

09/08/19

**TIP PROJECT: BR-0125**

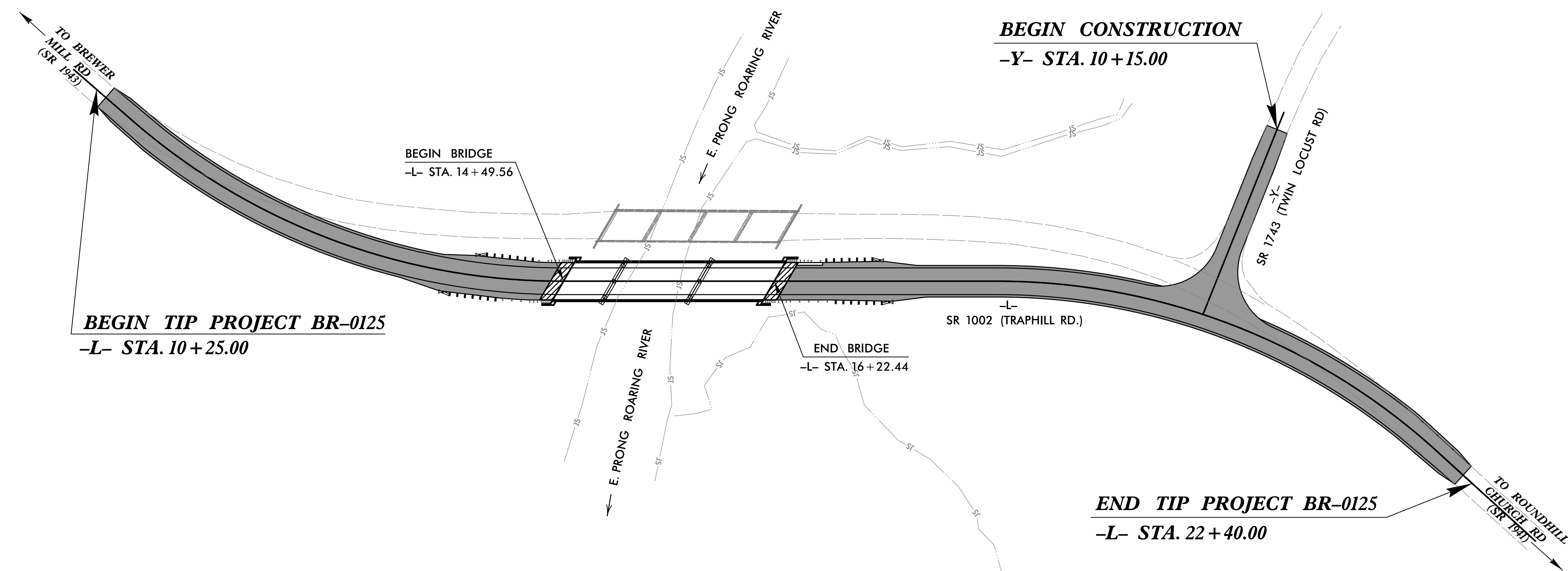
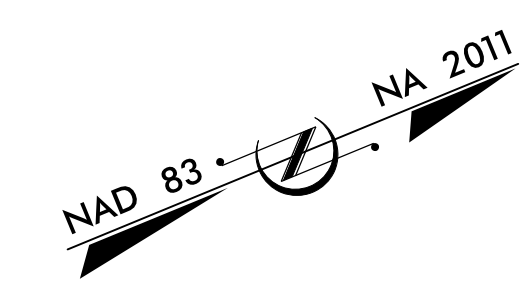
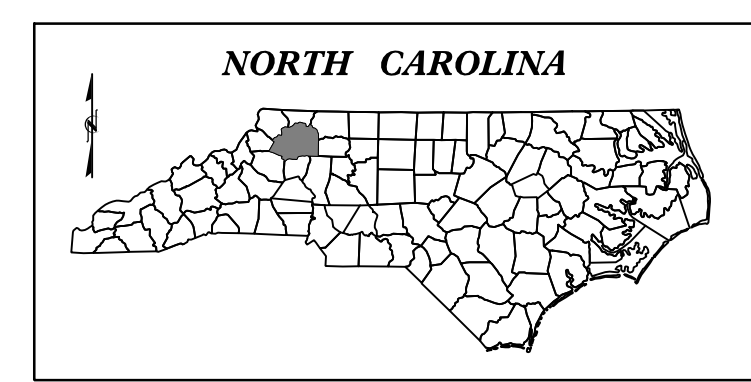
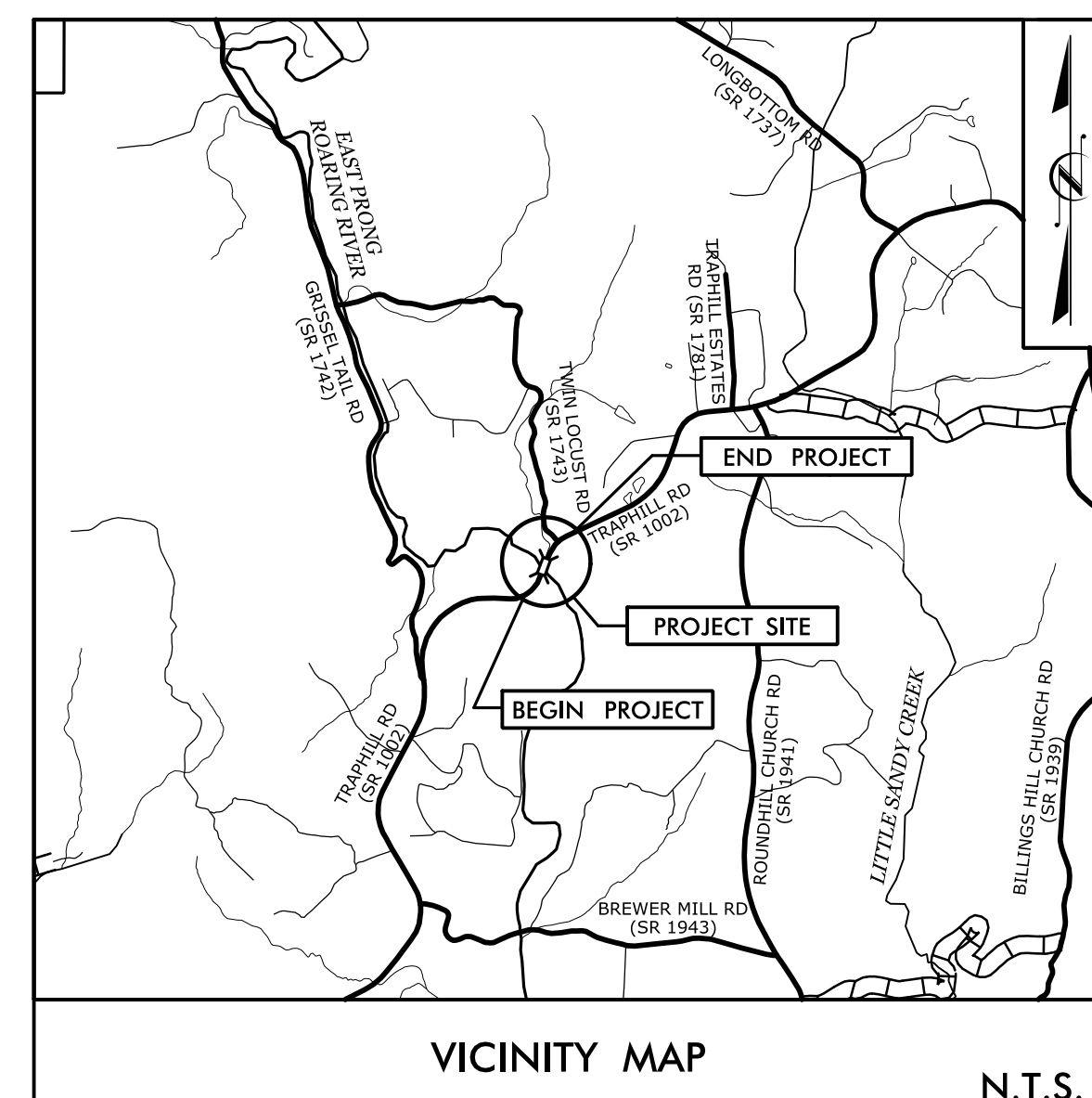
**CONTRACT: C204494**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# WILKES COUNTY

**LOCATION: BRIDGE #663 OVER EAST PRONG ROARING RIVER ON SR 1002 (TRAPHILL RD)**  
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, & STRUCTURE**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	<b>BR-0125</b>		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
48834.1.1		P.E.	
48834.1.1		R.O. UTILITIES	
48834.1.1	2020001	CONSTRUCTION	



## STRUCTURE

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**DESIGN DATA**

ADT 2016 =	1500
ADT 2040 =	2000
DHV =	N/A
D =	N/A
T =	N/A
V =	55 MPH

**FUNC. CLASSIFICATION:**  
MAJOR COLLECTOR  
SUB-REGIONAL TIER

**PROJECT LENGTH**

LENGTH OF ROADWAY TIP PROJECT BR-0125 =	0.197 MILES
LENGTH OF STRUCTURE TIP PROJECT BR-0125 =	0.033 MILES
TOTAL LENGTH OF TIP PROJECT BR-0125 =	0.230 MILES

NCDOT CONTACT: **DAVID STUTTS, PE**  
Structures Management Unit

PLANS PREPARED FOR THE NCDOT BY:

**STV** 100 Years  
STV Engineers, Inc.  
900 West Trade St., Suite 715  
Charlotte, NC 28202  
NC License Number F-0991

2018 STANDARD SPECIFICATIONS	
<b>RIGHT OF WAY DATE:</b> JANUARY 22, 2020	<b>J. WESLEY JONES, PE</b> PROJECT ENGINEER
<b>LETTING DATE:</b> DECEMBER 15, 2020	<b>LOGAN A. HEDRICK, EI</b> PROJECT DESIGNER

**STRUCTURAL ENGINEER**

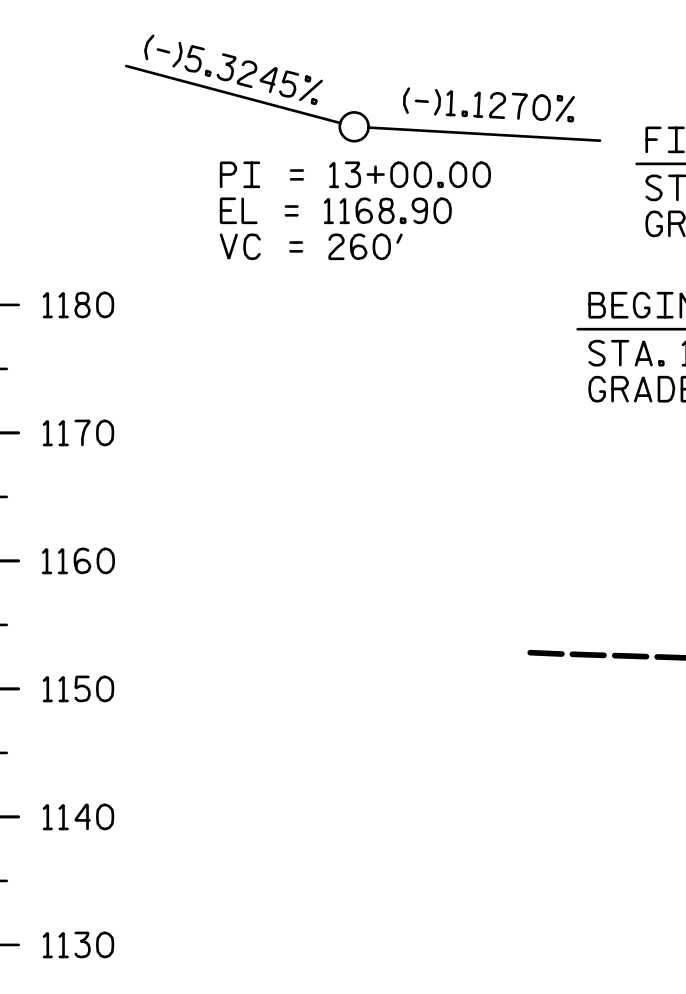
**J. WESLEY JONES**  
ENGINEER  
SEAL  
038640  
10/23/2020

SIGNATURE: \_\_\_\_\_ P.E.

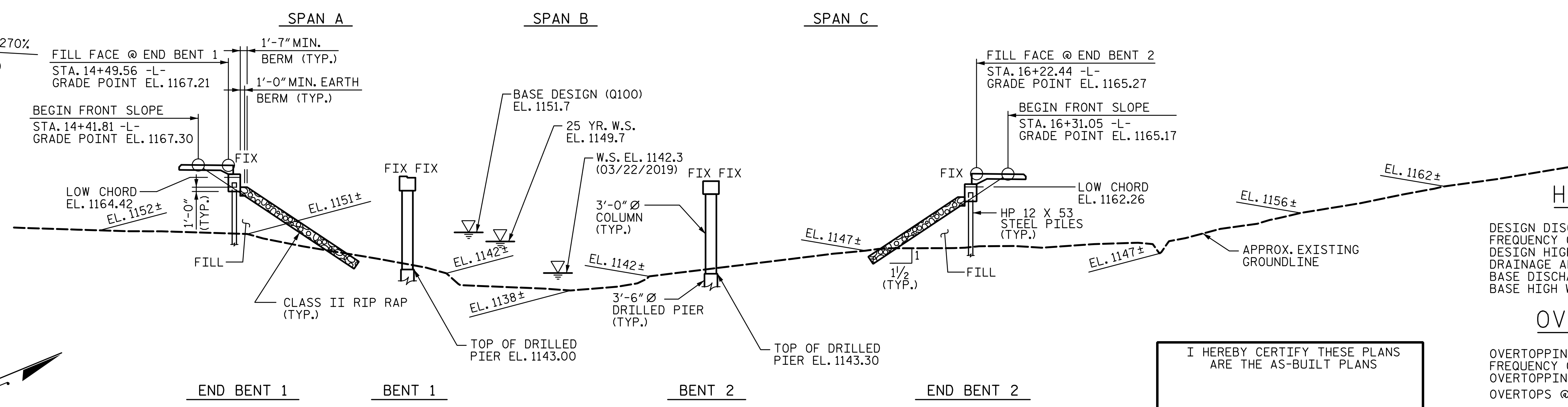
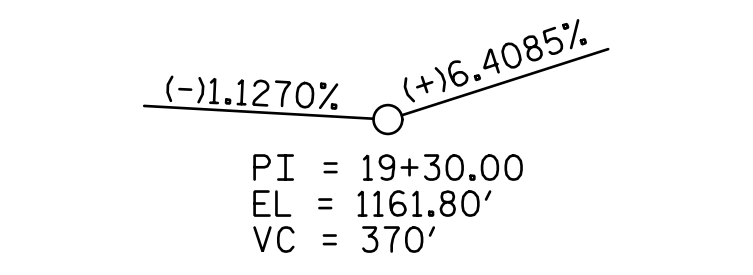




### VERTICAL CURVE DATA -L-



### VERTICAL CURVE DATA -L-



### HYDRAULIC DATA

DESIGN DISCHARGE:	4400 CFS
FREQUENCY OF DESIGN FLOOD:	25 YRS.
DESIGN HIGH WATER ELEVATION:	1149.7
DRAINAGE AREA:	27.7 SQ. MI.
BASE DISCHARGE (Q100):	6100 CFS
BASE HIGH WATER ELEVATION:	1151.7

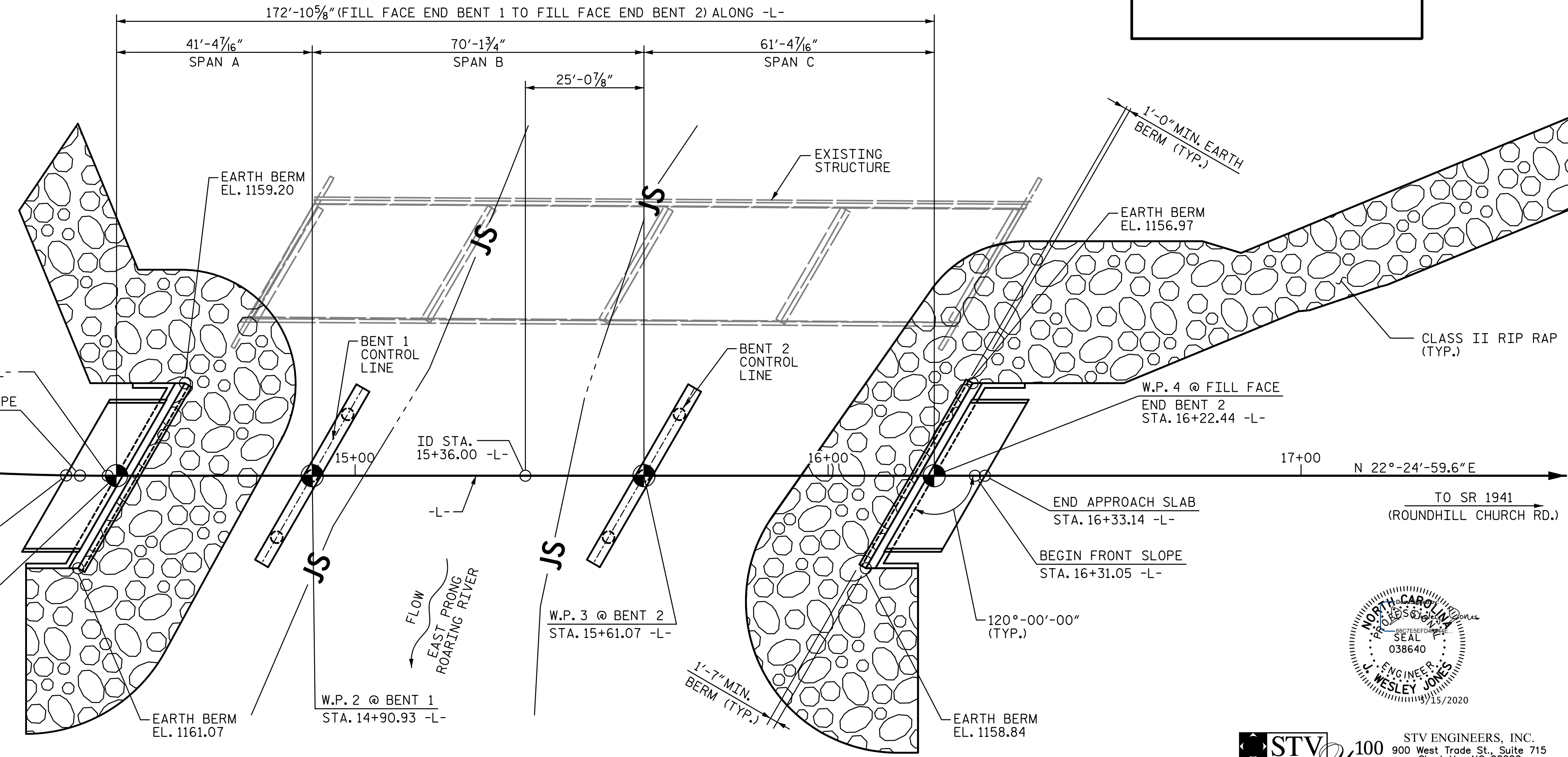
### OVERTOPPING DATA

OVERTOPPING DISCHARGE:	20000 CFS
FREQUENCY OF OVERTOPPING:	500+ YRS.
OVERTOPPING FLOOD ELEVATION:	1163.8
OVERTOPS @ STA. 17+84.00 -L-	

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

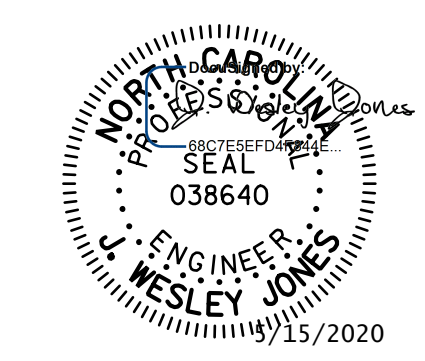
### HORIZONTAL CURVE DATA -L-

PI STA. = 12+64.84  
Δ = 40°-59'-58.4" (LT.)  
D = 10°-42'-34.2"  
L = 382.83'  
T = 200.03'  
R = 535.00'



### PLAN

(STEEL PILES NOT SHOWN FOR CLARITY)



**STV** 100 YEARS  
STV ENGINEERS, INC.  
900 West Trade St., Suite 715  
Charlotte, NC 28202  
NC License Number F-0991

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PROJECT NO. **BR-0125**  
**WILKES** COUNTY  
STATION: **15+36.00 -L-**  
SHEET 1 OF 2    REPLACES BRIDGE NO. 663

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**GENERAL DRAWING**  
FOR BRIDGE ON SR 1002 (TRAPHILL RD.) OVER EAST PRONG ROARING RIVER BETWEEN SR 1943 AND SR 1941

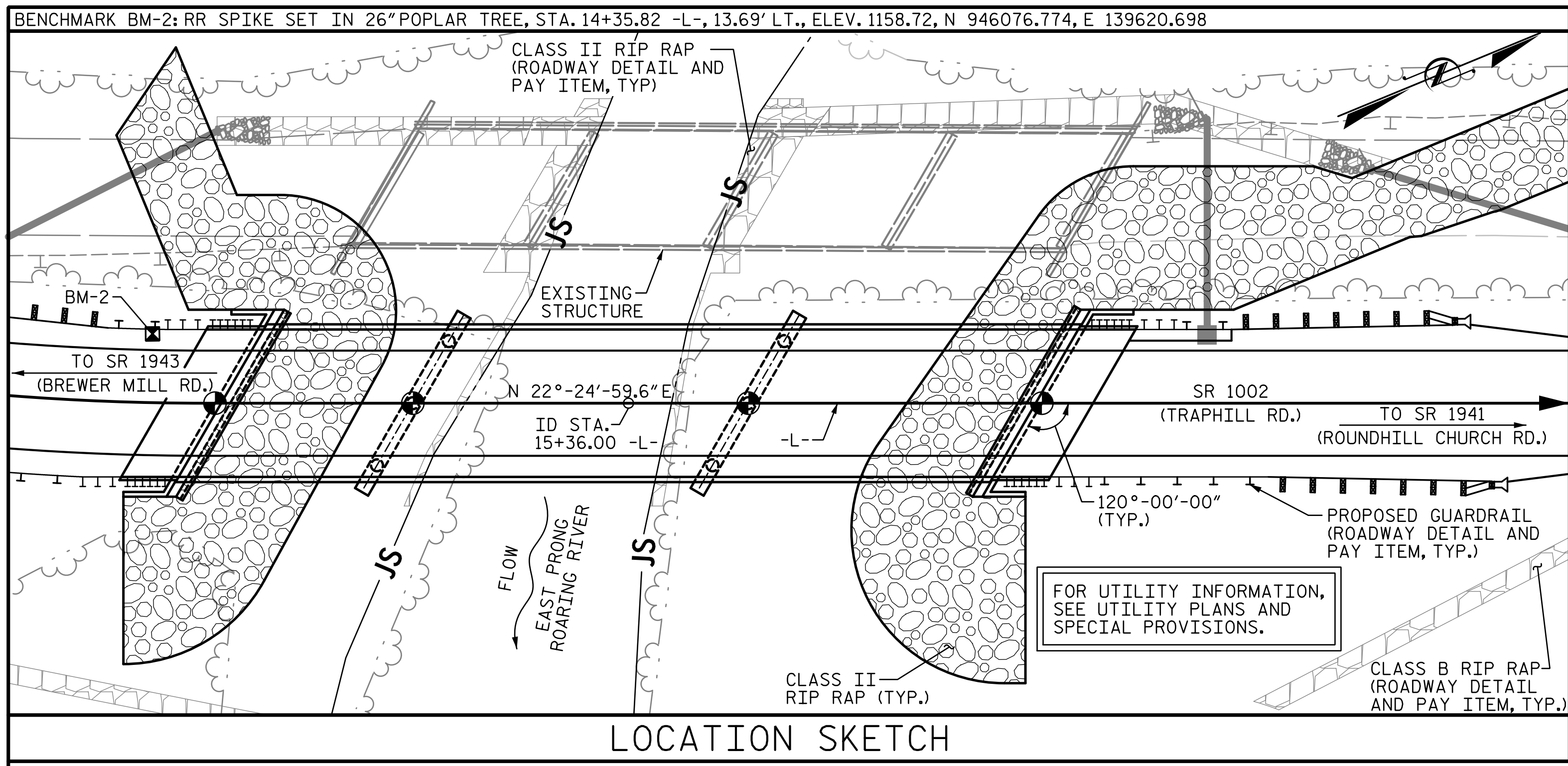
REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

S-1  
TOTAL SHEETS 23

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DRAWN BY : LAH    DATE : 09-19  
CHECKED BY : JWJ    DATE : 02-20  
DESIGN ENGINEER OF RECORD : JWJ    DATE : 04-20





LOCATION SKETCH

**GENERAL 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 OTHER DESIGN DATA AND GENERAL NOTES, SEE "STANDARD NOTES" SHEET.  
 FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.  
 THE EXISTING STRUCTURE CONSISTING OF (2) 37'-10" & (2) 37'-6" REINFORCED CONCRETE DECK ON STEEL I-BEAMS SPANS WITH A CLEAR ROADWAY WIDTH OF 24'-0" ON CONCRETE CAPS, TIMBER POSTS, AND CONCRETE SILLS AND LOCATED UPSTREAM FROM THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT. FOR REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.  
 REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING 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.  
 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.  
 INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR REMOVAL OF EXISTING STRUCTURE AT STATION 15+36.00 -L-.  
 THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE SAMPLE BARS SHOULD COME FROM STEEL ACTUALLY USED IN THE PROJECT AND THE SAMPLE BARS SHOULD BE REPLACED BY SPLICED BARS AS SPECIFIED IN THE SAMPLE BAR REPLACEMENT CHART. PAYMENT FOR THE SAMPLE BARS AND REPLACEMENT REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

AT THE CONTRACTOR'S OPTION, PRESTRESSED CONCRETE END BENT AND BENT CAPS MAY BE SUBSTITUTED IN PLACE OF THE CAST-IN-PLACE CAPS. THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER TO RECEIVE REVISED PLANS AND DETAILS FROM THE STRUCTURES MANAGEMENT UNIT. THE REDESIGN AND ANY ADDITIONAL MATERIALS NEEDED WILL BE AT NO ADDITIONAL COST TO THE CONTRACTOR.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18 - EVALUATING SCOUR AT BRIDGES".  
 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.  
 ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.  
 FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.  
 FOR FIBER OPTIC CONDUIT SYSTEM, SEE SPECIAL PROVISIONS.

**FOUNDATION NOTES**

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.  
 PILES AT END BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 60 TONS PER PILE.  
 DRIVE PILES AT END BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 100 TONS PER PILE.  
 FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.  
 DRILLED PIERS AT BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 360 TONS/PIER.  
 CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 20 TSF.  
 INSTALL DRILLED PIERS AT BENT NO.1 TO A TIP ELEVATION NO HIGHER THAN 1103.0 FT. WITH THE REQUIRED TIP RESISTANCE AND HAVE A PENETRATION OF AT LEAST 15 FT. INTO WEATHERED ROCK OR ROCK AS DEFINED BY ARTICLE 411 OF THE STANDARD SPECIFICATIONS.  
 PERMANENT STEEL CASINGS MAY BE REQUIRED FOR DRILLED PIERS AT BENT NO.1. DO NOT EXTEND PERMANENT CASINGS BELOW ELEVATION 1135.0 FT. WITHOUT PRIOR APPROVAL FROM THE ENGINEER.  
 THE SCOUR CRITICAL ELEVATION FOR BENT NO.1 IS ELEVATION 1122.0. THE SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.  
 DRILLED PIERS AT BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 425 TONS/PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 105 TSF.  
 INSTALL DRILLED PIERS AT BENT NO.2 TO A TIP ELEVATION NO HIGHER THAN 1109.8 FT. WITH THE REQUIRED TIP RESISTANCE AND HAVE A PENETRATION OF AT LEAST 7 FT. INTO ROCK AS DEFINED BY ARTICLE 411 OF THE STANDARD SPECIFICATIONS.  
 PERMANENT STEEL CASINGS MAY BE REQUIRED FOR DRILLED PIERS AT BENT NO.2. DO NOT EXTEND PERMANENT CASINGS BELOW ELEVATION 1135.0 FT. WITHOUT PRIOR APPROVAL FROM THE ENGINEER.  
 THE SCOUR CRITICAL ELEVATION FOR BENT NO.2 IS ELEVATION 1119.0 FT. THE SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.  
 SPT MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SPT. FOR SPT, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.  
 SID INSPECTIONS MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTIONS. FOR SID INSPECTIONS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.  
 CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. FOR CSL TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.  
 PILES AT END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 75 TONS PER PILE.  
 DRIVE PILES AT END BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 125 TONS PER PILE.  
 STEEL H-PILE POINTS ARE REQUIRED FOR STEEL PILES AT END BENT NO.2. FOR STEEL PILE POINTS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.  
 OBSERVE A 2 MONTH WAITING PERIOD AFTER CONSTRUCTION OF THE EMBANKMENT TO WITHIN 2 FT. OF FINISHED GRADE BEFORE BEGINNING END BENT CONSTRUCTION AT END BENT NO.1 AND END BENT NO.2. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.

**SAMPLE BAR REPLACEMENT**

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

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

**TOTAL BILL OF MATERIAL**

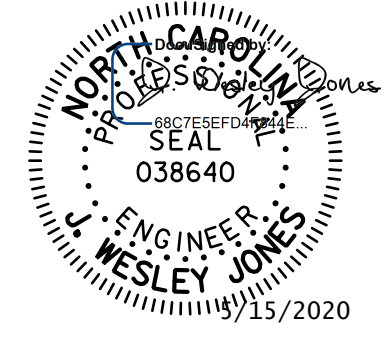
	REMOVAL OF EXISTING STRUCTURE AT STA. 15+36.00 -L-	ASBESTOS ASSESSMENT	3'-6" Ø DRILLED PIERS IN SOIL	3'-6" Ø DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 3'-6" Ø DRILLED PIER	SID INSPECTIONS	SPT TESTING	CSL TESTING	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES
	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	CU. YDS.	LUMP SUM	LBS.	LBS.	EA.	NO. LIN. FT.
SUPERSTRUCTURE														
END BENT 1									24.1		2,923		7	7 210
BENT 1			80.0	40.0	29.0				32.7		15,254	3,741		
BENT 2			69.0	33.0	27.0				31.1		13,908	3,298		
END BENT 2									24.3		2,923		7	7 210
TOTAL	LUMP SUM	LUMP SUM	149.0	73.0	56.0	2	2	1	112.2	LUMP SUM	35,008	7,039	14	14 420

**TOTAL BILL OF MATERIAL (CONT'D.)**

	STEEL PILE POINTS	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	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLABS	FIBER OPTIC CONDUIT SYSTEM
	EA.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	NO. LIN. FT.	NO. LIN. FT.	LIN. FT.
SUPERSTRUCTURE		340.57				11 440.0	22 1,430.0	336.6
END BENT 1			470	525				
BENT 1								
BENT 2								
END BENT 2	7		830	925				
TOTAL	7	340.57	1,300	1,450	LUMP SUM	11 440.0	22 1,430.0	336.6

PROJECT NO. BR-0125  
WILKES COUNTY  
 STATION: 15+36.00 -L-

SHEET 2 OF 2



**STV** 100  
 STV ENGINEERS, INC.  
 900 West Trade St., Suite 715  
 Charlotte, NC 28202  
 NC License Number F-0991

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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR BRIDGE ON SR 1002 (TRAPHILL RD.) OVER EAST PRONG ROARING RIVER BETWEEN SR 1943 AND SR 1941

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

S-2  
 TOTAL SHEETS 23

DRAWN BY : WAW DATE : 10-19  
 CHECKED BY : JWJ DATE : 02-20  
 DESIGN ENGINEER OF RECORD : JWJ DATE : 04-20

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## 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			
						LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT						
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.352	--	1.75	0.252	1.95	40'	EL	19.423	0.653	<b>1.35</b>	40'	EL	<b>7.769</b>	0.80	0.252	1.72	40'	EL	19.423		
	HL-93(Opr)	N/A	--	1.753	--	1.35	0.252	2.52	40'	EL	19.423	0.653	1.75	40'	EL	7.769	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.544	55.583	1.75	0.252	2.45	40'	EL	19.423	0.653	<b>1.54</b>	40'	EL	<b>7.769</b>	0.80	0.252	2.14	40'	EL	19.423		
	HS-20(Opr)	36.000	--	2.001	72.053	1.35	0.252	3.17	40'	EL	19.423	0.653	2	40'	EL	7.769	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.929	53.037	1.4	0.252	5.64	40'	EL	19.423	0.653	3.93	40'	EL	7.769	0.80	0.252	3.99	40'	EL	19.423	
		SNGARBS2	20.000	--	2.985	59.708	1.4	0.252	4.63	40'	EL	15.538	0.653	2.99	40'	EL	7.769	0.80	0.252	3.28	40'	EL	19.423	
		SNAGRIS2	22.000	--	2.852	62.746	1.4	0.252	4.53	40'	EL	15.538	0.653	2.85	40'	EL	7.769	0.80	0.252	3.23	40'	EL	15.538	
		SNCOTTS3	27.250	--	1.98	53.947	1.4	0.252	2.82	40'	EL	19.423	0.653	1.98	40'	EL	7.769	0.80	0.252	1.99	40'	EL	19.423	
		SNAGGRS4	34.925	--	1.782	62.222	1.4	0.252	2.54	40'	EL	19.423	0.653	1.78	40'	EL	7.769	0.80	0.252	1.79	40'	EL	19.423	
		SNS5A	35.550	--	1.746	62.059	1.4	0.252	2.47	40'	EL	19.423	0.653	1.89	40'	EL	7.769	0.80	0.252	1.75	40'	EL	19.423	
		SNS6A	39.950	--	1.662	66.381	1.4	0.252	2.35	40'	EL	19.423	0.653	1.79	40'	EL	7.769	0.80	0.252	1.66	40'	EL	19.423	
	TTST	SNS7B	42.000	--	1.585	66.556	1.4	0.252	2.24	40'	EL	19.423	0.653	1.86	40'	EL	7.769	0.80	0.252	1.58	40'	EL	19.423	
		TNAGRIT3	33.000	--	2.045	67.476	1.4	0.252	2.89	40'	EL	19.423	0.653	2.07	40'	EL	7.769	0.80	0.252	2.04	40'	EL	19.423	
		TNT4A	33.075	--	1.951	64.52	1.4	0.252	2.93	40'	EL	19.423	0.653	1.95	40'	EL	7.769	0.80	0.252	2.07	40'	EL	19.423	
		TNT6A	41.600	--	1.757	73.106	1.4	0.252	2.49	40'	EL	19.423	0.653	1.91	40'	EL	7.769	0.80	0.252	1.76	40'	EL	19.423	
		TNT7A	42.000	--	1.795	75.386	1.4	0.252	2.55	40'	EL	19.423	0.653	1.79	40'	EL	7.769	0.80	0.252	1.80	40'	EL	19.423	
		TNT7B	42.000	--	1.729	72.638	1.4	0.252	2.61	40'	EL	19.423	0.653	1.73	40'	EL	7.769	0.80	0.252	1.84	40'	EL	19.423	
		TNAGRIT4	43.000	--	1.661	71.441	1.4	0.252	2.53	40'	EL	15.538	0.653	1.66	40'	EL	7.769	0.80	0.252	1.79	40'	EL	19.423	
TNAGT5A	45.000	--	1.659	74.644	1.4	0.252	2.35	40'	EL	19.423	0.653	1.77	40'	EL	7.769	0.80	0.252	1.66	40'	EL	19.423			
TNAGT5B	45.000	3	1.568	70.561	1.4	0.252	2.28	40'	EL	19.423	0.653	<b>1.57</b>	40'	EL	<b>7.769</b>	0.80	0.252	1.61	40'	EL	19.423			

**LOAD FACTORS:**

DESIGN LOAD RATING FACTORS	LIMIT STATE	$\gamma_{DC}$	$\gamma_{DW}$
	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.
- 2.
- 3.
- 4.

**# CONTROLLING LOAD RATING**

① DESIGN LOAD RATING (HL-93)

② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

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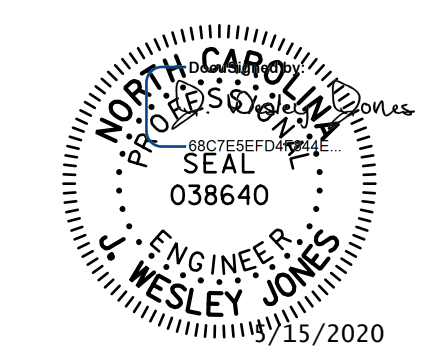
**GIRDER LOCATION**

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



**LRFR SUMMARY**  
FOR SPAN 'A'

PROJECT NO. BR-0125  
WILKES COUNTY  
STATION: 15+36.00 -L-



**STV** 100 YEARS  
STV ENGINEERS, INC.  
900 West Trade St., Suite 715  
Charlotte, NC 28202  
NC License Number F-0991

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SIGNATURES COMPLETED

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
LRFR SUMMARY FOR  
40' CORED SLAB UNIT  
120° SKEW  
(NON-INTERSTATE TRAFFIC)

REVISIONS				SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS 23
2			4			

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DRAWN BY : WAW DATE : 10-19  
CHECKED BY : JWJ DATE : 01-20  
DESIGN ENGINEER OF RECORD : JWJ DATE : 04-20  
DRAWN BY : CVC 6/10  
CHECKED BY : DNS 6/10

## 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	<b>1</b>	1.06	--	1.75	0.248	1.14	70'	EL	34.423	0.655	<b>1.06</b>	70'	EL	<b>6.885</b>	0.80	0.248	1.11	70'	EL	34.423		
	HL-93(0pr)	N/A	--	1.374	--	1.35	0.248	1.48	70'	EL	34.423	0.655	1.37	70'	EL	6.885	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	<b>2</b>	1.32	47.508	1.75	0.248	1.48	70'	EL	34.423	0.655	<b>1.32</b>	70'	EL	<b>6.885</b>	0.80	0.248	1.44	70'	EL	34.423		
	HS-20(0pr)	36.000	--	1.711	61.585	1.35	0.248	1.91	70'	EL	34.423	0.655	1.71	70'	EL	6.885	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13,500	--	3.204	43.258	1.4	0.248	4.12	70'	EL	34.423	0.655	3.9	70'	EL	6.885	0.80	0.248	3.20	70'	EL	34.423	
		SNGARBS2	20,000	--	2.403	48.063	1.4	0.248	3.09	70'	EL	34.423	0.655	2.78	70'	EL	6.885	0.80	0.248	2.40	70'	EL	34.423	
		SNAGRIS2	22,000	--	2.282	50.21	1.4	0.248	2.94	70'	EL	34.423	0.655	2.58	70'	EL	6.885	0.80	0.248	2.28	70'	EL	34.423	
		SNCOTTS3	27,250	--	1.595	43.463	1.4	0.248	2.05	70'	EL	34.423	0.655	1.95	70'	EL	6.885	0.80	0.248	1.59	70'	EL	34.423	
		SNAGGRS4	34,925	--	1.339	46.755	1.4	0.248	1.72	70'	EL	34.423	0.655	1.62	70'	EL	6.885	0.80	0.248	1.34	70'	EL	34.423	
		SNS5A	35,550	--	1.309	46.526	1.4	0.248	1.68	70'	EL	34.423	0.655	1.65	70'	EL	6.885	0.80	0.248	1.31	70'	EL	34.423	
		SNS6A	39,950	--	1.203	48.069	1.4	0.248	1.55	70'	EL	34.423	0.655	1.5	70'	EL	6.885	0.80	0.248	1.20	70'	EL	34.423	
	TTST	SNS7B	42,000	--	1.146	48.129	1.4	0.248	1.47	70'	EL	34.423	0.655	1.48	70'	EL	6.885	0.80	0.248	1.15	70'	EL	34.423	
		TNAGRIT3	33,000	--	1.468	48.444	1.4	0.248	1.89	70'	EL	34.423	0.655	1.79	70'	EL	6.885	0.80	0.248	1.47	70'	EL	34.423	
		TNT4A	33,075	--	1.475	48.79	1.4	0.248	1.9	70'	EL	34.423	0.655	1.74	70'	EL	6.885	0.80	0.248	1.48	70'	EL	34.423	
		TNT6A	41,600	--	1.208	50.272	1.4	0.248	1.55	70'	EL	34.423	0.655	1.58	70'	EL	6.885	0.80	0.248	1.21	70'	EL	34.423	
		TNT7A	42,000	--	1.216	51.061	1.4	0.248	1.56	70'	EL	34.423	0.655	1.55	70'	EL	6.885	0.80	0.248	1.22	70'	EL	34.423	
		TNT7B	42,000	--	1.261	52.955	1.4	0.248	1.62	70'	EL	34.423	0.655	1.44	70'	EL	6.885	0.80	0.248	1.26	70'	EL	34.423	
		TNAGRIT4	43,000	--	1.197	51.476	1.4	0.248	1.54	70'	EL	34.423	0.655	1.4	70'	EL	6.885	0.80	0.248	1.20	70'	EL	34.423	
TNAGT5A	45,000	--	1.128	50.745	1.4	0.248	1.45	70'	EL	34.423	0.655	1.39	70'	EL	6.885	0.80	0.248	1.13	70'	EL	34.423			
TNAGT5B	45,000	<b>3</b>	1.113	50.088	1.4	0.248	1.43	70'	EL	34.423	0.655	1.33	70'	EL	6.885	0.80	0.248	<b>1.11</b>	70'	EL	<b>34.423</b>			

**LOAD FACTORS:**

DESIGN LOAD RATING FACTORS	LIMIT STATE	$\gamma_{DC}$	$\gamma_{DW}$
	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.
- 2.
- 3.
- 4.

**# CONTROLLING LOAD RATING**

① DESIGN LOAD RATING (HL-93)

② DESIGN LOAD RATING (HS-20)

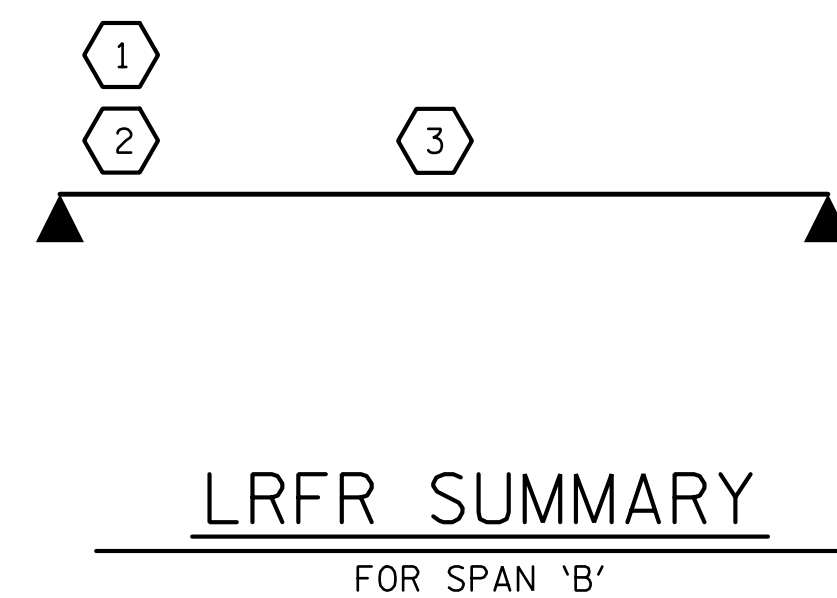
③ LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

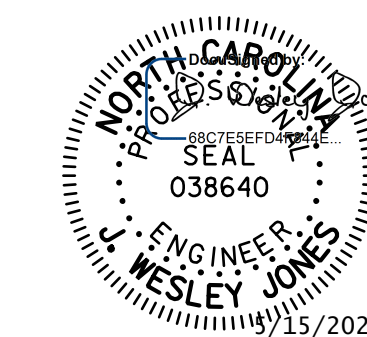
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**GIRDER LOCATION**

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



PROJECT NO. BR-0125  
WILKES COUNTY  
 STATION: 15+36.00 -L-



**STV** 100 YEARS  
 STV ENGINEERS, INC.  
 900 West Trade St., Suite 715  
 Charlotte, NC 28202  
 NC License Number F-0991

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 LRFR SUMMARY FOR  
 70' CORED SLAB UNIT  
 120° SKEW  
 (NON-INTERSTATE TRAFFIC)

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

DRAWN BY : WAW DATE : 10-19  
 CHECKED BY : JWJ DATE : 01-20  
 DESIGN ENGINEER OF RECORD : JWJ DATE : 04-20

DRAWN BY : CVC 6/10  
 CHECKED BY : DNS 6/10



### 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 (FF)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FF)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FF)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	<b>1</b>	1.133	--	1.75	0.249	1.48	60'	EL	29.423	0.649	<b>1.13</b>	60'	EL	<b>5.885</b>	0.80	0.249	1.52	60'	EL	29.423		
	HL-93(Opr)	N/A	--	1.468	--	1.35	0.249	1.91	60'	EL	29.423	0.649	1.47	60'	EL	5.885	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	<b>2</b>	1.364	49.098	1.75	0.249	1.87	60'	EL	29.423	0.649	<b>1.36</b>	60'	EL	<b>5.885</b>	0.80	0.249	1.92	60'	EL	29.423		
	HS-20(Opr)	36.000	--	1.768	63.645	1.35	0.249	2.42	60'	EL	29.423	0.649	1.77	60'	EL	5.885	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.938	53.159	1.4	0.249	5.03	60'	EL	29.423	0.649	3.94	60'	EL	5.885	0.80	0.249	4.13	60'	EL	29.423	
		SNGARBS2	20.000	--	2.837	56.744	1.4	0.249	3.85	60'	EL	29.423	0.649	2.84	60'	EL	5.885	0.80	0.249	3.17	60'	EL	29.423	
		SNAGRIS2	22.000	--	2.648	58.256	1.4	0.249	3.69	60'	EL	29.423	0.649	2.65	60'	EL	5.885	0.80	0.249	3.03	60'	EL	29.423	
		SNCOTTS3	27.250	--	1.97	53.671	1.4	0.249	2.5	60'	EL	29.423	0.649	1.97	60'	EL	5.885	0.80	0.249	2.06	60'	EL	29.423	
		SNAGGRS4	34.925	--	1.661	58.001	1.4	0.249	2.13	60'	EL	29.423	0.649	1.66	60'	EL	5.885	0.80	0.249	1.75	60'	EL	29.423	
		SNS5A	35.550	--	1.696	60.293	1.4	0.249	2.08	60'	EL	29.423	0.649	1.7	60'	EL	5.885	0.80	0.249	1.71	60'	EL	29.423	
		SNS6A	39.950	--	1.558	62.257	1.4	0.249	1.93	60'	EL	29.423	0.649	1.56	60'	EL	5.885	0.80	0.249	1.58	60'	EL	29.423	
	TTST	TNAGRIT3	33.000	--	1.846	60.907	1.4	0.249	2.36	60'	EL	29.423	0.649	1.85	60'	EL	5.885	0.80	0.249	1.94	60'	EL	29.423	
		TNT4A	33.075	--	1.787	59.108	1.4	0.249	2.37	60'	EL	29.423	0.649	1.79	60'	EL	5.885	0.80	0.249	1.95	60'	EL	29.423	
		TNT6A	41.600	--	1.607	66.863	1.4	0.249	1.96	60'	EL	29.423	0.649	1.67	60'	EL	5.885	0.80	0.249	1.61	60'	EL	29.423	
		TNT7A	42.000	--	1.598	67.1	1.4	0.249	1.97	60'	EL	29.423	0.649	1.6	60'	EL	5.885	0.80	0.249	1.62	60'	EL	29.423	
		TNT7B	42.000	--	1.499	62.942	1.4	0.249	2.06	60'	EL	29.423	0.649	1.5	60'	EL	5.885	0.80	0.249	1.69	60'	EL	29.423	
		TNAGRIT4	43.000	--	1.447	62.223	1.4	0.249	1.95	60'	EL	29.423	0.649	1.45	60'	EL	5.885	0.80	0.249	1.60	60'	EL	29.423	
		TNAGT5A	45.000	--	1.455	65.474	1.4	0.249	1.83	60'	EL	29.423	0.649	1.45	60'	EL	5.885	0.80	0.249	1.50	60'	EL	29.423	
TNAGT5B	45.000	<b>3</b>	1.374	61.845	1.4	0.249	1.8	60'	EL	29.423	0.649	<b>1.37</b>	60'	EL	<b>5.885</b>	0.80	0.249	1.48	60'	EL	29.423			

**LOAD FACTORS:**

DESIGN LOAD RATING FACTORS	LIMIT STATE	$\gamma_{DC}$	$\gamma_{DW}$
	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.
- 2.
- 3.
- 4.

**# CONTROLLING LOAD RATING**

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

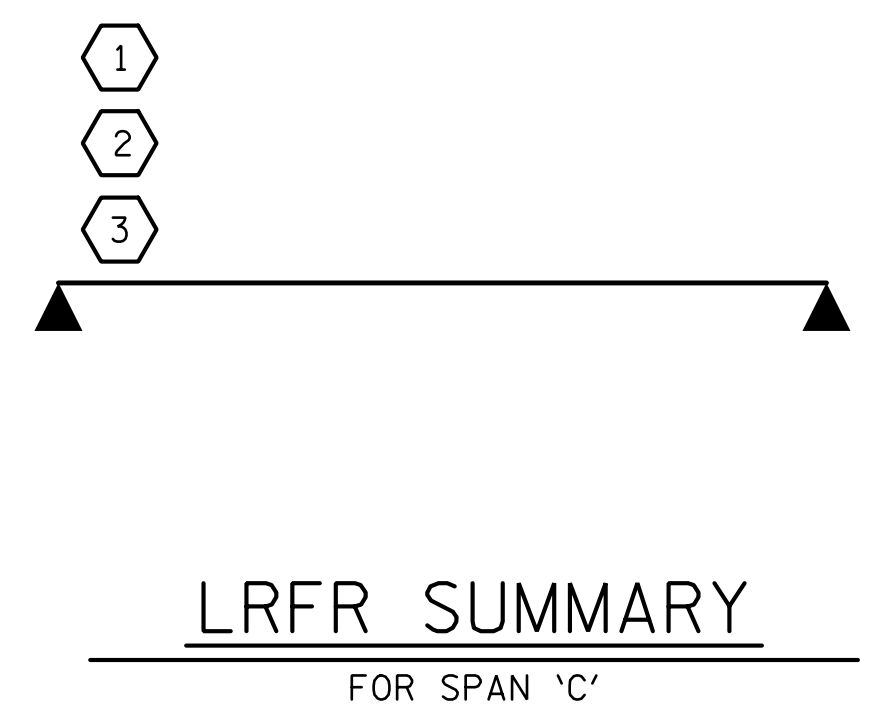
3 LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

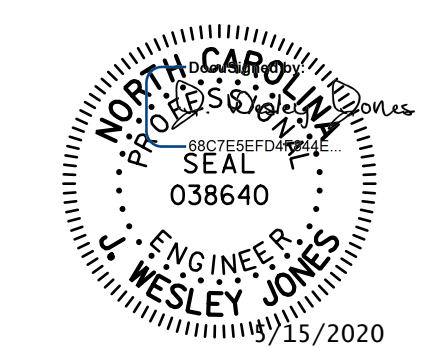
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**GIRDER LOCATION**

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



PROJECT NO. BR-0125  
WILKES COUNTY  
STATION: 15+36.00 -L-



**STV** 100 YEARS  
STV ENGINEERS, INC.  
900 West Trade St., Suite 715  
Charlotte, NC 28202  
NC License Number F-0991

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

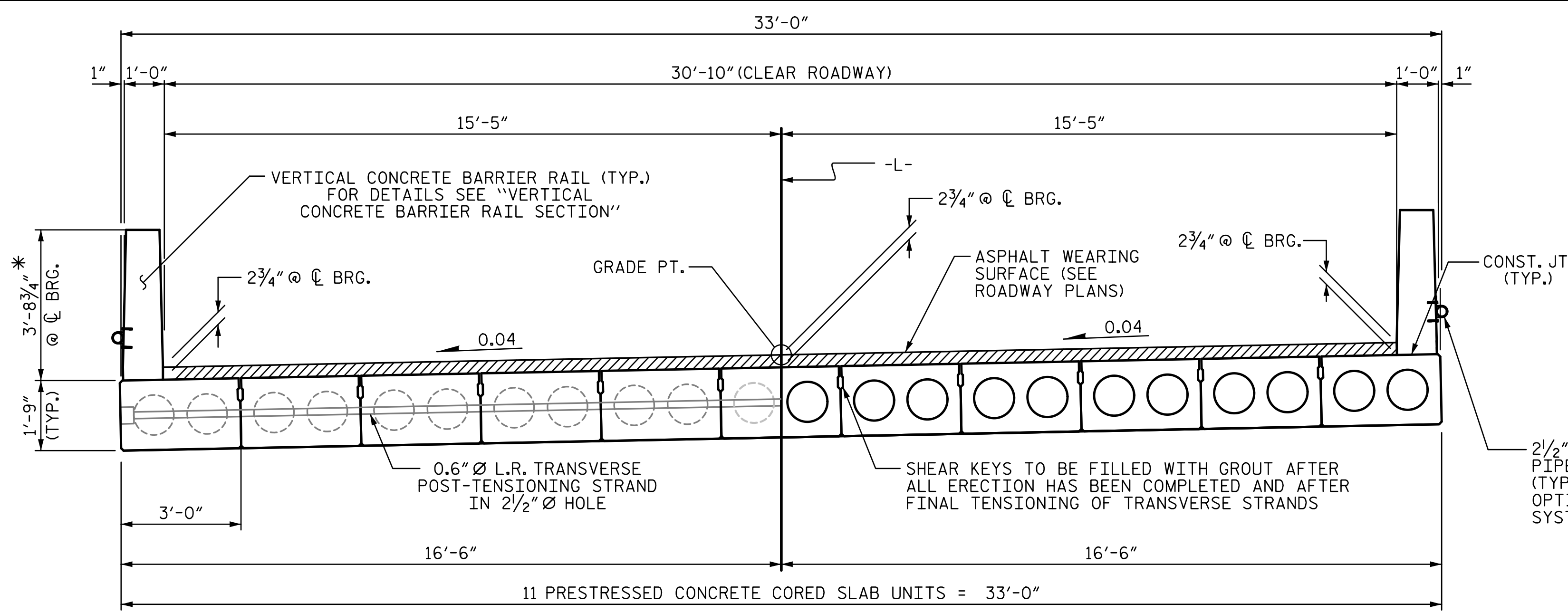
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
LRFR SUMMARY FOR  
60' CORED SLAB UNIT  
120° SKEW  
(NON-INTERSTATE TRAFFIC)

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

S-5  
TOTAL SHEETS 23

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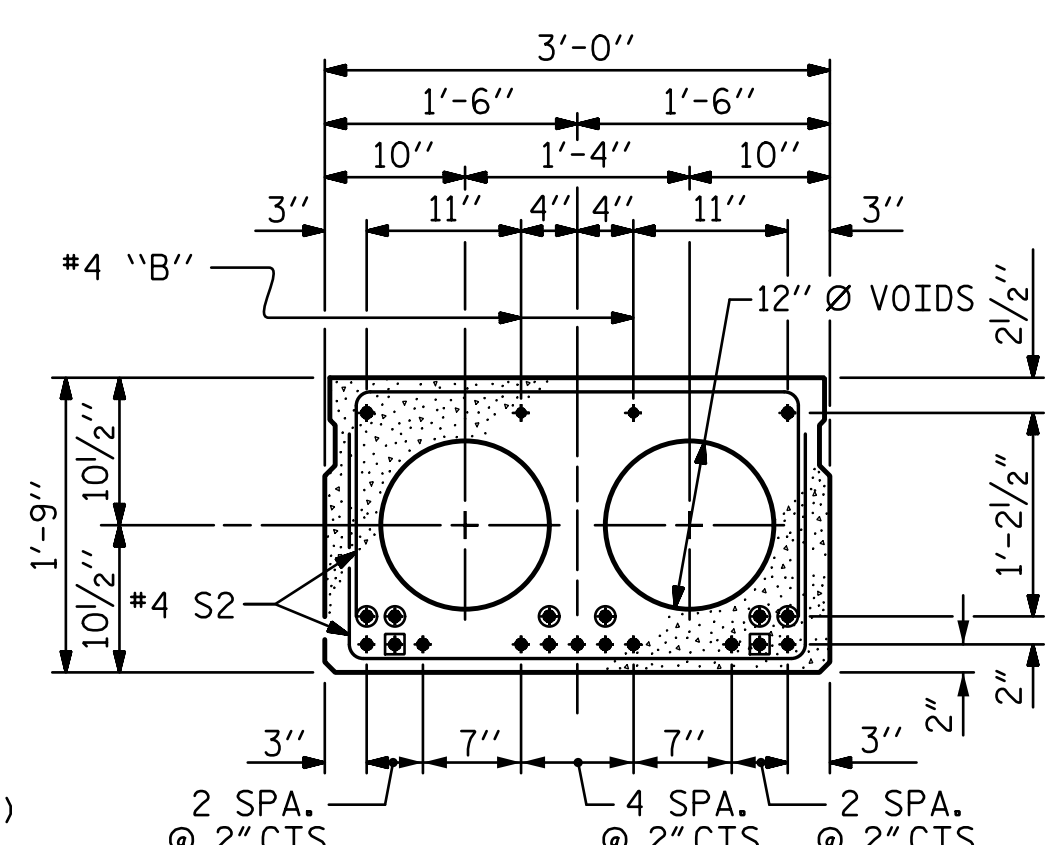
DRAWN BY : WAW DATE : 10-19  
CHECKED BY : JWJ DATE : 01-20  
DESIGN ENGINEER OF RECORD : JWJ DATE : 04-20  
DRAWN BY : CVC 6/10  
CHECKED BY : DNS 6/10



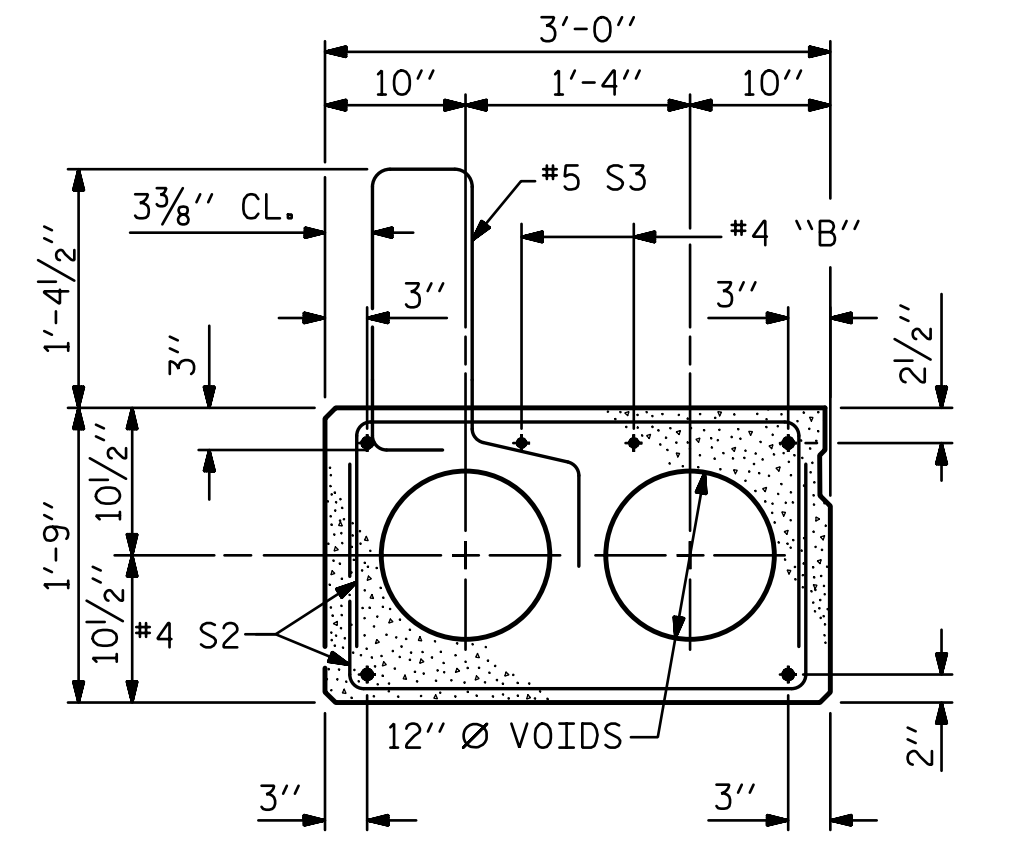
HALF SECTION AT INTERMEDIATE DIAPHRAGMS      HALF SECTION THROUGH VOIDS

**TYPICAL SECTION**

\* - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.



INTERIOR SLAB SECTION (40' UNIT)  
(13 STRANDS REQUIRED)

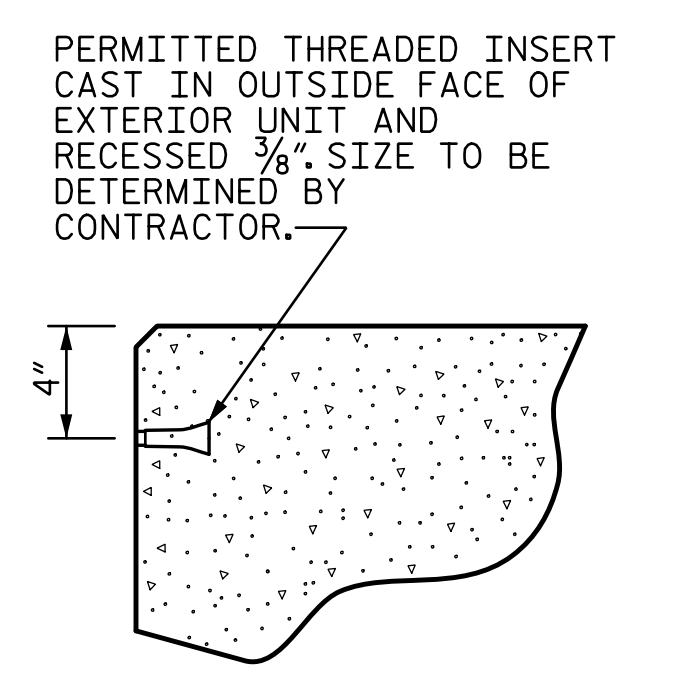


EXT. SLAB SECTION  
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)

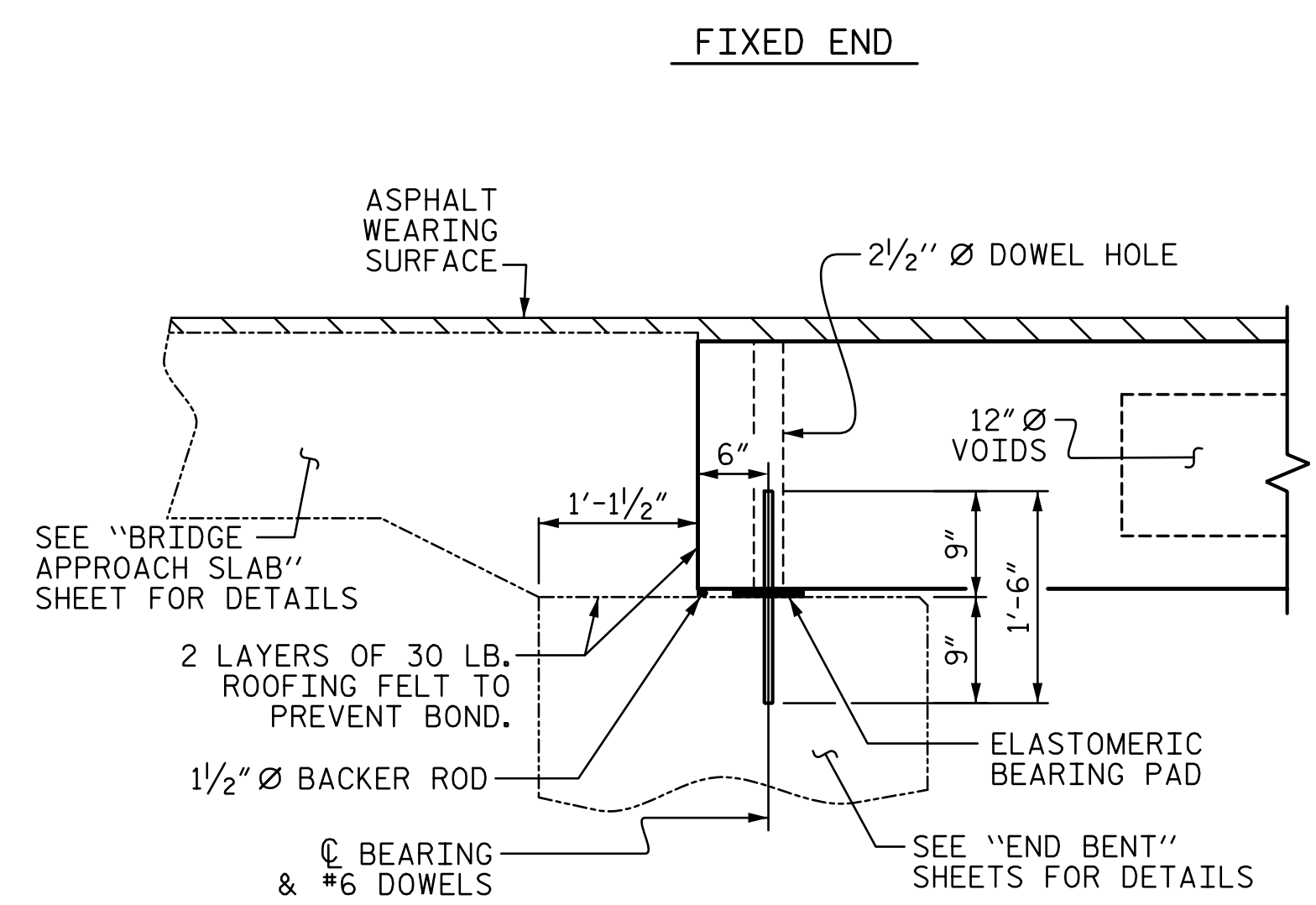
**0.6" Ø LOW RELAXATION STRAND LAYOUT**

- BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 2'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

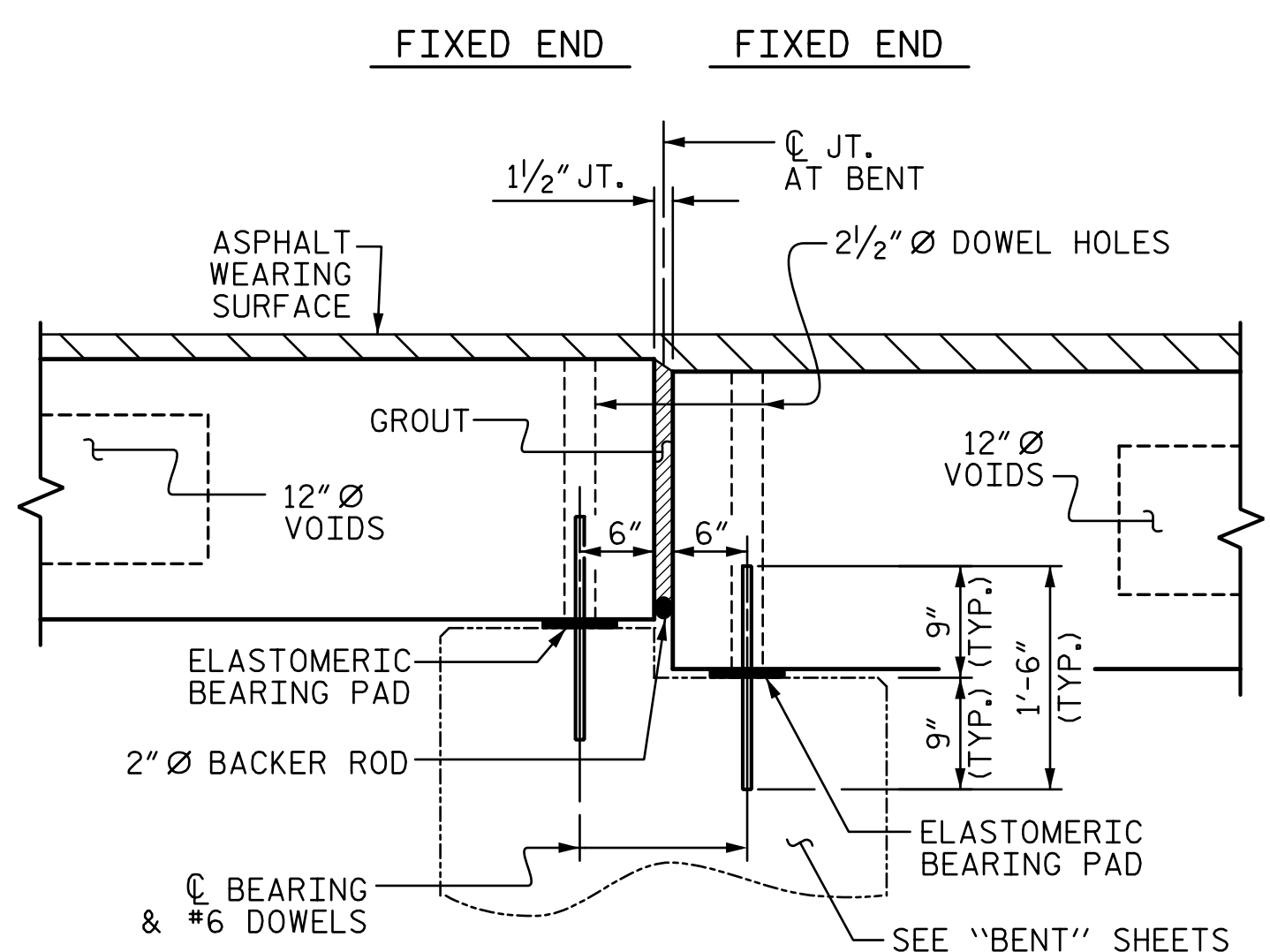
**DEBONDING LEGEND**



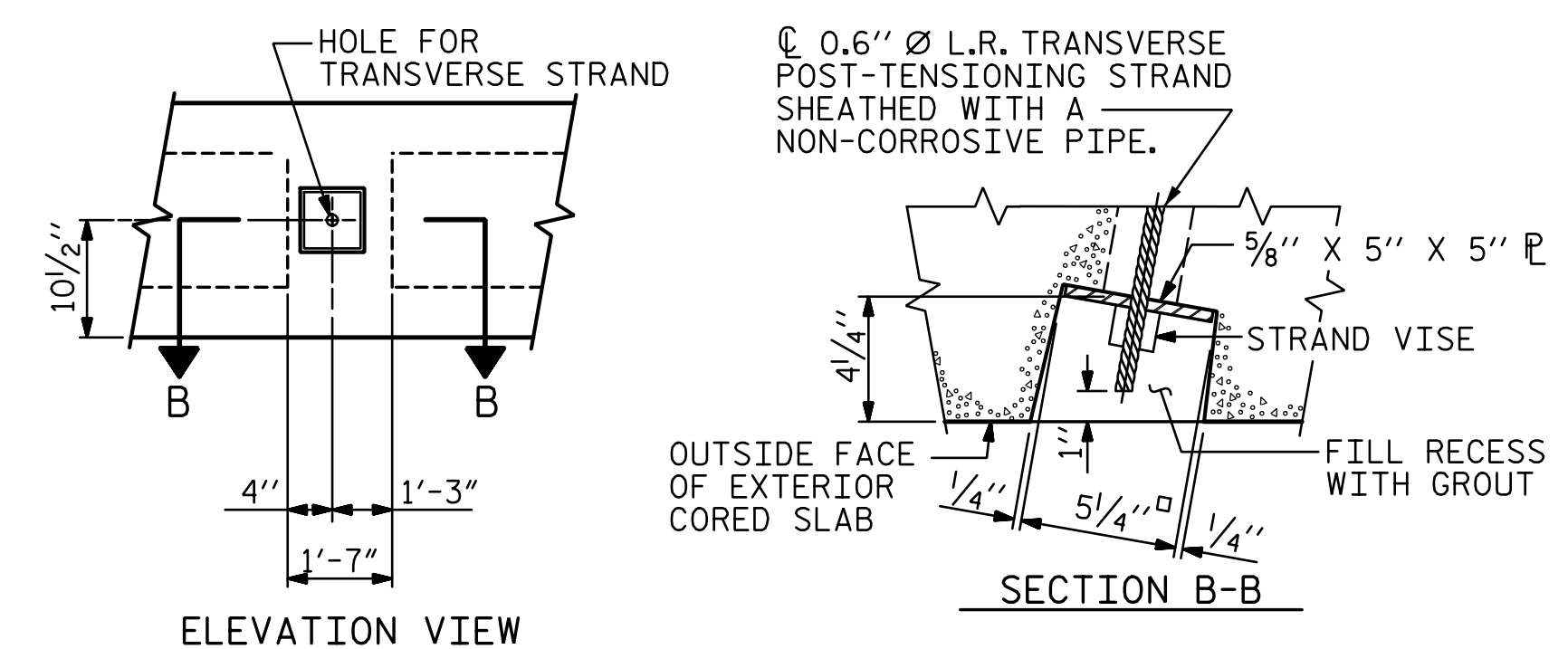
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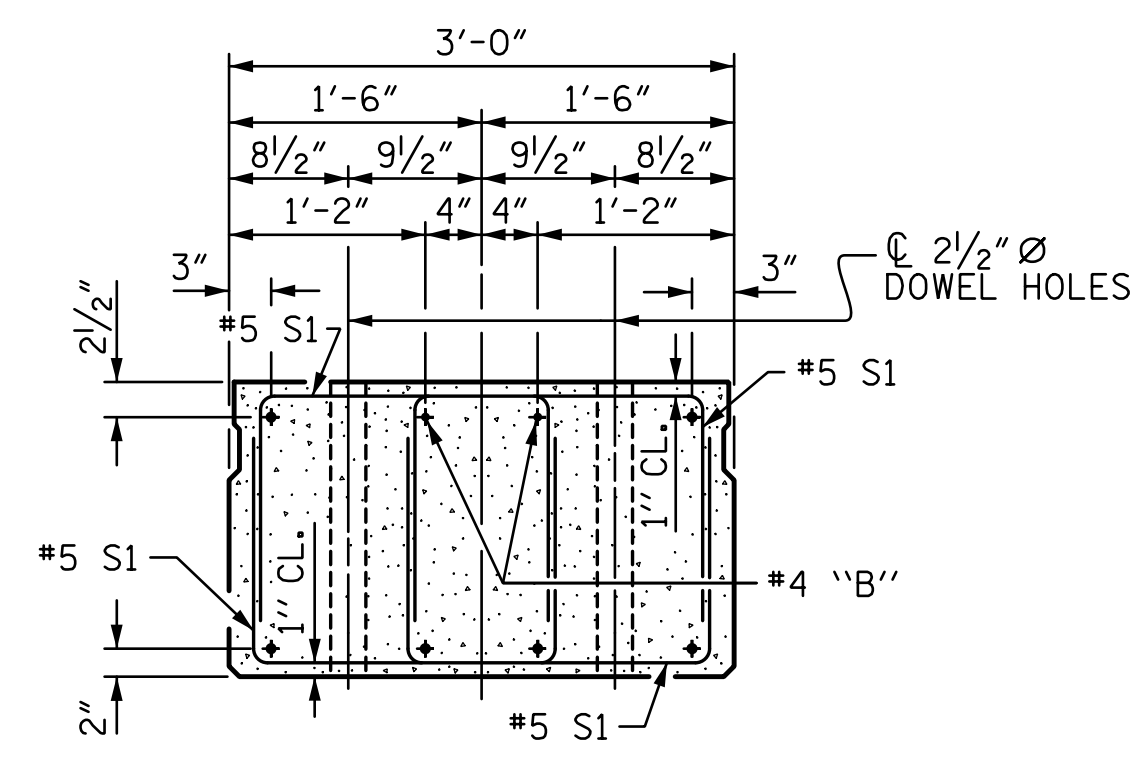
SECTION AT END BENT 1



SECTION AT BENT 1

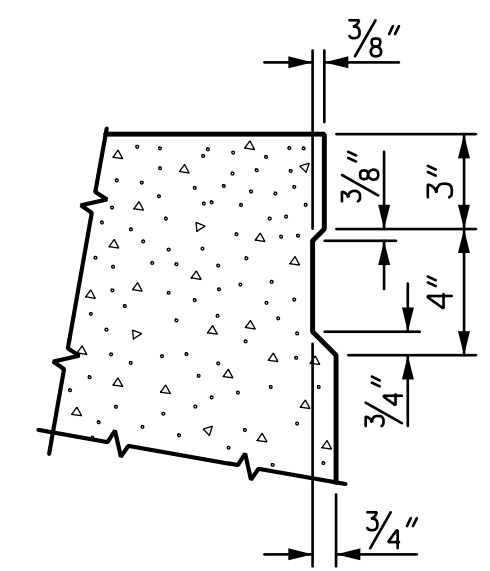


**GROUTED RECESS AT END OF POST-TENSIONED STRAND OF CORED SLABS**



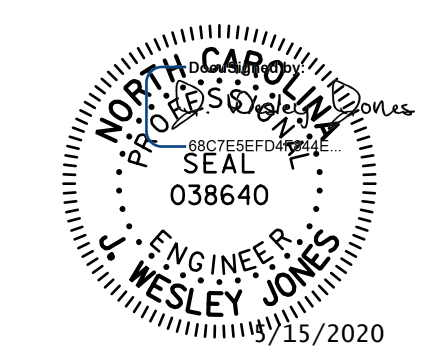
END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



**SHEAR KEY DETAIL**

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. BR-0125  
WILKES COUNTY  
 STATION: 15+36.00 -L-  
 SHEET 1 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 3'-0" X 1'-9"  
 PRESTRESSED CONCRETE  
 CORED SLAB UNIT  
 (SPAN A)

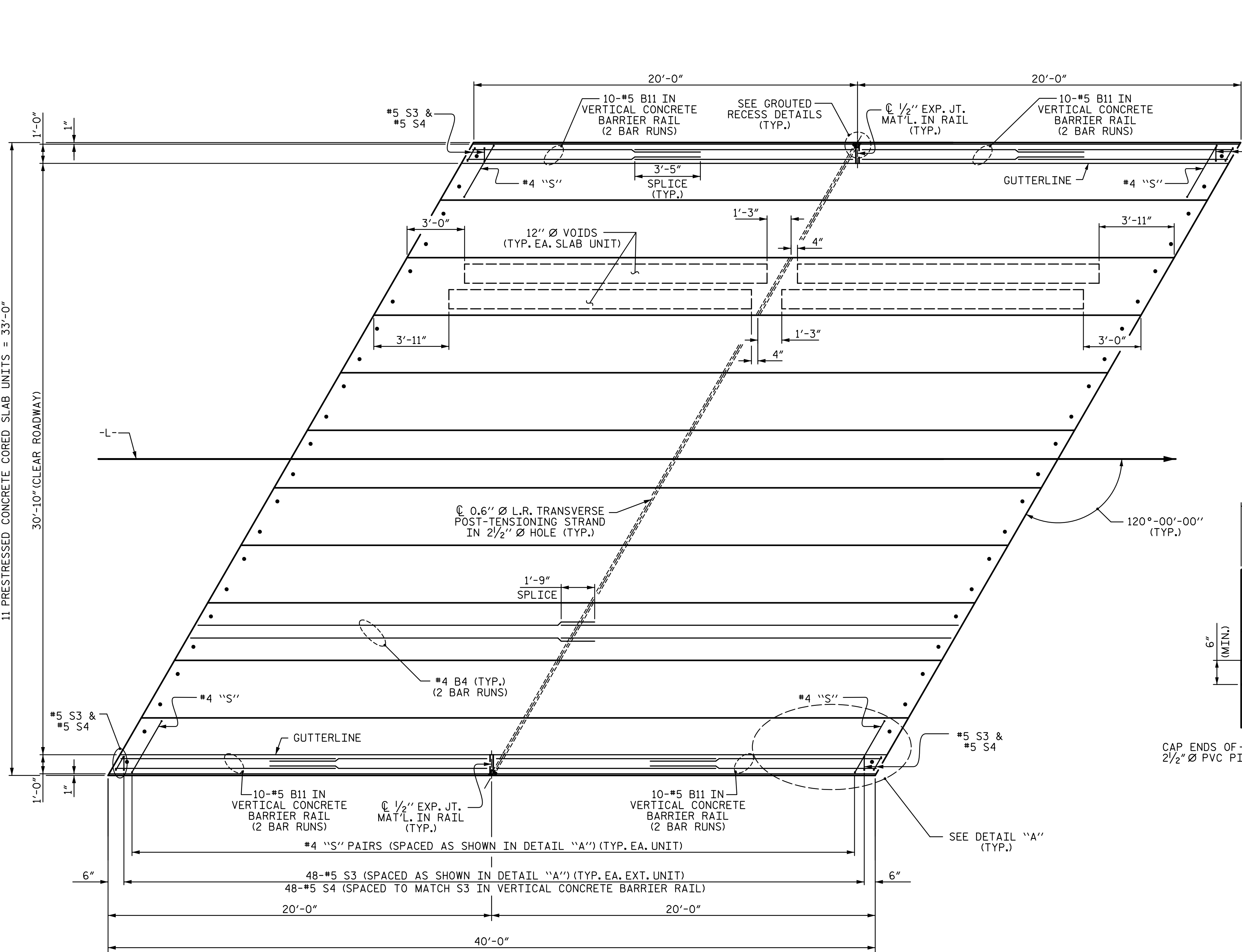
REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

S-6  
TOTAL SHEETS 23

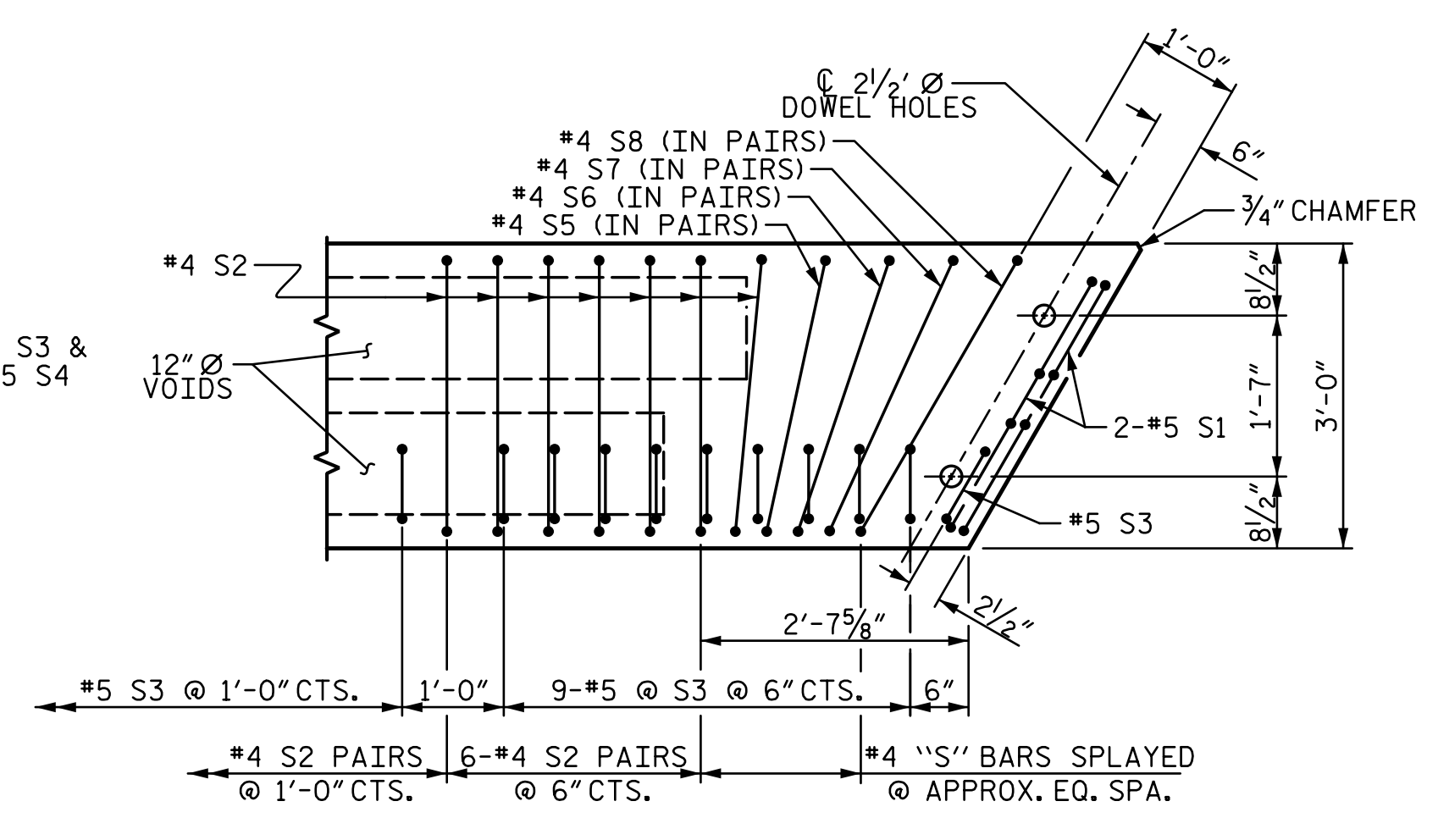
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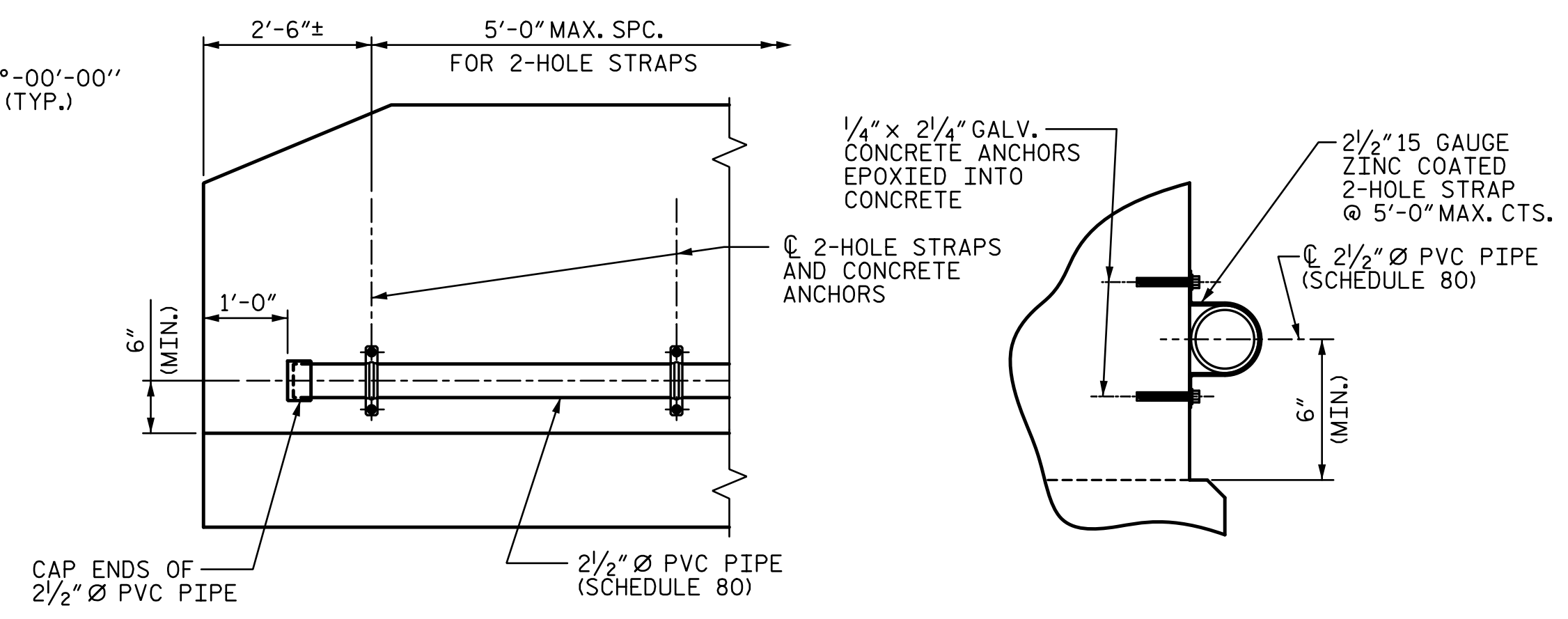
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PLAN OF UNIT



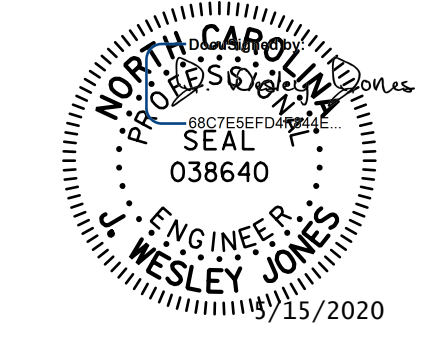
DETAIL "A"  
(SIMILAR EACH END OF UNIT)  
NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.



FIBER OPTIC CONDUIT SYSTEM DETAILS

2 1/2" Ø SCHEDULE 80 PVC PIPE ATTACHED TO THE BACK OF BOTH RAILS FOR FUTURE FIBER OPTIC CABLE.

PROJECT NO. BR-0125  
WILKES COUNTY  
STATION: 15+36.00 -L-  
SHEET 2 OF 3



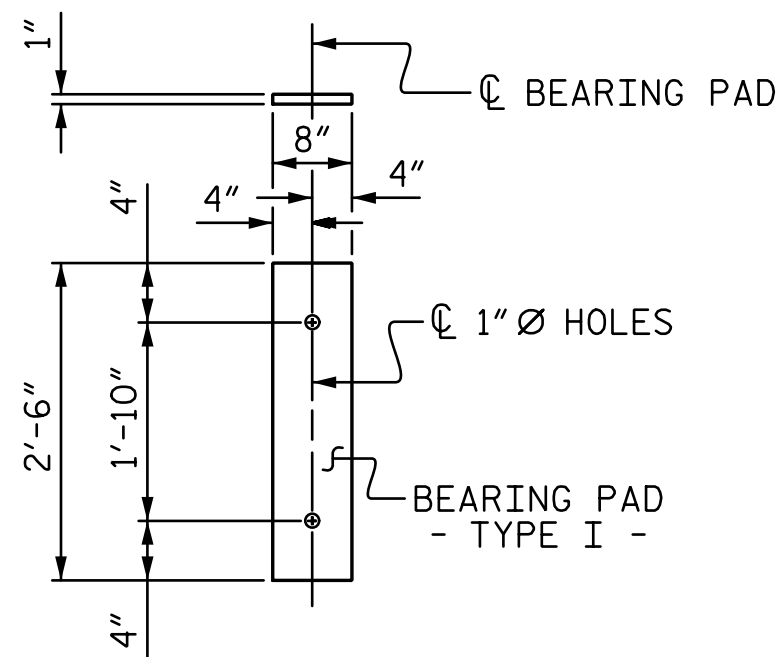
**STV** 100 YEARS  
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NC License Number F-0991

DOCUMENT NOT CONSIDERED  
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN OF 40' UNIT 30'-10" CLEAR ROADWAY 120° SKEW (SPAN A)					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					23

DRAWN BY :	WAW	DATE :	10-19
CHECKED BY :	JWJ	DATE :	11-19
DESIGN ENGINEER OF RECORD :	JWJ	DATE :	04-20
DRAWN BY :	DGE 3/09	REV. 12/5/11	MAA/AAC
CHECKED BY :	BCH 3/09	REV. 8/14	MAA/TMG





FIXED END  
(TYPE I - 22 REQ'D)

**ELASTOMERIC BEARING DETAILS**

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

**BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL**

BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
40' UNIT						
* B11	80	80	#5	STR	11'-9"	980
* S4	100	100	#5	2	7'-2"	747
* EPOXY COATED REINFORCING STEEL					LBS.	1727
CLASS AA CONCRETE					CU.YDS.	10.2
TOTAL VERTICAL CONCRETE BARRIER RAIL					LN. FT.	80.14

**GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT**

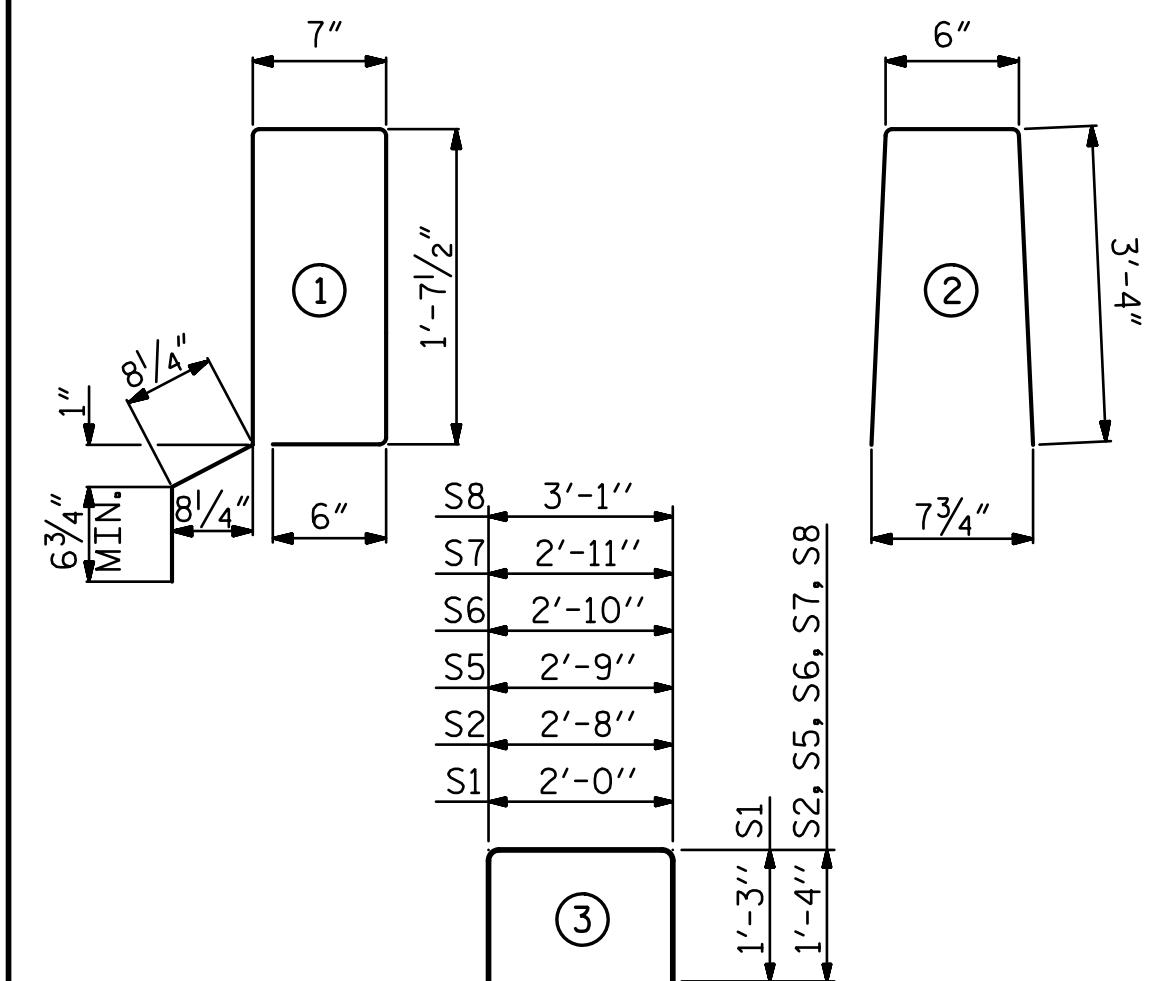
	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
40' UNITS	2"	3'-8"

**DEAD LOAD DEFLECTION AND CAMBER**

	3'-0" x 1'-9"
40' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	7/8" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/8" ↓
FINAL CAMBER	3/4" ↑

\*\* INCLUDES FUTURE WEARING SURFACE

**BAR TYPES**



**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 SIDWAYS. 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.

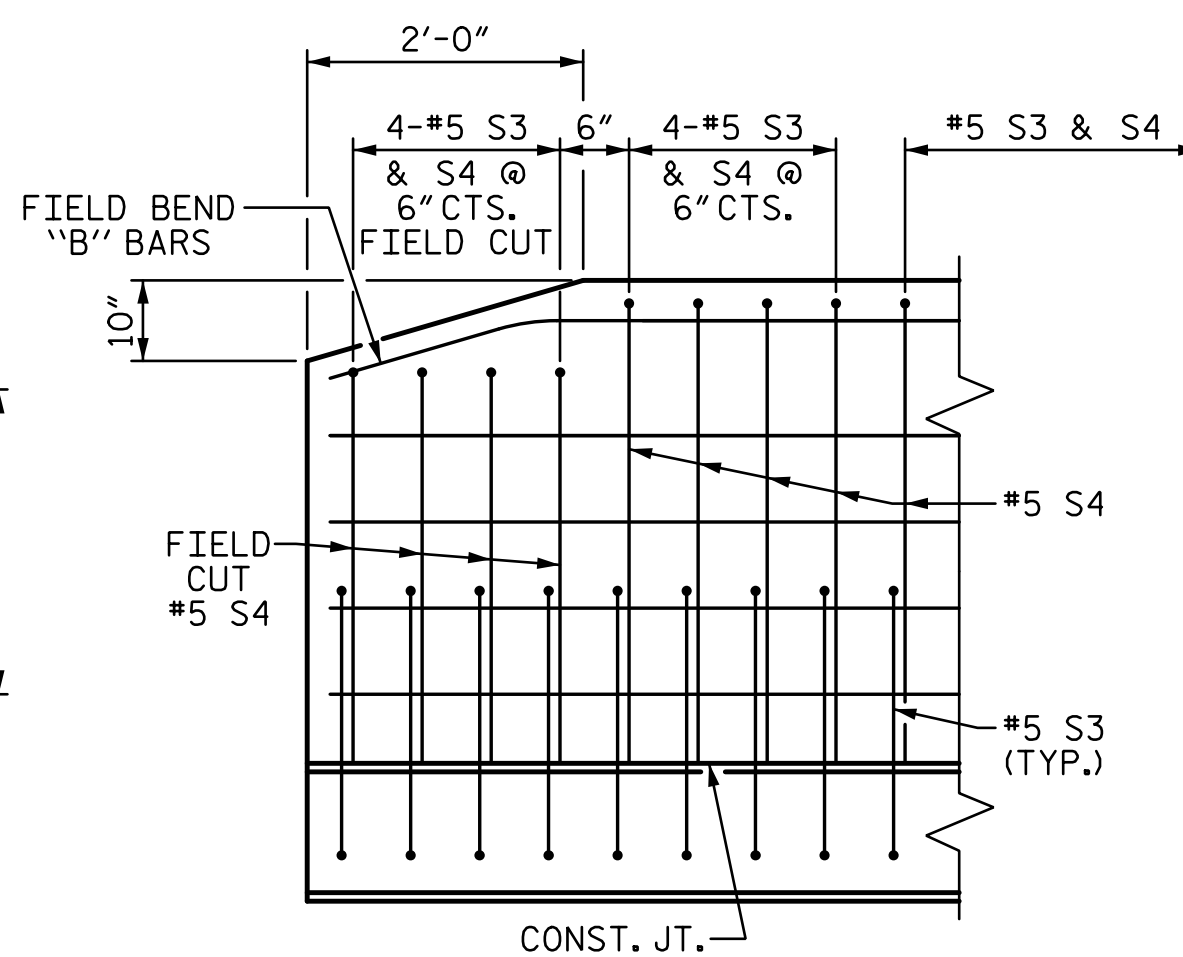
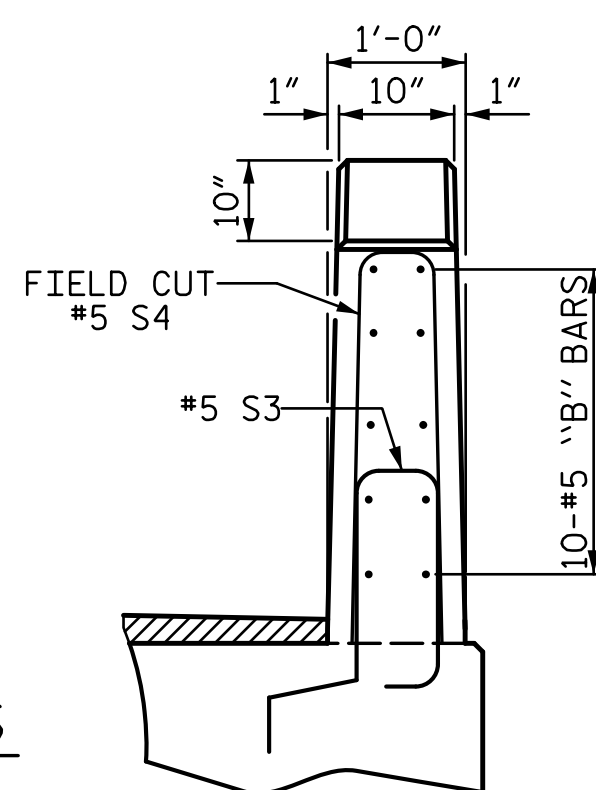
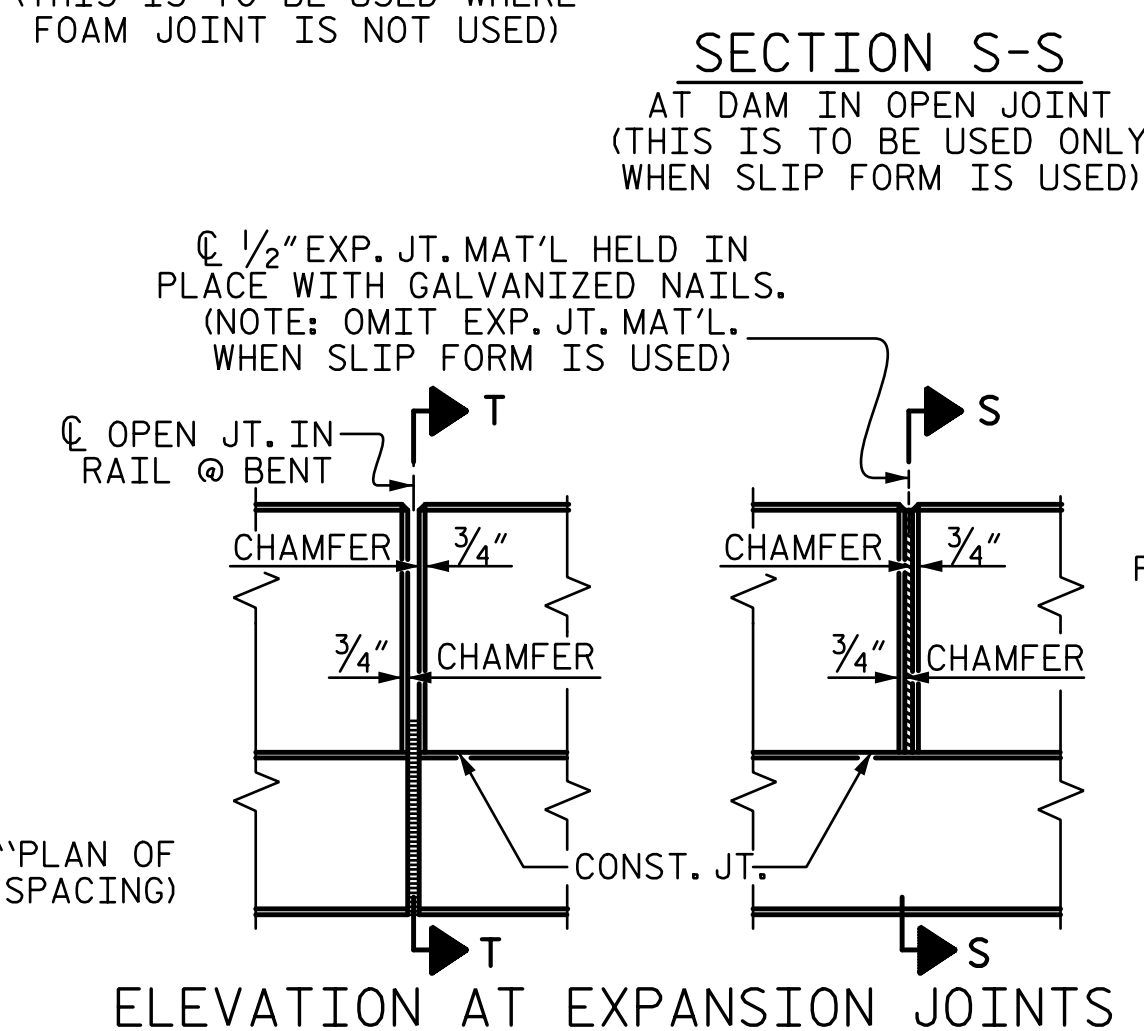
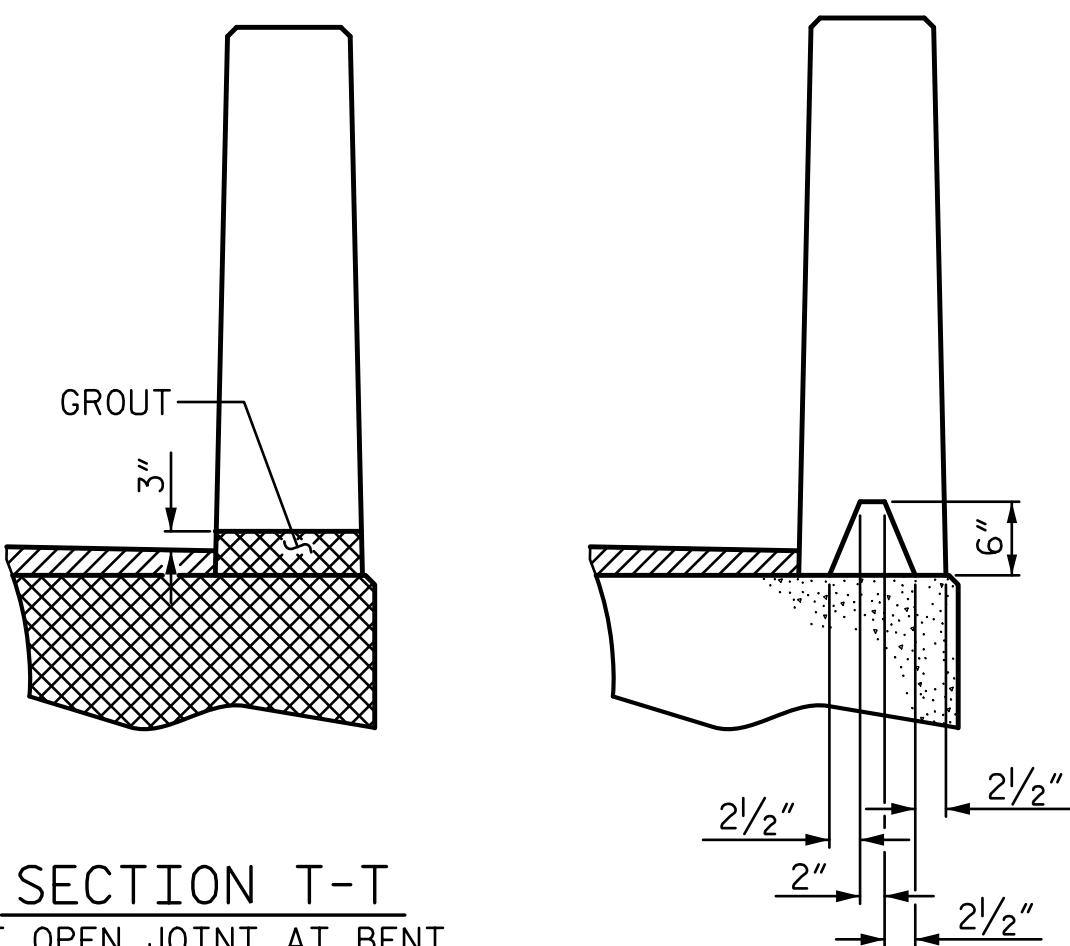
THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

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.

**CORED SLABS REQUIRED**

40' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	40'-0"	80'-0"
INTERIOR C.S.	9	40'-0"	360'-0"
TOTAL	11		440'-0"



**END OF RAIL DETAILS**

**BILL OF MATERIAL FOR ONE 40' CORED SLAB UNIT**

BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B4	4	#4	STR	20'-9"	55	20'-9"	55
S1	8	#5	3	4'-6"	38	4'-6"	38
S2	82	#4	3	5'-4"	292	5'-4"	292
* S3	50	#5	1	5'-7"	291		
S5	4	#4	3	5'-5"	14	5'-5"	14
S6	4	#4	3	5'-6"	15	5'-6"	15
S7	4	#4	3	5'-7"	15	5'-7"	15
S8	4	#4	3	5'-9"	15	5'-9"	15
REINFORCING STEEL				LBS.	444		444
* EPOXY COATED REINFORCING STEEL				LBS.	291		
5000 P.S.I. CONCRETE				CU. YDS.	5.9		5.9
0.6" Ø L.R. STRANDS				No.	13		13

**GRADE 270 STRANDS**

	0.6" Ø L.R.
AREA ( SQUARE INCHES )	0.217
ULTIMATE STRENGTH ( LBS. PER STRAND )	58,600
APPLIED PRESTRESS ( LBS. PER STRAND )	43,950

**CONCRETE RELEASE STRENGTH**

UNIT	PSI
40' UNITS	4000

PROJECT NO. **BR-0125**  
**WILKES** COUNTY  
 STATION: **15+36.00 -L-**

SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 3'-0" X 1'-9"  
 PRESTRESSED CONCRETE  
 CORED SLAB UNIT  
 (SPAN A)

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-8
2			4			TOTAL SHEETS 23

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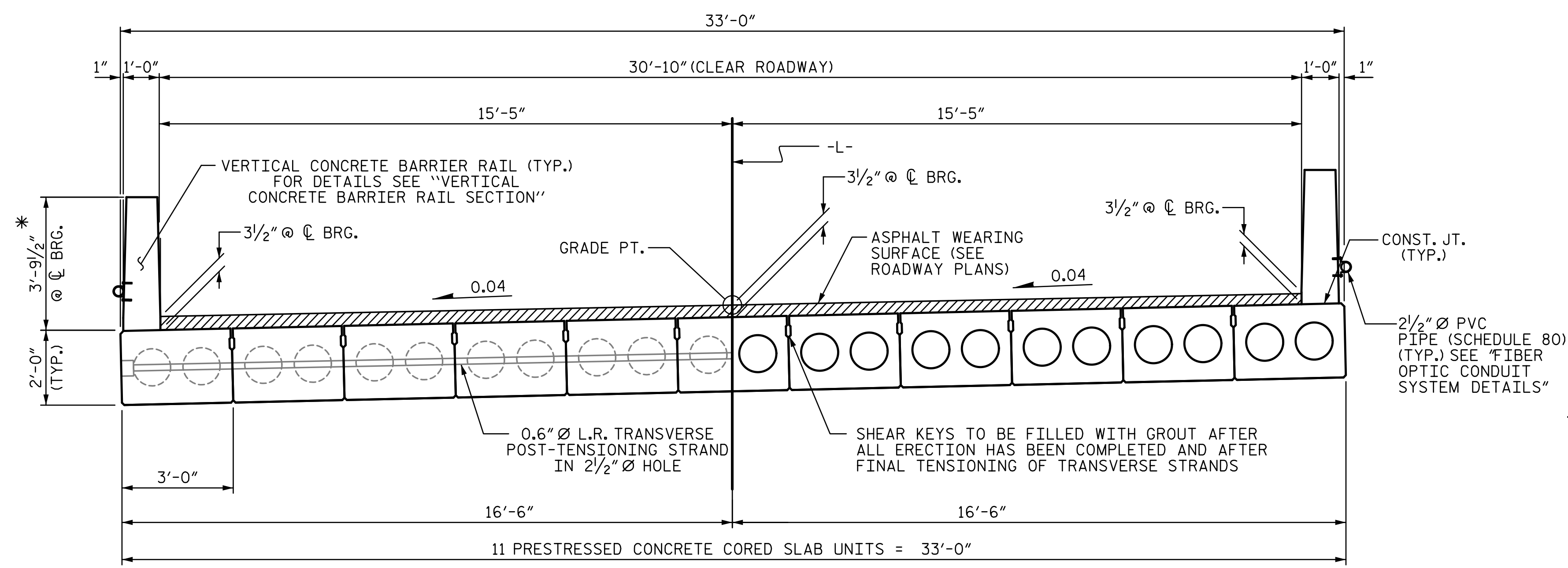
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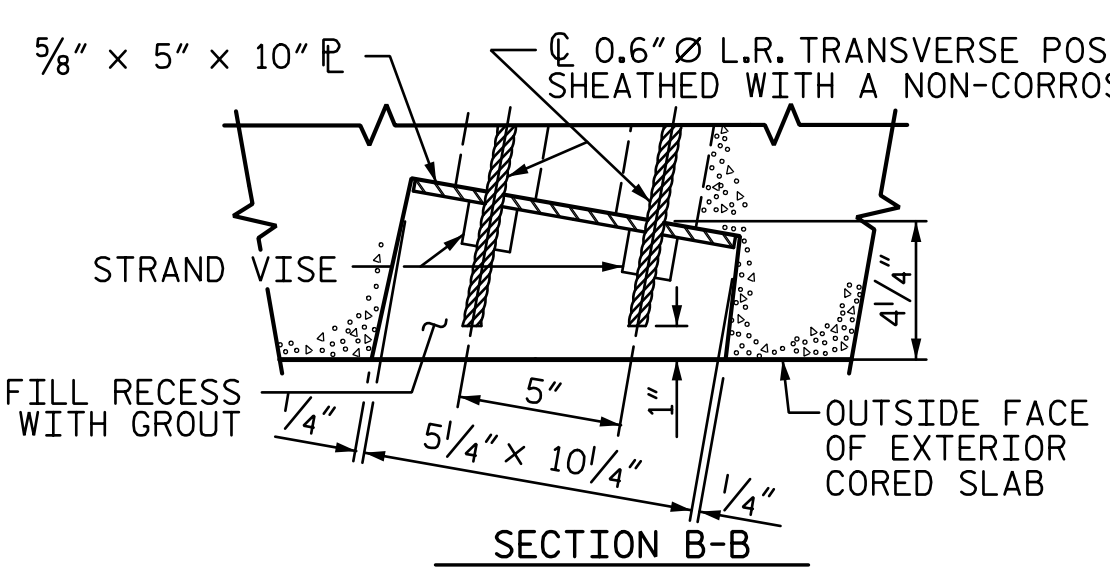
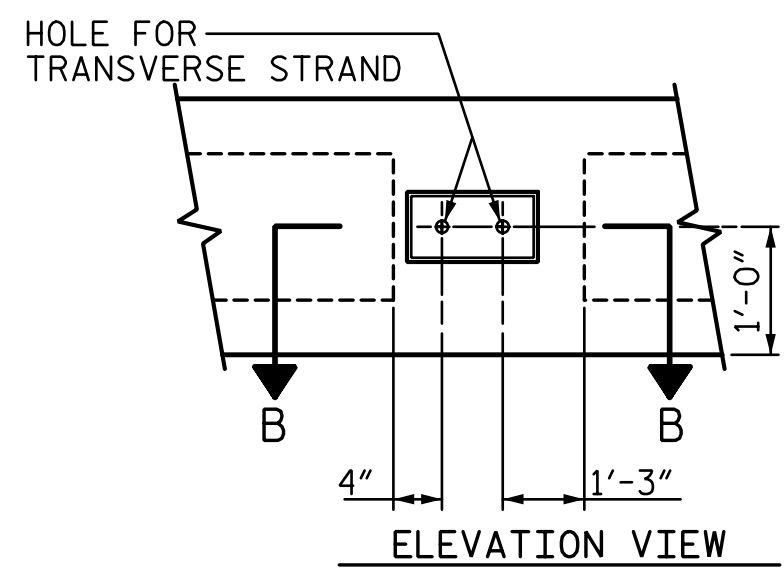
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CHECKED BY : JWJ	DATE : 11-19
DESIGN ENGINEER OF RECORD : JWJ	DATE : 04-20
DRAWN BY : DGE 5/09	REV. 5/18
CHECKED BY : BCH 6/09	MAA/THC



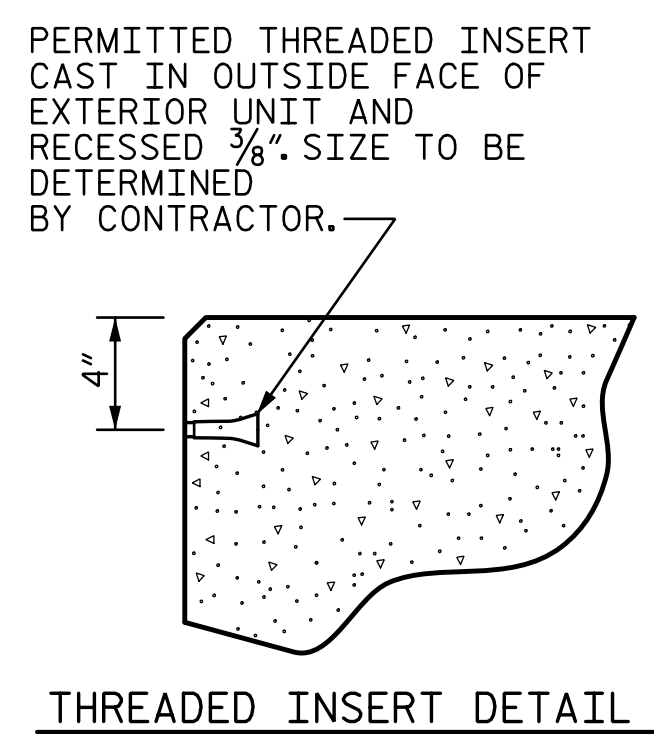


HALF SECTION AT INTERMEDIATE DIAPHRAGMS      **TYPICAL SECTION**      HALF SECTION THROUGH VOIDS

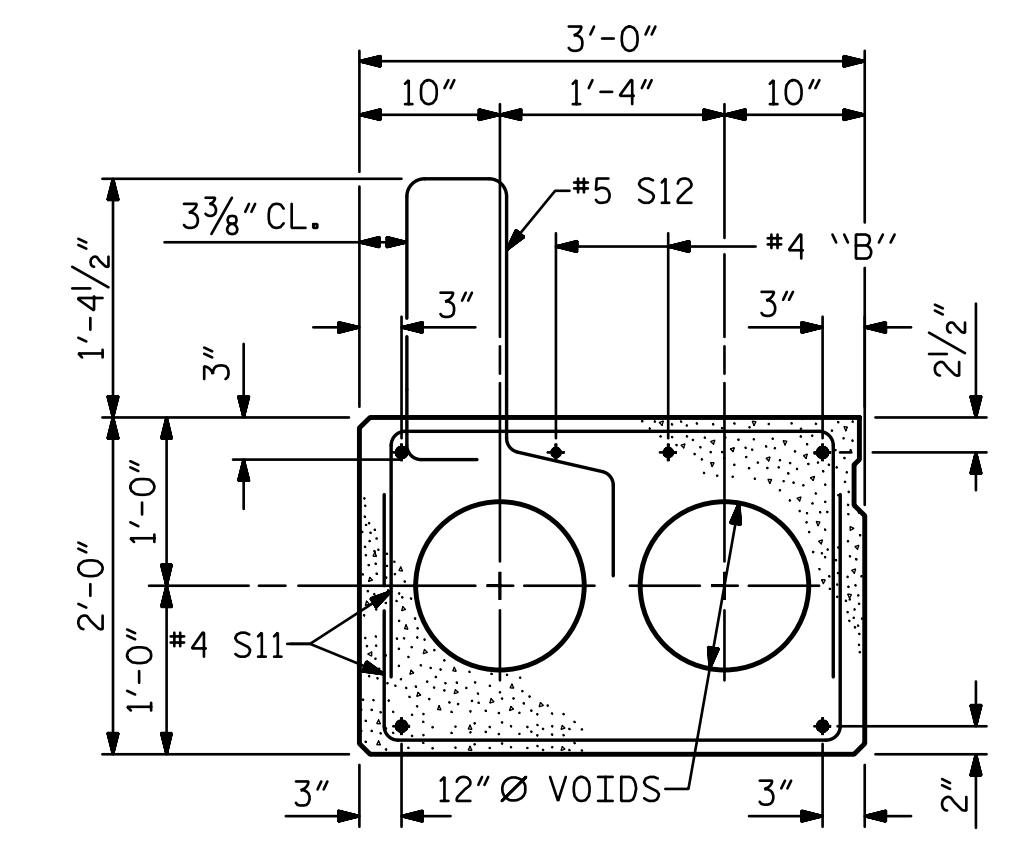
\* - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS, SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.



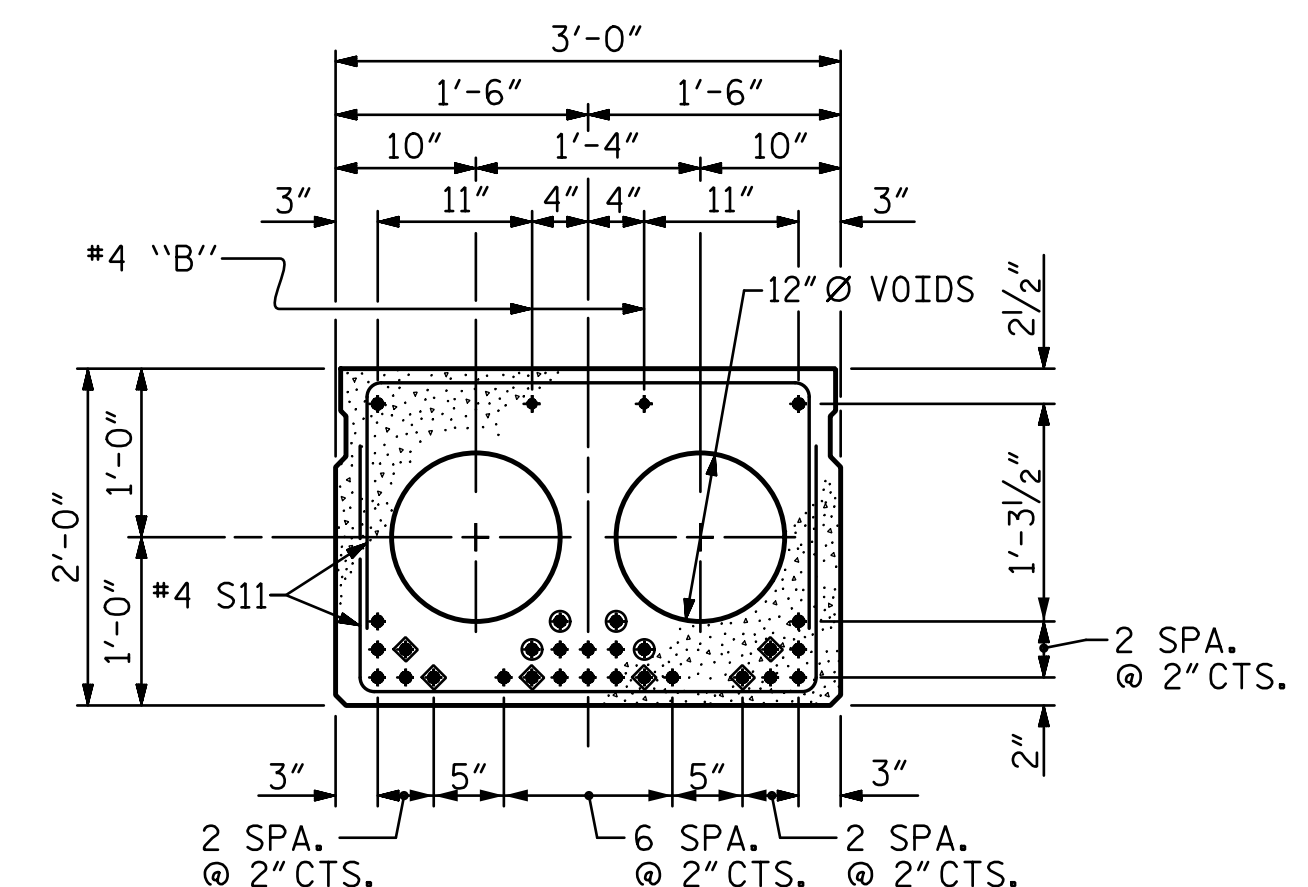
**GROUTED RECESS AT END OF POST-TENSIONED STRAND-CORED SLABS**



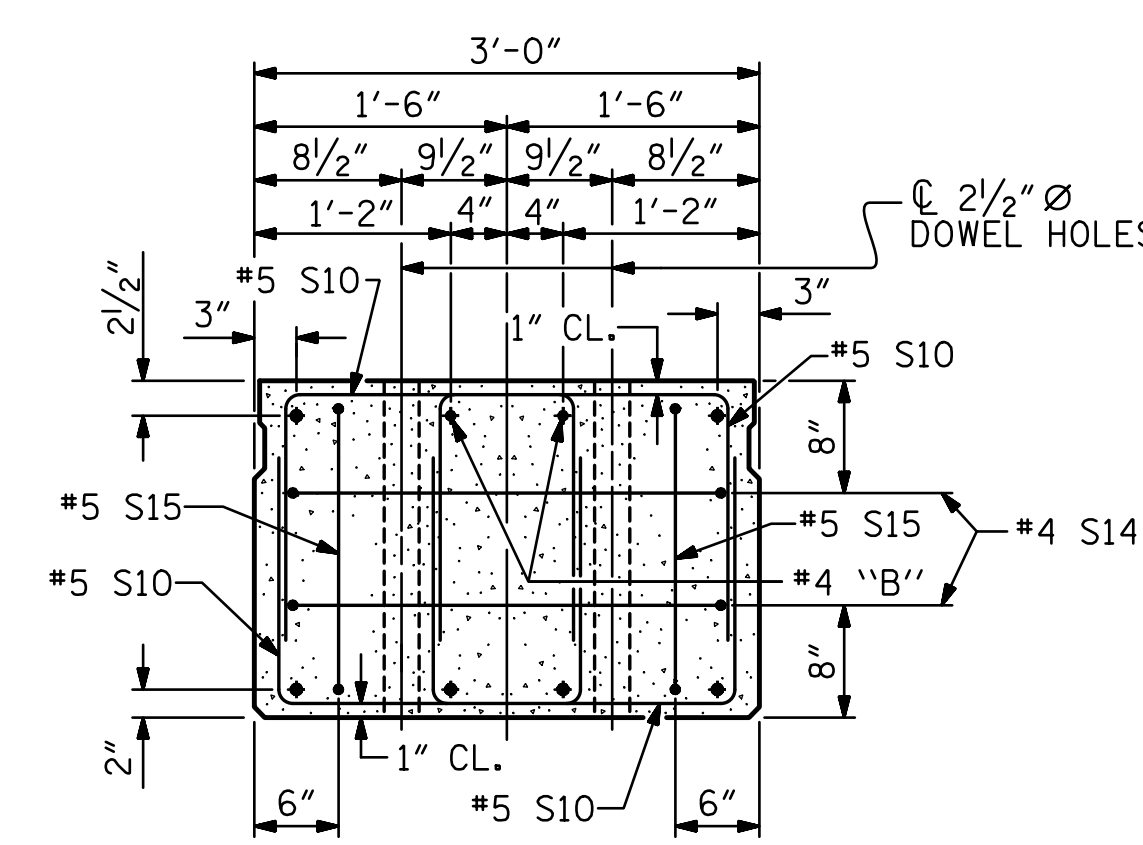
**THREADED INSERT DETAIL**



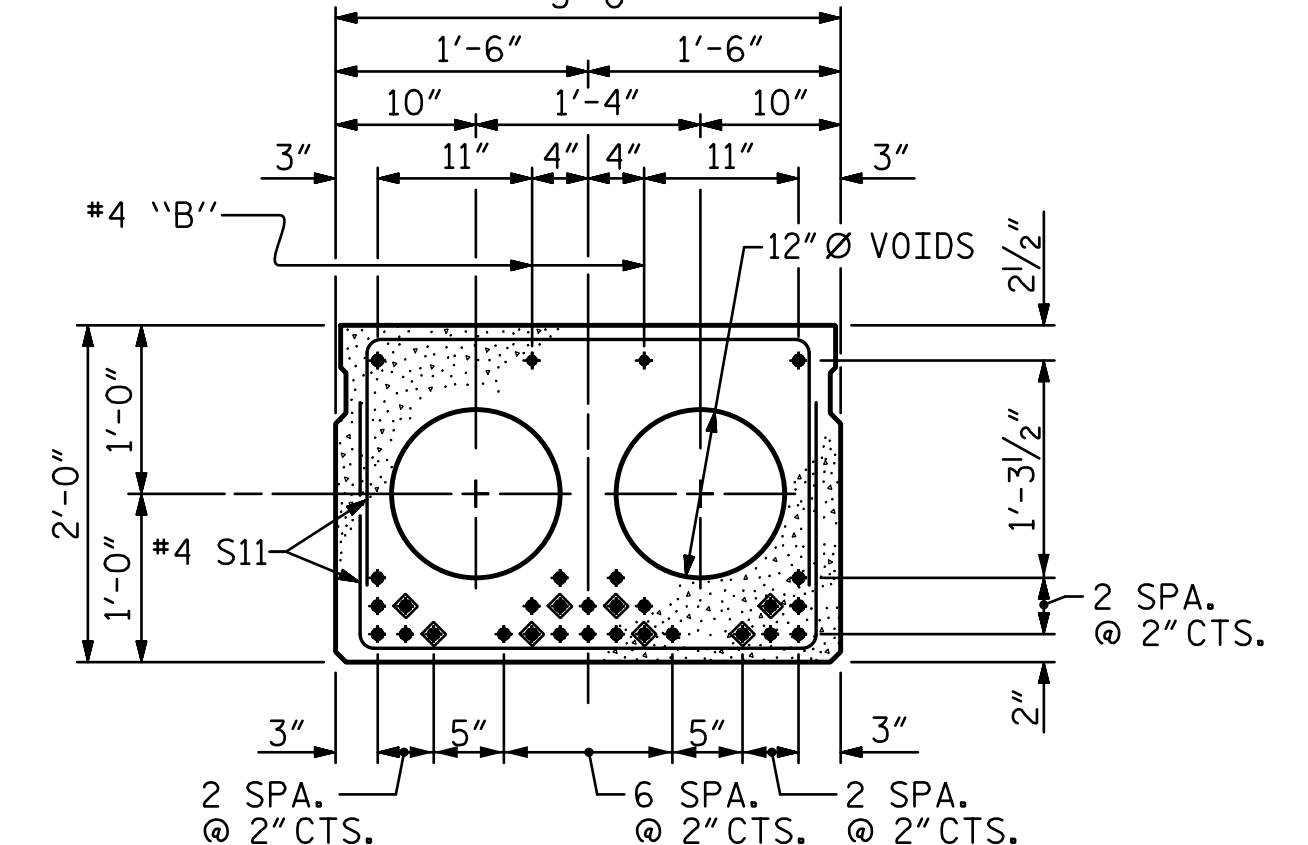
**EXTERIOR SLAB SECTION**  
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



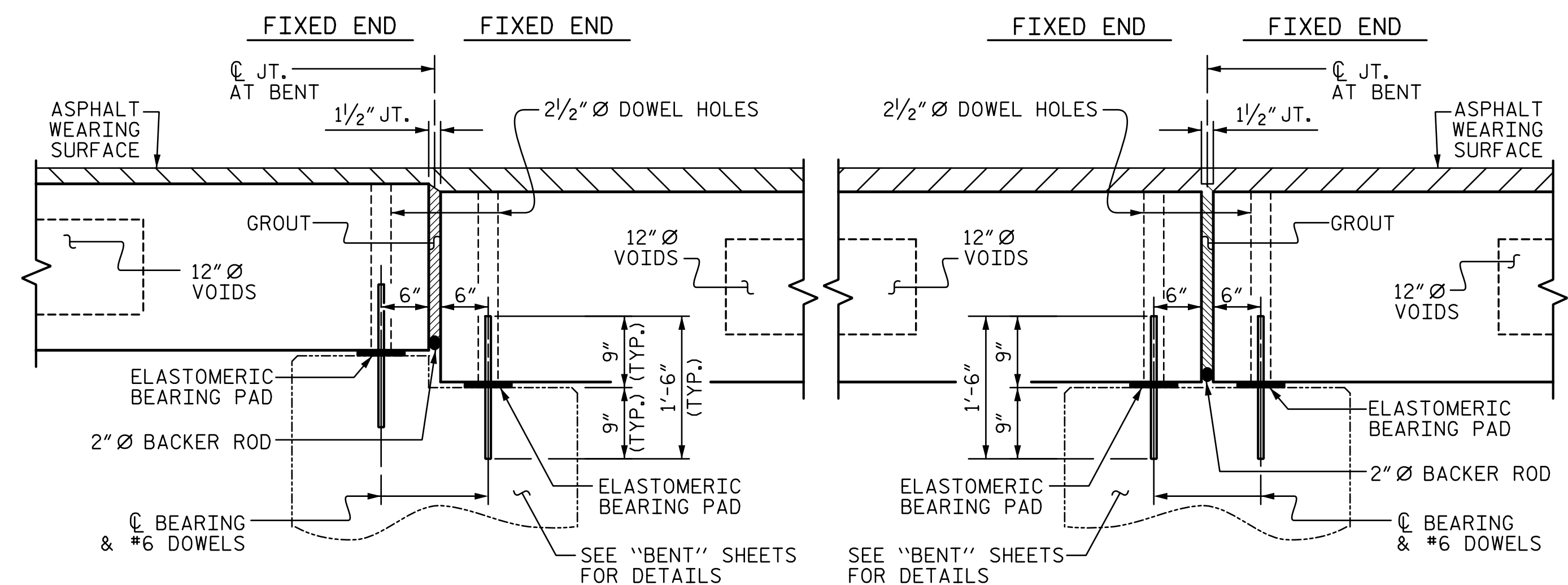
**INTERIOR SLAB SECTION (60' UNIT)**  
(24 STRANDS REQUIRED)



**END ELEVATION**  
SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.

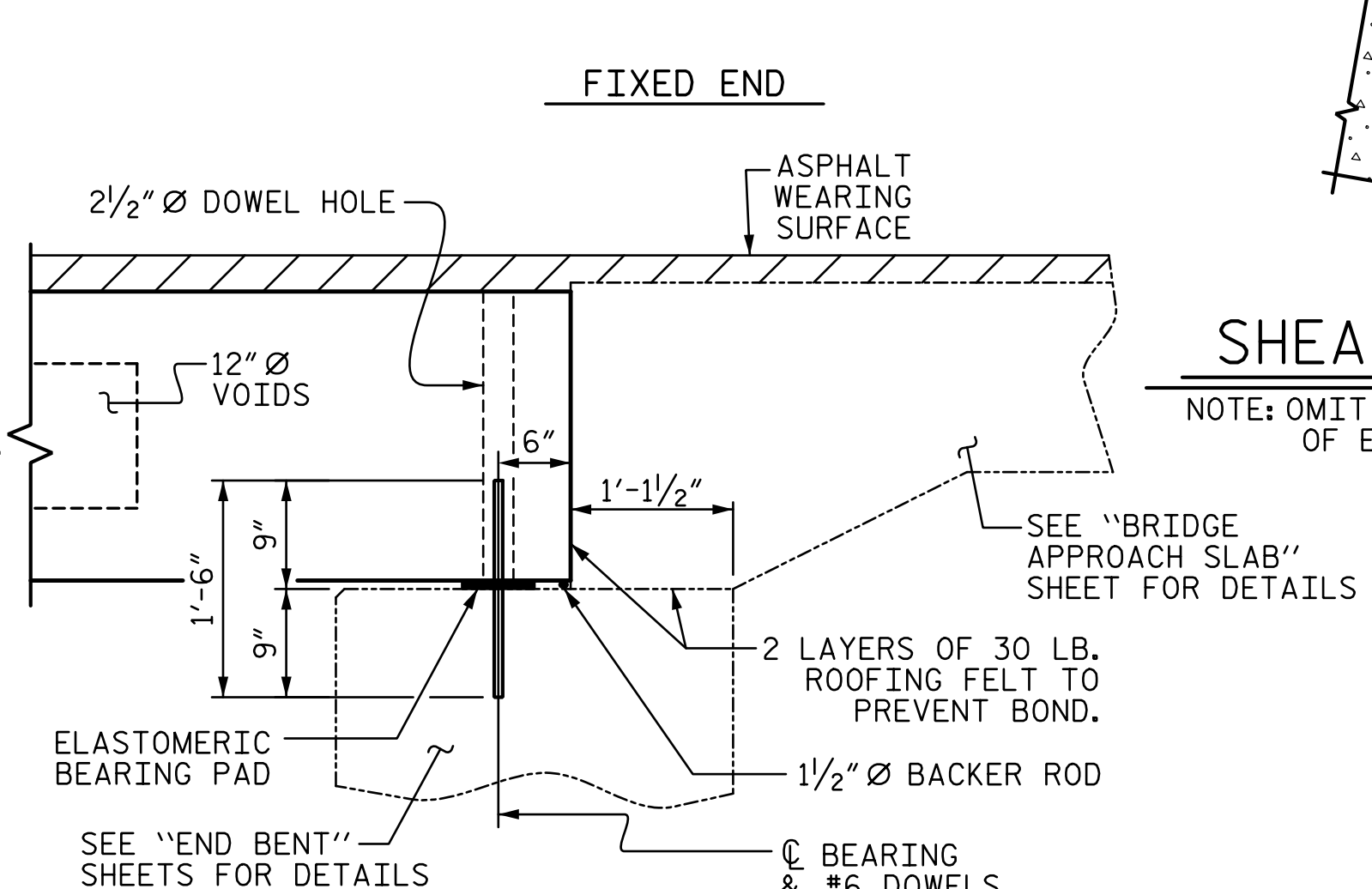


**INTERIOR SLAB SECTION (70' UNIT)**  
(28 STRANDS REQUIRED)  
**0.6" Ø LOW RELAXATION STRAND LAYOUT**

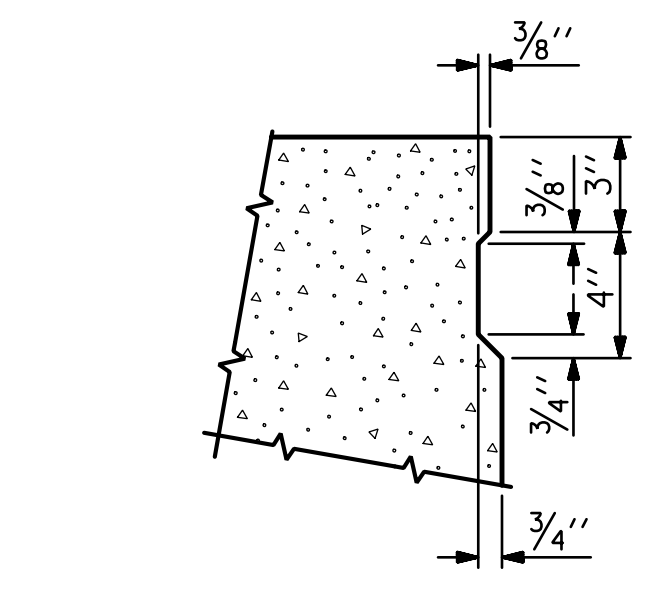


**SECTION AT BENT 1**

**SECTION AT BENT 2**



**SECTION AT END BENT 2**



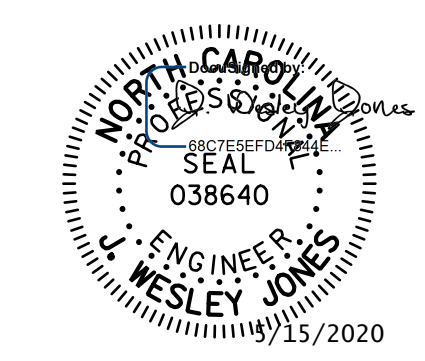
**SHEAR KEY DETAIL**  
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

- DEBONDING LEGEND**
- ◆ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
  - OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

PROJECT NO. **BR-0125**  
**WILKES** COUNTY  
STATION: **15+36.00 -L-**

SHEET 1 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
**3'-0" X 2'-0"**  
PRESTRESSED CONCRETE  
CORED SLAB UNIT  
(SPANS B & C)



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REVISIONS				SHEET NO.
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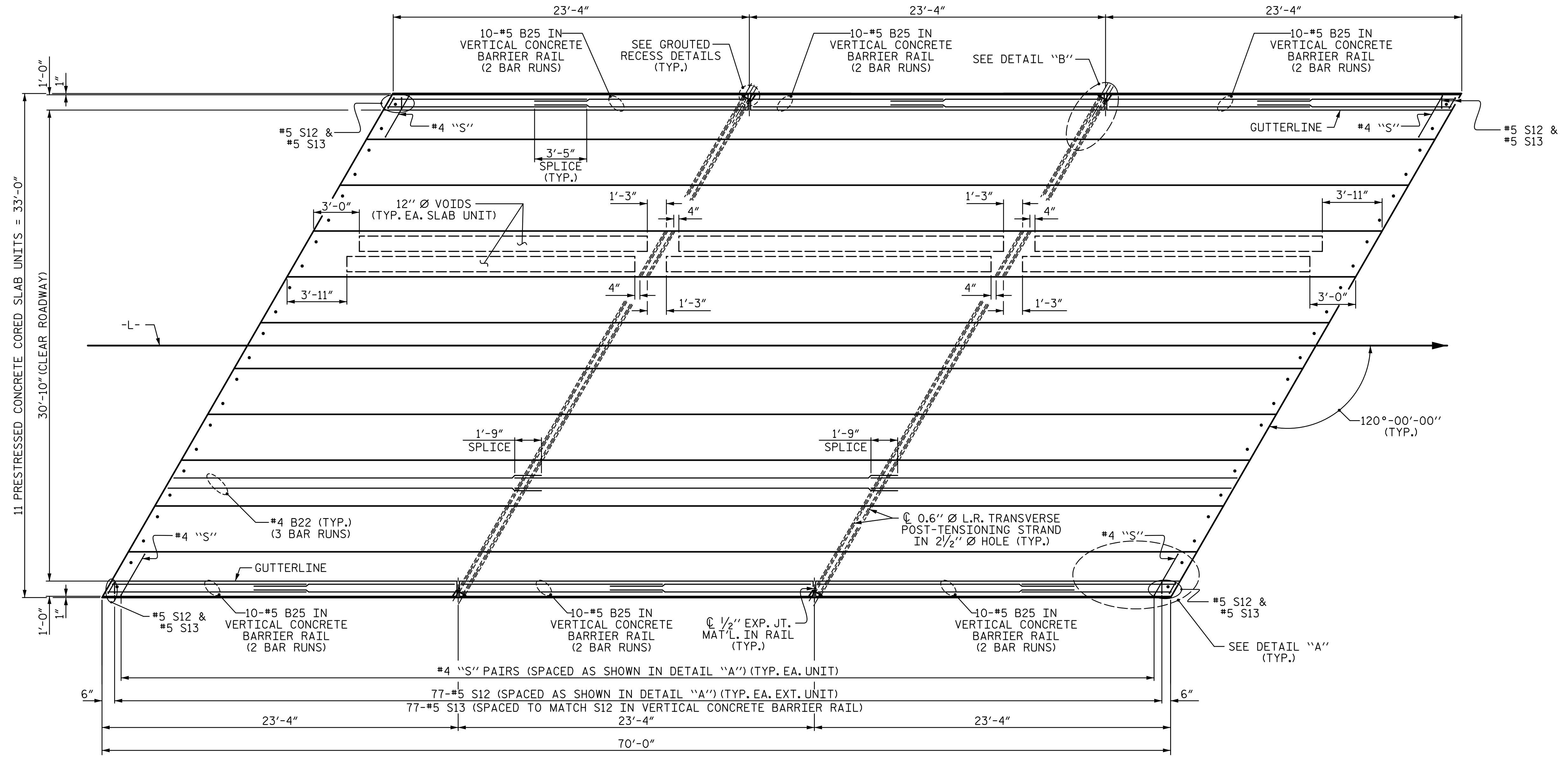
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TOTAL SHEETS 23

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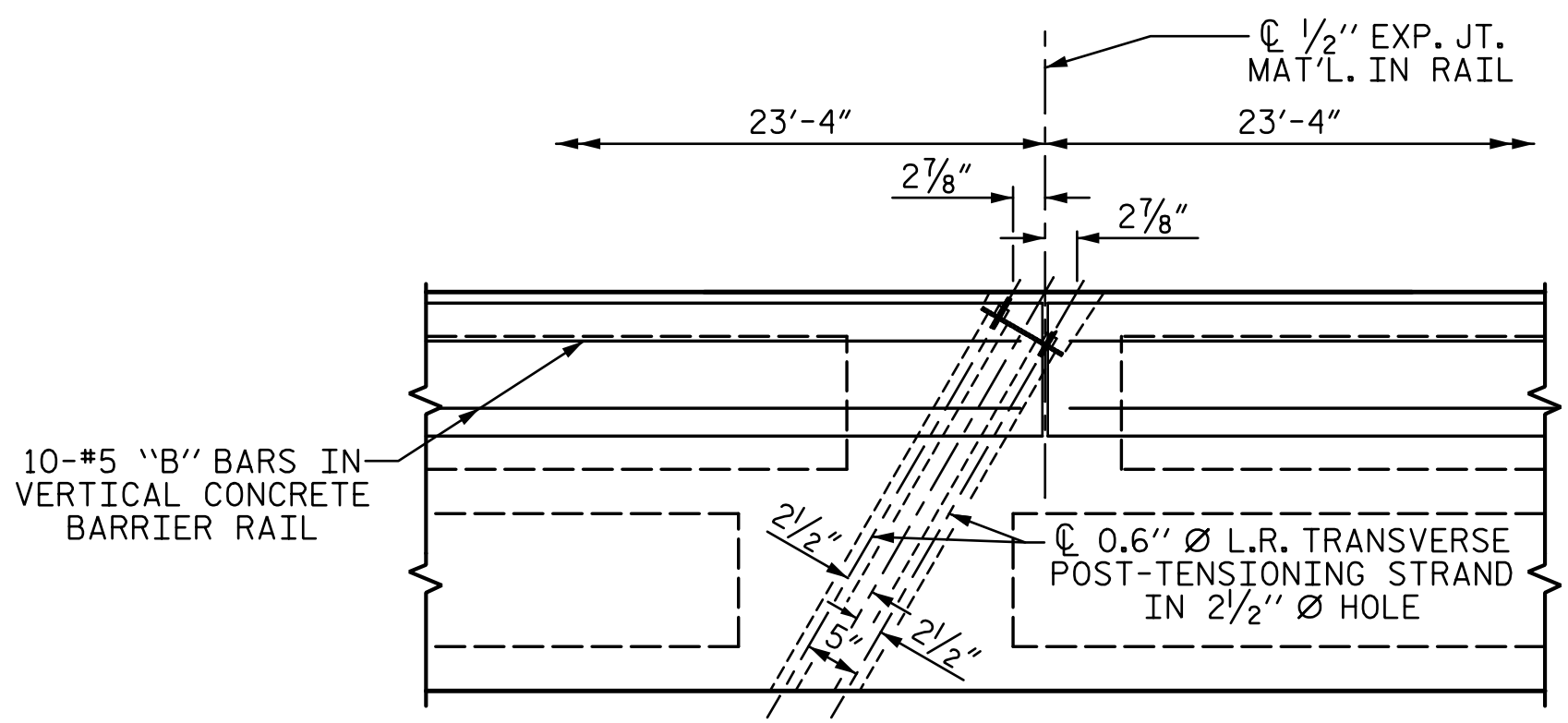
DRAWN BY : WAW	DATE : 10-19
CHECKED BY : JWJ	DATE : 11-19
DESIGN ENGINEER OF RECORD : JWJ	DATE : 04-20
DRAWN BY : MAA 6/10	REV. 9/14
CHECKED BY : MKT 7/10	MAA/TMG



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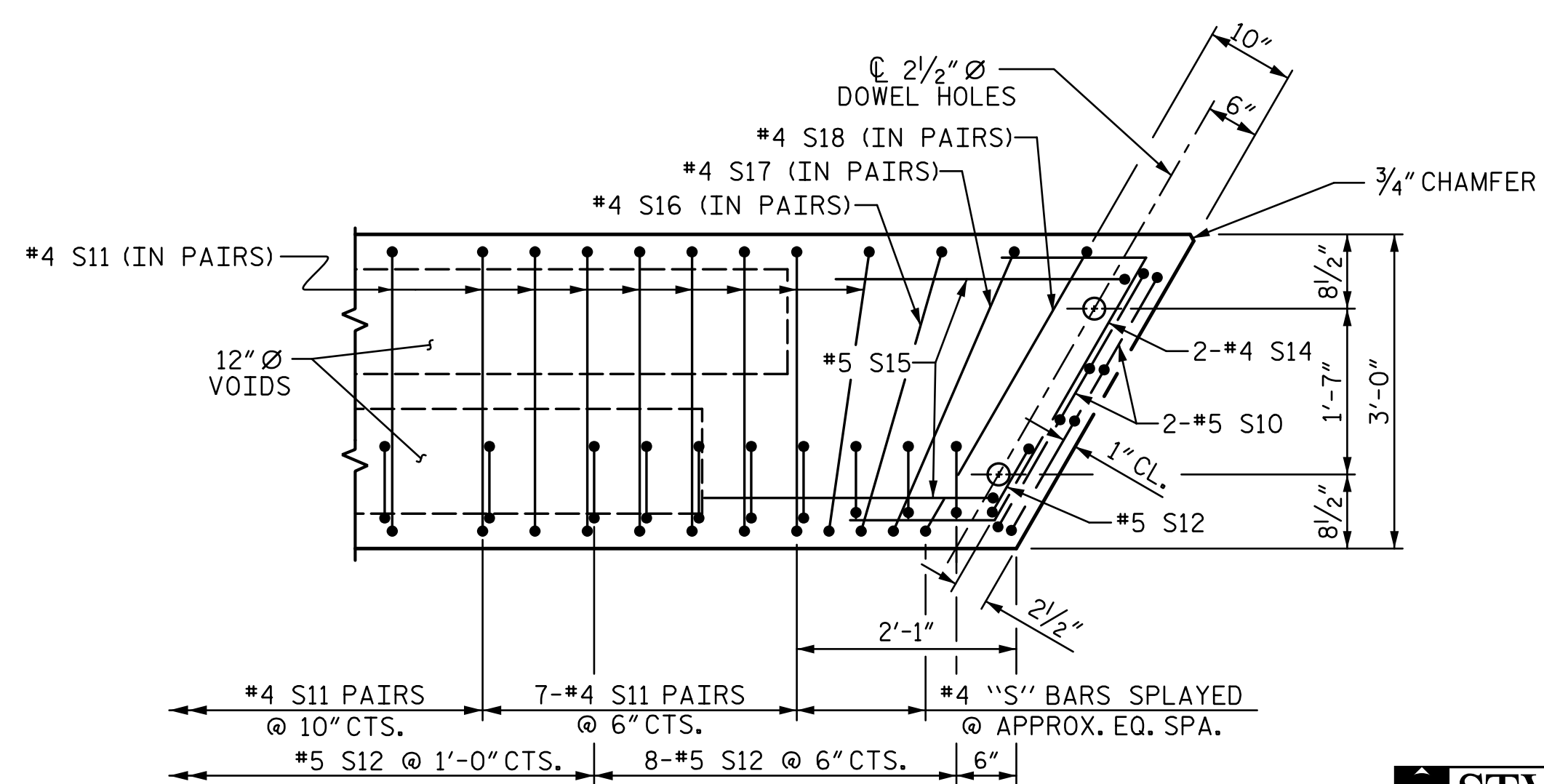


PLAN OF UNIT



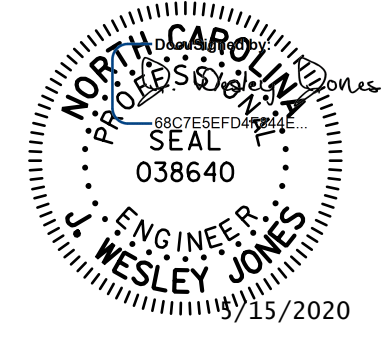
DETAIL "B"

#4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUDED RECESS AND 2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES



DETAIL "A"

(SIMILAR EACH END OF UNIT)  
NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.



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PROJECT NO. BR-0125  
WILKES COUNTY  
STATION: 15+36.00 -L-  
SHEET 2 OF 4

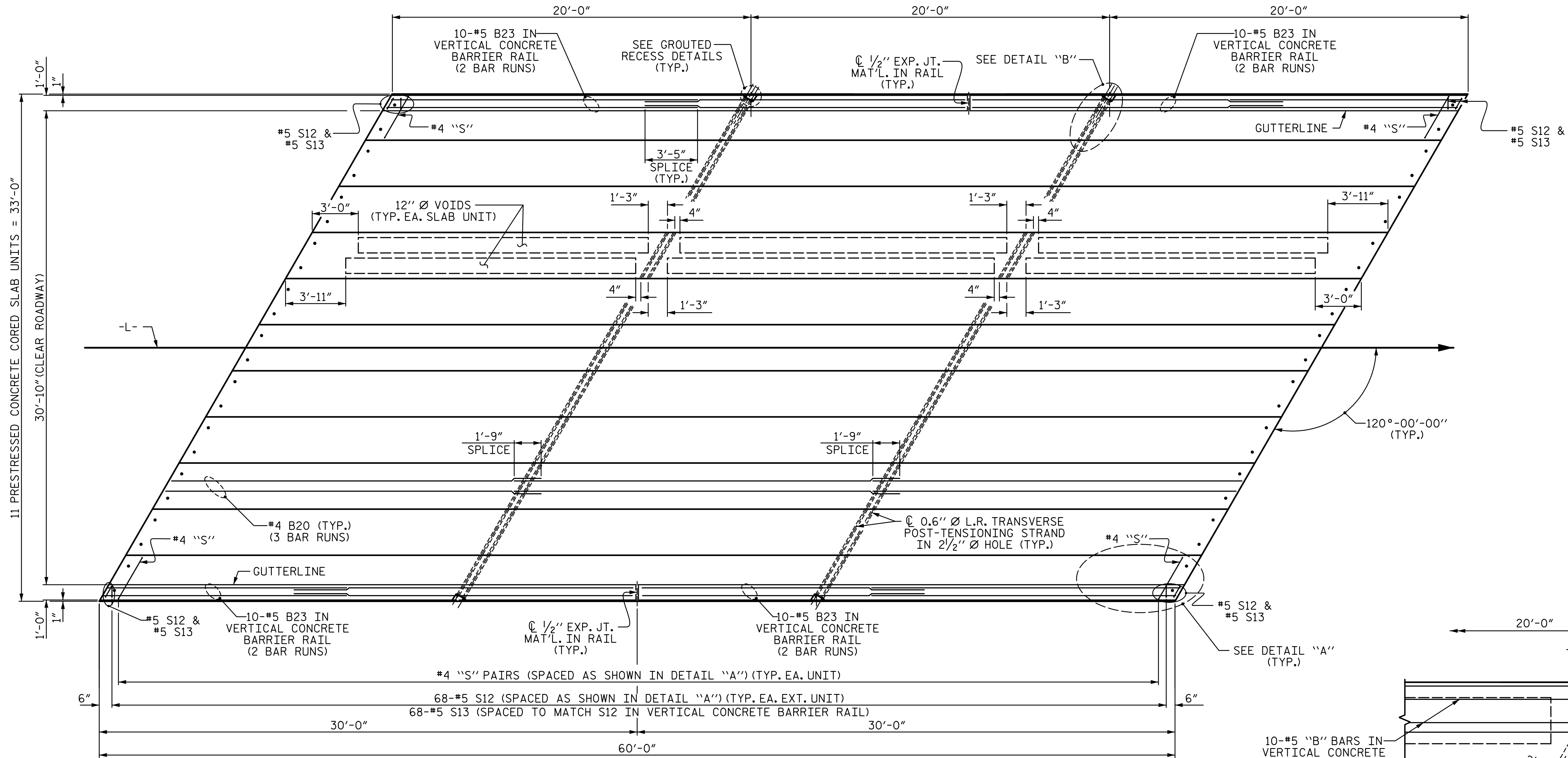
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
PLAN OF 70' UNIT  
30'-10" CLEAR ROADWAY  
120° SKEW  
(SPAN B)

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

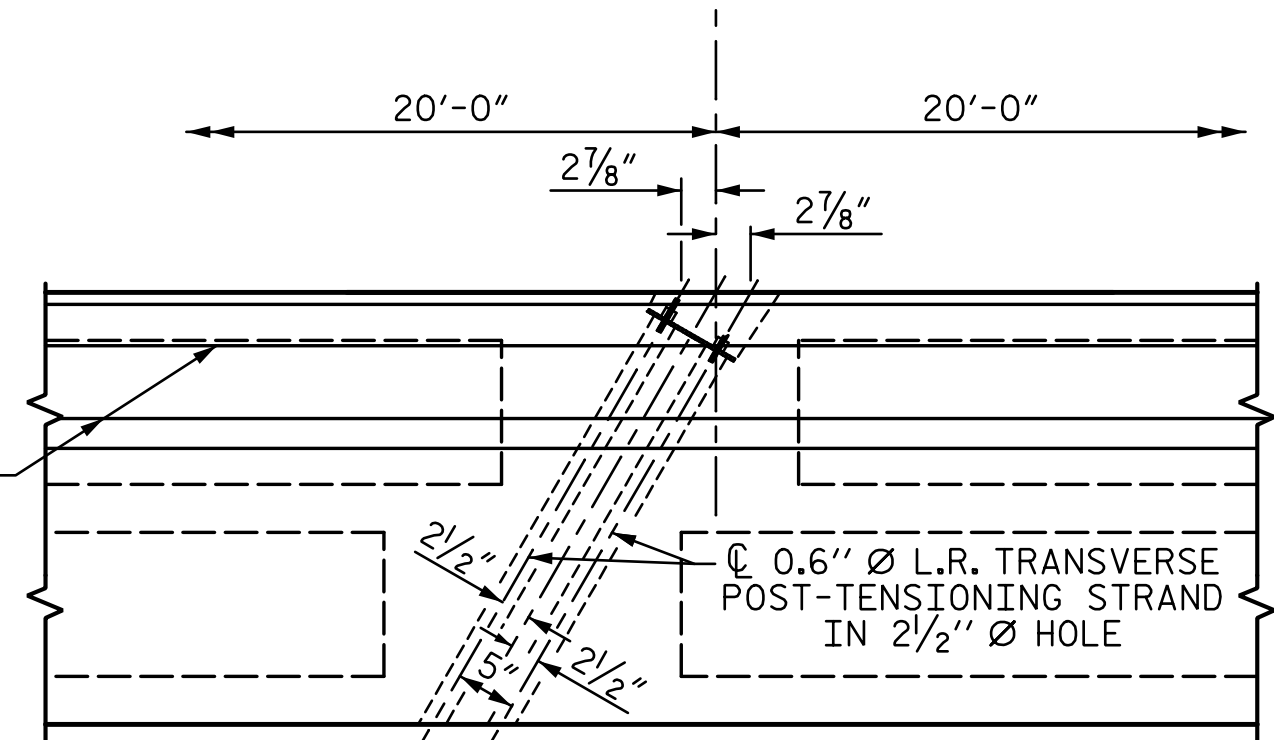
TOTAL SHEETS: 23



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**PLAN OF UNIT**



**DETAIL "B"**

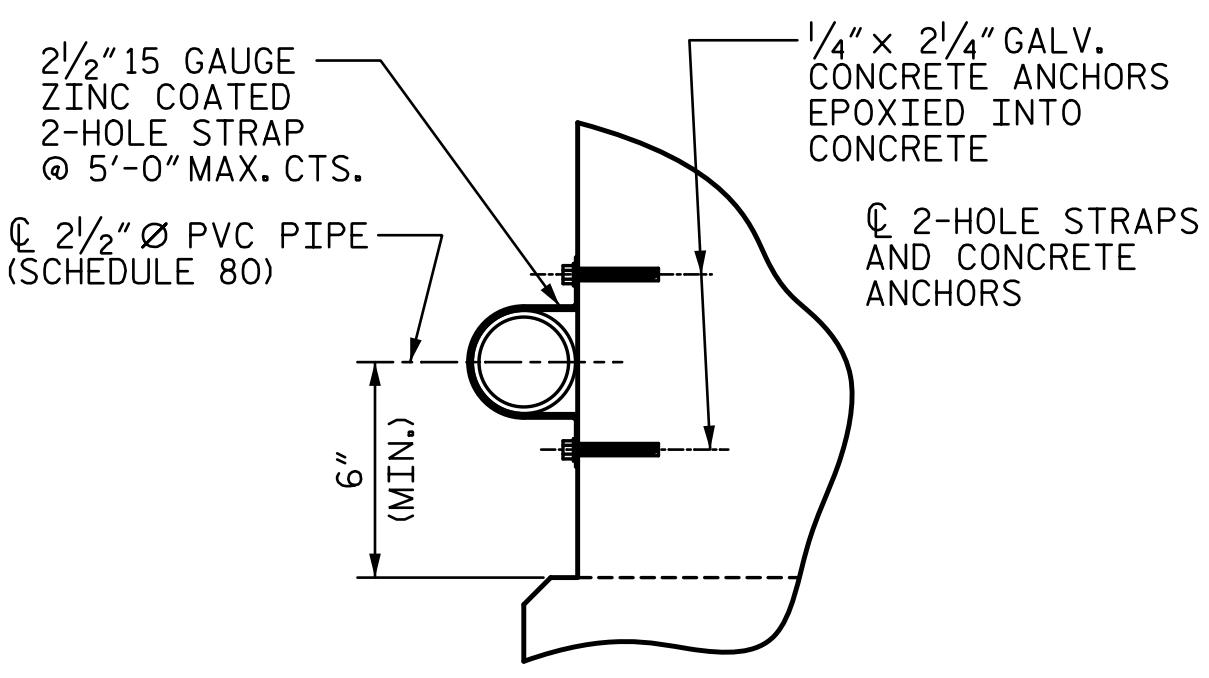
#4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUDED RECESS AND 2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES

PROJECT NO. **BR-0125**  
**WILKES** COUNTY  
 STATION: **15+36.00 -L-**  
 SHEET 3 OF 4

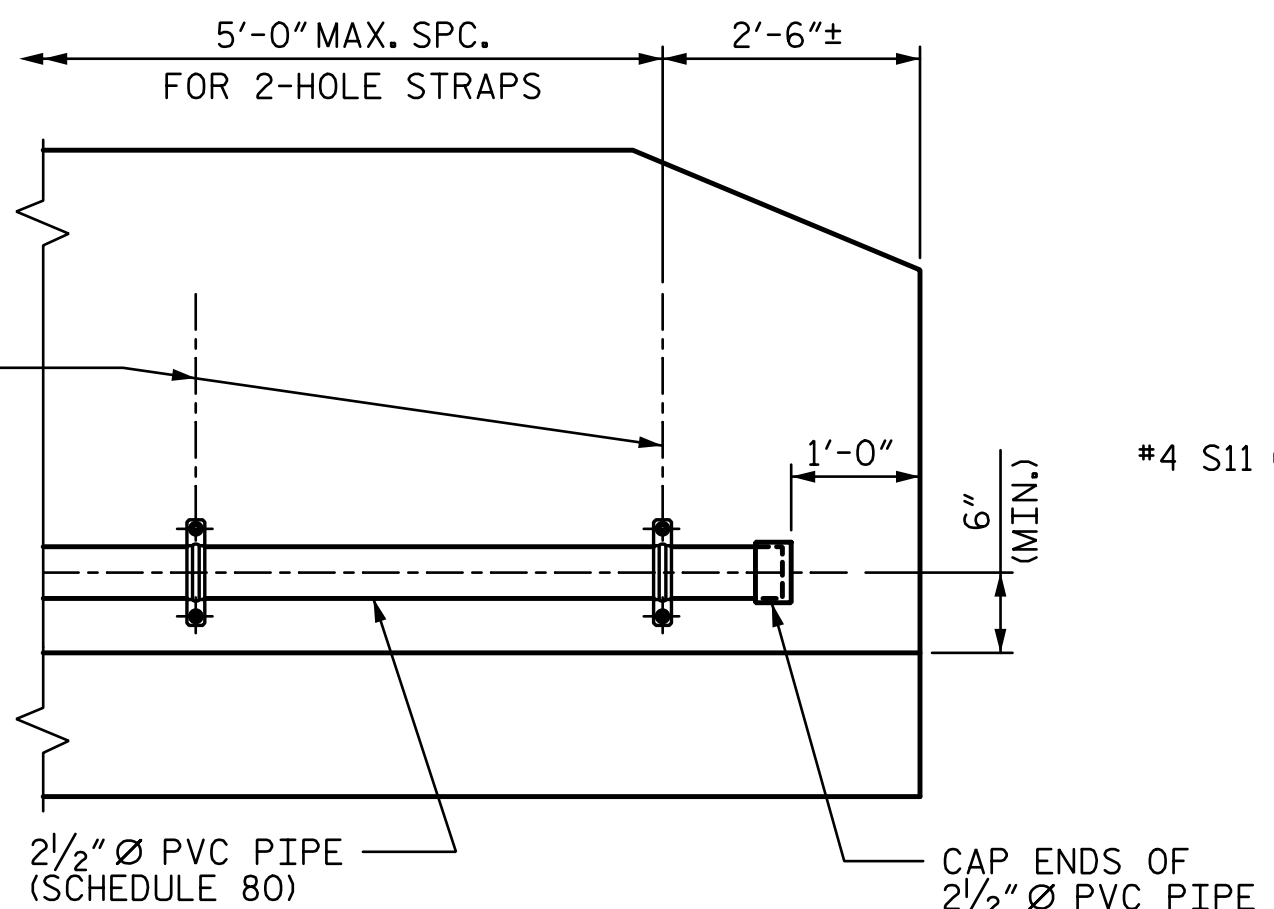
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**PLAN OF 60' UNIT**  
**30'-10" CLEAR ROADWAY**  
**120° SKEW**  
**(SPAN C)**

REVISIONS				SHEET NO.	
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1			3		
2			4		

S-11  
TOTAL SHEETS 23



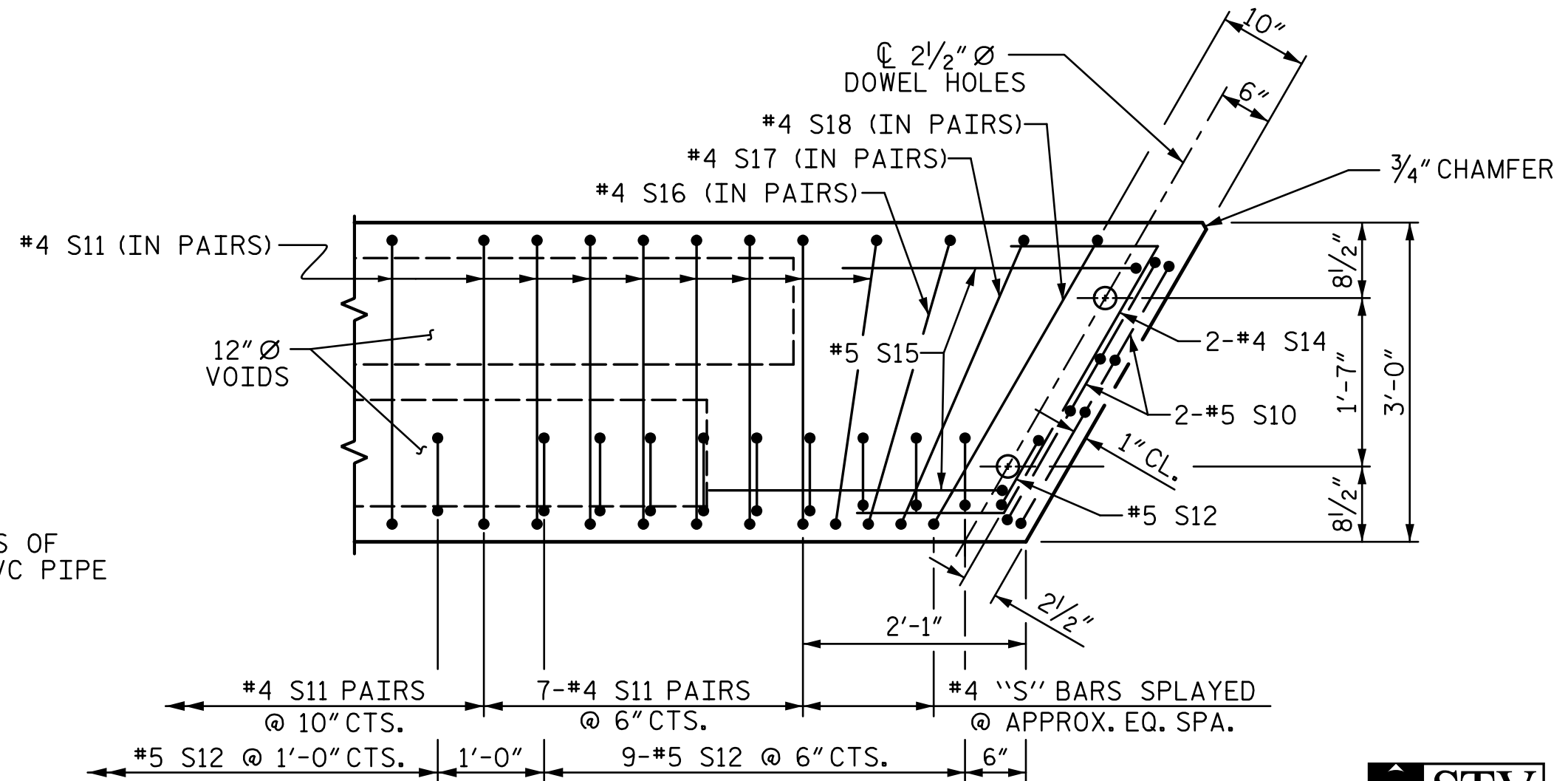
**SECTION**



**ELEVATION**

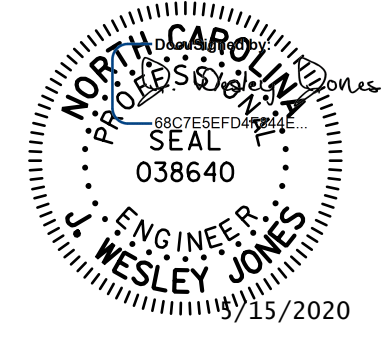
**FIBER OPTIC CONDUIT SYSTEM DETAILS**

2 1/2" Ø SCHEDULE 80 PVC PIPE ATTACHED TO THE BACK OF BOTH RAILS FOR FUTURE FIBER OPTIC CABLE.



**DETAIL "A"**

(SIMILAR EACH END OF UNIT)  
 NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.

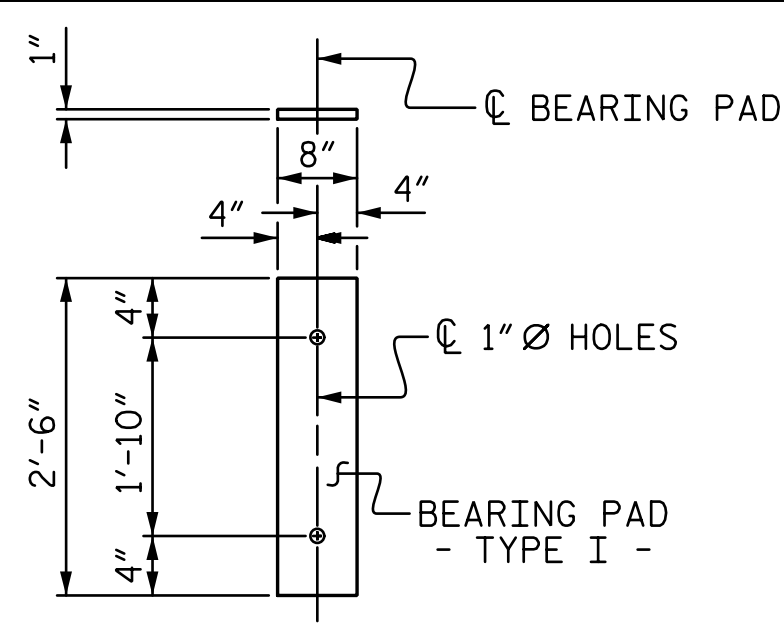


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DRAWN BY : WAW	DATE : 10-19
CHECKED BY : JWJ	DATE : 11-19
DESIGN ENGINEER OF RECORD : JWJ	DATE : 04-20
DRAWN BY : MAA 6/10	REV. 12/5/11 MAA/AAC
CHECKED BY : MKT 7/10	REV. 8/14 MAA/TMG





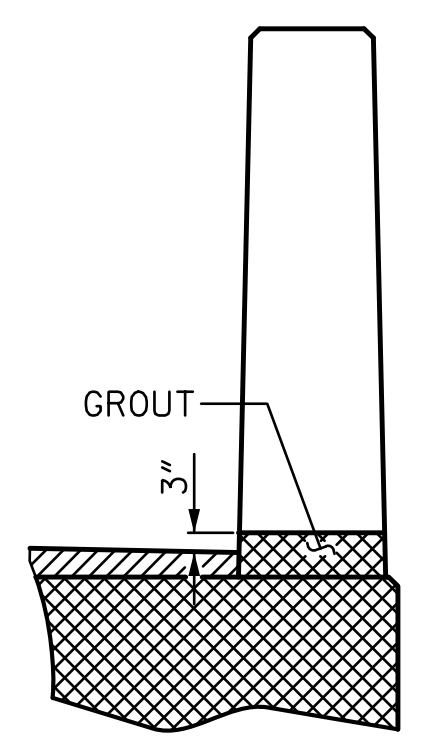
FIXED END  
(TYPE I - 44 REQ'D)

**ELASTOMERIC BEARING DETAILS**

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

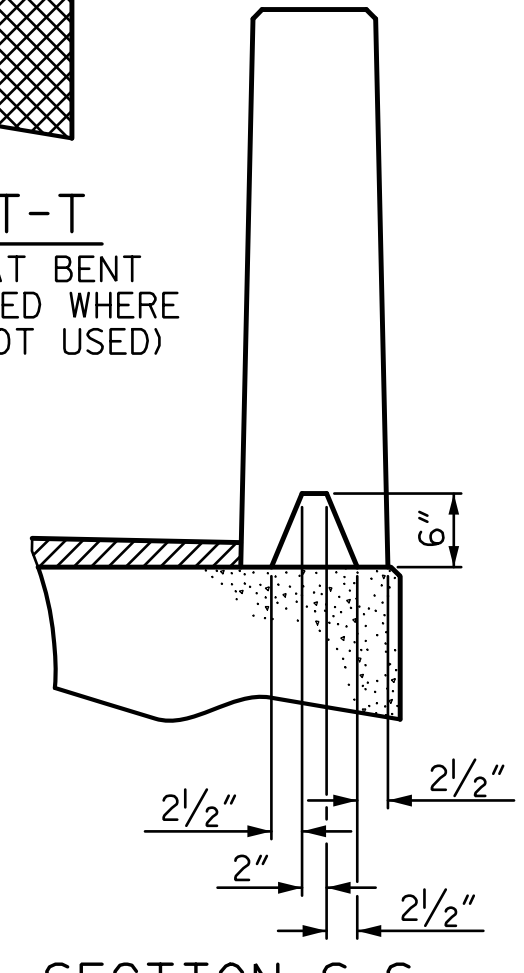
CONCRETE RELEASE STRENGTH	
UNIT	PSI
60' UNITS	4800
70' UNITS	5500

GRADE 270 STRANDS	
	0.6" Ø L.R.
AREA ( SQUARE INCHES )	0.217
ULTIMATE STRENGTH ( LBS. PER STRAND )	58,600
APPLIED PRESTRESS ( LBS. PER STRAND )	43,950



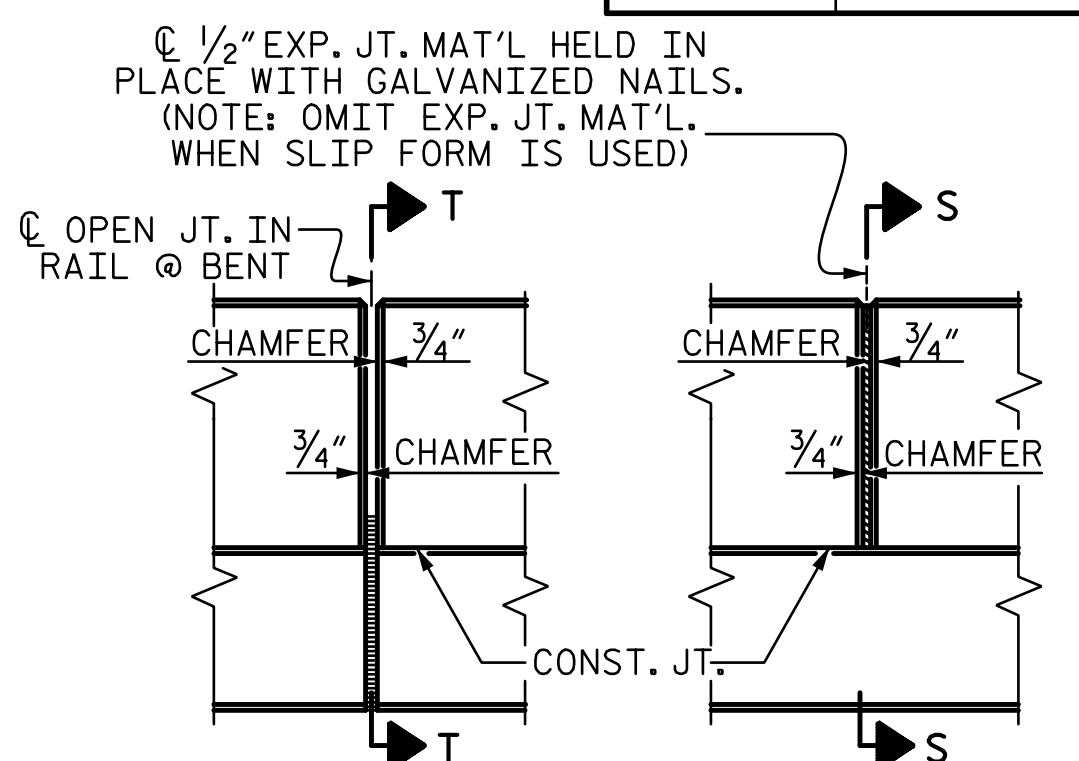
SECTION T-T

AT OPEN JOINT AT BENT  
(THIS IS TO BE USED WHERE  
FOAM JOINT IS NOT USED)

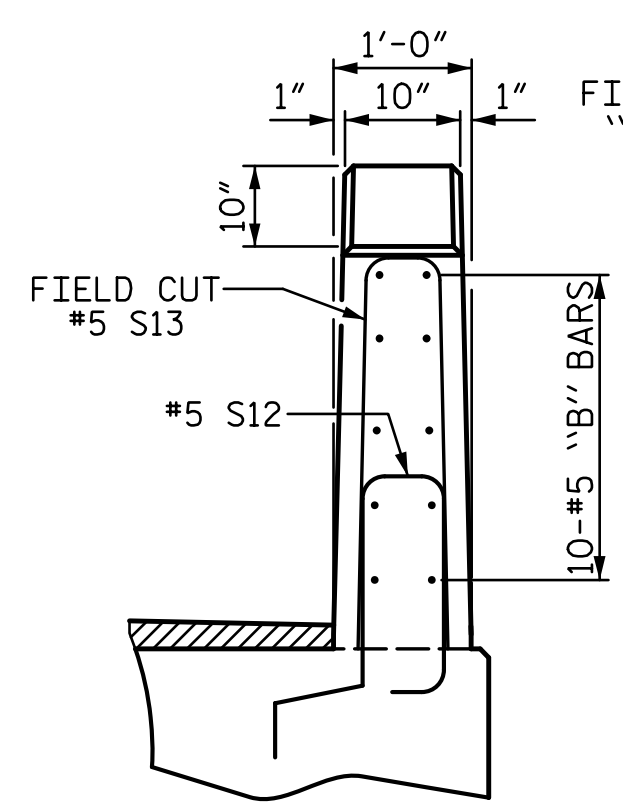


SECTION S-S

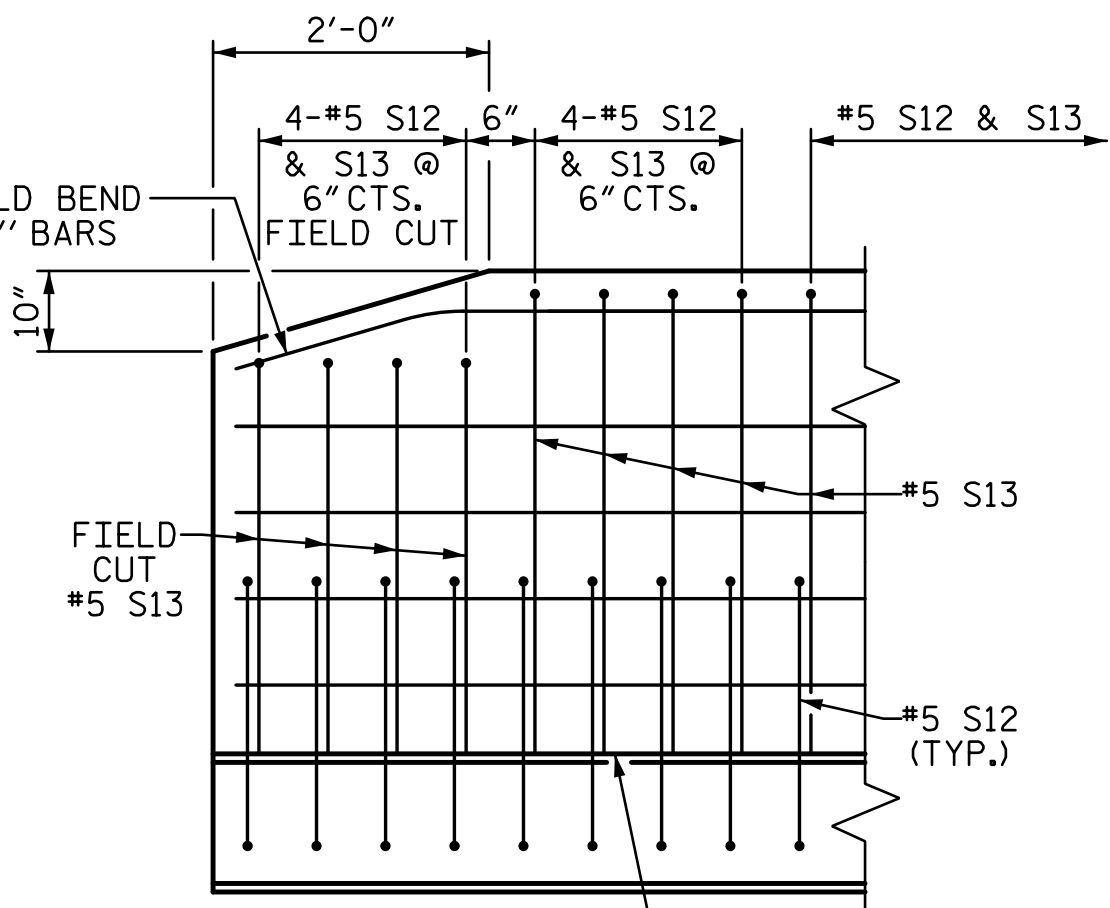
AT DAM IN OPEN JOINT  
(THIS IS TO BE USED ONLY  
WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS



END VIEW



SIDE VIEW

END OF RAIL DETAILS

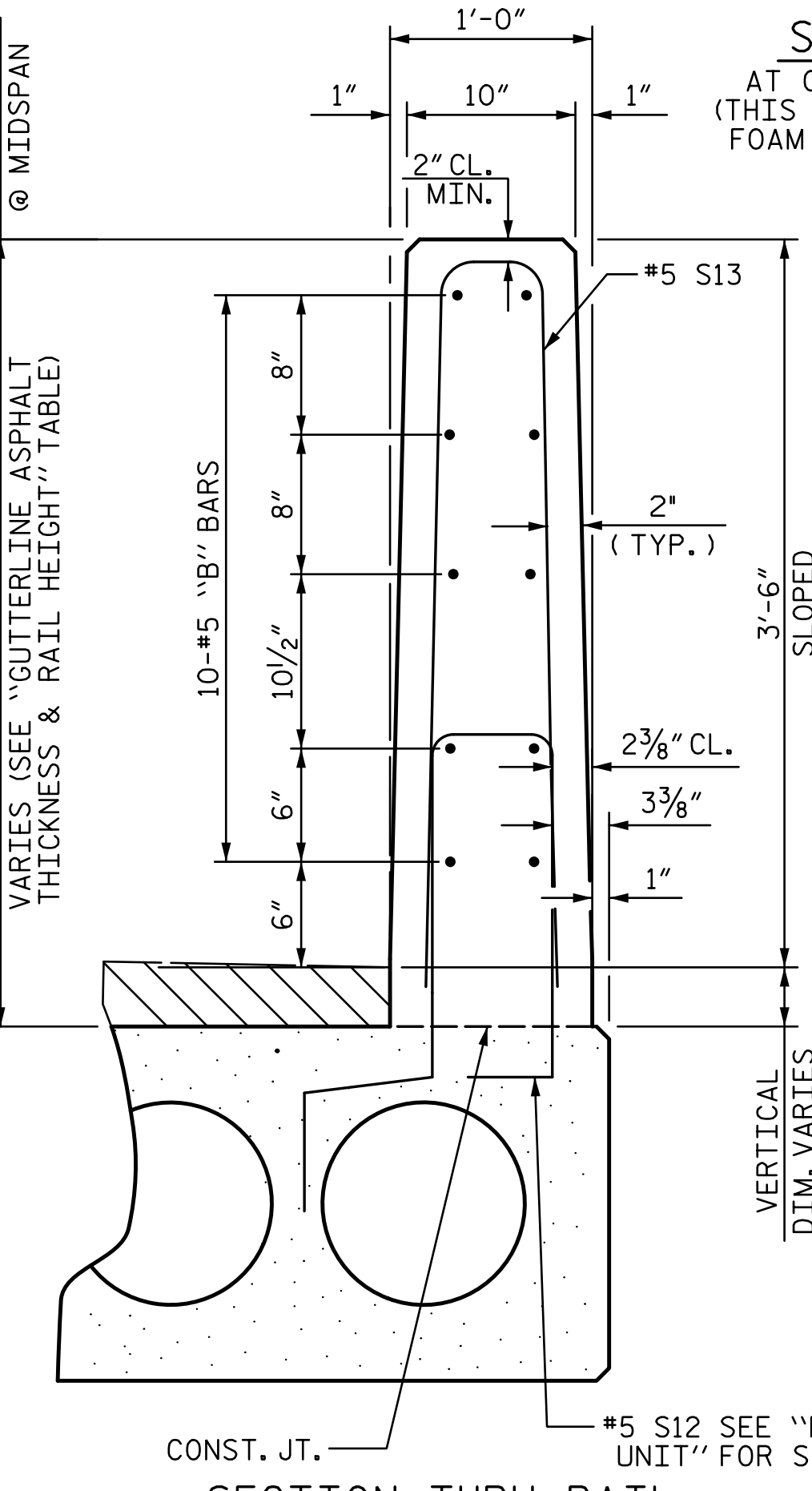
BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
60' UNIT						
*B23	80	80	#5	STR	16'-11"	1412
*S13	140	140	#5	2	7'-2"	1046
*EPOXY COATED REINFORCING STEEL						LBS.
CLASS AA CONCRETE						CU.YDS.
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN. FT.

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
70' UNIT						
*B25	120	120	#5	STR	13'-8"	1711
*S13	158	158	#5	2	7'-2"	1181
*EPOXY COATED REINFORCING STEEL						LBS.
CLASS AA CONCRETE						CU.YDS.
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN. FT.

BILL OF MATERIAL FOR ONE 60' CORED SLAB UNIT							
				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B20	6	#4	STR	21'-2"	85	21'-2"	85
S10	8	#5	3	5'-0"	42	5'-0"	42
S11	146	#4	3	5'-10"	569	5'-10"	569
*S12	70	#5	1	5'-7"	408		
S14	4	#4	4	5'-11"	16	5'-11"	16
S15	4	#5	3	7'-1"	30	7'-1"	30
S16	4	#4	3	5'-11"	16	5'-11"	16
S17	4	#4	3	6'-1"	16	6'-1"	16
S18	4	#4	3	6'-3"	17	6'-3"	17
REINFORCING STEEL					LBS.	791	791
*EPOXY COATED REINFORCING STEEL					LBS.	408	2892
6000 P.S.I. CONCRETE					CU. YDS.	10.4	18.1
0.6" Ø L.R. STRANDS					No.	24	140.29

BILL OF MATERIAL FOR ONE 70' CORED SLAB UNIT							
				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B22	6	#4	STR	24'-6"	98	24'-6"	98
S10	8	#5	3	5'-0"	42	5'-0"	42
S11	170	#4	3	5'-10"	662	5'-10"	662
*S12	79	#5	1	5'-7"	460		
S14	4	#4	4	5'-11"	16	5'-11"	16
S15	4	#5	3	7'-1"	30	7'-1"	30
S16	4	#4	3	5'-11"	16	5'-11"	16
S17	4	#4	3	6'-1"	16	6'-1"	16
S18	4	#4	3	6'-3"	17	6'-3"	17
REINFORCING STEEL					LBS.	897	897
*EPOXY COATED REINFORCING STEEL					LBS.	460	2892
7000 P.S.I. CONCRETE					CU. YDS.	12.0	18.1
0.6" Ø L.R. STRANDS					No.	28	140.29

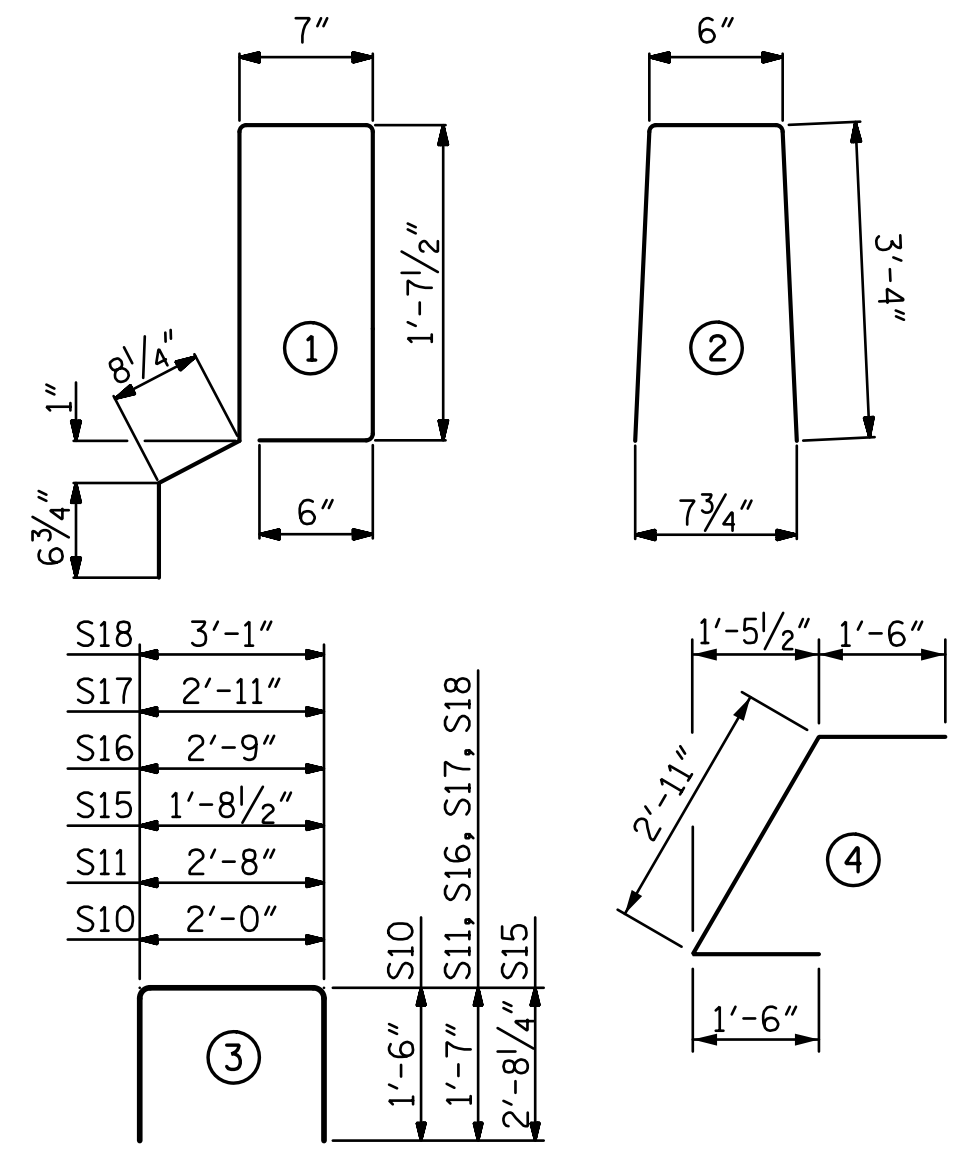
GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
	ASPHALT OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
60' UNITS	2 1/8"	3'-8 1/8"
70' UNITS	2"	3'-8"



SECTION THRU RAIL

**VERTICAL CONCRETE BARRIER RAIL DETAILS**

**BAR TYPES**



ALL BAR DIMENSIONS ARE OUT TO OUT

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 2'-0"
70' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER ( SLAB ALONE IN PLACE )	2 1/4" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	3/4" ↓
FINAL CAMBER	1 1/2" ↑

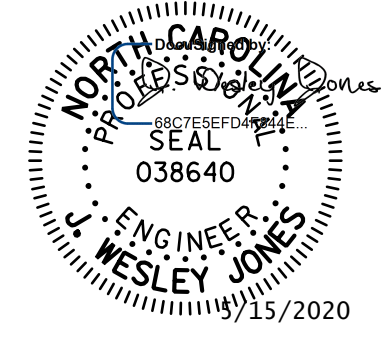
\*\* INCLUDES FUTURE WEARING SURFACE

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 2'-0"
60' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER ( SLAB ALONE IN PLACE )	1 1/8" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/2" ↓
FINAL CAMBER	1 3/8" ↑

\*\* INCLUDES FUTURE WEARING SURFACE

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
60' UNIT			
EXTERIOR C.S.	2	60'-0"	120'-0"
INTERIOR C.S.	9	60'-0"	540'-0"
TOTAL	11		660'-0"

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
70' UNIT			
EXTERIOR C.S.	2	70'-0"	140'-0"
INTERIOR C.S.	9	70'-0"	630'-0"
TOTAL	11		770'-0"



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**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.

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.

ALL REINFORCING STEEL IN VERTICAL CONCRETE BARRIER RAILS 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.

MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST TENSIONING STRANDS IN THE DIAPHRAGM.

THE #4 S11 STIRRUPS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO THE GROUTED RECESS.

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.

PROJECT NO. **BR-0125**  
**WILKES** COUNTY  
STATION: **15+36.00 -L-**

SHEET 4 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
3'-0" X 2'-0"  
PRESTRESSED CONCRETE  
CORED SLAB UNIT  
(SPANS B & C)

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

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NOTES

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

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

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

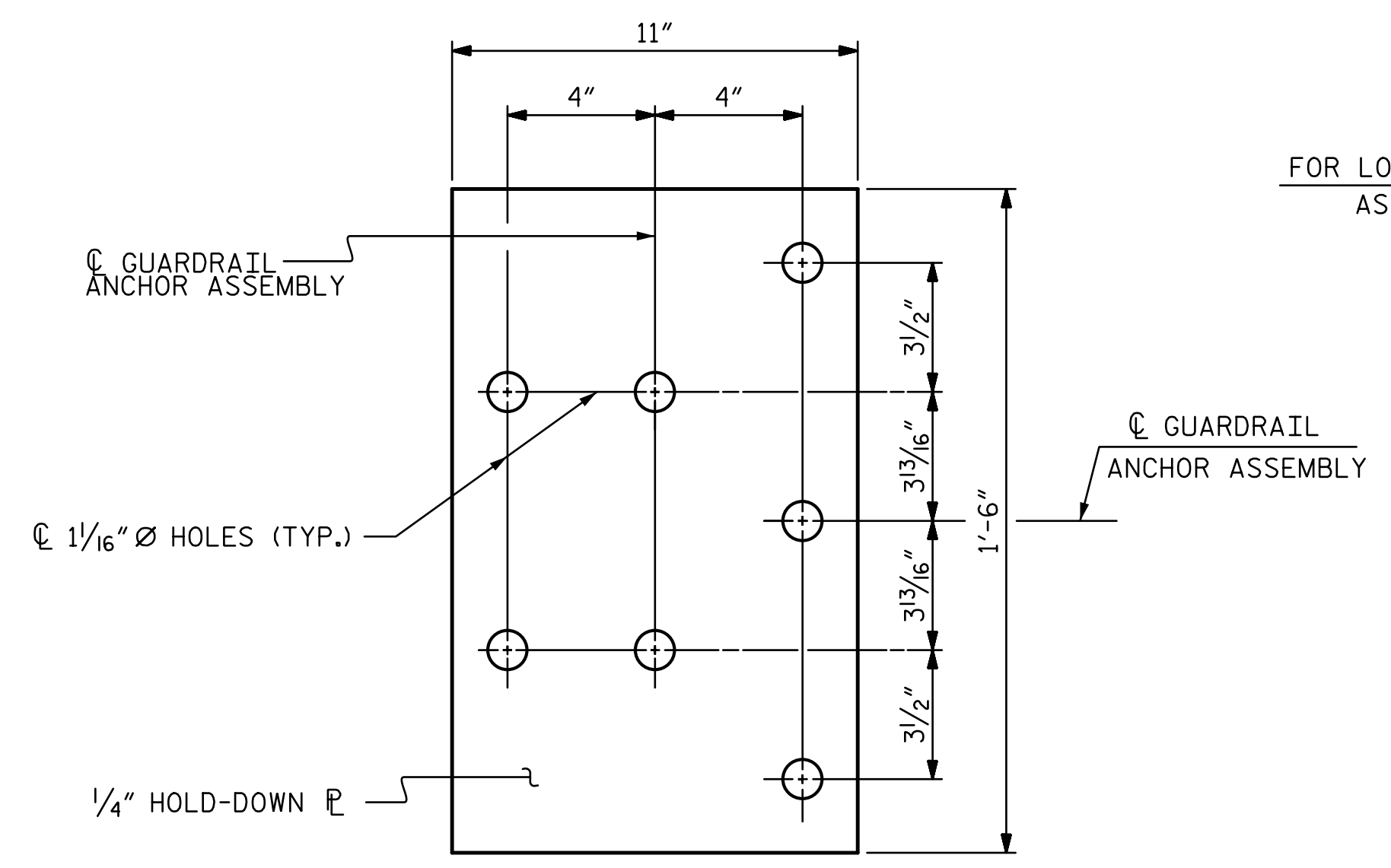
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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.

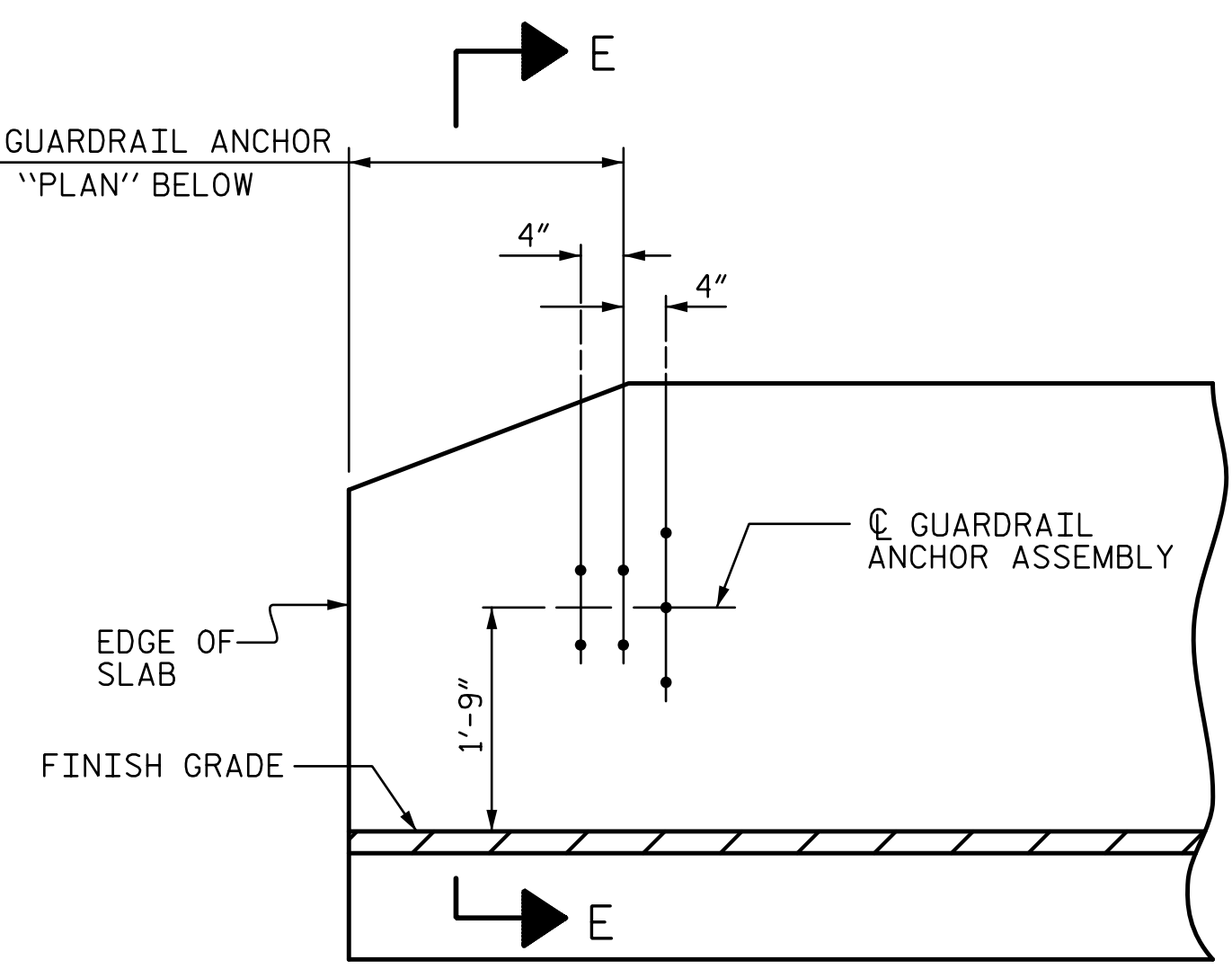
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

THE 1 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.

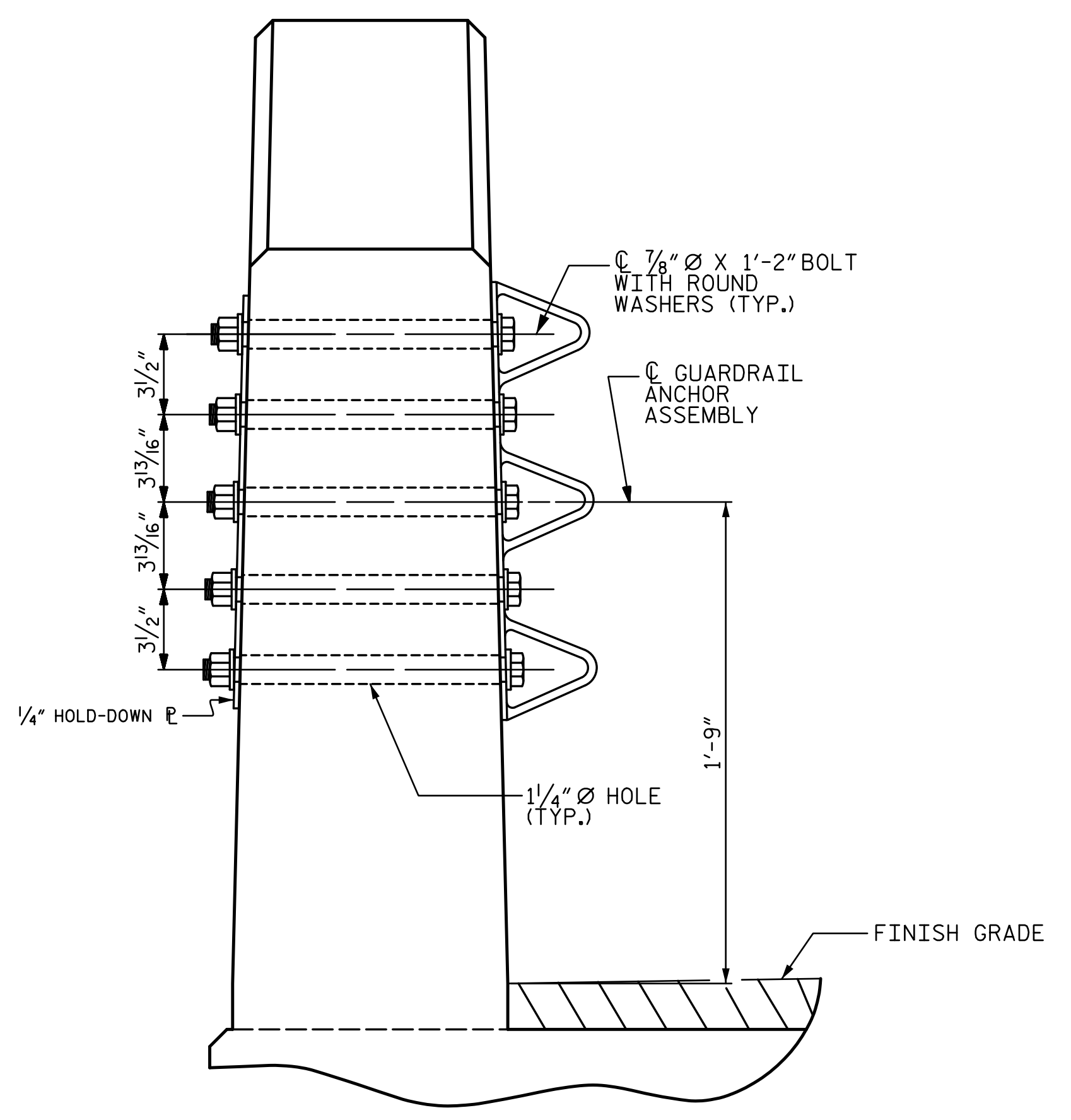


PLAN

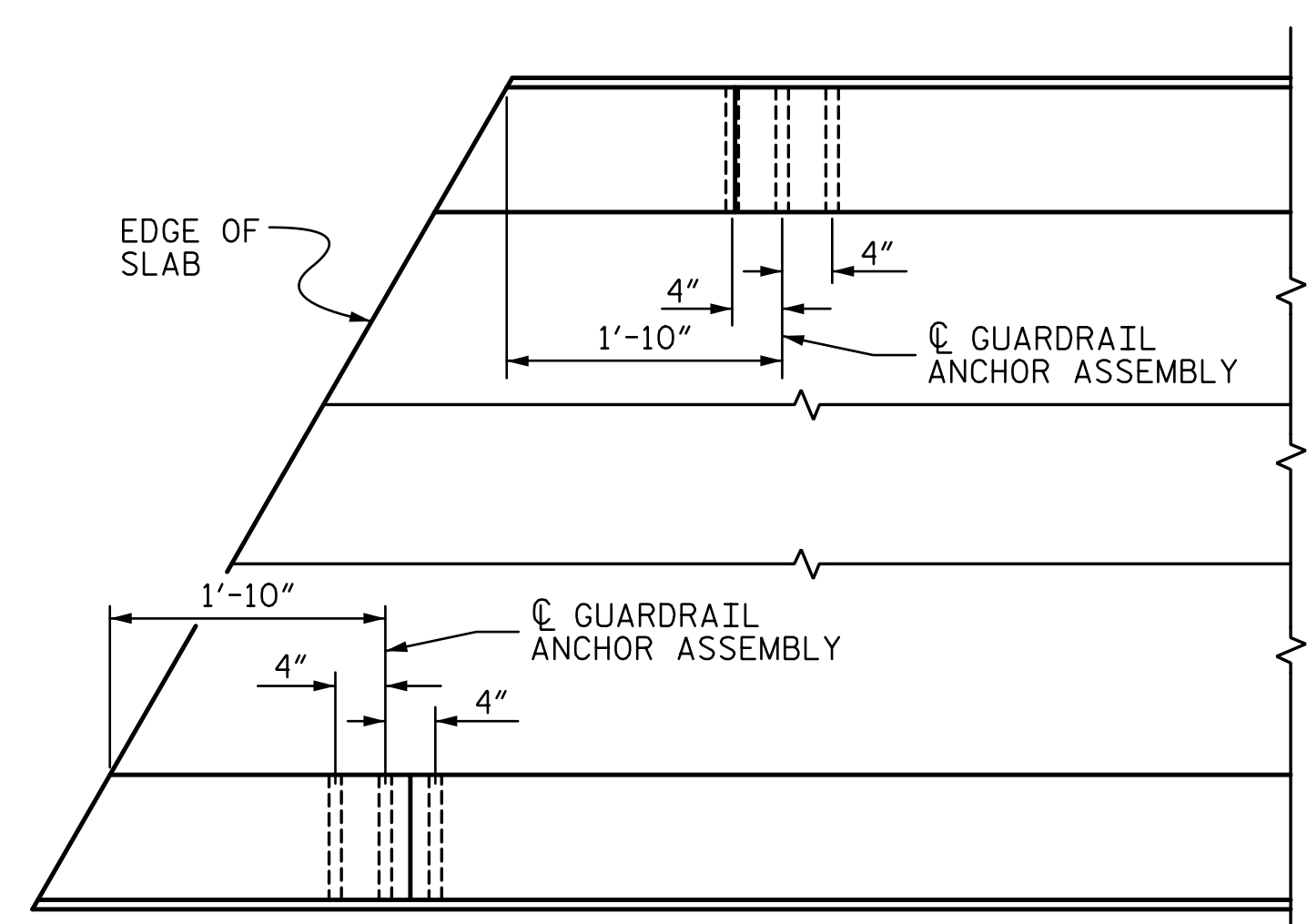
FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



ELEVATION



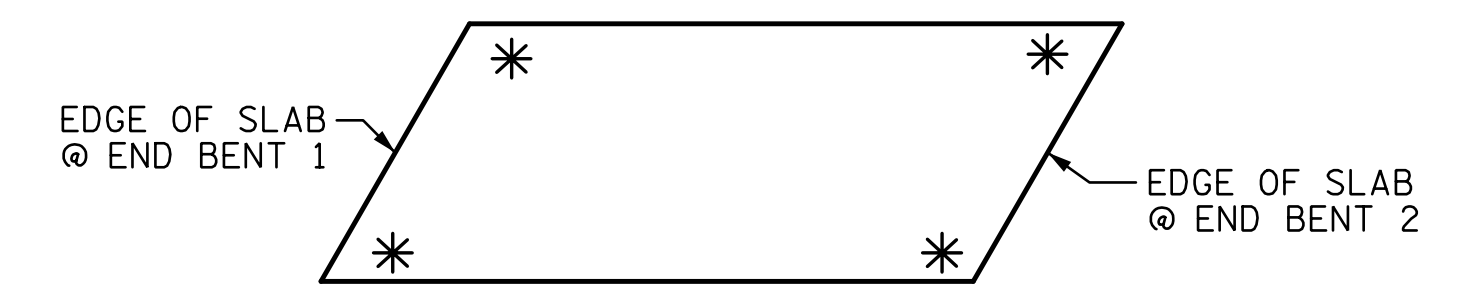
SECTION E-E  
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

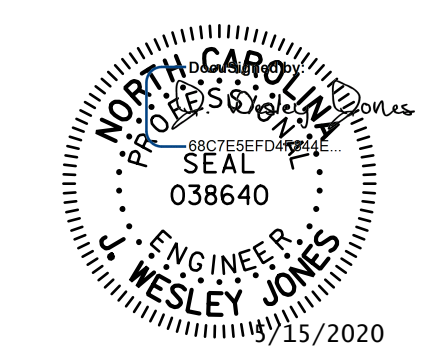
END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENT

\* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. BR-0125  
WILKES COUNTY  
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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:
1			3		
2			4		

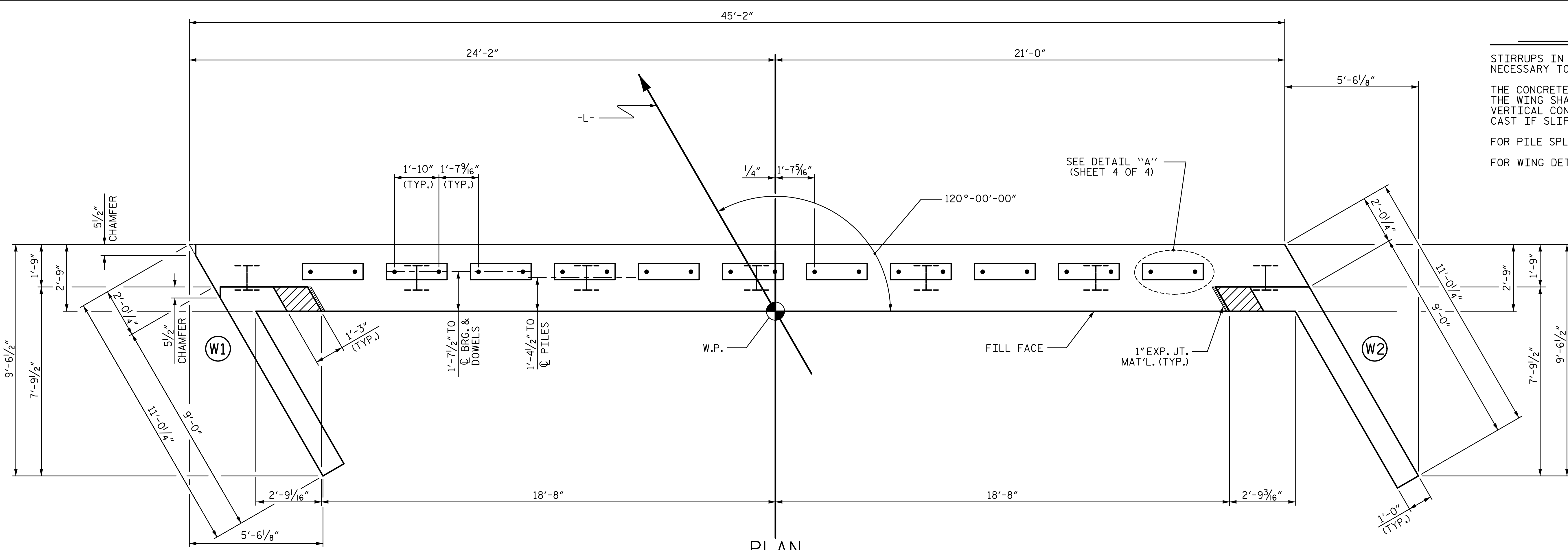
TOTAL SHEETS: 23

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DRAWN BY : WAW	DATE : 10-19
CHECKED BY : JWJ	DATE : 01-20
DESIGN ENGINEER OF RECORD : JWJ	DATE : 04-20
DRAWN BY : MAA 5/10	REV. 1/15 MAA/TMG
CHECKED BY : GM 5/10	REV. 12/17 MAA/THC
	REV. 5/18 MAA/THC



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PLAN

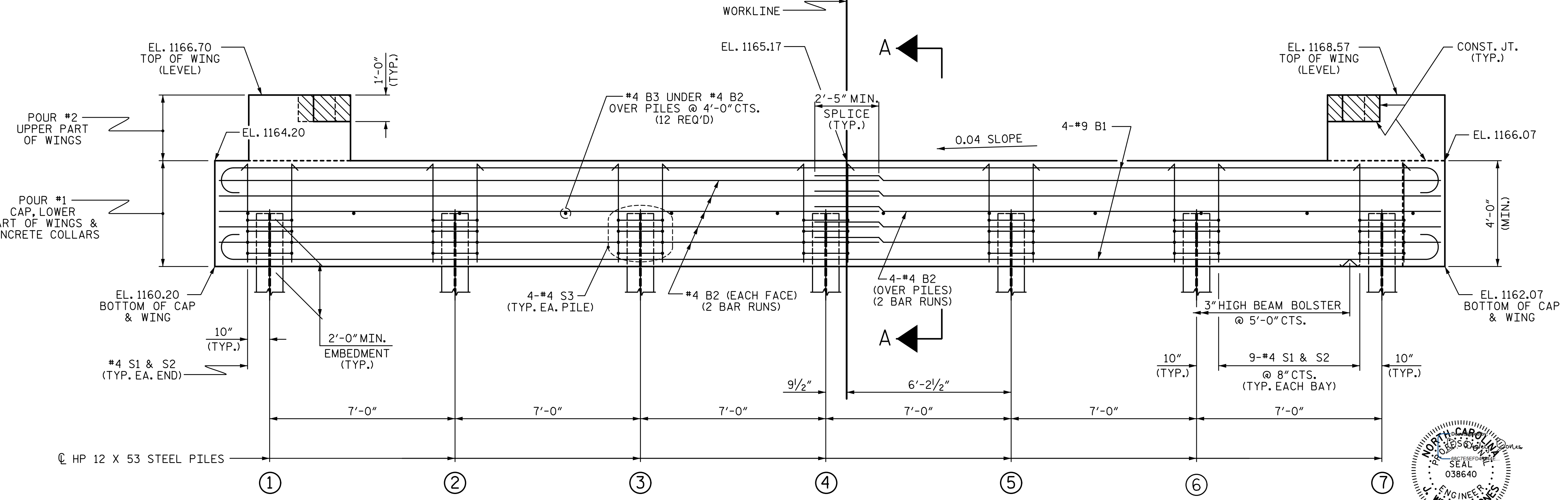
**NOTES**

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 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



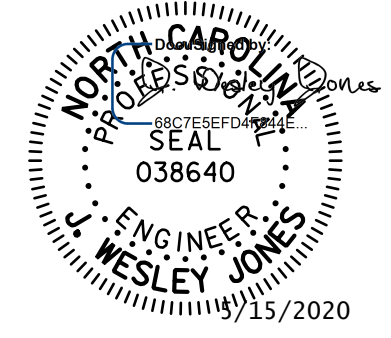
ELEVATION

TOP OF PILE ELEVATIONS	
①	1162.32
②	1162.60
③	1162.88
④	1163.16
⑤	1163.44
⑥	1163.72
⑦	1164.00

PROJECT NO. BR-0125  
WILKES COUNTY  
 STATION: 15+36.00 -L-  
 SHEET 1 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE  
 END BENT No. 1**



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DESIGN ENGINEER OF RECORD : JWJ	DATE : 04-20
DRAWN BY : WJH 12/11	REV. 4/15
CHECKED BY : AAC 12/11	MAA/TMG

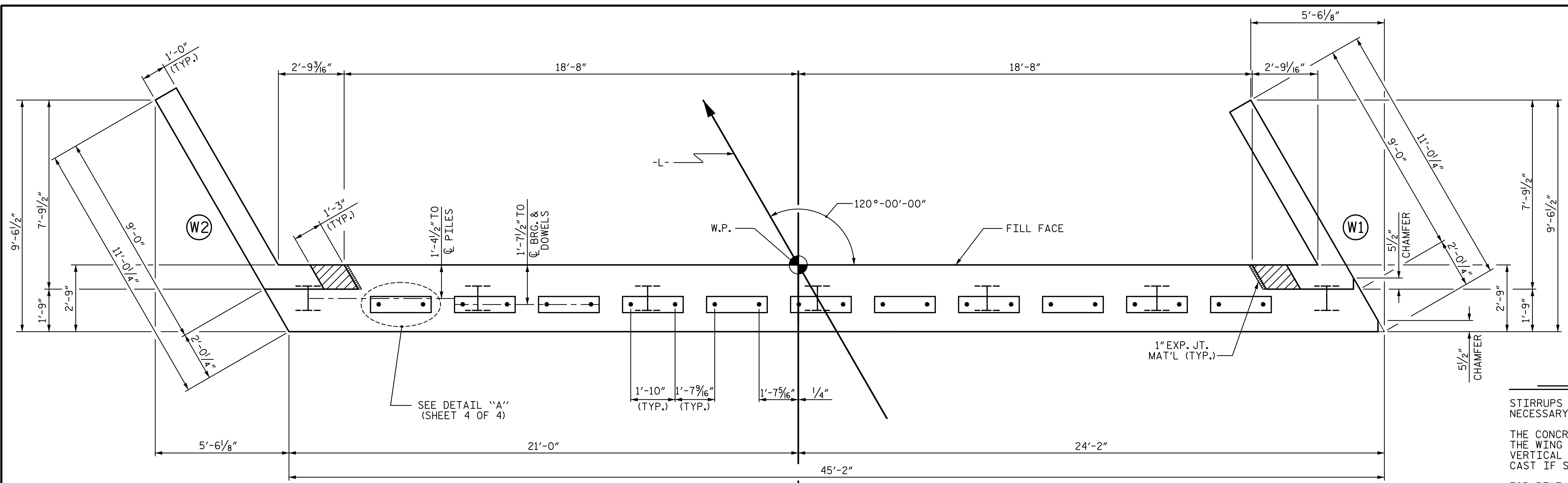
WINGS NOT SHOWN FOR CLARITY.  
 FOR SECTION A-A, SEE SHEET 4 OF 4.  
 CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.  
 SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

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

S-14  
 TOTAL SHEETS 23



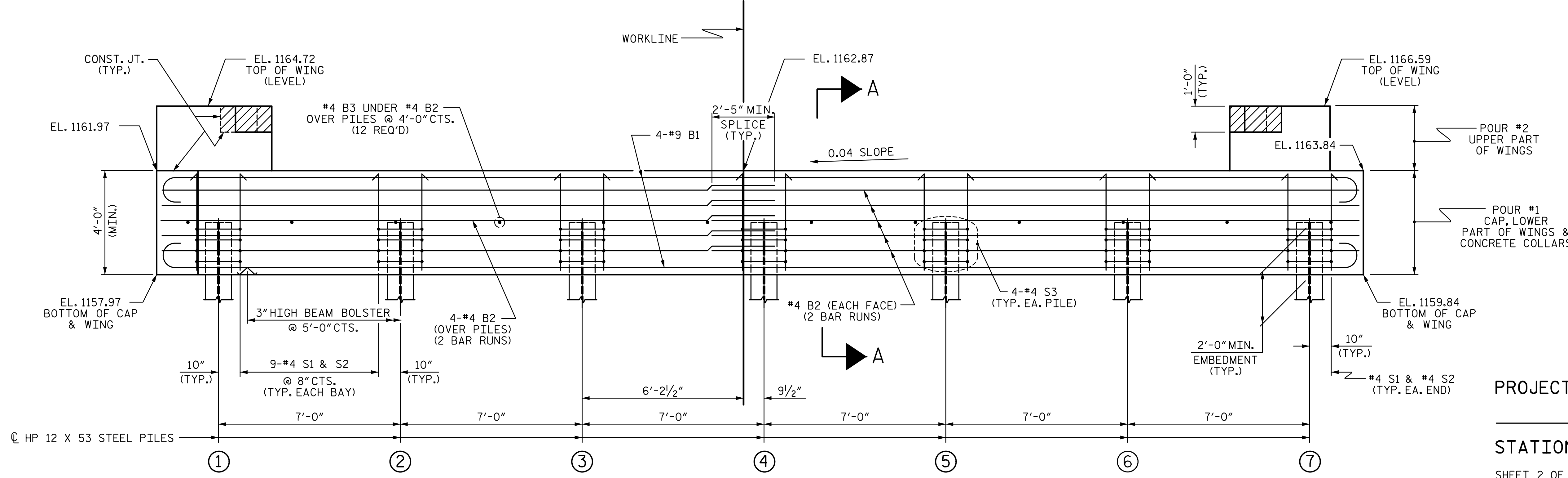
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PLAN

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 4 OF 4.
- FOR WING DETAILS, SEE SHEET 3 OF 4.



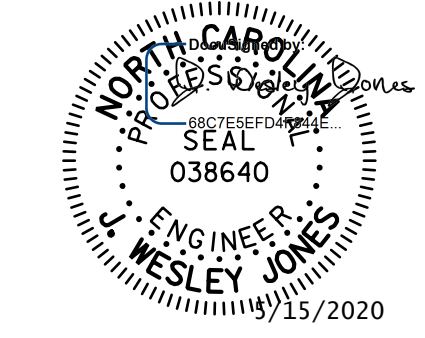
ELEVATION

WINGS NOT SHOWN FOR CLARITY.  
 FOR SECTION A-A, SEE SHEET 4 OF 4.  
 CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.  
 SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

TOP OF PILE ELEVATIONS

①	1160.09
②	1160.37
③	1160.65
④	1160.93
⑤	1161.21
⑥	1161.49
⑦	1161.77

PROJECT NO. BR-0125  
WILKES COUNTY  
 STATION: 15+36.00 -L-  
 SHEET 2 OF 4



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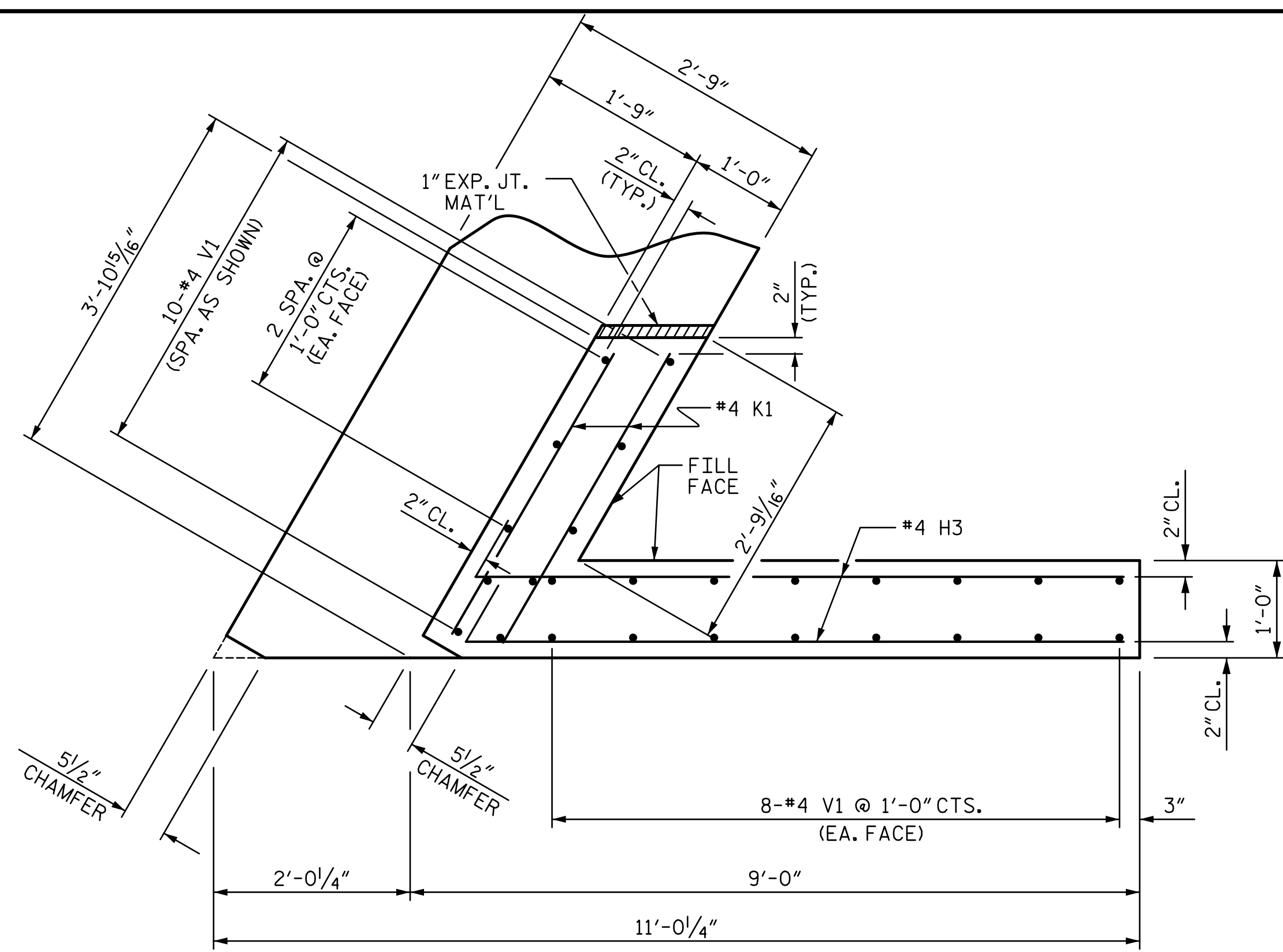
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT No. 2					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-15
					TOTAL SHEETS 23

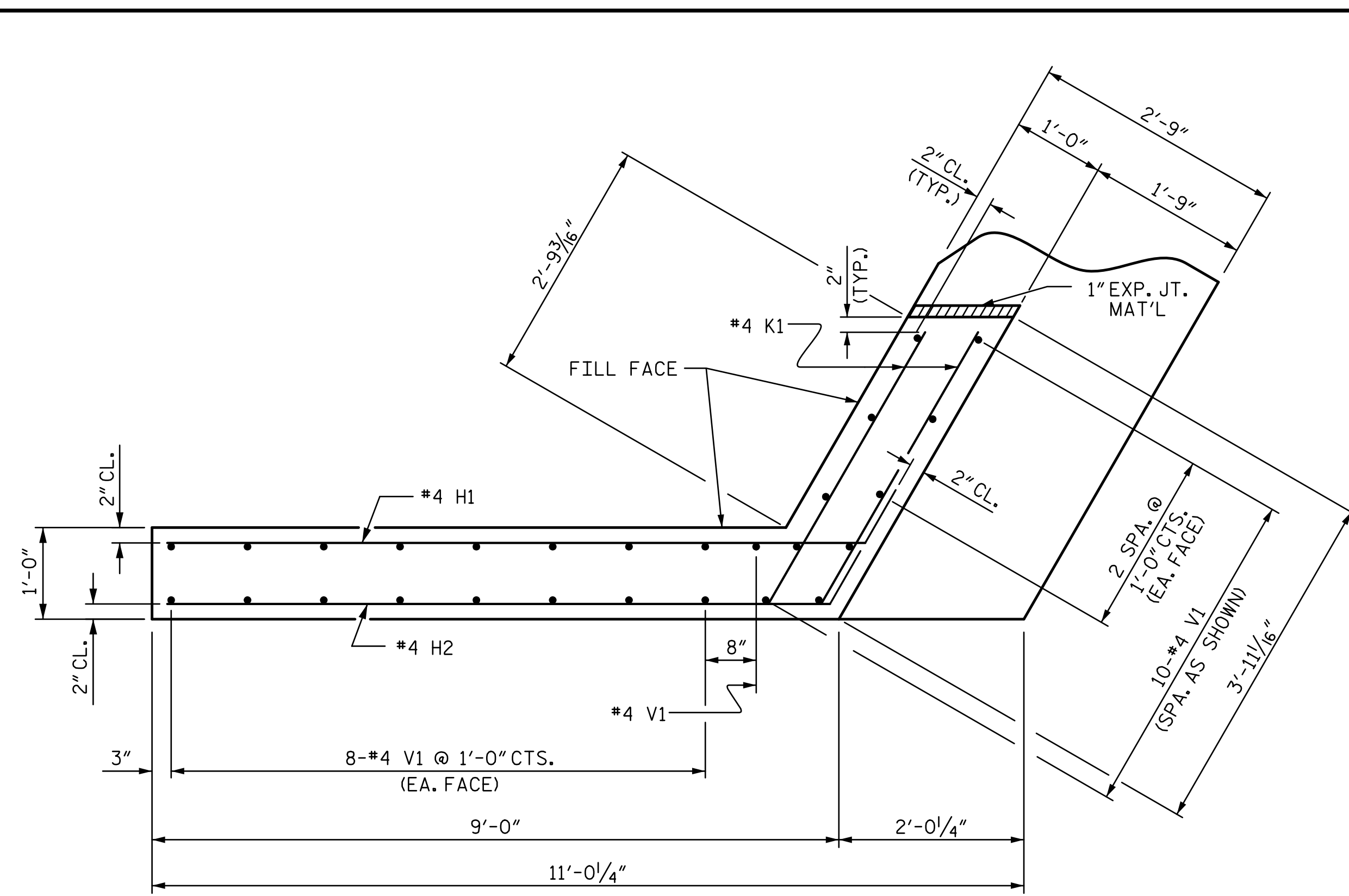
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CHECKED BY : JWJ	DATE : 02-20
DESIGN ENGINEER OF RECORD : JWJ	DATE : 04-20
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CHECKED BY : AAC 12/11	



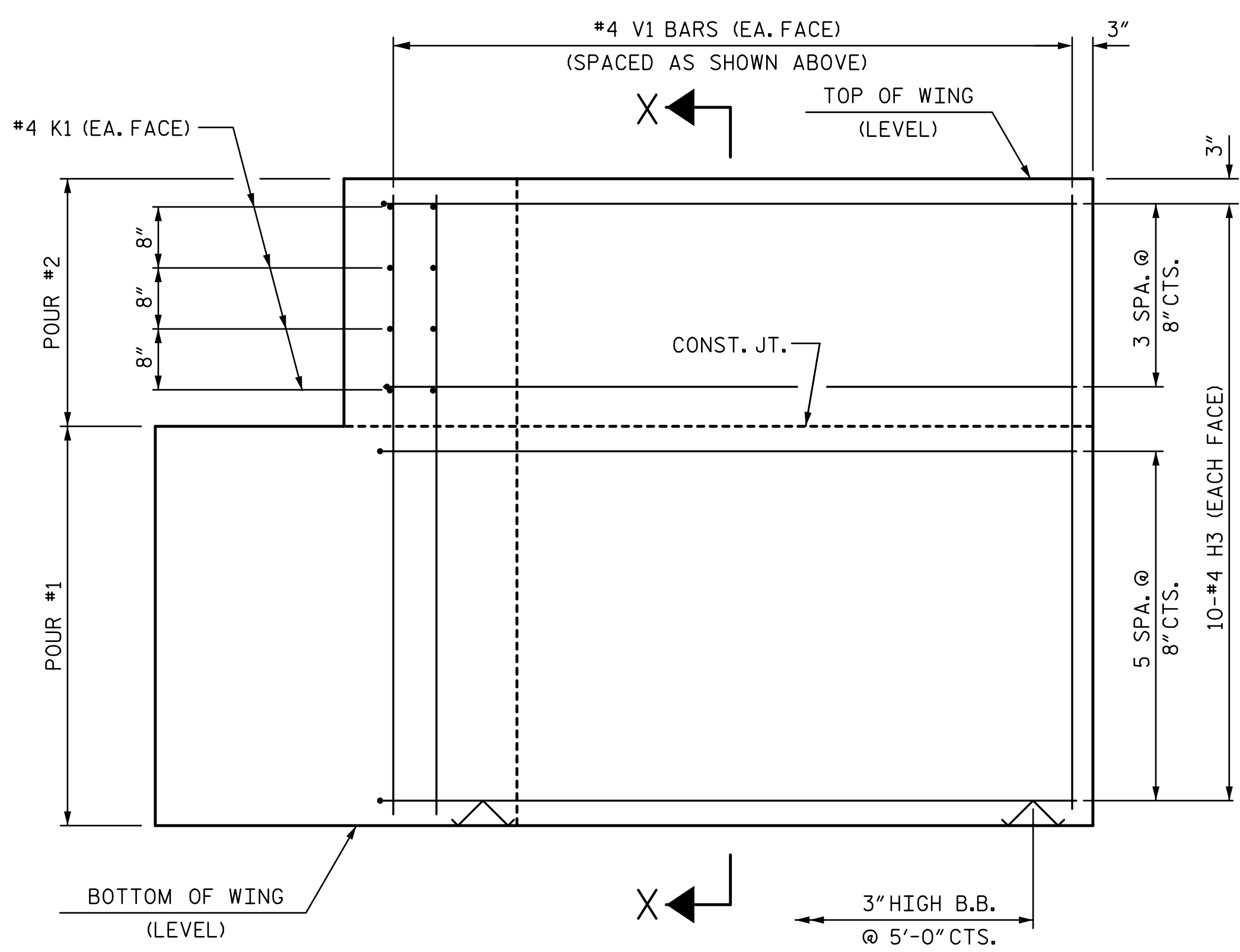
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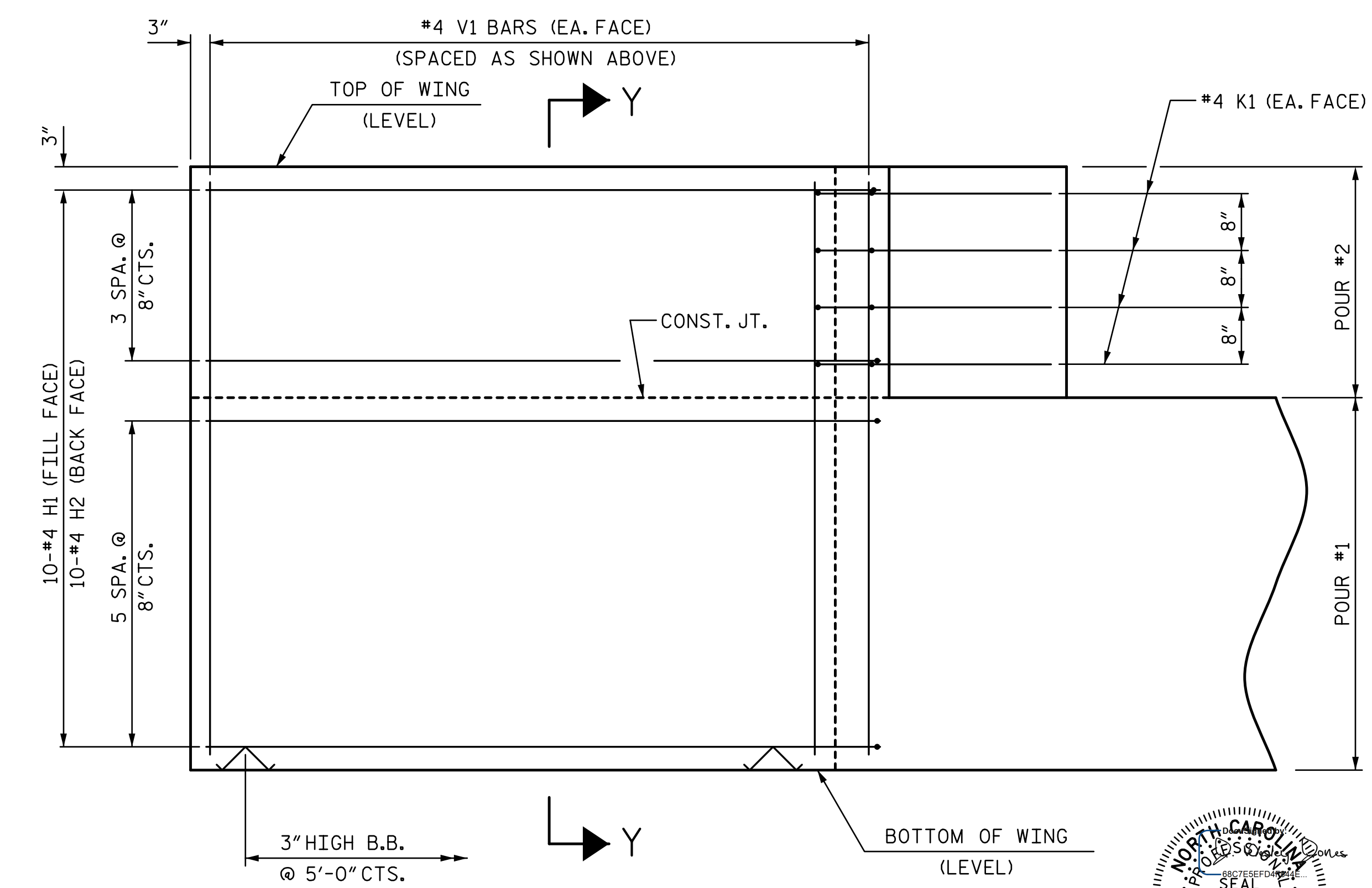
PLAN OF WING (W1)



PLAN OF WING (W2)

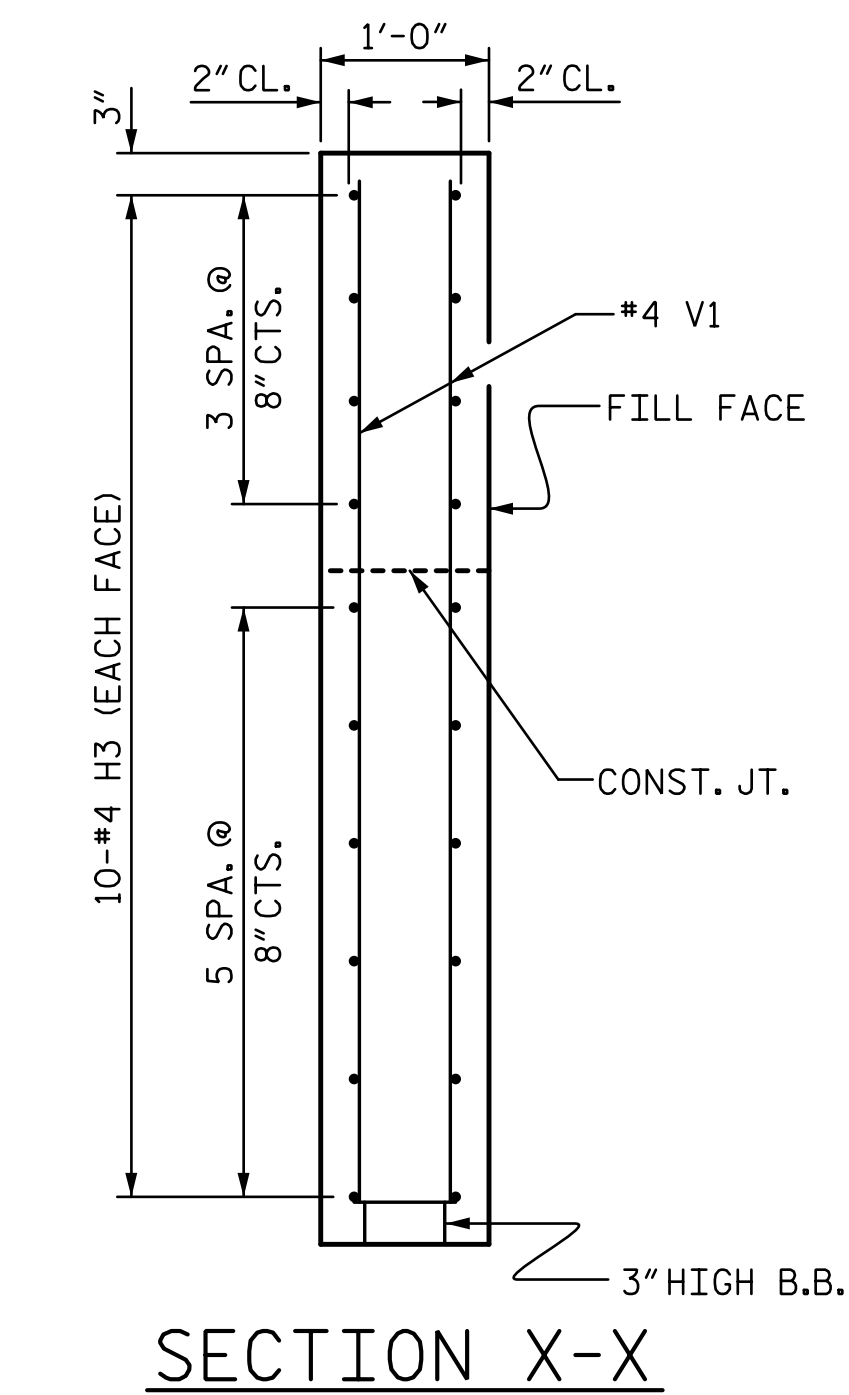


ELEVATION OF WING (W1)

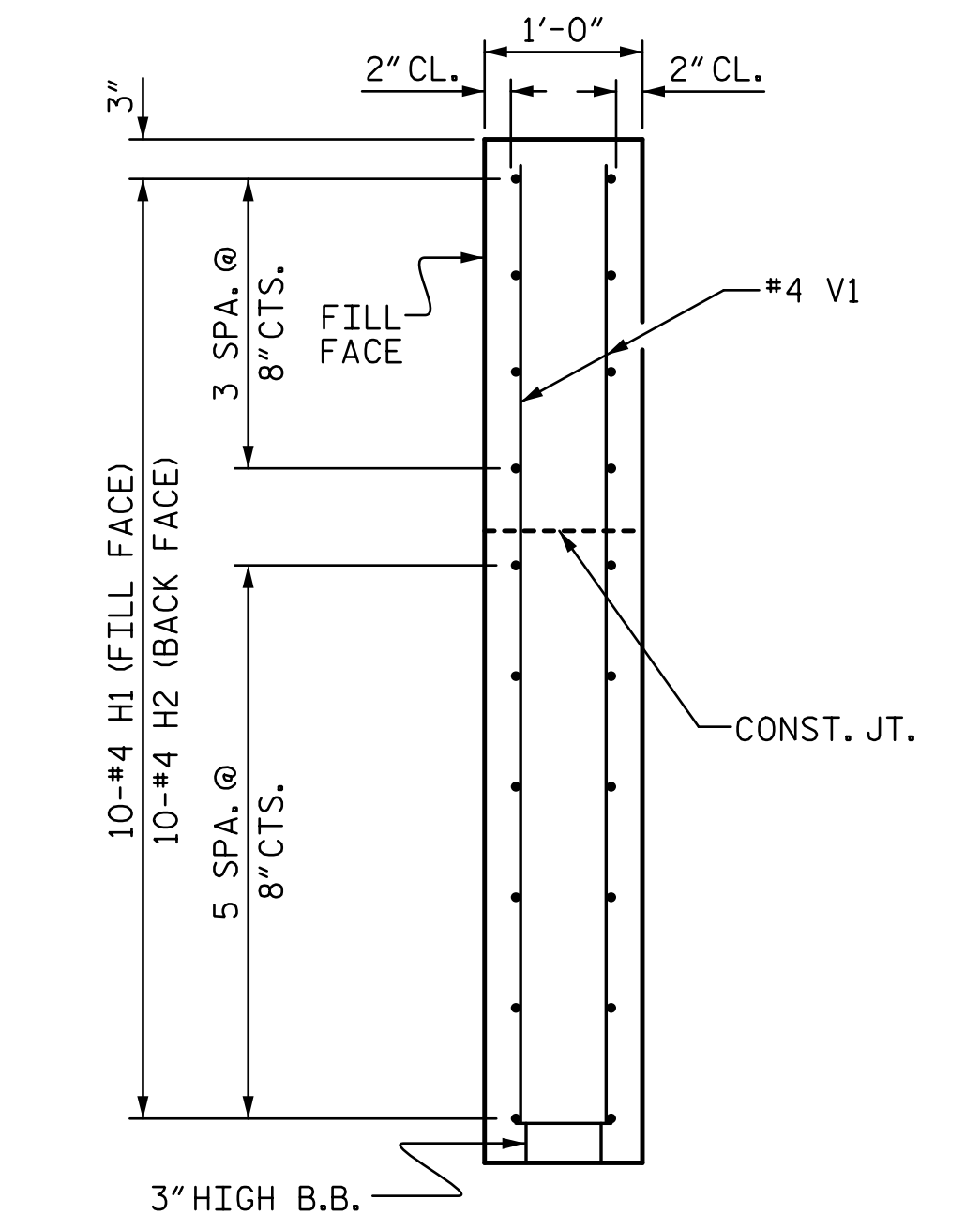


ELEVATION OF WING (W2)

WING DETAILS



SECTION X-X



SECTION Y-Y

PROJECT NO. BR-0125  
WILKES COUNTY  
 STATION: 15+36.00 -L-

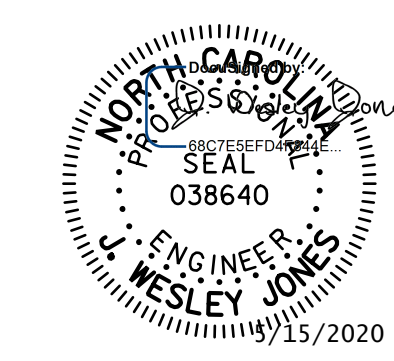
SHEET 3 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 END BENT  
 WING DETAILS

DRAWN BY : WAW	DATE : 10-19
CHECKED BY : JWJ	DATE : 02-20
DESIGN ENGINEER OF RECORD : JWJ	DATE : 04-20
DRAWN BY : WJH 12/11	REV. 4/15
CHECKED BY : AAC 12/11	MAA/TMG

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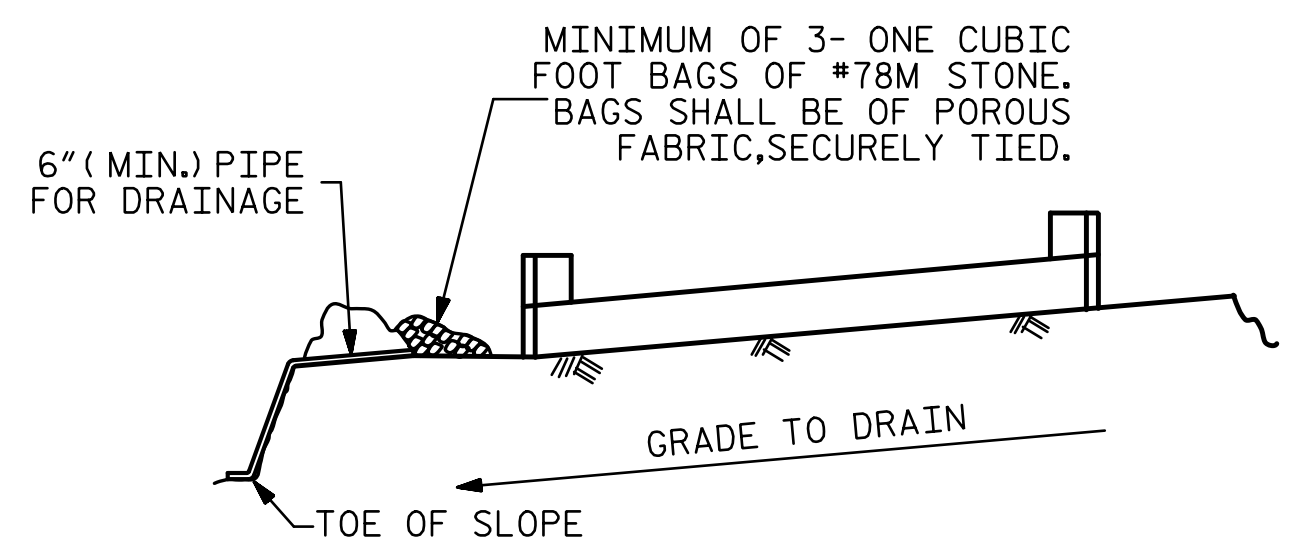


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REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

S-16
TOTAL SHEETS 23



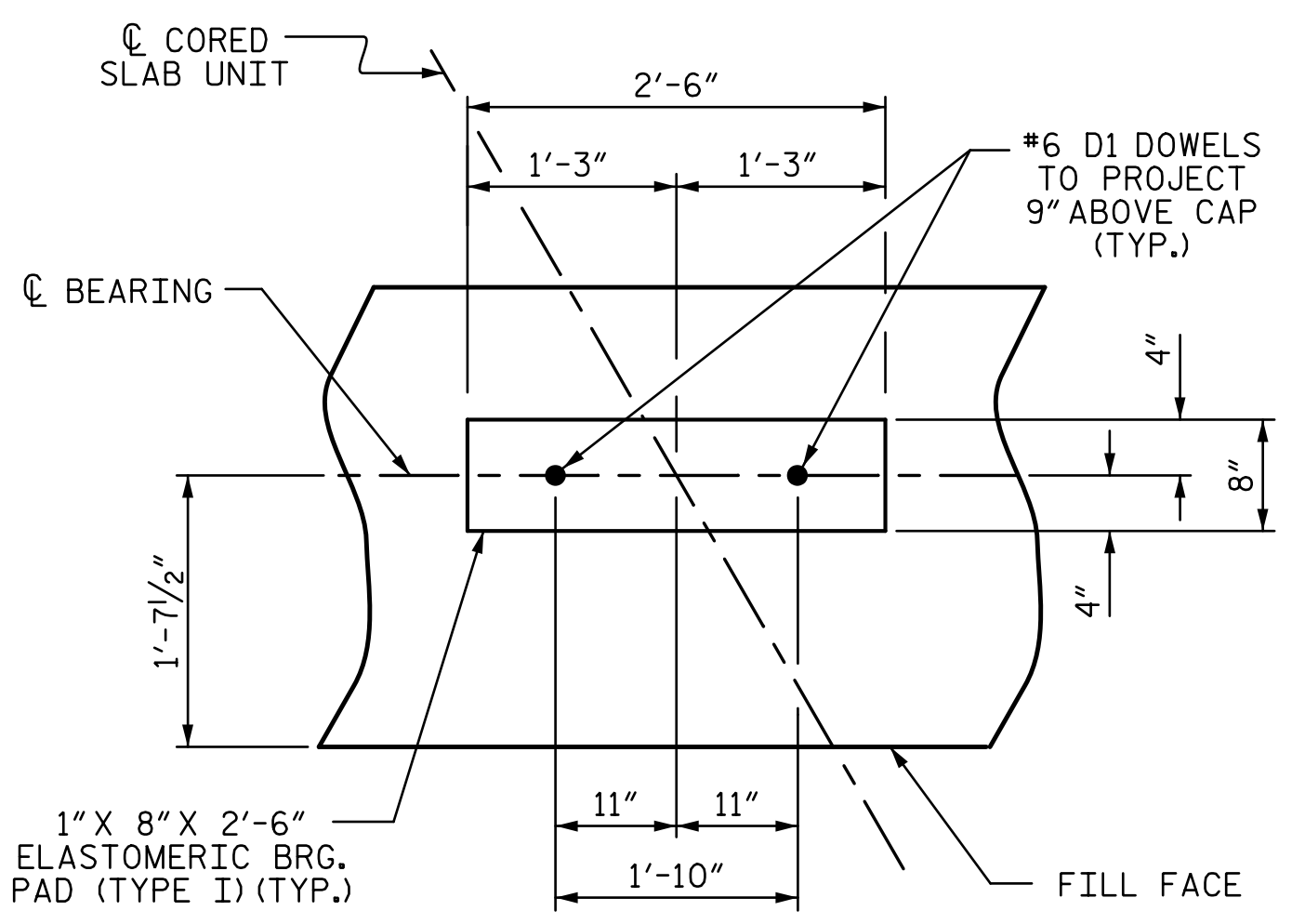


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

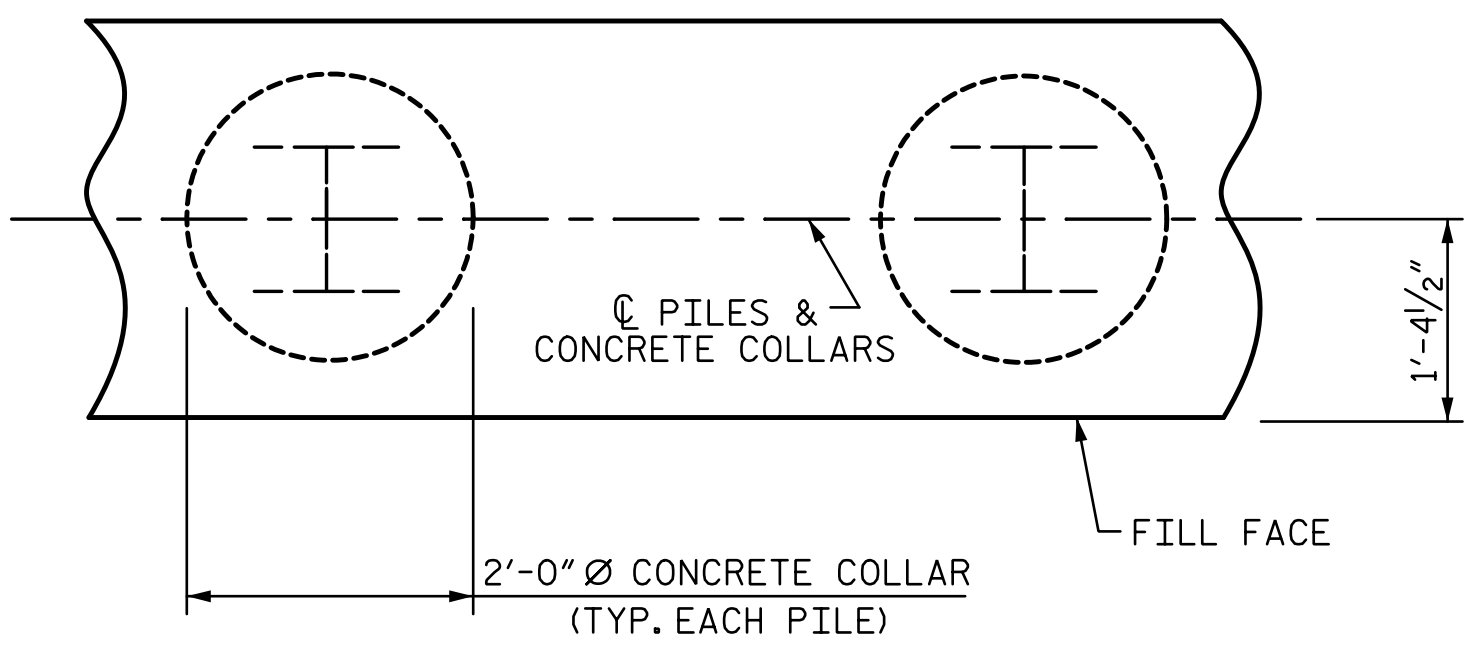
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

### TEMPORARY DRAINAGE AT END BENT

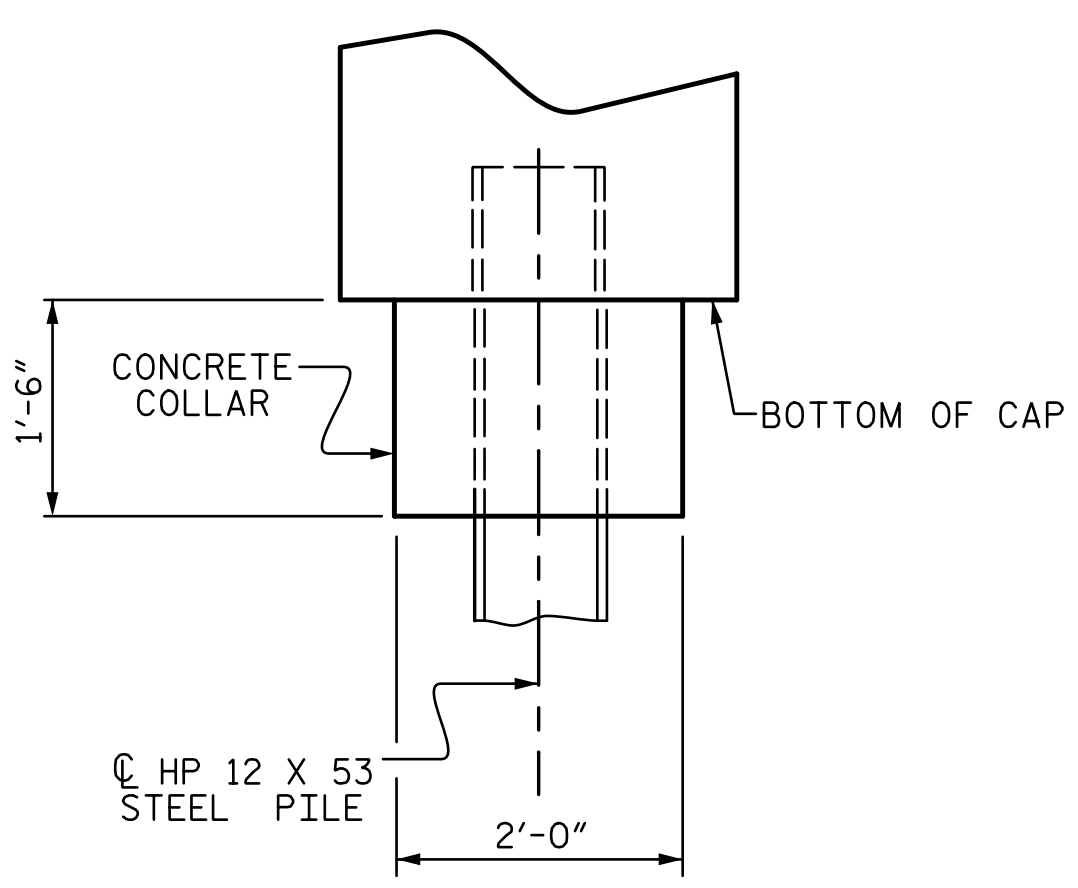


### DETAIL "A"

(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



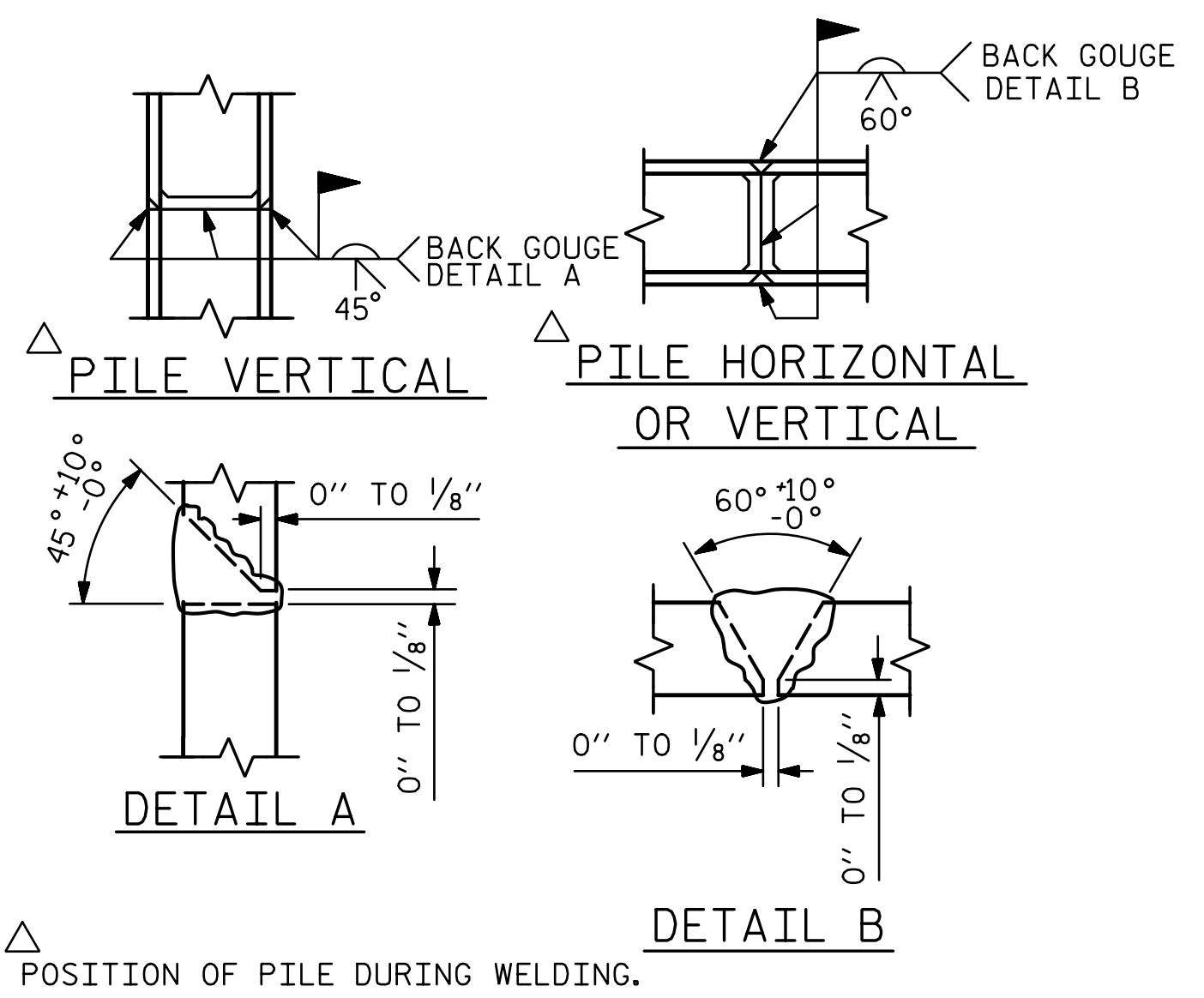
### PLAN



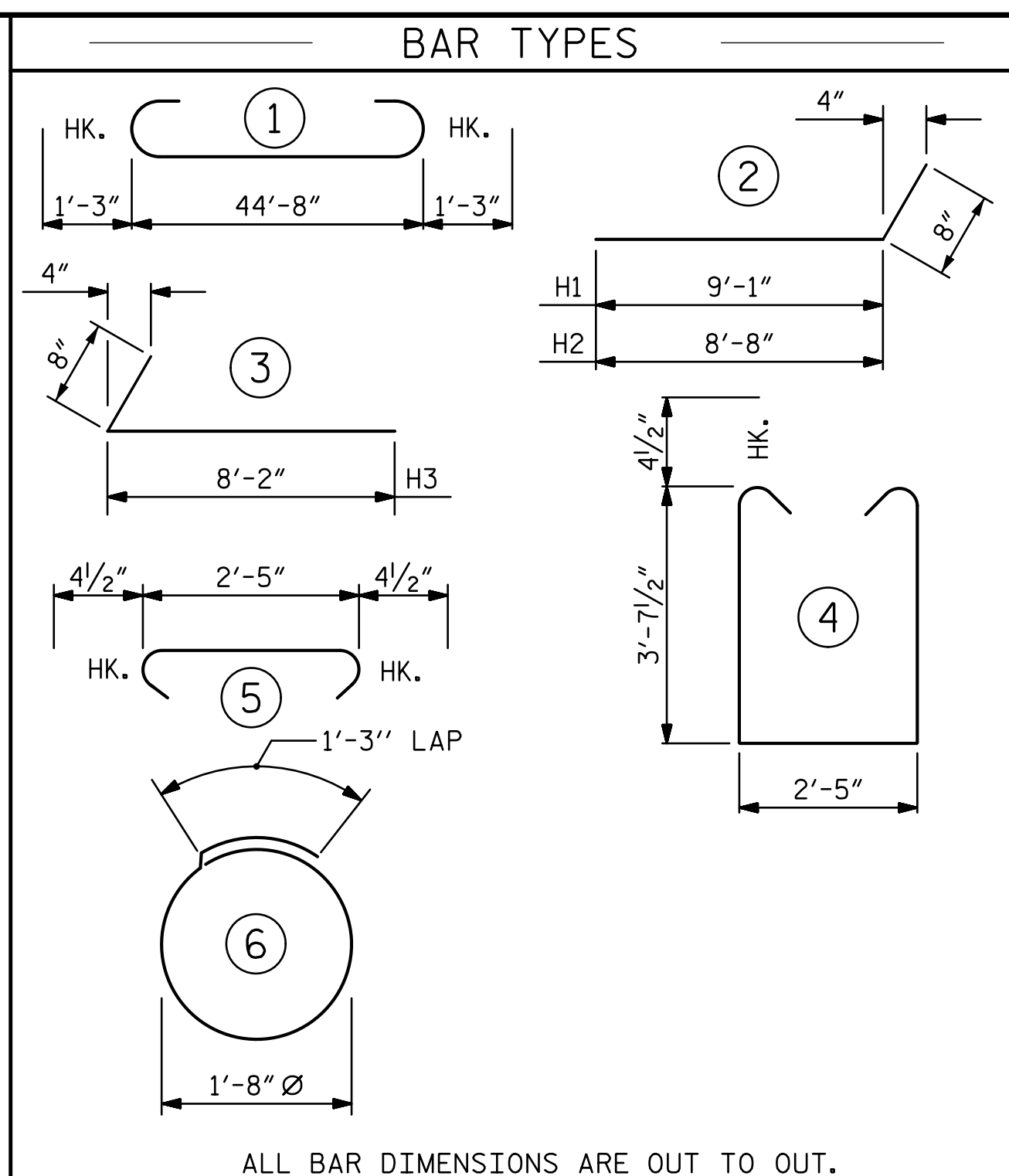
### ELEVATION

### CORROSION PROTECTION FOR STEEL PILES DETAIL

(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



### PILE SPLICE DETAILS

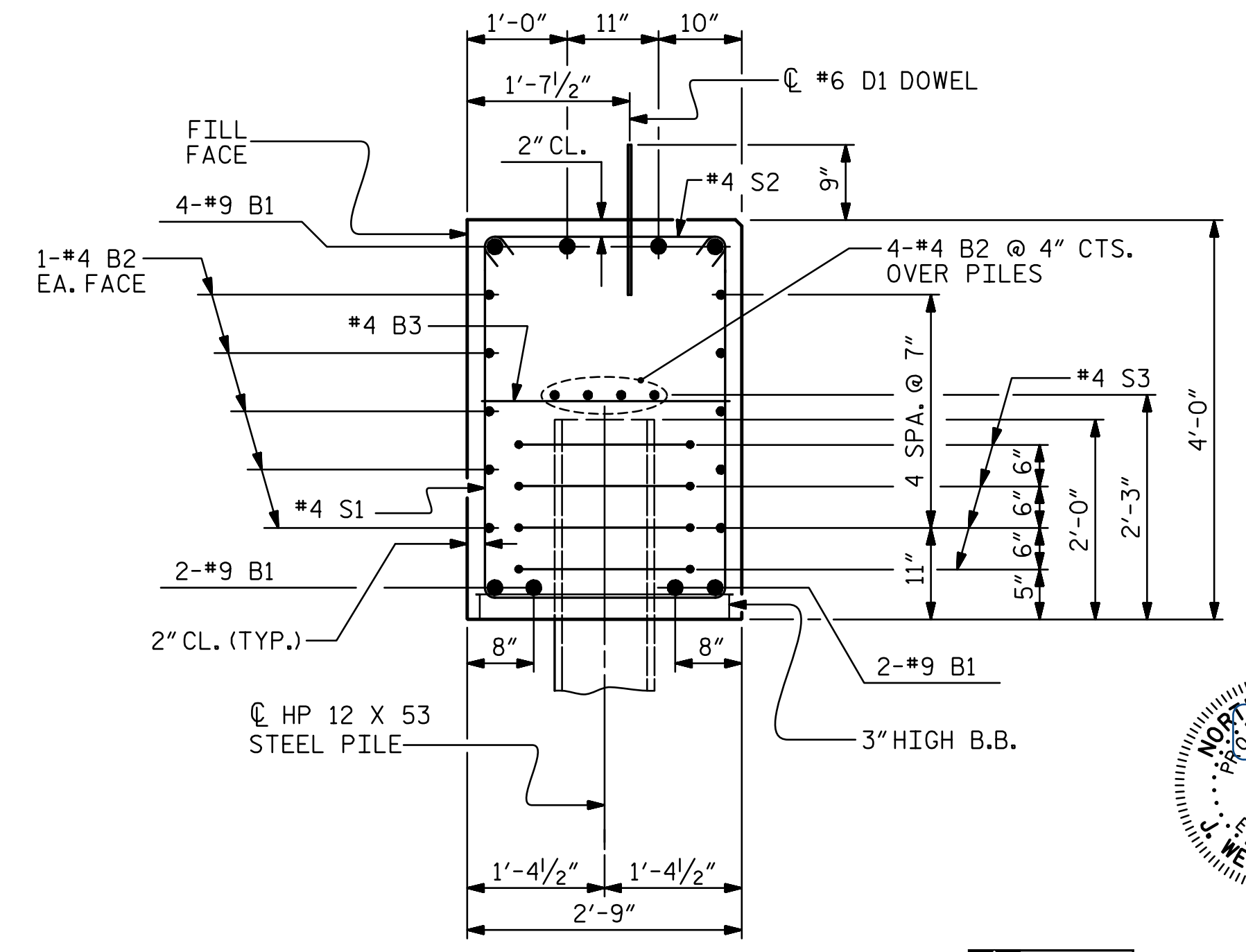


ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT No. 1		END BENT No. 2	
HP 12 X 53 STEEL PILES	NO: 7	HP 12 X 53 STEEL PILES	NO: 7
LIN. FT.= 210		LIN. FT.= 210	
PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	NO: 7	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	NO: 7
STEEL PILE POINTS	EA.: 0	STEEL PILE POINTS	EA.: 7

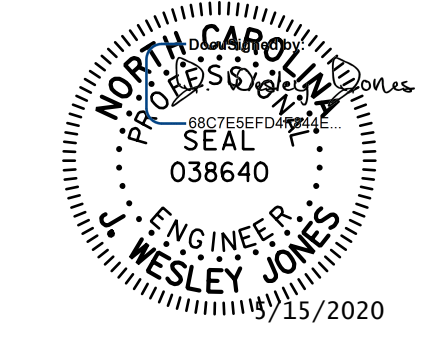
### BILL OF MATERIAL

FOR ONE END BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	47'-2"	1283
B2	28	#4	STR	23'-8"	443
B3	12	#4	STR	2'-5"	19
D1	22	#6	STR	1'-6"	50
H1	10	#4	2	9'-9"	65
H2	10	#4	2	9'-4"	62
H3	20	#4	3	8'-10"	118
K1	16	#4	STR	3'-3"	35
S1	56	#4	4	10'-5"	390
S2	56	#4	5	3'-2"	118
S3	28	#4	6	6'-6"	122
V1	53	#4	STR	6'-2"	218
REINFORCING STEEL (FOR ONE END BENT)					2923 LBS.
CLASS A CONCRETE BREAKDOWN (FOR END BENT No. 1)					
POUR #1	CAP, LOWER PART OF WINGS & COLLARS				21.9 C.Y.
POUR #2	UPPER PART OF WINGS				2.2 C.Y.
CLASS A CONCRETE BREAKDOWN (FOR END BENT No. 2)					
POUR #1	CAP, LOWER PART OF WINGS & COLLARS				21.9 C.Y.
POUR #2	UPPER PART OF WINGS				2.4 C.Y.
TOTAL CLASS A CONCRETE					24.1 C.Y.
TOTAL CLASS A CONCRETE					24.3 C.Y.



### SECTION A-A

(CONCRETE COLLAR NOT SHOWN FOR CLARITY. SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")



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NC License Number F-0991

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PROJECT NO. BR-0125  
WILKES COUNTY  
STATION: 15+36.00 -L-  
SHEET 4 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
SUBSTRUCTURE  
END BENT No. 1 & 2  
DETAILS

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

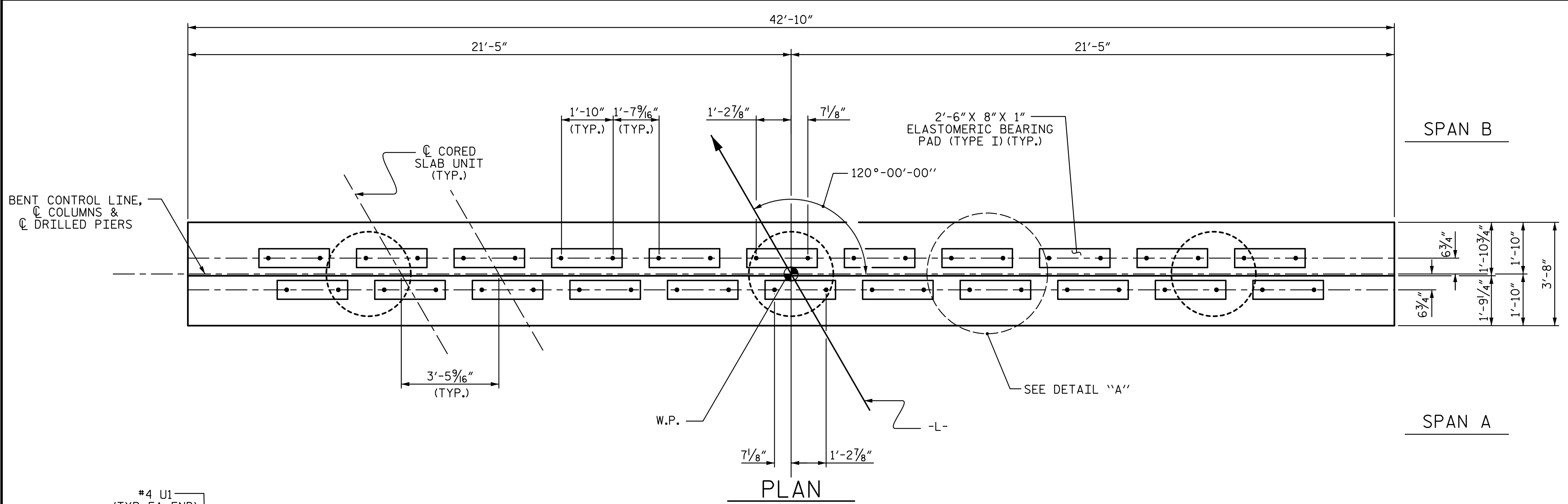
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TOTAL SHEETS 23

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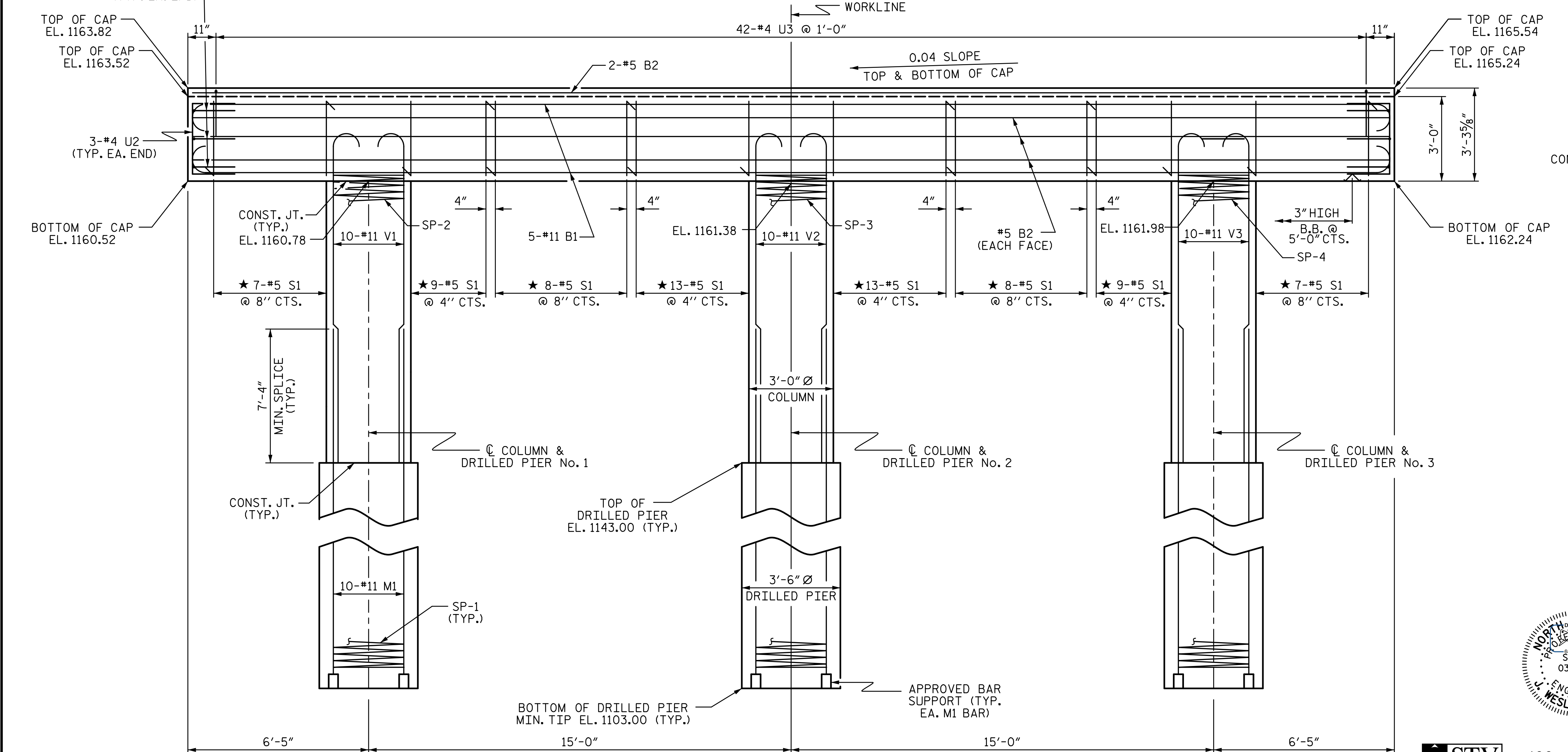


### NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
- HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
- 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."
- ★ INVERT ALTERNATE STIRRUPS.
- THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND LINE ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT ONE FOOT BELOW THE GROUND LINE.
- DRILLED PIERS SHALL BE TERMINATED ONE FOOT ± ABOVE NORMAL WATER SURFACE ELEVATION FOR SHAFTS LOCATED IN WATER.
- THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.

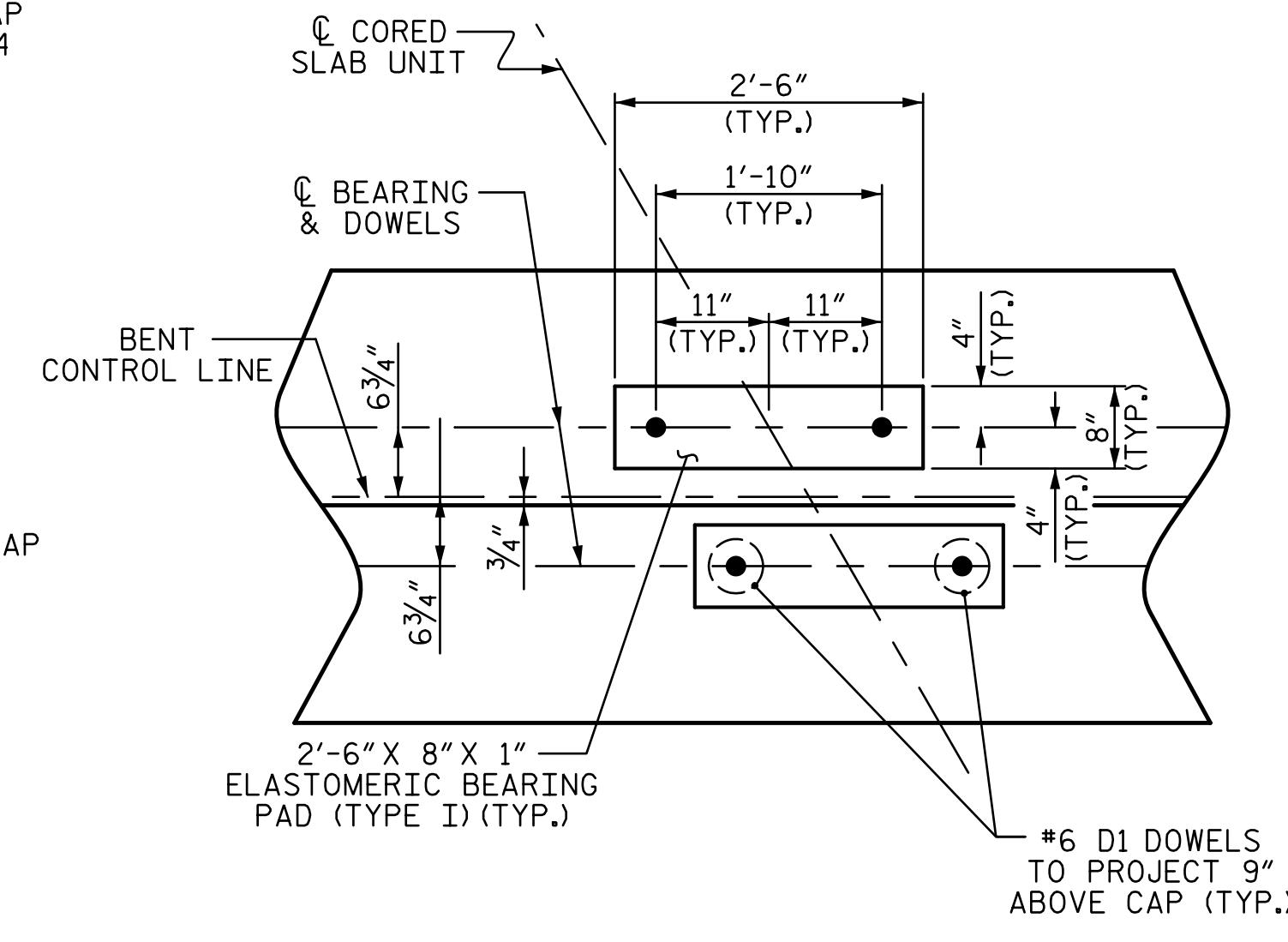


### PLAN



### ELEVATION

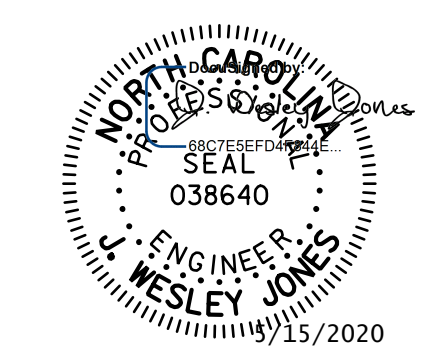
DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER UNLESS OTHERWISE NOTED.



### DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

PROJECT NO. BR-0125  
WILKES COUNTY  
 STATION: 15+36.00 -L-  
 SHEET 1 OF 2



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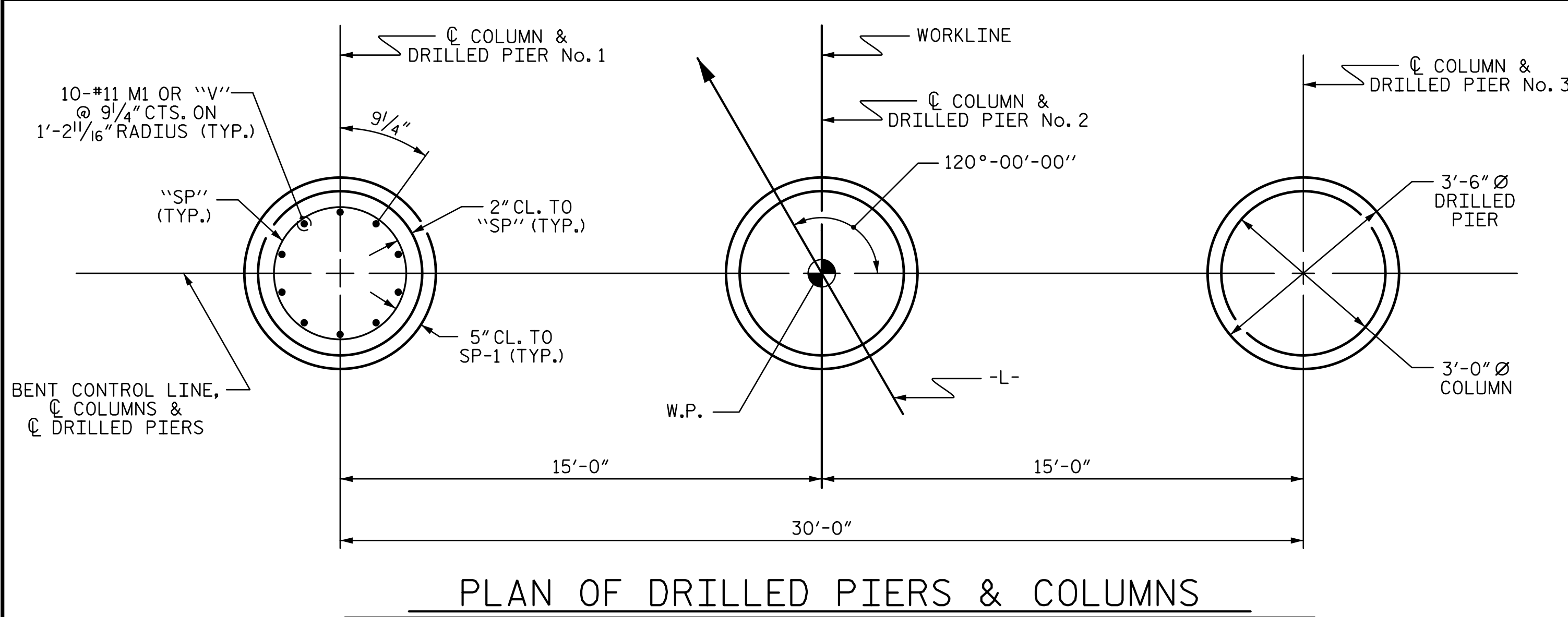
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SUBSTRUCTURE BENT No. 1					
REVISIONS					SHEET NO.
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2			4		
					S-18
					TOTAL SHEETS 23

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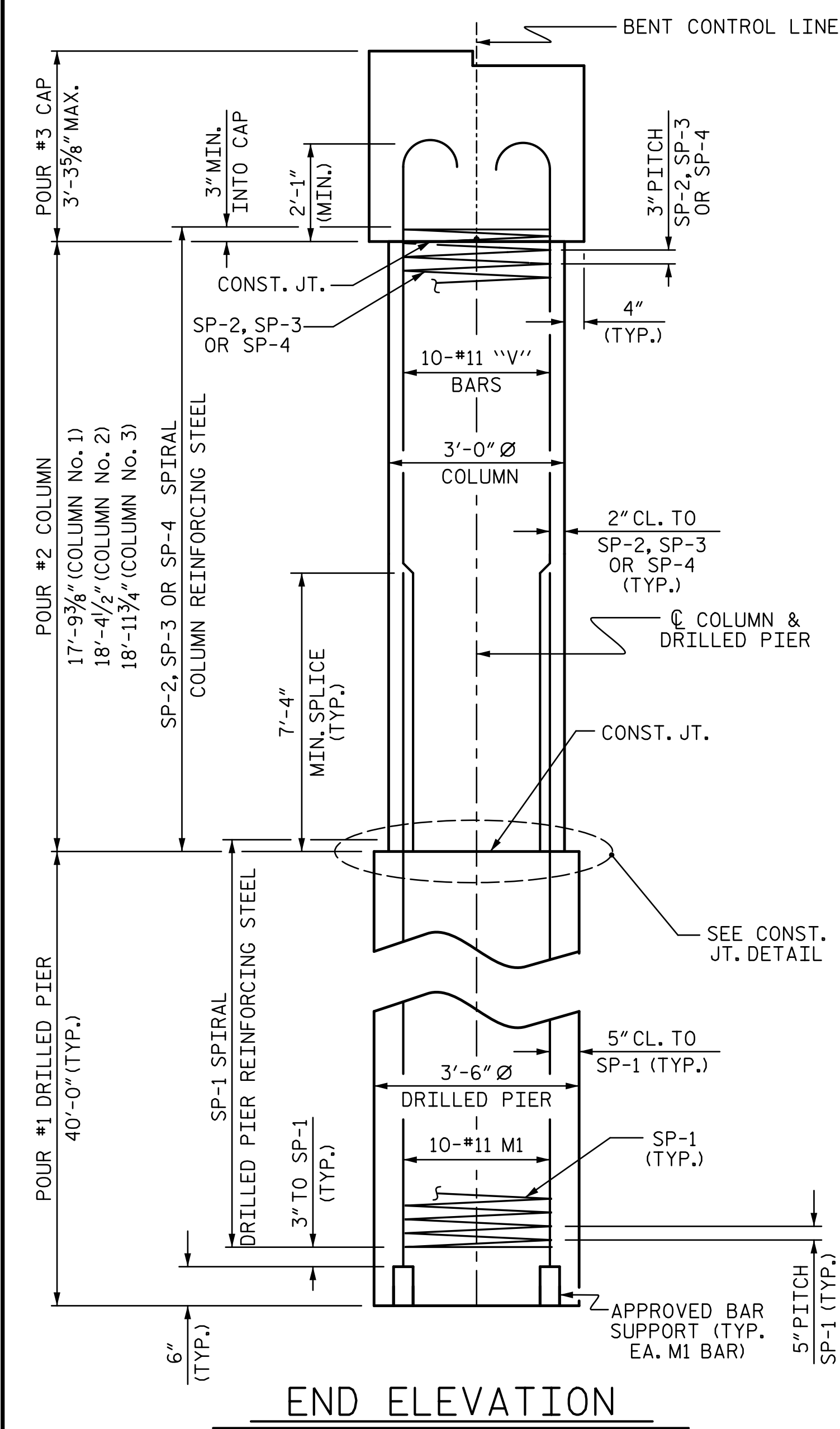
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CHECKED BY : JWJ	DATE : 02-20
DESIGN ENGINEER OF RECORD : JWJ	DATE : 04-20
DRAWN BY : DGE 4/10	REV. 11/14 MAA/TMG
CHECKED BY : MKT 4/10	



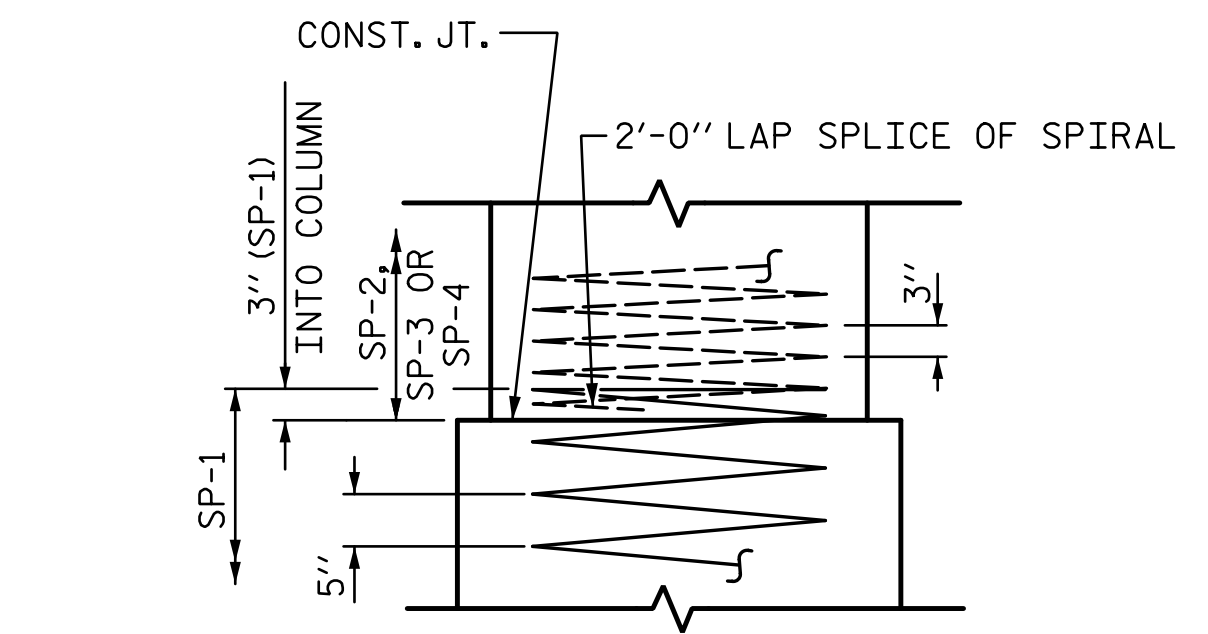
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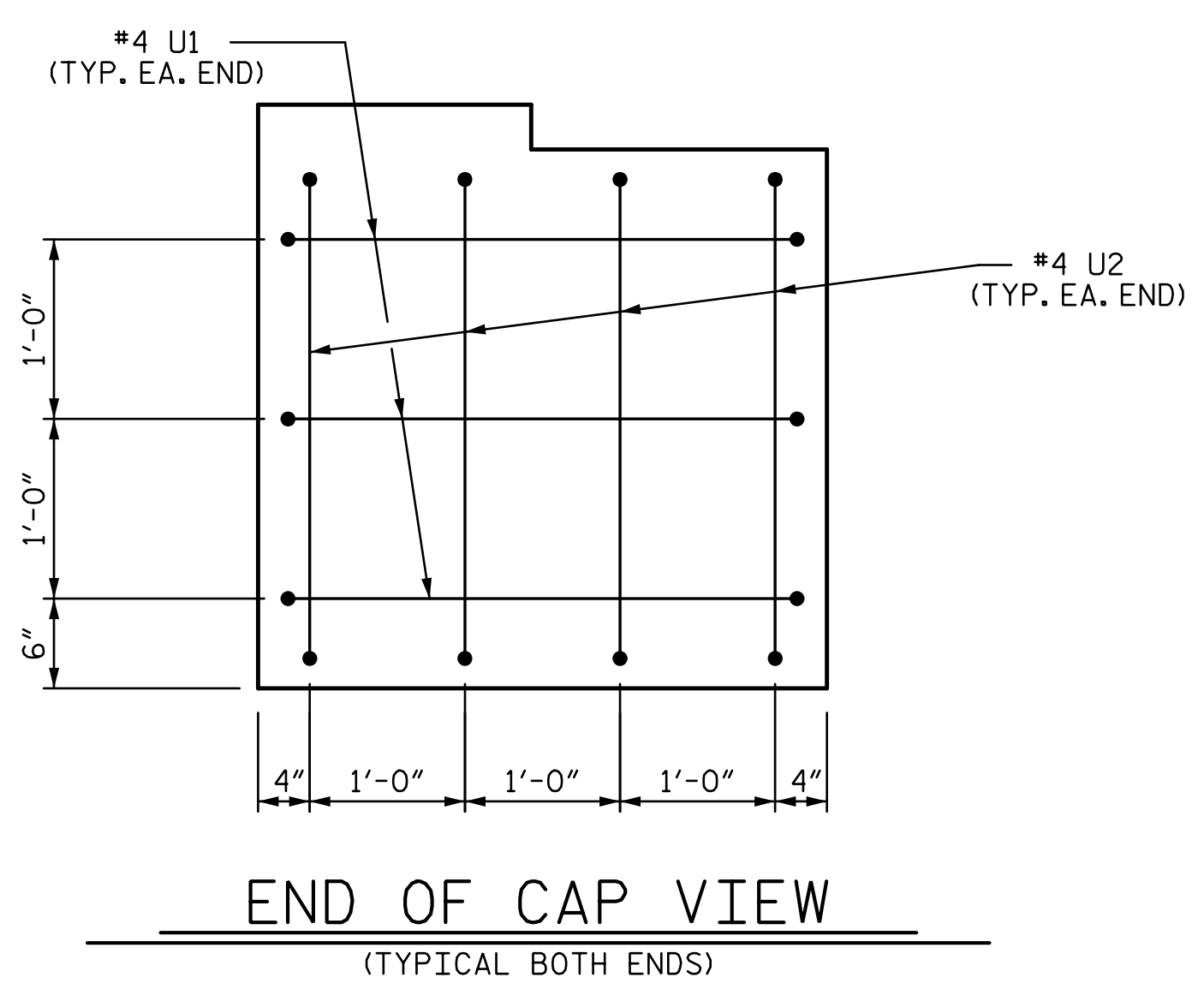
PLAN OF DRILLED PIERS & COLUMNS



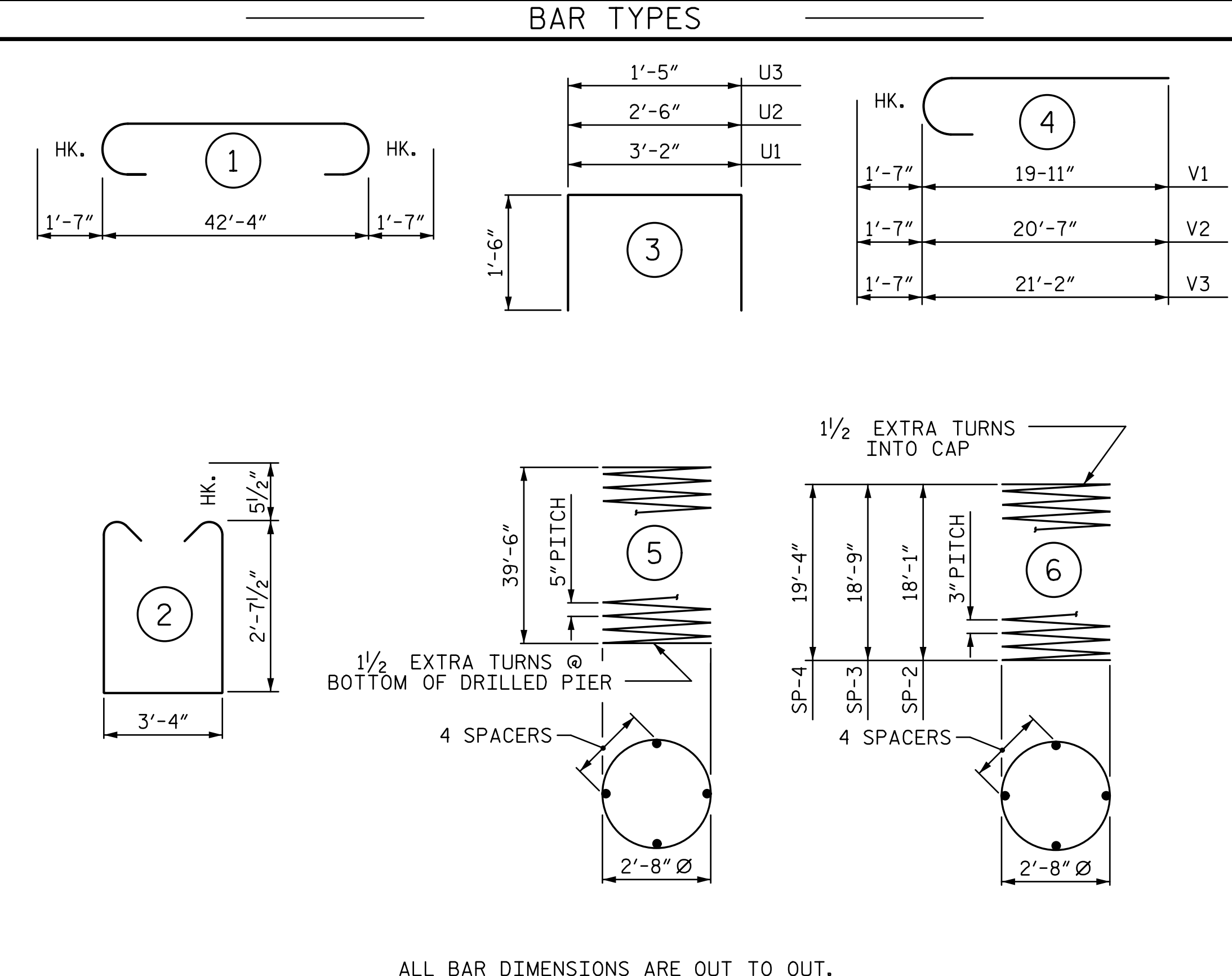
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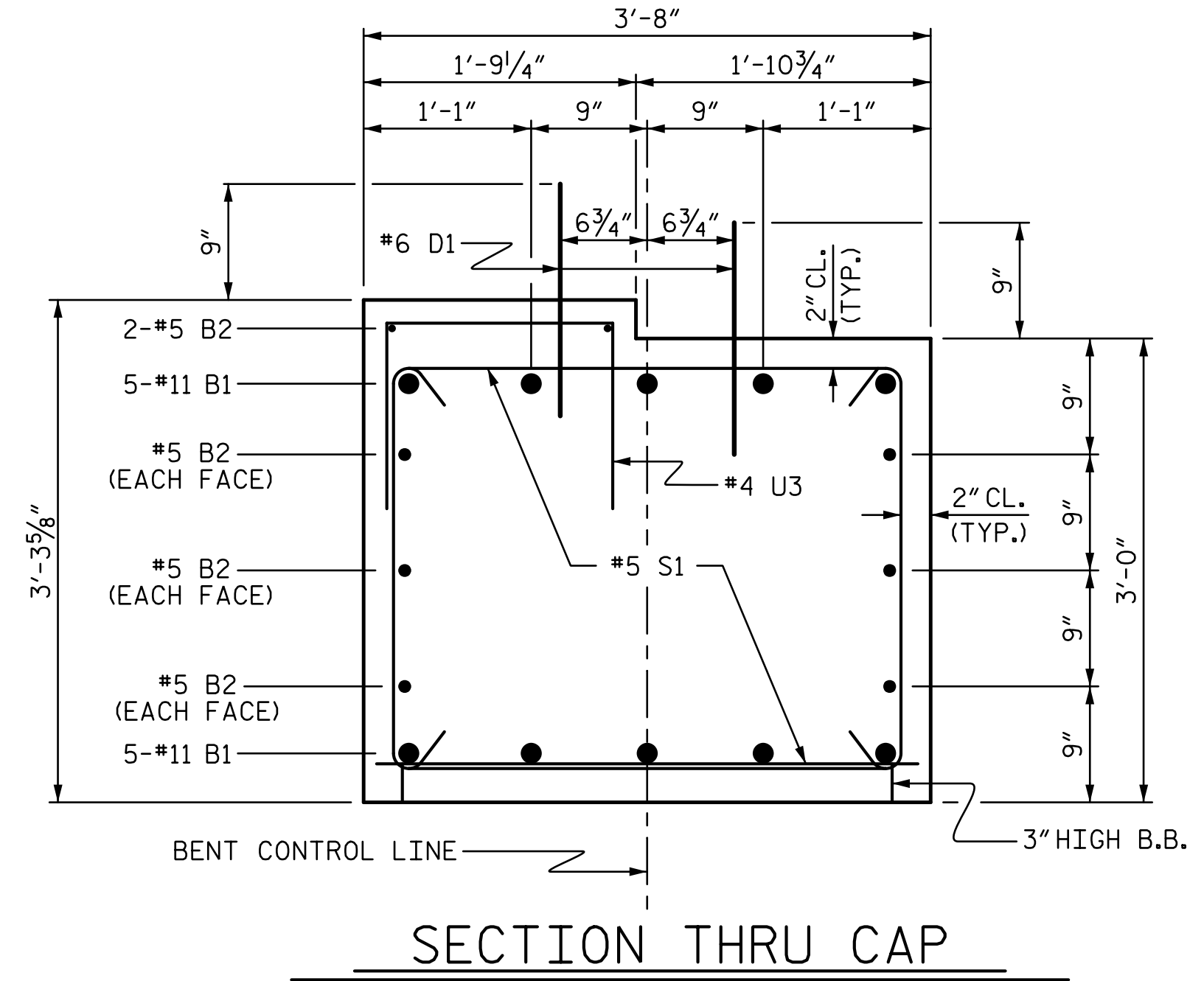
CONSTRUCTION JOINT DETAIL



END OF CAP VIEW  
(TYPICAL BOTH ENDS)



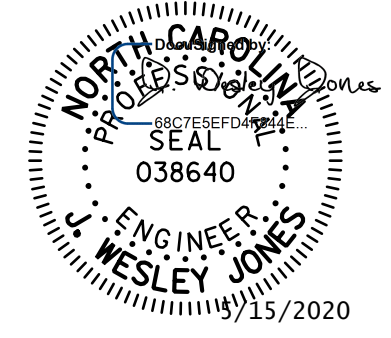
ALL BAR DIMENSIONS ARE OUT TO OUT.



SECTION THRU CAP

BILL OF MATERIAL FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#11	1	45'-6"	2417
B2	8	#5	STR	42'-6"	355
D1	44	#6	STR	1'-6"	99
M1	30	#11	STR	49'-10"	7,943
S1	74	#5	2	9'-6"	733
U1	6	#4	3	6'-2"	25
U2	8	#4	3	5'-6"	29
U3	42	#4	3	4'-5"	124
V1	10	#11	4	21'-6"	1,142
V2	10	#11	4	22'-2"	1,178
V3	10	#11	4	22'-9"	1,209
REINFORCING STEEL (FOR ONE BENT)					15,254 LBS.
SP-1	3	*	5	792'-1"	2,478
SP-2	1	**	6	609'-2"	407
SP-3	1	**	6	631'-2"	422
SP-4	1	**	6	650'-5"	434
SPIRAL COLUMN REINFORCING STEEL (FOR ONE BENT)					3,741 LBS.
* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					
** THE SP-2, SP-3 & SP-4 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
POUR #2 (COLUMNS)					14.4 C.Y.
POUR #3 (CAP)					18.3 C.Y.
TOTAL CLASS A CONCRETE					32.7 C.Y.
DRILLED PIERS: (FOR ONE BENT)					
DRILLED PIER CONCRETE POUR #1 (DRILLED PIERS)					42.8 C.Y.
3'-6" Ø DRILLED PIER NOT IN SOIL					40.0 LIN. FT.
3'-6" Ø DRILLED PIER IN SOIL					80.0 LIN. FT.
PERMANENT STEEL CASING FOR 3'-6" Ø DRILLED PIER					29.0 LIN. FT.
CSL TUBES					498.0 LIN. FT.

PROJECT NO. BR-0125  
WILKES COUNTY  
 STATION: 15+36.00 -L-  
 SHEET 2 OF 2



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 Charlotte, NC 28202  
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CHECKED BY : JWJ	DATE : 02-20
DESIGN ENGINEER OF RECORD : JWJ	DATE : 04-20
DRAWN BY : DGE 3/10	REV. 11/14 MAA/TMG
CHECKED BY : MKT 3/10	

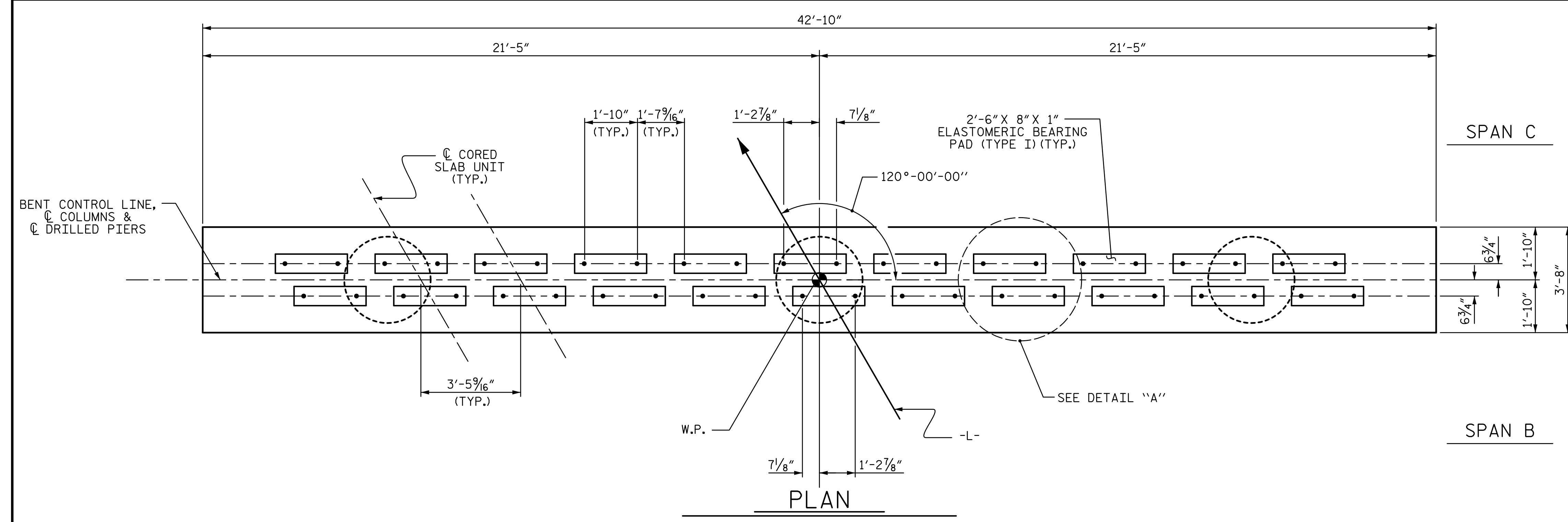
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TOTAL SHEETS 23

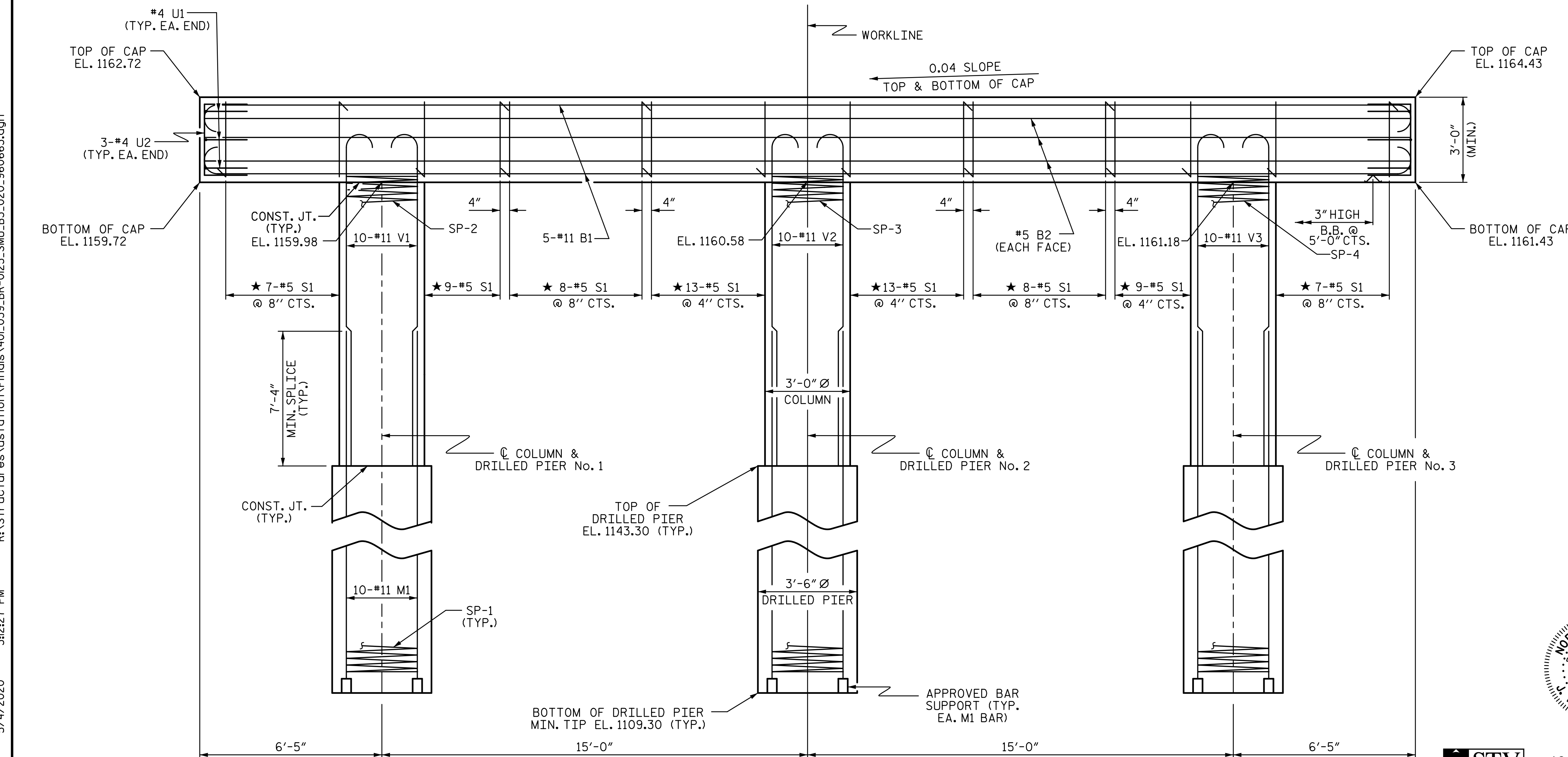


**NOTES**

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
- HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
- FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
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- ★ INVERT ALTERNATE STIRRUPS.
- THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND LINE ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT ONE FOOT BELOW THE GROUND LINE.
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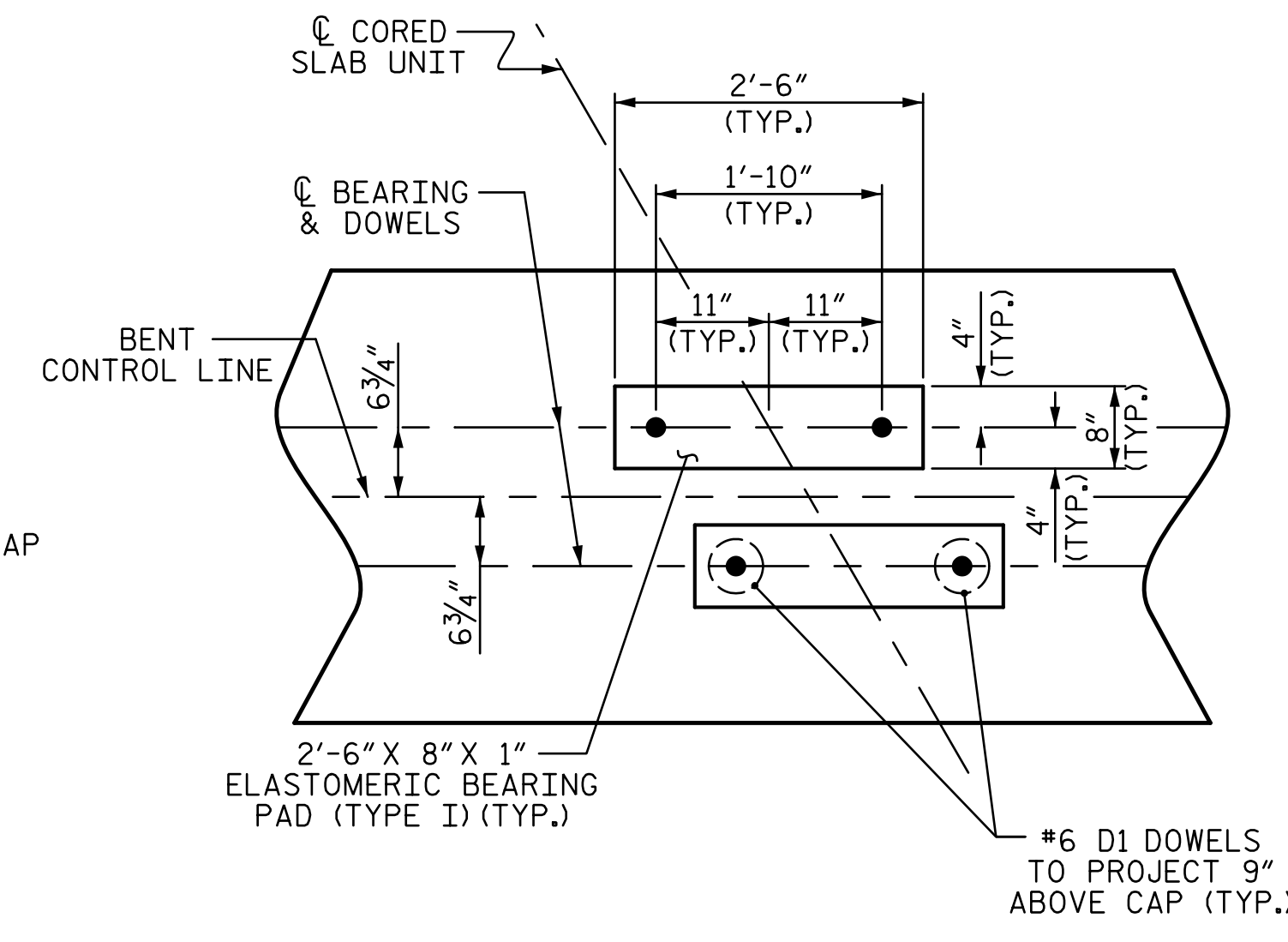


**PLAN**



**ELEVATION**

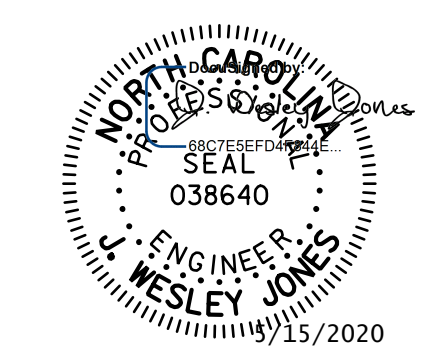
DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER UNLESS OTHERWISE NOTED.



**DETAIL "A"**

(DIMENSIONS ARE TYPICAL EACH BEARING)

PROJECT NO. BR-0125  
WILKES COUNTY  
 STATION: 15+36.00 -L-  
 SHEET 1 OF 2



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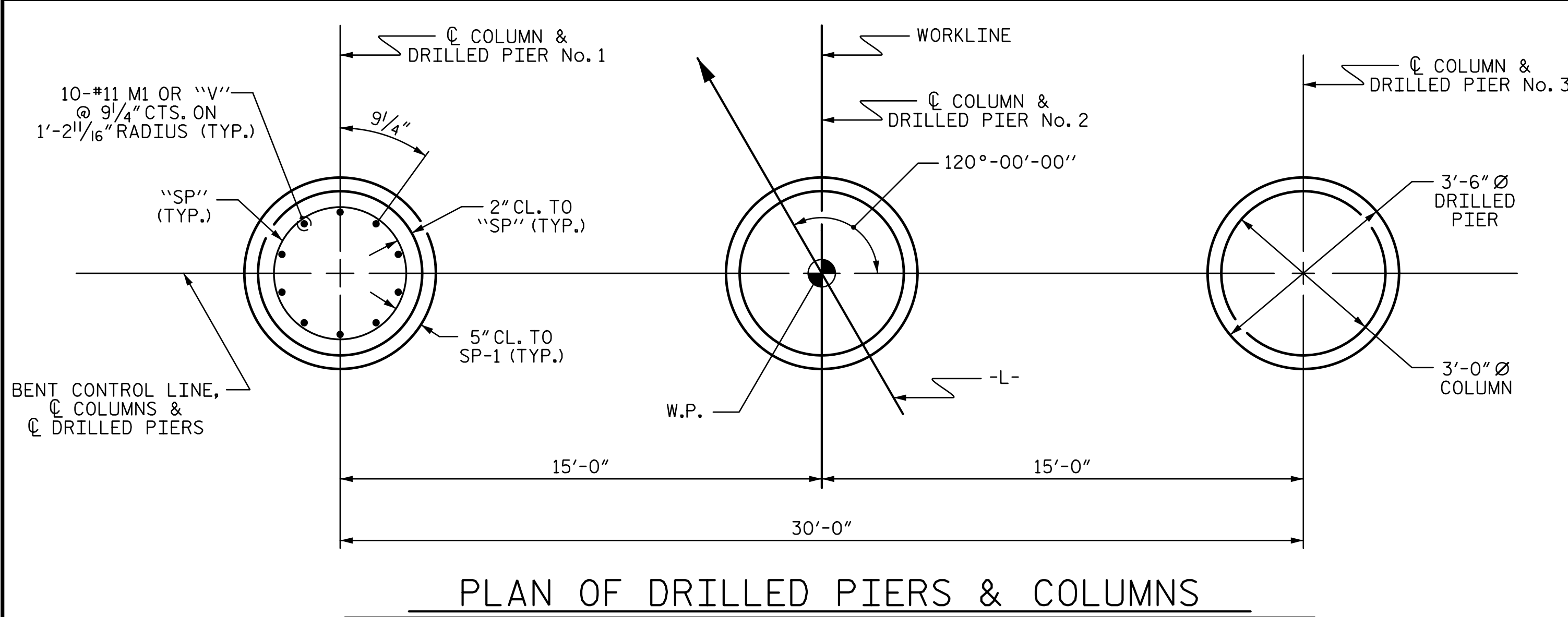
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SUBSTRUCTURE BENT No. 2					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
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					TOTAL SHEETS 23

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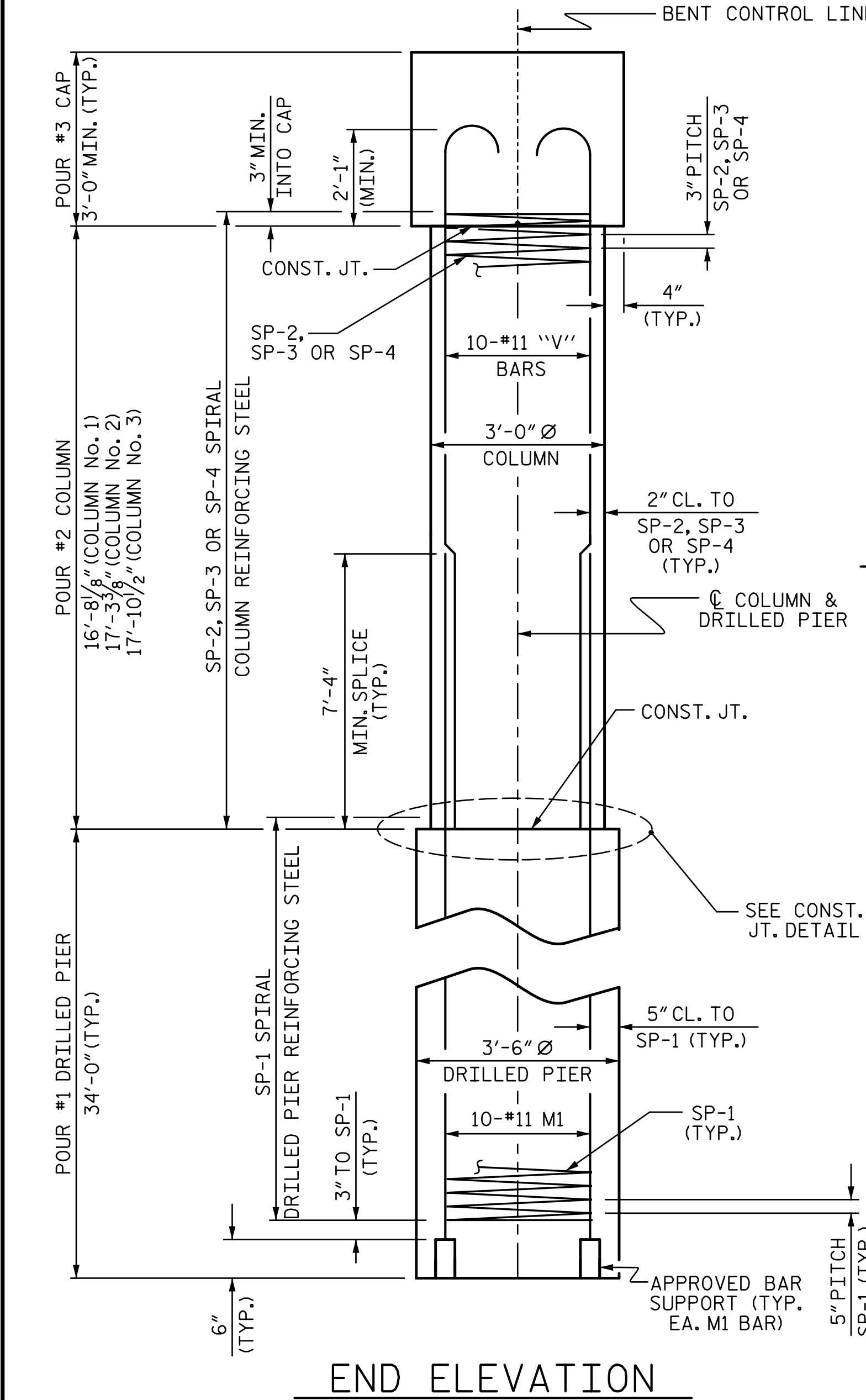
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CHECKED BY : JWJ	DATE : 02-20
DESIGN ENGINEER OF RECORD : JWJ	DATE : 04-20
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CHECKED BY : MKT 4/10	



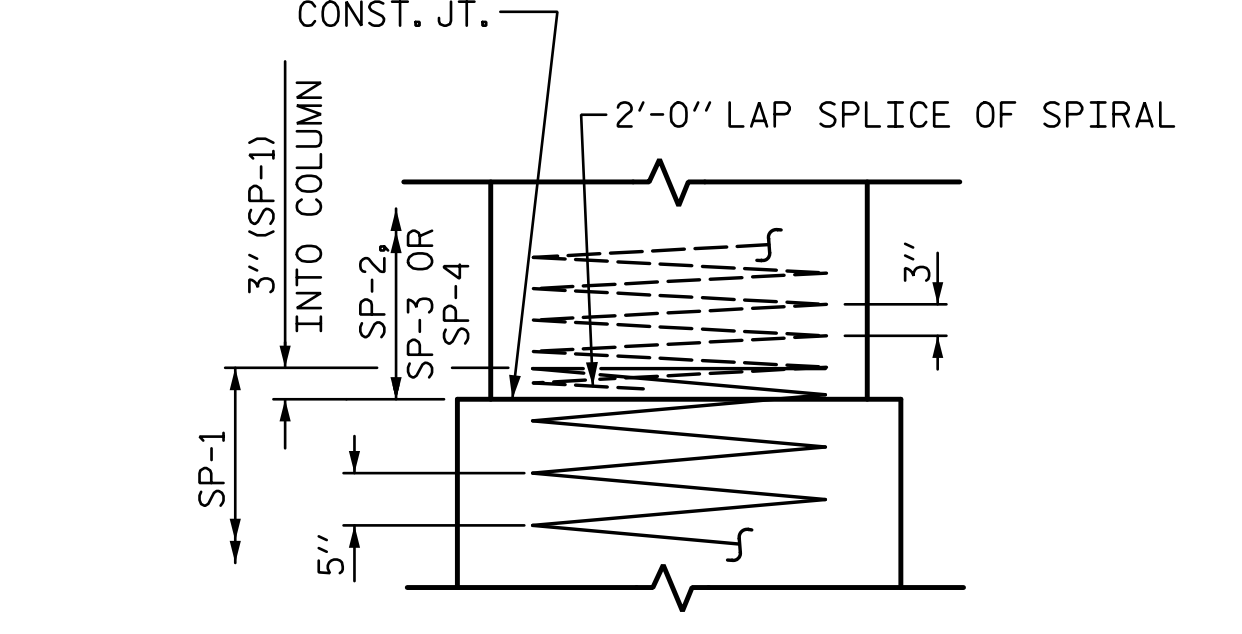
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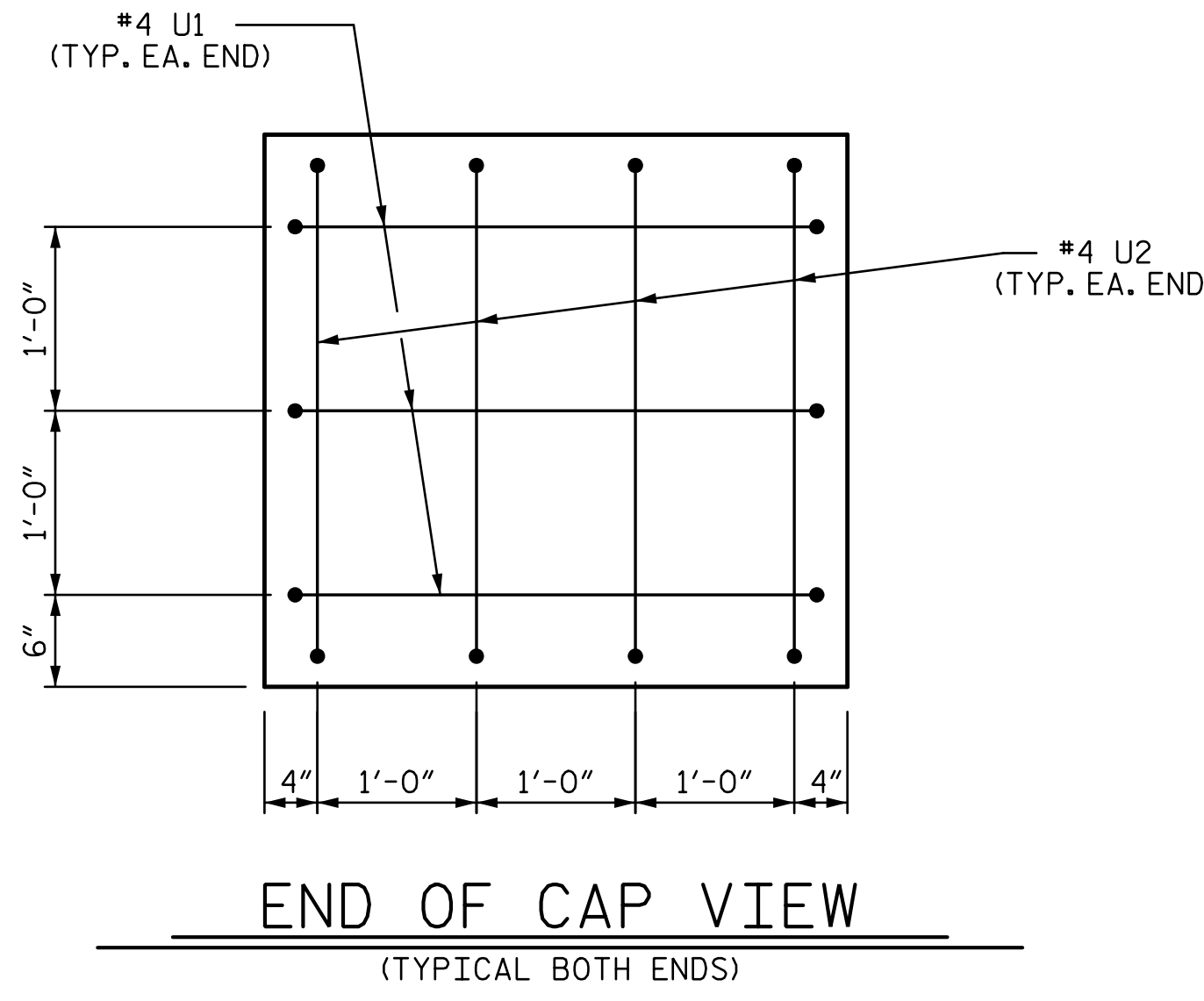
PLAN OF DRILLED PIERS & COLUMNS



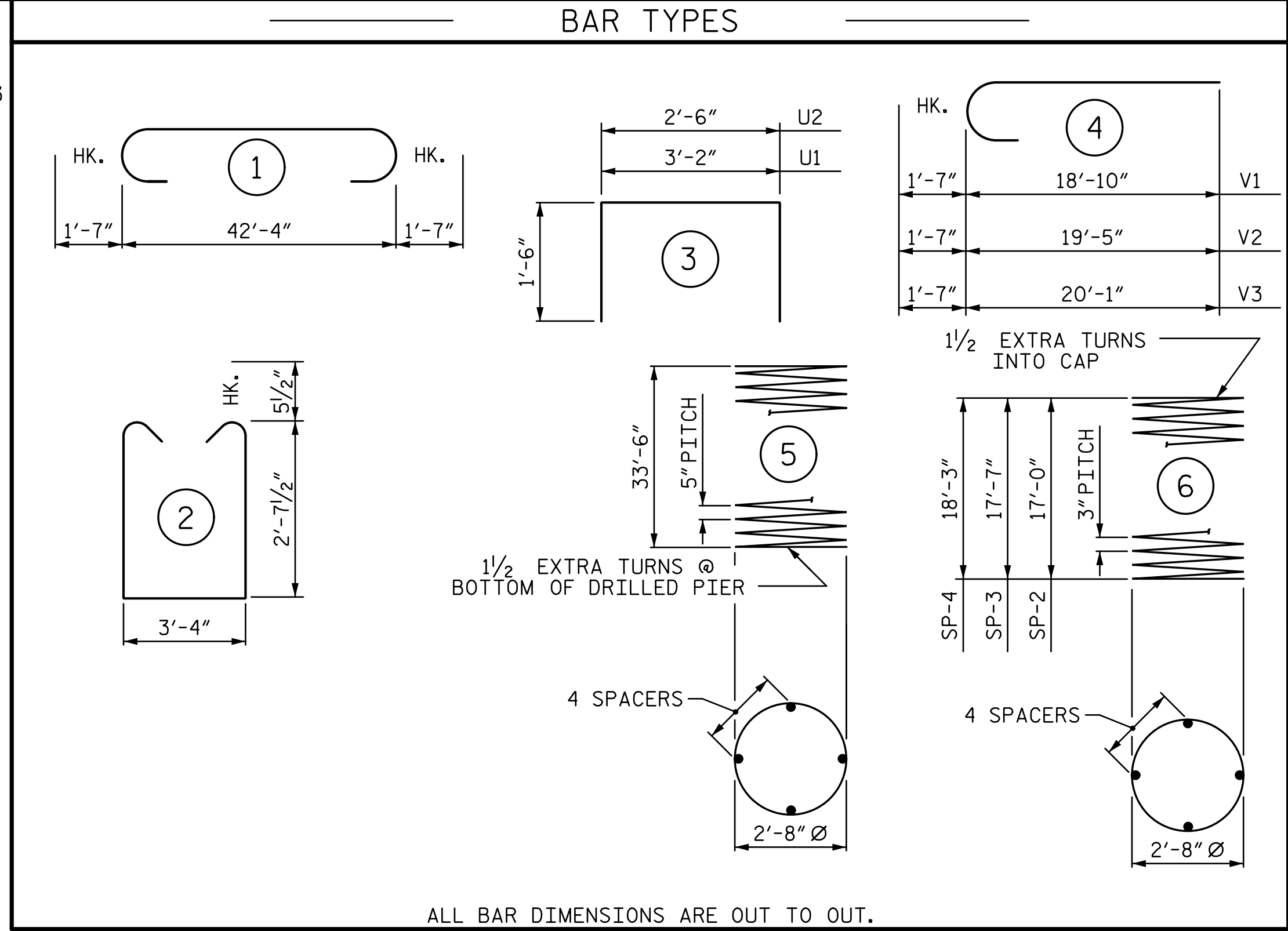
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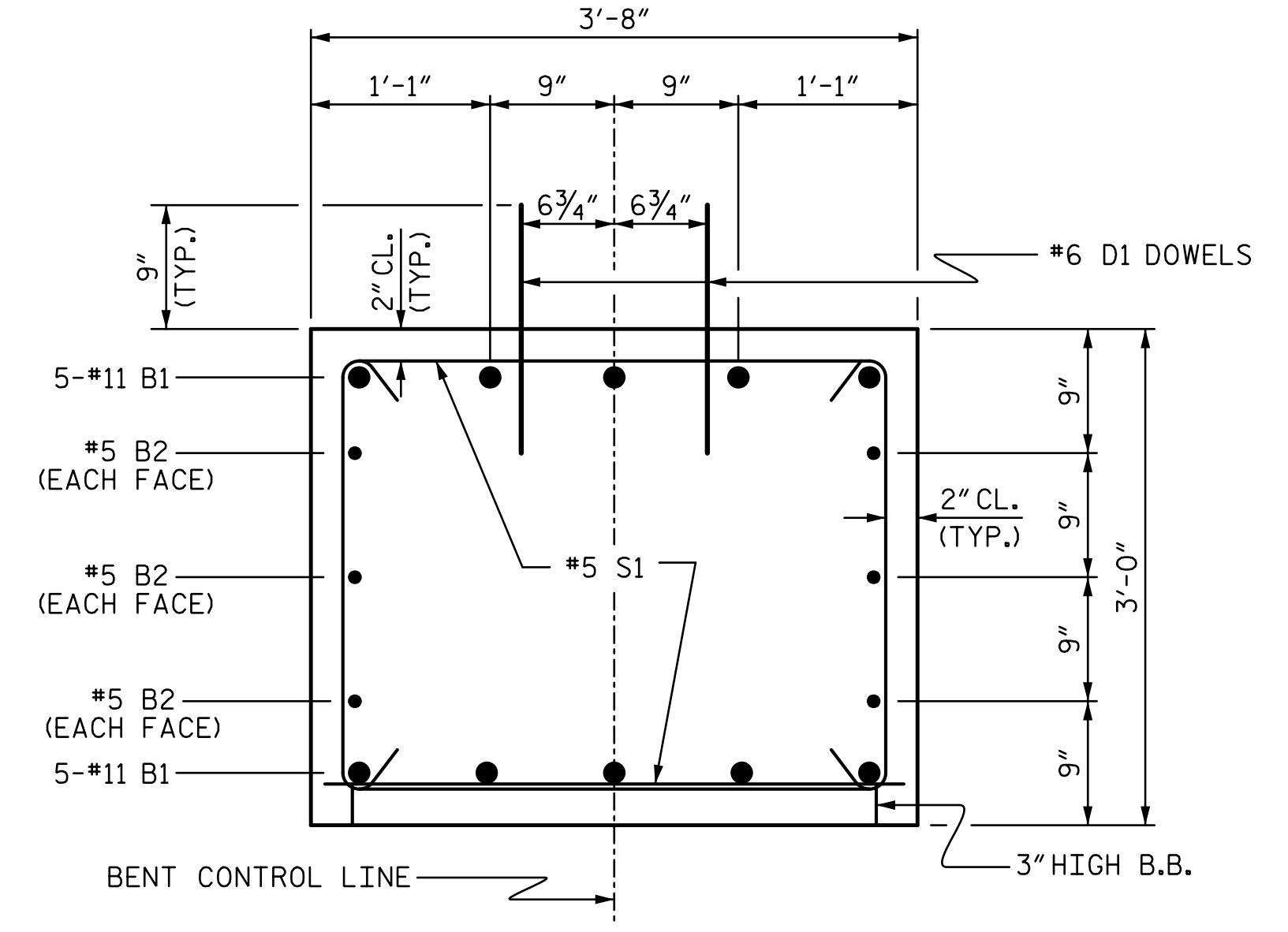
CONSTRUCTION JOINT DETAIL



END OF CAP VIEW  
(TYPICAL BOTH ENDS)



ALL BAR DIMENSIONS ARE OUT TO OUT.

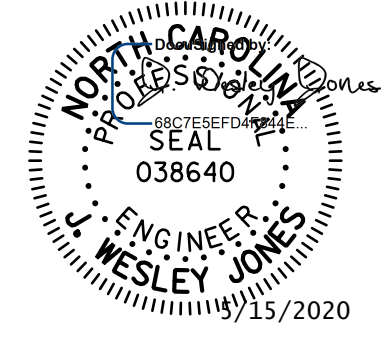


SECTION THRU CAP

BILL OF MATERIAL FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#11	1	45'-6"	2417
B2	6	#5	STR	42'-6"	266
D1	44	#6	STR	1'-6"	99
M1	30	#11	STR	43'-10"	6,987
S1	74	#5	2	9'-6"	733
U1	6	#4	3	6'-2"	25
U2	8	#4	3	5'-6"	29
V1	10	#11	4	20'-5"	1,085
V2	10	#11	4	21'-0"	1,116
V3	10	#11	4	21'-8"	1,151
REINFORCING STEEL (FOR ONE BENT)					13,908 LBS.
SP-1	3	*	5	673'-8"	2,108
SP-2	1	**	6	573'-5"	383
SP-3	1	**	6	592'-8"	396
SP-4	1	**	6	614'-8"	411
SPIRAL COLUMN REINFORCING STEEL (FOR ONE BENT)					3,298 LBS.
* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					
** THE SP-2, SP-3 & SP-4 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
POUR #2 (COLUMNS)					13.6 C.Y.
POUR #3 (CAP)					17.5 C.Y.
TOTAL CLASS A CONCRETE					31.1 C.Y.
DRILLED PIERS: (FOR ONE BENT)					
DRILLED PIER CONCRETE POUR #1 (DRILLED PIERS)					36.3 C.Y.
3'-6" Ø DRILLED PIER NOT IN SOIL					33.0 LIN. FT.
3'-6" Ø DRILLED PIER IN SOIL					69.0 LIN. FT.
PERMANENT STEEL CASING FOR 3'-6" Ø DRILLED PIER					27.0 LIN. FT.
CSL TUBES					426.0 LIN. FT.

PROJECT NO. BR-0125  
WILKES COUNTY  
 STATION: 15+36.00 -L-

SHEET 2 OF 2  
 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUBSTRUCTURE  
 BENT No. 2



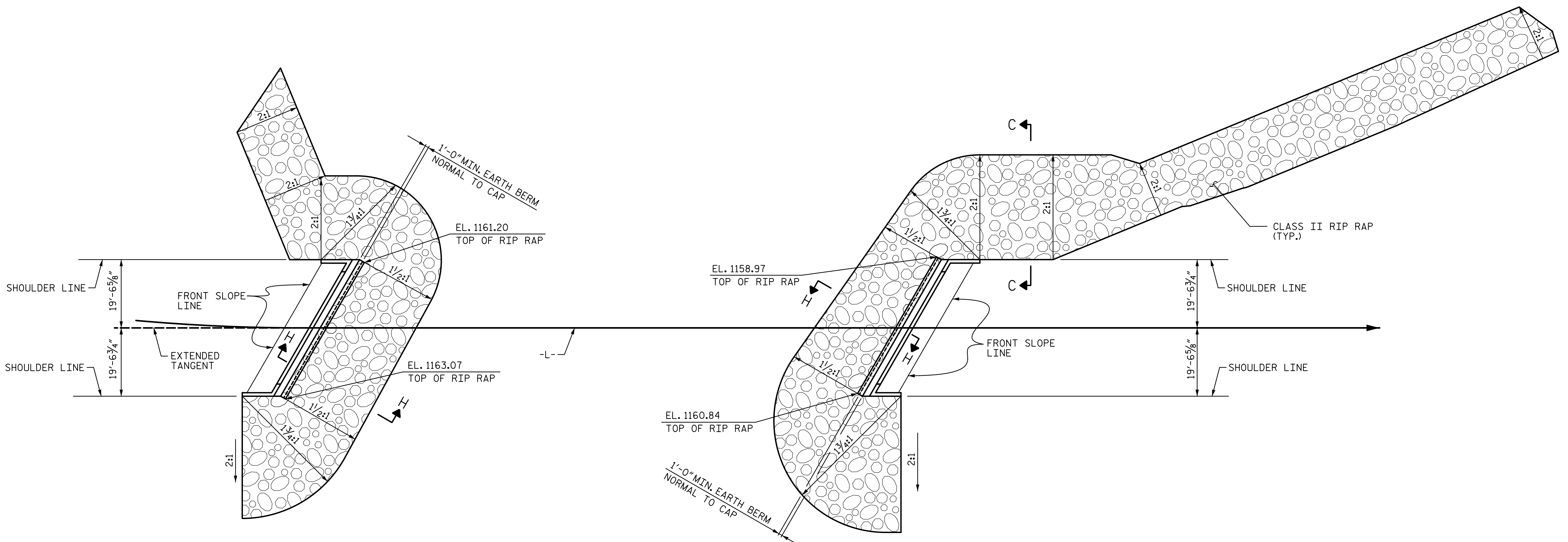
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 Charlotte, NC 28202  
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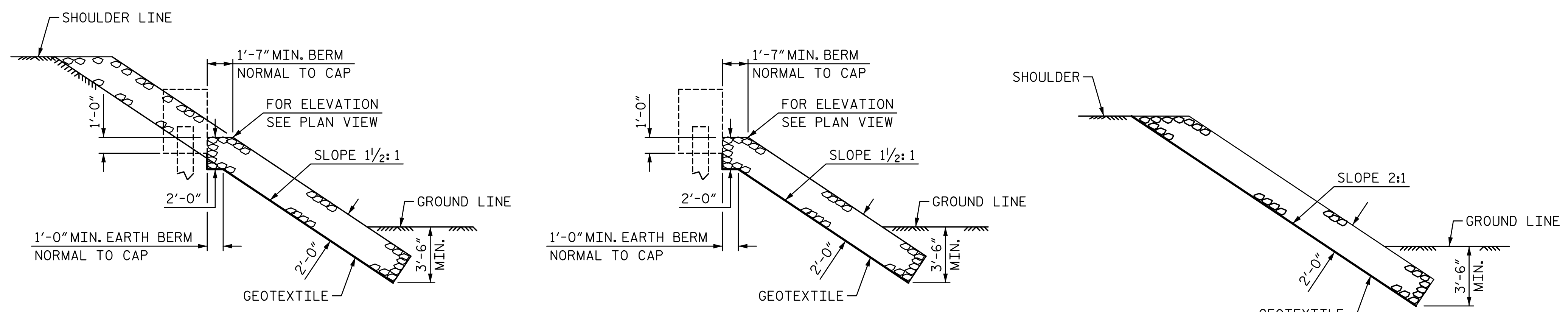
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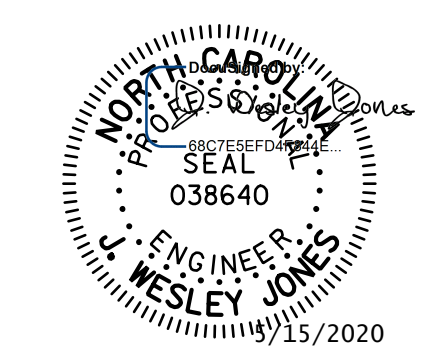
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ESTIMATED QUANTITIES		
BRIDGE @ STA. 15+36.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	470	525
END BENT 2	830	925



PROJECT NO. BR-0125  
WILKES COUNTY  
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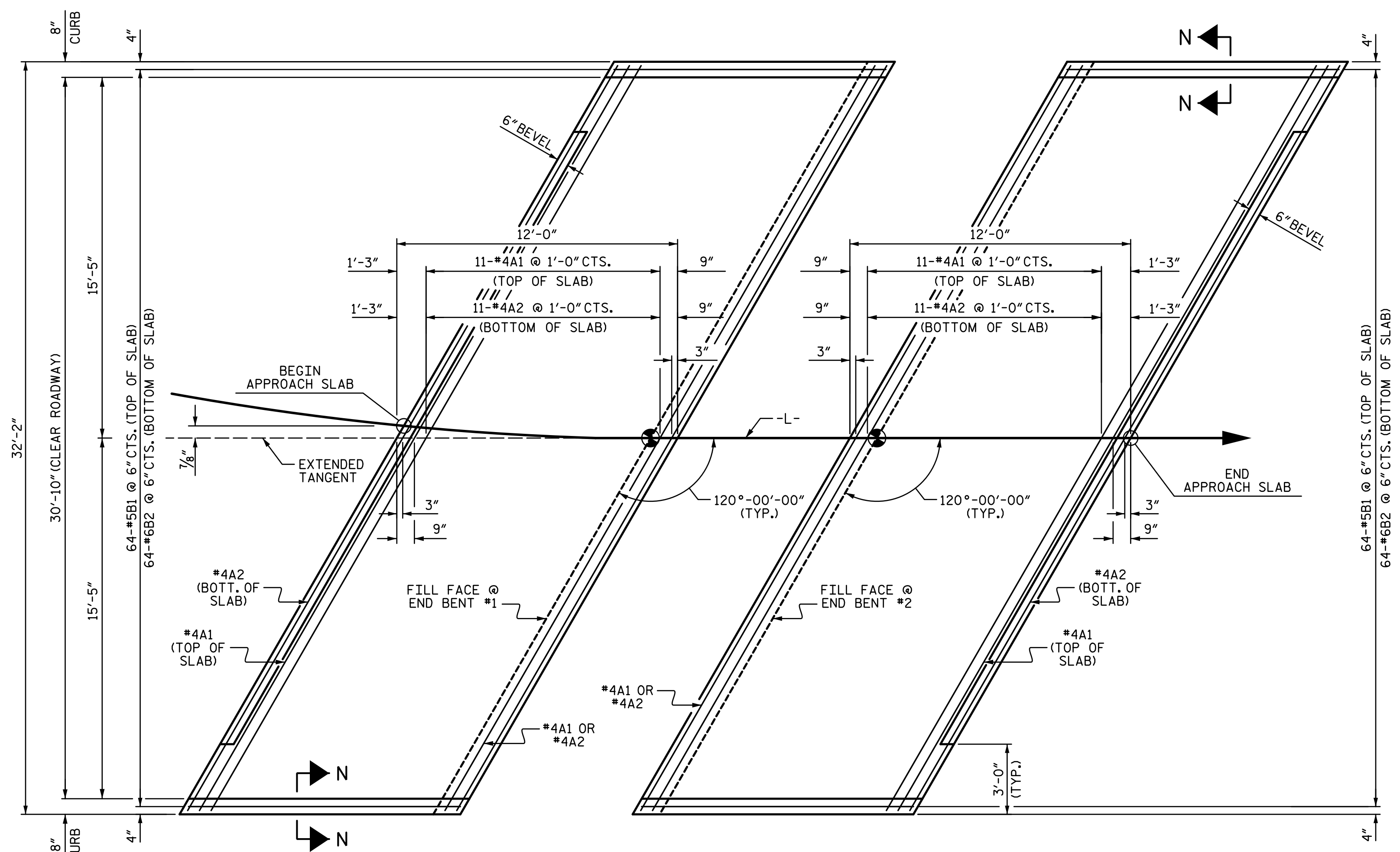
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TOTAL SHEETS 23

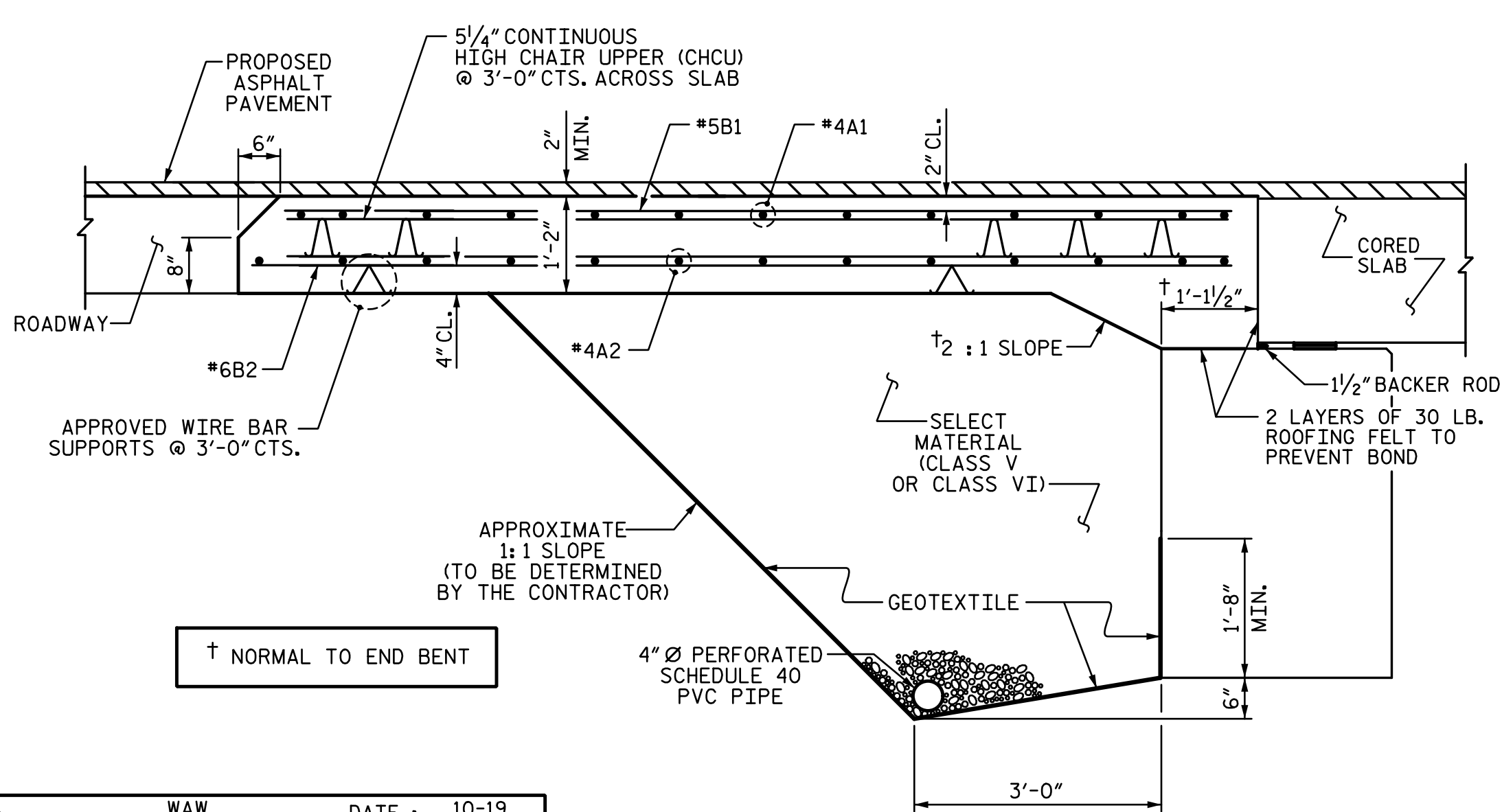
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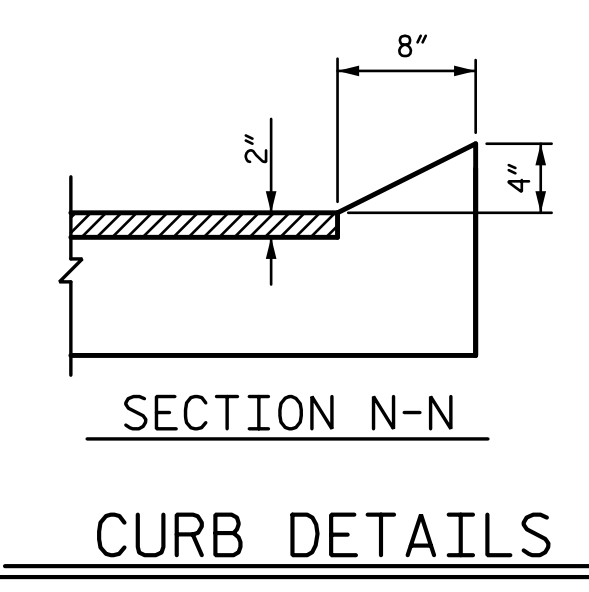
**PLAN @ END BENT #1**      **PLAN @ END BENT #2**  
 DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



**SECTION THRU SLAB**  
 (TYPE II - MODIFIED APPROACH FILL)

DRAWN BY : WAW	DATE : 10-19
CHECKED BY : JWJ	DATE : 11-19
DESIGN ENGINEER OF RECORD : JWJ	DATE : 04-20
DRAWN BY : SHS/MAA 5-09	REV. 12-17
CHECKED BY : BCH 5-09	REV. 08-19
	MAA/THC
	BNB/THC

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



**NOTES**

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 4" Ø DRAINAGE PIPE, AND SELECT MATERIAL BACKFILL, SEE ROADWAY PLANS.

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

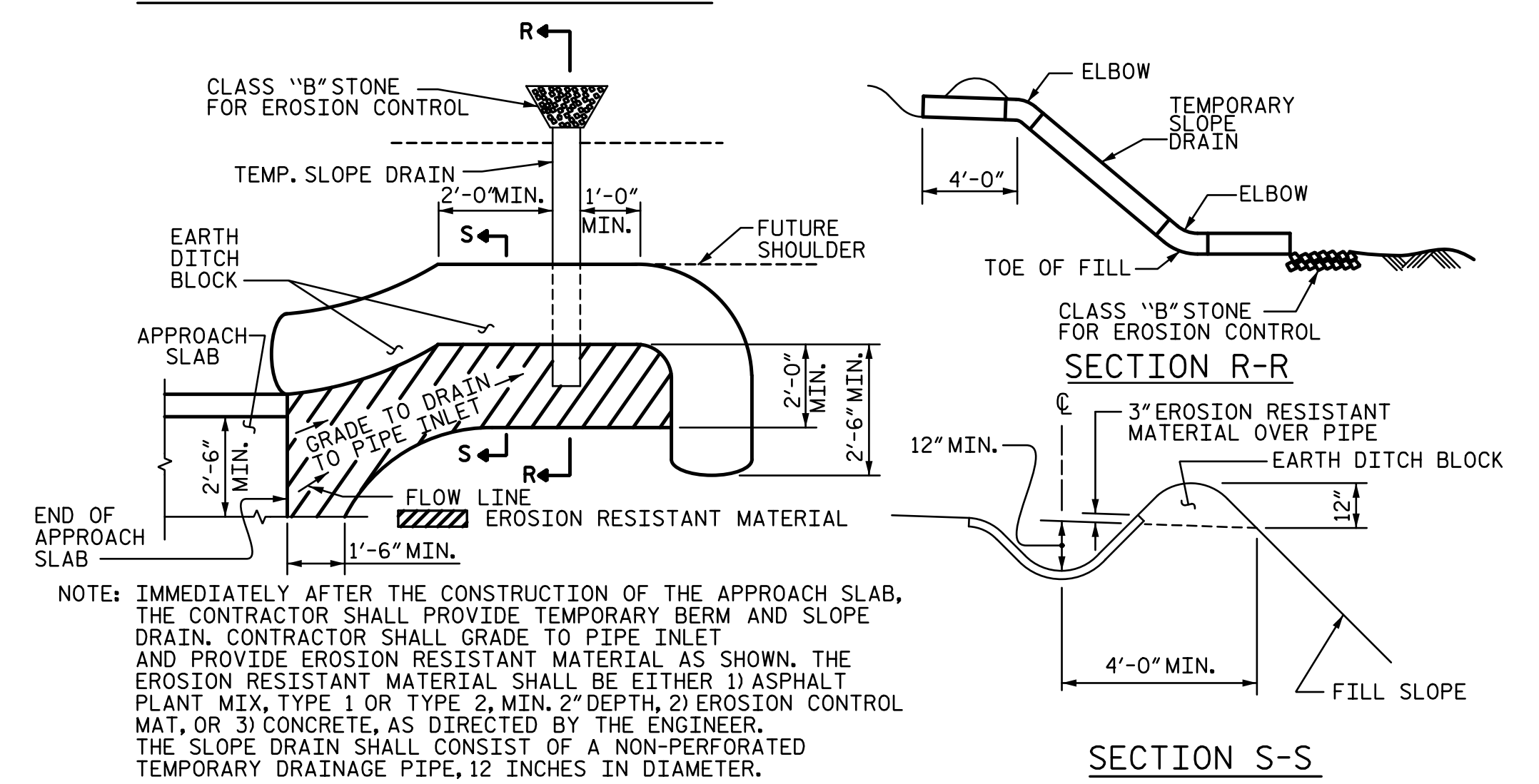
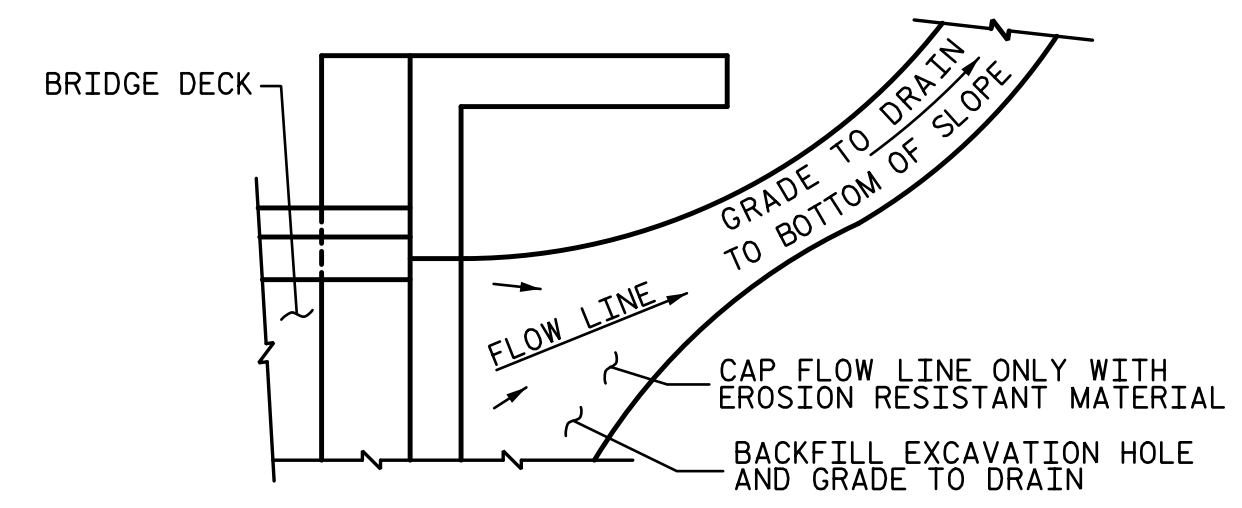
SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

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

FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

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

APPROACH SLAB GROOVING IS NOT REQUIRED.

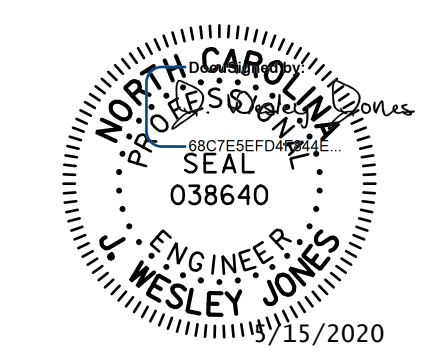


APPROACH SLAB AT EB #1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	13	#4	STR	36'-8"	318	
A2	13	#4	STR	36'-8"	318	
*B1	64	#5	STR	11'-1"	740	
B2	64	#6	STR	11'-7"	1113	
REINFORCING STEEL					LBS.	1431
* EPOXY COATED REINFORCING STEEL					LBS.	1058
CLASS AA CONCRETE					C. Y.	18.6

APPROACH SLAB AT EB #2						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	13	#4	STR	36'-8"	318	
A2	13	#4	STR	36'-8"	318	
*B1	64	#5	STR	11'-1"	740	
B2	64	#6	STR	11'-7"	1113	
REINFORCING STEEL					LBS.	1431
* EPOXY COATED REINFORCING STEEL					LBS.	1058
CLASS AA CONCRETE					C. Y.	19.8

PROJECT NO. **BR-0125**  
**WILKES** COUNTY  
 STATION: **15+36.00 -L-**



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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**STANDARD BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT (SUB-REGIONAL TIER) 120° SKEW**

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

TOTAL SHEETS: 23



