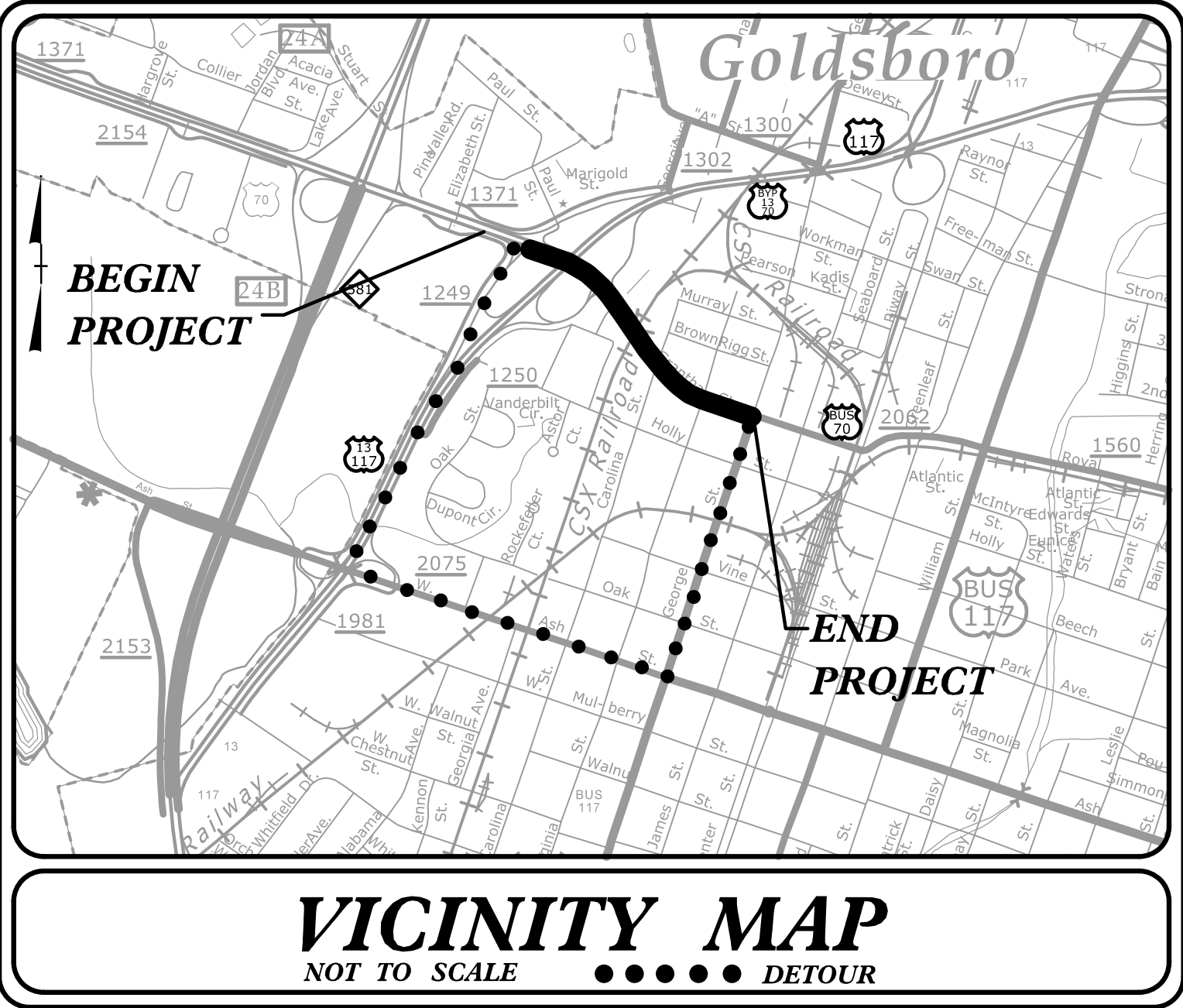


11/19/2025
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09/08/2019

TIP PROJECT: B-4838

CONTRACT: C204814

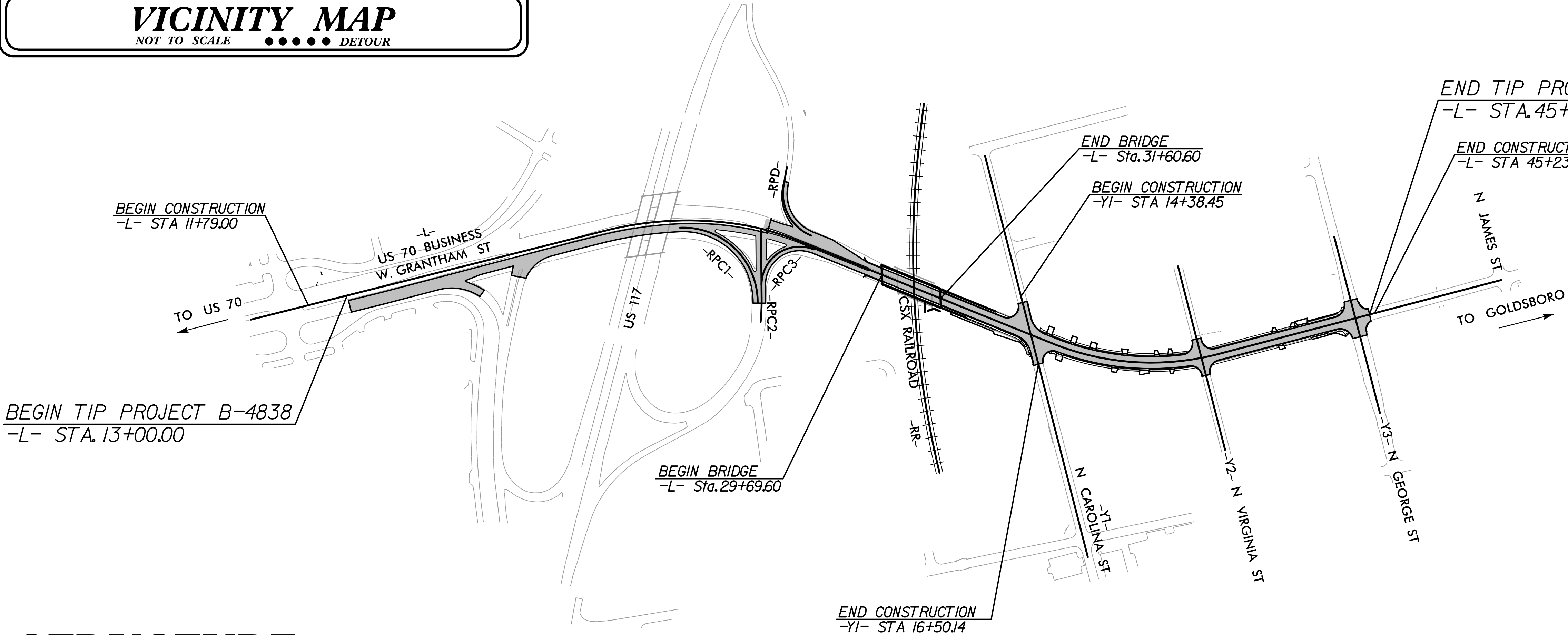
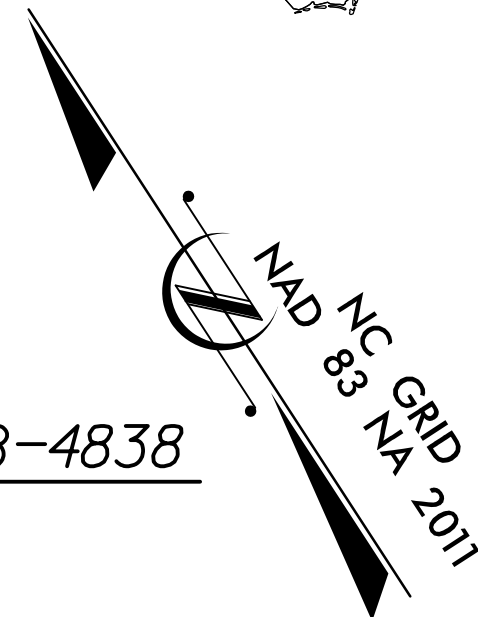
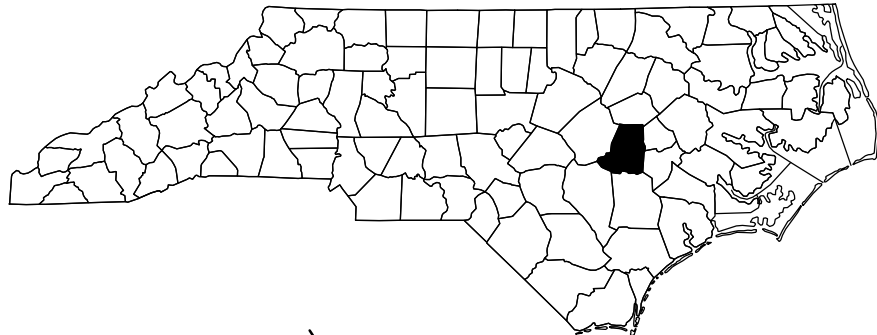


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
WAYNE COUNTY

LOCATION: BRIDGE NO. 950020 ON US 70 BUSINESS (GRANTHAM ST)
OVER CSX RAILROAD

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE,
RETAINING WALLS, AND SIGNALS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4838		
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
38608.1.1	BRSTP-070B(7)	PE	
38608.1.2		PE	
38608.2.1		ROW/UTILITY	
38608.3.1		CONST.	



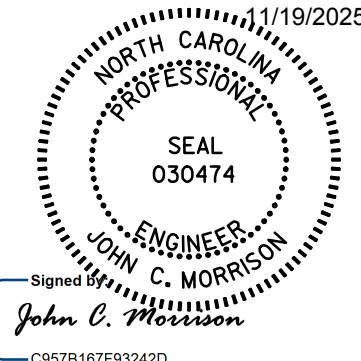
STRUCTURE

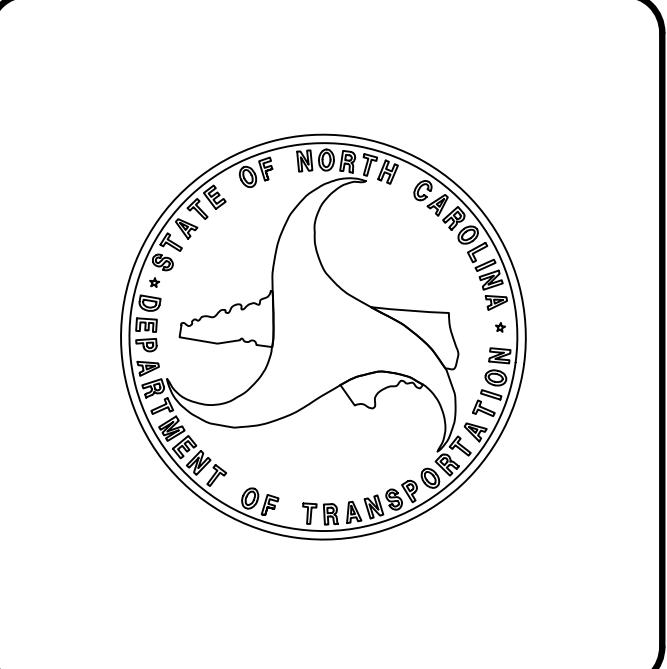
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

DESIGN DATA	
ADT 2023	= 10,280
ADT 2043	= 11,363
K	= 10 %
D	= 55 %
T	= 5 % *
V	= 40 MPH
* TTST	= 2% DUAL 3%
FUNC CLASS	=
MINOR ARTERIAL	
REGIONAL TIER	

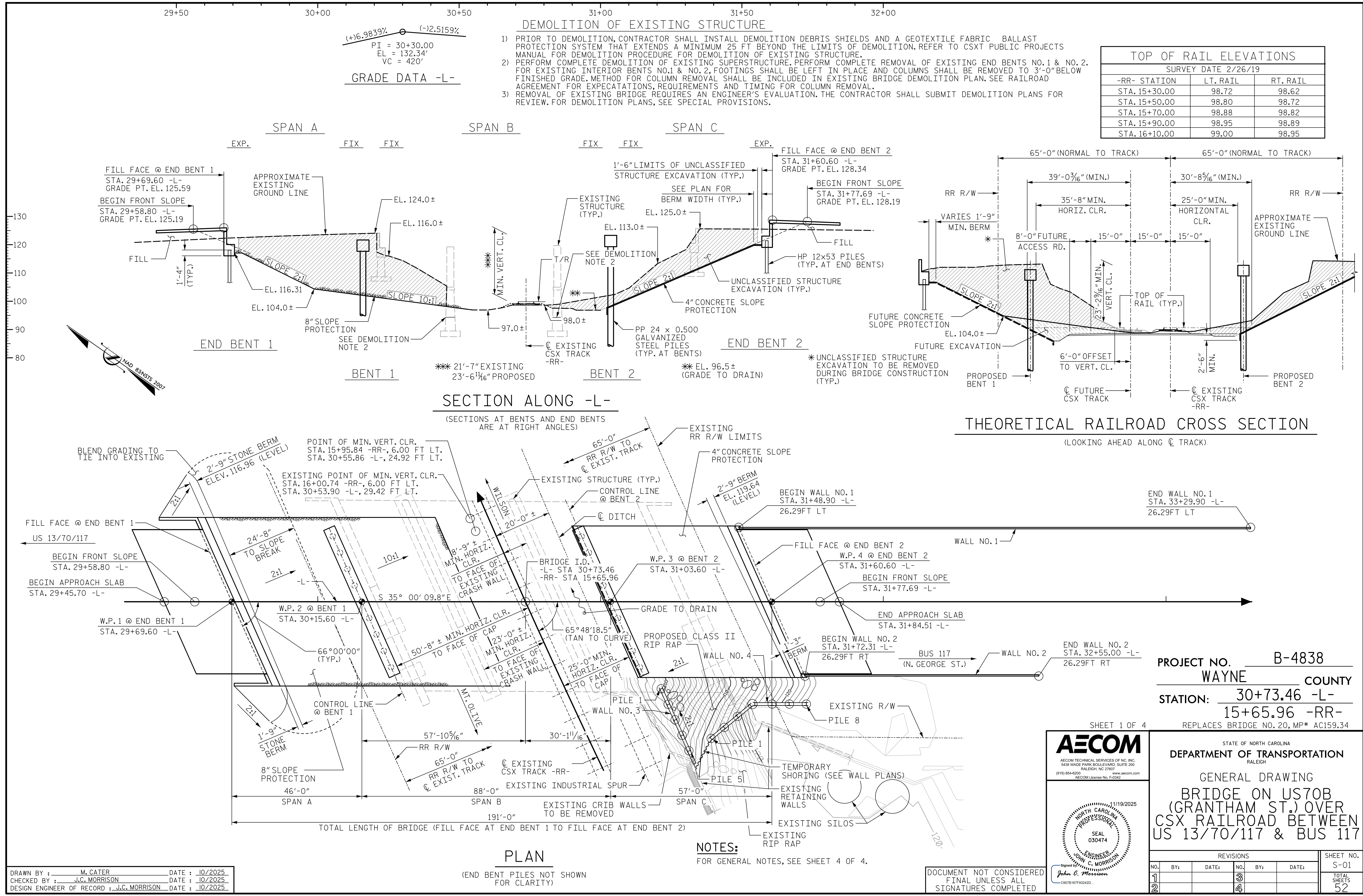
PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT B-4838	= 0.571 MI
LENGTH STRUCTURE TIP PROJECT B-4838	= 0.036 MI
TOTAL LENGTH TIP PROJECT B-4838	= 0.607 MI

Prepared in the Office of: AECOM NC FIRM LICENSE No: F-0342 5438 Wade Park Boulevard, Suite 200 Raleigh, NC 27607 (919) 854-6200 (919) 854-6259(FAX)	
2024 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: MARCH 24, 2022	JOHN C. MORRISON, P.E. PROJECT ENGINEER
LETTING DATE: JANUARY 20, 2026	MOHAMMED FALLAHA, P.E. PROJECT DESIGN ENGINEER
	DAVID STUTTS, PE NCDOT CONTACT

STRUCTURES DESIGN ENGINEER	
	
JOHN C. MORRISON P.E. SIGNATURE:	



DATE: 11/14/2025
TIME: 4:15:01 PM
DRAWN BY: M. CATER
CHECKED BY: J.C. MORRISON
DESIGN ENGINEER OF RECORD: J.C. MORRISON
DATE: 10/2025
DATE: 10/2025
DATE: 10/2025



TOP OF RAIL ELEVATIONS		
SURVEY DATE 2/26/19		
-RR- STATION	LT. RAIL	RT. RAIL
STA. 15+30.00	98.72	98.62
STA. 15+50.00	98.80	98.72
STA. 15+70.00	98.88	98.82
STA. 15+90.00	98.95	98.89
STA. 16+10.00	99.00	98.95

PROJECT NO. **B-4838**
WAYNE COUNTY
STATION: **30+73.46 -L-**
15+65.96 -RR-
REPLACES BRIDGE NO. 20, MP# AC159.34

AECOM
AECOM TECHNICAL SERVICES OF NC, INC.
2438 WARD PARK BOULEVARD, SUITE 200
RALEIGH, NC 27607
(919) 854-8200
www.aecom.com
AECOM License No. F-0342

JOHN C. MORRISON
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 030474
11/19/2025
Signed: *John C. Morrison*
C0576167F93242D

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING BRIDGE ON US70B (GRANTHAM ST.) OVER CSX RAILROAD BETWEEN US 13/70/117 & BUS 117					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-01					TOTAL SHEETS 52



DRAWN BY : <u>M.L. CATER</u>	DATE : <u>10/2025</u>
CHECKED BY : <u>J.C. MORRISON</u>	DATE : <u>10/2025</u>
DESIGNED BY : <u>S. NATARAJAN</u>	DATE : <u>10/2025</u>
DESIGN ENGINEER OF RECORD: <u>J.C. MORRISON</u>	DATE : <u>10/2025</u>

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

AECOM AECOM TECHNICAL SERVICES OF NC, INC. 5438 WADE PARK BOULEVARD, SUITE 200 RALEIGH, NC 27607 (919) 654-6200 www.aecom.com AECOM License No. T-0242	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH GENERAL DRAWING BRIDGE ON US70B (GRANTHAM ST.) OVER CSX RAILROAD BETWEEN US 13/70/117 & BUS 117																					
11/19/2025 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SEAL 030474 ENGINEER JOHN C. MORRISON Signed by <i>John C. Morrison</i> C957B167F93242D...	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="6" style="text-align: center; padding: 5px;">REVISIONS</th> <th style="width: 20%; text-align: center; padding: 5px;">SHEET NO. S-02</th> </tr> <tr> <th style="width: 10%;">NO.</th> <th style="width: 15%;">BY:</th> <th style="width: 15%;">DATE:</th> <th style="width: 10%;">NO.</th> <th style="width: 15%;">BY:</th> <th style="width: 15%;">DATE:</th> <th></th> </tr> </thead> <tbody> <tr> <td style="text-align: center; font-size: 2em;">1</td> <td></td> <td></td> <td style="text-align: center; font-size: 2em;">3</td> <td></td> <td></td> <td style="text-align: center; font-size: 2em;">TOTAL SHEETS 52</td> </tr> </tbody> </table>	REVISIONS						SHEET NO. S-02	NO.	BY:	DATE:	NO.	BY:	DATE:		1			3			TOTAL SHEETS 52
REVISIONS						SHEET NO. S-02																
NO.	BY:	DATE:	NO.	BY:	DATE:																	
1			3			TOTAL SHEETS 52																

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")	Factored Resistance per Pile TONS	Pile Cut-Off (Top of Pile) Elevation FT	Estimated Pile Lenth per Pile FT	Scour Critical Elevation FT	Driven Piles			Predrilling for Piles*			Drilled-In Piles		
					Min Pile Tip (Tip No Higher Than) Elev FT	Required Driving Resistance (RDR)** per Pile TONS	Total Pile Redrives Quantity EACH	Predrilling Length per Pile Lin FT	Predrilling Elevation (Elev Not To Predrill Below) FT	Maximum Predrilling Dia INCHES	Pile Excavation (Bottom of Hole) Elev FT	Pile Exc Not In Soil per Pile Lin FT	Pile Exc In Soil per Pile Lin FT
End Bent 1, Piles 1-9	75	117.6	55			125	19						
Bent 1, Piles 1-9	265	119.2	115		66.0	390							
Bent 2, Piles 1-9	265	119.2	105		74.0	355							
End Bent 2, Piles 1-8	110	120.6	60			185							

*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.

$$^{**}RDR = \frac{Factored\ Resistance + Factored\ Downdrag\ Load + Factored\ Dead\ Load}{Dynamic\ Resistance\ Factor} + Nominal\ Downdrag\ Resistance + \frac{Nominal\ Scour\ Resistance}{Scour\ Resistance\ Factor}$$

SUMMARY OF DPT/PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

Dynamic Pile Testing (DPT)				Pile Order Lengths	
End Bent/ Bent No	DPT Testing Required? YES or MAYBE	DPT Test Pile Length FT	Total DPT Testing Quantity EACH	End Bent/ Bent No(s)	Pile Order Length Basis* EST or PDA
End Bent 1, Piles 1-9	MAYBE	60	3		
Bent 1, Piles 1-9	YES	120			
Bent 2, Piles 1-9	YES	110			
End Bent 2, Piles 1-8	MAYBE	65			

*EST = Pile order lengths from estimated pile lengths; DPT = Pile order lengths based on DPT 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.

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 TONS	Factored Downdrag Load per Pile TONS	Factored Dead Load* per Pile TONS	Dynamic Resistance Factor	Nominal Downdrag Resistance per Pile TONS	Nominal Scour Resistance per Pile TONS	Scour Resistance Factor (Default = 1.00)
End Bent 1, Piles 1-9	71			0.60			1.00
Bent 1, Piles 1-9	263			0.75			1.00
Bent 2, Piles 1-9	263			0.75			1.00
End Bent 2, Piles 1-8	105			0.60			1.00

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

PROJECT NO. B-4838

Wayne COUNTY

STATION: -L- 30+73.46

SHEET 3 OF 4

NOTES:

1. The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Cheng Wang, PE# 048123) on 2-23-2024.
2. Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, i.e., the number of piles with a Required Driving Resistance.
3. The Engineer will determine the need for DPT when DPTs may be required.

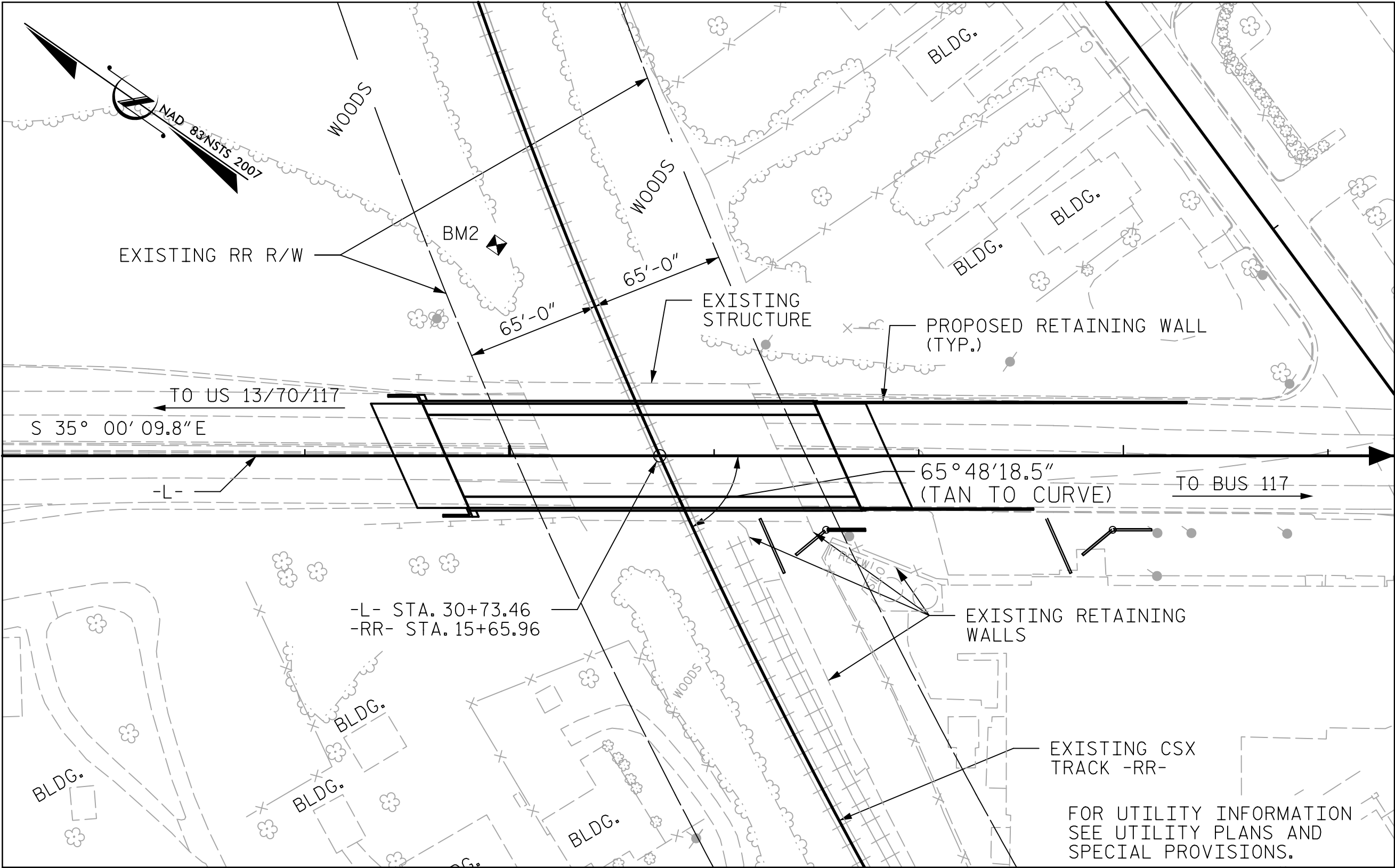
 11/19/2025 SEAL 030474 ENGINEER JOHN C. MORRISON Signed _____ <i>John C. Morrison</i> —C057B167F93242D—	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH PILE FOUNDATION TABLES
SIGNATURE	DATE
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES REQUIRED	

REVISIONS						SHEET NO. S-03
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 52
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2			4			
3						

DATE: 11/19/2025
TIME: 9:55:55 AM

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BENCHMARK: BM2 - R/R SPIKE SET IN 23" WILLOW OAK TREE, -RR- STATION 16+91.16, OFFSET 33.30' LT., N 600410 E 2298074 EL. 107.76



LOCATION SKETCH

GENERAL NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

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

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

THE RAILROAD TRACK TOP OF RAIL ELEVATIONS ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE TOP OF RAIL ELEVATIONS 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.

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.

THE MATERIAL SHOWN IN THE HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 56 FT.± LEFT AND 52 FT.± RIGHT OF -L- AT END BENT 1; AND A DISTANCE 44 FT.± LEFT OF -L- AND 35 FT.± RIGHT OF -L- AT END BENT 2 AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION, SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR REMOVAL OF EXISTING STRUCTURE AT STATION 30+73.46 -L-.

THE EXISTING STRUCTURE, CONSISTING OF 3 SPANS: 1 @ 23.75', 1 @ 35.0' AND 1 @ 43.75'; 56.0' CLEAR ROADWAY WIDTH AND A 7.25' REINFORCED CONCRETE DECK ON REINFORCED CONCRETE BEAMS; AND END BENTS CONSISTING OF REINFORCING CONCRETE CAP WITH STEEL PILES OR FOOTING FOUNDATION AT END BENT 1 AND 2, INTERIOR BENTS CONSISTING OF REINFORCED CONCRETE POST AND BEAM COLUMNS ON PILE, FOOTING FOUNDATION, AND TIMBER CRIB WALLS SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. 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 INTERIOR BENTS 1 & 2, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEETS FOR REQUIRED GALVANIZED LENGTHS. PAYMENT FOR PARTIALLY GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

FOR RAILROAD PROVISIONS, SEE SPECIAL PROVISIONS.

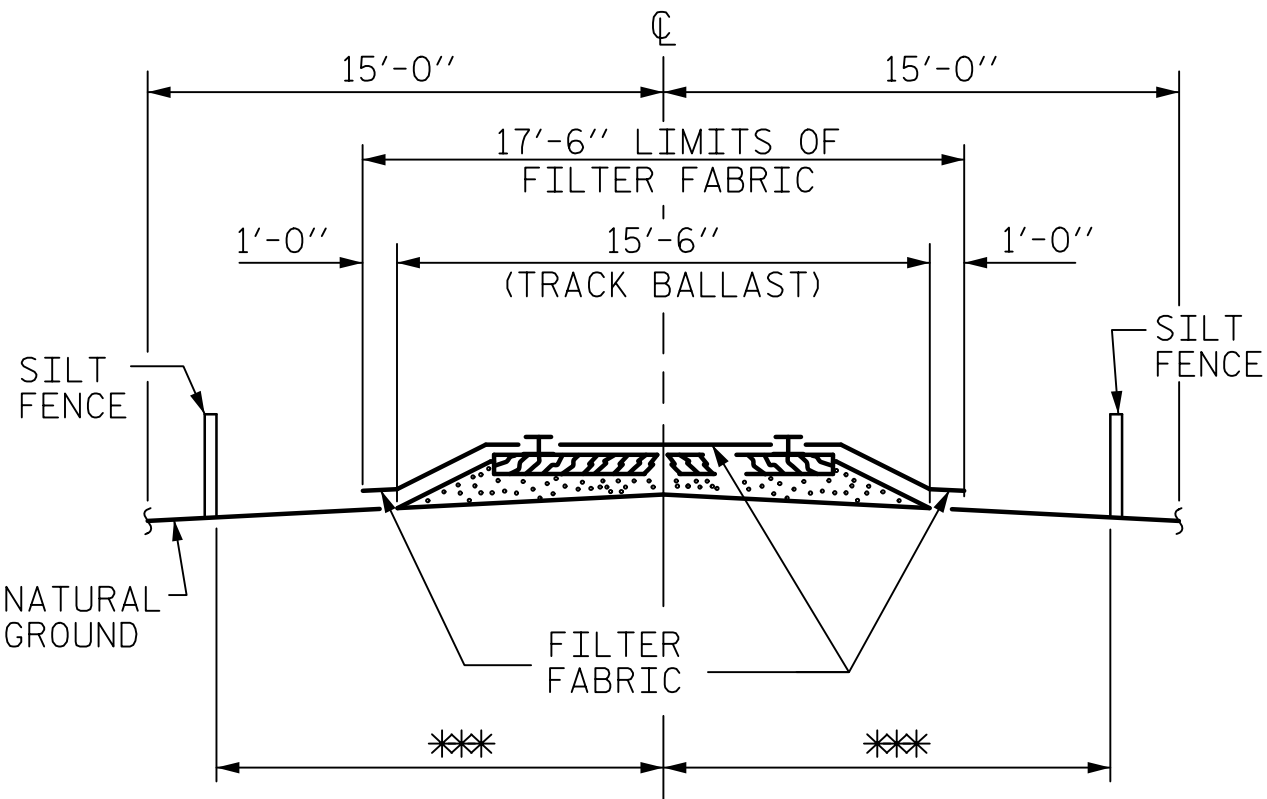
THE TOTAL LINEAR FEET OF 1'-2" X 2'-6" CONCRETE PARAPET WITH MOMENT SLAB FOR WALL #1 AND #2 IS INCLUDED IN THE TOTAL BILL OF MATERIAL FOR THE BRIDGE.

THE TOTAL LINEAR FEET OF TWO BAR METAL RAIL SHOWN IN THE TOTAL BILL OF MATERIAL INCLUDES THE LENGTH ON THE BRIDGE, THE APPROACH SLAB AT END BENT 2, AND THE MOMENT SLAB FOR WALL #1 AND WALL #2

TOTAL BILL OF MATERIAL

TOTAL BILL OF MATERIAL																									
	REMOVAL OF EXISTING STRUCTURES AT 30+73.46	ASBESTOS ASSESSMENT	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	45" PRESTRESSED CONCRETE GIRDERS		PILE DRIVING EQUIPMENT SETUP FOR HP12x53 STEEL PILES	PILE DRIVING EQUIPMENT SETUP FOR PP24x0.50 GALVANIZED STEEL PILES	HP12X53 STEEL PILES		PP 24 X 0.50 GALVANIZED STEEL PILES		PILE REDRIVES	DYNAMIC PILE TESTING	TWO BAR METAL RAIL	1'-2" X 3'-3" CONCRETE PARAPET	72" CHAIN LINK FENCE	4" SLOPE PROTECTION	8" SLOPE PROTECTION	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	LUMP SUM	LUMP SUM	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	EA.	EA.	NO.	LIN. FT.	NO.	LIN. FT.	EA.	EACH	LIN. FT.	LIN. FT.	LIN. FT.	SQ. YDS.	SQ. YDS.	TONS	SQ. YDS.
SUPERSTRUCTURE				10,093	8,795				21	1305.94										627.06	426.71	372.70			
END BENT 1						58.9		8,623			9		9	495										539	
BENT 1						35.2		3,908				9			9	1,035									
BENT 2						33.4		3,782				9			9	945									
END BENT 2						42.5		5,605			8		8	480								326		720	800
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	10,093	8,795	170.0	LUMP SUM	21,918	21	1305.94	17	18	17	975	18	1,980	19	3	627.06	426.71	372.70	326	539	720	800

	ELASTOMERIC BEARINGS	STRIP SEAL EXPANSION JOINTS	1'-2" X 2'-6" CONCRETE PARAPET W/ MOMENT SLAB
	LUMP SUM	LUMP SUM	LIN. FT
SUPERSTRUCTURE			
END BENT 1			
BENT 1			
BENT 2			
END BENT 2			
TOTAL	LUMP SUM	LUMP SUM	215.90



RAILROAD EROSION CONTROL DETAIL

*** TO BE DETERMINED BY THE RESIDENT ENGINEER IN CONSULTATION WITH THE RAILROAD ENGINEER.

NOTES

RAILROAD EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO PERFORMING ANY WORK IN THE RAILROAD RIGHT-OF-WAY.

ADDITIONAL EROSION CONTROL MEASURES FOR PROTECTION OF RAILROAD DITCHES MAY BE REQUIRED AS DIRECTED BY THE ENGINEER.

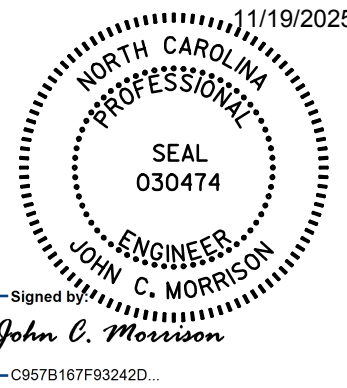
NO SEPARATE PAYMENT WILL BE MADE FOR RAILROAD EROSION CONTROL MEASURES.

LIMITS OF SILT FENCE AND FILTER FABRIC PARALLEL TO RAILROAD SHALL EXTEND A MINIMUM OF 25'-0" OUTSIDE EDGE OF SUPERSTRUCTURE OR TOE OF SLOPE ON CONSTRUCTION. A GREATER LENGTH OF SILT FENCE OR FILTER FABRIC MAY BE REQUIRED IF SO DIRECTED BY THE ENGINEER.

FILTER FABRIC TO BE NAILED TO TIMBER RAIL TIES WITH PRIME SOURCE "GRIP CAP" OR EQUIVALENT. FILTER FABRIC ON SHOULDER TO BE SECURED AS DIRECTED BY THE ENGINEER AND RAILROAD.

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 4 OF 4



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LOCATION SKETCH
&
BILL OF MATERIAL

DRAWN BY : M.L. CATER DATE : 10/2025
CHECKED BY : J.C. MORRISON DATE : 10/2025
DESIGNED BY : M.L. CATER DATE : 10/2025
DESIGN ENGINEER OF RECORD: J.C. MORRISON DATE : 10/2025

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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

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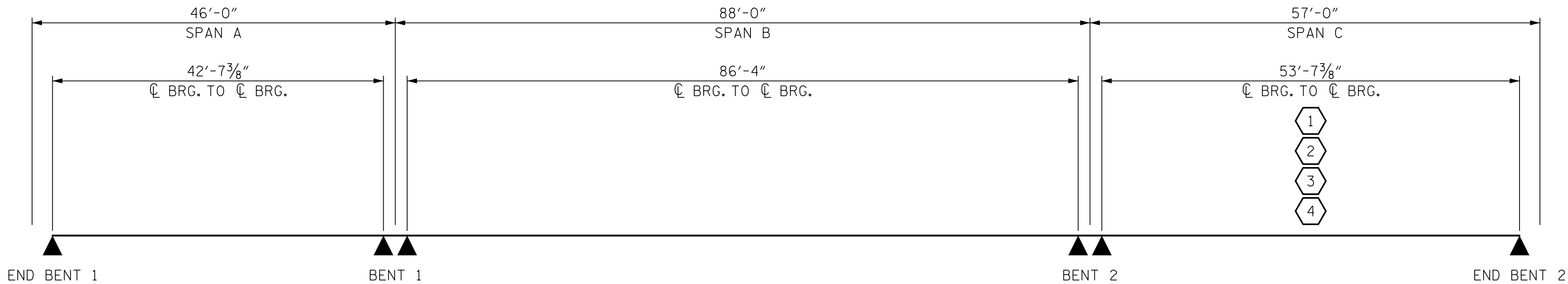
NOTES:

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

1. THE CONTROLLING RATING FACTOR OCCURS IN SPAN C
FOR DESIGN LOAD RATING AND LEGAL LOAD RATING.

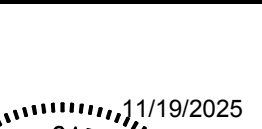
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1	DESIGN LOAD RATING (HL-93)
2	DESIGN LOAD RATING (HS-20)
3	LEGAL LOAD RATING **
4	EMERGENCY VEHICLE LOAD RATING **
** SEE CHART FOR VEHICLE TYPE	
GIRDER LOCATION	
I - INTERIOR GIRDER	
EL - EXTERIOR LEFT GIRDER	
ER - EXTERIOR RIGHT GIRDER	

PROJECT NO. B-4838
WAYNE COUNTY
 STATION: 30+73.46 -L-



DOCUMENT NOT CONSIDERED
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SIGNATURES COMPLETED

 AECOM TECHNICAL SERVICES OF, INC. INC. 6438 WADE PARK BOULEVARD, SUITE 200 RALEIGH, NC 27607 (919) 854-6210 www.aecom.com AECOM License No. F-0342	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD LRFR SUMMARY FOR PRESTRESSED CONCRETE GIRDERS (NON-INTERSTATE TRAFFIC)
--	--



Signed by
John C. Morrison
C0957816TF93242D

REVISIONS						SHEET NO. S-05
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 52
1			3			
2			4			



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FINAL UNLESS ALL
SIGNATURES COMPLETED



AECOM

AECOM TECHNICAL SERVICES OF NC, INC.
 5438 WADE PARK BOULEVARD, SUITE 200
 RALEIGH, NC 27607
 (919) 854-6200 www.aecom.com
 AECOM License No. F-0342

STATE OF NORTH CAROLINA

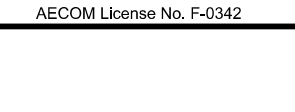
DEPARTMENT OF TRANSPORTATION

RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION

11/19/2025



JOHN C. MORRISON

Signed _____
John C. Morrison

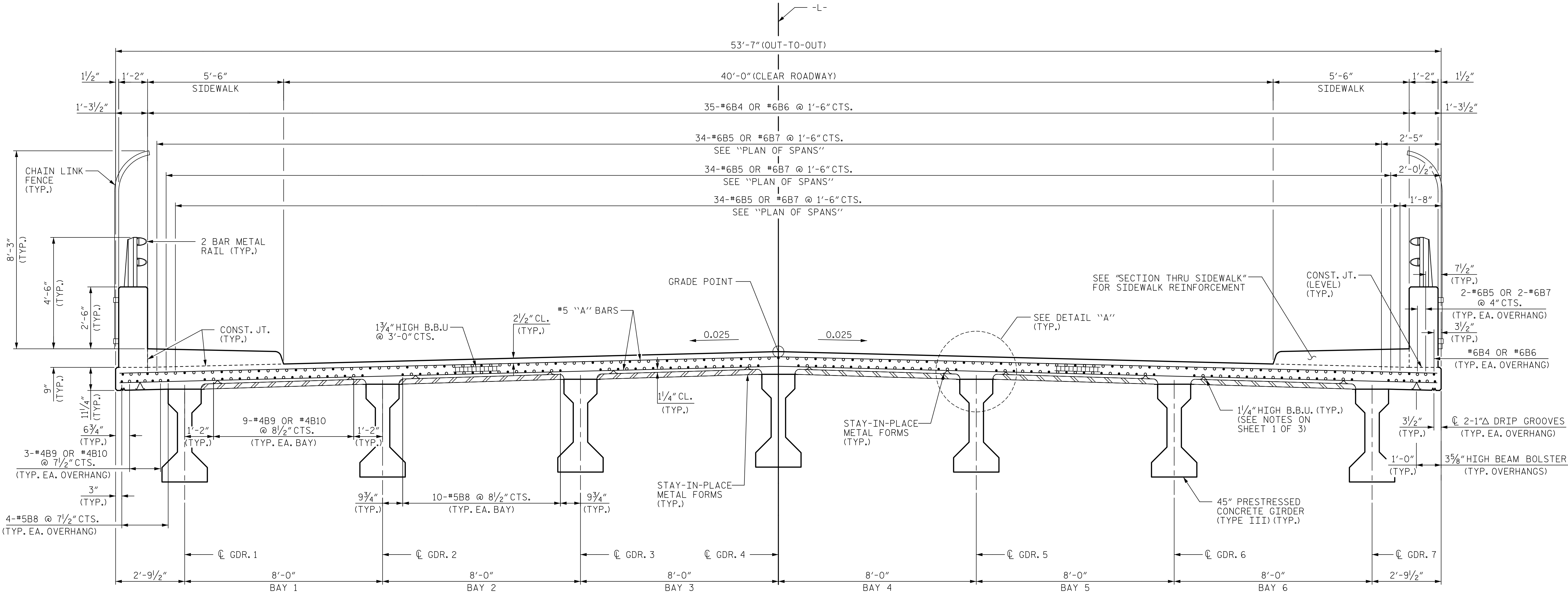
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2			4			

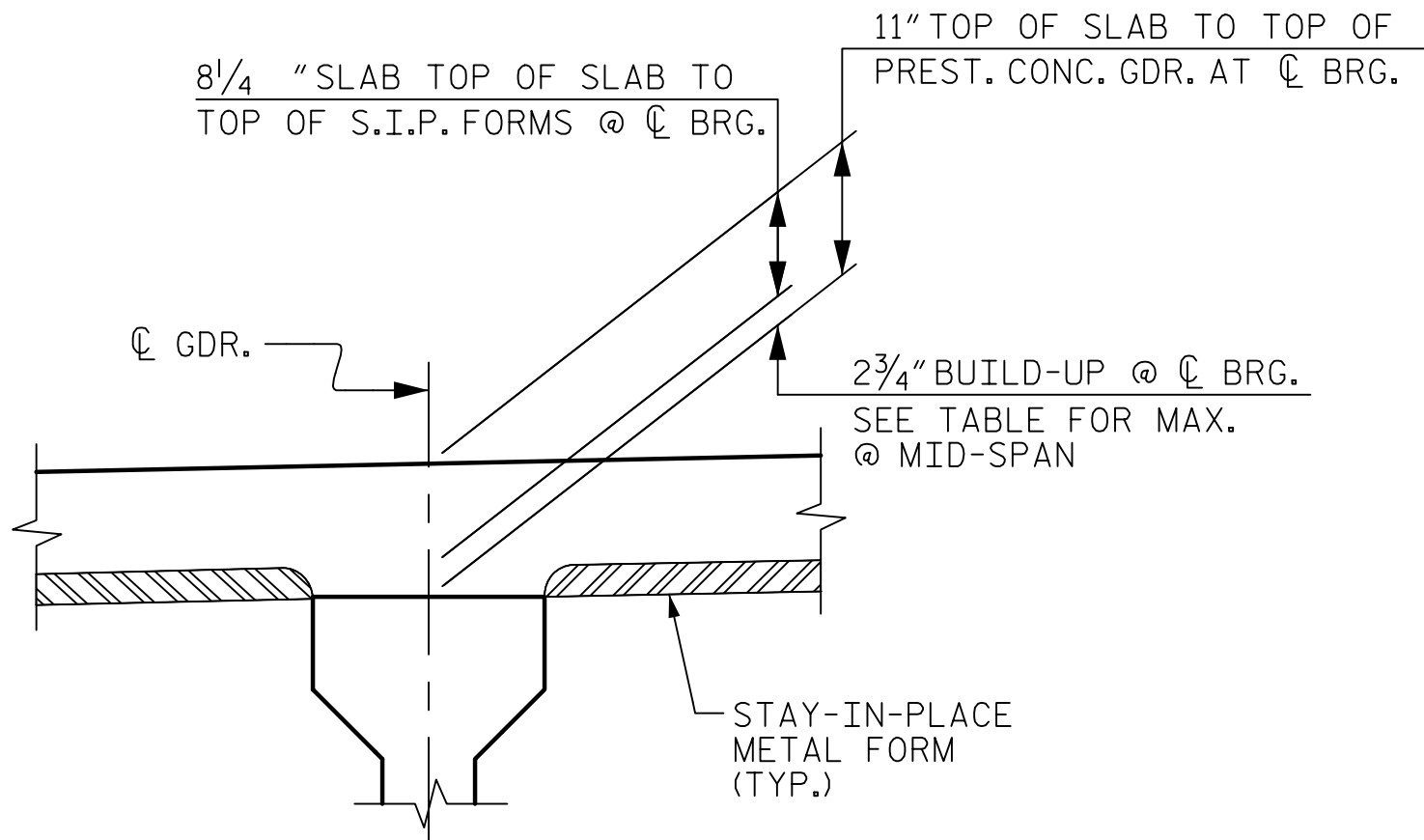
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FOR NOTES, SEE SHEET 1 OF 3.

DATE: 11/14/2025
TIME: 4:56:22 PM

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TYPICAL SECTION
(SHOWING LINK SLAB AT BENTS)
SEE "PLAN OF SPAN"



DETAIL "A"

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 2 OF 3

SPAN	* MAX. MID-SPAN BUILD-UP (INCHES)	CONTROLLING GIRDER
A	3 1/8"	2 & 6
B	4 1/2"	2 & 6
C	3 1/2"	2 & 6

* BASED ON PREDICTED FINAL CAMBER
AND THEORETICAL GRADE LINE ELEVATIONS

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2438 WADE PARK BOULEVARD, SUITE 200
RALEIGH, NC 27607
(919) 854-8200
www.aecom.com
AECOM License No. F-0342

11/19/2025
NORTH CAROLINA
PROFESSIONAL
SEAL
030474
ENGINEER
JOHN C. MORRISON
Signed by
John C. Morrison
C0578167F93242D

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
TYPICAL SECTION

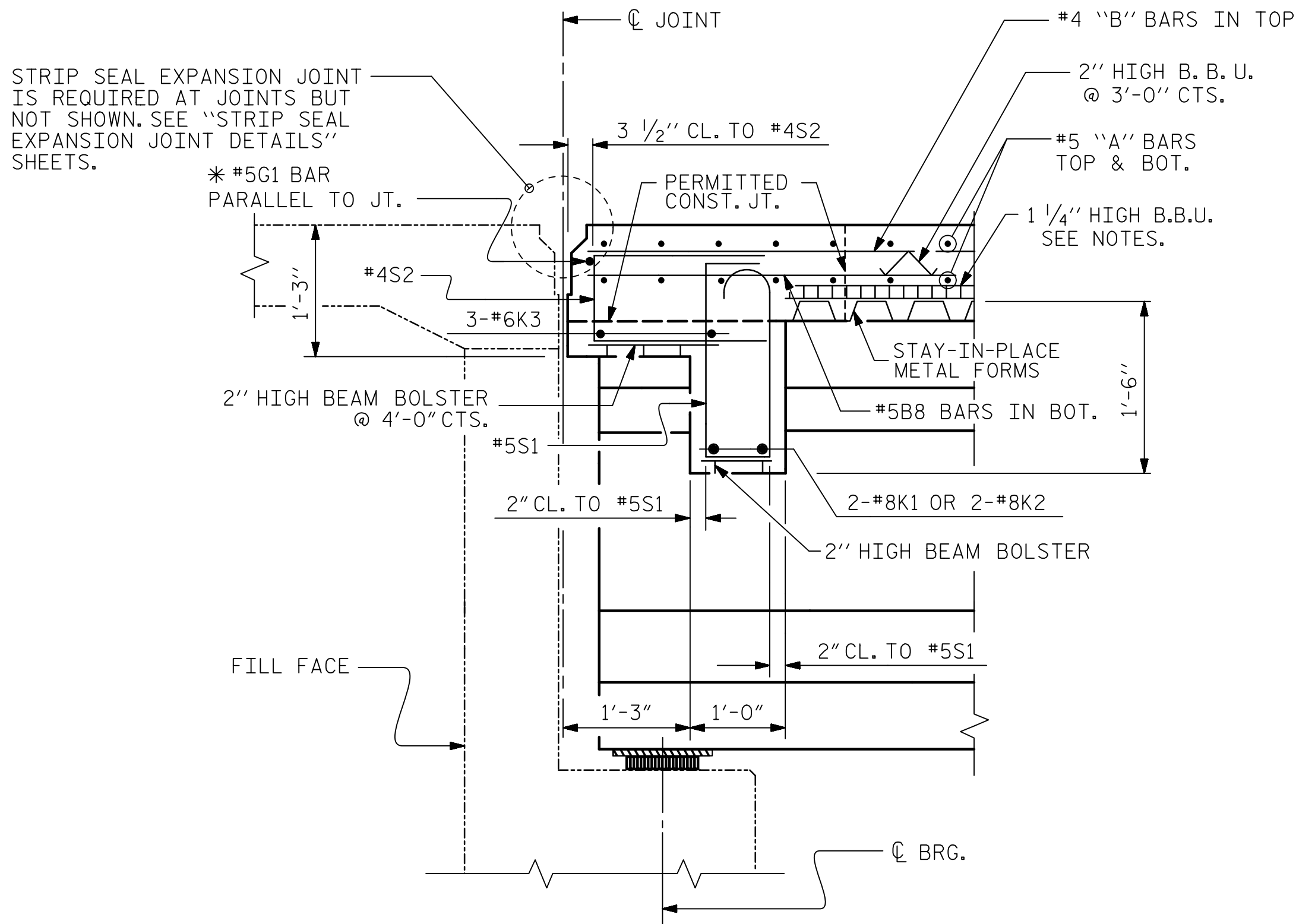
REVISIONS						SHEET NO. S-07
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 52
2			4			

DRAWN BY : M.L. CATER
CHECKED BY : J.C. MORRISON
DESIGNED BY : M.L. CATER
DESIGN ENGINEER OF RECORD: J.C. MORRISON
DATE : 10/2025
DATE : 10/2025
DATE : 10/2025
DATE : 10/2025

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SIGNATURES COMPLETED

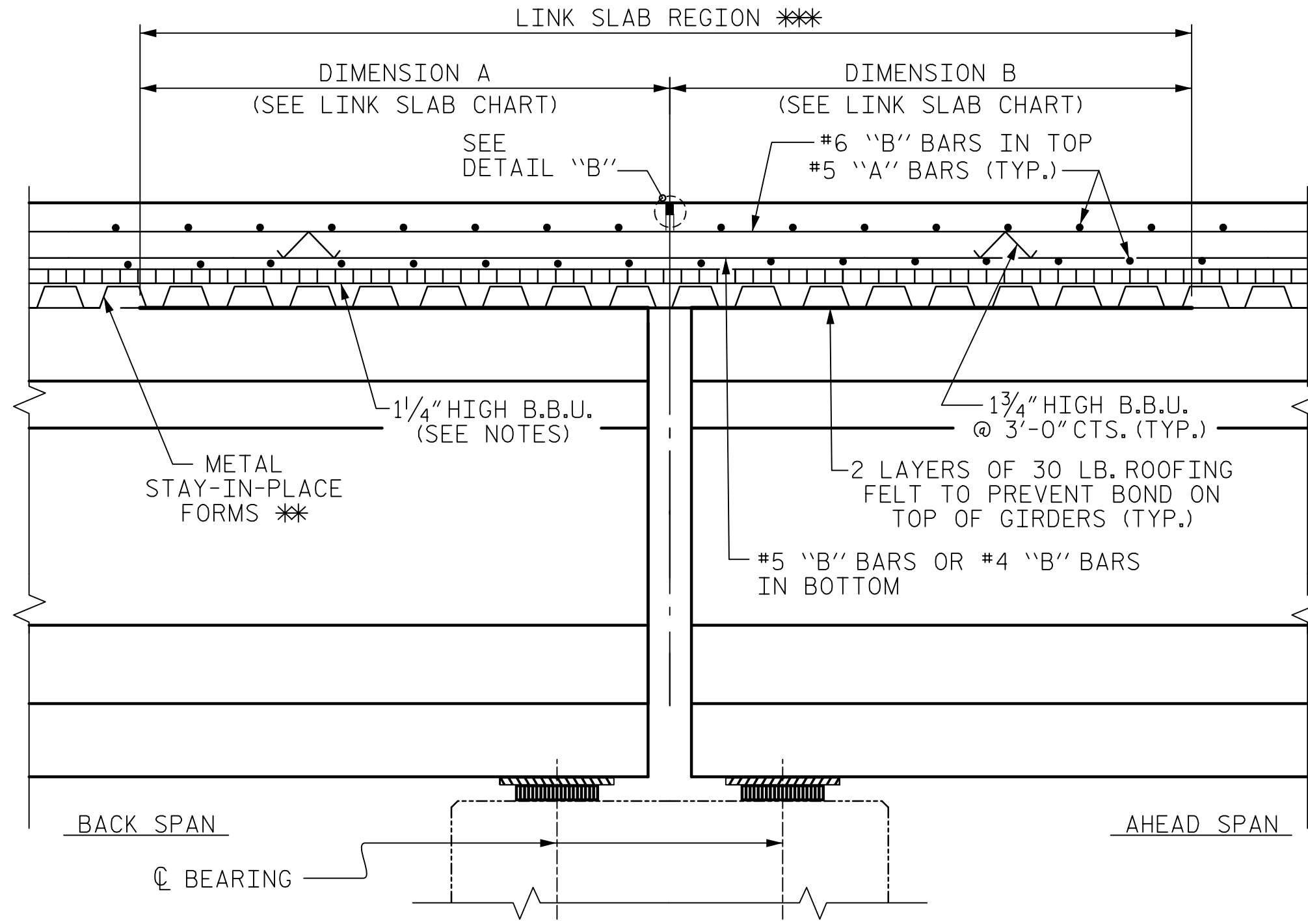
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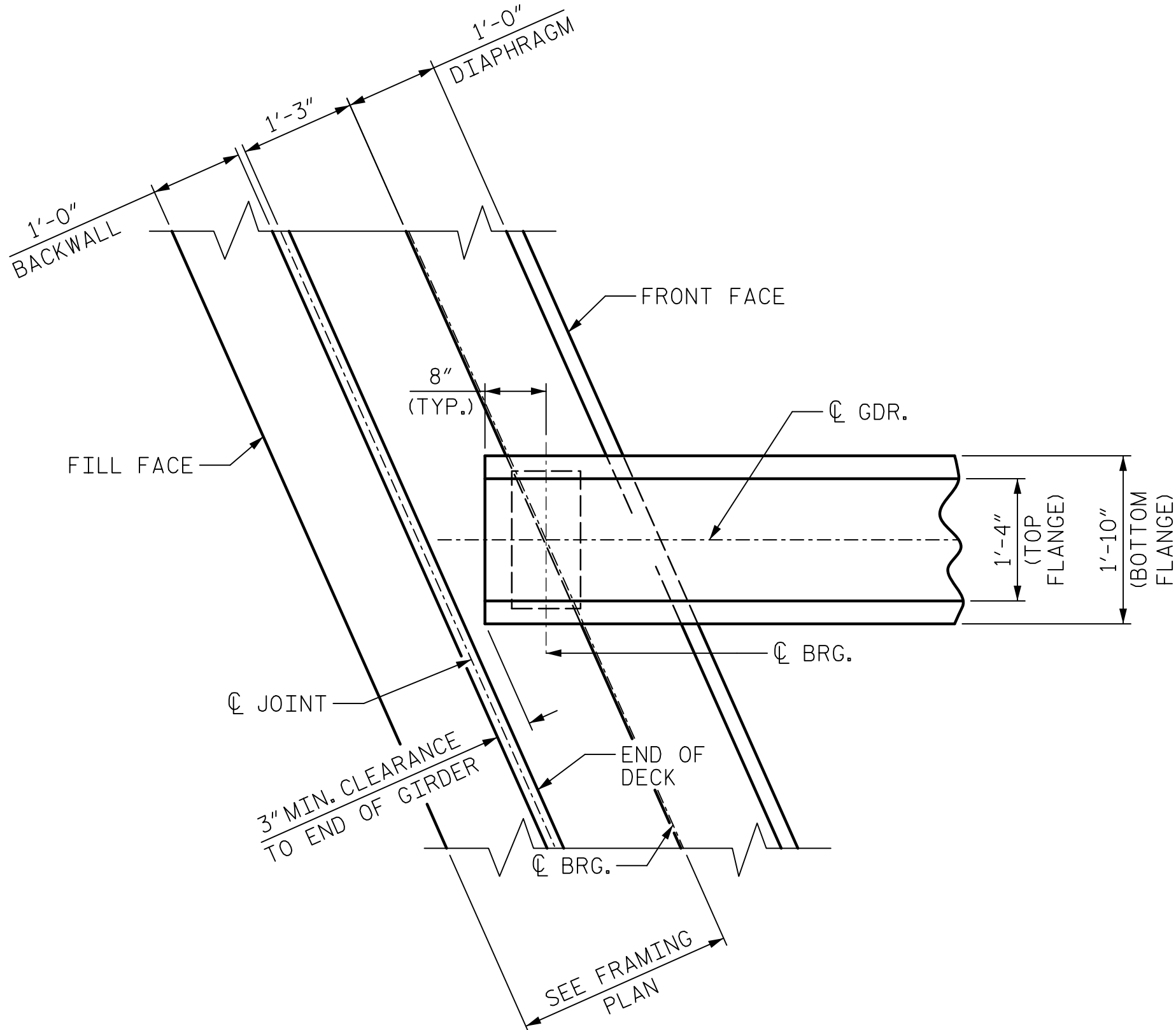
SECTION THRU END BENT DIAPHRAGMS

*#5G1 MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR REINFORCING STEEL AND STIRRUPS.

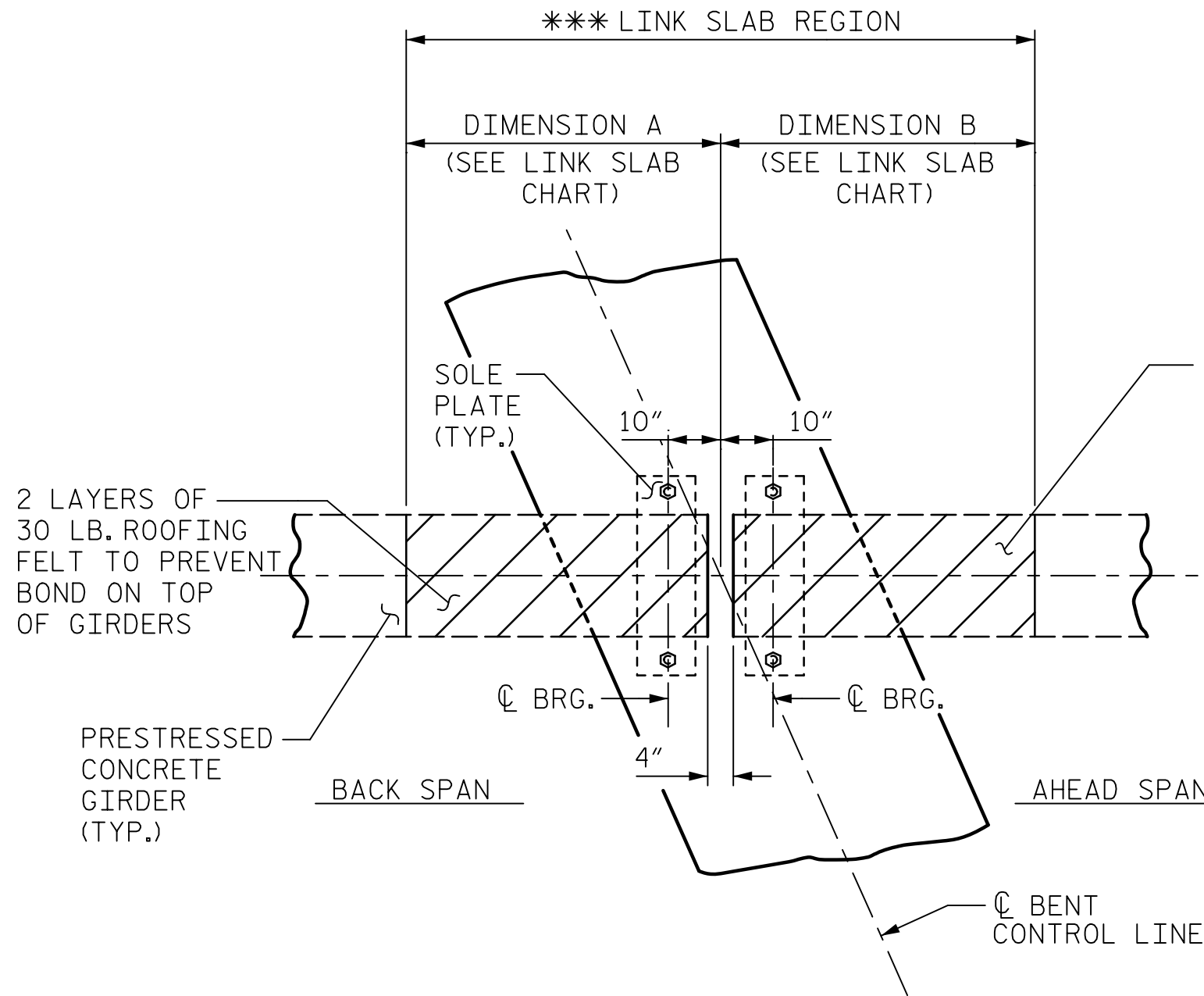


SECTION @ LINK SLAB

SECTION SHOWN ALONG GIRDER



PLAN VIEW OF END BENT DIAPHRAGM

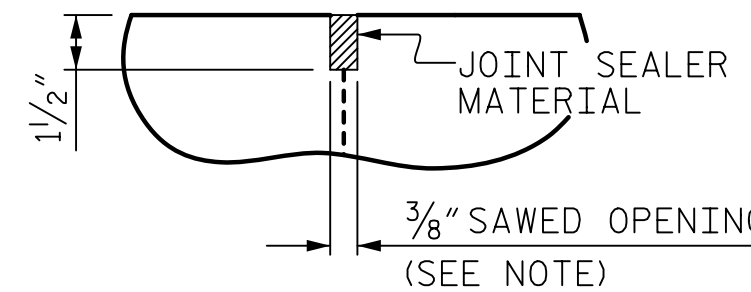


PLAN @ BENT

***: THE TOP OF GIRDER IN THE REGION OF THE LINK SLAB SHALL BE SMOOTH (NOT RAKED) AND FREE OF STIRRUPS, ANCHOR STUDS, DECK FORMWORK ATTACHMENTS, AND OVERHANG FALSEWORK/FORMWORK ATTACHMENTS.

*: METAL STAY-IN-PLACE FORMS SHALL NOT BE WELDED TO THE GIRDER FLANGES IN THE REGION OF THE LINK SLAB.

A 1 1/2" DEEP, 3/8" WIDE CONTRACTION JOINT AT BENT CONTROL LINE SHALL BE SAWN WITHIN 24 HOURS OF POURING THE DECK. THE JOINT SHALL BE FILLED WITH JOINT SEALER MATERIAL. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1028-3 OF THE STANDARD SPECIFICATIONS.



DETAIL "B"

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LINK SLAB CHART

BENT No.	A	B
1	3'-5"	5'-8"
2	5'-8"	3'-11"

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 3 OF 3

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NORTH CAROLINA PROFESSIONAL SEAL
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

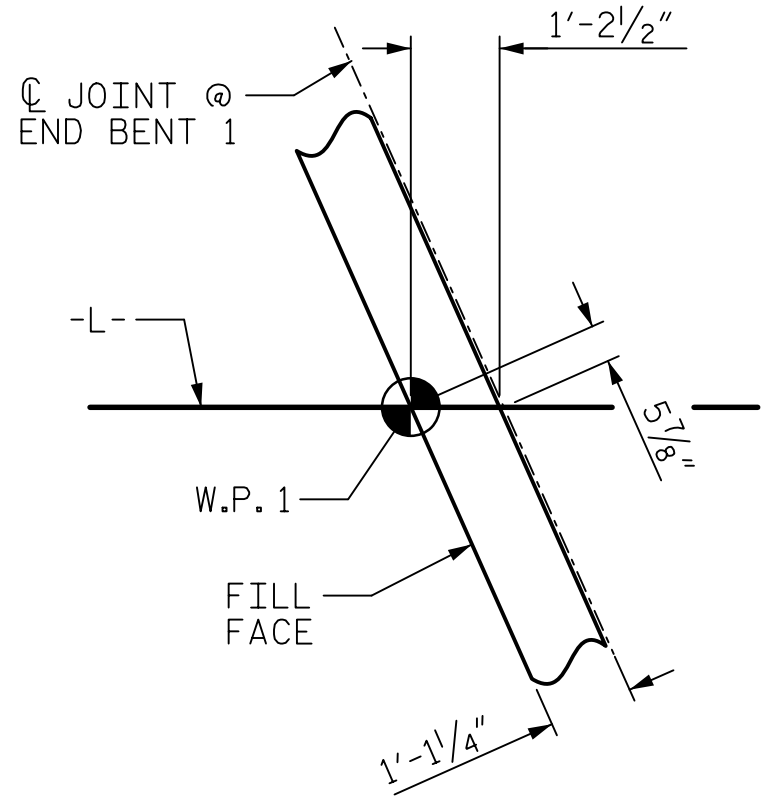
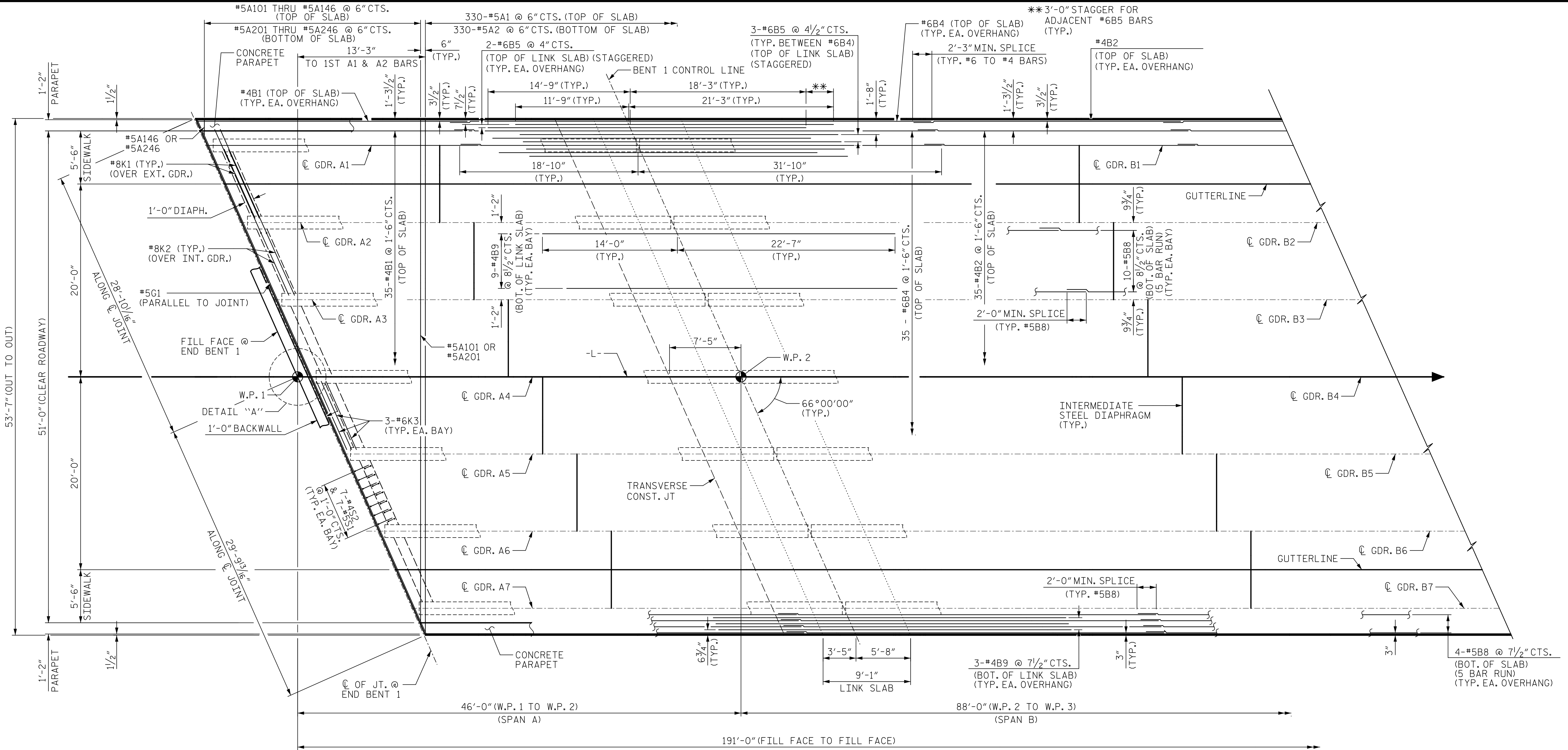
SUPERSTRUCTURE

TYPICAL SECTION
DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-08
1			3			TOTAL SHEETS
2			4			52

DATE: 11/19/2025
TIME: 9:55:15 AM

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DETAIL "A"

PLAN OF SPAN A

PLAN OF SPAN B

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 1 OF 2

DRAWN BY : M.L. CATER
CHECKED BY : J.C. MORRISON
DESIGNED BY : A. VAN VUREN
DESIGN ENGINEER OF RECORD: J.C. MORRISON
DATE : 10/2025
DATE : 10/2025
DATE : 10/2025
DATE : 10/2025

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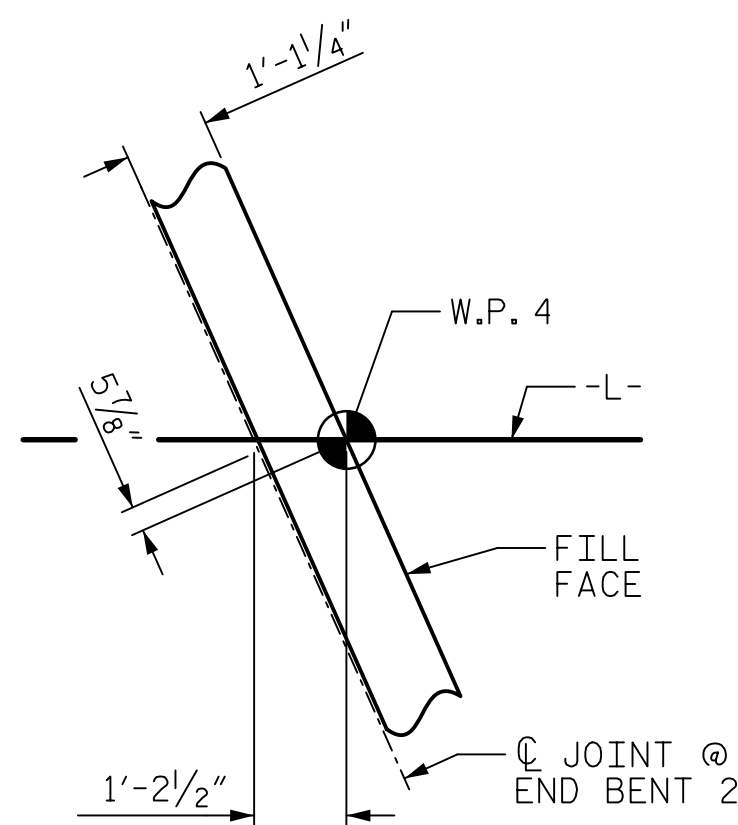
11/19/2025
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF SPANS

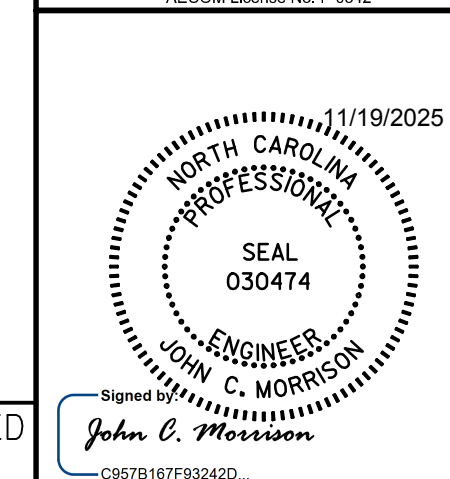
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.
S-09
TOTAL SHEETS
52



PLAN OF SPAN C

SHEET 2 OF 2



PLAN OF SPANS

REVISIONS						SHEET NO. S-10
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 52
2			4			

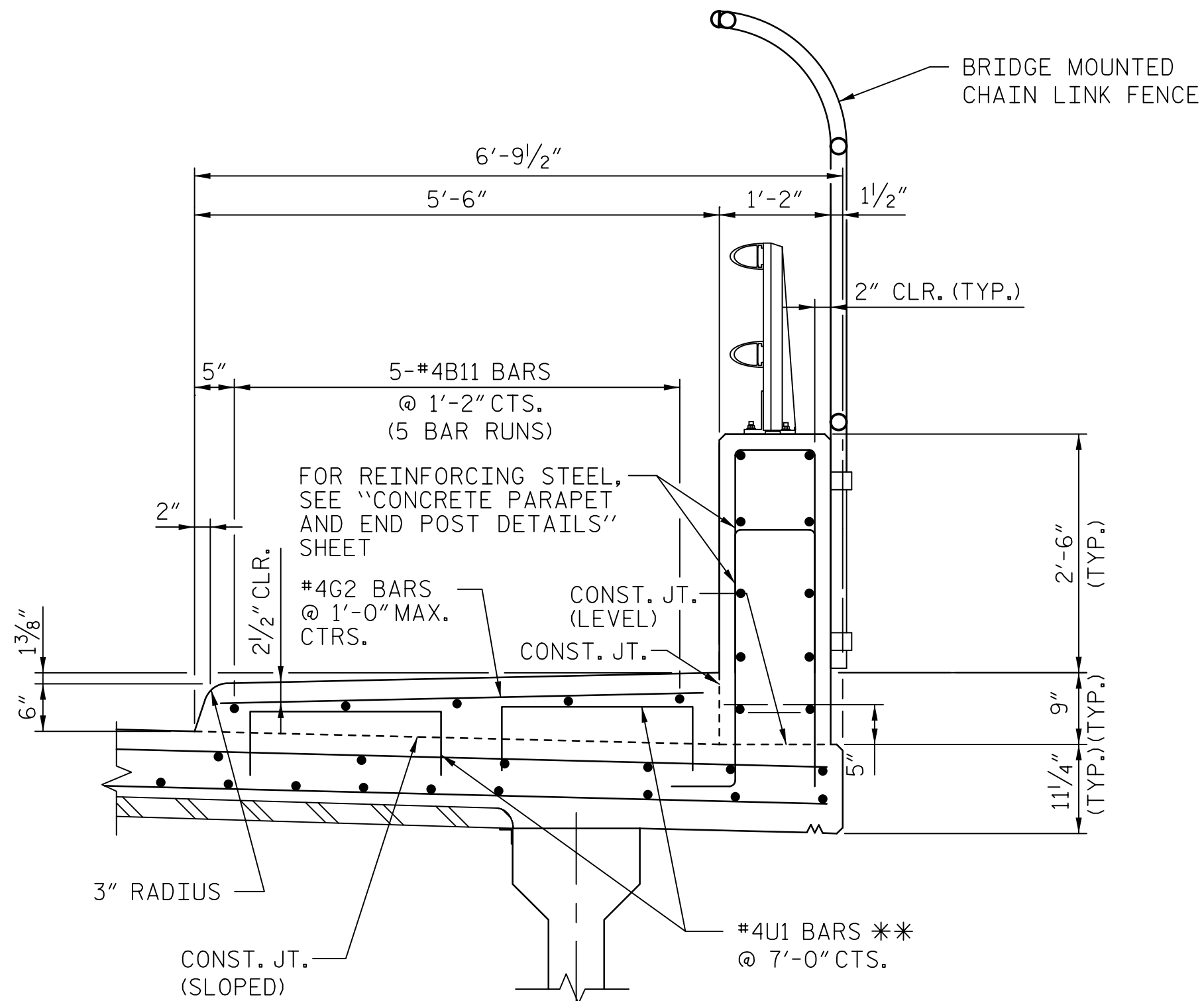
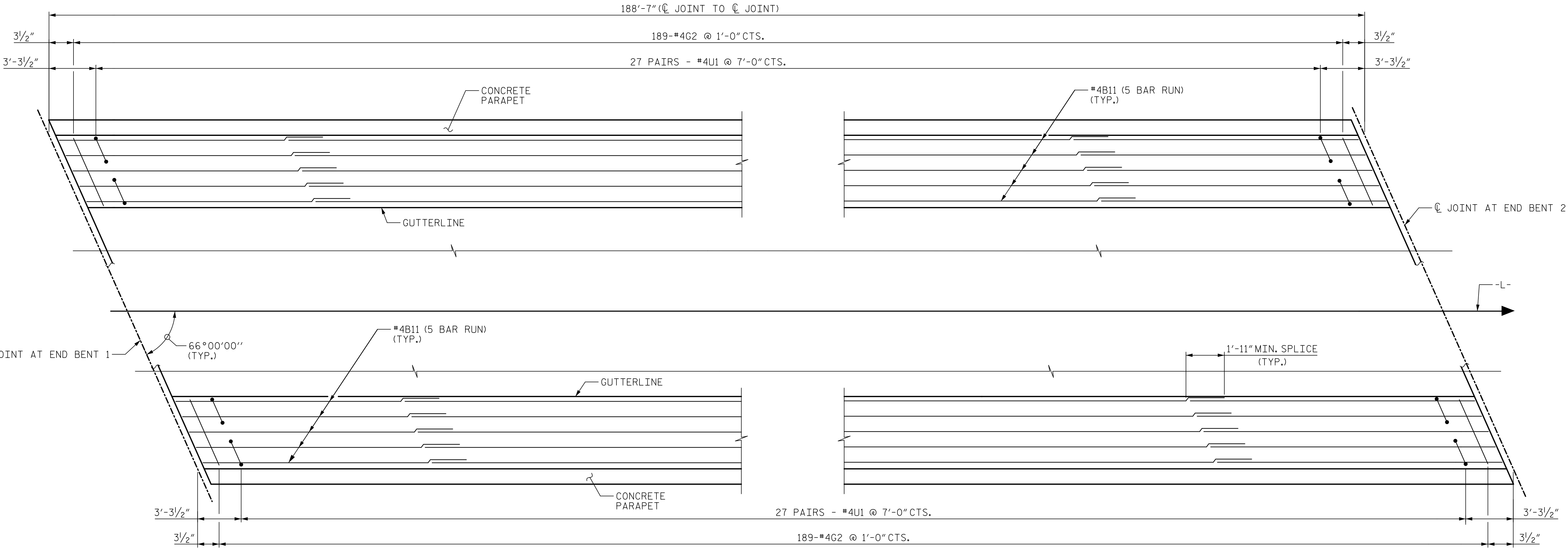
DRAWN BY : M.L. CATER DATE : 10/2025
 CHECKED BY : J.C. MORRISON DATE : 10/2025
 DESIGNED BY : A. VAN VUREN DATE : 10/2025
 DESIGN ENGINEER OF RECORD: J.C. MORRISON DATE : 10/2025

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TIME: 1:52:49 PM

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PLAN OF SIDEWALK

SEE "TYPICAL SECTION DETAILS" SHEET FOR SECTION THRU SIDEWALK

NOTES:

- THE SIDEWALK ON A CONTINUOUS UNIT SHALL NOT BE CAST UNTIL ALL CONCRETE IN THE UNIT HAS BEEN CAST AND HAS REACHED MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.
- 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 JT. SHALL BE LOCATED AT A SPACING OF 8 TO 10 FT. BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINT WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.
- SIDEWALKS ON THE BRIDGE ARE INCLUDED IN THE SUPERSTRUCTURE BILL OF MATERIAL AND PAID FOR AS PART OF THE REINFORCED CONCRETE DECK PAY ITEM.
- ** "U" BARS MAY BE PUSHED INTO GREEN CONCRETE AFTER SPAN HAS BEEN SCREEDED OFF.
- FOR SIDEWALK ON APPROACH SLABS, SEE APPROACH SLAB SHEETS.
- SEE "STRIP SEAL EXPANSION JOINT DETAILS FOR SIDEWALK" FOR COVER PLATE DETAILS.

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

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DESIGNED BY : M.L. CATER
DESIGN ENGINEER OF RECORD: J.C. MORRISON

DATE : 10/2025
DATE : 10/2025
DATE : 10/2025
DATE : 10/2025

SECTION THRU SIDEWALK

(RIGHT SIDE SHOWN, LEFT SIDE SIMILAR)
(SEE "SIDEWALK DETAILS" SHEET FOR NOTES)

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11/19/2025

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030474

ENGINEER
JOHN C. MORRISON

Signed by
John C. Morrison
C0578167F93242D

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE					
SIDEWALK DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-11					TOTAL SHEETS 52



PROJECT NO. B-4838
WAYNE COUNTY
 STATION: 30+73.46 -L-

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SUPERSTRUCTURE

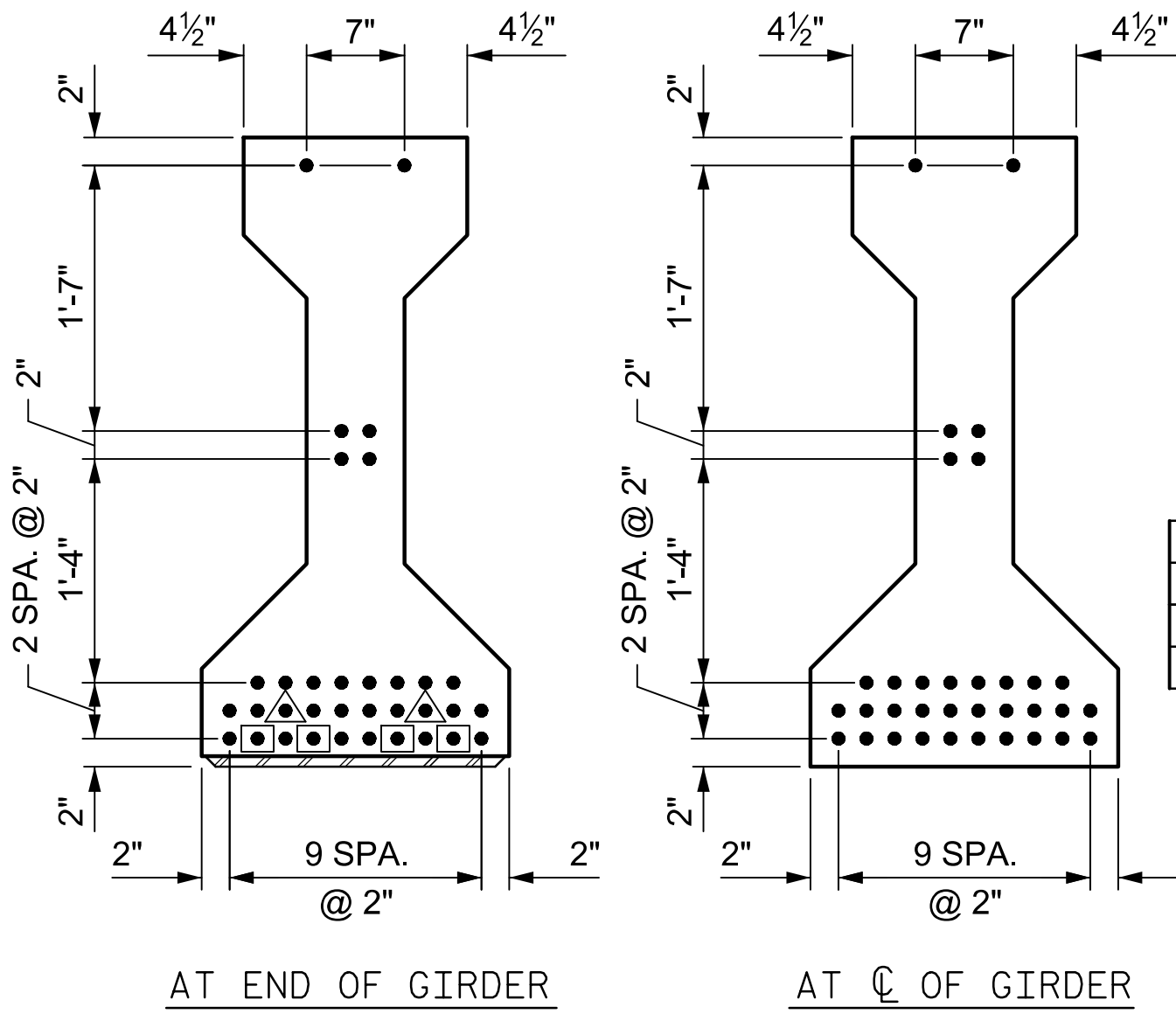
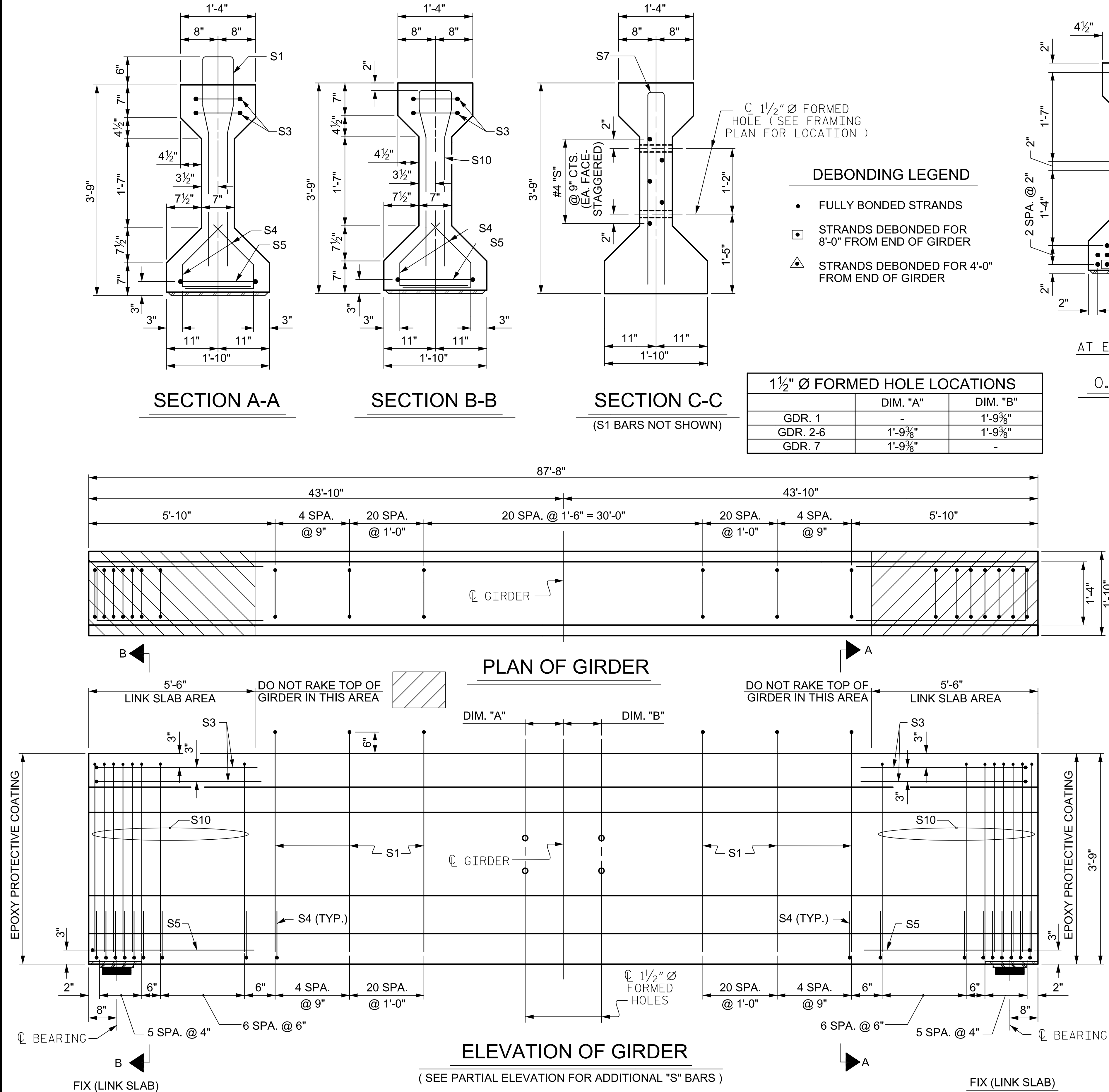
FRAMING PLAN

REVISIONS						SHEET NO. S-12
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 52
2			4			

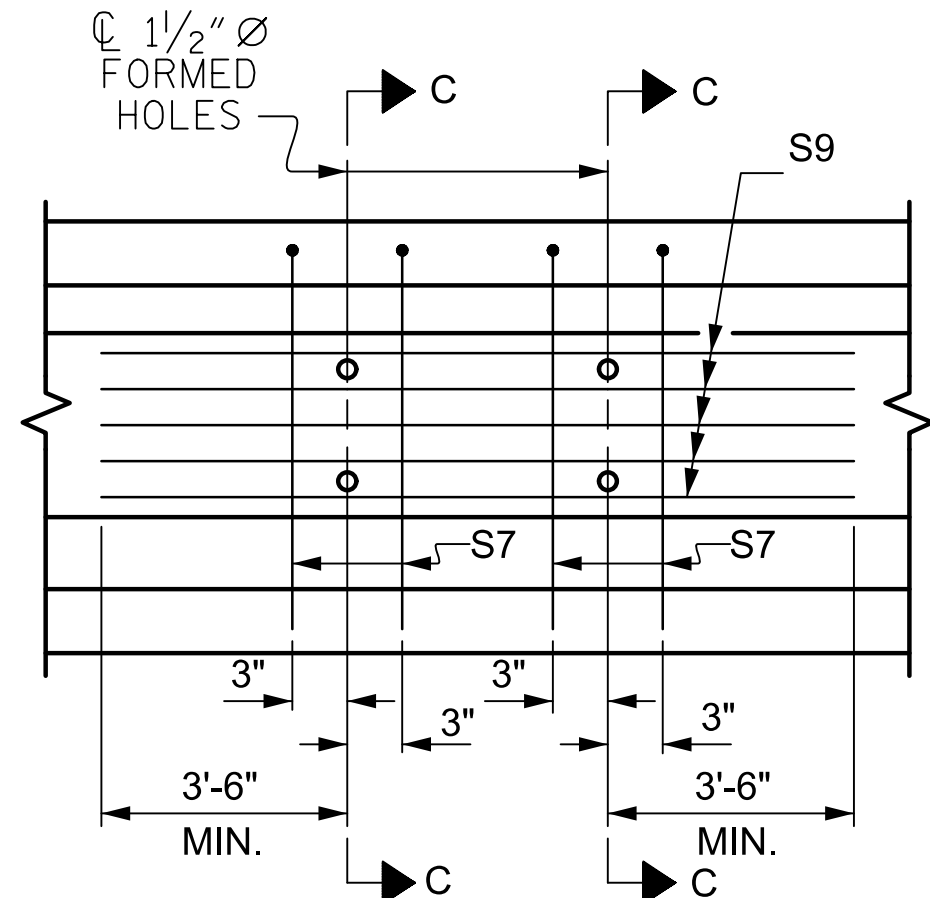
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TOTAL SHEETS	52

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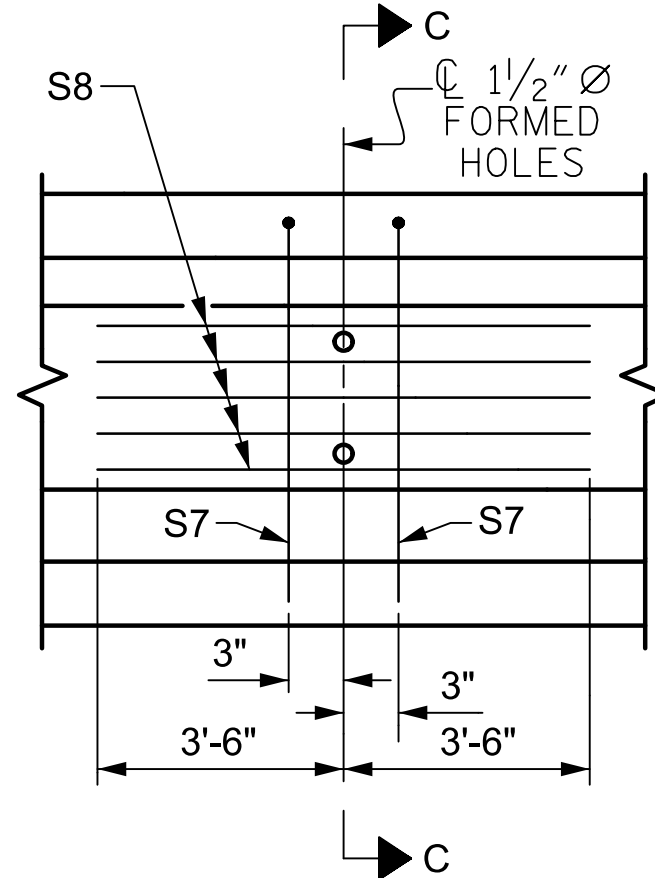


0.6" Ø LOW RELAXATION STRAND LAYOUT



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM
REINFORCING STEEL FOR GIRDER Nos. 2-6



PARTIAL ELEVATION

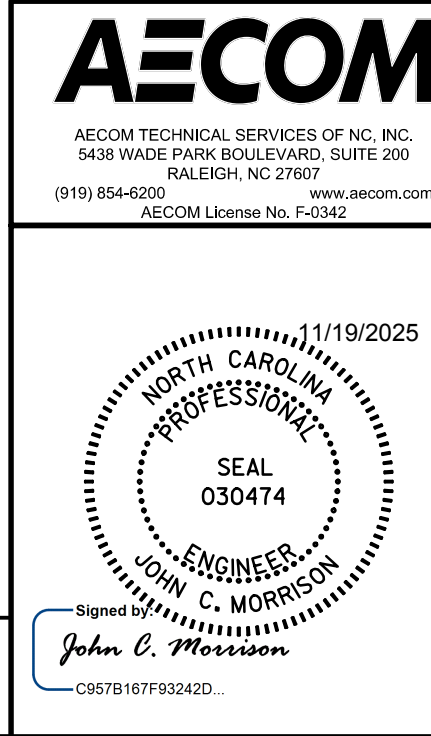
SHOWING INTERMEDIATE DIAPHRAGM
REINFORCING STEEL FOR GIRDER Nos. 1 & 7

GDR. 1 & 7	S7	2	#5	3	7'-2"	15
GDR. 2-6	S7	4	#5	3	7'-2"	30
GDR. 1 & 7	S8	5	#4	STR	7'-0"	23
GDR. 2-6	S9	5	#4	STR	10'-7"	35
	S10	26	#6	1	7'-2"	280

0.6"Ø L.R. GRADE 270 STRANDS					
AREA (SQUARE INCHES)		ULTIMATE STRENGTH (LBS. PER STRAND)		APPLIED PRESTRESS (LBS. PER STRAND)	
0.217		58,600		43,950	
REINFORCING STEEL FOR ONE GIRDER					
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	69	#6	1	8'-6"	881
S3	4	#4	3	8'-8"	23
S4	56	#4	2	2'-9"	103
S5	2	#4	3	9'-6"	13
S7	2	#5	3	7'-2"	15
S7	4	#5	3	7'-2"	30
S8	5	#4	STR	7'-0"	23
S9	5	#4	STR	10'-7"	35
S10	26	#6	1	7'-2"	280
BAR TYPES					
ALL BAR DIMENSIONS ARE OUT-TO-OUT					
QUANTITIES FOR ONE GIRDER					
	REINFORCING STEEL		9,000 PSI CONCRETE	0.6" Ø L. R. STRANDS	
	LB.		C.Y.	No.	
GDR. 1 & 7	1,338		12.6	34	
GDR. 2-6	1,365		12.6	34	
GIRDERS REQUIRED					
NUMBER		LENGTH		TOTAL LENGTH	
7		87'-8"		613'-8"	

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 2 OF 5

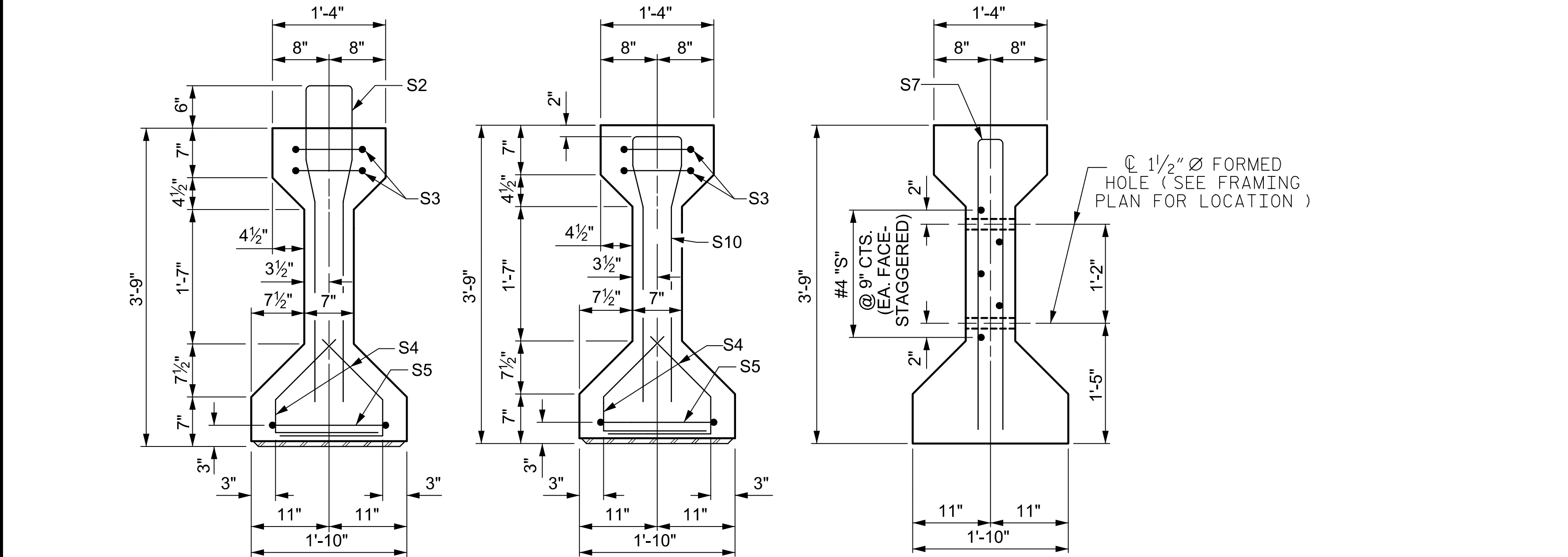


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD					
AASHTO TYPE III PRESTRESSED CONCRETE GIRDER LINK SLAB SPAN B					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					52

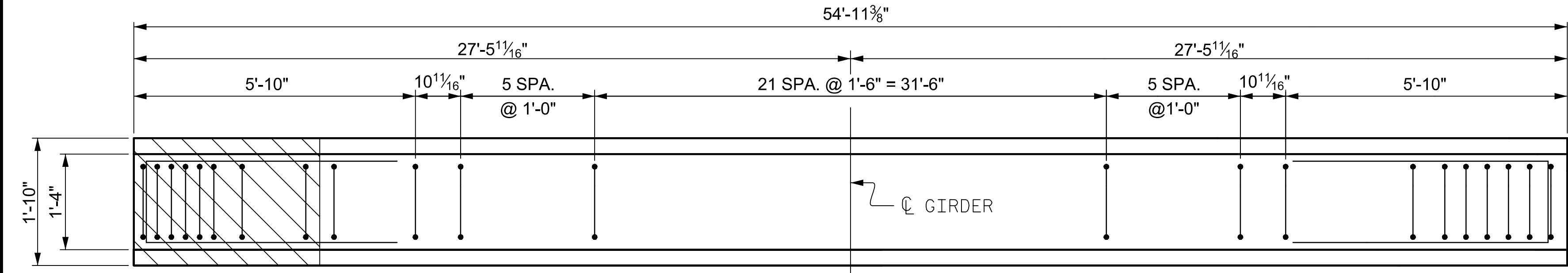
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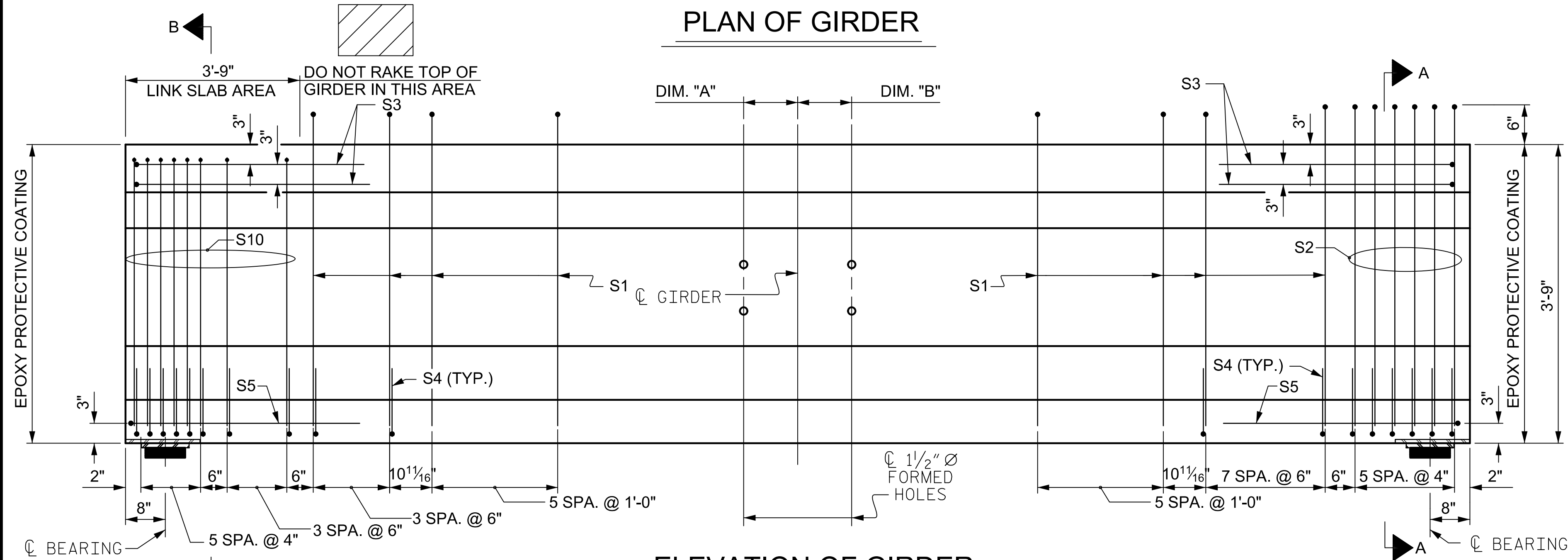
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1 1/2" Ø FORMED HOLE LOCATIONS		
	DIM. "A"	DIM. "B"
GDR. 1	-	1'-9 3/8"
GDR. 2-6	1'-9 3/8"	1'-9 3/8"
GDR. 7	1'-9 3/8"	-



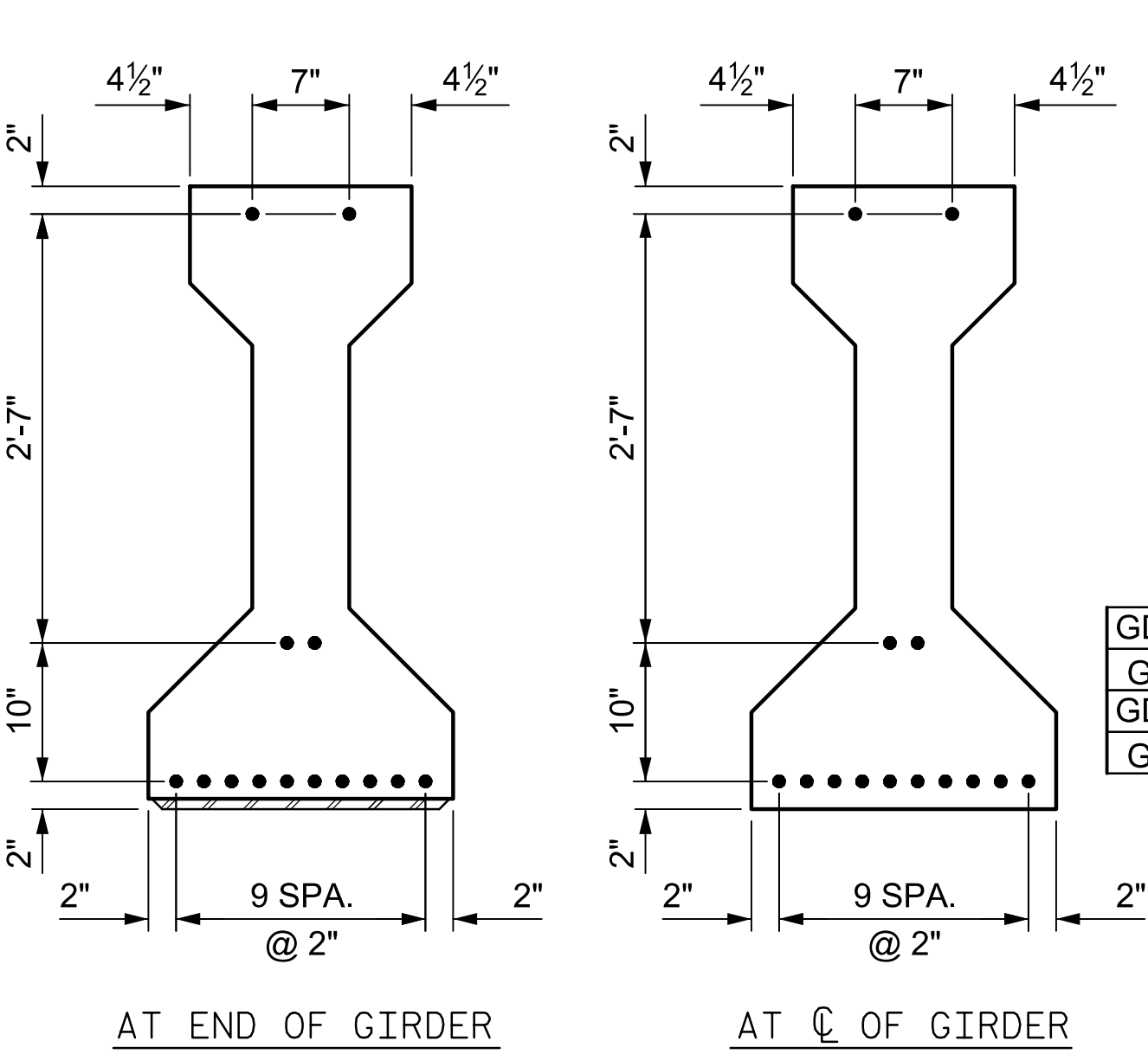
PLAN OF GIRDER



ELEVATION OF GIRDER

(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)

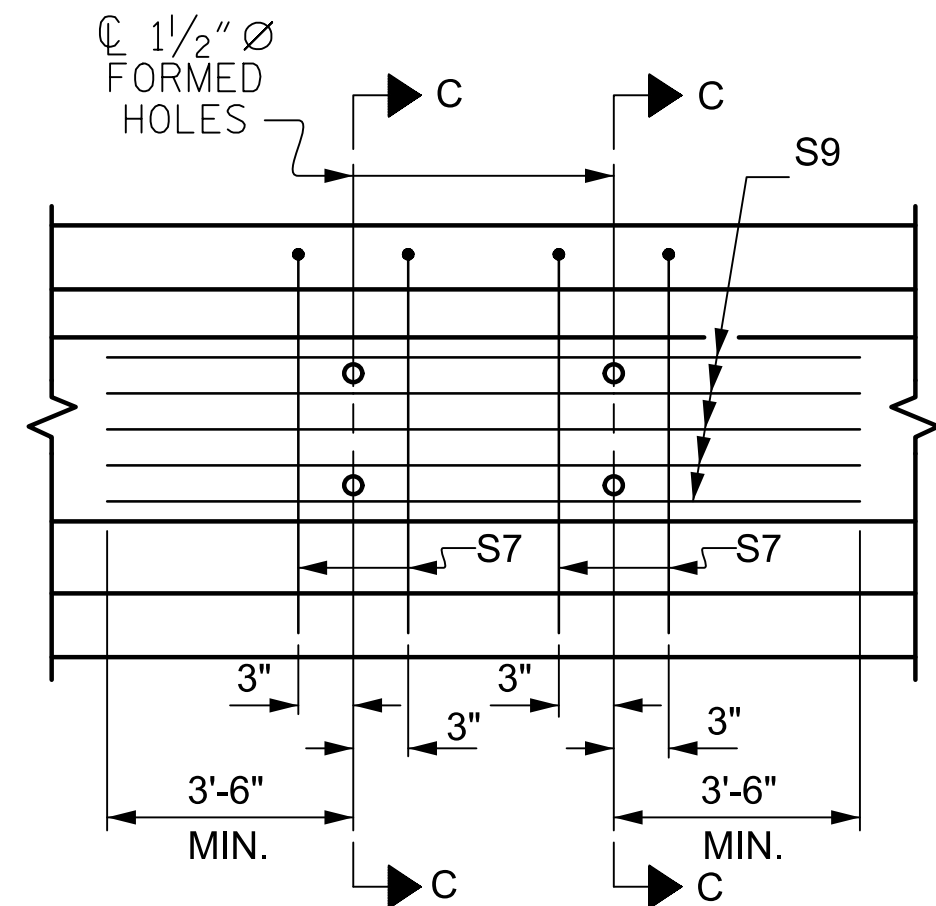
ASSEMBLED BY : A.R. VAN VUREN	DATE : 10/2025
CHECKED BY : J.C. MORRISON	DATE : 10/2025
DESIGN ENGINEER OF RECORD : J.C. MORRISON	DATE : 10/2025
DRAWN BY : BMB 9/21	
CHECKED BY : AAI 9/21	



AT END OF GIRDER

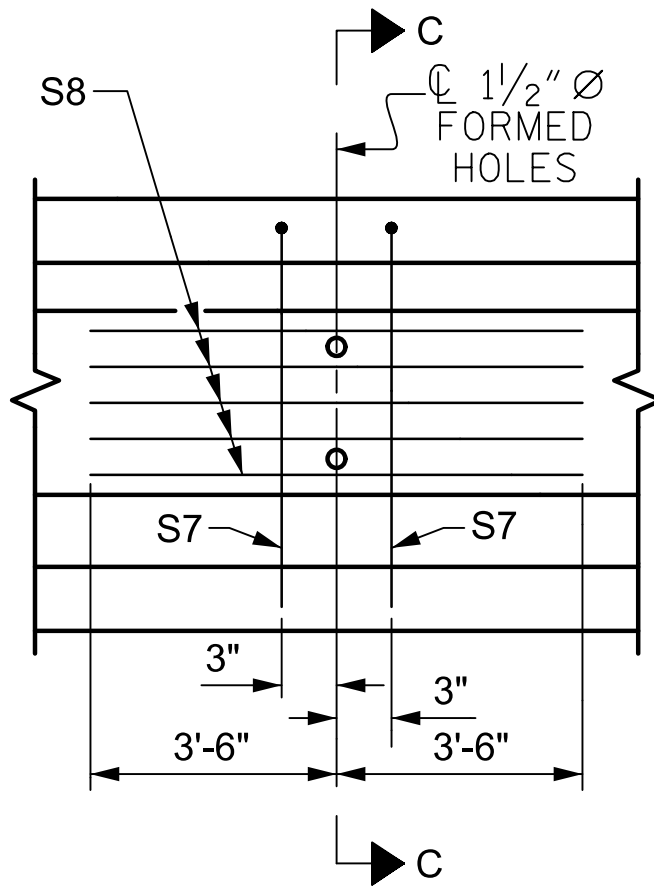
AT CL OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 2-6



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 1 & 7

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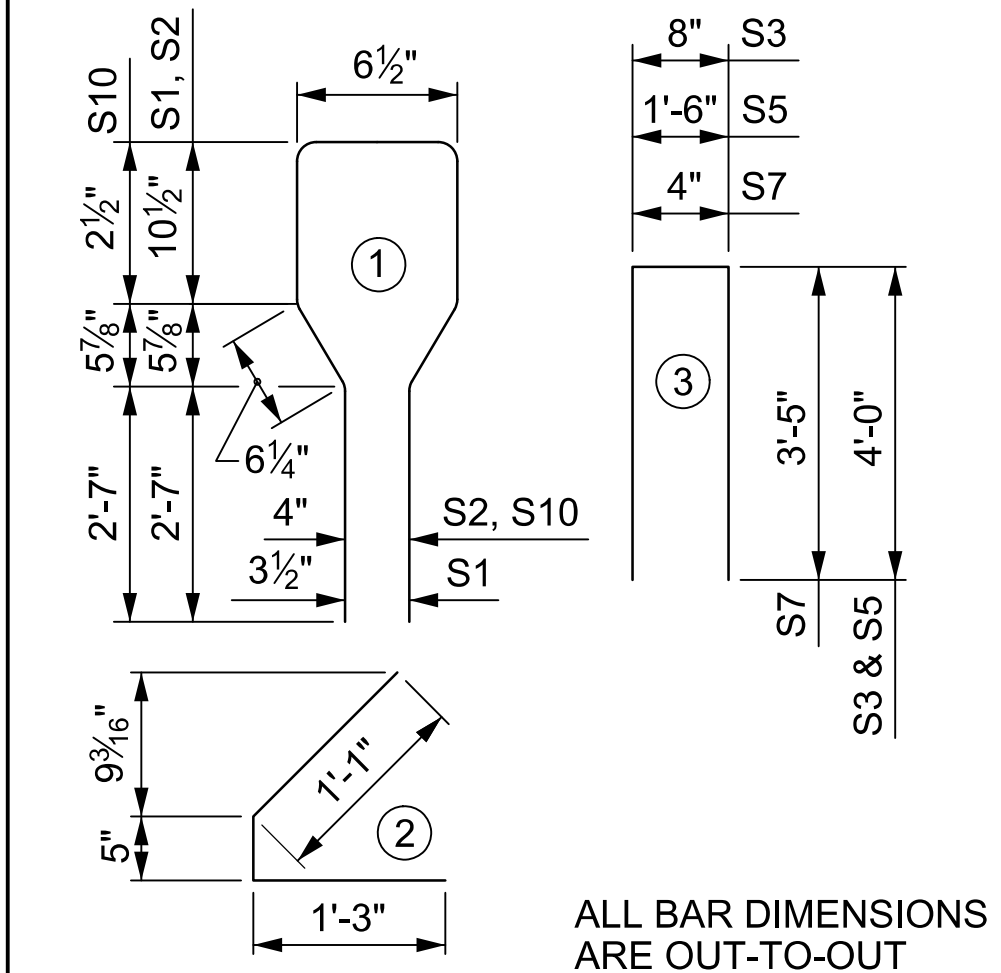
0.6"Ø L.R. GRADE 270 STRANDS

AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	44	#5	1	8'-6"	390
S2	6	#6	1	8'-6"	77
S3	4	#4	3	8'-8"	23
S4	56	#4	2	2'-9"	103
S5	2	#4	3	9'-6"	13
S7	2	#5	3	7'-2"	15
S7	4	#5	3	7'-2"	30
S8	5	#4	STR	7'-0"	23
S9	5	#4	STR	10'-7"	35
S10	10	#6	1	7'-2"	108

BAR TYPES



QUANTITIES FOR ONE GIRDER

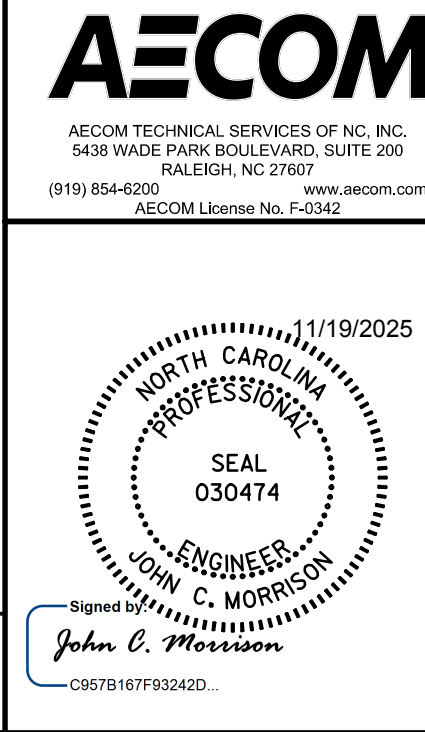
	REINFORCING STEEL	7,000 PSI CONCRETE	0.6" Ø L. R. STRANDS
	LB.	C.Y.	No.
GDR. 1 & 7	752	7.9	14
GDR. 2-6	779	7.9	14

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
7	54'-11 3/8"	384'-7 5/8"

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 3 OF 5



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD AASHTO TYPE III PRESTRESSED CONCRETE GIRDER LINK SLAB SPAN C					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					52

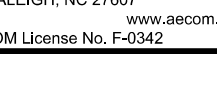
STD. NO. PCG5

DEAD LOAD DEFLECTION TABLE FOR GIRDERS OF SPAN C																						
0.6" Ø LOW-RELAXATION		GIRDER 1 & 7																				
TWENTIETH POINTS		BRG.	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	BRG.
CAMBER (GIRDER ALONE IN PLACE) ↑		0.000	0.008	0.016	0.024	0.031	0.037	0.042	0.046	0.049	0.051	0.052	0.051	0.049	0.046	0.042	0.037	0.031	0.024	0.016	0.008	0.000
* DEFLECTION DUE TO SUPERIMPOSED DL ↓		0.000	0.004	0.009	0.013	0.017	0.020	0.023	0.026	0.028	0.029	0.029	0.029	0.028	0.026	0.024	0.021	0.017	0.013	0.009	0.005	0.000
FINAL CAMBER ↑		0	1/16"	1/16"	1/8"	3/16"	3/16"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/16"	3/16"	3/16"	1/8"	1/16"	1/16"	0
0.6" Ø LOW-RELAXATION		GIRDER 2 & 6																				
TWENTIETH POINTS		BRG.	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	BRG.
CAMBER (GIRDER ALONE IN PLACE) ↑		0.000	0.008	0.016	0.024	0.031	0.037	0.042	0.046	0.049	0.051	0.052	0.051	0.049	0.046	0.042	0.037	0.031	0.024	0.016	0.008	0.000
* DEFLECTION DUE TO SUPERIMPOSED DL ↓		0.000	0.004	0.009	0.013	0.018	0.021	0.025	0.027	0.029	0.030	0.031	0.030	0.029	0.027	0.025	0.022	0.018	0.014	0.009	0.005	0.000
FINAL CAMBER ↑		0	1/16"	1/16"	1/8"	1/8"	3/16"	3/16"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/16"	3/16"	1/8"	1/8"	1/16"	1/16"	0
0.6" Ø LOW-RELAXATION		GIRDER 3 & 5																				
TWENTIETH POINTS		BRG.	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	BRG.
CAMBER (GIRDER ALONE IN PLACE) ↑		0.000	0.008	0.016	0.024	0.031	0.037	0.042	0.046	0.049	0.051	0.052	0.051	0.049	0.046	0.042	0.037	0.031	0.024	0.016	0.008	0.000
* DEFLECTION DUE TO SUPERIMPOSED DL ↓		0.000	0.004	0.008	0.013	0.017	0.020	0.023	0.026	0.028	0.028	0.029	0.029	0.028	0.026	0.024	0.020	0.017	0.013	0.009	0.004	0.000
FINAL CAMBER ↑		0	1/16"	1/16"	1/8"	3/16"	3/16"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/16"	3/16"	1/8"	1/16"	1/16"	0
0.6" Ø LOW-RELAXATION		GIRDER 4																				
TWENTIETH POINTS		BRG.	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	BRG.
CAMBER (GIRDER ALONE IN PLACE) ↑		0.000	0.008	0.016	0.024	0.031	0.037	0.042	0.046	0.049	0.051	0.052	0.051	0.049	0.046	0.042	0.037	0.031	0.024	0.016	0.008	0.000
* DEFLECTION DUE TO SUPERIMPOSED DL ↓		0.000	0.004	0.008	0.011	0.015	0.018	0.021	0.023	0.025	0.026	0.027	0.026	0.025	0.023	0.021	0.018	0.015	0.012	0.008	0.004	0.000
FINAL CAMBER ↑		0	1/16"	1/8"	1/8"	3/16"	1/4"	1/4"	1/4"	5/16"	5/16"	5/16"	5/16"	5/16"	1/4"	1/4"	1/4"	3/16"	1/8"	1/8"	1/16"	0

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

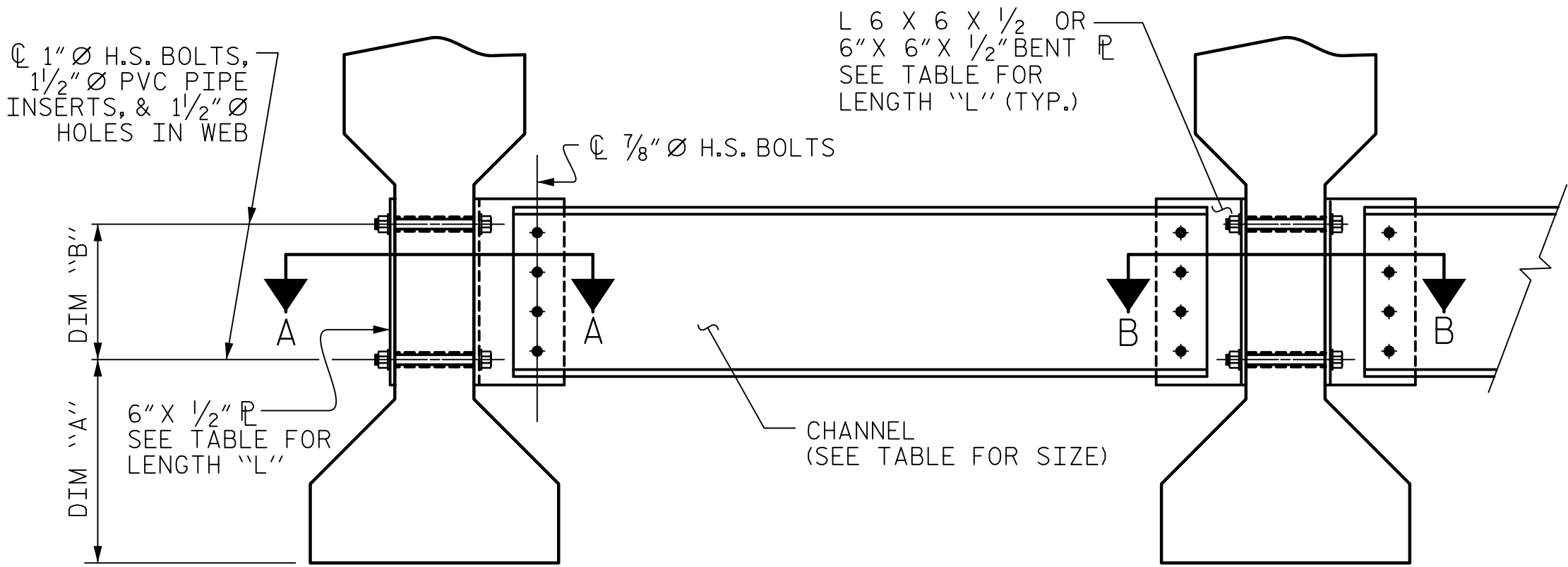
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

FOR SPAN A DEAD LOAD DEFLECTION TABLES, SEE SHEET 4 OF 6.

 AECOM TECHNICAL SERVICES OF NC, INC. 5438 WADE PARK BOULEVARD, SUITE 200 RALEIGH, NC 27607 (919) 854-6200 www.aecom.com AECOM License No. F-0342	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUPERSTRUCTURE DEAD LOAD DEFLECTION TABLES FOR SPANS B & C
	11/19/2025
SIGNED: _____ JOHN C. MORRISON ENGINEER	
C097B16TF93242D	

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17 TOTAL SHEETS 52
1			3			
2			4			

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USER: caterm
DGN: pma\kmmom-nr-pma\entfry.com\AECOM\USA\North Carolina\Documents\60398150-NC DOT 3M\B-4838\900-CAD\01590C_CADD\010_NCDOT_TIP\Structures\04 Drawings\400_035_B4838_5M\LP03_6_5-18_350202.dgn

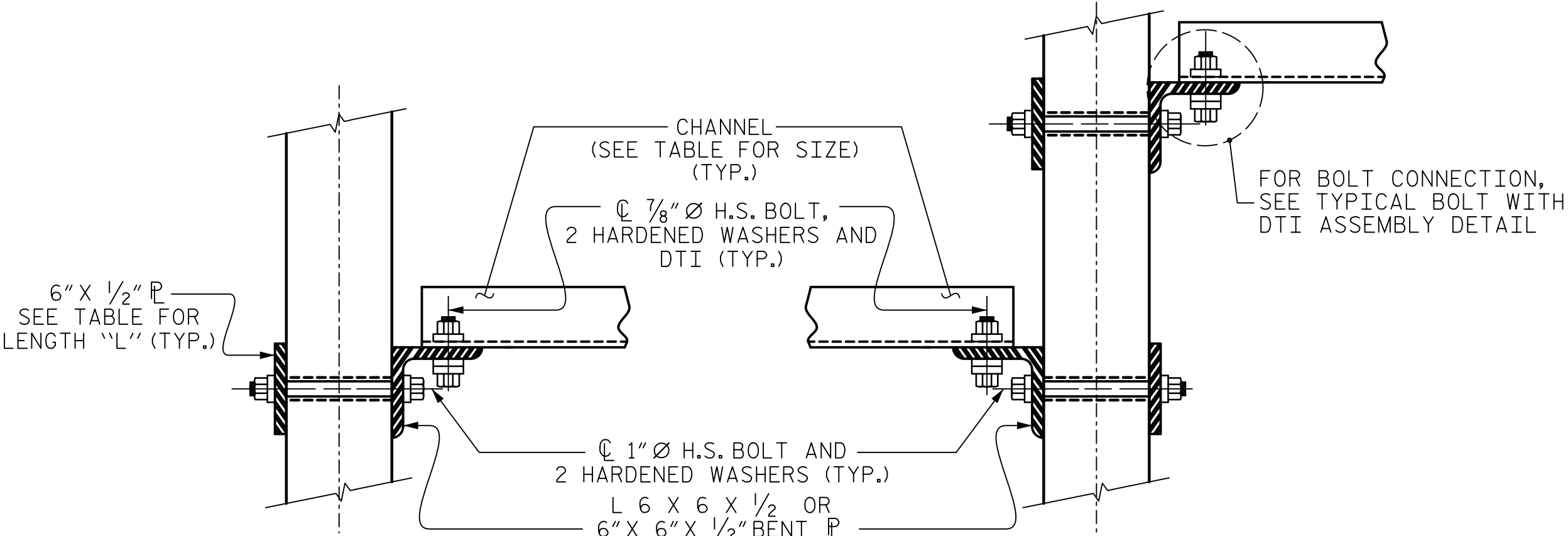


EXTERIOR GIRDER

INTERIOR GIRDER

PART SECTION AT INTERMEDIATE DIAPHRAGM

(TYPE III GIRDER SHOWN)

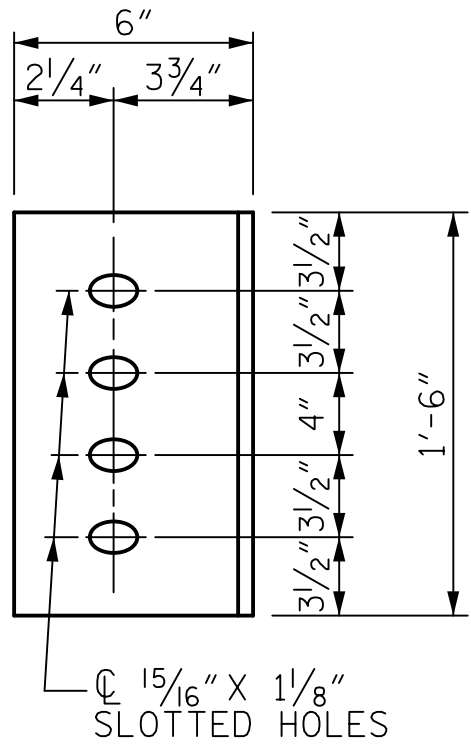


SECTION A-A

SECTION B-B

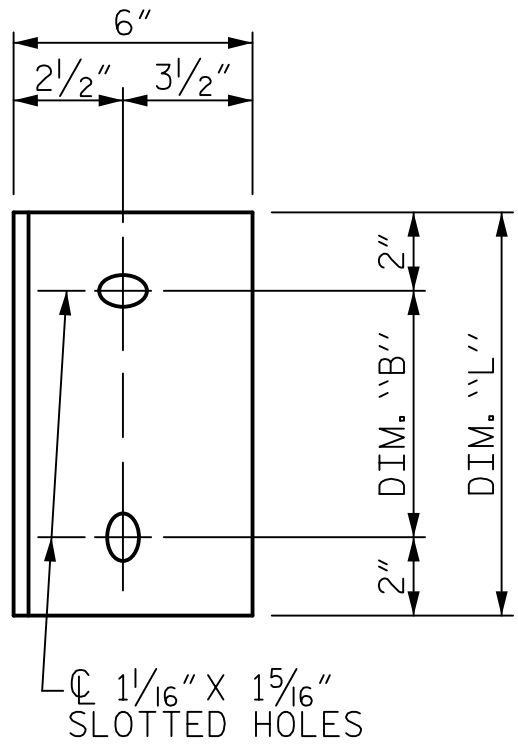
CONNECTION DETAILS

(FOR SKEW < 70°)



DIAPHRAGM FACE

(TYPE III GDR.)



WEB FACE

CONNECTOR PLATE DETAILS

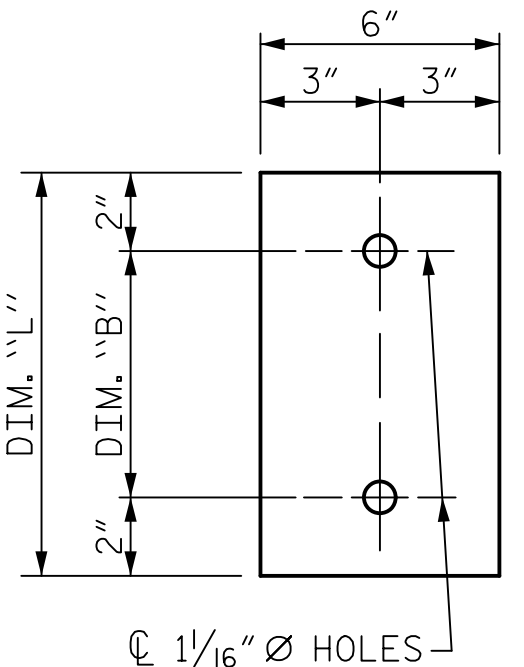
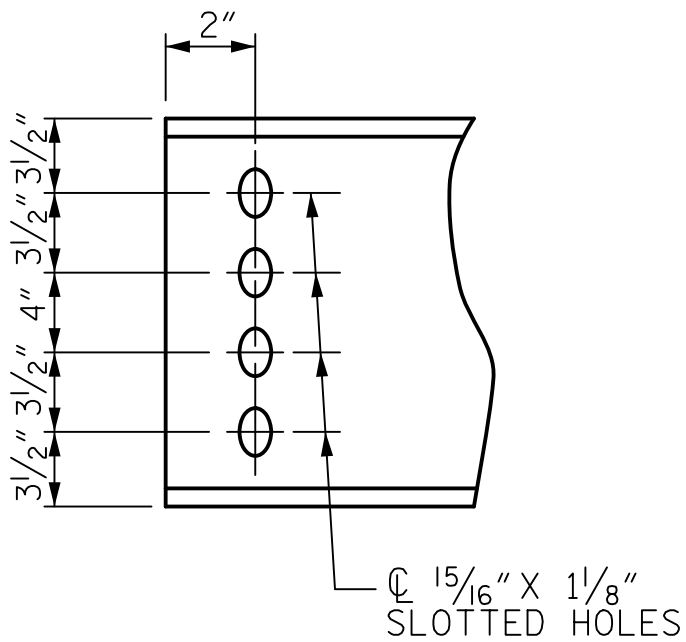


PLATE DETAILS



CHANNEL END

(TYPE III GDR.)

STRUCTURAL STEEL NOTES

ALL INTERMEDIATE DIAPHRAGM STEEL AND CONNECTOR PLATES SHALL BE AASHTO M270 GRADE 50 OR APPROVED EQUAL.

TENSION ON THE ASTM A325 BOLTS THROUGH THE CHANNEL MEMBER SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TENSION ON THE ASTM A449 BOLTS THROUGH THE GIRDER WEB SHALL BE SNUG TIGHTENED FOLLOWED BY AN ADDITIONAL 1/4 TURN.

THE PLATES, BENT PLATES, CHANNELS, AND ANGLES SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

FOR METALLIZATION, APPLY A THERMAL SPRAYED COATING WITH A SEAL COAT TO ALL STEEL DIAPHRAGM SURFACES IN ACCORDANCE WITH THE DEPARTMENTS THERMAL SPRAYED COATINGS (METALLIZATION) PROGRAM, THERMAL SPRAYED COATINGS SPECIAL PROVISION AND SECTION 442 OF THE STANDARD SPECIFICATIONS.

GALVANIZE THE HIGH STRENGTH BOLTS, NUTS, WASHERS AND DIRECT TENSION INDICATORS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

USE AN ASTM F436 HARDENED WASHER WITH STANDARD AND SLOTTED HOLES UNDER EACH BOLT HEAD AND NUT.

FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST 1/4 PROJECTION BEYOND THE NUT.

INTERMEDIATE DIAPHRAGM ASSEMBLY SHALL COMPLY WITH SECTION 1072 OF THE STANDARD SPECIFICATIONS.

SUBMIT TWO SETS OF WORKING DRAWINGS FOR THE INTERMEDIATE DIAPHRAGM ASSEMBLY FOR REVIEW, COMMENTS AND ACCEPTANCE. AFTER REVIEW, COMMENTS, AND ACCEPTANCE, SUBMIT SEVEN SETS FOR DISTRIBUTION.

IN THE EXTERIOR BAYS, PLACE TEMPORARY STRUTS BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE STEEL DIAPHRAGMS. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED.

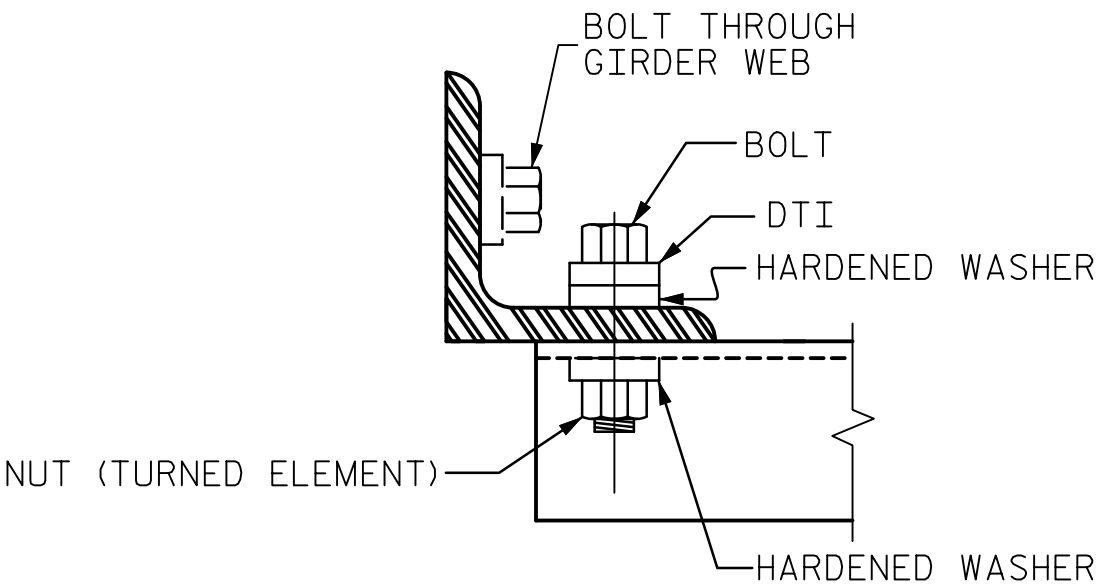
THE COST OF THE STEEL DIAPHRAGMS AND ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS.

TABLE

GIRDER TYPE	CHANNEL SIZE	DIM. "A"	DIM. "B"	DIM. "L"
III	MC 18 x 42.7	1'-5"	1'-2"	1'-6"

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

ASSEMBLED BY : M.L. CATER	DATE : 10/2025
CHECKED BY : J.C. MORRISON	DATE : 10/2025
DESIGN ENGINEER OF RECORD : J.C. MORRISON	DATE : 10/2025
DRAWN BY : TLC 6/05	REV. 5/1/06RRR KMM/GM
CHECKED BY : VC 6/05	REV. 10/1/11 MAA/GM
	REV. 12/17 MAA/THC



BOLT WITH DTI ASSEMBLY DETAIL

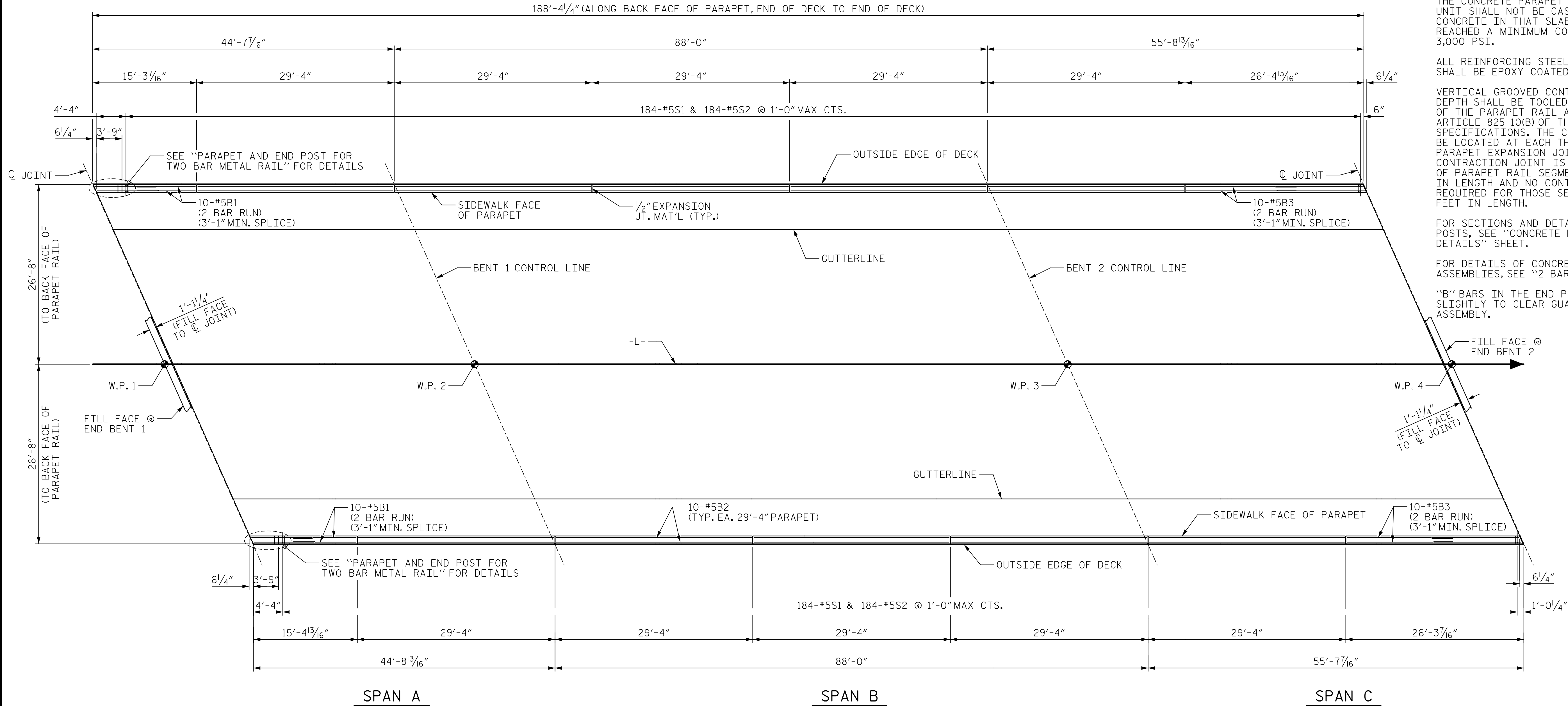
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(919) 854-8200
www.aecom.com
AECOM License No. F-0342

JOHN C. MORRISON
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 030474
11/19/2025
Signed by
John C. Morrison
C0578161F93242D

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE III PRESTRESSED CONCRETE GIRDERS					
REVISIONS					SHEET NO. S-18
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					52

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DATE: 11/14/2025
TIME: 4:54:45 PM
USER: john.morrison
DRAWN BY: J.C. MORRISON
CHECKED BY: J.C. MORRISON
DESIGNED BY: M.L. CATER
DESIGN ENGINEER OF RECORD: J.C. MORRISON
DATE: 10/2025
DATE: 10/2025
DATE: 10/2025
DATE: 10/2025



NOTES:

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

ALL REINFORCING STEEL IN PARAPET RAILS SHALL BE EPOXY COATED.

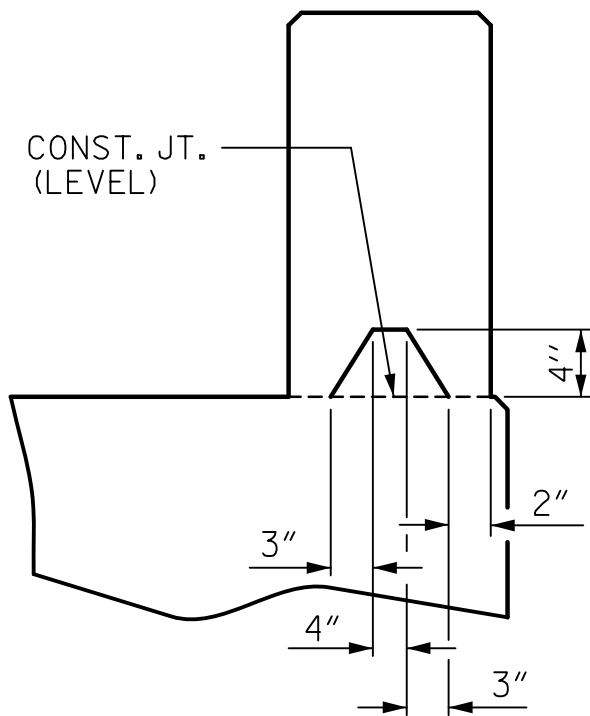
VERTICAL GROOVED CONTRACTION JOINTS $\frac{1}{2}$ " IN DEPTH SHALL BE TOoled IN ALL EXPOSED FACES OF THE PARAPET RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN PARAPET EXPANSION JOINTS. ONLY ONE CONTRACTION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

FOR SECTIONS AND DETAILS OF PARAPET AND END POSTS, SEE "CONCRETE PARAPET AND END POST DETAILS" SHEET.

FOR DETAILS OF CONCRETE INSERTS AND ANCHOR ASSEMBLIES, SEE "2 BAR METAL RAIL" SHEETS.

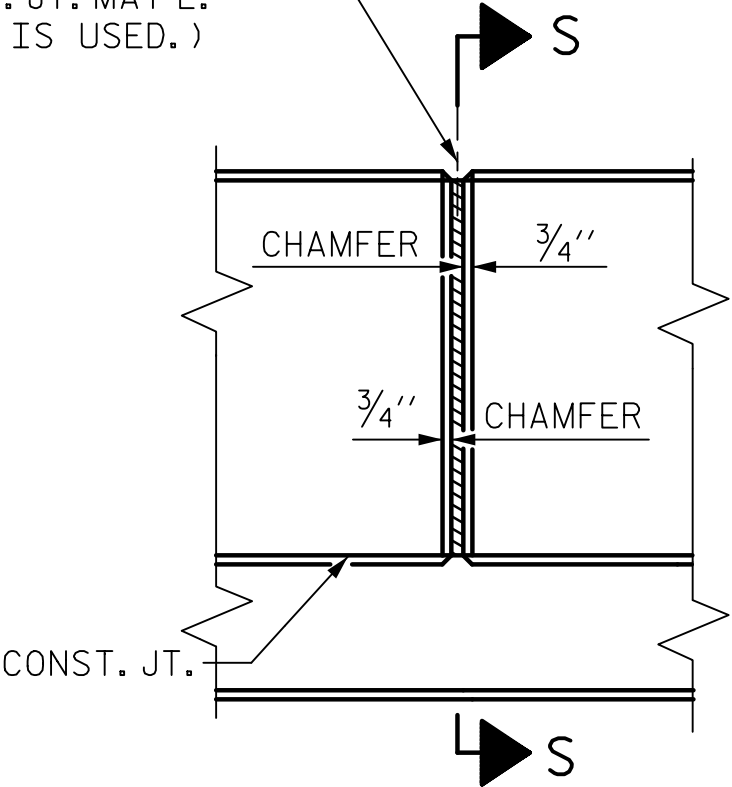
"B" BARS IN THE END POST MAY BE SHIFTED SLIGHTLY TO CLEAR GUARDRAIL ANCHOR ASSEMBLY.

PLAN OF CONCRETE PARAPET RAIL



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

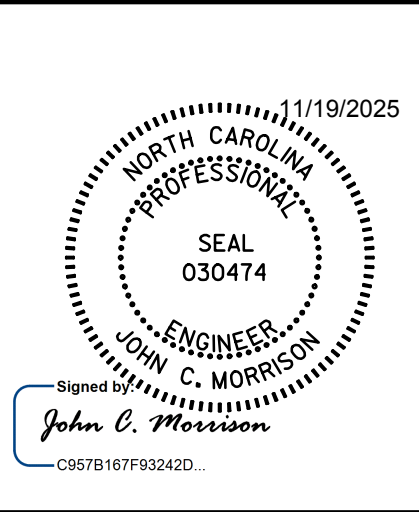
$\frac{1}{2}$ " EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS.
(NOTE: OMIT EXP. JT. MAT'L. WHEN SLIP FORM IS USED.)



ELEVATION AT JOINTS IN PARAPET

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

CONCRETE PARAPET
RAIL PLAN

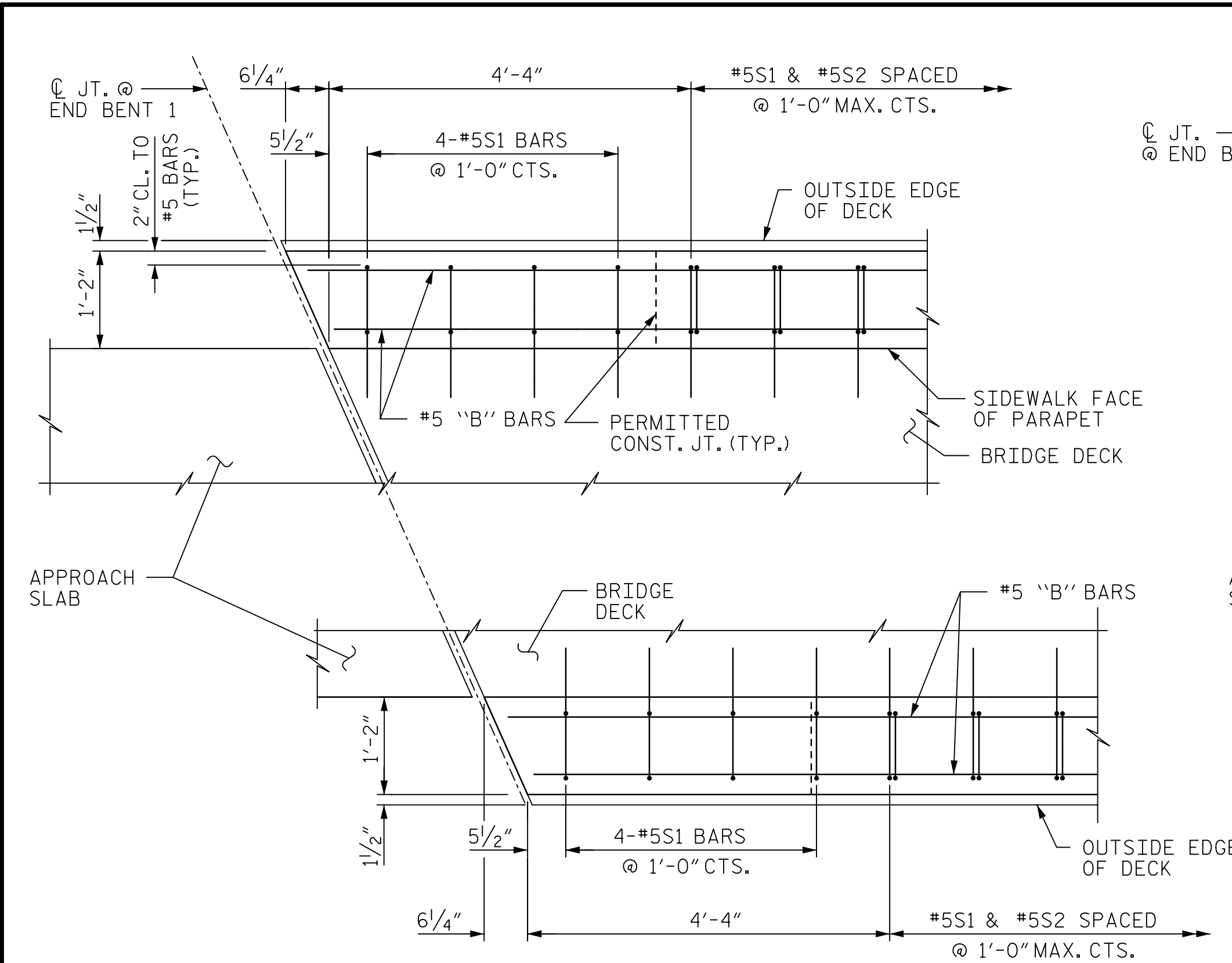
REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-20
2			4			TOTAL SHEETS 52

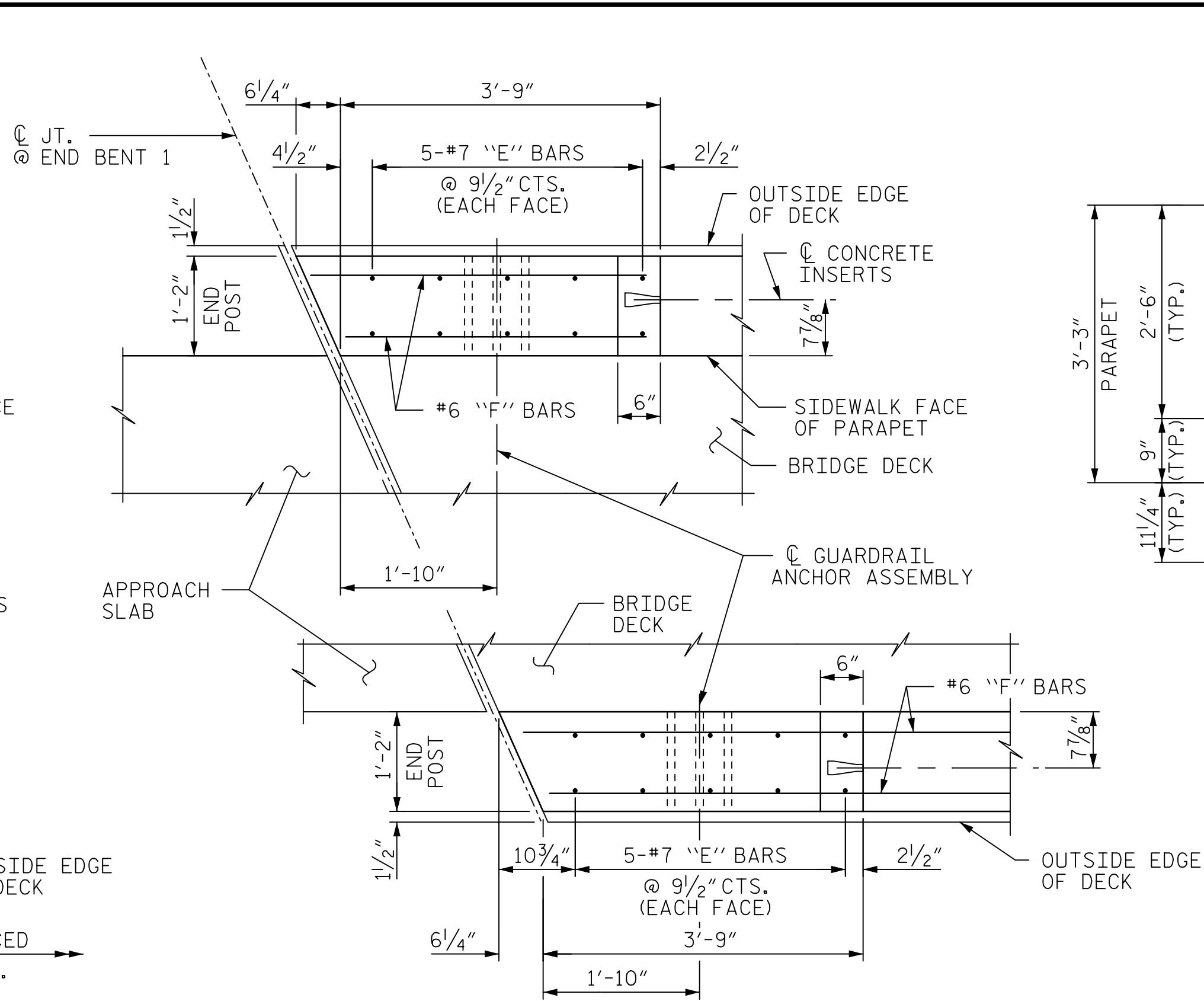
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SIGNATURES COMPLETED

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TIME: 12:00:08 PM

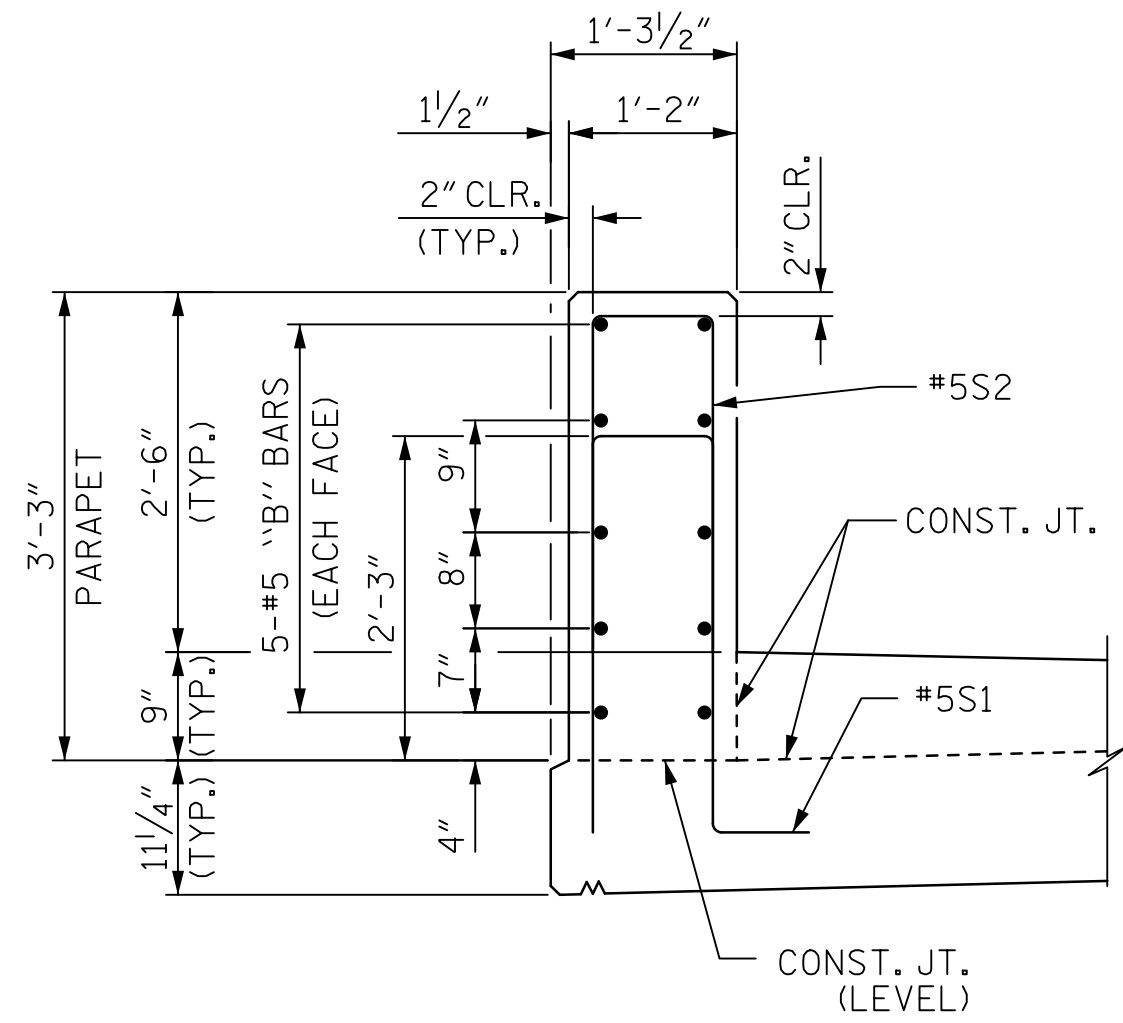
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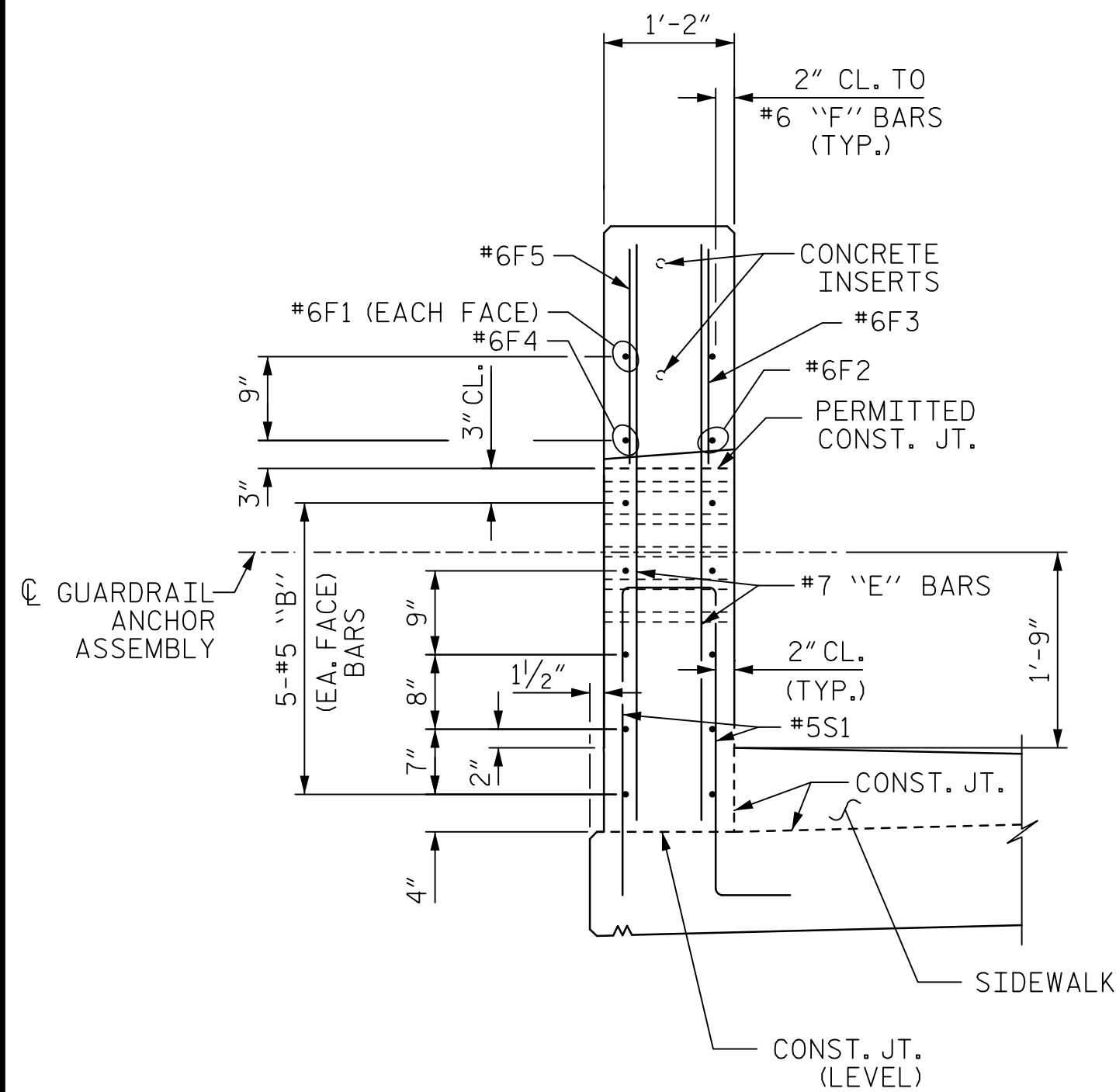
PLAN OF PARAPET
(END BENT 1 SHOWN)



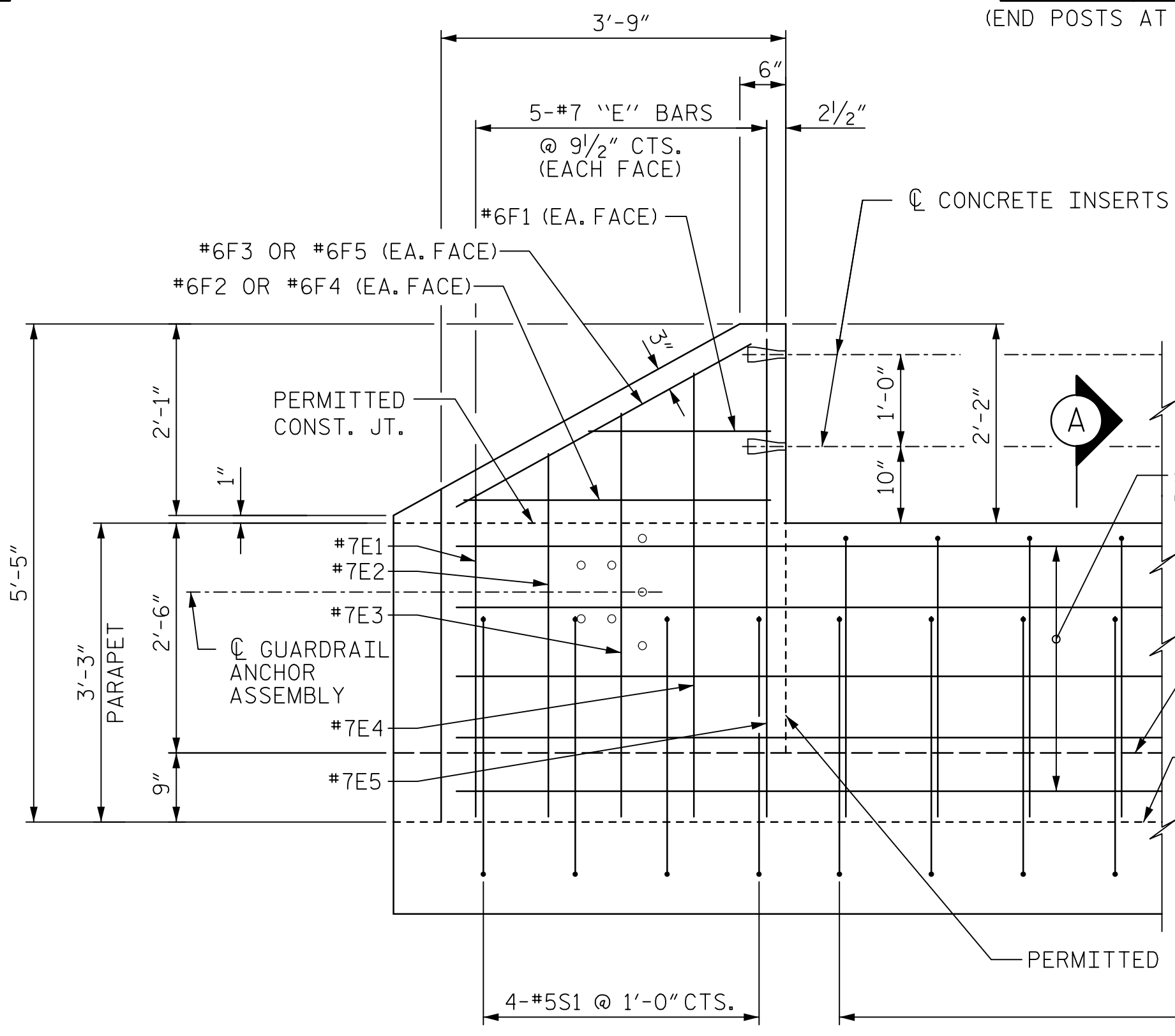
PLAN OF END POST
(END POSTS AT END BENT 1 ONLY)



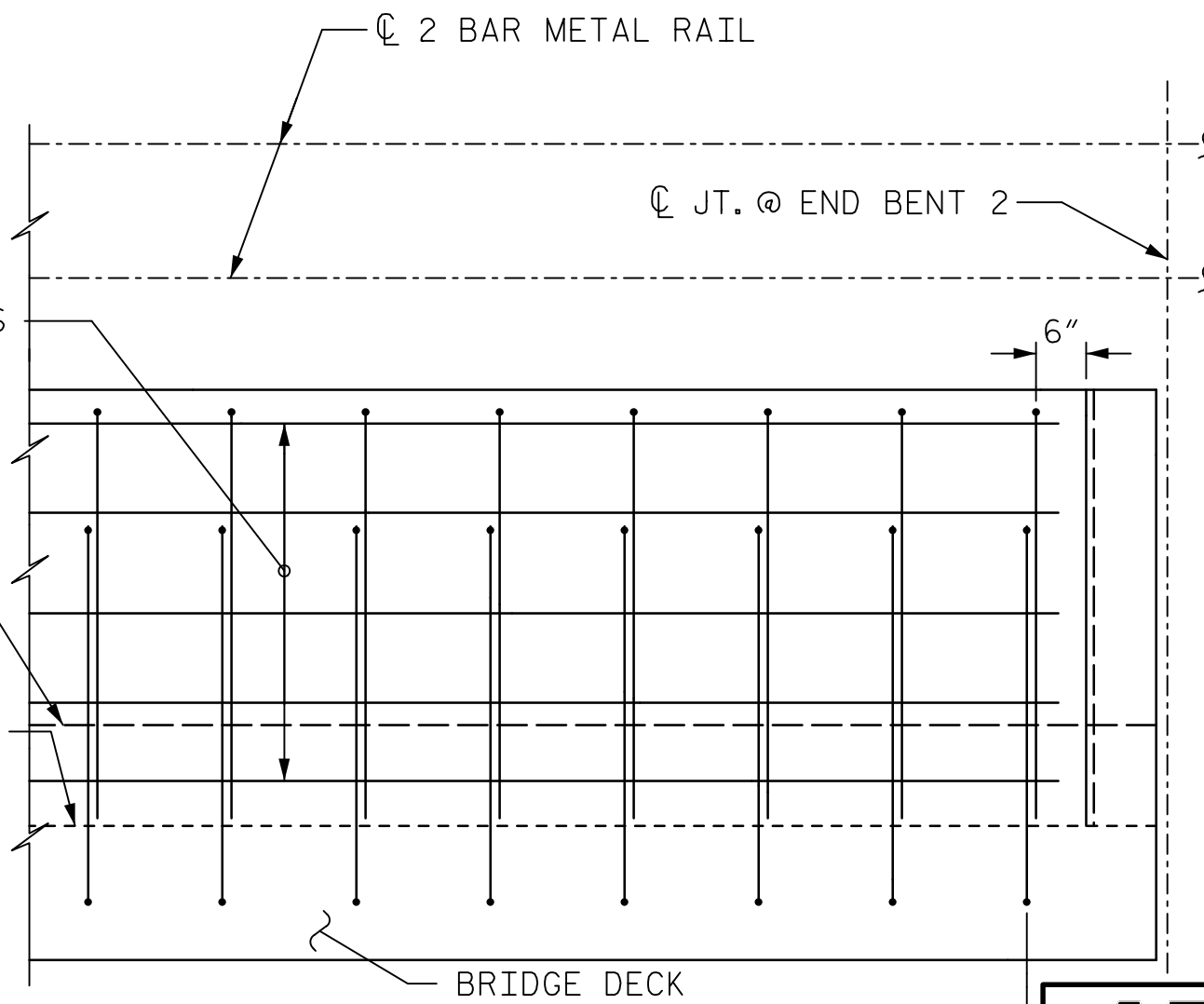
SECTION "A-A"



END VIEW @ END BENT 1
(LEFT SIDE SHOWN, RIGHT SIDE SIMILAR)



ELEVATION @ END BENT 1
(LEFT SIDE SHOWN, RIGHT SIMILAR)



ELEVATION @ END BENT 2
NO END POST

BILL OF MATERIAL					
FOR CONCRETE PARAPET AND TWO END POSTS					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B1	40	#5	STR.	9'-3"	386
*B2	100	#5	STR.	28'-11"	3,016
*B3	40	#5	STR.	14'-6"	605
*E1	4	#7	STR.	3'-3"	27
*E2	4	#7	STR.	3'-9"	31
*E3	4	#7	STR.	4'-3"	35
*E4	4	#7	STR.	4'-9"	39
*E5	4	#7	STR.	5'-1"	41
*F1	4	#6	STR.	1'-9"	11
*F2	2	#6	STR.	2'-11"	9
*F3	2	#6	STR.	3'-3"	10
*F4	2	#6	STR.	3'-5"	10
*F5	2	#6	STR.	3'-9"	11
*S1	376	#5	1	6'-11"	2,712
*S2	368	#5	2	7'-0"	2,687
*EPOXY COATED REINFORCING STEEL				LBS.	9,630
CLASS AA CONCRETE				C.Y.	53.3
1'-2" x 3'-3" CONCRETE PARAPET				L.F.	* 376.71
BAR TYPES					
ALL BAR DIMENSIONS ARE OUT TO OUT.					

NOTE:
* LENGTH SHOWN DOES NOT INCLUDE LENGTH OF PARAPET ON THE APPROACH SLAB AT END BENT 2. SEE APPROACH SLAB SHEETS.

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

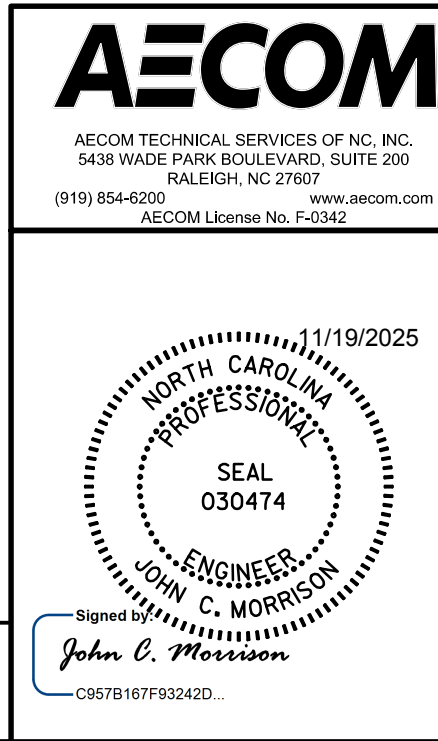
SHEET 2 OF 2

DRAWN BY : M.L. CATER
CHECKED BY : J.C. MORRISON
DESIGNED BY : M.L. CATER
DESIGN ENGINEER OF RECORD: J.C. MORRISON
DATE : 10/2025
DATE : 10/2025
DATE : 10/2025
DATE : 10/2025

PARAPET AND END POST FOR TWO BAR RAIL

(END POSTS AT END BENT 1 ONLY)

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE					
CONCRETE PARAPET AND END POST DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-21					TOTAL SHEETS 52



Technical drawing of a rectangular plate with the following specifications:

- Overall length: 11"
- Overall width: 4"
- Four holes, each with a diameter of $1\frac{1}{2}"$ ($\varnothing 1\frac{1}{2}"$).
- Four slots, each with a width of $1\frac{3}{16}"$ and a depth of 1" ($\varnothing 1\frac{3}{16}" \times 1"$).
- Distance between the centers of the two holes: 3 $\frac{1}{2}"$.
- Distance from the left edge to the center of the first hole: $1\frac{3}{4}"$.

ANGLE TO BE MADE FROM
 $\frac{1}{2}'' \times 4'' \times 11''$ P AND
 $\frac{1}{2}'' \times 4'' \times 4''$ P

4''

2'' 2''

5

4 1/2''

2 1/2''

7/8'' 7/8''

Ø 1 1/2" Ø HOLE

Ø SLOTS

Technical drawing of a rail section showing the attachment bracket, rail post, and various dimensions. The drawing includes the following labels and dimensions:

- CL RAIL POST
- ATTACHMENT BRACKET
- RAIL SECTION
- STANDARD BAR CLAMP
- CL $\frac{1}{2}$ " $\varnothing$ [13 THREAD] X $1\frac{1}{4}$ " STAINLESS STEEL HEX HEAD CAP SCREWS & $\frac{1}{16}$ " O.D., $1\frac{1}{32}$ " I.D., $\frac{1}{16}$ " THICK WASHER
- $1'-4"$
- $\frac{3}{4}" \varnothing$ X $1\frac{5}{8}"$ BOLT AND $2"$ O.D. WASHER
- CL $\frac{3}{4}"$ STRUCTURAL CONCRETE INSERT
- $7\frac{7}{8}"$
- ROADWAY FACE
- $1\frac{1}{2}"$

Technical drawing of a mechanical part with the following dimensions and features:

- Overall length: $3 \frac{3}{4}''$
- Overall width: $\frac{1}{2}''$
- Top edge features:
 - $\varnothing \frac{13}{16}'' \times 1''$ SLOTS
 - $\varnothing \frac{1}{2}''$ HOLE
- Bottom edge features:
 - $\frac{1}{2}''$ (dimension from bottom edge to the center of the hole)

RAIL SECTION

STANDARD CLAMP BAR

1/2" R

DETAILS FOR ATTACHING METAL RAIL TO END POST

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 $\frac{3}{4}" \times 1\frac{5}{8}"$ BOLT WITH WASHER SHALL BE REPLACED WITH A $\frac{3}{4}" \times 6\frac{1}{2}"$ BOLT AND 2" O.D. WASHER. ALL SPECIFICATIONS THAT APPLY TO THE $\frac{3}{4}" \times 1\frac{5}{8}"$ BOLT SHALL APPLY TO THE $\frac{3}{4}" \times 6\frac{1}{2}"$ BOLT. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

SHEET 1 OF 3

ASSEMBLED BY : M.L. CATER	DATE : 10/2025
CHECKED BY : J.C. MORRISON	DATE : 10/2025
DESIGN ENGINEER OF RECORD : J.C. MORRISON	DATE : 10/2025
DRAWN BY : FCJ 1/88	REV. 10/1/11 MAA/GM
CHECKED BY : CRK 3/89	REV. 12/17 MAA/THC
	REV. 10/23 RNR/SNM



AECOM TECHNICAL SERVICES OF CO. INC.
5438 WADE PARK BOULEVARD, SUITE 200
RALEIGH, NC 27607
(919) 854-6200 www.aecom.com
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STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

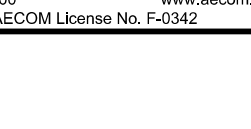
SUPERSTRUCTURE

RAIL POST SPACINGS

AND

END OF RAIL DETAILS

FOR TWO BAR METAL RAILS



11/19/2025

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22 TOTAL SHEETS 52
1			3			
2			4			

Signed _____

John C. Morrison

C057B167F93242D.



UNLESS OTHERWISE REQUIRED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR HAS THE OPTION TO USE AN ALTERNATE TO THE 2 BAR METAL RAIL. THE ALTERNATE RAIL SHALL MEET THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND MUST BE LISTED ON THE DEPARTMENT'S APPROVED PRODUCTS LIST (APL) UNDER "2 BAR METAL RAIL ALTERNATE". ADJUSTMENTS TO THE CONCRETE PARAPET WILL NOT BE ALLOWED.

MATERIAL FOR POSTS, BASES AND RAILS, EXPANSION BARS AND CLAMP BARS SHALL BE ASTM B-221 ALLOY 6061-T6.

THE BASE OF RAIL POSTS, OR ANY OTHER ALUMINUM SURFACE IN CONTACT WITH CONCRETE SHALL BE THOROUGHLY COATED WITH AN ALUMINUM IMPREGNATED CAULKING COMPOUND OF APPROVED QUALITY.

MATERIAL FOR SHIMS TO BE ASTM B209 ALLOY 6061-T6.

MATERIAL AND GALVANIZING ARE TO CONFORM TO THE FOLLOWING SPECIFICATIONS:

RIVETS: RIVETS SHALL MEET THE REQUIREMENTS OF ASTM A502 FOR GRADE 1 RIVETS.

SHIMS: SHIMS SHALL MEET THE REQUIREMENTS OF ASTM A570 FOR GRADE 33 OR A611 FOR GRADE C AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.

RAIL CAPS: RAIL CAPS SHALL MEET THE REQUIREMENTS OF ASTM A570 FOR GRADE 33 OR A611 FOR GRADE C AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.

RAILING SHALL BE CONTINUOUS FROM FIRST END POST TO END OF BRIDGE. EACH JOINT IN RAIL LENGTH SHALL BE SPLICED AS DETAILED. PANEL LENGTHS OF RAIL SHALL BE ATTACHED TO A MINIMUM OF THREE POSTS.

FOR END OF RAIL TO CLEAR FACE OF CONCRETE END POST DIMENSION, SEE STANDARD NO. BMR2.

CAP SCREWS SHALL BE ASTM F593 ALLOY 305 STAINLESS STEEL. WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

CERTIFIED MILL REPORTS ARE REQUIRED FOR RAILS AND POSTS. SHOP INSPECTION IS NOT REQUIRED.

METAL RAIL POSTS SHALL BE SET NORMAL TO CURB GRADE.

METHOD OF MEASUREMENT FOR METAL RAILS: FOR LENGTH OF METAL RAILS TO BE PAID FOR, SEE THE STANDARD SPECIFICATIONS.

CURVED RAIL USAGE: WHERE RAILS ARE TO BE USED ON BRIDGES ON HORIZONTAL AND/OR VERTICAL CURVATURE THE CONTRACTOR MAY, AT HIS OPTION, HAVE THE REQUIRED CURVATURE IN THE RAIL FORMED IN THE SHOP OR IN THE FIELD. IN EITHER EVENT, THE RAIL SHALL CONFORM WITHOUT BUCKLING OR KINKING TO THE REQUIRED CURVATURE IN A UNIFORM MANNER ACCEPTABLE TO THE ENGINEER.

TO INSURE FUTURE IDENTIFICATION OF THE FABRICATOR A PERMANENT IDENTIFYING MARK SHALL BE PLACED ON EACH POST. THE METHOD OF MARKING AND LOCATION SHALL BE SUCH THAT IT DOES NOT DETRACT FROM THE APPEARANCE OF THE POST, BUT REMAINS VISIBLE AFTER RAIL PLACEMENT.

SHIMS SHALL BE USED AS NECESSARY FOR POST ALIGNMENT.

ALLOY 6351-T5 MAY BE SUBSTITUTED FOR ALLOY 6061-T6 WHERE APPLICABLE.

MINOR VARIATIONS IN DETAILS OF METAL RAIL WILL BE CONSIDERED. DETAILS OF SUCH VARIATIONS, IF DESIRED, SHALL BE SUBMITTED FOR APPROVAL.

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. A CONTRACTION JOINT SHALL
 BE LOCATED AT EACH THIRD POINT BETWEEN PARAPET EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS
 REQUIRED AT MIDPOINT OF PARAPET SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS
 ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

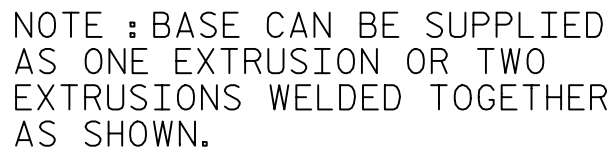
PAY LENGTH = 418.69 LIN. FT. **

✱ PAY LENGTH IS FOR 2 BAR METAL RAIL ON BRIDGE AND APPROACH SLAB AT END BENT 2 MEASURED ALONG C RAIL. FOR PAY LENGTH OF 2 BAR METAL RAIL FOR CONCRETE PARAPET WITH MOMENT SLAB, SEE "CONCRETE PARAPET WITH MOMENT SLAB" SHEETS.

PROJECT NO. B-4838
WAYNE COUNTY
 STATION: 30+73.46 -L-

SHEET 2 OF 3

DATE : 10/2025
DATE : 10/2025
DATE : 10/2025



NOTE : BASE CAN BE SUPPLIED
AS ONE EXTRUSION OR TWO
EXTRUSIONS WELDED TOGETHER
AS SHOWN.

PERMITTED WELD

Technical drawing of a bolt head and shank. The head is semi-circular with a diameter of .750 inches. The shank has a diameter of .745 inches. The total height from the base of the shank to the top of the head is 1.375 inches, with a tolerance of $\pm .005$ inches.

DOCUMENT NOT CONSIDERED
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RALEIGH

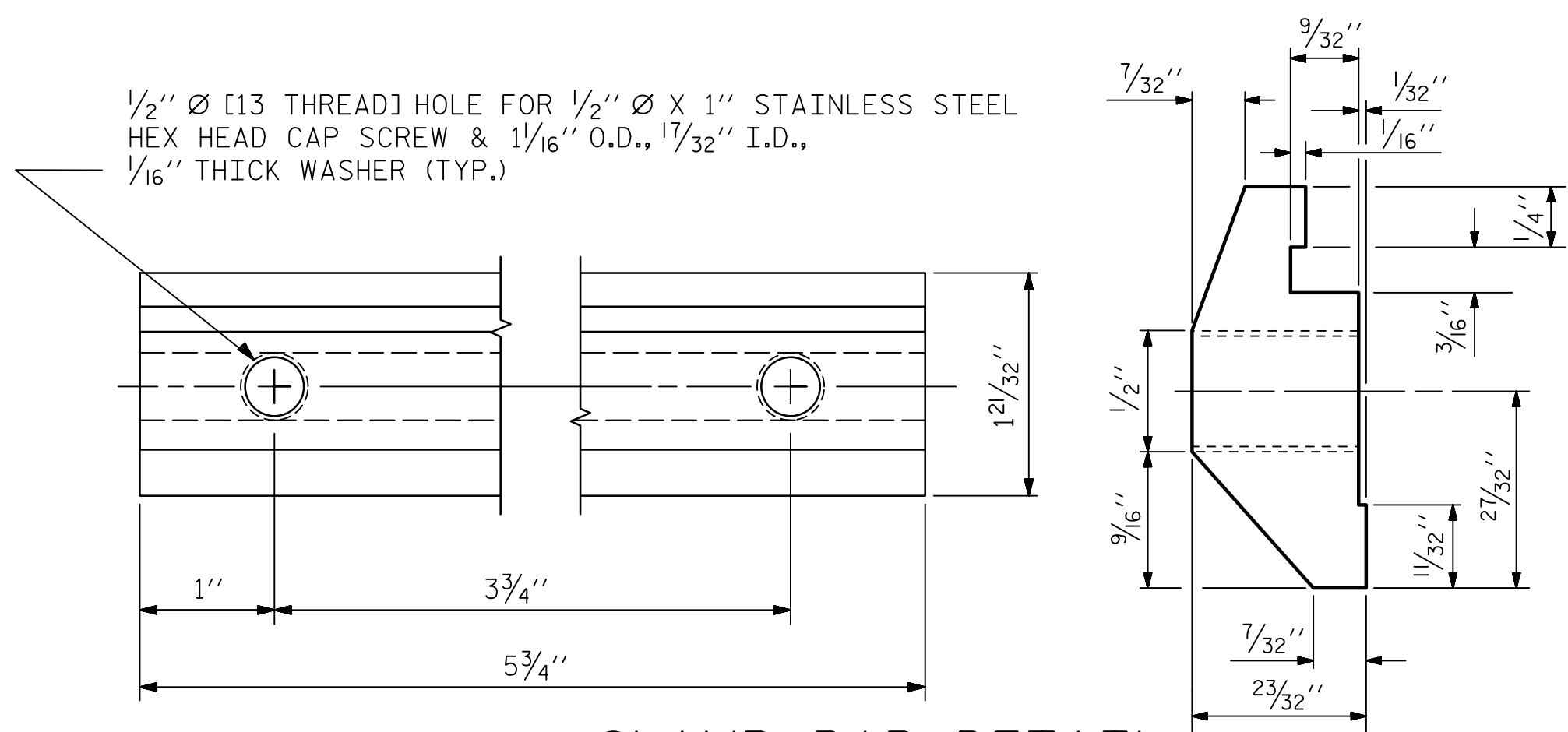
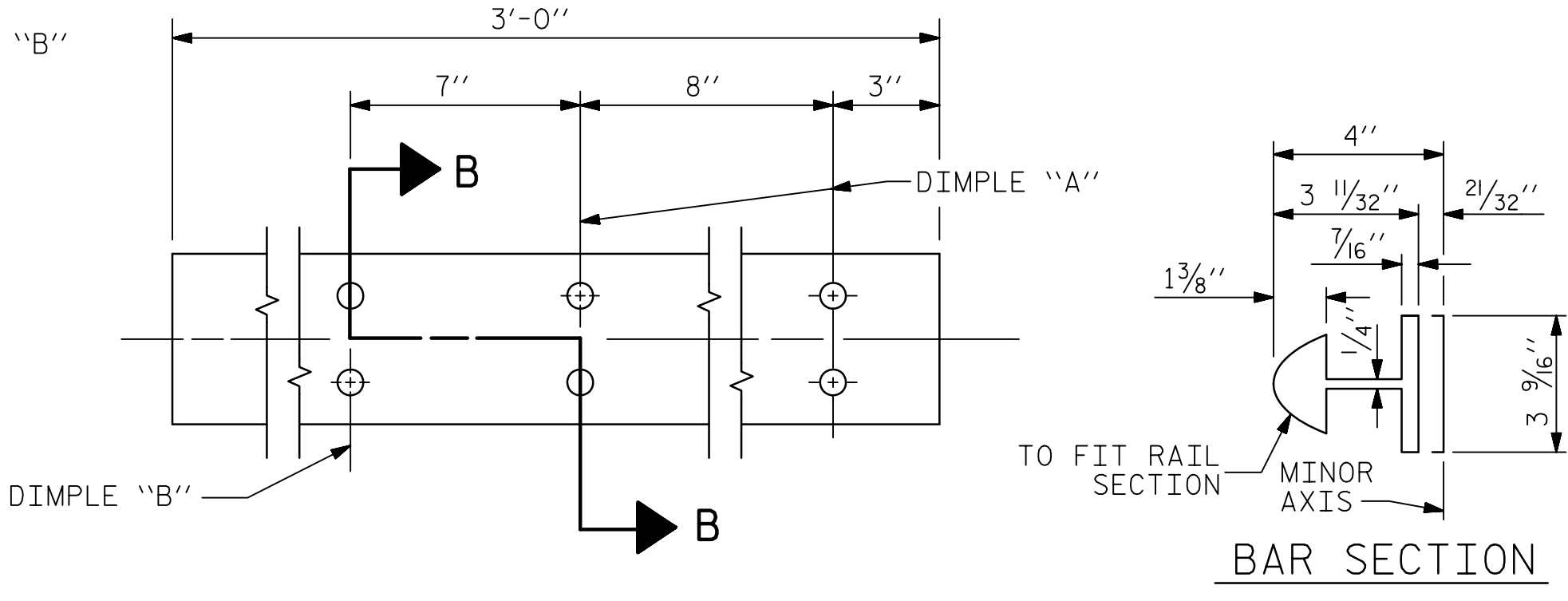
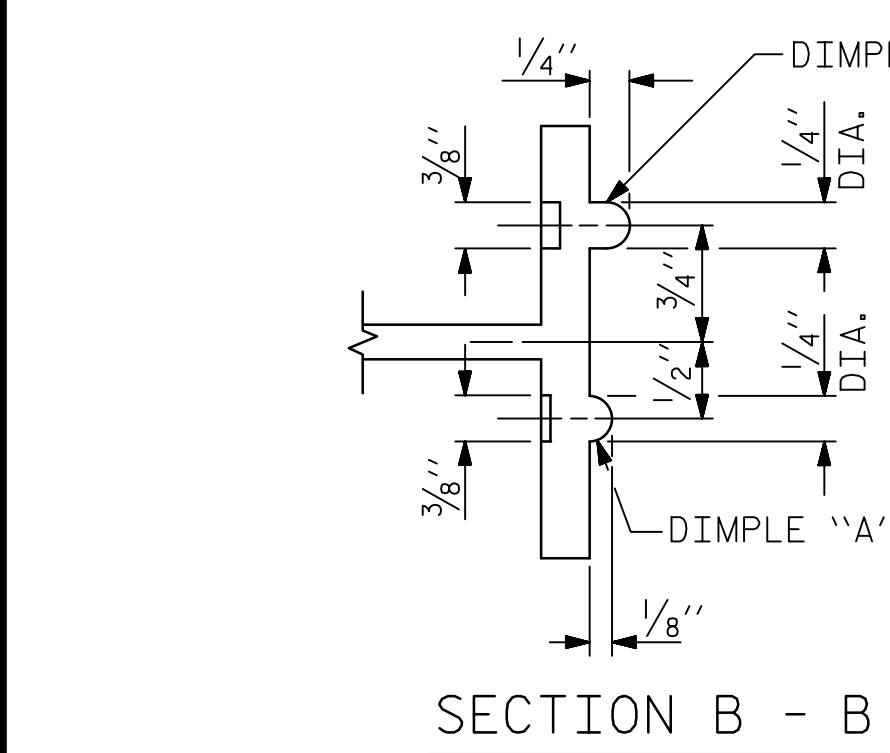
SUPERSTRUCTURE

2 BAR METAL RAIL

REVISIONS						SHEET NO. S-23
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

DATE: 11/14/2025
TIME: 4:26:59 PM

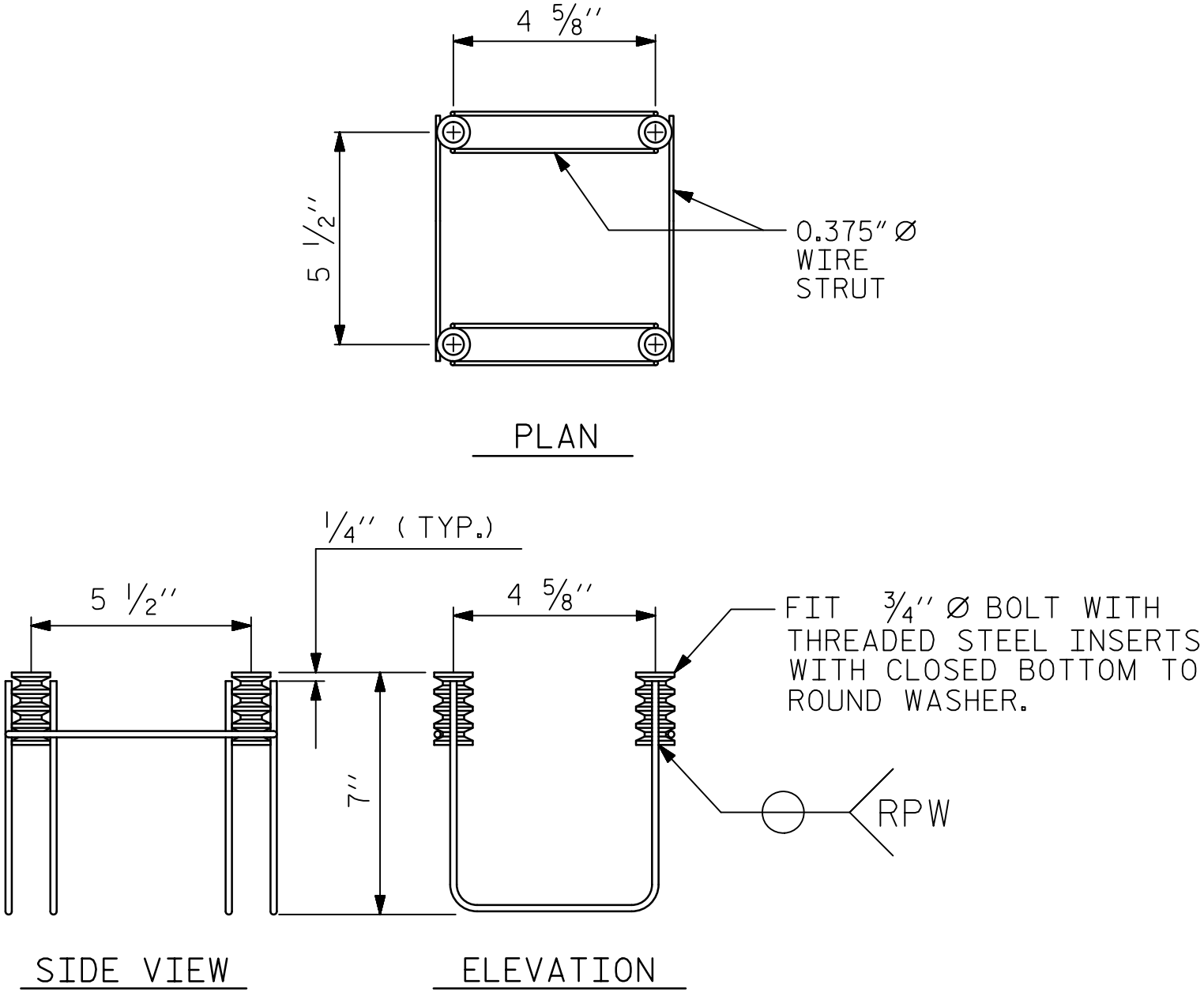
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CLAMP BAR DETAIL

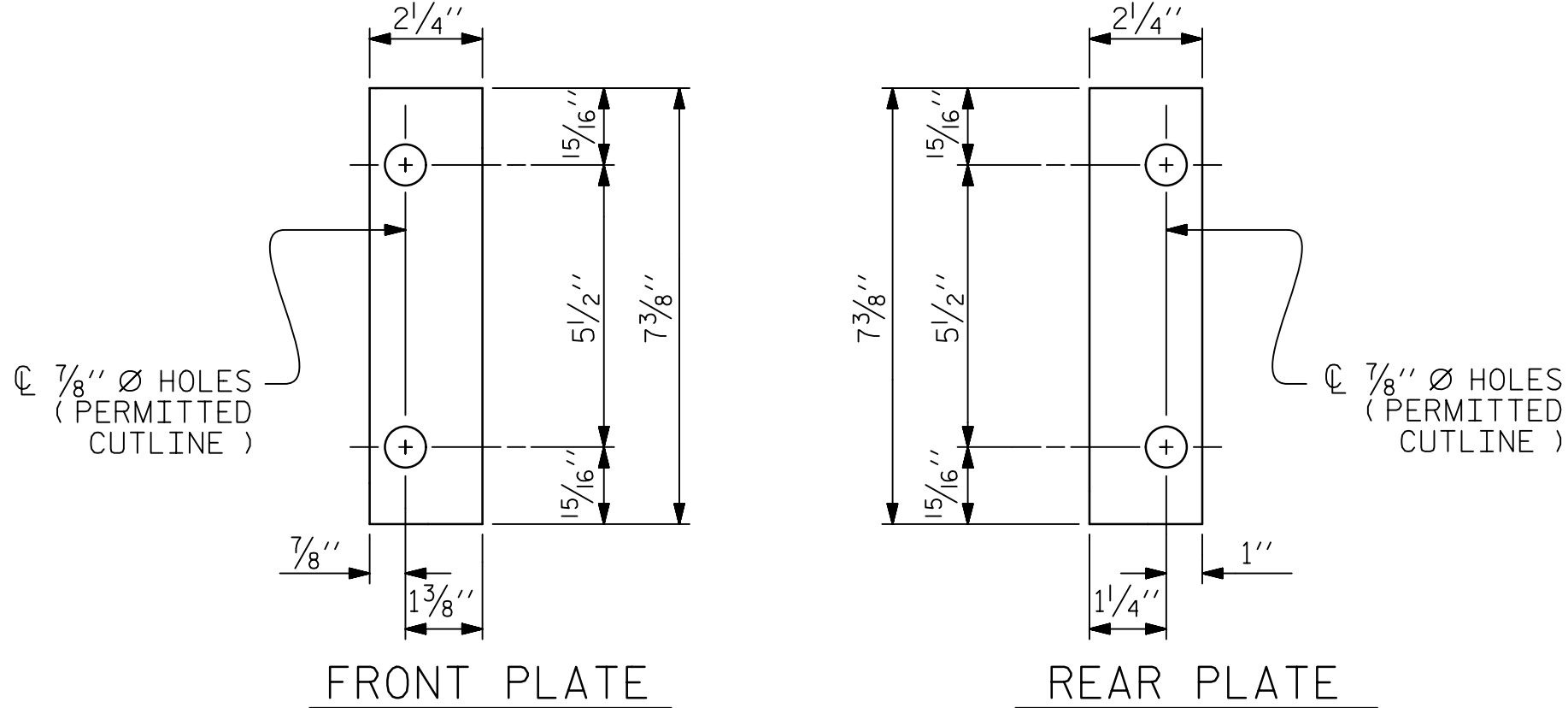
(2 REQUIRED PER POST ON BRIDGE)

ASSEMBLED BY : M.L. CATER	DATE : 10/2025
CHECKED BY : J.C. MORRISON	DATE : 10/2025
DESIGN ENGINEER	
OF RECORD : J.C. MORRISON	DATE : 10/2025
DRAWN BY : EEM 6/94	REV. 6/13 MAA/GM
CHECKED BY : RGW 6/94	REV. 12/17 MAA/THC
	REV. 10/23 BNB/SNM



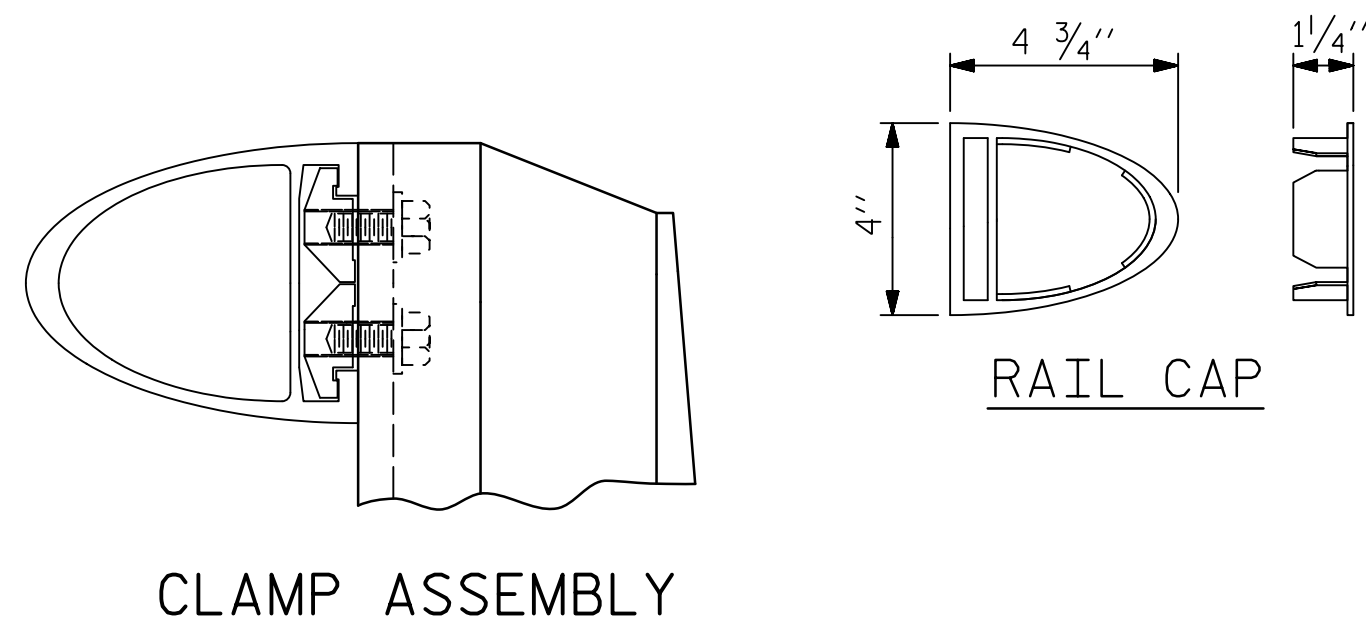
4-BOLT METAL RAIL ANCHOR ASSEMBLY

(74 ASSEMBLIES REQUIRED ON BRIDGE AND APPROACH SLAB ON BRIDGE AND APPROACH SLAB)

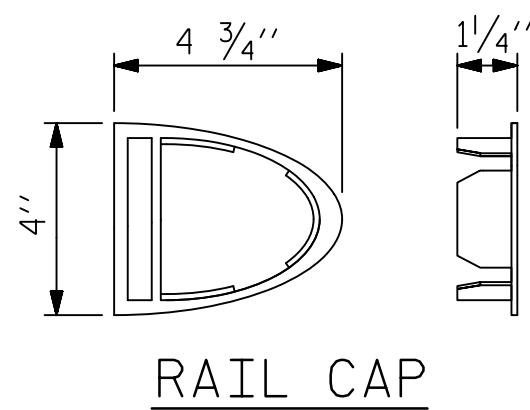


SHIM DETAILS

NOTE: SHIMS MAY BE CUT ALONG PERMITTED CUTLINE OR SLOTTED TO EDGE OF PLATE TO FACILITATE PLACEMENT.



CLAMP ASSEMBLY



RAIL CAP

NOTES

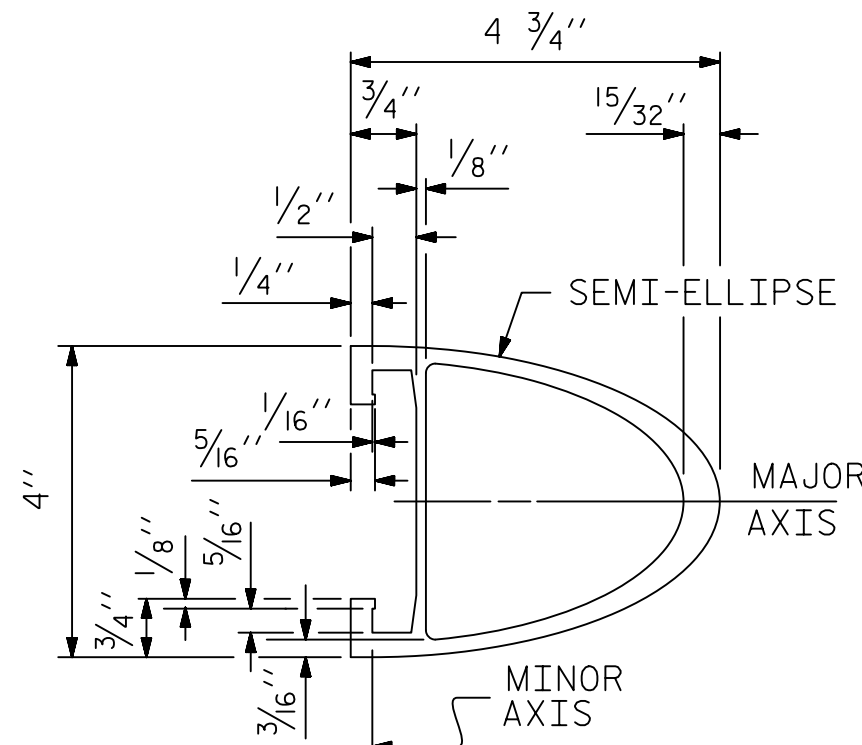
STRUCTURAL CONCRETE ANCHOR ASSEMBLY

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

- FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2" FOR 3/4" FERRULES.
- 4 - 3/4" Ø X 2 1/2" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø X 2 1/2" GALVANIZED BOLTS 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.
- WIRE STRUT SHOWN IN THE CONCRETE ANCHOR ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 7/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.
- THE METAL RAIL ANCHOR ASSEMBLIES TO BE HOT DIPPED GALVANIZED TO CONFORM TO REQUIREMENTS OF AASHTO M111.
- THE COST OF THE METAL RAIL ANCHOR ASSEMBLY WITH BOLTS AND WASHERS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF METAL RAIL.
- BOLTS TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM A FINGER-TIGHT POSITION.

THE CONTRACTOR MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF THE METAL RAIL ANCHOR ASSEMBLY. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 10 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE THE STANDARD SPECIFICATIONS.

WHEN ADHESIVELY ANCHORED ANCHOR BOLTS ARE USED, BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F593 ALLOY 304 STAINLESS STEEL WITH MINIMUM 75,000 PSI ULTIMATE STRENGTH. NUTS SHALL MEET THE REQUIREMENTS OF ASTM F594 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.



RAIL SECTION

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 3 OF 3

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11/19/2025
NORTH CAROLINA
PROFESSIONAL
SEAL
030474
ENGINEER
JOHN C. MORRISON
Signed by
John C. Morrison
C0578167F93242D

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

2 BAR METAL RAIL

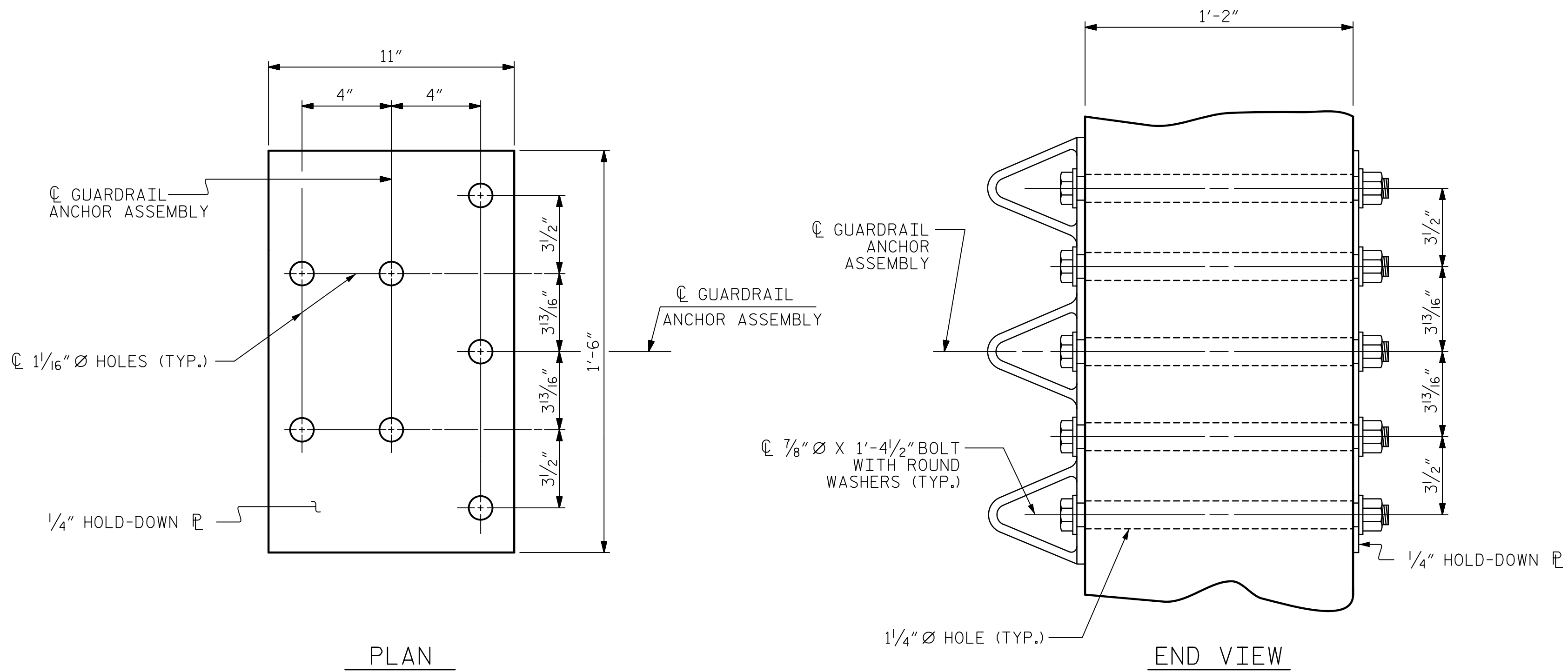
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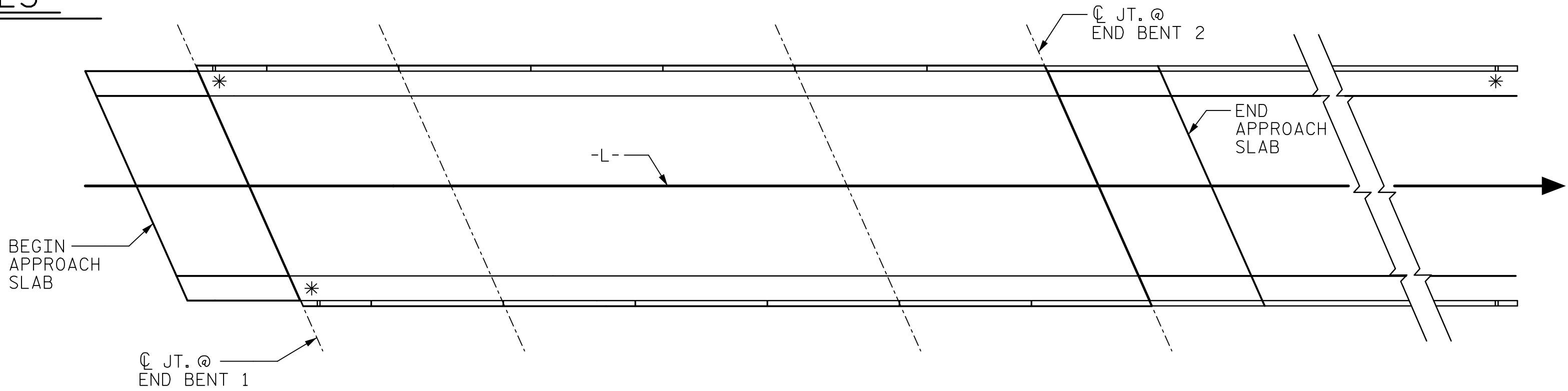
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PLAN

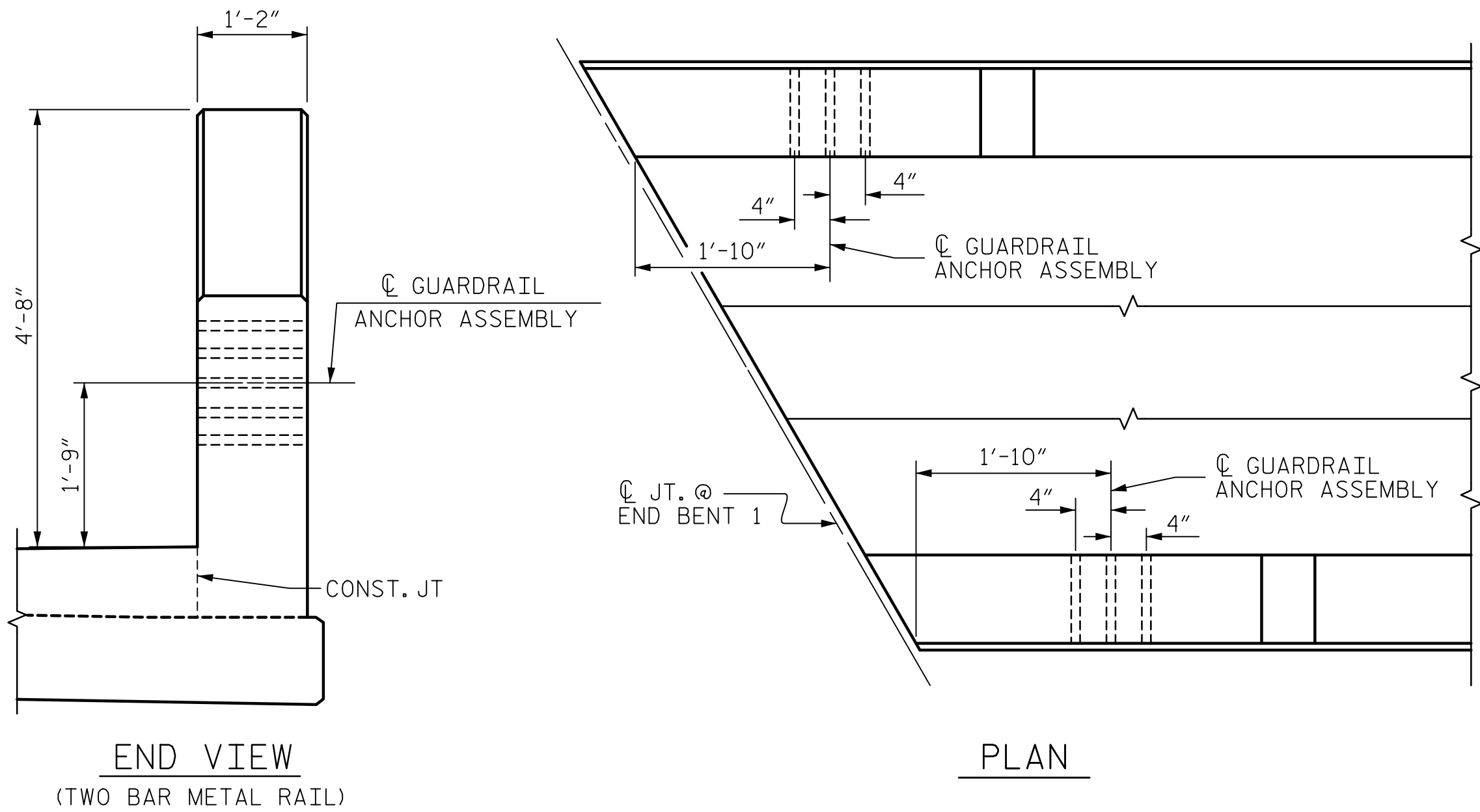
END VIEW

GUARDRAIL ANCHOR ASSEMBLY DETAILS



SKETCH SHOWING POINTS OF ATTACHMENT

* LOCATION OF GUARDRAIL ATTACHMENT



END VIEW
(TWO BAR METAL RAIL)

PLAN

LOCATION OF GUARDRAIL ANCHOR AT END POST

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.

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

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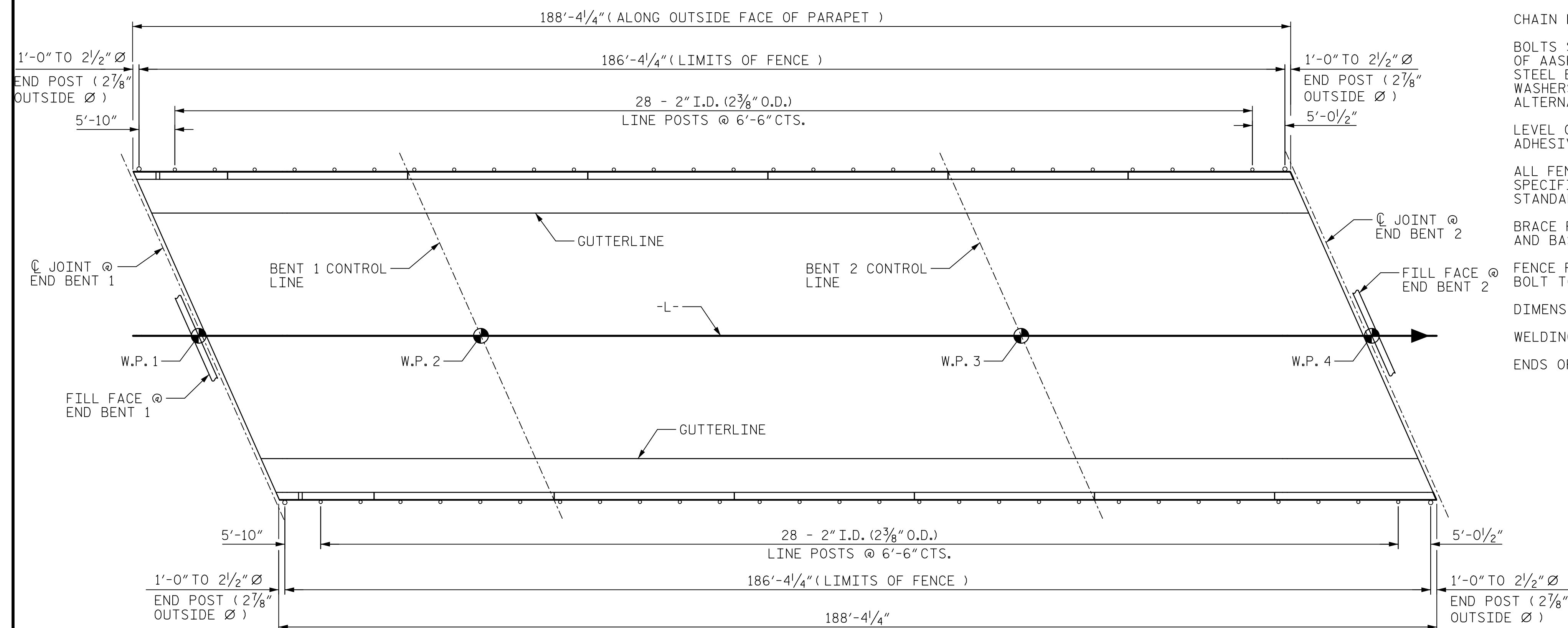
11/19/2025
NORTH CAROLINA
PROFESSIONAL
SEAL
030474
ENGINEER
JOHN C. MORRISON
Signed by
John C. Morrison
C0578167F93242D

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
GUARDRAIL ANCHORAGE
DETAILS FOR
METAL RAILS

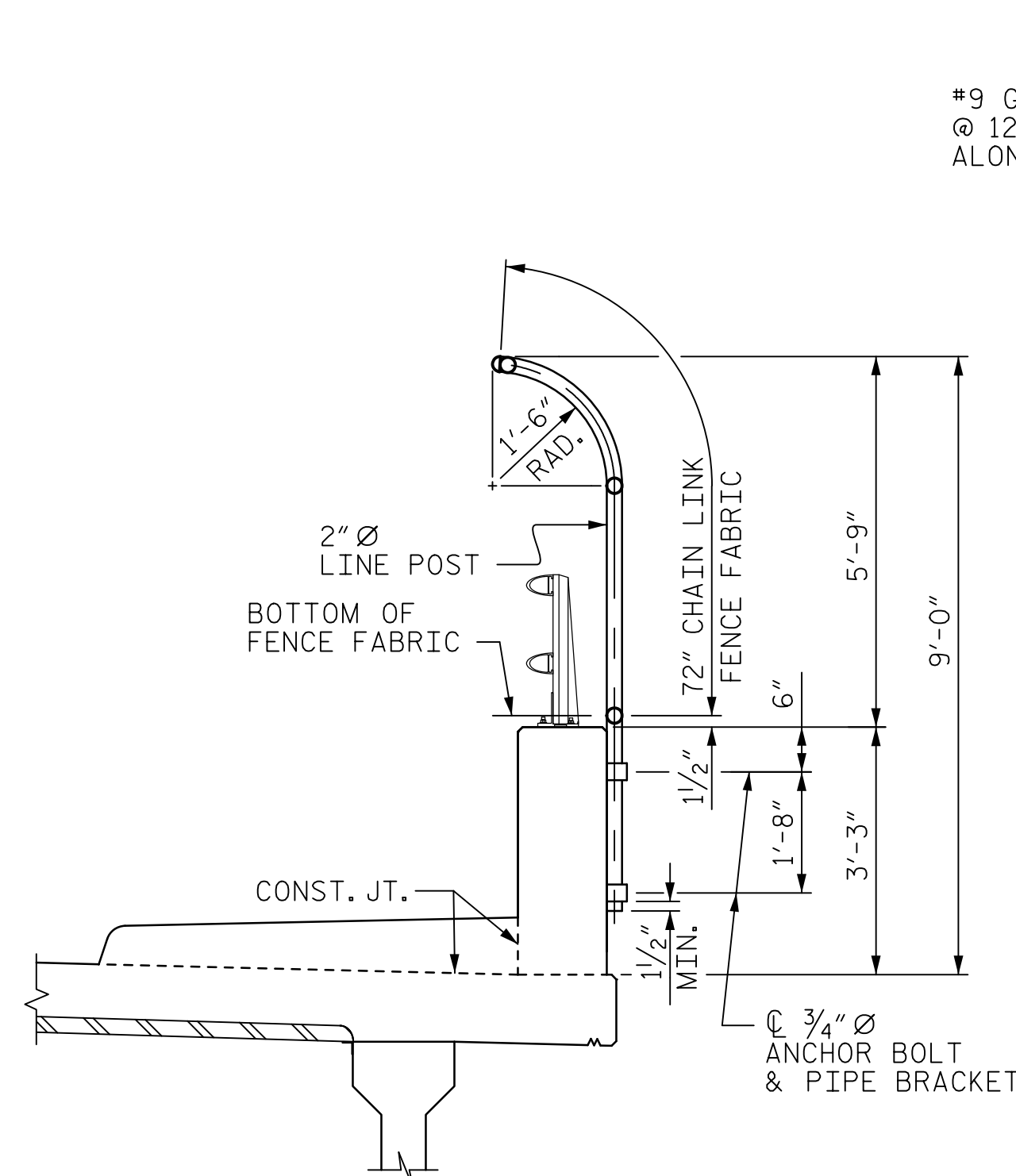
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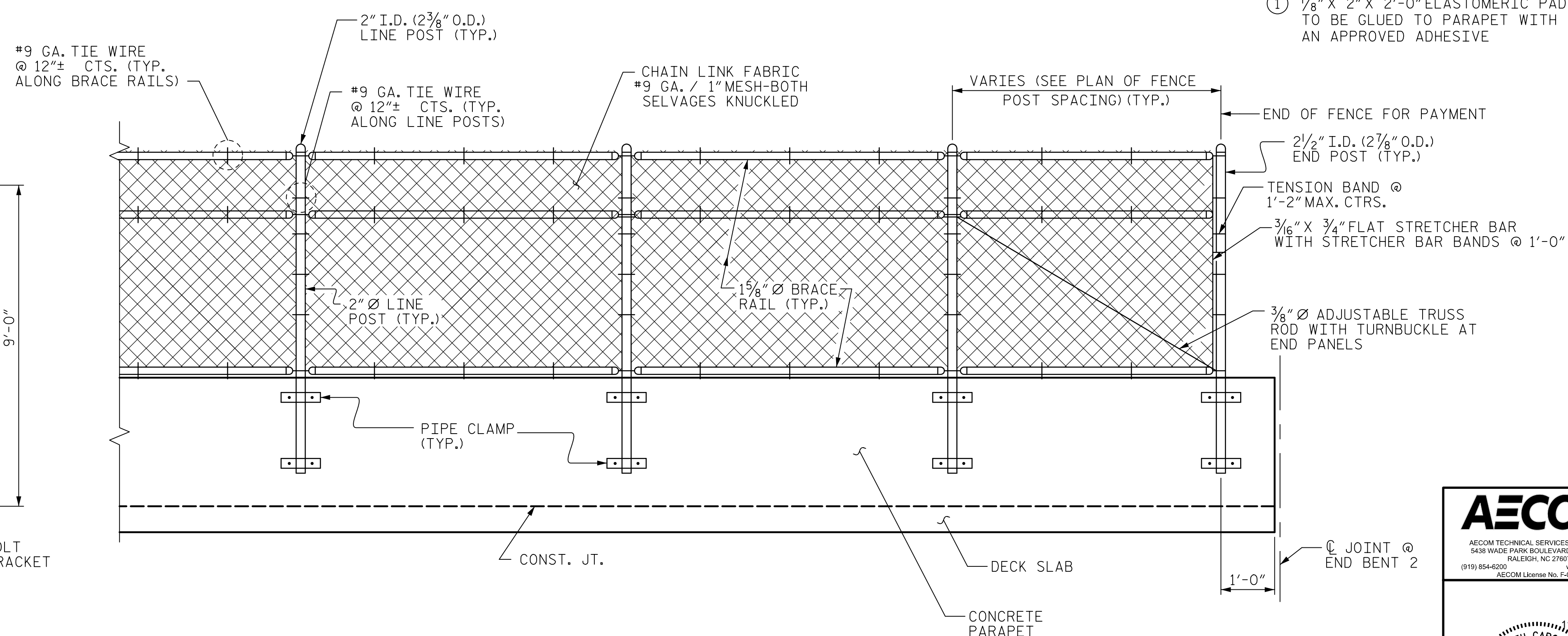


PLAN OF FENCE POST SPACING

(DIMENSIONS MEASURED ALONG OUTSIDE FACE OF PARAPET
 @ JT. @ END BENT 1 TO @ JT. @ END BENT 2)



SECTION THRU FENCE



PARTIAL ELEVATION

(2 BAR METAL RAIL NOT SHOWN)
72" CHAIN LINK FENCE PAY LENGTH = 372.7 LIN. FT.

NOTES:

FOR BRIDGE MOUNTED 72" CHAIN LINK FENCE, SEE SPECIAL PROVISIONS.

CHAIN LINK FABRIC SHALL BE PLACED ON INSIDE OF POSTS AND RAILS.

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 3/4" Ø GALVANIZED BOLTS, NUTS, AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATIVE SHALL BE APPROVED BY THE ENGINEER.)

LEVEL ONE FIELD TESTING IS REQUIRED AND THE YIELD LOAD OF THE ANCHOR BOLTS IS 10.0 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS, SEE THE STANDARD SPECIFICATIONS.

ALL FENCE MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION 866 AND 1050 OF THE STANDARD SPECIFICATIONS, GALVANIZE ALL STEEL PARTS AND HARDWARE IN ACCORDANCE WITH ARTICLE 1076 OF THE STANDARD SPECIFICATIONS.

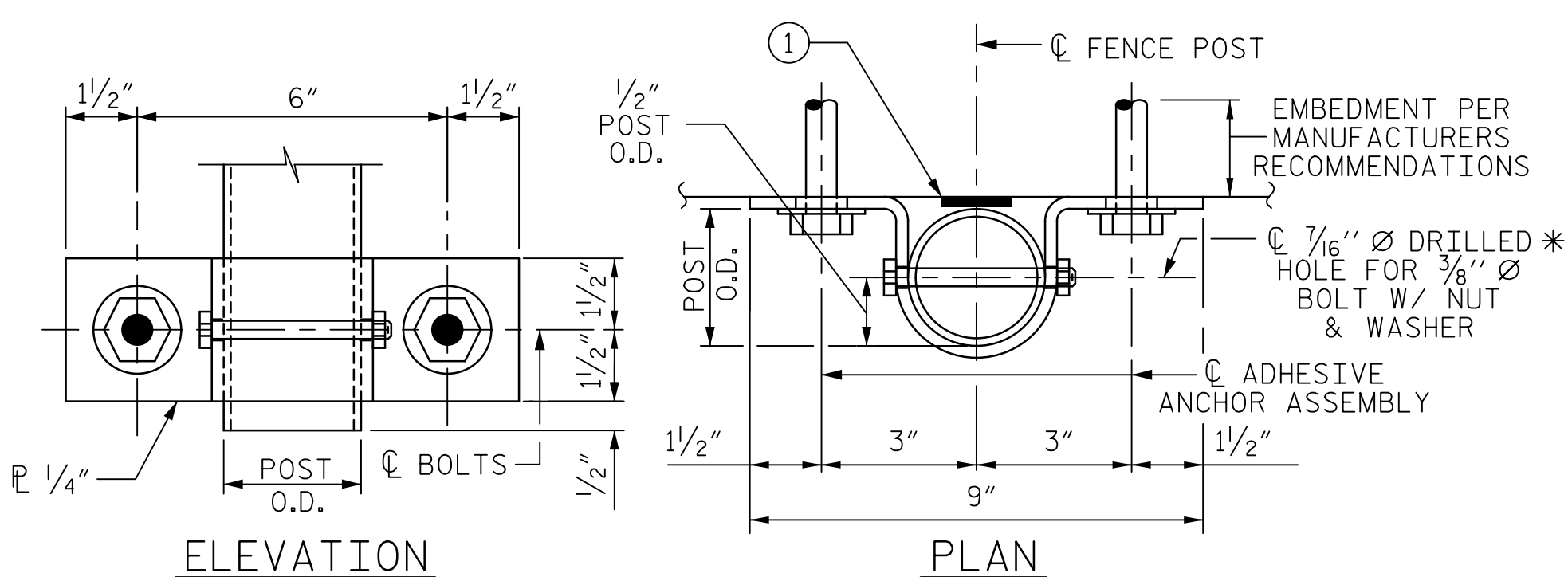
BRACE RAIL SHALL BE USED. ADJUSTABLE TRUSS ROD WITH TURNBUCKLE SHALL BE INSTALLED BETWEEN LINE POST AND BASE OF END POST.

FENCE POST LOCATIONS SHALL BE SHIFTED, AS NECESSARY, TO MAINTAIN 12" MINIMUM DISTANCE FROM ANCHOR BOLT TO JOINTS IN PARAPET.

DIMENSIONS TAKEN ALONG OUTSIDE FACE OF PARAPET.

WELDING SHALL BE DONE IN ACCORDANCE WITH ARTICLE 1072-20 OF THE STANDARD SPECIFICATIONS.

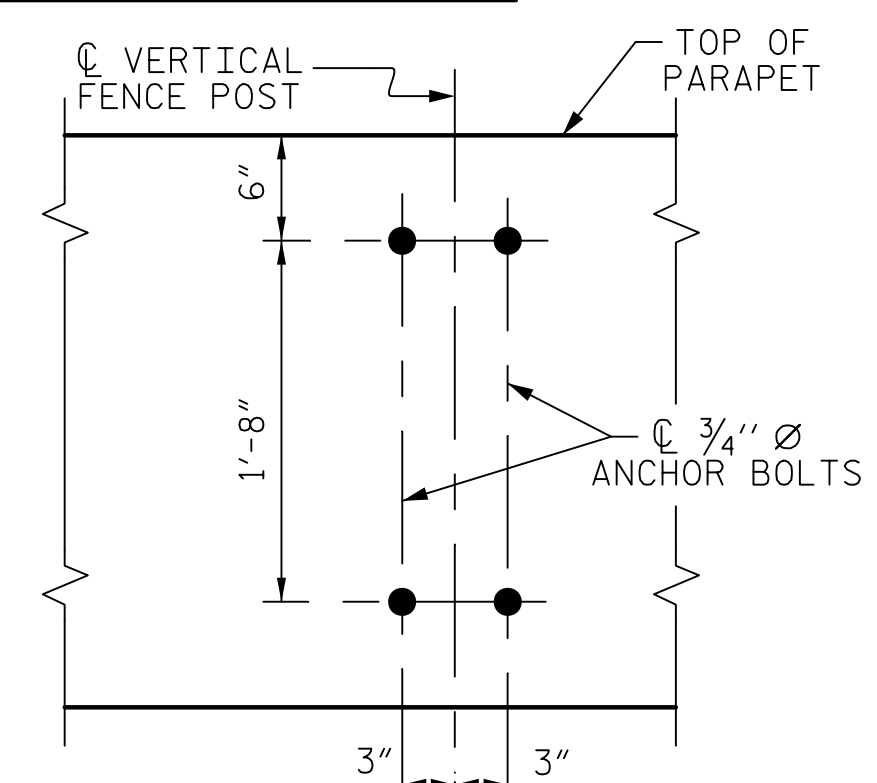
ENDS OF WIRE TIES SHALL BE TURNED TO OUTSIDE OF FENCE TO PREVENT INJURY TO PEDESTRIANS.



PIPE CLAMP DETAILS

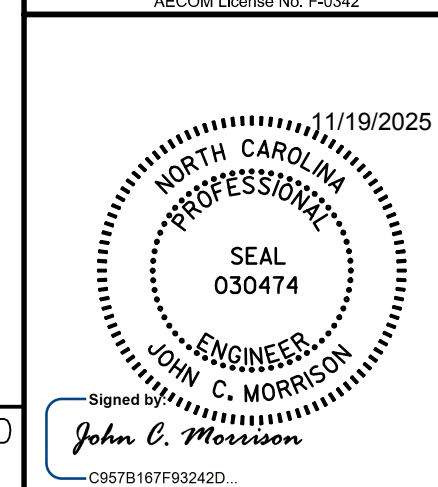
* : BOTTOM CLAMP ONLY

- ① 1/8" X 2" X 2'-0" ELASTOMERIC PAD,
TO BE GLUED TO PARAPET WITH
AN APPROVED ADHESIVE



BOLT SETTING DETAIL

PROJECT NO. B-4838
WAYNE COUNTY
 STATION: 30+73.46 -L-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BRIDGE MOUNTED 72"
CHAIN LINK FENCE

REVISIONS						SHEET NO. S-26
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 52
2			4			

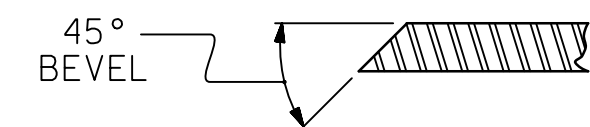
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STD. NO. SSEJ1



DOCUMENT NOT CONSIDERED
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STD. NO. SSEJ3 SHT. 2



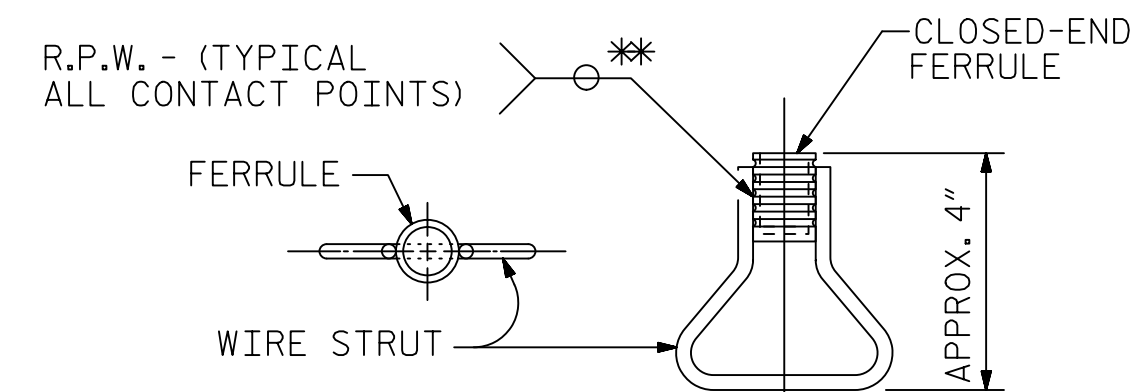
SECTION B - B

END VIEW
(NORMAL TO SIDEWALK)

* CONCRETE RECESS DIMENSIONS:

$\frac{13}{16}$ " FOR THE SIDE OF THE JOINT HAVING THE $\frac{1}{2}$ " COVER PLATE WITH A $\frac{1}{4}$ " BACKING PLATE.

9/16" FOR THE SIDE OF THE JOINT HAVING ONLY THE 1/2" COVER PLATE.

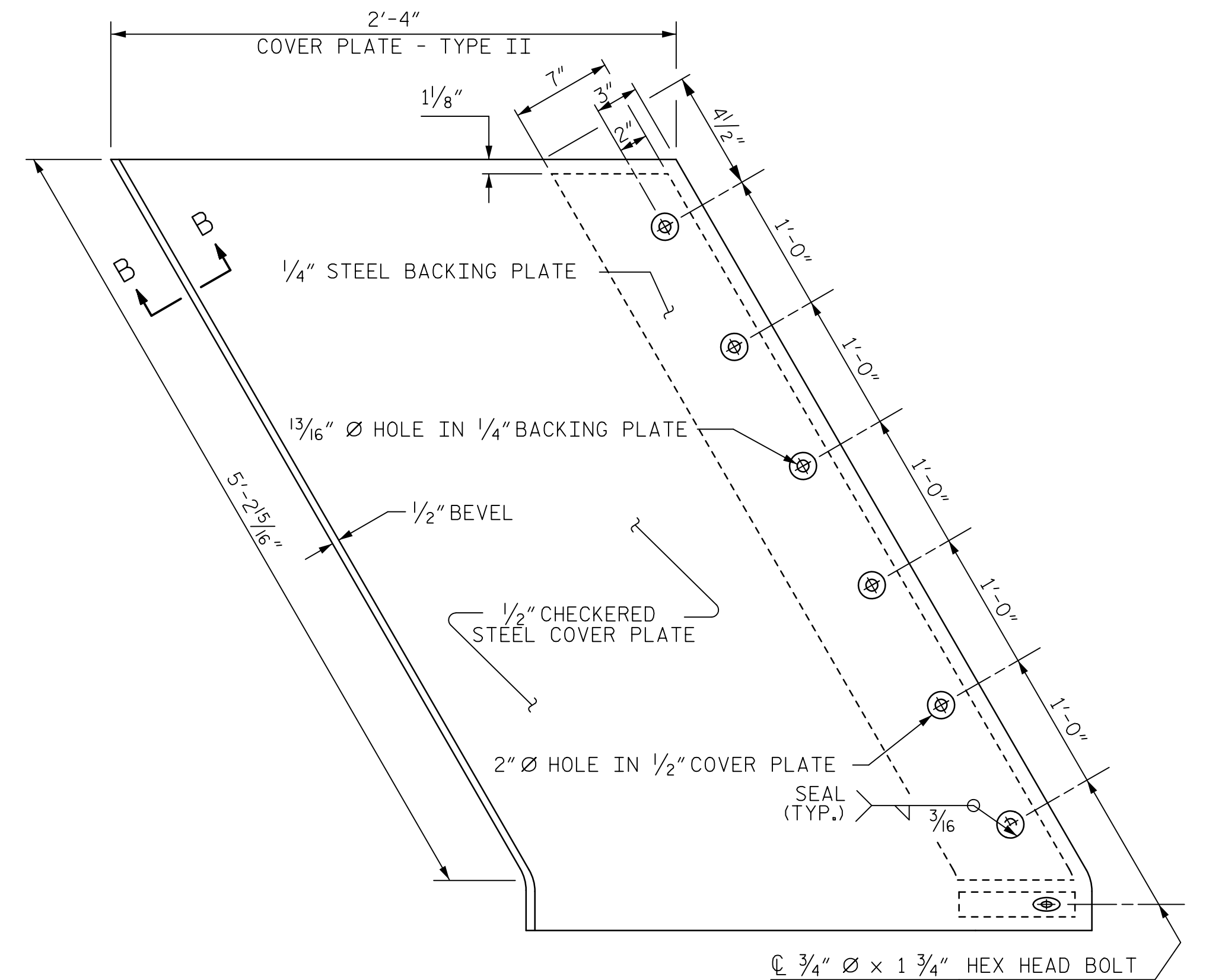


PLAN

ELEVATION

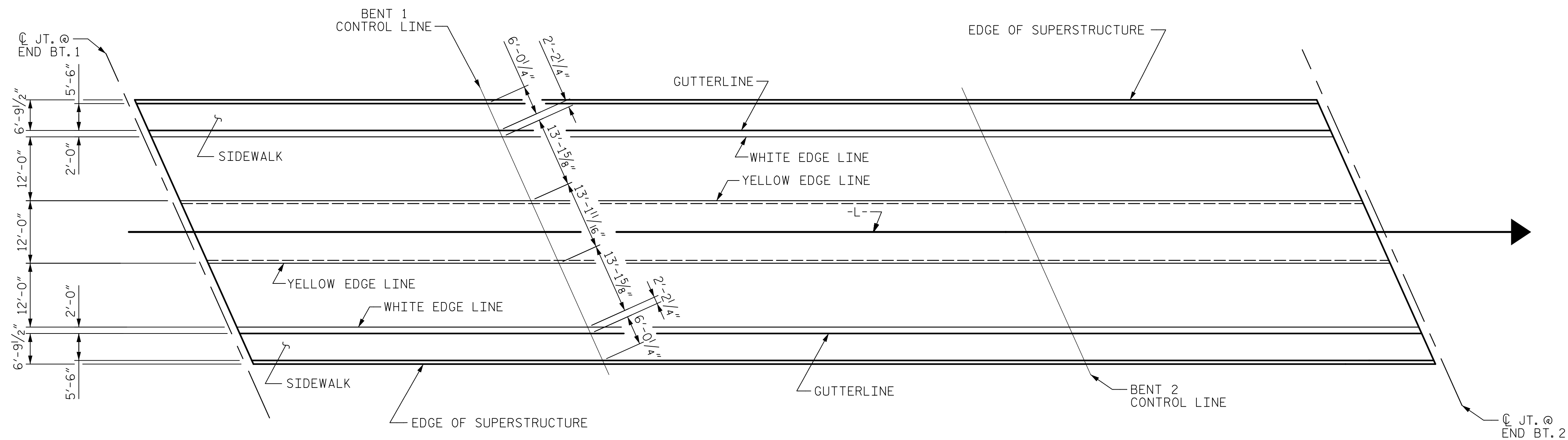
CONCRETE INSERT

*EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.



TYPE II - PLAN VIEW

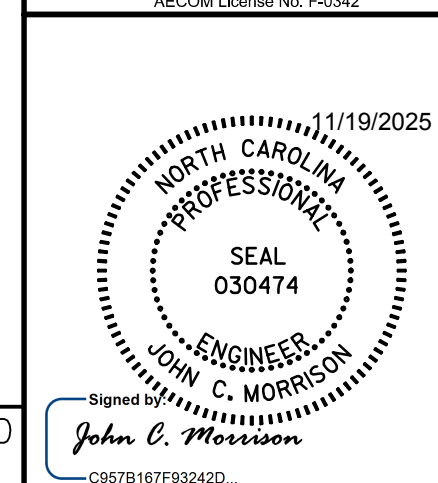
COVER PLATE DETAILS



PAVEMENT MARKING ALIGNMENT

PROJECT NO. B-4838
WAYNE COUNTY
 STATION: 30+73.46 -L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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SUPERSTRUCTURE
STRIP SEAL EXPANSION
JOINT DETAILS
FOR SIDEWALK

REVISIONS						SHEET NO. S-29
NO.	BY:	DATE:	NO.	BY:	DATE:	
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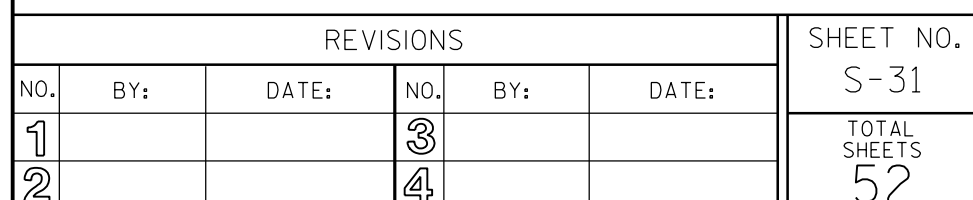
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*FOR LOCATION OF ELEVATION BETWEEN BUILDUPS,
SEE SECTION A-A & B-B ON SHEET 3 OF 4

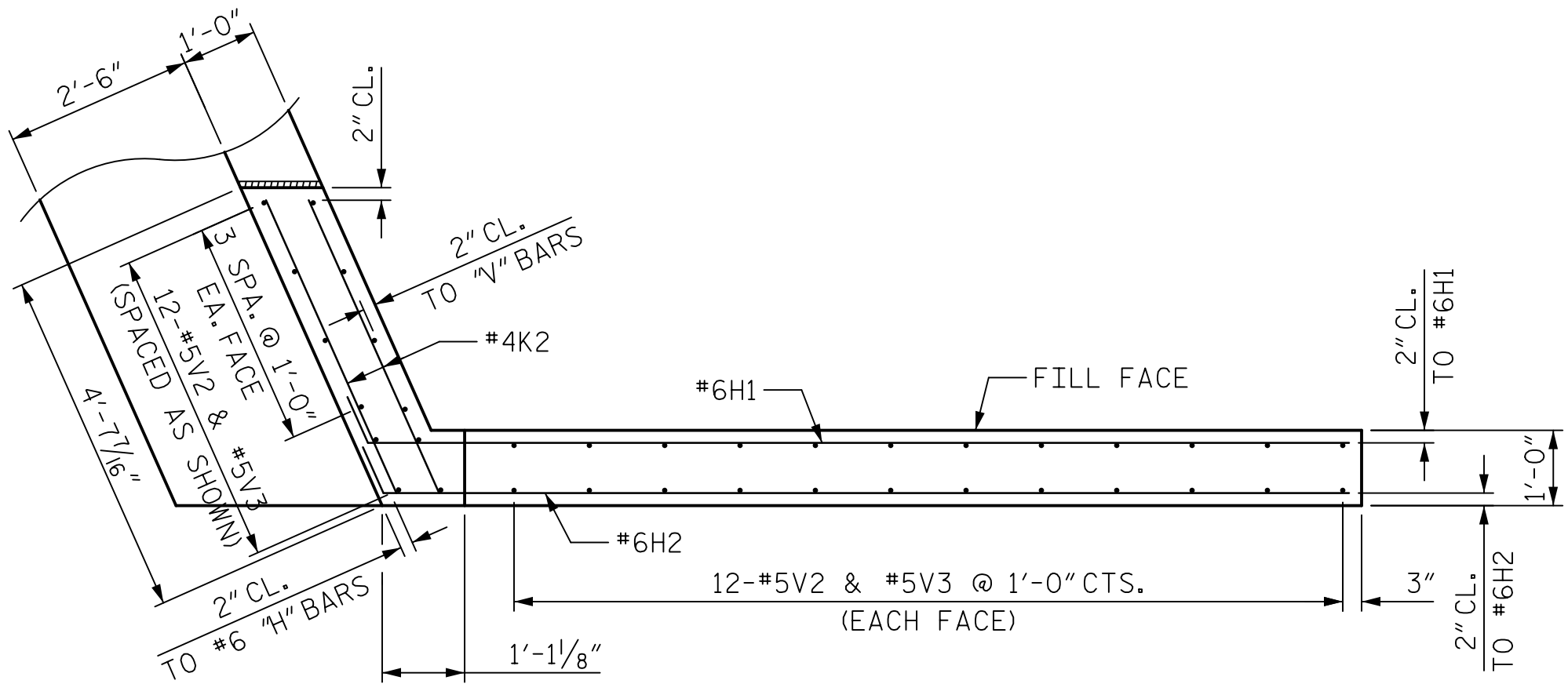
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FOR ADDITIONAL SECTIONS AND DETAILS, SEE SHEET 2 OF 3.

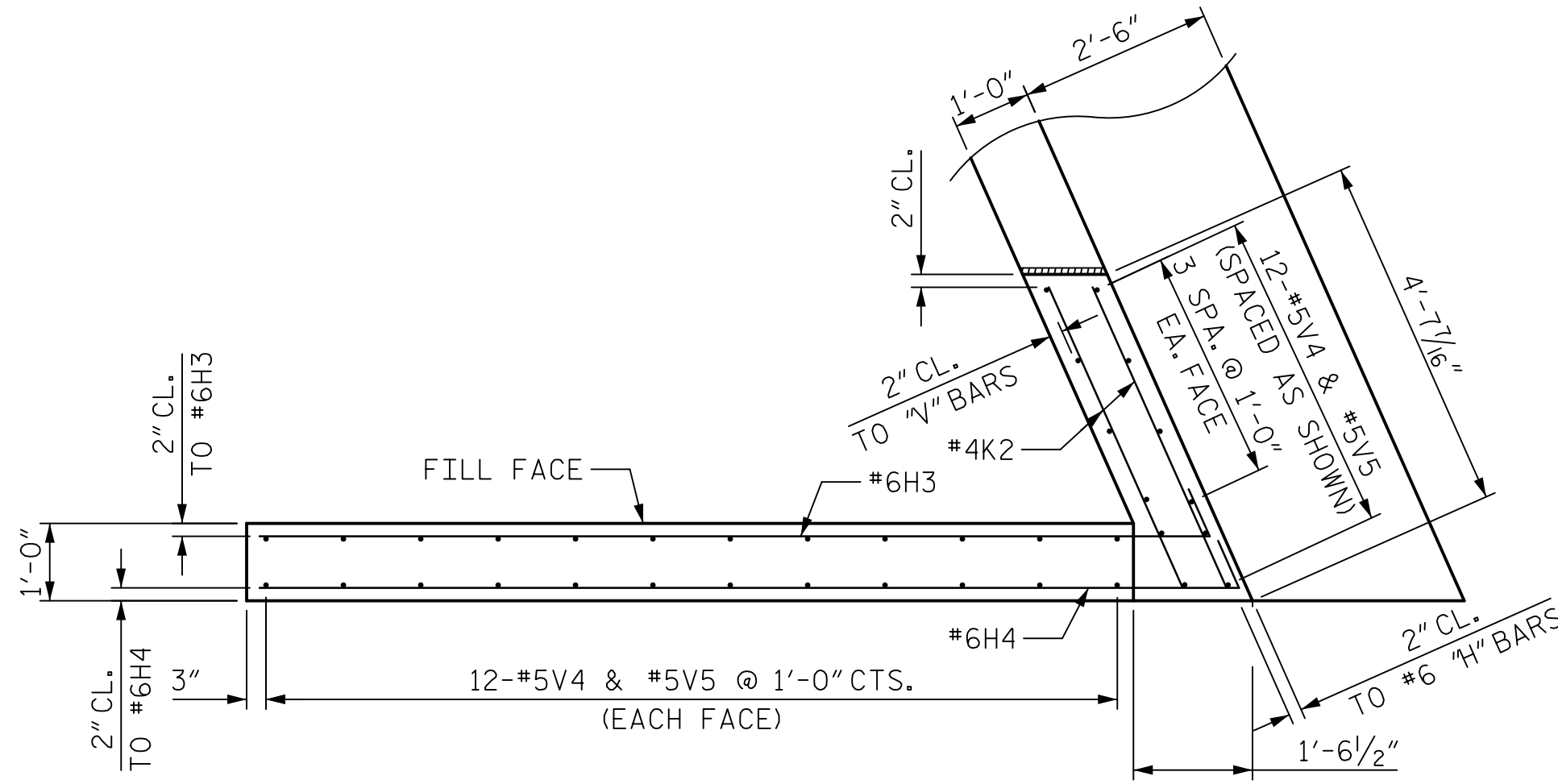


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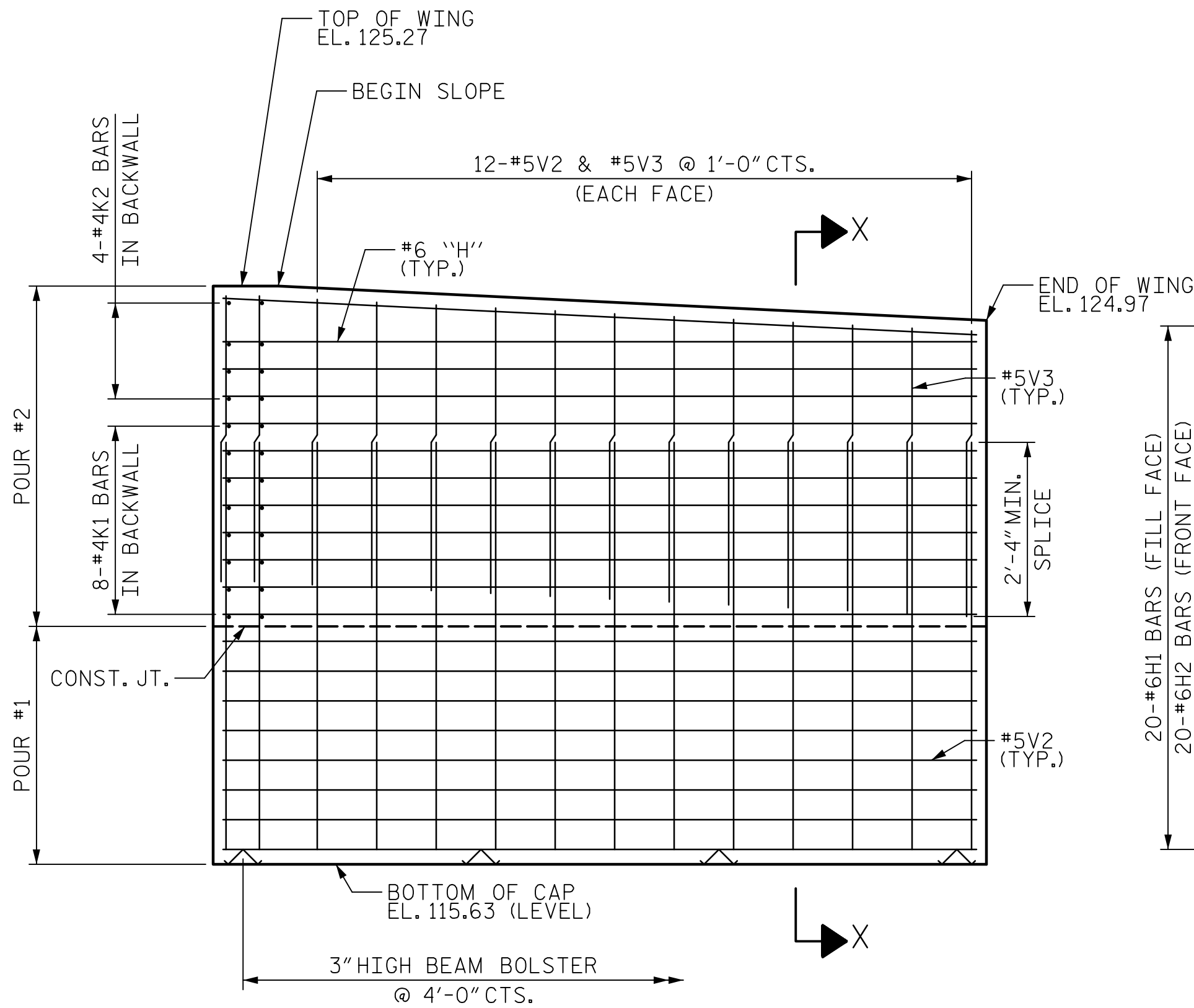
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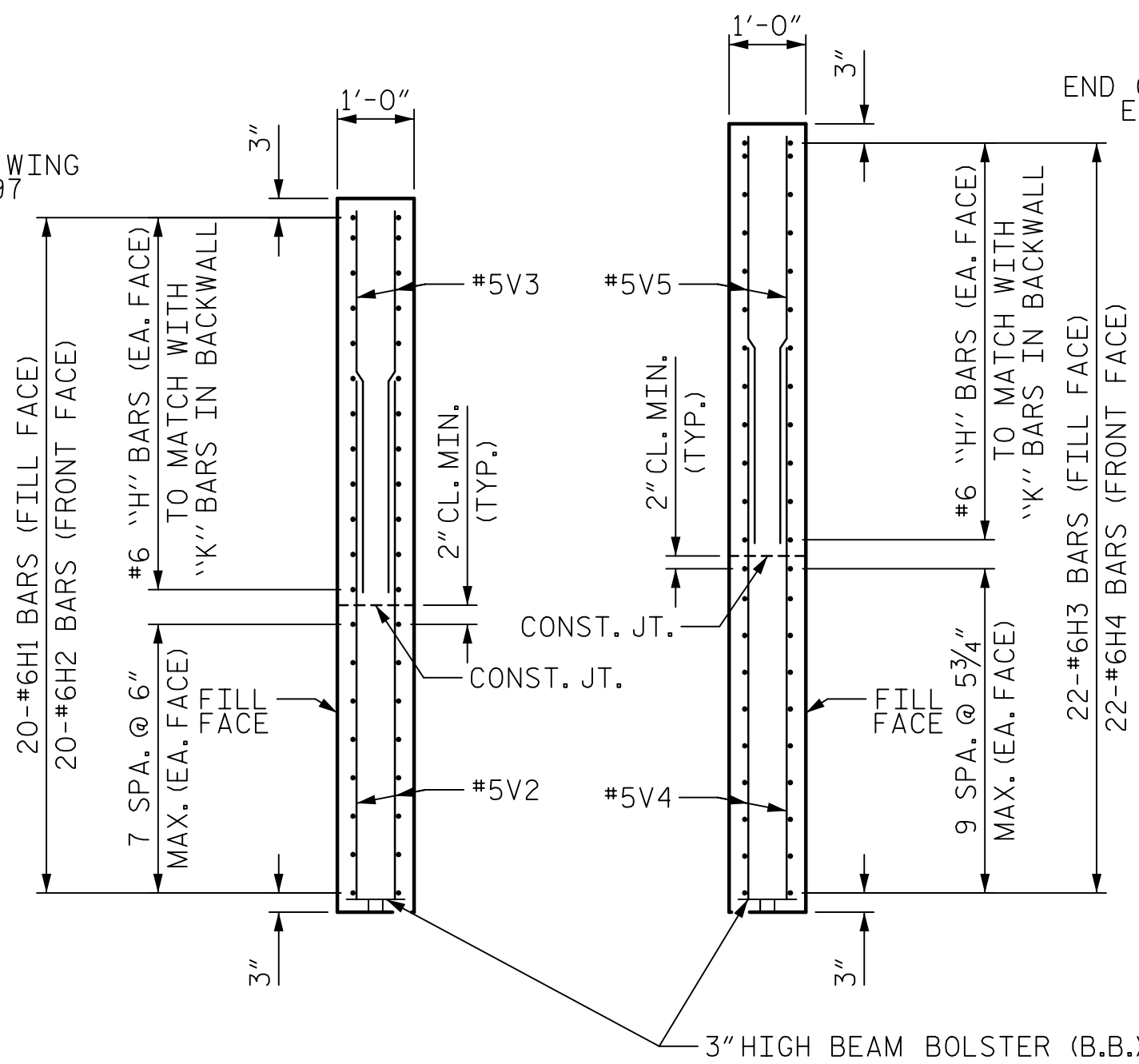
PLAN OF WING W1



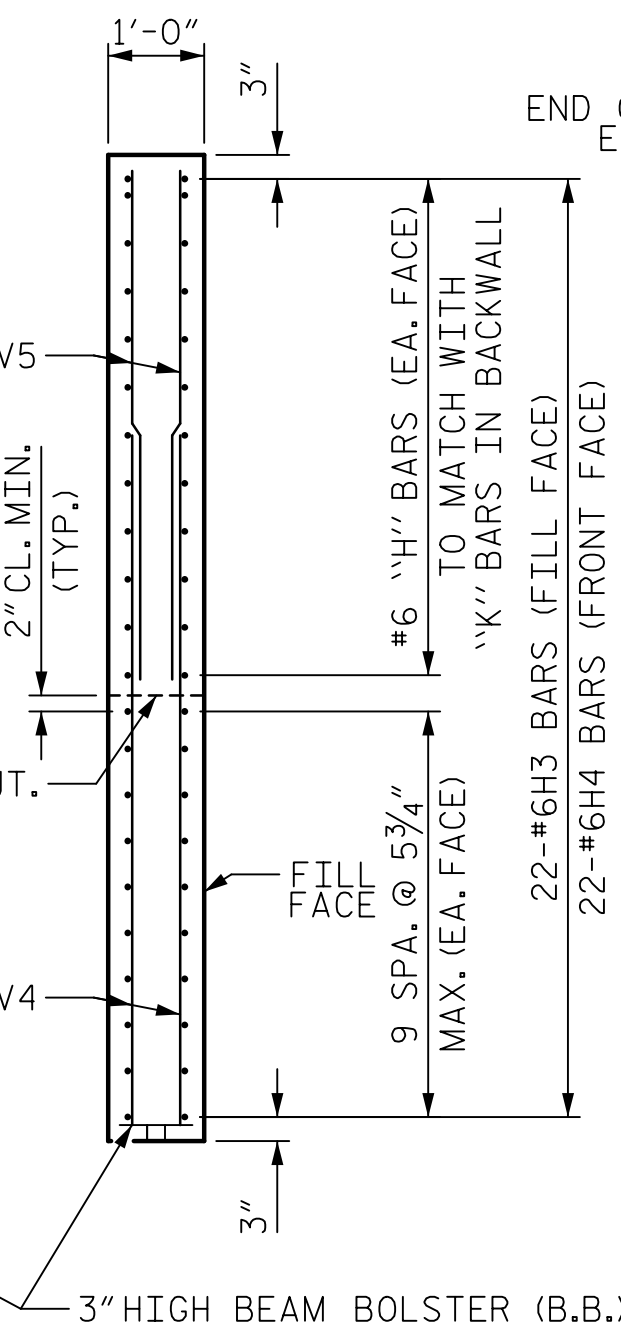
PLAN OF WING W2



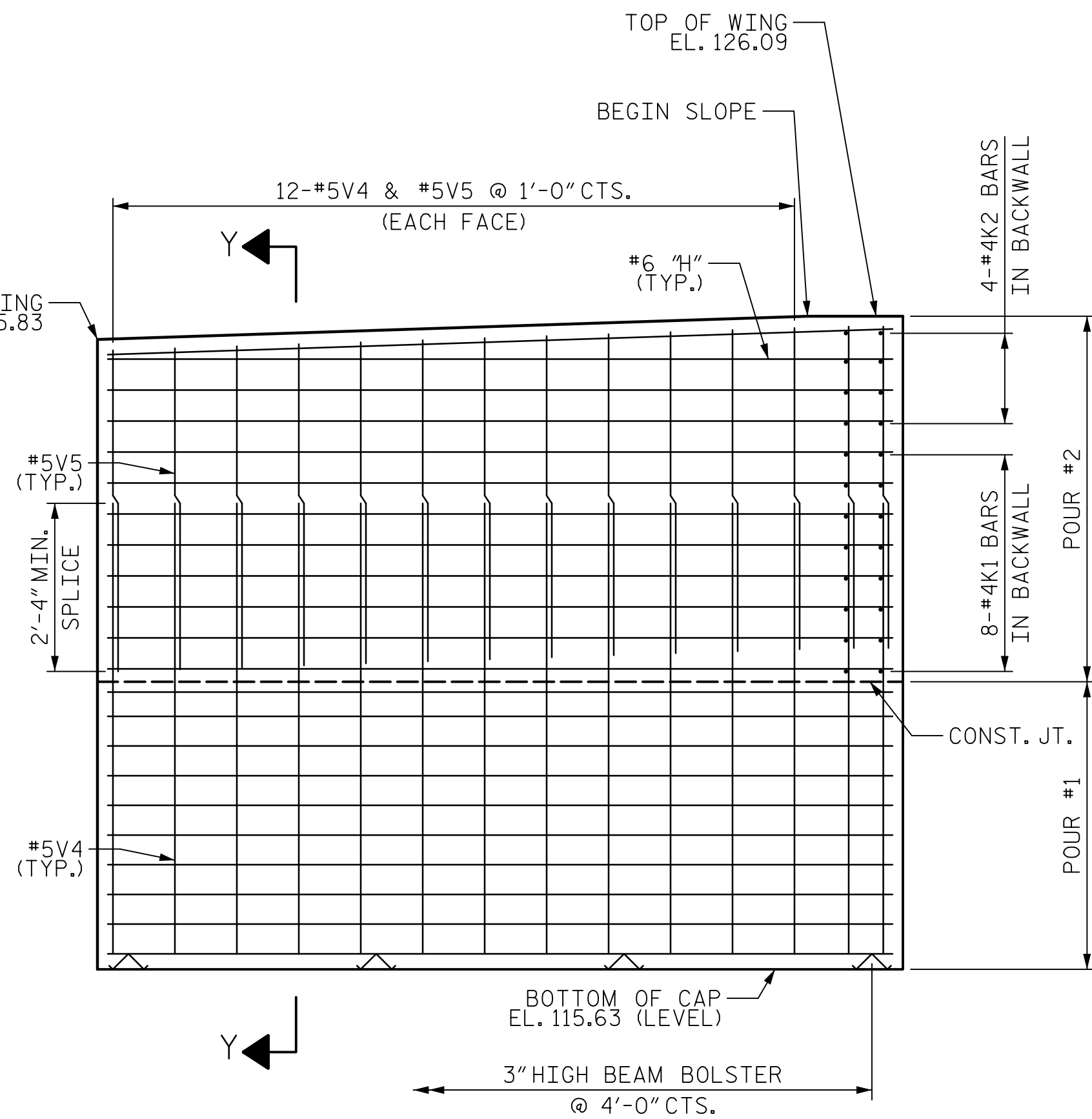
ELEVATION OF WING W1



SECTION X-X



SECTION Y-Y



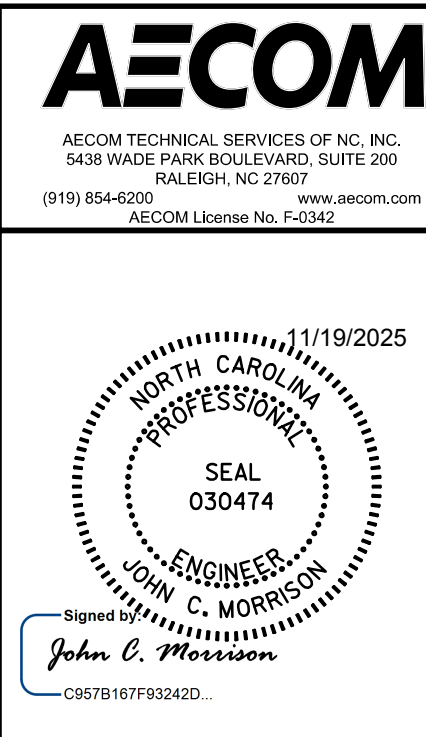
ELEVATION OF WING W2

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

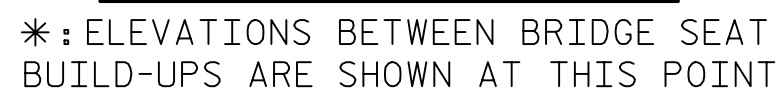
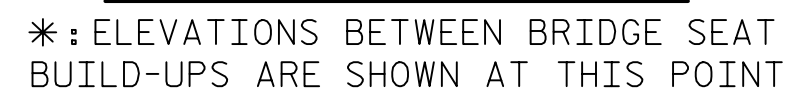
SHEET 2 OF 4

DRAWN BY : A.R. VAN VUREN
CHECKED BY : J.C. MORRISON
DESIGNED BY : A.R. VAN VUREN
DESIGN ENGINEER OF RECORD: J.C. MORRISON
DATE : 10/2025
DATE : 10/2025
DATE : 10/2025
DATE : 10/2025

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-32
2			4			TOTAL SHEETS 52



REVISIONS						SHEET NO. S-33
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

DRAWN BY : <u>A.R. VAN VUREN</u>	DATE : <u>10/2025</u>
CHECKED BY : <u>J.C. MORRISON</u>	DATE : <u>10/2025</u>
DESIGNED BY : <u>A.R. VAN VUREN</u>	DATE : <u>10/2025</u>
DESIGN ENGINEER OF RECORD: <u>J.C. MORRISON</u>	DATE : <u>10/2025</u>

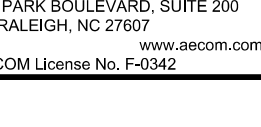
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SHEET 4 OF 4

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 AECOM TECHNICAL SERVICES OF NC, INC. 5418 WIDE PARK BOULEVARD, SUITE 200 RALEIGH, NC 27607 (919) 854-6200 www.aecom.com AECOM License No. F-0342	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUBSTRUCTURE END BENT 1
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11/19/2025

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
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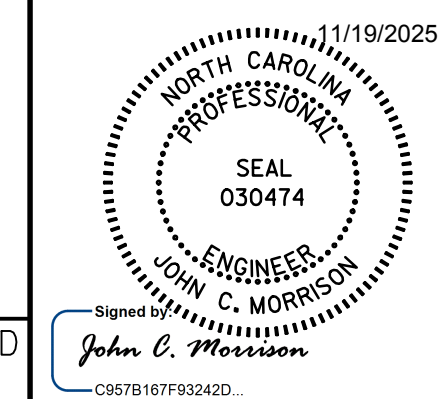
SHEET NO.
S-34
TOTAL SHEETS
52



Signed _____

John C. Morrison

C057B187F93242DD





CAP	35.2 C.Y.
-----	-----------



PROJECT NO. B-4838
WAYNE COUNTY
 STATION: 30+73.46 -L-

SHEET 2 OF 2

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STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

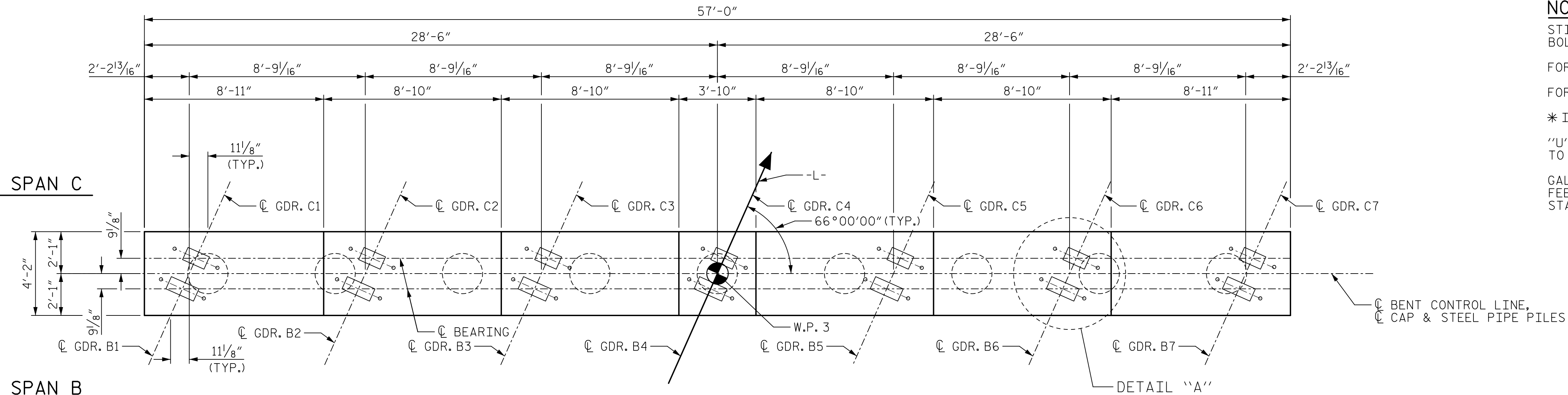
RALEIGH

SUBSTRUCTURE

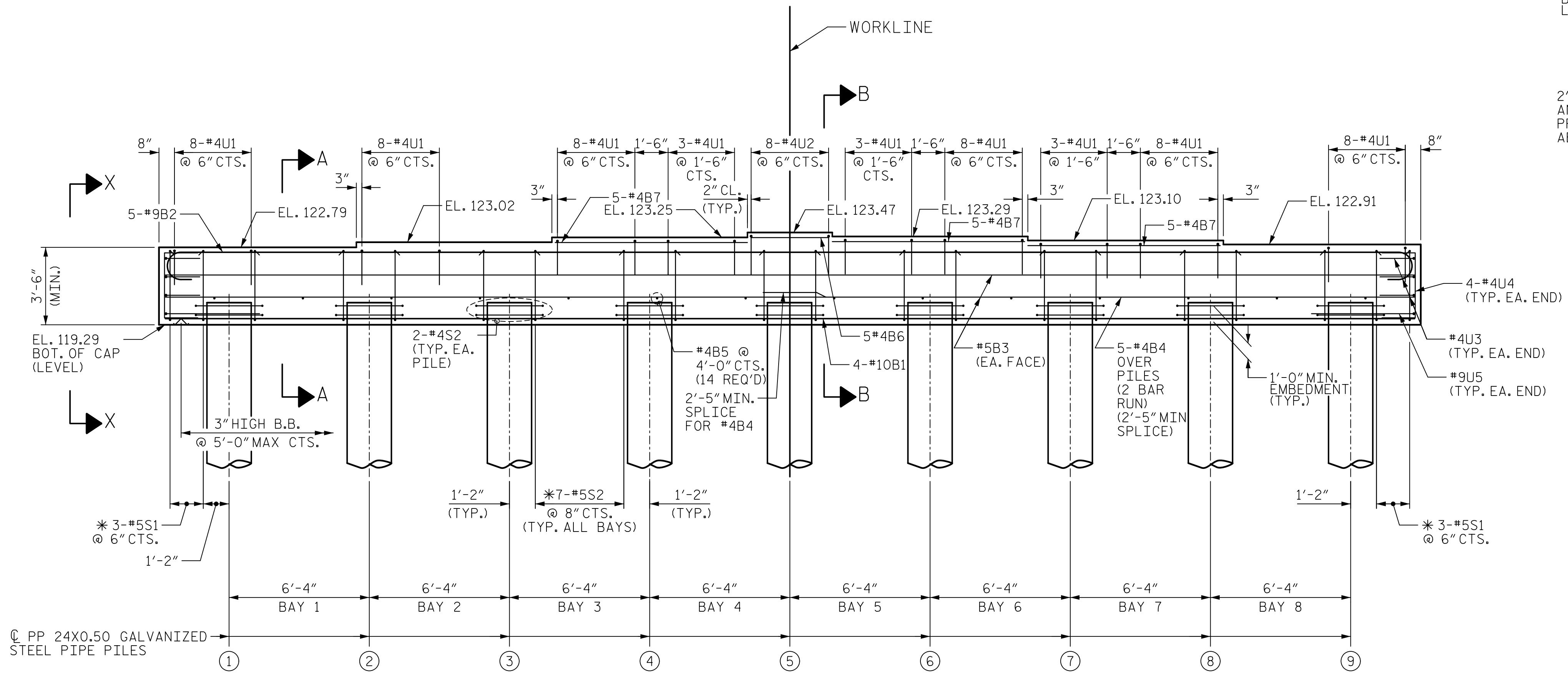
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PLAN



ELEVATION

INDICATES PILE NUMBER

NOTES:

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

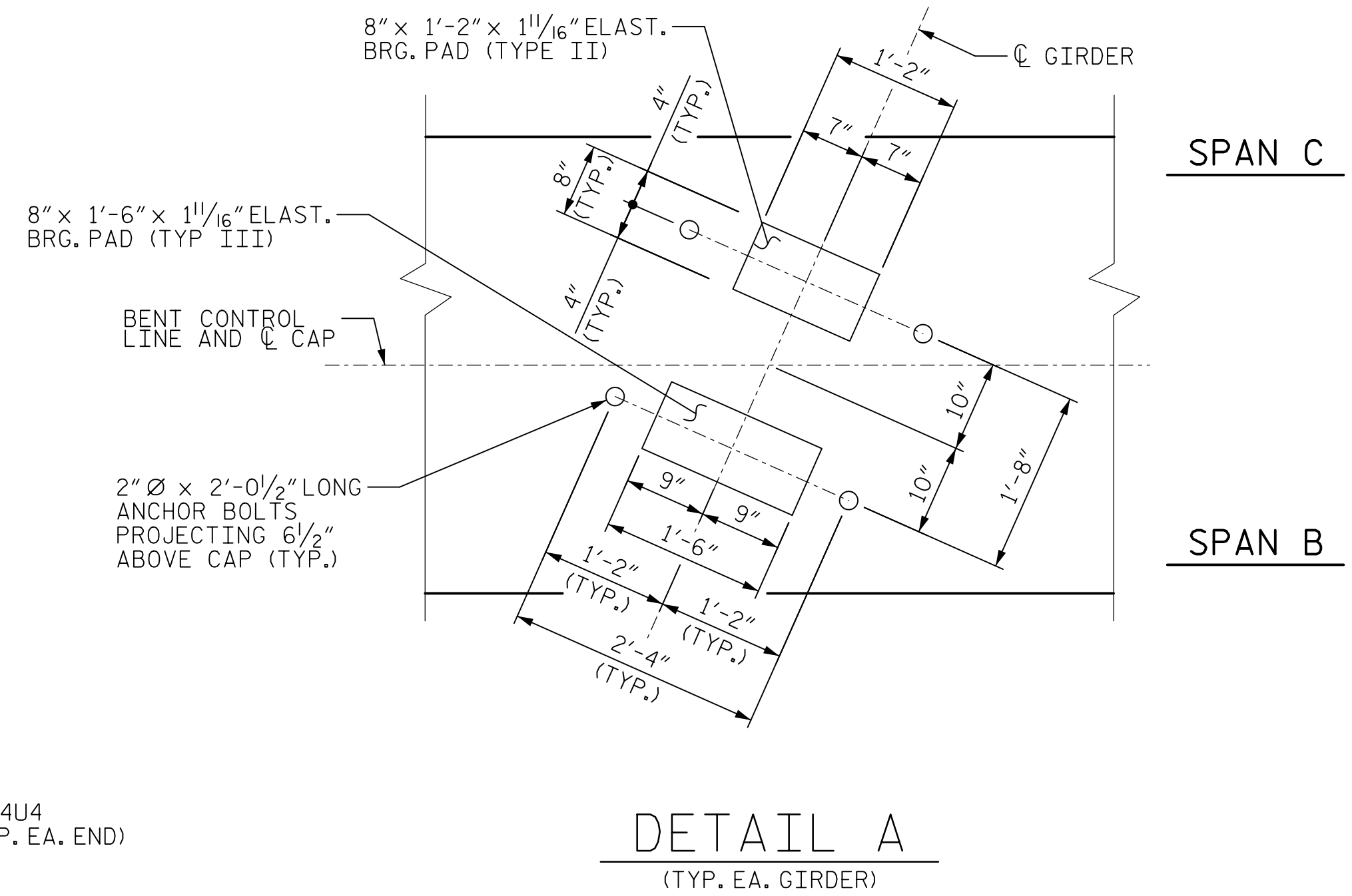
FOR STEEL PIPE PILE DETAILS, SEE "24" STEEL PIPE PILE" SHEET.

FOR ADDITIONAL SECTIONS AND DETAILS, SEE SHEET 2 OF 2.

* INVERT ALTERNATE STIRRUPS

"U" BARS IN ENDS OF CAP MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR "B" BARS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 43 FEET, GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

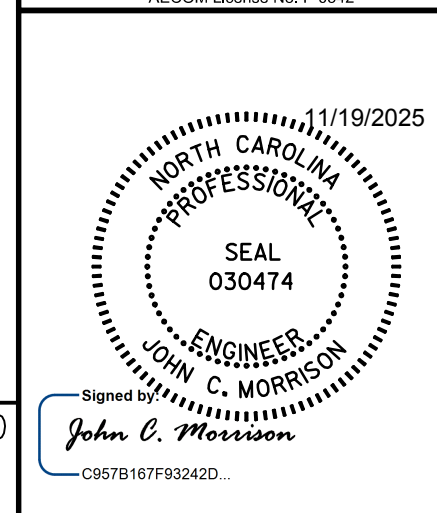


DETAIL A

(TYP. EA. GIRDER)

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 2

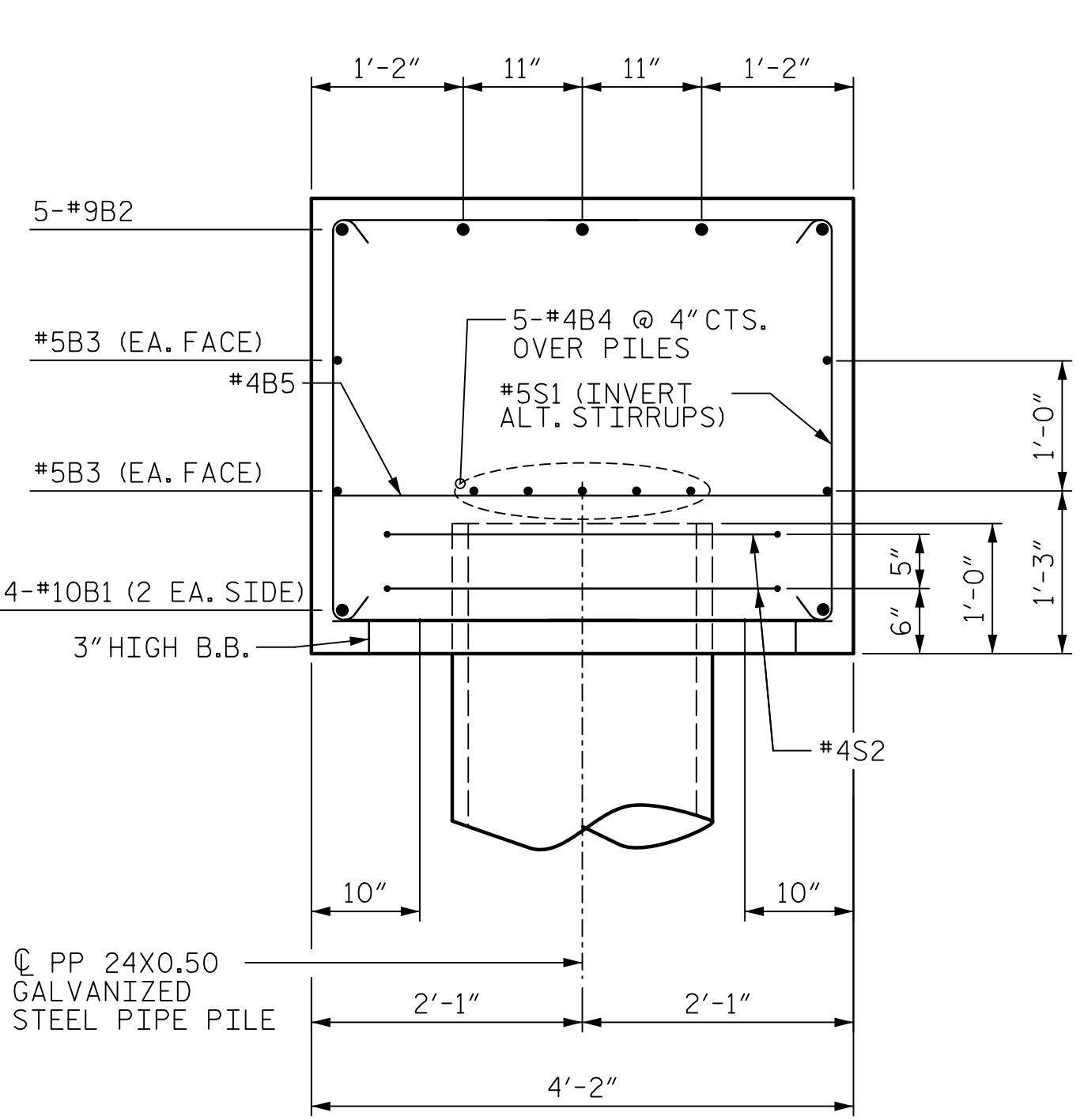
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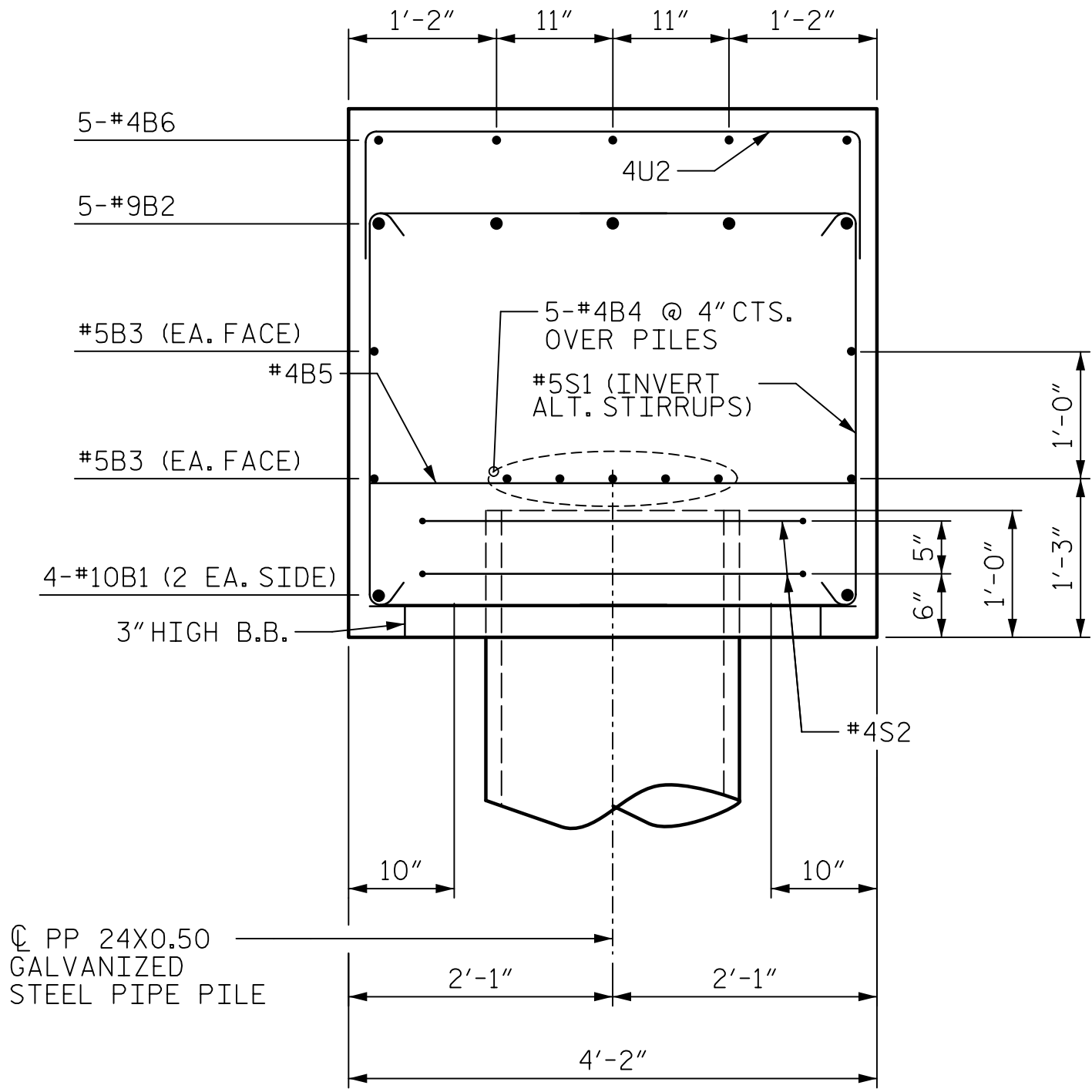
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CHECKED BY : J.C. MORRISON DATE : 10/2025
DESIGNED BY : A.R. VAN VUREN DATE : 10/2025
DESIGN ENGINEER OF RECORD: J.C. MORRISON DATE : 10/2025

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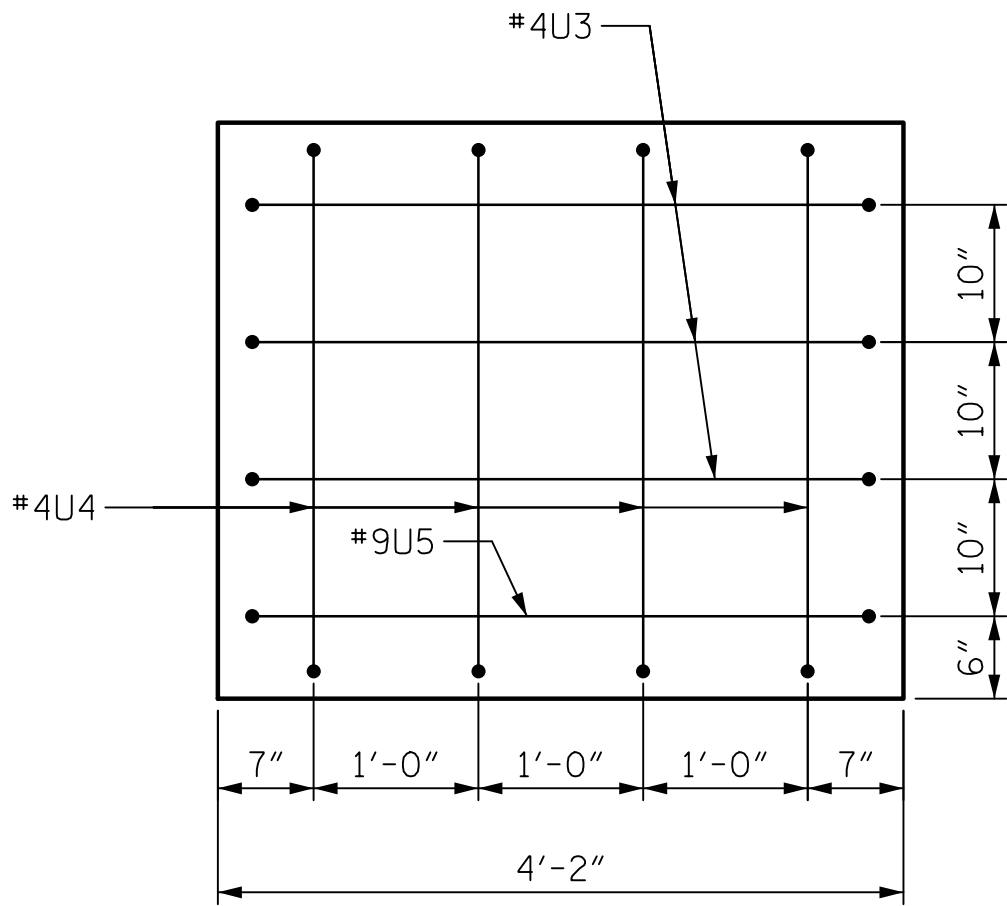
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SECTION A-A



SECTION B-B



VIEW X-X
(TYP. BOTH ENDS)

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CHECKED BY : J.C. MORRISON	DATE : 10/2025
DESIGNED BY : A.R. VAN VUREN	DATE : 10/2025
DESIGN ENGINEER OF RECORD: J.C. MORRISON	DATE : 10/2025

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	10	STR	56'-6"	972
B2	5	9	1	59'-0"	1,003
B3	4	5	STR	56'-8"	236
B4	10	4	STR	29'-6"	197
B5	14	4	STR	3'-10"	36
B6	5	4	STR	3'-6"	12
B7	15	4	STR	8'-8"	87
S1	62	5	2	10'-11"	706
S2	18	4	3	8'-4"	100
U1	57	4	4	6'-10"	260
U2	8	4	4	7'-4"	39
U3	6	4	4	6'-8"	27
U4	8	4	4	5'-11"	32
U5	2	9	4	11'-0"	75
REINFORCING STEEL					3,782 LBS.
CLASS A CONCRETE					
CAP					33.4 C.Y.

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 2 OF 2

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11/19/2025

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030474
ENGINEER
JOHN C. MORRISON
Signed
John C. Morrison
C0578167F93242D

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
BENT 2

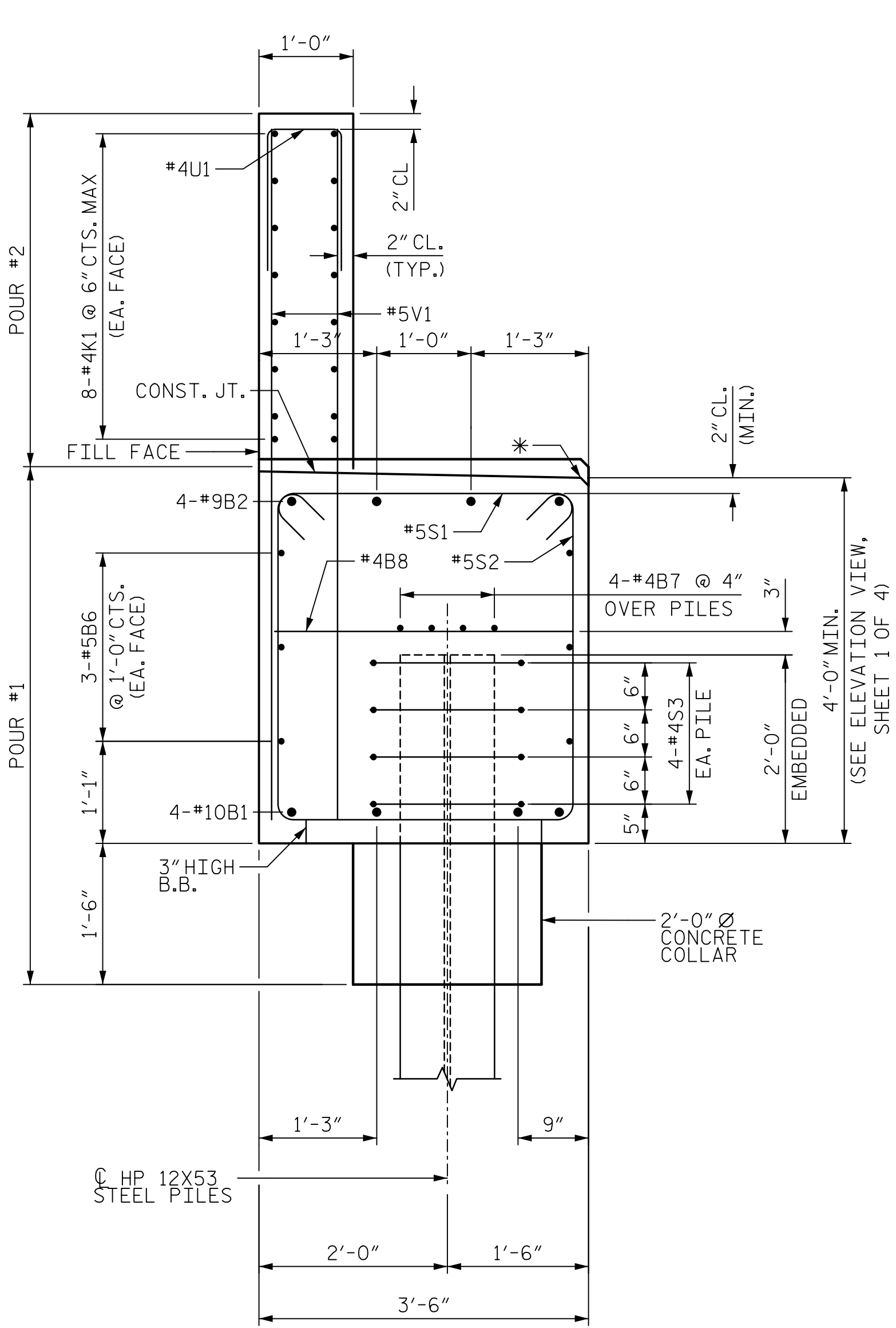
REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
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SHEET NO.
S-38
TOTAL SHEETS
52

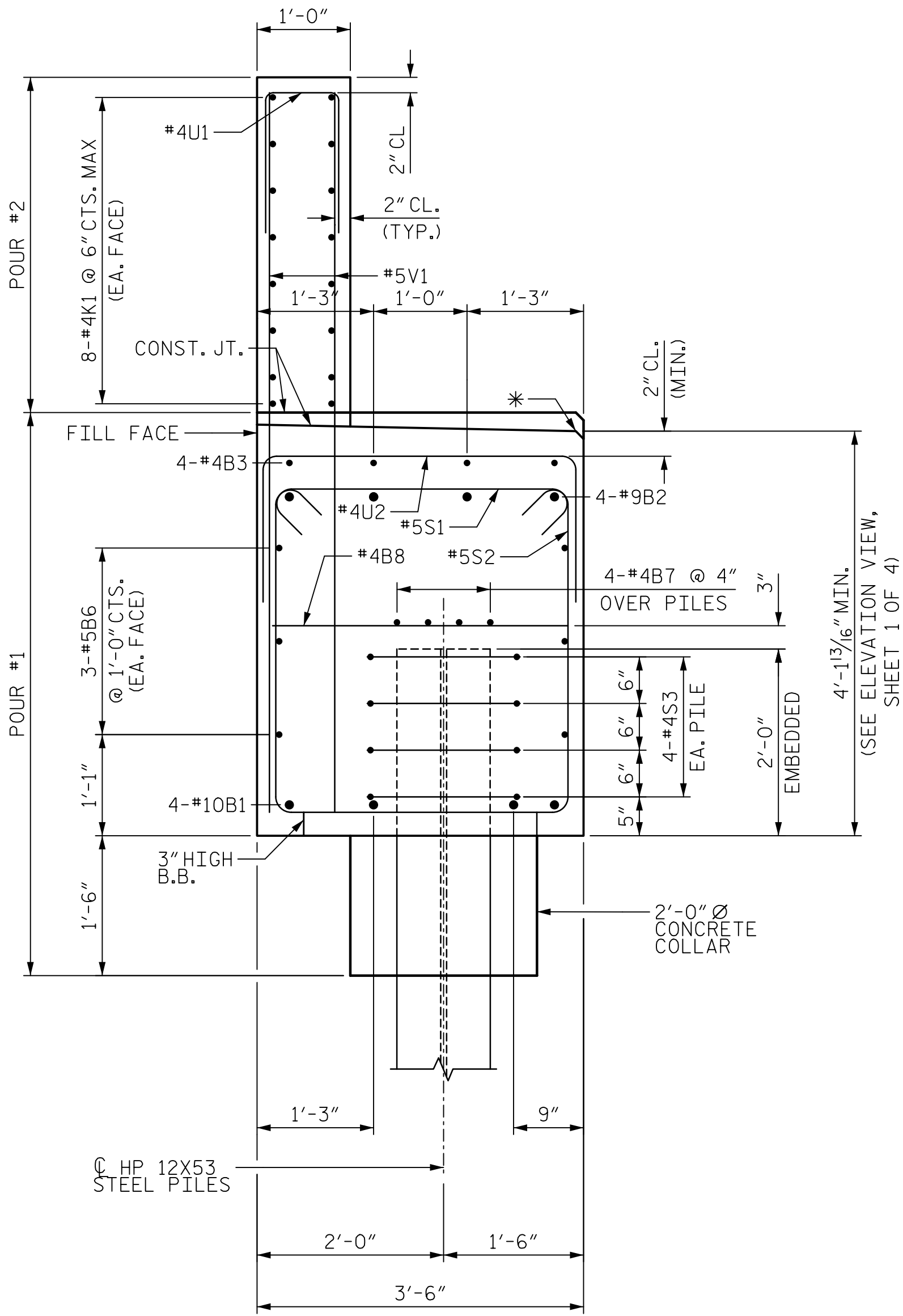
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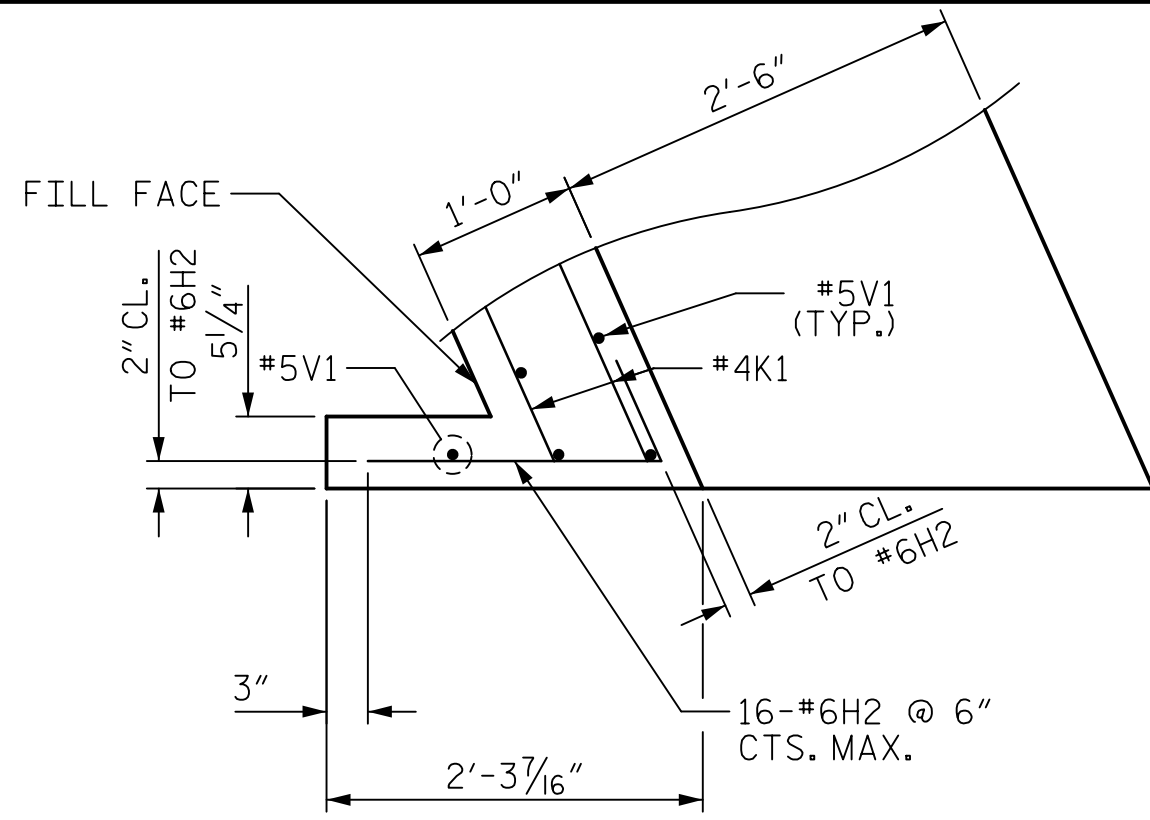
SECTION A-A

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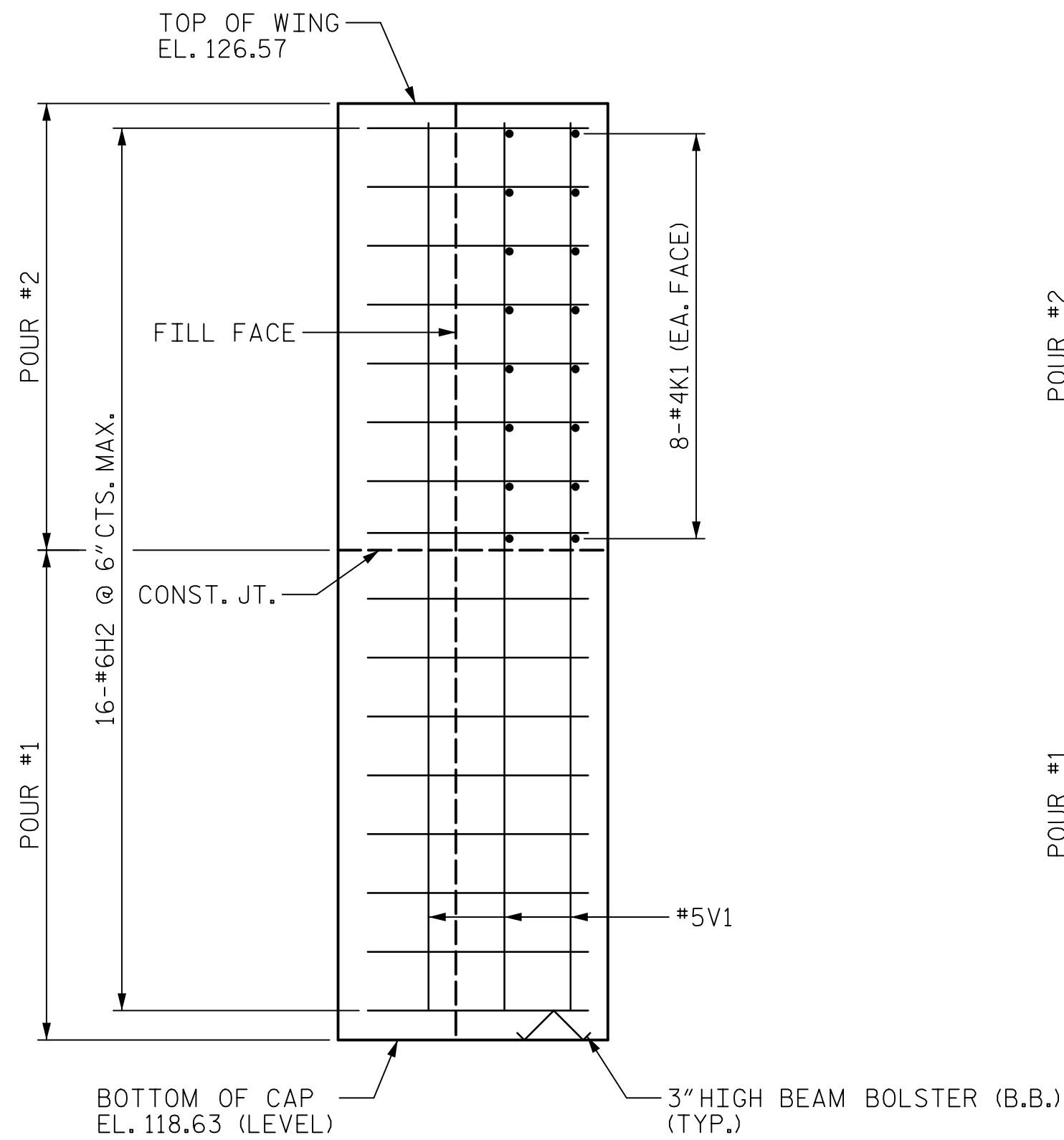


SECTION B-B

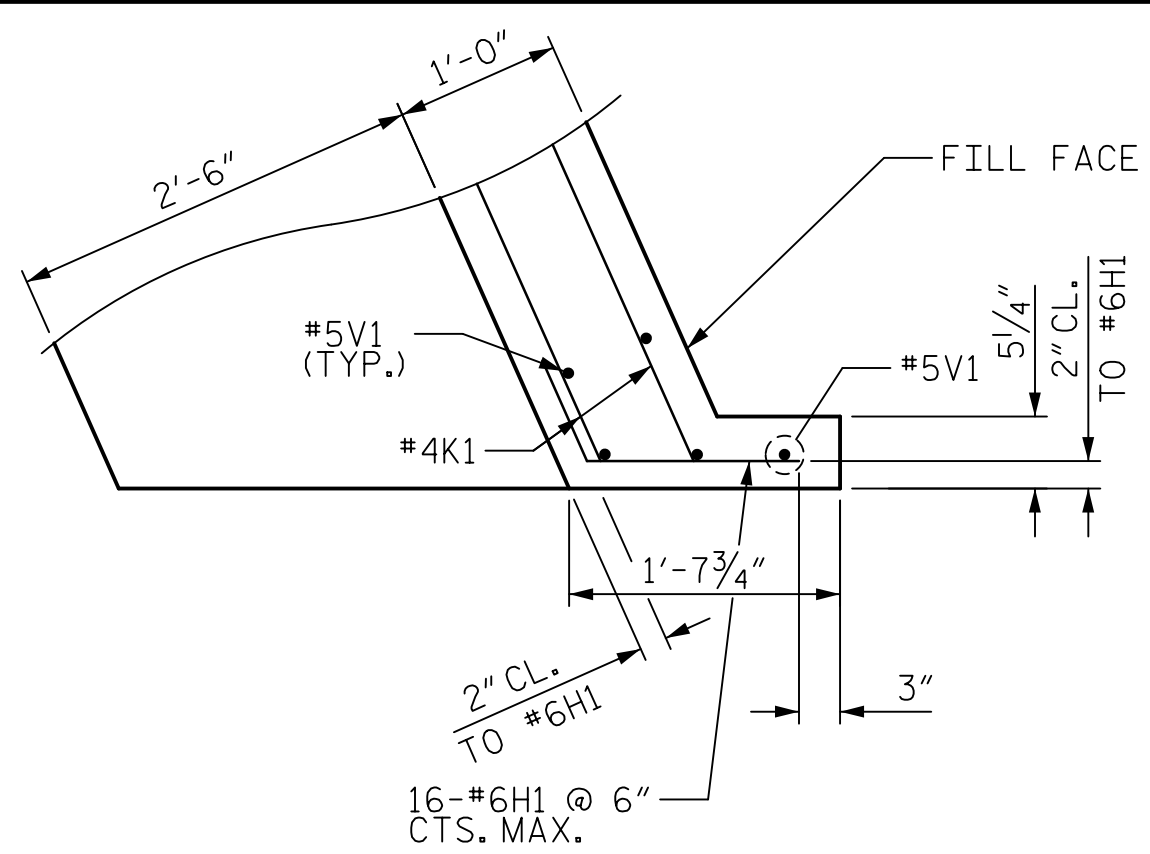
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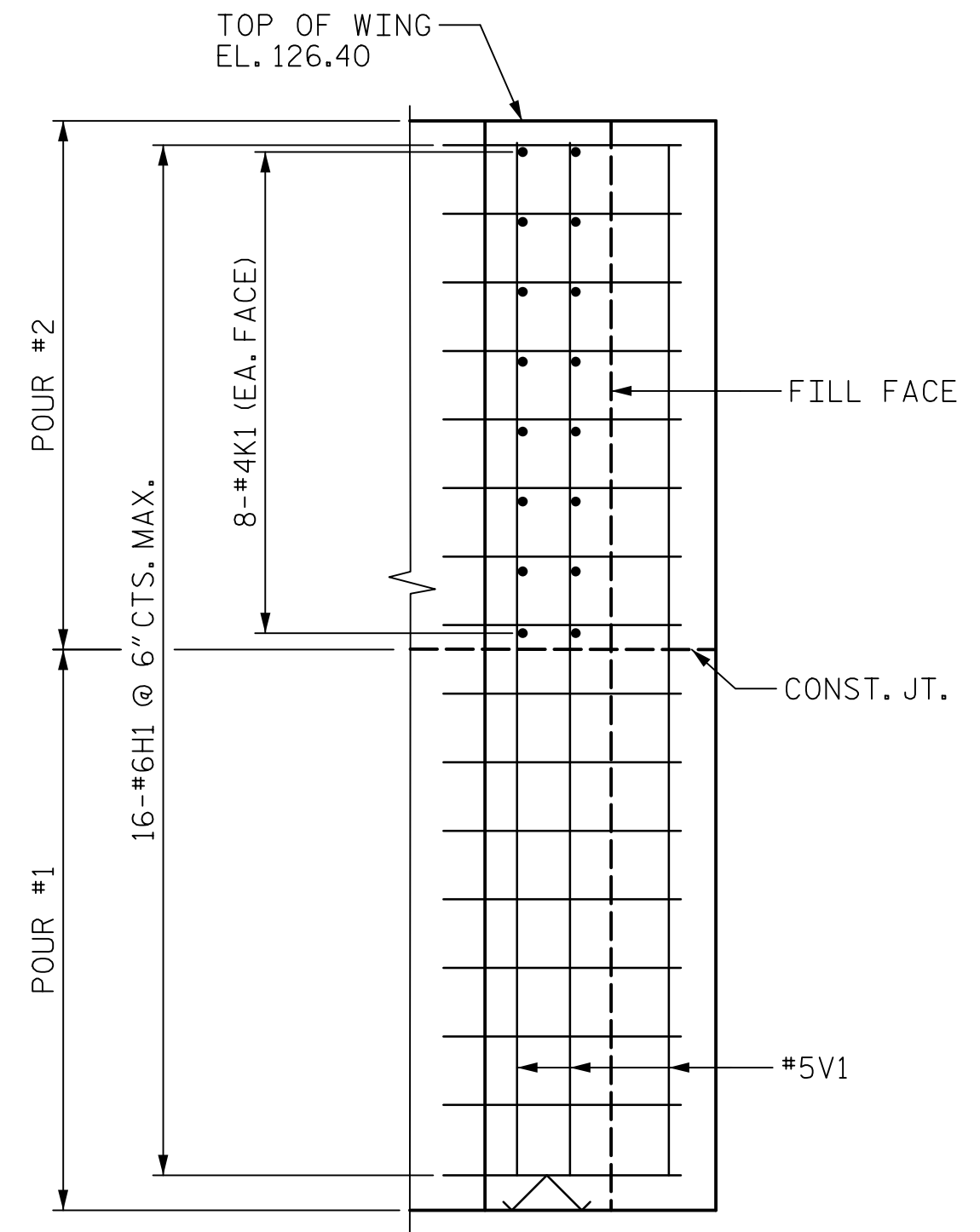
PLAN OF WING W1



ELEVATION OF WING W1



PLAN OF WING W2



ELEVATION OF WING W2

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 2 OF 3

DRAWN BY : A.R. VAN VUREN DATE : 10/2025
CHECKED BY : J.C. MORRISON DATE : 10/2025
DESIGNED BY : A.R. VAN VUREN DATE : 10/2025
DESIGN ENGINEER OF RECORD: J.C. MORRISON DATE : 10/2025

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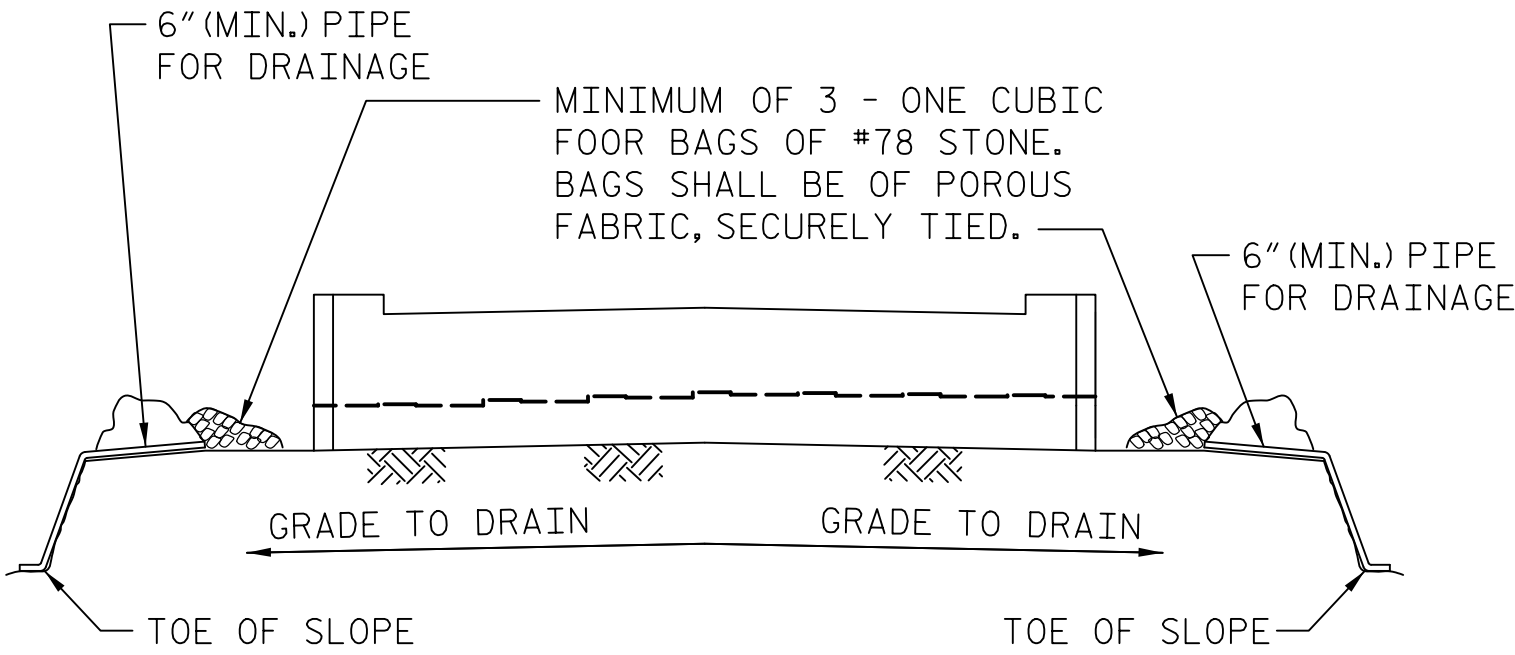
11/19/2025
NORTH CAROLINA
PROFESSIONAL
SEAL
030474
ENGINEER
JOHN C. MORRISON
Signed
John C. Morrison
C0578167F93242D

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 2

REVISIONS						SHEET NO. S-40
NO.	BY:	DATE:	NO.	BY:	DATE:	
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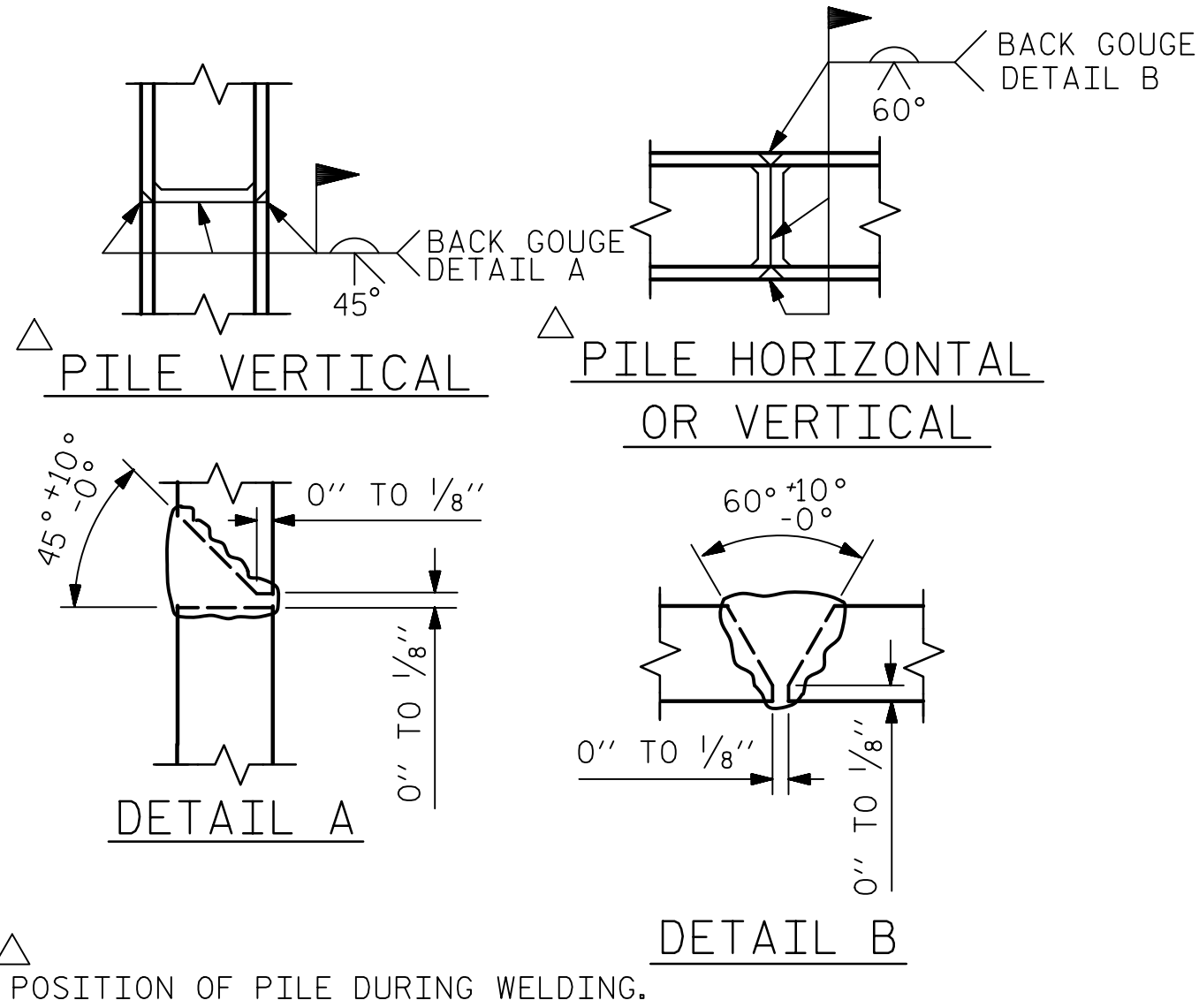


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE FOR THE SEVERAL PAY ITEMS.

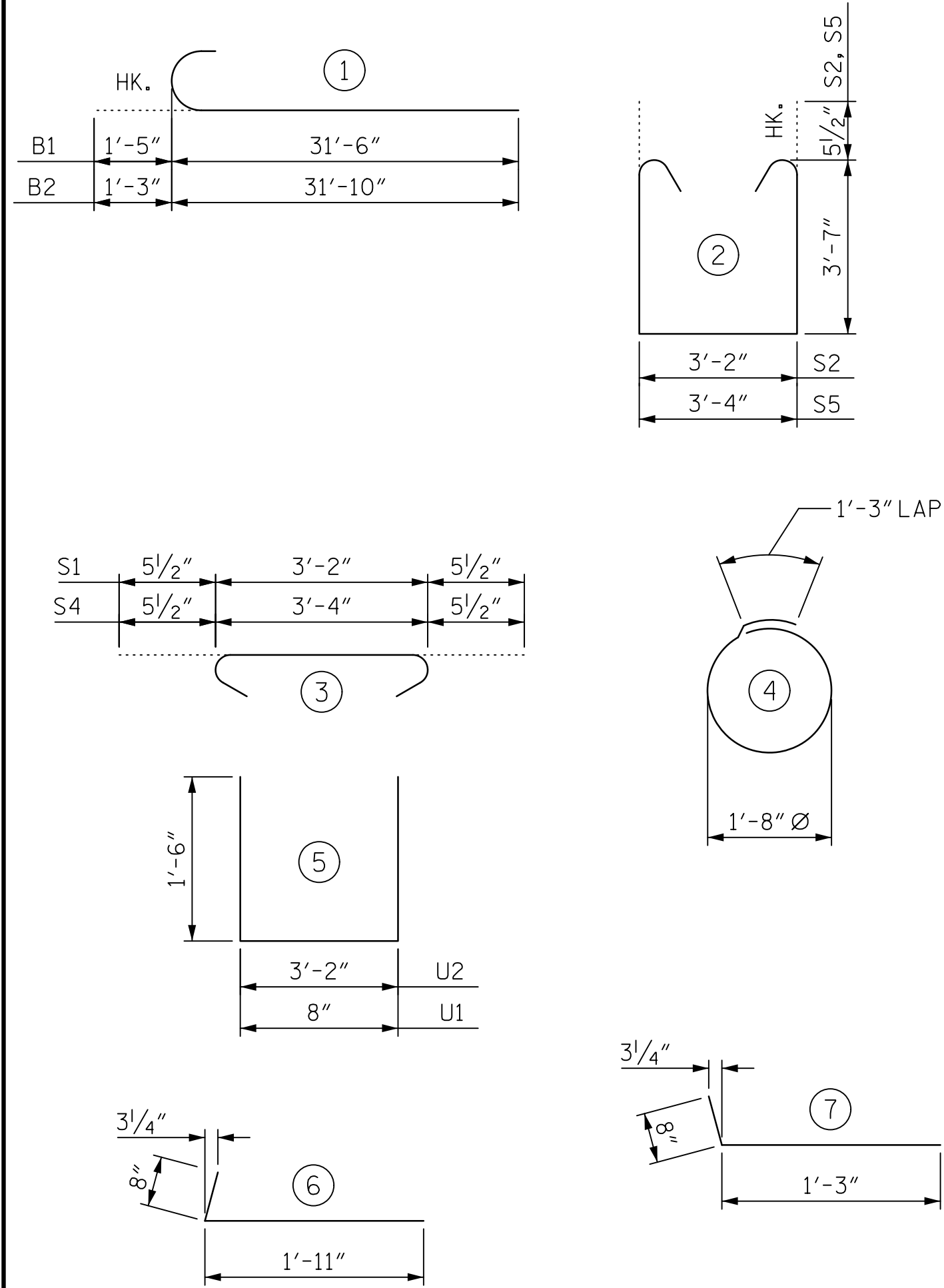
TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS

DRAWN BY : A.R. VAN VUREN DATE : 10/2025
CHECKED BY : J.C. MORRISON DATE : 10/2025
DESIGNED BY : A.R. VAN VUREN DATE : 10/2025
DESIGN ENGINEER OF RECORD: J.C. MORRISON DATE : 10/2025

BAR TYPES				BILL OF MATERIAL					
END BENT 2									
BAR	No.	SIZE	TYPE	LENGTH	WEIGHT				
B1	8	10	1	32'-11"	1,133				
B2	8	9	1	33'-1"	900				
B3	8	4	STR	2'-10"	15				
B4	4	4	STR	17'-4"	46				
B5	4	4	STR	8'-7"	23				
B6	12	5	STR	30'-8"	384				
B7	8	4	STR	30'-5"	163				
B8	15	4	STR	3'-2"	32				
H1	16	6	7	1'-11"	46				
H2	16	6	6	2'-7"	62				
K1	32	4	STR	30'-2"	645				
S1	51	5	3	4'-1"	217				
S2	51	5	2	11'-3"	598				
S3	32	4	4	6'-6"	139				
S4	2	5	3	4'-3"	9				
S5	2	5	2	11'-5"	24				
U1	58	4	5	3'-8"	142				
U2	30	4	5	6'-2"	124				
V1	118	5	STR	7'-4"	903				
REINFORCING STEEL					5,605 LBS.				
CLASS A CONCRETE									
POUR #1 (CAP, COLLARS, & LOWER WINGWALLS)					34.4 C.Y.				
POUR #2 (UPPER BACKWALL & WINGWALL)					8.1 C.Y.				
TOTAL					42.5 C.Y.				



ALL BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 3 OF 3

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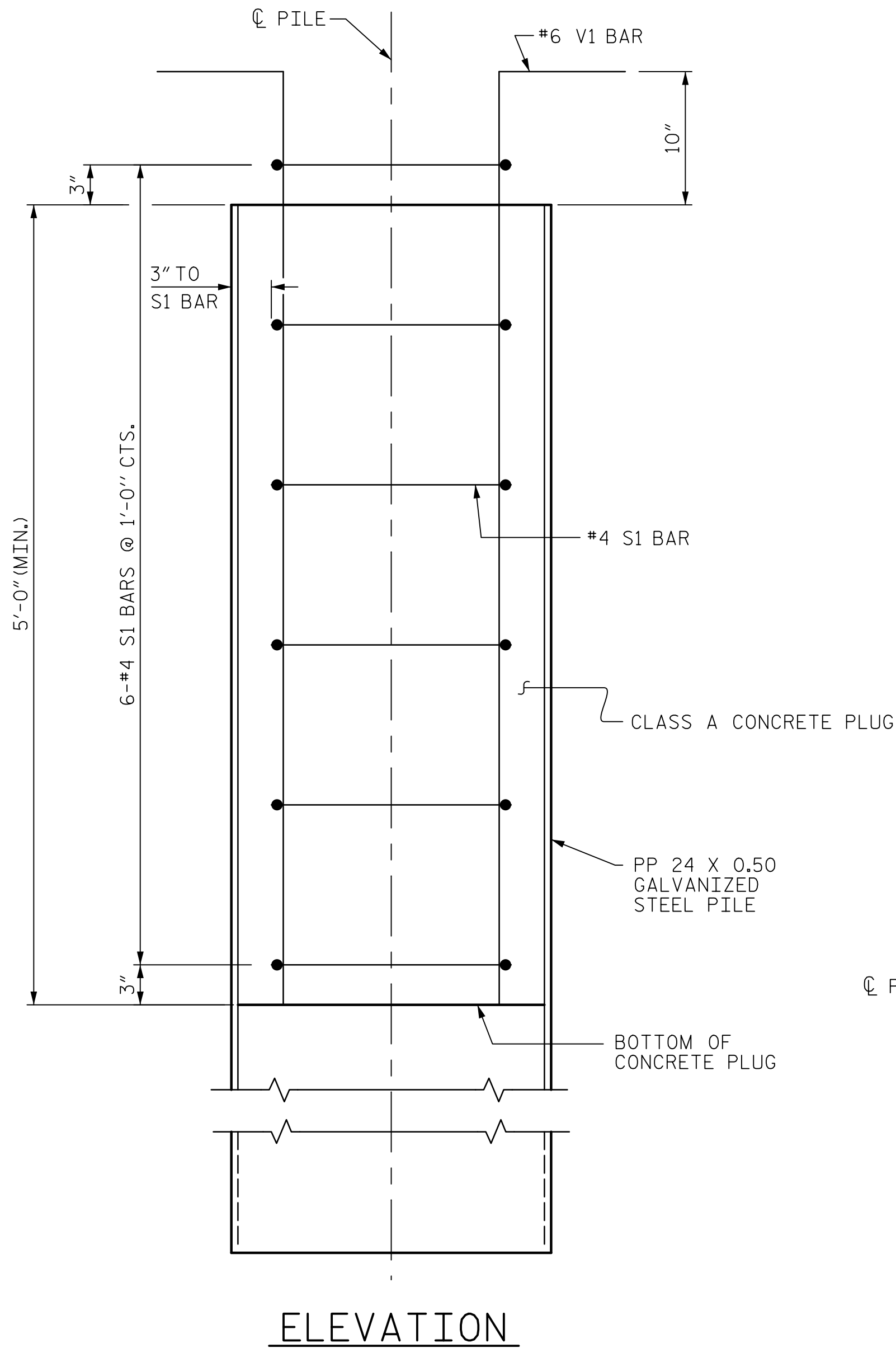
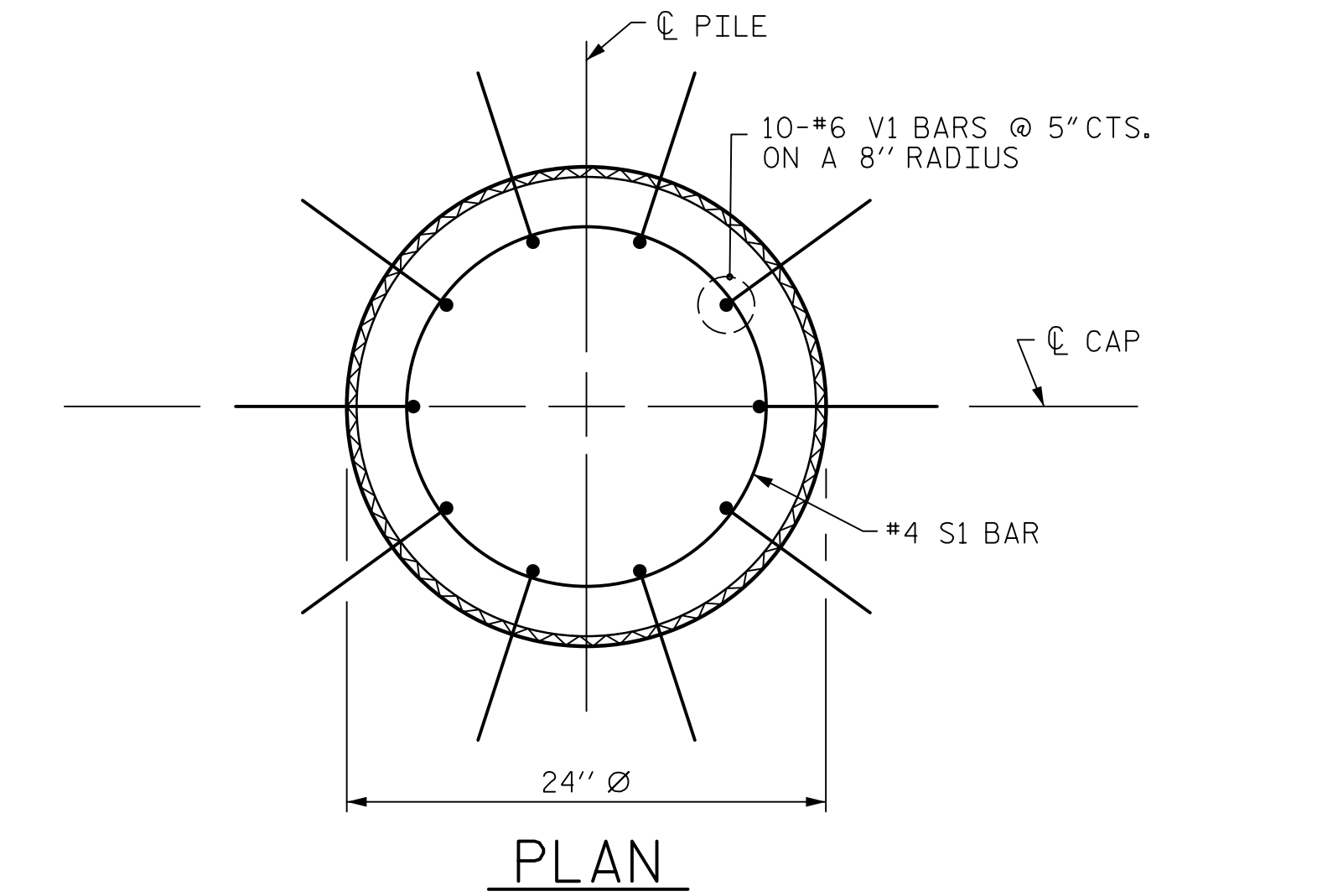
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SEAL
030474
ENGINEER
JOHN C. MORRISON
Signed by John C. Morrison
C0576167F93242D.

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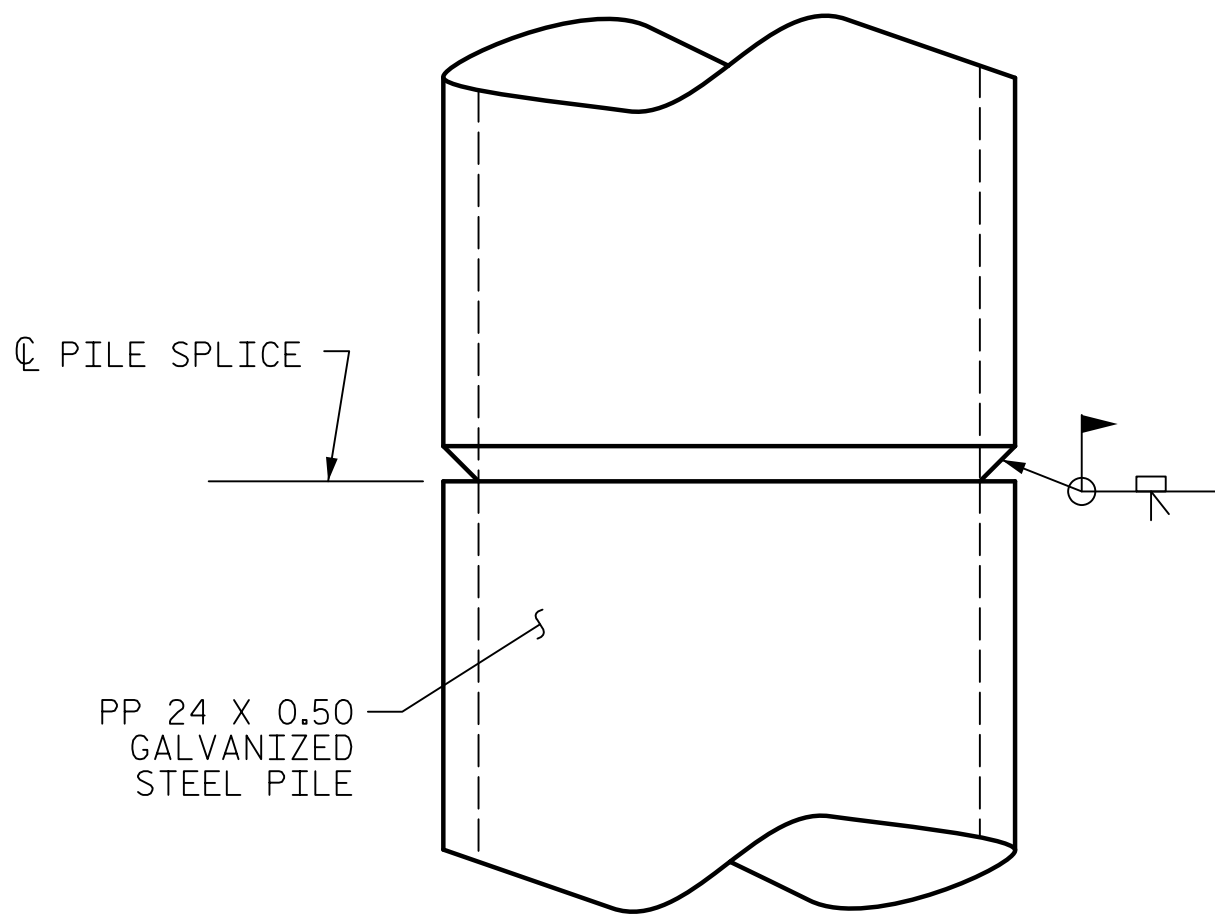
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END BENT 2					
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PP 24 X 0.50 GALVANIZED STEEL PILE
(OPEN END)



PIPE PILE SPLICE DETAIL

NOTES

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

GALVANIZE STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED. GALVANIZING OR METALLIZING PIPE PILE PLATES IS NOT REQUIRED.

PIPE PILE PLATES, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

REMOVE AND REPLACE OR REPAIR TO THE SATISFACTION OF THE ENGINEER PILES THAT ARE DAMAGED, DEFORMED OR COLLAPSED DURING INSTALLATION OR DRIVING.

PILE SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AWS D1.1.

FOR OPEN END PIPE PILES, REMOVE ENOUGH SOIL AND WATER FROM INSIDE THE PILES TO CONSTRUCT THE CONCRETE PLUG WITHOUT FOULING THE CONCRETE.

FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE BENT CAP UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 24 X 0.50 GALVANIZED STEEL PILES.

BILL OF MATERIAL FOR ONE PP 24 X 0.50 GALVANIZED STEEL PILE

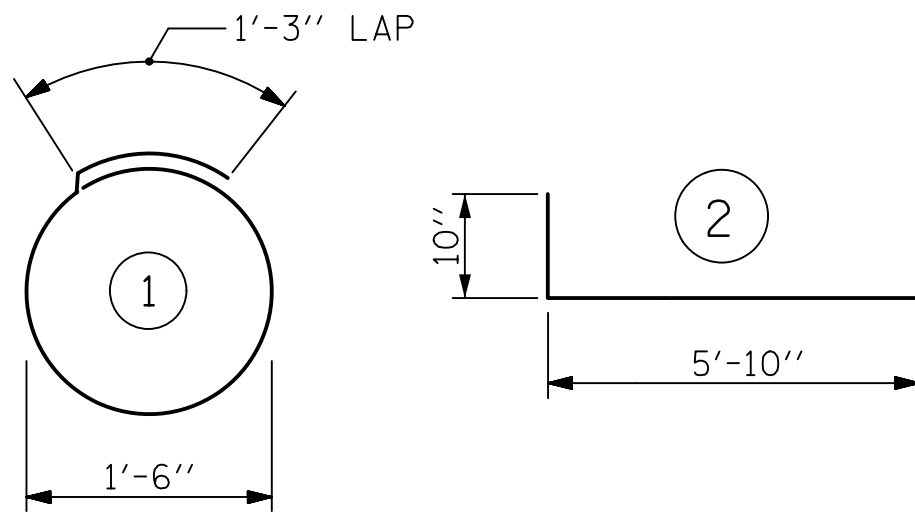
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	6'-0"	24
V1	10	#6	2	6'-8"	100
REINFORCING STEEL =				124	lbs

CLASS A CONCRETE

5'-0" MINIMUM PLUG

0.5 CY

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

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JOHN C. MORRISON
Signed by
John C. Morrison
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

24" STEEL PIPE PILE

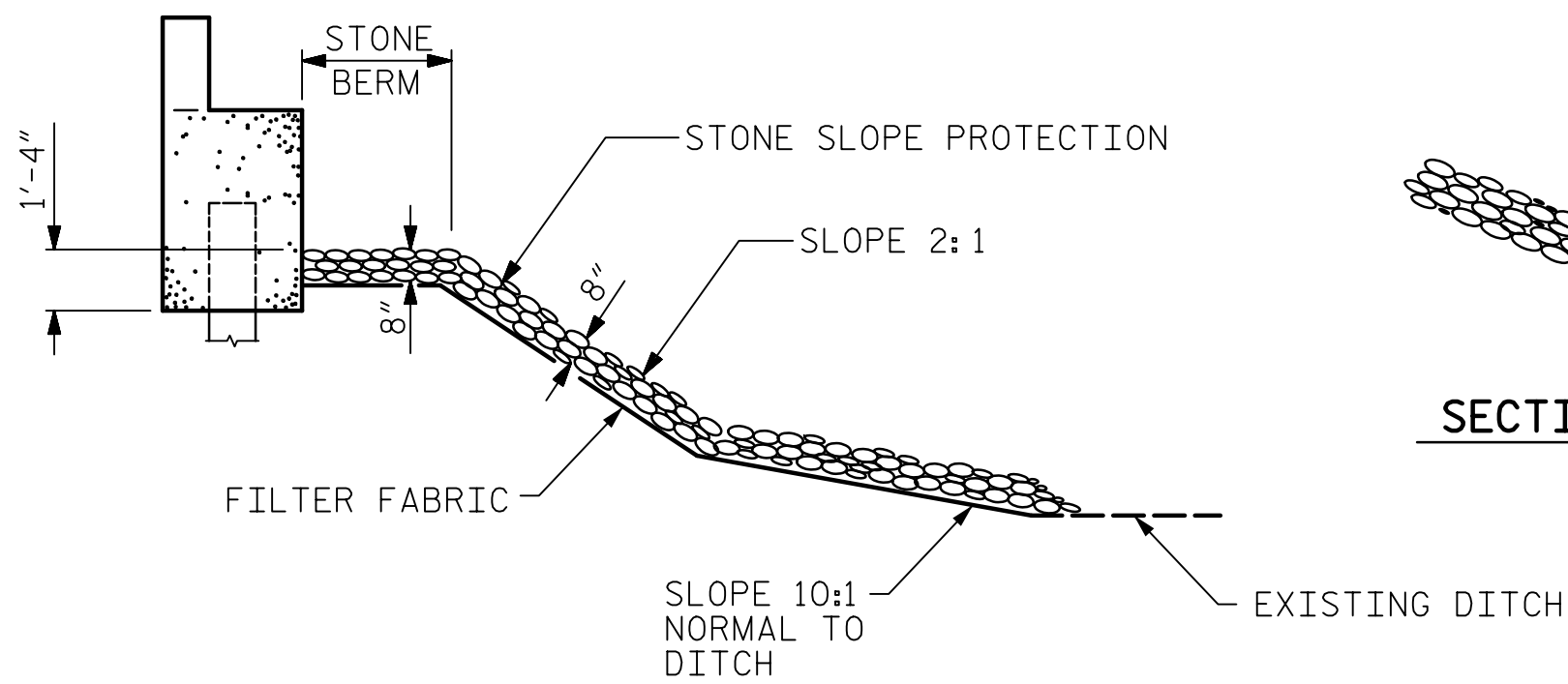
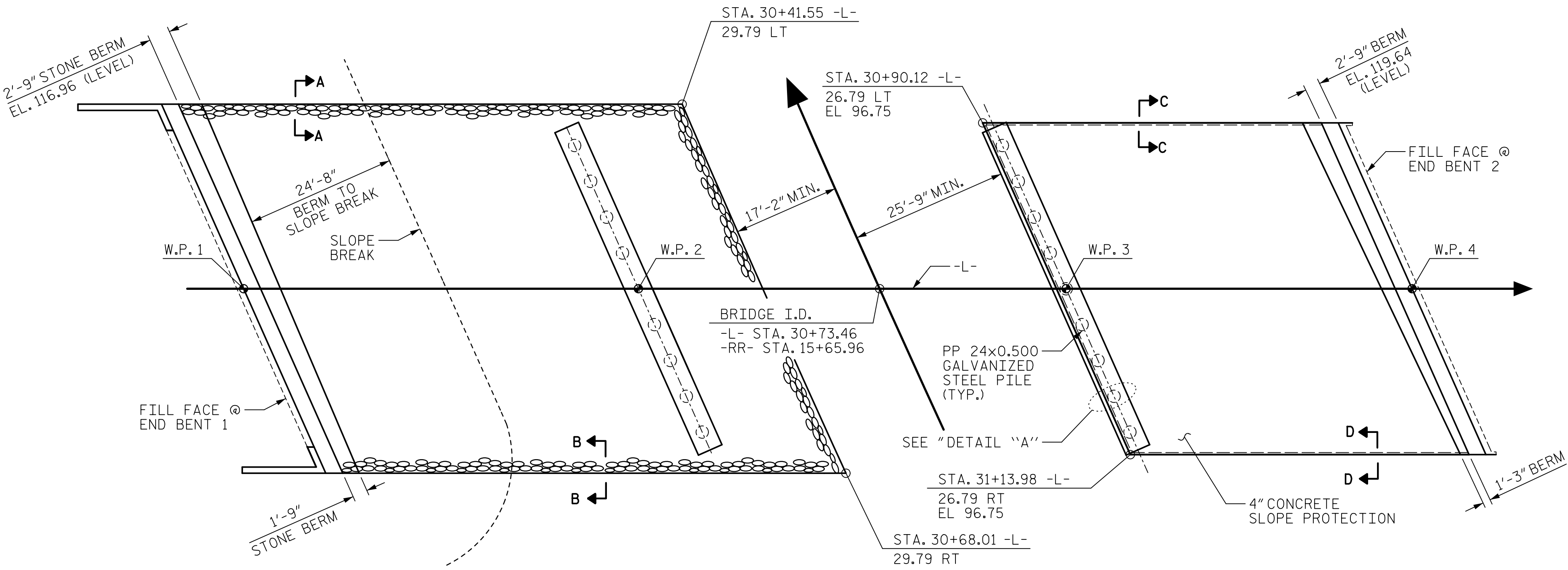
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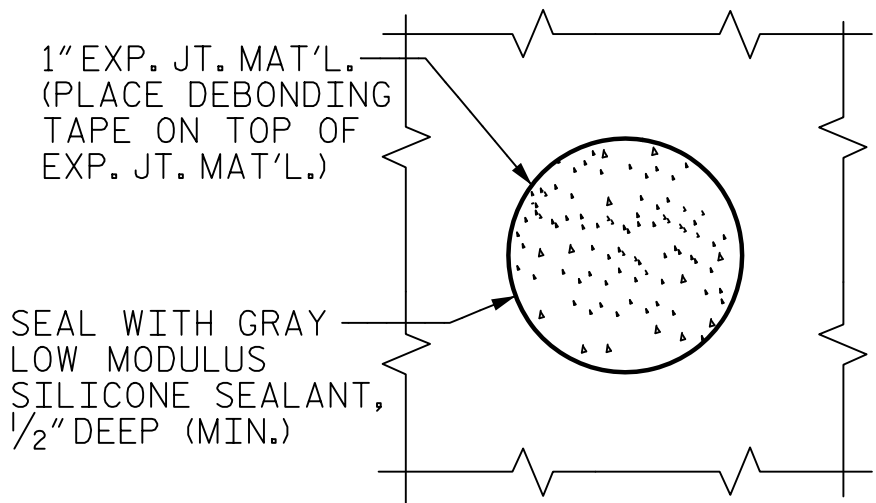
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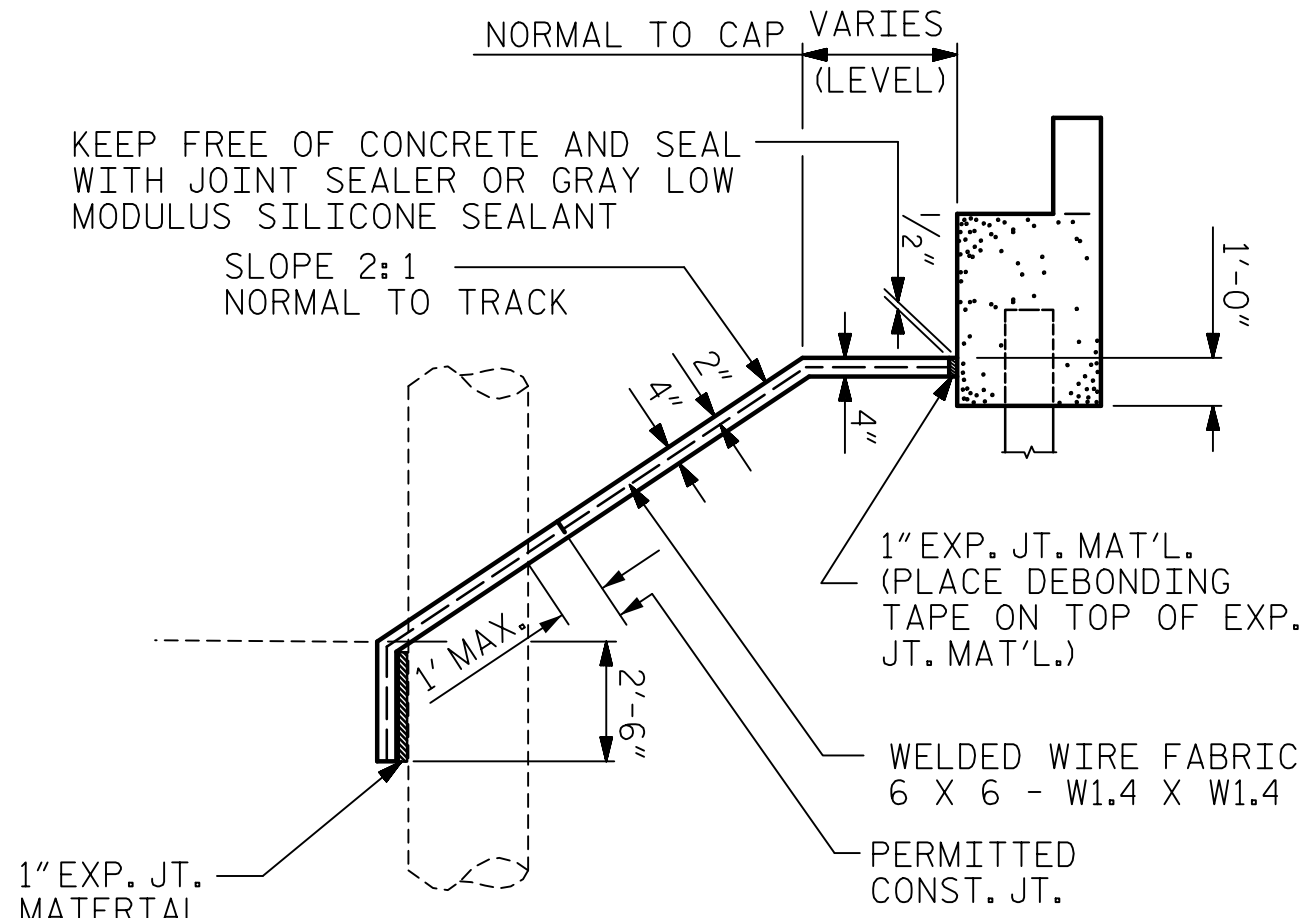


SECTION ALONG C SURVEY WHEN DITCH IS NOT PROVIDED

DETAILS FOR SLOPE PROTECTION AT END BENT 1

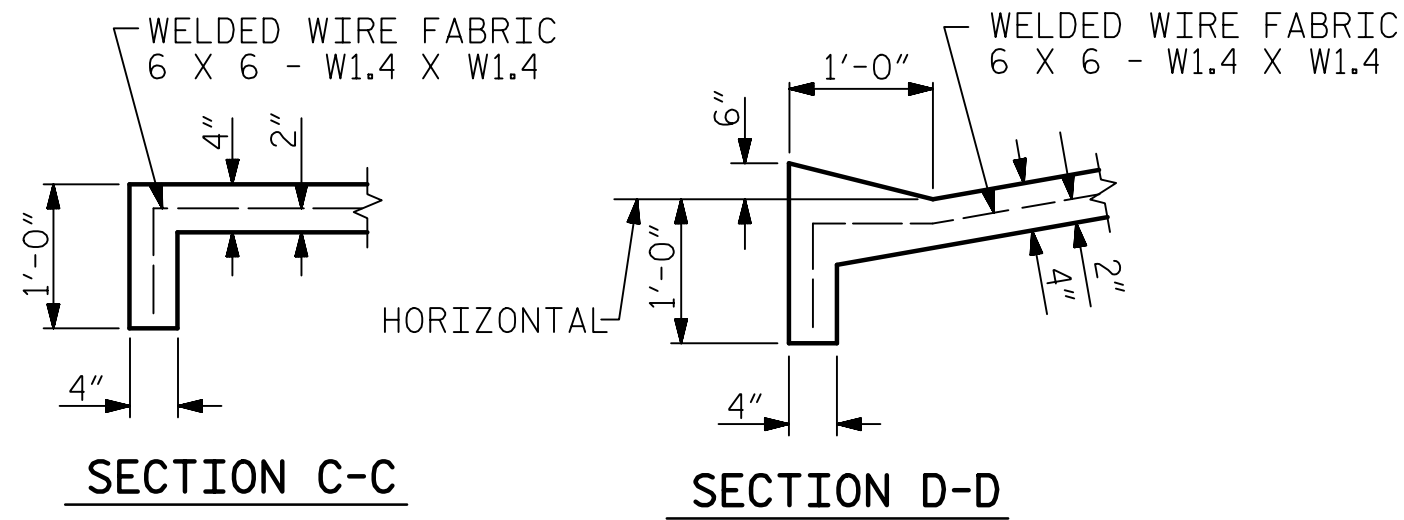


DETAIL "A"
PLAN OF SLOPE PROTECTION
AROUND BENT PILE



SECTION NORMAL TO TRACK

DETAILS FOR SLOPE PROTECTION AT END BENT 2



SECTION C-C

SECTION D-D

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. FOR BERM WIDTH, SEE GENERAL DRAWING.

SLOPE PROTECTION

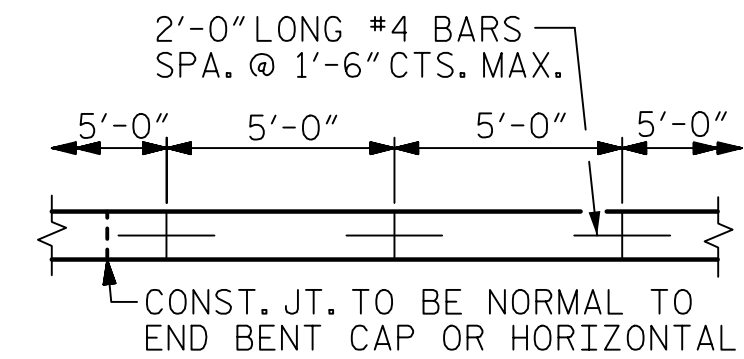
SLOPE PROTECTION AT END BENT 2 SHALL CONSIST OF 4" POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS "B". THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W1.4 X W1.4, 60" WIDE. SLOPE PROTECTION 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.

SLOPE PROTECTION AT END BENT 1 SHALL CONSIST OF FILTER FABRIC AND 8" OF STONE AS SHOWN IN THE DETAILS OF THIS SHEET. THE COST OF THE FILTER FABRIC AND STONE SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR 8" SLOPE PROTECTION. SUBGRADING, STONE TYPE, STONE SIZING, AND HERBICIDE PROTECTION, SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE HERBICIDE TYPE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO APPLICATION.

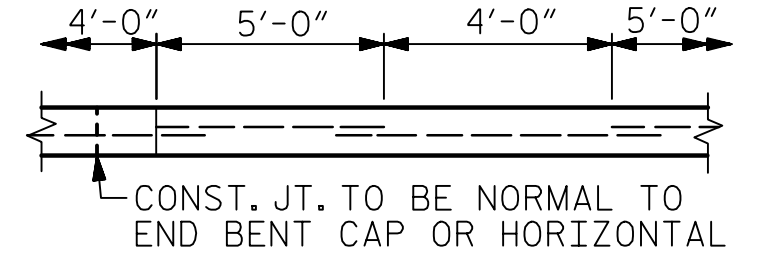
BRIDGE @ STA. 30+73.46 -L-	8 INCH SLOPE PROTECTION
	SQUARE YARDS
END BENT 1	539

BRIDGE @ STA. 30+73.46 -L-	4 INCH SLOPE PROTECTION	*WELDED WIRE FABRIC 60 INCHES WIDE
	SQUARE YARDS	APPROX. L.F.
END BENT 2	326	633

* QUANTITY SHOWN IS BASED ON 5' POURS.



STRIP WIDTHS MAY VARY IN CURVED PORTION.



POUR A 4'-0" STRIP FIRST. STRIP WIDTHS MAY VARY IN CURVED PORTION.

POURING DETAIL

OPTIONAL POURING DETAIL

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

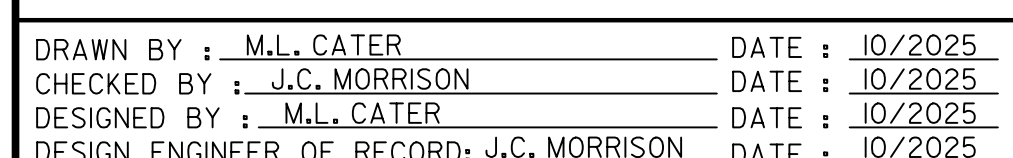
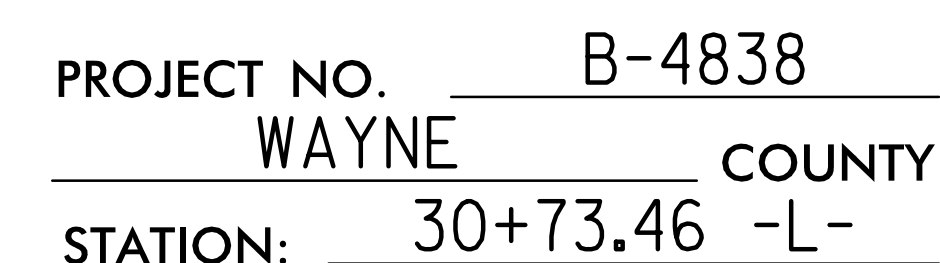
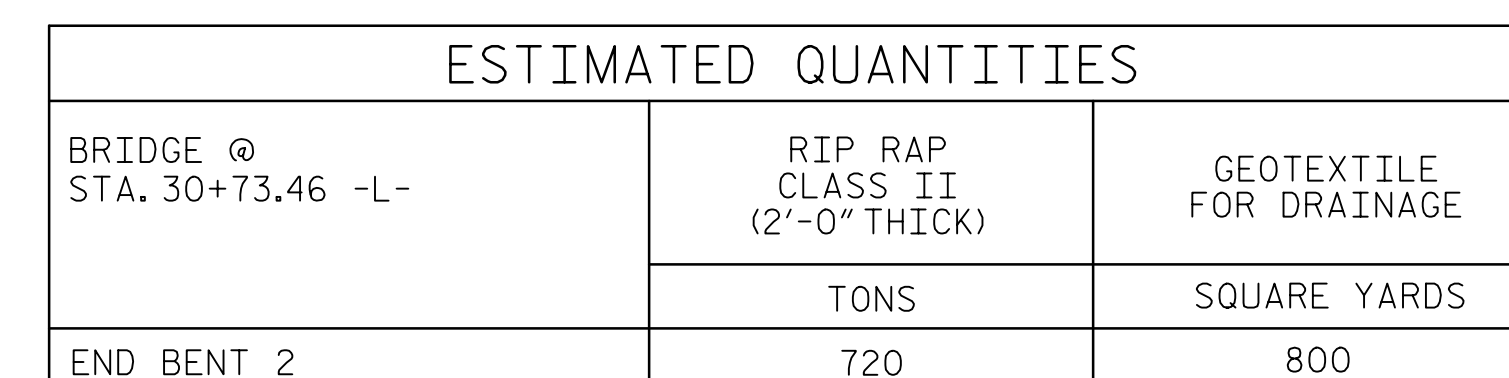
DRAWN BY : M.L. CATER DATE : 10/2025
CHECKED BY : J.C. MORRISON DATE : 10/2025
DESIGNED BY : M.L. CATER DATE : 10/2025
DESIGN ENGINEER OF RECORD: J.C. MORRISON DATE : 10/2025

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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD SLOPE PROTECTION DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-43					TOTAL SHEETS 52

FOR WALL DETAILS SEE GEOTECHNICAL PLANS.



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MOD. STD. NO. RR1

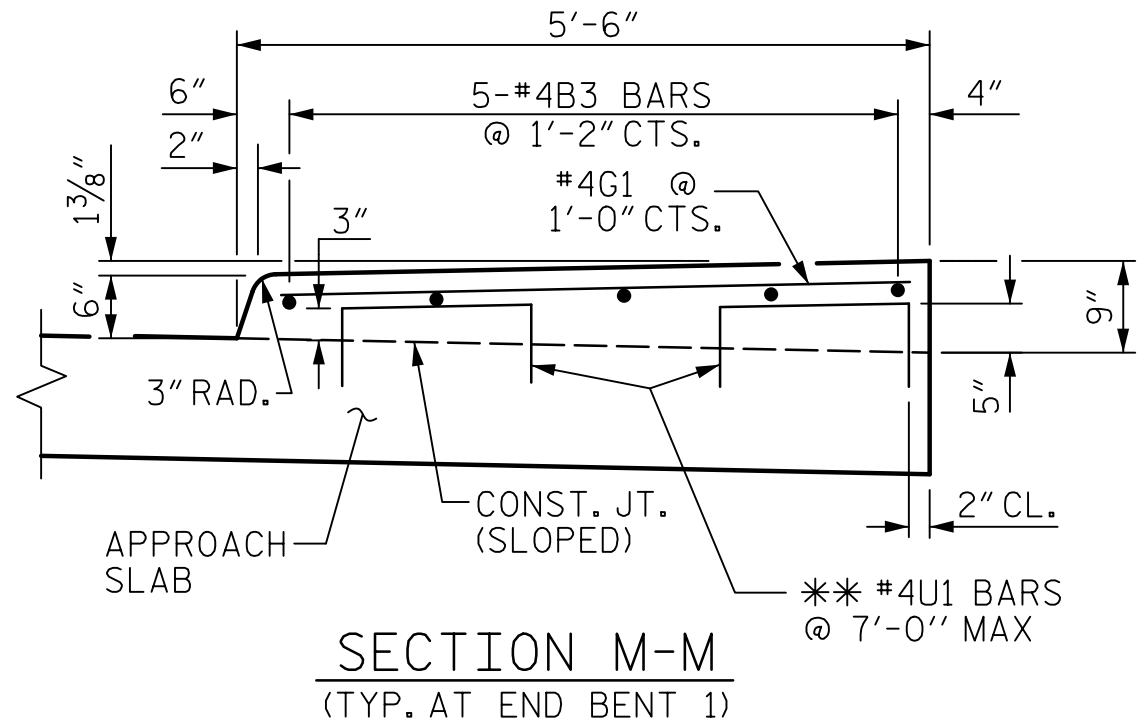
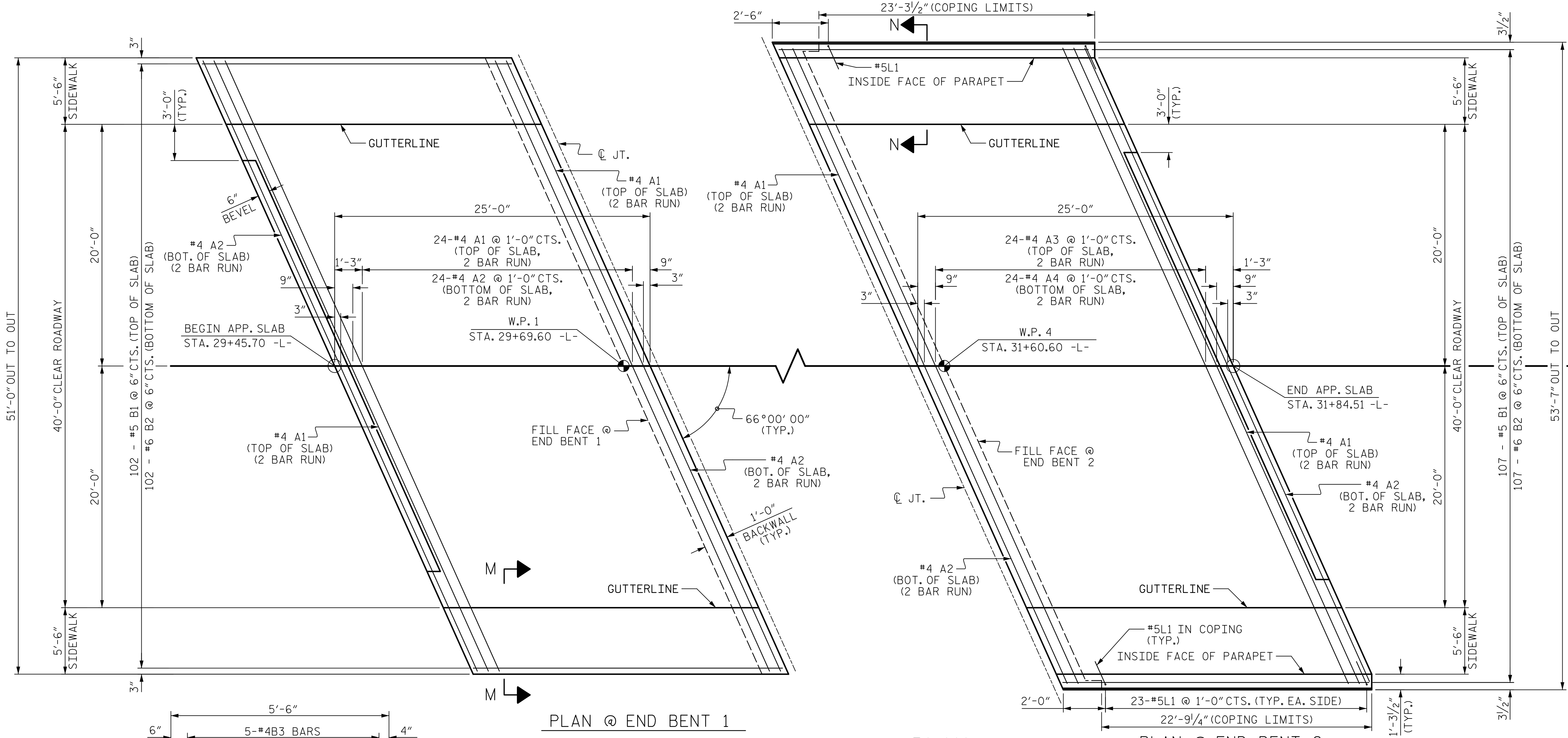
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NOTES:

FOR NOTES, SEE SHEET 2 OF 3.

FOR SPLICE LENGTH CHART,
SEE SHEET 2 OF 3.

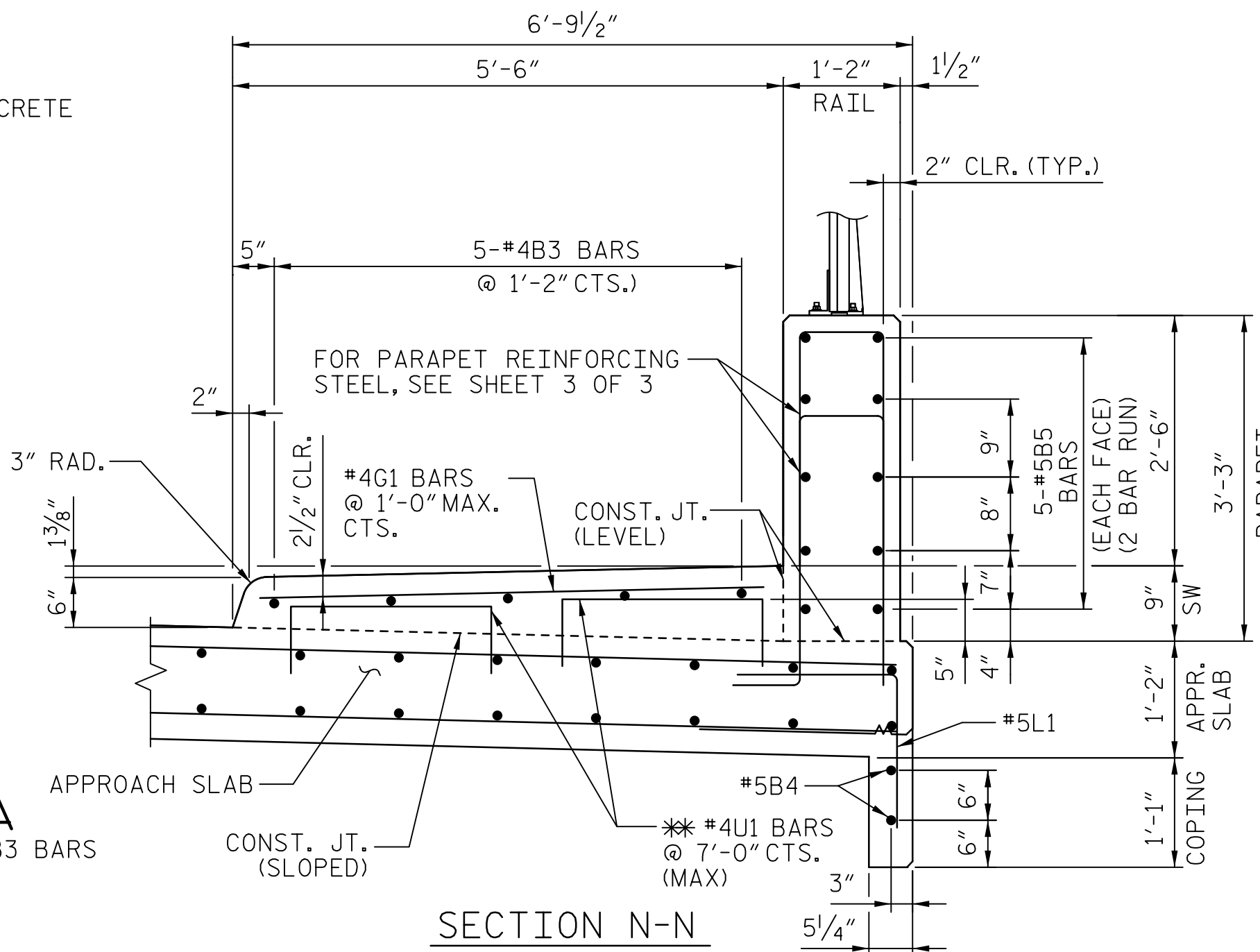


PLAN @ END BENT 1

PLAN

REINFORCING STEEL IN SIDEWALK NOT SHOWN FOR CLARITY.

PLAN @ END BENT 2

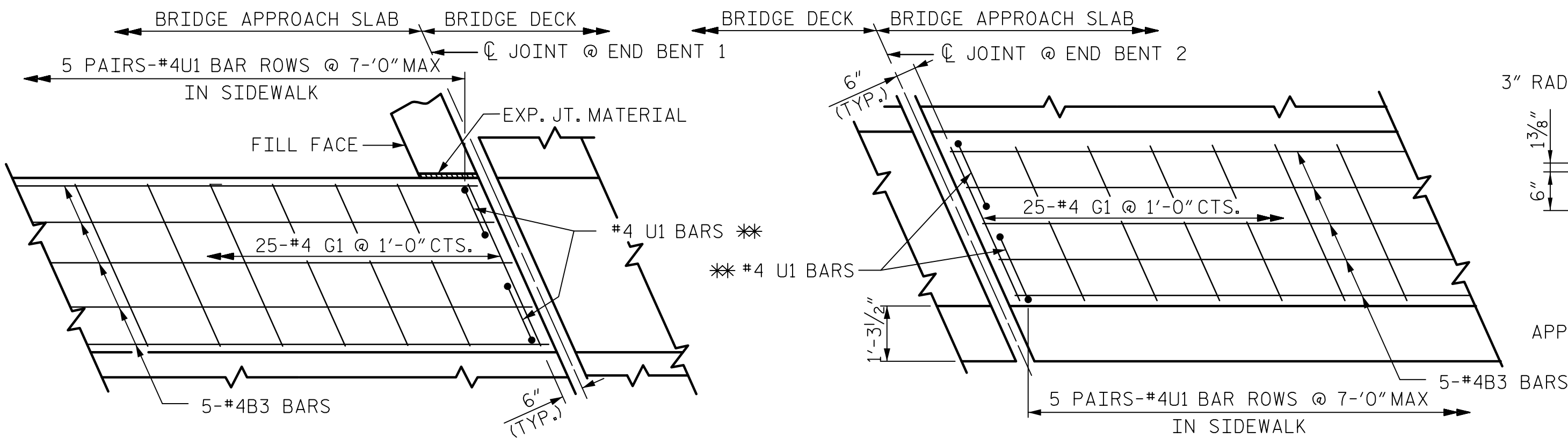


SECTION N-N
(TYP. AT END BENT 2)

MSE RETAINING WALL NOT SHOWN.
SEE WALL NO.1 & NO. 2 PLANS

DOCUMENT NOT CONSIDERED
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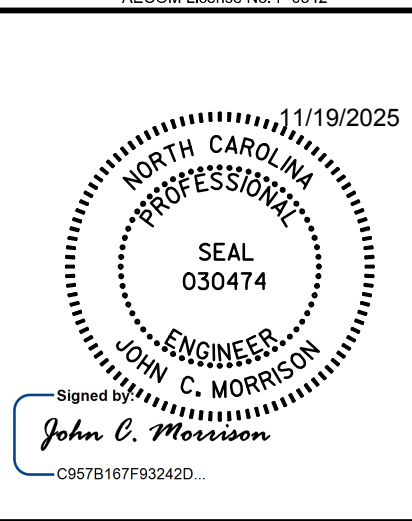
SIDEWALK DETAILS



DRAWN BY : M.L. CATER	DATE : 10/2025
CHECKED BY : J.C. MORRISON	DATE : 10/2025
DESIGNED BY : M.L. CATER	DATE : 10/2025
DESIGN ENGINEER OF RECORD: J.C. MORRISON	DATE : 10/2025

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

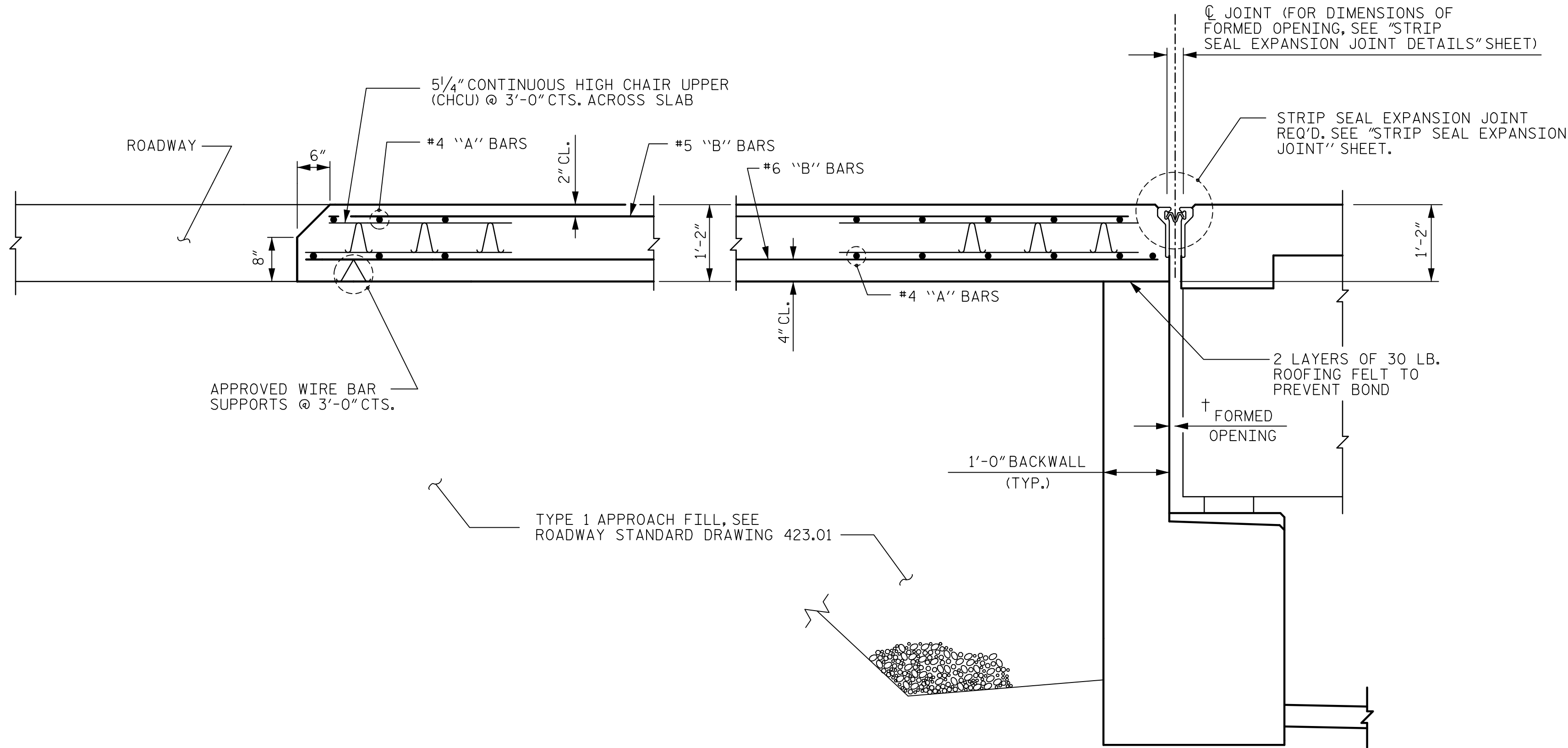
SHEET 1 OF 3



REVISIONS						SHEET NO. S-45
NO.	BY:	DATE:	NO.	BY:	DATE:	
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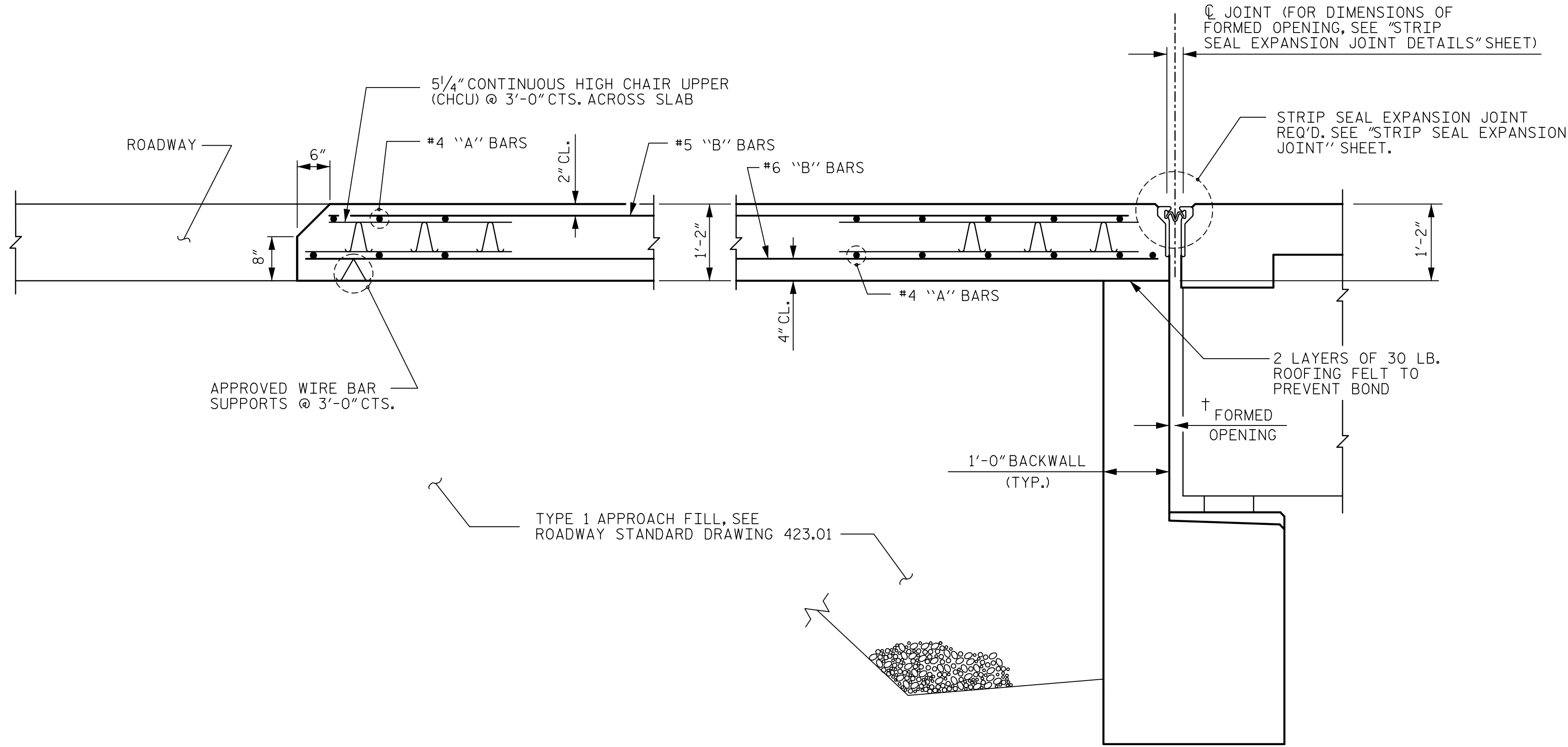
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SECTION THRU SLAB AT END BENT 2

(TYPE I - APPROACH FILL)



SECTION THRU SLAB AT END BENT 1

(TYPE I - APPROACH FILL)

NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 6" DIA. DRAINAGE PIPE, MSE WALL REINFORCEMENT AND BACKFILL MATERIAL, SEE ROADWAY PLANS.

GEOTEXTILE SHALL BE TYPE 1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

FOR END BENT 1, THE SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

SELECT MATERIAL BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

FOR THE 6" DIA. DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

FOR END BENT 2, BACKFILL MATERIAL IS GOING TO BE THE AGGREGATE USED IN THE REINFORCED ZONE FOR THE MSE RETAINING WALL.

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 STRIP SEAL EXPANSION JOINTS, SEE SPECIAL PROVISIONS.

PAYMENT FOR CONCRETE PARAPET AND 2 BAR METAL RAIL ON THE APPROACH SLAB AT END BENT 2 SHALL BE INCLUDED IN THE LINEAR FOOT CONTRACT PRICE BID FOR "1'-2" X 3'-3" CONCRETE PARAPET" AND "TWO BAR METAL RAIL".

THE SIDEWALK SHALL NOT BE CAST UNTIL APPROACH SLAB CONCRETE HAS BEEN CAST AND REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.

ALL REINFORCING STEEL IN THE SIDEWALKS SHALL BE EPOXY COATED.

FOR SIDEWALK REINFORCING, SEE "SIDEWALK DETAILS".

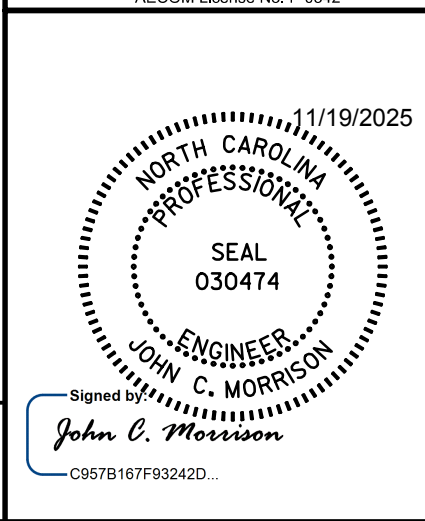
GROOVED CONTRACTION JOINTS 1/2" IN DEPTH SHALL BE TOOLED IN ALL EXPOSED FACES OF SIDEWALK IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FEET TO 10 FEET BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR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

NO SEPARATE MEASUREMENT OF PAYMENT WILL BE MADE FOR MATERIALS OR LABOR REQUIRED TO CONSTRUCT THE CONCRETE SIDEWALKS, THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR APPROACH SLABS.

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

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 2 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB

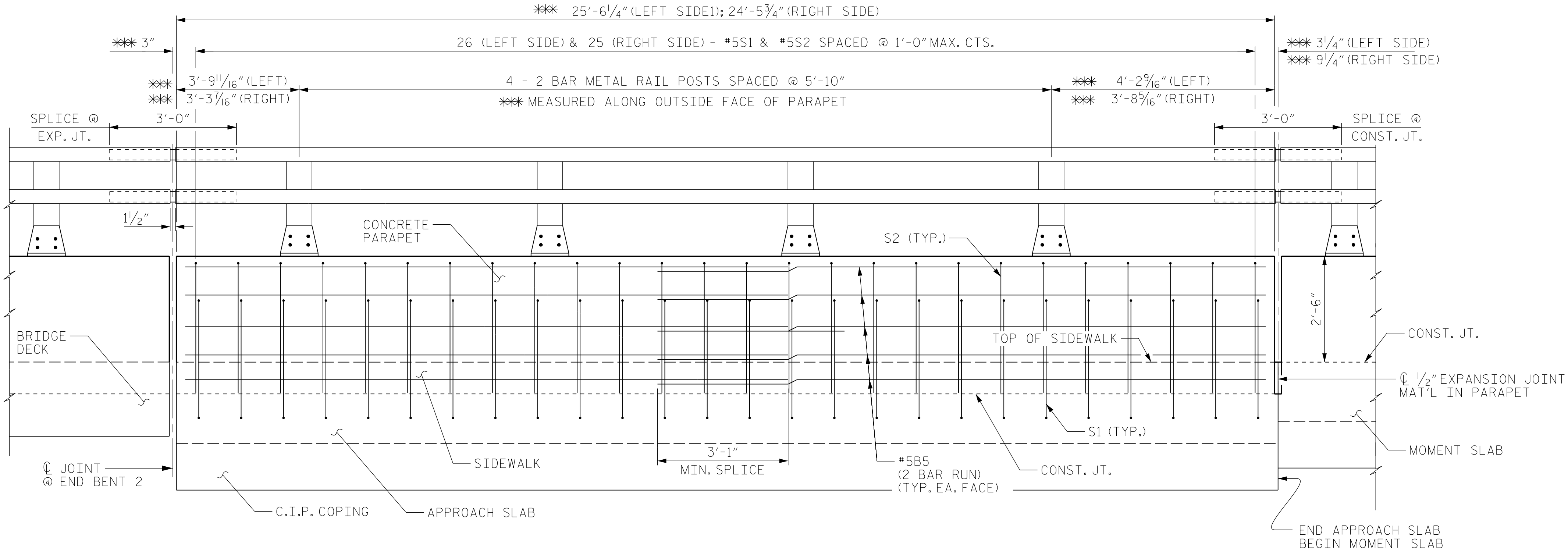
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CHECKED BY : J.C. MORRISON DATE : 10/2025
DESIGNED BY : M.L. CATER DATE : 10/2025
DESIGN ENGINEER OF RECORD: J.C. MORRISON DATE : 10/2025

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2			4			

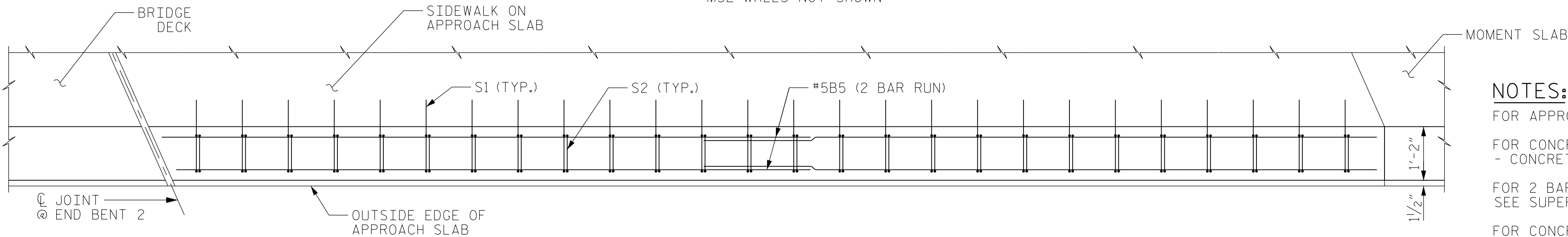
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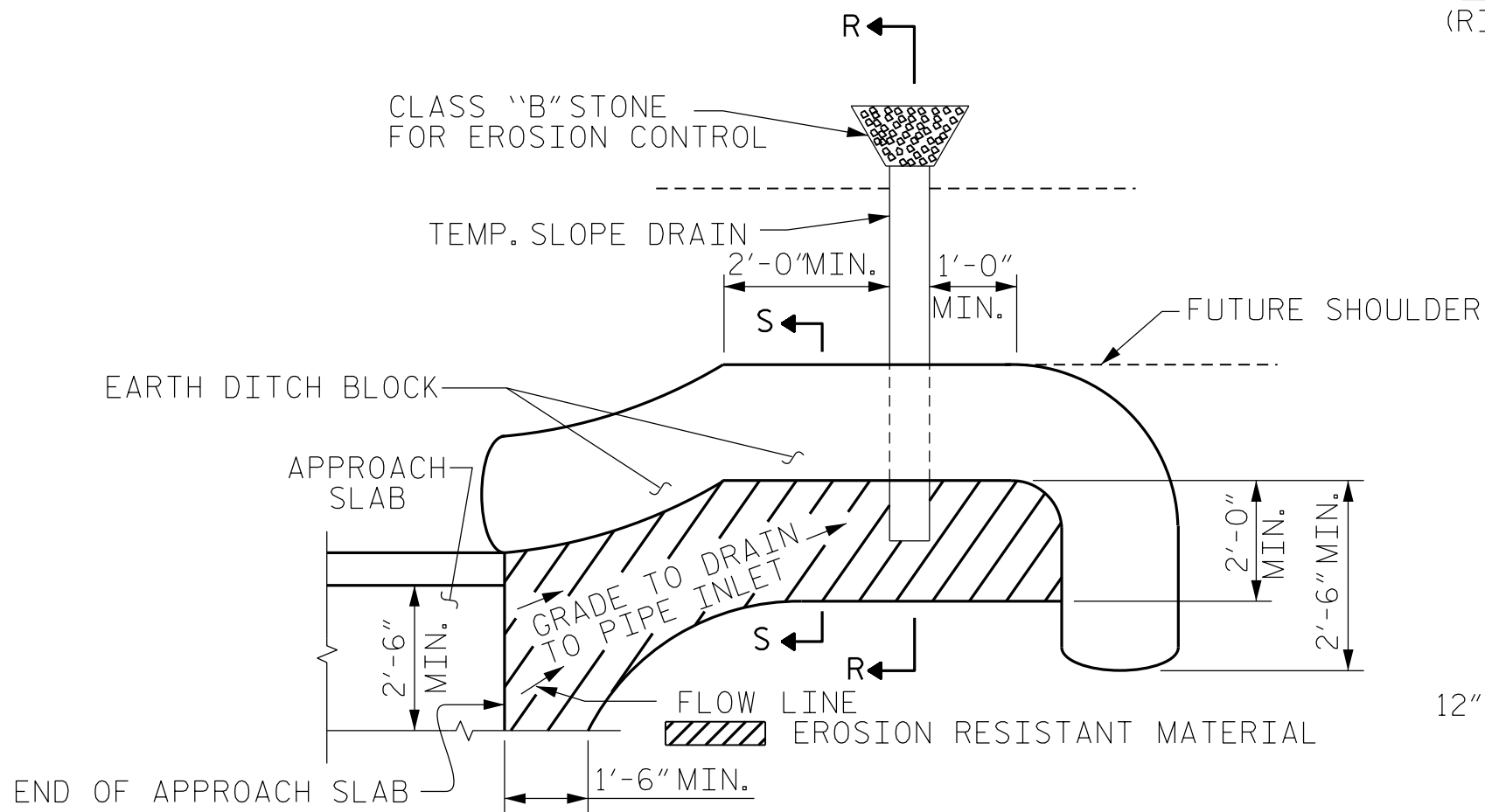
ELEVATION OF PARAPET

NOTE: 4-BOLT METAL RAIL POST ANCHOR ASSEMBLY NOT SHOWN FOR CLARITY
MSE WALLS NOT SHOWN



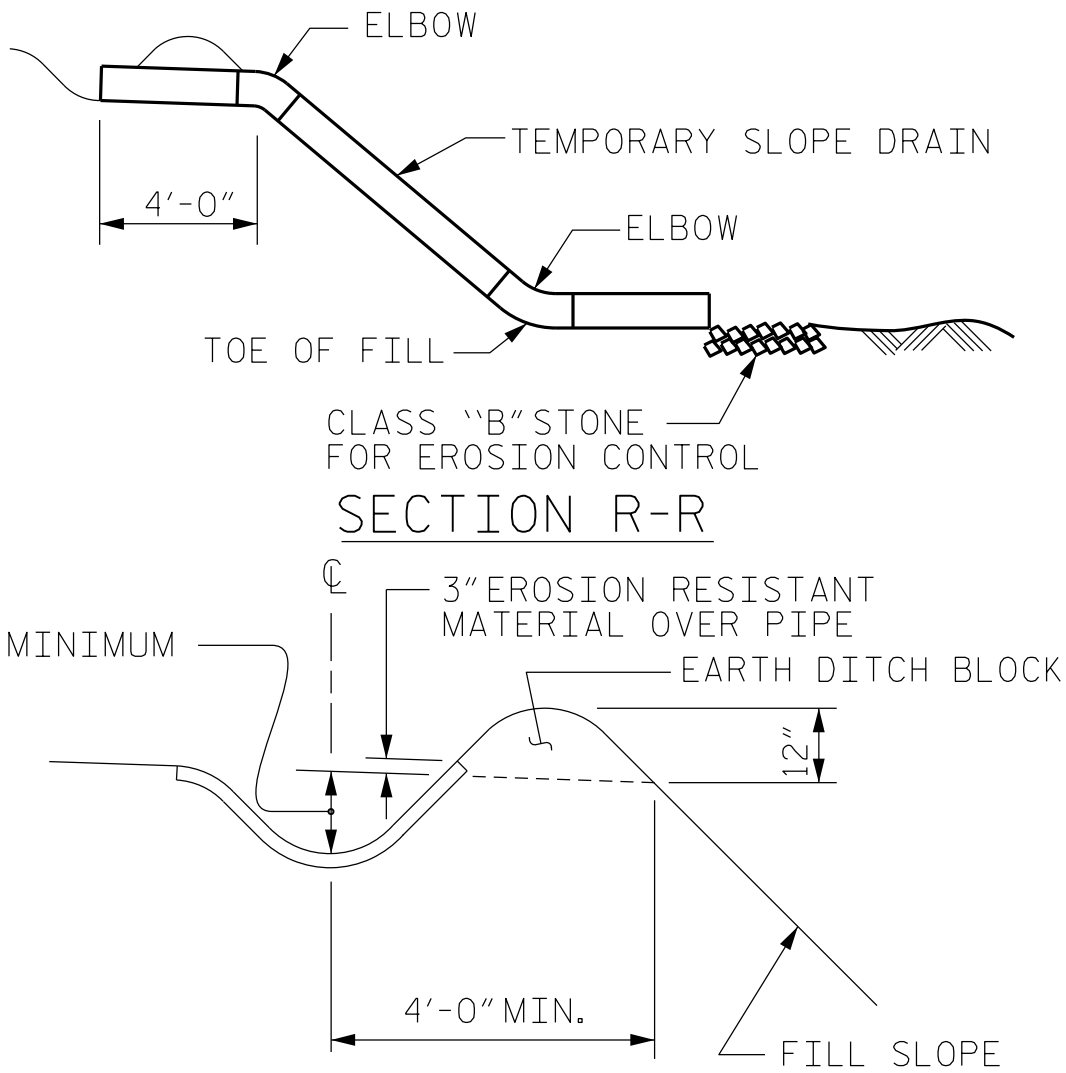
PLAN OF PARAPET

(RIGHT SIDE SHOWN, LEFT SIDE SIMILAR)

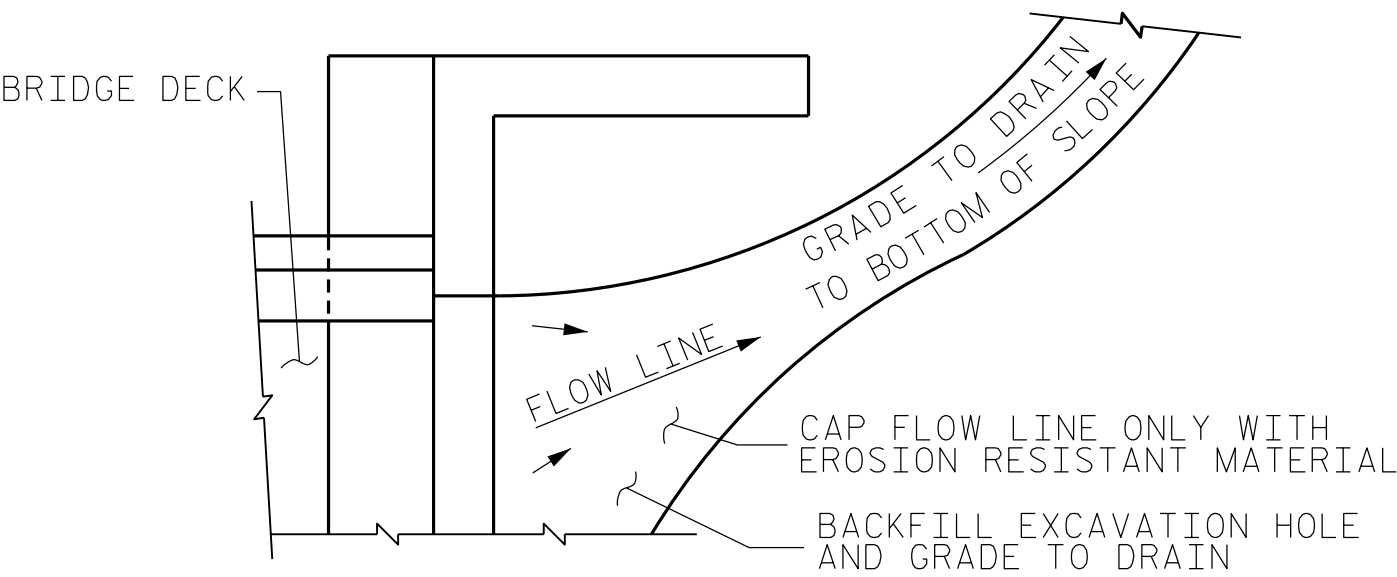


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

PLAN VIEW



SECTION S-S



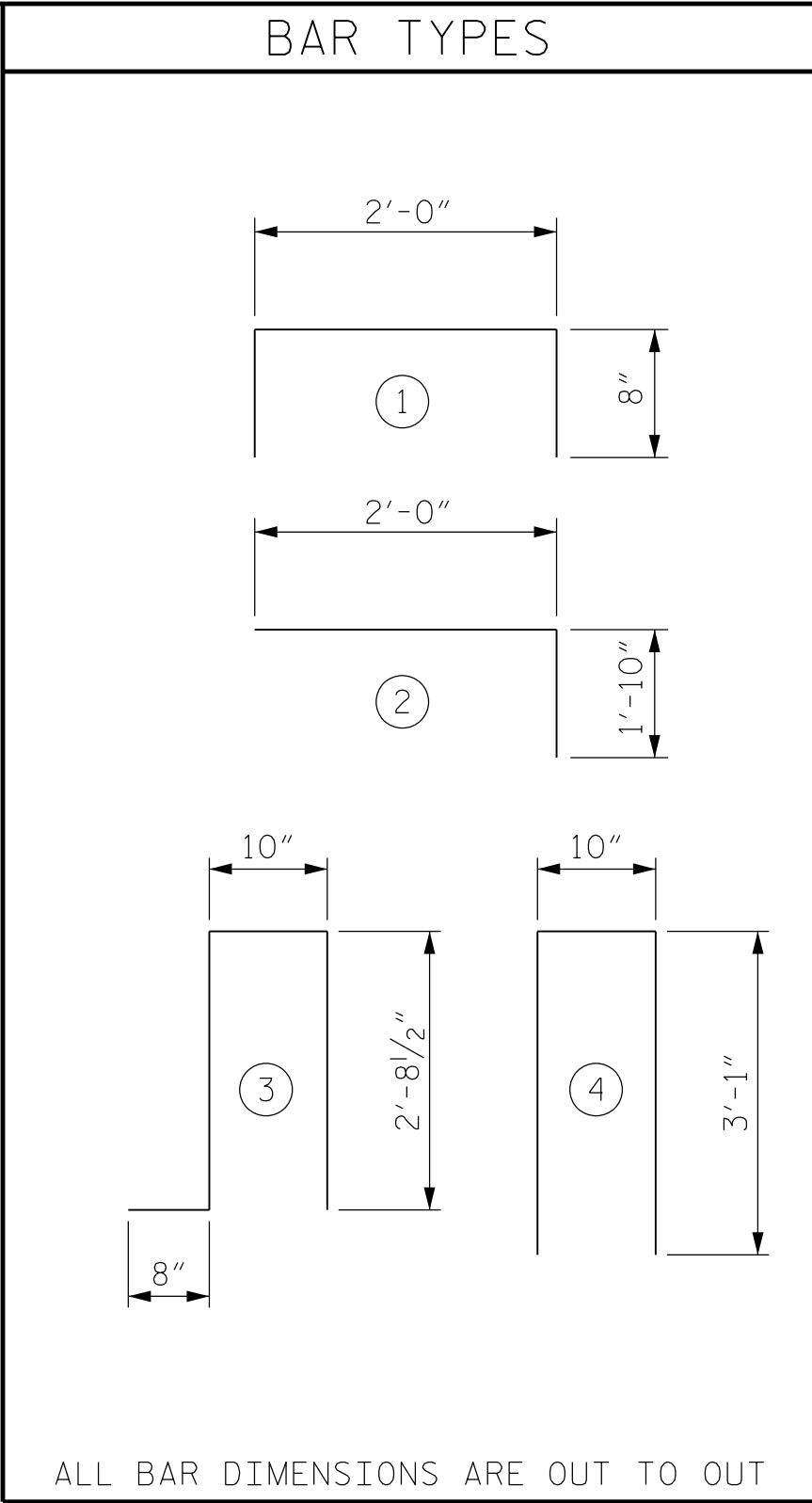
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

TEMPORARY DRAINAGE DETAIL

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

DRAWN BY : A.R. VAN VUREN	DATE : 10/20/25
CHECKED BY : J.C. MORRISON	DATE : 10/20/25
DESIGNED BY : A.R. VAN VUREN	DATE : 10/20/25
DESIGN ENGINEER OF RECORD: J.C. MORRISON	DATE : 10/20/25



*** CONCRETE QUANTITIES FOR APPROACH SLAB DO NOT INCLUDE CONCRETE PARAPET RAIL.

BILL OF MATERIAL

APPROACH SLAB 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	52	#4	STR	28'-8"	996
A2	52	#4	STR	28'-6"	990
* B1	102	#5	STR	24'-2"	2,571
B2	102	#6	STR	24'-8"	3,779
* B3	10	#4	STR	24'-8"	165
* G1	50	#4	STR	5'-4"	178
* U1	20	#4	1	3'-4"	45

REINFORCING STEEL	LBS.	4,769
* EPOXY COATED REINFORCING STEEL	LBS.	3,955
CLASS AA CONCRETE		
SLAB	C. Y.	54.9
SIDEWALK	C. Y.	6.3
TOTAL	C. Y.	61.2

APPROACH SLAB 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A3	52	#4	STR	30'-1"	1,045
A4	52	#4	STR	29'-11"	1,039
* B1	107	#5	STR	24'-2"	2,697
B2	107	#6	STR	24'-8"	3,964
* B3	10	#4	STR	24'-8"	165
B4	4	#5	STR	22'-5"	94
L1	46	#5	2	3'-10"	184

* G1	50	#4	STR	5'-4"	178
* U1	20	#4	1	3'-4"	45

REINFORCING STEEL	LBS.	5,281
* EPOXY COATED REINFORCING STEEL	LBS.	4,130
CLASS AA CONCRETE ***		
SLAB	C. Y.	57.7
COPING	C. Y.	0.80
SIDEWALK	C. Y.	6.3
TOTAL	C. Y.	64.8

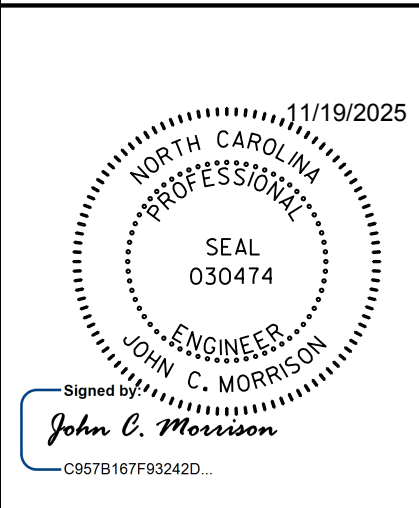
CONCRETE PARAPET

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B5	40	#5	STR	14'-2"	591
* S1	51	#5	3	6'-11"	368
* S2	51	#5	4	7'-0"	372

* EPOXY COATED REINFORCING STEEL	LBS.	1,331
CLASS AA CONCRETE ***	C. Y.	7.0
1'-2" x 3'-3" CONCRETE PARAPET	L.F.	50.0

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB

REVISIONS						SHEET NO. S-47
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 52
2			4			

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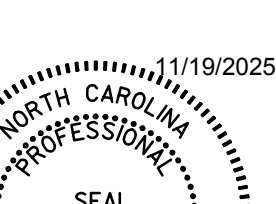
AECOM TECHNICAL SERVICES OF NC, INC.
5438 WADE PARK BOULEVARD, SUITE 200
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(919) 854-6200 www.aecom.com
AECOM License No. T-0342

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

11/19/2025



SEAL
030474

ENGINEER
JOHN C. MORRISON

Signed by
John C. Morrison

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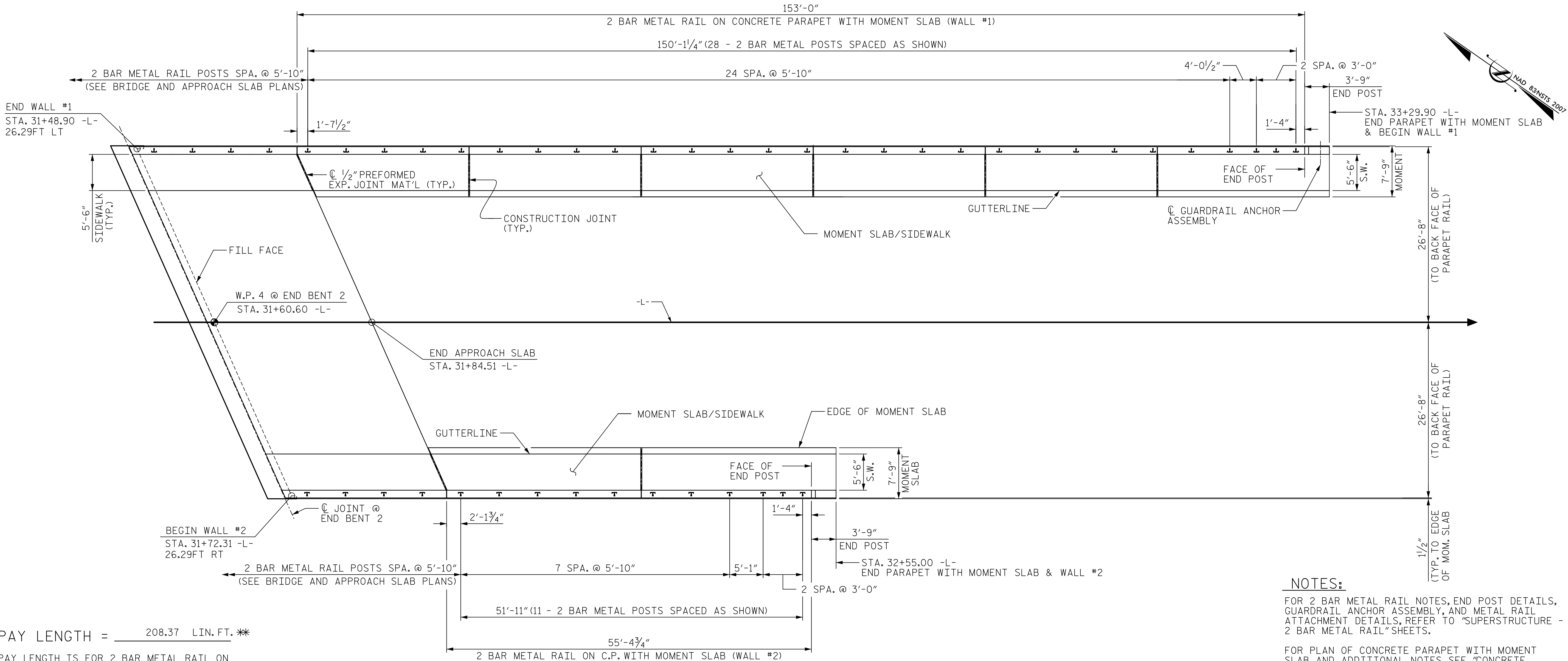
CONCRETE PARAPET WITH MOMENT SLAB

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

SHEET NO. S-48
TOTAL SHEETS 52

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PAY LENGTH = 208.37 LIN.FT.**

** PAY LENGTH IS FOR 2 BAR METAL RAIL ON BRIDGE AND APPROACH SLAB AT END BENT 2 MEASURED ALONG C RAIL, FOR PAY LENGTH 2 BAR METAL RAIL ON BRIDGE SUPERSTRUCTURE AND APPROACH SLAB, SEE "SUPERSTRUCTURE - 2 BAR METAL RAIL" SHEETS.

PLAN OF 2 BAR METAL RAIL POST SPACING AT WALLS #1 AND #2

NOTES:

FOR 2 BAR METAL RAIL NOTES, END POST DETAILS, GUARDRAIL ANCHOR ASSEMBLY, AND METAL RAIL ATTACHMENT DETAILS, REFER TO "SUPERSTRUCTURE - 2 BAR METAL RAIL" SHEETS.

FOR PLAN OF CONCRETE PARAPET WITH MOMENT SLAB AND ADDITIONAL NOTES, SEE "CONCRETE PARAPET WITH MOMENT SLAB" SHEET 1 OF 5.

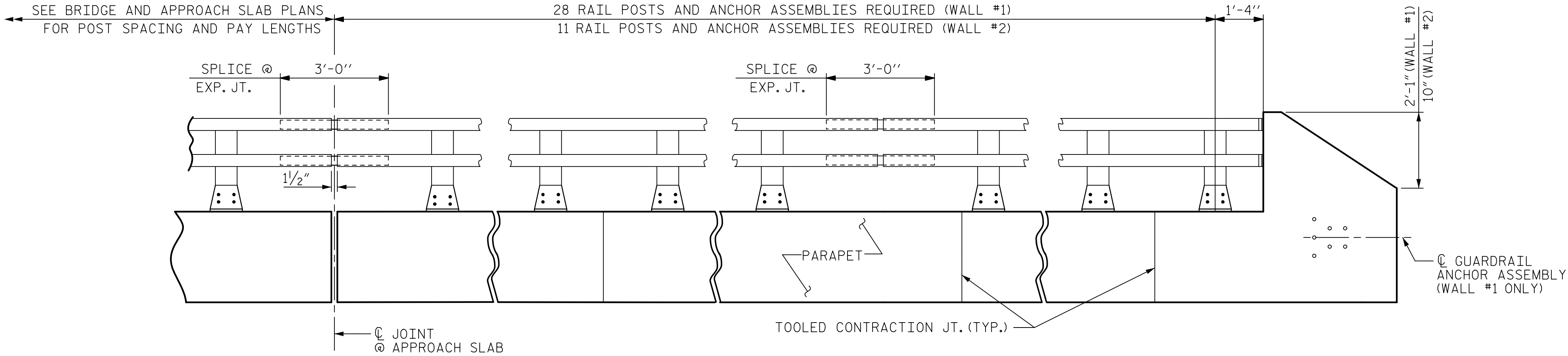
FOR CONCRETE PARAPET AND END POST QUANTITIES, SEE "CONCRETE PARAPET WITH MOMENT SLAB", SHEET 2 OF 5.

FOR MOMENT SLAB DETAILS AND QUANTITIES, SEE "CONCRETE PARAPET WITH MOMENT SLAB", SHEETS 4 OF 5 AND 5 OF 5.

SEE WALL PLANS FOR WALL #1 AND WALL #2 DETAILS.

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 3 OF 5



ELEVATION OF 2 BAR METAL RAIL AT WALLS #1 AND #2

DRAWN BY : M.L. CATER
CHECKED BY : J.C. MORRISON
DESIGNED BY : M.L. CATER
DESIGN ENGINEER OF RECORD: J.C. MORRISON
DATE : 10/2025
DATE : 10/2025
DATE : 10/2025
DATE : 10/2025

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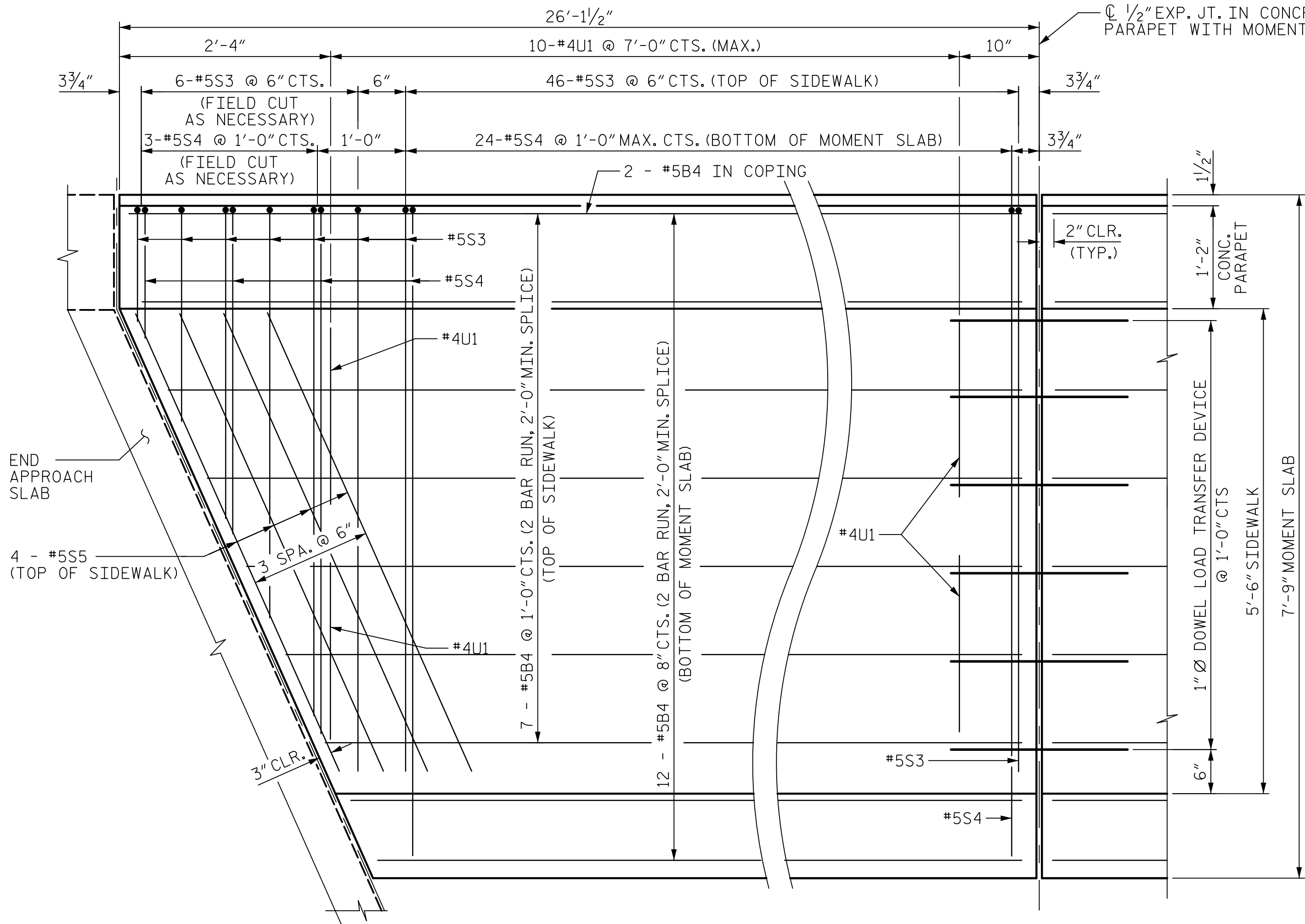
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11/19/2025
NORTH CAROLINA
PROFESSIONAL
SEAL
030474
ENGINEER
JOHN C. MORRISON
Signed
John C. Morrison
C0576167F93242D

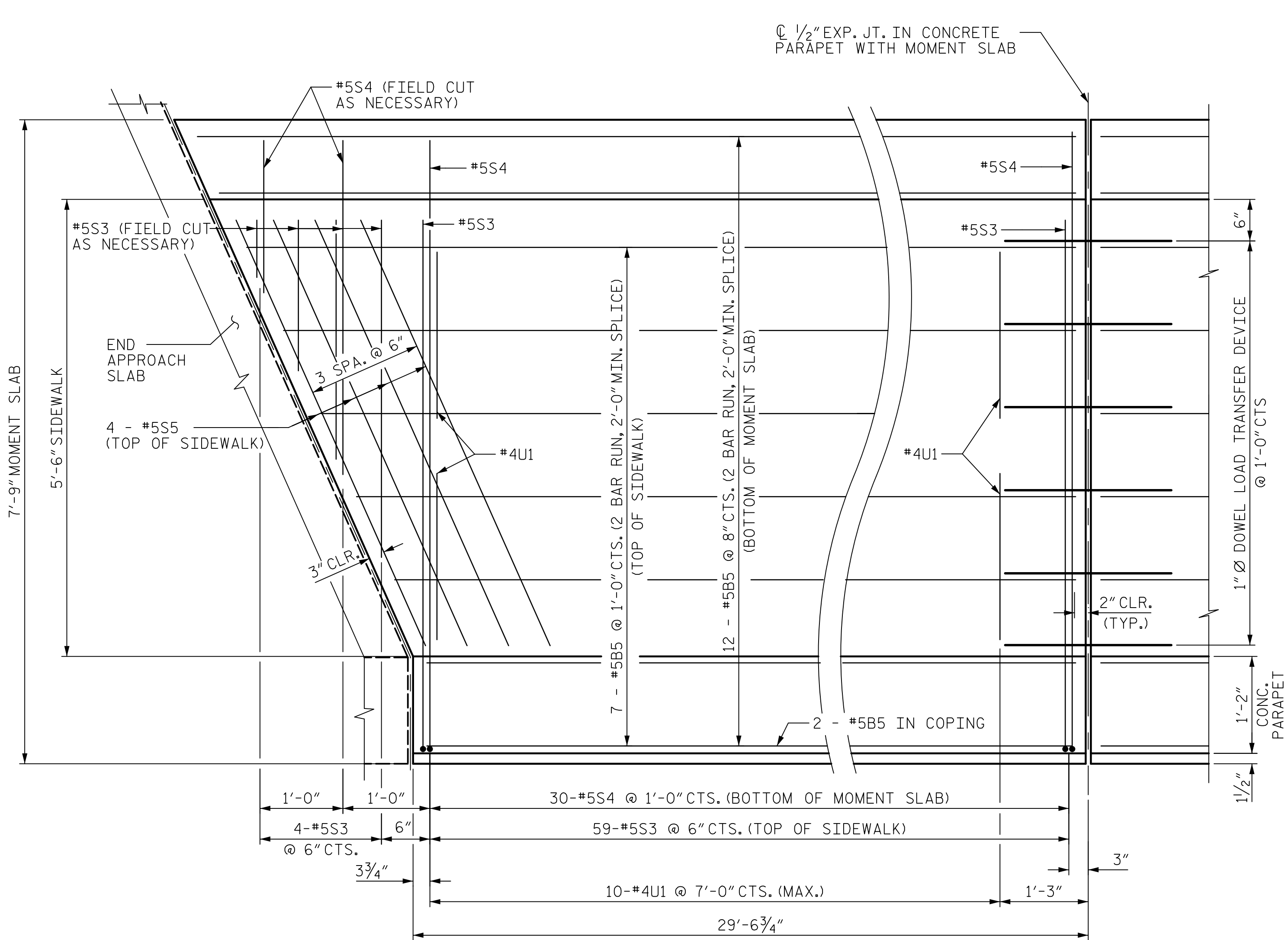
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REINFORCING PLAN OF MOMENT SLAB AT
END APPROACH SLAB AT WALL #1



REINFORCING PLAN OF MOMENT SLAB AT
END APPROACH SLAB AT WALL #2

NOTES:

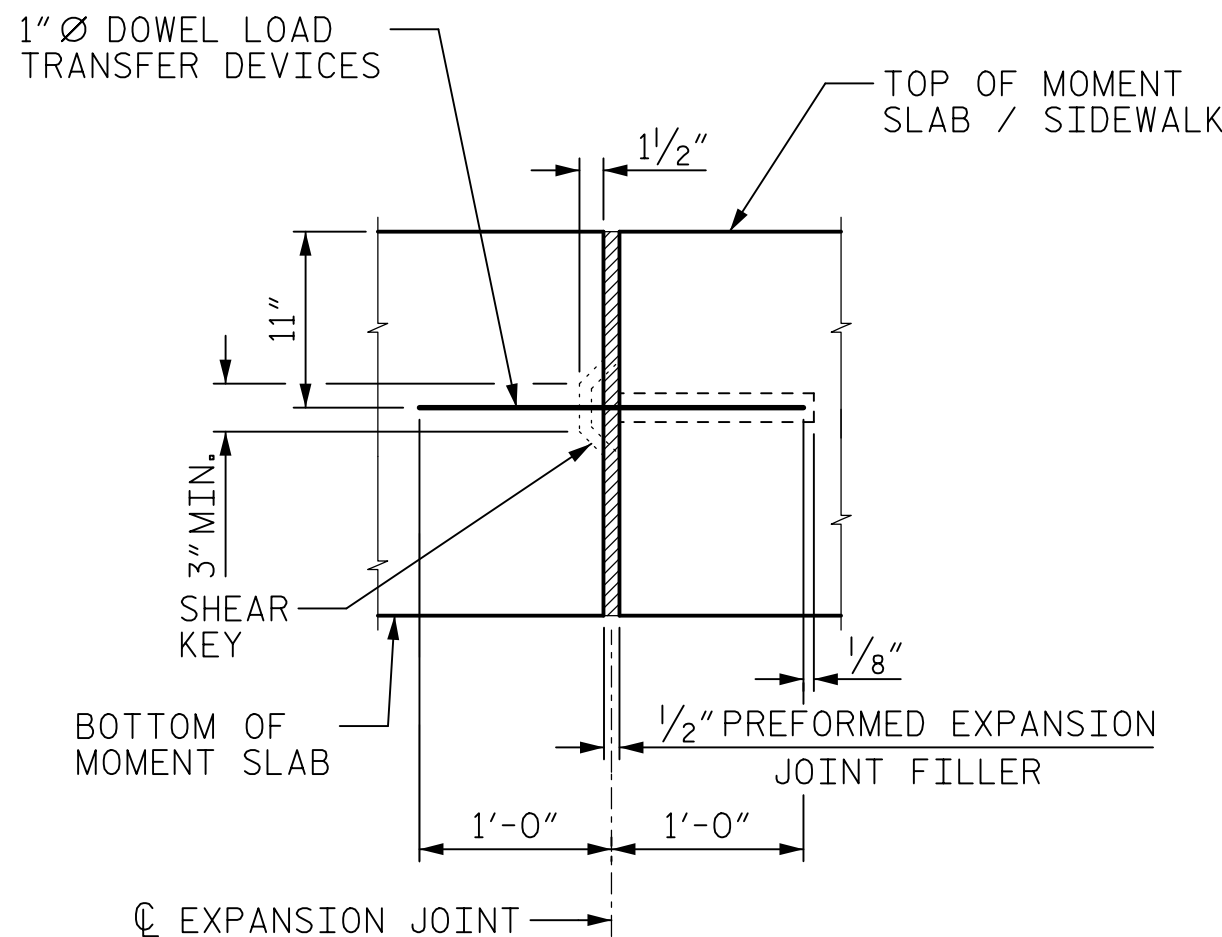
FOR PLAN OF CONCRETE PARAPET WITH MOMENT SLAB AND ADDITIONAL NOTES, SEE "CONCRETE PARAPET WITH MOMENT SLAB" SHEET 1 OF 5.

FOR CONCRETE PARAPET AND END POST DETAILS AND QUANTITIES, SEE "CONCRETE PARAPET WITH MOMENT SLAB", SHEET 2 OF 5.

FOR DETAILS OF 2 BAR METAL RAIL AT WALL #1 AND #2, SEE "CONCRETE PARAPET WITH MOMENT SLAB", SHEET 3 OF 5.

FOR ADDITIONAL MOVEMENT SLAB DETAILS AND QUANTITIES, SEE "CONCRETE PARAPET WITH MOMENT SLAB", SHEET 5 OF 5.

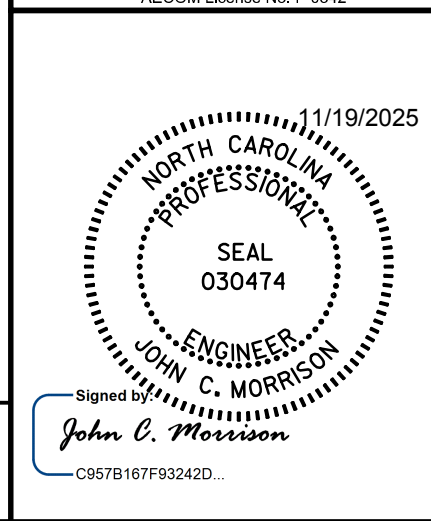
SEE WALL PLANS FOR WALL #1 AND WALL #2 DETAILS.



EXPANSION JOINT DETAIL
(RAISED SIDEWALK EXPANSION JOINTS ARE TO COINCIDE WITH 1/2" OPEN JOINTS IN CONCRETE PARAPET)

PROJECT NO. B-4838
WAYNE COUNTY
STATION: 30+73.46 -L-

SHEET 4 OF 5



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE PARAPET
WITH MOMENT SLAB

REVISIONS						SHEET NO. S-51
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 52
2			4			

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES"OF THE N.C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

STD. NO. SN