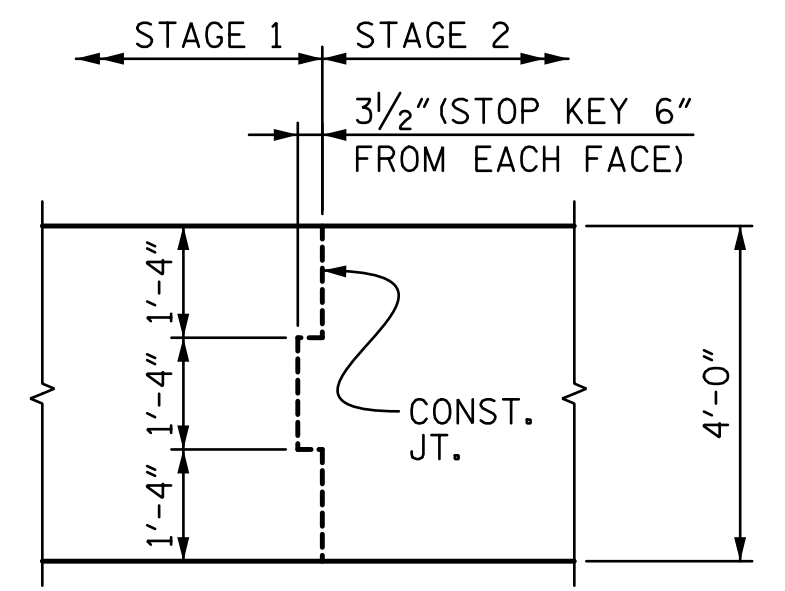


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

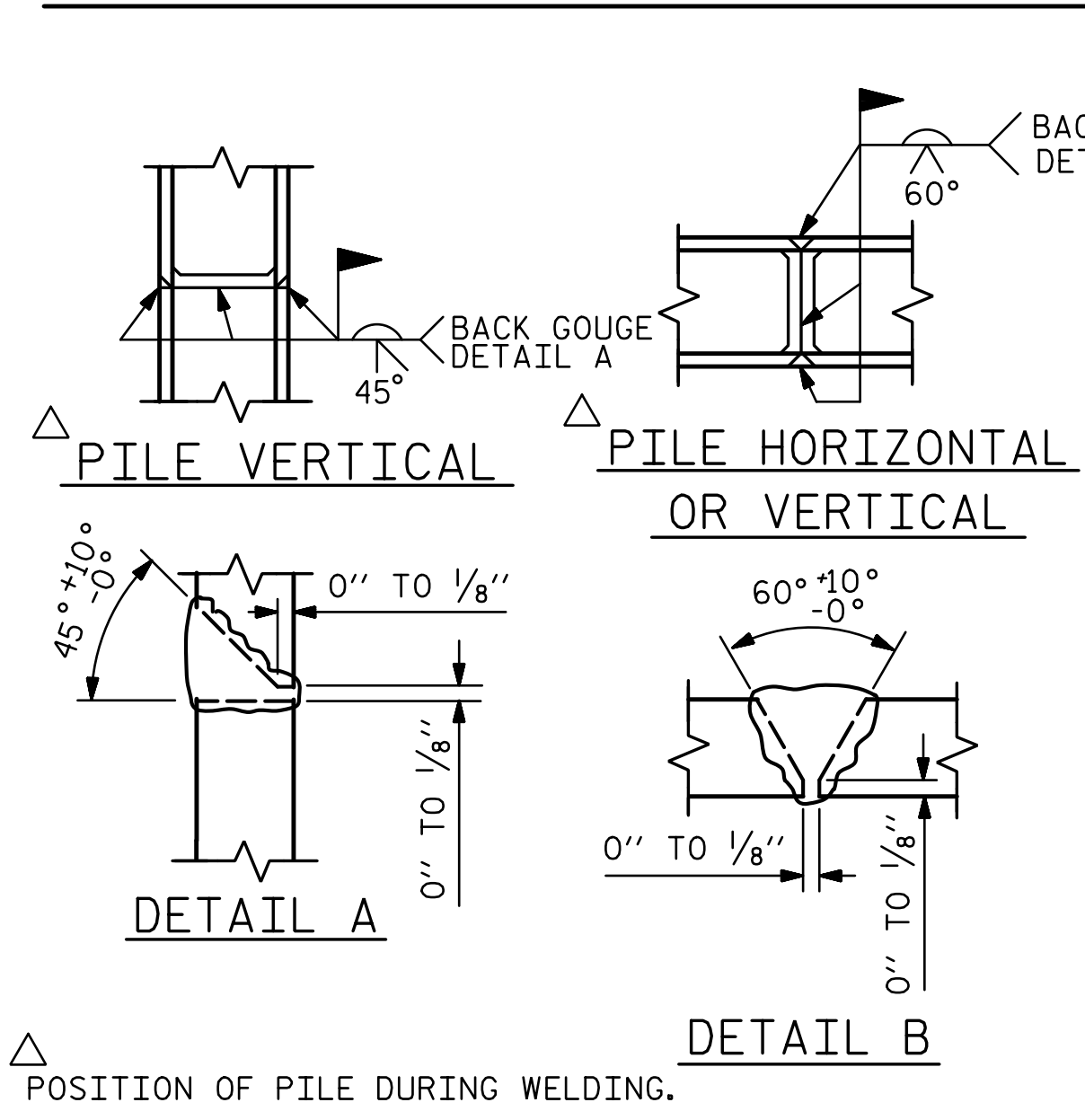
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

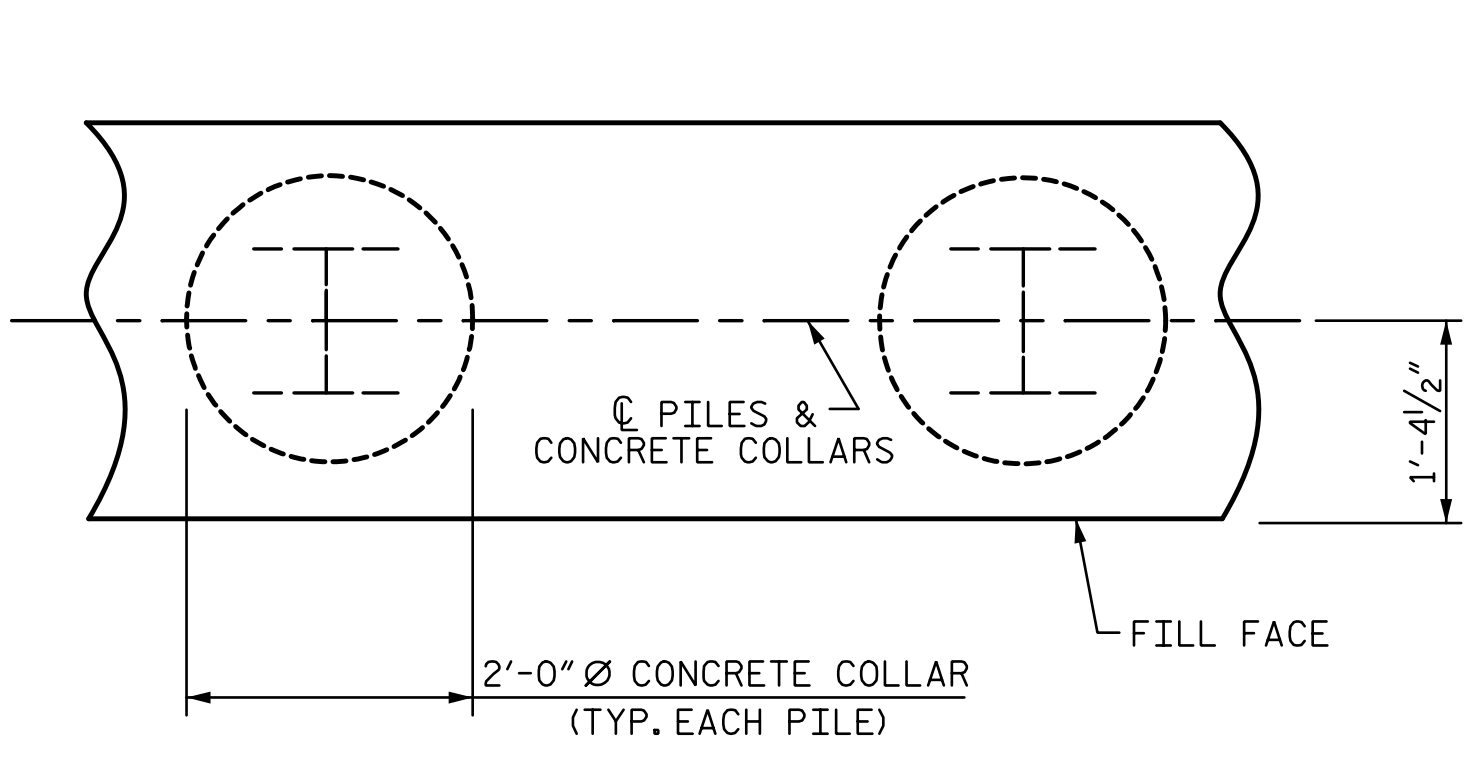
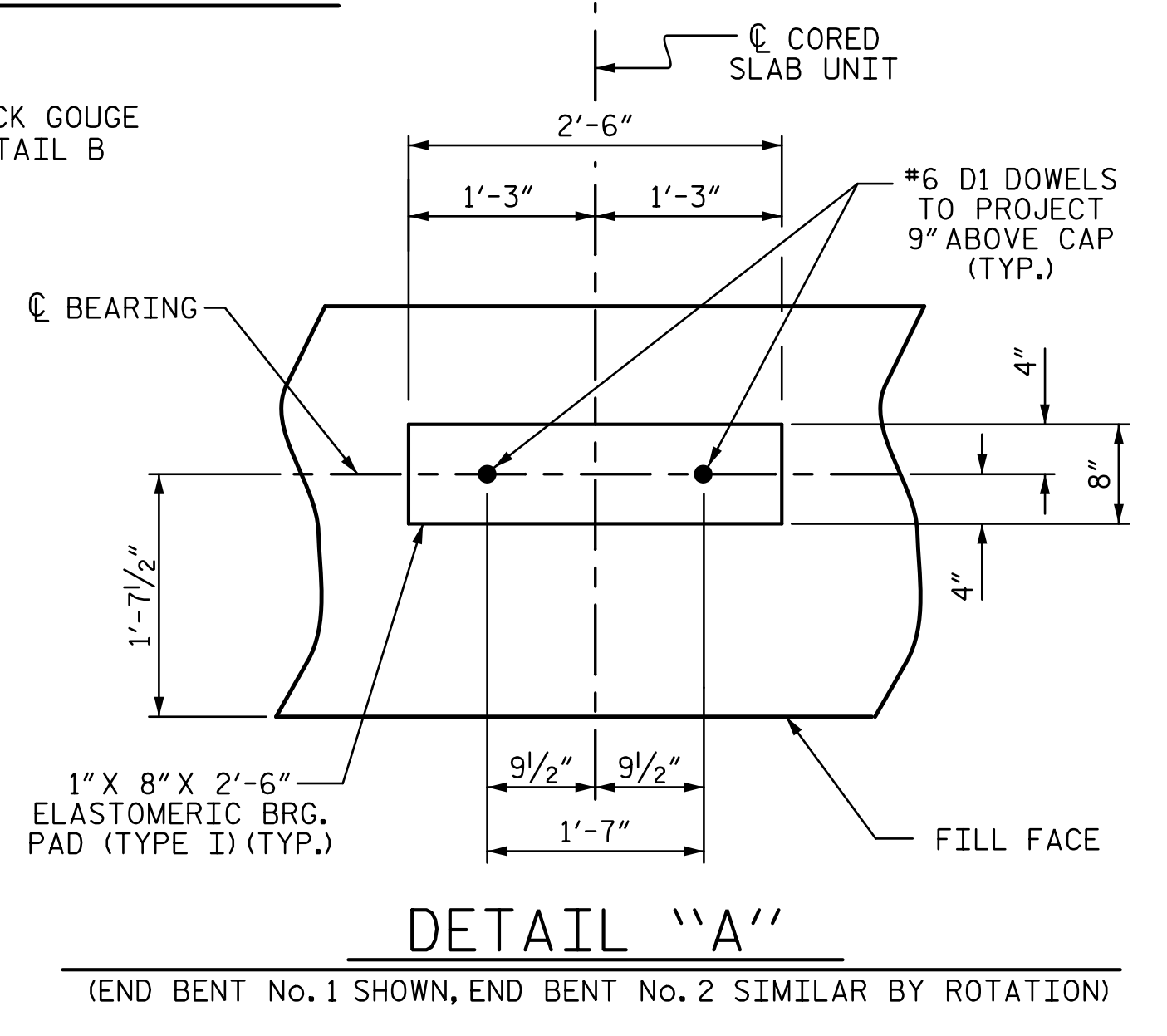
TEMPORARY DRAINAGE AT END BENT



CONST. JT. DETAIL

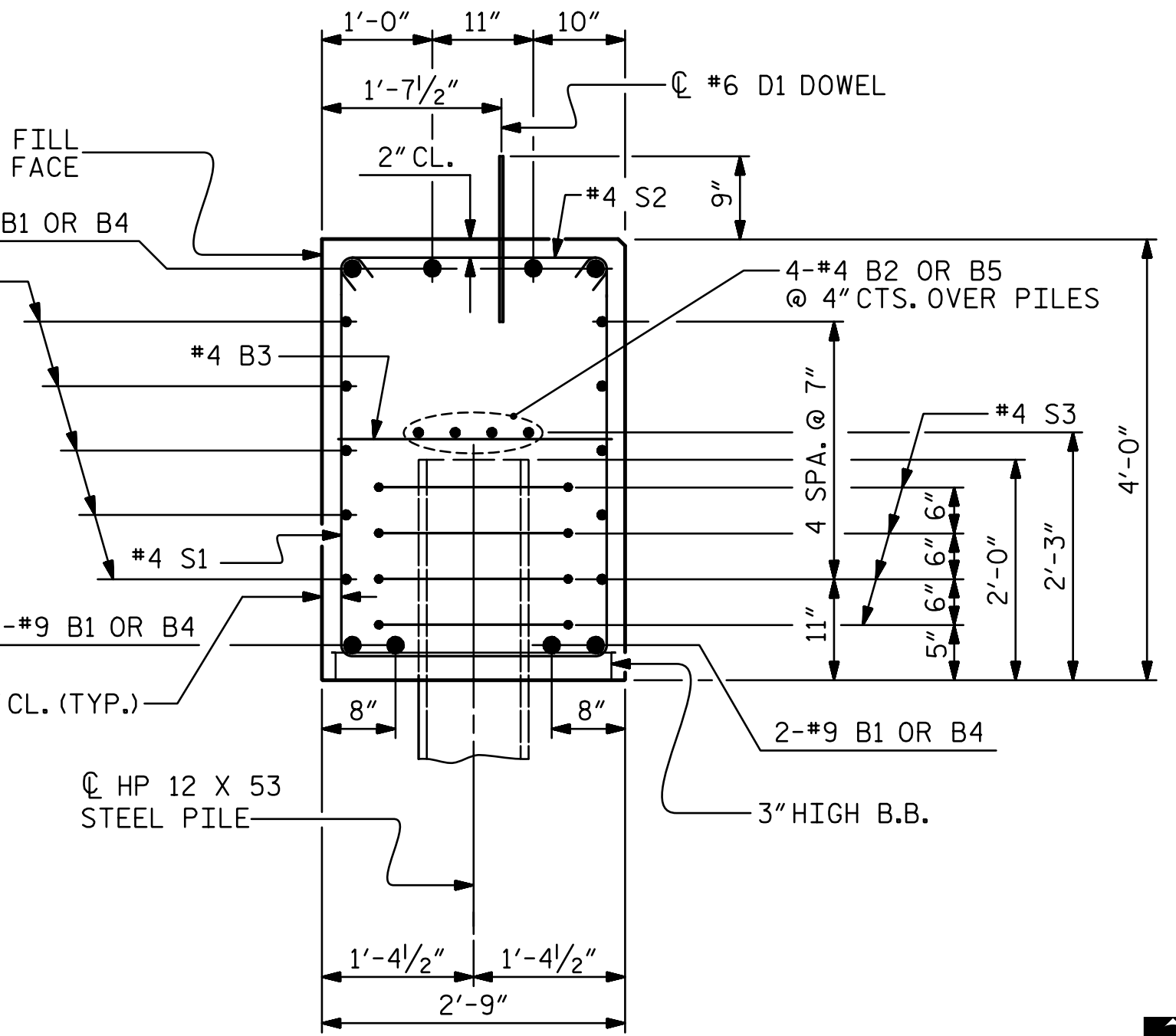
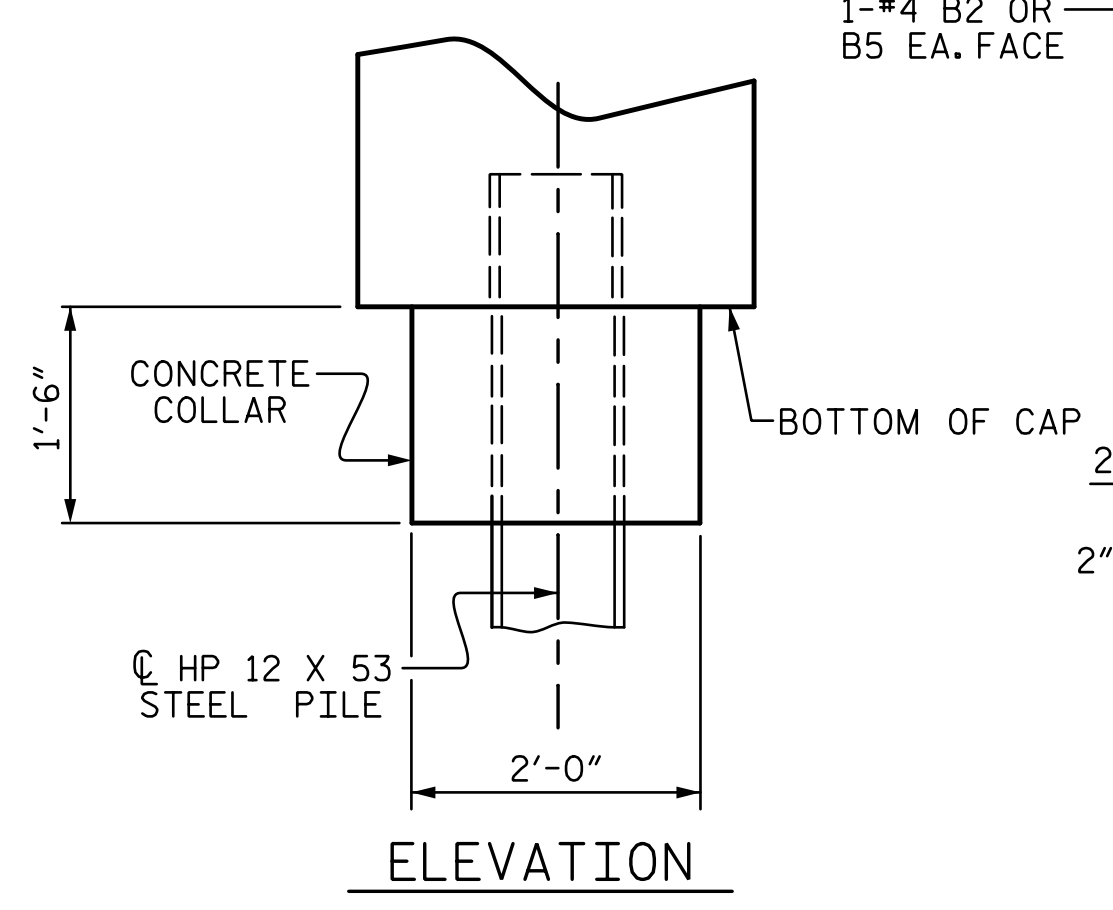


PILE SPlice DETAILS

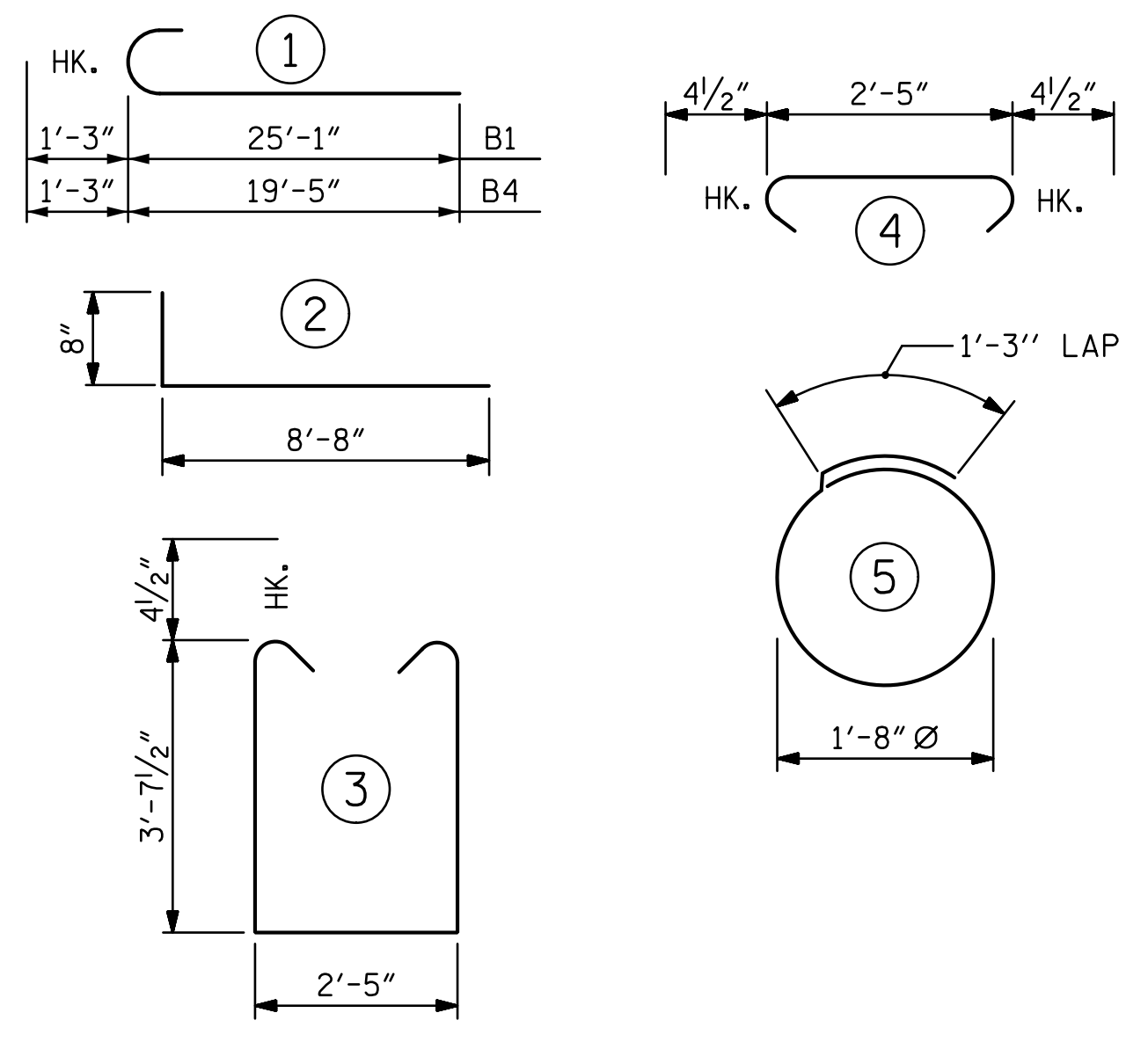


CORROSION PROTECTION FOR STEEL PILES DETAIL

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



BAR TYPES



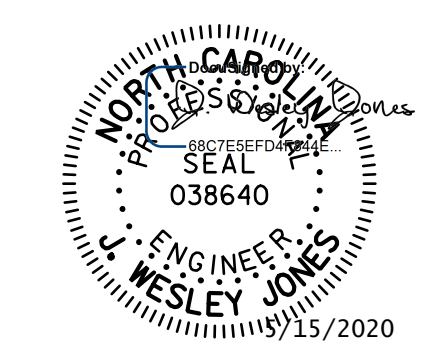
BILL OF MATERIAL					
END BENT 1 (STAGE 1)					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	26'-4"	716
B2	14	#4	STR	25'-1"	235
B3	6	#4	STR	2'-5"	10
D1	14	#6	STR	1'-6"	32
H1	20	#4	2	9'-4"	125
K1	8	#4	STR	2'-11"	16
S1	30	#4	3	10'-5"	209
S2	30	#4	4	3'-2"	63
S3	16	#4	5	6'-6"	69
V1	26	#4	STR	6'-2"	107
REINFORCING STEEL				1582 LBS.	
CLASS A CONCRETE BREAKDOWN					
POUR #1 CAP, LOWER PART OF WINGS & COLLARS				11.8 C.Y.	
POUR #2 UPPER PART OF WINGS				1.2 C.Y.	
TOTAL CLASS A CONCRETE				13.0 C.Y.	

BILL OF MATERIAL					
END BENT 1 (STAGE 2)					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	6	#4	STR	2'-5"	10
B4	8	#9	1	20'-8"	562
B5	14	#4	STR	19'-5"	182
D1	12	#6	STR	1'-6"	27
H1	20	#4	2	9'-4"	125
K1	8	#4	STR	2'-11"	16
S1	26	#4	3	10'-5"	181
S2	26	#4	4	3'-2"	55
S3	12	#4	5	6'-6"	52
V1	26	#4	STR	6'-2"	107
REINFORCING STEEL				1317 LBS.	
CLASS A CONCRETE BREAKDOWN					
POUR #1 CAP, LOWER PART OF WINGS & COLLARS				10.1 C.Y.	
POUR #2 UPPER PART OF WINGS				1.2 C.Y.	
TOTAL CLASS A CONCRETE				11.3 C.Y.	

END BENT No. 1 (STAGE 1)						END BENT No. 1 (STAGE 2)					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
HP 12 X 53 STEEL PILES NO: 4 LIN. FT.= 100						HP 12 X 53 STEEL PILES NO: 3 LIN. FT.= 75					
PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 4						PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 3					
STEEL PILE POINTS. EA. = 4						STEEL PILE POINTS. EA. = 3					
PREDRILLING FOR PILES LIN. FT.= 76						PREDRILLING FOR PILES LIN. FT.= 62					
END BENT No. 2 (STAGE 1)						END BENT No. 2 (STAGE 2)					
HP 12 X 53 STEEL PILES NO: 4 LIN. FT.= 110						HP 12 X 53 STEEL PILES NO: 3 LIN. FT.= 105					
PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 4						PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 3					
STEEL PILE POINTS. EA. = 4						STEEL PILE POINTS. EA. = 3					
PREDRILLING FOR PILES LIN. FT.= 58						PREDRILLING FOR PILES LIN. FT.= 54					
REINFORCING STEEL						1582 LBS.					
CLASS A CONCRETE BREAKDOWN						1317 LBS.					
POUR #1 CAP, LOWER PART OF WINGS & COLLARS						11.8 C.Y.					
POUR #2 UPPER PART OF WINGS						1.0 C.Y.					
TOTAL CLASS A CONCRETE						12.8 C.Y.					

END BENT 2 (STAGE 1)						END BENT 2 (STAGE 2)					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
HP 12 X 53 STEEL PILES NO: 4 LIN. FT.= 110						HP 12 X 53 STEEL PILES NO: 3 LIN. FT.= 105					
PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 4						PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 3					
STEEL PILE POINTS. EA. = 4						STEEL PILE POINTS. EA. = 3					
PREDRILLING FOR PILES LIN. FT.= 58						PREDRILLING FOR PILES LIN. FT.= 54					
REINFORCING STEEL						1582 LBS.					
CLASS A CONCRETE BREAKDOWN						1317 LBS.					
POUR #1 CAP, LOWER PART OF WINGS & COLLARS						11.8 C.Y.					
POUR #2 UPPER PART OF WINGS						1.0 C.Y.					
TOTAL CLASS A CONCRETE						12.8 C.Y.					

PROJECT NO. BR-0126
WILKES COUNTY
STATION: 16+62.00 -L-
SHEET 4 OF 4



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
SUBSTRUCTURE
END BENT No. 1 & 2
DETAILS

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

TOTAL SHEETS 23

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DRAWN BY : LAH DATE : 11-19
CHECKED BY : JWJ DATE : 3-20
DESIGN ENGINEER OF RECORD : JWJ DATE : 5-20