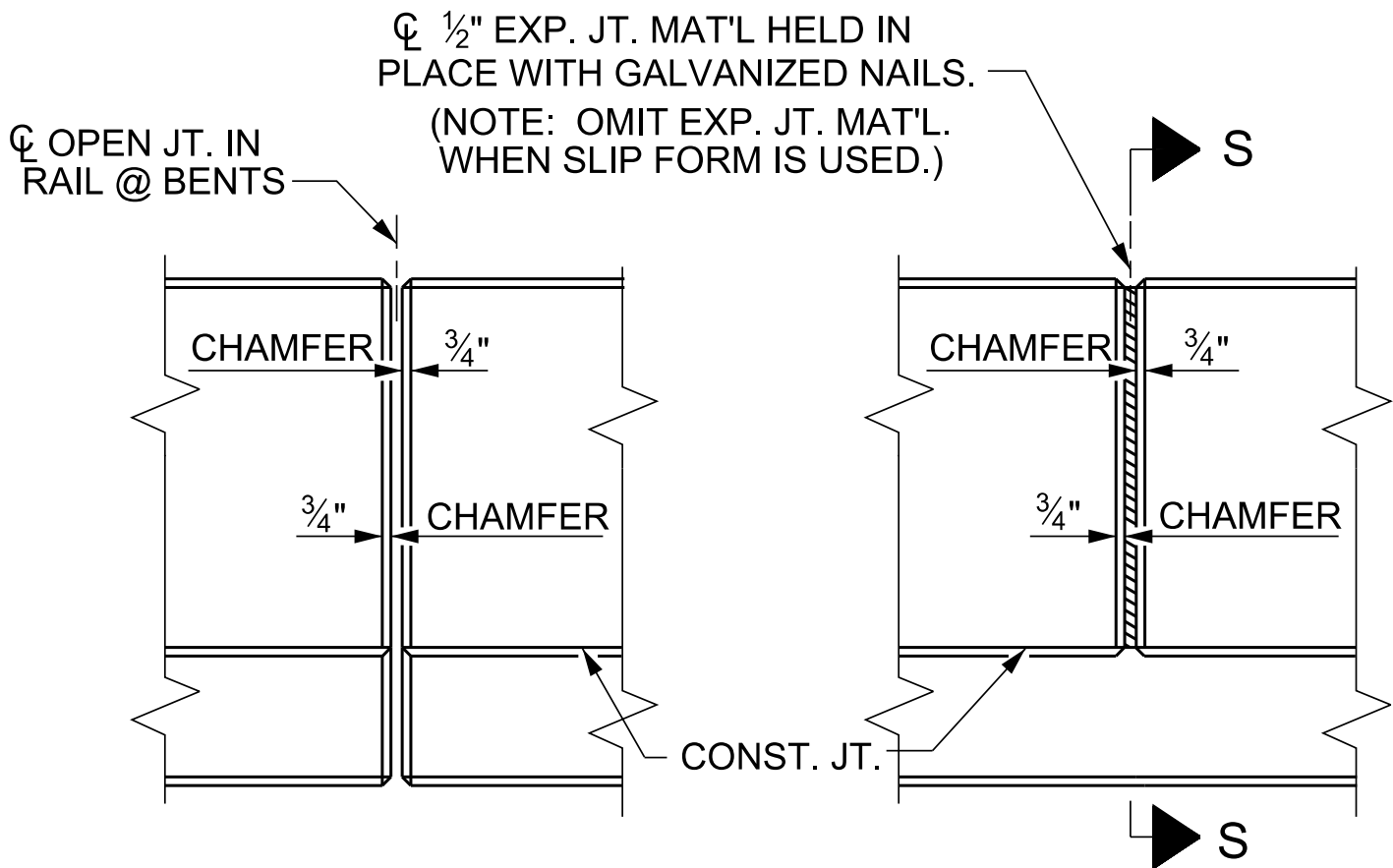
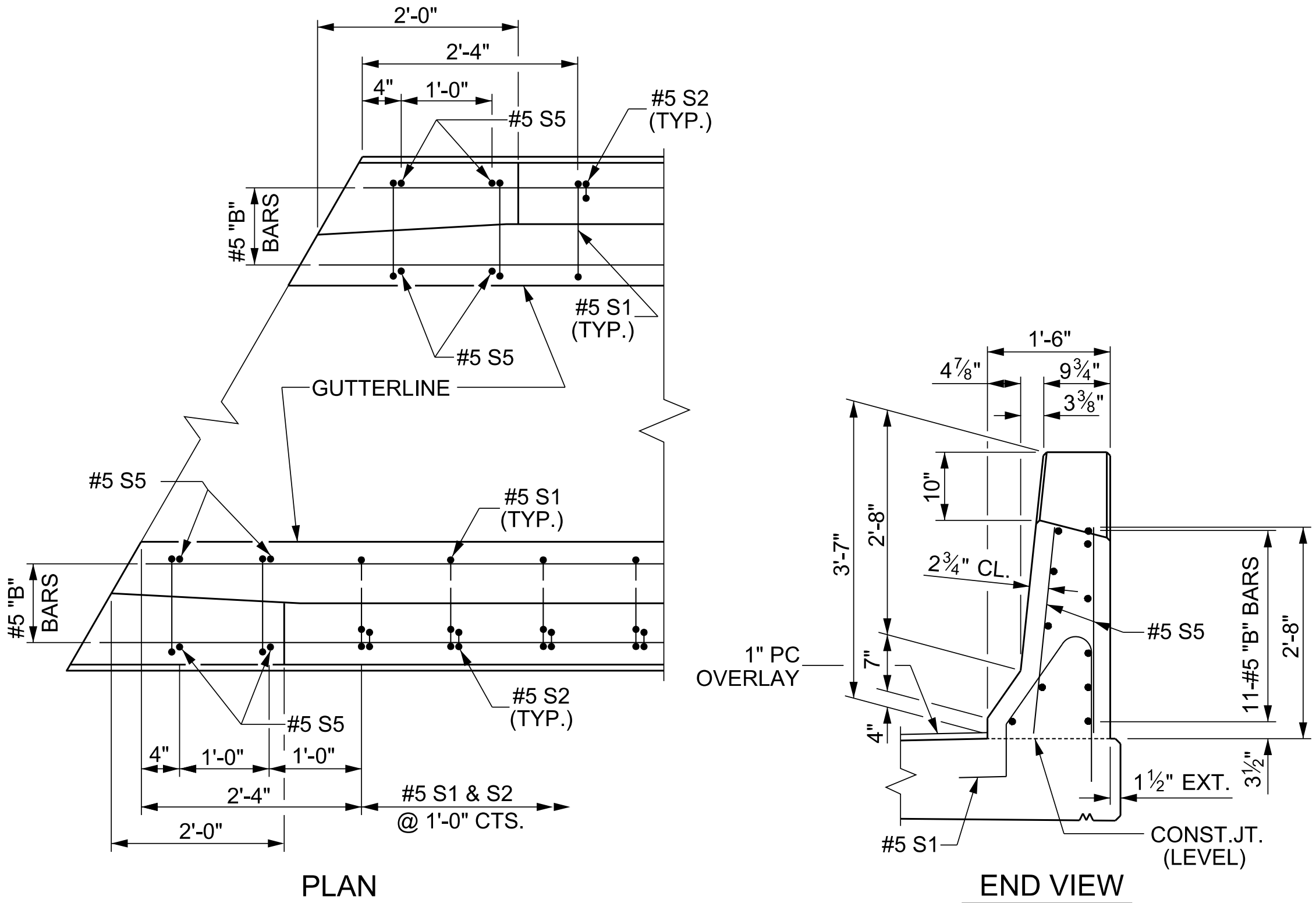


ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

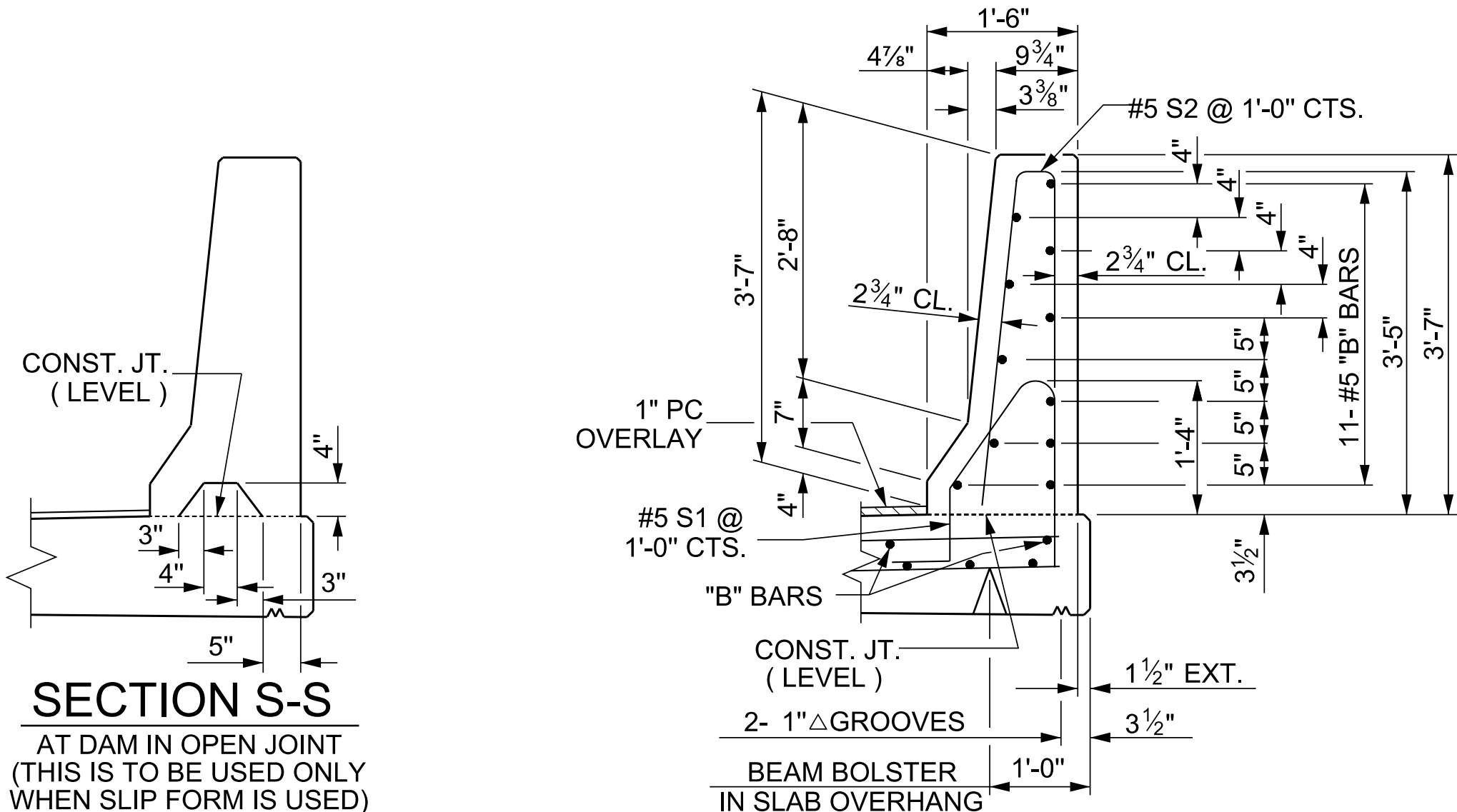
LEFT SIDE WIDENING						RIGHT SIDE WIDENING					
FOR CONCRETE BARRIER RAIL ONLY						FOR CONCRETE BARRIER RAIL ONLY					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	22	#5	STR	11'-4"	260	* B1	22	#5	STR	11'-4"	260
* B2	22	#5	STR	10'-11"	250	* B2	22	#5	STR	10'-11"	250
* B3	22	#5	STR	14'-1"	323	* B3	22	#5	STR	14'-1"	323
* B4	22	#5	STR	24'-1"	553	* B4	22	#5	STR	24'-1"	553
* B5	22	#5	STR	13'-8"	314	* B5	22	#5	STR	13'-8"	314
* B6	22	#5	STR	11'-9"	270	* B6	22	#5	STR	11'-9"	270
* B7	22	#5	STR	11'-3"	258	* B7	22	#5	STR	11'-3"	258
* S1	163	#5	1	4'-11"	836	* S1	162	#5	1	4'-11"	831
* S2	159	#5	2	7'-2"	1189	* S2	158	#5	2	7'-2"	1181
* S3	12	#5	3	4'-3"	53	* S3	12	#5	3	4'-3"	53
* S4	12	#5	STR	4'-0"	50	* S4	12	#5	STR	4'-0"	50
* S5	8	#5	STR	2'-6"	21	* S5	8	#5	STR	2'-6"	21
* EPOXY COATED REINFORCING STEEL 4377 LBS.						* EPOXY COATED REINFORCING STEEL 4364 LBS.					
CLASS AA CONCRETE 24.7 CU. YDS.						CLASS AA CONCRETE 24.7 CU. YDS.					
CONCRETE BARRIER RAIL 175.54 LIN. FT.						CONCRETE BARRIER RAIL 175.52 LIN. FT.					

END OF RAIL DETAILS @ END BENTS



ELEVATION AT EXPANSION JOINTS

BARRIER RAIL DETAILS



SECTION THRU RAIL

PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
CONCRETE
BARRIER RAIL

REVISIONS

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

SHEET NO.
S2-42

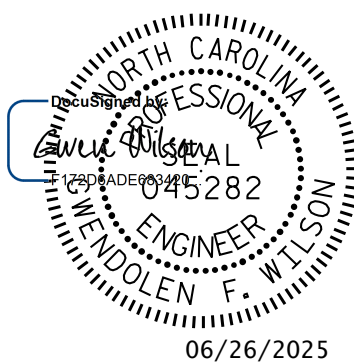
TOTAL
SHEETS
81

STD. CBR1 Sht.2

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



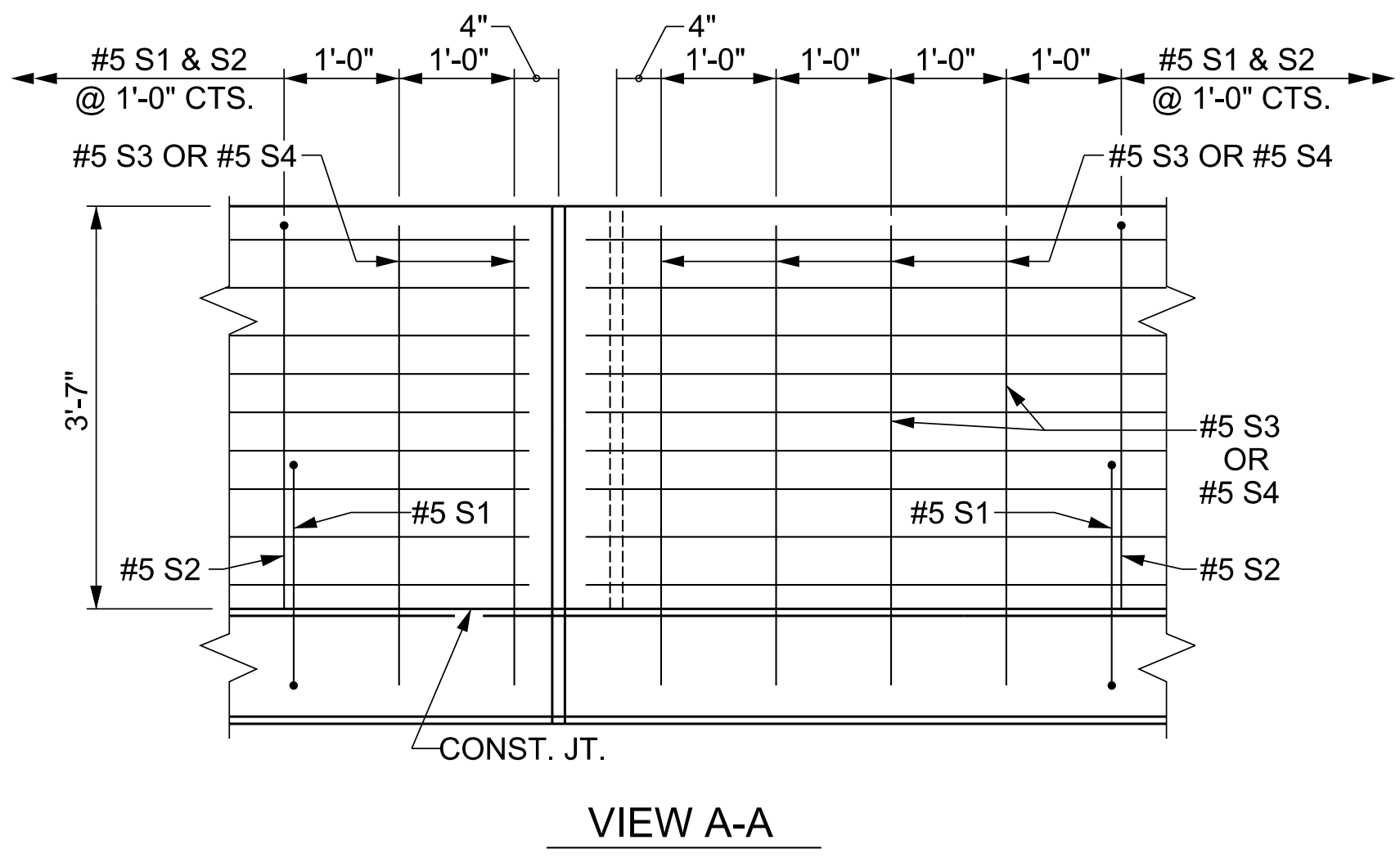
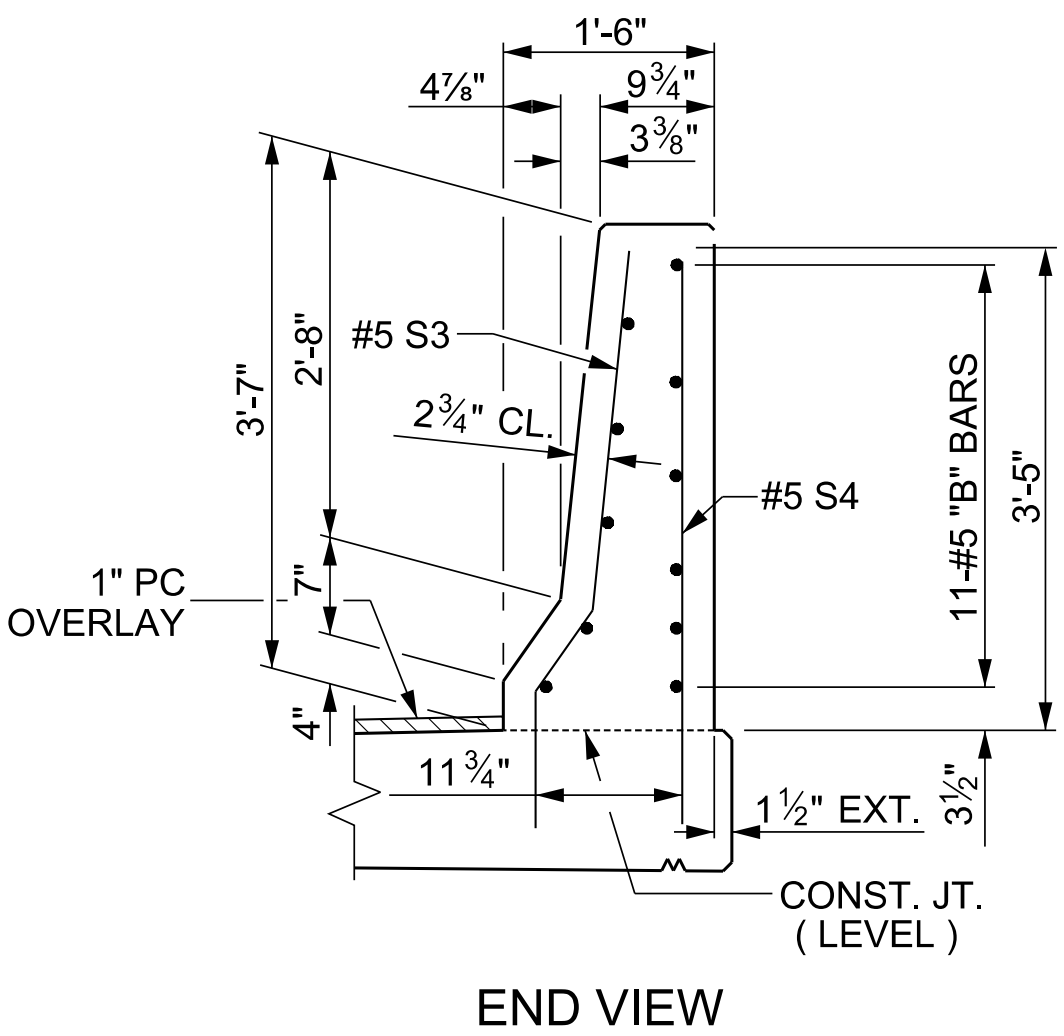
Johnson, Mirmiran, & Thompson Inc.
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Raleigh, NC, 27609
License No: C-3097



PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE CONCRETE BARRIER RAIL



FOR ADHESIVE ANCHORING AT SAWED JOINTS

DWN. BY: WDC DATE: 09/2024
CHKD. BY: GFW DATE: 11/2024
DES. EGR. OF RECORD: STC DATE: 09/2024