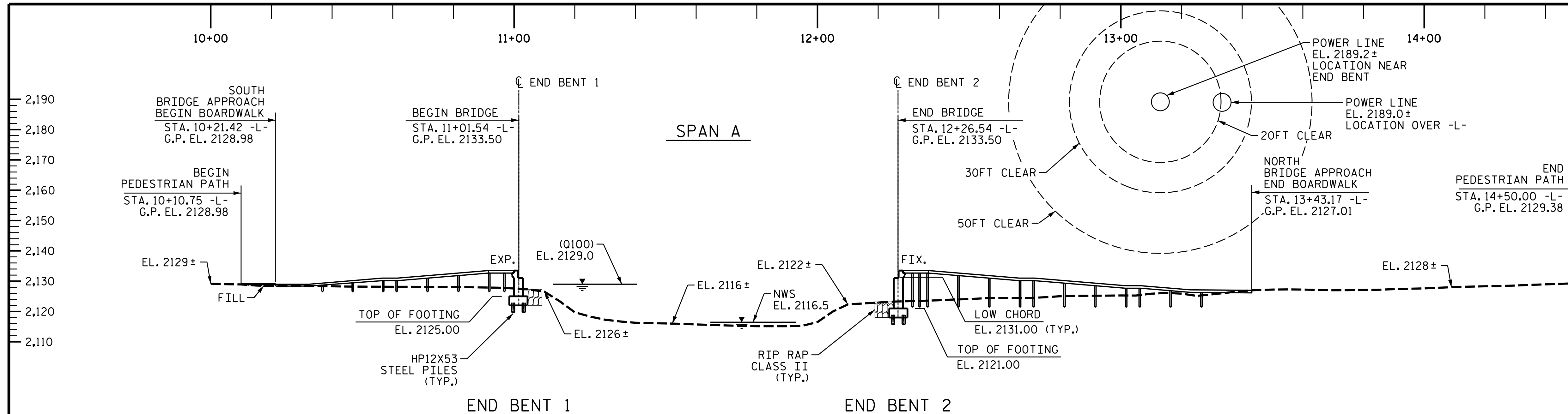


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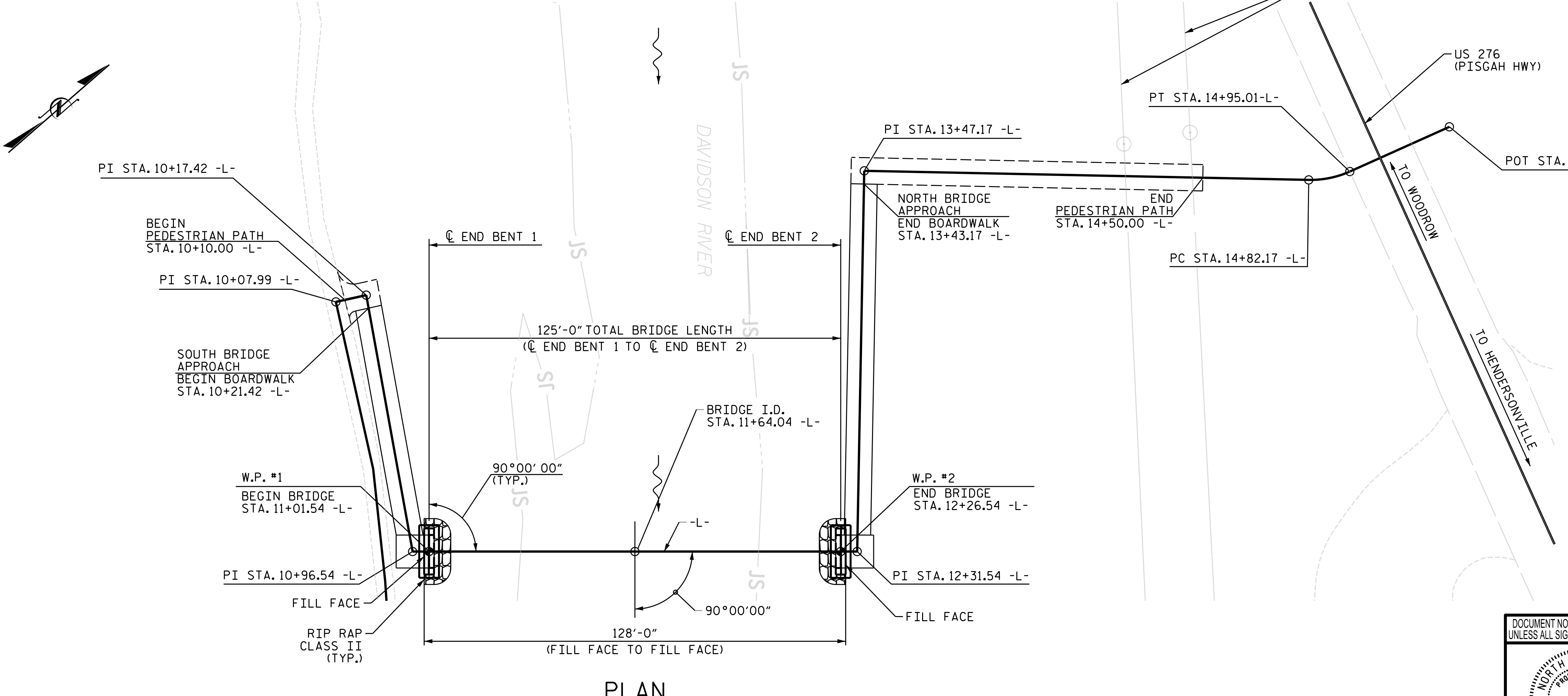
HYDRAULIC DATA

DESIGN DISCHARGE	9470 CFS
FREQUENCY OF DESIGN FLOOD	100 YRS.
DESIGN HIGH WATER ELEVATION	2,129.0
DRAINAGE AREA	40.3 SQ.MI.
BASE DISCHARGE (Q100)	9470 CFS
BASE HIGH WATER ELEVATION	2,129.0

OVERTOPPING FLOOD DATA

OVERTOPPING FLOOD DISCHARGE	>13,470(+) CFS
FREQUENCY OF OVERTOPPING FLOOD	>500(+) YRS.
OVERTOPPING FLOOD ELEVATION	2,133.5

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS



PROJECT NO. EB-5858
TRANSYLVANIA COUNTY
 STATION: 11+64.04 -L-
 SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR PEDESTRIAN BRIDGE
 OVER DAVIDSON RIVER
 BY PISGAH HWY 276

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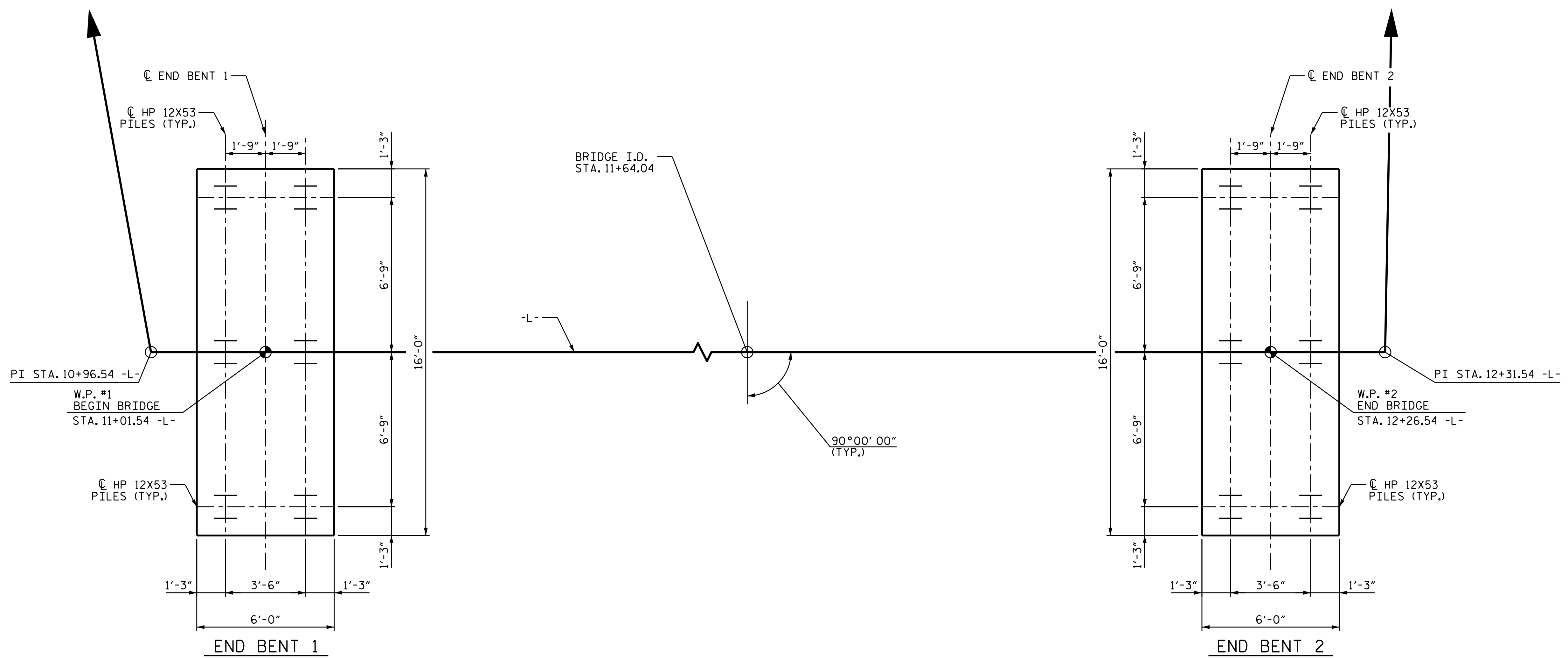
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 RALEIGH, NC 27601
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DESIGNED BY: J. WHEATLEY DATE: FEB 2023
 DRAWN BY: J. WHEATLEY DATE: FEB 2023
 CHECKED BY: S. AGUILAR DATE: FEB 2023
 DESIGN ENGINEER OF RECORD: S. AGUILAR DATE: FEB 2023

FOR CLARITY, PILES NOT SHOWN IN PLAN VIEW
 END BENTS ARE PARALLEL



FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO CENTERLINE OF PILES.
ORIENT PILES AS SHOWN.

NOTES

- FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATION.
- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 13,500 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NOS. 1 AND 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATION.
- IT MAY BE NECESSARY TO EXCAVATE BELOW THE BOTTOM OF FOOTING ELEVATION TO REMOVE PILE OBSTRUCTIONS.

PROJECT NO. EB-5858
TRANSYLVANIA COUNTY
 STATION: 11+64.04 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
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SUPERSTRUCTURE
 GENERAL DRAWING
 FOR PEDESTRIAN BRIDGE
 OVER DAVIDSON RIVER
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SEAL
 046232
 ENGINEER
 SANTIAGO E. AGUILAR
 2/27/2023

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 Santiago E Aguilar

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SUMMARY OF PILE INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No, Pile(s) #-# (e.g., "Bent 1, Piles 1-5")	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 Exc 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 1-6	30	2123	25	2109		55		25	2098	12			
End Bent 2, Piles 1-6	30	2119	20	2106		55		20	2098	12			

*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.

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

SUMMARY OF PDA/PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

Pile Driving Analyzer (PDA)				Pile Order Lengths	
End Bent/ Bent No	PDA Testing Required? YES or MAYBE	PDA Test Pile Length FT	Total PDA Testing Quantity EACH	End Bent/ Bent No(s)	Pile Order Length Basis* EST or PDA

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

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 1-6	30			0.60		5	1.00
End Bent 2, Piles 1-6	30			0.60		5	1.00

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

SUMMARY OF PILE ACCESSORIES

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No, Pile(s) #-# (e.g., "Bent 1, Piles 1-5")	Pipe Pile Plates Required? YES or MAYBE	Steel Pile Points			Steel Pile Tips Required? YES
		Pipe Pile Cutting Shoes Required? YES	Pipe Pile Conical Points Required? YES	H-Pile Points Required? YES	
End Bent 1, Piles 1-6				YES	
End Bent 2, Piles 1-6				YES	
TOTAL QTY:				12	


NOTES:

- The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Jacob Wessell, P.E., NC PE 030395) on 10-26-2021.
- 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 will determine the need for PDA Testing and Pipe Pile Plates when PDAs or plates may be required.

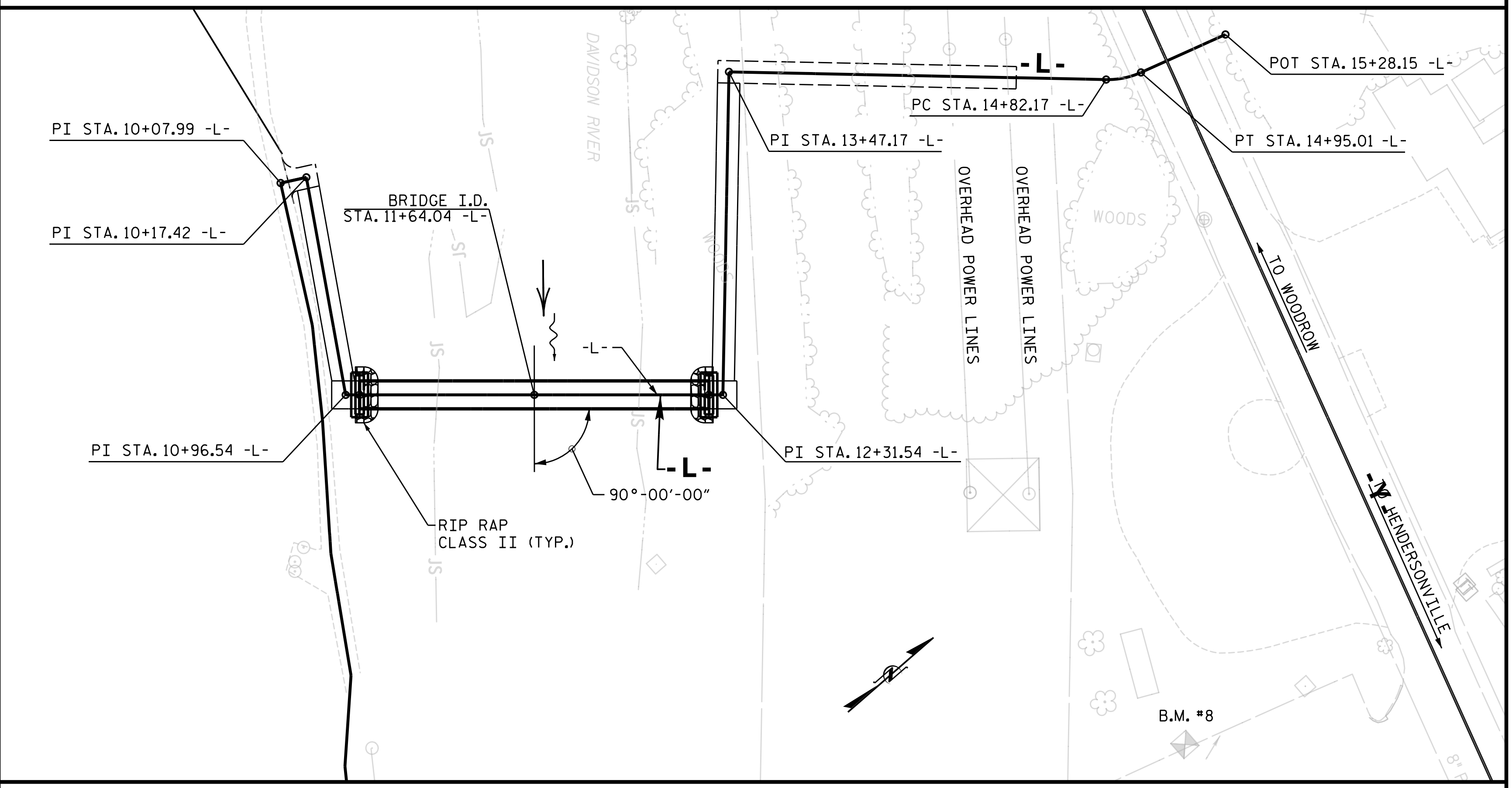
PROJECT NO. EB-5858 (47314)

TRANSYLVANIA COUNTY

STATION: 11+64.04 -L-

 Documented by: <i>Santiago E. Aguilar</i> 2/27/2023 SIGNATURE DATE	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH <h2 style="text-align: center;">PILE FOUNDATION TABLES</h2>					SHEET NO. S-3 TOTAL SHEETS 13
	REVISIONS					
	NO.	BY:	DATE:	NO.	BY:	
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BM #8: STA. 24+36.93 -BY2-, OFFSET 101.71' RT, ELEV.= 2130.56', SPIKE NAIL IN 16" HARDWOOD STUMP



LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

NOTES

PEDESTRIAN LIVE LOAD = 90 PSF

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND MEETS THE CRITERIA SET FORTH BY THE AASHTO GUIDE SPECIFICATIONS FOR DESIGN OF PEDESTRIAN BRIDGES.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET "STANDARD NOTES" SHEET.

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.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18 - EVALUATING SCOUR AT BRIDGES".

THE SCOUR CRITICAL ELEVATION FOR END BENT NO. 1 IS ELEVATION 2109, AND END BENT 2 NO. 2 IS ELEVATION 2106. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

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

THE CONTRACTOR SHALL BE ADVISED THAT THE PROPOSED PEDESTRIAN BRIDGE IS NEAR OVERHEAD POWER LINES. POWER LINE LOCATIONS AND CLEARANCES SHOWN ON THE PLANS ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES AND SURVEY THE LOCATION OF UTILITIES PRIOR TO COMMENCEMENT OF THE WORK. THE CONTRACTOR SHALL BE ADVISED THAT OVERHEAD POWER LINES ARE SUBJECT TO MINIMUM TEMPORARY AND PERMANENT CLEARANCE ENVELOPES AS ESTABLISHED BY THE POWER COMPANY.

FOR PREFABRICATED PEDESTRIAN BRIDGE, SEE SPECIAL PROVISIONS.

FOR BRIDGE APPROACH BOARDWALKS, SEE SPECIAL PROVISIONS.

WATER USED IN THE PRODUCTION OF CONCRETE OR GROUT SHALL BE IN ACCORDANCE WITH SECTION 1024-4 OF THE STANDARD SPECIFICATIONS.

TOTAL BILL OF MATERIAL

	FOUNDATION EXCAVATION FOR END BENT	REINFORCED CONC. DECK SLAB	CLASS A CONCRETE	REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES	STEEL PILE POINTS	PRE-DRILLING FOR PILES	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	* PRE-FABRICATED PEDESTRIAN BRIDGE	* BRIDGE APPROACH BOARDWALKS	
	LUMP SUM	SQ. FT.	CU. YDS.	LBS.	EA.	No.	LIN. FT.	EA.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	LUMP SUM
SUPERSTRUCTURE		1250.0										LUMP SUM	LUMP SUM
END BENT 1	LUMP SUM		22.3	2,838	6	6	150	6	150	27	12		
END BENT 2	LUMP SUM		28.6	4,129	6	6	120	6	120	27	12		
TOTAL	LUMP SUM	1250.0	50.9	6,967	12	12	270	12	270	54	24	LUMP SUM	LUMP SUM

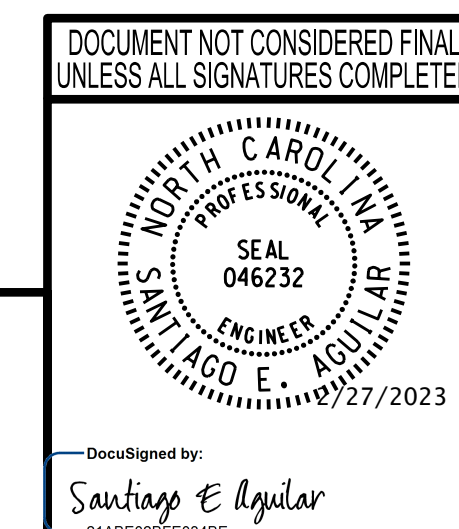
* SEE SPECIAL PROVISIONS

PROJECT NO. EB-5858
TRANSYLVANIA COUNTY
 STATION: 11+64.04 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR PEDESTRIAN BRIDGE
 OVER DAVIDSON RIVER
 BY PISGAH HWY 276

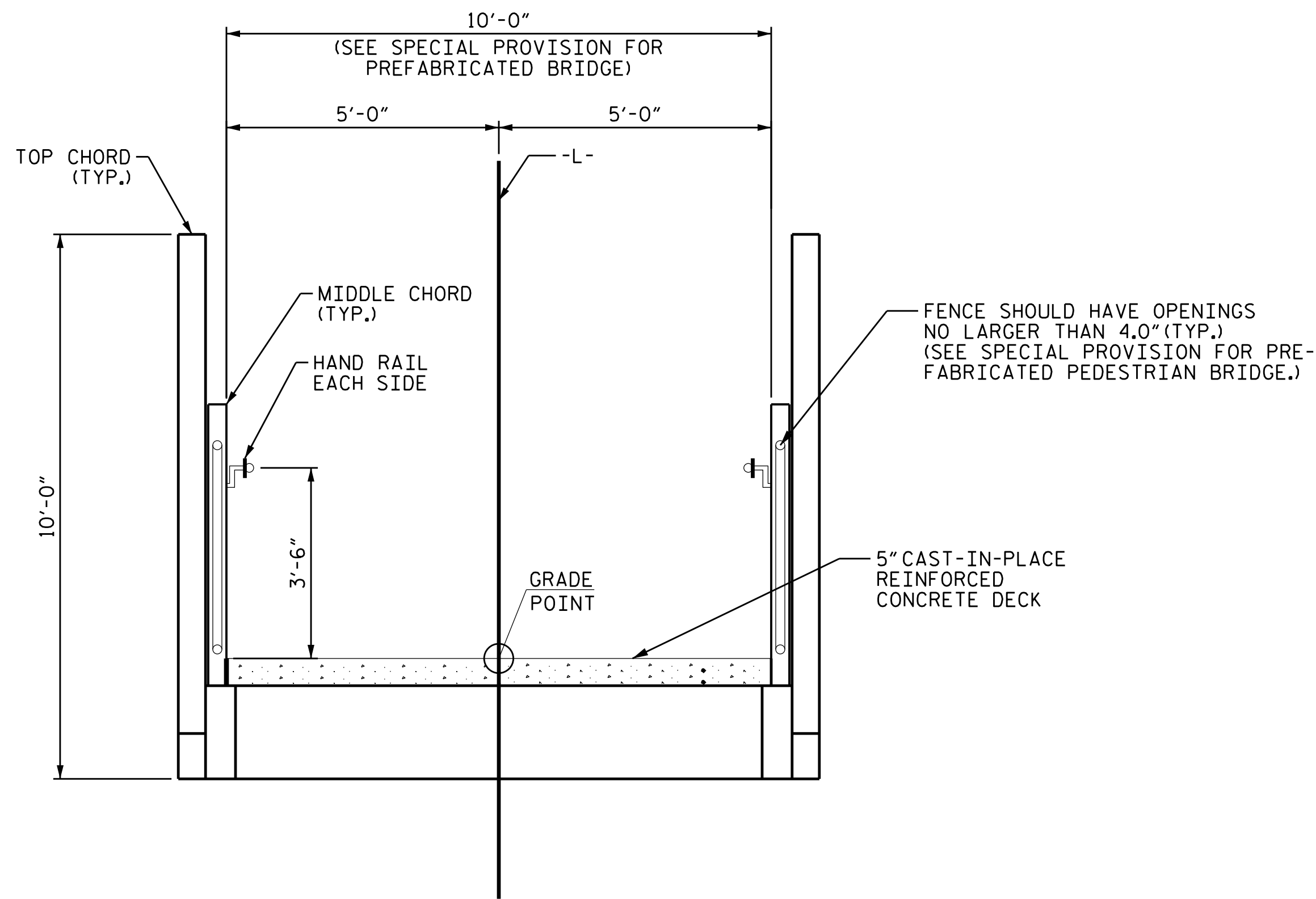


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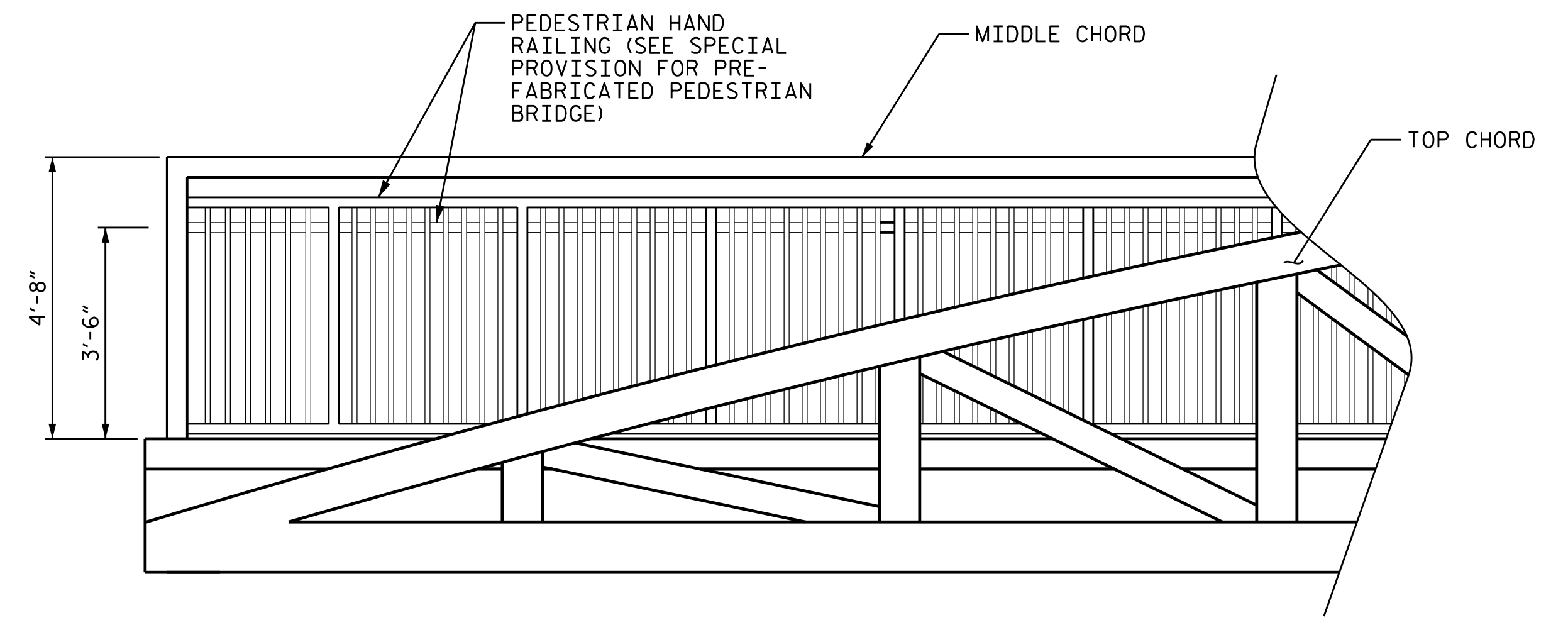
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1			3			TOTAL SHEETS
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 DRAWN BY: J. WHEATLEY DATE: FEB 2023
 CHECKED BY: S. AGUILAR DATE: FEB 2023
 DESIGN ENGINEER OF RECORD: S. AGUILAR DATE: FEB 2023

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BRIDGE TYPICAL SECTION
 FOR REINFORCED CONCRETE DECK SLAB DETAILS,
 SEE "DECK SLAB PLAN" SHEET.



BRIDGE ELEVATION

PROJECT NO. EB-5858
TRANSYLVANIA COUNTY
 STATION: 11+64.04 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION

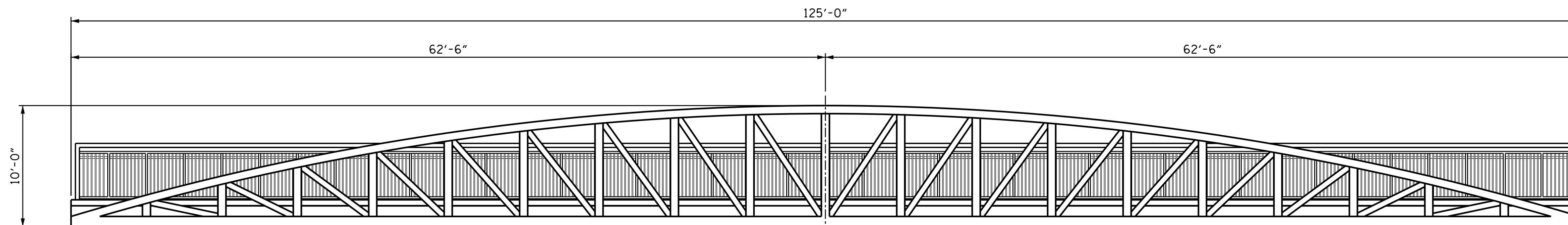
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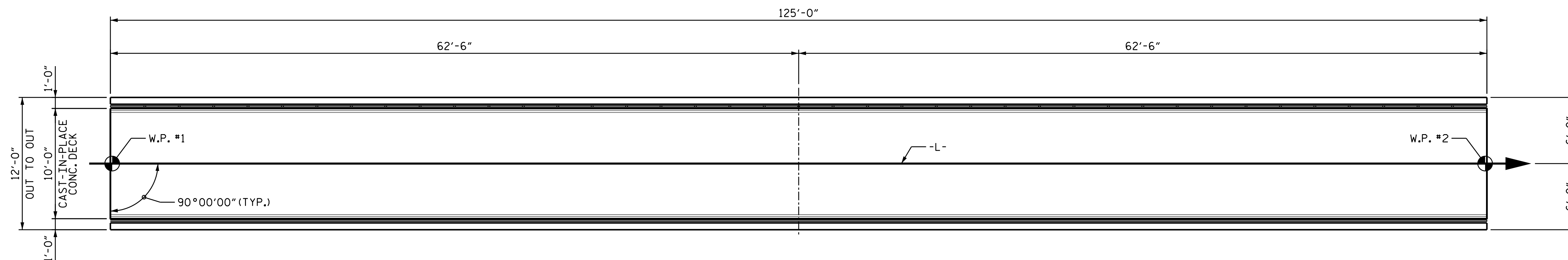
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BRIDGE ELEVATION

SEE SPECIAL PROVISION FOR
PREFABRICATED PEDESTRIAN BRIDGE.



BRIDGE PLAN OF SPAN A

SEE SPECIAL PROVISION FOR
PREFABRICATED PEDESTRIAN BRIDGE.

NOTE:

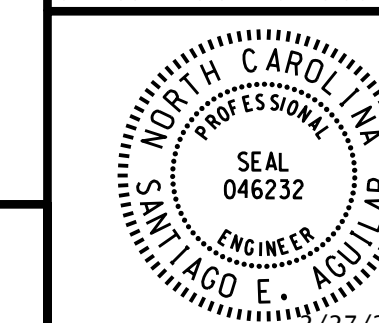
THE CONCEPTUAL ILLUSTRATION OF THE PREFABRICATED PEDESTRIAN BRIDGE SHOWN HEREIN IS DEFINED AS A BOW TRUSS BRIDGE. THE CONTRACTOR SHALL PROCURE A PREFABRICATED BRIDGE SIMILAR TO THE ILLUSTRATION SHOWN IN THIS SHEET. THE PROPOSED BRIDGE AESTHETICS SHALL BE APPROVED BY THE ENGINEER, CITY OF BREVARD, NCDOT AND FOREST SERVICE PRIOR TO PROCUREMENT.

PROJECT NO. EB-5858
TRANSYLVANIA COUNTY
STATION: 11+64.04 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
PLAN OF SPAN A

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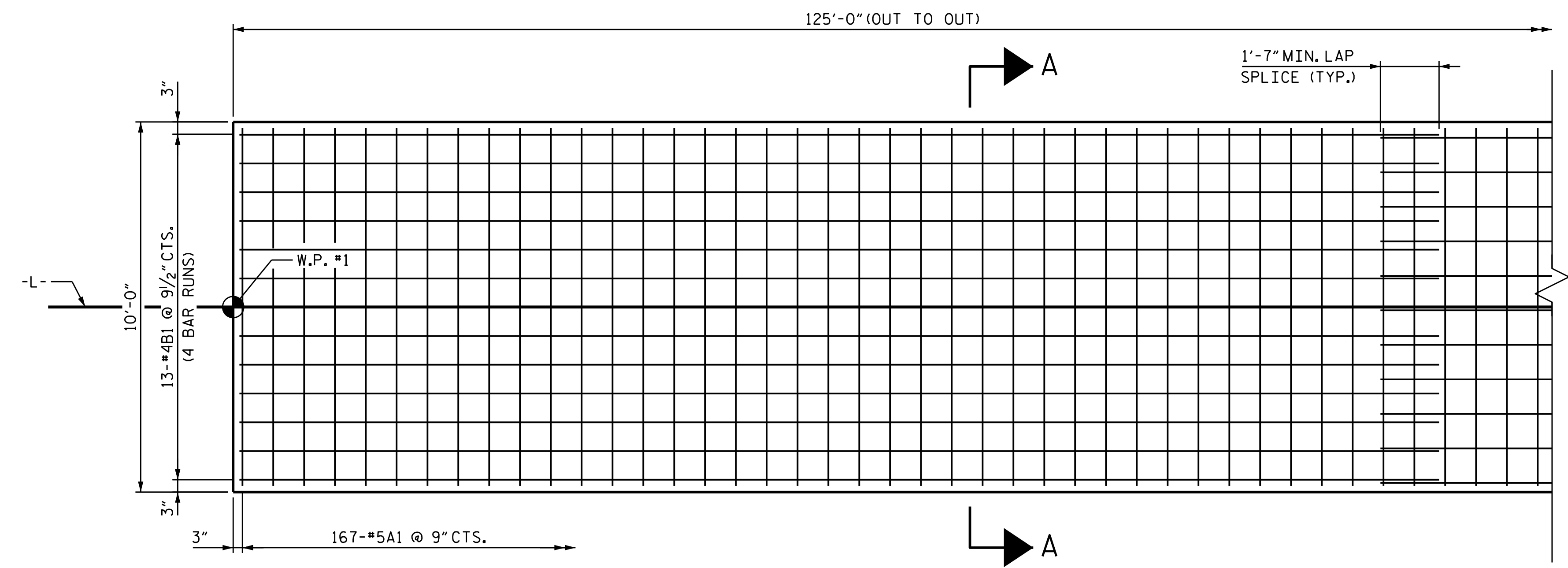
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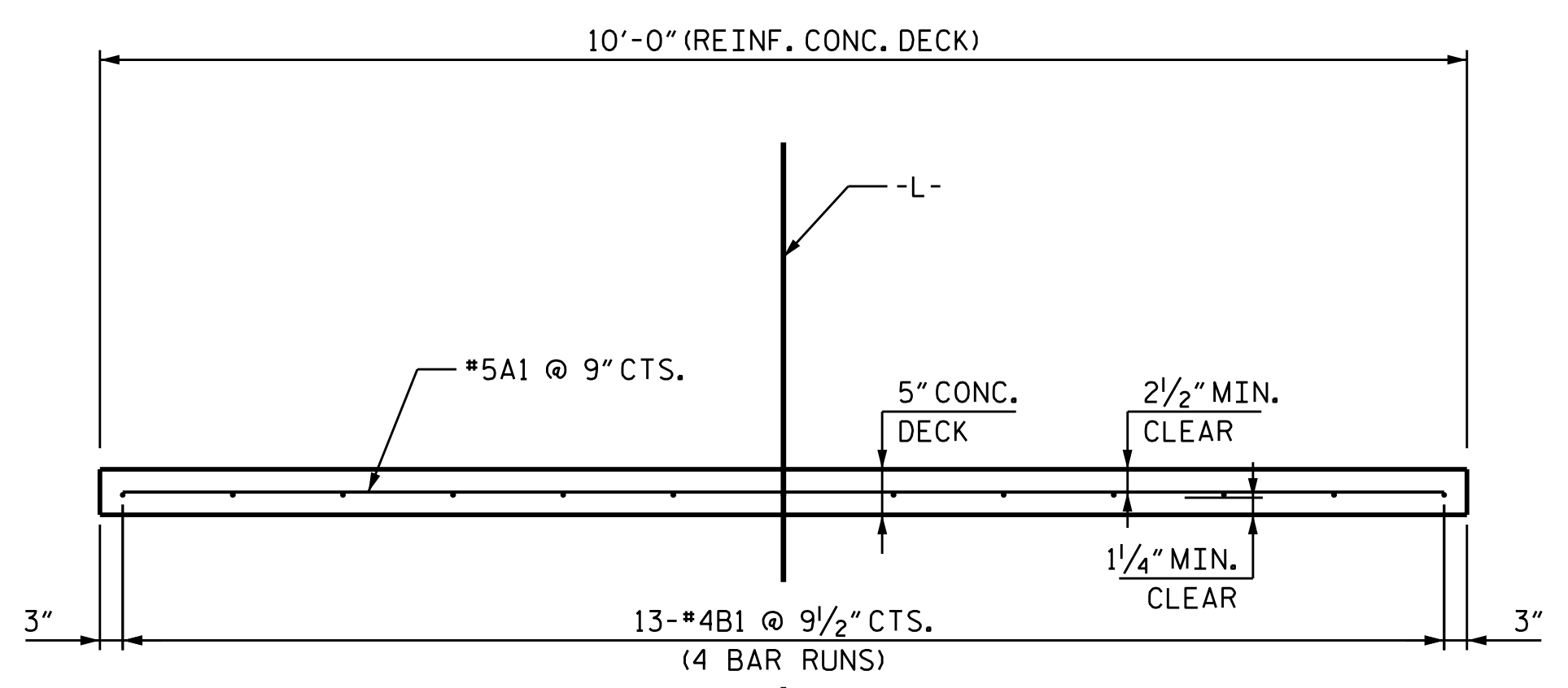
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DESIGN ENGINEER OF RECORD:	S. AGUILAR	DATE :	FEB 2023

BILL OF MATERIAL					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	167	#5	STR	9'-8"	1684
*B1	52	#4	STR	32'-5"	1126
EPOXY COATED REINFORCING STEEL					2,810 LBS.
TOTAL CLASS AA CONCRETE					19.3 C.Y.

NOTE:
 THE CONTRACTOR MAY PROPOSE AN ALTERNATE DESIGN FOR THE DECK SLAB AT NO ADDITIONAL COST TO THE OWNER FOLLOWING THE TECHNICAL RECOMMENDATIONS OF THE PREFABRICATED BRIDGE MANUFACTURER. SUCH DESIGN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL ALONG WITH THE PREFABRICATED BRIDGE SHOP DRAWINGS. THE ALTERNATE DECK SLAB DESIGN SHALL BE STAMPED BY A PROFESSIONAL ENGINEER IN THE STATE OF NORTH CAROLINA.



DECK SLAB PLAN - SPAN A



SECTION A-A

PROJECT NO. EB-5858
TRANSYLVANIA COUNTY
 STATION: 11+64.04 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 DECK SLAB PLAN
 SPAN A

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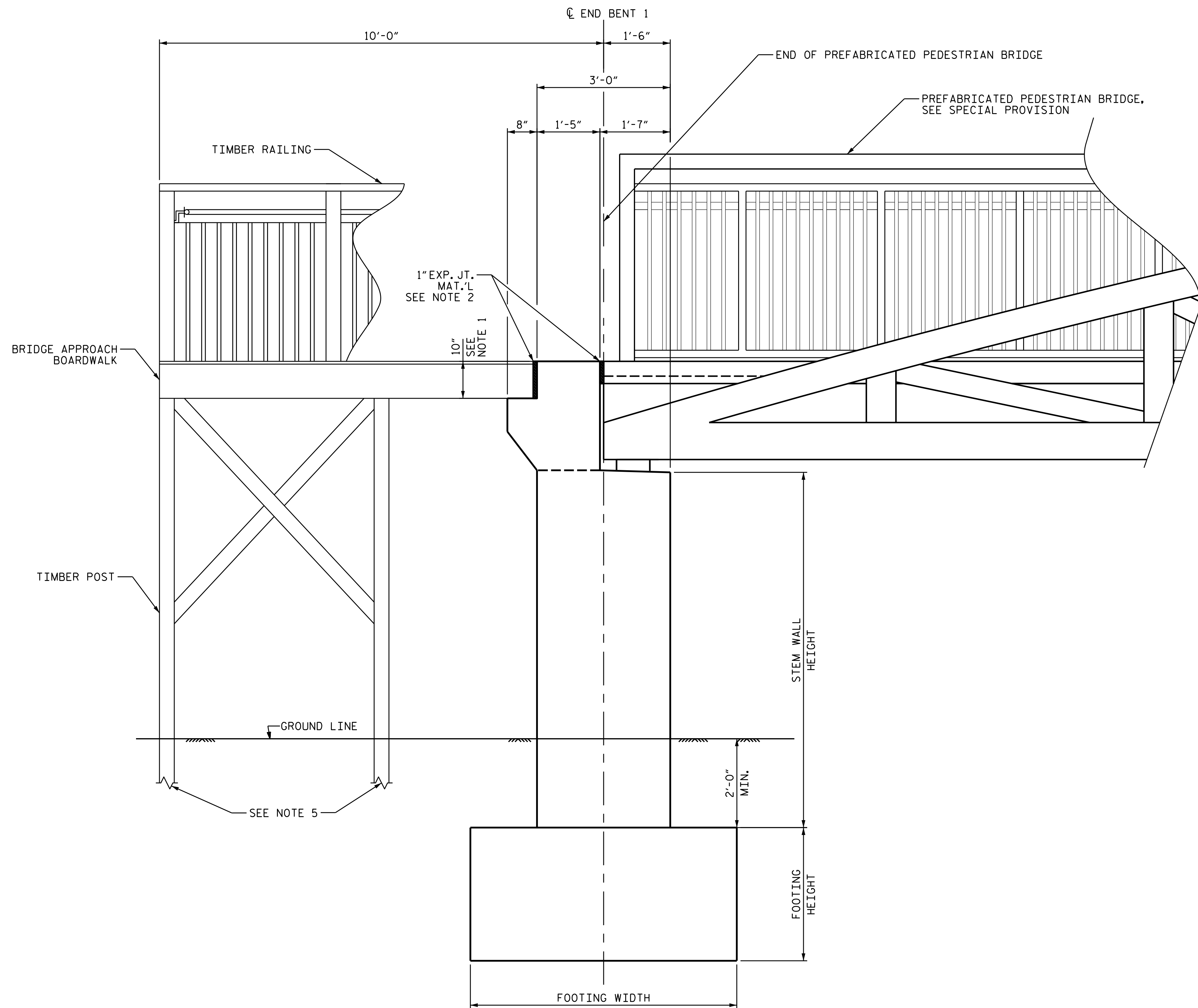
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EXPANSION JOINTS
SECTION AT END BENT 1 SHOWN, END BENT 2 SIMILAR.

NOTE:

1. HEIGHT OF BRIDGE APPROACH BOARDWALK SEAT MAY BE ADJUSTED TO FIT THE APPROACH BOARDWALK FLOOR GEOMETRY. ADJUSTMENTS SHALL BE SUCH THAT THE TRANSITION FROM BRIDGE APPROACH BOARDWALKS TO THE PREFABRICATED BRIDGE IS SMOOTH AND FREE OF TRIP HAZARDS. THE BRIDGE APPROACH BOARDWALK CONTRACTOR SHALL SUBMIT SHOP DRAWINGS INCLUDING ANY REQUIRED ADJUSTMENTS FOR APPROVAL BY THE ENGINEER.
2. THE EXPANSION JOINT MAY BE MODIFIED BY THE CONTRACTOR TO MEET THE DESIGN REQUIREMENTS OF THE PREFABRICATED PEDESTRIAN BRIDGE AND THE BRIDGE APPROACH BOARDWALK. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL BY THE ENGINEER.
3. END BENT SHALL BE CONSTRUCTED BEFORE THE APPROACH BOARDWALK.
4. FOR BRIDGE APPROACH BOARDWALKS, SEE SPECIAL PROVISIONS.
5. FOR FOUNDATIONS, SEE BRIDGE APPROACH BOARDWALK SPECIAL PROVISIONS.

PROJECT NO. EB-5858
TRANSYLVANIA COUNTY
 STATION: 11+64.04 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

EXPANSION JOINTS

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046232
ENGINEER
SANTIAGO E. AGUILAR

2/27/2023
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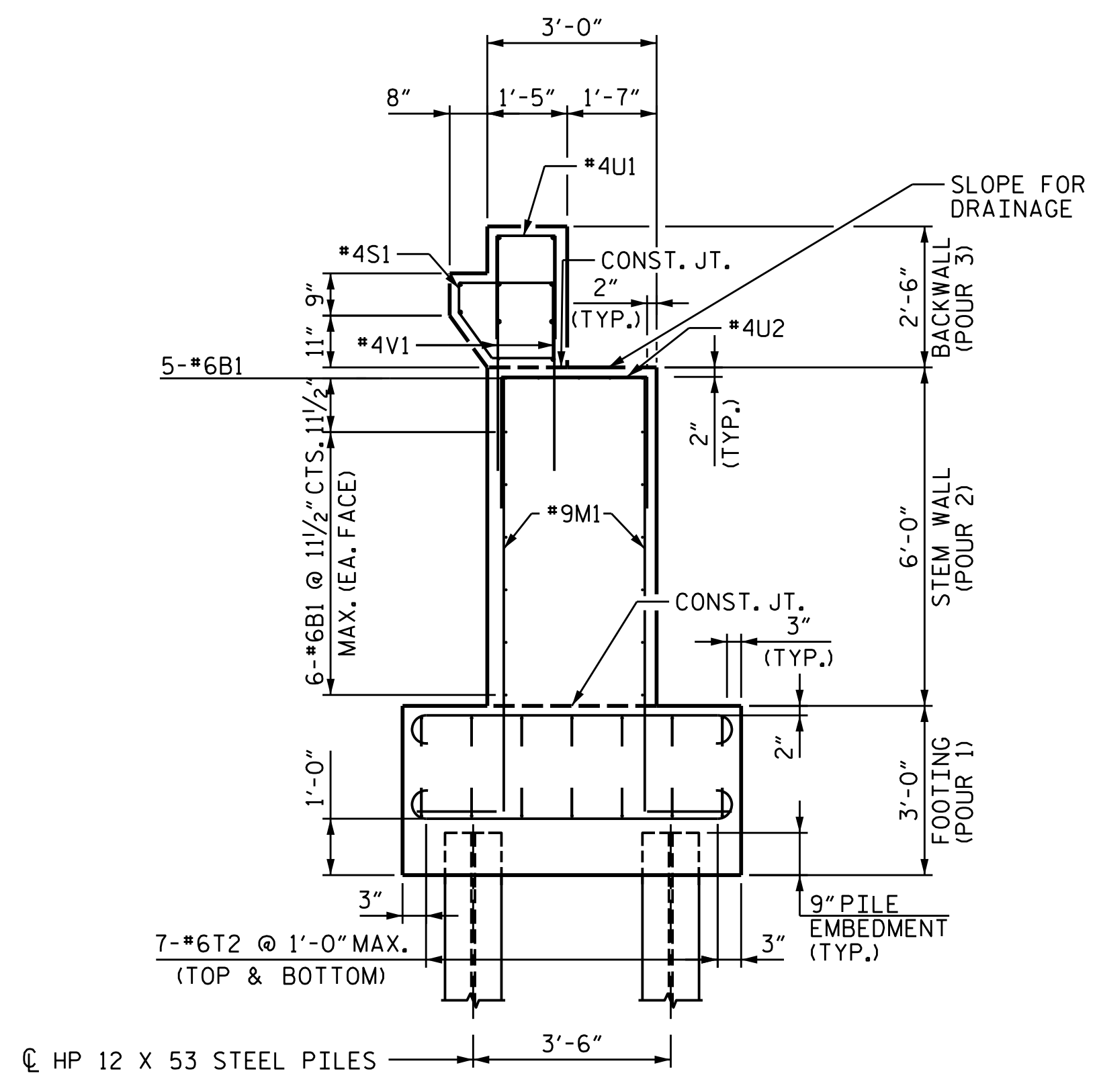
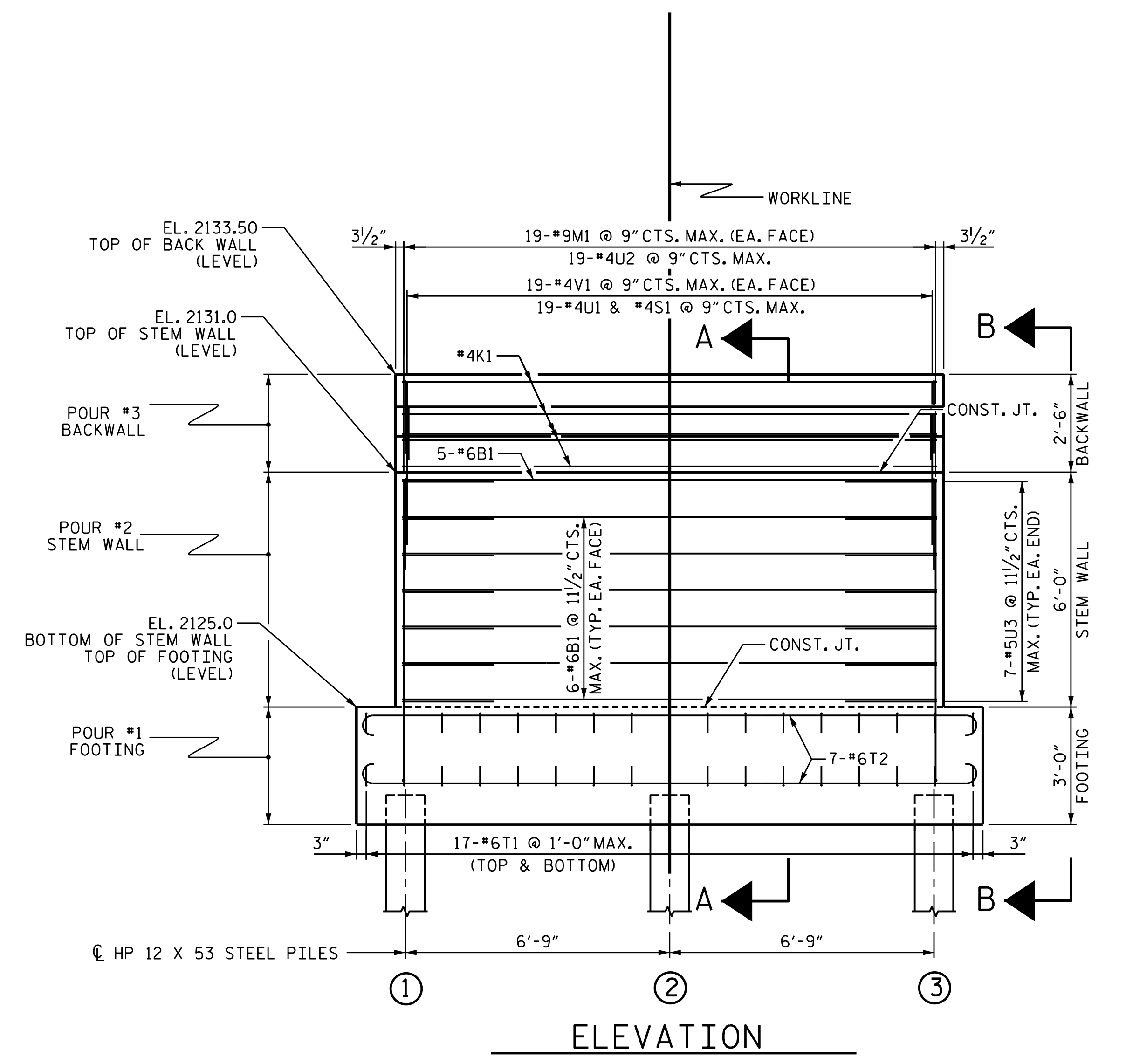
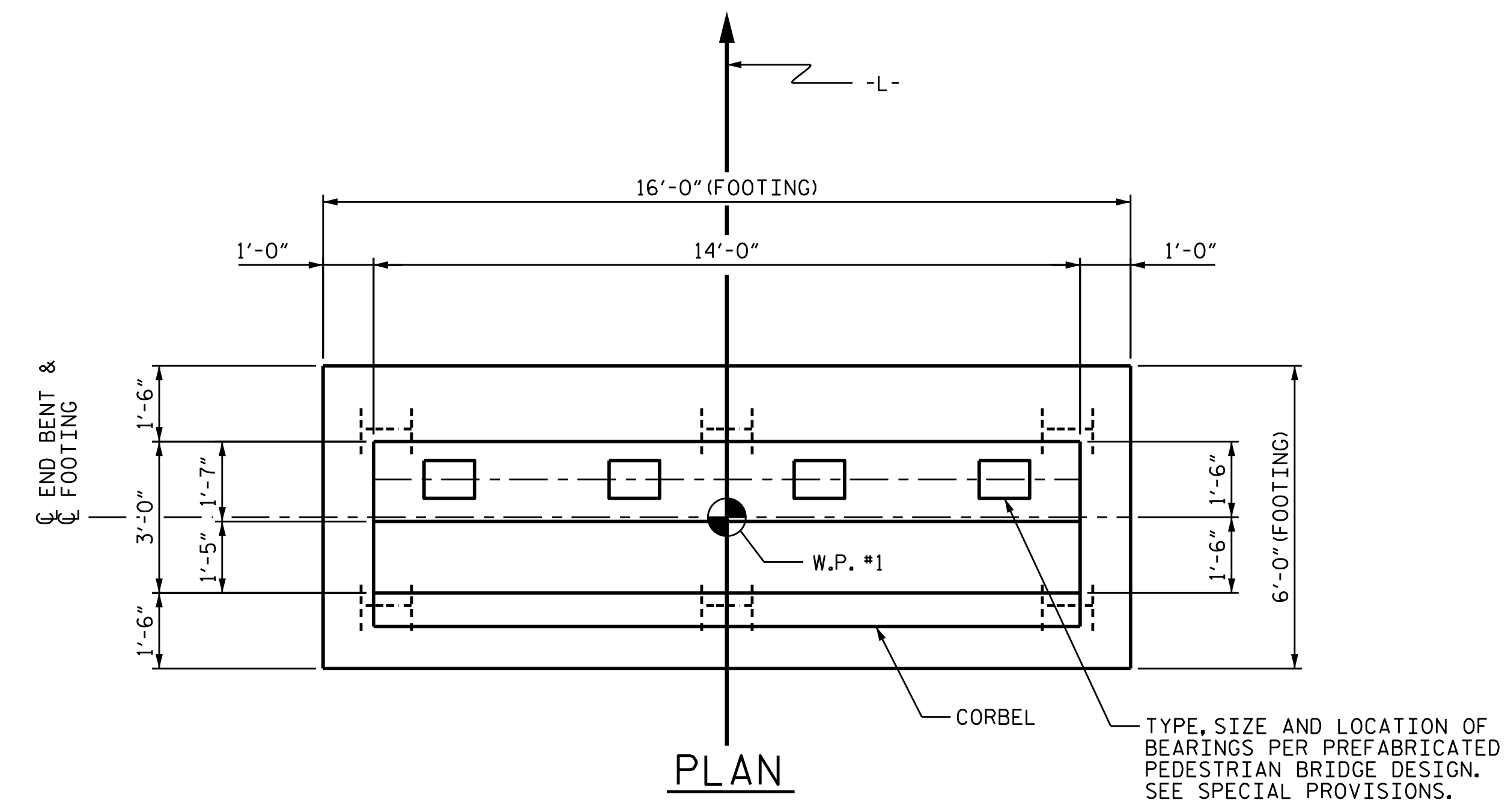
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NOTES

FOR PLAN OF FOOTING, SEE SHEET 2 OF 2.
 FOR SECTION B-B, SEE SHEET 2 OF 2.
 FOR PILE SPLICE DETAILS, SEE SHEET 2 OF 2.



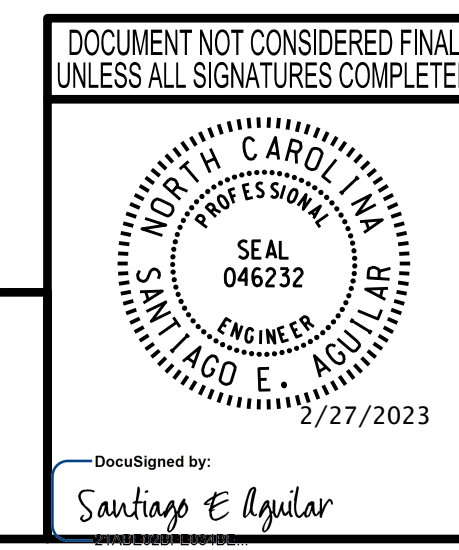
ELEVATION

SECTION A-A

PROJECT NO. EB-5858
TRANSYLVANIA COUNTY
 STATION: 11+64.04 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
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					TOTAL SHEETS 13

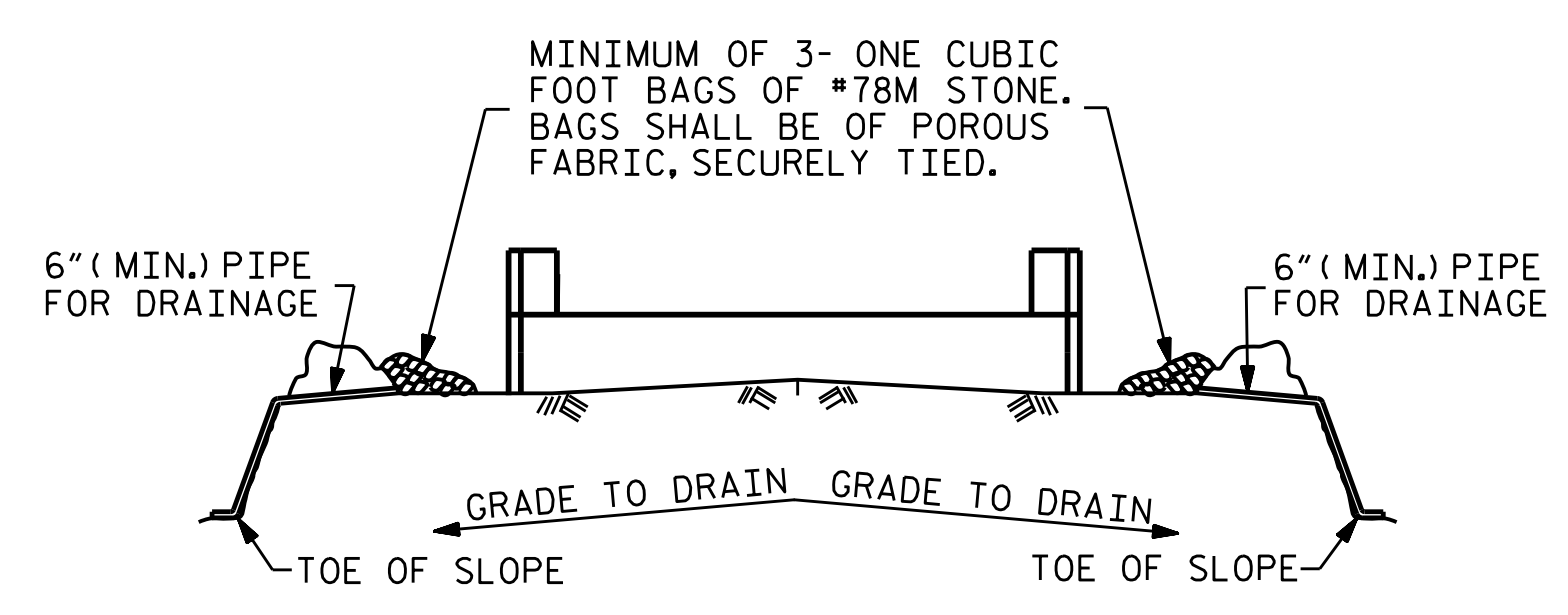


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 LICENSE NO. F-0165

2/7/2023 \\USRAG100CIFS01\Jobs\NCS2005263,014 EB5858 Brevard Pedestrian Bridge\Engineering\References\Structures\Dr\of\ing\DCM\401_017_EB5858_SMU_EB101.dgn

DESIGNED BY:	J. WHEATLEY	DATE:	FEB 2023
DRAWN BY:	J. WHEATLEY	DATE:	FEB 2023
CHECKED BY:	S. AGUILAR	DATE:	FEB 2023
DESIGN ENGINEER OF RECORD:	S. AGUILAR	DATE:	FEB 2023

2/7/2023 \\USRAG100CIFS01\Jobs\NCS2005263,014_EB5858_Brevard Pedestrian Bridge\Engineer\References\Structures\Dr-of-ting\DCM\401_019_EB5858_SMU_EB102.dgn

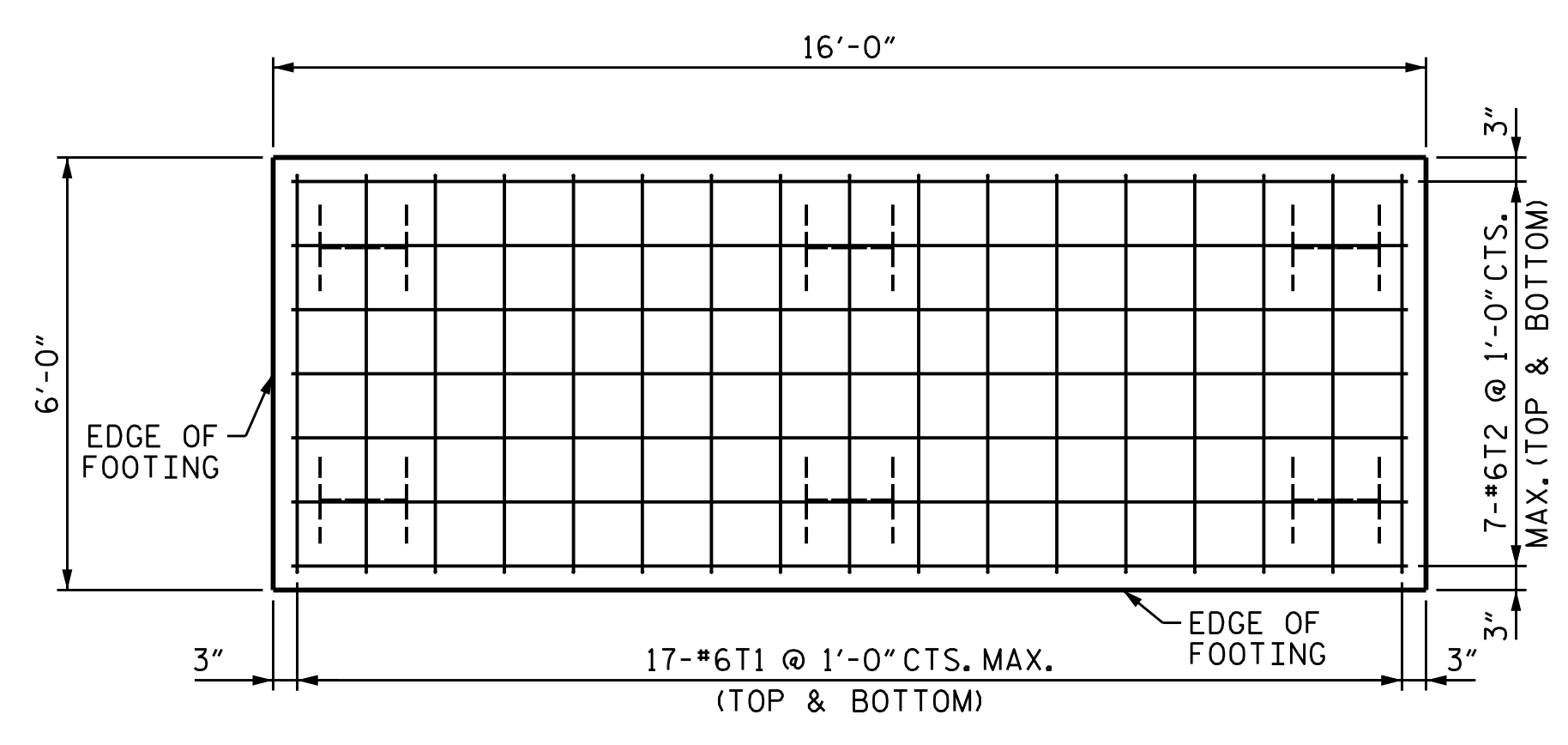


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

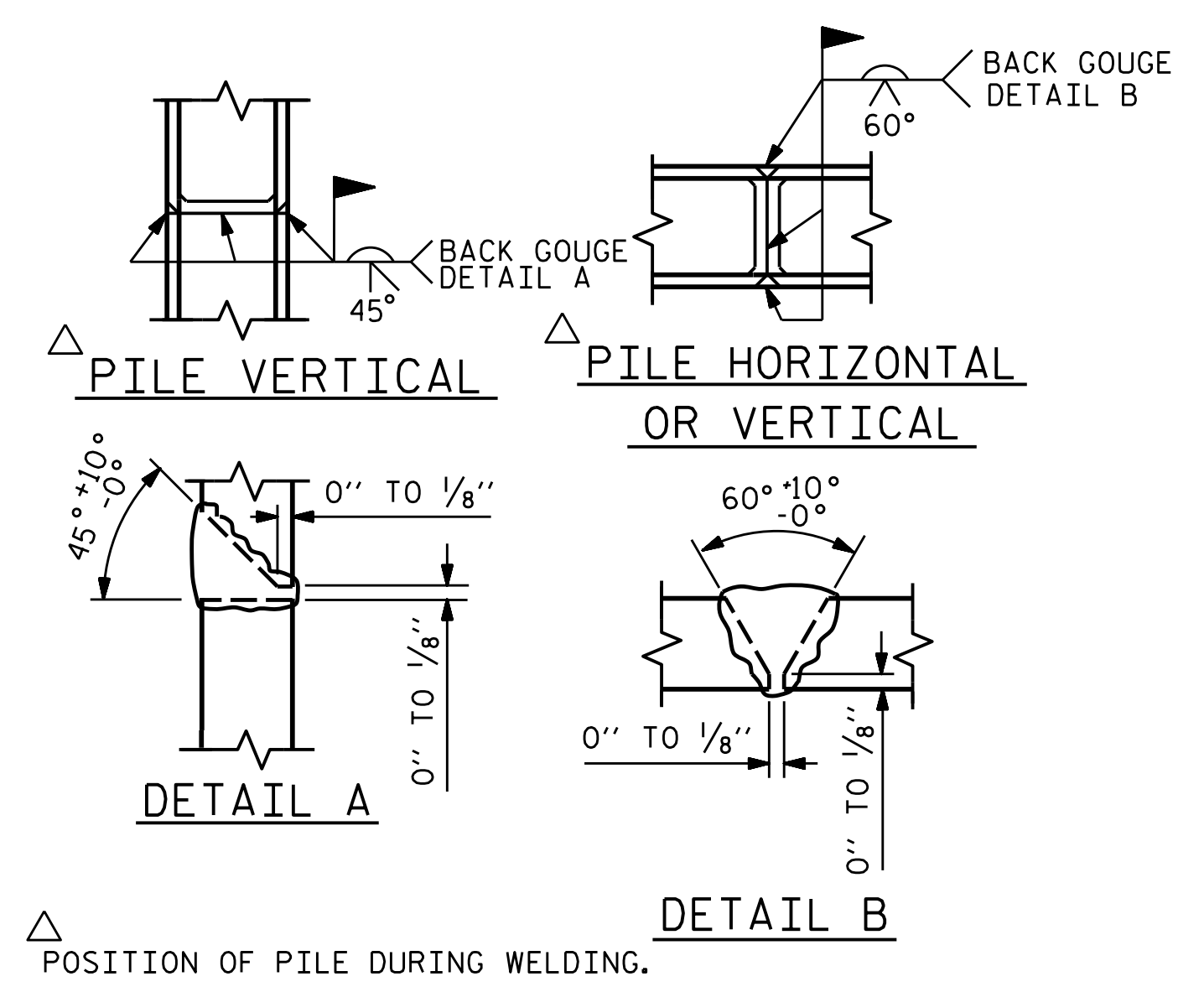
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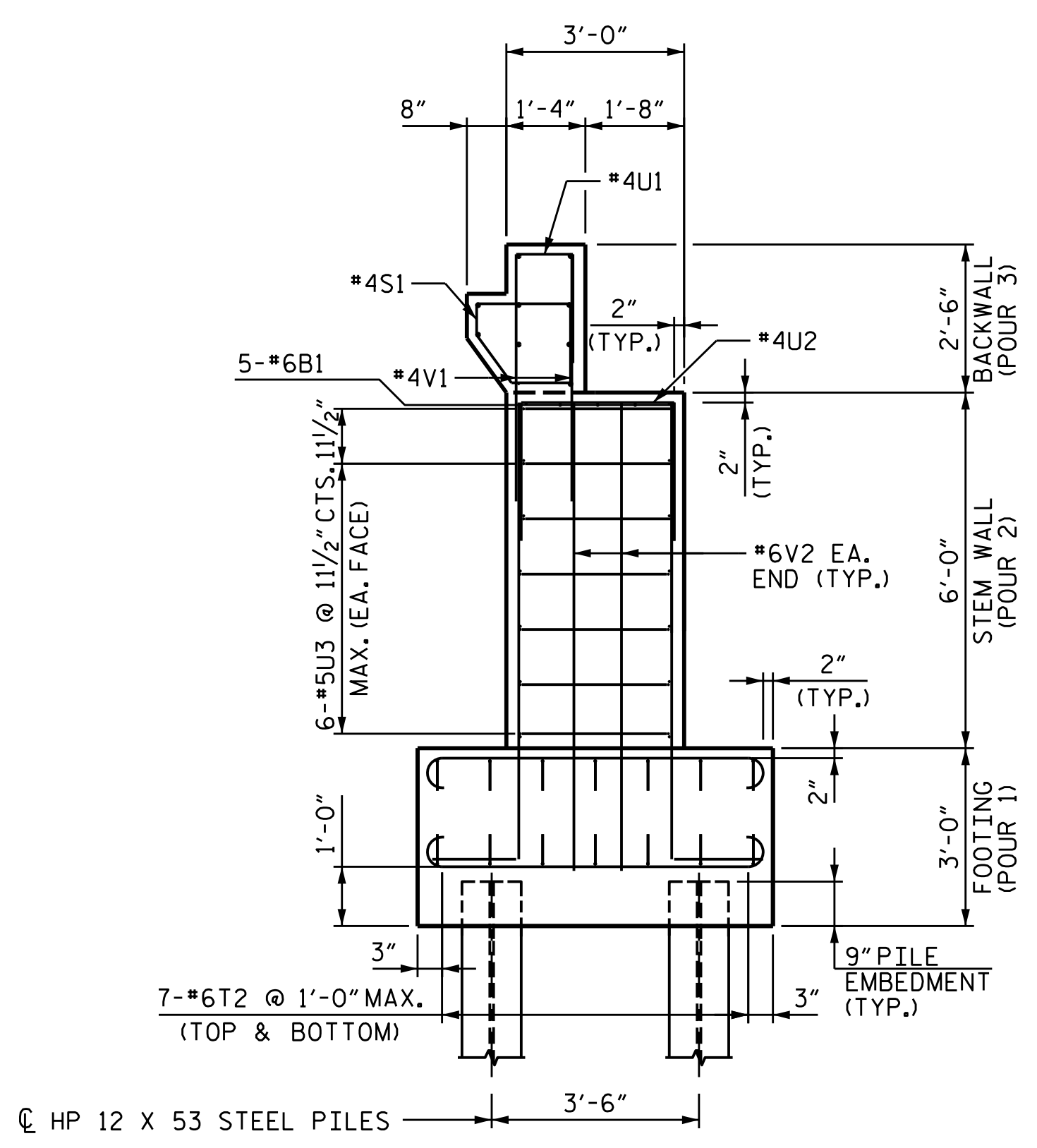
TEMPORARY DRAINAGE AT END BENT



PLAN OF FOOTING



PILE SPLICE DETAILS



VIEW B-B

BAR TYPES		BILL OF MATERIAL				
		END BENT 1				
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	17	#6	STR	13'-8"	349	
K1	10	#4	STR	13'-8"	91	
M1	38	#9	2	9'-4"	1206	
S1	19	#4	4	6'-4"	80	
T1	32	#6	1	7'-0"	357	
T2	14	#6	1	17'-0"	357	
U1	19	#4	3	4'-8"	59	
U2	19	#4	3	6'-4"	80	
U3	14	#5	3	7'-2"	105	
V1	38	#4	STR	4'-2"	106	
V2	4	#6	STR	7'-11"	48	
REINFORCING STEEL (FOR END BENT 1)					2,838 LBS.	
CLASS A CONCRETE BREAKDOWN (END BENT 1)						
POUR #1 FOOTING					10.7 C.Y.	
POUR #2 STEM WALL					9.3 C.Y.	
POUR #3 BACKWALL & CORBEL					2.3 C.Y.	
TOTAL CLASS A CONCRETE (END BENT 1)					22.3 C.Y.	
HP 12 X 53 STEEL PILES						
NO: 6					LIN. FT.= 150	

ALL BAR DIMENSIONS ARE OUT TO OUT.

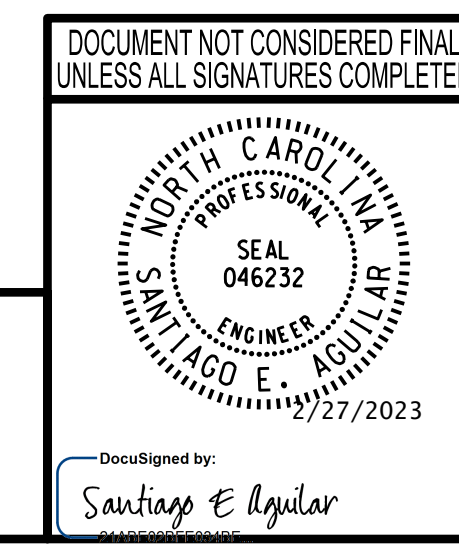
PROJECT NO. EB-5858

TRANSYLVANIA COUNTY

STATION: 11+64.04 -L-

SHEET 2 OF 2

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



wsp

WSP USA Inc.
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
TEL: 1.919.836.4040
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DESIGNED BY: J. WHEATLEY DATE: FEB 2023

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CHECKED BY: S. AGUILAR DATE: FEB 2023

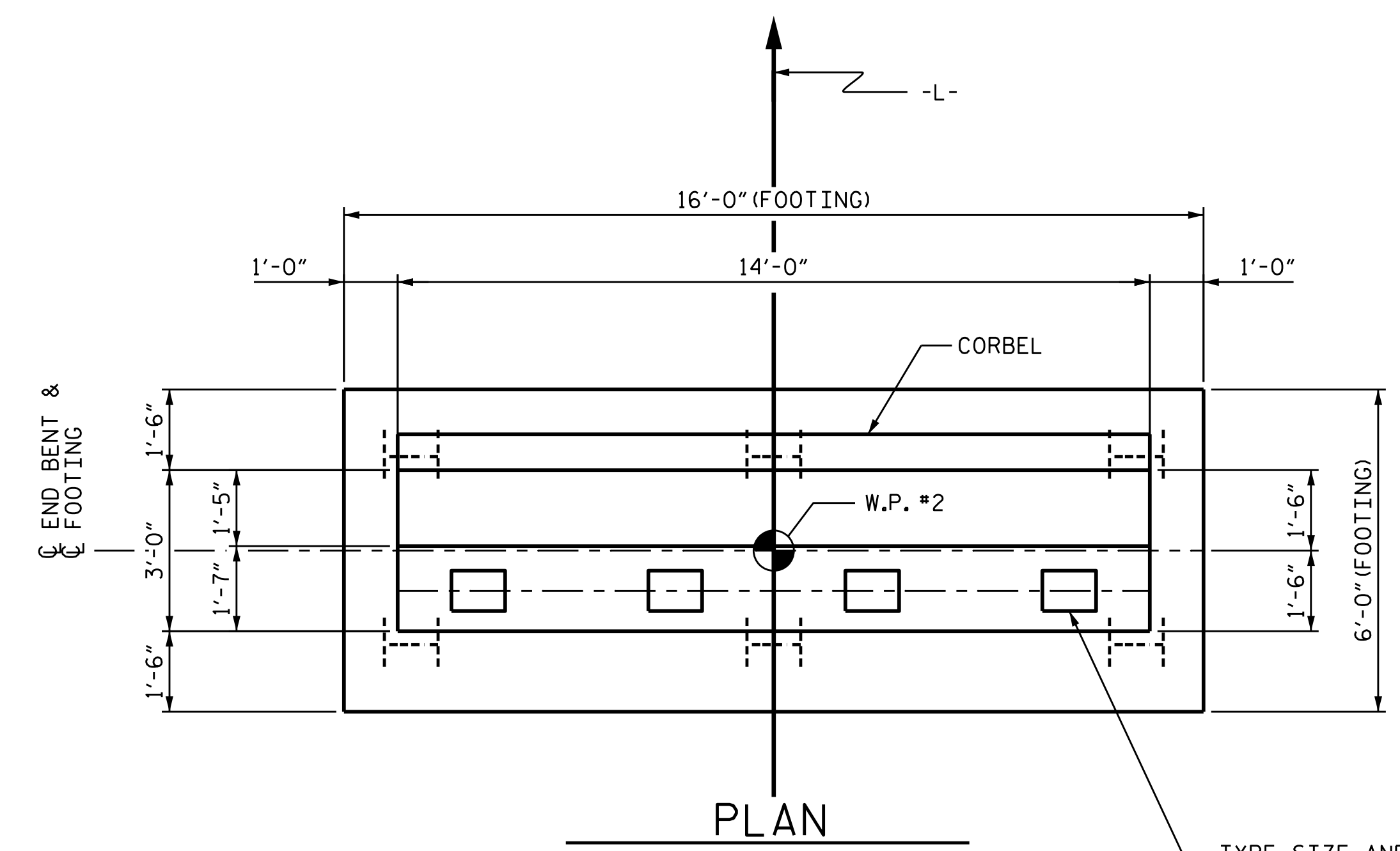
DESIGN ENGINEER OF RECORD: S. AGUILAR DATE: FEB 2023

SHEET NO. S-10

TOTAL SHEETS 13

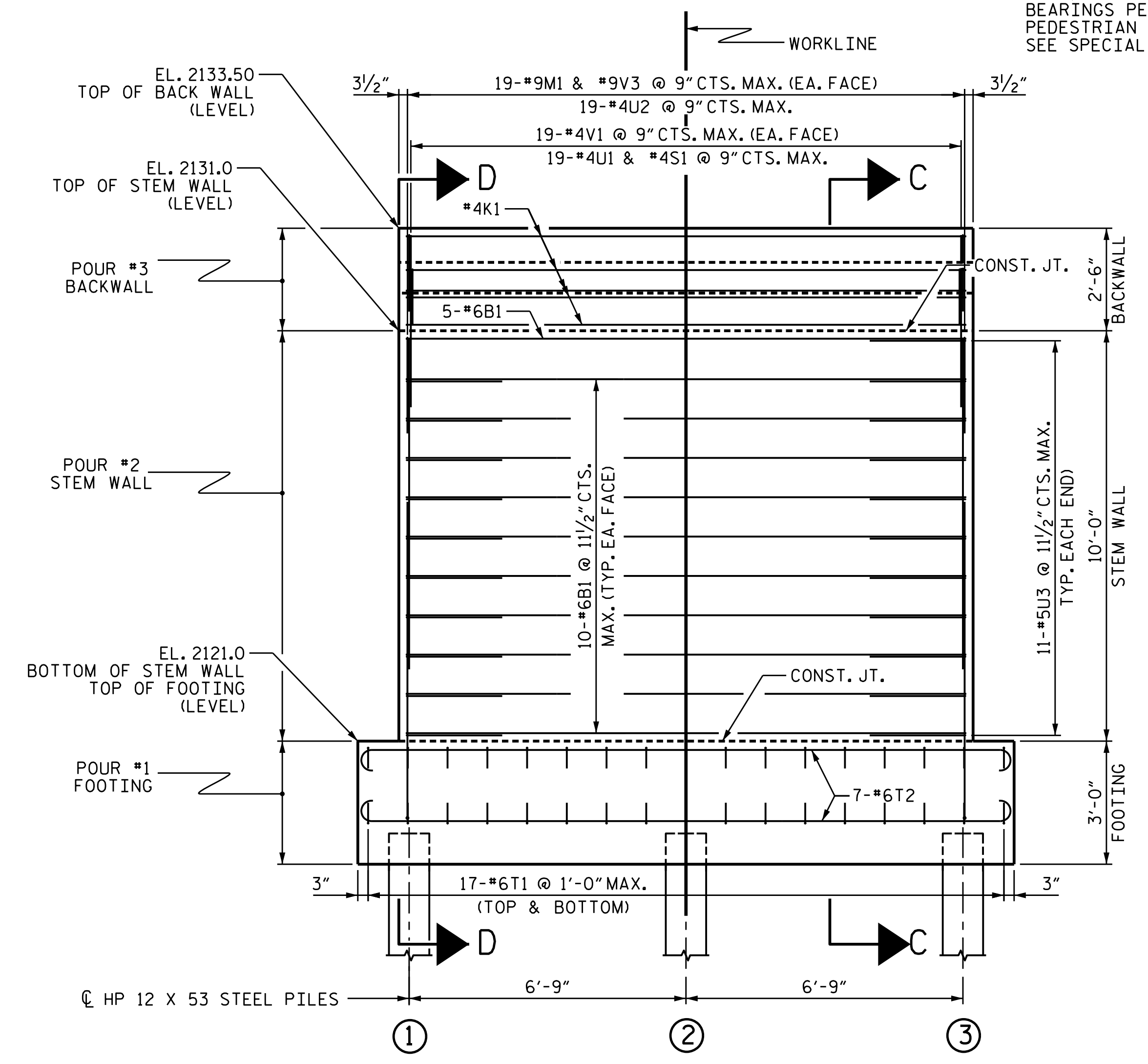
NOTES

FOR PLAN OF FOOTING, SEE SHEET 2 OF 2.
 FOR SECTION B-B, SEE SHEET 2 OF 2.
 FOR PILE SPLICE DETAILS, SEE SHEET 2 OF 2.

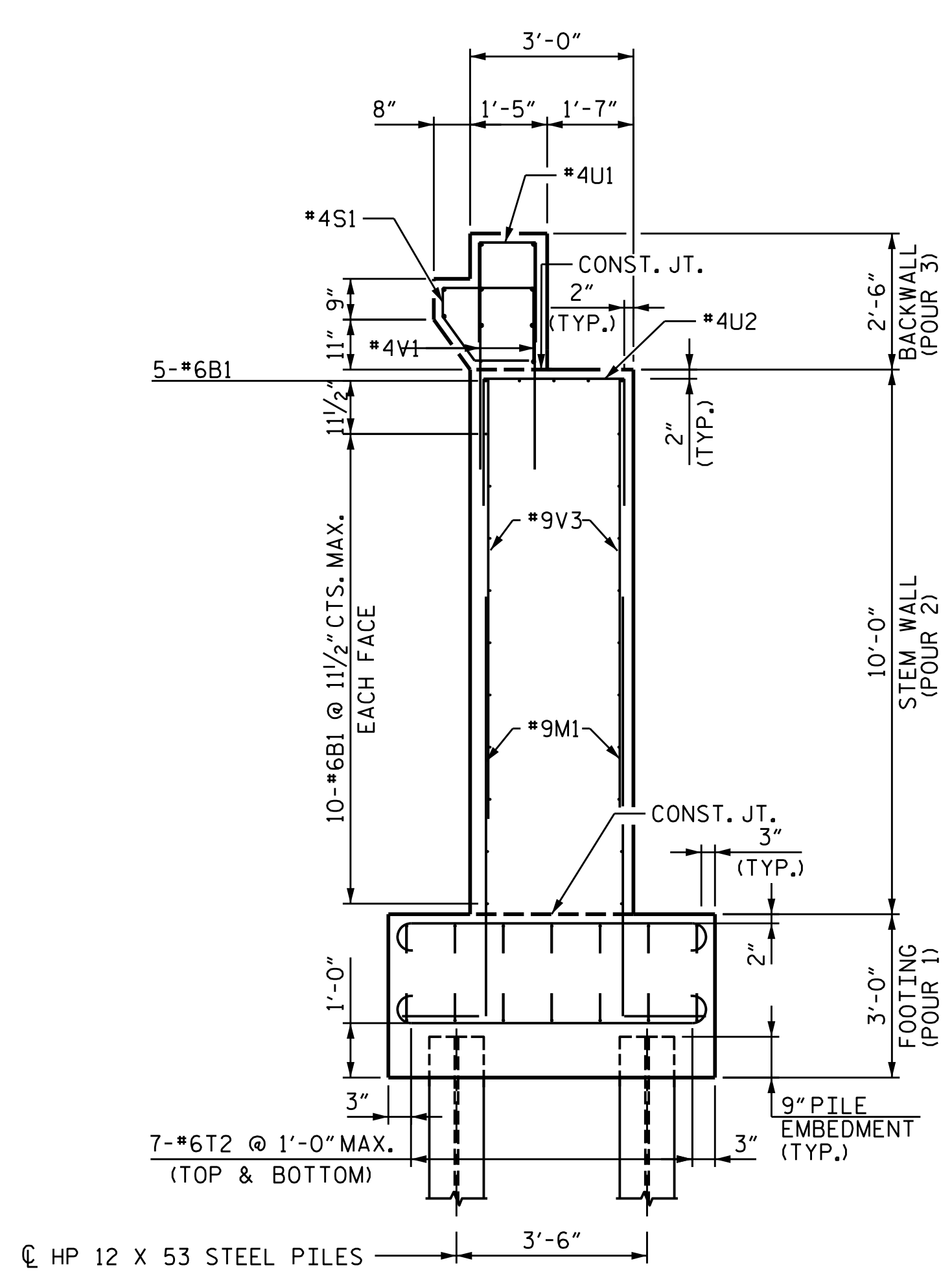


PLAN

TYPE, SIZE AND LOCATION OF BEARINGS PER PREFABRICATED PEDESTRIAN BRIDGE DESIGN. SEE SPECIAL PROVISIONS.



ELEVATION

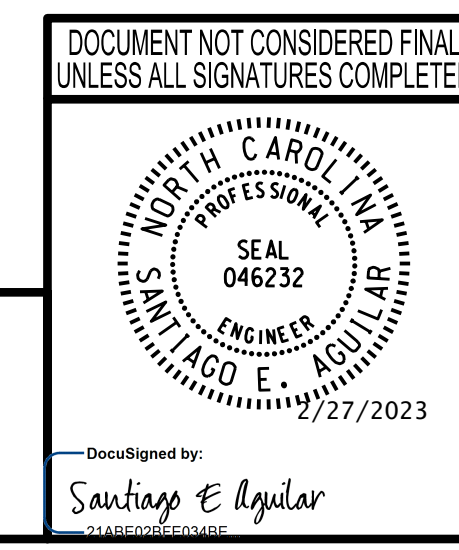


SECTION C-C

PROJECT NO. EB-5858
TRANSYLVANIA COUNTY
 STATION: 11+64.04 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 2					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-11
					TOTAL SHEETS 13

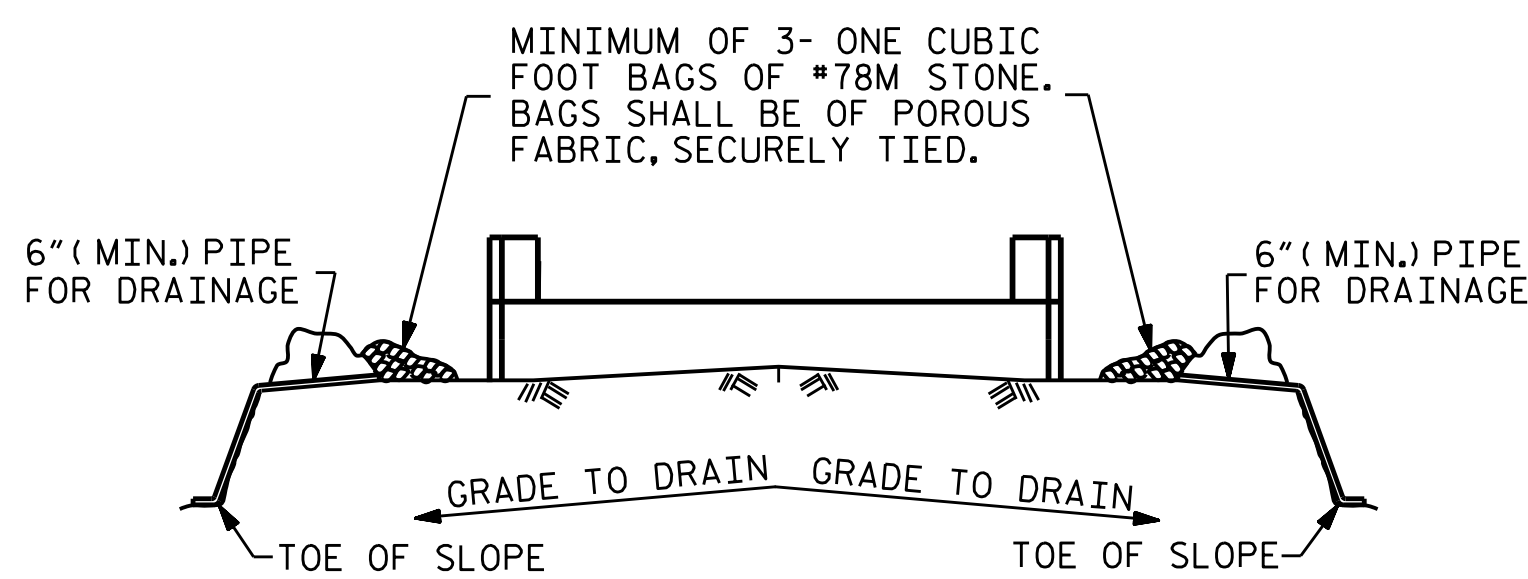


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DESIGN ENGINEER OF RECORD:	S. AGUILAR	DATE:	FEB 2023

2/7/2023 \\NSRAG100CIFS01\Jobs\NSC2005263\014_EB5858_Brevard Pedestrian Bridge\Engineer\References\Structures\Dr-offing\DCM\401_023_EB5858_SMU_EB202.dgn

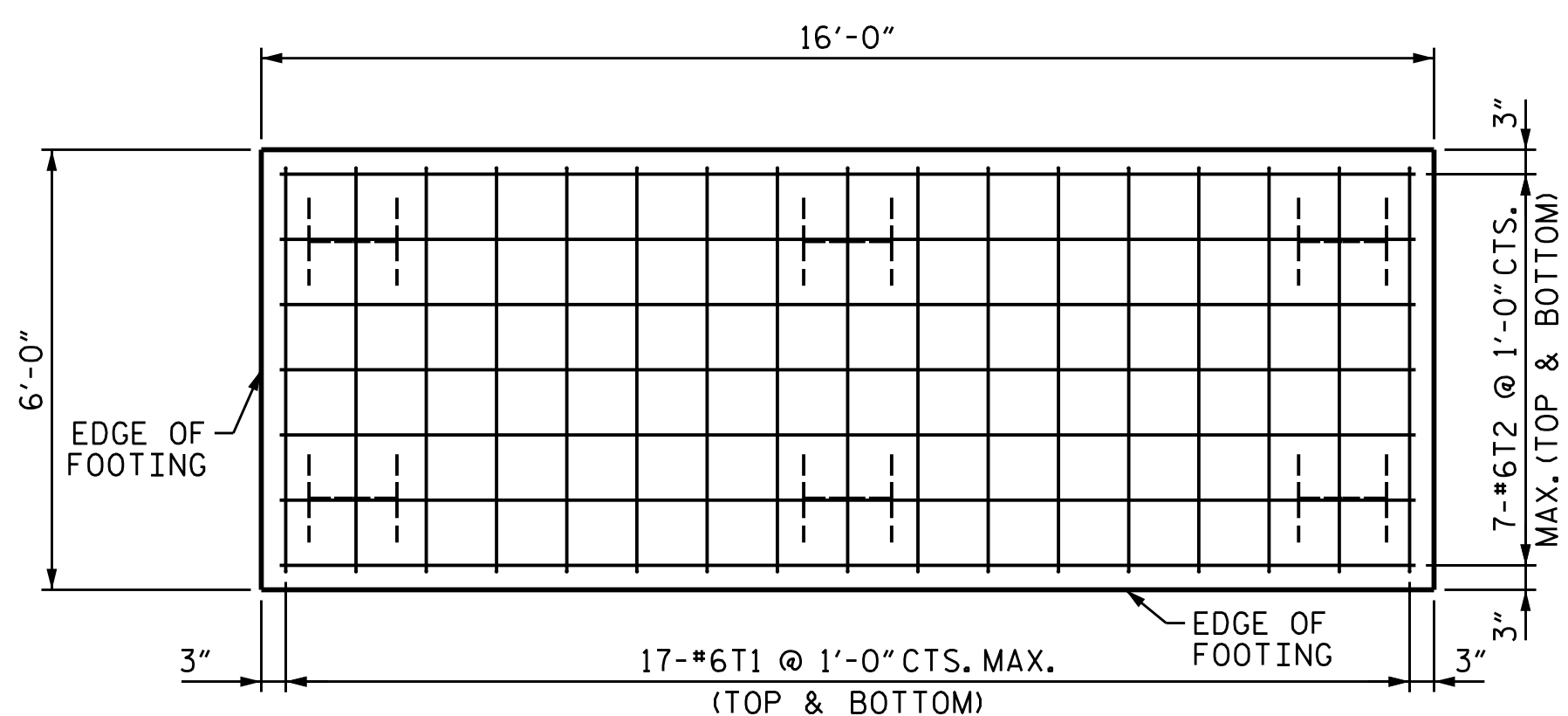


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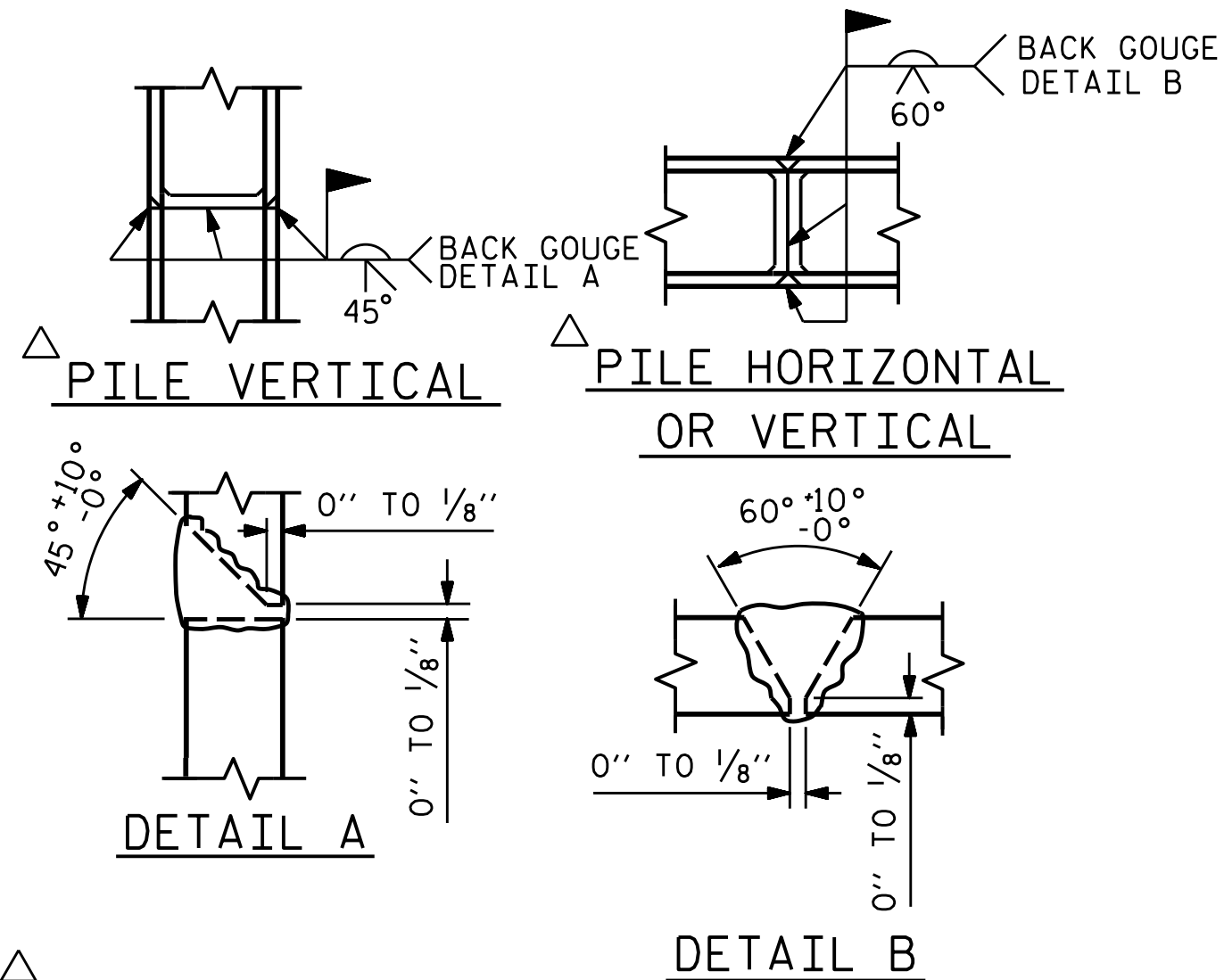
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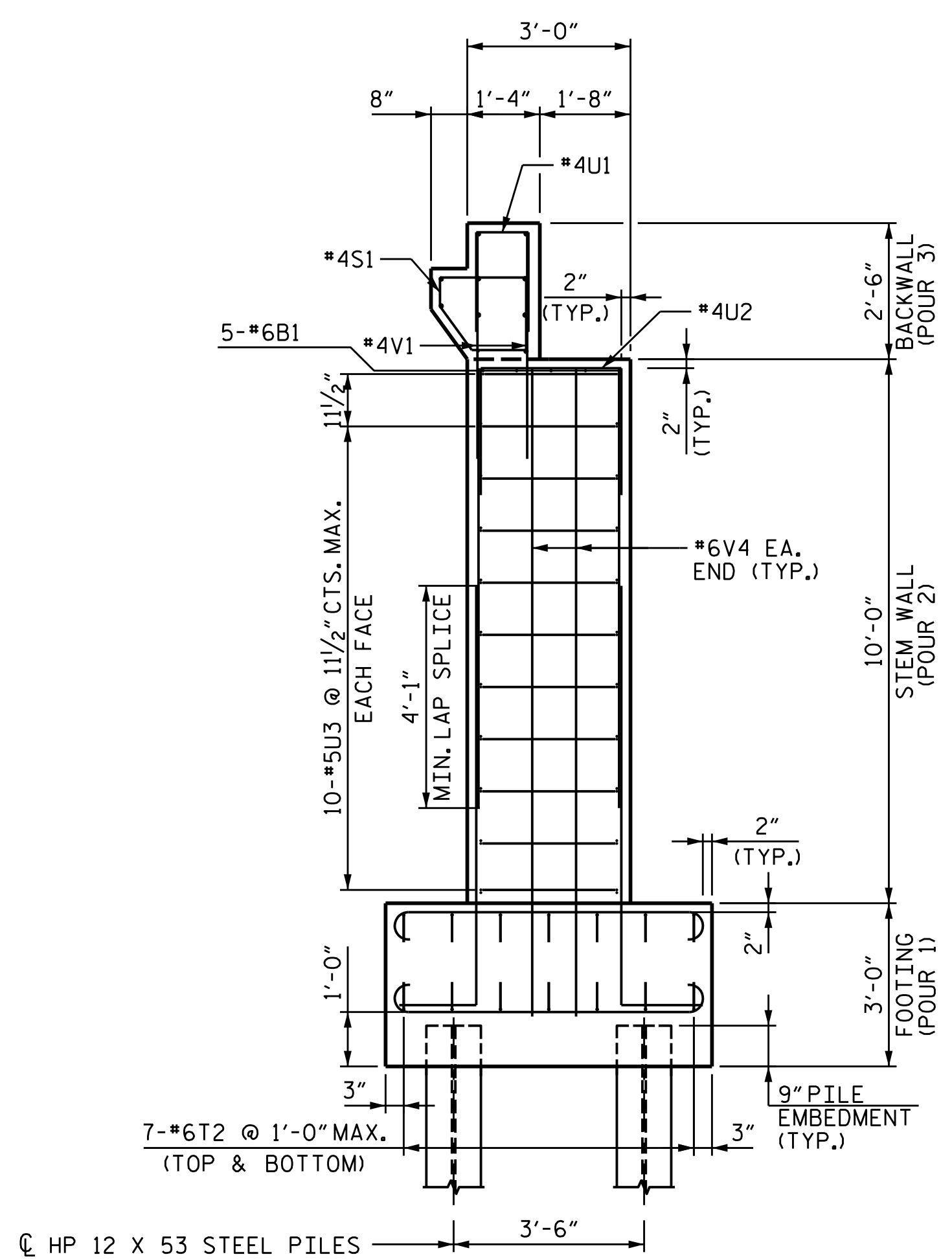
TEMPORARY DRAINAGE AT END BENT



PLAN OF FOOTING



PILE SPLICE DETAILS



VIEW D-D

BAR TYPES				BILL OF MATERIAL			
				END BENT 2			
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT		
B1	25	#6	STR	13'-8"	513		
K1	10	#4	STR	13'-8"	91		
M1	38	#9	2	9'-4"	1206		
S1	19	#4	4	6'-4"	80		
T1	34	#6	1	7'-0"	357		
T2	14	#6	1	17'-0"	357		
U1	19	#4	3	4'-8"	59		
U2	19	#4	3	6'-4"	80		
U3	22	#5	3	7'-2"	164		
V1	38	#4	STR	4'-2"	106		
V3	38	#9	STR	8'-1"	1044		
V4	4	#6	STR	11'-11"	72		
REINFORCING STEEL (FOR END BENT 2)				4,129 LBS.			
CLASS A CONCRETE BREAKDOWN (END BENT 2)							
POUR #1 FOOTING				10.7 C.Y.			
POUR #2 STEM WALL				15.6 C.Y.			
POUR #3 BACKWALL & CORBEL				2.3 C.Y.			
TOTAL CLASS A CONCRETE (END BENT 2)				28.6 C.Y.			
HP 12 X 53 STEEL PILES NO: 6				LIN. FT. = 120			

PROJECT NO. EB-5858
TRANSYLVANIA COUNTY
 STATION: 11+64.04 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT 2
 DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			13

DESIGNED BY: J. WHEATLEY DATE: FEB 2023
 DRAWN BY: J. WHEATLEY DATE: FEB 2023
 CHECKED BY: S. AGUILAR DATE: FEB 2023
 DESIGN ENGINEER OF RECORD: S. AGUILAR DATE: FEB 2023

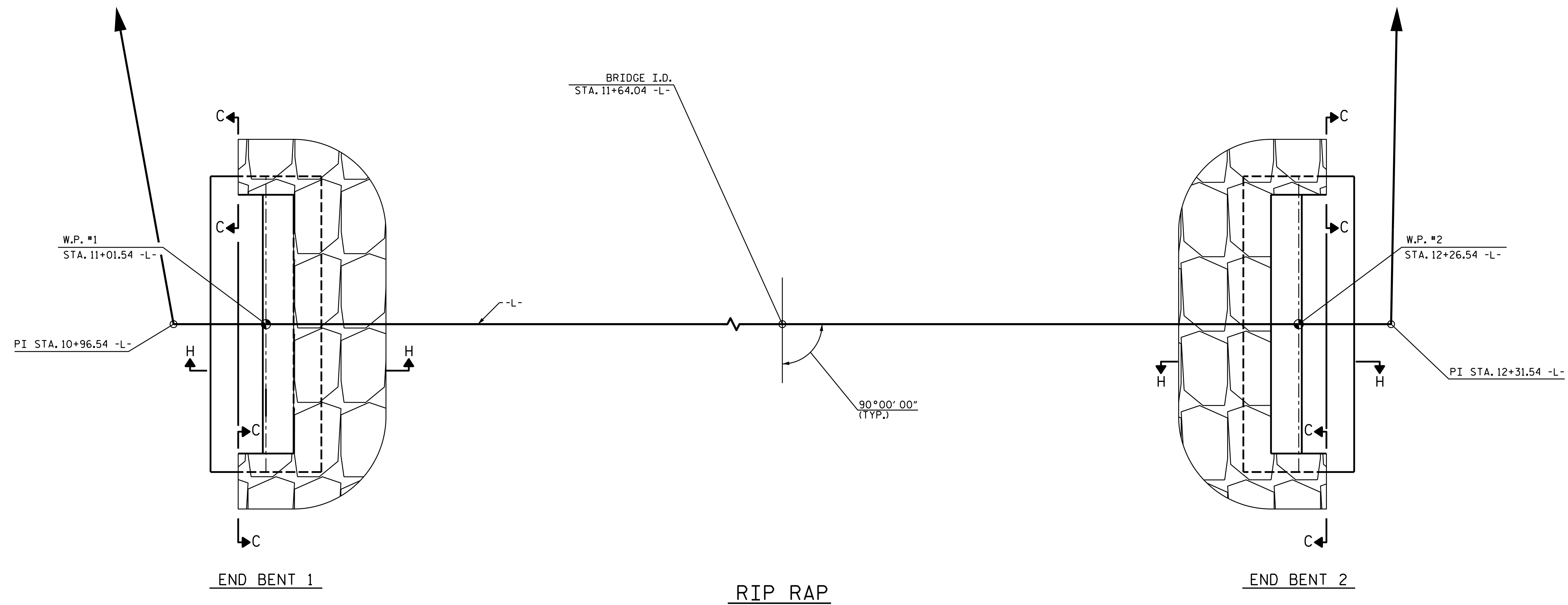
wsp

WSP USA Inc.
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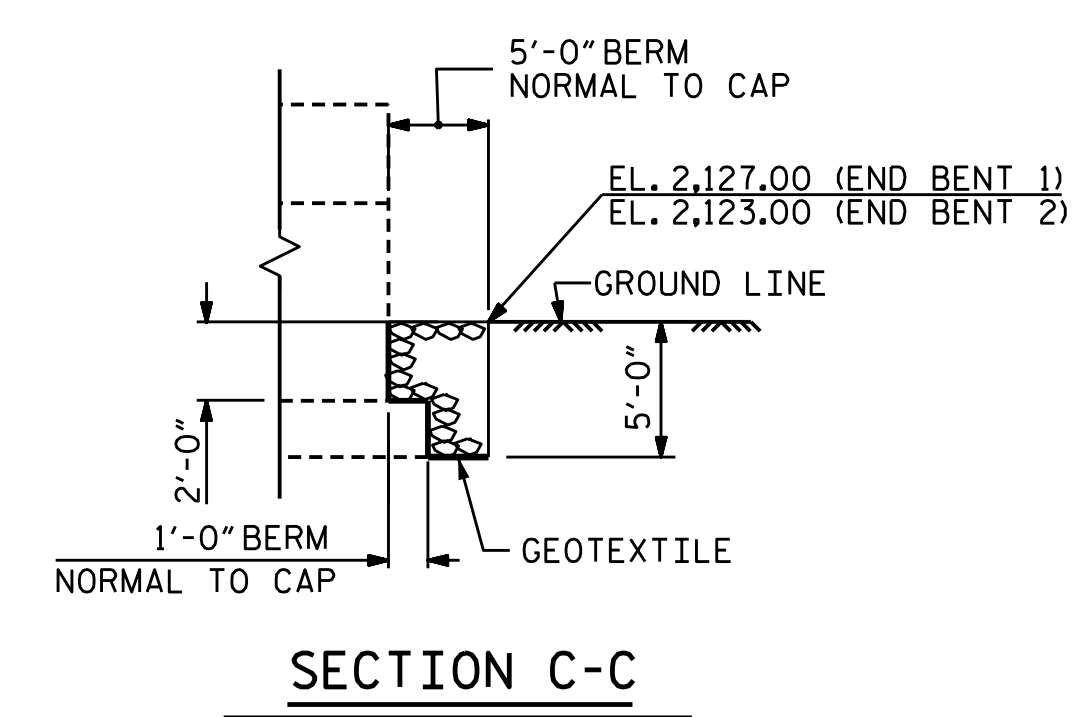
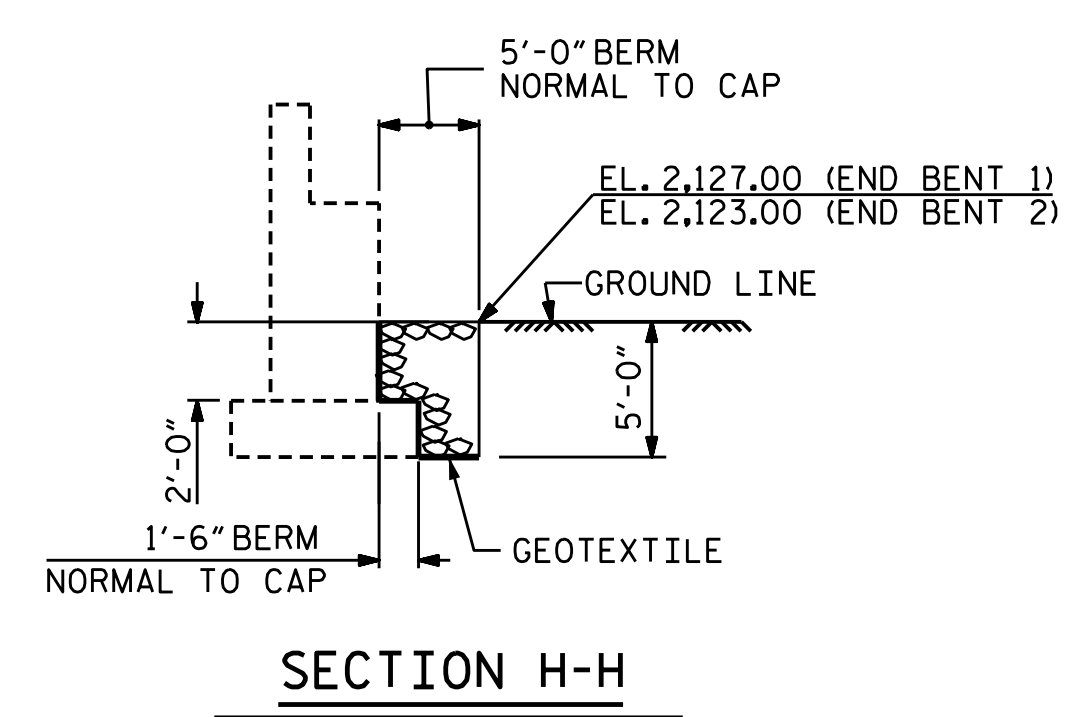
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SEAL
 046232
 ENGINEER
 SANTIAGO E. AGUILAR
 2/27/2023

Signed by: Santiago E. Aguilar



ESTIMATED QUANTITIES		
BRIDGE @ STA. 11+64.04 -L-	RIP RAP CLASS II	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	27	12
END BENT 2	27	12



PROJECT NO. EB-5858
TRANSYLVANIA COUNTY
 STATION: 11+64.04 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

RIP RAP DETAILS

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DocuSigned by:
 Santiago E. Aguilar
 2/27/2023

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			13

2/7/2023 \\USRAG100CIFS01\Jobs\NCS2005263,014_EB5858_Brevard_Pedestrian_Bridge\Engineer\References\Structures\Dr\of\ing\DCN\401_025_EB5858_SMU_LRR.dgn

DESIGNED BY: J. WHEATLEY DATE: FEB 2023
 DRAWN BY: J. WHEATLEY DATE: FEB 2023
 CHECKED BY: S. AGUILAR DATE: FEB 2023
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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 3/16" 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