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09_08/25

CONTRACT: DN01118 PROJECT TIP: DF18314.2045332

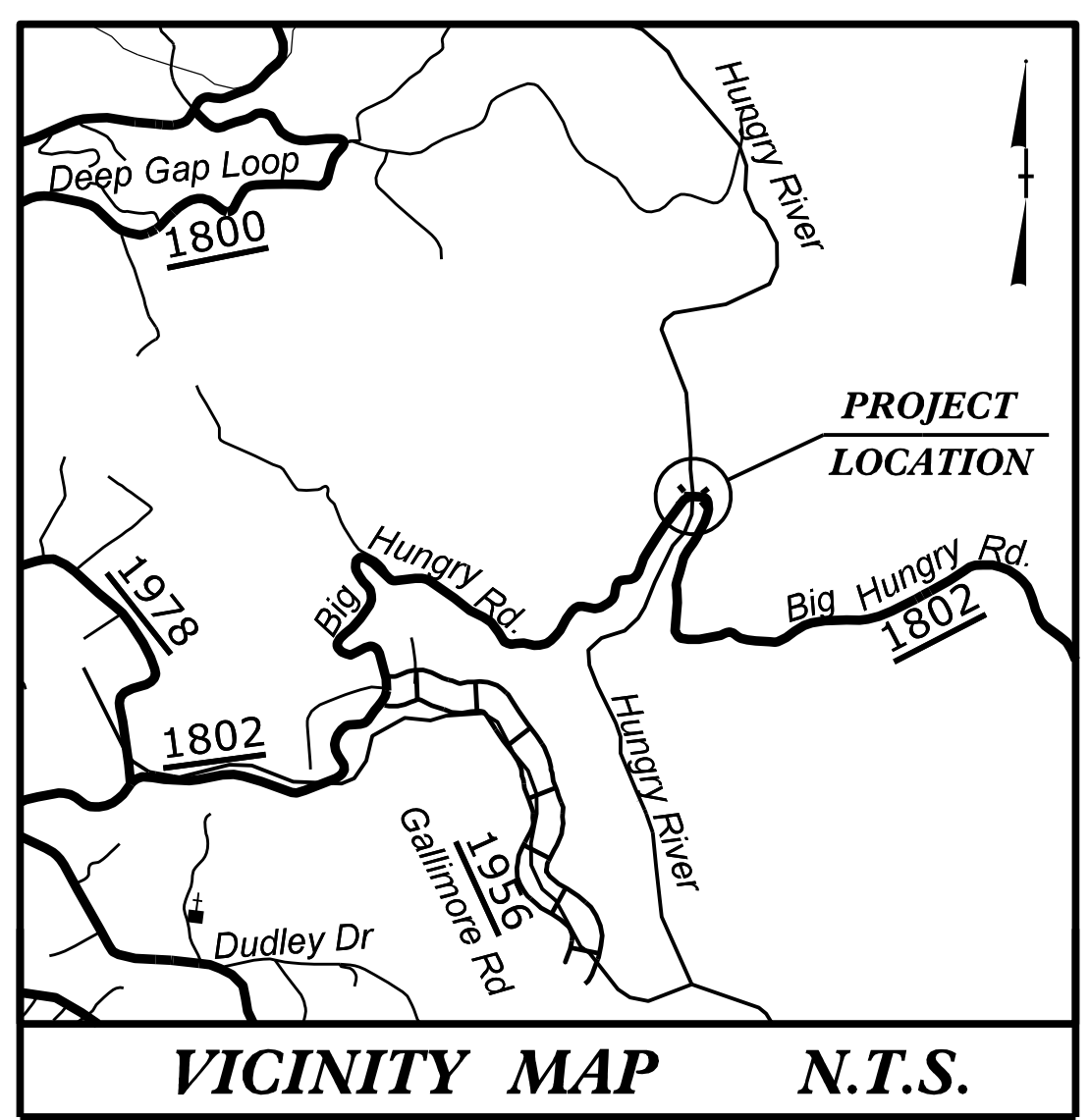
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HENDERSON COUNTY

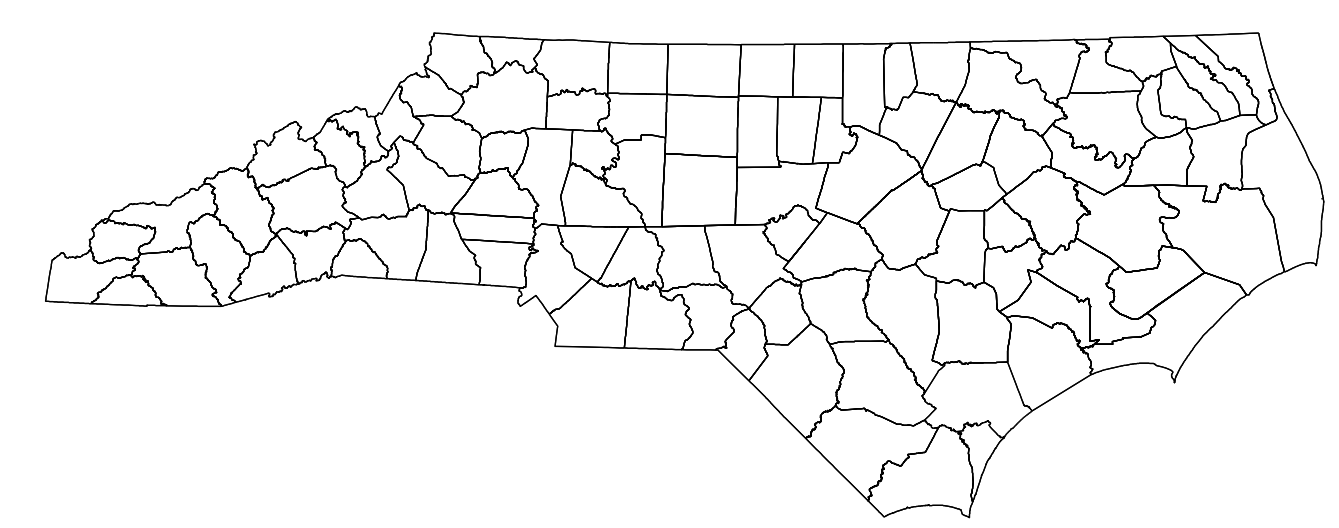
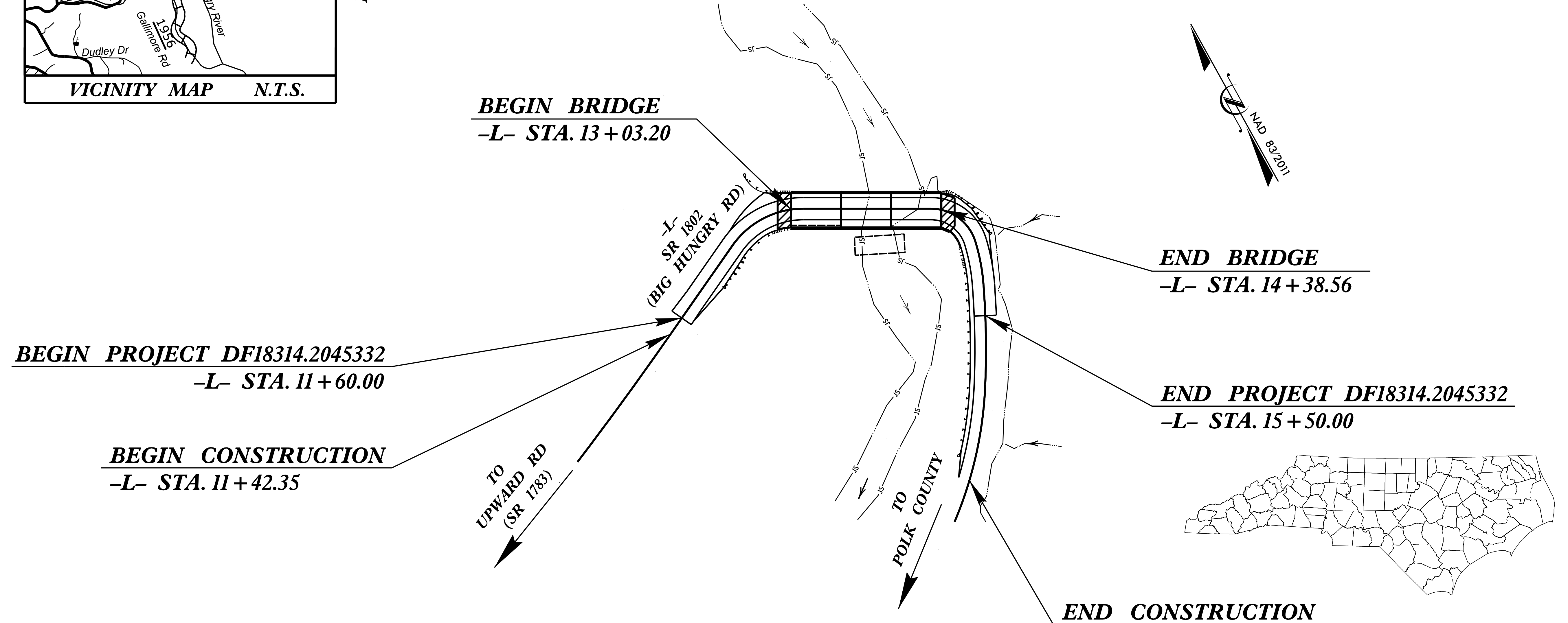
**LOCATION: BRIDGE 440055 OVER HUNGRY RIVER
ON SR 1802 (BIG HUNGRY ROAD)**

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE (BRIDGE)

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	DF18314.2045332	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
DF18314.2045332	N/A	PE	
DF18314.2045332	N/A	RW	
DF18314.2045332	N/A	CONST.	

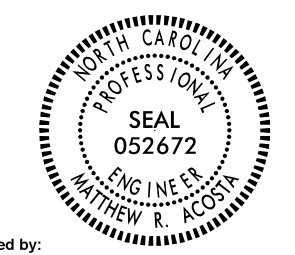

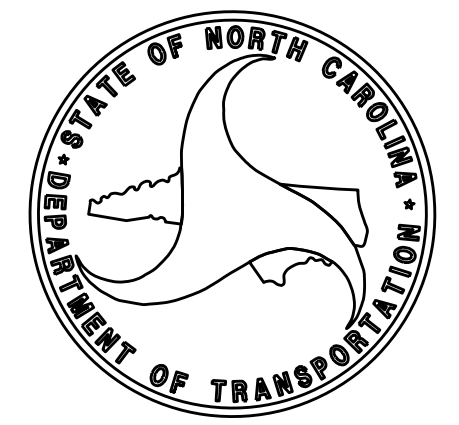


100% PLANS



STRUCTURE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

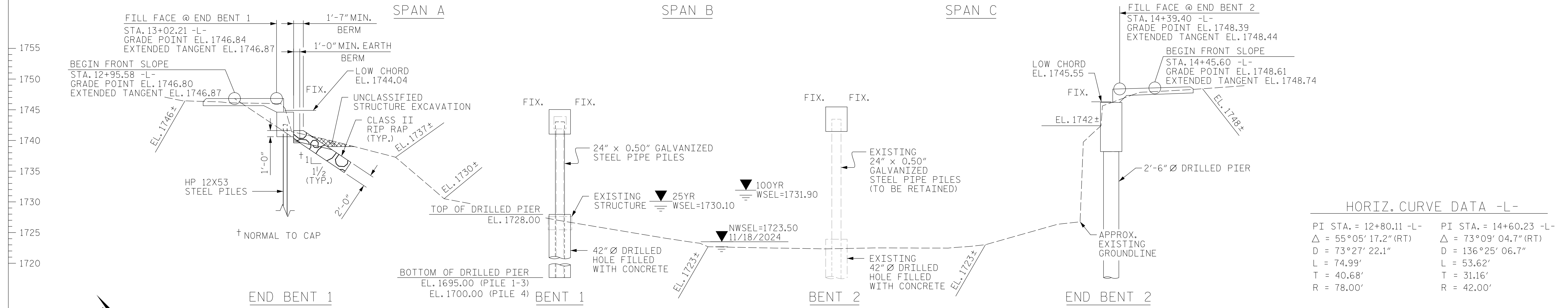
<p>DESIGN DATA ADT 2025 = <400 ADT 2045 = <400 V = 35 MPH FUNC CLASS = LOCAL SUBREGIONAL TIER</p>	<p>PROJECT LENGTH LENGTH ROADWAY PROJECT DF18314.2045332 = 0.048 MILES LENGTH STRUCTURE PROJECT DF18314.2045332 = 0.026 MILES TOTAL LENGTH PROJECT DF18314.2045332 = 0.074 MILES</p>	<p>PREPARED IN THE OFFICE OF: RS&H 1520 SOUTH BOULEVARD, SUITE 200 CHARLOTTE, NC 28203 NC FIRM LICENSE No: F-0493 FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION 2024 STANDARD SPECIFICATIONS</p> <p>MATTHEW R. ACOSTA, PE PROJECT ENGINEER</p> <p>TONY R. LAWS, PE PROJECT DESIGN ENGINEER</p> <p>ZACHARY T. SHULER, PE NCDOT CONTACT</p> <p>RIGHT OF WAY DATE: APRIL 14, 2025</p> <p>LETTING DATE: JUNE 9, 2026</p>	<p>STRUCTURAL ENGINEER</p> <p></p> <p>DocuSigned by:  SIGNATURE: 4/13/2026 P.E.</p>	<p></p>
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VERTICAL CURVE DATA -L-

(-)8.0098% (+)0.9211%
GRADE DATA
PVI STA. 12+55.00 -L-
PVI EL. = 1,746.40
LVC = 95.00'

VERTICAL CURVE DATA -L-

(+)0.9211% (+)7.6990%
GRADE DATA
PVI STA. 14+50.00 -L-
PVI EL. = 1,748.20
LVC = 70.00'



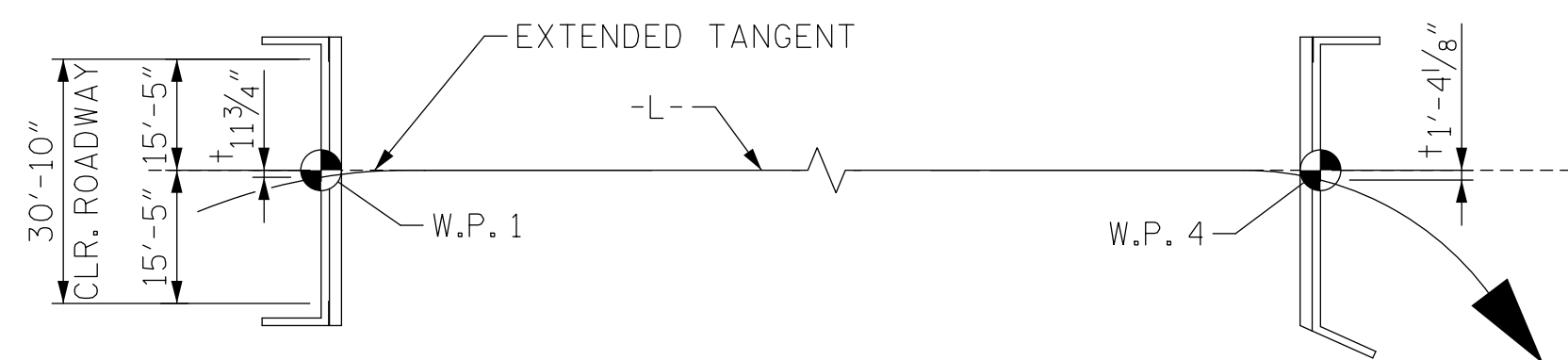
HORIZ. CURVE DATA -L-

PI STA. = 12+80.11 -L- PI STA. = 14+60.23 -L-
Δ = 55°05' 17.2" (RT) Δ = 73°09' 04.7" (RT)
D = 73°27' 22.1" D = 136°25' 06.7"
L = 74.99' L = 53.62'
T = 40.68' T = 31.16'
R = 78.00' R = 42.00'

SECTION ALONG -L-

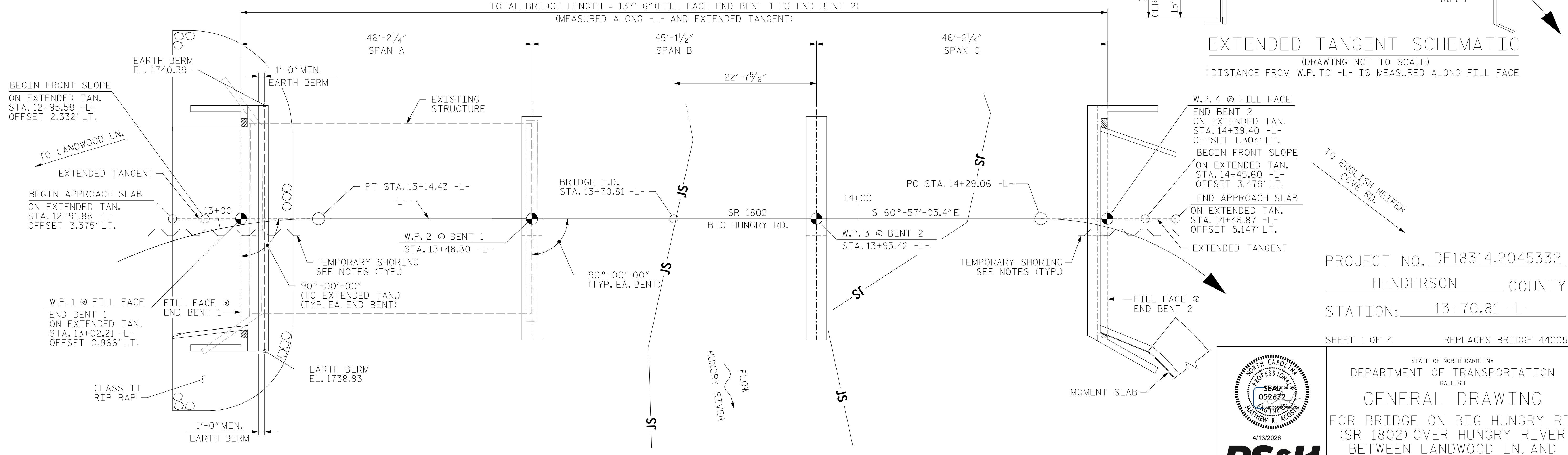
(SECTIONS AT BENTS ARE AT RIGHT ANGLES)
(EXISTING END BENT 1 NOT SHOWN FOR CLARITY)

TOTAL BRIDGE LENGTH = 137'-6" (FILL FACE END BENT 1 TO END BENT 2)
(MEASURED ALONG -L- AND EXTENDED TANGENT)



EXTENDED TANGENT SCHEMATIC

(DRAWING NOT TO SCALE)
†DISTANCE FROM W.P. TO -L- IS MEASURED ALONG FILL FACE



PLAN

(STEEL PILES AND DRILLED PIERS NOT SHOWN FOR CLARITY)

DRAWN BY : J. SCACCA DATE : 01/2025
CHECKED BY : M. ACOSTA DATE : 01/2025
DESIGN ENGINEER OF RECORD: M. ACOSTA DATE : 03/2026

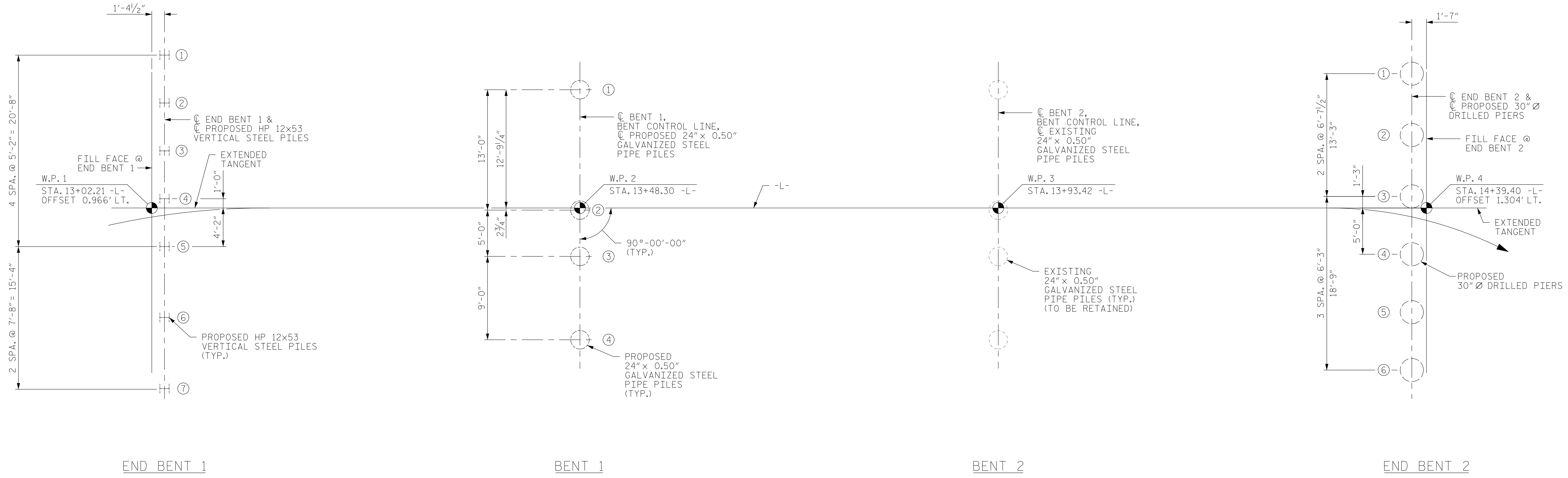
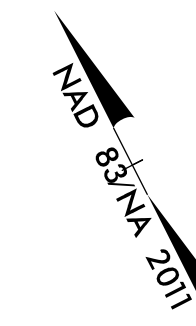
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Professional Engineer Seal for Andrew R. Acosta, State of North Carolina, License No. 052672. Includes RS&H logo and contact information.

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
STATION: 13+70.81 -L-

SHEET 1 OF 4 REPLACES BRIDGE 440055

Table with columns for REVISIONS (NO., BY, DATE) and SHEET NO. (S-1, TOTAL SHEETS 32).



FOUNDATION LAYOUT
 (DIMENSIONS SHOWN ARE TO THE C OF HP 12x53 STEEL PILES,
 TO THE C OF 24" Ø x 0.50" GALVANIZED STEEL PIPE PILES,
 & TO THE C OF 30" Ø DRILLED PIERS)

FOUNDATION NOTES:
 FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
 FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
 A MINIMUM PENETRATION OF 10 FT INTO WEATHERED ROCK AND/OR ROCK IS
 REQUIRED FOR PILE EXCAVATION AT BENT NO. 1 AS DEFINED BY ARTICLE 411-1 OF
 THE STANDARD SPECIFICATIONS.

- LEGEND**
- HP 12x53 STEEL PILES
 - PROPOSED 24" x 0.50" GALVANIZED STEEL PIPE PILES
 - EXISTING 24" x 0.50" GALVANIZED STEEL PIPE PILES (TO REMAIN IN PLACE)
 - PROPOSED 30" DRILLED PIERS

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
 STATION: 13+70.81 -L-

SHEET 2 OF 4

DRAWN BY :	M. KHIN	DATE :	01/2025
CHECKED BY :	M. ACOSTA	DATE :	01/2025
DESIGN ENGINEER OF RECORD:	M. ACOSTA	DATE :	03/2026

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 FINAL UNLESS ALL
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 RS&H Architects-Engineers-Planners, Inc.
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 Raleigh, NC 27615
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 www.rsandh.com
 North Carolina License Nos. 50073-F-0403-C-28

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-2	
GENERAL DRAWING FOUNDATION LAYOUT						TOTAL SHEETS 32	
REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				
2			4				

SUMMARY OF PILE INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Number of Piles per Line	Factored Resistance per Pile KIPS	Pile Cut-Off (Top of Pile) Elevation FT	Estimated Pile Length per Pile FT	Scour Critical Elevation FT	Driven Piles			Predrilling for Piles **			Drilled-In Piles		
						Minimum Pile Tip (Tip No Higher Than) Elevation FT	Required Driving Resistance (RDR)* per pile KIPS	Pile Redrives Quantity EACH	Predrilling Length per Pile LIN FT	Predrilling Elevation (Elevation Not To Predrill Below) FT	Maximum Predrilling Diameter INCHES	Pile Excavation (Bottom of Hole) Elevation FT	Pile Excavation Not In Soil per Pile LIN FT	Pile Excavation In Soil per Pile LIN FT
End Bent No. 1, Piles 1-7	7	140		20			235							
Bent No. 1, Piles 1-3	3	360		50	1715	1695						1695	33	10
Bent No. 1, Pile 4	1	360		45	1715	1700						1700	28	10
TOTAL QUANTITY:													127	40

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

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

*** WR = Weathered Rock

PILE DESIGN INFORMATION

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Factored Axial Load per Pile KIPS	Factored Drag Load per Pile KIPS	Factored Dead Load * per Pile KIPS	Dynamic Resistance Factor	Nominal Drag Resistance per Pile KIPS	Nominal Scour Resistance per Pile KIPS
End Bent No. 1, Piles 1-7	140			0.6		

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

SUMMARY OF DRILLED-IN PIPE PILE AND DRILLED PIER INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pier(s) #(-#) (e.g., "Bent 1, Piers 1-3")	Number of Piers per Line	Factored Resistance per Pier KIPS	Required Drilled Pier Tip Elevation FT	Required Tip Resistance per Pier KSF	Scour Critical Elevation FT	Minimum Drilled Pier Penetration Into Weathered Rock and/ or Rock per Pier LIN FT	Drilled Pier Length* per Pier LIN FT	Drilled Pier Length Not In Soil* per Pier LIN FT	Drilled Pier Length In Soil* per Pier LIN FT	Permanent Steel Casing Required? YES	Permanent Steel Casing Tip Elevation (Elevation Not To Extend Casing Below) FT	Permanent Steel Casing Length** per Pier LIN FT
Bent No. 1, Piles 1-3	3									YES	1721.00	7
Bent No. 1, Pile 4	1									YES	1716.80	7
Bent No. 2***	4				1715.00							
End Bent No. 2, Piers (1-3)	3	205	1710.00	20		10	28					
End Bent No. 2, Piers (4-6)	3	205	1710.00	20		10	28		Yes	1720.00		18
TOTAL QUANTITY:							168					82

** Drilled Pier Length, Drilled Pier Length Not in Soil and Drilled Pier Length in Soil represent estimated drilled pier quantities and are measured and paid for as either "___ Dia. Drilled Piers" or "___ Dia. Drilled Piers Not in Soil" and "___ Dia. Drilled Piers in Soil" in accordance with Article 411-7 of the NCDOT Standard Specifications. For bents with a not in soil pay item, drilled piers through air or water will be paid at the contract unit price for "___ Dia. Drilled Piers in Soil."

** Permanent Steel Casing Length equals the difference between the ground line or top of drilled pier elevation, whichever is higher, and the permanent casing tip elevation and is measured and paid for as "Permanent Steel Casing for ___ Dia. Drilled Pier" in accordance with Article 411-7 of the NCDOT Standard Specifications.

*** Bent 2 Pipe Piles were designed and previously install for the temporary bridge. Existing Pipe Pile are suitable to support the new lateral and axial loads for the new bridge.

SUMMARY OF DRILLED PIER TESTING

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pier(s) #(-#) (e.g., "Bent 1, Piers 1-3")	Standard Penetration Test (SPT) EACH	Crosshole Sonic Logging (CSL) EACH	Thermal Integrity Profiler (TIP) EACH	Shaft Inspection Device (SID) EACH	Pile Integrity Test (PIT) EACH
End Bent No. 2		1			
TOTAL QUANTITY:		1			

NOTES:

- The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Michael H. Stephens, #028893) on 08-12-2025.
- 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.
- The Engineer may adjust the quantity for DPT Testing, Pipe Pile Plates, Permanent Steel Casing, SPTs, TIPs, CSL Testing, SID Inspections and PITs when necessary.

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
 STATION: 13+70.81 -L-

SHEET 3 OF 4

DRAWN BY : M. ACOSTA DATE : 08/2025
 CHECKED BY : T. R. LAWS DATE : 08/2025
 DESIGN ENGINEER OF RECORD: M. ACOSTA DATE : 03/2026

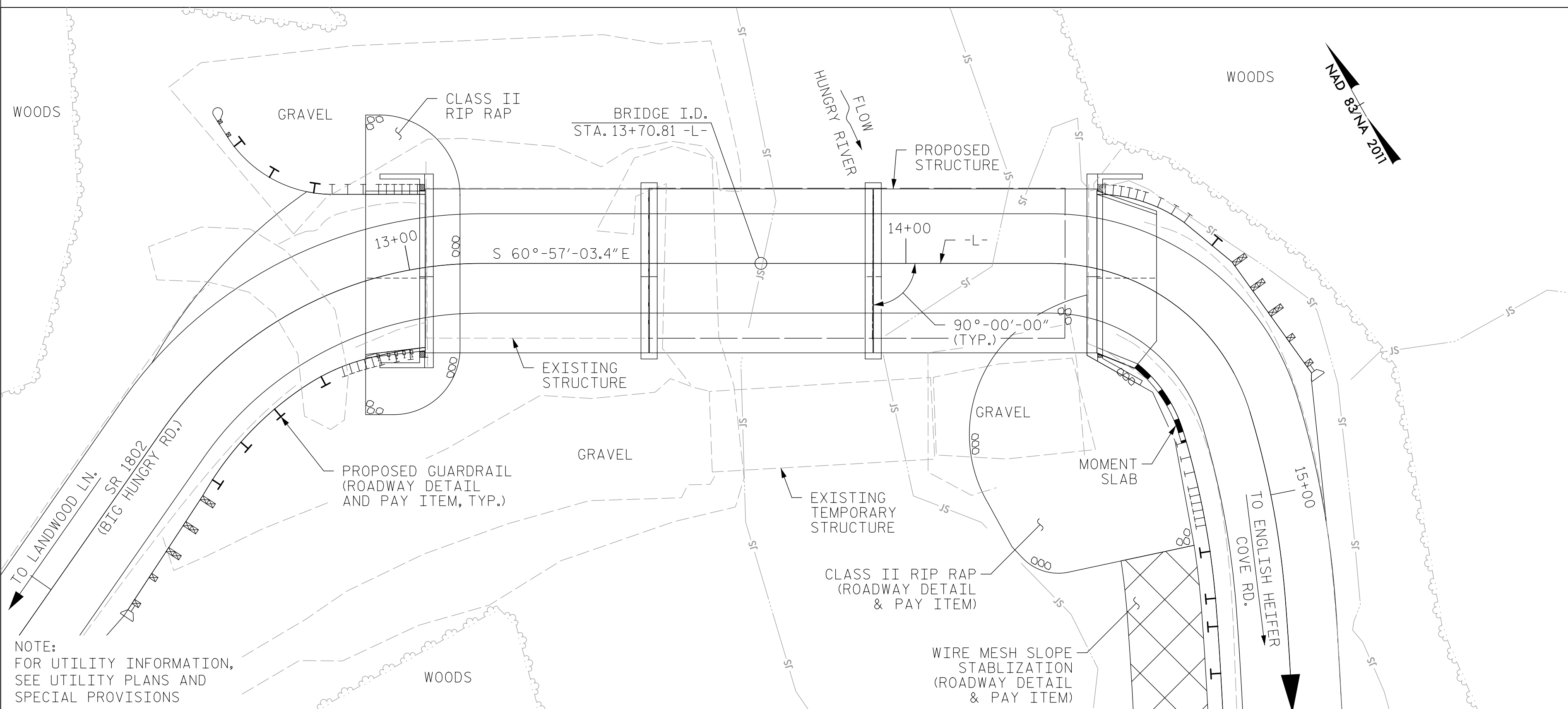
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
PILE AND DRILLED PIER FOUNDATION TABLES

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

BENCHMARK #1: R.R SPIKE SET IN 22" POPLAR, STA. 11+54.27 -L-, 70.18' RT., EL 1747.27. (N 580375, E 1000297)



LOCATION SKETCH

NOTES

- ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
- THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
- THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE TEMPORARY GUARDRAILS FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. FOR CONSTRUCTION, AND MAINTENANCE, SEE SPECIAL PROVISIONS.
- THE EXISTING STRUCTURE CONSISTING OF (1) 45'-0" SPAN WITH A CLEAR ROADWAY OF APPROXIMATELY 30 FEET AND SUPPORTED BY REINFORCED CONCRETE ABUTMENTS AND AN INTERIOR PILE BENT WITH H-PILES AND A CONCRETE CAP AND FOOTING SHALL BE REMOVED. SEE SPECIAL PROVISIONS.
- REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
- ALL MATERIALS REMOVED FROM THE BRIDGE SHALL BE RETAINED AND DELIVERED TO THE NCDOT MAINTENANCE YARD AS DIRECTED BY THE ENGINEER. SEE SPECIAL PROVISIONS.
- THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
- THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET 1 OF 4 SHALL BE EXCAVATED FOR A DISTANCE FROM THE CENTERLINE OF ROADWAY 30'± LEFT AND 30'± (RIGHT) AT END BENT 1. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.
- THE NUMBER AND LINEAR FEET OF PP 24 x 0.5 GALVANIZED STEEL PILES IS FOR NEWLY INSTALLED PILES ONLY. NO ADDITIONAL PAYMENT WILL BE MADE FOR PIPE PILES TO BE RETAINED FROM THE TEMPORARY CONSTRUCTION. FOR ADDITIONAL INFORMATION FOR PIPE PILES TO BE REUSED, SEE SPECIAL PROVISION 'REMOVAL, STAGING, DEMOLITION AND CONSTRUCTION OF BRIDGE AT STA. 13+70.81 -L-'.
- THE LINEAR FEET OF 3'-0" x 1'-9" PRESTRESSED CONCRETE CORED SLAB UNITS IS FOR NEWLY FABRICATED CORED SLAB UNITS ONLY. NO ADDITIONAL PAYMENT WILL BE MADE FOR CORED SLABS TO BE REUSED FROM THE TEMPORARY CONSTRUCTION. FOR ADDITIONAL INFORMATION FOR CORED SLABS TO BE REUSED, SEE SPECIAL PROVISION 'REMOVAL, STAGING, DEMOLITION AND CONSTRUCTION OF BRIDGE AT STA. 13+70.81 -L-'.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH 'HEC 18 - EVALUATING SCOUR AT BRIDGES'.
- ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.
- FOR REMOVAL, STAGING, DEMOLITION AND CONSTRUCTION OF BRIDGE AT STA. 13+70.81 -L-, SEE SPECIAL PROVISIONS.
- FOR TEMPORARY TIMBER MATS, SEE SPECIAL PROVISIONS.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE "STANDARD NOTES" SHEET.
- FOR INTERIOR BENT 1, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEET(S) FOR REQUIRED GALVANIZED LENGTHS. PAYMENT FOR PARTIALLY GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.
- FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.
- SHEET PILING FOR TEMPORARY SHORING SHALL BE HOT ROLLED.
- FOR MOMENT SLAB LAYOUT AND DETAILS, SEE ROADWAY PLANS.

TOTAL BILL OF MATERIAL

	REMOVAL, STAGING, DEMOLITION AND CONSTRUCTION OF STRUCTURE AT STA. 13+70.81 -L-	ASBESTOS ASSESSMENT	PILE EXCAVATION IN SOIL	PILE EXCAVATION NOT IN SOIL	2'-6"Ø DRILLED PIERS	PERMANENT STEEL CASING FOR 2'-6"Ø DRILLED PIER	PERMANENT STEEL CASING FOR 3'-6"Ø DRILLED-IN PILE	CSL TESTING	UNCLASSIFIED STRUCTURE EXCAVATION @ STA. 13+70.81 -L-	CLASS A CONCRETE	BRIDGE APPROACH SLABS
	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LUMP SUM	CU. YDS.	LUMP SUM
SUPERSTRUCTURE											
END BENT 1										21.5	
BENT 1			40	127	168.0	28.0		1		21.0	
BENT 2										21.0	
END BENT 2							54.0			41.9	
TOTAL	LUMP SUM	LUMP SUM	40	127	168.0	28.0	54.0	1	LUMP SUM	105.4	LUMP SUM

	REINFORCING STEEL	SPIRAL REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP12x53 STEEL PILES	PILE DRIVING EQUIPMENT SETUP FOR PP 24x0.50 GALVANIZED STEEL PILES	HP 12x53 STEEL PILES	PP 24x0.50 GALVANIZED STEEL PILES	CONCRETE BARRIER RAIL WITH MOMENT SLAB	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS		
	LBS.	LBS.	EACH	EACH	NO.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE								18.11	278.92				19	855
END BENT 1	2,659		7		7	140				101	112			
BENT 1	3,708			4		195								
BENT 2	3,708													
END BENT 2	16,125	2,902												
TOTAL	26,200	2,902	7	4	7	140	4	195	18.11	278.92	112	LUMP SUM	19	855

HYDRAULIC DATA

DESIGN DISCHARGE: 2,900 CFS
 FREQUENCY OF DESIGN FLOOD: 25 YRS.
 DESIGN HIGH WATER ELEVATION: 1,730.1
 DRAINAGE AREA: 19.4 SQ. MI.
 BASE DISCHARGE (Q100): 4,200 CFS
 BASE HIGH WATER ELEVATION: 1,731.9

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE: 17,950 CFS
 FREQUENCY OF OVERTOPPING FLOOD: 1000+ YRS.
 *OVERTOPPING FLOOD ELEVATION: 1,746.8
 * SAG AT -L- STA. 12+92.70

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
 STATION: 13+70.81 -L-

SHEET 4 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON BIG HUNGRY RD.
 (SR 1802) OVER HUNGRY RIVER
 BETWEEN LANDWOOD LN. AND
 ENGLISH HEIFER COVE RD.

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : J. SCACCA DATE : 01/2025
 CHECKED BY : M. ACOSTA DATE : 01/2025
 DESIGN ENGINEER OF RECORD: M. ACOSTA DATE : 03/2026

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER		
						MOMENT					SHEAR					MOMENT								
						LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.121	--	1.75	0.274	1.45	45'	EL	22.00	0.543	1.40	45'	EL	2.20	0.80	0.274	1.12	45'	EL	22.00		
	HL-93(Opr)	N/A	--	1.813	--	1.35	0.274	1.87	45'	EL	22.00	0.543	1.81	45'	EL	2.20	N/A	0.274	--	45'	EL	22.00		
	HS-20(Inv)	36.000	2	1.377	49.561	1.75	0.274	1.77	45'	EL	22.00	0.543	1.65	45'	EL	2.20	0.80	0.274	1.38	45'	EL	22.00		
	HS-20(Opr)	36.000	--	2.142	77.130	1.35	0.274	2.30	45'	EL	22.00	0.543	2.14	45'	EL	2.20	N/A	0.274	--	45'	EL	22.00		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.690	36.319	1.4	0.274	4.33	45'	EL	22.00	0.543	4.56	45'	EL	2.20	0.80	0.274	2.69	45'	EL	22.00	
		SNGARBS2	20.000	--	2.172	43.443	1.4	0.274	3.50	45'	EL	22.00	0.543	3.35	45'	EL	2.20	0.80	0.274	2.17	45'	EL	22.00	
		SNAGRIS2	22.000	--	2.136	46.991	1.4	0.274	3.39	45'	EL	26.40	0.543	3.15	45'	EL	2.20	0.80	0.274	2.14	45'	EL	26.40	
		SNCOTTS3	27.250	--	1.343	36.603	1.4	0.274	2.16	45'	EL	22.00	0.543	2.29	45'	EL	2.20	0.80	0.274	1.34	45'	EL	22.00	
		SNAGGRS4	34.925	--	1.185	41.398	1.4	0.274	1.91	45'	EL	22.00	0.543	1.97	45'	EL	2.20	0.80	0.274	1.18	45'	EL	22.00	
		SNS5A	35.550	--	1.155	41.048	1.4	0.274	1.86	45'	EL	22.00	0.543	2.04	45'	EL	2.20	0.80	0.274	1.15	45'	EL	22.00	
		SNS6A	39.950	--	1.088	43.452	1.4	0.274	1.75	45'	EL	22.00	0.543	1.90	45'	EL	2.20	0.80	0.274	1.08	45'	EL	22.00	
	TTST	SNS7B	42.000	--	1.037	43.549	1.4	0.274	1.67	45'	EL	22.00	0.543	1.91	45'	EL	2.20	0.80	0.274	1.04	45'	EL	22.00	
		TNAGRIT3	33.000	--	1.335	44.054	1.4	0.274	2.15	45'	EL	22.00	0.543	2.23	45'	EL	2.20	0.80	0.274	1.33	45'	EL	22.00	
		TNT4A	33.075	--	1.349	44.617	1.4	0.274	2.17	45'	EL	22.00	0.543	2.14	45'	EL	2.20	0.80	0.274	1.35	45'	EL	22.00	
		TNT6A	41.600	--	1.132	47.097	1.4	0.274	1.82	45'	EL	22.00	0.543	2.08	45'	EL	2.20	0.80	0.274	1.13	45'	EL	22.00	
		TNT7A	42.000	--	1.154	48.468	1.4	0.274	1.86	45'	EL	22.00	0.543	1.92	45'	EL	2.20	0.80	0.274	1.15	45'	EL	22.00	
		TNT7B	42.000	--	1.201	50.459	1.4	0.274	1.94	45'	EL	22.00	0.543	1.83	45'	EL	2.20	0.80	0.274	1.20	45'	EL	22.00	
		TNAGRIT4	43.000	--	1.144	49.203	1.4	0.274	1.84	45'	EL	22.00	0.543	1.76	45'	EL	2.20	0.80	0.274	1.14	45'	EL	22.00	
EMERGENCY VEHICLE (EV)	EV2	28.750	--	1.558	44.784	1.3	0.274	2.69	45'	EL	22.00	0.543	2.54	45'	EL	2.20	0.80	0.274	1.56	45'	EL	22.00		
	EV3	43.000	4	1.001	43.053	1.3	0.274	1.74	45'	EL	22.00	0.543	1.72	45'	EL	2.20	0.80	0.274	1.00	45'	EL	22.00		

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

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

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

COMMENTS:

1. NCDOT PROCURED 'STANDARD' CORED SLAB UNITS FOR TEMPORARY USE DUE TO HURRICANE RELIEF. THIS PROJECT WILL REUSE SEVERAL OF THOSE BEAMS. ANY BEAMS LABELED FOR REUSE SHALL BE VERIFIED WITH SHOP DRAWINGS PROVIDED BY THE ORIGINAL FABRICATOR OR NCDOT. RS&H TAKES NO RESPONSIBILITY FOR REUSED BEAMS LABELED FOR REUSE BY NCDOT.

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

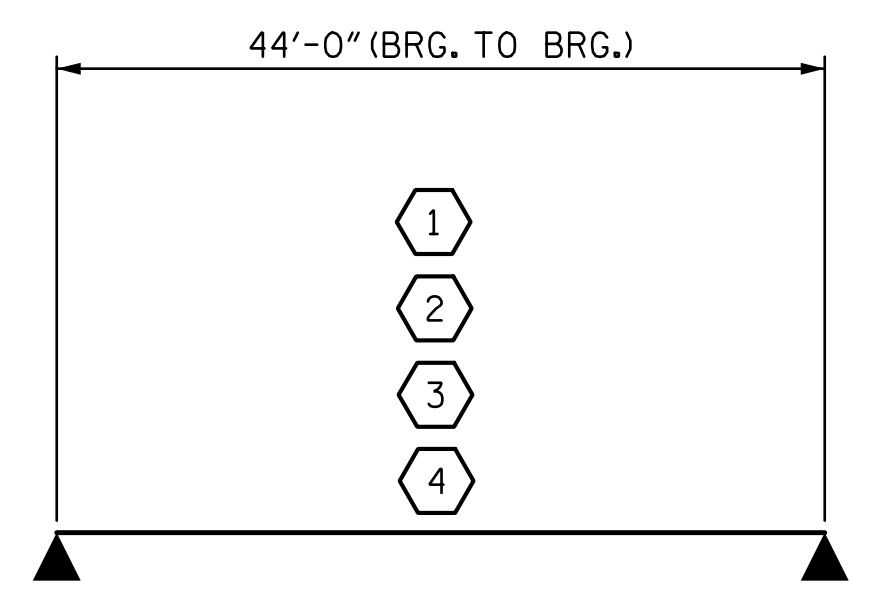
3 LEGAL LOAD RATING **

4 EMERGENCY VEHICLE LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY
FOR SPANS A-C

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
 STATION: 13+70.81 -L-

DRAWN BY : M. KHIN DATE : 01/2025
 CHECKED BY : M. ACOSTA DATE : 01/2025
 DESIGN ENGINEER OF RECORD: M. ACOSTA DATE : 03/2026

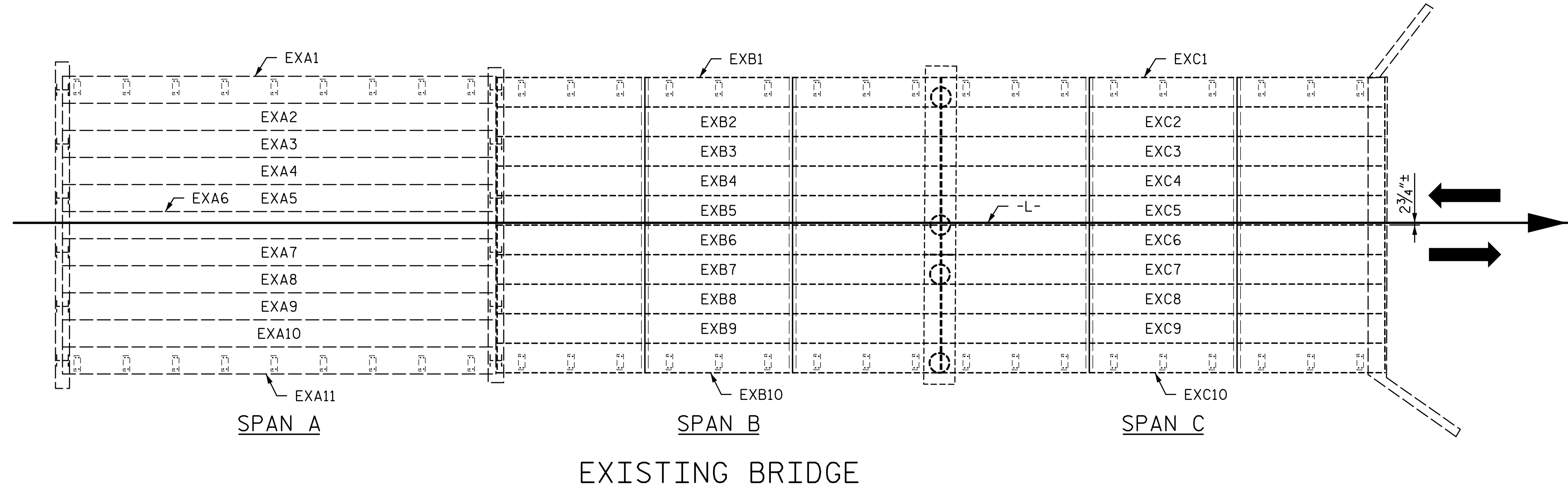
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SIGNATURES COMPLETED



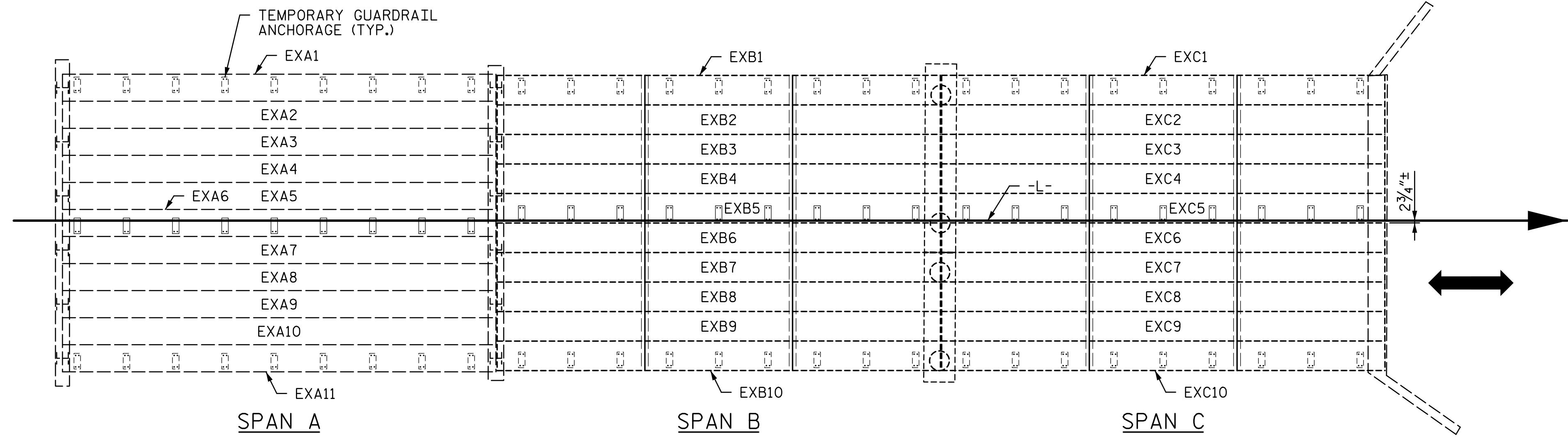
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR
45' CORED SLAB UNIT
90° SKEW
(NON-INTERSTATE TRAFFIC)

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

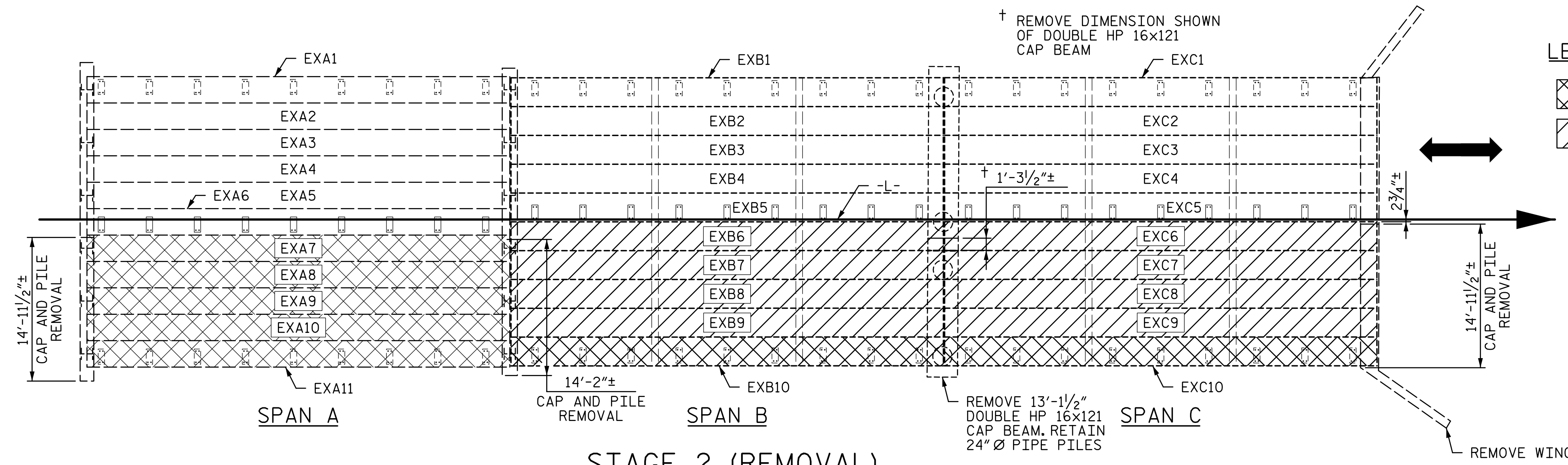


EXISTING BRIDGE



STAGE 1

ADDITION OF TEMPORARY GUARDRAIL ANCHOR PLATES ALONG EXA6, EXB5, AND EXC5.



STAGE 2 (REMOVAL)

PARTIAL REMOVAL OF SPANS A, B, AND C - RIGHT OF -L-

NOTES:

SPANS B AND C AND BENT 2 WERE DESTROYED BY HURRICANE HELENE. NEW CAST CORED SLAB UNITS AND NEW PILES WERE INSTALLED IN A TEMPORARY CONDITION. THE INTENT OF THIS BRIDGE REPLACEMENT TO THE EXTENT PRACTICAL IS TO REUSE THOSE MATERIALS IN THE PERMANENT CONDITION AND ONLY DO A FULL REPLACEMENT OF REMAINING STRUCTURAL ELEMENTS OF THE ORIGINAL BRIDGE. FOR ADDITIONAL INFORMATION ON MATERIAL TO BE RETAINED, SEE SPECIAL PROVISIONS.

FOR STAGE 2 (REMOVAL) DETENSIONING OF POST-TENSIONED STRANDS SHALL ONLY OCCUR FOR ONE SPAN PER EACH NIGHT OF WORK. FOR DURATIONS, SEE MAINTENANCE OF TRAFFIC PLANS.

FOR STAGE 2 (REMOVAL) CORED SLAB UNITS EXB6 THRU EXB9 AND CORED SLAB UNITS EXC6 THRU EXC9 SHALL BE STORED ON SITE TO BE REUSED IN STAGE 5 CONSTRUCTION.

FOR STAGE 2 (REMOVAL) ALL EXISTING CORED SLAB UNITS FROM SPAN A AND CORED SLAB UNITS EXB10 AND EXC10 ARE NOT TO BE REUSED.

FOR ADDITIONAL STAGE 2 REMOVAL NOTES, SEE SHEETS 4 OF 8 AND 6 OF 8.

LEGEND:

- REMOVE (SEE NOTES)
- REMOVE TO BE REUSED (SEE NOTES)

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
 STATION: 13+70.81 -L-

SHEET 1 OF 8



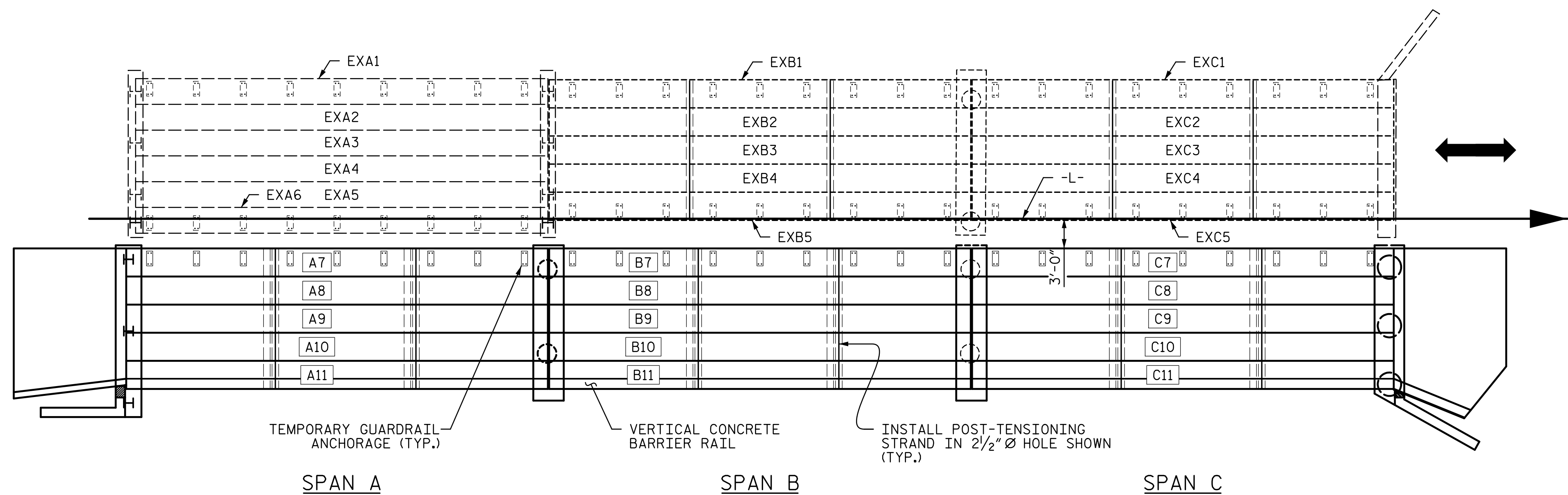
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 DEPARTMENT OF TRANSPORTATION
 RALEIGH
CONSTRUCTION STAGING

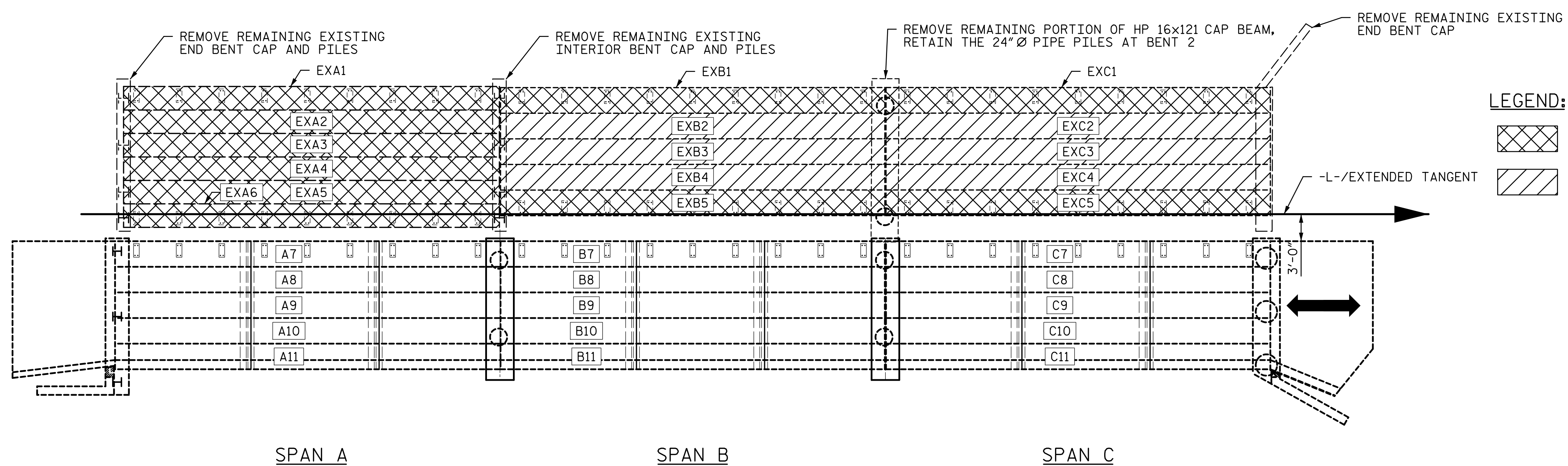
DRAWN BY : M. KHIN DATE : 01/2025
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			32



STAGE 3 (CONSTRUCTION)
PARTIAL CONSTRUCTION OF SPANS A, B, AND C - RIGHT OF -L-



STAGE 4 (REMOVAL)
PARTIAL REMOVAL OF SPANS A, B, AND C - LEFT OF -L-

NOTES:

ALL CORED SLAB UNITS ERECTED DURING STAGE 3 CONSTRUCTION SHALL BE NEW AND SHALL HAVE 2-2 1/2" Ø DUCTS FOR POST-TENSIONING.


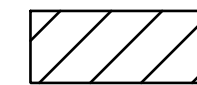
FOR STAGE 4 (REMOVAL) CORED SLAB UNITS EXB2 THRU EXB4 AND CORED SLAB UNITS EXC2 THRU EXC4 SHALL BE STORED ON SITE TO BE REUSED IN STAGE 5 CONSTRUCTION.

FOR STAGE 4 (REMOVAL) CORED SLAB UNITS EXB1, EXB5, EXC1 AND EXC5 ARE TO BE REMOVED FROM THE SITE AND NOT TO BE REUSED.

FOR ADDITIONAL STAGE 3 CONSTRUCTION NOTES, SEE SHEETS 5 OF 8 AND 7 OF 8.

ANY CORED SLAB UNITS THAT ARE ALTERED IN ANY WAY (I.E. DRILLING FOR ATTACHMENTS, ETC.), WILL NOT BE ALLOWED TO BE REUSED IN THE FINAL CONDITION. IF THE CONTRACTOR ALTERS EXISTING CORED SLAB UNITS IN THESE PLANS TO BE REUSED, NEW CORED SLAB UNITS SHALL BE CAST IN THEIR PLACE.

LEGEND:

-  REMOVE (SEE NOTES)
-  REMOVE TO BE REUSED (SEE NOTES)

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
STATION: 13+70.81 -L-

SHEET 2 OF 8



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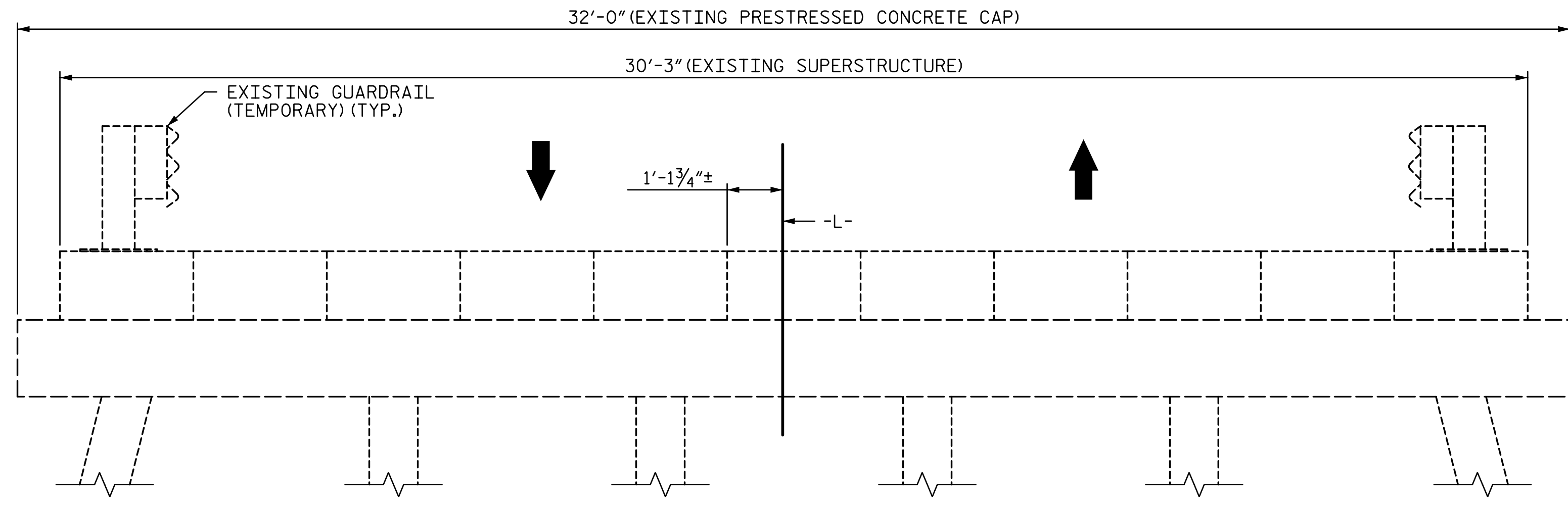
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONSTRUCTION STAGING

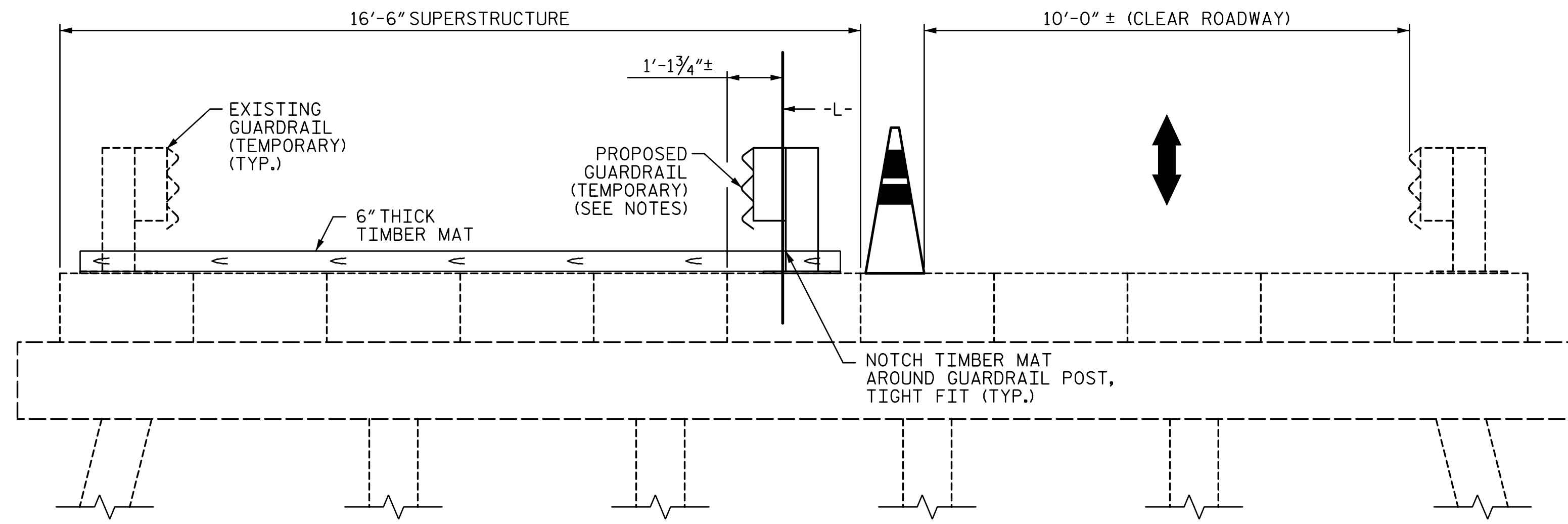
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CHECKED BY : M. ACOSTA DATE : 01/2025
DESIGN ENGINEER OF RECORD: M. ACOSTA DATE : 03/2026

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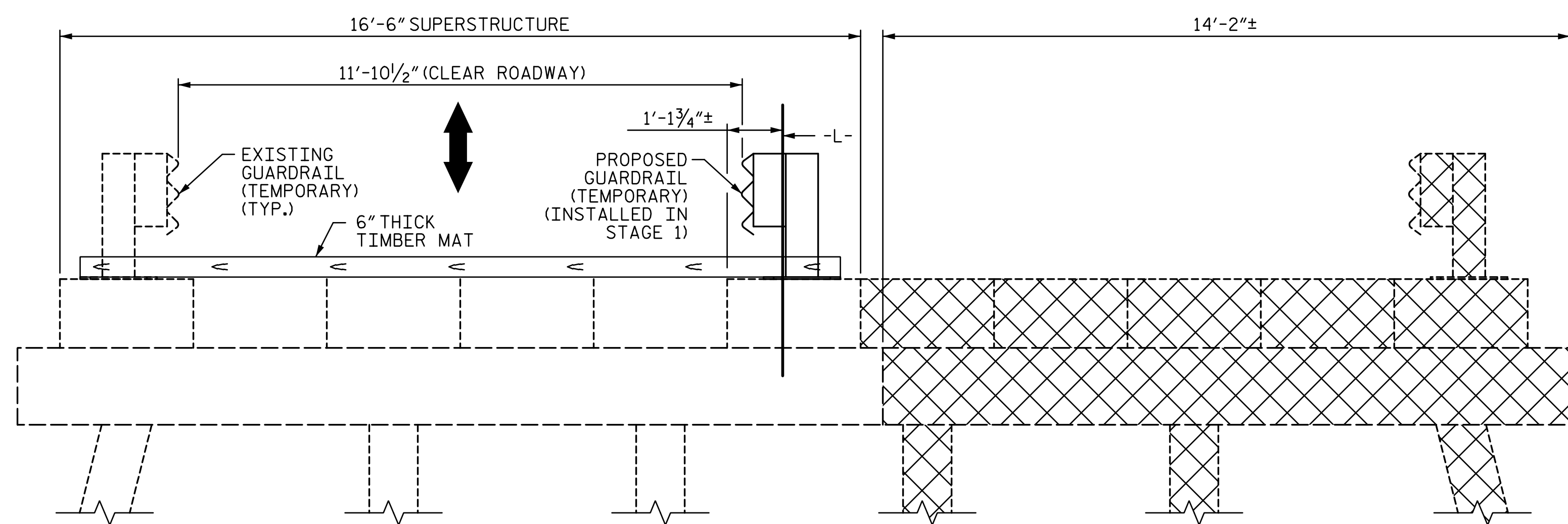
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			32



EXISTING STRUCTURE
(LOOKING UPSTATION @ INTERIOR BENT 1)



STAGE 1
(LOOKING UPSTATION @ INTERIOR BENT 1)



STAGE 2 (REMOVAL)
(LOOKING UPSTATION @ INTERIOR BENT 1)

- STAGE 1 SEQUENCE:**
1. SHIFT TRAFFIC TO RIGHT SIDE OF BRIDGE.
 2. INSTALL PROPOSED TEMPORARY GUARDRAIL AS SHOWN.
 3. PLACE 6" THICK TIMBER MAT. (SEE NOTES)

- STAGE 2 SEQUENCE:**
1. SHIFT TRAFFIC TO LEFT SIDE OF BRIDGE.
 2. INSTALL TEMPORARY BENT(S) AS REQUIRED.
 3. REMOVE PORTION OF BRIDGE AS SHOWN.

 EXISTING BRIDGE REMOVAL

NOTES:
TEMPORARY GUARDRAIL SHALL BE ANCHORED. CONTRACTOR SHALL SUBMIT METHOD OF ANCHORAGE TO THE ENGINEER FOR APPROVAL. PRIOR TO MAKING ANY MODIFICATIONS TO THE EXISTING CORED SLABS, THE CONTRACTOR SHALL LOCATE THE REINFORCING OR PRESTRESSING AND SHALL NOT DRILL OR INSTALL AT THESE LOCATIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DAMAGE TO REINFORCING OR PRESTRESSING IN THE EXISTING BEAMS.

TIMBER MATS (6" THICKNESS) SHALL BE PLACED AS SHOWN PRIOR TO DETENSIONING THE TRANSVERSE POST-TENSIONING RODS. TIMBER MATS SHALL REMAIN IN PLACE UNTIL CORED SLAB UNIT 6 (SEE SHEET 1 OF 8 FOR CORED SLAB UNIT 6 LOCATION) IS REMOVED AND TRANSVERSE POST-TENSIONING IS RE-INSTALLED. ONCE POST-TENSIONING IS REINSTALLED, TIMBER MATS MAY BE REMOVED, OR MAY REMAIN IN PLACE. TIMBER MATS SHALL BE MAINTAINED BY THE CONTRACTOR WHILE IN PLACE. TIMBER MATS SHALL BE SECURED IN A MANNER TO AVOID EXCESS MOVEMENT TO THE SATISFACTION OF THE ENGINEER. NO MODIFICATIONS TO CSU ARE ALLOWED TO AFFIX TIMBER MATS TO THE BRIDGE. THE INSTALLATION OF THE TIMBER MAT ASSUMES NO ASPHALT WEARING SURFACE IS CURRENTLY PLACED ON THE EXISTING BRIDGE. IF AN ASPHALT SURFACE IS IN PLACE, NOTIFY THE ENGINEER PRIOR TO PLACEMENT OF TIMBER MATS.

FOR STAGE 2 (REMOVAL) DETENSIONING OF POST-TENSIONED STRANDS SHALL ONLY OCCUR FOR ONE SPAN PER EACH NIGHT OF WORK. FOR DURATIONS, SEE MAINTENANCE OF TRAFFIC PLANS.

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
STATION: 13+70.81 -L-

SHEET 4 OF 8



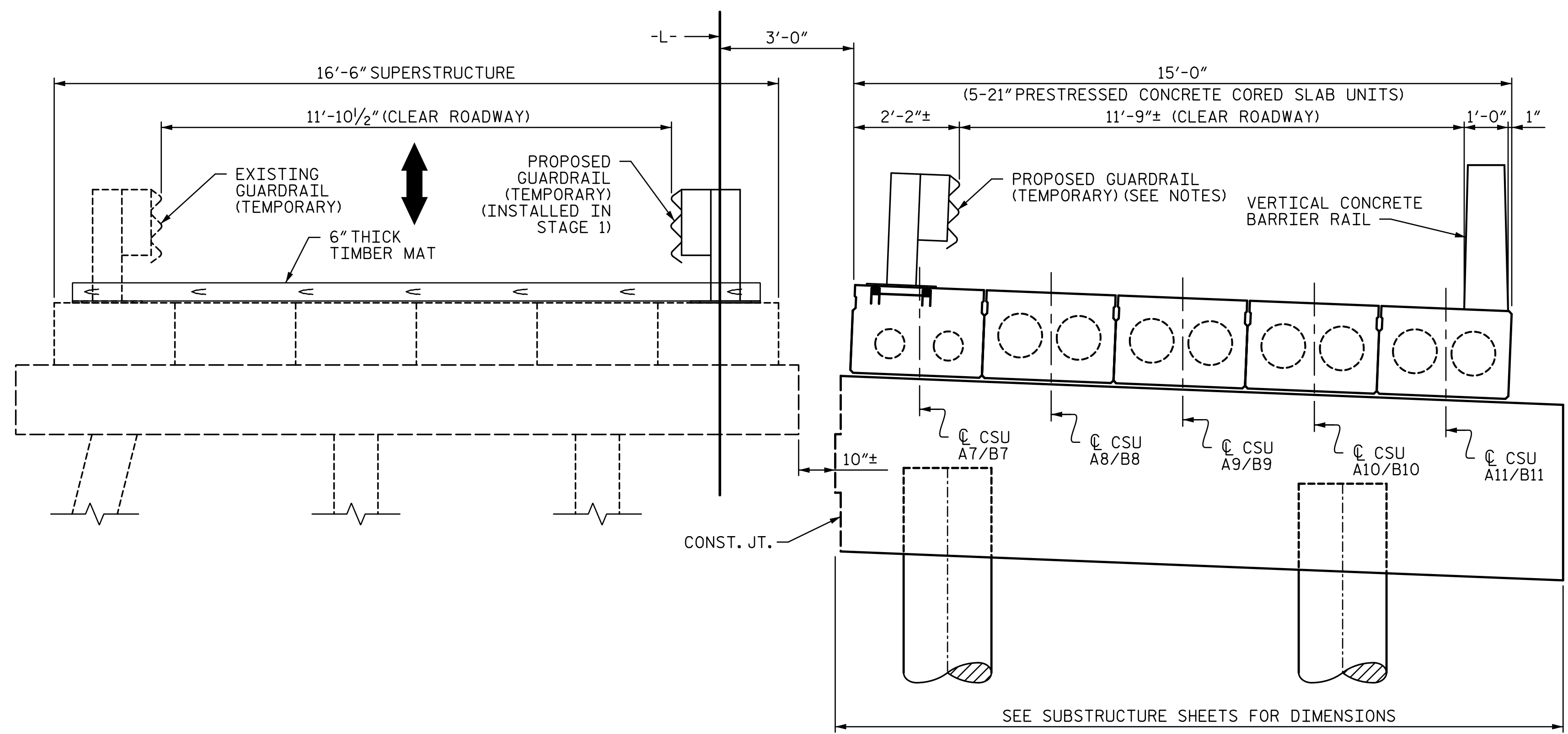
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
CONSTRUCTION STAGING
(SPAN A AND BENT 1)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			32

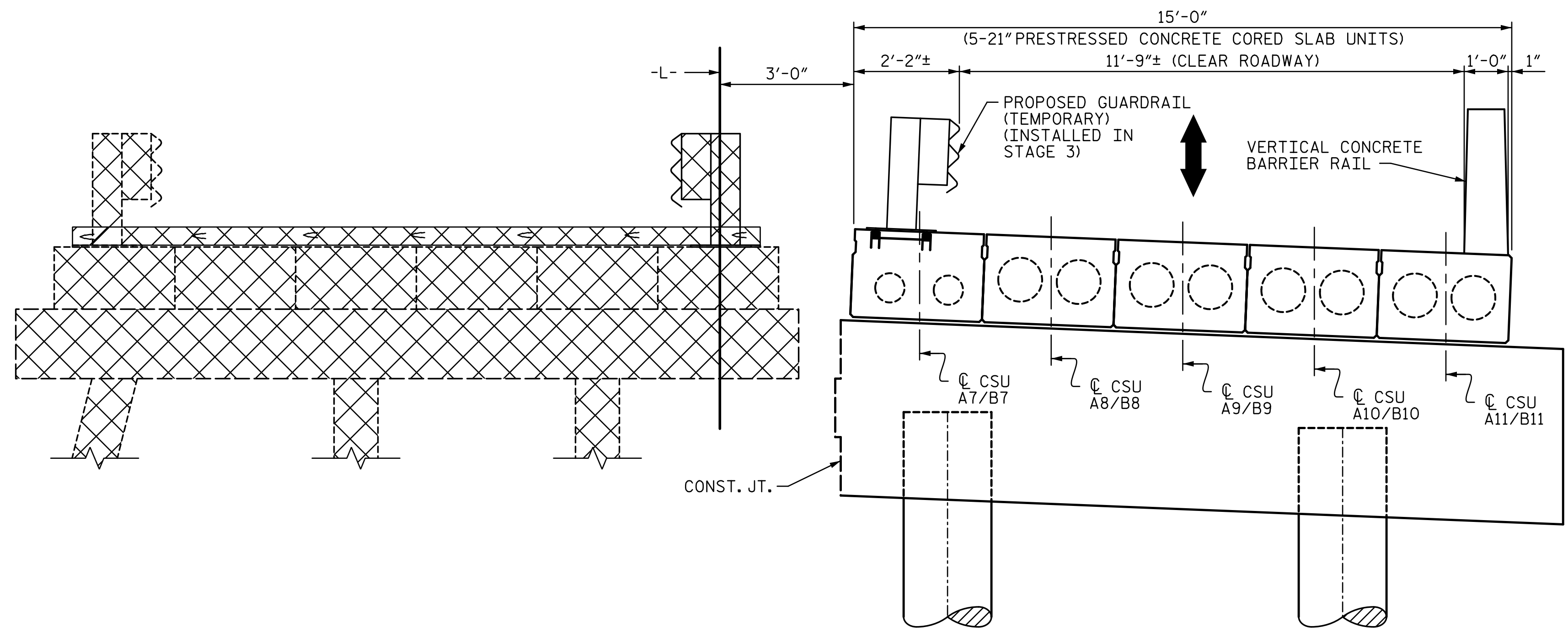
DRAWN BY : M. KHIN DATE : 01/2025
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DESIGN ENGINEER OF RECORD: M. ACOSTA DATE : 03/2026

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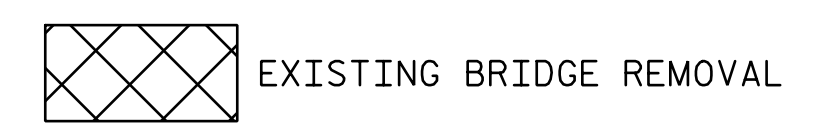
STAGE 3 (CONSTRUCTION)
(LOOKING UPSTATION @ INTERIOR BENT 1)

- STAGE 3 SEQUENCE:**
1. RE-INSTALL TRANSVERSE POST-TENSIONING ON CSU 1-5. TIMBER MATS MAY BE REMOVED ONLY AFTER POST-TENSIONING HAS BEEN COMPLETE.
 2. CONSTRUCT SUBSTRUCTURE FOR THE RIGHT SIDE OF END BENT 1, END BENT 2, BENT 1 AND THE BENT CAP OF BENT 2.
 3. ERECT CORED SLABS A7-A11 AND B7-B11, POST-TENSION THE CORED SLAB UNITS AND INSTALL GROUT IN SHEAR KEYS.
 4. CONSTRUCT VERTICAL CONCRETE BARRIER RAIL AND ATTACH TEMPORARY GUARDRAIL. FOR ADDITIONAL INFORMATION ON ATTACHING GUARDRAIL, SEE "ANCHORAGE DETAILS FOR TEMPORARY GUARDRAIL" SHEET.



STAGE 4 (REMOVAL)
(LOOKING UPSTATION @ INTERIOR BENT 1)

- STAGE 4 SEQUENCE:**
1. SHIFT TRAFFIC TO NEWLY CONSTRUCTED BRIDGE.
 2. REMOVE EXISTING SUBSTRUCTURE AND SUPERSTRUCTURE AS SHOWN.



FOR STAGE 5 CONSTRUCTION AND FINAL SECTION, SEE "CONSTRUCTION STAGING" SHEET 8 OF 8.

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
 STATION: 13+70.81 -L-

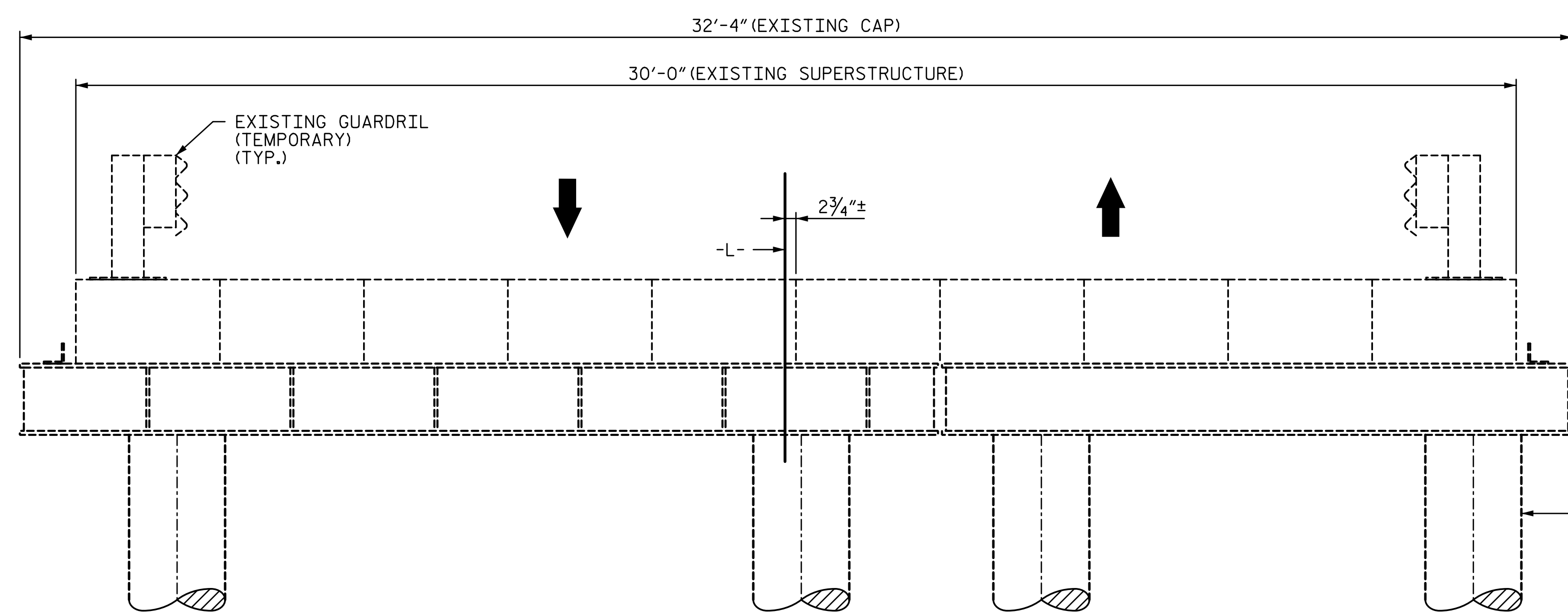
SHEET 5 OF 8

DRAWN BY : M. KHIN DATE : 01/2025
 CHECKED BY : M. ACOSTA DATE : 01/2025
 DESIGN ENGINEER OF RECORD: M. ACOSTA DATE : 03/2026

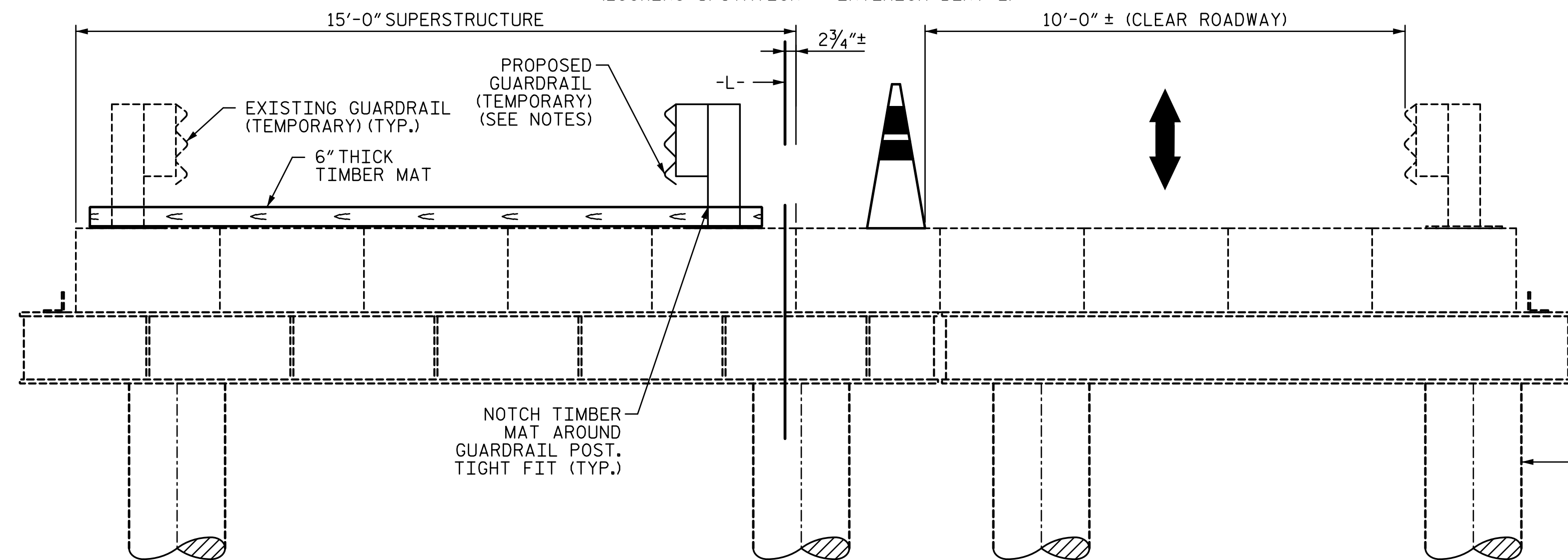
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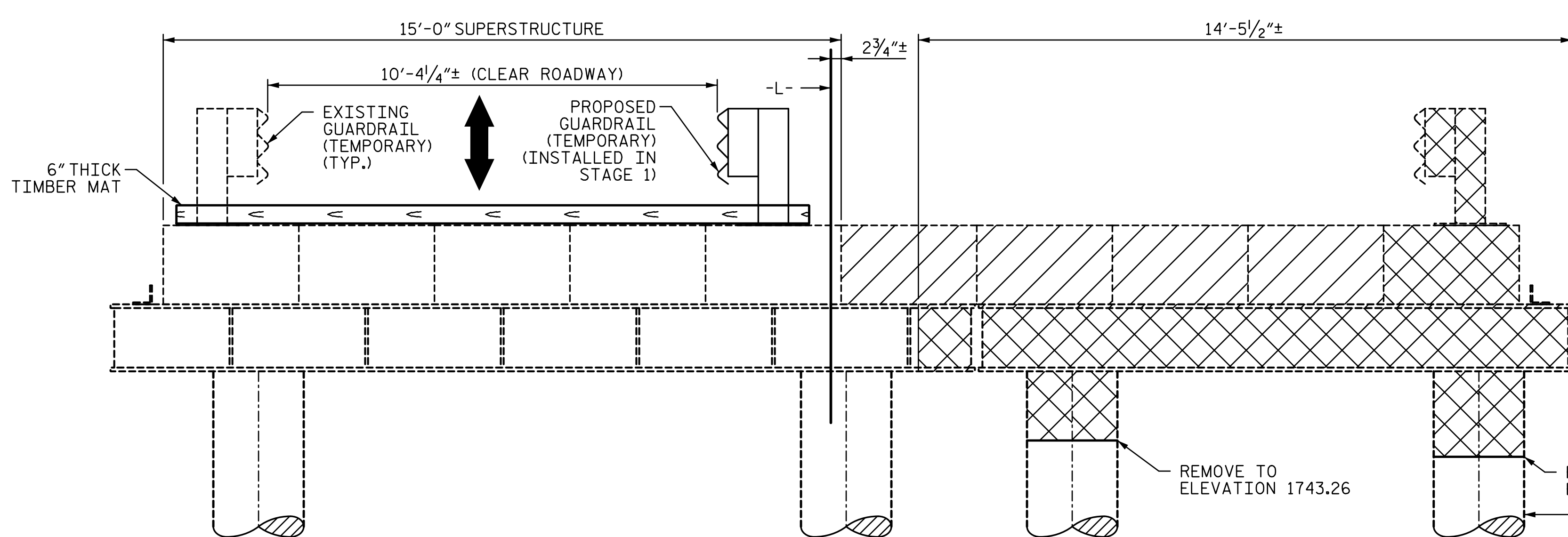
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
CONSTRUCTION STAGING (SPAN A AND BENT 1)					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-10
TOTAL SHEETS					32



EXISTING STRUCTURE
(LOOKING UPSTATION @ INTERIOR BENT 2)



STAGE 1
(LOOKING UPSTATION @ INTERIOR BENT 2)



STAGE 2 (REMOVAL)
(LOOKING UPSTATION @ INTERIOR BENT 2)

NOTES:

TEMPORARY GUARDRAIL SHALL BE ANCHORED. CONTRACTOR SHALL SUBMIT METHOD OF ANCHORAGE TO THE ENGINEER FOR APPROVAL. PRIOR TO MAKING ANY MODIFICATIONS TO THE EXISTING CORED SLABS, THE CONTRACTOR SHALL LOCATE THE REINFORCING OR PRESTRESSING AND SHALL NOT DRILL OR INSTALL AT THESE LOCATIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DAMAGE TO REINFORCING OR PRESTRESSING IN THE EXISTING BEAMS.

TIMBER MATS (6" THICKNESS) SHALL BE PLACED AS SHOWN PRIOR TO DETENSIONING THE TRANSVERSE POST-TENSIONING RODS. TIMBER MATS SHALL REMAIN IN PLACE UNTIL CSU 6 (SEE SHEET 1 OF 8 FOR CSU 6 LOCATION) IS REMOVED AND TRANSVERSE POST-TENSIONING IS RE-INSTALLED. ONCE POST-TENSIONING IS REINSTALLED, TIMBER MATS MAY BE REMOVED, OR MAY REMAIN IN PLACE. TIMBER MATS SHALL BE MAINTAINED BY THE CONTRACTOR WHILE IN PLACE. NO MODIFICATIONS TO CSU ARE ALLOWED TO AFFIX TIMBER MATS TO THE BRIDGE.

FOR STAGE 2 (REMOVAL) DETENSIONING OF POST-TENSIONED STRANDS SHALL ONLY OCCUR FOR ONE SPAN PER EACH NIGHT OF WORK. FOR DURATIONS, SEE MAINTENANCE OF TRAFFIC PLANS.

FOR ADDITIONAL INFORMATION ON ATTACHING GUARDRAIL TO EXISTING CSU, SEE "ANCHORAGE DETAILS FOR TEMPORARY GUARDRAIL" SHEET.

EXISTING 24" PILES INSTALLED FOR TEMPORARY BRIDGE. REPAIR TO REMAIN IN PERMANENT CONDITION.

EXISTING 24" PILES INSTALLED FOR TEMPORARY BRIDGE. REPAIR TO REMAIN IN PERMANENT CONDITION.

STAGE 1 SEQUENCE:

1. SHIFT TRAFFIC TO RIGHT OF BRIDGE
2. INSTALL PROPOSED GUARDRAIL (TEMPORARY) AS SHOWN.
3. PLACE 6" TIMBER MAT. (SEE NOTES)

STAGE 2 SEQUENCE:

1. SHIFT TRAFFIC TO LEFT SIDE OF BRIDGE.
2. DETENSION AND REMOVE CORED SLAB UNITS AS SHOWN. SEE SHEET 1 OF 8 FOR EXISTING CORED SLAB UNITS TO BE RETAINED AND REUSED.
3. REMOVE EXISTING PILE CAP AS SHOWN.
4. REMOVE EXISTING 24" Ø PILES TO THE REQUIRED ELEVATION.

REMOVE (SEE NOTES ON SHEET 1 OF 8)

REMOVE TO BE REUSED (SEE NOTES ON SHEET 1 OF 8)

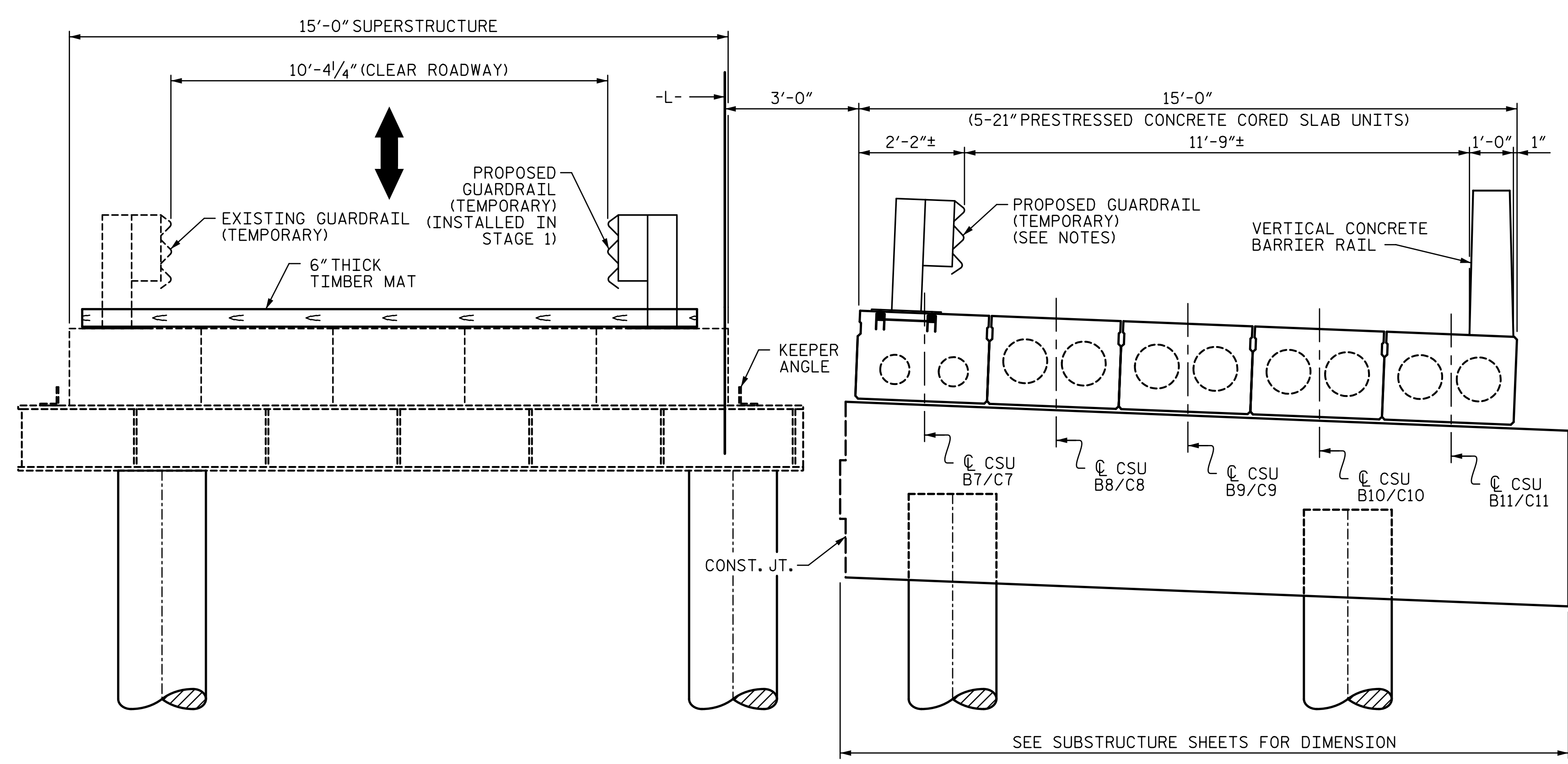
PROJECT NO. DF18314.2045332
HENDERSON COUNTY
 STATION: 13+70.81 -L-

SHEET 6 OF 8

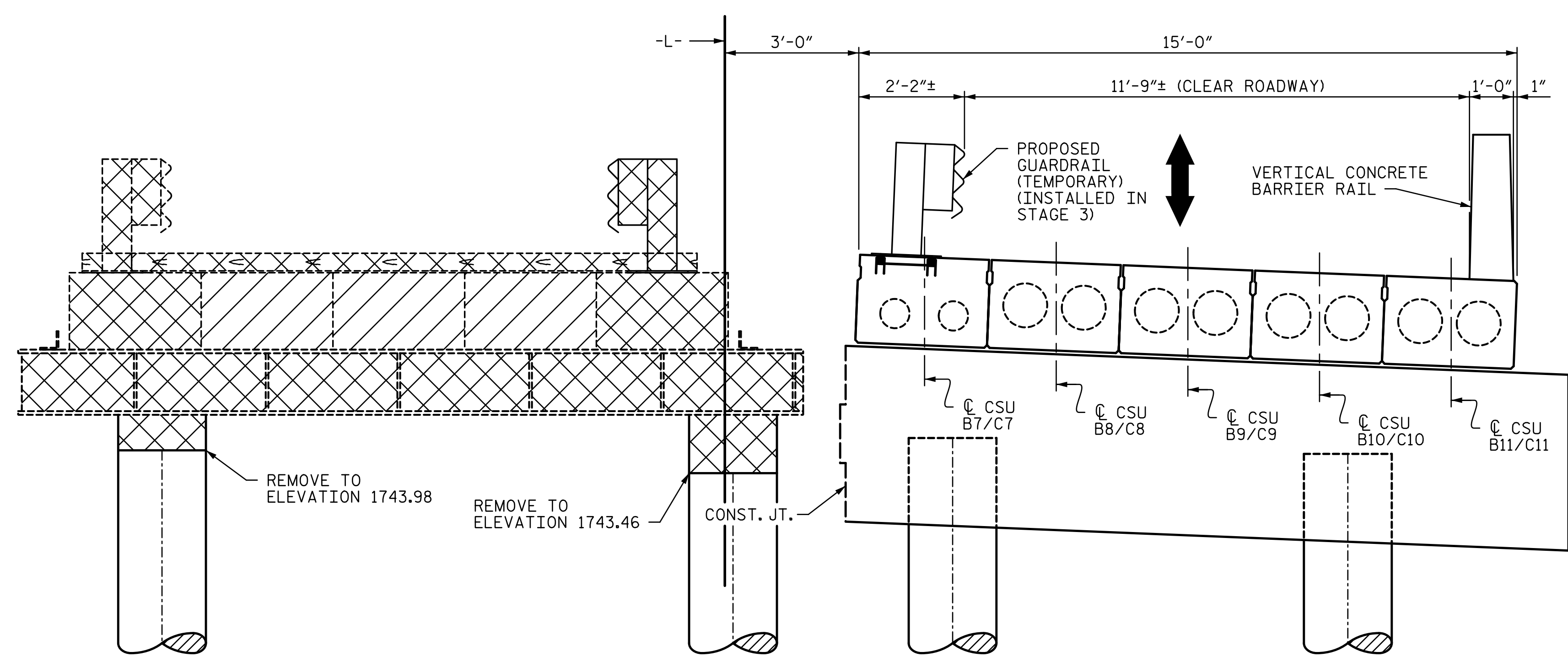
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
CONSTRUCTION STAGING (SPANS B & C AND BENT 2)					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-11
TOTAL SHEETS					32

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STAGE 3 (CONSTRUCTION)
(LOOKING UPSTATION @ INTERIOR BENT 2)




STAGE 4 (REMOVAL)
(LOOKING UPSTATION @ INTERIOR BENT 2)

- STAGE 3 SEQUENCE:**
1. RE-INSTALL TRANSVERSE POST TENSIONING ON CSU 1-5. TIMBER MATS MAY BE REMOVED ONLY AFTER POST TENSIONING HAS BEEN COMPLETED.
 2. CONSTRUCT SUBSTRUCTURE FOR THE RIGHT SIDE OF END BENT 1, END BENT 2, BENT 1 AND THE BENT CAP OF BENT 2.
 3. ERECT CORED SLABS C7-C11, POST-TENSION THE CORED SLAB UNITS AND INSTALL GROUT IN SHEAR KEYS.
 4. CONSTRUCT VERTICAL CONCRETE BARRIER RAIL AND ATTACH TEMPORARY GUARDRAIL. FOR ADDITIONAL INFORMATION ON ATTACHING GUARDRAIL TO CSU, SEE "ANCHORAGE DETAILS FOR TEMPORARY GUARDRAIL" SHEET.

- STAGE 4 SEQUENCE:**
1. SHIFT TRAFFIC TO NEWLY CONSTRUCTED BRIDGE.
 2. DETENSION AND REMOVE CORED SLAB UNITS AS SHOWN. SEE SHEET 2 OF 8 FOR EXISTING CORED SLAB UNITS TO BE RETAINED AND REUSED.
 3. REMOVE EXISTING PILE CAP AS SHOWN.
 4. REMOVE EXISTING 24" Ø PILES TO THE REQUIRED ELEVATION.

 REMOVE (SEE NOTES ON SHEET 2 OF 8)

 REMOVE TO BE REUSED (SEE NOTES ON SHEET 2 OF 8)

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
 STATION: 13+70.81 -L-

SHEET 7 OF 8



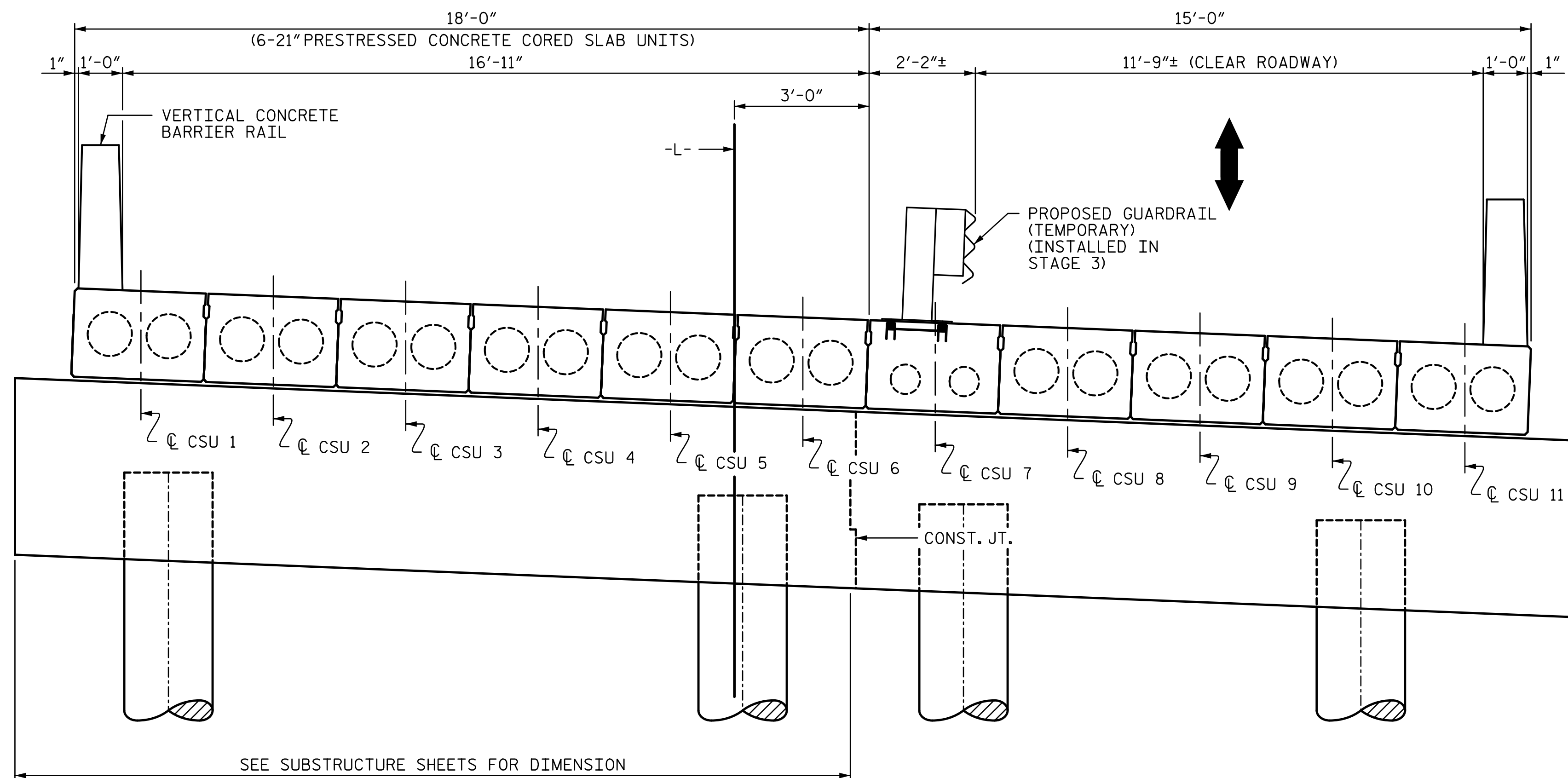
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONSTRUCTION STAGING
 (SPANS B & C AND
 BENT 2)

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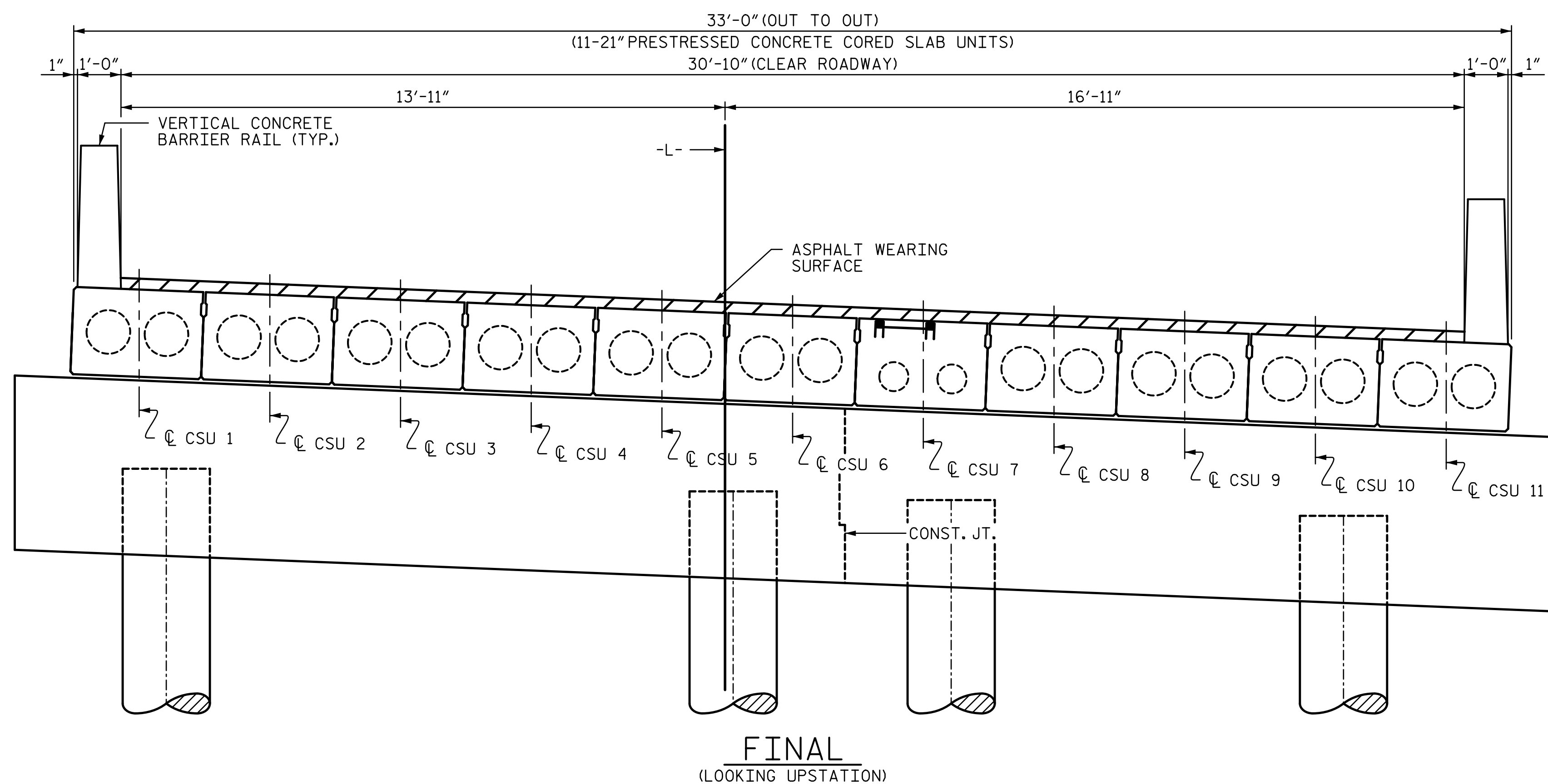
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			32



- STAGE 5 SEQUENCE:**
1. CONSTRUCT REMAINING PORTION OF ALL SUBSTRUCTURE ELEMENTS.
 2. ERECT REMAINING CORED SLAB UNITS.
 3. POST-TENSION ALL CORED SLAB UNITS, GROUT ALL REMAINING SHEAR KEYS AND INSTALL FULL WIDTH POST TENSIONING.
 4. CONSTRUCT VERTICAL CONCRETE BARRIER RAIL ON LEFT SIDE OF BRIDGE AND REMOVE TEMPORARY GUARDRAIL.
 5. PLACE ASPHALT OVERLAY.

STAGE 5 (CONSTRUCTION)
(LOOKING UPSTATION)



FINAL
(LOOKING UPSTATION)

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
 STATION: 13+70.81 -L-

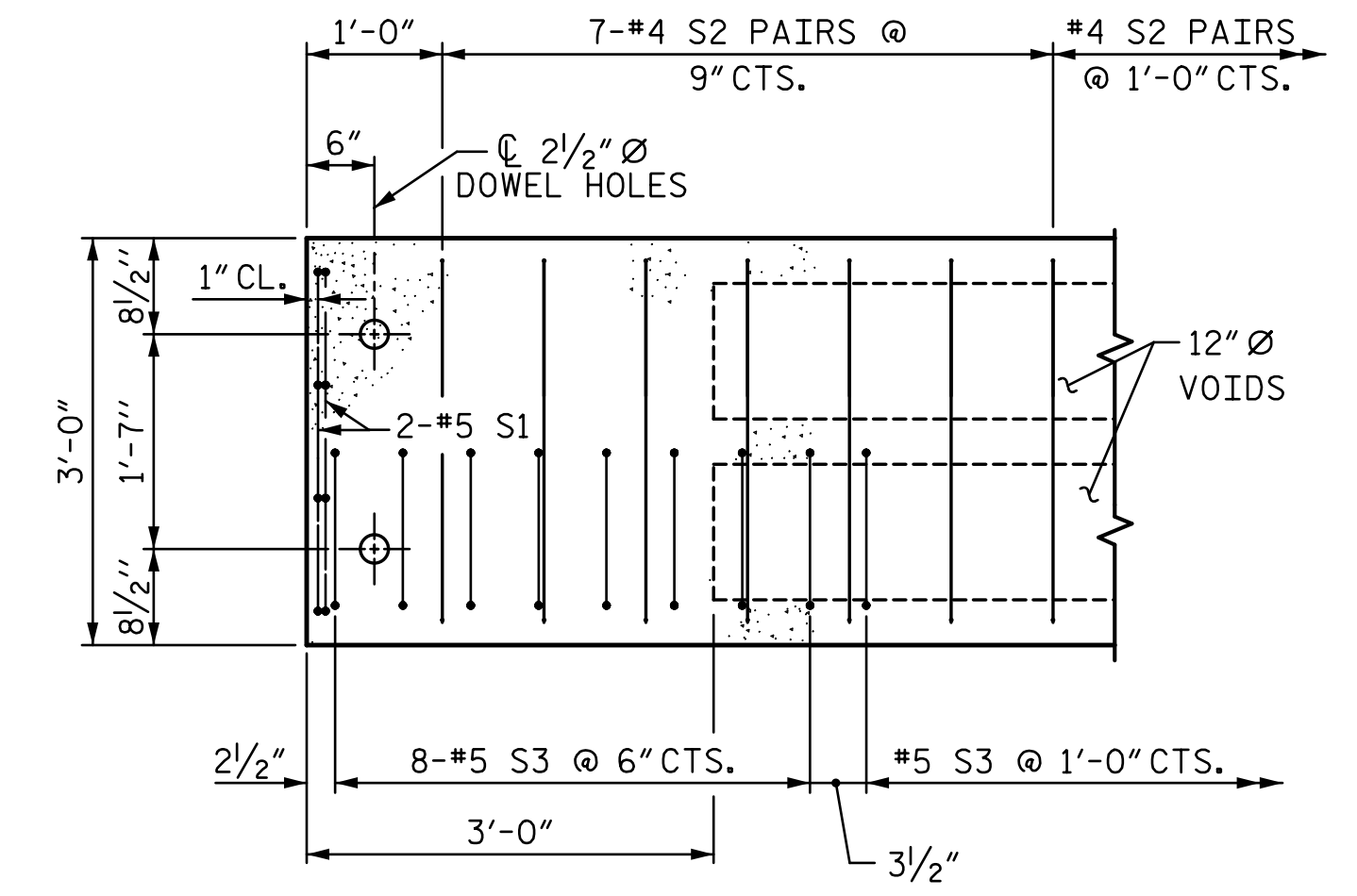
SHEET 8 OF 8

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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
CONSTRUCTION STAGING					
SHEET NO. S-13					
TOTAL SHEETS 32					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

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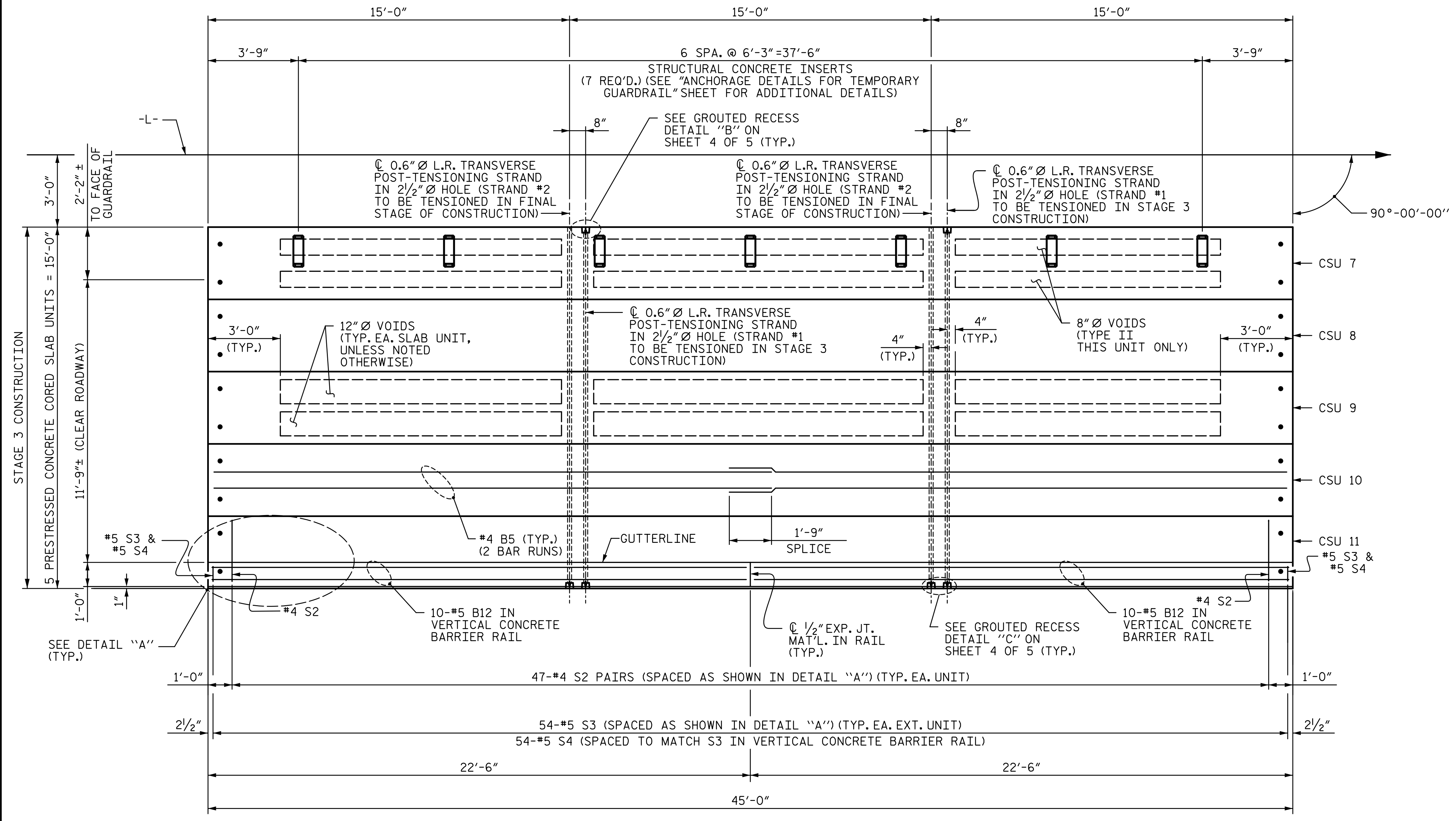
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DETAIL "A"

(TYPICAL EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

	UNIT TYPE		
	SPAN A	SPAN B	SPAN C
CSU 1	TYPE III	TYPE III	TYPE III
CSU 2	EXISTING	EXISTING	EXISTING
CSU 3	EXISTING	EXISTING	EXISTING
CSU 4	EXISTING	EXISTING	EXISTING
CSU 5	EXISTING	EXISTING	EXISTING
CSU 6	EXISTING	EXISTING	TYPE I
CSU 7	TYPE II	TYPE II	TYPE II
CSU 8	TYPE I	TYPE I	TYPE I
CSU 9	TYPE I	TYPE I	TYPE I
CSU 10	TYPE I	TYPE I	TYPE I
CSU 11	TYPE IV	TYPE IV	TYPE IV



PLAN OF UNIT (STAGE 3 CONSTRUCTION)

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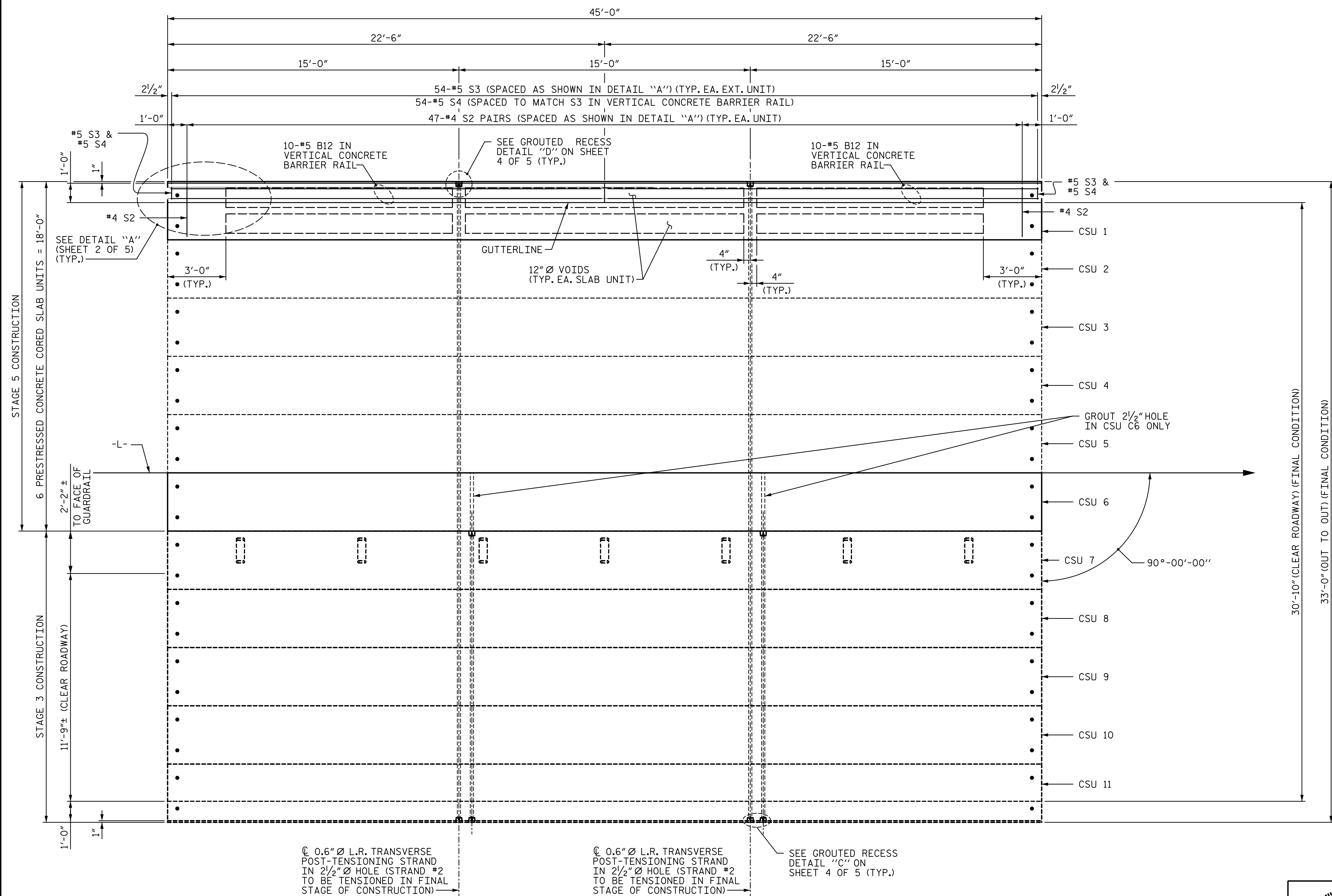


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PROJECT NO. DF18314.2045332
 HENDERSON COUNTY
 STATION: 13+70.81 -L-

SHEET 2 OF 5

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTALS
2			4			32



CSU	UNIT TYPE		
	SPAN A	SPAN B	SPAN C
CSU 1	TYPE III	TYPE III	TYPE III
CSU 2	EXISTING	EXISTING	EXISTING
CSU 3	EXISTING	EXISTING	EXISTING
CSU 4	EXISTING	EXISTING	EXISTING
CSU 5	EXISTING	EXISTING	EXISTING
CSU 6	EXISTING	EXISTING	TYPE I
CSU 7	TYPE II	TYPE II	TYPE II
CSU 8	TYPE I	TYPE I	TYPE I
CSU 9	TYPE I	TYPE I	TYPE I
CSU 10	TYPE I	TYPE I	TYPE I
CSU 11	TYPE IV	TYPE IV	TYPE IV

PLAN OF UNIT (STAGE 5 CONSTRUCTION)

(*4 B5 BARS NOT SHOWN FOR CLARITY, SEE PLAN VIEW ON SHEET 2 OF 5 FOR DETAILS)

PROJECT NO. DF18314.2045332
 HENDERSON COUNTY
 STATION: 13+70.81 -L-

SHEET 3 OF 5



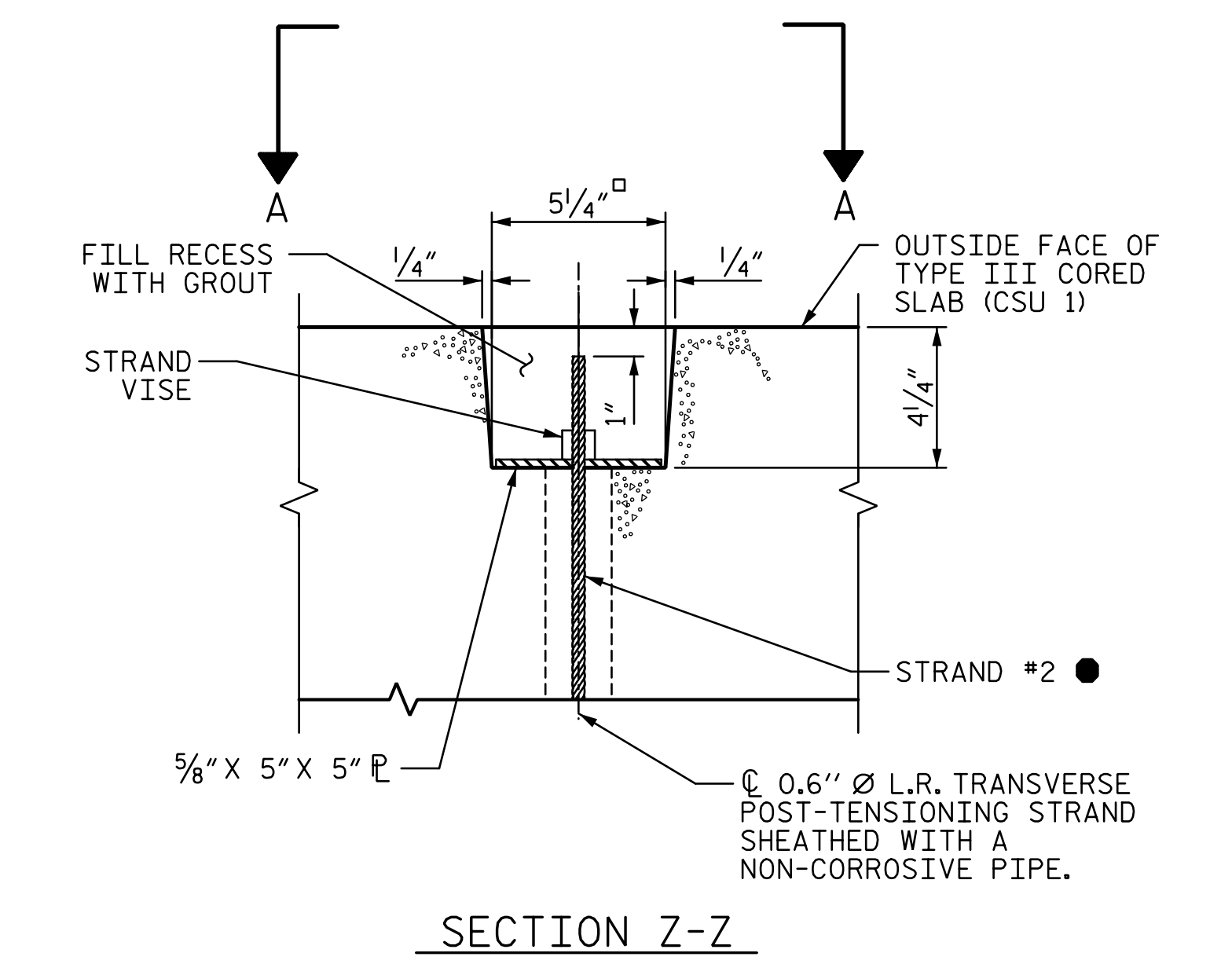
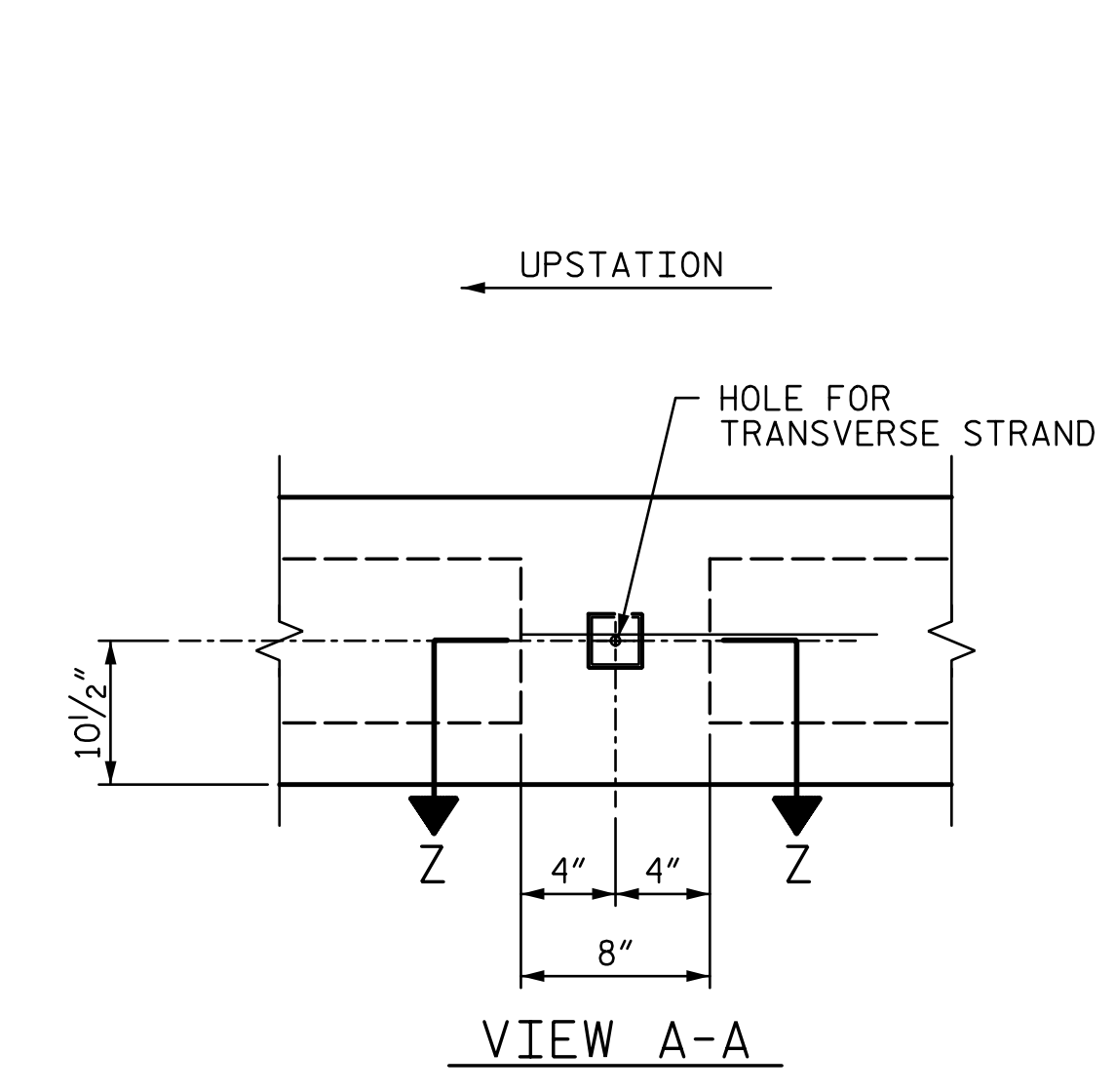
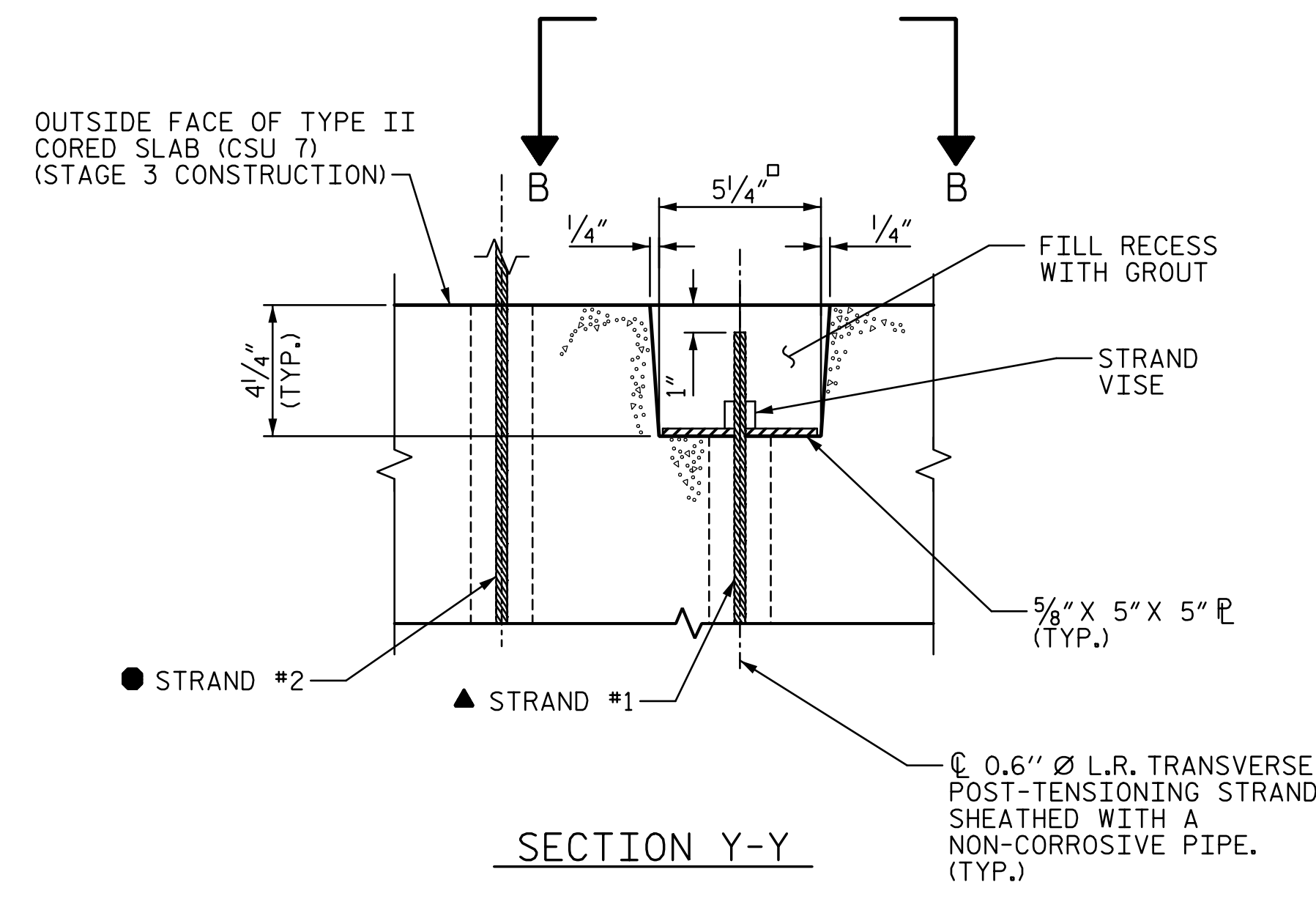
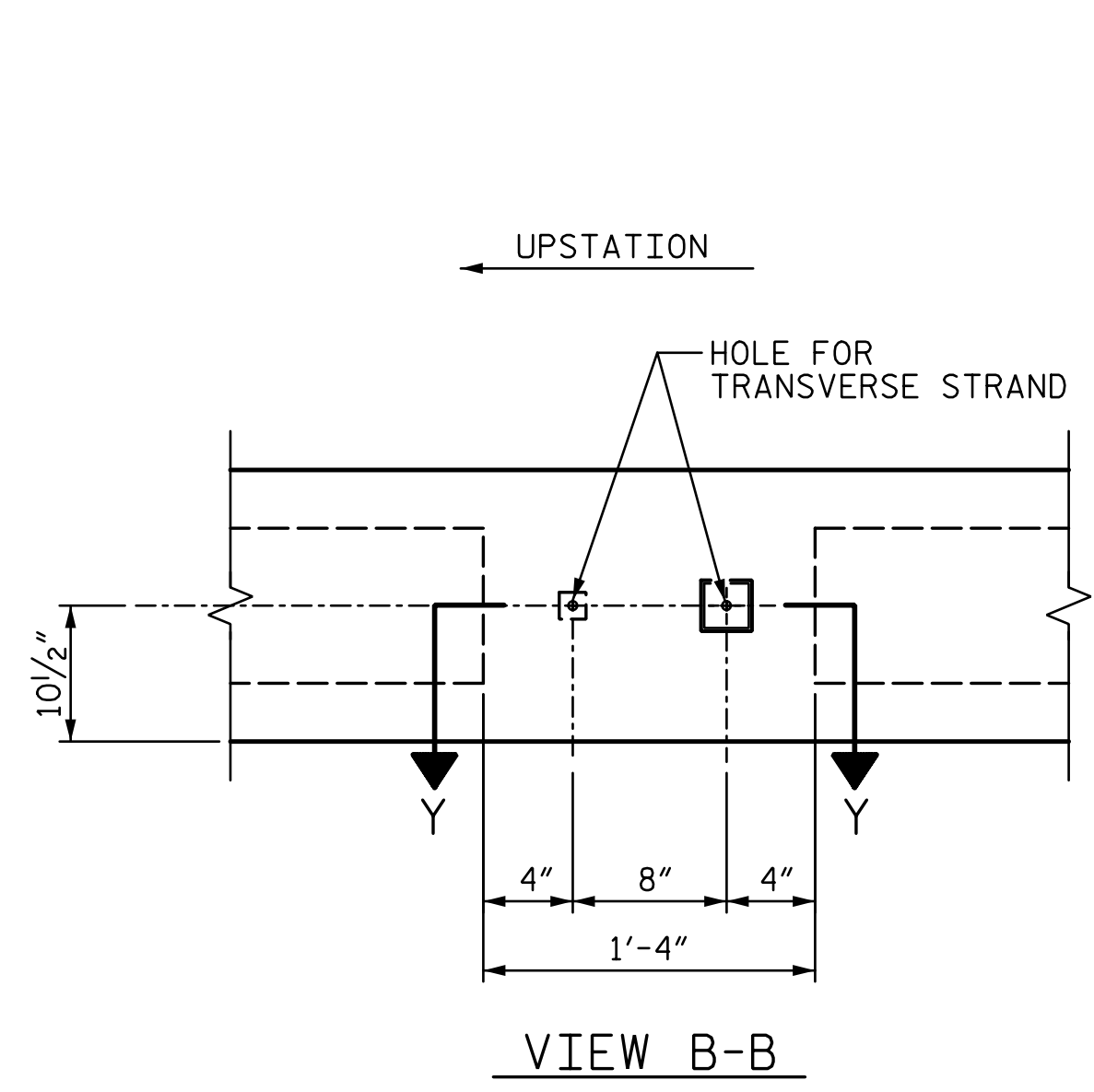
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PLAN OF 45' UNIT
 30'-10" CLEAR ROADWAY
 90° SKEW

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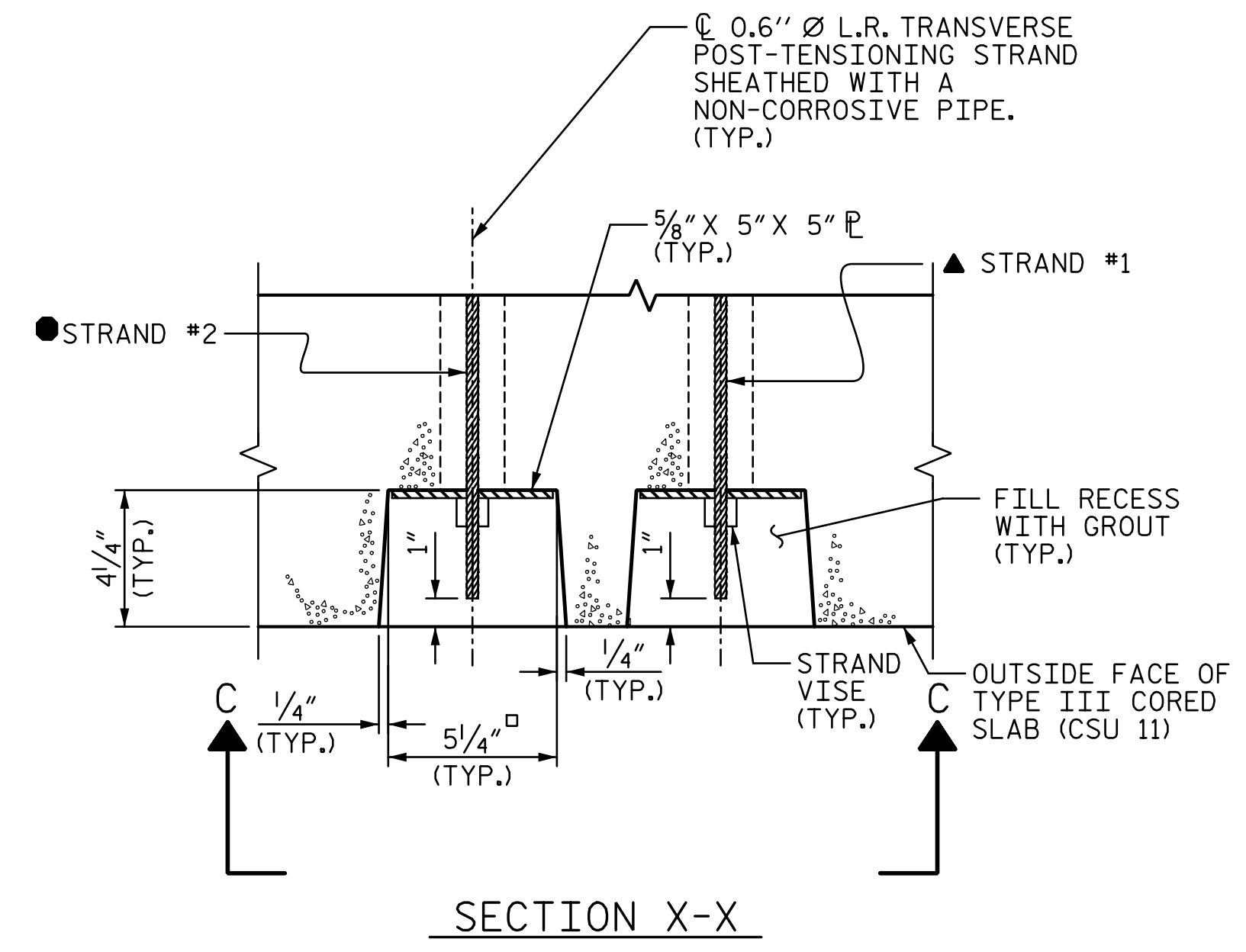
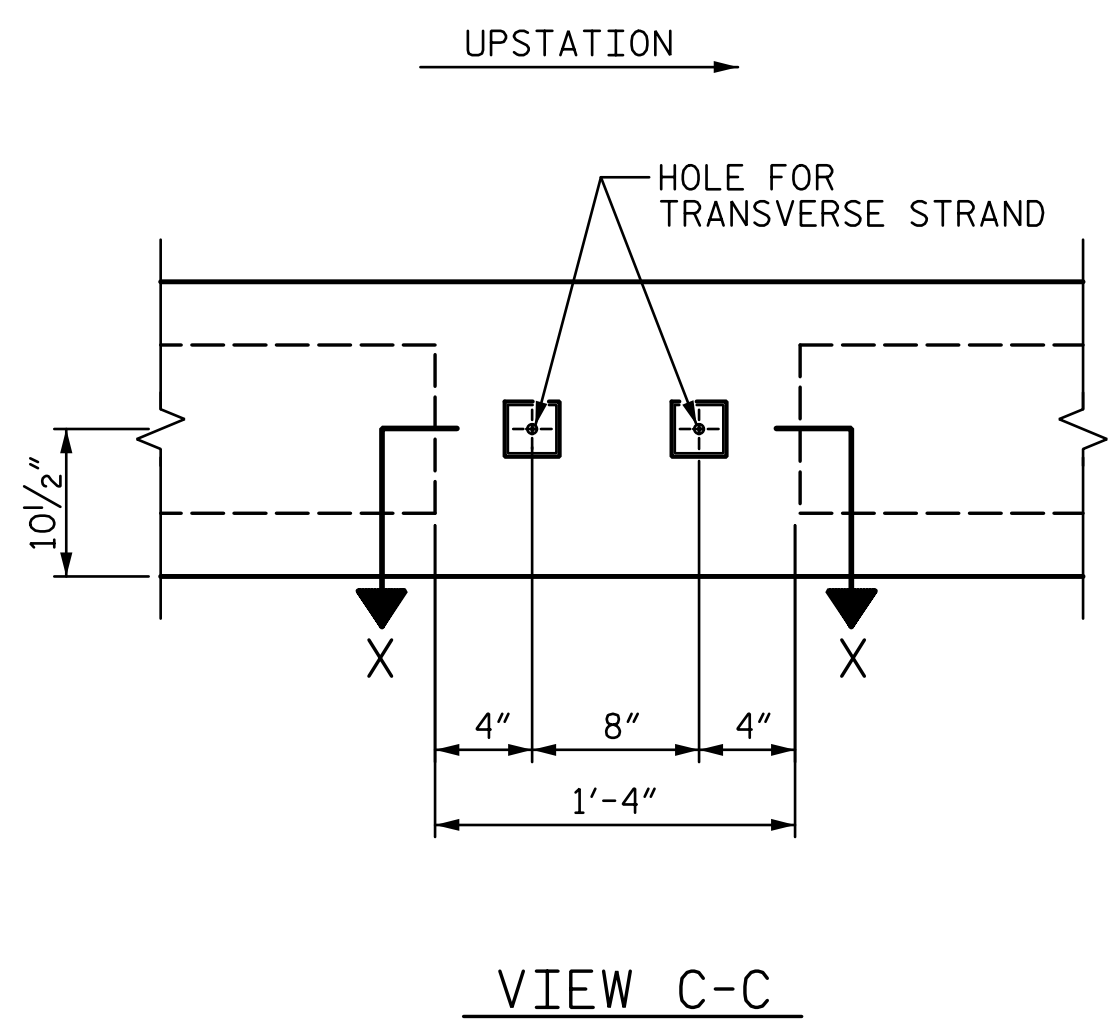
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			32



DETAIL B
(TYPE II UNIT)
(DOWNSTATION SET OF STRANDS AND DIAPHRAGM SHOWN, UPSTATION SET OF STRANDS AND DIAPHRAGM SIMILAR)

DETAIL D
(TYPE III UNIT - CSU 1)



DETAIL C
(TYPE IV UNIT-CSU 11)

GROUTED RECESS AT END OF POST-TENSIONED STRAND OF CORED SLABS

- ▲ STRAND #1 GOES THRU CORED SLAB UNITS 7 THRU 11 (TO BE TENSIONED DURING STAGE 3 CONSTRUCTION)
- STRAND #2 GOES THRU ALL 11 CORED SLAB UNITS (TO BE TENSIONED DURING STAGE 5 CONSTRUCTION)

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
 STATION: 13+70.81 -L-

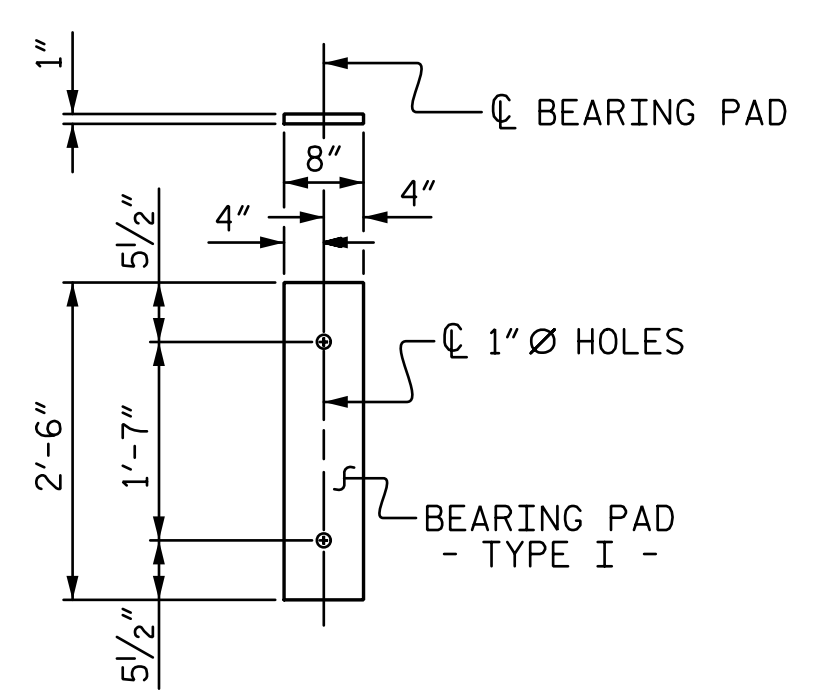
SHEET 4 OF 5



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT					
SHEET NO. S-17					
TOTAL SHEETS 32					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

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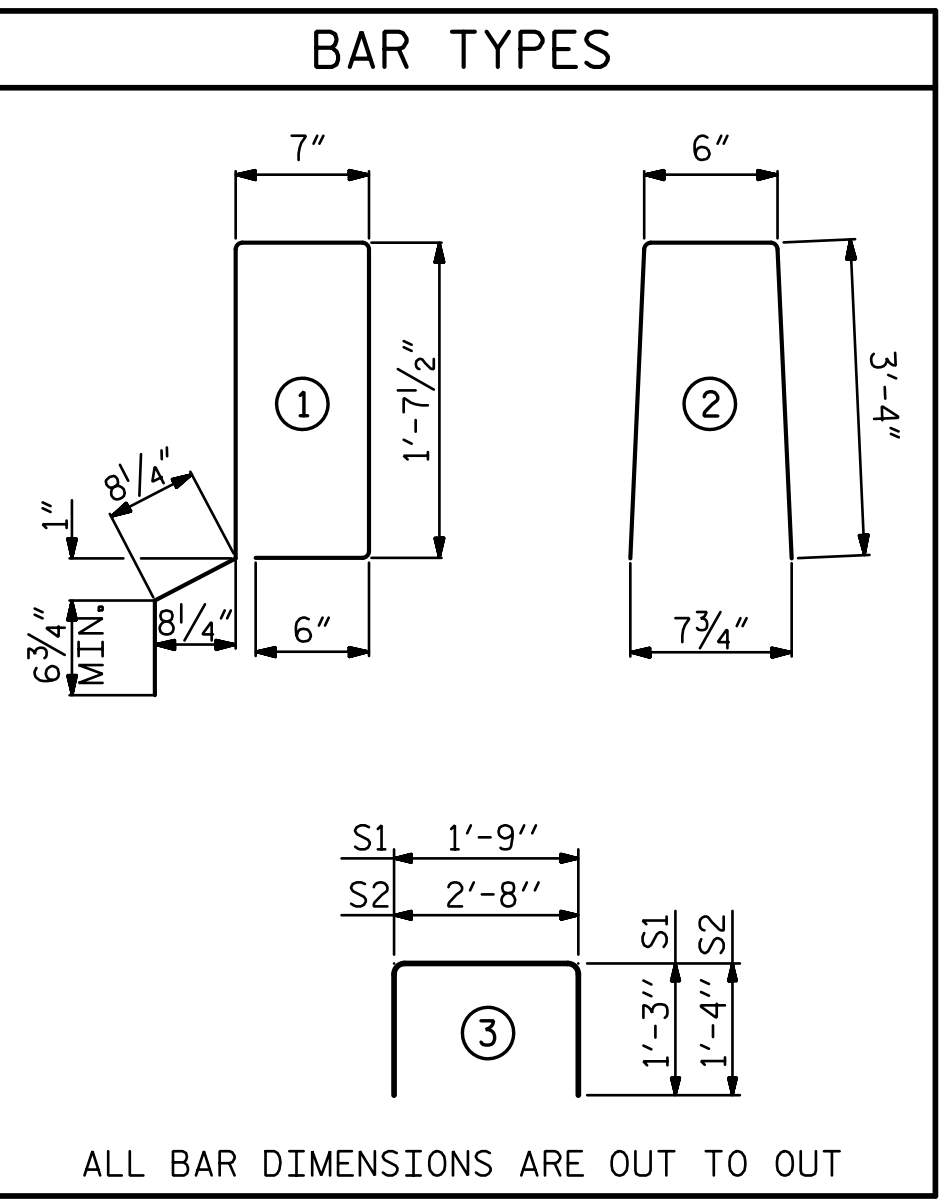


FIXED END
(TYPE I - 66 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

BILL OF MATERIAL FOR ONE 45' CORED SLAB UNIT (ALL TYPES)											
				TYPE IV		TYPE III		TYPE II		TYPE I	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT
B5	4	#4	STR	23'-3"	62	23'-3"	62	23'-3"	62	23'-3"	62
S1	8	#5	3	4'-3"	35	4'-3"	35	4'-3"	35	4'-3"	35
S2	94	#4	3	5'-4"	335	5'-4"	335	5'-4"	335	5'-4"	335
*S3	54	#5	1	5'-7"	314	5'-7"	314				
REINFORCING STEEL				LBS.	432	432	432	432			
*EPOXY COATED REINFORCING STEEL				LBS.	314	314	314				
6500 P.S.I. CONCRETE				CU. YDS.	6.5	6.5	8.0	6.5			
0.6" Ø L.R. STRANDS				No.	13	13	13	13			



NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

ALL REINFORCING STEEL IN THE VERTICAL CONCRETE BARRIER RAIL SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

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

FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.

THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

THE PERMITTED THREADED INSERTS SHALL BE GROUTED BY THE CONTRACTOR IMMEDIATELY FOLLOWING REMOVAL OF THE FALSEWORK.

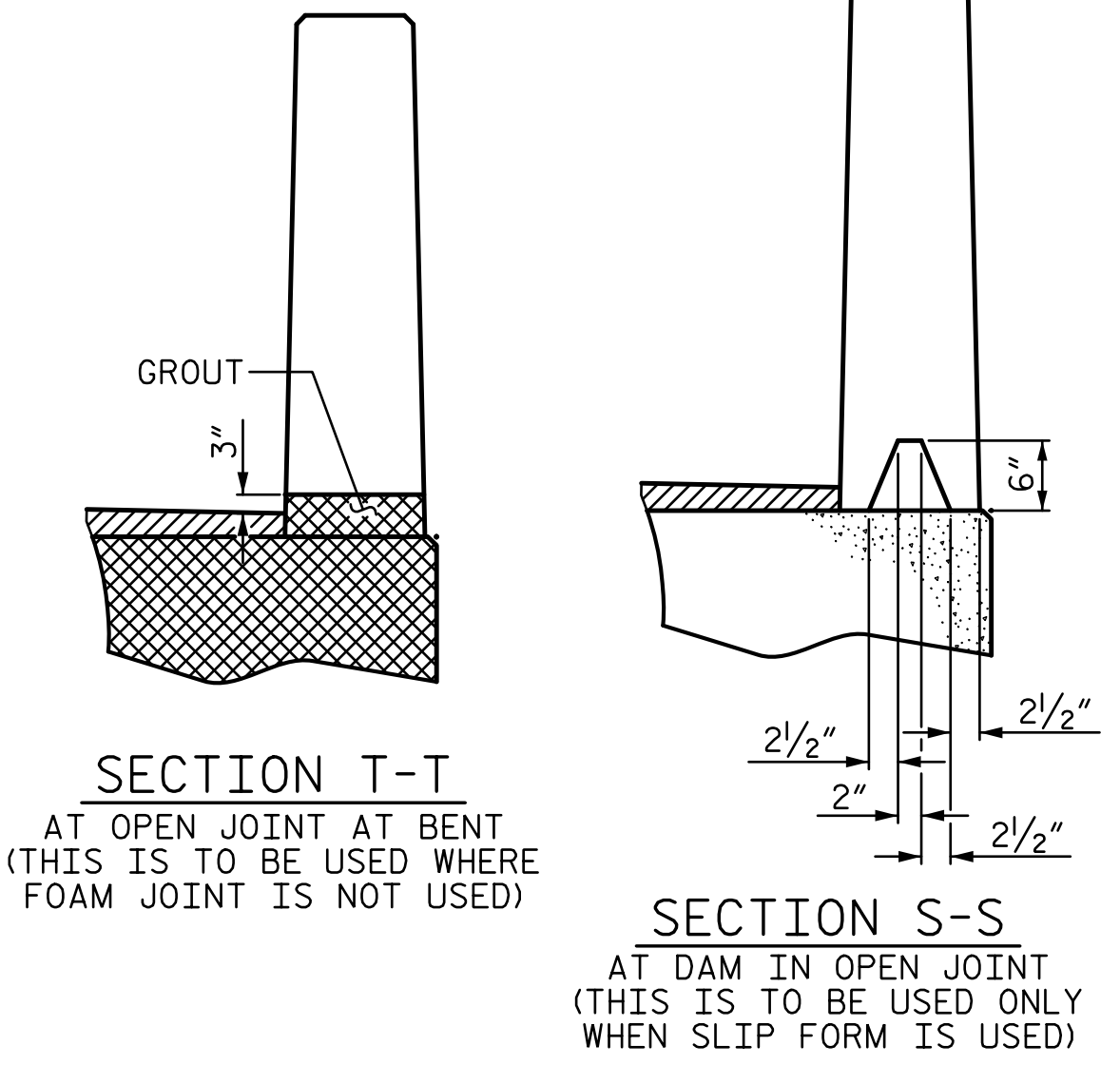
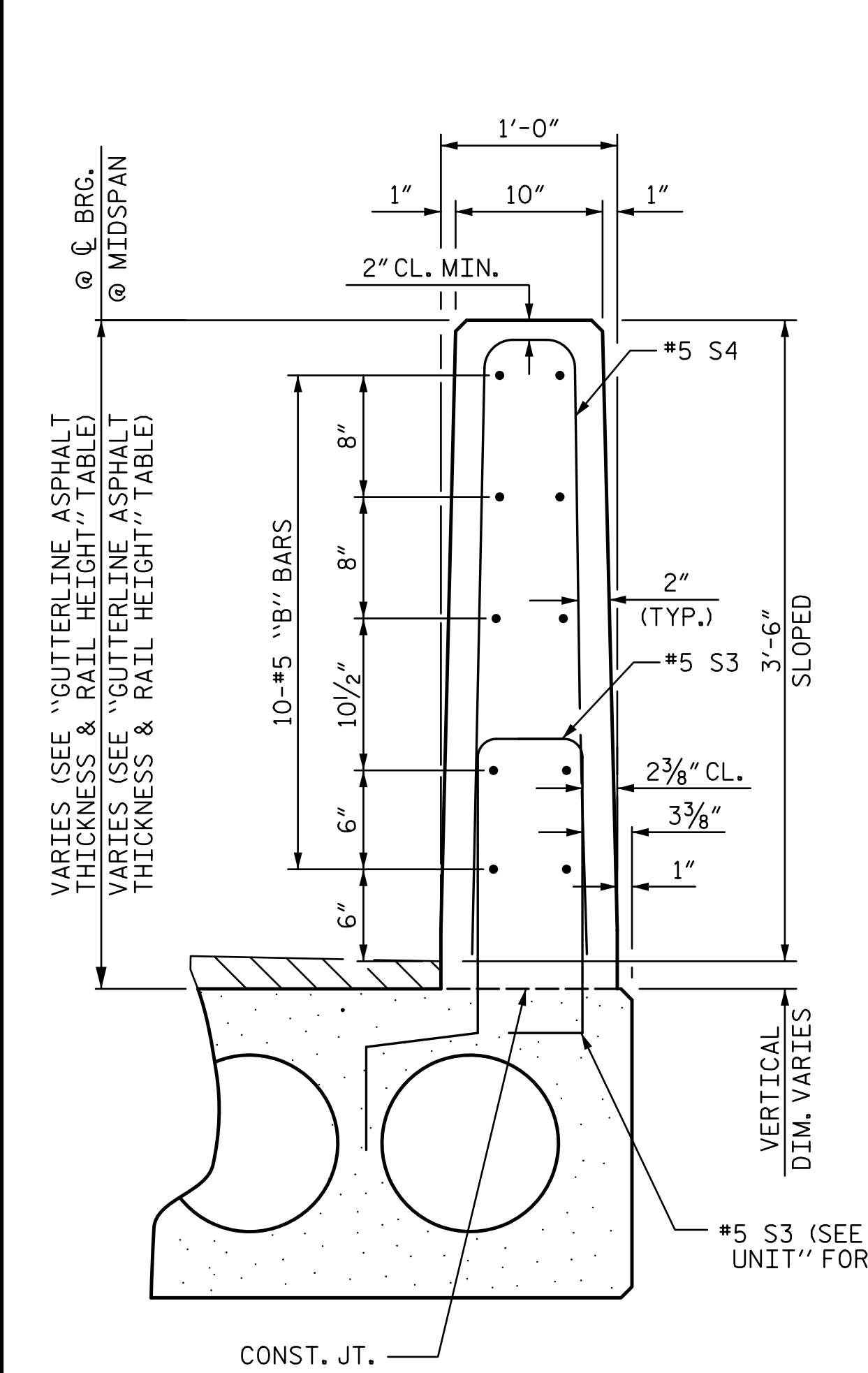
THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT							
45' UNITS		ASPHALT OVERLAY THICKNESS			RAIL HEIGHT		
		CL BRG. 1	@ MID-SPAN	CL BRG. 2	CL BRG. 1	@ MID-SPAN	CL BRG. 2
SPAN 1	LEFT	4"	3 3/4"	4 1/2"	3'-10"	3'-9 3/4"	3'-10 1/2"
	RIGHT	5 3/8"	3 9/16"	4 1/2"	3'-11 3/8"	3'-9 9/16"	3'-10 1/2"
SPAN 2	LEFT	4 1/2"	3 7/8"	4 1/2"	3'-10 1/2"	3'-9 7/8"	3'-10 1/2"
	RIGHT	4 1/2"	3 7/8"	4 1/2"	3'-10 1/2"	3'-9 7/8"	3'-10 1/2"
SPAN 3	LEFT	4 1/2"	1 7/8"	3 1/2"	3'-10 1/2"	3'-7 7/8"	3'-9 1/2"
	RIGHT	4 1/2"	2 9/16"	7 3/8"	3'-10 1/2"	3'-8 9/16"	4'-1 3/8"

DEAD LOAD DEFLECTION AND CAMBER	
45' CORED SLAB UNIT	3'-0" x 1'-9"
CAMBER (SLAB ALONE IN PLACE)	0.6" Ø L.R. STRAND
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	3/4" ↓
FINAL CAMBER	1/8" ↓
	5/8" ↑

** INCLUDES FUTURE WEARING SURFACE AND CONCRETE BARRIER RAILS

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL							
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT	
45' UNIT							
*B12	40	120	#5	STR	22'-1"	2763	
*S4	108	324	#5	2	7'-2"	2421	
*EPOXY COATED REINFORCING STEEL						LBS.	5184
CLASS AA CONCRETE						CU.YDS.	34.5
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN. FT.	270.75



CORED SLABS REQUIRED					
STAGE	CONSTRUCTION	45' UNIT	NUMBER	LENGTH	TOTAL LENGTH
STAGE 3	CONSTRUCTION	TYPE I	9	45'-0"	405'-0"
		TYPE II	3	45'-0"	135'-0"
		TYPE IV	3	45'-0"	135'-0"
		TOTAL	15	-	675'-0"
STAGE 5	CONSTRUCTION	TYPE I	1	45'-0"	45'-0"
		TYPE III	3	45'-0"	135'-0"
		TOTAL	4	-	180'-0"
TOTAL REQUIRED		19	-	855'-0"	

NOTE: TOTAL NUMBER OF NEW CORED SLAB UNITS = 19, DOES NOT INCLUDE EXISTING UNITS.

CONCRETE RELEASE STRENGTH	
UNIT	PSI
45'	4900

VERTICAL CONCRETE BARRIER RAIL SECTION

END OF RAIL DETAILS

PROJECT NO. DF18314.2045332
 HENDERSON COUNTY
 STATION: 13+70.81 -L-

SHEET 5 OF 5



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

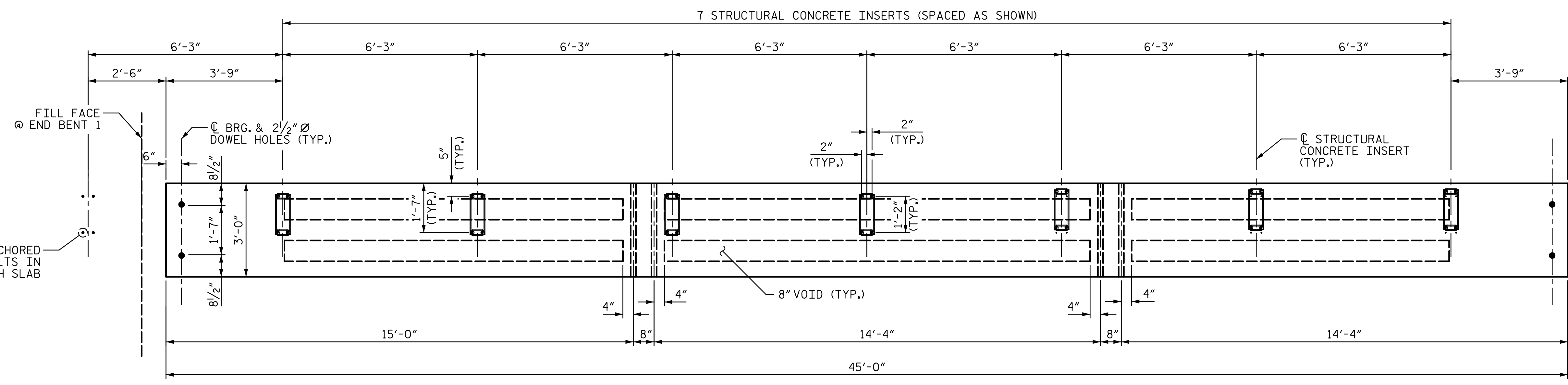
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT

GRADE 270 STRANDS	
AREA (SQUARE INCHES)	0.6" Ø L.R.
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

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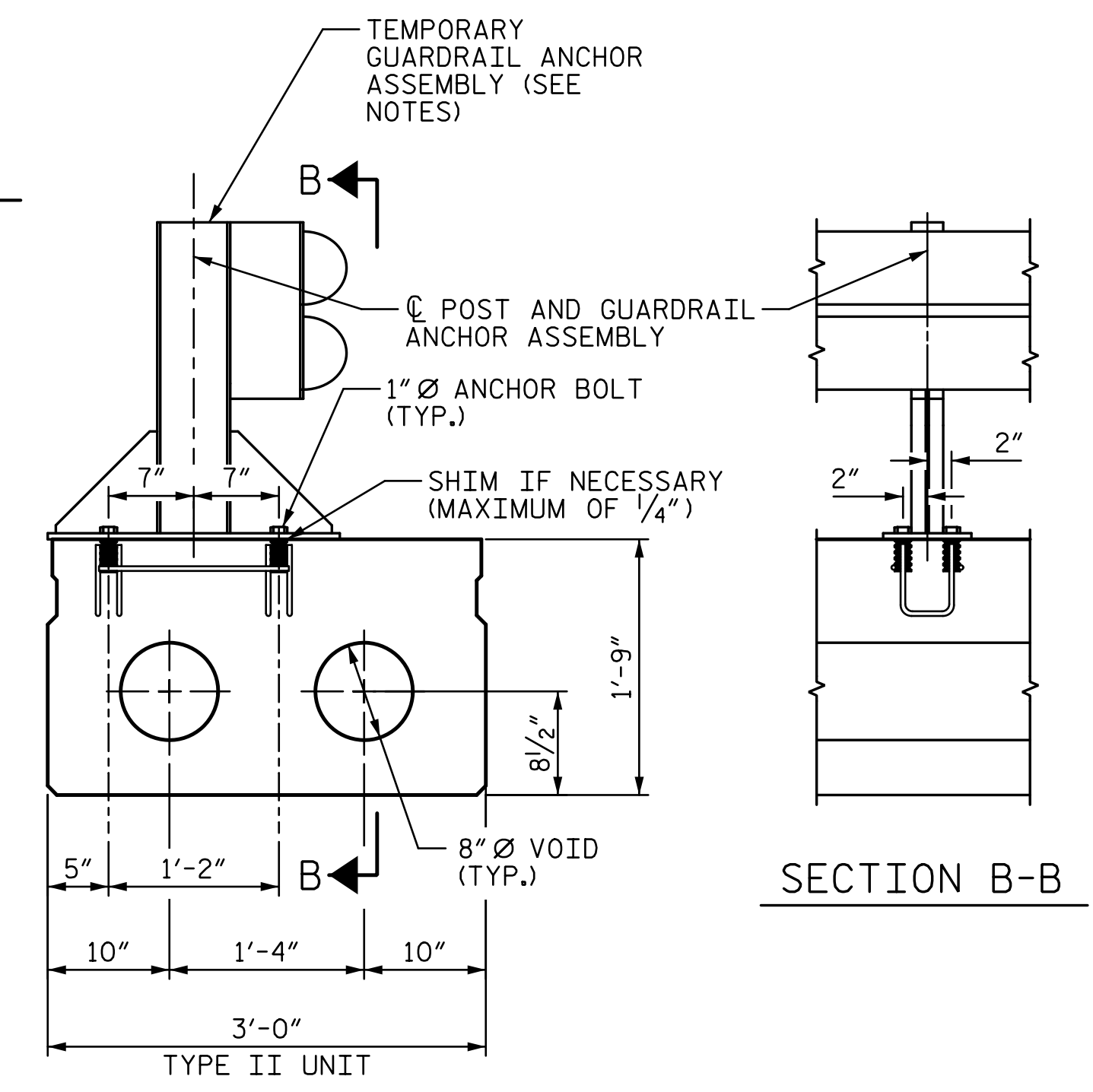
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			SHEETS
2			4			32

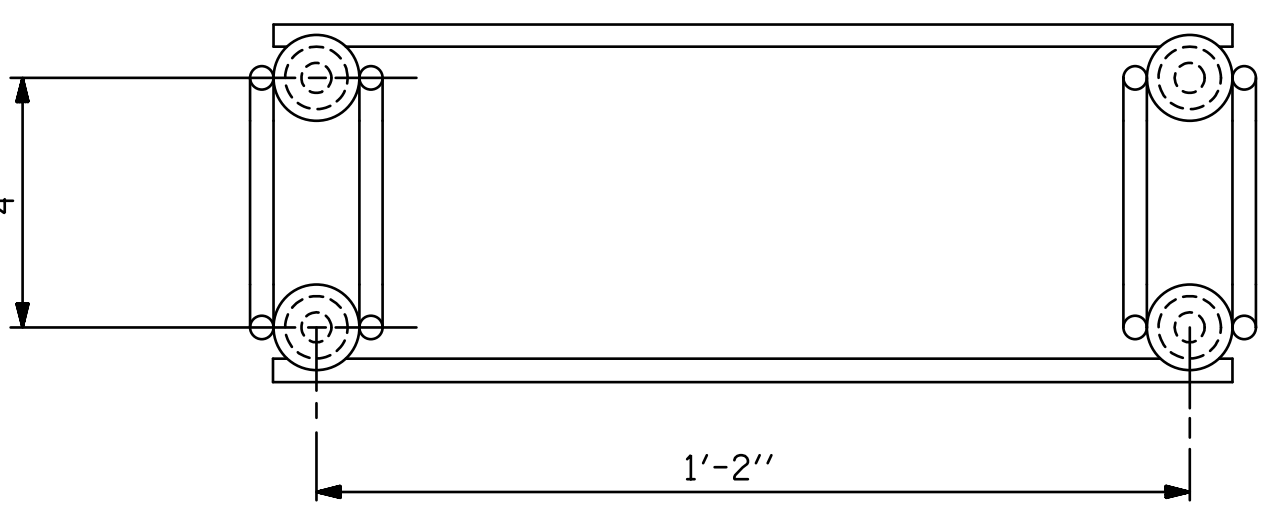


PLAN OF STAGE 1 CORED SLAB UNIT (TYPE II)

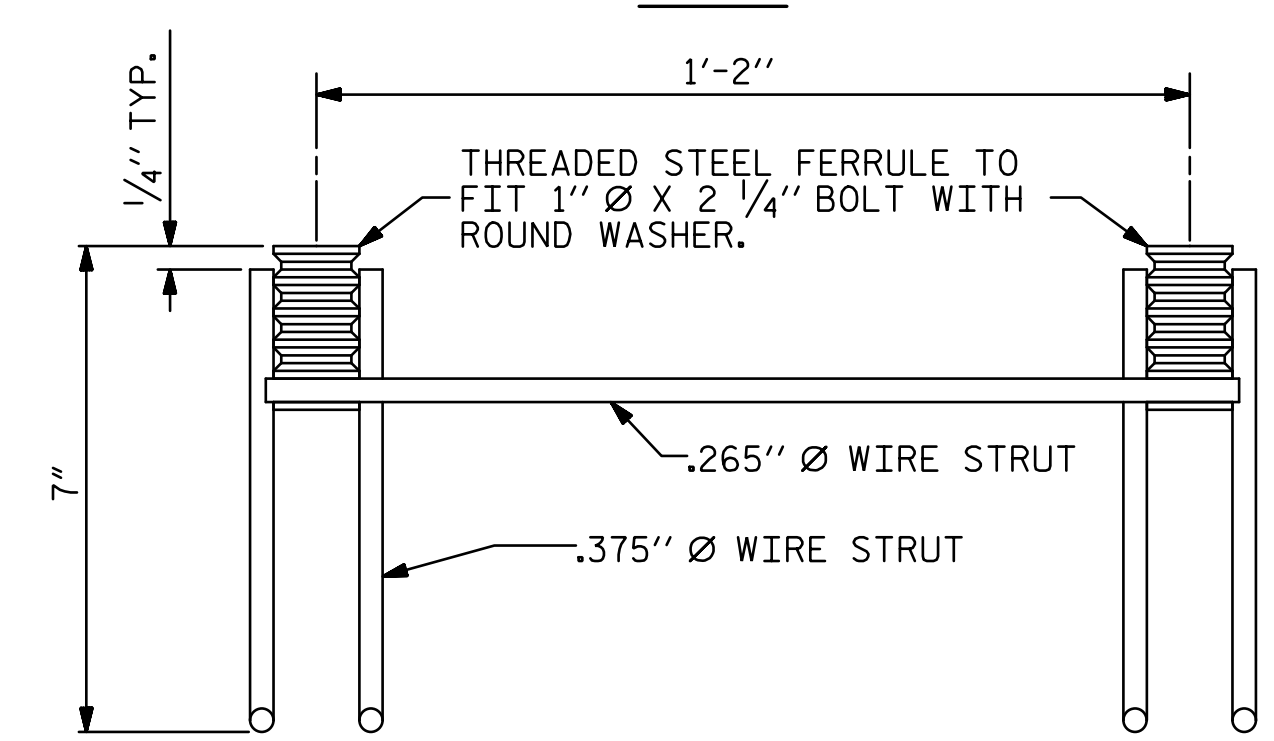
(SPAN A SHOWN, OTHER SPANS SIMILAR)



CONCRETE INSERT LOCATION



PLAN



SIDE VIEW

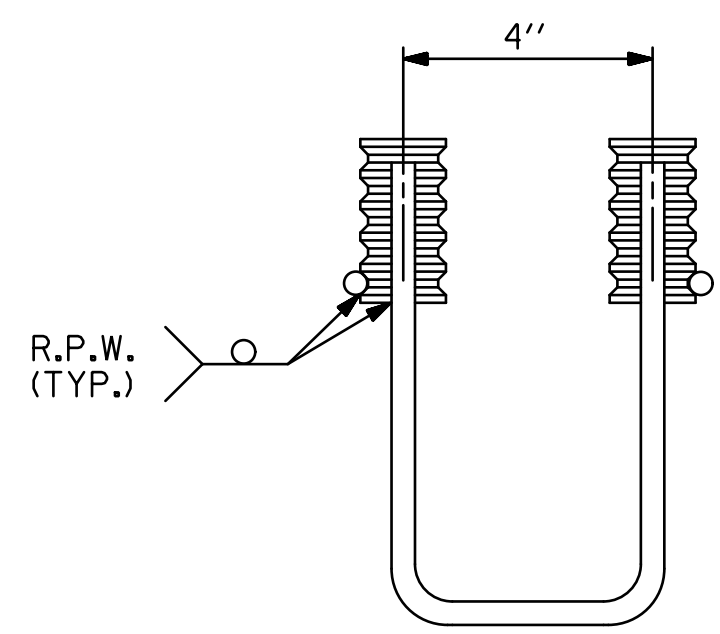
ELEVATION

STRUCTURAL CONCRETE INSERT

(7 ASSEMBLIES REQUIRED IN THE TYPE II CORED SLAB UNITS)
(4 ASSEMBLIES REQUIRED IN THE APPROACH SLABS)

NOTES

- THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS :
 - A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2 1/2".
 - B. 4 - 1" Ø X 2 1/4" 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 1" Ø X 2 1/4" 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.)
 - C. WIRE STRUTS SHOWN IN THE GUARDRAIL ANCHOR ASSEMBLY ARE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 P.S.I. AS AN OPTION, A 7/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.
- GUARDRAIL ANCHOR ASSEMBLY WITH BOLTS SHALL BE ASSEMBLED IN THE SHOP. BOLT THREADS MAY BE RECUT AS NECESSARY TO INSURE FIT.
- THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY COMPLETE IN PLACE, SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS.
- FERRULES TO BE PLUGGED DURING CASTING OF THE CORED SLAB UNITS AS RECOMMENDED BY THE MANUFACTURER.
- AT THE CONTRACTOR'S OPTION, FERRULES WITH OPEN OR CLOSED ENDS MAY BE USED.
- PAYMENT FOR GUARDRAIL, POSTS, AND POST BASE PLATES IS INCLUDED IN ROADWAY PAY ITEMS.
- CORED SLAB UNITS REINFORCING STEEL MAY BE SHIFTED AS NECESSARY TO CLEAR GUARDRAIL ANCHOR ASSEMBLY. CARE SHOULD BE TAKEN TO KEEP THE SHIFTING OF REINFORCING STEEL TO A MINIMUM.
- AFTER REMOVAL OF TEMPORARY GUARDRAIL ANCHOR ASSEMBLY, THE STRUCTURAL CONCRETE INSERTS SHALL BE FILLED WITH GROUT.



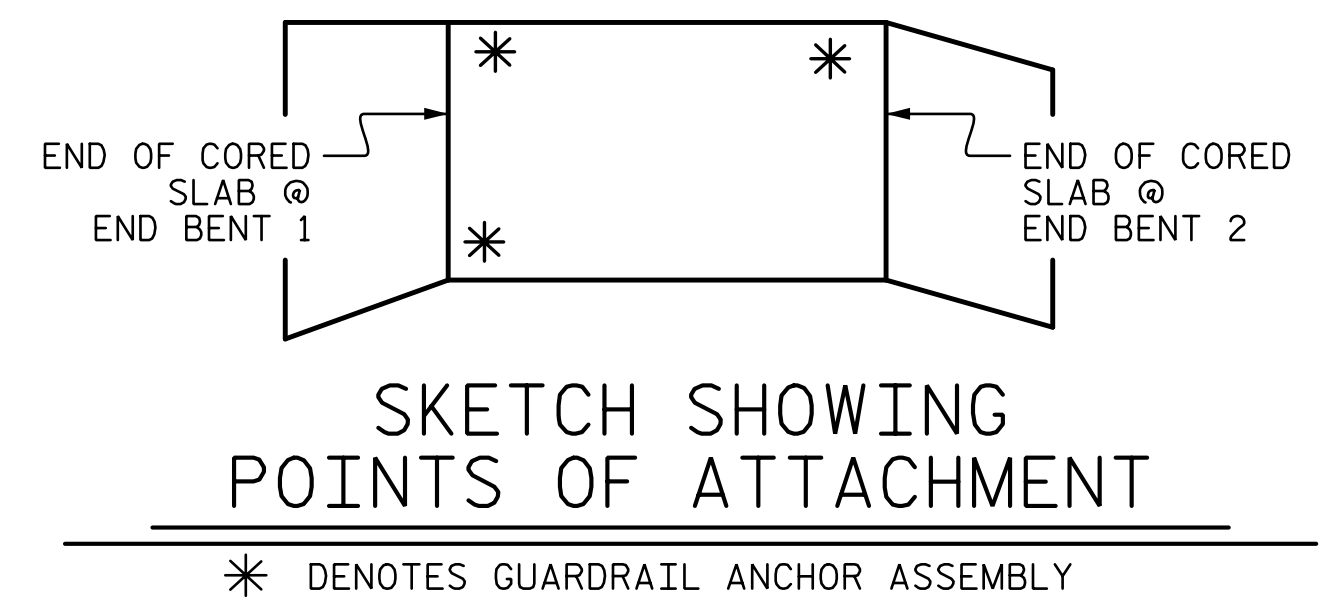
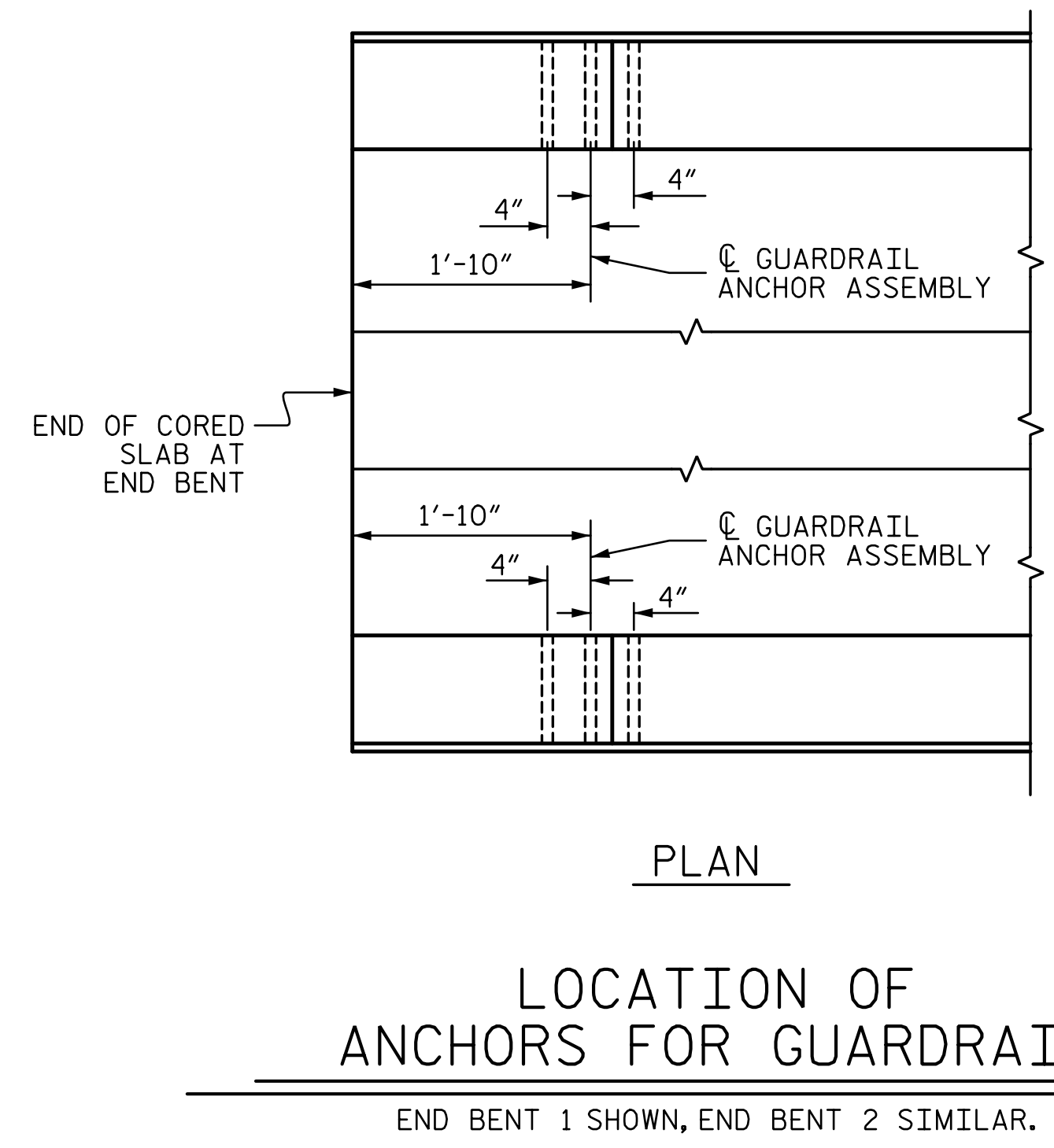
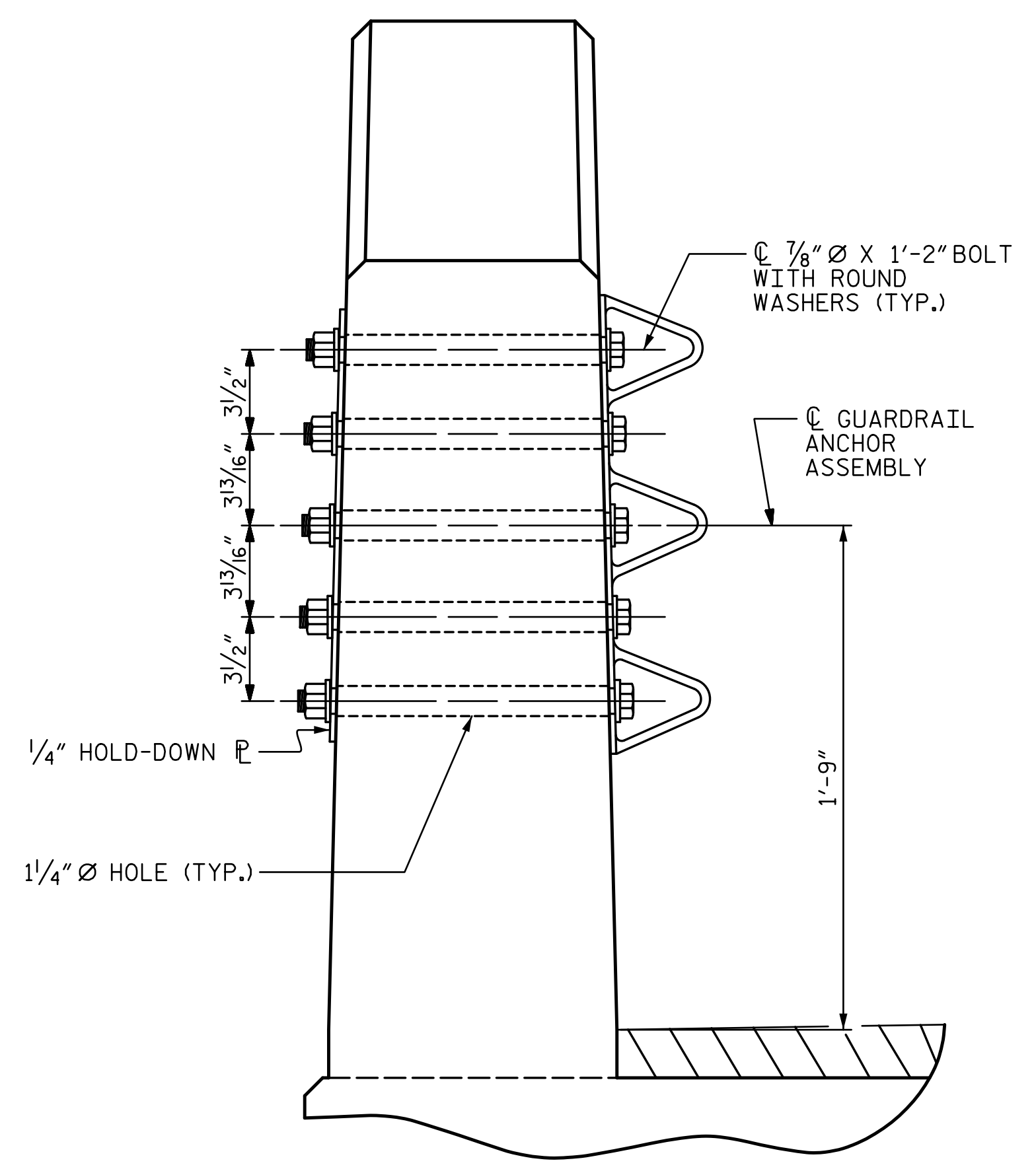
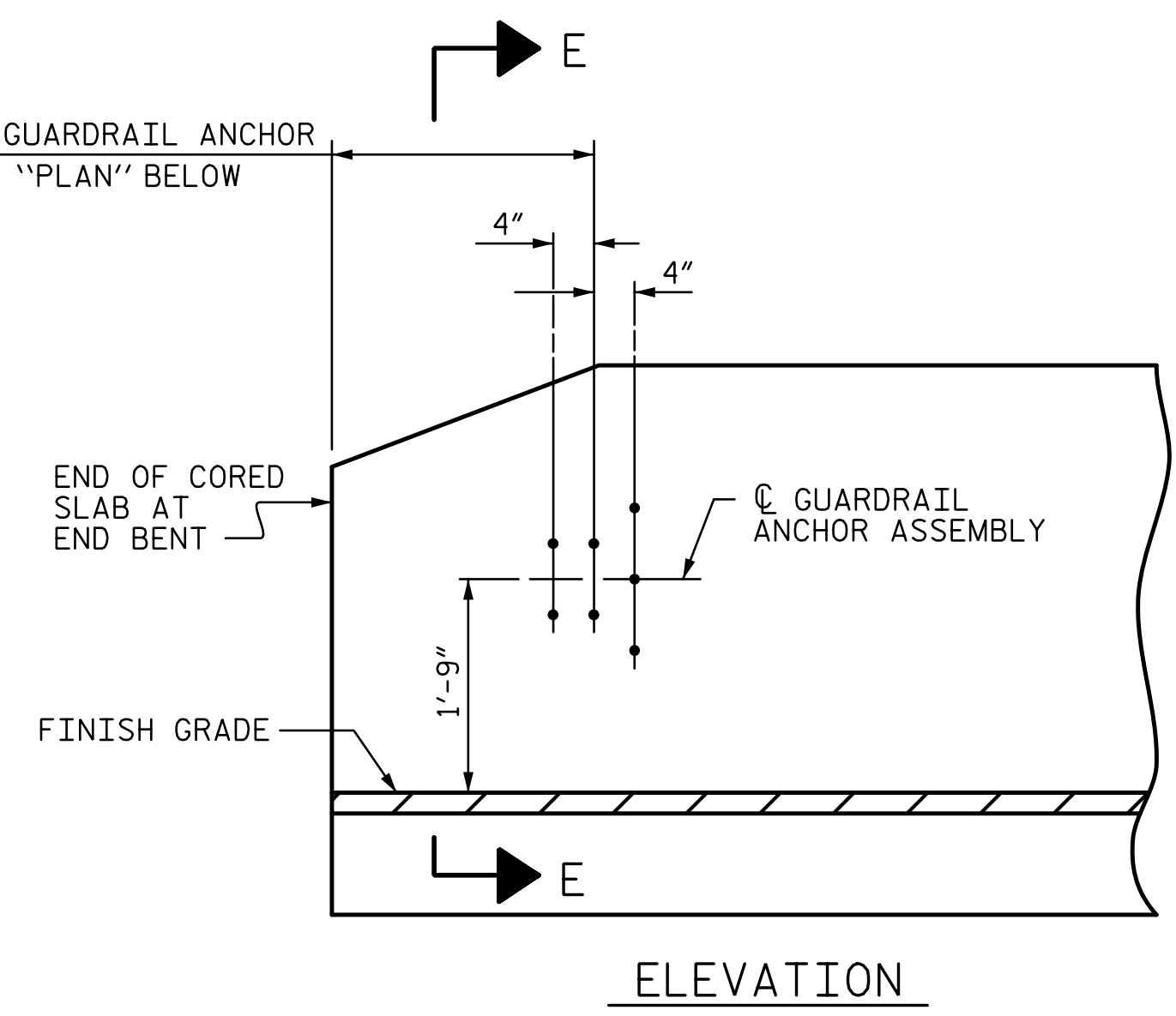
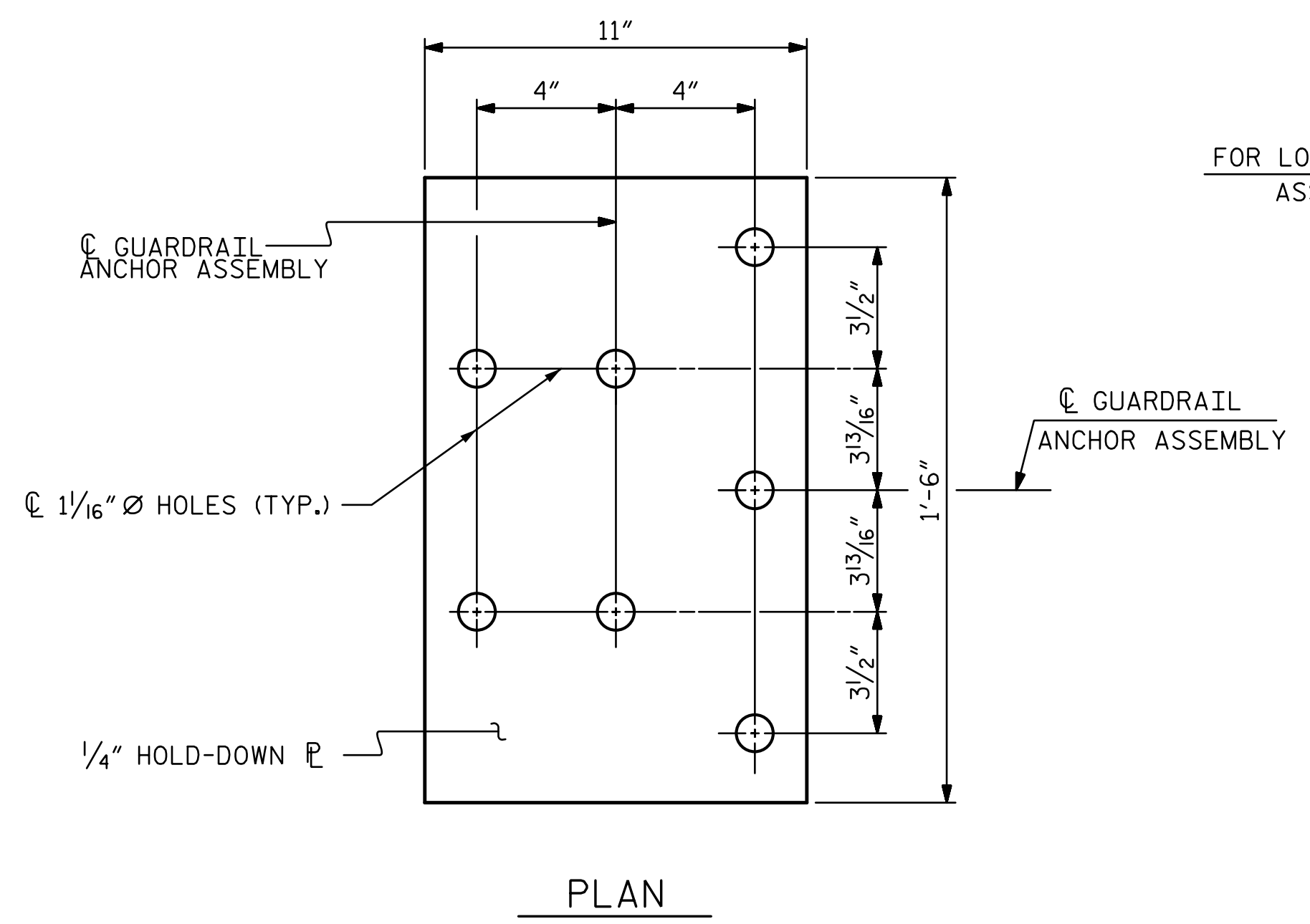
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North Carolina License No. 50737-0403-C-02

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
STATION: 13+70.81 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
ANCHORAGE DETAILS FOR TEMPORARY GUARDRAIL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-19
TOTAL SHEETS					32



SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS

LOCATION OF ANCHORS FOR GUARDRAIL

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 1/8" 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 1/8" 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 BARRIER RAIL. 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 ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

THE 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.

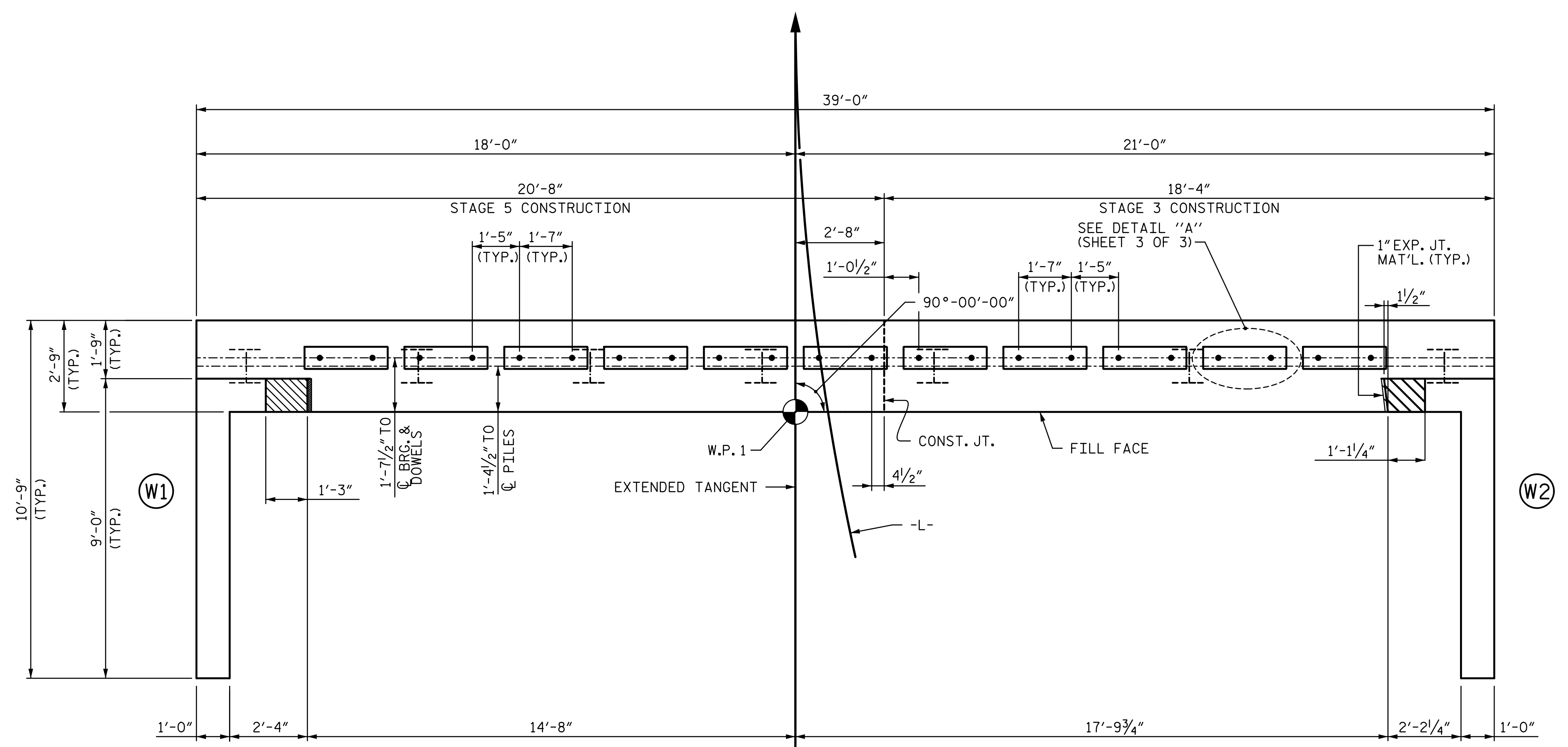
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 DESIGN ENGINEER OF RECORD: M. ACOSTA DATE : 03/2026

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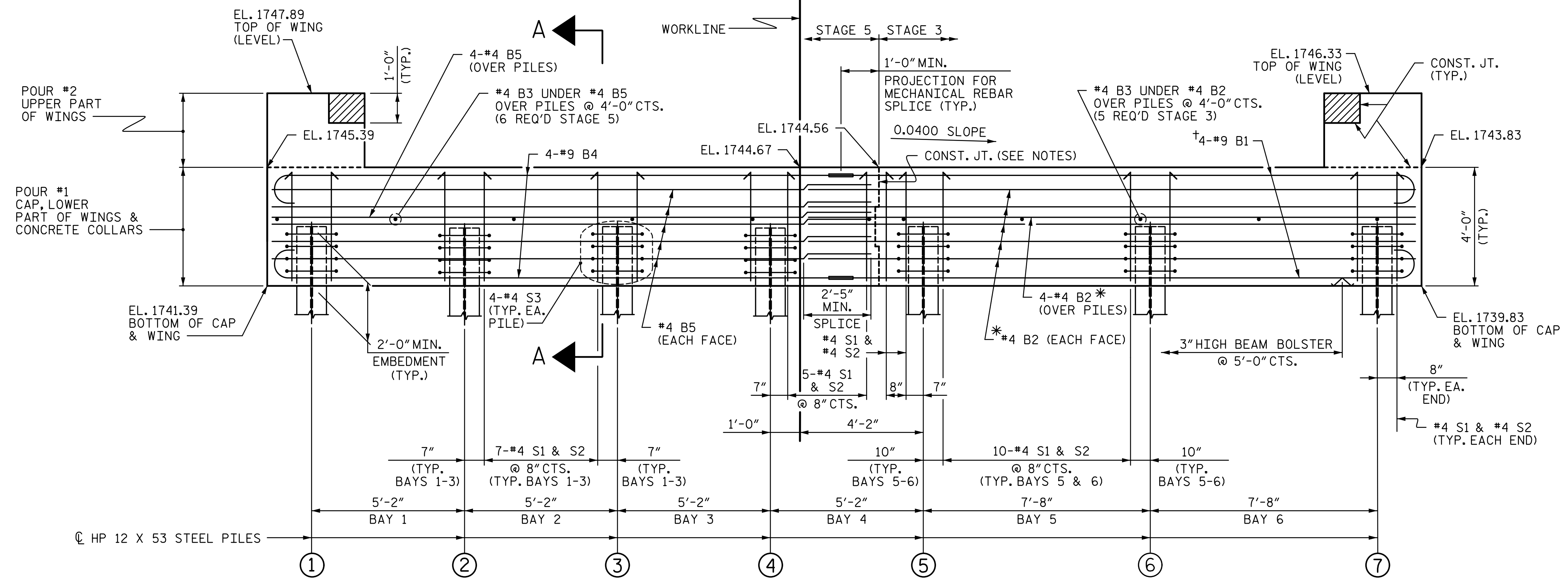
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 DETAILS
 FOR VERTICAL CONCRETE
 BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			32



PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
 FOR SECTION A-A, SEE SHEET 3 OF 3.
 CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
 SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 3 OF 3.

NOTES:

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
- THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.
- FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.
- FOR WING DETAILS, SEE SHEET 2 OF 3.
- FOR CONSTRUCTION JOINT DETAILS, SEE SHEET 3 OF 3.
- FOR DETAILS ON CONSTRUCTION STAGING, SEE CONSTRUCTION STAGING SHEETS.

TOP OF PILE ELEVATIONS	
①	1743.33
②	1743.12
③	1742.92
④	1742.71
⑤	1742.50
⑥	1742.20
⑦	1741.89

+ BAR LENGTH IS BASED ON "B" BAR PROJECTING FROM THE CONSTRUCTION JOINT 1'-0" FOR MECHANICAL SPLICE. BAR LENGTH MAY NEED TO BE INCREASED PER MANUFACTURER'S RECOMMENDATIONS.

* BARS ARE DETAILED WITH ADEQUATE LENGTH FOR A SPLICE. MECHANICAL REBAR SPLICES WILL BE REQUIRED IF THE TEMPORARY SHORING LOCATION DOES NOT ALLOW FOR MIN. REQUIRED SPLICE LENGTH. ALL COSTS ASSOCIATED WITH MECHANICAL BAR SPLICES SHALL BE CONSIDERED INCIDENTAL TO THE REINFORCING STEEL, NO ADDITIONAL PAYMENT WILL BE MADE.

PROJECT NO. DF18314.2045332
 HENDERSON COUNTY
 STATION: 13+70.81 -L-

SHEET 1 OF 3



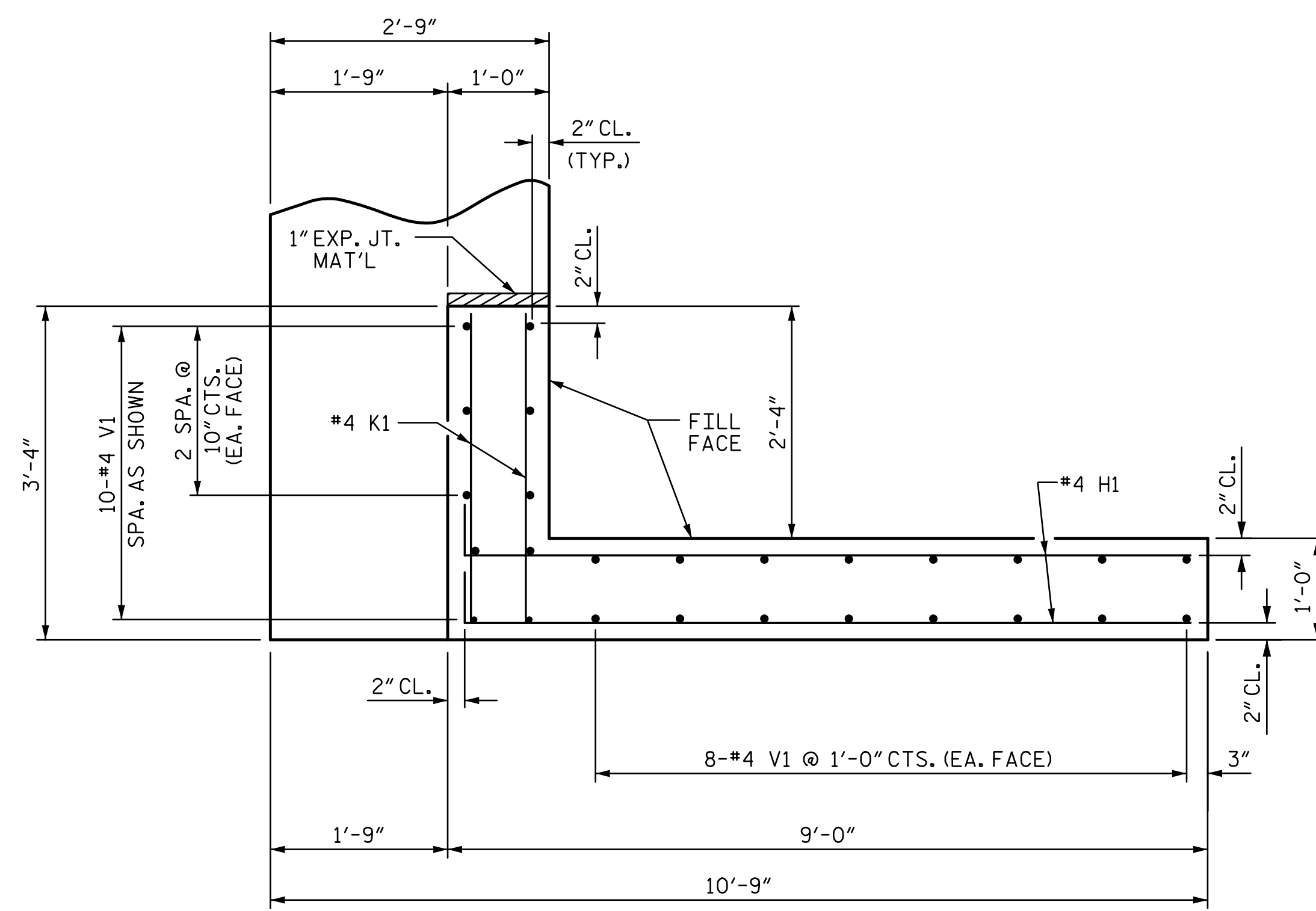
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE					
END BENT 1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

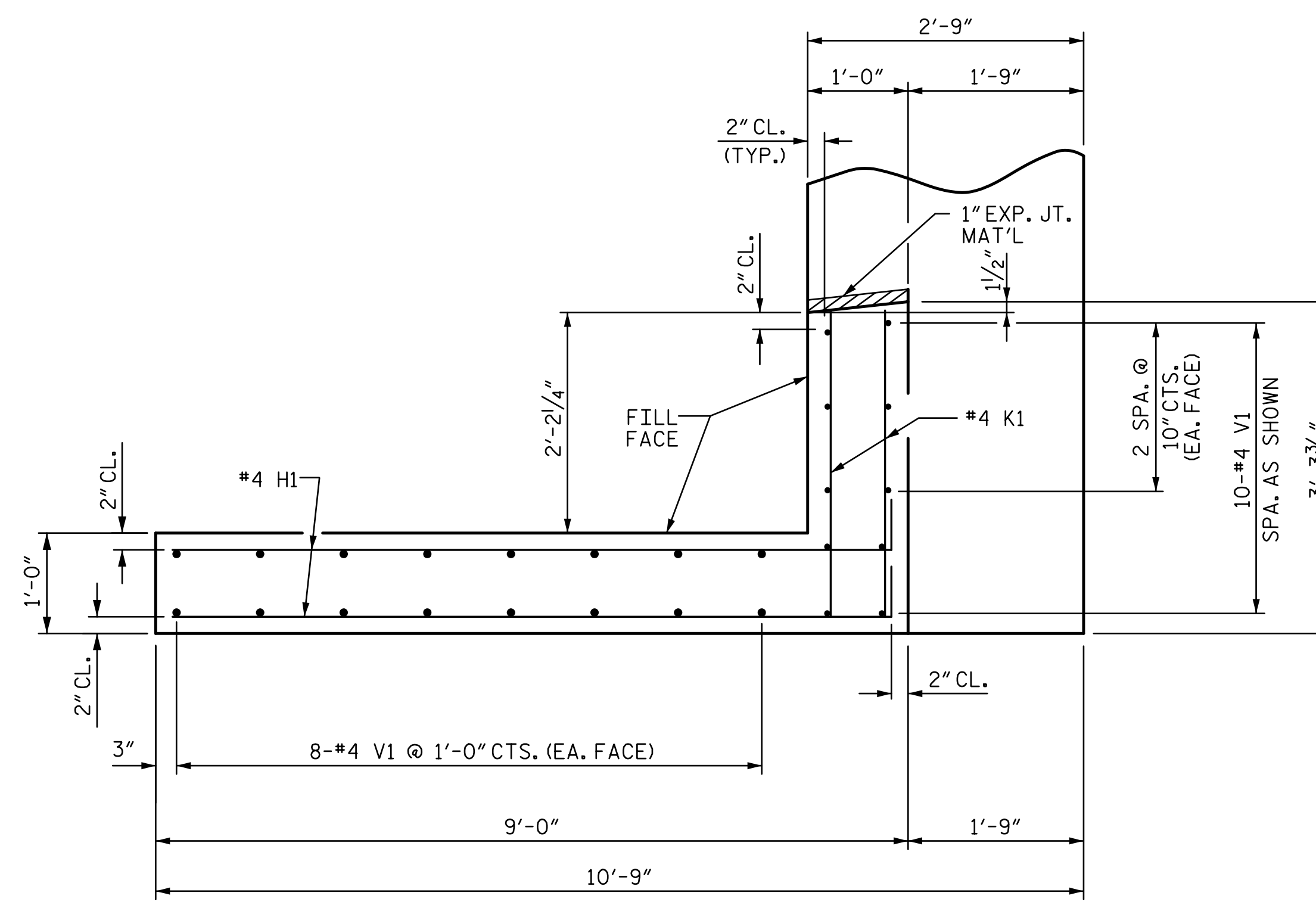
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TOTAL SHEETS	32

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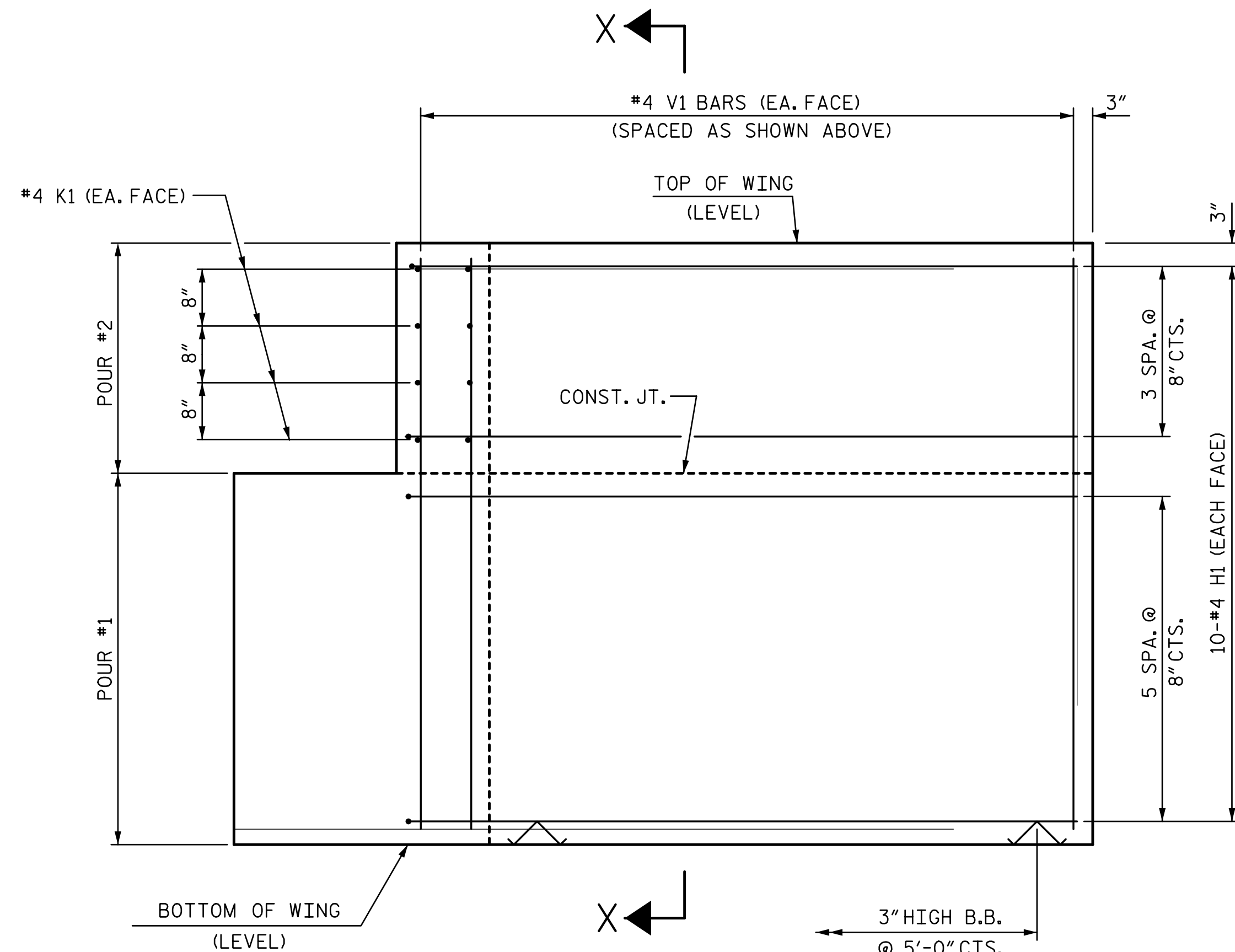
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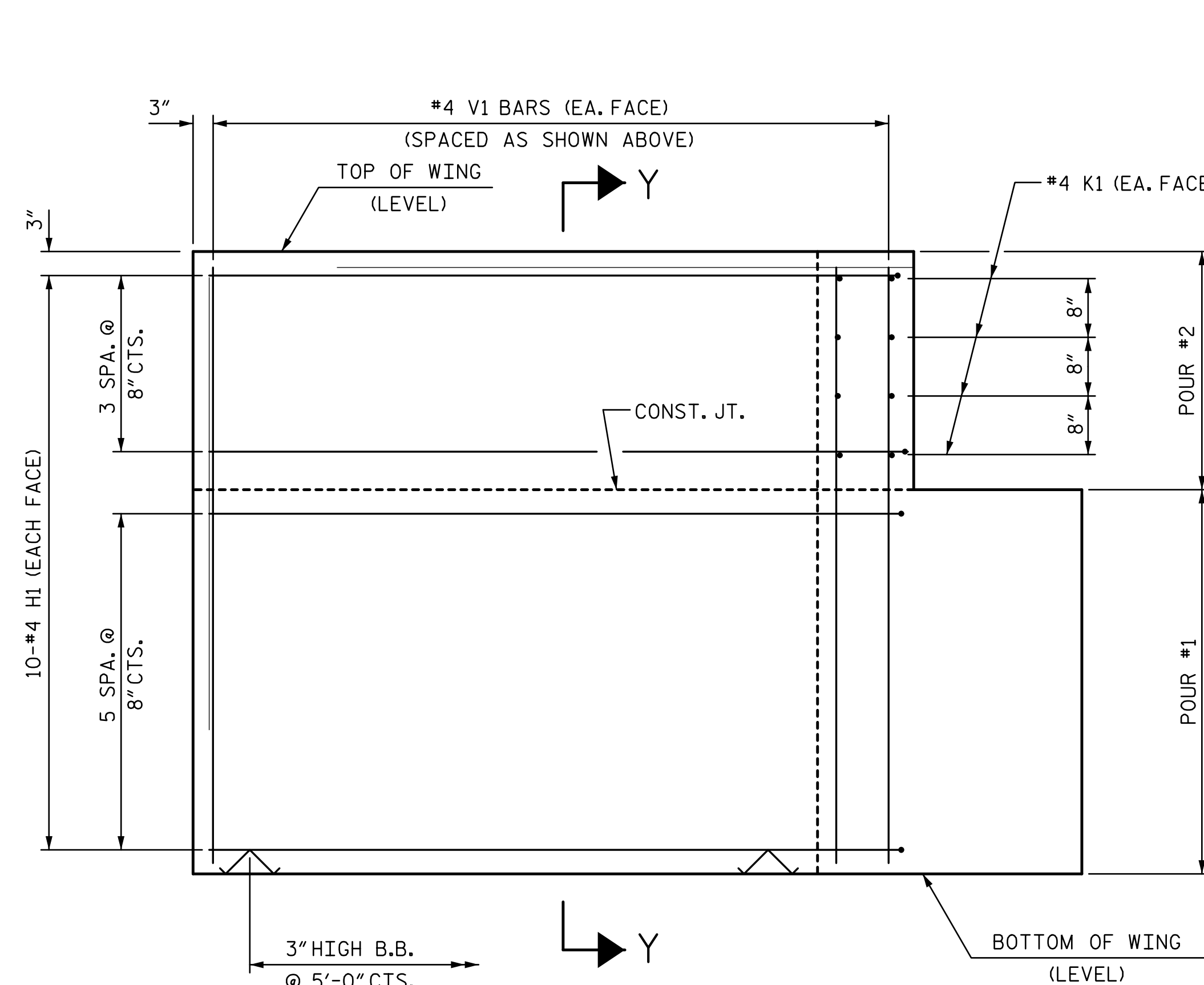
PLAN OF WING (W1)



PLAN OF WING (W2)

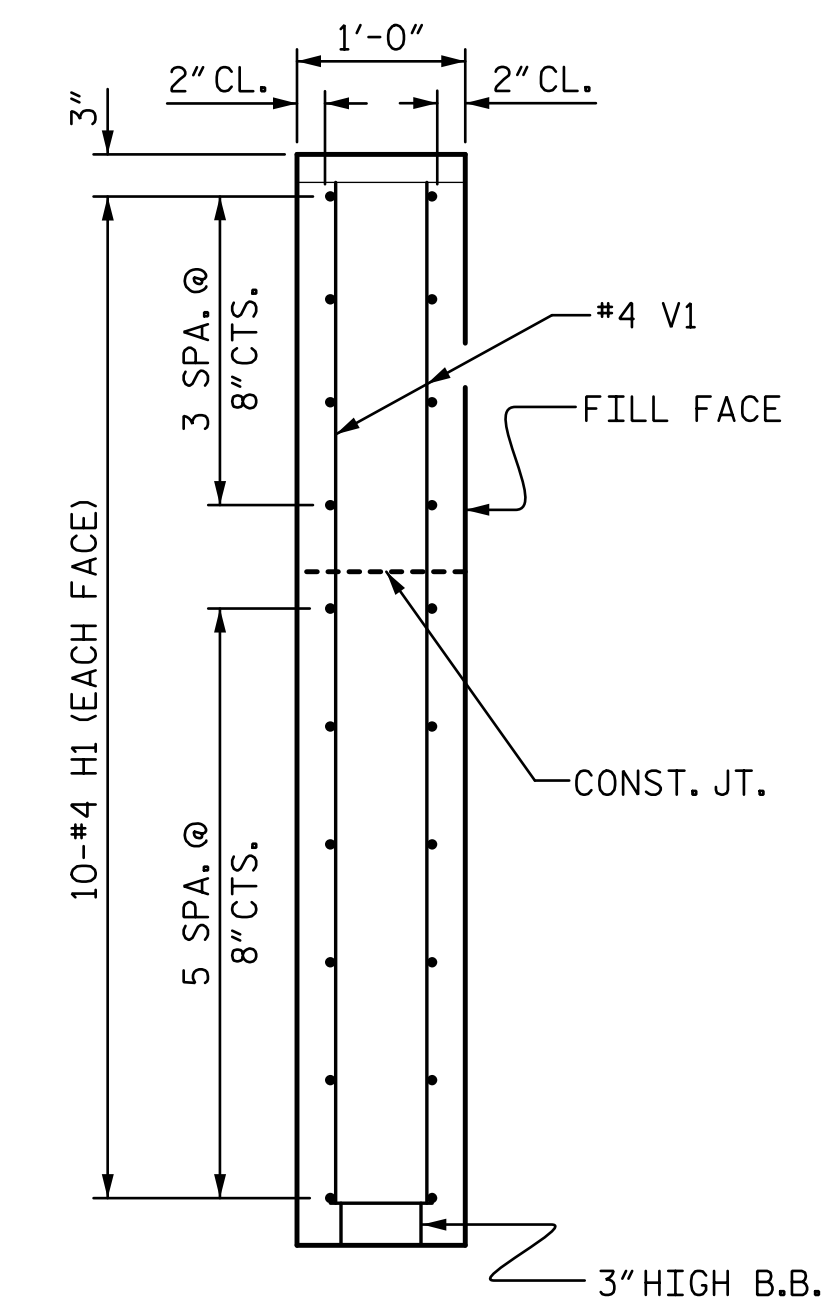


ELEVATION OF WING (W1)

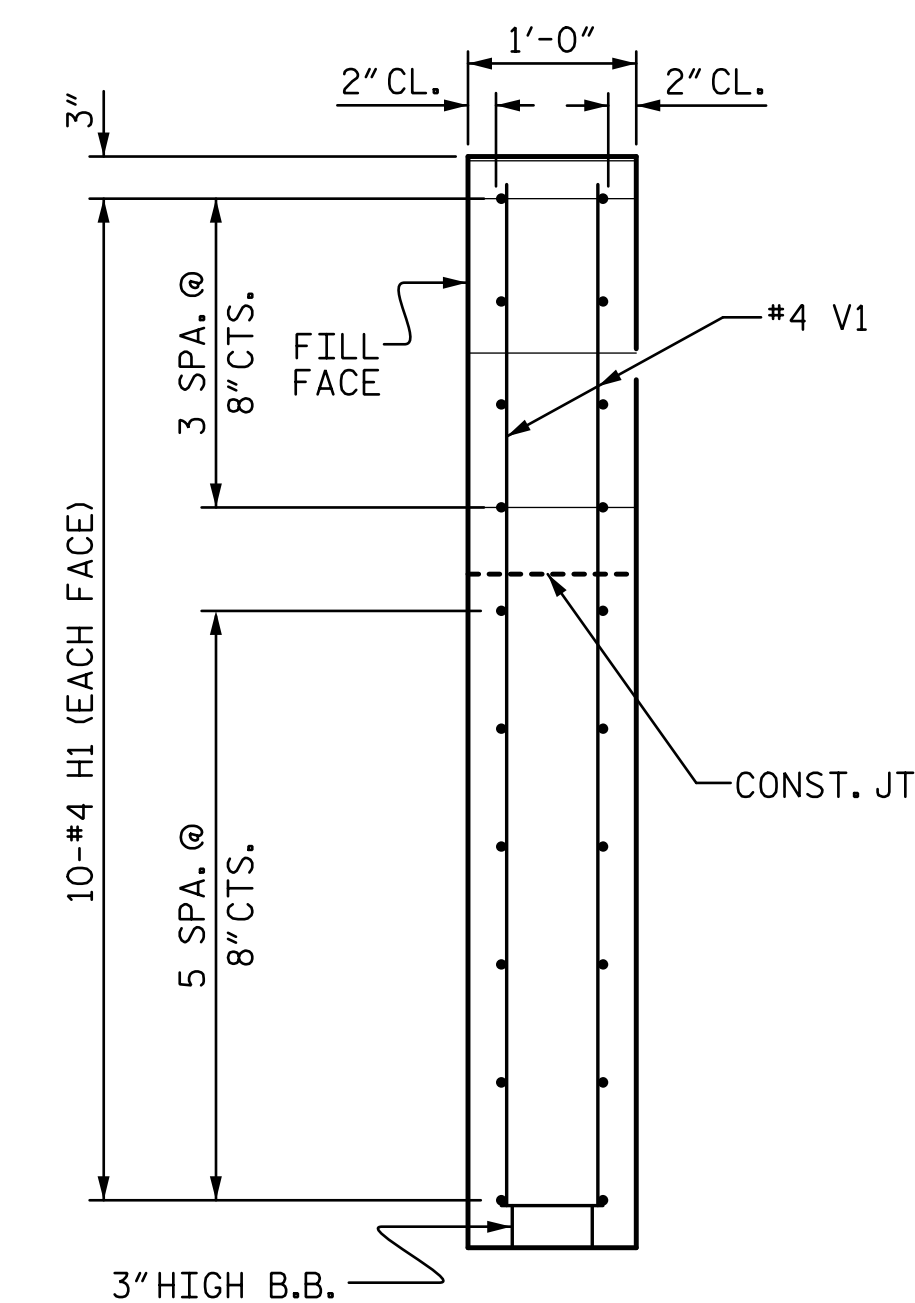


ELEVATION OF WING (W2)

WING DETAILS



SECTION X-X



SECTION Y-Y

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SHEET 2 OF 3



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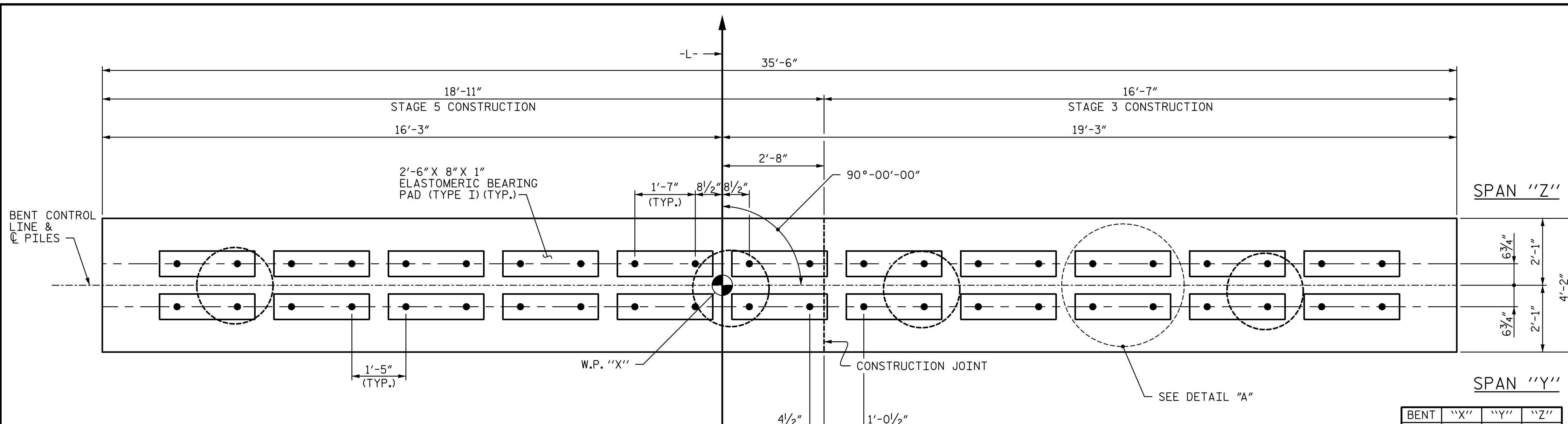
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 RALEIGH
 SUBSTRUCTURE

END BENT 1
 WING DETAILS

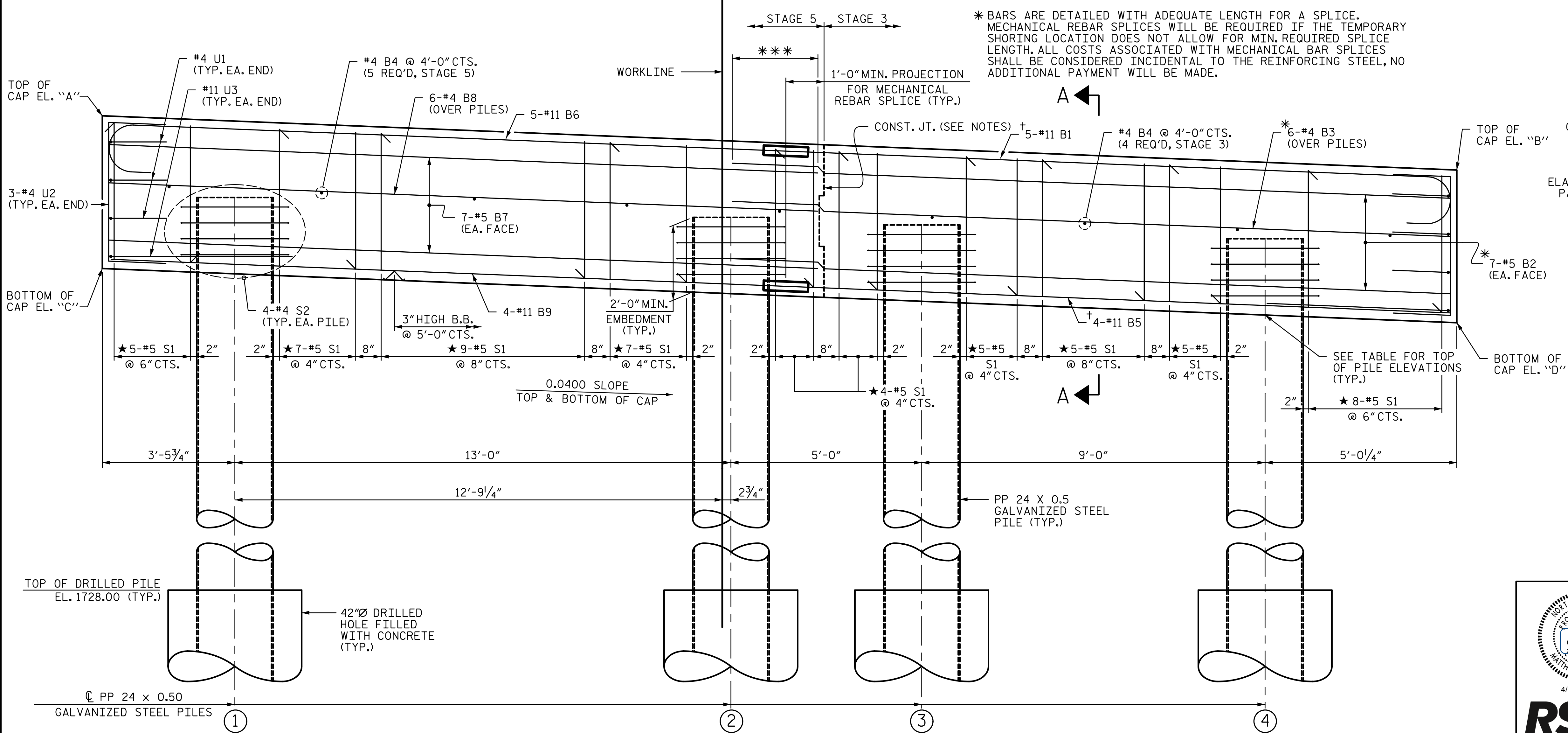
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 CHECKED BY : M. ACOSTA DATE : 01/2025
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS 32
2			4			

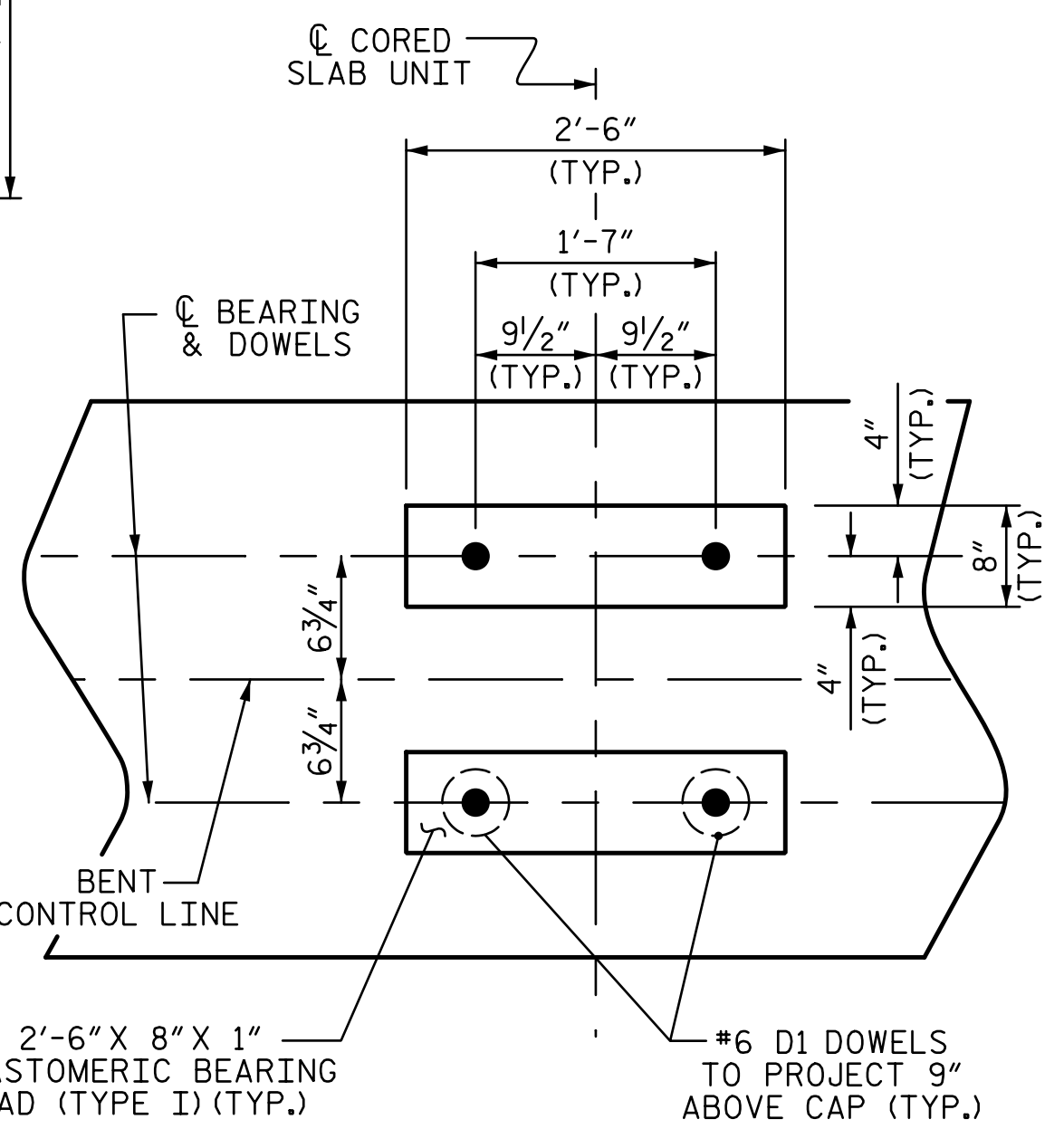


PLAN



ELEVATION

NOTES:
 STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
 ★ INVERT ALTERNATE STIRRUPS.
 FOR ADDITIONAL REINFORCING STEEL IN PP 24 x 0.50 GALVANIZED STEEL PILES, SEE SHEET 3 OF 3.
 GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 34 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.
 FOR CONSTRUCTION JOINT DETAIL, SEE SHEET 2 OF 3.
 FOR DETAILS ON CONSTRUCTION STAGING, SEE CONSTRUCTION STAGING SHEETS.



DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

CAP ELEVATIONS		
	BENT 1	BENT 2
"A"	1745.70	1746.12
"B"	1744.28	1744.70
"C"	1741.70	1742.12
"D"	1740.28	1740.70

TOP OF PILE ELEVATIONS		
PILE NO.	BENT 1	BENT 2
P1	1743.56	1743.98
P2	1743.04	1743.46
P3	1742.84	1743.26
P4	1742.48	1742.90

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SHEET 1 OF 3



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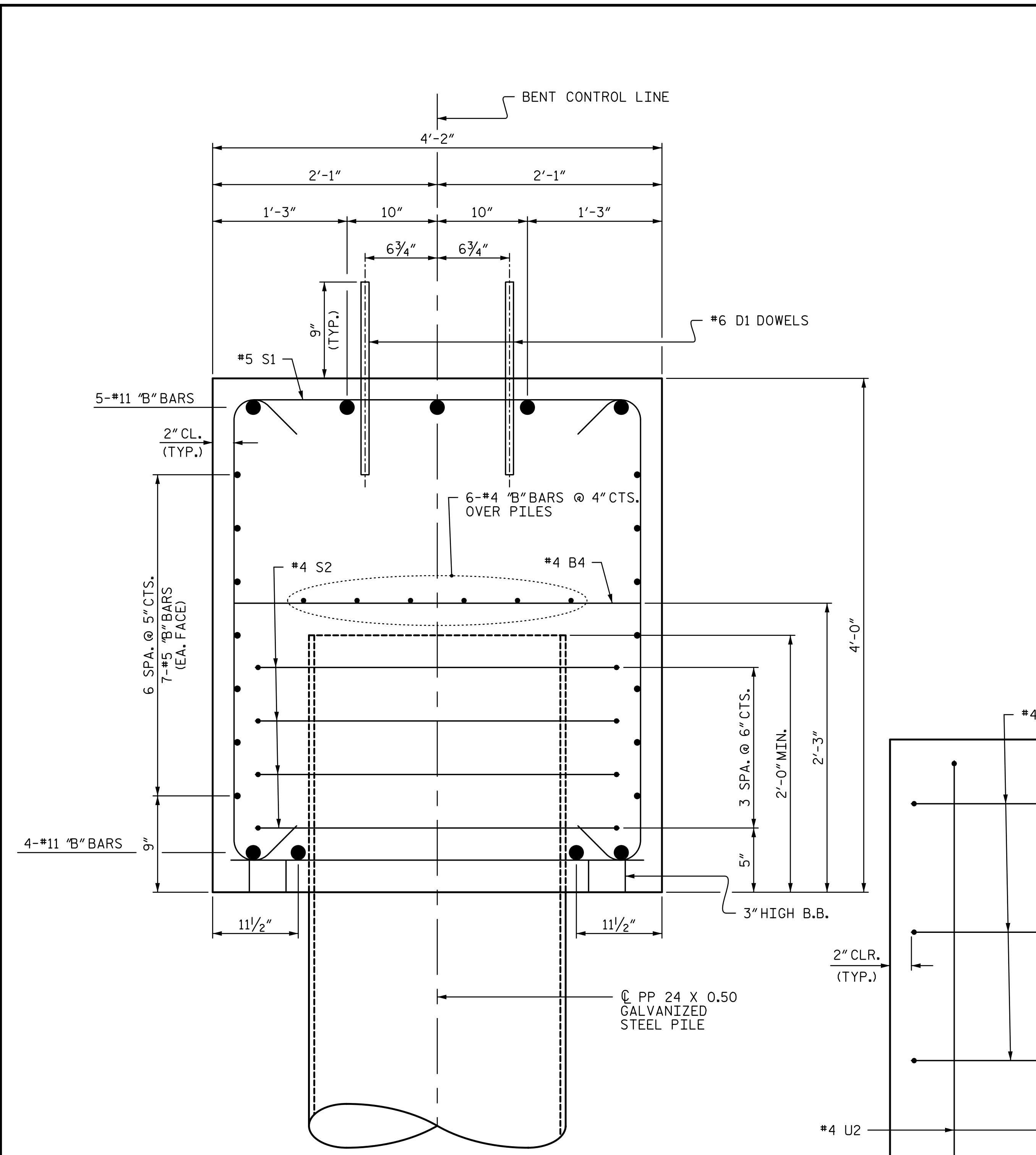
BENT 1 & BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS 32
2			4			

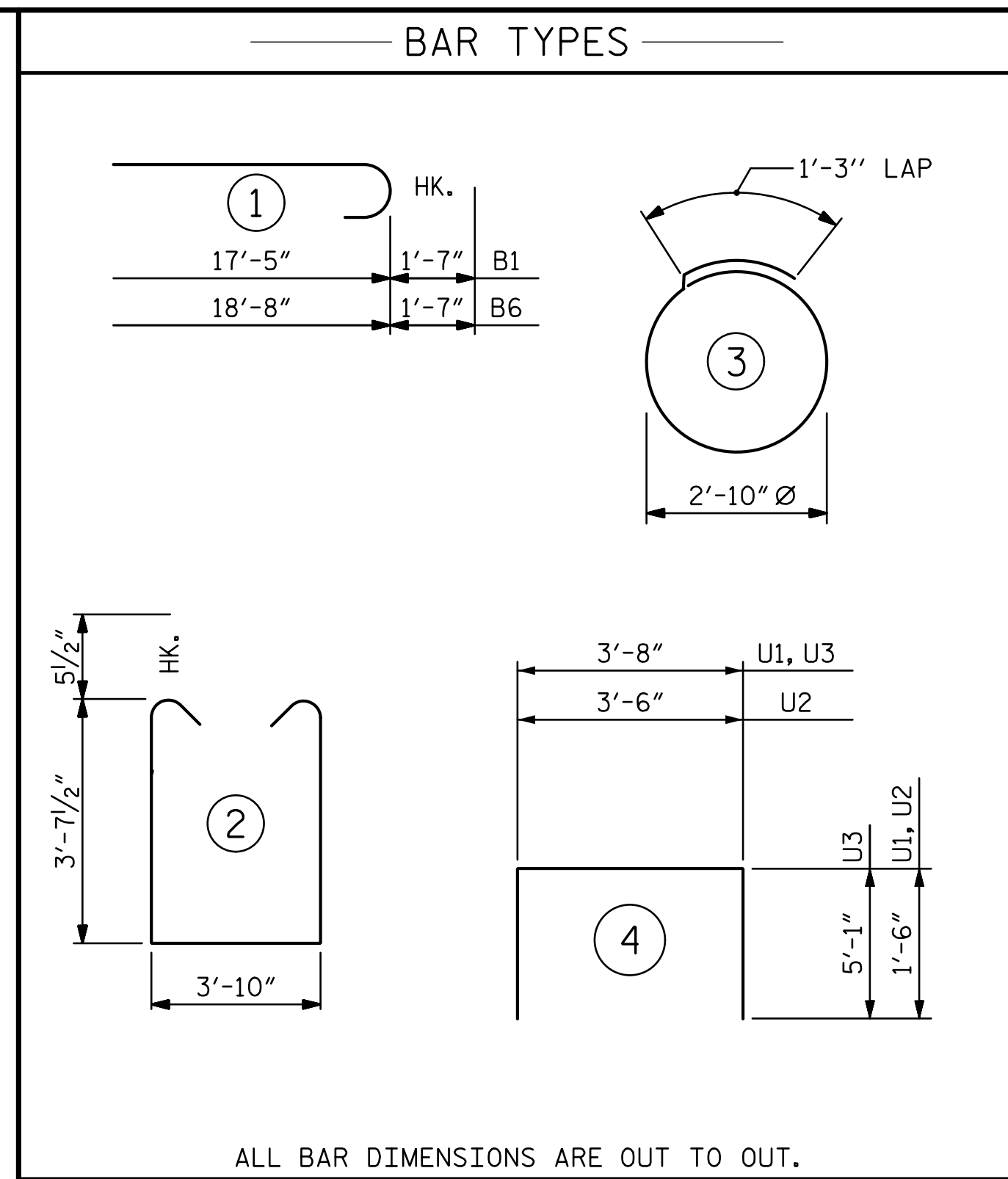
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(FOR SECTION A-A, SEE SHEET 2 OF 3)
 (PILES AND DRILLED PIERS SHOWN FOR BENT 1, EXISTING PILES AND DRILLED PIERS FOR BENT 2 TO BE RETAINED)
 (SEE CONSTRUCTION SEQUENCE AND FOUNDATION LAYOUT FOR ADDITIONAL DETAILS AND LOCATIONS FOR EXISTING BENT 2 PILES)
 *** 2'-6" MIN. SPLICE (#4 BARS), 3'-1" MIN. SPLICE (#5 BARS)

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SECTION A-A



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR ONE BENT (STAGE 3)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
† B1	5	#11	1	19'-0"	505
* B2	14	#5	STR	19'-6"	285
* B3	6	#4	STR	18'-11"	76
B4	4	#4	STR	3'-10"	10
† B5	4	#11	STR	17'-6"	372
D1	20	#6	STR	1'-6"	45
S1	27	#5	2	12'-0"	338
S2	8	#4	3	10'-2"	54
U1	3	#4	4	6'-8"	18
U2	4	#4	4	6'-6"	17
U3	1	#11	4	13'-8"	73

BILL OF MATERIAL FOR ONE BENT (STAGE 5)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B4	5	#4	STR	3'-10"	13
B6	5	#11	1	20'-3"	538
B7	14	#5	STR	18'-9"	274
B8	6	#4	STR	18'-9"	75
B9	4	#11	STR	18'-9"	398
D1	24	#6	STR	1'-6"	54
S1	32	#5	2	12'-0"	401
S2	8	#4	3	10'-2"	54
U1	3	#4	4	6'-8"	18
U2	4	#4	4	6'-6"	17
U3	1	#11	4	13'-8"	73

STAGE 3 REINFORCING STEEL (FOR ONE BENT) 1,793 LBS.

STAGE 5 REINFORCING STEEL (FOR ONE BENT) 1,915 LBS.

CLASS A CONCRETE BREAKDOWN (FOR ONE BENT) ▲ 9.8 C.Y.

CLASS A CONCRETE BREAKDOWN (FOR ONE BENT) ▲ 11.2 C.Y.

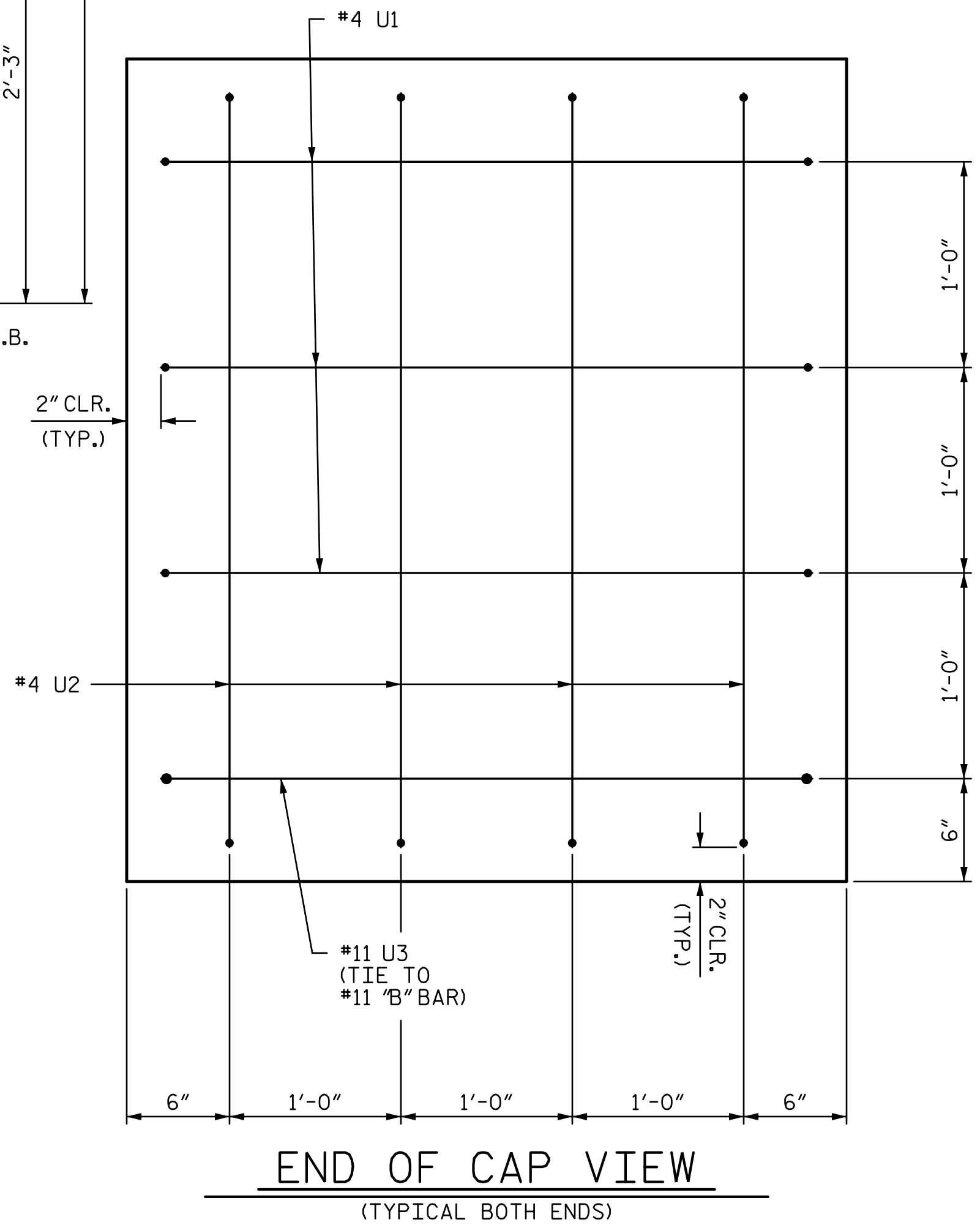
NOTE: FOR DETAILS ON CONSTRUCTION STAGING, SEE CONSTRUCTION STAGING SHEETS.

TOTAL CLASS A CONCRETE ▲ 21.0 C.Y.
TOTAL REINFORCING STEEL 3,708 LBS.

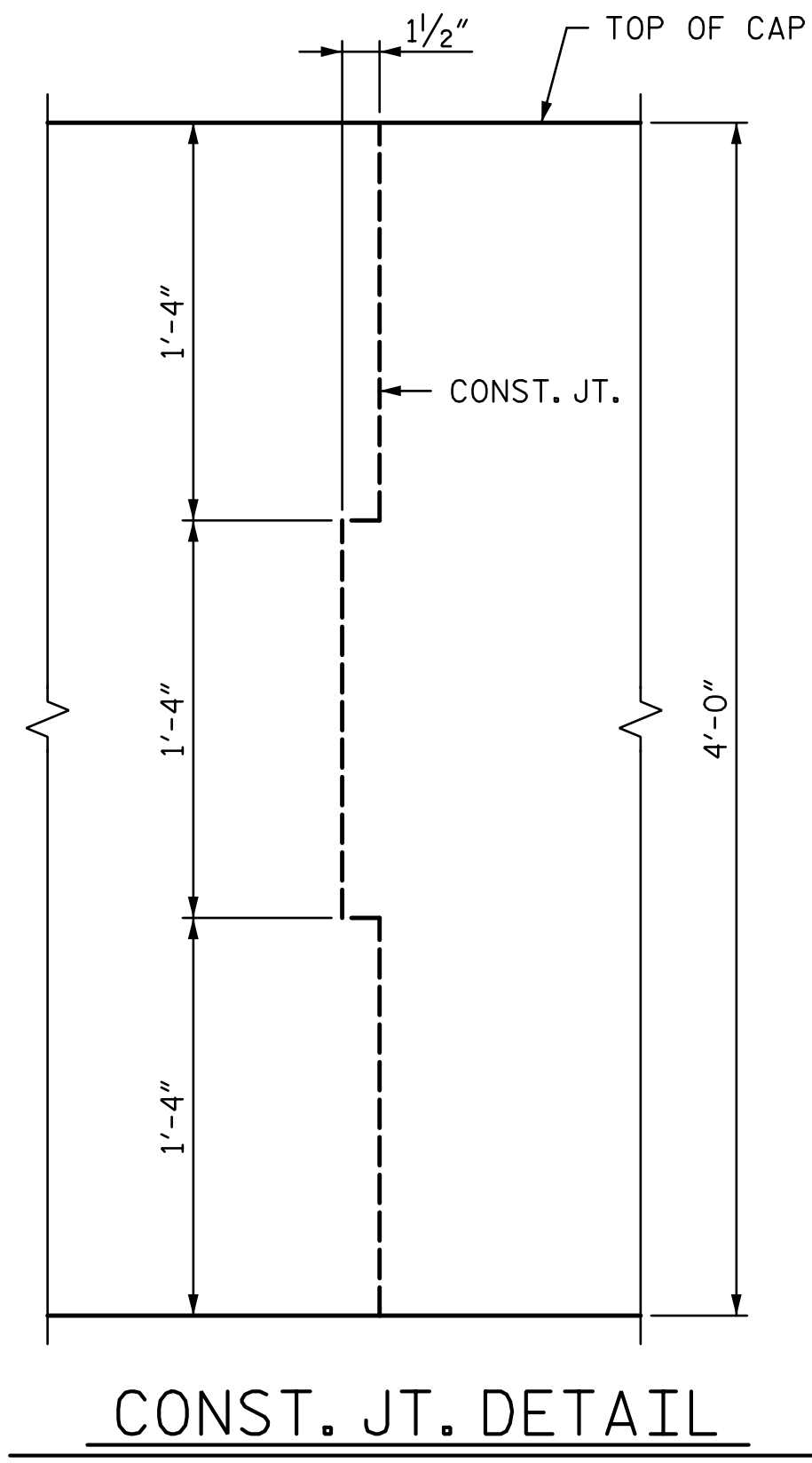
▲ CONCRETE DISPLACED BY THE PP 24 x 0.50 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.

† BAR LENGTH IS BASED ON 'B' BAR PROJECTING FROM THE CONSTRUCTION JOINT 1'-0" FOR MECHANICAL SPLICE. BAR LENGTH MAY NEED TO BE MODIFIED PER MANUFACTURER'S RECOMMENDATIONS.

* BARS ARE DETAILED WITH ADEQUATE LENGTH FOR A SPLICE. MECHANICAL REBAR SPLICES WILL BE REQUIRED IF THE TEMPORARY SHORING LOCATION DOES NOT ALLOW FOR MIN. REQUIRED SPLICE LENGTH. ALL COSTS ASSOCIATED WITH MECHANICAL BAR SPLICES SHALL BE CONSIDERED INCIDENTAL TO THE REINFORCING STEEL, NO ADDITIONAL PAYMENT WILL BE MADE.



END OF CAP VIEW (TYPICAL BOTH ENDS)



CONST. JT. DETAIL

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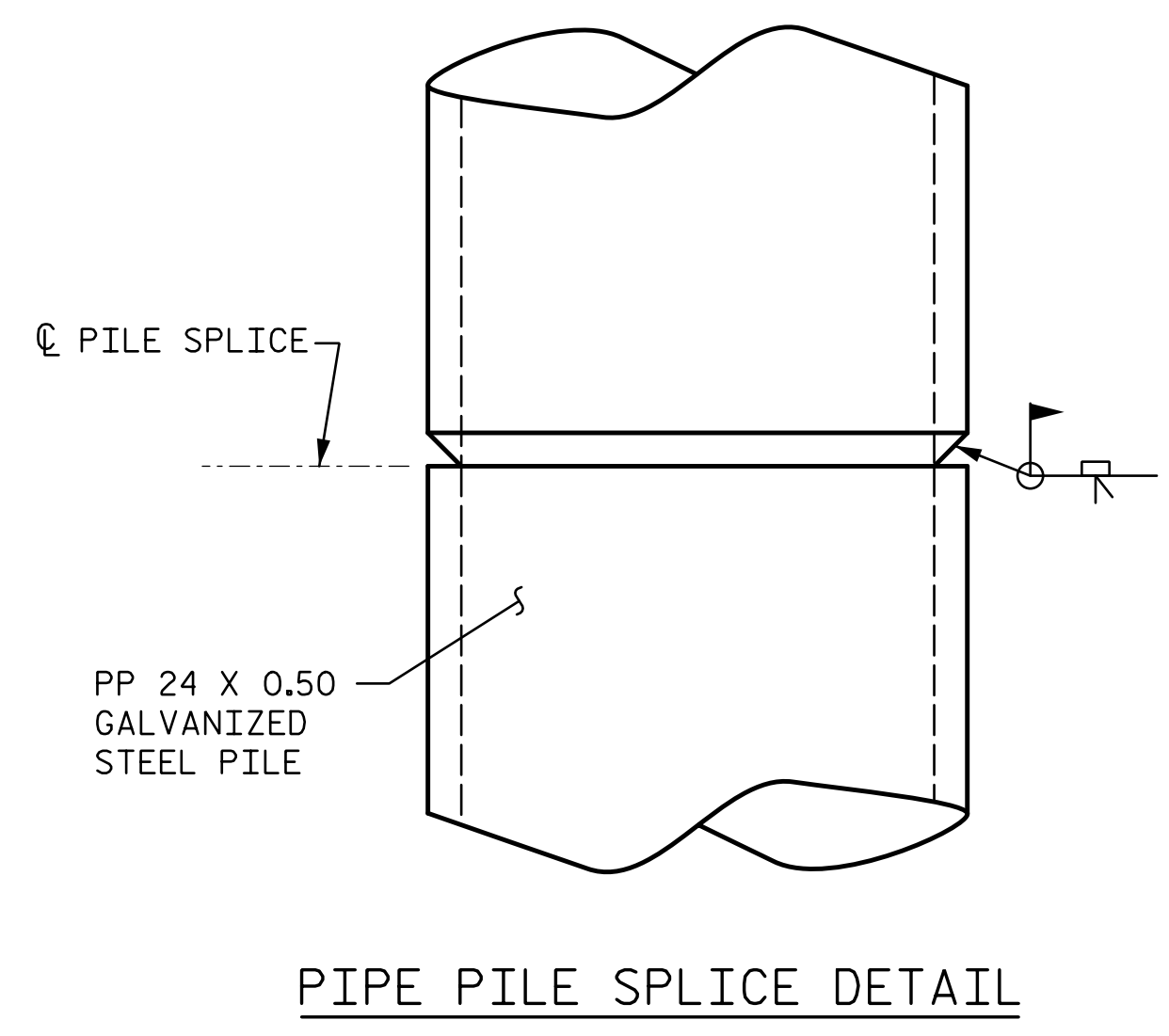
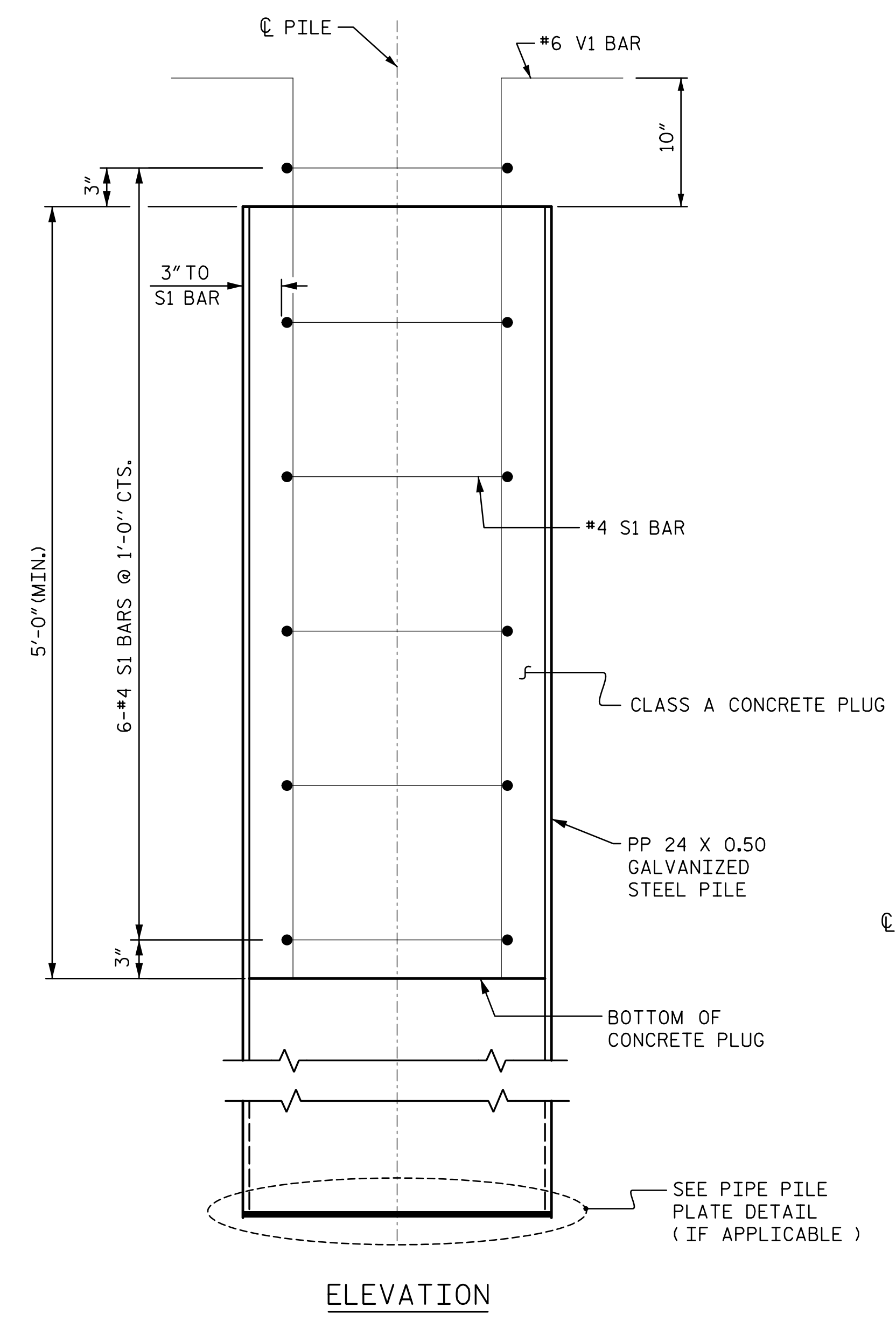
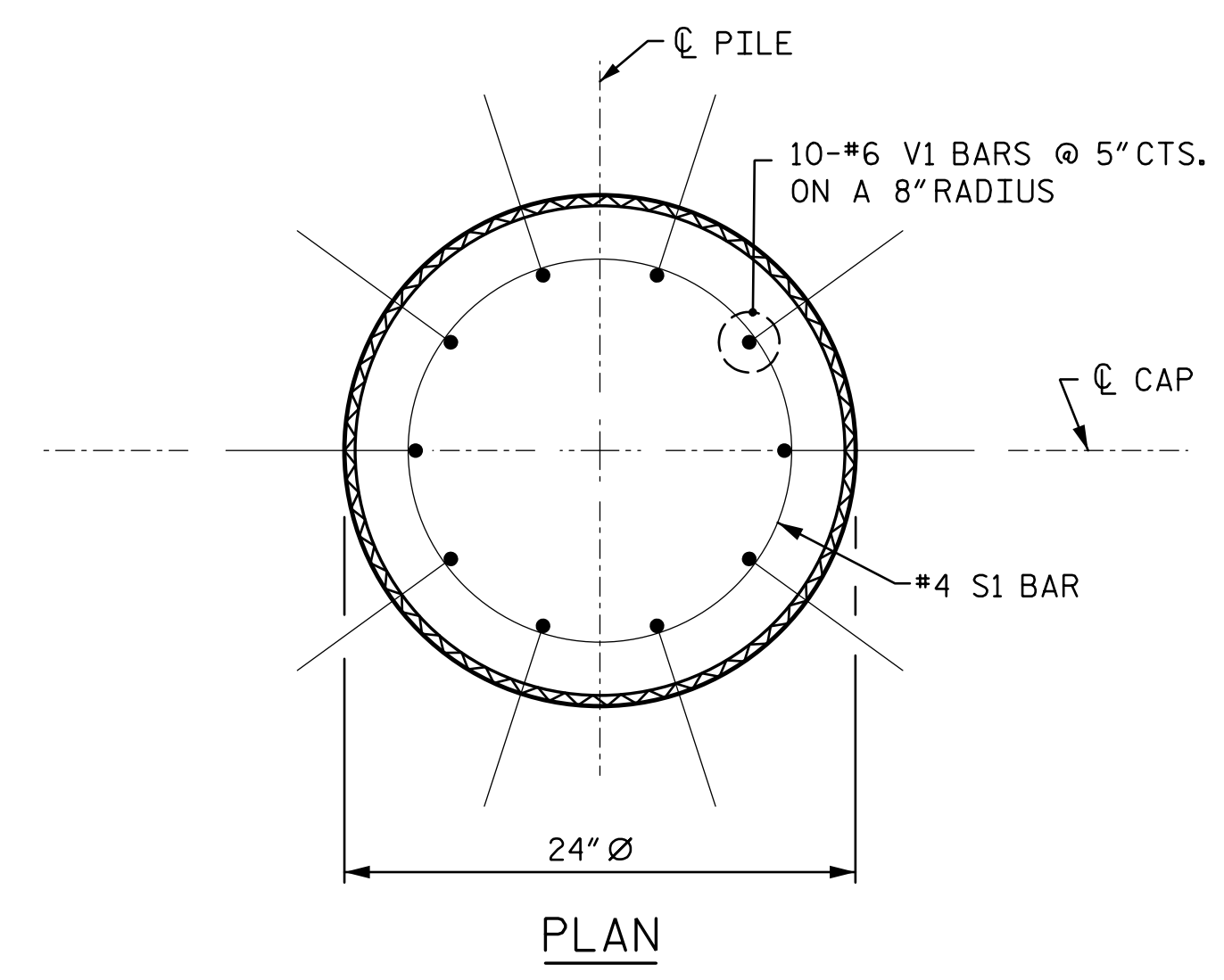
SHEET 2 OF 3



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			32

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PP 24 X 0.50 GALVANIZED STEEL PILE
(OPEN OR CLOSED END)

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 CLOSED END PIPE PILES, REMOVE ALL SOIL AND WATER FROM INSIDE THE PILES JUST PRIOR TO PLACING REINFORCING STEEL AND CONCRETE FOR THE CONCRETE PLUG.

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

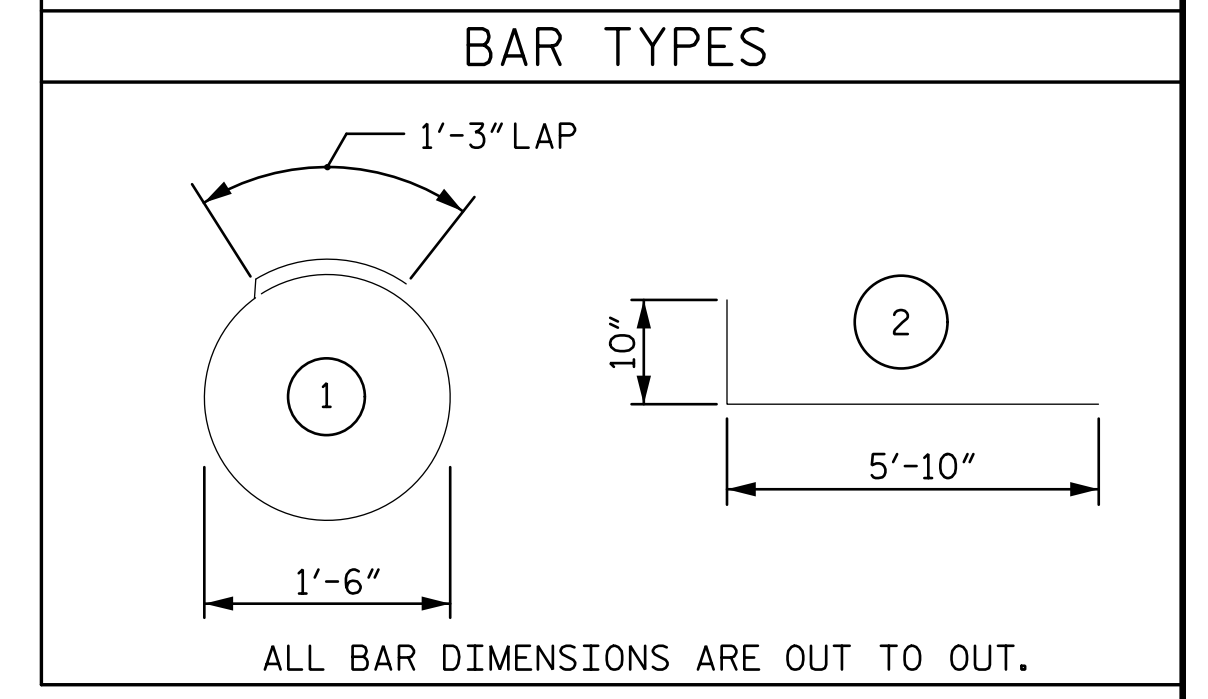
FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE BENT CAP UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF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



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HENDERSON COUNTY
STATION: 13+70.81 -L-

SHEET 3 OF 3

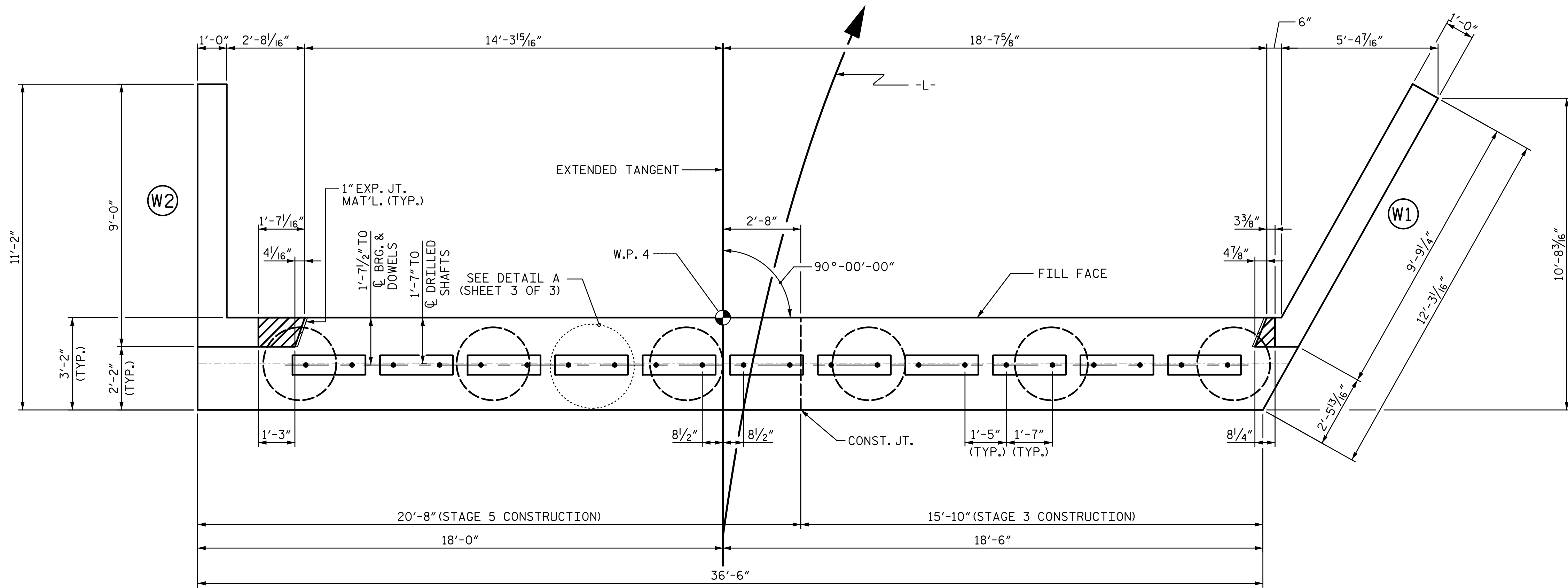


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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUBSTRUCTURE					
24" STEEL PIPE PILE					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-26
TOTAL SHEETS					32

DRAWN BY : J. SCACCA DATE : 01/2025
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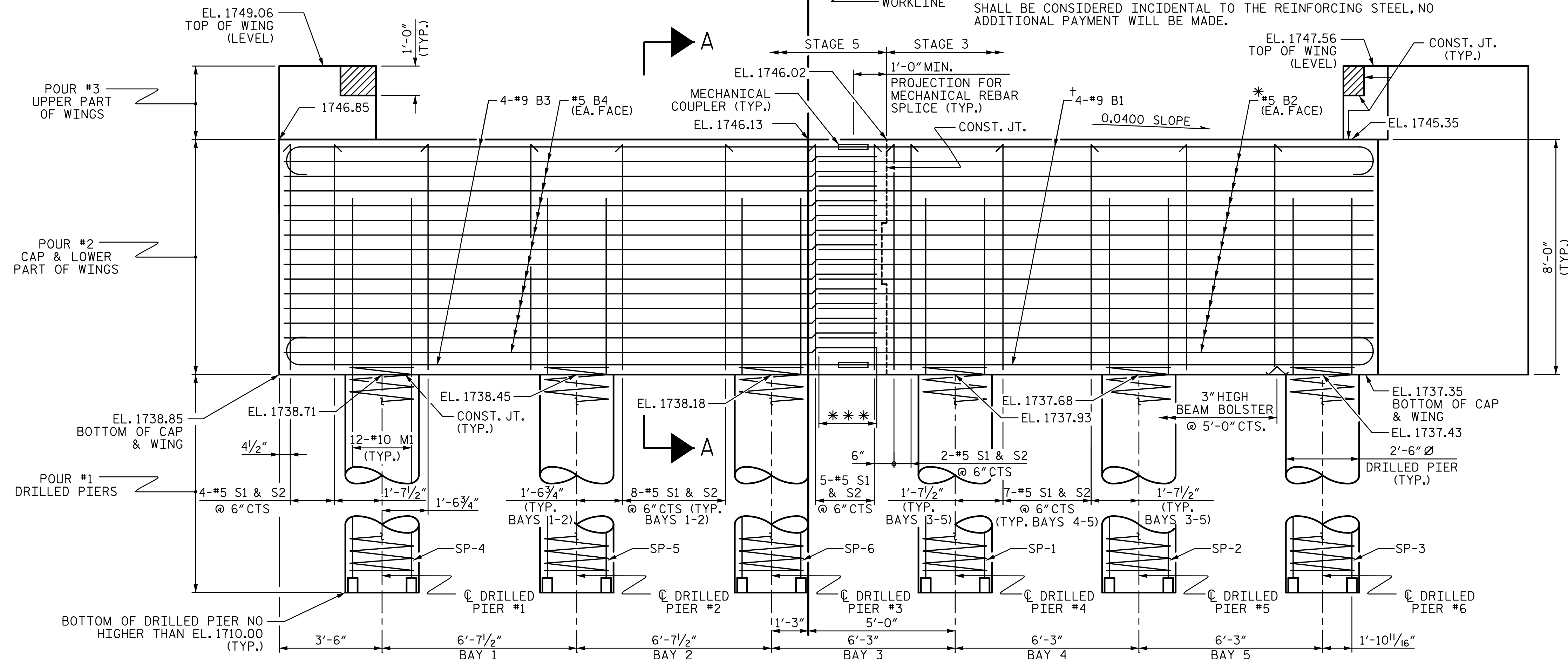


PLAN

* BARS ARE DETAILED WITH ADEQUATE LENGTH FOR A SPLICE. MECHANICAL REBAR SPLICES WILL BE REQUIRED IF THE TEMPORARY SHORING LOCATION DOES NOT ALLOW FOR MIN. REQUIRED SPLICE LENGTH. ALL COSTS ASSOCIATED WITH MECHANICAL BAR SPLICES SHALL BE CONSIDERED INCIDENTAL TO THE REINFORCING STEEL, NO ADDITIONAL PAYMENT WILL BE MADE.

† BAR LENGTH IS BASED ON "B" BAR PROJECTING FROM THE CONSTRUCTION JOINT 1'-0" FOR MECHANICAL SPLICE. BAR LENGTH MAY NEED TO BE MODIFIED PER MANUFACTURER'S RECOMMENDATIONS.

NOTES:
 STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
 THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.
 FOR WING DETAILS, SEE SHEET 2 OF 3.
 THE CONTRACTORS ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH 3'-0" EXTRA LENGTH.
 FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
 ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL."
 COSTS ASSOCIATED FOR THE MECHANICAL SPLICES SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM FOR REINFORCING STEEL. NO ADDITIONAL PAYMENT WILL BE MADE.
 FOR DETAILS ON CONSTRUCTION STAGING, SEE CONSTRUCTION STAGING SHEETS.



ELEVATION

FOR SECTION A-A, SEE SHEET 3 OF 3.
 *** 3'-0"

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
 STATION: 13+70.81 -L-

SHEET 1 OF 3

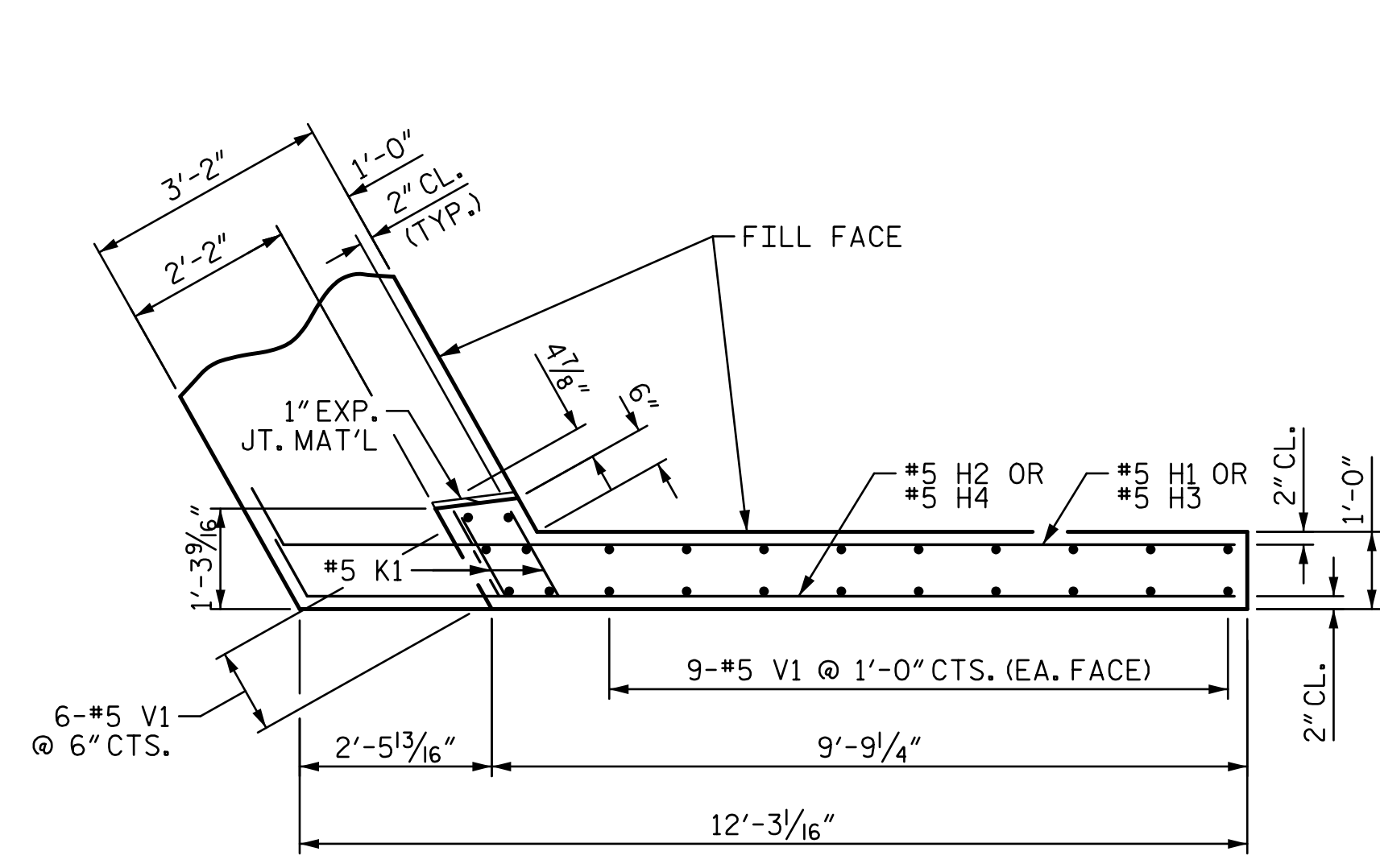


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 DEPARTMENT OF TRANSPORTATION
 RALEIGH
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 END BENT 2

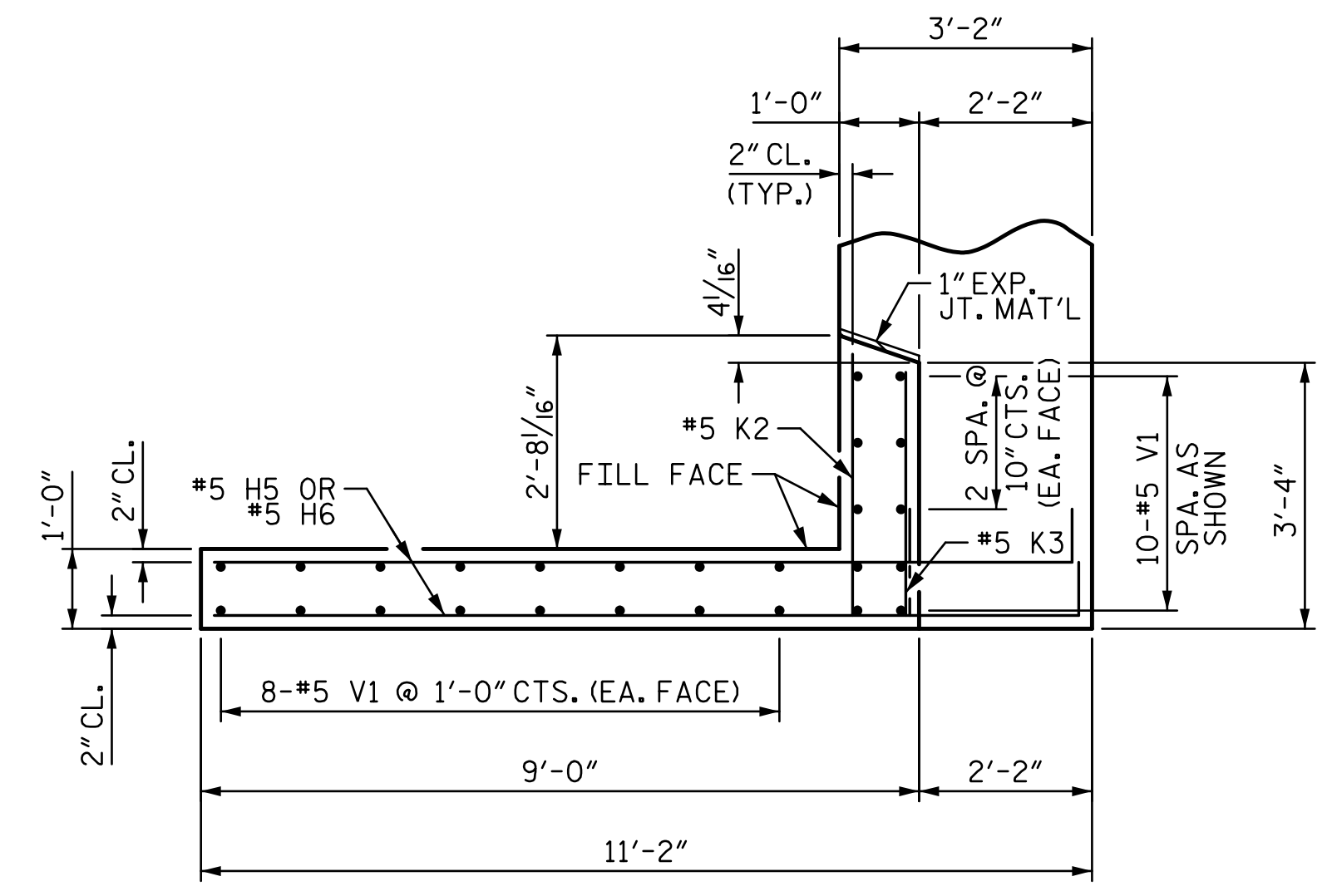
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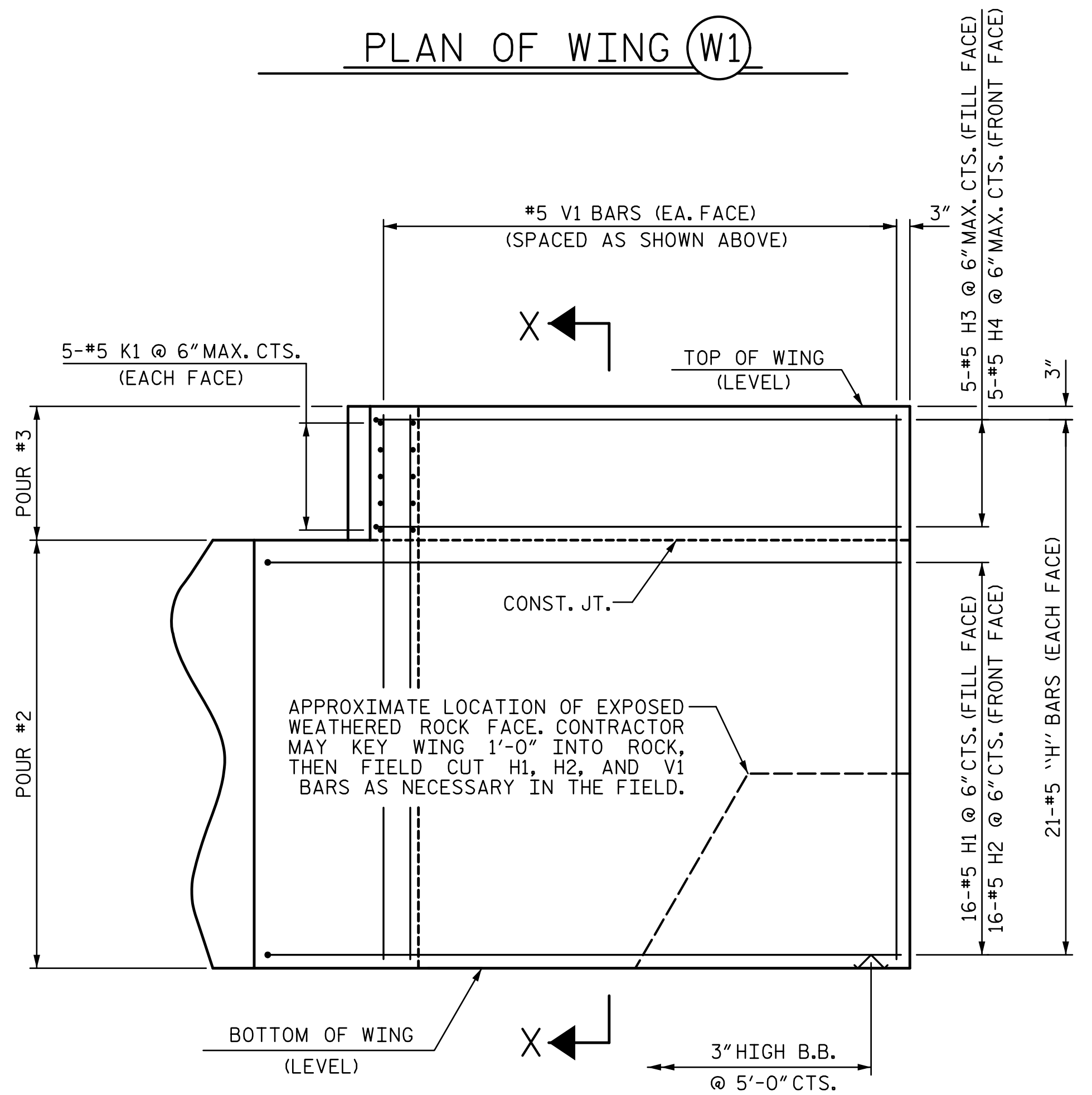
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1			3			TOTAL SHEETS
2			4			32



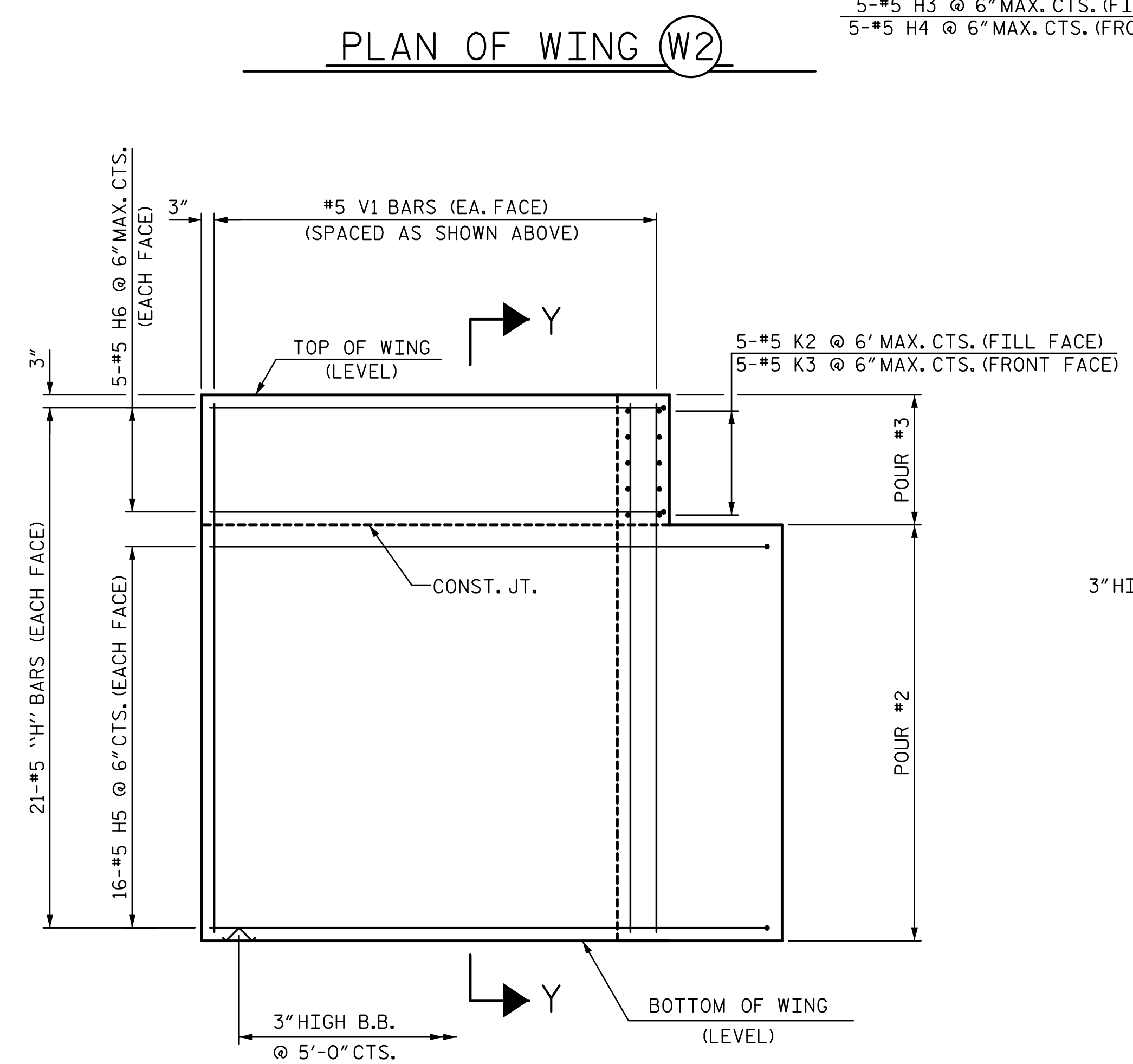
PLAN OF WING (W1)



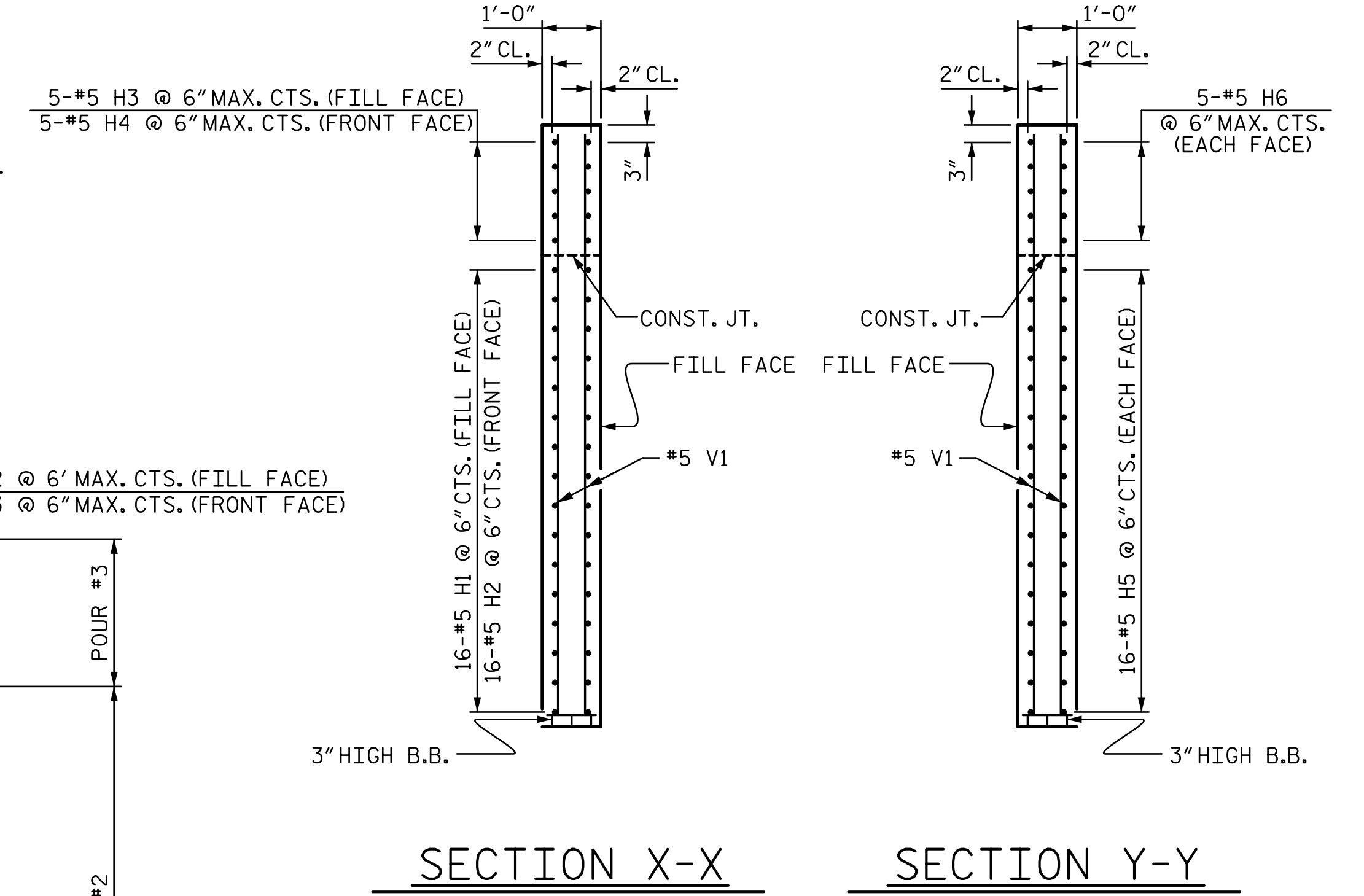
PLAN OF WING (W2)



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X

SECTION Y-Y

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HENDERSON COUNTY
 STATION: 13+70.81 -L-

SHEET 2 OF 3

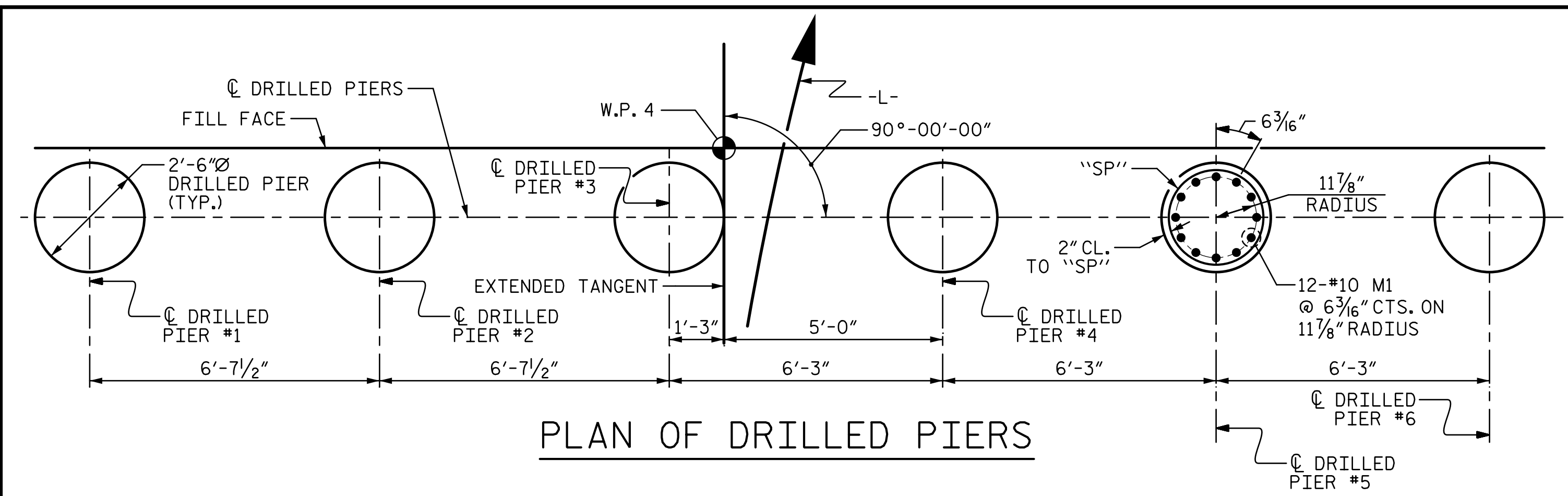


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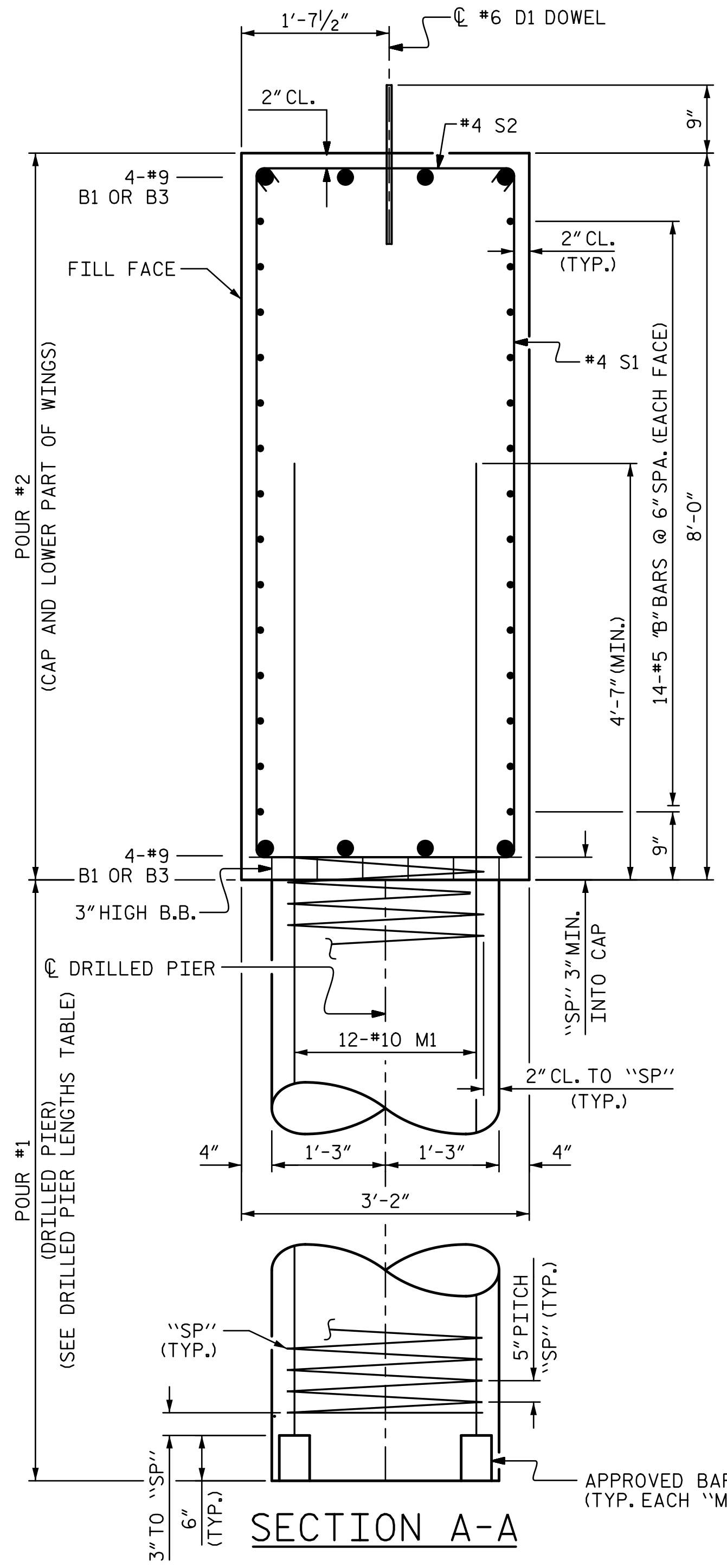
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUBSTRUCTURE					
END BENT 2 WING DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-28
TOTAL SHEETS					32

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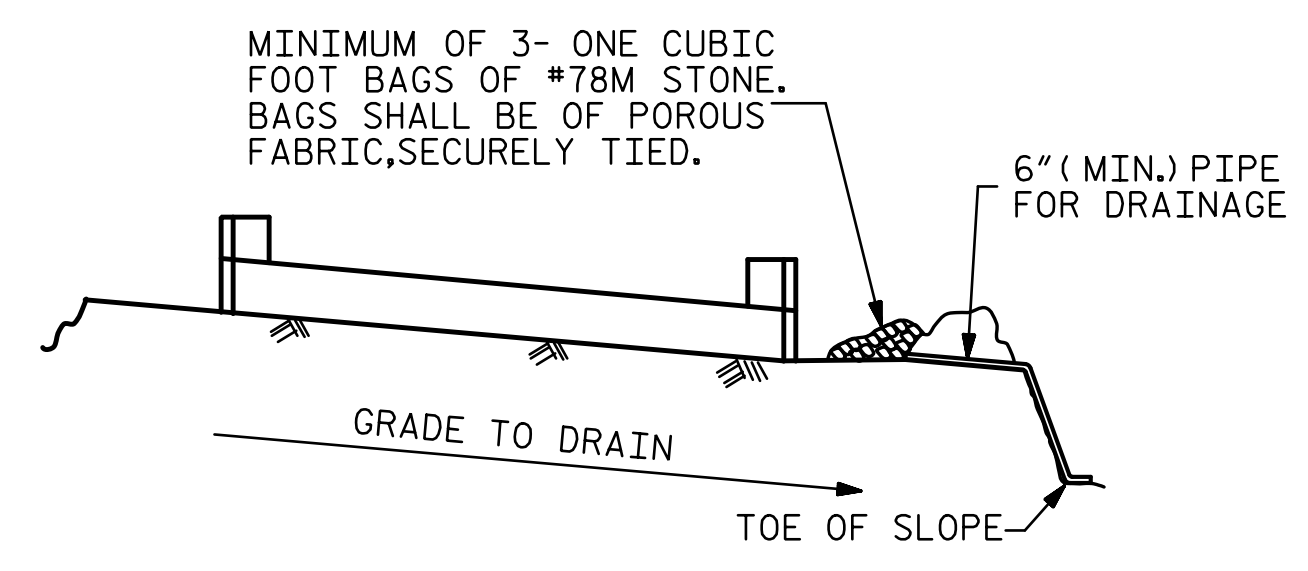
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PLAN OF DRILLED PIERS



SECTION A-A



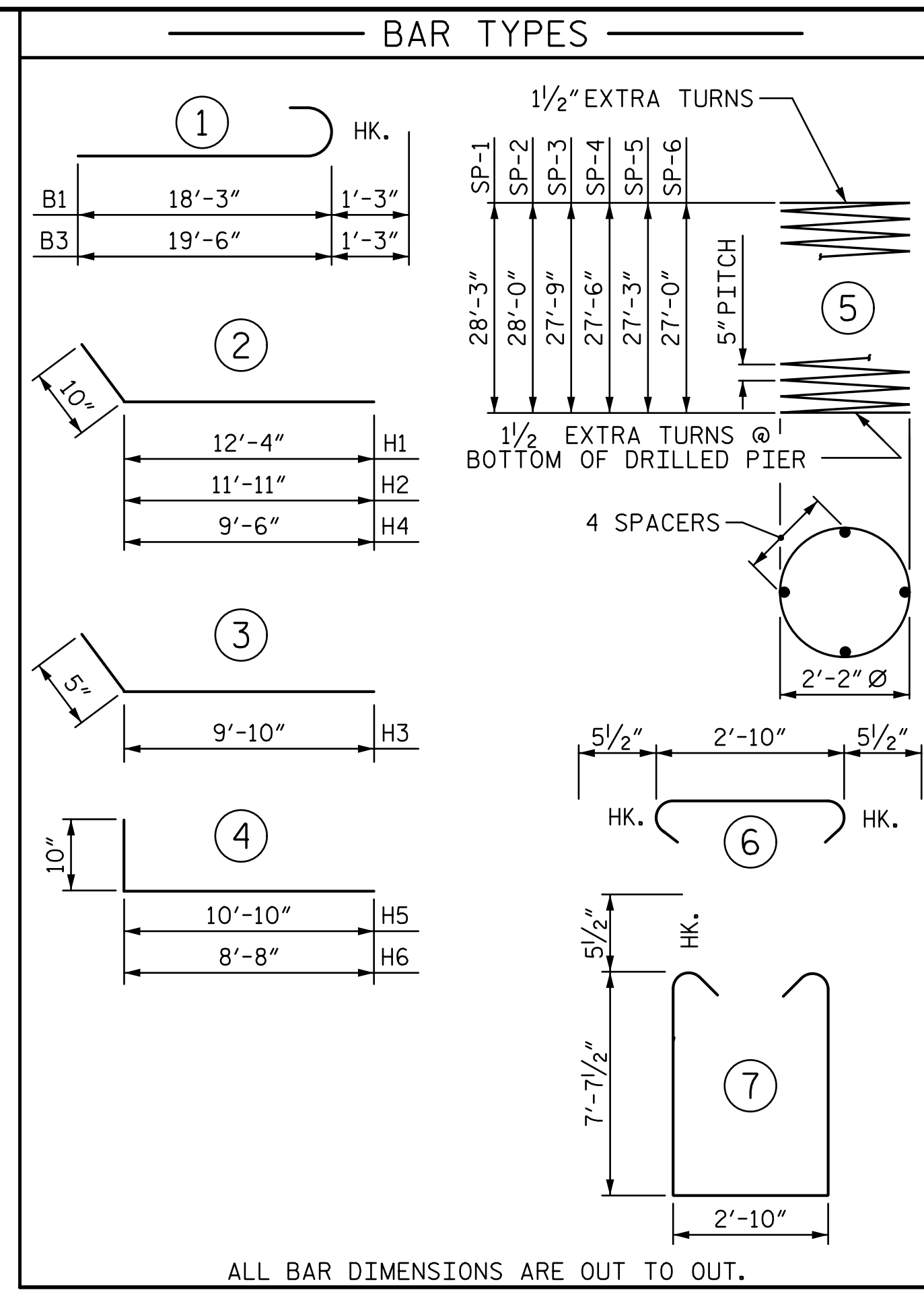
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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 BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

DRILLED PIER LENGTHS						
PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6	
28'-9"	28'-6"	28'-3"	28'-0"	27'-9"	27'-6"	



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL						BILL OF MATERIAL					
END BENT 2 (STAGE 3)						END BENT 2 (STAGE 5)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		19'-6"	530	B3	8	#9		20'-9"	564
*B2	28	#5	STR	19'-9"	577	B4	28	#5	STR	20'-4"	594
D1	10	#6	STR	1'-6"	23	D1	12	#6	STR	1'-6"	27
H1	16	#5		13'-2"	220	H5	32	#5		11'-8"	389
H2	16	#5		12'-9"	213	H6	10	#5		9'-6"	99
H3	5	#5		10'-3"	53	H4	5	#5		10'-4"	54
H4	5	#5		10'-4"	54	K2	5	#5	STR	3'-3"	17
K1	10	#5	STR	1'-2"	12	K3	5	#5	STR	3'-0"	16
S1	16	#5		19'-0"	317	S1	25	#5		19'-0"	495
S2	16	#5		3'-9"	63	S2	25	#5		3'-9"	98
M1	36	#10	STR	36'-4"	5628	M1	36	#10	STR	36'-4"	5628
V1	24	#5	STR	9'-9"	244	V1	26	#5	STR	9'-9"	264
REINFORCING STEEL (STAGE 3) 7,934 LBS.						REINFORCING STEEL (STAGE 5) 8,191 LBS.					
SP-1	1	**	5	459'-4"	479	SP-4	1	**	5	472'-8"	493
SP-2	1	**	5	459'-4"	479	SP-5	1	**	5	472'-8"	493
SP-3	1	**	5	452'-8"	472	SP-6	1	**	5	466'-0"	486
SPIRAL REINFORCING STEEL 1,430 LBS.						SPIRAL REINFORCING STEEL 1,472 LBS.					
DRILLED PIER CONCRETE						DRILLED PIER CONCRETE					
POUR #1 DRILLED PIERS 15.2 C.Y.						POUR #1 DRILLED PIERS 15.7 C.Y.					
CLASS A CONCRETE BREAKDOWN						CLASS A CONCRETE BREAKDOWN					
POUR #2 CAP & LOWER PART OF WINGS 18.3 C.Y.						POUR #2 CAP & LOWER PART OF WINGS 21.8 C.Y.					
POUR #3 UPPER PART OF WINGS 0.9 C.Y.						POUR #3 UPPER PART OF WINGS 0.9 C.Y.					
TOTAL CLASS A CONCRETE 19.2 C.Y.						TOTAL CLASS A CONCRETE 22.7 C.Y.					
TOTAL REINFORCING STEEL 16,125 LBS.						TOTAL REINFORCING STEEL 16,125 LBS.					
TOTAL SPIRAL REINFORCING 2,902 LBS.						TOTAL SPIRAL REINFORCING 2,902 LBS.					
TOTAL CLASS A CONCRETE 41.9 C.Y.						TOTAL CLASS A CONCRETE 41.9 C.Y.					
TOTAL DRILLED PIER CONCRETE 30.9 C.Y.						TOTAL DRILLED PIER CONCRETE 30.9 C.Y.					

NOTE:
FOR DETAILS ON CONSTRUCTION STAGING, SEE CONSTRUCTION STAGING SHEETS.

+ BAR LENGTH IS BASED ON "B" BAR PROJECTING FROM THE CONSTRUCTION JOINT 1'-0". BAR LENGTH MAY NEED TO BE MODIFIED PER MANUFACTURER'S RECOMMENDATIONS.

** THE "SP" SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.

* BARS ARE DETAILED WITH ADEQUATE LENGTH FOR A SPLICE. MECHANICAL REBAR SPLICES WILL BE REQUIRED IF THE TEMPORARY SHORING LOCATION DOES NOT ALLOW FOR MIN. REQUIRED SPLICE LENGTH. ALL COSTS ASSOCIATED WITH MECHANICAL BAR SPLICES SHALL BE CONSIDERED INCIDENTAL TO THE REINFORCING STEEL. NO ADDITIONAL PAYMENT WILL BE MADE.

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
 STATION: 13+70.81 -L-

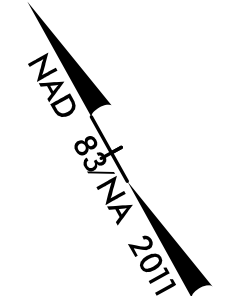
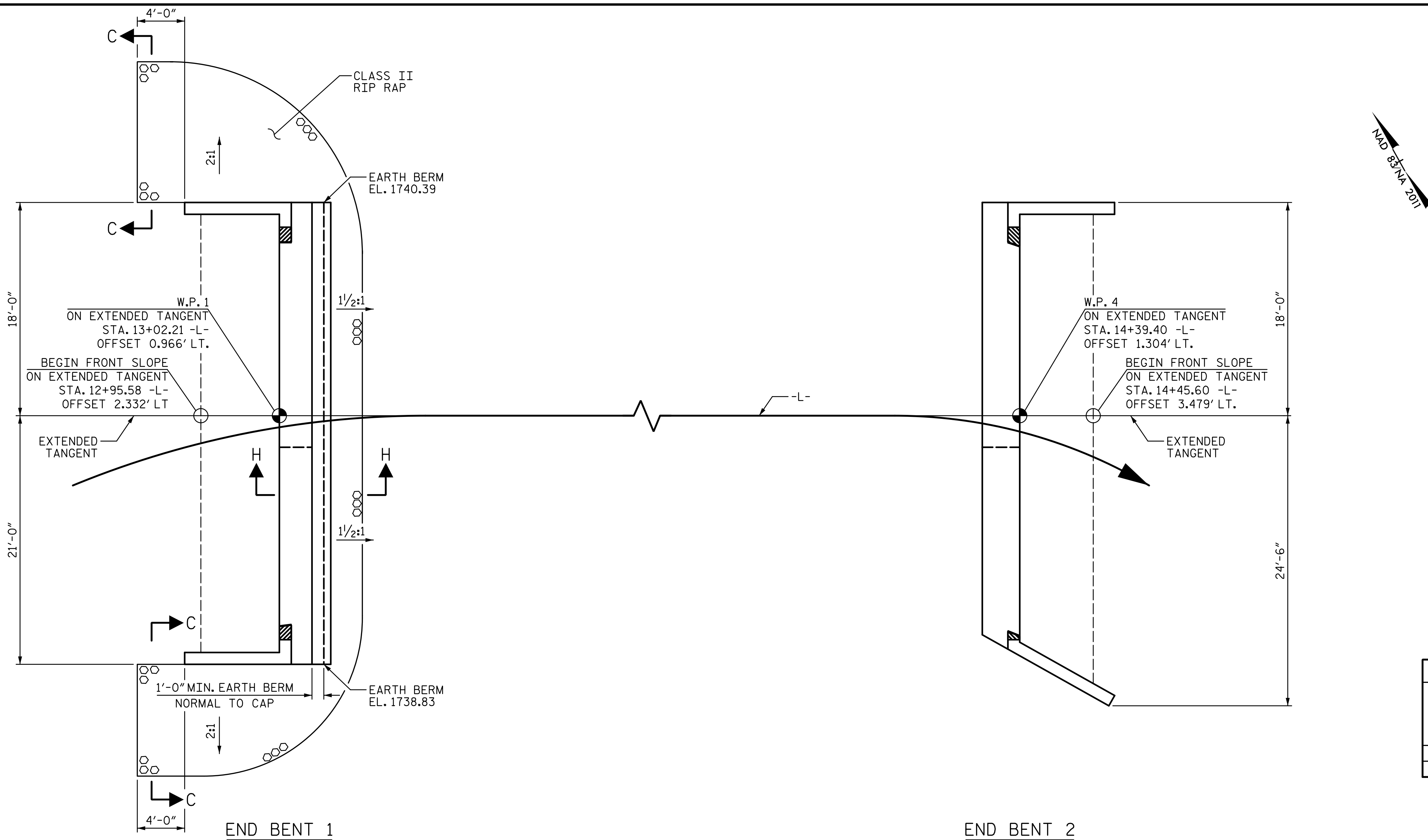
SHEET 3 OF 3



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-29
2			4			TOTAL SHEETS 32

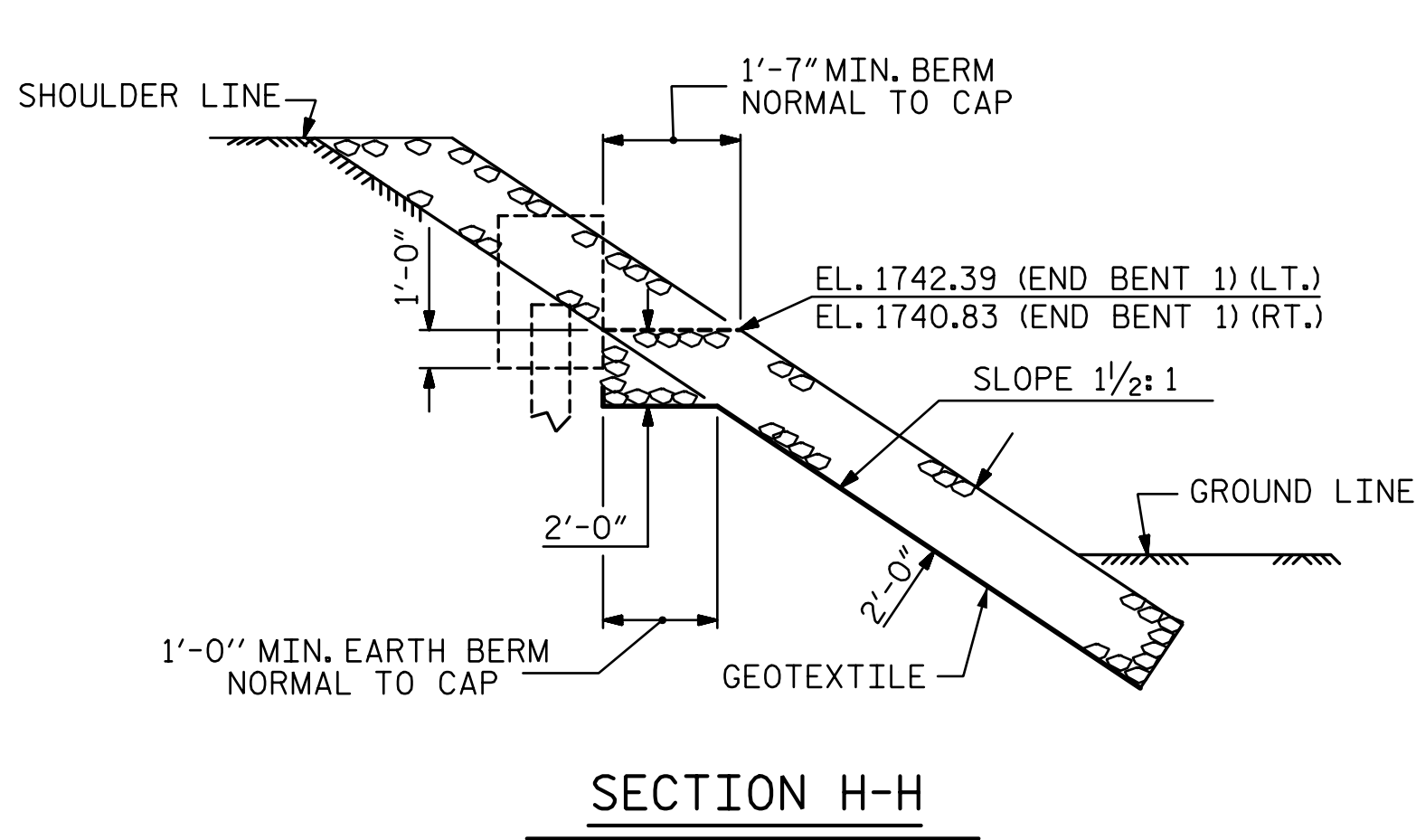
DRAWN BY : J. SCACCA DATE : 06/2025
 CHECKED BY : M. ACOSTA DATE : 07/2025
 DESIGN ENGINEER OF RECORD: M. ACOSTA DATE : 03/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

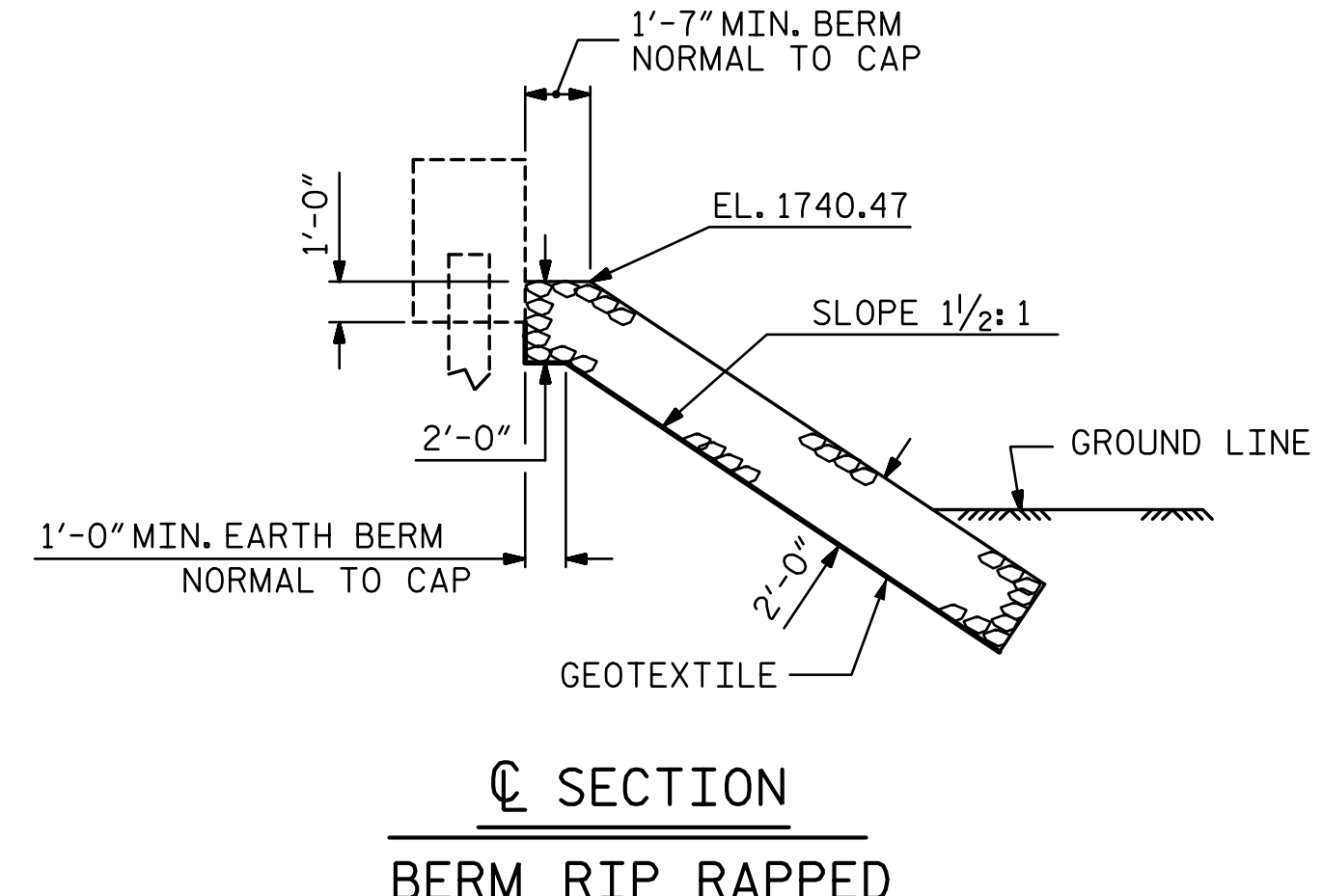


ESTIMATED QUANTITIES		
BRIDGE @ STA. 13+70.81 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	101	112
END BENT 2	0	0

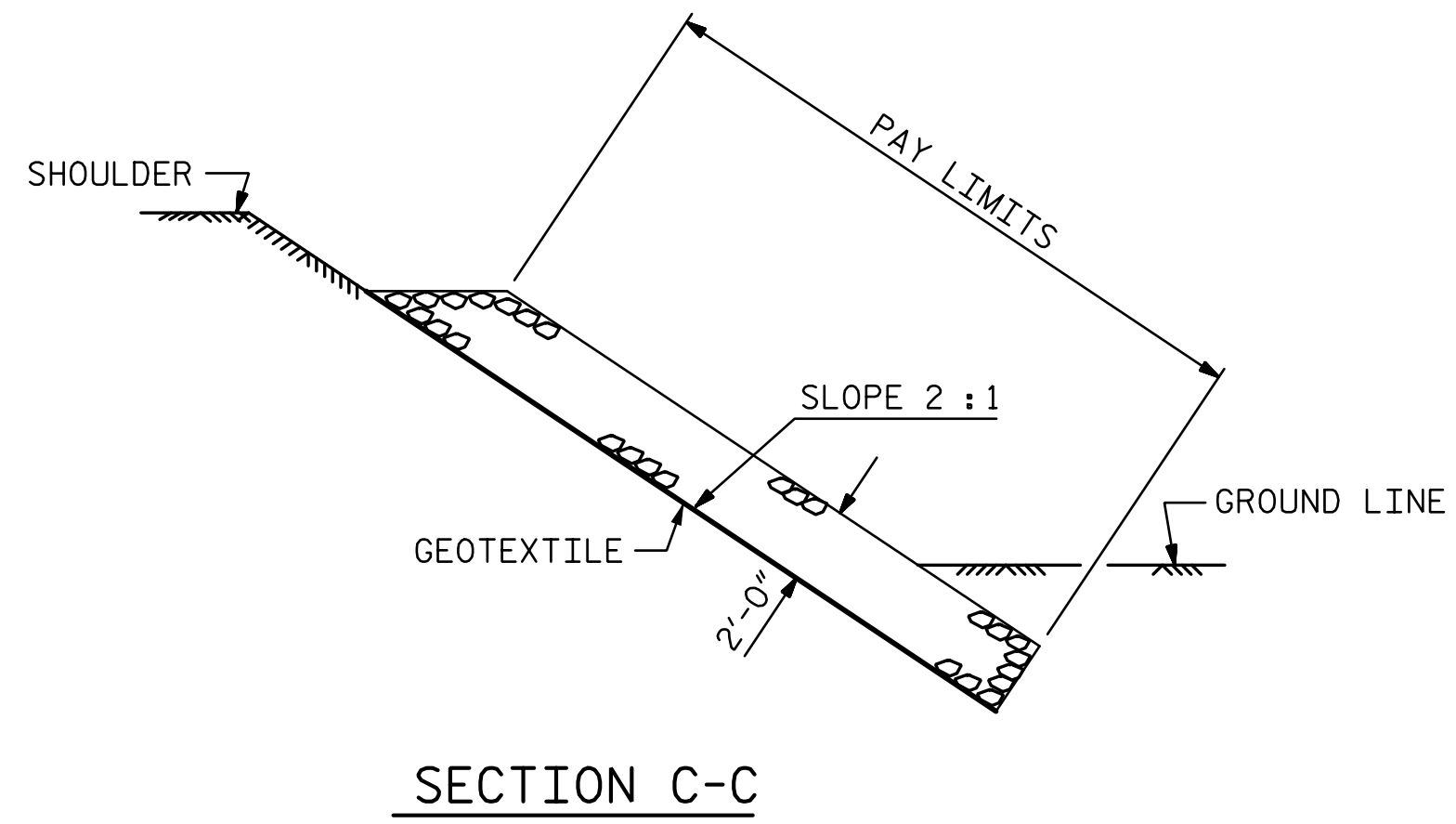
PLAN OF RIP RAP



SECTION H-H



SECTION C-C
BERM RIP RAPPED



SECTION C-C

PROJECT NO. DF18314.2045332
HENDERSON COUNTY
 STATION: 13+70.81 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

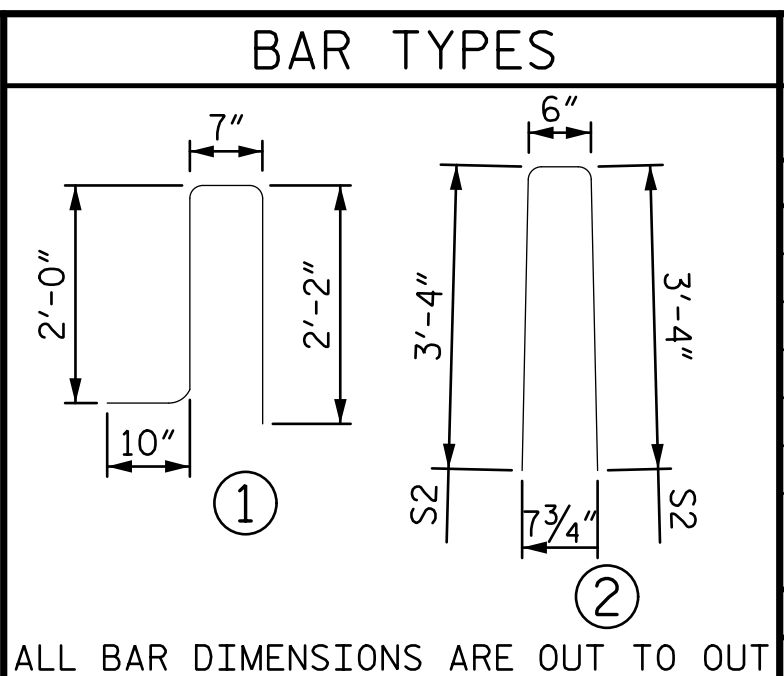
RIP RAP DETAILS

RS&H
 RS&H Architects-Engineers-Planners, Inc.
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 Raleigh, NC 27615
 919-926-4100 FAX 919-846-9080
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 North Carolina License Nos. 50737-F-0403 / C-28

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-30
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : M. ACOSTA DATE : 07/2025
 CHECKED BY : T. R. LAWS DATE : 07/2025
 DESIGN ENGINEER OF RECORD: M. ACOSTA DATE : 03/2026

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ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL BARRIER RAIL ONLY					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B32	5	#5	STR	8'-4"	43
B33	5	#5	STR	7'-10"	41
S1	17	#5	1	5'-7"	99
S2	17	#5	2	7'-2"	127
* EPOXY COATED REINFORCING STEEL					310 LBS.
CLASS AA CONCRETE					1.0 C.Y.
CONCRETE BARRIER RAIL					8.1 LIN. FT.

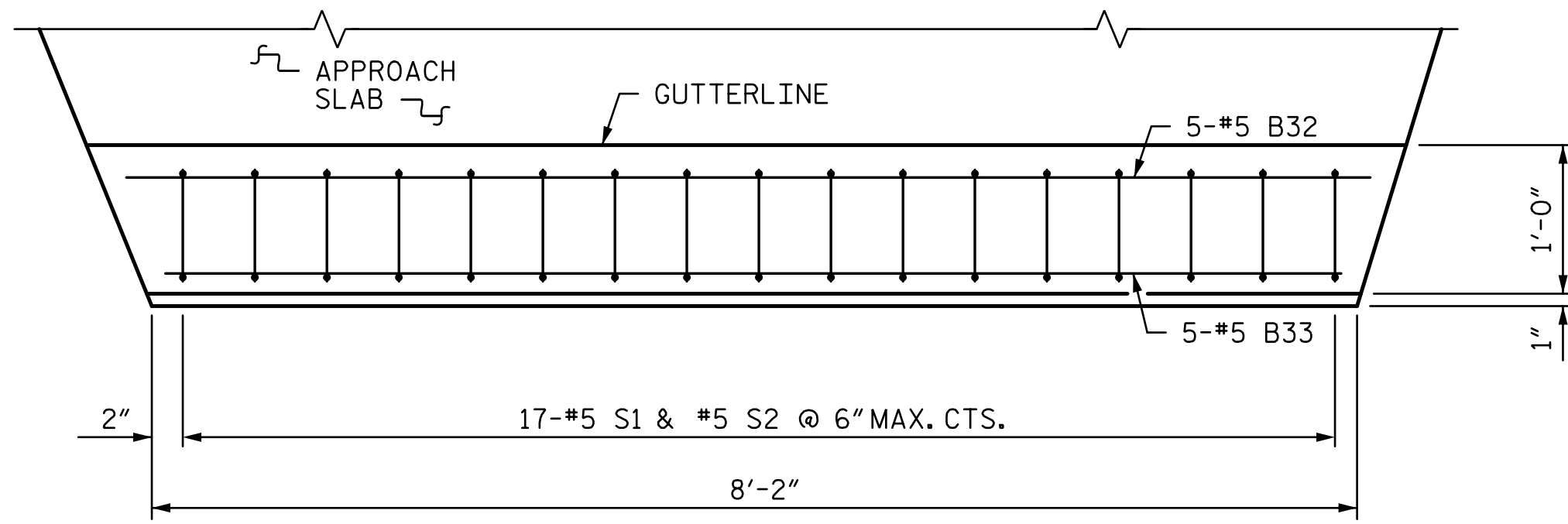
BILL OF MATERIAL APPROACH SLAB AT EB 1 (STAGE 3)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	26	#4	STR	9'-11"	172
A2	26	#4	STR	9'-8"	168
* B1	32	#5	STR	11'-2"	373
B2	32	#6	STR	11'-8"	561
REINFORCING STEEL					729 LBS.
* EPOXY COATED REINFORCING STEEL					545 LBS.
CLASS AA CONCRETE					8.8 C.Y.

BILL OF MATERIAL APPROACH SLAB AT EB 2 (STAGE 3)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A5	3	#4	STR	17'-9"	36
* A6	3	#4	STR	19'-0"	38
* A7	3	#4	STR	19'-11"	40
* A8	1	#4	STR	18'-6"	12
* A9	1	#4	STR	17'-3"	12
* A10	2	#4	STR	16'-0"	21
A11	3	#4	STR	17'-5"	35
A12	3	#4	STR	18'-8"	37
A13	3	#4	STR	19'-7"	39
A14	1	#4	STR	18'-2"	12
A15	1	#4	STR	16'-11"	11
A16	1	#4	STR	15'-8"	10
A17	1	#4	STR	14'-10"	10
REINFORCING STEEL					739 LBS.
* EPOXY COATED REINFORCING STEEL					551 LBS.
CLASS AA CONCRETE					9.2 C.Y.

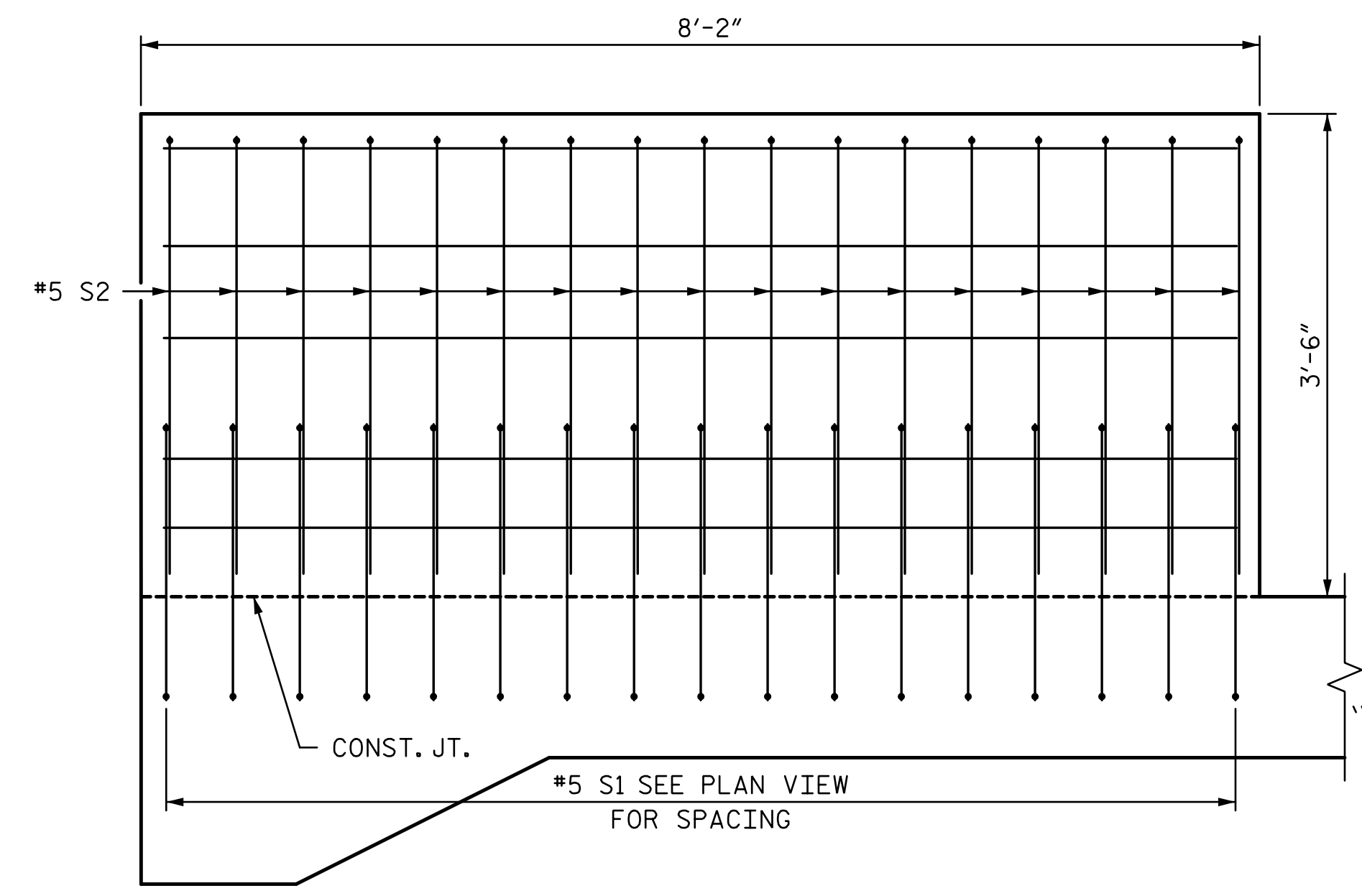
BILL OF MATERIAL APPROACH SLAB AT EB 2 (STAGE 5)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A18	1	#4	STR	17'-2"	11
* A19	1	#4	STR	17'-0"	11
* A20	1	#4	STR	16'-8"	11
* A21	1	#4	STR	16'-4"	11
* A22	1	#4	STR	16'-0"	11
* A23	1	#4	STR	15'-7"	10
* A24	1	#4	STR	15'-3"	10
* A25	1	#4	STR	14'-11"	10
* A26	1	#4	STR	14'-7"	10
* A27	1	#4	STR	14'-3"	10
* A28	1	#4	STR	13'-11"	9
* A29	1	#4	STR	13'-7"	9
* A30	1	#4	STR	13'-5"	9
A31	1	#4	STR	17'-3"	12
A32	1	#4	STR	17'-0"	11
A33	1	#4	STR	16'-9"	11
A34	1	#4	STR	16'-4"	11
A35	1	#4	STR	16'-0"	11
A36	1	#4	STR	15'-8"	10
A37	1	#4	STR	15'-3"	10
A38	1	#4	STR	14'-11"	10
A39	1	#4	STR	14'-8"	10
A40	1	#4	STR	14'-3"	10
A41	1	#4	STR	13'-11"	9
A42	1	#4	STR	13'-8"	9
A43	1	#4	STR	13'-8"	9
* B1	27	#5	STR	11'-2"	314
B2	27	#6	STR	11'-8"	473
* B20	1	#5	STR	10'-6"	11
* B21	1	#5	STR	9'-1"	9
* B22	1	#5	STR	7'-7"	8
* B23	1	#5	STR	6'-2"	6
* B24	1	#5	STR	4'-8"	5
* B25	3	#5	STR	3'-2"	10
B26	1	#6	STR	10'-6"	16
B27	1	#6	STR	9'-1"	14
B28	1	#6	STR	7'-7"	11
B29	1	#6	STR	6'-2"	9
B30	1	#6	STR	4'-8"	7
B31	3	#6	STR	3'-2"	14
REINFORCING STEEL					677 LBS.
* EPOXY COATED REINFORCING STEEL					495 LBS.
CLASS AA CONCRETE					9.1 C.Y.

BILL OF MATERIAL APPROACH SLAB AT EB 1 (STAGE 5)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A3	13	#4	STR	17'-3"	150
A4	13	#4	STR	17'-3"	150
* B1	35	#5	STR	11'-2"	408
B2	35	#6	STR	11'-8"	613
REINFORCING STEEL					763 LBS.
* EPOXY COATED REINFORCING STEEL					558 LBS.
CLASS AA CONCRETE					10.2 C.Y.

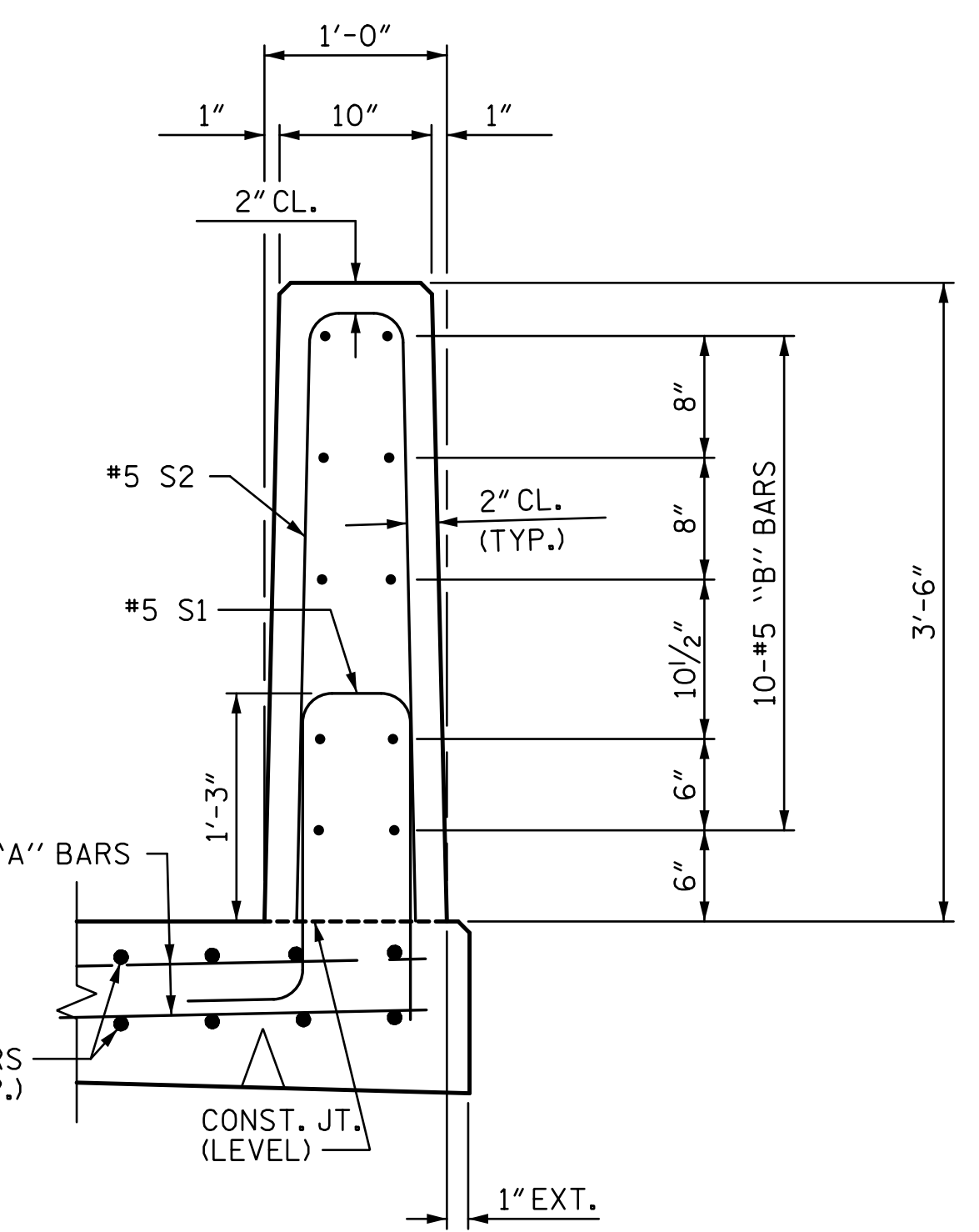
NOTES:
 THE COST OF THE BARRIER RAIL ON THE APPROACH SLAB SHALL BE INCLUDED IN THE LINEAR FOOT CONTRACT PRICE BID FOR "CONCRETE BARRIER RAIL".
 THE BARRIER RAIL ON APPROACH SLAB SHALL NOT BE CAST UNTIL ALL APPROACH SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.
 ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.
 FOR DETAILS ON CONSTRUCTION STAGING, SEE CONSTRUCTION STAGING SHEETS.



PLAN OF BARRIER RAIL



SIDE VIEW



SECTION THRU RAIL

END OF RAIL DETAILS

DRAWN BY : J. SCACCA DATE : 07/2025
 CHECKED BY : M. ACOSTA DATE : 07/2025
 DESIGN ENGINEER OF RECORD: M. ACOSTA DATE : 03/2026

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED



PROJECT NO. DF18314.2045332
HENDERSON COUNTY
 STATION: 13+70.81 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
APPROACH SLAB DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.	S-32
TOTAL SHEETS	32

