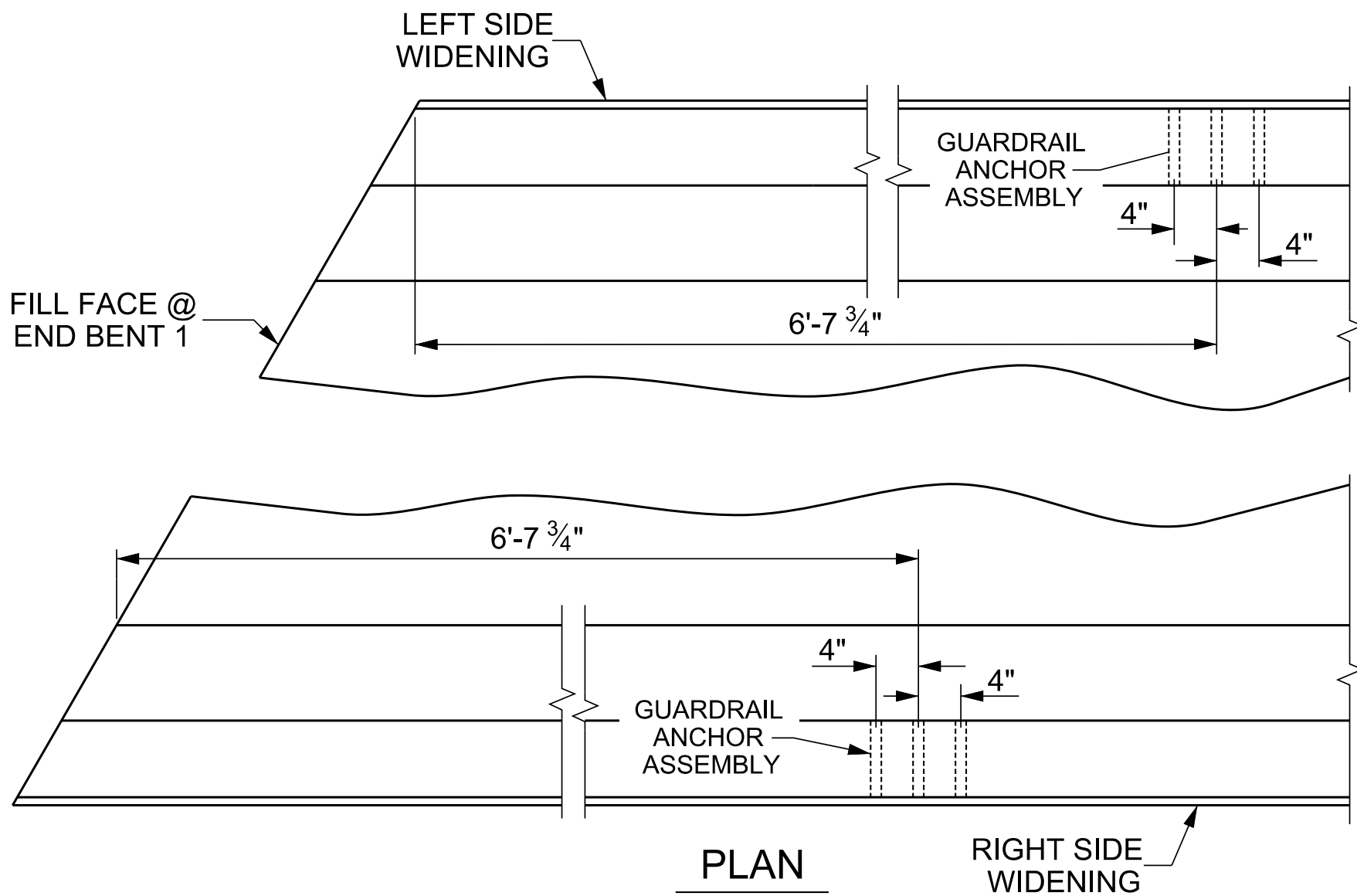
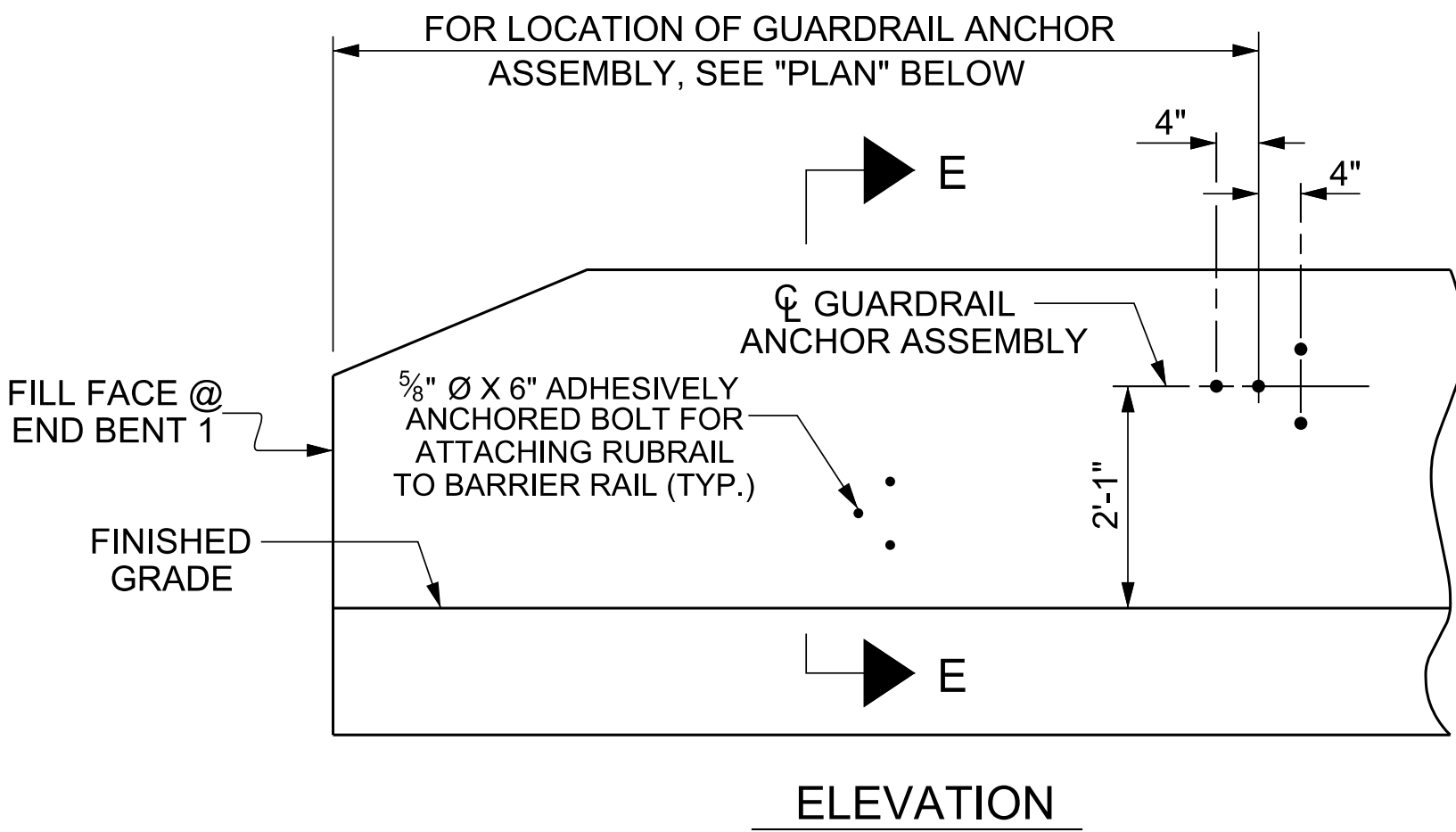
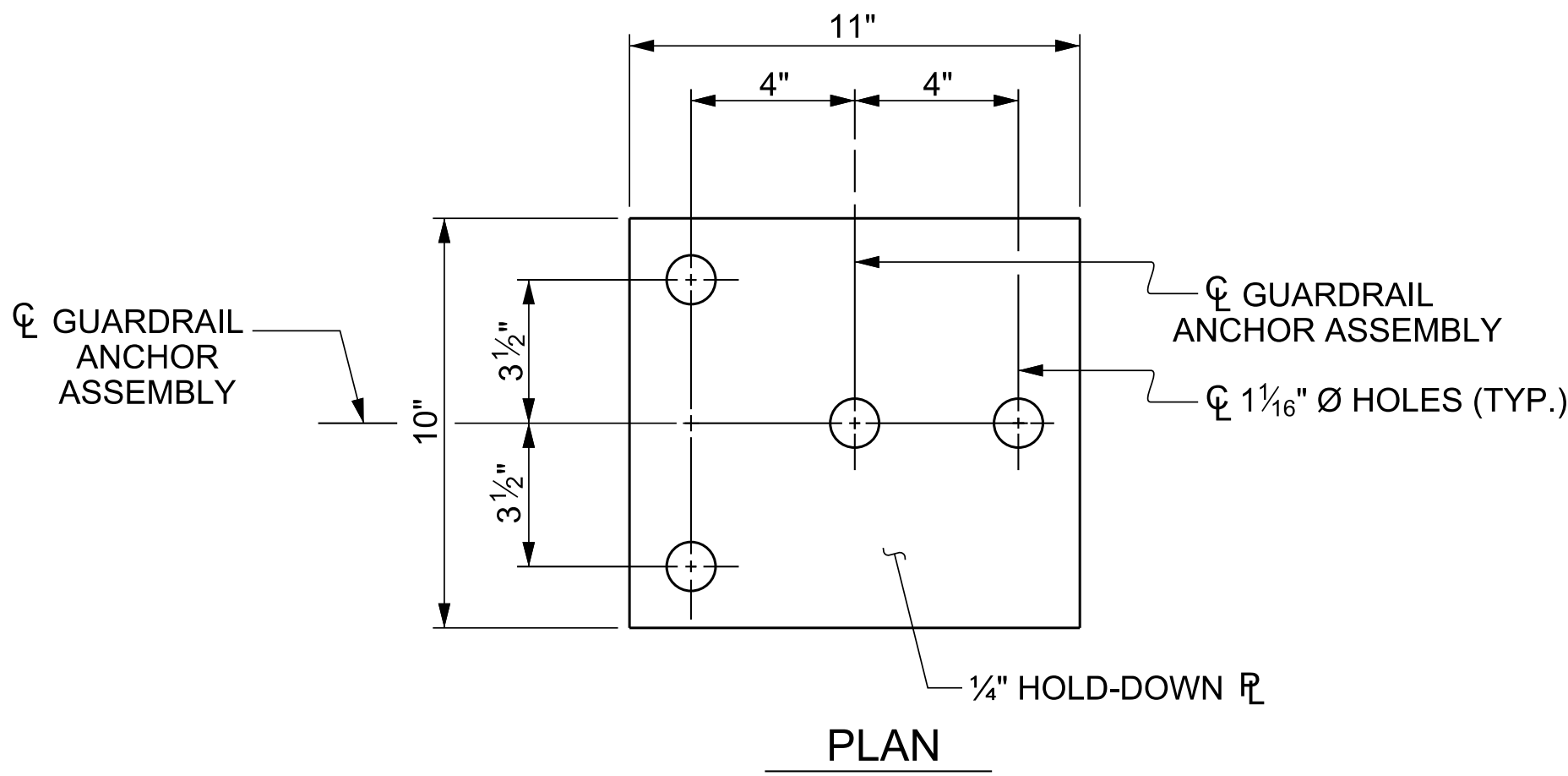




LOCATION OF ANCHORS FOR GUARDRAIL

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

NOTES

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

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.)

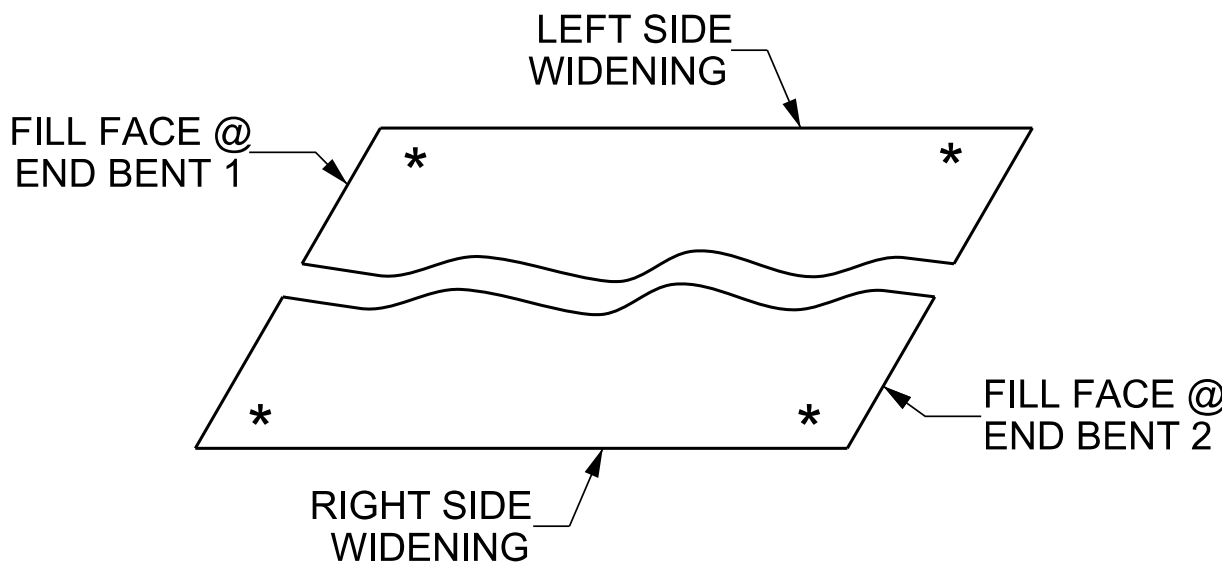
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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 CONCRETE BARRIER RAIL.

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.

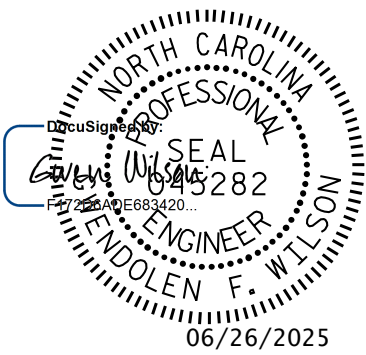
THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 5/8" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD GUARDRAIL ANCHORAGE FOR BARRIER RAIL

**DOCUMENT NOT CONSIDERED FINAL
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4700 Falls of Neuse Rd, Suite 100,
Raleigh, NC 27609
License No: C-3097

REVISIONS						SHEET NO. S2-44
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

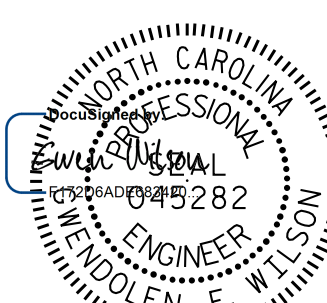
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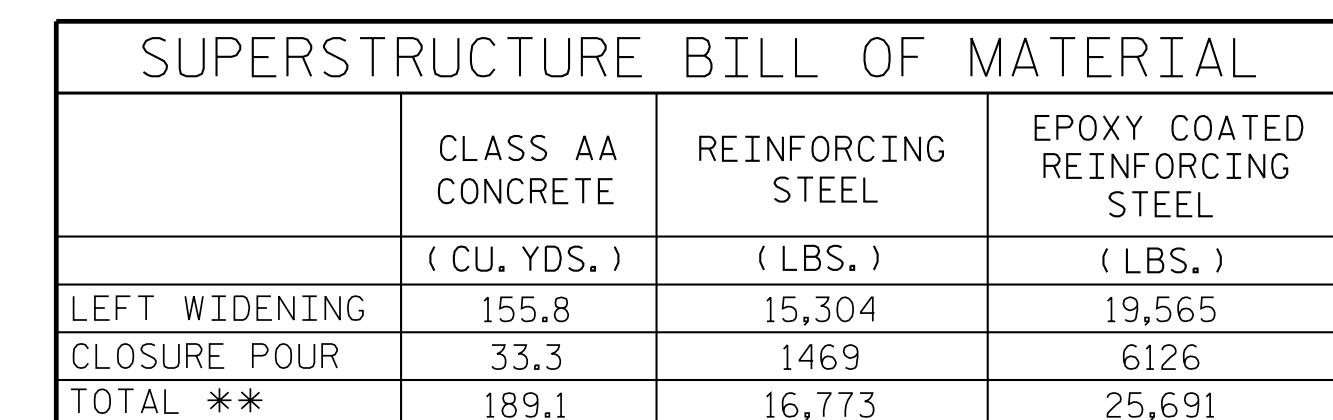
DWN. BY: WDC	DATE: 09/2024	DRAWN BY : TLA	5/06	REV. 6/13	MAA/GM
CHKD. BY: GFW	DATE: 11/2024	CHECKED BY : GM	5/06	REV. 12/17	MAA/THC
DES. EGR. OF RECORD: STC	DATE: 09/2024			REV. 6/22	BNB/AAI

SPAN A - LEFT WIDENING											
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	49	#5	STR	25'-4"	1295	B1	26	#4	STR	2'-9"	48
A2	49	#5	STR	25'-4"	1295	B2	29	#4	1	5'-9"	111
						B3	28	#5	STR	37'-7"	1098
* A101	2	#5	STR	24'-5"	51	* B4	18	#4	STR	37'-7"	452
* A102	2	#5	STR	23'-6"	49						
* A103	2	#5	STR	22'-7"	47	* D1	154	#6	STR	7'-2"	1658
* A104	2	#5	STR	21'-7"	45						
* A105	2	#5	STR	20'-8"	43	* G1	2	#5	STR	28'-9"	60
* A106	2	#5	STR	19'-9"	41						
* A107	2	#5	STR	18'-10"	39	K1	2	#6	STR	19'-4"	58
* A108	2	#5	STR	17'-11"	37	K2	2	#6	STR	13'-11"	42
* A109	2	#5	STR	17'-0"	35	K3	8	#4	STR	18'-11"	101
* A110	2	#5	STR	16'-0"	33	K4	8	#4	STR	13'-6"	72
* A111	2	#5	STR	15'-1"	31	K5	2	#4	STR	16'-0"	21
* A112	2	#5	STR	14'-2"	30	* K6	2	#5	2	7'-5"	15
* A113	2	#5	STR	13'-3"	28	* K7	6	#5	3	10'-3"	64
* A114	2	#5	STR	12'-4"	26	* K8	2	#5	2	6'-1"	13
* A115	2	#5	STR	11'-5"	24	K17	1	#4	STR	3'-5"	2
* A116	2	#5	STR	10'-5"	22						
* A117	2	#5	STR	9'-6"	20	S1	39	#4	4	2'-8"	69
* A118	2	#5	STR	8'-7"	18	* S2	20	#4	5	4'-0"	53
* A119	2	#5	STR	7'-8"	16	S4	8	#4	6	2'-2"	12
* A120	2	#5	STR	6'-9"	14	REINFORCING STEEL 3620 LBS.					
* A121	2	#5	STR	5'-10"	12	* EPOXY COATED REINFORCING STEEL 4301 LBS.					
* A122	2	#5	STR	4'-10"	10						
* A123	2	#5	STR	3'-11"	8						
* A124	2	#5	STR	3'-0"	6						
* A125	2	#5	STR	2'-1"	4						
* A126	2	#5	STR	1'-2"	2						
A201	2	#5	STR	24'-5"	51	SPAN A - CLOSURE POUR					
A202	2	#5	STR	23'-6"	49	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A203	2	#5	STR	22'-7"	47	B3	8	#5	STR	37'-7"	314
A204	2	#5	STR	21'-7"	45	* B4	4	#4	STR	37'-7"	100
A205	2	#5	STR	20'-8"	43						
A206	2	#5	STR	19'-9"	41	* D2	144	#6	STR	5'-6"	1190
A207	2	#5	STR	18'-10"	39	REINFORCING STEEL 314 LBS.					
A208	2	#5	STR	17'-11"	37	* EPOXY COATED REINFORCING STEEL 1290 LBS.					
A209	2	#5	STR	17'-0"	35						
A210	2	#5	STR	16'-0"	33						
A211	2	#5	STR	15'-1"	31						
A212	2	#5	STR	14'-2"	30						
A213	2	#5	STR	13'-3"	28						
A214	2	#5	STR	12'-4"	26						
A215	2	#5	STR	11'-5"	24						
A216	2	#5	STR	10'-5"	22						
A217	2	#5	STR	9'-6"	20						
A218	2	#5	STR	8'-7"	18						
A219	2	#5	STR	7'-8"	16						
A220	2	#5	STR	6'-9"	14						
A221	2	#5	STR	5'-10"	12						
A222	2	#5	STR	4'-10"	10						
A223	2	#5	STR	3'-11"	8						
A224	2	#5	STR	3'-0"	6						
A225	2	#5	STR	2'-1"	4						
A226	2	#5	STR	1'-2"	2						

SPAN B - LEFT WIDENING											
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A3	167	#5	STR	25'-4"	4413	B5	54	#5	STR	49'-8"	2797
A4	167	#5	STR	25'-4"	4413	* B6	54	#4	STR	33'-9"	1217
* A301	2	#5	STR	25'-0"	52	* D1	386	#6	STR	7'-2"	4155
* A302	2	#5	STR	24'-1"	50						
* A303	2	#5	STR	23'-2"	48	* G1	2	#5	STR	28'-9"	60
* A304	2	#5	STR	22'-3"	46						
* A305	2	#5	STR	21'-4"	45	* K9	4	#5	2	7'-11"	33
* A306	2	#5	STR	20'-5"	43	* K10	12	#5	3	11'-5"	143
* A307	2	#5	STR	19'-5"	41	* K11	4	#5	2	6'-7"	27
* A308	2	#5	STR	18'-6"	39						
* A309	2	#5	STR	17'-7"	37						
* A310	2	#5	STR	16'-8"	35	* S3	32	#4	5	4'-2"	89
* A311	2	#5	STR	15'-9"	33	REINFORCING STEEL 7938 LBS.					
* A312	2	#5	STR	14'-10"	31	* EPOXY COATED REINFORCING STEEL 10,865 LBS.					
* A313	2	#5	STR	13'-10"	29						
* A314	2	#5	STR	12'-11"	27						
* A315	2	#5	STR	12'-0"	25						
* A316	2	#5	STR	11'-1"	23						
* A317	2	#5	STR	10'-2"	21						
* A318	2	#5	STR	9'-3"	19						
* A319	2	#5	STR	8'-3"	17						
* A320	2	#5	STR	7'-4"	15	SPAN B - CLOSURE POUR					
* A321	2	#5	STR	6'-5"	13	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A322	2	#5	STR	5'-6"	11	B5	16	#5	STR	49'-8"	829
* A323	2	#5	STR	4'-7"	10	* B6	12	#4	STR	33'-9"	271
* A324	2	#5	STR	3'-8"	8						
* A325	2	#5	STR	2'-9"	6	* D2	386	#6	STR	5'-6"	3189
* A326	2	#5	STR	1'-9"	4	REINFORCING STEEL 829 LBS.					
						* EPOXY COATED REINFORCING STEEL 3460 LBS.					
A401	2	#5	STR	25'-0"	52						
A402	2	#5	STR	24'-1"	50						
A403	2	#5	STR	23'-2"	48						
A404	2	#5	STR	22'-3"	46						
A405	2	#5	STR	21'-4"	45						
A406	2	#5	STR	20'-5"	43						
A407	2	#5	STR	19'-5"	41						
A408	2	#5	STR	18'-6"	39						
A409	2	#5	STR	17'-7"	37						
A410	2	#5	STR	16'-8"	35						
A411	2	#5	STR	15'-9"	33						
A412	2	#5	STR	14'-10"	31						
A413	2	#5	STR	13'-10"	29						
A414	2	#5	STR	12'-11"	27						
A415	2	#5	STR	12'-0"	25						
A416	2	#5	STR	11'-1"	23						
A417	2	#5	STR	10'-2"	21						
A418	2	#5	STR	9'-3"	19						
A419	2	#5	STR	8'-3"	17						
A420	2	#5	STR	7'-4"	15						
A421	2	#5	STR	6'-5"	13						
A422	2	#5	STR	5'-6"	11						
A423	2	#5	STR	4'-7"	10						
A424	2	#5	STR	3'-8"	8						
A425	2	#5	STR	2'-9"	6						
A426	2	#5	STR	1'-9"	4						

SPAN C - LEFT WIDENING												
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
* A5	51	#5	STR	25'-4"	1348	B1	26	#4	STR	2'-9"	48	
A6	51	#5	STR	25'-4"	1348	B2	29	#4	1	5'-9"	111	
						B7	28	#5	STR	39'-1"	1141	
* A501	2	#5	STR	24'-11"	52	* B8	18	#4	STR	39'-1"	470	
* A502	2	#5	STR	23'-11"	50							
* A503	2	#5	STR	23'-0"	48	* D1	154	#6	STR	7'-2"	1658	
* A504	2	#5	STR	22'-1"	46							
* A505	2	#5	STR	21'-2"	44	* G1	2	#5	STR	28'-9"	60	
* A506	2	#5	STR	20'-3"	42							
* A507	2	#5	STR	19'-4"	40	* K6	2	#5	2	7'-5"	15	
* A508	2	#5	STR	18'-4"	38	* K7	6	#5	3	10'-3"	64	
* A509	2	#5	STR	17'-5"	36	* K8	2	#5	2	6'-1"	13	
* A510	2	#5	STR	16'-6"	34	K12	2	#6	STR	14'-5"	43	
* A511	2	#5	STR	15'-7"	33	K13	2	#6	STR	18'-10"	57	
* A512	2	#5	STR	14'-8"	31	K14	8	#4	STR	20'-4"	109	
* A513	2	#5	STR	13'-9"	29	K15	8	#4	STR	12'-1"	65	
* A514	2	#5	STR	12'-9"	27	K16	2	#4	STR	15'-10"	21	
* A515	2	#5	STR	11'-10"	25	K18	1	#4	STR	4'-1"	3	
* A516	2	#5	STR	10'-11"	23							
* A517	2	#5	STR	10'-0"	21	S1	39	#4	4	2'-8"	69	
* A518	2	#5	STR	9'-1"	19	* S2	20	#4	5	4'-0"	53	
* A519	2	#5	STR	8'-2"	17	S4	9	#4	6	2'-2"	13	
* A520	2	#5	STR	7'-3"	15	REINFORCING STEEL					3746 LBS.	
* A521	2	#5	STR	6'-3"	13	* EPOXY COATED REINFORCING STEEL					4399 LBS.	
* A522	2	#5	STR	5'-4"	11							
* A523	2	#5	STR	4'-5"	9							
* A524	2	#5	STR	3'-6"	7							
* A525	2	#5	STR	2'-7"	5							
* A526	2	#5	STR	1'-8"	3							
A601	2	#5	STR	24'-11"	52	SPAN C - CLOSURE POUR						
A602	2	#5	STR	23'-11"	50	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
A603	2	#5	STR	23'-0"	48	B7	8	#5	STR	39'-1"	326	
A604	2	#5	STR	22'-1"	46	* B8	4	#4	STR	39'-1"	104	
A605	2	#5	STR	21'-2"	44							
A606	2	#5	STR	20'-3"	42	* D2	154	#6	STR	5'-6"	1272	
A607	2	#5	STR	19'-4"	40	REINFORCING STEEL					326 LBS.	
A608	2	#5	STR	18'-4"	38	* EPOXY COATED REINFORCING STEEL					1376 LBS.	
A609	2	#5	STR	17'-5"	36							
A610	2	#5	STR	16'-6"	34							
A611	2	#5	STR	15'-7"	33							
A612	2	#5	STR	14'-8"	31							
A613	2	#5	STR	13'-9"	29							
A614	2	#5	STR	12'-9"	27							
A615	2	#5	STR	11'-10"	25							
A616	2	#5	STR	10'-11"	23							
A617	2	#5	STR	10'-0"	21							
A618	2	#5	STR	9'-1"	19							
A619	2	#5	STR	8'-2"	17							
A620	2	#5	STR	7'-3"	15							
A621	2	#5	STR	6'-3"	13							
A622	2	#5	STR	5'-4"	11							
A623	2	#5	STR	4'-5"	9							
A624	2	#5	STR	3'-6"	7							
A625	2	#5	STR	2'-7"	5							
A626	2	#5	STR	1'-8"	3							





** QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED.

GROOVING BRIDGE FLOORS		
LEFT WIDENING		
APPROACH SLABS	1474	SQ.FT.
BRIDGE DECK	4885	SQ.FT.
TOTAL	6359	SQ.FT.

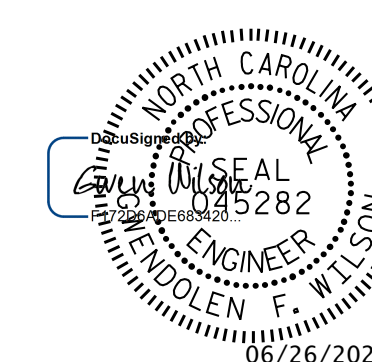
CLASS AA CONCRETE BREAKDOWN			
LEFT WIDENING			
	SPAN A	SPAN B	SPAN C
DECK	36.2 CY.	82.1 CY.	37.5 CY.
CLOSURE POUR	7.3 CY.	18.4 CY.	7.6 CY.
PAVEMENT BRACKET EXTENSIONS	0.2 CY.	N/A	0.2 CY.
TOTAL	43.7 CY.	100.5 CY.	45.3 CY.

PC OVERLAY QUANTITIES	
LEFT WIDENING	
SHOTBLASTING BRIDGE DECK	783.0 SY
PC MATERIALS	22.0 SY
PLACING AND FINISHING PC OVERLAY	783.0 SY

PC OVERLAY QUANTITIES INCLUDE APPROACH
SLABS. FOR LIMITS OF APPROACH SLAB PC
OVERLAY, SEE BRIDGE APPROACH SLAB SHEET
1 OF 3.

PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
BILL OF MATERIAL
LEFT WIDENING

DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024

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LEFT WIDENING

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

SHEET NO
52-46
TOTAL SHEETS
81

STIRRUPS AND "U" BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

EPOXY PROTECTIVE COATING IS REQUIRED ON TOP OF THE END BENT CAP. DO NOT EPOXY COAT IN THE AREA OF THE CURTAIN WALL, WHICH WILL BE POURED WITH THE SUPERSTRUCTURE.

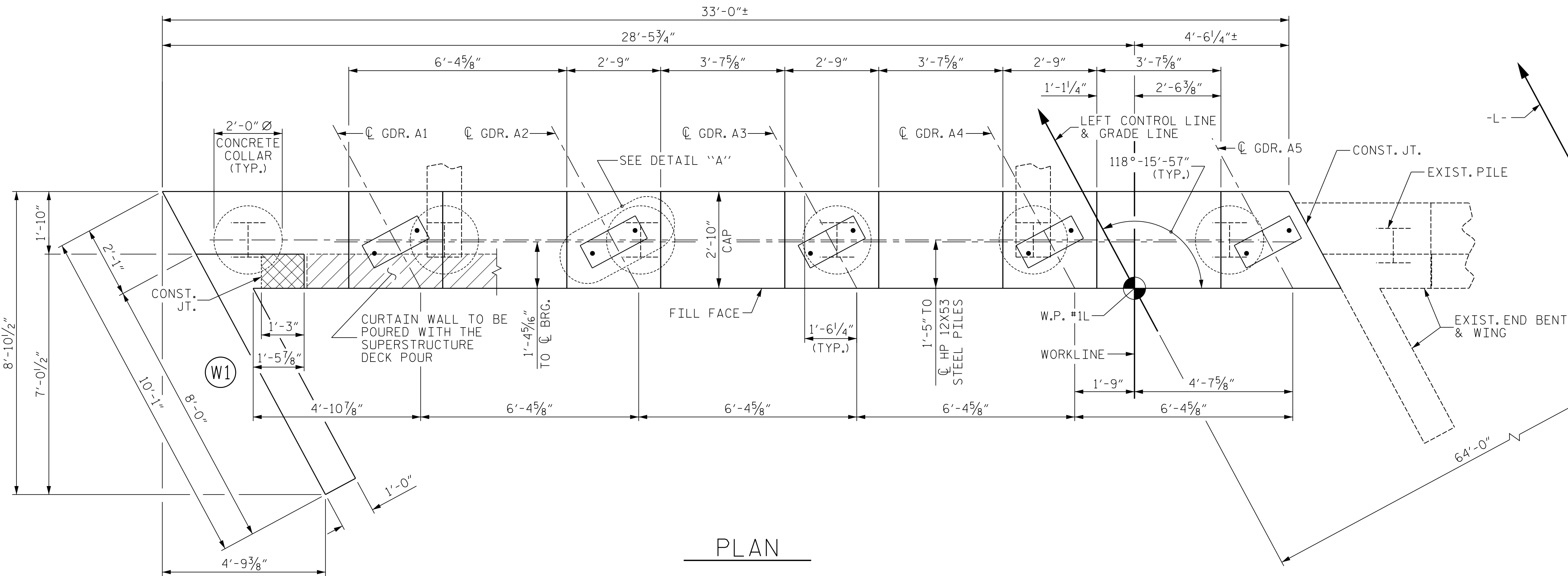
THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

* THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

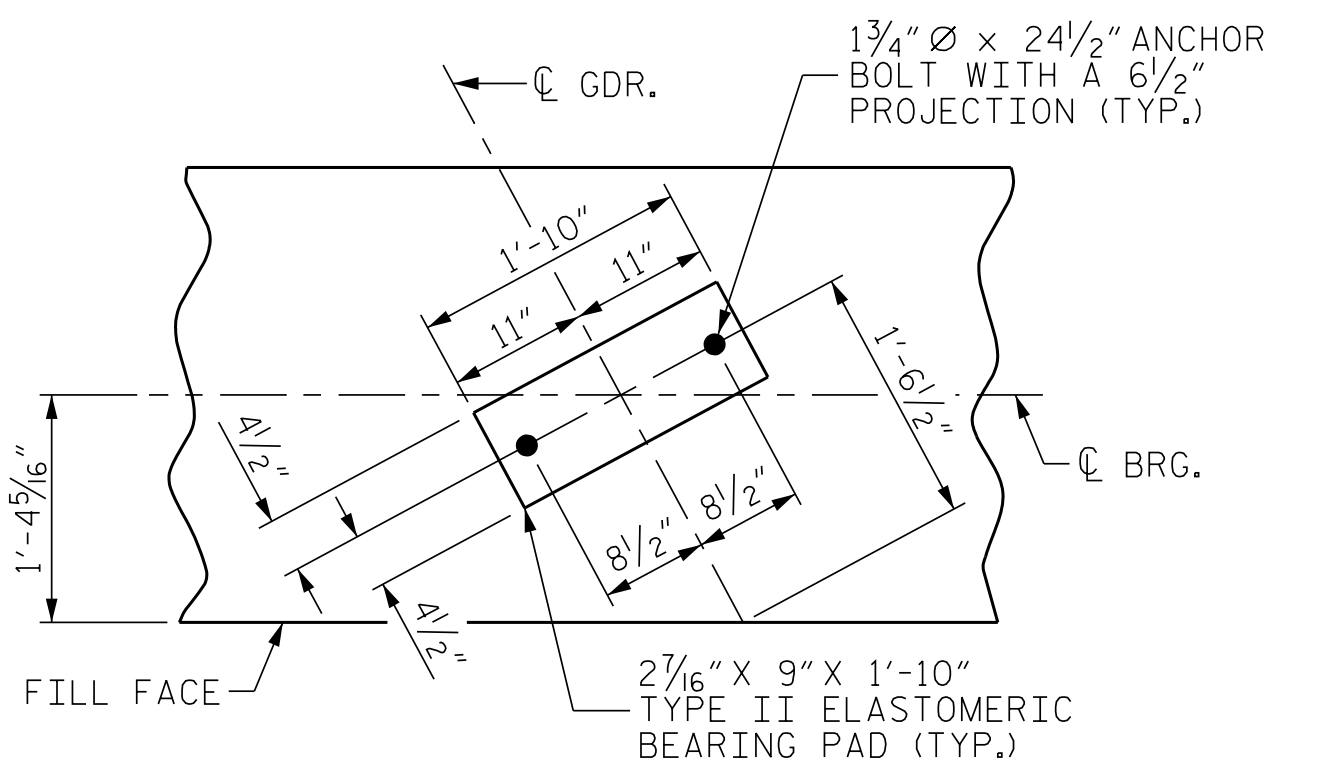
FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

FOR WING DETAILS, SEE SHEET 2 OF 3.

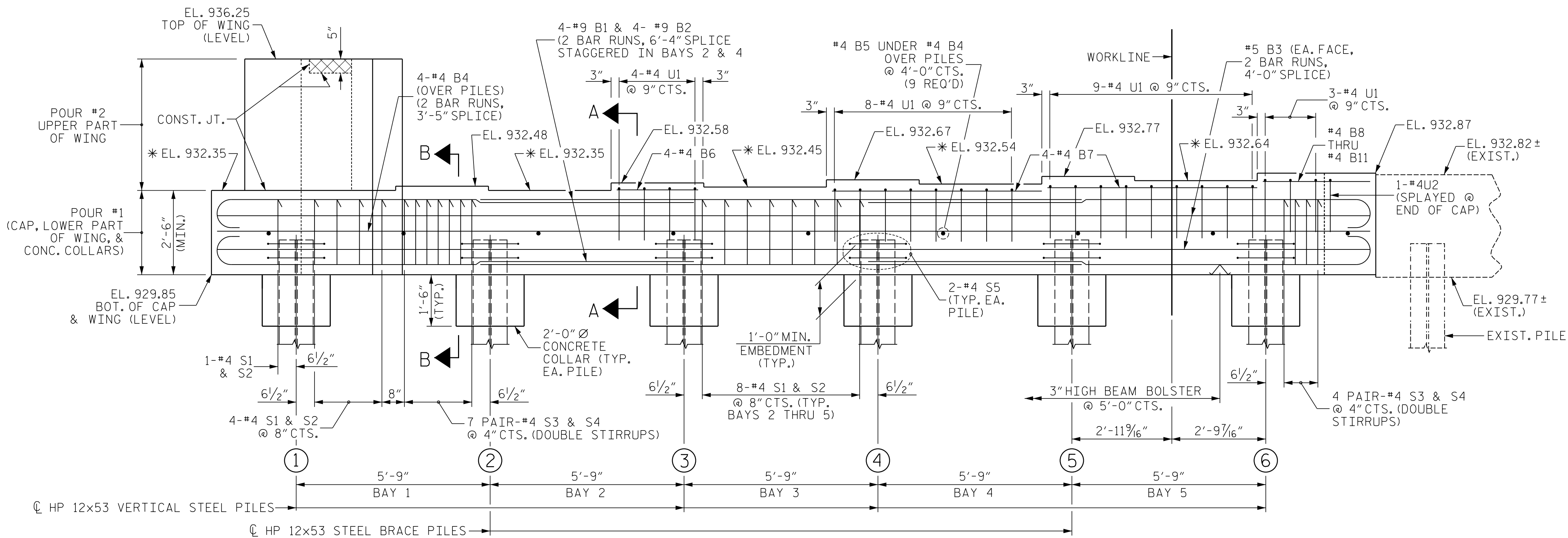
THE CONCRETE IN THE CROSS-HATCHED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND THE APPROACH SLAB HAS BEEN SAWED AND THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.



PLAN



DETAIL ``A''



ELEVATION

FOR SECTIONS A-A & B-B, SEE SHEET 3 OF 3.

PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1

LEFT WIDENING

REVISIONS						SHEET NO. S2-48
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

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SHEET 2 OF 3

SUBSTRUCTURE
END BENT 1

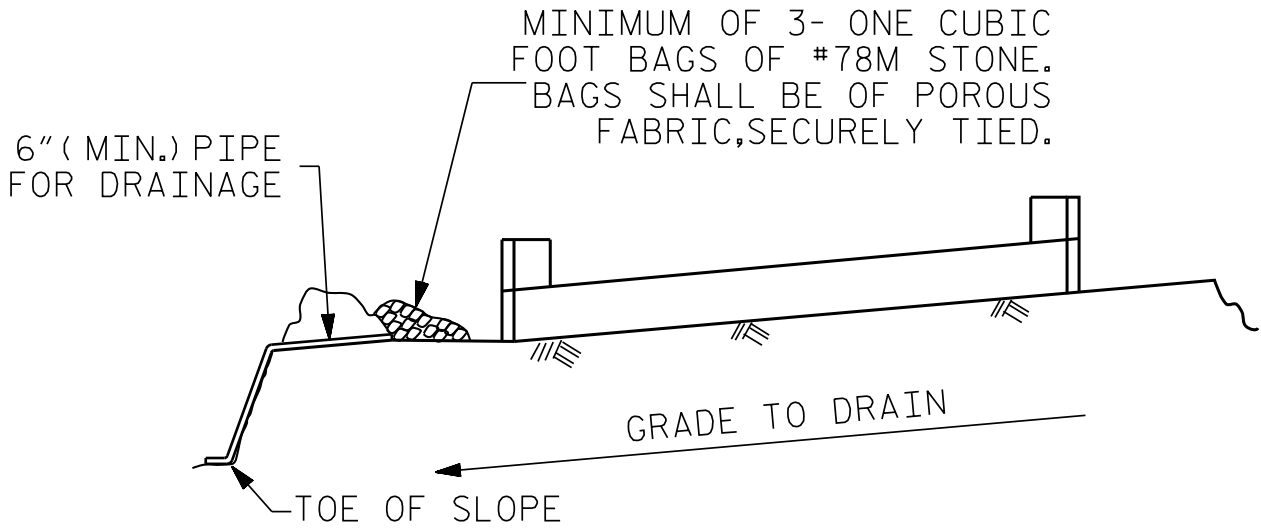
LEFT WIDENING

c.	REVISIONS						SHEET NO.
							S2-49
	NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 81
	1			3			
	2			4			

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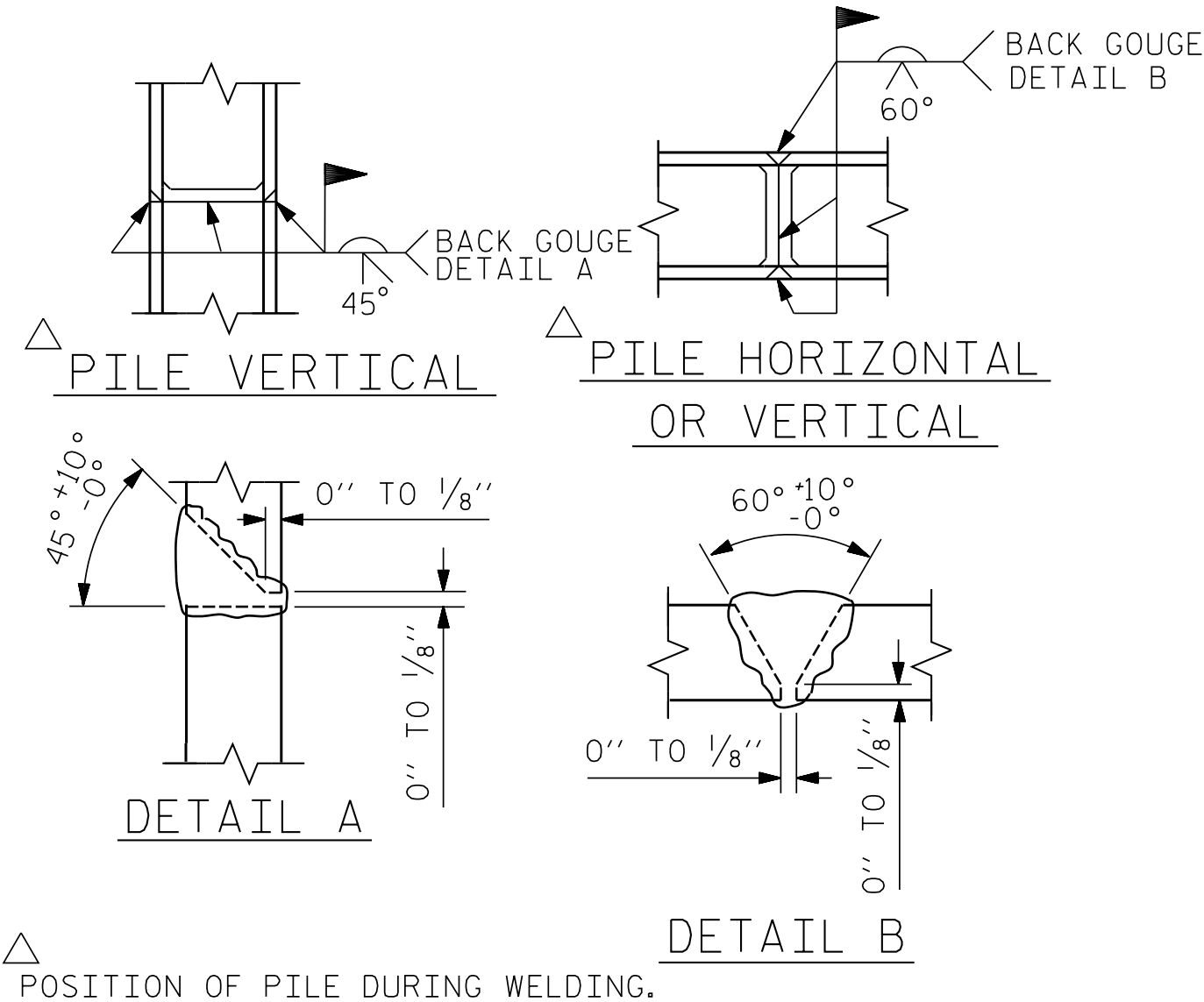


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

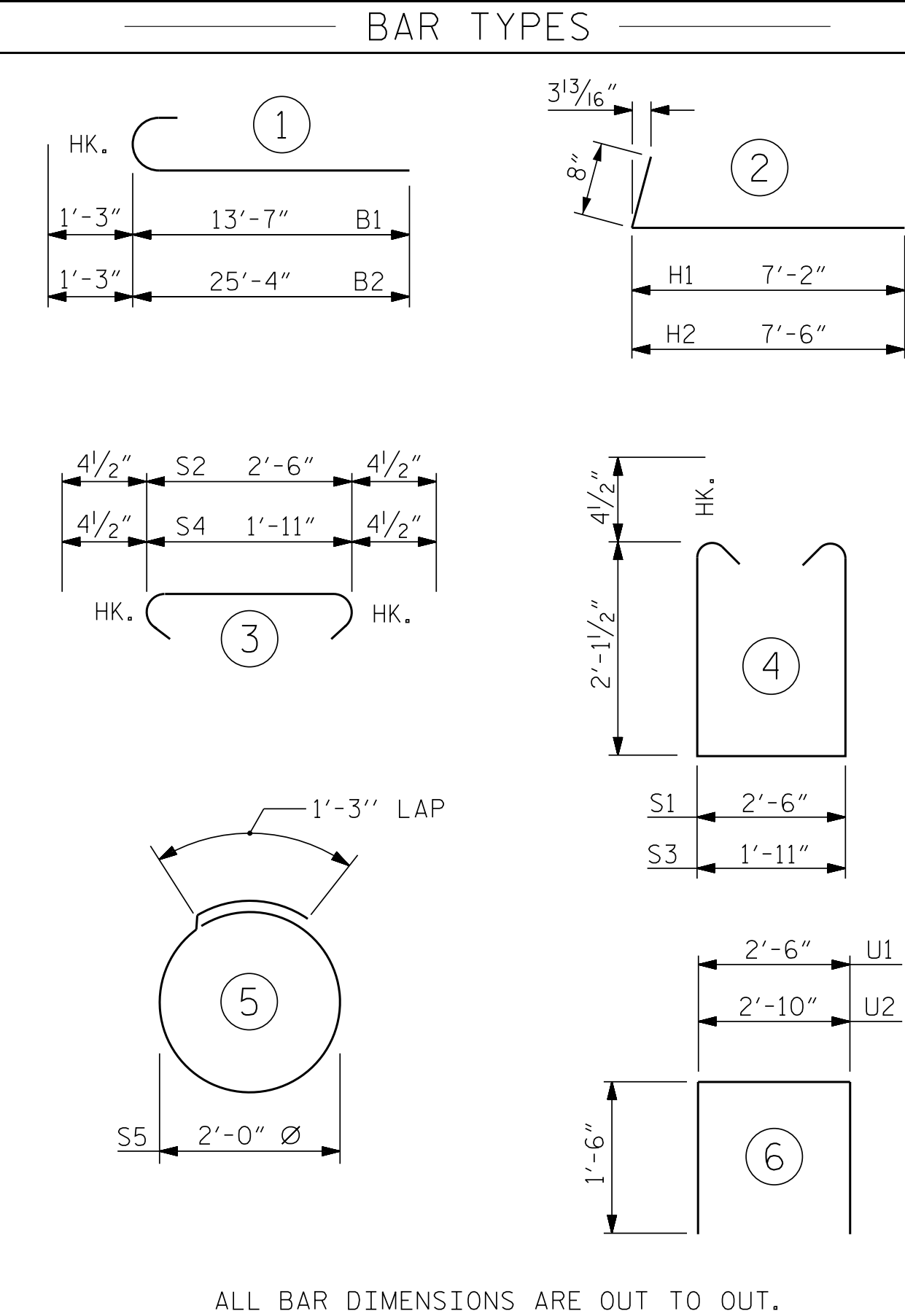
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

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

TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS



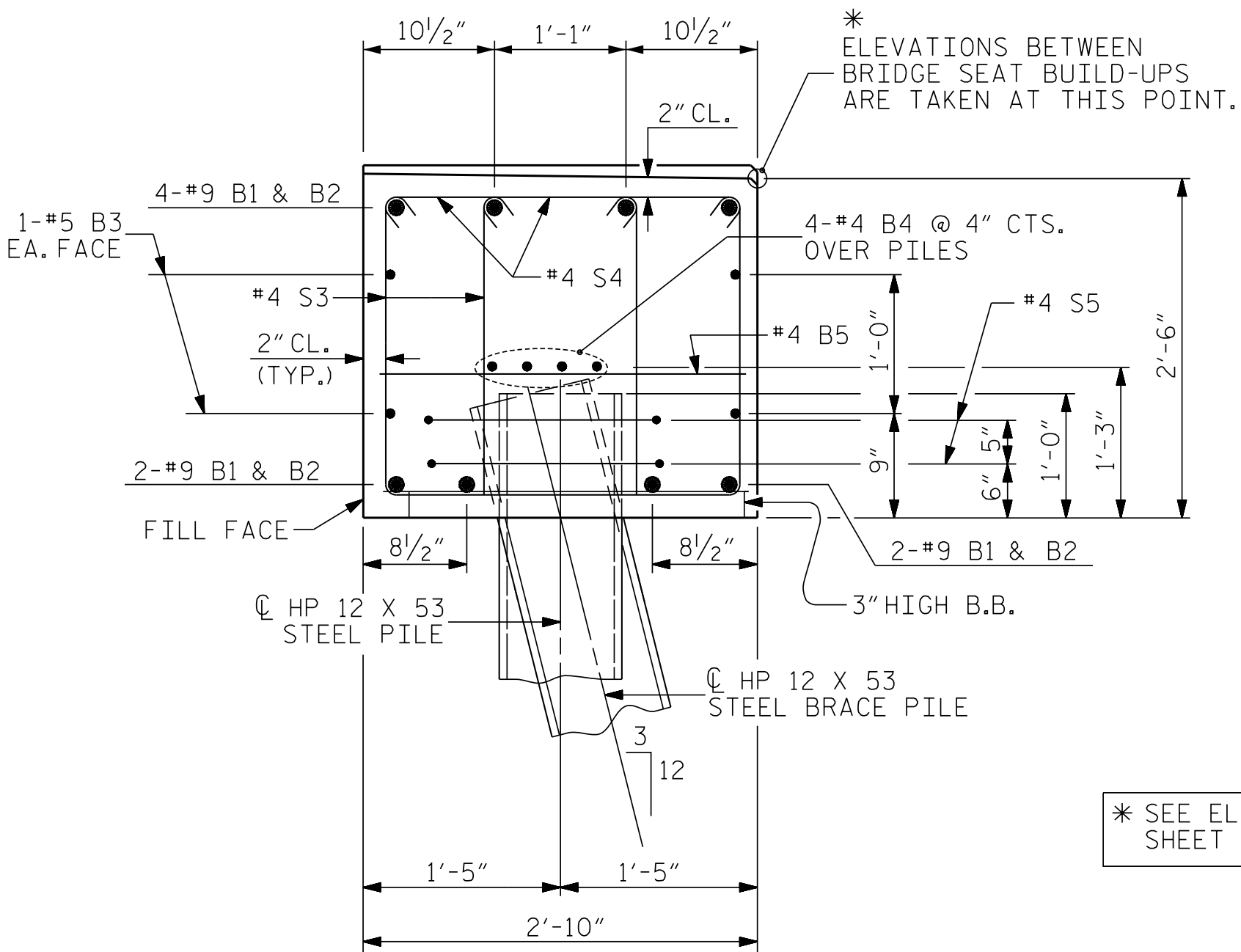
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL						
LEFT WIDENING						
END BENT 1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	8	#9	1	14'-10"	403	
B2	8	#9	1	26'-7"	723	
B3	8	#5	STR	18'-4"	153	
B4	8	#4	STR	18'-1"	97	
B5	9	#4	STR	2'-6"	15	
B6	4	#4	STR	2'-5"	6	
B7	8	#4	STR	6'-3"	33	
B8	1	#4	STR	1'-9"	1	
B9	1	#4	STR	2'-1"	1	
B10	1	#4	STR	2'-8"	2	
B11	1	#4	STR	3'-0"	2	
H1	7	#4	2	7'-10"	37	
H2	7	#4	2	8'-2"	38	
K1	4	#4	STR	2'-8"	7	
K2	4	#4	STR	2'-4"	6	
S1	37	#4	4	7'-6"	185	
S2	37	#4	3	3'-3"	80	
S3	22	#4	4	6'-11"	102	
S4	22	#4	3	2'-8"	39	
S5	12	#4	5	7'-7"	61	
U1	24	#4	6	5'-6"	88	
U2	1	#4	6	5'-10"	4	
V1	22	#4	STR	6'-0"	88	

REINFORCING STEEL 2171 LBS.

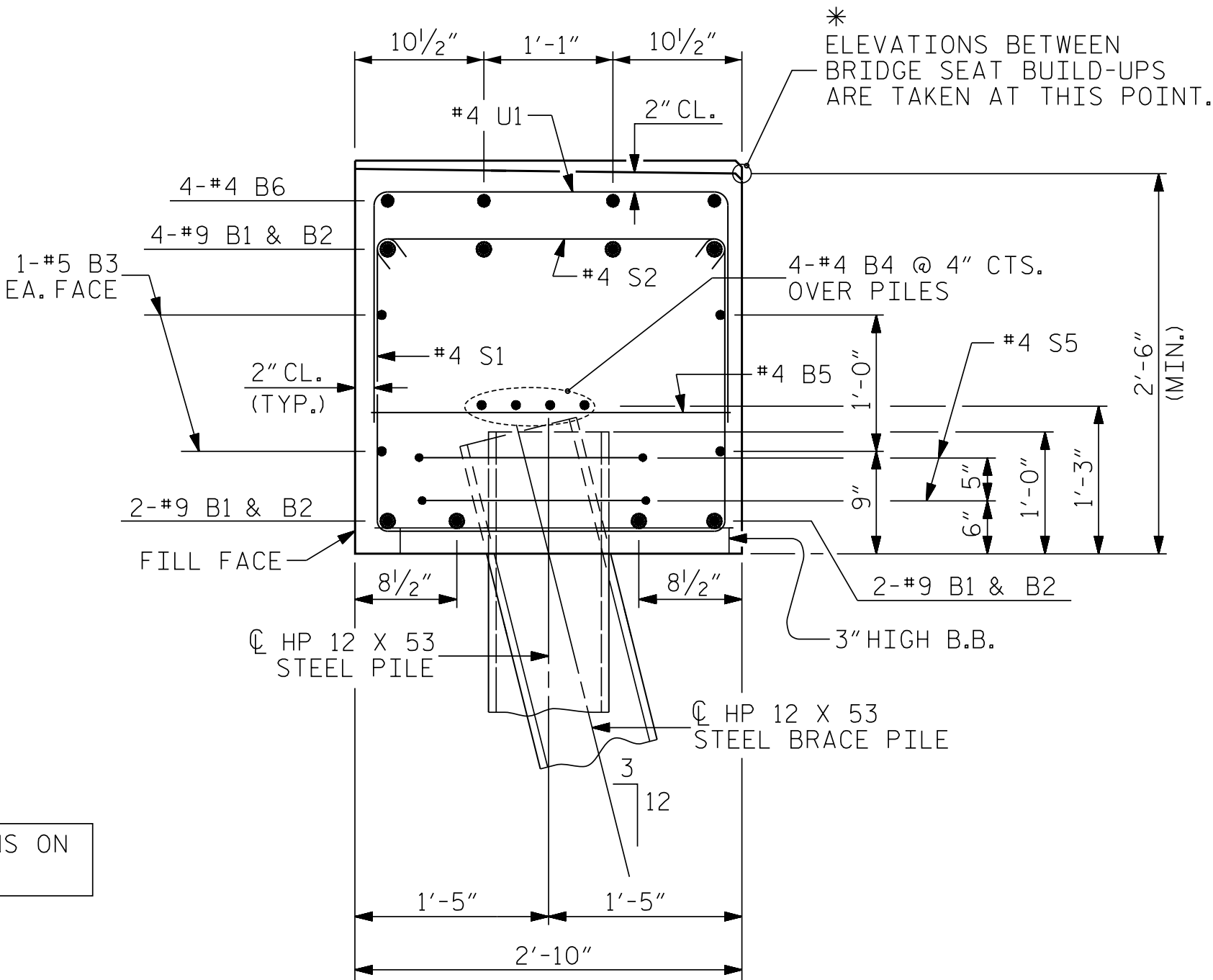
CLASS A CONCRETE BREAKDOWN

POUR #1	CAP, LOWER PART OF WING & COLLARS	11.1 C.Y.
POUR #2	UPPER PART OF WING	1.4 C.Y.
TOTAL CLASS A CONCRETE		12.5 C.Y.



SECTION B-B

(CONCRETE COLLAR NOT SHOWN FOR CLARITY, SEE SHEET 1 OF 3 FOR DETAILS)

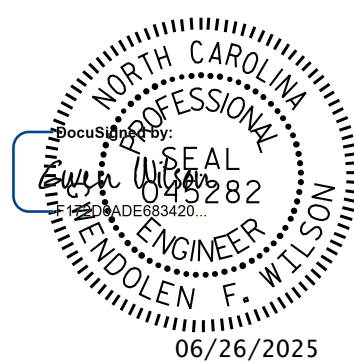


SECTION A-A

(CONCRETE COLLAR NOT SHOWN FOR CLARITY, SEE SHEET 1 OF 3 FOR DETAILS)

PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 3 OF 3



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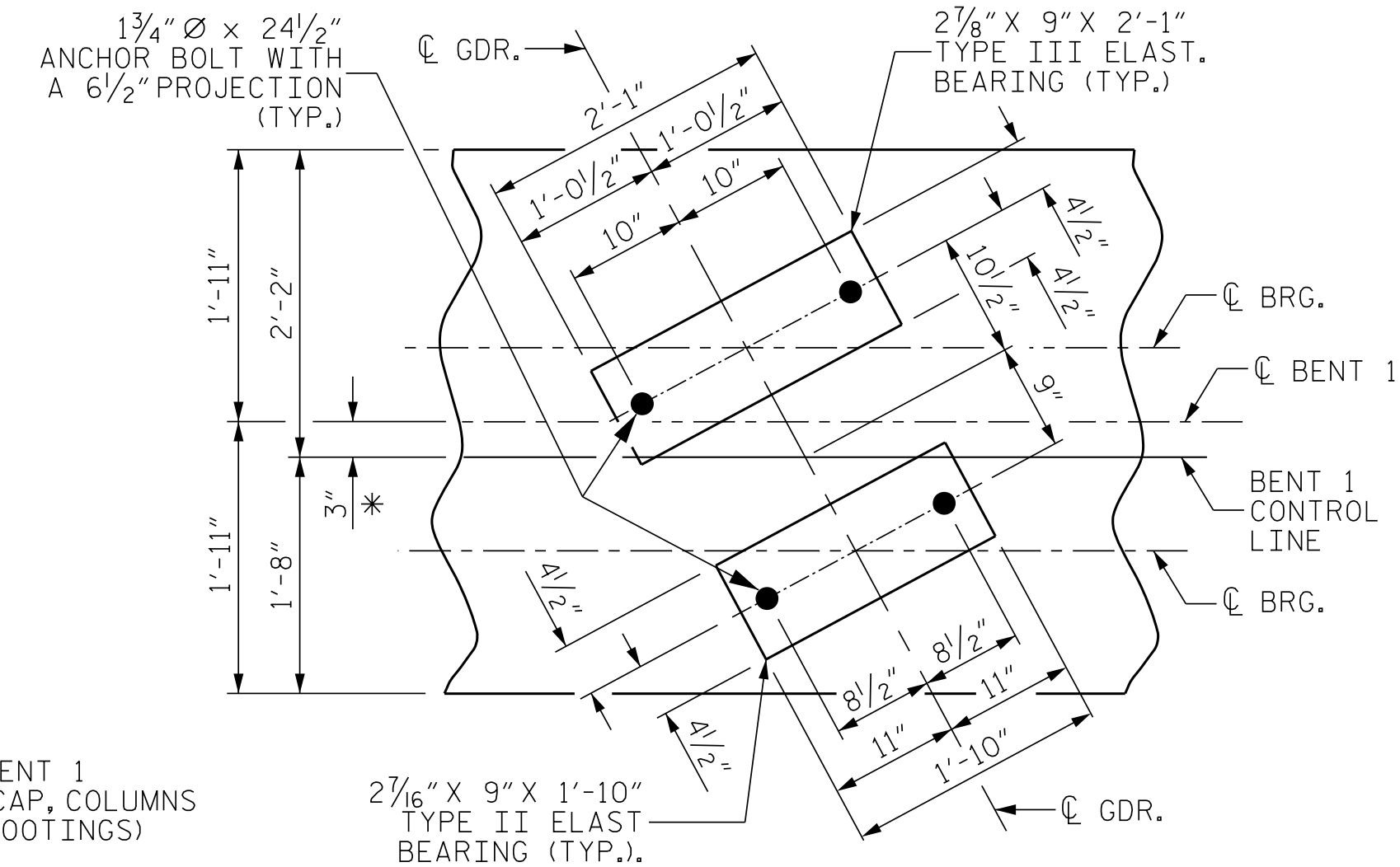
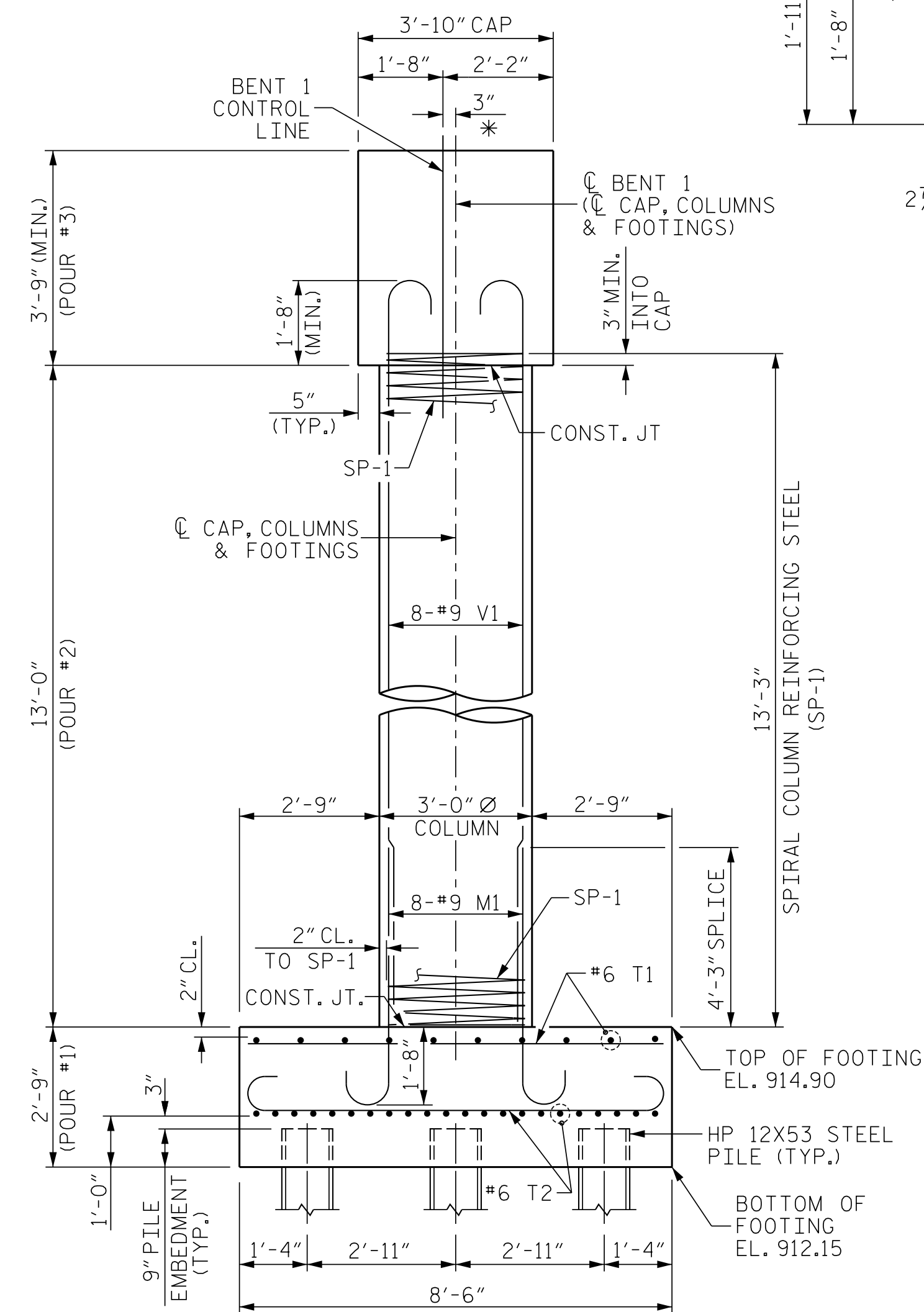
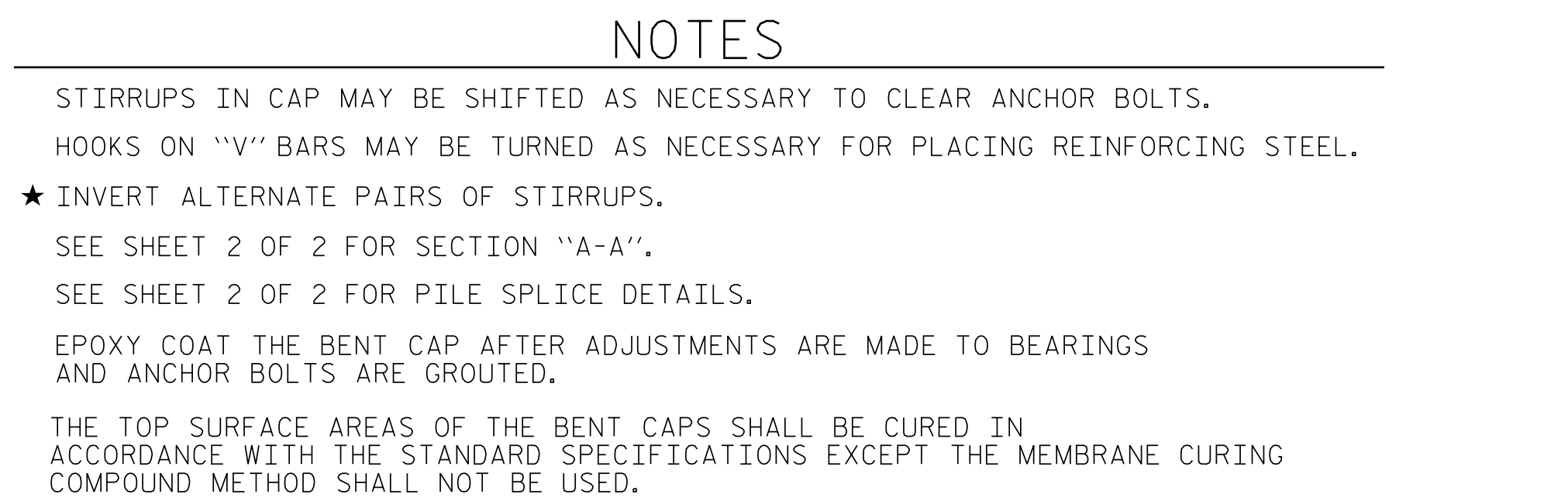
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4700 Falls of Neuse Rd, Suite 100,
Raleigh, NC 27609
License No: C-3097

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1

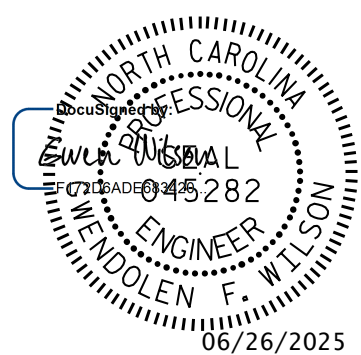
LEFT WIDENING

REVISIONS						SHEET NO. S2-50
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			



DETAIL "A"

(TYP. EA. BEARING LOCATION)



PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 1

LEFT WIDENING

REVISIONS						SHEET NO. S2-51
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024

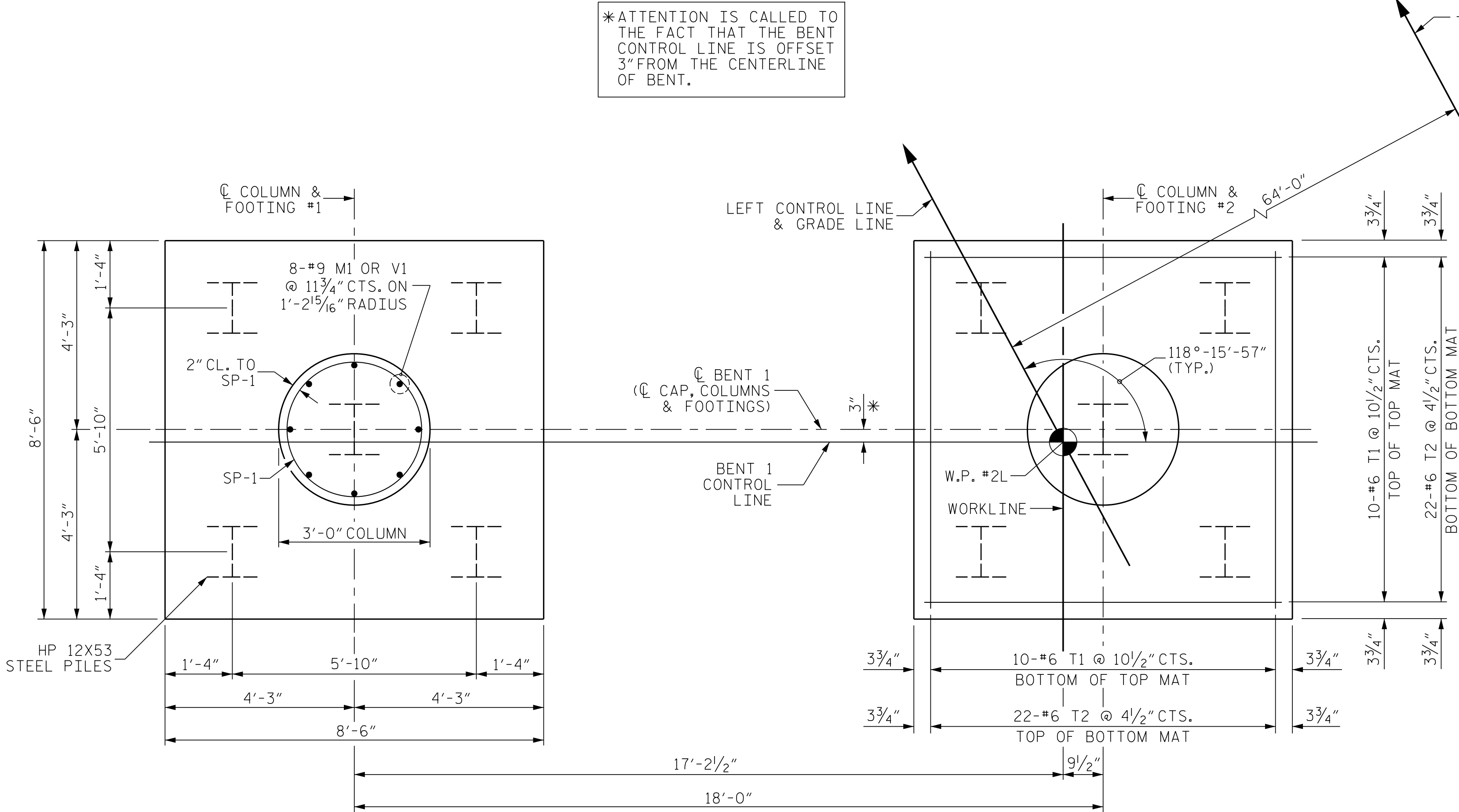
REINFORCING STEEL, DIMENSIONS AND DETAILS ARE
TYPICAL FOR EACH COLUMN AND FOOTING

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



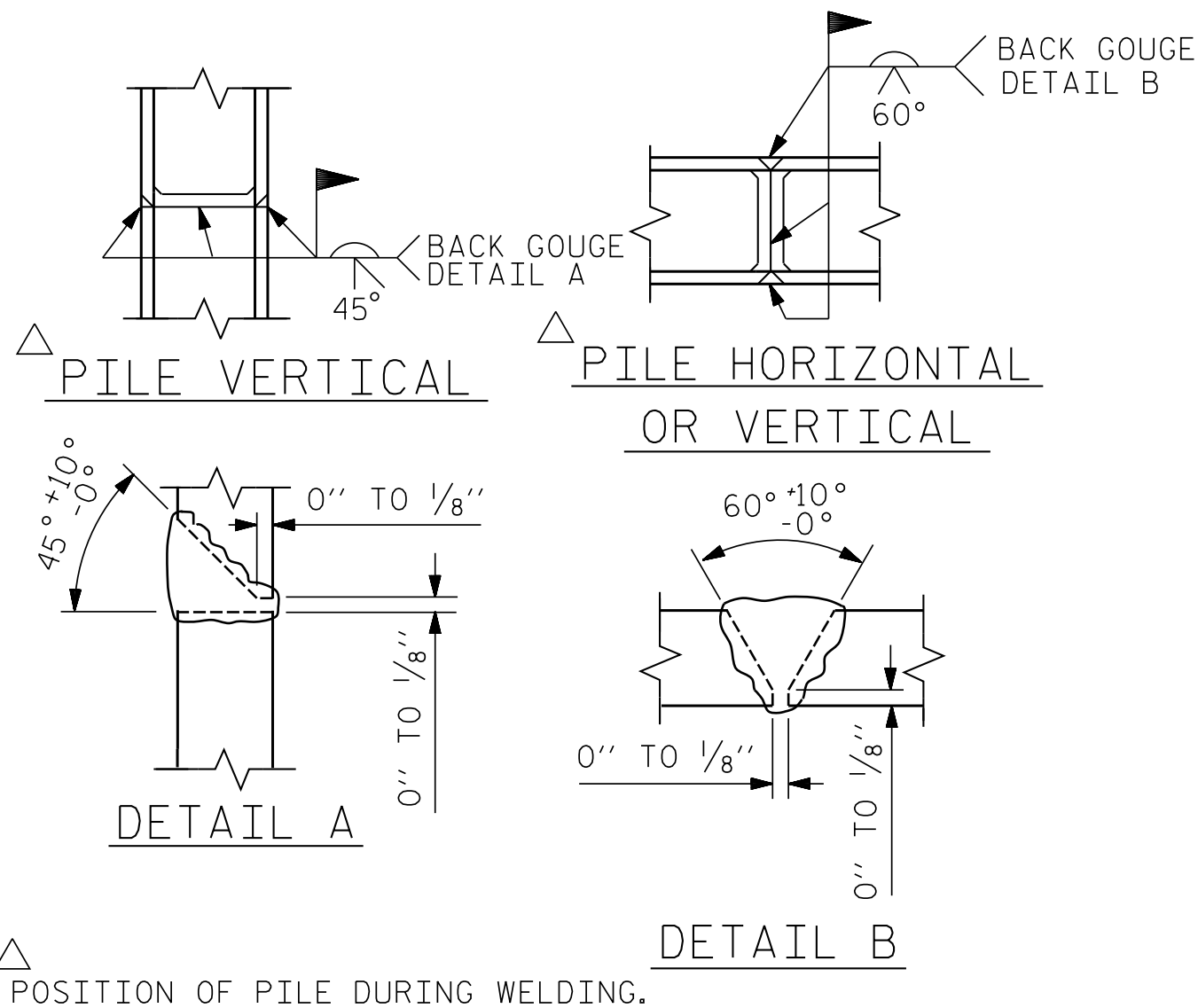
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Raleigh, NC, 27609
License No: C-3097

\\jc01\user\DWG\pwa\jmt-jaw\Documents\Pro Jobs\2019\B-00036-00\Design\Structures\Bridge\330340\Structures\2_PlaneWidening_Plans\A02_03_I5880_330340_B1\2_052.dgn
TIME: 6/18/2025

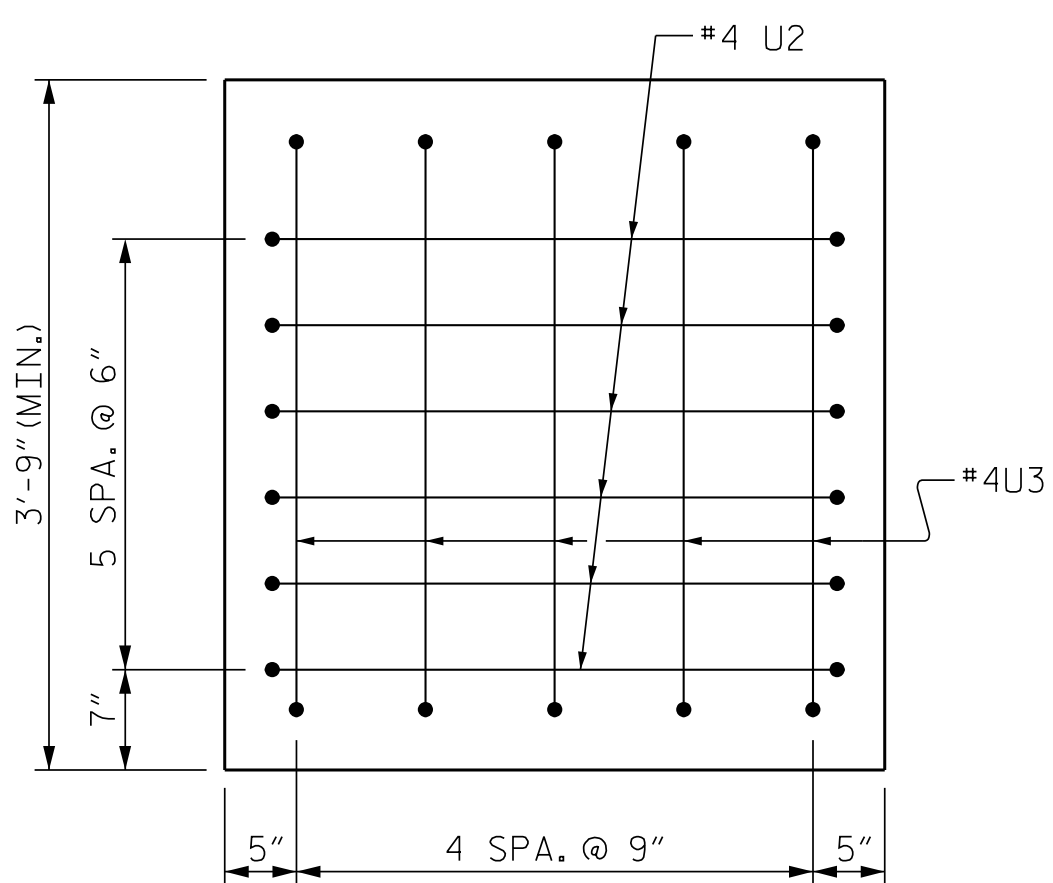


PLAN OF FOOTINGS & COLUMNS

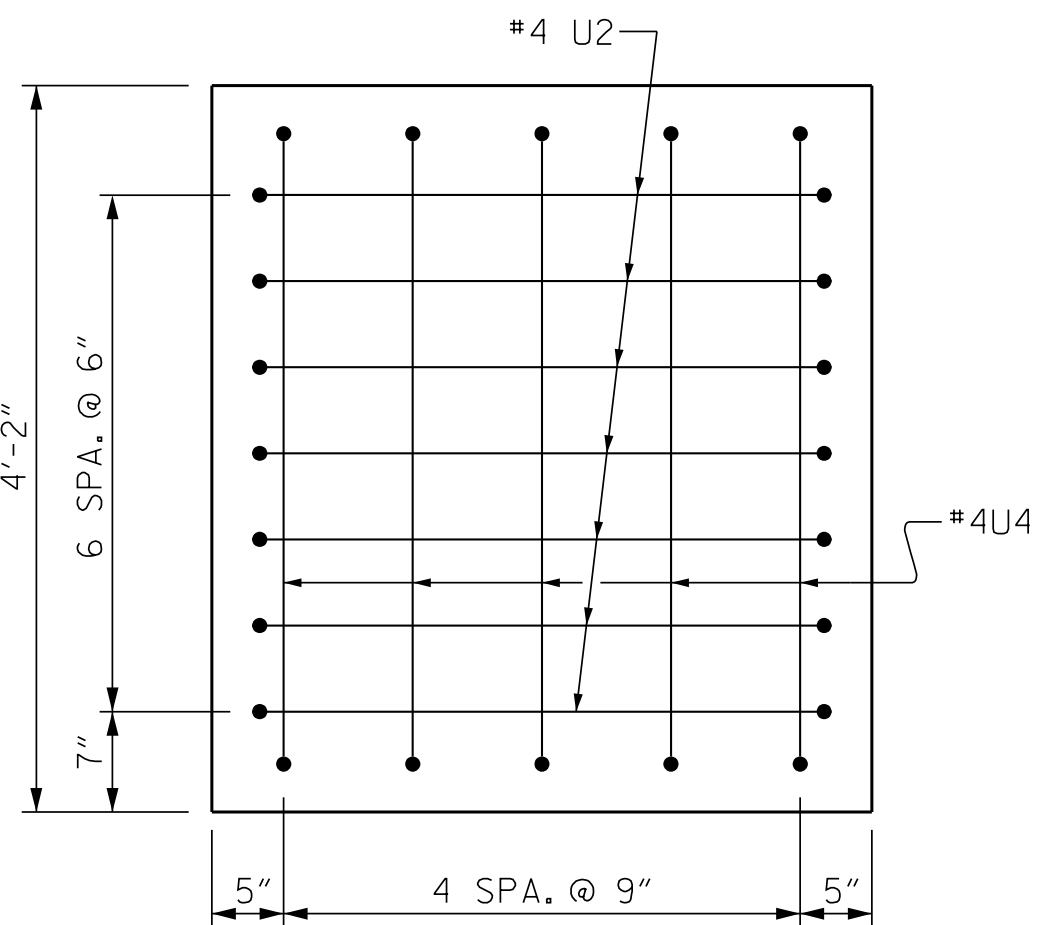
REINFORCING STEEL, DIMENSIONS AND DETAILS ARE TYPICAL FOR EACH COLUMN AND FOOTING



PILE SPLICE DETAILS

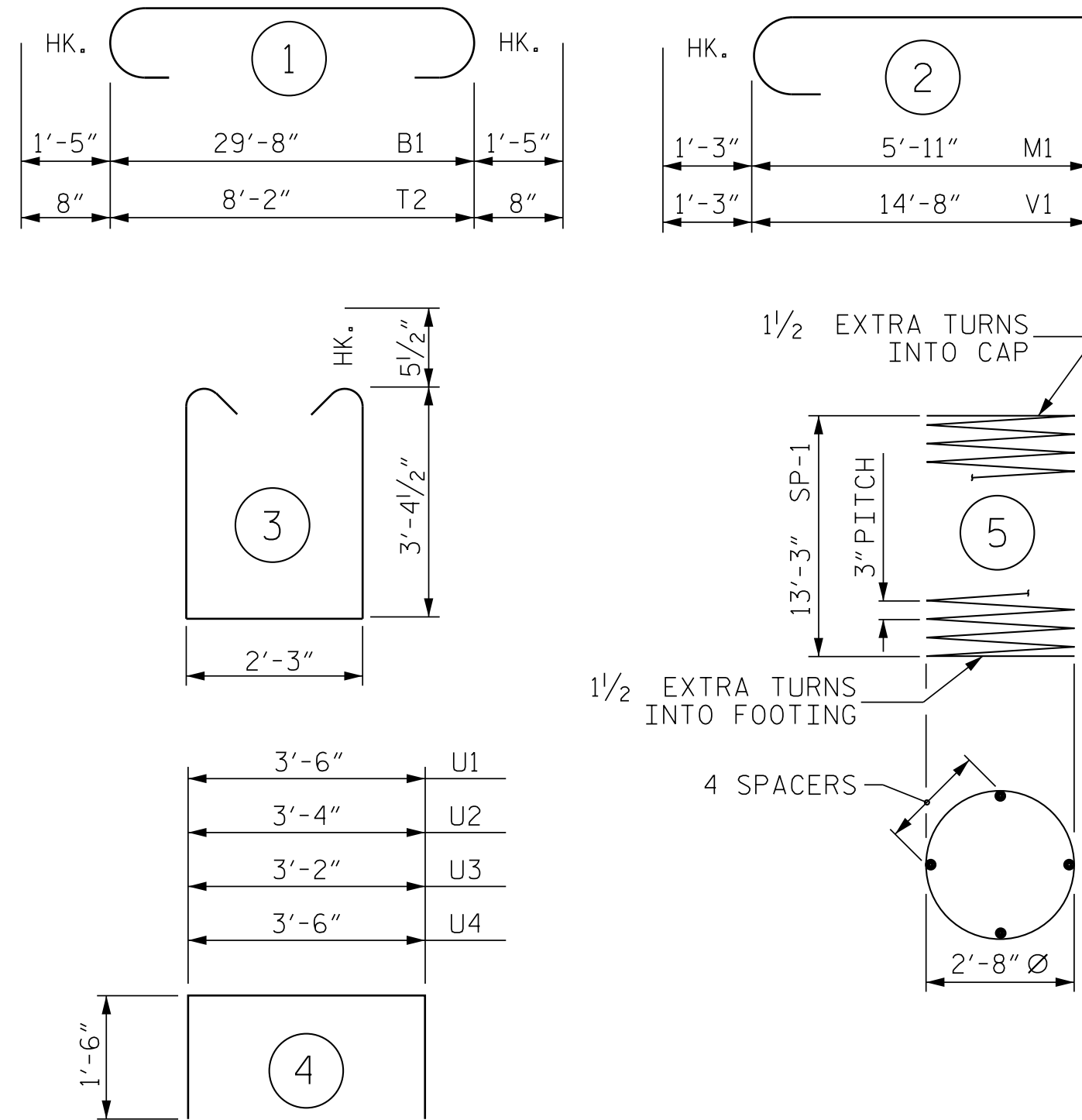


LEFT END OF CAP

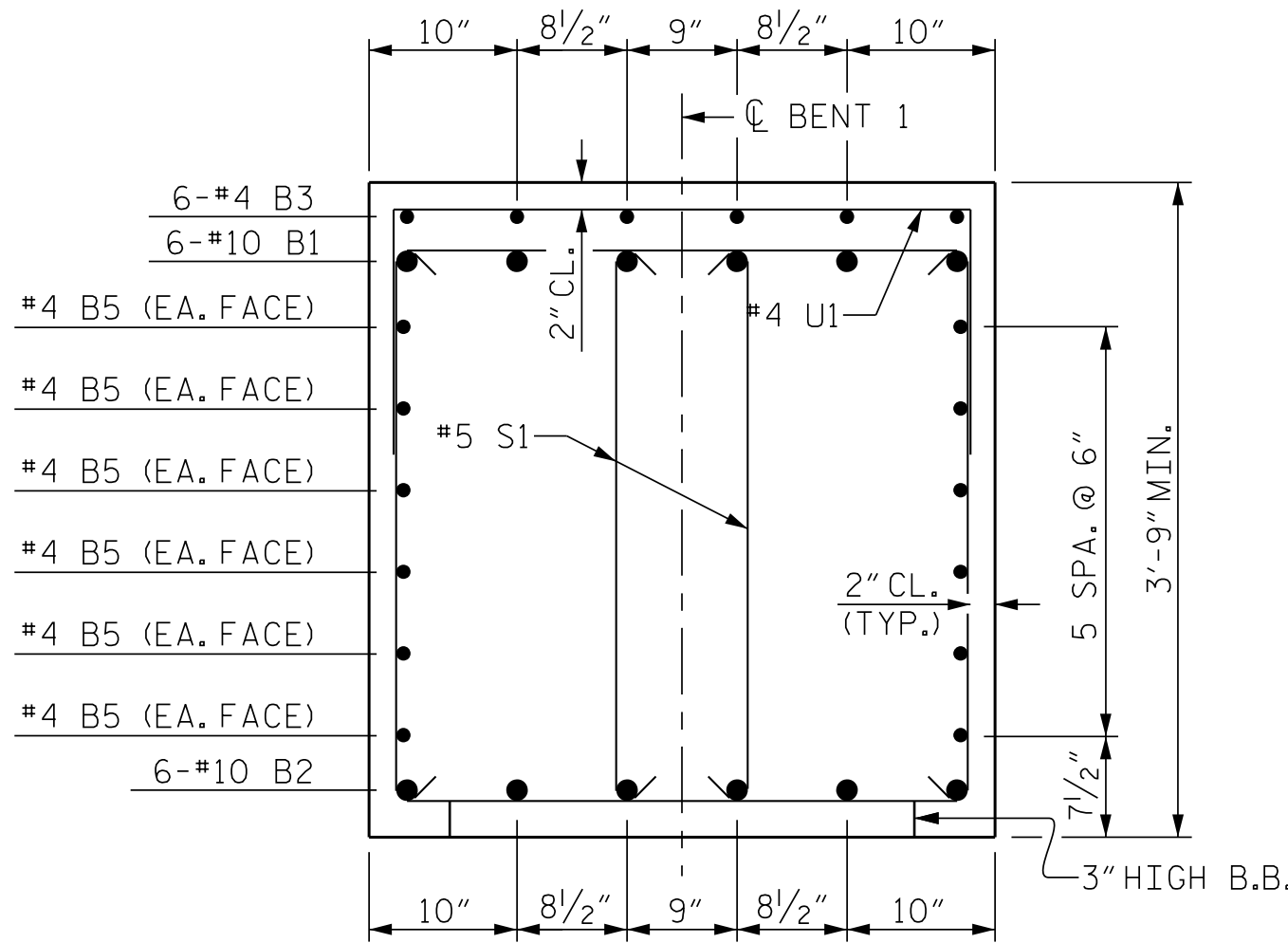


RIGHT END OF CAP

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT



SECTION A-A

BILL OF MATERIAL

LEFT WIDENING

BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10		32'-6"	839
B2	6	#10	STR	29'-8"	766
B3	18	#4	STR	6'-4"	76
B4	6	#4	STR	3'-8"	15
B5	12	#4	STR	29'-8"	238
M1	16	#9	2	7'-2"	390
S1	64	#5	3	9'-11"	662
T1	40	#6	STR	8'-2"	491
T2	88	#6	1	9'-6"	1256
U1	43	#4	4	6'-6"	187
U2	13	#4	4	6'-4"	55
U3	5	#4	4	6'-2"	21
U4	5	#4	4	6'-6"	22
V1	16	#9	2	15'-11"	866

REINFORCING STEEL 5884 LBS.

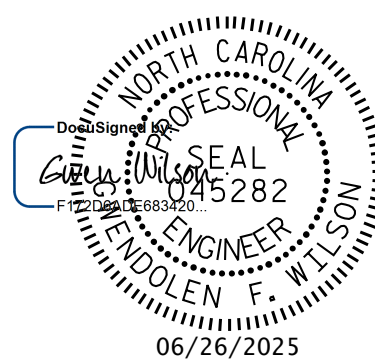
SP-1 2 ** 5 462'-1" 617

SPIRAL COLUMN REINFORCING STEEL 617 LBS.

** THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR

CLASS A CONCRETE BREAKDOWN

POUR #1 (FOOTINGS)	14.7 C.Y.
POUR #2 (COLUMNS)	6.8 C.Y.
POUR #3 (CAP)	16.8 C.Y.
TOTAL CLASS A CONCRETE	38.3 C.Y.
FOUNDATION EXCAVATION	LUMP SUM



PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 1

LEFT WIDENING

REVISIONS

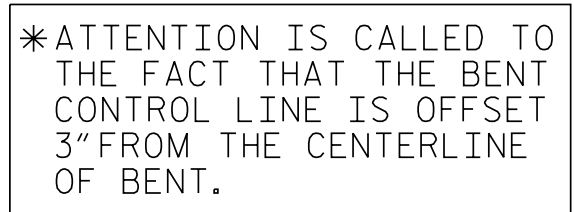
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S2-52
2			4			TOTAL SHEETS 81

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License No: C-3097

DWN. BY: WDC DATE: 09/2024
CHKD. BY: CFW DATE: 11/2024
DES. EGR. OF RECORD: STC DATE: 09/2024



Technical drawing of a bent plate with dimensions and labels:

- Labels:**
 - CL GDR.
 - CL BRG.
 - BENT 2 CONTROL LINE
 - CL BENT 2
 - CL BRG.
 - BENT 2 CONTROL LINE
 - CL GDR.
- Dimensions:**
 - Top section: 1'-10" (total), 11" (segment), 8 1/2" (segment), 8 1/2" (segment), 11" (segment).
 - Right side: 1'-8" (total), 1'-11" (segment), 2'-2" (segment), 1'-11" (segment).
 - Bottom section: 1'-0 1/2" (total), 10" (segment), 10" (segment), 1'-0 1/2" (segment), 2'-1" (segment).
 - Left side: 9" (segment), 10 1/2" (segment), 3 1/4" (segment), 2 1/4" (segment), 3 1/4" (segment).
 - Other: 3" (segment), 2 1/4" (segment), 2 1/4" (segment).
- Notes:**
 - 2 7/16" X 9" X 1'-10" TYPE II ELAST. BEARING (TYP.).
 - 2 7/8" X 9" X 2'-1" TYPE III ELAST. BEARING (TYP.).
 - 1 3/4" Ø X 24 1/2" ANCHOR BOLT WITH A 6 1/2" PROJECTION (TYP.).

3'-10" CAP

2'-2" 1'-8"

3" *

BENT 2 CONTROL LINE

3'-9" (MIN.) (POUR #3)

1'-8" (MIN.)

5" (TYP.)

3" MIN. INTO CAP

CONST. JT

SP-1

8-#9 V1

13'-0" (POUR #2)

3'-0" Ø COLUMN

2'-9" 3'-0" 2'-9"

8-#9 M1

SP-1

2" CL. TO SP-1

CONST. JT.

#6 T1

4'-3" SPLICE

13'-3" SPIRAL COLUMN REINFORCING STEEL (SP-1)

2'-9" 3" 1'-0" 9" PILE EMBEDMENT (TYP.)

1'-4" 2'-11" 2'-11" 1'-4"

8'-6"

#6 T2

TOP OF FOOTING EL. 915.05

HP 12X53 STEEL PILE (TYP.)

BOTTOM OF FOOTING EL. 912.30

2 7/8" X 9" X TYPE III E BEARING

This structural drawing illustrates the reinforcement details for a bridge pier and abutment. The drawing is divided into two main sections: a plan view (top) and a cross-section view (bottom).

Plan View (Top):

- Dimensions:** The overall width is 18'-0". The length of the pier is 13'-0" (POUR #2), and the length of the abutment is 3'-9" (MIN.) (POUR #3).
- Reinforcement:**
 - Upright Bars (U1, U2, U3, U4):** 3-#4 U1 @ 5" CTS., 6-#10 B1, 6-#4 B3, 8-#4 U1 @ 6" CTS., 1'-3" 1'-3", 6-#4 B3, 8-#4 U1 @ 6" CTS., 1'-3" 1'-3", 7-#4 U1 @ 6" CTS., 6-#4 B4, 5-#4 U4.
 - Horizontal Bars (B1, B2, B3, B4, B5):** 6-#10 B1, 6-#4 B3, 6-#10 B2, 6-#4 B4, #4 B5 (EACH FACE).
 - Other Bars:** 5-#4 U3, 5-#4 U4, 5-#4 U1, 5-#4 U2, 5-#4 U3, 5-#4 U4.
- Elevations:** EL. 931.80, EL. 931.92, EL. 932.04, EL. 932.16, EL. 932.27, EL. 928.05 (LEVEL).
- Other Details:** 3" HIGH B.B. @ 5'-0" CTS., 5-PAIR #5 S1 @ 10" CTS., 7-PAIR #5 S1 @ 6" CTS., 8-PAIR #5 S1 @ 1'-0" CTS., 7-PAIR #5 S1 @ 6" CTS., 5-PAIR #5 S1 @ 10" CTS., 11 1/2", 1'-0" (PILE EMBEDMENT), 9" PILE EMBEDMENT (TYP.), 8'-6" (TOTAL WIDTH), 1'-4" 2'-11" 2'-11" 1'-4" (PIER WIDTHS), 2'-9" (PIER SPACING), 3'-0" Ø COLUMN, CONST. JT., 2" CL. TO SP-1, 2" CL. TO SP-1, 8-#9 V1, 8-#9 M1, #6 T1, #6 T2.

Cross-Section View (Bottom):

- Dimensions:** The overall width is 18'-0". The length of the pier is 13'-0" (POUR #2), and the length of the abutment is 3'-9" (MIN.) (POUR #3).
- Reinforcement:**
 - Upright Bars (U1, U2, U3, U4):** 3-#4 U1 @ 5" CTS., 6-#10 B1, 6-#4 B3, 8-#4 U1 @ 6" CTS., 1'-3" 1'-3", 6-#4 B3, 8-#4 U1 @ 6" CTS., 1'-3" 1'-3", 7-#4 U1 @ 6" CTS., 6-#4 B4, 5-#4 U4.
 - Horizontal Bars (B1, B2, B3, B4, B5):** 6-#10 B1, 6-#4 B3, 6-#10 B2, 6-#4 B4, #4 B5 (EACH FACE).
 - Other Bars:** 5-#4 U3, 5-#4 U4, 5-#4 U1, 5-#4 U2, 5-#4 U3, 5-#4 U4.
- Elevations:** EL. 931.80, EL. 931.92, EL. 932.04, EL. 932.16, EL. 932.27, EL. 928.05 (LEVEL).
- Other Details:** 3" HIGH B.B. @ 5'-0" CTS., 5-PAIR #5 S1 @ 10" CTS., 7-PAIR #5 S1 @ 6" CTS., 8-PAIR #5 S1 @ 1'-0" CTS., 7-PAIR #5 S1 @ 6" CTS., 5-PAIR #5 S1 @ 10" CTS., 11 1/2", 1'-0" (PILE EMBEDMENT), 9" PILE EMBEDMENT (TYP.), 8'-6" (TOTAL WIDTH), 1'-4" 2'-11" 2'-11" 1'-4" (PIER WIDTHS), 2'-9" (PIER SPACING), 3'-0" Ø COLUMN, CONST. JT., 2" CL. TO SP-1, 2" CL. TO SP-1, 8-#9 V1, 8-#9 M1, #6 T1, #6 T2.

REINFORCING STEEL, DIMENSIONS AND DETAILS ARE
TYPICAL FOR EACH COLUMN AND FOOTING

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

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 Raleigh, NC, 27609
 License No: C-3097

Documented by:
Gwen Wilson
02166ADE85420
06/26/2025

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LEFT WIDENING

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-53
1			3			TOTAL SHEETS 81
2			4			

STIRRUPS AND "U" BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

EPOXY PROTECTIVE COATING IS REQUIRED ON TOP OF THE END BENT CAP. DO NOT EPOXY COAT IN THE AREA OF THE CURTAIN WALL, WHICH WILL BE POURED WITH THE SUPERSTRUCTURE.

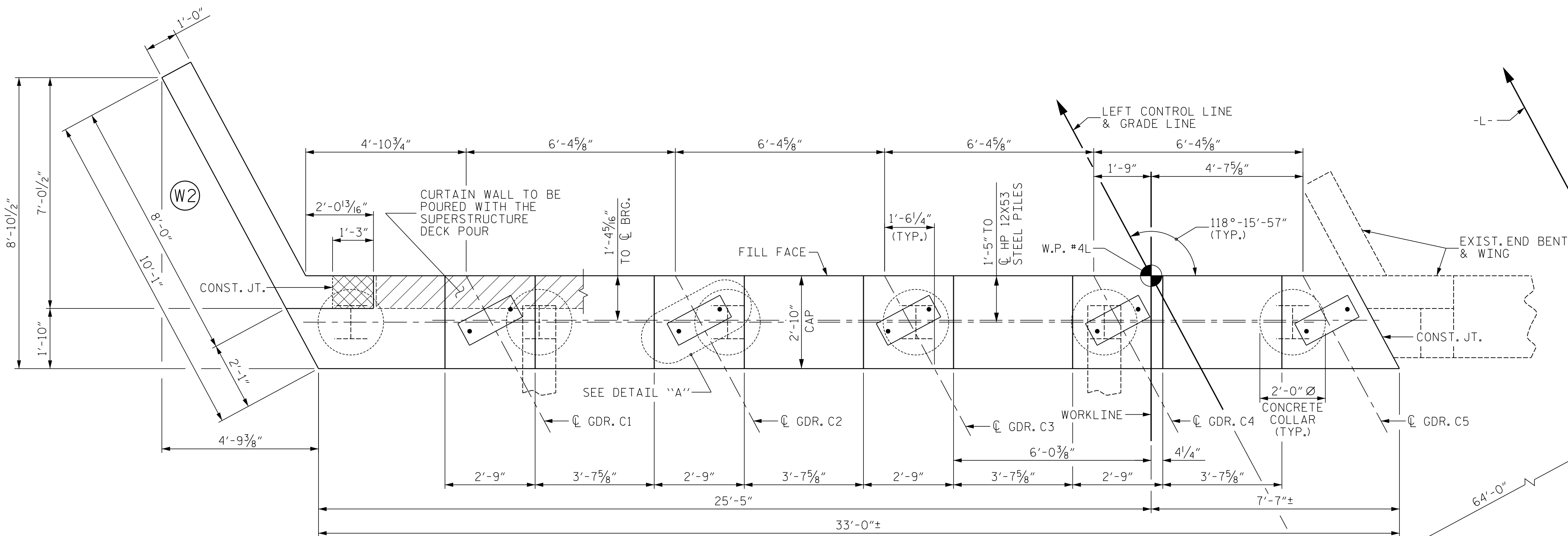
THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

* THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

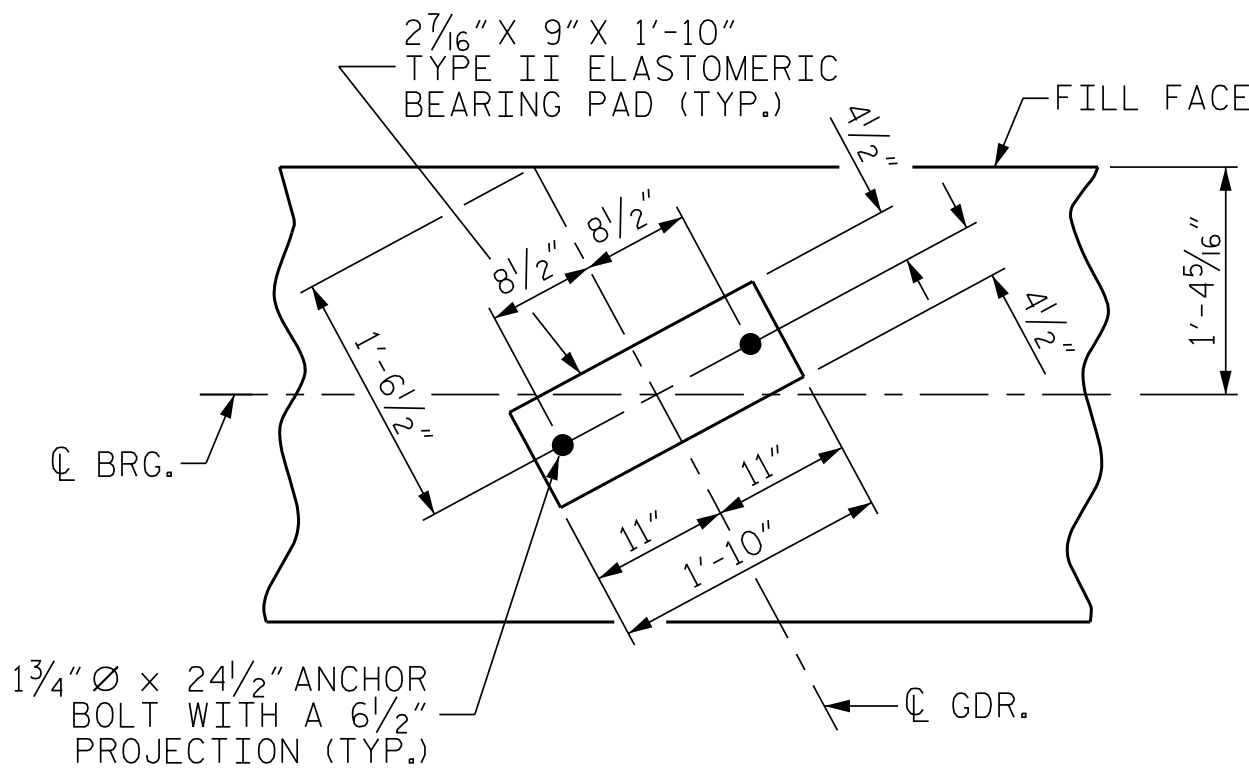
FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

FOR WING DETAILS, SEE SHEET 2 OF 3.

THE CONCRETE IN THE CROSS-HATCHED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND THE APPROACH SLAB HAS BEEN SAWED AND THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.



PLAN



DETAIL ``A''

PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2

LEFT WIDENING

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-55
1			3			TOTAL SHEETS 81
2			4			

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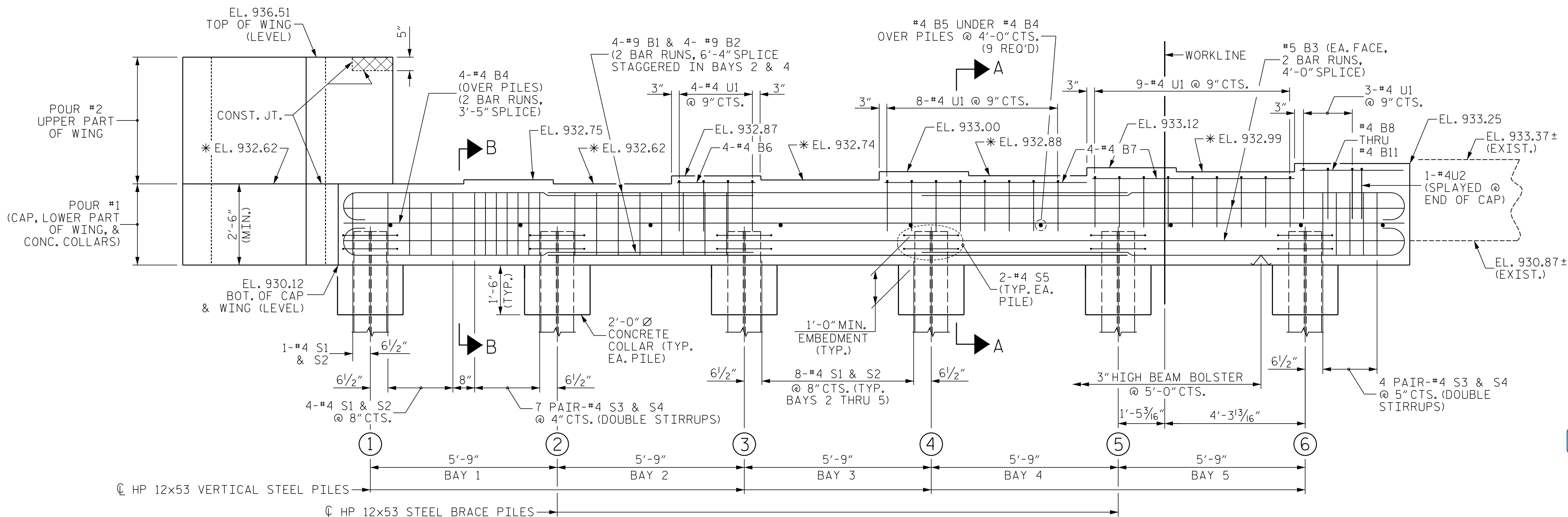
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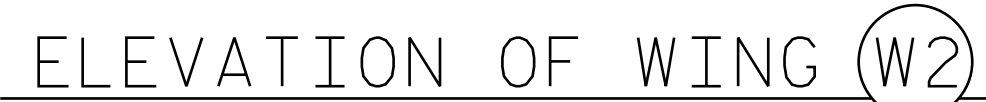
DWN. BY: WDC DATE: 09/2024
CHKD. BY: GFW DATE: 11/2024
DES. EGR. OF RECORD: STC DATE: 09/2024

ELEVATION

FOR SECTIONS A-A & B-B, SEE SHEET 3 OF 3.

ELEVATION





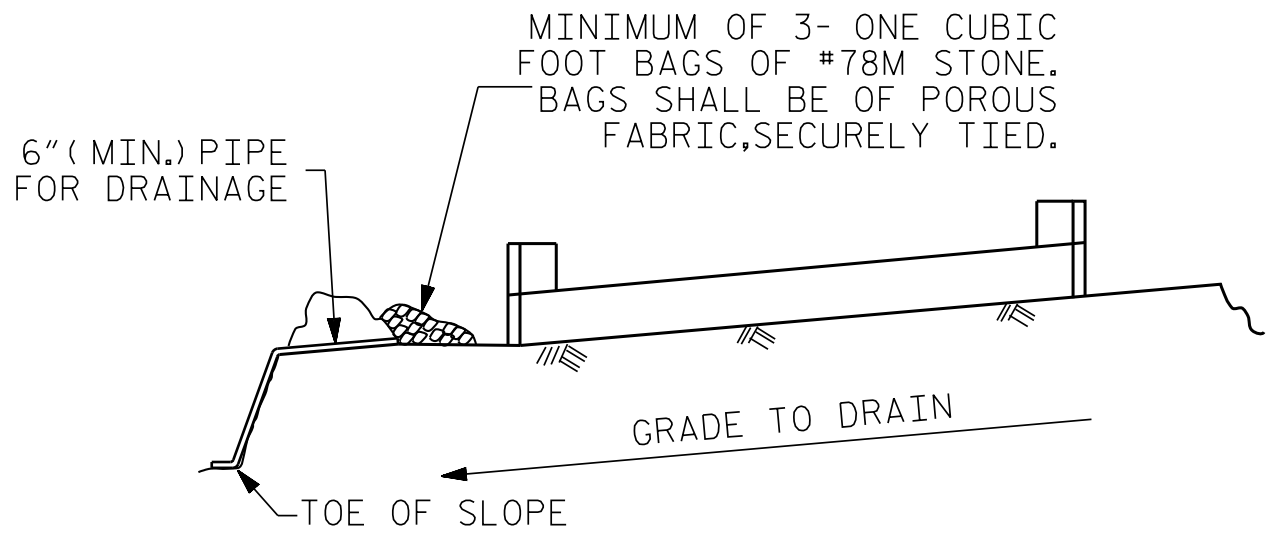
SHEET 2 OF 3

LEFT WIDENING

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-56
1			3			TOTAL SHEETS 81
2			4			



Documented by:  06/26/202

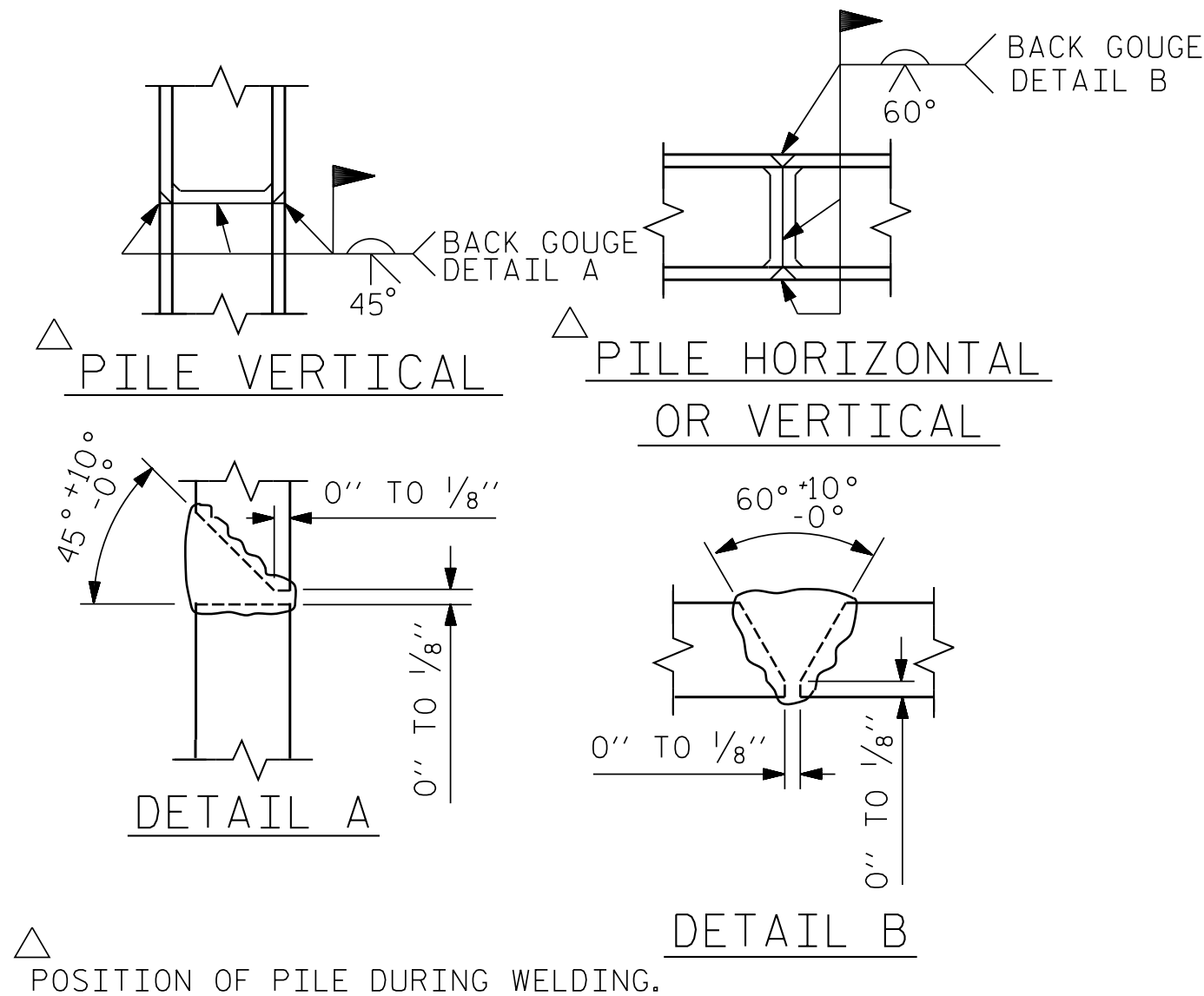


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

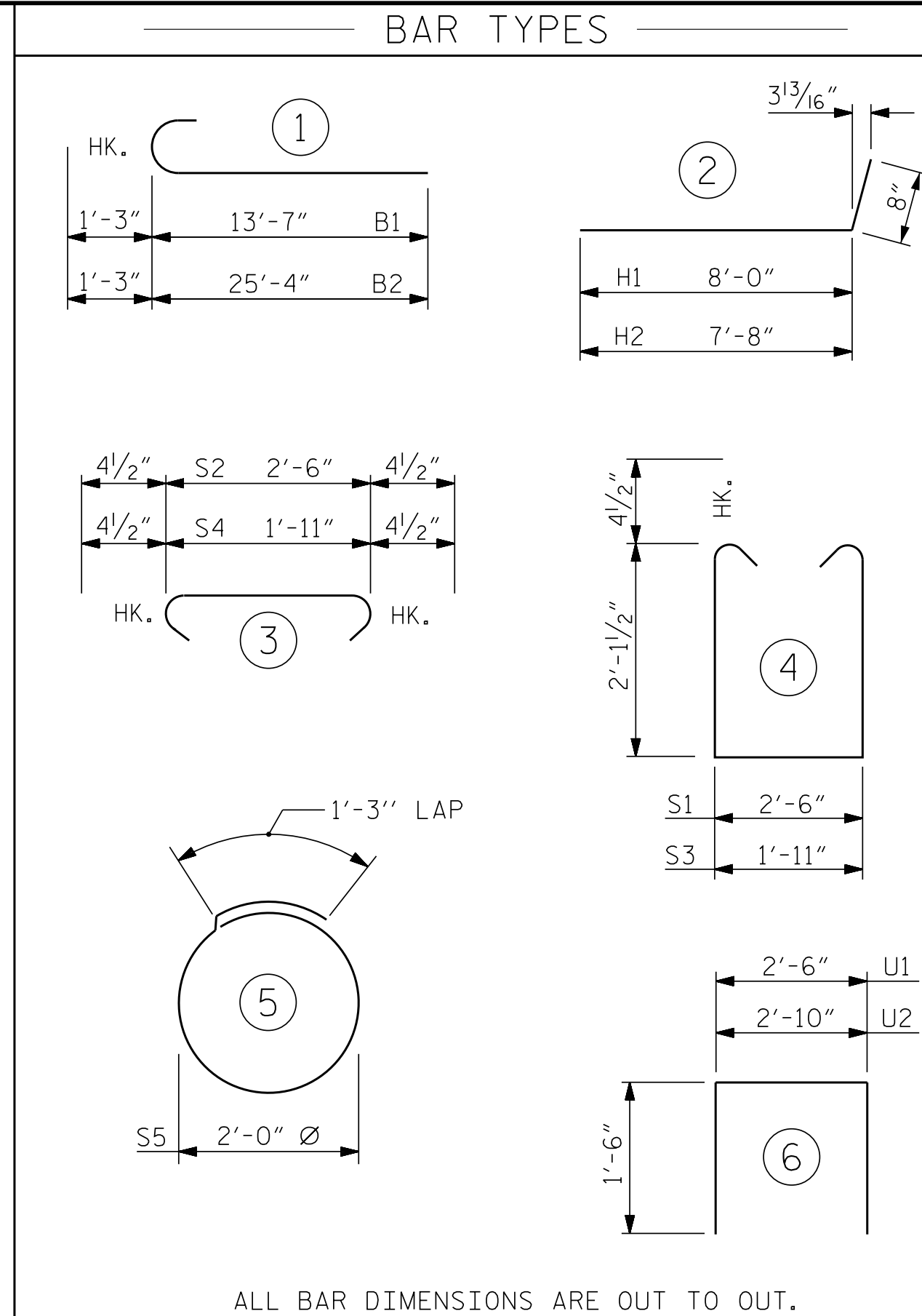
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

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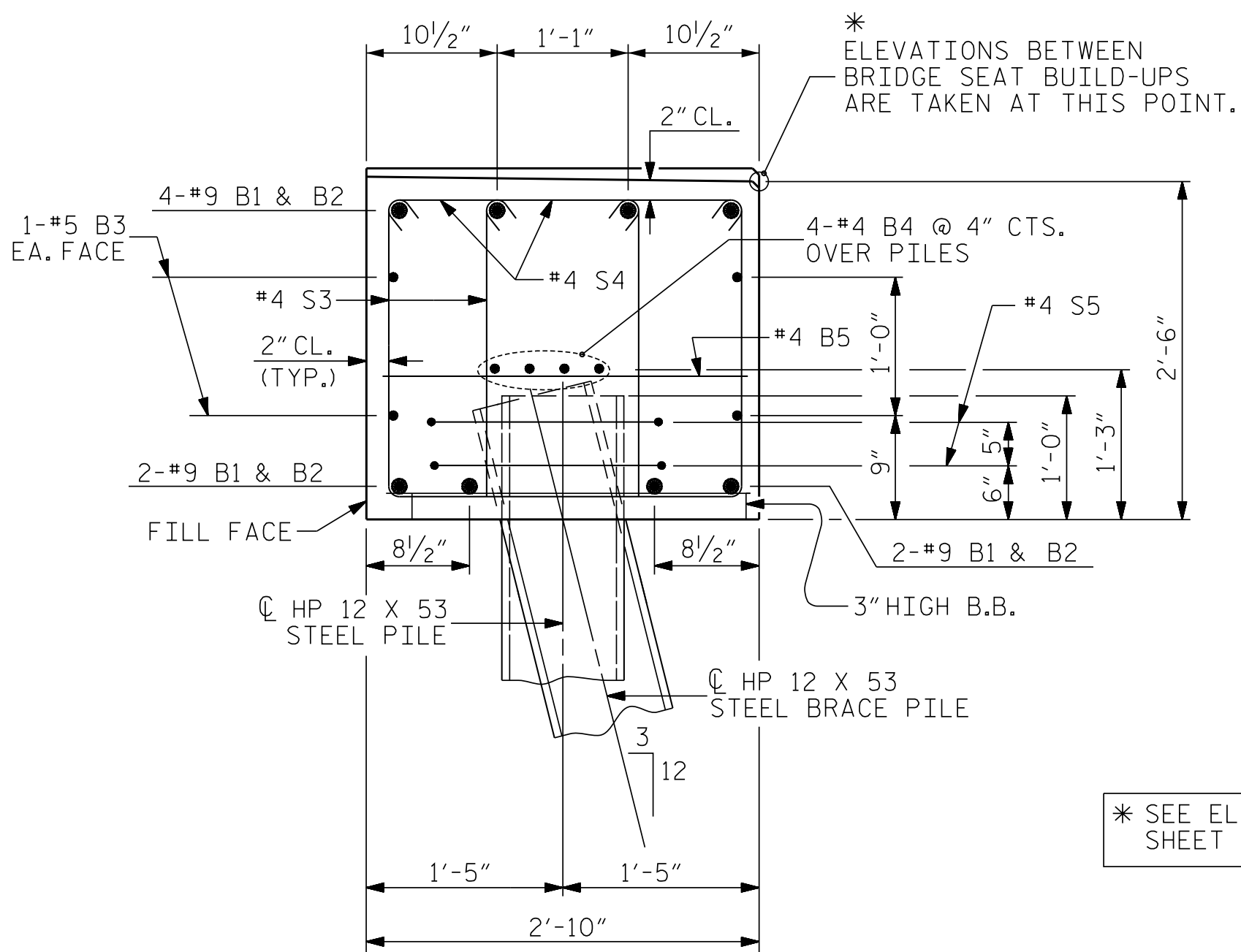
TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS

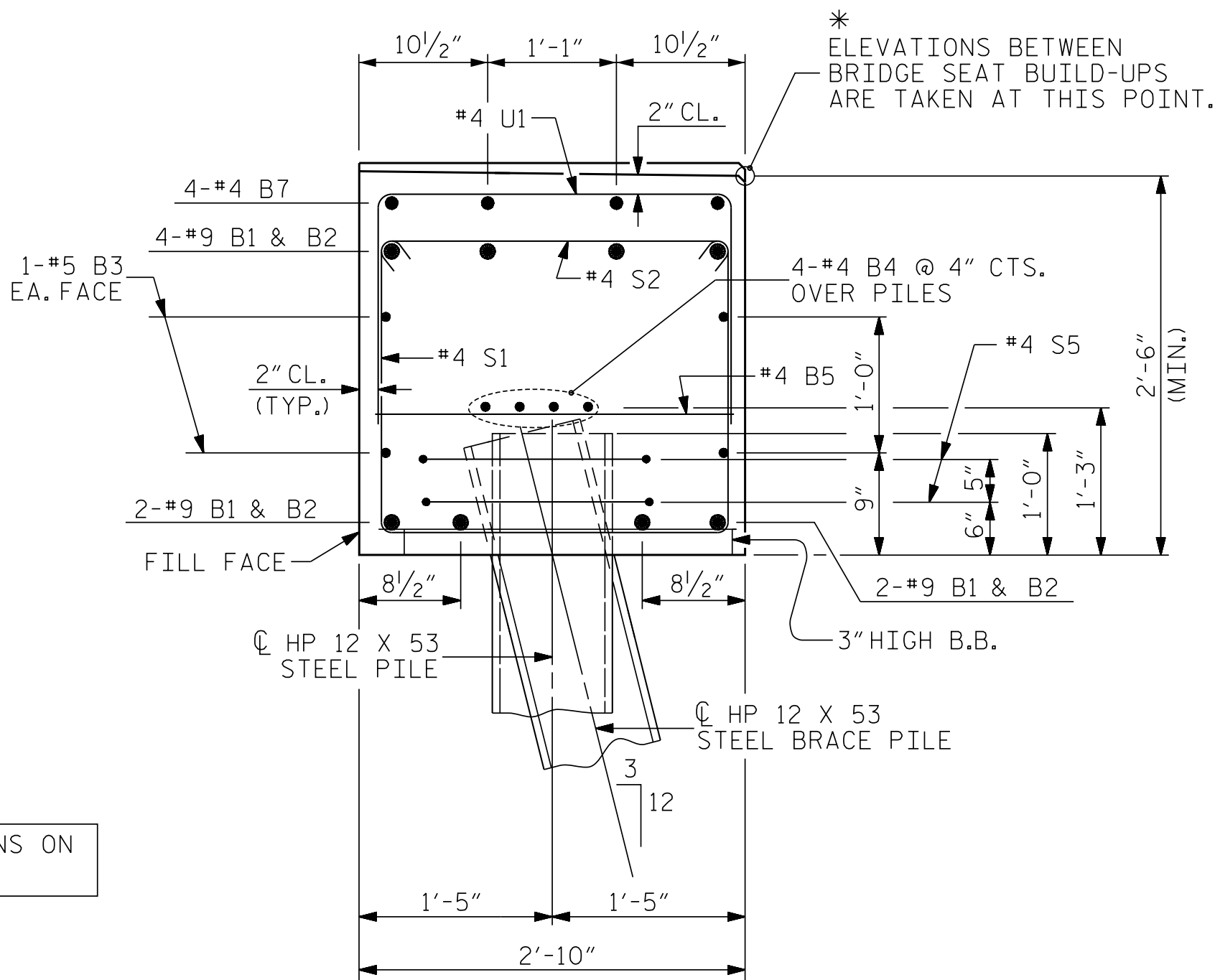


BILL OF MATERIAL						
LEFT WIDENING						
END BENT 2						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	8	#9	1	14'-10"	403	
B2	8	#9	1	26'-7"	723	
B3	8	#5	STR	18'-4"	153	
B4	8	#4	STR	18'-1"	97	
B5	9	#4	STR	2'-6"	15	
B6	4	#4	STR	2'-5"	6	
B7	8	#4	STR	6'-3"	33	
B8	1	#4	STR	1'-9"	1	
B9	1	#4	STR	2'-1"	1	
B10	1	#4	STR	2'-8"	2	
B11	1	#4	STR	3'-0"	2	
H1	7	#4	2	8'-8"	41	
H2	7	#4	2	8'-4"	39	
K1	4	#4	STR	2'-8"	7	
K2	4	#4	STR	2'-4"	6	
S1	37	#4	4	7'-6"	185	
S2	37	#4	3	3'-3"	80	
S3	22	#4	4	6'-11"	102	
S4	22	#4	3	2'-8"	39	
S5	12	#4	5	7'-7"	61	
U1	24	#4	6	5'-6"	88	
U2	1	#4	6	5'-10"	4	
V1	24	#4	STR	6'-0"	96	
REINFORCING STEEL					2184 LBS.	
CLASS A CONCRETE BREAKDOWN						
POUR #1	CAP, LOWER PART OF WING & COLLARS				11.2 C.Y.	
POUR #2	UPPER PART OF WING				1.5 C.Y.	
TOTAL CLASS A CONCRETE					12.7 C.Y.	



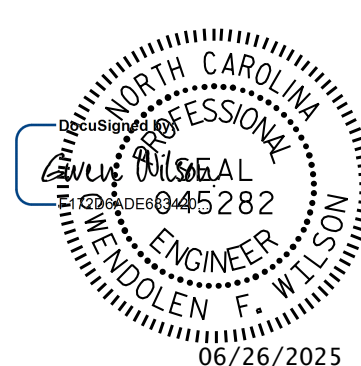
SECTION B-B

(CONCRETE COLLAR NOT SHOWN FOR CLARITY, SEE SHEET 1 OF 3 FOR DETAILS)



SECTION A-A

(CONCRETE COLLAR NOT SHOWN FOR CLARITY, SEE SHEET 1 OF 3 FOR DETAILS)



PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2

LEFT WIDENING

REVISIONS						SHEET NO. S2-57
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			



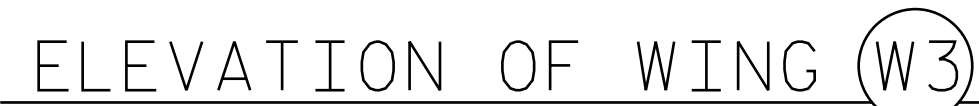
FOR SECTIONS A-A & B-B, SEE SHEET 3 OF 3.

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DETAIL "A"

REVISIONS						SHEET NO.
C.	NO.	BY:	DATE:	NO.	BY:	DATE:
	1			3		
	2			4		
						S2-58 TOTAL SHEETS 81



SHEET 2 OF 3

SUBSTRUCTURE
END BENT 1

RIGHT WIDENING

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

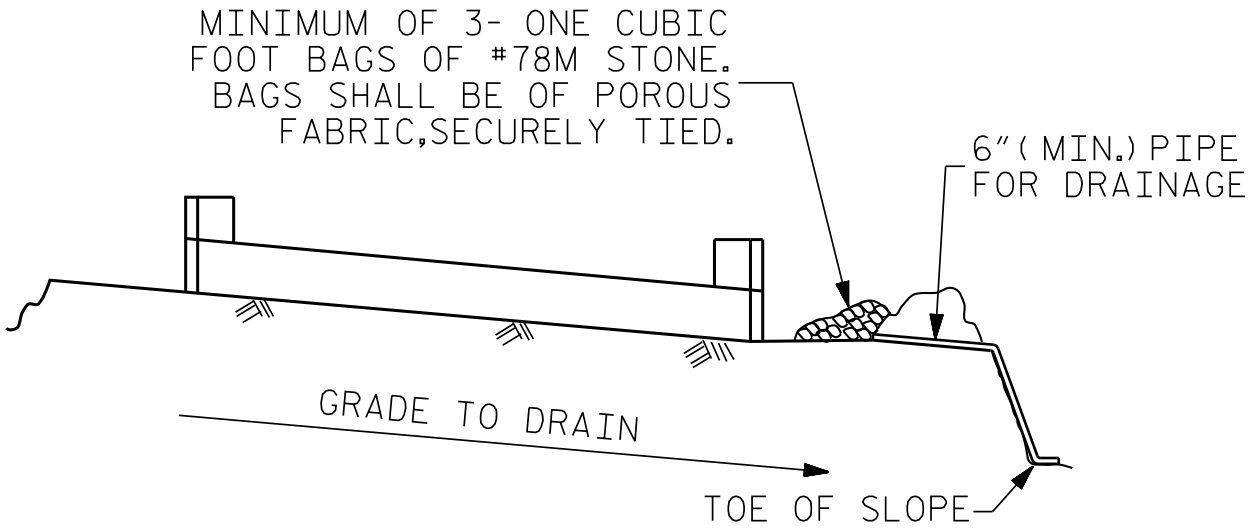


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4700 Falls of Neuse Rd, Suite 100,
Raleigh, NC, 27609
License No: C-3097

REVISIONS							SHEET NO. S2-59
C.	NO.	BY:	DATE:	NO.	BY:	DATE:	
	1			3			
	2			4			
							TOTAL SHEETS 81

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DATE: 6/18/2025 TIME: 6:18/2025

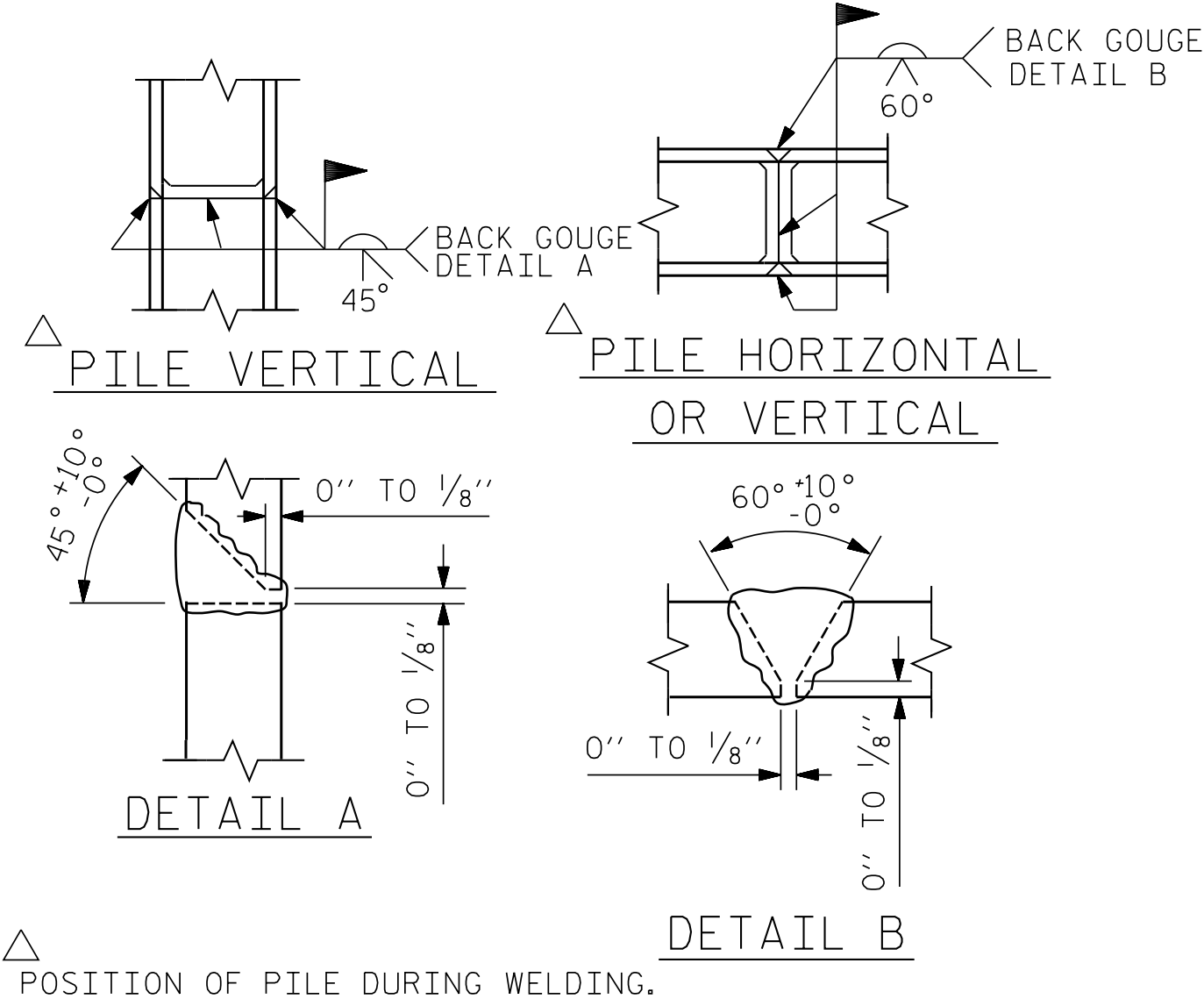


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

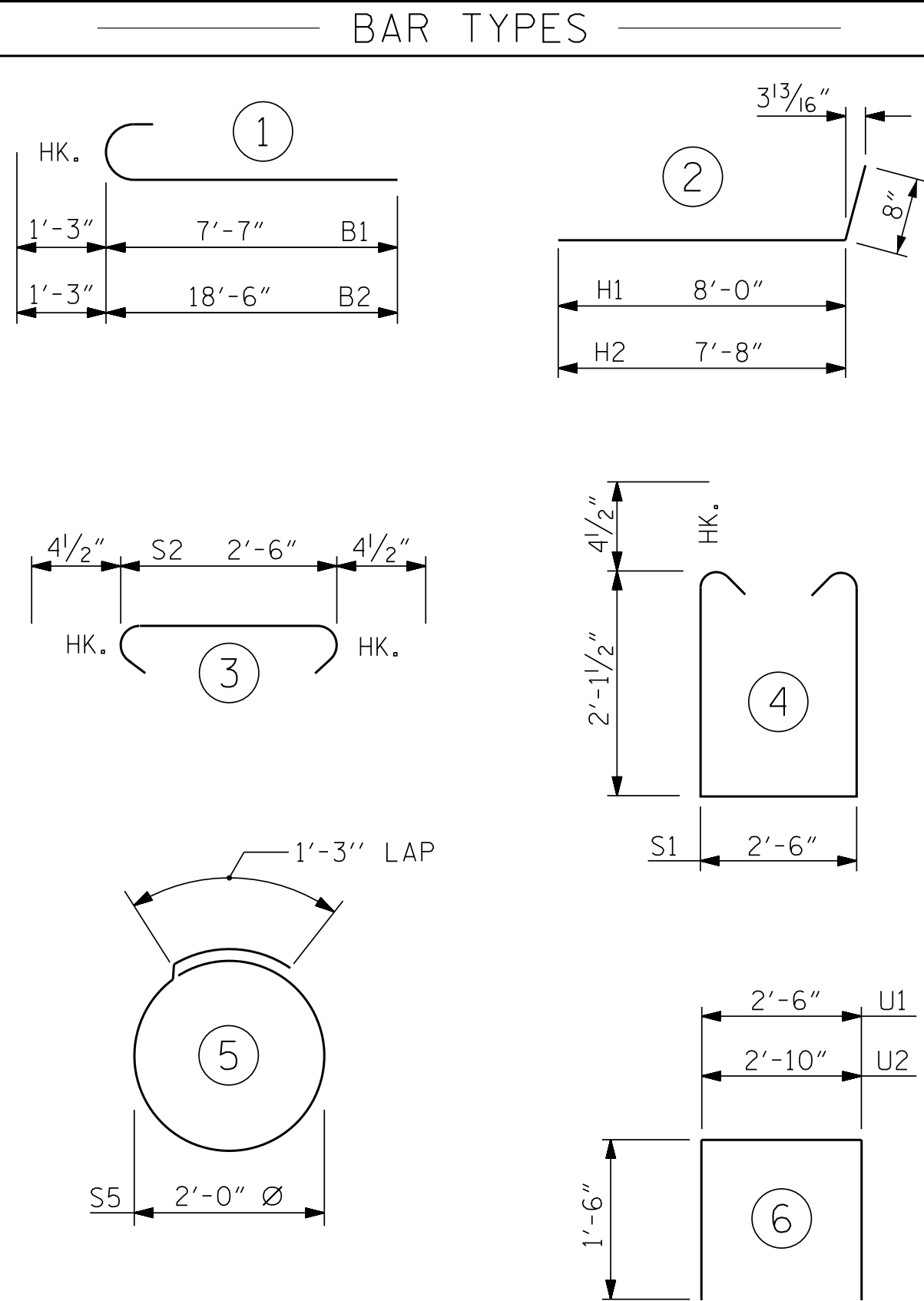
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

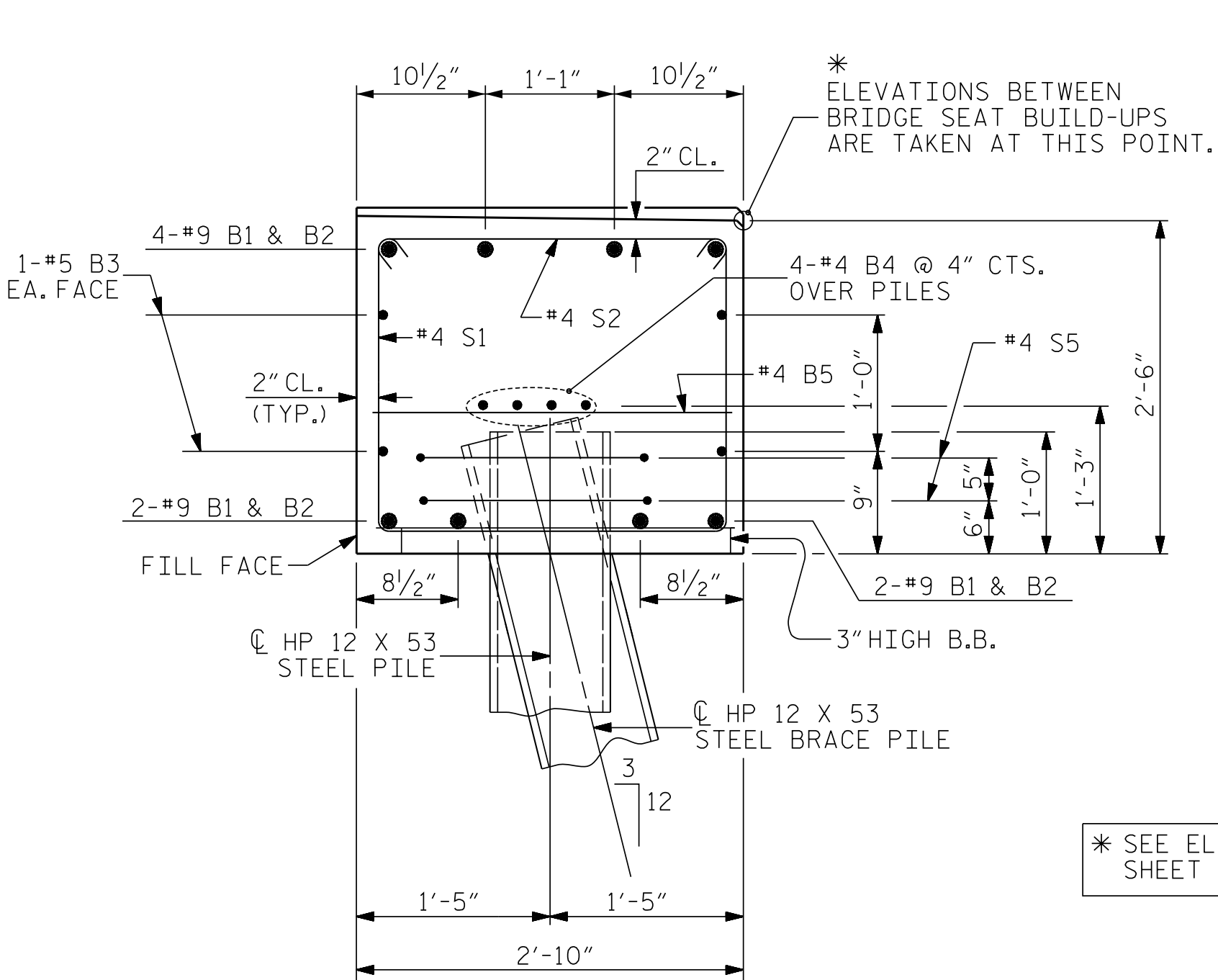


PILE SPLICE DETAILS

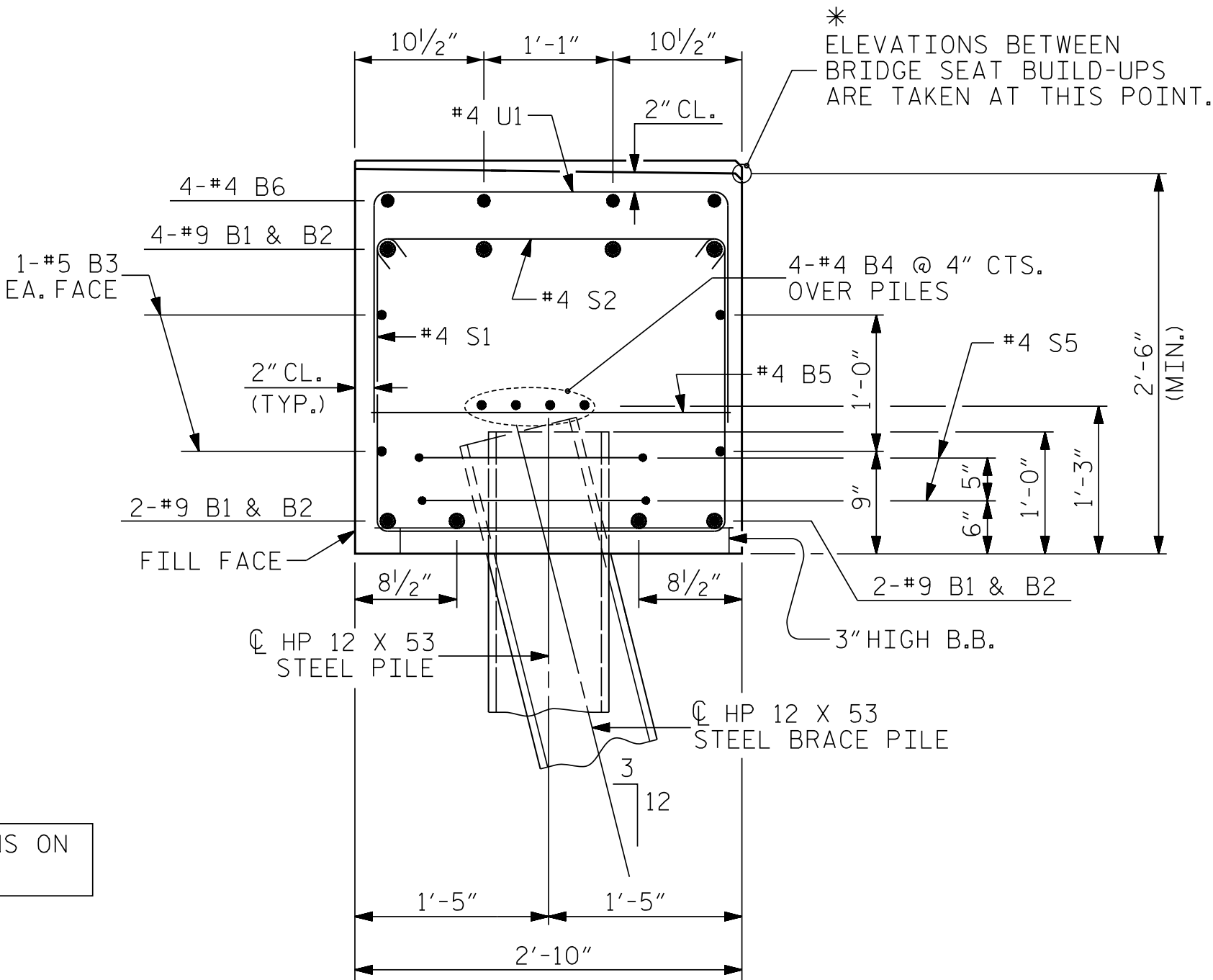


ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
RIGHT WIDENING					
END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	8'-10"	240
B2	8	#9	1	19'-9"	537
B3	8	#5	STR	11'-11"	99
B4	8	#4	STR	11'-8"	62
B5	5	#4	STR	2'-6"	8
B6	4	#4	STR	2'-5"	6
B7	1	#4	STR	1'-9"	1
B8	1	#4	STR	2'-1"	1
B9	1	#4	STR	2'-8"	2
B10	1	#4	STR	3'-0"	2
H1	7	#4	2	8'-8"	41
H2	7	#4	2	8'-4"	39
K1	4	#4	STR	2'-10"	8
K2	4	#4	STR	2'-7"	7
S1	33	#4	4	7'-6"	165
S2	33	#4	3	3'-3"	72
S5	8	#4	5	7'-7"	41
U1	7	#4	6	5'-6"	26
U2	1	#4	6	5'-10"	4
V1	25	#4	STR	6'-0"	100
REINFORCING STEEL					1461 LBS.
CLASS A CONCRETE BREAKDOWN					
POUR #1	CAP, LOWER PART OF WING & COLLARS				7.0 C.Y.
POUR #2	UPPER PART OF WING				1.5 C.Y.
TOTAL CLASS A CONCRETE					8.5 C.Y.



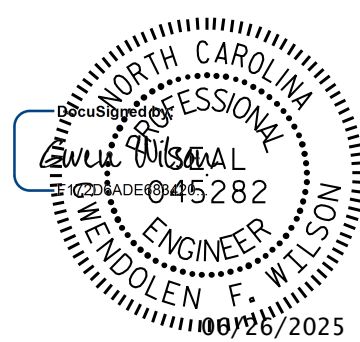
SECTION B-B
(CONCRETE COLLAR NOT SHOWN FOR CLARITY, SEE SHEET 1 OF 3 FOR DETAILS)



SECTION A-A
(CONCRETE COLLAR NOT SHOWN FOR CLARITY, SEE SHEET 1 OF 3 FOR DETAILS)

PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 3 OF 3



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License No: C-3097

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DEPARTMENT OF TRANSPORTATION
RALEIGH

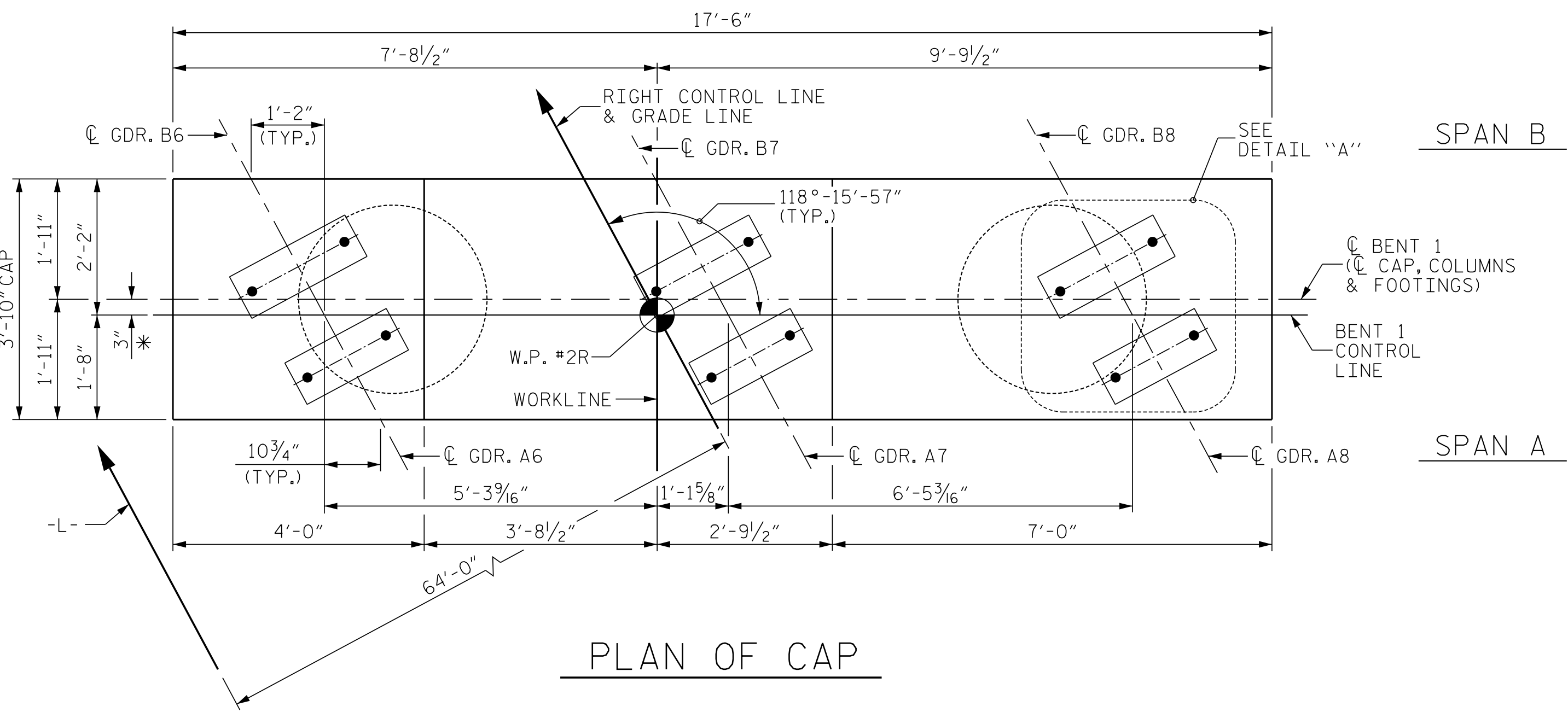
SUBSTRUCTURE
END BENT 1

RIGHT WIDENING

REVISIONS						SHEET NO. S2-60
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

DWN. BY: WDC DATE: 09/2024
CHKD. BY: CFW DATE: 11/2024
DES. EGR. OF RECORD: STC DATE: 09/2024

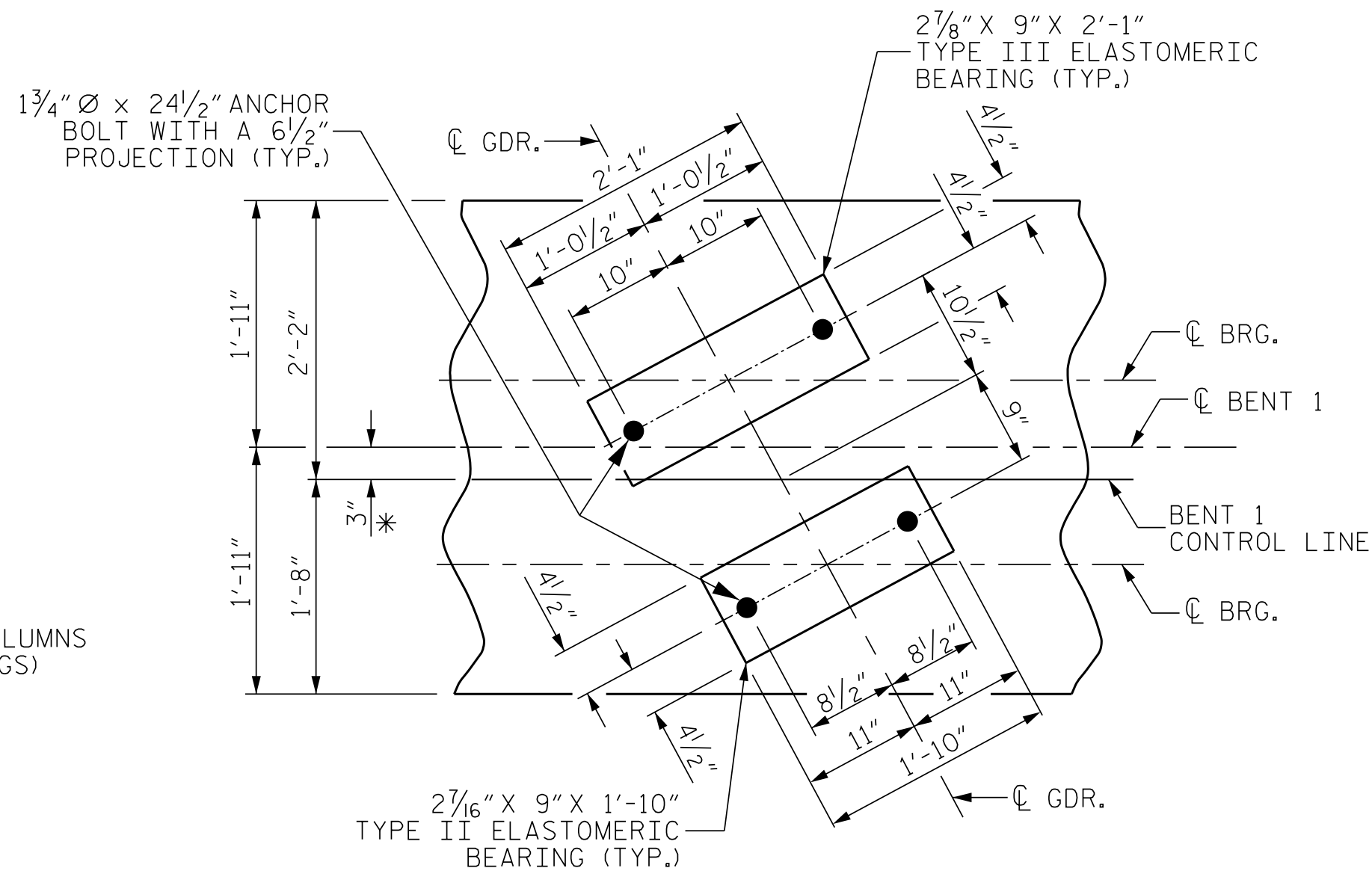
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DATE: 6/18/2025 TIME: 6:18/2025



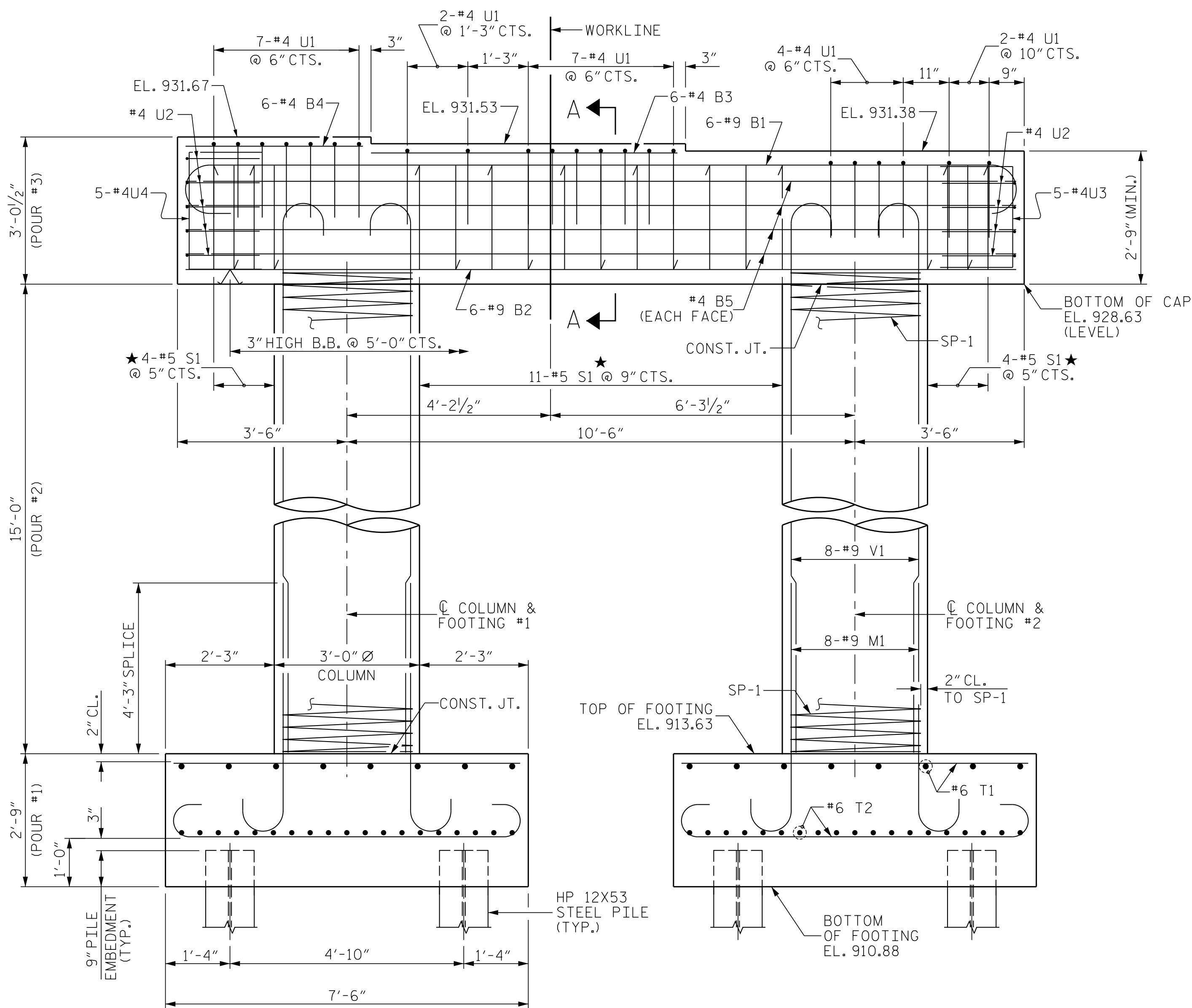
*ATTENTION IS CALLED TO THE FACT THAT THE BENT CONTROL LINE IS OFFSET 3" FROM THE CENTERLINE OF BENT.

NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
- ★ INVERT ALTERNATE PAIRS OF STIRRUPS.
- SEE SHEET 2 OF 2 FOR SECTION "A-A".
- SEE SHEET 2 OF 2 FOR PILE SPLICE DETAILS.
- EPOXY COAT THE BENT CAP AFTER ADJUSTMENTS ARE MADE TO BEARINGS AND ANCHOR BOLTS ARE GROUTED.
- THE TOP SURFACE AREAS OF THE BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

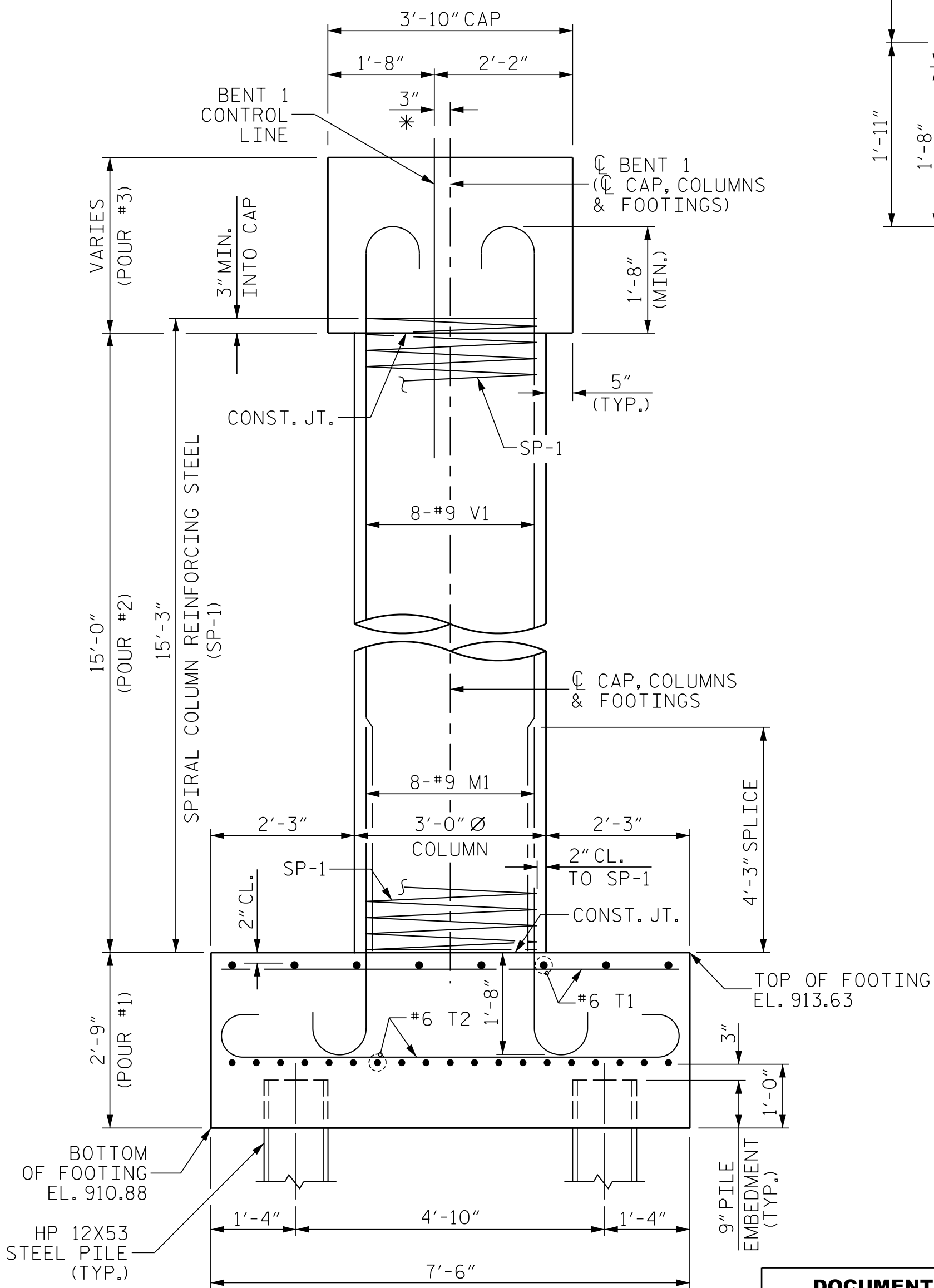


DETAIL "A"
(TYP. EA. BEARING LOCATION)



ELEVATION

REINFORCING STEEL DIMENSIONS AND DETAILS ARE TYPICAL FOR EACH COLUMN AND FOOTING



RIGHT END ELEVATION

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FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 1 OF 2

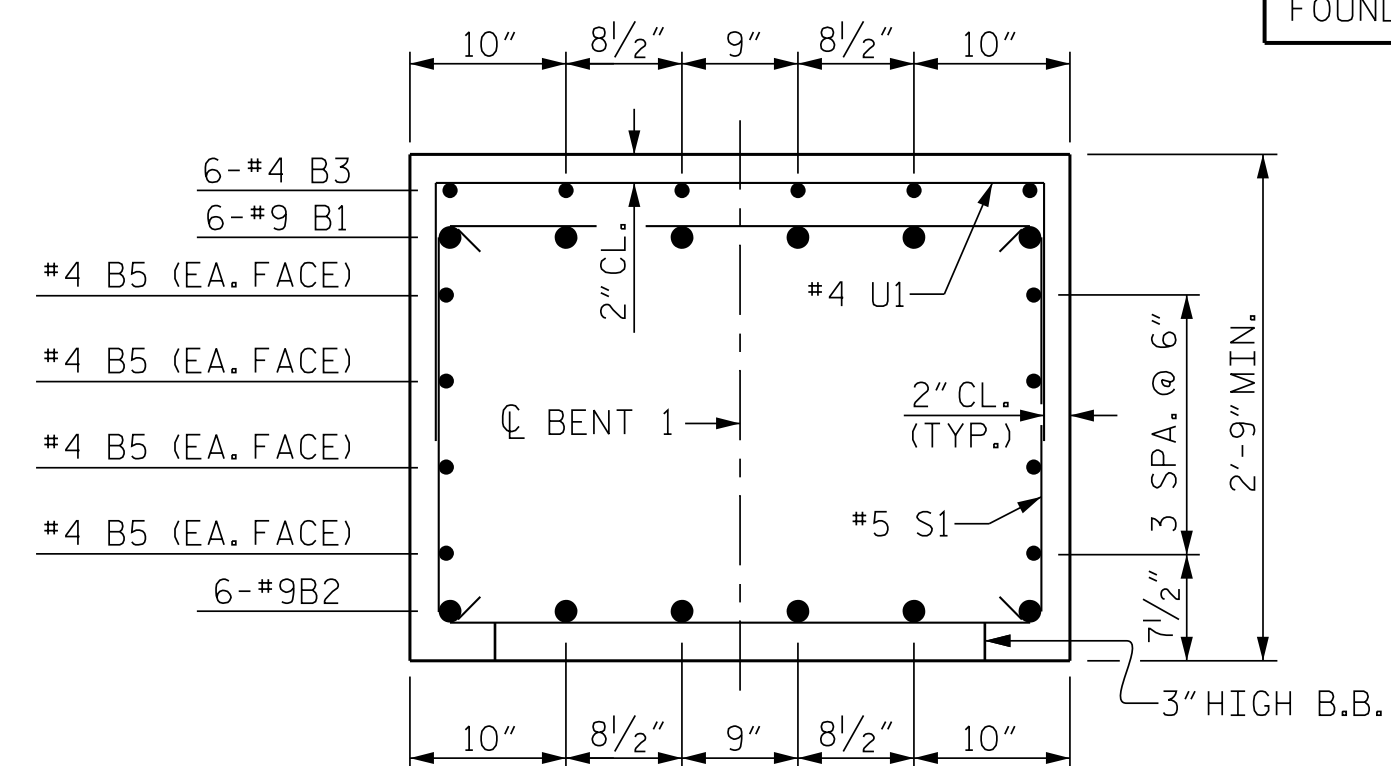
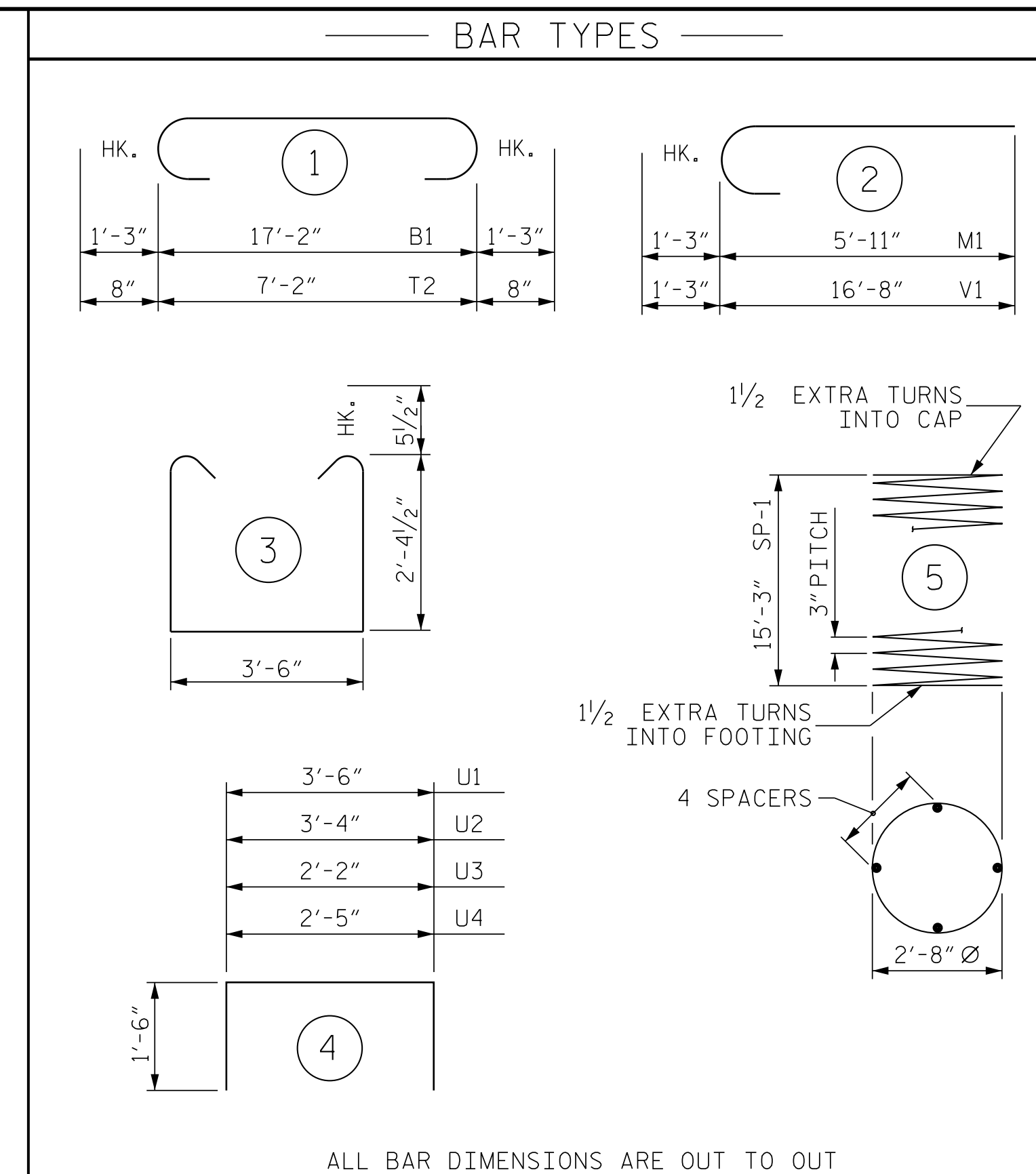
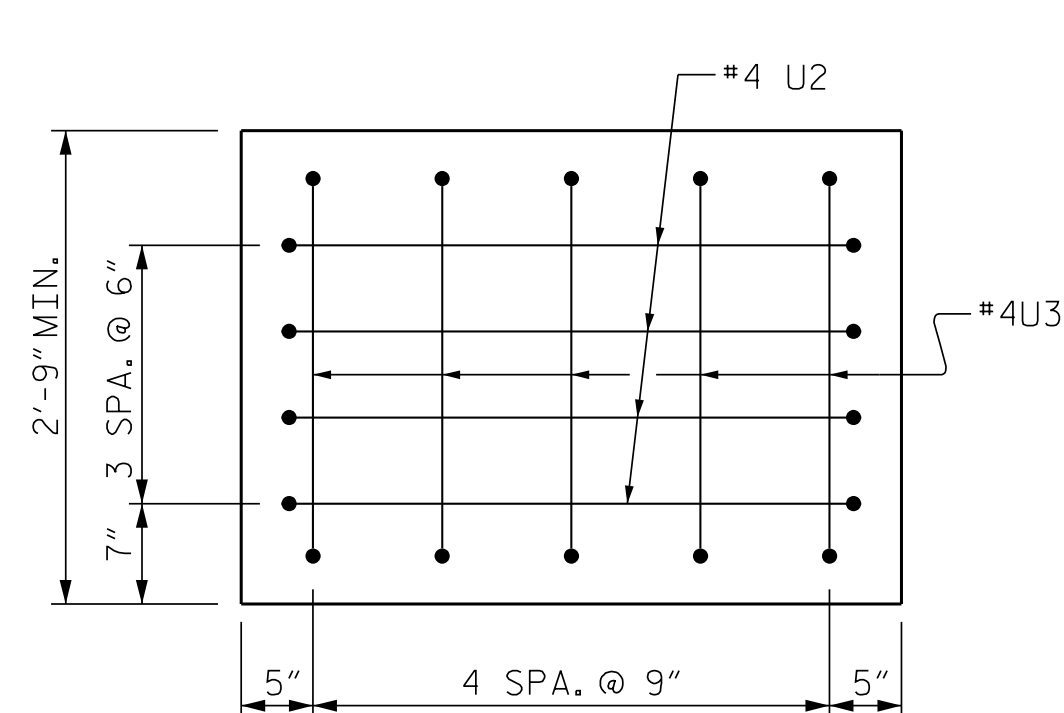
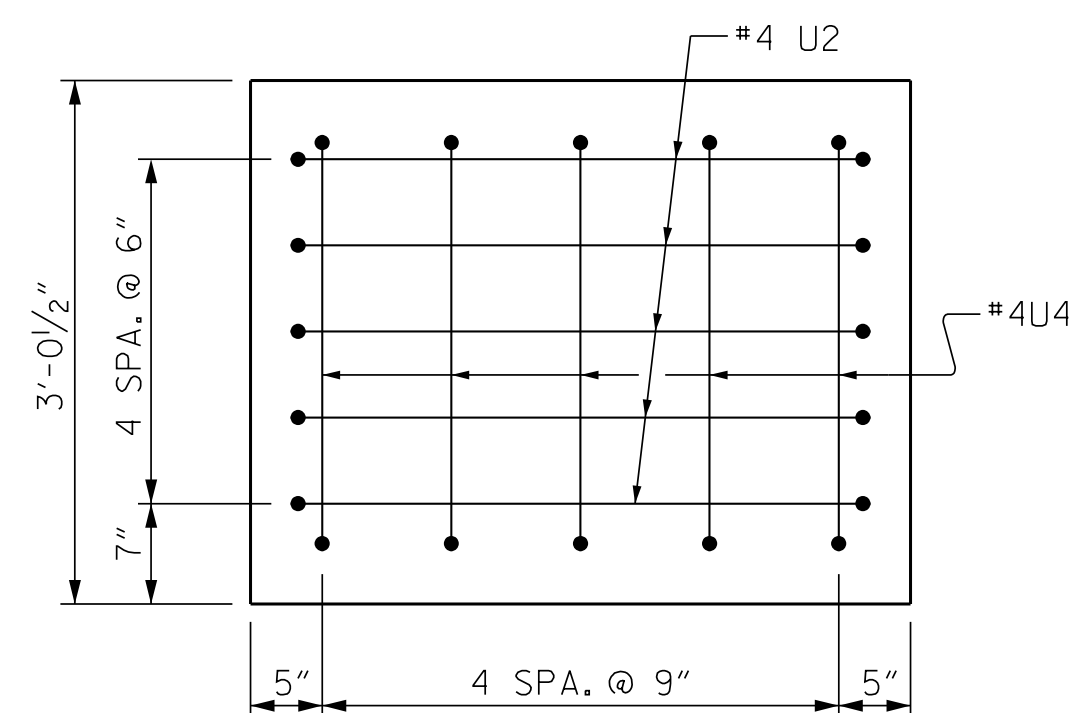
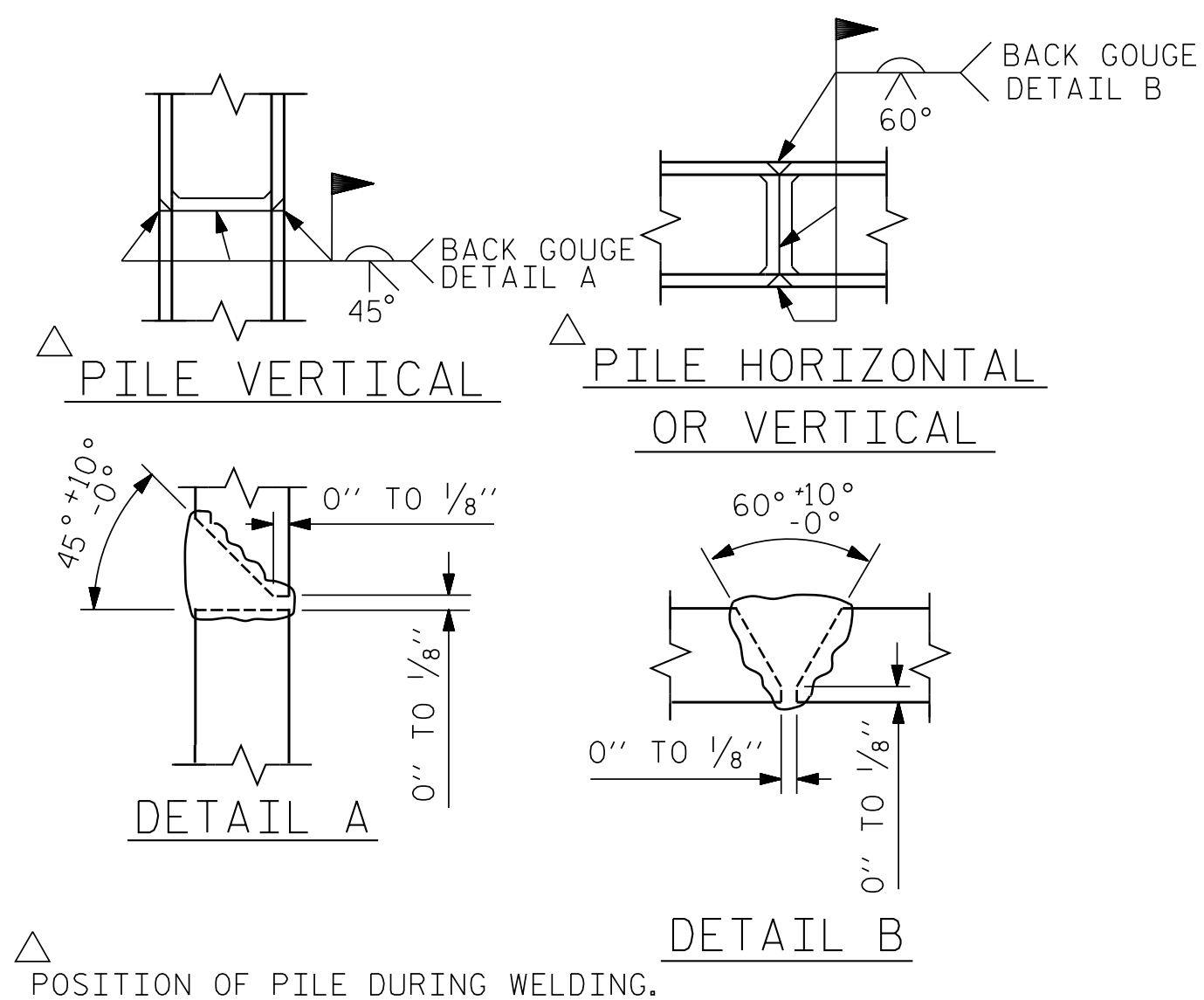
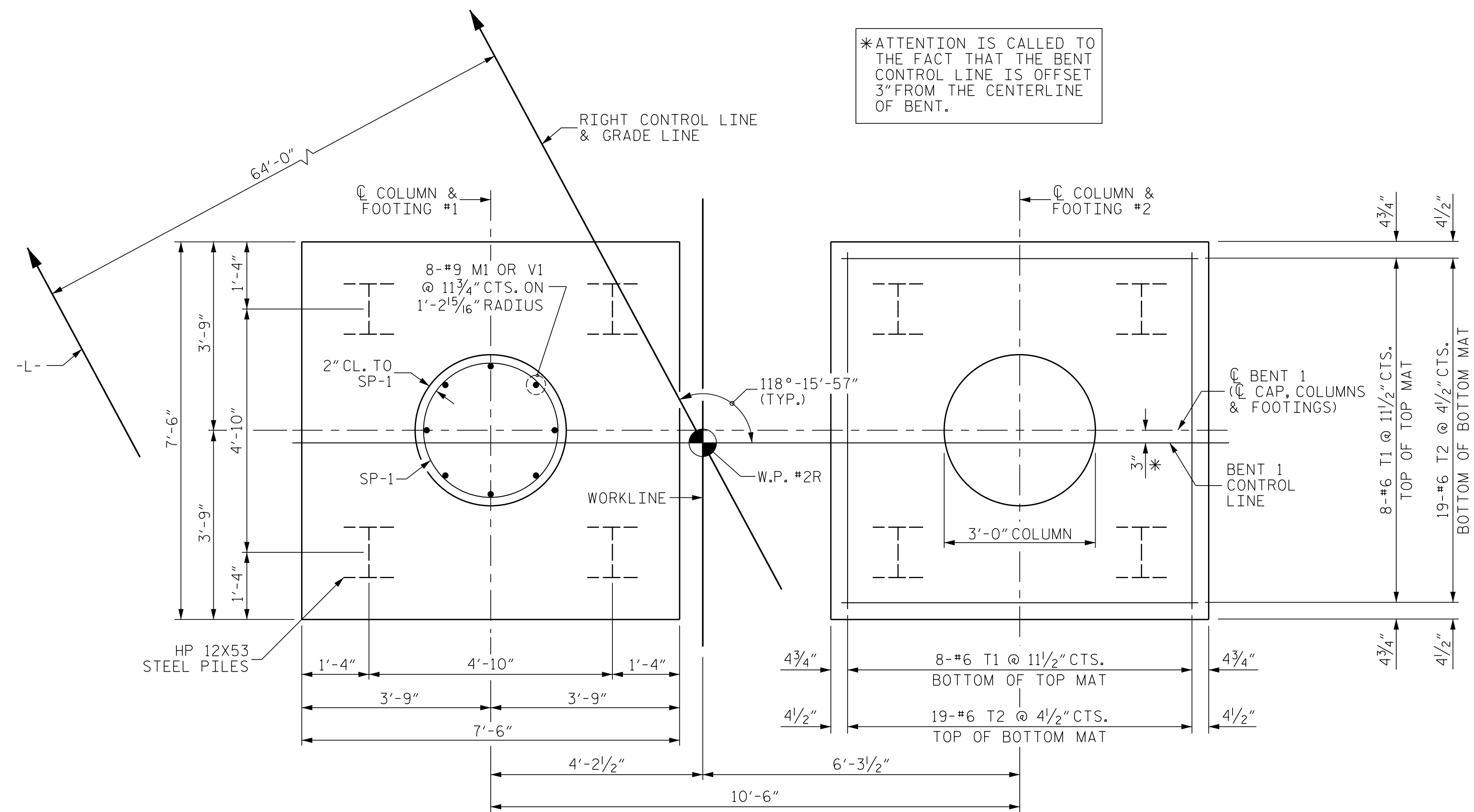
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 1

RIGHT WIDENING

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S2-61
2			4			

TOTAL
SHEETS
81



BILL OF MATERIAL					
RIGHT WIDENING					
BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#9	1	19'-8"	401
B2	6	#9	STR	17'-2"	350
B3	6	#4	STR	6'-4"	25
B4	6	#4	STR	3'-8"	15
B5	8	#4	STR	17'-2"	92
M1	16	#9	2	7'-2"	390
S1	19	#5	3	9'-2"	182
T1	32	#6	STR	7'-2"	344
T2	76	#6	1	8'-6"	970
U1	22	#4	4	6'-6"	96
U2	9	#4	4	6'-4"	38
U3	5	#4	4	5'-2"	17
U4	5	#4	4	5'-5"	18
V1	16	#9	2	17'-11"	975
REINFORCING STEEL					3913 LBS.
SP-1	2	*	5	528'-1"	706
SPIRAL COLUMN REINFORCING STEEL					706 LBS.
* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					
CLASS A CONCRETE BREAKDOWN					
POUR #1 (FOOTINGS)					11.5 C.Y.
POUR #2 (COLUMNS)					7.9 C.Y.
POUR #3 (CAP)					7.1 C.Y.
TOTAL CLASS A CONCRETE					26.5 C.Y.
FOUNDATION EXCAVATION					LUMP SUM

PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-

SHEET 2 OF 2

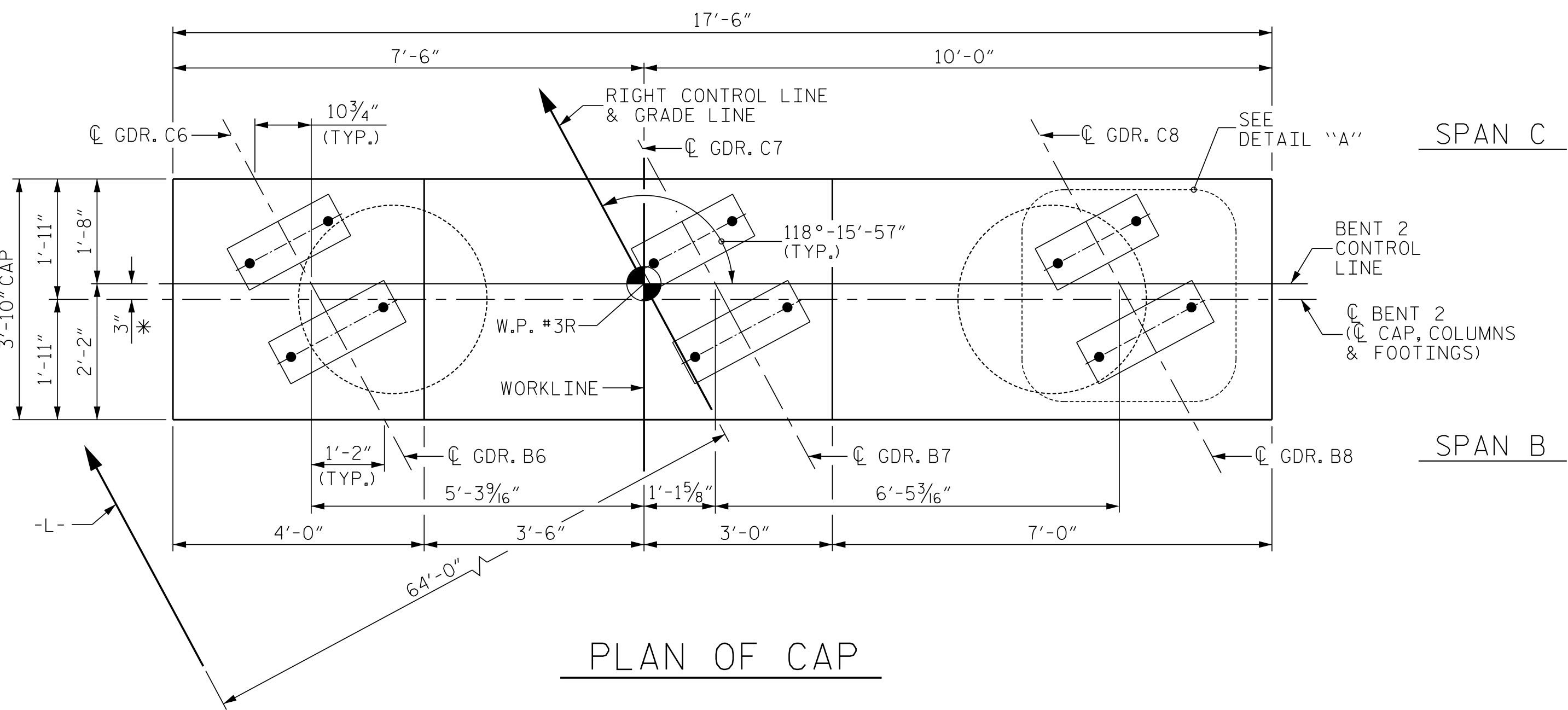
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 1

RIGHT WIDENING

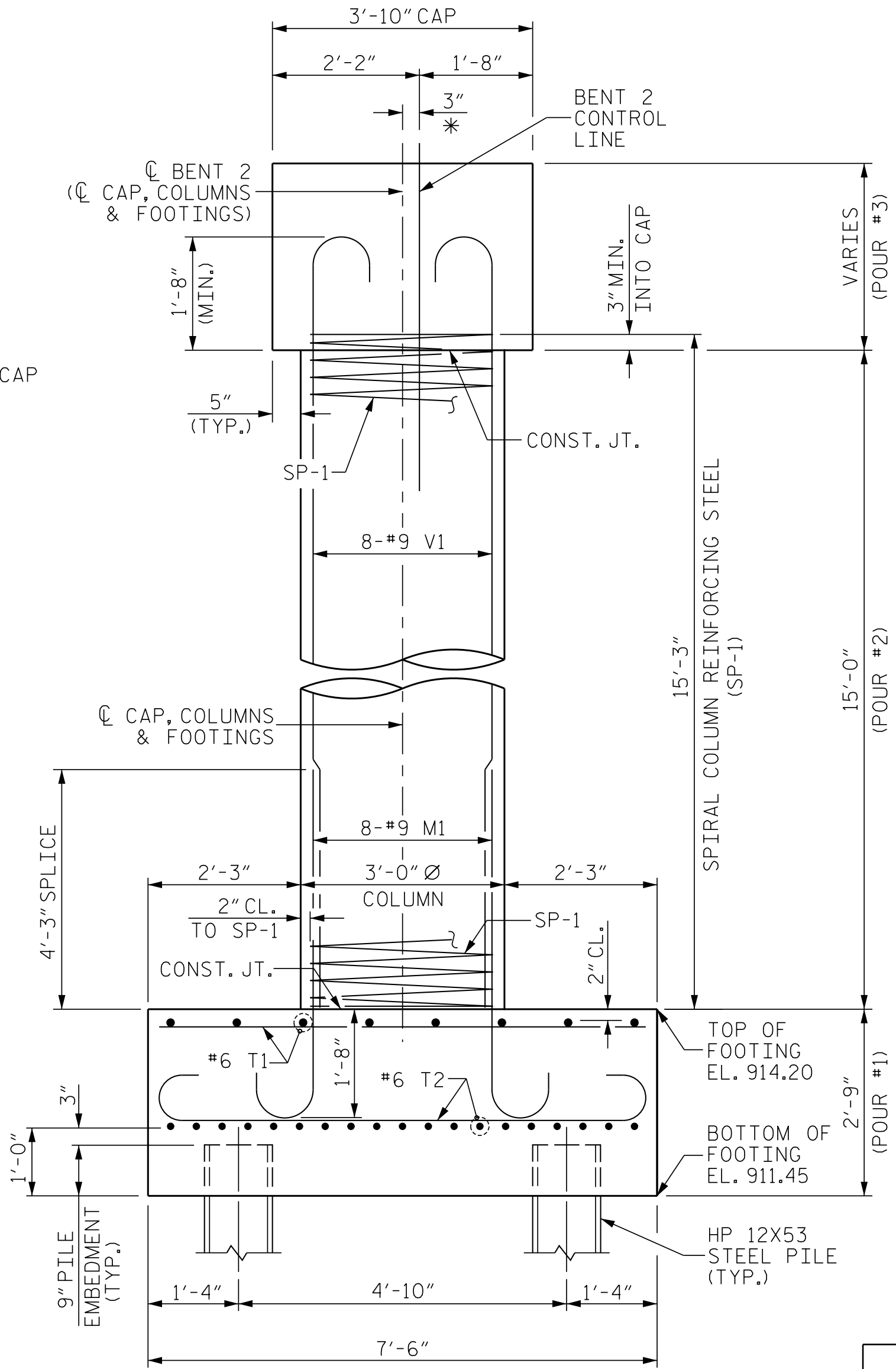
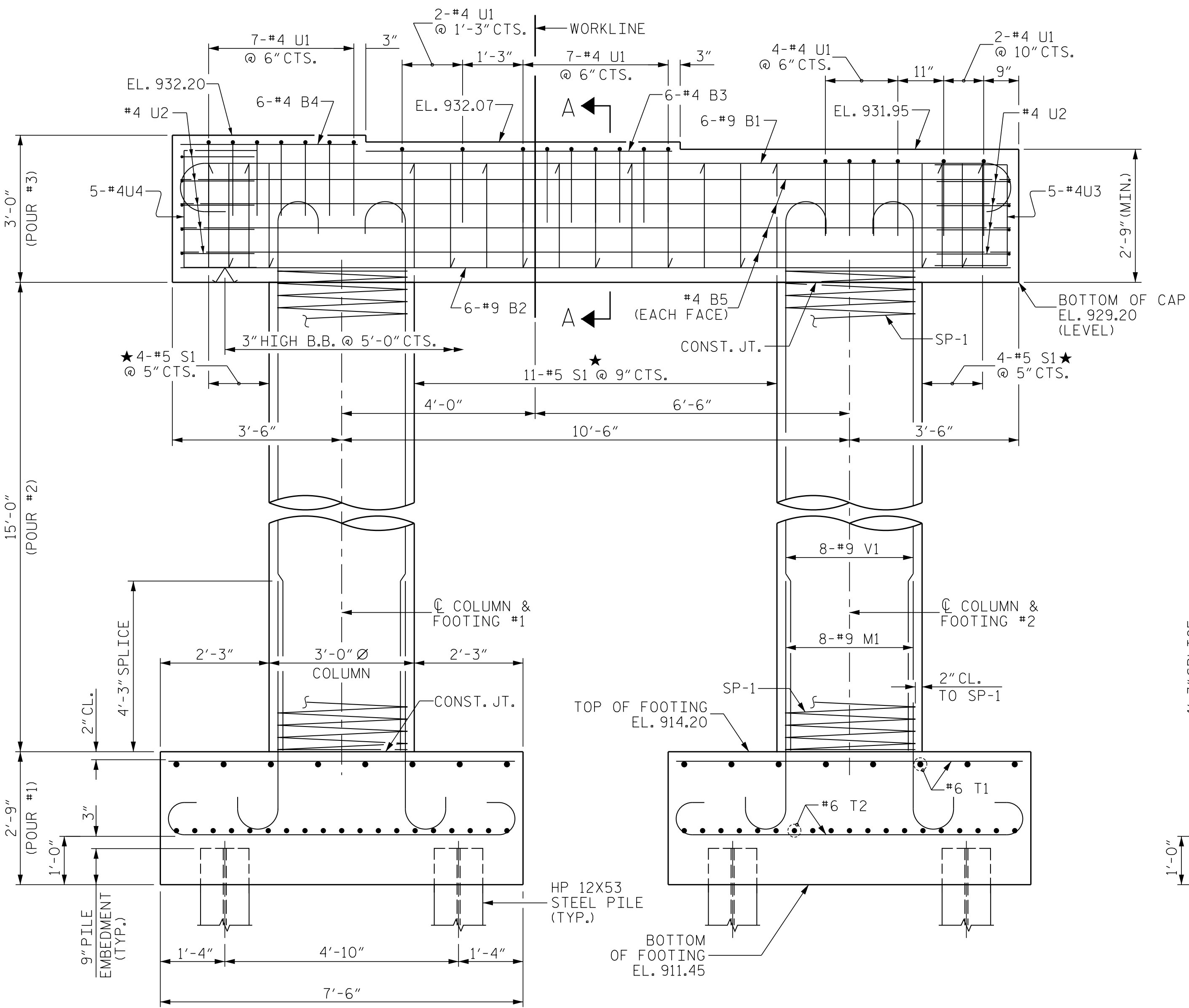
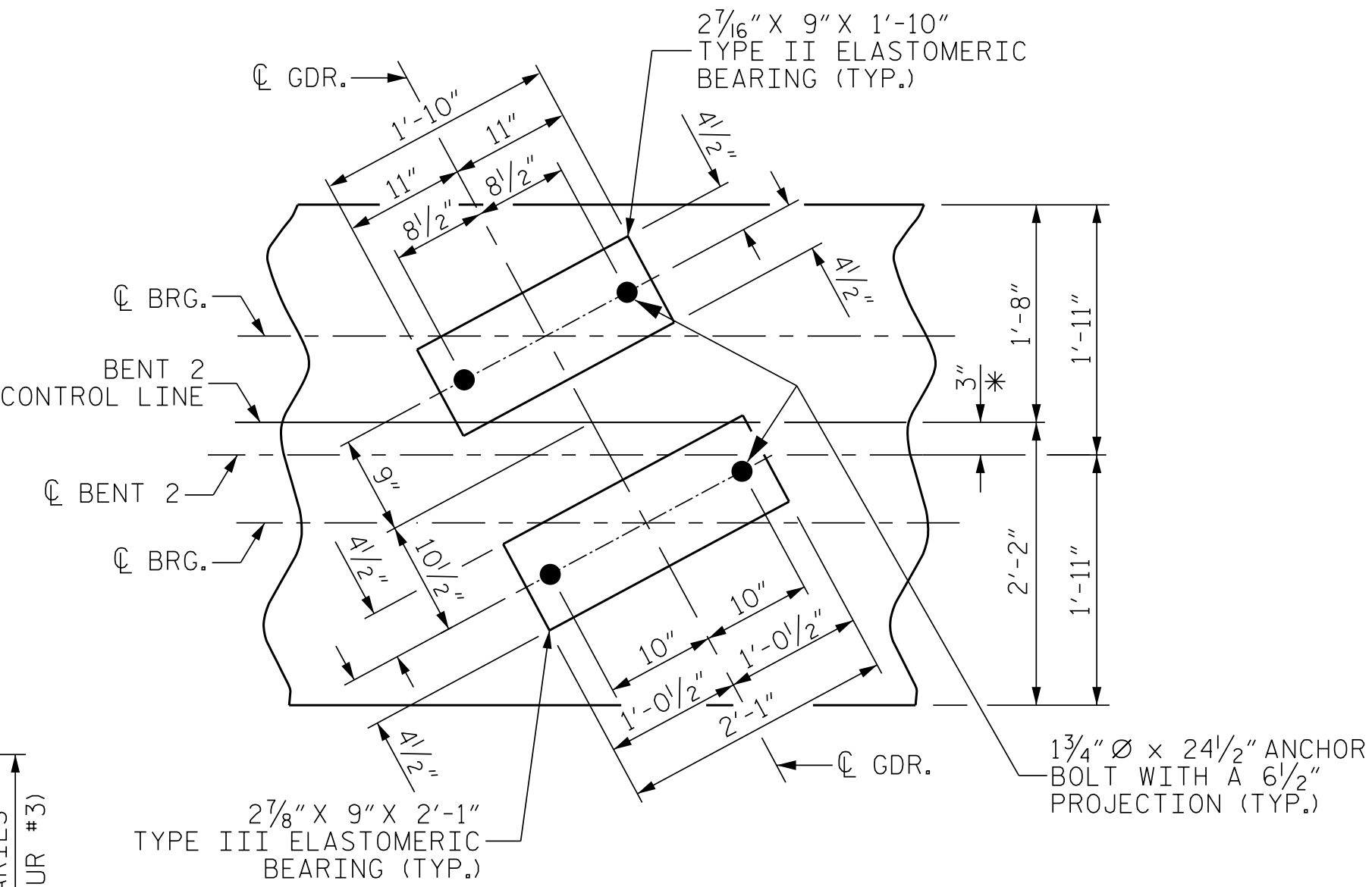
DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024

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TIME: 6/18/2025



*ATTENTION IS CALLED TO THE FACT THAT THE BENT CONTROL LINE IS OFFSET 3" FROM THE CENTERLINE OF BENT.

- ### NOTES
- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 - HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
 - ★ INVERT ALTERNATE PAIRS OF STIRRUPS.
 - SEE SHEET 2 OF 2 FOR SECTION "A-A".
 - SEE SHEET 2 OF 2 FOR PILE SPlice DETAILS.
 - EPOXY COAT THE BENT CAP AFTER ADJUSTMENTS ARE MADE TO BEARINGS AND ANCHOR BOLTS ARE GROUTED.
 - THE TOP SURFACE AREAS OF THE BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.



ELEVATION

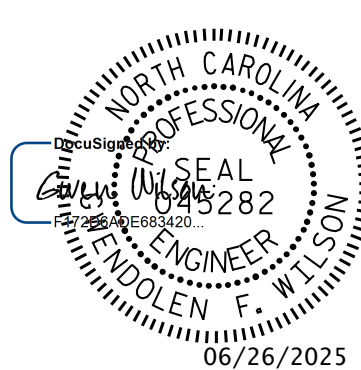
RIGHT END ELEVATION

DWN. BY: WDC
CHKD. BY: GFW
DES. EGR. OF RECORD: STC
DATE: 09/2024
DATE: 11/2024
DATE: 09/2024

REINFORCING STEEL, DIMENSIONS AND DETAILS ARE TYPICAL FOR EACH COLUMN AND FOOTING

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PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

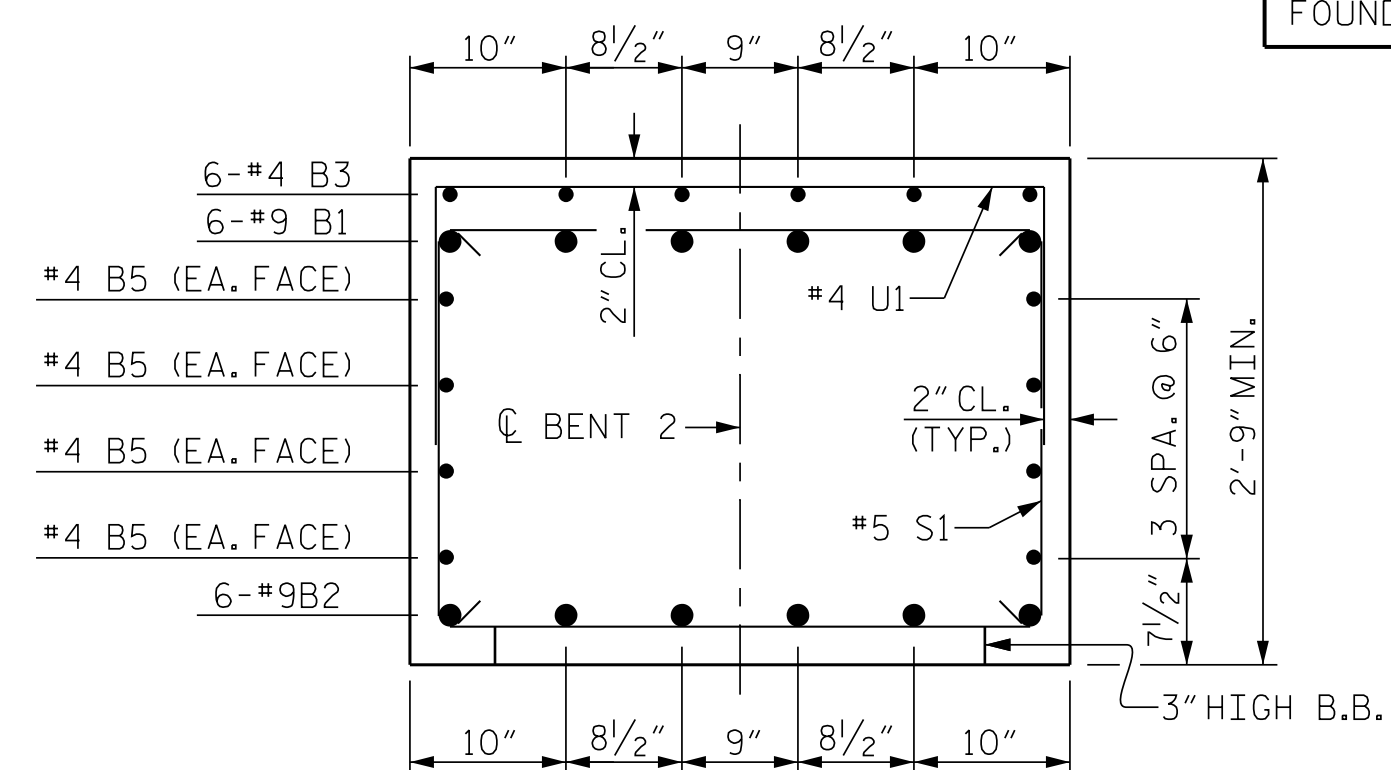
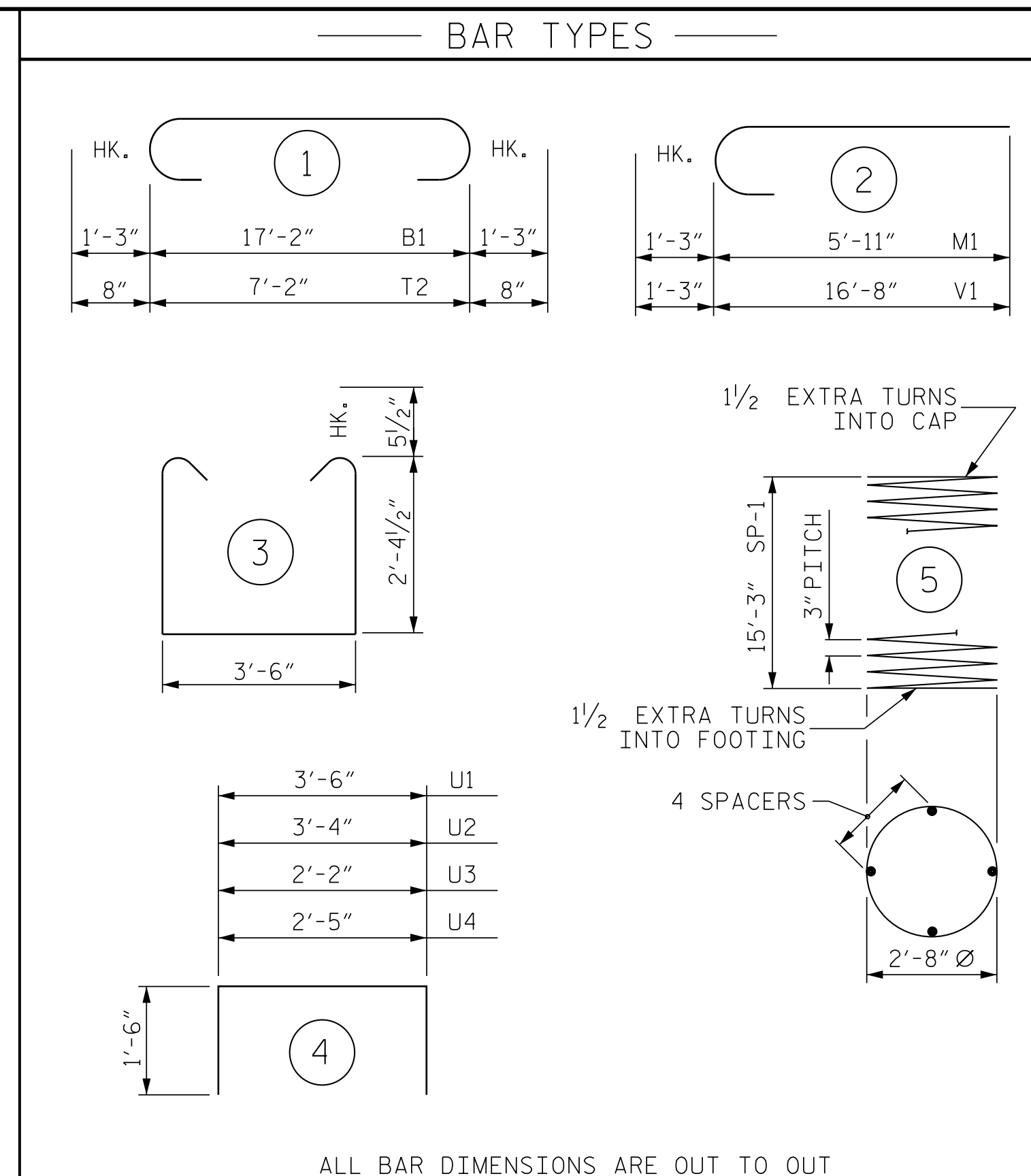
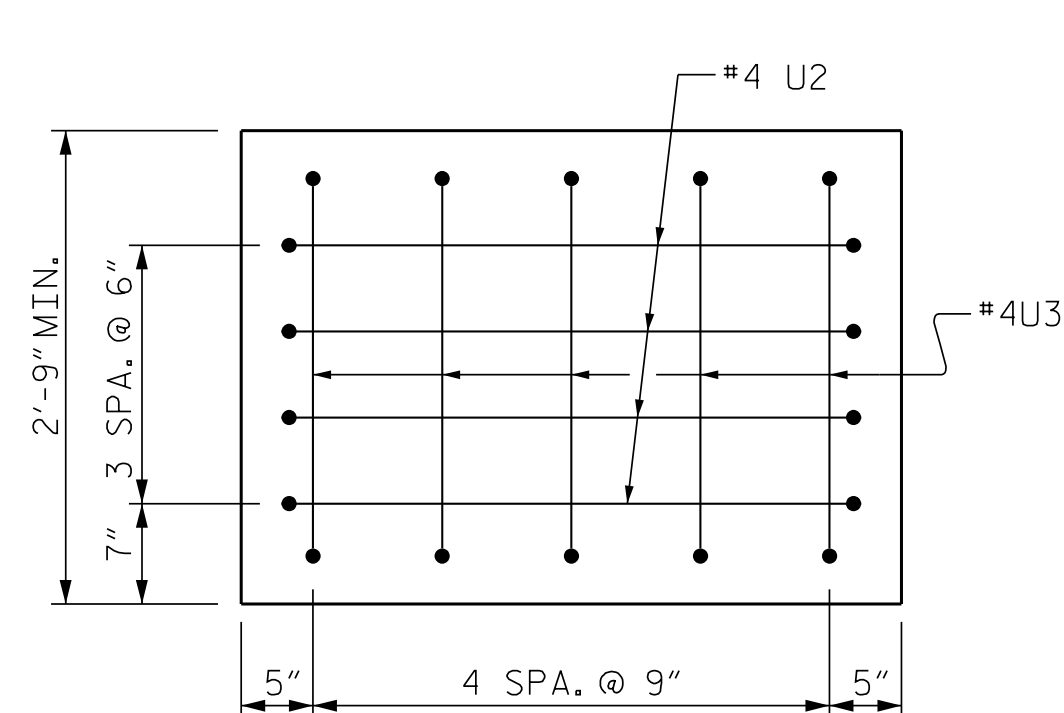
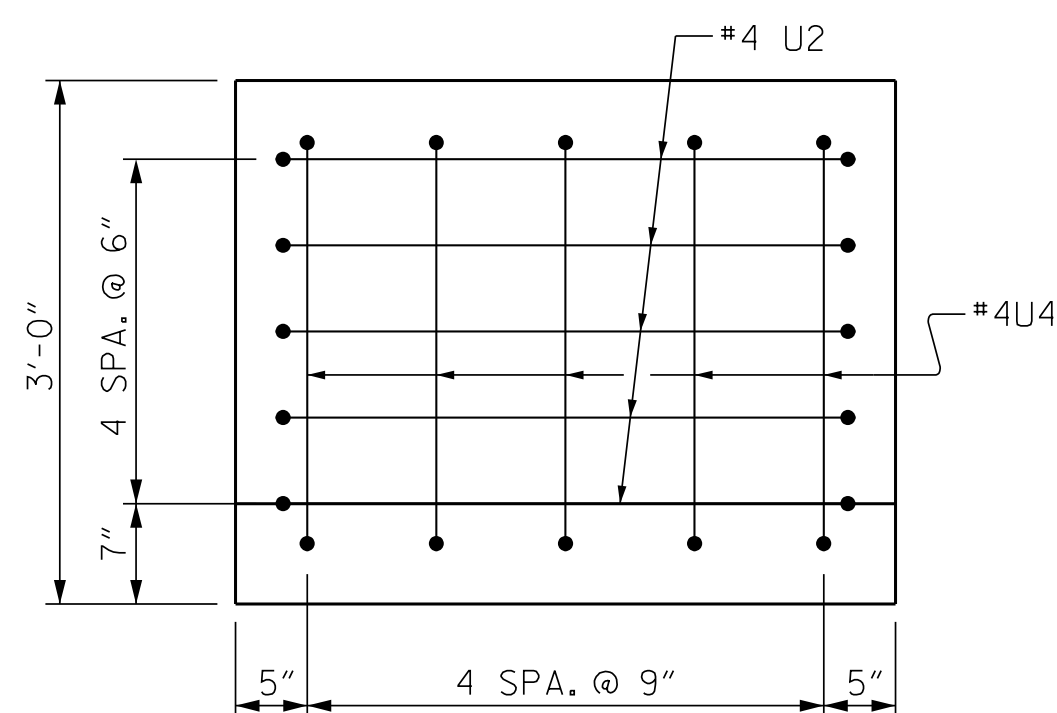
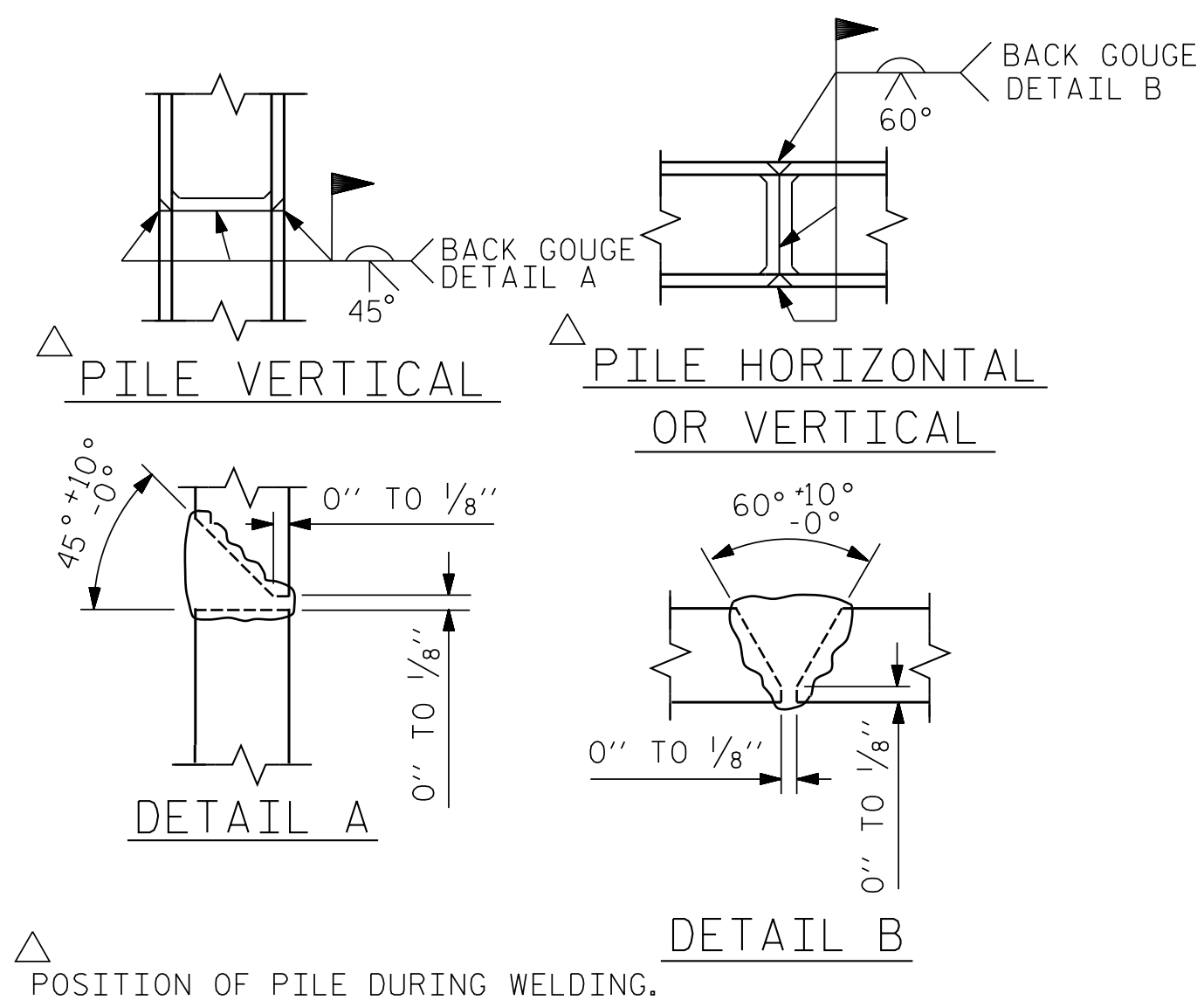
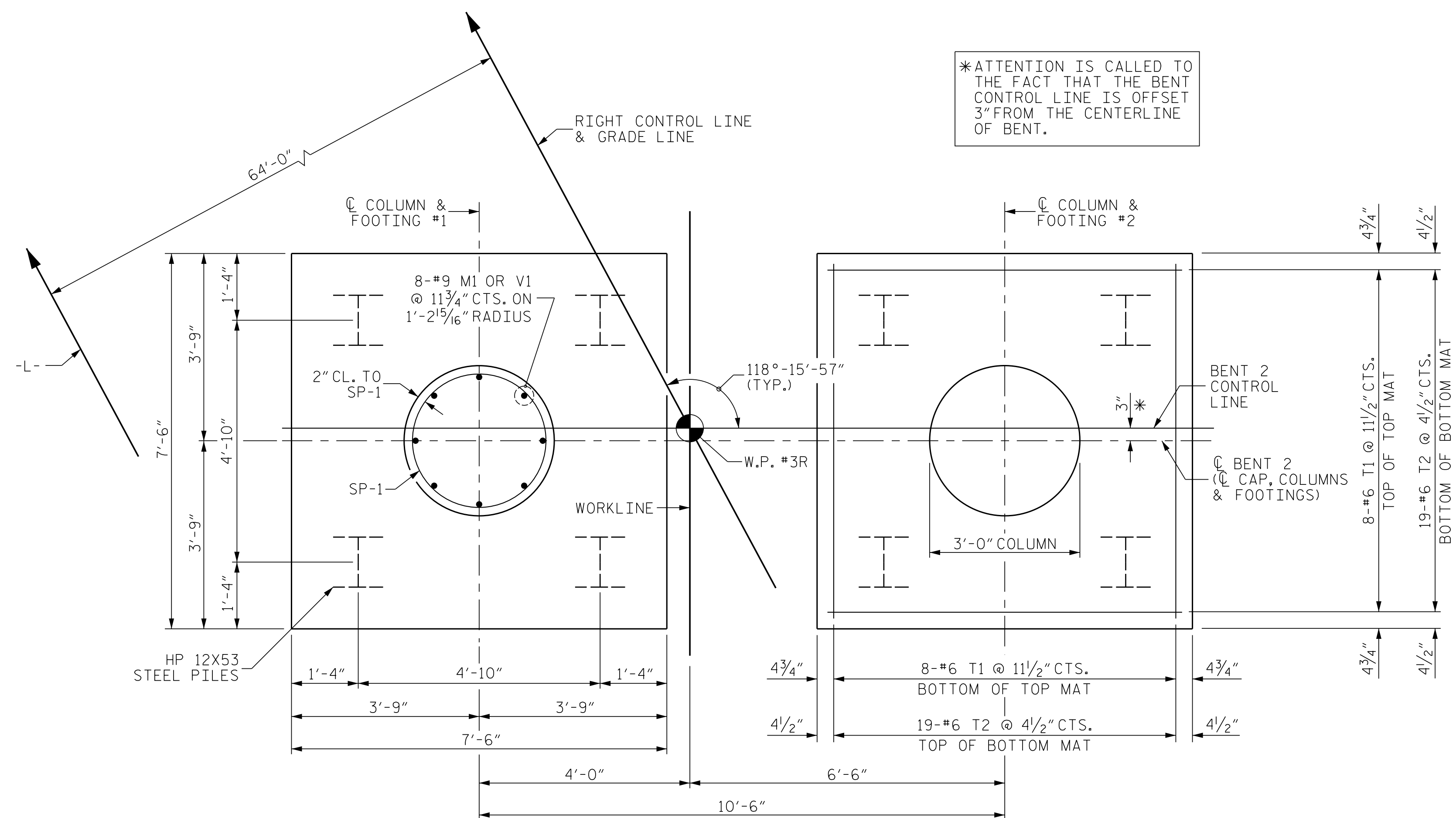
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 2

RIGHT WIDENING

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S2-63
2			4			
TOTAL SHEETS						81



BILL OF MATERIAL					
RIGHT WIDENING					
BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#9	1	19'-8"	401
B2	6	#9	STR	17'-2"	350
B3	6	#4	STR	6'-4"	25
B4	6	#4	STR	3'-8"	15
B5	8	#4	STR	17'-2"	92
M1	16	#9	2	7'-2"	390
S1	19	#5	3	9'-2"	182
T1	32	#6	STR	7'-2"	344
T2	76	#6	1	8'-6"	970
U1	22	#4	4	6'-6"	96
U2	9	#4	4	6'-4"	38
U3	5	#4	4	5'-2"	17
U4	5	#4	4	5'-5"	18
V1	16	#9	2	17'-11"	975
REINFORCING STEEL					3913 LBS.
SP-1	2	*	5	528'-1"	706
SPIRAL COLUMN REINFORCING STEEL					706 LBS.
* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					
CLASS A CONCRETE BREAKDOWN					
POUR #1 (FOOTINGS)					11.5 C.Y.
POUR #2 (COLUMNS)					7.9 C.Y.
POUR #3 (CAP)					7.1 C.Y.
TOTAL CLASS A CONCRETE					26.5 C.Y.
FOUNDATION EXCAVATION					LUMP SUM

PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-

SHEET 2 OF 2

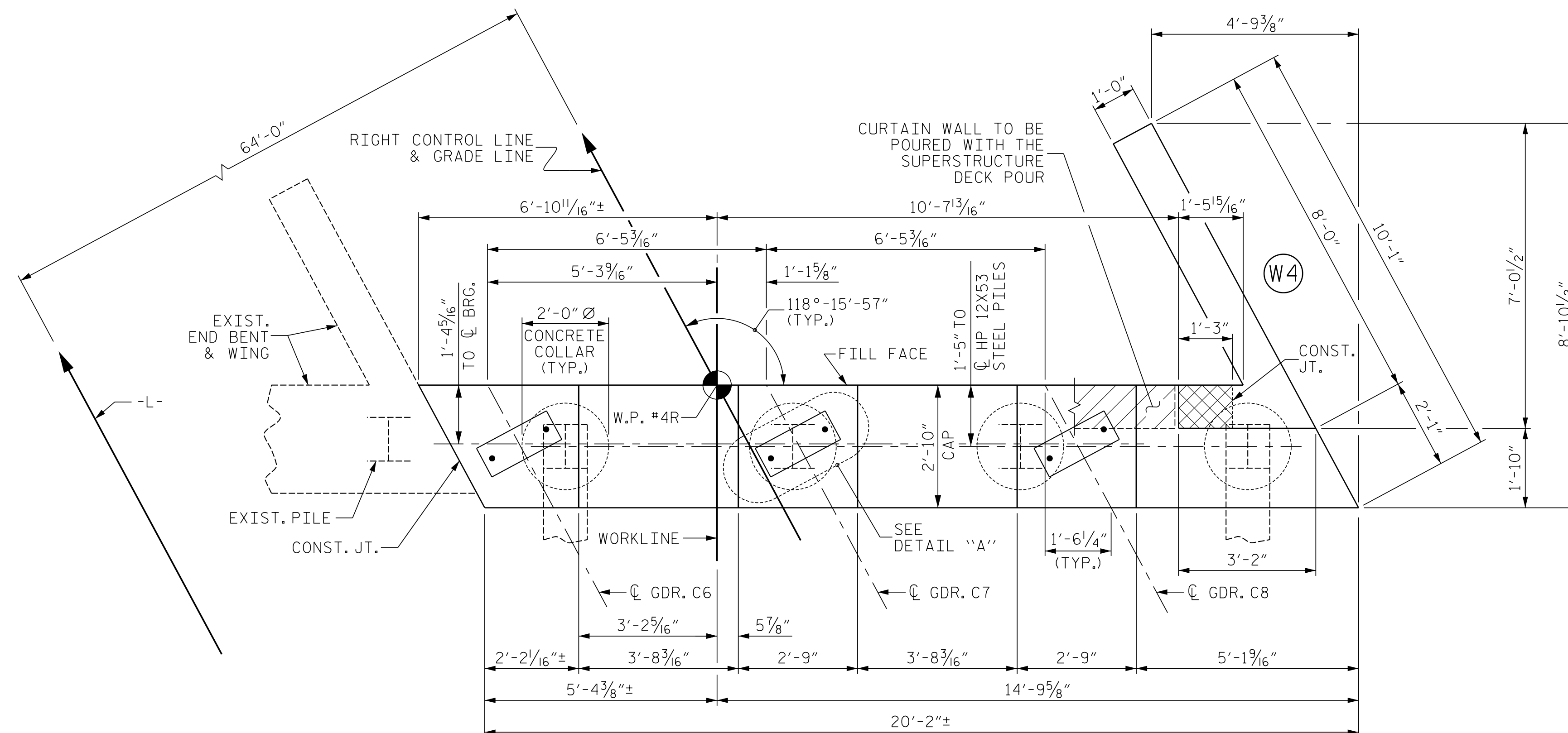
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 2

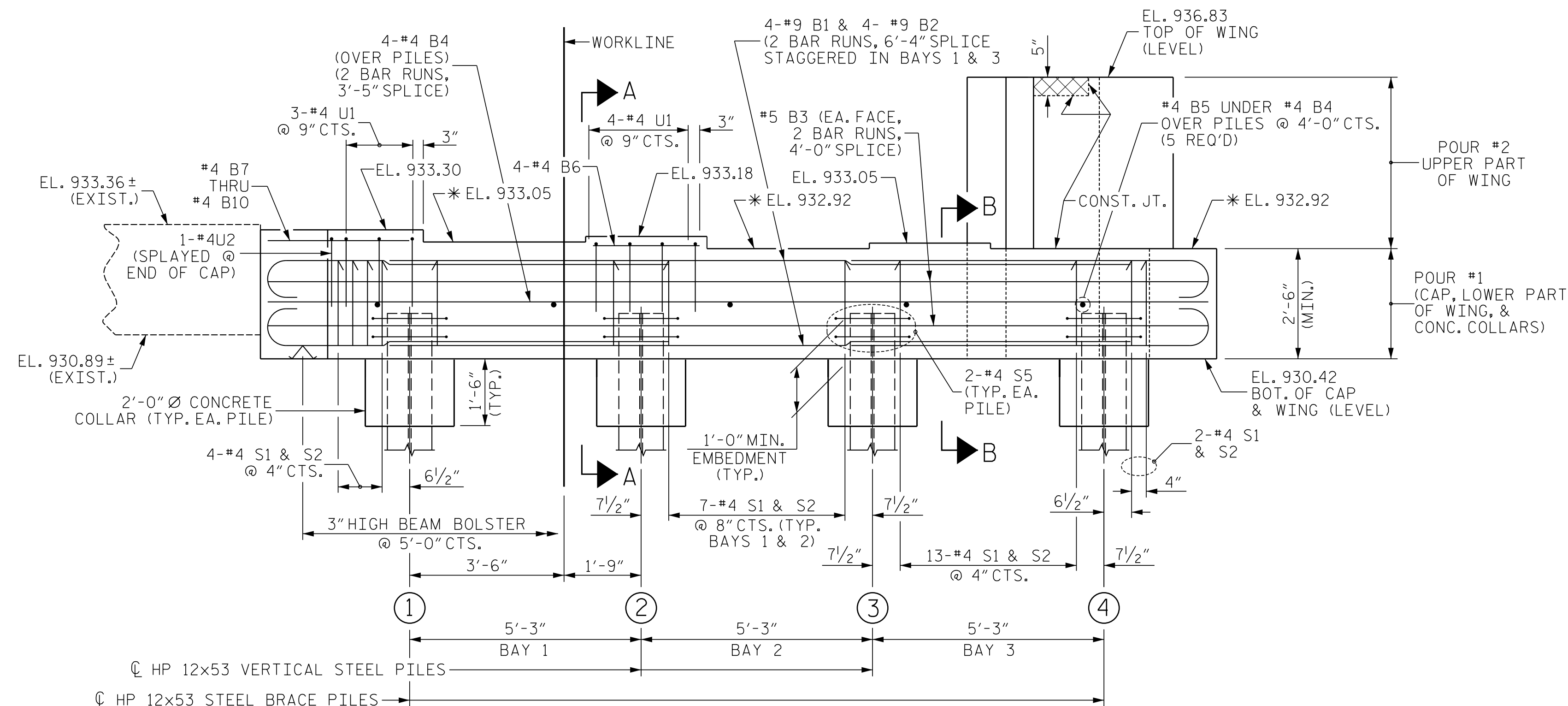
RIGHT WIDENING

REVISIONS						SHEET NO. S2-64
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024



PLAN



ELEVATION

FOR SECTIONS A-A & B-B, SEE SHEET 3 OF 3.

NOTES

STIRRUPS AND "U" BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

EPOXY PROTECTIVE COATING IS REQUIRED ON TOP OF THE END BENT CAP. DO NOT EPOXY COAT IN THE AREA OF THE CURTAIN WALL, WHICH WILL BE POURED WITH THE SUPERSTRUCTURE.

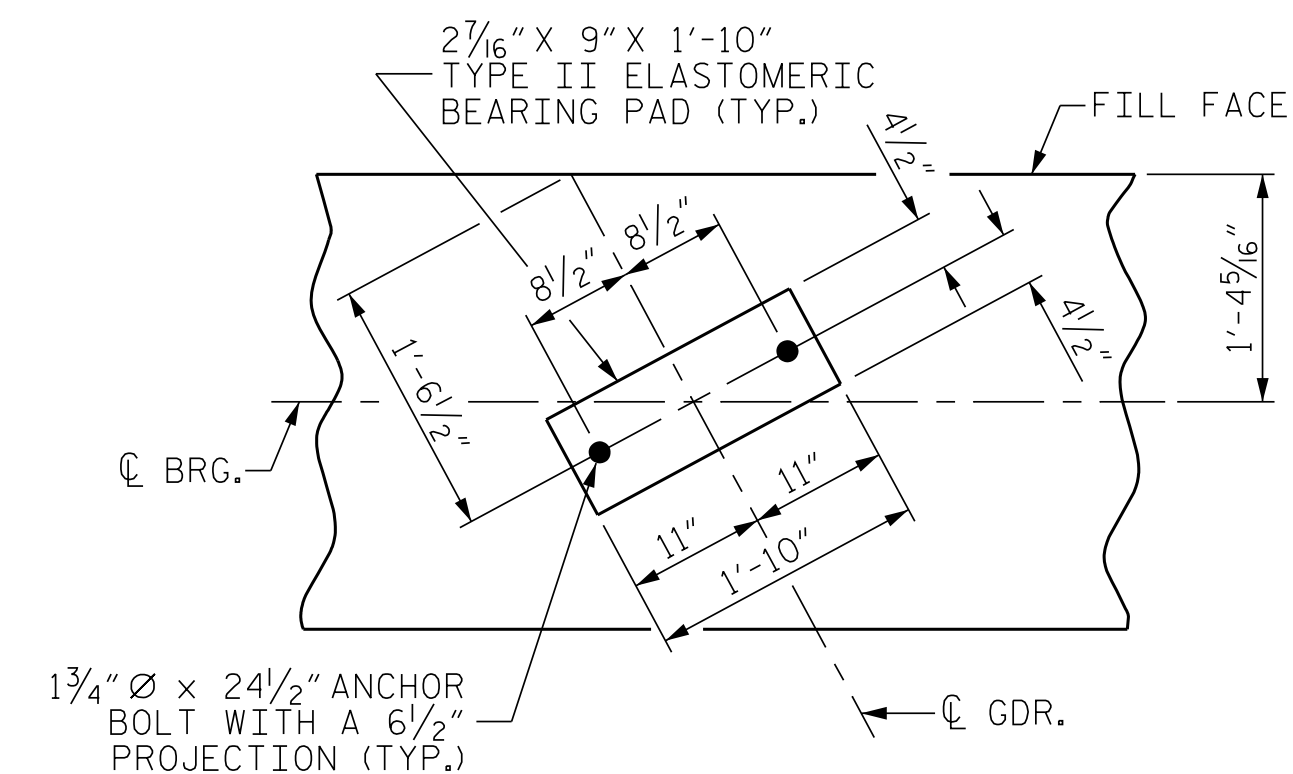
THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

* THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

FOR WING DETAILS, SEE SHEET 2 OF 3.

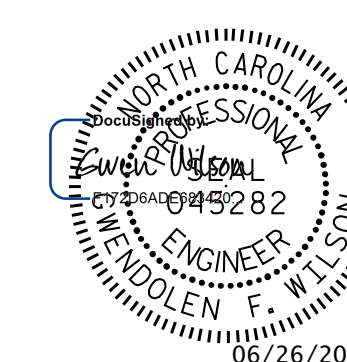
THE CONCRETE IN THE CROSS-HATCHED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND THE APPROACH SLAB HAS BEEN SAWED AND THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.



DETAIL "A"

PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-

SHEET 1 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2

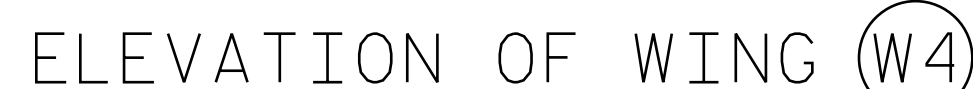
RIGHT WIDENING

REVISED SHEET NO. S2-65						
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 81
1			3			
2			4			

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License No: C-3097



SHEET 2 OF 3

SUBSTRUCTURE
END BENT 2

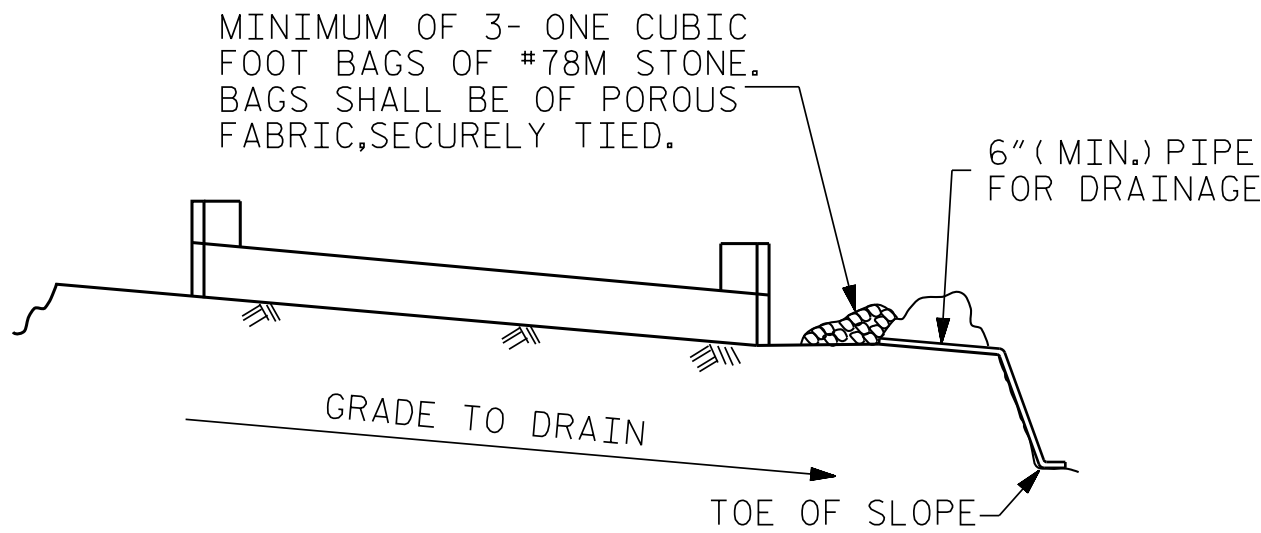
RIGHT WIDENING

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REVISIONS							SHEET NO. S2-66
C.	NO.	BY:	DATE:	NO.	BY:	DATE:	
	1			3			
	2			4			
							TOTAL SHEETS 81

\\c01\user\DW\p\N\jnt-jw-01\Documents\Pro\jnts\2019\B-00036-00\Design\Structures\Bridges\330340\Structures\2_PlaneWidening_Plans\A02_133_15880_330340_L2R3_067.dgn
DATE: 6/18/2025 TIME: 6:18/2025

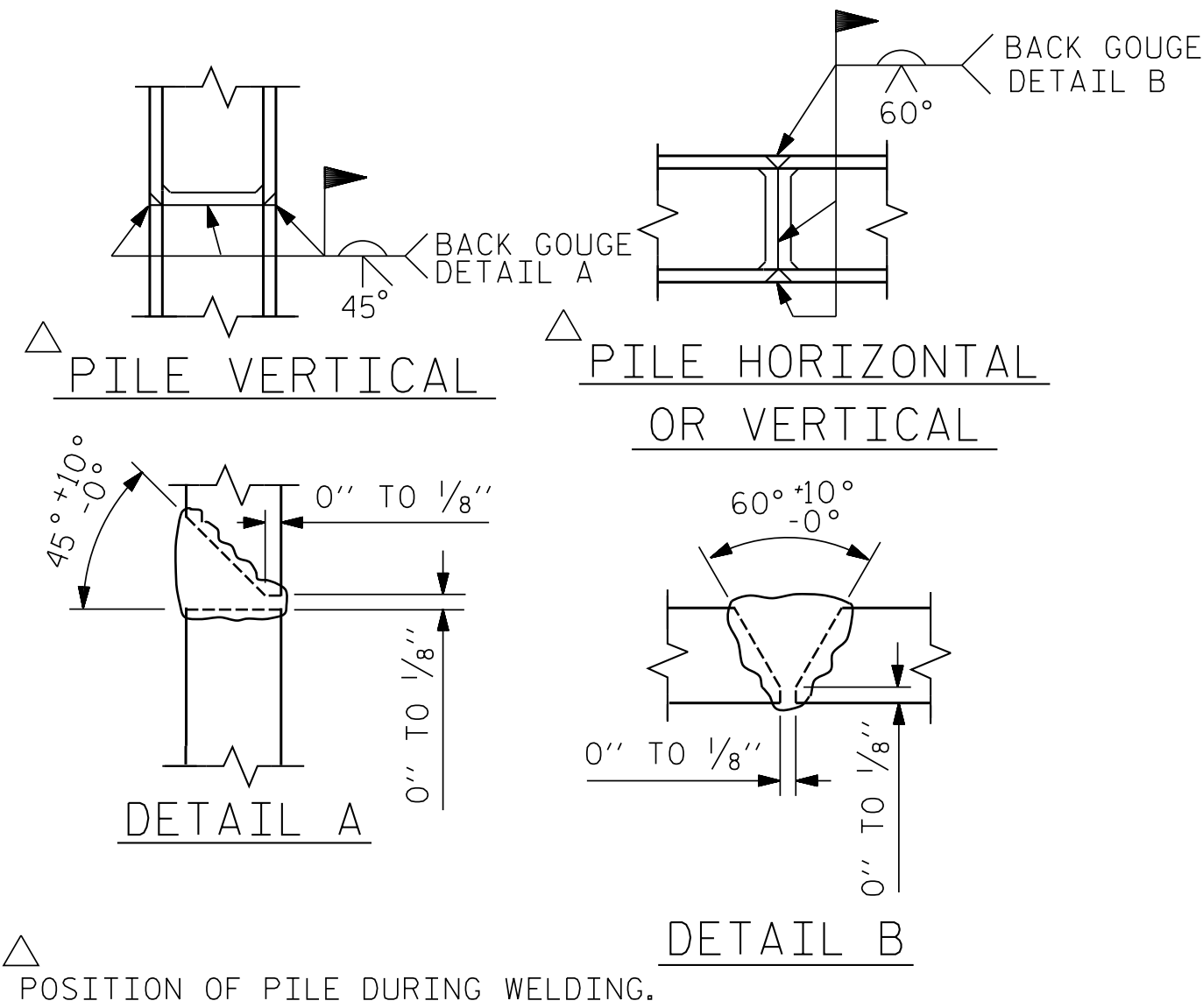


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

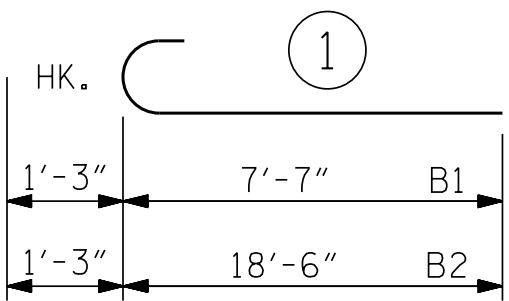
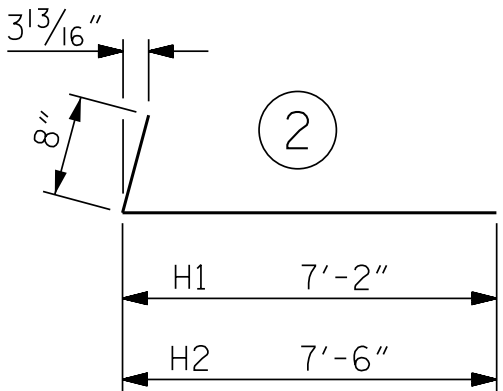
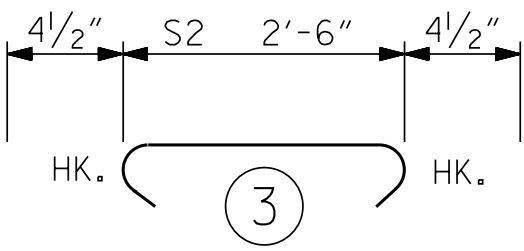
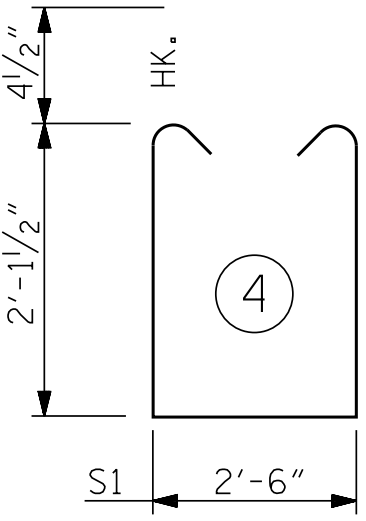
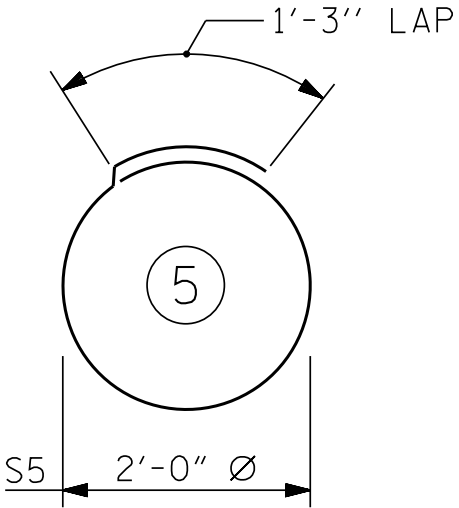
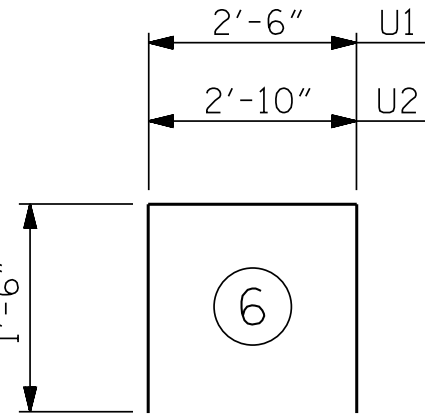
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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



PILE SPLICE DETAILS

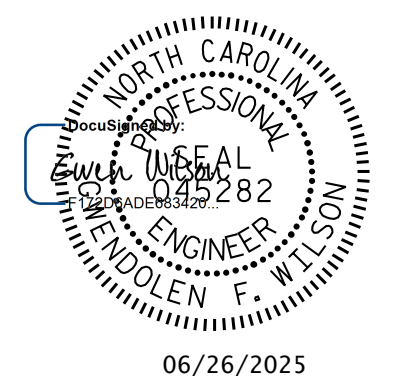
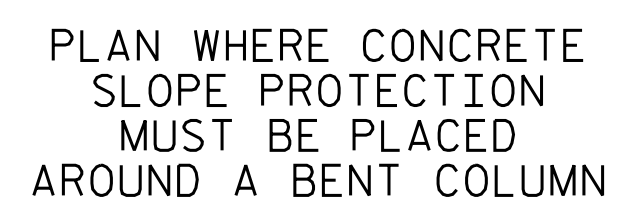
BAR TYPES			BILL OF MATERIAL								
     			RIGHT WIDENING								
			END BENT 2								
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	8'-10"	240	B1	8	#9	1	8'-10"	240
B2	8	#9	1	19'-9"	537	B2	8	#9	1	19'-9"	537
B3	8	#5	STR	11'-11"	99	B3	8	#5	STR	11'-11"	99
B4	8	#4	STR	11'-8"	62	B4	8	#4	STR	11'-8"	62
B5	5	#4	STR	2'-6"	8	B5	5	#4	STR	2'-6"	8
B6	4	#4	STR	2'-5"	6	B6	4	#4	STR	2'-5"	6
B7	1	#4	STR	1'-9"	1	B7	1	#4	STR	1'-9"	1
B8	1	#4	STR	2'-1"	1	B8	1	#4	STR	2'-1"	1
B9	1	#4	STR	2'-8"	2	B9	1	#4	STR	2'-8"	2
B10	1	#4	STR	3'-0"	2	B10	1	#4	STR	3'-0"	2
H1	7	#4	2	7'-10"	37	H1	7	#4	2	7'-10"	37
H2	7	#4	2	8'-2"	38	H2	7	#4	2	8'-2"	38
K1	4	#4	STR	2'-8"	7	K1	4	#4	STR	2'-8"	7
K2	4	#4	STR	2'-4"	6	K2	4	#4	STR	2'-4"	6
S1	33	#4	4	7'-6"	165	S1	33	#4	4	7'-6"	165
S2	33	#4	3	3'-3"	72	S2	33	#4	3	3'-3"	72
S5	8	#4	5	7'-7"	41	S5	8	#4	5	7'-7"	41
U1	7	#4	6	5'-6"	26	U1	7	#4	6	5'-6"	26
U2	1	#4	6	5'-10"	4	U2	1	#4	6	5'-10"	4
V1	22	#4	STR	6'-0"	88	V1	22	#4	STR	6'-0"	88
REINFORCING STEEL						1442 LBS.					
CLASS A CONCRETE BREAKDOWN											
POUR #1 CAP, LOWER PART OF WING & COLLARS						6.9 C.Y.					
POUR #2 UPPER PART OF WING						1.4 C.Y.					
TOTAL CLASS A CONCRETE						8.3 C.Y.					

* QUANTITY SHOWN IS BASED ON 5' POURS.

SLOPE PROTECTION SHALL CONSIST OF 4" POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS "B". THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W14 X W14.60" WIDE. SLOPE PROTECTION SHALL BE POURED IN 5' STRIPS AS SHOWN IN THE "POURING DETAIL" WITH 2'-0" LONG #4 BARS PLACED ALONG THE SLOPE BETWEEN STRIPS AT 1'-6" MAXIMUM SPACING. SLOPE PROTECTION MAY BE POURED IN ALTERNATE 4' AND 5' STRIPS AS SHOWN IN THE "OPTIONAL POURING DETAIL" WITH ADJACENT RUNS OF WELDED WIRE FABRIC LAPPING AT LEAST 6". THE COST OF THE WELDED WIRE FABRIC AND #4 BARS, IF USED, SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR SLOPE PROTECTION.

EXISTING SLOPE PROTECTION TO REMAIN, AND ANY THAT WAS DAMAGED DURING CONSTRUCTION, SHALL BE REPLACED.

BERM AND SLOPE PROTECTION MAY BE ADJUSTED SLIGHTLY AS NECESSARY IN ORDER TO MATCH THE EXISTING SITE CONDITIONS, THE CONTRACTOR SHALL PROVIDE AS SMOOTH A TRANSITION AS POSSIBLE BETWEEN THE EXISTING AND PROPOSED SLOPE AS DIRECTED BY THE ENGINEER.



PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SLOPE PROTECTION DETAILS

LEFT WIDENING

REVISIONS						SHEET NO. S2-68
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

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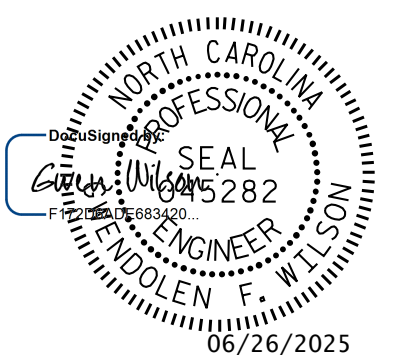
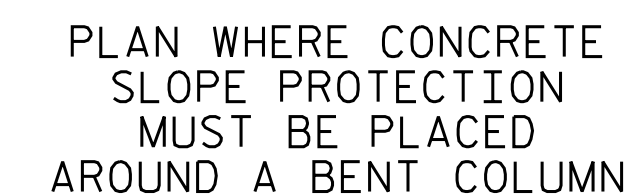
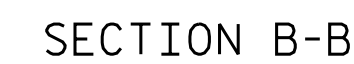
DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGB. OF RECORD: STC	DATE: 09/2024

* QUANTITY SHOWN IS BASED ON 5' POURS.

SLOPE PROTECTION SHALL CONSIST OF 4" POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS "B". THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W14 X W14.60" WIDE. SLOPE PROTECTION SHALL BE POURED IN 5' STRIPS AS SHOWN IN THE "POURING DETAIL" WITH 2'-0" LONG #4 BARS PLACED ALONG THE SLOPE BETWEEN STRIPS AT 1'-6" MAXIMUM SPACING. SLOPE PROTECTION MAY BE POURED IN ALTERNATE 4' AND 5' STRIPS AS SHOWN IN THE "OPTIONAL POURING DETAIL" WITH ADJACENT RUNS OF WELDED WIRE FABRIC LAPPING AT LEAST 6". THE COST OF THE WELDED WIRE FABRIC AND #4 BARS, IF USED, SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR SLOPE PROTECTION.

BERM AND SLOPE PROTECTION MAY BE ADJUSTED SLIGHTLY AS NECESSARY IN ORDER TO MATCH THE EXISTING SITE CONDITIONS, THE CONTRACTOR SHALL PROVIDE AS SMOOTH A TRANSITION AS POSSIBLE BETWEEN THE EXISTING AND PROPOSED SLOPE AS DIRECTED BY THE ENGINEER.

GENERAL NOTES



SHEET 2 OF 2

SLOPE PROTECTION DETAILS

RIGHT WIDENING

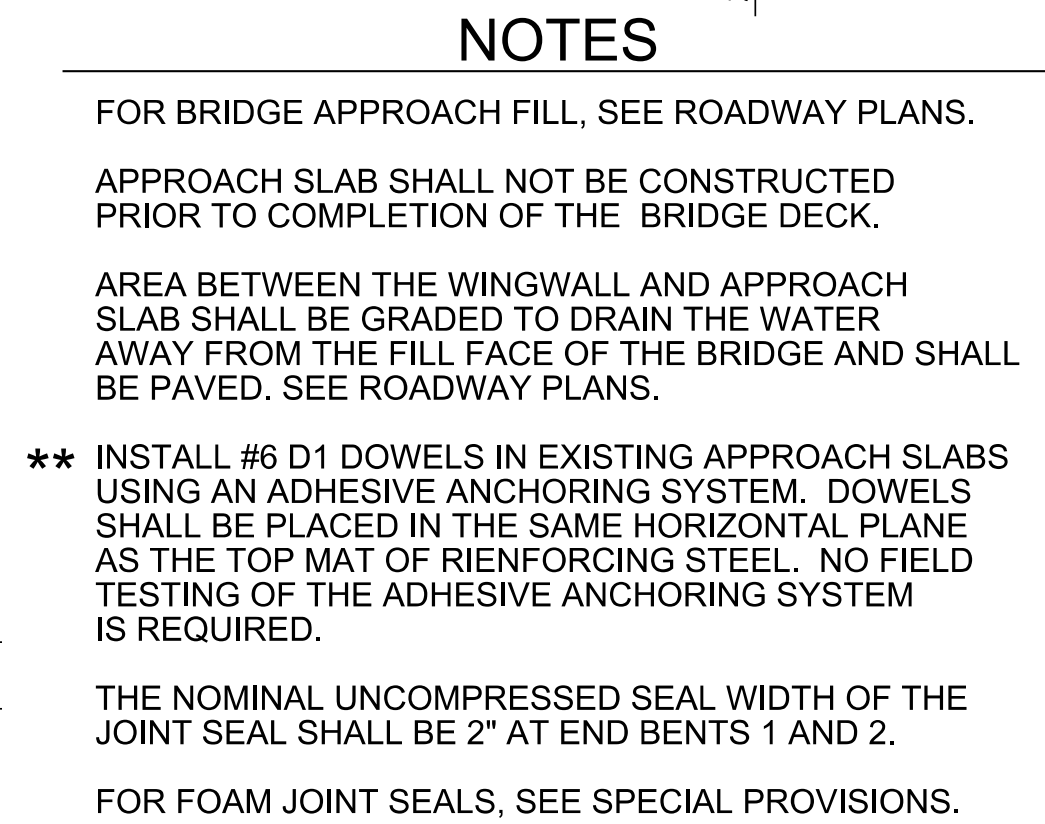
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGB. OF RECORD: STC	DATE: 09/2024

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1" POLYMER CONC. (PC) OVERLAY

8"

4"

1'-2"

Diagram illustrating the curb and approach slab. The curb width is labeled as 3'-1 1/2". The approach slab is shown below the curb.

PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-

SHEET 1 OF 3



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

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REVISIONS							SHEET NO. S2-70
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 81	
1			3				
2			4				

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT LEFT WIDENING

DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024



FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

APPROACH SLAB SHALL NOT BE CONSTRUCTED
PRIOR TO COMPLETION OF THE BRIDGE DECK.

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

**** INSTALL #6 D1 DOWELS IN EXISTING APPROACH SLABS USING AN ADHESIVE ANCHORING SYSTEM. DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP MAT OF REINFORCING STEEL. NO FIELD TESTING OF THE ADHESIVE ANCHORING SYSTEM IS REQUIRED.**

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE JOINT SEAL SHALL BE 2" AT END BENTS 1 AND 2.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.



1" POLYMER CONC. (PC) OVERLAY

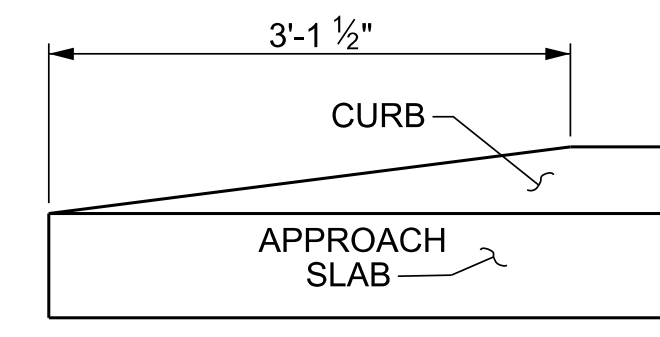
8"

4"

1'-2"

SECTION N-N

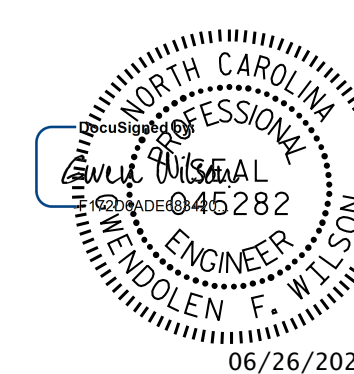
SPlice LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	1'-11"	1'-7"
#5	2'-5"	2'-0"
#6	3'-7"	2'-5"



END OF CURB WITHOUT
SHOULDER BERM GUTTER

PROJECT NO. I-5880
FORSYTH COUNTY
 STATION: 39+32.73 -L-

SHEET 2 OF 3



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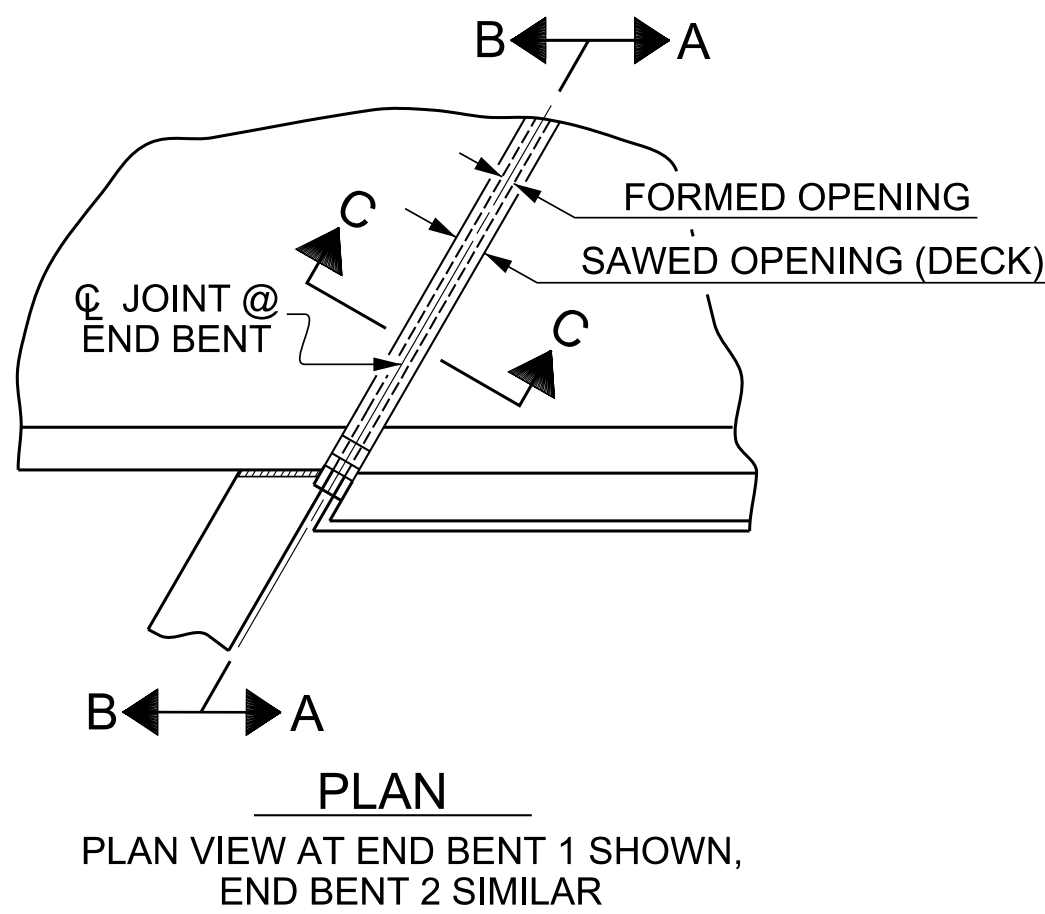
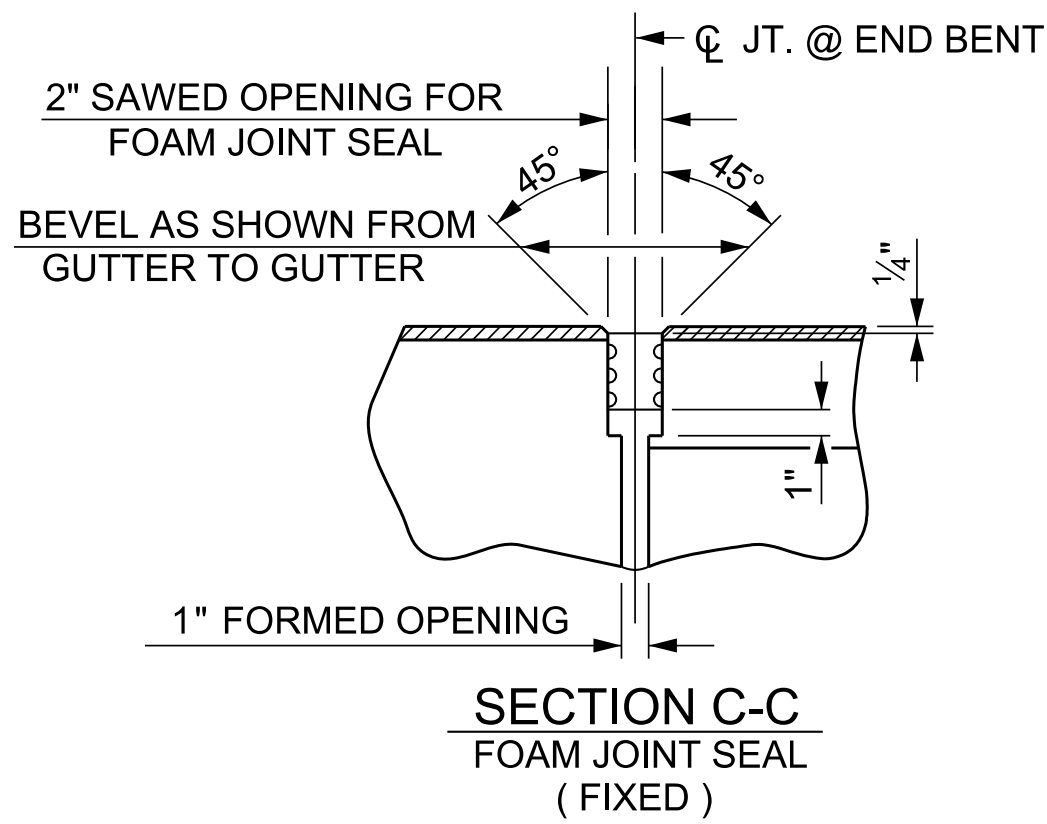
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REVISIONS							SHEET NO. S2-71
c.	NO.	BY:	DATE:	NO.	BY:	DATE:	
	1			3			
	2			4			
							TOTAL SHEETS 81

STD. NO. BAS2

DWN. BY: WDC	DATE: 09/2024
CHKD. BY: GFW	DATE: 11/2024
DES. EGR. OF RECORD: STC	DATE: 09/2024

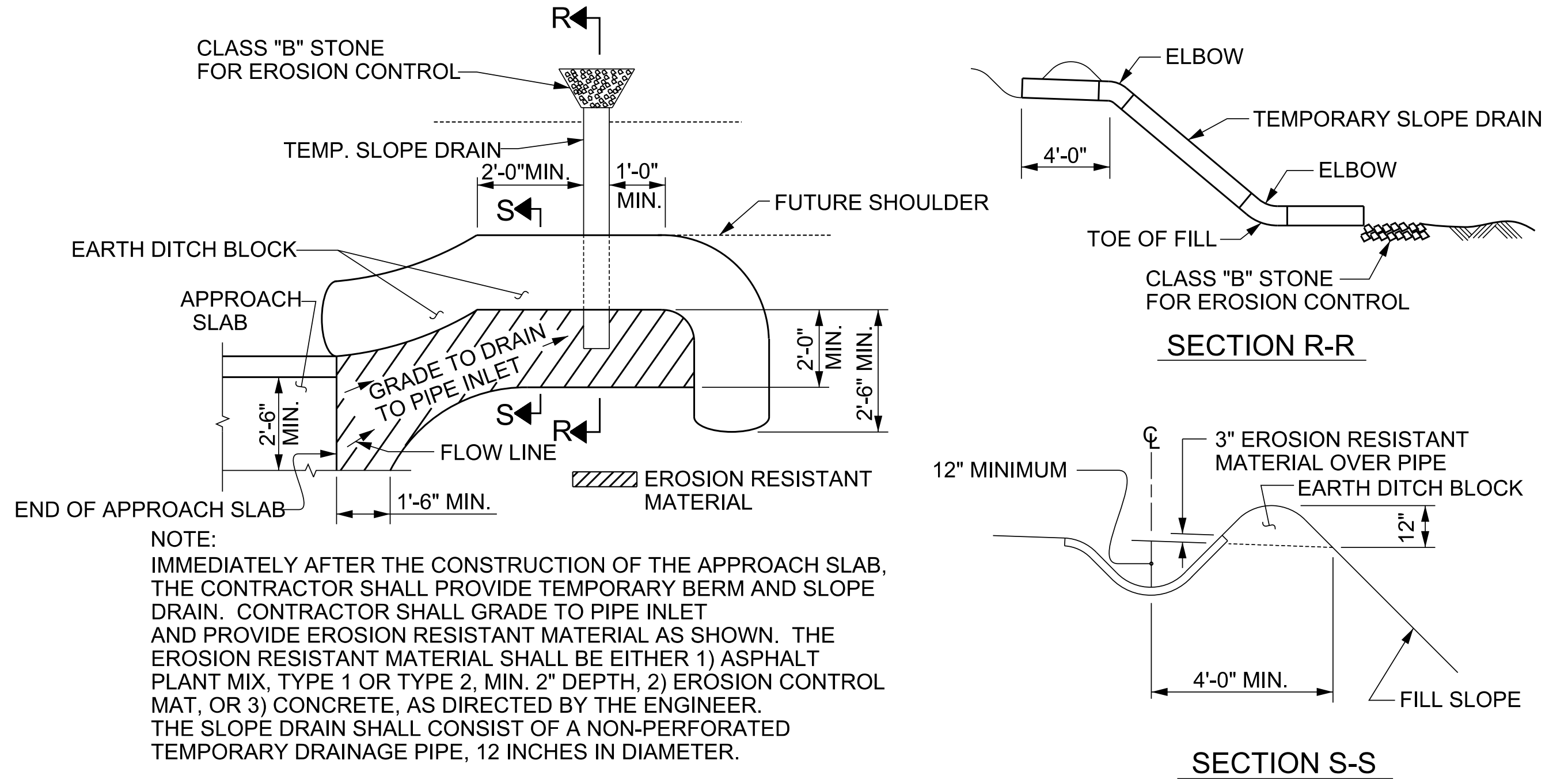
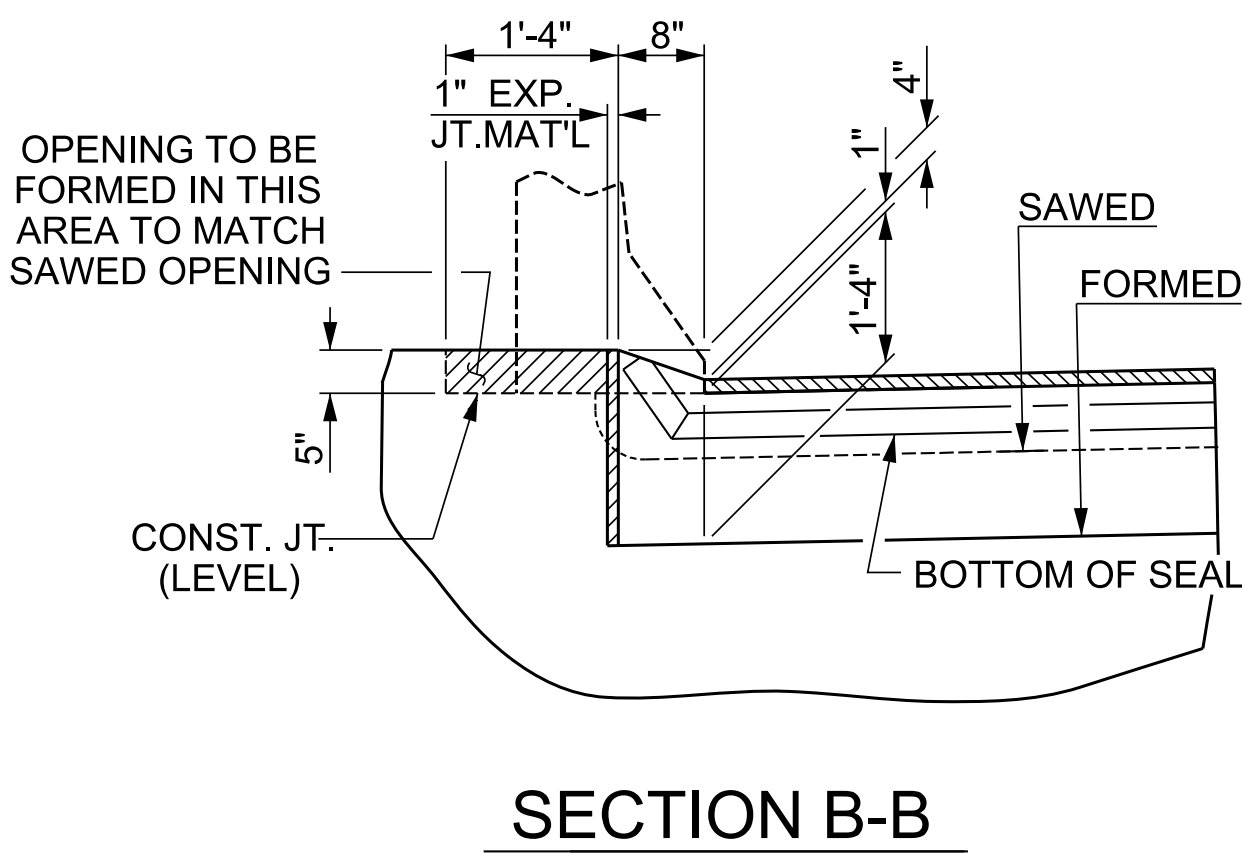
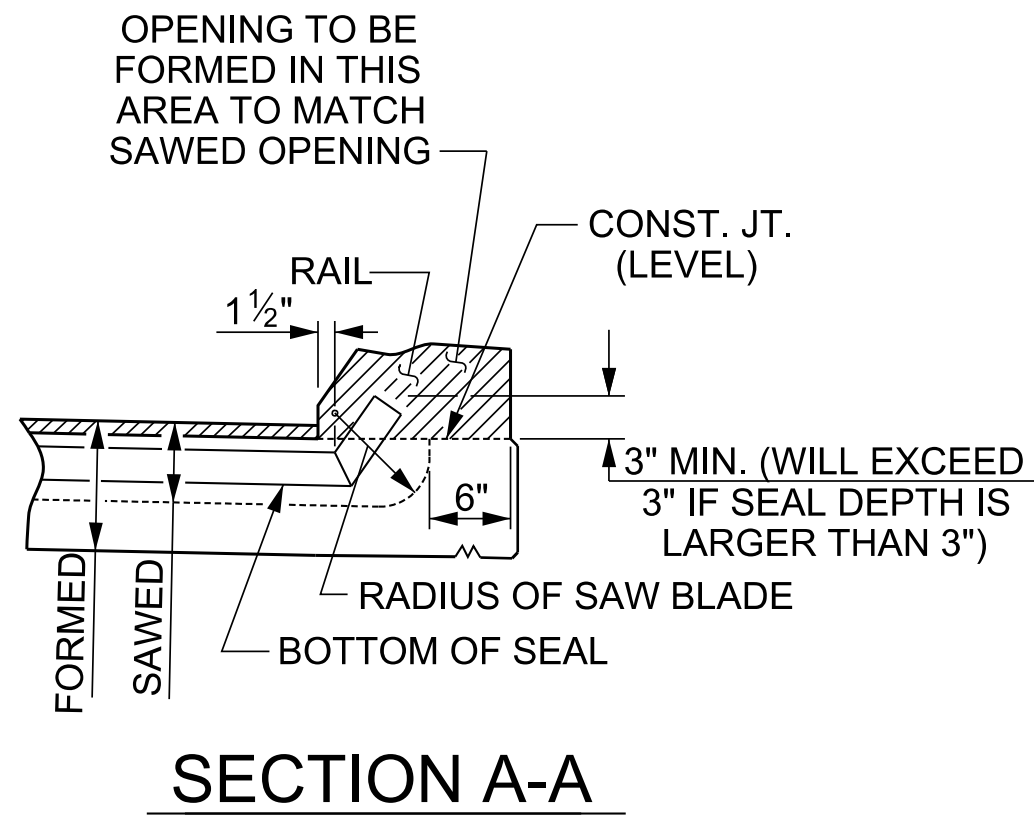
DRAWN BY : EEM 3/95	REV. 12/17	MAA/THC
CHECKED BY : VAP 3/95	REV. 06/19	BNB/THC
	REV. 07/23	BNB/SNM



JOINT SEAL DETAILS @ END BENT

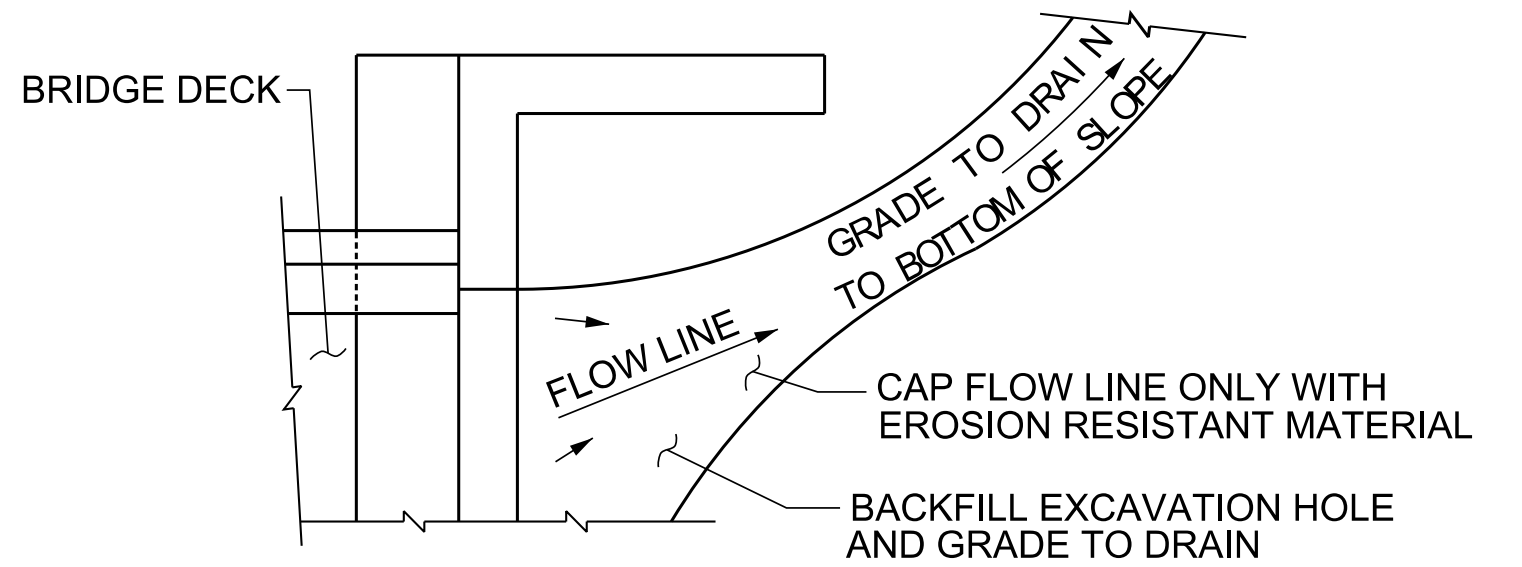
FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE BARRIER RAIL.



TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

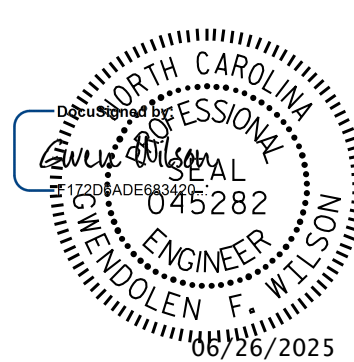


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

PROJECT NO. I-5880
FORSYTH COUNTY
STATION: 39+32.73 -L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

BRIDGE APPROACH
SLAB DETAILS

LEFT & RIGHT WIDENING

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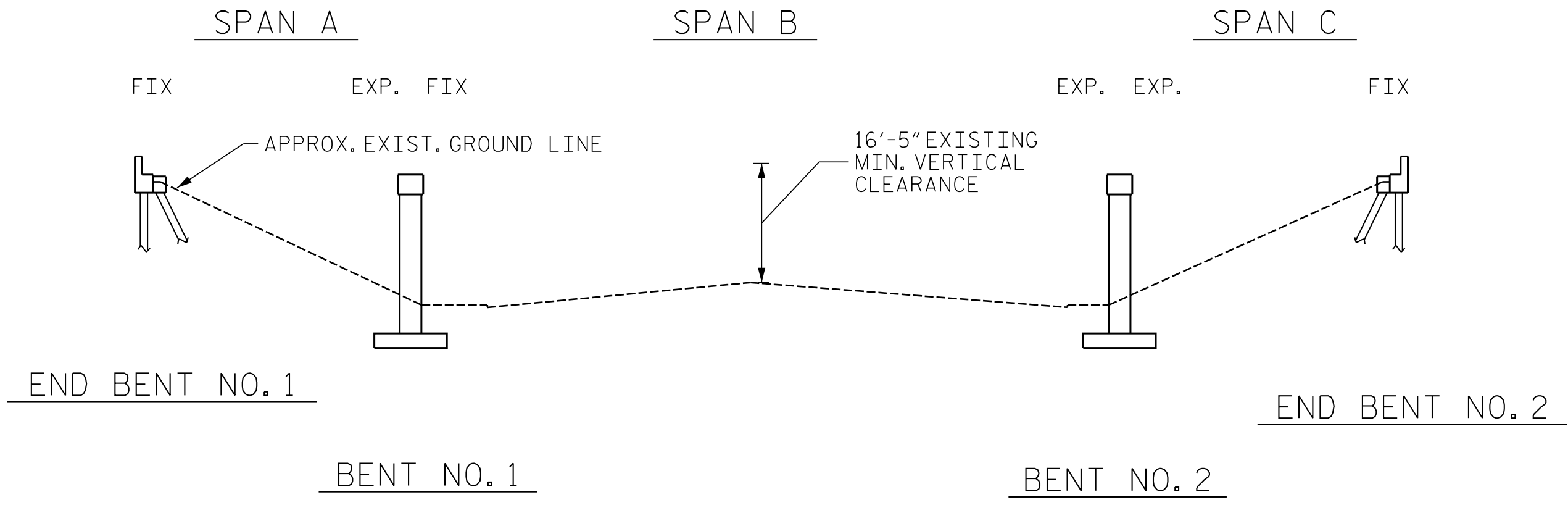


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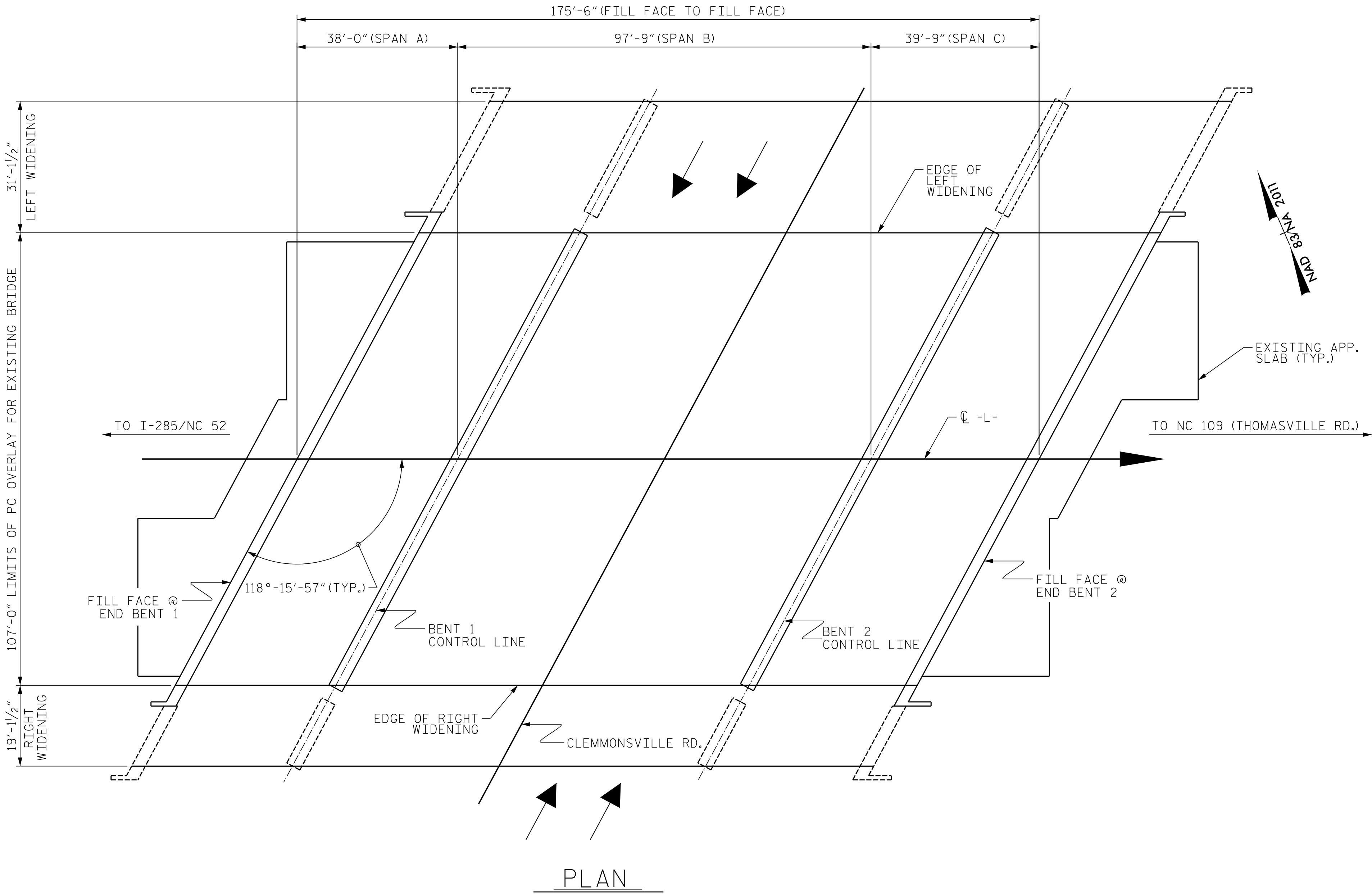
REVISIONS						SHEET NO. S2-72
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

STD. BAS4

DWN. BY: WDC	DATE: 09/2024	DRAWN BY : FCJ	11/88	REV. 6/13	MAA/GM
CHKD. BY: CFW	DATE: 11/2024	CHECKED BY : ARB	11/88	REV. 12/17	MAA/THC
DES. EGR. OF RECORD: STC	DATE: 09/2024			REV. 5/18	MAA/THC



SECTION ALONG CL BRIDGE
(SECTION @ END BENTS & BENTS ARE TAKEN AT RIGHT ANGLES)



PLAN

NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND ROUTINE INSPECTION REPORT DATED 8/16/2022.

BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

PARTIALLY REMOVE TOP OF BRIDGE DECK AND APPROACH SLAB CONCRETE BY SCARIFICATION AND SHOTBLASTING METHODS.

OVERLAY PREPARED TOP OF BRIDGE DECK AND APPROACH SLABS WITH POLYMER CONCRETE (PC).

GROOVE POLYMER CONCRETE BRIDGE DECK.

REMOVE EXISTING JOINT MATERIAL AT BENTS AND END BENTS AND INSTALL FOAM JOINTS.

INJECT CONCRETE CRACKS WITH EPOXY RESIN.

REMOVE UNSOUND CONCRETE AND PROPERLY PREPARE EXISTING END BENT AND BENT AREAS FOR SHOTCRETE AND CONCRETE REPAIRS.

PROPERLY PREPARE SPALLED AREAS IN EXISTING END BENT AND BENTS AND PERFORM SHOTCRETE AND CONCRETE REPAIRS.

REMOVE DEBRIS FROM TOP OF EXISTING END BENT AND BENT CAPS AND APPLY EPOXY COATING.

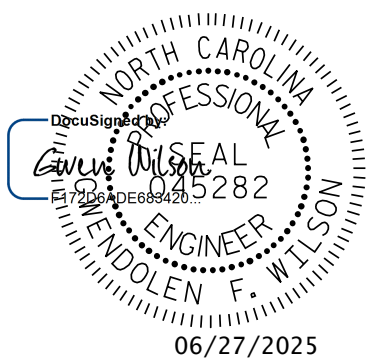
CLEAN AND PAINT WEATHERING STEEL AT THE INTERIOR BENTS.

PROJECT NO. I-5880
FORSYTH COUNTY
BRIDGE: 330340

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER
CLEMMONSVILLE RD. ON
I-40/US 311 BETWEEN
I-285/NC 52 AND NC 109
(THOMASVILLE RD.)



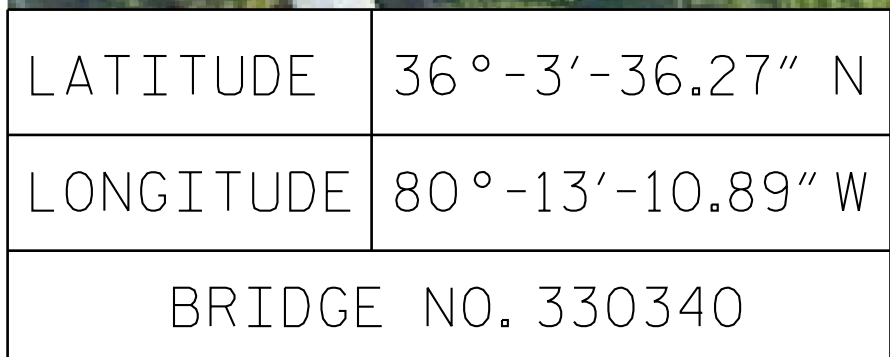
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 81
2			4			

DWN. BY: BC DATE: 06/2024
CHKD. BY: GFW DATE: 10/2024



INFORMATION INDICATED ON THE LOCATION SKETCH SHALL BE CONSIDERED GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL CONFIRM, THROUGH OTHER SOURCES, SPECIFIC INFORMATION REGARDING BRIDGES, ROADWAYS, UTILITIES, THE SURROUNDING AREA, AND ANY OTHER ASPECTS THAT MAY BE NECESSARY TO PERFORM AND COMPLETE THE PROJECT.

TOTAL BILL OF MATERIAL					
POLYESTER POLYMER CONCRETE MATERIALS	EPOXY COATING	CONCRETE DECK REPAIR FOR POLYMER CONCRETE OVERLAY	PLACING & FINISHING OF POLYMER CONCRETE OVERLAY	SCARIFYING BRIDGE DECK	SHOTBLASTING BRIDGE DECK
CU. YD.	SQ. FT.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.
67.9	1358.0	54.3	2443.4	2443.4	2443.4

DWN. BY: BC	DATE: 06/2024
CHKD. BY: GFW	DATE: 10/2024

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

ALL REFERENCES IN THE PLANS AND SPECIAL PROVISIONS TO THE STANDARD SPECS ARE TO THE 2024 "NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES". ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECK.

FOR CONCRETE DECK REPAIR FOR POLYMER CONCRETE OVERLAY, PLACING AND FINISHING POLYMER CONCRETE OVERLAY, GROOVING BRIDGE FLOORS, POLYESTER POLYMER CONCRETE MATERIALS, AND EPOXY POLYMER CONCRETE MATERIALS, SEE "POLYMER CONCRETE BRIDGE DECK OVERLAY" SPECIAL PROVISION.

FOR SCARIFYING BRIDGE DECK, SHOTBLASTING OF BRIDGE DECK, AND CLASS II AND CLASS III SURFACE PREPARATION, SEE "OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE" SPECIAL PROVISION.

THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK.

FOR CLEANING AND PAINTING OF EXISTING WEATHERING STEEL, POLLUTION CONTROL AND PAINTING CONTAINMENT, SEE "PAINTING EXISTING WEATHERING STEEL STRUCTURE" SPECIAL PROVISION.

LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

WORK ON THE BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL BELOW, EXCEPT WHERE THE CONTRACTOR PLANS TO USE PLATFORMS, NETS, SCREENS OR OTHER PROTECTIVE DEVICES TO CATCH THE MATERIAL. THE CONTRACTOR SHALL SUBMIT PLANS FOR CONSTRUCTION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS AND THE PROJECT SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT THE EXISTING STRUCTURE WHICH IS TO REMAIN IN PLACE WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY PART OF THE EXISTING STRUCTURE WHICH IS TO REMAIN IN PLACE, THE DAMAGED AREA SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER AT NO ADDITIONAL COST TO THE DEPARTMENT.

THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON THE DIFFERENCES BETWEEN WHAT IS SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

FOR CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE ELSEWHERE IN THE CONTRACT DOCUMENTS.

FOR SUBMITTAL OF WORKING DRAWINGS, FALSEWORK AND FORMWORK, GROUT FOR STRUCTURES, CRANE SAFETY, VOLUMETRIC MIXER, CONCRETE REPAIRS, SHOTCRETE REPAIRS, EPOXY RESIN INJECTION, AND FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

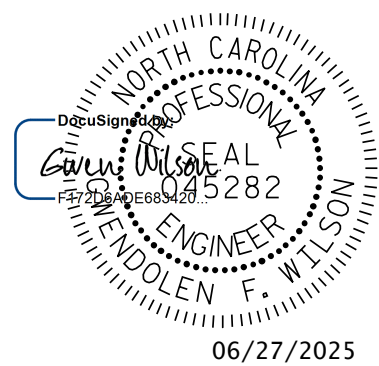
AT THE TIME OF PREPARATION OF THESE PLANS, IT WAS NOT ANTICIPATED THAT ITEMS LISTED BELOW WOULD BE REQUIRED. HOWEVER, IT MAY BE DETERMINED IN THE FIELD THAT THESE ITEMS, OR OTHER WORK WILL BE NECESSARY TO COMPLETE THE INTENDED BRIDGE PRESERVATION/REHABILITATION WORK. THE CONTRACTOR SHALL BE PREPARED TO PERFORM SUCH WORK IN A TIMELY MANNER, AS DETERMINED IN THE FIELD. SUCH WORK SHALL BE CONSIDERED EXTRA WORK AND SHALL BE ADDRESSED AS PER ARTICLE 104-7 OF THE STANDARD SPECIFICATIONS. PROJECT SPECIAL PROVISIONS THAT OUTLINE THE REQUIREMENTS FOR THESE OPTIONAL WORK ITEMS HAVE BEEN PROVIDED IN THE PROJECT DOCUMENTS, BUT NO QUANTITIES HAVE BEEN ESTIMATED. QUANTITIES, QUANTITIES, AND COSTS WILL BE ESTABLISHED, AS REQUIRED, IF EXTRA WORK IS ENCOUNTERED.

UNANTICIPATED ITEMS:

ITEM NO.	DESCRIPTION	UNIT
1	CLASS III SURFACE PREPARATION	SQ. YDS.
2	VOLUMETRIC MIXER	LUMP SUM
3	CONCRETE REPAIRS	CU. FT.

PROJECT NO. I-5880
FORSYTH COUNTY
 BRIDGE: 330340

SHEET 2 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER
CLEMMONSVILLE RD. ON
I-40/US 311 BETWEEN
I-285/NC 52 AND NC 109
(THOMASVILLE RD.)

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1 250' NC 52 AND NC 109
(THOMASVILLE RD.)

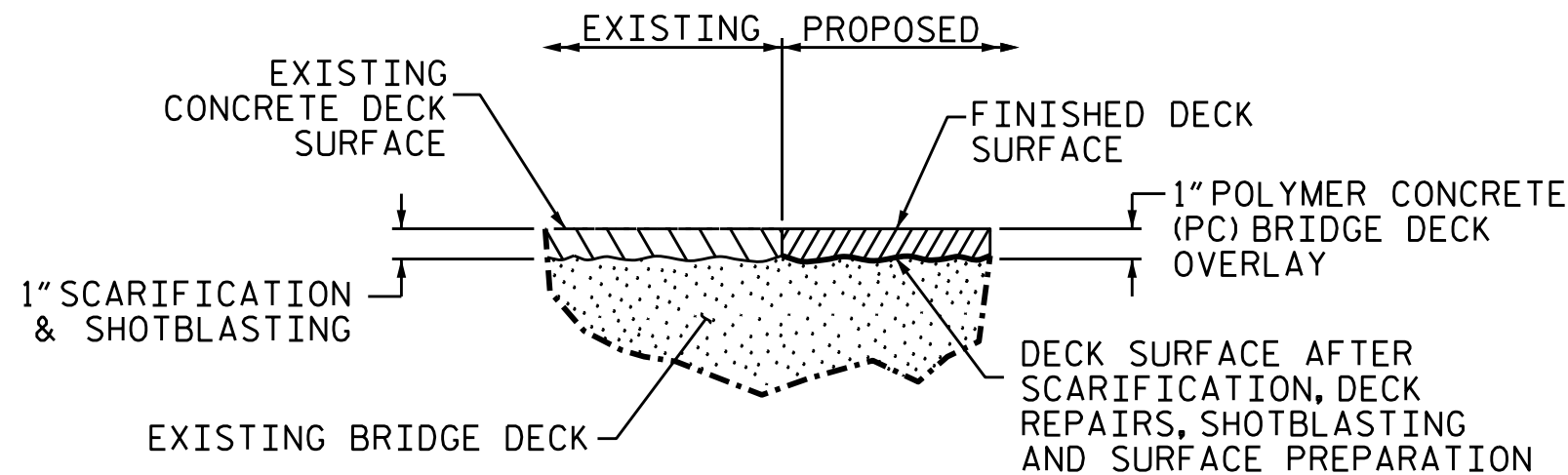
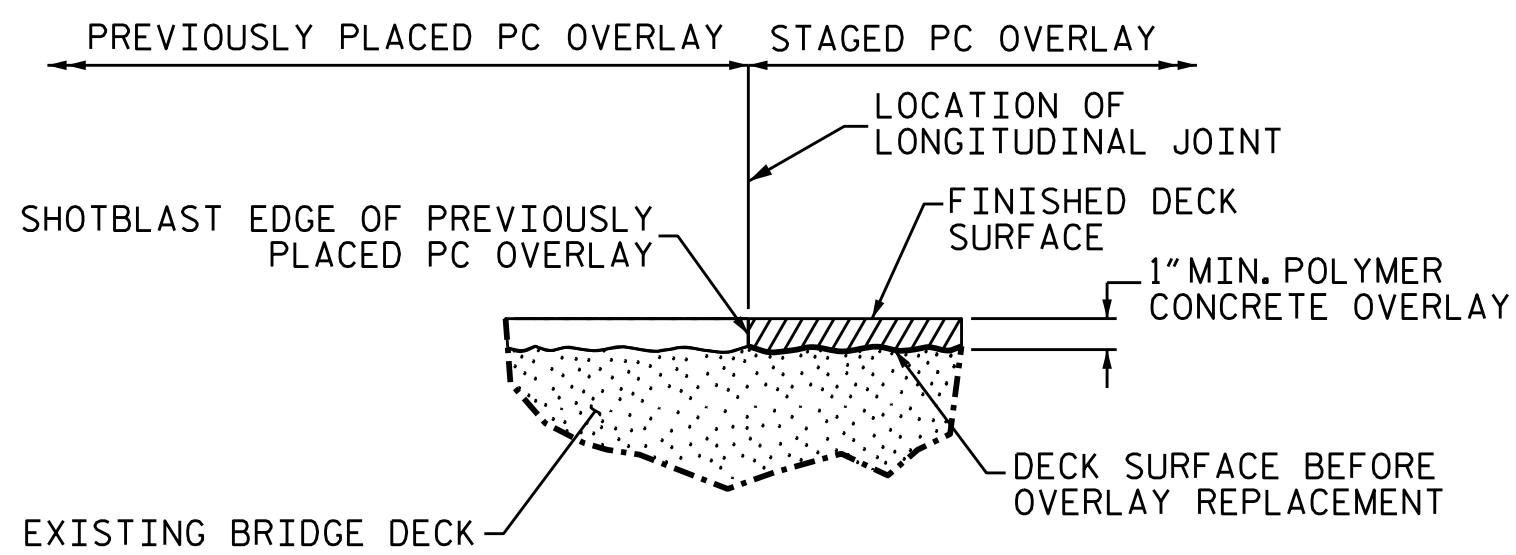
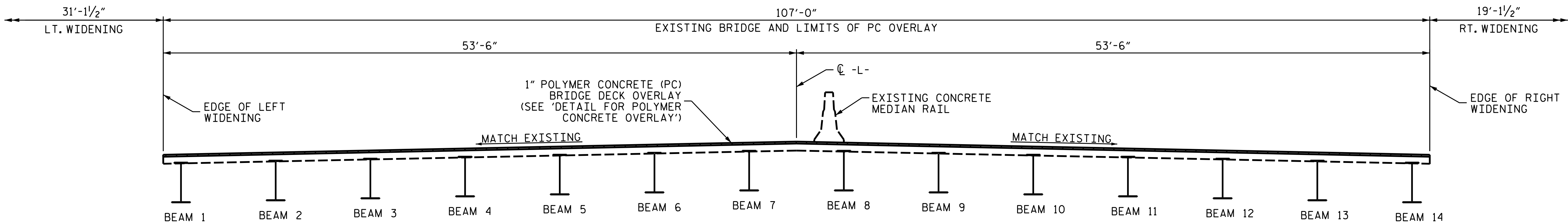
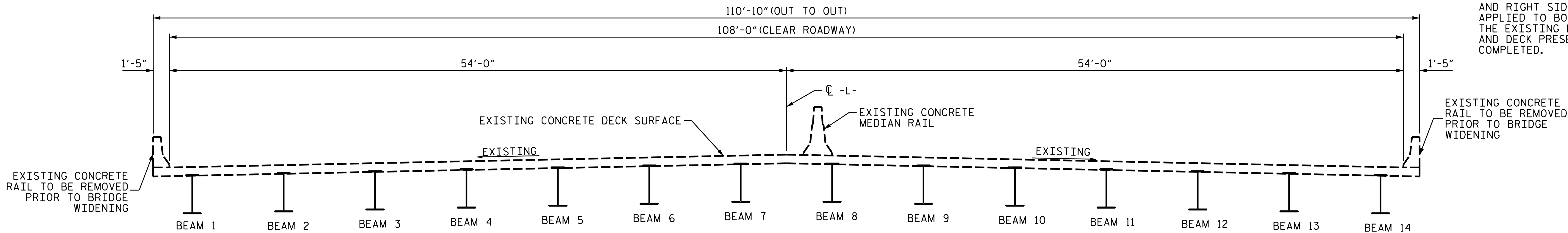
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REVISIONS						SHEET NO. 52-74
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 81
1			3			
2			4			

NOTES

SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND POLYMER CONCRETE PLACEMENT.

BRIDGE 340 WILL BE WIDENED ON BOTH THE LEFT AND RIGHT SIDES. THE PC OVERLAY WILL BE APPLIED TO BOTH THE WIDENED PORTIONS AND THE EXISTING DECK ONLY AFTER THE WIDENING AND DECK PRESERVATION WORK ARE FULLY COMPLETED.



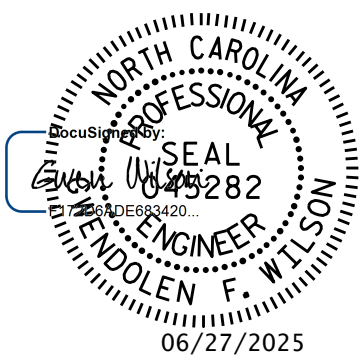
DETAIL FOR POLYMER CONCRETE OVERLAY

FINISHED SURFACE ELEVATION SHALL MATCH EXISTING CONCRETE SURFACE ELEVATION. ACTUAL THICKNESS OF PC OVERLAY MAY VARY.

PROJECT NO. I-5880
FORSYTH COUNTY
BRIDGE: 330340

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION
AND SURFACE
PREPARATION DETAILS



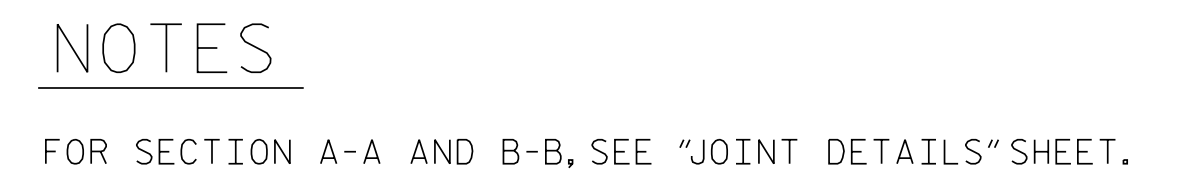
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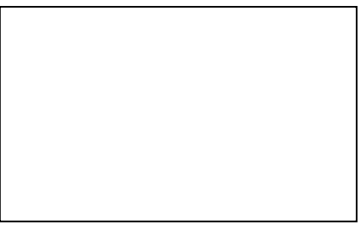
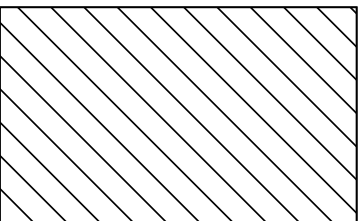
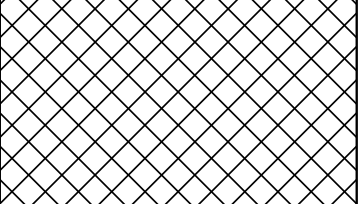


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1			3			TOTAL SHEETS 81
2			4			

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DATE: 06/2024
DATE: 10/2024



	SCARIFICATION, SHOTBLASTING, AND POLYMER CONCRETE OVERLAY
	CONCRETE BARRIER REPAIR
	CLASS II SURFACE PREP

PROJECT NO. I-5880
FORSYTH COUNTY
 BRIDGE: 330340

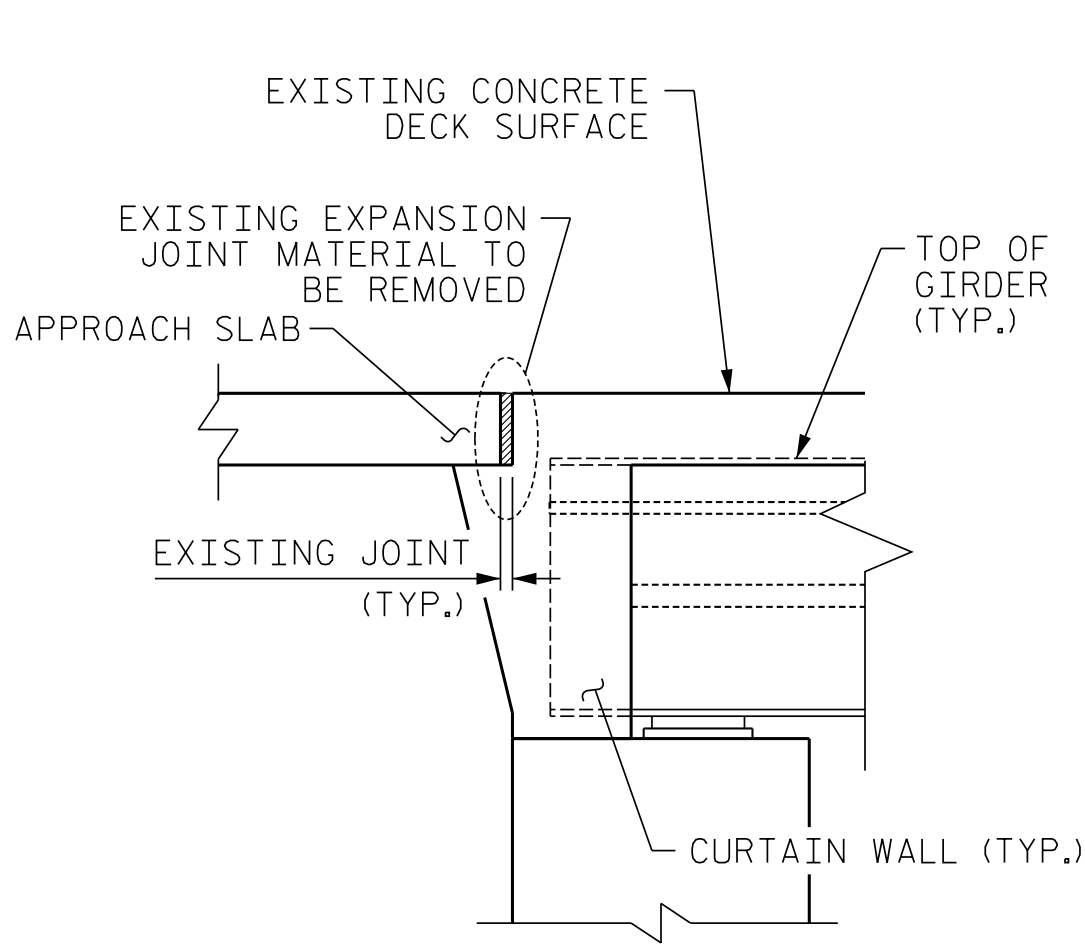
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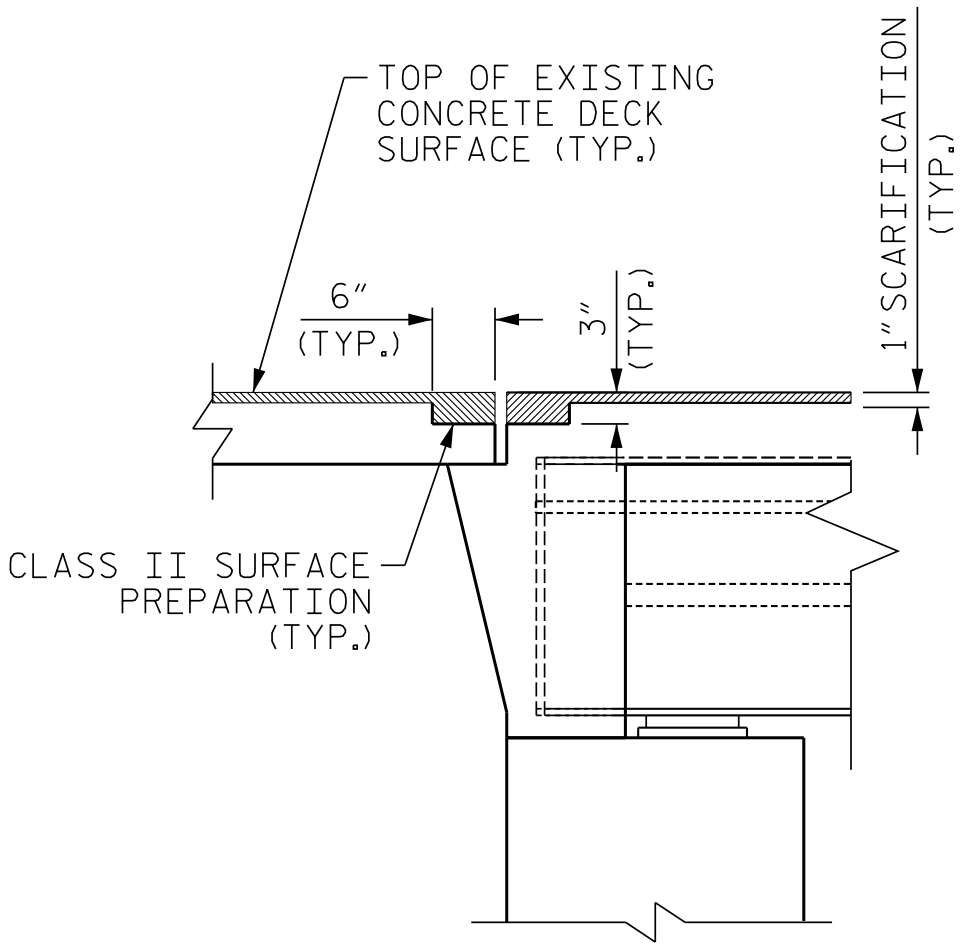
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2			4			

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CHKD. BY: GFW	DATE: 10/2024

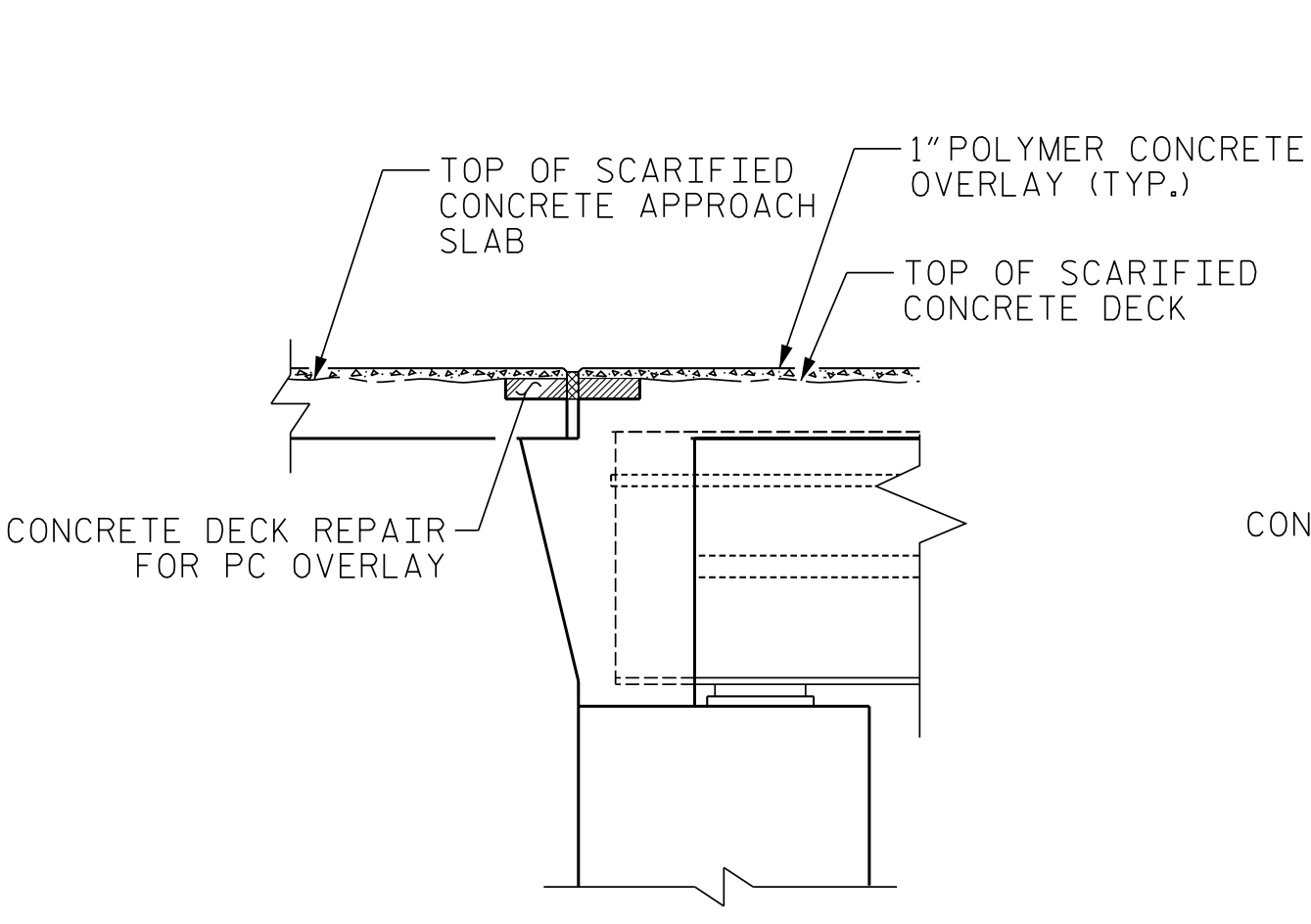
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TIME: 5/5/2025



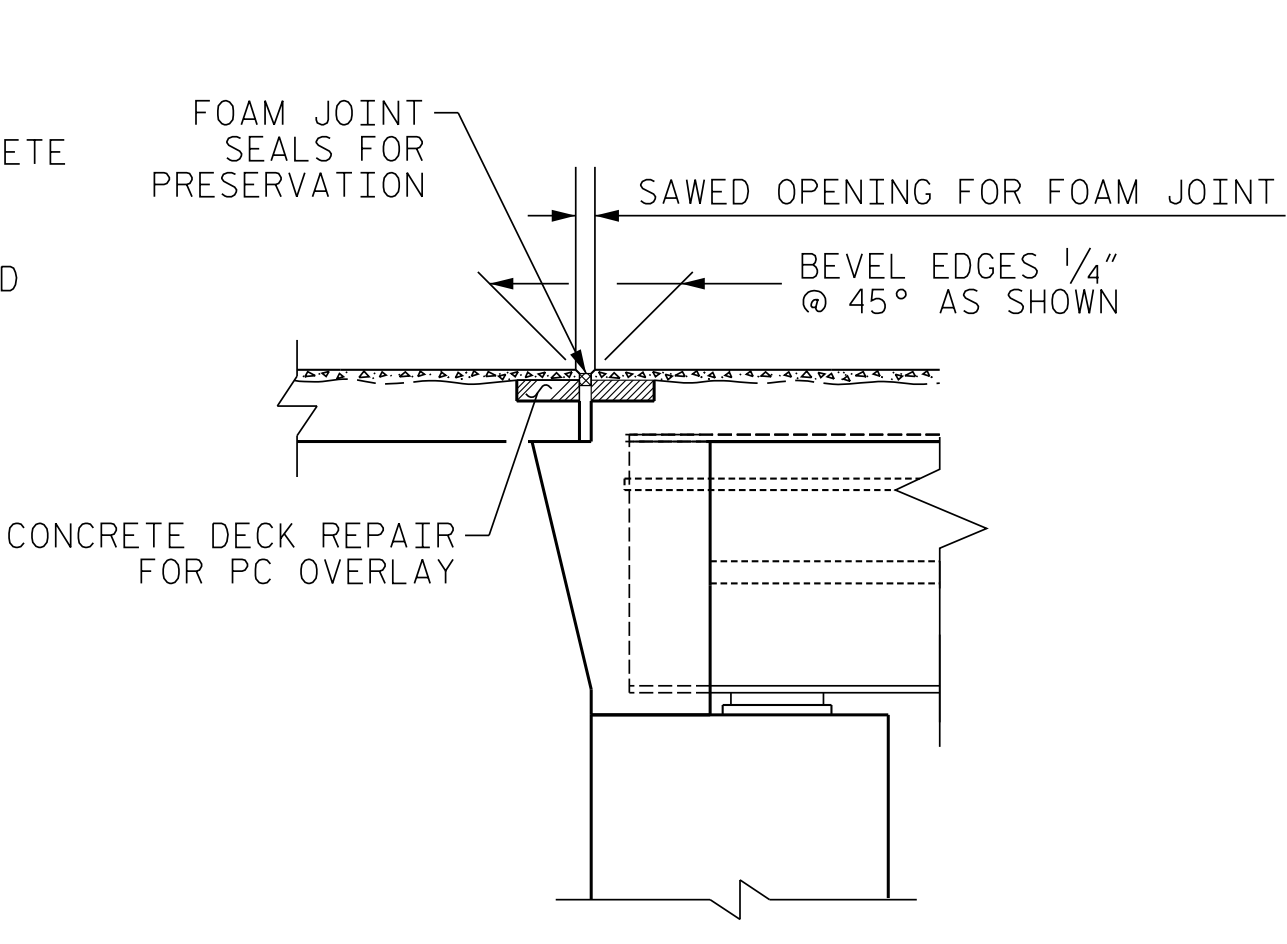
EXISTING JOINT



MINIMUM EXISTING JOINT
DEMOLITION AND SCARIFICATION



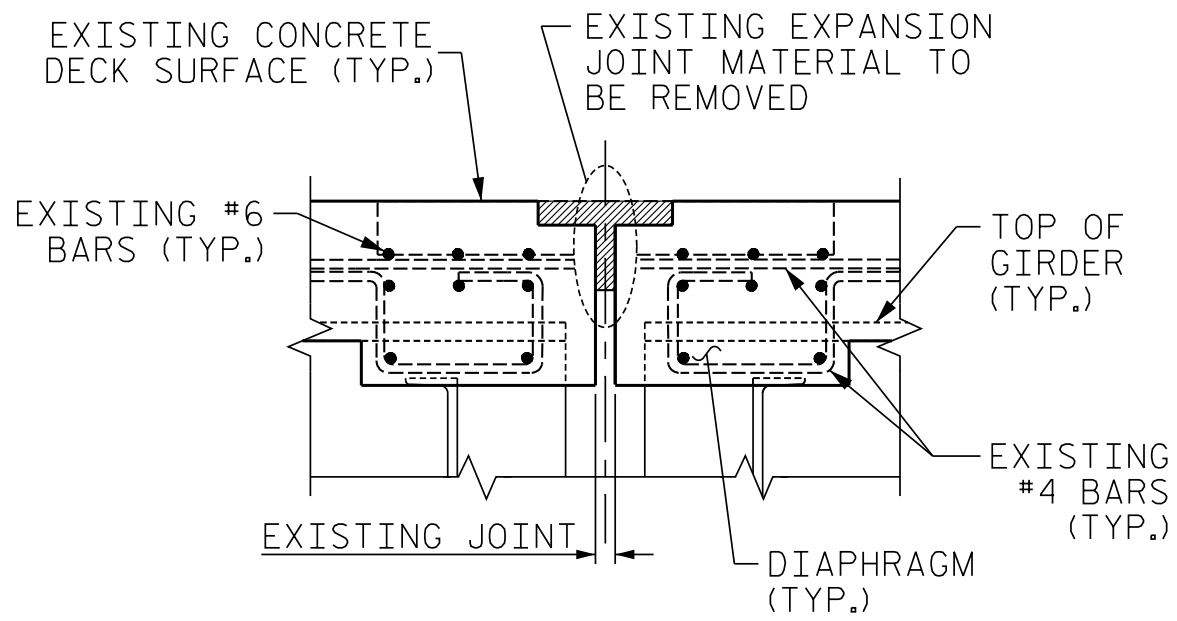
PROPOSED JOINT REPAIR



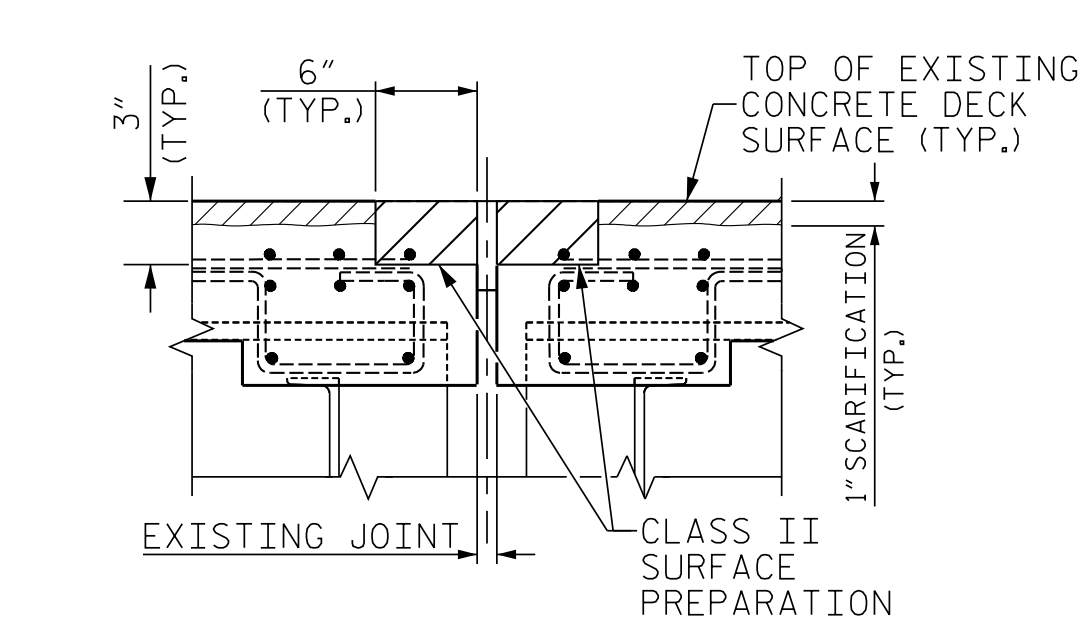
PROPOSED FOAM JOINT SEAL

JOINT INSTALLATION SEQUENCE AT END BENTS

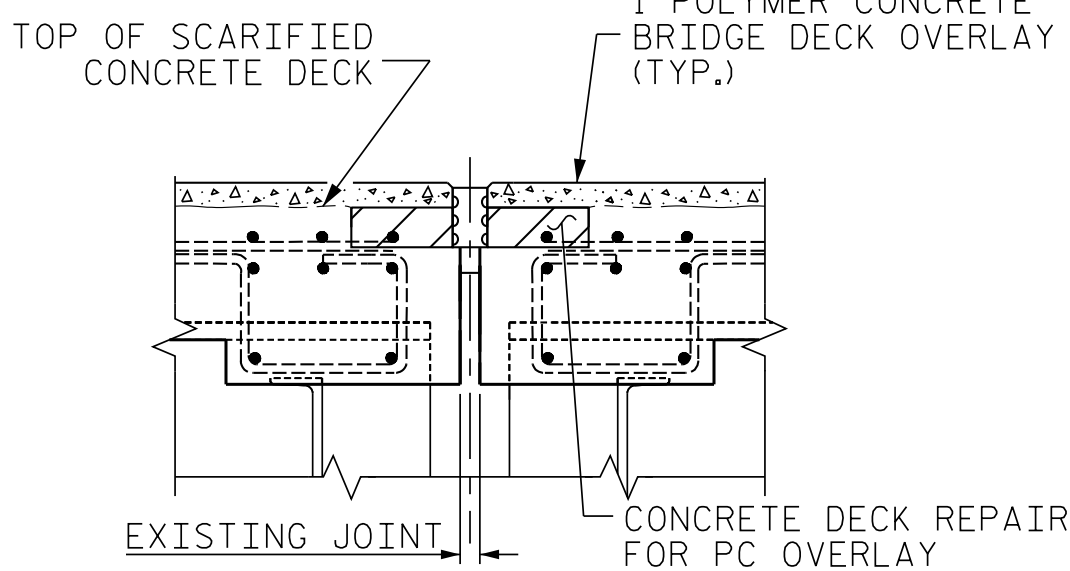
SECTION A-A



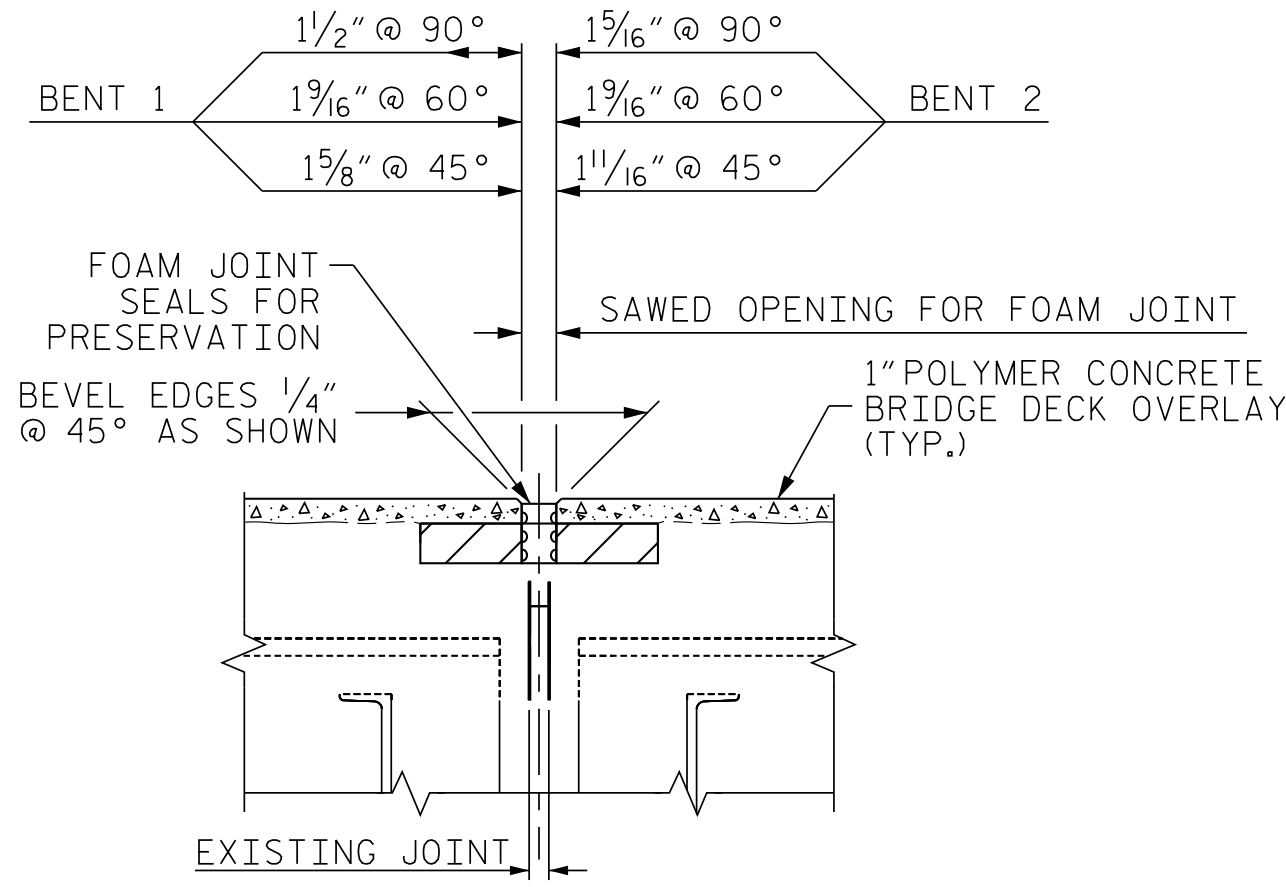
EXISTING EXPANSION
JOINT SEAL



MINIMUM EXISTING JOINT
DEMOLITION AND SCARIFICATION



PROPOSED JOINT REPAIR



PROPOSED FOAM
JOINT SEAL

JOINT INSTALLATION SEQUENCE AT BENTS

SECTION B-B

LOCATION	FOAM JOINT SEALS FOR PRESERVATION
	LIN. FT.
END BENT 1	121.5
BENT 1	121.5
BENT 2	121.5
END BENT 2	121.5
* TOTAL	486.0

* BASED ON THE MINIMUM BLOCKOUT SHOWN

NOTES

FOR CLASS II SURFACE PREPARATION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEALS SHALL BE 2".

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE.

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.

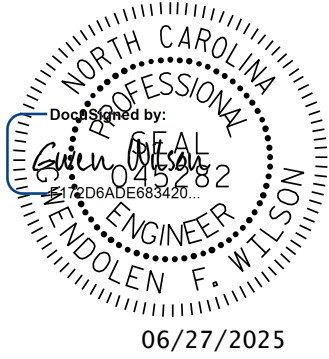
DURING THE JOINT INSTALLATION PROCEDURE, THE JOINT AND SURROUNDING AREA SHALL BE KEPT CLEAN AND FREE OF DEBRIS.

A MANUFACTURER'S CERTIFIED TRAINED REPRESENTATIVE SHALL BE PRESENT DURING THE INSTALLATION OF THE FIRST JOINT OF THE PROJECT, OR UNTIL THE ENGINEER IS SATISFIED WITH THE INSTALLATION PROCESS.

FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE DECK REPAIR FOR PC OVERLAY SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.

FOAM JOINTS SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION.

PROJECT NO. I-5880
FORSYTH COUNTY
BRIDGE: 330340



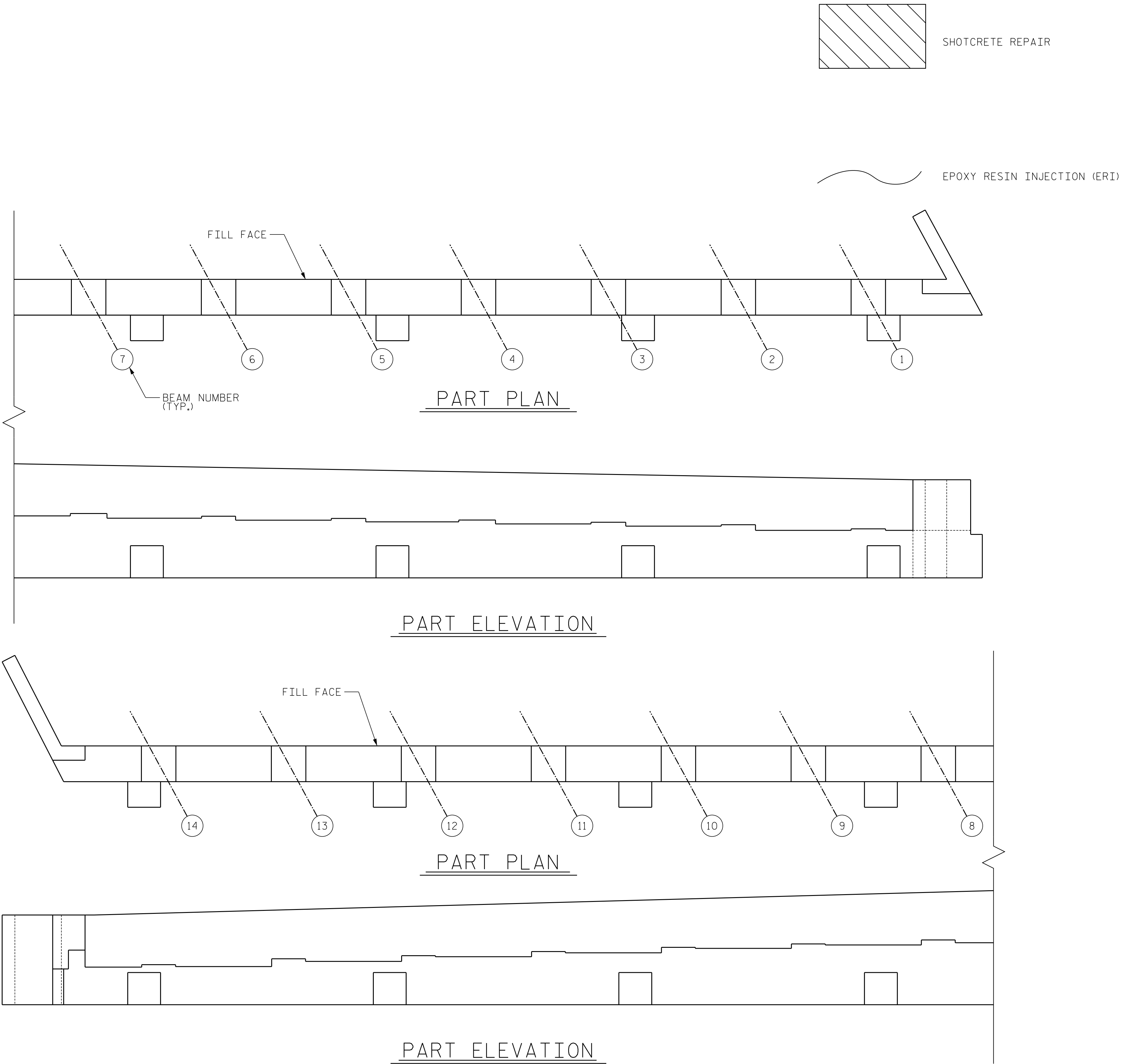
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
JOINT DETAILS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 81

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AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CURTAIN WALL	0.0	0.0		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CURTAIN WALL	0.0	0.0		
EPOXY RESIN INJECTION		LIN. FT.	LIN. FT.	
CAP		0.0		
CURTAIN WALL		0.0		
EPOXY COATING		SQ. FT.	SQ. FT.	
CAP		304.7		

NOTES

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN OF 1"BEHIND REBAR AND MIN. 2" CLEAR TO SAWCUT.

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARINGS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

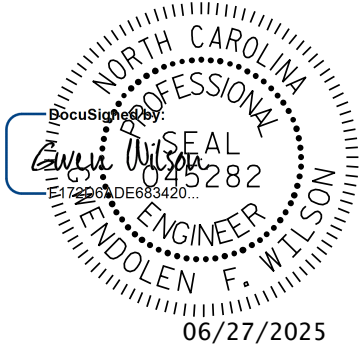
SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

PROJECT NO. I-5880
FORSYTH COUNTY
BRIDGE: 330340



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENT 1

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1			3			TOTAL SHEETS 81
2			4			



REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

Documented by:
Ewen Wilson
F-320-00AD-005320...
06/27/2025

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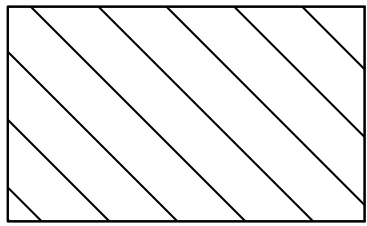
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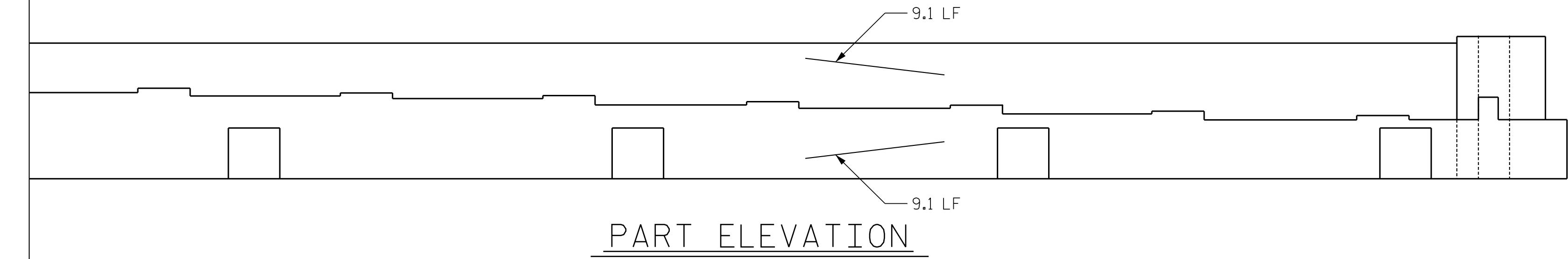
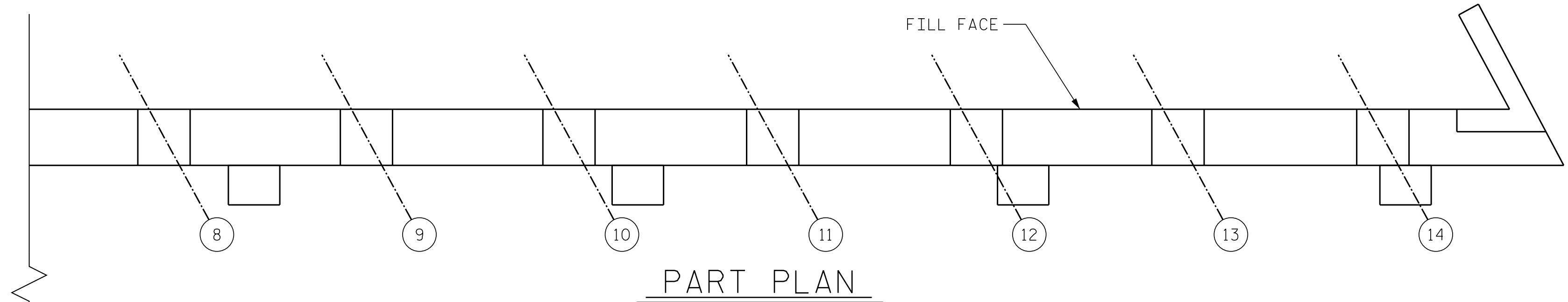
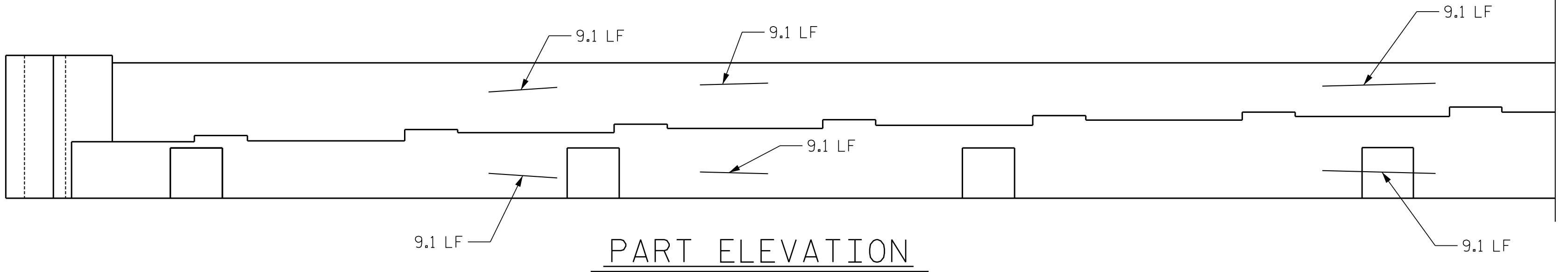
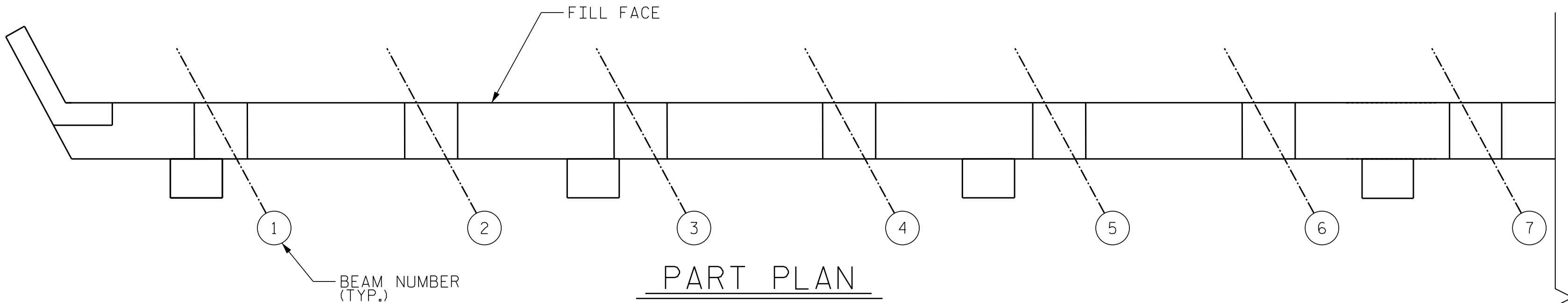
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DATE: 5/6/2025 TIME: 5/6/2025



SHOTCRETE REPAIR



EPOXY RESIN INJECTION (ERI)



AS-BUILT REPAIR QUANTITY TABLE

REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CURTAIN WALL	0.0	0.0		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CURTAIN WALL	0.0	0.0		
EPOXY RESIN INJECTION		LIN. FT.	LIN. FT.	
CAP		0.0		
CURTAIN WALL		72.7		
EPOXY COATING		SQ. FT.	SQ. FT.	
CAP		304.7		

NOTES

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN OF 1" BEHIND REBAR AND MIN. 2" CLEAR TO SAWCUT.

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE BEARINGS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

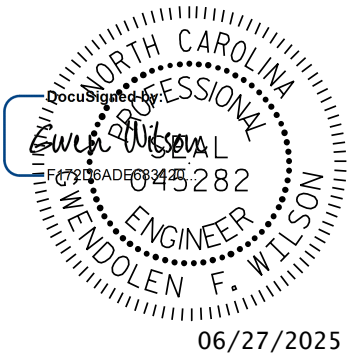
SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

PROJECT NO. I-5880
FORSYTH COUNTY
BRIDGE: 330340



STATE OF NORTH CAROLINA
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RALEIGH

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1			3			TOTAL SHEETS 81
2			4			

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2024 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED³/₄" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO ¹/₂" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¹/₄" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A ¹/₄" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE⁷/₈" Ø SHEAR STUDS FOR THE ³/₄" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⁷/₈" Ø STUDS FOR 4 - ³/₄" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF⁷/₈" Ø STUDS ALONG THE BEAM AS SHOWN FOR ³/₄" Ø STUDS BASED ON THE RATIO OF 3 - ⁷/₈"Ø STUDS FOR 4 - ³/₄" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST⁵/₁₆" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATEL⁵/₁₆" OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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