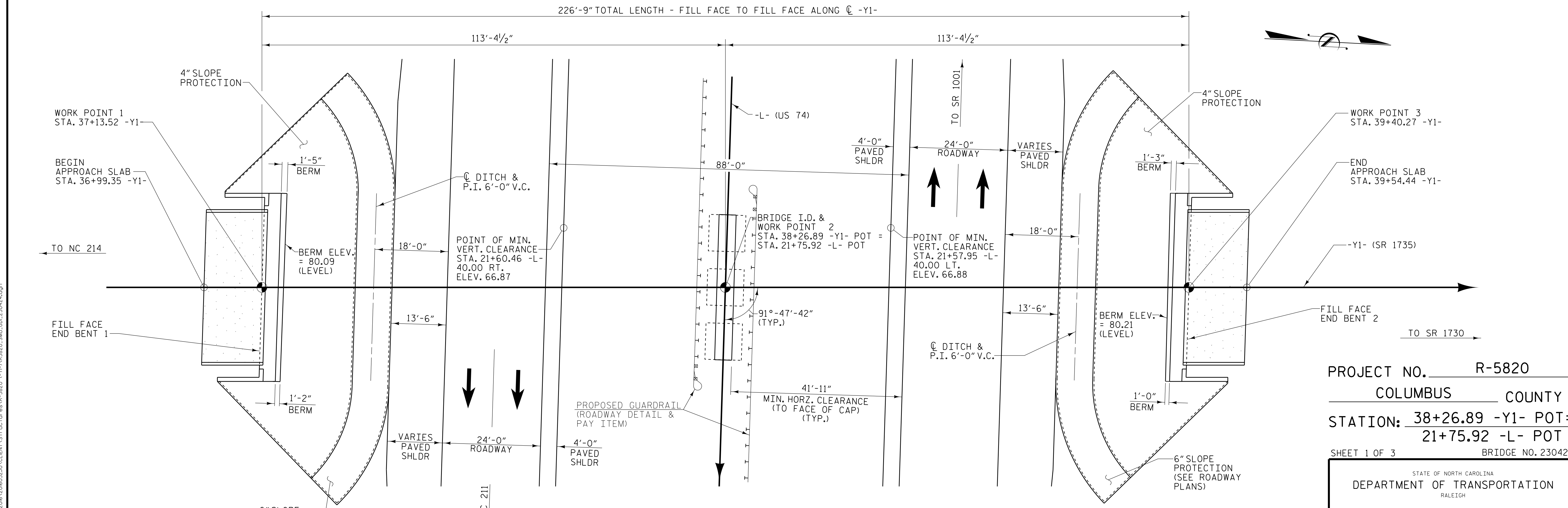
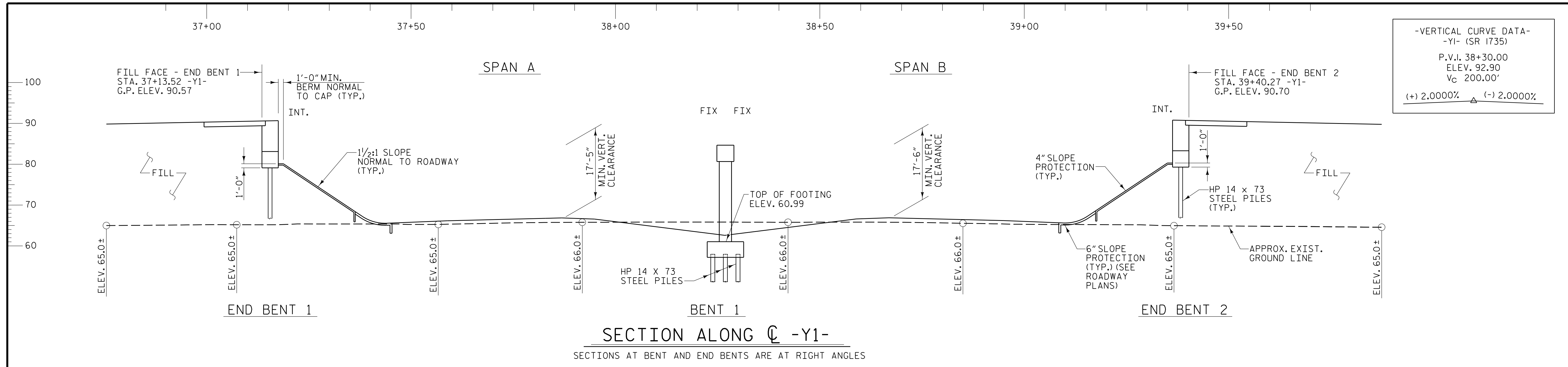


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PROJECT NO. R-5820
COLUMBUS COUNTY
STATION: 38+26.89 -Y1- POT =
21+75.92 -L- POT
SHEET 1 OF 3 BRIDGE NO. 230424

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOR BRIDGE ON -Y1- (SR 1735)
OVER -L- (US-74)
BETWEEN NC 214 AND SR 1730

PLANS PREPARED BY:
NV5
NV5 ENGINEERS & CONSULTANTS, INC.
3300 REGENCY PARKWAY, SUITE 100
CARY, NC 27518
P: 919.851.1912 www.nv5.com
NC License # F-1333
Formerly CAVI Engineers & Consultants

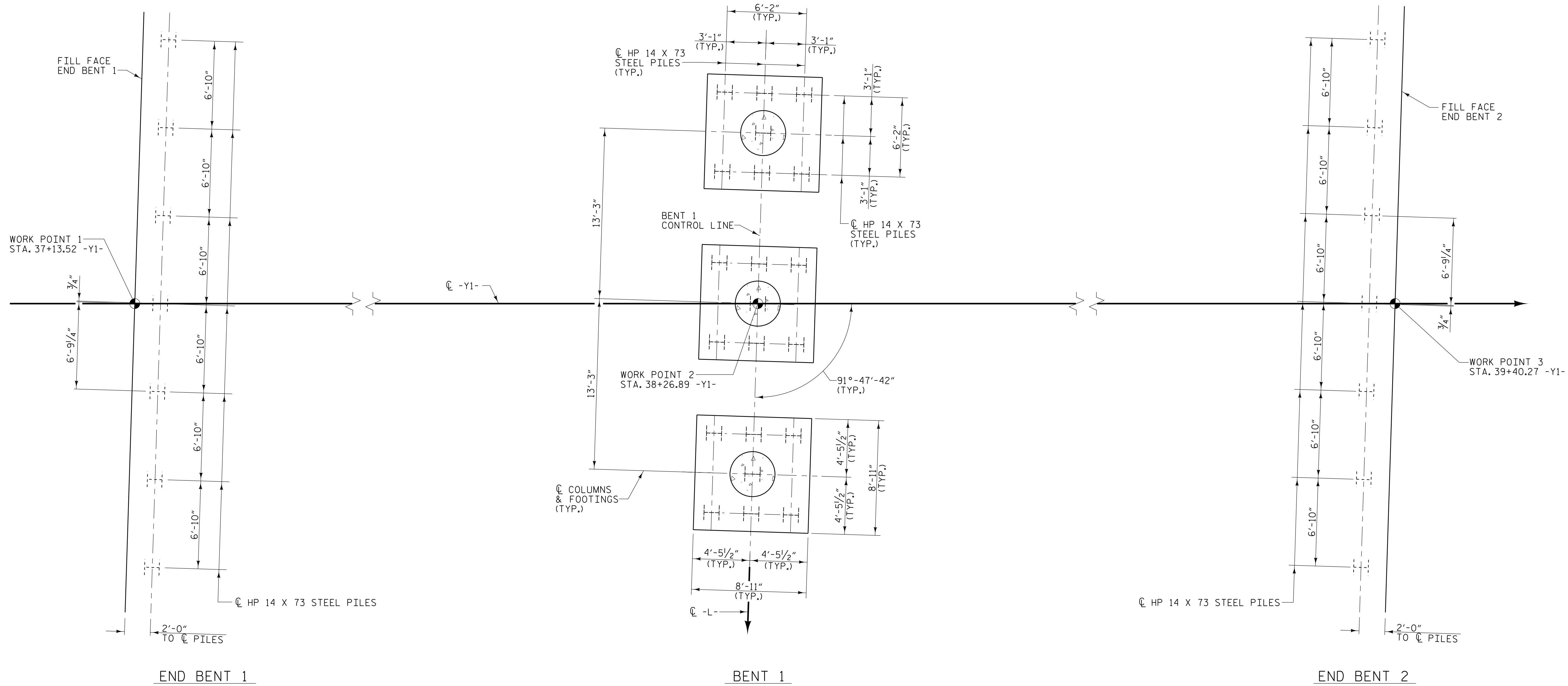


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-1
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : W. B. ALLEN DATE : 8/19
CHECKED BY : G. F. WILSON DATE : 6/21
DESIGN ENGINEER OF RECORD: G. F. WILSON DATE : 10/21

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FONDATION LAYOUT

NOTES

- ALL PILES AT END BENT 1, BENT 1 AND END BENT 2 ARE HP 14 X 73. DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE. FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- PILES AT END BENT NO.1 AND END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 135 TONS PER PILE.
- PILES AT BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 125 TONS PER PILE.
- DRIVE PILES AT END BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 330 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG.
- DRIVE PILES AT BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 170 TONS PER PILE.
- DRIVE PILES AT END BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 310 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG.

- TESTING THE FIRST PRODUCTION PILE WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT END BENT NO.1 OR END BENT NO.2. FOR PDA TESTING, SEE SECTION 450 OF THE STANADRD SPECIFICATIONS.
- TESTING THE FIRST PRODUCTION PILE WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT BENT NO.1. FOR PDA TESTING, SEE SECTION 450 OF THE STANADRD SPECIFICATIONS.
- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 56-110 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NO.1 AND END BENT NO.2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.
- OBSERVE A ONE MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND REINFORCED BRIDGE APPROACH FILL, IF APPLICABLE, BEFORE BEGINNING APPROACH SLAB 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.

PROJECT NO. R-5820
COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

SHEET 2 OF 3
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON -Y1- (SR 1735)
 OVER -L- (US-74)
 BETWEEN NC 214 AND SR 1730

DRAWN BY :	W. B. ALLEN	DATE :	3/21
CHECKED BY :	G. F. WILSON	DATE :	7/21
DESIGN ENGINEER OF RECORD:	G. F. WILSON	DATE :	10/21

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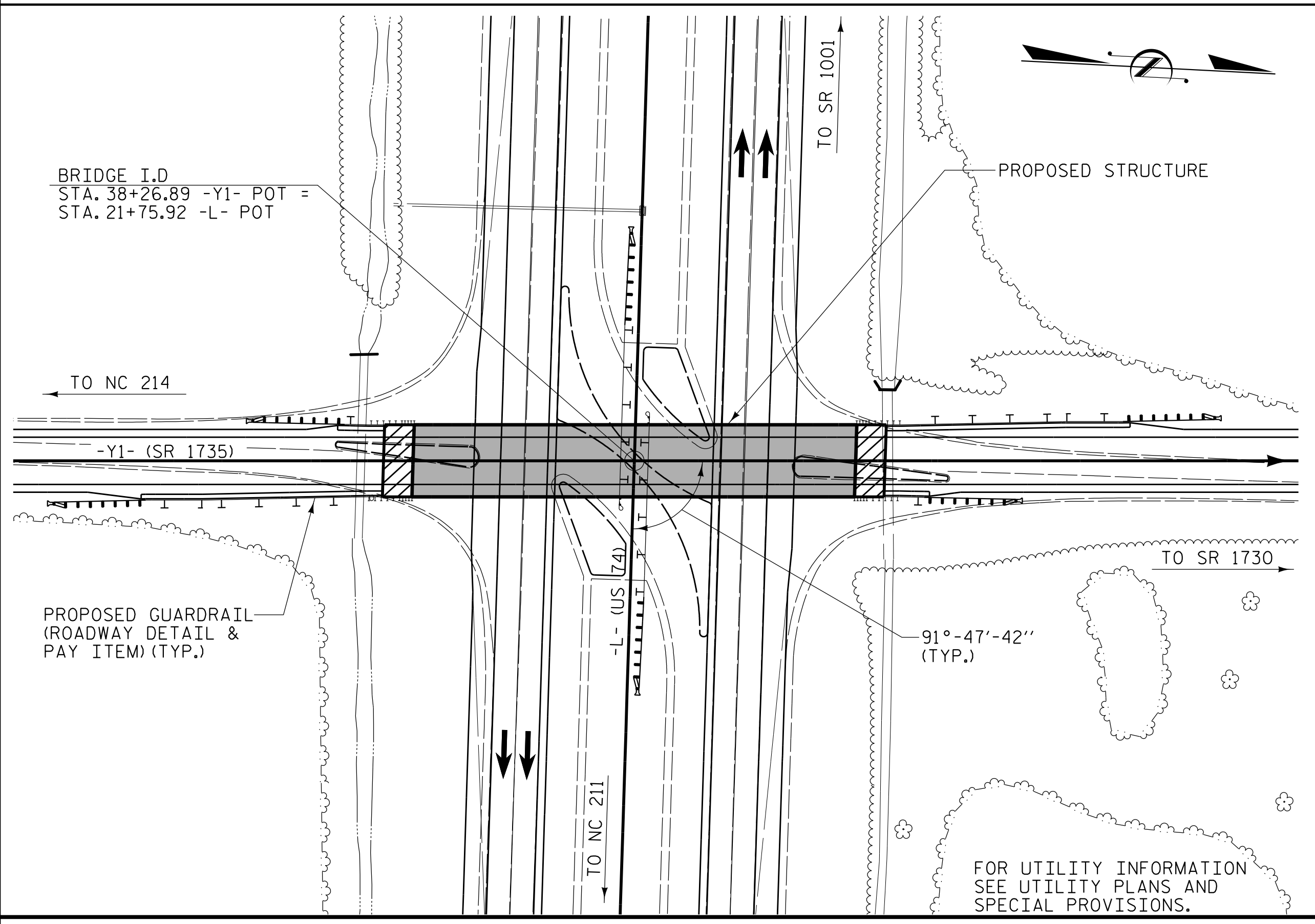


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2			4			31

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BM#4: RR SPIKE IN BASE OF 48" PINE TREE; 419.49' RT STA. 19+94.38 -Y1- ELEV. 63.28



LOCATION SKETCH

NOTES

- ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
- THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- THIS BRIDGE IS LOCATED IN SEISMIC ZONE 2.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.
- PRESTRESSED CONCRETE DECK PANELS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
- REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
- NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

TOTAL BILL OF MATERIAL

	FOUNDATION EXCAVATION FOR BENT	PDA TESTING	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	MODIFIED 72" PRESTRESSED CONCRETE GIRDERS		PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 STEEL PILES			HP 14 X 73 STEEL PILES	PILE REDRIVES	CONCRETE BARRIER RAIL	4" SLOPE PROTECTION	ELASTOMERIC BEARINGS
									NO.	FEET	EACH	NO.	LIN. FT.					
	LUMP SUM	EACH	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	LBS.	NO.	FEET	EACH	NO.	LIN. FT.	EACH	LIN. FT.	SO. YDS.	LUMP SUM	
SUPERSTRUCTURE			8985	8554		LUMP SUM			8	895.33					450.17		LUMP SUM	
END BENT 1					39.1		5848				7	7	525	7		227		
BENT 1	LUMP SUM				76.2		13724	2491			21	21	1470	15				
END BENT 2					39.3		5848				7	7	560	7		228		
TOTAL	LUMP SUM	3	8985	8554	154.6	LUMP SUM	25420	2491	8	895.33	35	35	2555	29	450.17	455	LUMP SUM	

PROJECT NO. R-5820
COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON -Y1- (SR 1735)
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4/12/2022

DRAWN BY : W. B. ALLEN DATE : 7/21
 CHECKED BY : G. F. WILSON DATE : 7/21
 DESIGN ENGINEER OF RECORD: G. F. WILSON DATE : 10/21

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2			4			31

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LOAD FACTORS:

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

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
						LIVE-LOAD FACTORS (γ_{LL})	MOMENT					SHEAR					LIVE-LOAD FACTORS (γ_{LL})	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 (INVENTORY)	N/A	①	1.10	--	1.75	0.940	1.27	A, B	E	55.25	0.940	1.18	A, B	E	32.87	0.80	0.940	1.10	A, B	E	55.25				
	HL-93 (OPERATING)	N/A		1.59	--	1.35	0.940	1.65	A, B	E	55.25	0.940	1.59	A, B	E	100.02	N/A	--	--	--	--	--				
	HS-20 (INVENTORY)	36.000	②	1.58	56.88	1.75	0.940	1.82	A, B	E	55.25	0.940	1.68	A, B	E	10.48	0.80	0.940	1.58	A, B	E	55.25				
	HS-20 (OPERATING)	36.000		2.22	79.92	1.35	0.940	2.36	A, B	E	55.25	0.940	2.22	A, B	E	100.02	N/A	--	--	--	--	--				
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.79	51.17	1.40	0.940	5.47	A, B	E	55.25	0.940	5.48	A, B	E	100.02	0.80	0.940	3.79	A, B	E	55.25			
		SNGARBS2	20.000		2.73	54.60	1.40	0.940	3.93	A, B	E	55.25	0.940	3.79	A, B	E	100.02	0.80	0.940	2.73	A, B	E	55.25			
		SNAGRIS2	22.000		2.54	55.88	1.40	0.940	3.67	A, B	E	55.25	0.940	3.48	A, B	E	100.02	0.80	0.940	2.54	A, B	E	55.25			
		SNCOTTS3	27.250		1.89	51.50	1.40	0.940	2.72	A, B	E	55.25	0.940	2.67	A, B	E	100.02	0.80	0.940	1.89	A, B	E	55.25			
		SNAGGRS4	34.925		1.54	53.78	1.40	0.940	2.22	A, B	E	55.25	0.940	2.14	A, B	E	100.02	0.80	0.940	1.54	A, B	E	55.25			
		SNS5A	35.550		1.50	53.33	1.40	0.940	2.17	A, B	E	55.25	0.940	2.14	A, B	E	100.02	0.80	0.940	1.50	A, B	E	55.25			
		SNS6A	39.950		1.36	54.33	1.40	0.940	1.97	A, B	E	55.25	0.940	1.93	A, B	E	100.02	0.80	0.940	1.36	A, B	E	55.25			
		SNS7B	42.000		1.30	54.60	1.40	0.940	1.87	A, B	E	55.25	0.940	1.87	A, B	E	100.02	0.80	0.940	1.30	A, B	E	55.25			
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.66	54.78	1.40	0.940	2.39	A, B	E	55.25	0.940	2.33	A, B	E	10.48	0.80	0.940	1.66	A, B	E	55.25			
		TNT4A	33.075		1.66	54.90	1.40	0.940	2.40	A, B	E	55.25	0.940	2.29	A, B	E	100.02	0.80	0.940	1.66	A, B	E	55.25			
		TNT6A	41.600		1.34	55.74	1.40	0.940	1.94	A, B	E	55.25	0.940	1.95	A, B	E	10.48	0.80	0.940	1.34	A, B	E	55.25			
		TNT7A	42.000		1.34	56.28	1.40	0.940	1.94	A, B	E	55.25	0.940	1.92	A, B	E	10.48	0.80	0.940	1.34	A, B	E	55.25			
		TNT7B	42.000		1.37	57.54	1.40	0.940	1.98	A, B	E	55.25	0.940	1.84	A, B	E	100.02	0.80	0.940	1.37	A, B	E	55.25			
		TNAGRIT4	43.000		1.32	56.76	1.40	0.940	1.90	A, B	E	55.25	0.940	1.78	A, B	E	100.02	0.80	0.940	1.32	A, B	E	55.25			
TNAGT5A	45.000		1.25	56.25	1.40	0.940	1.80	A, B	E	55.25	0.940	1.74	A, B	E	100.02	0.80	0.940	1.25	A, B	E	55.25					
TNAGT5B	45.000		③	1.24	55.80	1.40	0.940	1.79	A, B	E	55.25	0.940	1.69	A, B	E	100.02	0.80	0.940	1.24	A, B	E	55.25				

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)

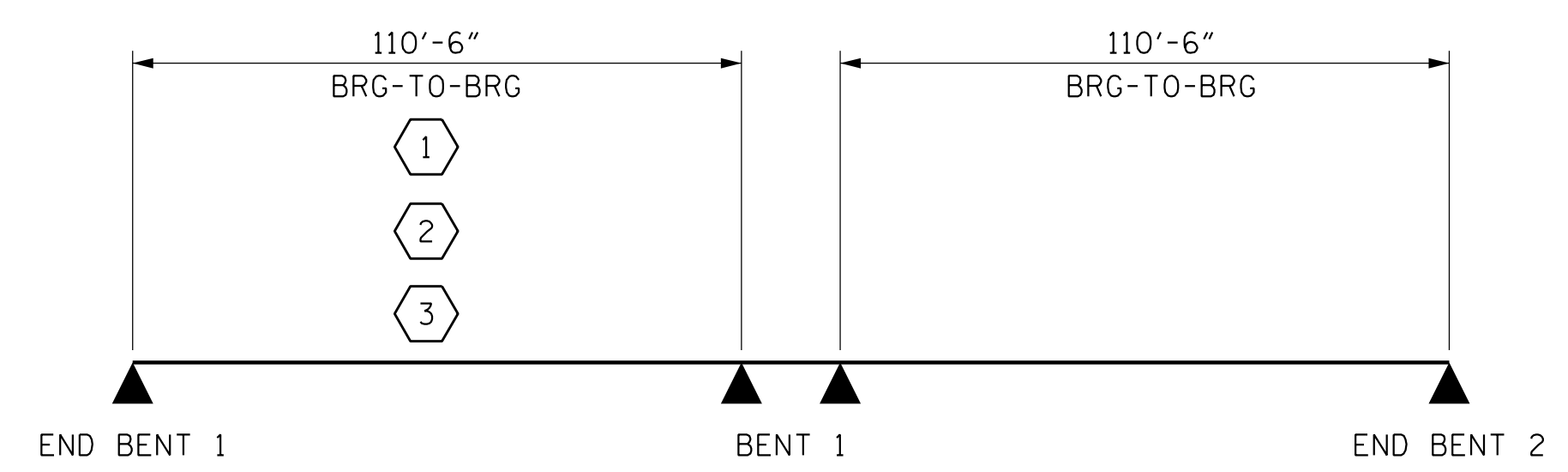
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. R-5820
COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

ASSEMBLED BY : J. A. PANDOLI	DATE : 6/21
CHECKED BY : G. F. WILSON	DATE : 7/21
DRAWN BY : MAA 1/08	REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/1/11 MAA/GM
	REV. 12/17 MAA/THC

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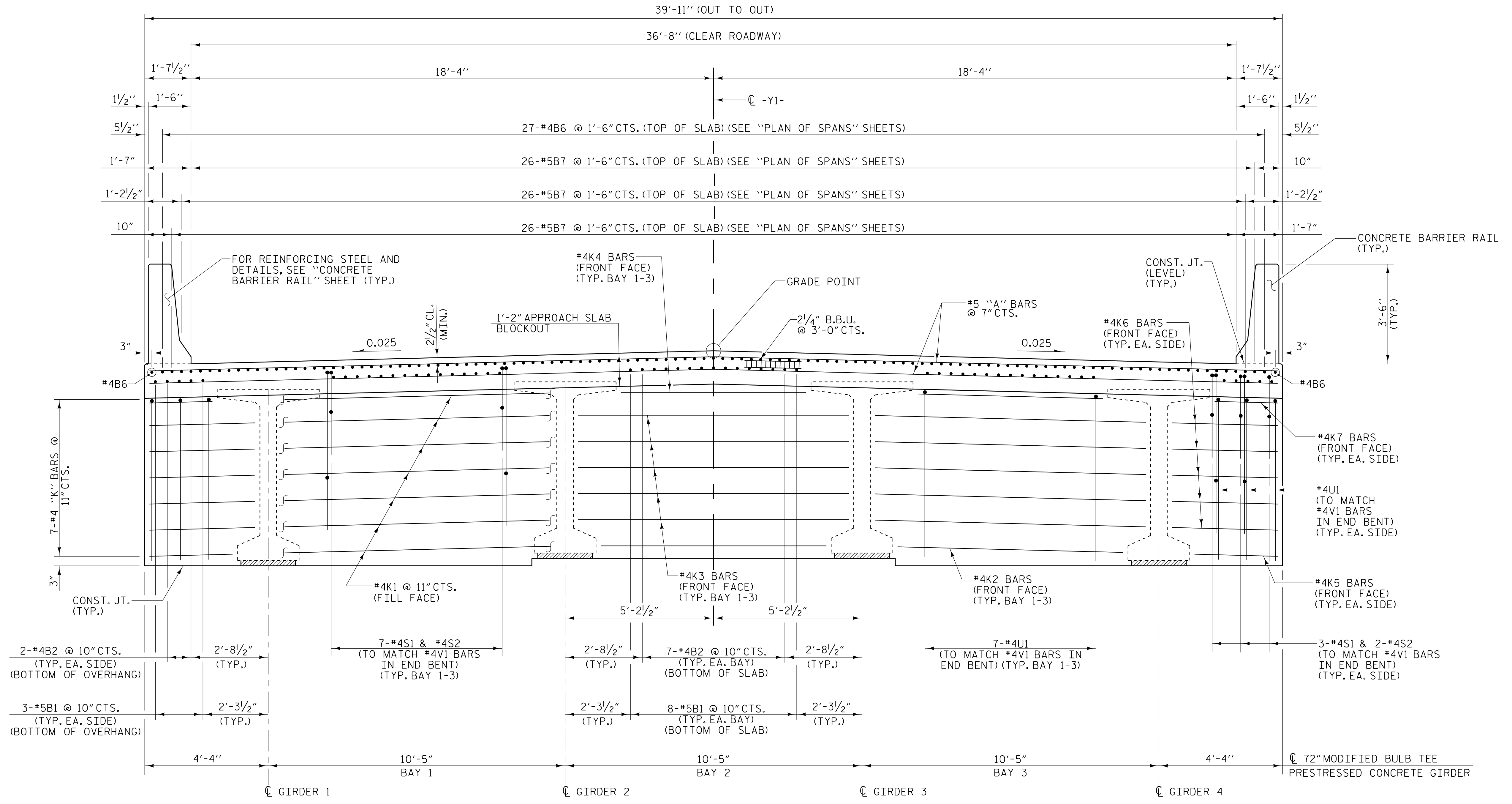
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 LRFR SUMMARY FOR
 PRESTRESSED
 CONCRETE GIRDERS
 (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
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STD. NO. LRFR1

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TYPICAL SECTION
(SHOWING INTEGRAL END BENT DIAPHRAGMS)

PROJECT NO. R-5820
COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 TYPICAL SECTION**

REVISIONS						SHEET NO.
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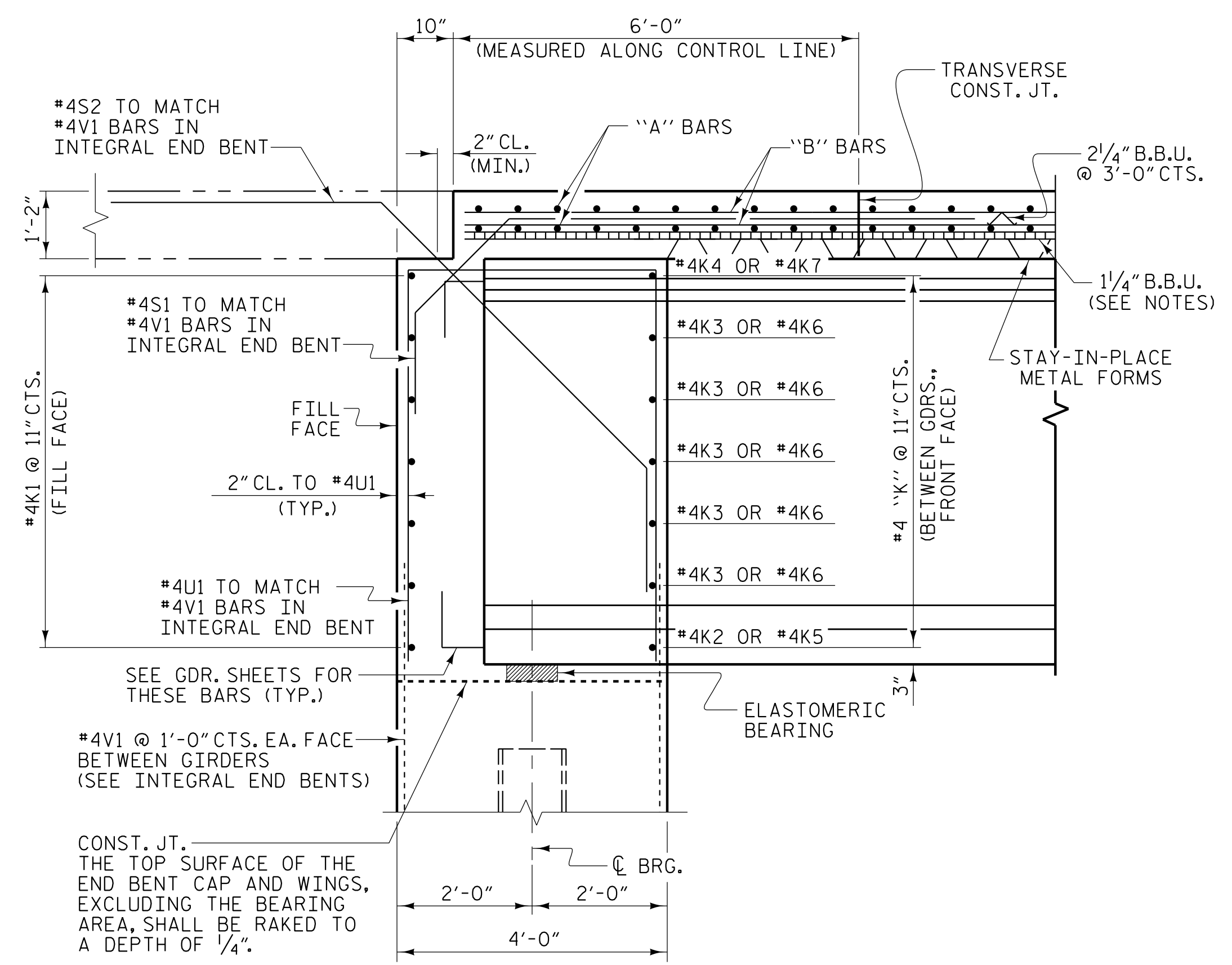
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Seal of the State of North Carolina, Department of Transportation, Raleigh. The seal contains the name of the design engineer, G. F. Wilson, and the date 4/12/2022.

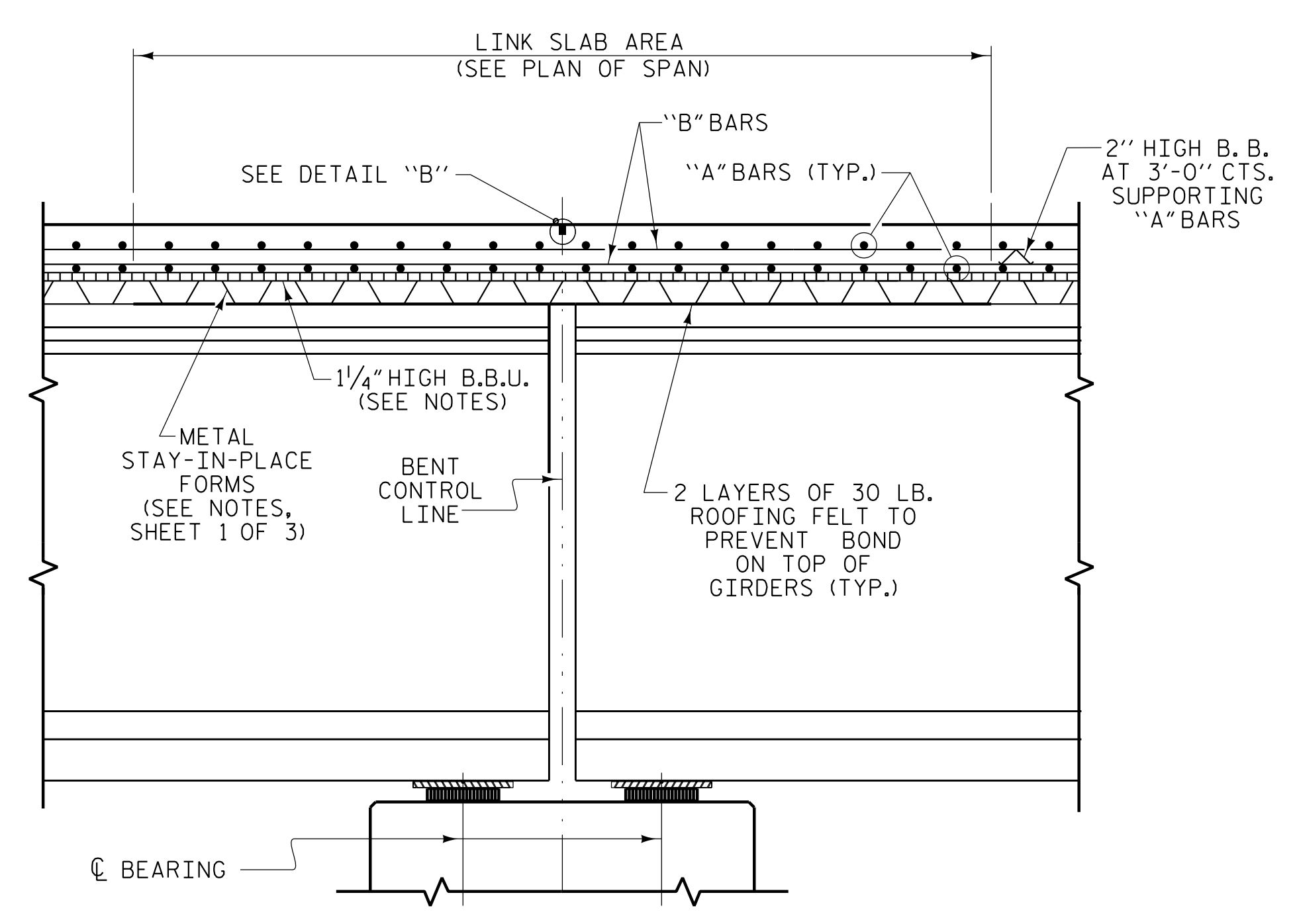
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 DESIGN ENGINEER OF RECORD: G. F. WILSON DATE: 10/21

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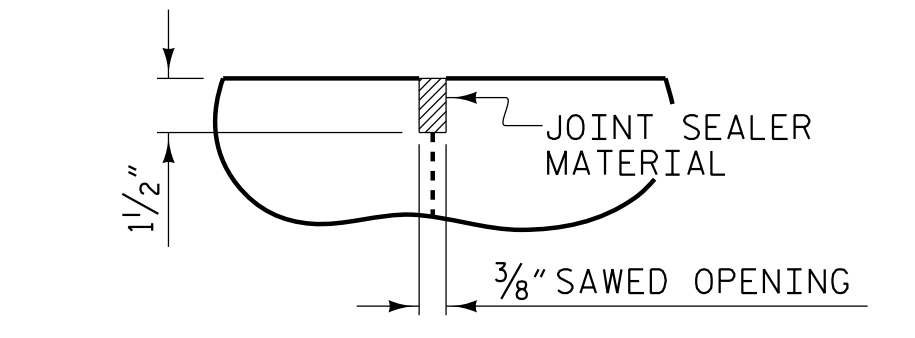
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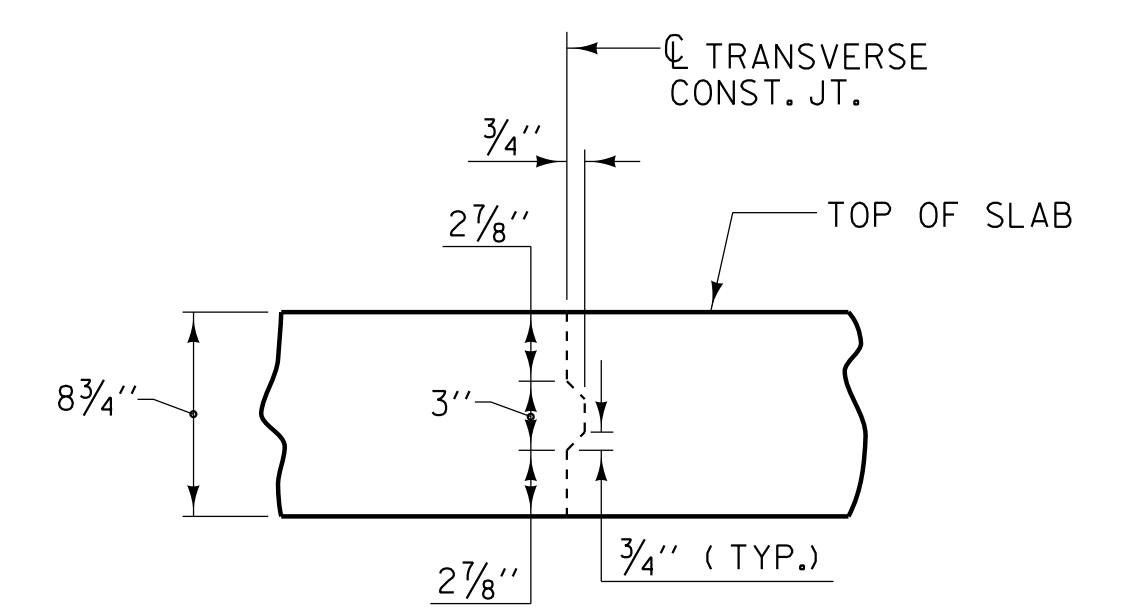
SECTION THRU INTEGRAL END BENTS
SECTION AT END BENT 1 SHOWN, END BENT 2 SIMILAR



SECTION AT LINK SLAB

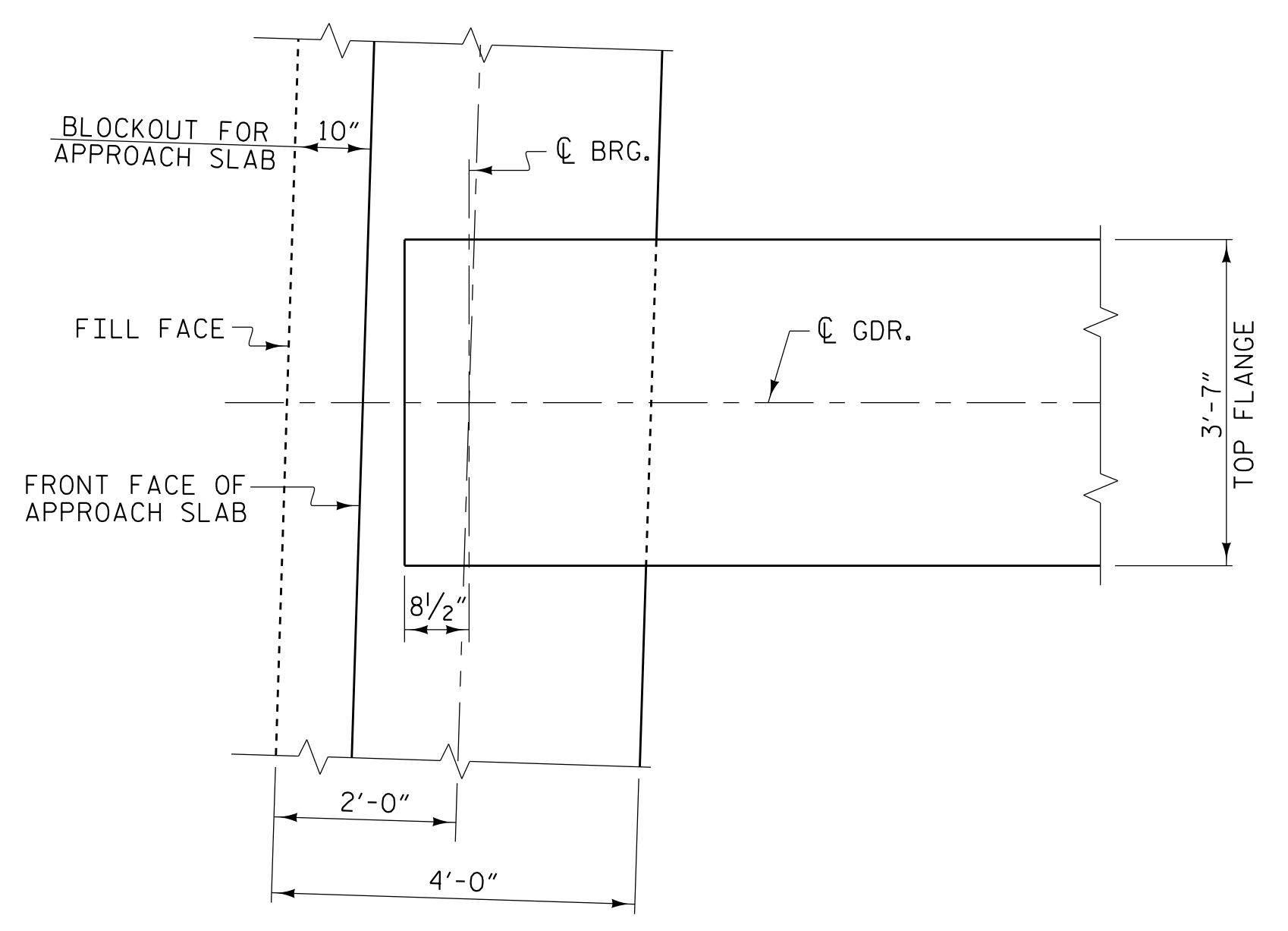


DETAIL "B"
A 1/2" DEEP CONTRACTION JOINT AT BENT CONTROL LINE AND EDGES OF LINK SLAB AREA SHALL BE SAWN WITHIN 24 HOURS OF POURING THE DECK. THE JOINT SHALL BE FILLED WITH JOINT SEALER MATERIAL. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE B LOW MODULUS SILICONE SEALANT. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

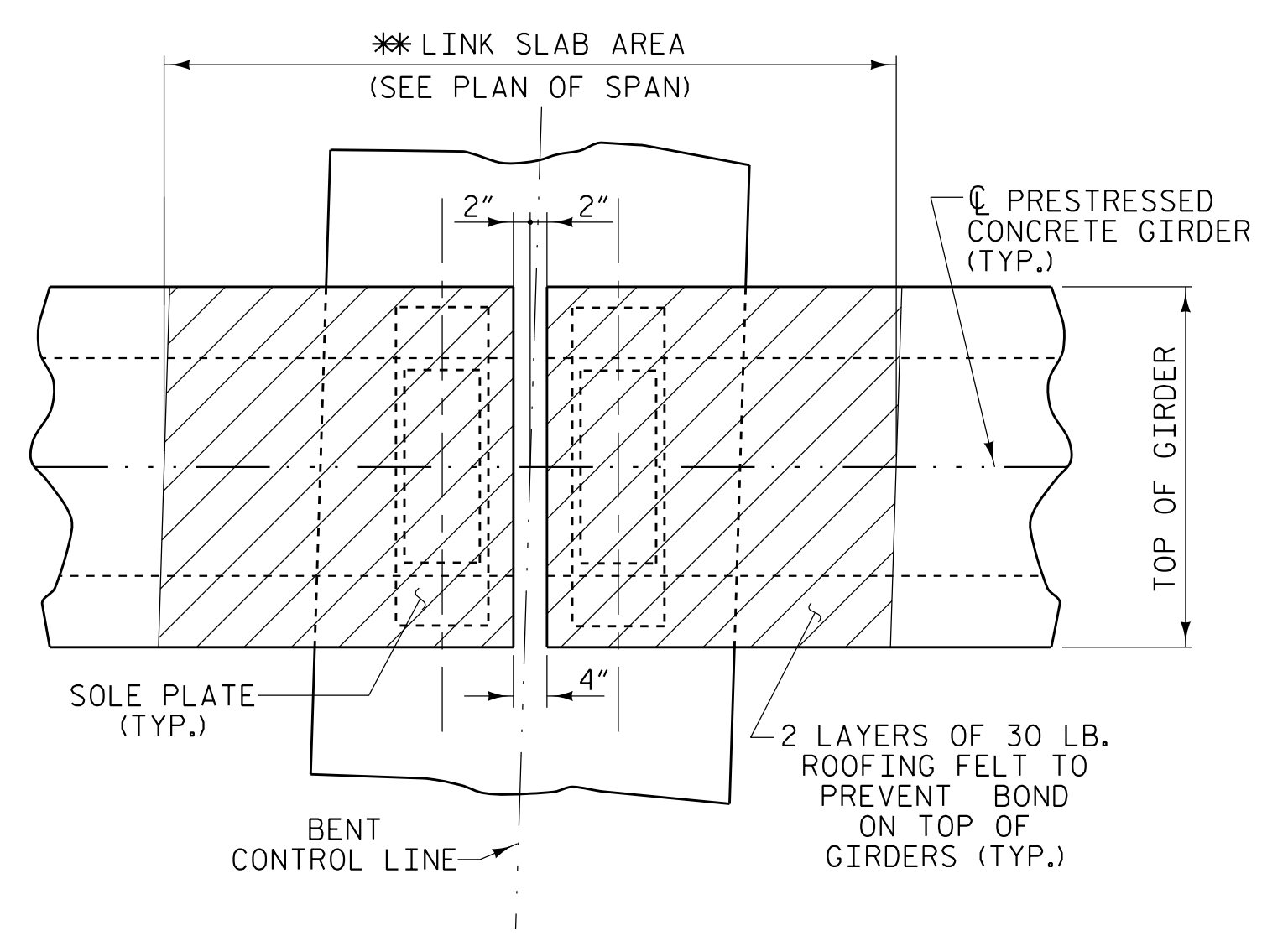


TRANSVERSE CONSTRUCTION JOINT DETAIL

NOTE: REINFORCING STEEL IN SLAB NOT SHOWN. LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THRU JOINT



PLAN OF GIRDER AT INTEGRAL END BENT
END BENT 1 SHOWN, END BENT 2 SIMILAR



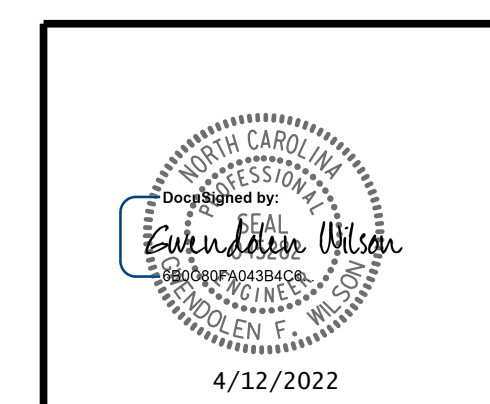
PLAN AT BENT

* THE TOP OF GIRDER IN THE REGION OF THE LINK SLAB SHALL BE SMOOTH (NOT RAKED) AND FREE OF STIRRUPS/STUDS, ANCHOR STUDS, DECK FORMWORK, ATTACHMENTS, AND OVERHANG FALSEWORK/FORMWORK ATTACHMENTS.

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PROJECT NO. R-5820
COLUMBUS COUNTY
STATION: 38+26.89 -Y1- POT

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
TYPICAL SECTION

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CHECKED BY: G. F. WILSON DATE: 7/21
DESIGN ENGINEER OF RECORD: G. F. WILSON DATE: 10/21

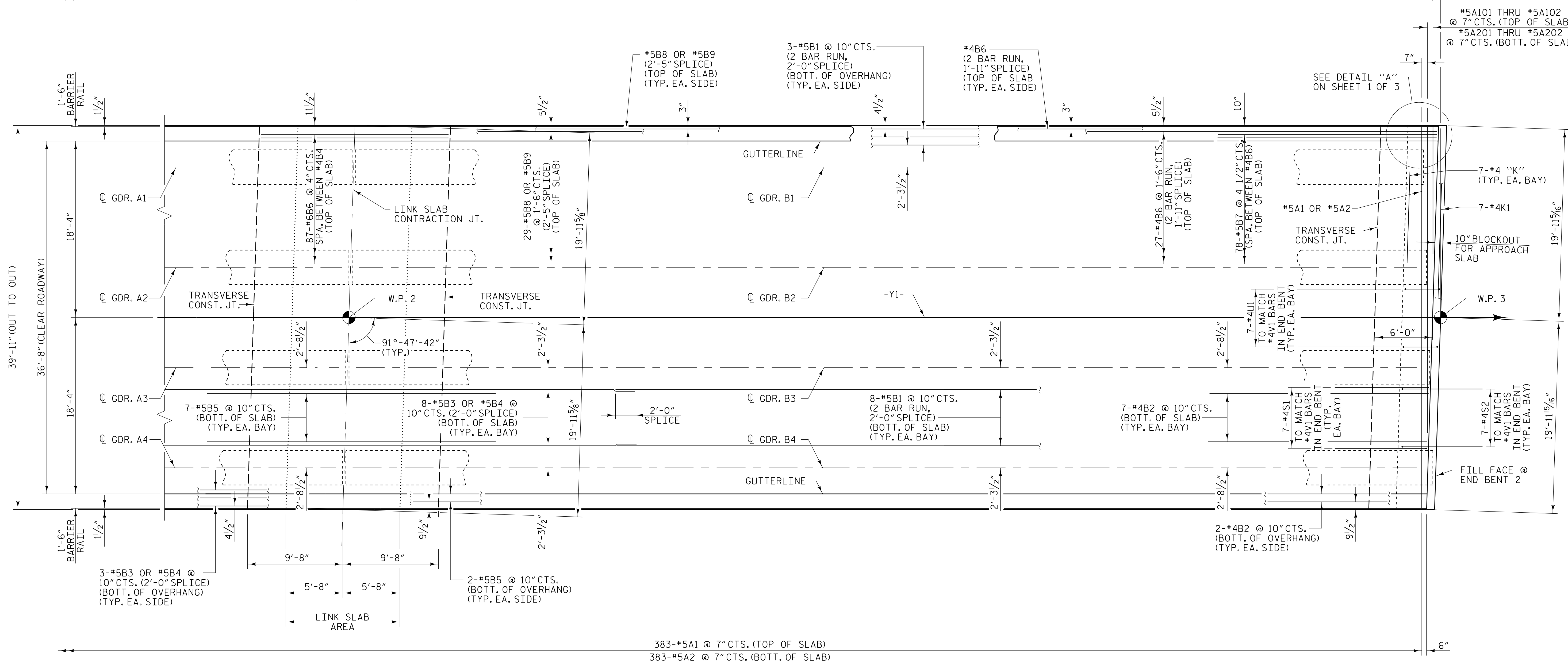
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4/12/2022

226'-9" (FILL FACE TO FILL FACE)

113'-4 1/2" (W.P. 1 TO W.P. 2)

113'-4 1/2" (W.P. 2 TO W.P. 3)



SPAN A

SPAN B

PLAN OF SPANS A & B
 FOR LINK SLAB 'B' BARS SEE SHEET S2-10

PROJECT NO. R-5820
COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 PLAN OF SPAN B**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-9
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2			4			31

PLANS PREPARED BY:

NV5

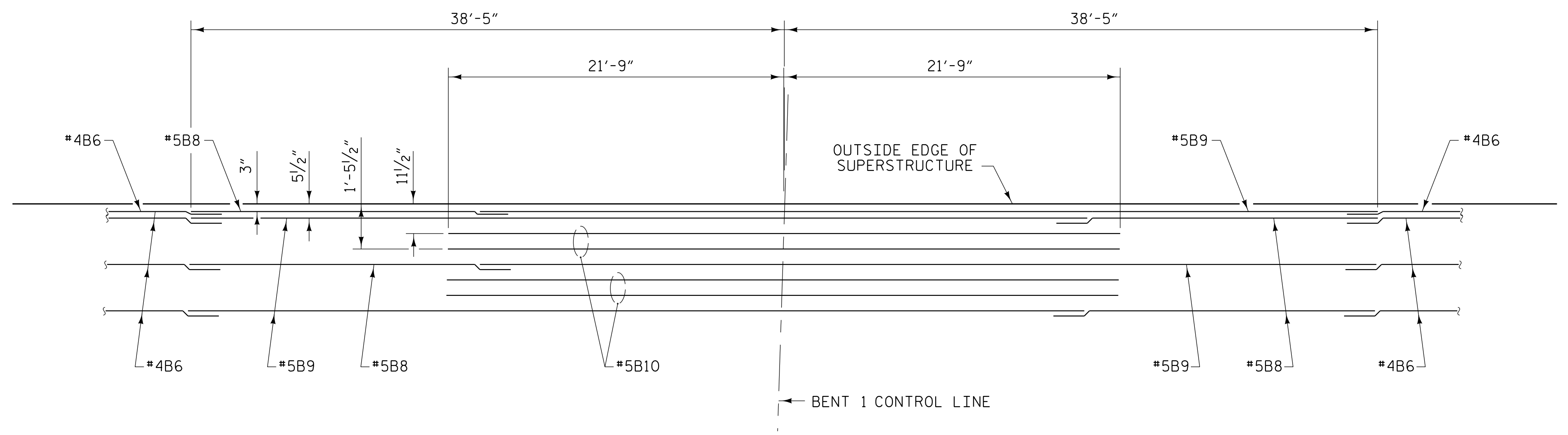
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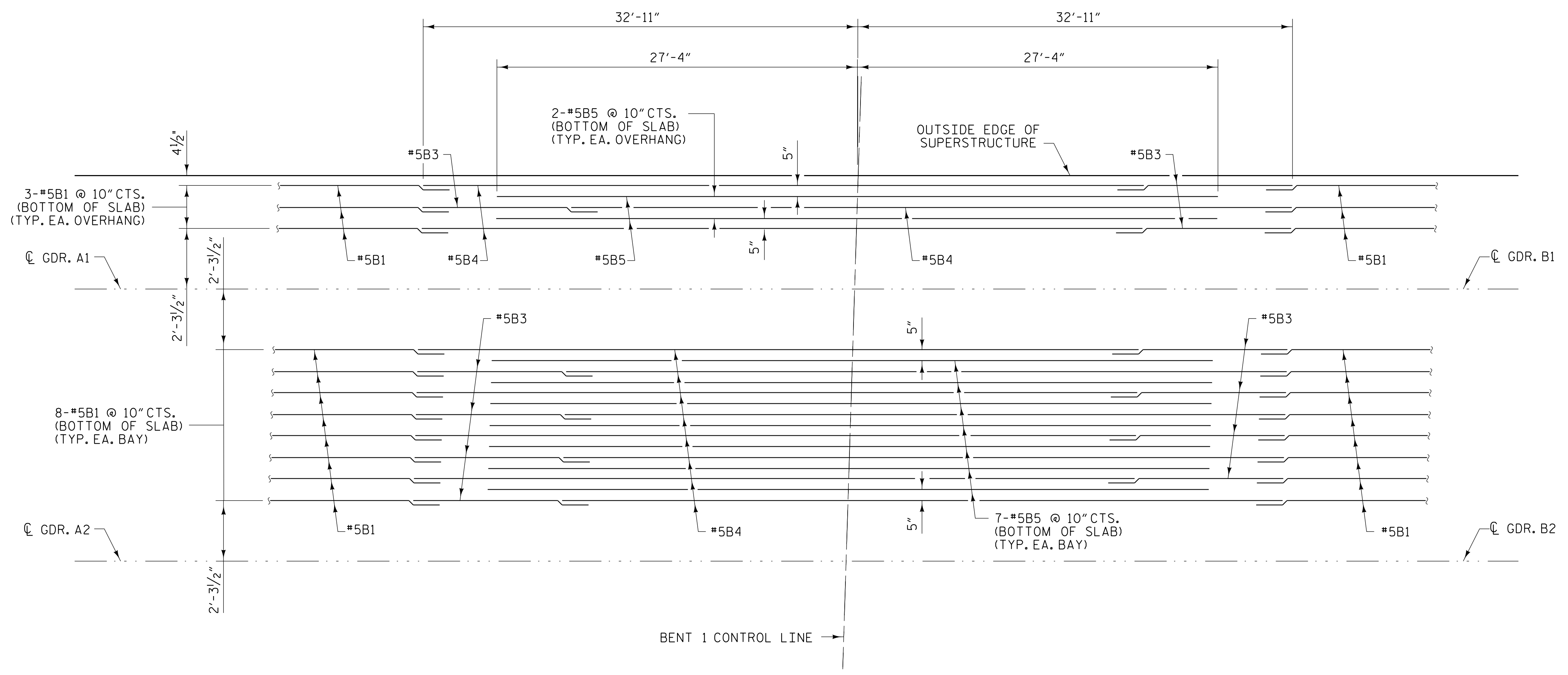
DRAWN BY: W. B. ALLEN DATE: 4/20
 CHECKED BY: G. F. WILSON DATE: 7/21
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TOP OF DECK "B" BAR PLACEMENT
AT BENT



BOTTOM OF DECK "B" BAR PLACEMENT
AT BENT

PROJECT NO. R-5820
COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF LINK SLAB
 "B" BAR LAYOUT

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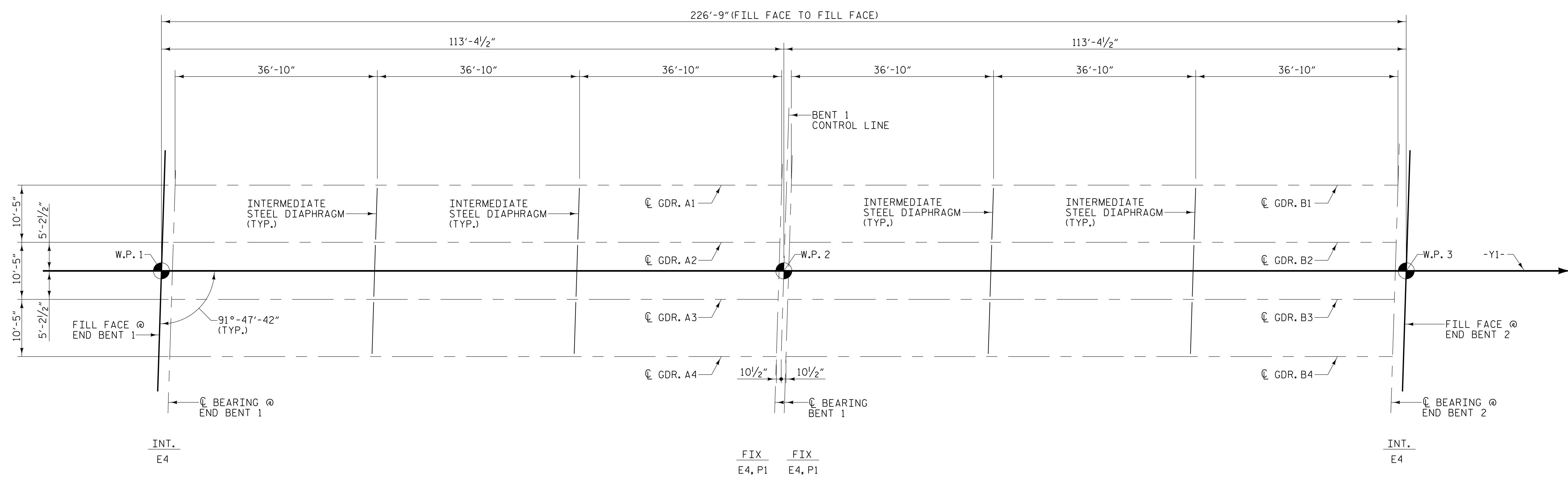
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			31
2			4			

DRAWN BY :	J. A. PANDOLI	DATE :	1/22
CHECKED BY :	G. F. WILSON	DATE :	1/22
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NOTES
FOR DIAPHRAGM DETAILS, SEE "SUPERSTRUCTURE INTERMEDIATE STEEL DIAPHRAGM" SHEET.



SPAN A

SPAN B

FRAMING PLAN

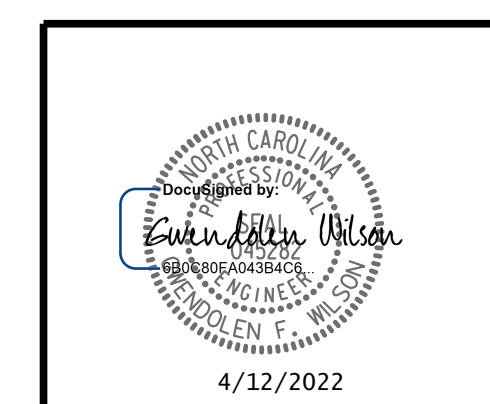
PROJECT NO. R-5820
COLUMBUS COUNTY
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
FRAMING PLAN

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1			3			TOTAL SHEETS
2			4			31

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 SHALL BE GRADE 60.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES INDICATED IN ELEVATION VIEW.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THROUGH 1020 OR APPROVED EQUAL, AND SHALL MEET THE TYPE "B" REQUIREMENTS OF SUBSECTION 7.3 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

AT ENDS OF GIRDERS TO BE EMBEDDED IN CONCRETE DIAPHRAGMS OR END WALLS, PRESTRESSING STRANDS MAY EXTEND A MAXIMUM OF 2" BEYOND THE GIRDER ENDS. OTHERWISE, PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

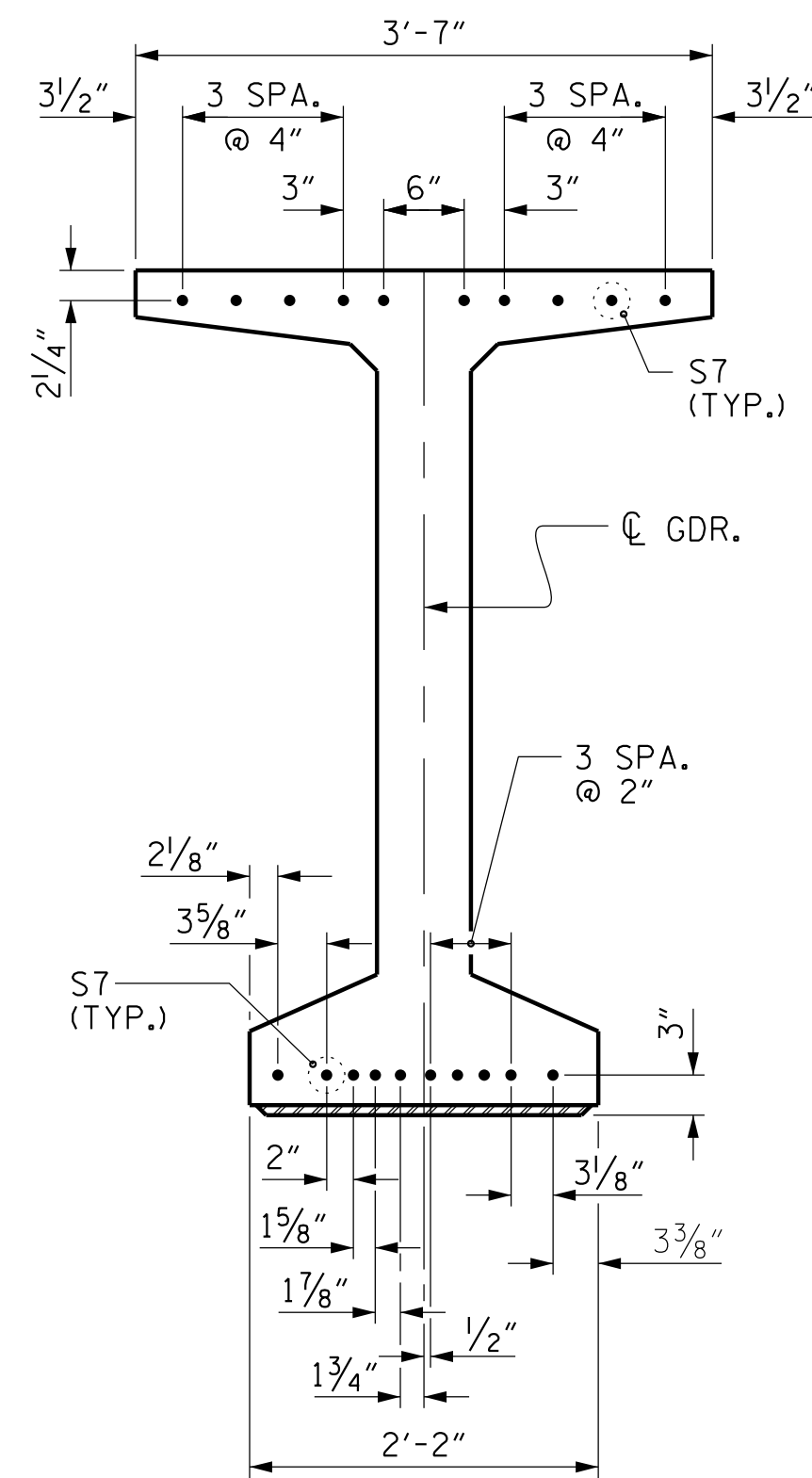
THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6000 PSI.

DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

THE TOP SURFACE OF THE GIRDER, EXCLUDING THE OUTSIDE 4", SHALL BE RAKED TO A DEPTH OF 1/4", EXCEPT AS NOTED IN THE LINK SLAB AREAS.

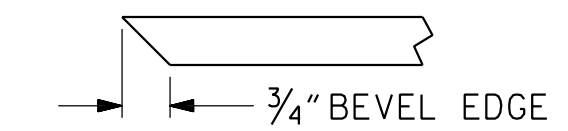
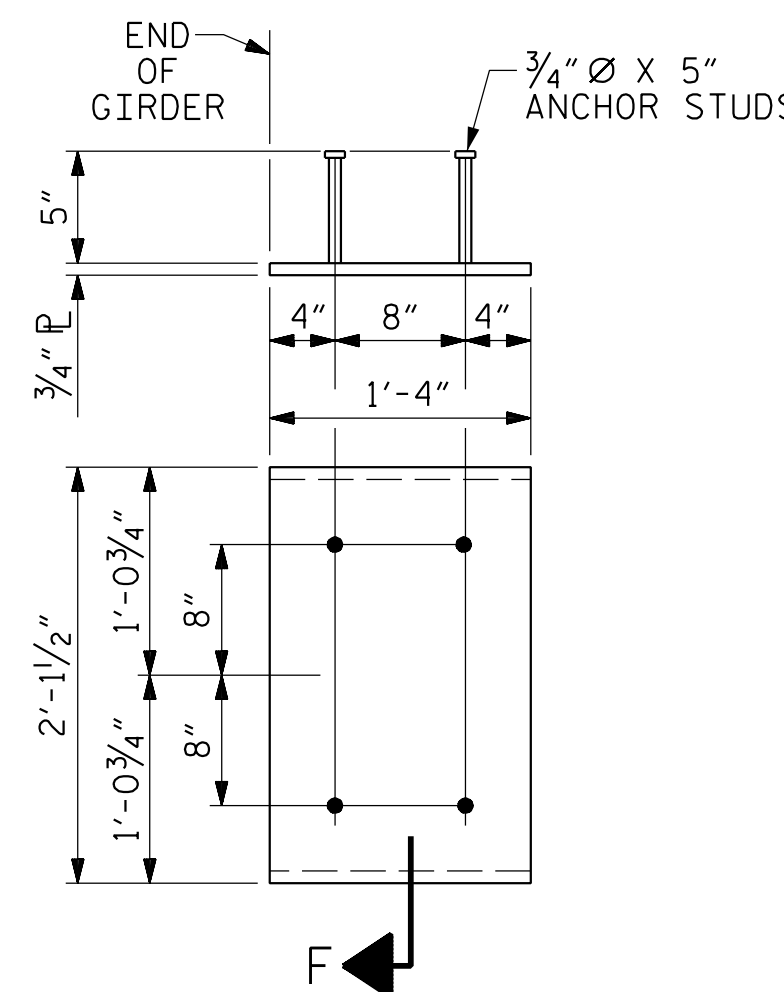
A 2" x 2" CHAMFER IS ALLOWED AT THE INTERSECTION OF THE WEB AND THE BOTTOM FLANGE OF THE 72" MODIFIED BULB TEES ONLY.

THE CONTRACTOR HAS THE OPTION TO PROVIDE, AT NO ADDITIONAL COST TO THE DEPARTMENT, 2 ADDITIONAL STRANDS AT THE TOP OF THE GIRDER TO FACILITATE TYING OF THE REINFORCING STEEL. THESE STRANDS SHALL BE PULLED TO A LOAD OF 4500 lbs.



DETAIL "C"

(FOR 72" MODIFIED BULB TEES)



SECTION "F"

(SEE NOTES)

EMBEDDED PLATE "B-1" DETAILS FOR 72" MODIFIED BULB TEES

(2 REQ'D PER GIRDER)

DEAD LOAD DEFLECTION TABLE FOR GIRDERS - SPANS A & B

0.6" Ø LOW RELAXATION		GIRDERS 1 & 4																				
FORTIETH POINTS		0	.025	.05	.075	.1	.125	.15	.175	.2	.225	.25	.275	.3	.325	.35	.375	.4	.425	.45	.475	.50
CAMBER (GIRDER ALONE IN PLACE) ↑	0.0	0.019	0.037	0.055	0.073	0.090	0.106	0.122	0.136	0.152	0.165	0.177	0.188	0.198	0.207	0.214	0.220	0.225	0.229	0.231	0.231	
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0.0	0.010	0.021	0.031	0.041	0.051	0.061	0.071	0.081	0.089	0.097	0.104	0.112	0.117	0.122	0.127	0.132	0.134	0.135	0.137	0.139	
FINAL CAMBER ↑	0.0	1/8"	3/16"	5/16"	3/8"	7/16"	9/16"	5/8"	11/16"	3/4"	13/16"	7/8"	15/16"	1"	1"	1 1/16"	1 1/16"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	
0.6" Ø LOW RELAXATION		GIRDERS 1 & 4																				
FORTIETH POINTS		.50	.525	.55	.575	.6	.625	.65	.675	.7	.725	.75	.775	.8	.825	.85	.875	.9	.925	.95	.975	1.0
CAMBER (GIRDER ALONE IN PLACE) ↑	0.231	0.231	0.229	0.224	0.220	0.214	0.207	0.198	0.188	0.177	0.165	0.152	0.137	0.122	0.106	0.090	0.073	0.055	0.037	0.019	0.0	
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0.139	0.137	0.135	0.134	0.132	0.127	0.122	0.117	0.112	0.104	0.097	0.089	0.081	0.071	0.061	0.051	0.041	0.031	0.021	0.010	0.0	
FINAL CAMBER ↑	1 1/8"	1 1/8"	1 1/8"	1 1/16"	1 1/16"	1 1/16"	1"	1"	15/16"	7/8"	13/16"	3/4"	11/16"	5/8"	9/16"	7/16"	3/8"	5/16"	3/16"	1/8"	0.0	
0.6" Ø LOW RELAXATION		GIRDERS 2 & 3																				
FORTIETH POINTS		0	.025	.05	.075	.1	.125	.15	.175	.2	.225	.25	.275	.3	.325	.35	.375	.4	.425	.45	.475	.50
CAMBER (GIRDER ALONE IN PLACE) ↑	0.0	0.019	0.037	0.055	0.073	0.090	0.106	0.122	0.136	0.152	0.165	0.177	0.188	0.198	0.207	0.214	0.220	0.225	0.229	0.231	0.231	
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0.0	0.011	0.022	0.033	0.044	0.055	0.065	0.076	0.086	0.095	0.103	0.111	0.120	0.125	0.130	0.136	0.141	0.143	0.144	0.146	0.148	
FINAL CAMBER ↑	0.0	1/8"	3/16"	1/4"	3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"	13/16"	7/8"	15/16"	15/16"	15/16"	1"	1"	1"	1"	
0.6" Ø LOW RELAXATION		GIRDERS 2 & 3																				
FORTIETH POINTS		.50	.525	.55	.575	.6	.625	.65	.675	.7	.725	.75	.775	.8	.825	.85	.875	.9	.925	.95	.975	1.0
CAMBER (GIRDER ALONE IN PLACE) ↑	0.231	0.231	0.229	0.224	0.220	0.214	0.207	0.198	0.188	0.177	0.165	0.152	0.137	0.122	0.106	0.090	0.073	0.055	0.037	0.019	0.0	
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0.148	0.146	0.144	0.143	0.141	0.136	0.130	0.125	0.120	0.111	0.103	0.095	0.086	0.076	0.065	0.055	0.044	0.033	0.022	0.011	0.0	
FINAL CAMBER ↑	1"	1"	1"	1"	15/16"	15/16"	15/16"	7/8"	13/16"	13/16"	3/4"	11/16"	5/8"	9/16"	1/2"	7/16"	3/8"	1/4"	3/16"	1/8"	0.0	

* INCLUDES FUTURE WEARING SURFACE.

ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. R-5820
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 STATION: 38+26.89 -Y1- POT

SHEET 2 OF 3

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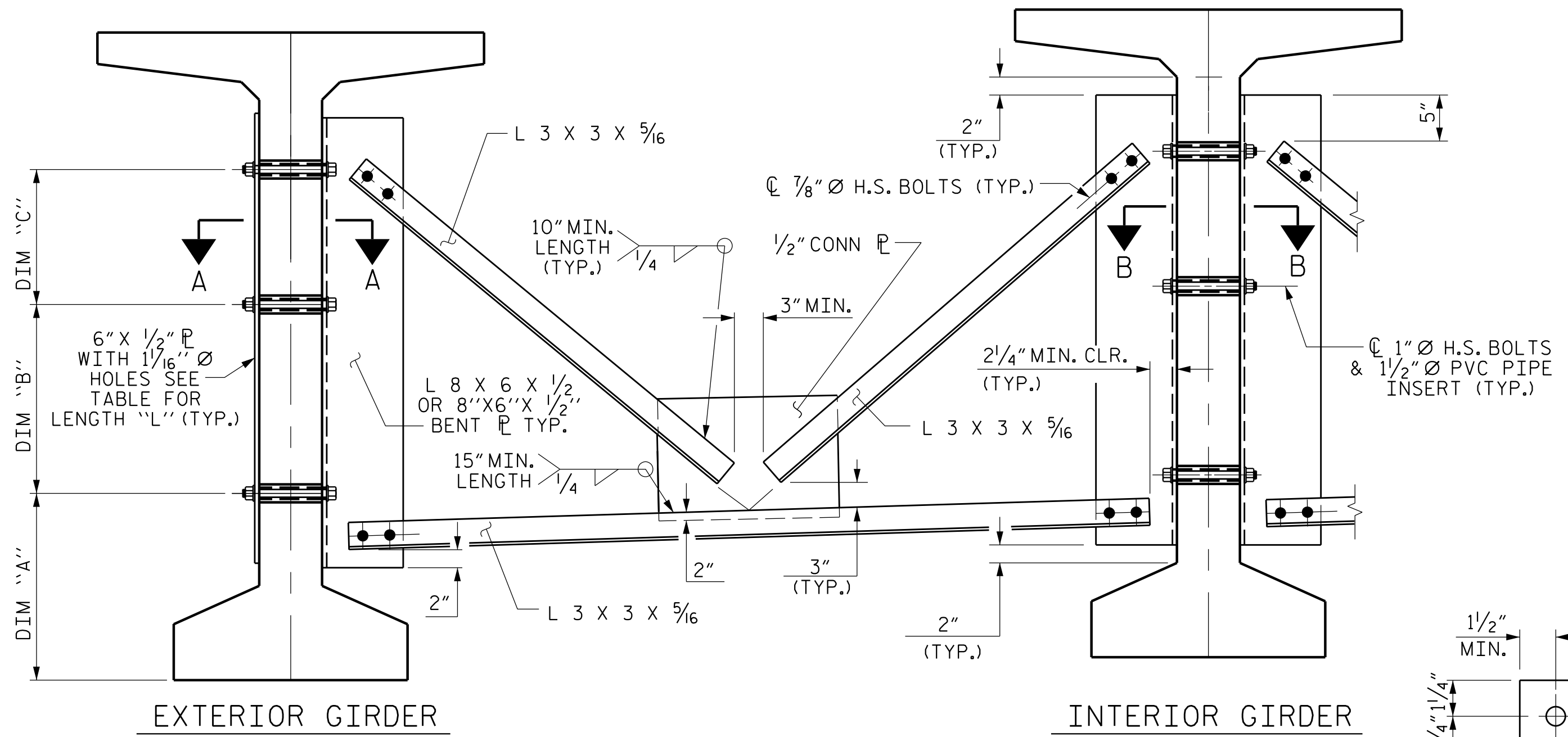
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PRESTRESSED CONCRETE GIRDER
 DETAILS

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1			3			TOTAL SHEETS
2			4			31

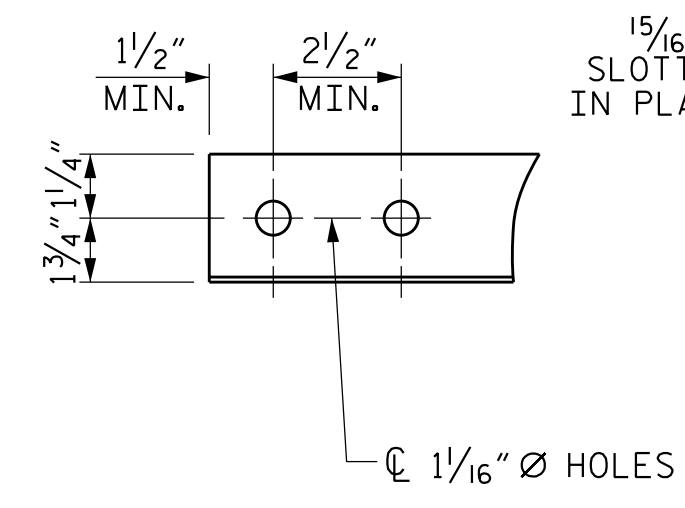
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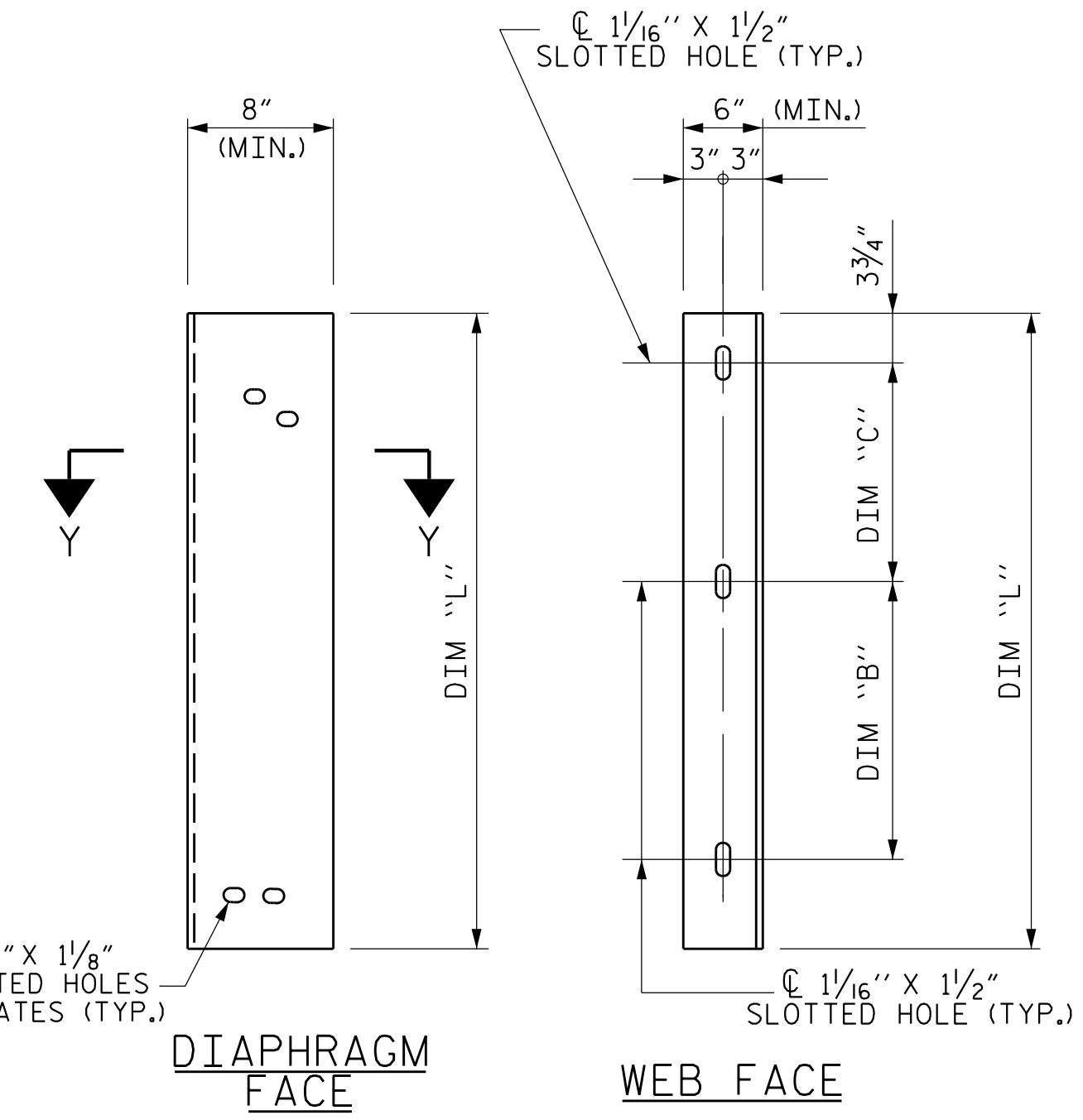
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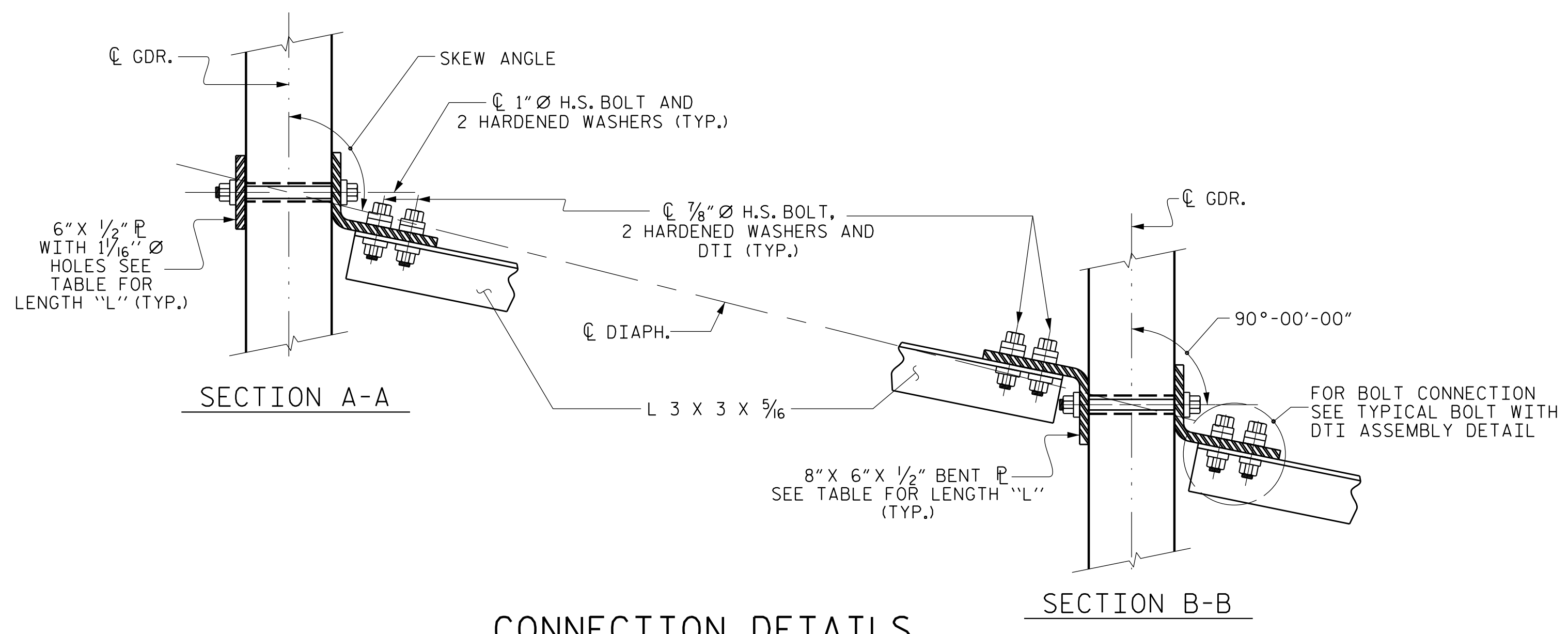
PART SECTION AT INTERMEDIATE DIAPHRAGM
(72" BULB TEE GIRDER SHOWN)



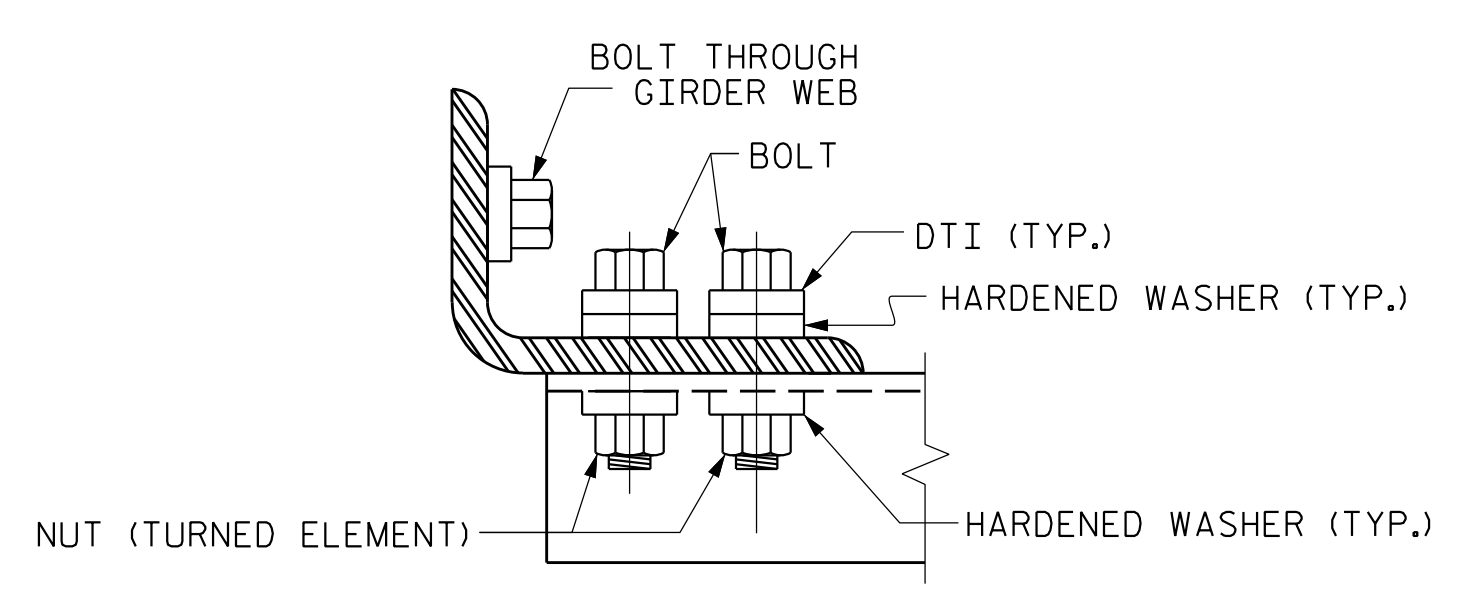
ANGLE END
(L 3 X 3 X 5/16)



CONNECTOR PLATE DETAIL



CONNECTION DETAILS



BOLT WITH DTI ASSEMBLY DETAIL

STRUCTURAL STEEL NOTES

ALL INTERMEDIATE DIAPHRAGM STEEL AND CONNECTOR PLATES SHALL BE AASHTO M270 GRADE 50 OR APPROVED EQUAL.

TENSION ON THE ASTM A325 BOLTS THROUGH THE ANGLE MEMBER SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TENSION ON THE ASTM A449 BOLTS THROUGH THE GIRDER WEB SHALL BE SNUG TIGHTENED FOLLOWED BY AN ADDITIONAL 1/4 TURN.

THE PLATES, BENT PLATES, AND ANGLES SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

FOR METALLIZATION, APPLY A THERMAL SPRAYED COATING WITH A SEAL COAT TO ALL STEEL DIAPHRAGM SURFACES IN ACCORDANCE WITH THE DEPARTMENTS THERMAL SPRAYED COATINGS (METALLIZATION) PROGRAM, THERMAL SPRAYED COATINGS SPECIAL PROVISION AND SECTION 442 OF THE STANDARD SPECIFICATIONS.

GALVANIZE THE HIGH STRENGTH BOLTS, NUTS, WASHERS AND DIRECT TENSION INDICATORS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

USE AN ASTM F436 HARDENED WASHER WITH STANDARD AND SLOTTED HOLES UNDER EACH BOLT HEAD AND NUT.

FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST 1/4" PROJECTION BEYOND THE NUT.

INTERMEDIATE DIAPHRAGM ASSEMBLY SHALL COMPLY WITH SECTION 1072 OF THE STANDARD SPECIFICATIONS.

SUBMIT TWO SETS OF WORKING DRAWINGS FOR THE INTERMEDIATE DIAPHRAGM ASSEMBLY FOR REVIEW, COMMENTS AND ACCEPTANCE. AFTER REVIEW, COMMENTS, AND ACCEPTANCE, SUBMIT SEVEN SETS FOR DISTRIBUTION.

IN THE EXTERIOR BAYS, PLACE TEMPORARY STRUTS BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE STEEL DIAPHRAGMS. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED.

THE COST OF THE STEEL DIAPHRAGMS AND ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS.

TABLE

GIRDER TYPE	DIM "A"	DIM "B"	DIM "C"	DIM "L"
72" BULB TEE	1'-8"	1'-9"	1'-3"	4'-2"

PROJECT NO. R-5820
COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 INTERMEDIATE
 STEEL DIAPHRAGMS
 FOR 72" MODIFIED BULB TEE
 PRESTRESSED CONCRETE
 GIRDERS

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NOTES

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

STEEL SOLE PLATES, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

PRIOR TO WELDING, GRIND THE GALVANIZED SURFACE OF THE PORTION OF THE EMBEDDED PLATE AND SOLE PLATE THAT ARE TO BE WELDED. AFTER WELDING, DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

WHEN WELDING THE SOLE PLATE TO THE EMBEDDED PLATE IN THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

SOLE PLATE P1, BOLTS, NUTS, AND WASHERS SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.

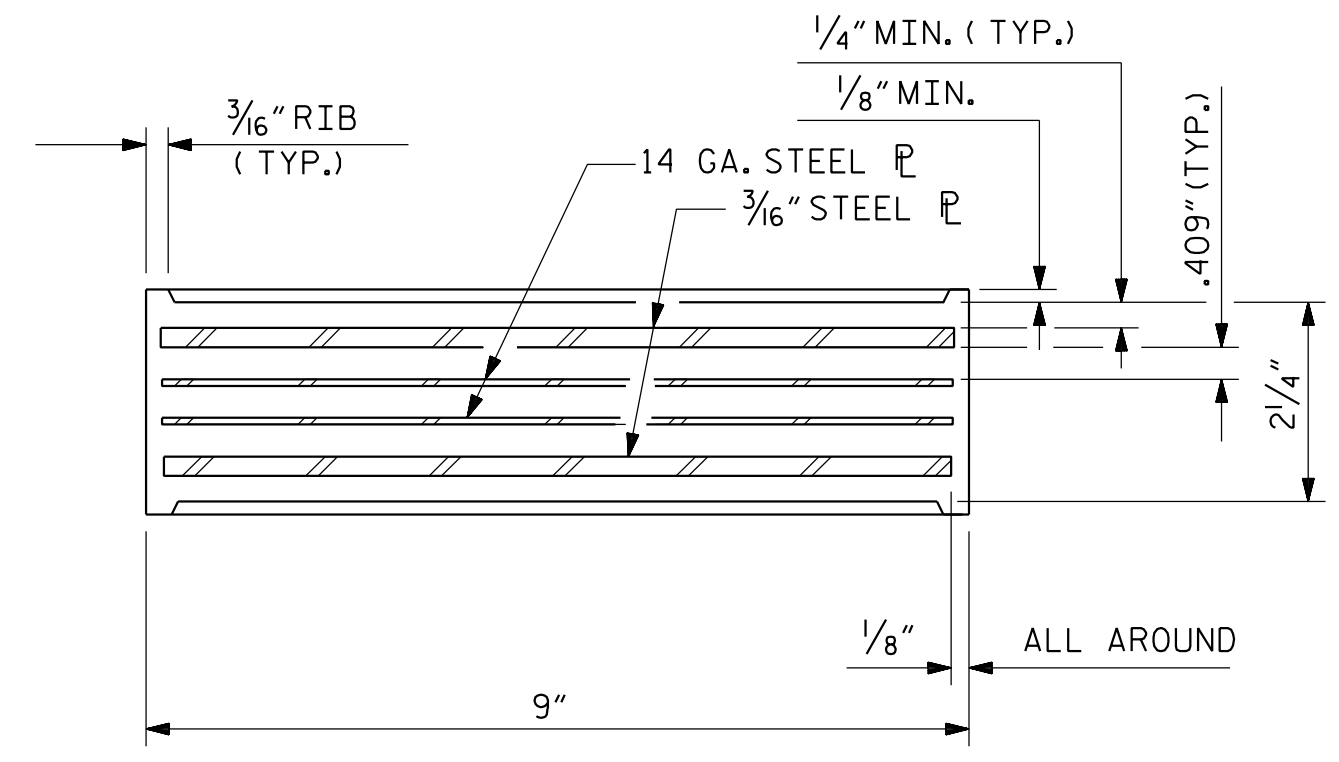
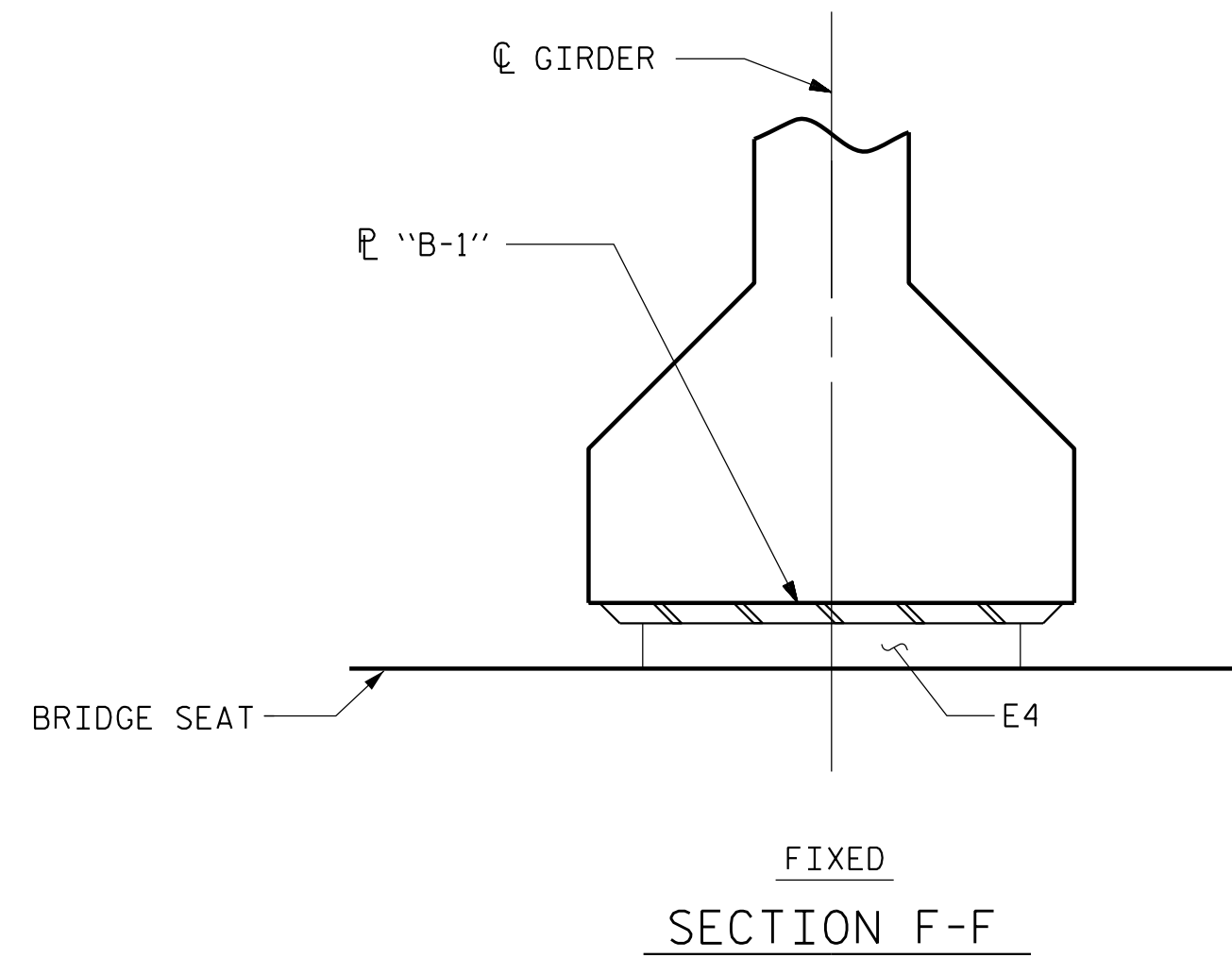
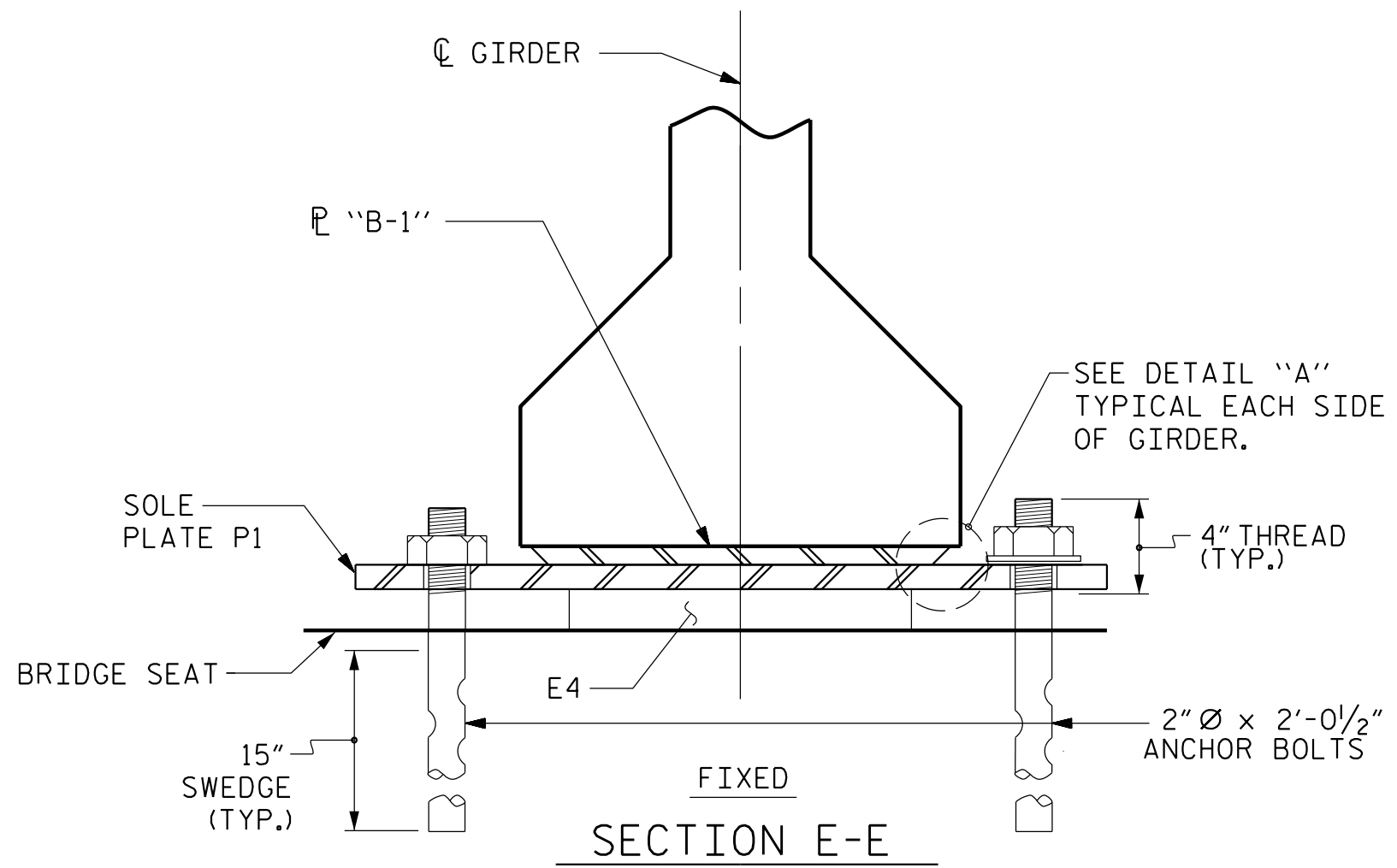
ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. NO SHOP DRAWINGS ARE REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

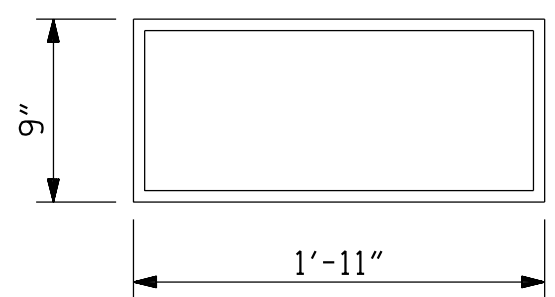
THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

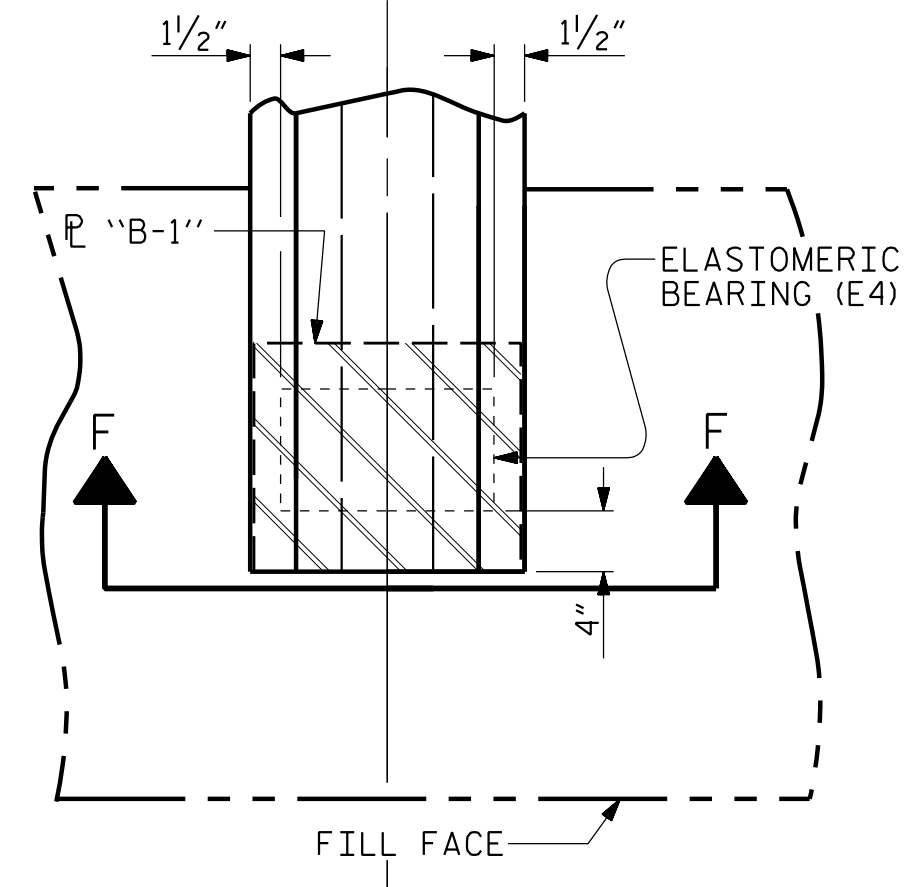
ALL SOLE PLATES SHALL BE AASHTO M270 GRADE 36.



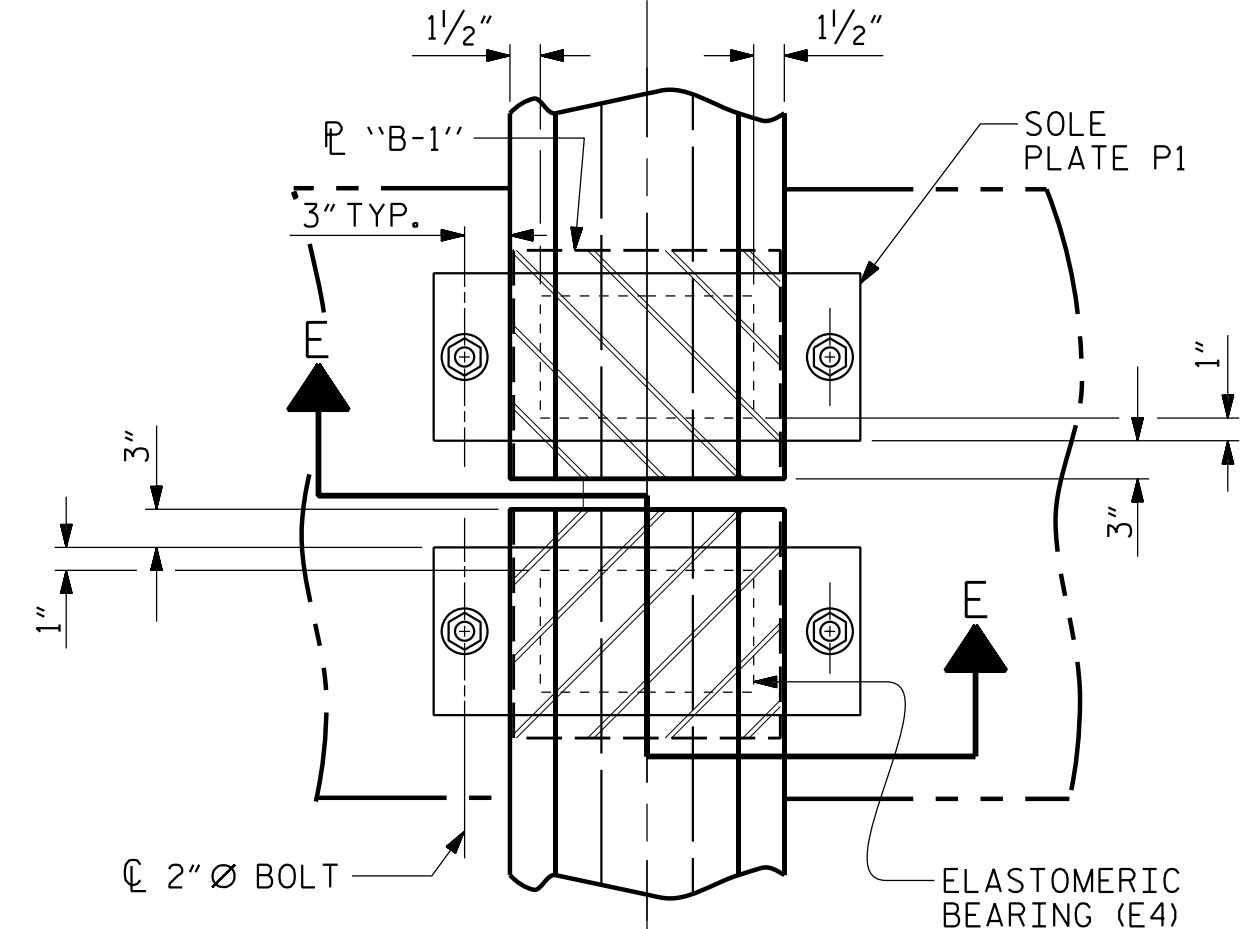
TYPICAL SECTION OF ELASTOMERIC BEARINGS



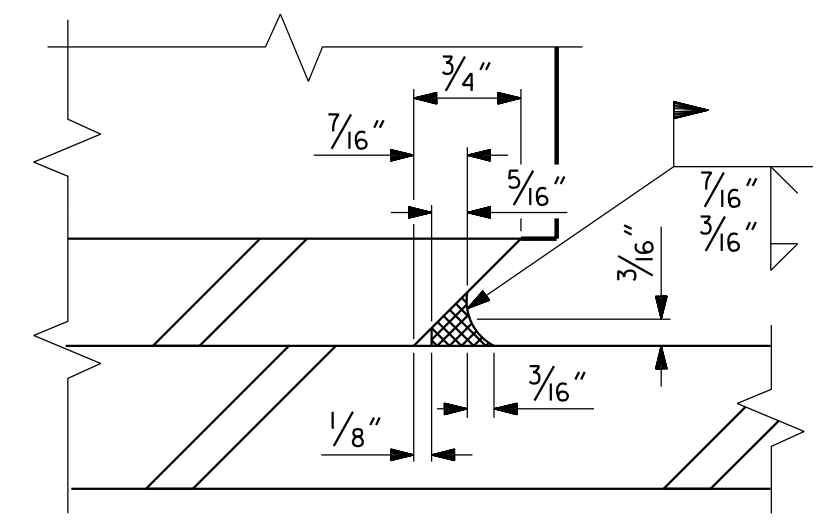
E4 (16 REQ'D)
PLAN VIEW OF ELASTOMERIC BEARING
TYPE V



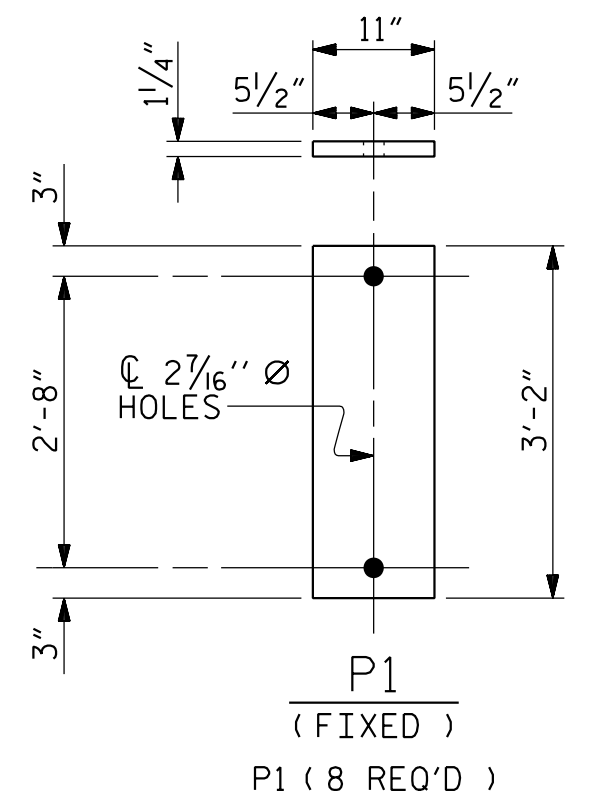
TYPICAL HALF-PLAN
(SHOWING INTEGRAL END BENT)



TYPICAL HALF-PLAN
(SHOWING CONTINUOUS BENT)



DETAIL "A"



SOLE PLATE P1 DETAILS

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE V	365 k

PROJECT NO. R-5820
COLUMBUS COUNTY
STATION: 38+26.89 -Y1- POT

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RALEIGH

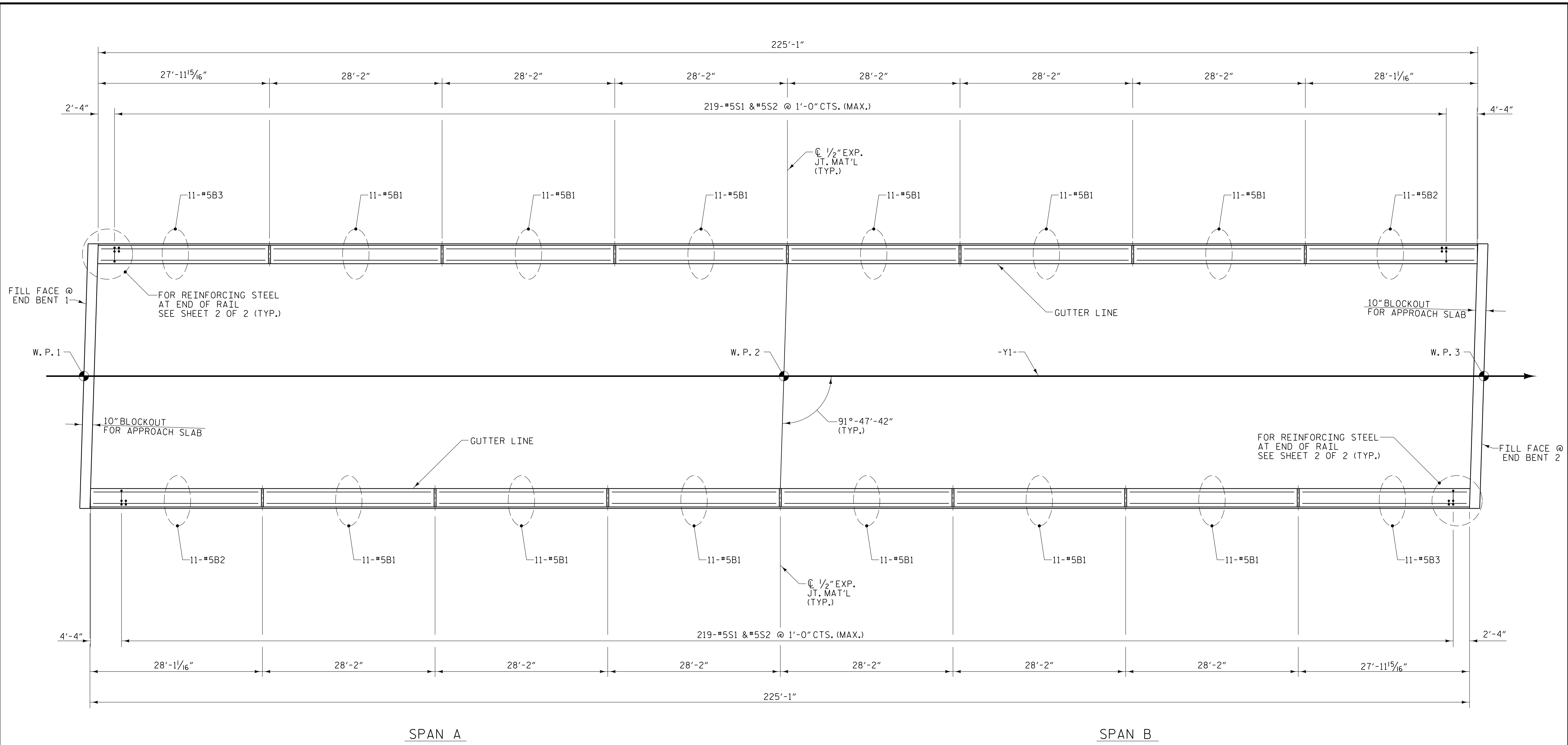
STANDARD
ELASTOMERIC BEARING DETAILS
PRESTRESSED CONCRETE GIRDER SUPERSTRUCTURE

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1			3			TOTAL SHEETS 31
2			4			

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CHECKED BY : C. F. WILSON	DATE : 6/21
DRAWN BY : EEM 2/97	REV. 1/15 MAA/TMG
CHECKED BY : VAP 2/97	REV. 12/17 MAA/THC
	REV. 10/21 BNB/AAI

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PLAN OF BARRIER RAIL

PROJECT NO. R-5820
COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
CONCRETE
BARRIER RAIL

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Professional Engineer Seal for G. F. Wilson, State of North Carolina, License No. 28023, Exp. 12/31/2023.

4/12/2022

DRAWN BY : W. B. ALLEN DATE : 4/20
 CHECKED BY : G. F. WILSON DATE : 6/21
 DESIGN ENGINEER OF RECORD: G. F. WILSON DATE : 10/21

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			31
2			4			

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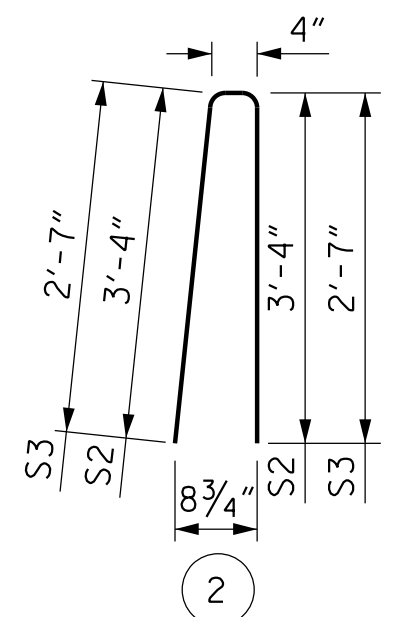
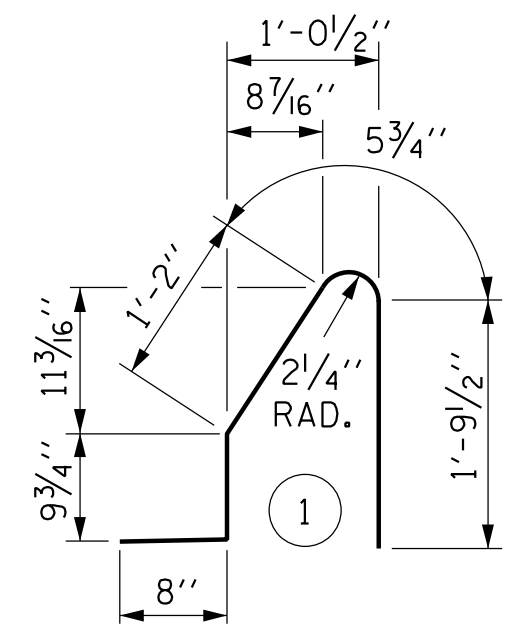
NOTES

THE BARRIER RAIL IN EACH SPAN SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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, THE 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.

BAR TYPES



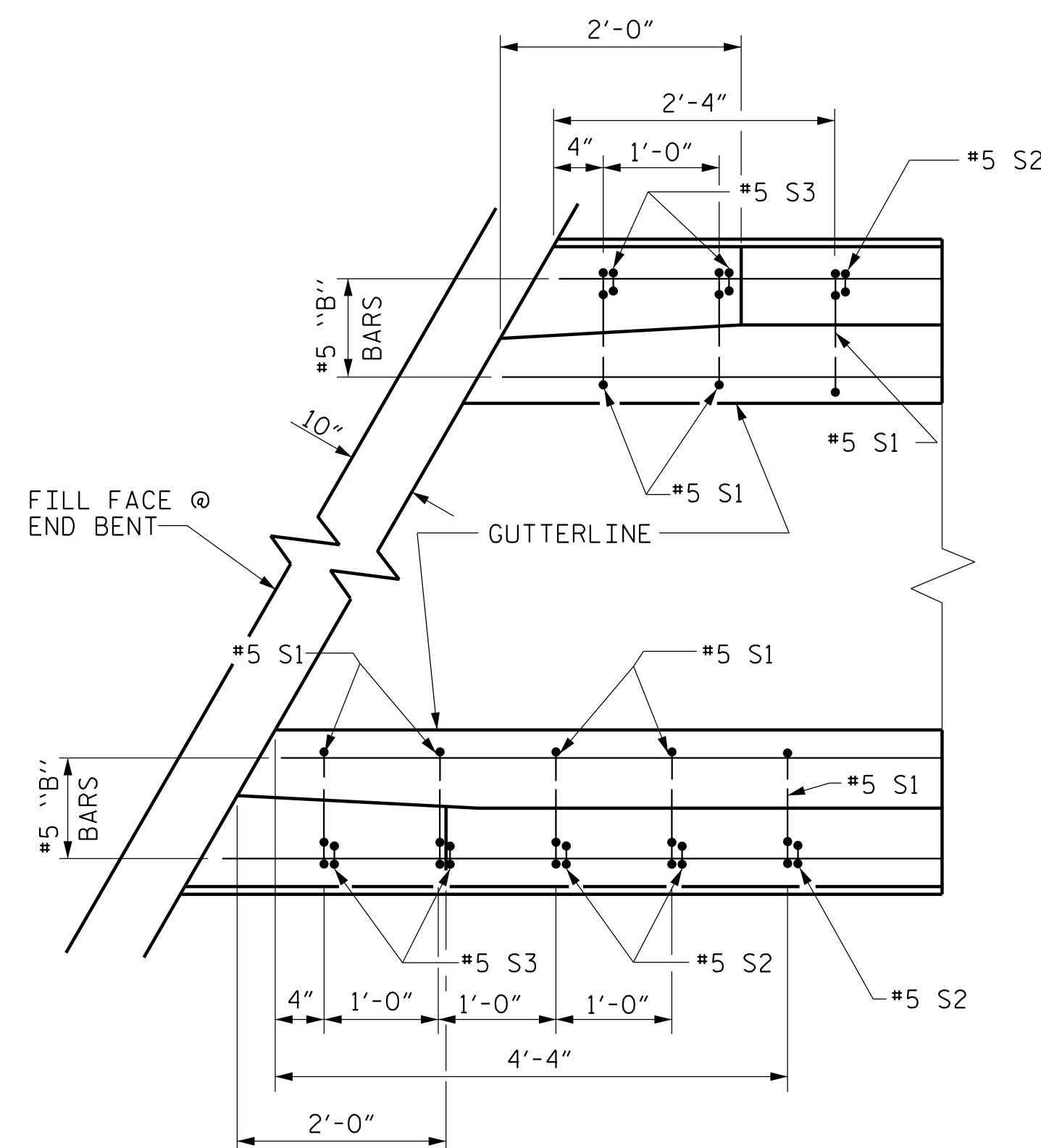
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

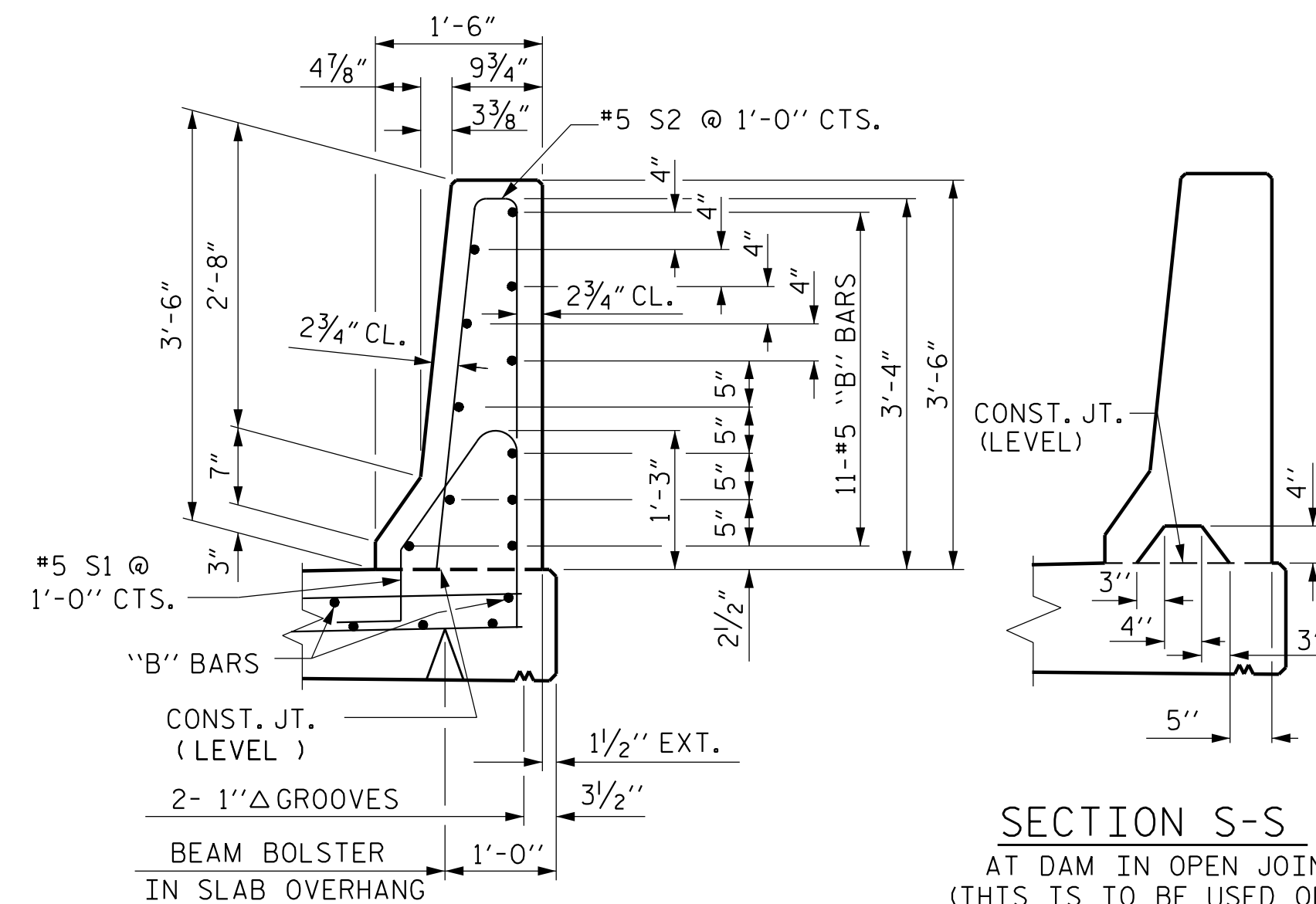
FOR CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	132	#5	STR	27'-9"	3821
* B2	22	#5	STR	27'-8"	635
* B3	22	#5	STR	27'-7"	633
* S1	450	#5	1	4'-11"	2308
* S2	442	#5	2	7'-0"	3227
* S3	8	#5	2	5'-6"	46

* EPOXY COATED REINFORCING STEEL	10670 LBS.
CLASS AA CONCRETE	61.2 CU. YDS.
CONCRETE BARRIER RAIL	450.17 LIN. FT.

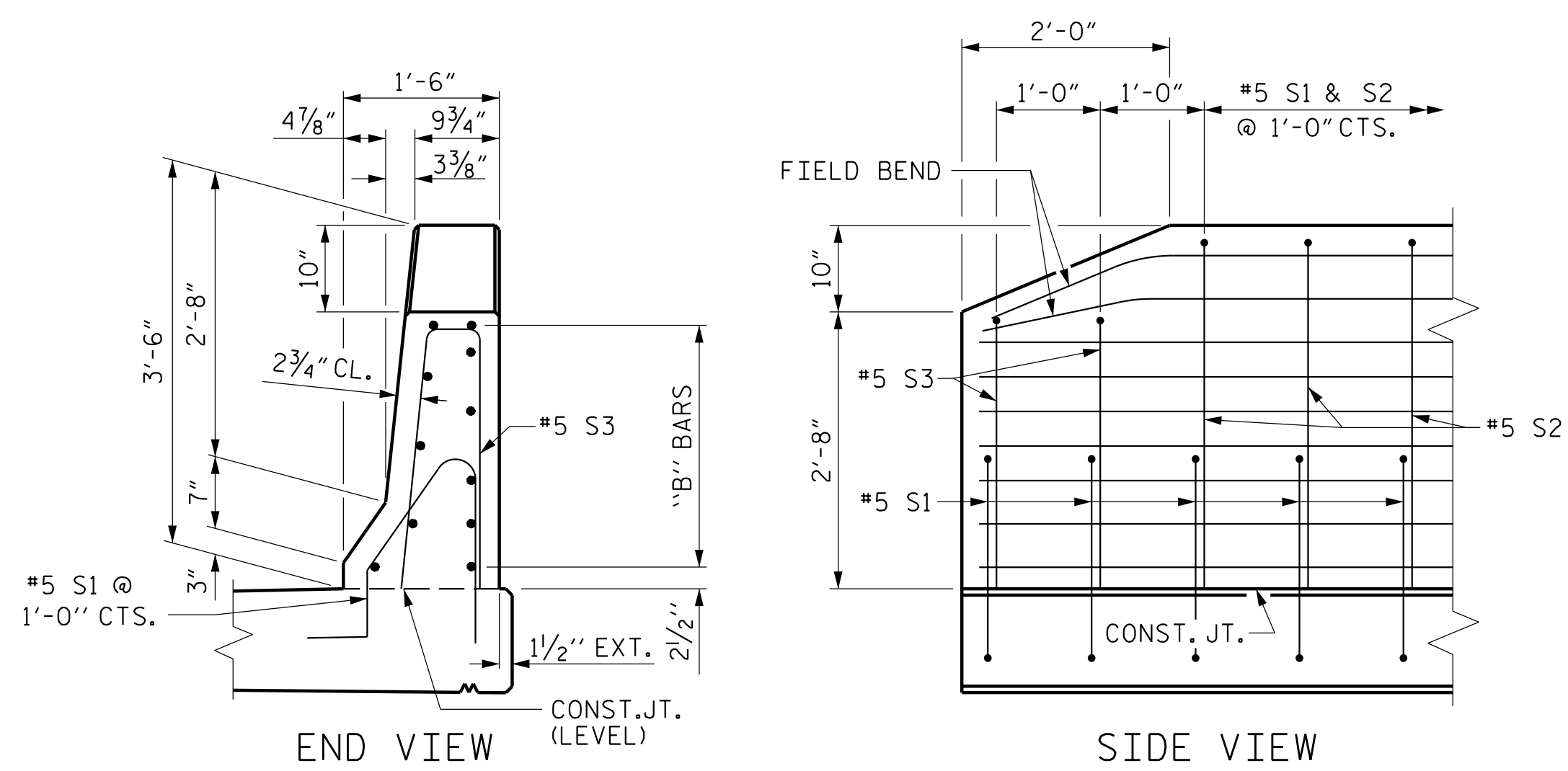


PLAN



SECTION THRU RAIL

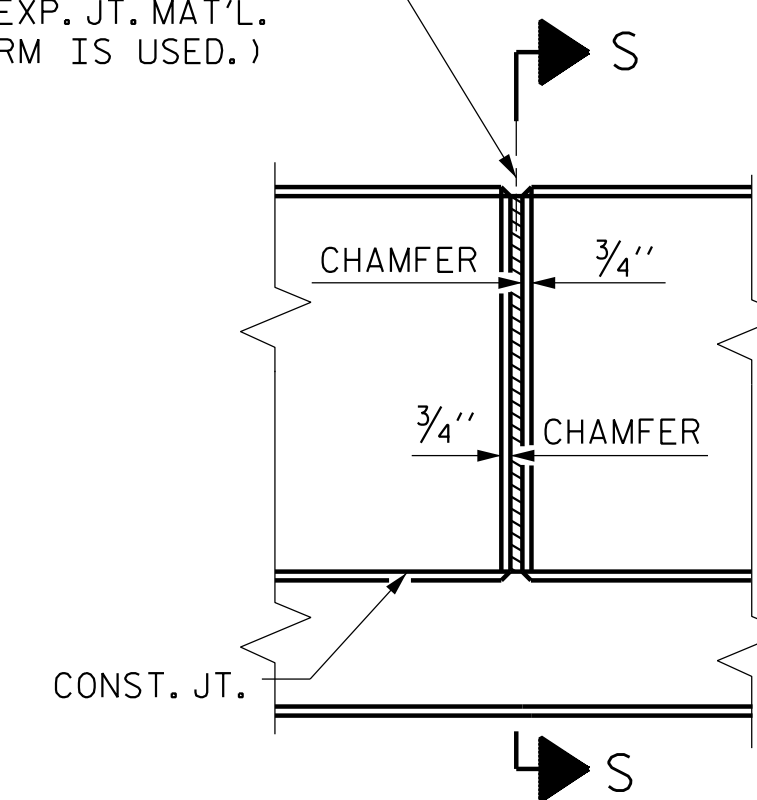
SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)



END OF RAIL DETAILS

FOR ADHESIVE ANCHORING AT SAWED JOINTS

1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS.
(NOTE: OMIT EXP. JT. MAT'L. WHEN SLIP FORM IS USED.)



ELEVATION AT EXPANSION JOINTS

BARRIER RAIL DETAILS

PROJECT NO. R-5820
COLUMBUS COUNTY
STATION: 38+26.89 -Y1- POT

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
CONCRETE
BARRIER RAIL

REVISIONS

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

SHEET NO.

S2-17

TOTAL SHEETS

31

STD. NO. CBR1 (SHT 2)

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4/12/2022

ASSEMBLED BY : W. B. ALLEN	DATE : 4/20
CHECKED BY : G. F. WILSON	DATE : 6/21
DRAWN BY : ARB 5/87	REV. 7/12 MAA/GM
CHECKED BY : SJD 9/87	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

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.)

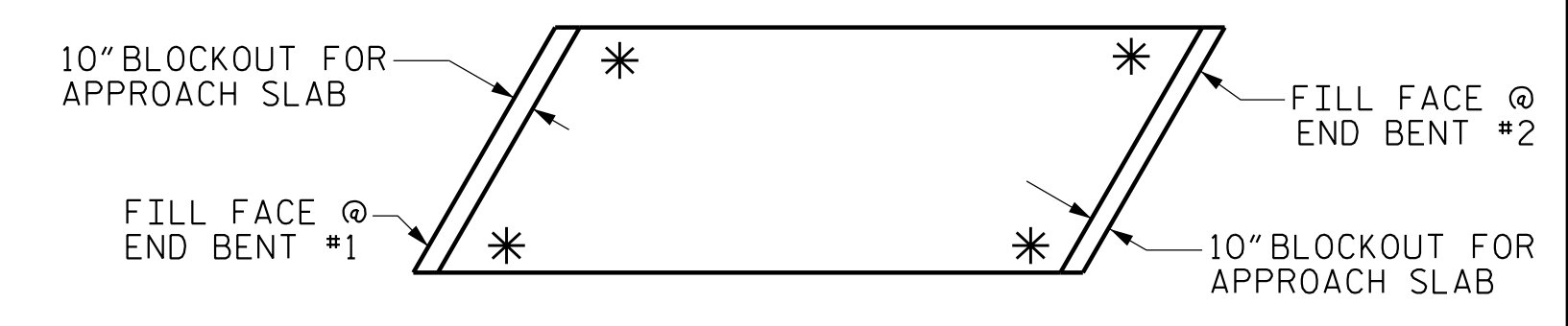
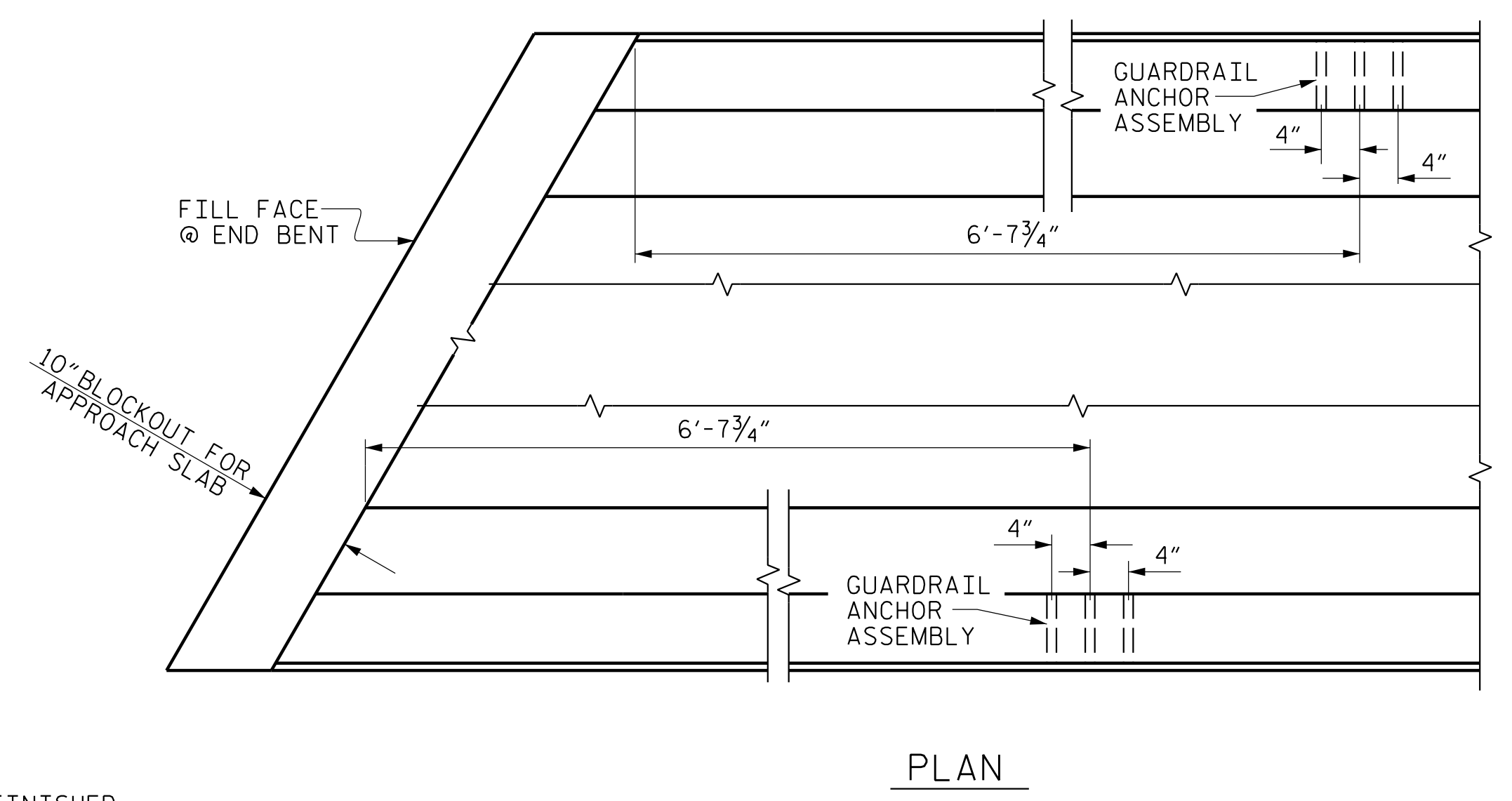
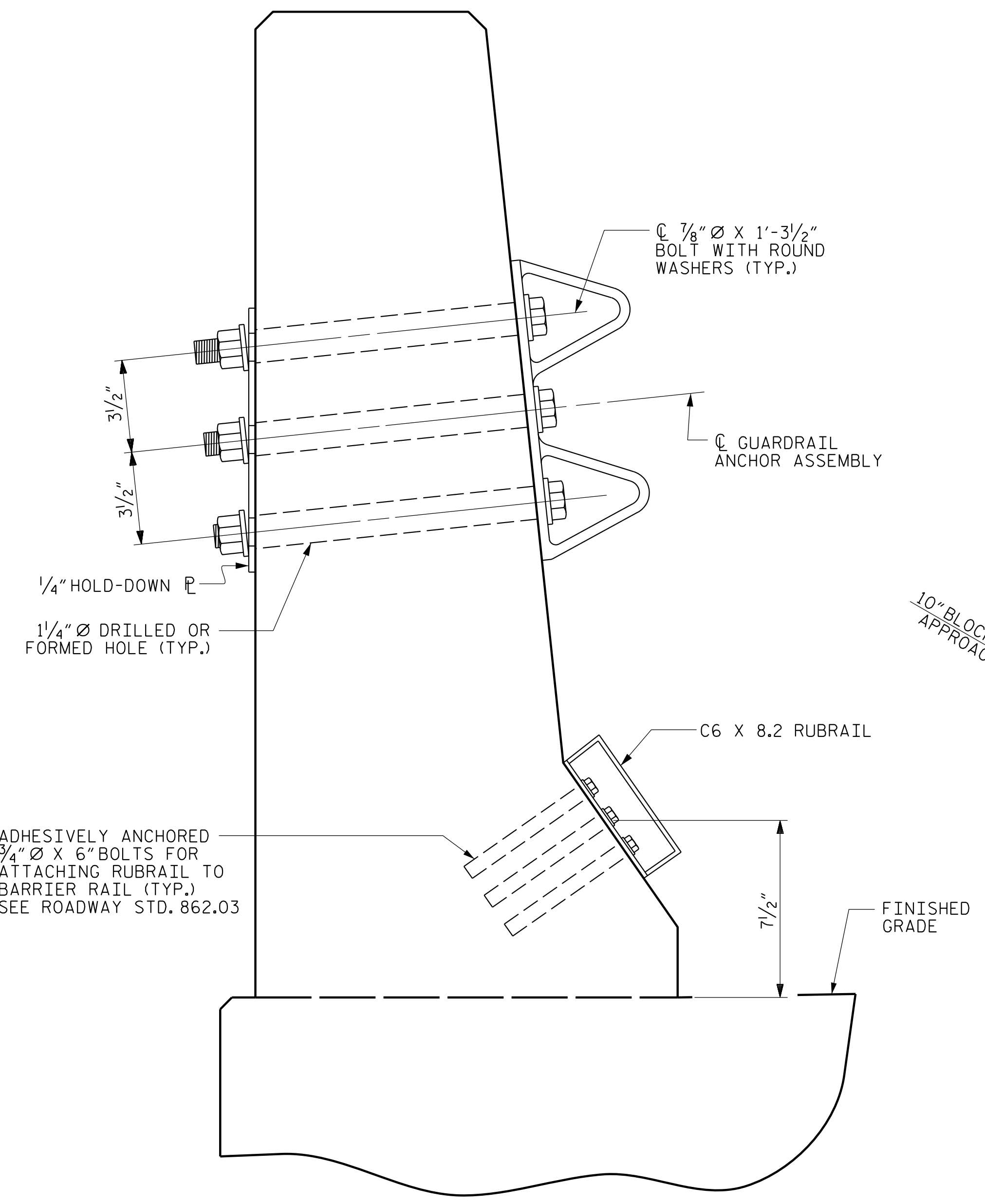
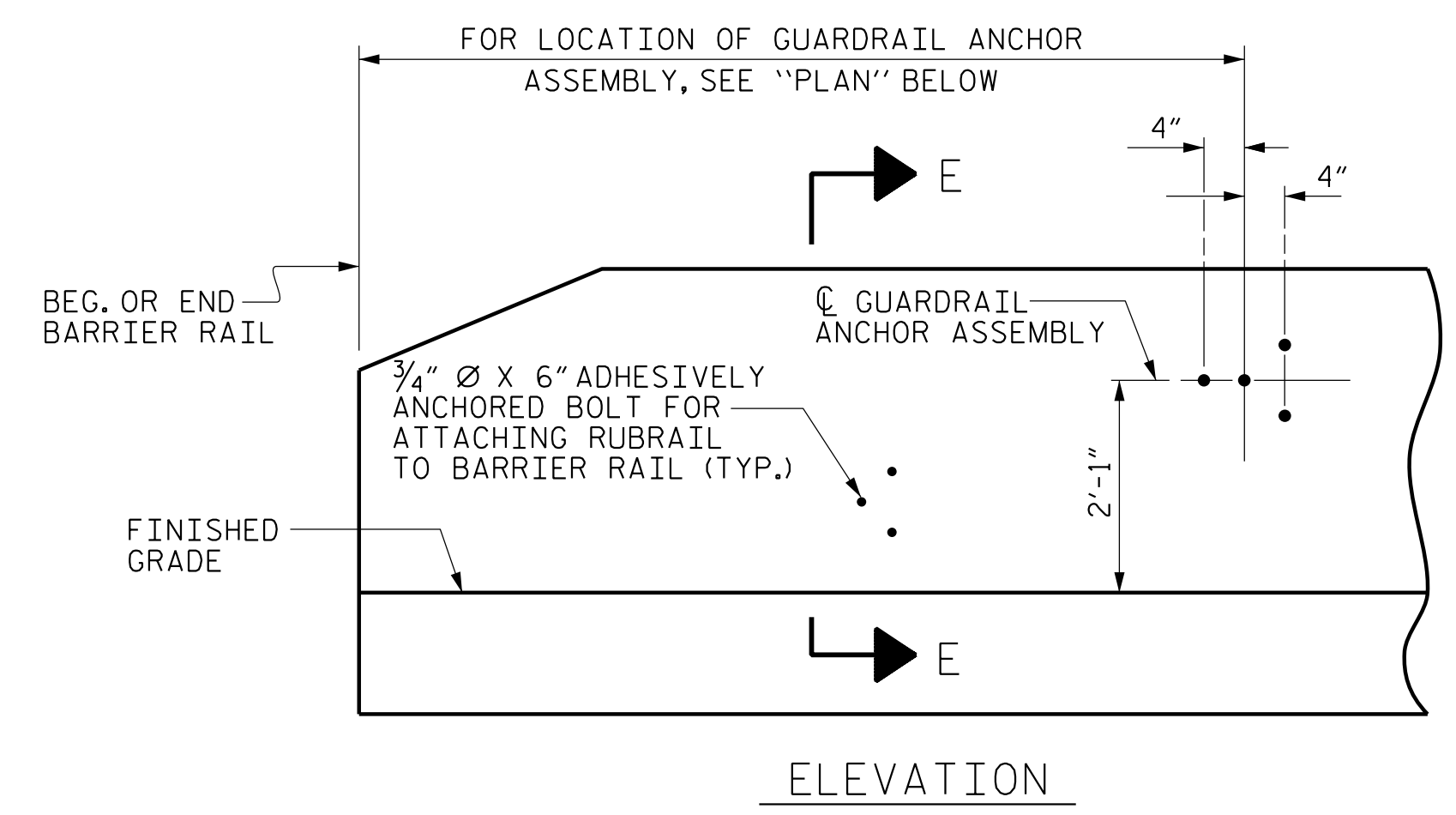
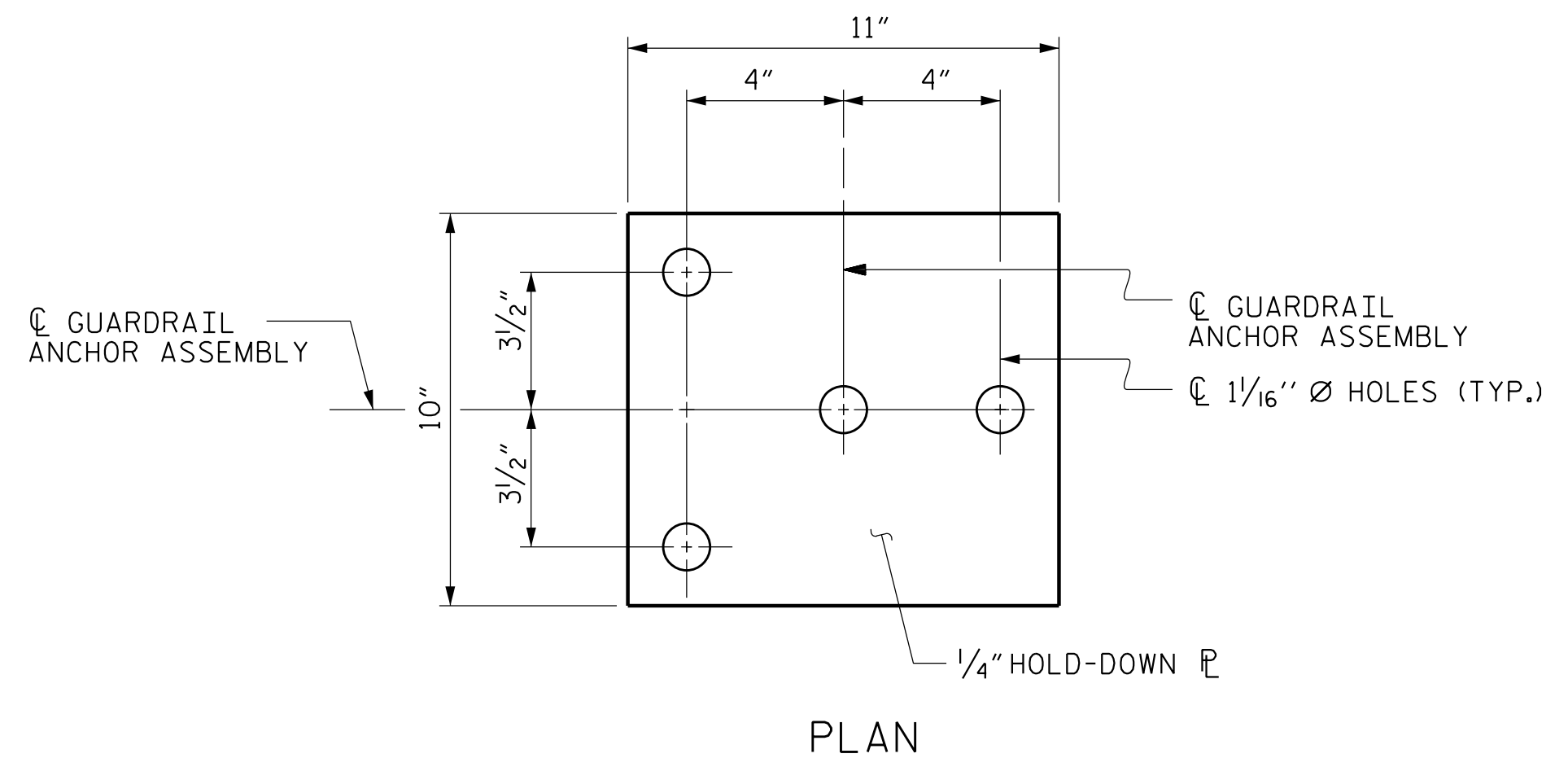
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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 3/4" 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 ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

LOCATION OF ANCHORS FOR GUARDRAIL

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

PROJECT NO. R-5820
COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

SECTION E-E
 GUARDRAIL ANCHOR ASSEMBLY DETAILS

ASSEMBLED BY : W. B. ALLEN	DATE : 4/20
CHECKED BY : G. F. WILSON	DATE : 6/21
DRAWN BY : TLA 5/06	REV. 7/12 MAA/GM
CHECKED BY : GM 5/06	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

PLANS PREPARED BY:

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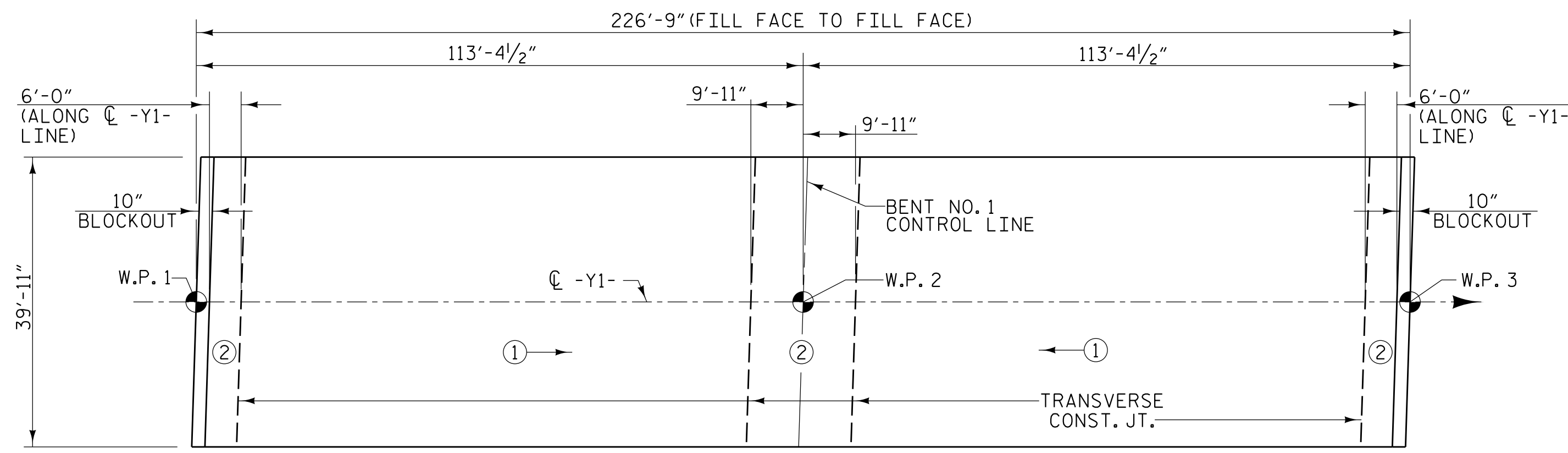
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 GUARDRAIL ANCHORAGE
 FOR BARRIER RAIL

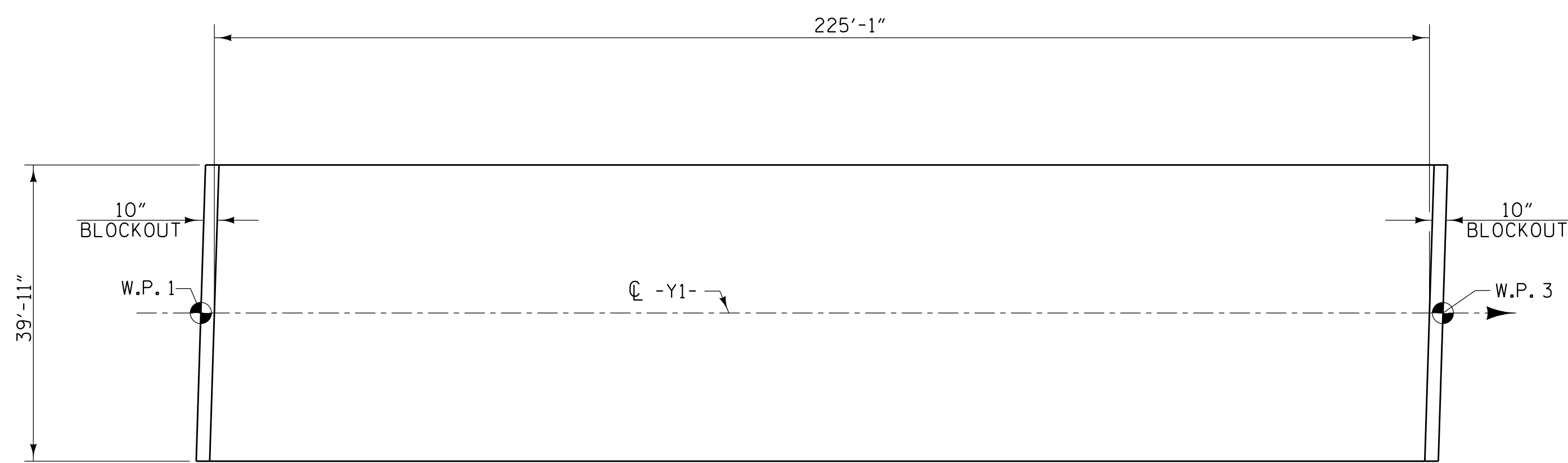
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2			4			

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POURING SEQUENCE SKETCH

⊕ INDICATES POUR SEQUENCE NUMBER
 NOTE: POUR 2 CANNOT BE STARTED UNTIL BOTH ADJACENT POURS REACH MINIMUM OF 3000 PSI



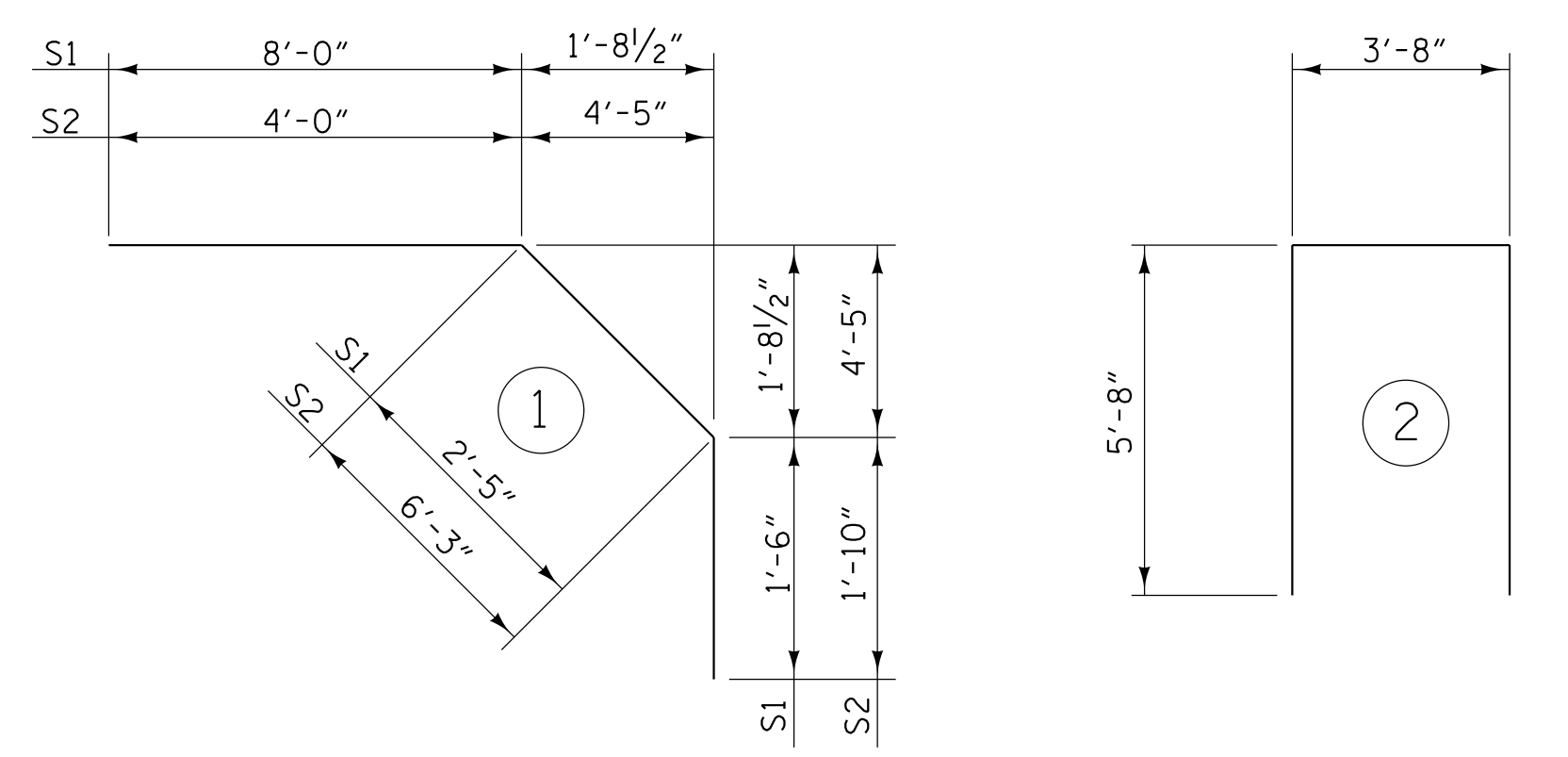
LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB

(TOTAL SQ. FT. = 8985)

REINFORCING BAR SCHEDULE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	383	#5	STR	39'-7"	15812
A2	383	#5	STR	39'-7"	15812
* A101	2	#5	STR	31'-9"	66
* A102	2	#5	STR	13'-1"	27
A201	2	#5	STR	31'-9"	66
A202	2	#5	STR	13'-1"	27
B1	120	#5	STR	41'-9"	5225
B2	50	#4	STR	22'-9"	760
B3	30	#5	STR	12'-0"	375
B4	30	#5	STR	55'-10"	1747
B5	25	#5	STR	54'-8"	1425
* B6	116	#4	STR	39'-2"	3035
* B7	156	#5	STR	22'-9"	3702
* B8	29	#5	STR	22'-0"	665
* B9	29	#5	STR	57'-3"	1732
* B10	52	#5	STR	43'-6"	2359
K1	14	#4	STR	39'-7"	370
K2	6	#4	STR	7'-11"	32
K3	30	#4	STR	9'-6"	190
K4	6	#4	STR	6'-6"	26
K5	4	#4	STR	2'-11"	8
K6	20	#4	STR	3'-8"	49
K7	4	#4	STR	2'-2"	6
* S1	54	#4	1	11'-11"	430
* S2	50	#4	1	12'-1"	404
REINFORCING STEEL				LBS.	26659
*EPOXY COATED REINFORCING STEEL				LBS.	28232

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

SUPERSTRUCTURE BILL OF MATERIAL

	CLASS AA CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	* EPOXY COATED REINFORCING STEEL (LBS.)
POUR 1	242.6		
POUR 2	110.0		
REINFORCING STEEL		LBS.	26659
*EPOXY COATED REINFORCING STEEL		LBS.	28232
TOTALS **	352.6	26659	28232

* INDICATES EPOXY COATED REINFORCING STEEL
 ** QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	1'-11"	1'-7"	1'-11"	1'-7"	2'-6"
#5	2'-5"	2'-0"	2'-5"	2'-0"	3'-1"
#6	2'-10"	2'-5"	3'-7"	2'-5"	3'-8"
#7	4'-2"	2'-9"			
#8	4'-9"	3'-2"			

GROOVING BRIDGE FLOORS

APPROACH SLABS	976	SO. FT.
BRIDGE DECK	7578	SO. FT.
TOTAL	8554	SO. FT.

PROJECT NO. R-5820
COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE BILL OF MATERIAL

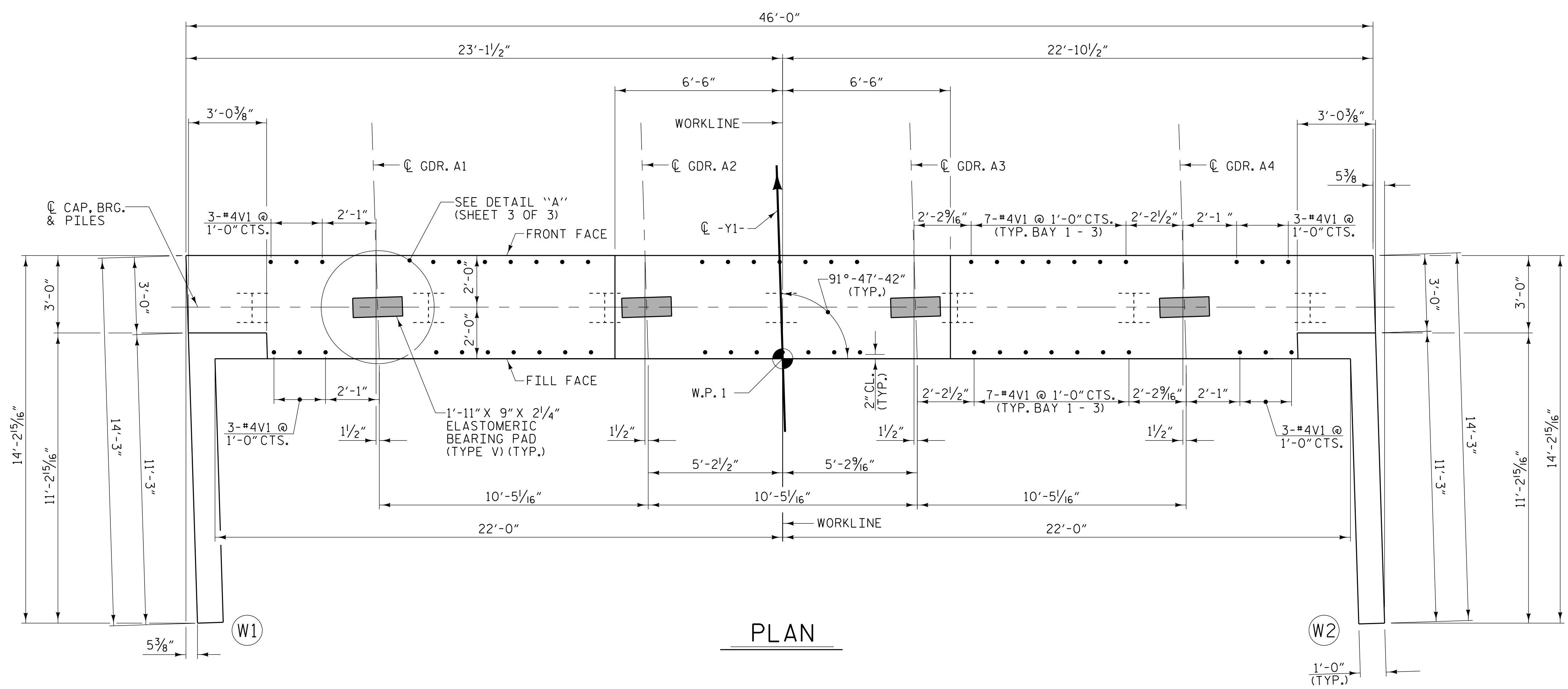
DRAWN BY : W. B. ALLEN DATE : 4/20
 CHECKED BY : G. F. WILSON DATE : 7/21
 DESIGN ENGINEER OF RECORD: G. F. WILSON DATE : 10/21

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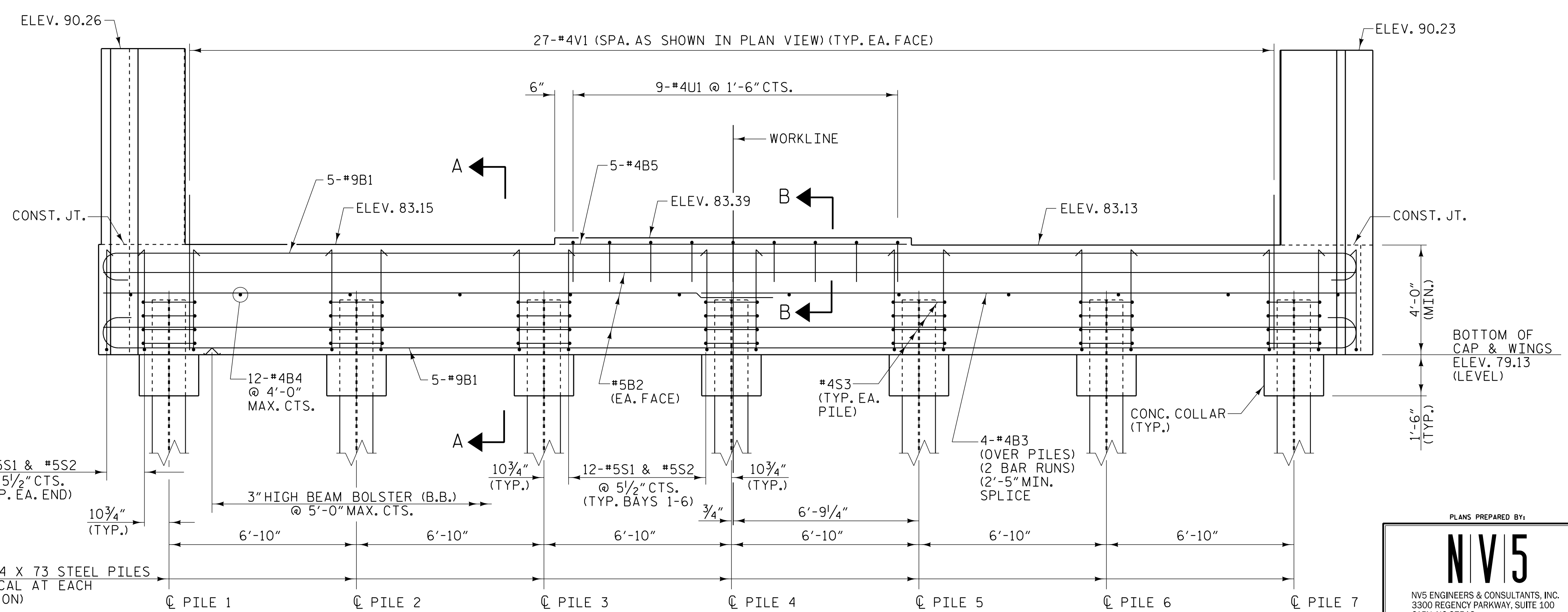
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-19
1			3			TOTAL SHEETS
2			4			31



PLAN

NOTES

- #4V1 BARS MAY BE SHIFTED SLIGHTLY TO AVOID STIRRUPS IN THE CAP.
- THE TOP SURFACE OF THE END BENT CAP AND WINGS (POUR 1), EXCLUDING THE BEARING AREA, SHALL BE RAKED TO A DEPTH OF 1/4".
- FOR SECTION A-A AND SECTION B-B, SEE SHEET 3 OF 3.
- SEE "GENERAL DRAWING FOUNDATION LAYOUT" FOR ADDITIONAL NOTES FOR DRIVING PILES.
- FOR TEMPORARY DRAINAGE AT END BENT DETAIL SEE "INTEGRAL END BENT 1" SHEET 3 OF 3.
- FOR PILE SPLICE DETAILS, SEE "INTEGRAL END BENT 2" SHEET 3 OF 3.



ELEVATION

PROJECT NO. R-5820
COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
INTEGRAL END BENT 1

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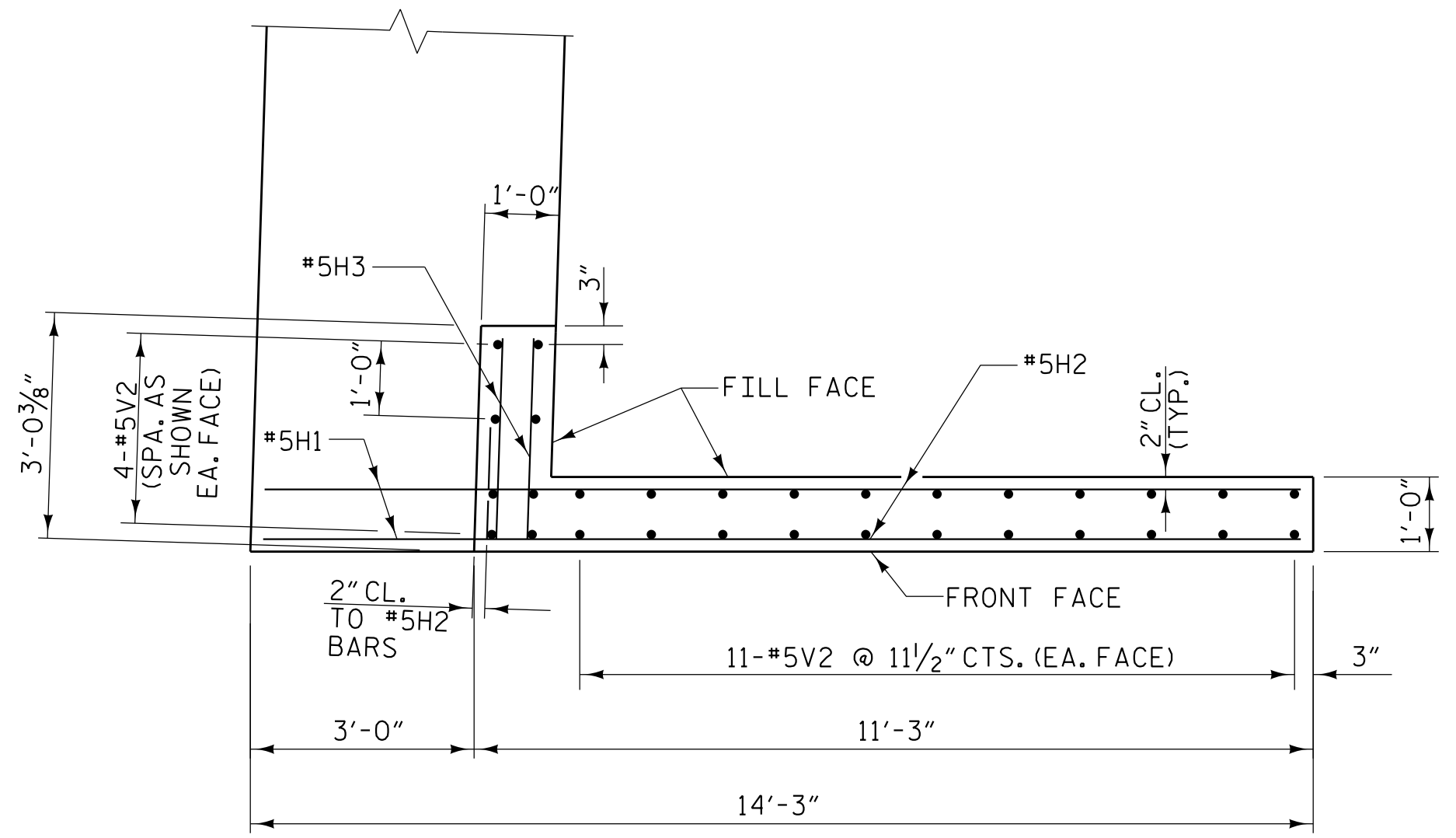
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			31
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DRAWN BY : W. B. ALLEN DATE : 5/20
 CHECKED BY : G. F. WILSON DATE : 6/21
 DESIGN ENGINEER OF RECORD: G. F. WILSON DATE : 10/21

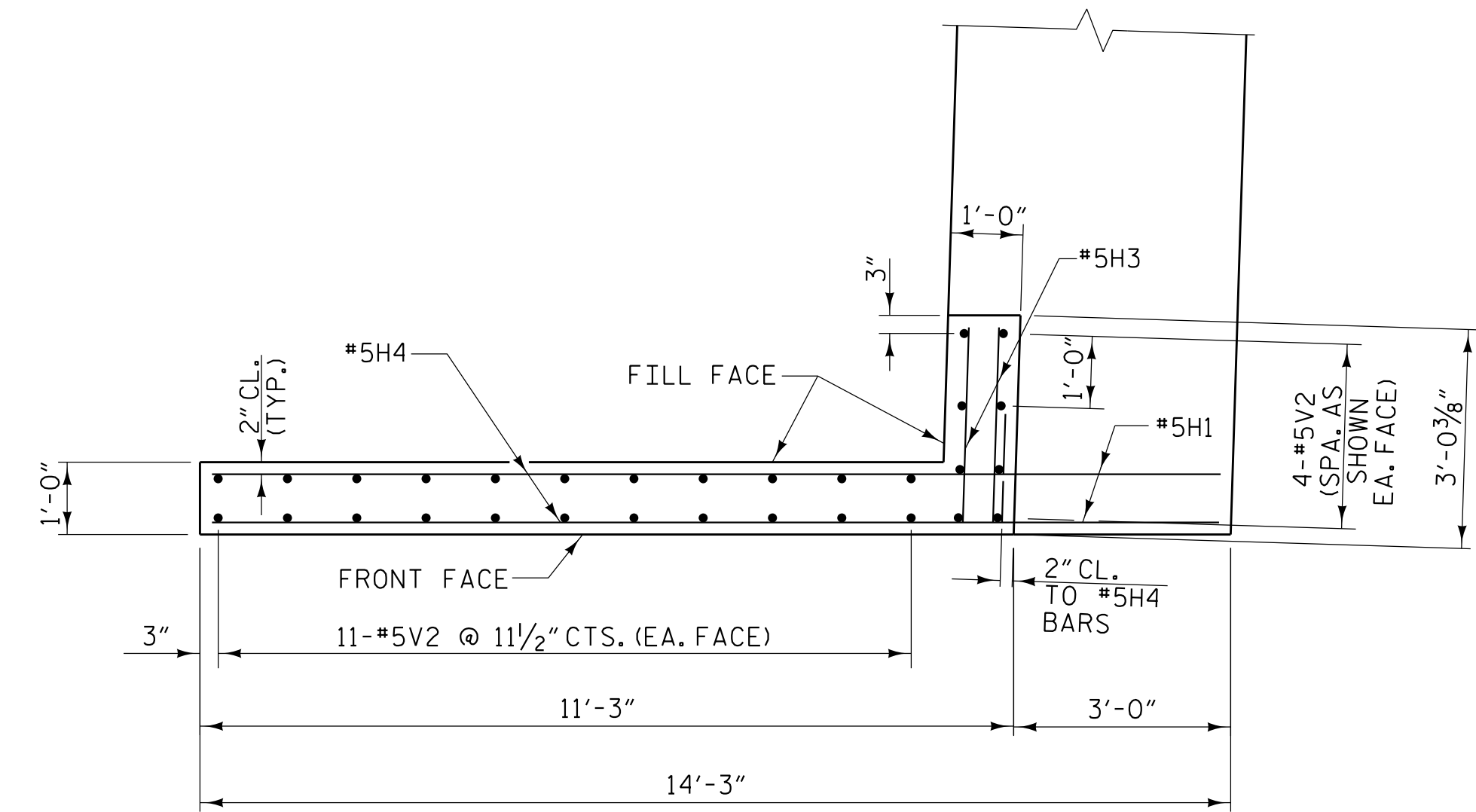
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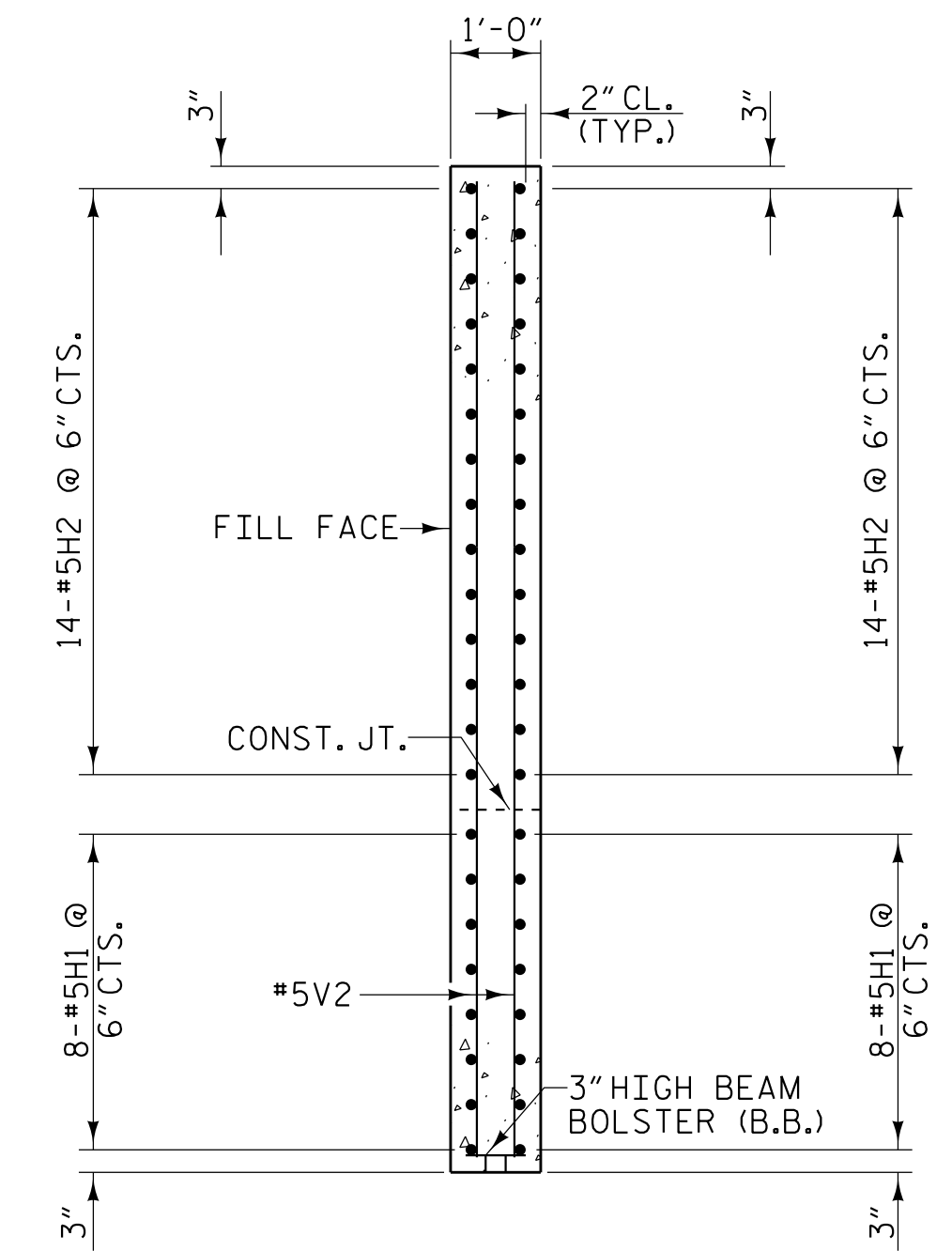
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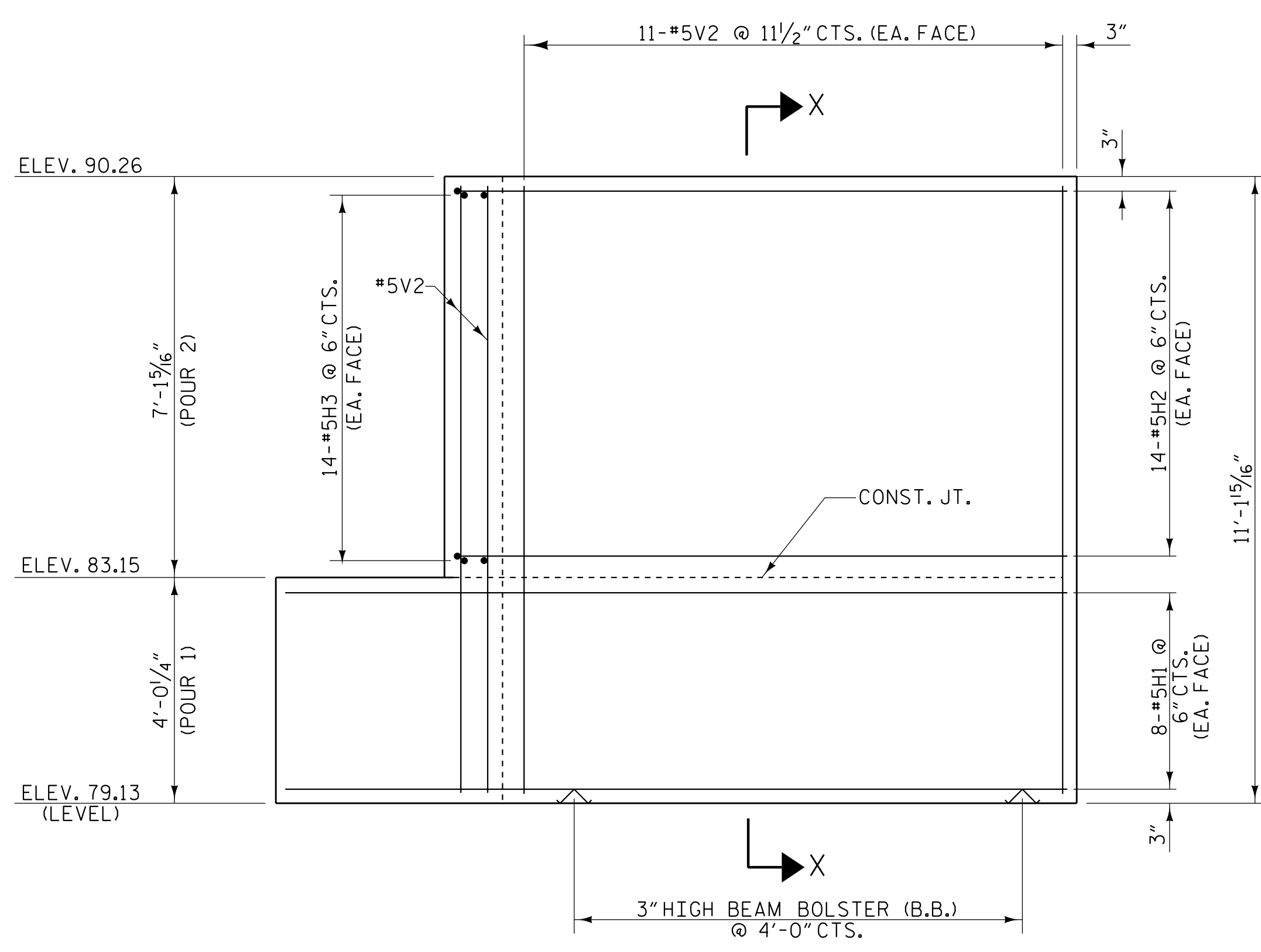
PLAN OF LEFT WING - W1



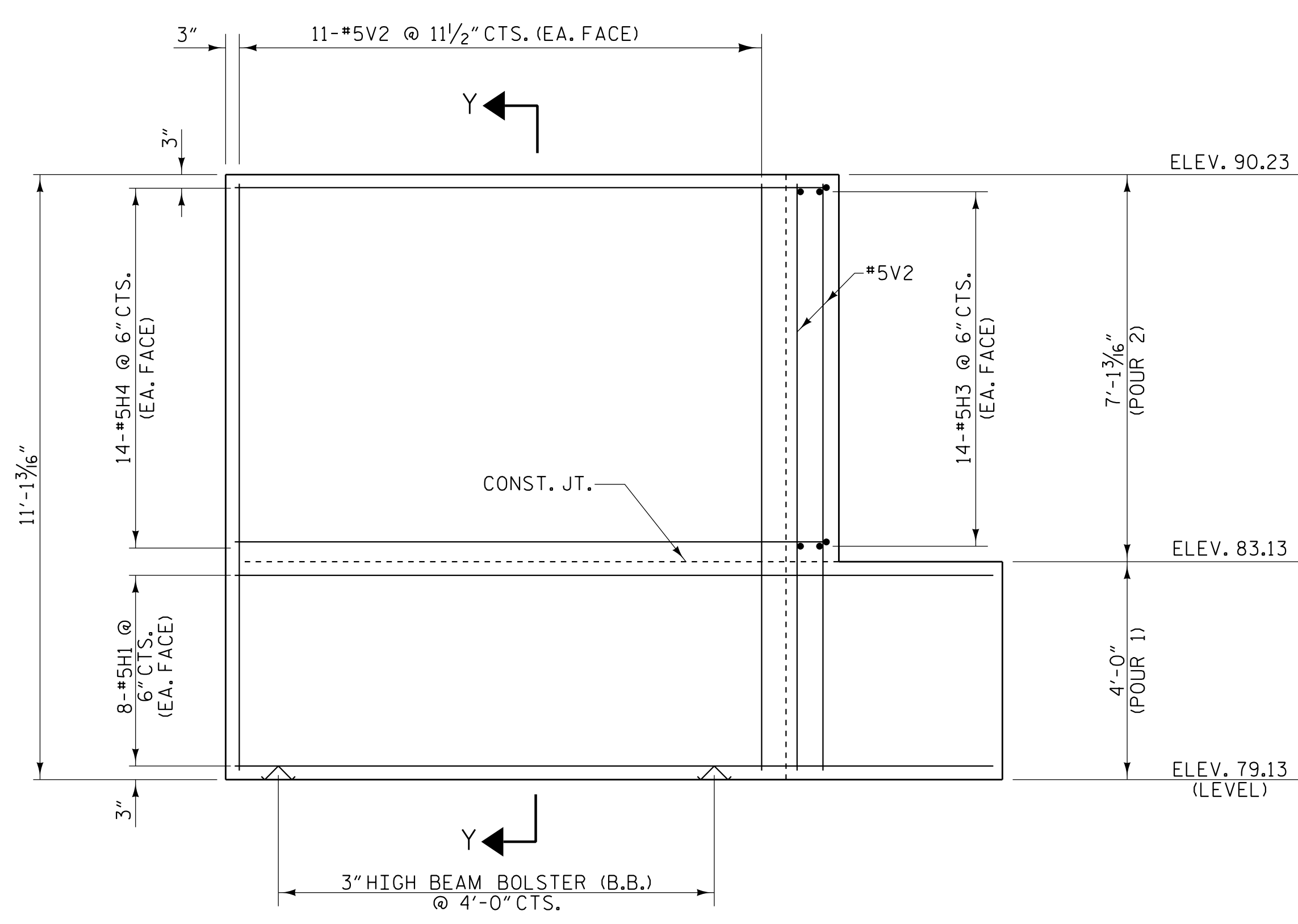
PLAN OF RIGHT WING - W2



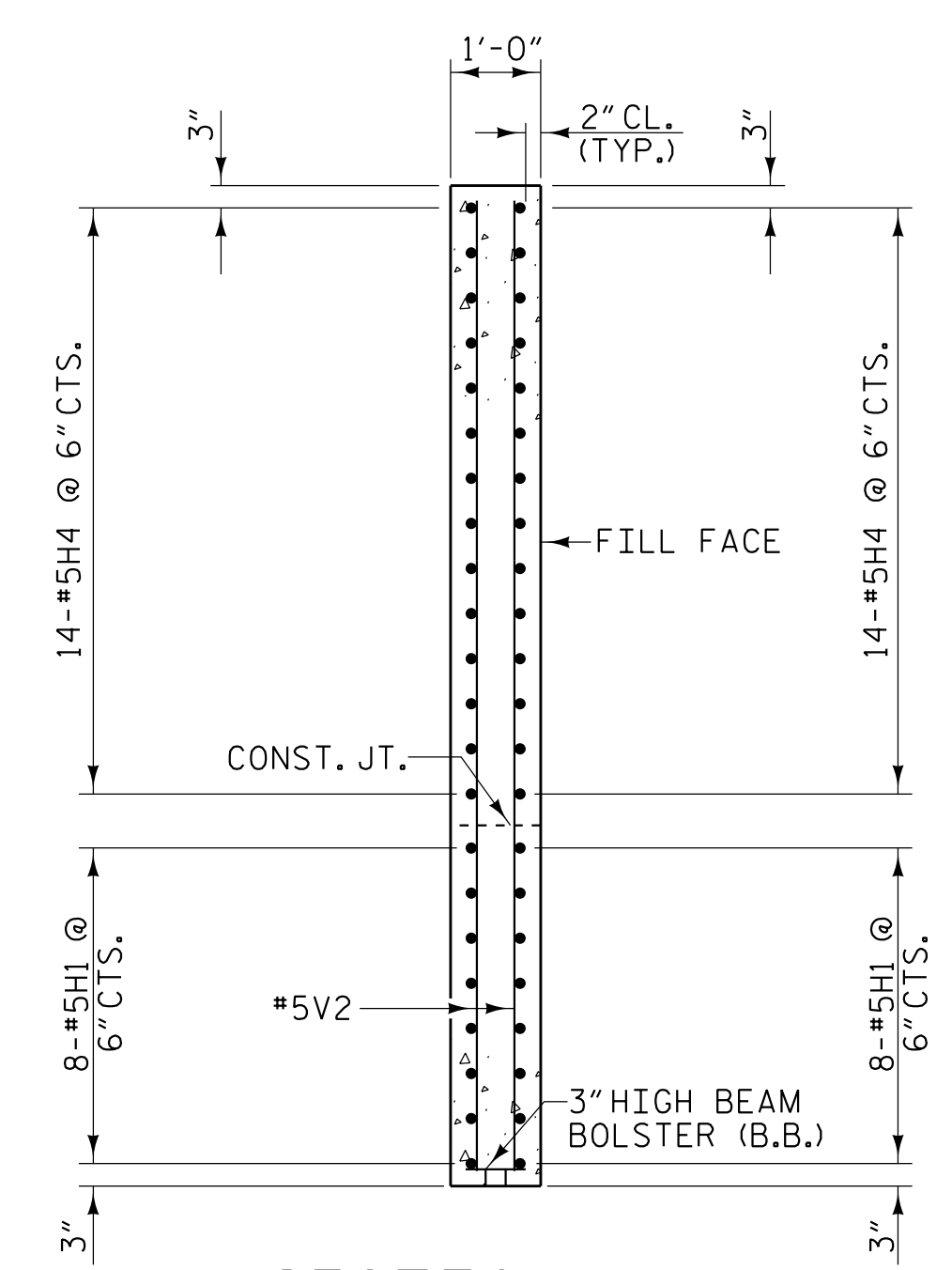
SECTION X-X



ELEVATION OF LEFT WING - W1



ELEVATION OF RIGHT WING - W2



SECTION Y-Y

PROJECT NO. R-5820
 COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

SHEET 2 OF 3

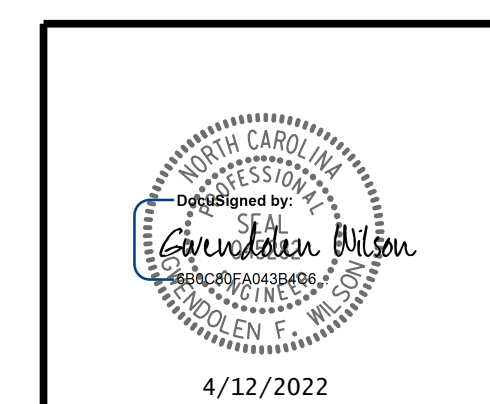
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 INTEGRAL END BENT 1
 WING DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-21
1			3			TOTAL SHEETS
2			4			31

DRAWN BY : W. B. ALLEN DATE : 5/20
 CHECKED BY : G. F. WILSON DATE : 6/21
 DESIGN ENGINEER OF RECORD: G. F. WILSON DATE : 10/21

PLANS PREPARED BY:

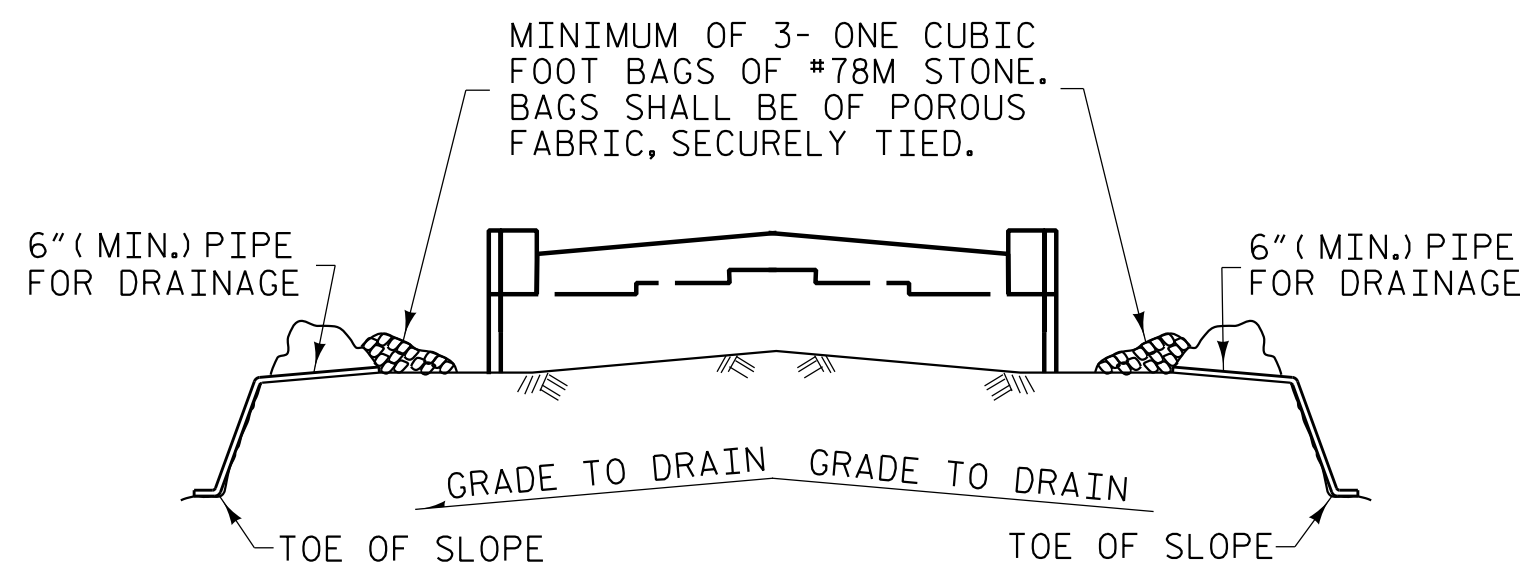
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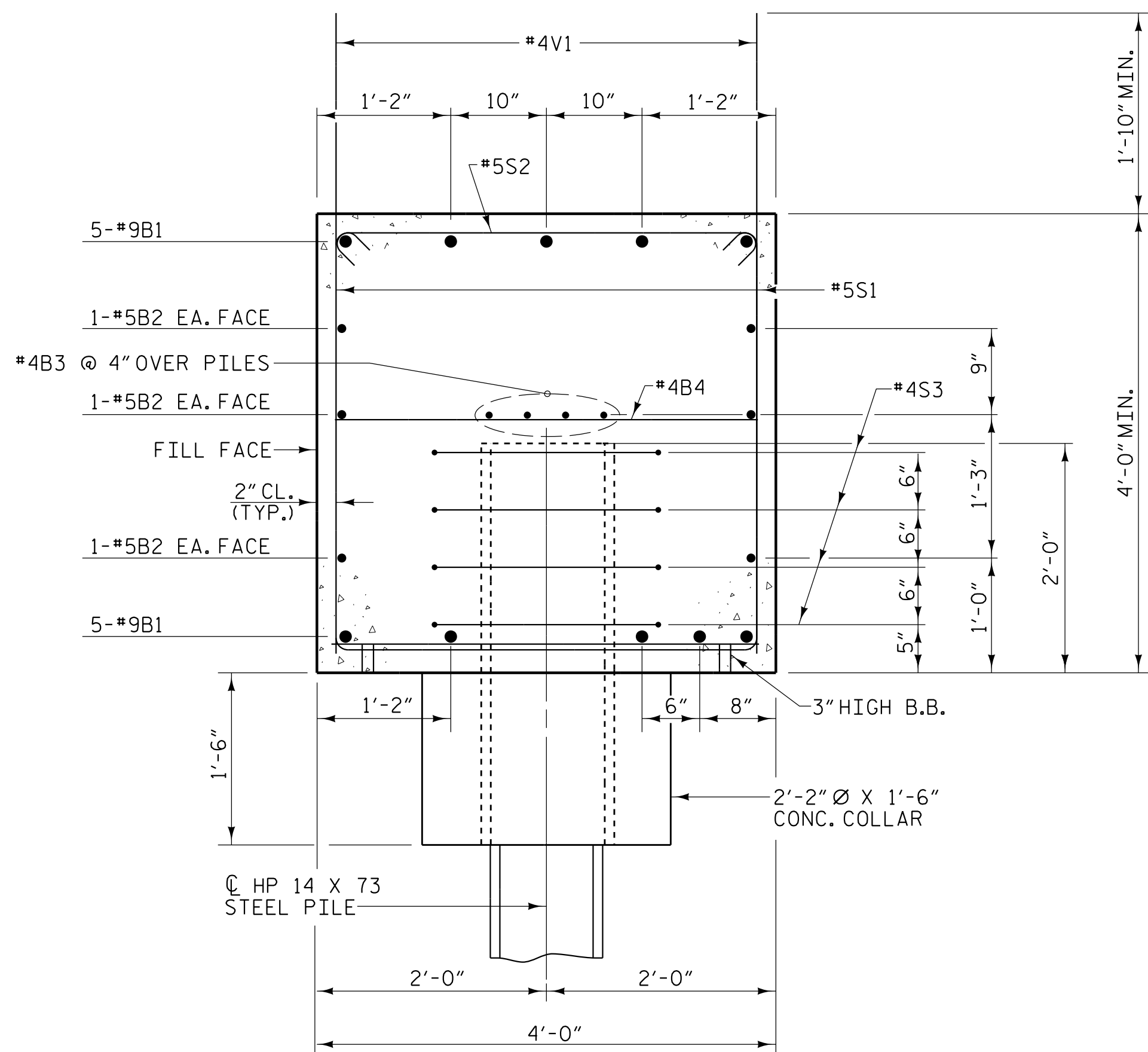


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

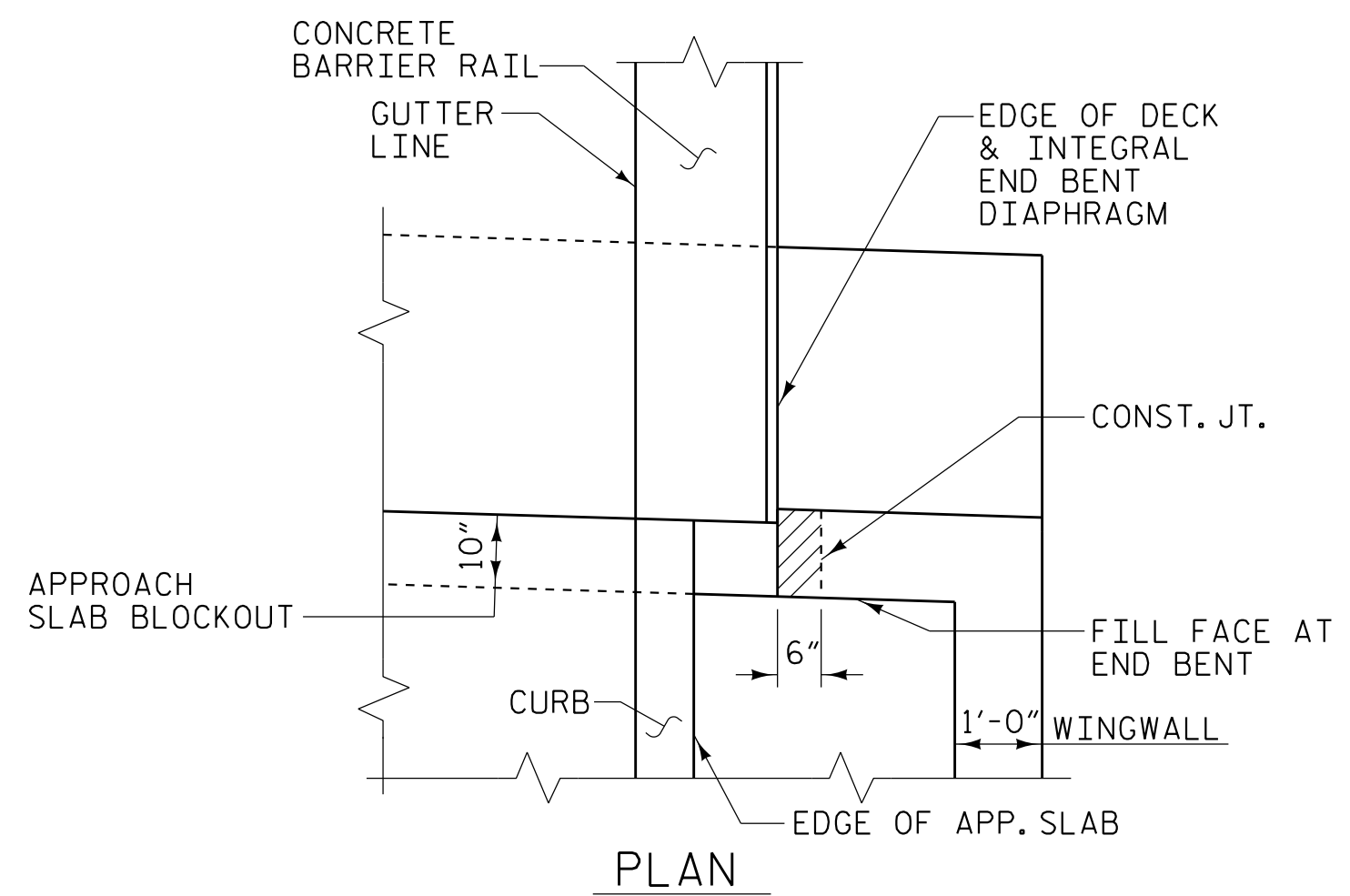
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

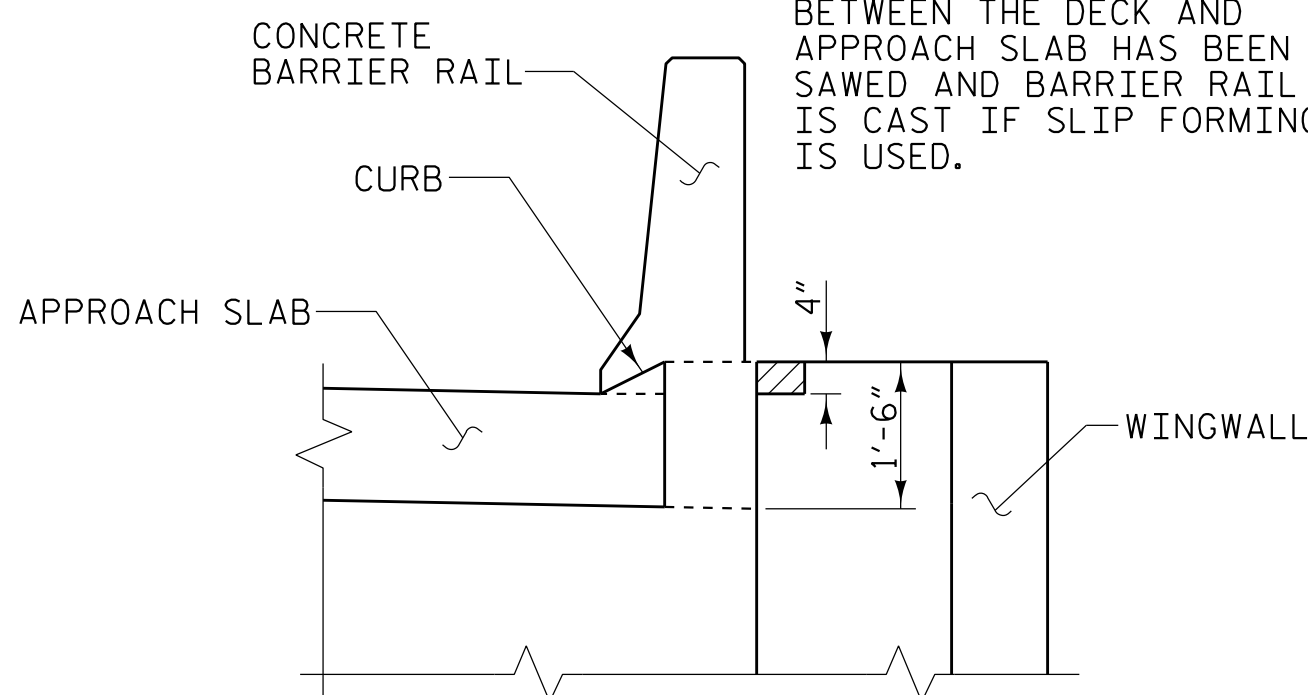
TEMPORARY DRAINAGE AT END BENT



SECTION A-A

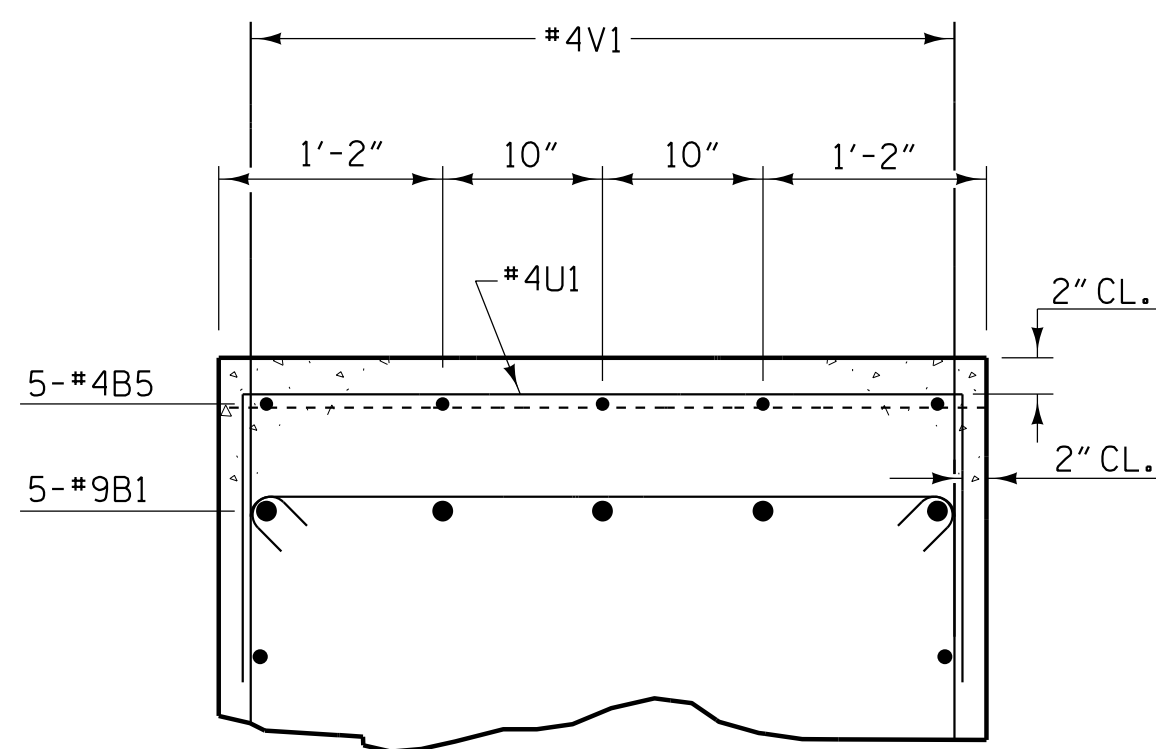


THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND APPROACH SLAB HAS BEEN SAWS AND BARRIER RAIL IS CAST IF SLIP FORMING IS USED.



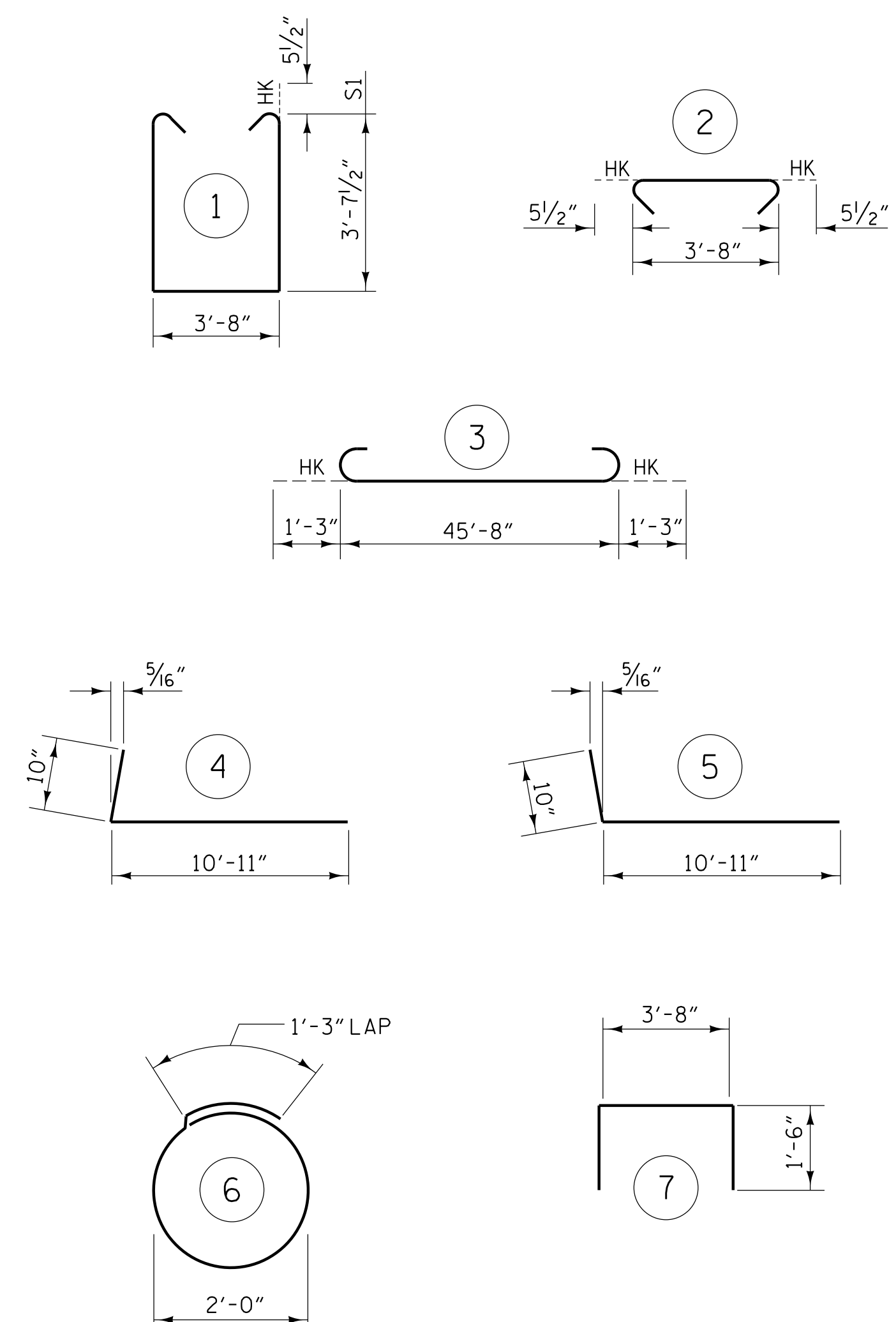
WINGWALL BLOCKOUT

(RIGHT WINGWALL SHOWN, LEFT WINGWALL SIMILAR)

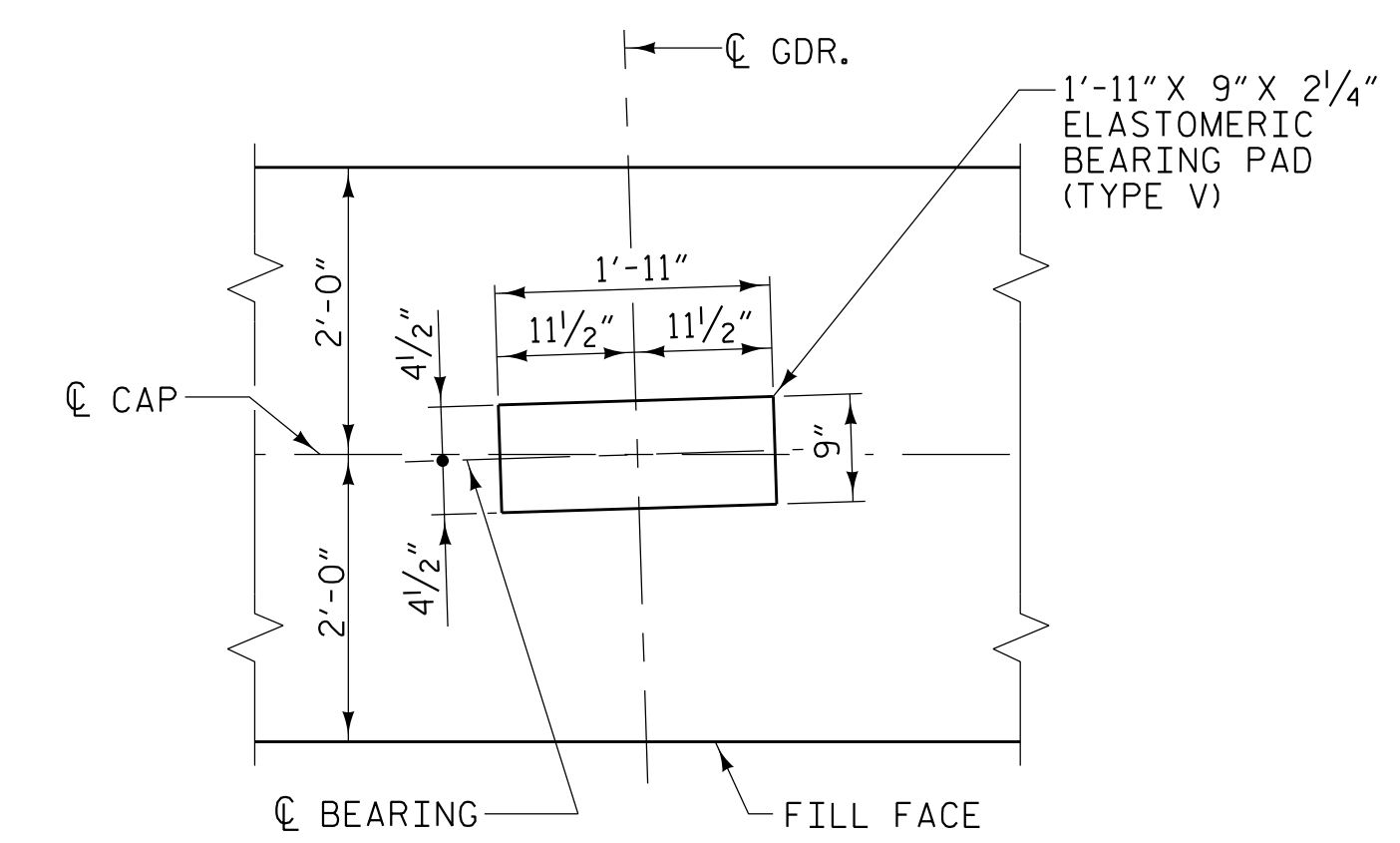


PART SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT



DETAIL "A"

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BILL OF MATERIAL

END BENT 1					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#9	3	48'-2"	1638
B2	6	#5	STR	45'-8"	286
B3	8	#4	STR	24'-1"	129
B4	12	#4	STR	3'-8"	29
B5	5	#4	STR	12'-8"	42
H1	32	#5	STR	13'-10"	462
H2	28	#5	4	11'-9"	343
H3	56	#5	STR	2'-8"	156
H4	28	#5	5	11'-9"	343
S1	80	#5	1	11'-10"	987
S2	80	#5	2	4'-7"	382
S3	28	#4	6	7'-7"	142
U1	9	#4	7	6'-8"	40
V1	54	#4	STR	5'-7"	201
V2	60	#5	STR	10'-8"	668
TOTAL REINFORCING STEEL					5848 lbs.
CLASS "A" CONCRETE - CU. YARDS					
POUR 1 (CAP, COLLARS, LOWER WINGS) 32.2 cu. yds.					
POUR 2 (UPPER WINGS) 6.9 cu. yds.					
TOTAL 39.1 cu. yds.					
HP 14 X 73 STEEL PILES					
7 PILES REQUIRED - LIN. FEET					525
PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 STEEL PILES - EACH					7
PILE REDRIVES - EACH					7

PROJECT NO. R-5820

COLUMBUS COUNTY

STATION: 38+26.89 -Y1- POT

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
INTEGRAL END BENT 1
DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-22
1			3			TOTAL SHEETS
2			4			31

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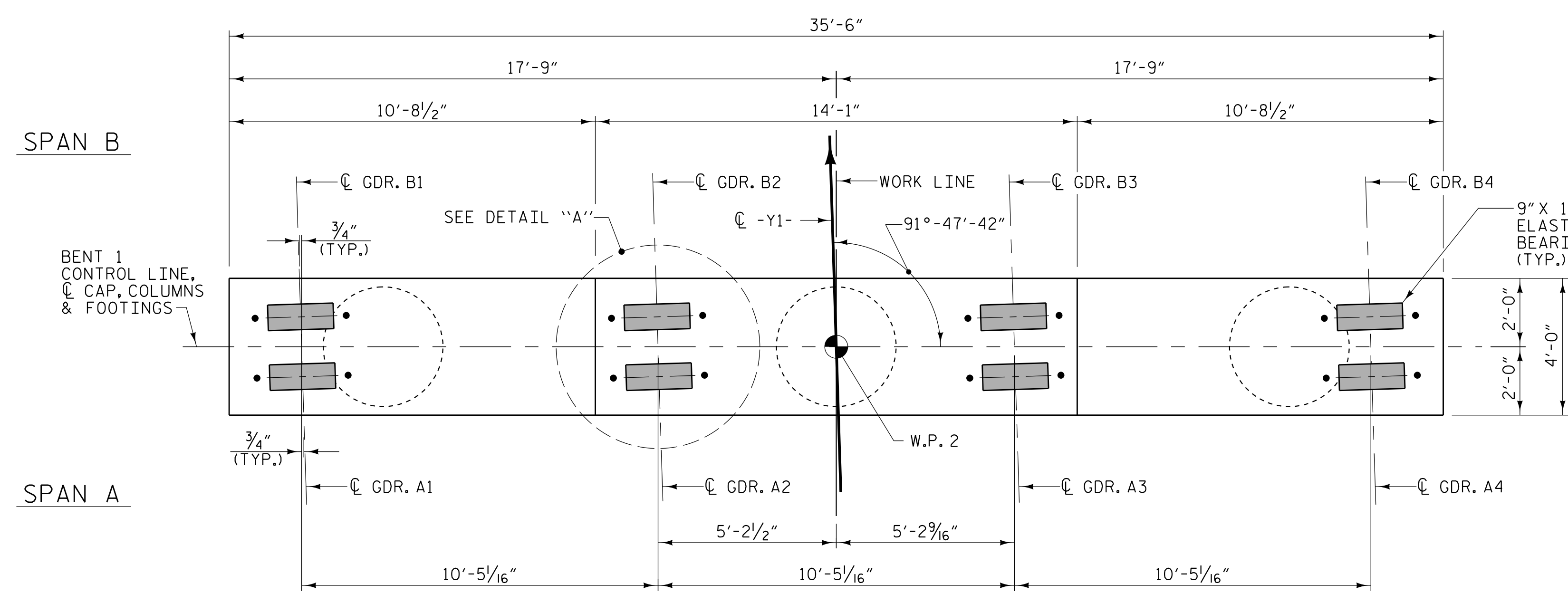
DRAWN BY: W. B. ALLEN DATE: 4/20

CHECKED BY: G. F. WILSON DATE: 6/21

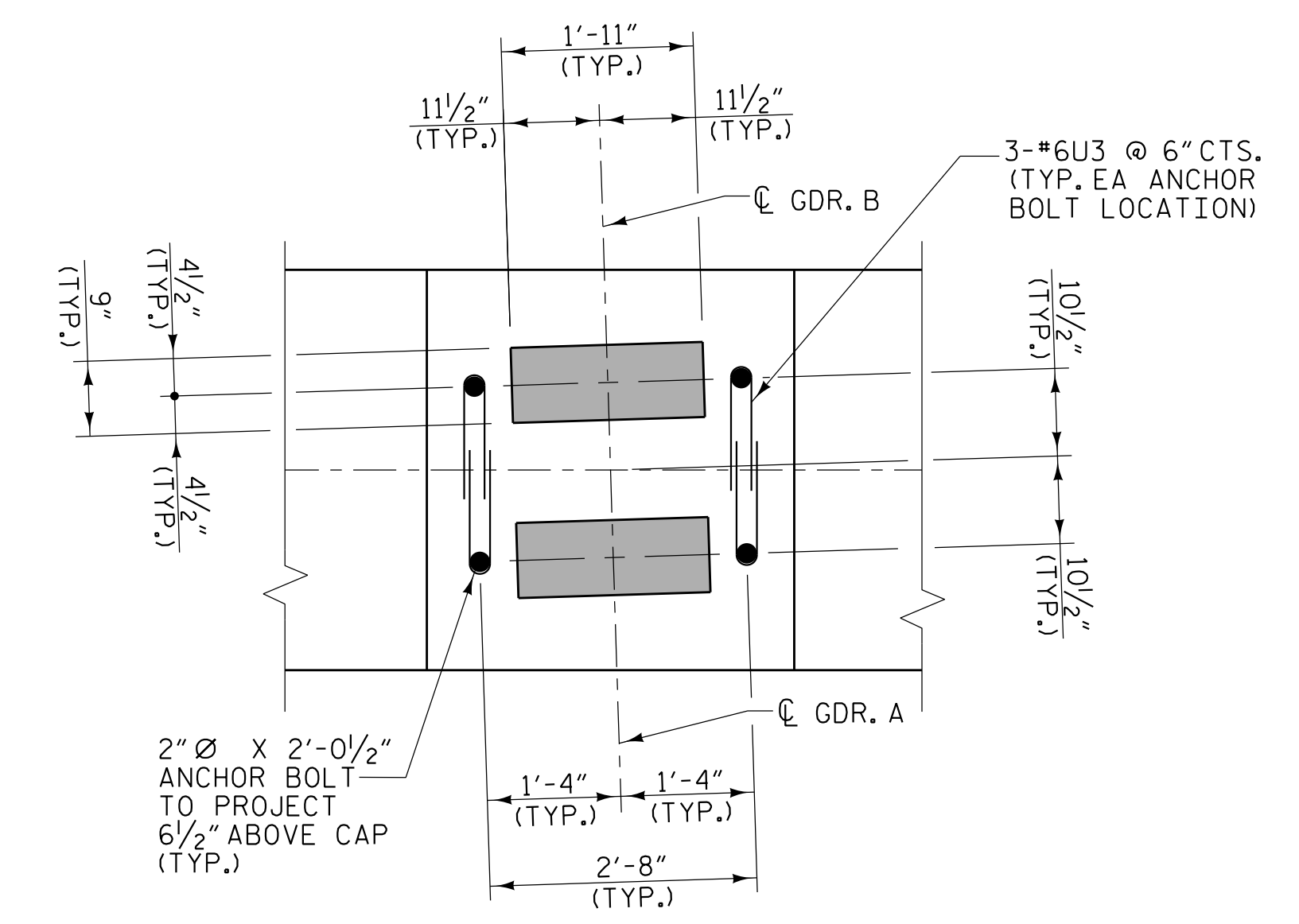
DESIGN ENGINEER OF RECORD: G. F. WILSON DATE: 10/21

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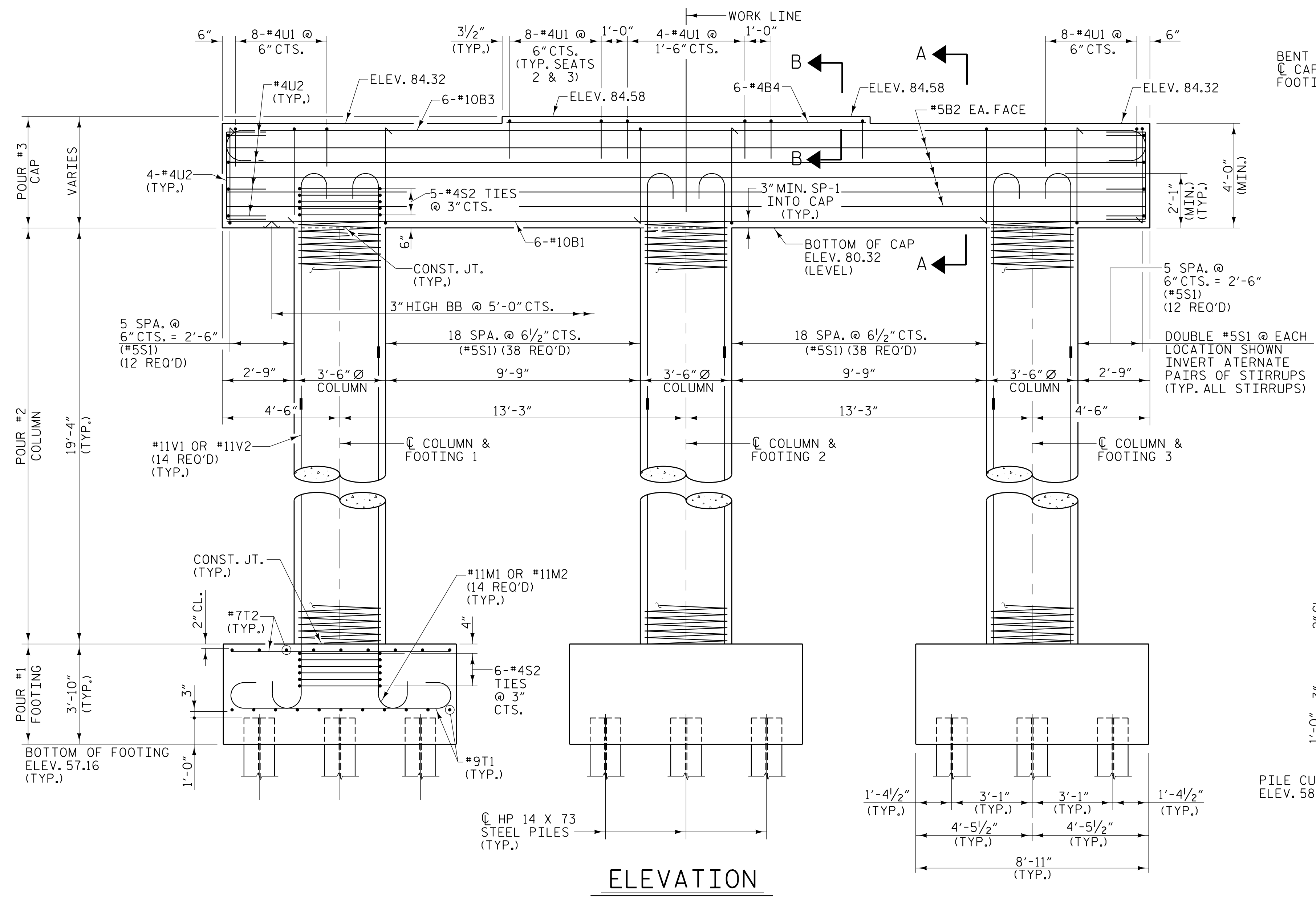
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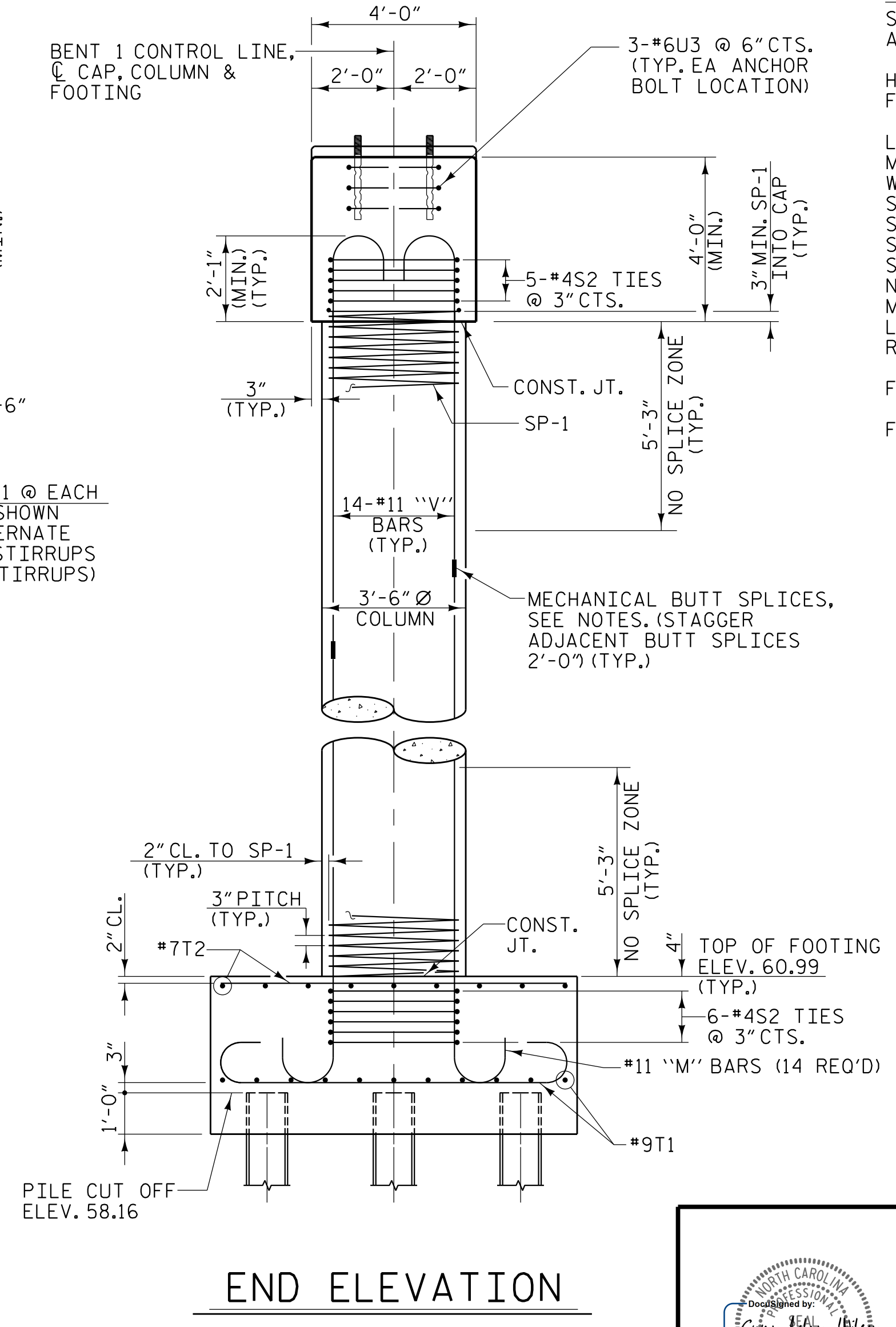
PLAN



DETAIL "A"
(TYP. EACH GIRDER)



ELEVATION



END ELEVATION

- NOTES**
- STIRRUPS AND "U" BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 - HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
 - LONGITUDINAL REINFORCING STEEL IN THE COLUMN MAY BE SPICED USING MECHANICAL BUTT SPLICES WHERE SHOWN IN THE ELEVATION VIEW. ADJACENT SPLICES TO BE OFFSET 2'-0". MECHANICAL BUTT SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. MECHANICAL BUTT SPLICES SHALL BE SUBMITTED FOR APPROVAL. NO EXTRA PAYMENT WILL BE MADE FOR USING MECHANICAL BUTT SPLICES OR MODIFYING BAR LENGTHS. THE COST WILL BE INCIDENTAL TO REINFORCING STEEL.
 - FOR PILE SPICE DETAILS, SEE SHEET 2 OF 2.
 - FOR SECTIONS A-A & B-B, SEE SHEET 2 OF 2.



PROJECT NO. R-5820
 COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 1

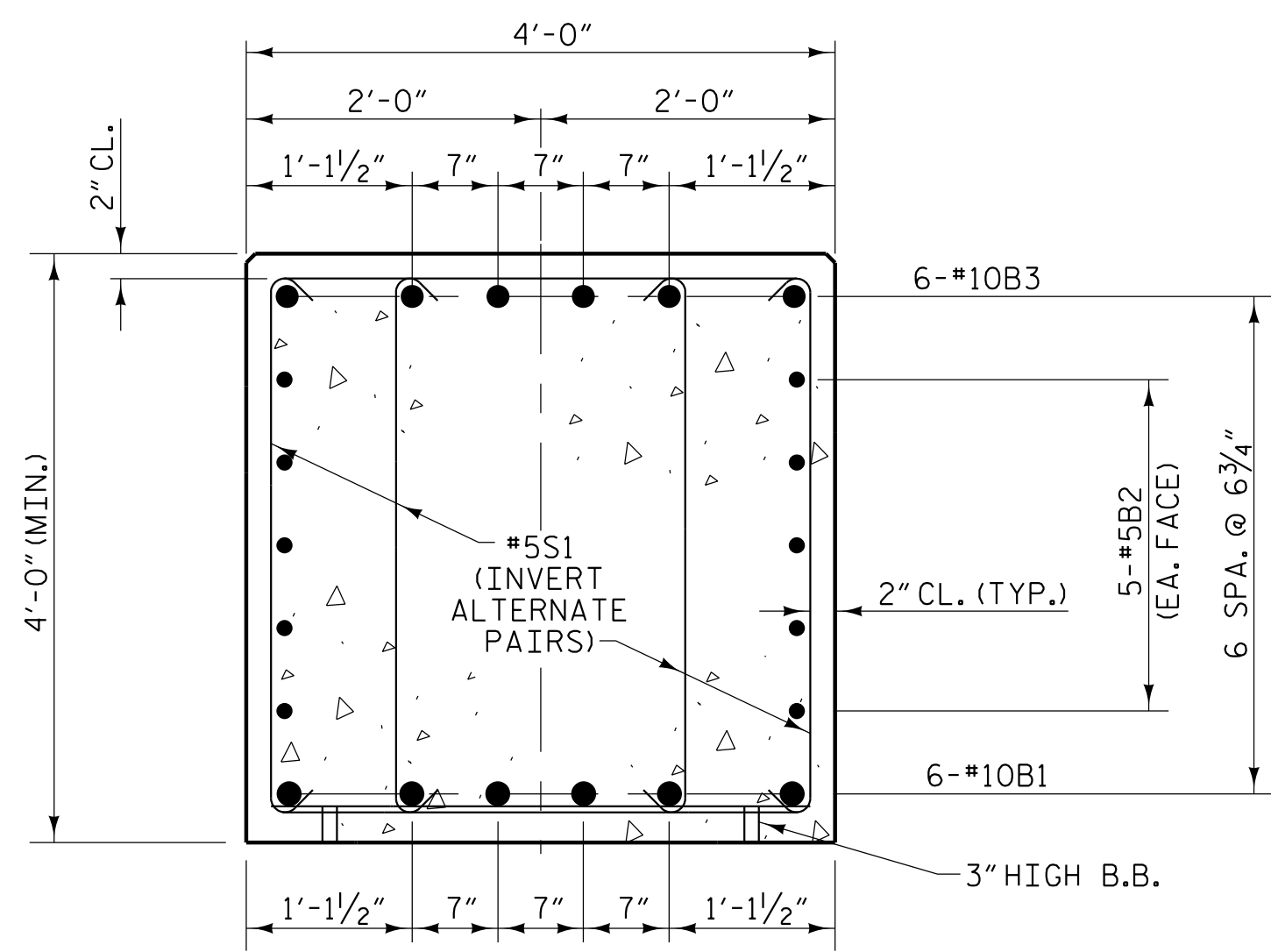
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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-23
1			3			TOTAL SHEETS
2			4			31

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 DESIGN ENGINEER OF RECORD: G. F. WILSON DATE : 10/21

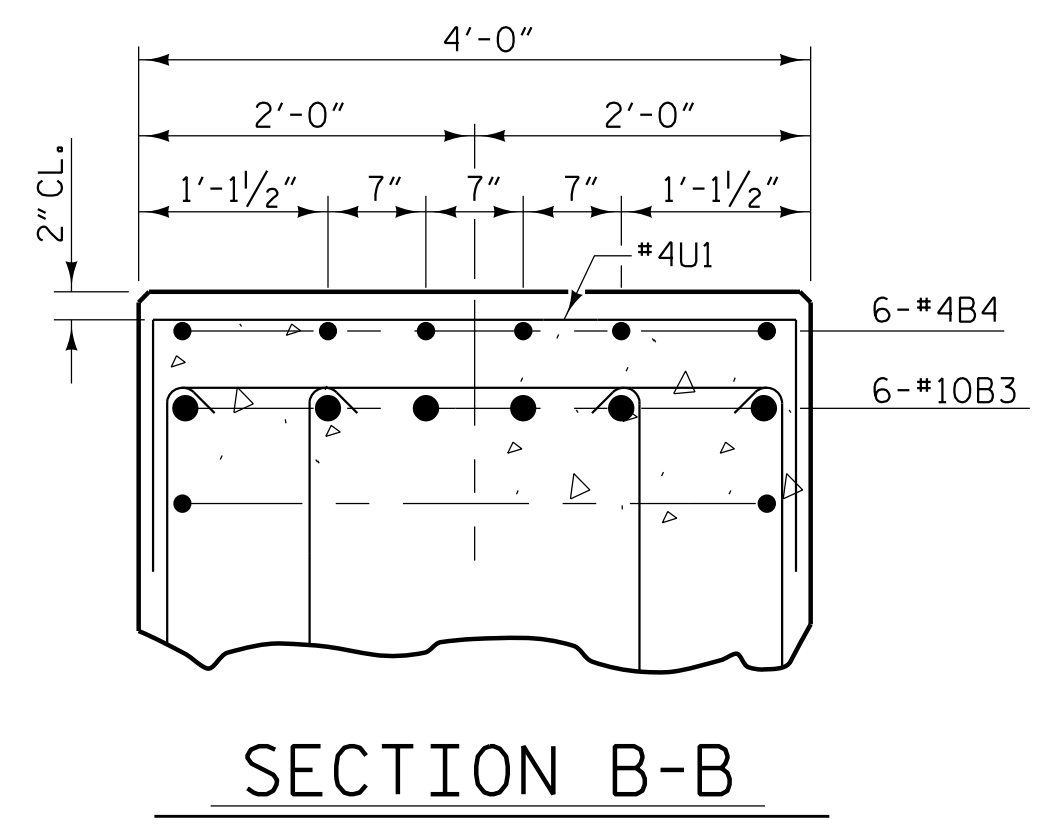
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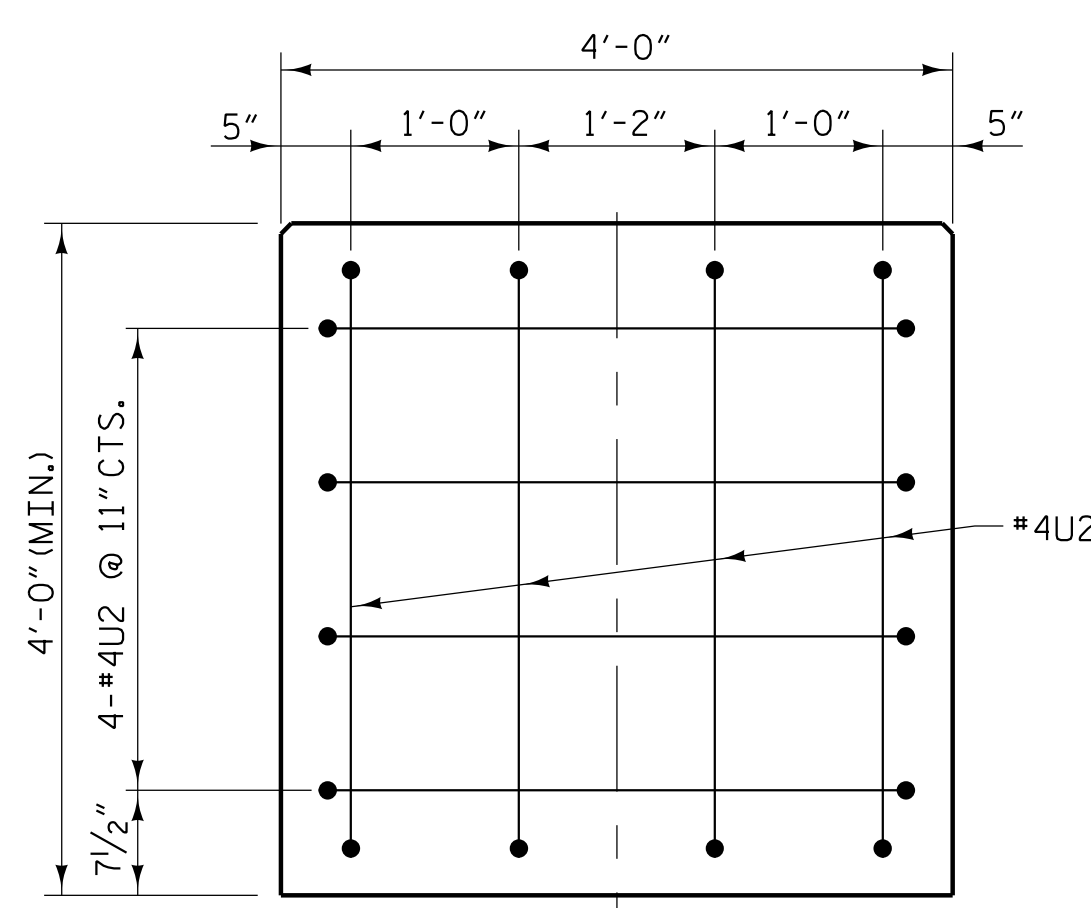
4/12/2022



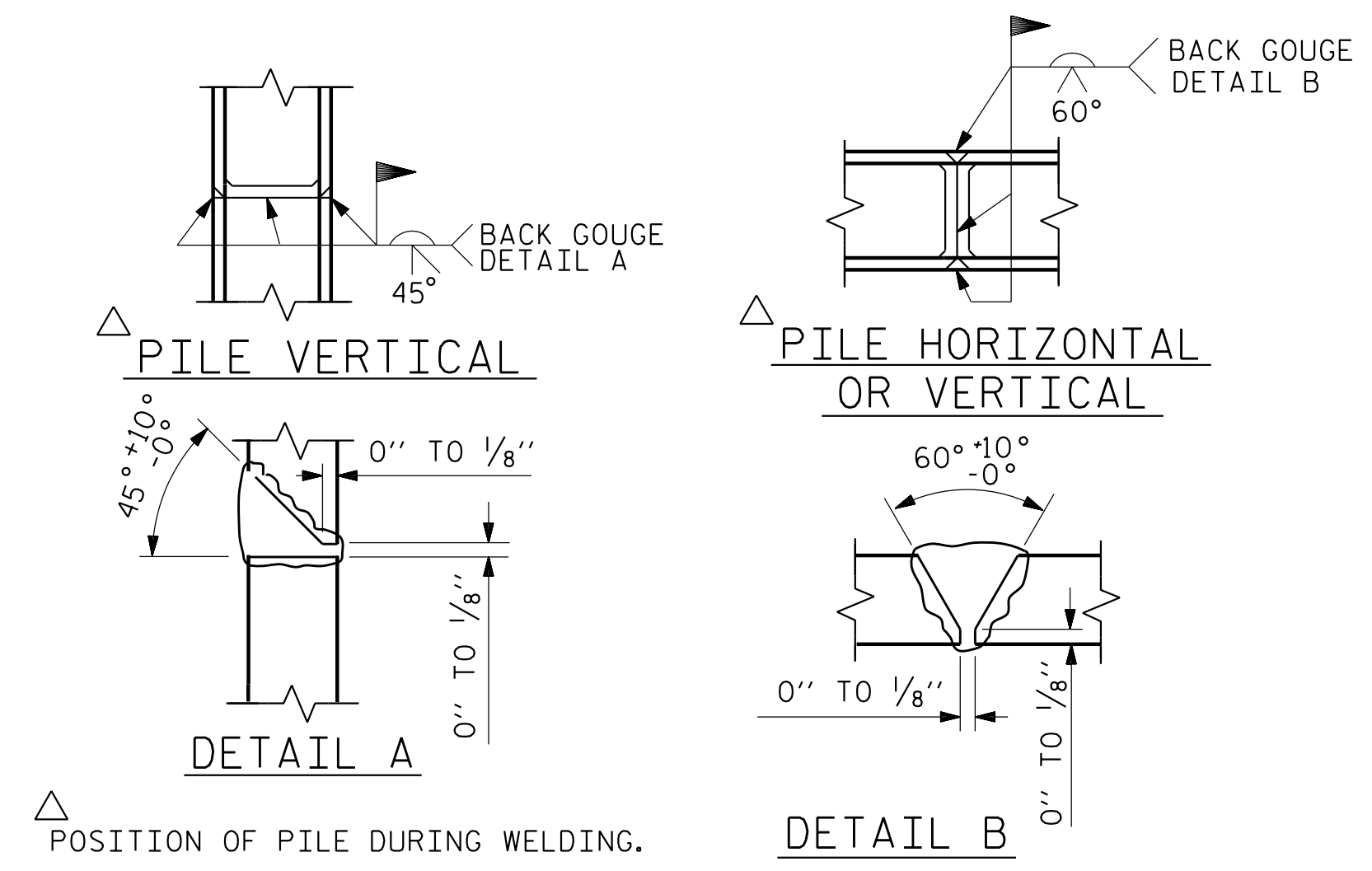
SECTION A-A



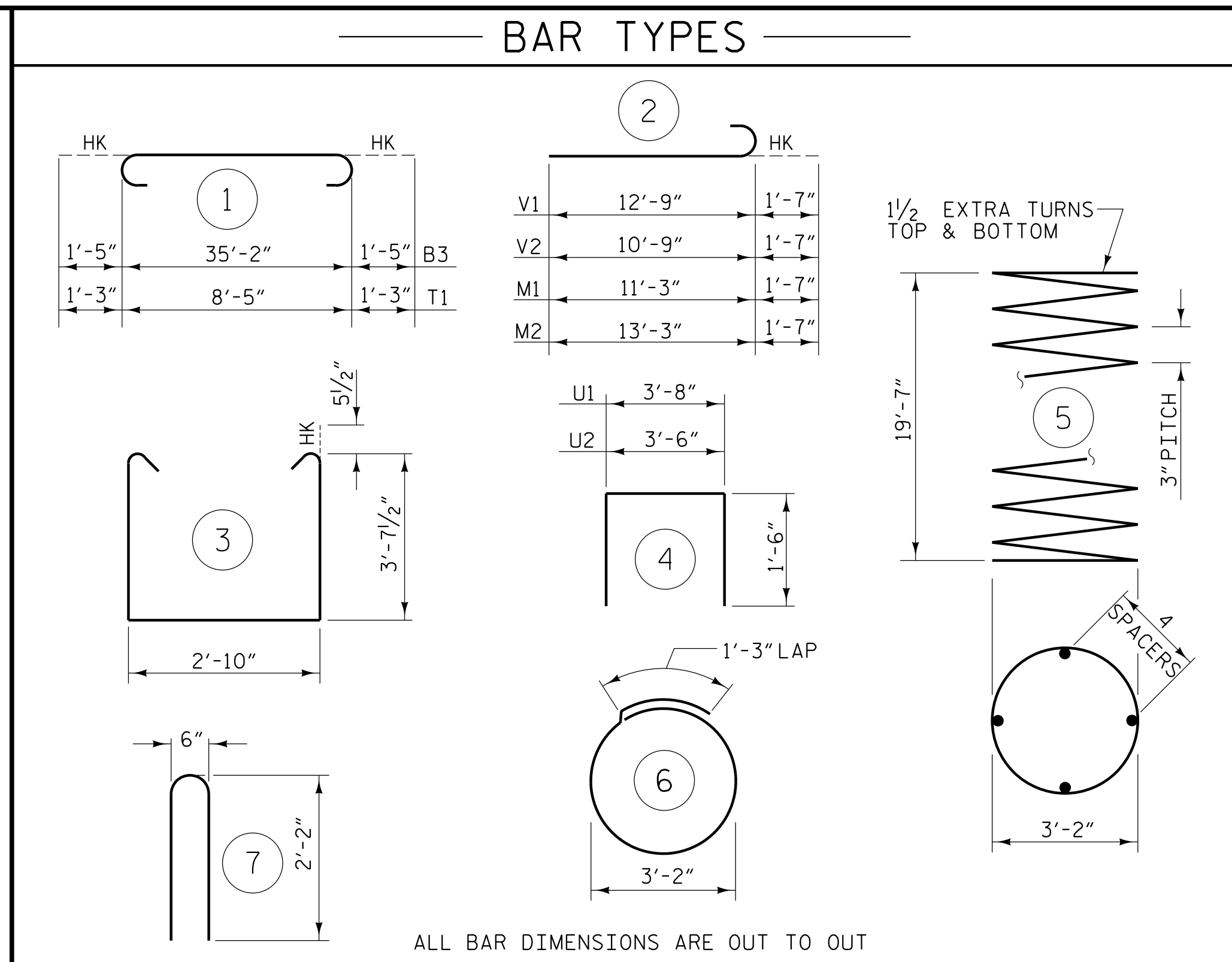
SECTION B-B



CAP END VIEW
(TYP. EACH END)



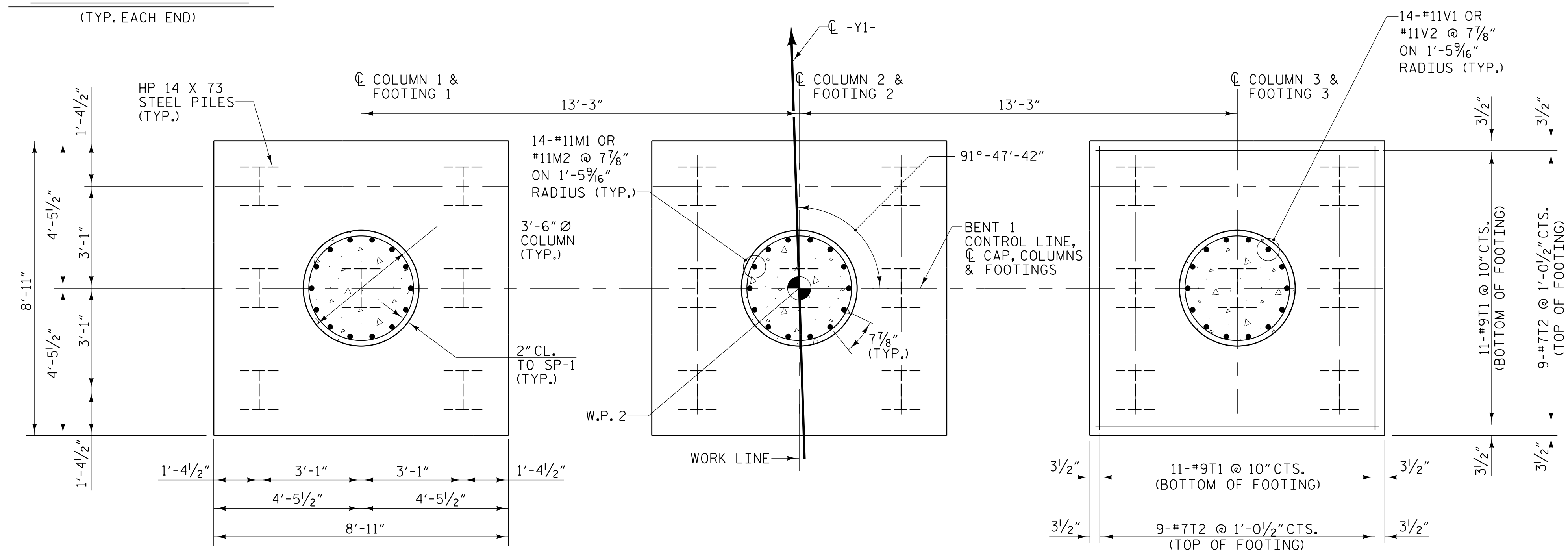
PILE SPLICE DETAILS



BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT
 ** THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.

BILL OF MATERIAL					
BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	STR	35'-2"	908
B2	10	#5	STR	35'-2"	367
B3	6	#10	1	38'-0"	981
B4	6	#4	STR	13'-9"	55
M1	21	#11	2	12'-10"	1432
M2	21	#11	2	14'-10"	1655
S1	100	#5	3	11'-0"	1147
S2	33	#4	6	11'-3"	248
U1	36	#4	4	6'-8"	160
U2	16	#4	4	6'-6"	69
U3	48	#6	7	4'-10"	348
V1	21	#11	2	14'-4"	1599
V2	21	#11	2	12'-4"	1376
T1	66	#9	1	10'-11"	2450
T2	54	#7	STR	8'-5"	929
TOTAL REINFORCING STEEL					13724 lbs.
SPIRAL COLUMN REINFORCING STEEL (SP)					
SP-1	3	**	5	796'-2"	2491
TOTAL SPIRAL COLUMN REINFORCING STEEL					2491 lbs.
CLASS "A" CONCRETE - CU. YARDS					
POUR 1 - FOOTINGS				33.9 CU. YDS.	
POUR 2 - COLUMNS				20.7 CU. YDS.	
POUR 3 - CAP				21.6 CU. YDS.	
TOTAL CLASS "A" CONCRETE					76.2 CU. YDS.
HP 14 X 73 STEEL PILES					
21 PILES REQUIRED - LIN. FEET					1470
PILE REDRIVES					15 EA.



PLAN OF COLUMNS AND FOOTINGS

(DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN AND FOOTING)

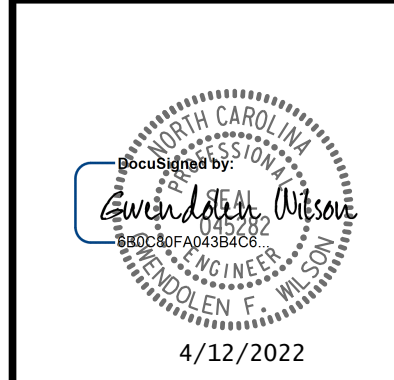
SPAN B
 SPAN A



PROJECT NO. R-5820
 COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

SHEET 2 OF 2

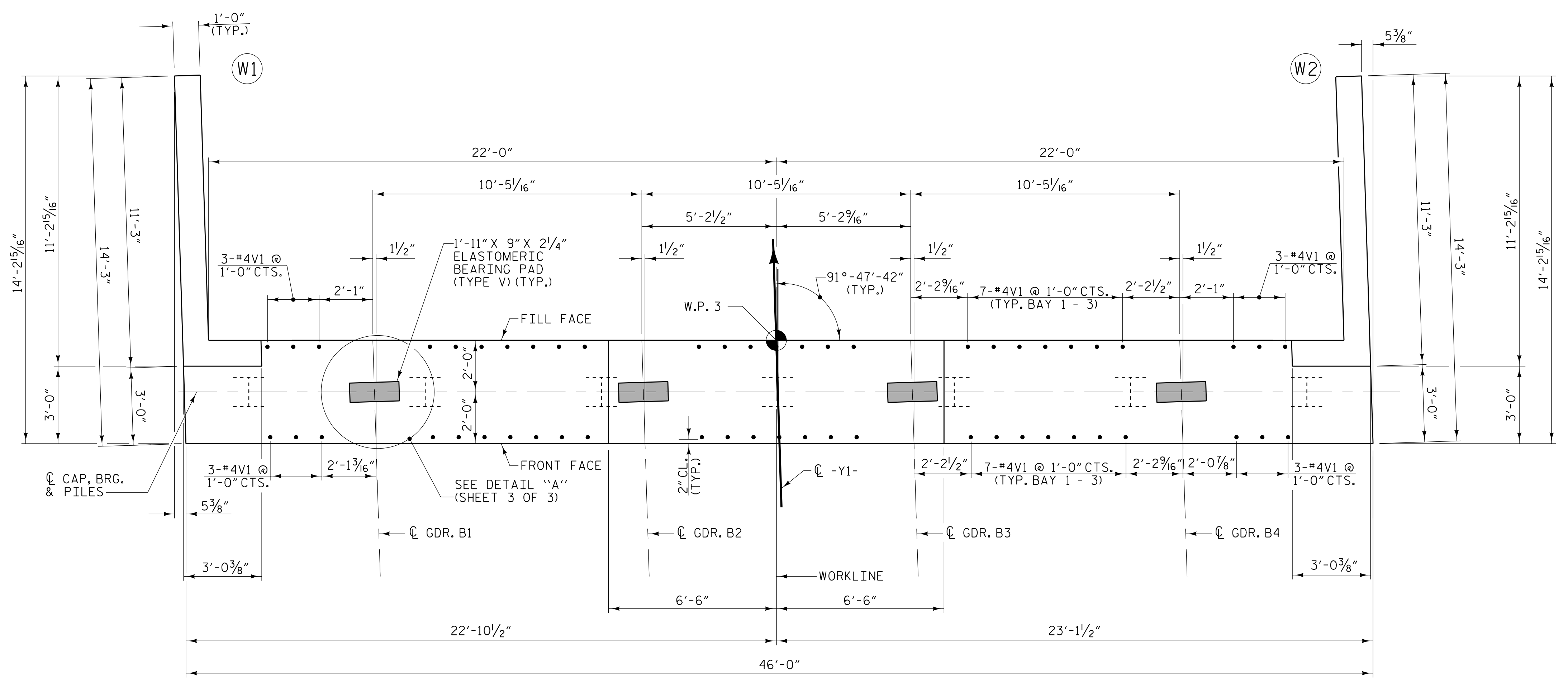
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT 1					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 31



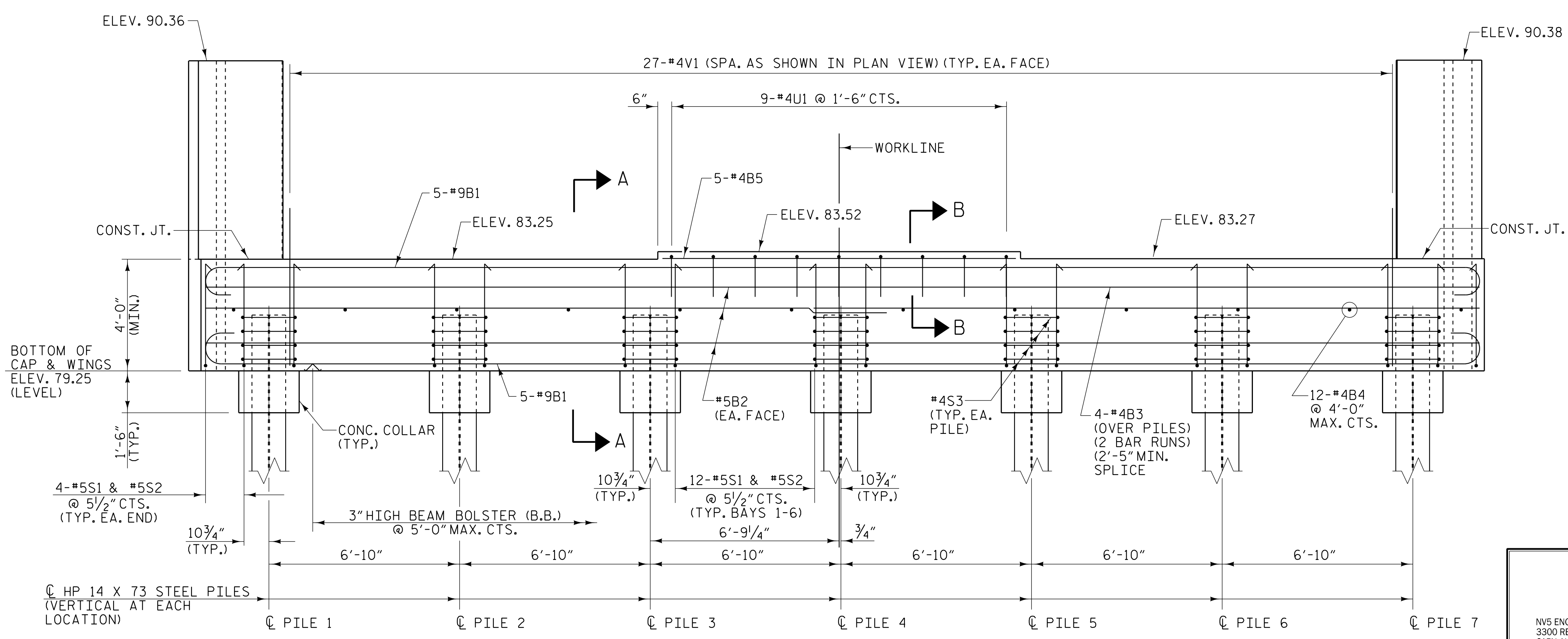
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DRAWN BY: W. B. ALLEN DATE: 7/21
 CHECKED BY: G. F. WILSON DATE: 7/21
 DESIGN ENGINEER OF RECORD: G. F. WILSON DATE: 10/21



PLAN



ELEVATION

NOTES

#4V1 BARS MAY BE SHIFTED SLIGHTLY TO AVOID STIRRUPS IN THE CAP.

THE TOP SURFACE OF THE END BENT CAP AND WINGS (POUR 1), EXCLUDING THE BEARING AREA, SHALL BE RAKED TO A DEPTH OF 1/4".

FOR SECTION A-A AND SECTION B-B, SEE SHEET 3 OF 3.

SEE "GENERAL DRAWING FOUNDATION LAYOUT" FOR ADDITIONAL NOTES FOR DRIVING PILES.

FOR TEMPORARY DRAINAGE AT END BENT DETAIL SEE "INTEGRAL END BENT 1" SHEET 3 OF 3.

FOR PILE SPLICE DETAILS, SEE "INTEGRAL END BENT 2" SHEET 3 OF 3.

PROJECT NO. R-5820
 COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

SHEET 1 OF 3

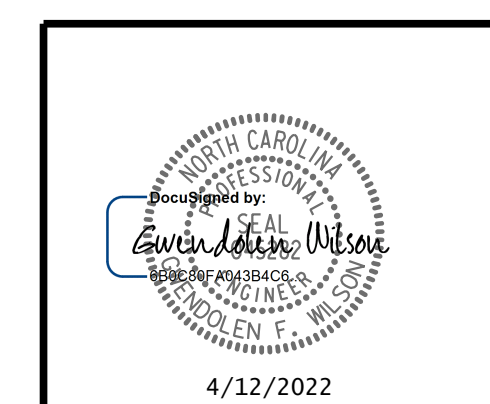
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 INTEGRAL END BENT 2

PLANS PREPARED BY:

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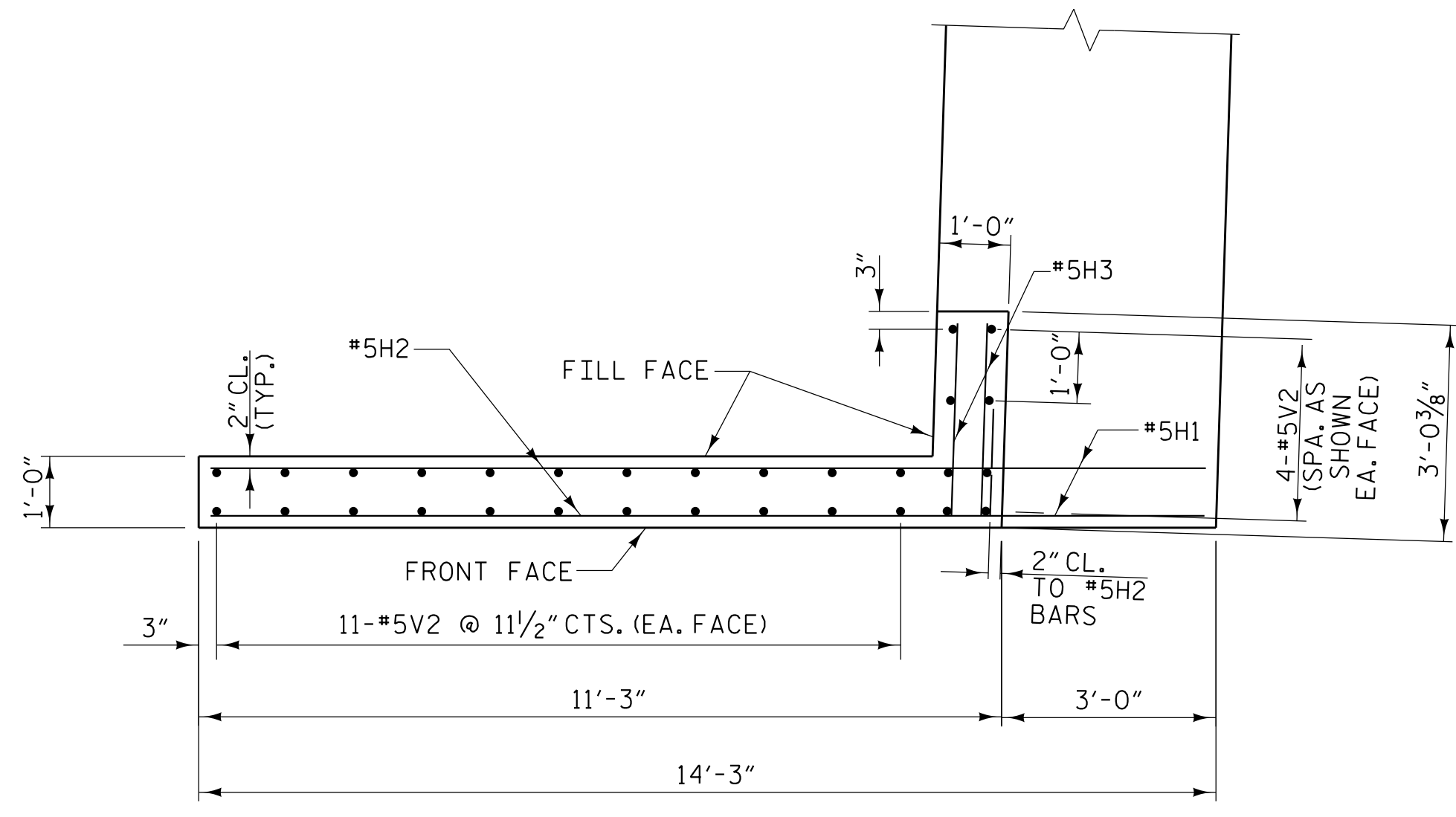


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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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2			4			

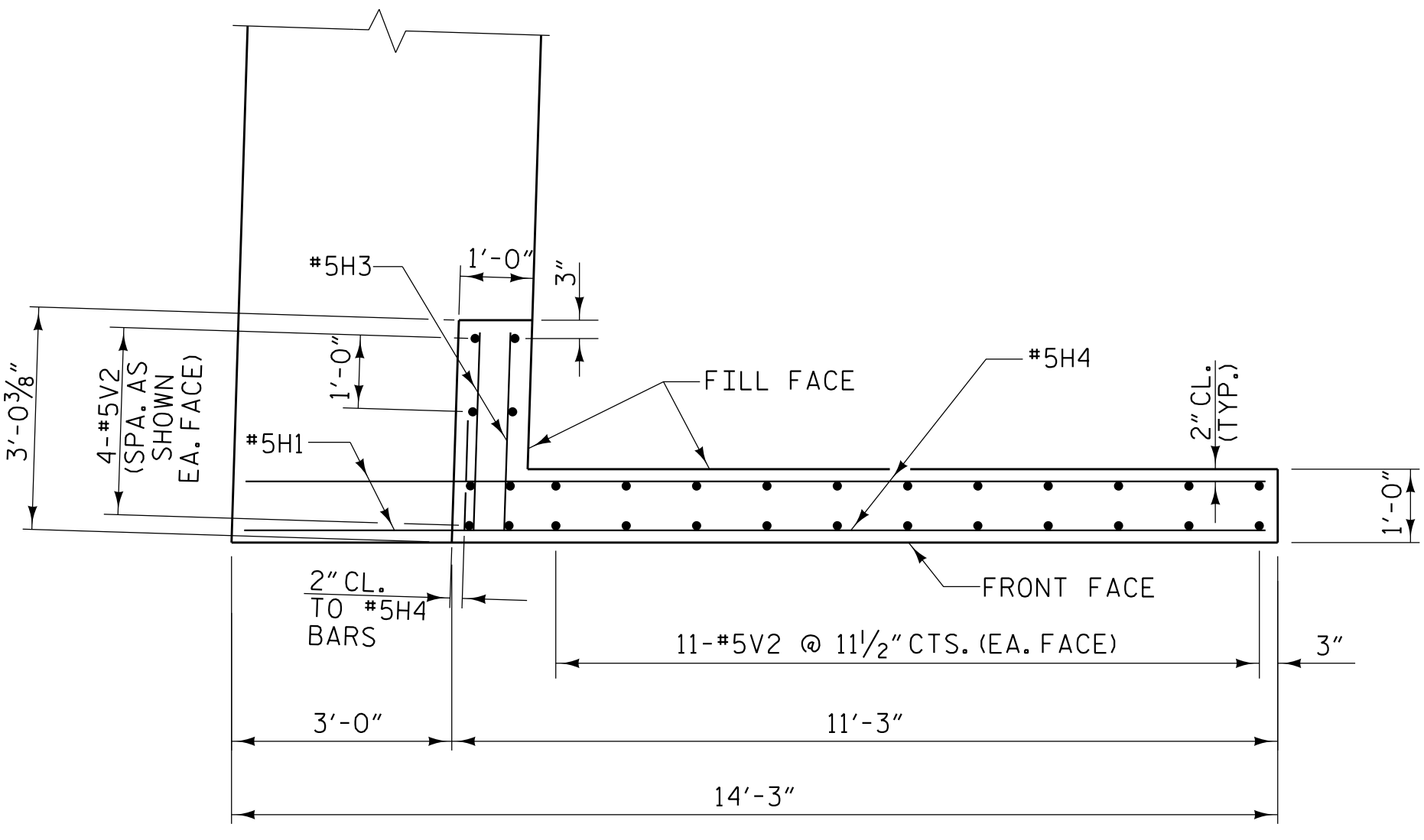
DRAWN BY : W. B. ALLEN DATE : 5/20
 CHECKED BY : G. F. WILSON DATE : 6/21
 DESIGN ENGINEER OF RECORD: G. F. WILSON DATE : 10/21

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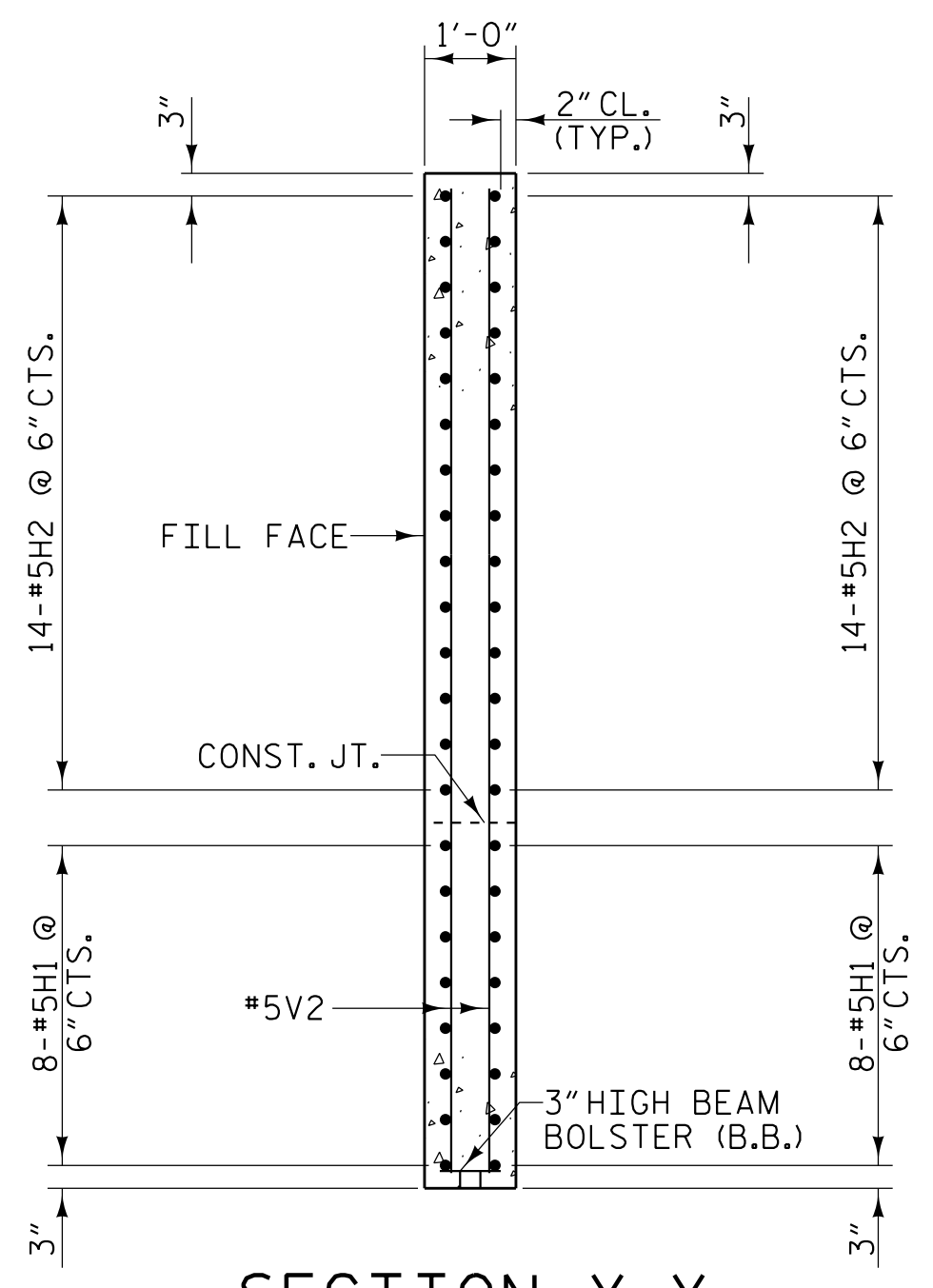
4/12/2022



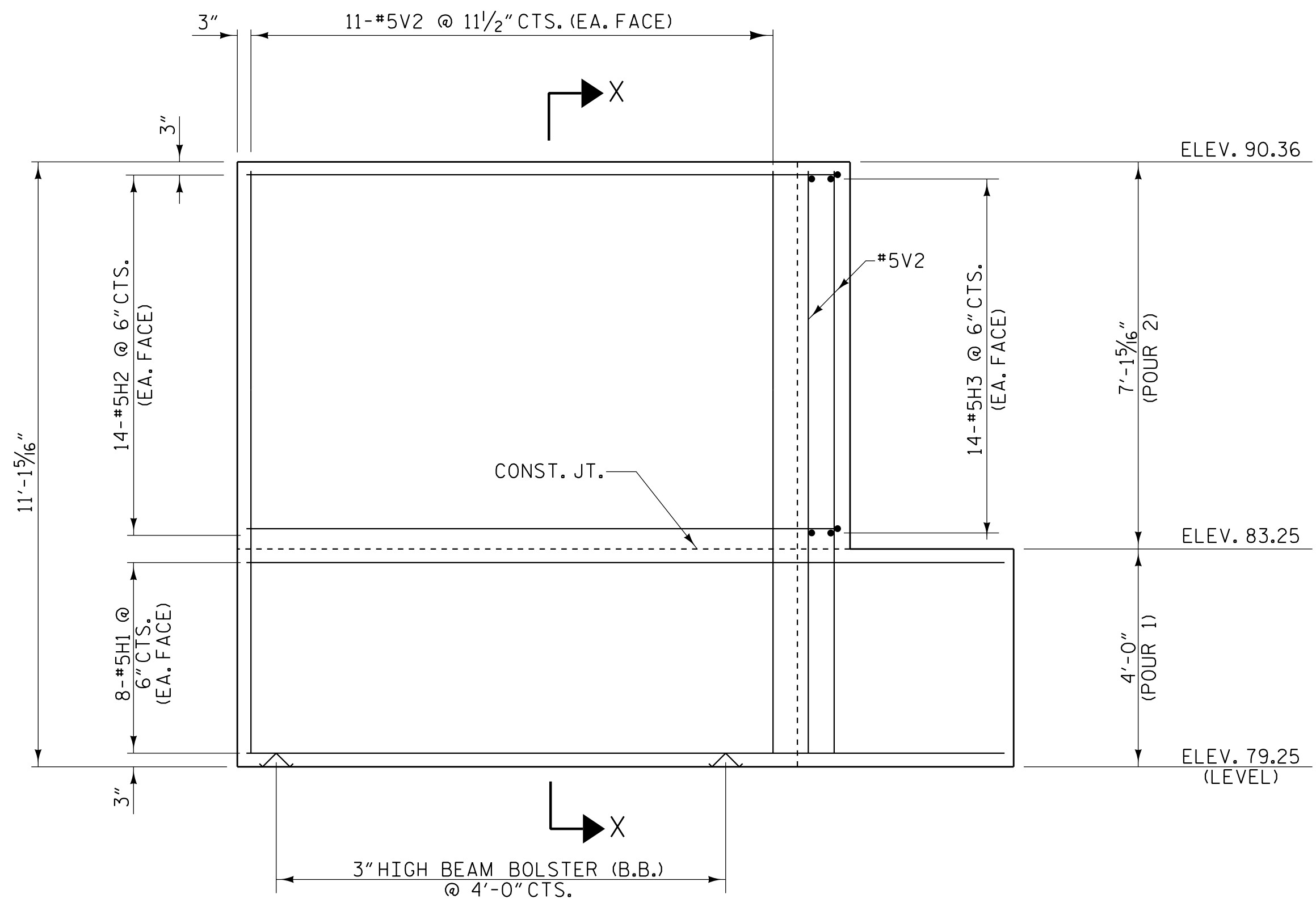
PLAN OF LEFT WING - W1



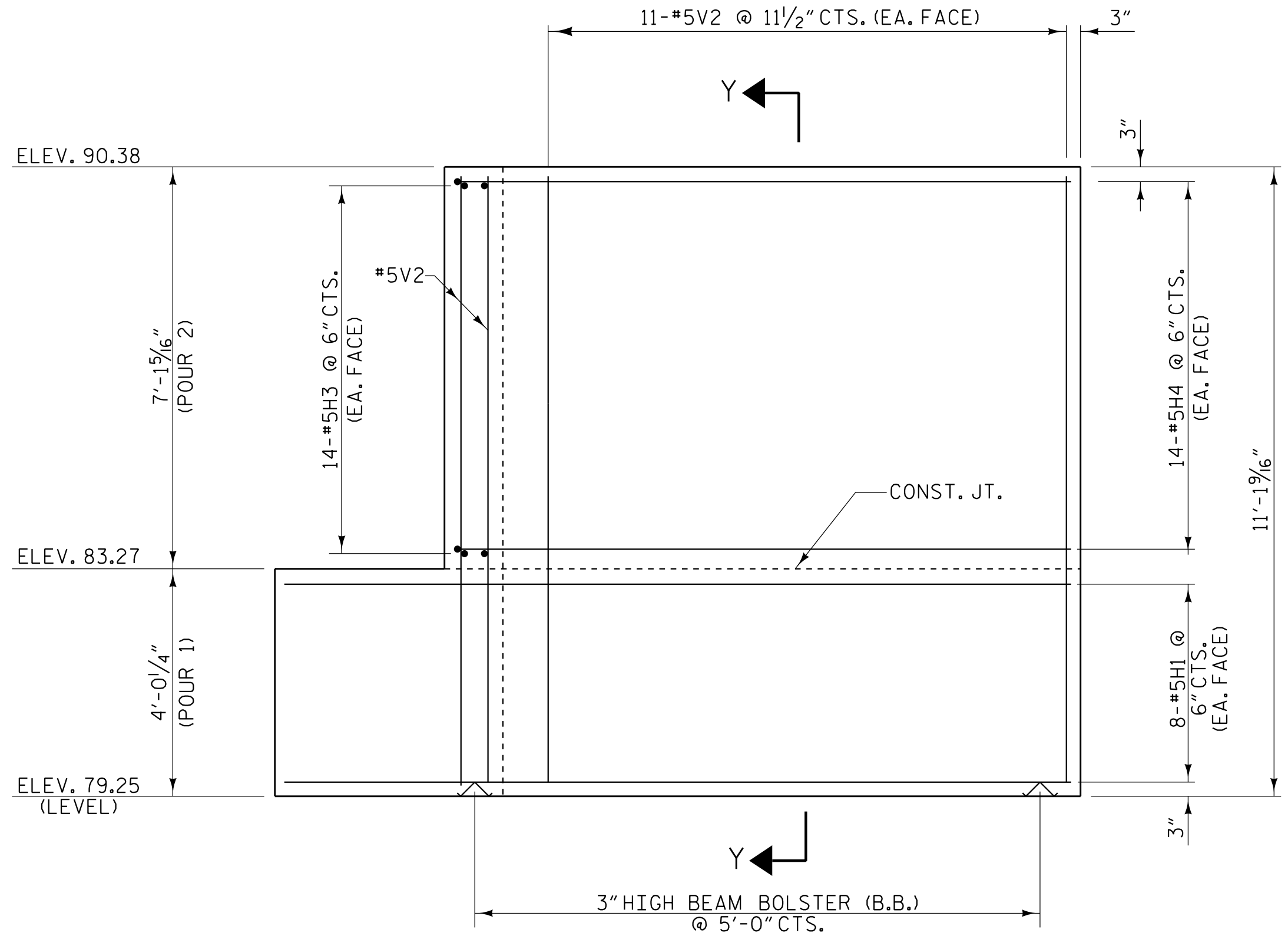
PLAN OF RIGHT WING - W2



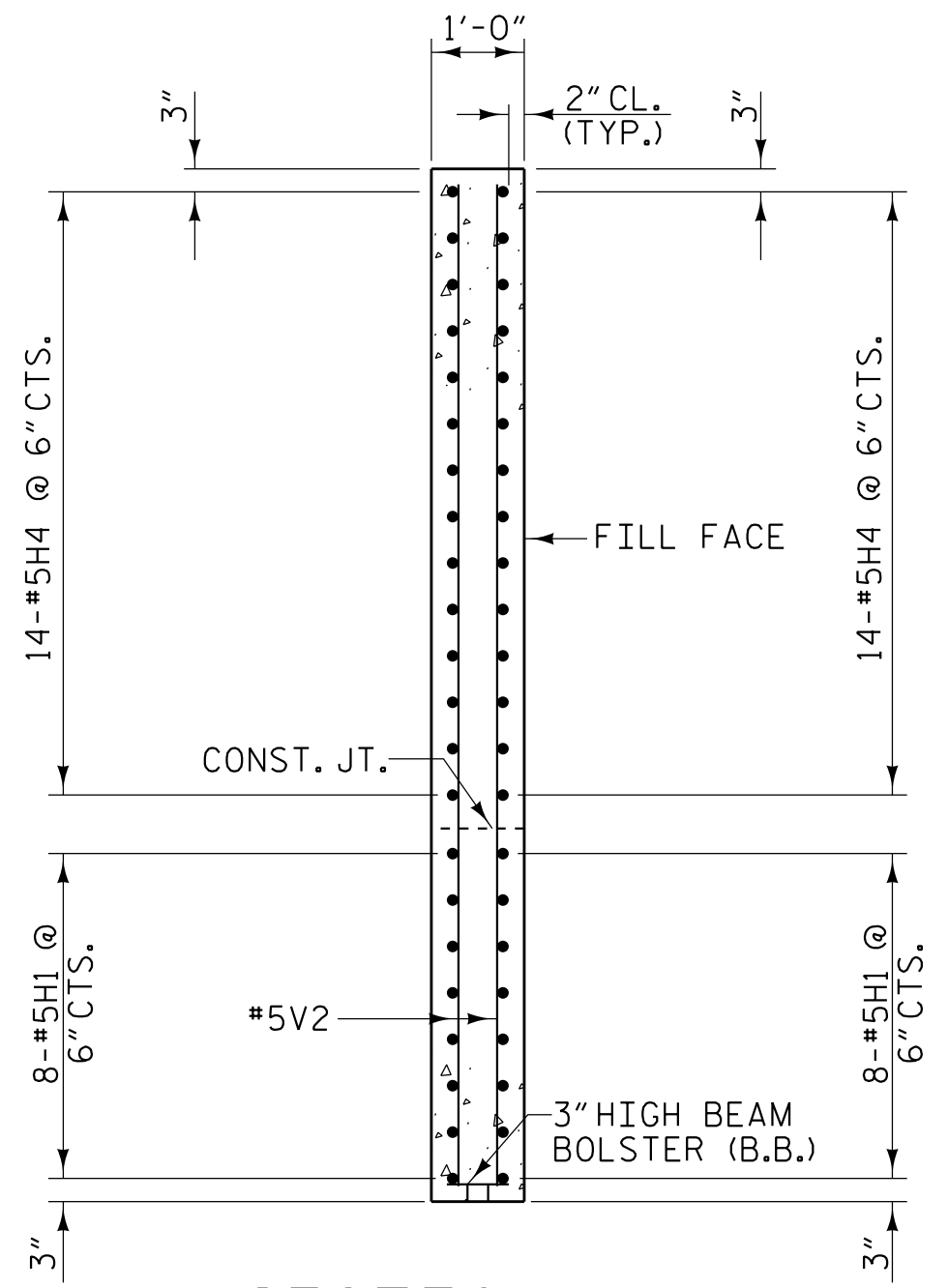
SECTION X-X



ELEVATION OF LEFT WING - W1



ELEVATION OF RIGHT WING - W2



SECTION Y-Y

PROJECT NO. R-5820
 COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

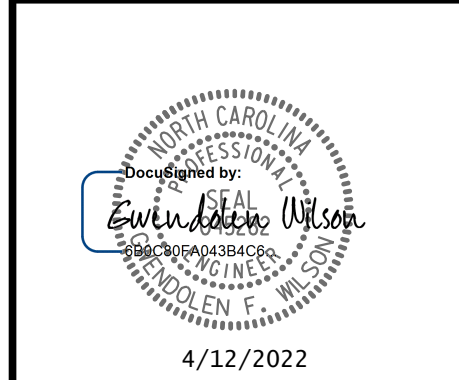
SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 INTEGRAL END BENT 2
 WING DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			31
2			4			

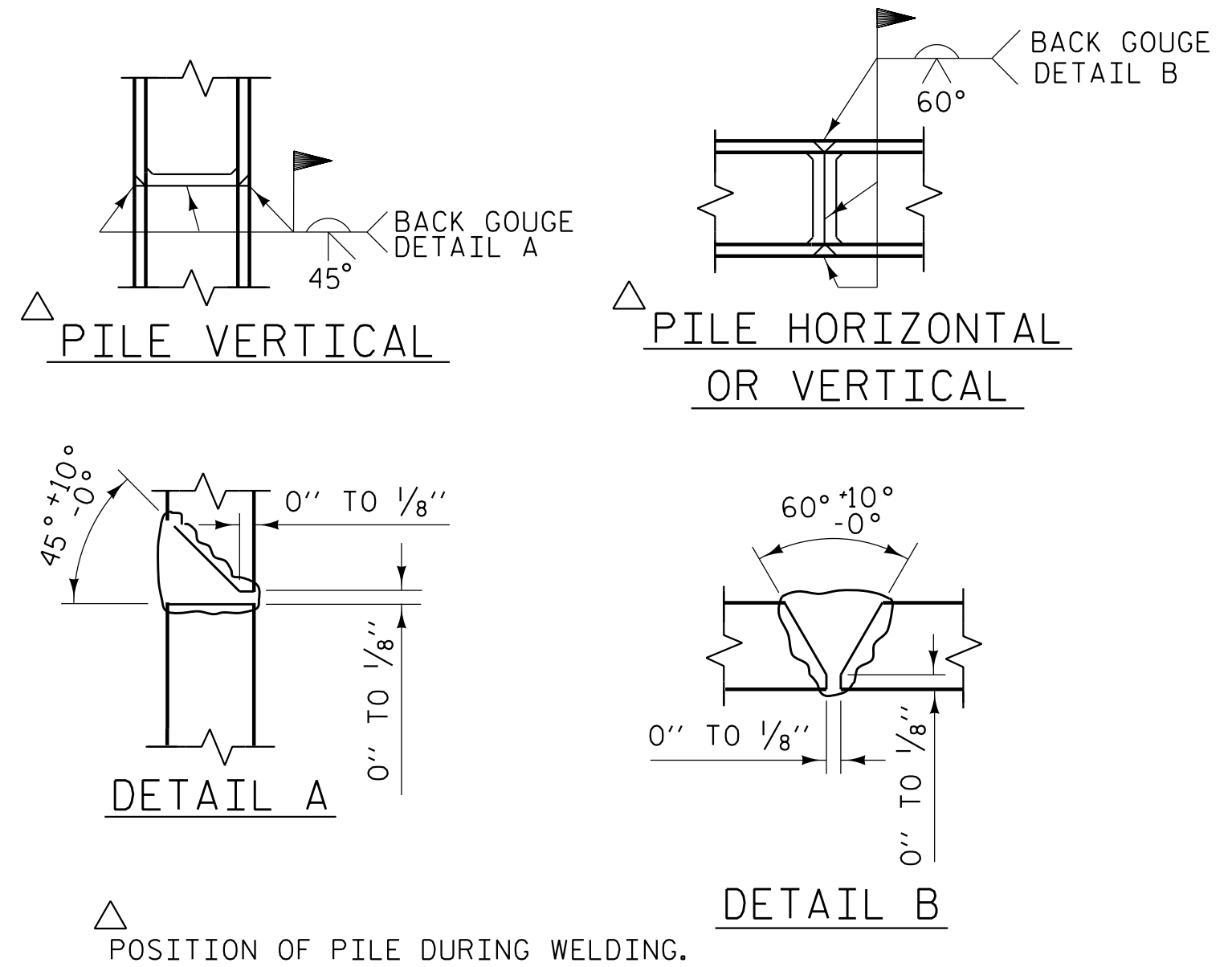
DRAWN BY: W. B. ALLEN DATE: 5/20
 CHECKED BY: G. F. WILSON DATE: 6/21
 DESIGN ENGINEER OF RECORD: G. F. WILSON DATE: 10/21

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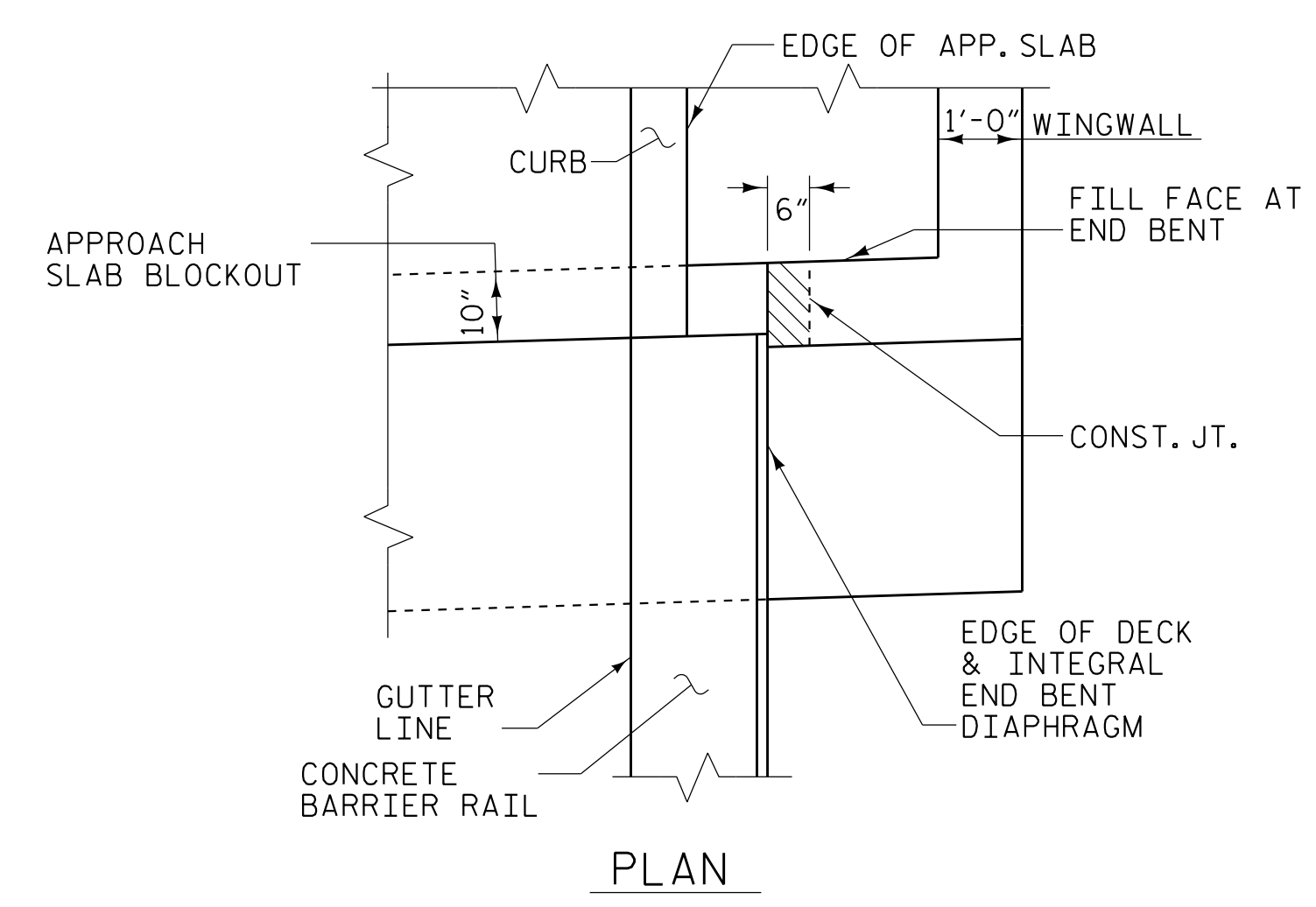


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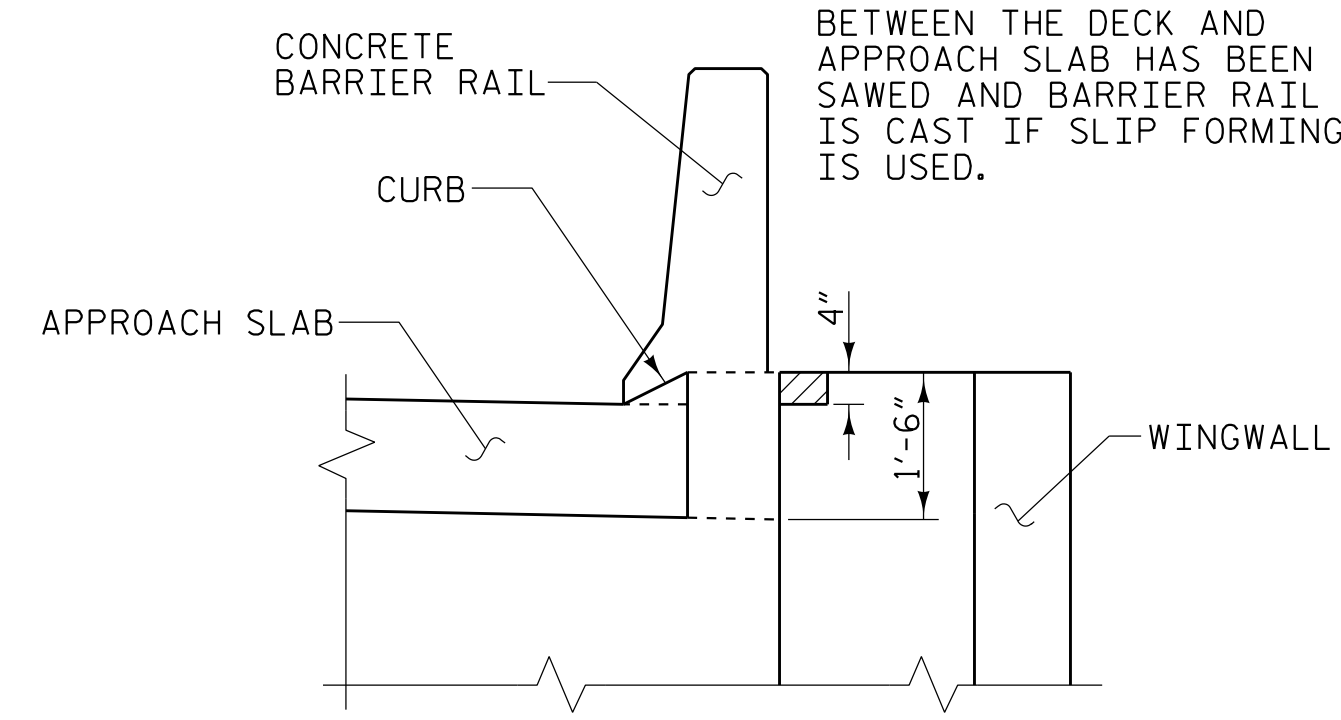
4/12/2022



PILE SPLICE DETAILS

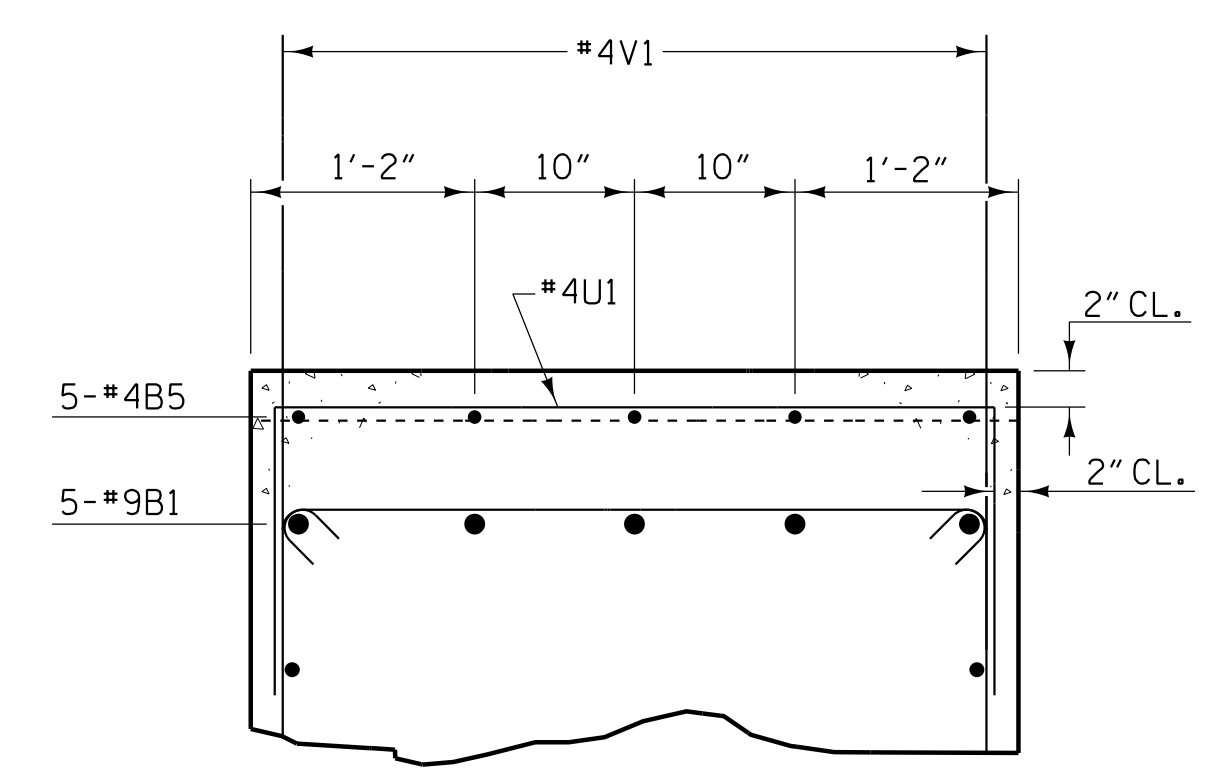
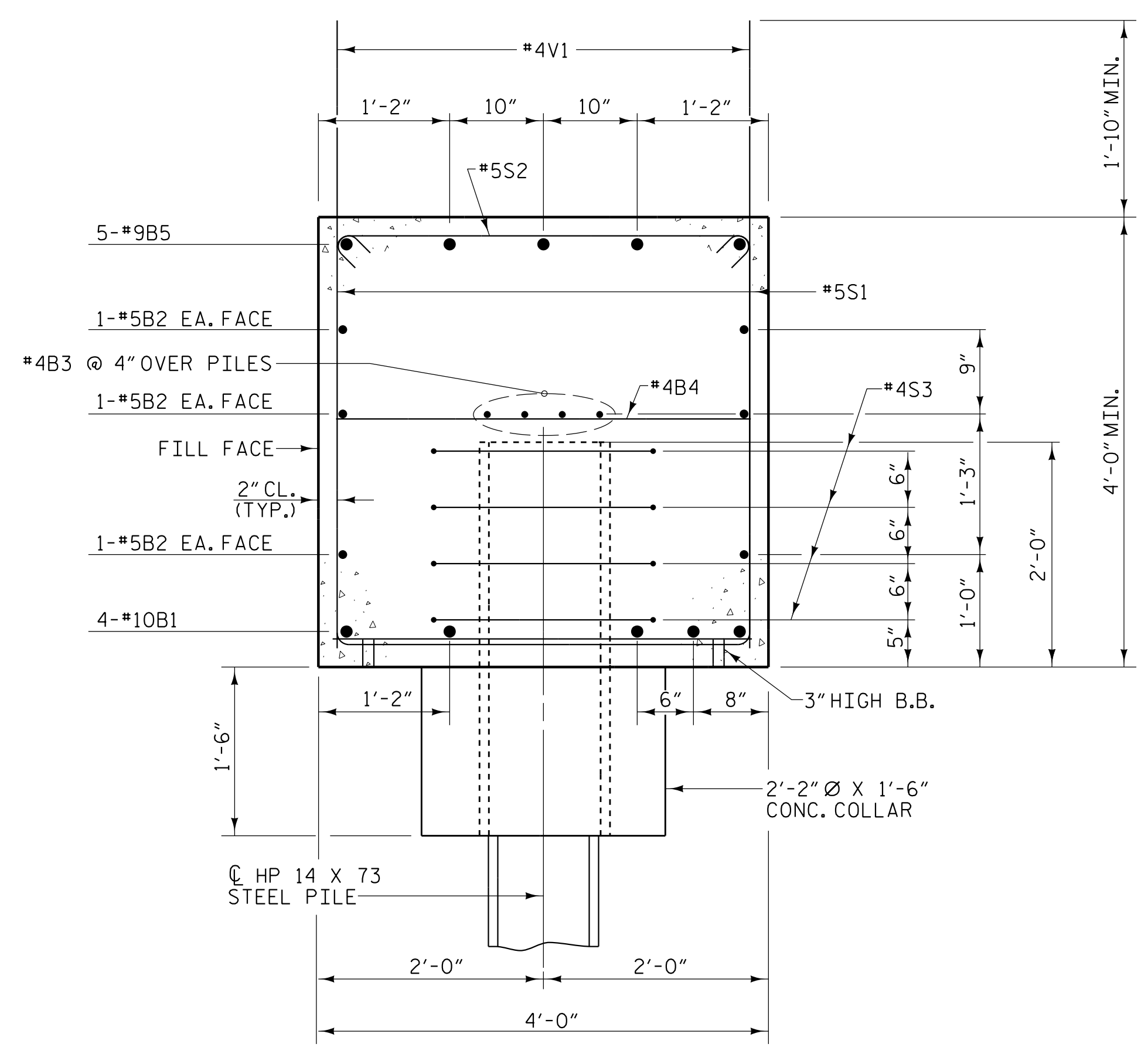


THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND APPROACH SLAB HAS BEEN SAWED AND BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

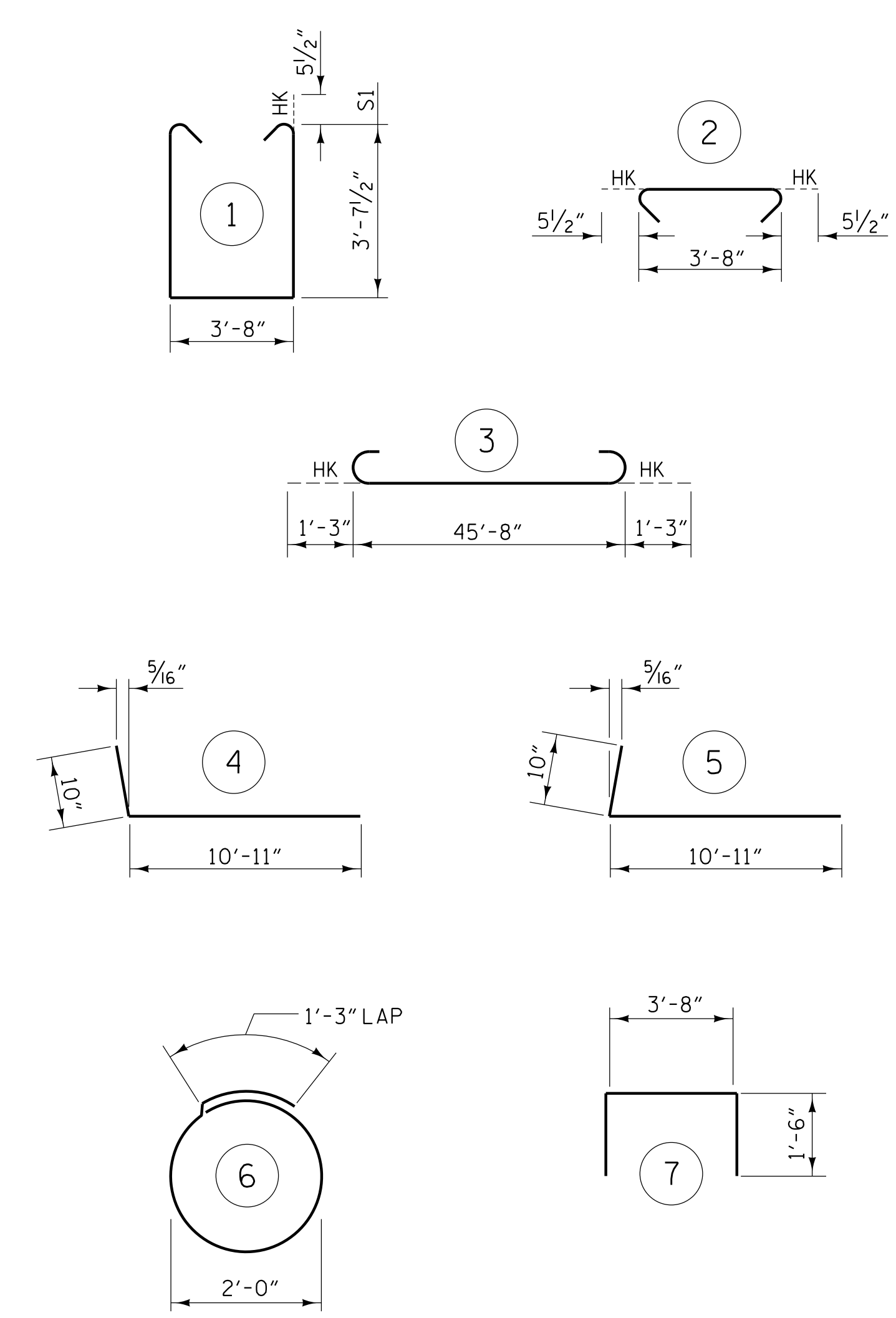


WINGWALL BLOCKOUT

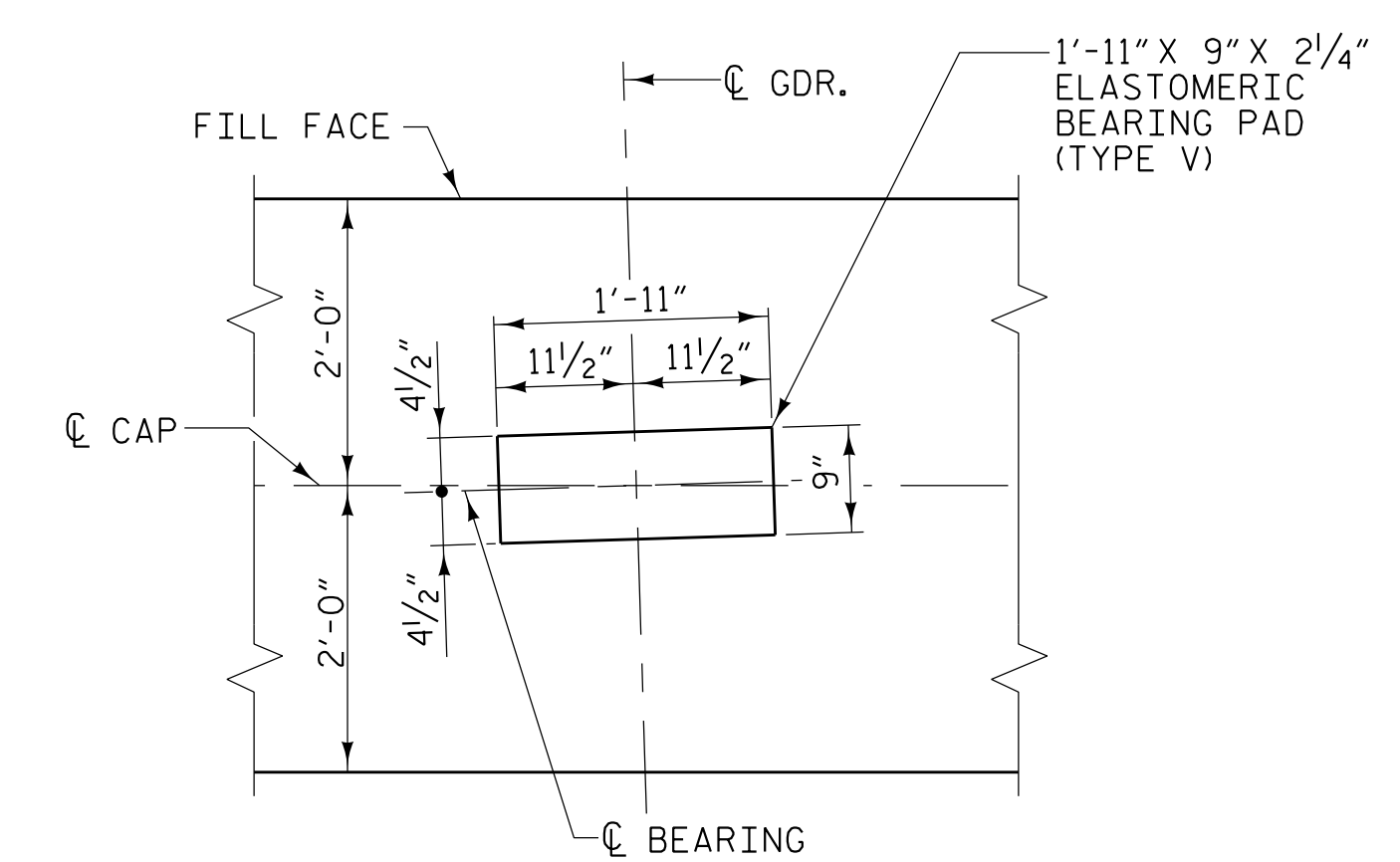
(RIGHT WINGWALL SHOWN, LEFT WINGWALL SIMILAR)



BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT



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BILL OF MATERIAL

END BENT 2					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#9	3	48'-2"	1638
B2	6	#5	STR	45'-8"	286
B3	8	#4	STR	24'-1"	129
B4	12	#4	STR	3'-8"	29
B5	5	#4	STR	12'-8"	42
H1	32	#5	STR	13'-10"	462
H2	28	#5	4	11'-9"	343
H3	56	#5	STR	2'-8"	156
H4	28	#5	5	11'-9"	343
S1	80	#5	1	11'-10"	987
S2	80	#5	2	4'-7"	382
S3	28	#4	6	7'-7"	142
U1	9	#4	7	6'-8"	40
V1	54	#4	STR	5'-7"	201
V2	60	#5	STR	10'-8"	668
TOTAL REINFORCING STEEL					5848 lbs.
CLASS "A" CONCRETE - CU. YARDS					
POUR 1 (CAP, COLLARS, LOWER WINGS) 32.3 cu. yds.					
POUR 2 (UPPER WINGS) 7.0 cu. yds.					
TOTAL					39.3 cu. yds.
HP 14 X 73 STEEL PILES					
7 PILES REQUIRED - LIN. FEET					560
PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 STEEL PILES - EACH					7
PILE REDRIVES - EACH					7

PROJECT NO. R-5820
COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

SHEET 3 OF 3

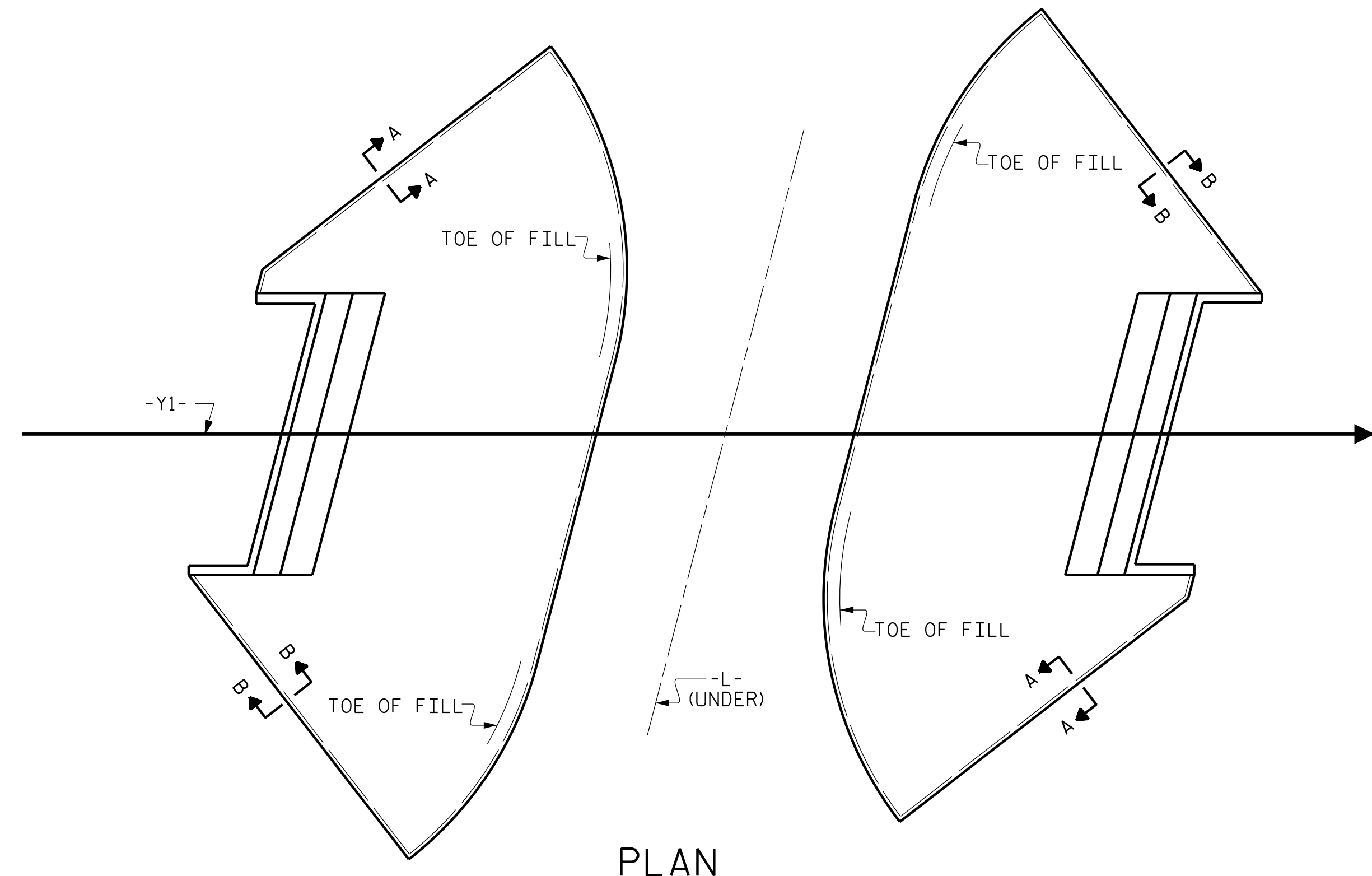
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 INTEGRAL END BENT 2
 DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 31
2			4			

DRAWN BY: W. B. ALLEN DATE: 4/20
 CHECKED BY: G. F. WILSON DATE: 6/21
 DESIGN ENGINEER OF RECORD: G. F. WILSON DATE: 10/21

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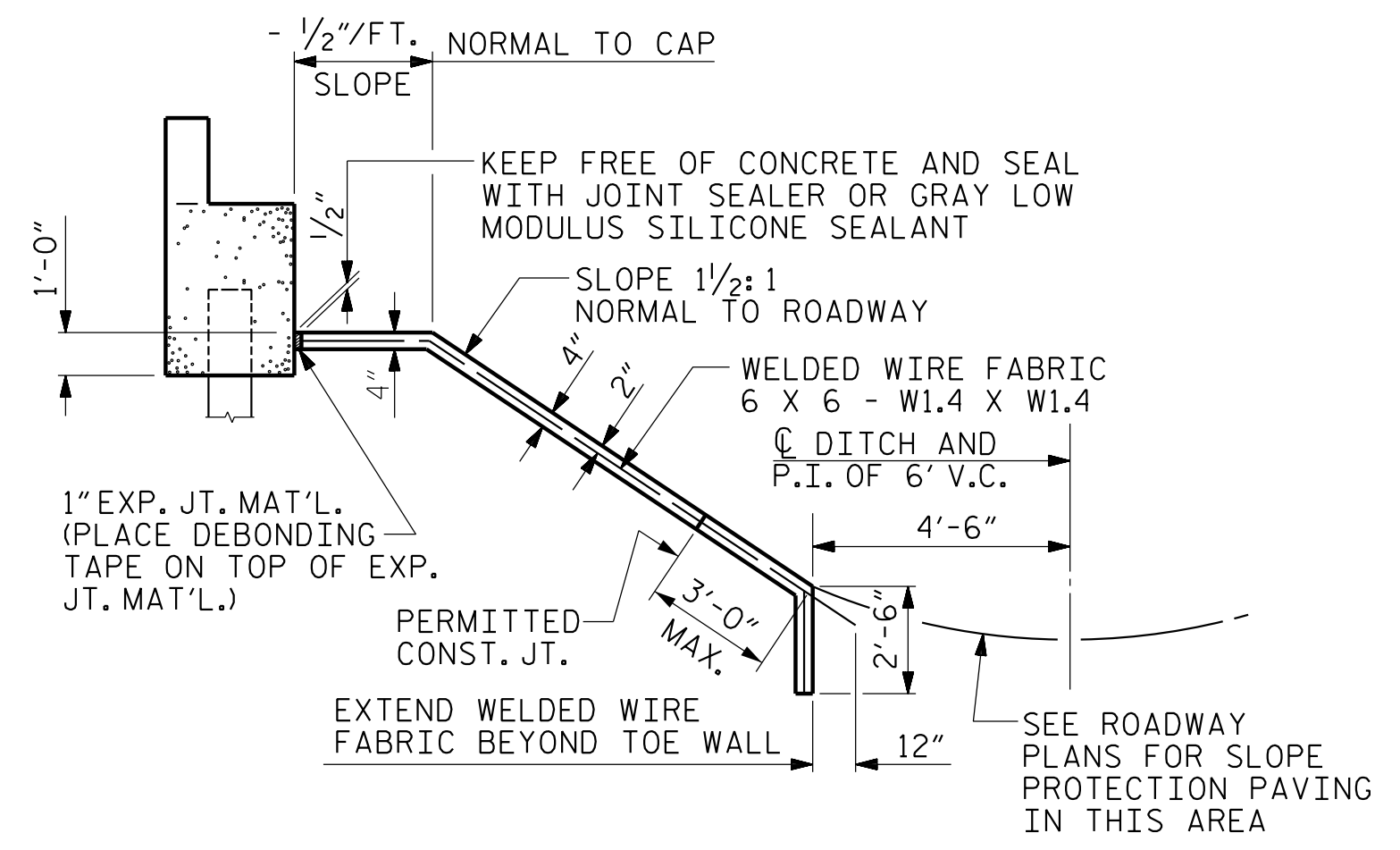


GENERAL NOTES

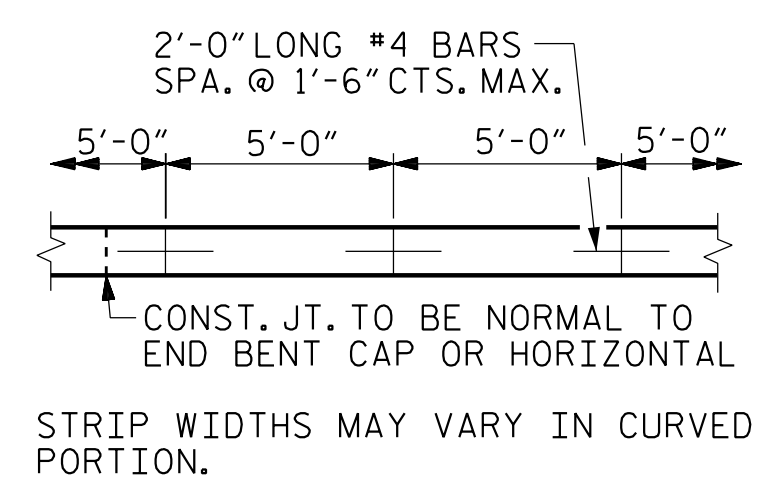
STRAIGHT EDGING WILL NOT BE REQUIRED UNLESS, IN THE OPINION OF THE ENGINEER, VISUAL INSPECTION INDICATES A NEED FOR IT. MEASUREMENT AND PAYMENT SHALL BE AS PRESCRIBED IN SECTION 462 OF THE STANDARD SPECIFICATIONS. FOR BERM WIDTH, SEE GENERAL DRAWING. SLOPE PROTECTION SHALL CONSIST OF 4" POURED-IN-PLACE 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 - W1.4 X W1.4, 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.

BRIDGE @ STA. 38+26.89 -Y1-	4" INCH SLOPE PROTECTION	* WELDED WIRE FABRIC 60 INCHES WIDE
	SQUARE YARDS	APPROX. L.F.
END BENT 1	227	584
END BENT 2	228	581

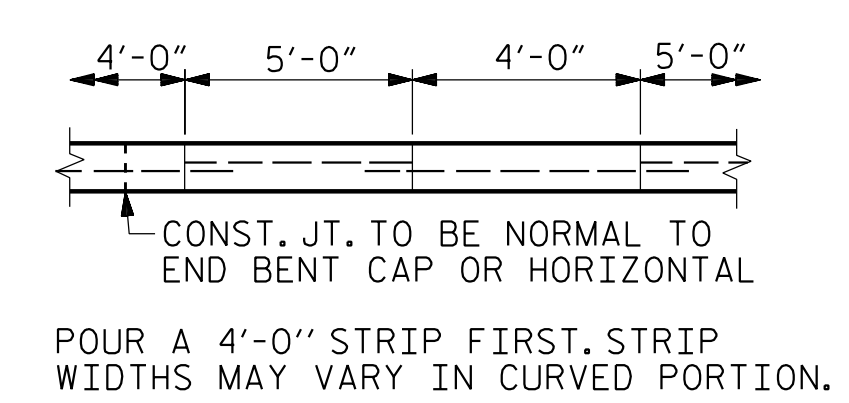
* QUANTITY SHOWN IS BASED ON 5' POURS.



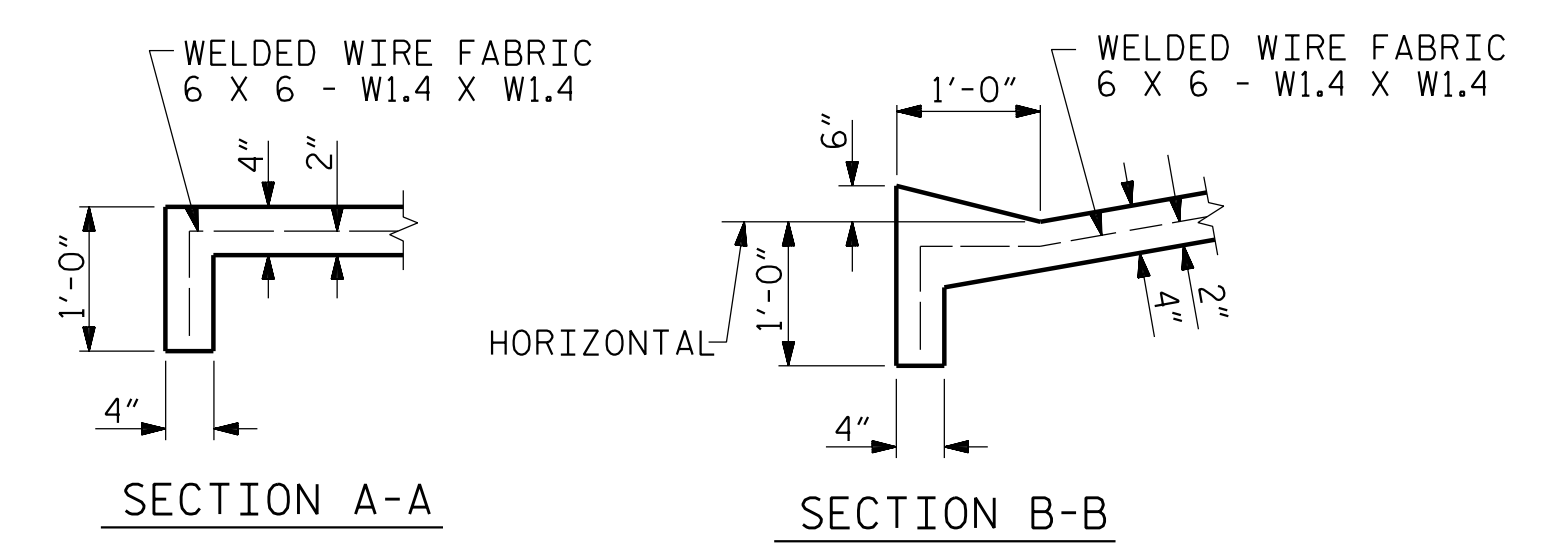
SECTION ALONG C SURVEY WHEN FILL CATCHES IN DITCH



POURING DETAIL



OPTIONAL POURING DETAIL



SECTION A-A

SECTION B-B

PROJECT NO. R-5820
COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 SLOPE PROTECTION
 DETAILS

REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					31

PLANS PREPARED BY:

NV5

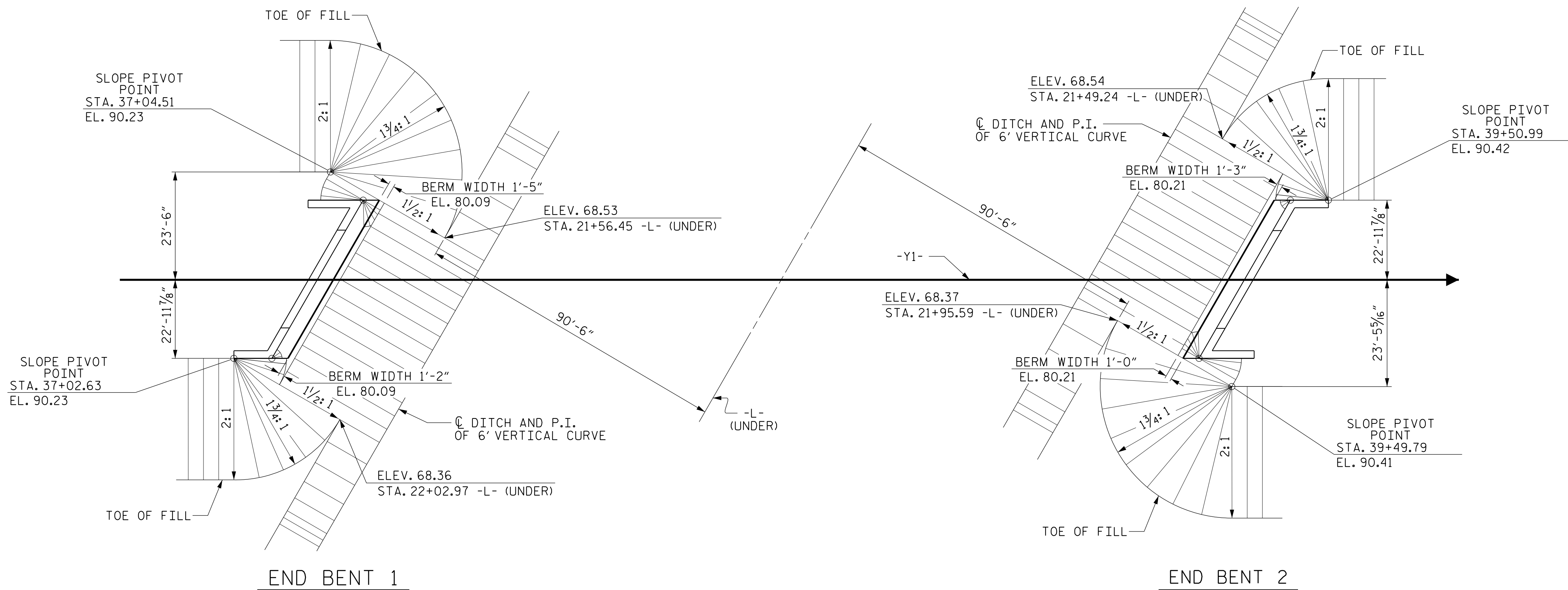
NV5 ENGINEERS & CONSULTANTS, INC.
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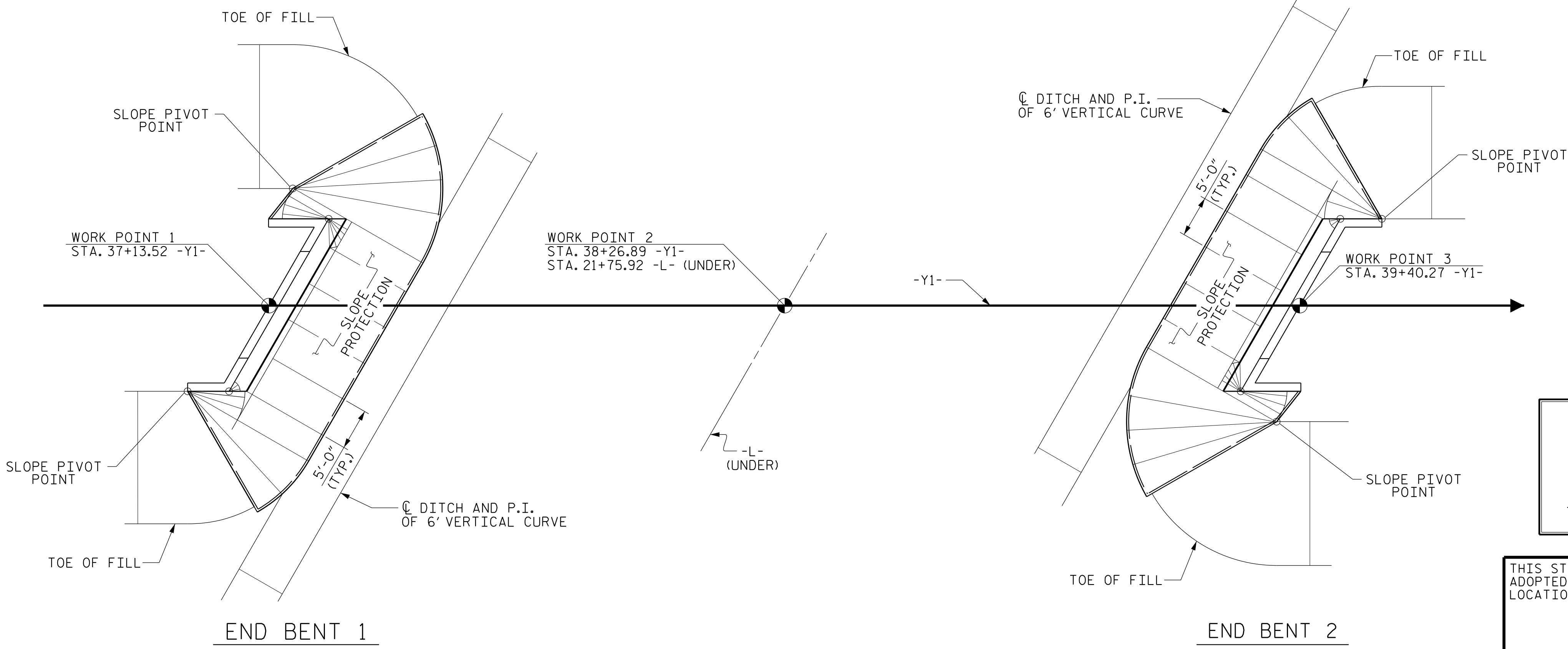
THIS STANDARD DRAWING REVIEWED & ADOPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED:

4/12/2022

ASSEMBLED BY : W. B. ALLEN	DATE : 4/20
CHECKED BY : G. F. WILSON	DATE : 10/21
DRAWN BY : ELR 5/92	REV. 12/21/11 MAA/GM
CHECKED BY : GRP 6/92	REV. 1/16 MAA/TMG
	REV. 12/17 MAA/THC



PLAN - GRADING



PLAN - CONCRETE PLACEMENT

PROJECT NO. R-5820
COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT

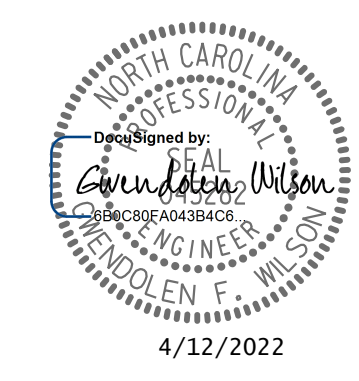
SHEET 2 OF 2

PLANS PREPARED BY:

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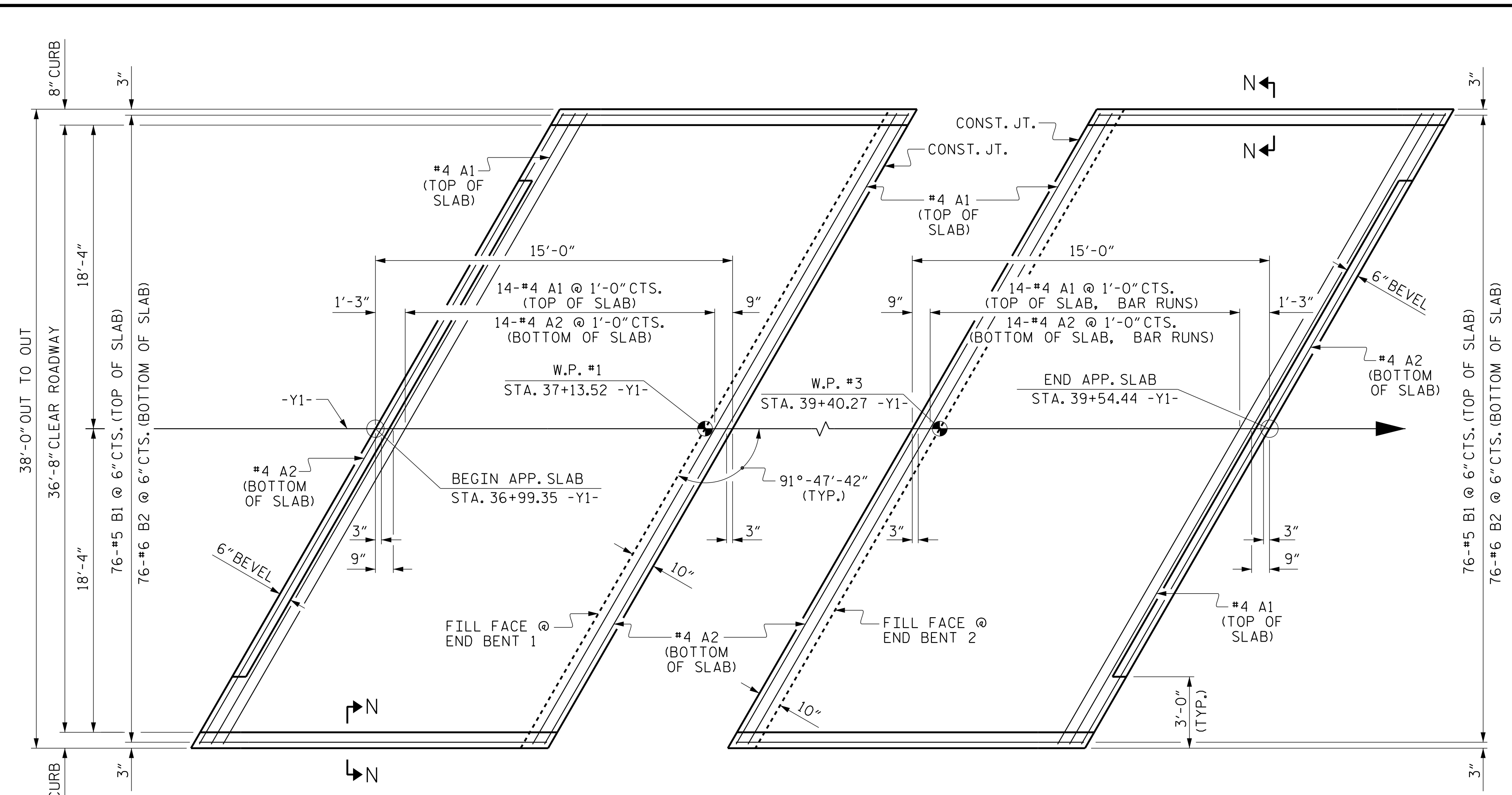


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 SLOPE PROTECTION
 DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-29
1			3			TOTAL SHEETS 31
2			4			

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ASSEMBLED BY : W. B. ALLEN	DATE : 4/20
CHECKED BY : G. F. WILSON	DATE : 10/21
DRAWN BY : WJH 10/88	REV. 10/1/11 MAA/GM
CHECKED BY : FCJ 10/88	REV. 1/16 MAA/TMG
	REV. 12/17 MAA/THC



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

NOTES

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

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 6" Ø DRAINAGE PIPE, AND SELECT MATERIAL, 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 6" 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.

THE JOINT OPENING AT THE APPROACH SLAB/DECK INTERFACE SHALL BE SAWED NO MORE THAN 12 HOURS AFTER THE APPROACH SLAB IS CAST. THE JOINT SHALL BE CLEANED OF ALL DEBRIS BEFORE THE SEALANT IS APPLIED. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1028-3 OF THE STANDARD SPECIFICATIONS.

AT THE CONTRACTORS OPTION, "TYPE A - ALTERNATE APPROACH FILL" IN LIEU OF "TYPE I - STANDARD APPROACH FILL" MAY BE CONSTRUCTED AT NO ADDITIONAL COST TO THE DEPARTMENT. SEE SHEET 2 OF 2 FOR DETAILS AND NOTES.

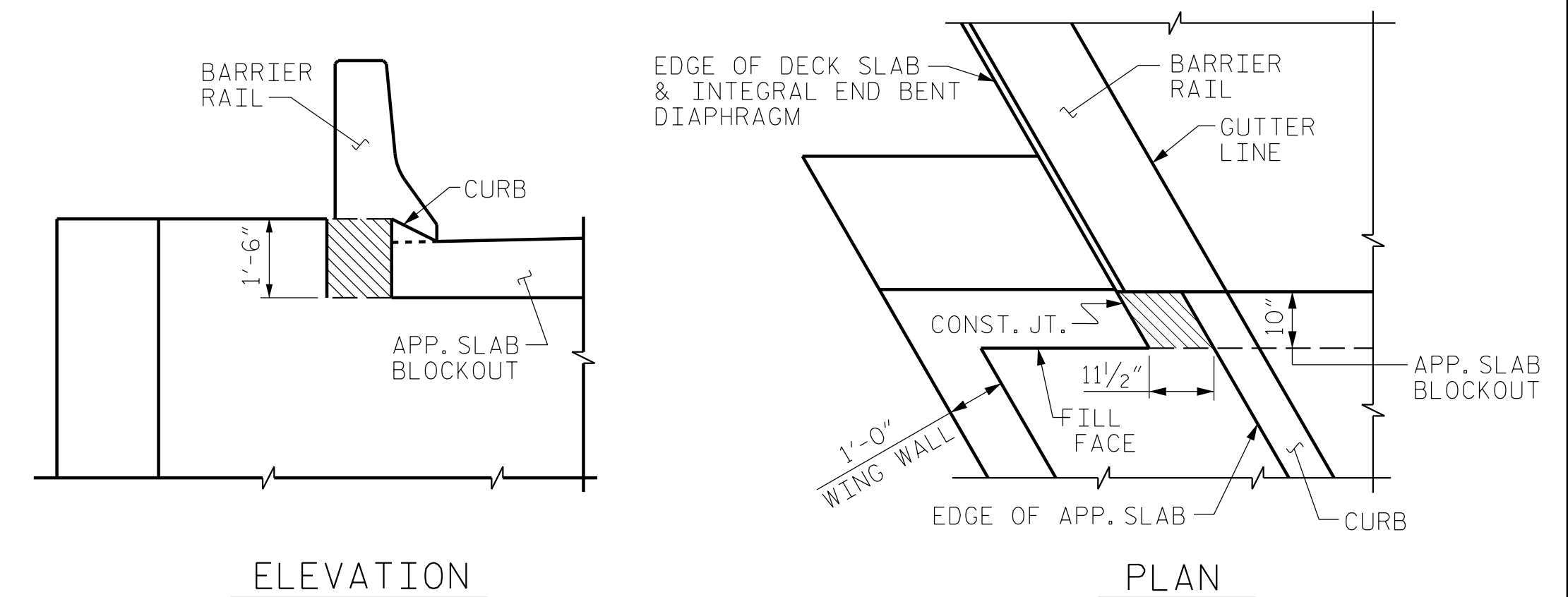
BILL OF MATERIAL

FOR ONE APPROACH SLAB (2 REQ'D)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	16	#4	STR	37'-6"	401
A2	16	#4	STR	37'-6"	401
* B1	76	#5	STR	14'-2"	1123
B2	76	#6	STR	14'-8"	1674
REINFORCING STEEL					LBS. 2075
* EPOXY COATED REINFORCING STEEL					LBS. 1524
CLASS AA CONCRETE					C. Y. 24.6

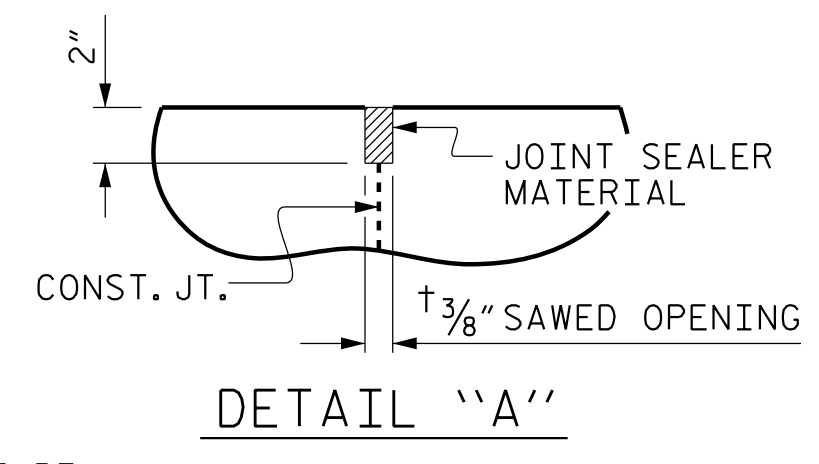
SPLICE LENGTHS

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

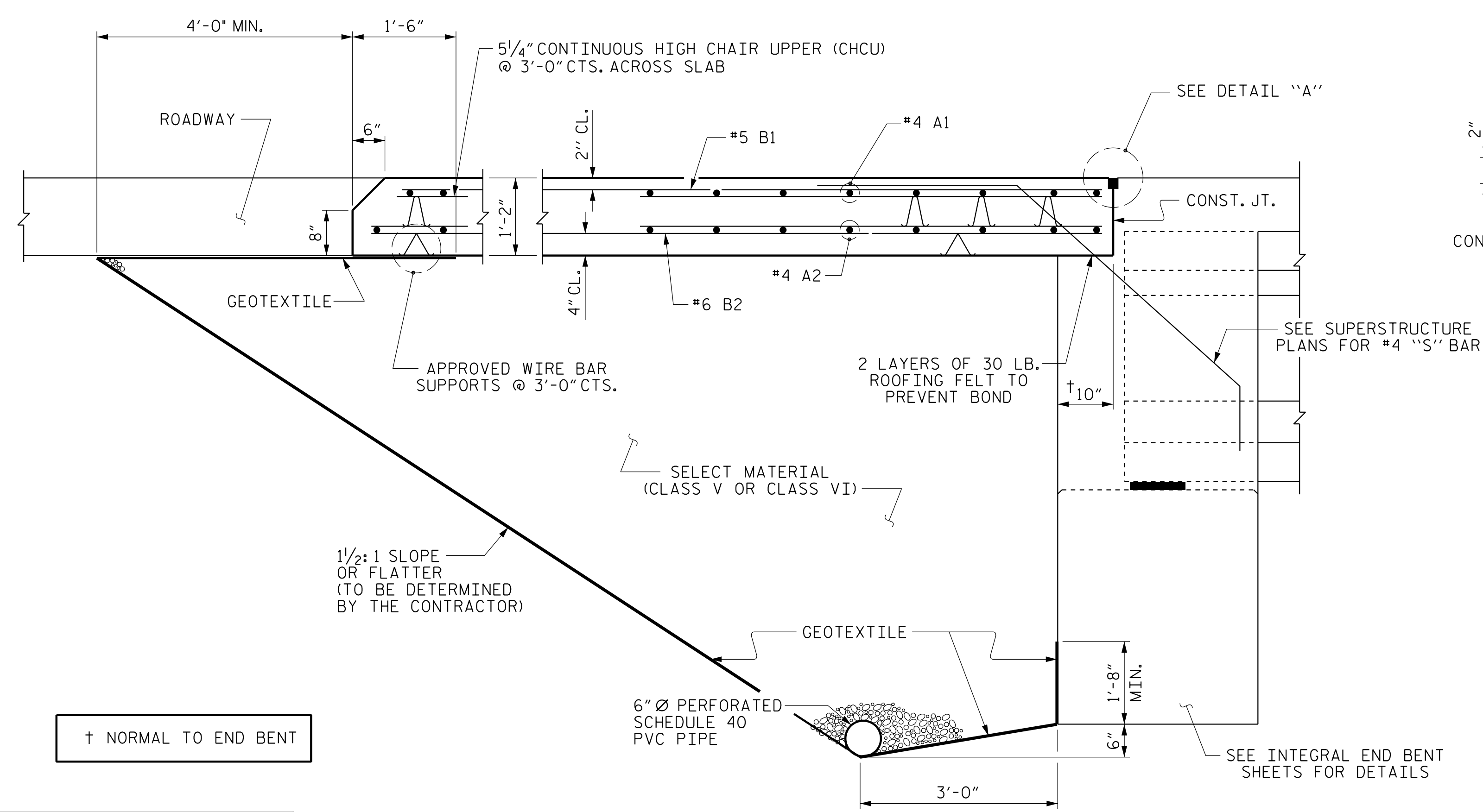


ELEVATION
 PLAN
 APPROACH SLAB BLOCKOUT
 (WHEN APPROACH SLAB HAS CURB)

THE CONCRETE IN THE SHADED AREA SHALL BE POURED ALONG WITH APPROACH SLAB CONSTRUCTION AND AFTER BARRIER RAIL HAS BEEN CAST IF SLIP FORMING IS USED.

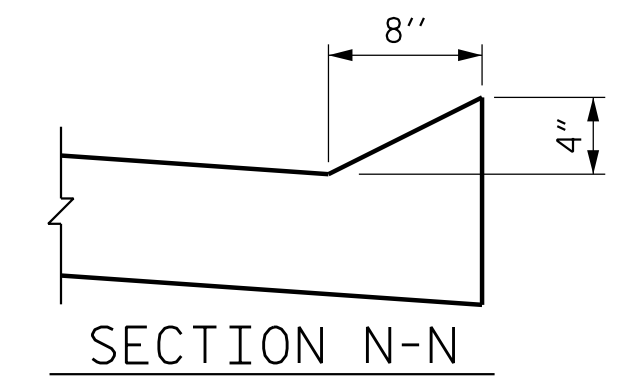


DETAIL "A"



SECTION THRU SLAB
 (TYPE I - STANDARD APPROACH FILL)

PROJECT NO. R-5820
 COLUMBUS COUNTY
 STATION: 38+26.89 -Y1- POT



SECTION N-N

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 BRIDGE APPROACH SLAB
 FOR INTEGRAL ABUTMENT
 WITH FLEXIBLE PAVEMENT

REVISIONS

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

SHEET NO. S2-30
 TOTAL SHEETS 31

PLANS PREPARED BY:

NV5

NV5 ENGINEERS & CONSULTANTS, INC.
 3300 REGENCY PARKWAY, SUITE 100
 CARY, NC 27518
 P: 919.851.1912 www.nv5.com
 NC License # F-1333
 formerly CALVI Engineers & Consultants

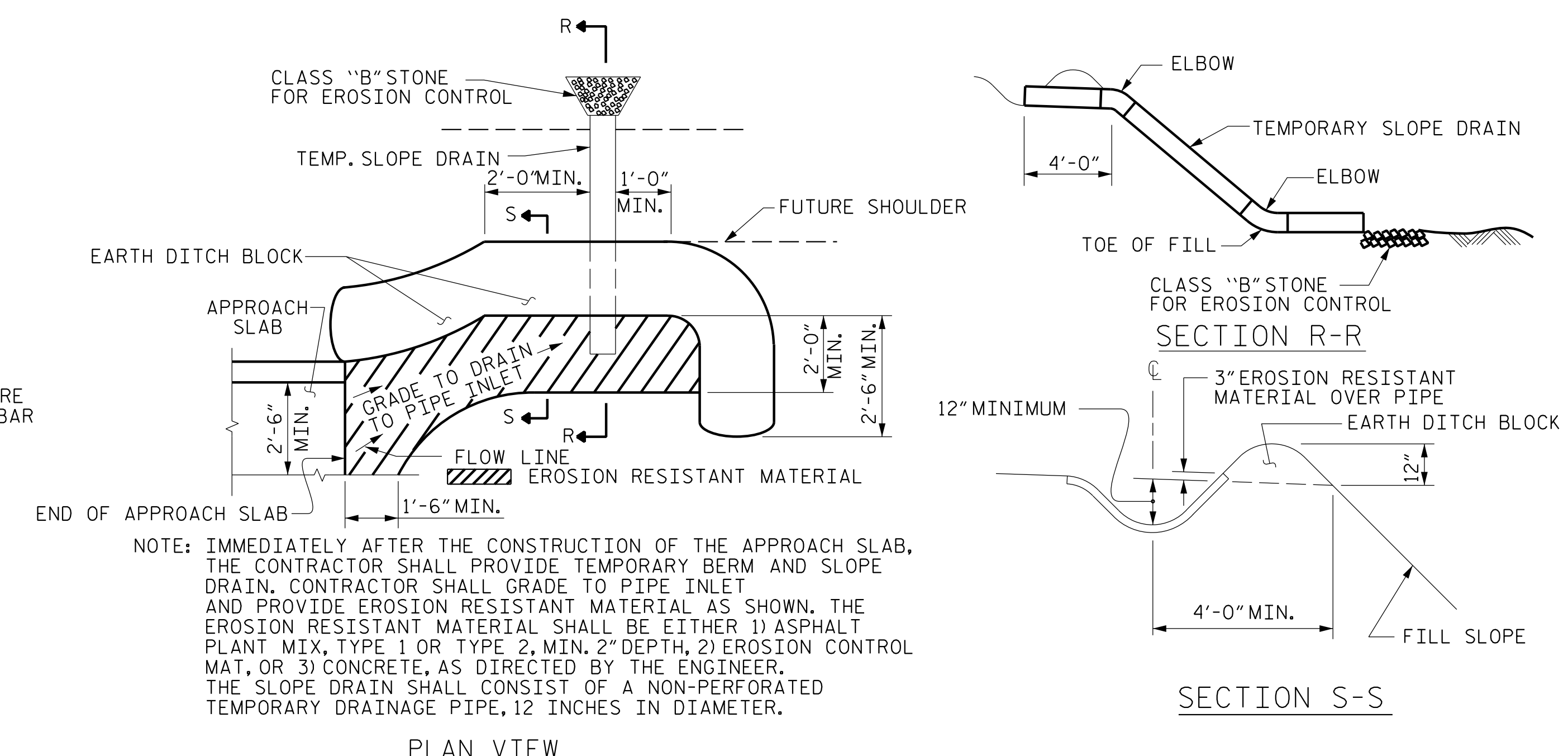
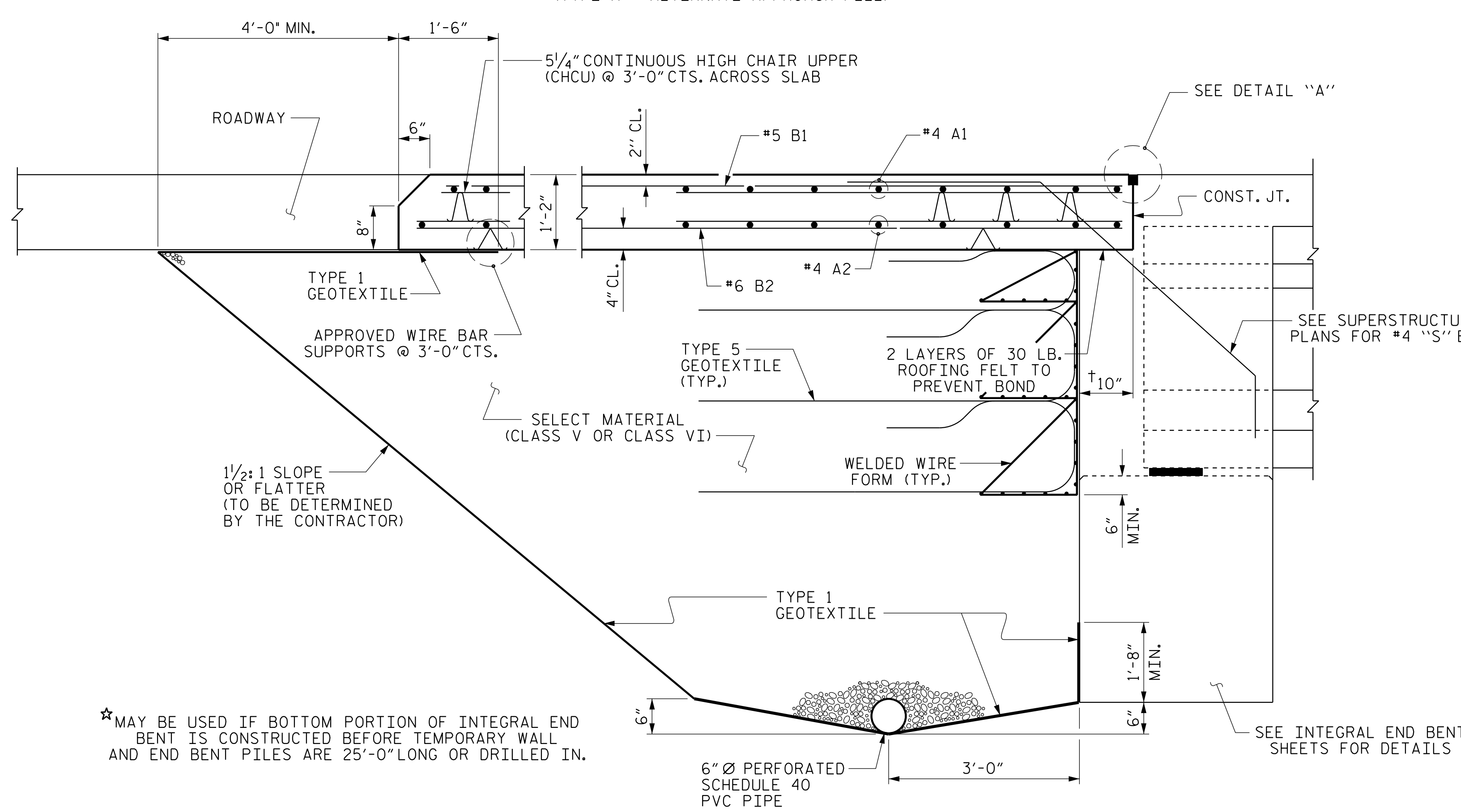
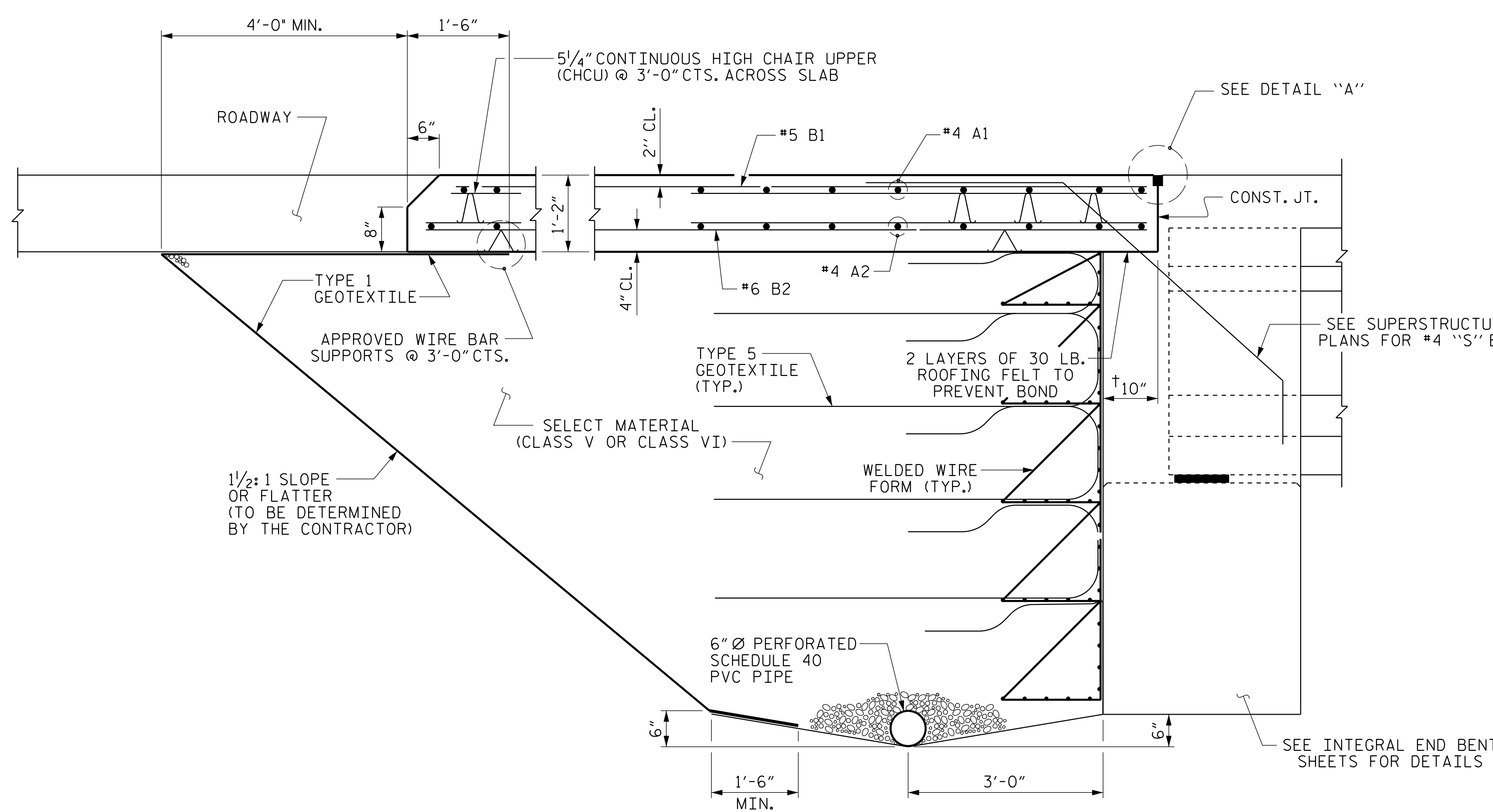
THIS STANDARD DRAWING REVIEWED & ADOPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED:

Carroll Wilson
 PROFESSIONAL ENGINEER
 STATE OF NORTH CAROLINA
 LICENSE NO. 48424

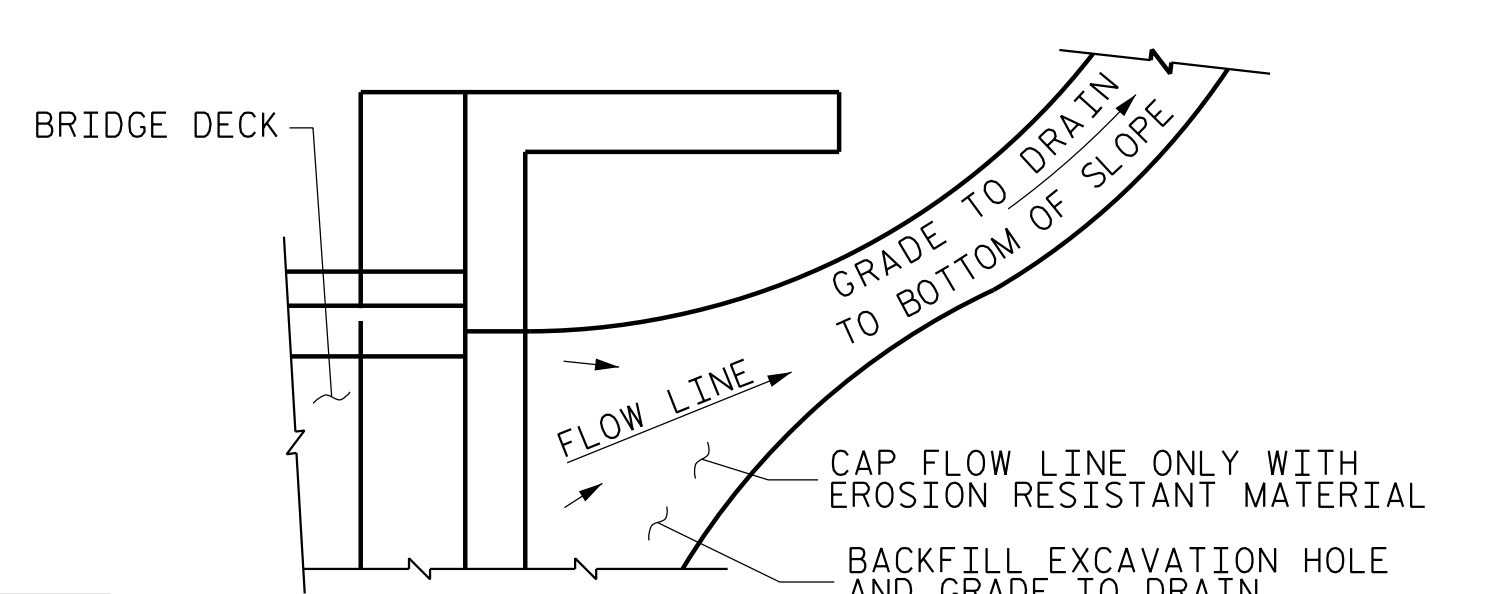
4/12/2022

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

4/12/2022 1:38:00 PM G:\Projects\2016\20160320\CLIENT\Structures\R-5820 (Y1-NR5820.SMU.ASI.230424.dgn)



TEMPORARY BERM AND SLOPE DRAIN DETAILS
(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



NOTES

- APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.
- FOR TEMPORARY GEOTEXTILE WALL INCLUDING GEOTEXTILE, 6" Ø DRAINAGE PIPE, WELDED WIRE FORM, AND SELECT MATERIAL, SEE ROADWAY PLANS.
- GEOTEXTILE (TYPE 1 OR TYPE 5) SHALL BE 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 BACKFILL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.
- FOR THE 6" 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.
- THE JOINT OPENING AT THE APPROACH SLAB/DECK INTERFACE SHALL BE SAWS NO MORE THAN 12 HOURS AFTER THE APPROACH SLAB IS CAST. THE JOINT SHALL BE CLEANED OF ALL DEBRIS BEFORE THE SEALANT IS APPLIED. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1028-3 OF THE STANDARD SPECIFICATIONS.

★ MAY BE USED IF BOTTOM PORTION OF INTEGRAL END BENT IS CONSTRUCTED BEFORE TEMPORARY WALL AND END BENT PILES ARE 25'-0" LONG OR DRILLED IN.

SECTION THRU SLAB
(TYPE A - ALTERNATE APPROACH FILL)

ASSEMBLED BY : W. B. ALLEN	DATE : 4/20
CHECKED BY : G. F. WILSON	DATE : 7/21
DRAWN BY : TLA 10/05	REV. 12/21/11 MAA/GM
CHECKED BY : GM 5/06	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

PLANS PREPARED BY:

NV5

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Formerly GATCO Engineers & Consultants

THIS STANDARD DRAWING REVIEWED & ADOPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED:

Gavin Wilson
Gavin Wilson
Professional Engineer
No. 40001
State of North Carolina
4/12/2022

PROJECT NO. R-5820
COLUMBUS COUNTY
STATION: 38+26.89 -Y1- POT

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
BRIDGE APPROACH
SLAB DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-31
1			3			TOTAL SHEETS
2			4			31

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