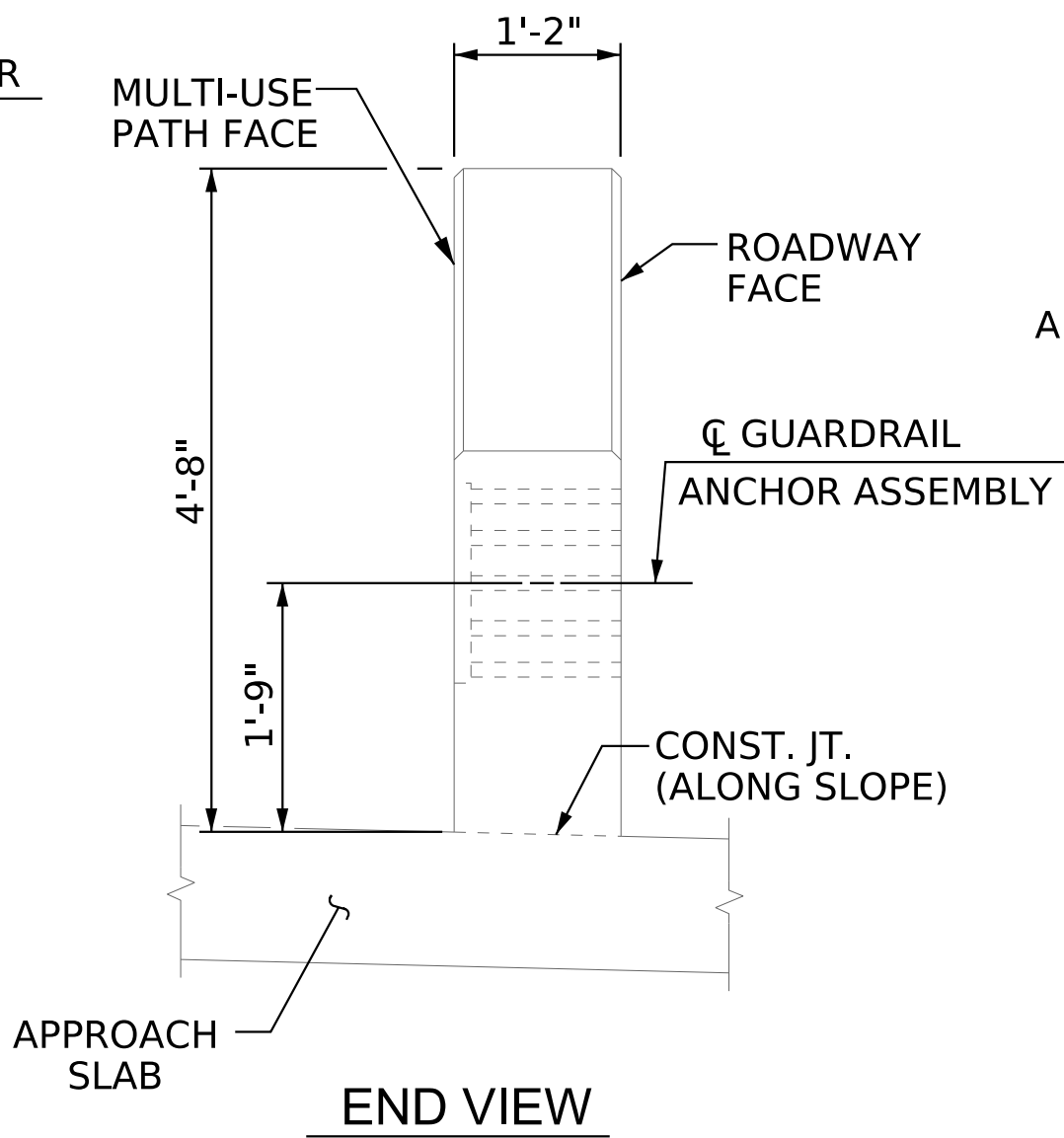
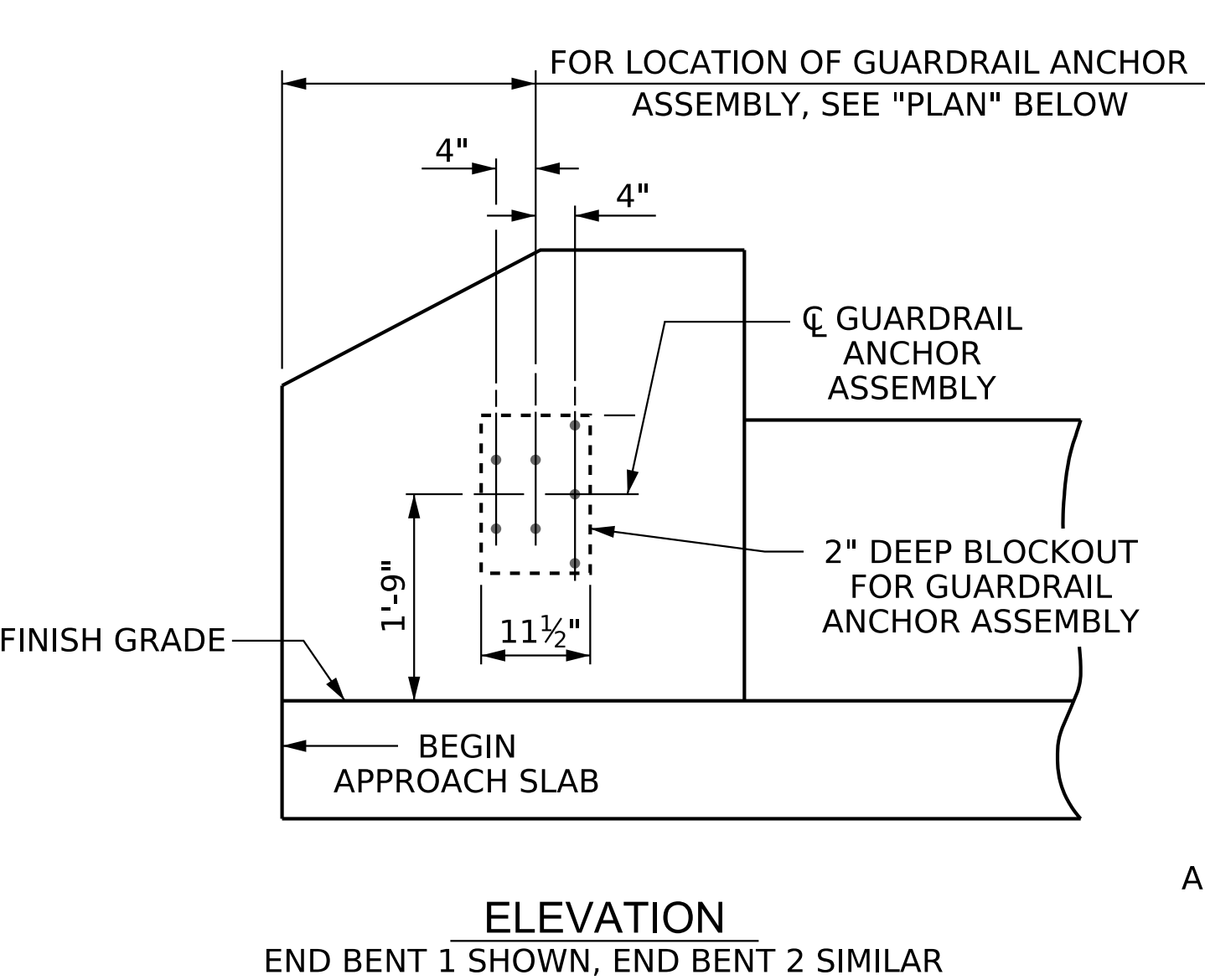
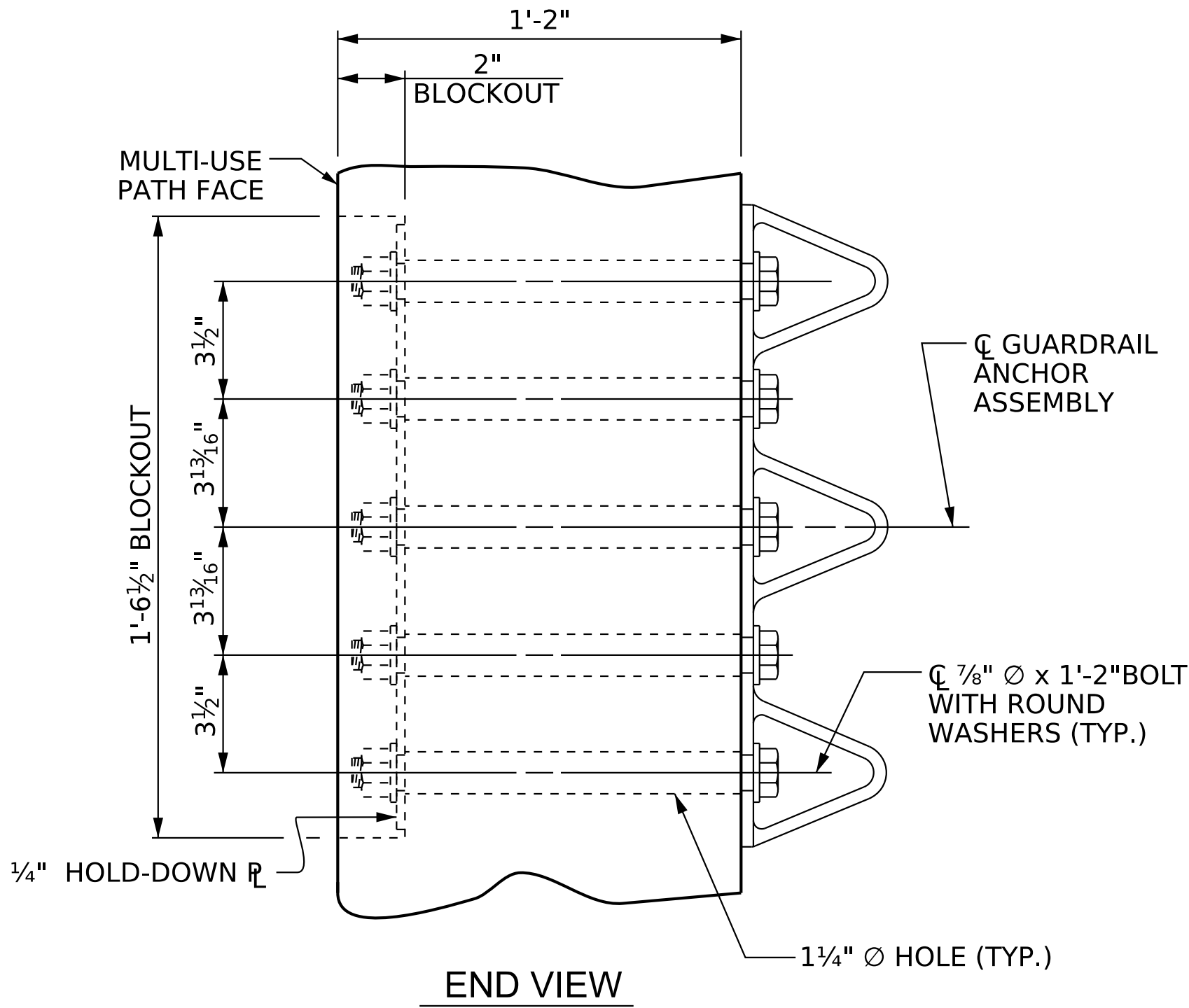
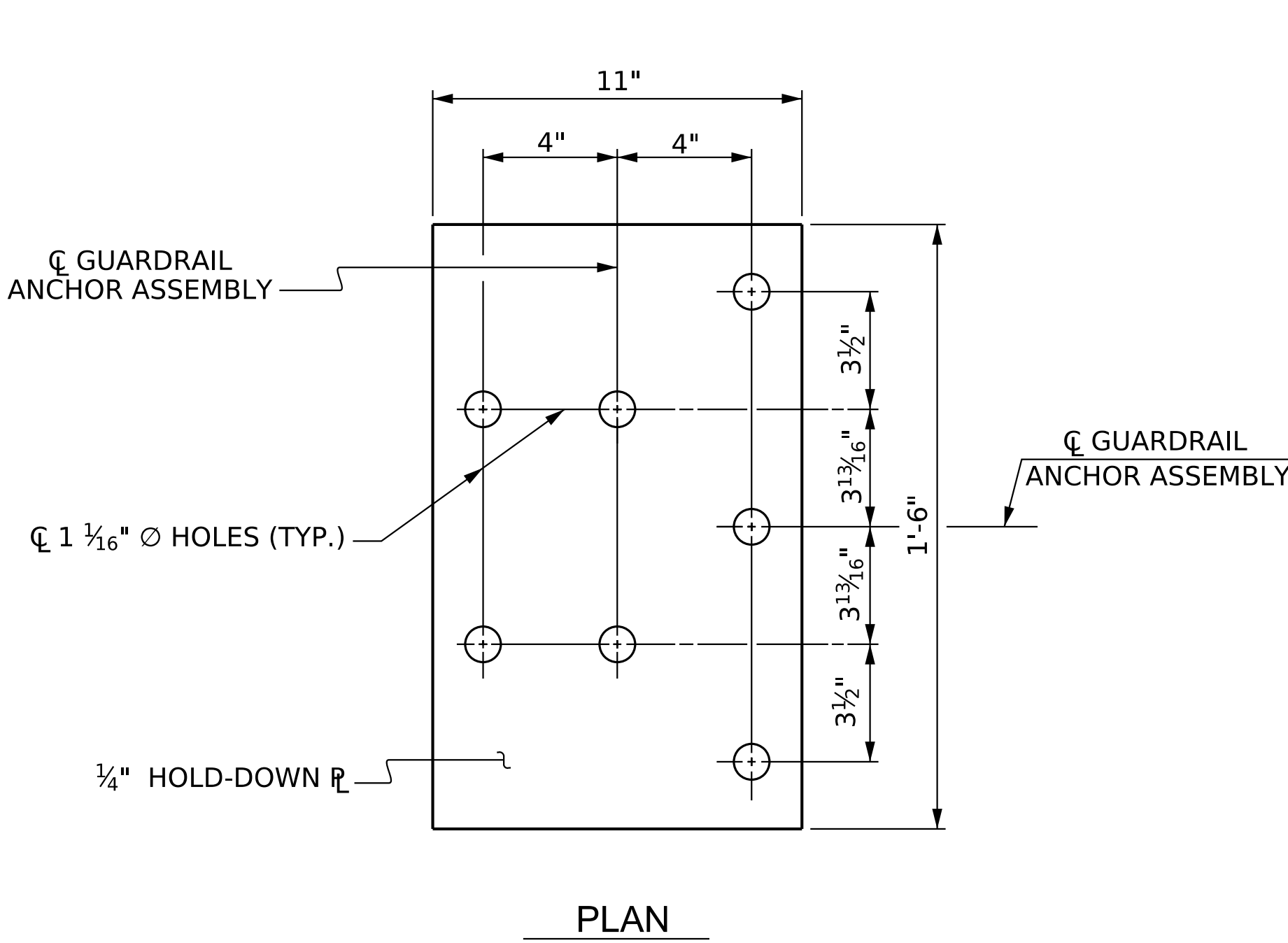
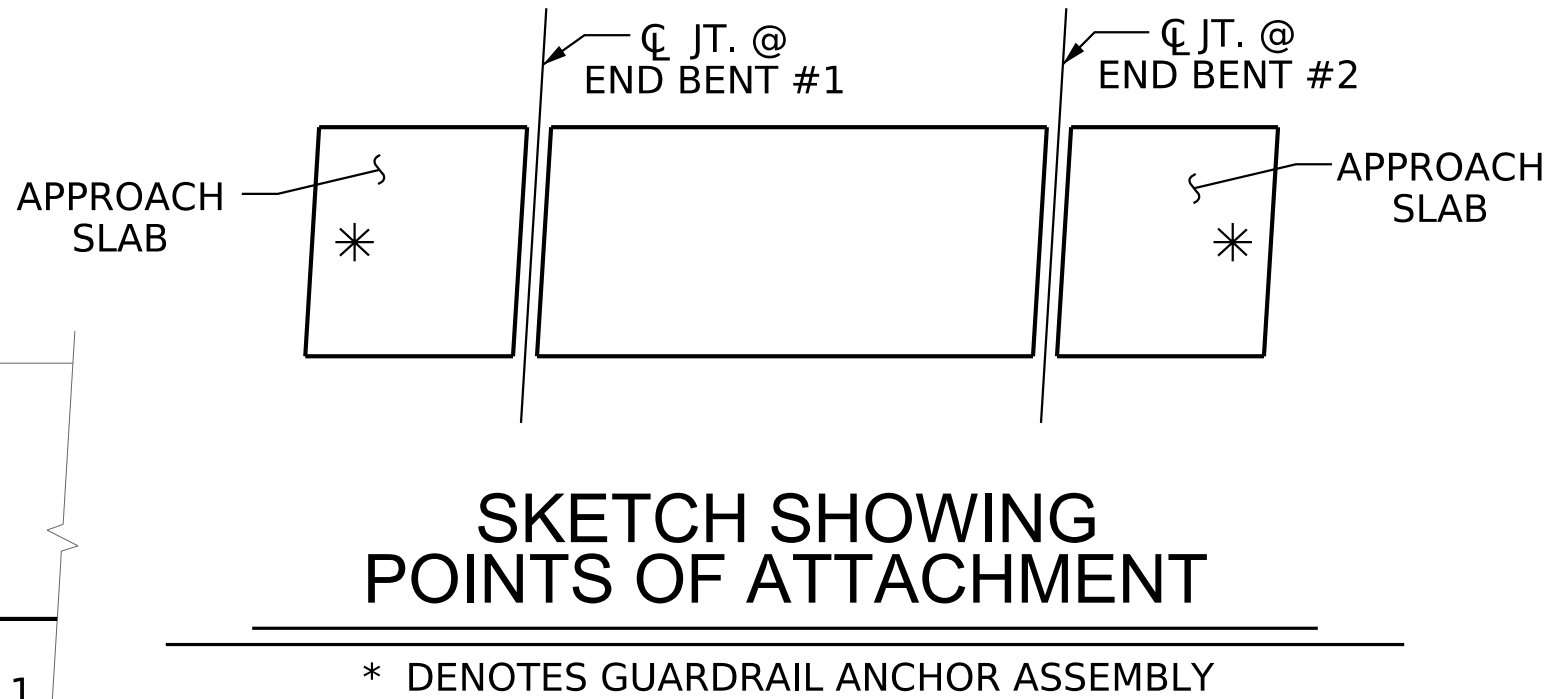
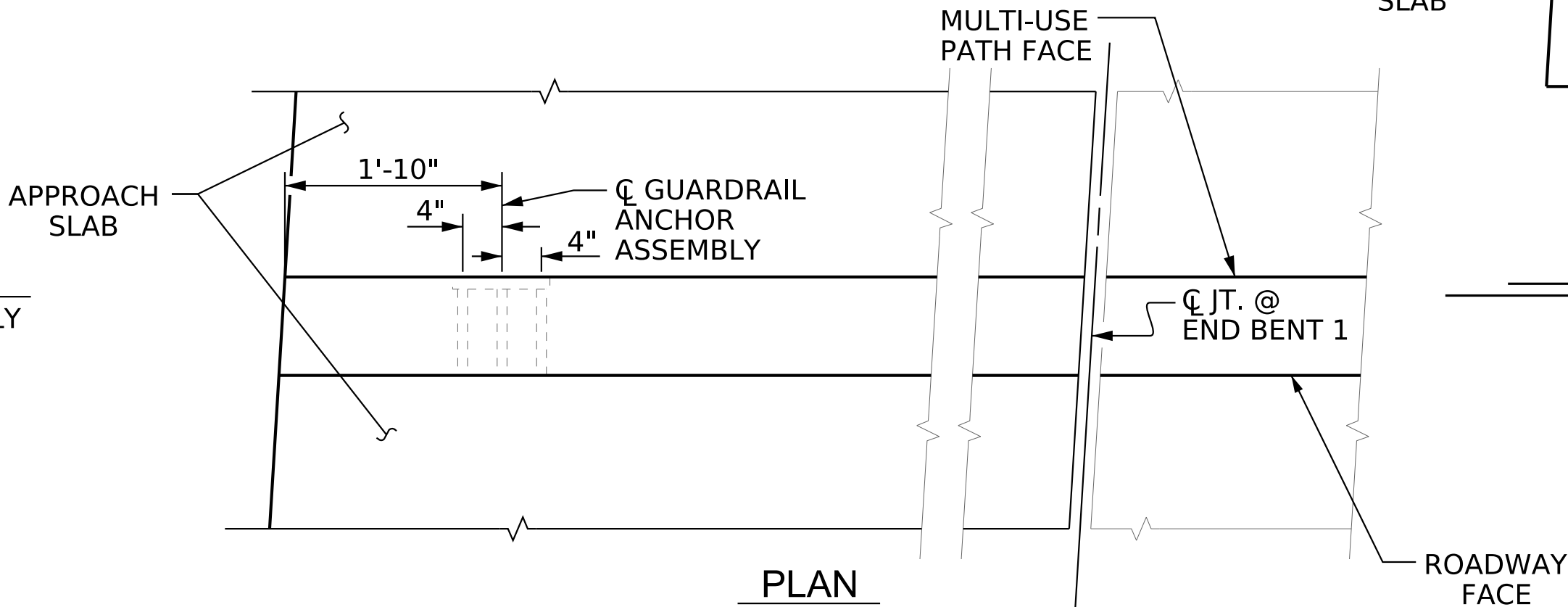


7/31/2026 K:\RDT_Structures\Bridges\NC\01036524 - I-5715 Structure Design\Coord\Sign\Site *1\Structure 2\Final\402.079.15715.SMW.GR2.591416.040.dgn

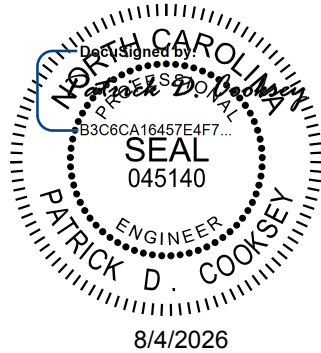


LOCATION OF ANCHORS FOR GUARDRAIL

BEGINNING OF APPROACH SLAB SHOWN, END APPROACH SLAB SIMILAR



PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 23+39.87 -Y1-



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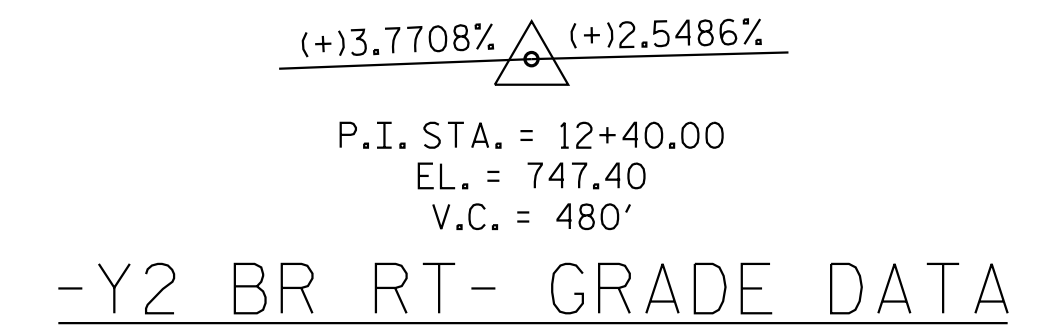
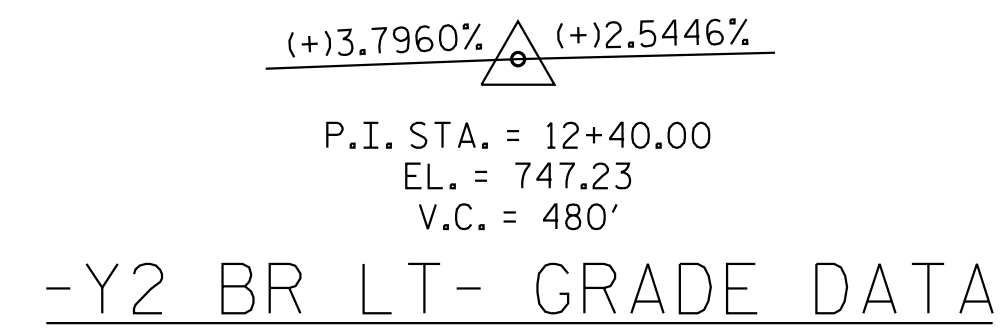
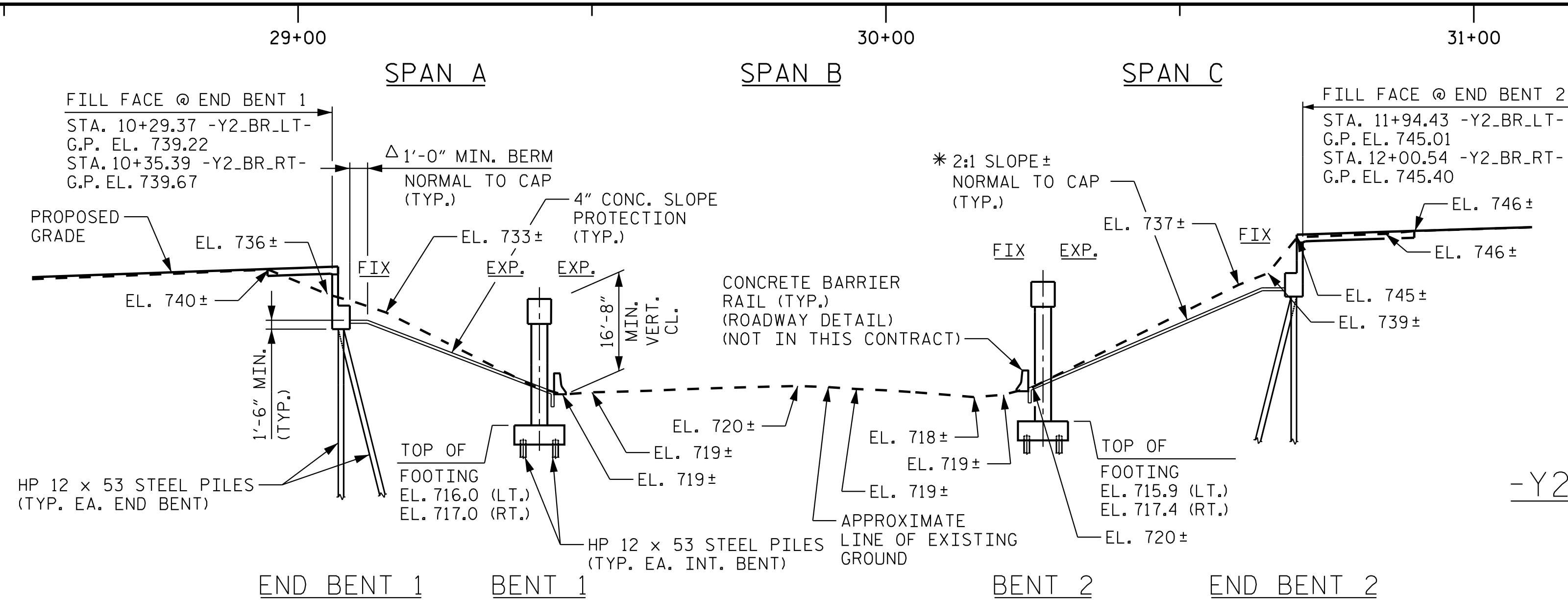
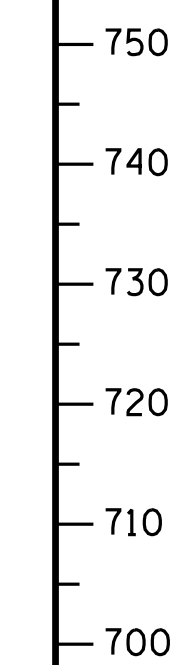
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
GUARDRAIL ANCHORAGE
DETAILS FOR
METAL RAILS ON
APPROACH SLAB

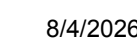
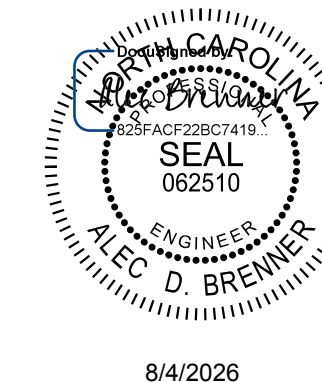
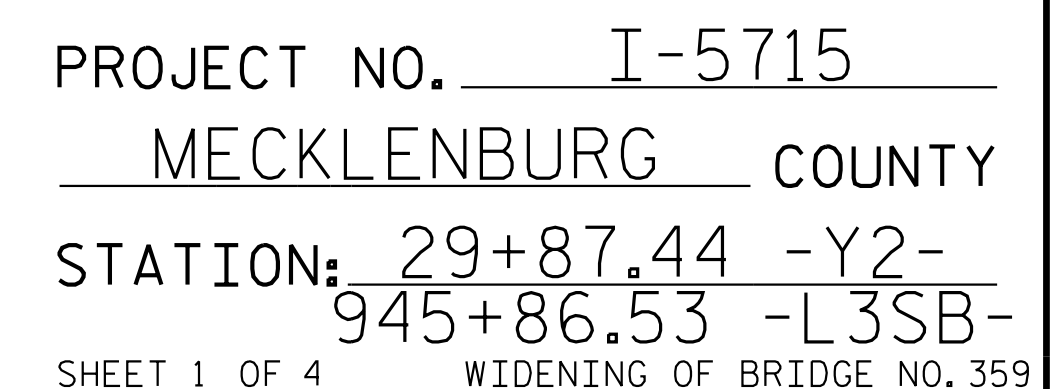
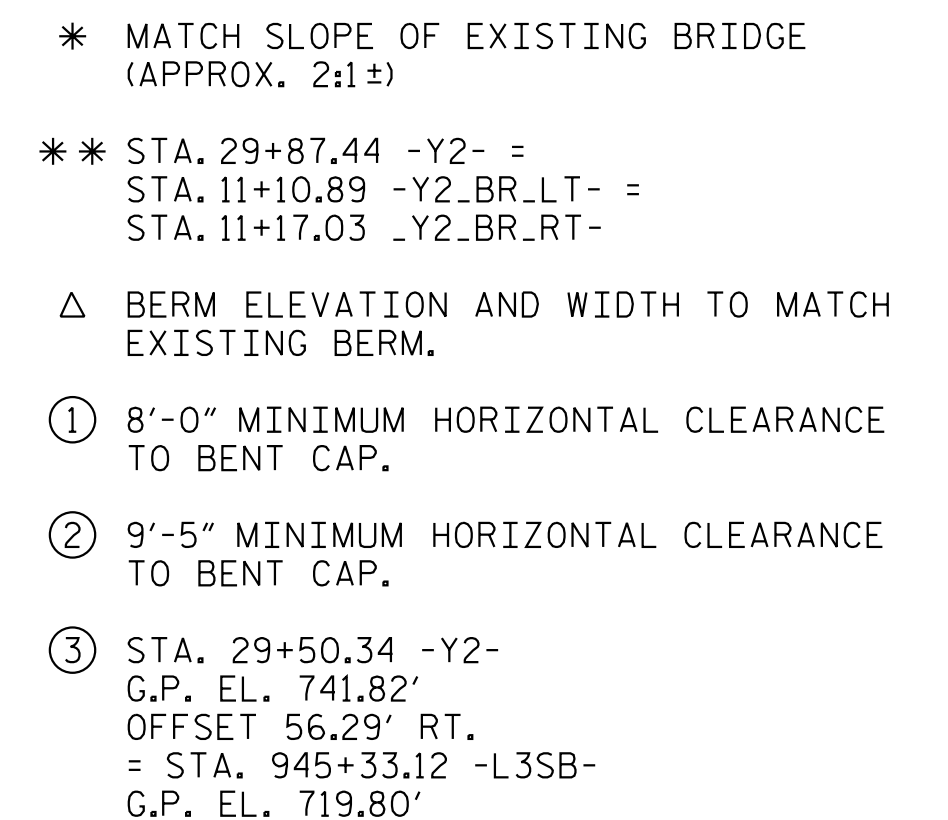
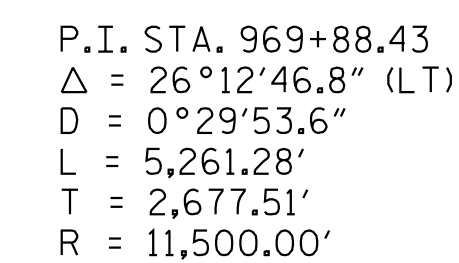
REVISIONS						SHEET NO. S2-40
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 40
2			4			

STR. #2 STD. NO. GRA3

DRAWN BY: R. C. GIESEN DATE: 04/2026
CHECKED BY: E. W. SPRABERRY DATE: 04/2026
DESIGN ENGINEER OF RECORD: A. L. PHILLIPS DATE: 04/2026



SECTION ALONG -Y2-
SECTIONS @ BENT AND END BENTS ARE @ RIGHT ANGLES



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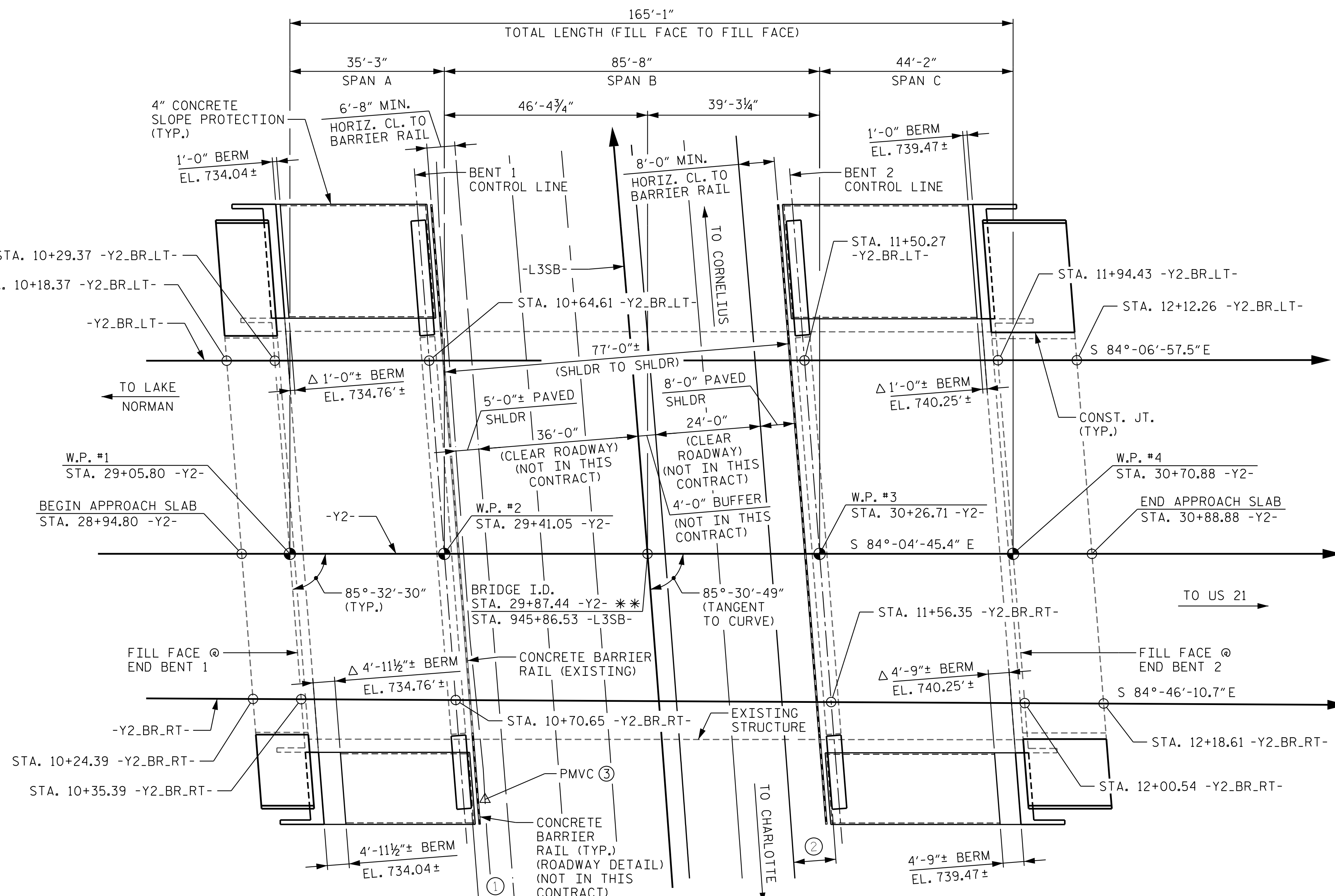
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STR. #3



PLAN

PILES AND FOOTINGS NOT SHOWN IN PLAN VIEW FOR CLARITY.
PMVC - DENOTES POINT OF MINIMUM VERTICAL CLEARANCE

DRAWN BY: T.K. BOYD DATE: 03/26
CHECKED BY: A.D. BRENNER DATE: 03/26
DESIGN ENGINEER OF RECORD: A.L. PHILLIPS DATE: 03/26

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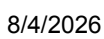
SHEET 2 OF 4

GENERAL DRAWING

FOUNDATION LAYOUT

REVISIONS						SHEET NO. S3-2
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STR. #3



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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
End Bent No. 1, Left Piles 1-3	3	110	733.24	40			185							
End Bent No. 1, Right Piles 1-2	2	110	733.93	45			185							
Bent No. 1, Left Piles 1-12	12	190	713.75	30			320							
Bent No. 1, Right Piles 1-8	8	190	714.75	35			320							
Bent No. 2, Left Piles 1-12	12	190	713.65	20			320							
Bent No. 2, Right Piles 1-8	8	190	715.15	40			320							
End Bent No. 2, Left Piles 1-3	3	110	738.77	60			185							
End Bent No. 2, Right Piles 1-2	2	110	739.38	60			185							
TOTAL QUANTITY:														

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

** 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
End Bent No. 1, Piles 1-5	110			0.60		
Bent No. 1, Footings 1-20	188			0.60		
Bent No. 2, Footings 1-20	188			0.60		
End Bent No. 2, Piles 1-5	110			0.60		

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

SUMMARY OF PILE ACCESSORIES

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Pipe Pile Plates EACH	Steel Pile Points		
		Pipe Pile Cutting Shoes EACH	Pipe Pile Conical Points EACH	H-Pile Points EACH
TOTAL QUANTITY:				

SUMMARY OF DPT/PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

Dynamic Pile Testing (DPT)		
End Bent / Bent No (e.g., "Bent 1 - Bent 3")	DPT Test Pile Length FT	DPT Testing Quantity EACH
TOTAL QUANTITY:		

Pile Order Lengths for Concrete Piles	
End Bent / Bent No (e.g., "Bent 1 - Bent 3")	Pile Order Length Basis* EST or DPT

* EST = Pile order lengths from estimated pile lengths; DPT = Pile order lengths based on Dynamic Pile Testing. For groups of end bents/bents with pile order lengths based on DPT testing, the first end bent/bent no. listed for each group is the representative end bent/bent with the DPT.

NOTES:

1. The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Pete Tomos, #051623) on 02-04-2026.
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.



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PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 3 OF 4

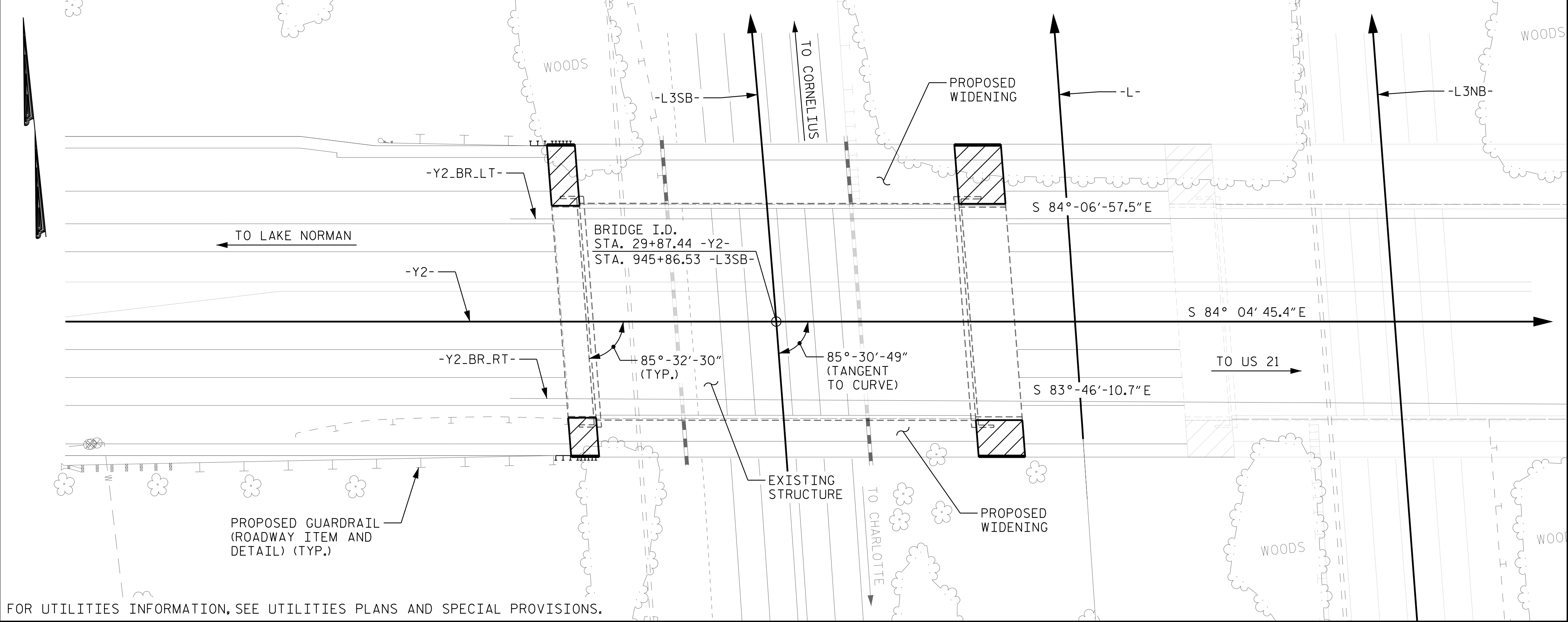
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DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOUNDATION TABLES

REVISIONS						SHEET NO. S3-3
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

K:\RD1-Structures\Bridges\N\01036524 - I-5715 Structure Design\Coord\Design\Site *2\Structure 3\Final\403.005.15115.SMU.FTL.590359.003.dgn 7/31/2026

BM #26: TIE SPIKE SET IN 18" OAK TREE, 330.53' LEFT OF STATION 26+75.10 -Y2-, EL. 725.60'



FOR UTILITIES INFORMATION, SEE UTILITIES PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE AT STATION 29+87.44 -Y2-	ASBESTOS ASSESSMENT	FOUNDATION EXCAVATION FOR BENT 1 AT STATION 29+87.44 -Y2-	FOUNDATION EXCAVATION FOR BENT 2 AT STATION 29+87.44 -Y2-	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	APPROX. 236,674 LBS. STRUCTURAL STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12x53 STEEL PILES	HP 12 X 53 STEEL PILES	
	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	LBS.	LUMP SUM	EA.	NO.	LIN. FT.
SUPERSTRUCTURE					7,616	5,513		LUMP SUM			LUMP SUM			
END BENT 1							21.2		3,588			5	5	210
BENT 1			LUMP SUM				62.4		10,894	1,562		20	20	640
BENT 2				LUMP SUM			65.2		11,100	1,809		20	20	560
END BENT 2							21.5		3,587			5	5	300
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	7,616	5,513	170.3	LUMP SUM	29,169	3,371	LUMP SUM	50	50	1,710

TOTAL BILL OF MATERIAL

	TWO BAR METAL RAIL	1'-2" X 3'-2 3/4" CONCRETE PARAPET	4" SLOPE PROTECTION	ELASTOMERIC BEARINGS	FOAM JOINT SEALS
	LIN. FT.	LIN. FT.	SQ. YD.	LUMP SUM	LUMP SUM
SUPERSTRUCTURE	318.3	325.8		LUMP SUM	LUMP SUM
END BENT 1			189		
BENT 1					
BENT 2					
END BENT 2			241		
TOTAL	318.3	325.8	430	LUMP SUM	LUMP SUM

SAMPLE BAR
REPLACEMENT

SIZE	LENGTH
#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"

NOTE:
SAMPLE BAR REPLACEMENT LENGTHS
BASED ON 30"(SAMPLE LENGTH) PLUS
TWO SPLICE LENGTHS AND f_y = 60ksi.

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

WIDENING OF BRIDGE NO. 359.

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 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.

THE ELEVATION(S) AND CLEARANCE(S) SHOWN ON THE PLANS AT THE POINT(S) OF MINIMUM VERTICAL CLEARANCE ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE ELEVATION(S) 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.

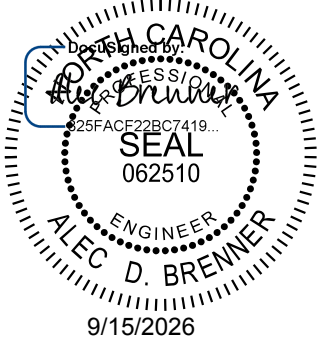
THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED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

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 FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 4 OF 4



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RALEIGH

GENERAL DRAWING
LOCATION SKETCH &
BILL OF MATERIAL

REVISIONS						SHEET NO. S3-4
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #3

K:\B01_Structures\Bridges\NC\01036524 - I-5715 Structure Design\Coord\Sign\Site *2\Structure 3\Final\403.007.15715_SMU_CD2.590359.004.dgn 9/15/2026

DRAWN BY: T. K. BOYD DATE: 03/26
CHECKED BY: A. D. BRENNER DATE: 03/26
DESIGN ENGINEER OF RECORD: A. L. PHILLIPS DATE: 03/26

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LOAD FACTORS:

NOTES:

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

- 1.
- 2.
- 3.
- 4.

Diagram illustrating the layout of a bridge deck with three spans and four support points. The spans are defined by the following dimensions (BRG. TO BRG.):

- Span 1: 32'-10 $\frac{7}{16}$ "
- Span 2: 84'-3 $\frac{3}{8}$ "
- Span 3: 41'-9 $\frac{9}{16}$ "

The support points are labeled as follows:

- END BENT 1
- BENT 1
- BENT 2
- END BENT 2

Four numbered markers (1, 2, 3, 4) are positioned within the middle span (Span 2), indicating specific locations or features.

PROJECT NO. I-5715
MECKLENBURG COUNTY
 STATION: 29+87.44 -Y2-

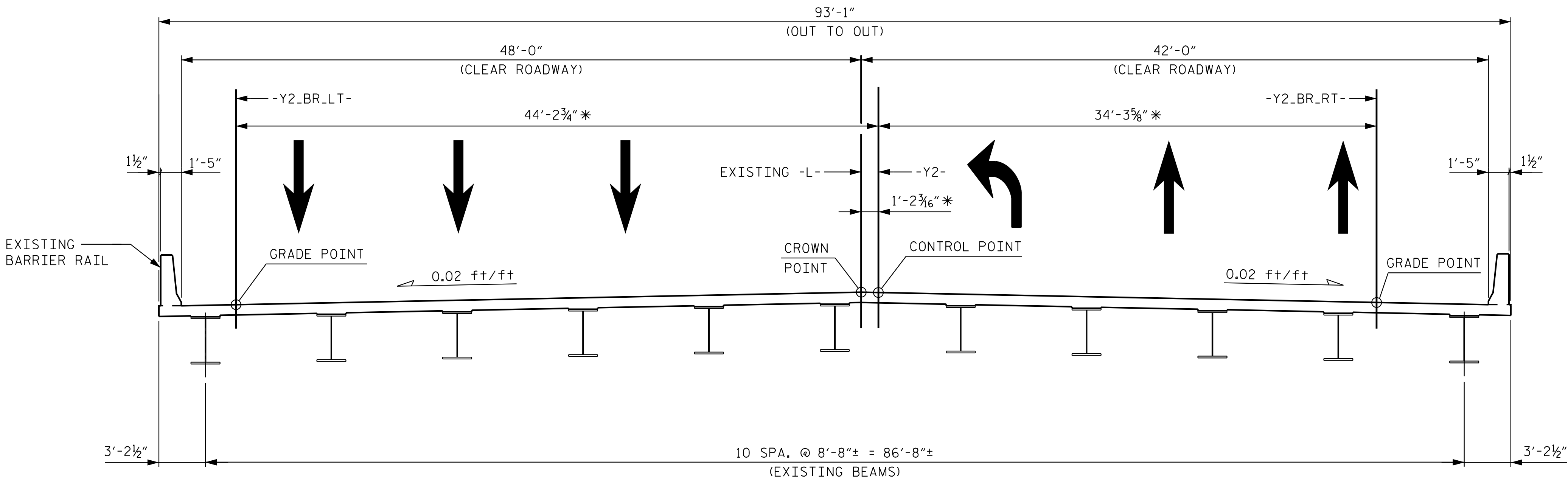


ASSEMBLED BY : T. K. BOYD	DATE : 11/25
CHECKED BY : A. L. PHILLIPS	DATE : 11/25
DRAWN BY : MAA 1/08	REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/10/11 MAA/GM
	REV. 12/17 MAA/THG

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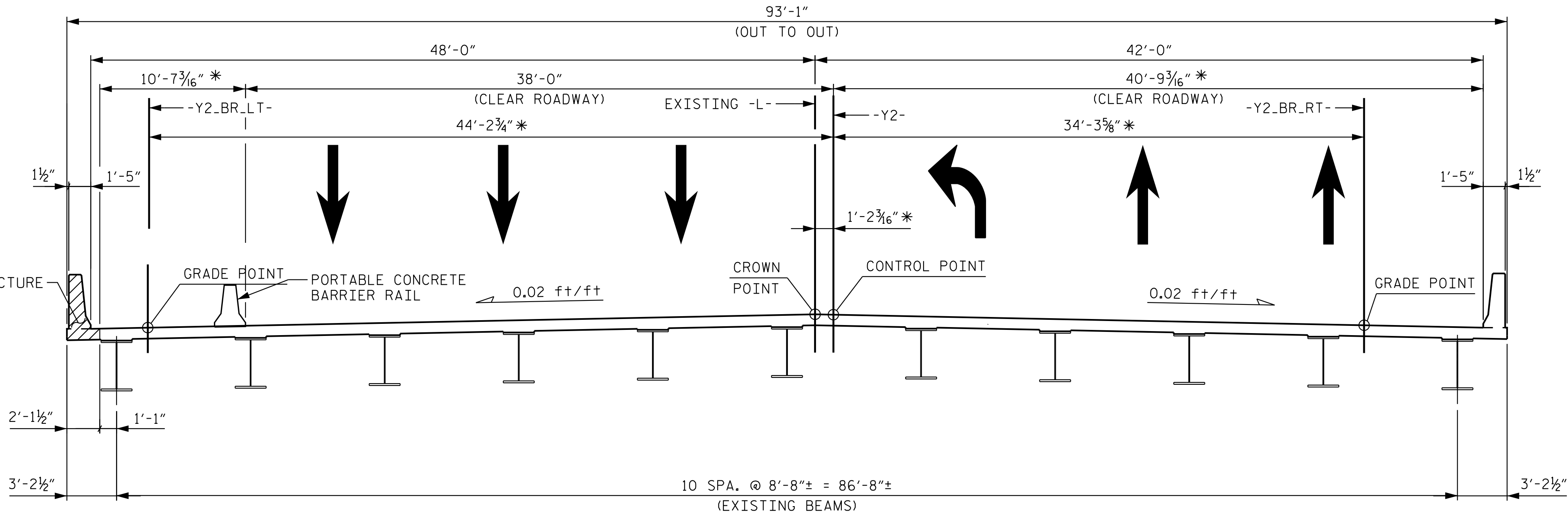
STR. #3 STD. NO. LRFR4

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EXISTING STRUCTURE

* DIMENSIONS VARY
DIMENSIONS TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)



STAGE 1

* DIMENSIONS VARY
DIMENSIONS TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)

GENERAL STAGING NOTES:

FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMIT OF THE PORTABLE CONCRETE BARRIER.

CARE SHALL BE TAKEN DURING THE PARTIAL REMOVAL OF THE EXISTING STRUCTURE. DAMAGE TO THE REMAINING STRUCTURE SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE DEPARTMENT. THE REPAIR METHOD SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.

EXISTING BRIDGE WIDTHS ARE BASED ON EXISTING BRIDGE PLANS.

FOR CONCRETE MEDIAN DETAILS, SEE "CONCRETE MEDIAN DETAILS" SHEET.

STAGE 1:

1. PLACE TEMPORARY BARRIER ALONG LEFT EDGE OF STRUCTURE AND SHIFT TRAFFIC LANES.
2. CUT AND REMOVE EXISTING BARRIER RAIL AND SLAB ON LEFT SIDE OF BRIDGE.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 1 OF 4



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SUPERSTRUCTURE
CONSTRUCTION
SEQUENCE

REVISIONS						SHEET NO. S3-6
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

DRAWN BY: T. K. BOYD DATE: 03/26
CHECKED BY: A. D. BRENNER DATE: 03/26
DESIGN ENGINEER OF RECORD: A. L. PHILLIPS DATE: 03/26

STR. #3

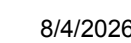


1. CONSTRUCT LEFT WIDENING BEHIND TEMPORARY BARRIER.
2. CONSTRUCT LEFT PARAPET AND SIDEWALK BEHIND TEMPORARY BARRIER.

1. CONSTRUCT CLOSURE POUR BETWEEN LEFT WIDENING AND EXISTING STRUCTURE.
2. MOVE TEMPORARY BARRIER ALONG RIGHT EDGE OF STRUCTURE AND SHIFT TRAFFIC LANES.
3. CUT AND REMOVE EXISTING BARRIER RAIL AND SLAB ON RIGHT SIDE OF BRIDGE.

PROJECT NO. I-5715
MECKLENBURG COUNTY
 STATION: 29+87.44 -Y2-

SHEET 2 OF 4



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SUPERSTRUCTURE CONSTRUCTION SEQUENCE

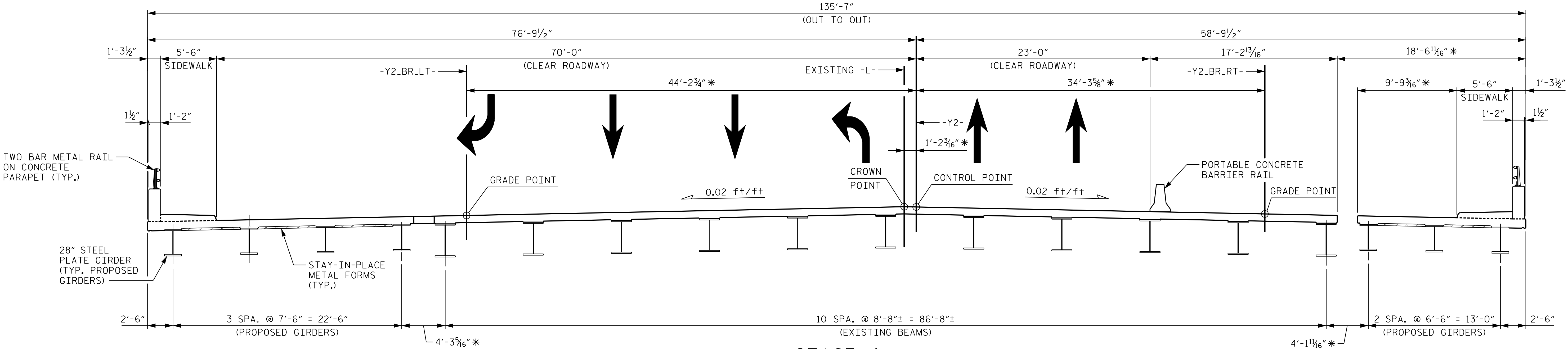
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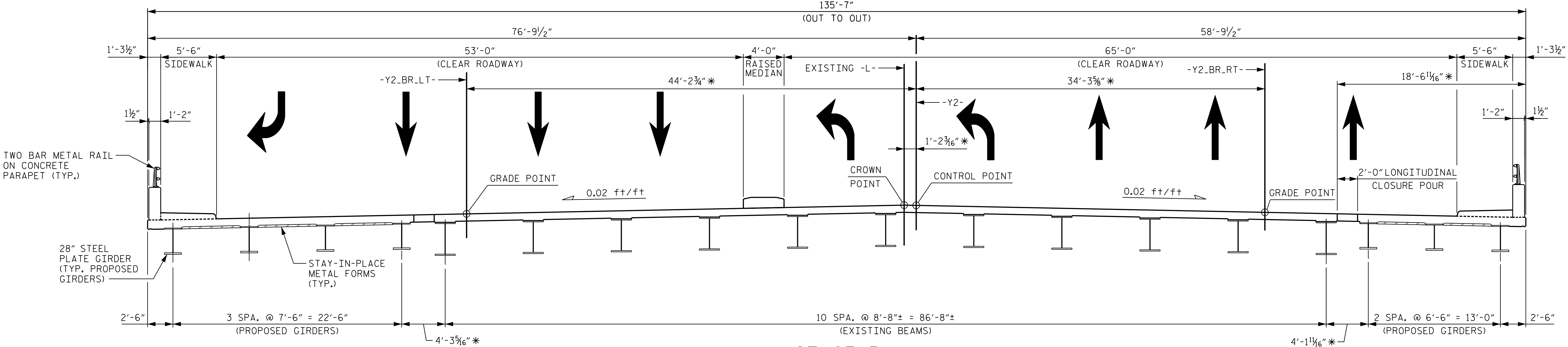
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STAGE 4

* DIMENSIONS VARY
DIMENSIONS TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)



STAGE 5

* DIMENSIONS VARY
DIMENSIONS TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)

STAGE 4:

1. CONSTRUCT RIGHT WIDENING BEHIND TEMPORARY BARRIER.
2. CONSTRUCT RIGHT PARAPET AND SIDEWALK BEHIND TEMPORARY BARRIER.

STAGE 5:

1. CONSTRUCT CLOSURE POUR BETWEEN RIGHT WIDENING AND EXISTING STRUCTURE.
2. CONSTRUCT CONCRETE MEDIAN.
3. REMOVE TEMPORARY BARRIER AND OPEN TRAFFIC TO FINAL CONFIGURATION.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 3 OF 4



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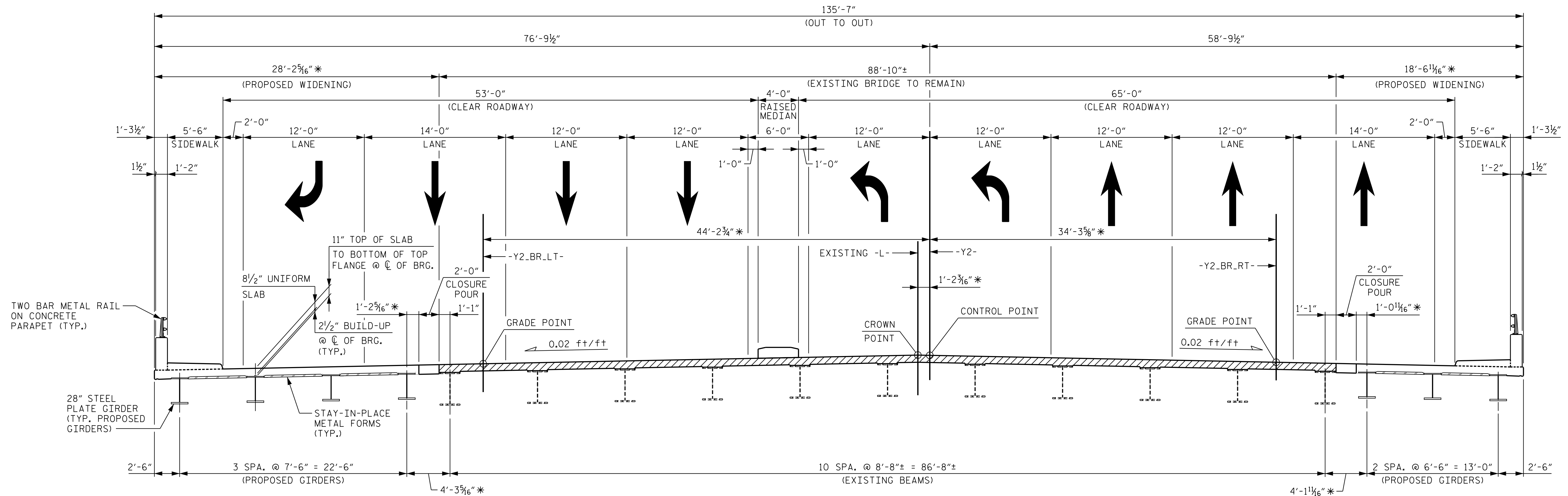
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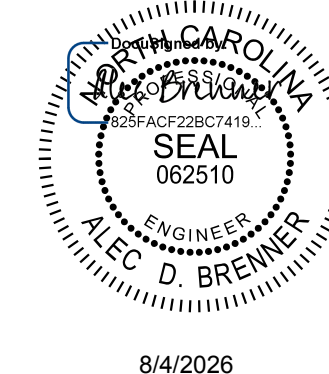


FINAL CONDITION

* DIMENSIONS VARY
DIMENSIONS TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)

PROJECT NO. I-5715
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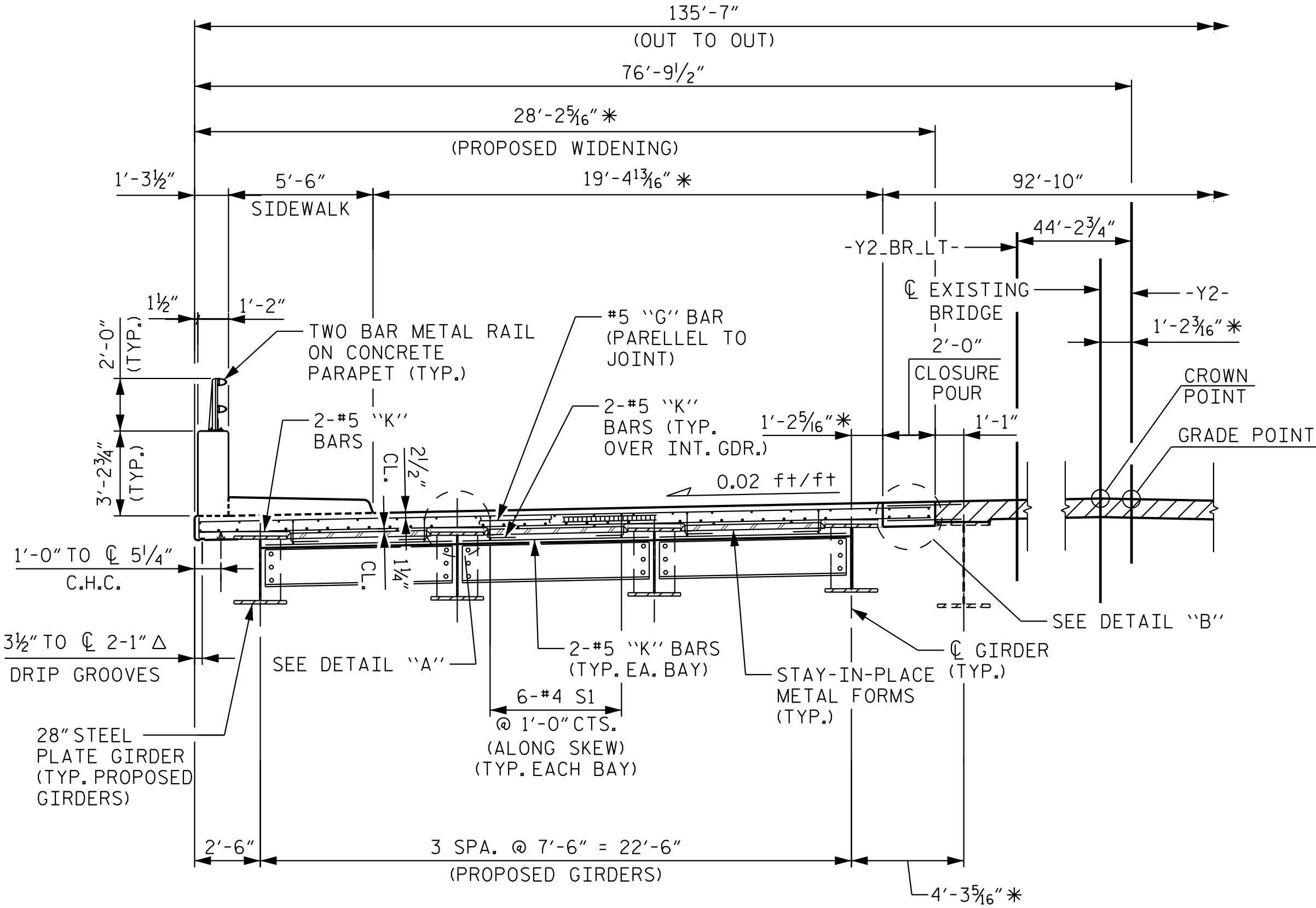
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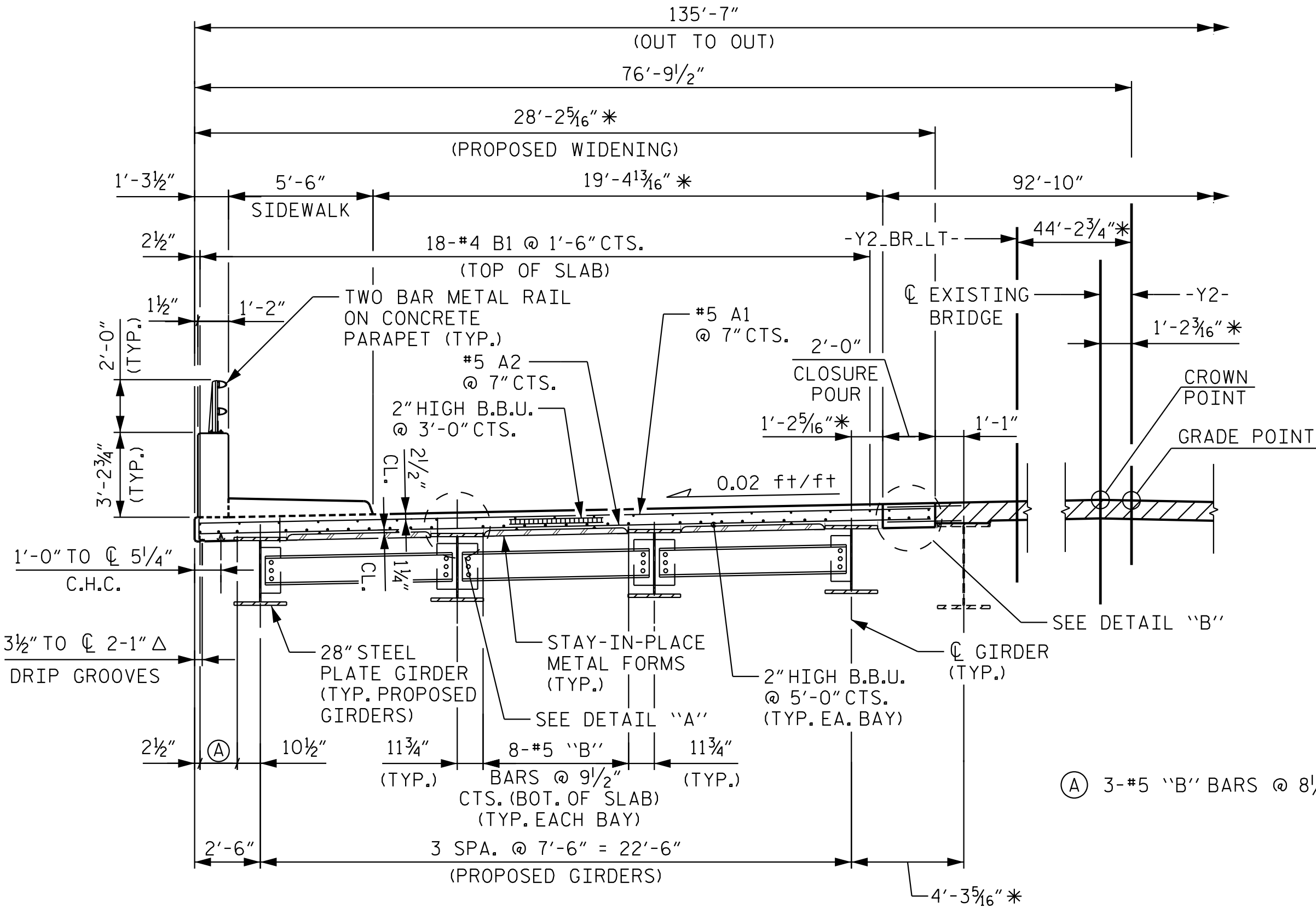
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FOR NOTES, SEE SHEET 3 OF 3



TYPICAL SECTION AT END BENT AND BENT DIAPHRAGMS

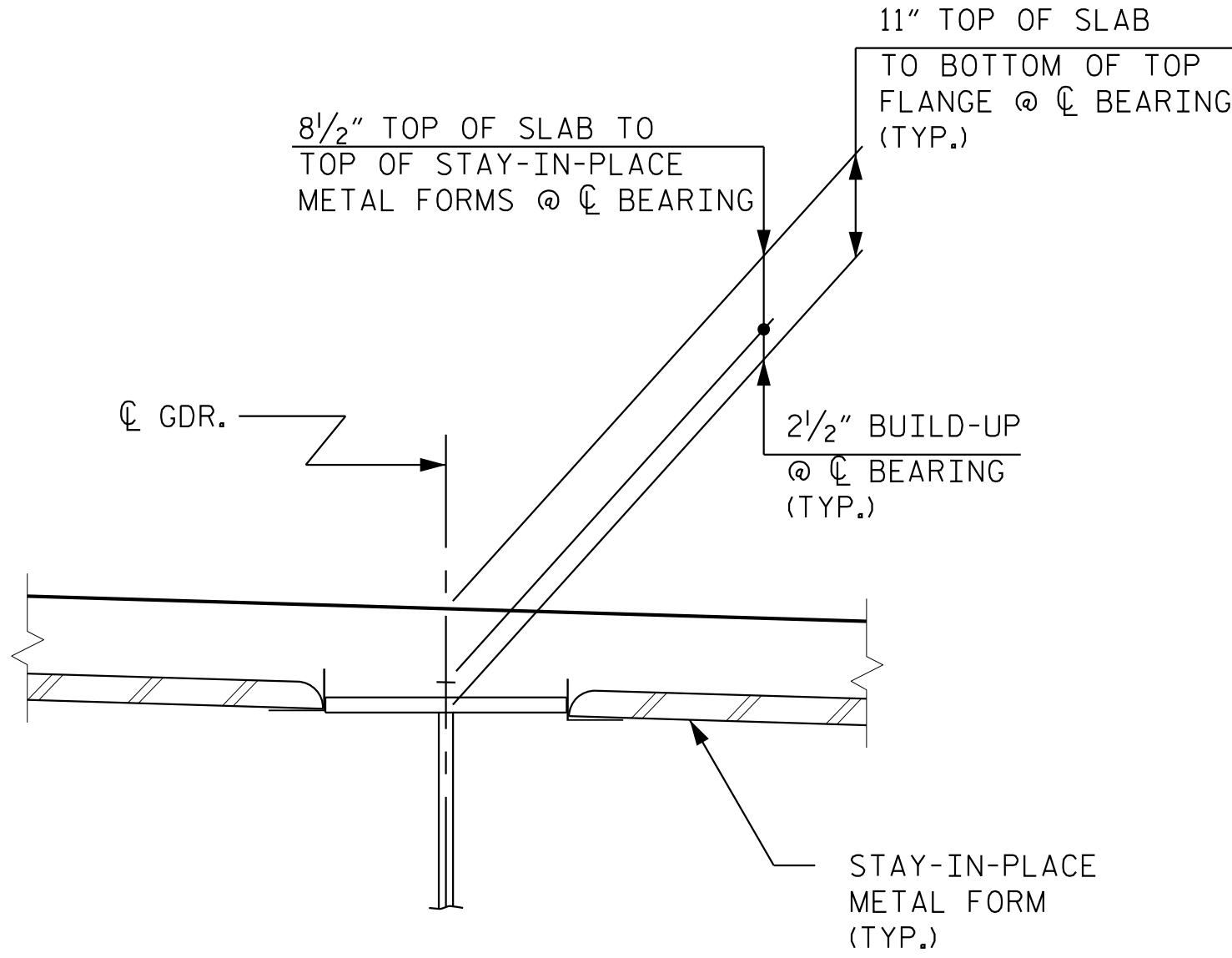
FOR "A" BAR, "B" BAR AND B.B.U. INFORMATION, SEE "TYPICAL SECTION VIEW AT INTERMEDIATE DIAPHRAGMS," THIS SHEET.



TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS

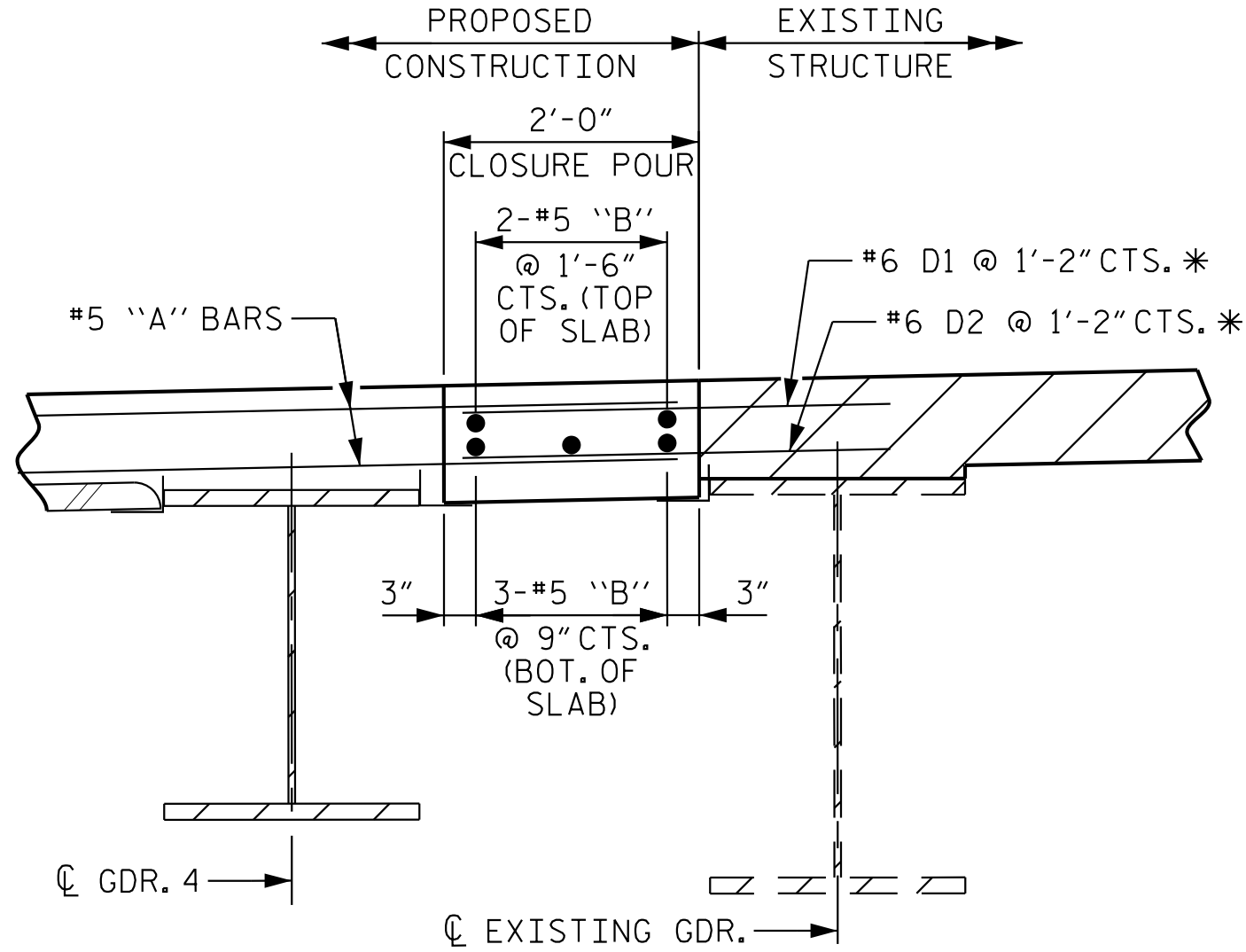
TYPICAL SECTION - LEFT EXTENSION

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DIMENSIONS TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)



DETAIL A

(TYP. @ EA. GDR.)

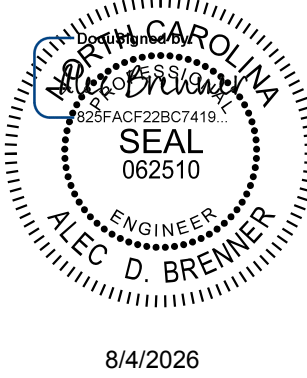


DETAIL B

* SEE NOTES ON SHEET 3 OF 3.

PROJECT NO. I-5715
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STATION: 29+87.44 -Y2-

SHEET 1 OF 3



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SUPERSTRUCTURE
TYPICAL SECTION

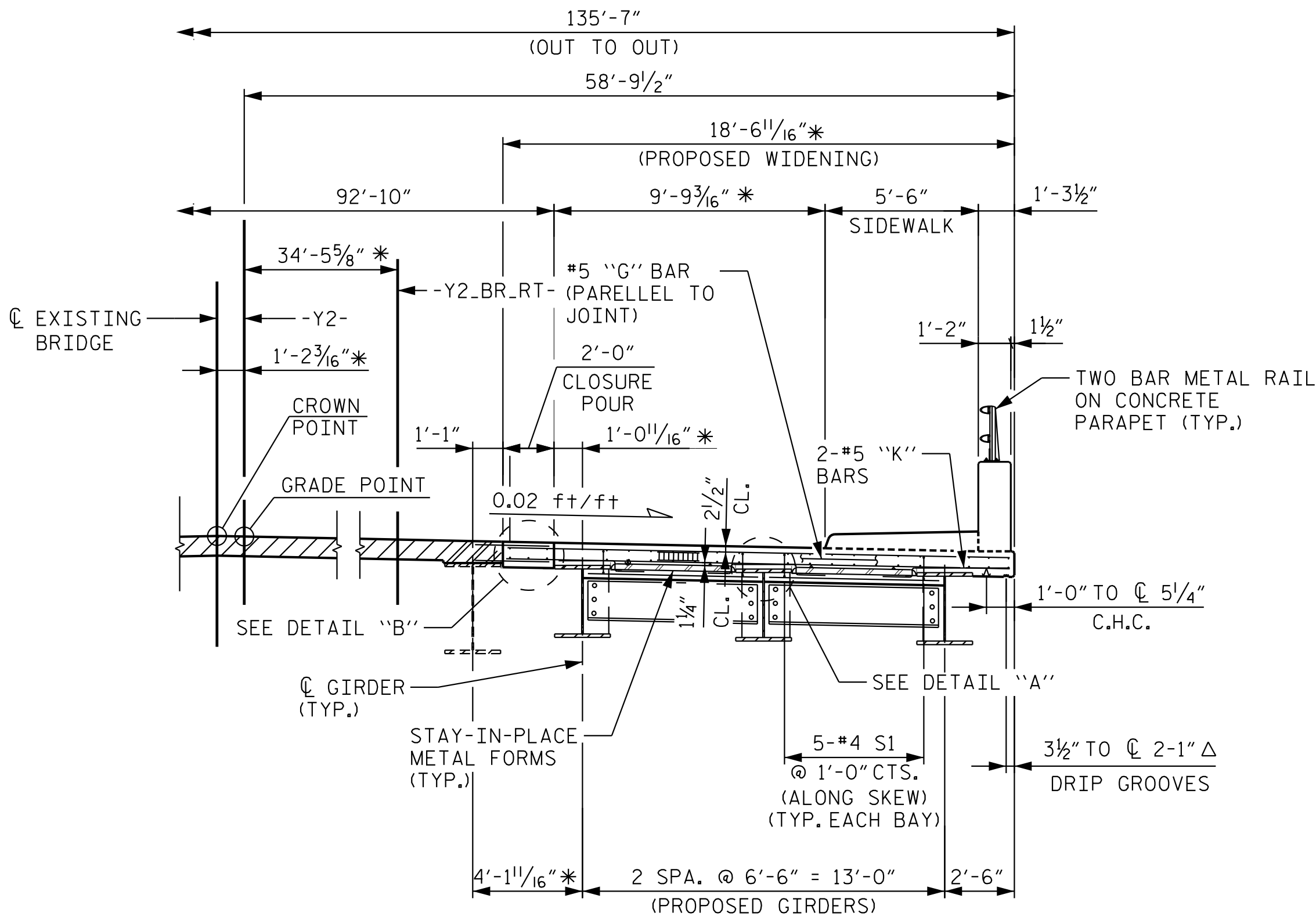
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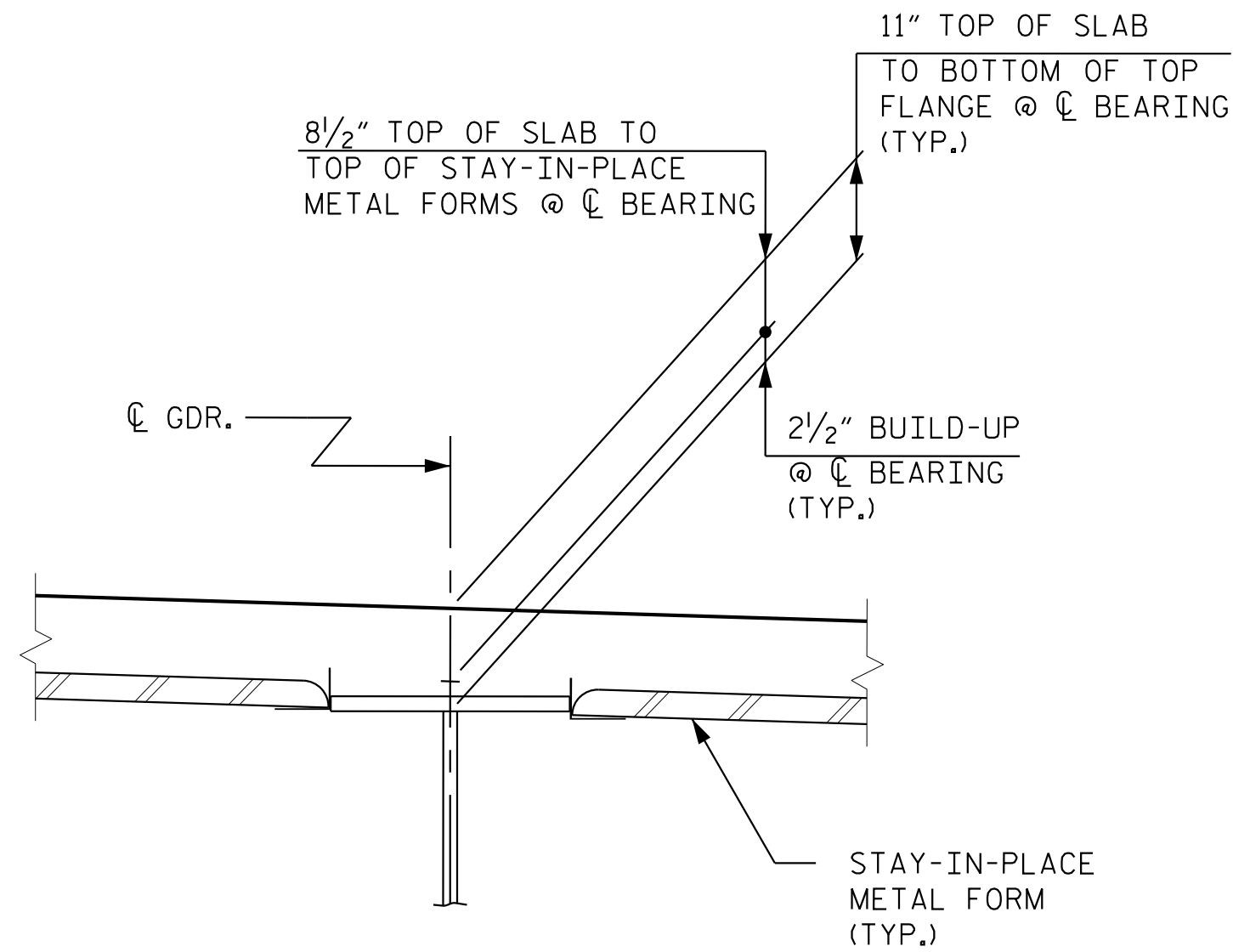
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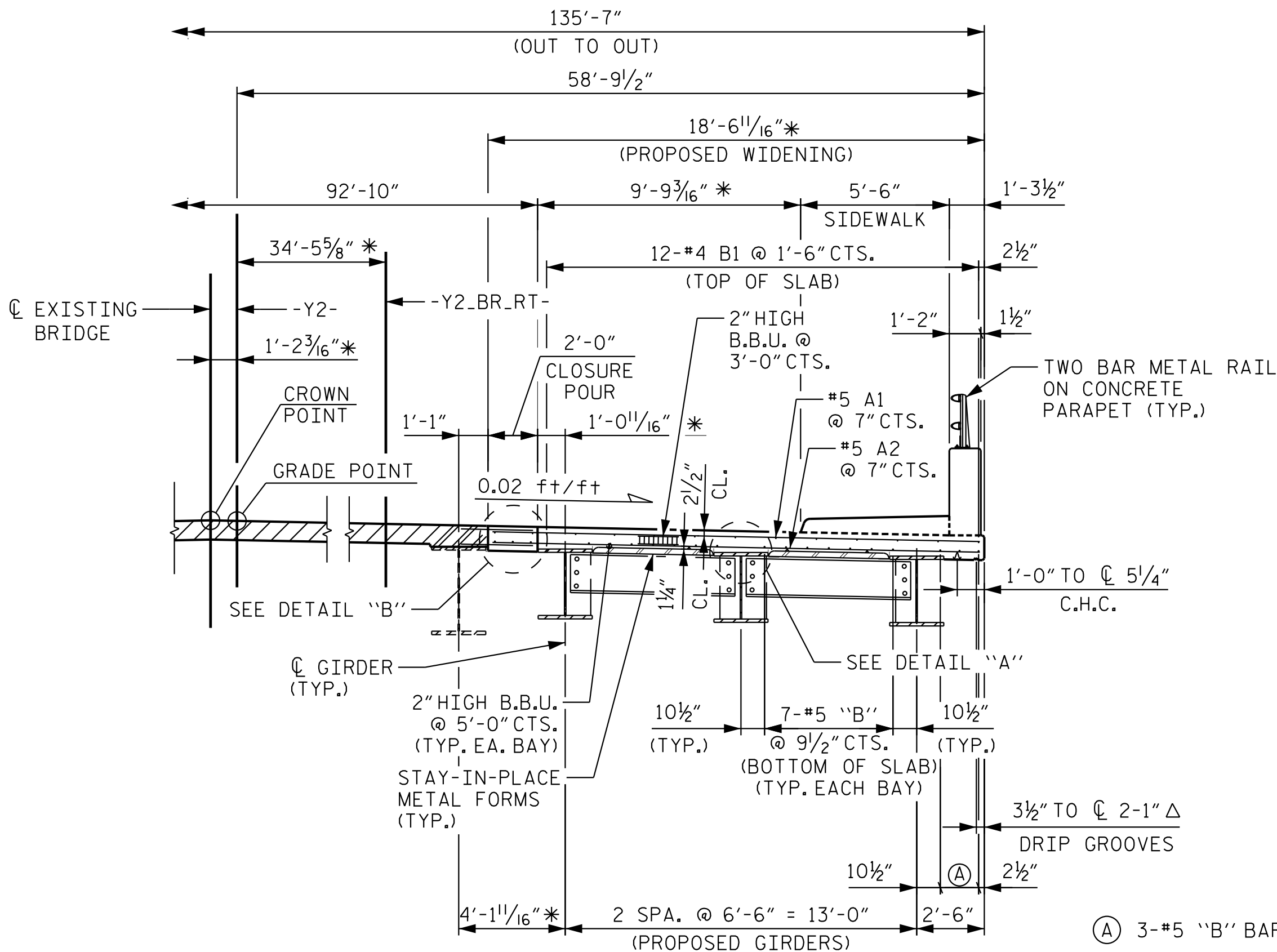
NOTES:
FOR NOTES, SEE SHEET 3 OF 3



TYPICAL SECTION AT END BENT AND BENT DIAPHRAGMS
FOR "A" BAR, "B" BAR AND B.B.U. INFORMATION, SEE "TYPICAL SECTION VIEW AT INTERMEDIATE DIAPHRAGMS," THIS SHEET.

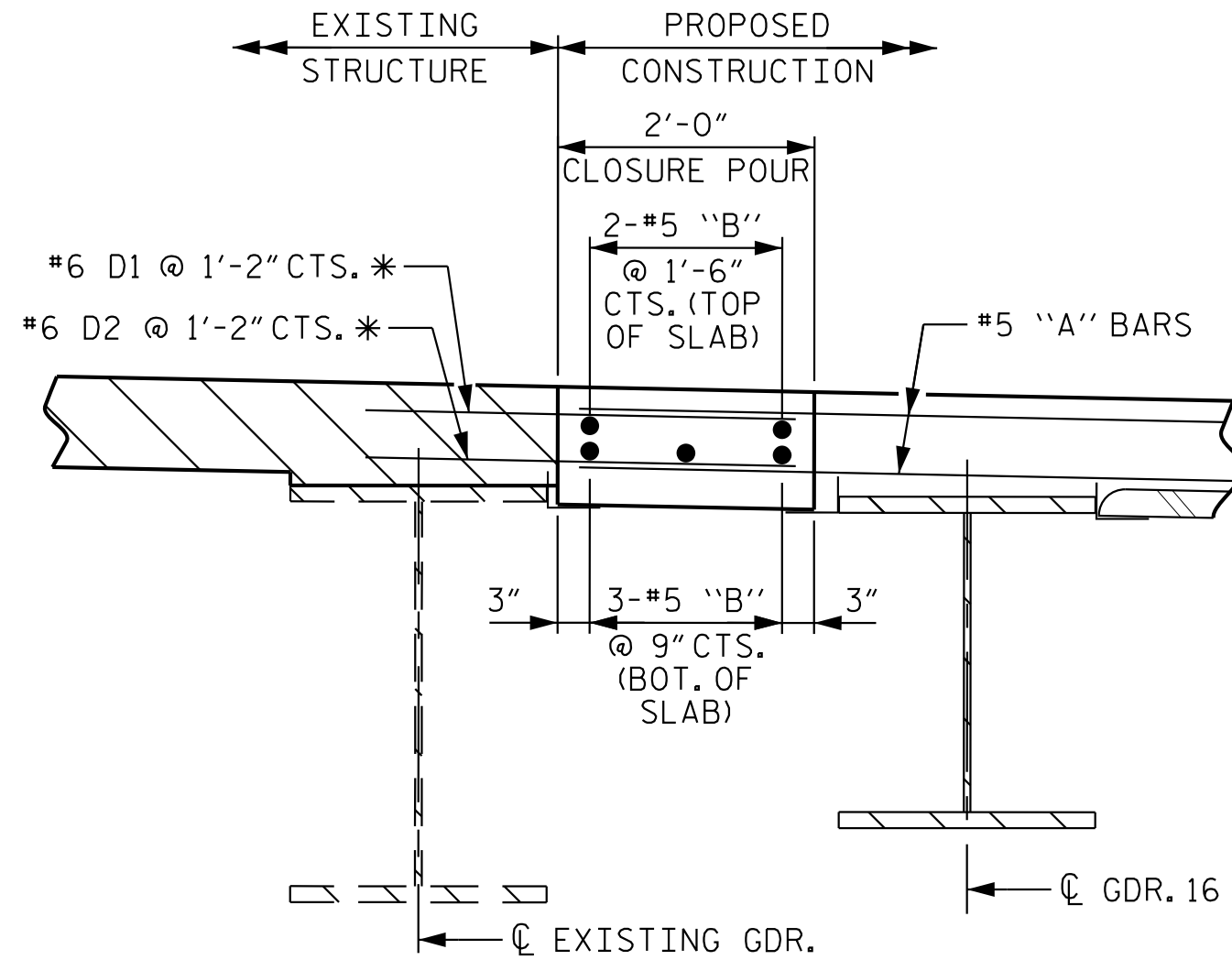


DETAIL A
(TYP. @ EA. GDR.)

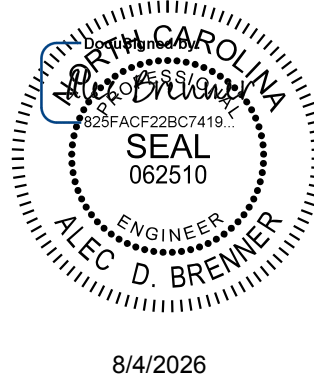


TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS

TYPICAL SECTION - RIGHT EXTENSION
* DIMENSIONS VARY
DIMENSIONS TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)



DETAIL B
* SEE NOTES ON SHEET 3 OF 3.



PROJECT NO. I-5715
MECKLENBURG COUNTY
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SHEET 2 OF 3

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SUPERSTRUCTURE
TYPICAL SECTION

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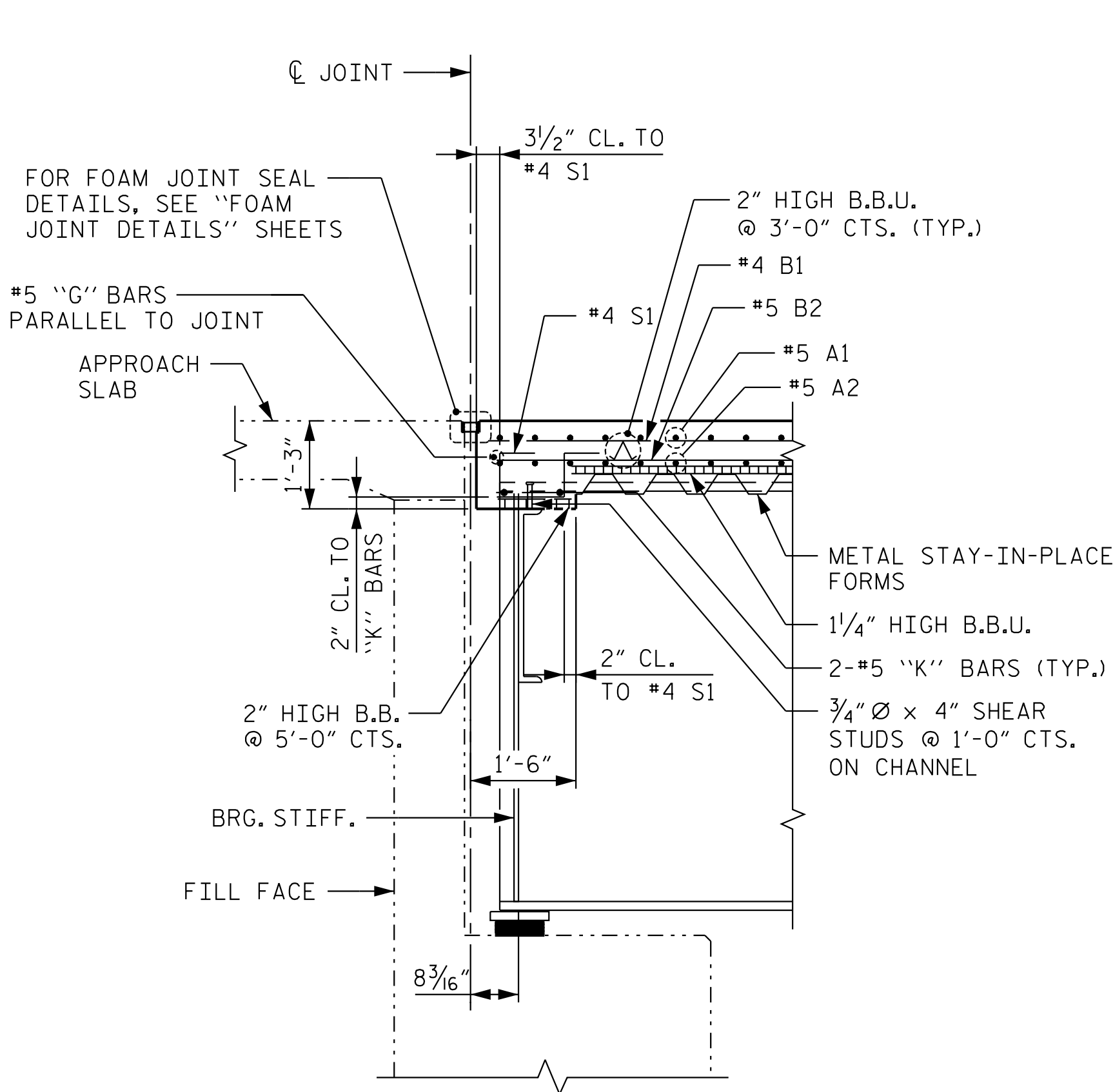
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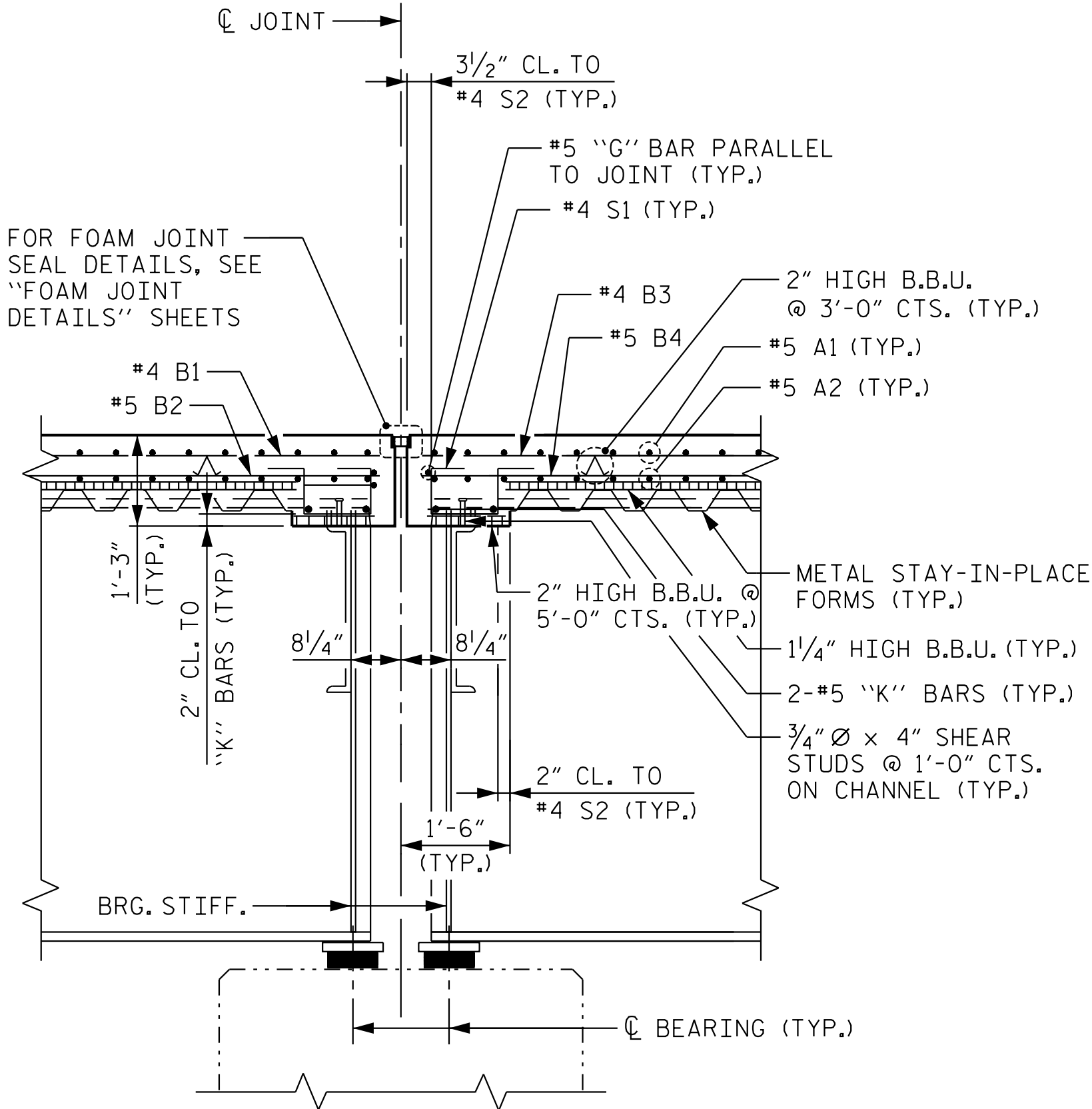
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7/31/2026



SECTION THRU END BENT DIAPHRAGM
(END BENT 1 SHOWN, END BENT 2 SIMILAR)



SECTION AT BENT
(BENT 1 SHOWN, BENT 2 SIMILAR)

NOTES:

PROVIDE 1 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF "A" BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF "A" BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.

FOR MORE INFORMATION REGARDING THE DIAPHRAGMS SEE "STRUCTURAL STEEL DETAILS" SHEETS.

PREVIOUS CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

#5 "G" BARS MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL AND STIRRUPS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR MAY, WHEN NECESSARY, PROPOSE A SCHEME FOR AVOIDING INTERFERENCE BETWEEN METAL STAY-IN-PLACE FORM SUPPORTS OR FORMS AND GIRDER STIFFENERS OR CONNECTOR PLATES. THE PROPOSAL SHALL BE INDICATED, AS APPROPRIATE, ON EITHER THE STEEL WORKING DRAWINGS OR THE METAL STAY-IN-PLACE FORM WORKING DRAWING.

THE CONTRACTOR SHALL ENSURE THE STABILITY OF THE GIRDER WEB DURING CONSTRUCTION BASED ON THE OVERHANG SUPPORT SYSTEM USED.

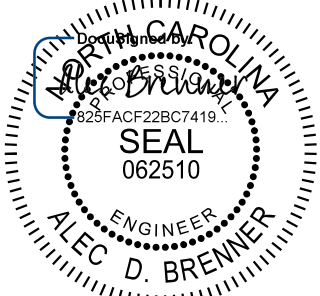
D1 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP SLAB REINFORCING STEEL IN THE PROPOSED DECK.

D2 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE BOTTOM SLAB REINFORCING STEEL IN THE PROPOSED DECK.

D1 AND D2 DOWELS SHALL BE INSTALLED IN THE EXISTING CONCRETE DECK USING AN ADHESIVELY ANCHORED SYSTEM. LEVEL ONE FIELD TESTING IS REQUIRED AND THE YIELD LOAD OF THE DOWEL IS 13.2 KIPS. OVERALL DOWEL LENGTH SHALL PROVIDE 1'-6" MINIMUM EXTENSION INTO THE CLOSURE POUR. EMBEDMENT LENGTH TO BE DETERMINED BE THE MANUFACTURER OF THE ADHESIVELY ANCHORED DOWELS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 3 OF 3



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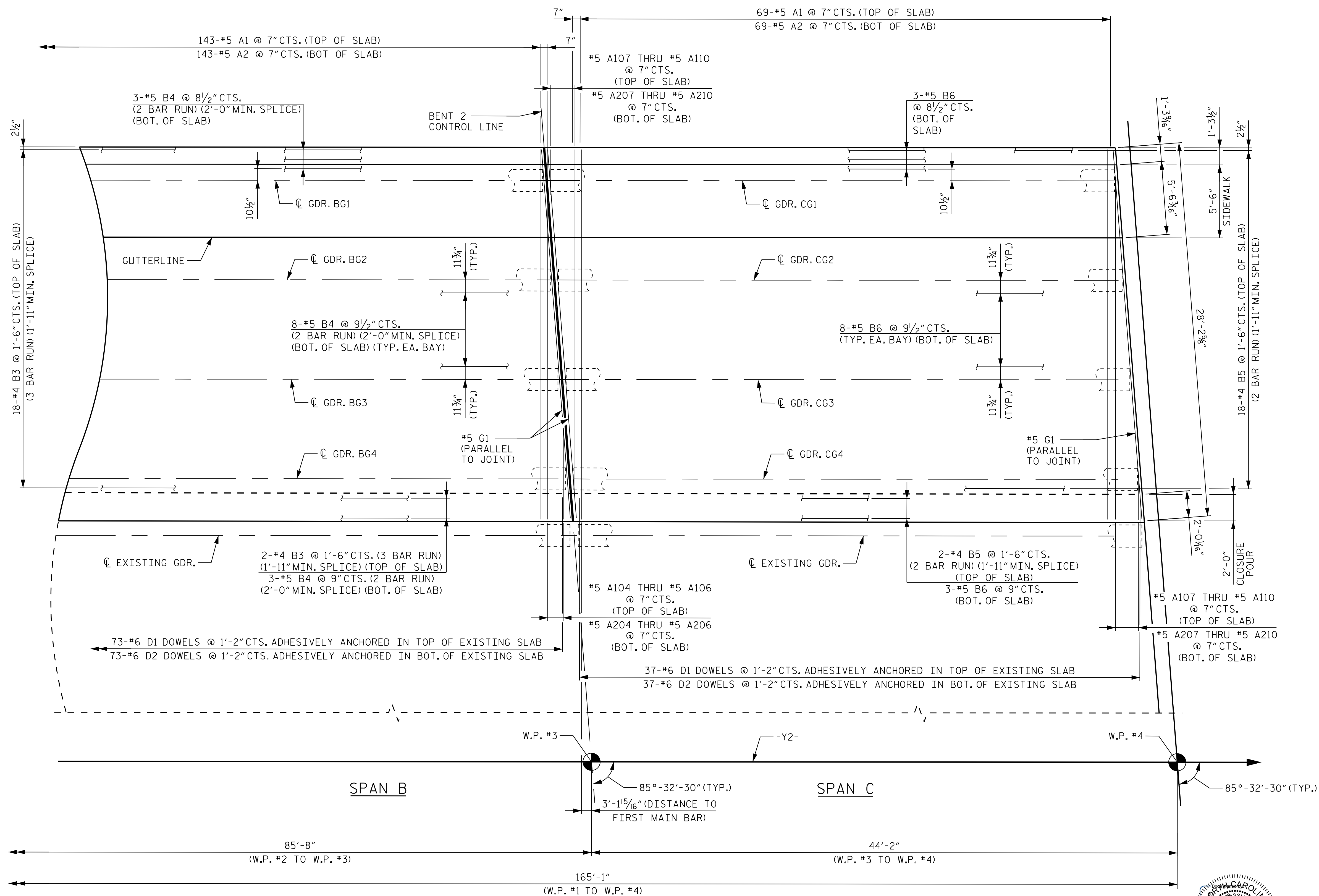
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STR. #3



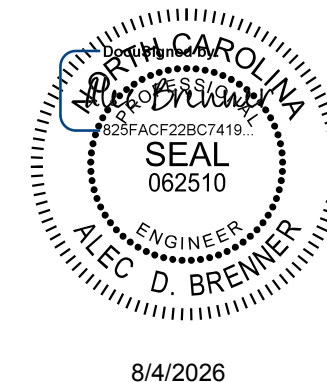
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NOTES:
FOR NOTES, SEE SHEET 1 OF 5.



PLAN OF SPANS - LEFT EXTENSION

FOR BENT DIAPHRAGM ENLARGEMENT, SEE SHEET 5 OF 5.



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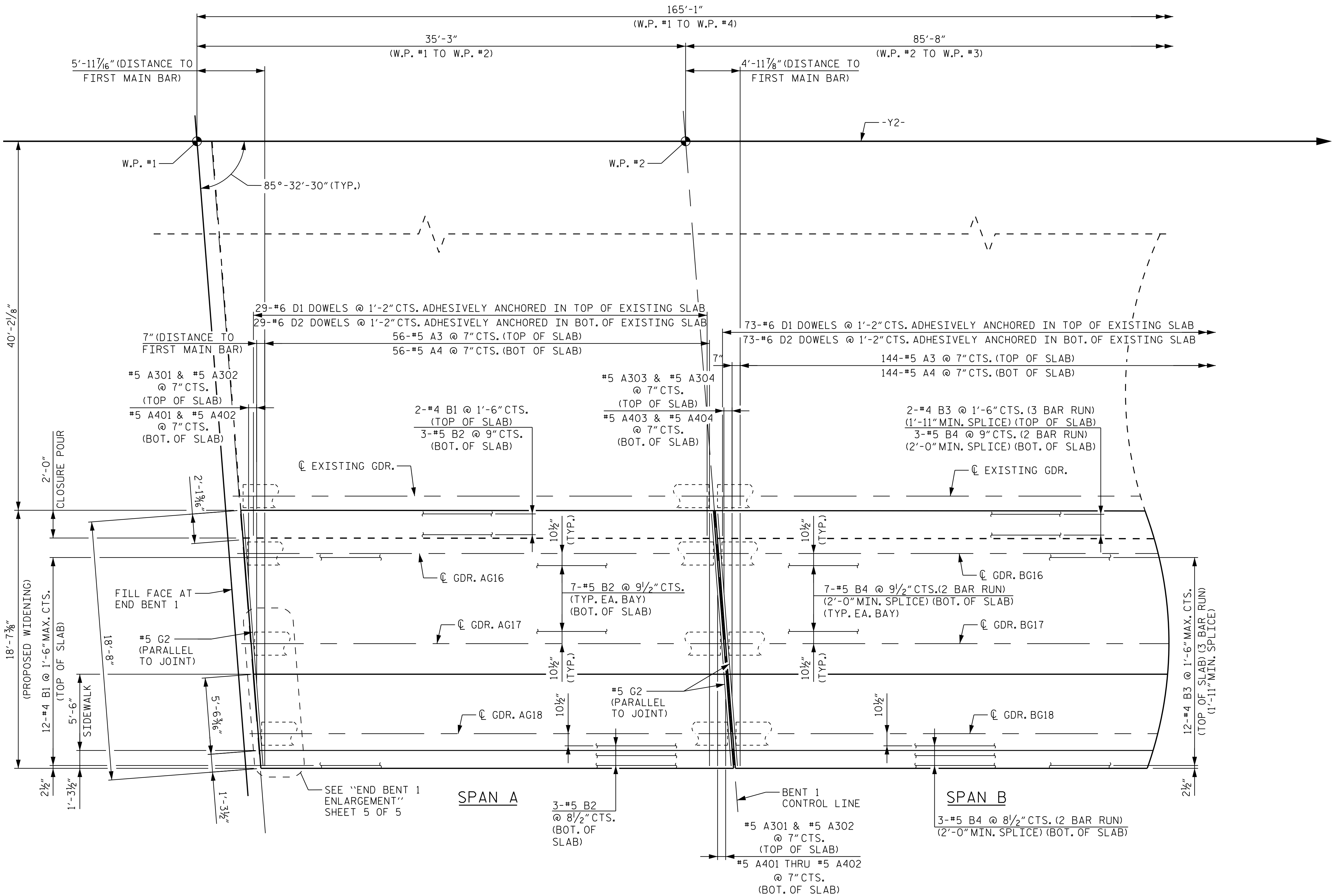
SHEET 2 OF 5

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DEPARTMENT OF NORTH TRANSPORTATION
RALEIGH

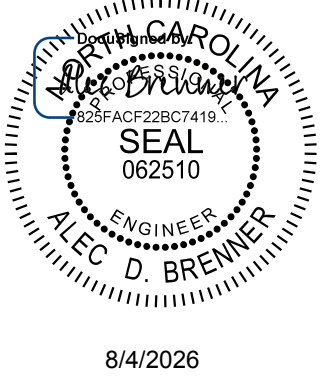
SUPERSTRUCTURE
PLAN OF SPANS
LEFT SIDE

STR. #3

NOTES:
FOR NOTES, SEE SHEET 1 OF 5.



PLAN OF SPANS - RIGHT EXTENSION
FOR BENT DIAPHRAGM ENLARGEMENT, SEE SHEET 5 OF 5.



PROJECT NO. I-5715
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STATION: 29+87.44 -Y2-

SHEET 3 OF 5

STATE OF NORTH CAROLINA
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SUPERSTRUCTURE
PLAN OF SPANS
RIGHT SIDE

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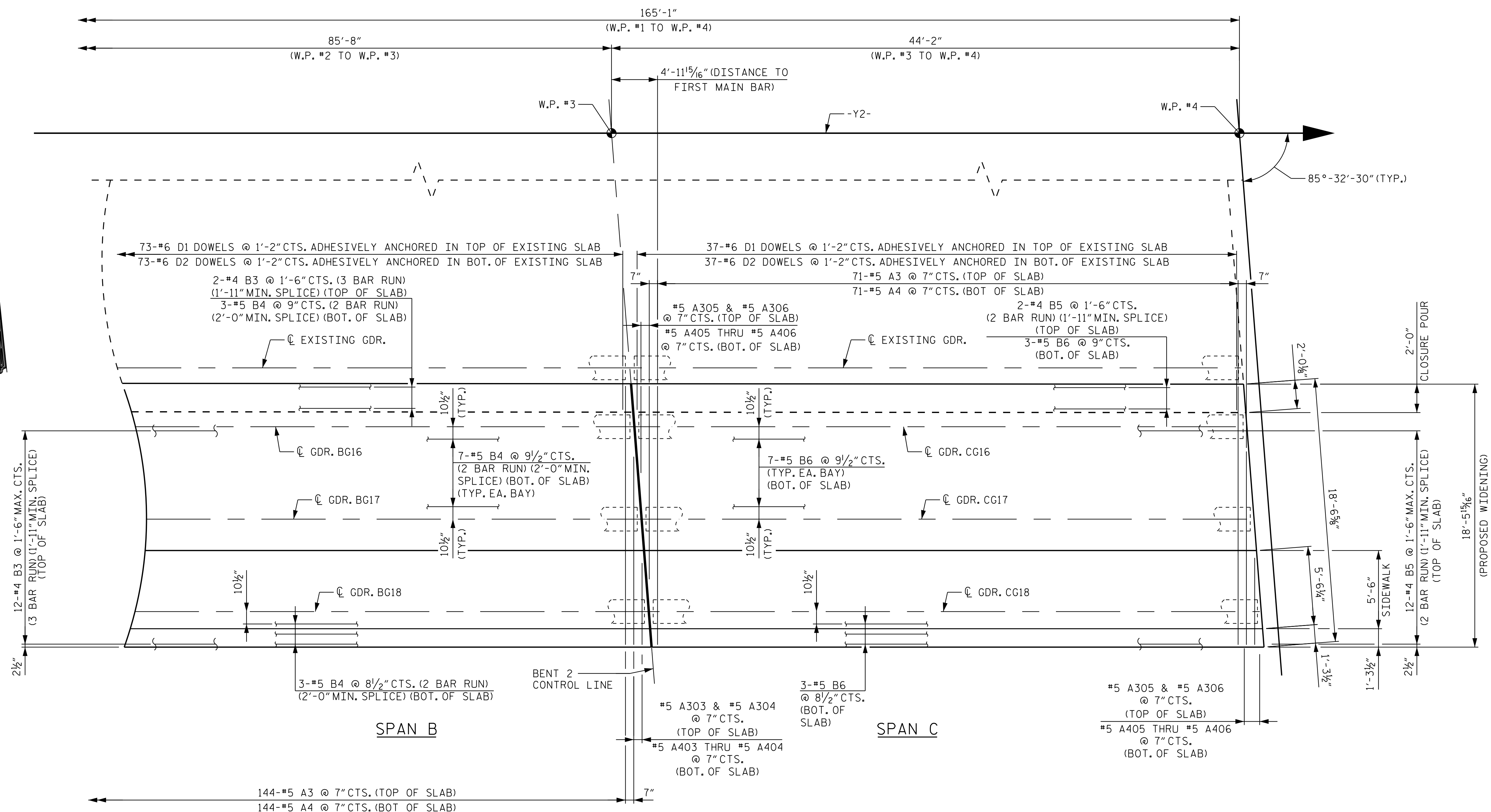
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STR. #3

NOTES:
FOR NOTES, SEE SHEET 1 OF 5.



PLAN OF SPANS - RIGHT EXTENSION
FOR BENT DIAPHRAGM ENLARGEMENT, SEE SHEET 5 OF 5.

PROJECT NO. I-5715
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SHEET 4 OF 5

Professional Engineer Seal for Alec D. Brenner, State of North Carolina, License No. 823FACF228C7419...

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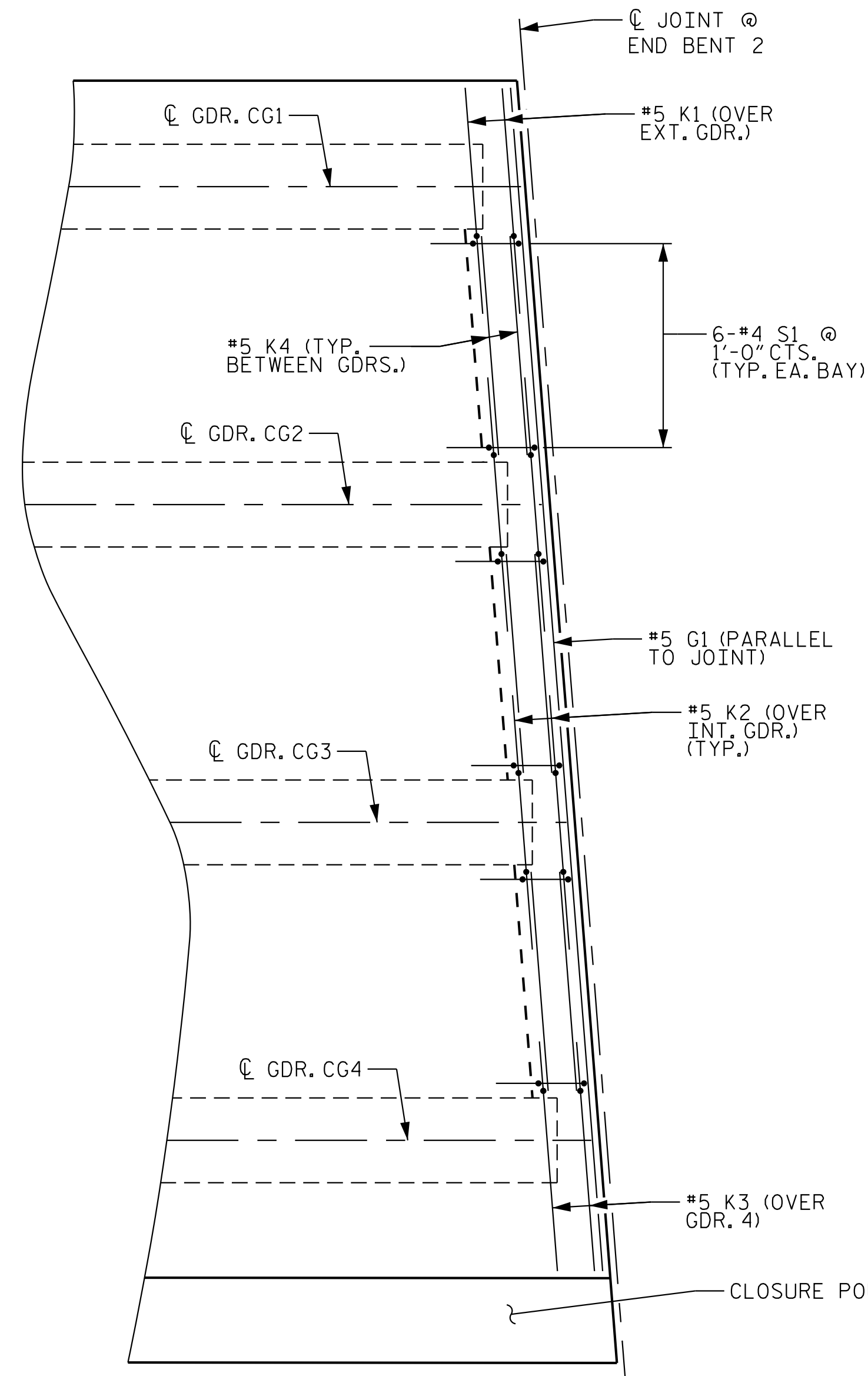
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SUPERSTRUCTURE
PLAN OF SPANS
RIGHT SIDE

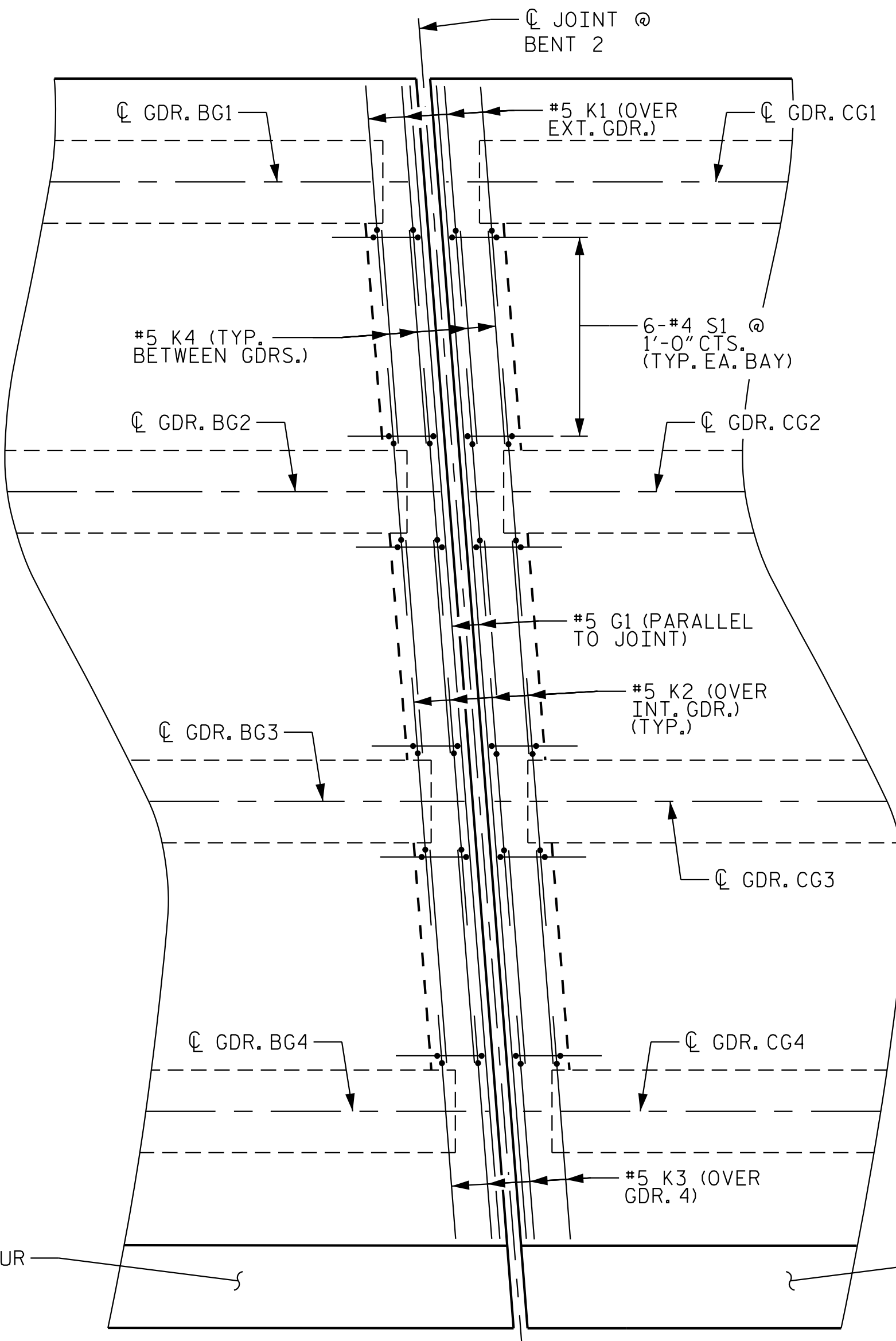
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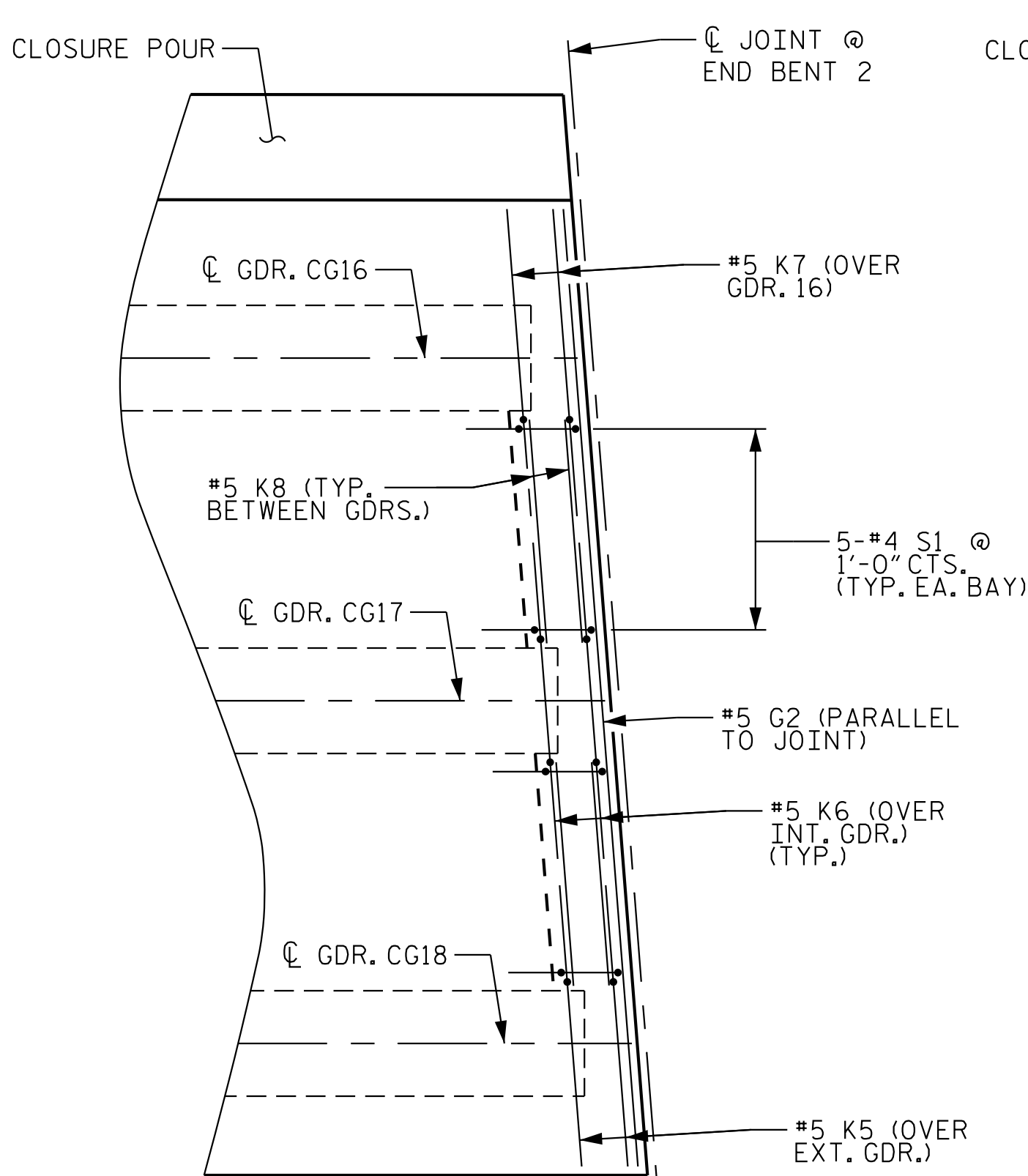
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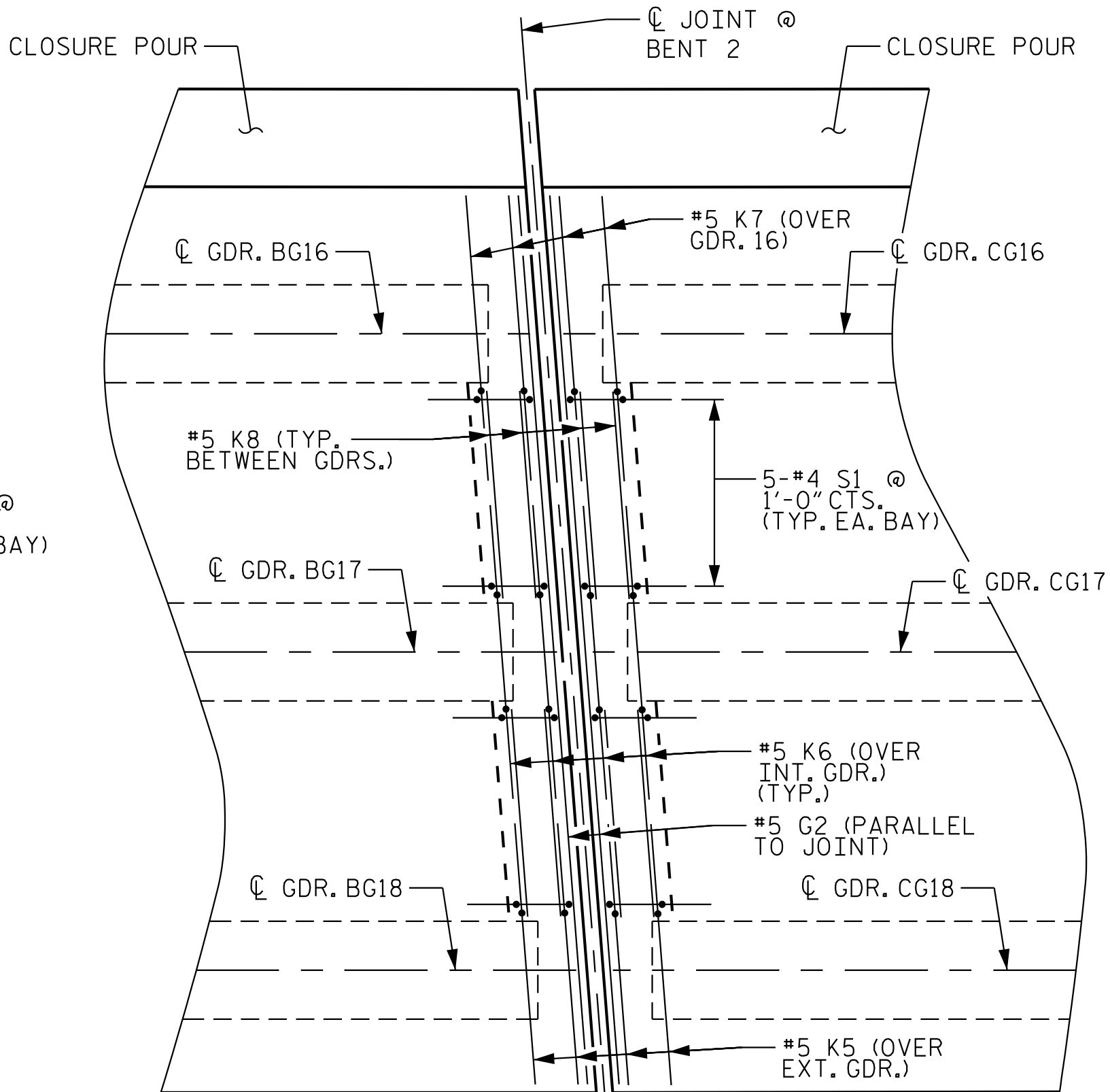
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LEFT EXTENSION
END BENT 2 SHOWN, END BENT 1 SIMILAR



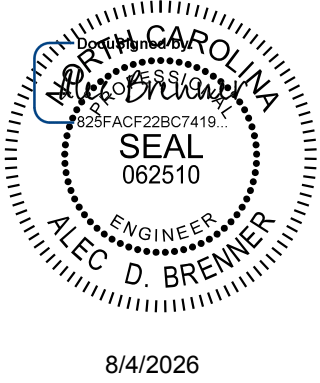
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LEFT EXTENSION
BENT 2 SHOWN, BENT 1 SIMILAR



END BENT DIAPHRAGM ENLARGEMENT
RIGHT EXTENSION
END BENT 2 SHOWN, END BENT 1 SIMILAR



BENT DIAPHRAGM ENLARGEMENT
RIGHT EXTENSION
BENT 2 SHOWN, BENT 1 SIMILAR



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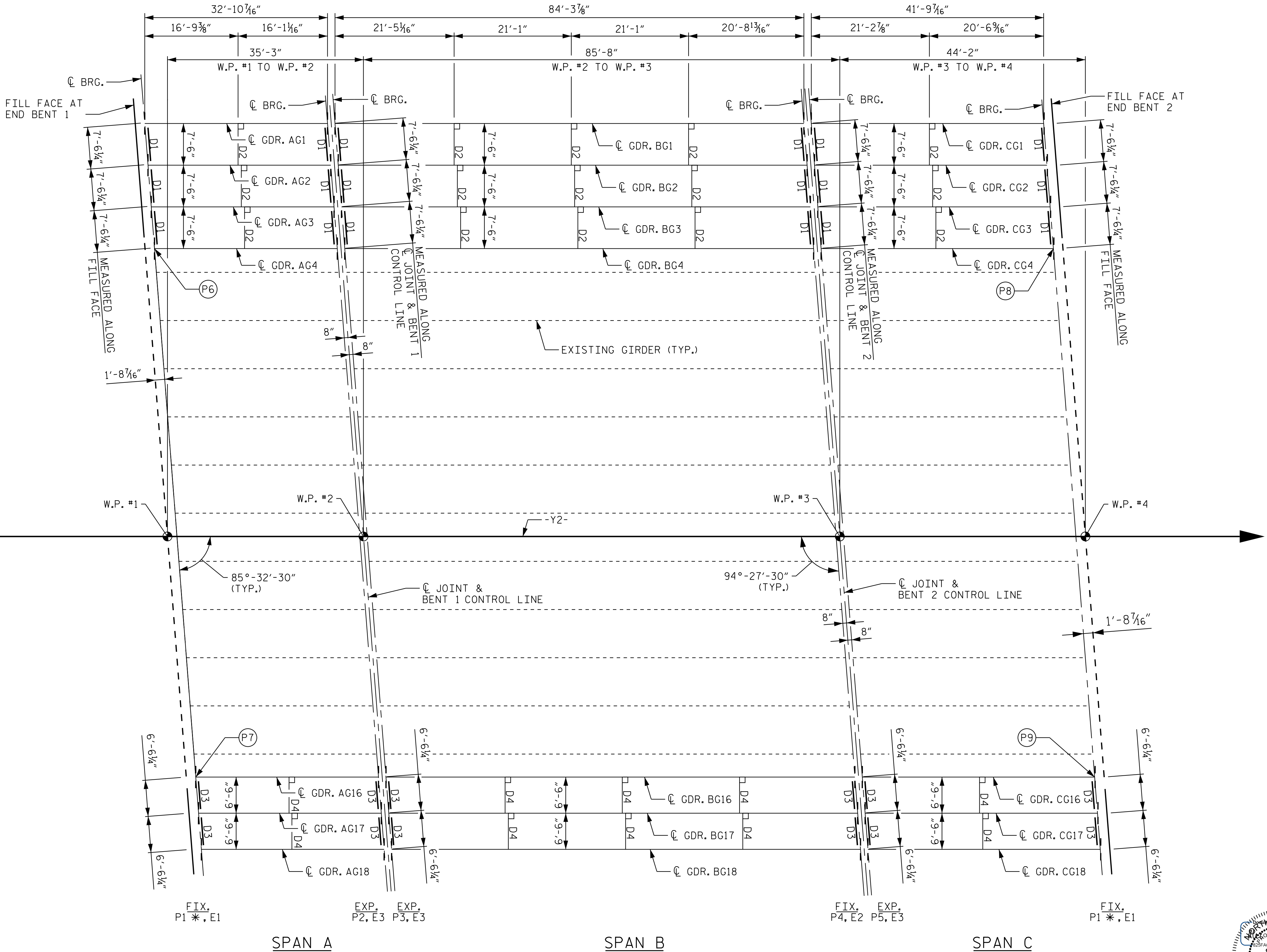
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NOTES:
FOR STEEL DIAPHRAGM DETAILS, SEE
"STRUCTURAL STEEL DETAILS" SHEET 3 OF 3.
FOR BEARING STIFFENERS, SEE "STRUCTURAL
STELL DETAILS" SHEET 3 OF 3.
* SOLE PLATE DESIGNATION IS TYPICAL,
EXCEPT AS OTHERWISE NOTED.

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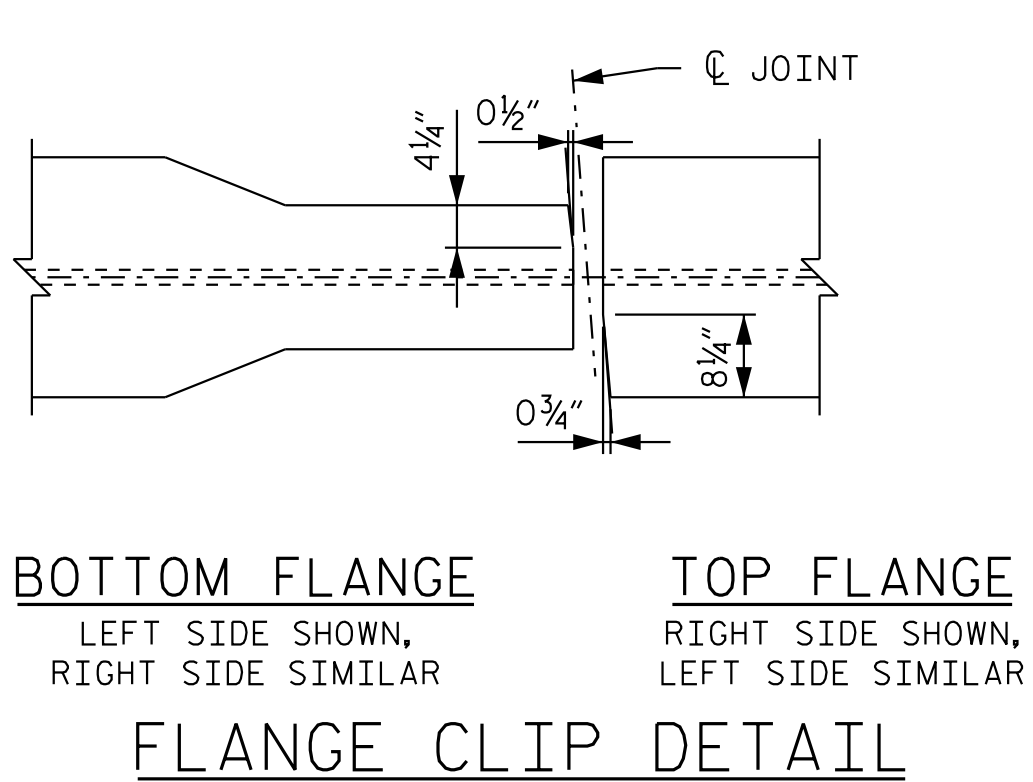
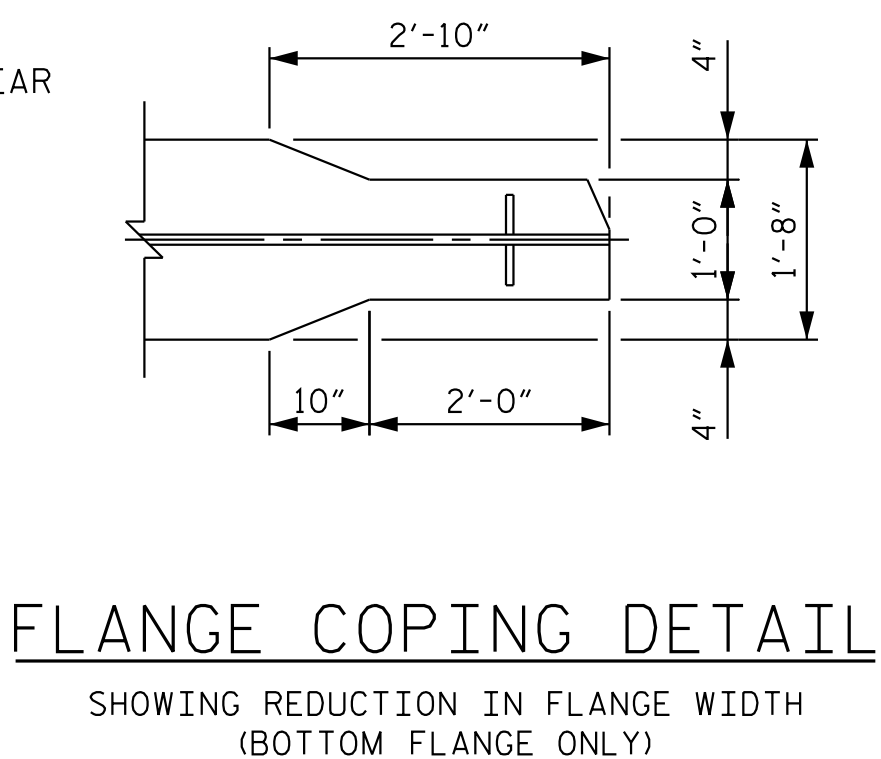
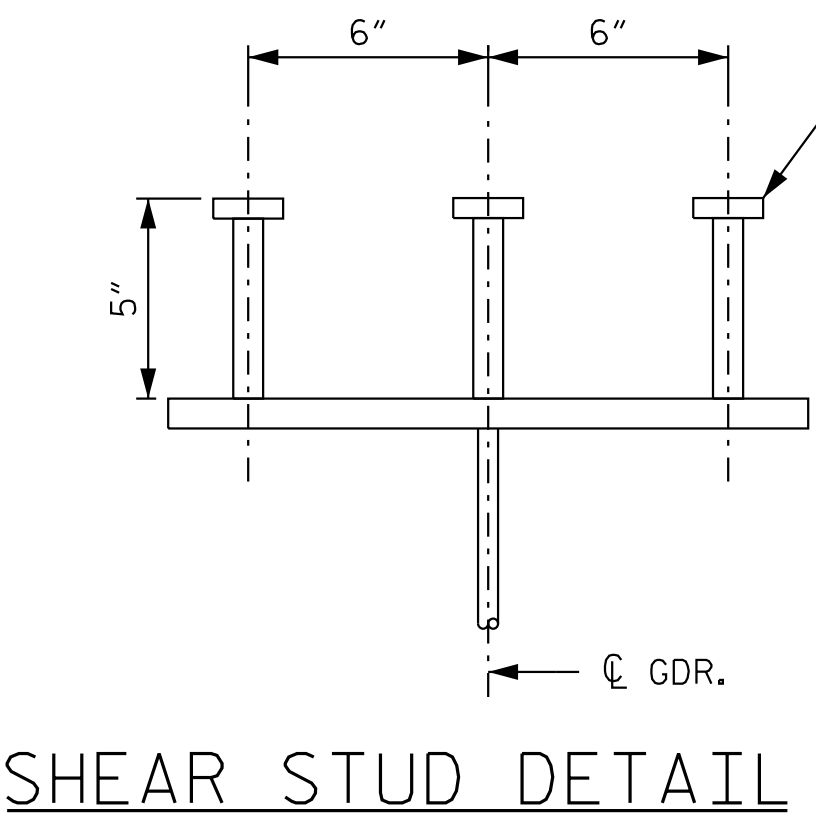
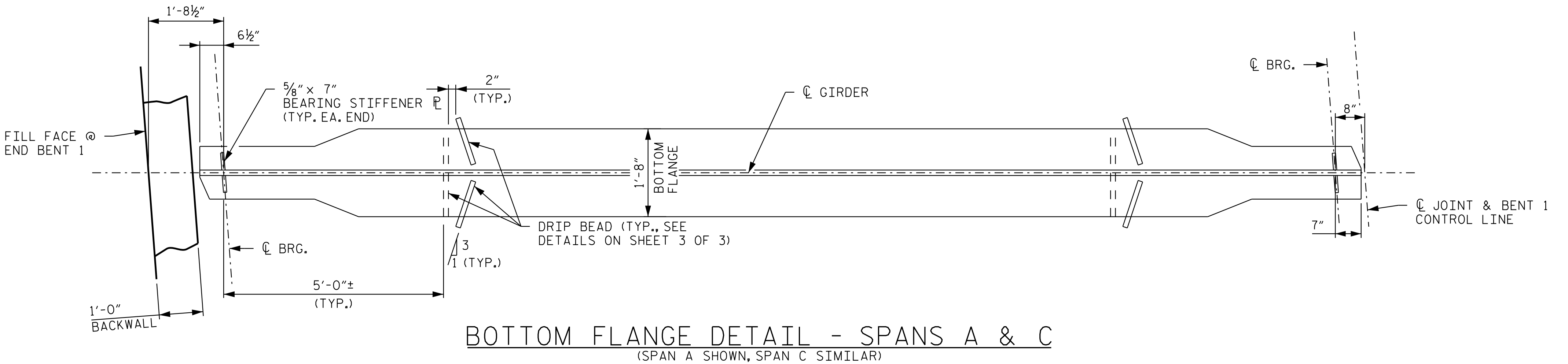
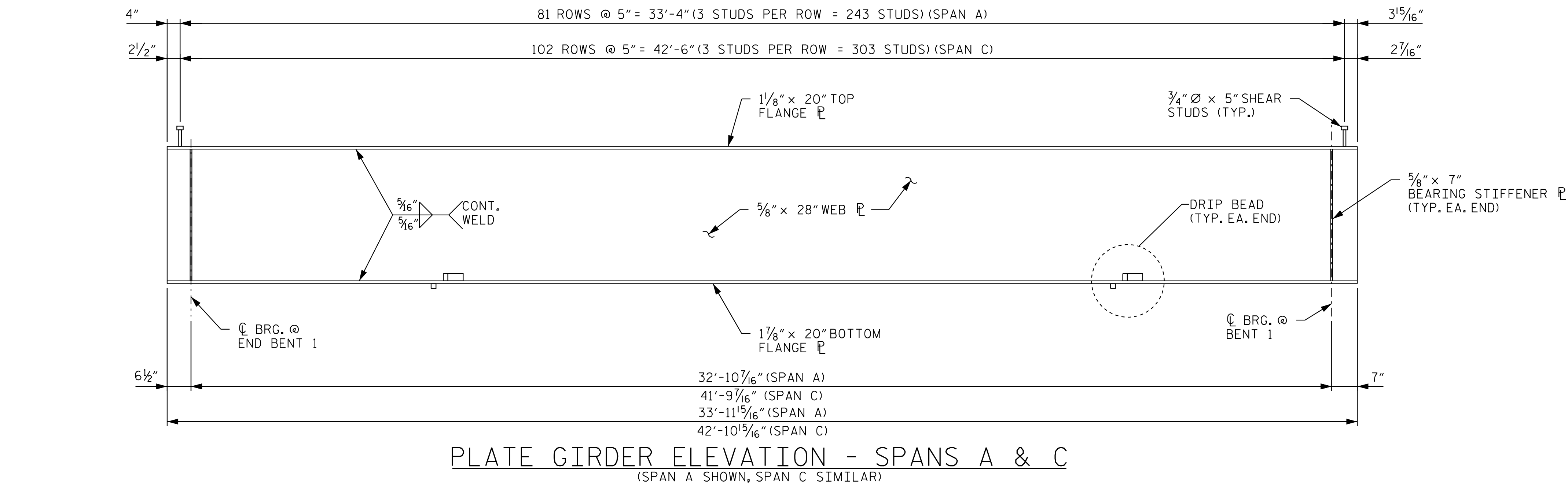
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SUPERSTRUCTURE GIRDER FRAMING PLAN					
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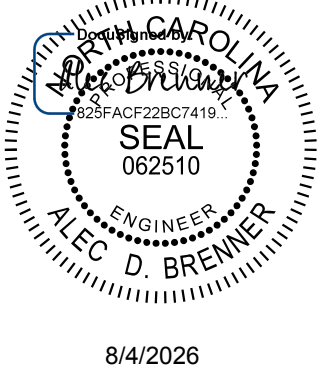
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NOTES:
FOR NOTES, SEE SHEET 3 OF 4.



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SHEET 1 OF 3



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STR. #3

215/16"

205 ROWS @ 5" = 85'-0" (3 STUDS PER ROW = 615 STUDS)

215/16"

1 1/8" x 20" TOP FLANGE

3/4" Ø x 5" SHEAR STUDS (TYP.)

5/16" x 28" WEB

CONT. WELD

5/8" x 7" BEARING STIFFENER (TYP. EA. END)

DRIP BEAD (TYP. EA. END)

1 1/8" x 20" BOTTOM FLANGE

CL BRG. @ BENT 1

CL BRG. @ BENT 2

7"

84'-3 7/8"

85'-5 7/8"

7"

8"

CL JOINT & BENT 1 CONTROL LINE

5/8" x 7" BEARING STIFFENER (TYP. EA. END)

2" (TYP.)

CL GIRDER

1'-8" BOTTOM FLANGE

CL BRG.

7"

5'-0" ± (TYP.)

3/1 (TYP.)

DRIP BEAD (TYP., SEE DETAILS ON SHEET 3 OF 3)

CL JOINT & BENT 2 CONTROL LINE

8"

7"

EAR

2'-10"

4"

1'-0"

1'-8"

4"

10"

2'-0"

FLANGE COPING DETAIL

SHOWING REDUCTION IN FLANGE WIDTH
(BOTTOM FLANGE ONLY)

Diagram illustrating a butt joint with dimensions:

- Joint type: BUTT JOINT
- Thickness: $4\frac{1}{4}"$
- Gap: $0\frac{1}{2}"$
- Width: $8\frac{1}{4}"$
- Root opening: $0\frac{3}{4}"$

RIGHT SIDE SHOWN,
LEFT SIDE SIMILAR

REVISIONS						SHEET NO. S3-20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

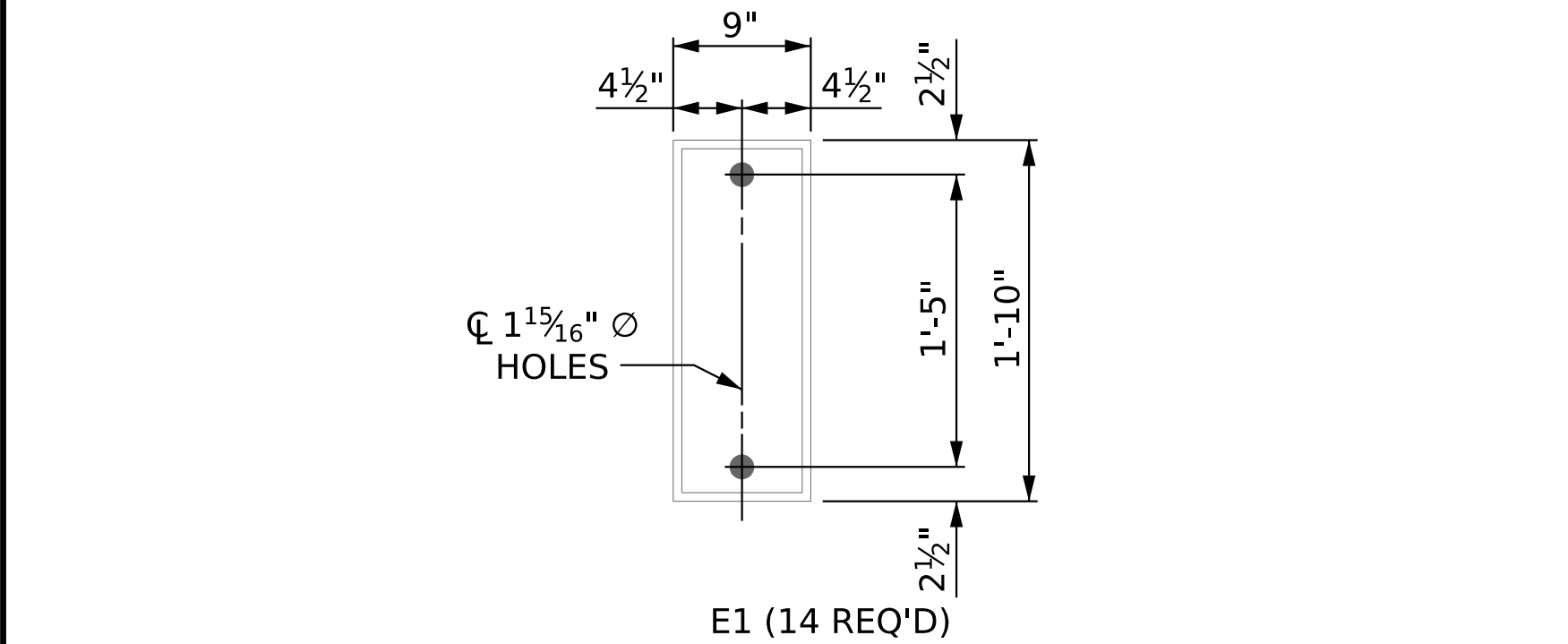
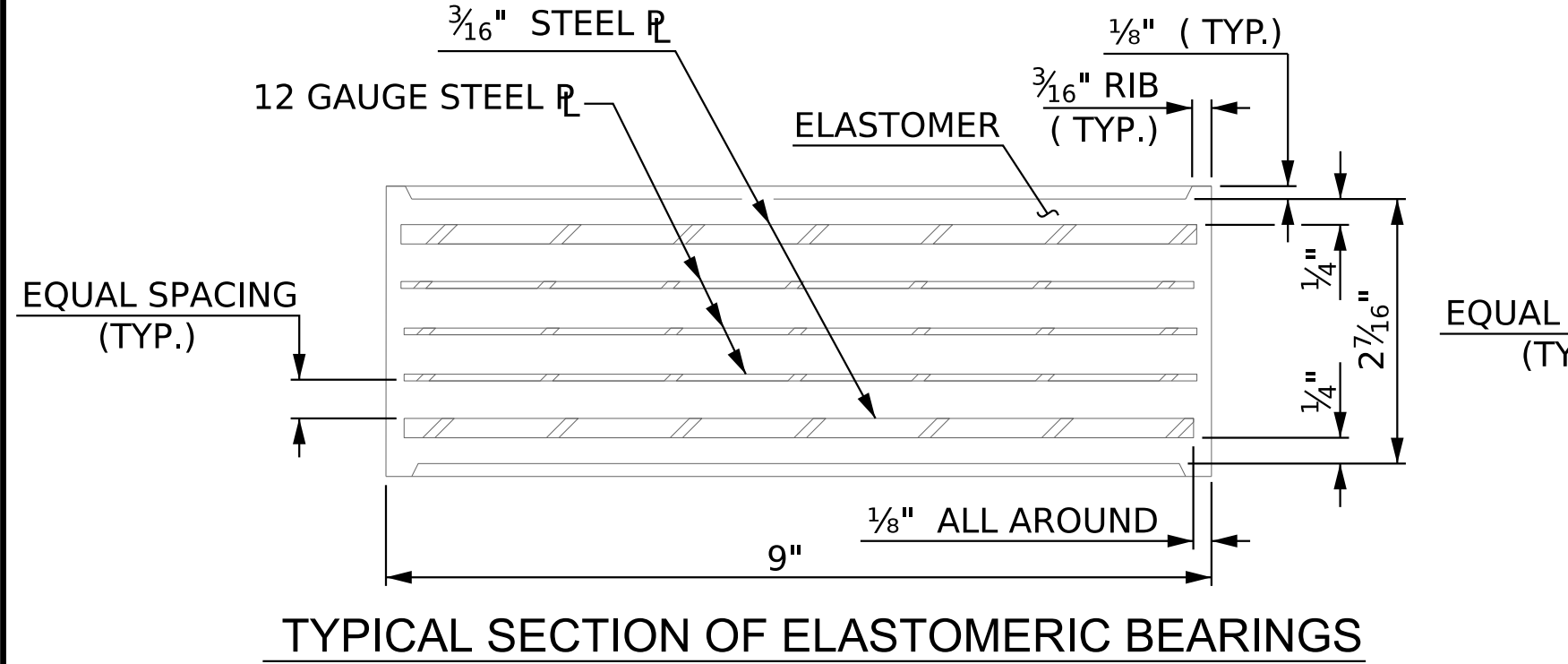
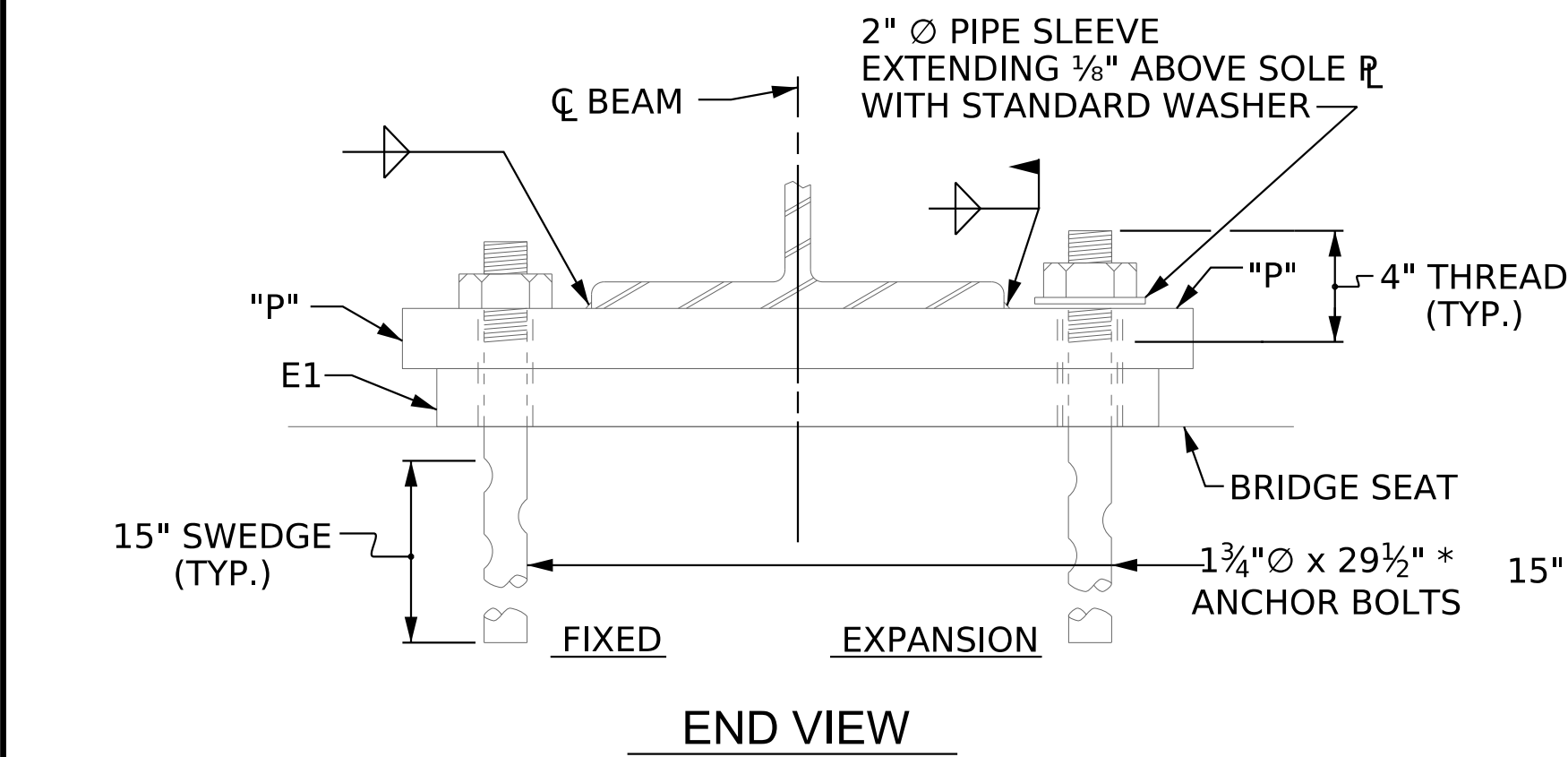
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STR. #3

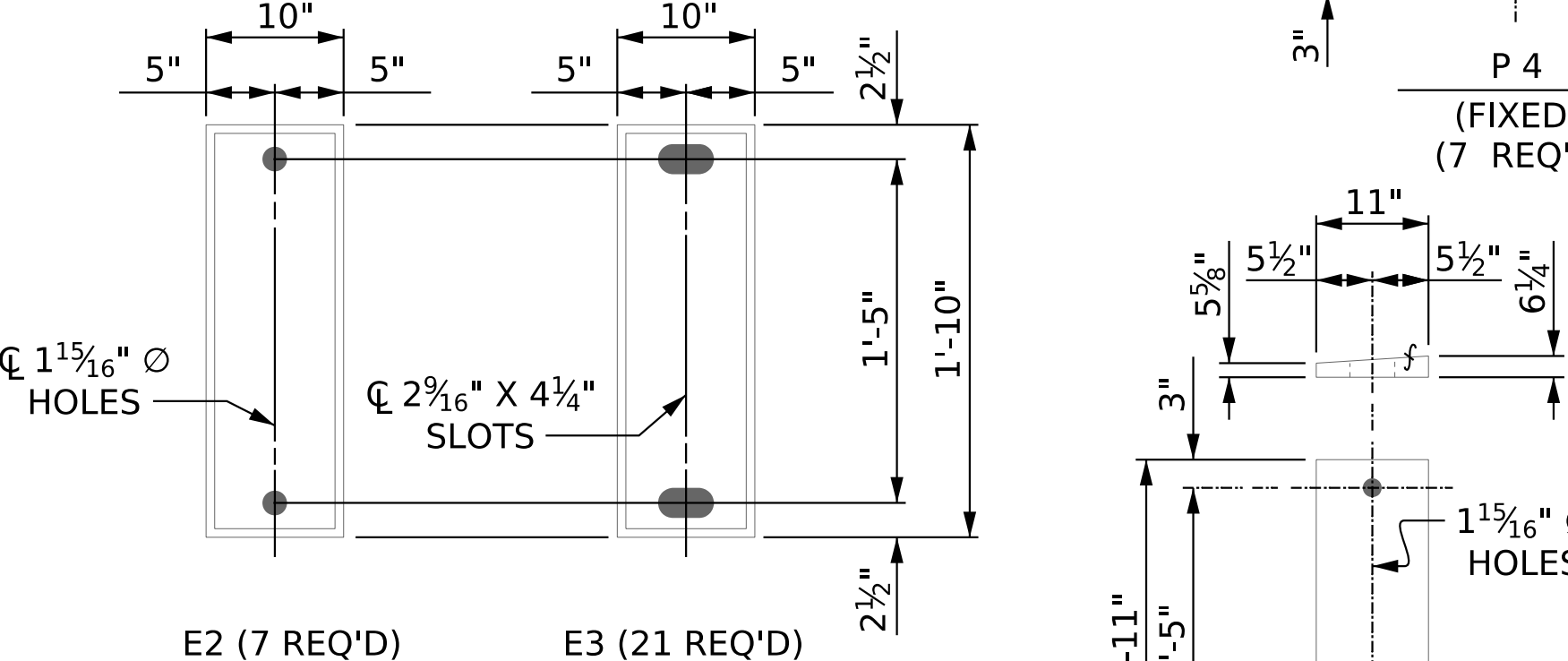
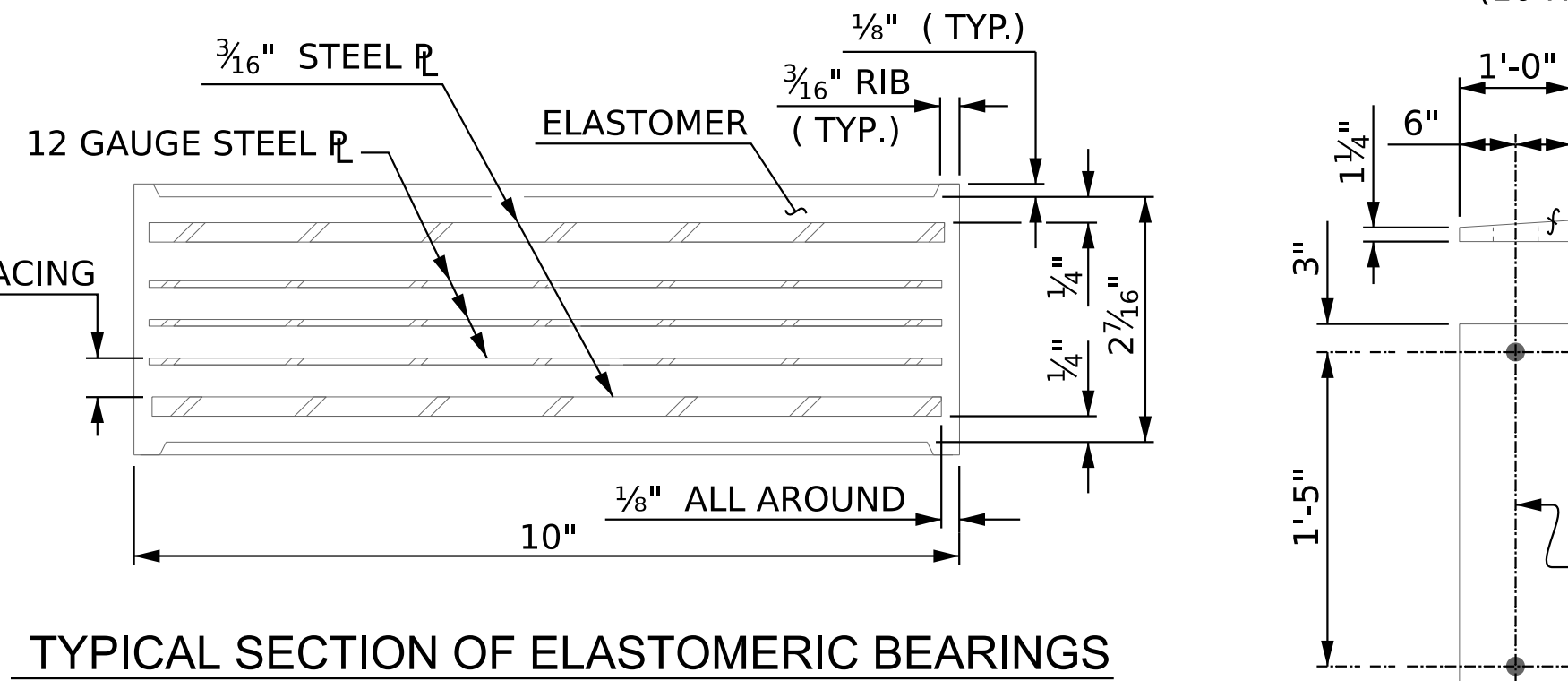
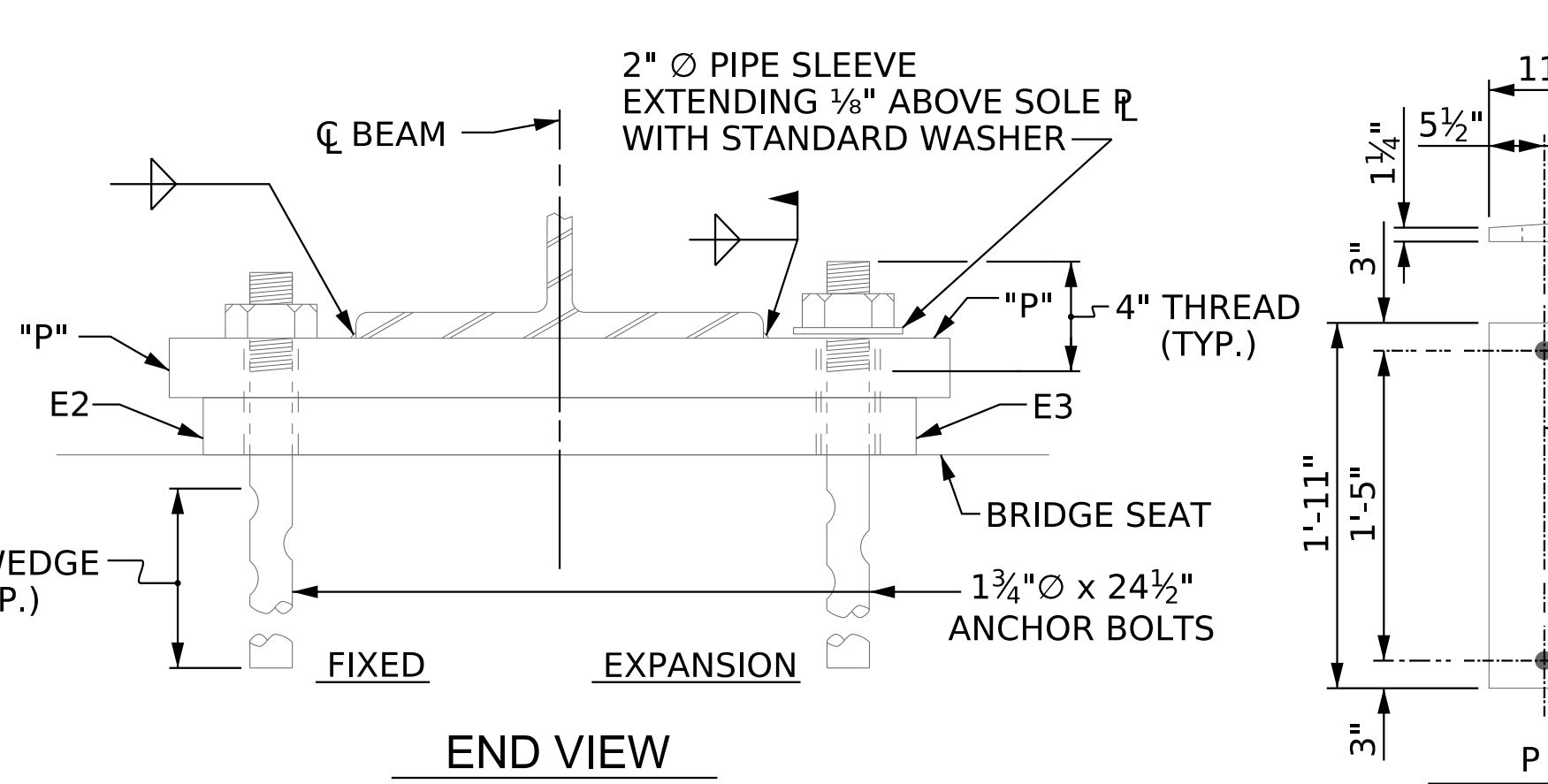
K:\RD1_Structures\Bridge\NC\01036524 - I-5715 Structure Design\cd\00gn\Site *2\Structure 3\Final\403_043_15175_SMU_BGI_590359_022.dgn 7/31/2026



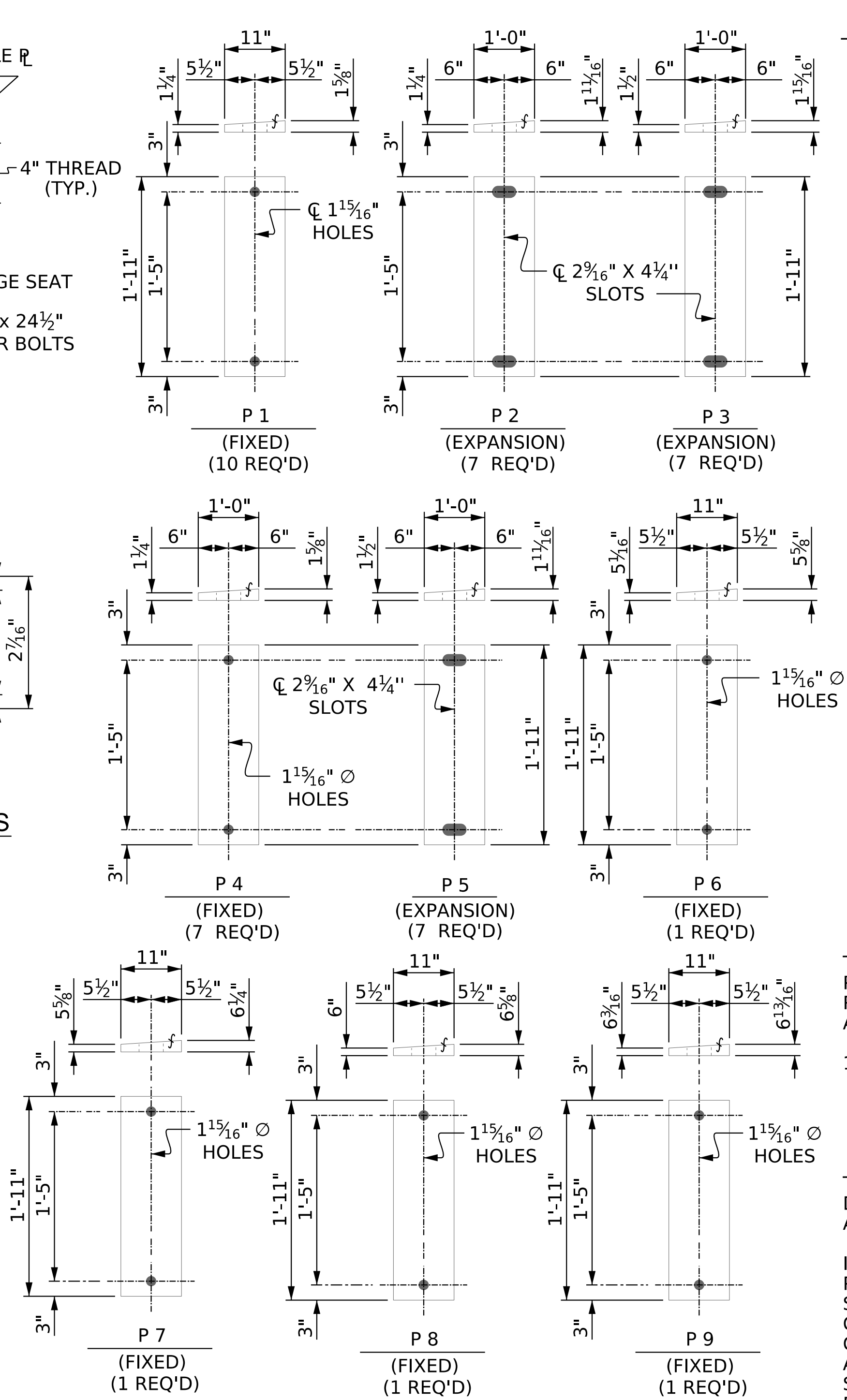
PLAN VIEW OF ELASTOMERIC BEARING

* 29½" ANCHOR BOLTS ARE REQUIRED AT SOLE PLATES P7-P9. FOR SOLE PLATE P1, A 24½" ANCHOR BOLT SHALL BE USED.

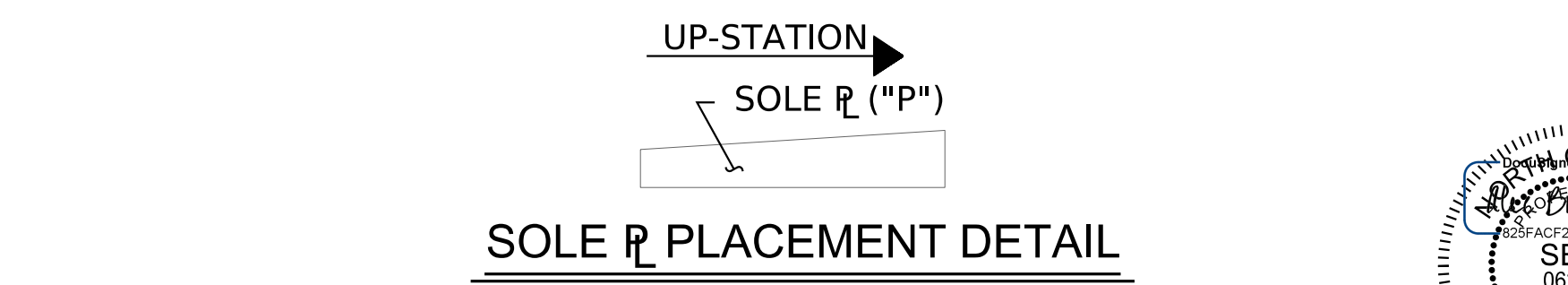
MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE II	180 k



PLAN VIEW OF ELASTOMERIC BEARING



SOLE PLATE DETAILS ("P")



SOLE PLATE PLACEMENT DETAIL

NOTES

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF ½" TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

THE 2" Ø PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.

THE PAYMENT FOR THE PIPE SLEEVES SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

FOR PAINTED STRUCTURAL STEEL (EXCLUDING AASHTO M270 GRADE 50W), SOLE PLATES, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

FOR AASHTO M270 GRADE 50W STRUCTURAL STEEL, SOLE PLATE SHALL BE AASHTO M270 GRADE 50W AND SHALL NOT BE GALVANIZED. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

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

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE STANDARD SPECIFICATIONS.

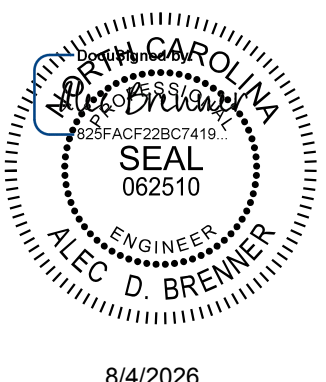
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FOLLOWING PROCEDURE, WHICH MAY BE REQUIRED BY THE ENGINEER, TO RESET ELASTOMERIC BEARINGS DUE TO GIRDER TRANSLATION AND END ROTATION:

1. ONCE THE DECK HAS CURED, THE GIRDERS SHALL BE JACKED AND THE ELASTOMERIC BEARING SLOTS CENTERED AS NEARLY AS PRACTICAL ABOUT THE BEARING STIFFENER. THIS OPERATION SHALL BE PERFORMED AT APPROXIMATELY 60° F.

THE CONTRACTOR MAY PROPOSE ALTERNATE METHODS, PROVIDED DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

IN LIEU OF INCREASED SOLE PLATE THICKNESS FOR SOLE PLATES P6-P9, THE CONTRACTOR MAY ELECT TO CONSTRUCT A BRIDGE SEAT ON THE EXISTING END BENT CAPS FOR GIRDERS AG4, AG16, CG4, AND CG16. IF BRIDGE SEATS ARE CONSTRUCTED, THE CONTRACTOR SHALL MODIFY THE SOLE PLATE THICKNESSES AND ANCHOR BOLT LENGTHS ACCORDINGLY. FOR OPTIONAL BRIDGE SEAT DETAILS, SEE "END BENT 1 SECTION AND DETAILS" AND "END BENT 2 SECTION AND DETAILS" SHEETS.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-



8/4/2026

Kimley»Horn

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Phone (919) 677-2000 NC LICENSE # F-0102

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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD ELASTOMERIC BEARING DETAILS					
REVISIONS					SHEET NO. S3-22
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 63

STR. #3

ASSEMBLED BY : T. K. BOYD	DATE : 11/25
CHECKED BY : A. L. PHILLIPS	DATE : 11/25
DRAWN BY : JMB	11/87
CHECKED BY : ARB	11/87
REV. 12/17	MAA/THC
REV. 10/21	BNB/AAI
REV. 10/23	BNB/SNM

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

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SHEET 1 OF 6

STR. #3

7/31/2026 K:\B01-Structures\Bridges\NC\01036524 - I-5715 Structure Design\Code\Sign\Site *2\Structure 3\Final\403.403.047.15115_S.WJ.DL2.590359.024.dgn

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
	SPAN A																					
	GIRDER AG16																					
	FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL	↓	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	0.002	0.001	0.001	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.001	0.002	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.001	0.000
DEFLECTION DUE TO WEIGHT OF RAIL & SIDEWALK	↓	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 DL DEFLECTION	↓	0.000	0.002	0.003	0.005	0.006	0.008	0.008	0.009	0.010	0.010	0.010	0.010	0.010	0.009	0.008	0.007	0.006	0.005	0.003	0.002	0.000
VERTICAL CURVE ORDINATE	↑	0.000	0.001	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.001	0.001	0.000
REQUIRED CAMBER	↑	0"	0"	0 1/16"	0 1/16"	0 1/8"	0 1/8"	0 1/8"	0 1/8"	0 3/16"	0 3/16"	0 3/16"	0 3/16"	0 3/16"	0 1/8"	0 1/8"	0 1/8"	0 1/8"	0 1/16"	0 1/16"	0"	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT ``FINAL CAMBER``, WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
	SPAN A																					
	GIRDER AG17																					
	FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL	↓	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	0.002	0.001	0.001	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.001	0.002	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.001	0.000
DEFLECTION DUE TO WEIGHT OF RAIL & SIDEWALK	↓	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	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000
TOTAL DL DEFLECTION	↓	0.000	0.002	0.003	0.005	0.006	0.007	0.008	0.009	0.009	0.009	0.010	0.009	0.009	0.009	0.008	0.007	0.006	0.004	0.003	0.002	0.000
VERTICAL CURVE ORDINATE	↑	0.000	0.001	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.001	0.001	0.000
REQUIRED CAMBER	↑	0"	0"	0 1⁄16"	0 1⁄16"	0 1⁄8"	0 1⁄8"	0 1⁄8"	0 1⁄8"	0 1⁄8"	0 1⁄8"	0 3⁄16"	0 1⁄8"	0 1⁄8"	0 1⁄8"	0 1⁄8"	0 1⁄8"	0 1⁄8"	0 1⁄16"	0 1⁄16"	0"	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT ``FINAL CAMBER``, WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
	SPAN A																					
	GIRDER AG18																					
	FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL	↓	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	0.001	0.001	0.001	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.001	0.002	0.002	0.003	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002	0.001	0.000
DEFLECTION DUE TO WEIGHT OF RAIL & SIDEWALK	↓	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 DL DEFLECTION	↓	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.006	0.006	0.007	0.007	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.001	0.000
VERTICAL CURVE ORDINATE	↑	0.000	0.001	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.001	0.001	0.000
REQUIRED CAMBER	↑	0"	0"	0 1/16"	0 1/16"	0 1/16"	0 1/16"	0 1/8"	0 1/8"	0 1/8"	0 1/8"	0 1/8"	0 1/8"	0 1/8"	0 1/8"	0 1/8"	0 1/16"	0 1/16"	0 1/16"	0 1/16"	0"	0"

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PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 2 OF 6



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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUPERSTRUCTURE DEAD LOAD DEFLECTIONS SPAN A RIGHT EXTENSION					
REVISIONS					SHEET NO. S3-24
NO.	BY:	DATE:	NO.	BY:	
1			3		TOTAL SHEETS 63
2			4		

STR. #3

DRAWN BY: <u>T. K. BOYD</u>	DATE: <u>03/26</u>
CHECKED BY: <u>A. D. BRENNER</u>	DATE: <u>03/26</u>
DESIGN ENGINEER OF RECORD: <u>A. L. PHILLIPS</u>	DATE: <u>03/26</u>

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
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SHEET 3 OF 6

STR. #3

7/31/2026 K:\RD1-Structures\Bridge\NC\01036524 - I-5715 Structure Design\cadd\gn\Site *2\Structure 3\Final\403.051.15715_SML.DL4_590359.026.dgn

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
	SPAN B																					
	GIRDER BG16																					
	FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.012	0.023	0.033	0.043	0.052	0.059	0.064	0.069	0.071	0.072	0.071	0.069	0.064	0.059	0.051	0.043	0.033	0.023	0.012	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.029	0.057	0.083	0.107	0.129	0.147	0.161	0.172	0.178	0.181	0.179	0.172	0.161	0.147	0.129	0.107	0.083	0.057	0.029	0.000
DEFLECTION DUE TO WEIGHT OF RAIL & SIDEWALK	↓	0.000	0.010	0.021	0.030	0.039	0.047	0.053	0.059	0.062	0.065	0.066	0.065	0.062	0.058	0.053	0.047	0.039	0.030	0.021	0.010	0.000
TOTAL DL DEFLECTION	↓	0.000	0.051	0.100	0.147	0.189	0.227	0.259	0.284	0.303	0.314	0.318	0.315	0.303	0.284	0.259	0.227	0.189	0.146	0.100	0.051	0.000
VERTICAL CURVE ORDINATE	↑	0.000	0.004	0.008	0.012	0.014	0.017	0.019	0.021	0.022	0.022	0.023	0.022	0.022	0.021	0.019	0.017	0.014	0.012	0.008	0.004	0.000
REQUIRED CAMBER	↑	0"	0 ¹¹ / ₁₆ "	1 ⁵ / ₁₆ "	1 ⁷ / ₈ "	2 ⁷ / ₁₆ "	2 ¹⁵ / ₁₆ "	3 ⁵ / ₁₆ "	3 ¹¹ / ₁₆ "	3 ⁷ / ₈ "	4 ¹ / ₁₆ "	4 ¹ / ₁₆ "	4 ¹ / ₁₆ "	3 ⁷ / ₈ "	3 ¹¹ / ₁₆ "	3 ⁵ / ₁₆ "	2 ¹⁵ / ₁₆ "	2 ⁷ / ₁₆ "	1 ⁷ / ₈ "	1 ⁵ / ₁₆ "	0 ¹¹ / ₁₆ "	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT ``FINAL CAMBER ``, WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
	SPAN B																					
	GIRDER BG17																					
	FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.012	0.023	0.034	0.044	0.053	0.060	0.066	0.070	0.073	0.074	0.073	0.070	0.066	0.060	0.053	0.044	0.034	0.023	0.012	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.034	0.067	0.098	0.126	0.152	0.173	0.189	0.202	0.210	0.213	0.210	0.202	0.189	0.173	0.152	0.126	0.098	0.067	0.034	0.000
DEFLECTION DUE TO WEIGHT OF RAIL & SIDEWALK	↓	0.000	0.015	0.030	0.043	0.056	0.067	0.077	0.084	0.090	0.093	0.094	0.093	0.090	0.084	0.077	0.067	0.056	0.043	0.030	0.015	0.000
TOTAL DL DEFLECTION	↓	0.000	0.061	0.119	0.175	0.226	0.272	0.309	0.339	0.361	0.375	0.381	0.375	0.361	0.339	0.309	0.272	0.226	0.175	0.119	0.061	0.000
VERTICAL CURVE ORDINATE	↑	0.000	0.004	0.008	0.012	0.014	0.017	0.019	0.021	0.022	0.022	0.023	0.022	0.022	0.021	0.019	0.017	0.014	0.012	0.008	0.004	0.000
REQUIRED CAMBER	↑	0"	0 ¹³ / ₁₆ "	1 ¹ / ₂ "	2 ¹ / ₄ "	2 ⁷ / ₈ "	3 ⁷ / ₁₆ "	3 ¹⁵ / ₁₆ "	4 ⁵ / ₁₆ "	4 ⁵ / ₈ "	4 ³ / ₄ "	4 ⁷ / ₈ "	4 ³ / ₄ "	4 ⁵ / ₈ "	4 ⁵ / ₁₆ "	3 ¹⁵ / ₁₆ "	3 ⁷ / ₁₆ "	2 ⁷ / ₈ "	2 ¹ / ₄ "	1 ¹ / ₂ "	0 ¹³ / ₁₆ "	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT ``FINAL CAMBER ``, WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
	SPAN B																					
	GIRDER BG18																					
	FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.012	0.023	0.033	0.043	0.052	0.059	0.065	0.069	0.071	0.072	0.071	0.069	0.065	0.059	0.052	0.043	0.033	0.023	0.012	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.031	0.061	0.090	0.116	0.139	0.159	0.174	0.186	0.193	0.195	0.193	0.186	0.174	0.159	0.139	0.116	0.090	0.061	0.031	0.000
DEFLECTION DUE TO WEIGHT OF RAIL & SIDEWALK	↓	0.000	0.020	0.039	0.058	0.075	0.090	0.102	0.112	0.120	0.124	0.126	0.124	0.120	0.112	0.102	0.090	0.075	0.058	0.040	0.020	0.000
TOTAL DL DEFLECTION	↓	0.000	0.063	0.123	0.180	0.233	0.280	0.320	0.351	0.374	0.389	0.394	0.388	0.374	0.351	0.320	0.281	0.234	0.181	0.124	0.063	0.000
VERTICAL CURVE ORDINATE	↑	0.000	0.004	0.008	0.012	0.014	0.017	0.019	0.021	0.022	0.022	0.023	0.022	0.022	0.021	0.019	0.017	0.014	0.012	0.008	0.004	0.000
REQUIRED CAMBER	↑	0"	0 ¹³ / ₁₆ "	1 ⁹ / ₁₆ "	2 ⁵ / ₁₆ "	3 "	3 ⁹ / ₁₆ "	4 ¹ / ₁₆ "	4 ⁷ / ₁₆ "	4 ³ / ₄ "	4 ¹⁵ / ₁₆ "	5"	4 ¹⁵ / ₁₆ "	4 ³ / ₄ "	4 ⁷ / ₁₆ "	4 ¹ / ₁₆ "	3 ⁹ / ₁₆ "	3"	2 ⁵ / ₁₆ "	1 ⁹ / ₁₆ "	0 ¹³ / ₁₆ "	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
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PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 4 OF 6



8/4/2026

Kimley»Horn

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CHECKED BY: <u>A. D. BRENNER</u>	DATE: <u>03/26</u>
DESIGN ENGINEER OF RECORD: <u>A. L. PHILLIPS</u>	DATE: <u>03/26</u>

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
DEAD LOAD DEFLECTIONS
SPAN B
RIGHT EXTENSION

REVISIONS						SHEET NO. S3-26
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

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SHEET 5 OF 6

STR. #3

K:\B01-Structures\Bridges\NC\01036524 - I-5715 Structure Design\cadd\Sign\Site *2\Structure 3\Final\403.055.15115_SMU.DL6.590359.028.dgn 7/31/2026

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
	SPAN C																					
	GIRDER CG16																					
	FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.001	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.005	0.004	0.004	0.004	0.004	0.003	0.003	0.002	0.001	0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	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	0.009	0.008	0.007	0.005	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL & SIDEWALK	↓	0.000	0.001	0.001	0.002	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.001	0.001	0.000
TOTAL DL DEFLECTION	↓	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
VERTICAL CURVE ORDINATE	↑	0.000	0.001	0.002	0.003	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.002	0.001	0.000
REQUIRED CAMBER	↑	0"	0 ¹ / ₁₆ "	0 ¹ / ₈ "	0 ¹ / ₈ "	0 ³ / ₁₆ "	0 ¹ / ₄ "	0 ¹ / ₄ "	0 ¹ / ₄ "	0 ⁵ / ₁₆ "	0 ⁵ / ₁₆ "	0 ⁵ / ₁₆ "	0 ⁵ / ₁₆ "	0 ⁵ / ₁₆ "	0 ¹ / ₄ "	0 ¹ / ₄ "	0 ¹ / ₄ "	0 ³ / ₁₆ "	0 ¹ / ₈ "	0 ¹ / ₈ "	0 ¹ / ₁₆ "	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT ``FINAL CAMBER '', WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
	SPAN C																					
	GIRDER CG17																					
	FORTIETH POINTS																					
	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0	
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.001	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.001	0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.002	0.004	0.006	0.008	0.010	0.011	0.012	0.013	0.013	0.013	0.013	0.013	0.012	0.011	0.010	0.008	0.006	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL & SIDEWALK	↓	0.000	0.001	0.002	0.003	0.003	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.001	0.000
TOTAL DL DEFLECTION	↓	0.000	0.004	0.008	0.011	0.014	0.017	0.019	0.021	0.023	0.023	0.024	0.023	0.023	0.021	0.019	0.017	0.014	0.011	0.008	0.004	0.000
VERTICAL CURVE ORDINATE	↑	0.000	0.001	0.002	0.003	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.002	0.001	0.000
REQUIRED CAMBER	↑	0"	0 ¹ / ₁₆ "	0 ¹ / ₈ "	0 ³ / ₁₆ "	0 ³ / ₁₆ "	0 ¹ / ₄ "	0 ⁵ / ₁₆ "	0 ⁵ / ₁₆ "	0 ⁵ / ₁₆ "	0 ³ / ₈ "	0 ³ / ₈ "	0 ³ / ₈ "	0 ⁵ / ₁₆ "	0 ⁵ / ₁₆ "	0 ⁵ / ₁₆ "	0 ¹ / ₄ "	0 ³ / ₁₆ "	0 ³ / ₁₆ "	0 ¹ / ₈ "	0 ¹ / ₁₆ "	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT ``FINAL CAMBER '', WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
	SPAN C																					
	GIRDER CG18																					
	FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL	↓	0.000	0.001	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.005	0.004	0.004	0.004	0.004	0.003	0.003	0.002	0.001	0.001	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	0.012	0.012	0.012	0.012	0.011	0.010	0.009	0.007	0.006	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL & SIDEWALK	↓	0.000	0.001	0.003	0.004	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.001	0.000
TOTAL DL DEFLECTION	↓	0.000	0.004	0.008	0.011	0.015	0.018	0.020	0.022	0.023	0.024	0.025	0.024	0.024	0.022	0.020	0.018	0.015	0.012	0.008	0.004	0.000
VERTICAL CURVE ORDINATE	↑	0.000	0.001	0.002	0.003	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.002	0.001	0.000
REQUIRED CAMBER	↑	0"	0 ¹ / ₁₆ "	0 ¹ / ₈ "	0 ³ / ₁₆ "	0 ³ / ₁₆ "	0 ¹ / ₄ "	0 ⁵ / ₁₆ "	0 ⁵ / ₁₆ "	0 ³ / ₈ "	0 ³ / ₈ "	0 ³ / ₈ "	0 ³ / ₈ "	0 ³ / ₈ "	0 ⁵ / ₁₆ "	0 ⁵ / ₁₆ "	0 ¹ / ₄ "	0 ¹ / ₄ "	0 ³ / ₁₆ "	0 ¹ / ₈ "	0 ¹ / ₁₆ "	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
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PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 6 OF 6



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DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
DEAD LOAD DEFLECTIONS
SPAN C
RIGHT EXTENSION

REVISIONS						SHEET NO. S3-28
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

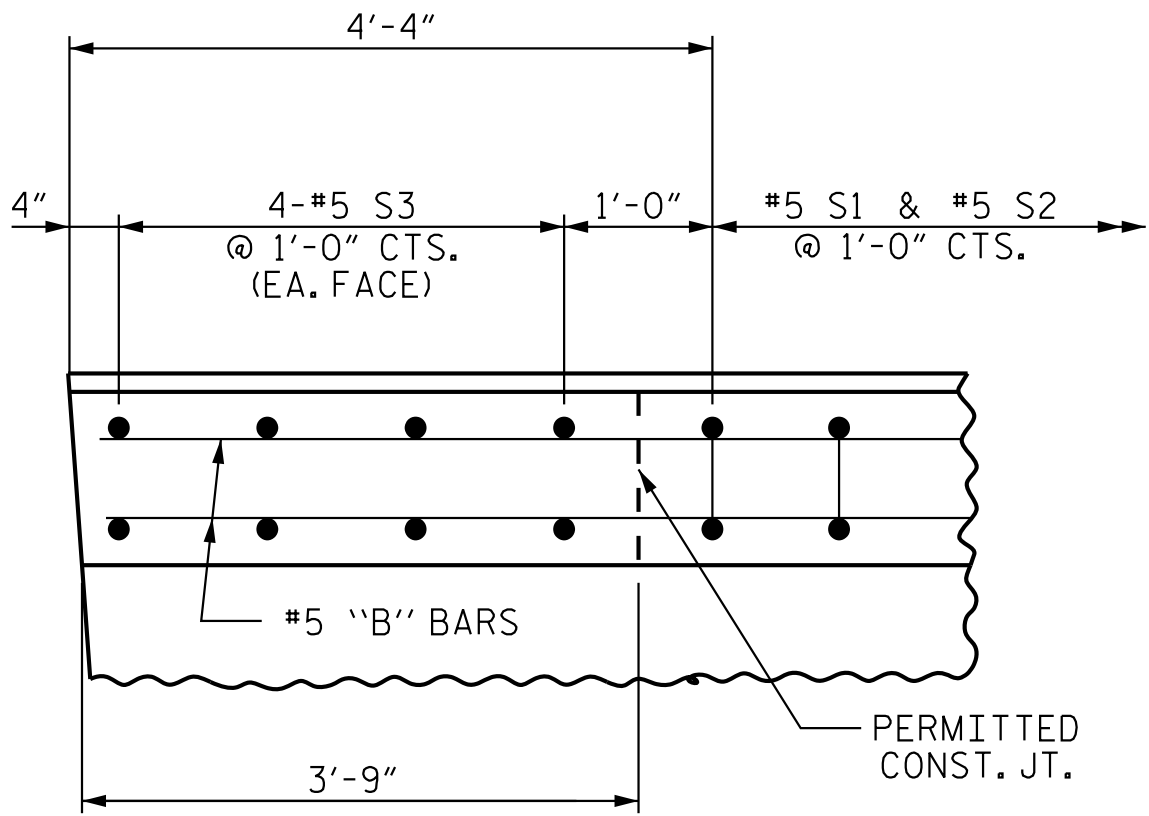
STR. #3

DRAWN BY: T. K. BOYD DATE: 03/26
CHECKED BY: A. D. BRENNER DATE: 03/26
DESIGN ENGINEER OF RECORD: A. L. PHILLIPS DATE: 03/26

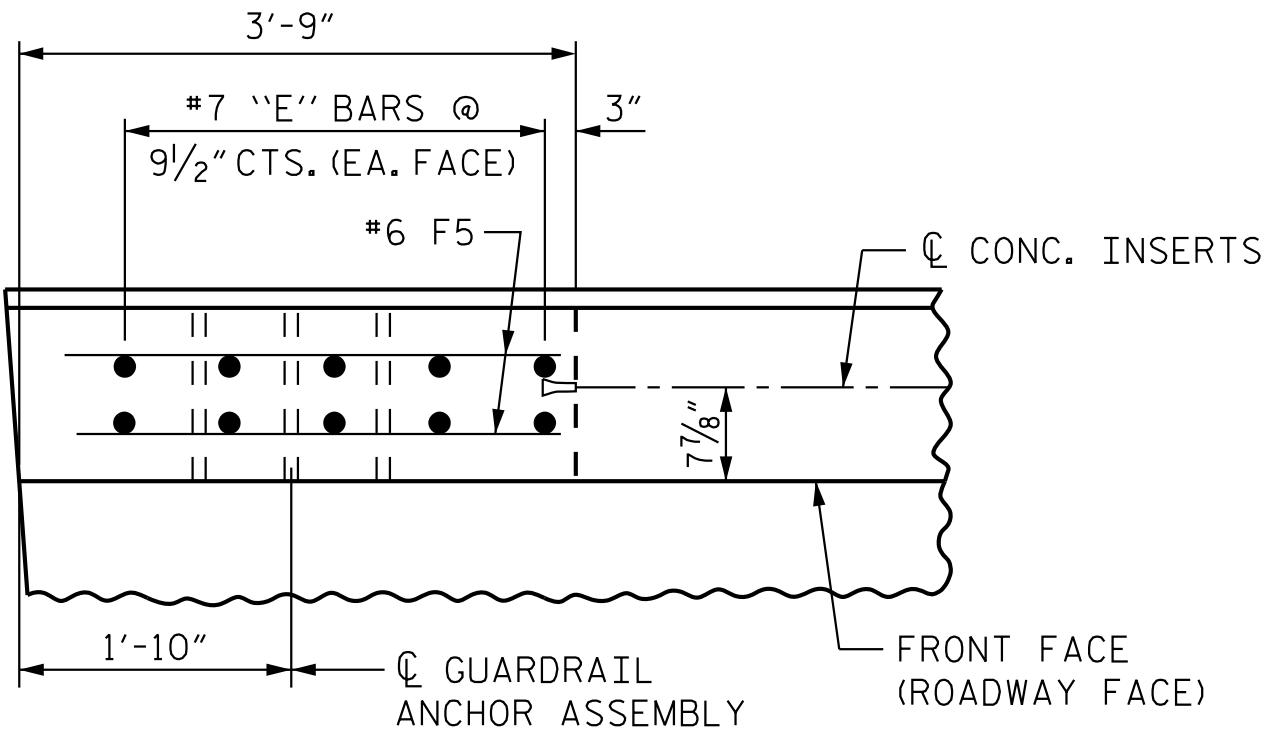
A circular professional engineer seal for the State of North Carolina. The outer ring contains the text "NORTH CAROLINA" at the top and "ALEC D. BRENNER" at the bottom. Inside the ring, the text "PROFESSIONAL ENGINEER" is written in a semi-circle. The center of the seal features the word "SEAL" above the license number "062510". A blue ink signature, "Alec Brenner", is written across the seal, overlapping the "PROFESSIONAL ENGINEER" text and the license number.

STR. #3

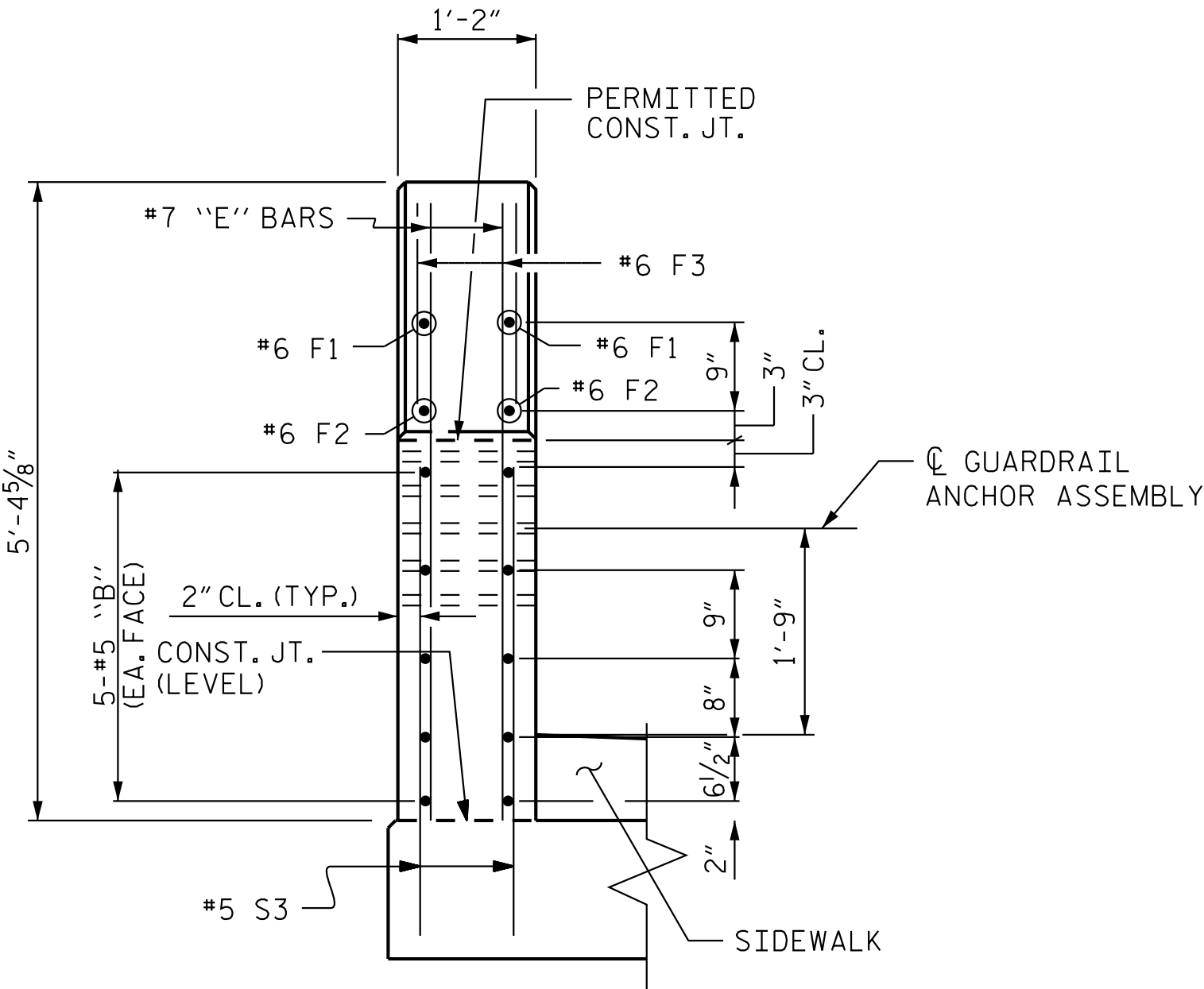
NOTE:
FOR NOTES, SEE SHEET 3 OF 3.



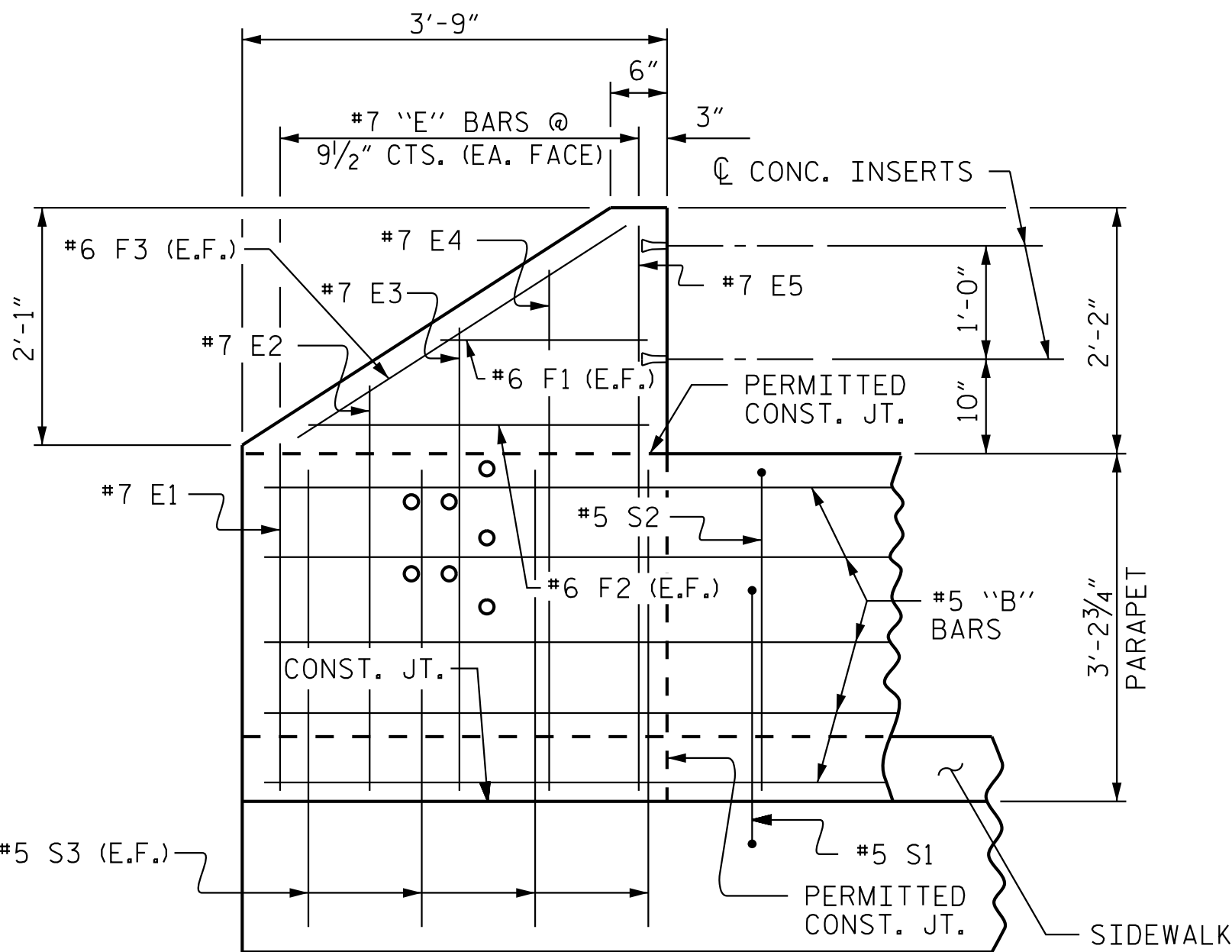
PLAN OF PARAPET



PLAN OF END POST



END VIEW



ELEVATION
E.F. - EACH FACE

CONCRETE PARAPET DETAILS AT END BENT 1
(LEFT PARAPET SHOWN, RIGHT SIDE SIMILAR)

PROJECT NO. I-5715
MECKLENBURG COUNTY
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SHEET 2 OF 3



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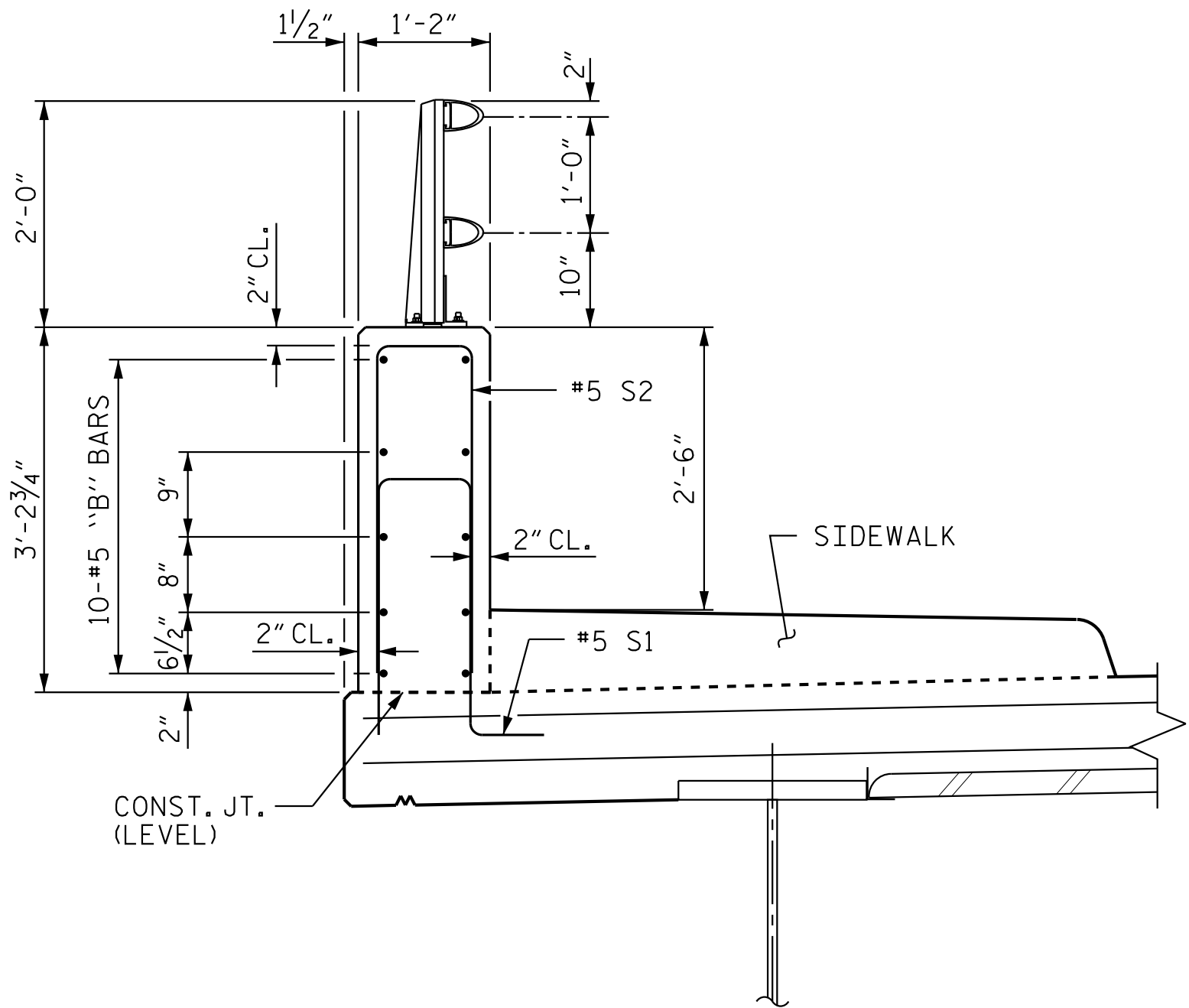
REVISIONS						SHEET NO. S3-30
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #3

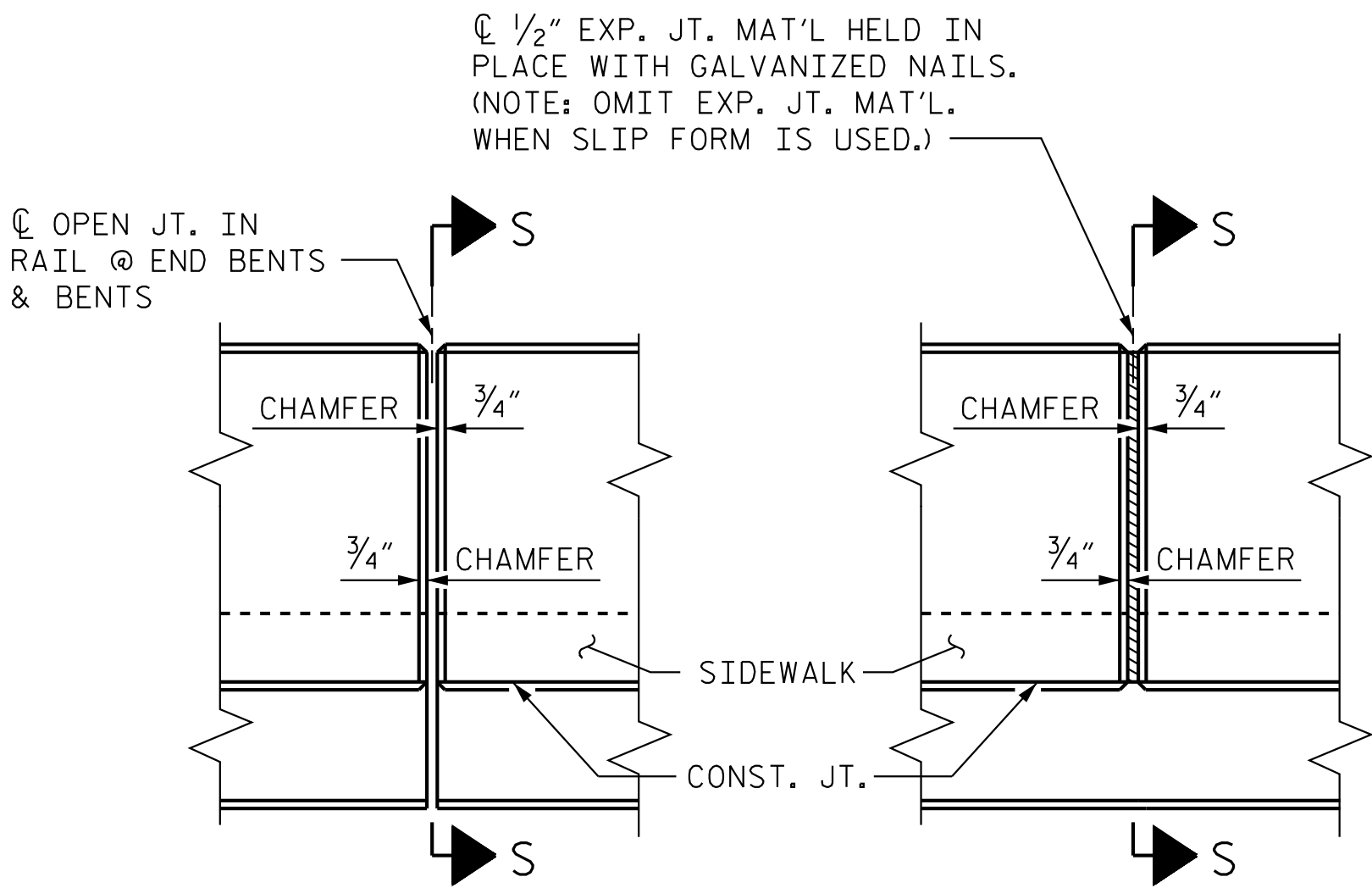
7/31/2026 K:\RD1_Structures\Bridges\N\01036524 - I-5715 Structure Design\Card\01\Site *2\Structure 3\Final\403.059.15175.SWU CP2.590359.030.dgn

DRAWN BY: <u>T. K. BOYD</u>	DATE: <u>03/26</u>
CHECKED BY: <u>A. D. BRENNER</u>	DATE: <u>03/26</u>
DESIGN ENGINEER OF RECORD: <u>A. L. PHILLIPS</u>	DATE: <u>03/26</u>

K:\RD1_Structures\Bridges\NC\01036524 - I-5715 Structure Design\Coord\gn\Site *2\Structure 3\Final\03.06.13\I5715_SML CP3.590359.031.dgn 7/31/2026

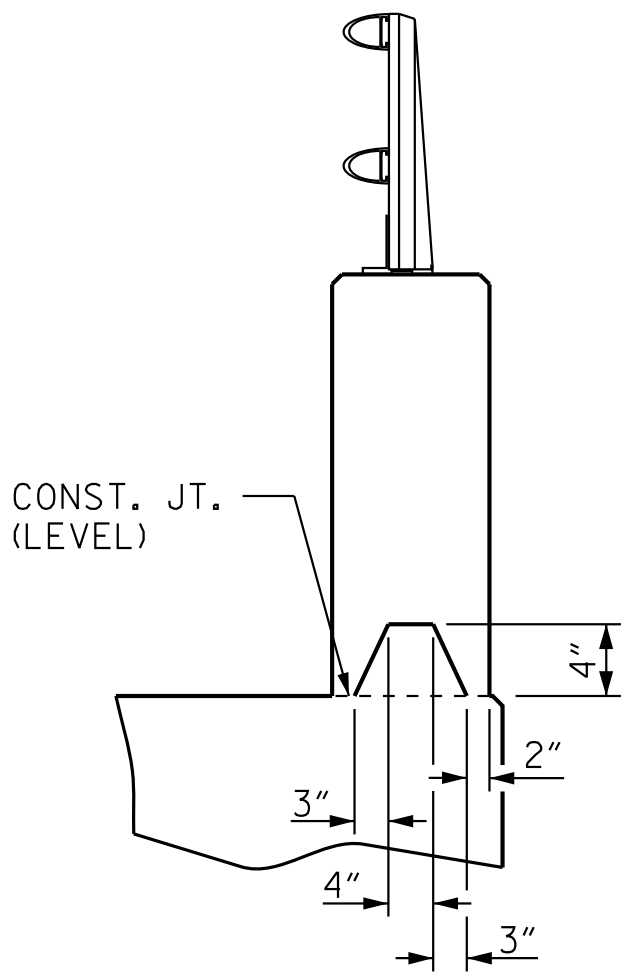


SECTION THRU PARAPET

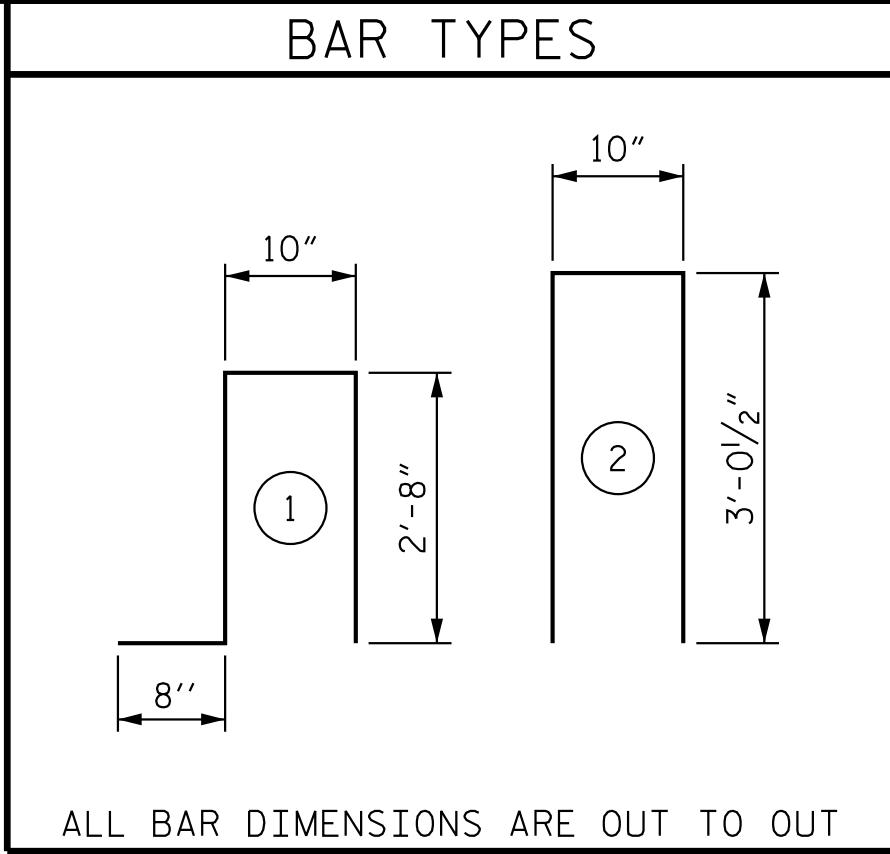


ELEVATION AT EXPANSION JOINTS

ELEVATION AT EXPANSION JOINTS



SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL						BILL OF MATERIAL					
CONCRETE PARAPET AND ONE END POST - LEFT EXTENSION						CONCRETE PARAPET AND ONE END POST - RIGHT EXTENSION					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	20	#5	STR	16'-8"	348	* B1	20	#5	STR	16'-8"	348
* B2	30	#5	STR	28'-1"	879	* B2	30	#5	STR	28'-1"	879
* B3	10	#5	STR	20'-1"	209	* B3	10	#5	STR	20'-1"	209
* B4	10	#5	STR	22'-1"	230	* B4	10	#5	STR	22'-1"	230
* E1	2	#7	STR	3'-2"	13	* E1	2	#7	STR	3'-2"	13
* E2	2	#7	STR	3'-8"	15	* E2	2	#7	STR	3'-8"	15
* E3	2	#7	STR	4'-2"	17	* E3	2	#7	STR	4'-2"	17
* E4	2	#7	STR	4'-8"	19	* E4	2	#7	STR	4'-8"	19
* E5	2	#7	STR	5'-0"	20	* E5	2	#7	STR	5'-0"	20
* F1	2	#6	STR	1'-9"	5	* F1	2	#6	STR	1'-9"	5
* F2	2	#6	STR	3'-0"	9	* F2	2	#6	STR	3'-0"	9
* F3	2	#6	STR	3'-9"	11	* F3	2	#6	STR	3'-9"	11
* S1	159	#5	1	6'-10"	1,133	* S1	159	#5	1	6'-10"	1,133
* S2	159	#5	2	6'-11"	1,147	* S2	159	#5	2	6'-11"	1,147
* S3	8	#5	STR	3'-6"	29	* S3	8	#5	STR	3'-6"	29
*EPOXY COATED REINFORCING STEEL 4,084 LBS.						*EPOXY COATED REINFORCING STEEL 4,084 LBS.					
CLASS AA CONCRETE 22.9 C.Y.						CLASS AA CONCRETE 22.9 C.Y.					
1'-2" X 3'-2 3/4" CONCRETE PARAPET 162.90 LF						1'-2" X 3'-2 3/4" CONCRETE PARAPET 162.90 LF					

NOTES

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

ALL REINFORCING STEEL IN PARAPET AND END POSTS SHALL BE EPOXY COATED.

THE #5 S1 AND #5 S2 BARS MAY BE SHIFTED SLIGHTLY IN ORDER TO MAINTAIN A 2" MINIMUM CLEARANCE TO THE 1/2" EXPANSION JOINT MATERIAL IN PARAPET.

FOR DETAILS OF CONCRETE INSERTS IN END POSTS, SEE "RAIL POST SPACINGS AND END OF RAIL DETAILS" SHEET.

FOR DETAILS OF GUARDRAIL ANCHOR ASSEMBLIES, SEE "GUARDRAIL ANCHORAGE DETAILS FOR METAL RAIL" SHEET.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE PARAPET AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS, THE CONTRACTION JOINTS 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 LENGTHS LESS THAN 10 FEET IN LENGTH.

WHEN FOAM JOINT SEAL IS REQUIRED, THE JOINT IN DECK SHALL BE SAWED PRIOR TO THE CASTING OF CONCRETE PARAPET.

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SHEET 3 OF 3



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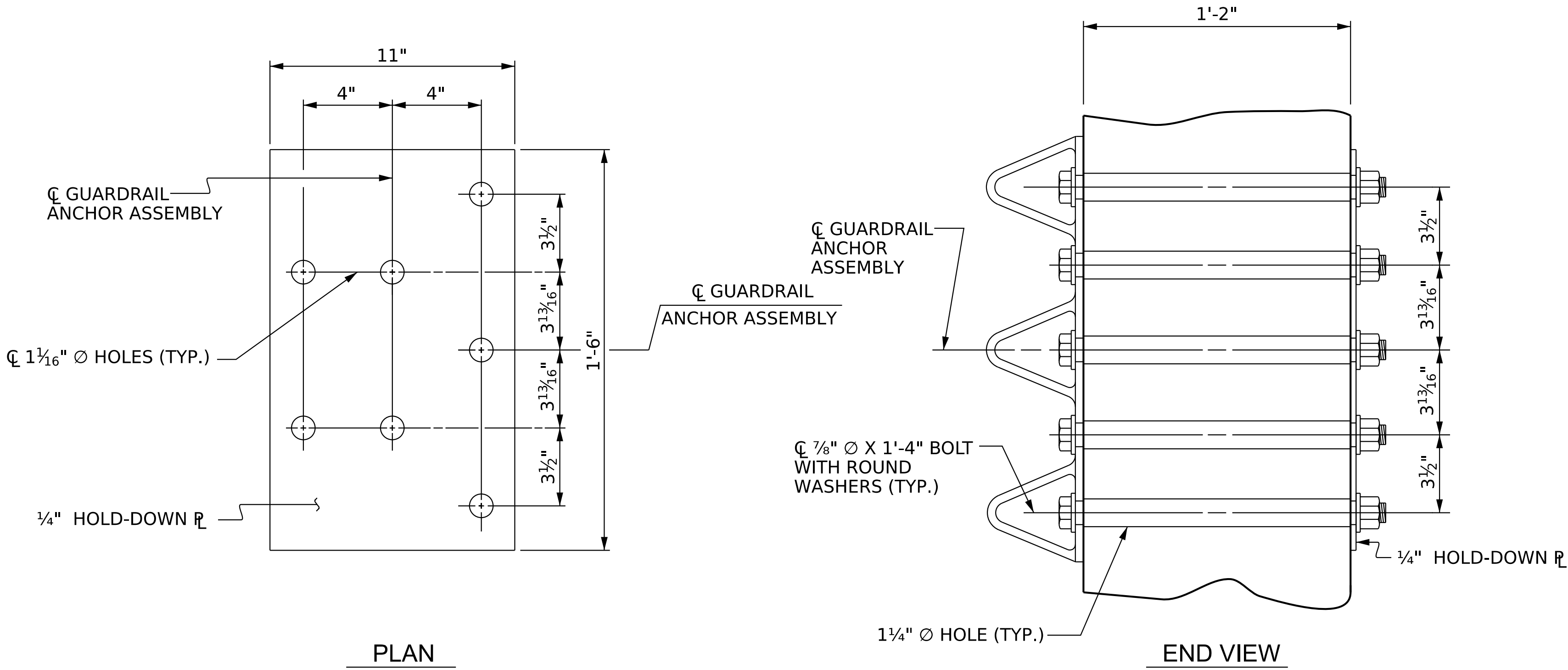
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SUPERSTRUCTURE CONCRETE PARAPET DETAILS						TOTAL SHEETS 63	
REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				
2			4				

DRAWN BY: <u>T. K. BOYD</u>	DATE: <u>03/26</u>
CHECKED BY: <u>A. D. BRENNER</u>	DATE: <u>03/26</u>
DESIGN ENGINEER OF RECORD: <u>A. L. PHILLIPS</u>	DATE: <u>03/26</u>

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GUARDRAIL ANCHOR ASSEMBLY DETAILS

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 7/8" Ø BOLTS WITH NUTS AND WASHERS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.

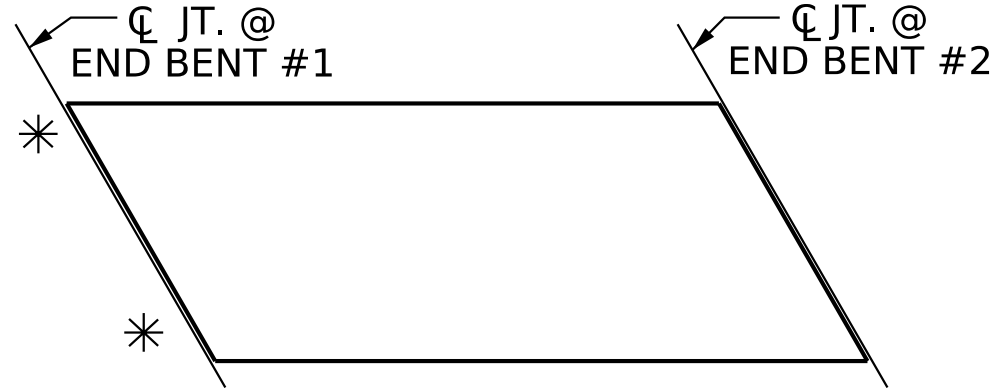
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF THE PARAPET. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS, NUTS AND WASHERS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

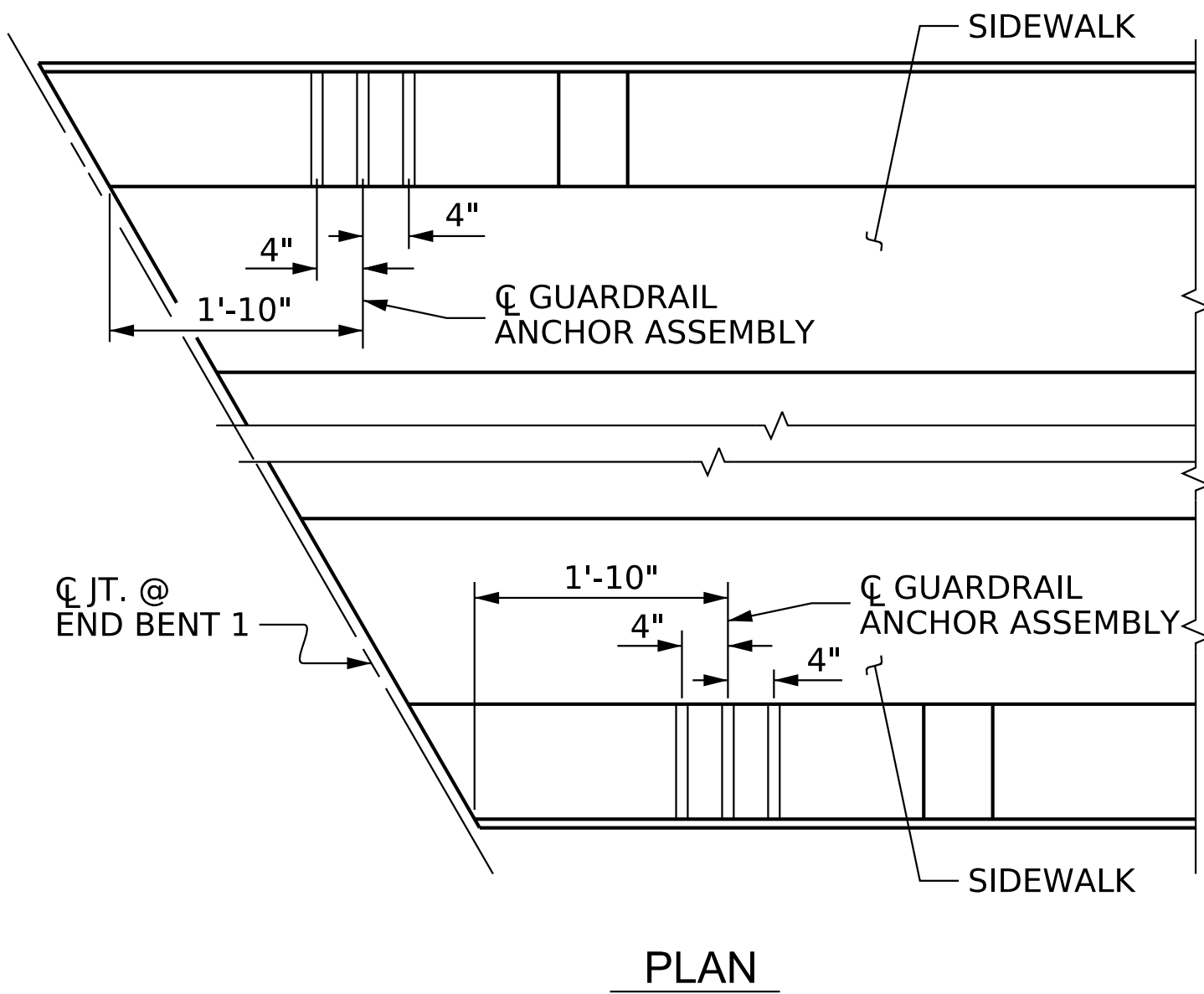
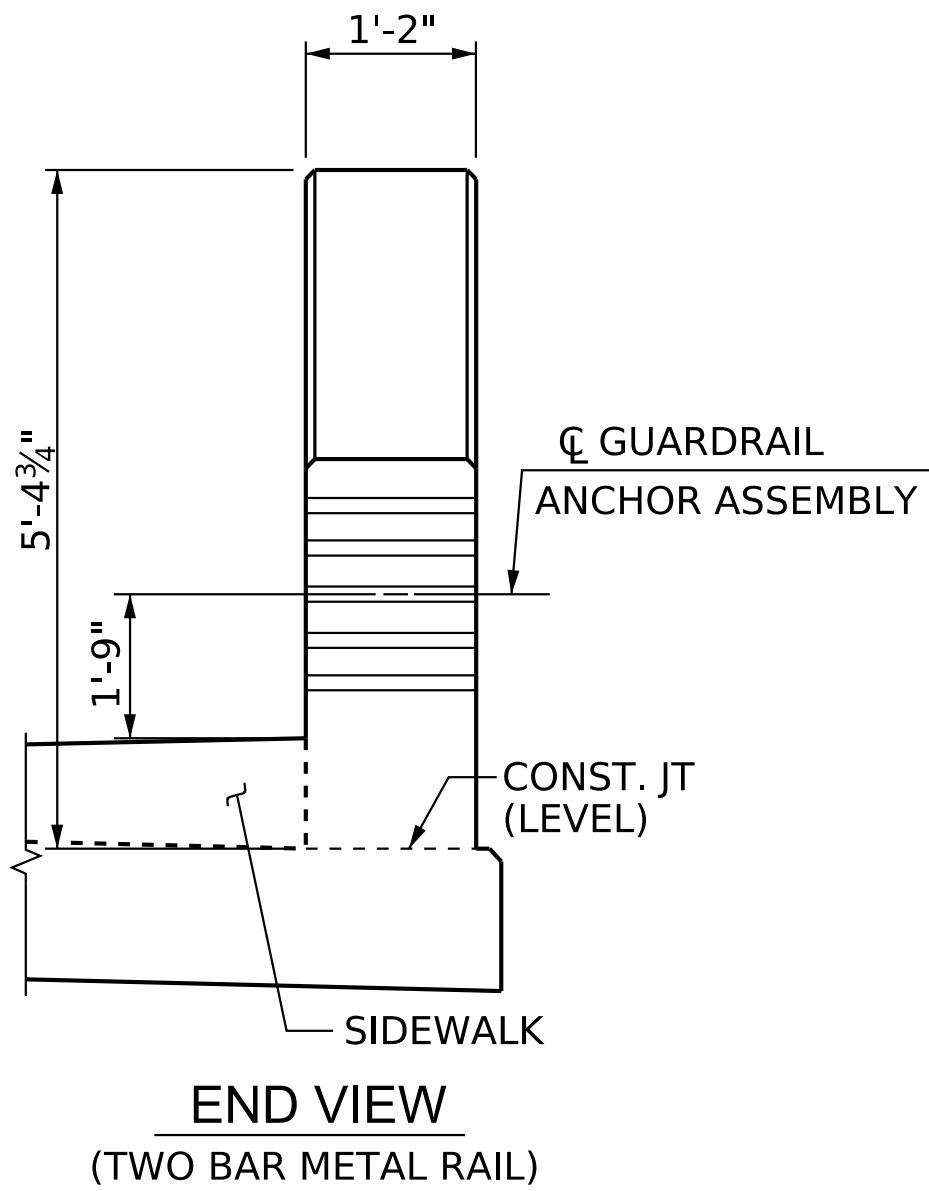
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE END POST TO CLEAR ASSEMBLY BOLTS.

THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



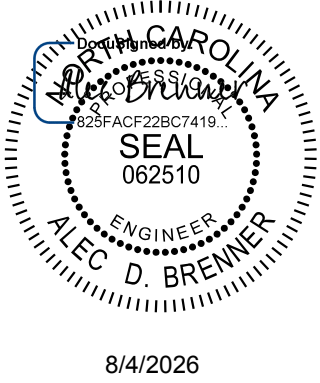
SKETCH SHOWING POINTS OF ATTACHMENT

* LOCATION OF GUARDRAIL ATTACHMENT



LOCATION OF GUARDRAIL ANCHOR AT END POST

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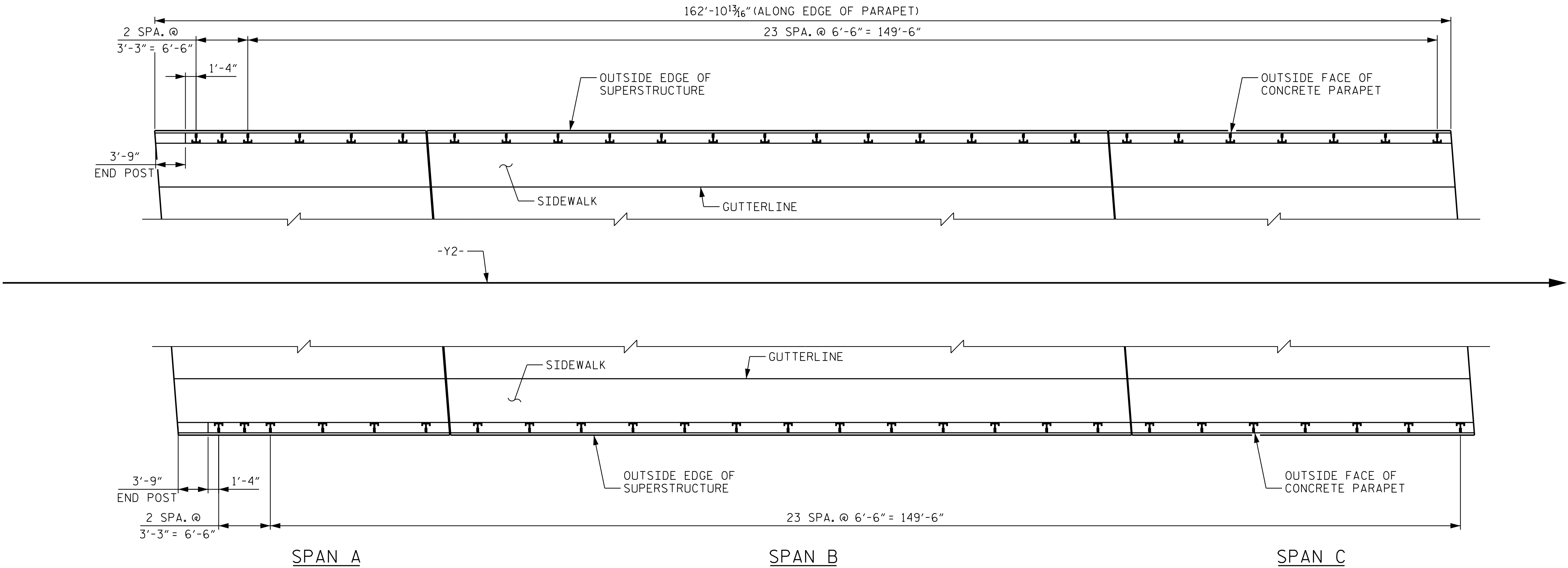
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD GUARDRAIL ANCHORAGE DETAILS FOR METAL RAILS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					63

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CHECKED BY : A. L. PHILLIPS	DATE : 11/25
DRAWN BY : MAA 5/10	REV. 1/15 MAA/TMG
CHECKED BY : GM 5/10	REV. 12/17 MAA/THC
	REV. 5/18 MAA/THC

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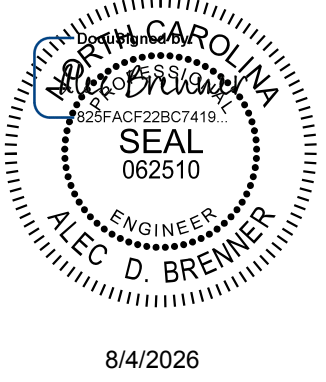
NOTES:
FOR 1/2" EXPANSION JOINT IN
CONCRETE PARAPET SPACING,
SEE "CONCRETE PARAPET
DETAILS" SHEET.



PLAN OF RAIL POST SPACING

PROJECT NO. I-5715
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SHEET 3 OF 4



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STR. #3 STD. NO. BMR2

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DRAWN BY : FCJ 1/88	REV. 5/1/06 TLA/GM
CHECKED BY : CRK 3/89	REV. 10/1/11 MAA/GM
	REV. 12/17 MAA/THC

NOTES

STRUCTURAL CONCRETE INSERT

THE STRUCTURAL CONCRETE INSERT ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:

- A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 1½".
- B. 1 - ¾" Ø x 1⅝" BOLT WITH WASHER. BOLT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLT AND WASHER SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLT AND WASHER MAY BE USED AS AN ALTERNATE FOR THE ¾" Ø x 1⅝" GALVANIZED BOLT AND WASHER. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)
- C. WIRE STRUT SHOWN IN THE CONCRETE INSERT ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A ⅞" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.

NOTES

METAL RAIL TO END POST CONNECTION

THE METAL RAIL TO END POST CONNECTION SHALL CONSIST OF THE FOLLOWING COMPONENTS:

- A. ½" PLATES SHALL CONFORM TO ASTM A36 GRADE 36 AND SHALL BE GALVANIZED AFTER FABRICATION.
- B. ¾" STRUCTURAL CONCRETE INSERT SHALL HAVE A WORKING LOAD SHEAR CAPACITY OF 4800 LBS. THE FERRULES SHALL ENGAGE A ¾" Ø x 1⅝" BOLT WITH 2" O.D. WASHER IN PLACE. THE ¾" Ø x 1⅝" BOLT SHALL HAVE N. C. THREADS.
- C. CAP SCREWS FOR RAIL ATTACHMENT TO ANGLE SHALL CONFORM TO THE REQUIREMENTS OF ASTM F593 ALLOY 305 STAINLESS STEEL. CAP SCREWS TO BE CENTERED IN SLOTS AT 60°F.
- D. STANDARD CLAMP BARS (SEE METAL RAIL SHEET).
- E. ½" Ø PIPE SLEEVES (IF REQUIRED) TO BE GALVANIZED.

THE COST OF THE STANDARD CLAMP BARS AND CAP SCREWS USED IN THE METAL RAIL TO END POST CONNECTION SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR LINEAR FEET OF 1 OR 2 BAR METAL RAILS.

THE ¾" STRUCTURAL CONCRETE INSERT WITH BOLT SHALL BE ASSEMBLED IN THE SHOP.

THE COST OF THE ¾" STRUCTURAL CONCRETE INSERT ASSEMBLY, AND THE ½" PLATES COMPLETE IN PLACE SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

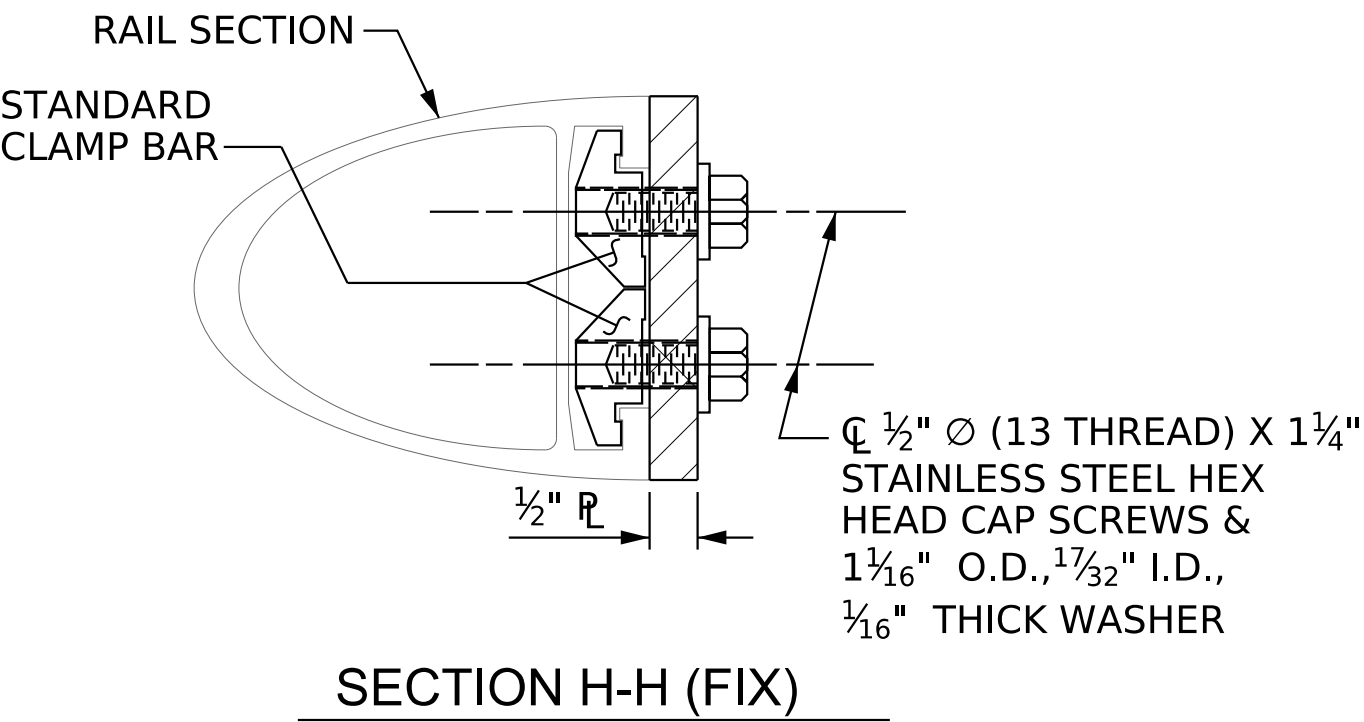
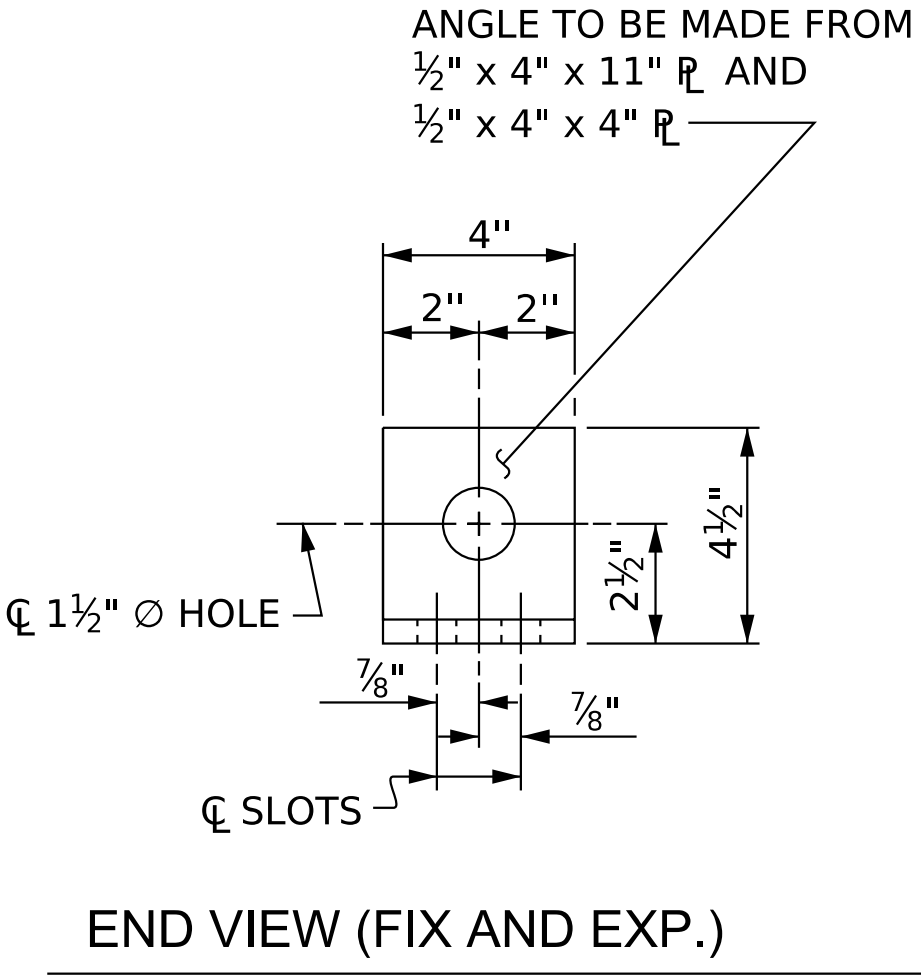
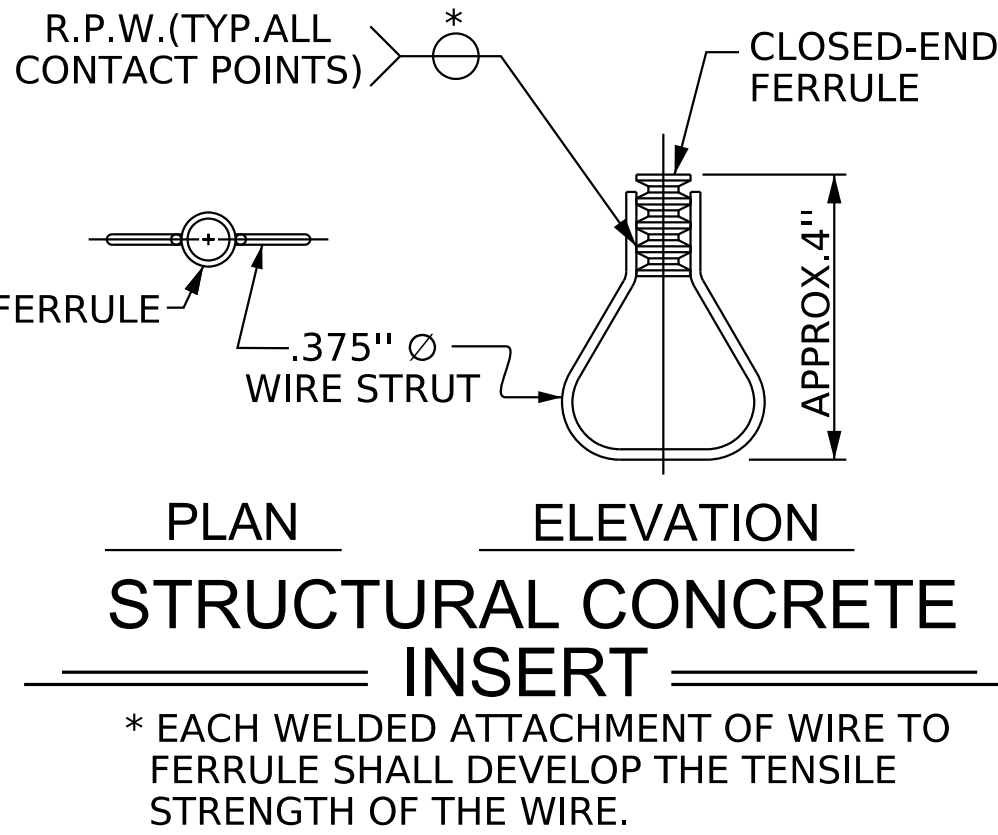
THE CONTRACTOR, AT HIS OPTION, MAY USE AN ADHESIVE BONDING SYSTEM IN LIEU OF THE STRUCTURAL CONCRETE INSERT EMBEDDED IN THE END POST. IF THE ADHESIVE BONDING SYSTEM IS USED, THE ¾" Ø x 1⅝" BOLT WITH WASHER SHALL BE REPLACED WITH A ¾" Ø x 6½" BOLT AND 2" O.D. WASHER. ALL SPECIFICATIONS THAT APPLY TO THE ¾" Ø x 1⅝" BOLT SHALL APPLY TO THE ¾" Ø x 6½" BOLT. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

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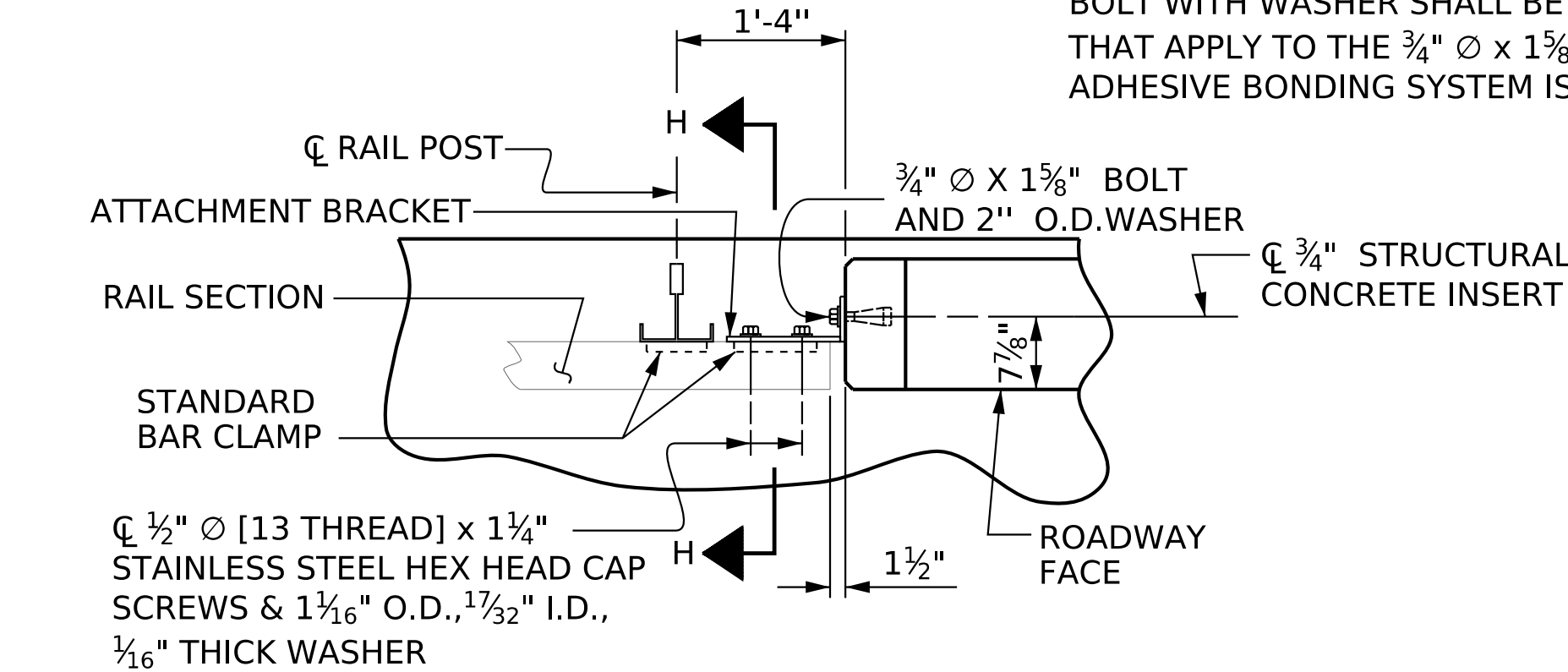
SHEET 4 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD END OF RAIL DETAILS FOR 2 BAR METAL RAIL					
REVISIONS					SHEET NO.
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1			3		
2			4		
TOTAL SHEETS					63

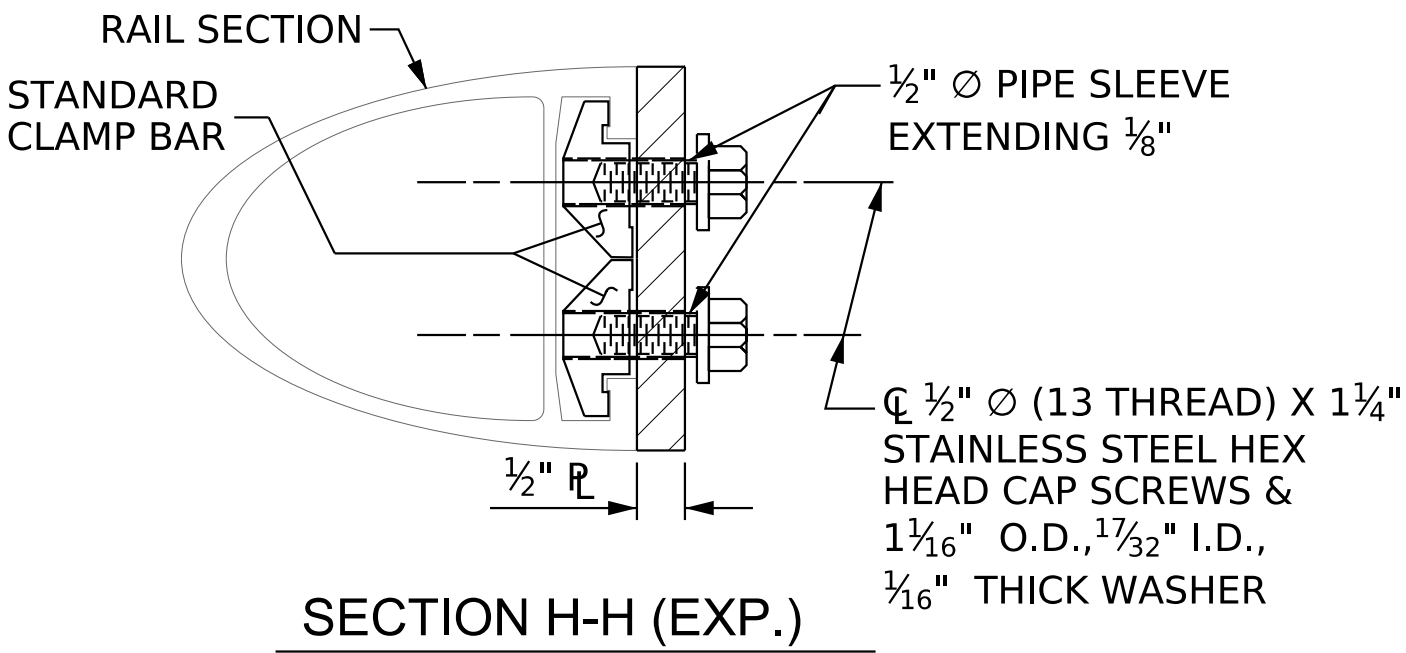
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FIXED



PLAN - RAIL AND END POST



EXPANSION

DETAILS FOR ATTACHING METAL RAIL TO END POST

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8/4/2026

SEAL

062510

ENGINEER

REC D. BRENNER

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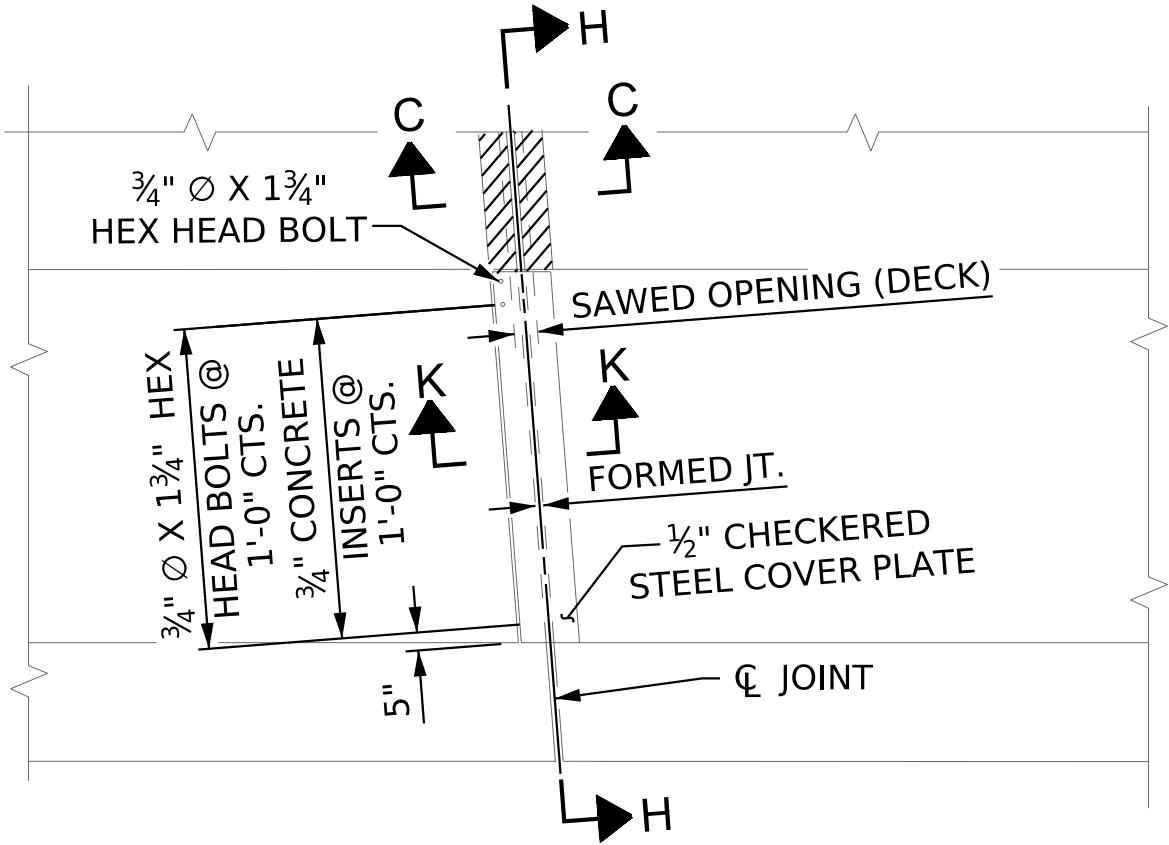
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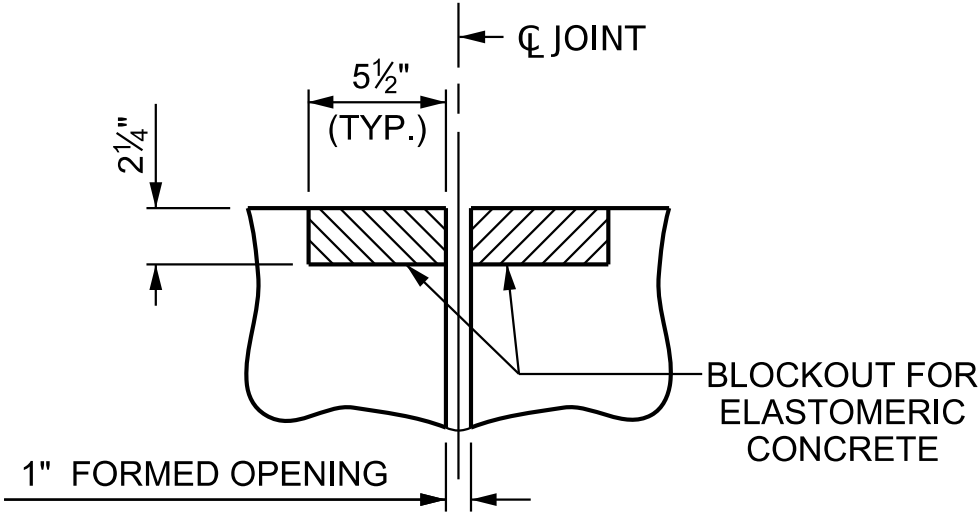
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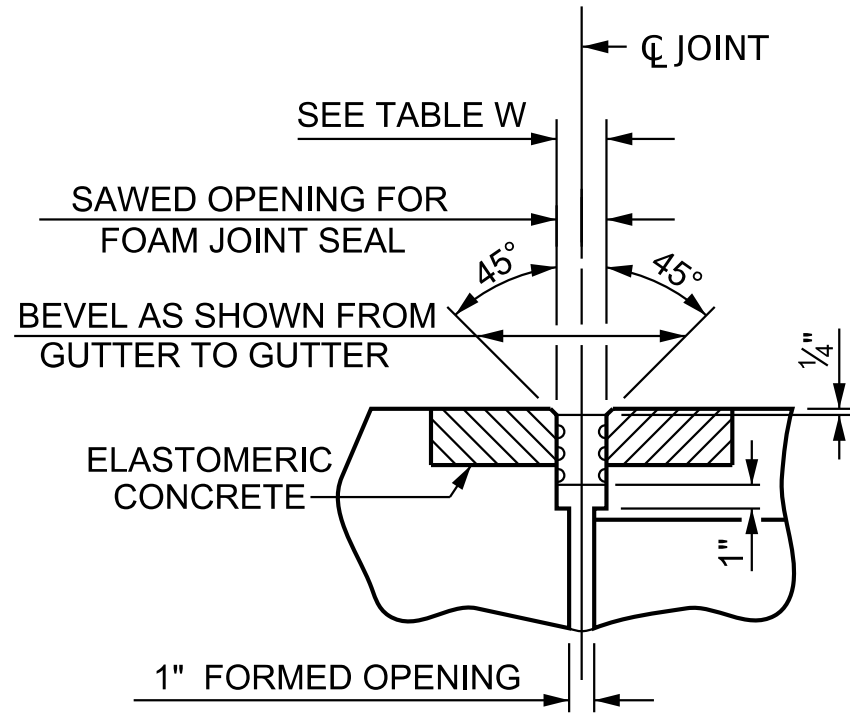
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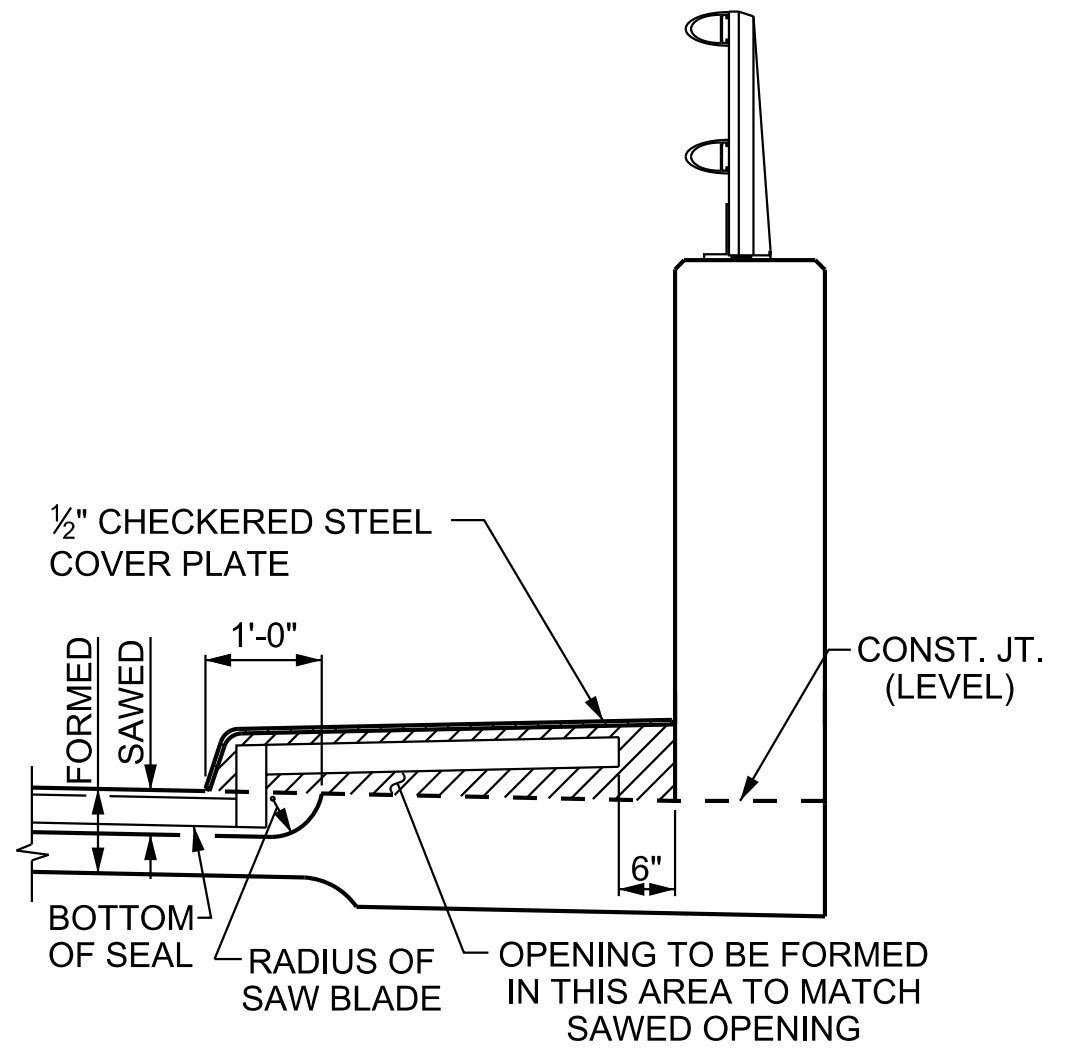
PLAN OF FOAM
JOINT SEAL @ BENT



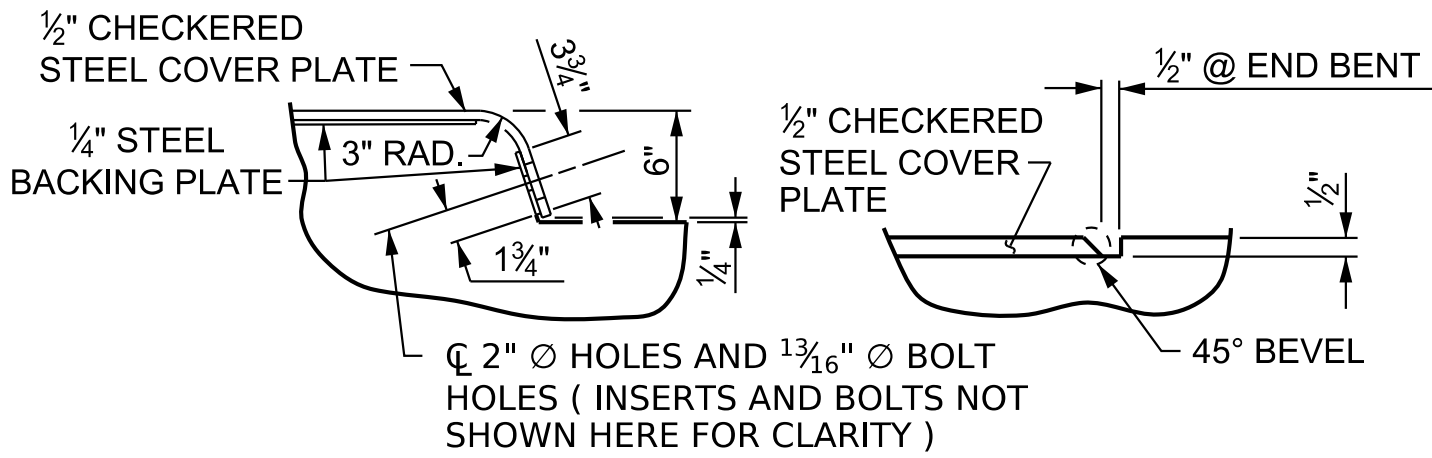
SECTION C-C
FOAM JOINT SEAL
(PRE-SAWED ELASTOMERIC
CONCRETE DIMENSIONS)



SECTION C-C
FOAM JOINT SEAL
(EXPANSION)



SECTION H-H

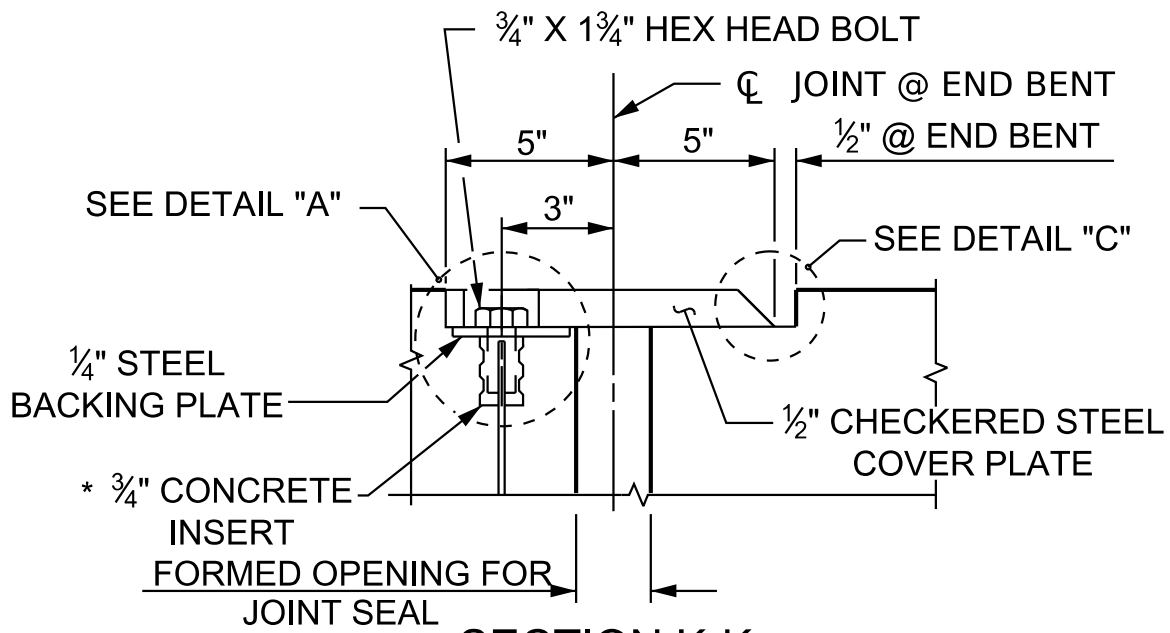


DETAIL "B" DETAIL "C"
JOINT SEAL DETAILS @ END BENT

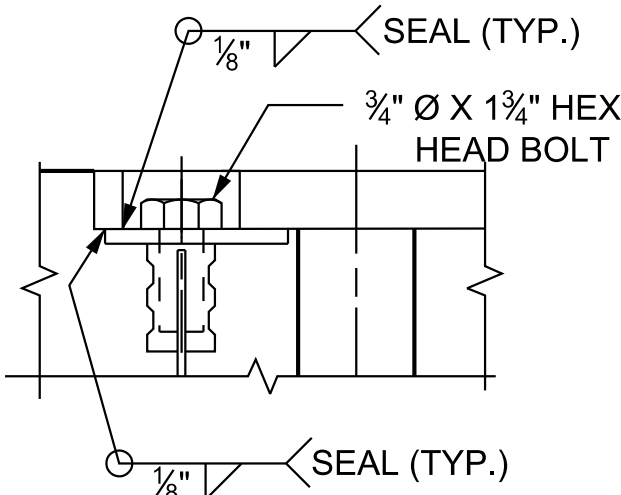
ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	5.7
2	5.7
TOTAL	11.4

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

TABLE W			
JT. WIDTH @	45° F	60° F	90° F
END BENT 1	1 5/8"	1 9/16"	1 1/2"
BENT 1	1 11/16"	1 9/16"	1 5/16"
BENT 2	1 11/16"	1 9/16"	1 5/16"
END BENT 2	1 5/8"	1 9/16"	1 1/16"



SECTION K-K



DETAIL "A"

JOINT SEAL DETAILS

* THE 3/4" CONCRETE INSERTS SHALL BE CLOSED-END FERRULES WITH LOOPED WIRE STRUTS ATTACHED TO THEM. THE INSERTS SHALL CONFORM TO AASHTO M169, GRADE 12L14 AND SHALL HAVE A TENSILE WORKING LOAD CAPACITY OF 3000 LBS.

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

THE STEEL PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 OR APPROVED EQUAL. AFTER FABRICATION, THE PLATES SHALL BE COMMERCIALY BLAST CLEANED AND EITHER COATED WITH A MINIMUM THICKNESS OF 4 MILS (DRY) OF ZINC-RICH PAINT, GALVANIZED OR METALLIZED TO A MINIMUM THICKNESS OF 6 MILS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

THE 3/4" DIAMETER HEX HEAD BOLTS SHALL CONFORM TO ASTM F593 ALLOY 304 STAINLESS STEEL.

NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE COVER PLATE. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR "FOAM JOINT SEALS".



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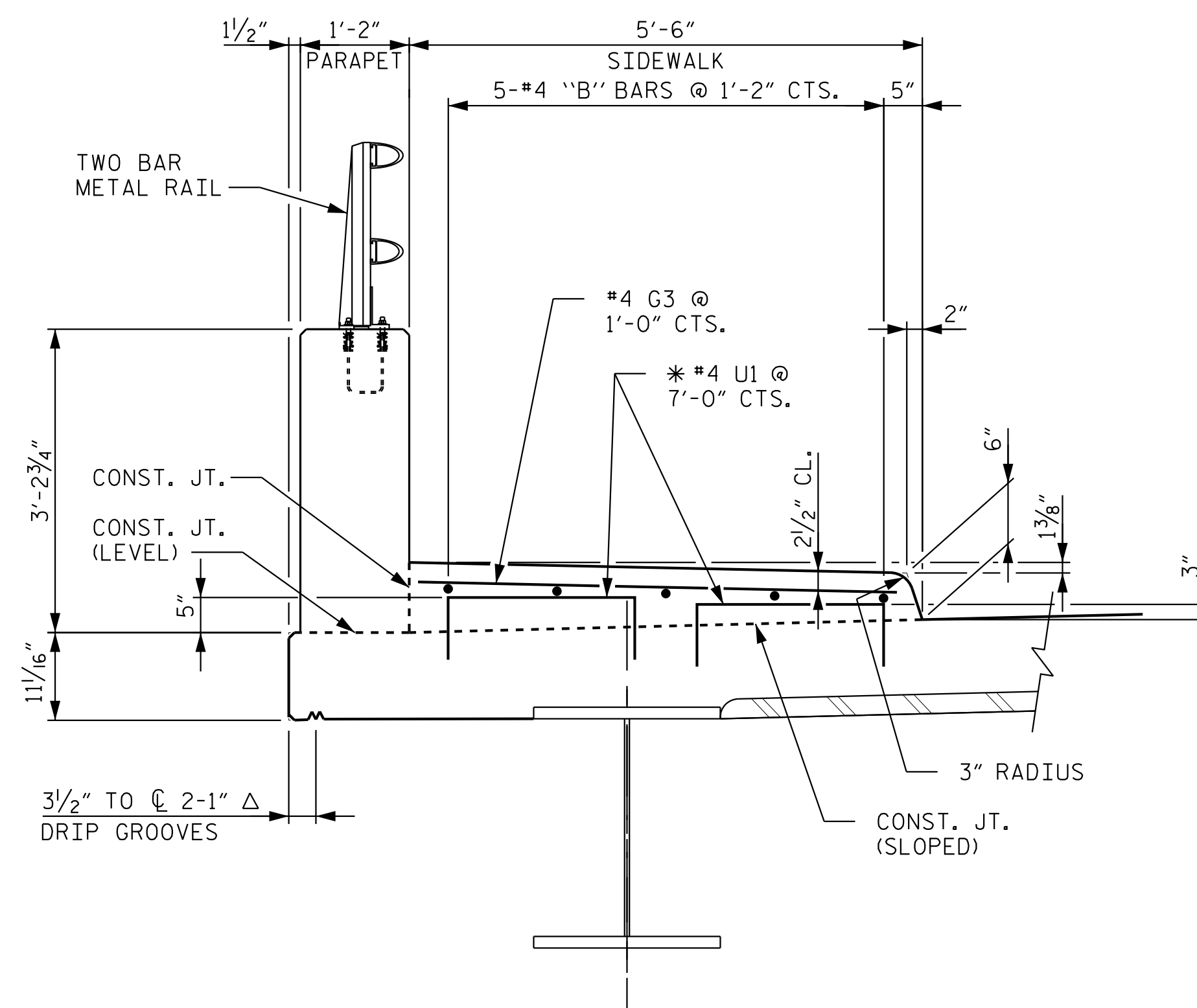
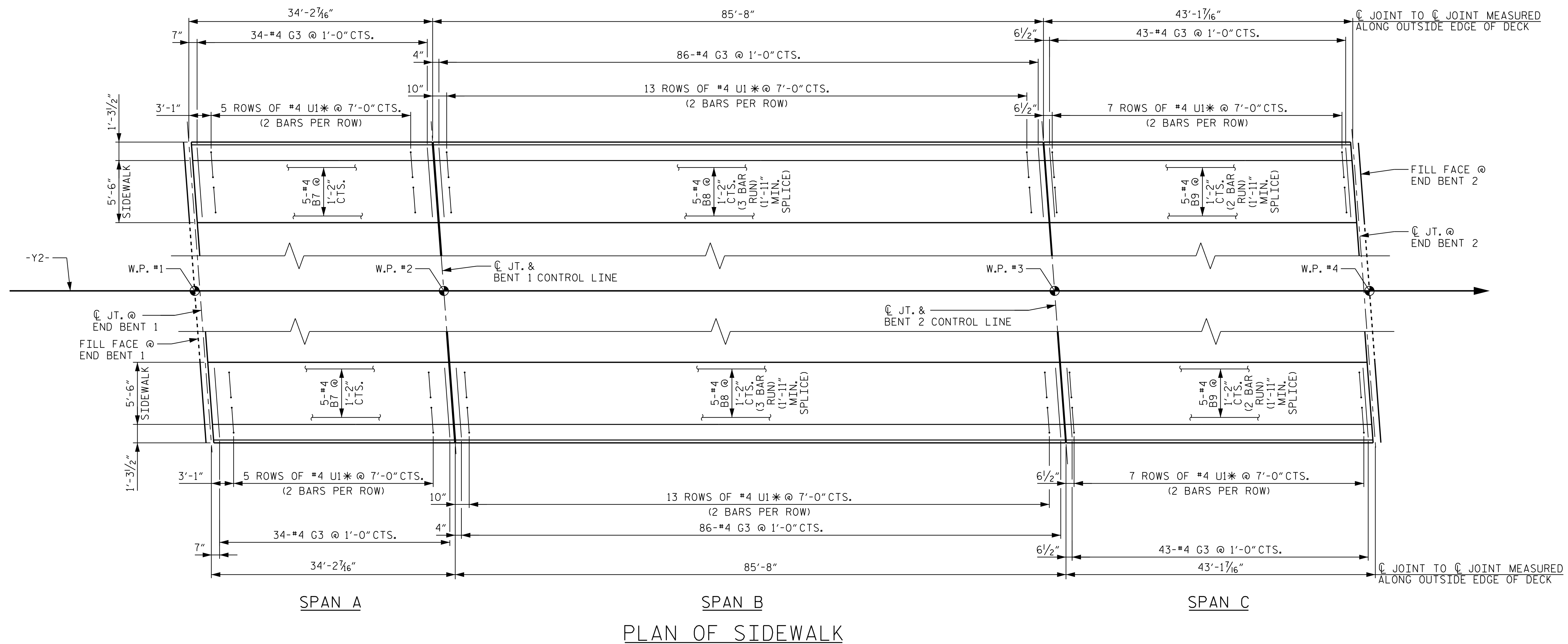
PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

STATE OF NORTH CAROLINA
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STANDARD
FOAM JOINT
SEAL DETAILS

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1			3			TOTAL SHEETS 63
2			4			

STR. #3 STD. NO. EJS1



SECTION THRU SIDEWALK
LEFT EXTENSION SHOWN, RIGHT EXTENSION SIMILAR

NOTES

ALL REINFORCING STEEL IN THE SIDEWALK SHALL BE EPOXY COATED.

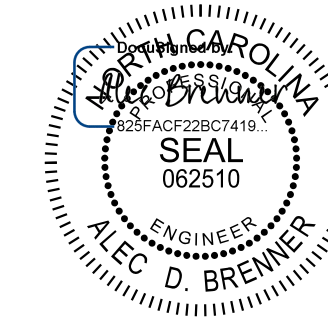
GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE SIDEWALK IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FEET TO 10 FEET BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINT WILL BE REQUIRED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

* #4 U1 MAY BE PUSHED INTO GREEN CONCRETE AFTER THE DECK HAS BEEN SCREEDED OFF.

SIDEWALK SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THE SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSION STRENGTH OF 3,000 PSI.

SEE APPROACH SLAB SHEETS FOR SIDEWALK ON APPROACH SLAB.

CONCRETE AND REINFORCING STEEL FOR THE SIDEWALK IS INCLUDED
IN THE SUPERSTRUCTURE BILL OF MATERIAL. PAYMENT FOR THE
SIDEWALK SHALL BE INCLUDED IN THE PAY ITEM "REINFORCED
CONCRETE DECK SLAB."



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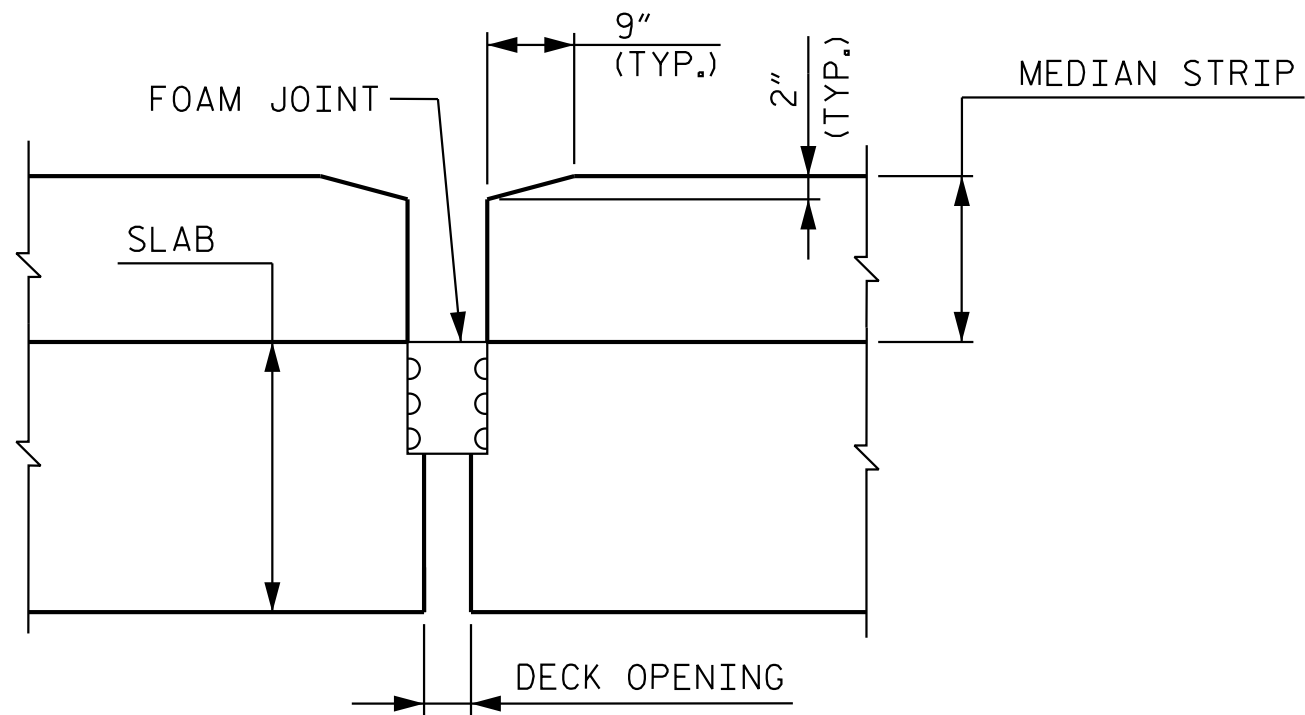
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SUPERSTRUCTURE
SIDEWALK DETAILS

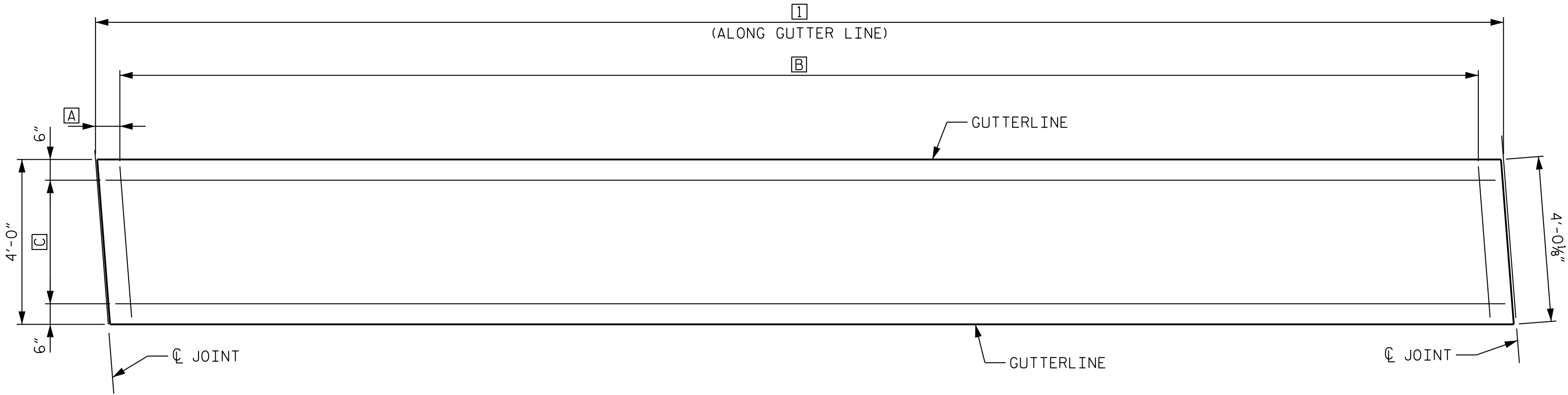
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STR. #3

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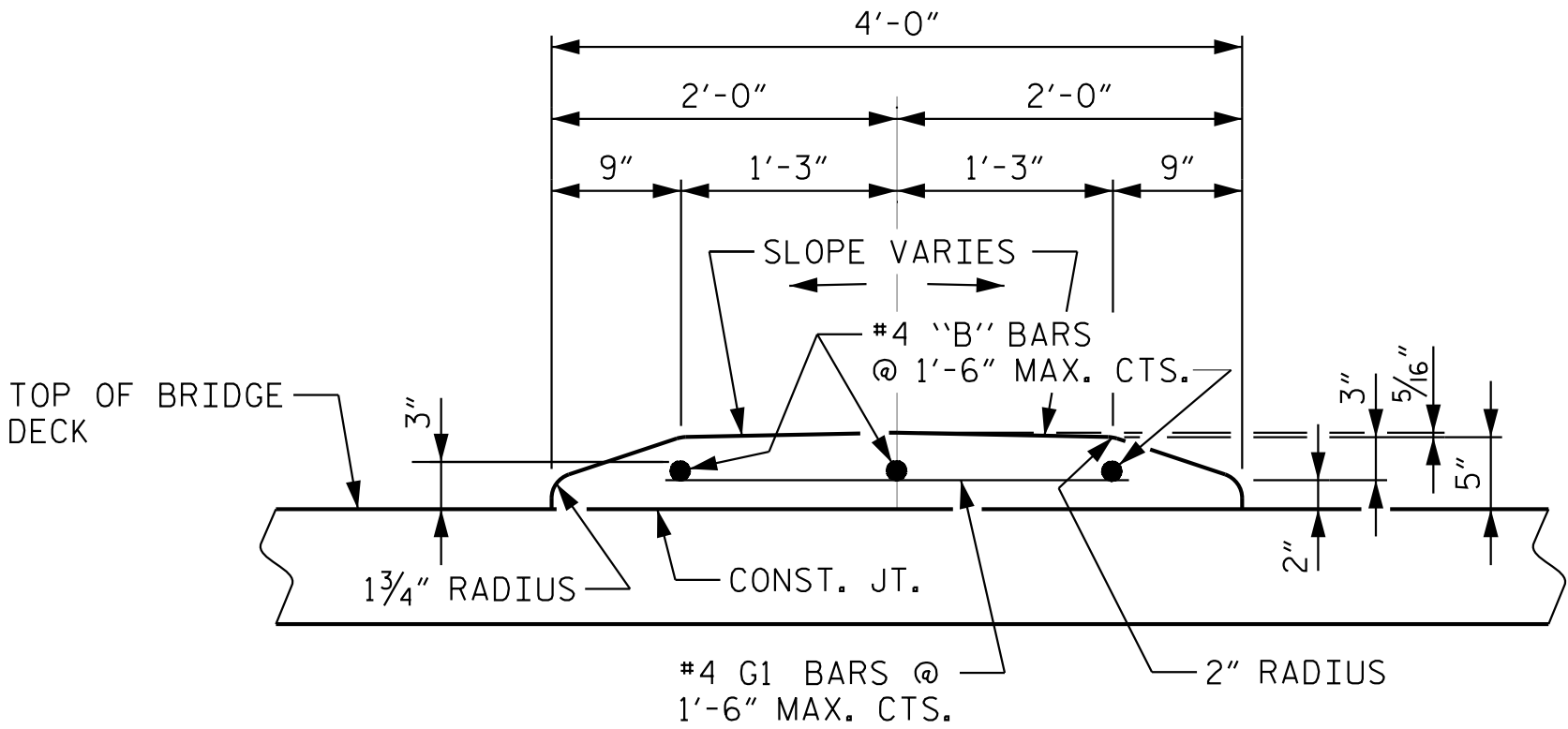


DETAILS AT EXPANSION JOINT



PLAN AT TYPICAL SPAN

DIMENSIONS AND REINFORCING INFORMATION			
	SPAN A	SPAN B	SPAN C
I	34'-2 ⁷ / ₁₆ "	85'-8"	43'-1 ⁷ / ₁₆ "
A	7"	10"	6 ¹ / ₂ "
B	23-#4 G1 @ 1'-6"	57-#4 G1 @ 1'-6"	29-#4 G1 @ 1'-6"
C	3-#4 B1	3-#4 B2 (3 BAR RUN) (1'-11" MIN. SPLICE)	3-#4 B3 (2 BAR RUN) (1'-11" MIN. SPLICE)



MEDIAN TYPICAL SECTION

BILL OF MATERIAL					
CONCRETE MEDIAN					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B1	3	#4	STR	33'-10"	68
*B2	9	#4	STR	29'-9"	179
*B3	6	#4	STR	22'-5"	90
*G1	109	#4	STR	2'-8"	194
* EPOXY COATED REINFORCING STEEL					531 LBS.
TOTAL CLASS AA CONCRETE					8.9 C.Y.

NOTES

- ALL REINFORCING STEEL IN CONCERTE MEDIAN SHALL BE EPOXY COATED.
- CONSTRUCTION SEQUENCE FOR CONCRETE MEDIAN:
- REMOVE PAINT, DIRT, OIL, AND ANY OBJECT OR MATERIAL THAT WILL ADVERSELY IMPACT CONCRETE BOND TO EXISTING BRIDGE DECK.
 - CONSTRUCT MEDIAN SECTION.
 - SAW CUT CONTRACTION JOINTS.
 - SEAL JOINTS.
- SAW CUT CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE CUT IN ALL EXPOSED FACES OF THE CONCRETE MEDIAN IN ACCORDANCE WITH ARTICLE 825-10(E) OF THE STANDARD SPECIFICATION. SEAL CONTRACTION JOINT IN ACCORDANCE WITH ARTICLE 825-10(F) OF THE STANDARD SPECIFICATION. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 TO 10 FEET BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINT WILL BE REQUIRED IN SEGMENTS LESS THAN 10 FEET.
- FOR MEDIAN ON APPROACH SLAB, SEE APPROACH SLAB SHEETS.
- MEDIAN ON BRIDGE IS PAID FOR AS A PART OF THE REINFORCED CONCRETE DECK SLAB PAY ITEM.

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MECKLENBURG COUNTY
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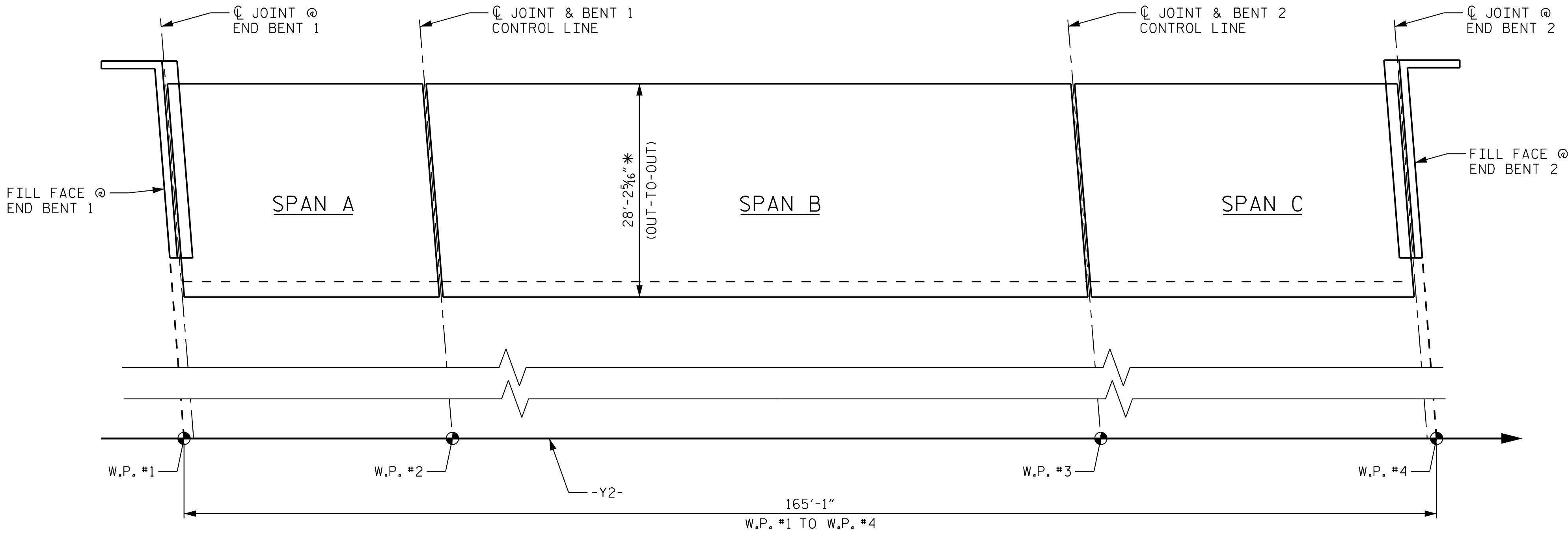
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1			3		
2			4		
					TOTAL SHEETS
					63

STR. #3

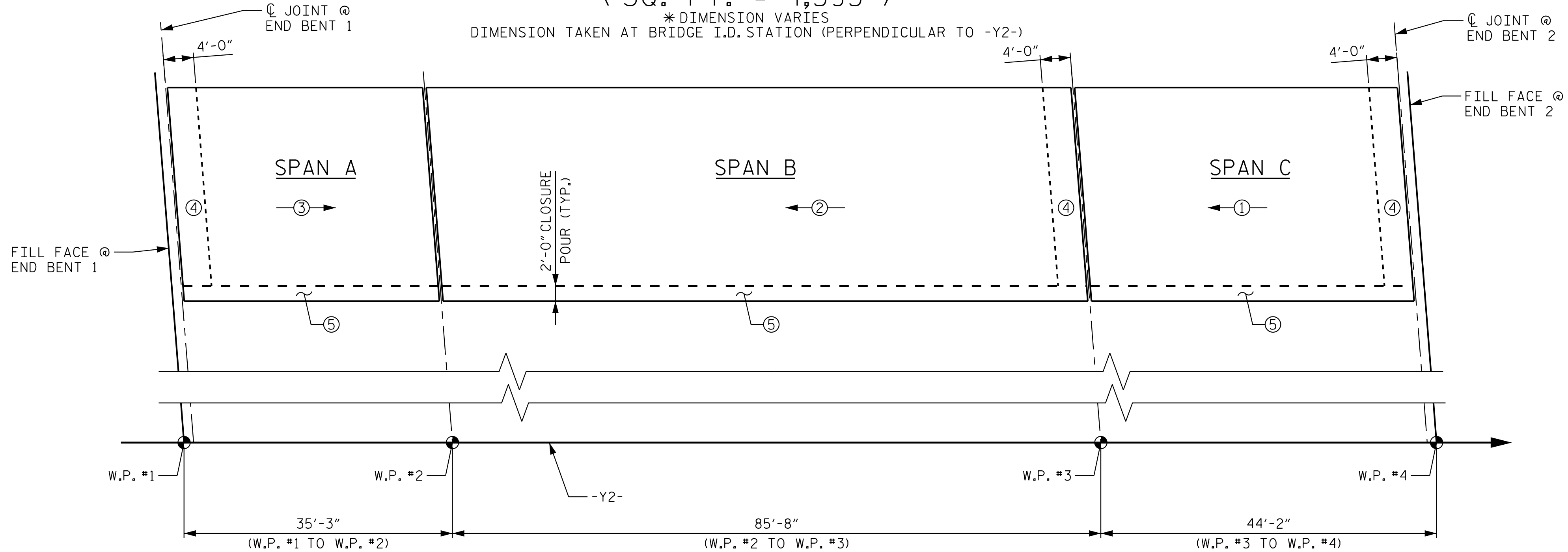
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DESIGN ENGINEER OF RECORD: <u>A. L. PHILLIPS</u>	DATE: <u>03/26</u>

7/31/2026 K:\RDT_Structures\Bridge\N\01036524 - I-5715 Structure Design\Cad\Drawn\Site *2\Structure 3\Final\403.079.15115.SWU.BM.590359.040.dgn



LAYOUT FOR COMPUTING AREA
OF REINFORCED CONCRETE DECK SLAB
(SQ. FT. = 4,593)

* DIMENSION VARIES
DIMENSION TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)



POURING SEQUENCE

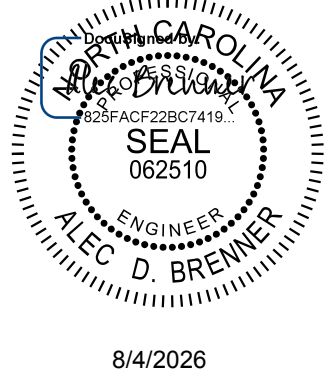
Ⓜ DENOTES POUR NUMBER AND DIRECTION

GROOVING BRIDGE FLOORS LEFT SIDE	
APPROACH SLABS *	226 SQ.FT.
BRIDGE DECK **	3,310 SQ.FT.
TOTAL	3,536 SQ.FT.

* INCLUDES AN APPROXIMATE 2'-0"WIDTH OF GROOVING ON EXISTING APPROACH SLAB

** INCLUDES AN APPROXIMATE 11"WIDTH OF GROOVING ON EXISTING BRIDGE DECK

DRAWN BY: T. K. BOYD	DATE: 03/26
CHECKED BY: A. D. BRENNER	DATE: 03/26
DESIGN ENGINEER OF RECORD: A. L. PHILLIPS	DATE: 03/26



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PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 1 OF 3

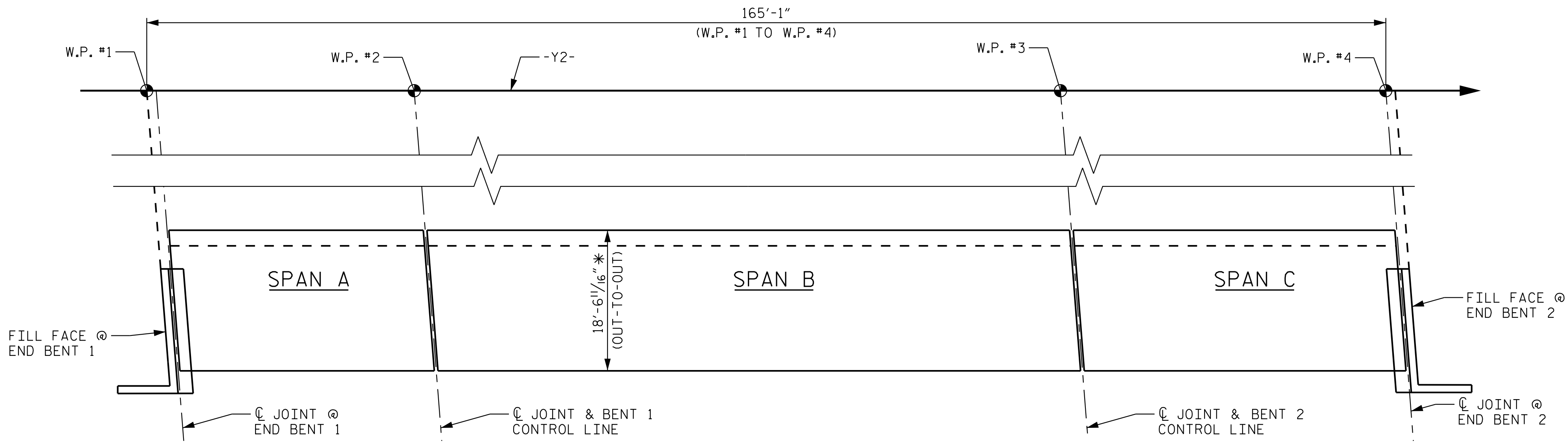
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
BILL OF MATERIAL
LEFT SIDE

REVISIONS						SHEET NO. S3-40
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #3

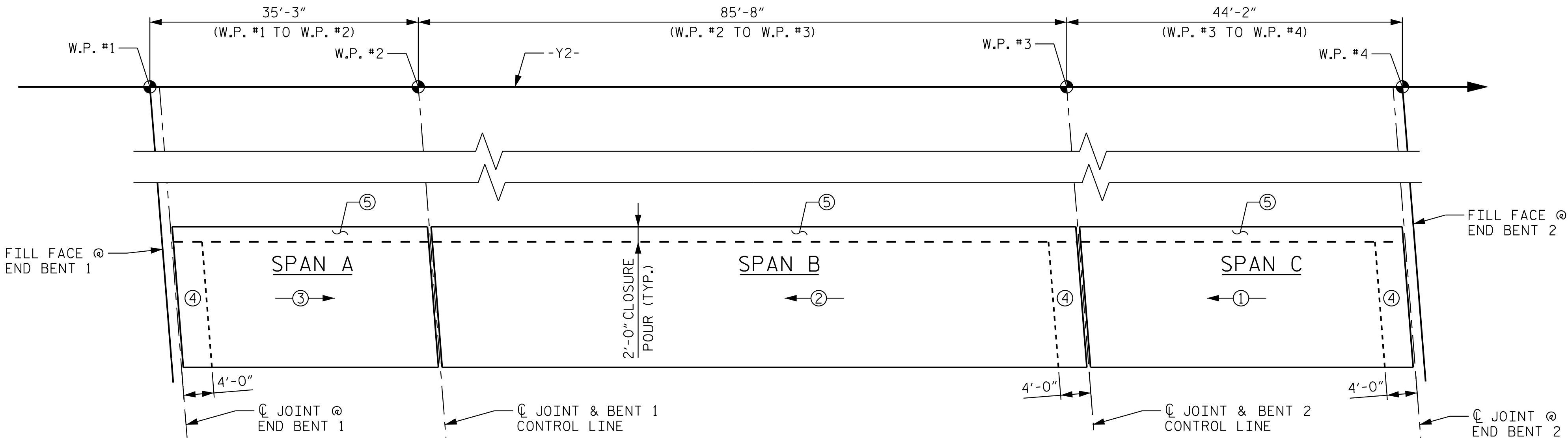
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LAYOUT FOR COMPUTING AREA
OF REINFORCED CONCRETE DECK SLAB

(SQ. FT. = 3,023)

* DIMENSION VARIES
DIMENSION TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)



POURING SEQUENCE

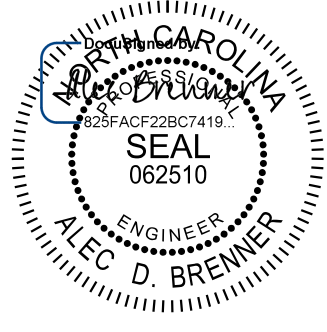
← (#) → DENOTES POUR NUMBER AND DIRECTION

GROOVING BRIDGE FLOORS RIGHT SIDE	
APPROACH SLABS *	199 SQ.FT.
BRIDGE DECK **	1,778 SQ.FT.
TOTAL	1,977 SQ.FT.

* INCLUDES AN APPROXIMATE 2'-0" WIDTH OF GROOVING ON EXISTING APPROACH SLAB

** INCLUDES AN APPROXIMATE 11" WIDTH OF GROOVING ON EXISTING BRIDGE DECK

DRAWN BY: T. K. BOYD DATE: 03/26
CHECKED BY: A. D. BRENNER DATE: 03/26
DESIGN ENGINEER OF RECORD: A. L. PHILLIPS DATE: 03/26



8/4/2026

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PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
BILL OF MATERIAL
RIGHT SIDE

REVISIONS						SHEET NO. S3-41
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #3

QUANTITIES FOR CONCRETE PARAPET AND
CONCRETE MEDIAN ARE NOT INCLUDED

QUANTITIES FOR CONCRETE PARAPET AND
CONCRETE MEDIAN ARE NOT INCLUDED

QUANTITIES FOR CONCRETE PARAPET AND
CONCRETE MEDIAN ARE NOT INCLUDED

SUPERSTRUCTURE REINFORCING STEEL
LENGTHS ARE BASED ON THE
FOLLOWING MINIMUM SPLICE LENGTHS



T. K. BOYD DATE: 03/26
A. D. BRENNER DATE: 03/26
NEER OF RECORD: A. L. PHILLIPS DATE: 03/26

* DENOTES EPOXY COATED REINFORCING



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ALL BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. I-5715
MECKLENBURG COUNTY
 STATION: 29+87.44 -Y2-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
BILL OF MATERIAL

STR. #3

K:\B01-Structures\Bridges\NC\01036524 - I-5715 Structure Design\Coord\Sign\Site *2\Structure 3\Final\403.085.151715.SW\EL.590359.043.dgn 7/31/2026

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR PILE SPlice DETAILS, SEE SHEET 4 OF 4.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE PROTECTIVE COATING.THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND SHALL NOT BE USED.

THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE FRONT FACE AT THE RATE OF 2%.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE PARAPET & END POSTS ARE CAST IF SLIP FORMING IS USED.

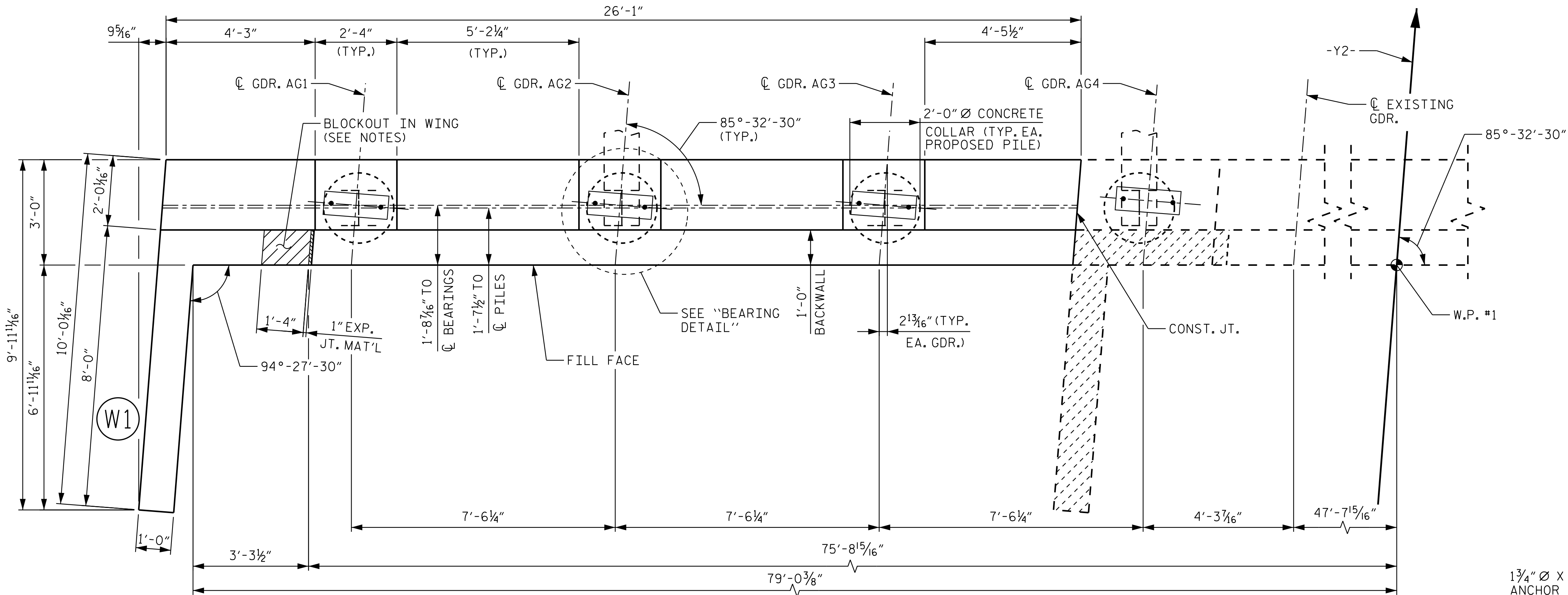
FOR "SECTION A-A", SEE "END BENT 1" SHEET 4 OF 4.

EPOXY COAT THE END BENT CAP AFTER ADJUSTMENTS ARE MADE TO BEARINGS AND ANCHOR BOLTS ARE GROUTED.

D1 AND D2 DOWELS SHALL BE INSTALLED IN THE EXISTING CONCRETE BACKWALL OR CAP USING AN ADHESIVELY ANCHORED SYSTEM.LEVEL ONE FIELD TESTING IS REQUIRED.THE YIELD LOAD OF THE D1 DOWELS IS 30.0 KIPS AND THE YIELD LOAD OF THE D2 DOWELS IS 13.2 KIPS. EMBEDMENT LENGTH TO BE DETERMINED BY THE MANUFACTURER OF THE ADHESIVELY ANCHORED DOWELS.FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.

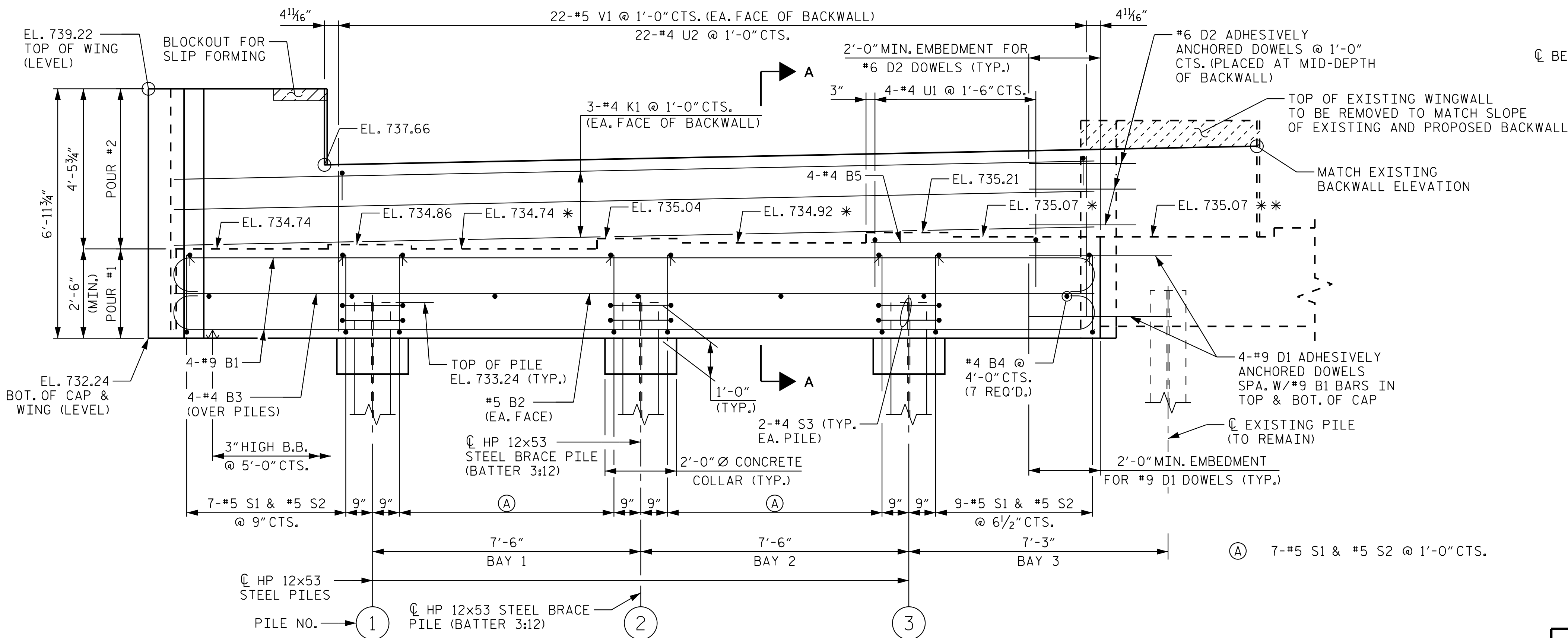
ELEVATIONS ARE BASED ON AVAILABLE SURVEY INFORMATION AND EXISTING BRIDGE PLANS.CONTRACTOR TO FIELD VERIFY ELEVATIONS PRIOR TO CONSTRUCTION.

IN LIEU OF INCREASED SOLE PLATE THICKNESS FOR GIRDERS PLACED ON EXISTING END BENT CAP,THE CONTRACTOR MAY ELECT TO CONSTRUCT A BRIDGE SEAT ON THE EXISTING END BENT CAPS FOR GIRDERS AG4 AND AG16.FOR OPTIONAL BRIDGE SEAT DETAILS, SEE "END BENT 1 SECTION AND DETAILS" SHEET.



PLAN

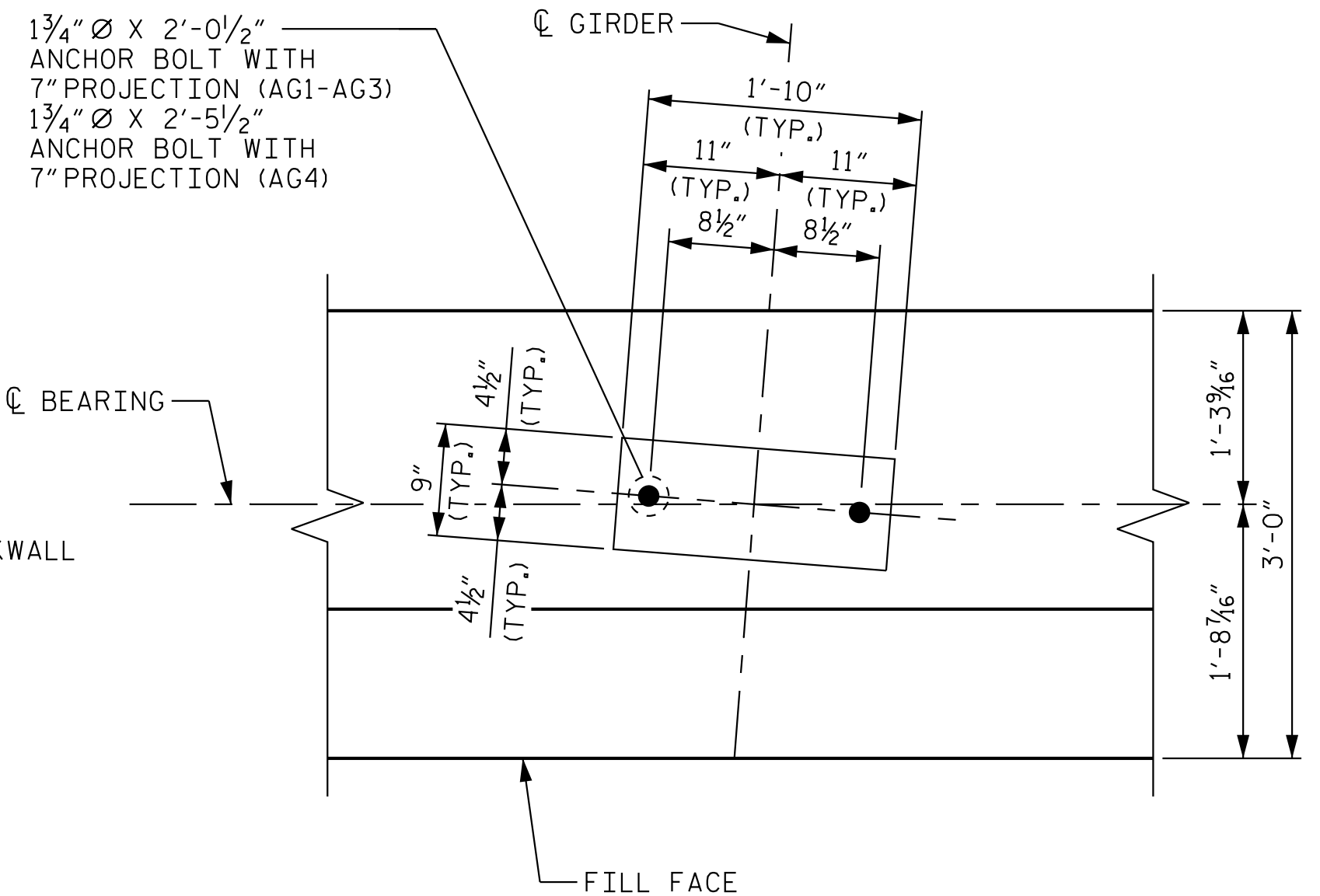
AREA OF EXISTING WINGWALL TO BE REMOVED



ELEVATION

* FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEATS, SEE "SECTION A-A" ON SHEET 4 OF 4
** BEAM SEAT ELEVATION OF NEW GIRDER ON EXISTING CAP AT C/L OF BEARING

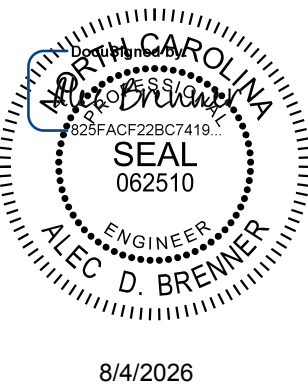
REINFORCING IN WING NOT SHOWN FOR CLARITY.FOR DETAILS SEE SHEET 3 OF 4



BEARING DETAIL

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 1 OF 4



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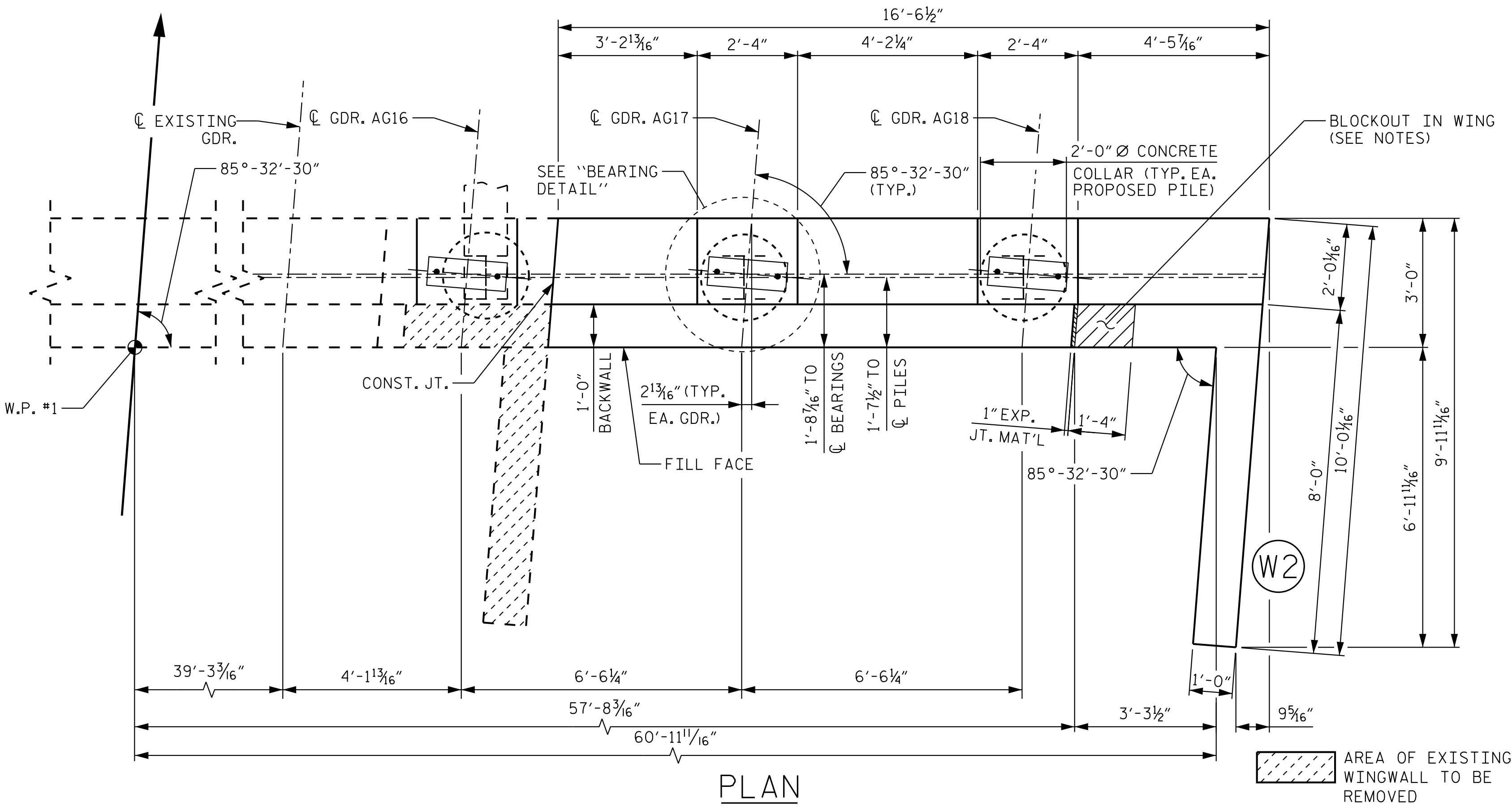
DRAWN BY: T. K. BOYD DATE: 03/26
CHECKED BY: A. D. BRENNER DATE: 03/26
DESIGN ENGINEER OF RECORD: A. L. PHILLIPS DATE: 03/26

REVISIONS						SHEET NO. S3-43
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1			3			TOTAL SHEETS 63
2			4			

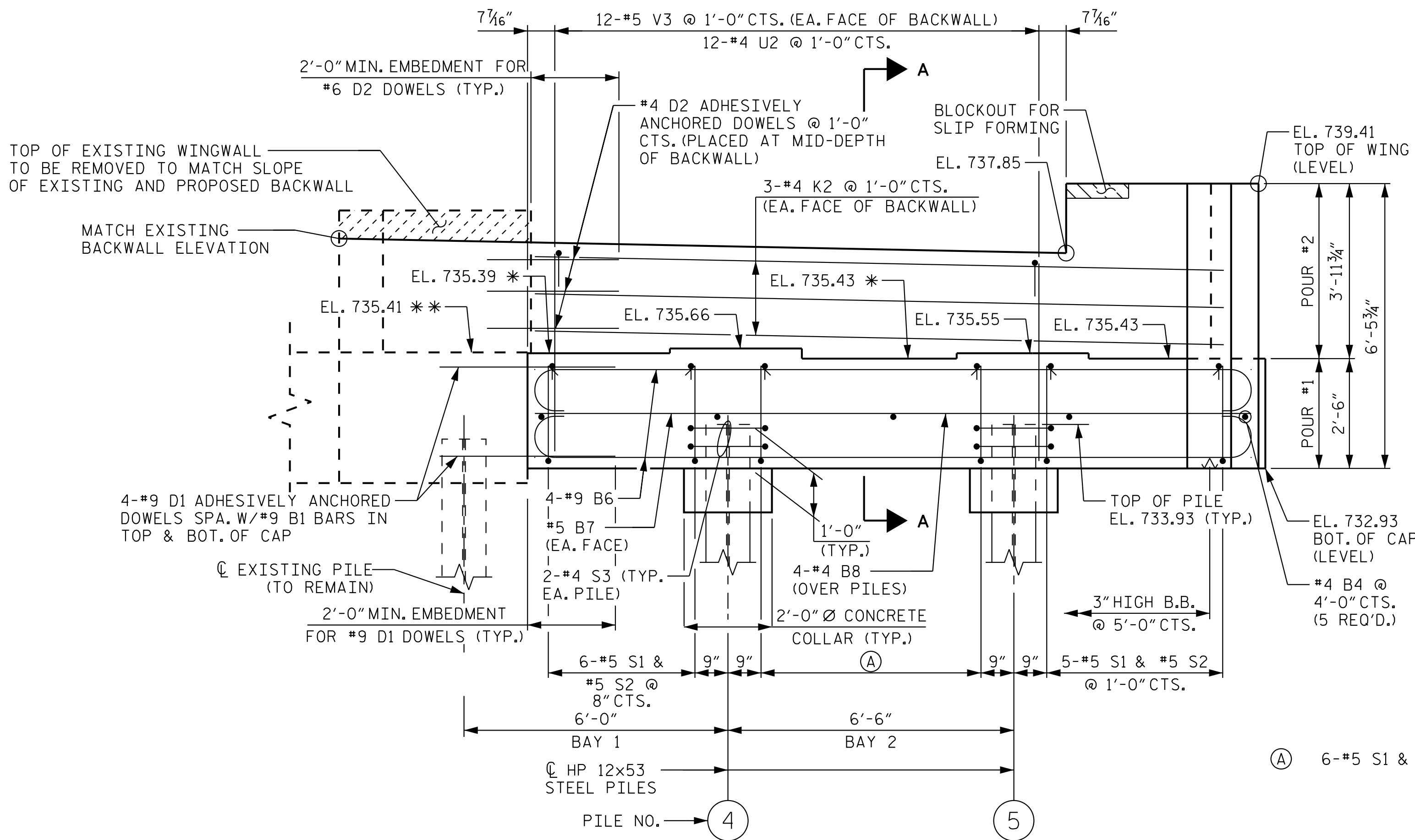
STR. #3

NOTES

FOR NOTES, SEE SHEET 1 OF 4.



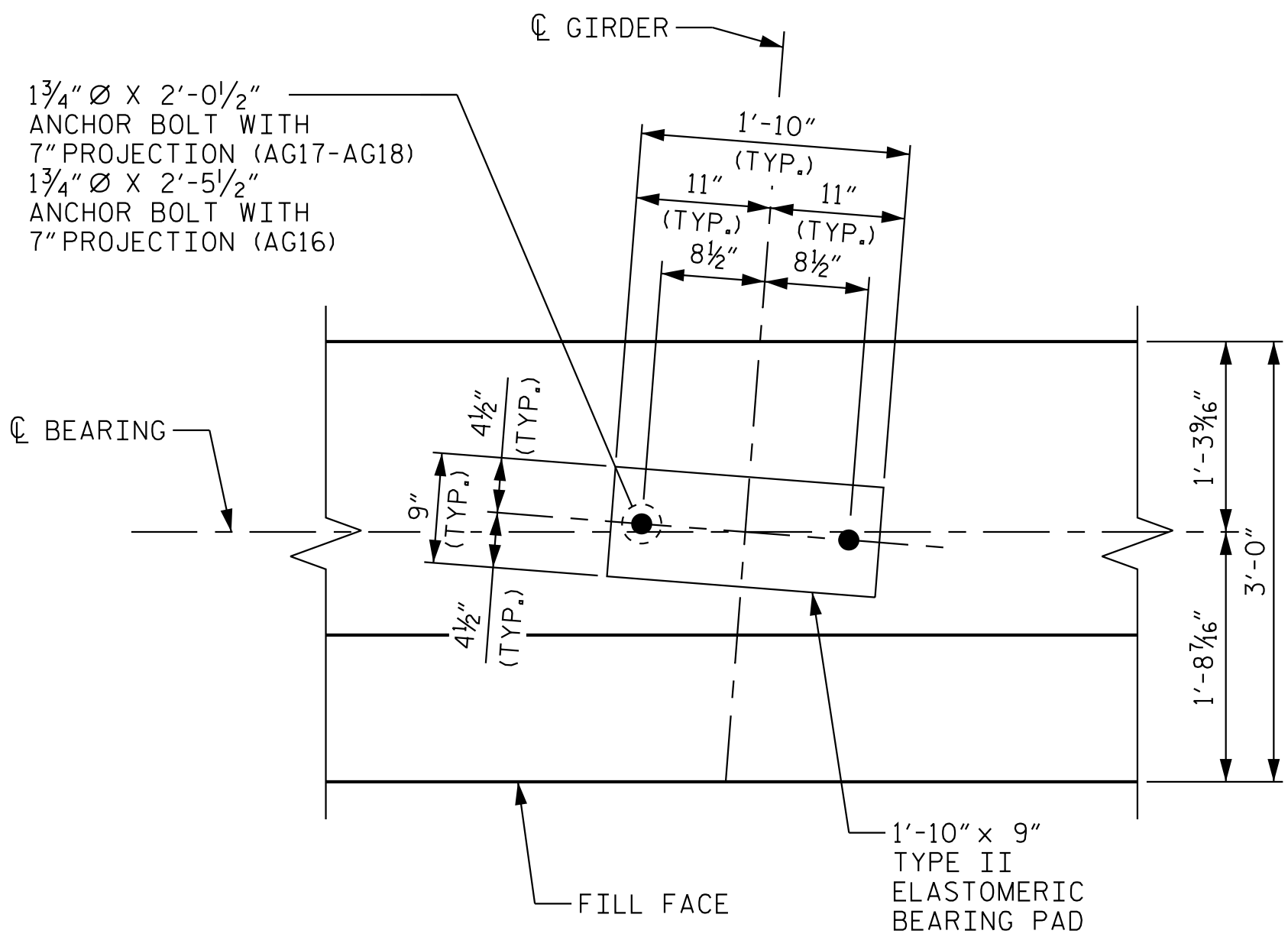
PLAN



ELEVATION

* FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEATS, SEE "SECTION A-A" ON SHEET 4 OF 4
** BEAM SEAT ELEVATION OF NEW GIRDER ON EXISTING CAP AT C/L OF BEARING

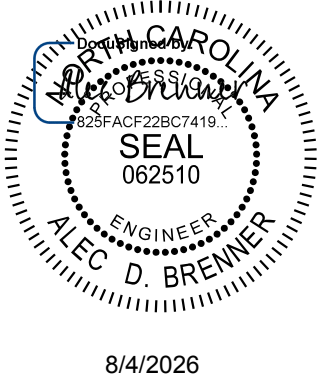
REINFORCING IN WING NOT SHOWN FOR CLARITY. FOR DETAILS SEE SHEET 3 OF 4



BEARING DETAIL

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 2 OF 4



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1
RIGHT EXTENSION

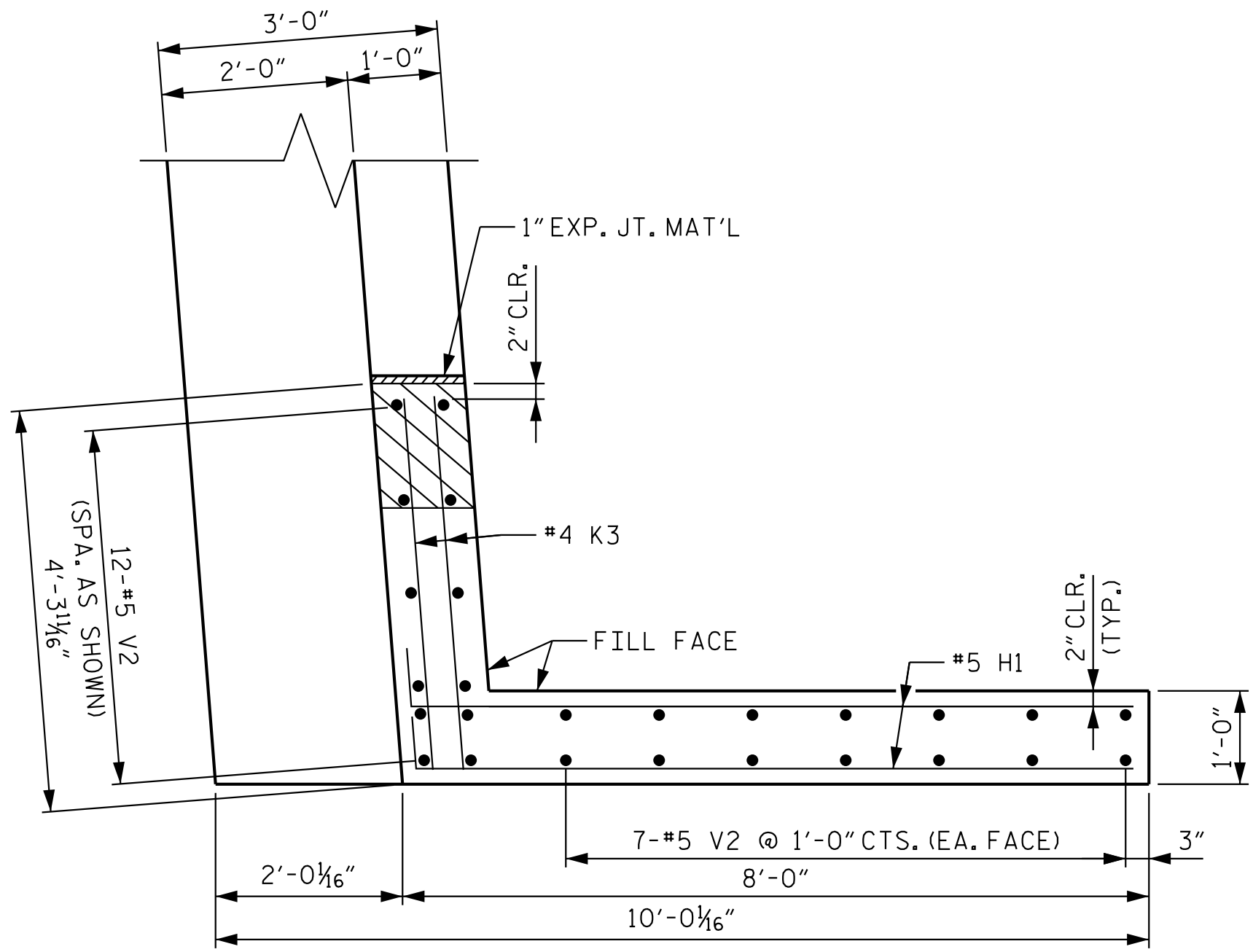
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2			4			

STR. #3

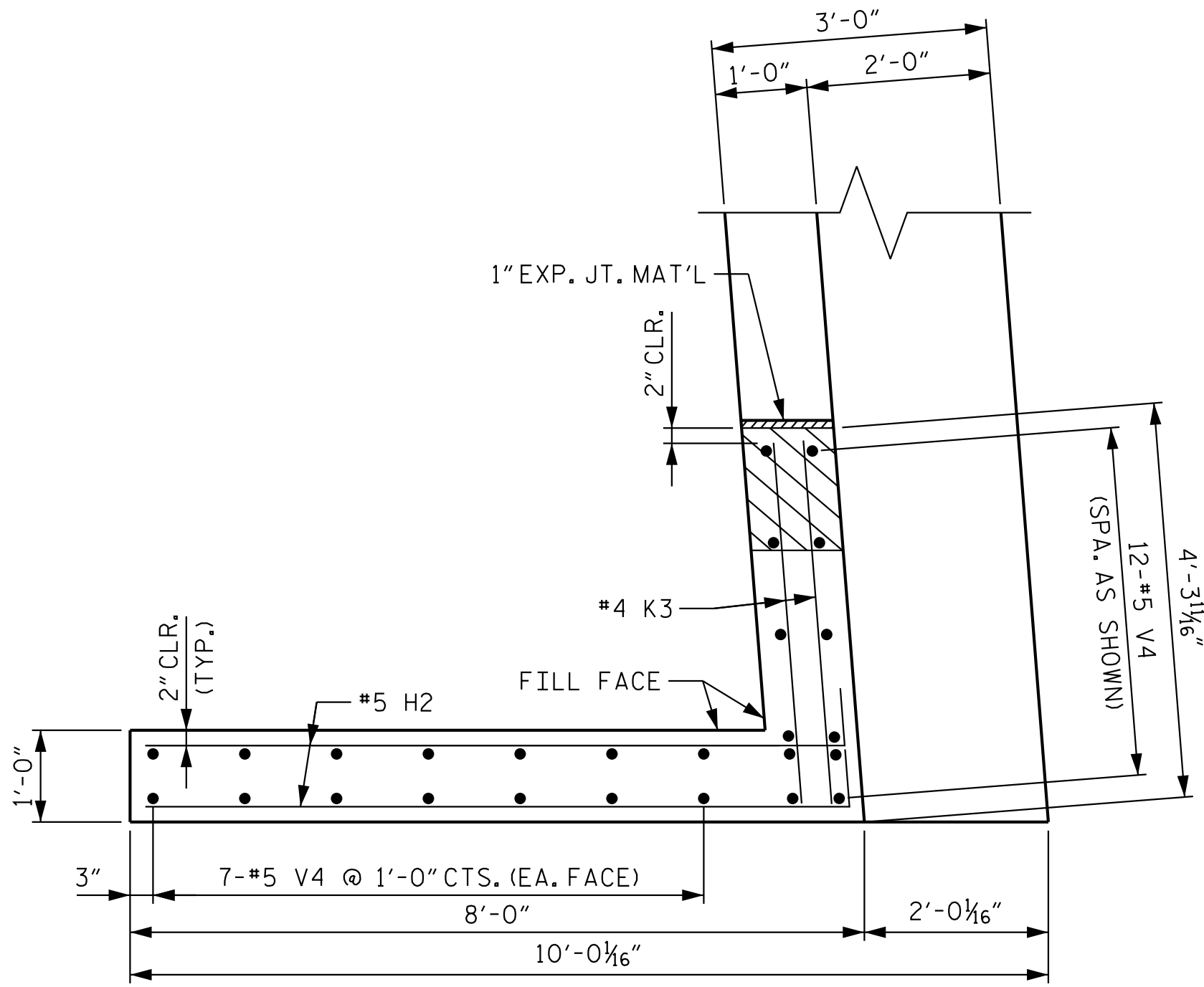
DRAWN BY: T. K. BOYD DATE: 03/26
CHECKED BY: A. D. BRENNER DATE: 03/26
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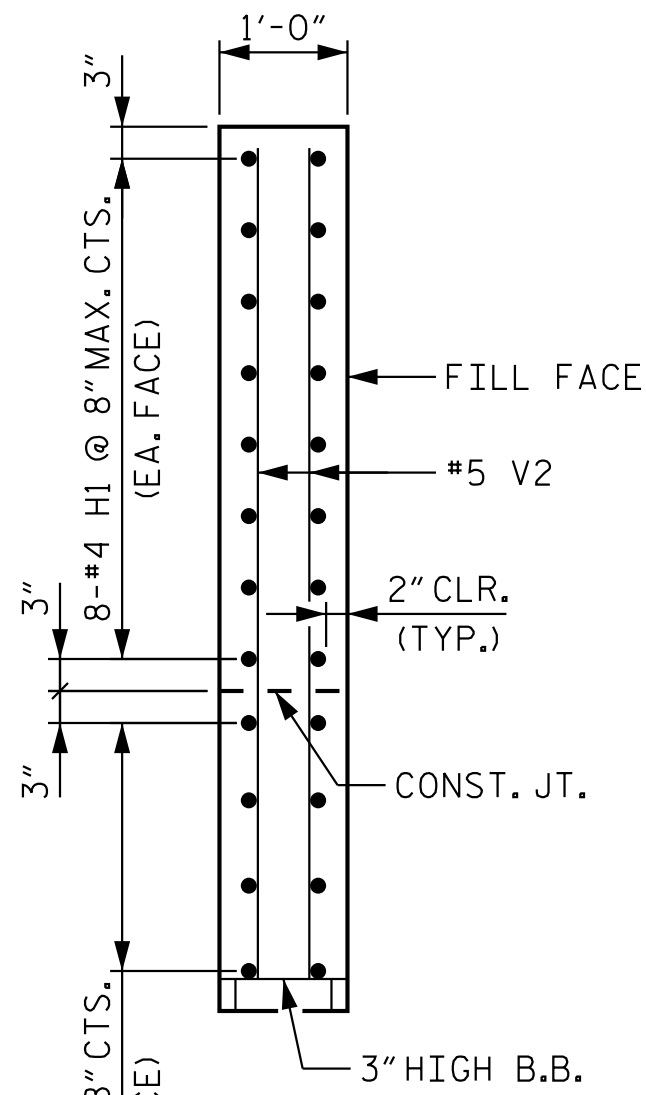
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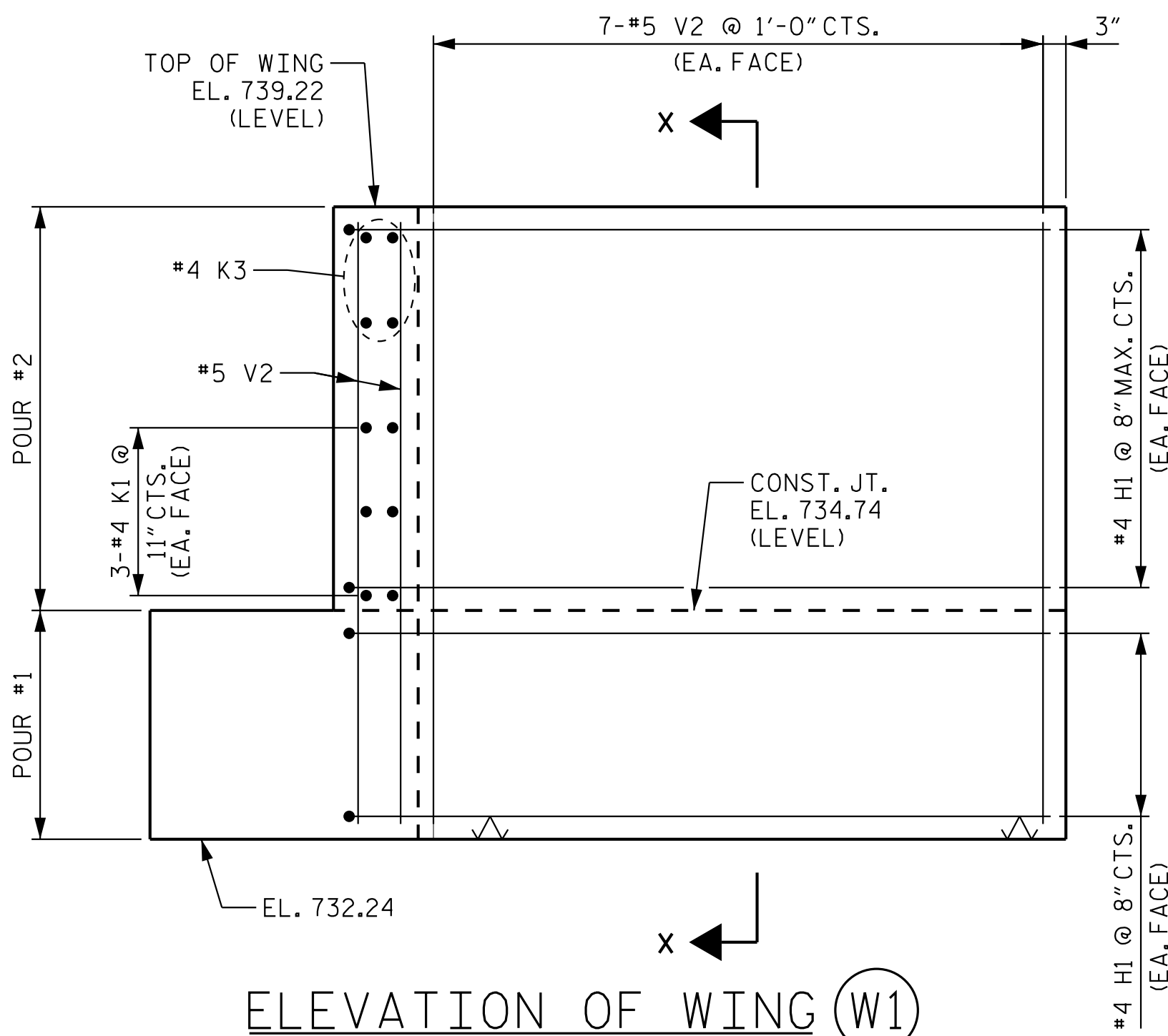
PLAN OF WING (W1)



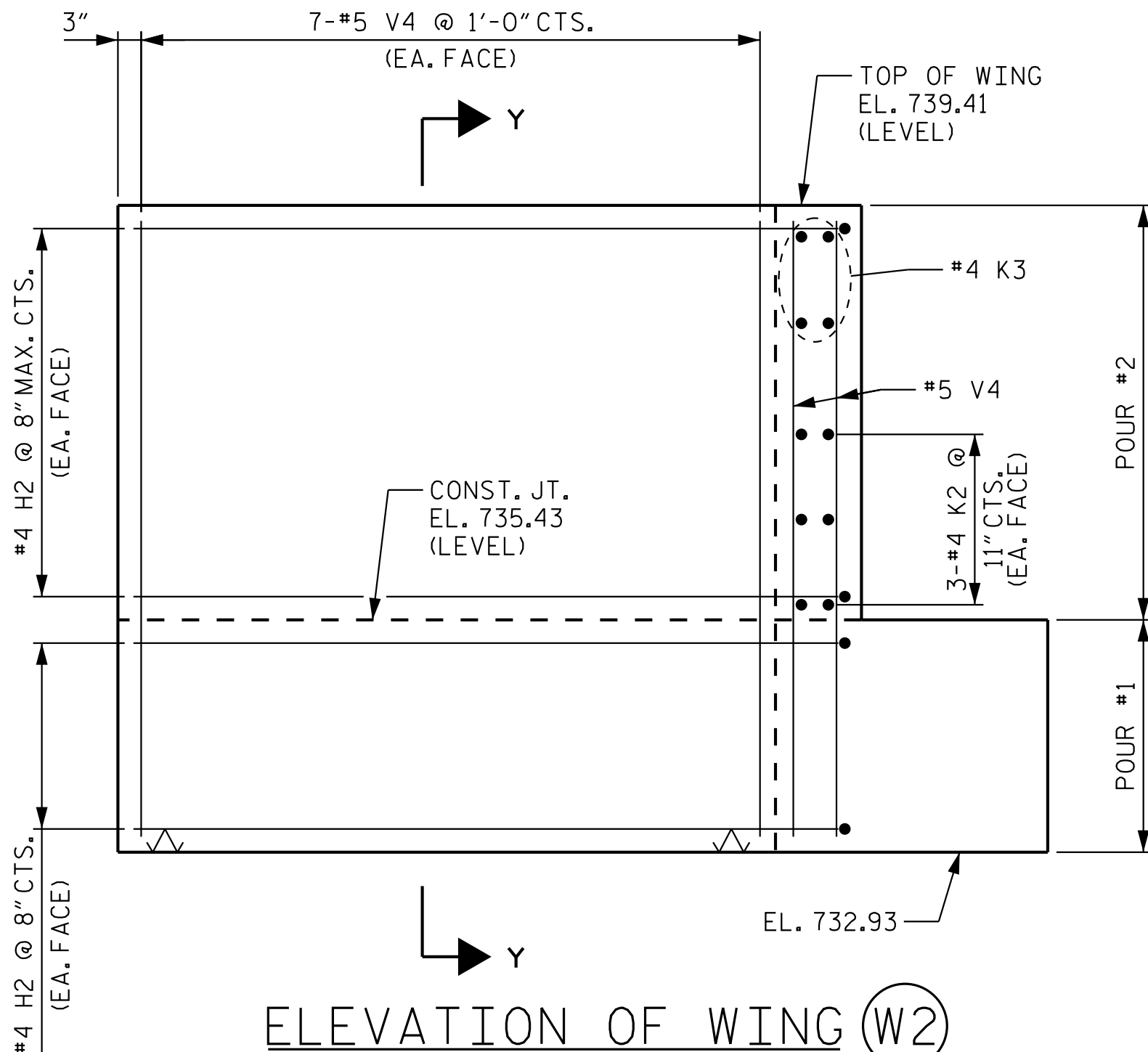
PLAN OF WING (W2)



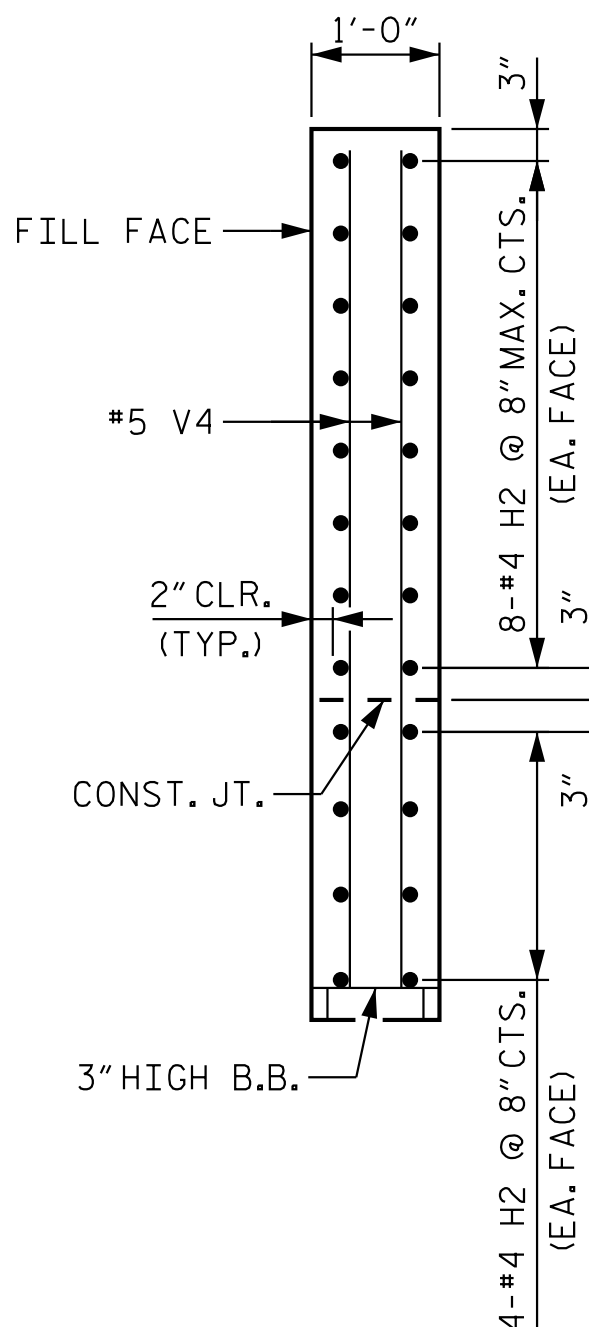
SECTION X-X



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION Y-Y

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 3 OF 4



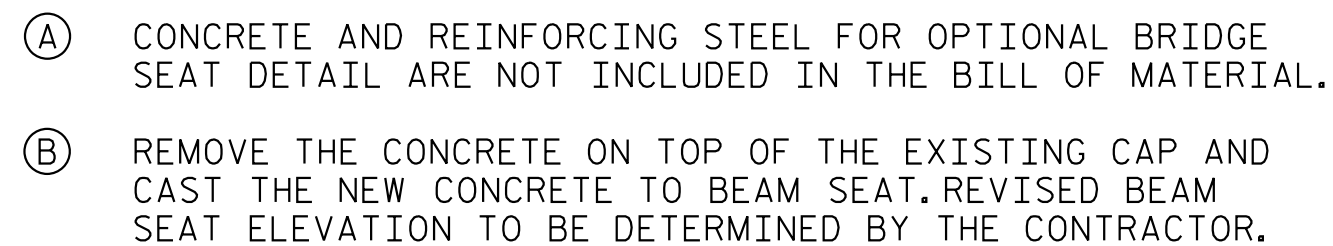
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1			3			TOTAL SHEETS 63
2			4			

STR. #3

[illegible]

ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. I-5715
MECKLENBURG COUNTY
 STATION: 29+87.44 -Y2-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1
SECTION AND DETAILS

REVISIONS						SHEET NO. S3-46
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #3

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Professional Engineer Seal for ALEC D. BRENNER, State of North Carolina, License No. 825FACF72BC7419...

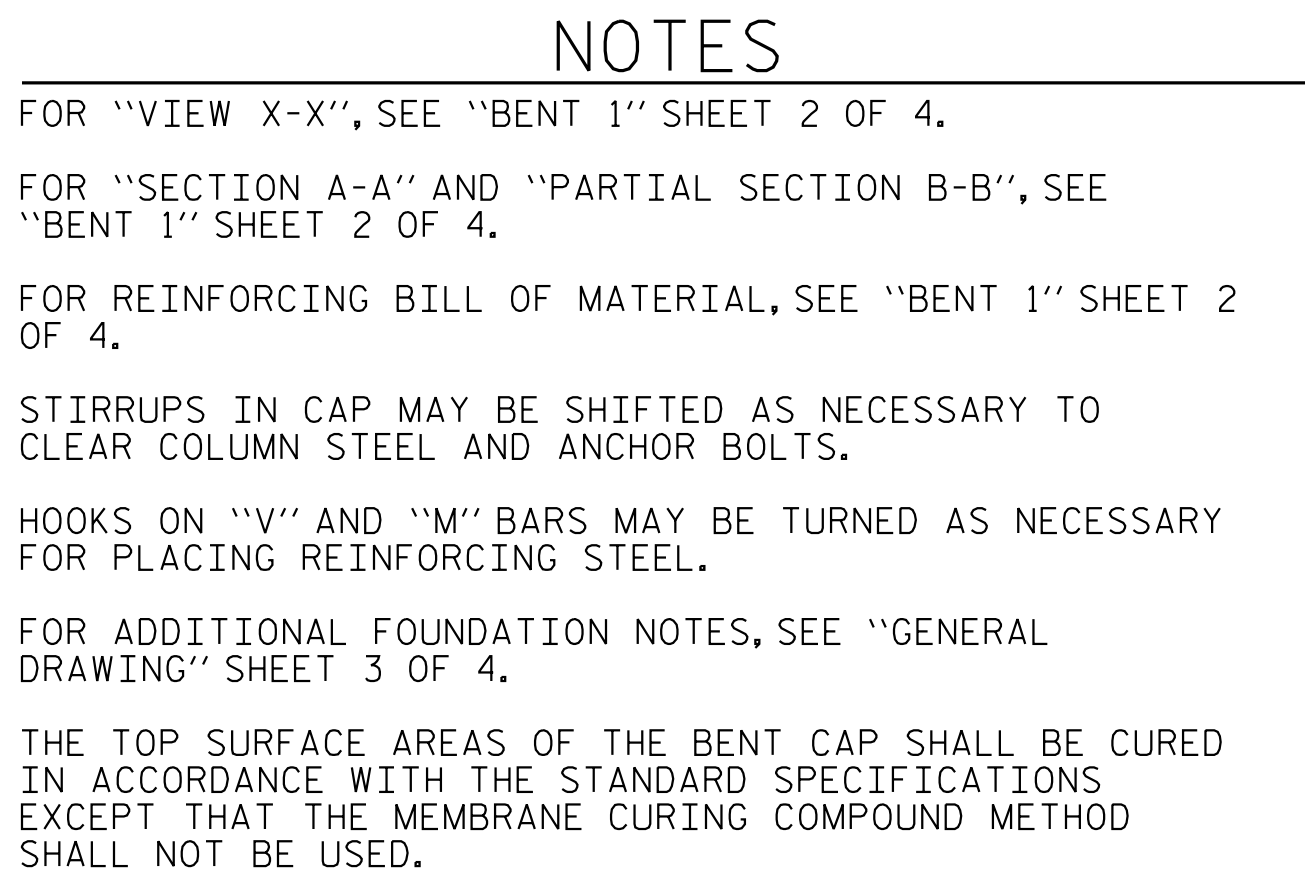
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SPAN B

11" (TYP.)

11" (TYP.)

10" (TYP.)

5" (TYP.)

5" (TYP.)

5" (TYP.)

1'-8"

1'-8"

13/4" Ø X 2'-0 1/2" ANCHOR BOLT WITH 7" PROJECTION (TYP.)

CL GIRDER

CL BEARING & ANCHOR BOLTS

CL BENT 1 CONTROL LINE

SPAN A

8 1/2" (TYP.)

8 1/2" (TYP.)

1'-5" (TYP.)

ELASTOMERIC BEARING PAD, SEE "ELASTOMERIC BEARING DETAILS" SHEET

ALL DIMENSIONS AND DETAILS SHOWN
ARE TYPICAL FOR ALL BEARINGS @
EACH BRIDGE SEAT LOCATION.

PROJECT NO. I-5715
MECKLENBURG COUNTY
 STATION: 29+87.44 -Y2-

SHEET 1 OF 4



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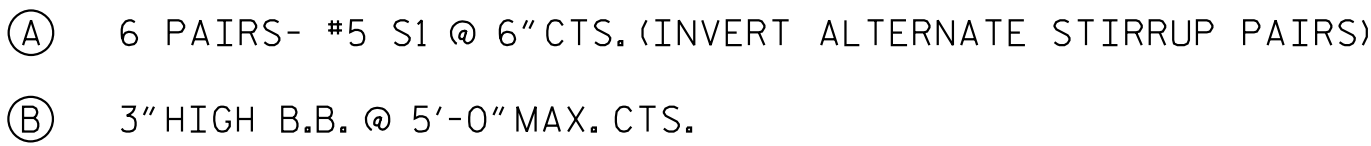
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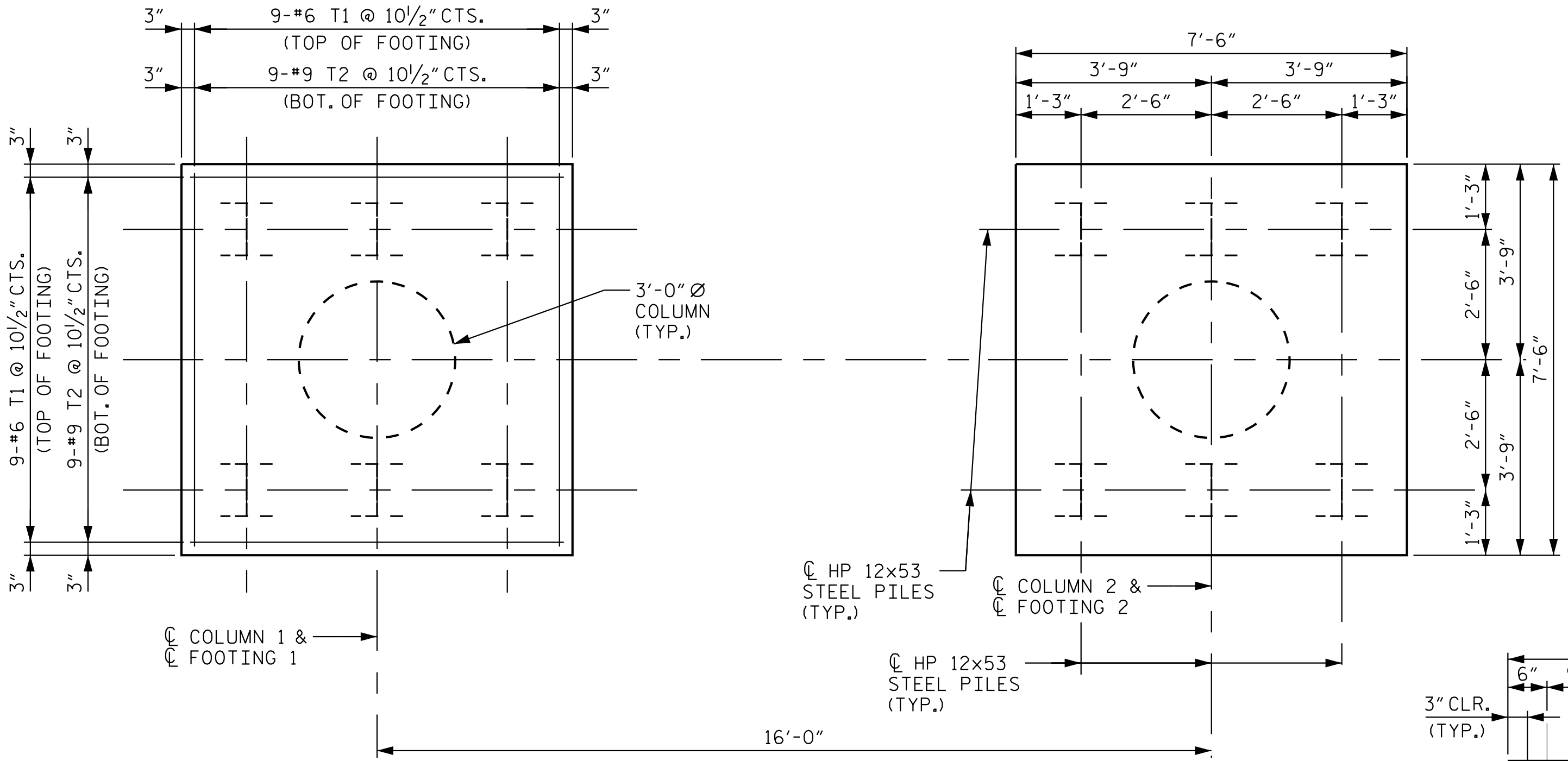
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NO.	BY:	DATE:	NO.	BY:	DATE:	S3-47
1			3			TOTAL SHEETS 63
2			4			

STR. #3

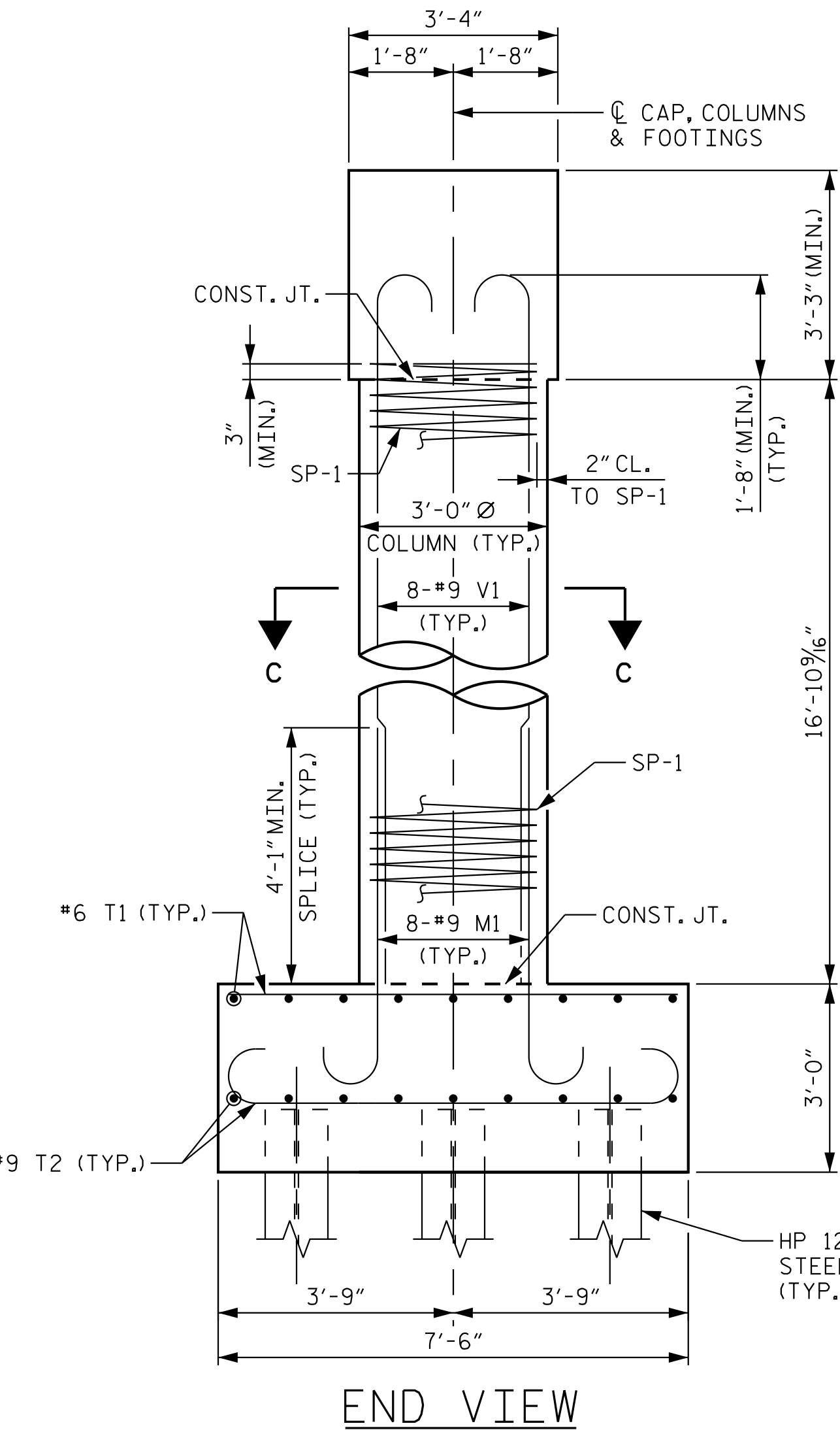
ELEVATION

DRAWN BY: T. K. BOYD DATE: 03/26
 CHECKED BY: A. D. BRENNER DATE: 03/26
 DESIGN ENGINEER OF RECORD: A. L. PHILLIPS DATE: 03/26

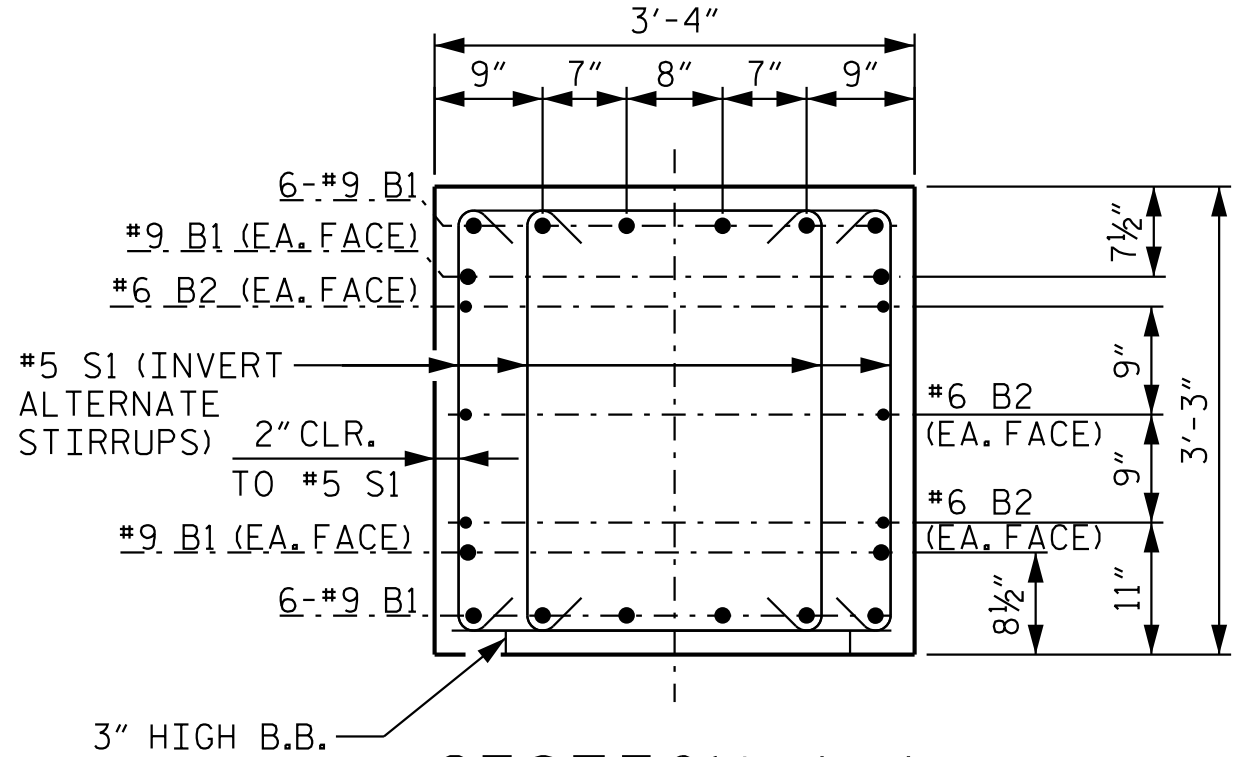
K:\BRI_Structures\Bridges\N\01036524 - I-5715 Structure Design\Coord\Sign\Site *2\Structure 3\Final\403.095.15175_SMU.B2.590359_048.dgn 8/4/2026



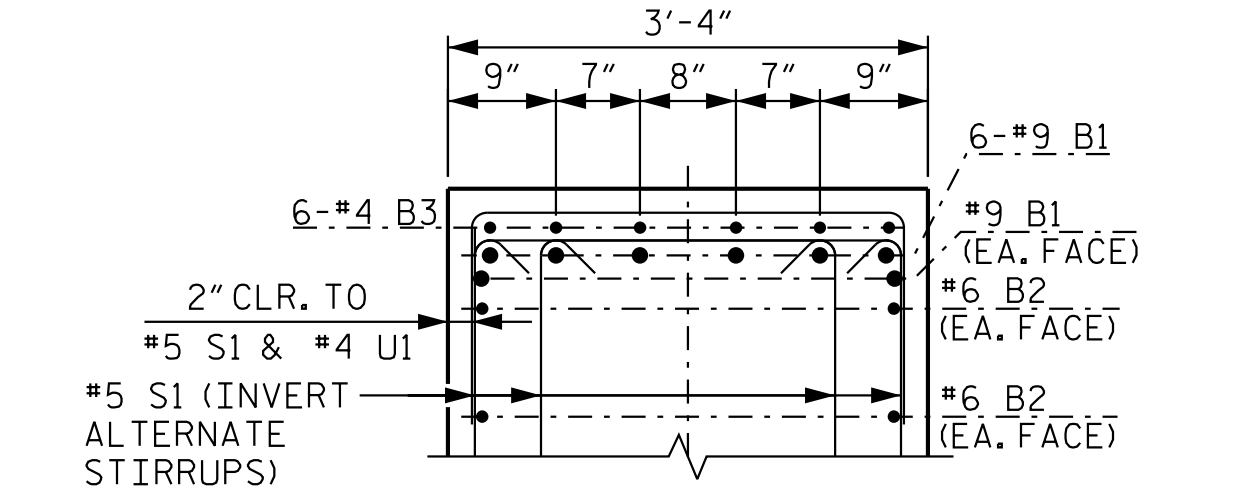
PLAN OF FOOTINGS



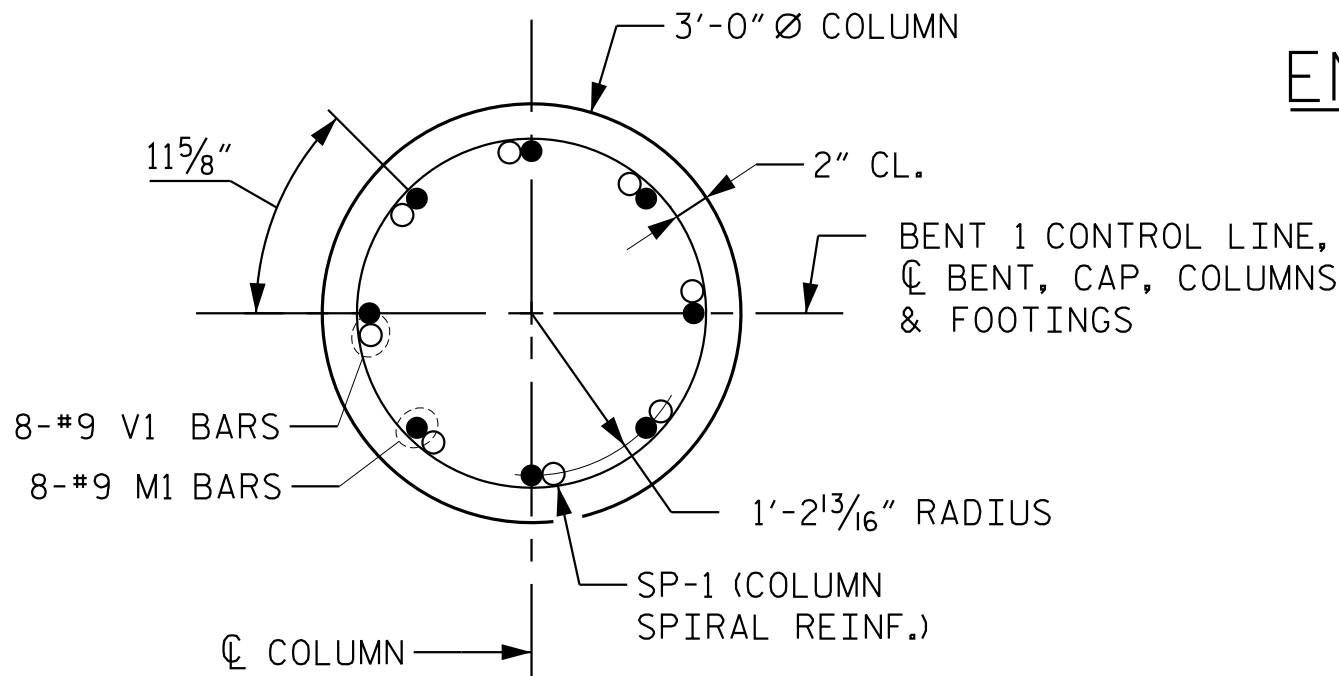
END VIEW



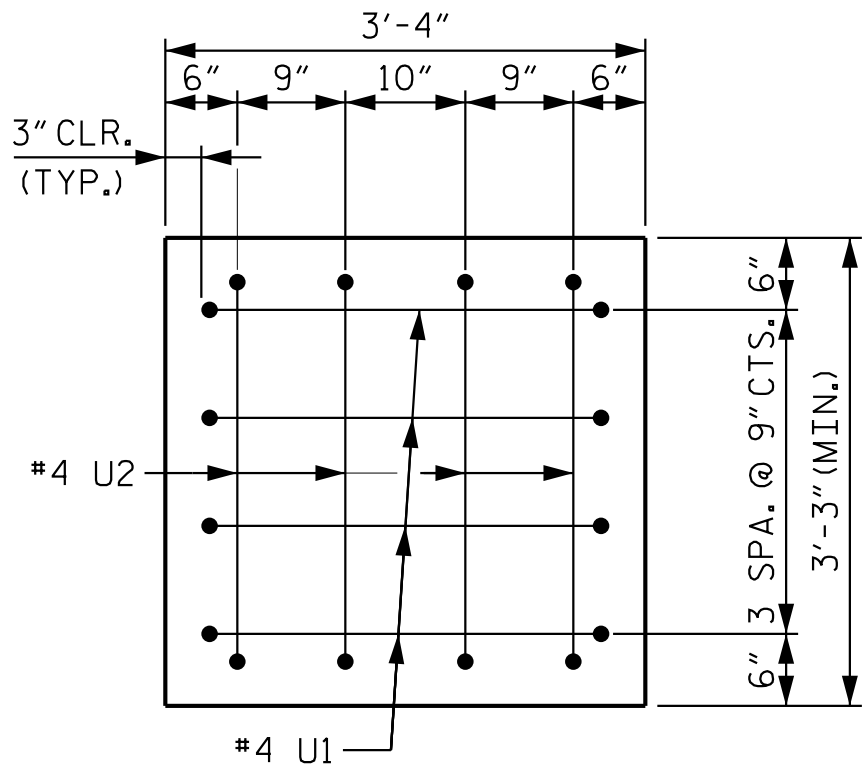
SECTION A-A



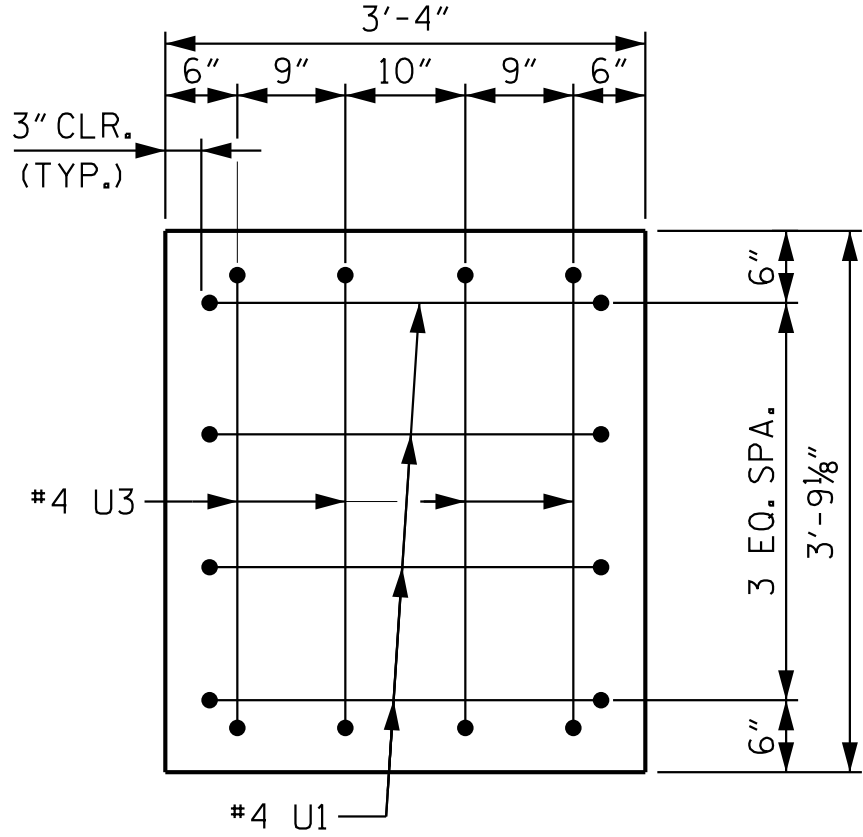
PARTIAL SECTION B-B



SECTION C-C

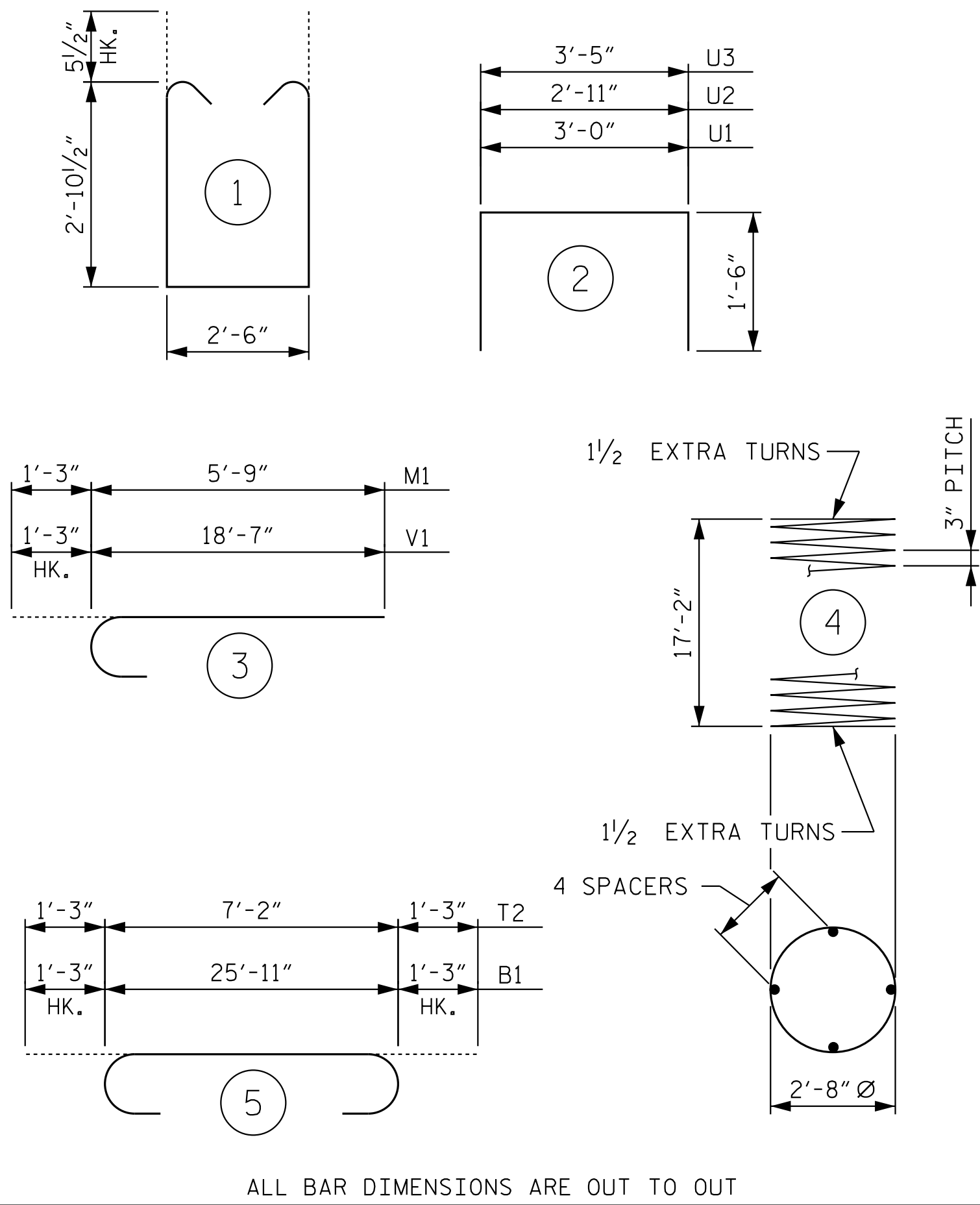


END VIEW X-X

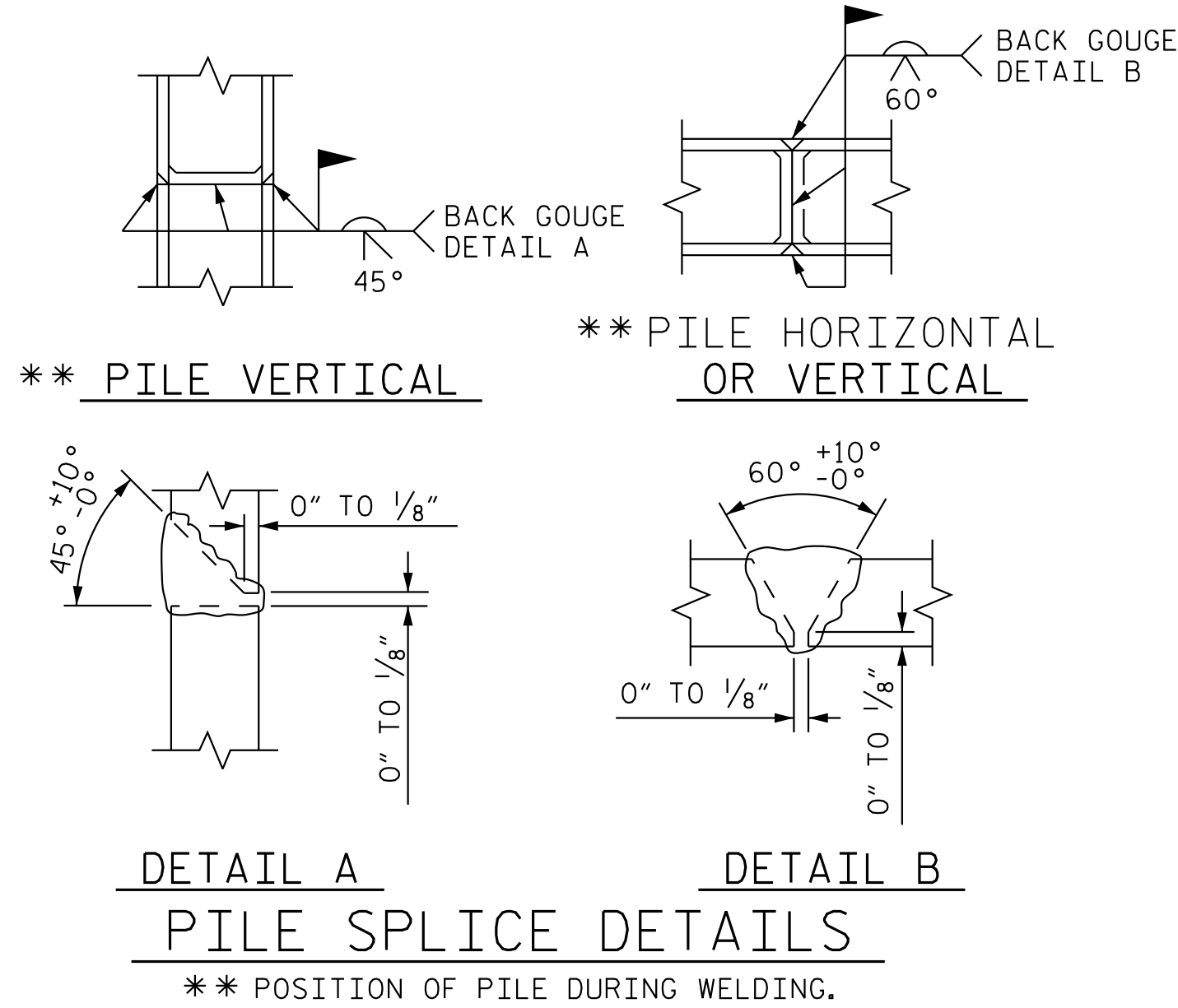


END VIEW Y-Y

BAR TYPES



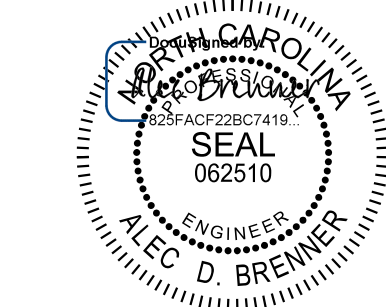
ALL BAR DIMENSIONS ARE OUT TO OUT



DETAIL A

PILE SPLICE DETAILS

** POSITION OF PILE DURING WELDING.



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BILL OF MATERIAL

BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	16	#9	5	28'-5"	1,546
B2	6	#6	STR	25'-11"	234
B3	6	#4	STR	12'-9"	51
M1	16	#9	3	7'-0"	381
S1	68	#5	1	9'-2"	650
T1	36	#6	STR	7'-2"	388
T2	36	#9	5	9'-8"	1,183
U1	38	#4	2	6'-0"	152
U2	4	#4	2	5'-11"	16
U3	4	#4	2	6'-5"	17
V1	16	#9	3	19'-6"	1,061
REINFORCING STEEL					5,679 LBS.
SP-1	2	**	4	590'-0"	788
SPIRAL COLUMN REINFORCING STEEL					788 LBS.
** THE "SP" SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.					

BENT 1 TOTAL QUANTITIES

CLASS A CONCRETE		
POUR 1 (FOOTINGS)		12.5 C.Y.
POUR 2 (COLUMNS)		8.8 C.Y.
POUR 3 (CAP)		11.3 C.Y.
TOTAL CLASS A CONCRETE		32.7 C.Y.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

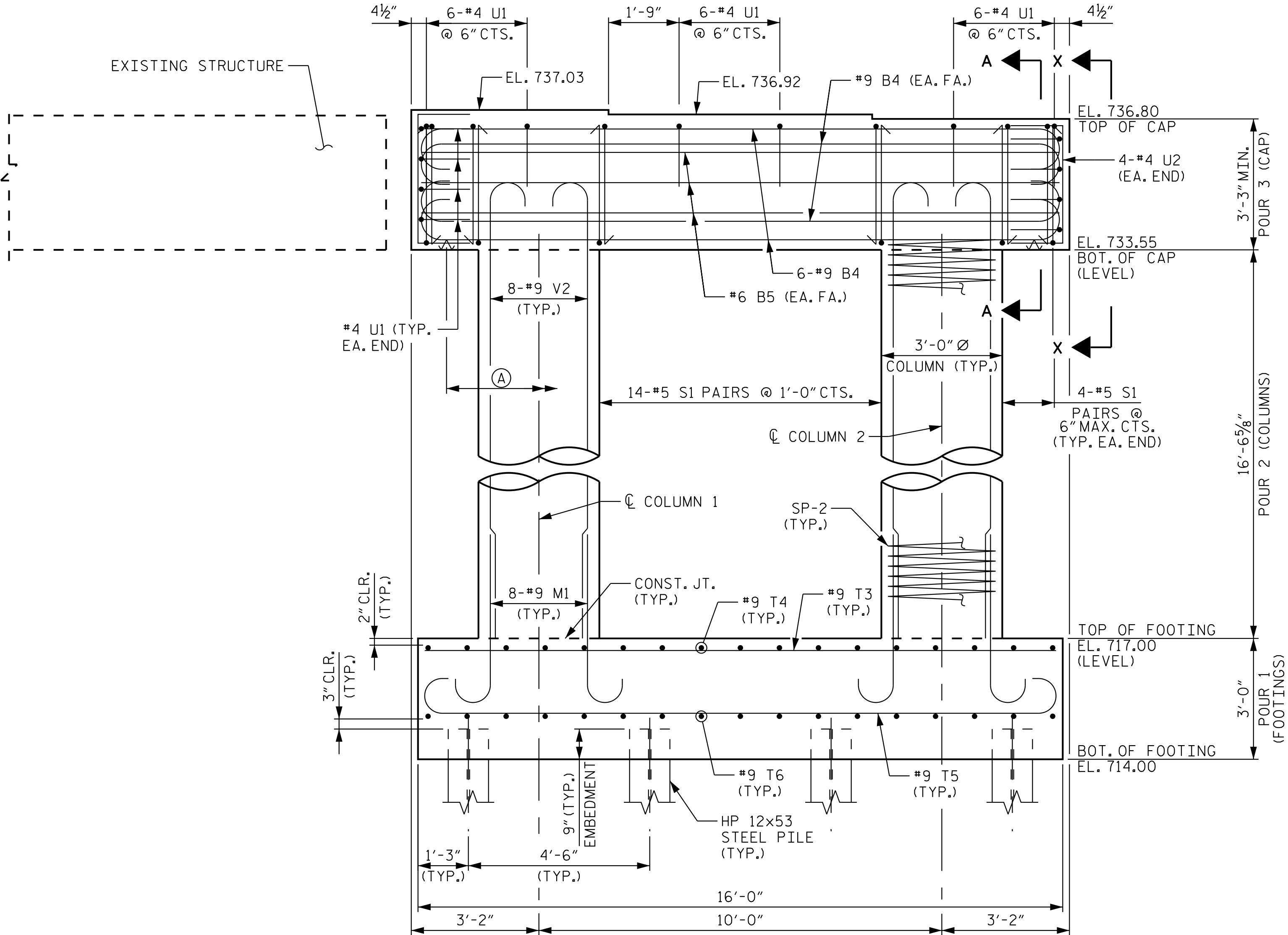
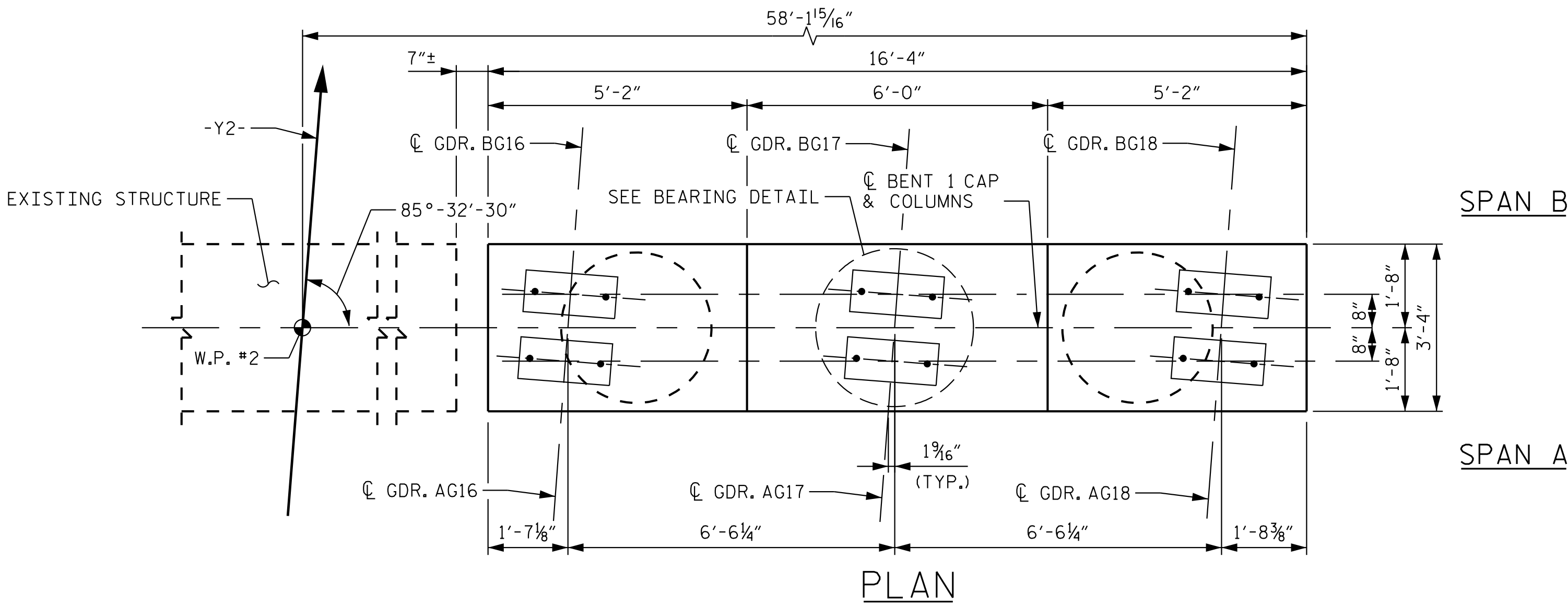
SUBSTRUCTURE
BENT 1
LEFT EXTENSION
SECTIONS & DETAILS

REVISIONS						SHEET NO. S3-48
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #3

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ELEVATION

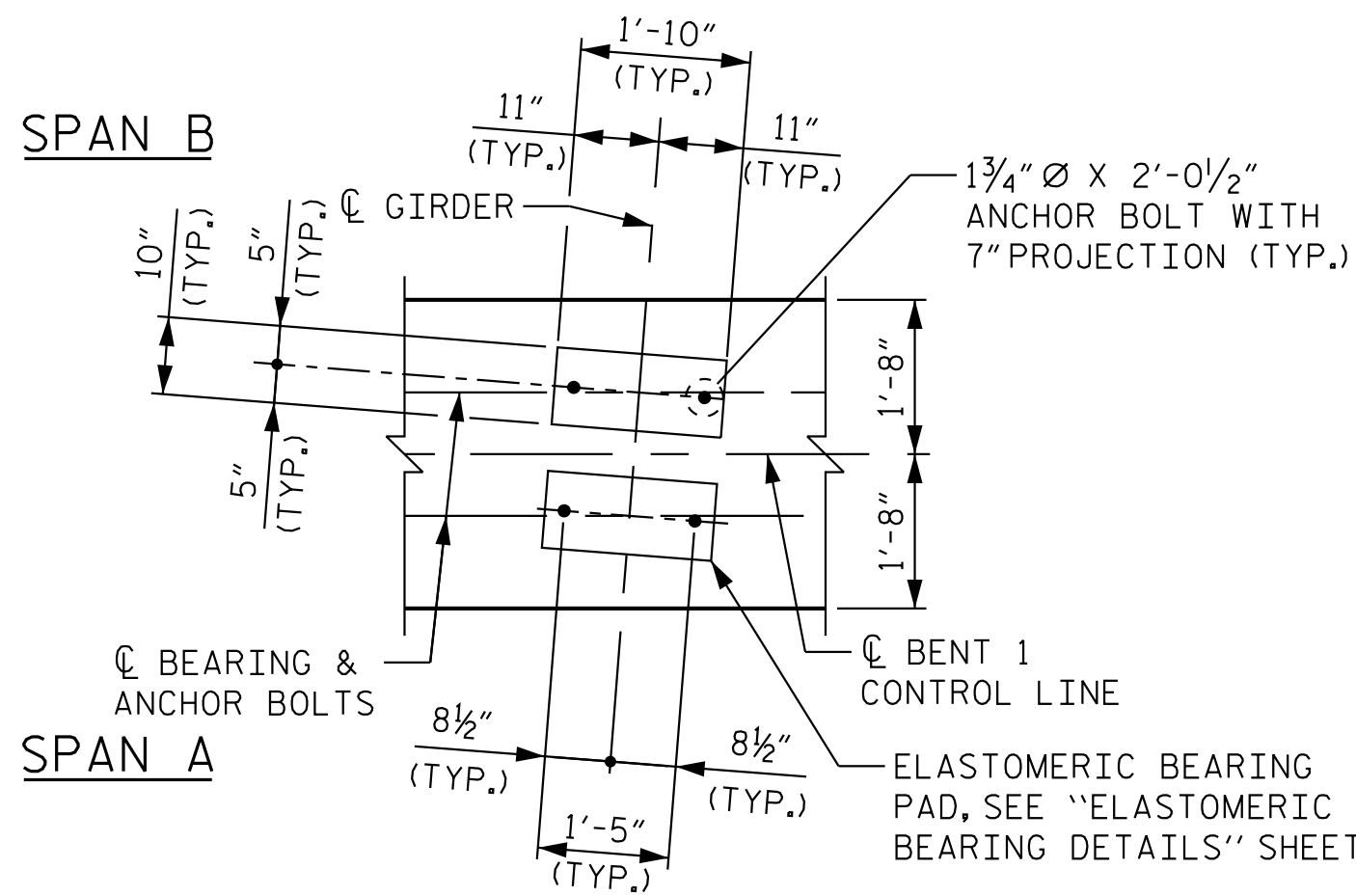
NOTES

FOR "VIEW X-X", SEE "BENT 1" SHEET 4 OF 4.

FOR "SECTION A-A" AND "PARTIAL SECTION B-B", SEE "BENT 1" SHEET 4 OF 4.

FOR REINFORCING BILL OF MATERILA, SEE "BENT 1" SHEET 4 OF 4.

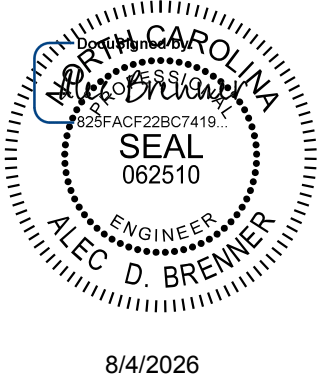
FOR ADDITIONAL NOTES, SEE "BENT 1", SHEET 1 OF 4.



BEARING DETAIL

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.

Ⓐ 3" HIGH B.B. @ 5'-0" CTS. MAX.



8/4/2026

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PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 3 OF 4

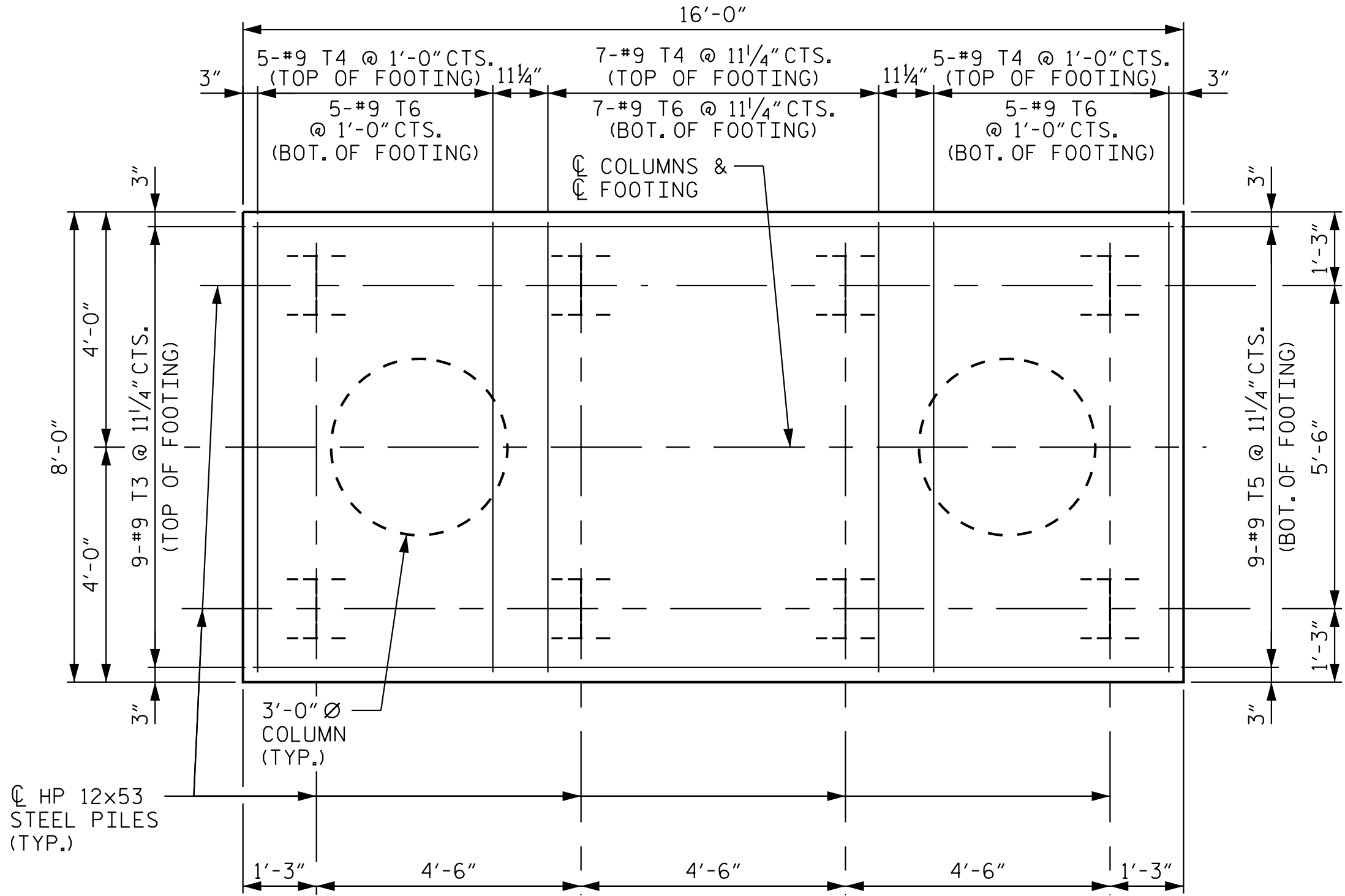
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 1
RIGHT EXTENSION
PLAN AND ELEVATION

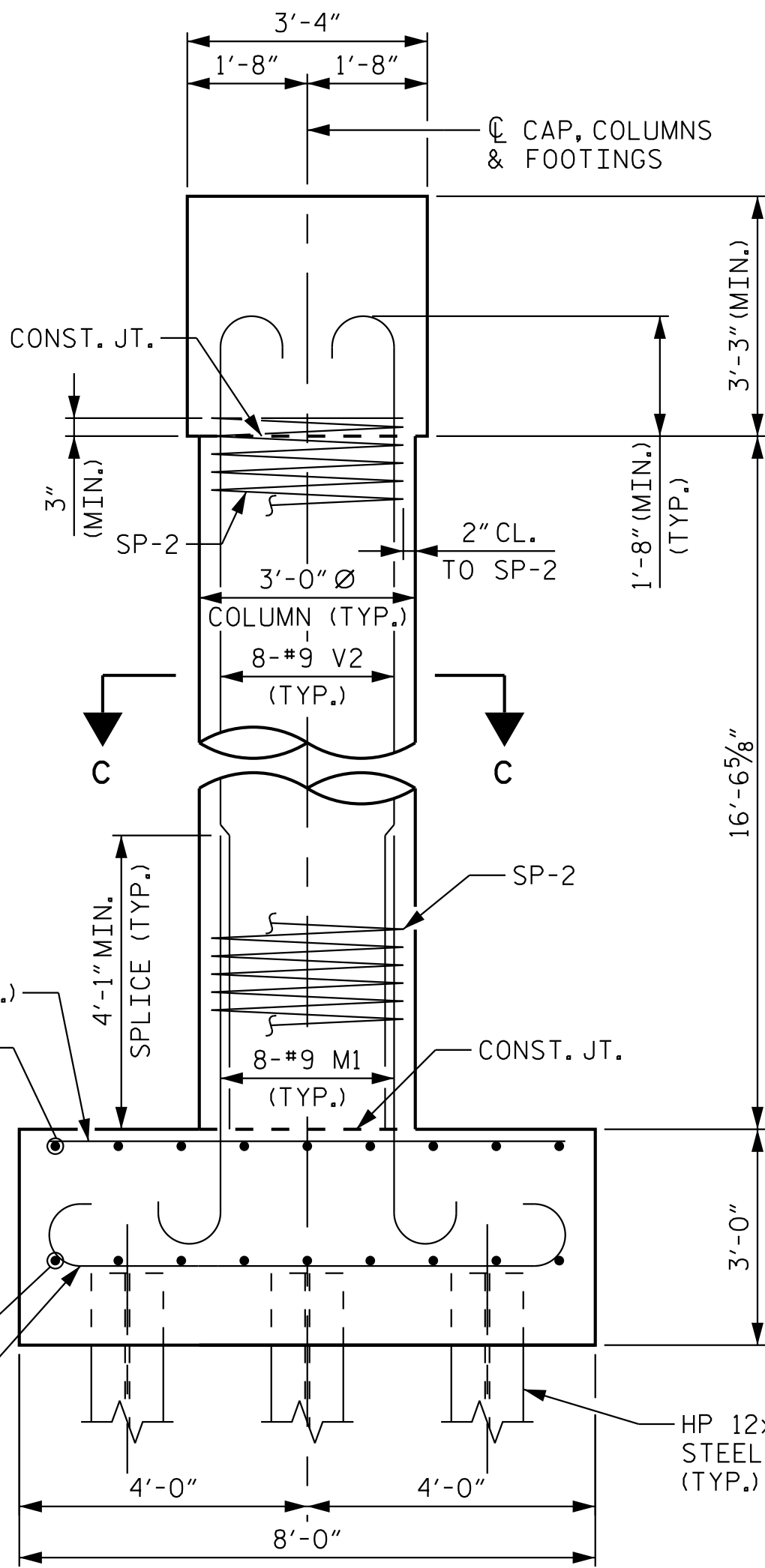
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NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

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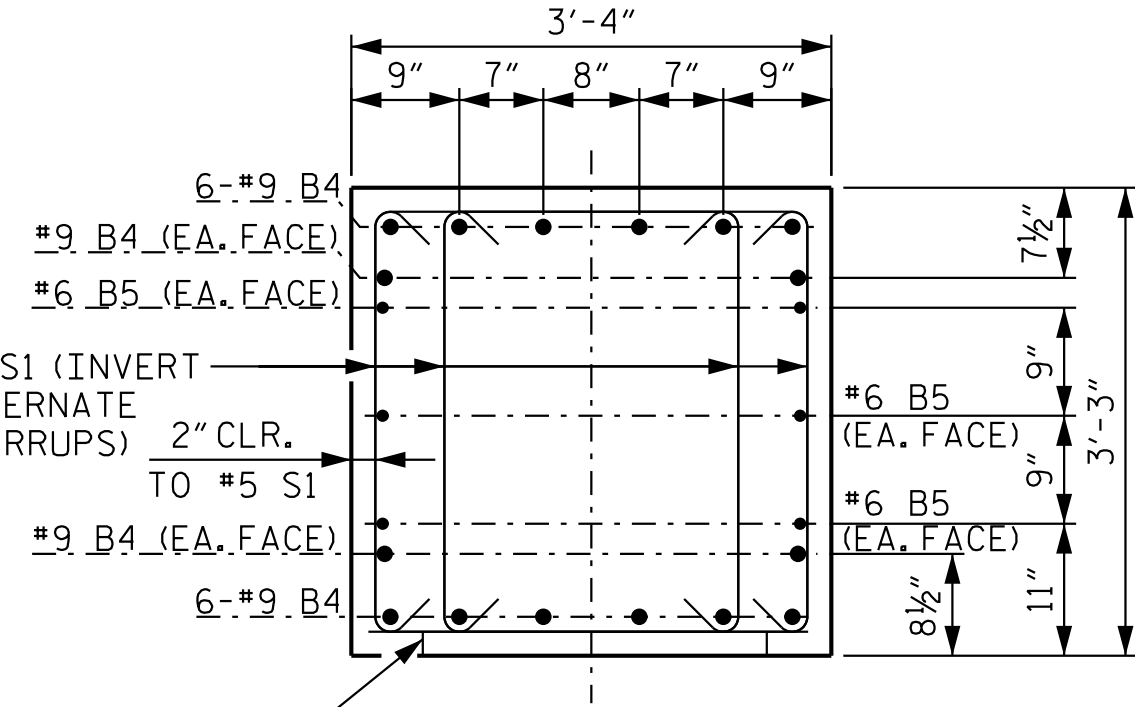
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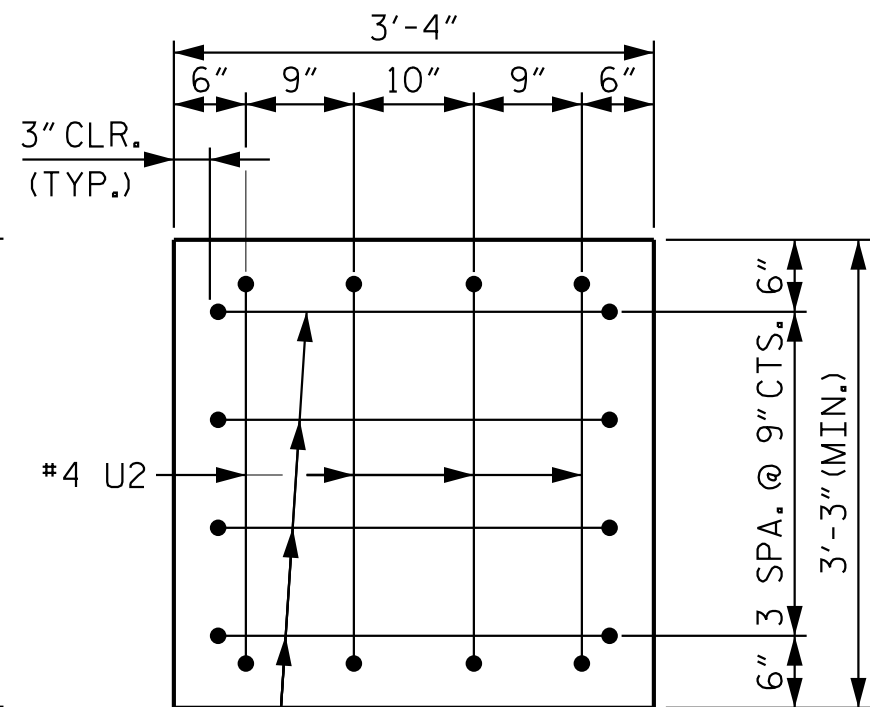
PLAN OF FOOTING



END VIEW

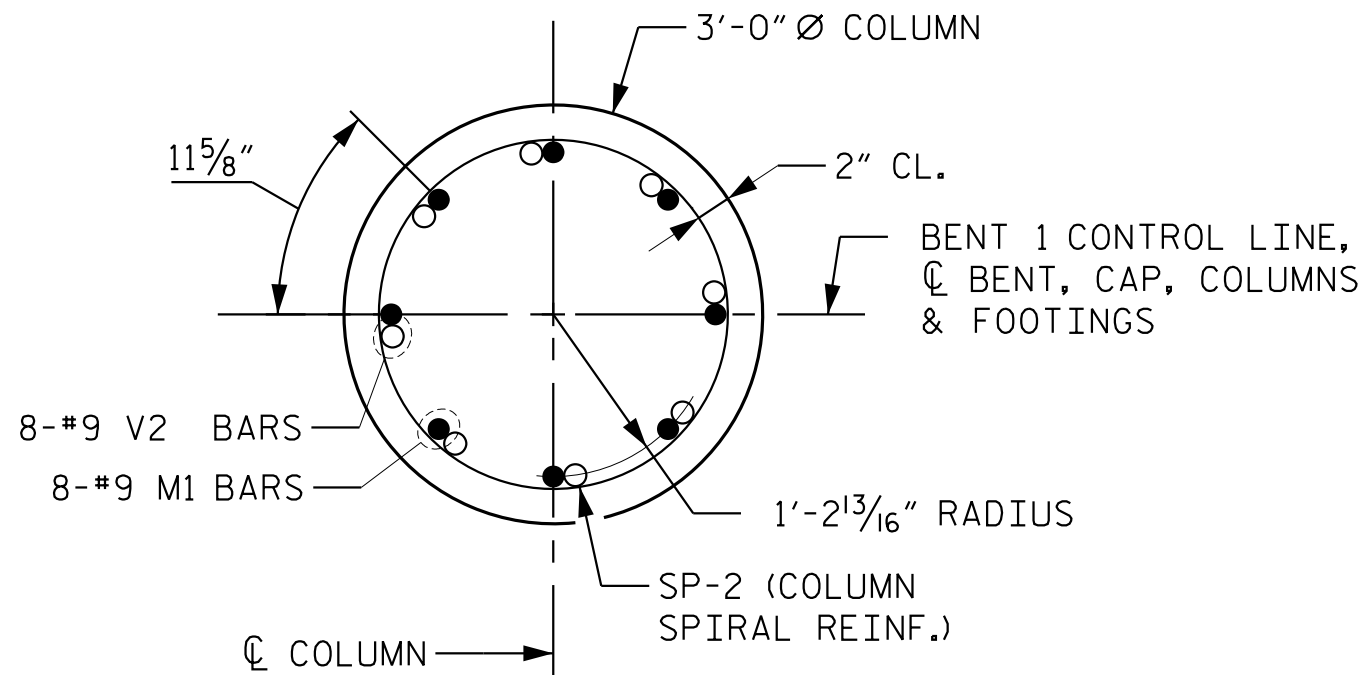


SECTION A-A



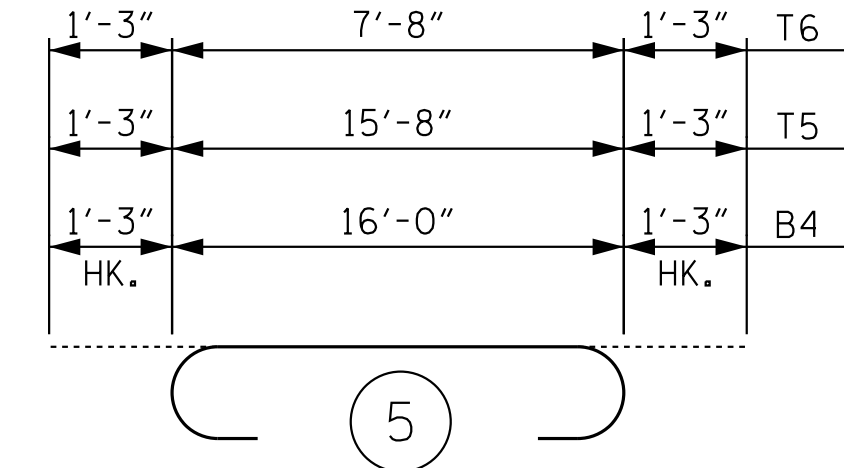
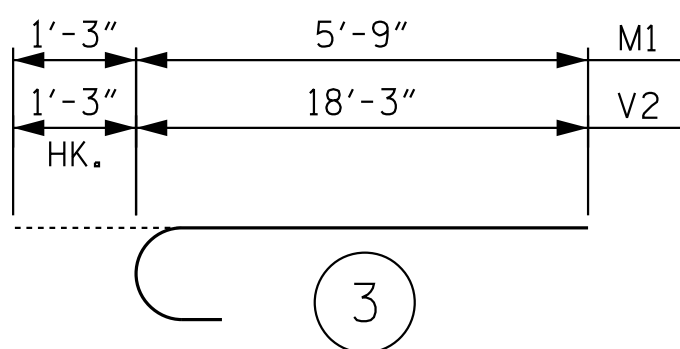
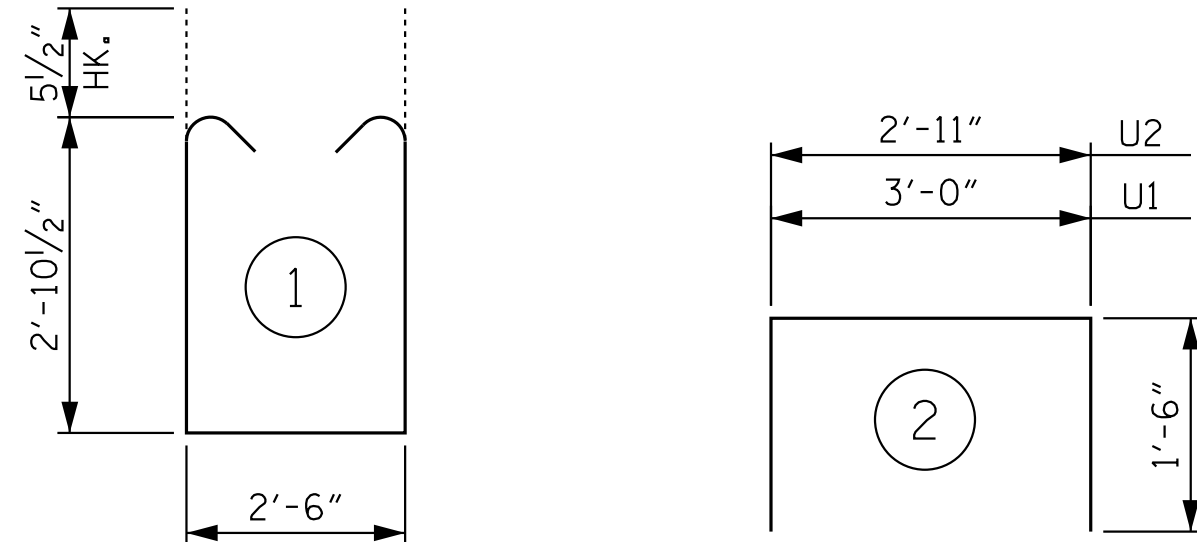
END VIEW X-X

(TYPICAL EACH END)



SECTION C-C

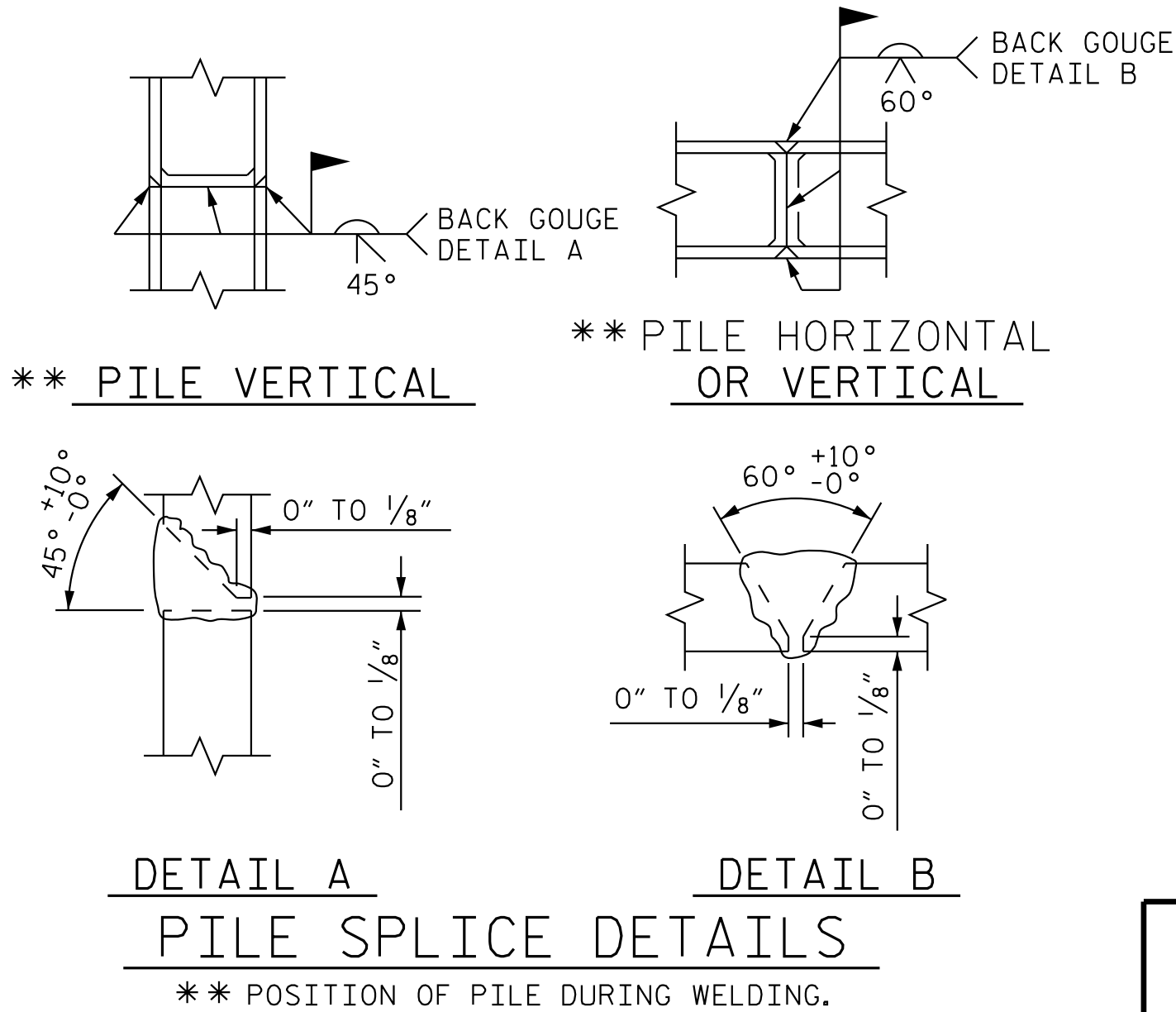
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B4	16	#9		18'-6"	1,006
B5	6	#6	STR	16'-0"	144
M1	16	#9	3	7'-0"	381
S1	44	#5	1	9'-2"	421
T3	9	#9	STR	15'-8"	479
T4	17	#9	STR	7'-8"	443
T5	9	#9	5	18'-2"	556
T6	17	#9	5	10'-2"	588
U1	26	#4	2	6'-0"	104
U2	8	#4	2	5'-11"	32
V2	16	#9	3	19'-6"	1,061
REINFORCING STEEL					5,215 LBS.
SP-2	2	**	4	579'-3"	774
SPIRAL COLUMN REINFORCING STEEL					774 LBS.
** THE "SP" SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.					
BENT 1 TOTAL QUANTITIES					
CLASS A CONCRETE					
POUR 1 (FOOTINGS)				14.2 C.Y.	
POUR 2 (COLUMNS)				8.7 C.Y.	
POUR 3 (CAP)				6.8 C.Y.	
TOTAL CLASS A CONCRETE				29.7 C.Y.	



PILE SPLICE DETAILS

** POSITION OF PILE DURING WELDING.



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PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 4 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT 1 RIGHT EXTENSION SECTIONS & DETAILS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					63

STR. #3

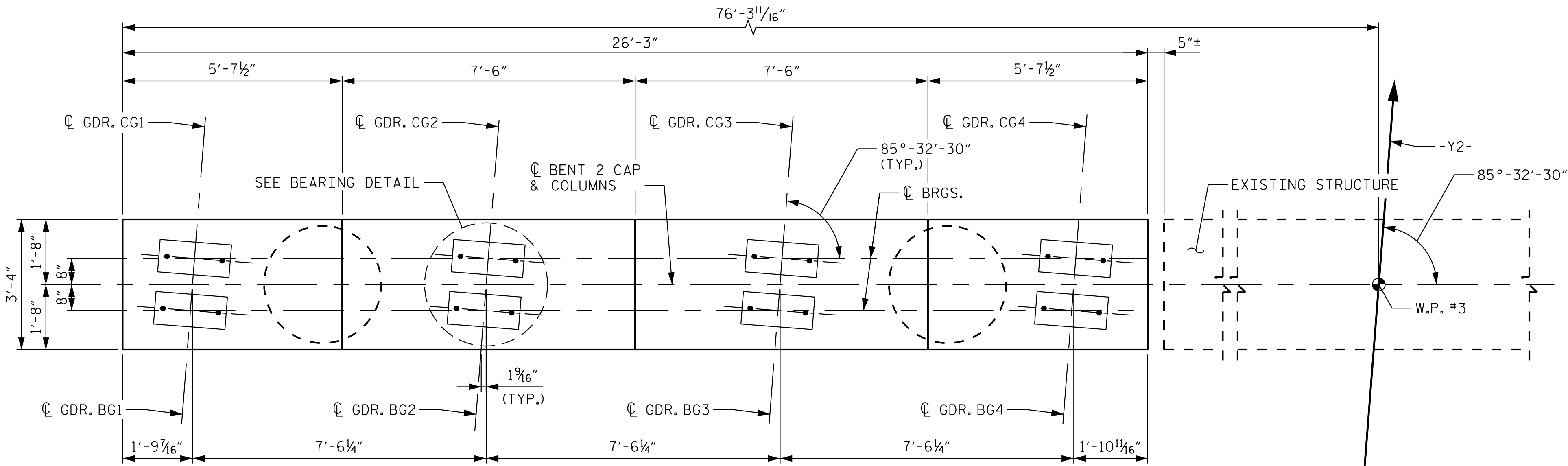
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CHECKED BY: A.D. BRENNER DATE: 03/26
DESIGN ENGINEER OF RECORD: A.L. PHILLIPS DATE: 03/26

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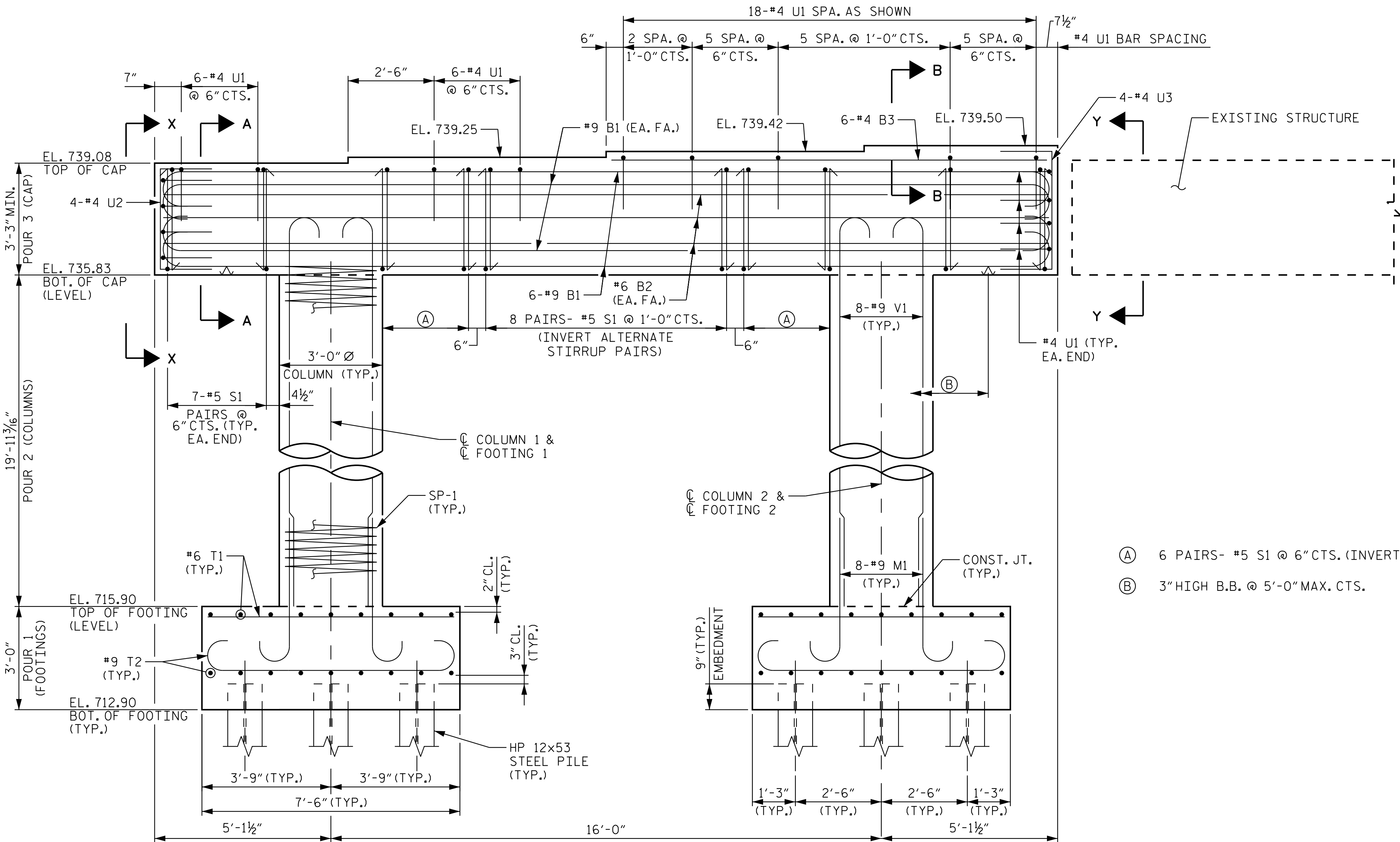
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SPAN C

SPAN B



PLAN



ELEVATION

NOTES

FOR "VIEW X-X", SEE "BENT 2" SHEET 2 OF 4.

FOR "SECTION A-A" AND "PARTIAL SECTION B-B", SEE "BENT 2" SHEET 2 OF 4.

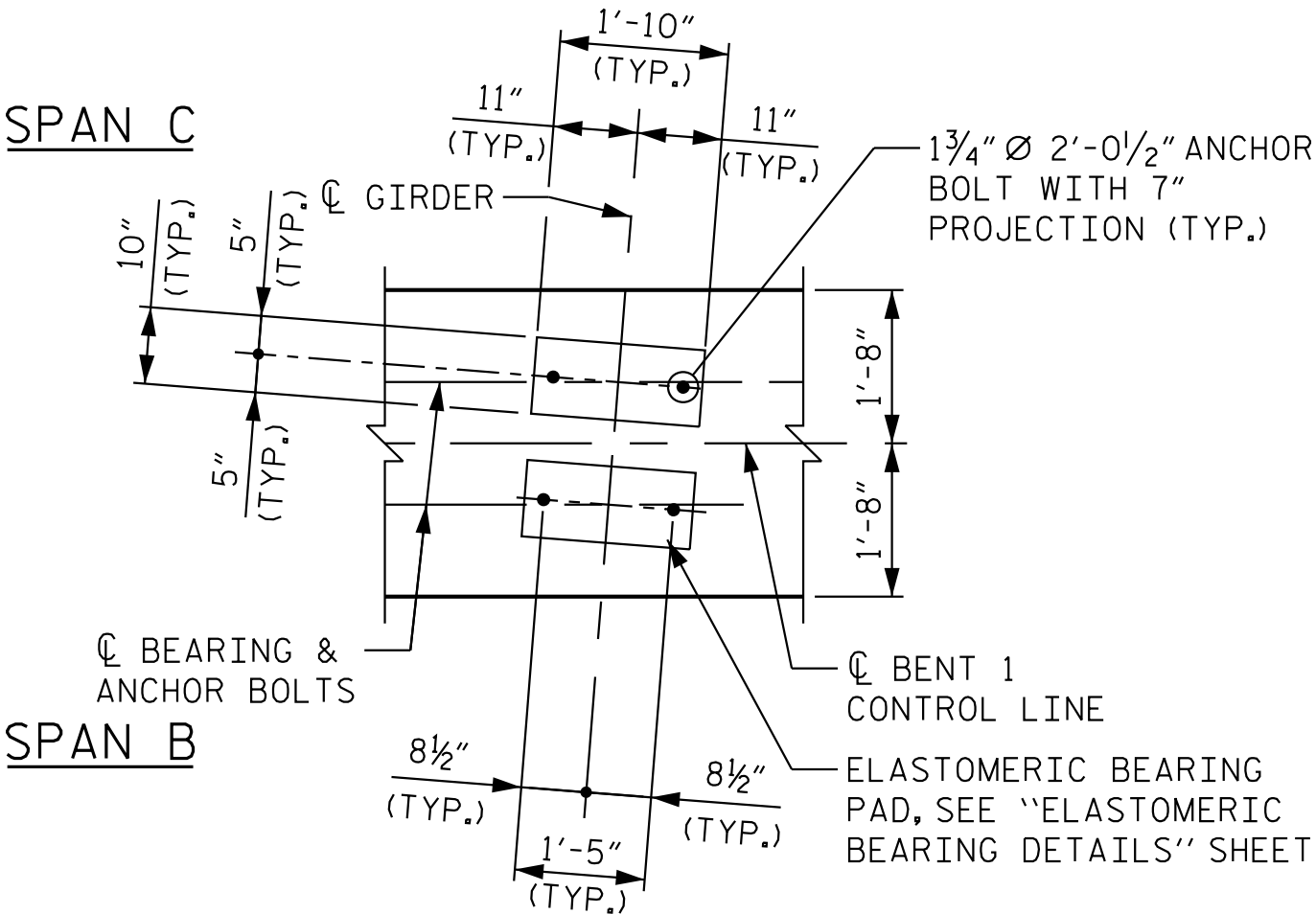
FOR REINFORCING BILL OF MATERIAL, SEE "BENT 2" SHEET 2 OF 4.

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR COLUMN STEEL AND ANCHOR BOLTS.

HOOKS ON "V" AND "M" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

FOR ADDITIONAL FOUNDATION NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 4.

THE TOP SURFACE AREAS OF THE BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.



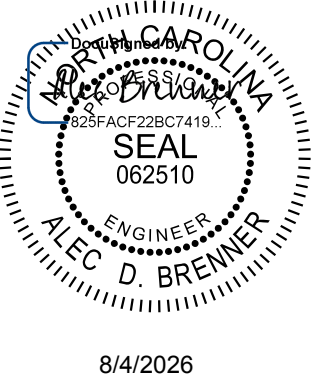
BEARING DETAIL

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.

- (A) 6 PAIRS- #5 S1 @ 6" CTS. (INVERT ALTERNATE STIRRUP PAIRS)
(B) 3" HIGH B.B. @ 5'-0" MAX. CTS.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 1 OF 4



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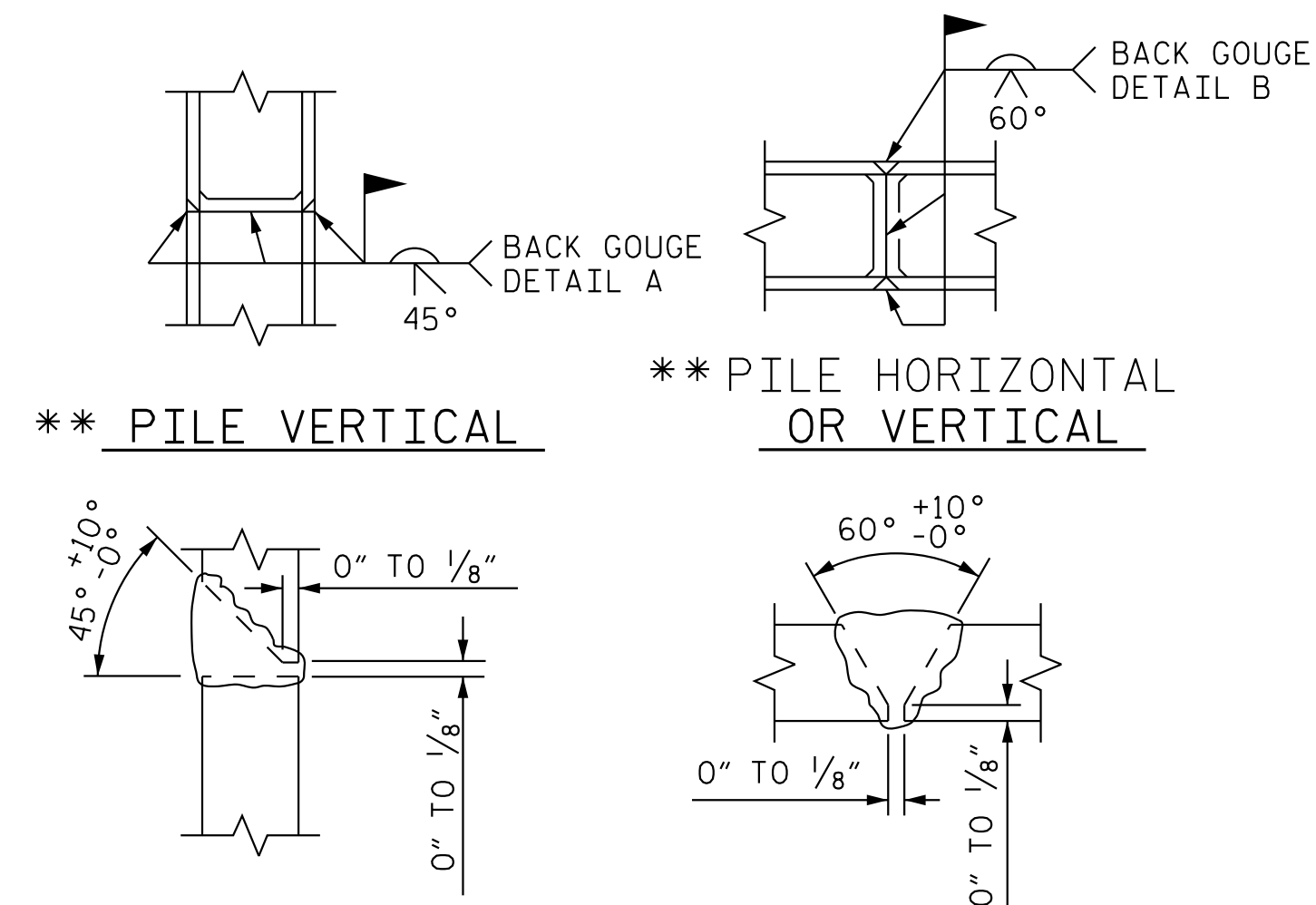
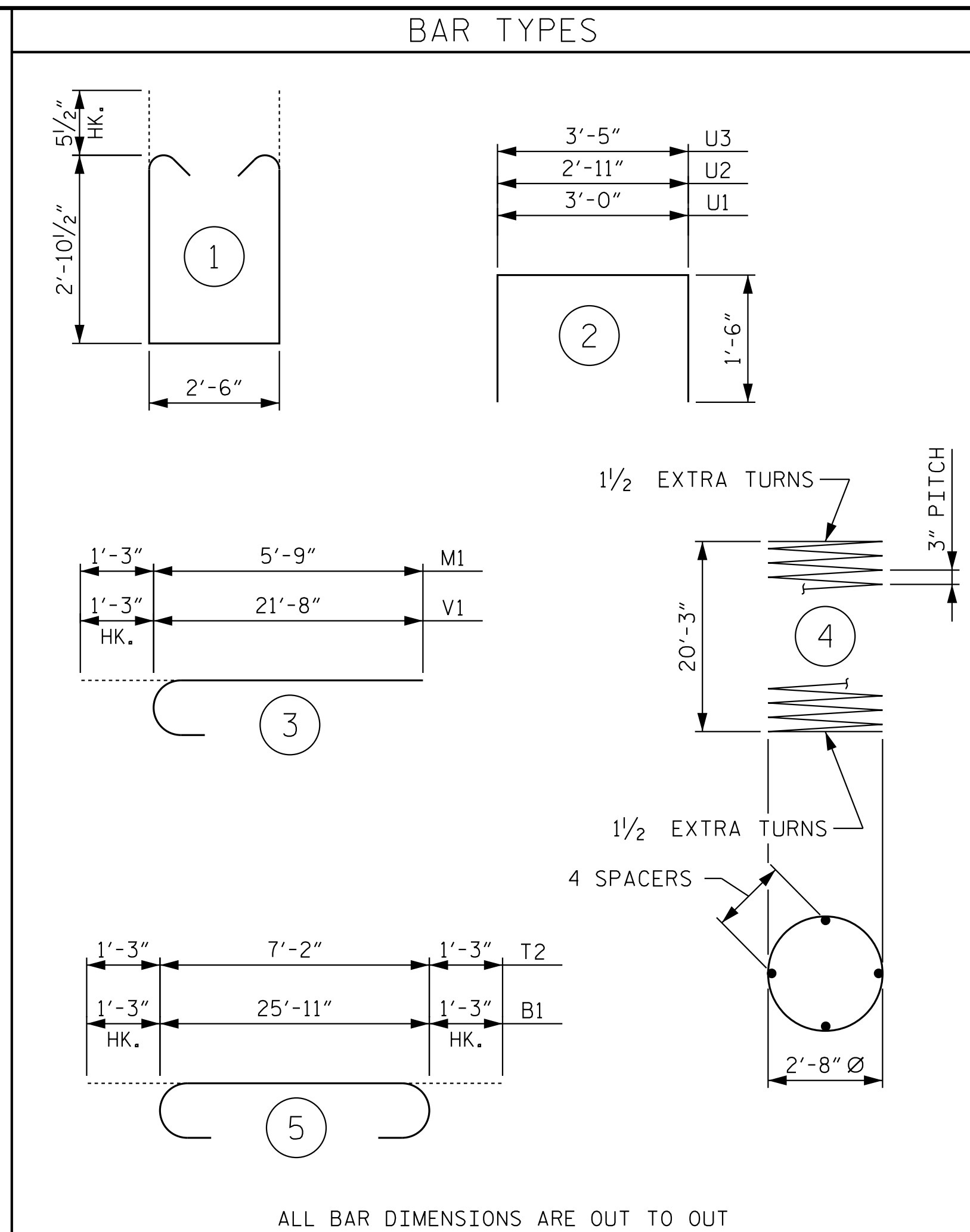
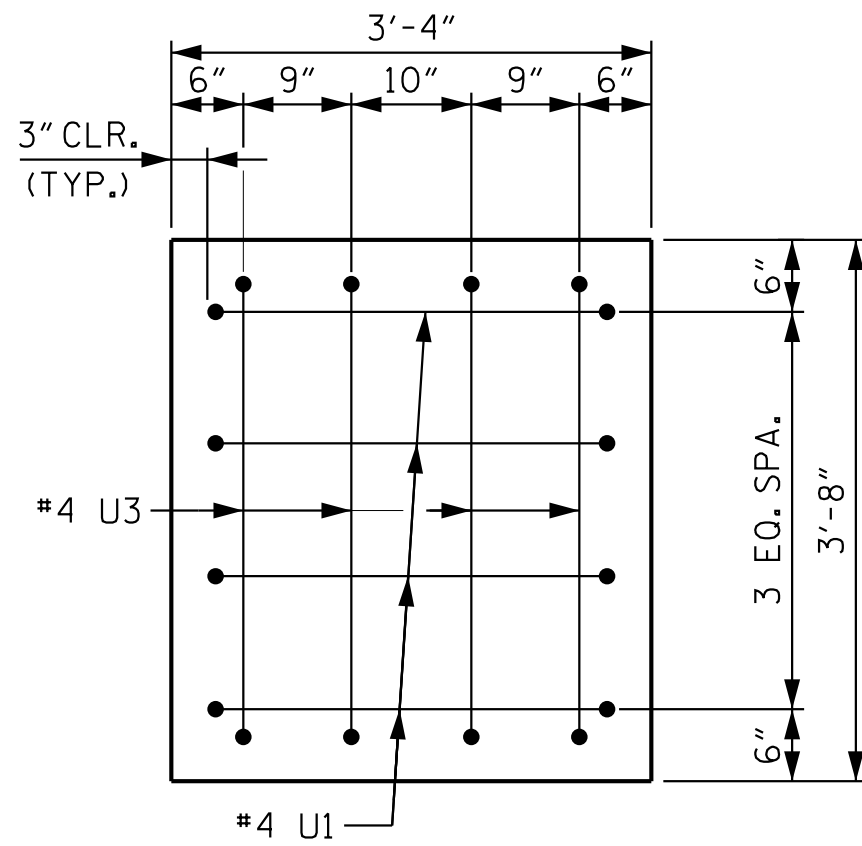
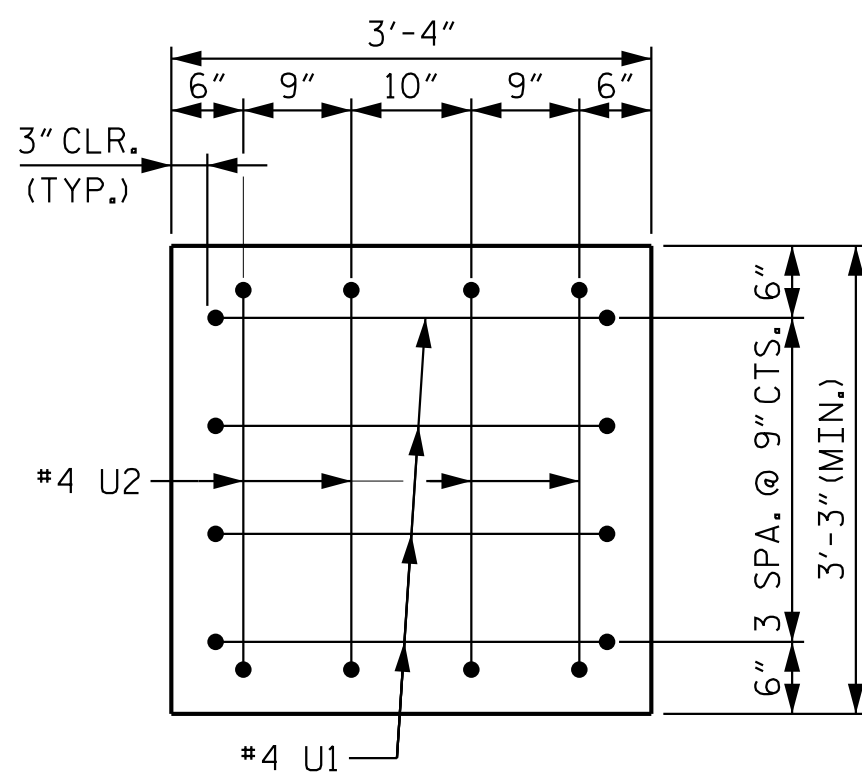
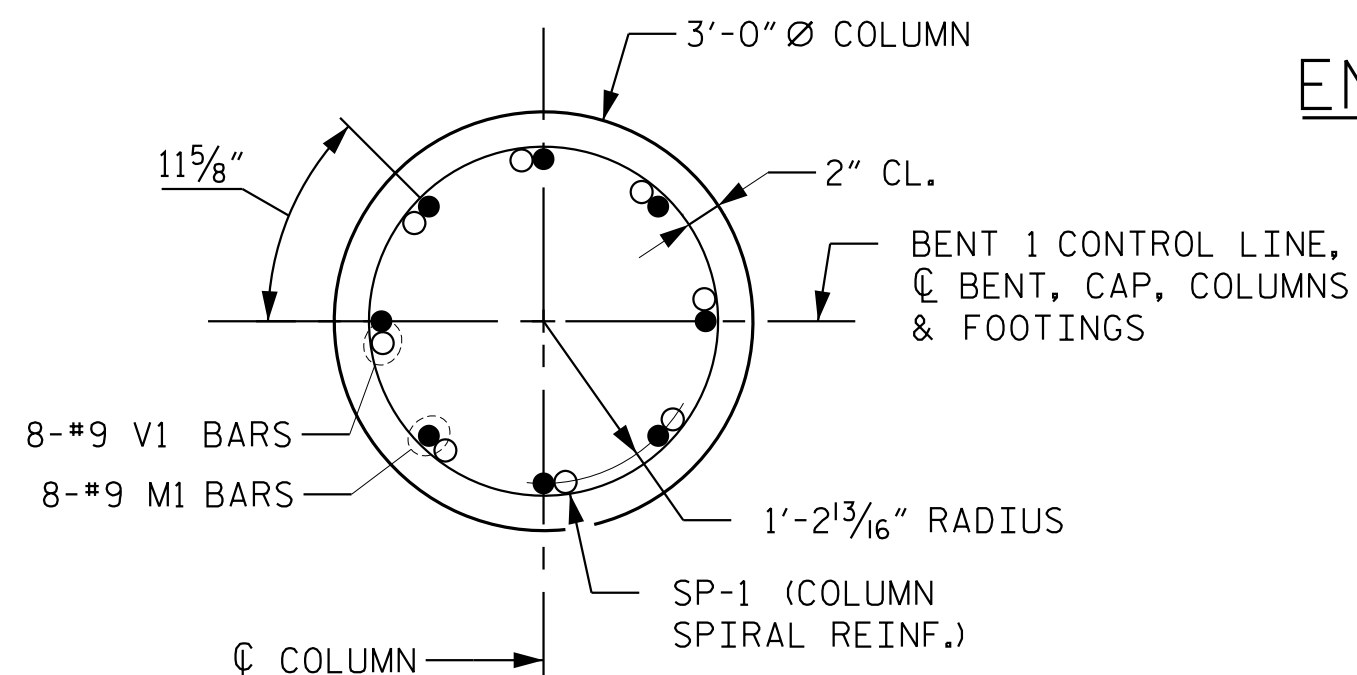
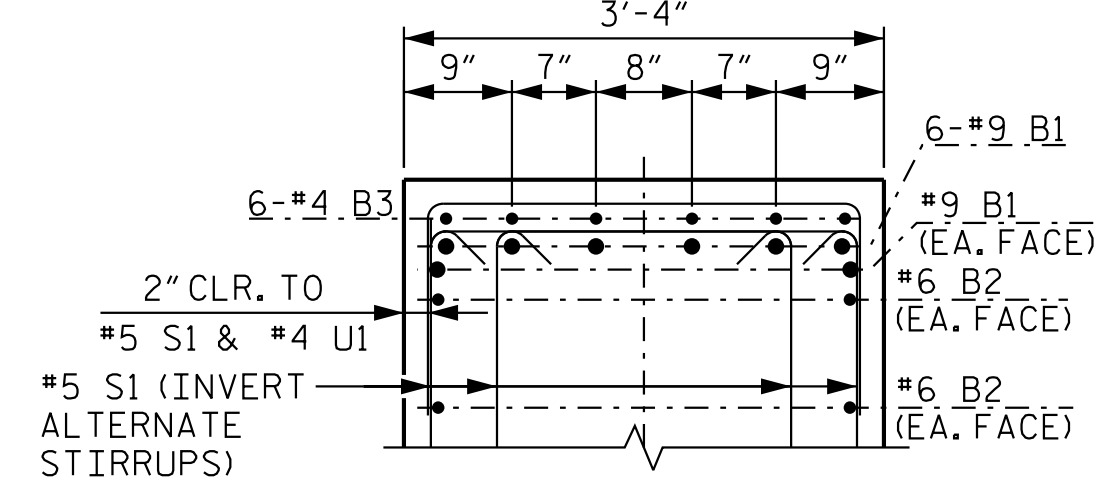
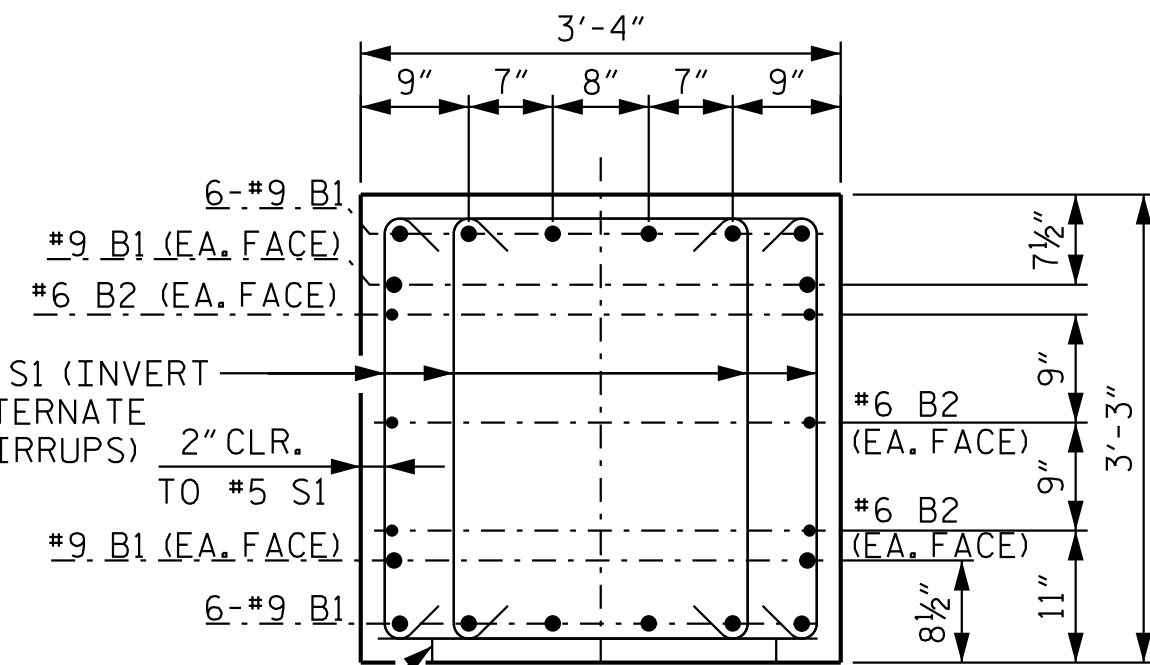
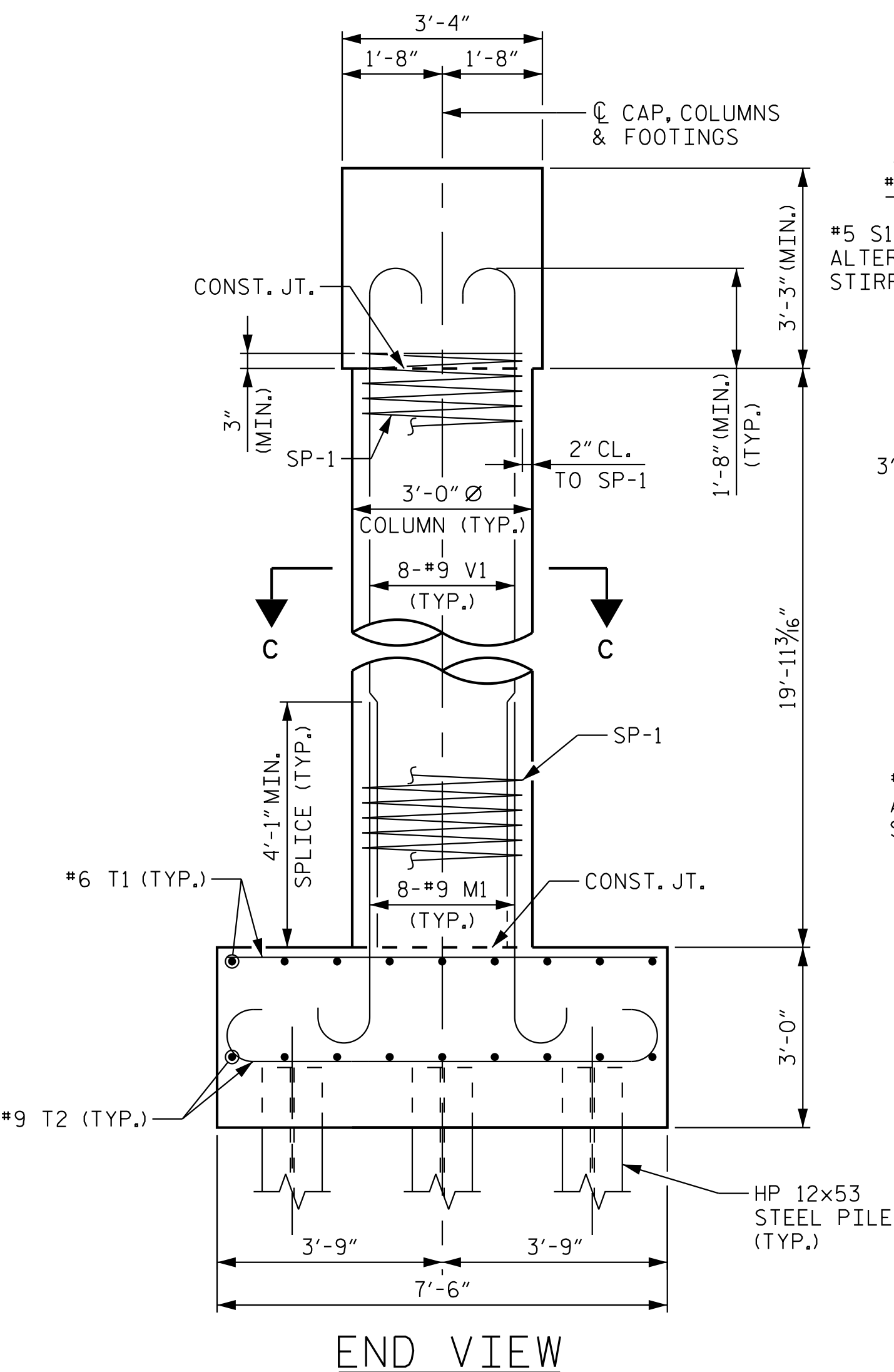
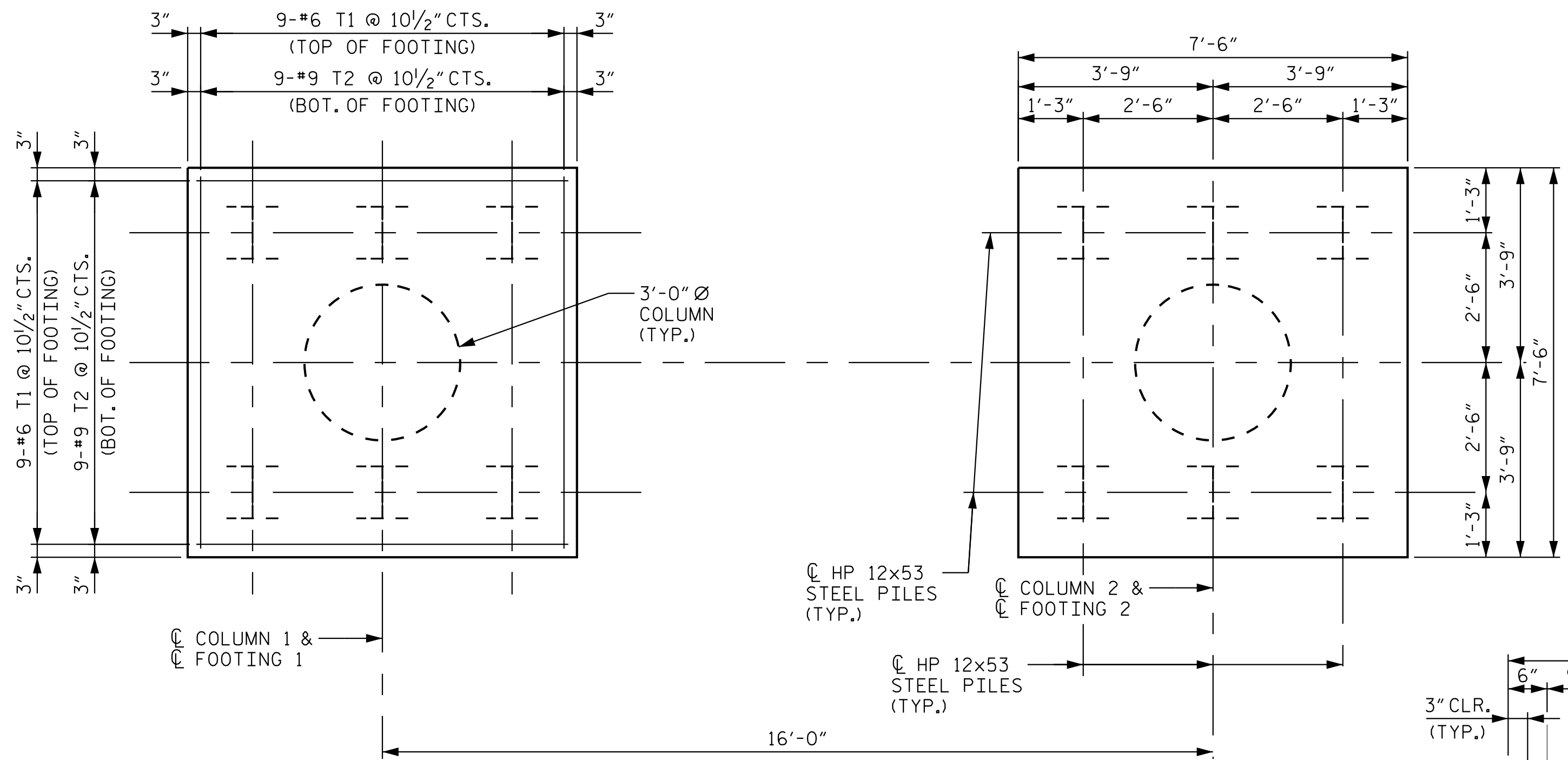
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2			4			

STR. #3

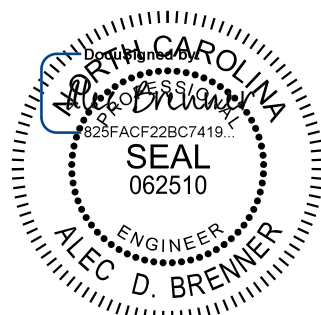


BILL OF MATERIAL					
BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	16	#9	5	28'-5"	1,546
B2	6	#6	STR	25'-11"	234
B3	6	#4	STR	12'-9"	51
M1	16	#9	3	7'-0"	381
S1	68	#5	1	9'-2"	650
T1	36	#6	STR	7'-2"	388
T2	36	#9	5	9'-8"	1,183
U1	38	#4	2	6'-0"	152
U2	4	#4	2	5'-11"	16
U3	4	#4	2	6'-5"	17
V1	16	#9	3	22'-10"	1,242
SPIRAL COLUMN				5,860 LBS.	
SP-1	2	**	4	690'-9"	923
SPIRAL COLUMN				923 LBS.	
** THE "SP" SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.					

BENT 1 TOTAL QUANTITIES	
CLASS A CONCRETE	
POUR 1 (FOOTINGS)	12.5 C.Y.
POUR 2 (COLUMNS)	10.4 C.Y.
POUR 3 (CAP)	11.3 C.Y.
TOTAL CLASS A CONCRETE	34.3 C.Y.

PROJECT NO. I-5715
MECKLENBURG COUNTY
 STATION: 29+87.44 -Y2-

SHEET 2 OF 4



8/4/2026
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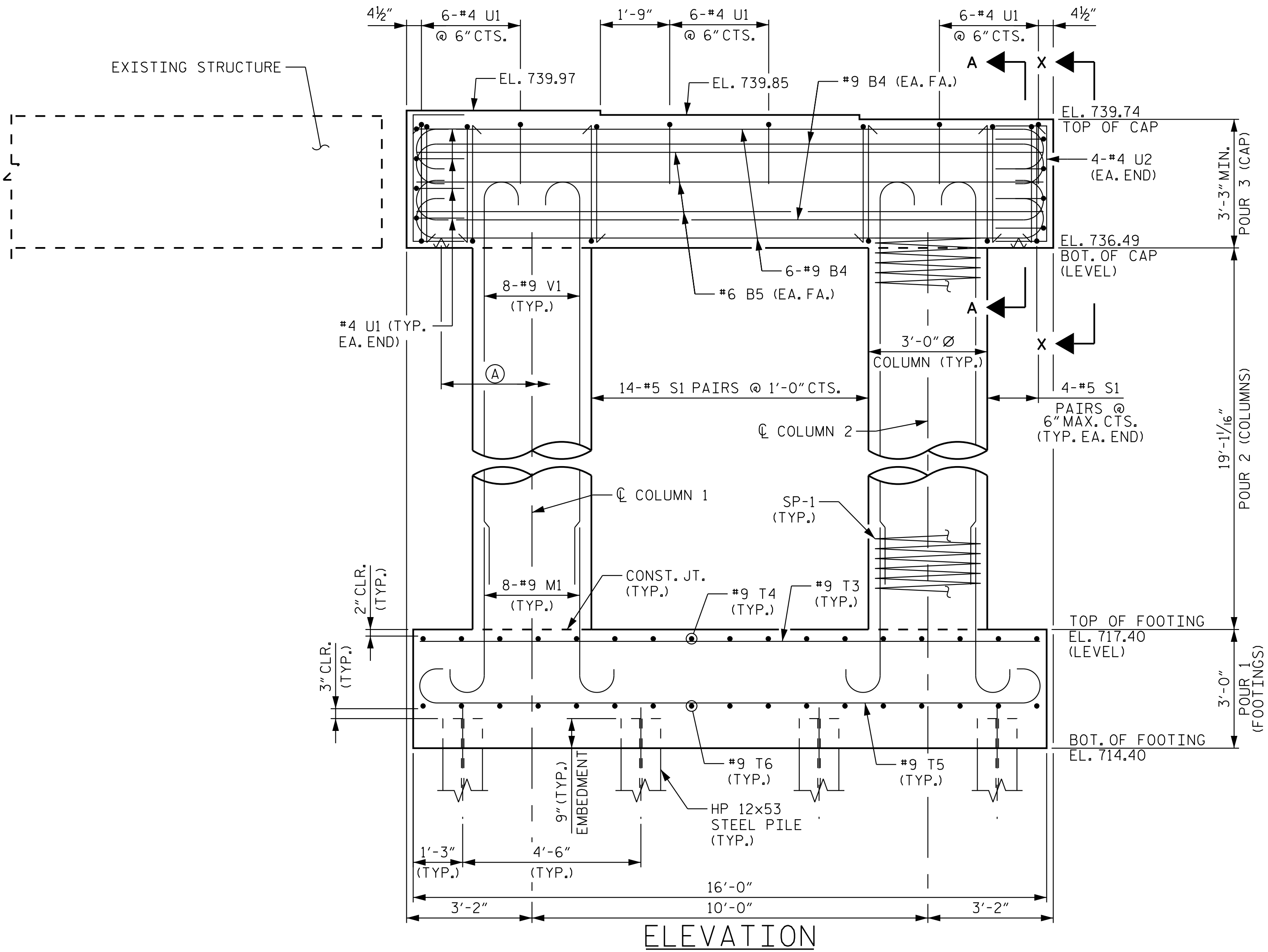
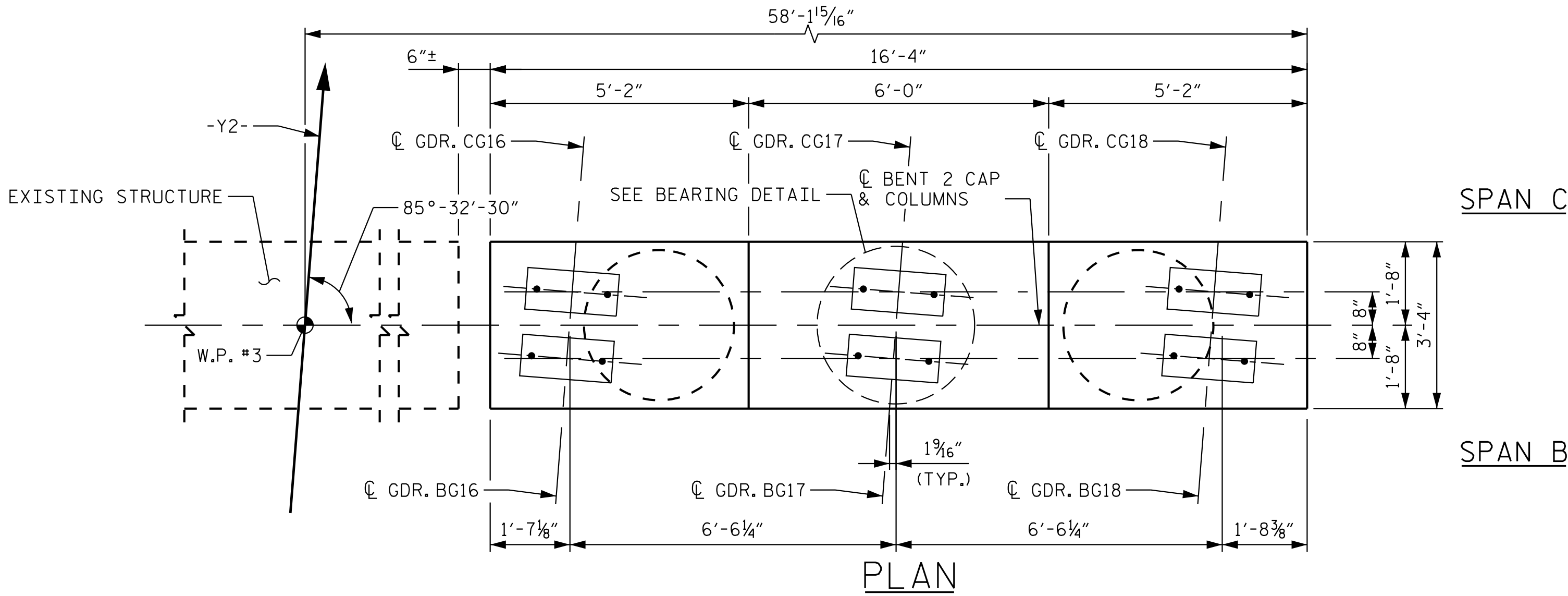
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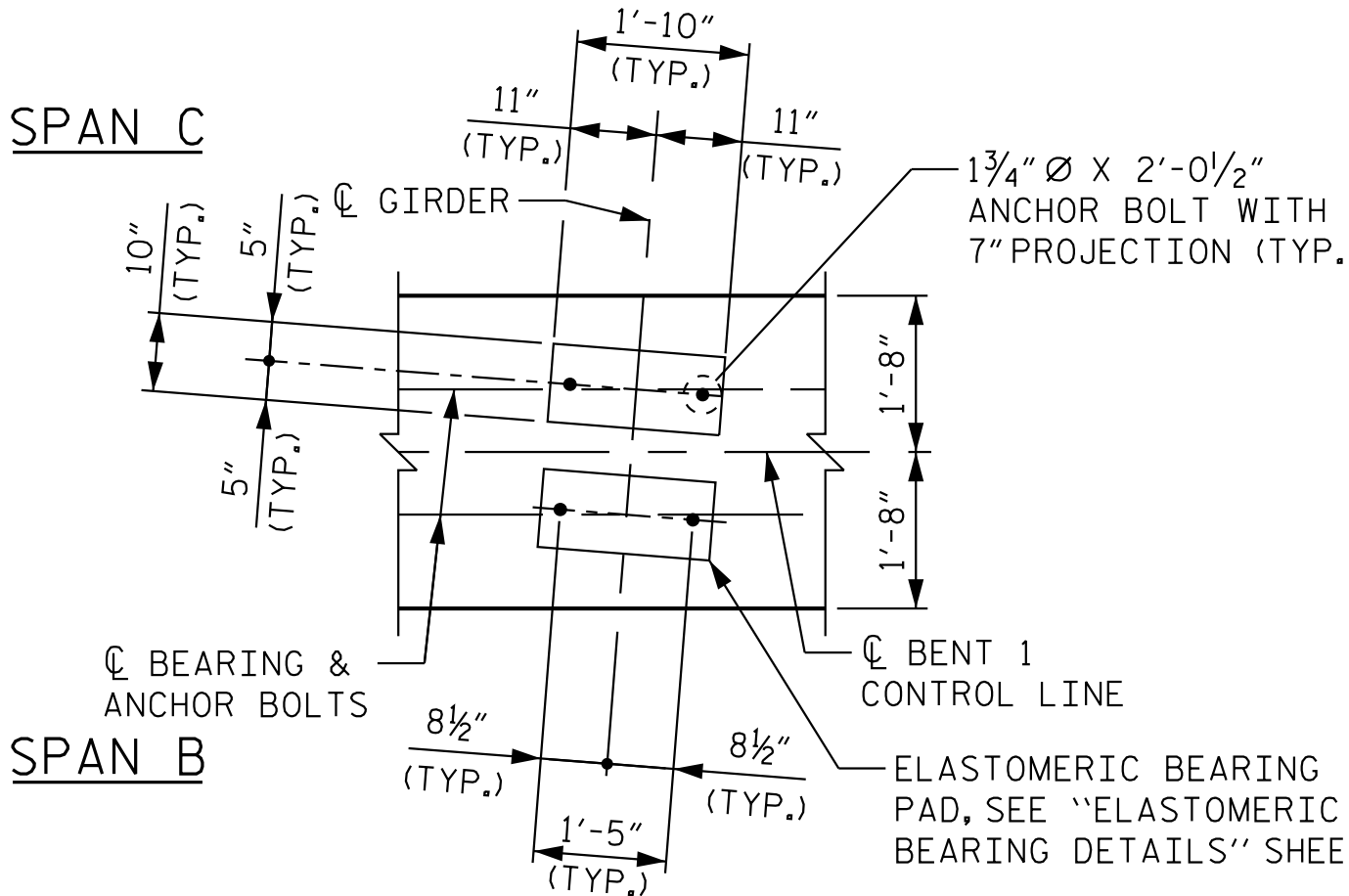
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NOTES

- FOR "VIEW X-X", SEE "BENT 2" SHEET 4 OF 4.
- FOR "SECTION A-A" AND "PARTIAL SECTION B-B", SEE "BENT 2" SHEET 4 OF 4.
- FOR REINFORCING BILL OF MATERIAL, SEE "BENT 2" SHEET 4 OF 4.
- FOR ADDITIONAL NOTES, SEE "BENT 2", SHEET 1 OF 4.



(A) 3" HIGH B.B. @ 5'-0" CTS. MAX.

BEARING DETAIL

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 3 OF 4



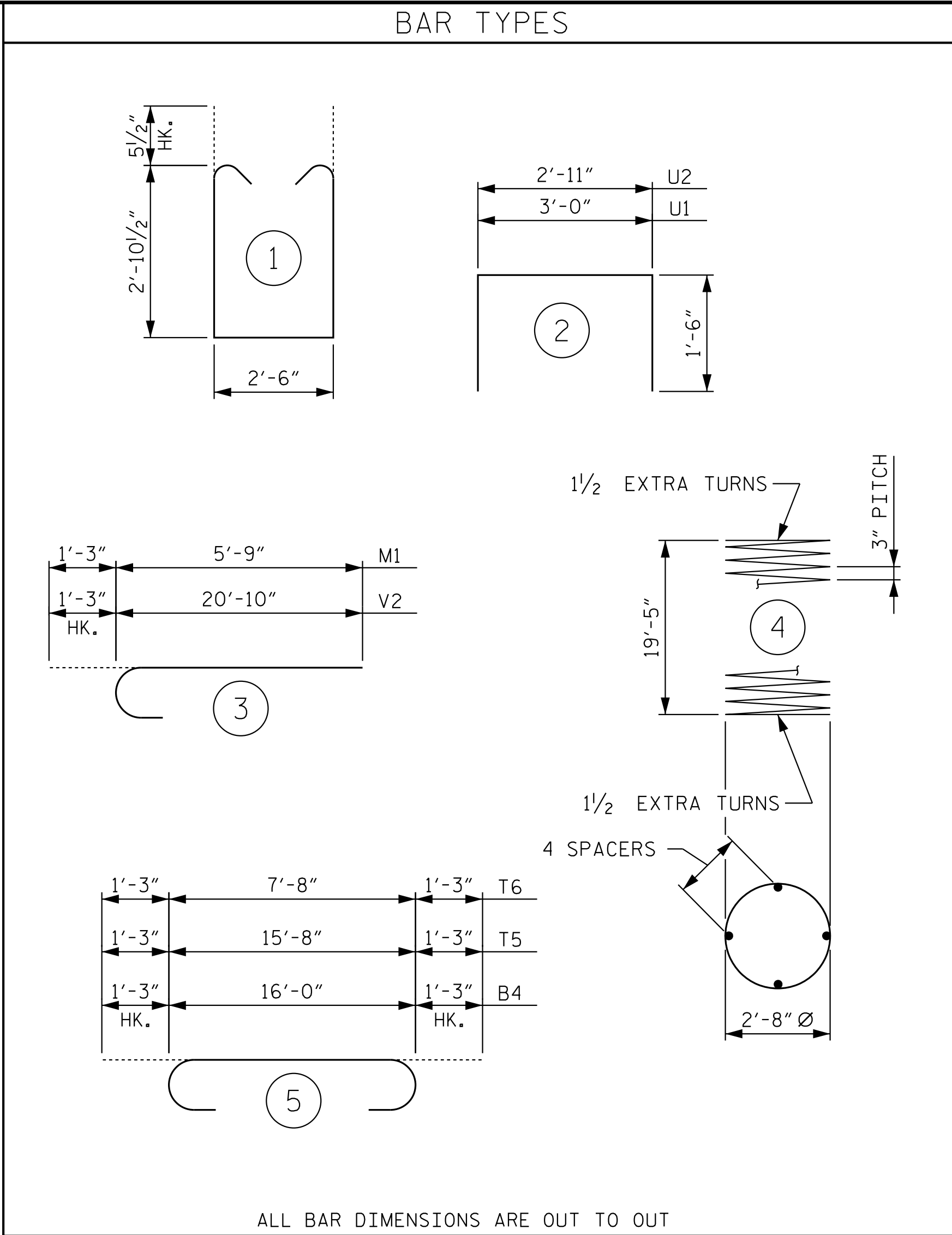
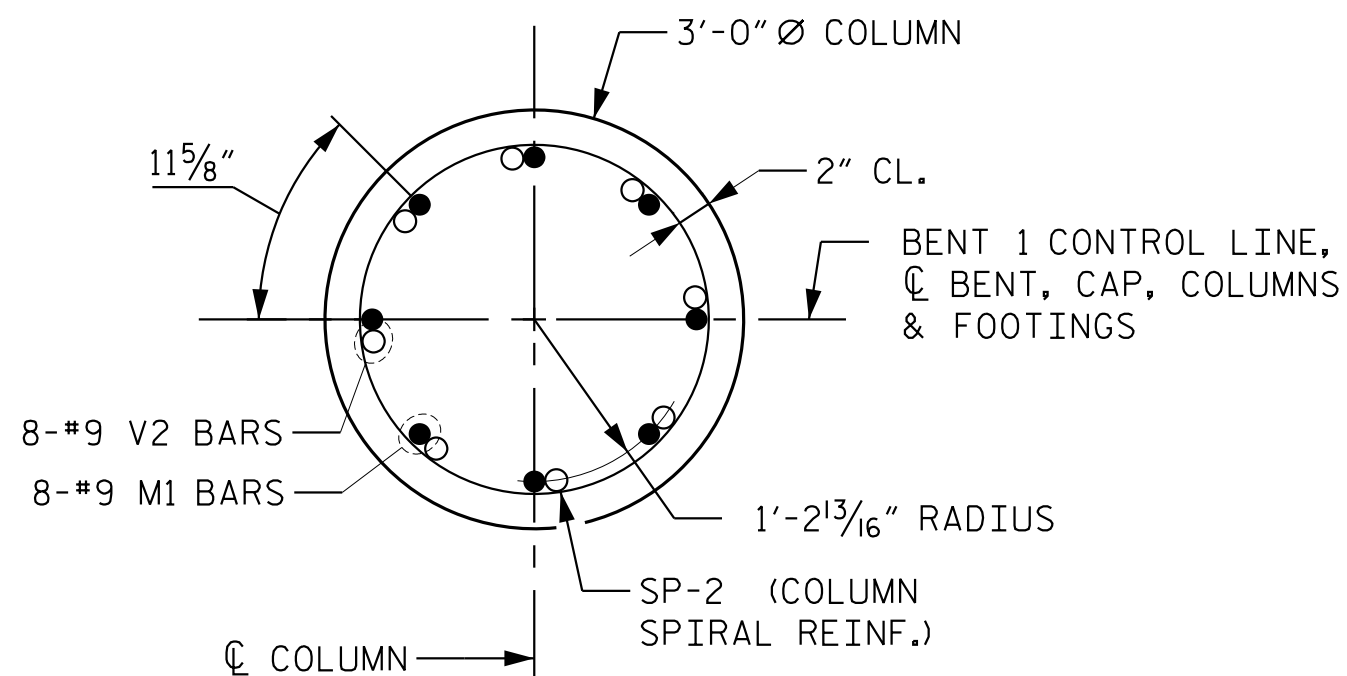
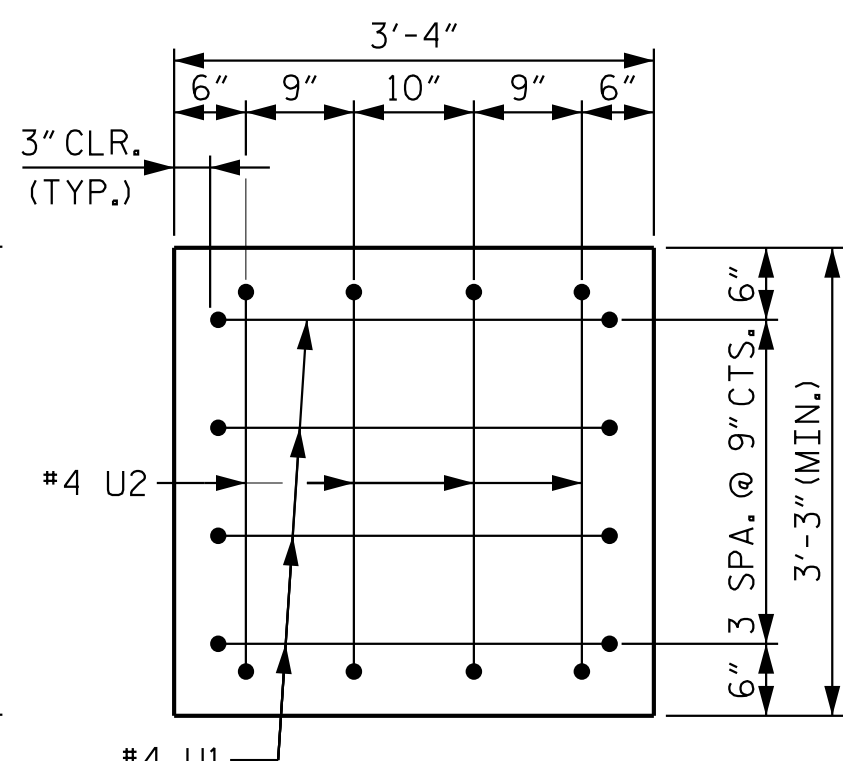
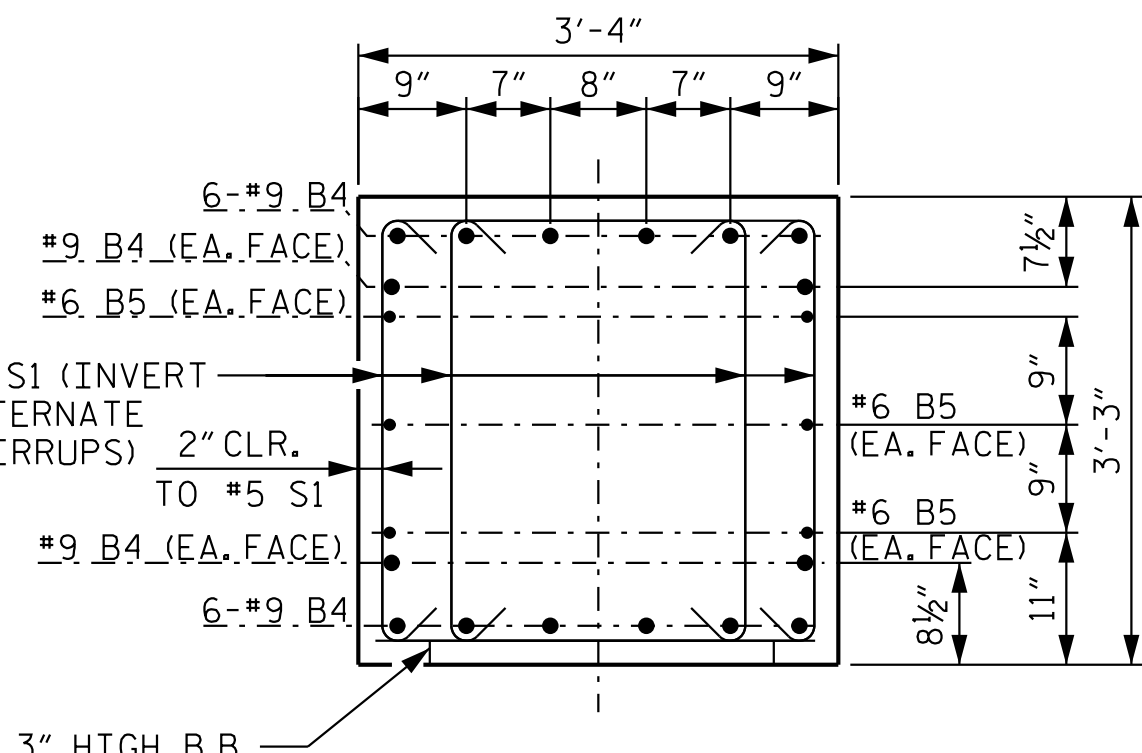
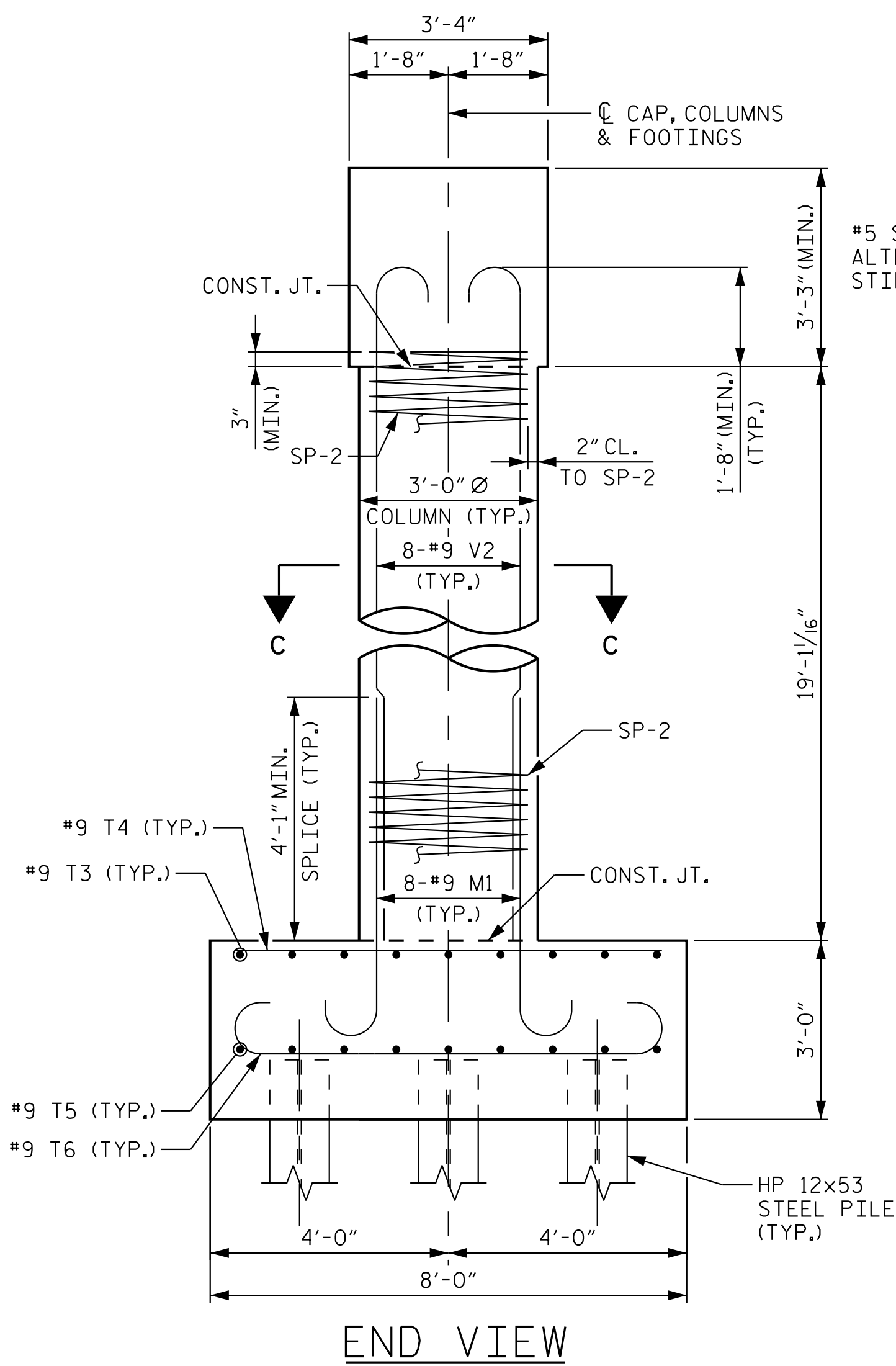
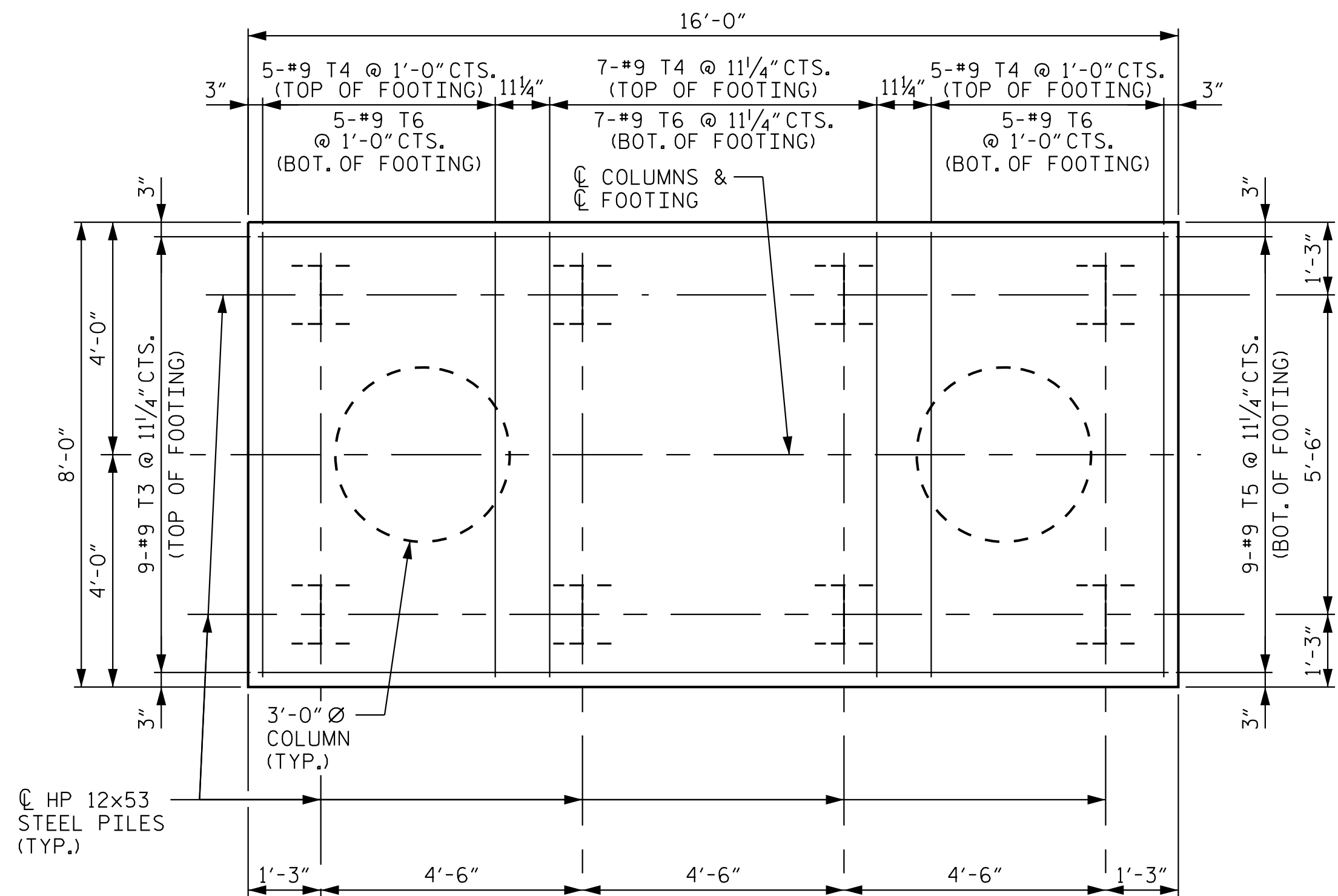
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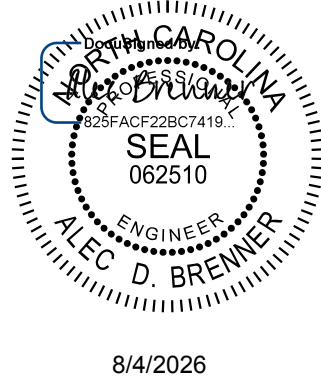
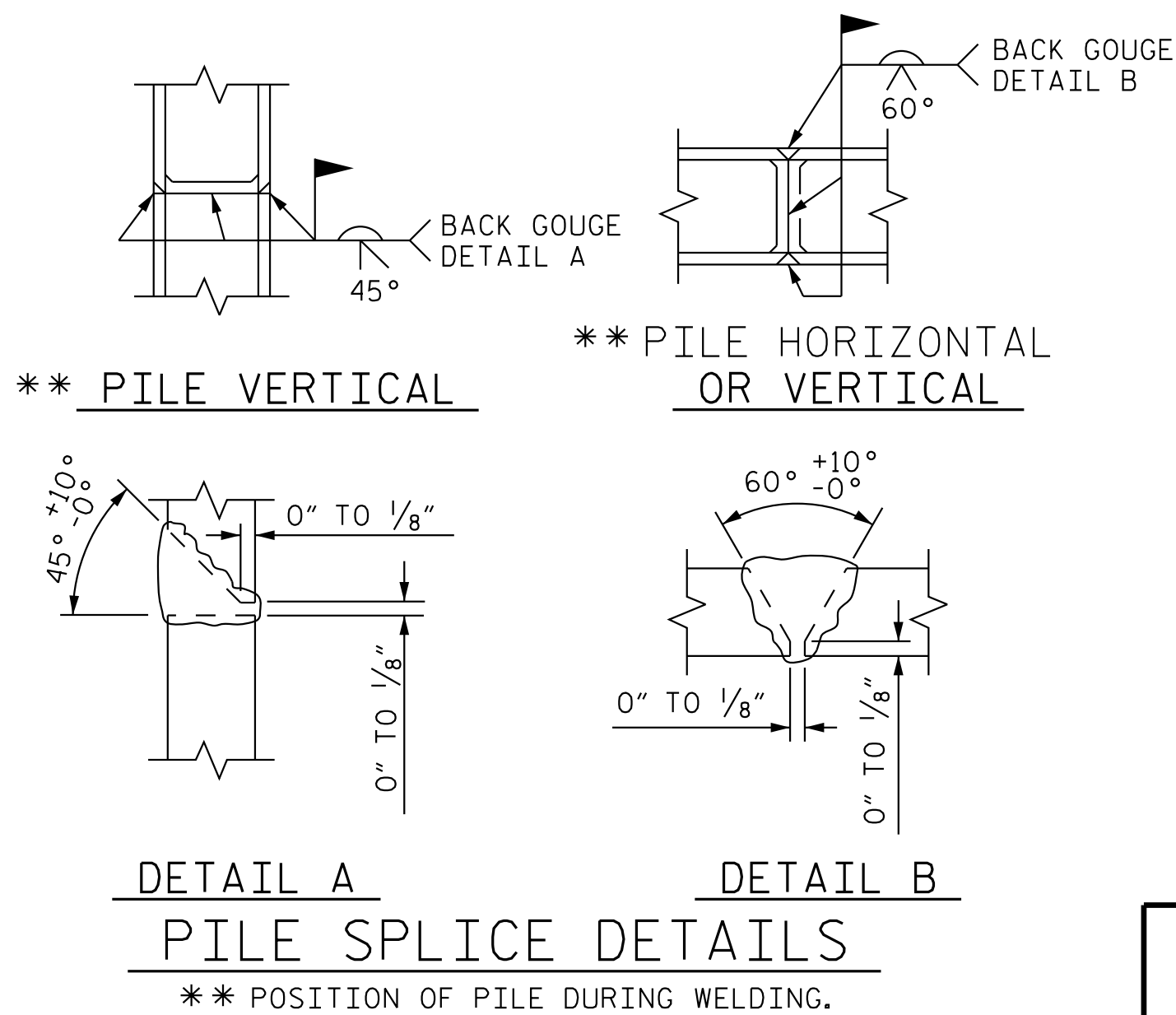
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #3



BILL OF MATERIAL					
BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	16	#9	5	18'-6"	1,006
B4	6	#6	STR	16'-0"	144
M1	16	#9	3	7'-0"	381
S1	32	#5	1	9'-2"	306
T3	9	#9	STR	15'-8"	479
T4	17	#9	STR	7'-8"	443
T5	9	#9	5	18'-2"	556
T6	17	#9	5	10'-2"	588
U1	26	#4	2	6'-0"	104
U2	8	#4	2	5'-11"	32
V2	16	#9	3	22'-1"	1,201
REINFORCING STEEL				5,240 LBS.	
SP-2	2	**	4	662'-11"	886
SPIRAL COLUMN REINFORCING STEEL				886 LBS.	
** THE "SP" SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.					
BENT 2 TOTAL QUANTITIES					
CLASS A CONCRETE					
POUR 1 (FOOTINGS)				14.2 C.Y.	
POUR 2 (COLUMNS)				10.0 C.Y.	
POUR 3 (CAP)				6.7 C.Y.	
TOTAL CLASS A CONCRETE				30.9 C.Y.	



PROJECT NO. I-5715
MECKLENBURG COUNTY
 STATION: 29+87.44 -Y2-

SHEET 4 OF 4

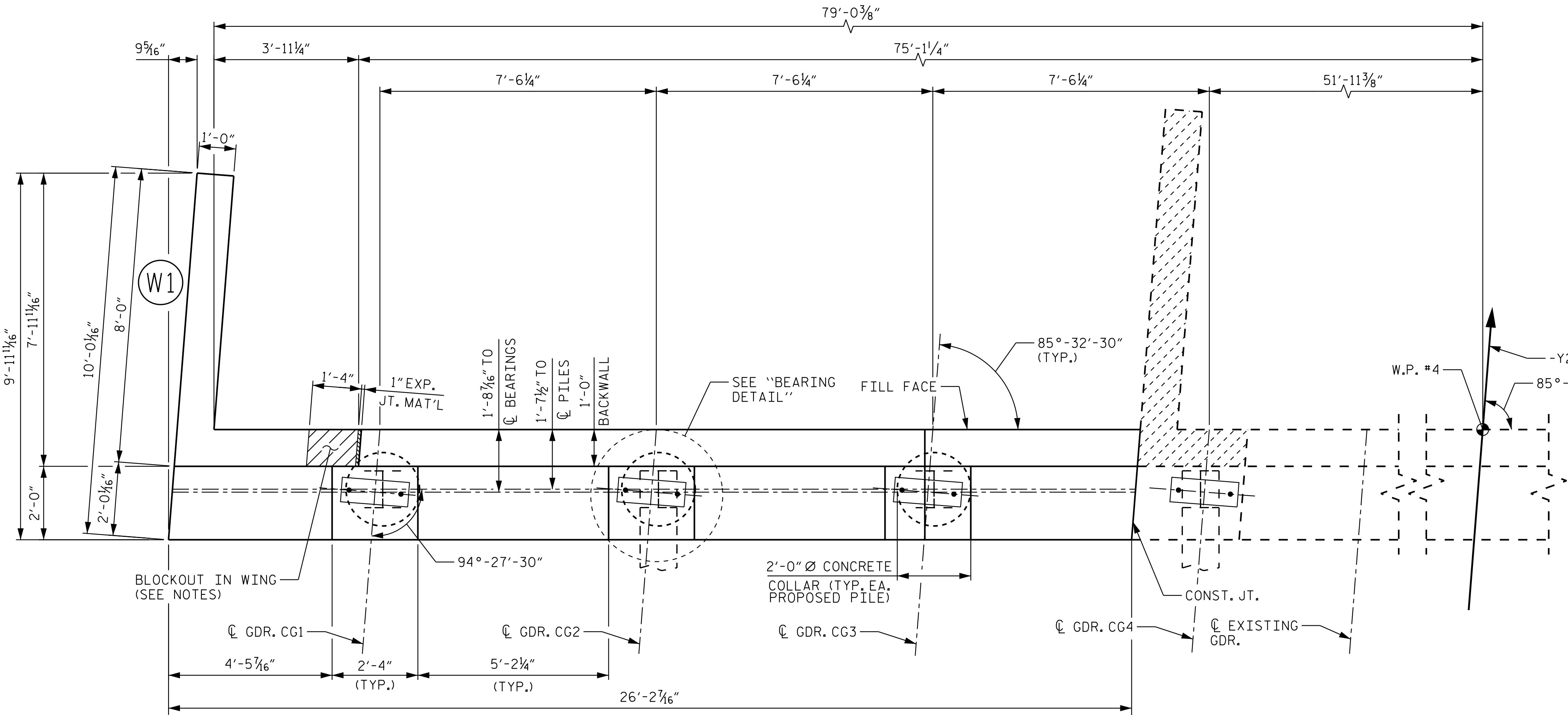
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE BENT 2 RIGHT EXTENSION SECTIONS & DETAILS

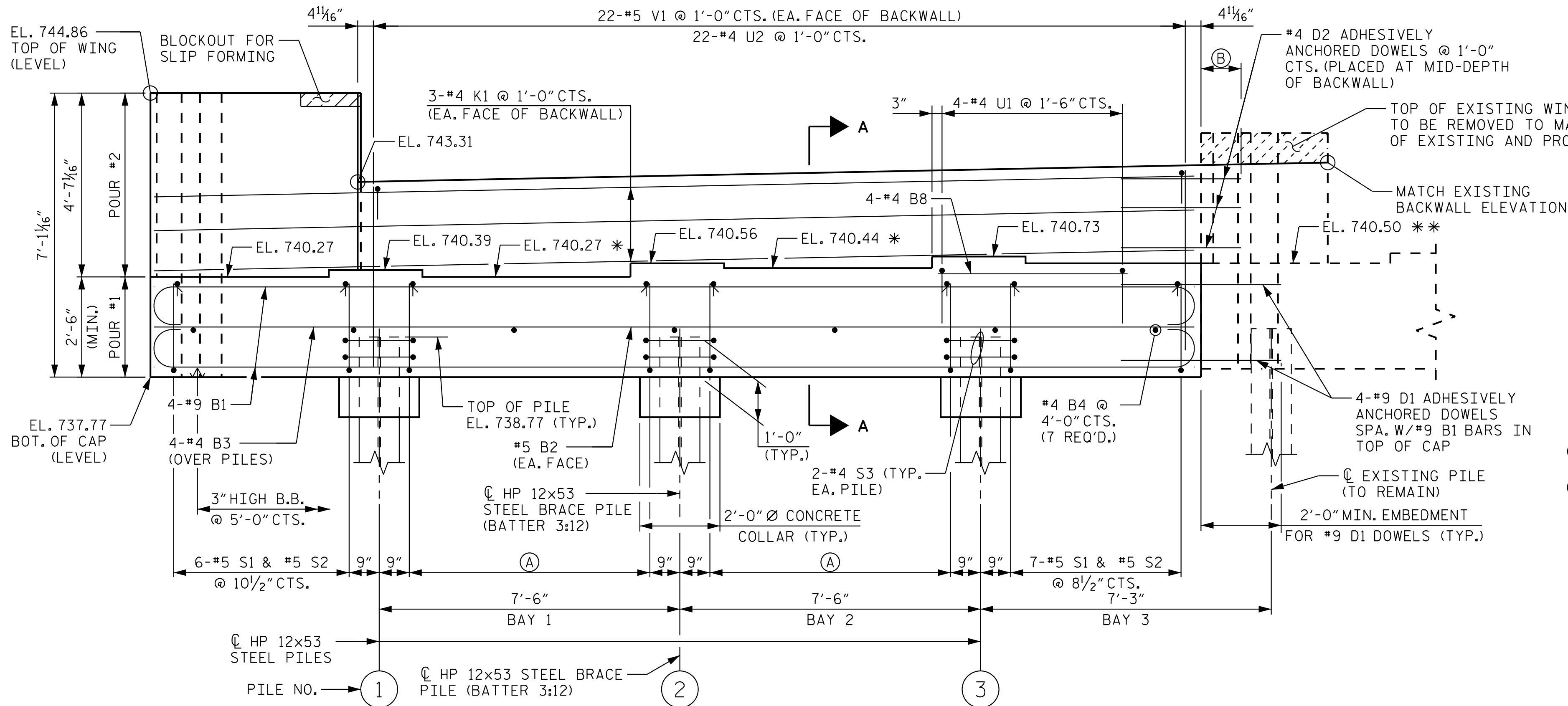
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2			4			

STR. #3

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PLAN



ELEVATION

*FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEATS, SEE "SECTION A-A" ON SHEET 4 OF 4
**BEAM SEAT ELEVATION OF NEW GIRDER ON EXISTING CAP AT C OF BEARING

REINFORCING IN WING NOT SHOWN FOR CLARITY. FOR DETAILS SEE SHEET 4 OF 4

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE PROTECTIVE COATING.

THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE FRONT FACE AT THE RATE OF 2%.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE PARAPET & END POSTS ARE CAST IF SLIP FORMING IS USED.

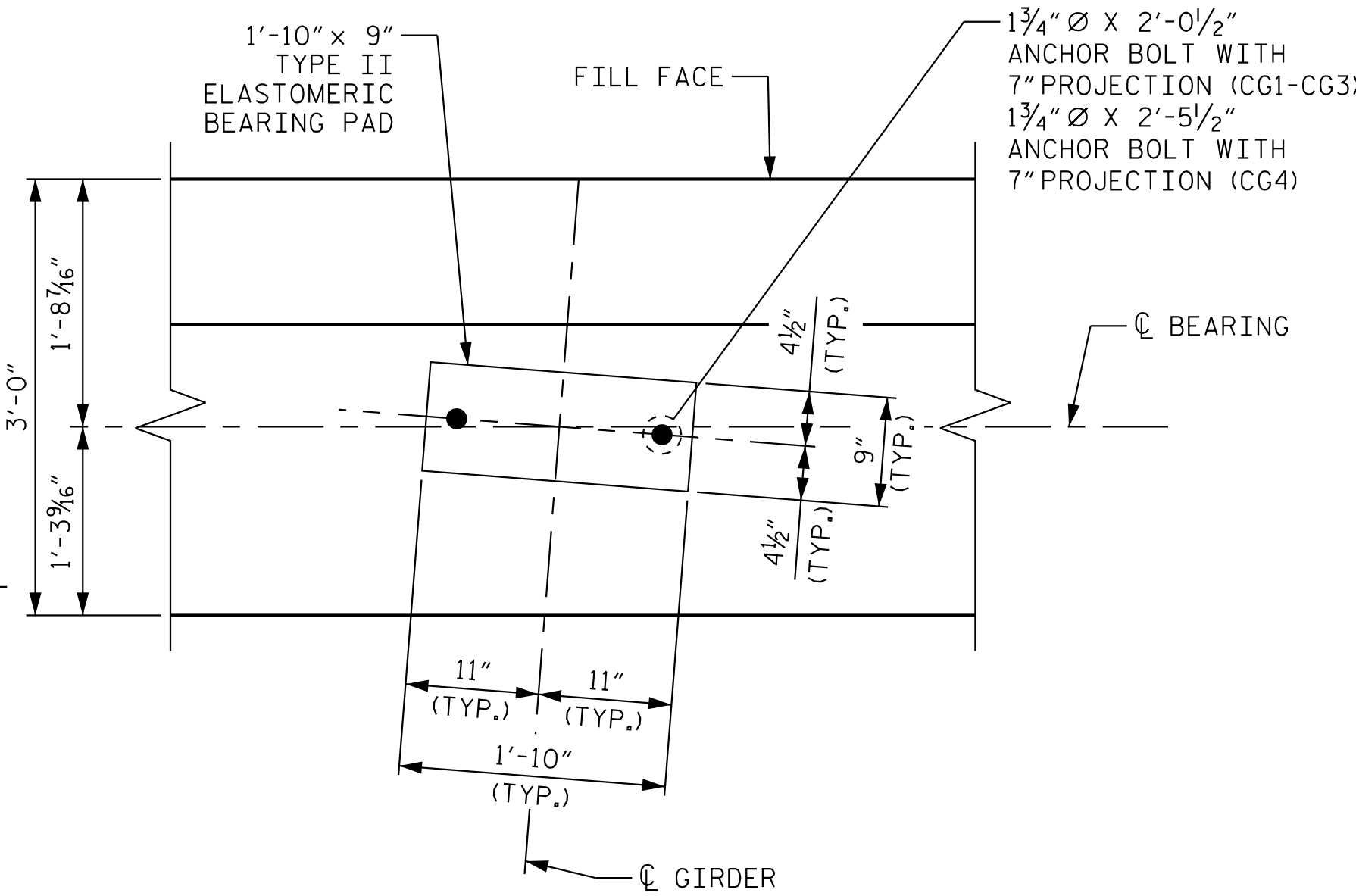
FOR "SECTION A-A", SEE "END BENT 1" SHEET 4 OF 4.

EPOXY COAT THE END BENT CAP AFTER ADJUSTMENTS ARE MADE TO BEARINGS AND ANCHOR BOLTS ARE GROUTED.

D1 AND D2 DOWELS SHALL BE INSTALLED IN THE EXISTING CONCRETE BACKWALL OR CAP USING AN ADHESIVELY ANCHORED SYSTEM. LEVEL ONE FIELD TESTING IS REQUIRED. THE YIELD LOAD OF THE D1 DOWELS IS 30.0 KIPS AND THE YIELD LOAD OF THE D2 DOWELS IS 13.2 KIPS. EMBEDMENT LENGTH TO BE DETERMINED BY THE MANUFACTURER OF THE ADHESIVELY ANCHORED DOWELS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.

ELEVATIONS ARE BASED ON AVAILABLE SURVEY INFORMATION AND EXISTING BRIDGE PLANS. CONTRACTOR TO FIELD VERIFY ELEVATIONS PRIOR TO CONSTRUCTION.

IN LIEU OF INCREASED SOLE PLATE THICKNESS FOR GIRDERS PLACED ON EXISTING END BENT CAP, THE CONTRACTOR MAY ELECT TO CONSTRUCT A BRIDGE SEAT ON THE EXISTING END BENT CAPS FOR GIRDERS CG4 AND CG16. FOR OPTIONAL BRIDGE SEAT DETAILS, SEE "END BENT 2 SECTION AND DETAILS" SHEET.



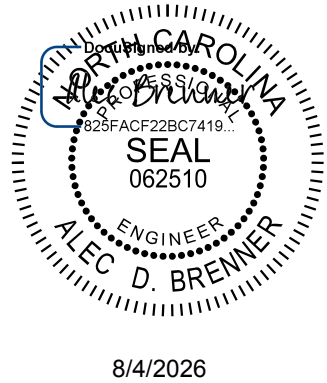
BEARING DETAIL

PROJECT NO. I-5715

MECKLENBURG COUNTY

STATION: 29+87.44 -Y2-

SHEET 1 OF 4



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2
LEFT EXTENSION

REVISIONS						SHEET NO. S3-55
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

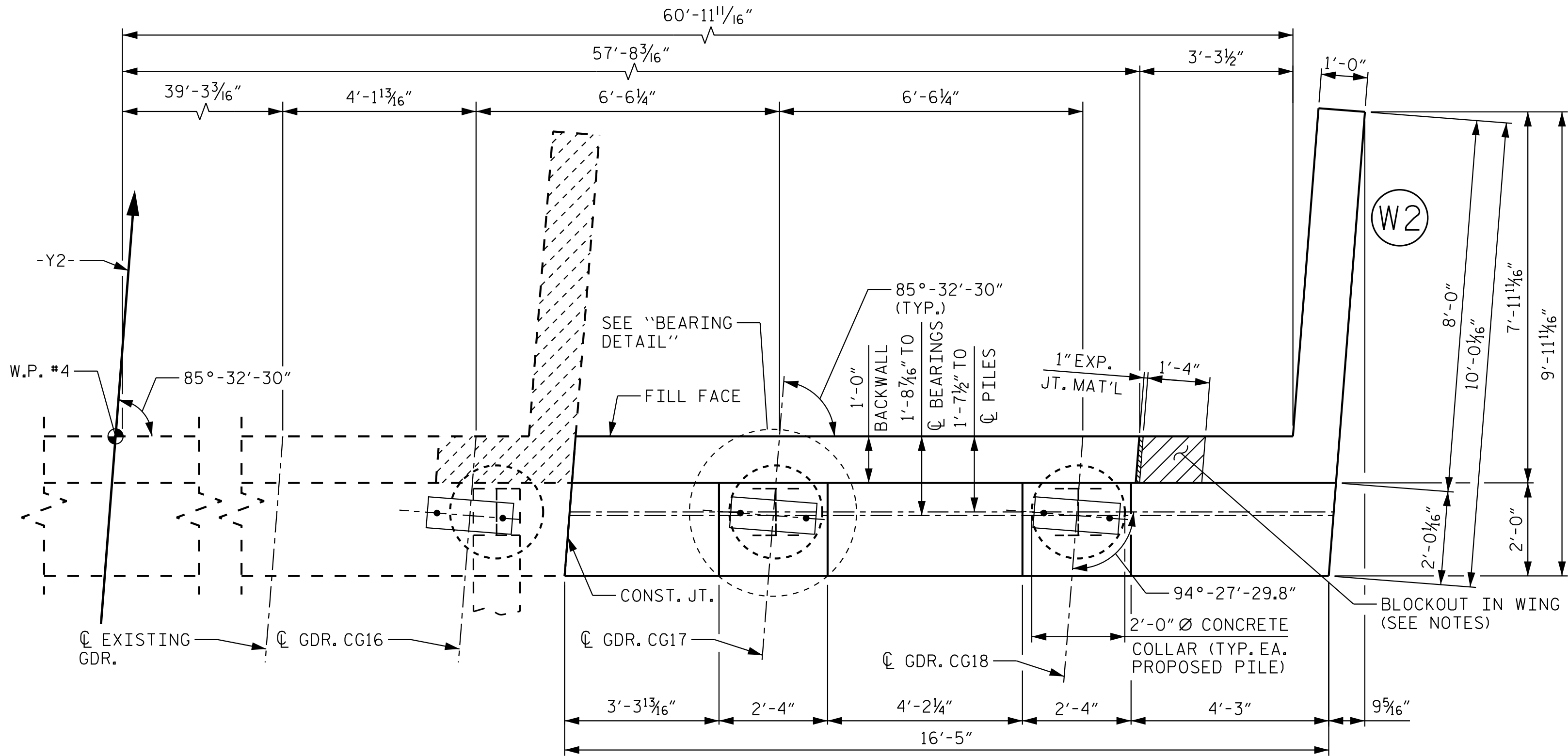
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CHECKED BY: A.D. BRENNER DATE: 03/26
DESIGN ENGINEER OF RECORD: A.L. PHILLIPS DATE: 03/26

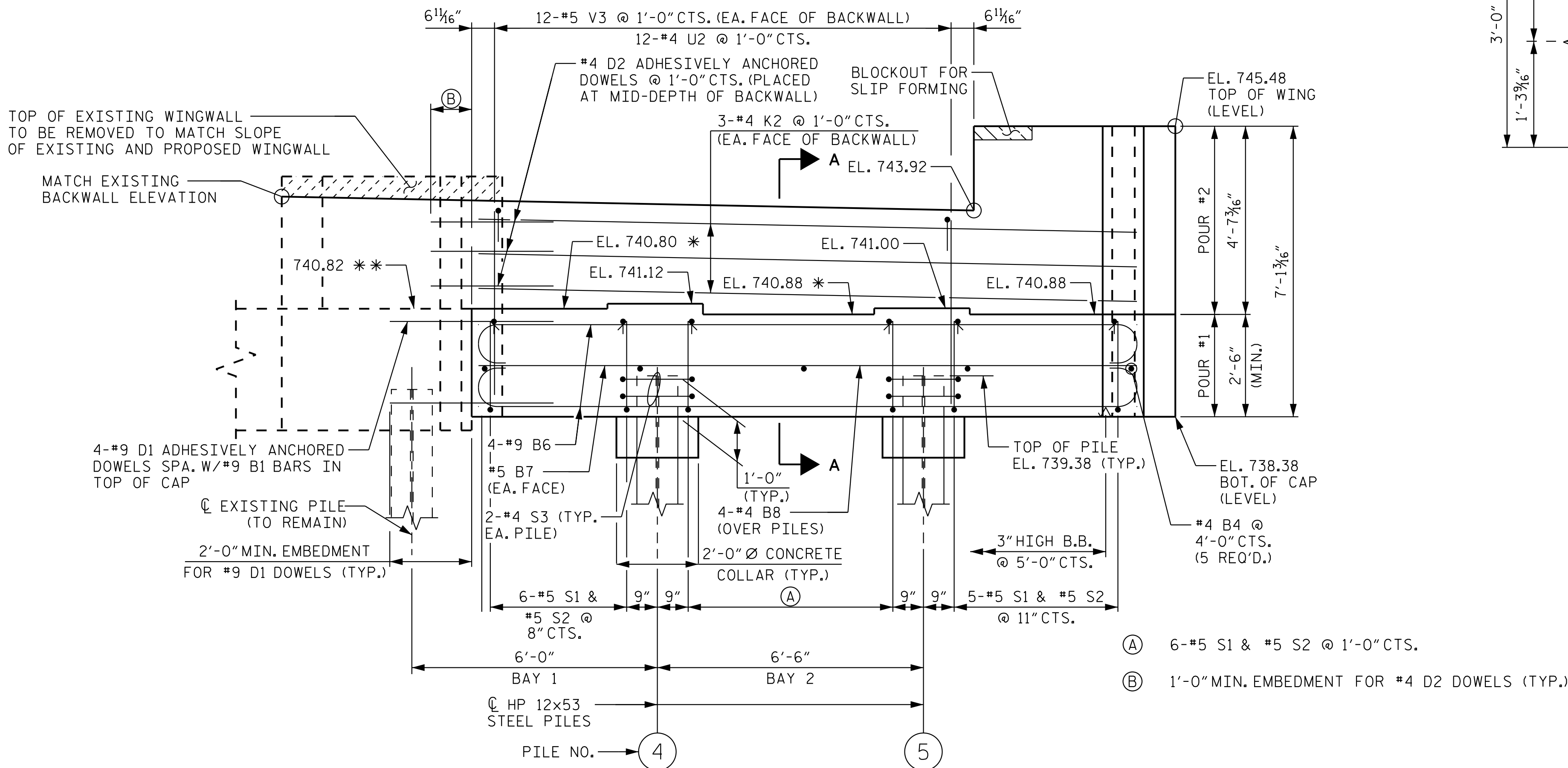
NOTES

FOR NOTES, SEE SHEET 1 OF 4.



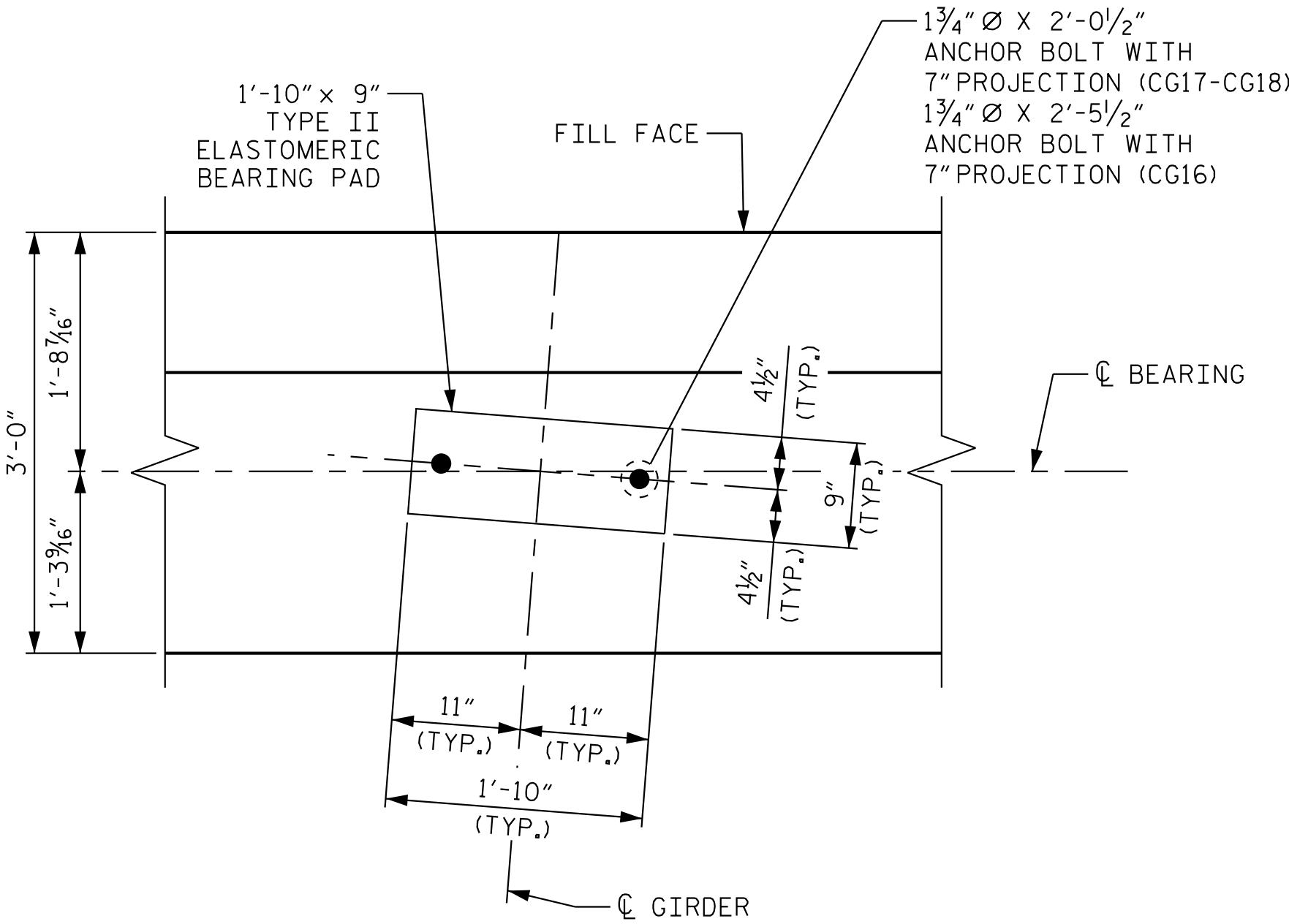
PLAN

AREA OF EXISTING WINGWALL TO BE REMOVED



ELEVATION

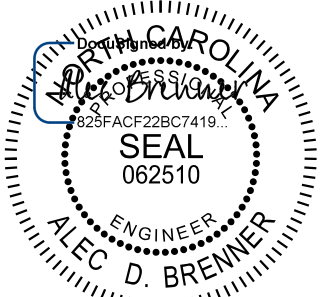
*FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEATS, SEE "SECTION A-A" ON SHEET 4 OF 4
**BEAM SEAT ELEVATION OF NEW GIRDER ON EXISTING CAP AT © OF BEARING
REINFORCING IN WING NOT SHOWN FOR CLARITY. FOR DETAILS SEE SHEET 4 OF 4



BEARING DETAIL

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 2 OF 4



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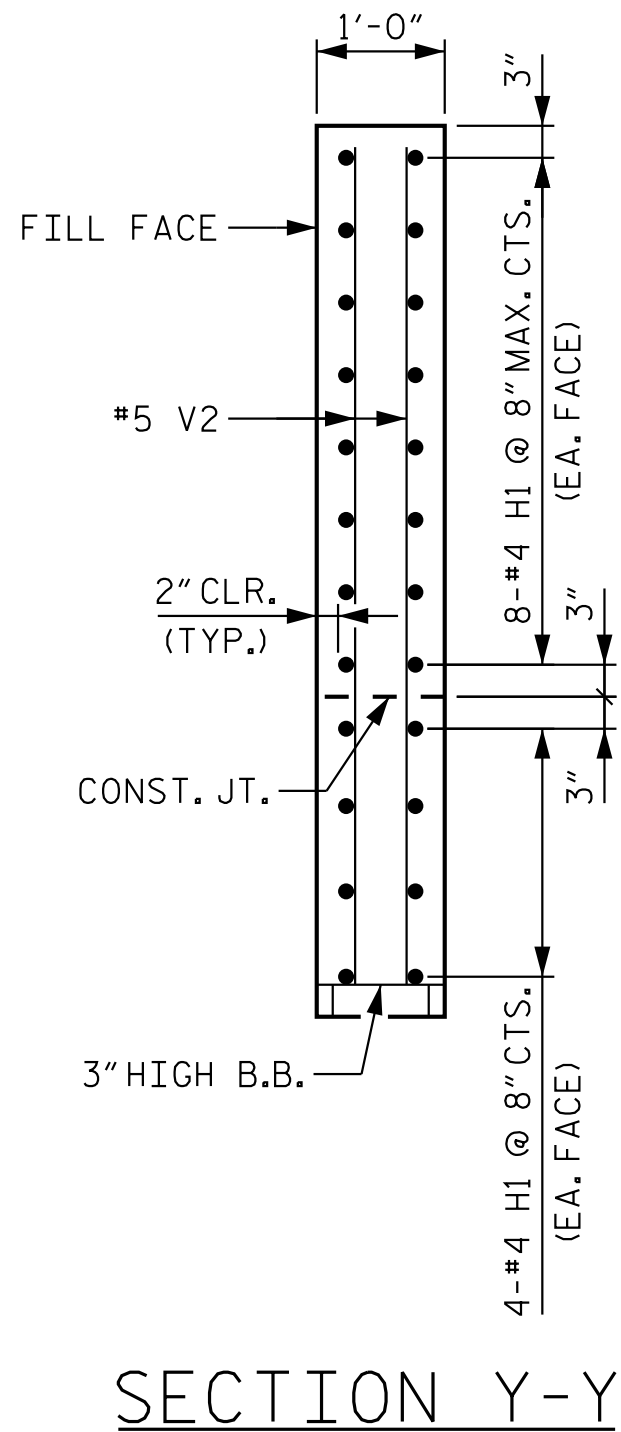
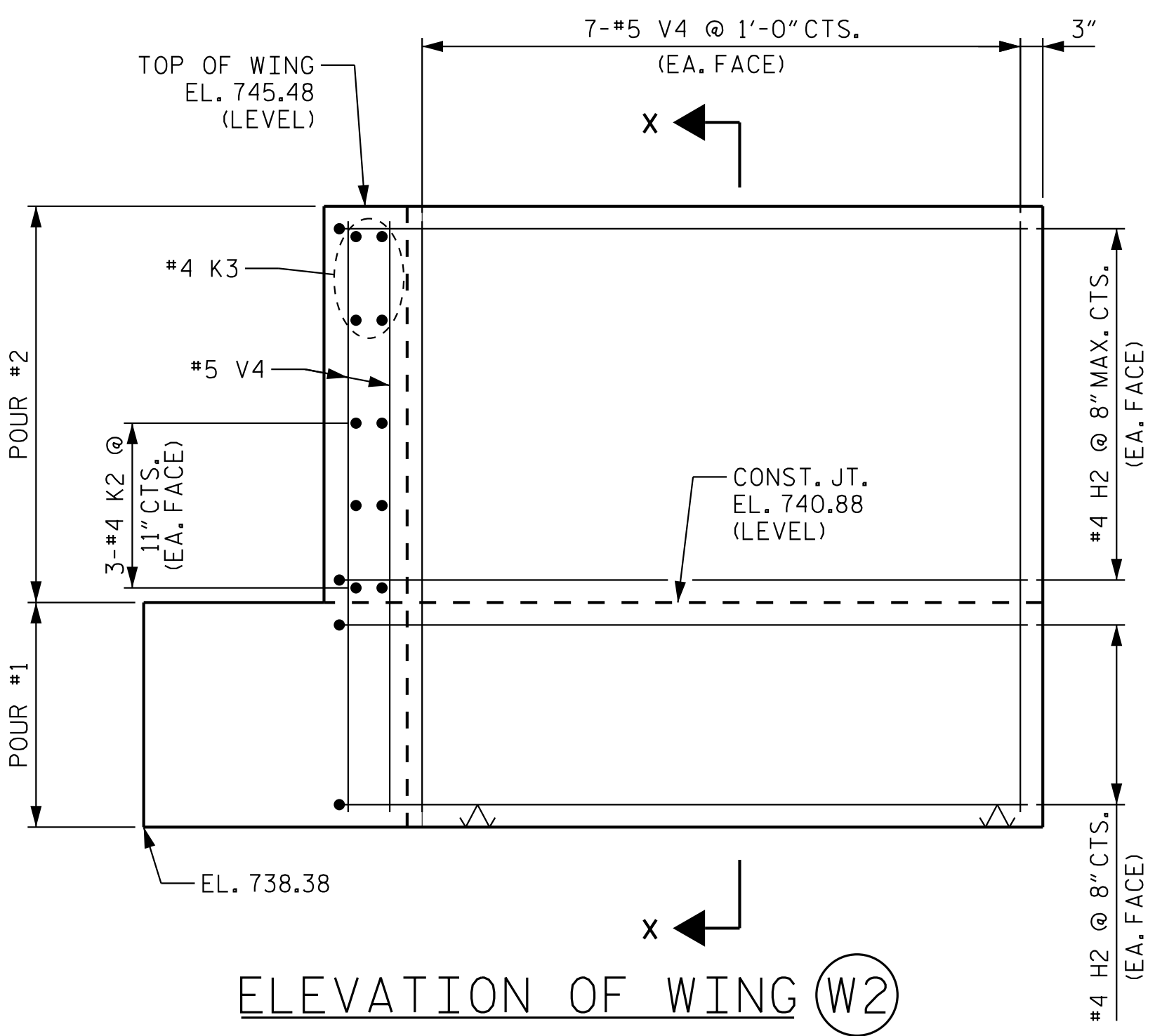
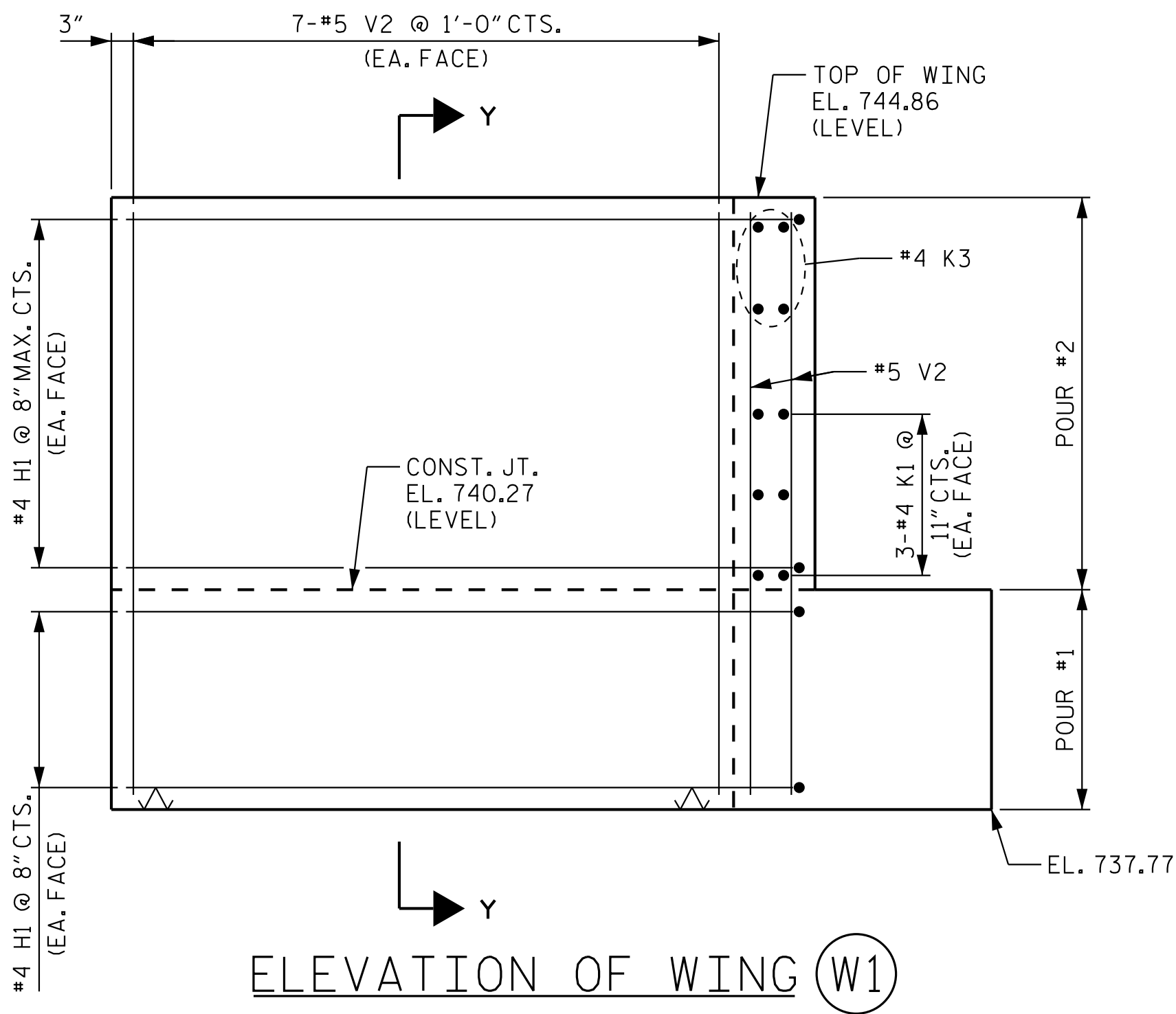
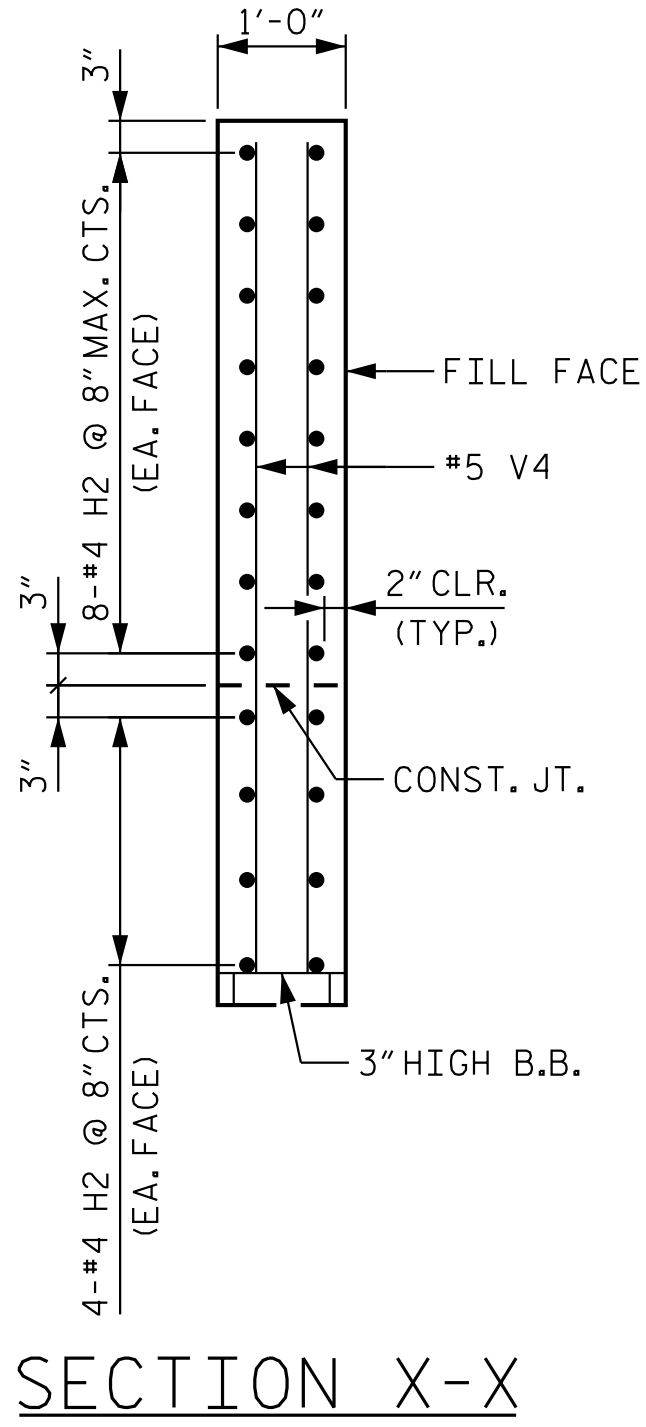
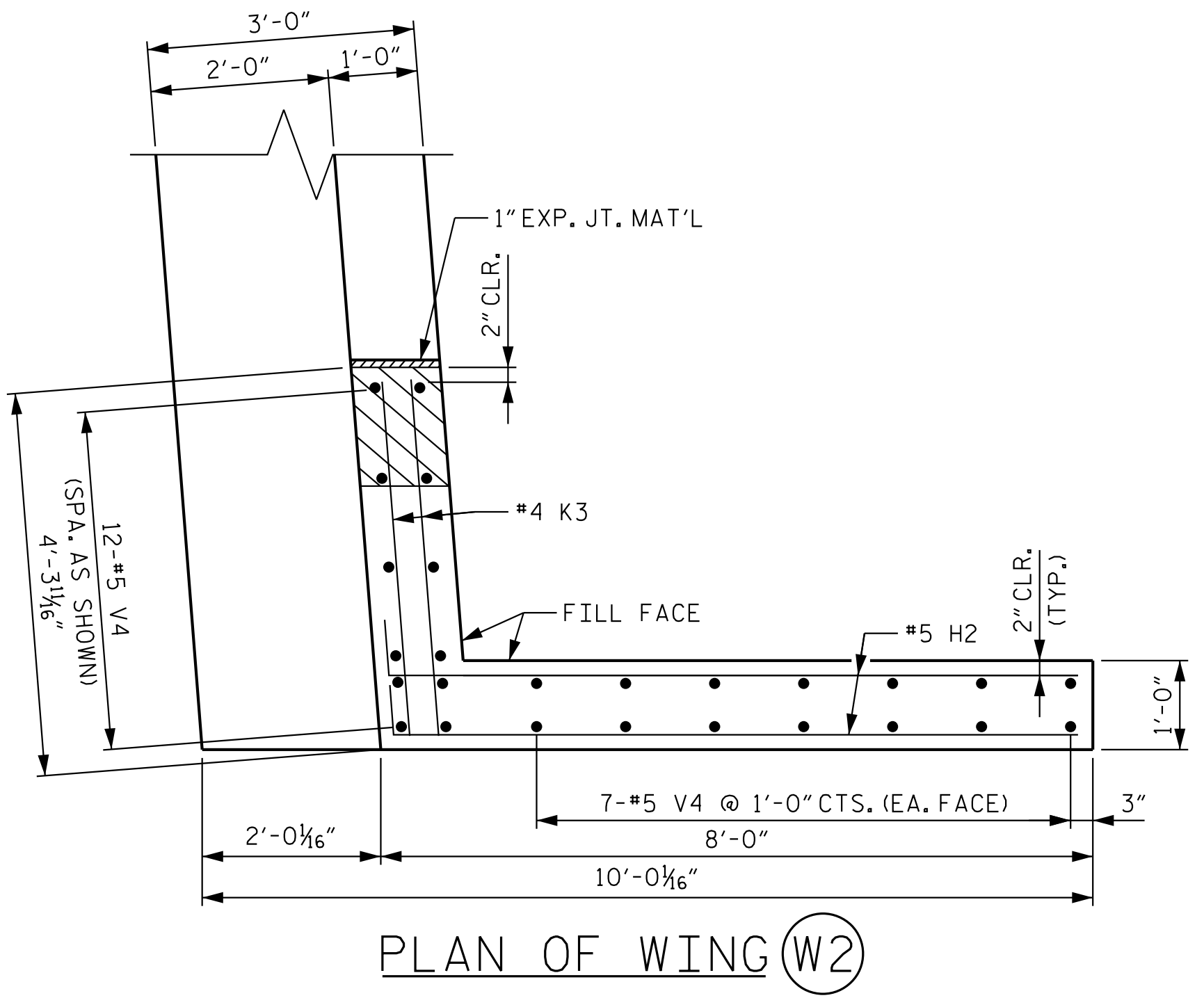
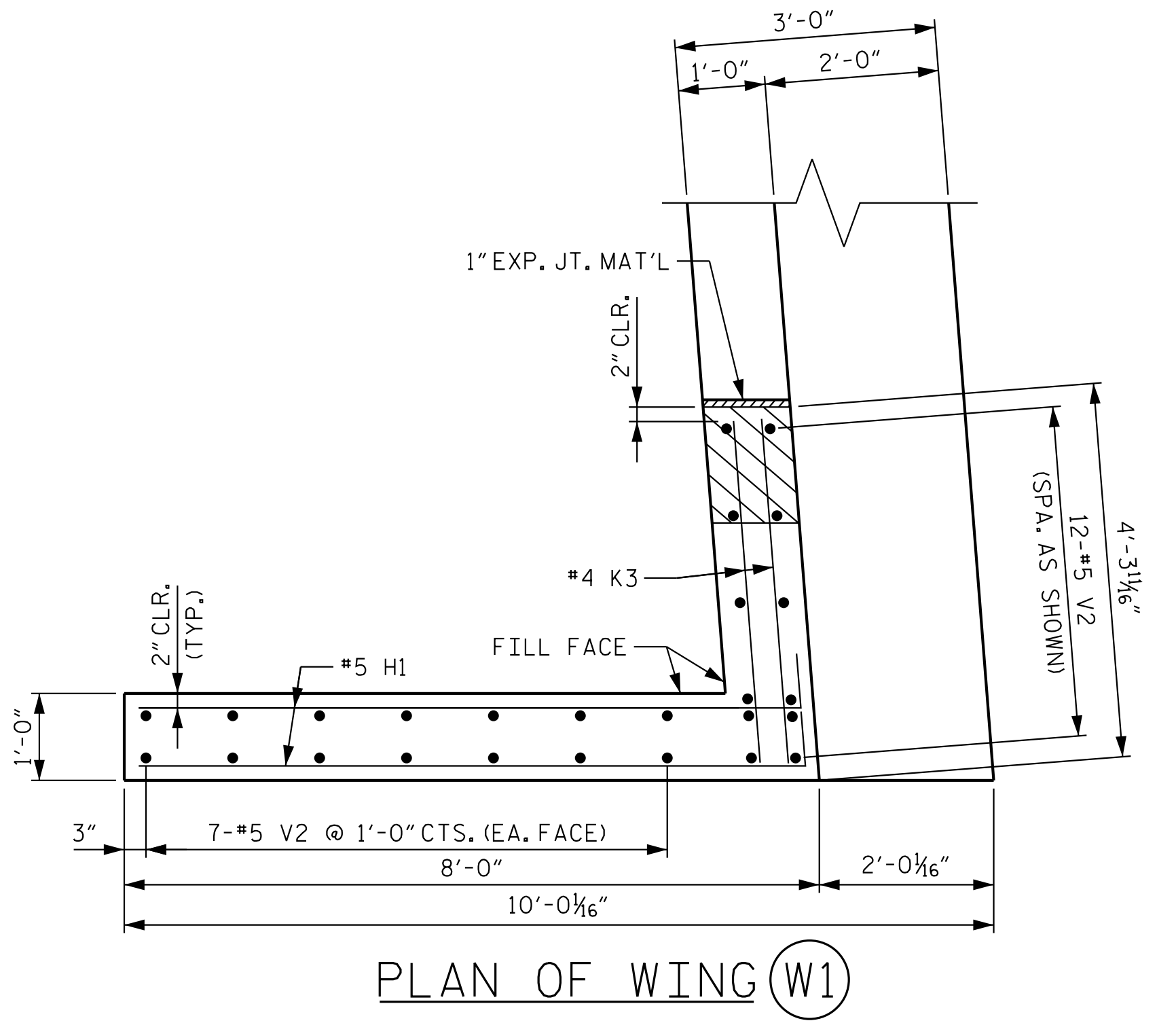
SUBSTRUCTURE
END BENT 2
RIGHT EXTENSION

REVISIONS						SHEET NO. S3-56
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #3

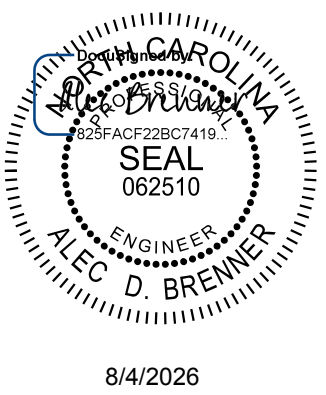
DRAWN BY: T. K. BOYD DATE: 03/26
CHECKED BY: A. D. BRENNER DATE: 03/26
DESIGN ENGINEER OF RECORD: A. L. PHILLIPS DATE: 03/26

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PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 3 OF 4



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2			4			

STR. #3

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DESIGN ENGINEER OF RECORD: A. L. PHILLIPS DATE: 03/26



(A) CONCRETE AND REINFORCING STEEL FOR OPTIONAL BRIDGE SEAT DETAIL ARE NOT INCLUDED IN THE BILL OF MATERIAL.

(B) REMOVE THE CONCRETE ON TOP OF THE EXISTING CAP AND CAST THE NEW CONCRETE TO BEAM SEAT. REVISED BEAM SEAT ELEVATION TO BE DETERMINED BY THE CONTRACTOR.

PROJECT NO. I-5715
MECKLENBURG COUNTY
 STATION: 29+87.44 -Y2-

SHEET 4 OF 4

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SUBSTRUCTURE
END BENT 2
SECTION AND DETAILS

REVISIONS						SHEET NO. S3-58
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #3

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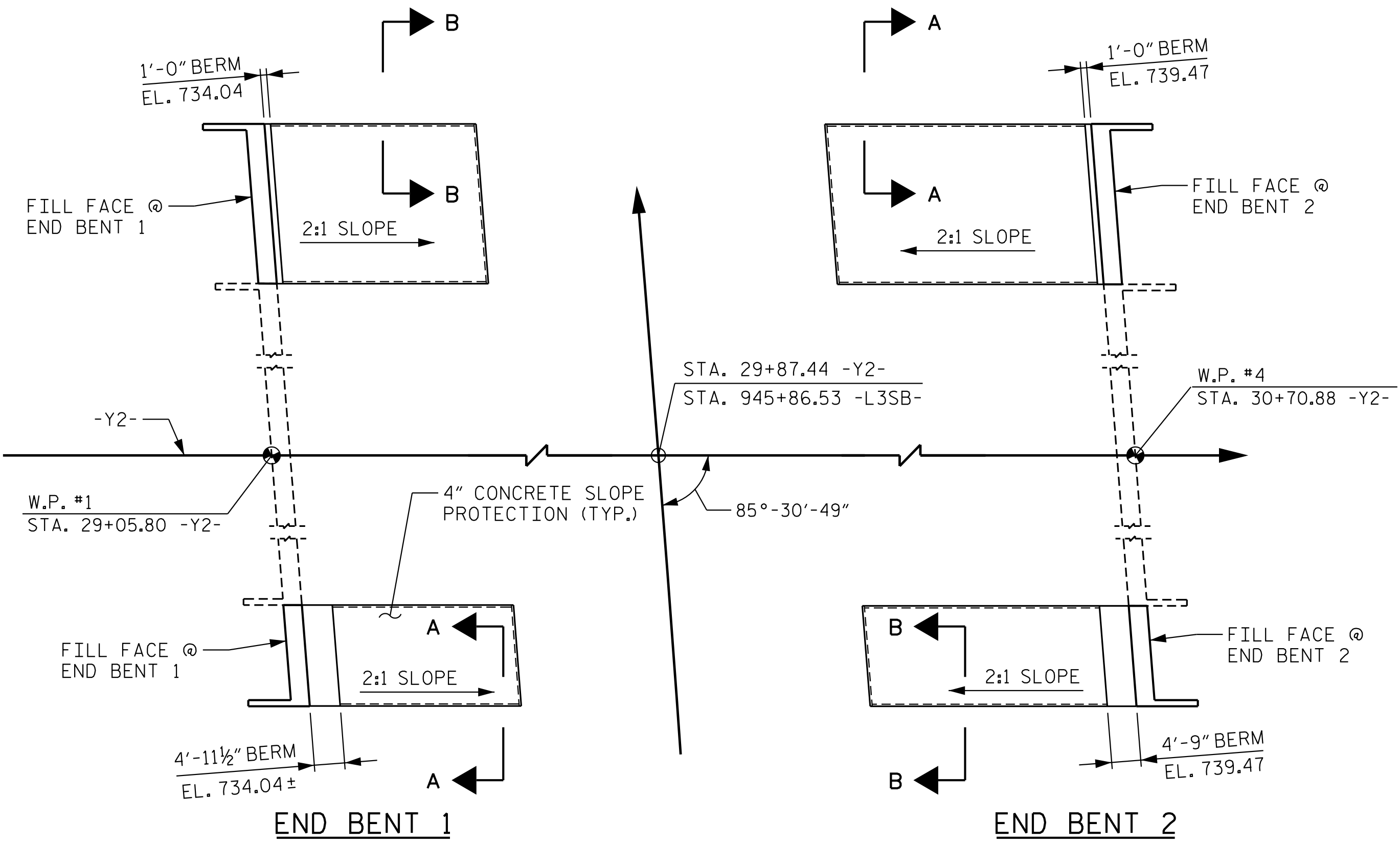
GENERAL NOTES

SLOPE PROTECTION SHALL BE PLACED UNDER THE ENDS OF THE BRIDGE AS SHOWN IN THE DETAILS. STRAIGHT EDGING WILL NOT BE REQUIRED UNLESS, IN THE OPINION OF THE ENGINEER, VISUAL INSPECTION INDICATES A NEED FOR IT. MEASUREMENT AND PAYMENT SHALL BE AS PRESCRIBED IN SECTION 462 OF THE STANDARD SPECIFICATIONS.

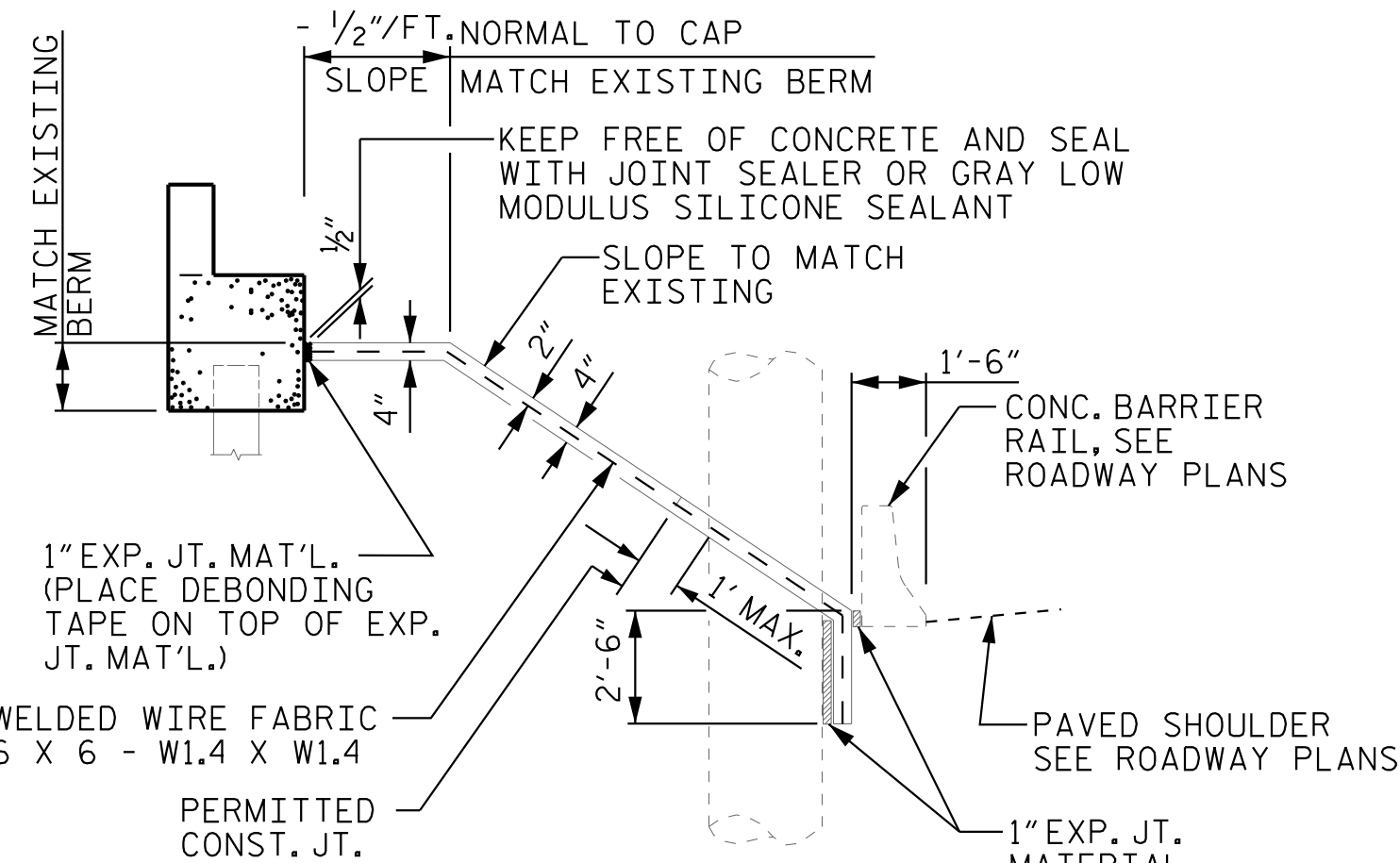
SLOPE PROTECTION SHALL CONSIST OF 4" POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS "B". THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W1.4 X W1.4, 60" WIDE. SLOPE PROTECTION SHALL BE POURED IN 5' STRIPS AS SHOWN IN THE "POURING DETAIL" WITH 2'-0" LONG #4 BARS PLACED ALONG THE SLOPE BETWEEN STRIPS AT 1'-6" MAXIMUM SPACING. SLOPE PROTECTION MAY BE POURED IN ALTERNATE 4' AND 5' STRIPS AS SHOWN IN THE "OPTIONAL POURING DETAIL" WITH ADJACENT RUNS OF WELDED WIRE FABRIC LAPPING AT LEAST 6". THE COST OF THE WELDED WIRE FABRIC AND #4 BARS, IF USED, SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR SLOPE PROTECTION.

BRIDGE @ STA. 33+80.20 -L-	4 INCH SLOPE PROTECTION	* WELDED WIRE FABRIC 60 INCHES WIDE
	SQUARE YARDS	APPROX. L.F.
END BENT 1	189	339
END BENT 2	241	433

* QUANTITY SHOWN IS BASED ON 5' POURS.

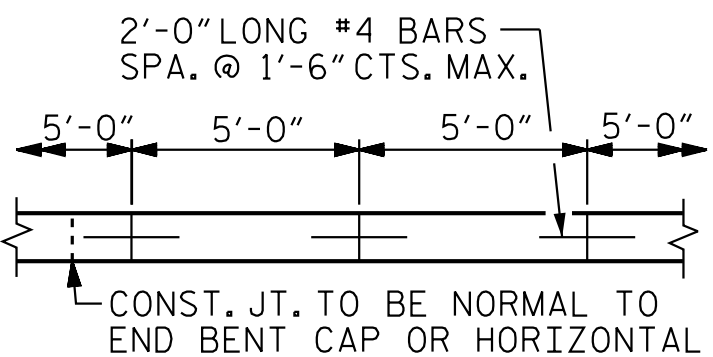


PLAN

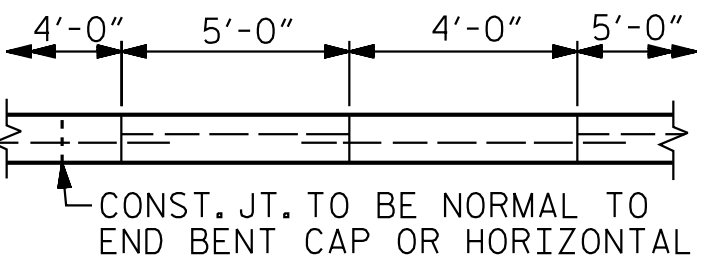


SECTION ALONG C SURVEY WITH SHOULDER PIER

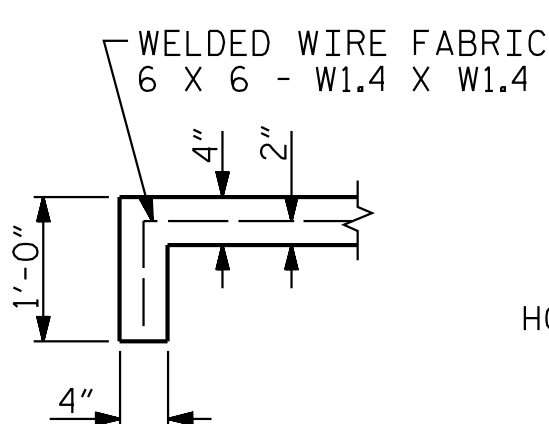
DETAILS FOR ALTERNATE "A"



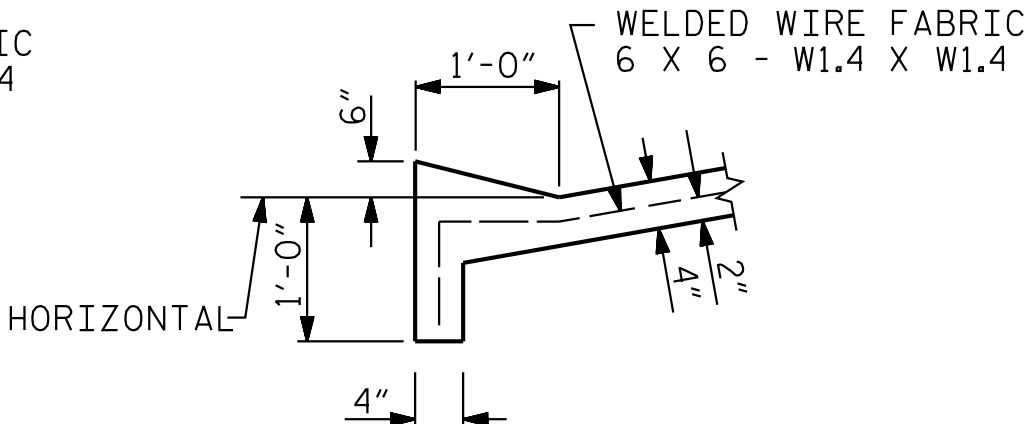
POURING DETAIL



OPTIONAL POURING DETAIL

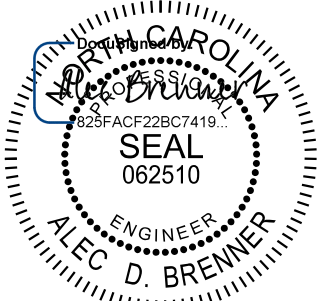


SECTION A-A



SECTION B-B

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-



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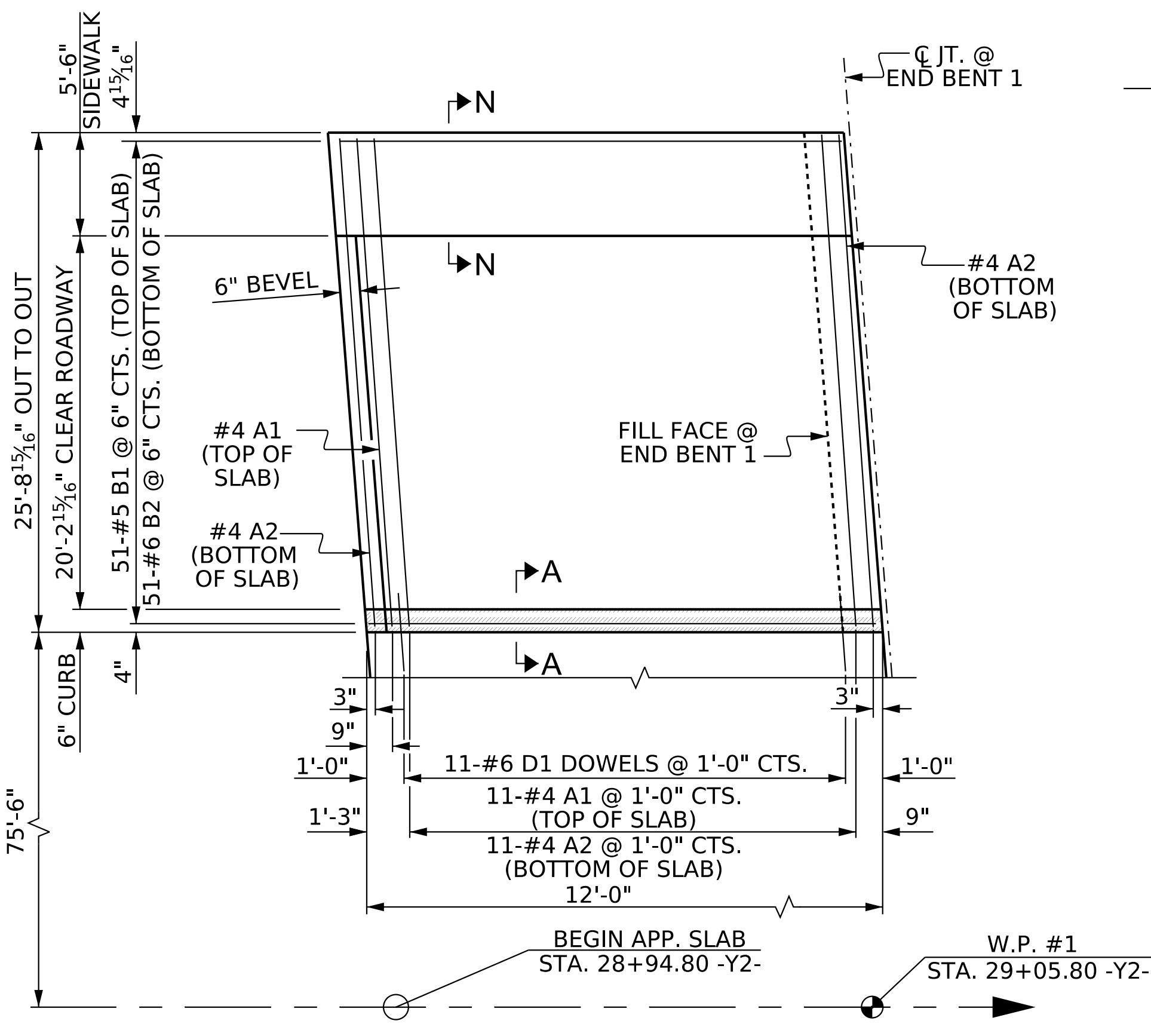
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD SLOPE PROTECTION DETAILS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 63

STR. #3 STD. NO. SP1

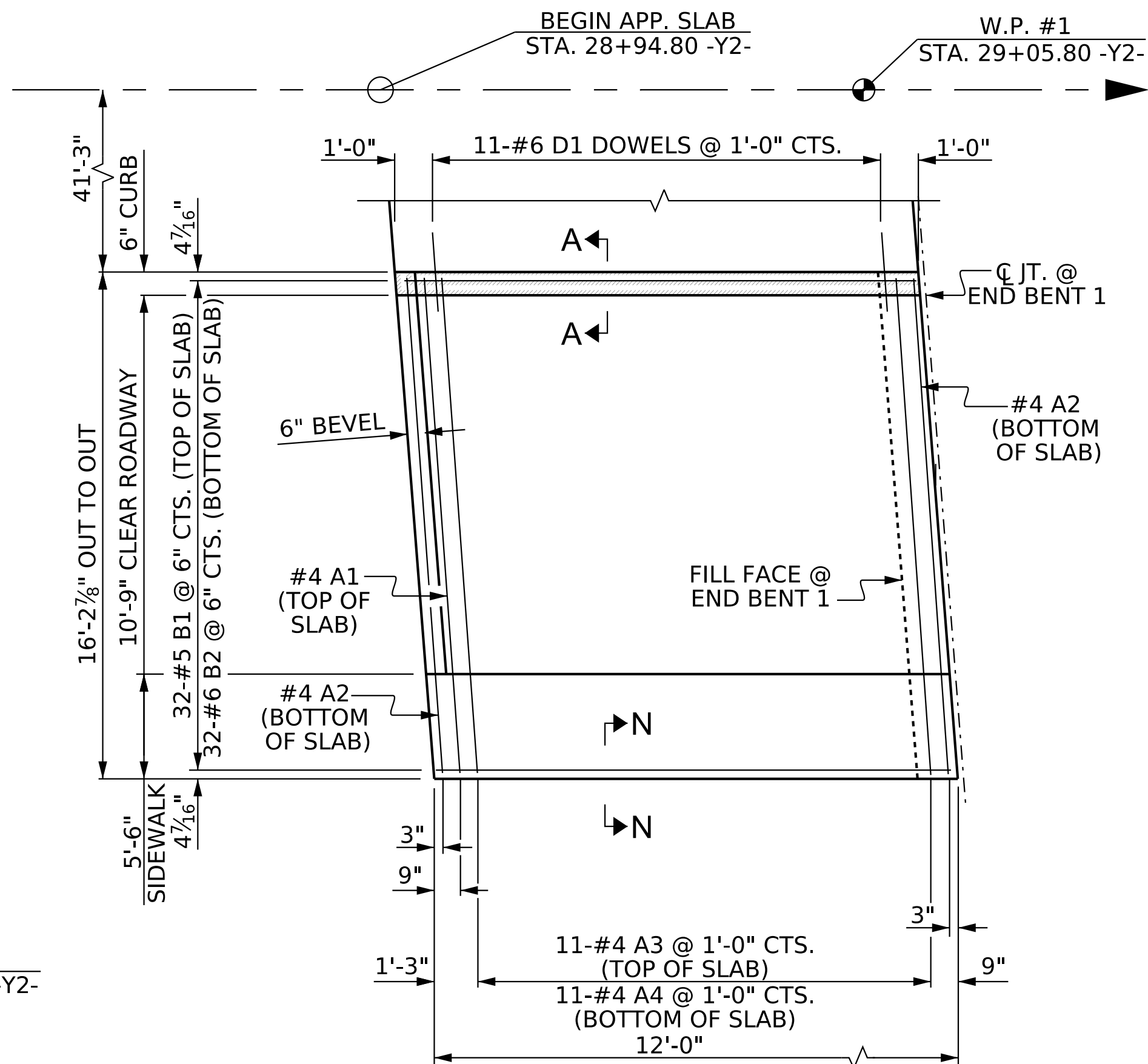
DRAWN BY: <u>T. K. BOYD</u>	DATE: <u>03/26</u>
CHECKED BY: <u>A. D. BRENNER</u>	DATE: <u>03/26</u>
DESIGN ENGINEER OF RECORD: <u>A. L. PHILLIPS</u>	DATE: <u>03/26</u>

K:\B01_Structures\Bridges\NC\01036524 - I-5715 Structure Design\Coord\gn\Site *2\Structure 3\Final\403.119.15715.SMU.ASI.590359.060.dgn 8/2/2026

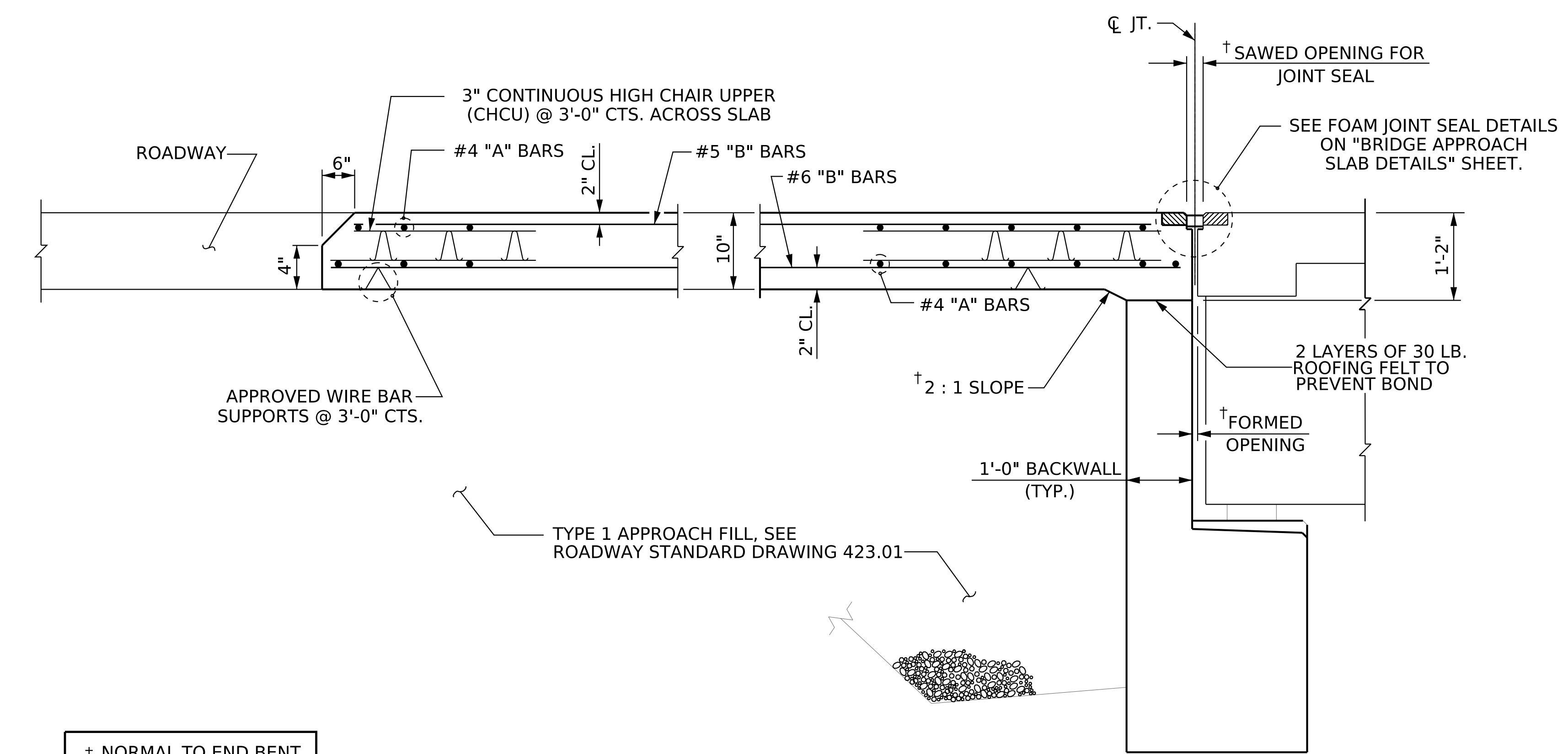


PLAN @ END BENT 1 - LEFT SIDE

EXISTING CURB TO BE REMOVED



PLAN @ END BENT 1 - RIGHT SIDE



SECTION THRU SLAB

NOTES

FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

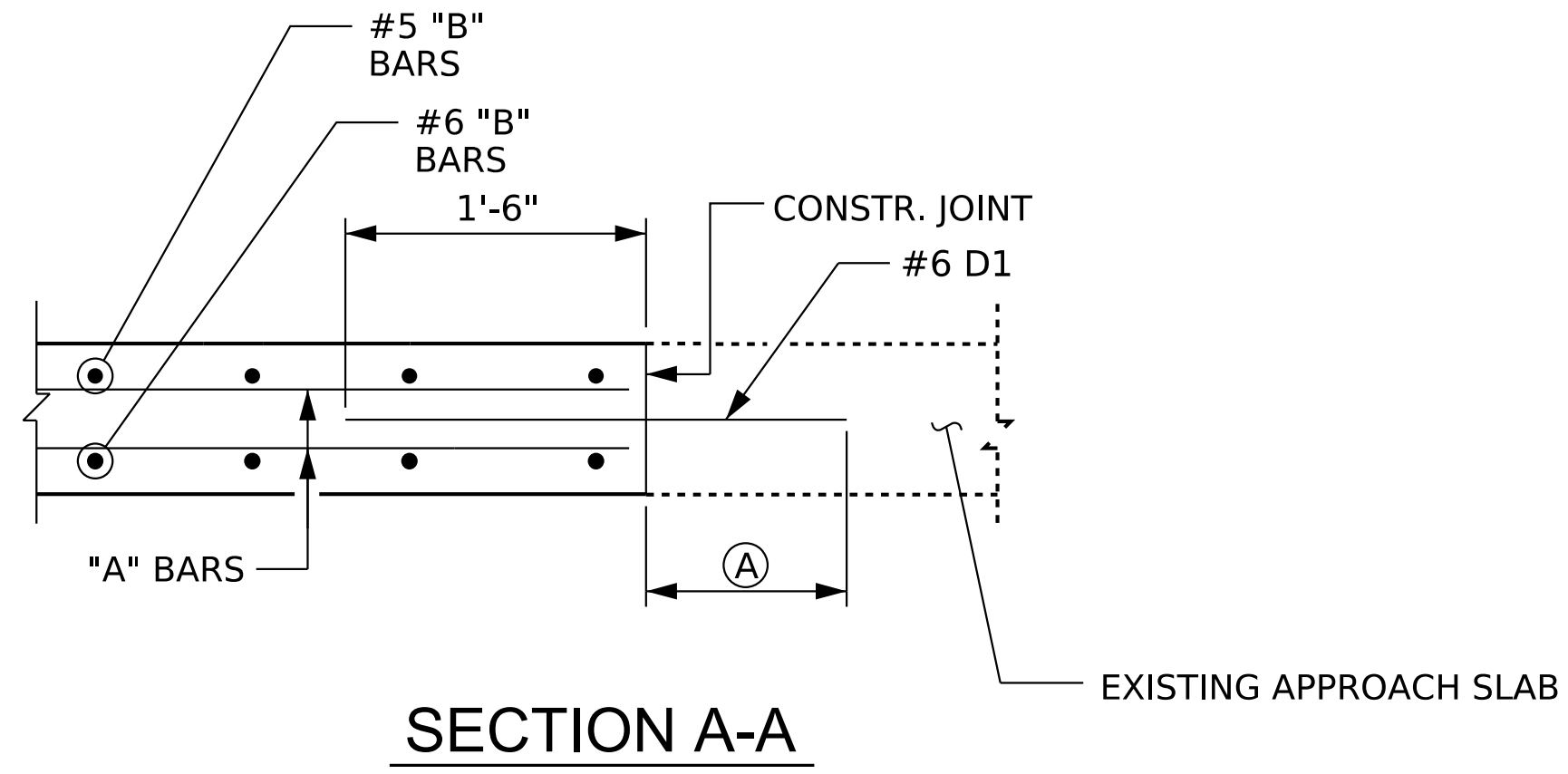
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR APPROACH SLAB AT END BENT 2, SEE SPECIAL APPROACH SLAB PLANS.

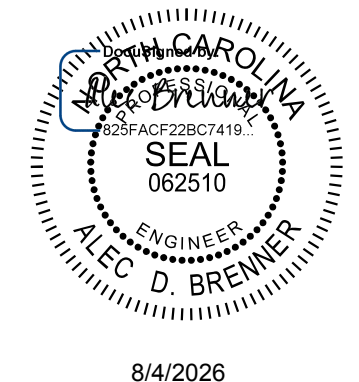
(A) D1 DOWELS SHALL BE INSTALLED IN THE EXISTING CONCRETE APPROACH SLAB USING AN ADHESIVELY ANCHORED SYSTEM. LEVEL ONE FIELD TESTING IS REQUIRED AND THE YIELD LOAD OF THE DOWEL IS 13.2 KIPS. OVERALL DOWEL LENGTH SHALL PROVIDE 1'-6" MINIMUM EXTENSION INTO THE NEW APPROACH SLAB. EMBEDMENT LENGTH TO BE DETERMINED BY THE MANUFACTURER OF THE ADHESIVELY ANCHORED DOWELS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.

SPLICE LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	1'-11"	1'-7"
#5	2'-5"	2'-0"
#6	3'-7"	2'-5"



PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-

SHEET 1 OF 3



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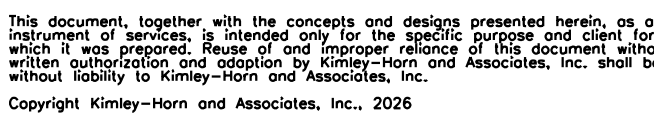
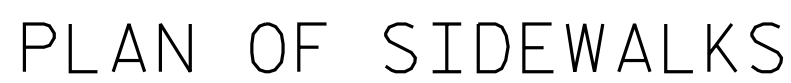
STATE OF NORTH CAROLINA
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RALEIGH

STANDARD
BRIDGE APPROACH
SLAB FOR
FLEXIBLE PAVEMENT

REVISIONS						SHEET NO. S3-60
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

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STR. #3 STD. NO. BAS2



BILL OF MATERIAL					
APPROACH SLAB AT EB #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	12	#4	STR	25'-5"	204
A2	13	#4	STR	25'-5"	221
A3	12	#4	STR	15'-11"	128
A4	13	#4	STR	15'-11"	138
*B1	83	#5	STR	11'-8"	1,010
B2	83	#6	STR	11'-8"	1,454
B3	8	#4	STR	11'-8"	62
G1	22	#4	STR	5'-0"	73
*U1	12	#4	1	3'-8"	29
REINFORCING STEEL				LBS.	1,813
* EPOXY COATED REINFORCING STEEL				LBS.	1,506
CLASS AA CONCRETE BREAKDOWN					
POUR 1 (SLAB)				C. Y.	16.1
POUR 2 (SIDEWALK)				C. Y.	2.9
TOTAL				C. Y.	19.0

PROJECT NO. I-5715
MECKLENBURG COUNTY
 STATION: 29+87.44 -Y2-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

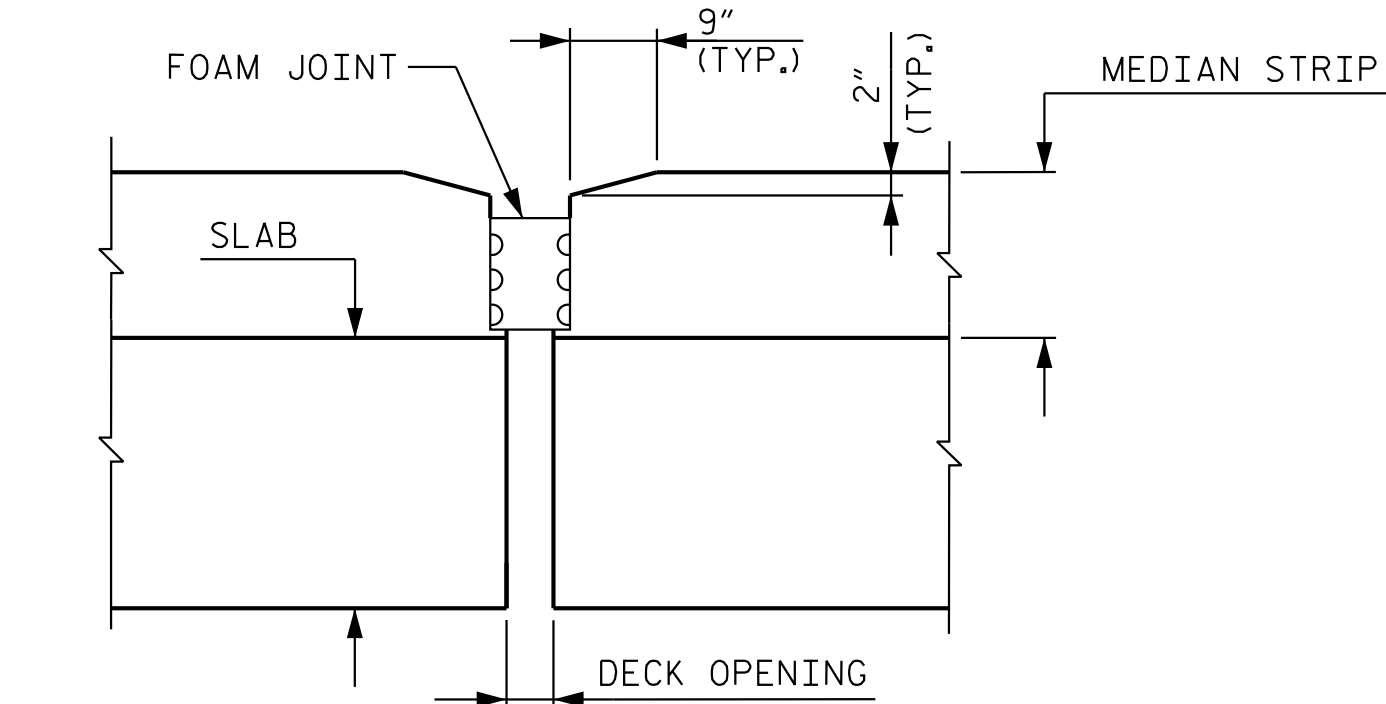
STANDARD

BRIDGE APPROACH SLAB SIDEWALK DETAILS

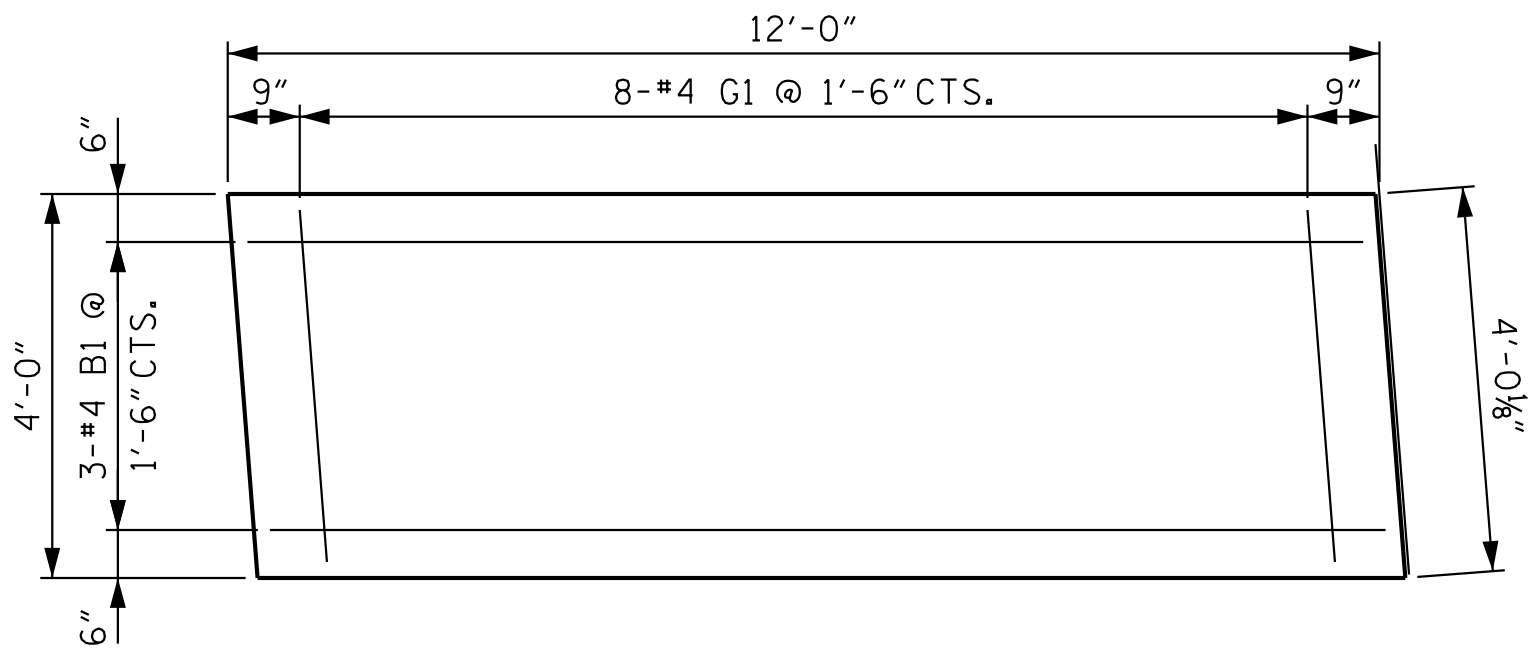
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #3 STD. NO. BAS4 (SHT 2)

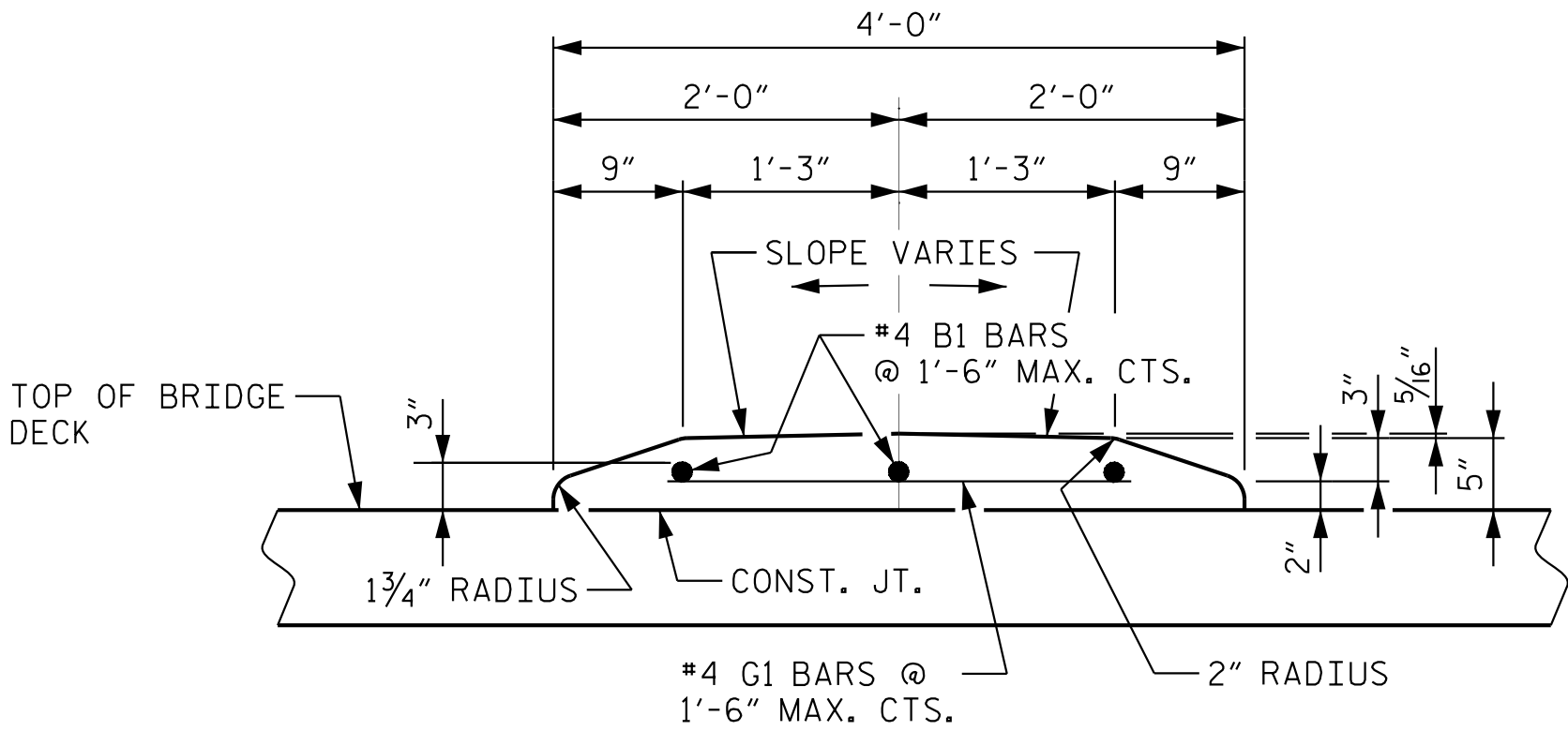
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DETAILS AT EXPANSION JOINT



PLAN AT APPROACH SLAB



MEDIAN TYPICAL SECTION

BILL OF MATERIAL					
CONCRETE MEDIAN					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B1	3	#4	STR	11'-8"	23
*G1	8	#4	STR	2'-8"	14
*EPOXY COATED REINFORCING STEEL					37 LBS.
TOTAL CLASS AA CONCRETE					0.7 C.Y.

NOTES

ALL REINFORCING STEEL IN MEDIAN SHALL BE EPOXY COATED.

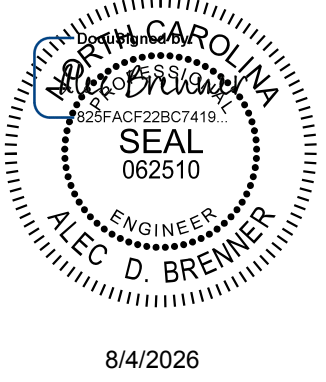
SEE ROADWAY PLANS FOR CONCRETE MEDIAN OUTSIDE THE BRIDGE LIMITS.

CONSTRUCTION SEQUENCE FOR CONCRETE MEDIAN

- 1-REMOVE PAINT,DIRT,OIL,AND ANY OBJECT OR MATERIAL THAT WILL ADVERSELY IMPACT CONCRETE BOND TO EXISTING BRIDGE DECK.
- 2-CONSTRUCT MEDIAN SECTION.
- 3-SAW CUT CONTRACTION JOINTS.
- 4-SEAL JOINTS.

SAW CUT CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE CUT IN ALL EXPOSED FACES OF THE CONCRETE MEDIAN IN ACCORDANCE WITH ARTICLE 825-10(E) OF THE STANDARD SPECIFICATION. SEAL CONTRACTION JOINT IN ACCORDANCE WITH ARTICLE 825-10(F) OF THE STANDARD SPECIFICATION.THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 TO 10 FEET BETWEEN EXPANSION JOINTS.NO CONTRACTION JOINT WILL BE REQUIRED IN SEGMENTS LESS THAN 10 FEET.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 29+87.44 -Y2-



8/4/2026

STATE OF NORTH CAROLINA
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APPROACH SLAB
MEDIAN DETAILS

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2			4			

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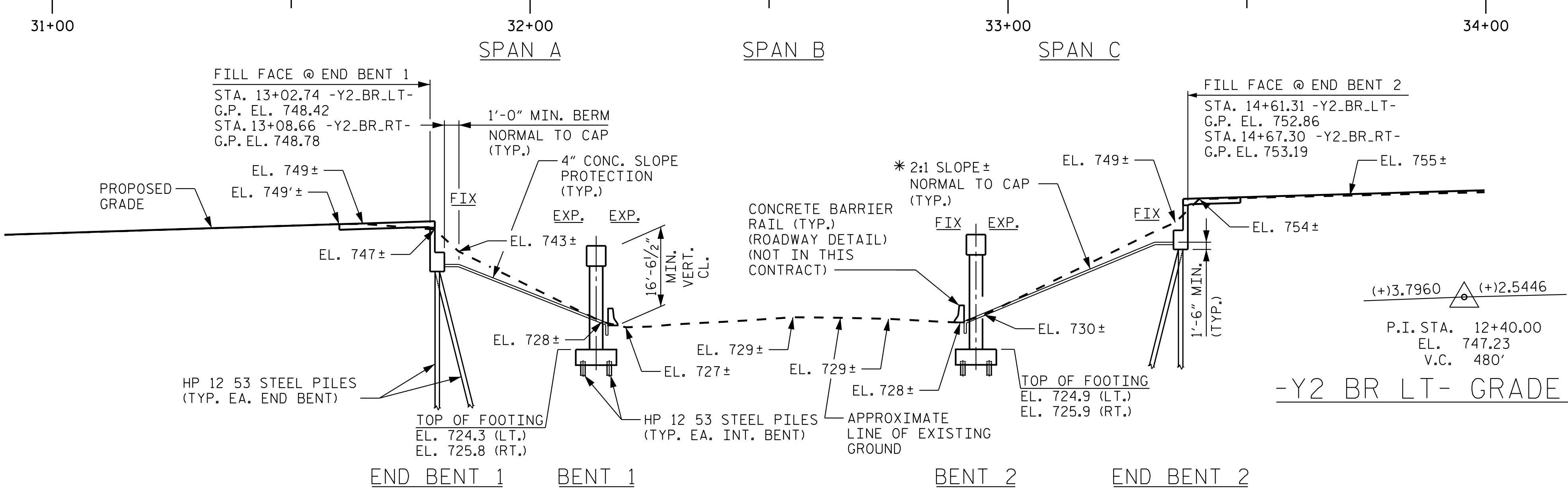
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K:\RD\I-Structures\Bridge\NC\01036524 - I-5715 Structure Design\Coord\gn\Site *2\Structure 3\Final\403.125.15715.SMU.MD2.590359.063.dgn 8/3/2026

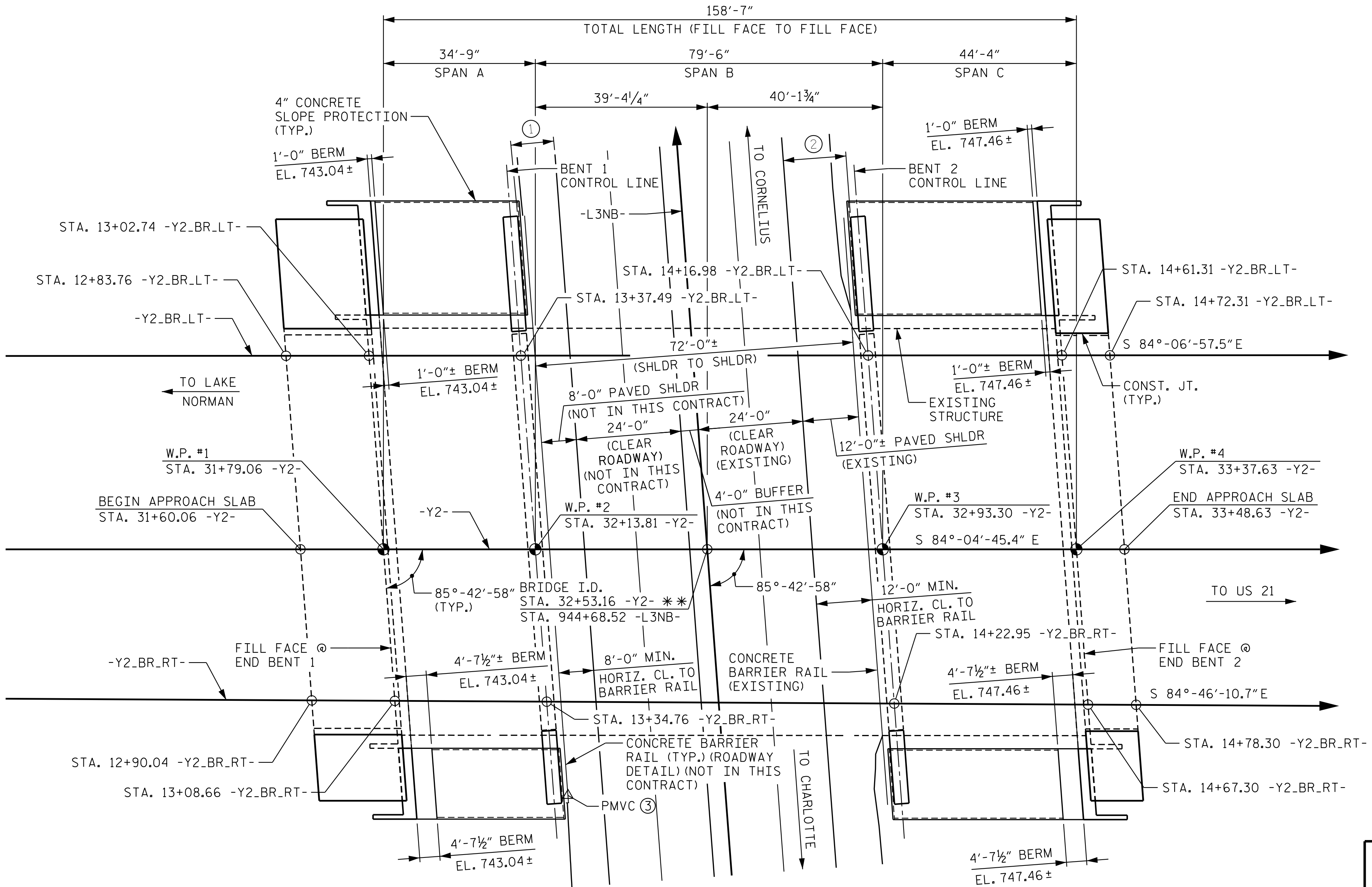
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CHECKED BY: <u>A.D. BRENNER</u>	DATE: <u>03/26</u>
DESIGN ENGINEER OF RECORD: <u>A.L. PHILLIPS</u>	DATE: <u>03/26</u>

760
750
740
730
720
710
700



-Y2 BR LT- GRADE DATA

-Y2 BR RT- GRADE DATA



* MATCH SLOPE OF EXISTING BRIDGE (APPROX. 2:1±)

** STA. 29+87.44 -Y2-
STA. 13+76.84 -Y2_BR_LT
STA. 13+82.79 -Y2_BR_RT-

BERM ELEVATION AND WIDTH TO MATCH EXISTING BERM.

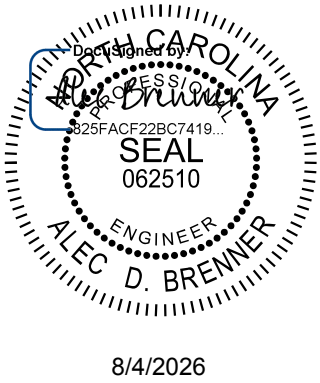
- ① 9'-6" MINIMUM HORIZONTAL CLEARANCE TO BENT CAP.
- ② 14'-4" MINIMUM HORIZONTAL CLEARANCE TO BENT CAP.
- ③ STA. 32+21.27 -Y2-
G.P. EL. 751.51'
OFFSET 56.29' RT.
STA. 944+14.77 -L3NB-
G.P. EL. 727.88'
OFFSET 36.00' LT.

PROJECT NO. I-5715

MECKLENBURG COUNTY

STATION: 32+53.16 -Y2-
944+68.52 -L3NB-

SHEET 1 OF 4 WIDENING OF BRIDGE NO. 358



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STATE OF NORTH CAROLINA
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RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER
NORTHBOUND I-77 ON
SR 2145/NC 73 BETWEEN
LAKE NORMAN & US 21

REVISIONS						SHEET NO. S4-1
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #4

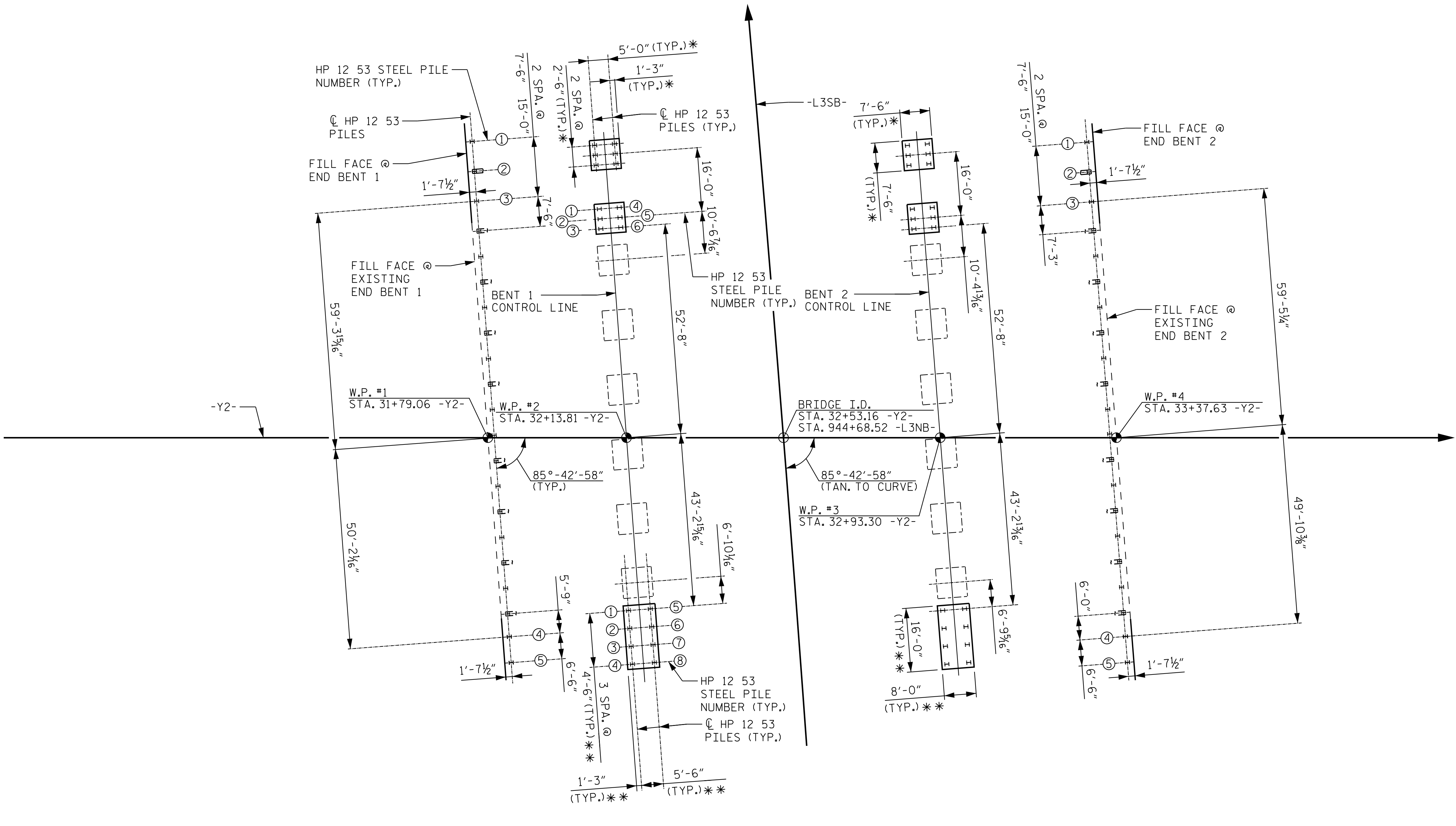
DRAWN BY: T.K. BOYD DATE: 4/26
CHECKED BY: A.D. BRENNER DATE: 4/26
DESIGN ENGINEER OF RECORD: A.L. PHILLIPS DATE: 4/26

PILES AND FOOTINGS NOT SHOWN IN PLAN VIEW FOR CLARITY.
PMVC - DENOTES POINT OF MINIMUM VERTICAL CLEARANCE

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NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

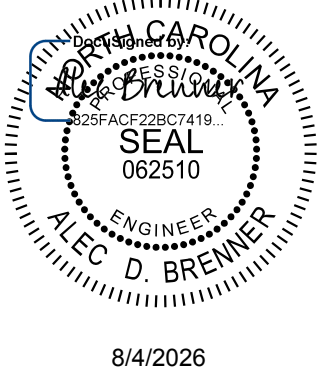


FOUNDATION LAYOUT

(DIMENSIONS LOCATING PILES ARE SHOWN TO THE CENTERLINE OF PILES AT BOTTOM OF CAP OR FOOTING)
* - TYP. LEFT WIDENING
** - TYP. RIGHT WIDENING

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 2 OF 4



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GENERAL DRAWING
FOUNDATION LAYOUT

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1			3			TOTAL SHEETS 63
2			4			

STR. #4

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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
End Bent No. 1, LT Piles 1-3	3	95	742.32	85			160							
End Bent No. 1, RT Piles 1-2	2	95	742.95	50			160							
Bent No. 1, LT Piles 1-12	12	165	722.05	45			275							
Bent No. 1, RT Piles 1-8	8	165	722.83	45			275							
Bent No. 2, LT Piles 1-12	12	165	722.65	30			275							
Bent No. 2, RT Piles 1-8	8	165	723.65	40			275							
End Bent No. 2, LT Piles 1-3	3	95	746.77	70			160							
End Bent No. 2, RT Piles 1-2	2	95	747.35	75			160							
TOTAL QUANTITY:														

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

** 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
End Bent No. 1, Piles 1-5	95			0.60		
Bent No. 1, Footings 1-20	163			0.60		
Bent No. 2, Footings 1-20	163			0.60		
End Bent No. 2, Piles 1-5	95			0.60		

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

SUMMARY OF PILE ACCESSORIES

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Pipe Pile Plates EACH	Steel Pile Points		
		Pipe Pile Cutting Shoes EACH	Pipe Pile Conical Points EACH	H-Pile Points EACH
TOTAL QUANTITY:				

SUMMARY OF DPT/PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

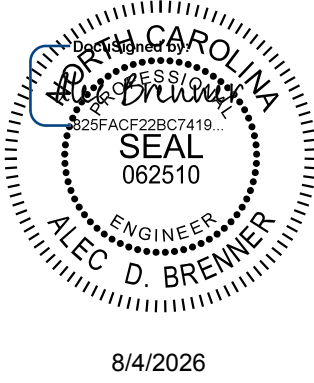
Dynamic Pile Testing (DPT)		
End Bent / Bent No (e.g., "Bent 1 - Bent 3")	DPT Test Pile Length FT	DPT Testing Quantity EACH
TOTAL QUANTITY:		

Pile Order Lengths for Concrete Piles	
End Bent / Bent No (e.g., "Bent 1 - Bent 3")	Pile Order Length Basis* EST or DPT

* EST = Pile order lengths from estimated pile lengths; DPT = Pile order lengths based on Dynamic Pile Testing. For groups of end bents/bents with pile order lengths based on DPT testing, the first end bent/bent no. listed for each group is the representative end bent/bent with the DPT.

NOTES:

1. The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Pete Tomos, #051623) on 02-04-2026.
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.



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PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

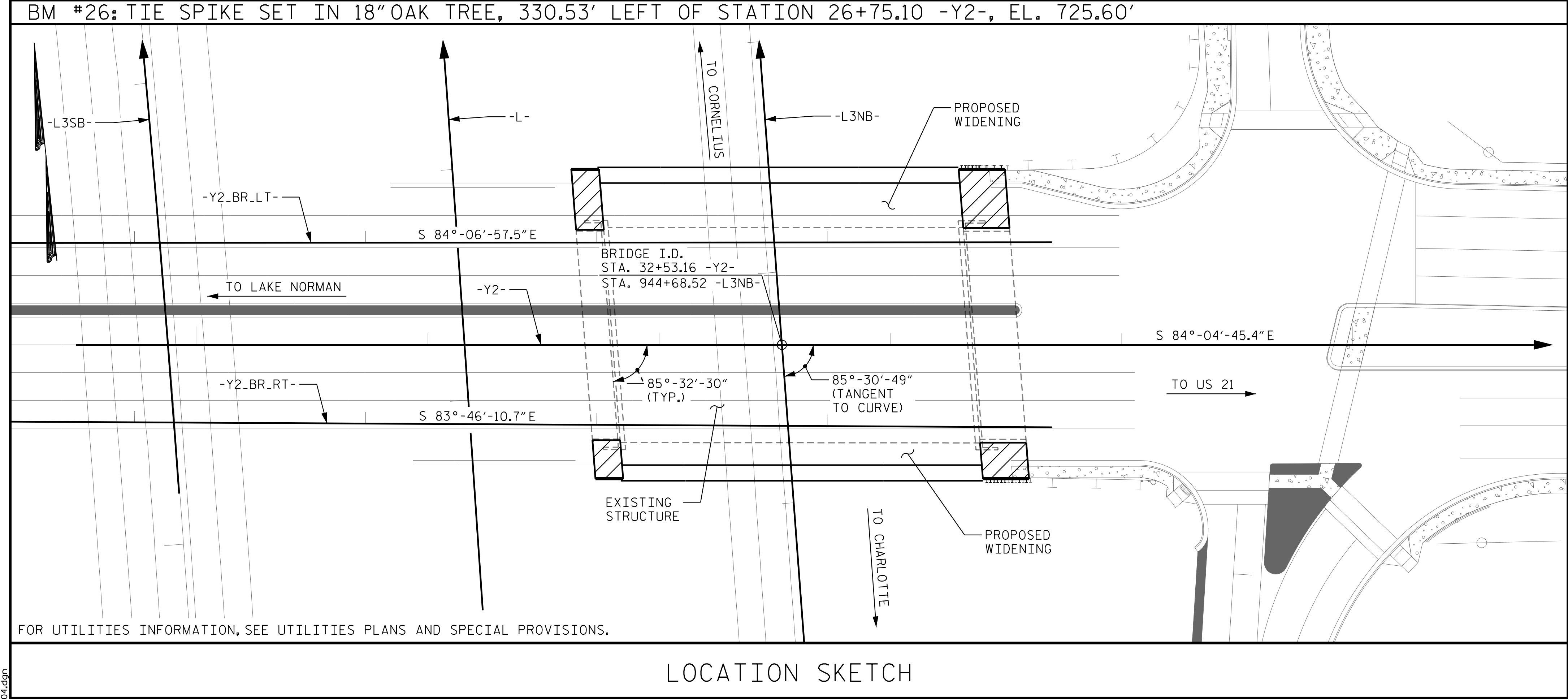
SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOUNDATION TABLES

REVISIONS						SHEET NO. S4-3
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

K:\RD1_Structures\Bridges\NC\01036524 - I-5715 Structure Design\Coord\Sign\Site *2\Structure 4\Final\04_005_151715_SMU_FT1_590358_003.dgn 8/3/2026



NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

WIDENING OF BRIDGE NO. 358.

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 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 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.

THE ELEVATION(S) AND CLEARANCE(S) SHOWN ON THE PLANS AT THE POINT(S) OF MINIMUM VERTICAL CLEARANCE ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE ELEVATION(S) 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.

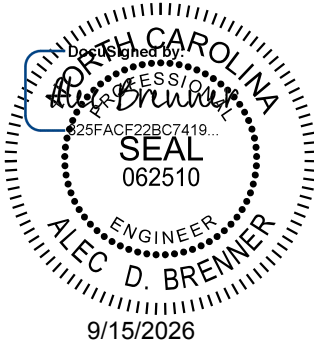
THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED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

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 FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 4 OF 6



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1			3			TOTAL SHEETS 63
2			4			

STR. #4

9/15/2026 K:\B01-Structures\Bridges\NC\01036524 - I-5715 Structure Design\Coord\Sign\Site *2\Structure 4\Final\404-007-15715_SMU_CD2_590358_004.dgn

TOTAL BILL OF MATERIAL														
	REMOVAL OF EXISTING STRUCTURE AT STATION 32+53.16 -Y2-	ASBESTOS ASSESSMENT	FOUNDATION EXCAVATION FOR BENT 1 AT STATION 32+53.16 -Y2-	FOUNDATION EXCAVATION FOR BENT 2 AT STATION 32+53.16 -Y2-	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	APPROX. 229,474 LBS. STRUCTURAL STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12x53 STEEL PILES	HP 12 X 53 STEEL PILES	
	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	LBS.	LUMP SUM	EA.	NO.	LIN. FT.
SUPERSTRUCTURE					7,312	5,229		LUMP SUM			LUMP SUM			
END BENT 1							21.3		3,580			5	5	355
BENT 1			LUMP SUM				62.6		10,944	1,585		20	20	900
BENT 2				LUMP SUM			64.6		11,152	1,755		20	20	680
END BENT 2							21.4		3,616			5	5	360
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	7,312	5,229	169.9	LUMP SUM	29,292	3,340	LUMP SUM	50	50	2,295

TOTAL BILL OF MATERIAL					
	TWO BAR METAL RAIL	1'-2" X 3'-2 3/4" CONCRETE PARAPET	4" SLOPE PROTECTION	ELASTOMERIC BEARINGS	FOAM JOINT SEALS
	LIN. FT.	LIN. FT.	SQ. YD.	LUMP SUM	LUMP SUM
SUPERSTRUCTURE	305.3	312.8		LUMP SUM	LUMP SUM
END BENT 1			191		
BENT 1					
BENT 2					
END BENT 2			240		
TOTAL	305.3	312.8	431	LUMP SUM	LUMP SUM

SAMPLE BAR REPLACEMENT	
SIZE	LENGTH
#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"

NOTE:
SAMPLE BAR REPLACEMENT LENGTHS
BASED ON 30" (SAMPLE LENGTH) PLUS
TWO SPLICE LENGTHS AND f_y = 60ksi.

DRAWN BY: <u>T. K. BOYD</u>	DATE: <u>4/26</u>
CHECKED BY: <u>A. D. BRENNER</u>	DATE: <u>4/26</u>
DESIGN ENGINEER OF RECORD: <u>A. L. PHILLIPS</u>	DATE: <u>4/26</u>

K:\B01_Structures\Bridge\NC\01036524 - I-5715 Structure Design\Coord\Sign\Site *2\Structure 4\Final\404-009-151715_SMU_G03_590358_005.dgn 8/2/2026

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR STEEL 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	
							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	1.69	--	1.75		1.69	B	I	38.85		3.02	B	I	78.15	1.30		2.03	B	I	48.90	
		HL-93 (OPERATING)	N/A		2.20	--	1.35		2.20	B	I	38.85		3.91	B	I	78.15	1.00		2.64	B	I	48.90	
		HS-20 (INVENTORY)	36.000	②	2.05	73.91	1.75		2.05	B	I	39.41		3.63	B	I	78.15	1.30		2.50	B	I	39.41	
		HS-20 (OPERATING)	36.000		2.66	95.81	1.35		2.66	B	I	39.41		4.70	B	I	78.15	1.00		3.25	B	I	39.41	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		4.95	66.76	1.40		5.45	B	I	29.36		11.12	B	I	78.15	1.30		4.95	B	I	29.36	
		SNGARBS2	20.000		3.94	78.77	1.40		4.28	B	I	38.85		7.88	B	I	78.15	1.30		3.94	B	I	29.36	
		SNAGRIS2	22.000		3.85	84.63	1.40		3.96	B	I	39.41		7.24	B	I	78.15	1.30		3.85	B	I	29.36	
		SNCOTTS3	27.250		2.64	72.00	1.40		2.91	B	I	29.36		5.55	B	I	78.15	1.30		2.64	B	I	29.36	
		SNAGGRS4	34.925		2.38	83.20	1.40		2.58	B	I	39.41		4.73	B	I	78.15	1.30		2.38	B	I	29.36	
		SNS5A	35.550		2.40	85.47	1.40		2.56	B	I	39.41		4.69	B	I	0.00	1.30		2.40	B	I	29.36	
		SNS6A	39.950		2.22	88.73	1.40		2.34	B	I	39.41		4.19	B	I	0.00	1.30		2.22	B	I	29.36	
		SNS7B	42.000		2.13	89.35	1.40		2.18	B	I	39.41		4.18	B	I	78.15	1.30		2.13	B	I	29.36	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		2.62	86.47	1.40		2.64	B	I	38.85		4.26	B	I	78.15	1.30		2.62	B	I	38.85	
		TNT4A	33.075		2.48	82.00	1.40		2.69	B	I	29.36		4.81	B	I	0.00	1.30		2.48	B	I	29.36	
		TNT6A	41.600		2.21	91.76	1.40		2.30	B	I	39.41		4.34	B	I	78.15	1.30		2.21	B	I	48.90	
		TNT7A	42.000		2.22	93.15	1.40		2.34	B	I	38.85		4.14	B	I	0.00	1.30		2.22	B	I	29.36	
		TNT7B	42.000		2.25	94.63	1.40		2.33	B	I	38.85		4.20	B	I	0.00	1.30		2.25	B	I	48.90	
		TNAGRIT4	43.000		2.07	88.86	1.40		2.14	B	I	39.41		3.82	B	I	0.00	1.30		2.07	B	I	29.36	
		TNAGT5A	45.000	③	2.01	90.50	1.40		2.04	B	I	38.85		3.89	B	I	0.00	1.30		2.01	B	I	38.85	
		TNAGT5B	45.000		2.02	91.10	1.40		2.07	B	I	38.85		3.78	B	I	0.00	1.30		2.02	B	I	29.36	
EMERGENCY VEHICLE (EV)		EV2	28.750		2.81	80.71	1.30		3.29	B	I	48.90		6.33	B	I	78.15	1.30		2.81	B	I	29.36	
		EV3	43.000	④	1.92	82.41	1.30		2.23	B	I	48.90		4.11	B	I	78.15	1.30		1.92	B	I	48.90	
FATIGUE		HL-93 (INVENTORY)	γLL=0.80		7.36	--																		

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.
2.
3.
4.

Ⓢ

CONTROLLING LOAD RATING

Ⓢ1

DESIGN LOAD RATING (HL-93)

Ⓢ2

DESIGN LOAD RATING (HS-20)

Ⓢ3

LEGAL LOAD RATING **

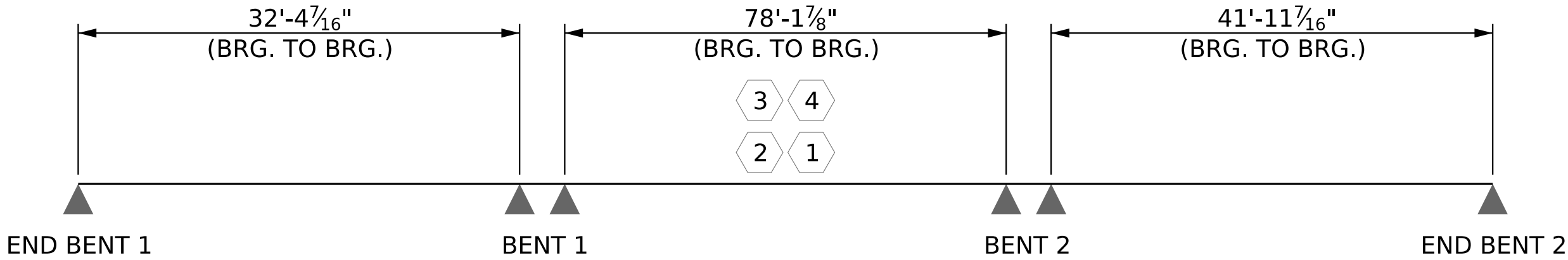
Ⓢ4

EMERGENCY VEHICLE LOAD RATING

** SEE CHART FOR VEHICLE TYPE

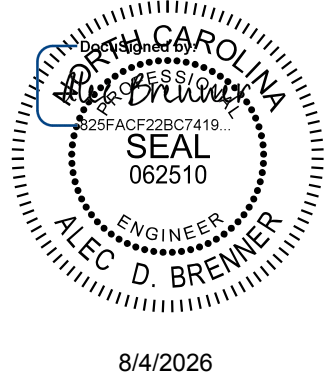
GIRDER LOCATION

I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER



LRFR SUMMARY

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR
NEW STEEL GIRDERS
(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO. S4-5
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

DRAWN BY: <u>T. K. BOYD</u>	DATE: <u>4/26</u>
CHECKED BY: <u>A. D. BRENNER</u>	DATE: <u>4/26</u>
DESIGN ENGINEER OF RECORD: <u>A. L. PHILLIPS</u>	DATE: <u>4/26</u>

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GENERAL STAGING NOTES:

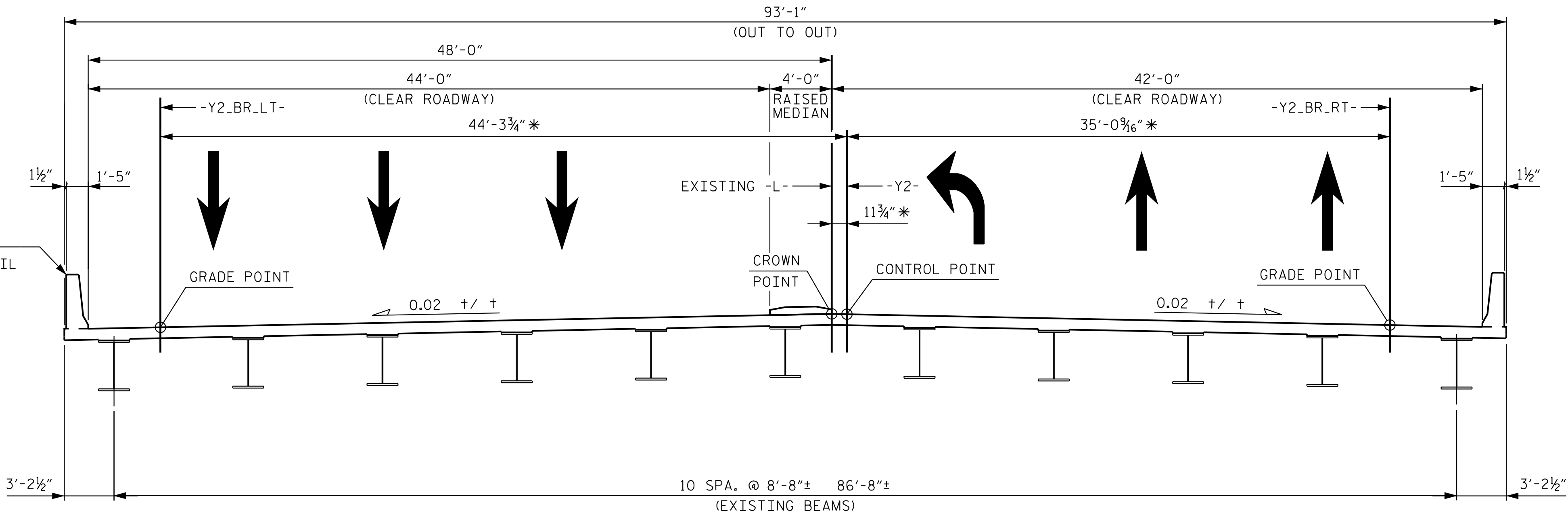
FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMIT OF THE PORTABLE CONCRETE BARRIER.

CARE SHALL BE TAKEN DURING THE PARTIAL REMOVAL OF THE EXISTING STRUCTURE. DAMAGE TO THE REMAINING STRUCTURE SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE DEPARTMENT. THE REPAIR METHOD SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.

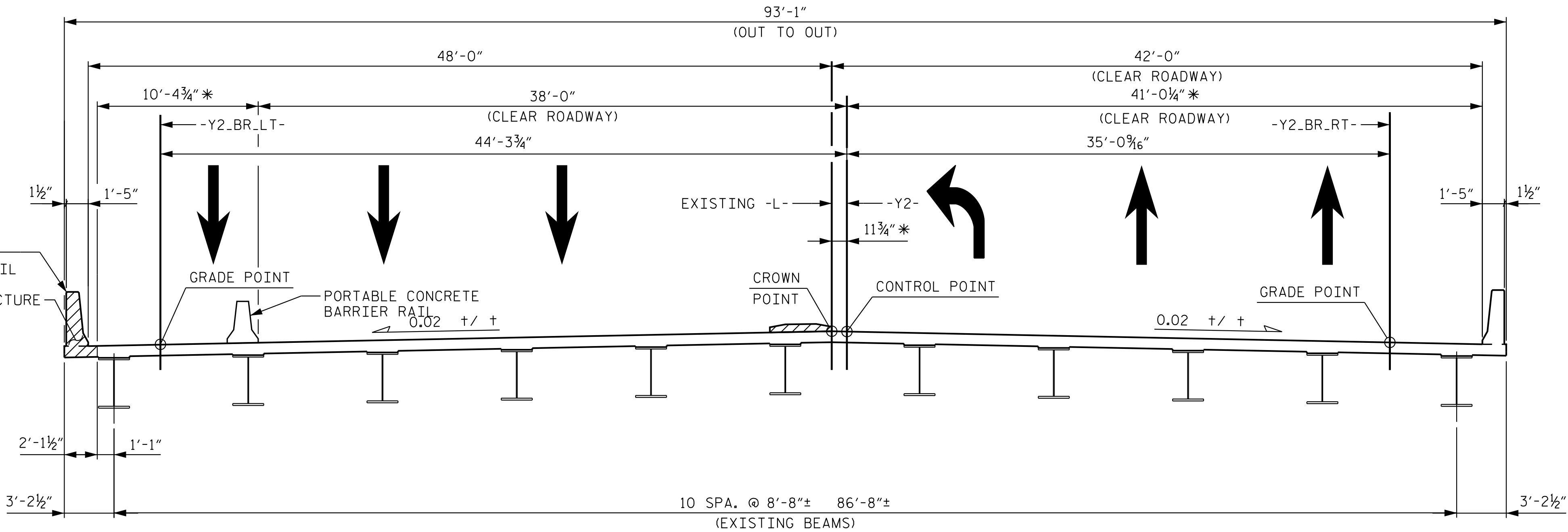
EXISTING BRIDGE WIDTHS ARE BASED ON EXISTING BRIDGE PLANS.

FOR CONCRETE MEDIAN DETAILS, SEE "CONCRETE MEDIAN DETAILS" SHEET.



EXISTING STRUCTURE

* DIMENSIONS VARY
DIMENSIONS TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)



STAGE 1

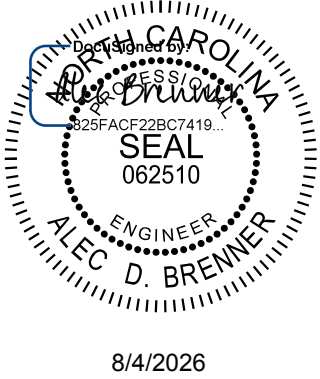
* DIMENSIONS VARY
DIMENSIONS TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)

STAGE 1:

1. REMOVE EXISTING CONCRETE MEDIAN.
2. PLACE TEMPORARY BARRIER ALONG LEFT EDGE OF STRUCTURE AND SHIFT TRAFFIC LANES.
3. CUT AND REMOVE EXISTING BARRIER RAIL AND SLAB ON LEFT SIDE OF BRIDGE.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 1 OF 4



8/4/2026

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DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
CONSTRUCTION
SEQUENCE

REVISIONS						SHEET NO. S4-6
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

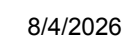
STR. #4

DRAWN BY: T. K. BOYD DATE: 4/26
CHECKED BY: A. D. BRENNER DATE: 4/26
DESIGN ENGINEER OF RECORD: A. L. PHILLIPS DATE: 4/26



1. CONSTRUCT LEFT WIDENING BEHIND TEMPORARY BARRIER.
2. CONSTRUCT LEFT PARAPET AND SIDEWALK BEHIND TEMPORARY BARRIER.

1. CONSTRUCT CLOSURE POUR BETWEEN LEFT WIDENING AND EXISTING STRUCTURE.
2. MOVE TEMPORARY BARRIER ALONG RIGHT EDGE OF STRUCTURE AND SHIFT TRAFFIC LANES.
3. CUT AND REMOVE EXISTING BARRIER RAIL AND SLAB ON RIGHT SIDE OF BRIDGE.



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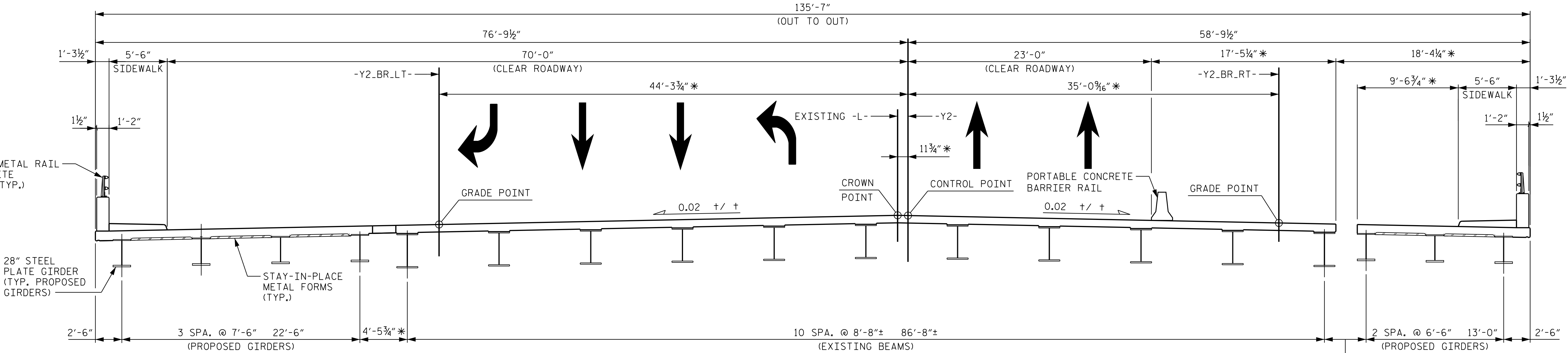
SHEET 2 OF 4

SUPERSTRUCTURE CONSTRUCTION SEQUENCE

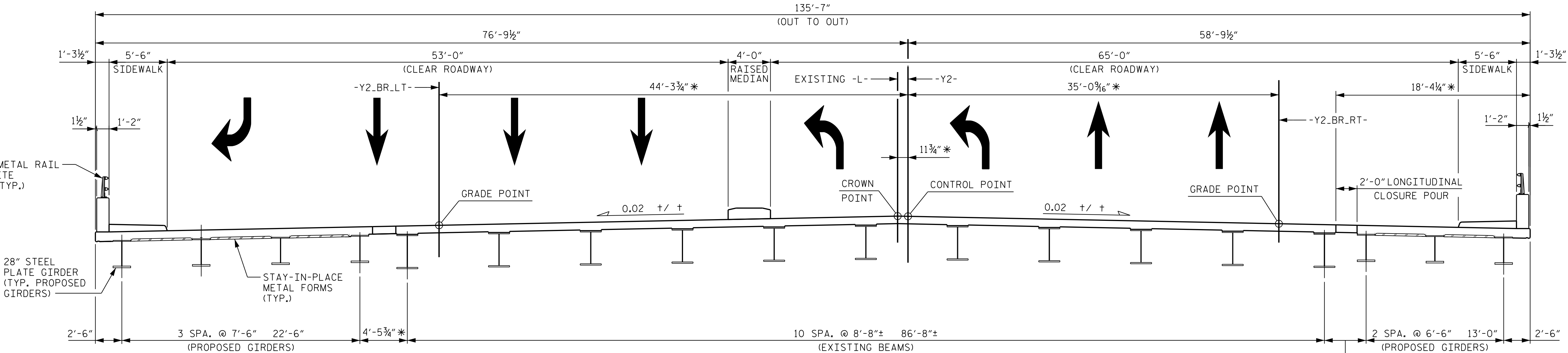
REVISIONS						SHEET NO. S4-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #4

K:\B01_Structures\Bridge\N\01036524 - I-5715 Structure Design\Coord\gn\Site *2\Structure 4\Final\404_015_15715_SML\PC3.590358_008.dgn
8/2/2026



STAGE 4
* DIMENSIONS VARY
DIMENSIONS TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)



STAGE 5
* DIMENSIONS VARY
DIMENSIONS TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)

STAGE 4:

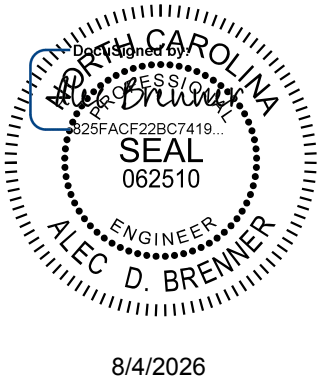
1. CONSTRUCT RIGHT WIDENING BEHIND TEMPORARY BARRIER.
2. CONSTRUCT RIGHT PARAPET AND SIDEWALK BEHIND TEMPORARY BARRIER.

STAGE 5:

1. CONSTRUCT CLOSURE POUR BETWEEN RIGHT WIDENING AND EXISTING STRUCTURE.
2. CONSTRUCT CONCRETE MEDIAN.
3. REMOVE TEMPORARY BARRIER AND OPEN TRAFFIC TO FINAL CONFIGURATION.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 3 OF 4



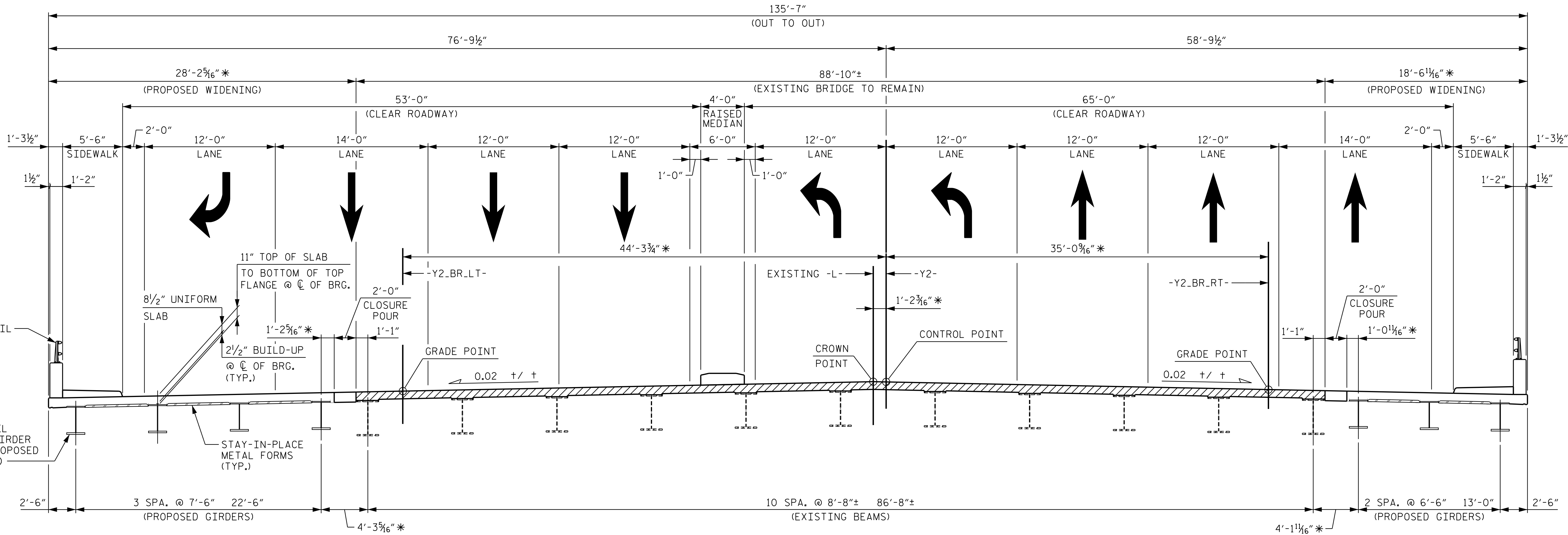
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REVISIONS					
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SHEET NO. S4-8					TOTAL SHEETS 63

STR. #4

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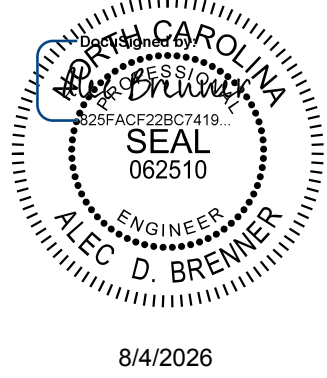


TYPICAL SECTION - FINAL CONDITION

* DIMENSIONS VARY
DIMENSIONS TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 4 OF 4



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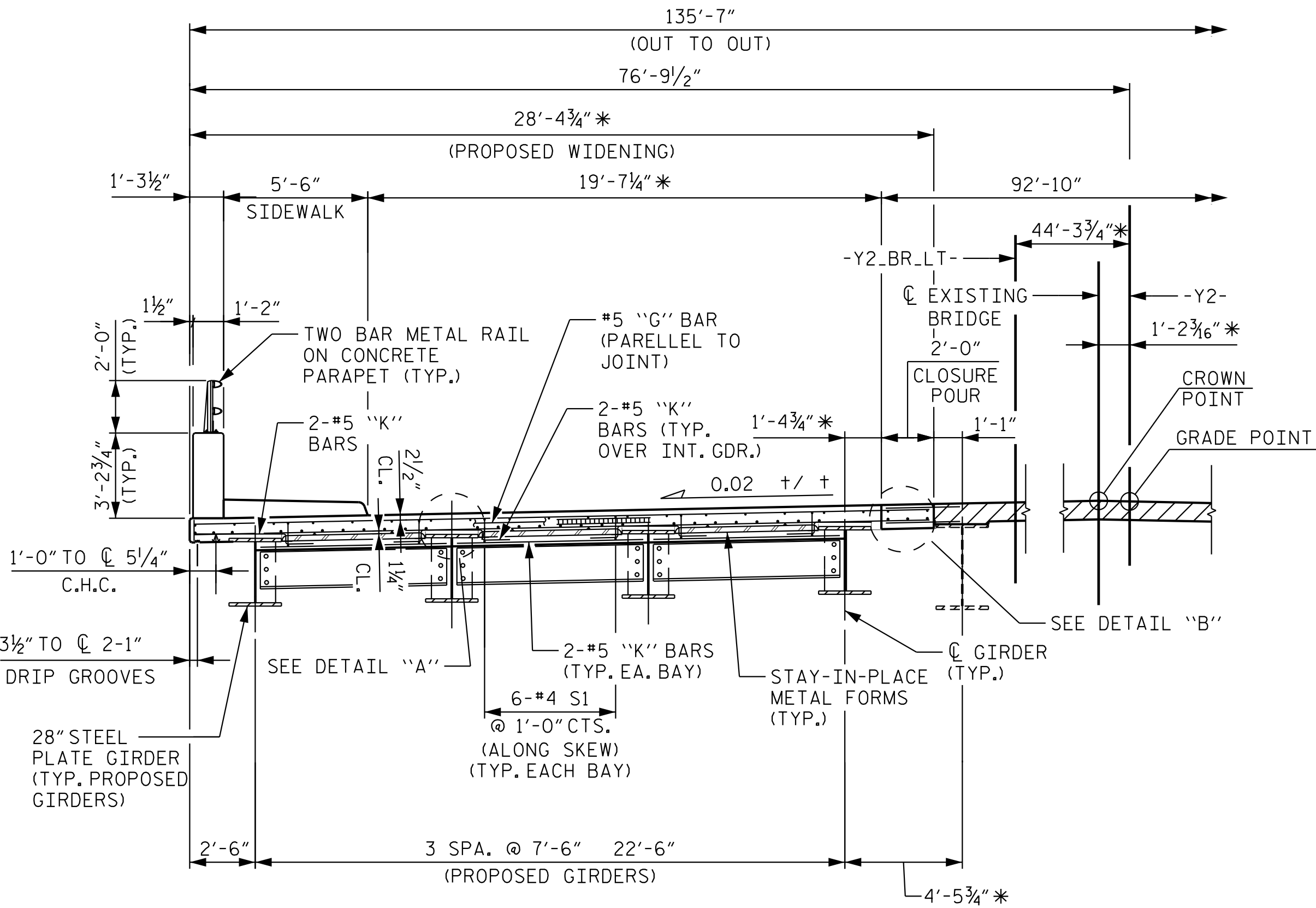
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
CONSTRUCTION
SEQUENCE

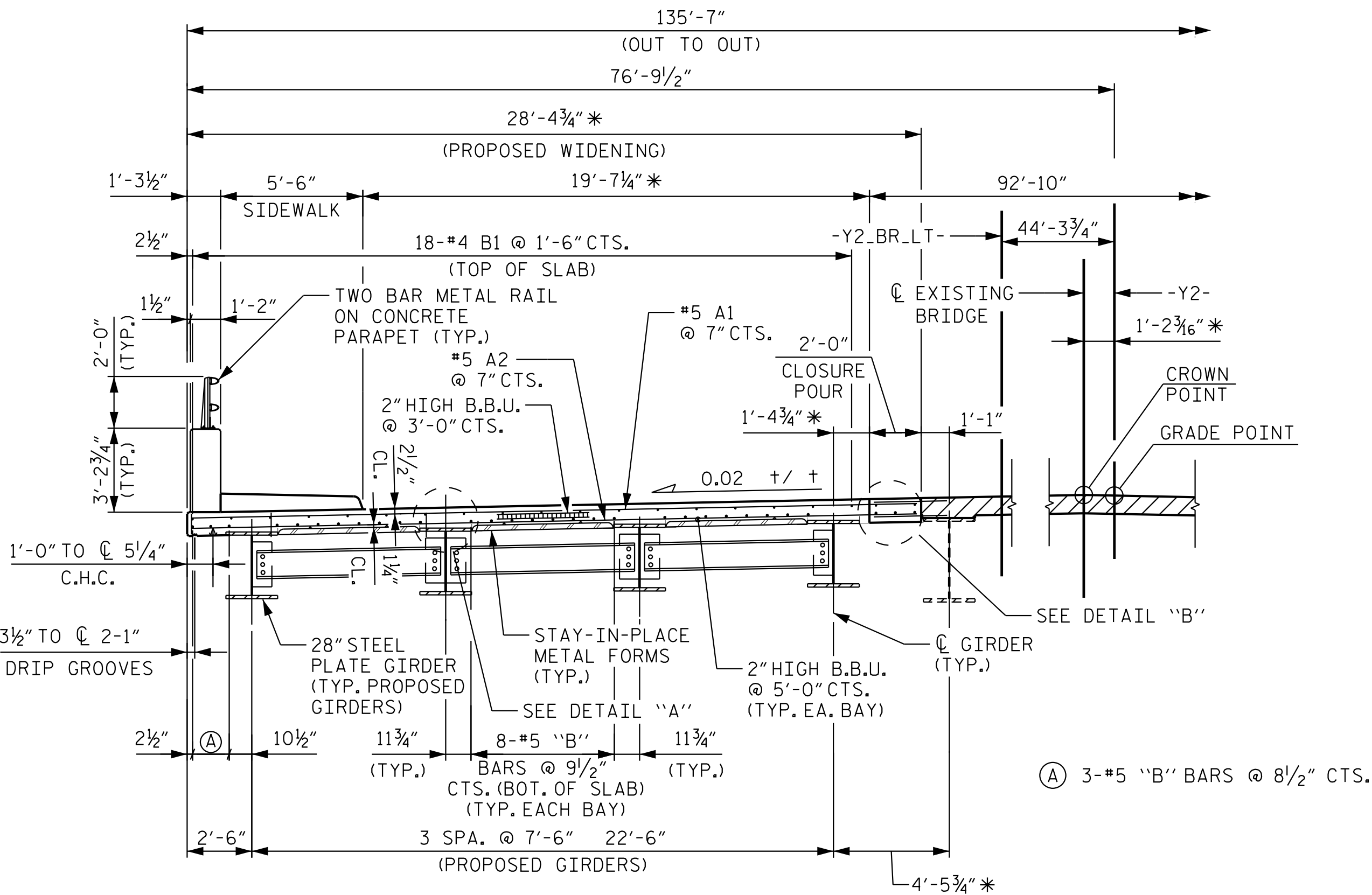
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STR. #4



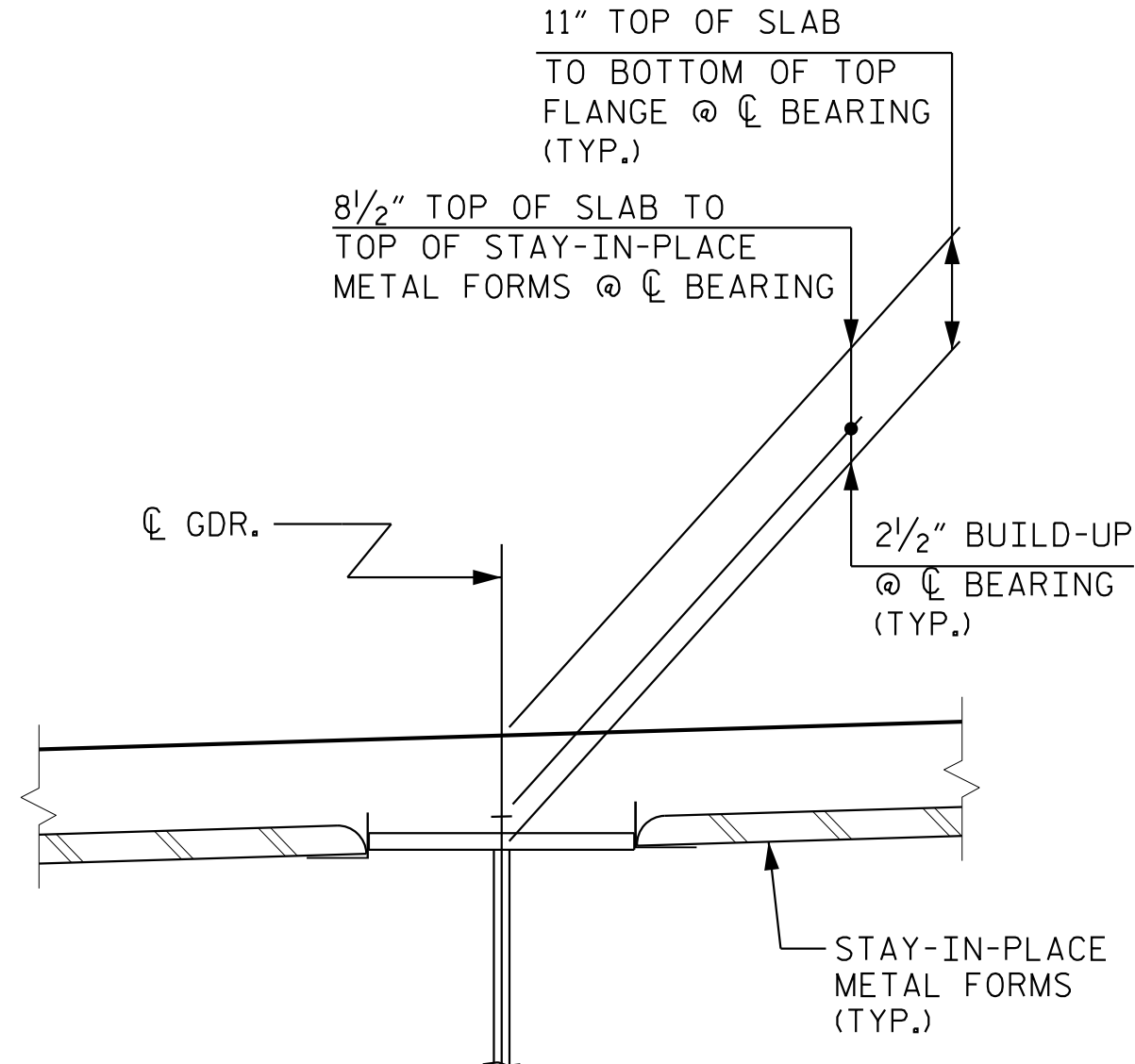
TYPICAL SECTION AT END BENT AND BENT DIAPHRAGMS
FOR "A" BAR, "B" BAR AND B.B.U. INFORMATION, SEE "TYPICAL SECTION VIEW AT INTERMEDIATE DIAPHRAGMS," THIS SHEET.



TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS

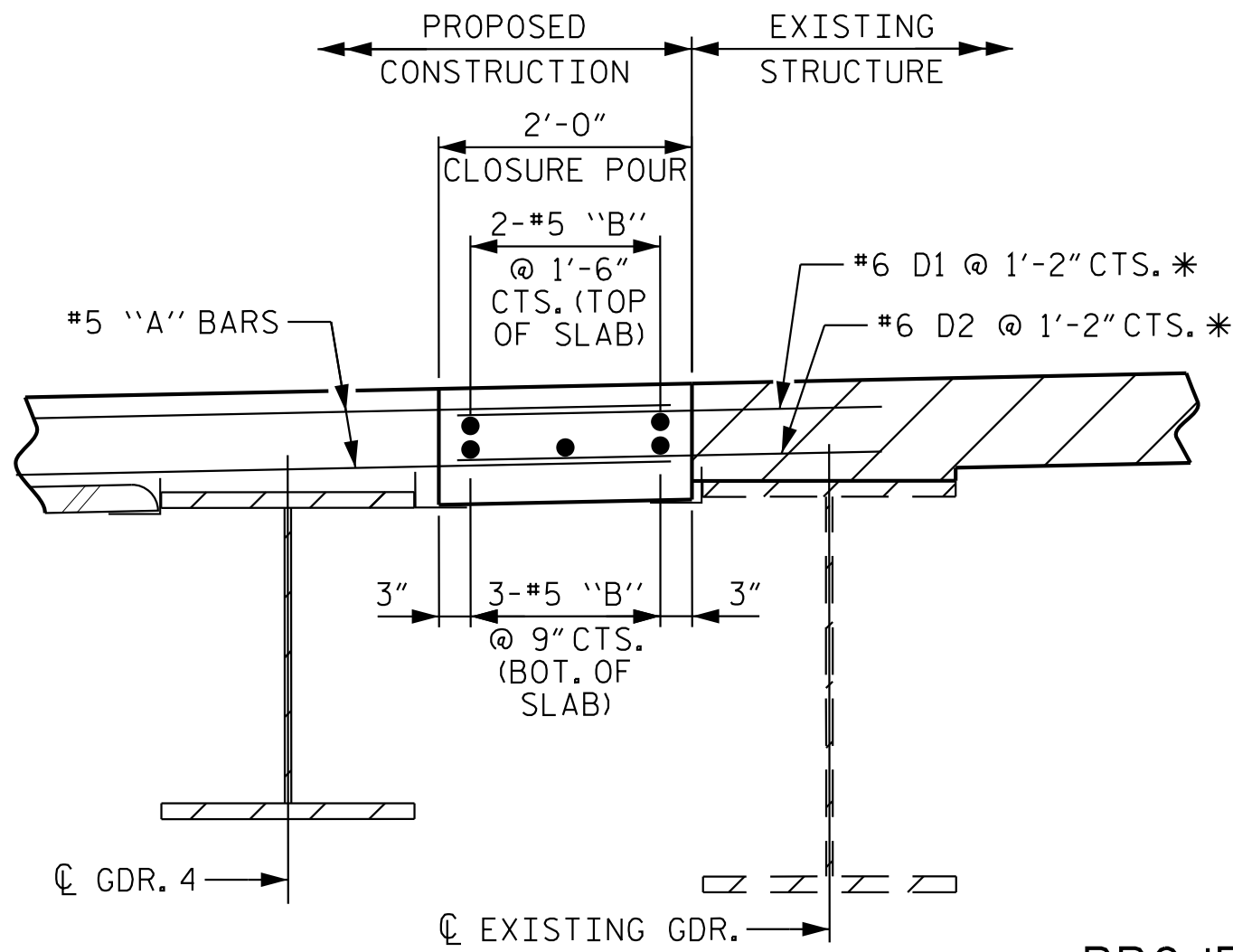
TYPICAL SECTION - LEFT EXTENSION

* DIMENSIONS VARY
DIMENSIONS TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)



DETAIL A

(TYP. @ EA. GDR.)

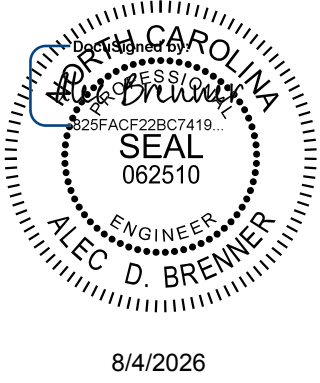


DETAIL B

* SEE NOTES ON SHEET 3 OF 3.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 1 OF 3



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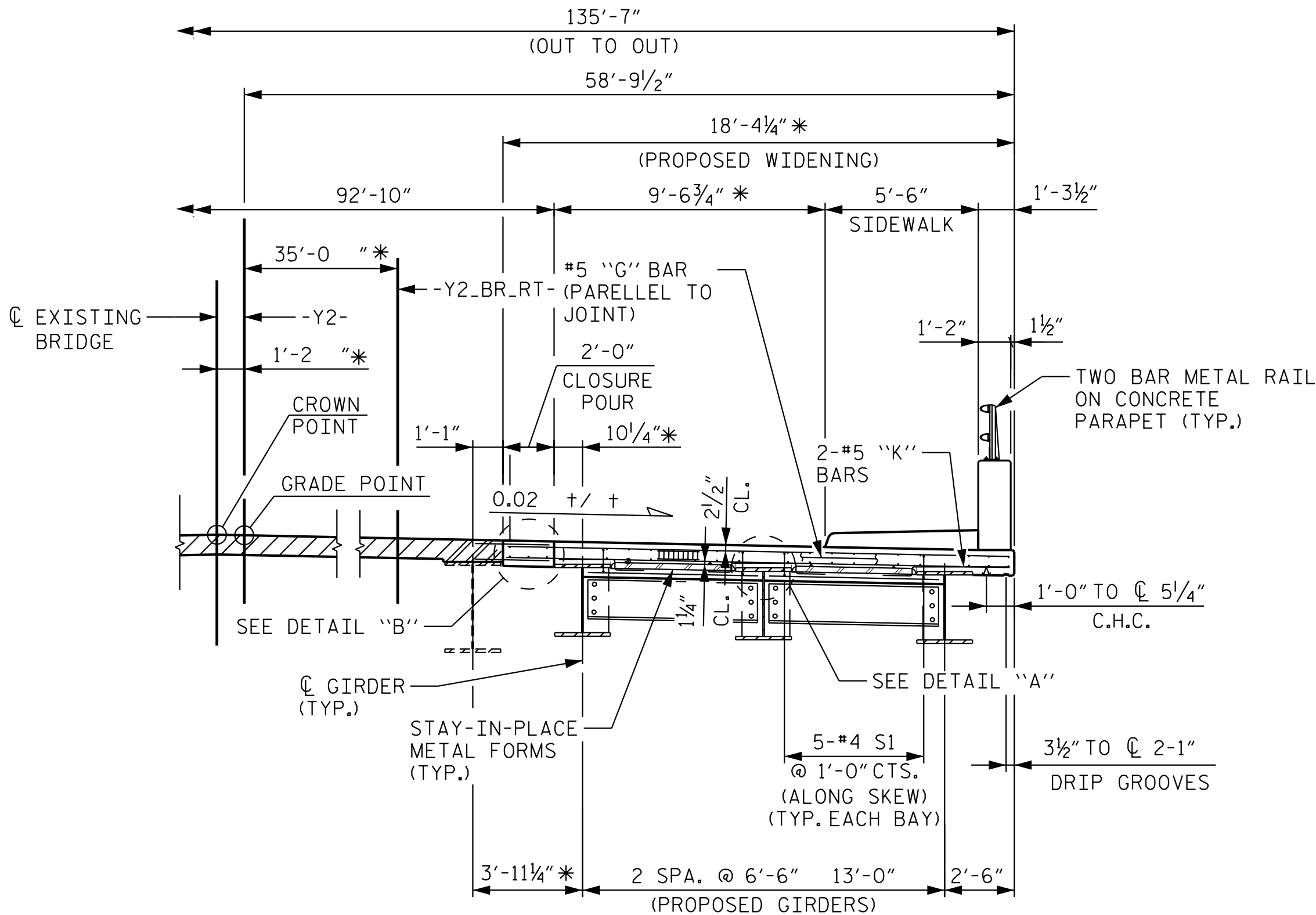
SUPERSTRUCTURE
TYPICAL SECTIONS

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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #4

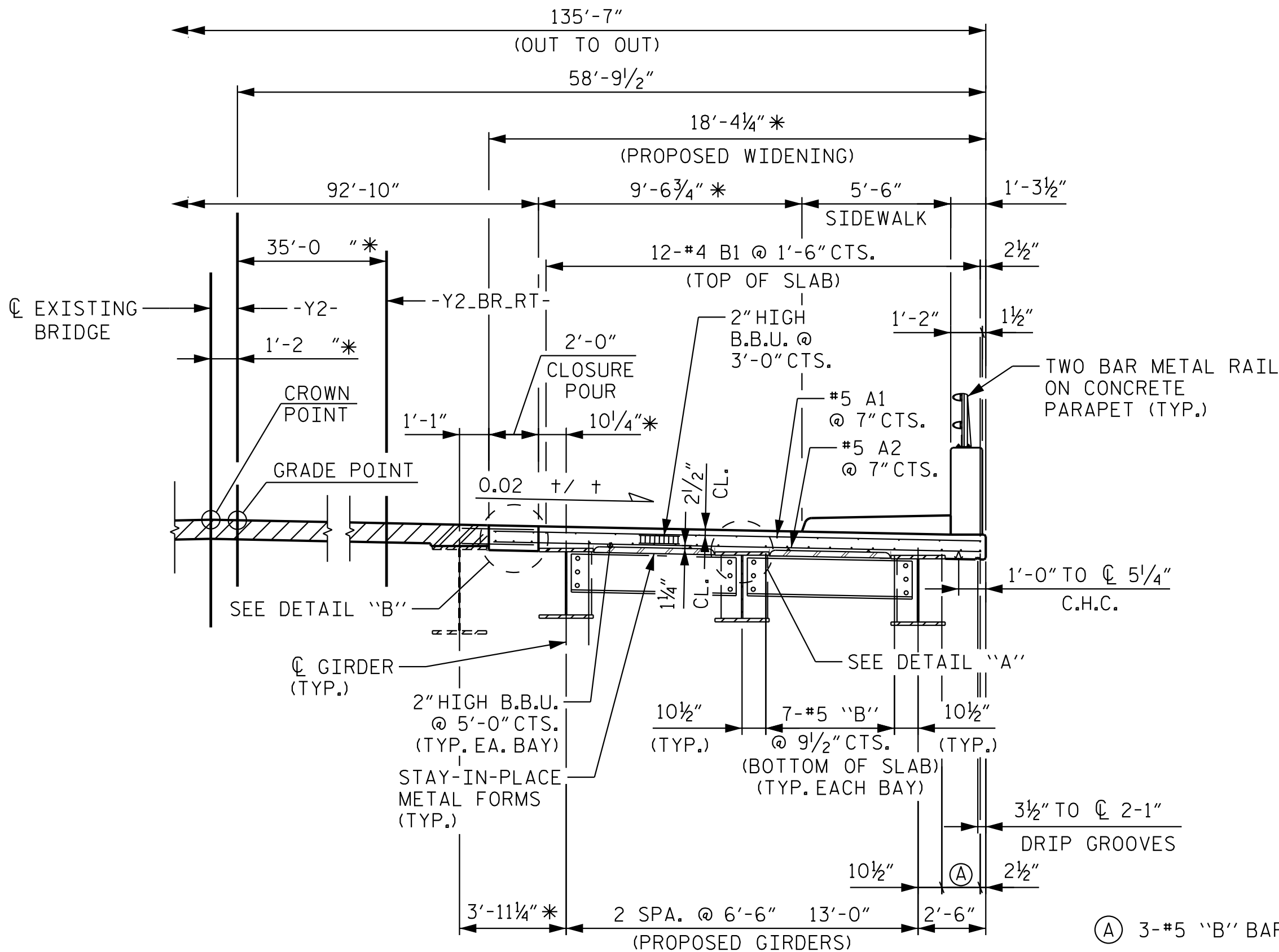
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DESIGN ENGINEER OF RECORD: A. L. PHILLIPS	DATE: 4/26

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TYPICAL SECTION AT END BENT AND BENT DIAPHRAGMS

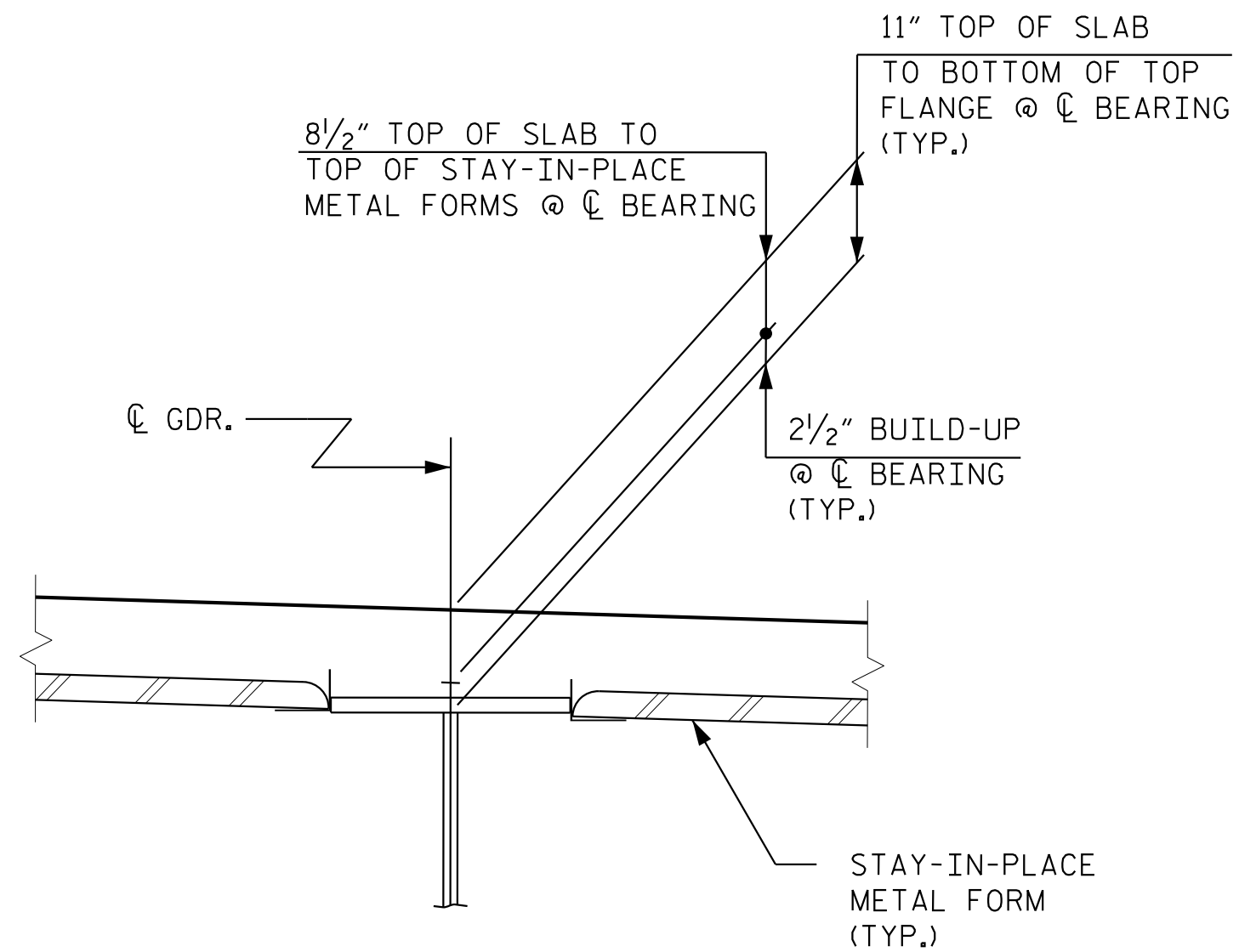
FOR "A" BAR, "B" BAR AND B.B.U. INFORMATION, SEE "TYPICAL SECTION VIEW AT INTERMEDIATE DIAPHRAGMS," THIS SHEET.



TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS

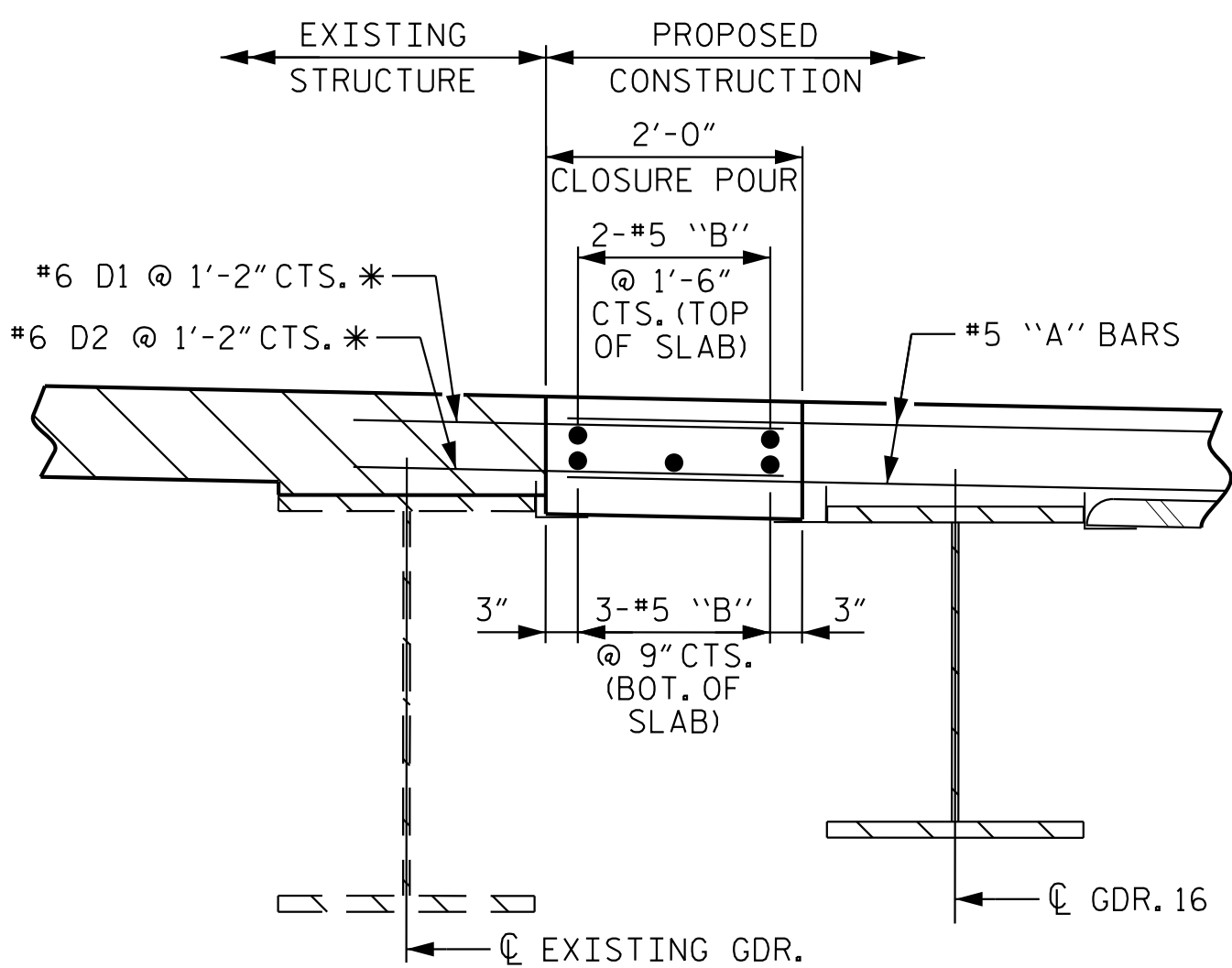
TYPICAL SECTION - RIGHT EXTENSION

* DIMENSIONS VARY
DIMENSIONS TAKEN AT BRIDGE I.D. STATION (PERPENDICULAR TO -Y2-)



DETAIL A

(TYP. @ EA. GDR.)

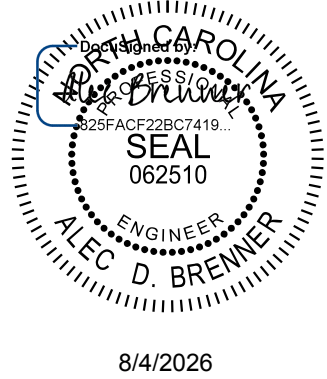


DETAIL B

* SEE NOTES ON SHEET 3 OF 3.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 2 OF 3



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SUPERSTRUCTURE
TYPICAL SECTIONS

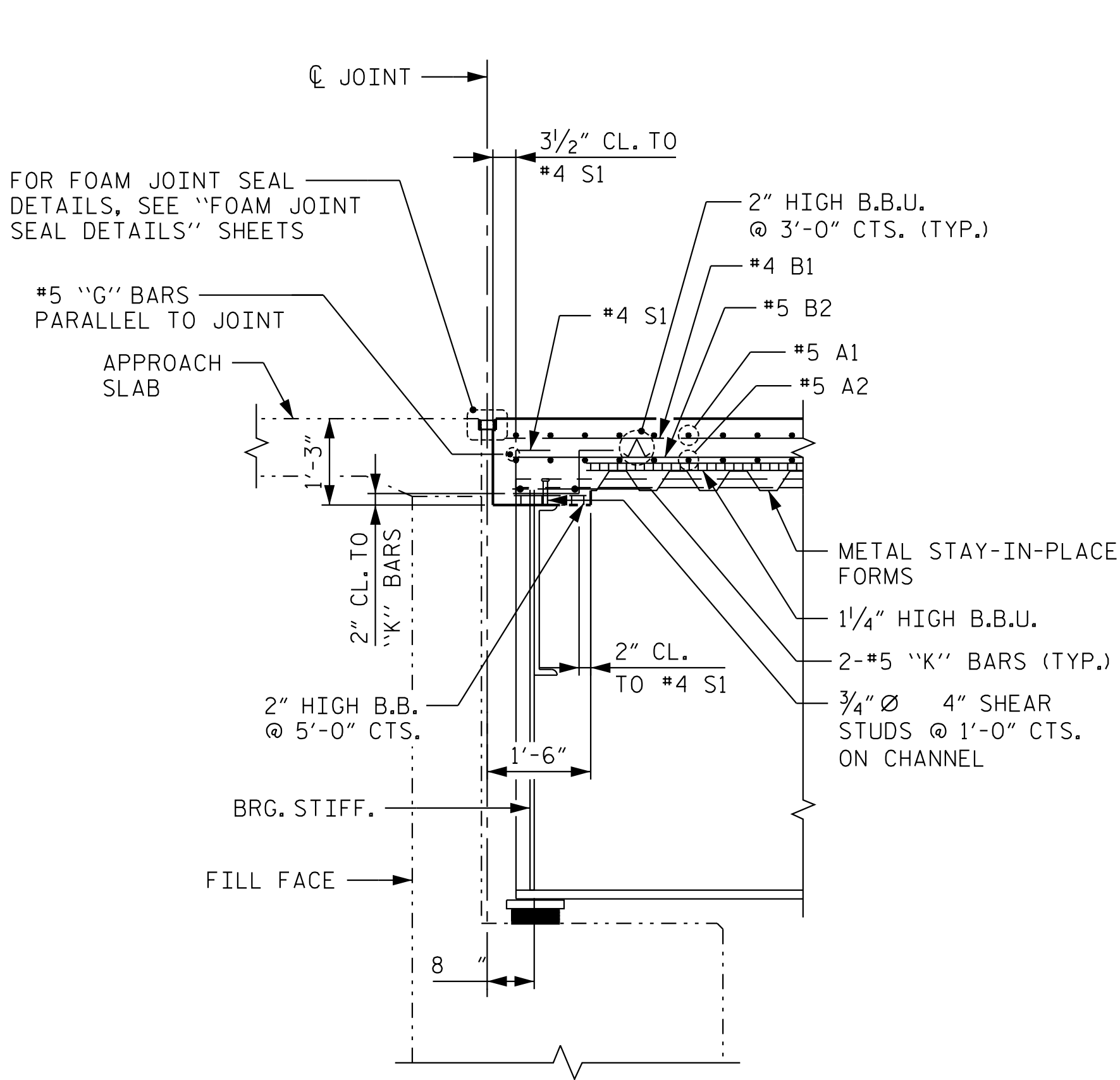
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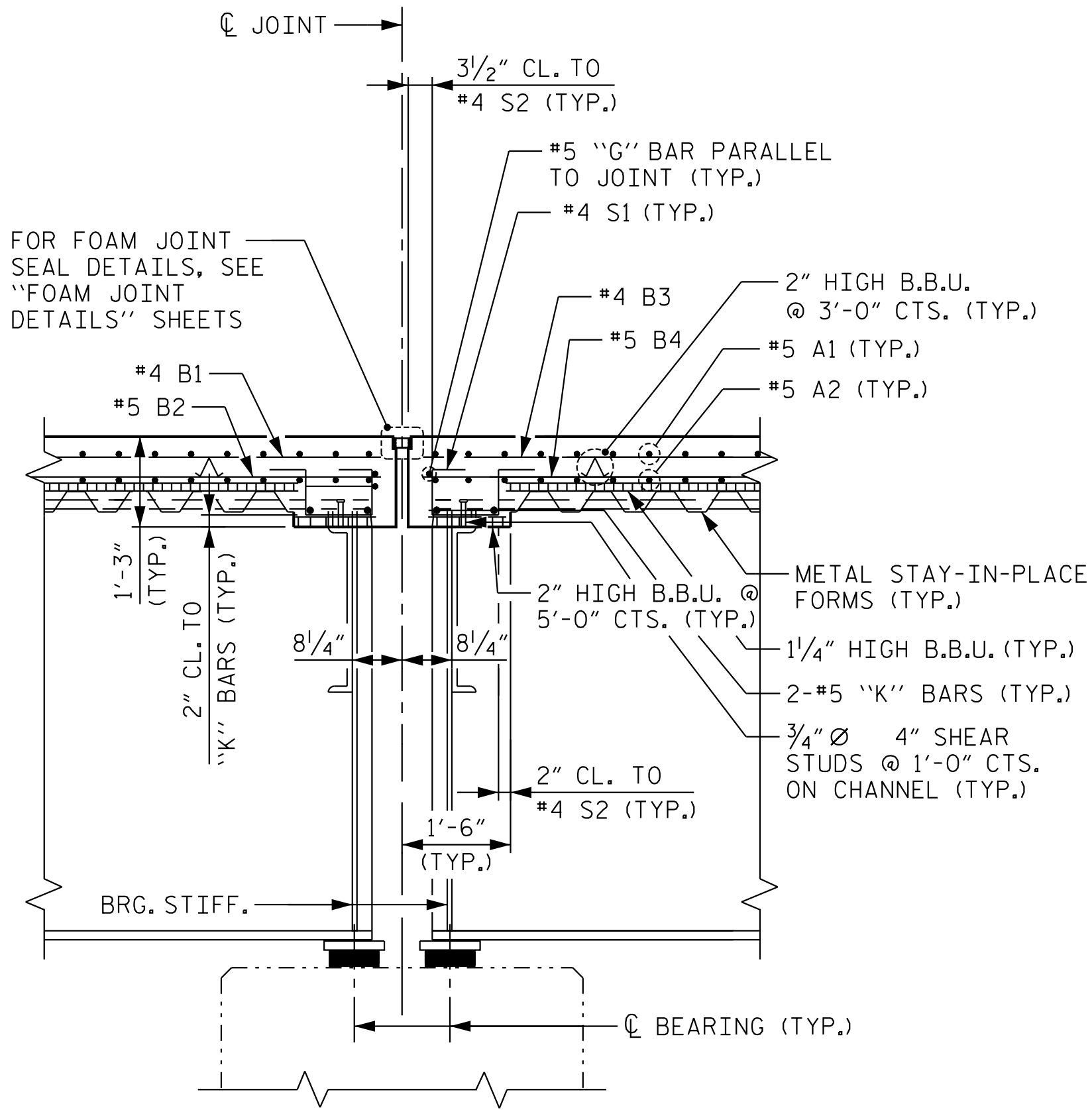
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CHECKED BY: A. D. BRENNER DATE: 4/26
DESIGN ENGINEER OF RECORD: A. L. PHILLIPS DATE: 4/26

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SECTION THRU END BENT DIAPHRAGM
(END BENT 1 SHOWN, END BENT 2 SIMILAR)



SECTION AT BENT
(BENT 1 SHOWN, BENT 2 SIMILAR)

NOTES:

PROVIDE 1 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF "A" BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF "A" BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.

FOR MORE INFORMATION REGARDING THE DIAPHRAGMS SEE "STRUCTURAL STEEL DETAILS" SHEETS.

PREVIOUS CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

#5 "G" BARS MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL AND STIRRUPS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR MAY, WHEN NECESSARY, PROPOSE A SCHEME FOR AVOIDING INTERFERENCE BETWEEN METAL STAY-IN-PLACE FORM SUPPORTS OR FORMS AND GIRDER STIFFENERS OR CONNECTOR PLATES. THE PROPOSAL SHALL BE INDICATED, AS APPROPRIATE, ON EITHER THE STEEL WORKING DRAWINGS OR THE METAL STAY-IN-PLACE FORM WORKING DRAWING.

THE CONTRACTOR SHALL ENSURE THE STABILITY OF THE GIRDER WEB DURING CONSTRUCTION BASED ON THE OVERHANG SUPPORT SYSTEM USED.

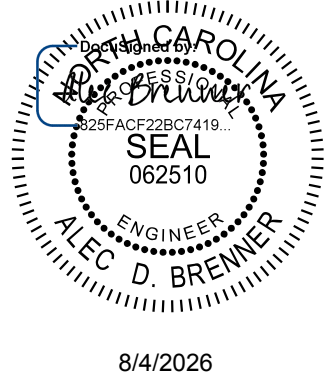
D1 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP SLAB REINFORCING STEEL IN THE PROPOSED DECK.

D2 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE BOTTOM SLAB REINFORCING STEEL IN THE PROPOSED DECK.

D1 AND D2 DOWELS SHALL BE INSTALLED IN THE EXISTING CONCRETE DECK USING AN ADHESIVELY ANCHORED SYSTEM. LEVEL ONE FIELD TESTING IS REQUIRED AND THE YIELD LOAD OF THE DOWEL IS 13.2 KIPS. OVERALL DOWEL LENGTH SHALL PROVIDE 1'-6" MINIMUM EXTENSION INTO THE CLOSURE POUR. EMBEDMENT LENGTH TO BE DETERMINED BE THE MANUFACTURER OF THE ADHESIVELY ANCHORED DOWELS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 3 OF 3



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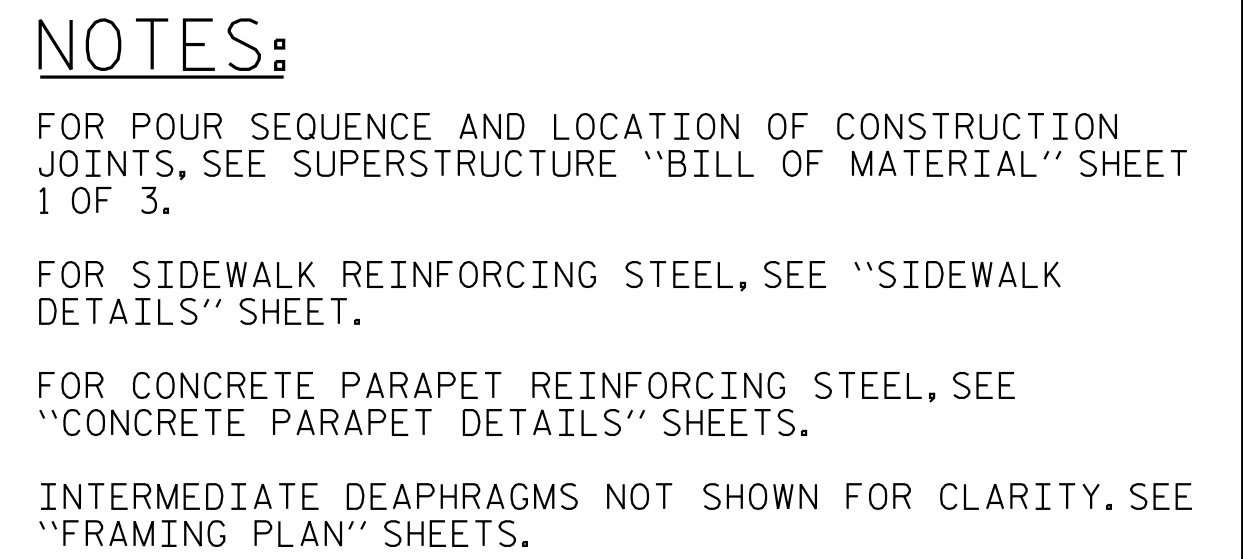
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STR. #4



Professional Engineer Seal for North Carolina, License No. 062510, Engineer ALEC D. BRENNER.

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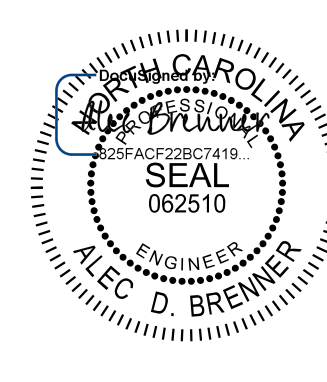
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1			3			TOTAL SHEETS 63
2			4			

STR. #4

NOTES:

FOR NOTES, SEE SHEET 1 OF 5.



PLAN OF SPANS - LEFT EXTENSION

FOR BENT DIAPHRAGM ENLARGEMENT, SEE SHEET 5 OF 5.

PROJECT NO. I-5715
MECKLENBURG COUNTY
 STATION: 32+53.16 -Y2-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
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RALEIGH

SUPERSTRUCTURE
PLAN OF SPANS
LEFT SIDE

REVISIONS						SHEET NO. S4-14
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STR. #4

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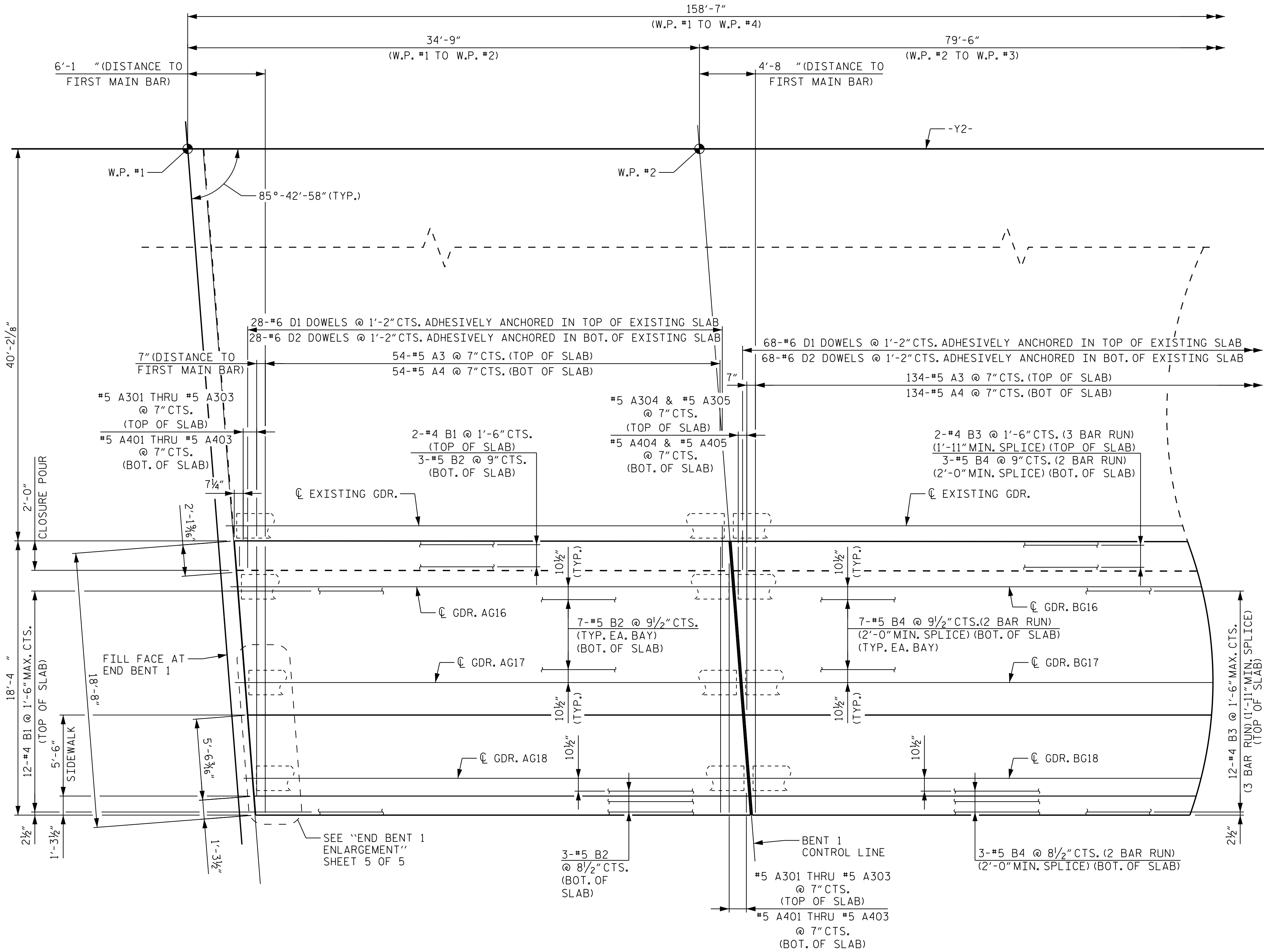
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PLAN OF SPANS - RIGHT EXTENSION
FOR BENT DIAPHRAGM ENLARGEMENT, SEE SHEET 5 OF 5.

NOTES:
FOR NOTES, SEE SHEET 1 OF 5.

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 3 OF 5



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SUPERSTRUCTURE
PLAN OF SPANS
RIGHT SIDE

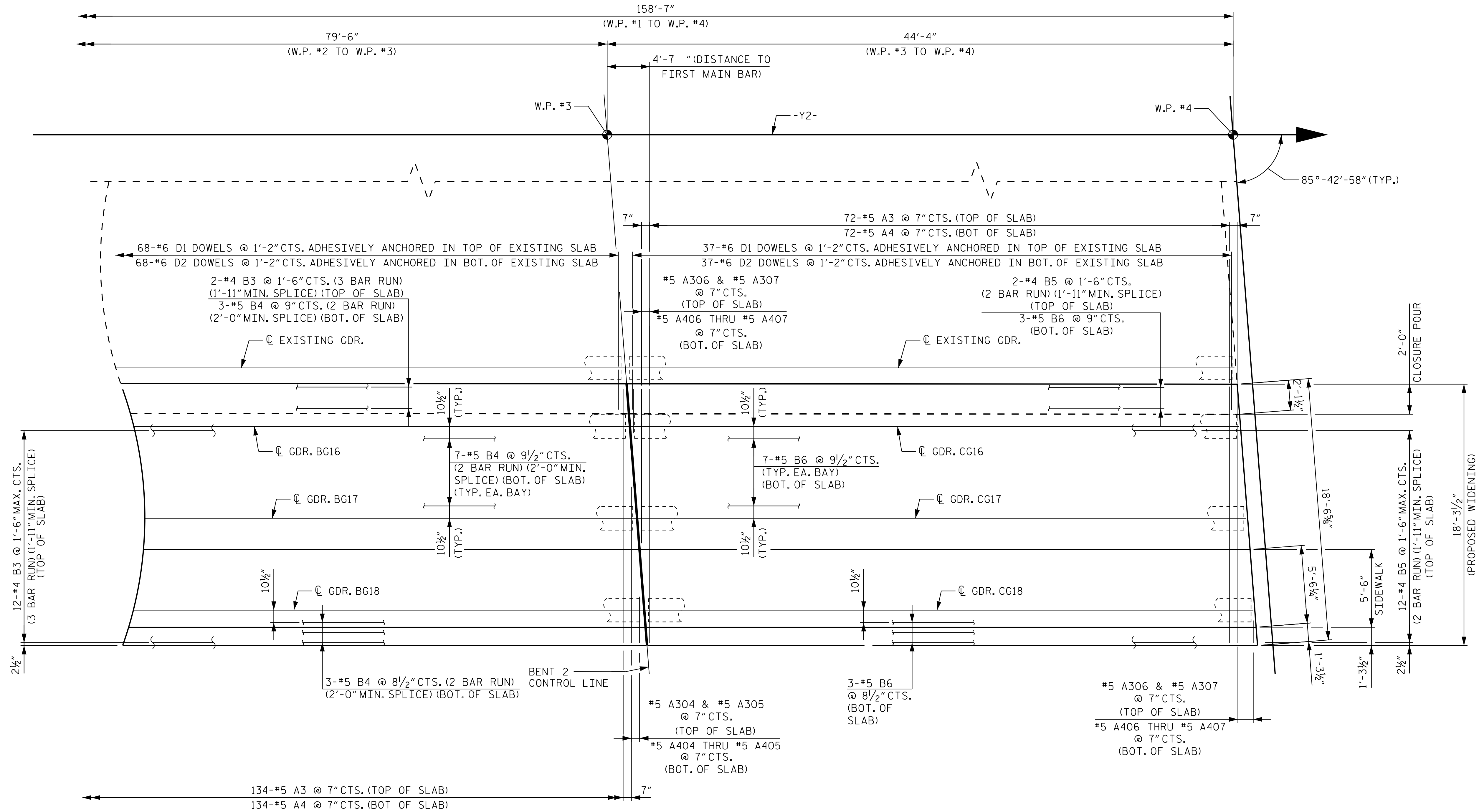
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PLAN OF SPANS - RIGHT EXTENSION
FOR BENT DIAPHRAGM ENLARGEMENT, SEE SHEET 5 OF 5.

NOTES:
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PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 4 OF 5



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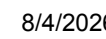
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REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S4-16					TOTAL SHEETS 63

STR. #4



PROJECT NO. I-5715
MECKLENBURG COUNTY
 STATION: 32+53.16 -Y2-

SHEET 5 OF 5



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF SPAN
DETAILS

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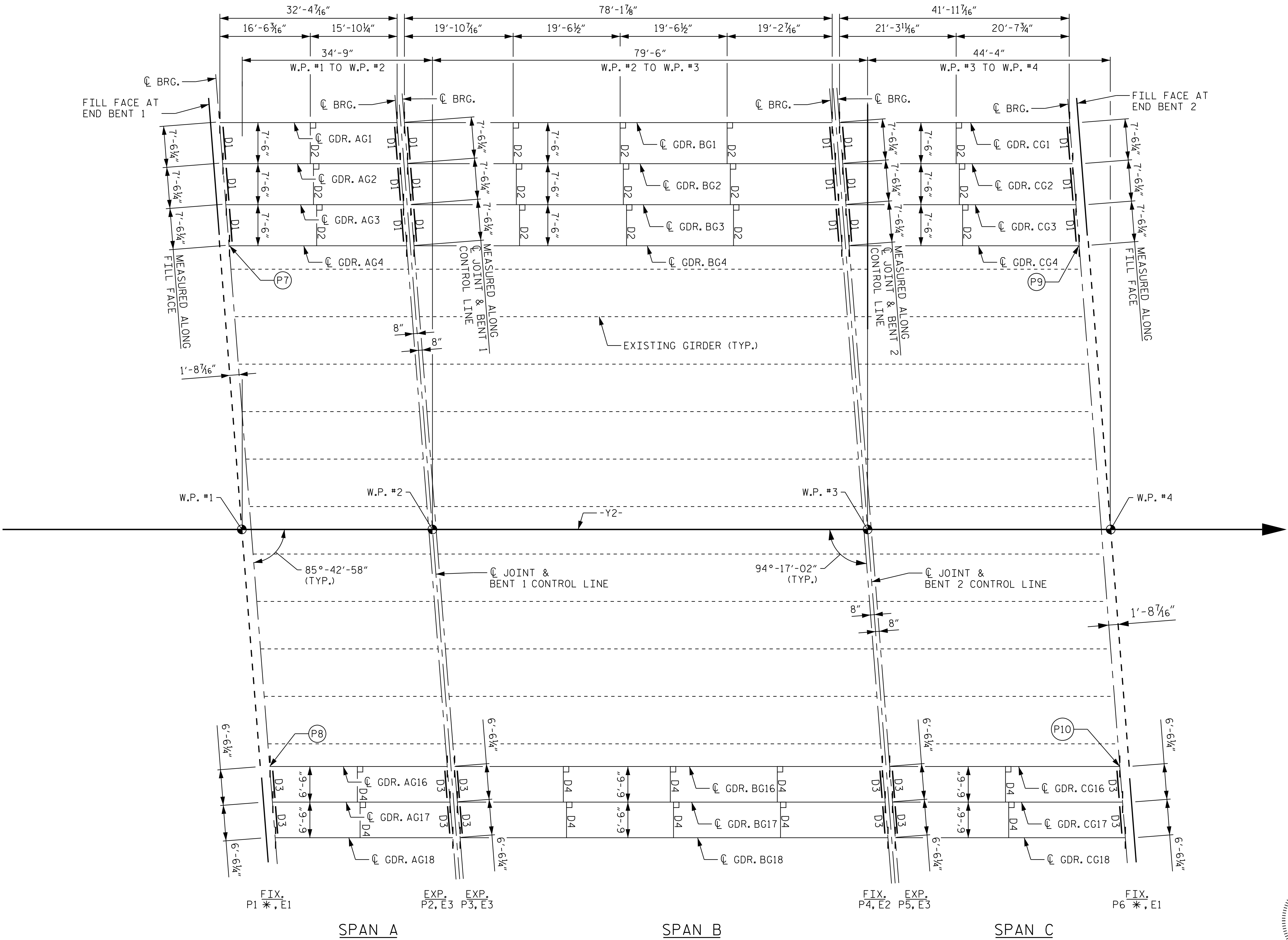
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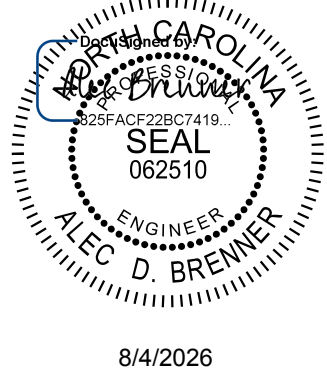
FOR BEARING STIFFENERS, SEE "STRUCTURAL
STEEL DETAILS" SHEET 3 OF 3.

*SOLE PLATE DESIGNATION IS TYPICAL,
EXCEPT AS OTHERWISE NOTED.



FRAMING PLAN

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE GIRDER FRAMING PLAN					
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STR. #4

NOTES:
FOR NOTES, SEE SHEET 3 OF 4.

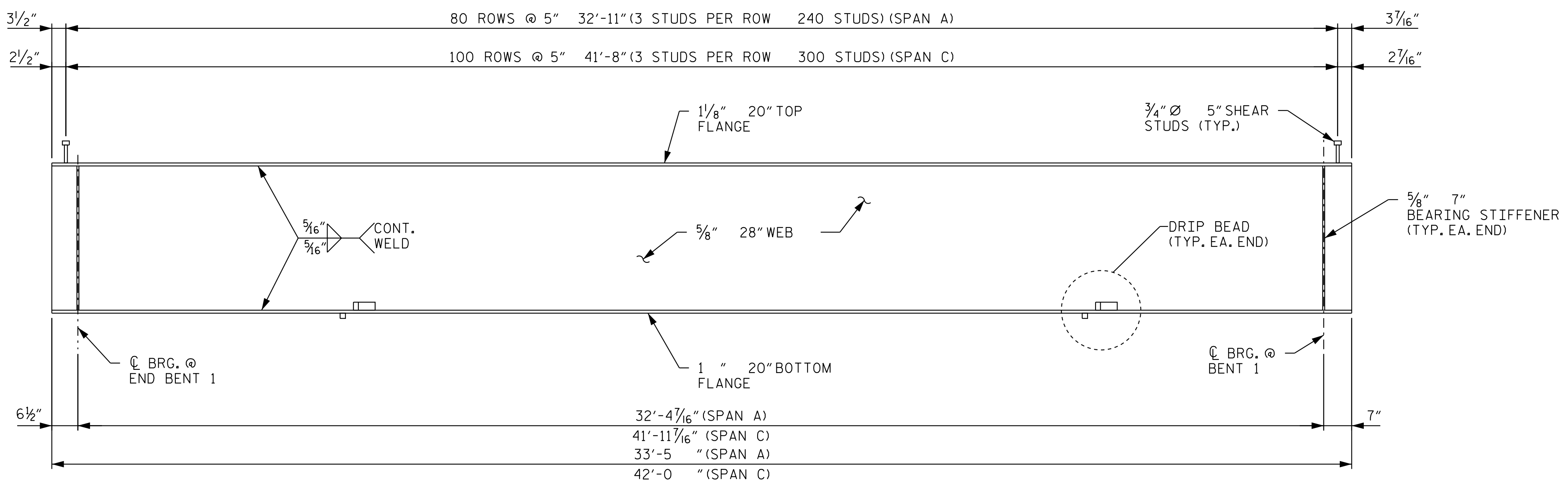
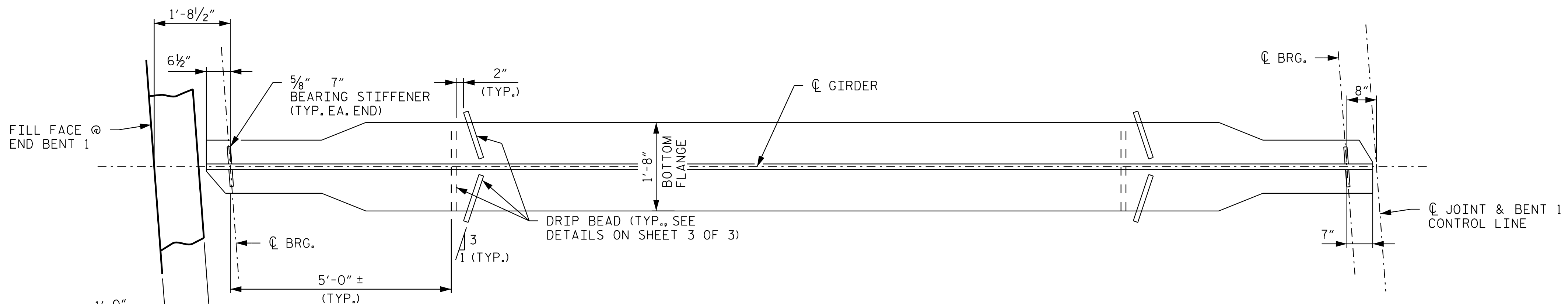
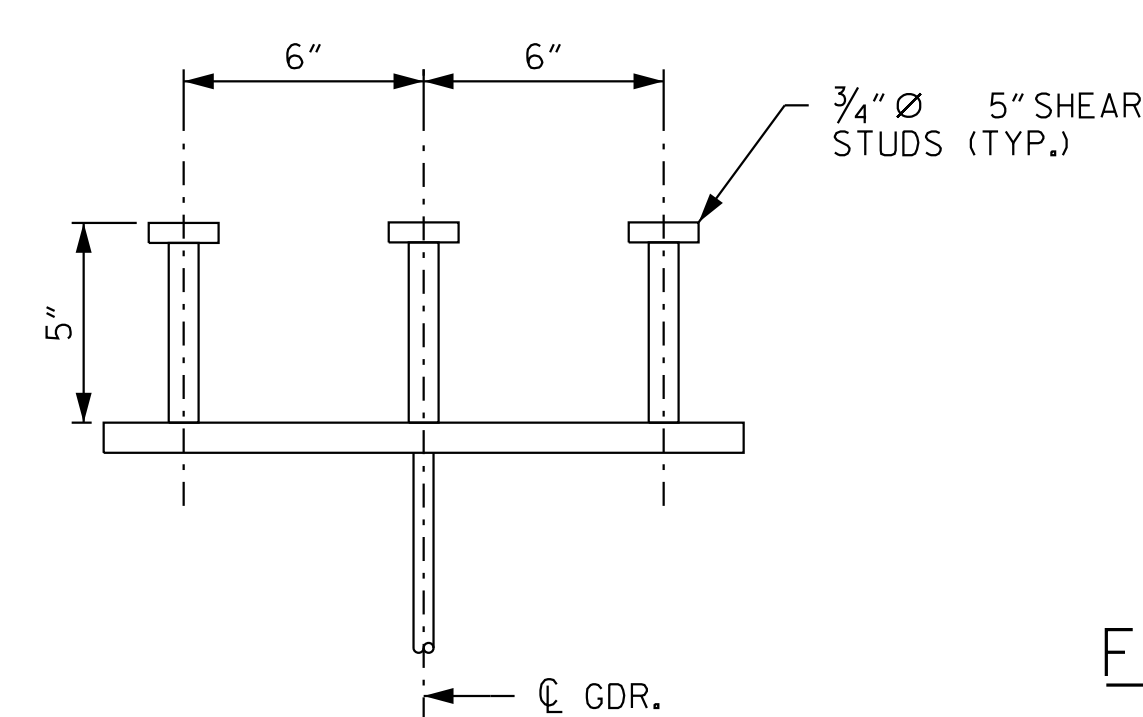


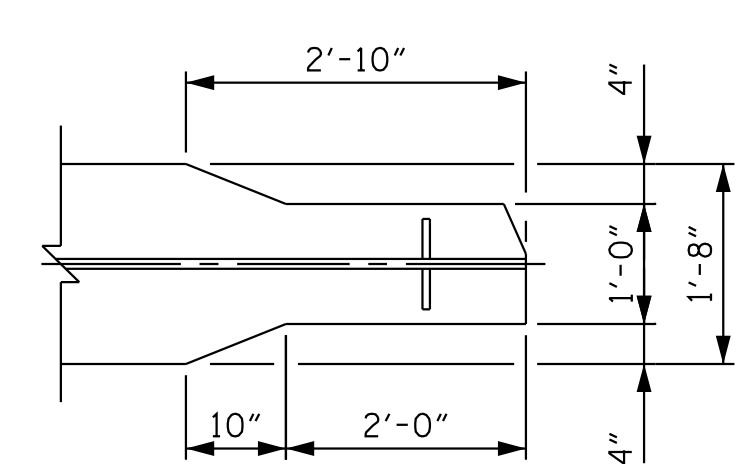
PLATE GIRDER ELEVATION - SPANS A & C
(SPAN A SHOWN, SPAN C SIMILAR)



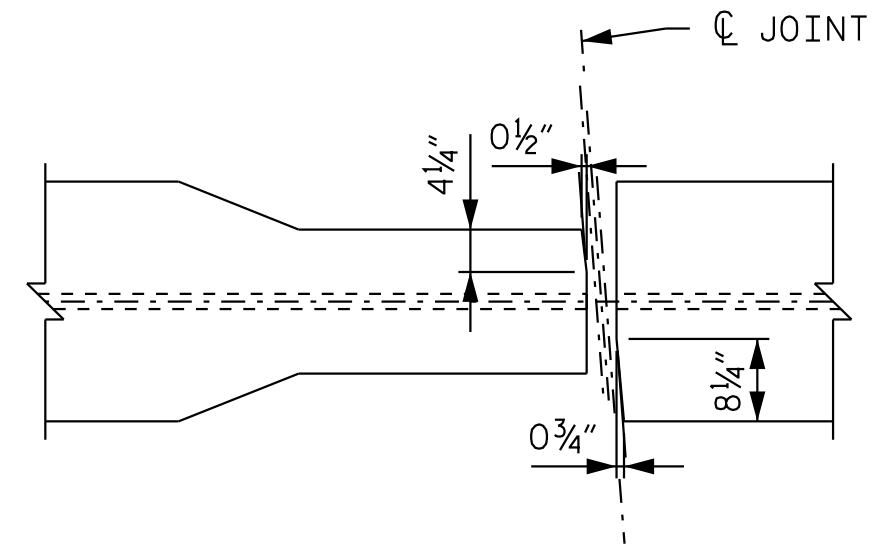
BOTTOM FLANGE DETAIL - SPANS A & C
(SPAN A SHOWN, SPAN C SIMILAR)



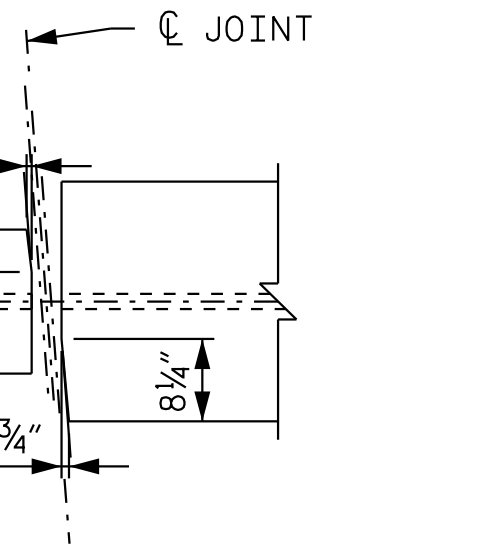
SHEAR STUD DETAIL



FLANGE COPING DETAIL
SHOWING REDUCTION IN FLANGE WIDTH
(BOTTOM FLANGE ONLY)

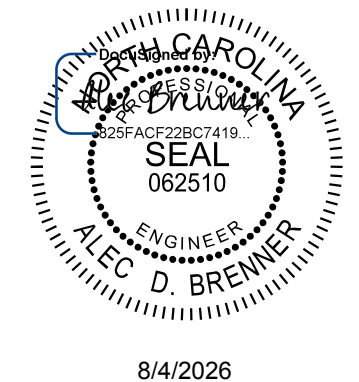


BOTTOM FLANGE
LEFT SIDE SHOWN,
RIGHT SIDE SIMILAR



TOP FLANGE
RIGHT SIDE SHOWN,
LEFT SIDE SIMILAR

FLANGE CLIP DETAIL



8/4/2026

Kimley»Horn

421 Fayetteville Street, Suite 600
Raleigh, NC 27601-1772
Phone (919) 677-2000 NC LICENSE # F-0102

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PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

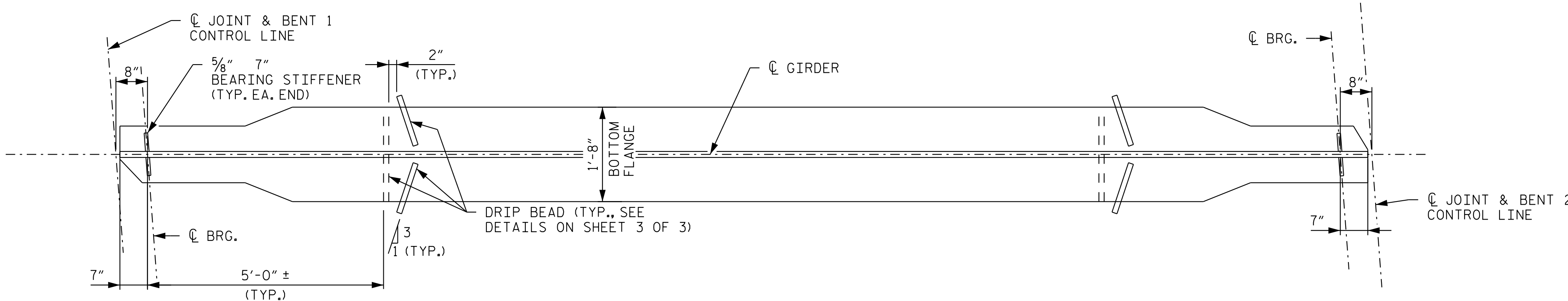
SHEET 1 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE STRUCTURAL STEEL DETAILS SPANS A & C					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					63

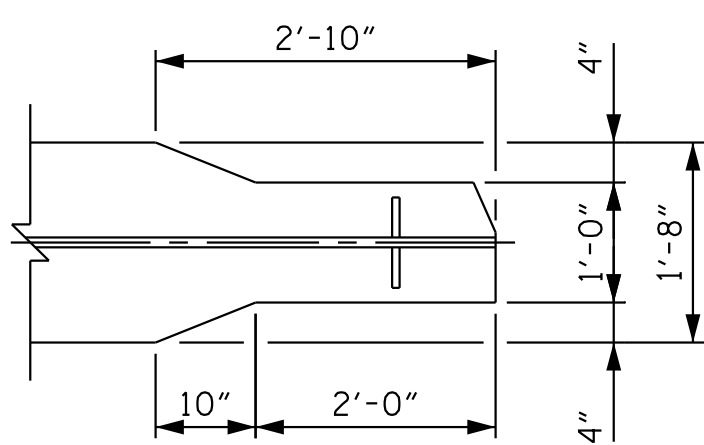
STR. #4

K:\PDI_Structures\Bridges\N\01036524 - I-5715 Structure Design\Cad\Drawn\Site *2\Structure 4\Final\404-037-15175_SMU_SSI_590358.dwg 8/4/2026

DRAWN BY: T. K. BOYD DATE: 4/26
CHECKED BY: A. D. BRENNER DATE: 4/26
DESIGN ENGINEER OF RECORD: A. L. PHILLIPS DATE: 4/26

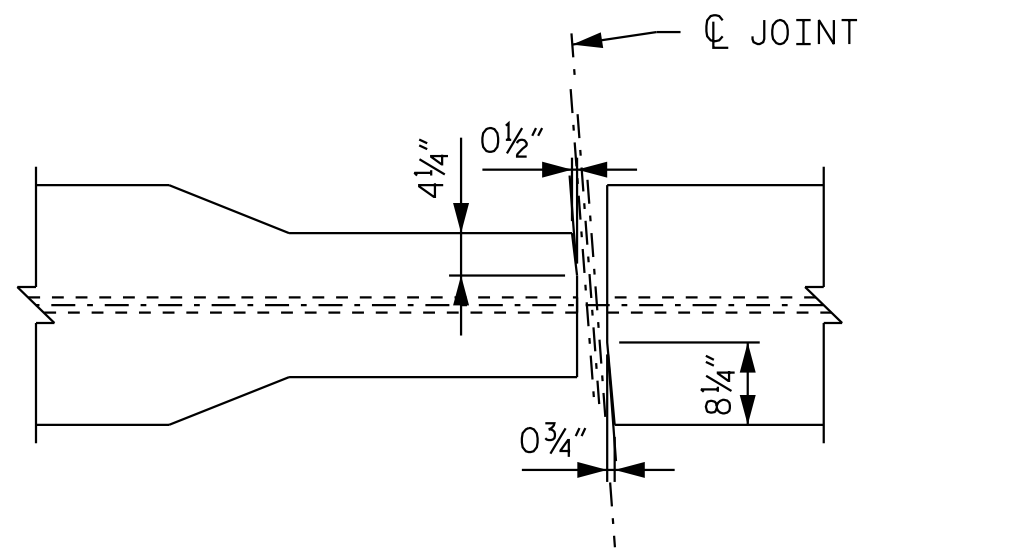


BOTTOM FLANGE DETAIL - SPAN B



FLANGE COPING DETAIL

SHOWING REDUCTION IN FLANGE WIDTH
(BOTTOM FLANGE ONLY)



TOP FLANGE
RIGHT SIDE SHOWN,
LEFT SIDE SIMILAR

FLANGE CLIP DETAIL

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PROJECT NO. I-5715
MECKLENBURG COUNTY
 STATION: 32+53.16 -Y2-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
STRUCTURAL STEEL
DETAILS
SPAN B

REVISIONS						SHEET NO. S4-20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #4

ALL STRUCTURES 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.

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.

ALL FIELD CONNECTIONS TO BE "DIA. HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.

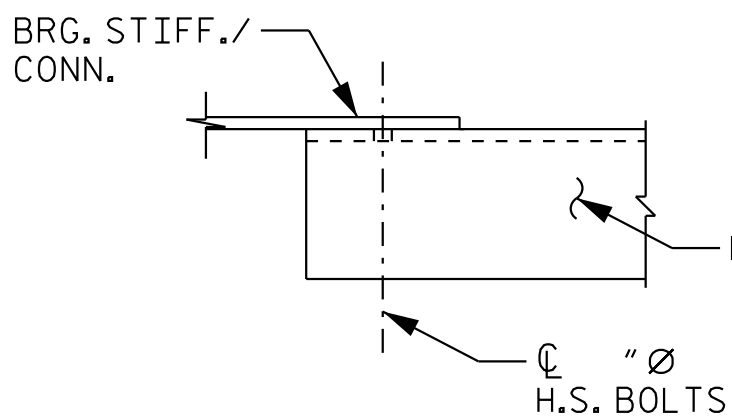
BEARING STIFFENERS ARE TO BE PLACED AT THE ANGLE SHOWN AND SHALL BE PLUMB.

A CHARPY V-NOTCH TEST IS REQUIRED FOR WEB PLATES, BOTTOM FLANGE PLATES, BOTTOM FLANGE SPLICE PLATES AND WEB SPLICE PLATES (IF USED) FOR ALL GIRDERS AND IN ACCORDANCE WITH ARTICLE 1072-7 OF THE STANDARD SPECIFICATIONS.

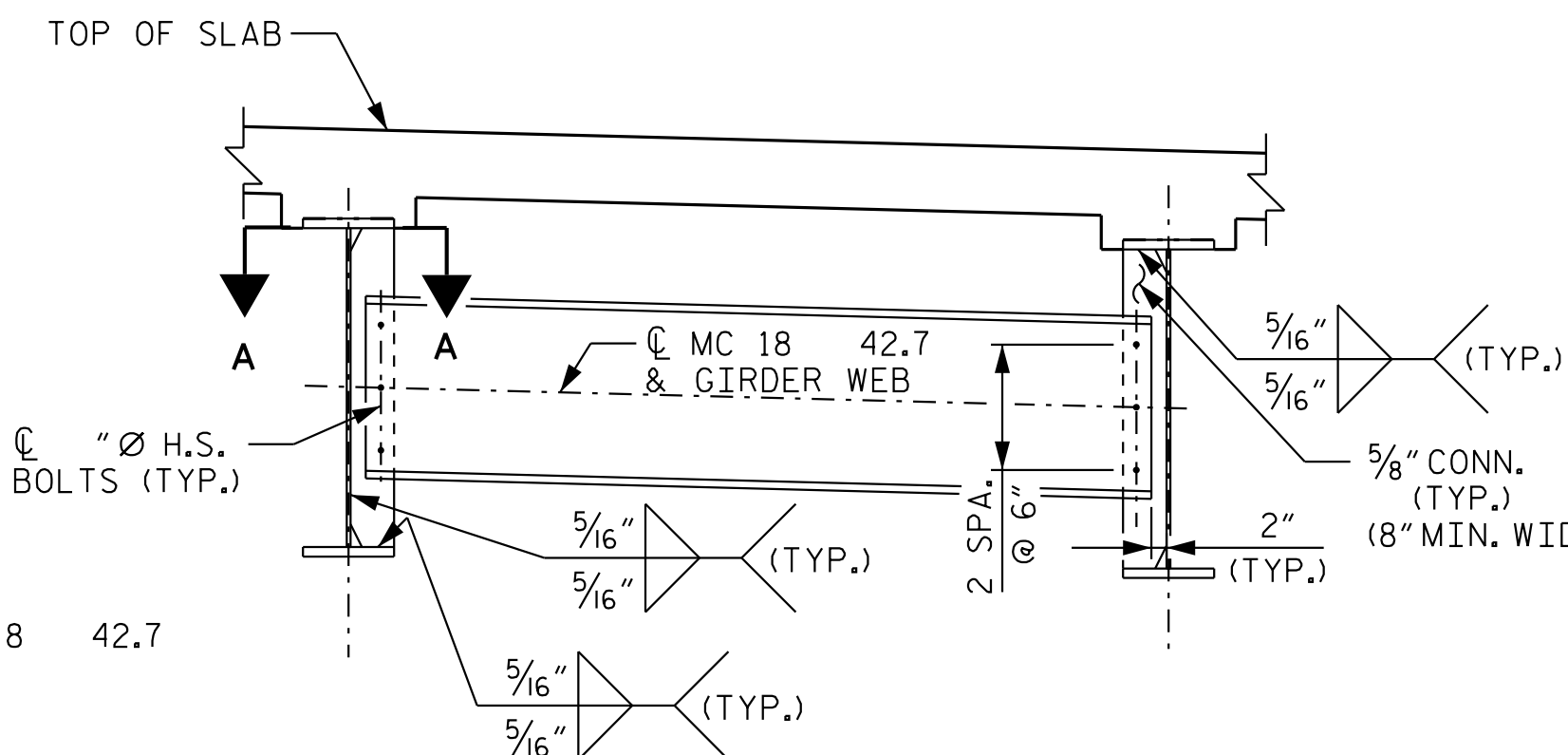
END OF GIRDERS SHALL BE PLUMB.

BEARING STIFFENER MAY REQUIRE COPING IF WIDER THAN BOTTOM FLANGE.

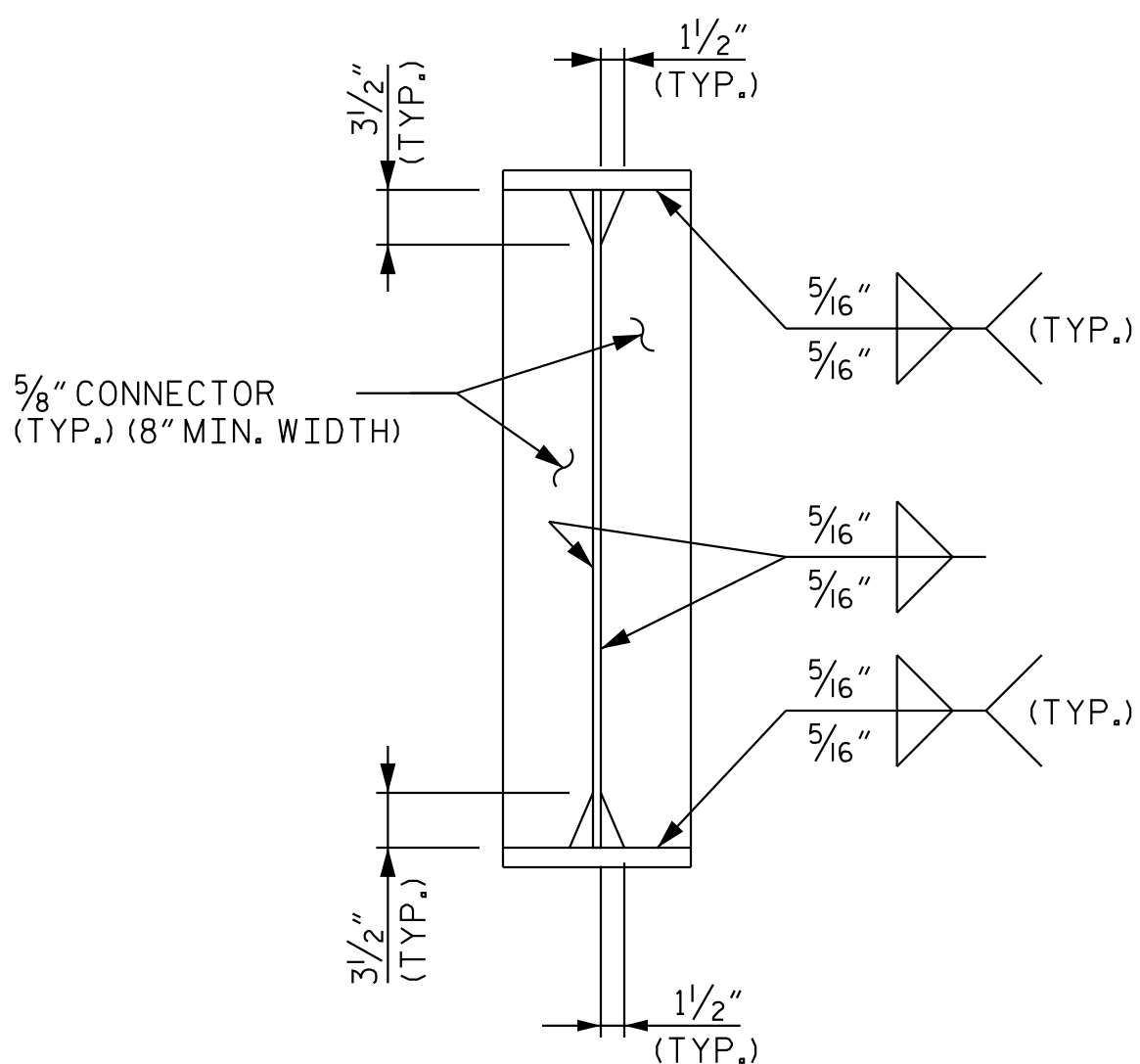
FABRICATORS SHALL DETAIL DIAPHRAGM MEMBERS AND CONNECTIONS FOR FULL DEAD LOAD
FIT UP. GIRDERS SHALL BE PLUMB AFTER THE FULL AMOUNT OF DEAD LOAD IS APPLIED.



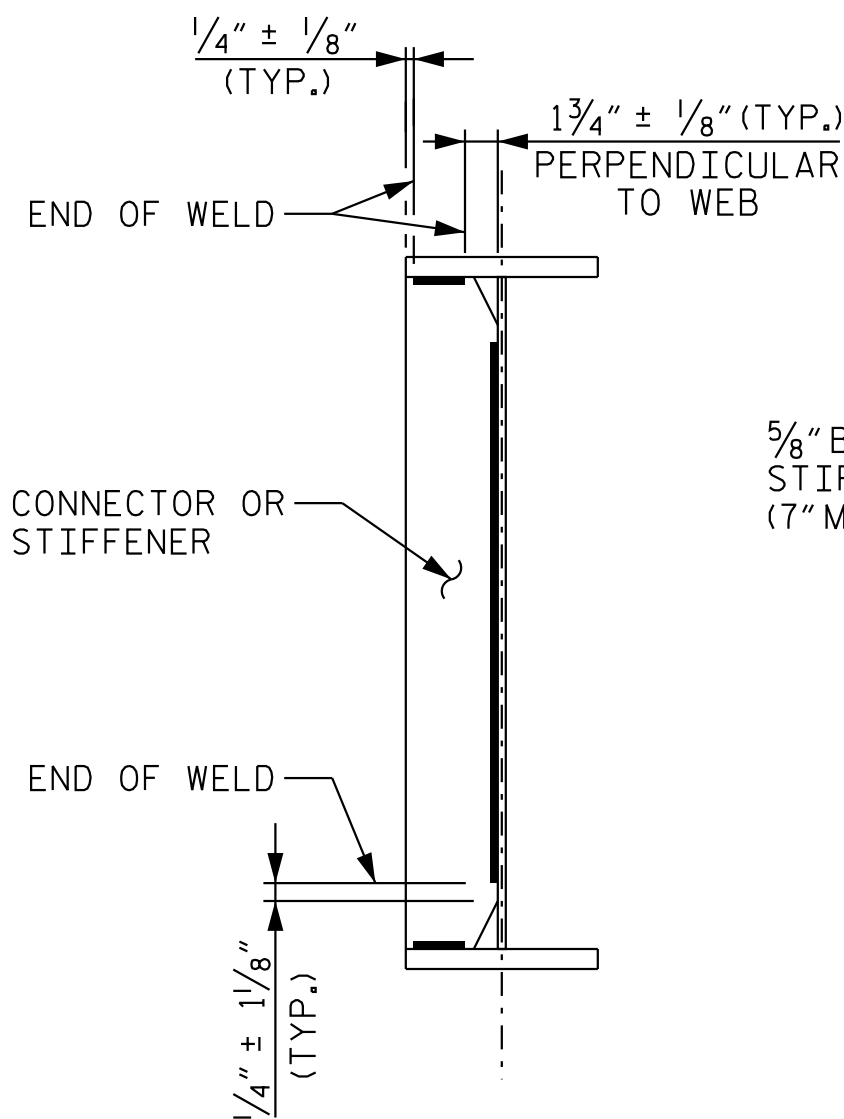
TYPICAL END BENT &
BENT DIAPHRAGM (D1 & D3)
D1 SHOWN, D3 SIMILAR



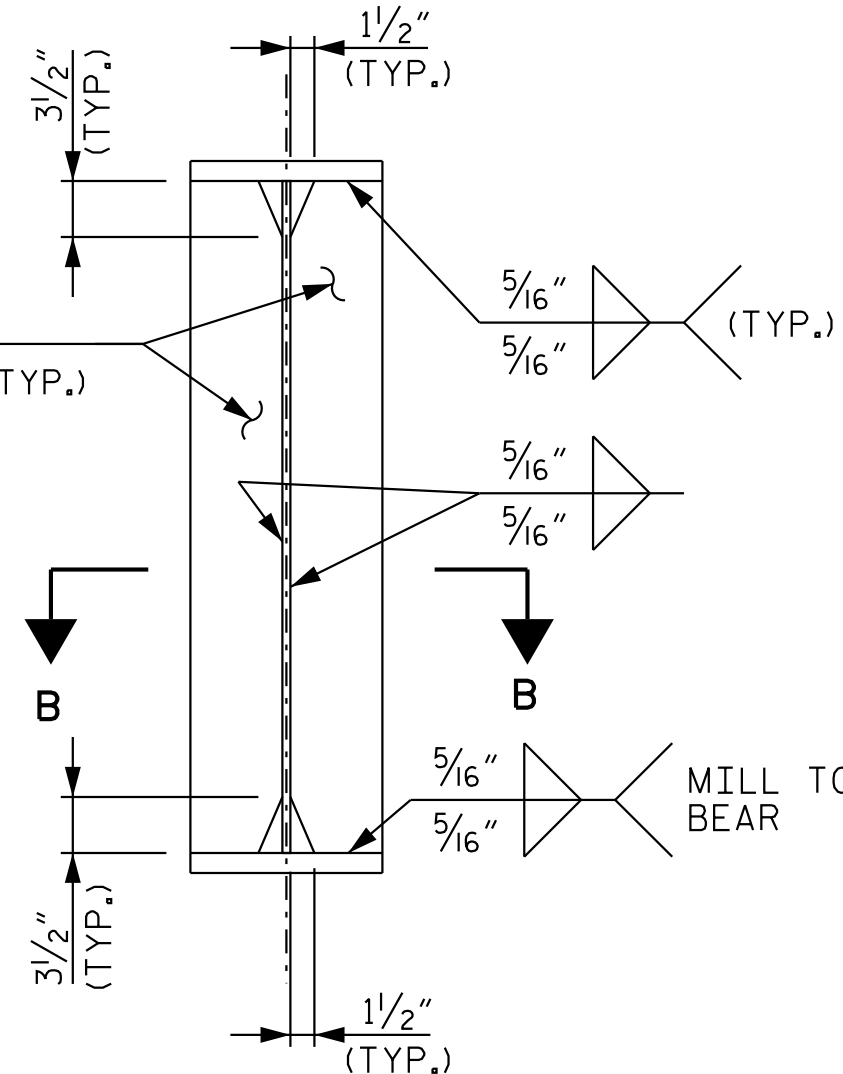
TYPICAL INTERMEDIATE
DIAPHRAM (D2 & D4)
D2 SHOWN, D4 SIMILAR



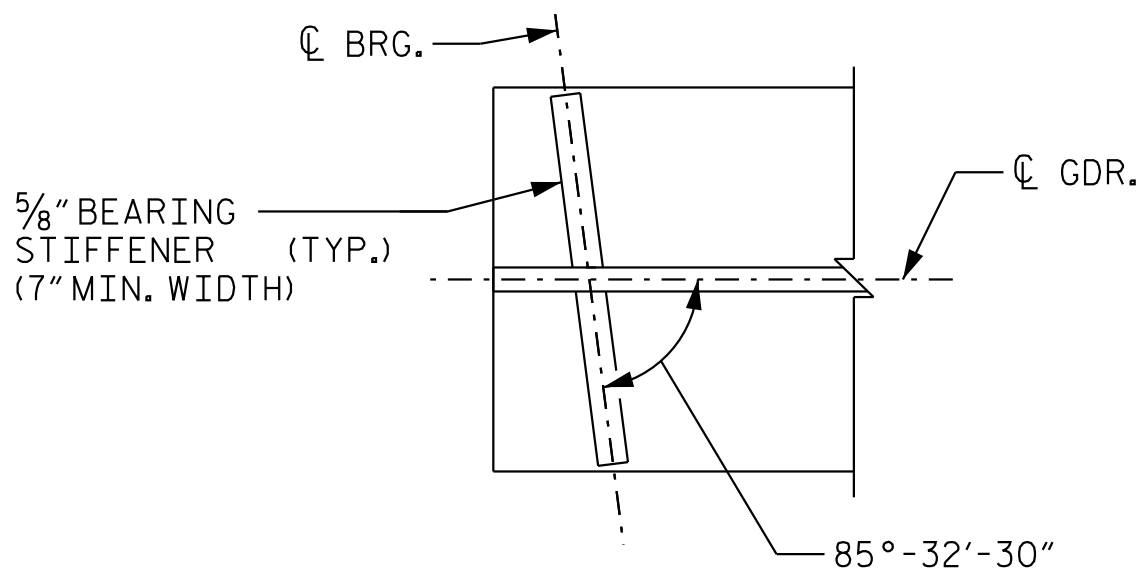
CONNECTOR PLATE



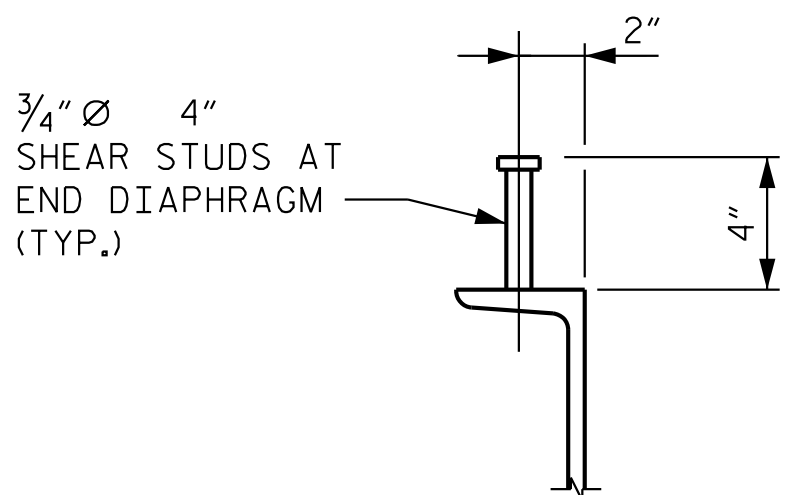
WELD TERMINATION DETAIL



BEARING STIFFENER

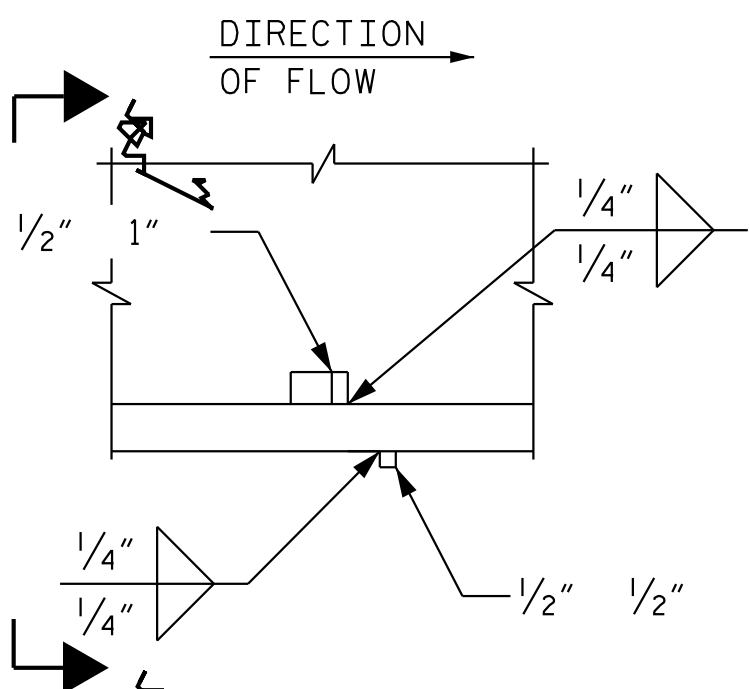


SECTION B-B

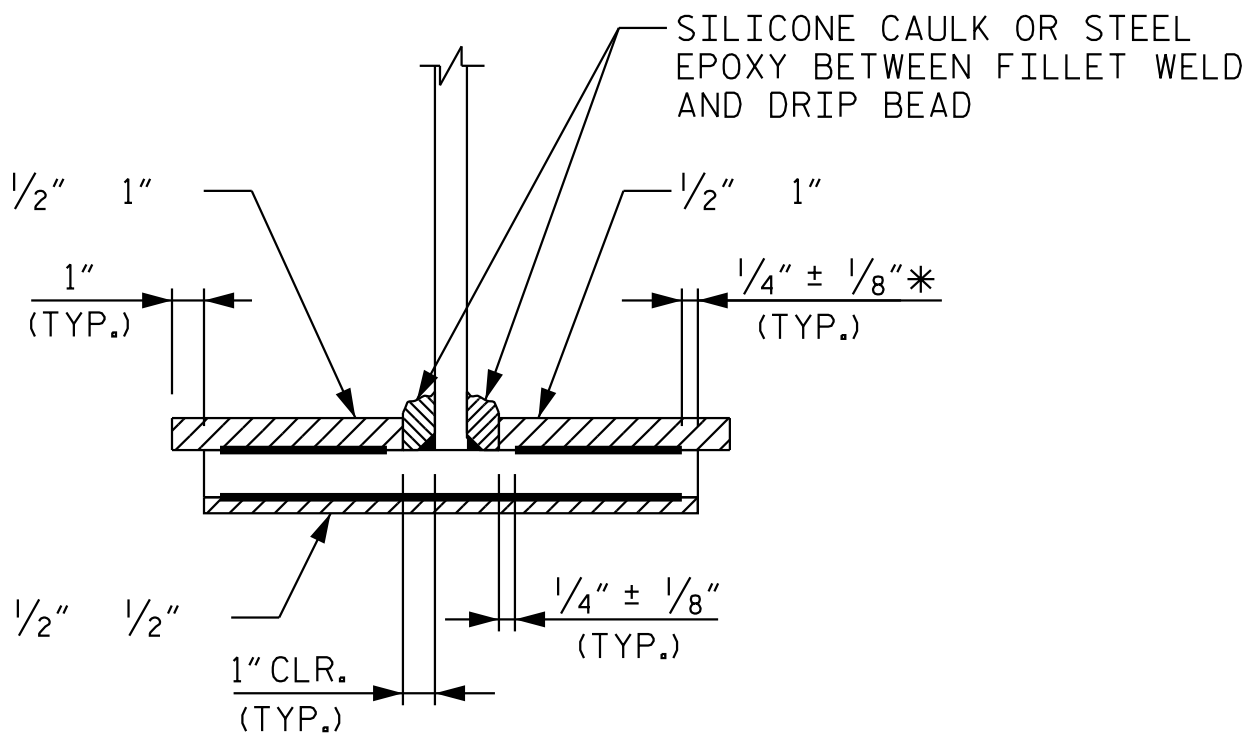


SHEAR STUD DETAIL

NOTE: TOP OF SHEAR STUD SHALL HAVE AT LEAST 2½" COVER AND PENETRATE AT LEAST 3" ABOVE BOTTOM OF EDGE BEAM.



SECTION VIEW



VIEW C-C

DRIP BEAD DETAILS

* TO WELD TERMINATIONS

DRAWN BY: T. K. BOYD DATE: 4/26
 CHECKED BY: A. D. BRENNER DATE: 4/26
 DESIGN ENGINEER OF RECORD: A. L. PHILLIPS DATE: 4/26

8/4/2026

Kimley»Horn

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Phone (919) 677-2000 F-0102

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PROJECT NO. I-5715
MECKLENBURG COUNTY
 STATION: 32+53.16 -Y2-

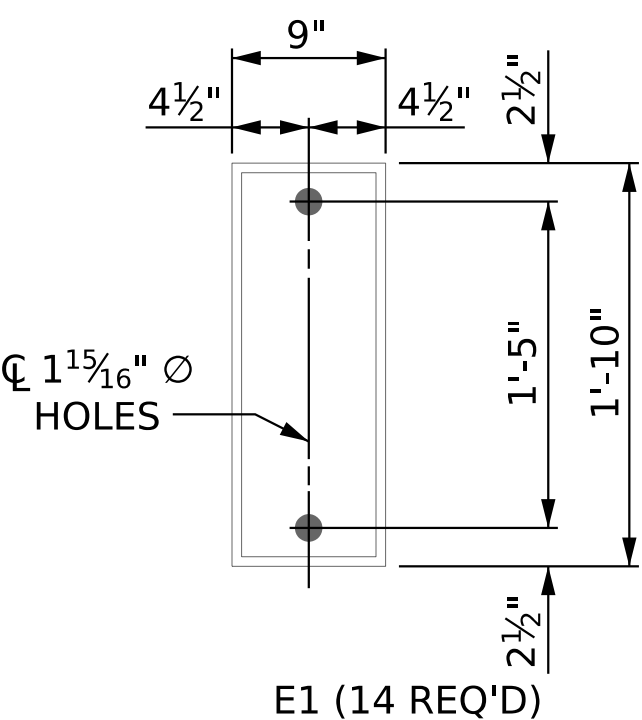
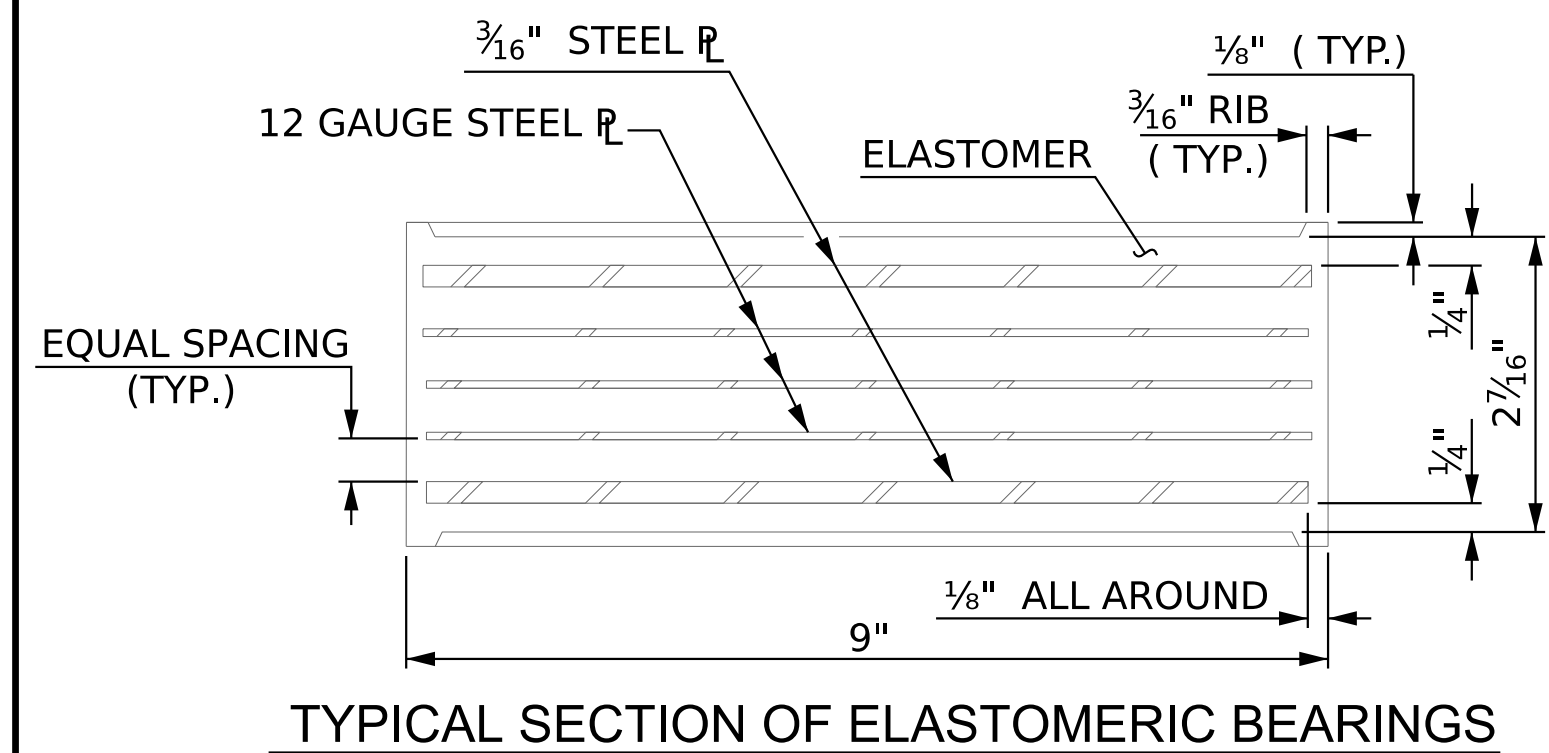
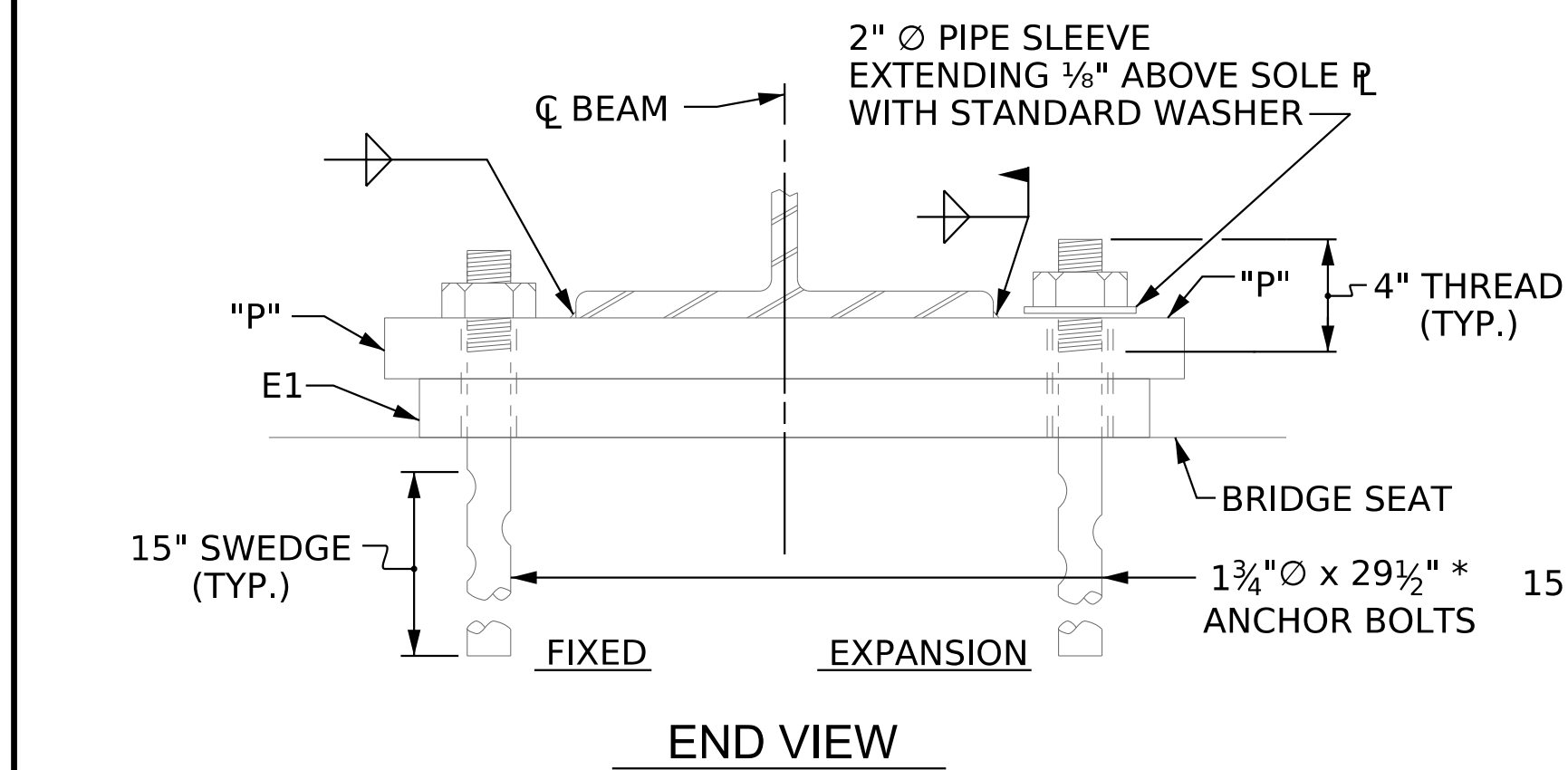
SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE STRUCTURAL STEEL DETAILS

REVISIONS						SHEET NO. S4-21
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #4

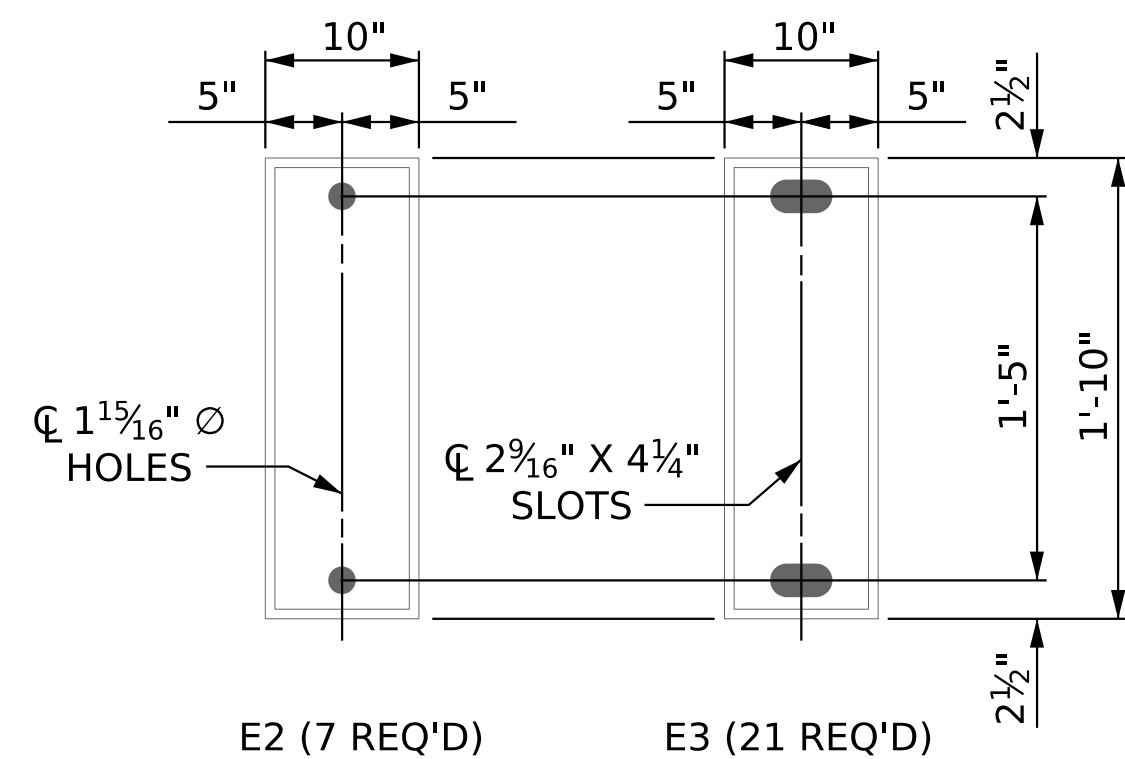
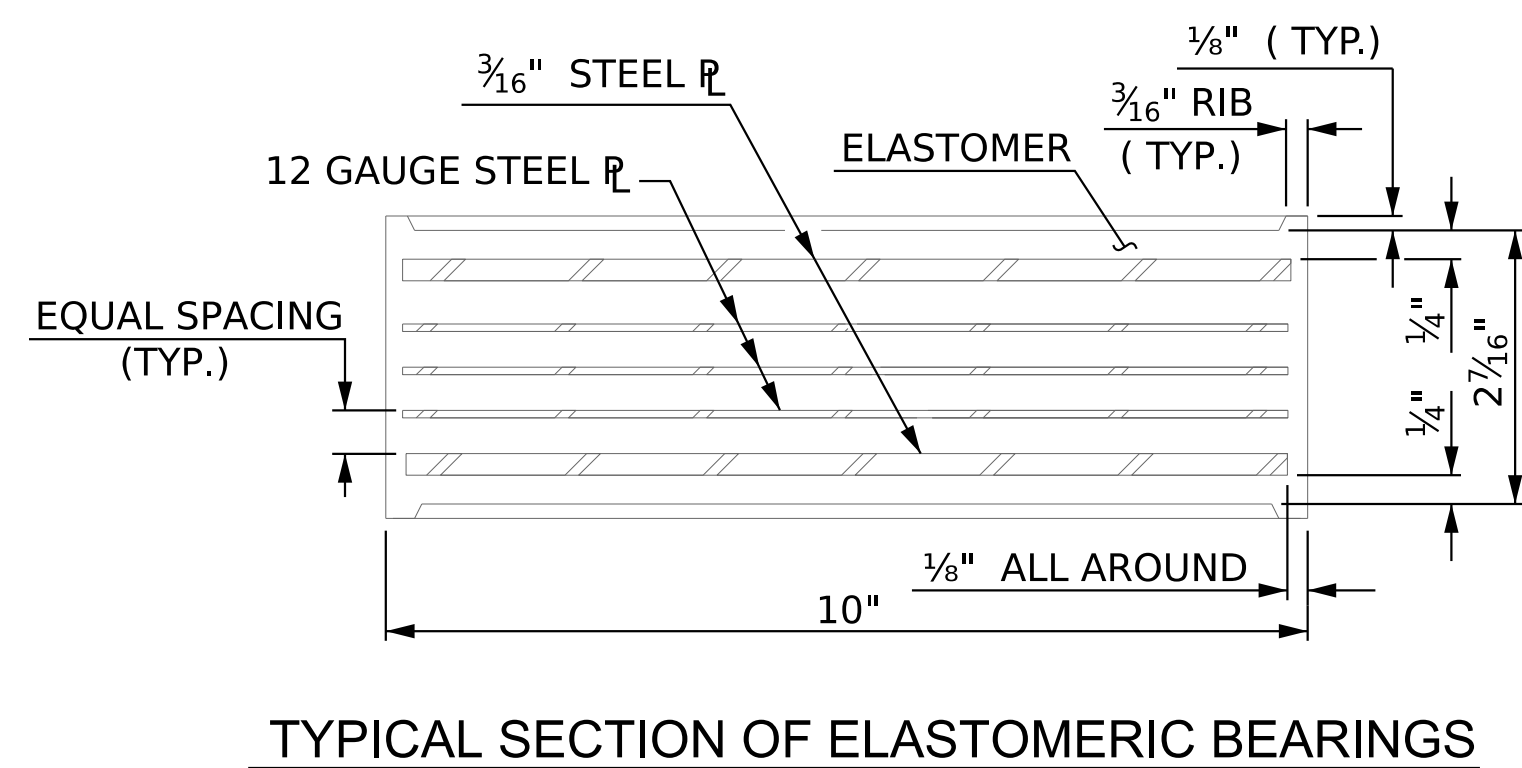
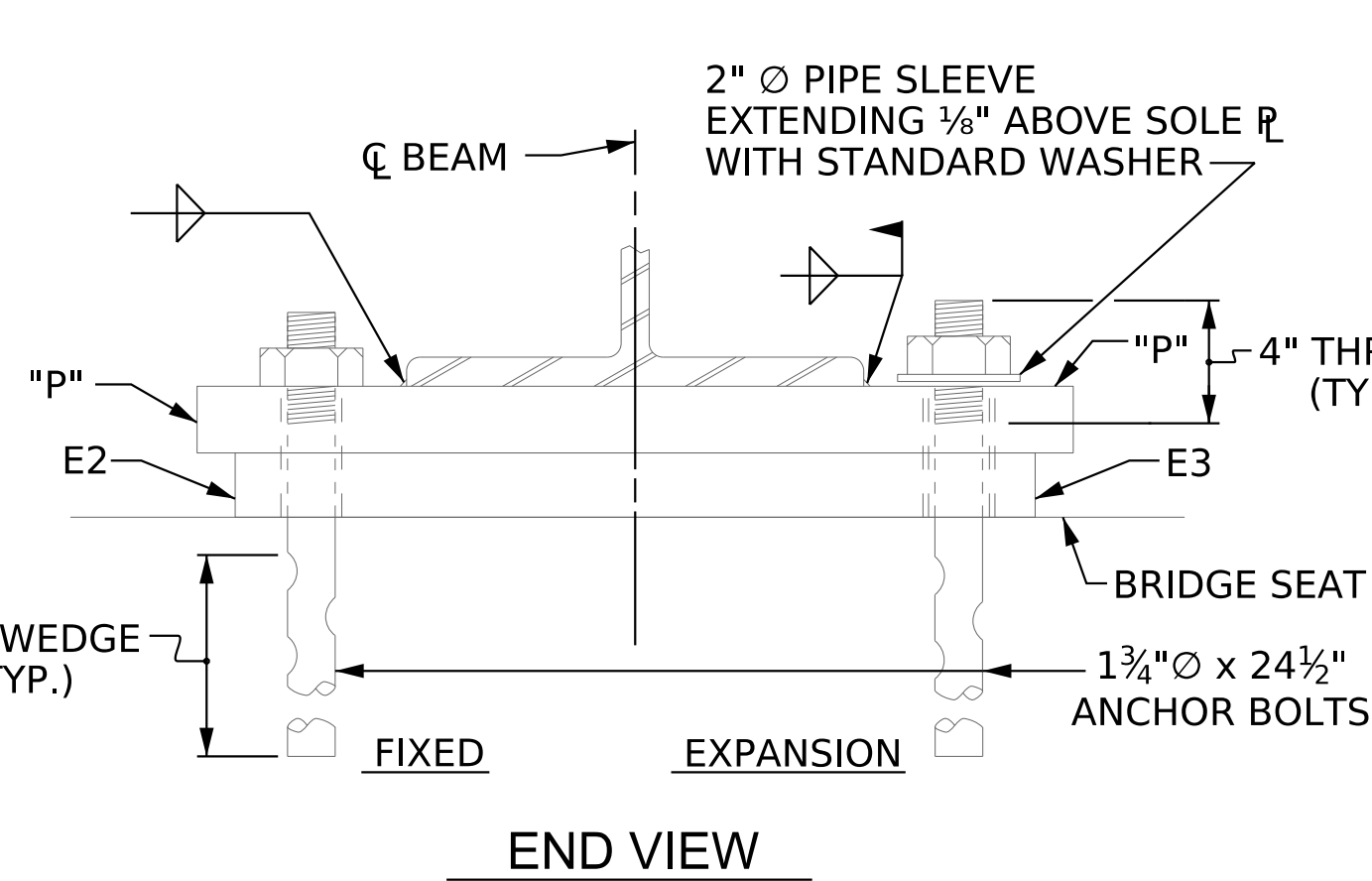


PLAN VIEW OF ELASTOMERIC BEARING

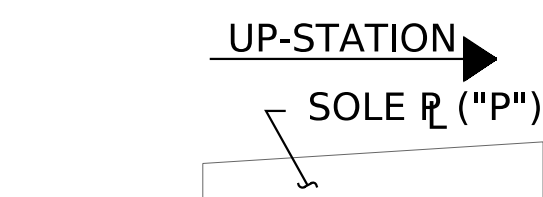
TYPE II

* 29½" ANCHOR BOLTS ARE REQUIRED AT SOLE PLATES P7-P9. FOR SOLE PLATE P1, AT 24½" ANCHOR BOLT SHALL BE USED.

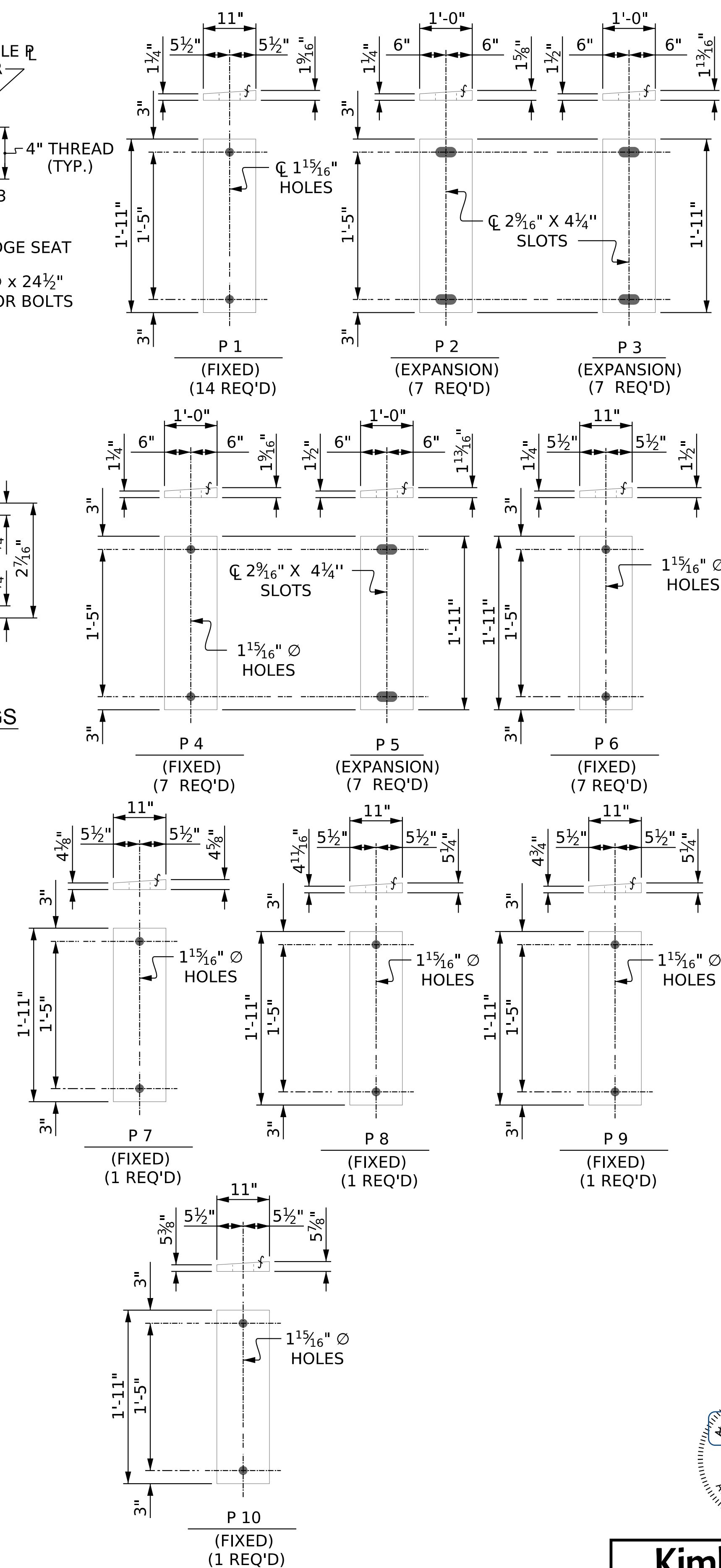
MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE II	180 k



PLAN VIEW OF ELASTOMERIC BEARING

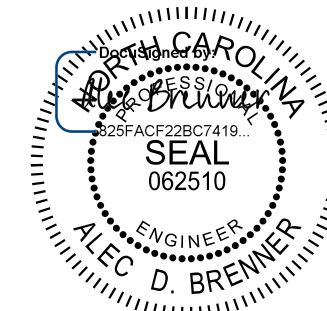


SOLE PLACEMENT DETAIL



SOLE PLATE DETAILS ("P")

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8/4/2026
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NOTES

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF $\frac{1}{2}$ " TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

THE 2" Ø PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.

THE PAYMENT FOR THE PIPE SLEEVES SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

FOR PAINTED STRUCTURAL STEEL (EXCLUDING AASHTO M270 GRADE 50W), SOLE PLATES, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

FOR AASHTO M270 GRADE 50W STRUCTURAL STEEL, SOLE PLATE SHALL BE AASHTO M270 GRADE 50W AND SHALL NOT BE GALVANIZED. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

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

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT

THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE STANDARD SPECIFICATIONS.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FOLLOWING PROCEDURE, WHICH MAY BE REQUIRED BY THE ENGINEER, TO RESET ELASTOMERIC BEARINGS DUE TO GIRDER TRANSLATION AND END ROTATION:

1. ONCE THE DECK HAS CURED, THE GIRDERS SHALL BE JACKED AND THE ELASTOMERIC BEARING SLOTS CENTERED AS NEARLY AS PRACTICAL ABOUT THE BEARING STIFFENER. THIS OPERATION SHALL BE PERFORMED AT APPROXIMATELY 60° F.

THE CONTRACTOR MAY PROPOSE ALTERNATE METHODS, PROVIDED
DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND
APPROVAL.

IN LIEU OF INCREASED SOLE PLATE THICKNESS FOR SOLE PLATES P7-P10, THE CONTRACTOR MAY ELECT TO CONSTRUCT A BRIDGE SEAT ON THE EXISTING END BENT CAPS FOR GIRDERS AG4, AG16, CG4, AND CG16. IF BRIDGE SEATS ARE CONSTRUCTED, THE CONTRACTOR SHALL MODIFY THE SOLE PLATE THICKNESS AND ANCHOR BOLT LENGTHS ACCORDINGLY. FOR OPTIONAL BRIDGE SEAT DETAILS, SEE "END BENT 1 SECTION AND DETAILS" AND "END BENT 2 SECTION AND DETAILS" SHEETS.

PROJECT NO. I-5715
MECKLENBURG COUNTY
 STATION: 32+53.16 -Y2-

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

STANDARD

ELASTOMERIC BEARING

DETAILS

STR. #4

K:\B01-Structures\Bridges\NC\01036524 - I-5715 Structure Design\Code\Sign\Site *2\Structure 4\Final\404_046_15175_SMU.DLL_590359_023.dgn 8/2/2026

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
	SPAN A																				
	GIRDER AG1																				
FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	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	0.001	0.001	0.001	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.001	0.002	0.002	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002	0.001	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.001	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	0.001	0.000
TOTAL DL DEFLECTION ↓	0.000	0.002	0.003	0.005	0.006	0.007	0.008	0.009	0.009	0.010	0.010	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.003	0.002	0.000
VERTICAL CURVE ORDINATE ↑	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
REQUIRED CAMBER ↑	0"	0"	0 "	0 "	0 "	0 "	0 "	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 "	0 "	0 "	0 "	0"	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT ``FINAL CAMBER``, WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
	SPAN A																				
	GIRDER AG2																				
FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	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	0.001	0.001	0.001	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.001	0.002	0.003	0.003	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.005	0.005	0.005	0.004	0.003	0.003	0.002	0.001	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 DL DEFLECTION ↓	0.000	0.002	0.003	0.005	0.006	0.007	0.008	0.009	0.009	0.010	0.010	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.003	0.002	0.000
VERTICAL CURVE ORDINATE ↑	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
REQUIRED CAMBER ↑	0"	0"	0 "	0 "	0 "	0 "	0 "	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 "	0 "	0 "	0 "	0"	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT ``FINAL CAMBER``, WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
	SPAN A																				
	GIRDER AG3																				
FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	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	0.001	0.001	0.001	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.001	0.002	0.003	0.003	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.005	0.005	0.005	0.004	0.003	0.003	0.002	0.001	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	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000
TOTAL DL DEFLECTION ↓	0.000	0.002	0.003	0.004	0.005	0.007	0.007	0.008	0.009	0.009	0.009	0.009	0.009	0.008	0.007	0.007	0.005	0.004	0.003	0.002	0.000
VERTICAL CURVE ORDINATE ↑	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
REQUIRED CAMBER ↑	0"	0"	0 "	0 "	0 "	0 "	0 "	0 "	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 "	0 "	0 "	0 "	0 "	0"	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT ``FINAL CAMBER``, WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
	SPAN A																				
	GIRDER AG4																				
FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	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	0.001	0.001	0.001	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.001	0.002	0.002	0.003	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.004	0.004	0.003	0.003	0.002	0.002	0.001	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 DL DEFLECTION ↓	0.000	0.001	0.002	0.003	0.004	0.005	0.005	0.006	0.006	0.006	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.001	0.000
VERTICAL CURVE ORDINATE ↑	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
REQUIRED CAMBER ↑	0"	0"	0"	0 "	0 "	0 "	0 "	0 "	0 "	0 "	0 "	0 "	0 "	0 "	0 "	0 "	0 "	0 "	0"	0"	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT ``FINAL CAMBER``, WHICH IS GIVEN IN INCHES (FRACTION FORM).

DRAWN BY: T. K. BOYD

DATE: 4/26

CHECKED BY: A. D. BRENNER

DATE: 4/26

DESIGN ENGINEER OF RECORD: A. L. PHILLIPS

DATE: 4/26

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PROJECT NO. I-5715

MECKLENBURG COUNTY

STATION: 32+53.16 -Y2-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
DEAD LOAD DEFLECTIONS
SPAN A
LEFT EXTENSION

REVISIONS

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

SHEET NO. S4-23

TOTAL SHEETS 63

STR. #4

K:\B01_Structures\Bridges\N\01036524 - I-5715 Structure Design\Cad\00n\Site *2\Structure 4\Final\04_047_15175_S.WJ.DL2.590358_024.dgn 8/2/2026

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
	SPAN A																					
	GIRDER AG16																					
	FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	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	0.002	0.001	0.001	0.001	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.001	0.001	0.002	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.001	0.001	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	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	
TOTAL DL DEFLECTION ↓	0.000	0.001	0.002	0.004	0.005	0.005	0.006	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.006	0.005	0.004	0.003	0.002	0.001	0.000	
VERTICAL CURVE ORDINATE ↑	0.000	0.001	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.001	0.001	0.000	
REQUIRED CAMBER ↑	0"	0"	0 "	0 "	0 "	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 "	0 "	0 "	0"	0"	

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM),EXCEPT ``FINAL CAMBER `` ,WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
	SPAN A																					
	GIRDER AG17																					
	FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	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	0.002	0.001	0.001	0.001	0.001	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.001	0.002	0.002	0.003	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002	0.001	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	0.001	0.000	0.000
TOTAL DL DEFLECTION ↓	0.000	0.002	0.003	0.004	0.005	0.007	0.007	0.008	0.009	0.009	0.009	0.009	0.009	0.009	0.008	0.007	0.007	0.005	0.004	0.003	0.002	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.001	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.001	0.001	0.000
REQUIRED CAMBER ↑	0"	0"	0 "	0 "	0 "	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 ⅛"	0 "	0 "	0 "	0"	0"

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM),EXCEPT ``FINAL CAMBER `` ,WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
	SPAN A																					
	GIRDER AG18																					
	FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	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	0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.001	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.001	0.000	
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.001	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	0.001	0.000	
TOTAL DL DEFLECTION ↓	0.000	0.002	0.003	0.004	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	0.004	0.003	0.002	0.000	
VERTICAL CURVE ORDINATE ↑	0.000	0.001	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.001	0.001	0.000	
REQUIRED CAMBER ↑	0"	0"	0 "	0 "	0 "	0⅛"	0⅛"	0⅛"	0⅛"	0⅛"	0⅛"	0⅛"	0⅛"	0⅛"	0⅛"	0⅛"	0 "	0 "	0 "	0"	0"	

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM),EXCEPT ``FINAL CAMBER `` ,WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 2 OF 6



Kimley»Horn

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NC LICENSE # F-0102

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DRAWN BY: <u>T.K. BOYD</u>	DATE: <u>4/26</u>
CHECKED BY: <u>A.D. BRENNER</u>	DATE: <u>4/26</u>
DESIGN ENGINEER OF RECORD: <u>A.L. PHILLIPS</u>	DATE: <u>4/26</u>

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
DEAD LOAD DEFLECTIONS
SPAN A
RIGHT EXTENSION

REVISIONS						SHEET NO. S4-24
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #4

K:\BRI-Structures\Bridges\NC\01036524 - I-5715 Structure Design\Coord\Sign\Site *2\Structure 4\Final\404_049_15175_SMU_DL3.590358_025.dgn 8/2/2026

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
	SPAN B																				
	GIRDER BG1																				
	FORTIETH POINTS																				
	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.009	0.017	0.025	0.032	0.038	0.044	0.048	0.051	0.053	0.054	0.053	0.051	0.048	0.044	0.038	0.032	0.025	0.017	0.009	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.025	0.049	0.072	0.093	0.112	0.127	0.140	0.149	0.155	0.157	0.155	0.149	0.140	0.127	0.112	0.093	0.072	0.049	0.025	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.015	0.029	0.043	0.055	0.067	0.076	0.083	0.089	0.092	0.093	0.092	0.089	0.083	0.076	0.066	0.055	0.043	0.029	0.015	0.000
TOTAL DL DEFLECTION ↓	0.000	0.049	0.096	0.140	0.181	0.217	0.247	0.271	0.289	0.300	0.304	0.300	0.289	0.271	0.247	0.217	0.180	0.139	0.095	0.049	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.004	0.007	0.010	0.013	0.015	0.017	0.018	0.019	0.020	0.020	0.020	0.019	0.018	0.017	0.015	0.013	0.010	0.007	0.004	0.000
REQUIRED CAMBER ↑	0"	0⅝"	1¼"	1 "	2⅝"	2¾"	3 "	3½"	3 "	3 "	3 "	3 "	3 "	3½"	3 "	2¾"	2⅝"	1 "	1¼"	0⅝"	0"

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM),EXCEPT ``FINAL CAMBER `` ,WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
	SPAN B																				
	GIRDER BG2																				
	FORTIETH POINTS																				
	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.009	0.017	0.025	0.033	0.040	0.045	0.049	0.053	0.055	0.055	0.055	0.053	0.049	0.045	0.040	0.033	0.025	0.017	0.009	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.029	0.057	0.083	0.108	0.129	0.147	0.162	0.172	0.179	0.182	0.179	0.172	0.162	0.147	0.129	0.108	0.083	0.057	0.029	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.011	0.022	0.032	0.041	0.050	0.057	0.062	0.066	0.069	0.070	0.069	0.066	0.062	0.057	0.050	0.041	0.032	0.022	0.011	0.000
TOTAL DL DEFLECTION ↓	0.000	0.049	0.096	0.141	0.182	0.219	0.249	0.273	0.291	0.302	0.307	0.302	0.291	0.273	0.249	0.219	0.182	0.141	0.096	0.049	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.004	0.007	0.010	0.013	0.015	0.017	0.018	0.019	0.020	0.020	0.020	0.019	0.018	0.017	0.015	0.013	0.010	0.007	0.004	0.000
REQUIRED CAMBER ↑	0"	0⅝"	1¼"	1 "	2⅝"	2 "	3 "	3½"	3¾"	3 "	3 "	3 "	3¾"	3½"	3 "	2 "	2⅝"	1 "	1¼"	0⅝"	0"

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM),EXCEPT ``FINAL CAMBER `` ,WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
	SPAN B																				
	GIRDER BG3																				
FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.009	0.017	0.025	0.033	0.039	0.045	0.049	0.053	0.055	0.055	0.055	0.053	0.049	0.045	0.039	0.033	0.025	0.017	0.009	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.029	0.057	0.083	0.108	0.129	0.147	0.162	0.172	0.179	0.181	0.179	0.172	0.162	0.147	0.129	0.108	0.083	0.057	0.029	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.008	0.015	0.022	0.029	0.035	0.039	0.043	0.046	0.048	0.049	0.048	0.046	0.043	0.039	0.035	0.029	0.022	0.015	0.008	0.000
TOTAL DL DEFLECTION ↓	0.000	0.046	0.090	0.131	0.169	0.204	0.232	0.254	0.271	0.281	0.286	0.281	0.271	0.254	0.232	0.204	0.169	0.131	0.090	0.046	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.004	0.007	0.010	0.013	0.015	0.017	0.018	0.019	0.020	0.020	0.020	0.019	0.018	0.017	0.015	0.013	0.010	0.007	0.004	0.000
REQUIRED CAMBER ↑	0"	0 "	1 "	1 "	2 "	2⅝"	3"	3¼"	3½"	3⅝"	3 "	3⅝"	3½"	3¼"	3"	2⅝"	2 "	1 "	1 "	0 "	0"

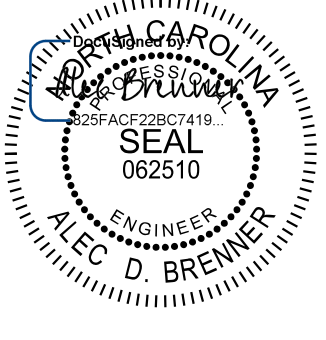
* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM),EXCEPT ``FINAL CAMBER `` ,WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
	SPAN B																				
	GIRDER BG4																				
FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.009	0.017	0.025	0.032	0.038	0.044	0.048	0.051	0.053	0.054	0.053	0.051	0.048	0.044	0.038	0.032	0.025	0.017	0.009	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.024	0.047	0.069	0.089	0.107	0.121	0.133	0.142	0.148	0.149	0.148	0.142	0.133	0.122	0.107	0.089	0.069	0.047	0.024	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 DL DEFLECTION ↓	0.000	0.033	0.064	0.093	0.121	0.145	0.165	0.182	0.193	0.201	0.203	0.201	0.193	0.182	0.165	0.145	0.121	0.094	0.064	0.033	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.004	0.007	0.010	0.013	0.015	0.017	0.018	0.019	0.020	0.020	0.020	0.019	0.018	0.017	0.015	0.013	0.010	0.007	0.004	0.000
REQUIRED CAMBER ↑	0"	0 ⁷ / ₁₆ "	0 "	1 ¹ / ₄ "	1 ⁵ / ₈ "	1 "	2 "	2 "	2 "	2 ⁵ / ₈ "	2 "	2 ⁵ / ₈ "	2 "	2 "	2 "	1 "	1 ⁵ / ₈ "	1 ¹ / ₄ "	0 "	0 ⁷ / ₁₆ "	0"

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM),EXCEPT ``FINAL CAMBER `` ,WHICH IS GIVEN IN INCHES (FRACTION FORM).

DRAWN BY: T.K. BOYD DATE: 4/26
CHECKED BY: A.D. BRENNER DATE: 4/26
DESIGN ENGINEER OF RECORD: A.L. PHILLIPS DATE: 4/26

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



8/4/2026

Kimley»Horn

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NC LICENSE # F-0102

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
DEAD LOAD DEFLECTIONS
SPAN B
LEFT EXTENSION

REVISIONS						SHEET NO. S4-25
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #4

K:\B01_Structures\Bridges\NC\01036524 - I-5715 Structure Design\Coord\gn\Site *2\Structure 4\Final\04_051_15715_SML\DL 4_590359_026.dgn 8/3/2026

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
	SPAN B																				
	GIRDER BG16																				
FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.009	0.017	0.025	0.032	0.038	0.044	0.048	0.051	0.053	0.054	0.053	0.051	0.048	0.044	0.038	0.032	0.025	0.017	0.009	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.021	0.041	0.061	0.078	0.094	0.107	0.117	0.125	0.130	0.131	0.130	0.125	0.117	0.107	0.094	0.078	0.060	0.041	0.021	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.008	0.015	0.022	0.029	0.035	0.039	0.043	0.046	0.048	0.049	0.048	0.046	0.043	0.039	0.035	0.029	0.022	0.015	0.008	0.000
TOTAL DL DEFLECTION ↓	0.000	0.037	0.073	0.108	0.139	0.167	0.190	0.209	0.222	0.231	0.234	0.231	0.222	0.208	0.190	0.166	0.138	0.107	0.073	0.037	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.004	0.007	0.010	0.012	0.015	0.016	0.018	0.019	0.019	0.019	0.019	0.019	0.018	0.016	0.015	0.012	0.010	0.007	0.004	0.000
REQUIRED CAMBER ↑	0"	0½"	0 "	1⅞"	1 "	2 "	2½"	2 "	2 "	3"	3 "	3"	2 "	2 "	2½"	2 "	1 "	1 "	0 "	0½"	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT ``FINAL CAMBER ``, WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
	SPAN B																				
	GIRDER BG17																				
FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.009	0.017	0.025	0.033	0.039	0.045	0.049	0.052	0.054	0.055	0.054	0.052	0.049	0.045	0.039	0.033	0.025	0.017	0.009	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.025	0.049	0.072	0.093	0.112	0.128	0.140	0.149	0.155	0.157	0.155	0.149	0.140	0.128	0.112	0.093	0.072	0.049	0.025	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.011	0.022	0.032	0.041	0.050	0.057	0.062	0.066	0.069	0.070	0.069	0.066	0.062	0.057	0.050	0.041	0.032	0.022	0.011	0.000
TOTAL DL DEFLECTION ↓	0.000	0.045	0.088	0.130	0.167	0.201	0.229	0.251	0.268	0.278	0.282	0.278	0.268	0.251	0.229	0.201	0.167	0.130	0.089	0.045	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.004	0.007	0.010	0.012	0.015	0.016	0.018	0.019	0.019	0.019	0.019	0.019	0.018	0.016	0.015	0.012	0.010	0.007	0.004	0.000
REQUIRED CAMBER ↑	0"	0 "	1⅛"	1 "	2 "	2 "	2 "	3¼"	3⅙"	3 "	3⅝"	3 "	3⅙"	3¼"	2 "	2 "	2 "	1 "	1⅛"	0 "	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT ``FINAL CAMBER ``, WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
	SPAN B																				
	GIRDER BG18																				
FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.009	0.017	0.025	0.032	0.038	0.044	0.048	0.051	0.053	0.054	0.053	0.051	0.048	0.044	0.038	0.032	0.025	0.017	0.009	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.023	0.045	0.066	0.086	0.103	0.117	0.129	0.137	0.143	0.144	0.143	0.137	0.129	0.118	0.103	0.086	0.067	0.045	0.023	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.015	0.029	0.043	0.055	0.066	0.076	0.083	0.089	0.092	0.093	0.092	0.089	0.083	0.076	0.067	0.055	0.043	0.029	0.015	0.000
TOTAL DL DEFLECTION ↓	0.000	0.047	0.091	0.134	0.173	0.208	0.237	0.260	0.277	0.288	0.291	0.288	0.277	0.260	0.237	0.208	0.173	0.134	0.092	0.047	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.004	0.007	0.010	0.012	0.015	0.016	0.018	0.019	0.019	0.019	0.019	0.019	0.018	0.016	0.015	0.012	0.010	0.007	0.004	0.000
REQUIRED CAMBER ↑	0"	0⅝"	1 "	1¾"	2¼"	2 "	3 "	3⅝"	3 "	3 "	3¾"	3 "	3 "	3⅝"	3 "	2 "	2¼"	1¾"	1 "	0⅝"	0"

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT ``FINAL CAMBER ``, WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 4 OF 6



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DRAWN BY: T. K. BOYD DATE: 4/26
CHECKED BY: A. D. BRENNER DATE: 4/26
DESIGN ENGINEER OF RECORD: A. L. PHILLIPS DATE: 4/26

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
DEAD LOAD DEFLECTIONS
SPAN B
RIGHT EXTENSION

REVISIONS						SHEET NO. S4-26
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #4

K:\B01_Structures\Bridges\N01036524 - I-5715 Structure Design\Code\00gn\Site *2\Structure 4\Final\404_053_15175_SMU.DL5.590358_027.dgn 8/2/2026

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
	SPAN C																				
	GIRDER CG1																				
FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.001	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.001	0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.002	0.004	0.006	0.008	0.010	0.011	0.012	0.013	0.013	0.014	0.013	0.013	0.012	0.011	0.010	0.008	0.006	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.001	0.003	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.008	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.001	0.000
TOTAL DL DEFLECTION ↓	0.000	0.004	0.008	0.012	0.016	0.019	0.021	0.023	0.025	0.026	0.026	0.026	0.025	0.023	0.021	0.019	0.015	0.012	0.008	0.004	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.001	0.002	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.001	0.000
REQUIRED CAMBER ↑	0"	0 "	0 1⁄8"	0 "	0 1⁄4"	0 1⁄4"	0 5⁄16"	0 "	0 "	0 "	0 "	0 "	0 "	0 5⁄16"	0 5⁄16"	0 1⁄4"	0 1⁄4"	0 "	0 1⁄8"	0 "	0"

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM),EXCEPT ``FINAL CAMBER `` ,WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
	SPAN C																				
	GIRDER CG2																				
FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.001	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.001	0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.003	0.005	0.007	0.009	0.011	0.013	0.014	0.015	0.015	0.016	0.015	0.015	0.014	0.013	0.011	0.009	0.007	0.005	0.003	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.001	0.002	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.001	0.000
TOTAL DL DEFLECTION ↓	0.000	0.004	0.008	0.012	0.016	0.019	0.021	0.023	0.025	0.026	0.026	0.026	0.025	0.023	0.021	0.019	0.016	0.012	0.008	0.004	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.001	0.002	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.001	0.000
REQUIRED CAMBER ↑	0"	0 "	0 1⁄8"	0 "	0 1⁄4"	0 1⁄4"	0 5⁄16"	0 "	0 "	0 "	0 "	0 "	0 "	0 "	0 5⁄16"	0 1⁄4"	0 1⁄4"	0 "	0 1⁄8"	0 "	0"

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM),EXCEPT ``FINAL CAMBER `` ,WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
	SPAN C																				
	GIRDER CG3																				
	FORTIETH POINTS																				
	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.001	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.001	0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.003	0.005	0.007	0.009	0.011	0.013	0.014	0.015	0.015	0.016	0.015	0.015	0.014	0.013	0.011	0.009	0.007	0.005	0.003	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.001	0.001	0.002	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.001	0.001	0.000
TOTAL DL DEFLECTION ↓	0.000	0.004	0.008	0.011	0.014	0.018	0.020	0.022	0.023	0.024	0.025	0.024	0.023	0.022	0.020	0.018	0.014	0.011	0.008	0.004	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.001	0.002	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.001	0.000
REQUIRED CAMBER ↑	0"	0 "	0 1⁄8"	0 "	0 "	0 1⁄4"	0 5⁄16"	0 5⁄16"	0 "	0 "	0 "	0 "	0 "	0 5⁄16"	0 5⁄16"	0 1⁄4"	0 "	0 "	0 1⁄8"	0 "	0"

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM),EXCEPT ``FINAL CAMBER `` ,WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
	SPAN C																				
	GIRDER CG4																				
FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.001	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.001	0.001	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	0.012	0.012	0.012	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 DL DEFLECTION ↓	0.000	0.003	0.005	0.008	0.010	0.012	0.014	0.015	0.016	0.017	0.017	0.017	0.016	0.015	0.014	0.012	0.010	0.008	0.005	0.003	0.000
VERTICAL CURVE ORDINATE ↑	0.000	0.001	0.002	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.001	0.000
REQUIRED CAMBER ↑	0"	0 "	0 "	0 1⁄8"	0 "	0 "	0 1⁄4"	0 1⁄4"	0 1⁄4"	0 1⁄4"	0 1⁄4"	0 1⁄4"	0 1⁄4"	0 1⁄4"	0 1⁄4"	0 "	0 "	0 1⁄8"	0 "	0 "	0"

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM),EXCEPT ``FINAL CAMBER `` ,WHICH IS GIVEN IN INCHES (FRACTION FORM).

DRAWN BY: T. K. BOYD

DATE: 4/26

CHECKED BY: A. D. BRENNER

DATE: 4/26

DESIGN ENGINEER OF RECORD: A. L. PHILLIPS

DATE: 4/26

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Kimley»Horn

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PROJECT NO. I-5715

MECKLENBURG COUNTY

STATION: 32+53.16 -Y2-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
DEAD LOAD DEFLECTIONS
SPAN C
LEFT EXTENSION

REVISIONS

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

SHEET NO. S4-27

TOTAL SHEETS 63

STR. #4

K:\B01_Structures\Bridges\NC\01036524 - I-5715 Structure Design\Cad\Drawings\Site *2\Structure 4\Final\404-055-15115_SMU.DWG 590358_026.dgn 8/2/2026

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
	SPAN C																					
	GIRDER CG16																					
	FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.001	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.003	0.003	0.002	0.001	0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	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	0.009	0.008	0.007	0.005	0.004	0.002	0.000	
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.001	0.001	0.002	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.001	0.001	0.000	
TOTAL DL DEFLECTION ↓	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	
VERTICAL CURVE ORDINATE ↑	0.000	0.001	0.002	0.003	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.002	0.001	0.000	
REQUIRED CAMBER ↑	0"	0 "	0⅛"	0⅛"	0 "	0¼"	0¼"	0¼"	0⅝"	0⅝"	0⅝"	0⅝"	0⅝"	0¼"	0¼"	0¼"	0 "	0⅛"	0⅛"	0 "	0"	

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM),EXCEPT ``FINAL CAMBER `` ,WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
	SPAN C																					
	GIRDER CG17																					
	FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.001	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.001	0.001	0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB * ↓	0.000	0.002	0.004	0.006	0.008	0.010	0.011	0.012	0.013	0.013	0.014	0.013	0.013	0.012	0.011	0.010	0.008	0.006	0.004	0.002	0.000	
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.001	0.002	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.001	0.000	
TOTAL DL DEFLECTION ↓	0.000	0.004	0.008	0.011	0.014	0.017	0.020	0.022	0.023	0.024	0.024	0.024	0.023	0.022	0.020	0.017	0.014	0.011	0.008	0.004	0.000	
VERTICAL CURVE ORDINATE ↑	0.000	0.001	0.002	0.003	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.002	0.001	0.000	
REQUIRED CAMBER ↑	0"	0 "	0⅛"	0 "	0 "	0¼"	0⅝"	0⅝"	0⅝"	0 "	0 "	0 "	0⅝"	0⅝"	0⅝"	0¼"	0 "	0 "	0⅛"	0 "	0"	

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM),EXCEPT ``FINAL CAMBER `` ,WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
	SPAN C																					
	GIRDER CG18																					
	FORTIETH POINTS	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0
DEFLECTION DUE TO WEIGHT OF STEEL ↓	0.000	0.001	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.001	0.001	0.001	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	0.012	0.012	0.012	0.012	0.011	0.010	0.009	0.007	0.006	0.004	0.002	0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL ↓	0.000	0.001	0.003	0.004	0.005	0.006	0.006	0.007	0.008	0.008	0.008	0.008	0.008	0.007	0.007	0.006	0.005	0.004	0.003	0.001	0.000	
TOTAL DL DEFLECTION ↓	0.000	0.004	0.008	0.012	0.015	0.018	0.020	0.022	0.024	0.025	0.025	0.025	0.024	0.023	0.020	0.018	0.015	0.012	0.008	0.004	0.000	
VERTICAL CURVE ORDINATE ↑	0.000	0.001	0.002	0.003	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.002	0.001	0.000	
REQUIRED CAMBER ↑	0"	0 "	0⅛"	0 "	0¼"	0¼"	0⅝"	0⅝"	0 "	0 "	0 "	0 "	0 "	0⅝"	0⅝"	0¼"	0¼"	0 "	0⅛"	0 "	0"	

* INCLUDES SLAB,BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM),EXCEPT ``FINAL CAMBER `` ,WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 6 OF 6



Kimley»Horn

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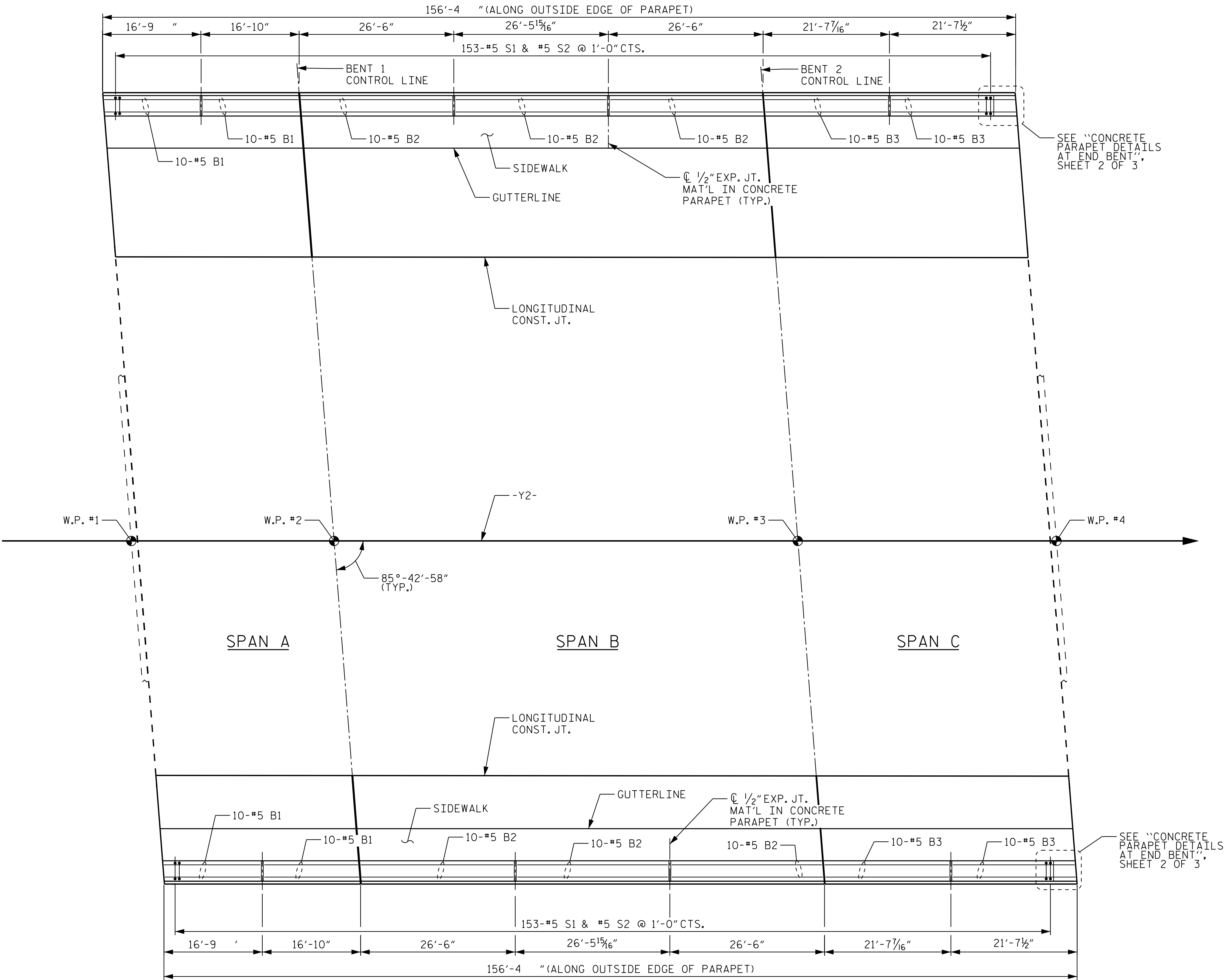
DRAWN BY: <u>T. K. BOYD</u>	DATE: <u>4/26</u>
CHECKED BY: <u>A. D. BRENNER</u>	DATE: <u>4/26</u>
DESIGN ENGINEER OF RECORD: <u>A. L. PHILLIPS</u>	DATE: <u>4/26</u>

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
DEAD LOAD DEFLECTIONS
SPAN C
RIGHT EXTENSION

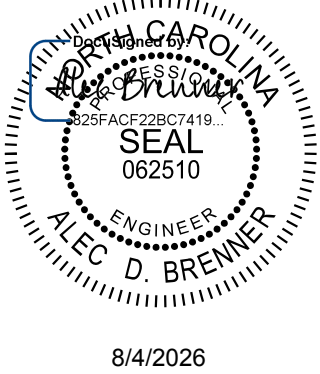
REVISIONS						SHEET NO. S4-28
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

NOTES:
FOR NOTES, SEE SHEET 3 OF 3.



PLAN OF CONCRETE PARAPET

NOTE: ALL DIMENSIONS ARE MEASURED ALONG OUTSIDE FACE OF CONCRETE PARAPET



PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 1 OF 3

REVISIONS						SHEET NO. S4-29
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

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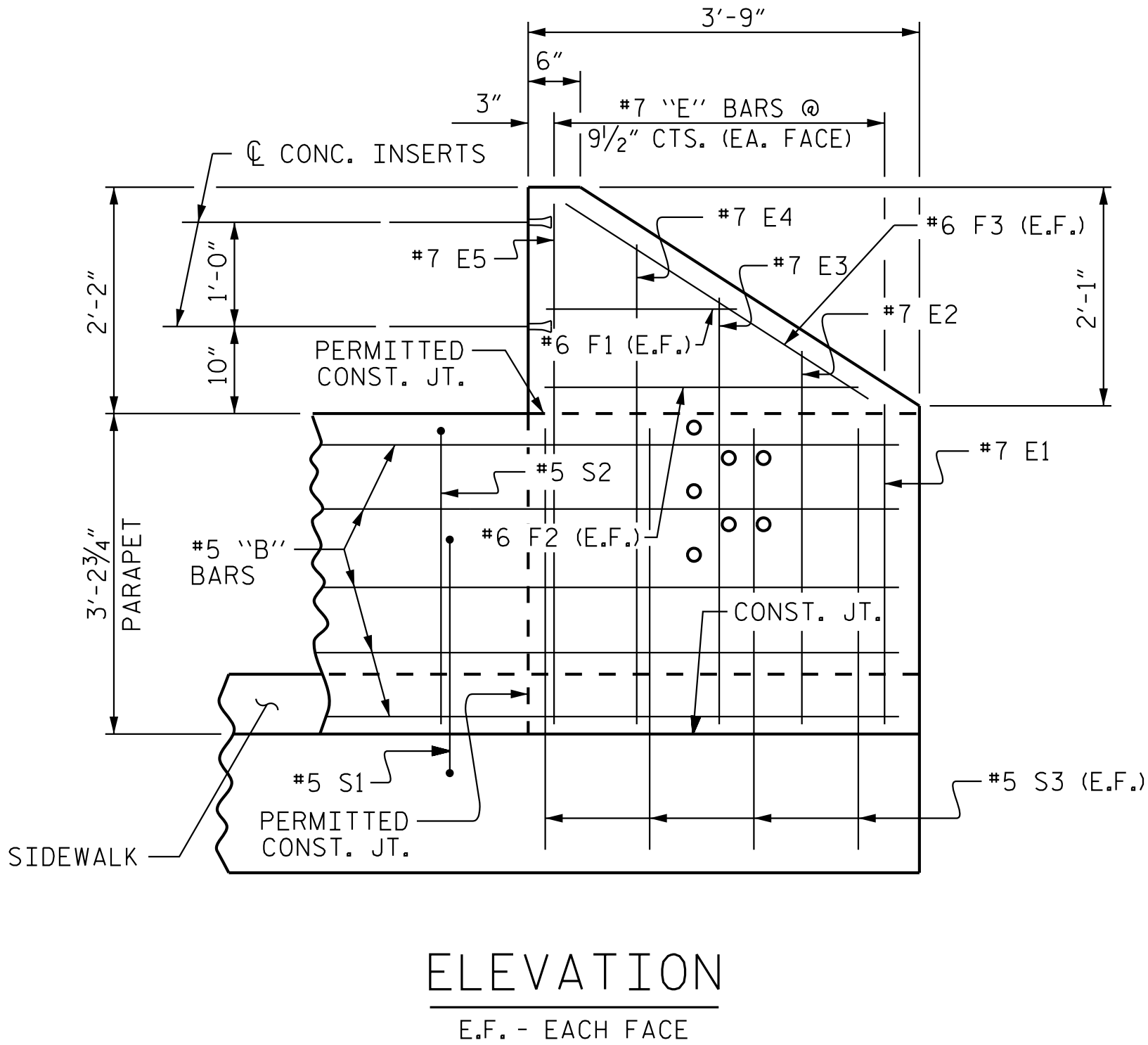
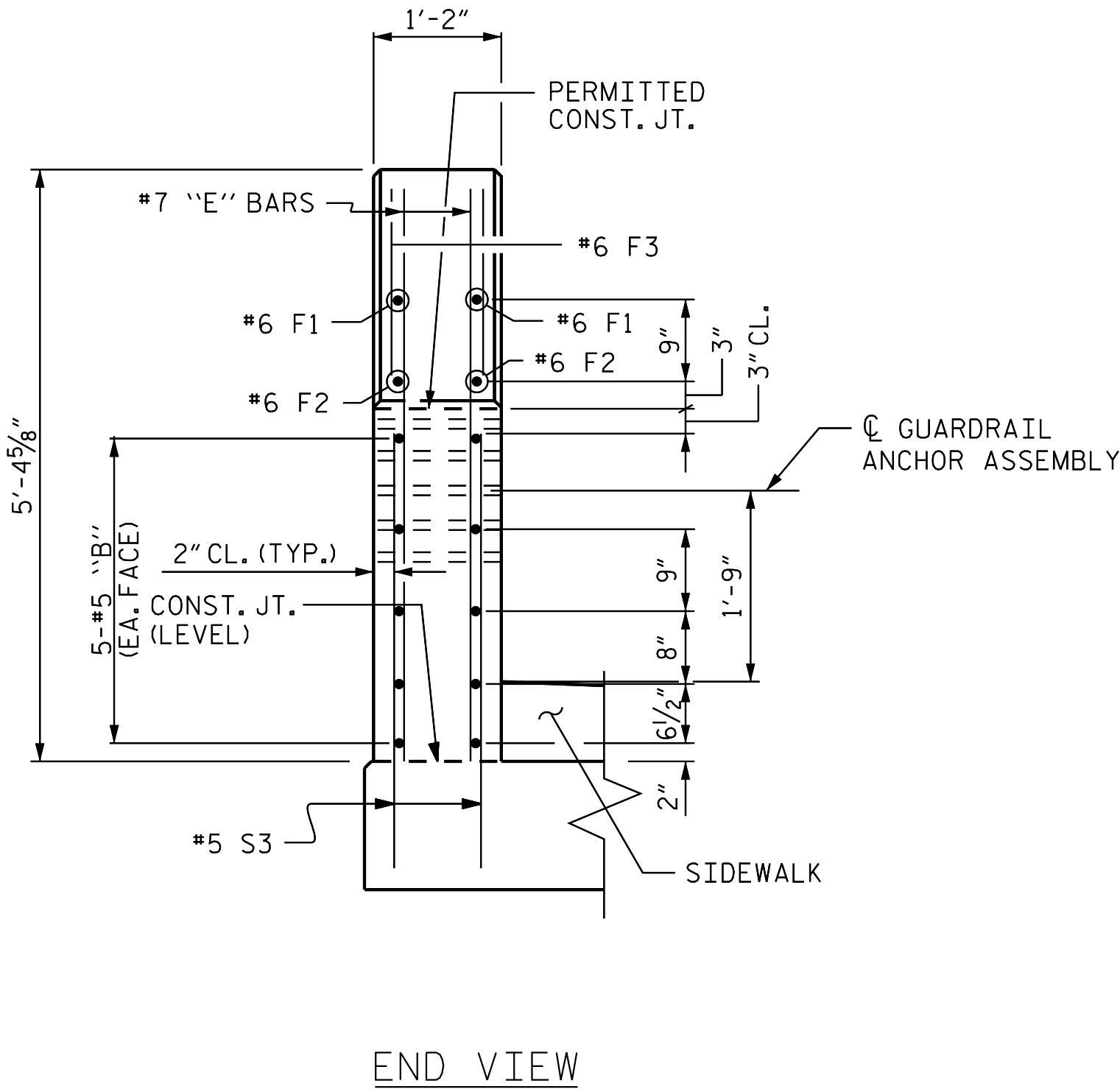
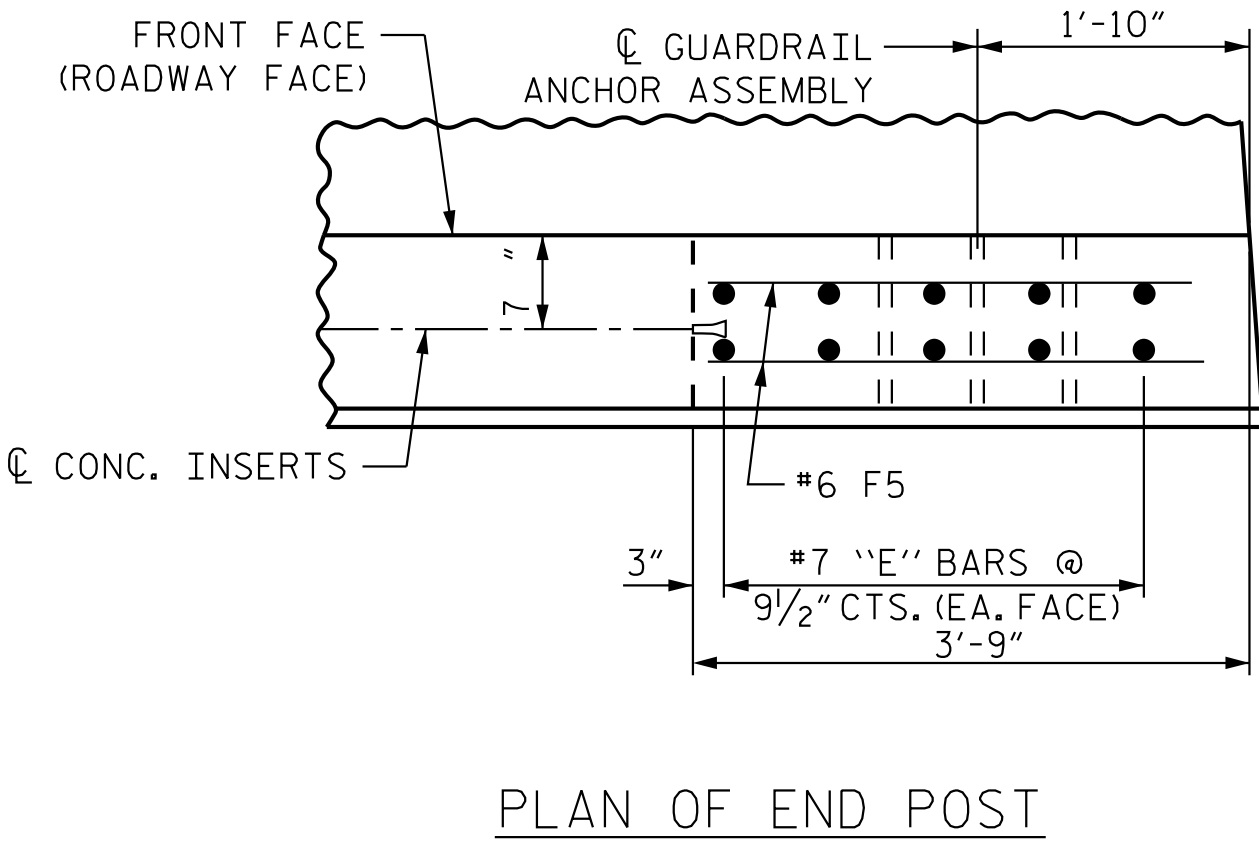
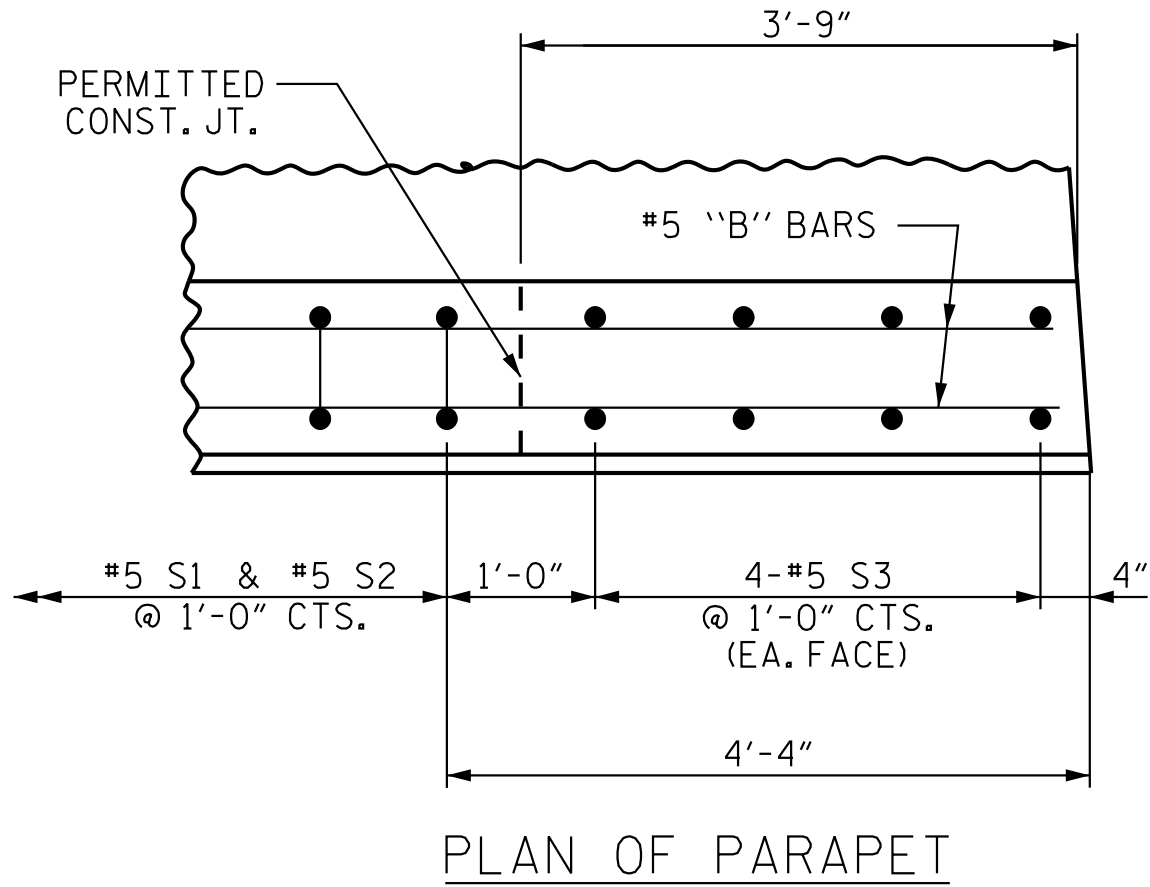
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

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DRAWN BY: T. K. BOYD DATE: 4/26
CHECKED BY: A. D. BRENNER DATE: 4/26
DESIGN ENGINEER OF RECORD: A. L. PHILLIPS DATE: 4/26

STR. #4

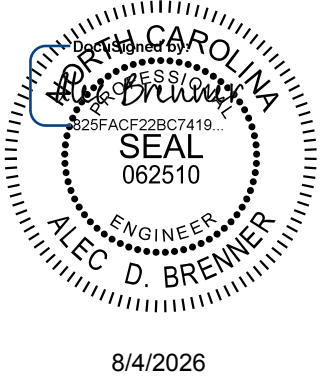
NOTE:
FOR NOTES, SEE SHEET 3 OF 3.



CONCRETE PARAPET DETAILS AT END BENT 2
(LEFT PARAPET SHOWN, RIGHT SIDE SIMILAR)

PROJECT NO. I-5715
MECKLENBURG COUNTY
STATION: 32+53.16 -Y2-

SHEET 2 OF 3



8/4/2026

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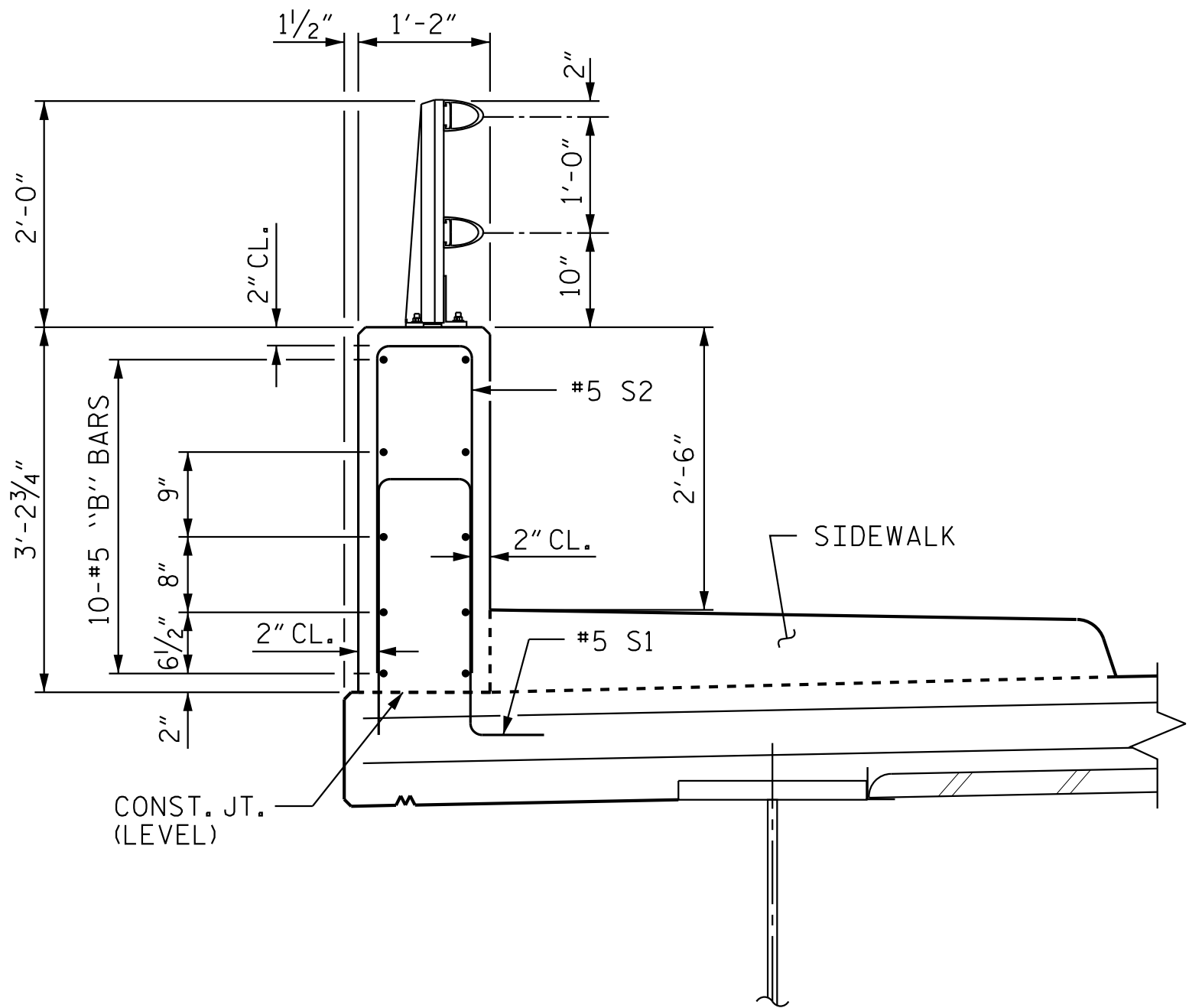
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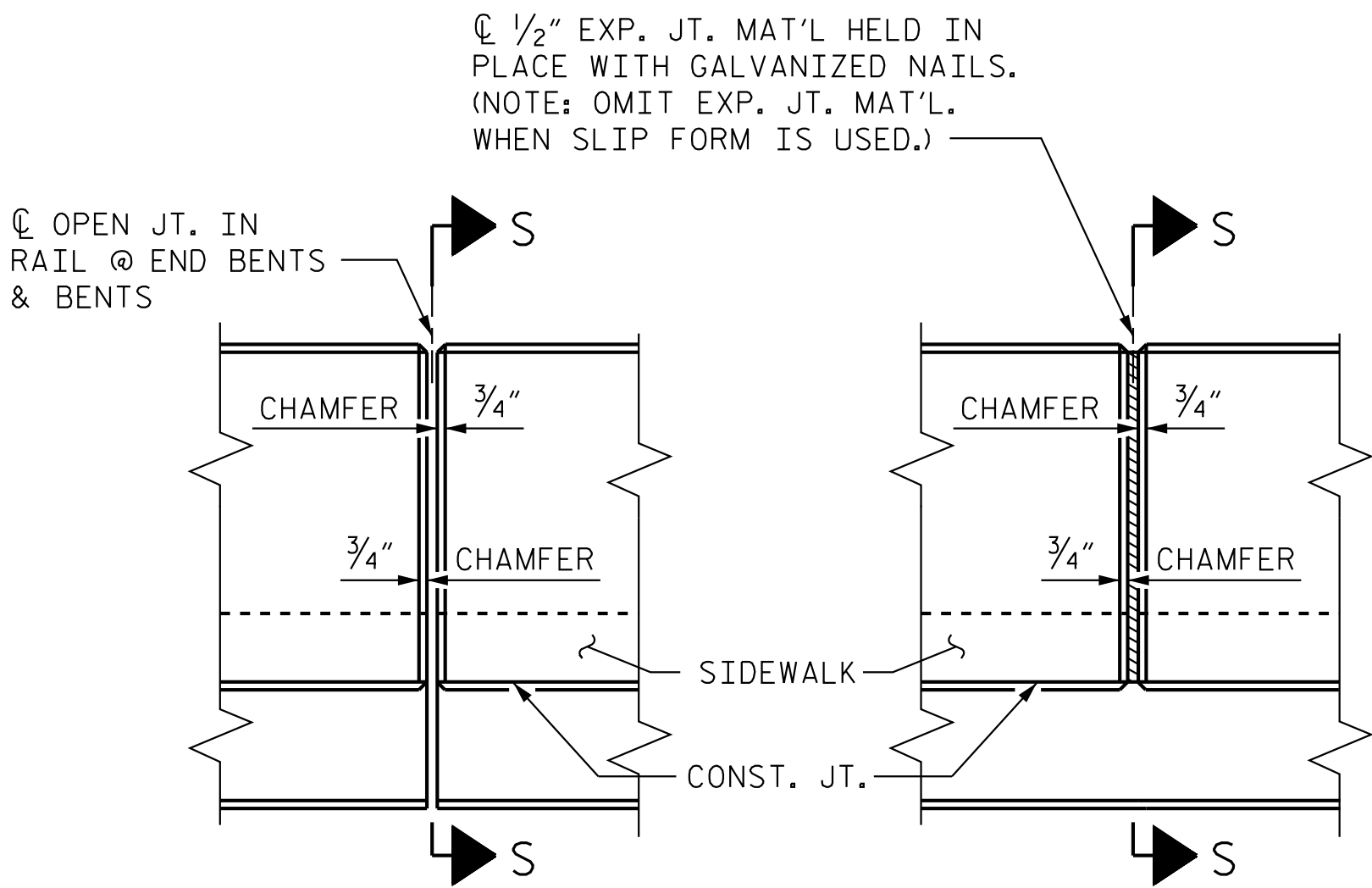
REVISIONS						SHEET NO. S4-30
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 63
2			4			

STR. #4

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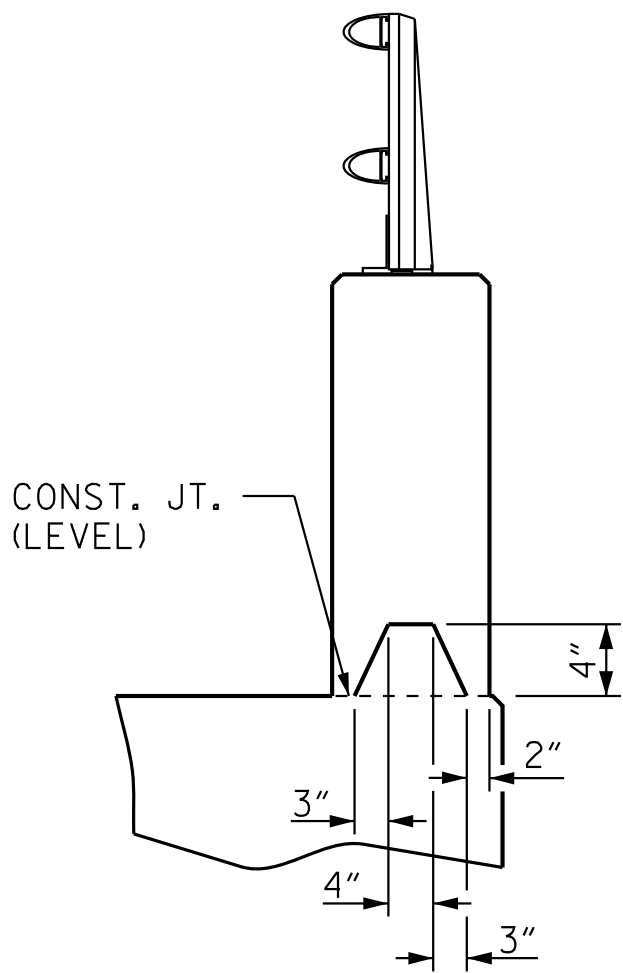


SECTION THRU PARAPET

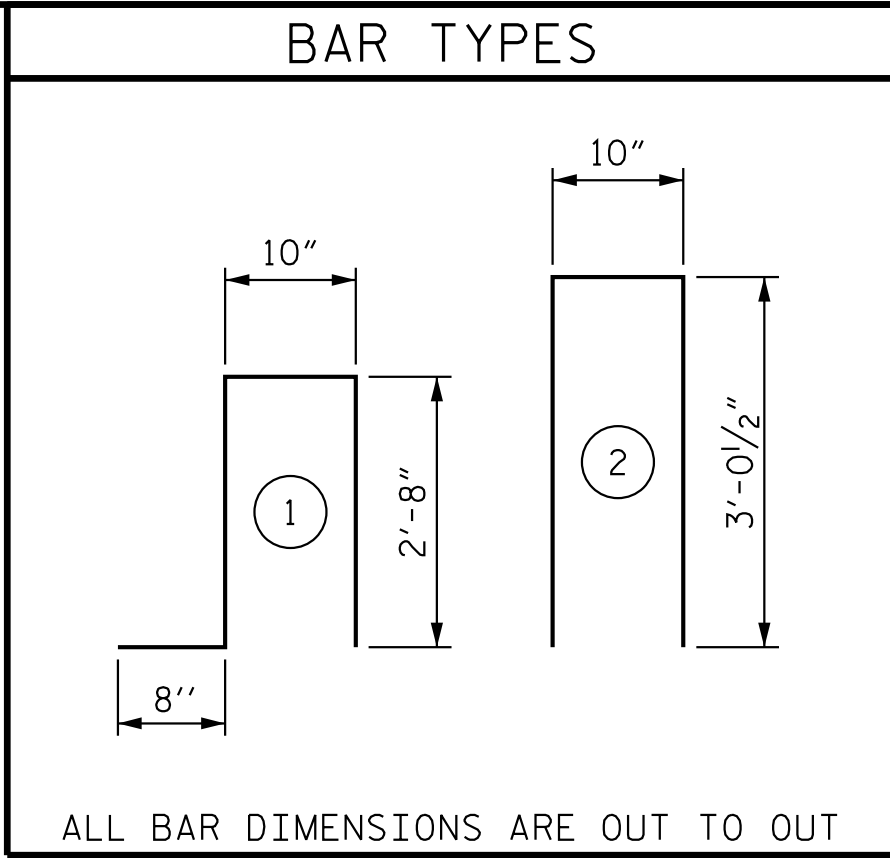


ELEVATION AT EXPANSION JOINTS

ELEVATION AT EXPANSION JOINTS



SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)



BILL OF MATERIAL						BILL OF MATERIAL					
CONCRETE PARAPET AND ONE END POST LEFT E TENSION						CONCRETE PARAPET AND ONE END POST RIGHT E TENSTION					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	20	#5	STR	16'-5"	342	* B1	20	#5	STR	16'-5"	342
* B2	30	#5	STR	26'-1"	816	* B2	30	#5	STR	26'-1"	816
* B3	20	#5	STR	21'-2"	442	* B3	20	#5	STR	21'-2"	442
* E1	2	#7	STR	3'-2"	13	* E1	2	#7	STR	3'-2"	13
* E2	2	#7	STR	3'-8"	15	* E2	2	#7	STR	3'-8"	15
* E3	2	#7	STR	4'-2"	17	* E3	2	#7	STR	4'-2"	17
* E4	2	#7	STR	4'-8"	19	* E4	2	#7	STR	4'-8"	19
* E5	2	#7	STR	5'-0"	20	* E5	2	#7	STR	5'-0"	20
* F1	2	#6	STR	1'-9"	5	* F1	2	#6	STR	1'-9"	5
* F2	2	#6	STR	3'-0"	9	* F2	2	#6	STR	3'-0"	9
* F3	2	#6	STR	3'-9"	11	* F3	2	#6	STR	3'-9"	11
* S1	153	#5	1	6'-10"	1,090	* S1	153	#5	1	6'-10"	1,090
* S2	153	#5	2	6'-11"	1,104	* S2	153	#5	2	6'-11"	1,104
* S3	8	#5	STR	3'-6"	29	* S3	8	#5	STR	3'-6"	29
*EPOXY COATED REINFORCING STEEL 3,932 LBS.						*EPOXY COATED REINFORCING STEEL 3,932 LBS.					
CLASS AA CONCRETE 22.0 C.Y.						CLASS AA CONCRETE 22.0 C.Y.					
1'-2" X 3'-2 3/4" CONCRETE PARAPET 156.4 LF						1'-2" X 3'-2 3/4" CONCRETE PARAPET 156.4 LF					

NOTES

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

ALL REINFORCING STEEL IN PARAPET AND END POSTS SHALL BE EPOXY COATED.

THE #5 S1 AND #5 S2 BARS MAY BE SHIFTED SLIGHTLY IN ORDER TO MAINTAIN A 2" MINIMUM CLEARANCE TO THE 1/2" EXPANSION JOINT MATERIAL IN PARAPET.

FOR DETAILS OF CONCRETE INSERTS IN END POSTS, SEE "RAIL POST SPACINGS AND END OF RAIL DETAILS" SHEET.

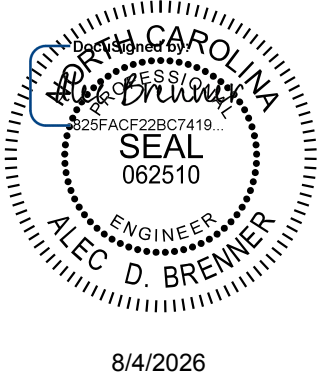
FOR DETAILS OF GUARDRAIL ANCHOR ASSEMBLIES, SEE "GUARDRAIL ANCHORAGE DETAILS FOR METAL RAIL" SHEET.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE PARAPET AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS 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 LENGTHS LESS THAN 10 FEET IN LENGTH.

WHEN FOAM JOINT SEAL IS REQUIRED, THE JOINT IN DECK SHALL BE SAWED PRIOR TO THE CASTING OF CONCRETE PARAPET.

PROJECT NO. I-5715
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SHEET 3 OF 3



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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S4-31	
SUPERSTRUCTURE CONCRETE PARAPET DETAILS						TOTAL SHEETS 63	
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-31	
1			3			TOTAL SHEETS	
2			4			63	

STR. #4