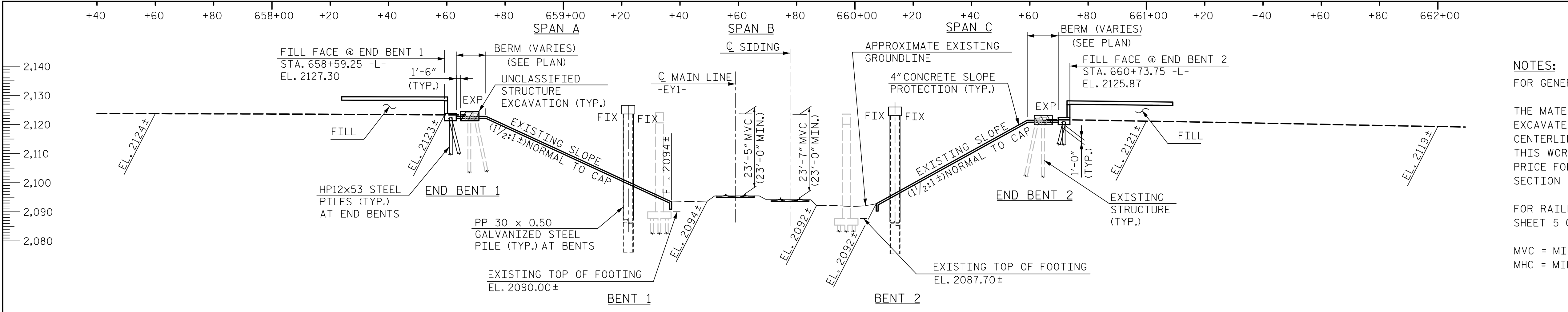


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and is Not a Certified Document –**

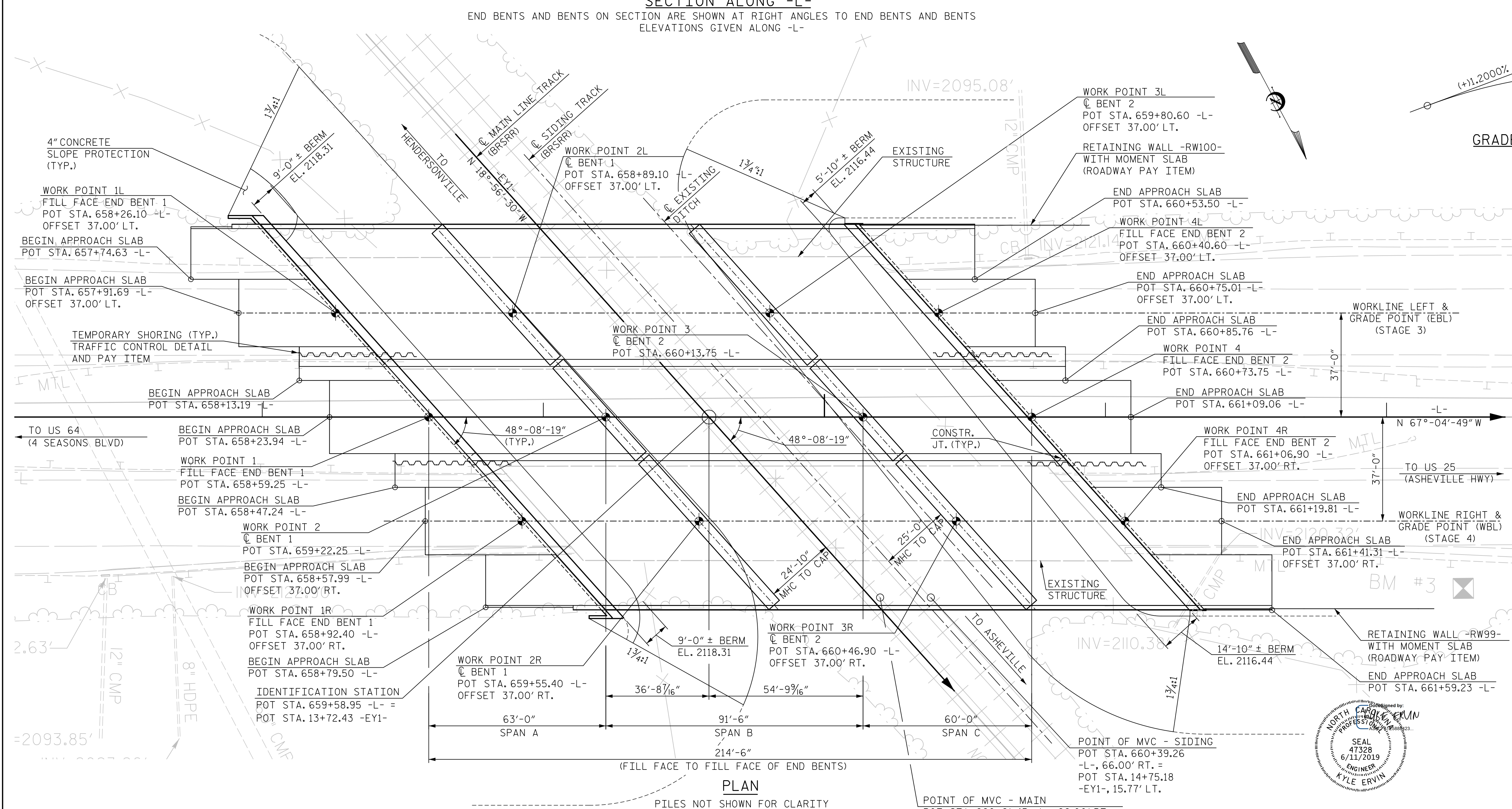
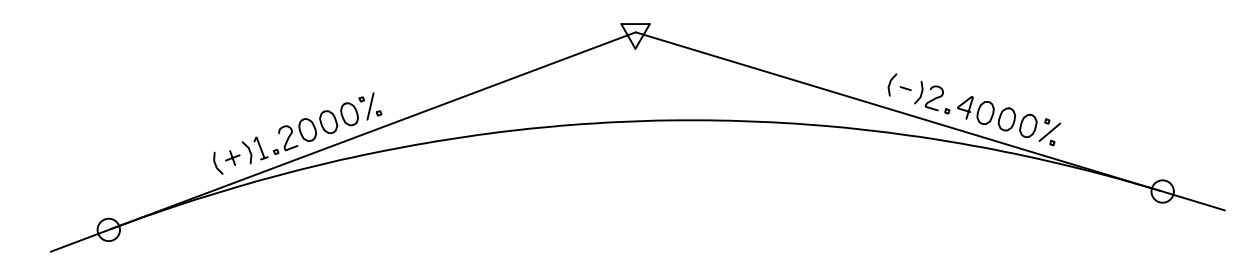
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and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
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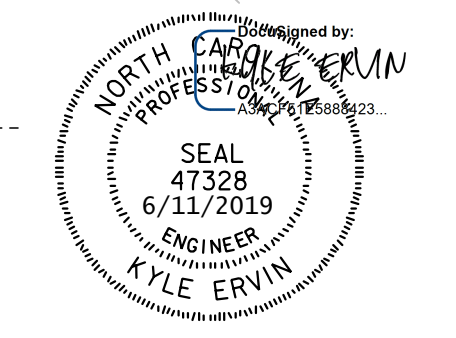
NOTES:
 FOR GENERAL NOTES, SEE GENERAL DRAWING SHEET 4 OF 5.
 THE MATERIAL SHOWN IN THE HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 72 FEET EACH SIDE OF THE CENTERLINE OF ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.
 FOR RAILROAD VERTICAL PROFILE, SEE GENERAL DRAWING SHEET 5 OF 5.
 MVC = MINIMUM VERTICAL CLEARANCE
 MHC = MINIMUM HORIZONTAL CLEARANCE

PI STA. = 659+50.00
 ELEV = 2,131.71
 V.C. = 900'



PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L- = POT 13+72.43 -EY1-
 RR MILEPOST W13.88 REPLACES BRIDGE NO. 228 AND 230
 SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 I-26 MAINLINE BRIDGE
 OVER BLUE RIDGE
 SOUTHERN RAILROAD
 BETWEEN US 25 AND US 64



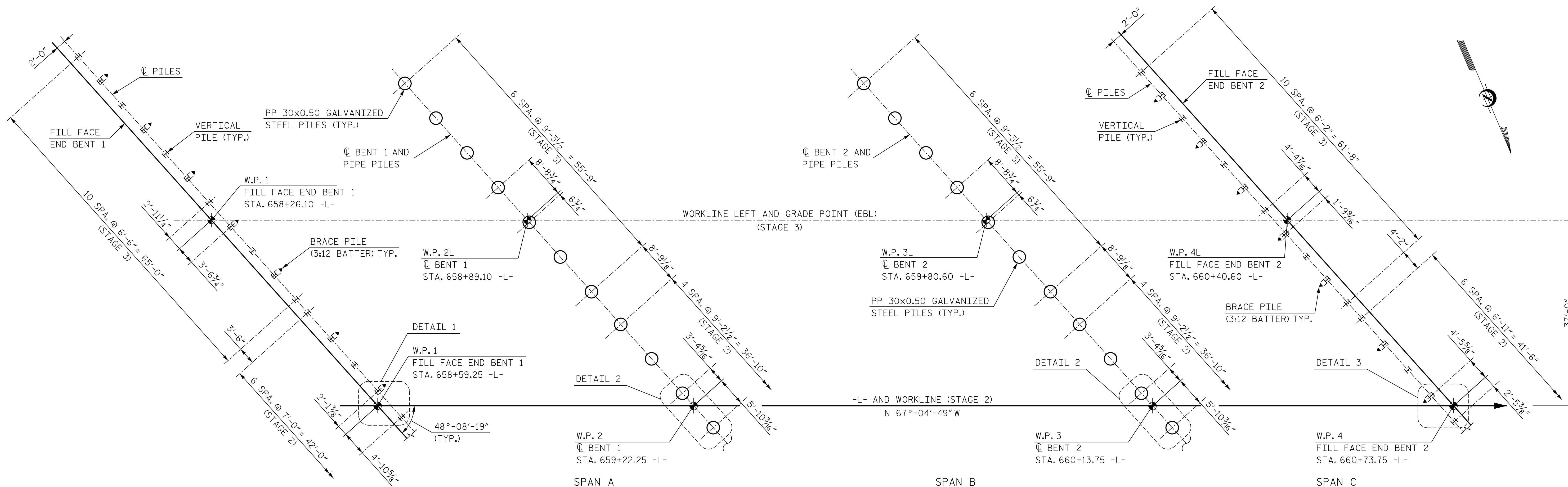
HNTB HNTB NORTH CAROLINA, P.C.
 NC License No. C-1554
 343 E. Six Forks Rd., Suite 200, Raleigh, NC 27609

DRAWN BY B. VAUGHN DATE 11/18
 CHECKED BY K. ERVIN DATE 11/18
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 11/18

REVISIONS						SHEET NO. S1-1
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 81
2			4			

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DWG. NO. 1



FOUNDATION NOTES:

◀ indicates pile to be battered 3:12 IN DIRECTION OF ARROW.

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 78 TONS PER PILE.

DRIVE PILES AT END BENT NO.1 AND END BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 130 TONS PER PILE.

PILES AT BENT NO.1 AND BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 240 TONS PER PILE.

DRIVE PILES AT BENT NO.1 TO A TIP ELEVATION NO HIGHER THAN 2060 FEET AND SATISFY THE REQUIRED DRIVING RESISTANCE OF 400 TONS PER PILE.

DRIVE PILES AT BENT NO.2 TO A TIP ELEVATION NO HIGHER THAN 2059 FEET (LT), 2063 FEET (CT), AND 2063 FEET (RT) AND SATISFY THE REQUIRED DRIVING RESISTANCE OF 400 TONS PER PILE.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 80,000 FT-LBS TO 150,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT NO.1 AND 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3 (D) (2) OF THE STANDARD SPECIFICATIONS.

TESTING PILES WITH PDA DURING DRIVING, RESTRIKING, OR REDRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

NOTES:

ALL DIMENSIONS ARE PARALLEL OR NORMAL TO FILL FACE AT END BENTS AND C BENT AT BENT NO.1 AND BENT NO.2.

ALL PILE DIMENSIONS ARE TO CENTERS OF PILES.

ALL DIMENSIONS TO BATTERED PILES ARE AT BOTTOM OF CAP ELEVATION.

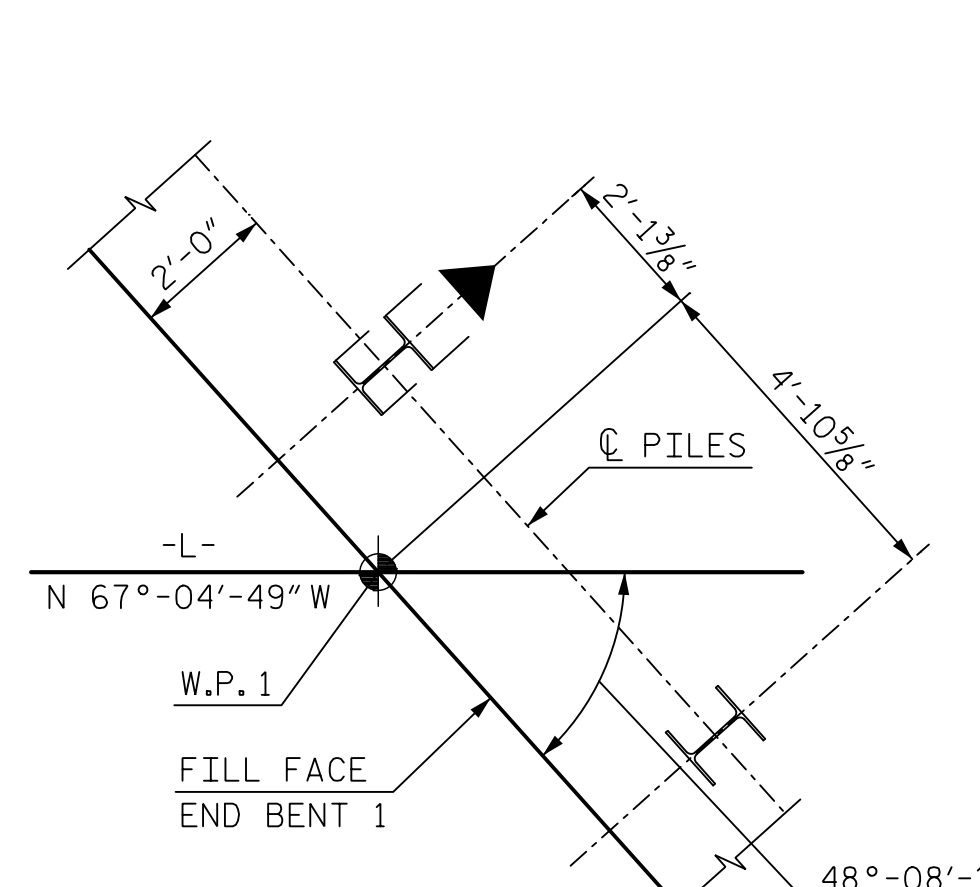
ALL END BENT PILES ARE HP 12x53 STEEL PILES.

ALL PILES AT BENT 1 AND BENT 2 ARE STEEL PP 30x0.50

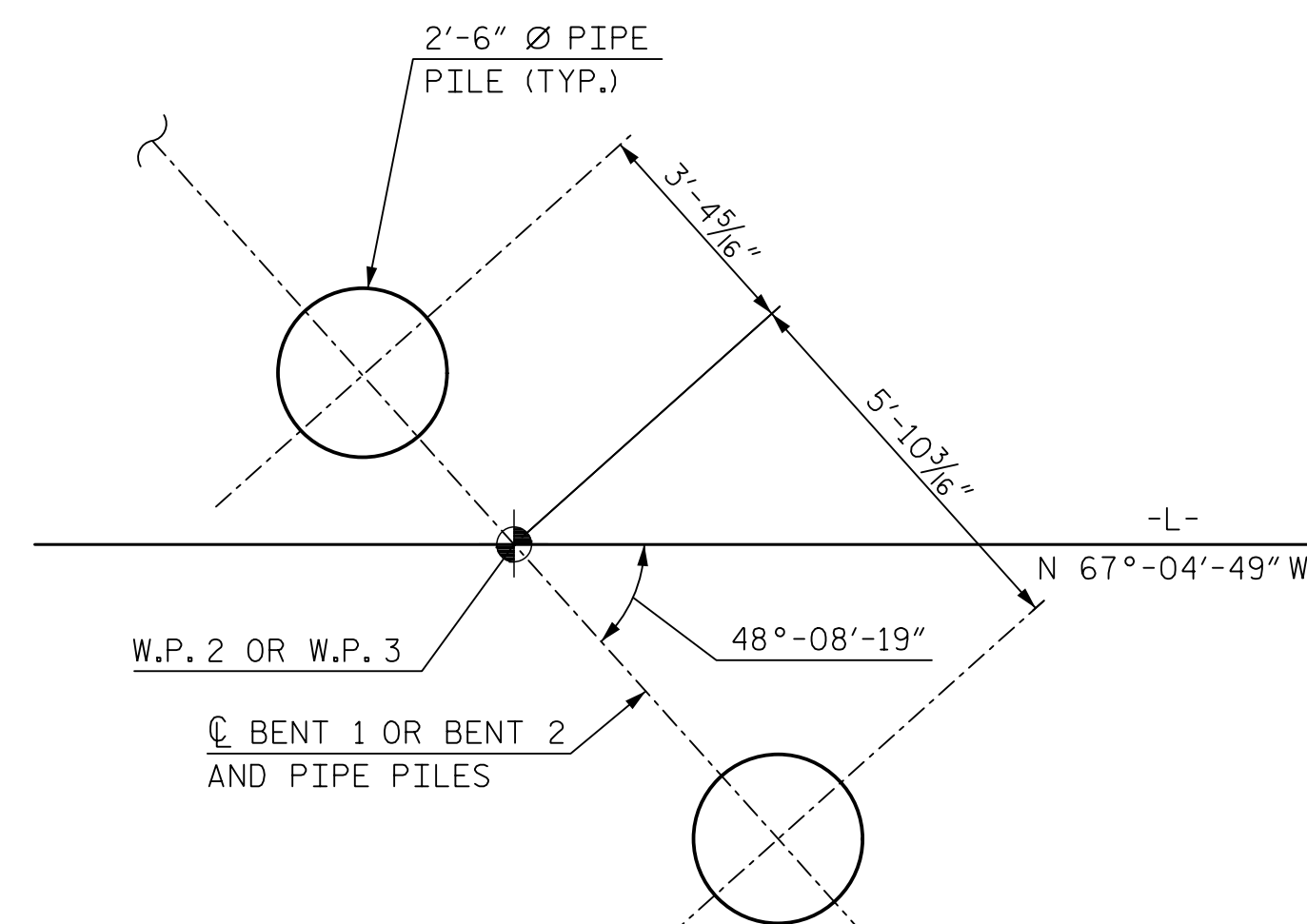
FOR FOUNDATION ELEVATIONS AND DETAILS, SEE END BENT AND BENT SHEETS.

FOR DETAIL 3, SEE SHEET 3 OF 5.

FOUNDATION LAYOUT



DETAIL 1

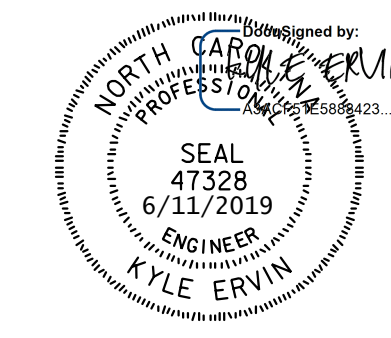


DETAIL 2

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 FOUNDATION LAYOUT
 (1 OF 2)



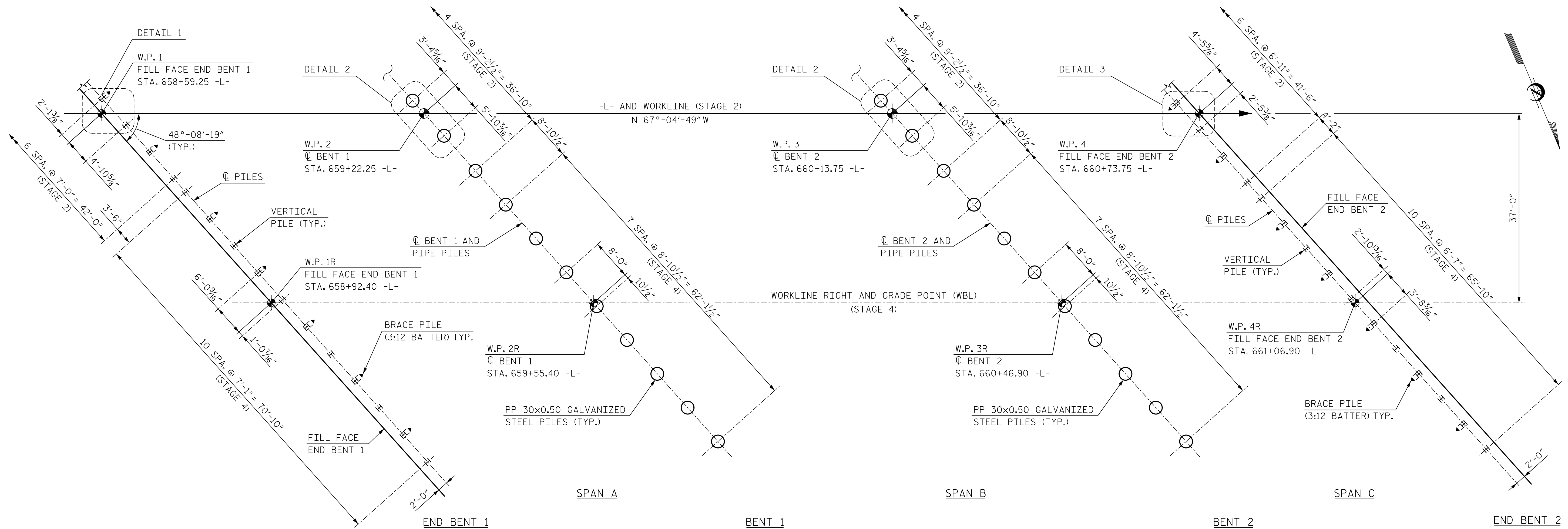
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 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY B. VAUGHN DATE 11/18
 CHECKED BY K. ERVIN DATE 1/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 11/18

DWG. NO. 2

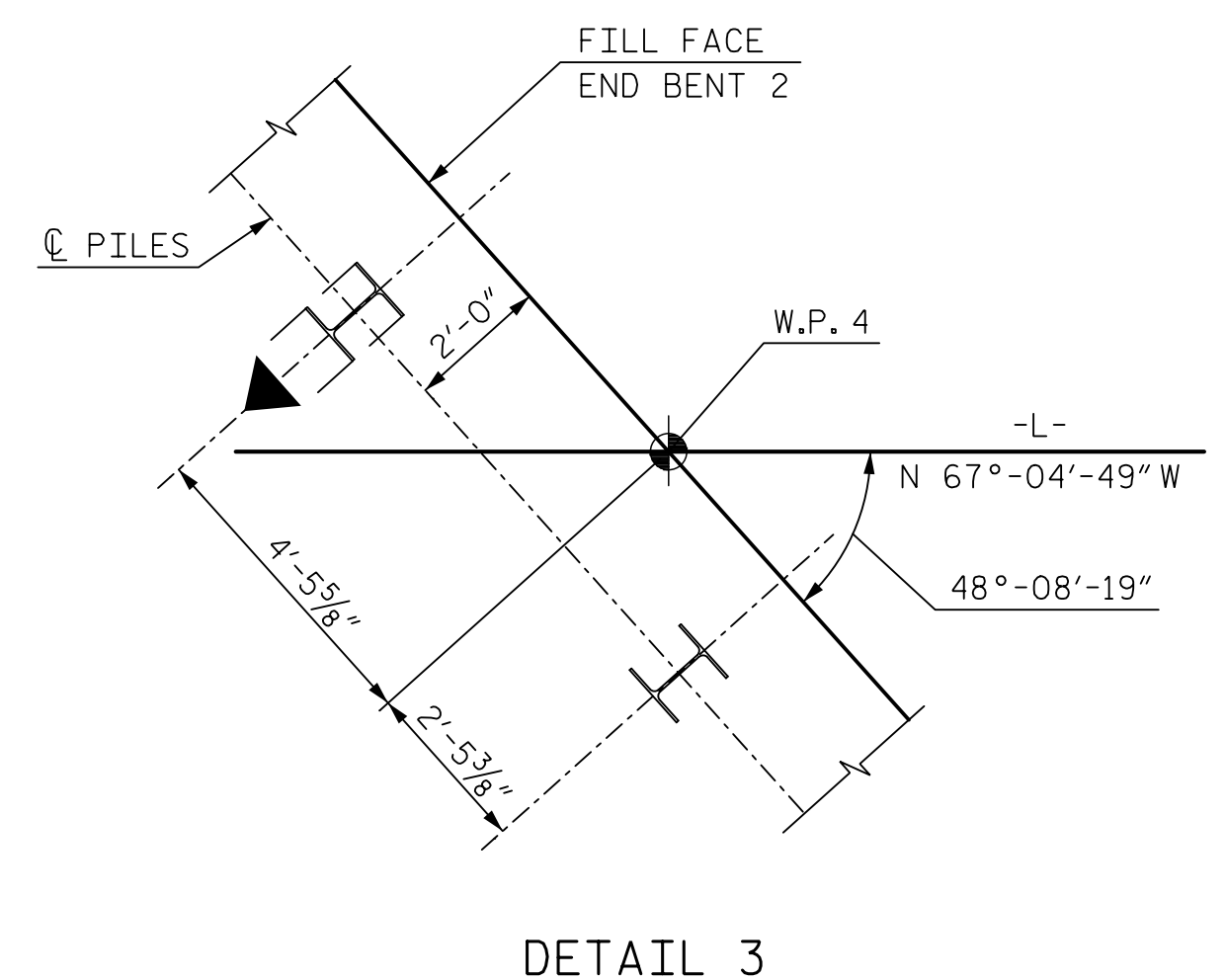
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REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	S1-2	
1			3			TOTAL SHEETS	
2			4			81	



FOUNDATION LAYOUT

NOTES:
 ALL DIMENSIONS ARE PARALLEL OR NORMAL TO FILL FACE AT END BENTS AND @ BENT AT BENT NO.1 AND BENT NO. 2.
 ALL PILE DIMENSIONS ARE TO CENTERS OF PILES.
 ALL PILES AT BENT 1 AND BENT 2 ARE STEEL PP 30x0.05.
 ALL DIMENSIONS TO BATTERED PILES ARE AT BOTTOM OF CAP ELEVATION.
 ALL END BENT PILES ARE HP 12x53 STEEL PILES.
 FOR FOUNDATION ELEVATIONS AND DETAILS, SEE END BENT AND BENT SHEETS.
 FOR FOUNDATION NOTES, DETAIL 1, AND DETAIL 2, SEE SHEET 2 OF 5.

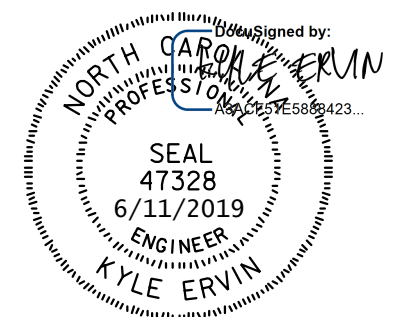


DETAIL 3

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 FOUNDATION LAYOUT
 (2 OF 2)



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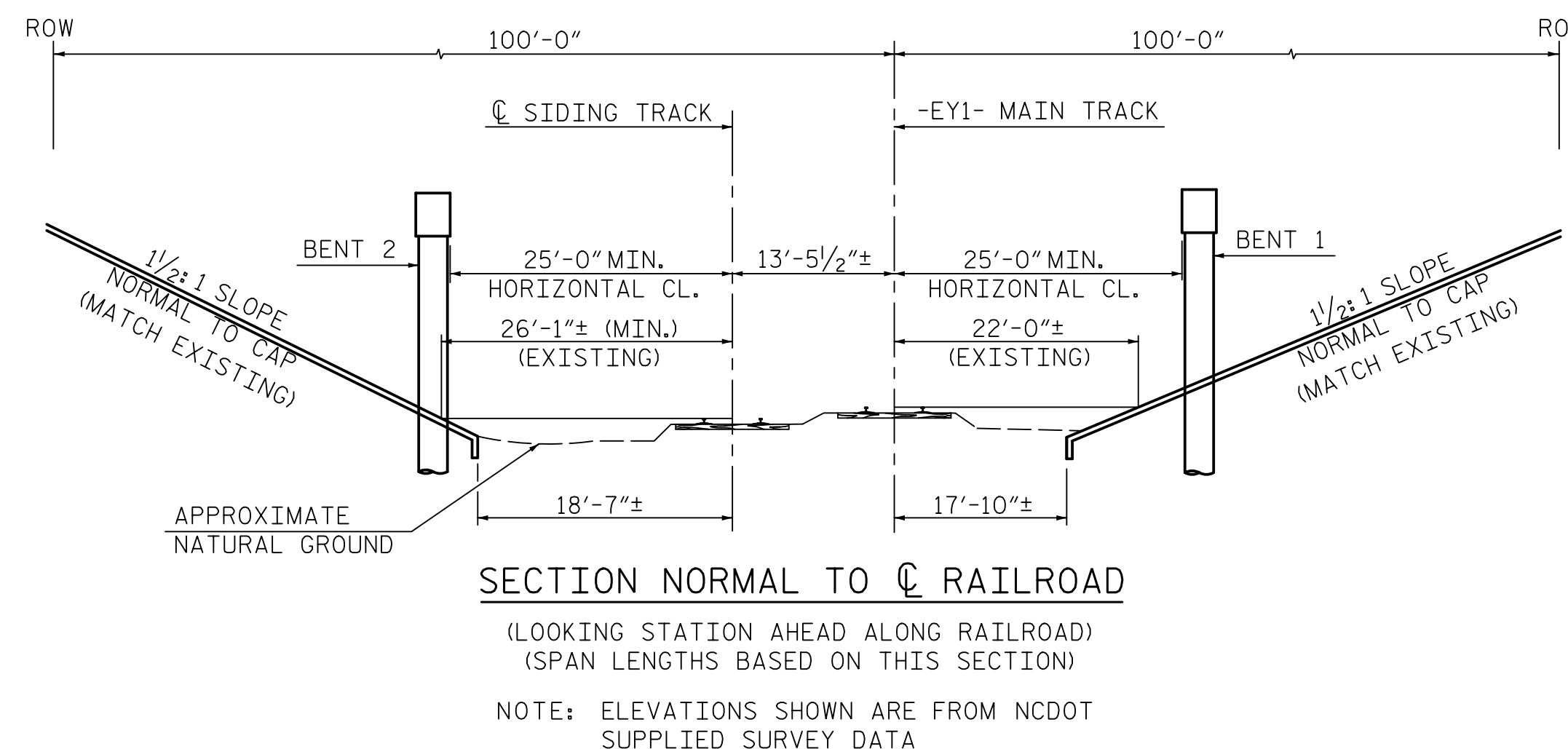
DRAWN BY B. VAUGHN DATE 11/18
 CHECKED BY K. ERVIN DATE 1/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 11/18

DWG. NO. 3

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	S1-3	
1			3			TOTAL SHEETS	
2			4			81	

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TOP OF RAIL ELEVATIONS (SIDING TRACK)			
LEFT RAIL		RIGHT RAIL	
STATION	ELEVATION	ELEVATION	STATION
11+60.00	2091.51	2091.56	11+60.00
11+80.00	2091.85	2091.91	11+80.00
12+00.00	2092.19	2092.24	12+00.00
12+20.00	2092.49	2092.53	12+20.00
12+40.00	2092.79	2092.83	12+40.00
12+60.00	2093.15	2093.21	12+60.00
12+80.00	2093.54	2093.64	12+80.00
13+00.00	2093.94	2094.06	13+00.00
13+20.00	2094.37	2094.48	13+20.00
13+40.00	2094.80	2094.88	13+40.00
13+60.00	2095.20	2095.25	13+60.00
13+80.00	2095.58	2095.60	13+80.00
14+00.00	2095.94	2095.95	14+00.00
14+20.00	2096.31	2096.34	14+20.00
14+40.00	2096.67	2096.72	14+40.00
14+60.00	2097.01	2097.07	14+60.00
14+80.00	2097.33	2097.41	14+80.00
15+00.00	2097.66	2097.75	15+00.00
15+20.00	2098.04	2098.11	15+20.00
15+40.00	2098.42	2098.47	15+40.00
15+60.00	2098.76	2098.82	15+60.00
15+80.00	2099.09	2099.18	15+80.00
16+00.00	2099.43	2099.52	16+00.00



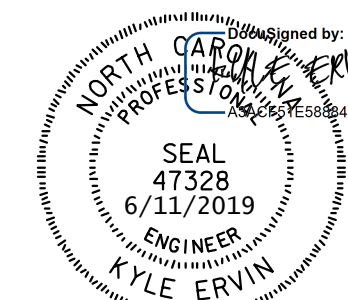
RAILROAD VERTICAL PROFILE

TOP OF RAIL ELEVATIONS (MAIN TRACK) -EY1-			
LEFT RAIL		RIGHT RAIL	
STATION	ELEVATION	ELEVATION	STATION
11+60.00	2092.67	2092.66	11+60.00
11+80.00	2092.94	2092.93	11+80.00
12+00.00	2093.22	2093.20	12+00.00
12+20.00	2093.51	2093.49	12+20.00
12+40.00	2093.81	2093.78	12+40.00
12+60.00	2094.12	2094.09	12+60.00
12+80.00	2094.44	2094.41	12+80.00
13+00.00	2094.76	2094.73	13+00.00
13+20.00	2095.09	2095.07	13+20.00
13+40.00	2095.43	2095.41	13+40.00
13+60.00	2095.79	2095.77	13+60.00
13+80.00	2096.15	2096.13	13+80.00
14+00.00	2096.51	2096.49	14+00.00
14+20.00	2096.86	2096.85	14+20.00
14+40.00	2097.20	2097.21	14+40.00
14+60.00	2097.56	2097.57	14+60.00
14+80.00	2097.94	2097.94	14+80.00
15+00.00	2098.32	2098.31	15+00.00
15+20.00	2098.68	2098.66	15+20.00
15+40.00	2099.03	2099.02	15+40.00
15+60.00	2099.39	2099.38	15+60.00
15+80.00	2099.75	2099.74	15+80.00
16+00.00	2100.10	2100.09	16+00.00

NOTE:
 THE RAILROAD TRACK TOP OF RAIL ELEVATION SHOW ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE TOP OF RAIL ELEVATIONS AND REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM VERTICAL CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 5 OF 5



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 RAILROAD
 VERTICAL PROFILE

HNTB HNTB NORTH CAROLINA, P.C.
 NC License No. C-1554
 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY B. VAUGHN DATE 11/18
 CHECKED BY K. ERVIN DATE 3/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 11/18

DWG. NO. 5

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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S1-5
1			3			TOTAL SHEETS
2			4			81

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		
							MOMENT					SHEAR					MOMENT							
							LIVE-LOAD FACTORS (γ_{LL})	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)	LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)
DESIGN LOAD RATING		HL-93 (INVENTORY)	N/A	①	1.16	--	1.75	0.79	1.50	B	EL	44.6	1.15	1.48	A	I	11.3	0.80	0.75	1.16	B	I	44.6	
		HL-93 (OPERATING)	N/A	--	1.94	--	1.35	0.79	1.94	B	EL	44.6	1.15	1.95	A	I	11.3	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	②	1.59	57.2	1.75	0.79	2.05	B	EL	44.6	1.15	1.80	A	I	11.3	0.80	0.75	1.59	B	I	44.6	
		HS-20 (OPERATING)	36.000	--	2.36	85.0	1.35	0.79	2.65	B	EL	44.6	1.15	2.36	A	I	11.3	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SH	12.500	--	4.05	50.6	1.40	0.79	6.52	B	EL	44.6	1.15	5.74	A	I	11.3	0.80	0.75	4.05	B	I	44.6	
		S3C	21.500	--	2.37	51.0	1.40	0.79	3.81	B	EL	44.6	1.15	3.35	A	I	11.3	0.80	0.75	2.37	B	I	44.6	
		S3A	22.750	--	2.25	51.2	1.40	0.79	3.61	B	EL	44.6	1.15	3.18	A	I	11.3	0.80	0.75	2.25	B	I	44.6	
		S4A	26.750	--	1.97	52.7	1.40	0.79	3.17	B	EL	44.6	1.15	2.81	A	I	11.3	0.80	0.75	1.97	B	I	44.6	
		S5A	30.500	--	1.74	53.1	1.40	0.79	2.80	B	EL	44.6	1.15	2.65	A	I	11.3	0.80	0.75	1.74	B	I	44.6	
		S6A	34.500	--	1.58	54.5	1.40	0.79	2.53	B	EL	44.6	1.15	2.42	A	I	11.3	0.80	0.75	1.58	B	I	44.6	
		S7B	38.500	--	1.43	55.1	1.40	0.79	2.30	B	EL	44.6	1.15	2.33	A	I	11.3	0.80	0.75	1.43	B	I	44.6	
		S7A	40.000	③	1.41	56.4	1.40	0.79	2.27	B	EL	44.6	1.15	2.42	A	I	11.3	0.80	0.75	1.41	B	I	44.6	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	T4A	28.250	--	1.94	54.8	1.40	0.79	3.12	B	EL	44.6	1.15	2.77	A	I	11.3	0.80	0.75	1.94	B	I	44.6	
		T5B	32.000	--	1.71	54.7	1.40	0.79	2.74	B	EL	44.6	1.15	2.66	A	I	11.3	0.80	0.75	1.71	B	I	44.6	
		T6A	36.000	--	1.56	56.2	1.40	0.79	2.51	B	EL	44.6	1.15	2.61	A	I	11.3	0.80	0.75	1.56	B	I	44.6	
		T7A	40.000	--	1.44	57.6	1.40	0.79	2.32	B	EL	44.6	1.15	2.45	A	I	11.3	0.80	0.75	1.44	B	I	44.6	
		T7B	40.000	--	1.53	61.2	1.40	0.79	2.47	B	EL	44.6	1.15	2.23	A	I	11.3	0.80	0.75	1.53	B	I	44.6	

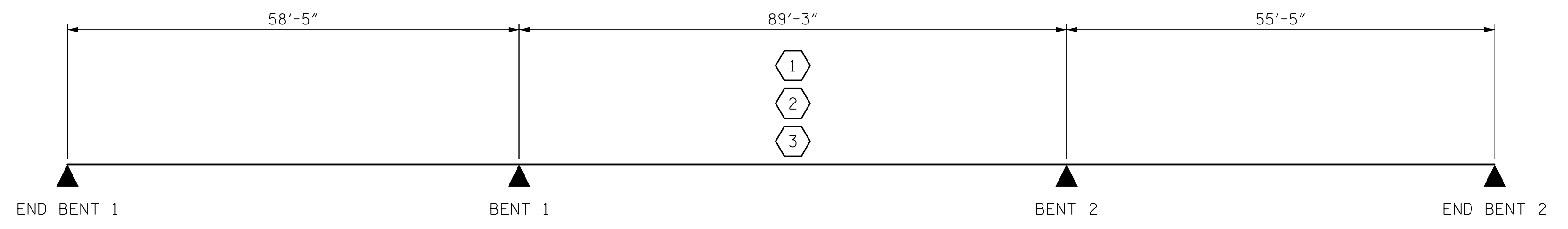
NOTES:

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:

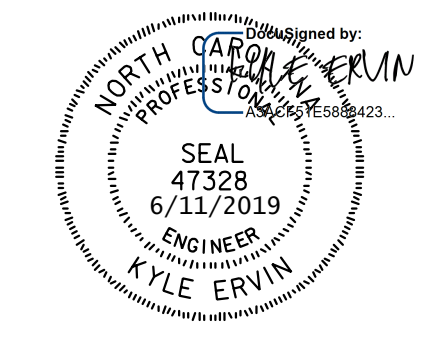
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①	CONTROLLING LOAD RATING
①	DESIGN LOAD RATING (HL-93)
②	DESIGN LOAD RATING (HS-20)
③	LEGAL LOAD RATING **
** SEE CHART FOR VEHICLE TYPE	
GIRDER LOCATION	
I - INTERIOR GIRDER EL - EXTERIOR LEFT GIRDER ER - EXTERIOR RIGHT GIRDER	



PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

LRFR SUMMARY
 NOTE: SPAN LENGTHS ARE BEARING TO BEARING LENGTHS.



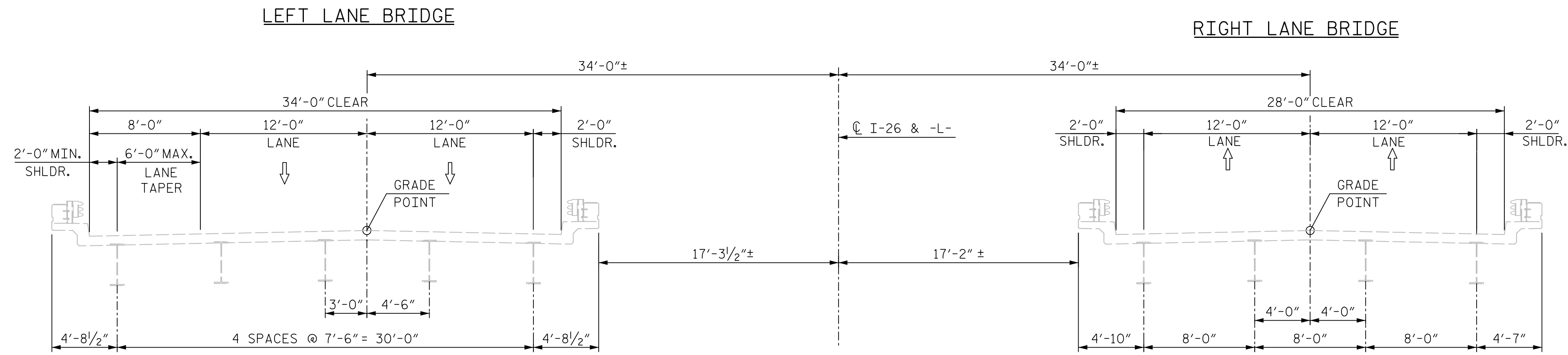
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 LRFR SUMMARY FOR
 PRESTRESSED
 CONCRETE GIRDERS
 (INTERSTATE TRAFFIC)

ASSEMBLED BY : B. VAUGHN	DATE : 2/19
CHECKED BY : K. ERVIN	DATE : 2/19
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/THG

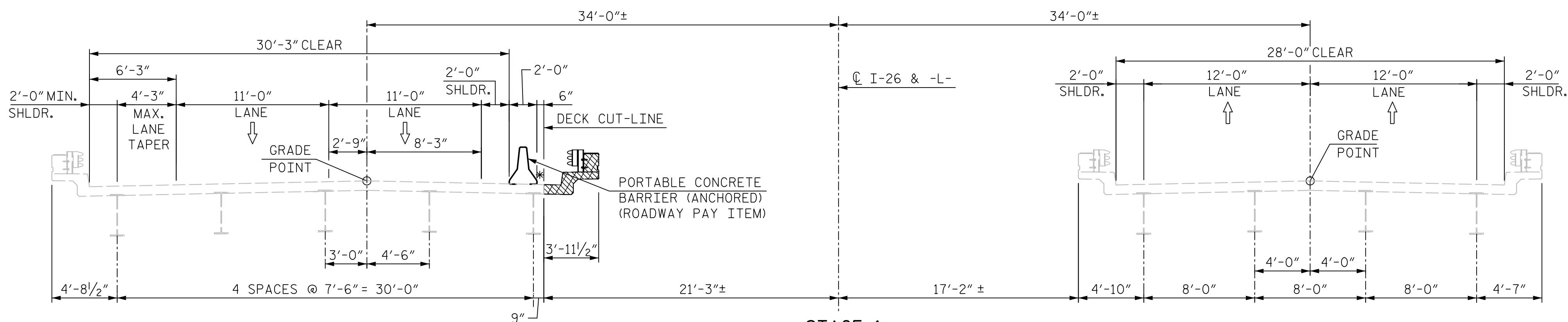
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HNTB	HNTB NORTH CAROLINA, P.C. NC License No. C-1554 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609
DRAWN BY : K. ERVIN	DATE : 3/19
CHECKED BY : M. SWERDUK	DATE : 4/19
DESIGN ENGINEER OF RECORD : K. ERVIN	DATE : 4/19

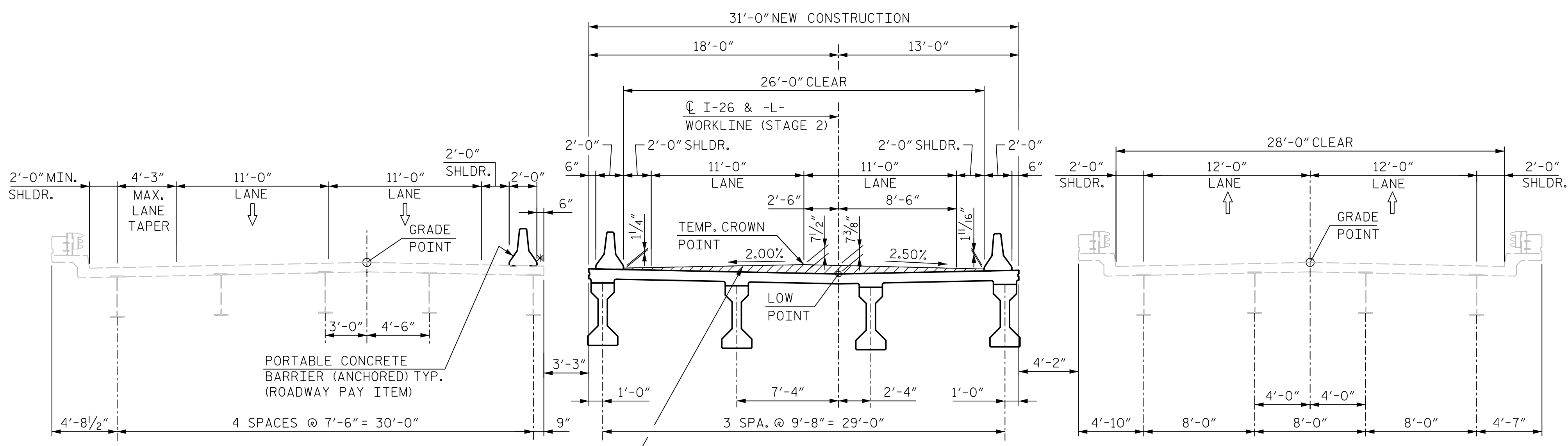
REVISIONS						SHEET NO. SI-6
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 81
2			4			



EXISTING CONDITION



STAGE 1
(PLACE SINGLE PORTABLE CONCRETE BARRIER, REMOVE PORTION OF EXISTING LEFT LANE BRIDGE)



STAGE 2

(BUILD MEDIAN BRIDGE SECTION AND MAINTAIN TRAFFIC ON EXISTING BRIDGES, PLACE TWO PORTABLE CONCRETE BARRIERS IN STAGE 2 MEDIAN CONSTRUCTION, CONSTRUCT TEMPORARY ASPHALT OVERLAY ON MEDIAN BRIDGE SECTION)

NOTES:

EXISTING CONDITION:

DIMENSIONS SHOWN FOR THE EXISTING STRUCTURES ARE FROM THE BEST INFORMATION AVAILABLE. THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING STRUCTURES SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE. IF FIELD CONDITIONS VARY FROM THE PLANS, MODIFICATIONS MAY BE MADE AS NECESSARY AS DIRECTED BY THE ENGINEER.

STAGE 1:

REMOVAL OF EXISTING SUBSTRUCTURE SHOULD BE MINIMIZED AND OVERALL STABILITY SHALL NOT BE AFFECTED. UPON FIELD VERIFICATION OF REQUIRED SUBSTRUCTURE REMOVAL LIMITS, THE CONTRACTOR SHALL REQUEST APPROVAL BY THE ENGINEER BEFORE SUBSTRUCTURE DEMOLITION BEGINS.

* CANTILEVERED DECK AREA SHALL NOT EXCEED 100 PSF OF LIVE LOAD. IF THIS LOAD IS TO BE EXCEEDED, THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING OF THE CANTILEVERED EXISTING DECK.

SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMITS OF THE ANCHORED PORTABLE CONCRETE BARRIER.

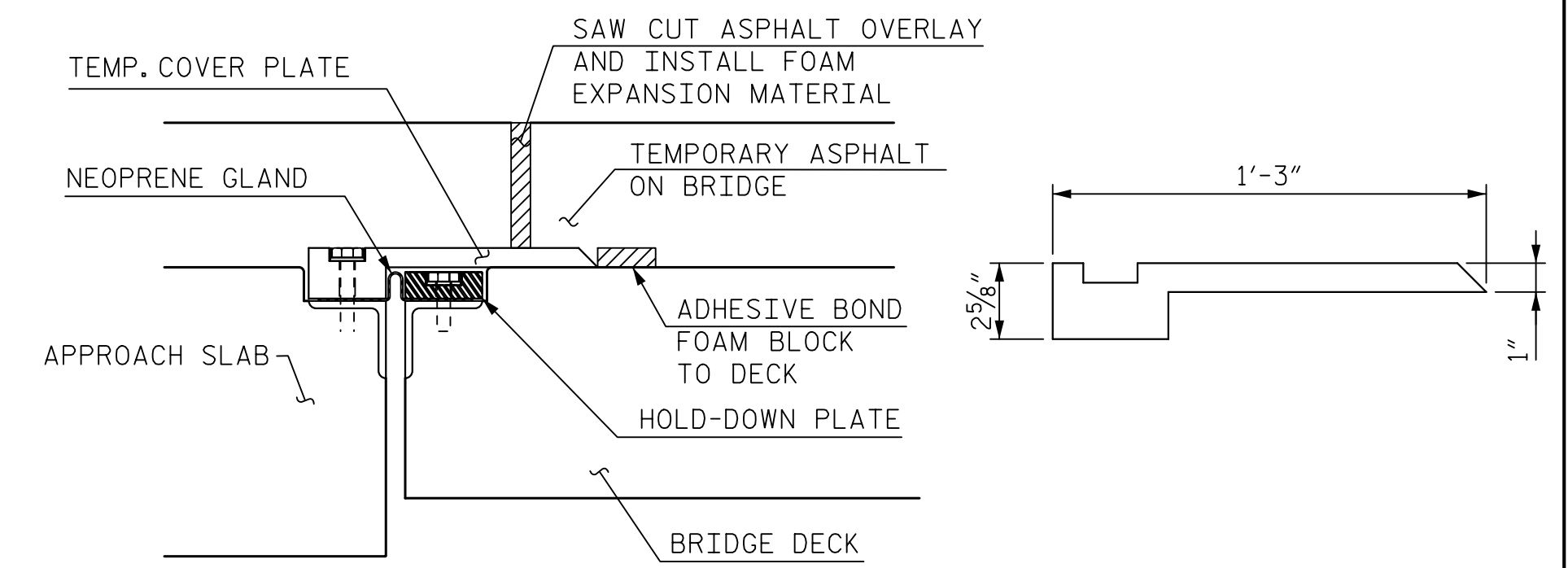
STAGE 2:

* CANTILEVERED DECK AREA SHALL NOT EXCEED 100 PSF OF LIVE LOAD. IF THIS LOAD IS TO BE EXCEEDED, THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING OF THE CANTILEVERED EXISTING DECK.

CONSTRUCT 31'-0" OF MEDIAN BRIDGE DECK WIDTH. INSTALL TEMPORARY ANCHORED BARRIERS ON NEW BRIDGE. PLACE TACKCOAT AND ASPHALT OVERLAY FOR TEMPORARY TRAFFIC CONFIGURATION.

TO PROTECT THE EXPANSION JOINT FROM THE PLACEMENT OF TEMPORARY ASPHALT ON BRIDGE, WHEN ASSEMBLING THE EXPANSION JOINT SEAL FOR THE MEDIAN BRIDGE SECTION, USE A TEMPORARY COVER PLATE AS SHOWN IN THE TEMPORARY EXPANSION JOINT DETAILS WHILE THE TEMPORARY ASPHALT PAVEMENT IS IN PLACE. COSTS ASSOCIATED WITH THE TEMPORARY EXPANSION JOINT PROCUREMENT, INSTALLATION, AND REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE FOR PAY ITEM "EXPANSION JOINT SEALS"

SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMITS OF THE ANCHORED PORTABLE CONCRETE BARRIER AND TEMPORARY ASPHALT OVERLAY.

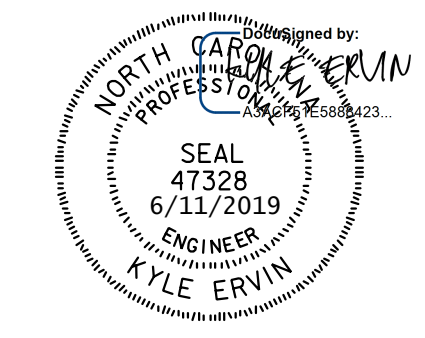


TEMPORARY EXPANSION JOINT DETAILS

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
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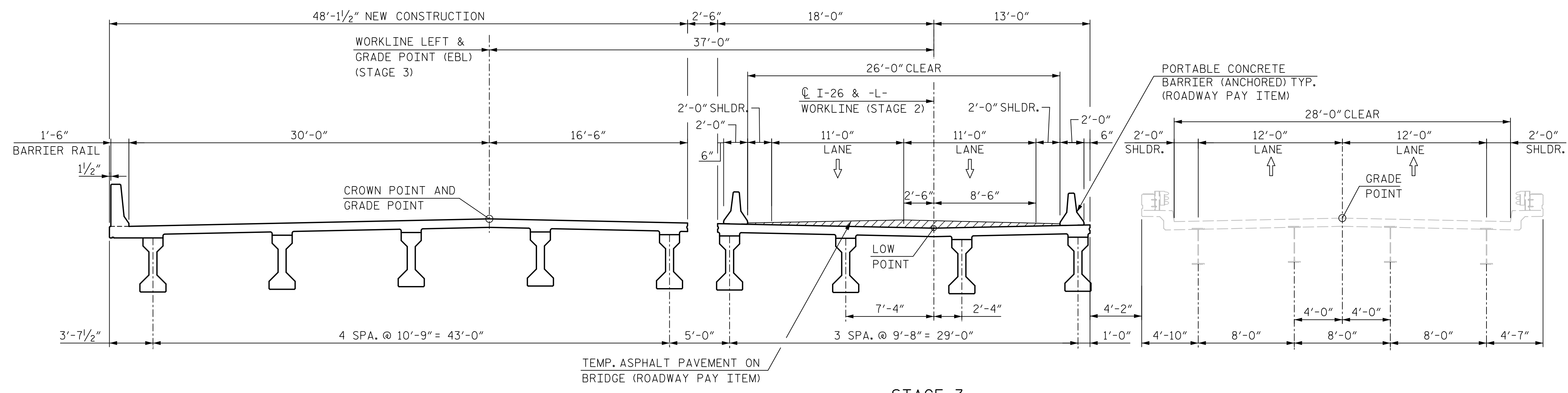
NOTES:

STAGE 3:
SHIFT TRAFFIC FROM EXISTING LEFT LANE BRIDGE ONTO NEWLY CONSTRUCTED MEDIAN BRIDGE SECTION. REMOVE EXISTING LEFT LANE BRIDGE. CONSTRUCT 48'-1/2" OF LEFT LANE BRIDGE DECK WIDTH.

SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMITS OF THE ANCHORED PORTABLE CONCRETE BARRIER.

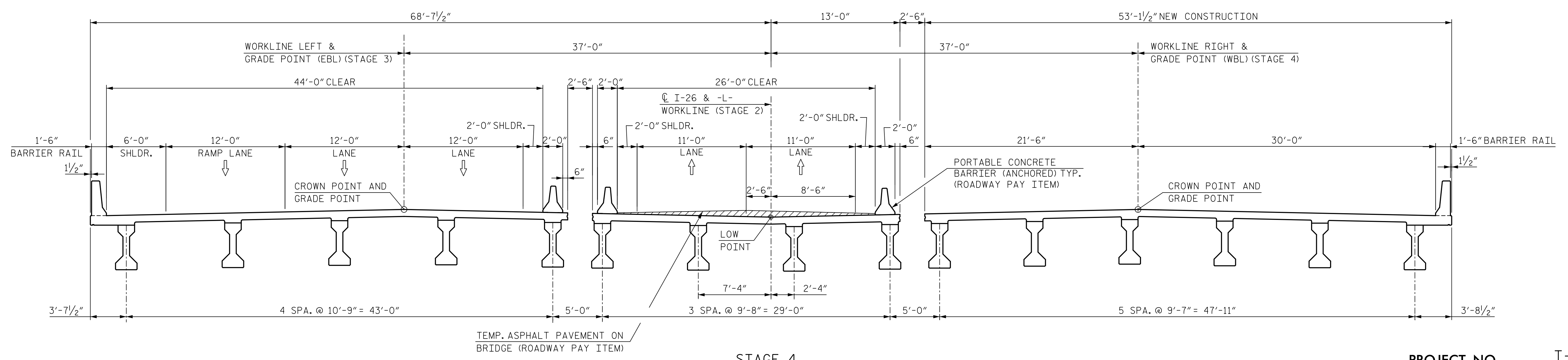
STAGE 4:
INSTALL TEMPORARY ANCHORED BARRIER ON NEWLY CONSTRUCTED LEFT LANE BRIDGE SECTION. SHIFT TRAFFIC FROM MEDIAN BRIDGE SECTION TO NEWLY CONSTRUCTED LEFT LANE BRIDGE SECTION. SHIFT TRAFFIC FROM EXISTING RIGHT LANE BRIDGE ONTO MEDIAN BRIDGE SECTION. REMOVE EXISTING RIGHT LANE BRIDGE. CONSTRUCT 53'-1/2" OF RIGHT LANE BRIDGE DECK WIDTH.

SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMITS OF THE PORTABLE CONCRETE BARRIER.



STAGE 3

(SHIFT LEFT LANE BRIDGE TRAFFIC TO MEDIAN BRIDGE SECTION, REPLACE AND WIDEN EXISTING LEFT LANE BRIDGE)



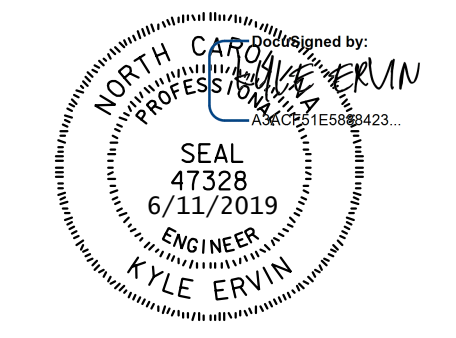
STAGE 4

(PLACE SINGLE PORTABLE CONCRETE BARRIER, SHIFT TRAFFIC TO NEW LEFT LANE BRIDGE AND REVERSE TRAFFIC IN MEDIAN BRIDGE SECTION, REPLACE AND WIDEN EXISTING RIGHT LANE BRIDGE)

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SHEET 2 OF 3

STATE OF NORTH CAROLINA
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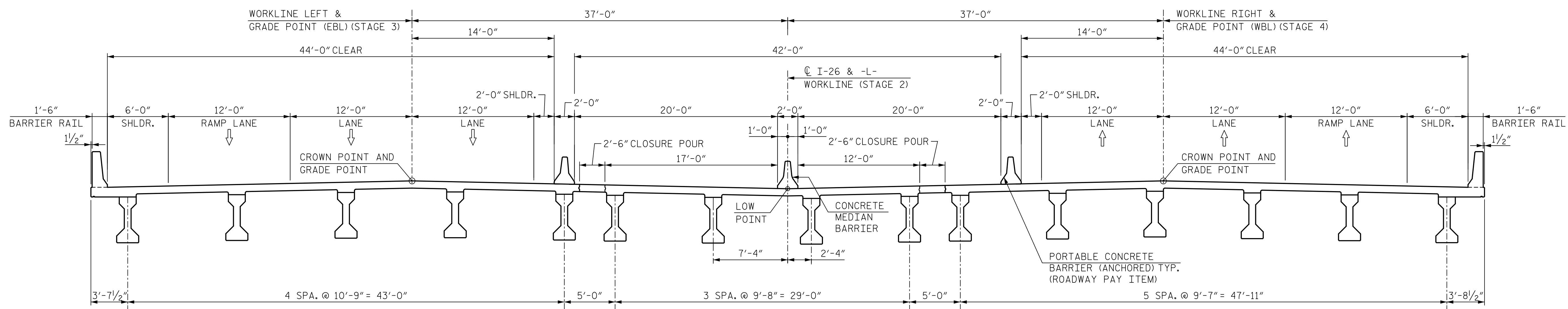
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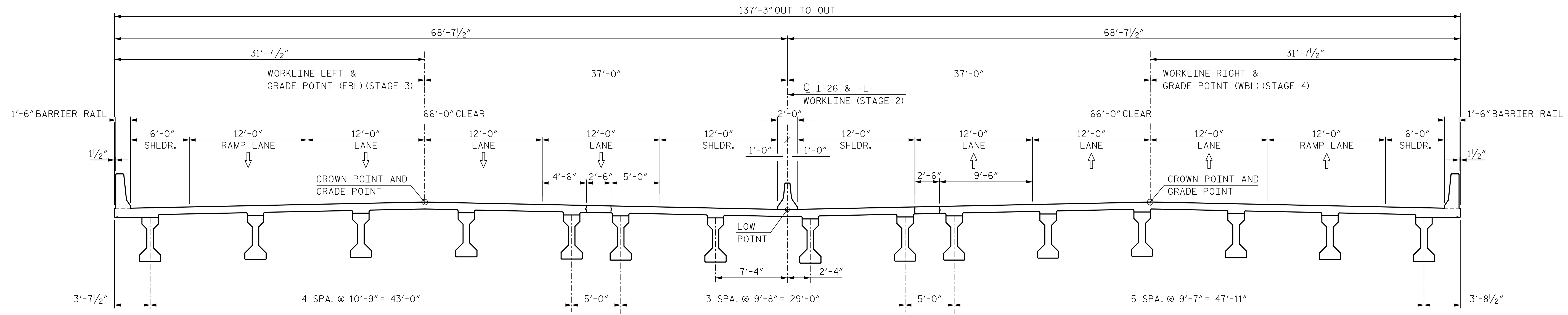
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2			4				



STAGE 5

(PLACE SINGLE PORTABLE CONCRETE BARRIER, SHIFT TRAFFIC FROM MEDIAN BRIDGE SECTION TO NEW RIGHT LANE BRIDGE, REMOVE TWO PORTABLE CONCRETE BARRIERS (ANCHORED) IN MEDIAN BRIDGE SECTION, REMOVE TEMPORARY ASPHALT PAVEMENT ON BRIDGE, TIE STAGES TOGETHER WITH CLOSURE POURS, GROOVE BRIDGE FLOORS, BUILD CONCRETE MEDIAN BARRIER)



FINAL CONDITION

NOTES:

STAGE 5:
 INSTALL TEMPORARY ANCHORED BARRIER ON NEWLY CONSTRUCTED RIGHT LANE BRIDGE SECTION. SHIFT TRAFFIC FROM MEDIAN BRIDGE SECTION TO NEWLY CONSTRUCTED RIGHT LANE BRIDGE SECTION. REMOVE TWO TEMPORARY ANCHORED BARRIERS FROM MEDIAN BRIDGE SECTION. REMOVE TEMPORARY ASPHALT PAVEMENT ON THE MEDIAN BRIDGE SECTION BY MILLING TO NEAR CONCRETE SURFACE AND THEN SHOT BLASTING RESIDUAL. TIE ALL STAGES OF BRIDGE TOGETHER WITH 2'-6" CLOSURE POURS. THE FULL WIDTH OF BRIDGE BELOW THE TEMPORARY ASPHALT PAVEMENT SHALL RECEIVE DIAMOND GRINDING. REPLACE TEMPORARY EXPANSION JOINT SEAL COVER PLATE WITH STANDARD FINAL HOLD-DOWN PLATE. CONSTRUCT PERMANENT CONCRETE MEDIAN BARRIER. APPLY SILENCE DECK TREATMENT.

SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMITS OF THE PORTABLE CONCRETE BARRIER.

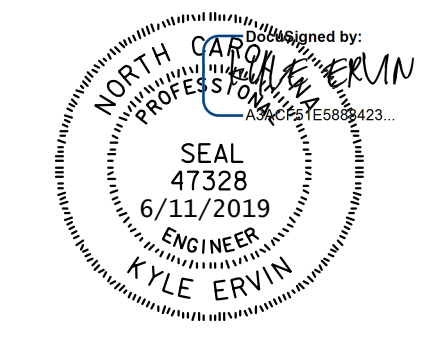
FINAL CONDITION:

REMOVE TWO TEMPORARY ANCHORED BARRIERS AND SHIFT TRAFFIC TO THE FINAL CONFIGURATION.

SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMITS OF THE PORTABLE CONCRETE BARRIER.

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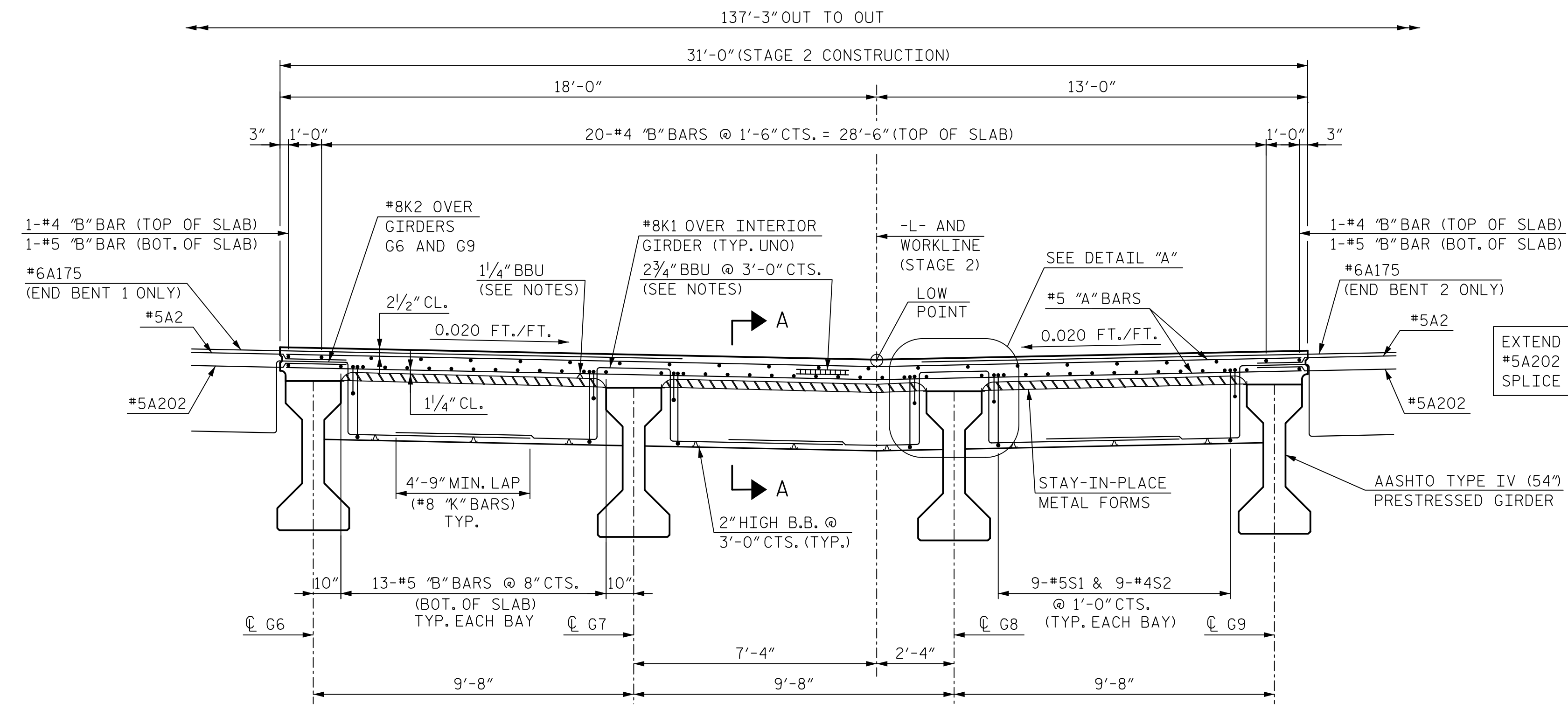
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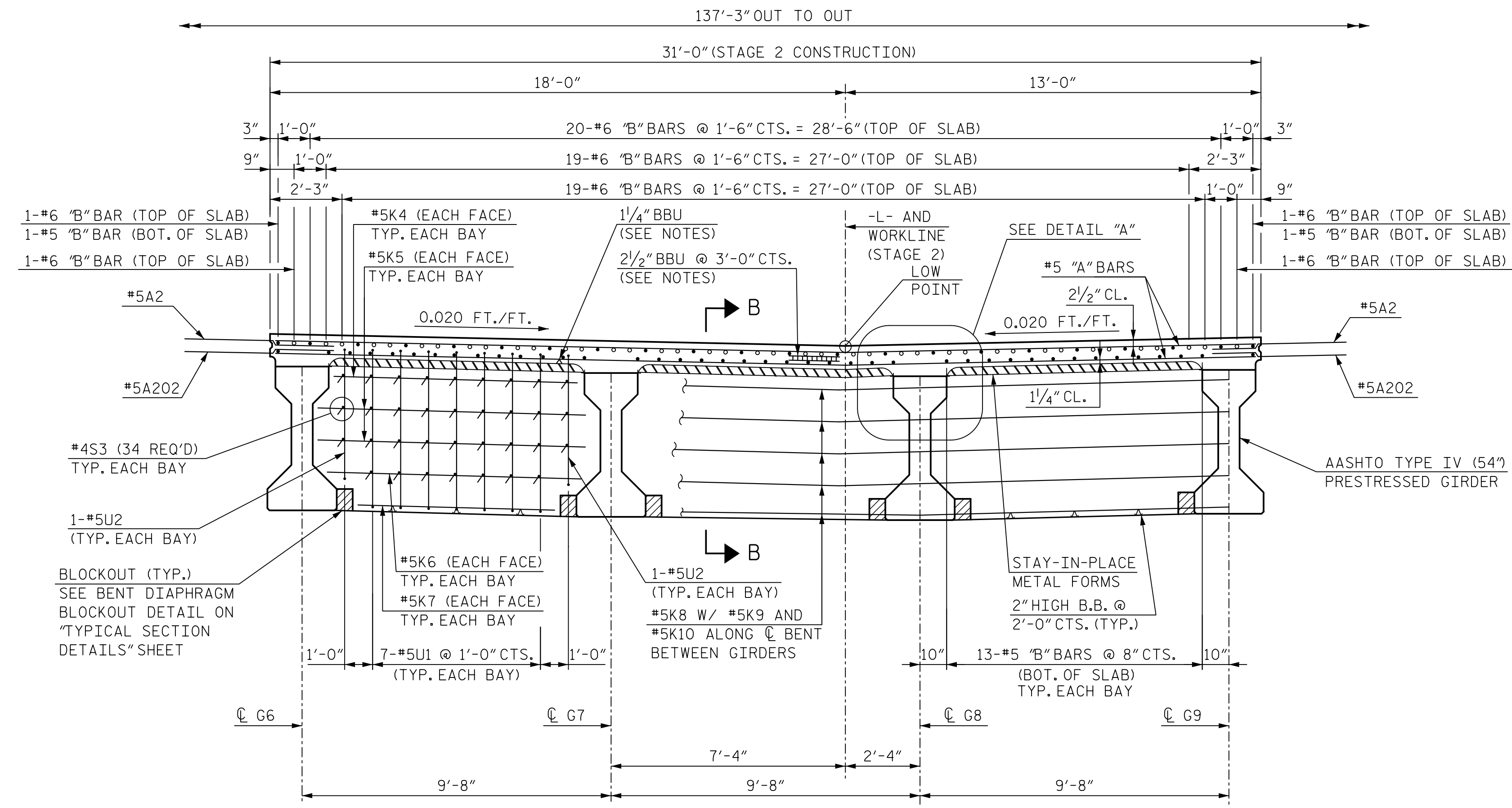
REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			1-9	
2			4			81	

"B" BAR KEY
 ● = CONTINUOUS BAR RUN, SEE PLAN OF SPAN SHEETS
 ○ = NON-CONTINUOUS BAR RUN FOR NEGATIVE MOMENT REGIONS, SEE PLAN OF SPAN SHEETS

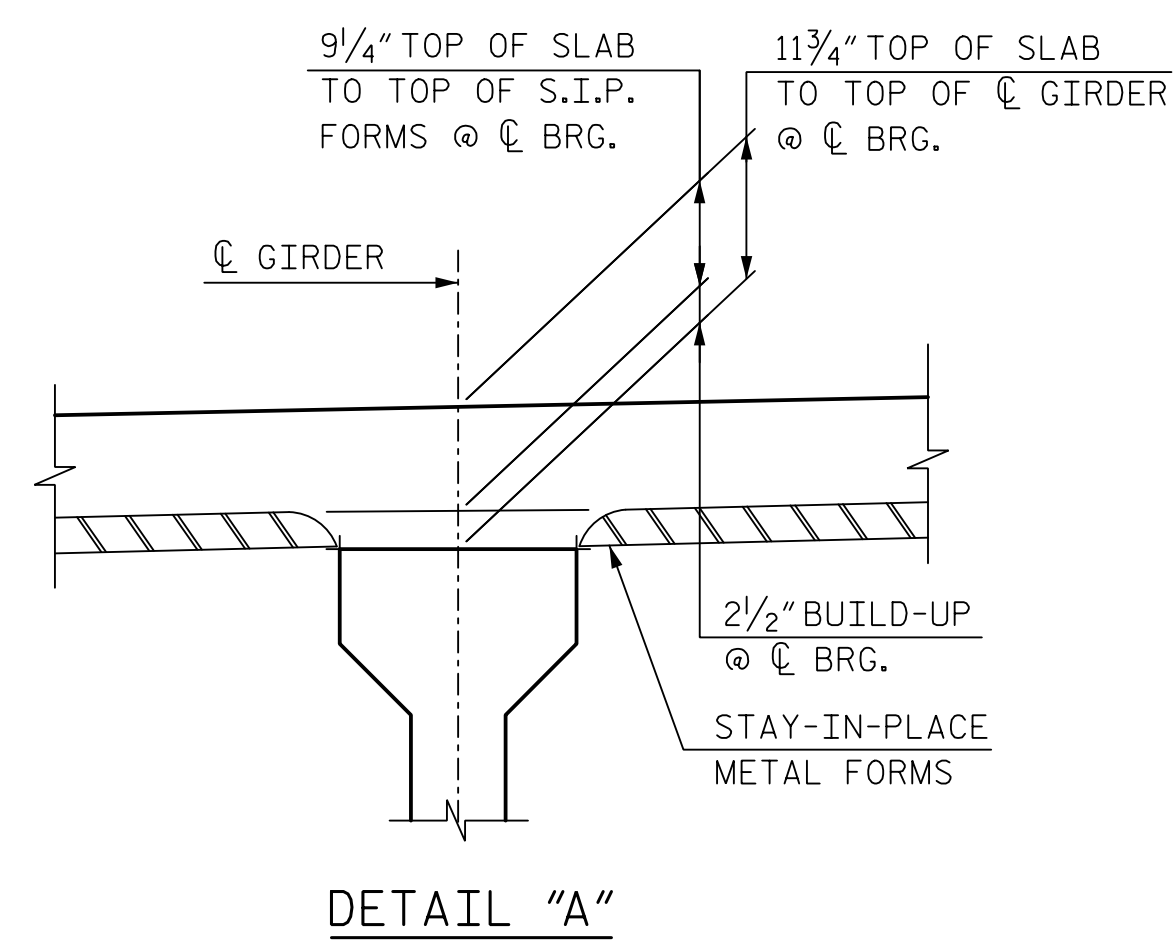
NOTES:
 PROVIDE 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF "A" BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (CHCM) AT 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF "A" BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.
 LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.
 PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.
 BARRIER RAIL IN A CONTINUOUS UNIT SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT UNIT HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.
 TO MAINTAIN PROPER LOCATION OF "A" BARS IN THE TOP OF SLAB, BBU DEPTH MUST VARY IN UNIT AS THE MAXIMUM SIZE OF THE "B" BARS IN THE TOP OF THE SLAB VARIES. A 2 3/4" BBU SHALL BE USED WHERE ONLY #4 "B" BARS ARE PRESENT. WHERE #6 OR #7 "B" BARS ARE PRESENT, A 2 1/2" BBU SHALL BE USED.
 NO CHAMFER IS REQUIRED ON CORNERS OF GIRDER BUILD-UPS.
 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM SLAB REINFORCING STEEL.
 ALL REINFORCEMENT SHALL HAVE A 2" MIN. CLEAR UNLESS NOTED OTHERWISE.
 #5 "G" BARS MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL AND STIRRUPS.



TYPICAL SECTION AT END BENT
 FOR SECTION THRU END BENT, SEE SECTION A-A ON "TYPICAL SECTION DETAILS" SHEET

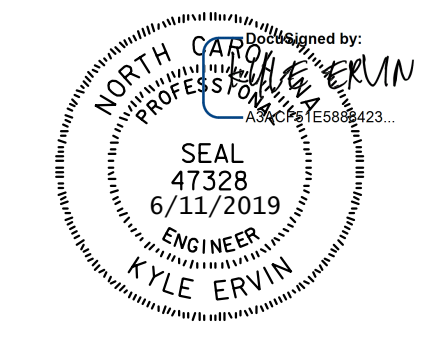


TYPICAL SECTION AT BENT
 FOR SECTION THRU BENT, SEE SECTION B-B ON "TYPICAL SECTION DETAILS" SHEET



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SHEET 1 OF 4
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 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTIONS
 STAGE 2 CONSTRUCTION

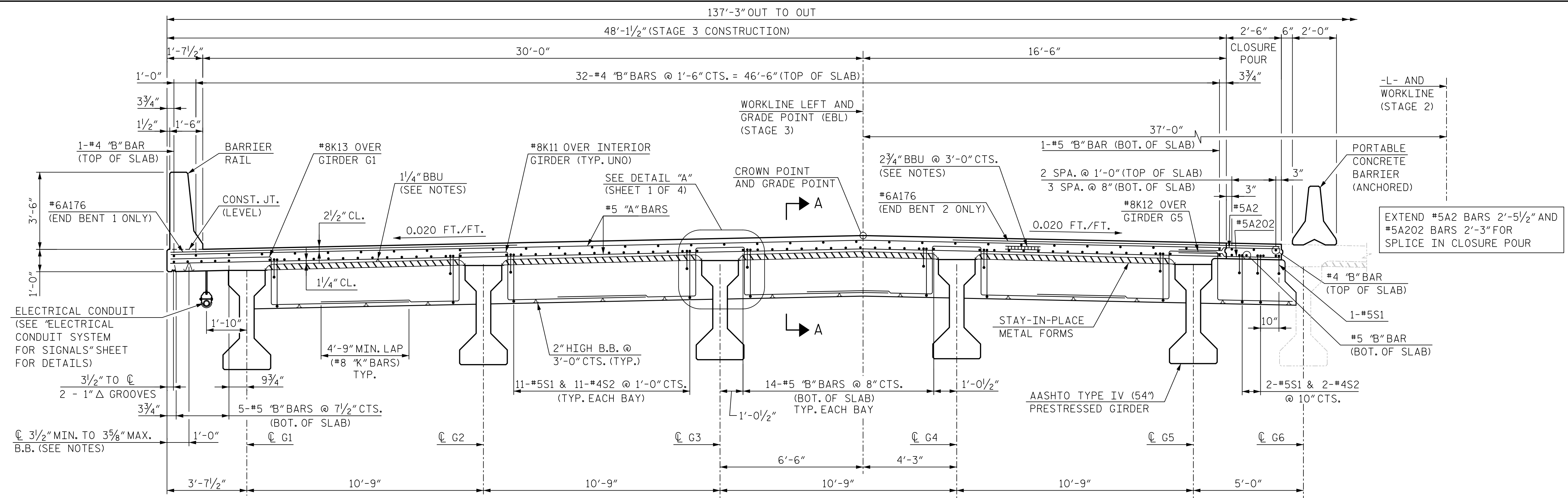


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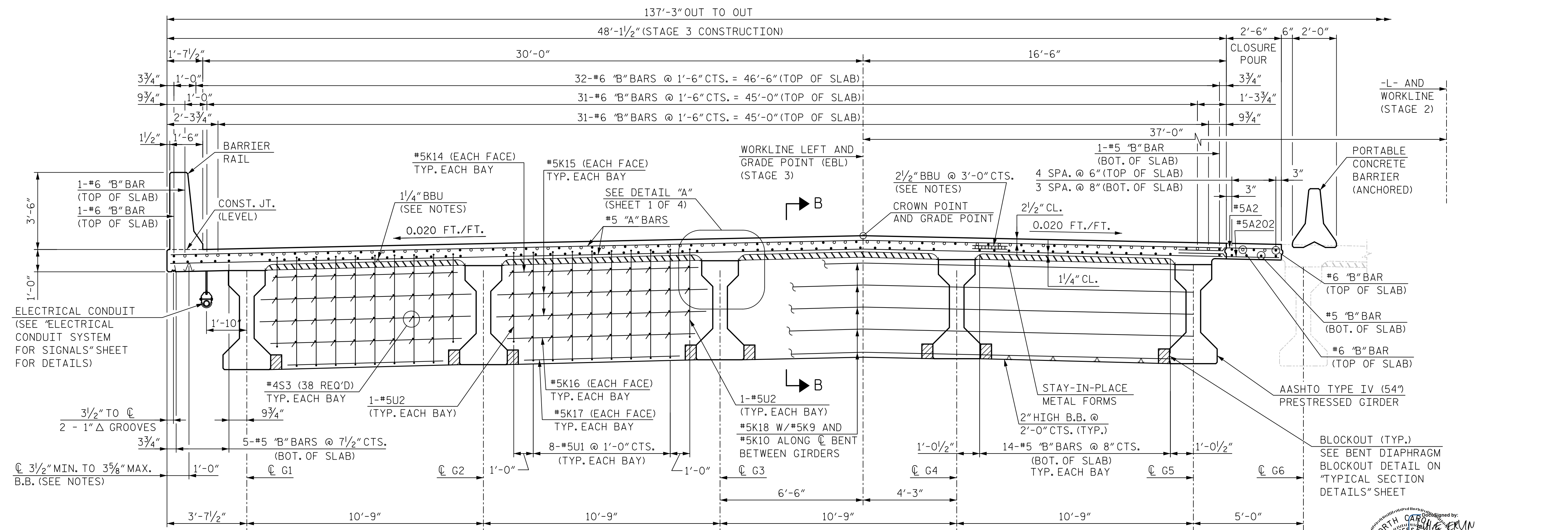
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2			4			81	

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TYPICAL SECTION AT END BENT
FOR SECTION THRU END BENT, SEE SECTION A-A ON "TYPICAL SECTION DETAILS" SHEET



TYPICAL SECTION AT BENT
FOR SECTION THRU BENT, SEE SECTION B-B ON "TYPICAL SECTION DETAILS" SHEET
NOTE: NO BENT DIAPHRAGM AT CLOSURE POUR

NOTES:
FOR NOTES AND DETAIL "A", SEE "TYPICAL SECTIONS STAGE 2 CONSTRUCTION" SHEET.
REMOVABLE FORMS SHALL BE USED AT CLOSURE BAY.
SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMITS OF THE ANCHORED PORTABLE CONCRETE BARRIER.

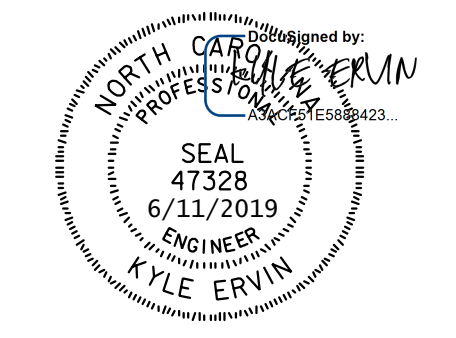
EXTEND #6A176 BARS 3'-2" (ALONG SKEW) IN CLOSURE POUR
EXTEND #5A2 BARS 2'-5 1/2" AND #5A202 BARS 2'-3" FOR SPLICE IN CLOSURE POUR

"B" BAR KEY
● = CONTINUOUS BAR RUN, SEE PLAN OF SPAN SHEETS
○ = NON-CONTINUOUS BAR RUN FOR NEGATIVE MOMENT REGIONS, SEE PLAN OF SPAN SHEETS

PROJECT NO. I-4400C
HENDERSON COUNTY
STATION: POT 659+58.95 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
TYPICAL SECTIONS
STAGE 3 CONSTRUCTION



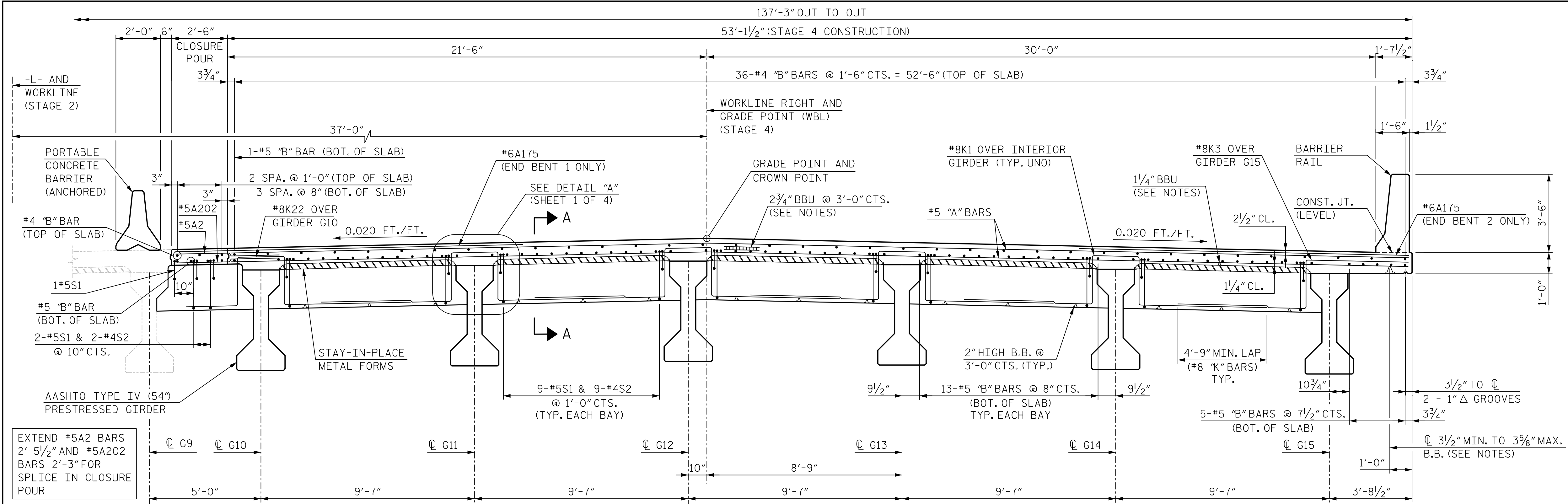
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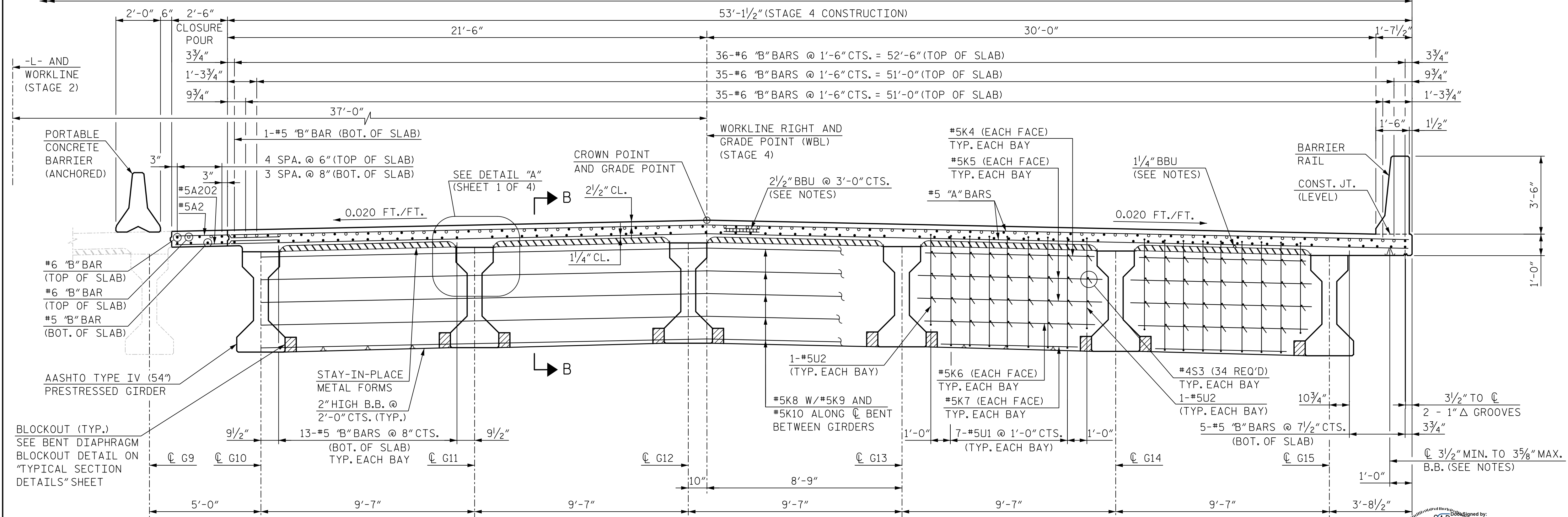
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2			4				



TYPICAL SECTION AT END BENT
 FOR SECTION THRU END BENT, SEE SECTION A-A ON "TYPICAL SECTION DETAILS" SHEET
 137'-3" OUT TO OUT



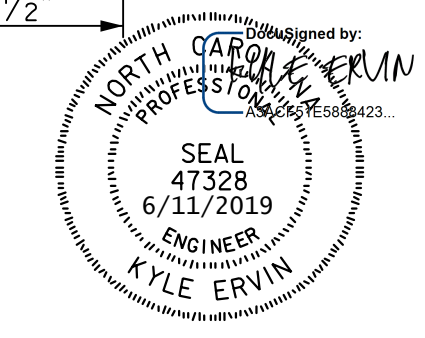
TYPICAL SECTION AT BENT
 FOR SECTION THRU BENT, SEE SECTION B-B ON "TYPICAL SECTION DETAILS" SHEET
 NOTE: NO BENT DIAPHRAGM AT THE CLOSURE POUR

NOTES:
 FOR NOTES AND DETAIL "A", SEE "TYPICAL SECTIONS STAGE 2 CONSTRUCTION" SHEET.
 REMOVABLE FORMS SHALL BE USED AT CLOSURE BAY.
 SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMITS OF THE ANCHORED PORTABLE CONCRETE BARRIER.

"B" BAR KEY
 ● = CONTINUOUS BAR RUN, SEE PLAN OF SPAN SHEETS
 ○ = NON-CONTINUOUS BAR RUN FOR NEGATIVE MOMENT REGIONS, SEE PLAN OF SPAN SHEETS

PROJECT NO. I-4400C
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 STATION: POT 659+58.95 -L-

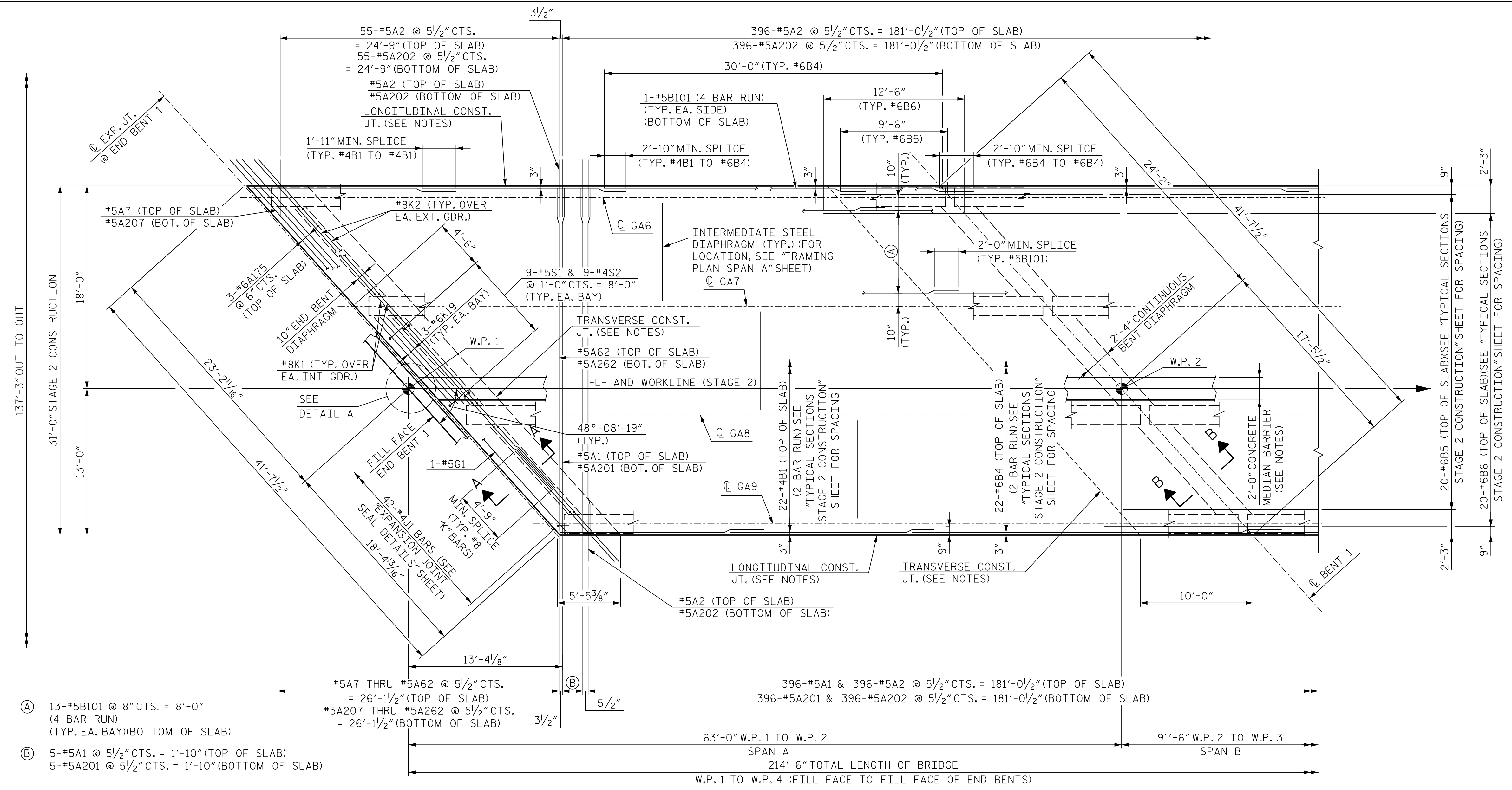
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 STAGE 4 CONSTRUCTION



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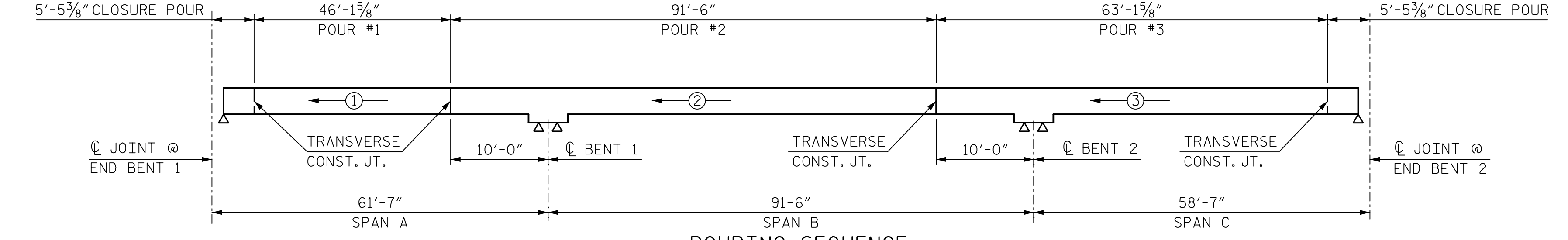
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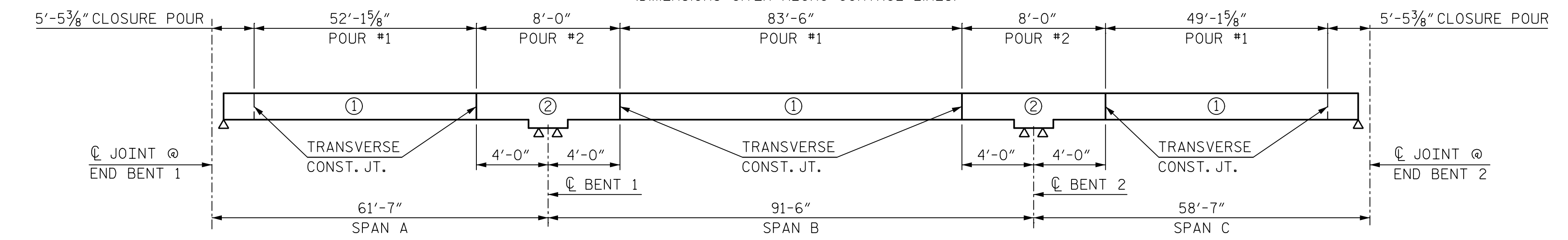


- (A) 13-#5B101 @ 8" CTS. = 8'-0" (4 BAR RUN) (TYP. EA. BAY) (BOTTOM OF SLAB)
- (B) 5-#5A1 @ 5/2" CTS. = 1'-10" (TOP OF SLAB)
5-#5A201 @ 5/2" CTS. = 1'-10" (BOTTOM OF SLAB)

PLAN OF SPAN A STAGE 2 CONSTRUCTION



POURING SEQUENCE
(DIMENSIONS GIVEN ALONG CONTROL LINES)



OPTIONAL POURING SEQUENCE
(DIMENSIONS GIVEN ALONG CONTROL LINES)

NOTE: POUR ② CANNOT BE STARTED UNTIL BOTH ADJACENT ① POURS REACH A MINIMUM OF 3,000 PSI.

NOTES:

FOR CONCRETE BARRIER RAIL DIMENSIONS, REINFORCING STEEL, AND JOINT SPACING, SEE "CONCRETE BARRIER RAIL" SHEET.

FOR CONCRETE MEDIAN BARRIER DIMENSIONS, REINFORCING STEEL, AND JOINT SPACING, SEE "CONCRETE MEDIAN BARRIER" SHEETS.

FOR SECTION VIEWS AND TRANSVERSE AND LONGITUDINAL CONSTRUCTION JOINT DETAILS, SEE "SUPERSTRUCTURE TYPICAL SECTION DETAILS" SHEET.

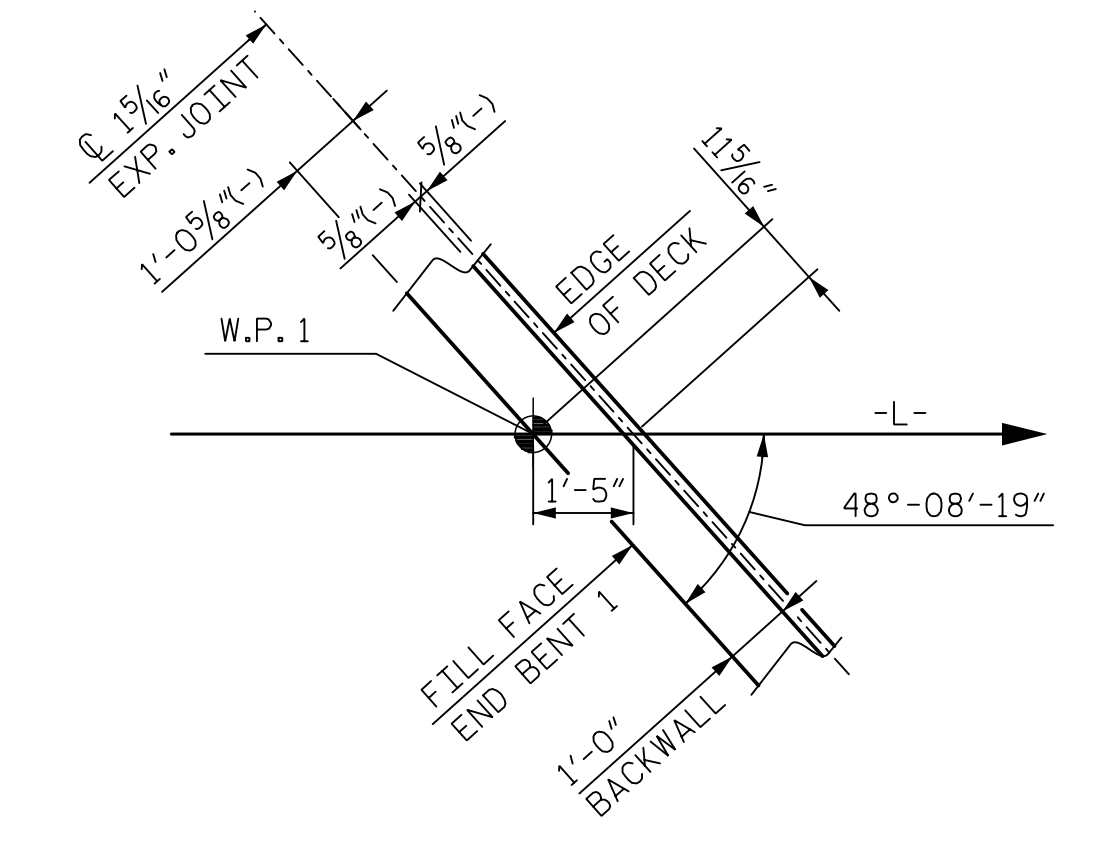
THE NEXT POUR CANNOT BE STARTED UNTIL ADJACENT POURS REACH A MINIMUM OF 3,000 PSI.

FOR EXPANSION JOINT DETAILS AND ADDITIONAL INFORMATION ON CLOSURE POURS, SEE "EXPANSION JOINT SEAL DETAILS (1 OF 3)" SHEET.

CLOSURE POURS SHALL BE CAST AFTER ALL DECK POURS ARE COMPLETE ON EACH ADJACENT STAGE OF CONSTRUCTION.

FOR INTERMEDIATE STEEL DIAPHRAGMS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET FOR DETAILS. FOR LOCATION, SEE "FRAMING PLAN" SHEETS.

BUILD CONCRETE MEDIAN BARRIER DURING STAGE 5 OF THE CONSTRUCTION SEQUENCE. FOR CONSTRUCTION SEQUENCE, SEE "CONSTRUCTION SEQUENCE" SHEETS.



DETAIL A

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DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF SPAN A
STAGE 2
CONSTRUCTION

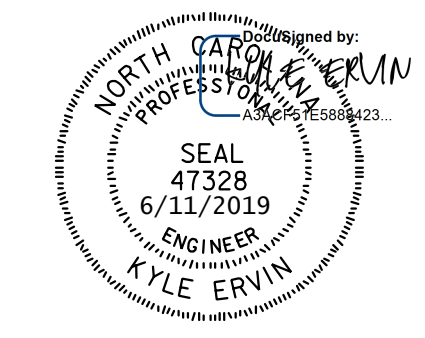
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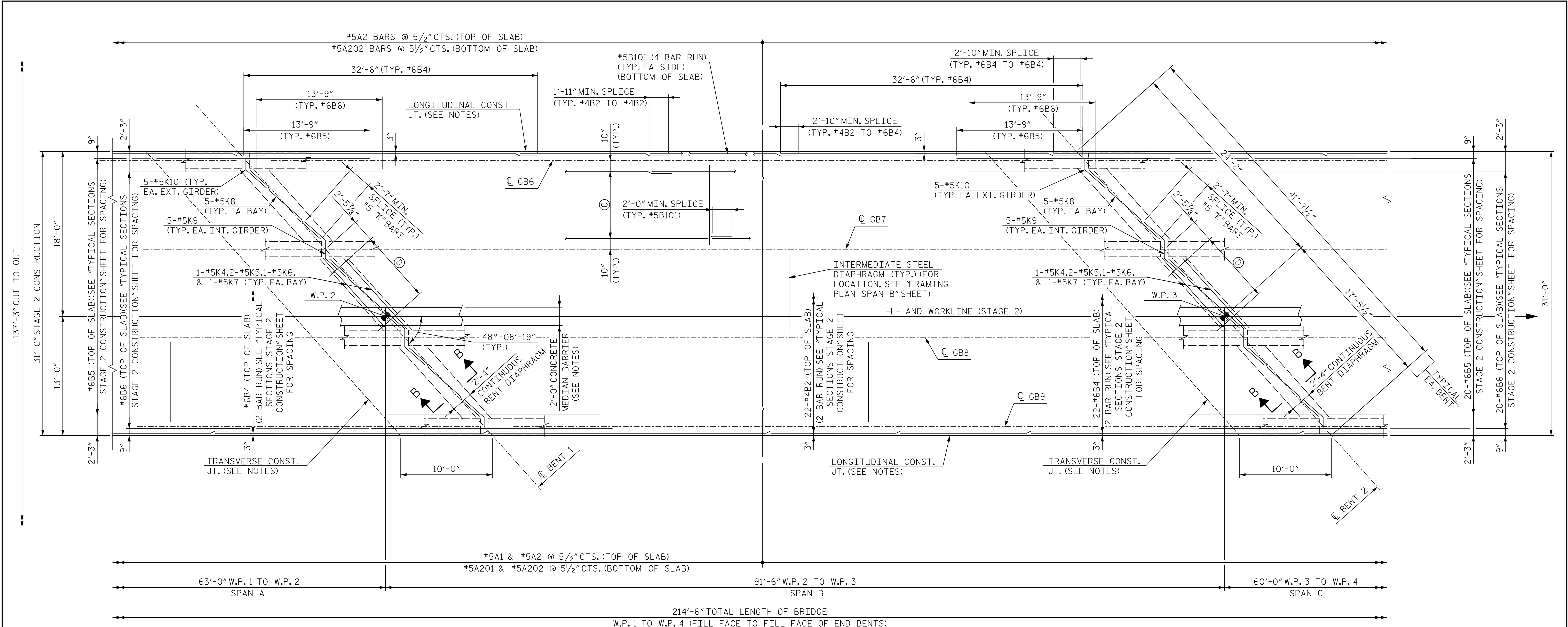
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2			4			

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PLAN OF SPAN B STAGE 2 CONSTRUCTION

- Ⓒ #5B101 @ 8" CTS.
(4 BAR RUN)
(TYP. EA. BAY)
(BOTTOM OF SLAB)
- Ⓓ 7-#5U1,2-#5U2, & 34-#4S3
(TYP. EA. BAY)

NOTES:

FOR CONCRETE BARRIER RAIL DIMENSIONS, REINFORCING STEEL, AND JOINT SPACING, SEE "CONCRETE BARRIER RAIL" SHEET.

FOR CONCRETE MEDIAN BARRIER DIMENSIONS, REINFORCING STEEL, AND JOINT SPACING, SEE "CONCRETE MEDIAN BARRIER" SHEETS.

FOR SECTION VIEWS AND TRANSVERSE AND LONGITUDINAL JOINT DETAILS, SEE "SUPERSTRUCTURE TYPICAL SECTION DETAILS" SHEET.

FOR INTERMEDIATE STEEL DIAPHRAGMS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET FOR DETAILS. FOR LOCATION, SEE "SUPERSTRUCTURE FRAMING PLAN" SHEETS.

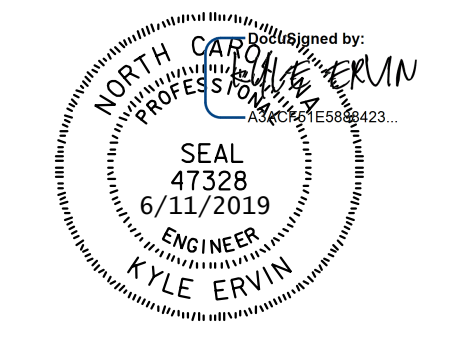
BUILD CONCRETE MEDIAN BARRIER DURING STAGE 5 OF THE CONSTRUCTION SEQUENCE. FOR CONSTRUCTION SEQUENCE, SEE "CONSTRUCTION SEQUENCE" SHEETS.

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STATE OF NORTH CAROLINA
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SUPERSTRUCTURE
 PLAN OF SPAN B
 STAGE 2
 CONSTRUCTION



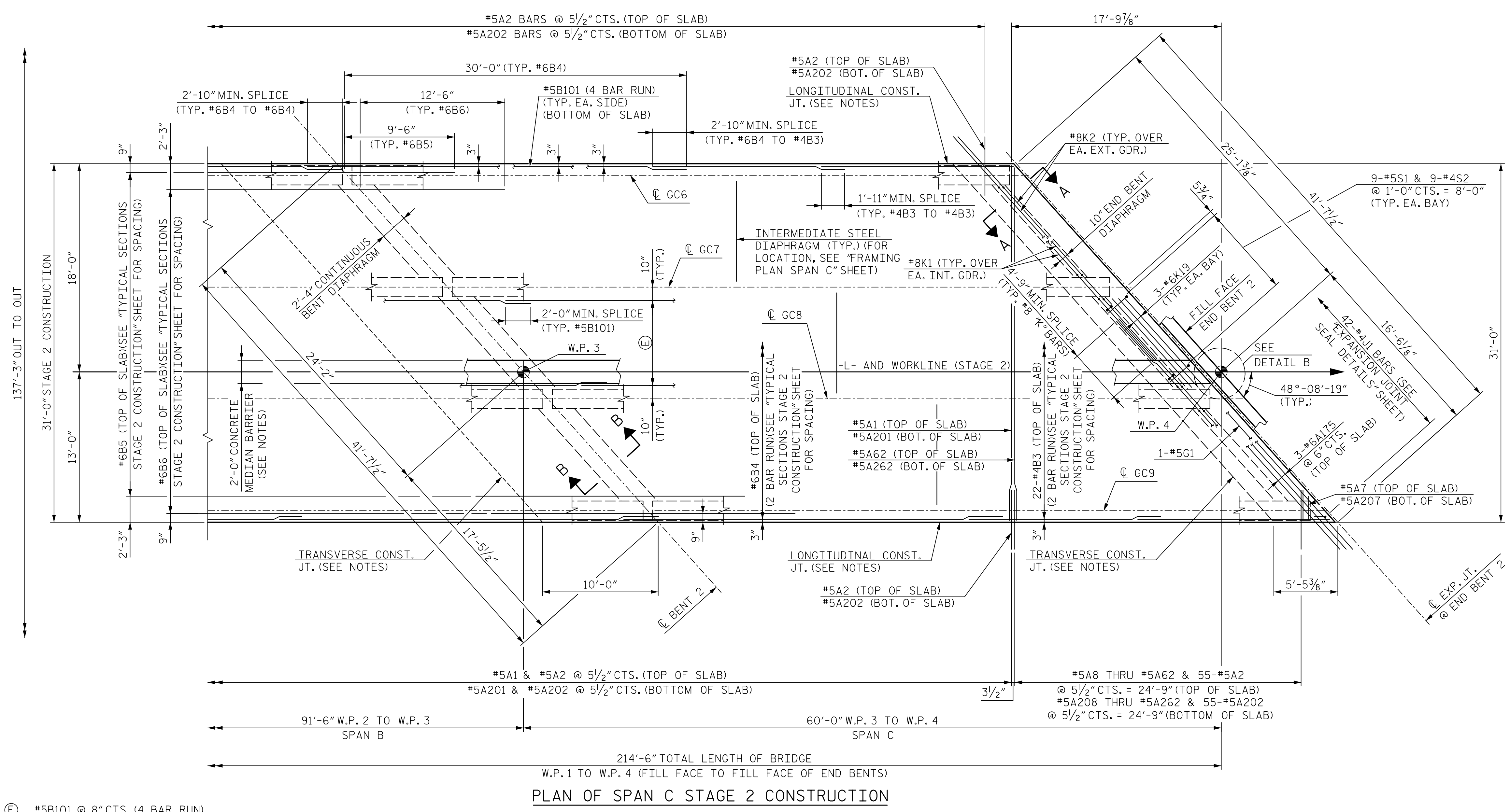
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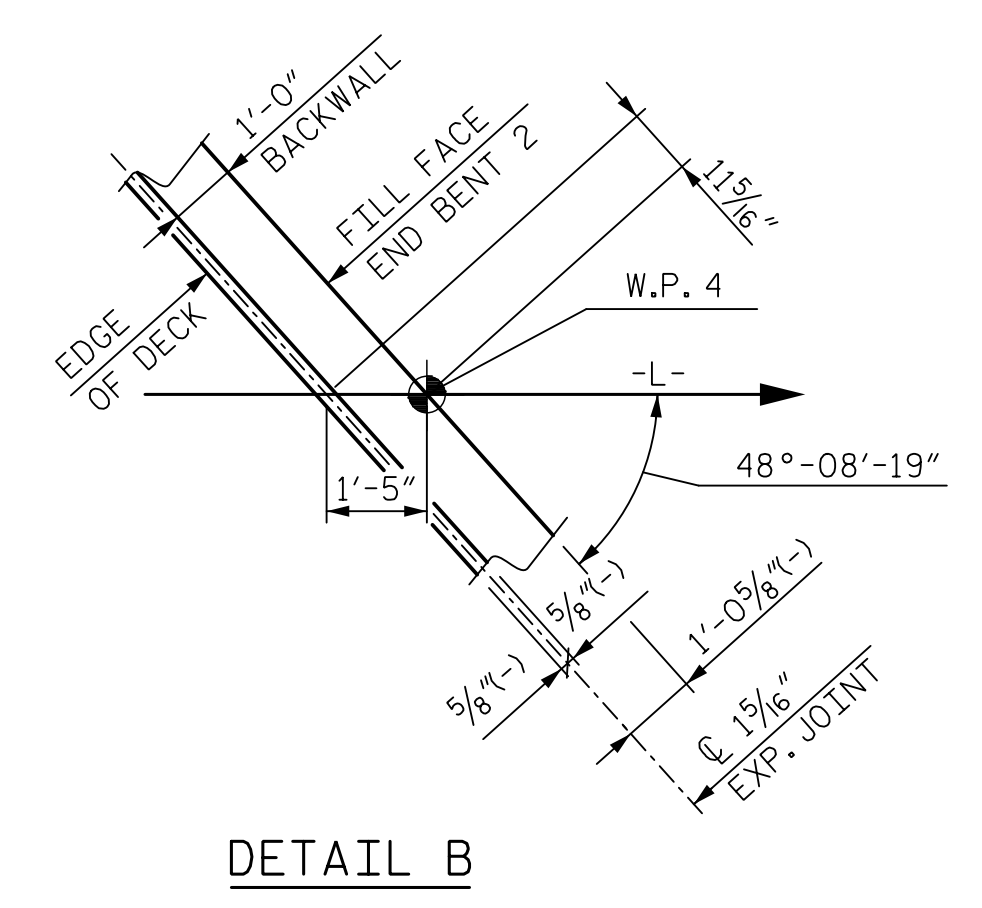
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2			4			81	

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ⓔ #5B101 @ 8" CTS. (4 BAR RUN)
(TYP. EA. BAY)
(BOTTOM OF SLAB)



NOTES:

FOR CONCRETE BARRIER RAIL DIMENSIONS, REINFORCING STEEL, AND JOINT SPACING, SEE "CONCRETE BARRIER RAIL" SHEET.

FOR CONCRETE MEDIAN BARRIER DIMENSIONS, REINFORCING STEEL, AND JOINT SPACING, SEE "CONCRETE MEDIAN BARRIER" SHEETS.

FOR SECTION VIEWS AND TRANSVERSE AND LONGITUDINAL JOINT DETAILS, SEE "SUPERSTRUCTURE TYPICAL SECTION DETAILS" SHEET.

FOR INTERMEDIATE STEEL DIAPHRAGMS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET FOR DETAILS. FOR LOCATION, SEE "SUPERSTRUCTURE FRAMING PLAN" SHEETS.

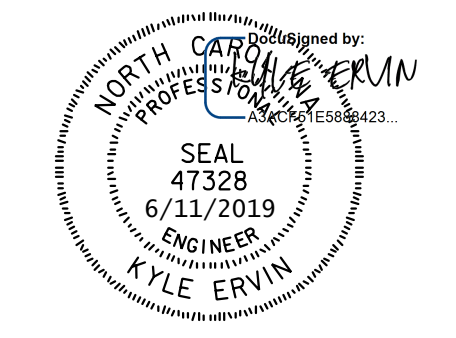
BUILD CONCRETE MEDIAN BARRIER DURING STAGE 5 OF THE CONSTRUCTION SEQUENCE. FOR CONSTRUCTION SEQUENCE, SEE "CONSTRUCTION SEQUENCE" SHEETS.

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STATE OF NORTH CAROLINA
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 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPAN C
 STAGE 2
 CONSTRUCTION

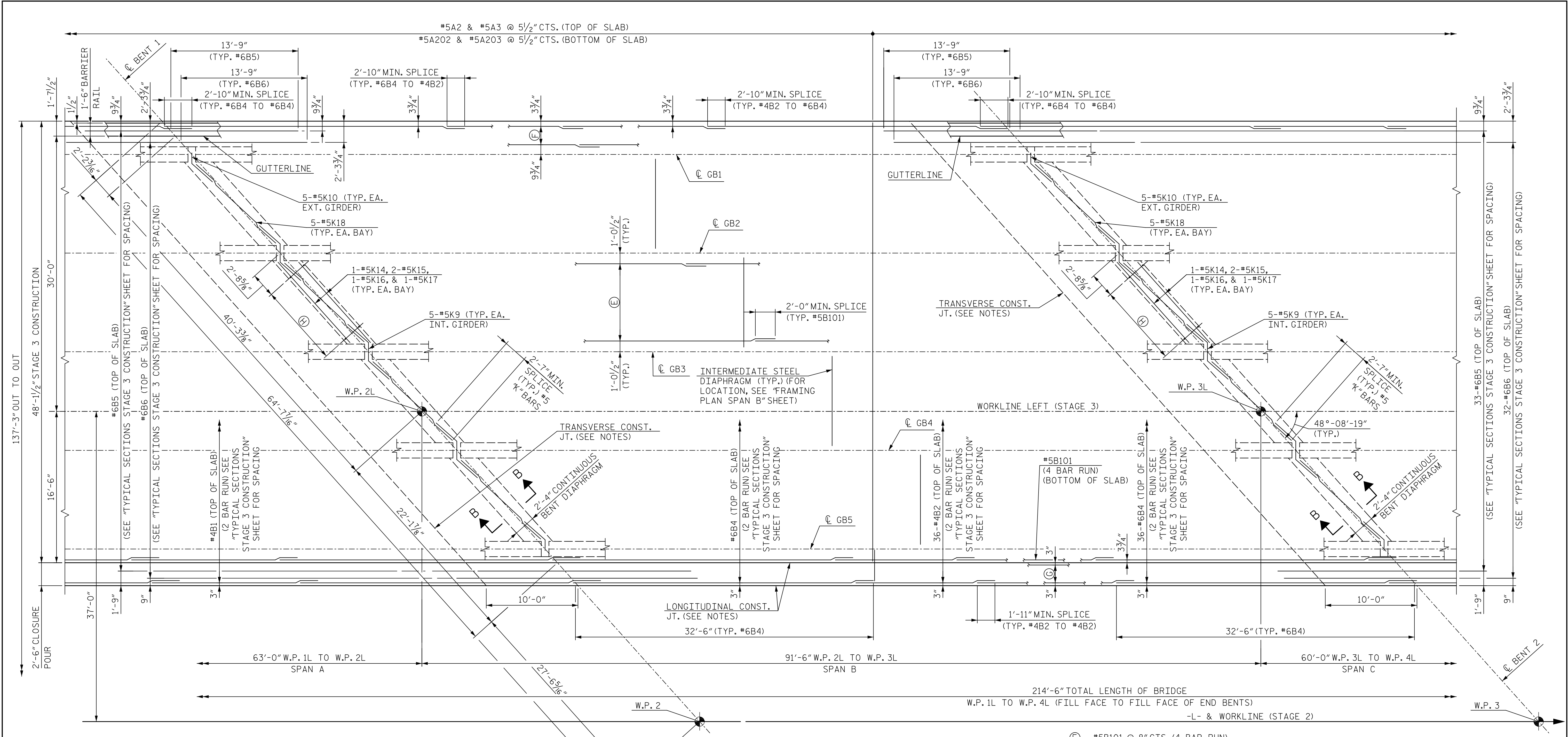


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DRAWN BY	M. WRIGHT	DATE	3/19
CHECKED BY	K. ERVIN	DATE	3/19
DESIGN ENGINEER OF RECORD	K. ERVIN	DATE	3/19

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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			

DWG. NO. 16



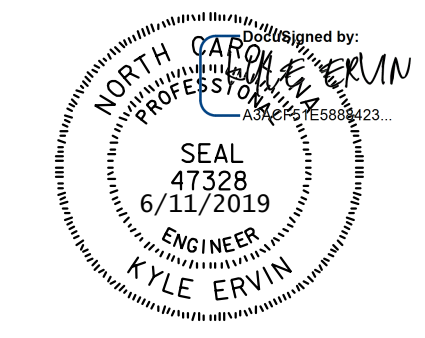
PLAN OF SPAN B STAGE 3 CONSTRUCTION

NOTES:
 FOR CONCRETE BARRIER RAIL DIMENSIONS, REINFORCING STEEL, AND JOINT SPACING, SEE "CONCRETE BARRIER RAIL" SHEET.
 FOR SECTION VIEWS AND TRANSVERSE AND LONGITUDINAL JOINT DETAILS, SEE "SUPERSTRUCTURE TYPICAL SECTION DETAILS" SHEET.
 FOR INTERMEDIATE STEEL DIAPHRAGMS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET FOR DETAILS. FOR LOCATION, SEE "SUPERSTRUCTURE FRAMING PLAN" SHEETS.

- (E) #5B101 @ 8" CTS. (4 BAR RUN) (TYP. EA. BAY EXCEPT CLOSURE POUR) (BOTTOM OF SLAB)
- (F) #5B101 @ 7 1/2" CTS. (4 BAR RUN) (BOTTOM OF SLAB)
- (G) #5B101 @ 8" CTS. (4 BAR RUN) (BOTTOM OF SLAB)
- (H) 8-#5U1, 2-#5U2, & 38-#4S3 (TYP. EA. BAY)

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 5 OF 9
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN B
 STAGE 3
 CONSTRUCTION



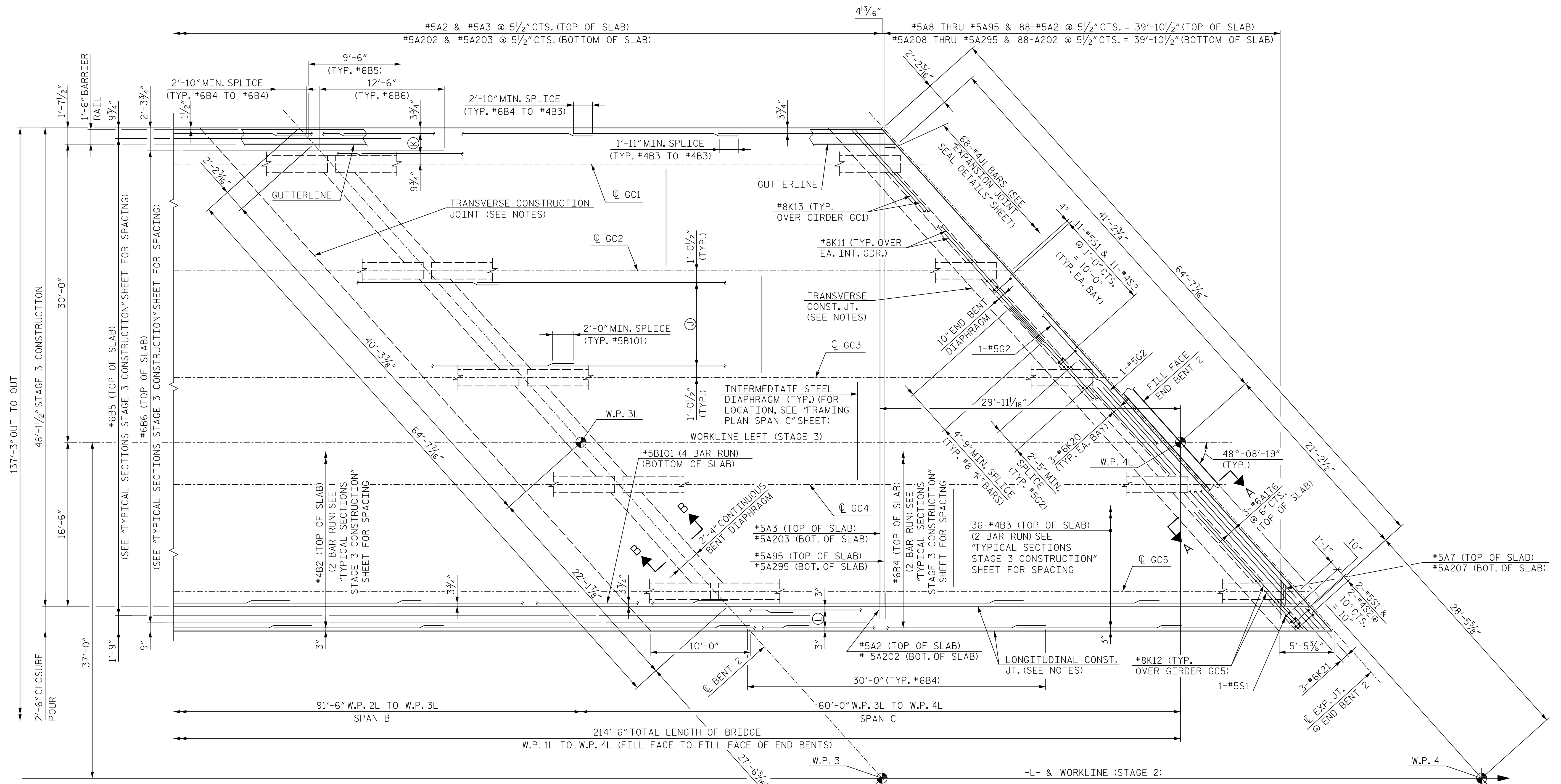
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 NC License No. C-1554
 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY: M. WRIGHT DATE: 3/19
 CHECKED BY: K. ERVIN DATE: 3/19
 DESIGN ENGINEER OF RECORD: K. ERVIN DATE: 3/19

DWG. NO. 18

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REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			S1-18	
2			4			81	



PLAN OF SPAN C STAGE 3 CONSTRUCTION

NOTES:

FOR CONCRETE BARRIER RAIL DIMENSIONS, REINFORCING STEEL, AND JOINT SPACING, SEE "CONCRETE BARRIER RAIL" SHEET.

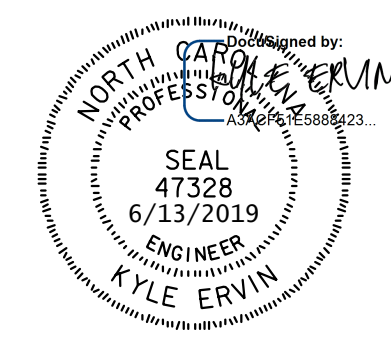
FOR SECTION VIEWS AND TRANSVERSE AND LONGITUDINAL JOINT DETAILS, SEE "SUPERSTRUCTURE TYPICAL SECTION DETAILS" SHEET.

FOR INTERMEDIATE STEEL DIAPHRAGMS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET FOR DETAILS. FOR LOCATION, SEE "SUPERSTRUCTURE FRAMING PLAN" SHEETS.

- Ⓝ #5B101 @ 8" CTS. (4 BAR RUN) (TYP. EA. BAY EXCEPT CLOSURE POUR) (BOTTOM OF SLAB)
- Ⓚ #5B101 @ 7 1/2" CTS. (4 BAR RUN) (BOTTOM OF SLAB)
- Ⓛ #5B101 @ 8" CTS. (4 BAR RUN) (BOTTOM OF SLAB)

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

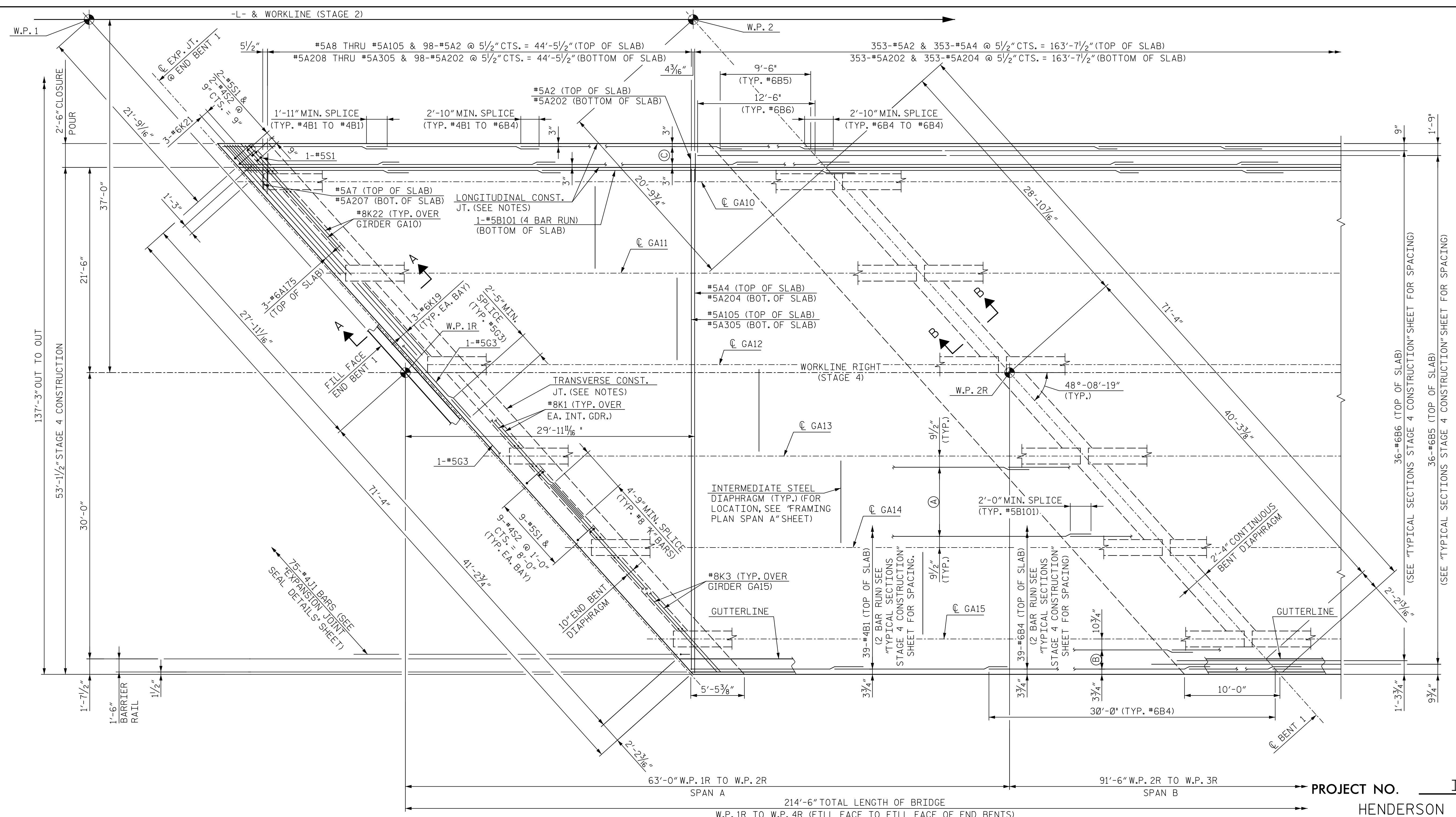
SHEET 6 OF 9
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN C
 STAGE 3
 CONSTRUCTION



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DRAWN BY: M. WRIGHT	DATE: 3/19	DWG. NO. 19	
CHECKED BY: K. ERVIN	DATE: 3/19		
DESIGN ENGINEER OF RECORD: K. ERVIN	DATE: 3/19		

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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S1-19
1			3			TOTAL SHEETS
2			4			81



PLAN OF SPAN A STAGE 4 CONSTRUCTION

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

NOTES:

FOR CONCRETE BARRIER RAIL DIMENSIONS, REINFORCING STEEL, AND JOINT SPACING, SEE "CONCRETE BARRIER RAIL" SHEET.

FOR SECTION VIEWS AND TRANSVERSE AND LONGITUDINAL JOINT DETAILS, SEE "SUPERSTRUCTURE TYPICAL SECTION DETAILS" SHEET.

FOR INTERMEDIATE STEEL DIAPHRAGMS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET FOR DETAILS. FOR LOCATION, SEE "SUPERSTRUCTURE FRAMING PLAN" SHEETS.

- (A) 13-#5B101 @ 8" CTS. = 8'-0" (4 BAR RUN) (TYP. EA. BAY EXCEPT AT CLOSURE POUR) (BOTTOM OF SLAB)
- (B) 5-#5B101 @ 7 1/2" CTS. = 2'-6" (4 BAR RUN) (BOTTOM OF SLAB)
- (C) 4-#5B101 @ 8" CTS. = 2'-0" (4 BAR RUN) (BOTTOM OF SLAB)



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DRAWN BY M. WRIGHT DATE 4/19
 CHECKED BY K. ERVIN DATE 4/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 4/19

DWG. NO. 20

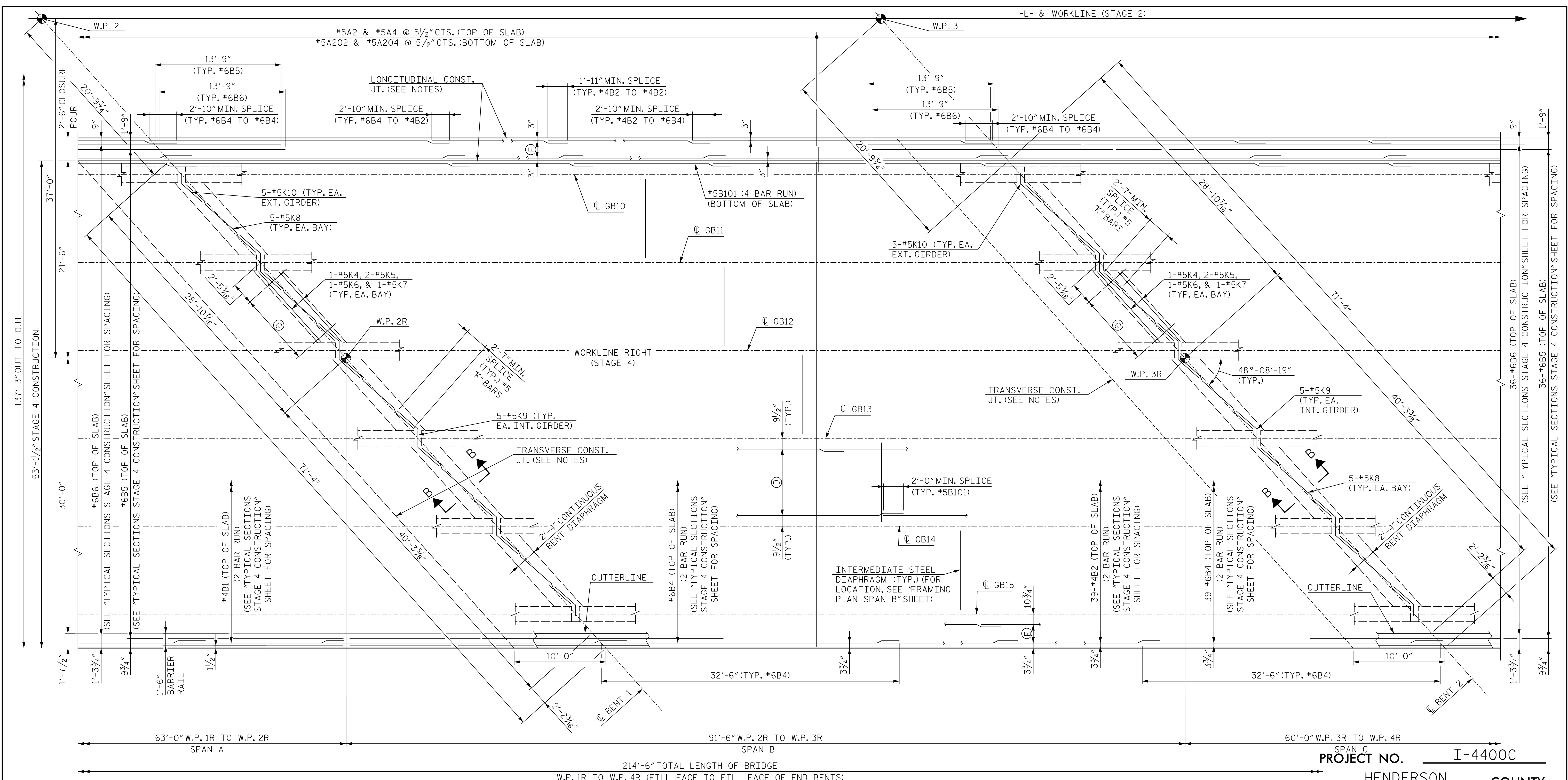
SHEET 7 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPAN A
 STAGE 4
 CONSTRUCTION

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			S1-20	
2			4			81	

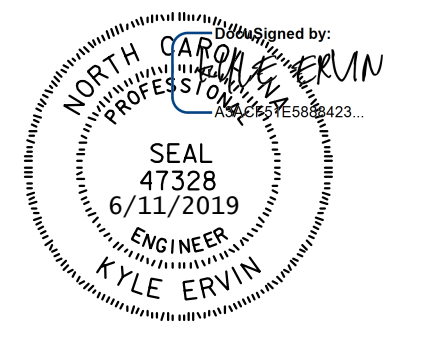
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PLAN OF SPAN B - STAGE 4 CONSTRUCTION

NOTES:
 FOR CONCRETE BARRIER RAIL DIMENSIONS, REINFORCING STEEL, AND JOINT SPACING, SEE "CONCRETE BARRIER RAIL" SHEET.
 FOR SECTION VIEWS AND TRANSVERSE AND LONGITUDINAL JOINT DETAILS, SEE "SUPERSTRUCTURE TYPICAL SECTION DETAILS" SHEET.
 FOR INTERMEDIATE STEEL DIAPHRAGMS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET FOR DETAILS. FOR LOCATION, SEE "SUPERSTRUCTURE FRAMING PLAN" SHEETS.

- Ⓓ #5B101 @ 8" CTS. (4 BAR RUN) (TYP. EA. BAY EXCEPT AT CLOSURE POUR) (BOTTOM OF SLAB)
- Ⓔ #5B101 @ 7 1/2" CTS. (4 BAR RUN) (BOTTOM OF SLAB)
- Ⓕ #5B101 @ 8" CTS. (4 BAR RUN) (BOTTOM OF SLAB)
- Ⓖ 7-#5U1, 2-#5U2, & 34-#4S3 (TYP. EA. BAY)



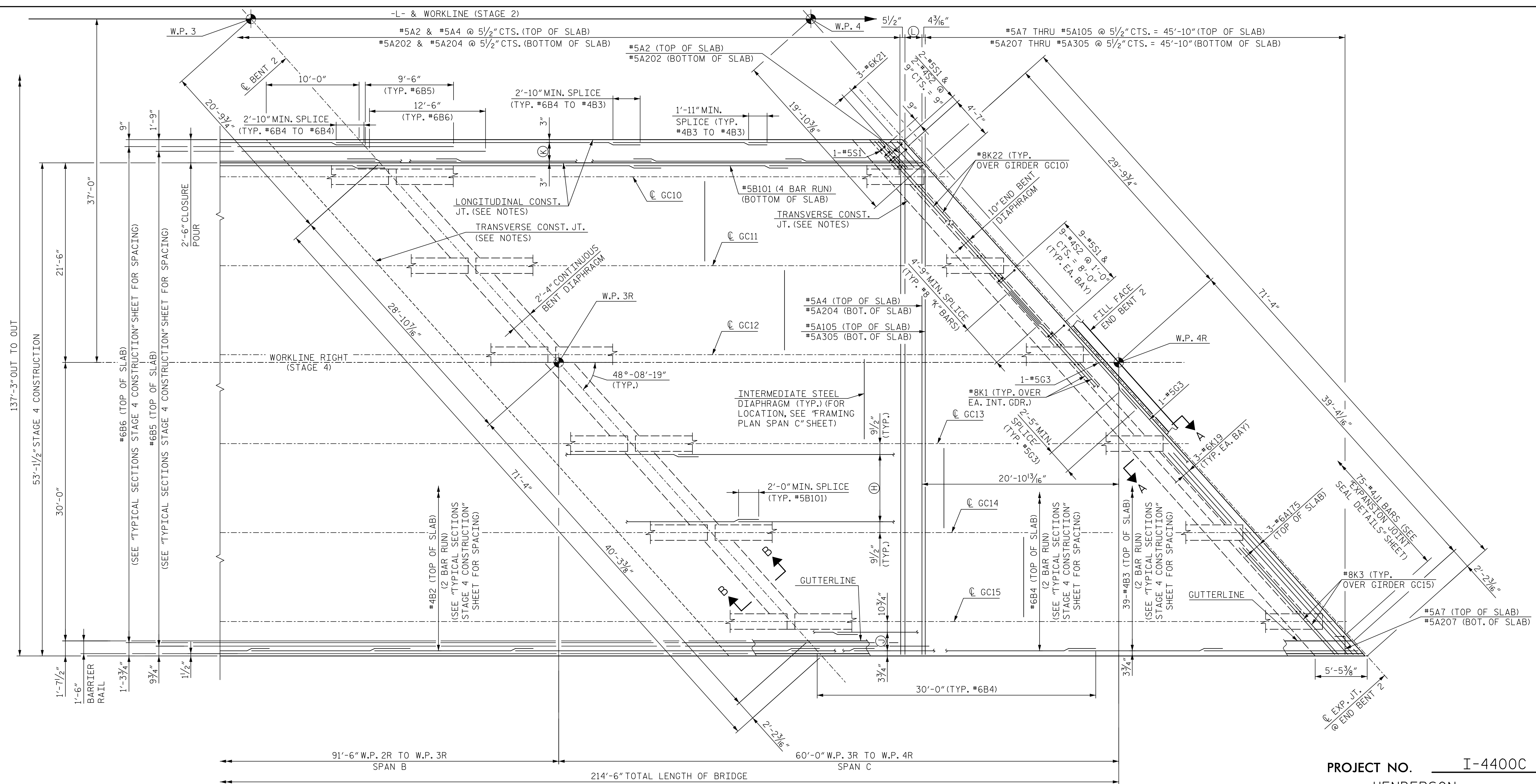
PROJECT NO. **I-4400C**
 HENDERSON COUNTY
 STATION: **POT 659+58.95 -L-**

SHEET 8 OF 9
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN B
 STAGE 4
 CONSTRUCTION

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DRAWN BY M. WRIGHT	CHECKED BY K. ERVIN	DESIGN ENGINEER OF RECORD K. ERVIN	DWG. NO. 21	

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			S1-21	
2			4			81	

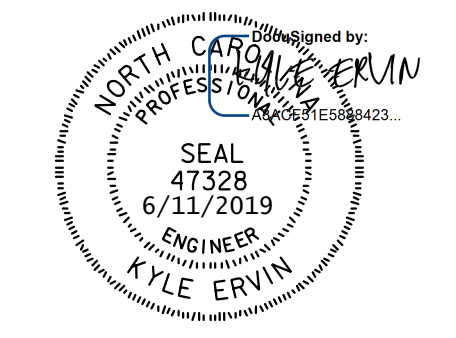
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PLAN OF SPAN C - STAGE 4 CONSTRUCTION

NOTES:
 FOR CONCRETE BARRIER RAIL DIMENSIONS, REINFORCING STEEL, AND JOINT SPACING, SEE "CONCRETE BARRIER RAIL" SHEET.
 FOR SECTION VIEWS AND TRANSVERSE AND LONGITUDINAL JOINT DETAILS, SEE "SUPERSTRUCTURE TYPICAL SECTION DETAILS" SHEET.
 FOR INTERMEDIATE STEEL DIAPHRAGMS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET FOR DETAILS. FOR LOCATION, SEE "SUPERSTRUCTURE FRAMING PLAN" SHEETS.

- (H) #5B101 @ 8" CTS. (4 BAR RUN) (TYP. EA. BAY EXCEPT AT CLOSURE POUR) (BOTTOM OF SLAB)
- (J) #5B101 @ 7 1/2" CTS. (4 BAR RUN) (BOTTOM OF SLAB)
- (K) #5B101 @ 8" CTS. (4 BAR RUN) (BOTTOM OF SLAB)
- (L) 5-#5A4 @ 5 1/2" CTS. = 1'-10" (TOP OF SLAB)
 5-#5A204 @ 5 1/2" CTS. = 1'-10" (BOTTOM OF SLAB)



PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 9 OF 9

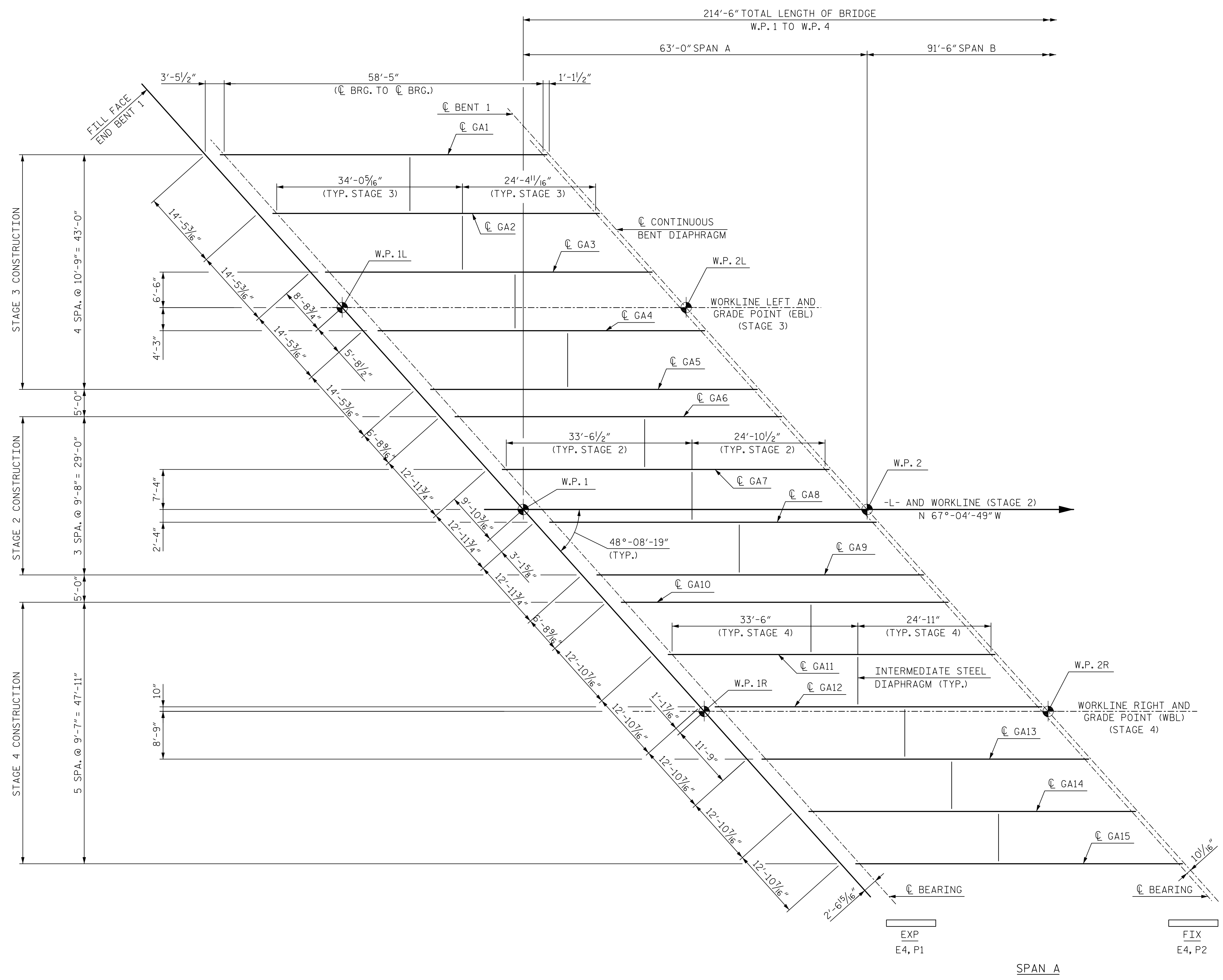
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
PLAN OF SPAN C
STAGE 4
CONSTRUCTION

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			

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 DWG. NO. 22

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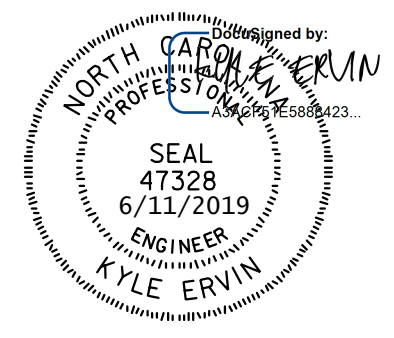
FRAMING PLAN

- NOTES:**
- "EXP" DENOTES EXPANSION BEARING ASSEMBLY.
 - "FIX" DENOTES FIXED BEARING ASSEMBLY.
 - "E" DENOTES ELASTOMERIC BEARING PAD MARK.
 - "P" DENOTES STEEL SOLE PLATE MARK.
 - "W.P." DENOTES WORK POINT

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 1 OF 3

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



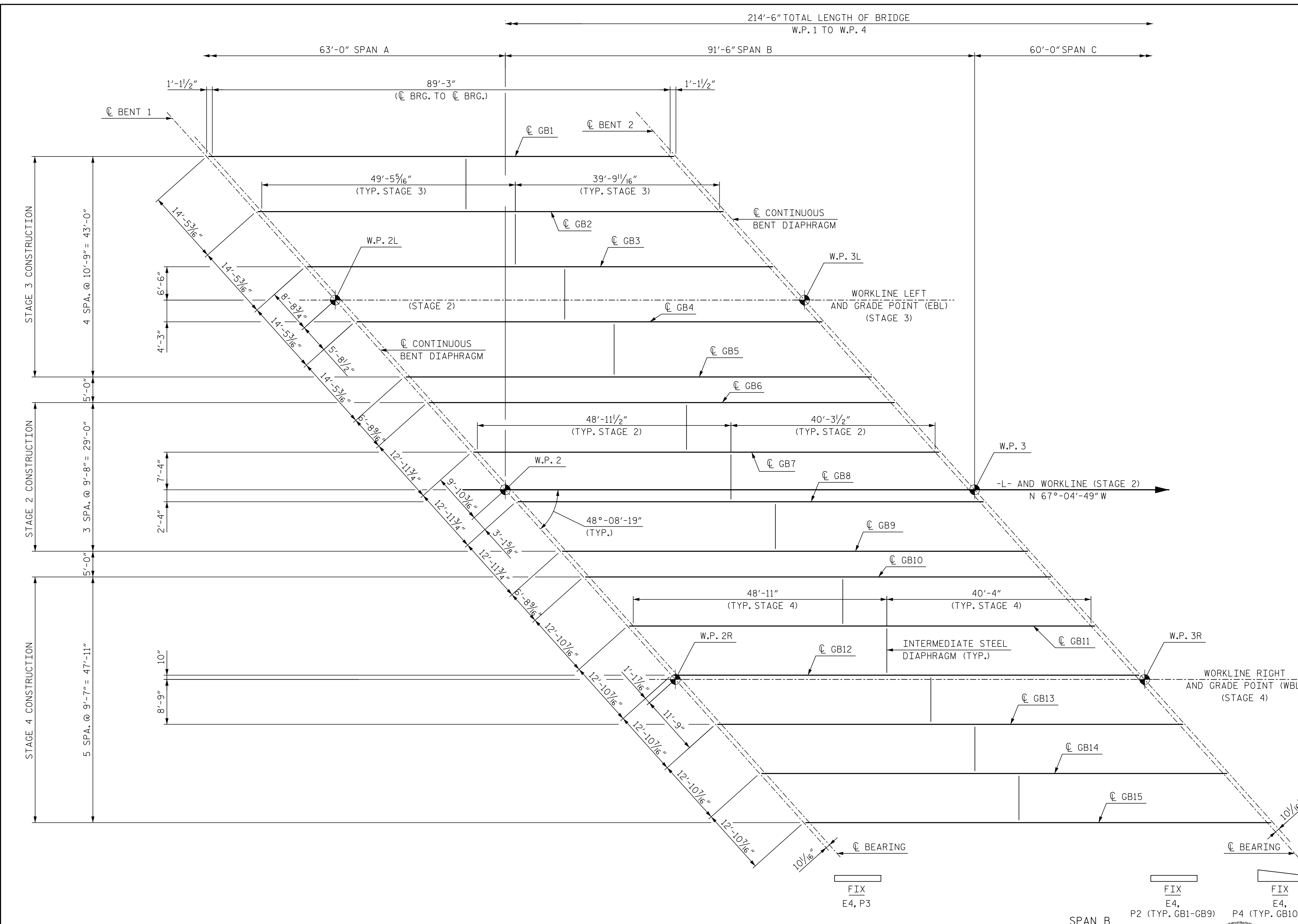
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 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY B. VAUGHN DATE 11/18
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DWG. NO. 23

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REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			S1-23	
2			4			81	



NOTE:
FOR NOTES, SEE "SUPERSTRUCTURE FRAMING PLAN SPAN A" SHEET.

FRAMING PLAN

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 2 OF 3
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 FRAMING PLAN
 SPAN B

SPAN B
 FIX E4, P3
 FIX E4, P2 (TYP. GB1-GB9)
 FIX E4, P4 (TYP. GB10-GB15)

SEAL
 47328
 6/11/2019
 ENGINEER
 KYLE ERVIN

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 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

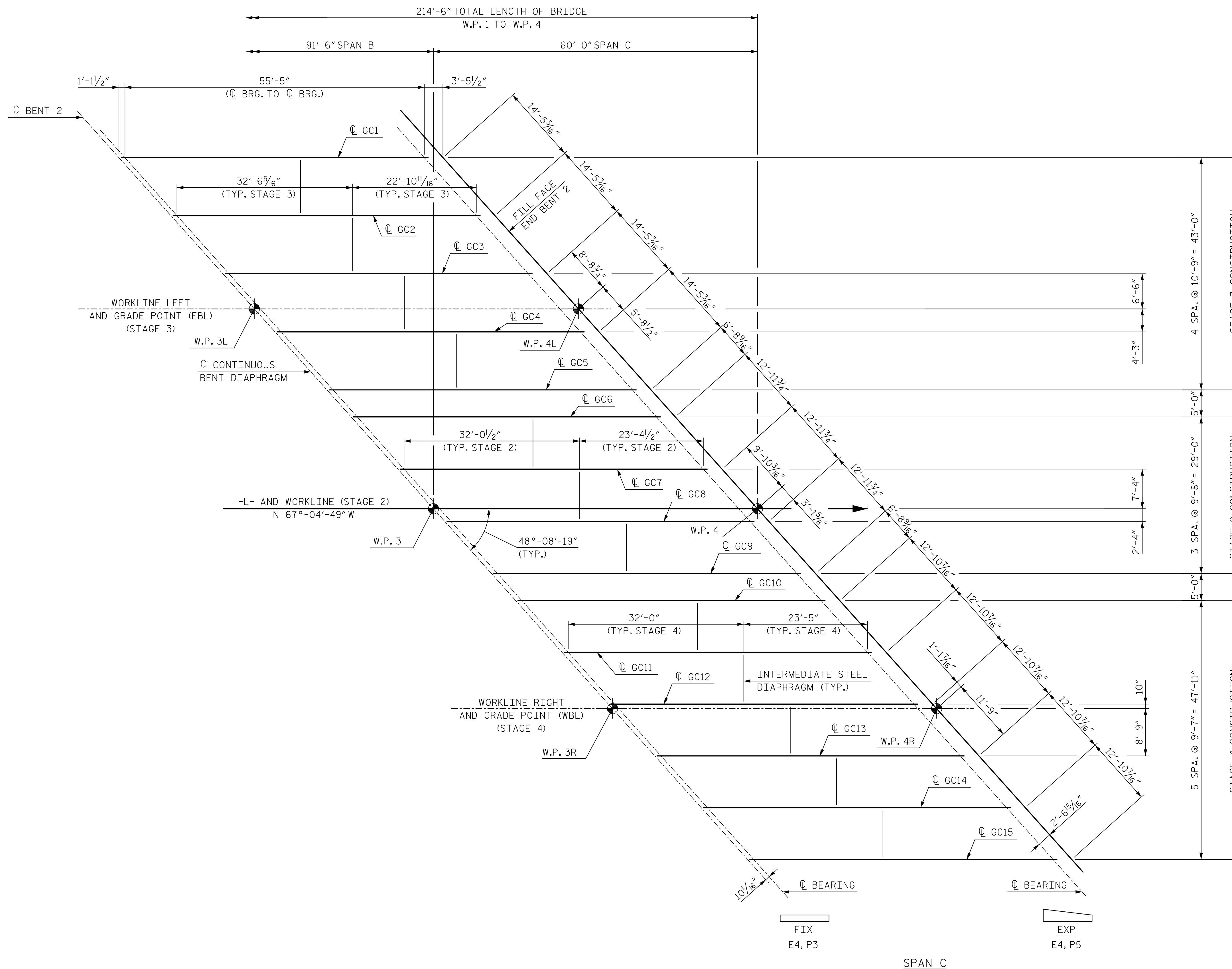
DRAWN BY B. VAUGHN DATE 11/18
 CHECKED BY K. ERVIN DATE 3/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 11/18

DWG. NO. 24

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REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
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2			4			81	

NOTE:
FOR NOTES, SEE "SUPERSTRUCTURE FRAMING PLAN SPAN A" SHEET.



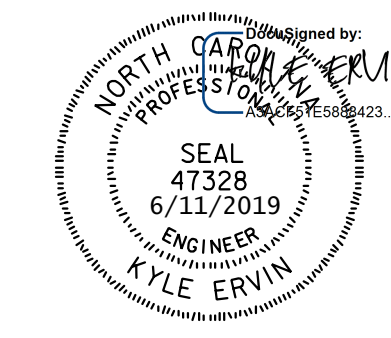
FRAMING PLAN

SPAN C

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 FRAMING PLAN
 SPAN C



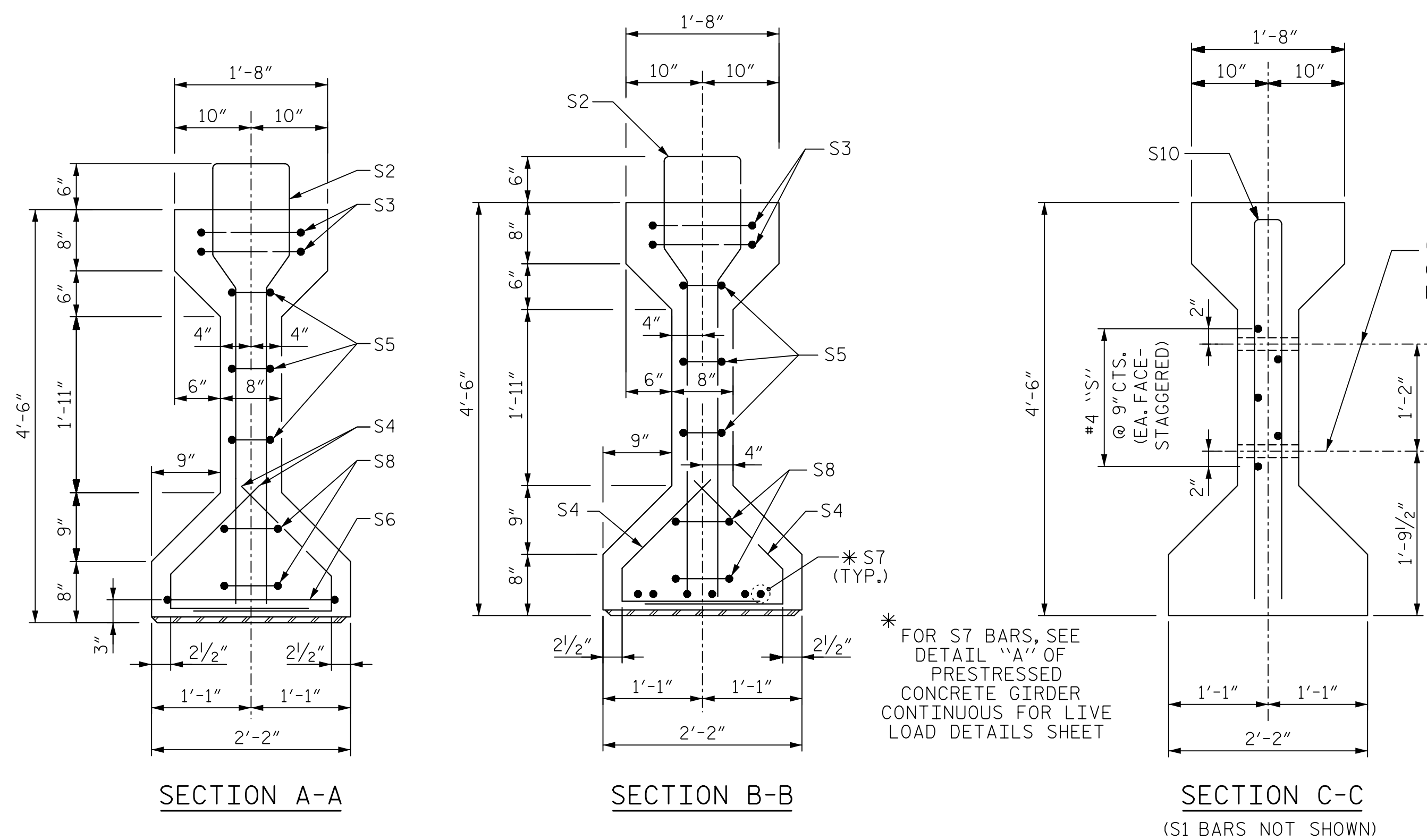
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DRAWN BY B. VAUGHN DATE 11/18
 CHECKED BY K. ERVIN DATE 3/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 11/18

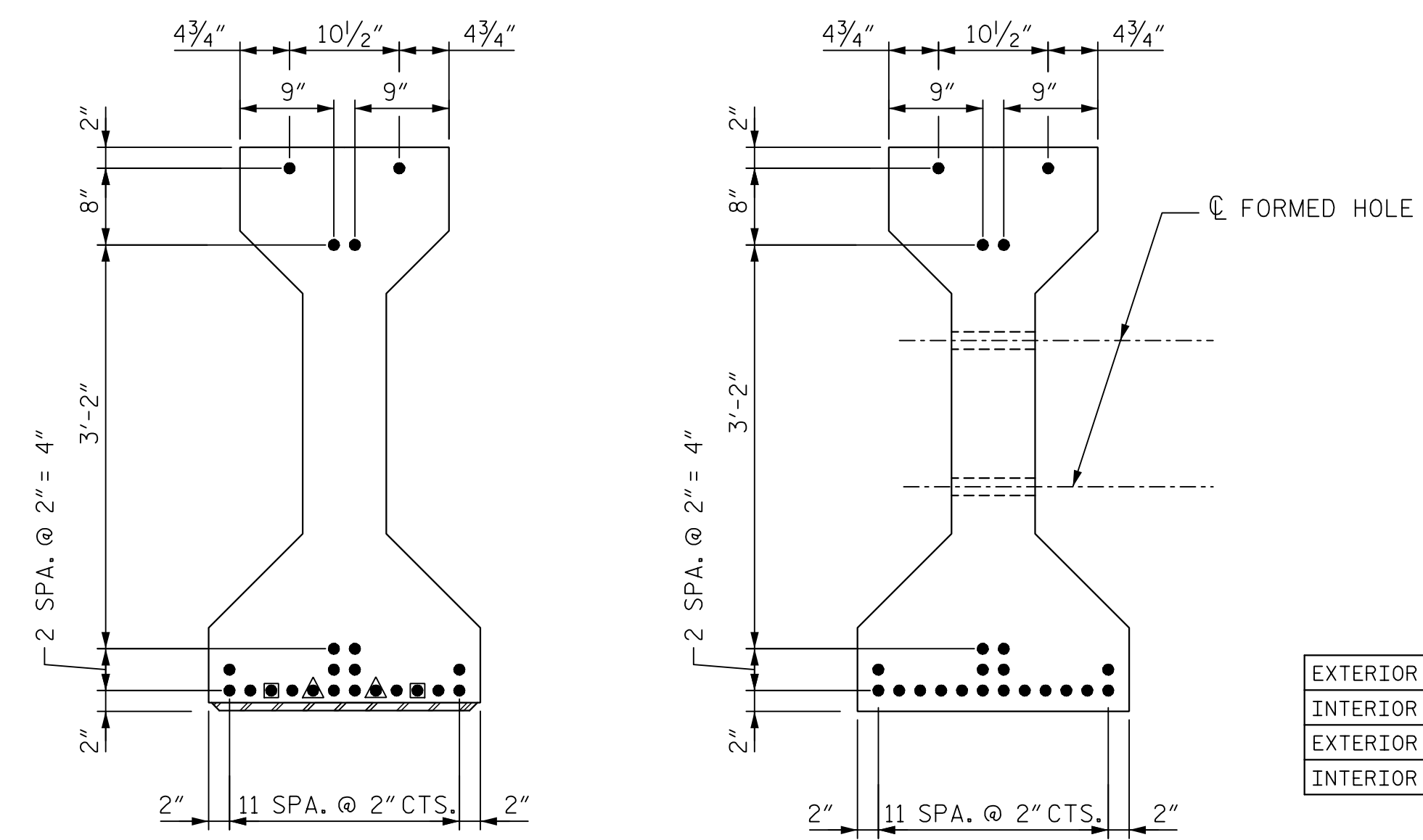
DWG. NO. 25

**DOCUMENT NOT CONSIDERED FINAL
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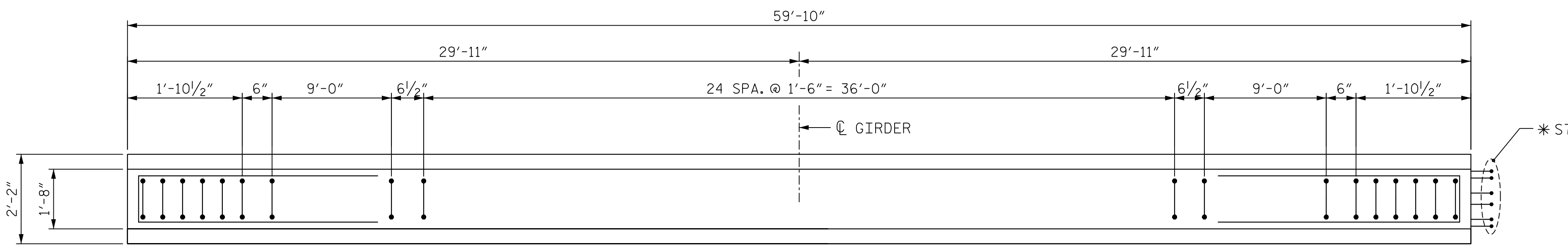
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			



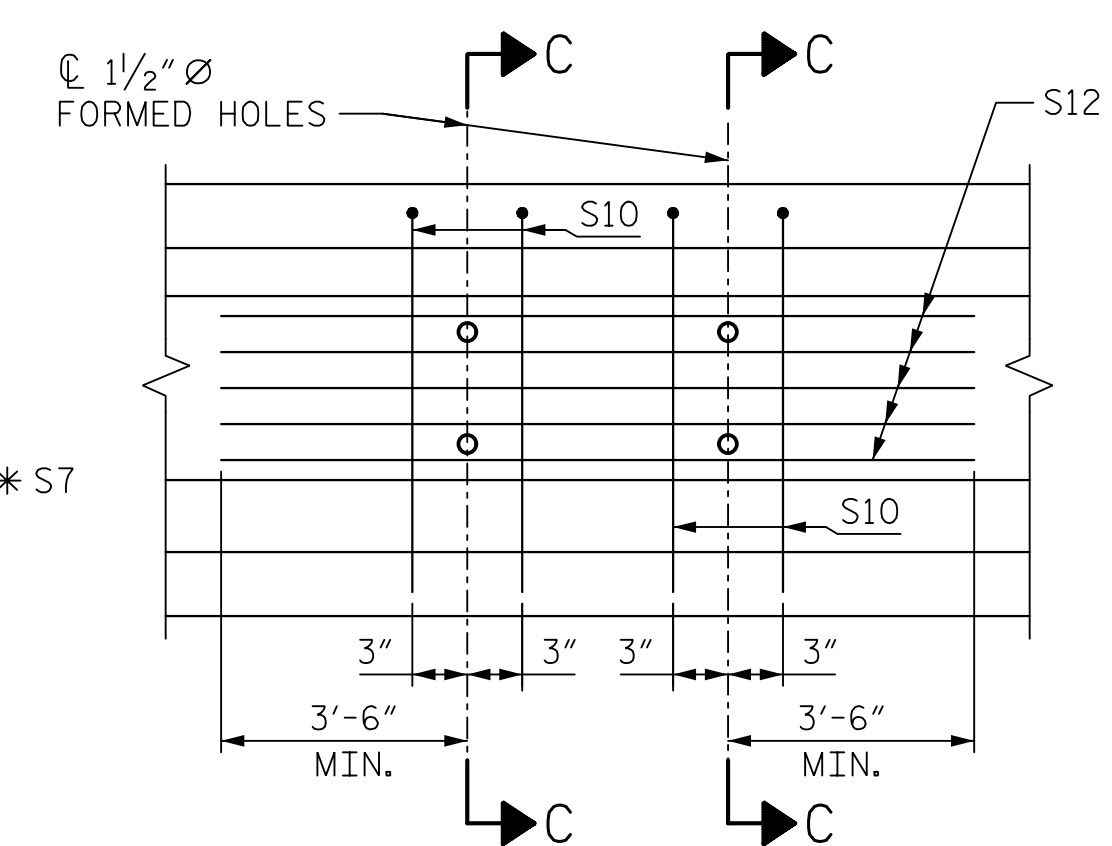
- FULLY BONDED STRAND
- ▲ STRANDS DEBONDED 8'-0" FROM END OF GIRDER
- STRANDS DEBONDED 6'-0" FROM END OF GIRDER



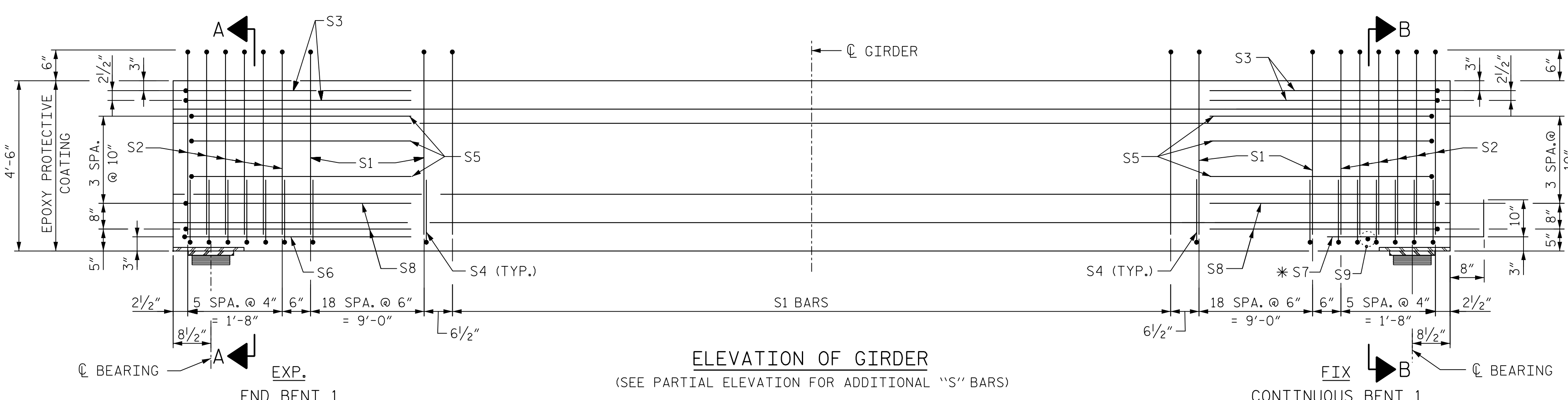
0.6" Ø LOW RELAXATION STRAND LAYOUT



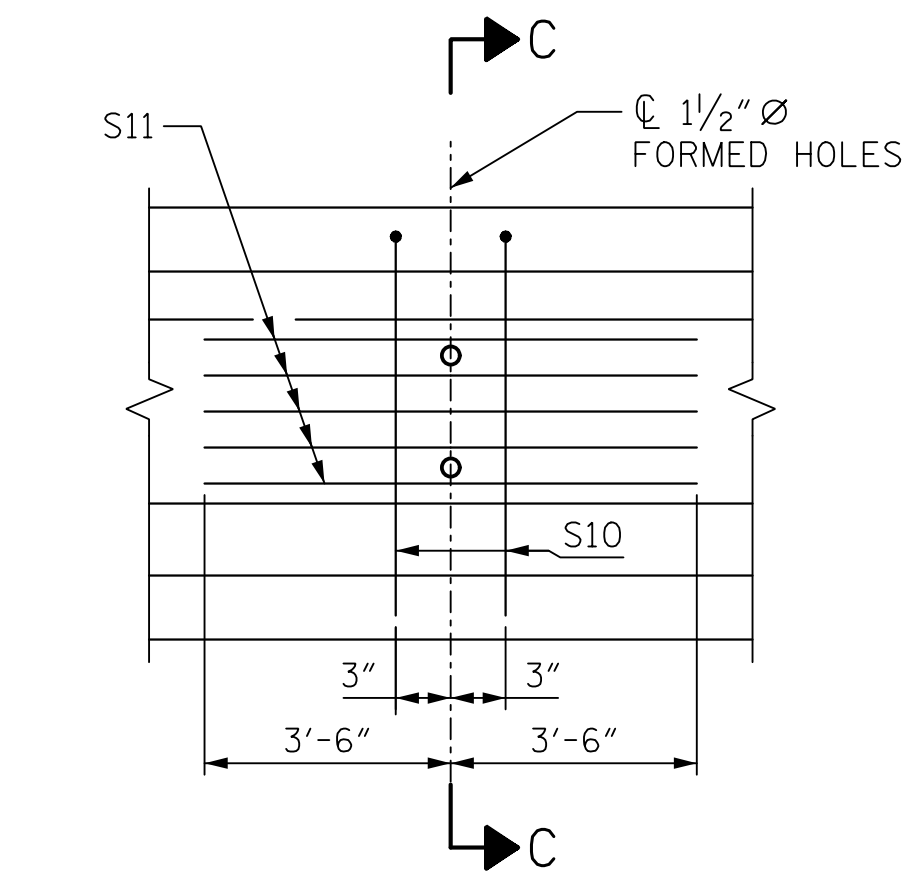
PLAN OF GIRDER



PARTIAL ELEVATION



NOTE:
 FOR LOCATION OF INTERMEDIATE DIAPHRAGM, SEE SHEET 4 OF 5.



PARTIAL ELEVATION

0.6" Ø L. R. GRADE 270 STRANDS

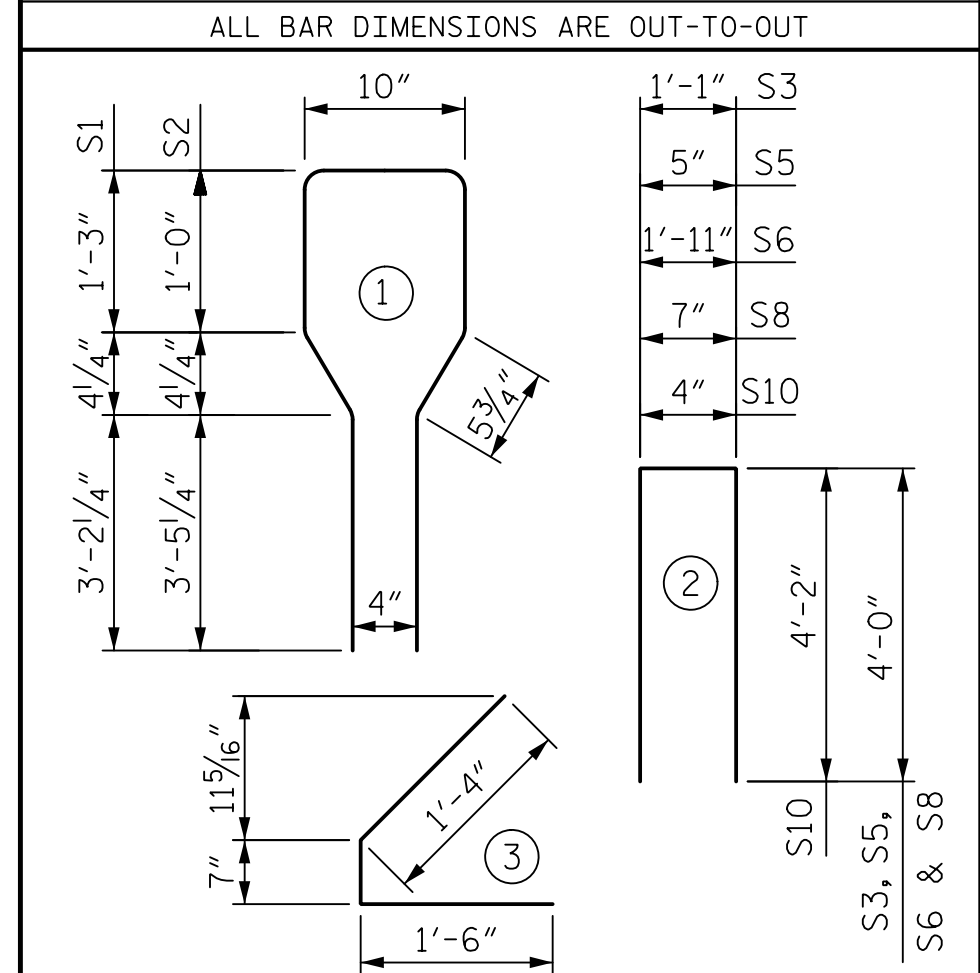
AREA (SQ. INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	63	#4	1	10'-8"	449
S2	12	#6	1	10'-8"	192
S3	4	#4	2	9'-1"	24
S4	100	#4	3	3'-5"	229
S5	6	#4	2	8'-5"	34
S6	1	#4	2	9'-11"	7
*S7	6	#5	STR	3'-8"	23
S8	4	#4	2	8'-7"	23
S9	1	#3	STR	1'-10"	1
EXTERIOR GDR. S10	2	#5	2	8'-8"	18
INTERIOR GDR. S10	4	#5	2	8'-8"	37
EXTERIOR GDR. S11	5	#4	STR	7'-0"	24
INTERIOR GDR. S12	5	#4	STR	16'-8"	56

* NOTE: S7 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL (LB.)	6,000 PSI CONCRETE (C.Y.)	0.6" Ø L. R. STRANDS (No.)
EXTERIOR GIRDER	1,024	12.2	22
INTERIOR GIRDER	1,075	12.2	22

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
15	59'-10"	897.50'

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 1 OF 5
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 AASHTO TYPE IV
 PRESTRESSED CONCRETE GIRDER
 CONTINUOUS FOR LIVE LOAD
 SPAN A

ASSEMBLED BY : JGJ	DATE : 3/19
CHECKED BY : KWE	DATE : 3/19
DRAWN BY : ELR 8/91	REV. 10/11/11 MAA/GM
CHECKED BY : CRP 8/91	REV. 1/15 MAA/TMG
	REV. 12/17 MAA/THC

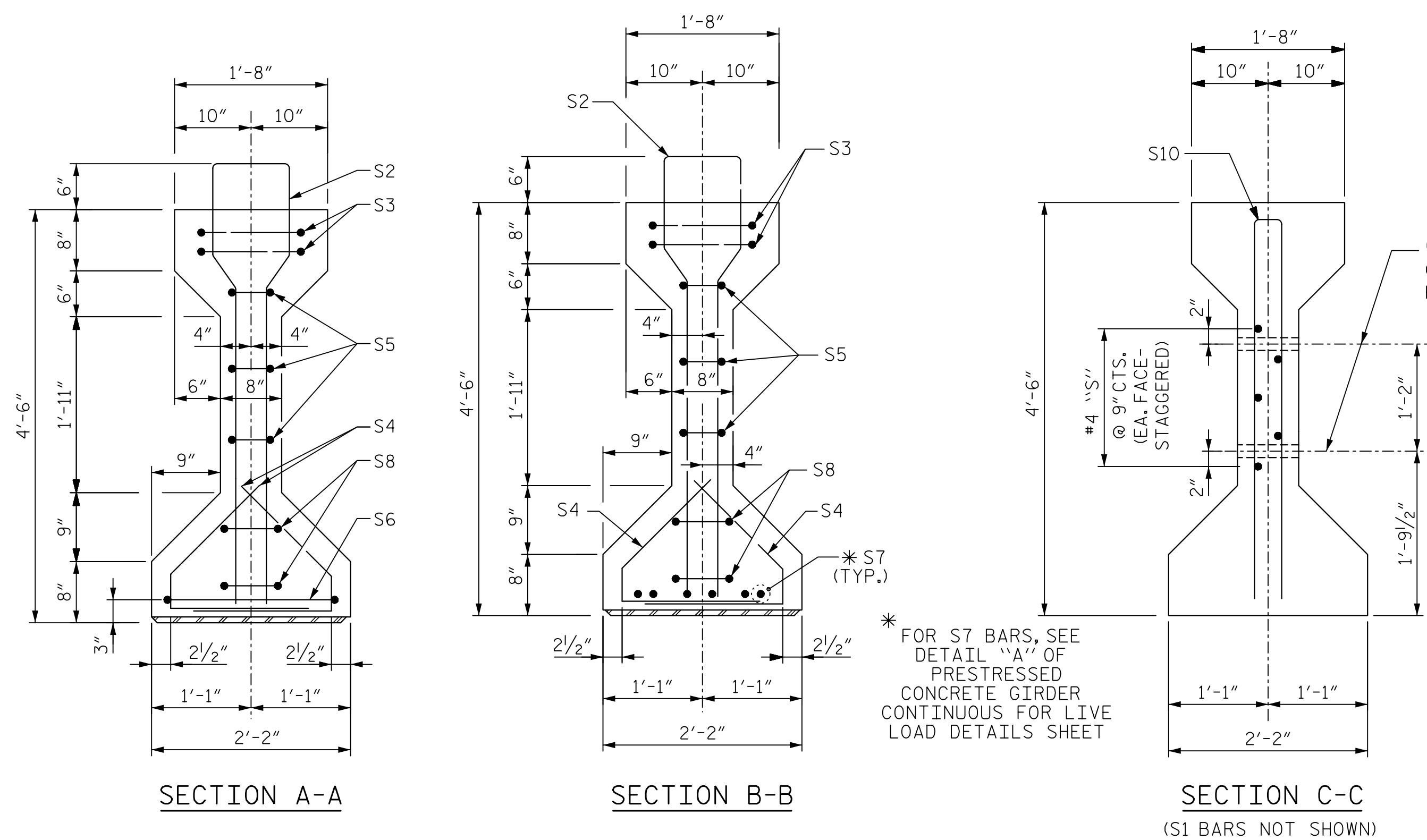
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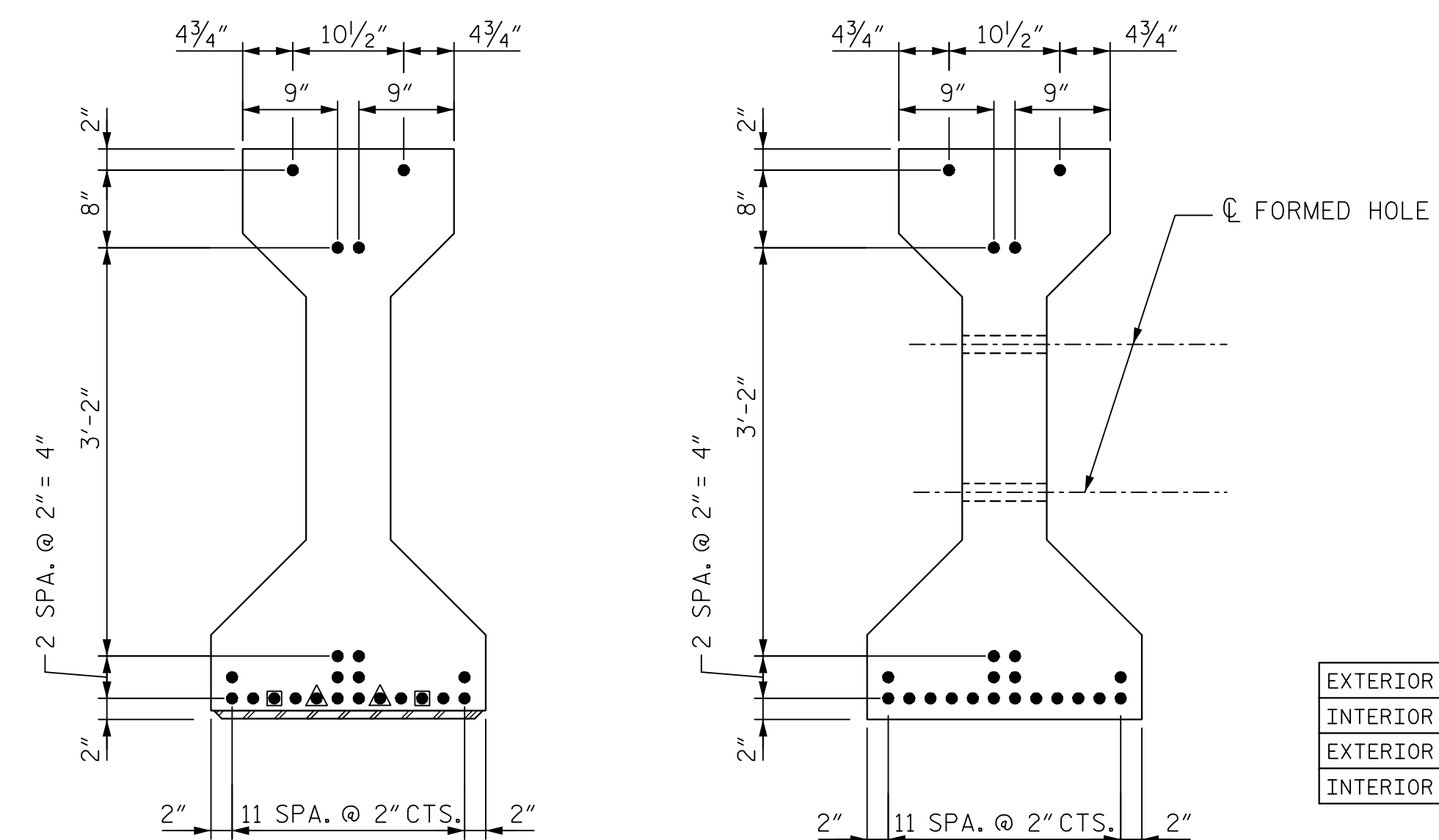
DRAWN BY : B. VAUGHN	DATE : 11/18
CHECKED BY : K. ERVIN	DATE : 3/19
DESIGN ENGINEER OF RECORD : K. ERVIN	DATE : 11/18

DWG. NO. 26

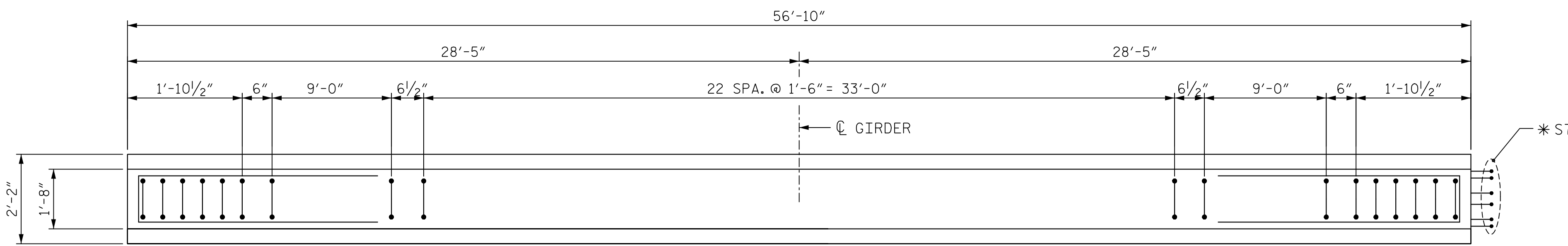
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			



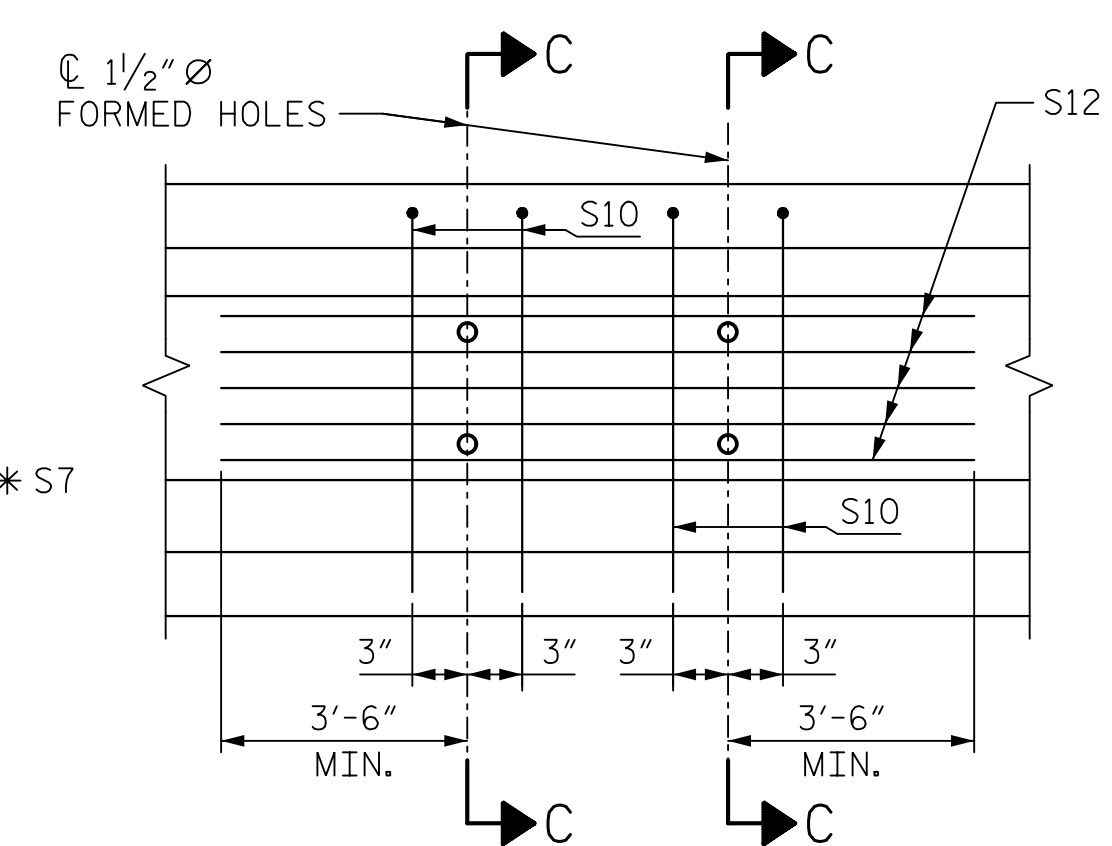
- FULLY BONDED STRAND
- ▲ STRANDS DEBONDED 8'-0" FROM END OF GIRDER
- STRANDS DEBONDED 6'-0" FROM END OF GIRDER



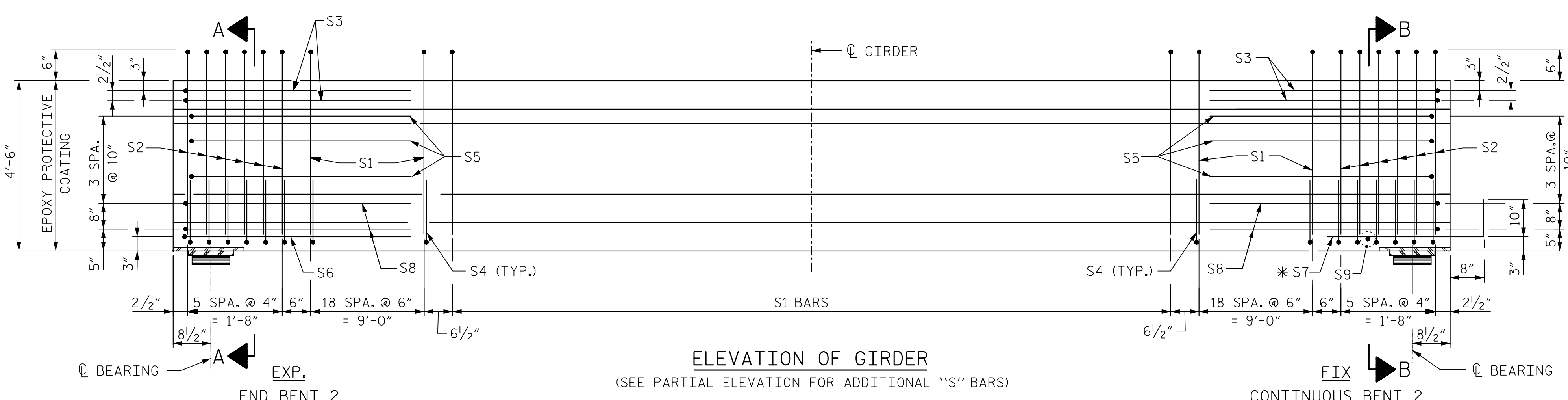
0.6" Ø LOW RELAXATION STRAND LAYOUT



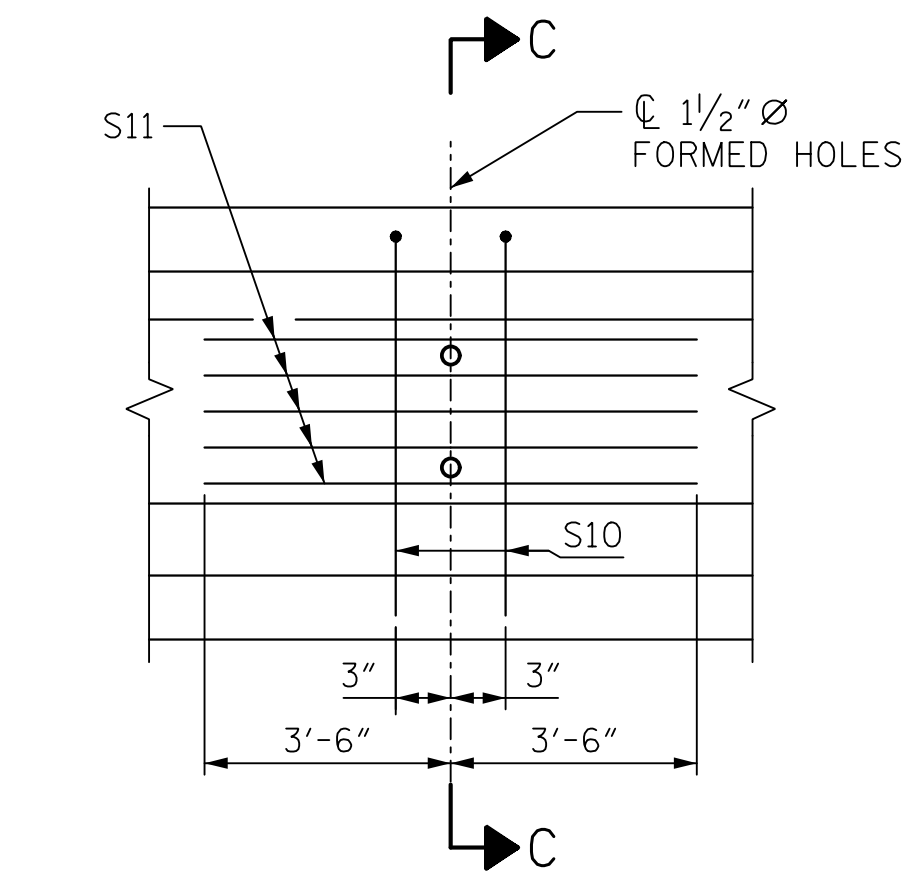
PLAN OF GIRDER



PARTIAL ELEVATION SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR INTERIOR GIRDERS (G2-G4, G7-G8, & G11-G14)



NOTE: FOR LOCATION OF INTERMEDIATE DIAPHRAGM, SEE SHEET 4 OF 5.



PARTIAL ELEVATION SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR EXTERIOR GIRDERS (G1, G5-G6, G9-G10, & G15)

0.6" Ø L. R. GRADE 270 STRANDS

AREA (SQ. INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

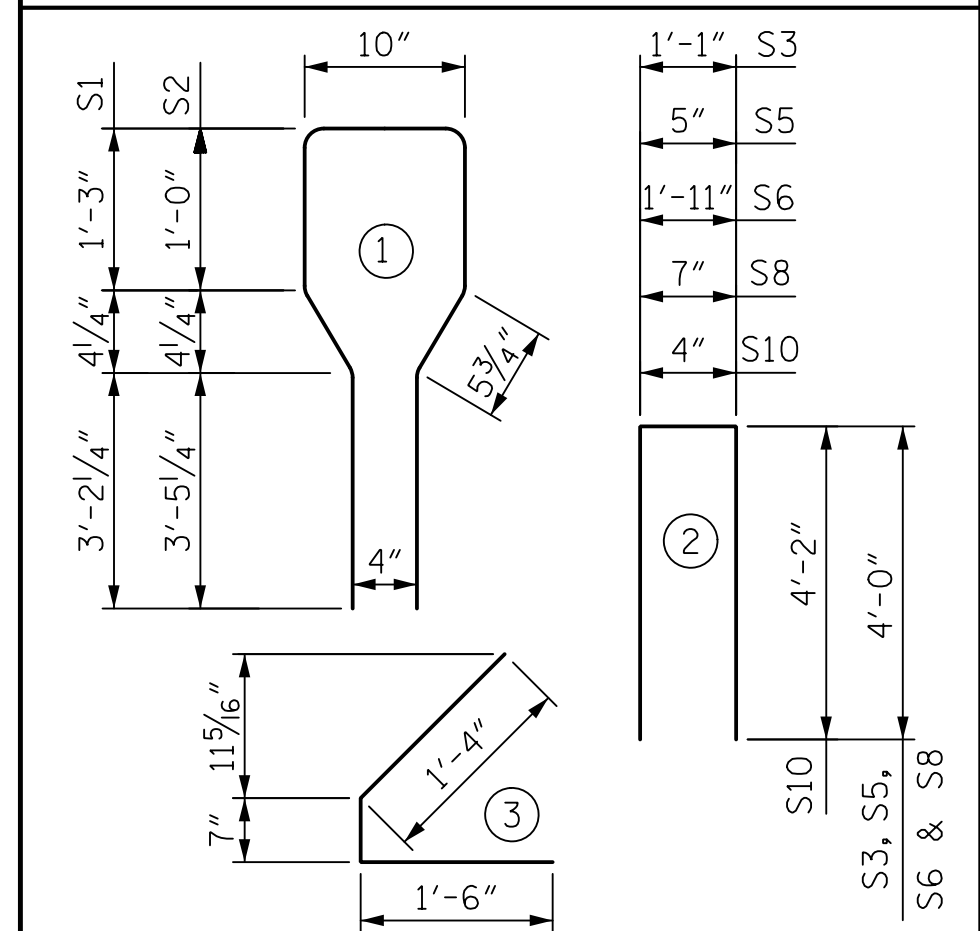
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	61	#4	1	10'-8"	435
S2	12	#6	1	10'-8"	192
S3	4	#4	2	9'-1"	24
S4	100	#4	3	3'-5"	229
S5	6	#4	2	8'-5"	34
S6	1	#4	2	9'-11"	7
*S7	6	#5	STR	3'-8"	23
S8	4	#4	2	8'-7"	23
S9	1	#3	STR	1'-10"	1
EXTERIOR GDR. S10	2	#5	2	8'-8"	18
INTERIOR GDR. S10	4	#5	2	8'-8"	37
EXTERIOR GDR. S11	5	#4	STR	7'-0"	24
INTERIOR GDR. S12	5	#4	STR	16'-8"	56

* NOTE: S7 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL (LB.)	6,000 PSI CONCRETE (C.Y.)	0.6" Ø L. R. STRANDS (No.)
EXTERIOR GIRDER	1,010	11.6	22
INTERIOR GIRDER	1,061	11.6	22

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
15	56'-10"	852.50'

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 3 OF 5
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 AASHTO TYPE IV
 PRESTRESSED CONCRETE GIRDER
 CONTINUOUS FOR LIVE LOAD
 SPAN C

ASSEMBLED BY : JGJ	DATE : 3/19
CHECKED BY : KWE	DATE : 3/19
DRAWN BY : ELR 8/91	REV. 10/11/11 MAA/GM
CHECKED BY : CRP 8/91	REV. 1/15 MAA/TMG
	REV. 12/17 MAA/THC

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HNTB HNTB NORTH CAROLINA, P.C.
 NC License No. C-1554
 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY : B. VAUGHN	DATE : 11/18
CHECKED BY : K. ERVIN	DATE : 3/19
DESIGN ENGINEER OF RECORD : K. ERVIN	DATE : 11/18

DWG. NO. 28

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

TOTAL SHEETS: 81

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.

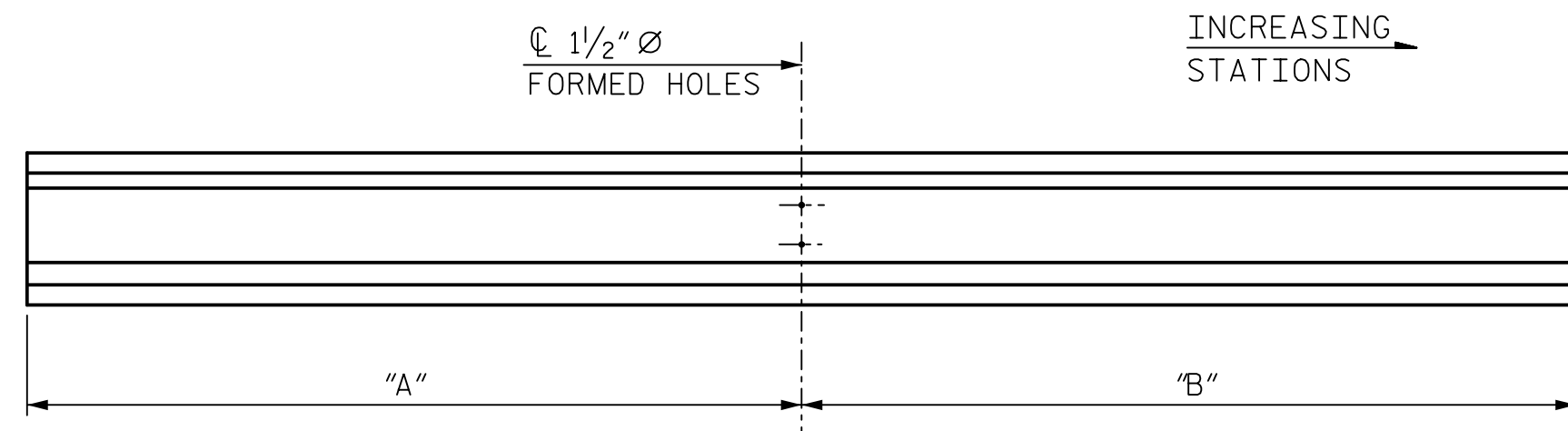
ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THROUGH 1020 OR APPROVED EQUAL, AND SHALL MEET THE TYPE "B" REQUIREMENTS OF SUBSECTION 7.3 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

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 4,500 PSI FOR GIRDERS IN SPANS A AND C AND 6,500 PSI FOR GIRDERS IN SPAN B.

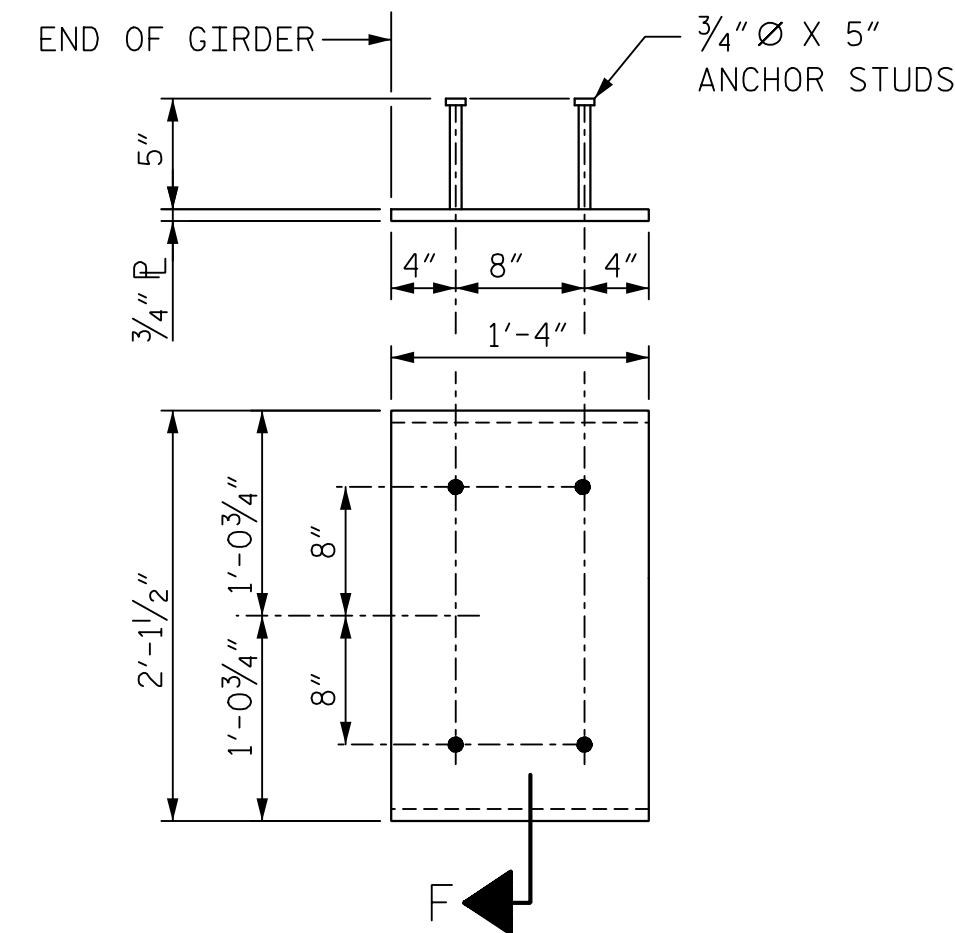
DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

THE TOP SURFACE OF THE GIRDER, EXCLUDING THE OUTSIDE 4", SHALL BE RAKED TO A DEPTH OF 1/4".

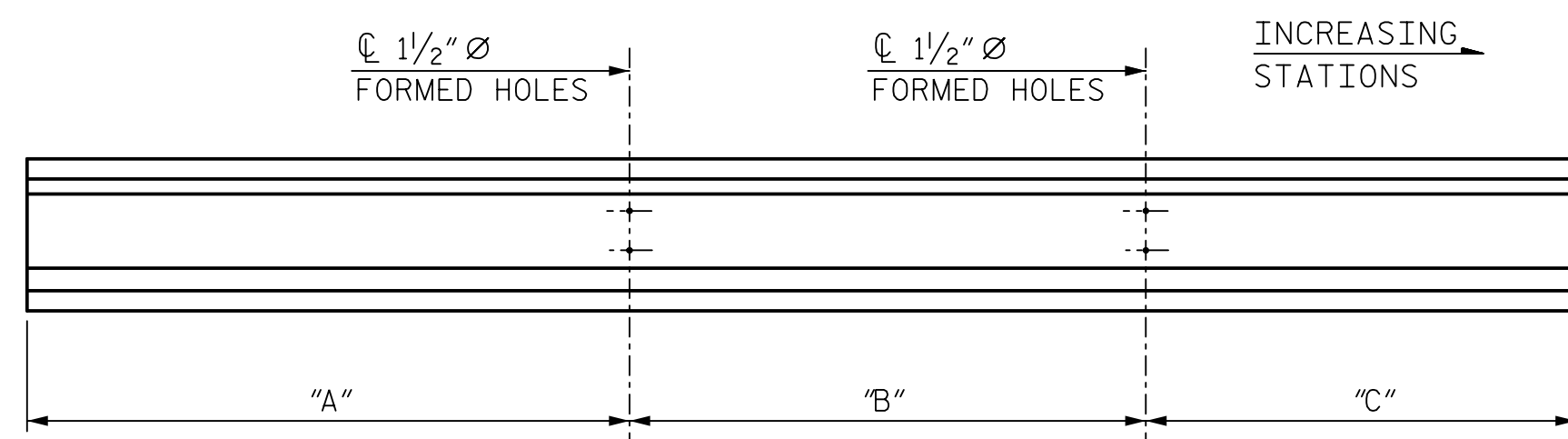


EXTERIOR GIRDER ELEVATION
(G1, G5-G6, G9-G10 & G15)

GIRDER	"A"	"B"	GIRDER	"A"	"B"	GIRDER	"A"	"B"
GA1	34'-8 ³ / ₁₆ "	25'-1 ³ / ₁₆ "	GB1	50'-1 ³ / ₁₆ "	40'-6 ³ / ₁₆ "	GC1	33'-2 ¹³ / ₁₆ "	23'-7 ³ / ₁₆ "
GA5	25'-1 ³ / ₁₆ "	34'-8 ³ / ₁₆ "	GB5	40'-6 ³ / ₁₆ "	50'-1 ³ / ₁₆ "	GC5	23'-7 ³ / ₁₆ "	33'-2 ¹³ / ₁₆ "
GA6	34'-3"	25'-7"	GB6	49'-8"	41'-0"	GC6	32'-9"	24'-1"
GA9	25'-7"	34'-3"	GB9	41'-0"	49'-8"	GC9	24'-1"	32'-9"
GA10	34'-2 ¹ / ₂ "	25'-7 ¹ / ₂ "	GB10	49'-7 ¹ / ₂ "	41'-0 ¹ / ₂ "	GC10	32'-8 ¹ / ₂ "	24'-1 ¹ / ₂ "
GA15	25'-7 ¹ / ₂ "	34'-2 ¹ / ₂ "	GB15	41'-0 ¹ / ₂ "	49'-7 ¹ / ₂ "	GC15	24'-1 ¹ / ₂ "	32'-8 ¹ / ₂ "



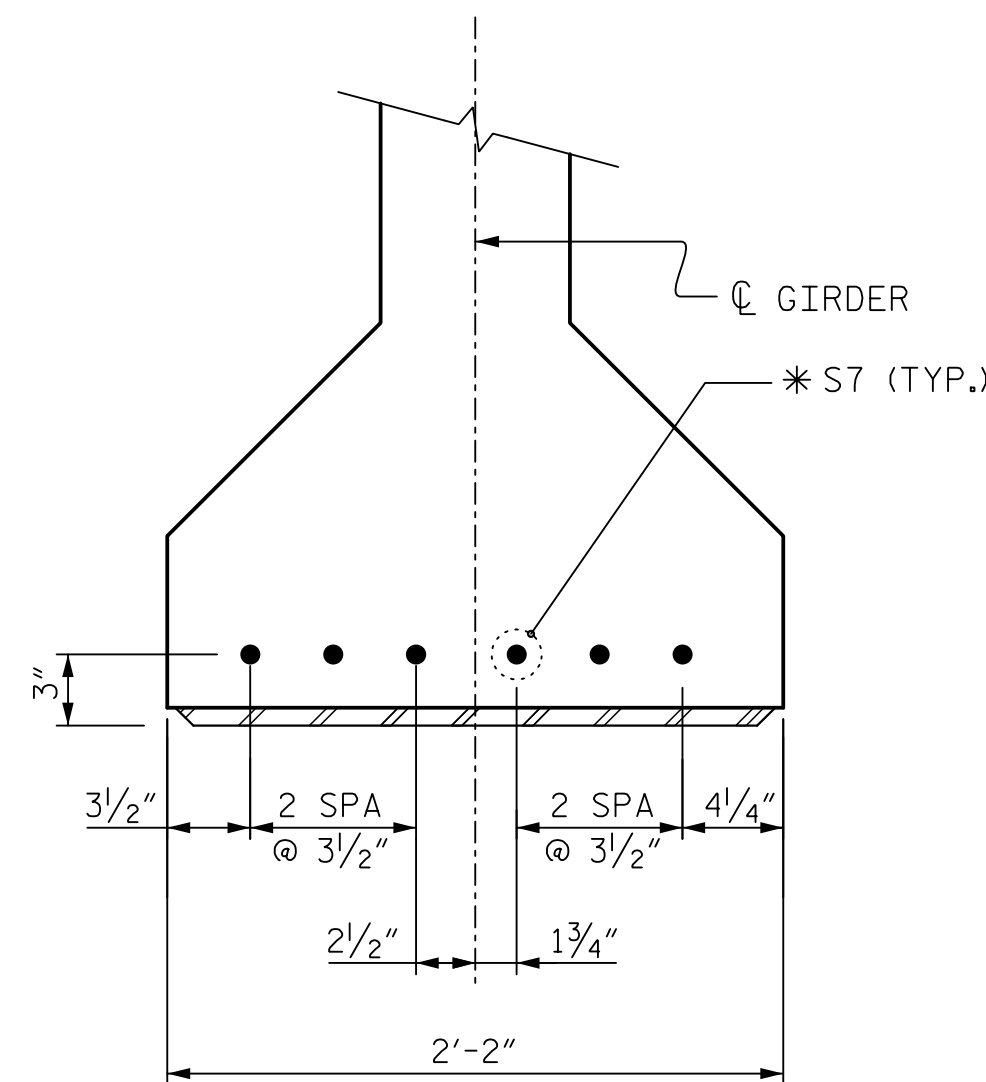
EMBEDDED PLATE "B-1" DETAILS
FOR AASHTO TYPE IV GIRDER
(2 REQ'D PER GIRDER)



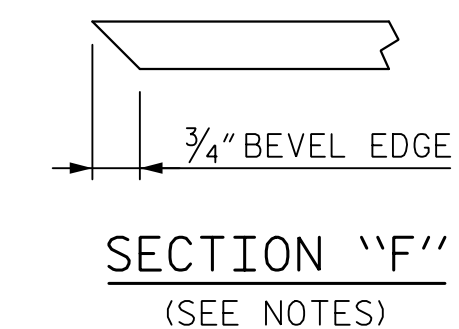
INTERIOR GIRDER ELEVATION
(G2-G4, G7-G8, & G11-G14)

GIRDER	"A"	"B"	"C"
GA2 THRU GA4	25'-1 ³ / ₁₆ "	9'-7 ⁵ / ₈ "	25'-1 ³ / ₁₆ "
GA7 & GA8	25'-7"	8'-8"	25'-7"
GA11 THRU GA14	25'-7 ¹ / ₂ "	8'-7"	25'-7 ¹ / ₂ "
GB2 THRU GB4	40'-6 ³ / ₁₆ "	9'-7 ⁵ / ₈ "	40'-6 ³ / ₁₆ "
GB7 & GB8	41'-0"	8'-8"	41'-0"
GB11 THRU GB14	41'-0 ¹ / ₂ "	8'-7"	41'-0 ¹ / ₂ "
GC2 THRU GC4	23'-7 ³ / ₁₆ "	9'-7 ⁵ / ₈ "	23'-7 ³ / ₁₆ "
GC7 & GC8	24'-1"	8'-8"	24'-1"
GC11 THRU GC14	24'-1 ¹ / ₂ "	8'-7"	24'-1 ¹ / ₂ "

1/2" Ø FORMED HOLE LOCATIONS



DETAIL "A"
(FOR AASHTO TYPE IV GIRDERS
AT CONTINUOUS BENT)



PROJECT NO. I-4400C
HENDERSON COUNTY
STATION: POT 659+58.95 -L-

SHEET 4 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
DETAILS

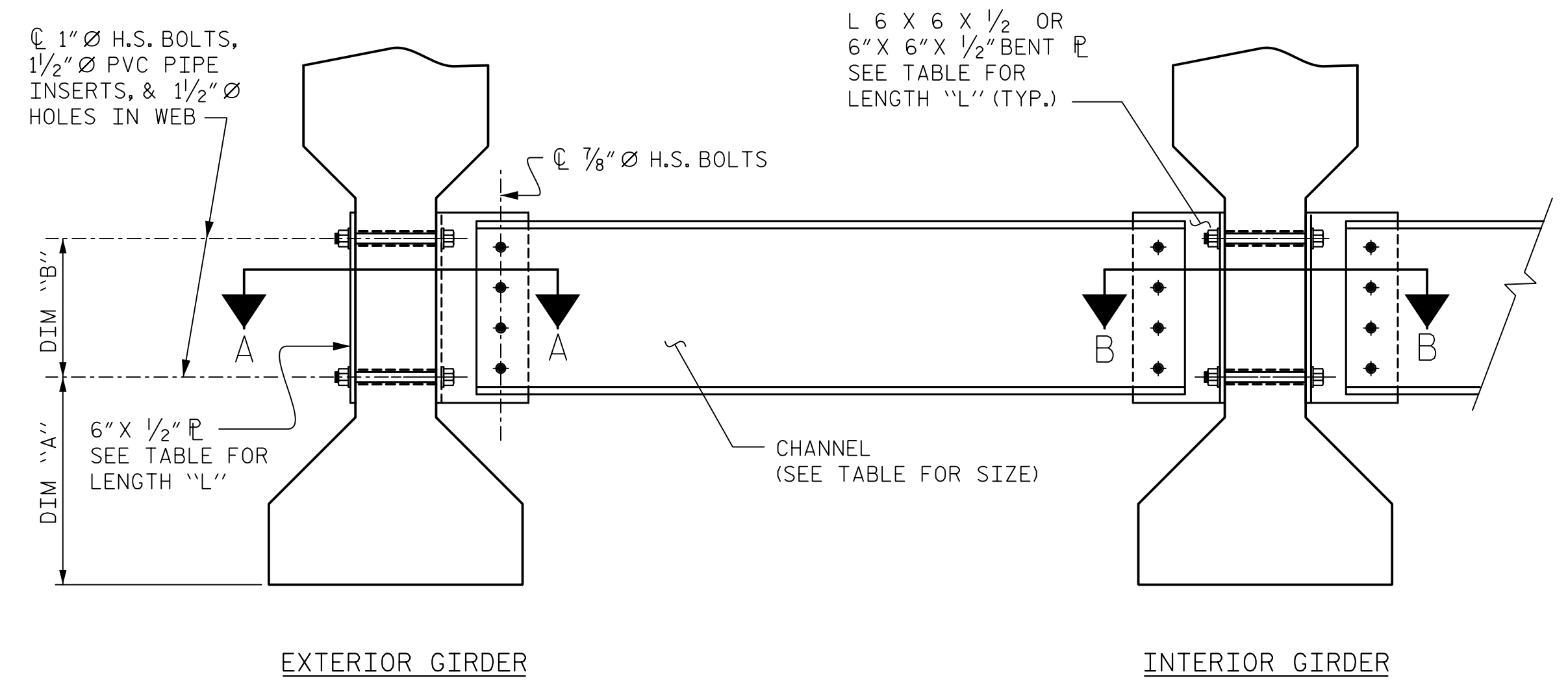
ASSEMBLED BY : JGJ	DATE : 3/19
CHECKED BY : KWE	DATE : 3/19
DRAWN BY : ELR 11/91	REV. 1/15 MAA/TMG
CHECKED BY : GRP 11/91	REV. 2/15 MAA/TMG
	REV. 12/17 MAA/THC

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DRAWN BY : B. VAUGHN	DATE : 11/18
CHECKED BY : K. ERVIN	DATE : 3/19
DESIGN ENGINEER OF RECORD : K. ERVIN	DATE : 11/18

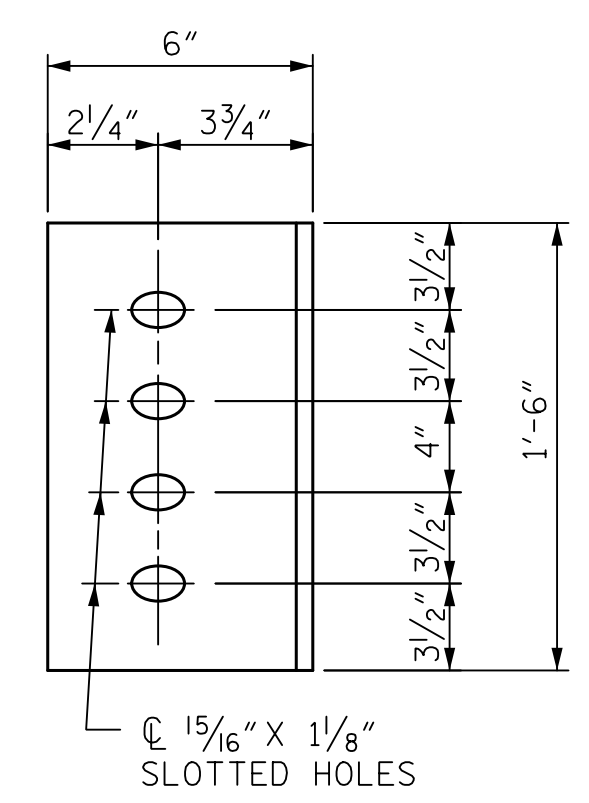
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

DWG. NO. 29

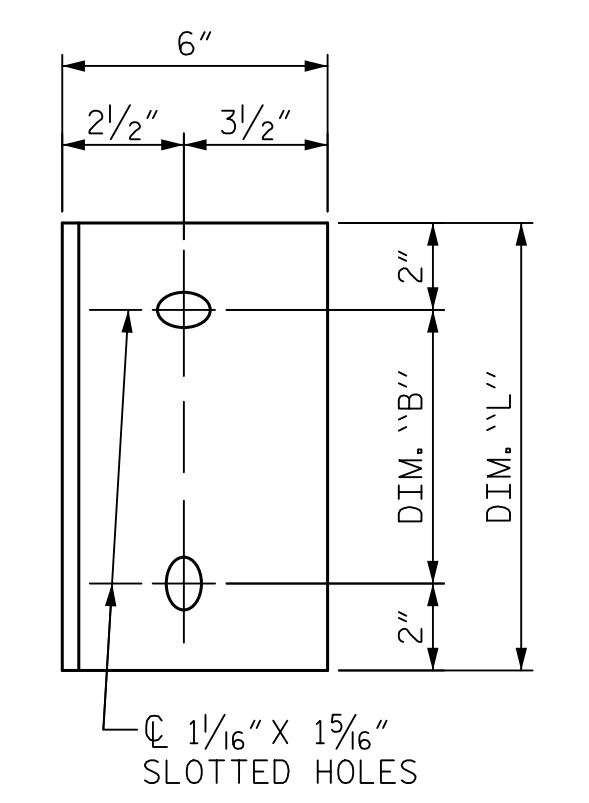
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			



PART SECTION AT INTERMEDIATE DIAPHRAGM



DIAPHRAGM FACE



WEB FACE

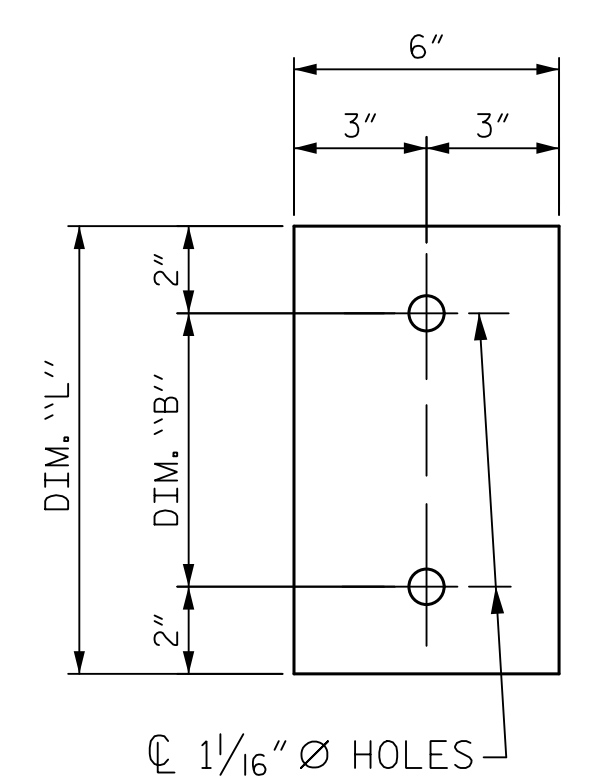
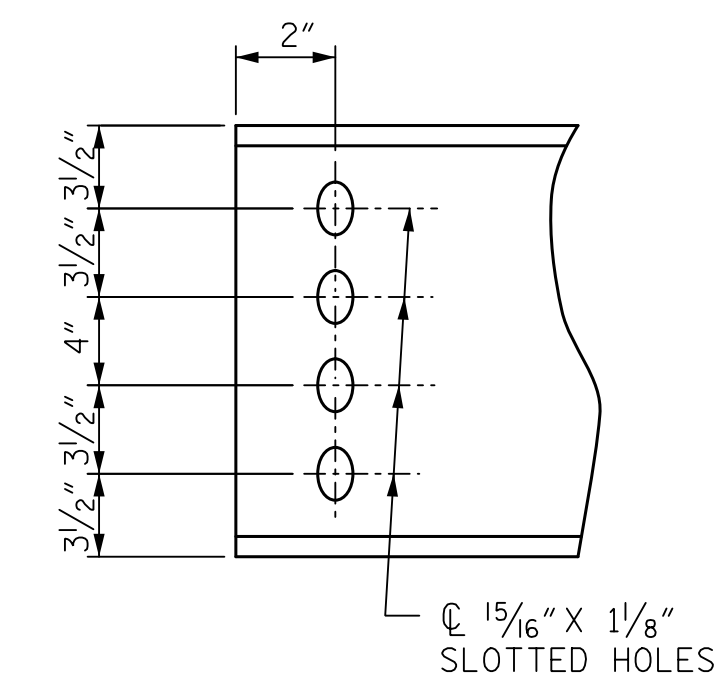
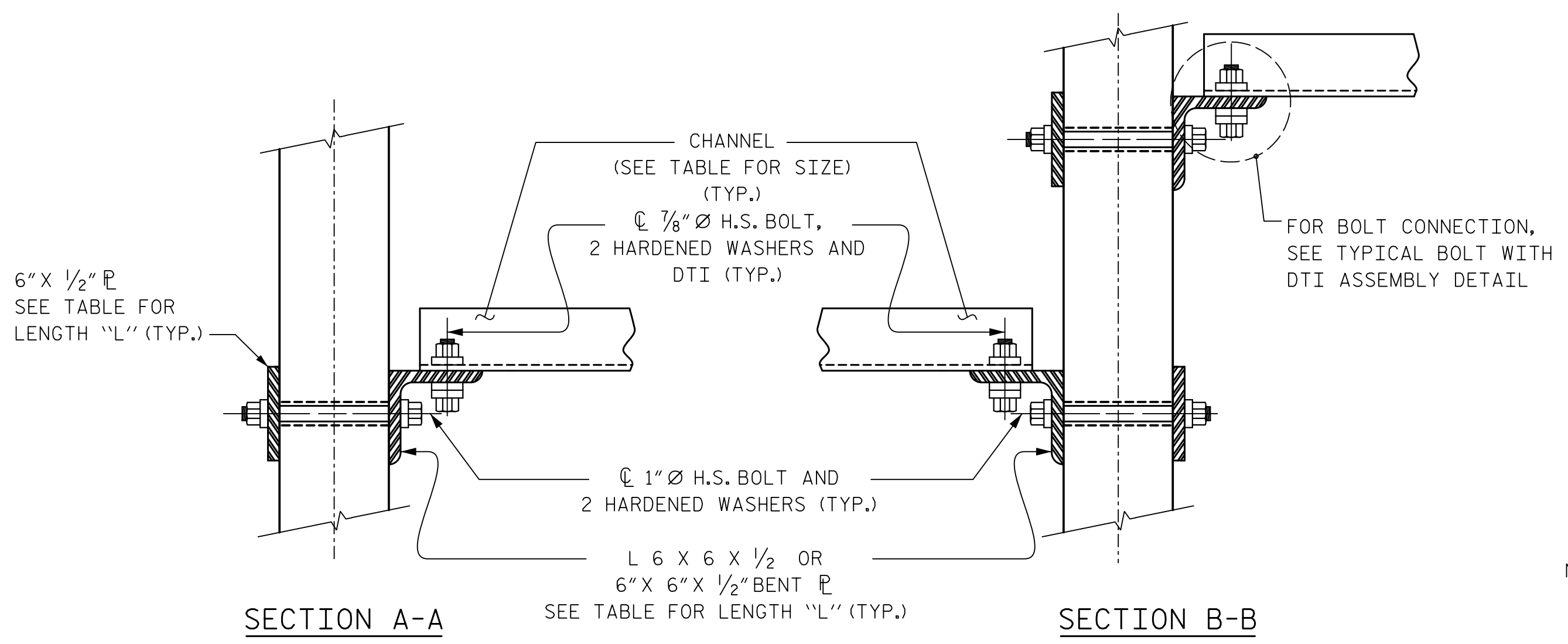


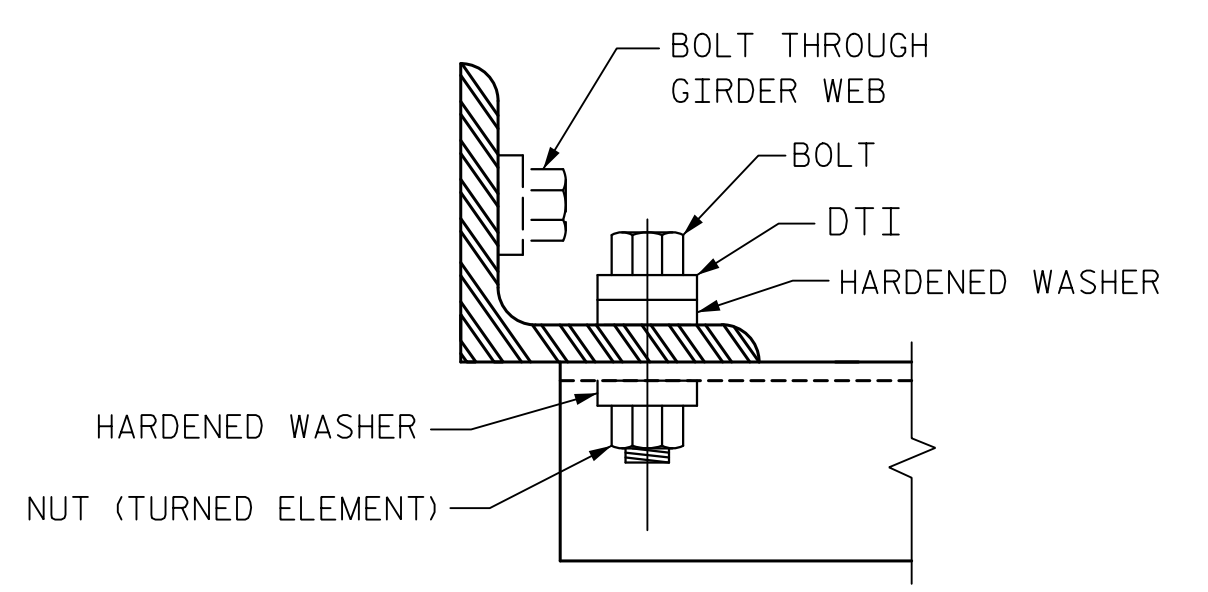
PLATE DETAILS



CHANNEL END



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 CHANNEL 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, CHANNELS, 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.

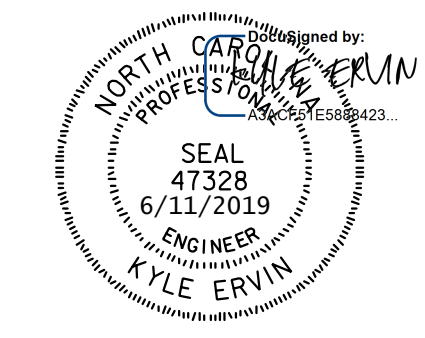
THE COST OF THE STEEL DIAPHRAGMS AND ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS.

TABLE

GIRDER TYPE	CHANNEL SIZE	DIM "A"	DIM "B"	DIM "L"
IV	MC 18 x 42.7	1'-9 1/2"	1'-2"	1'-6"

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 5 OF 5



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 INTERMEDIATE
 STEEL DIAPHRAGMS
 FOR TYPE IV
 PRESTRESSED CONCRETE
 GIRDERS

ASSEMBLED BY :	B. VAUGHN	DATE :	3/19
CHECKED BY :	K. ERVIN	DATE :	3/19
DRAWN BY :	TLA 6/05	REV. 5/1/06RRR	KMM/GM
CHECKED BY :	VC 6/05	REV. 10/1/11	MAA/GM
		REV. 12/17	MAA/THC

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DRAWN BY :	B. VAUGHN	DATE :	11/18
CHECKED BY :	K. ERVIN	DATE :	3/19
DESIGN ENGINEER OF RECORD :	K. ERVIN	DATE :	11/18
DWG. NO. 30			

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			

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.

THE 2" Ø PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.

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 "P", BOLTS, NUTS, WASHERS, AND PIPE SLEEVE 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.

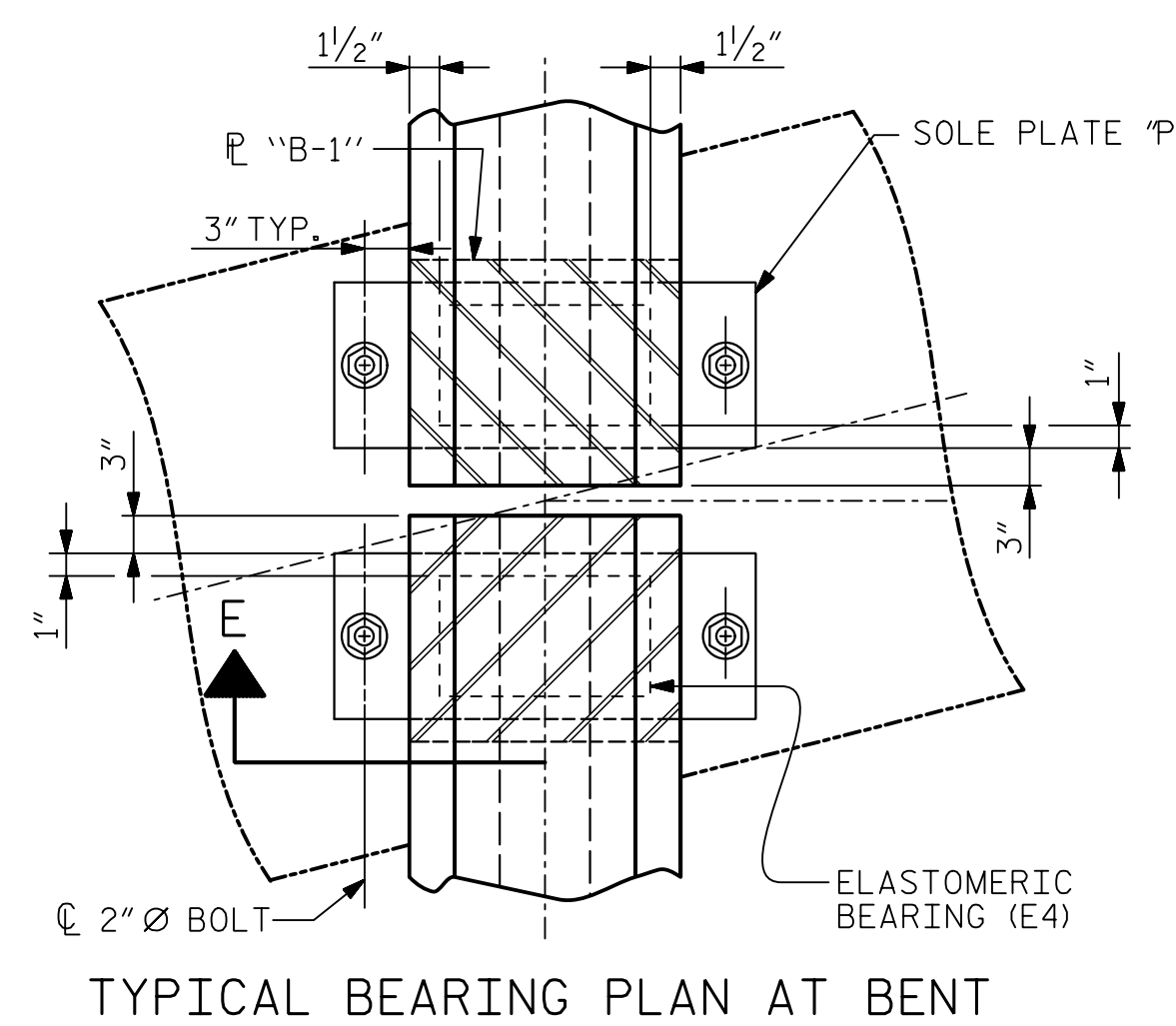
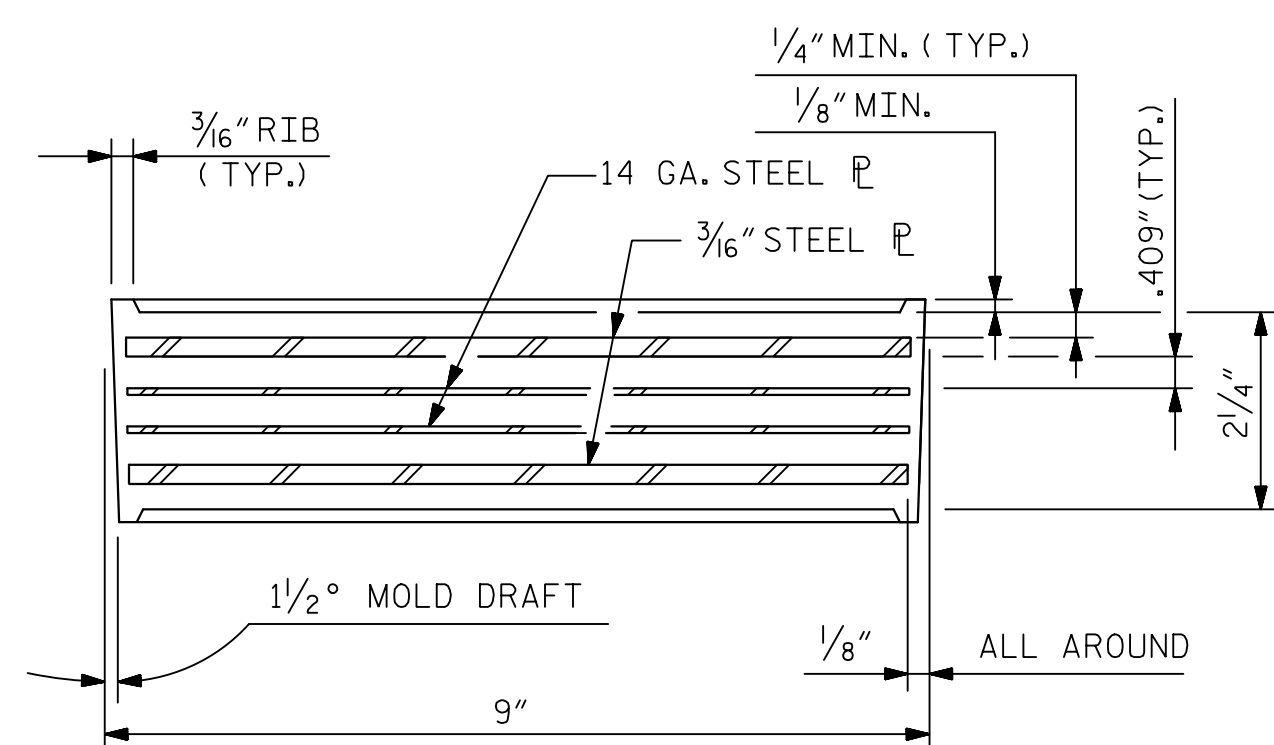
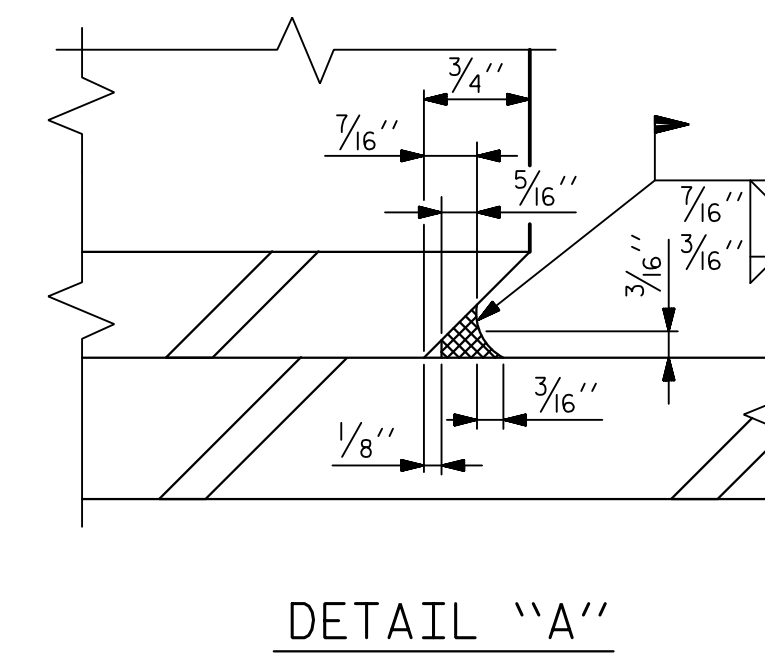
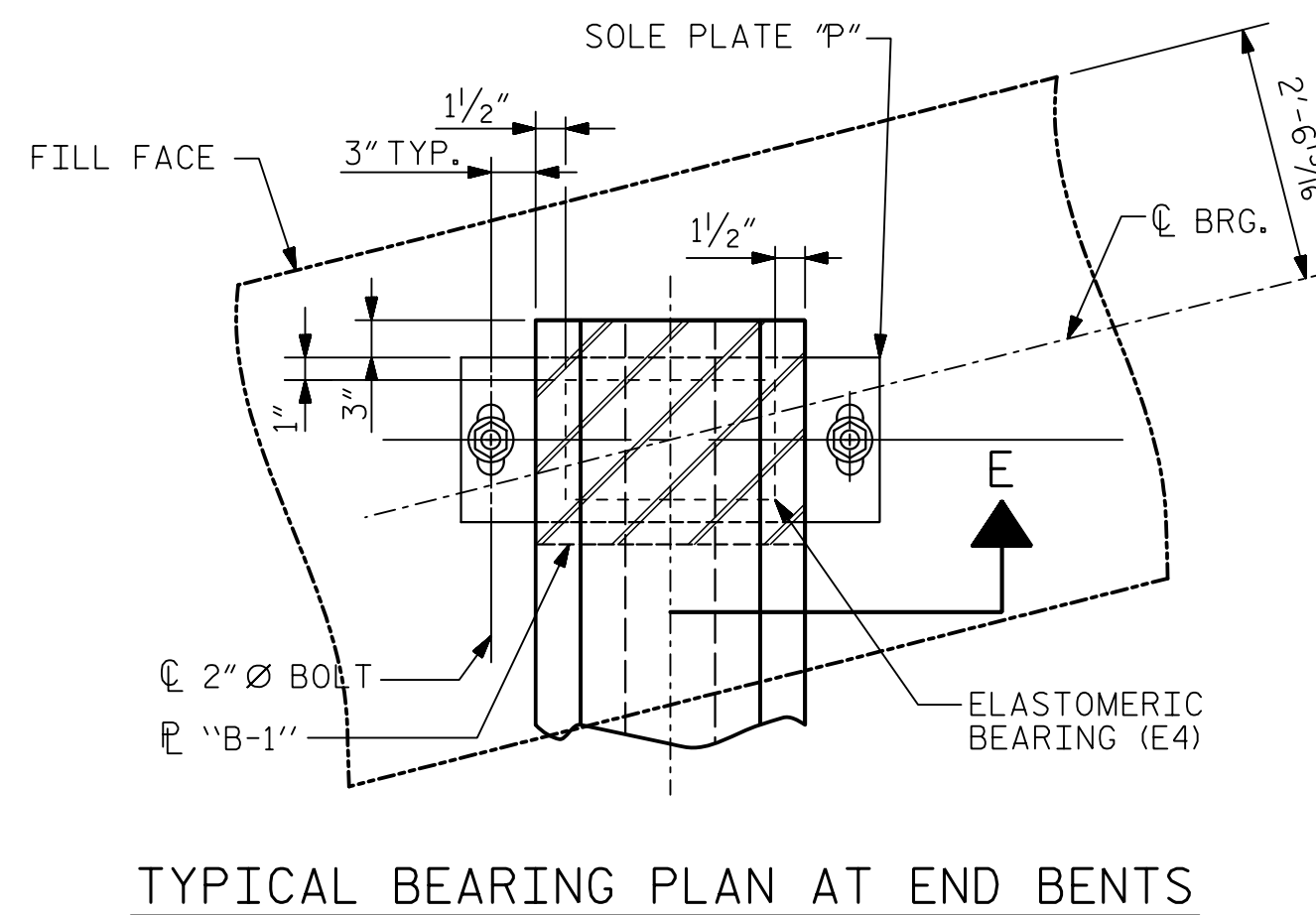
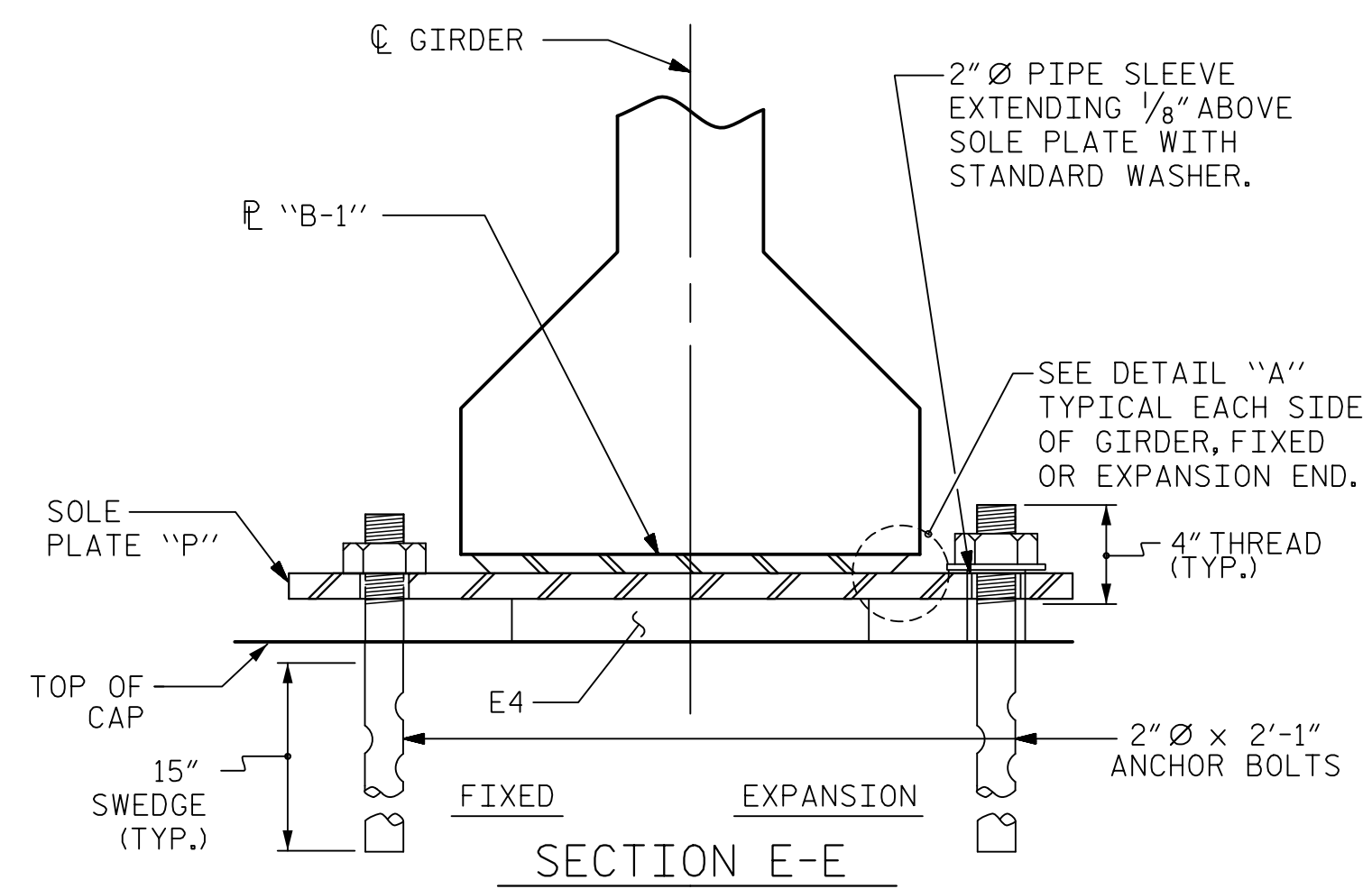
ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

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.

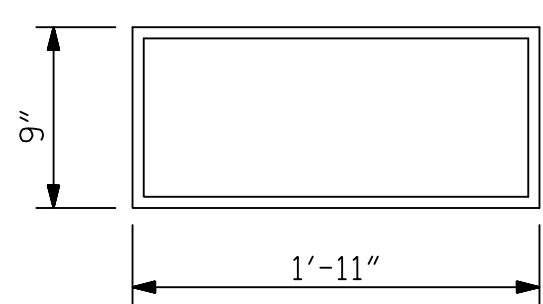
ALL SOLE PLATES SHALL BE AASHTO M270 GRADE 36.

FOR BEARING AND SOLE PLATE LOCATIONS, SEE "FRAMING PLAN" SHEETS.



TYPICAL SECTION OF ELASTOMERIC BEARINGS

TYPICAL BEARING PLAN AT BENT

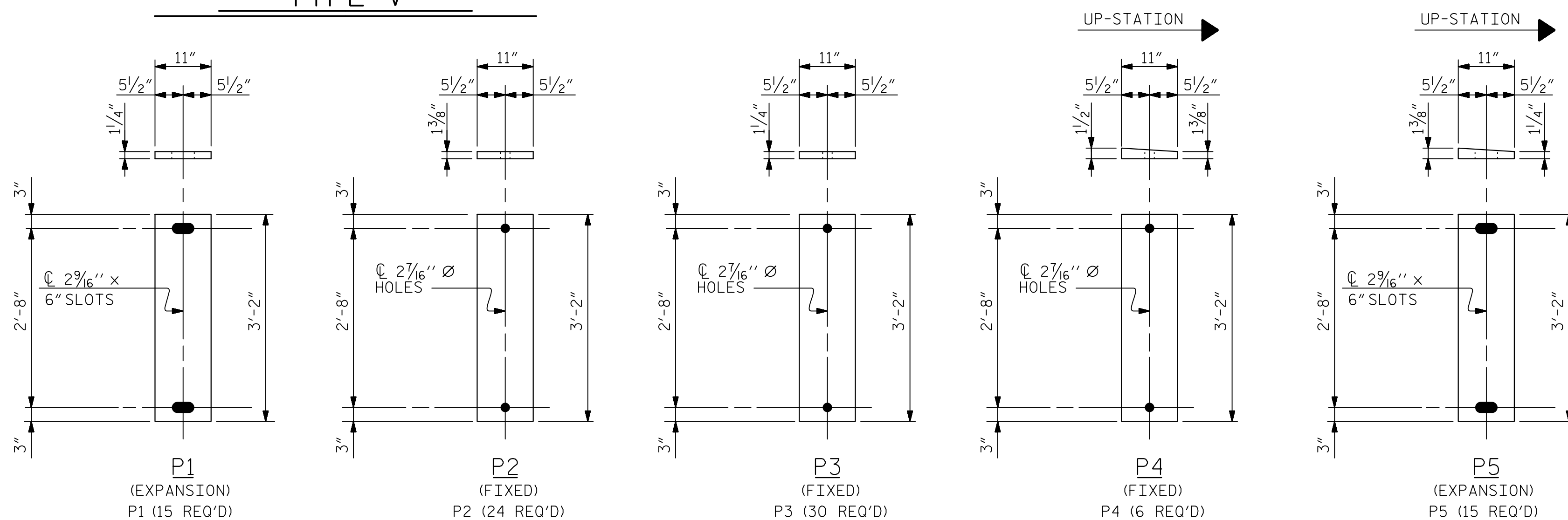


E4 (90 REQ'D)

PLAN VIEW OF ELASTOMERIC BEARING

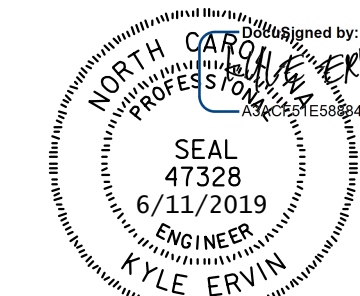
TYPE V

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE V	310 k



SOLE PLATE DETAILS ("P")

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-



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

ASSEMBLED BY : B. VAUGHN	DATE : 3/19
CHECKED BY : K. ERVIN	DATE : 3/19
DRAWN BY : EEM 2/97	REV. 5/1/06 TLA/GM
CHECKED BY : VAP 2/97	REV. 10/1/11 MAA/GM
	REV. 6/13 AAC/MAA

HNTB	HNTB NORTH CAROLINA, P.C. NC License No. C-1554 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609
DRAWN BY : B. VAUGHN	DATE : 11/18
CHECKED BY : K. ERVIN	DATE : 3/19
DESIGN ENGINEER OF RECORD : K. ERVIN	DATE : 11/18

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REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	S1-31	
1			3			TOTAL SHEETS	
2			4			81	

DEAD LOAD DEFLECTION TABLE FOR SPAN A											
0.6" Ø LOW RELAXATION STRANDS	GIRDER 1										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.018	0.034	0.047	0.055	0.057	0.055	0.047	0.034	0.018	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.008	-0.016	-0.022	-0.026	-0.027	-0.026	-0.022	-0.016	-0.008	0.000
FINAL CAMBER	↑ 0	1/8	1/4	5/16	3/8	3/8	3/8	5/16	1/4	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN B											
0.6" Ø LOW RELAXATION STRANDS	GIRDER 1										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.051	0.096	0.131	0.153	0.161	0.153	0.131	0.096	0.051	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.040	-0.079	-0.109	-0.128	-0.134	-0.128	-0.109	-0.079	-0.040	0.000
FINAL CAMBER	↑ 0	1/8	3/16	1/4	5/16	5/16	5/16	1/4	3/16	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN A											
0.6" Ø LOW RELAXATION STRANDS	GIRDERS 2 THRU 4										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.018	0.034	0.047	0.055	0.057	0.055	0.047	0.034	0.018	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.009	-0.018	-0.025	-0.029	-0.031	-0.029	-0.025	-0.018	-0.009	0.000
FINAL CAMBER	↑ 0	1/8	3/16	1/4	5/16	5/16	5/16	1/4	3/16	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN B											
0.6" Ø LOW RELAXATION STRANDS	GIRDERS 2 THRU 4										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.051	0.096	0.131	0.153	0.161	0.153	0.131	0.096	0.051	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.046	-0.089	-0.124	-0.145	-0.153	-0.145	-0.124	-0.089	-0.046	0.000
FINAL CAMBER	↑ 0	1/16	1/16	1/16	1/16	1/8	1/16	1/16	1/16	1/16	0

DEAD LOAD DEFLECTION TABLE FOR SPAN A											
0.6" Ø LOW RELAXATION STRANDS	GIRDER 5										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.018	0.034	0.047	0.055	0.057	0.055	0.047	0.034	0.018	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.006	-0.012	-0.017	-0.020	-0.021	-0.020	-0.017	-0.012	-0.006	0.000
FINAL CAMBER	↑ 0	1/8	1/4	3/8	7/16	7/16	7/16	3/8	1/4	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN B											
0.6" Ø LOW RELAXATION STRANDS	GIRDER 5										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.051	0.096	0.131	0.153	0.161	0.153	0.131	0.096	0.051	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.031	-0.061	-0.085	-0.100	-0.105	-0.100	-0.085	-0.061	-0.031	0.000
FINAL CAMBER	↑ 0	1/4	7/16	9/16	5/8	11/16	5/8	9/16	7/16	1/4	0

DEAD LOAD DEFLECTION TABLE FOR SPAN A											
0.6" Ø LOW RELAXATION STRANDS	GIRDERS 6 AND 9										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.018	0.034	0.047	0.055	0.057	0.055	0.047	0.034	0.018	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.006	-0.012	-0.016	-0.019	-0.020	-0.019	-0.016	-0.012	-0.006	0.000
FINAL CAMBER	↑ 0	1/8	1/4	3/8	7/16	7/16	7/16	3/8	1/4	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN B											
0.6" Ø LOW RELAXATION STRANDS	GIRDERS 6 AND 9										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.051	0.096	0.131	0.153	0.161	0.153	0.131	0.096	0.051	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.030	-0.059	-0.082	-0.097	-0.101	-0.097	-0.082	-0.059	-0.030	0.000
FINAL CAMBER	↑ 0	1/4	7/16	9/16	11/16	11/16	11/16	9/16	7/16	1/4	0

DEAD LOAD DEFLECTION TABLE FOR SPAN A											
0.6" Ø LOW RELAXATION STRANDS	GIRDERS 7 AND 8										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.018	0.034	0.047	0.055	0.057	0.055	0.047	0.034	0.018	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.008	-0.016	-0.022	-0.026	-0.027	-0.026	-0.022	-0.016	-0.008	0.000
FINAL CAMBER	↑ 0	1/8	1/4	5/16	3/8	3/8	3/8	5/16	1/4	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN B											
0.6" Ø LOW RELAXATION STRANDS	GIRDERS 7 AND 8										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.051	0.096	0.131	0.153	0.161	0.153	0.131	0.096	0.051	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.041	-0.080	-0.110	-0.130	-0.136	-0.130	-0.110	-0.080	-0.041	0.000
FINAL CAMBER	↑ 0	1/8	3/16	1/4	1/4	5/16	1/4	1/4	3/16	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN A											
0.6" Ø LOW RELAXATION STRANDS	GIRDER 10										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.018	0.034	0.047	0.055	0.057	0.055	0.047	0.034	0.018	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.006	-0.011	-0.016	-0.019	-0.020	-0.019	-0.016	-0.011	-0.006	0.000
FINAL CAMBER	↑ 0	1/8	1/4	3/8	7/16	7/16	7/16	3/8	1/4	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN B											
0.6" Ø LOW RELAXATION STRANDS	GIRDER 10										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.051	0.096	0.131	0.153	0.161	0.153	0.131	0.096	0.051	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.029	-0.057	-0.079	-0.092	-0.097	-0.092	-0.079	-0.057	-0.029	0.000
FINAL CAMBER	↑ 0	1/4	1/2	5/8	3/4	3/4	3/4	5/8	1/2	1/4	0

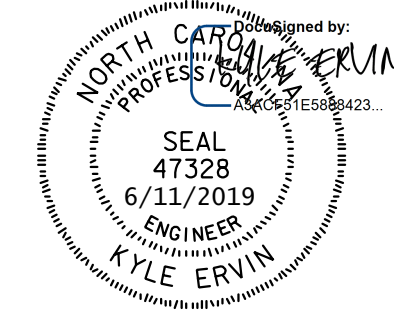
DEAD LOAD DEFLECTION TABLE FOR SPAN A											
0.6" Ø LOW RELAXATION STRANDS	GIRDERS 11 THRU 14										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.018	0.034	0.047	0.055	0.057	0.055	0.047	0.034	0.018	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.008	-0.016	-0.022	-0.026	-0.028	-0.026	-0.022	-0.016	-0.008	0.000
FINAL CAMBER	↑ 0	1/8	3/16	5/16	3/8	3/8	3/8	5/16	3/16	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN B											
0.6" Ø LOW RELAXATION STRANDS	GIRDERS 11 THRU 14										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.051	0.096	0.131	0.153	0.161	0.153	0.131	0.096	0.051	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.041	-0.081	-0.111	-0.131	-0.138	-0.131	-0.111	-0.081	-0.041	0.000
FINAL CAMBER	↑ 0	1/8	3/16	1/4	1/4	1/4	1/4	1/4	3/16	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN A											
0.6" Ø LOW RELAXATION STRANDS	GIRDER 15										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.018	0.034	0.047	0.055	0.057	0.055	0.047	0.034	0.018	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.008	-0.015	-0.021	-0.025	-0.026	-0.025	-0.021	-0.015	-0.008	0.000
FINAL CAMBER	↑ 0	1/8	1/4	5/16	3/8	3/8	3/8	5/16	1/4	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN B											
0.6" Ø LOW RELAXATION STRANDS	GIRDER 15										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.051	0.096	0.131	0.153	0.161	0.153	0.131	0.096	0.051	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.039	-0.075	-0.104	-0.122	-0.128	-0.122	-0.104	-0.075	-0.039	0.000
FINAL CAMBER	↑ 0	1/8	1/4	5/16	3/8	3/8	3/8	5/16	1/4	1/8	0

* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD. SUPERIMPOSED DEAD LOAD DOES NOT INCLUDE TEMPORARY BARRIERS NOR TEMPORARY OVERLAY. ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).



PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 1 OF 2
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 DEAD LOAD DEFLECTIONS

HNTB HNTB NORTH CAROLINA, P.C.
 NC License No. C-1554
 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY B. VAUGHN DATE 11/18
 CHECKED BY K. ERVIN DATE 3/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 11/18

DWG. NO. 32

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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			

DEAD LOAD DEFLECTION TABLE FOR SPAN C											
0.6" Ø LOW RELAXATION STRANDS	GIRDER 1										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.017	0.032	0.044	0.051	0.054	0.051	0.044	0.032	0.017	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.006	-0.013	-0.018	-0.021	-0.022	-0.021	-0.018	-0.013	-0.006	0.000
FINAL CAMBER	↑ 0	1/8	1/4	5/16	3/8	3/8	3/8	5/16	1/4	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN C											
0.6" Ø LOW RELAXATION STRANDS	GIRDERS 2 THRU 4										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.017	0.032	0.044	0.051	0.054	0.051	0.044	0.032	0.017	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.007	-0.014	-0.020	-0.024	-0.025	-0.024	-0.020	-0.014	-0.007	0.000
FINAL CAMBER	↑ 0	1/8	3/16	5/16	5/16	3/8	5/16	5/16	3/16	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN C											
0.6" Ø LOW RELAXATION STRANDS	GIRDER 5										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.017	0.032	0.044	0.051	0.054	0.051	0.044	0.032	0.017	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.005	-0.010	-0.014	-0.016	-0.017	-0.016	-0.014	-0.010	-0.005	0.000
FINAL CAMBER	↑ 0	1/8	1/4	3/8	7/16	7/16	7/16	3/8	1/4	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN C											
0.6" Ø LOW RELAXATION STRANDS	GIRDERS 6 AND 9										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.017	0.032	0.044	0.051	0.054	0.051	0.044	0.032	0.017	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.005	-0.010	-0.013	-0.016	-0.017	-0.016	-0.013	-0.010	-0.005	0.000
FINAL CAMBER	↑ 0	1/8	1/4	3/8	7/16	7/16	7/16	3/8	1/4	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN C											
0.6" Ø LOW RELAXATION STRANDS	GIRDERS 7 AND 8										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.017	0.032	0.044	0.051	0.054	0.051	0.044	0.032	0.017	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.007	-0.013	-0.018	-0.021	-0.022	-0.021	-0.018	-0.013	-0.007	0.000
FINAL CAMBER	↑ 0	1/8	1/4	5/16	3/8	3/8	3/8	5/16	1/4	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN C											
0.6" Ø LOW RELAXATION STRANDS	GIRDER 10										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.017	0.032	0.044	0.051	0.054	0.051	0.044	0.032	0.017	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.005	-0.009	-0.013	-0.015	-0.016	-0.015	-0.013	-0.009	-0.005	0.000
FINAL CAMBER	↑ 0	1/8	1/4	3/8	7/16	7/16	7/16	3/8	1/4	1/8	0

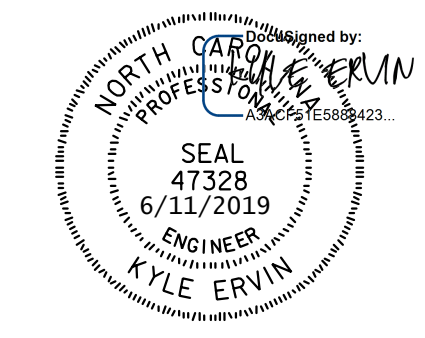
DEAD LOAD DEFLECTION TABLE FOR SPAN C											
0.6" Ø LOW RELAXATION STRANDS	GIRDERS 11 THRU 14										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.017	0.032	0.044	0.051	0.054	0.051	0.044	0.032	0.017	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.007	-0.013	-0.018	-0.021	-0.022	-0.021	-0.018	-0.013	-0.007	0.000
FINAL CAMBER	↑ 0	1/8	1/4	5/16	3/8	3/8	3/8	5/16	1/4	1/8	0

DEAD LOAD DEFLECTION TABLE FOR SPAN C											
0.6" Ø LOW RELAXATION STRANDS	GIRDER 15										
TENTH POINTS	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.017	0.032	0.044	0.051	0.054	0.051	0.044	0.032	0.017	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. * ↓	0.000	-0.006	-0.012	-0.017	-0.020	-0.021	-0.020	-0.017	-0.012	-0.006	0.000
FINAL CAMBER	↑ 0	1/8	1/4	5/16	3/8	3/8	3/8	5/16	1/4	1/8	0

* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD.
 SUPERIMPOSED DEAD LOAD DOES NOT INCLUDE TEMPORARY BARRIERS NOR TEMPORARY OVERLAY.
 ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 DEAD LOAD DEFLECTIONS

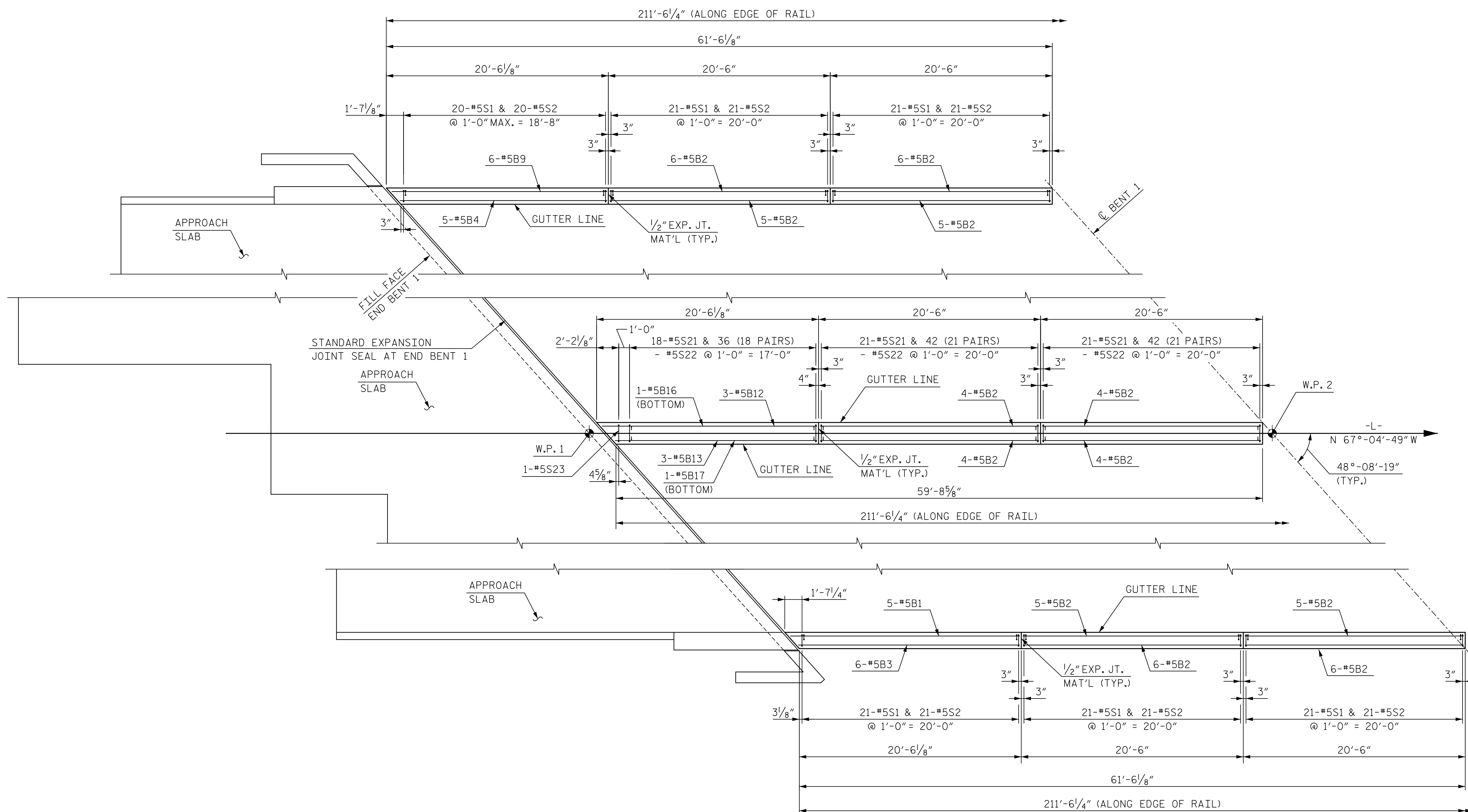
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 NC License No. C-1554
 343 E. Six Forks Rd., Suite 200, Raleigh, NC. 27609

DRAWN BY B. VAUGHN DATE 11/18
 CHECKED BY K. ERVIN DATE 3/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 11/18

DWG. NO. 33

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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			



SPAN A
 PLAN OF BARRIER RAIL
 EDGE OF SLAB NOT SHOWN FOR CLARITY

- NOTES:**
- FOR PLAN OF BARRIER RAIL SPAN B, SEE SHEET 2 OF 5.
 - FOR PLAN OF BARRIER RAIL SPAN C, SEE SHEET 3 OF 5.
 - FOR NOTES, BARRIER RAIL DETAILS, END OF RAIL DETAILS, AND BILL OF MATERIALS, SEE SHEET 4 OF 5.
 - FOR NOTES, MEDIAN BARRIER DETAILS, AND BILL OF MATERIALS, SEE SHEET 5 OF 5.
 - "W.P." DENOTES WORK POINT
 - FOR APPROACH SLAB CONCRETE BARRIER RAIL AND CONCRETE MEDIAN BARRIER REINFORCING, SEE "BRIDGE APPROACH SLAB FOR RIGID PAVEMENT" SHEET 11 OF 11.

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE

CONCRETE
 BARRIER RAIL
 SPAN A



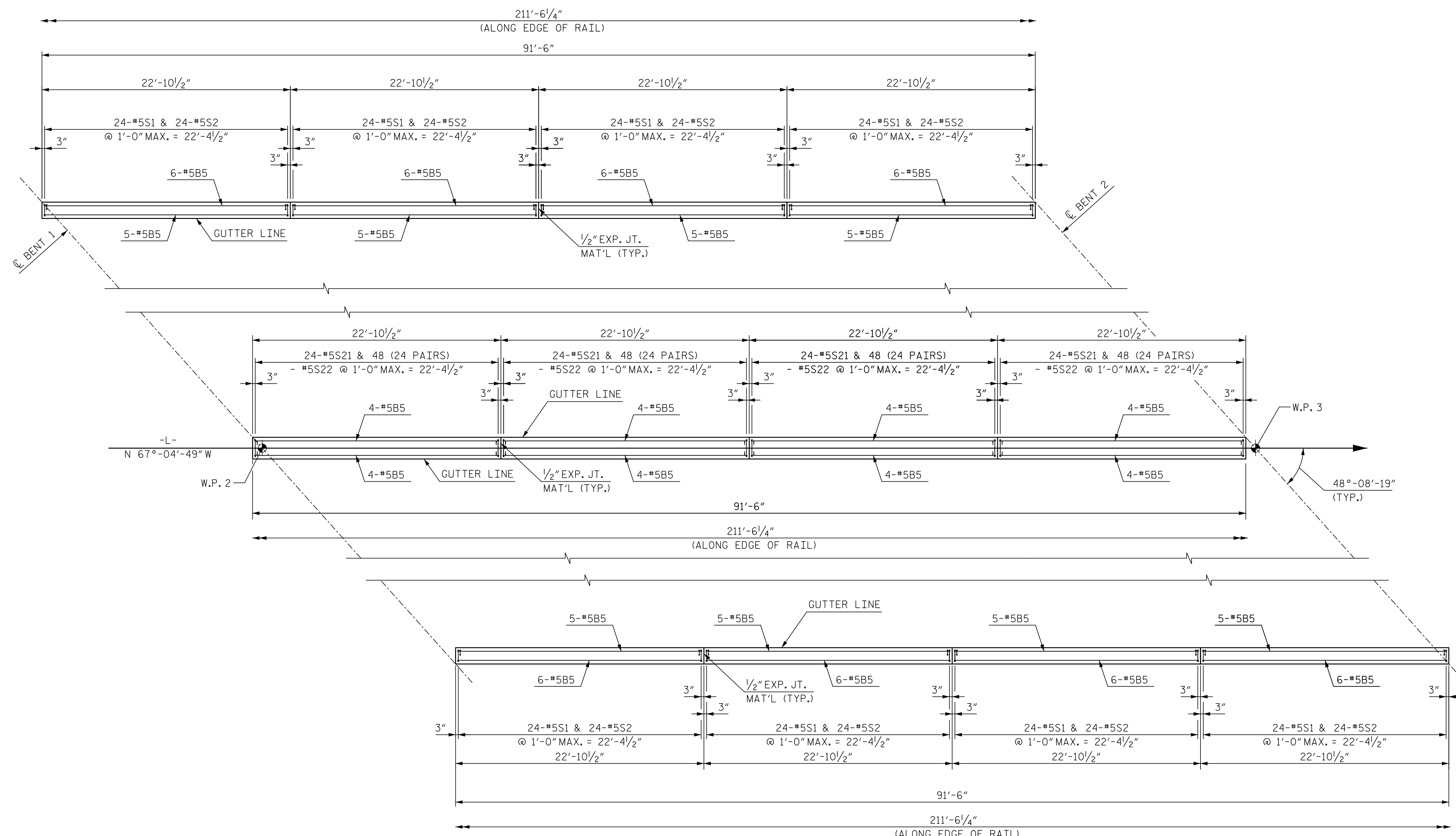
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DRAWN BY B. VAUGHN DATE 11/18
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DWG. NO. 34

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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			



SPAN B
 PLAN OF BARRIER RAIL
 EDGE OF SLAB NOT SHOWN FOR CLARITY

NOTES:
 FOR PLAN OF BARRIER RAIL SPAN A, SEE SHEET 1 OF 5.
 FOR PLAN OF BARRIER RAIL SPAN C, SEE SHEET 3 OF 5.
 FOR NOTES, BARRIER RAIL DETAILS, END OF RAIL DETAILS, AND BILL OF MATERIALS, SEE SHEET 4 OF 5.
 FOR NOTES, MEDIAN BARRIER DETAILS, AND BILL OF MATERIALS, SEE SHEET 5 OF 5.
 "W.P." DENOTES WORK POINT
 FOR APPROACH SLAB CONCRETE BARRIER RAIL AND CONCRETE MEDIAN BARRIER REINFORCING, SEE "BRIDGE APPROACH SLAB FOR RIGID PAVEMENT" SHEET 11 OF 11.

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 2 OF 5
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 CONCRETE
 BARRIER RAIL
 SPAN B



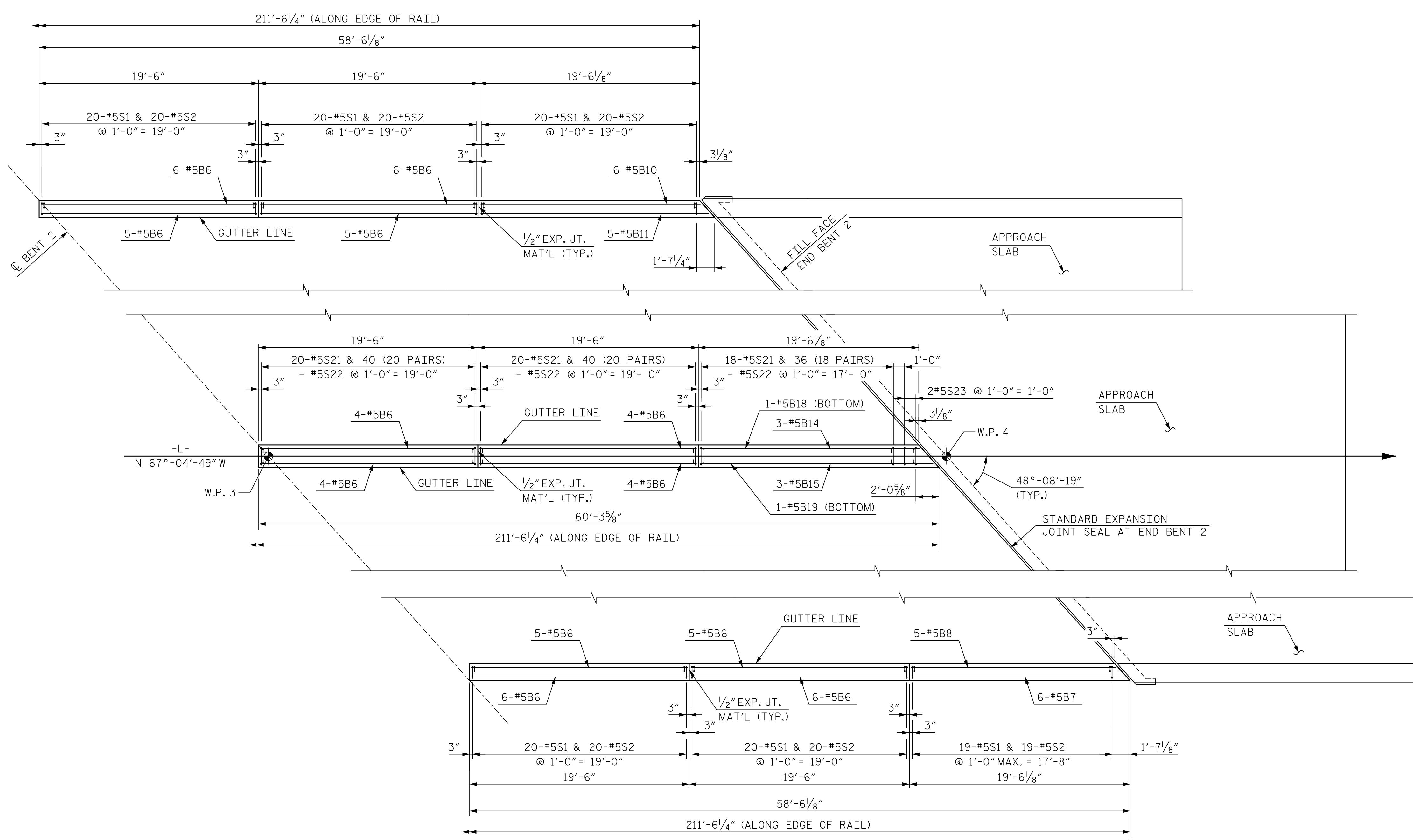
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DRAWN BY B. VAUGHN DATE 11/18
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DWG. NO. 35

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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			



SPAN C
 PLAN OF BARRIER RAIL
 EDGE OF SLAB NOT SHOWN FOR CLARITY

NOTES:
 FOR PLAN OF BARRIER RAIL SPAN A, SEE SHEET 1 OF 5.
 FOR PLAN OF BARRIER RAIL SPAN B, SEE SHEET 2 OF 5.
 FOR NOTES, BARRIER RAIL DETAILS, END OF RAIL DETAILS, AND BILL OF MATERIALS, SEE SHEET 4 OF 5.
 FOR NOTES, MEDIAN BARRIER DETAILS, AND BILL OF MATERIALS, SEE SHEET 5 OF 5.
 "W.P." DENOTES WORK POINT
 FOR APPROACH SLAB CONCRETE BARRIER RAIL AND CONCRETE MEDIAN BARRIER REINFORCING, SEE "BRIDGE APPROACH SLAB FOR RIGID PAVEMENT" SHEET 11 OF 11.

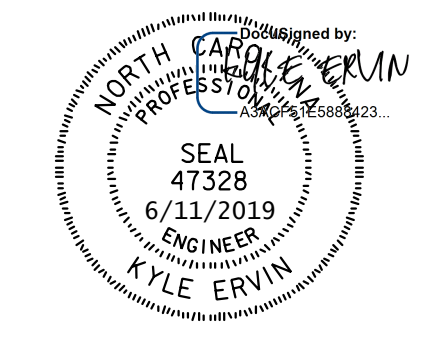
PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE

CONCRETE
 BARRIER RAIL
 SPAN C



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DRAWN BY B. VAUGHN DATE 11/18
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 DESIGN ENGINEER OF RECORD K. ERVIN DATE 3/19

DWG. NO. 36

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REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			81	
2			4				

NOTES

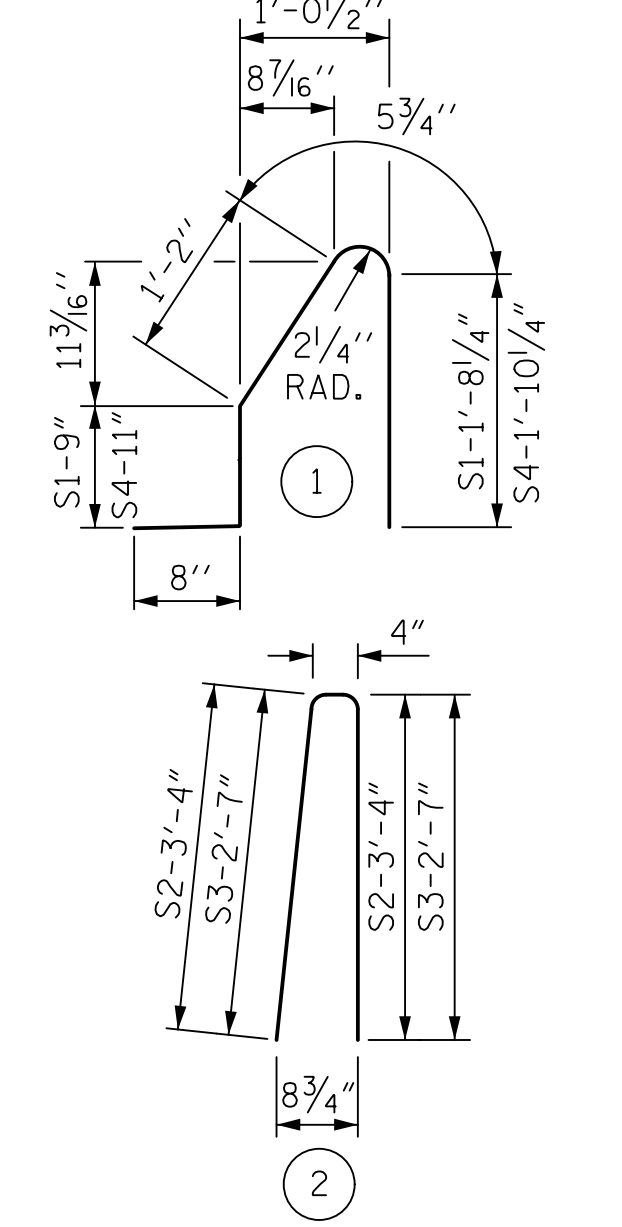
THE BARRIER RAIL IN EACH SPAN SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

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 LIST AND QUANTITIES SHOWN ON THIS SHEET DO NOT INCLUDE BARRIERS ON APPROACH SLABS. FOR BARRIERS ON APPROACH SLABS, SEE "BRIDGE APPROACH SLAB FOR RIGID PAVEMENT" SHEET 11 OF 11.

BAR TYPES

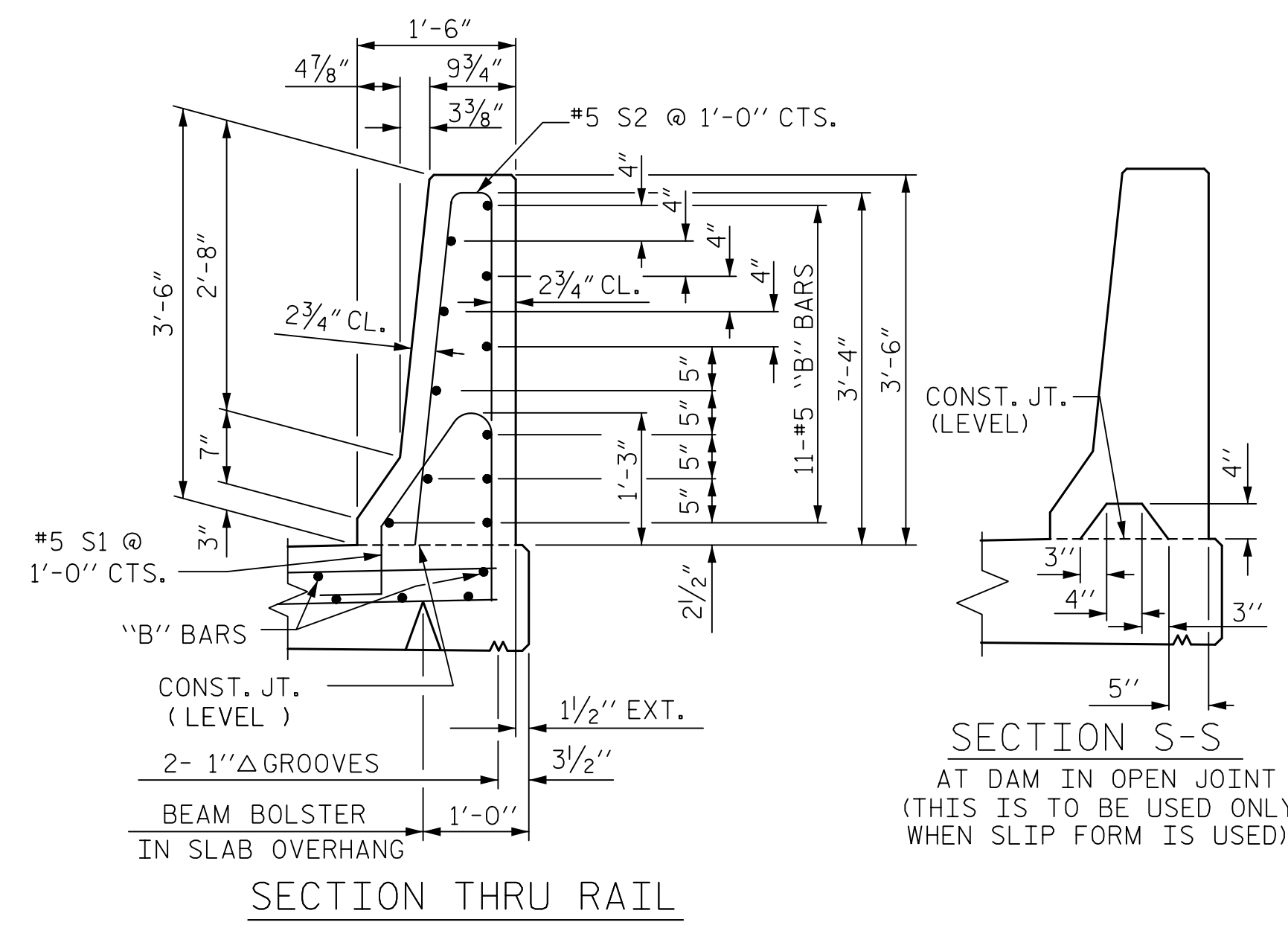


ALL BAR DIMENSIONS ARE OUT TO OUT

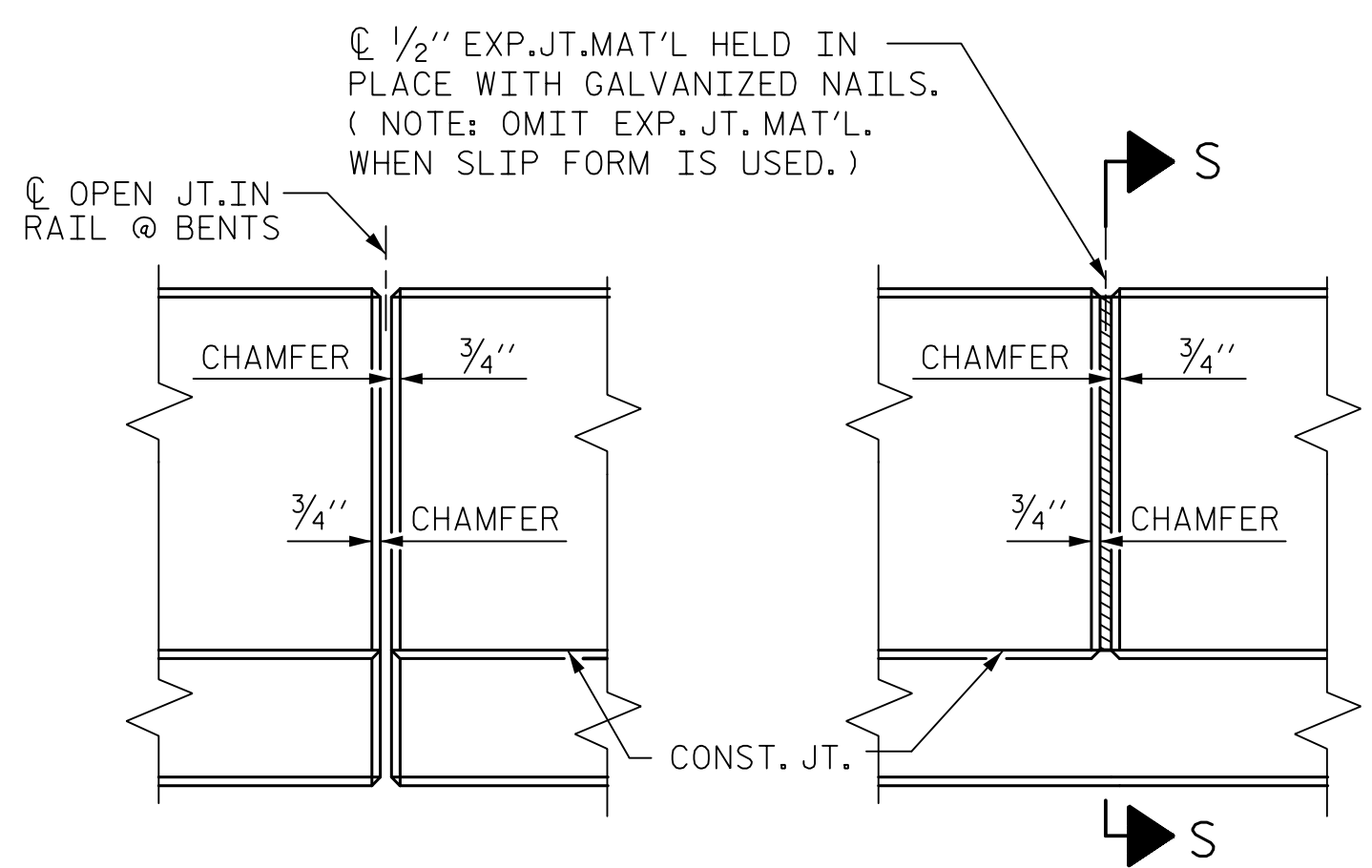
BILL OF MATERIAL

FOR CONCRETE BARRIER RAIL ONLY

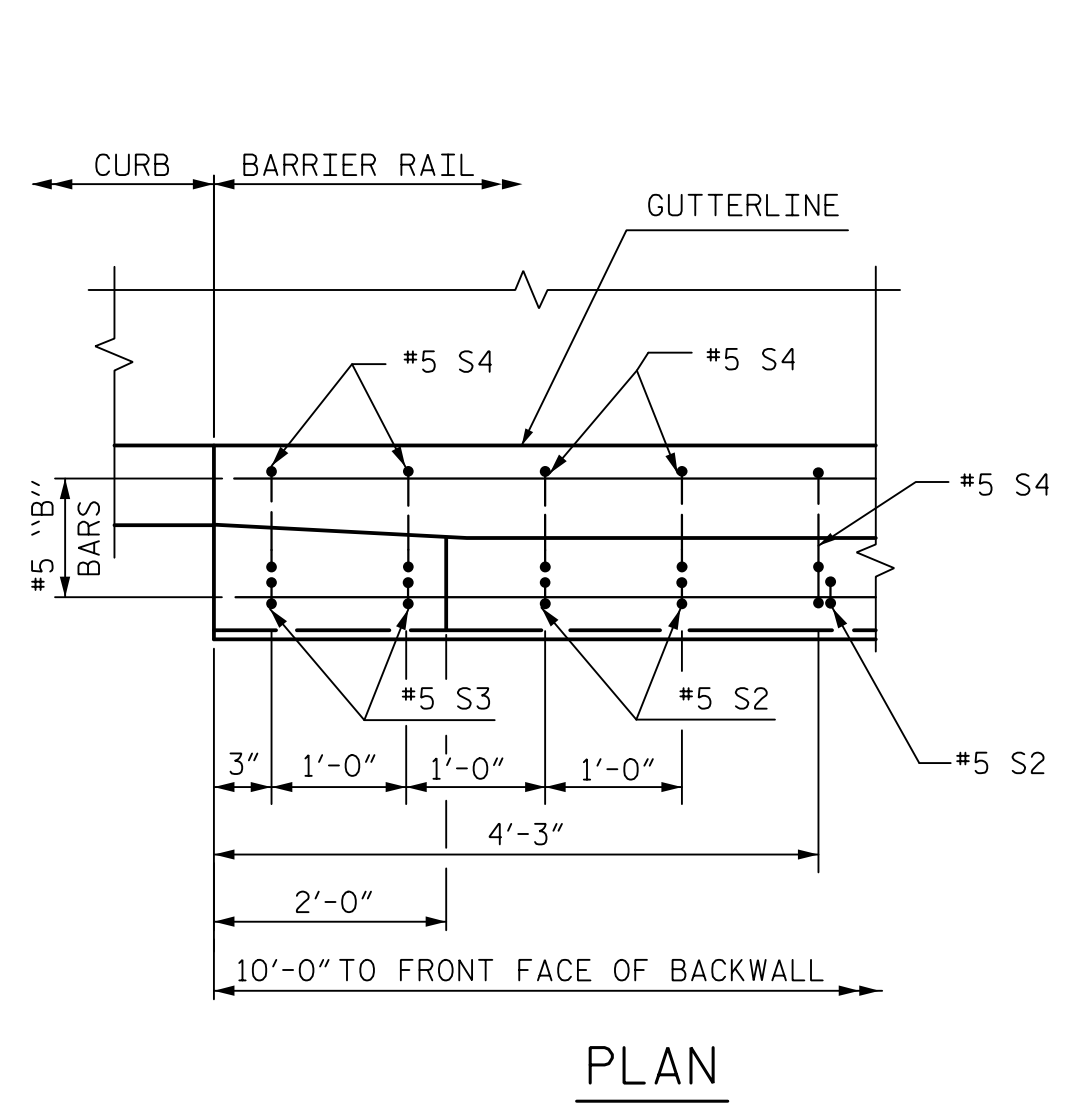
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* S1	436	#5	1	4'-9"	2,161
* S2	436	#5	2	7'-0"	3,184
* B1	5	#5	STR	20'-9"	109
* B2	44	#5	STR	20'-2"	926
* B3	6	#5	STR	20'-4"	128
* B4	5	#5	STR	19'-0"	100
* B5	88	#5	STR	22'-6"	2,066
* B6	44	#5	STR	19'-2"	880
* B7	6	#5	STR	18'-10"	118
* B8	5	#5	STR	18'-0"	94
* B9	6	#5	STR	19'-10"	125
* B10	6	#5	STR	19'-4"	121
* B11	5	#5	STR	19'-9"	103
* EPOXY COATED REINFORCING STEEL				10,115	LBS.
CLASS AA CONCRETE				57.6	CU. YDS.
CONCRETE BARRIER RAIL				423.1	LIN. FT.



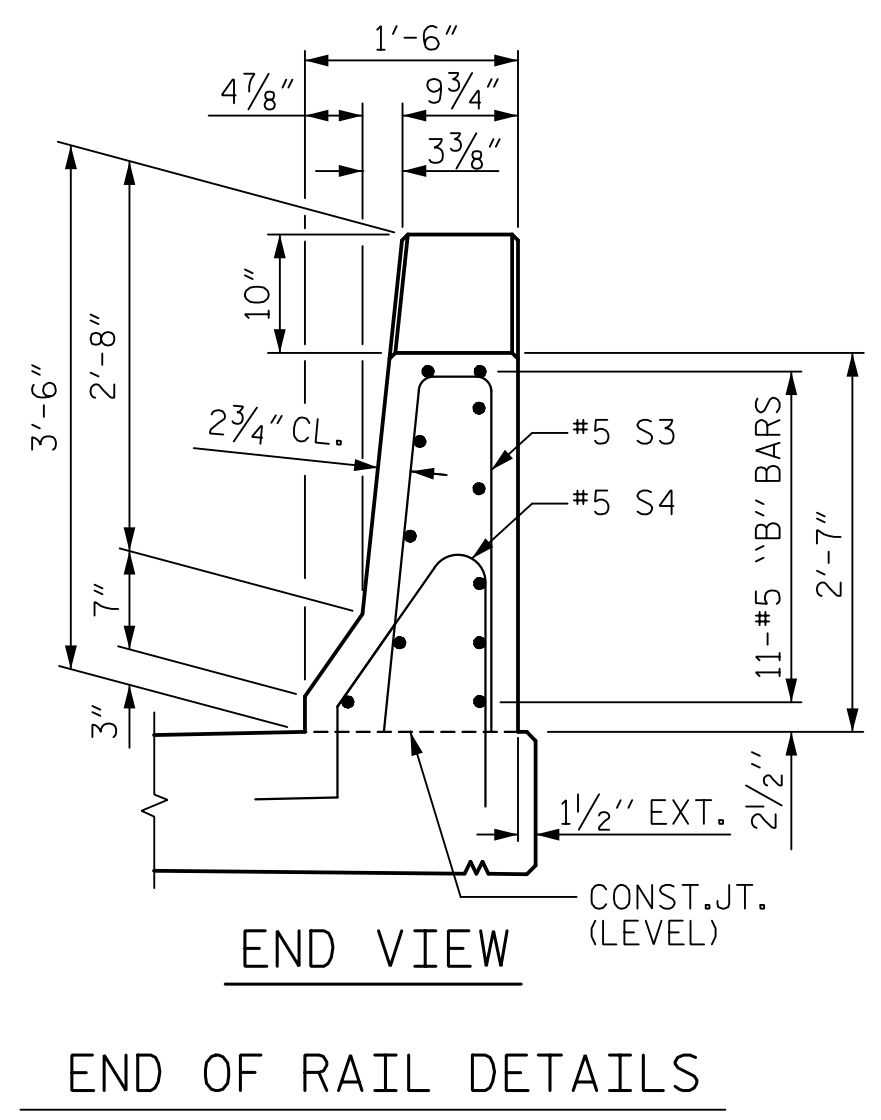
SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS BARRIER RAIL DETAILS

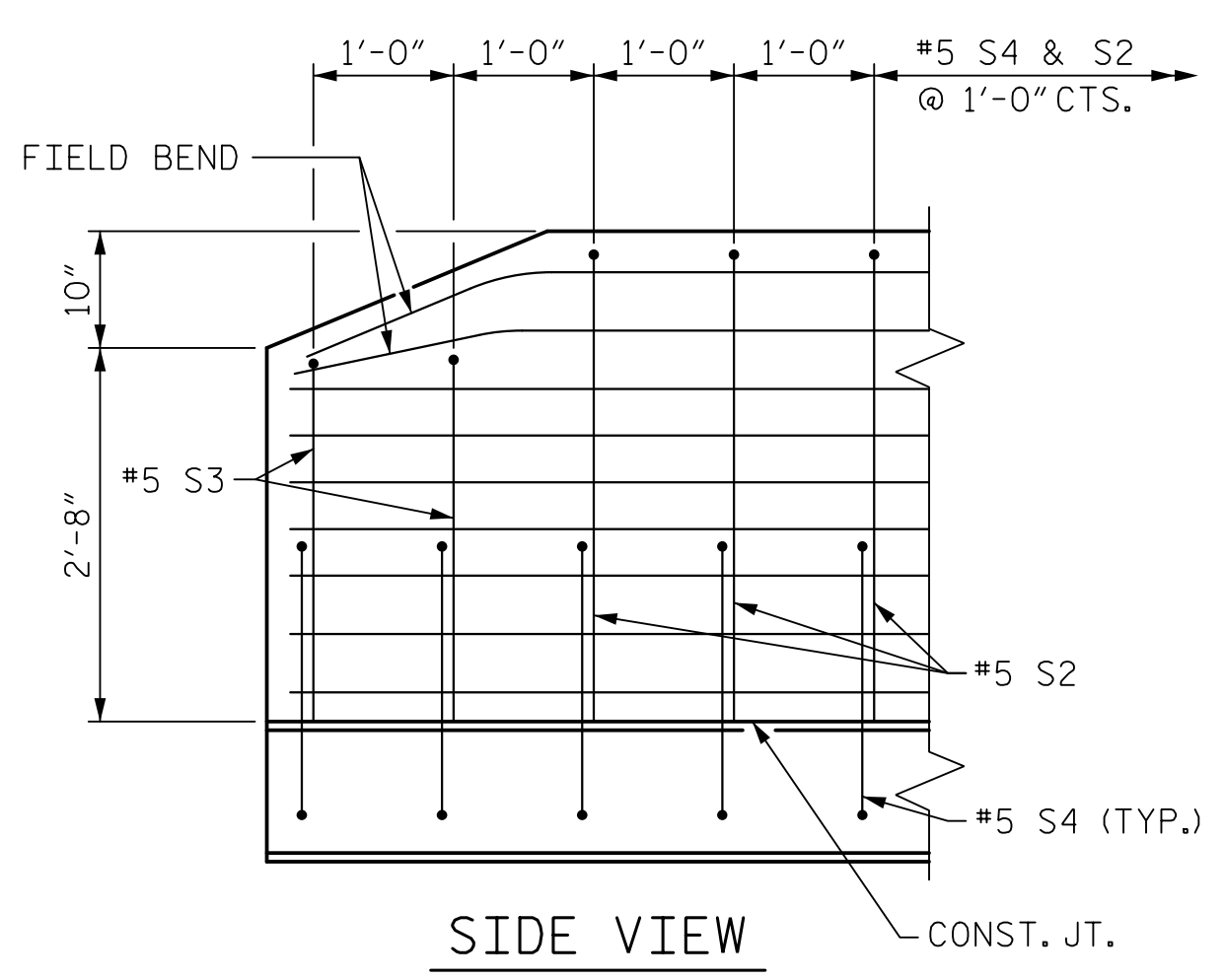


PLAN



END VIEW
END OF RAIL DETAILS

APPROACH SLAB @ END BENT 1



SIDE VIEW

ASSEMBLED BY : B. VAUGHN	DATE : 1/18
CHECKED BY : M. SWERDUK	DATE : 3/19
DRAWN BY : ARB 5/87	REV. 7/12
CHECKED BY : SJD 9/87	REV. 6/13
	REV. 12/17
	MAA/GM
	MAA/GM
	MAA/THC

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NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, NC. 27609

DESIGNED BY : B. VAUGHN DATE : 1/18
CHECKED BY : K. ERVIN DATE : 1/19
DESIGN ENGINEER OF RECORD : K. ERVIN DATE : 1/19

SEAL 47328
6/11/2019
ENGINEER
KYLE ERVIN

DWG. NO. 37

PROJECT NO. I-4400C
HENDERSON COUNTY
STATION: POT 659+58.95 -L-

SHEET 4 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
CONCRETE
BARRIER RAIL

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	S1-37	
1			3			TOTAL SHEETS	
2			4			81	

STD. NO. CBR1

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.

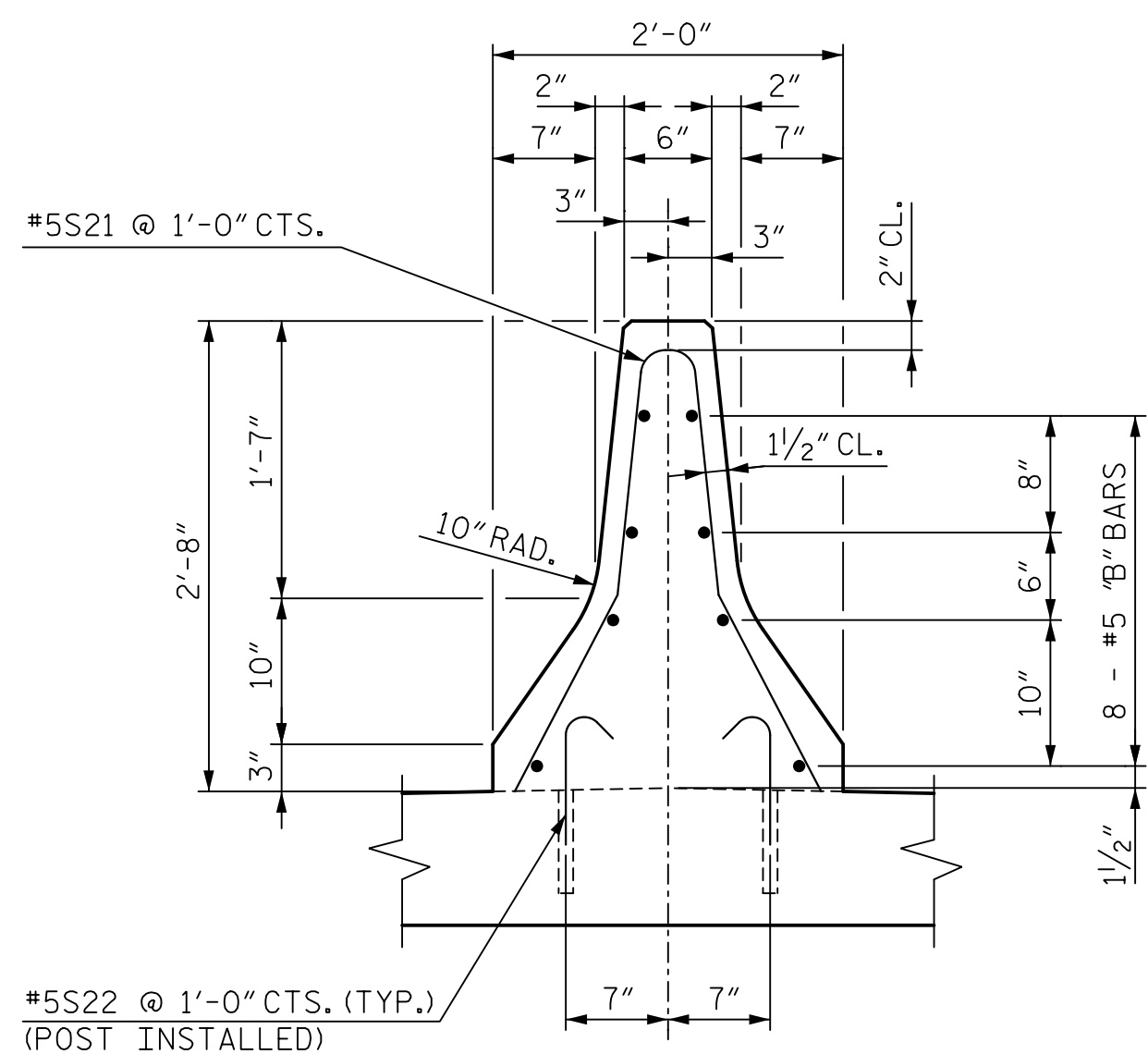
ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

THE #5 S22 BARS SHALL BE POST-INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM DURING THE PRESCRIBED CONSTRUCTION STAGE. THE YIELD LOAD FOR THE #5 S22 BARS IS 18.6 KIPS. TYPICAL EMBEDMENT OF #5 S22 BARS IS 5', THIS LENGTH SHALL BE ADJUSTED IN ORDER TO ACHIEVE FULL YIELD LOAD OF THE BAR BASED ON THE ADHESIVE SYSTEM USED. LEVEL TWO FIELD TESTING IS REQUIRED FOR THE ADHESIVE BONDING SYSTEM.

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.

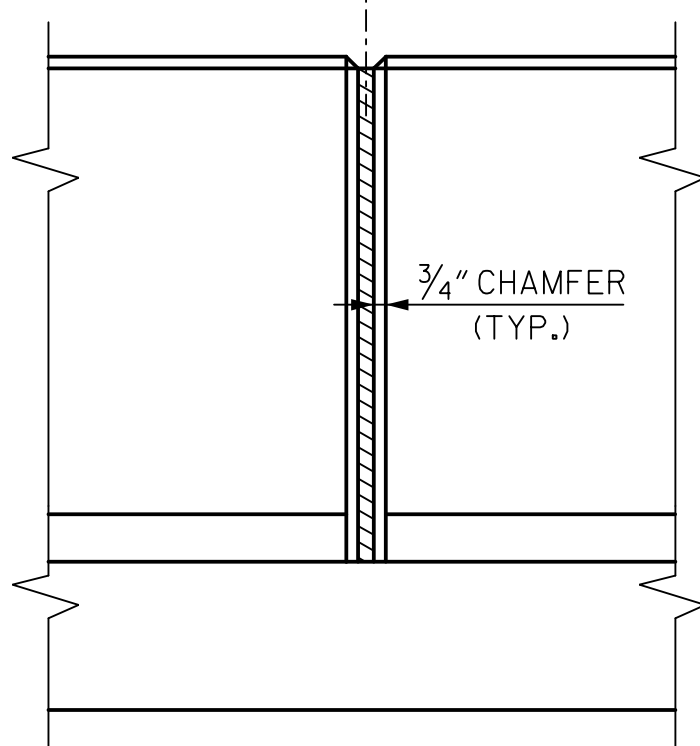
BAR LIST AND QUANTITIES SHOWN ON THIS SHEET DO NOT INCLUDE BARRIERS ON APPROACH SLABS. FOR BARRIERS ON APPROACH SLABS, SEE "BRIDGE APPROACH SLAB FOR RIGID PAVEMENT" SHEET 11 OF 11.

FOR CONCRETE MEDIAN BARRIER BLOCKOUT AT EXPANSION JOINT, SEE "EXPANSION JOINT SEAL DETAILS FOR MEDIAN BARRIER" SHEET.



SECTION THRU CONCRETE MEDIAN BARRIER

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

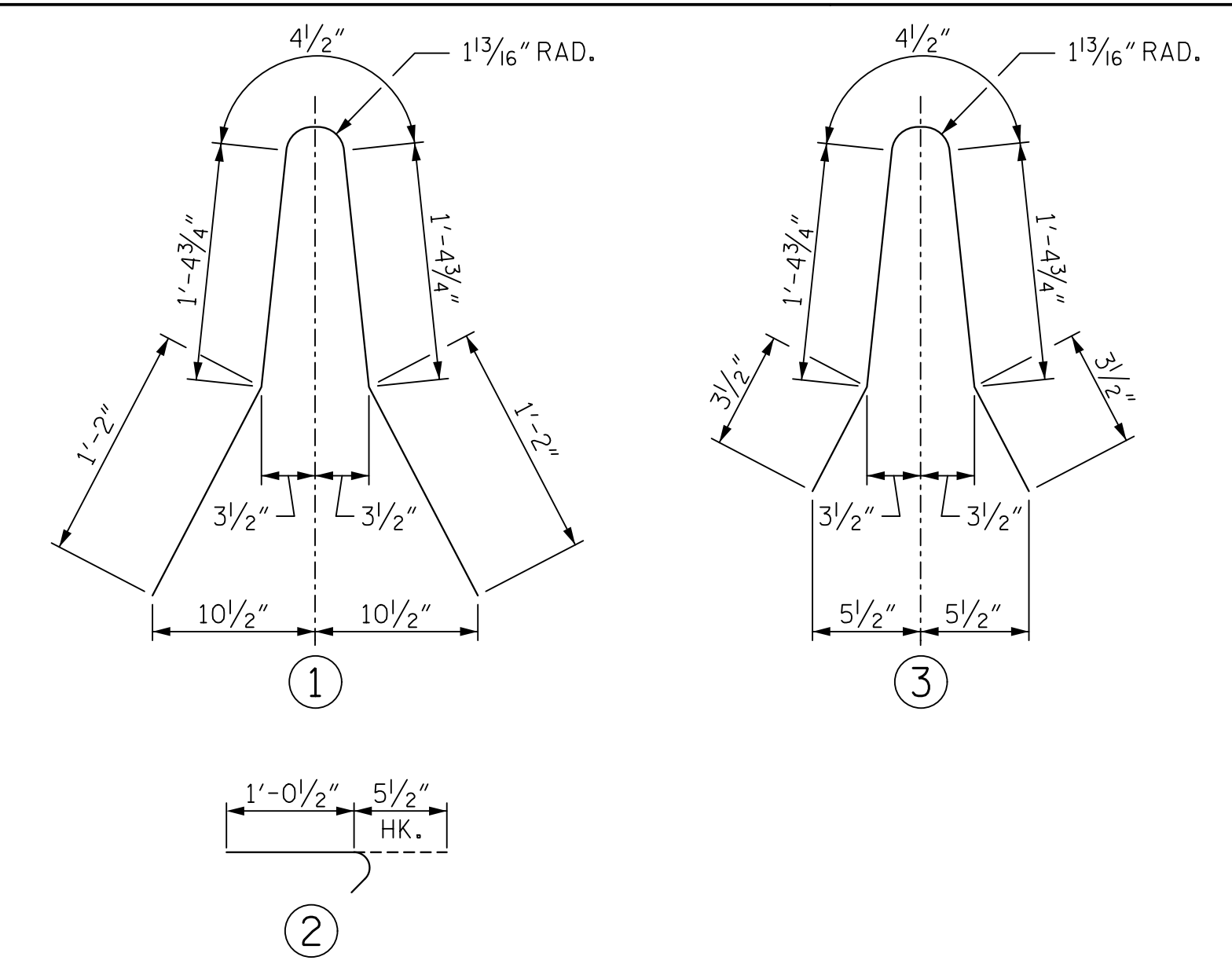


ELEVATION AT BARRIER EXP. JT.

BILL OF MATERIAL

FOR CONCRETE MEDIAN BARRIER ONLY					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* S21	214	#5	1	5'-6"	1,228
* S22	428	#5	2	1'-6"	670
* S23	3	#5	3	3'-9"	12
* B2	16	#5	STR	20'-2"	337
* B5	32	#5	STR	22'-6"	751
* B6	16	#5	STR	19'-2"	320
* B12	3	#5	STR	19'-5"	61
* B13	3	#5	STR	19'-0"	60
* B14	3	#5	STR	19'-9"	62
* B15	3	#5	STR	20'-2"	64
* B16	1	#5	STR	18'-9"	20
* B17	1	#5	STR	17'-5"	19
* B18	1	#5	STR	18'-2"	19
* B19	1	#5	STR	19'-6"	21
* EPOXY COATED REINFORCING STEEL 3,644 LBS.					
CLASS AA CONCRETE 21.5 CU. YDS.					
CONCRETE MEDIAN BARRIER 211.6 LIN. FT.					

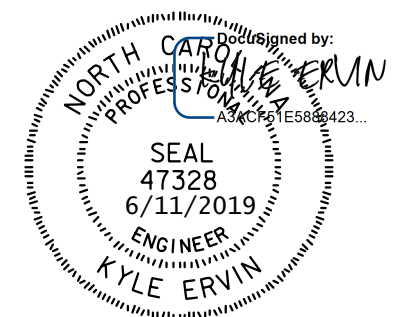
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 5 OF 5
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 CONCRETE MEDIAN BARRIER



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DRAWN BY B. VAUGHN DATE 1/18
 CHECKED BY K. ERVIN DATE 1/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 1/19

DWG. NO. 38

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REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			S1-38	
2			4			81	

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.)

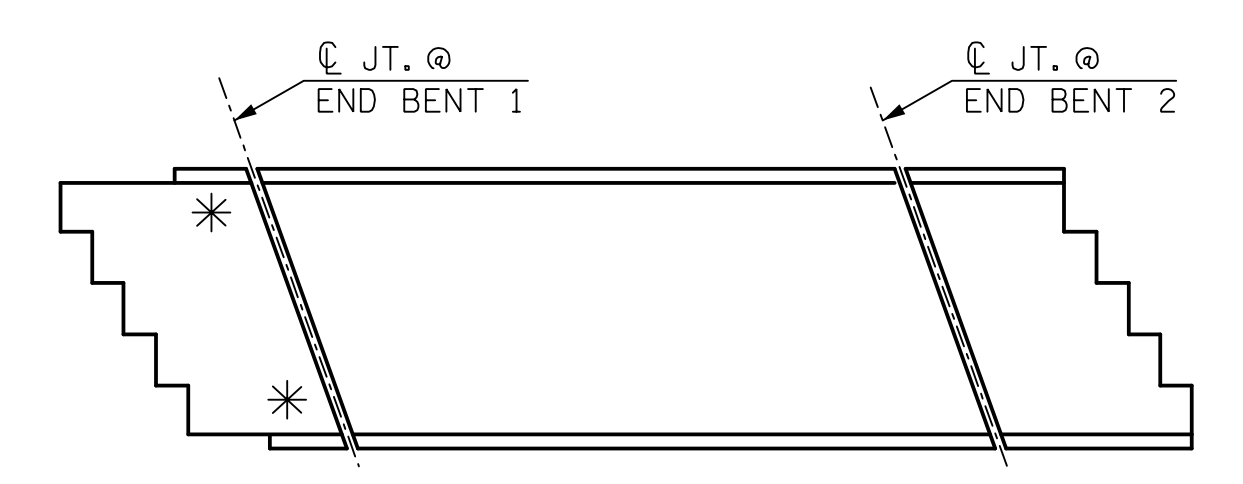
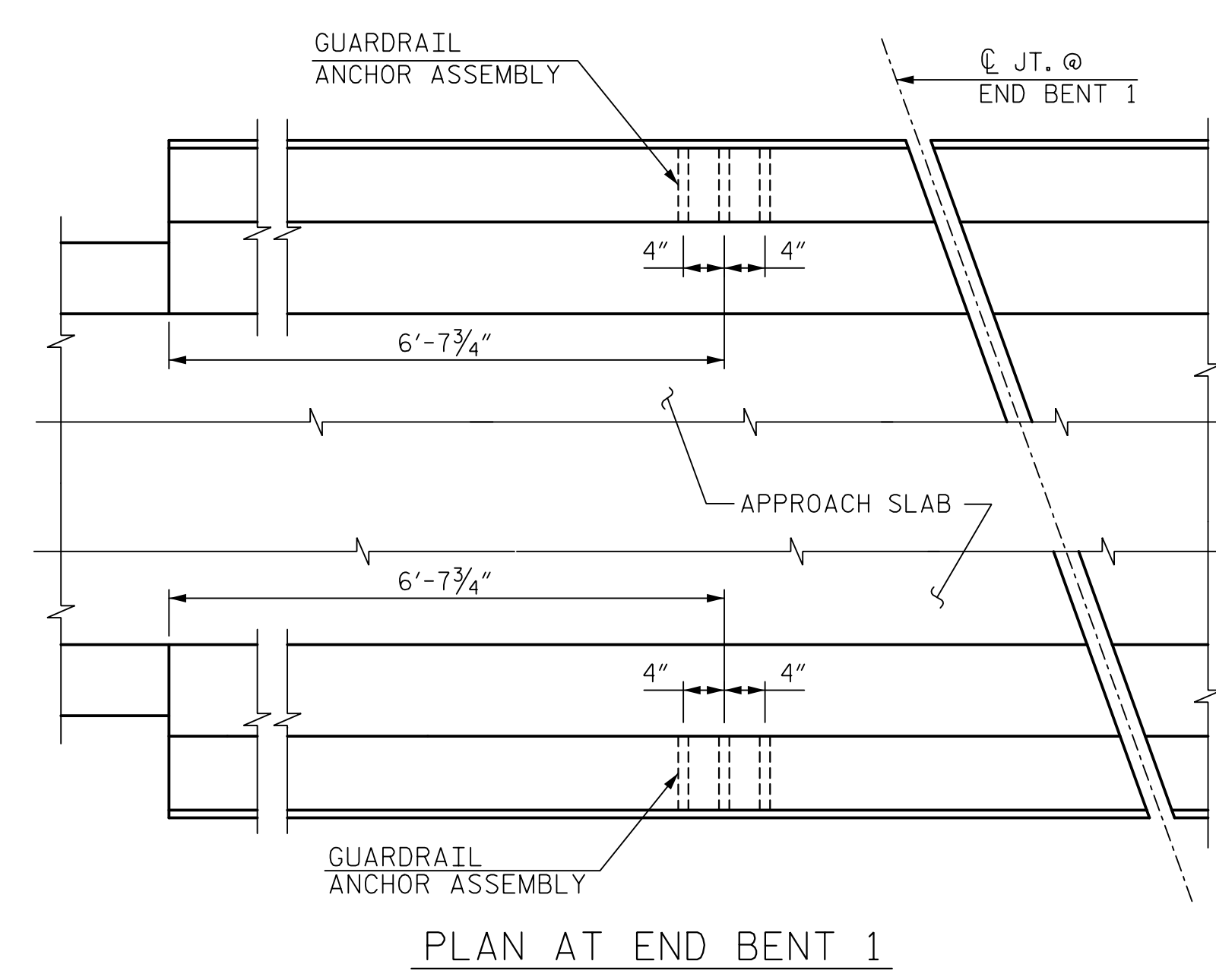
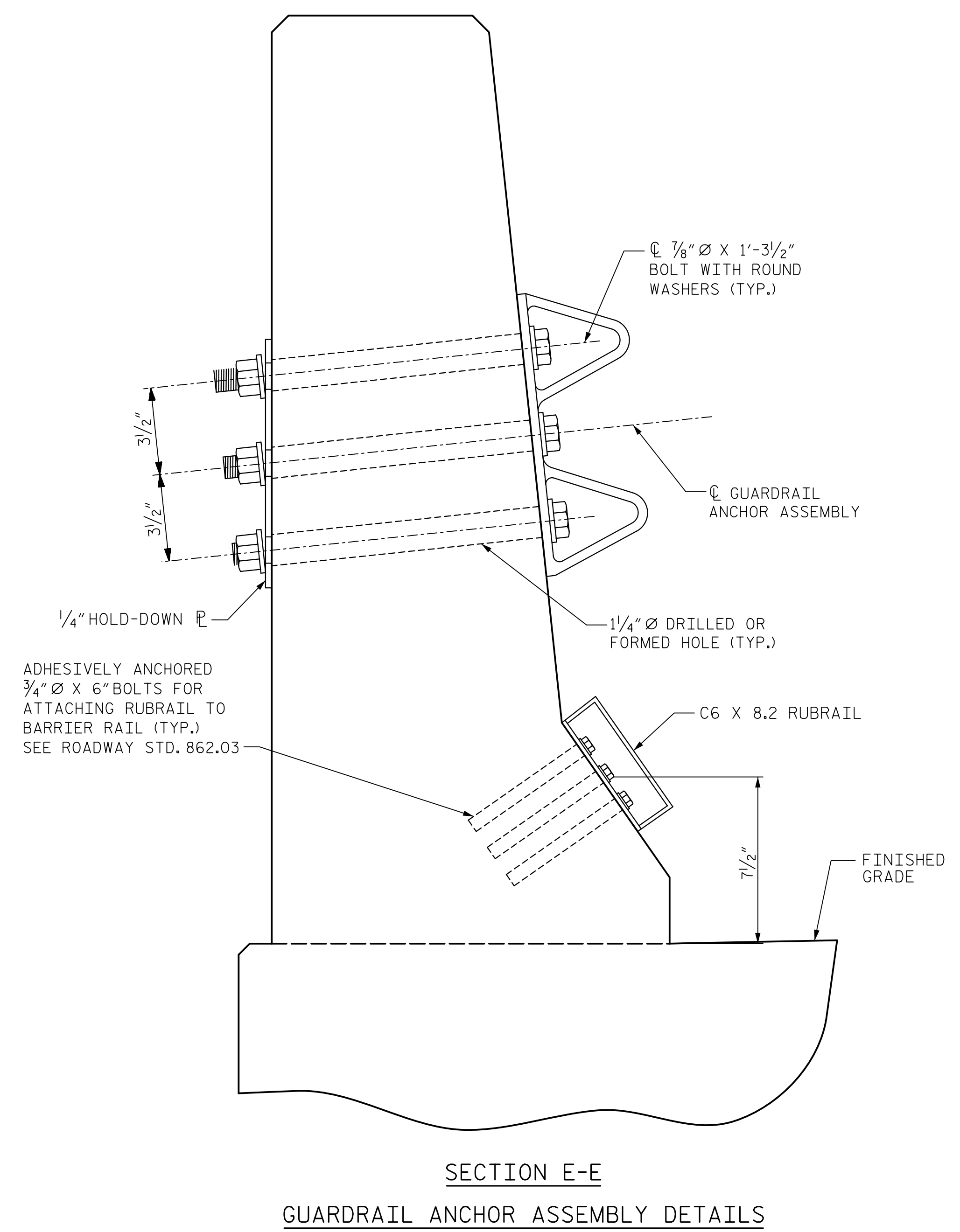
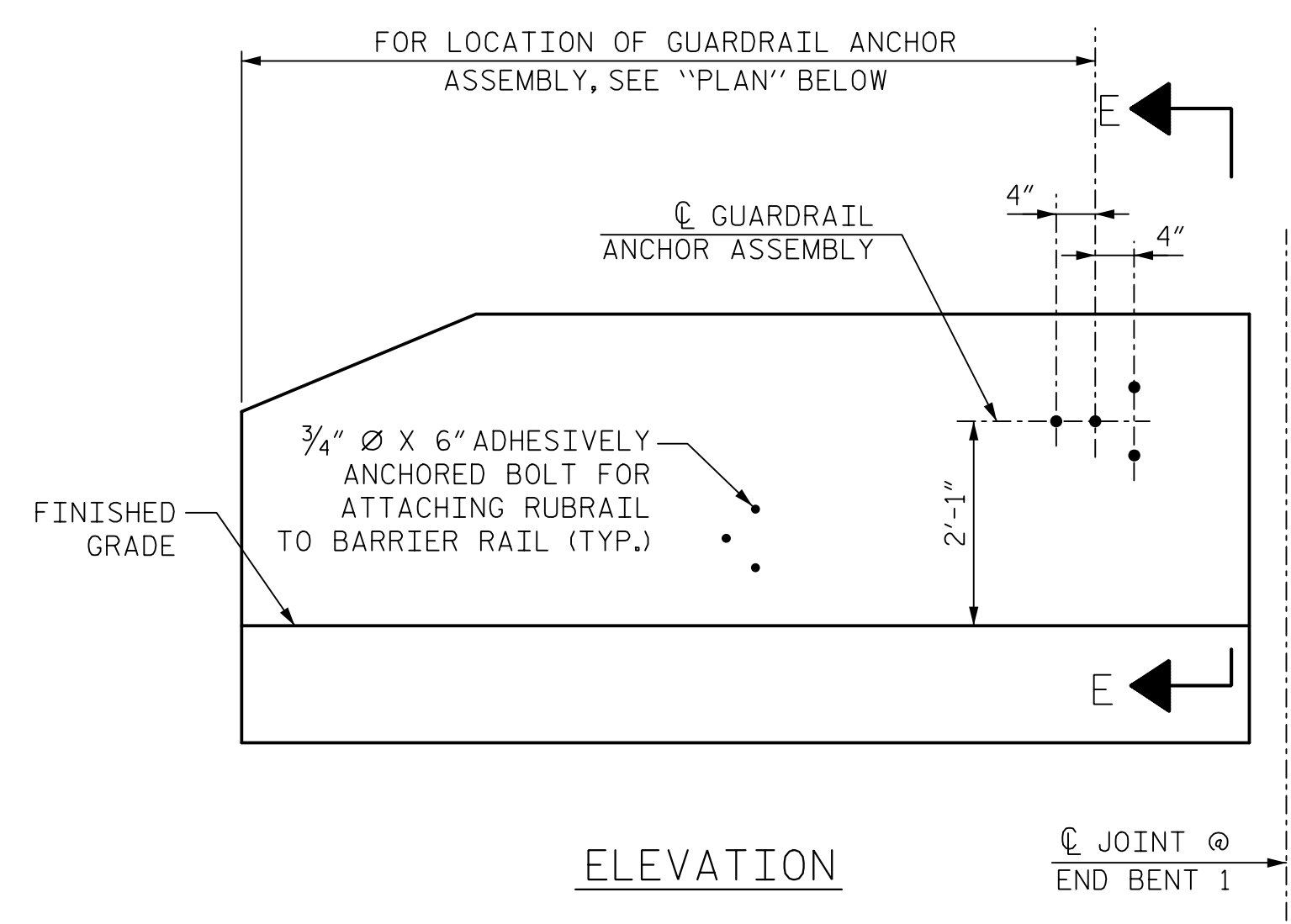
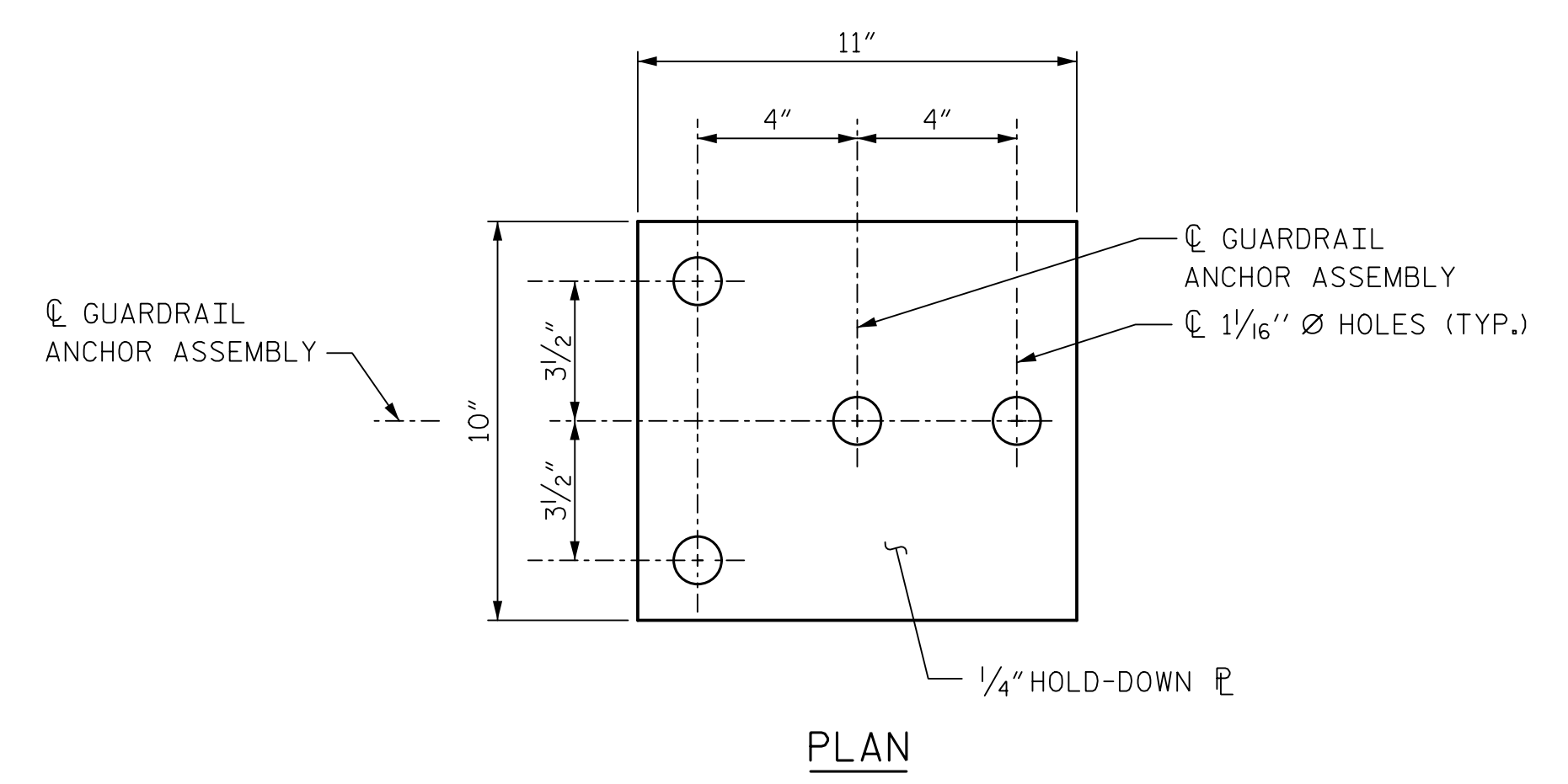
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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.

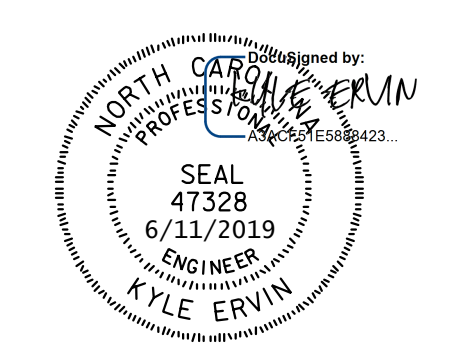
THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR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



SKETCH SHOWING POINTS OF ATTACHMENT
* DENOTES GUARDRAIL ANCHOR ASSEMBLY

LOCATION OF ANCHORS FOR GUARDRAIL

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-



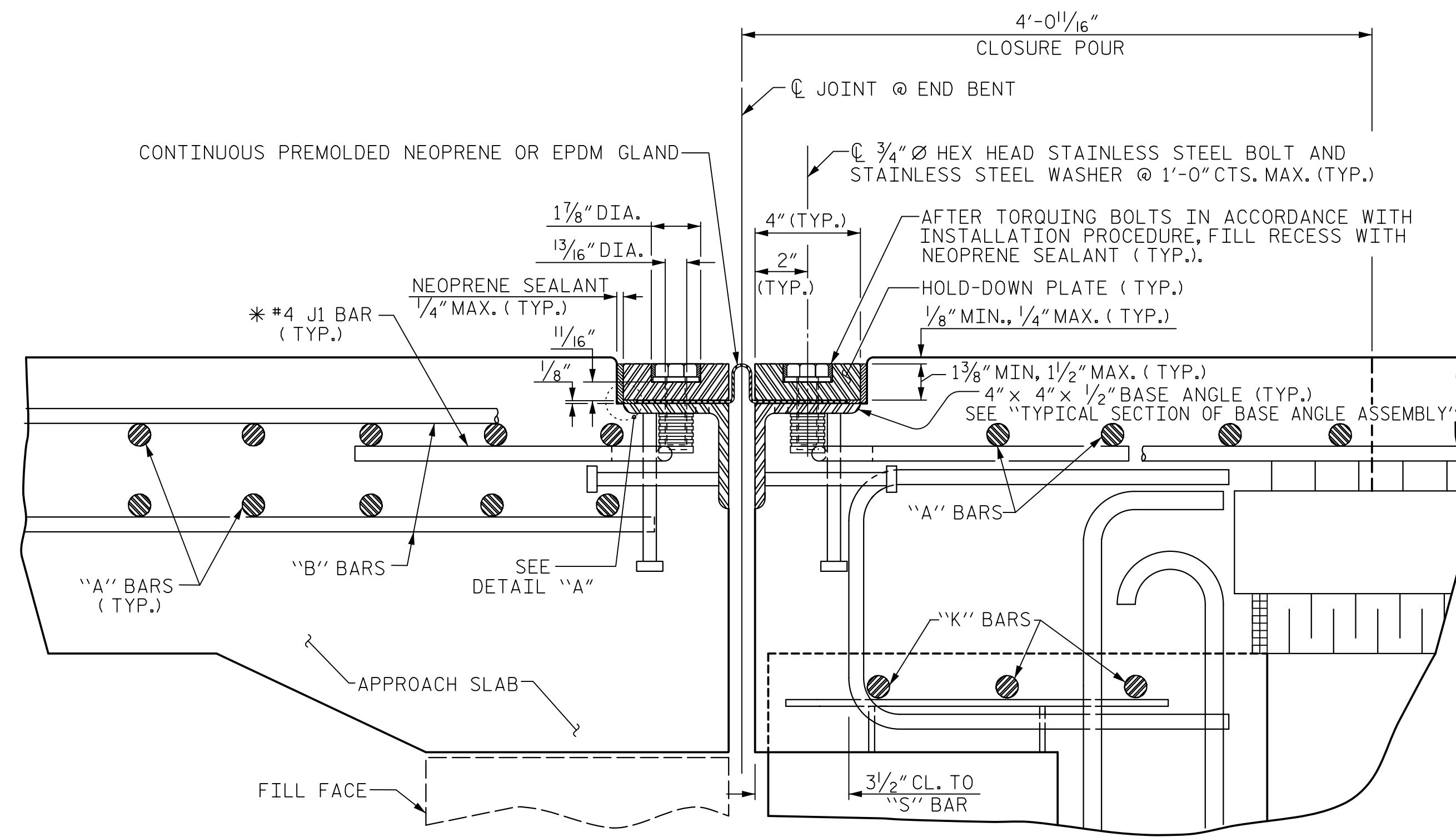
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 FOR BARRIER RAIL

ASSEMBLED BY : B. VAUGHN	DATE : 11/18
CHECKED BY : K. ERVIN	DATE : 1/19
DRAWN BY : TLA 5/06	REV. 10/1/11
CHECKED BY : GM 5/06	REV. 7/12
	REV. 6/13
	MAA/GM
	MAA/GM
	MAA/GM

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DRAWN BY : B. VAUGHN	DATE : 11/18
CHECKED BY : K. ERVIN	DATE : 1/19
DESIGN ENGINEER OF RECORD : K. ERVIN	DATE : 1/19
DWG. NO. 39	

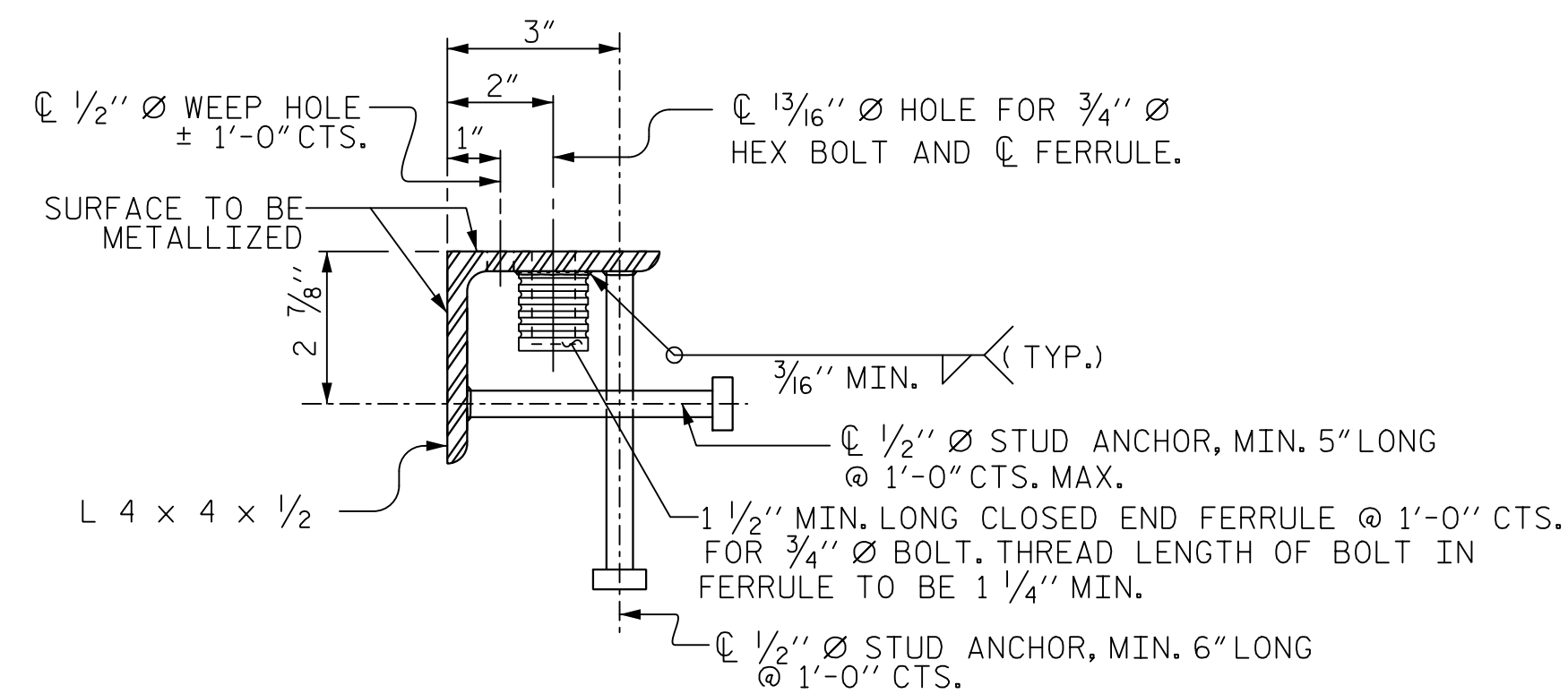
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			81



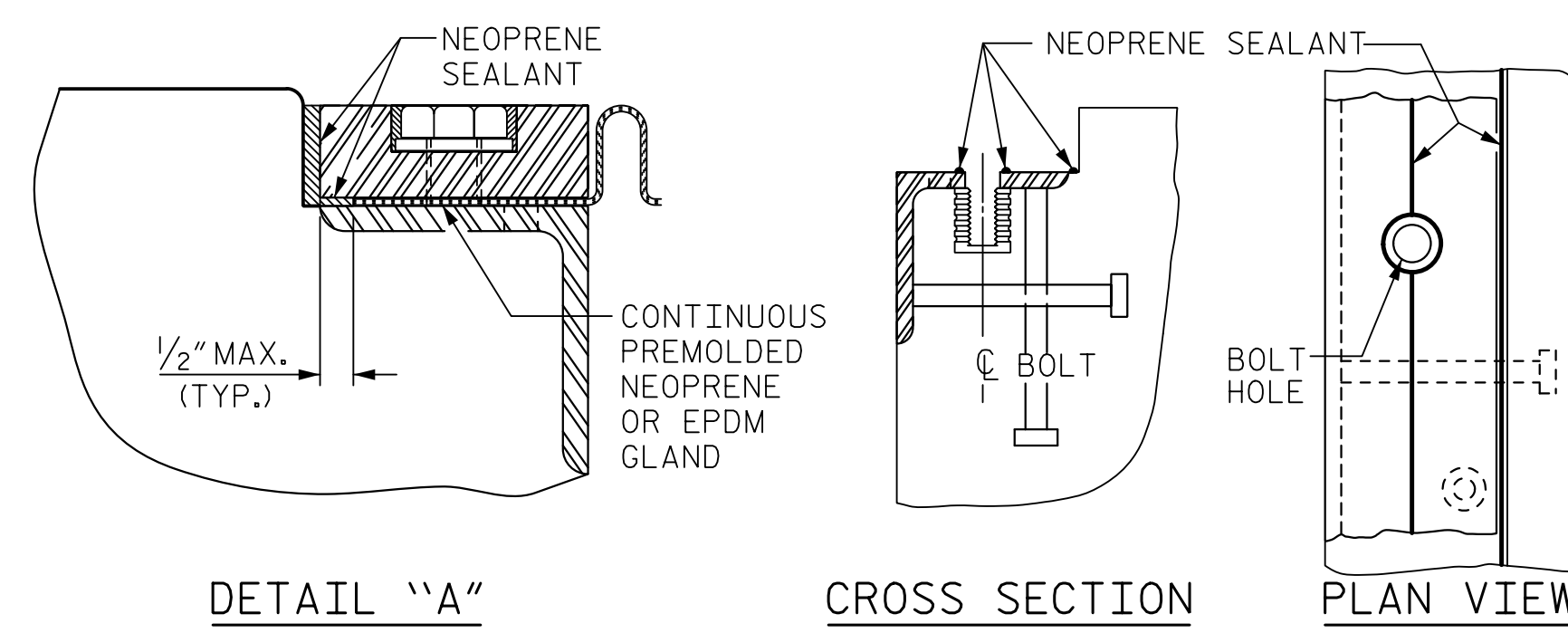
EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT -- PRESTRESSED GIRDER SUPERSTRUCTURE

* THE QUANTITY OF #4 J1 BARS ON THE BILL OF MATERIAL IS BASED ON 1'-0" CENTERS. J1 BARS SHALL BE PLACED AT EACH VERTICAL STUD ANCHOR BOLT. IN THE EVENT THAT THE NUMBER OF VERTICAL STUD ANCHORS EXCEEDS THE NUMBER OF J1 BARS SPECIFIED, ADDITIONAL J1 BARS WILL NOT BE REQUIRED.



TYPICAL SECTION OF BASE ANGLE ASSEMBLY



INSTALLATION SKETCH

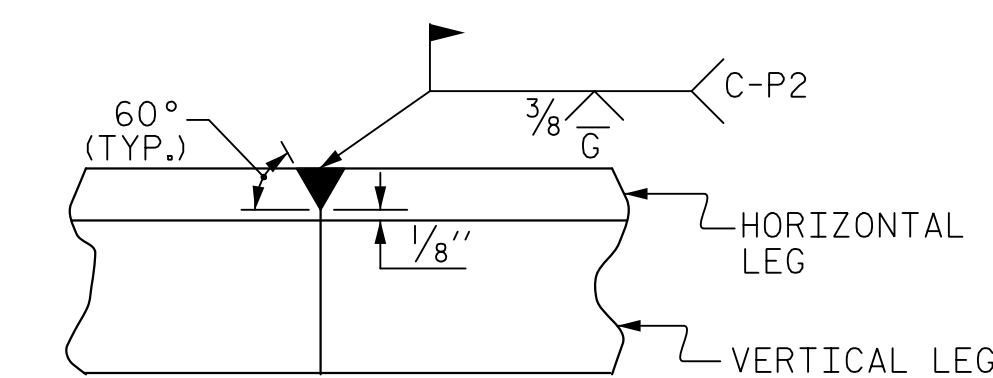
MOVEMENT AND SETTING AT JOINT					
BENT NO.	SKIEW ANGLE	TOTAL MOVEMENT (ALONG C RDWY)	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
END BENT 1	48°-08'-19"	1 1/16"	1 3/8"	1 5/16"	1 1/8"
END BENT 2	48°-08'-19"	1 1/16"	1 3/8"	1 5/16"	1 1/8"

INSTALLATION PROCEDURE

- FOR TEMPORARY CONFIGURATION OF EXPANSION JOINT SEAL WHILE ASPHALT PAVEMENT IS PRESENT ON THE BRIDGE, SEE "SUPERSTRUCTURE CONSTRUCTION SEQUENCE" SHEETS.
- A TEMPLATE OR OTHER SUITABLE DEVICE SHALL BE USED TO FORM THE TOP OF THE EXPANSION JOINT SEAL BLOCKOUT TO THE PROPER DEPTH AND WIDTH. THE TEMPLATE SHALL BE 4 1/8" TO 4 1/4" WIDE AND OF SUCH THICKNESS AS TO PROVIDE FOR CORRECT FINAL ELEVATION OF TOP OF HOLD-DOWN PLATES. THE TEMPLATE SHALL BE ATTACHED TO THE BASE ANGLE ASSEMBLY WITH THE 3/4" Ø HEX HEAD BOLTS PROVIDED FOR THE HOLD-DOWN PLATES. A 1" Ø HOLE SHALL BE PROVIDED IN THE TEMPLATE CENTERED OVER EACH WEEP HOLE IN THE 4" X 4" X 1/2" BASE ANGLE. OTHER METHODS OF INSURING DRAINAGE THROUGH WEEP HOLES MAY BE EMPLOYED SUBJECT TO ENGINEER'S APPROVAL.
- AFTER THE CONCRETE HAS BEEN CAST ON BOTH SIDES OF THE JOINT, REMOVE THE TEMPLATE, THOROUGHLY CLEAN THE BOLT HOLES AND THE ANGLE PLATE. REMOVE ANY EXCESS CONCRETE THAT COMES OUT OF THE WEEP HOLES. ANY DAMAGED STEEL SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).
- LAY THE GLAND ON THE BASE ANGLE AND FIELD MARK THE GLAND FOR THE BOLT HOLES. HOLES IN THE GLAND SHALL BE PUNCHED 3/8" IN DIAMETER WITH A HAND PUNCH.
- IN ORDER TO CHECK FOR PROPER ALIGNMENT, PLACE THE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. DO NOT APPLY NEOPRENE SEALANT. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE BUT DO NOT TIGHTEN. THE ENGINEER SHALL INSPECT THE JOINT SEAL DEVICE FOR PROPER ALIGNMENT.
- AFTER INSPECTION, REMOVE THE HOLD-DOWN PLATES AND GLAND. APPLY NEOPRENE SEALANT TO THE BASE ANGLE IN ACCORDANCE WITH THE "INSTALLATION SKETCH". PLACE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE ASSEMBLY AND TORQUE THE BOLTS TO 88 FT-LBS WITH A TORQUE WRENCH. CHECK THE TORQUE AFTER THREE (3) HOURS AND, IF NECESSARY, RETIGHTEN TO 88 FT-LBS. A FINAL CHECK SHALL BE MADE AT SEVEN (7) DAYS. TORQUE SHALL NOT BE LESS THAN 80 FT-LBS AFTER SEVEN (7) DAYS.
- AFTER PROPER TORQUING, CLEAN THE BOLT HOLE RECESSES, THE RECESS BETWEEN THE JOINT SEAL DEVICE AND CONCRETE, AND THE LIFTING HOLES IN THE HOLD-DOWN PLATE, AND COMPLETELY FILL THE RECESSES AND LIFTING HOLES WITH NEOPRENE SEALANT.

GENERAL NOTES

- FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.
- ALL PLATES AND ANGLES SHALL CONFORM TO AASHTO M270 GRADE 36 STEEL OR APPROVED EQUAL. ALL HOLD-DOWN BOLTS SHALL CONFORM TO ASTM F593 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL CONFORM TO ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL. ALL STUD ANCHORS SHALL CONFORM TO AASHTO M169, GRADES 1010 THRU 1020 OR APPROVED EQUAL. ALL CONCRETE INSERTS SHALL BE CLOSED END AND SHALL CONFORM TO AASHTO M169, GRADE 12L14. TENSILE CAPACITY SHALL BE 3000 LBS. MINIMUM.
- A PREMOLDED CORRUGATED OR NON-CORRUGATED GLAND SHALL BE USED FOR JOINTS SKEWED BETWEEN 50° THRU 130°. FOR JOINTS SKEWED LESS THAN 50° OR MORE THAN 130°, ONLY A CORRUGATED GLAND SHALL BE USED.
- CLOSED END FERRULES AND STUD ANCHORS SHALL BE SHOP WELDED AND ALL HOLES SHALL BE SHOP DRILLED AS SHOWN ON PLANS. STUD ANCHORS SHALL BE ELECTRIC ARC END WELDED WITH COMPLETE FUSION.
- SURFACES COMING IN CONTACT WITH NEOPRENE SHALL BE GROUND SMOOTH PRIOR TO METALLIZING.
- UPON COMPLETION OF SHOP FABRICATION, THE HOLD-DOWN PLATE AND BASE ANGLE ASSEMBLY, AS SHOWN IN THE "TYPICAL SECTION OF BASE ANGLE ASSEMBLY", SHALL BE METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.
- THE COVER PLATES SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.
- BASE ANGLE ASSEMBLY SHALL BE CONTINUOUS FOR THE LENGTH OF THE JOINT. AT CROWN BREAKS, THE ENDS OF THE BASE ANGLE ASSEMBLY SHALL BE CUT PARALLEL TO THE BRIDGE CENTERLINE FOR SKEWS LESS THAN 80° AND GREATER THAN 100°. FINISHED WELD SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).
- FIELD SPLICES OF HOLD-DOWN PLATES SHALL BE KEPT TO A MINIMUM. CONTRACTOR SHALL FURNISH DETAILED PLANS SHOWING PROPOSED SPLICE LOCATIONS FOR APPROVAL. HOLD-DOWN PLATES SHALL NOT EXCEED 20' LENGTHS UNLESS APPROVED BY THE ENGINEER.
- NO ALTERNATE JOINT DETAILS SHALL BE PERMITTED IN LIEU OF THOSE SHOWN ON THESE PLANS.
- THE CONTRACTOR MAY, AT HIS OPTION, USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF CONCRETE INSERTS FOR COVER PLATES. THE YIELD LOAD OF THE 3/4" Ø BOLT IS 10 KIPS. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.
- THE FABRICATOR SHALL PROVIDE 1/2" Ø THREADED HOLES IN THE HOLD-DOWN PLATES TO ASSIST IN LIFTING AND PLACING. THE HOLES SHALL BE 3/4" DEEP AT 6'-0" MAXIMUM SPACING AND A MINIMUM OF TWO HOLES PER PLATE.



DETAIL- FIELD WELD SPLICE OF BASE ANGLE

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 EXPANSION JOINT SEAL DETAILS

ASSEMBLED BY : B. VAUGHN	DATE : 11/18
CHECKED BY : M. SWERIDUK	DATE : 1/19
DRAWN BY : REK 9/87	REV. 10/17 MAA/GM
CHECKED BY : CRK 10/87	REV. 6/18 MAA/THC

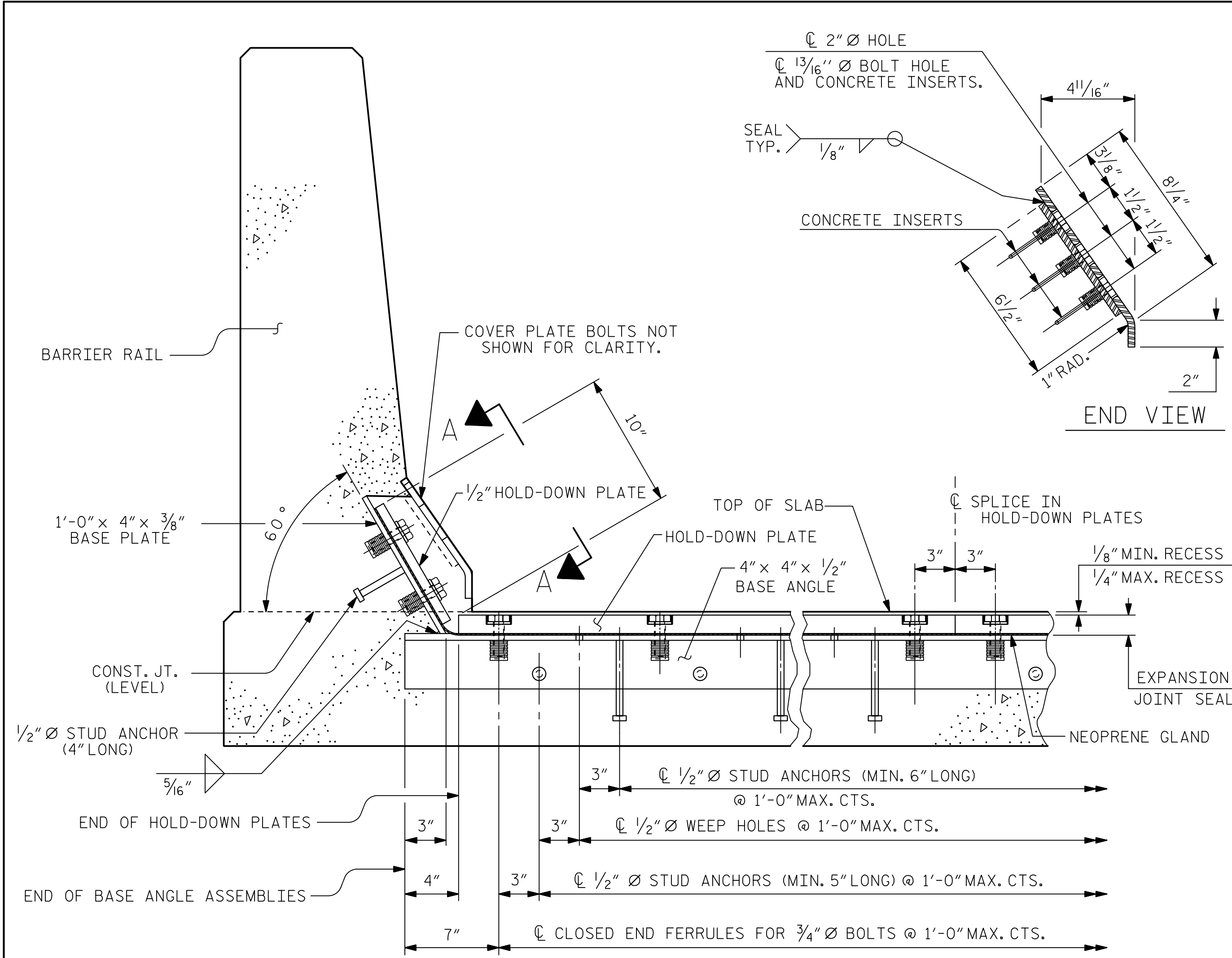
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DRAWN BY : B. VAUGHN DATE : 11/18
 CHECKED BY : K. ERVIN DATE : 1/19
 DESIGN ENGINEER OF RECORD : K. ERVIN DATE : 11/18

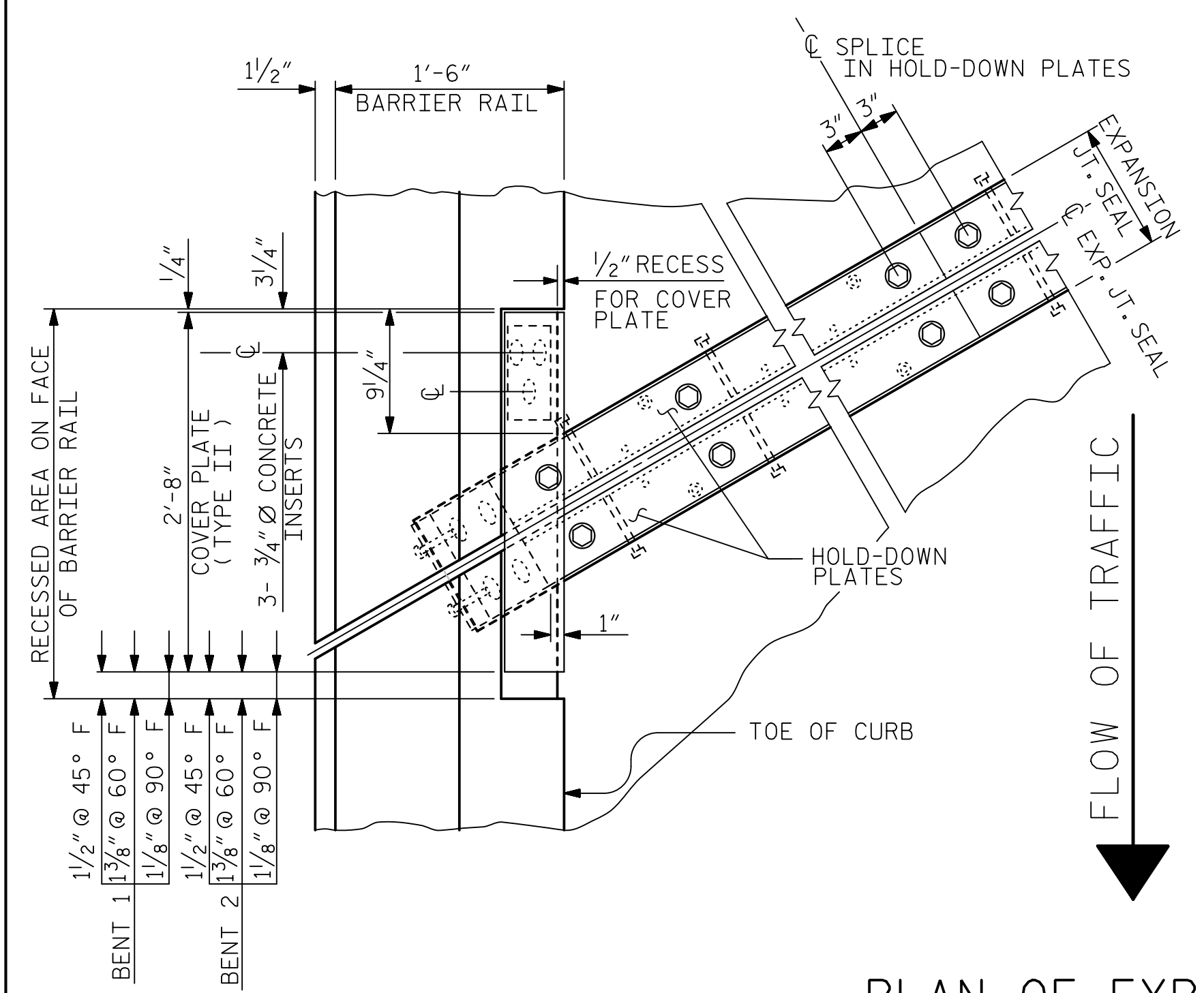
DWG. NO. 40

REVISIONS						SHEET NO.
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1			3			81
2			4			

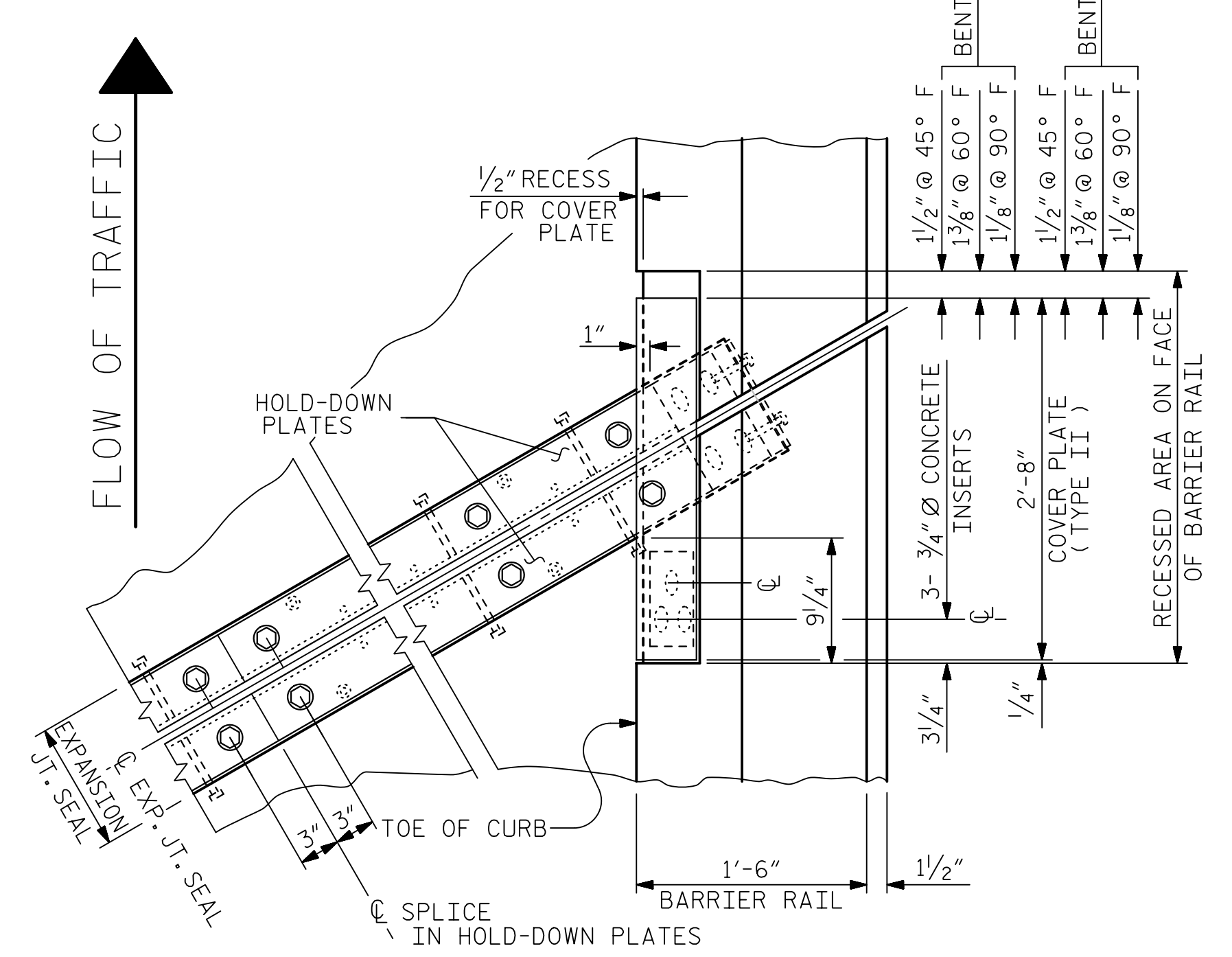
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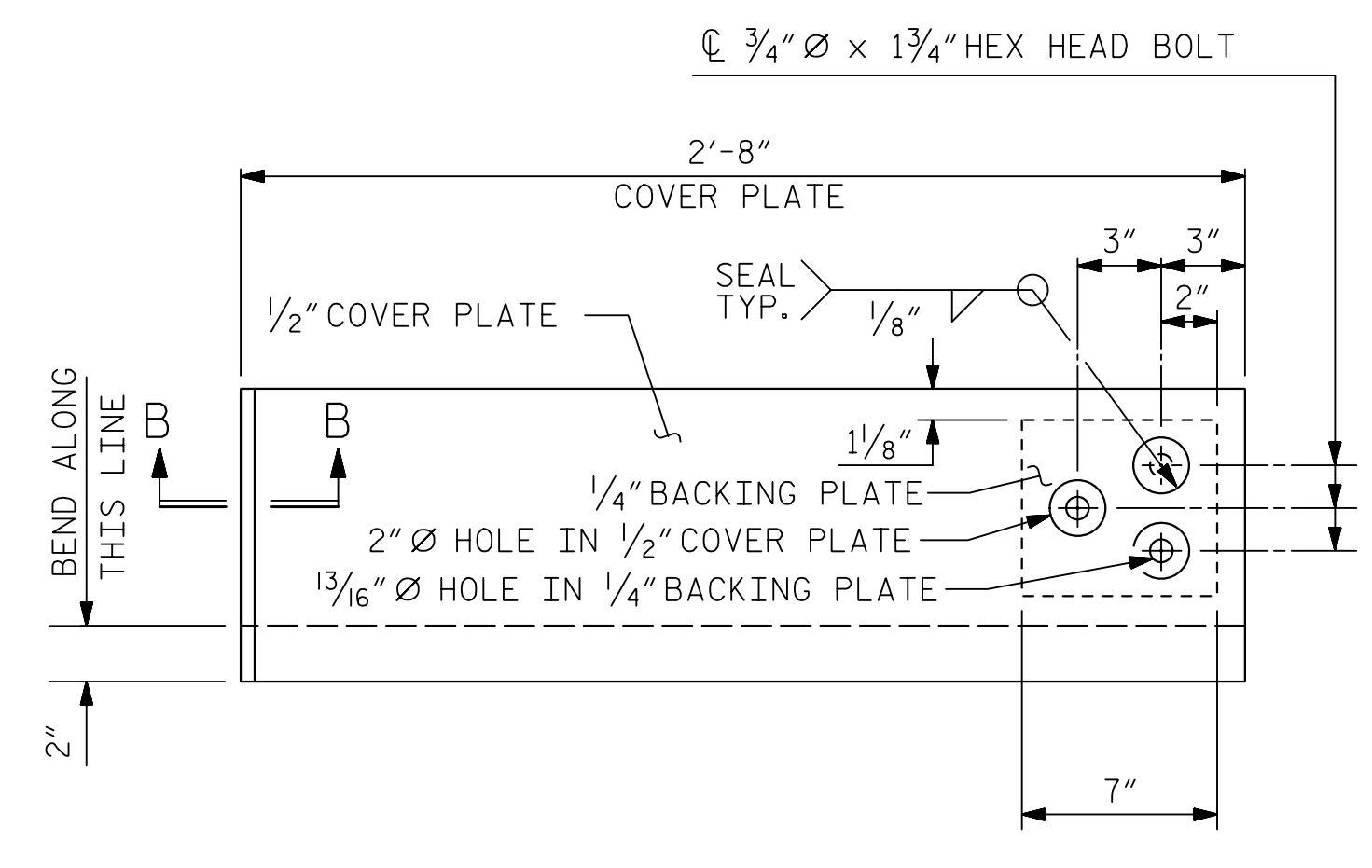
SECTION THRU RAIL NORMAL TO JOINT



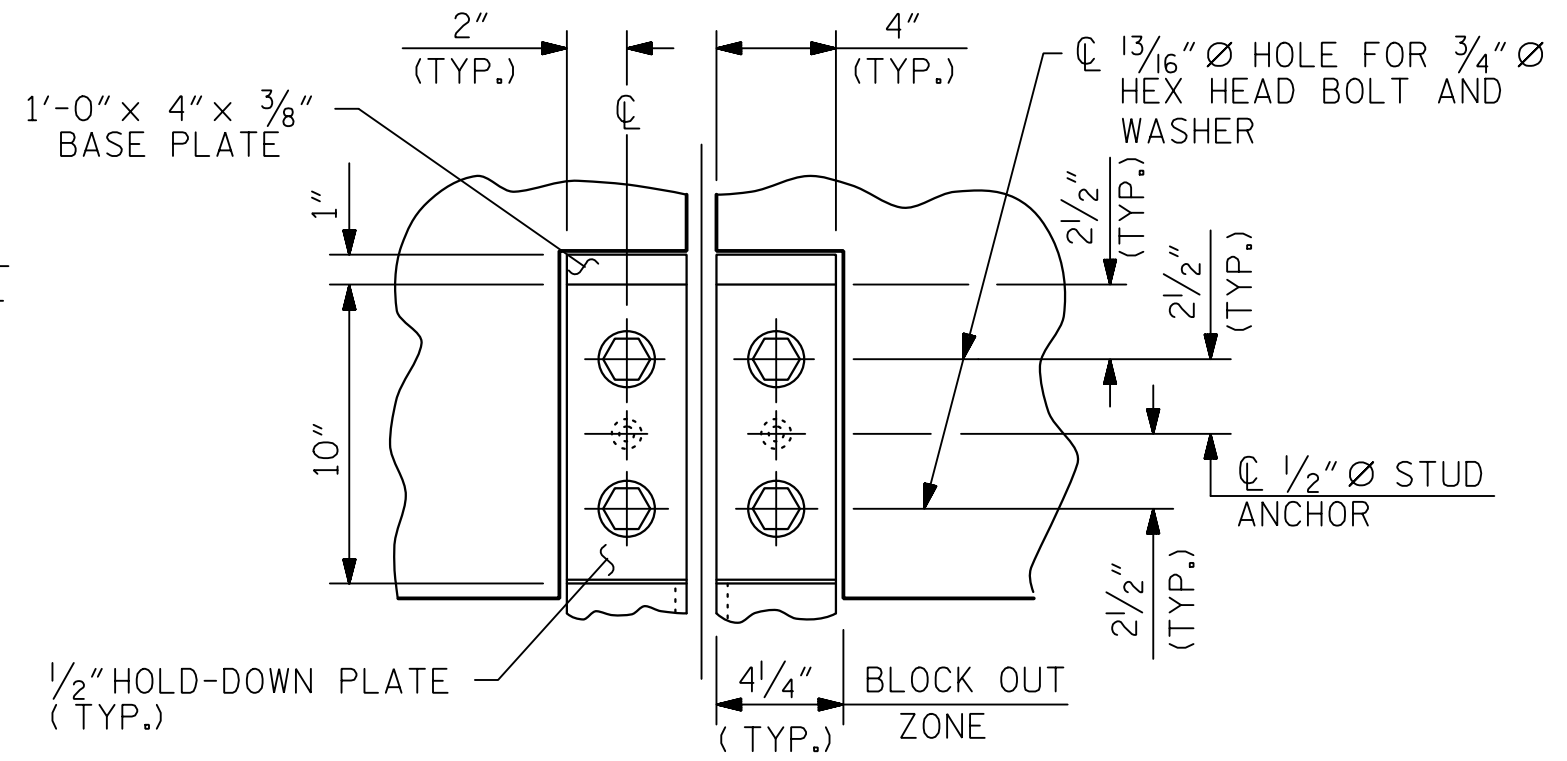
PLAN OF EXPANSION JOINT SEAL



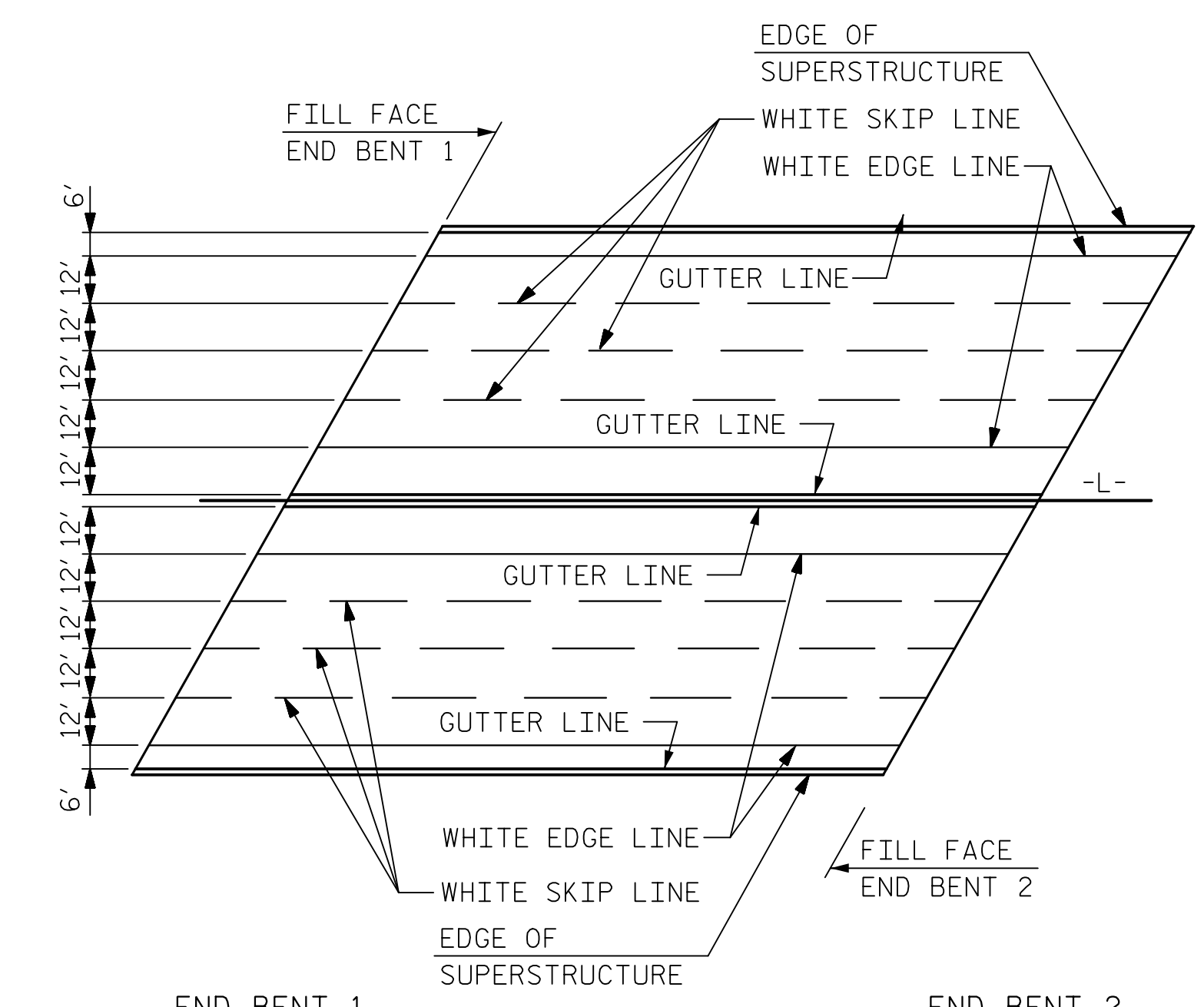
SECTION A - A



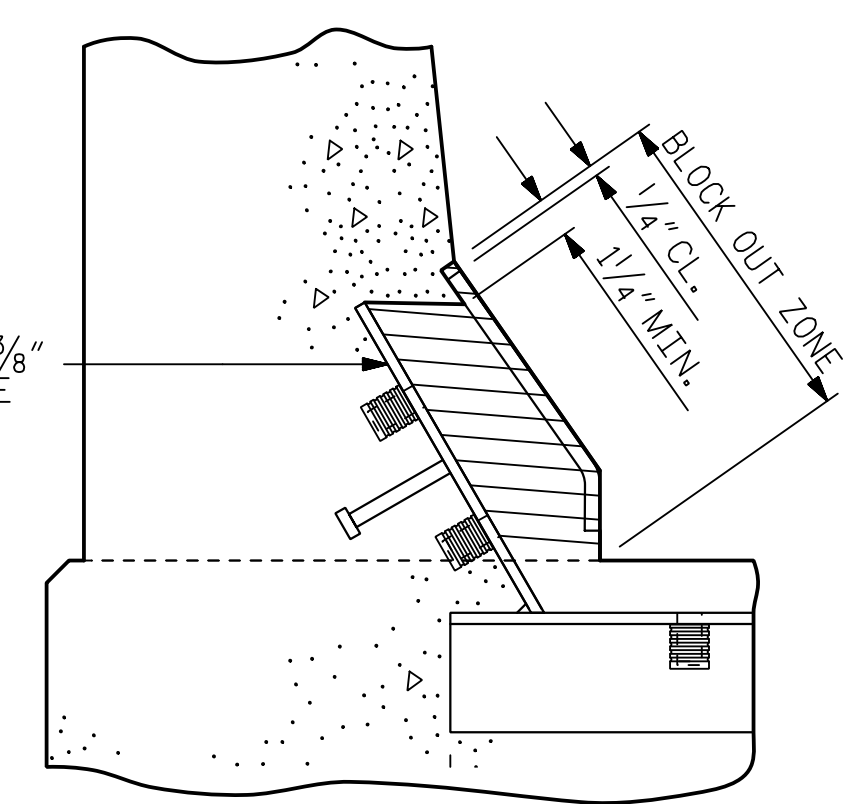
TYPE II - ELEVATION VIEW COVER PLATE DETAILS



SECTION A - A

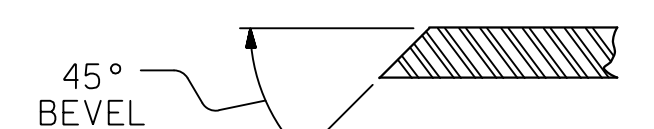


PAVEMENT MARKING ALIGNMENT

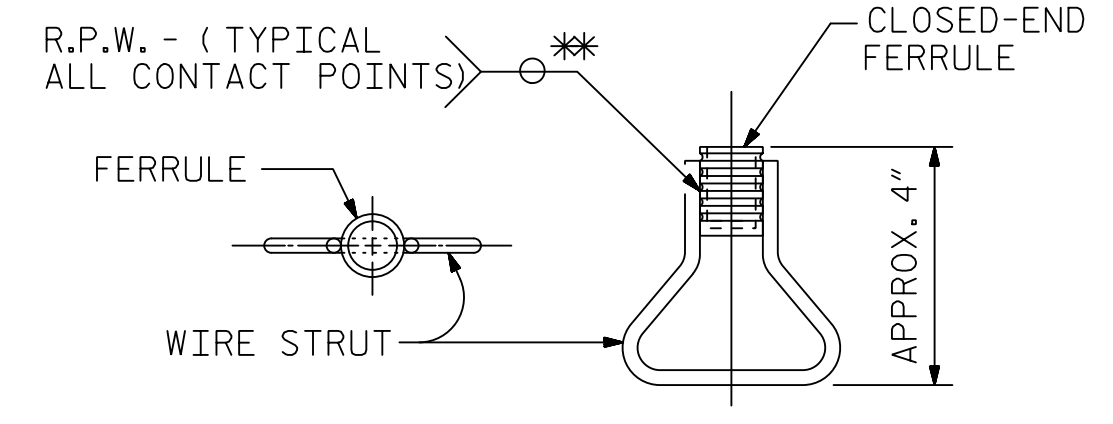


BLOCK OUT DETAIL

SEE "SECTION A - A" FOR OTHER DETAILS.



SECTION B - B



CONCRETE INSERT

* EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 EXPANSION JOINT SEAL DETAILS FOR BARRIER RAIL

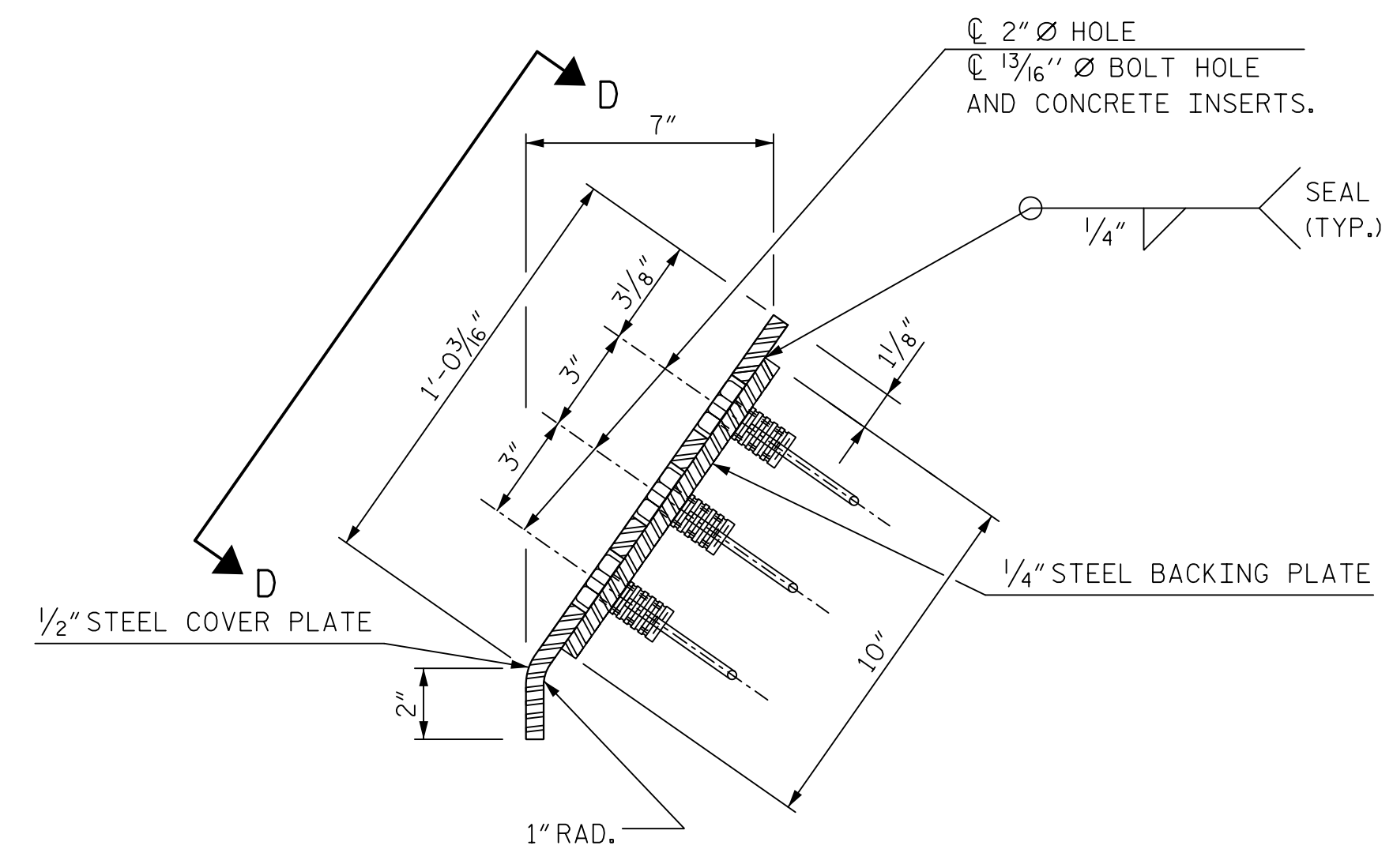
ASSEMBLED BY :	B. VAUGHN	DATE :	11/18
CHECKED BY :	M. SWERDUK	DATE :	1/19
DRAWN BY :	REK	9/87	REV. 7/12
CHECKED BY :	CRK	10/87	REV. 6/13
			REV. 12/17
			MAA/GM
			MAA/GM
			MAA/THC

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

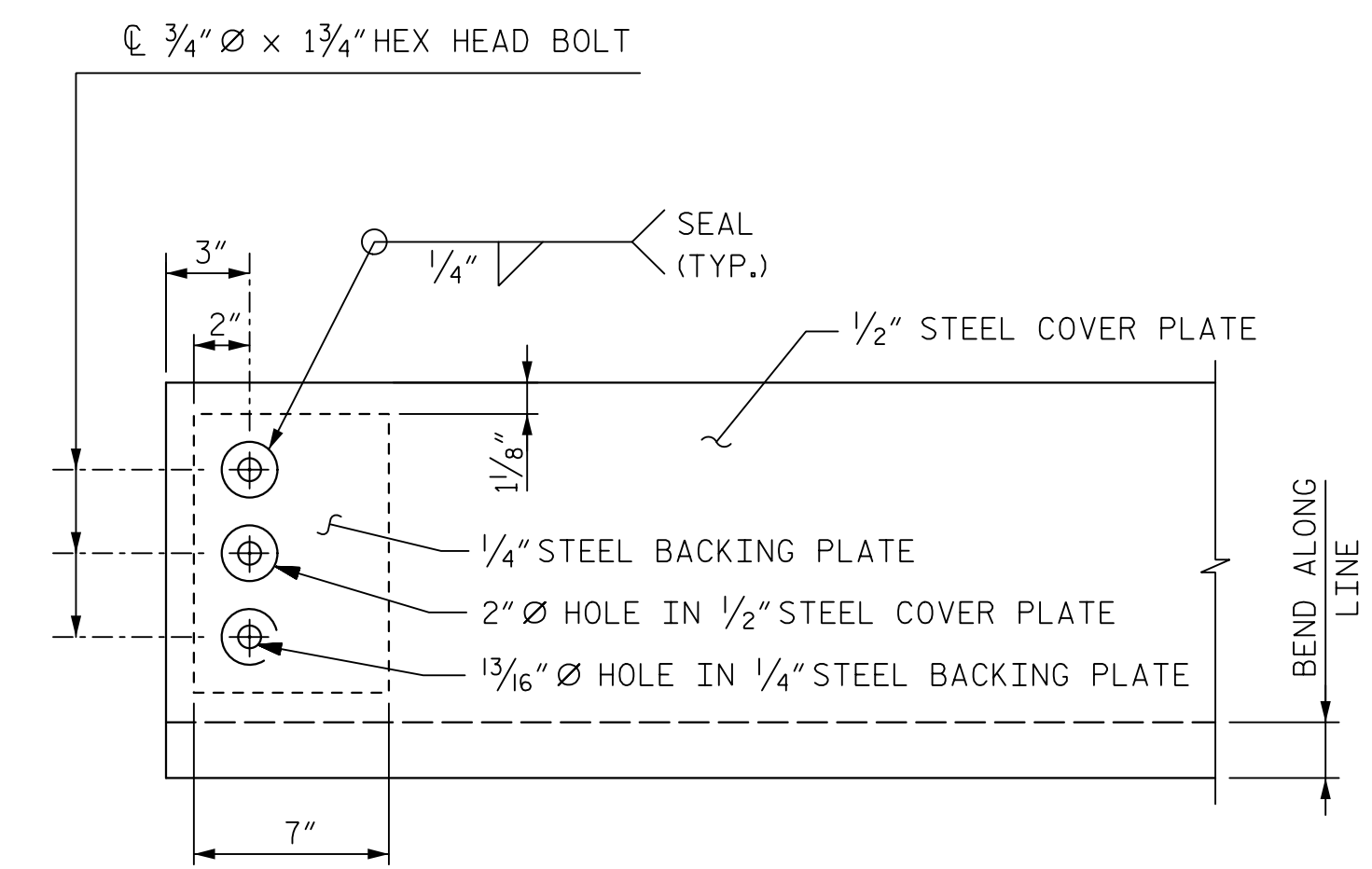
HNTB	HNTB NORTH CAROLINA, P.C. NC License No. C-1554 343 E. Six Forks Rd., Suite 200, Raleigh, NC. 27609		
DRAWN BY :	B. VAUGHN	DATE :	11/18
CHECKED BY :	K. ERVIN	DATE :	1/19
DESIGN ENGINEER OF RECORD :	K. ERVIN	DATE :	11/18

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			81	
2			4				

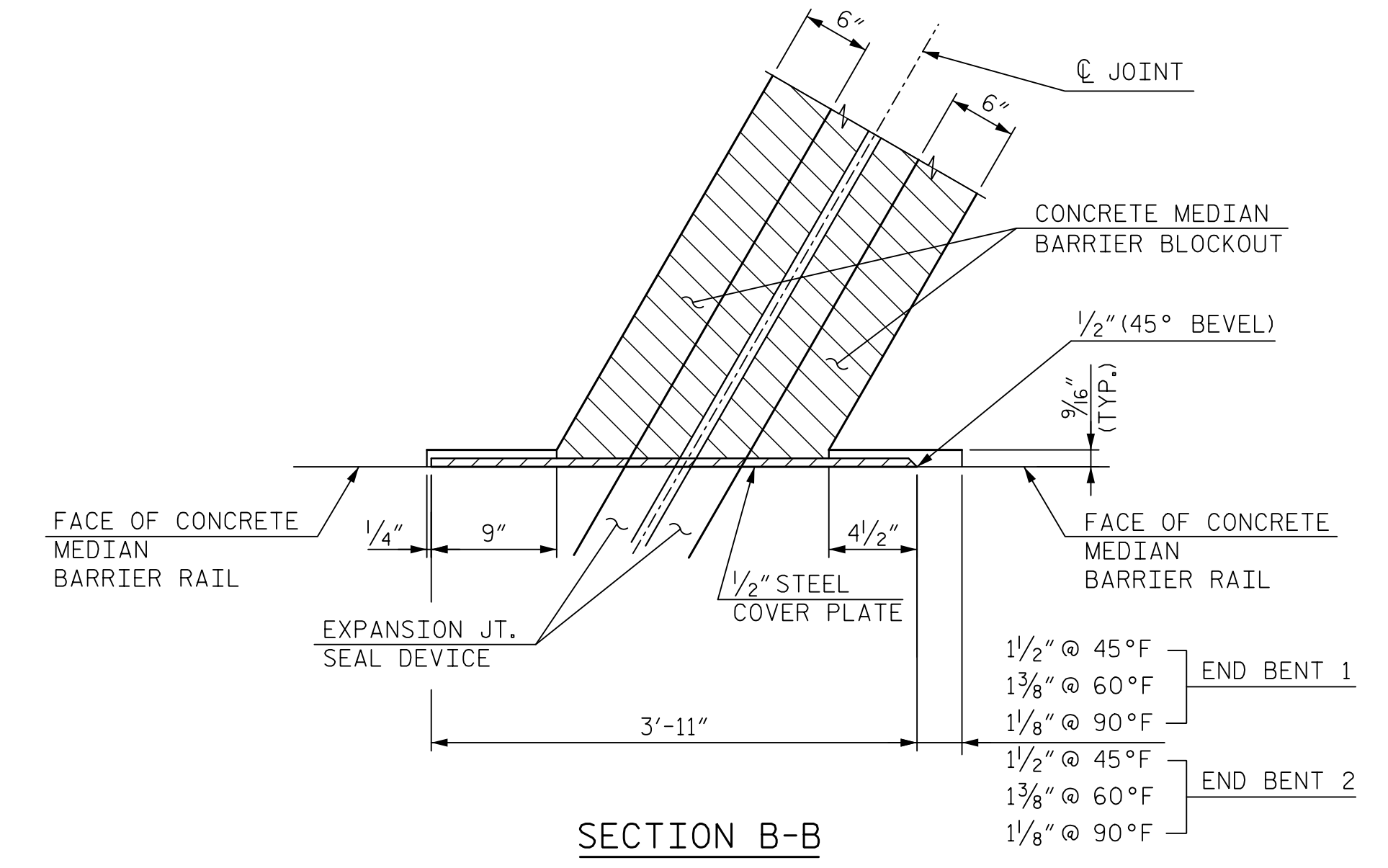
STD. NO. EJS2



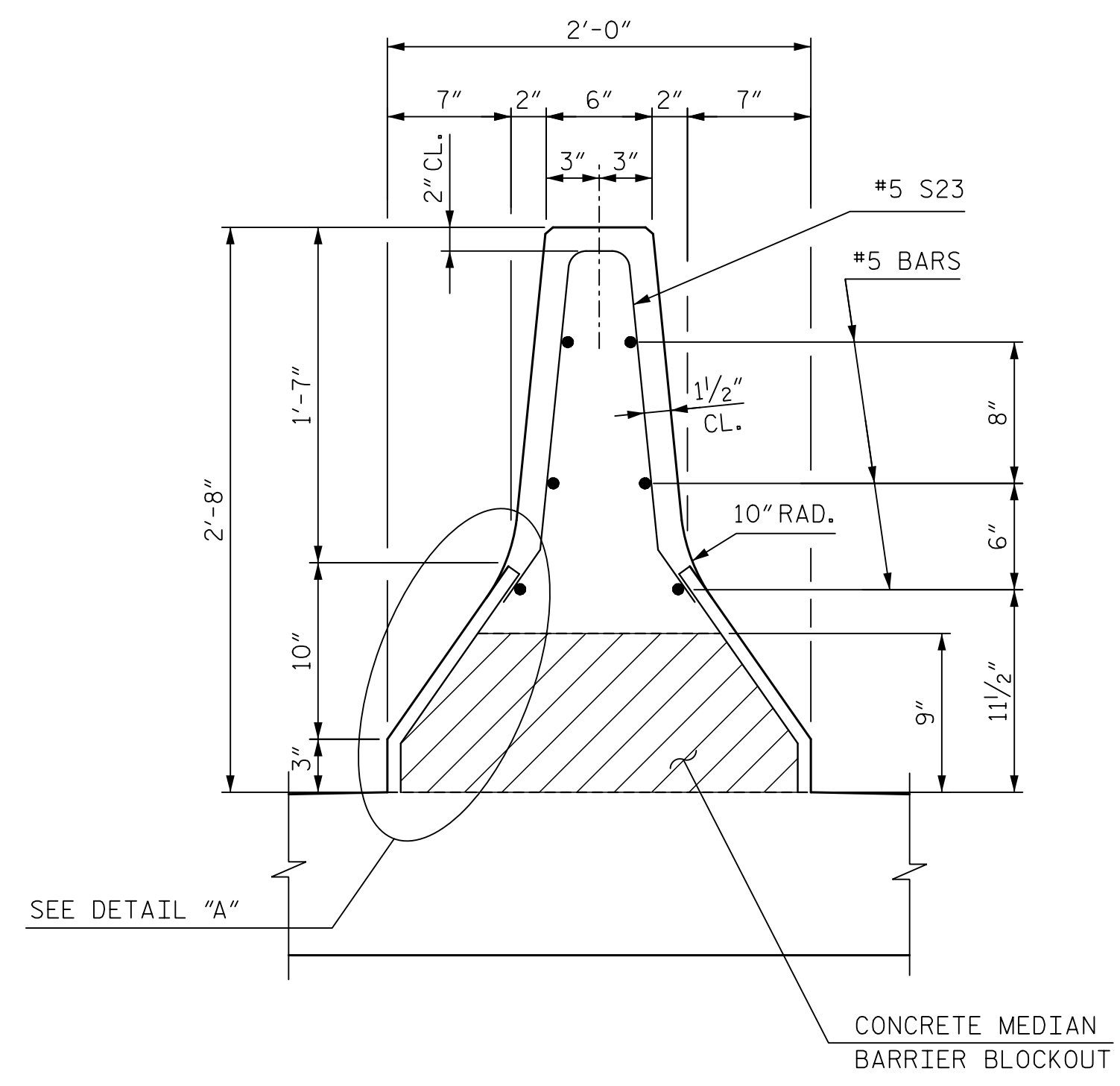
DETAIL "A"



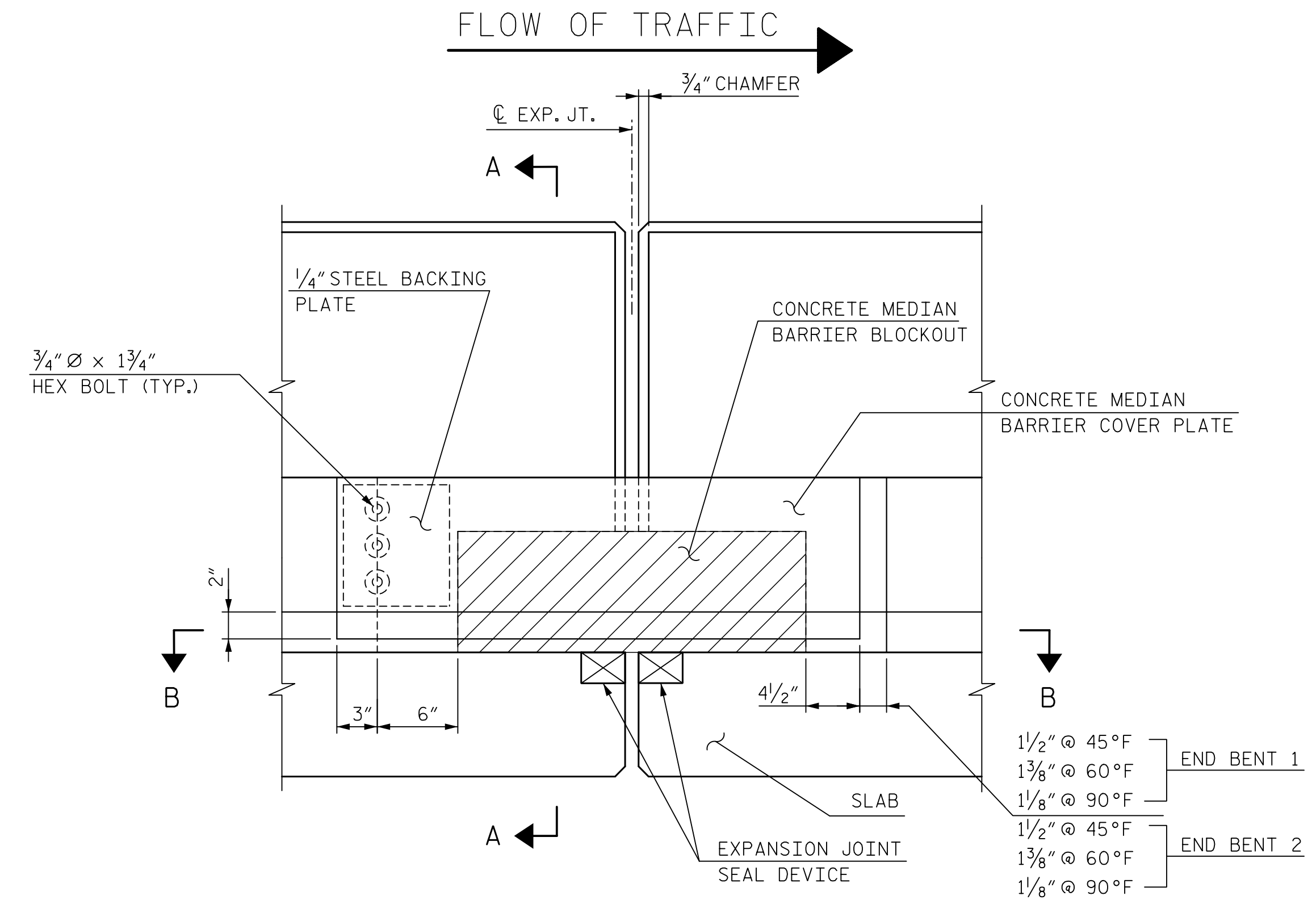
VIEW D-D



SECTION B-B



SECTION A-A



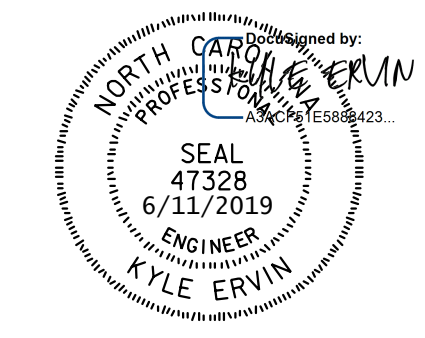
ELEVATION AT EXPANSION JOINTS

CONCRETE MEDIAN BARRIER

NOTES:
 NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE COVER PLATE. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR "EXPANSION JOINT SEALS".

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 3 OF 3
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 EXPANSION JOINT SEAL DETAILS
 FOR MEDIAN BARRIER



HNTB		HNTB NORTH CAROLINA, P.C. NC License No. C-1554 343 E. Six Forks Rd., Suite 200, Raleigh, NC. 27609	
DRAWN BY	B. VAUGHN	DATE	11/18
CHECKED BY	K. ERVIN	DATE	1/19
DESIGN ENGINEER OF RECORD	K. ERVIN	DATE	11/18
DWG. NO. 42			

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			S1-42	
2			4			81	

BILL OF REINFORCING					
EPOXY COATED (STAGE 2)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT (LBS.)
* A1	401	#5	STR	30'-8"	12,827
* A2	902	#5	STR	5'-1"	4,783
* A7	2	#5	STR	2'-1"	5
* A8	2	#5	STR	2'-7"	6
* A9	2	#5	STR	3'-1"	7
* A10	2	#5	STR	3'-7"	8
* A11	2	#5	STR	4'-1"	9
* A12	2	#5	STR	4'-8"	10
* A13	2	#5	STR	5'-2"	11
* A14	2	#5	STR	5'-8"	12
* A15	2	#5	STR	6'-2"	13
* A16	2	#5	STR	6'-8"	14
* A17	2	#5	STR	7'-2"	15
* A18	2	#5	STR	7'-8"	16
* A19	2	#5	STR	8'-3"	18
* A20	2	#5	STR	8'-9"	19
* A21	2	#5	STR	9'-3"	20
* A22	2	#5	STR	9'-9"	21
* A23	2	#5	STR	10'-3"	22
* A24	2	#5	STR	10'-9"	23
* A25	2	#5	STR	11'-3"	24
* A26	2	#5	STR	11'-10"	25
* A27	2	#5	STR	12'-4"	26
* A28	2	#5	STR	12'-10"	27
* A29	2	#5	STR	13'-4"	28
* A30	2	#5	STR	13'-10"	29
* A31	2	#5	STR	14'-4"	30
* A32	2	#5	STR	14'-10"	31
* A33	2	#5	STR	15'-4"	32
* A34	2	#5	STR	15'-11"	34
* A35	2	#5	STR	16'-5"	35
* A36	2	#5	STR	16'-11"	36
* A37	2	#5	STR	17'-5"	37
* A38	2	#5	STR	17'-11"	38
* A39	2	#5	STR	18'-5"	39
* A40	2	#5	STR	18'-11"	40
* A41	2	#5	STR	19'-6"	41
* A42	2	#5	STR	20'-0"	42
* A43	2	#5	STR	20'-6"	43
* A44	2	#5	STR	21'-0"	44
* A45	2	#5	STR	21'-6"	45
* A46	2	#5	STR	22'-0"	46
* A47	2	#5	STR	22'-6"	47
* A48	2	#5	STR	23'-1"	49
* A49	2	#5	STR	23'-7"	50
* A50	2	#5	STR	24'-1"	51
* A51	2	#5	STR	24'-7"	52

BILL OF REINFORCING					
EPOXY COATED (STAGE 2)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT (LBS.)
* A52	2	#5	STR	25'-1"	53
* A53	2	#5	STR	25'-7"	54
* A54	2	#5	STR	26'-1"	55
* A55	2	#5	STR	26'-8"	56
* A56	2	#5	STR	27'-2"	57
* A57	2	#5	STR	27'-8"	58
* A58	2	#5	STR	28'-2"	59
* A59	2	#5	STR	28'-8"	60
* A60	2	#5	STR	29'-2"	61
* A61	2	#5	STR	29'-8"	62
* A62	2	#5	STR	30'-3"	64
* A175	6	#6	STR	21'-0"	190
* B1	44	#4	STR	18'-1"	532
* B2	44	#4	STR	17'-1"	503
* B3	44	#4	STR	16'-7"	488
* B4	88	#6	STR	32'-9"	4,329
* B5	40	#6	STR	23'-3"	1,397
* B6	40	#6	STR	26'-3"	1,578
* G1	2	#5	STR	41'-2"	86
* J1	84	#4	1	1'-5"	80
* K1	8	#8	2	22'-1"	472
* K2	8	#8	2	17'-8"	378
* S1	54	#5	3	5'-11"	334
* S2	54	#4	4	5'-2"	187
* U1	42	#5	2	13'-0"	570
* U2	12	#5	2	11'-0"	138
EPOXY COATED REINFORCING STEEL TOTAL:					30,781

* DENOTES EPOXY COATED REINFORCING STEEL

BILL OF REINFORCING					
UNCOATED (STAGE 2)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT (LBS.)
A201	401	#5	STR	30'-8"	12,827
A202	902	#5	STR	4'-5"	4,156
A207	2	#5	STR	2'-1"	5
A208	2	#5	STR	2'-7"	6
A209	2	#5	STR	3'-1"	7
A210	2	#5	STR	3'-7"	8
A211	2	#5	STR	4'-1"	9
A212	2	#5	STR	4'-8"	10
A213	2	#5	STR	5'-2"	11
A214	2	#5	STR	5'-8"	12
EPOXY COATED REINFORCING STEEL TOTAL:					30,781

BILL OF REINFORCING					
UNCOATED (STAGE 2)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT (LBS.)
A215	2	#5	STR	6'-2"	13
A216	2	#5	STR	6'-8"	14
A217	2	#5	STR	7'-2"	15
A218	2	#5	STR	7'-8"	16
A219	2	#5	STR	8'-3"	18
A220	2	#5	STR	8'-9"	19
A221	2	#5	STR	9'-3"	20
A222	2	#5	STR	9'-9"	21
A223	2	#5	STR	10'-3"	22
A224	2	#5	STR	10'-9"	23
A225	2	#5	STR	11'-3"	24
A226	2	#5	STR	11'-10"	25
A227	2	#5	STR	12'-4"	26
A228	2	#5	STR	12'-10"	27
A229	2	#5	STR	13'-4"	28
A230	2	#5	STR	13'-10"	29
A231	2	#5	STR	14'-4"	30
A232	2	#5	STR	14'-10"	31
A233	2	#5	STR	15'-4"	32
A234	2	#5	STR	15'-11"	34
A235	2	#5	STR	16'-5"	35
A236	2	#5	STR	16'-11"	36
A237	2	#5	STR	17'-5"	37
A238	2	#5	STR	17'-11"	38
A239	2	#5	STR	18'-5"	39
A240	2	#5	STR	18'-11"	40
A241	2	#5	STR	19'-6"	41
A242	2	#5	STR	20'-0"	42
A243	2	#5	STR	20'-6"	43
A244	2	#5	STR	21'-0"	44
A245	2	#5	STR	21'-6"	45
A246	2	#5	STR	22'-0"	46
A247	2	#5	STR	22'-6"	47
A248	2	#5	STR	23'-1"	49
A249	2	#5	STR	23'-7"	50
A250	2	#5	STR	24'-1"	51
A251	2	#5	STR	24'-7"	52
A252	2	#5	STR	25'-1"	53
A253	2	#5	STR	25'-7"	54
A254	2	#5	STR	26'-1"	55
A255	2	#5	STR	26'-8"	56
A256	2	#5	STR	27'-2"	57
A257	2	#5	STR	27'-8"	58
A258	2	#5	STR	28'-2"	59
A259	2	#5	STR	28'-8"	60
A260	2	#5	STR	29'-2"	61
A261	2	#5	STR	29'-8"	62
A262	2	#5	STR	30'-3"	64
EPOXY COATED REINFORCING STEEL TOTAL:					30,781

BILL OF REINFORCING					
UNCOATED (STAGE 2)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT (LBS.)
K4	12	#5	STR	10'-2"	128
K5	24	#5	STR	11'-6"	288
K6	12	#5	STR	10'-6"	132
K7	12	#5	STR	8'-8"	109
K8	30	#5	STR	11'-4"	355
K9	20	#5	5	7'-10"	164
K10	20	#5	6	4'-1"	86
K19	18	#6	STR	10'-2"	275
S3	204	#4	7	2'-9"	376
REINFORCING STEEL TOTAL:					30,099

BILL OF REINFORCING					
EPOXY COATED (STAGE 3)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT (LBS.)
* A2	451	#5	STR	5'-1"	2,392
* A3	368	#5	STR	47'-9"	18,328
* A7	2	#5	STR	2'-1"	5
* A8	2	#5	STR	2'-7"	6
* A9	2	#5	STR	3'-1"	7
* A10	2	#5	STR	3'-7"	8
* A11	2	#5	STR	4'-1"	9
* A12	2	#5	STR	4'-8"	10
* A13	2	#5	STR	5'-2"	11
* A14	2	#5	STR	5'-8"	12
* A15	2	#5	STR	6'-2"	13
* A16	2	#5	STR	6'-8"	14
* A17	2	#5	STR	7'-2"	15
* A18	2	#5	STR	7'-8"	16
* A19	2	#5	STR	8'-3"	18
* A20	2	#5	STR	8'-9"	19
* A21	2	#5	STR	9'-3"	20
* A22	2	#5	STR	9'-9"	21
* A23	2	#5	STR	10'-3"	22
* A24	2	#5	STR	10'-9"	23
* A25	2	#5	STR	11'-3"	24
* A26	2	#5	STR	11'-10"	25
* A27	2	#5	STR	12'-4"	26
* A28	2	#5	STR	12'-10"	27
* A29	2	#5	STR	13'-4"	28
* A30	2	#5	STR	13'-10"	29
* A31	2	#5	STR	14'-4"	30
* A32	2	#5	STR	14'-10"	31
* A33	2	#5	STR	15'-4"	32
*					
*					

BILL OF REINFORCING					
EPOXY COATED (STAGE 3)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT (LBS.)
* A34	2	#5	STR	15'-11"	34
* A35	2	#5	STR	16'-5"	35
* A36	2	#5	STR	16'-11"	36
* A37	2	#5	STR	17'-5"	37
* A38	2	#5	STR	17'-11"	38
* A39	2	#5	STR	18'-5"	39
* A40	2	#5	STR	18'-11"	40
* A41	2	#5	STR	19'-6"	41
* A42	2	#5	STR	20'-0"	42
* A43	2	#5	STR	20'-6"	43
* A44	2	#5	STR	21'-0"	44
* A45	2	#5	STR	21'-6"	45
* A46	2	#5	STR	22'-0"	46
* A47	2	#5	STR	22'-6"	47
* A48	2	#5	STR	23'-1"	49
* A49	2	#5	STR	23'-7"	50
* A50	2	#5	STR	24'-1"	51
* A51	2	#5	STR	24'-7"	52
* A52	2	#5	STR	25'-1"	53
* A53	2	#5	STR	25'-7"	54
* A54	2	#5	STR	26'-1"	55
* A55	2	#5	STR	26'-8"	56
* A56	2	#5	STR	27'-2"	57
* A57	2	#5	STR	27'-8"	58
* A58	2	#5	STR	28'-2"	59
* A59	2	#5	STR	28'-8"	60
* A60	2	#5	STR	29'-2"	61
* A61	2	#5	STR	29'-8"	62
* A62	2	#5	STR	30'-3"	64
* A63	2	#5	STR	30'-9"	65
* A64	2	#5	STR	31'-3"	66
* A65	2	#5	STR	31'-9"	67
* A66	2	#5	STR	32'-3"	68
* A67	2	#5	STR	32'-9"	69
* A68	2	#5	STR	33'-3"	70
* A69	2	#5	STR	33'-9"	71
* A70	2	#5	STR	34'-4"	72
* A71	2	#5	STR	34'-10"	73
* A72	2	#5	STR	35'-4"	74
* A73	2	#5	STR	35'-10"	75
* A74	2	#5	STR	36'-4"	76
* A75	2	#5	STR	36'-10"	77
* A76	2	#5	STR	37'-4"	78
* A77	2	#5	STR	37'-11"	80
* A78	2	#5	STR	38'-5"	81
* A79	2	#5	STR	38'-11"	82
* A80	2	#5	STR	39'-5"	83
* A81	2	#5	STR	39'-11"	84
* A82	2	#5	STR	40'-5"	85

BILL OF REINFORCING					
EPOXY COATED (STAGE 3)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT (LBS.)
* A83	2	#5	STR	40'-11"	86
* A84	2	#5	STR	41'-6"	87
* A85	2	#5	STR	42'-0"	88
* A86	2	#5	STR	42'-6"	89
* A87	2	#5	STR	43'-0"	90
* A88	2	#5	STR	43'-6"	91
* A89	2	#5	STR	44'-0"	92
* A90	2	#5	STR	44'-6"	93
* A91	2	#5	STR	45'-1"	95
* A92	2	#5	STR	45'-7"	96
* A93	2	#5	STR	46'-1"	97
* A94	2	#5	STR	46'-	

BILL OF REINFORCING UNCOATED (STAGE 4)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT (LBS.)
A202	451	#5	STR	4'-5"	2,078
A204	358	#5	STR	52'-9"	19,697
A207	2	#5	STR	2'-1"	5
A208	2	#5	STR	2'-7"	6
A209	2	#5	STR	3'-1"	7
A210	2	#5	STR	3'-7"	8
A211	2	#5	STR	4'-1"	9
A212	2	#5	STR	4'-8"	10
A213	2	#5	STR	5'-2"	11
A214	2	#5	STR	5'-8"	12
A215	2	#5	STR	6'-2"	13
A216	2	#5	STR	6'-8"	14
A217	2	#5	STR	7'-2"	15
A218	2	#5	STR	7'-8"	16
A219	2	#5	STR	8'-3"	18
A220	2	#5	STR	8'-9"	19
A221	2	#5	STR	9'-3"	20
A222	2	#5	STR	9'-9"	21
A223	2	#5	STR	10'-3"	22
A224	2	#5	STR	10'-9"	23
A225	2	#5	STR	11'-3"	24
A226	2	#5	STR	11'-10"	25
A227	2	#5	STR	12'-4"	26
A228	2	#5	STR	12'-10"	27
A229	2	#5	STR	13'-4"	28
A230	2	#5	STR	13'-10"	29
A231	2	#5	STR	14'-4"	30
A232	2	#5	STR	14'-10"	31
A233	2	#5	STR	15'-4"	32
A234	2	#5	STR	15'-11"	34
A235	2	#5	STR	16'-5"	35
A236	2	#5	STR	16'-11"	36
A237	2	#5	STR	17'-5"	37
A238	2	#5	STR	17'-11"	38
A239	2	#5	STR	18'-5"	39
A240	2	#5	STR	18'-11"	40
A241	2	#5	STR	19'-6"	41
A242	2	#5	STR	20'-0"	42
A243	2	#5	STR	20'-6"	43
A244	2	#5	STR	21'-0"	44
A245	2	#5	STR	21'-6"	45
A246	2	#5	STR	22'-0"	46
A247	2	#5	STR	22'-6"	47
A248	2	#5	STR	23'-1"	49
A249	2	#5	STR	23'-7"	50
A250	2	#5	STR	24'-1"	51
A251	2	#5	STR	24'-7"	52

BILL OF REINFORCING UNCOATED (STAGE 4)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT (LBS.)
A252	2	#5	STR	25'-1"	53
A253	2	#5	STR	25'-7"	54
A254	2	#5	STR	26'-1"	55
A255	2	#5	STR	26'-8"	56
A256	2	#5	STR	27'-2"	57
A257	2	#5	STR	27'-8"	58
A258	2	#5	STR	28'-2"	59
A259	2	#5	STR	28'-8"	60
A260	2	#5	STR	29'-2"	61
A261	2	#5	STR	29'-8"	62
A262	2	#5	STR	30'-3"	64
A263	2	#5	STR	30'-9"	65
A264	2	#5	STR	31'-3"	66
A265	2	#5	STR	31'-9"	67
A266	2	#5	STR	32'-3"	68
A267	2	#5	STR	32'-9"	69
A268	2	#5	STR	33'-3"	70
A269	2	#5	STR	33'-9"	71
A270	2	#5	STR	34'-4"	72
A271	2	#5	STR	34'-10"	73
A272	2	#5	STR	35'-4"	74
A273	2	#5	STR	35'-10"	75
A274	2	#5	STR	36'-4"	76
A275	2	#5	STR	36'-10"	77
A276	2	#5	STR	37'-4"	78
A277	2	#5	STR	37'-11"	80
A278	2	#5	STR	38'-5"	81
A279	2	#5	STR	38'-11"	82
A280	2	#5	STR	39'-5"	83
A281	2	#5	STR	39'-11"	84
A282	2	#5	STR	40'-5"	85
A283	2	#5	STR	40'-11"	86
A284	2	#5	STR	41'-6"	87
A285	2	#5	STR	42'-0"	88
A286	2	#5	STR	42'-6"	89
A287	2	#5	STR	43'-0"	90
A288	2	#5	STR	43'-6"	91
A289	2	#5	STR	44'-0"	92
A290	2	#5	STR	44'-6"	93
A291	2	#5	STR	45'-1"	95
A292	2	#5	STR	45'-7"	96
A293	2	#5	STR	46'-1"	97
A294	2	#5	STR	46'-7"	98
A295	2	#5	STR	47'-1"	99
A296	2	#5	STR	47'-7"	100
A297	2	#5	STR	48'-1"	101
A298	2	#5	STR	48'-7"	102
A299	2	#5	STR	49'-2"	103
A300	2	#5	STR	49'-8"	104

BILL OF REINFORCING UNCOATED (STAGE 4)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT (LBS.)
A301	2	5	STR	50'-2"	105
A302	2	5	STR	50'-8"	106
A303	2	5	STR	51'-2"	107
A304	2	5	STR	51'-8"	108
A305	2	5	STR	52'-2"	109
B101	300	5	STR	54'-4"	17,001
K4	20	5	STR	10'-2"	213
K5	40	5	STR	11'-6"	480
K6	20	5	STR	10'-6"	220
K7	20	5	STR	8'-8"	181
K8	50	5	STR	11'-4"	592
K9	40	5	5	7'-10"	327
K10	20	5	6	4'-1"	86
K19	30	6	STR	10'-2"	459
K21	6	6	STR	3'-9"	34
S3	340	4	7	2'-9"	626
REINFORCING STEEL TOTAL:					47,645

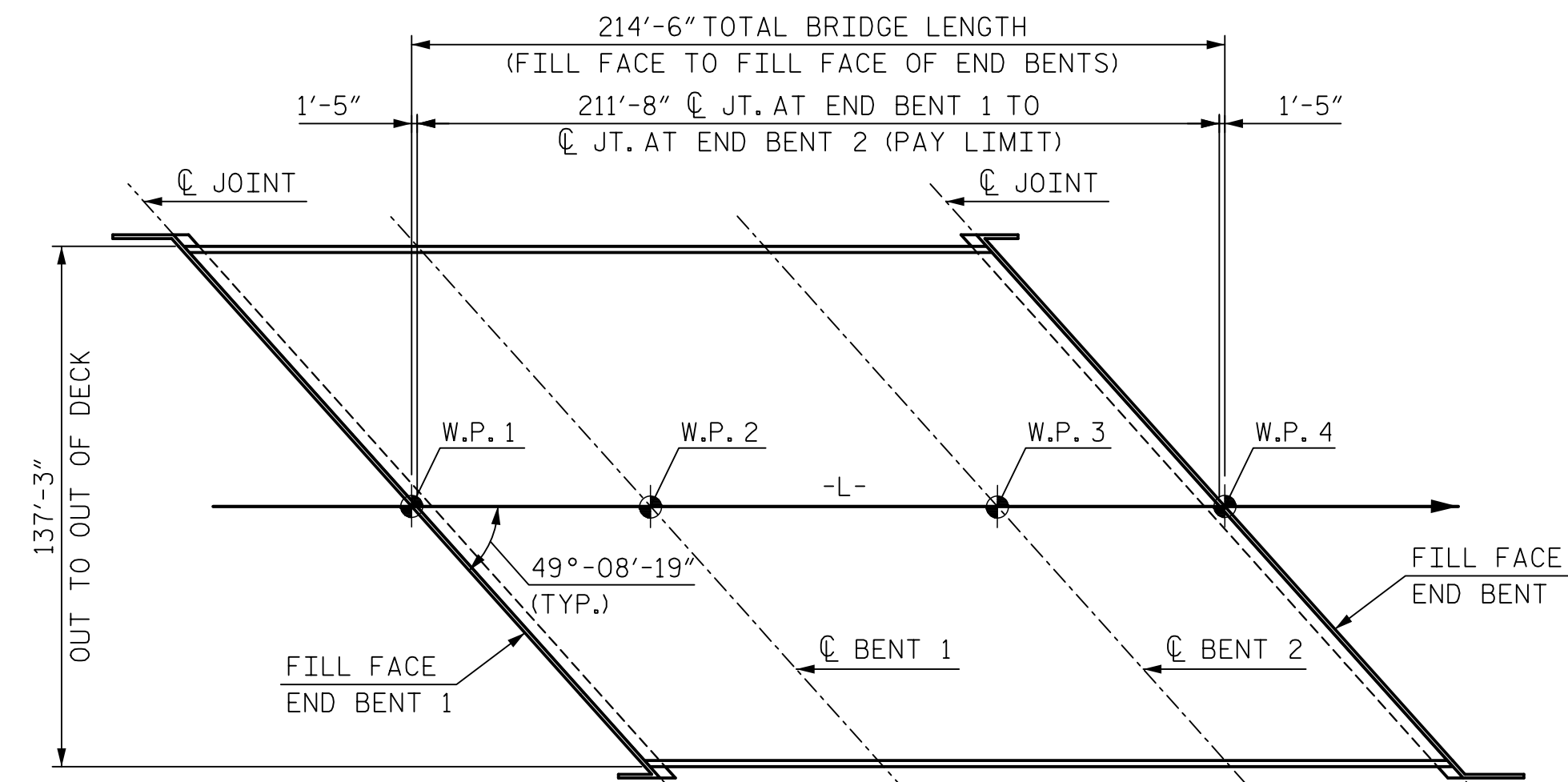
SILANE DECK TREATMENT		
STAGE 2	DIAMOND GRINDING	SILANE DECK TREATMENT
APPROACH SLABS	241 SQ.YD.	225 SQ.YD.
BRIDGE DECK	783 SQ.YD.	736 SQ.YD.
TOTAL	1,024 SQ.YD.	961 SQ.YD.
STAGE 3	DIAMOND GRINDING	SILANE DECK TREATMENT
APPROACH SLABS	354 SQ.YD.	365 SQ.YD.
BRIDGE DECK	1,080 SQ.YD.	1,116 SQ.YD.
TOTAL	1,434 SQ.YD.	1,481 SQ.YD.
STAGE 4	DIAMOND GRINDING	SILANE DECK TREATMENT
APPROACH SLABS	389 SQ.YD.	400 SQ.YD.
BRIDGE DECK	1,197 SQ.YD.	1,232 SQ.YD.
TOTAL	1,586 SQ.YD.	1,632 SQ.YD.
TOTAL	DIAMOND GRINDING	SILANE DECK TREATMENT
APPROACH SLABS	984 SQ.YD.	990 SQ.YD.
BRIDGE DECK	3,060 SQ.YD.	3,084 SQ.YD.
TOTAL	4,044 SQ.YD.	4,074 SQ.YD.

—SUPERSTRUCTURE BILL OF MATERIAL—			
STAGE 2			
	CLASS AA CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EPOXY COATED REINFORCING STEEL (LBS.)
POUR 1	53.4	29,918	30,788
POUR 2	106.1		
POUR 3	84.6		
TOTALS**	244.1	29,918	30,788

—SUPERSTRUCTURE BILL OF MATERIAL—			
STAGE 3			
	CLASS AA CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EPOXY COATED REINFORCING STEEL (LBS.)
POUR 1	82.6	42,594	4,301
POUR 2	163.4		
POUR 3	126.6		
CLOSURE POUR	15.7		
TOTALS**	388.3	42,594	4,301

—SUPERSTRUCTURE BILL OF MATERIAL—			
STAGE 4			
	CLASS AA CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EPOXY COATED REINFORCING STEEL (LBS.)
POUR 1	91.9	47,339	47,371
POUR 2	180.6		
POUR 3	143.8		
CLOSURE POUR	15.7		
TOTALS**	432.0	47,339	47,371

** QUANTITIES FOR CONCRETE BARRIER RAIL AND CONCRETE MEDIAN BARRIER ARE NOT INCLUDED

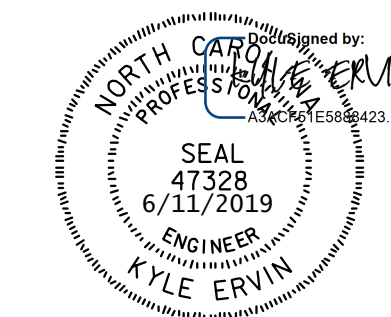


LAYOUT FOR COMPUTING AREA REINFORCED CONCRETE DECK SLAB (SQ. FT. = 29,052)

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 3 OF 3

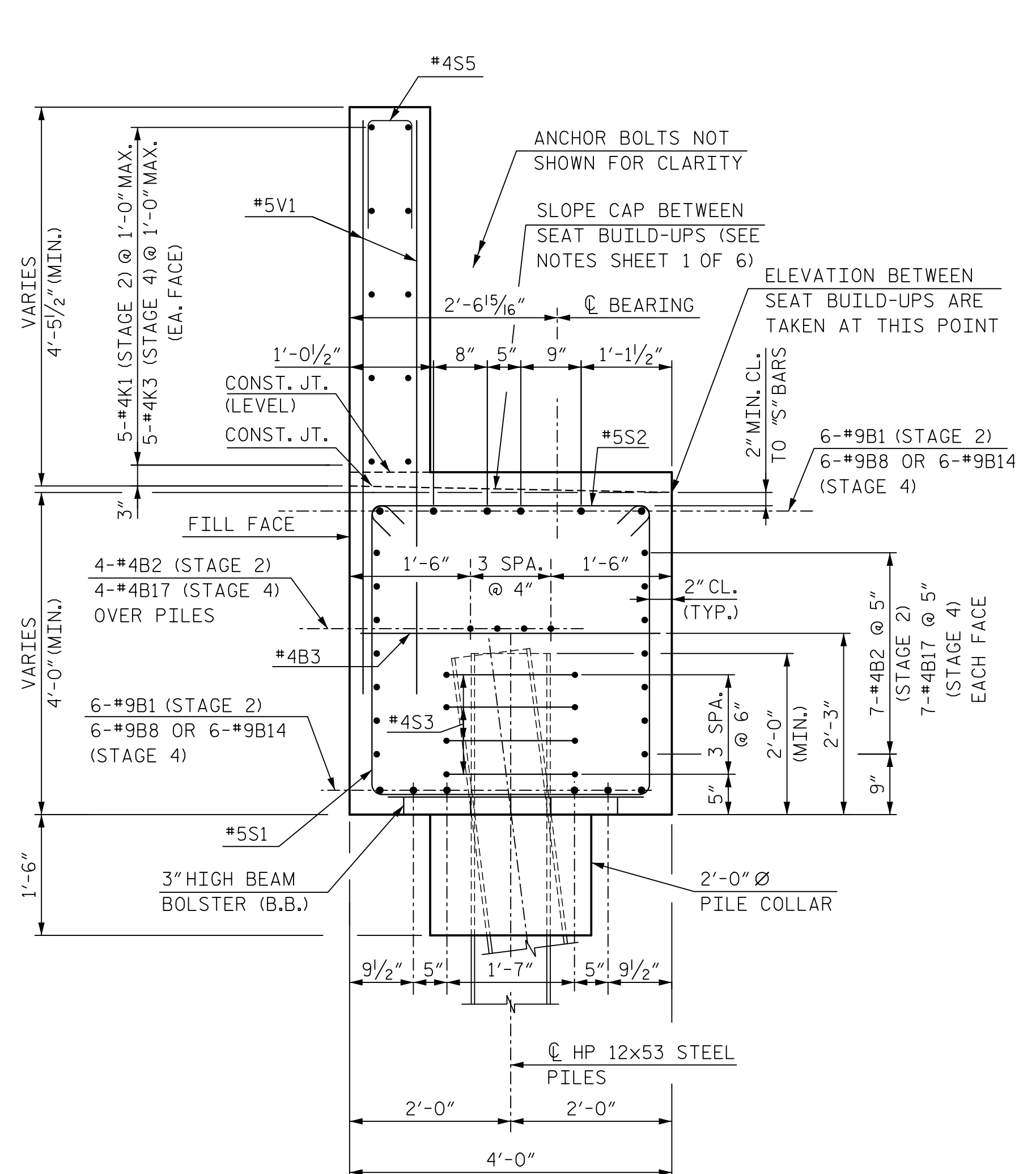
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 SUPERSTRUCTURE
 BILL OF MATERIAL



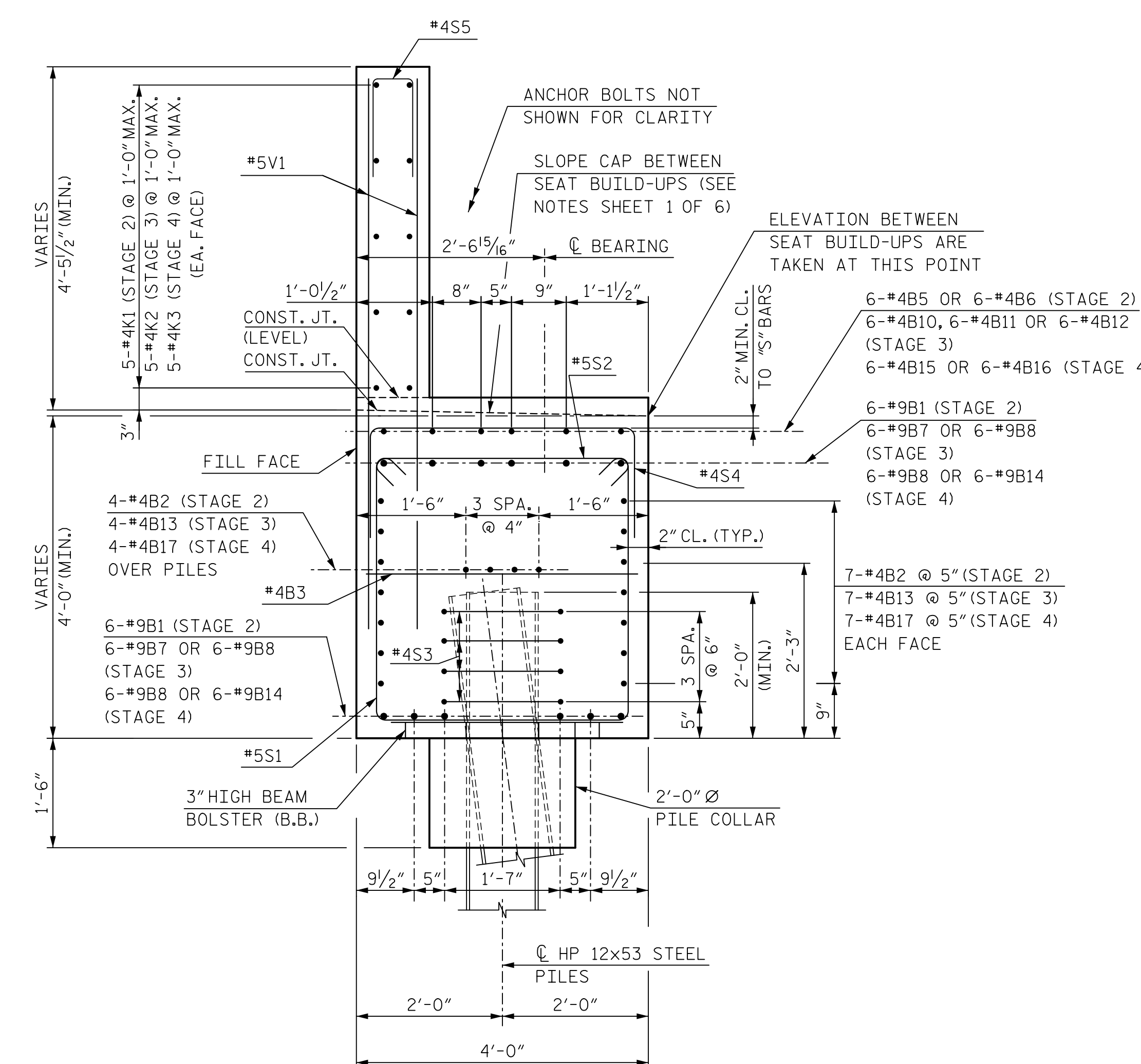
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CHECKED BY <u>K. ERVIN</u>	DATE <u>3/19</u>
DESIGN ENGINEER OF RECORD <u>K. ERVIN</u>	DATE <u>11/18</u>

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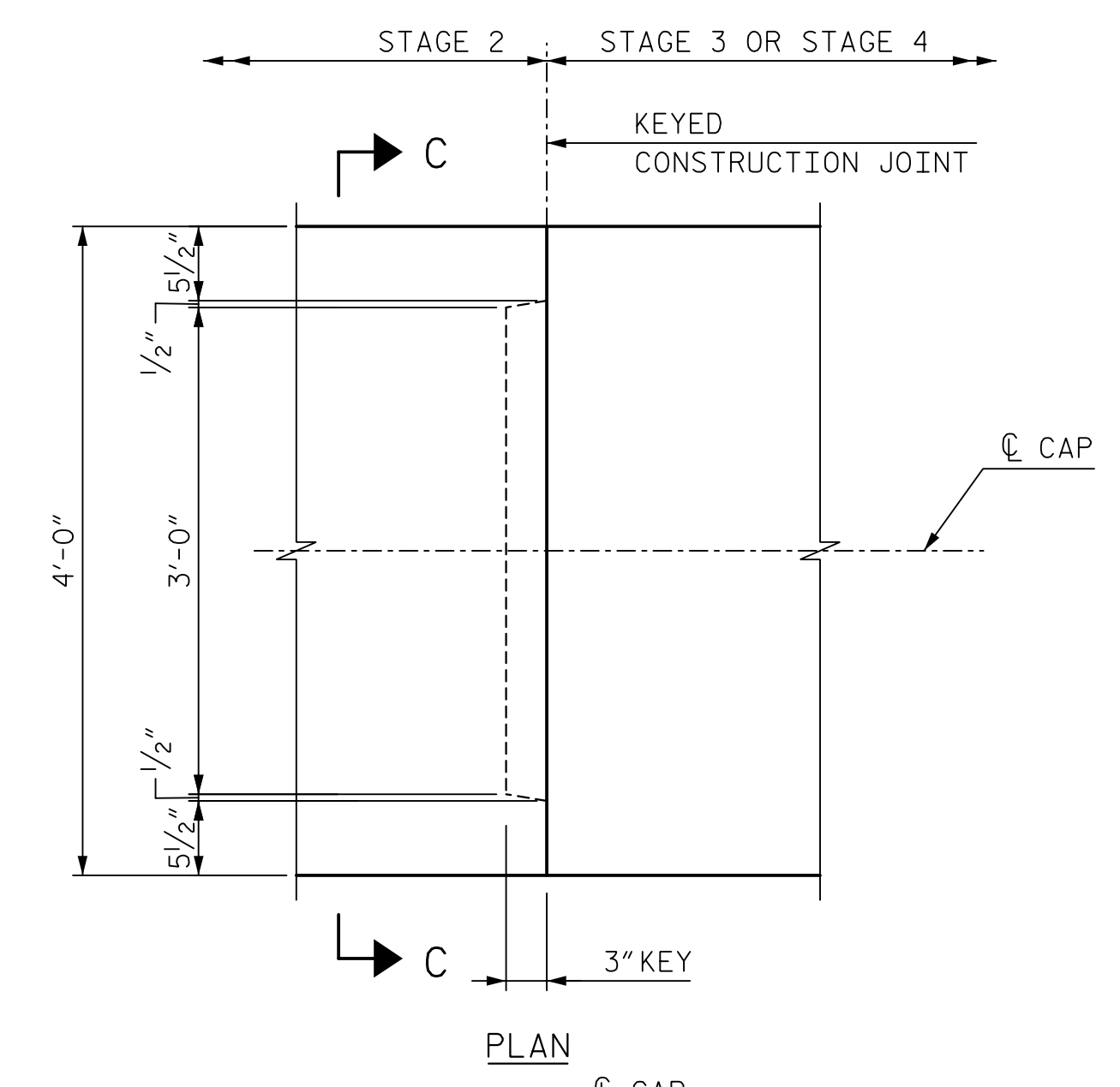
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			



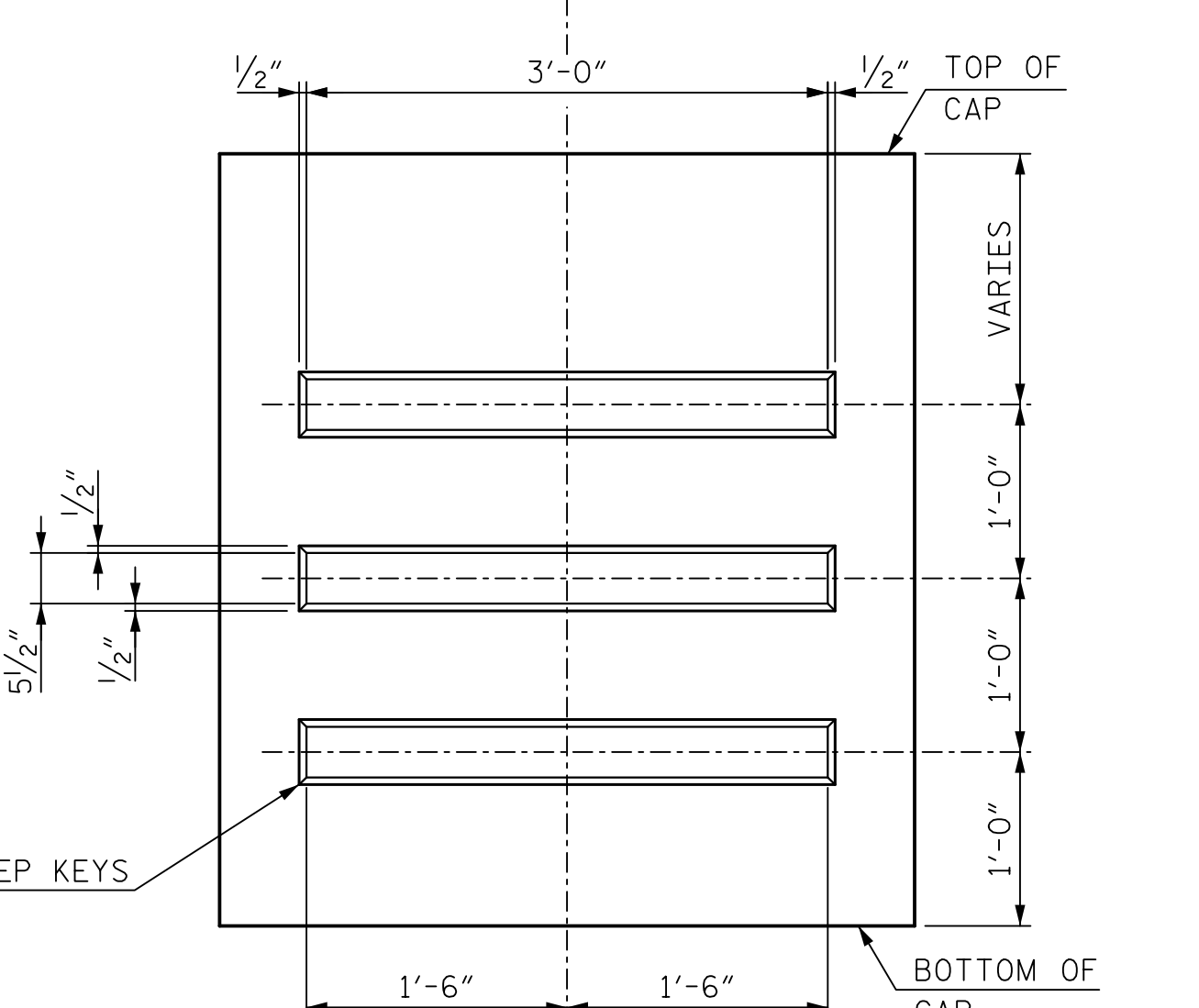
SECTION A-A



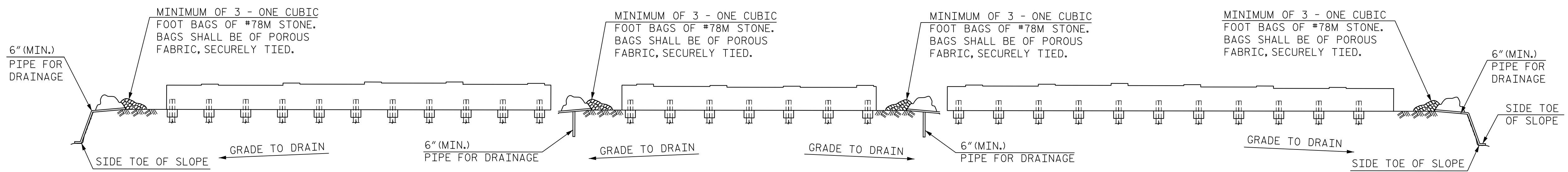
SECTION B-B



PLAN



SECTION C-C
KEYED CONSTRUCTION JOINT DETAILS



STAGE 3 CONSTRUCTION

STAGE 2 CONSTRUCTION

STAGE 4 CONSTRUCTION

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 DETRIORATED AND LOST THEIR EFFECTIVENESS.

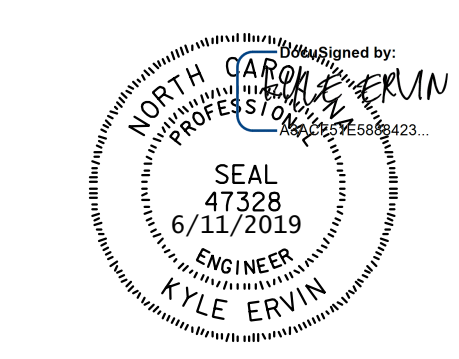
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT 1

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 4 OF 6

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



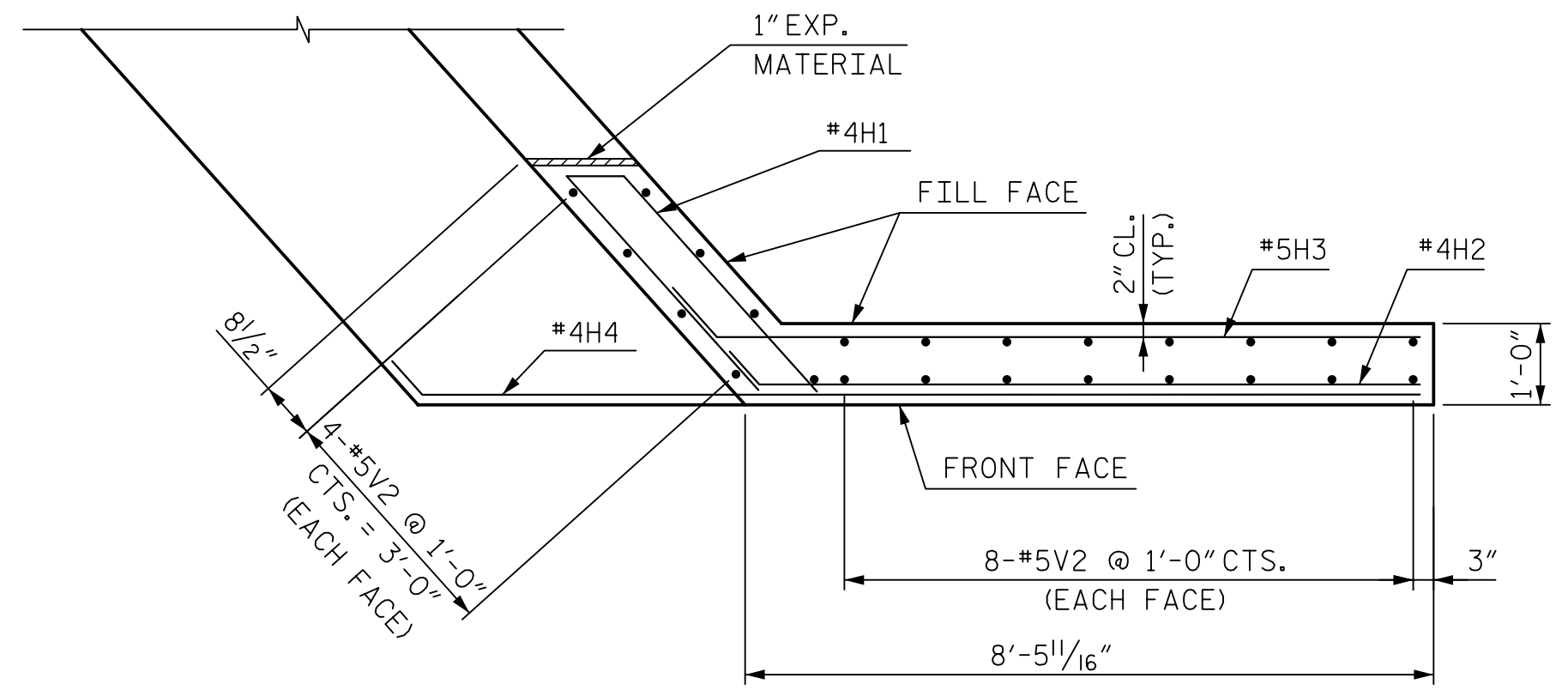
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 CHECKED BY K. ERVIN DATE 3/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 3/19

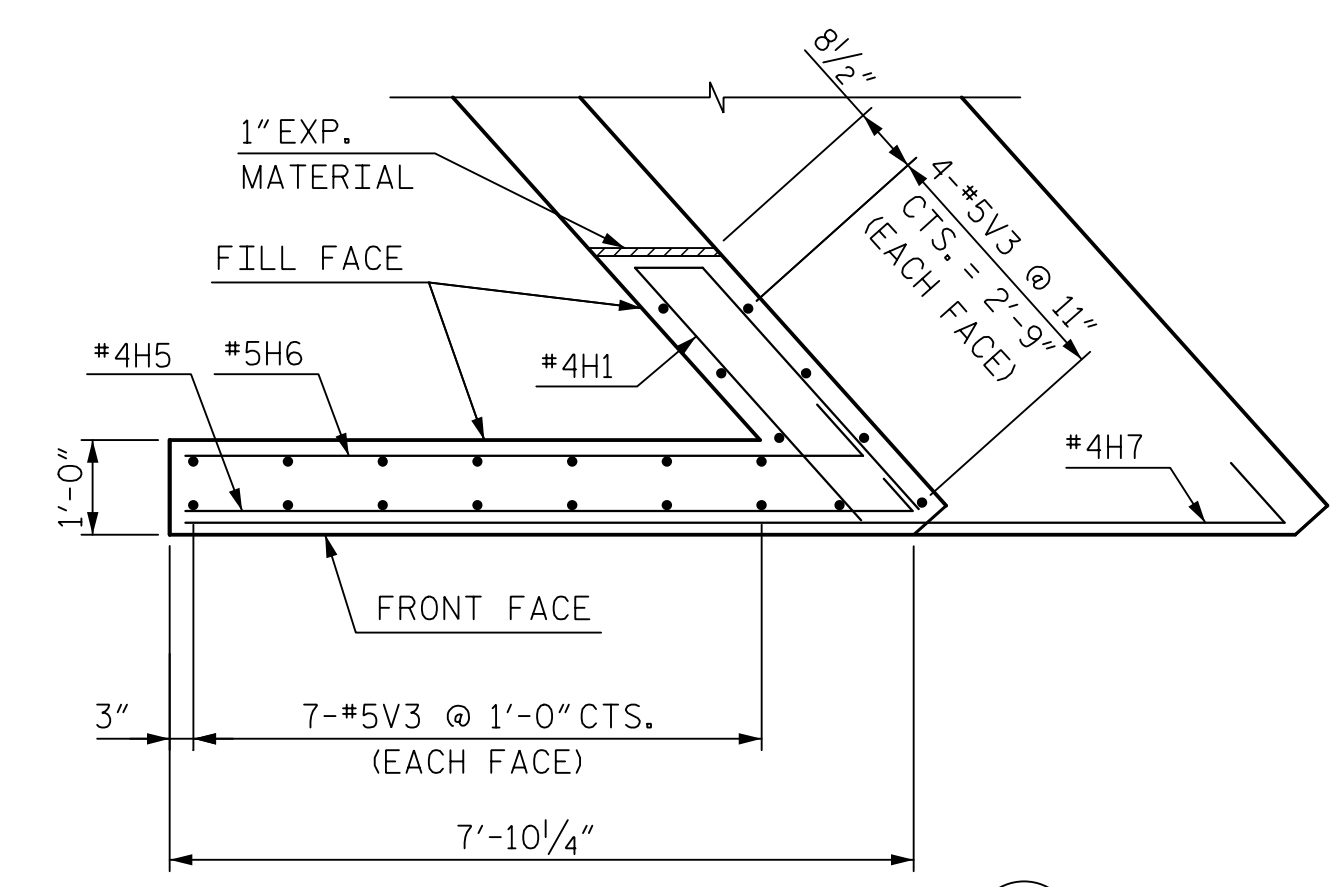
DWG. NO. 49

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
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2			4			81	

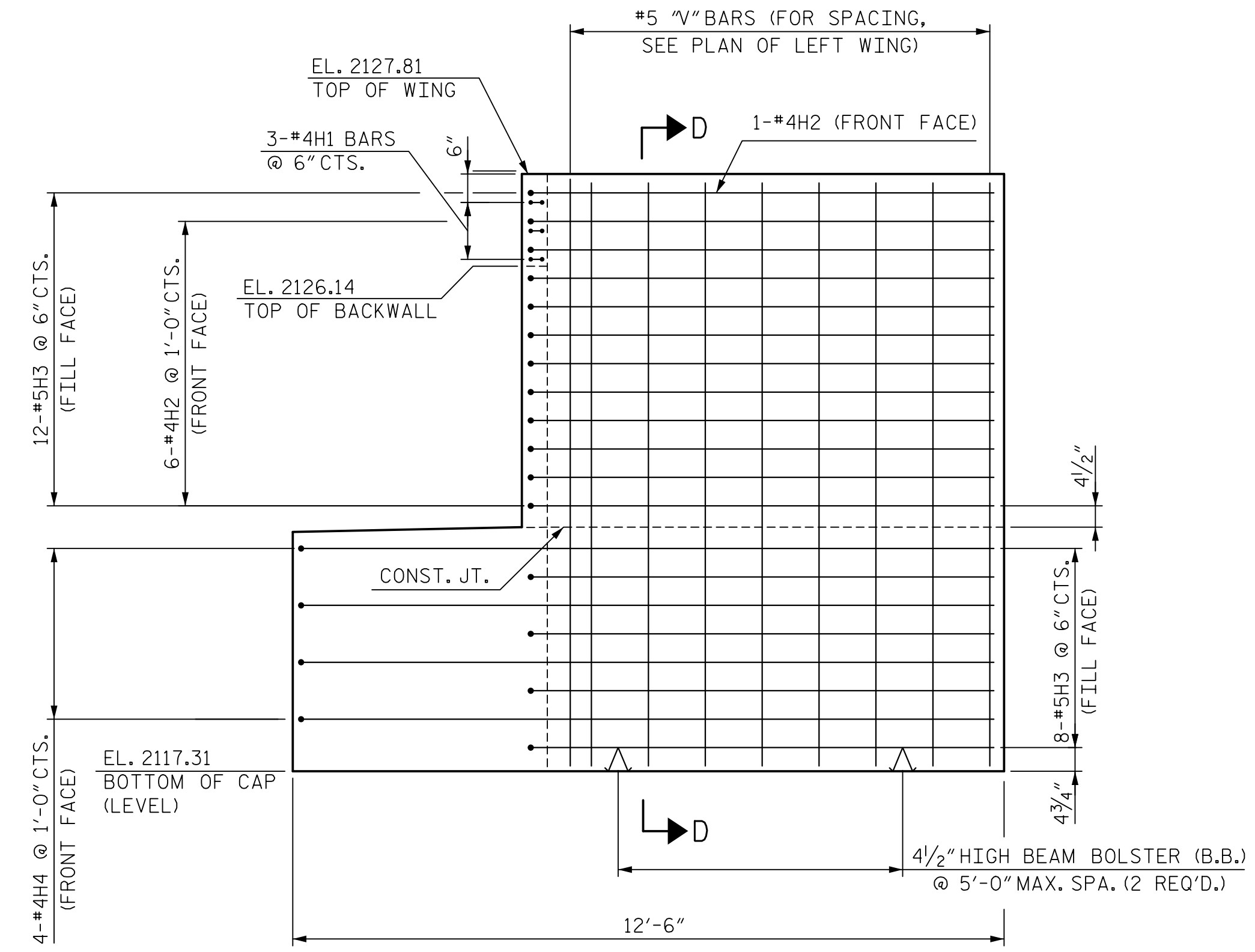
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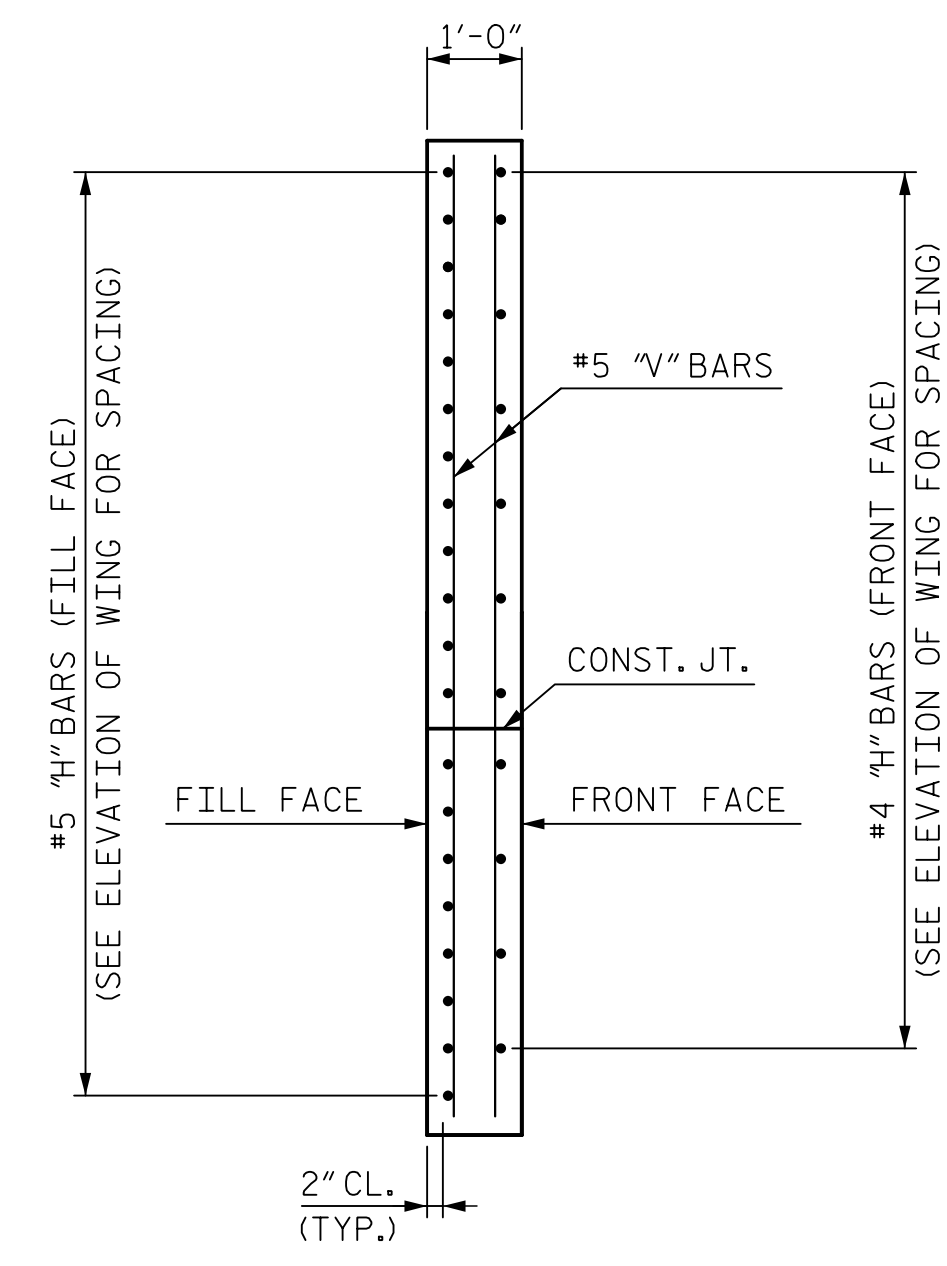
PLAN OF LEFT WING (W1)



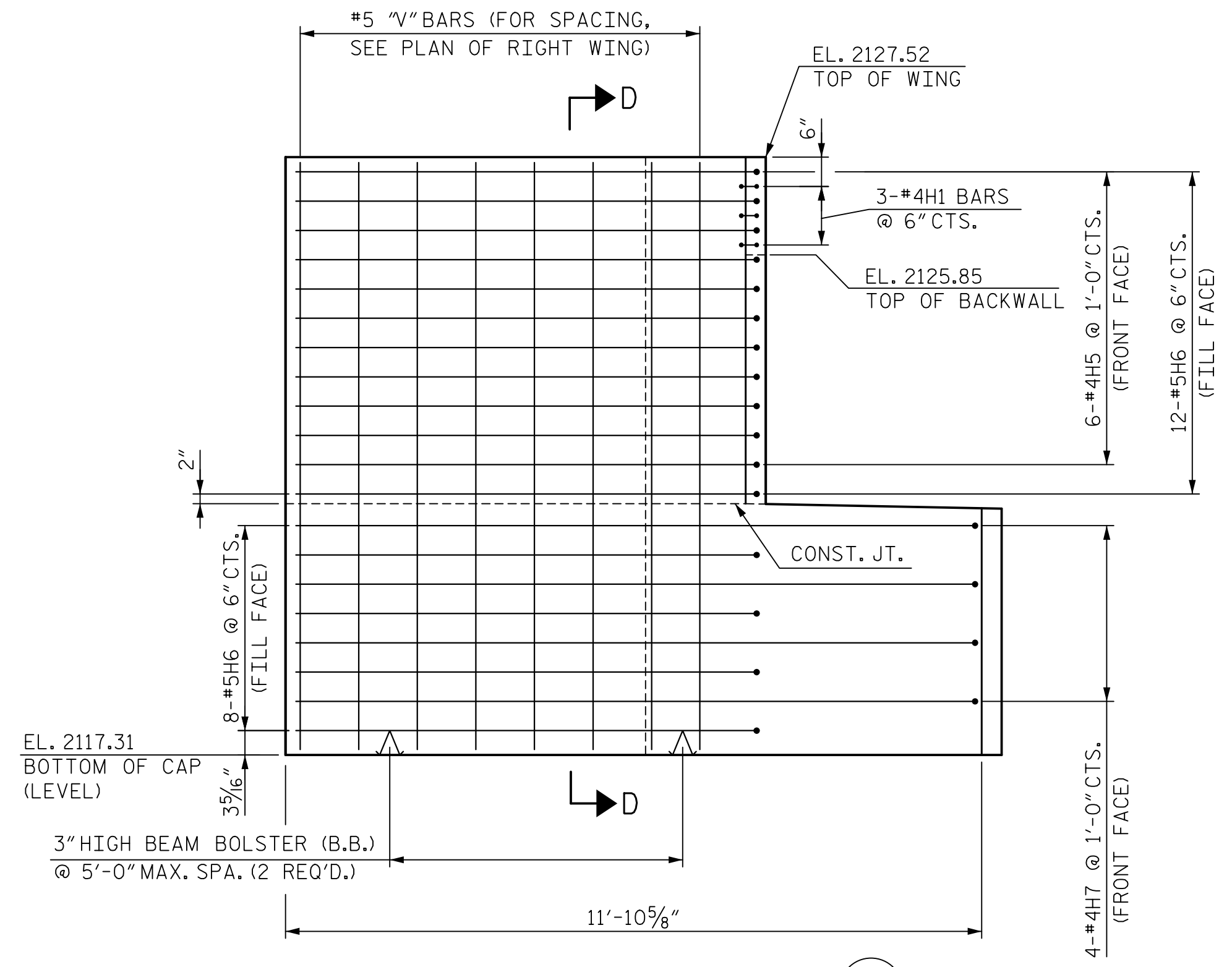
PLAN OF RIGHT WING (W2)



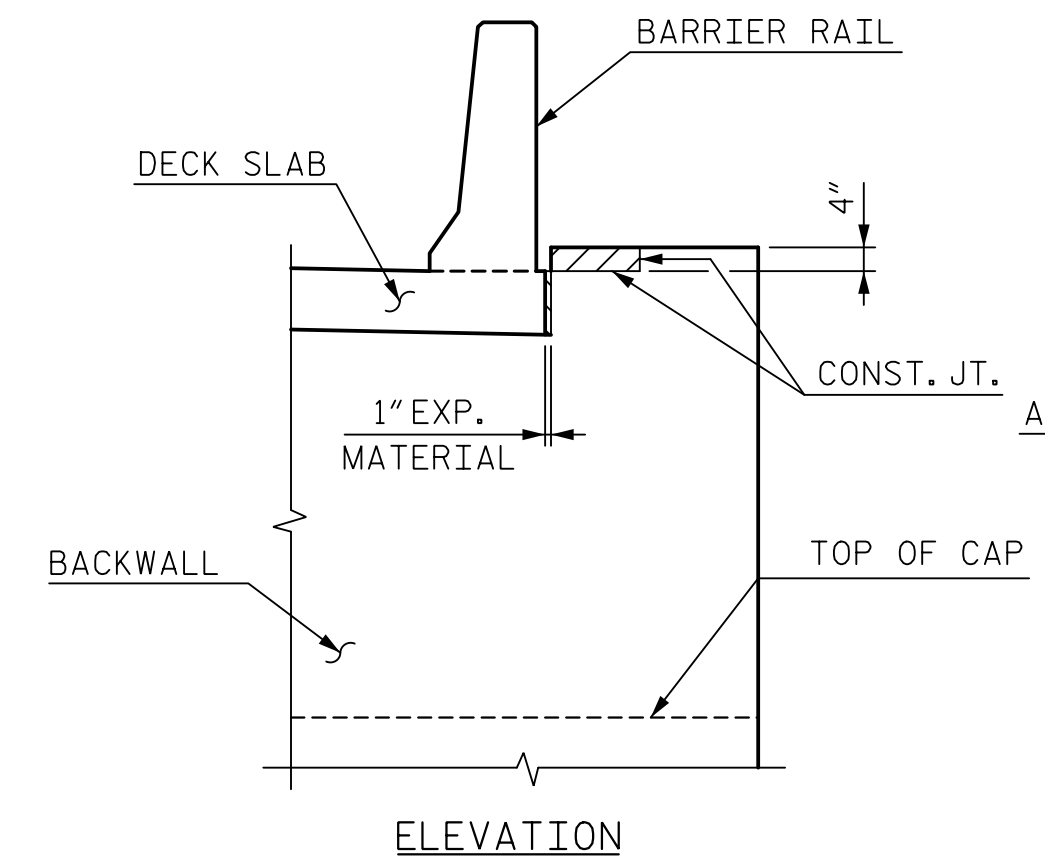
ELEVATION OF LEFT WING (W1)
(BACKWALL BARS NOT SHOWN FOR CLARITY)



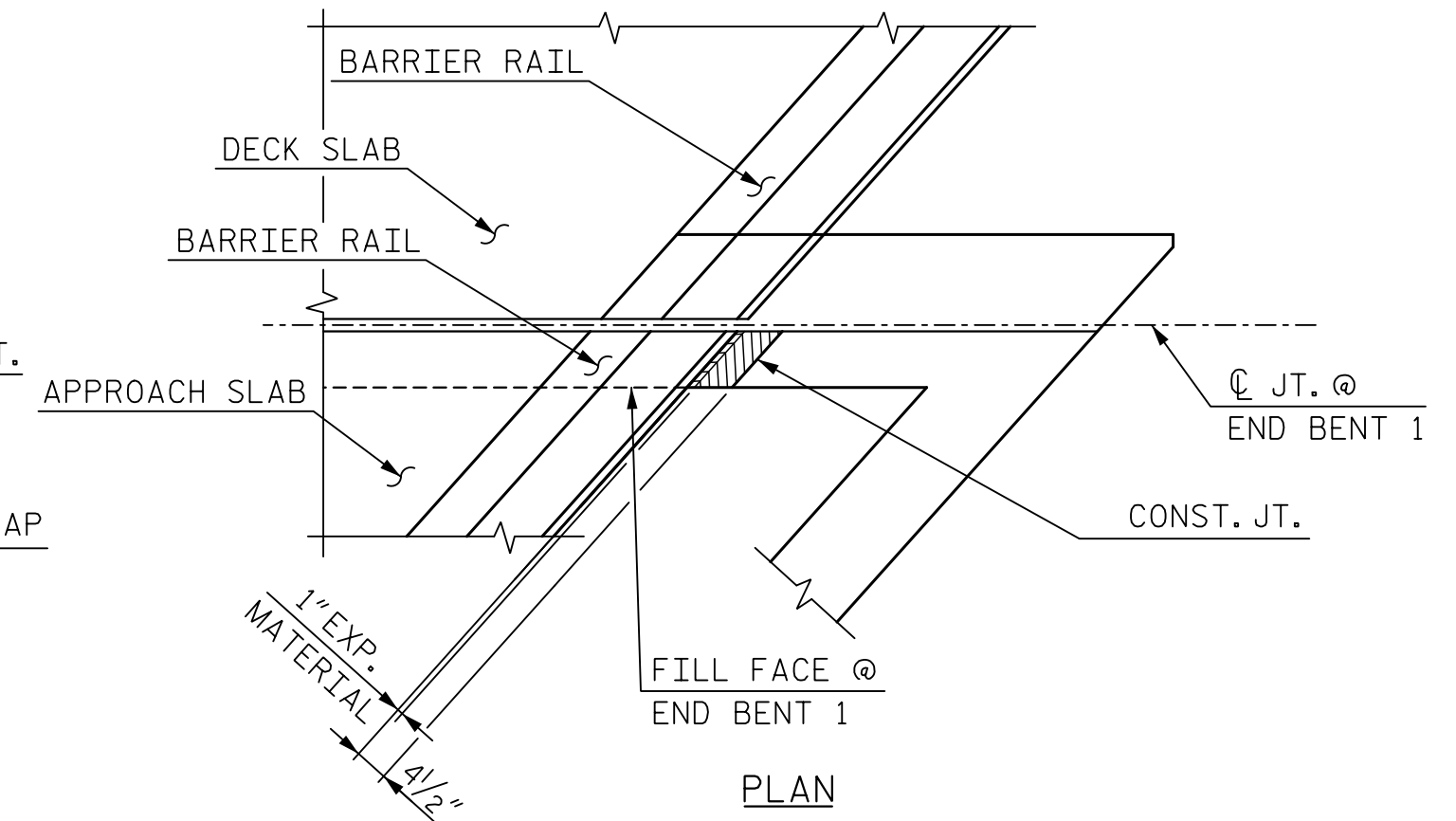
SECTION D-D



ELEVATION OF RIGHT WING (W2)
(BACKWALL BARS NOT SHOWN FOR CLARITY)



ELEVATION



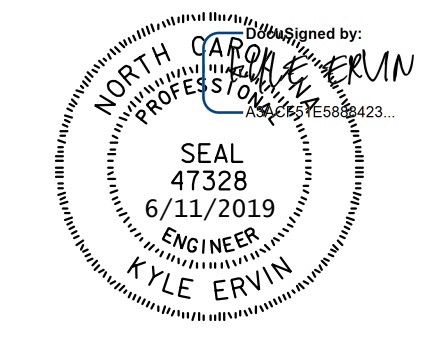
PLAN

BLOCKOUT IN WINGWALL
RIGHT SIDE SHOWN, LEFT SIDE SIMILAR

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SHEET 5 OF 6

STATE OF NORTH CAROLINA
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 SUBSTRUCTURE
 END BENT 1



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DWG. NO. 50			

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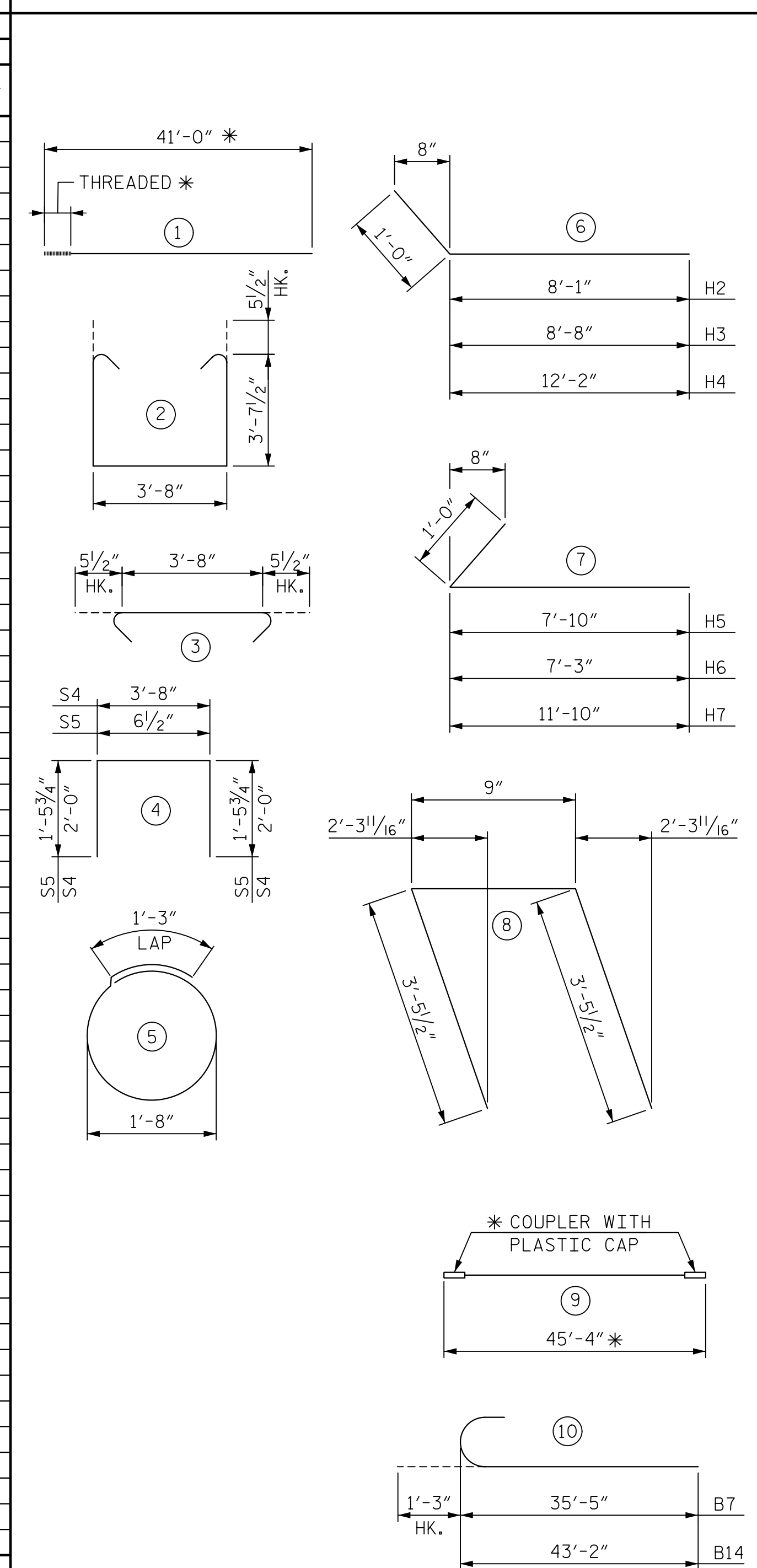
REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
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2			4			81	

BILL OF REINFORCING

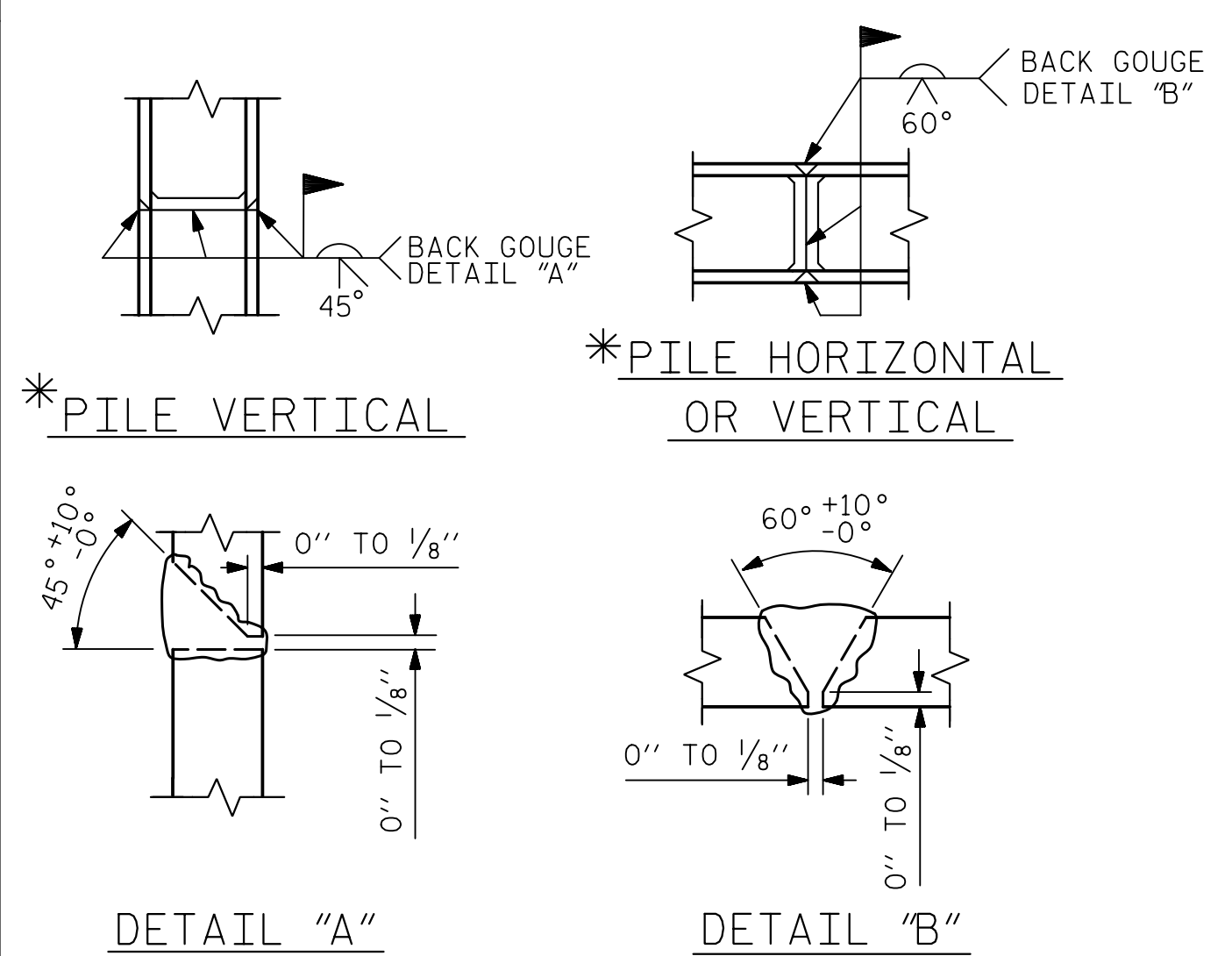
STAGE 2						END BENT 1						STAGE 4					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	9	9	45'-4"	1,850	B3	17	4	STR	3'-8"	42	B3	19	4	STR	3'-8"	47
B2	36	4	STR	26'-6"	638	B4	30	4	STR	2'-8"	54	B4	36	4	STR	2'-8"	65
B3	12	4	STR	3'-8"	30	B7	12	9	10	36'-8"	1,496	B8	12	9	1	41'-0"	1,673
B4	24	4	STR	2'-8"	43	B8	12	9	1	41'-0"	1,673	B14	12	9	10	44'-5"	1,813
B5	6	4	STR	8'-3"	33	B10	6	4	STR	18'-4"	74	B15	6	4	STR	15'-11"	64
B6	6	4	STR	6'-1"	25	B11	12	4	STR	14'-3"	115	B16	6	4	STR	28'-4"	114
						B12	6	4	STR	23'-0"	93	B17	54	4	STR	27'-11"	1,007
S1	50	5	2	11'-10"	618	B13	54	4	STR	25'-0"	902	H1	3	4	8	7'-8"	16
S2	50	5	3	4'-7"	239							H5	6	4	7	8'-10"	36
S3	28	4	5	6'-6"	122	H1	3	4	8	7'-8"	16	H6	20	5	7	8'-3"	173
S4	27	4	4	7'-8"	139	H2	7	4	6	9'-1"	43	H7	4	4	7	12'-10"	35
S5	45	4	4	3'-6"	106	H3	20	5	6	9'-8"	202						
						H4	4	4	6	13'-2"	36						
K1	20	4	STR	26'-6"	354							S1	86	5	2	11'-10"	1,062
						S1	73	5	2	11'-10"	901	S2	86	5	3	4'-7"	412
V1	90	5	STR	6'-5"	603	S2	73	5	3	4'-7"	349	S3	44	4	5	6'-6"	192
						S3	44	4	5	6'-6"	192	S4	59	4	4	7'-8"	303
						S4	67	4	4	7'-8"	344	S5	72	4	4	3'-6"	169
						S5	67	4	4	3'-6"	157						
												K3	30	4	STR	27'-0"	541
						K2	30	4	STR	25'-3"	506	V1	145	5	STR	6'-5"	971
												V3	22	5	STR	9'-9"	224
						V1	135	5	STR	6'-5"	904						
						V2	24	5	STR	10'-1"	253						

QUANTITIES				QUANTITIES				QUANTITIES			
REINFORCING STEEL	LBS.	4,800		REINFORCING STEEL	LBS.	8,352		REINFORCING STEEL	LBS.	8,917	
CLASS "A" CONCRETE BREAKDOWN				CLASS "A" CONCRETE BREAKDOWN				CLASS "A" CONCRETE BREAKDOWN			
POUR 1 - CAP & COLLARS	CU. YDS.	29.3		POUR 1 - CAP, BOT. OF WINGS, & COLLARS	CU. YDS.	50.3		POUR 1 - CAP, BOT. OF WINGS, & COLLARS	CU. YDS.	53.0	
POUR 2 - BACKWALL	CU. YDS.	7.6		POUR 2 - TOP OF WINGS & BACKWALL	CU. YDS.	14.1		POUR 2 - TOP OF WINGS & BACKWALL	CU. YDS.	14.6	
TOTAL	CU. YDS.	36.9		TOTAL	CU. YDS.	64.4		TOTAL	CU. YDS.	67.6	
HP 12x53 STEEL PILES	NO.	7		HP 12x53 STEEL PILES	NO.	11		HP 12x53 STEEL PILES	NO.	11	
	LIN. FT.	609			LIN. FT.	957			LIN. FT.	957	

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT
 * THE CONTRACTOR MAY MODIFY NOTED BAR DIMENSIONS AS NEEDED TO INSTALL MECHANICAL REBAR COUPLERS PER MANUFACTURER'S RECOMMENDATIONS. CHANGES TO REBAR LENGTH ARE TO BE APPROVED BY THE ENGINEER.

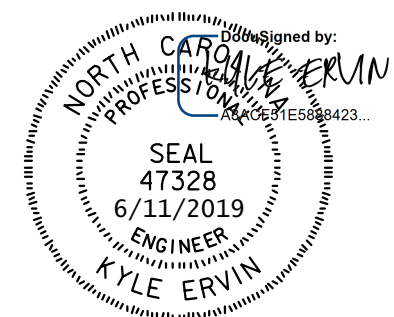


* POSITION OF PILE DURING WELDING.
PILE SPLICE DETAILS

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 6 OF 6

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

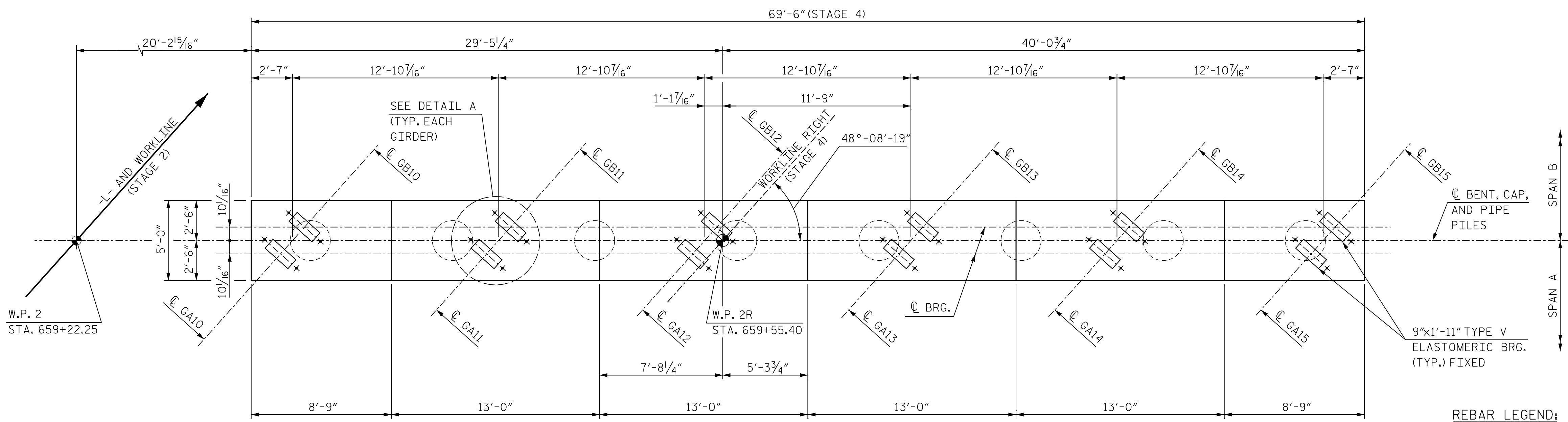


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DESIGN ENGINEER OF RECORD <u>K. ERVIN</u>	DATE <u>3/19</u>

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NO.	BY	DATE	NO.	BY	DATE	81
1			3			
2			4			

SHEET NO. S1-51

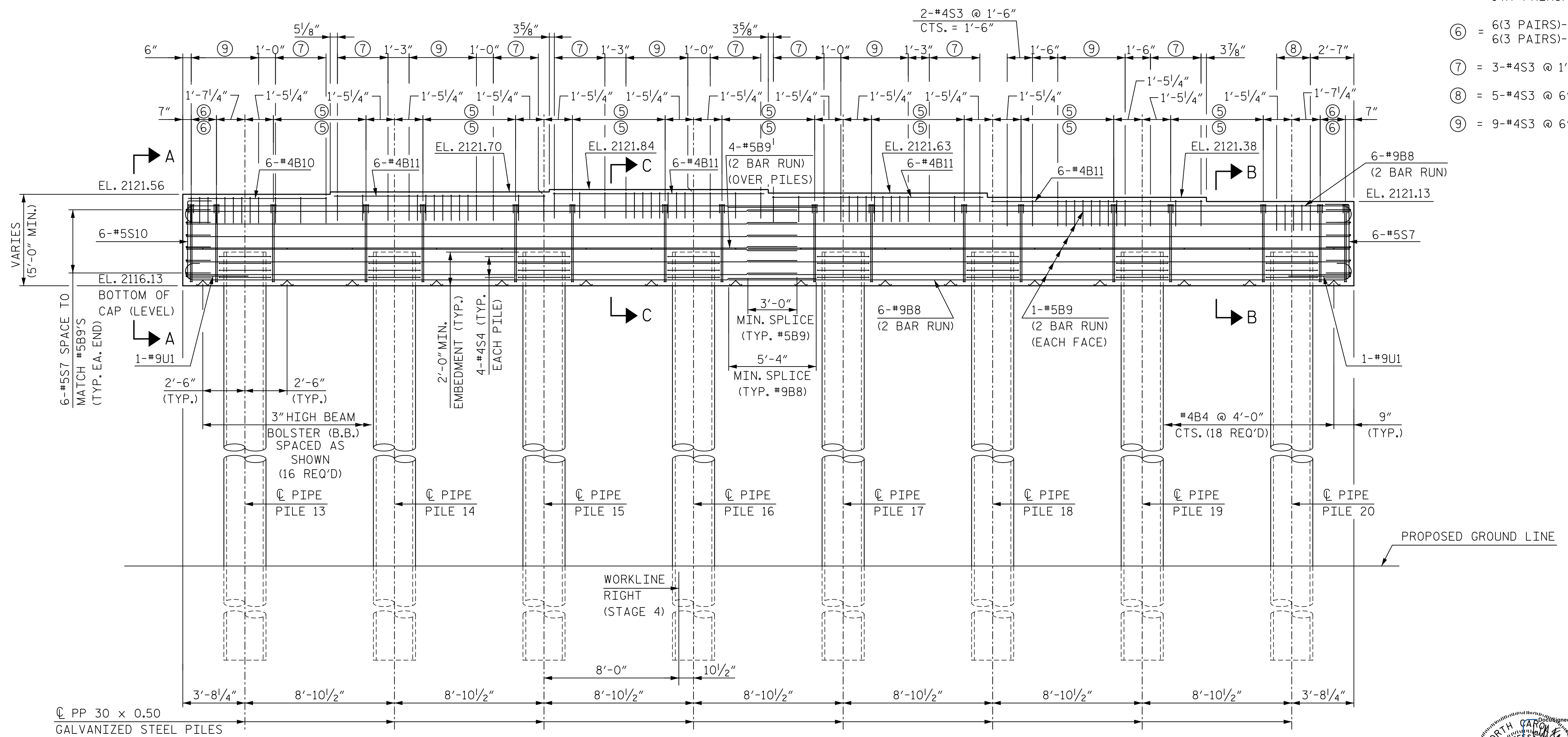


PLAN

NOTES:
 STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 FOR ADDITIONAL REINFORCING STEEL IN PP 30 x 0.50 GALVANIZED STEEL PILES, SEE "30" STEEL PIPE PILE SHEET."
 GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 43 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.
 FOR END VIEW AND DETAIL A, SEE "BENT 1" (1 OF 5) SHEET.
 FOR VIEW A-A AND SECTIONS, SEE "BENT 1" (4 OF 5) SHEET.
 FOR BILL OF REINFORCING AND QUANTITIES, SEE "BENT 1" (5 OF 5) SHEET.
 W.P. DENOTES WORK POINT

REBAR LEGEND:

- ⑤ = 14(7 PAIRS)-#5S9 @ 1'-0" CTS. = 6'-0"
 14(7 PAIRS)-#5S2 @ 1'-0" CTS. = 6'-0"
- ⑥ = 6(3 PAIRS)-#5S9 @ 9" CTS. = 1'-6"
 6(3 PAIRS)-#5S2 @ 9" CTS. = 1'-6"
- ⑦ = 3-#4S3 @ 1'-6" CTS. = 3'-0"
- ⑧ = 5-#4S3 @ 6" CTS. = 2'-0"
- ⑨ = 9-#4S3 @ 6" CTS. = 4'-0"



ELEVATION - STAGE 4 CONSTRUCTION

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 3 OF 5
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT 1
 STAGE 4 CONSTRUCTION



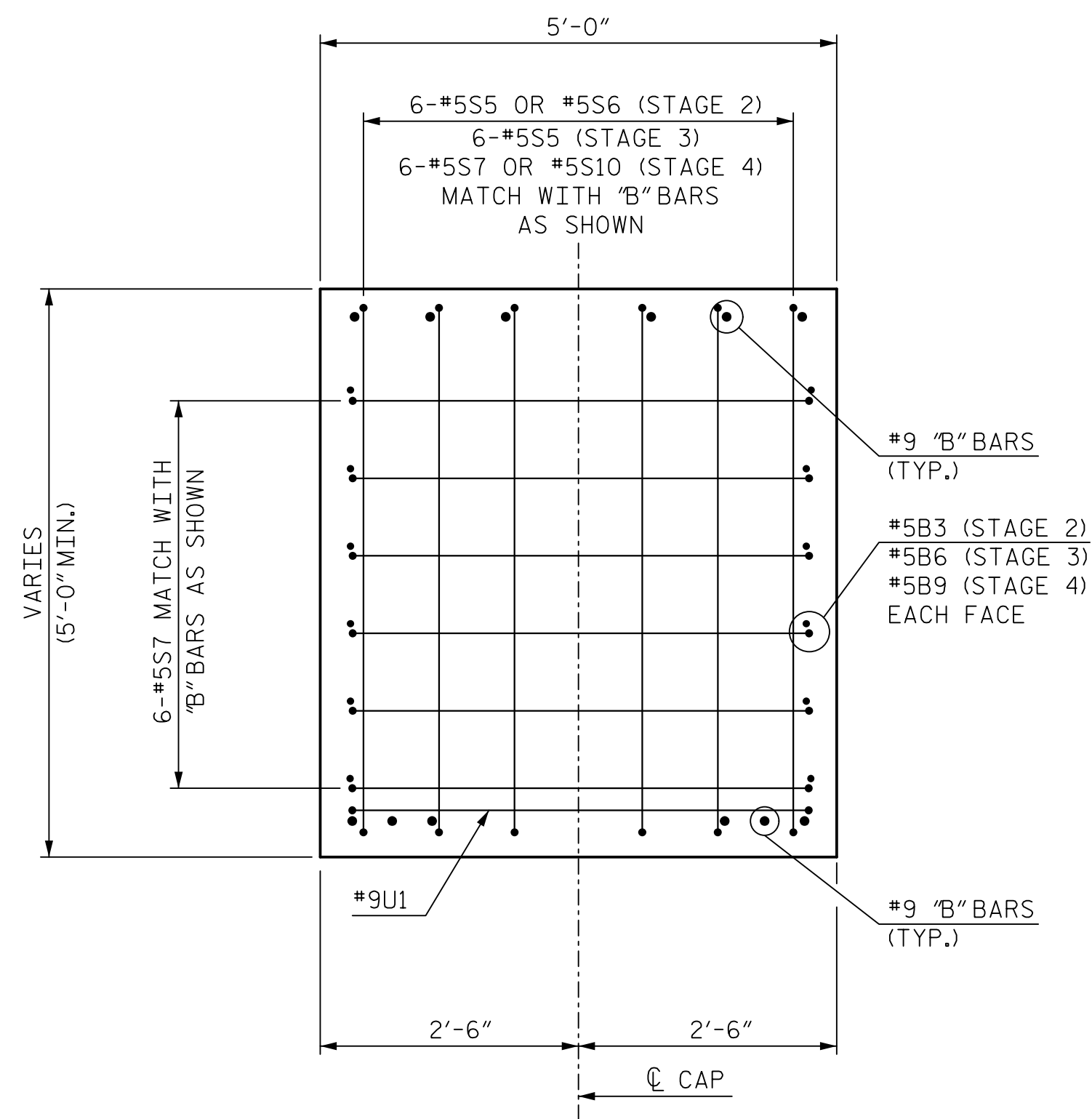
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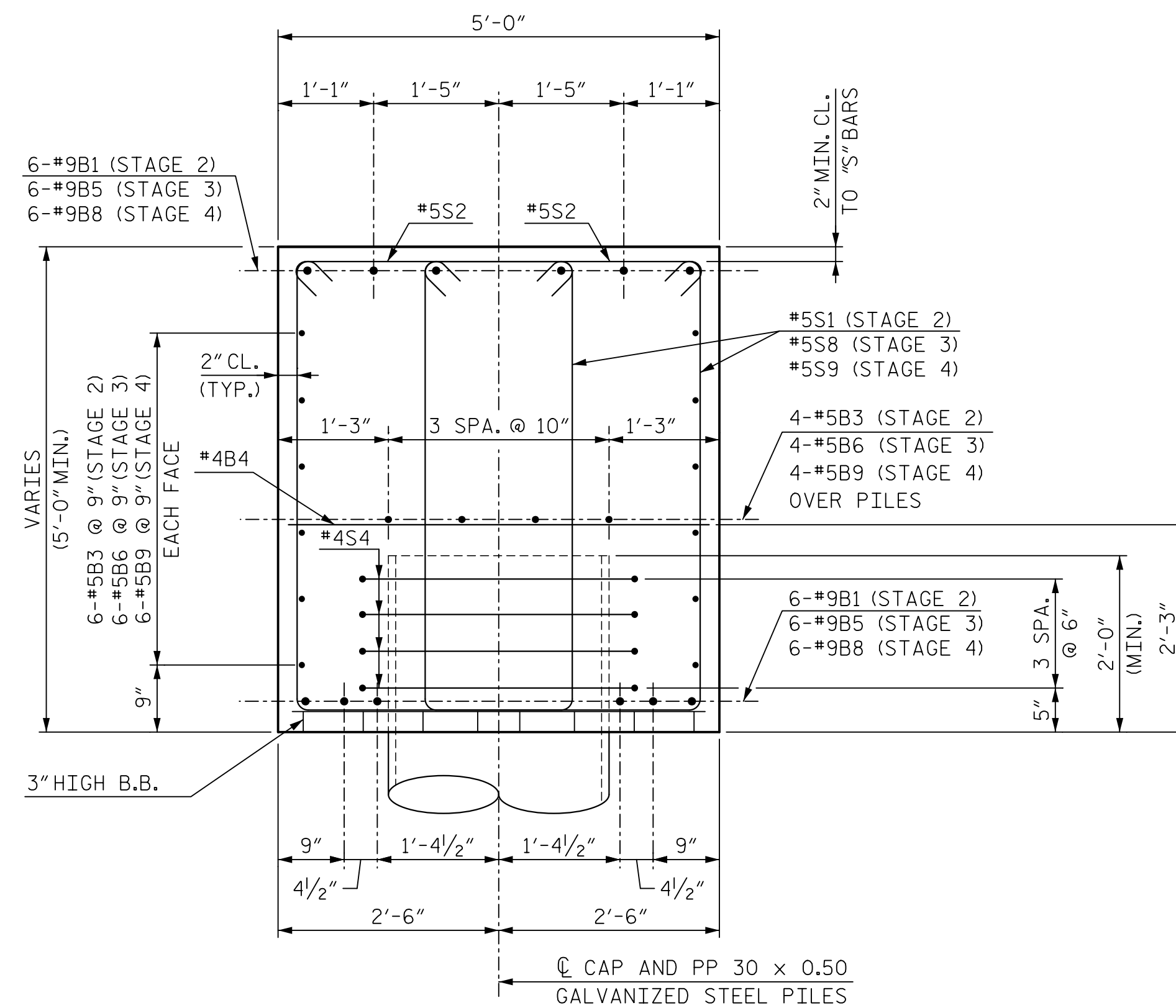
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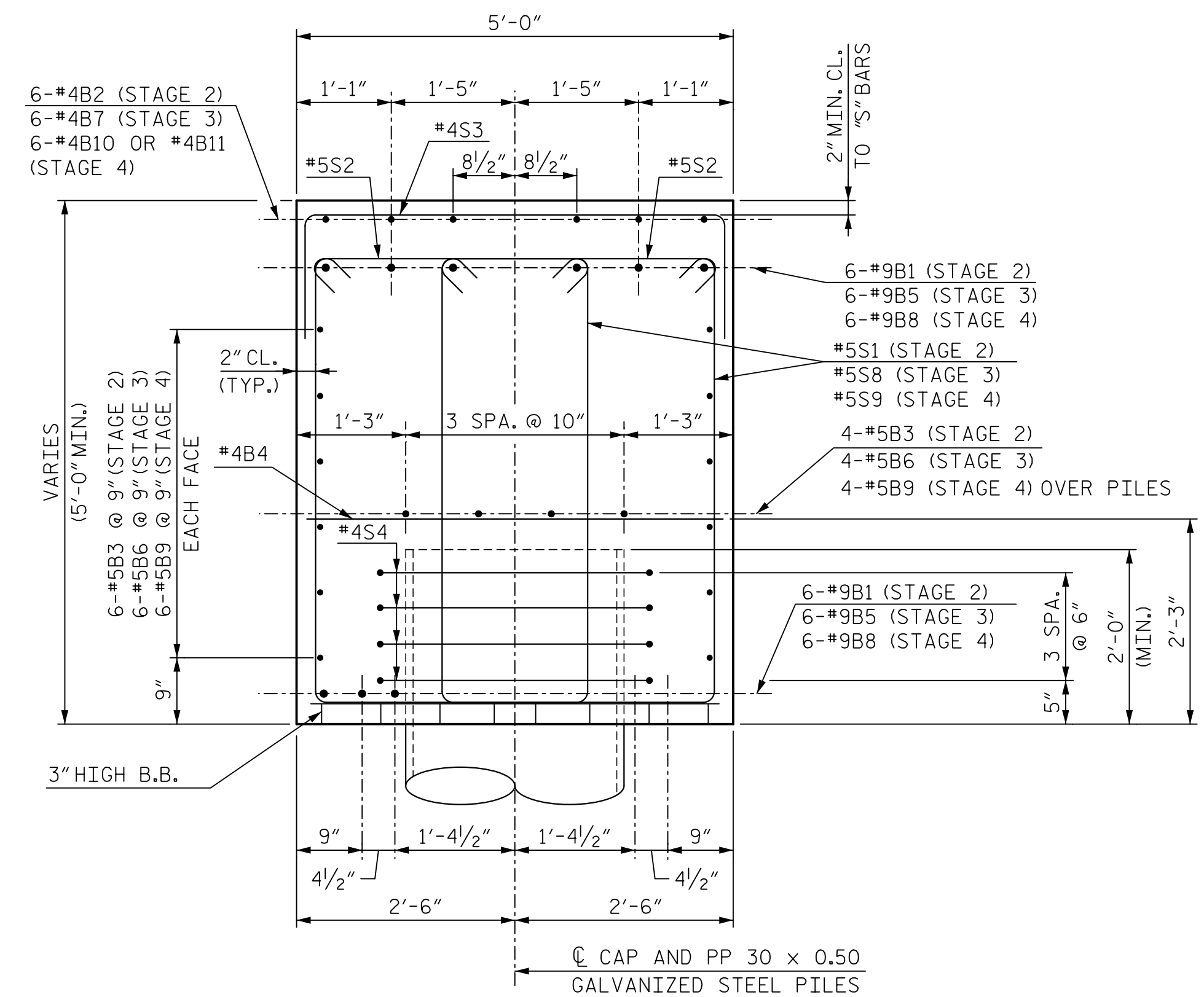
REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
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2			4			81	



VIEW A-A



SECTION B-B

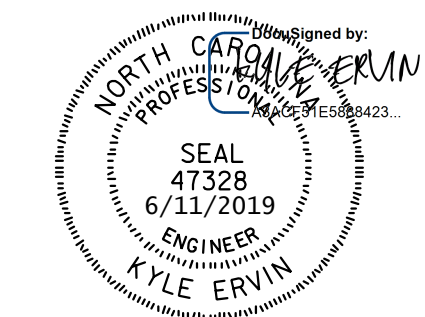


SECTION C-C

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT 1



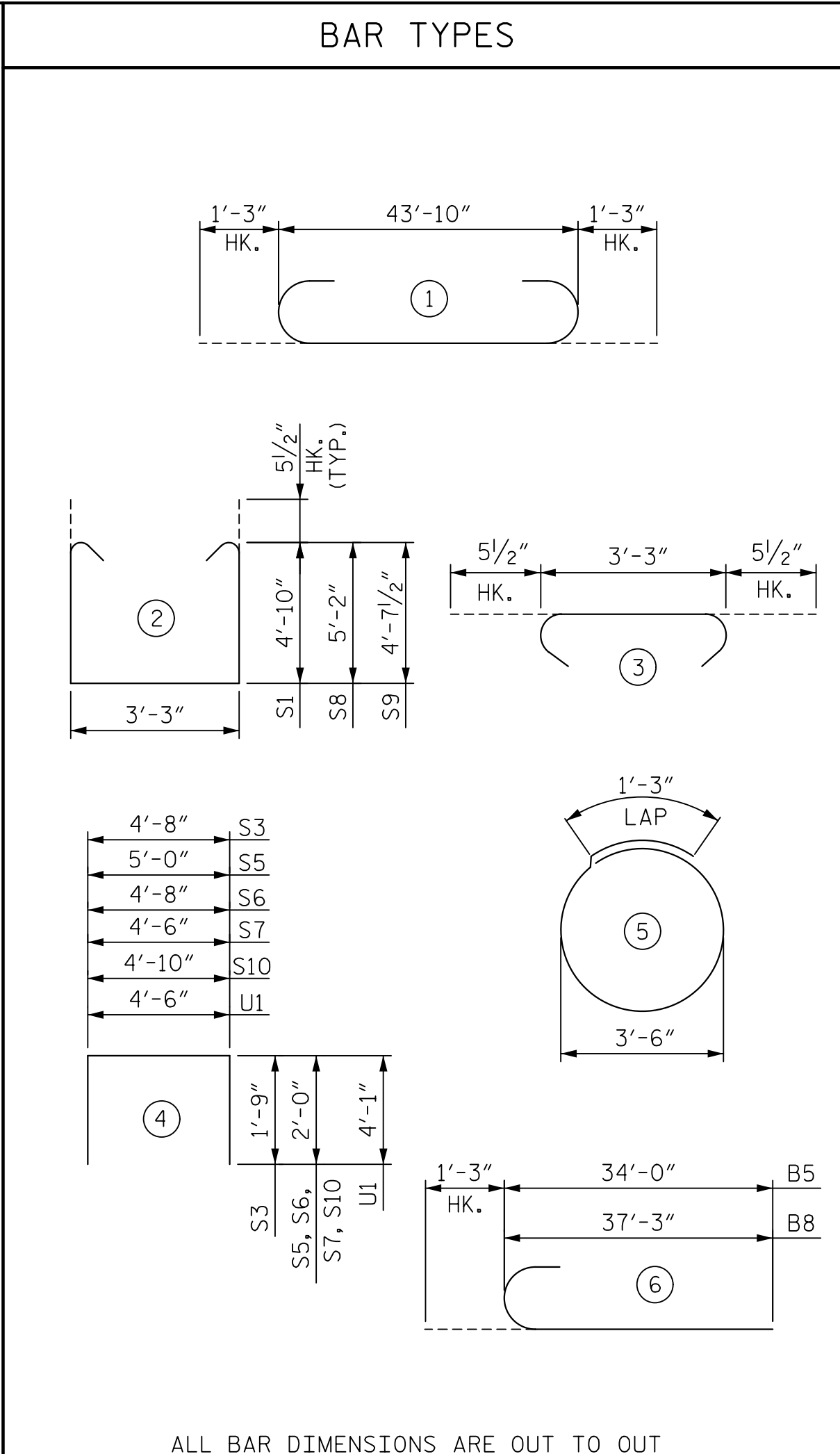
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REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			S1-55	
2			4			81	



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF REINFORCING																		
STAGE 2						BENT 1 STAGE 3						STAGE 4						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	12	9	1	46'-4"	1,891	B4	16	4	STR	4'-8"	50	B4	18	4	STR	4'-8"	57	
B2	16	4	STR	8'-9"	35	B5	24	9	6	35'-3"	2,877	B8	24	9	6	38'-6"	3,142	
B3	16	5	STR	43'-10"	732	B6	32	5	STR	32'-10"	1,096	B9	32	5	STR	36'-1"	1,205	
B4	11	4	STR	4'-8"	35	B7	6	4	STR	28'-6"	115	B10	6	4	STR	8'-5"	34	
												B11	24	4	STR	12'-8"	203	
S1	68	5	2	13'-10"	982	S2	96	5	3	4'-2"	418	S2	110	5	3	4'-2"	478	
S2	68	5	3	4'-2"	296	S3	46	4	4	8'-2"	251	S3	76	4	4	8'-2"	415	
S3	25	4	4	8'-2"	136	S4	28	4	5	12'-3"	230	S4	32	4	5	12'-3"	262	
S4	20	4	5	12'-3"	164	S5	12	5	4	9'-0"	113	S7	18	5	4	8'-6"	160	
S5	6	5	4	9'-0"	57	S7	12	5	4	8'-6"	107	S9	110	5	2	13'-5"	1,540	
S6	6	5	4	8'-8"	55	S8	96	5	2	14'-6"	1,452	S10	6	5	4	8'-10"	56	
S7	12	5	4	8'-6"	107													
U1	2	9	4	12'-8"	87	U1	2	9	4	21'-8"	87	U1	2	9	4	12'-8"	87	
QUANTITIES						QUANTITIES						QUANTITIES						
REINFORCING STEEL LBS.						4,577	REINFORCING STEEL LBS.						6,796	REINFORCING STEEL LBS.				7,639
CLASS A CONCRETE CU. YDS.						41.9 Δ	CLASS A CONCRETE CU. YDS.						65.0 Δ	CLASS A CONCRETE CU. YDS.				67.0 Δ
PP 30 x 0.50 GALVANIZED STEEL PILES NO.						5	PP 30 x 0.50 GALVANIZED STEEL PILES NO.						7	PP 30 x 0.50 GALVANIZED STEEL PILES NO.				8
LIN. FT.						335	LIN. FT.						469	LIN. FT.				536

Δ CONCRETE DISPLACED BY THE PP 30 x 0.50 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.

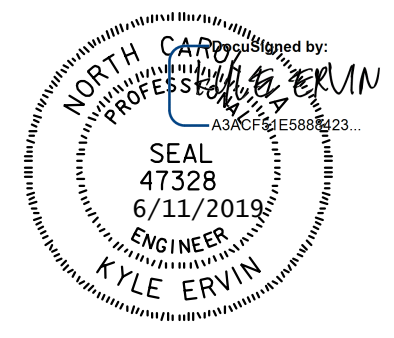
PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE

BENT 1



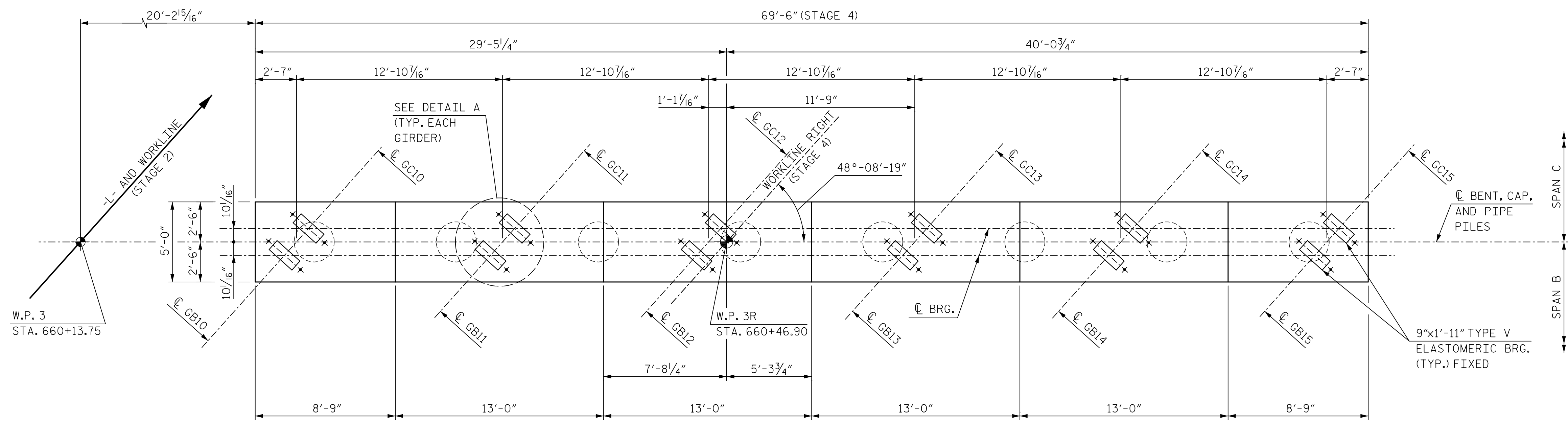
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 CHECKED BY K. ERVIN DATE 3/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 3/19

DWG. NO. 56

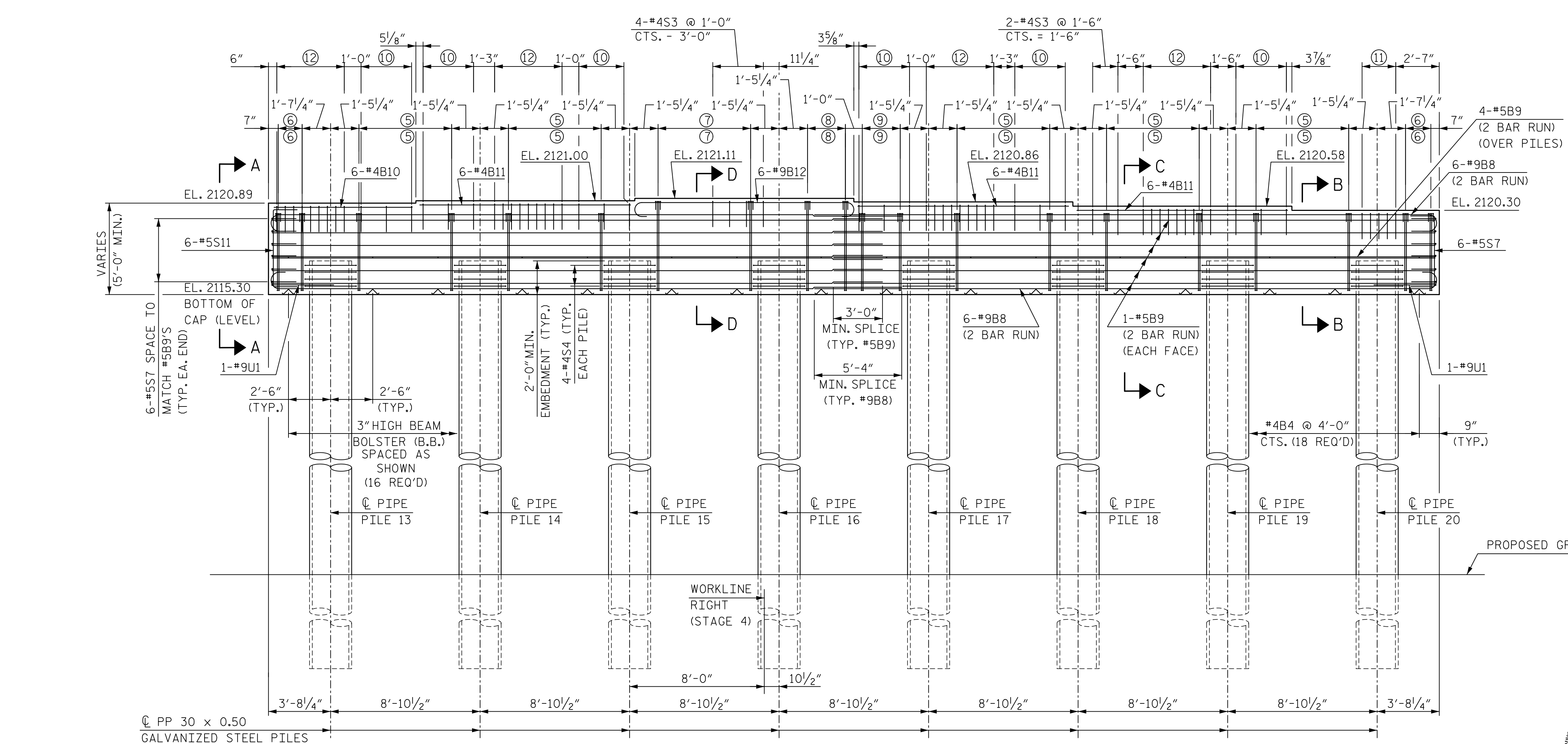
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REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			S1-56	
2			4			81	



PLAN

NOTES:
 STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 FOR ADDITIONAL REINFORCING STEEL IN PP 30 x 0.50 GALVANIZED STEEL PILES, SEE "30" STEEL PIPE PILE" SHEET.
 GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 43 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.
 FOR END VIEW AND DETAIL A, SEE "BENT 2" (1 OF 5) SHEET.
 FOR VIEW A-A AND SECTIONS, SEE "BENT 2" (4 OF 5) SHEET.
 FOR BILL OF REINFORCING AND QUANTITIES, SEE "BENT 2" (5 OF 5) SHEET.
 W.P. DENOTES WORK POINT

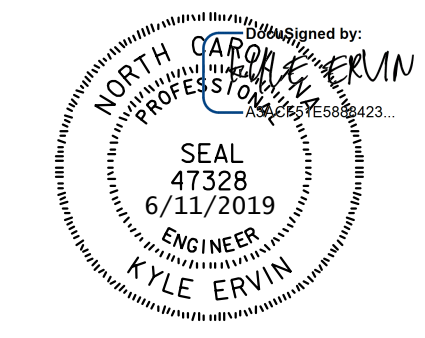


ELEVATION - STAGE 4 CONSTRUCTION

- REBAR LEGEND:**
- ⑤ = 14(7 PAIRS)-#5S10 @ 1'-0" CTS. = 6'-0"
 14(7 PAIRS)-#5S2 @ 1'-0" CTS. = 6'-0"
 - ⑥ = 6(3 PAIRS)-#5S10 @ 9" CTS. = 1'-6"
 6(3 PAIRS)-#5S2 @ 9" CTS. = 1'-6"
 - ⑦ = 14(7 PAIRS)-#5S12 @ 1'-0" CTS. = 6'-0"
 14(7 PAIRS)-#5S2 @ 1'-0" CTS. = 6'-0"
 - ⑧ = 6(3 PAIRS)-#5S12 @ 1'-0" CTS. = 2'-0"
 6(3 PAIRS)-#5S2 @ 1'-0" CTS. = 2'-0"
 - ⑨ = 8(4 PAIRS)-#5S10 @ 1'-0" CTS. = 3'-0"
 8(4 PAIRS)-#5S2 @ 1'-0" CTS. = 3'-0"
 - ⑩ = 3-#4S3 @ 1'-6" CTS. = 3'-0"
 - ⑪ = 5-#4S3 @ 6" CTS. = 2'-0"
 - ⑫ = 9-#4S3 @ 6" CTS. = 4'-0"

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 3 OF 5
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT 2
 STAGE 4 CONSTRUCTION



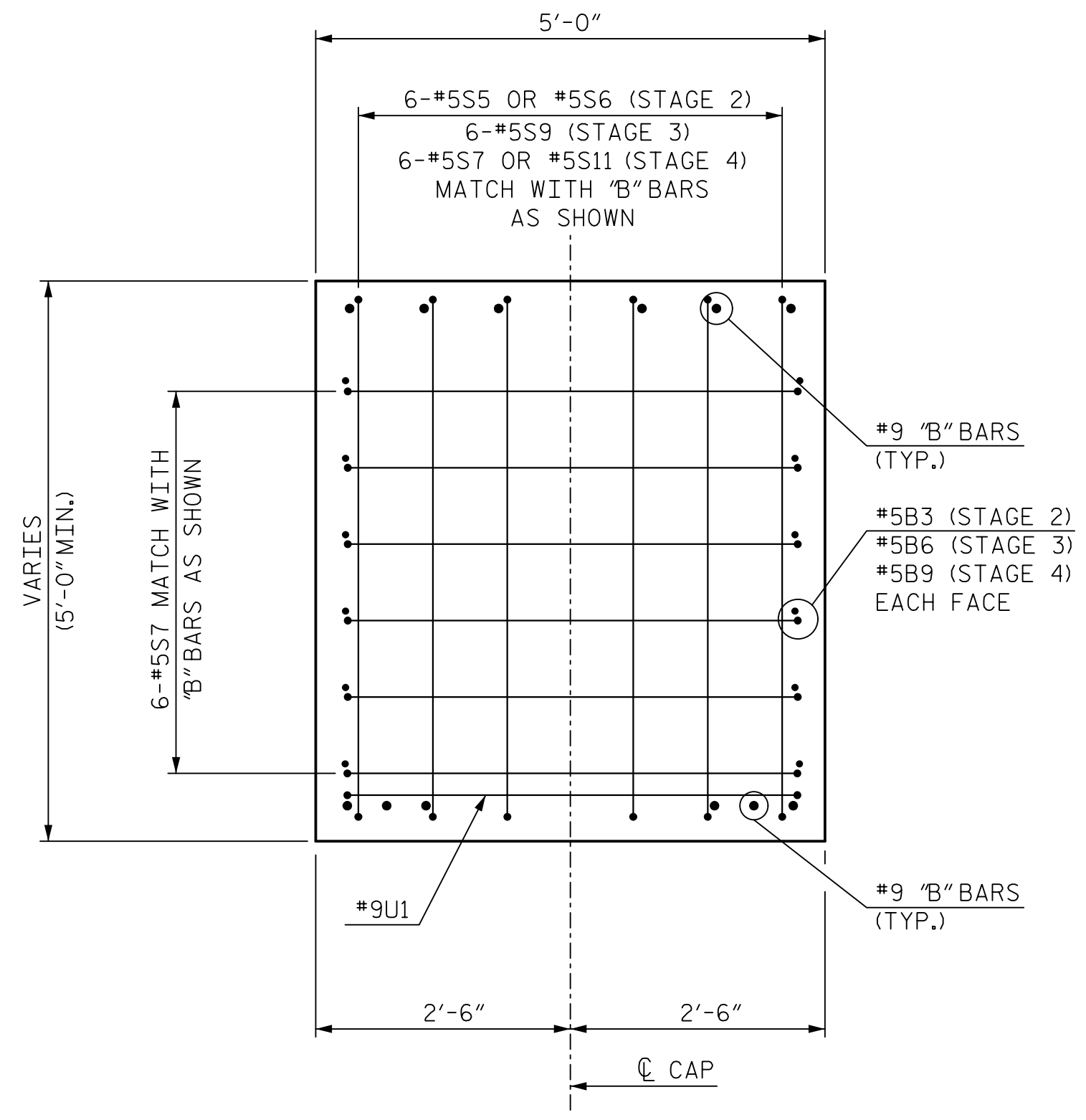
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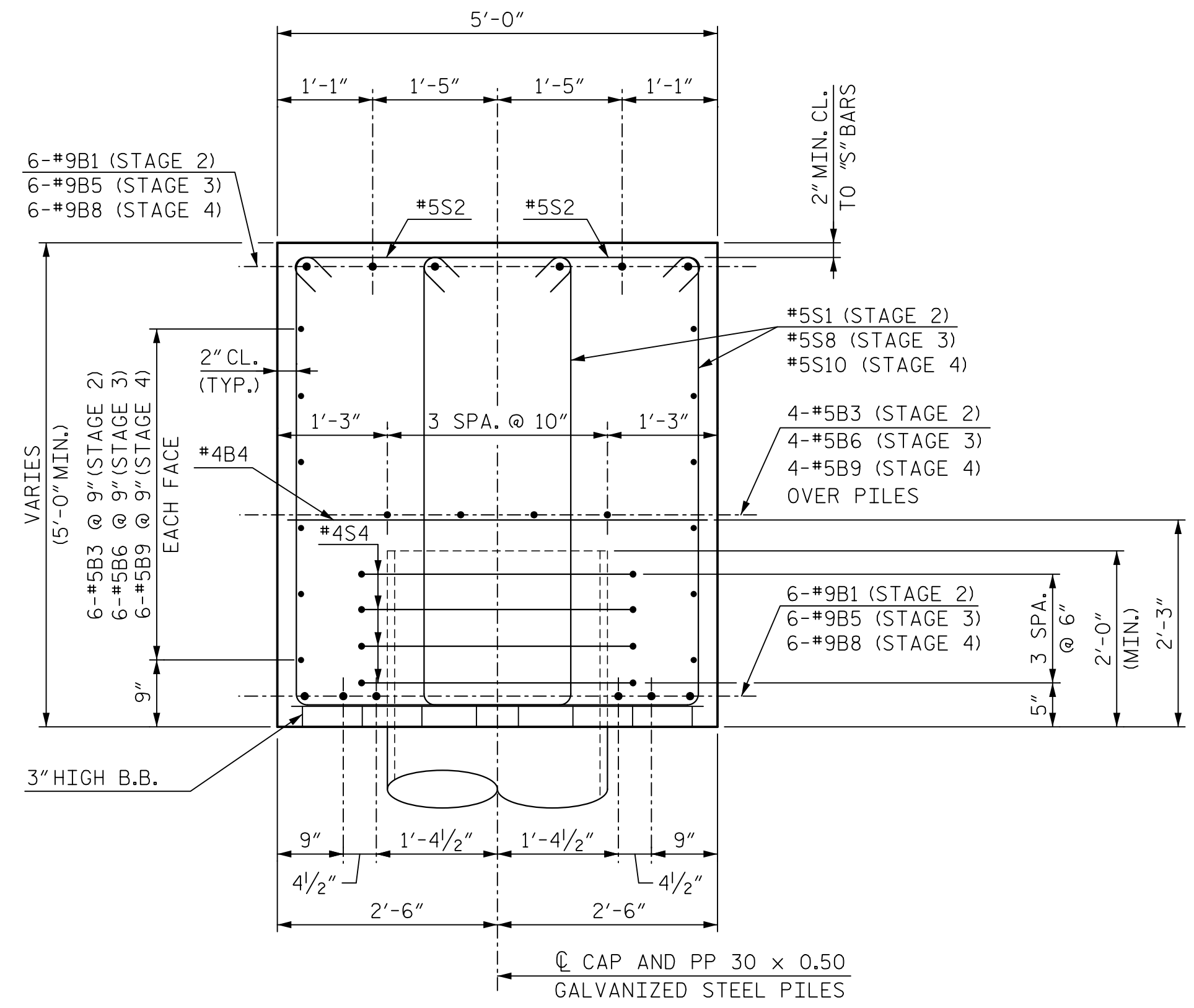
DWG. NO. 59

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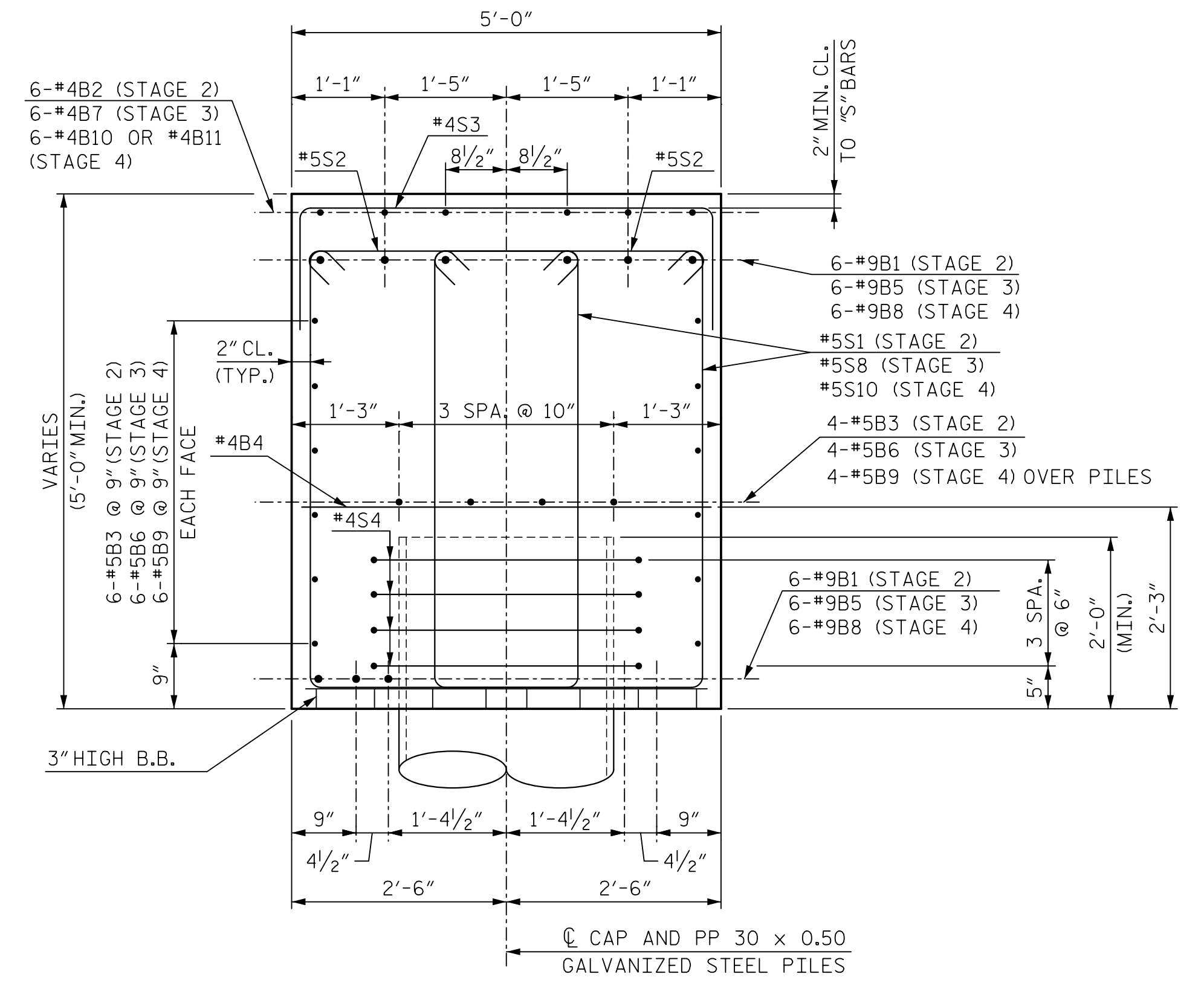
REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
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2			4			81	



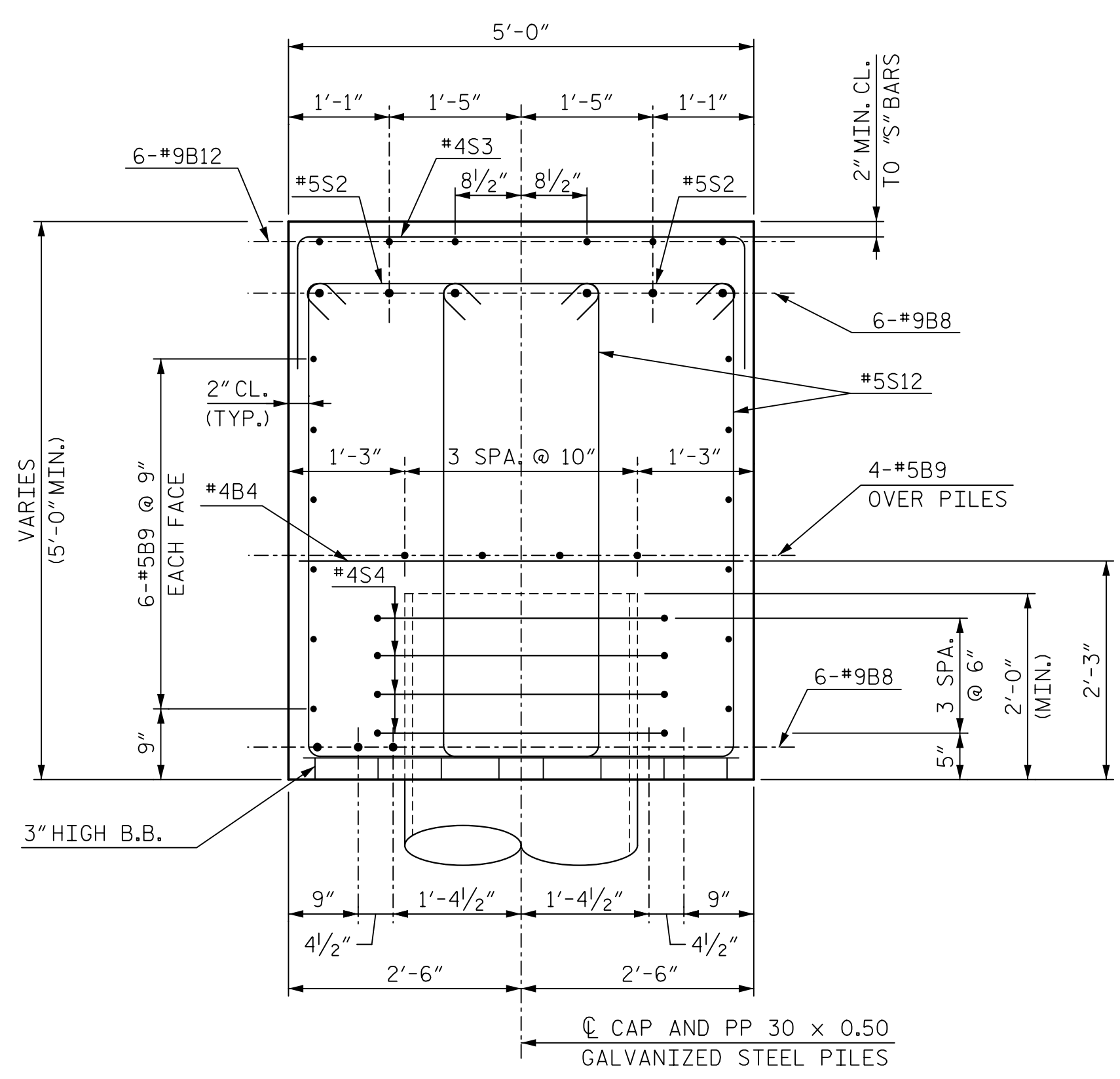
VIEW A-A



SECTION B-B



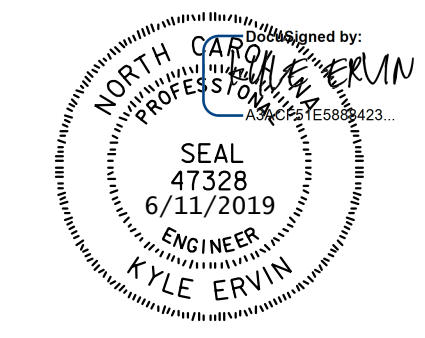
SECTION C-C



SECTION D-D

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 4 OF 5



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT 2

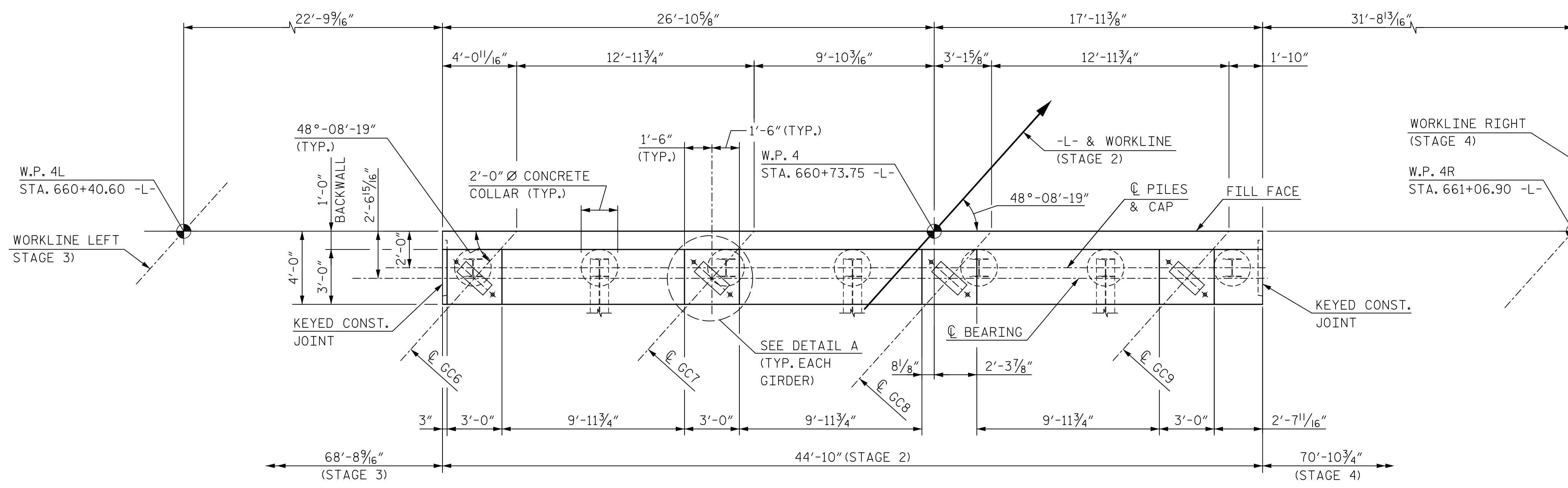
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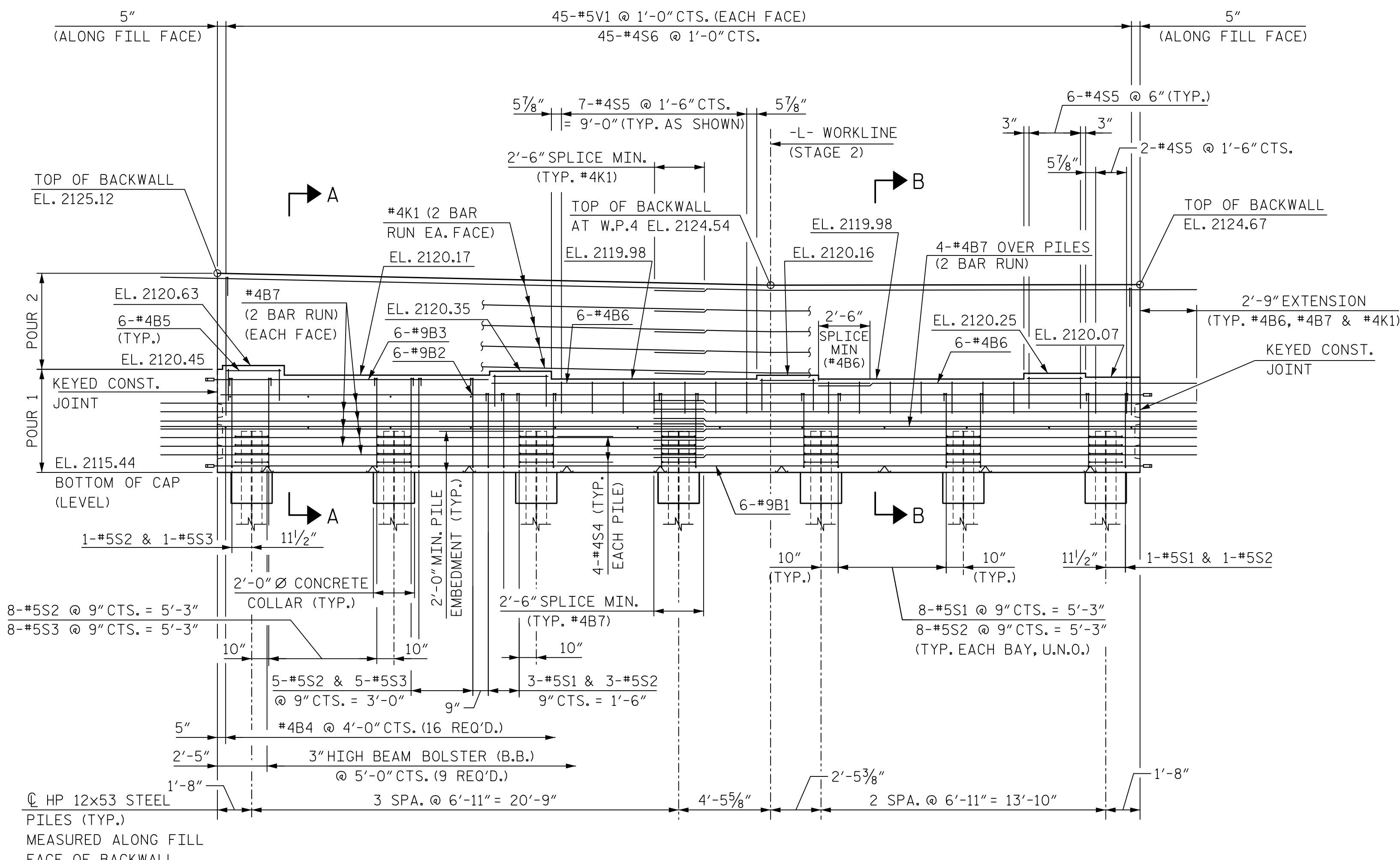
DWG. NO. 60

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
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2			4			81	

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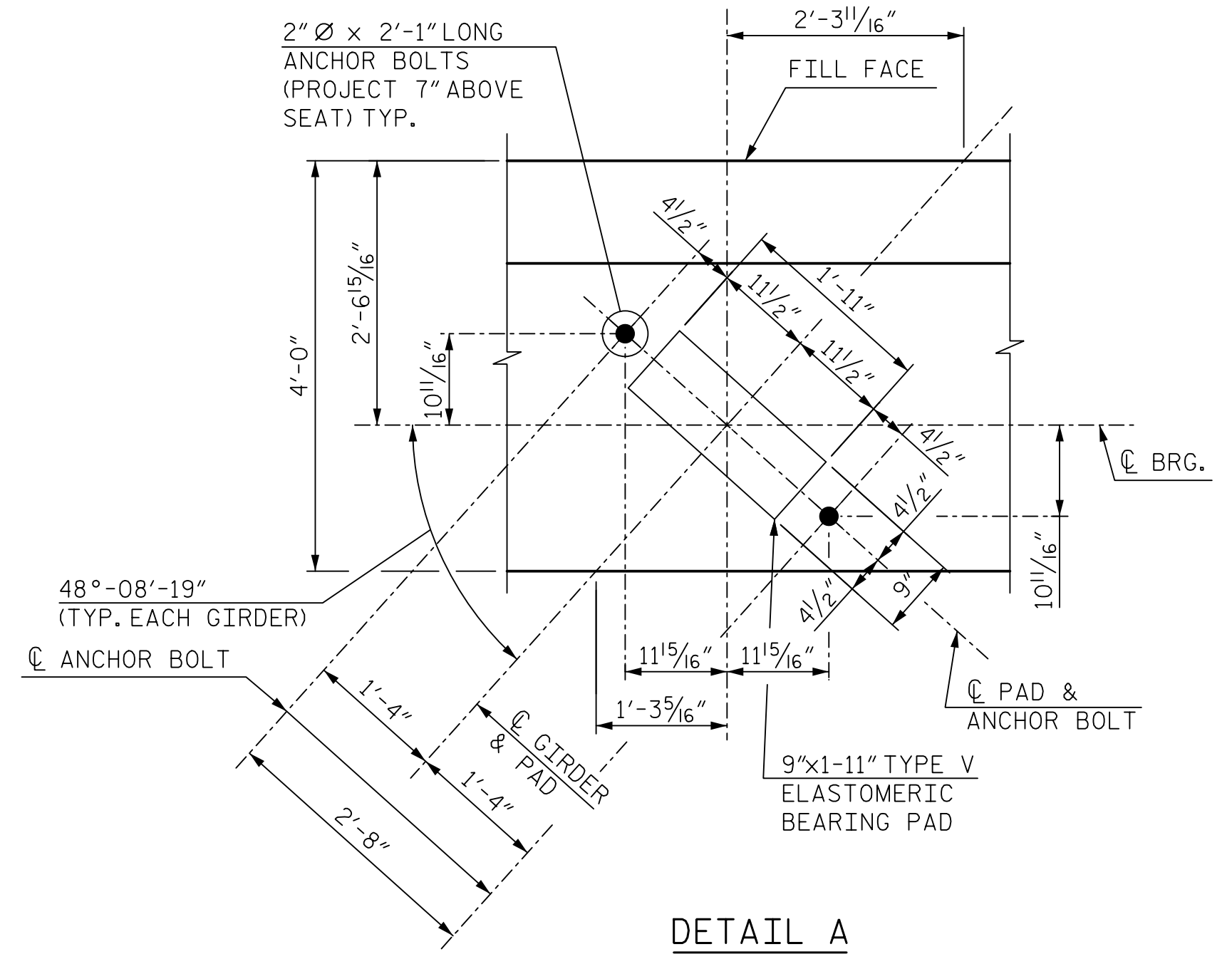


PLAN



ELEVATION - STAGE 2 CONSTRUCTION

NOTES:
 STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.
 THE TOP SURFACE AREAS OF THE END BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
 THE TOP SURFACE OF THE END BENT CAP EXCEPT THE BRIDGE SEAT BUILD-UPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.
 FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEAT BUILD-UPS, SEE SECTIONS ON SHEET 4 OF 6.
 FOR WINGWALL DETAILS, SEE SHEET 5 OF 6.
 FOR SECTIONS AND TEMPORARY DRAINAGE, SEE SHEET 4 OF 6.
 FOR KEYED CONSTRUCTION JOINT DETAILS, SEE SHEET 2 OF 6.
 FOR PILE SPLICE, BILL OF REINFORCING, AND QUANTITIES DETAILS, SEE SHEET 6 OF 6.

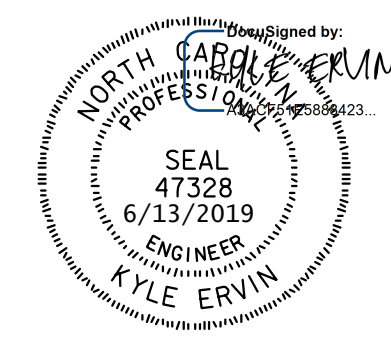


DETAIL A

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 2
 STAGE 2 CONSTRUCTION



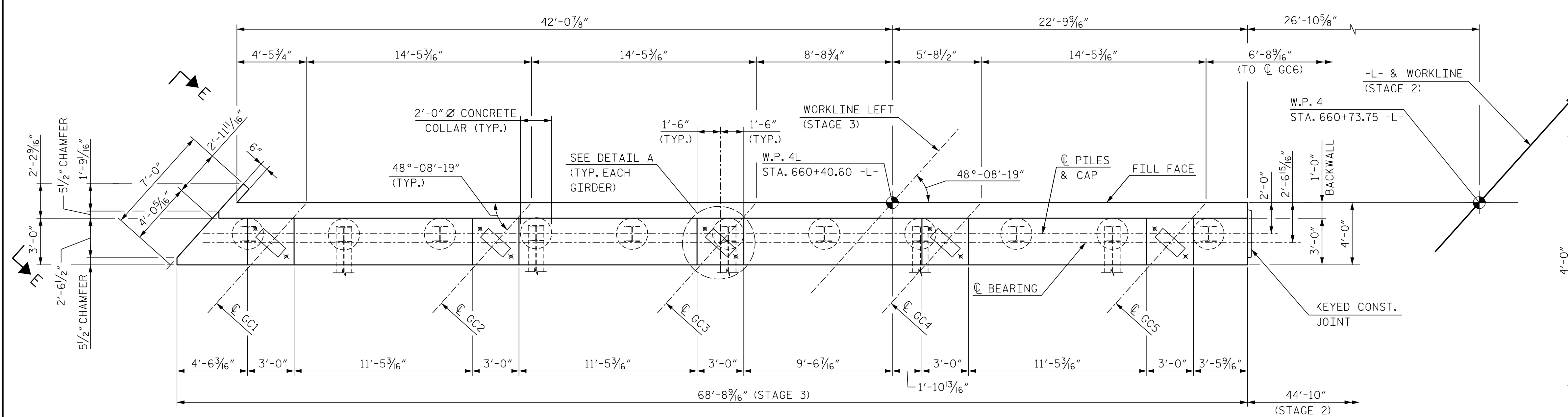
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 CHECKED BY: K. ERVIN DATE: 3/19
 DESIGN ENGINEER OF RECORD: K. ERVIN DATE: 3/19

DWG. NO. 62

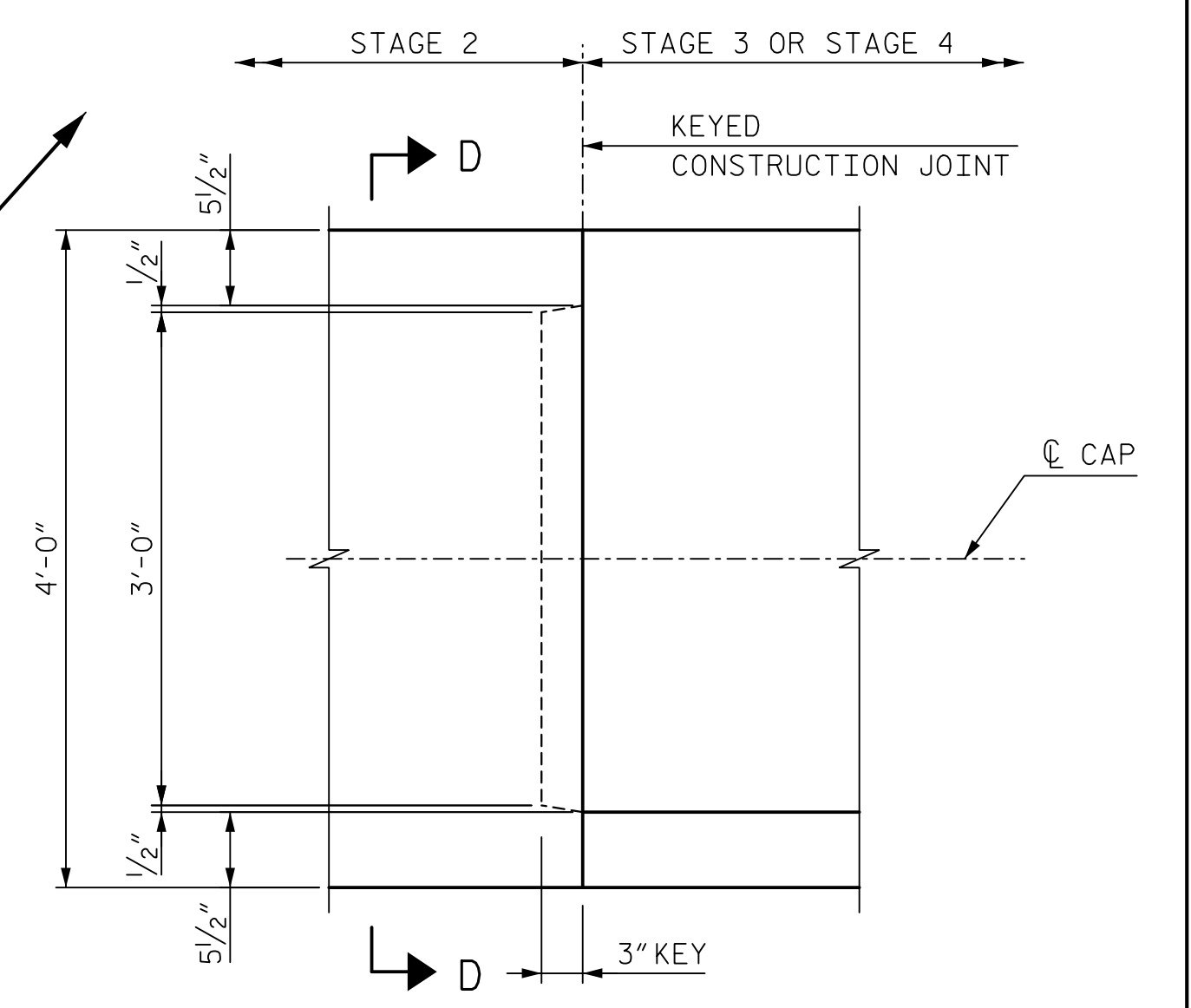
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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			

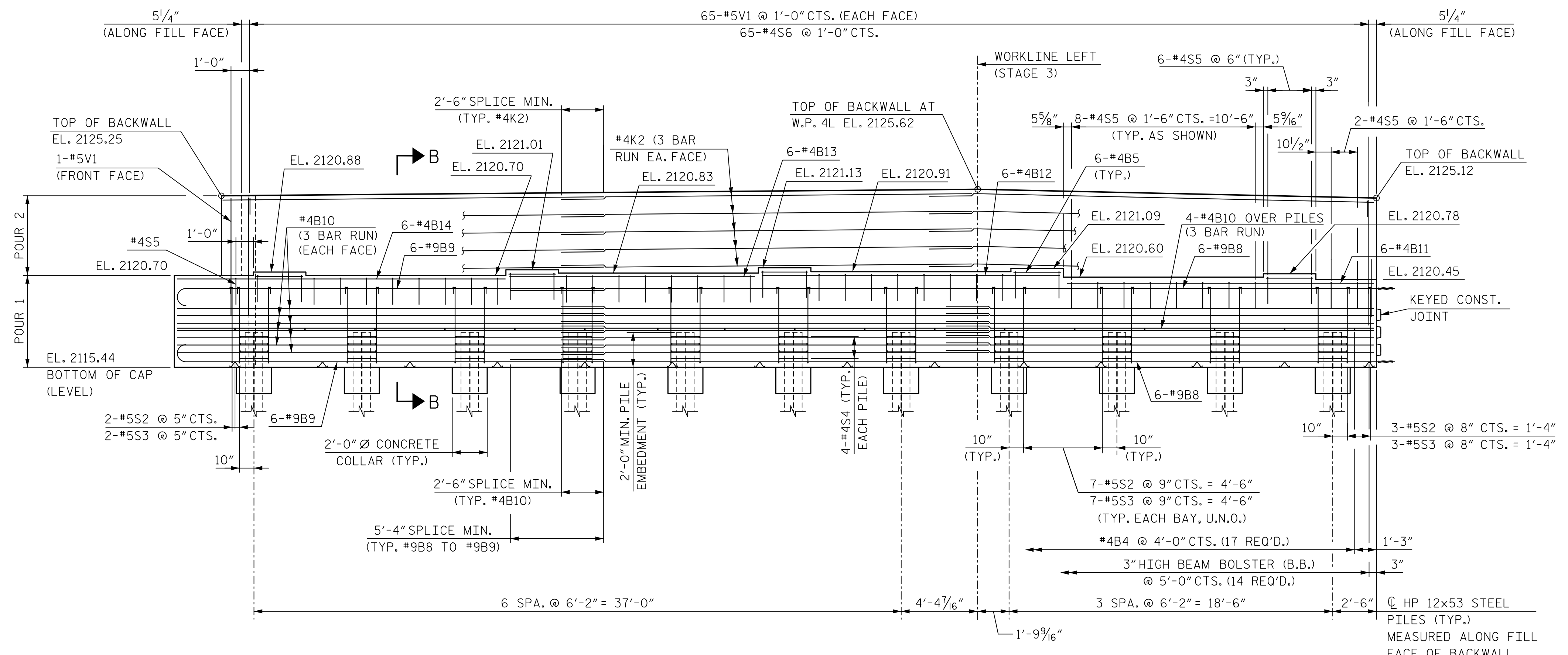


PLAN

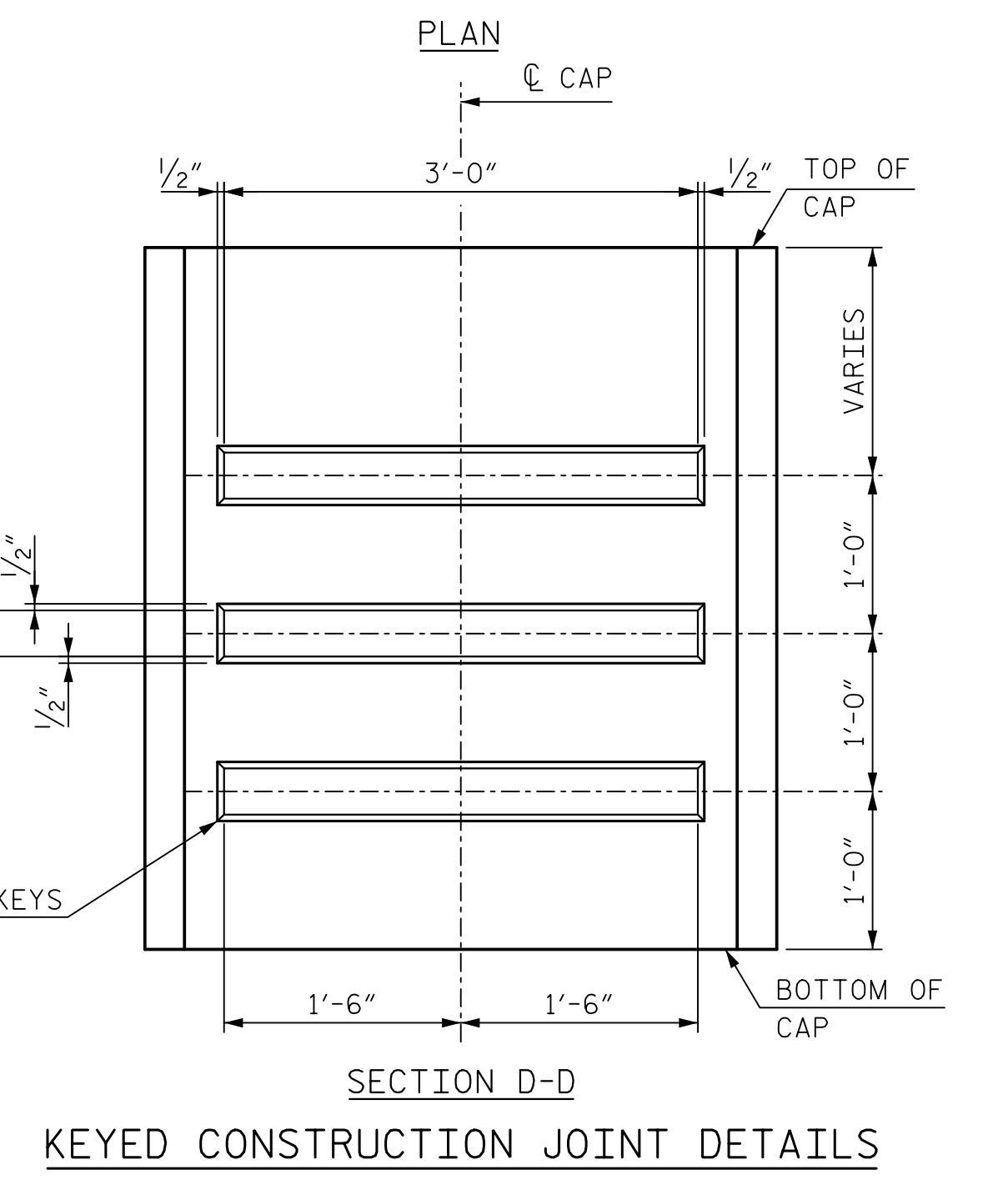
NOTES:
FOR NOTES AND DETAIL A, SEE "END BENT 2" SHEET 1 OF 6.



PLAN

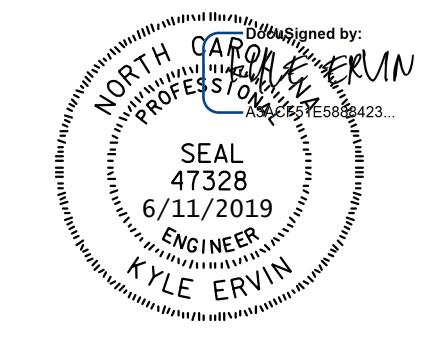


ELEVATION - STAGE 3 CONSTRUCTION



PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 2 OF 6



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 2
 STAGE 3 CONSTRUCTION

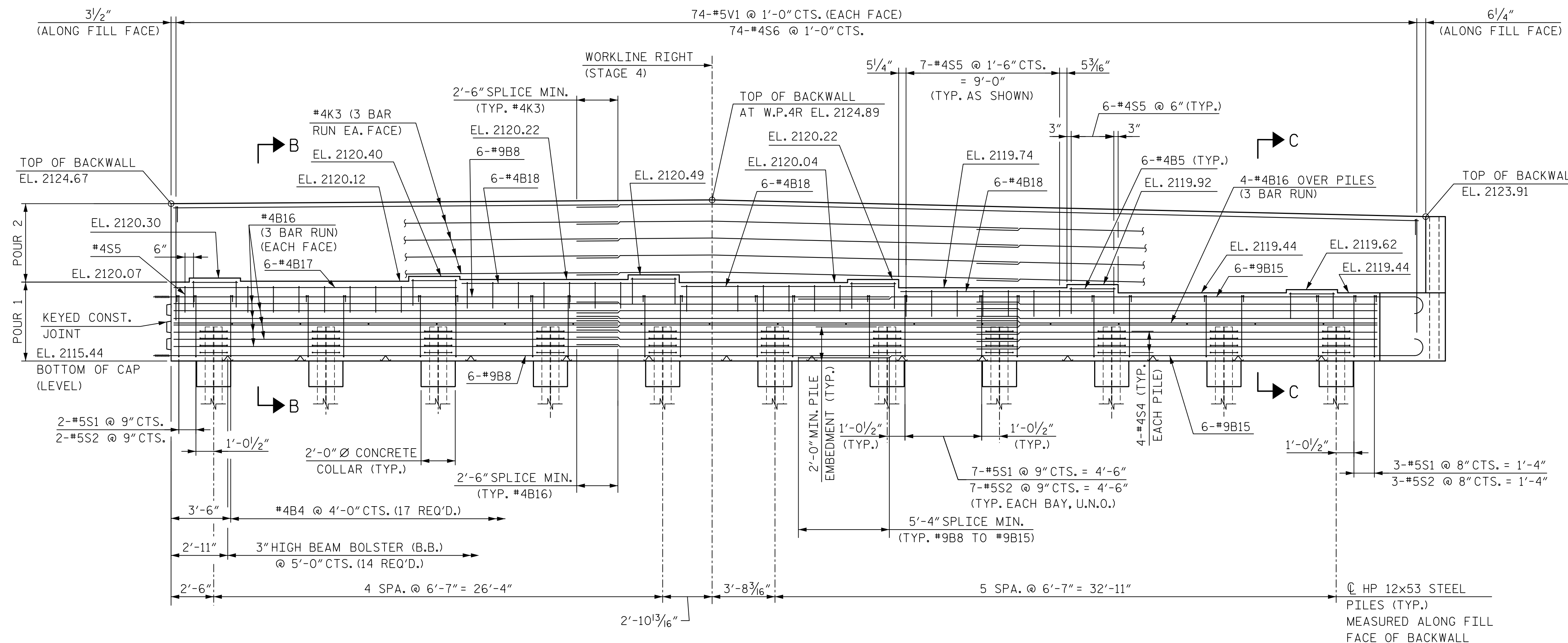
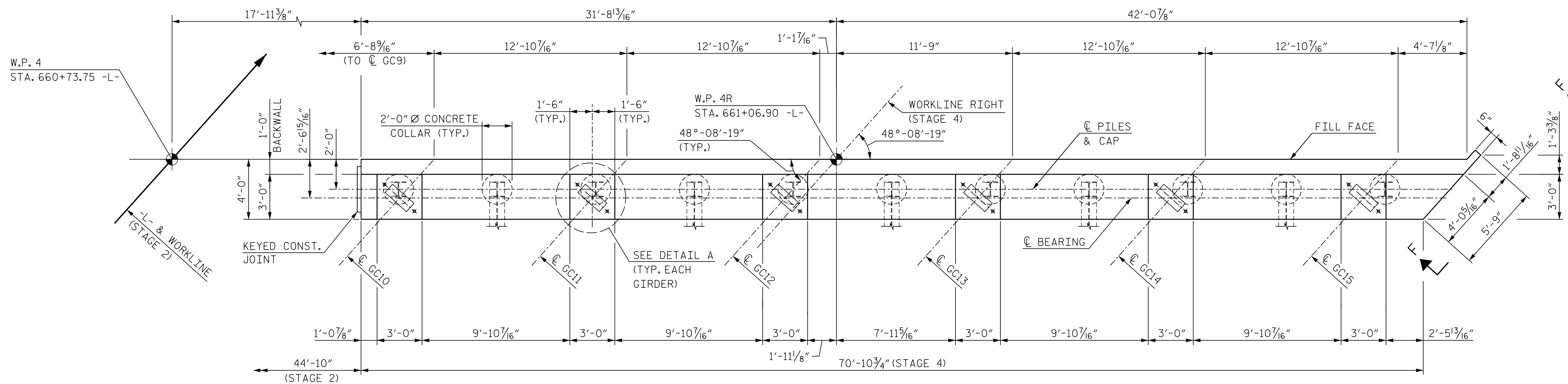
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DESIGN ENGINEER OF RECORD	K. ERVIN	DATE	3/19

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REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			S1-63	
2			4			81	

DWG. NO. 63

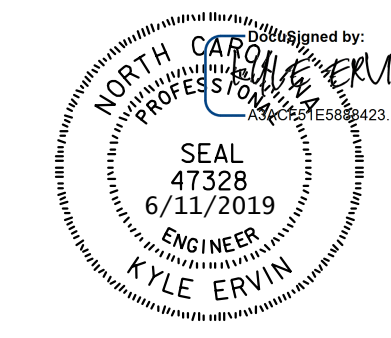
NOTES:
FOR NOTES AND DETAIL A,
SEE 'END BENT 2' SHEET 1 OF 6.



PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 2
 STAGE 4 CONSTRUCTION



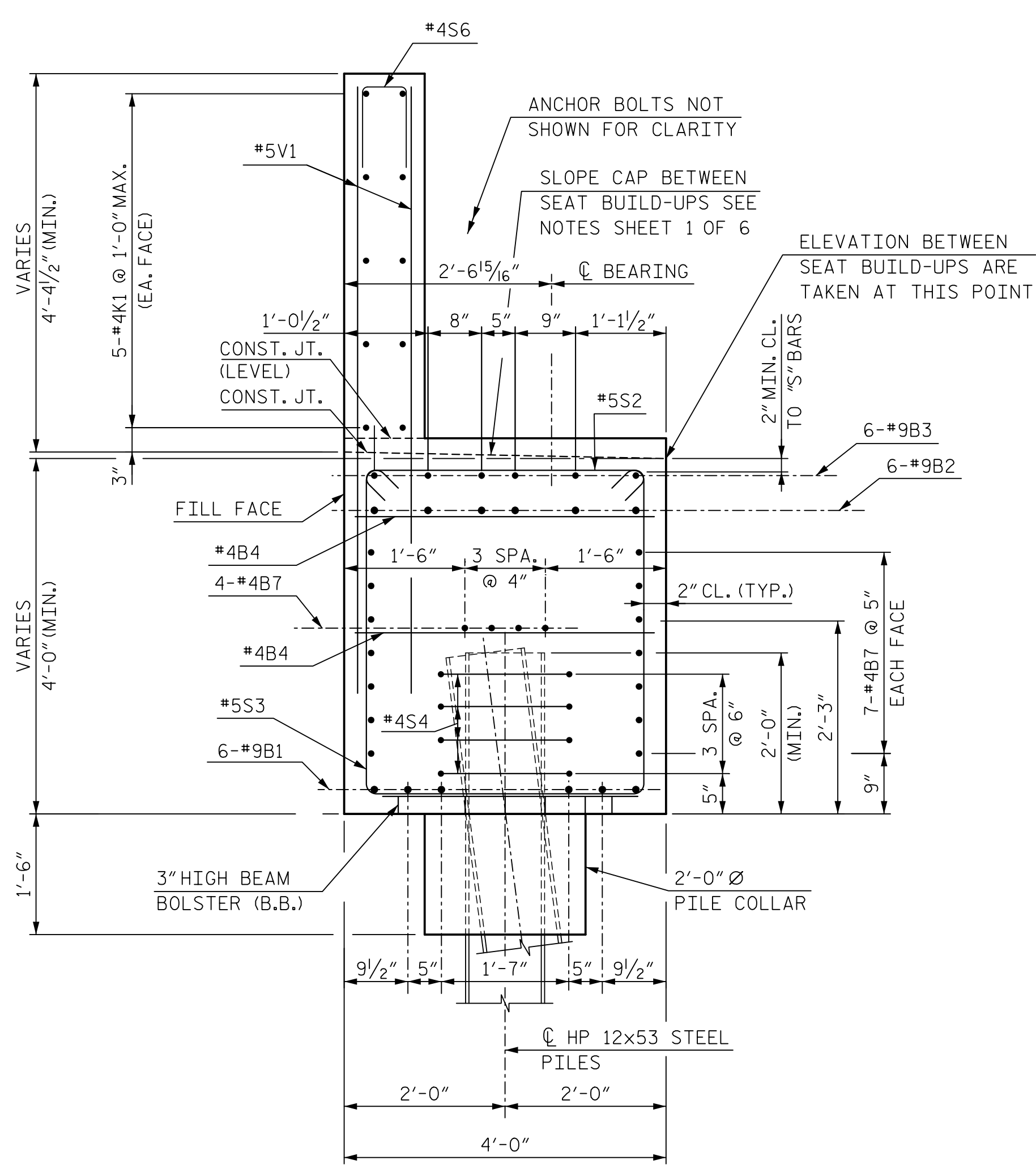
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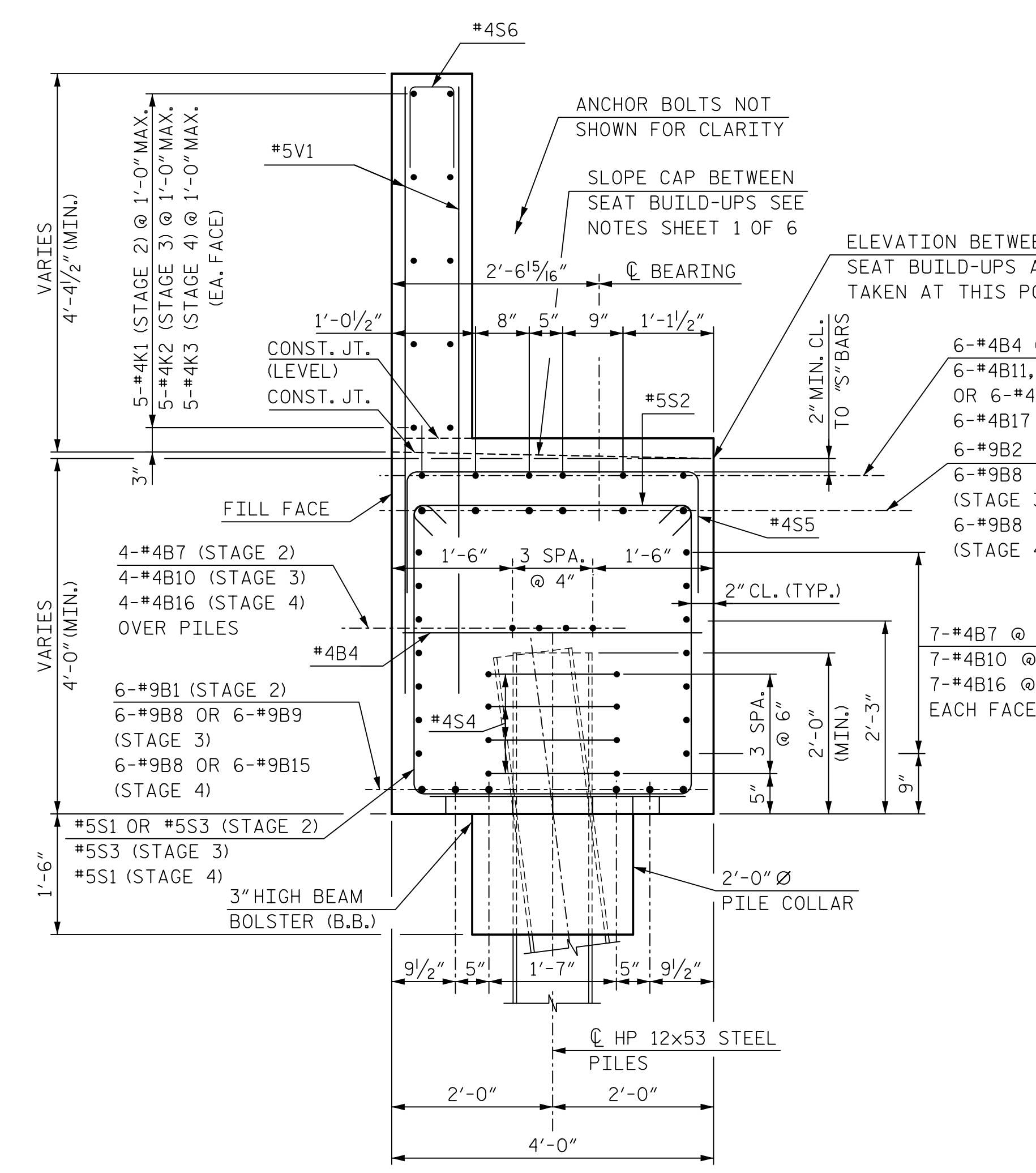
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 CHECKED BY K. ERVIN DATE 3/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 3/19

DWG. NO. 64

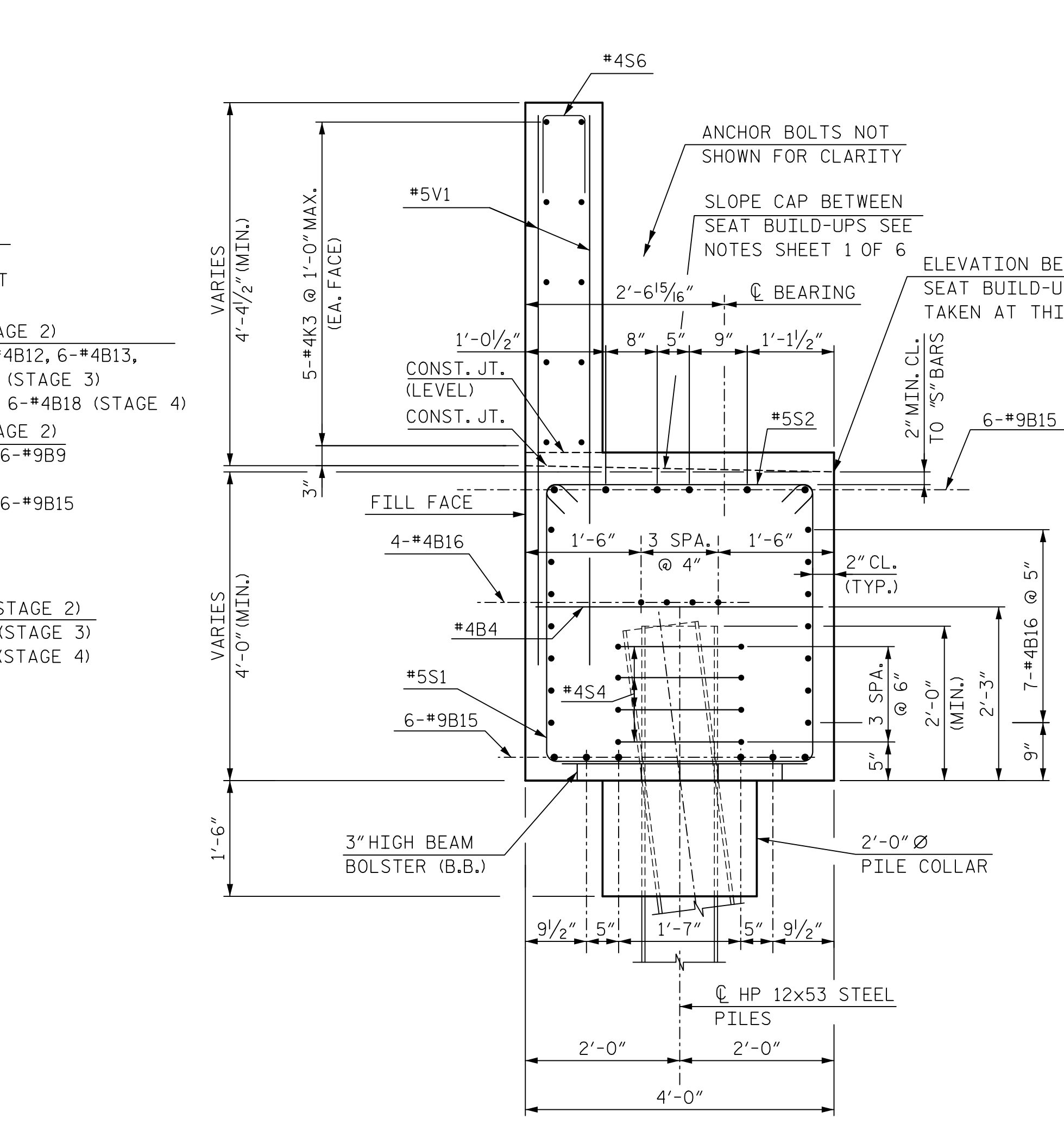
REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			S1-64	
2			4			81	



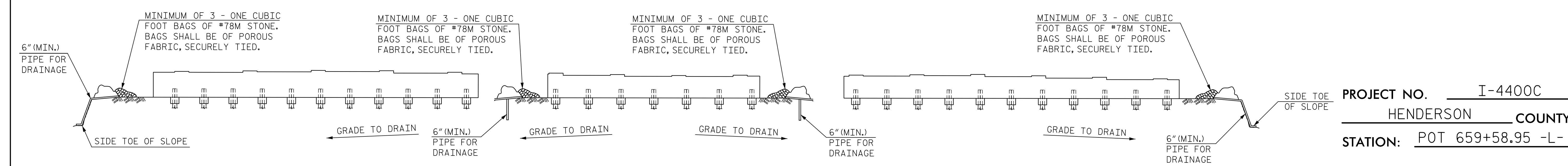
SECTION A-A



SECTION B-B



SECTION C-C



STAGE 3 CONSTRUCTION

STAGE 2 CONSTRUCTION

STAGE 4 CONSTRUCTION

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.

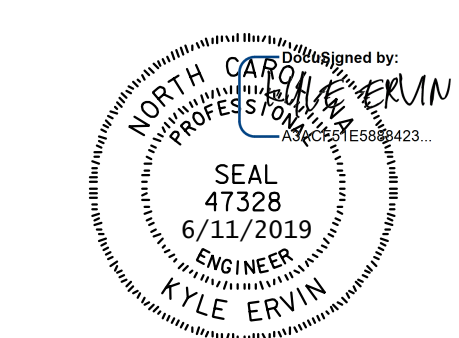
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT 2

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 2

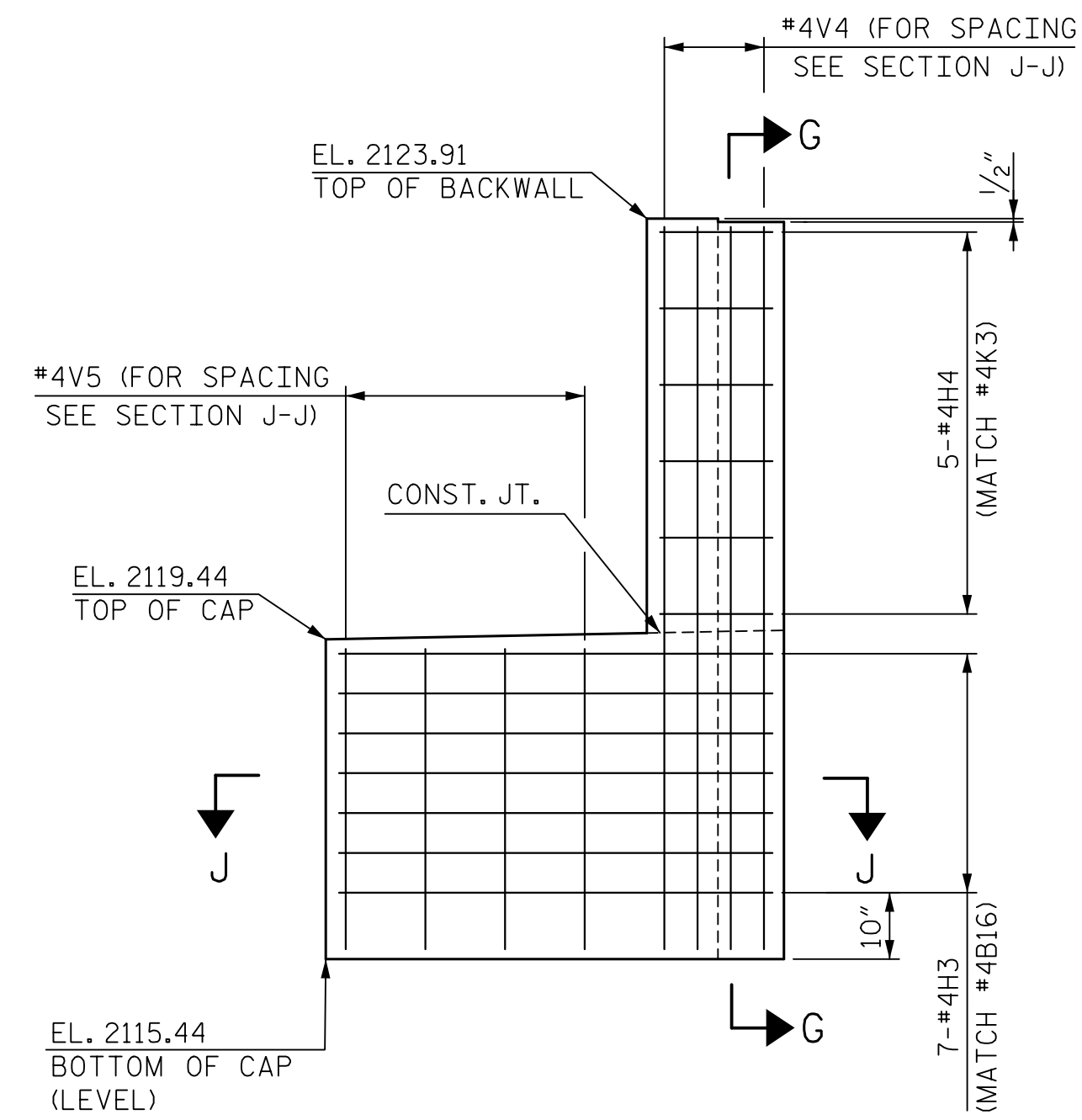
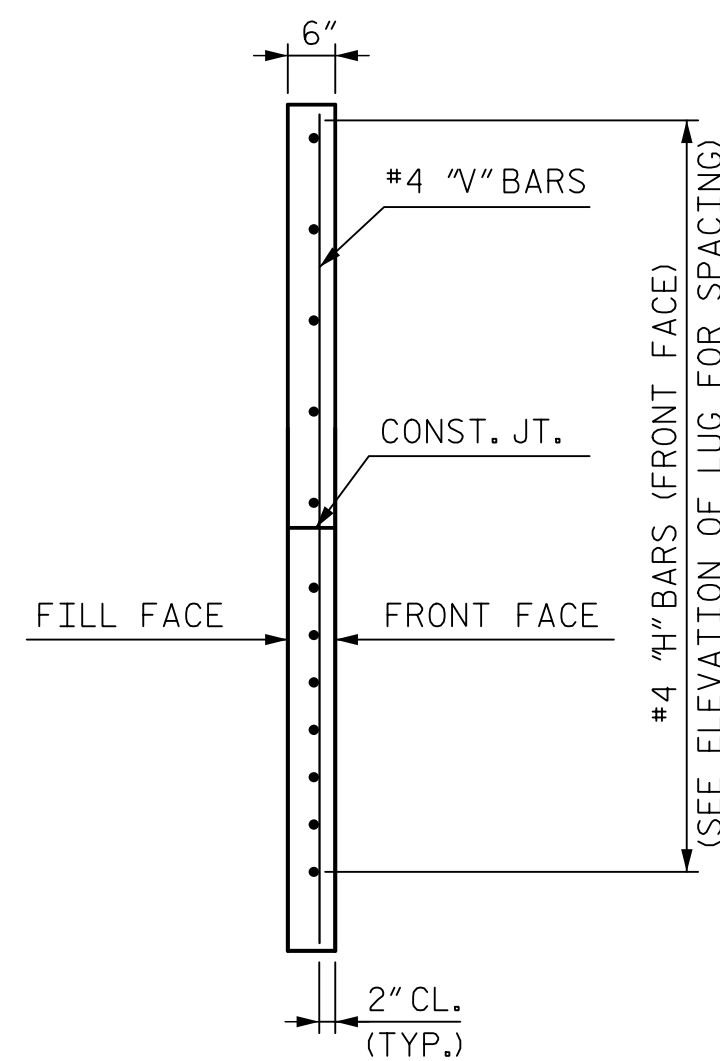
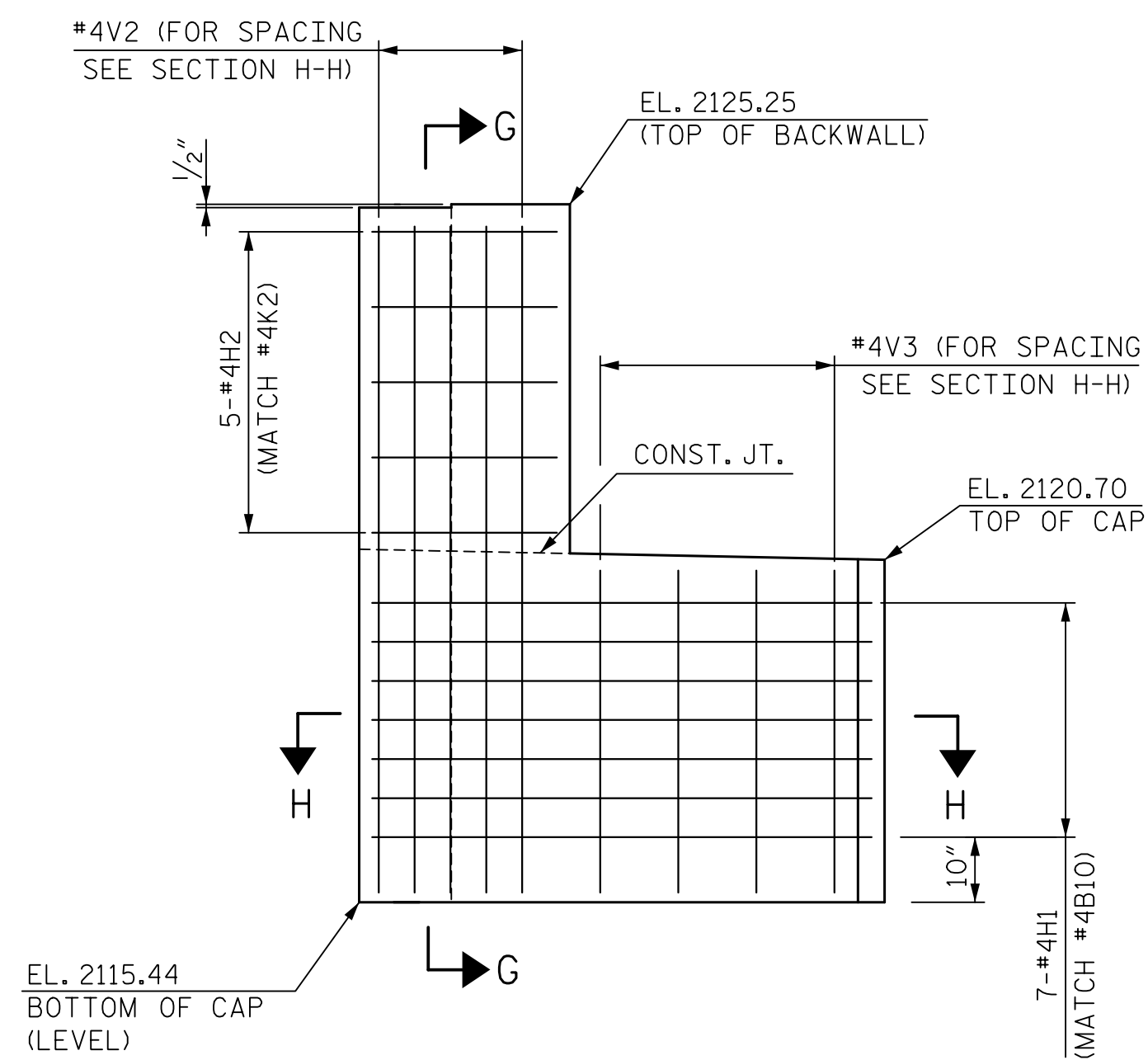
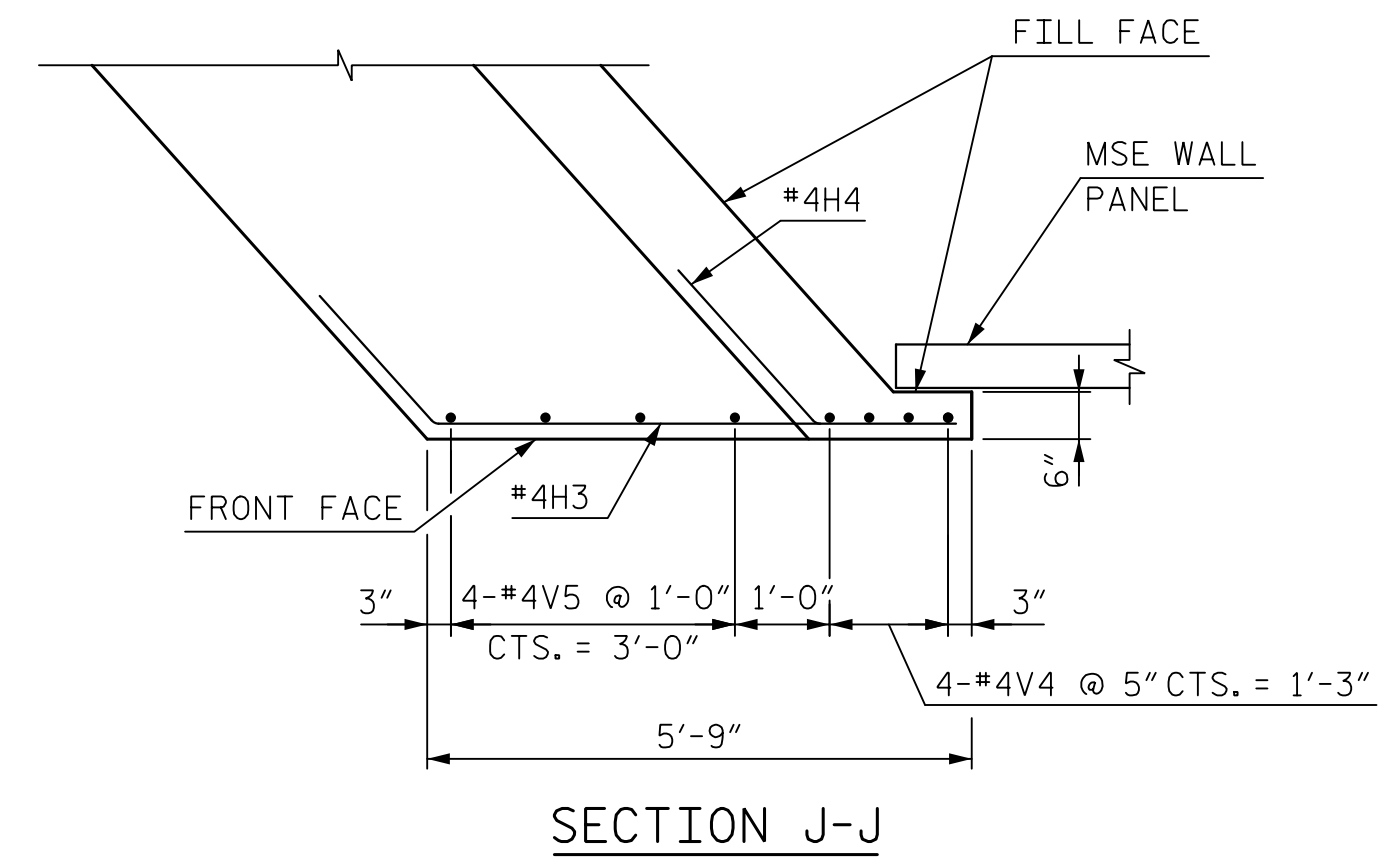
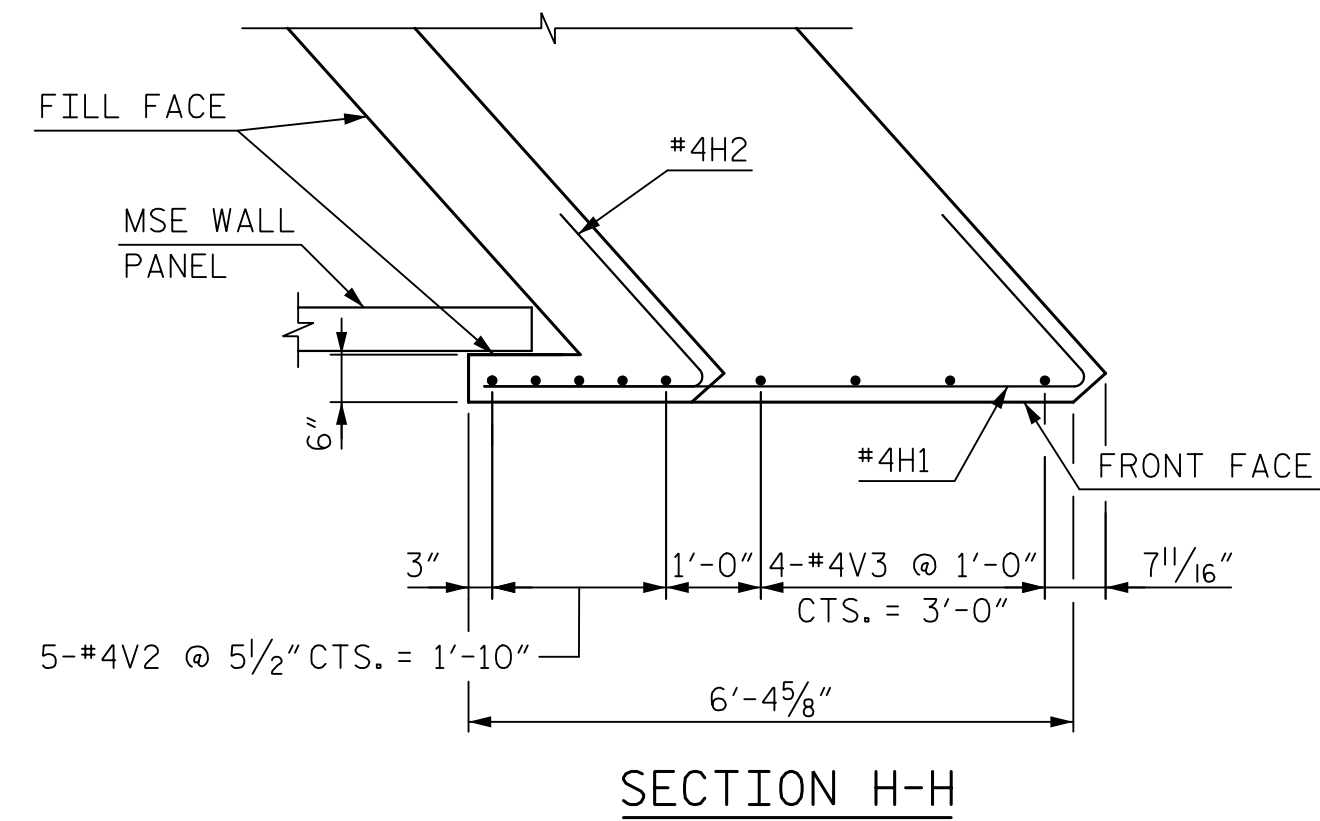


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NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			S1-65	
2			4			81	

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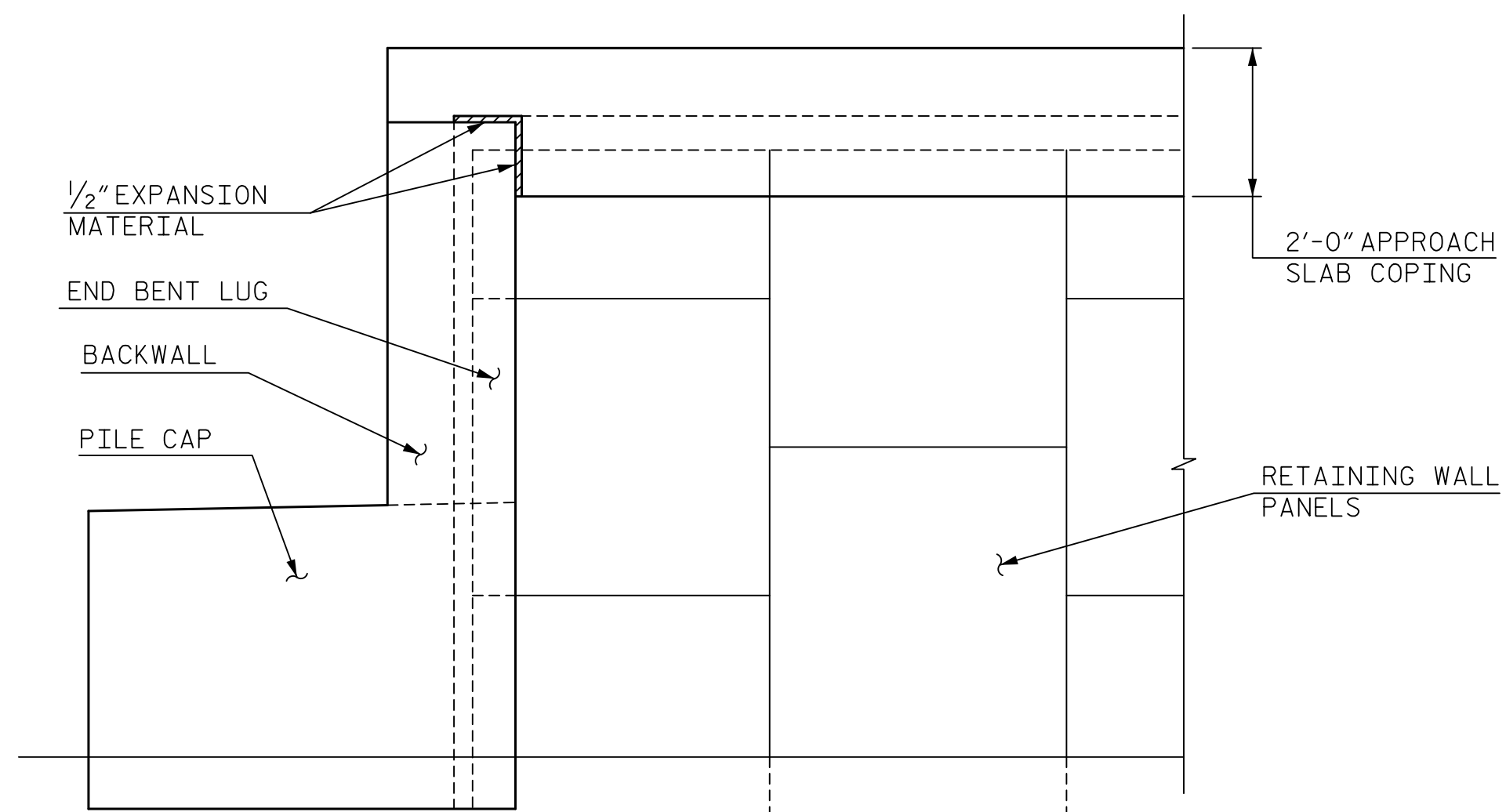
DWG. NO. 65



ELEVATION OF LEFT LUG
VIEW E-E

SECTION G-G

ELEVATION OF RIGHT LUG
VIEW F-F

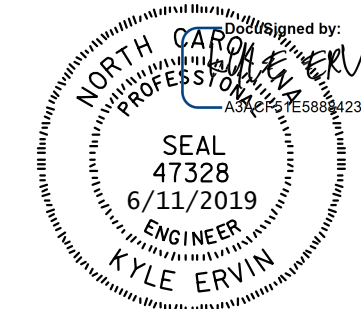


INTERFACE WITH RETAINING WALL AND COPING

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 2



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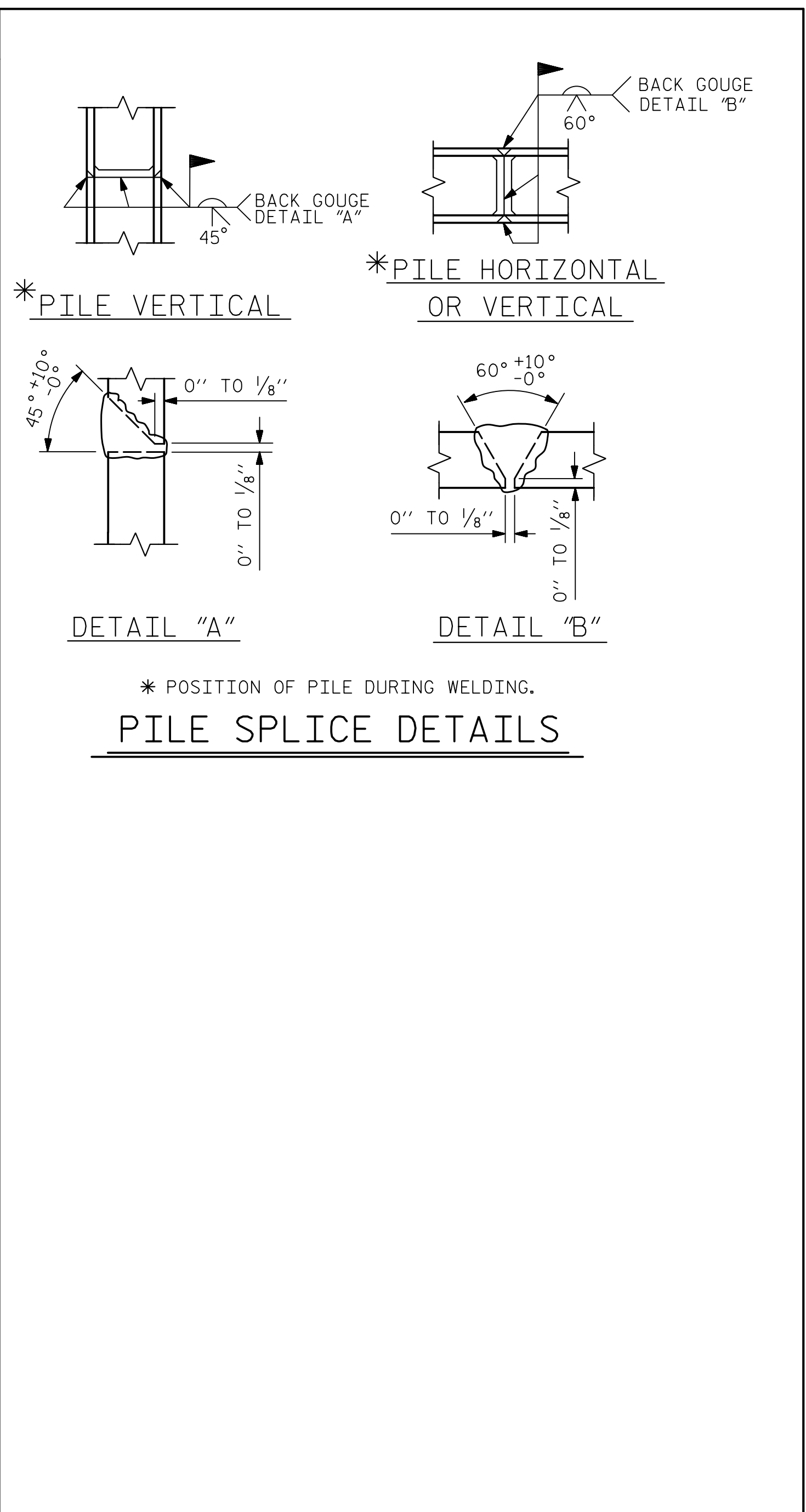
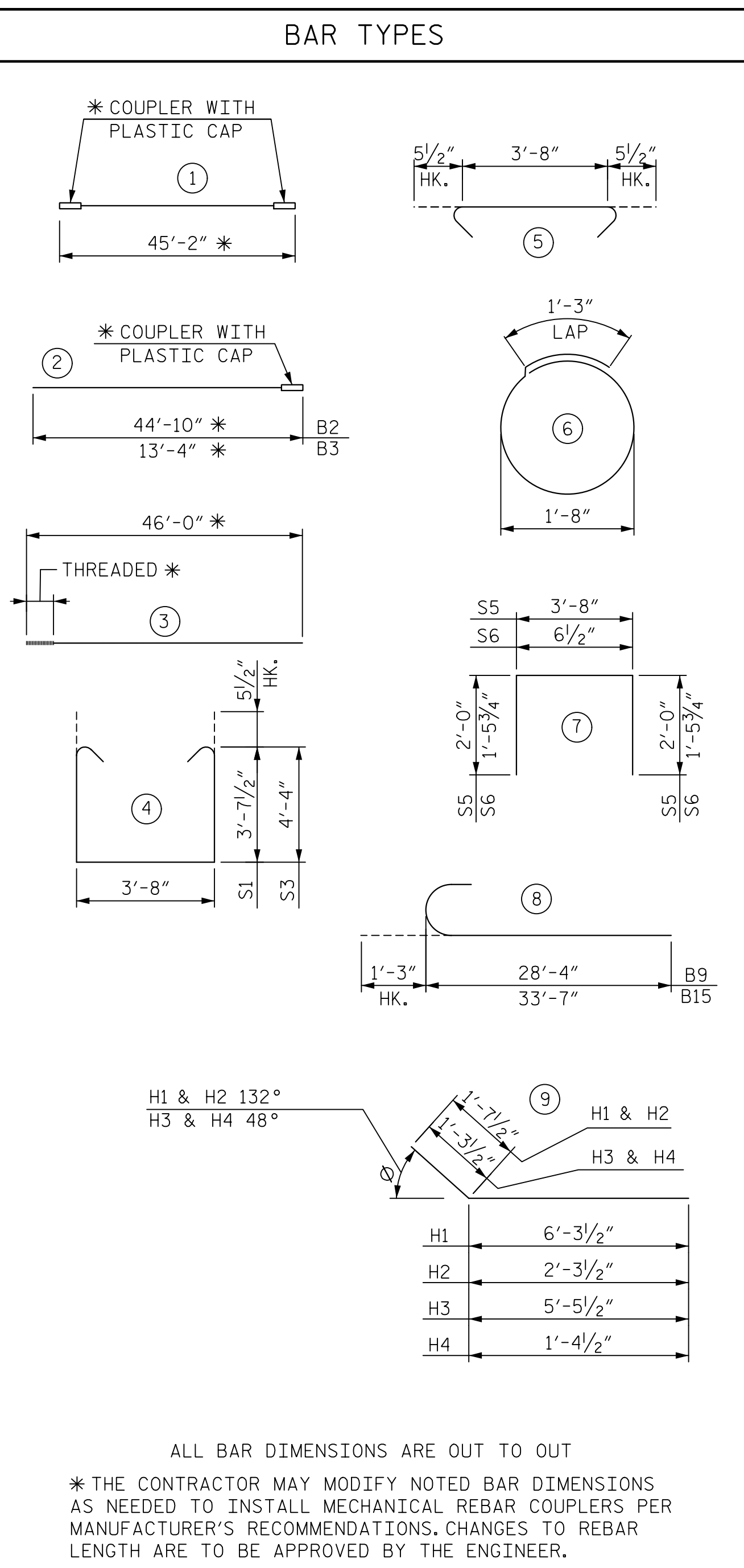
DWG. NO. 66

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			

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BILL OF REINFORCING																	
STAGE 2						END BENT 2						STAGE 4					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	9	1	45'-2"	922	B4	17	4	STR.	3'-8"	42	B4	17	4	STR.	3'-8"	42
B2	6	9	2	44'-10"	915	B5	30	4	STR.	2'-8"	54	B5	36	4	STR.	2'-8"	65
B3	6	9	2	13'-4"	272	B8	12	9	3	46'-0"	1,877	B8	12	9	3	46'-0"	1,877
B4	16	4	STR.	3'-8"	40	B9	12	9	8	29'-7"	1,207	B15	12	9	8	34'-10"	1,422
B5	24	4	STR.	2'-8"	43	B10	54	4	STR.	24'-6"	884	B16	54	4	STR.	26'-2"	944
B6	12	4	STR.	18'-5"	148	B11	6	4	STR.	17'-6"	71	B17	6	4	STR.	16'-7"	67
B7	36	4	STR.	26'-5"	636	B12	6	4	STR.	17'-0"	69	B18	18	4	STR.	12'-6"	151
						B13	6	4	STR.	14'-0"	57						
						B14	6	4	STR.	18'-9"	76	H3	7	4	9	6'-9"	32
												H4	5	4	9	2'-8"	9
K1	20	4	STR.	26'-6"	354	H1	7	4	9	7'-11"	37	K3	30	4	STR.	26'-2"	525
						H2	5	4	9	3'-11"	13						
S1	36	5	4	11'-10"	445												
S2	50	5	5	4'-7"	239	K2	30	4	STR.	23'-7"	473	S1	75	5	4	11'-10"	926
S3	14	5	4	13'-3"	194							S2	75	5	5	4'-7"	359
S4	28	4	6	6'-6"	122	S2	75	5	5	4'-7"	359	S4	44	4	6	6'-6"	191
S5	40	4	7	7'-8"	205	S3	75	5	4	13'-3"	1,037	S5	65	4	7	7'-8"	333
S6	45	4	7	3'-6"	106	S4	44	4	6	6'-6"	191	S6	74	4	7	3'-6"	173
						S5	65	4	7	7'-8"	333						
						S6	65	4	7	3'-6"	152	V1	148	5	STR.	6'-6"	1,004
V1	90	5	STR.	6'-6"	611							V4	4	4	STR.	8'-0"	22
						V1	131	5	STR.	6'-6"	889	V5	4	4	STR.	3'-7"	10
						V2	5	4	STR.	9'-4"	32						
						V3	4	4	STR.	4'-10"	13						

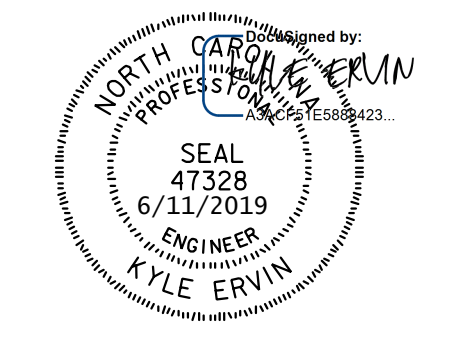
QUANTITIES			QUANTITIES			QUANTITIES		
REINFORCING STEEL	LBS.	5,252	REINFORCING STEEL	LBS.	7,866	REINFORCING STEEL	LBS.	8,152
CLASS "A" CONCRETE BREAKDOWN			CLASS "A" CONCRETE BREAKDOWN			CLASS "A" CONCRETE BREAKDOWN		
POUR 1 - CAP & COLLARS	CU. YDS.	32.6	POUR 1 - CAP, BOT. OF LUG, & COLLARS	CU. YDS.	55.7	POUR 1 - CAP, BOT. OF LUG, & COLLARS	CU. YDS.	50.9
POUR 2 - BACKWALL	CU. YDS.	7.7	POUR 2 - TOP OF LUG & BACKWALL	CU. YDS.	11.3	POUR 2 - TOP OF LUG & BACKWALL	CU. YDS.	12.5
TOTAL	CU. YDS.	40.3	TOTAL	CU. YDS.	67.0	TOTAL	CU. YDS.	63.4
HP 12x53 STEEL PILES	NO.	7	HP 12x53 STEEL PILES	NO.	11	HP 12x53 STEEL PILES	NO.	11
	LIN. FT.	469		LIN. FT.	737		LIN. FT.	737



PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 2



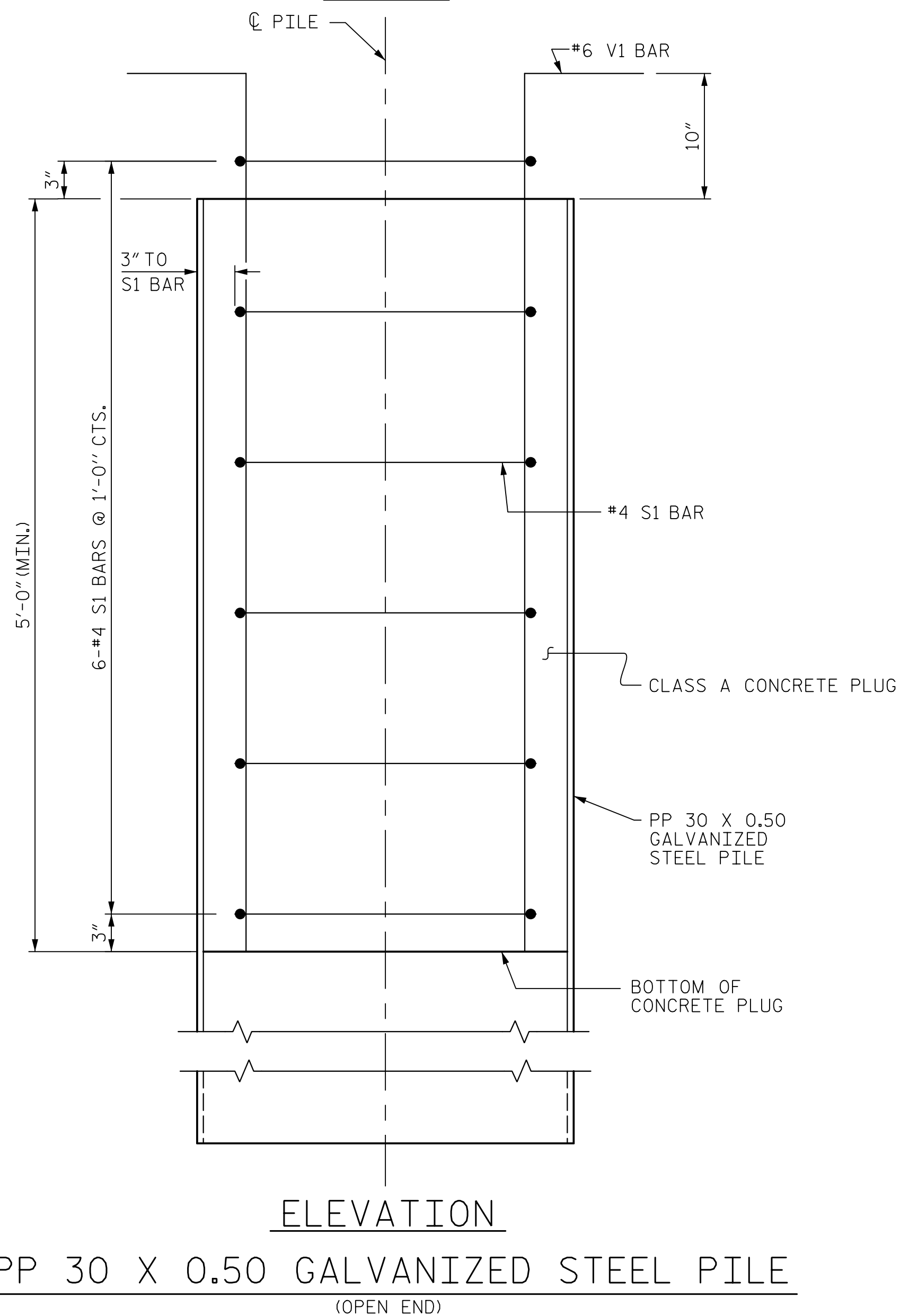
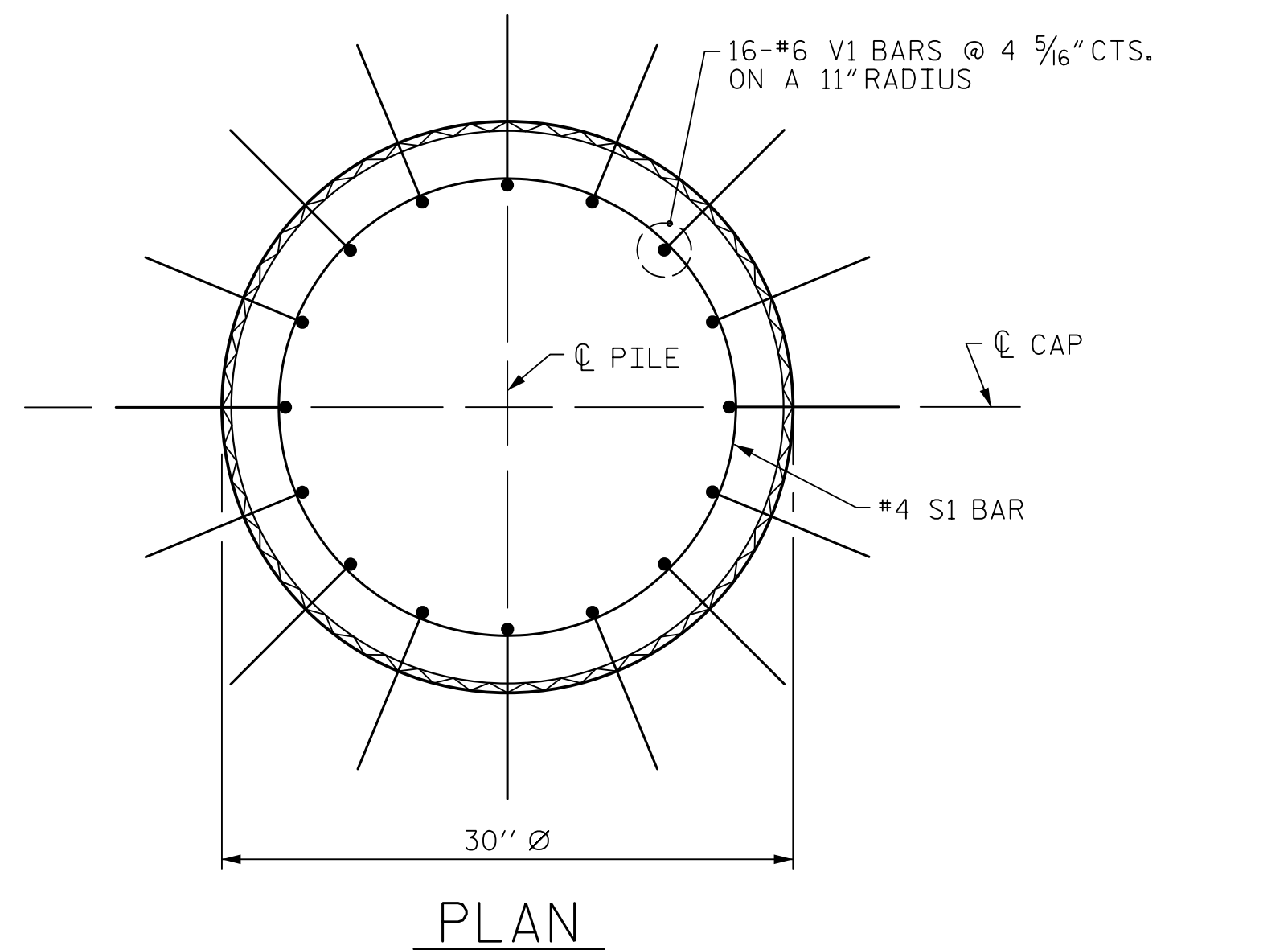
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 DESIGN ENGINEER OF RECORD K. ERVIN DATE 3/19

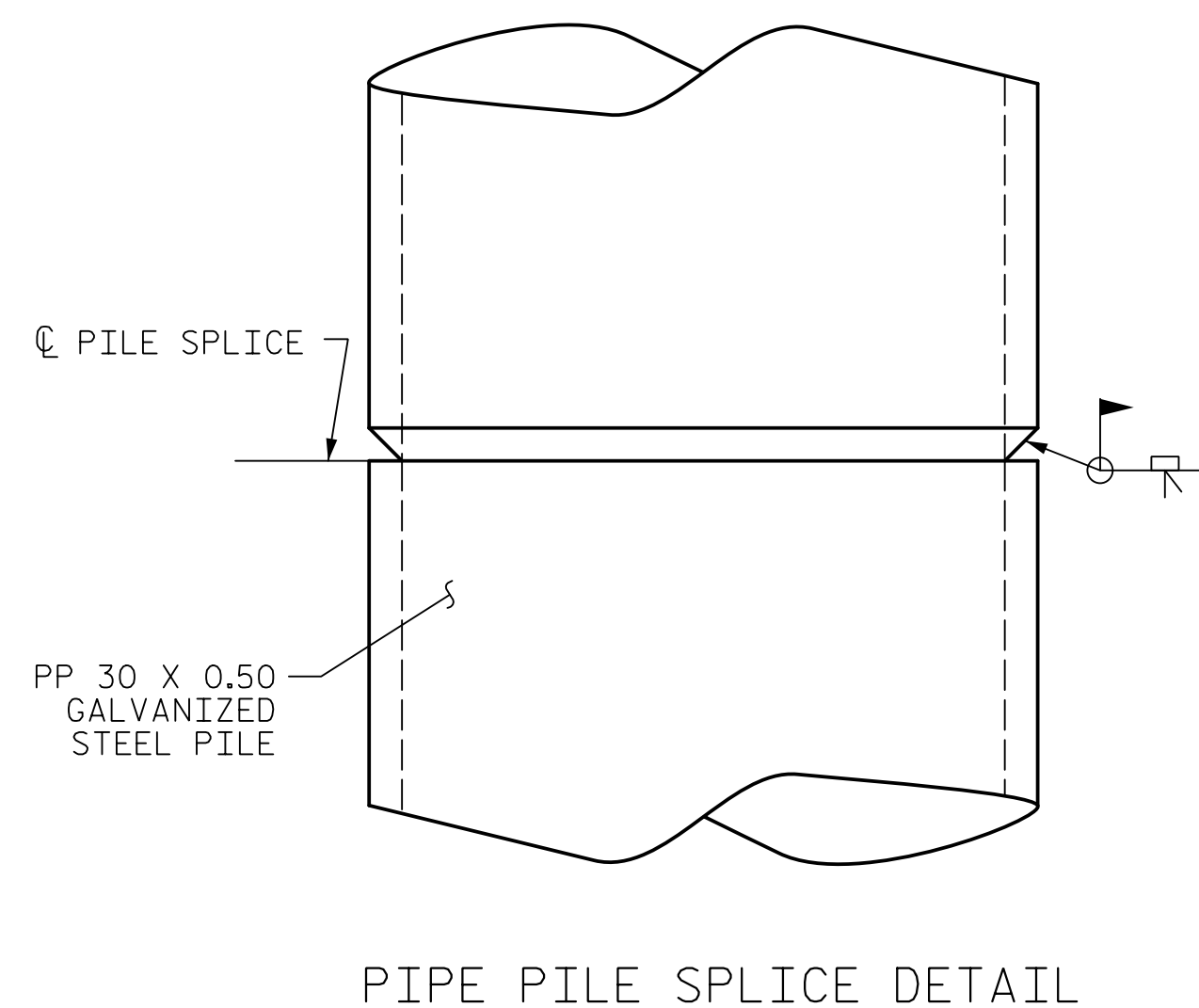
DWG. NO. 67

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



PP 30 X 0.50 GALVANIZED STEEL PILE
(OPEN END)



NOTES

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

GALVANIZE STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED. GALVANIZING OR METALLIZING PIPE PILE PLATES IS NOT REQUIRED.

PIPE PILE PLATES, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

REMOVE AND REPLACE OR REPAIR TO THE SATISFACTION OF THE ENGINEER PILES THAT ARE DAMAGED, DEFORMED OR COLLAPSED DURING INSTALLATION OR DRIVING.

PILE SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AWS D1.1.

FOR CLOSED END PIPE PILES, REMOVE ALL SOIL AND WATER FROM INSIDE THE PILES JUST PRIOR TO PLACING REINFORCING STEEL AND CONCRETE FOR THE CONCRETE PLUG.

FOR OPEN END PIPE PILES, REMOVE ENOUGH SOIL AND WATER FROM INSIDE THE PILES TO CONSTRUCT THE CONCRETE PLUG WITHOUT FOULING THE CONCRETE.

FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE BENT CAP UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

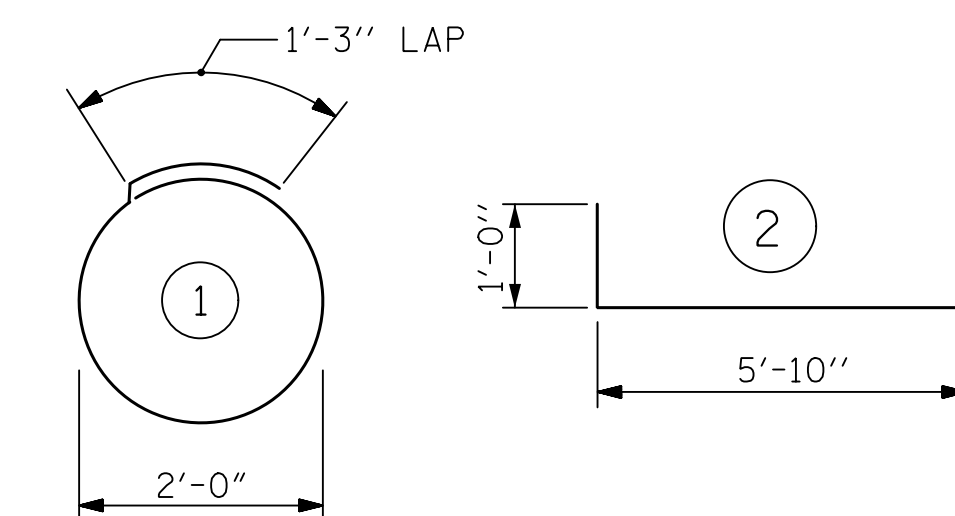
THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 30 X 0.50 GALVANIZED STEEL PILES.

BILL OF MATERIAL FOR ONE PP 30 X 0.50 GALVANIZED STEEL PILE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	7'-7"	30
V1	16	#6	2	6'-10"	164
REINFORCING STEEL =				194	lbs

CLASS A CONCRETE	
5'-0" MINIMUM PLUG	0.8 CY

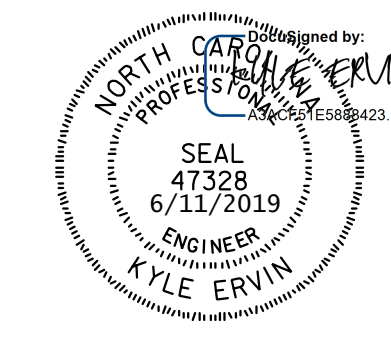
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 30" STEEL PIPE PILE

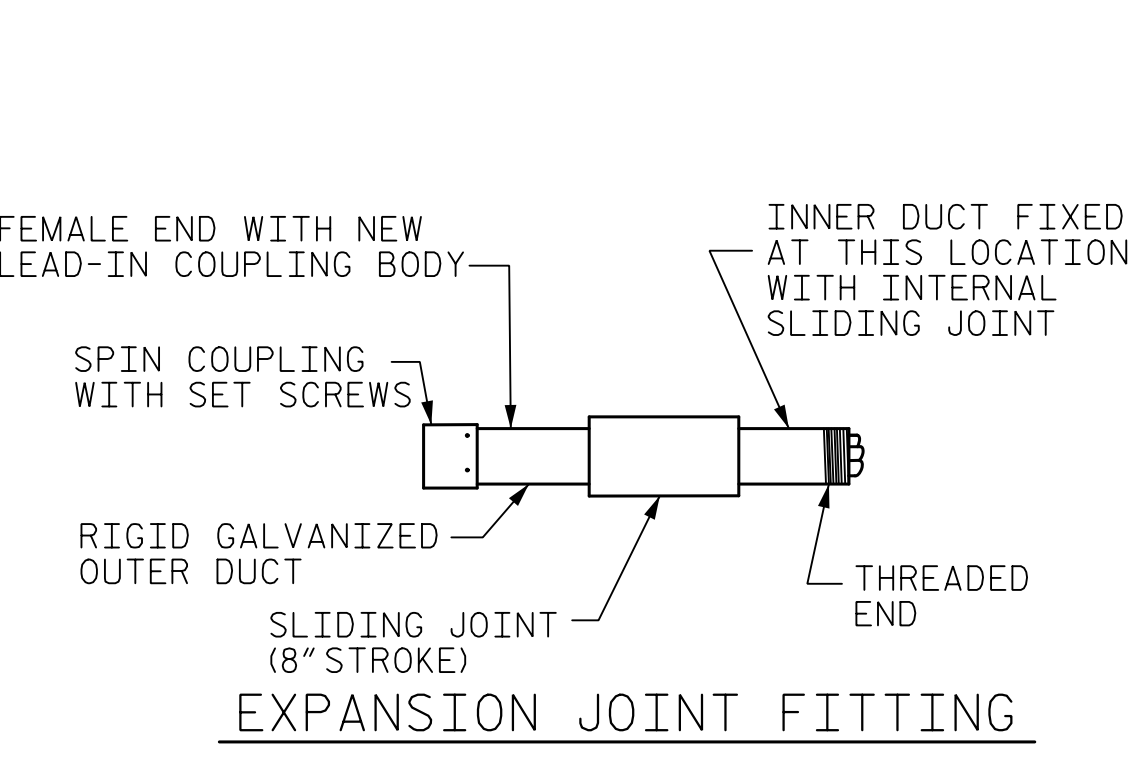
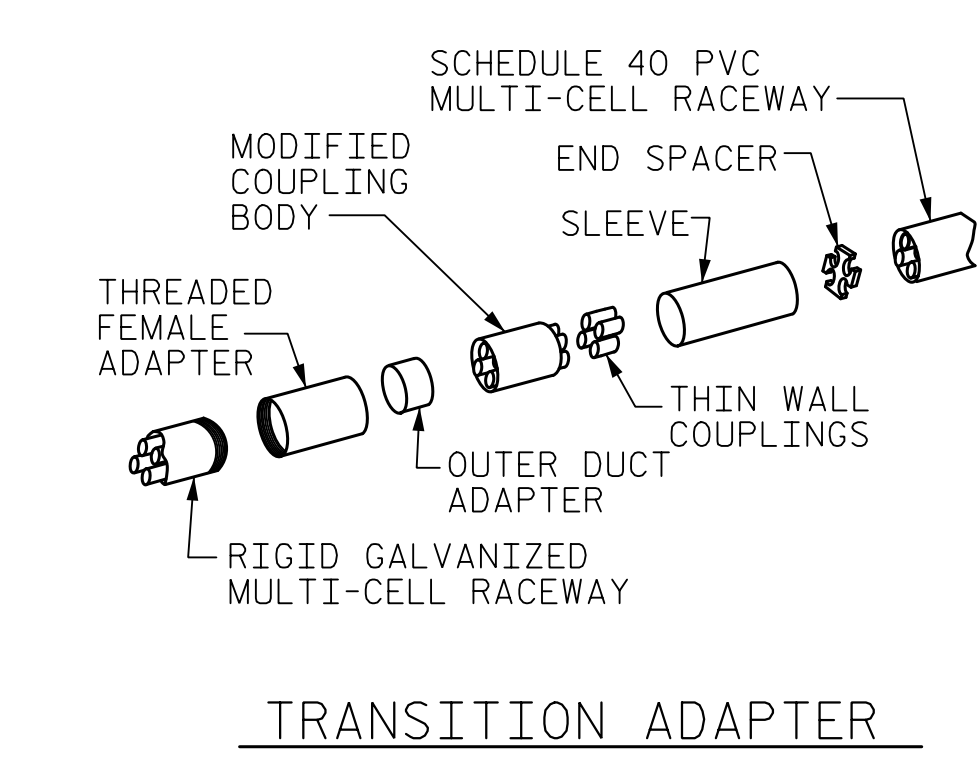
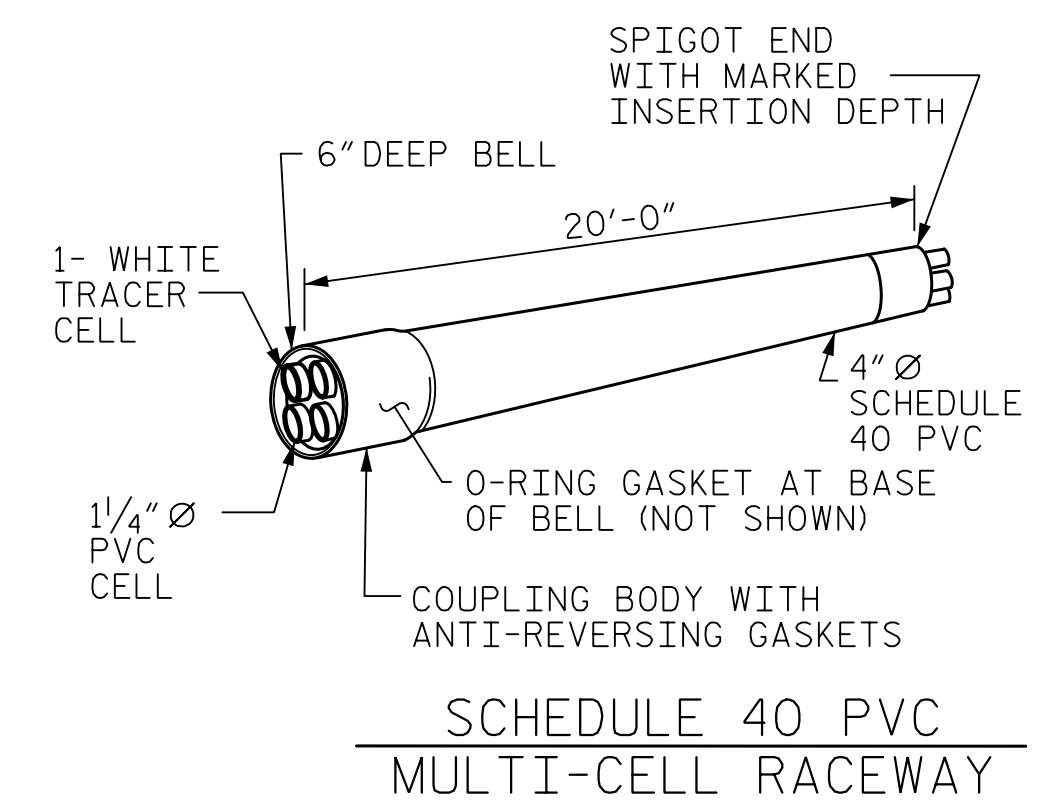
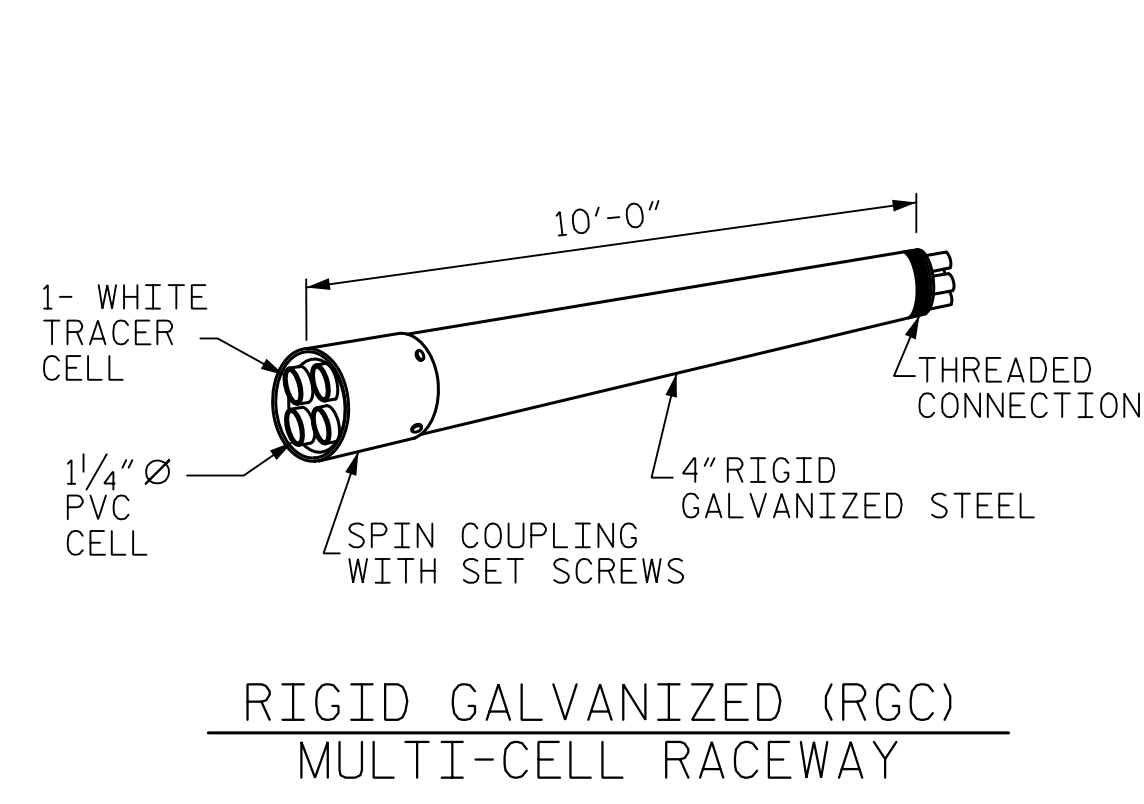


ASSEMBLED BY : B. VAUGHN	DATE : 3/19
CHECKED BY : K. ERVIN	DATE : 3/19
DRAWN BY : TLA 8/05	REV. 5/1/06R MAA/KMM
CHECKED BY : GM 9/05	REV. 10/1/11 MAA/GM
	REV. 12/17 MAA/THC

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DRAWN BY : B. VAUGHN	DATE : 3/19
CHECKED BY : K. ERVIN	DATE : 3/19
DESIGN ENGINEER OF RECORD : K. ERVIN	DATE : 3/19

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			S1-68	
2			4			81	



NOTES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE TOTAL QUANTITY OF CONDUIT NEEDED TO COMPLETE THE WORK AND THAT THE CONDUIT(S) ARE PLACED AT THE NOTED DIMENSION AND ABOVE THE BOTTOM OF THE GIRDER.

THE INSTALLATION OF THE CONDUIT SYSTEM SHALL BE PAID FOR AS LUMP SUM. THE PRICE SHALL INCLUDE ALL CONDUIT, HANGERS, STABILIZERS, EXPANSION JOINTS, CONCRETE INSERTS, PVC SLEEVES AND ALL NECESSARY HARDWARE TO COMPLETE THE WORK.

THE CONTRACTOR SHALL FIELD VERIFY THAT THE CONDUIT SYSTEM IS NOT IN CONFLICT WITH THE GUARDRAIL POSTS.

SEE DETAIL "C" FOR HANGER ASSEMBLY INSTALLATION.

INSTALL SLEEVES PARALLEL TO GIRDERS. SEE DETAIL "B" FOR SLEEVE INSTALLATION.

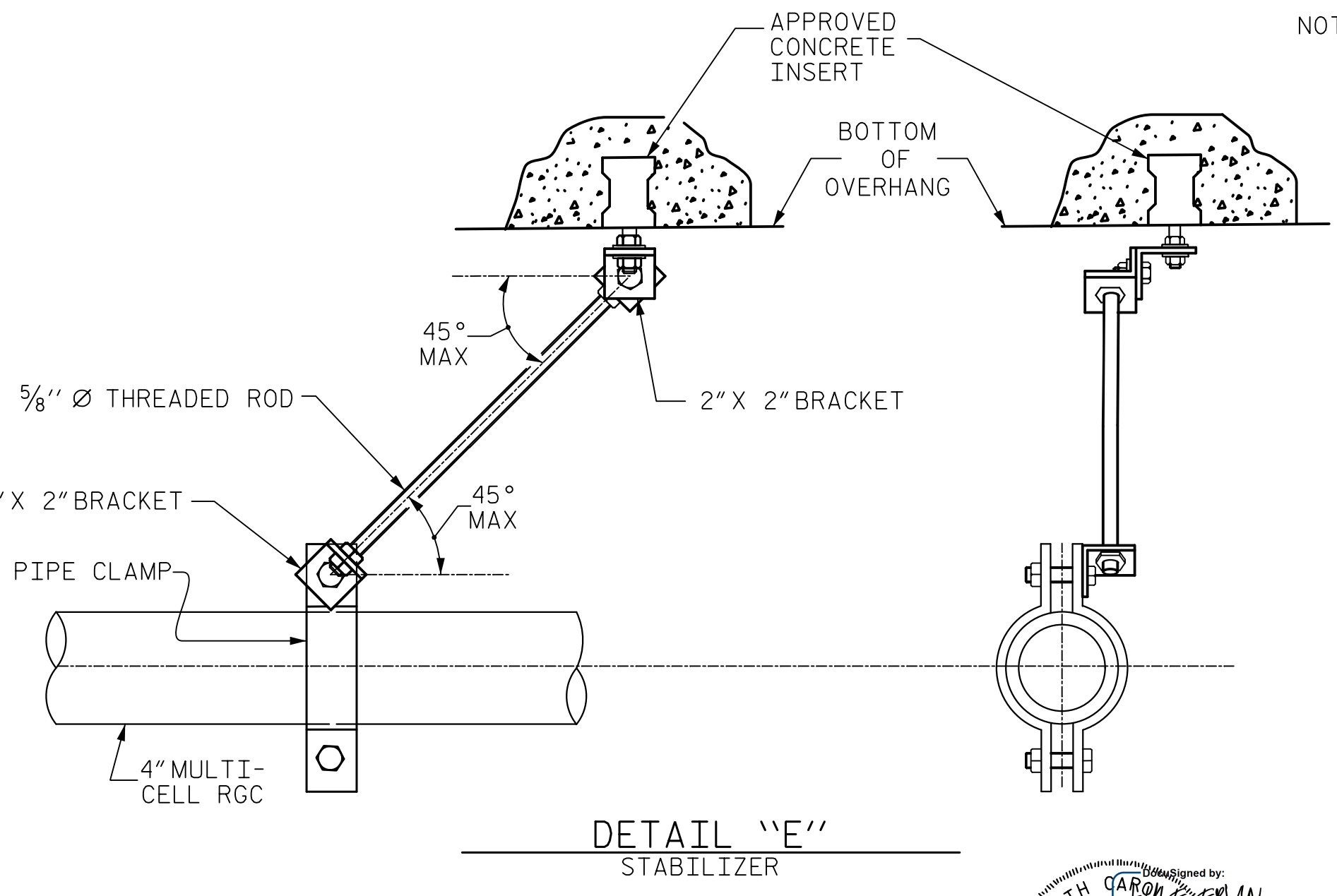
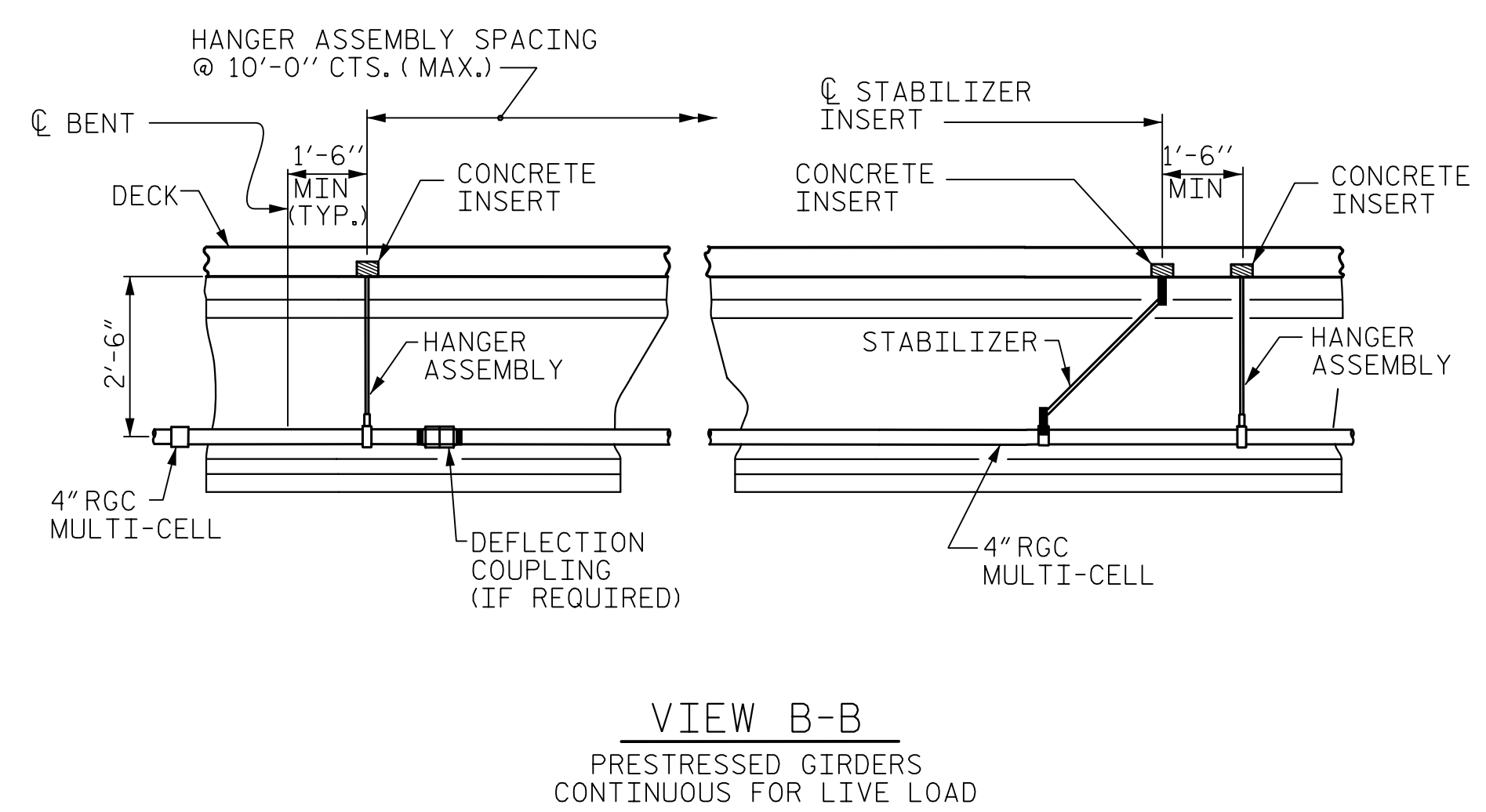
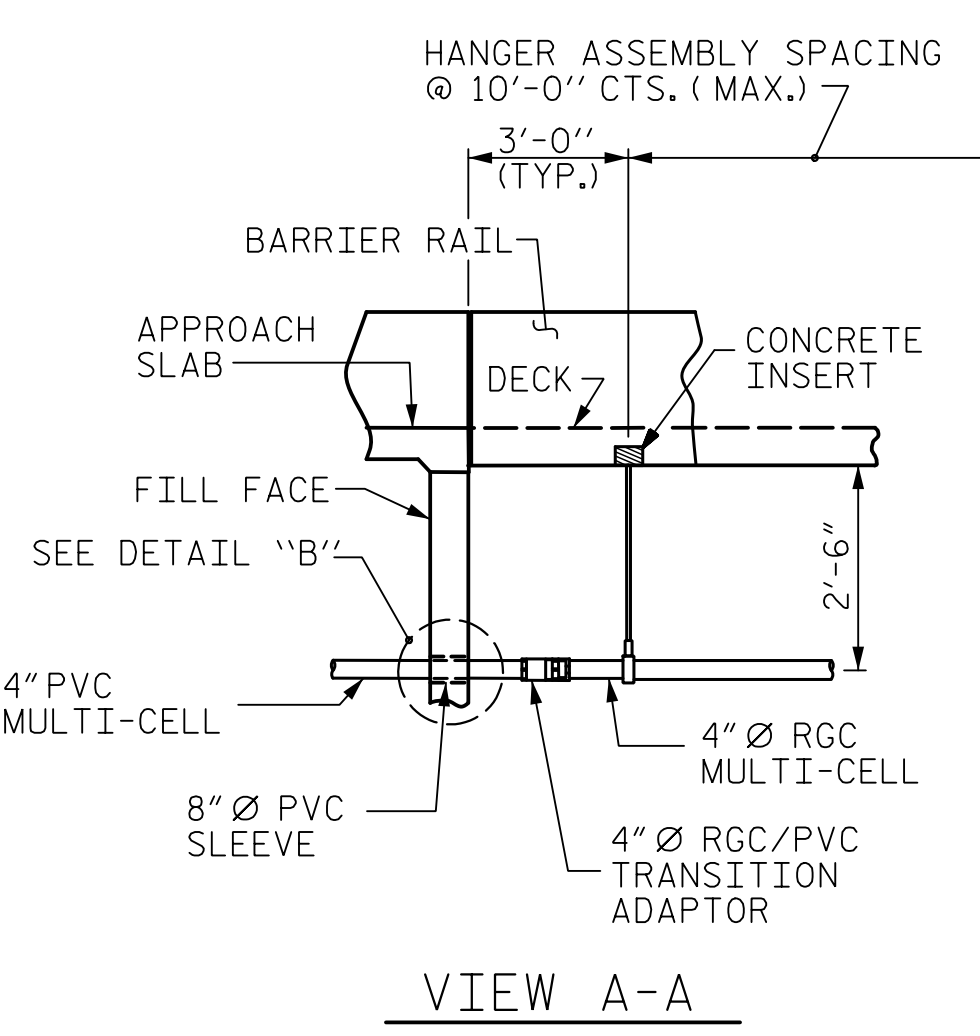
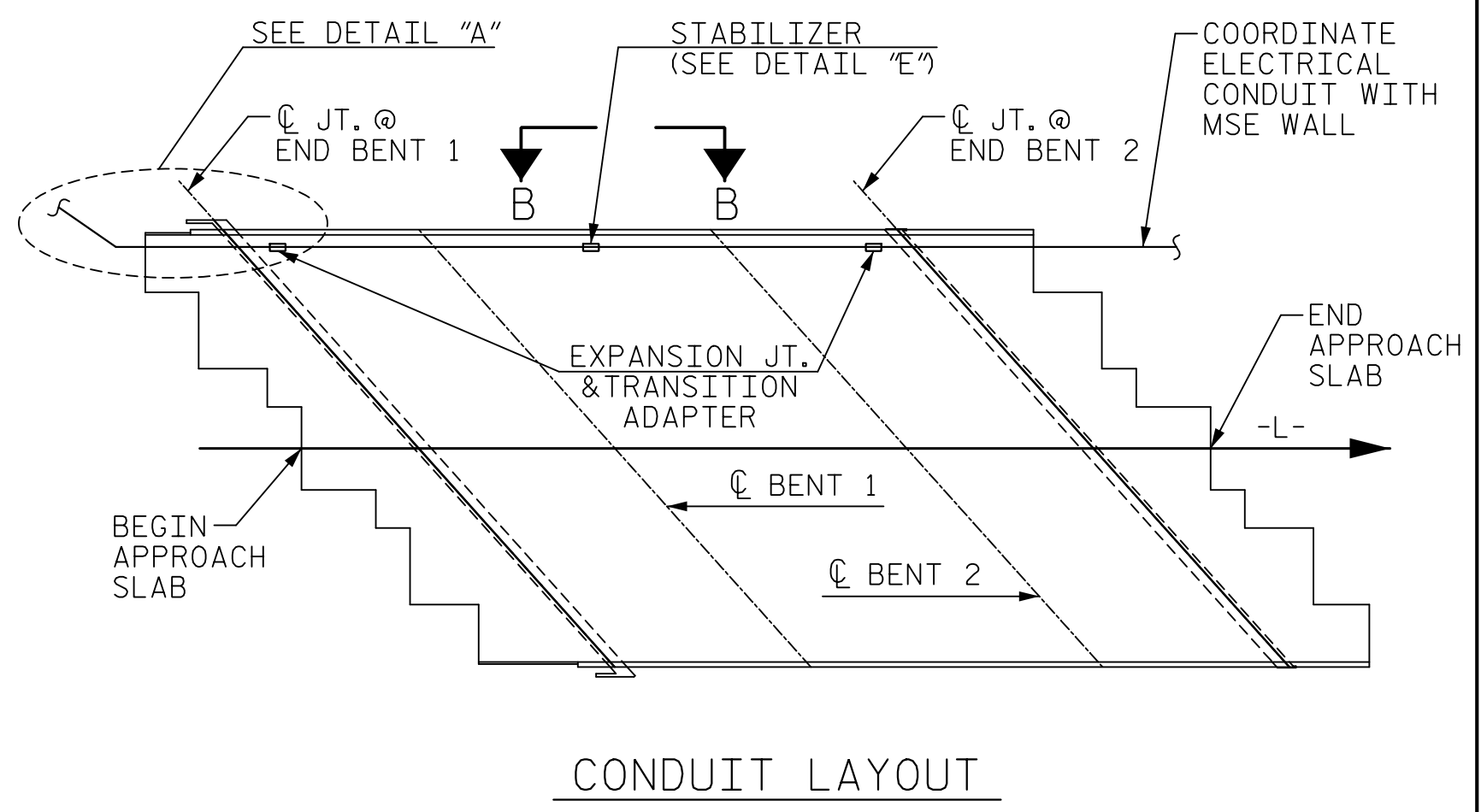
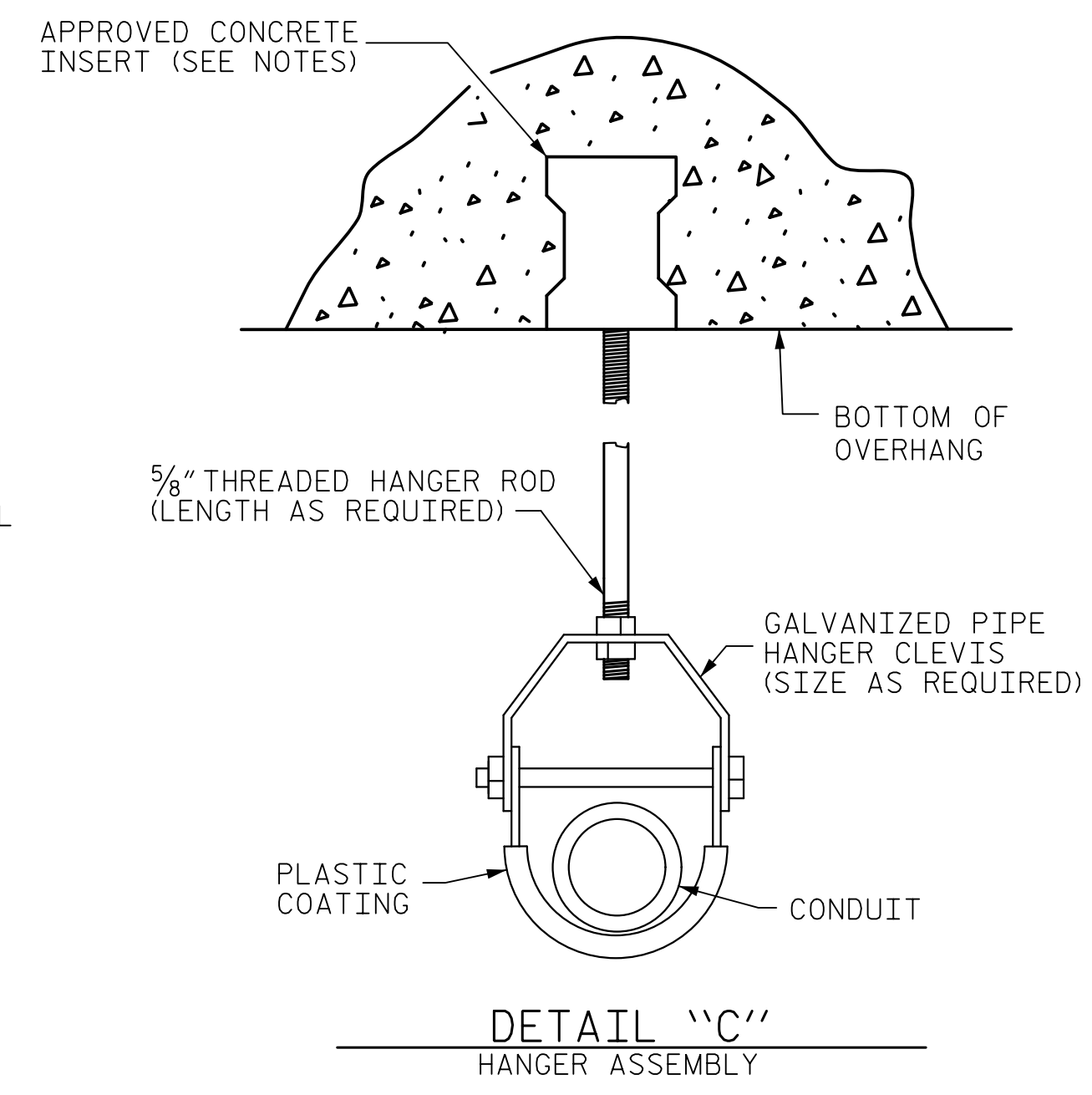
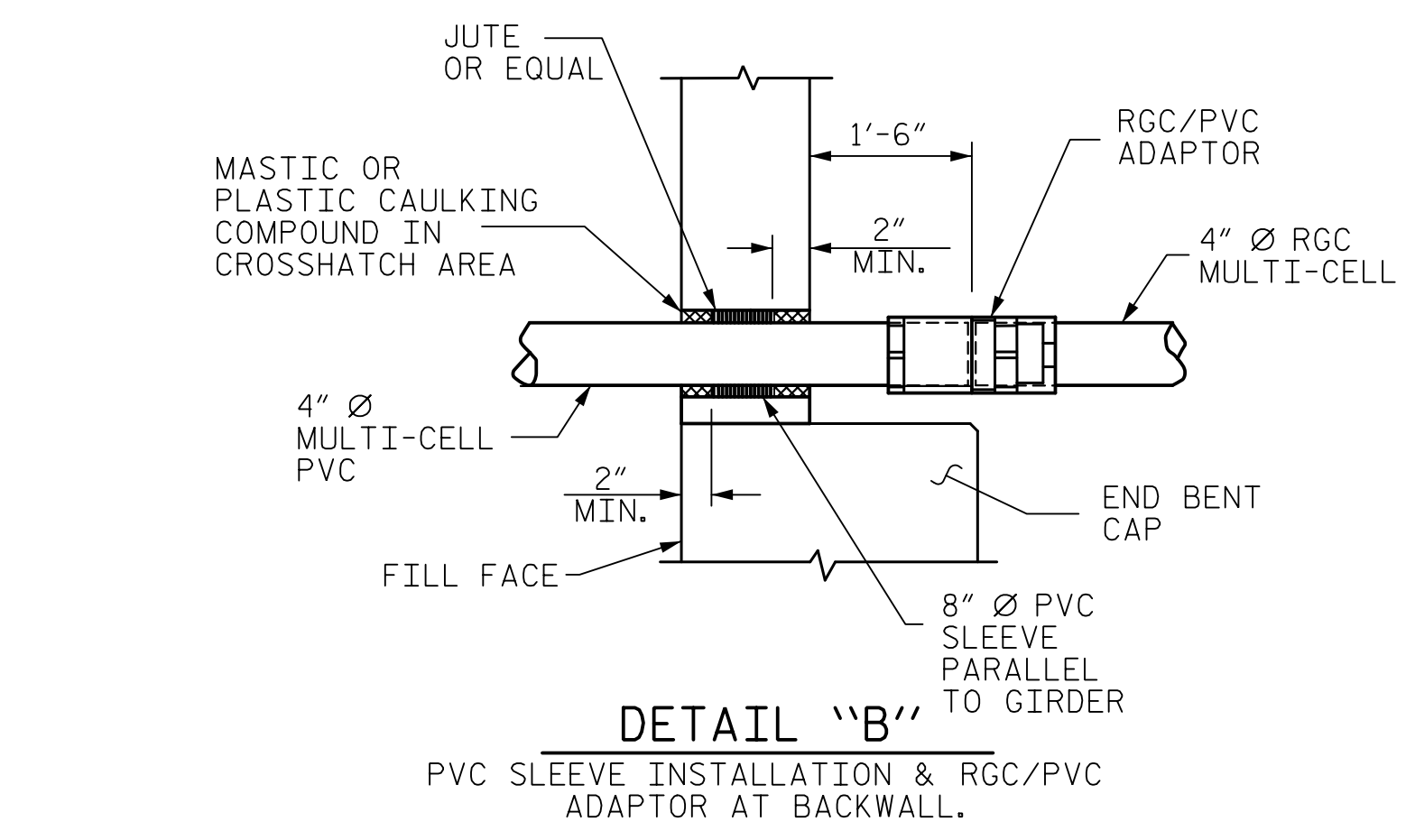
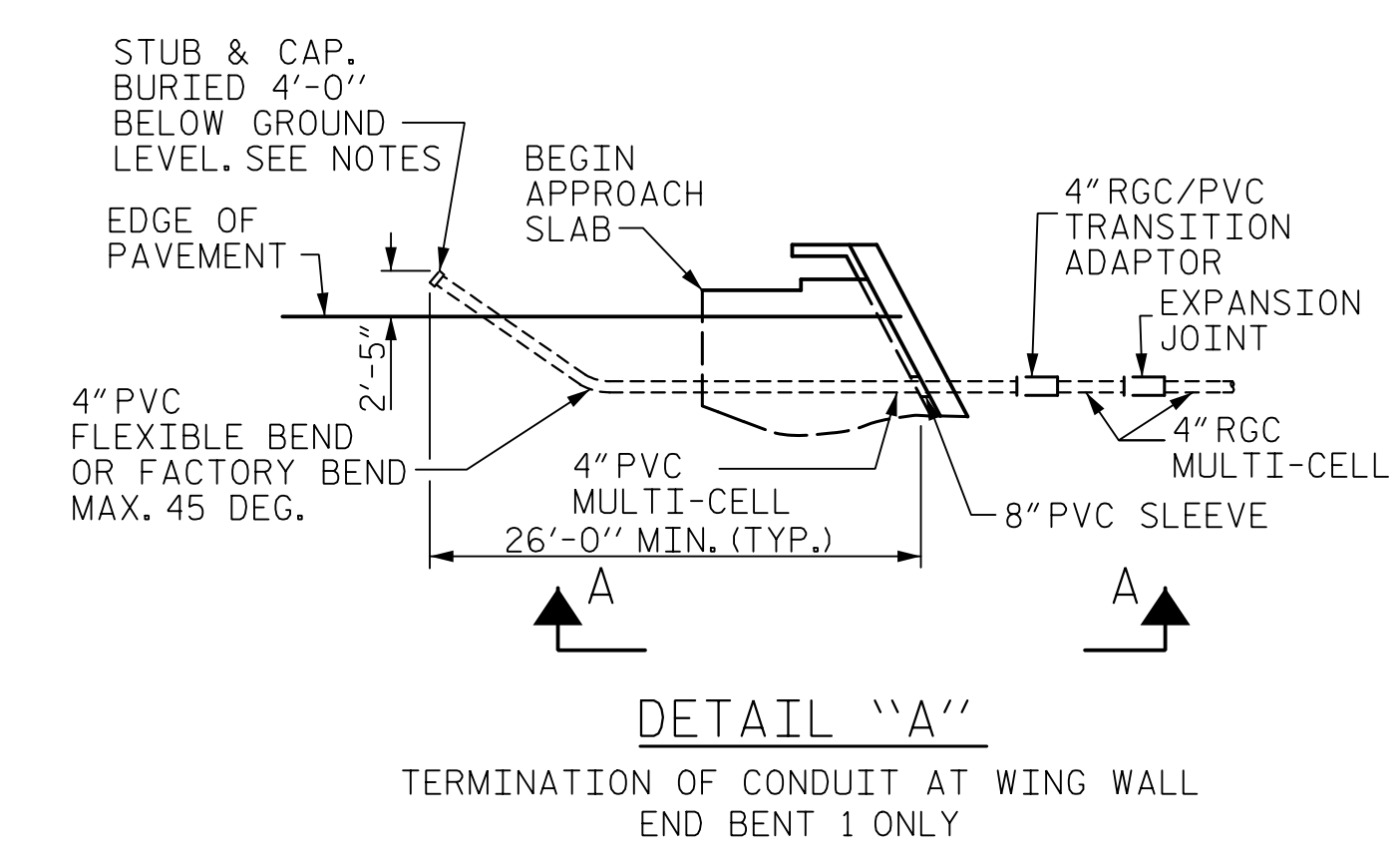
PROVIDE TRANSITION ADAPTOR AND EXPANSION JOINT FOR CONDUIT AT END BENT 1 AND END BENT 2.

INSTALL STABILIZER'S MIDWAY BETWEEN DECK EXPANSION JOINTS. STABILIZER CAN NOT BE USED INSTEAD OF A HANGER ASSEMBLY.

THE CONCRETE SCREW INSERT SHALL HAVE A ROD SIZE OF 5/8" AND A PULL FORCE OF 1260 lbs.

FOR ELECTRICAL CONDUIT SYSTEM FOR SIGNALS, SEE SPECIAL PROVISIONS.

DETAIL "D"
4" MULTI-CELL COMPONENTS



NOTE: SUPERSTRUCTURE IS CONTINUOUS FOR LIVE LOAD OVER INTERIOR BENTS.

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 ELECTRICAL CONDUIT SYSTEM FOR SIGNALS

DESIGNED BY: KYLE ERVIN
 SEAL 47328
 6/11/2010
 ENGINEER
 KYLE ERVIN

ASSEMBLED BY : BPV	DATE : 3/19
CHECKED BY : RWR	DATE : 3/19
DRAWN BY : RWW 2-4-03	REV. 5/1/06 TLA/GM
CHECKED BY : DBM 2-4-03	REV. 10/1/11 MAA/GM
	REV. 12/17 MAA/THC

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DRAWN BY : B. VAUGHN	DATE : 3/19
CHECKED BY : K. ERVIN	DATE : 3/19
DESIGN ENGINEER OF RECORD : K. ERVIN	DATE : 3/19

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			S1-69	
2			4			81	

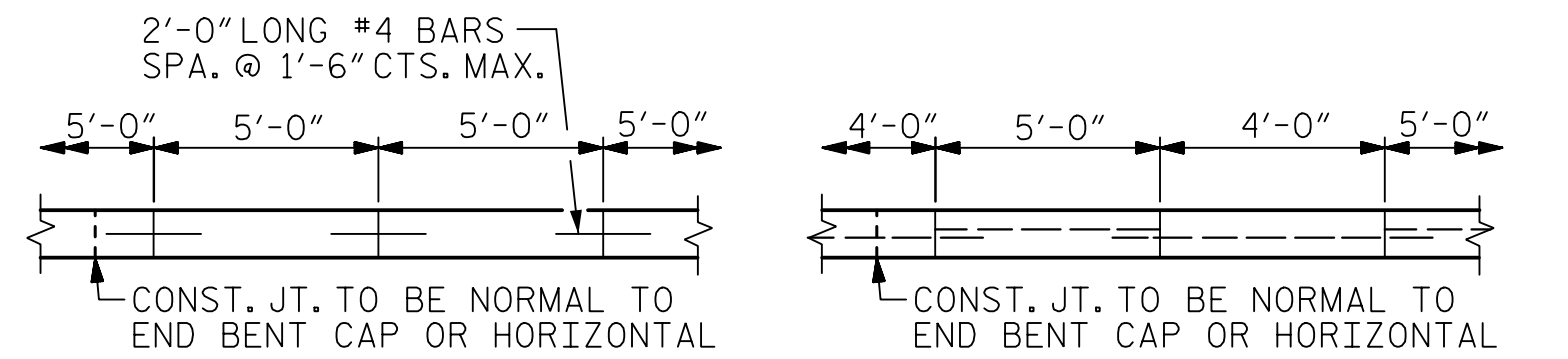
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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. STA. 659+58.95 -L-	4 INCH SLOPE PROTECTION	* WELDED WIRE FABRIC 60 INCHES WIDE
	SQUARE YARDS	APPROX. L.F.
END BENT 1	1,496	2,693
END BENT 2	1,482	2,667

* QUANTITY SHOWN IS BASED ON 5' POURS.

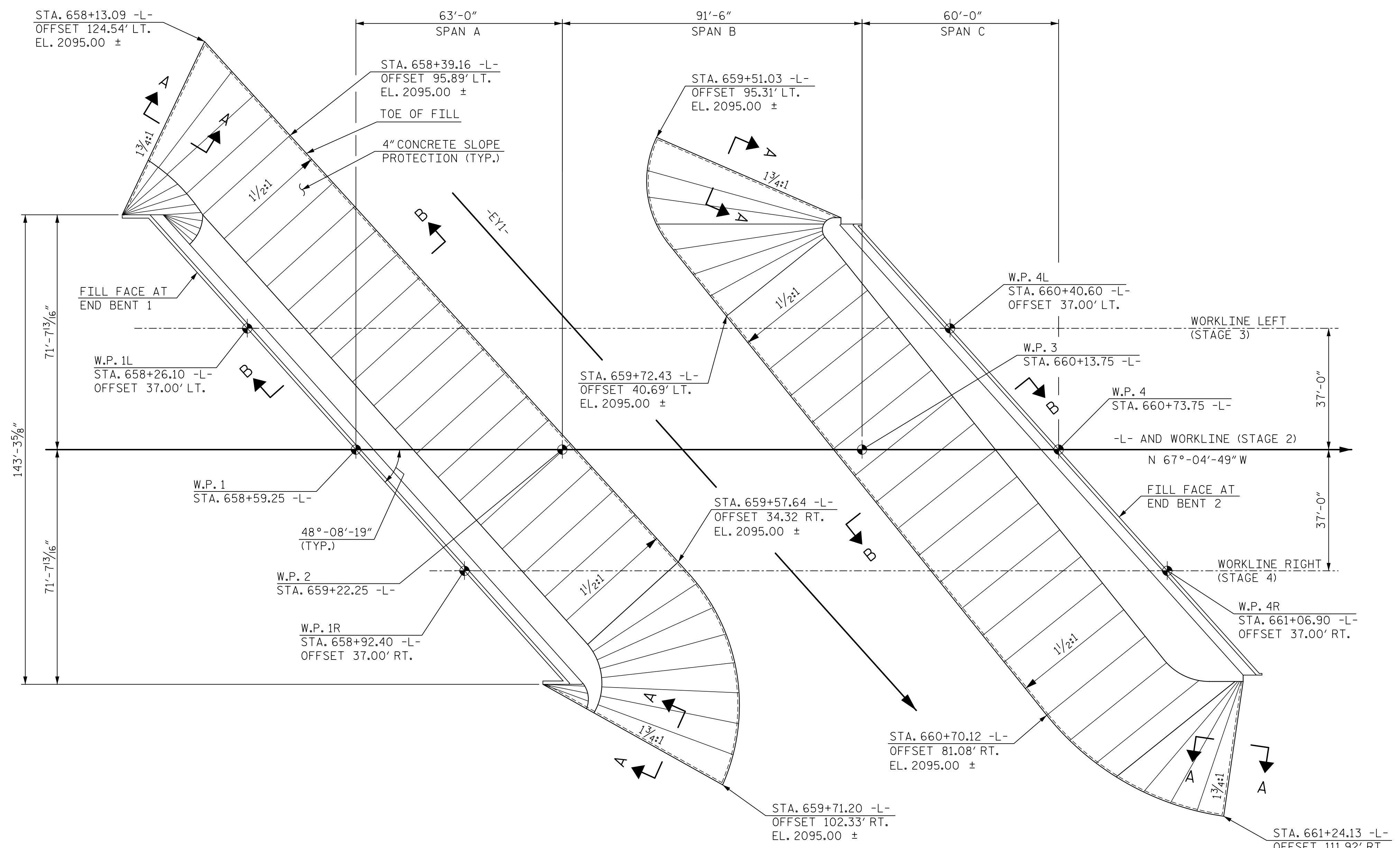


STRIP WIDTHS MAY VARY IN CURVED PORTION.

POUR A 4'-0" STRIP FIRST. STRIP WIDTHS MAY VARY IN CURVED PORTION.

POURING DETAIL

OPTIONAL POURING DETAIL

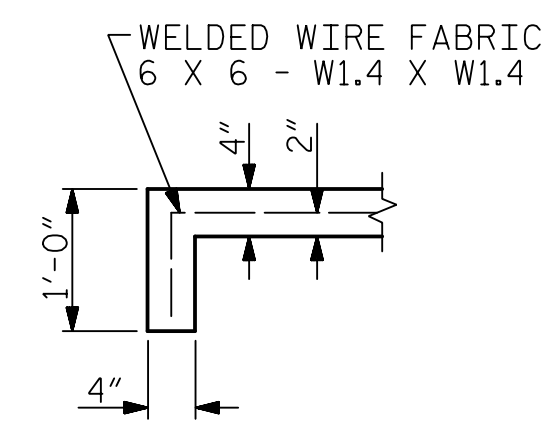


PLAN AT END BENT 1

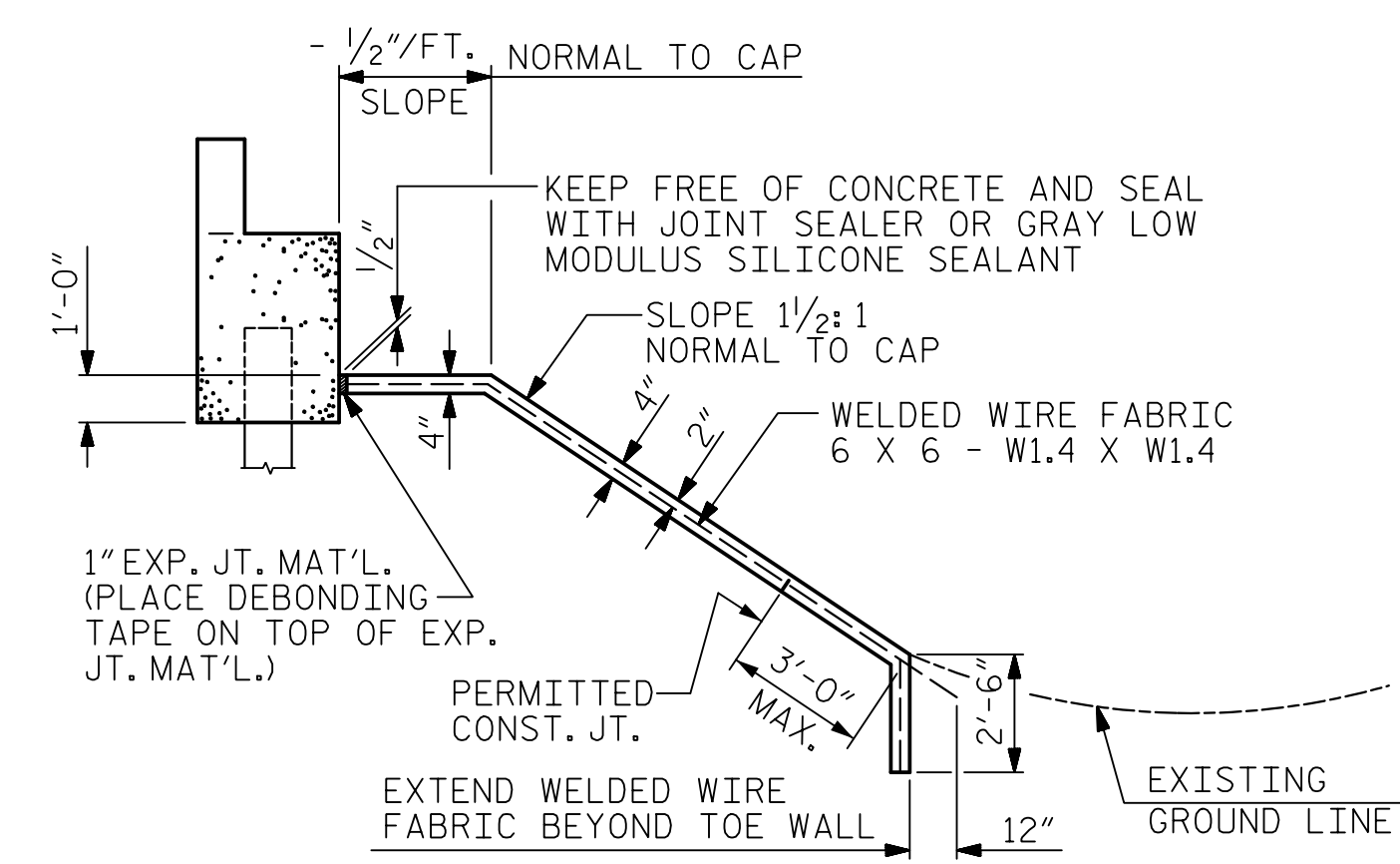
SLOPE PROTECTION LAYOUT

PLAN AT END BENT 2

NOTE:
SLOPE PROTECTION LIMITS SHOWN ATTEMPT TO TIE INTO EXISTING SLOPES. LIMITS MAY NEED TO BE ADJUSTED TO MATCH ACTUAL SITE CONDITIONS.



SECTION A-A



SECTION B-B

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

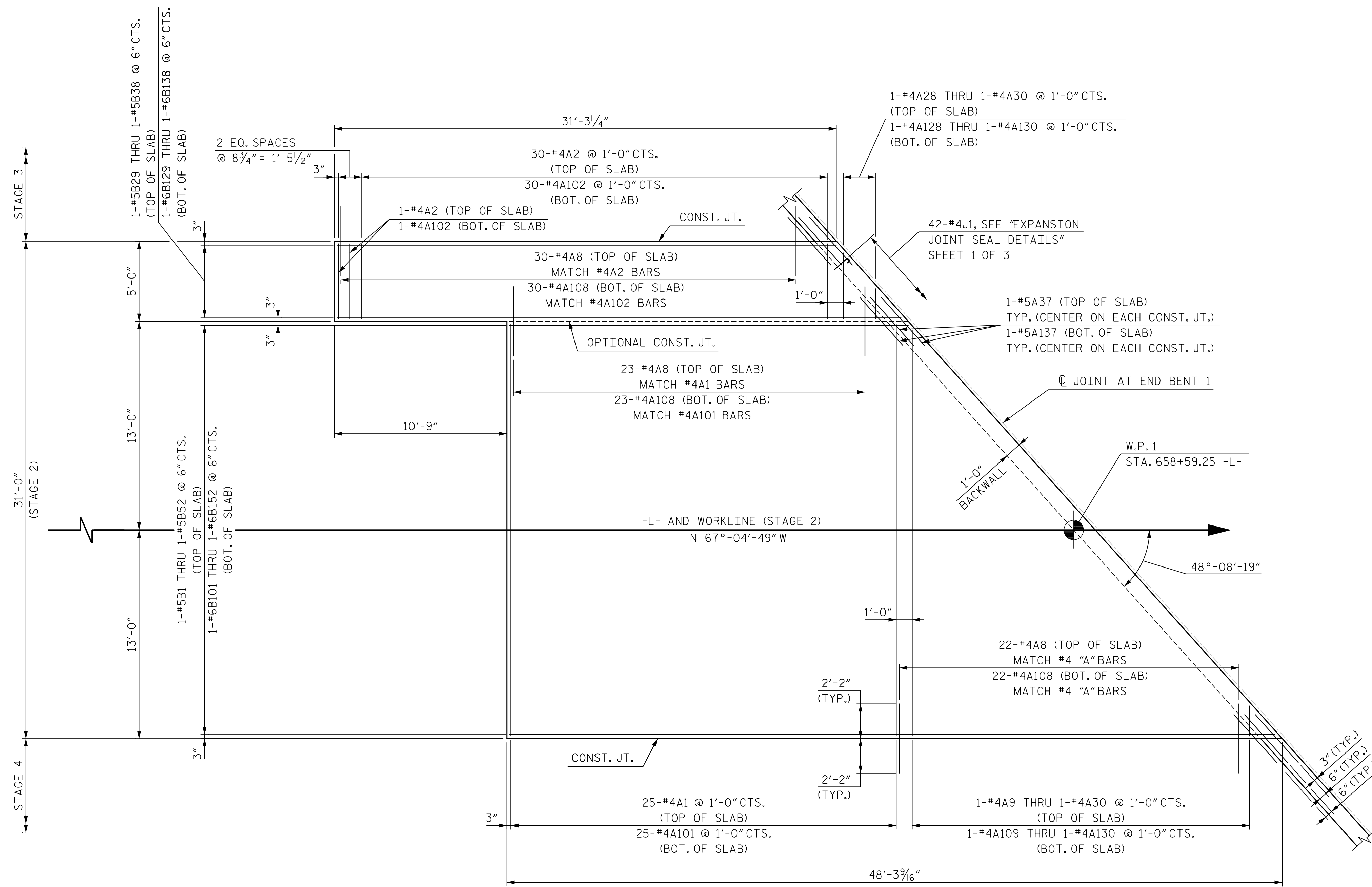


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 SLOPE PROTECTION
 DETAILS

HNTB HNTB NORTH CAROLINA, P.C. NC License No. C-1554 343 E. Six Forks Rd., Suite 200, Raleigh, NC. 27609		DWG. NO. 70
DRAWN BY <u>B. VAUGHN</u>	DATE <u>3/19</u>	
CHECKED BY <u>K. ERVIN</u>	DATE <u>3/19</u>	
DESIGN ENGINEER OF RECORD <u>K. ERVIN</u>	DATE <u>3/19</u>	

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS	
1			3			81	
2			4			81	

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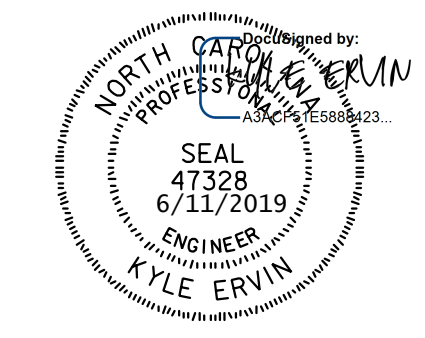


PLAN AT END BENT 1 (STAGE 2)
 MEDIAN BARRIER ON APPROACH SLAB NOT SHOWN FOR CLARITY

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 1 OF 11
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 BRIDGE APPROACH
 SLAB FOR RIGID PAVEMENT

NOTES:
 FOR NOTES AND SECTION THROUGH SLAB, SEE "BRIDGE APPROACH SLAB FOR RIGID PAVEMENT" SHEET 7 OF 11.
 FOR CONCRETE MEDIAN BARRIER DETAILS, SEE "CONCRETE MEDIAN BARRIER" SHEET.
 FOR BILL OF REINFORCING AND QUANTITIES, SEE BRIDGE APPROACH SLAB FOR RIGID PAVEMENT, SHEET 8 OF 11.



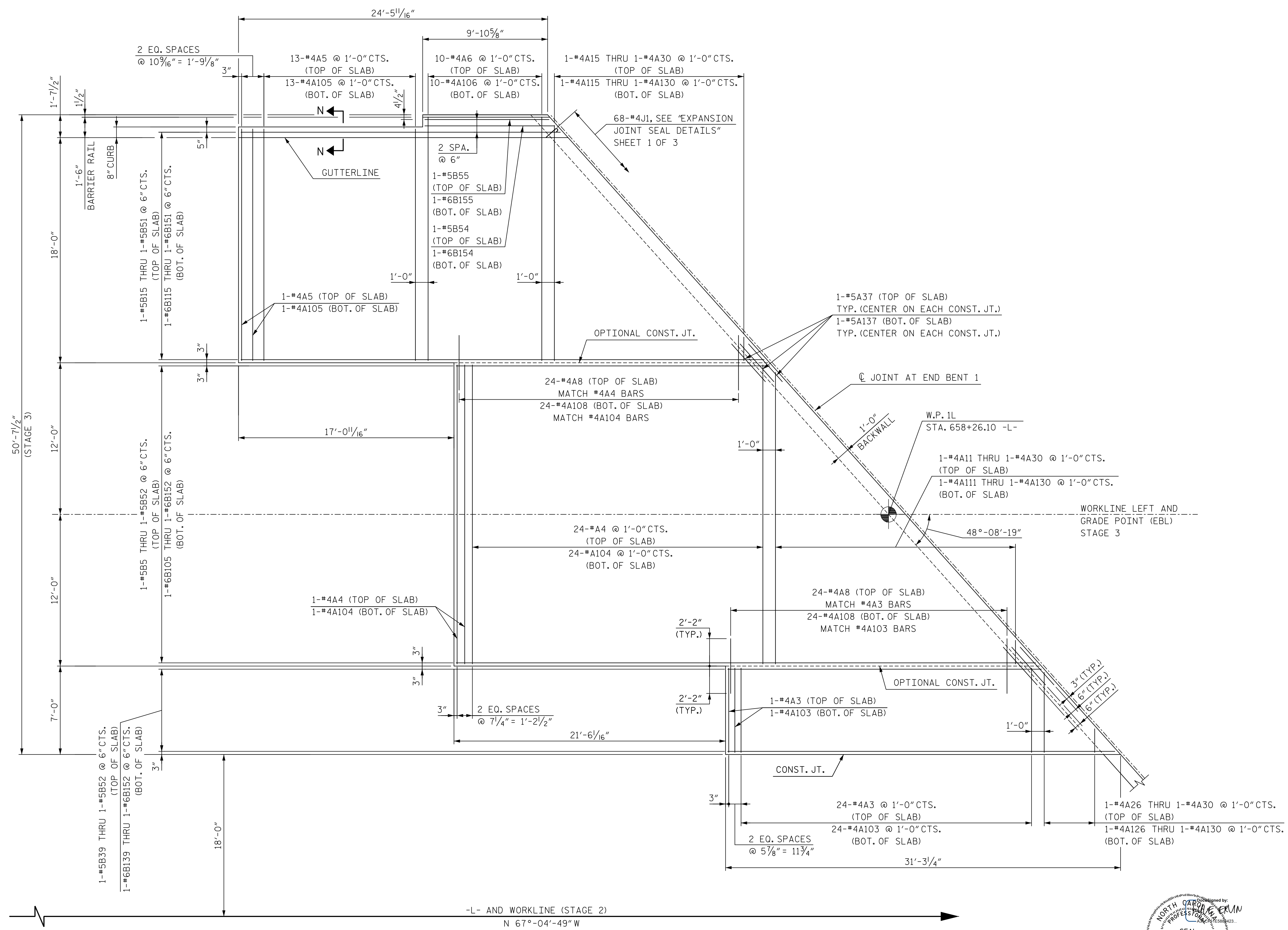
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 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY B. STEIB DATE 3/19
 CHECKED BY M. SWERDUK DATE 3/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 3/19

DWG. NO. 71

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REVISIONS						TOTAL SHEETS
NO.	BY	DATE	NO.	BY	DATE	81
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2			4			

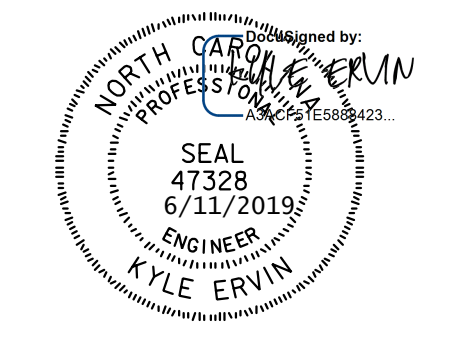


PLAN AT END BENT 1 (STAGE 3)

NOTES:
 FOR NOTES, SECTION THROUGH SLAB, AND SECTION N-N, SEE "BRIDGE APPROACH SLAB FOR RIGID PAVEMENT" SHEET 7 OF 11.
 FOR CONCRETE MEDIAN BARRIER DETAILS, SEE "CONCRETE MEDIAN BARRIER" SHEET.
 FOR BILL OF REINFORCING AND QUANTITIES, SEE BRIDGE APPROACH SLAB FOR RIGID PAVEMENT, SHEET 9 OF 11.

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 2 OF 11
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 BRIDGE APPROACH
 SLAB FOR RIGID PAVEMENT



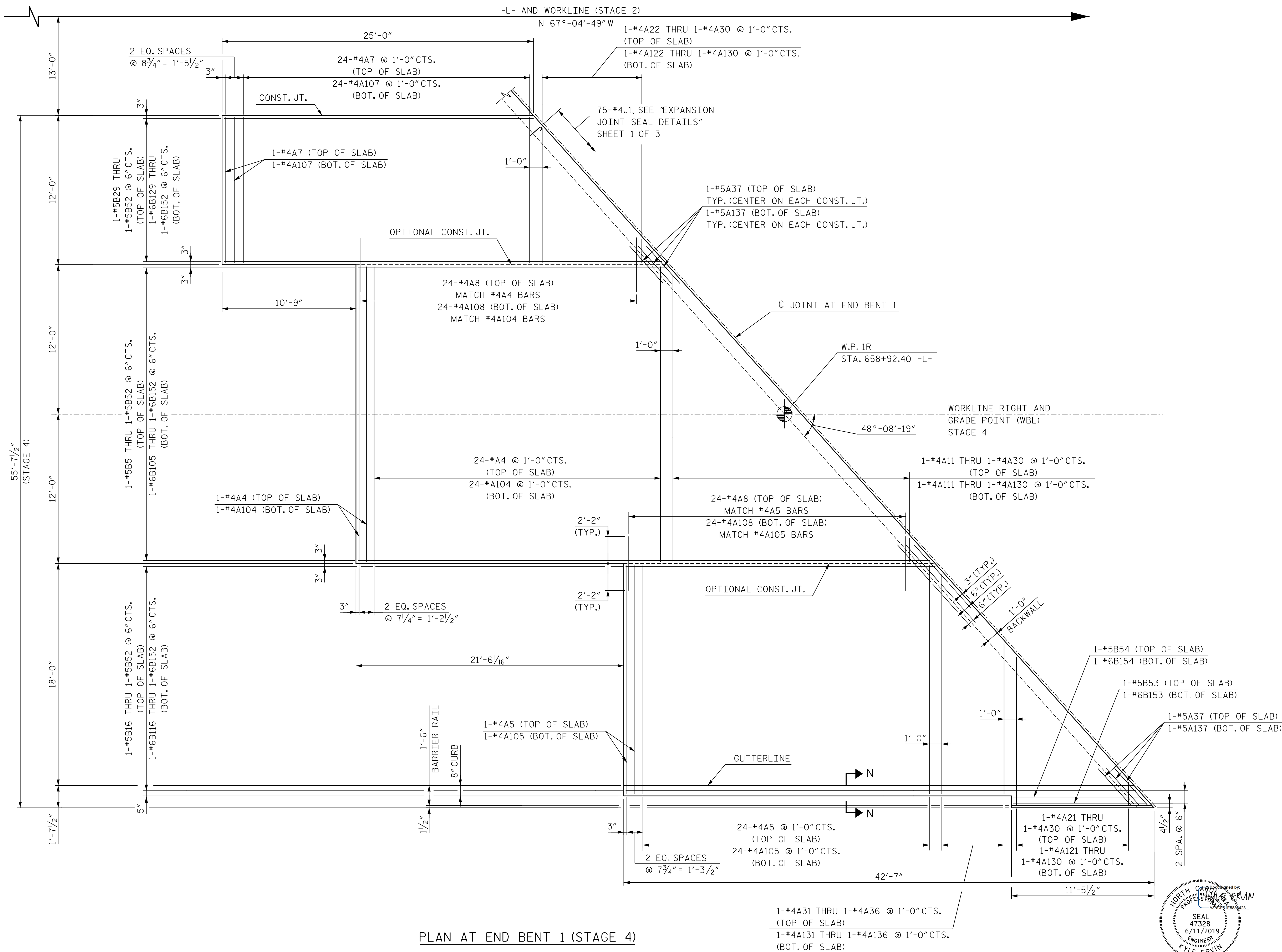
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DRAWN BY B. STEIB DATE 3/19
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 DESIGN ENGINEER OF RECORD K. ERVIN DATE 3/19

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DWG. NO. 72

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



PLAN AT END BENT 1 (STAGE 4)

NOTES:

- FOR NOTES, SECTION THROUGH SLAB, AND SECTION N-N, SEE "BRIDGE APPROACH SLAB FOR RIGID PAVEMENT" SHEET 7 OF 11.
- FOR CONCRETE MEDIAN BARRIER DETAILS, SEE "CONCRETE MEDIAN BARRIER" SHEET.
- FOR BILL OF REINFORCING AND QUANTITIES, SEE BRIDGE APPROACH SLAB FOR RIGID PAVEMENT, SHEET 10 OF 11.

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 3 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 BRIDGE APPROACH
 SLAB FOR RIGID PAVEMENT



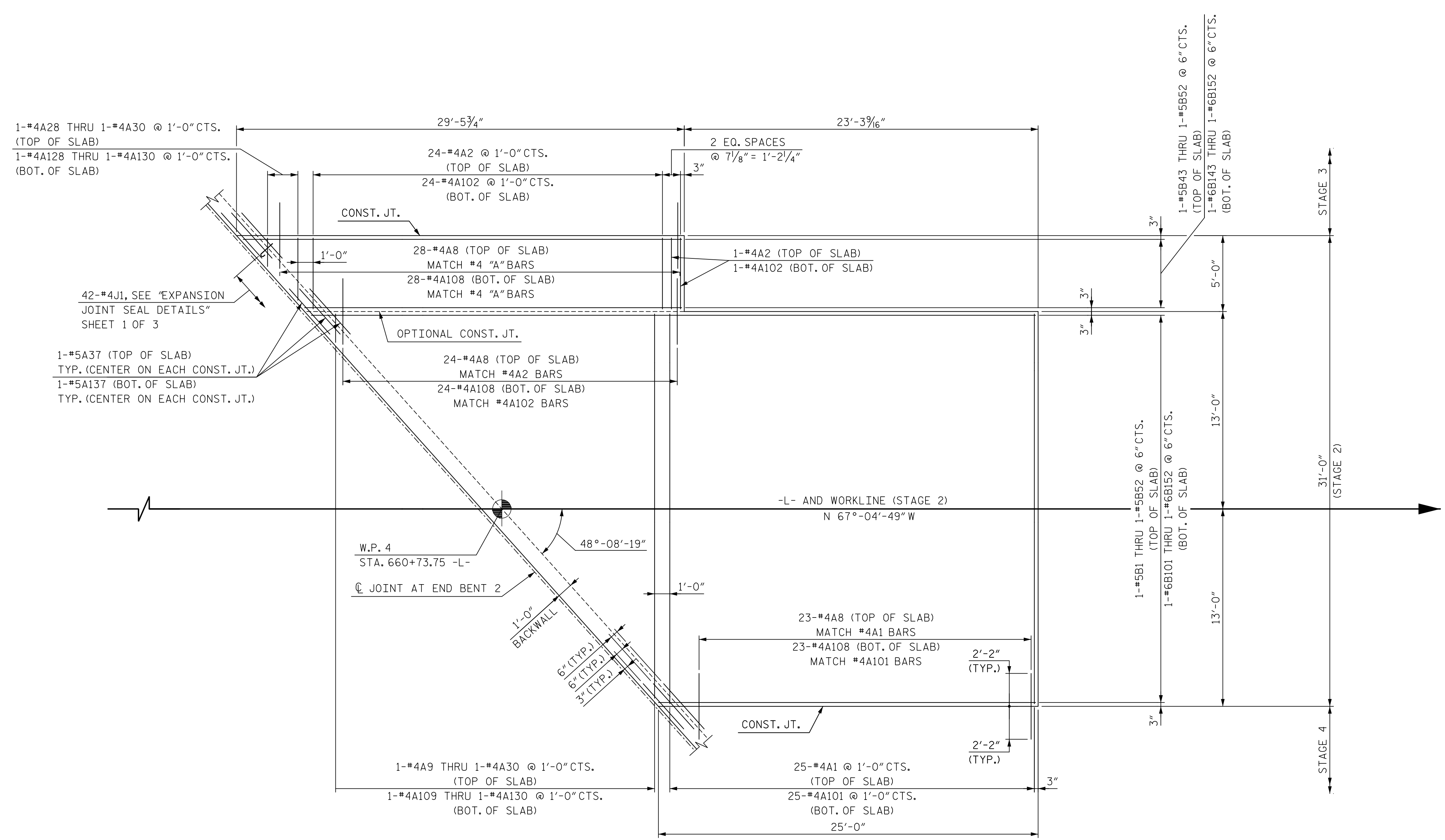
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DRAWN BY B. STEIB DATE 3/19
 CHECKED BY M. SWERDUK DATE 3/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 3/19

DWG. NO. 73

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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
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2			4			

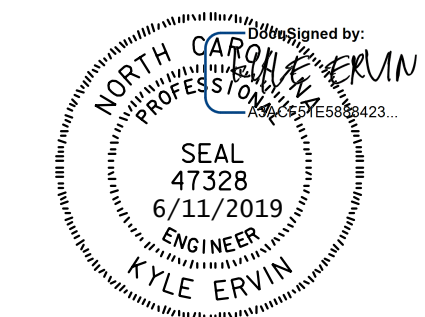


PLAN AT END BENT 2 (STAGE 2)
 MEDIAN BARRIER ON APPROACH SLAB NOT SHOWN FOR CLARITY

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 4 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 BRIDGE APPROACH
 SLAB FOR RIGID PAVEMENT

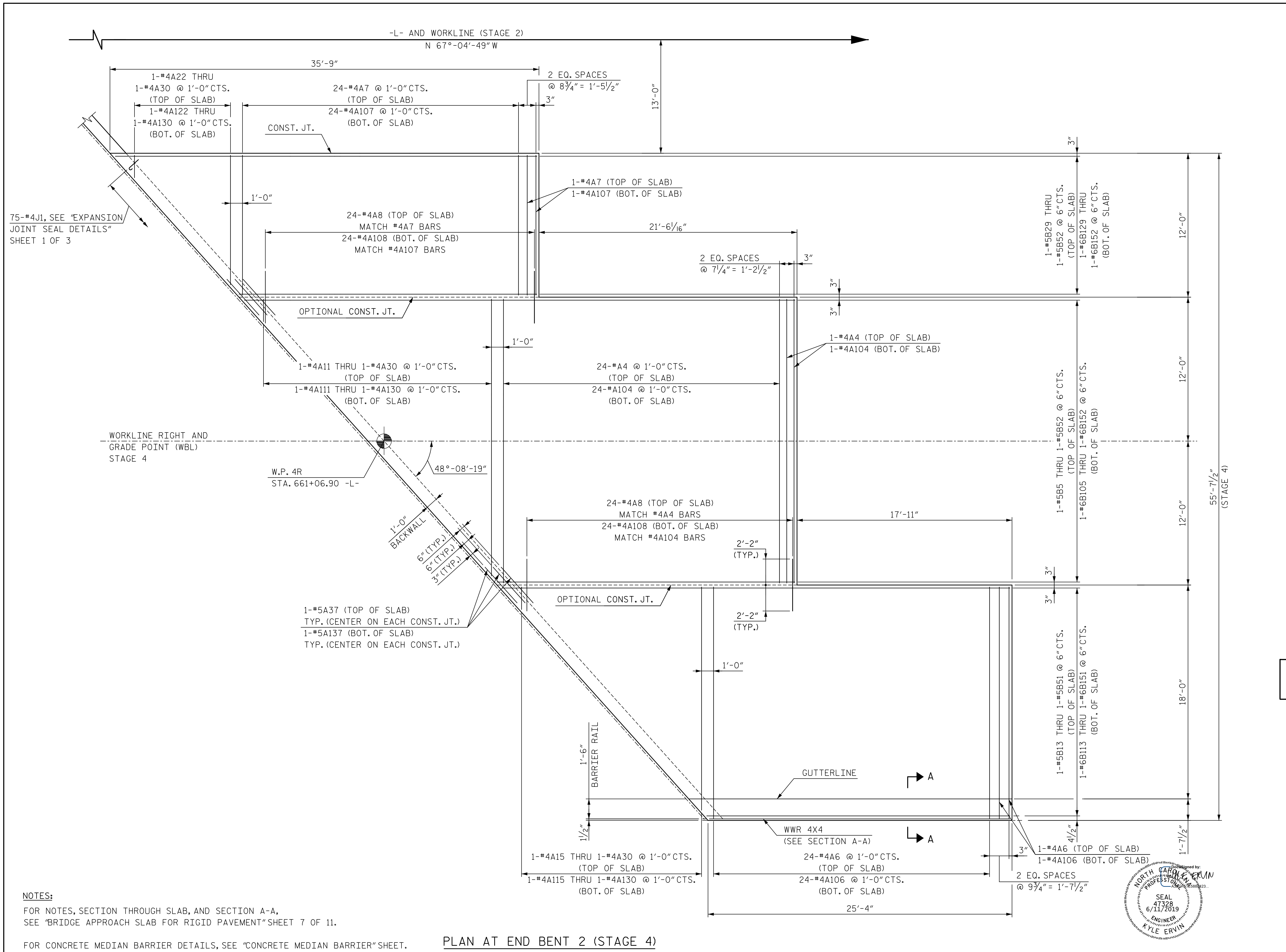


NOTES:
 FOR NOTES AND SECTION THROUGH SLAB, SEE "BRIDGE APPROACH SLAB FOR RIGID PAVEMENT" SHEET 7 OF 11.
 FOR CONCRETE MEDIAN BARRIER DETAILS, SEE "CONCRETE MEDIAN BARRIER" SHEET.
 FOR BILL OF REINFORCING AND QUANTITIES, SEE BRIDGE APPROACH SLAB FOR RIGID PAVEMENT, SHEET 8 OF 11.

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 CHECKED BY M. SWERDUK DATE 3/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 3/19
 DWG. NO. 74

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			



75-#4J1, SEE "EXPANSION JOINT SEAL DETAILS" SHEET 1 OF 3

NOT FOR CONSTRUCTION

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 6 OF 11
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 BRIDGE APPROACH
 SLAB FOR RIGID PAVEMENT

NOTES:
 FOR NOTES, SECTION THROUGH SLAB, AND SECTION A-A, SEE "BRIDGE APPROACH SLAB FOR RIGID PAVEMENT" SHEET 7 OF 11.

FOR CONCRETE MEDIAN BARRIER DETAILS, SEE "CONCRETE MEDIAN BARRIER" SHEET.

FOR BILL OF REINFORCING AND QUANTITIES, SEE BRIDGE APPROACH SLAB FOR RIGID PAVEMENT, SHEET 10 OF 11.

PLAN AT END BENT 2 (STAGE 4)



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 NC License No. C-1554
 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY: B. STEIB DATE: 3/19
 CHECKED BY: M. SWERIDUK DATE: 3/19
 DESIGN ENGINEER OF RECORD: K. ERVIN DATE: 3/19

DWG. NO. 76

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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			

NOTES

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

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

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

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

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

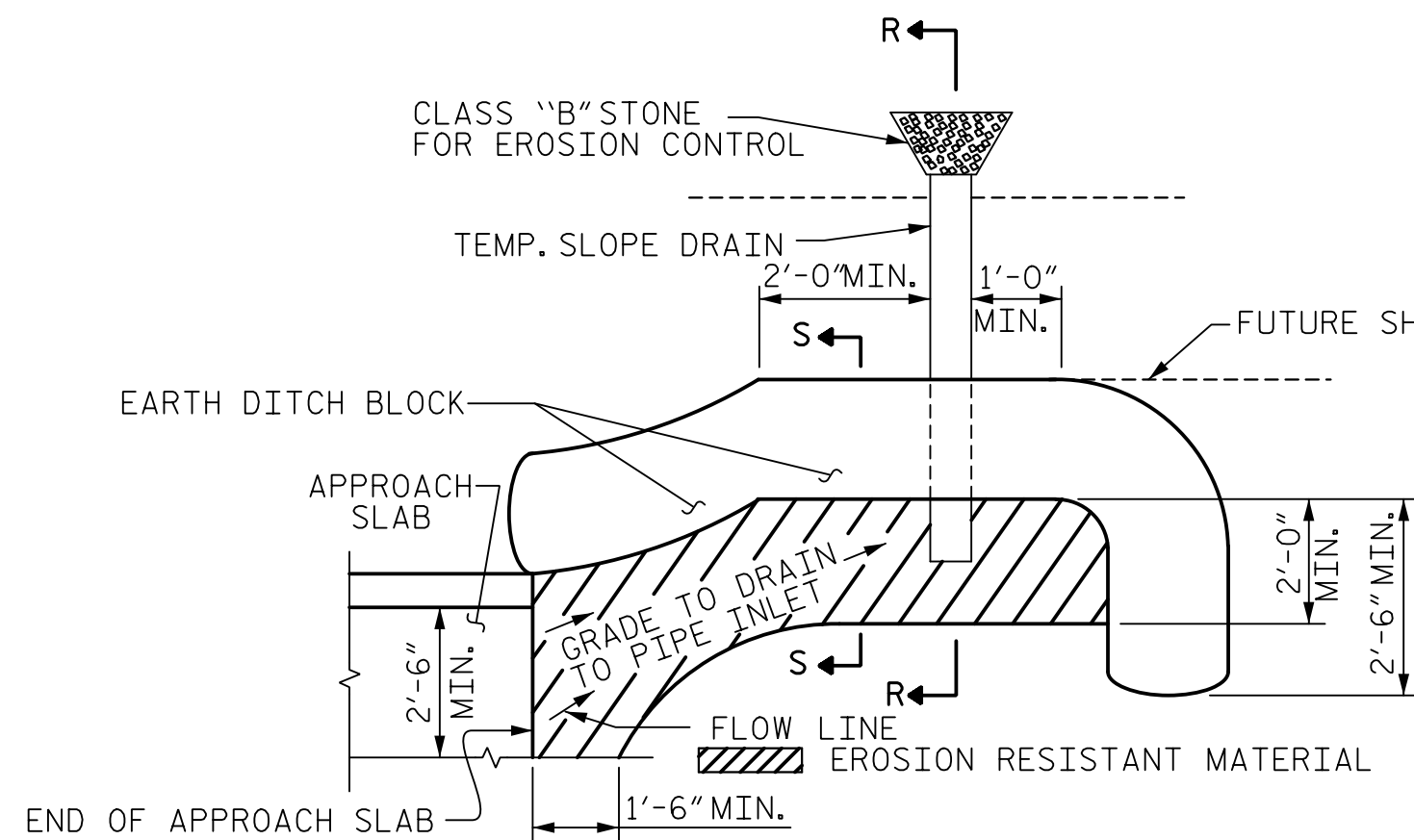
FOR THE 6" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

AREA BETWEEN THE WINGWALL AND APPROACH SLAB AT END BENT 1 SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.

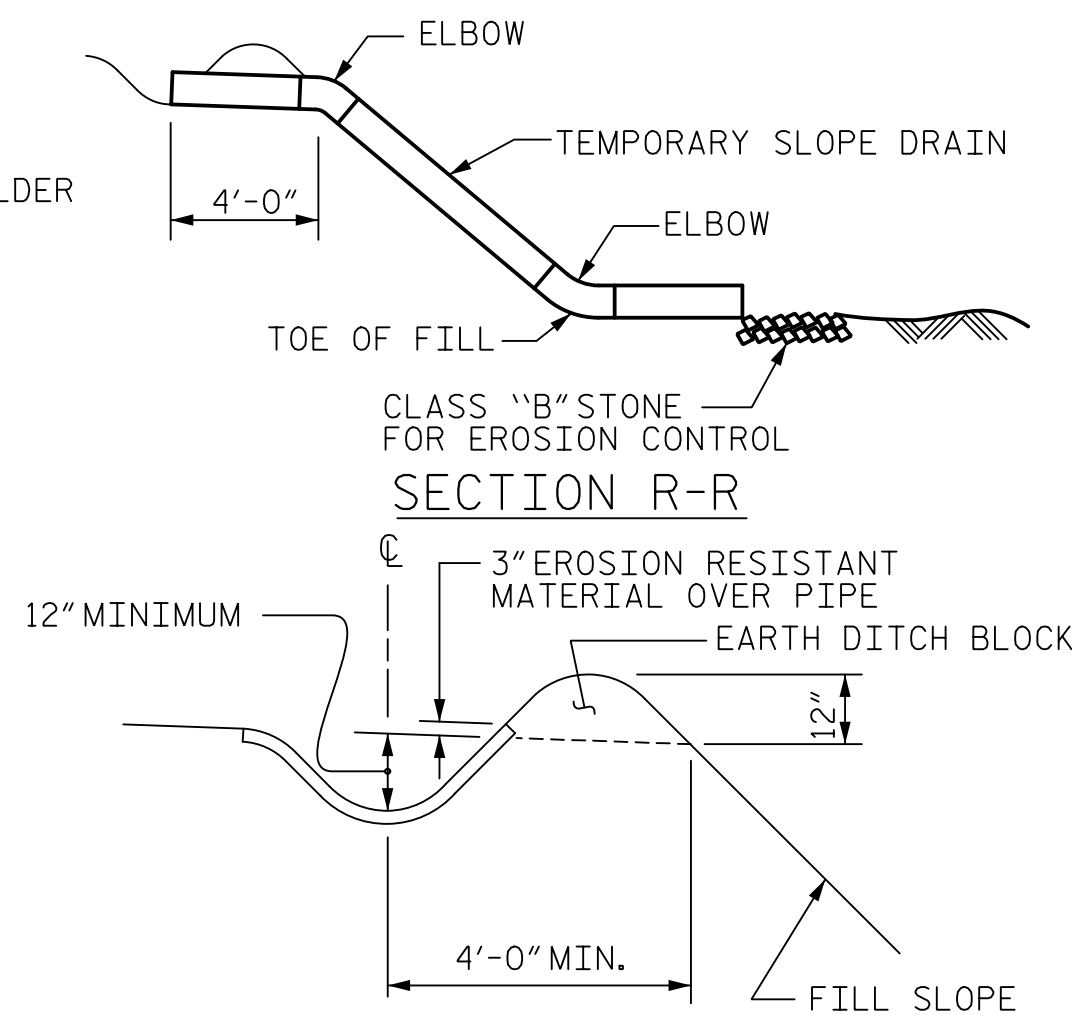
FOR BRIDGE APPROACH SLAB PLAN, SEE "BRIDGE APPROACH SLAB FOR RIGID PAVEMENT" SHEETS 1 THRU 6 OF 11.

FOR BARRIERS ON APPROACH SLAB SEE "BRIDGE APPROACH SLAB FOR RIGID PAVEMENT" SHEET 11 OF 11.

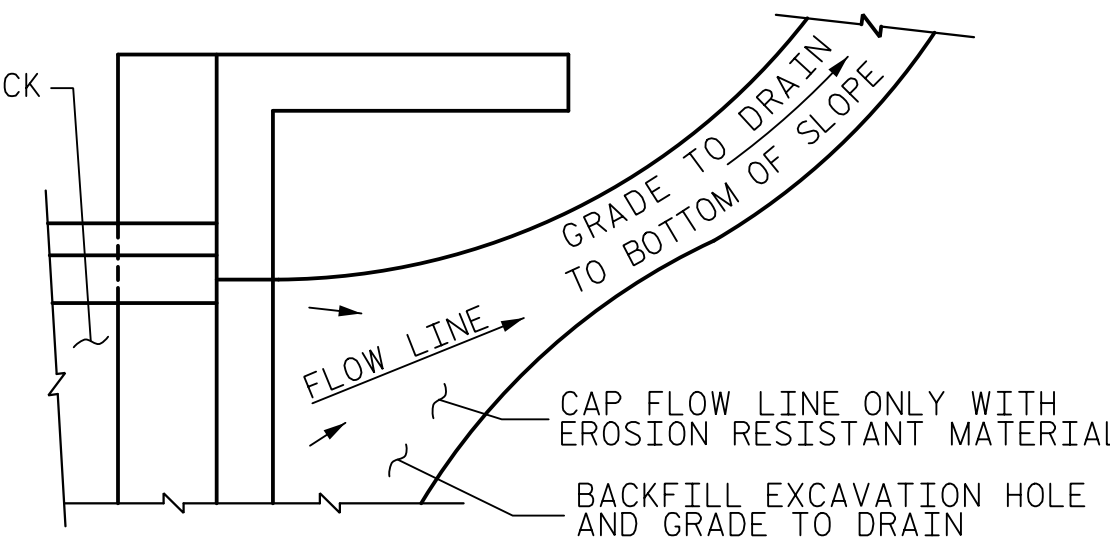


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

PLAN VIEW



SECTION S-S

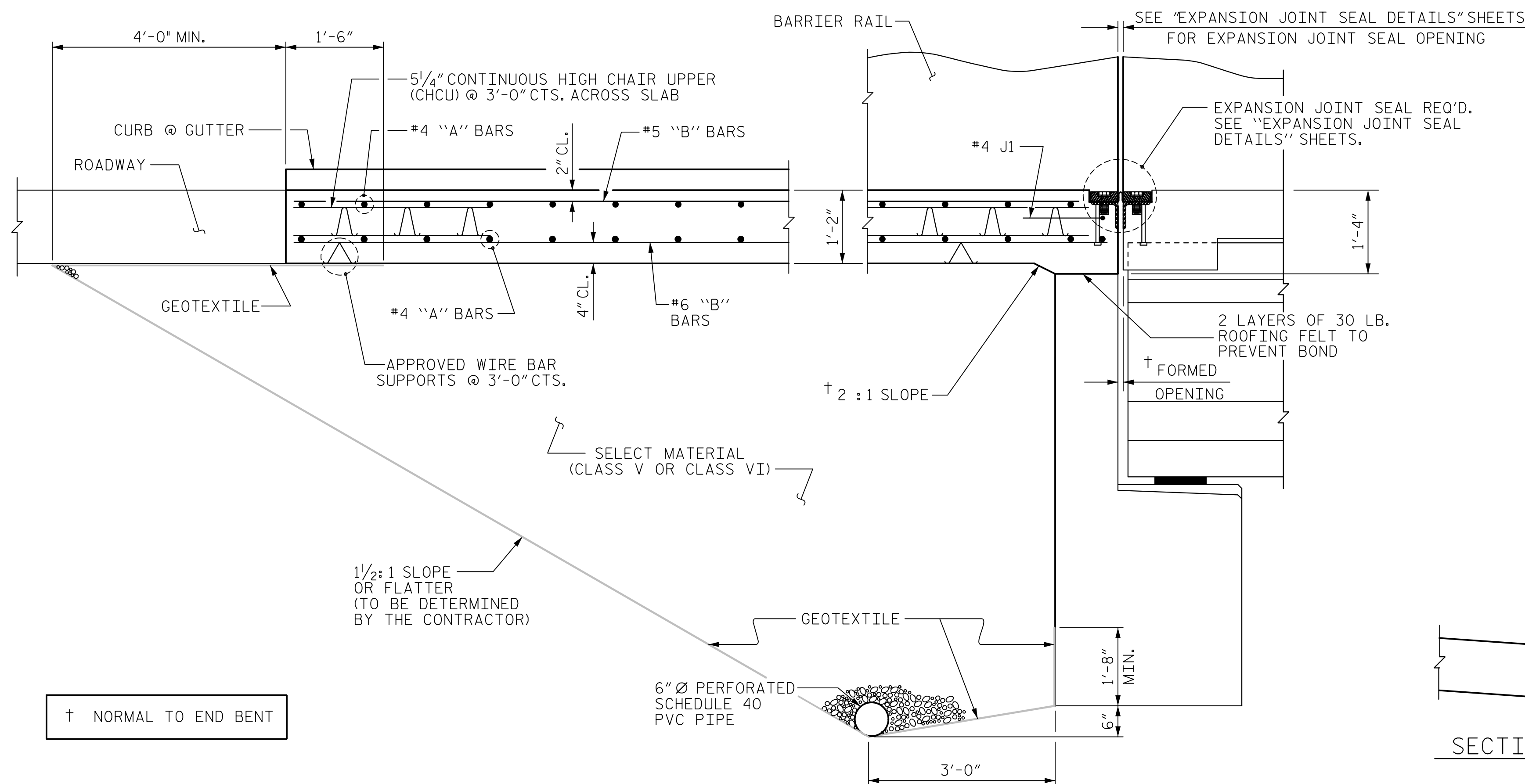


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

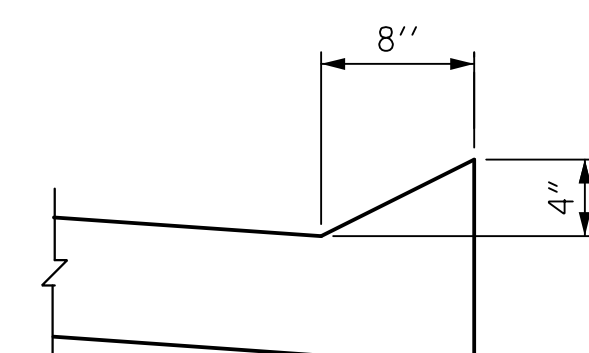
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



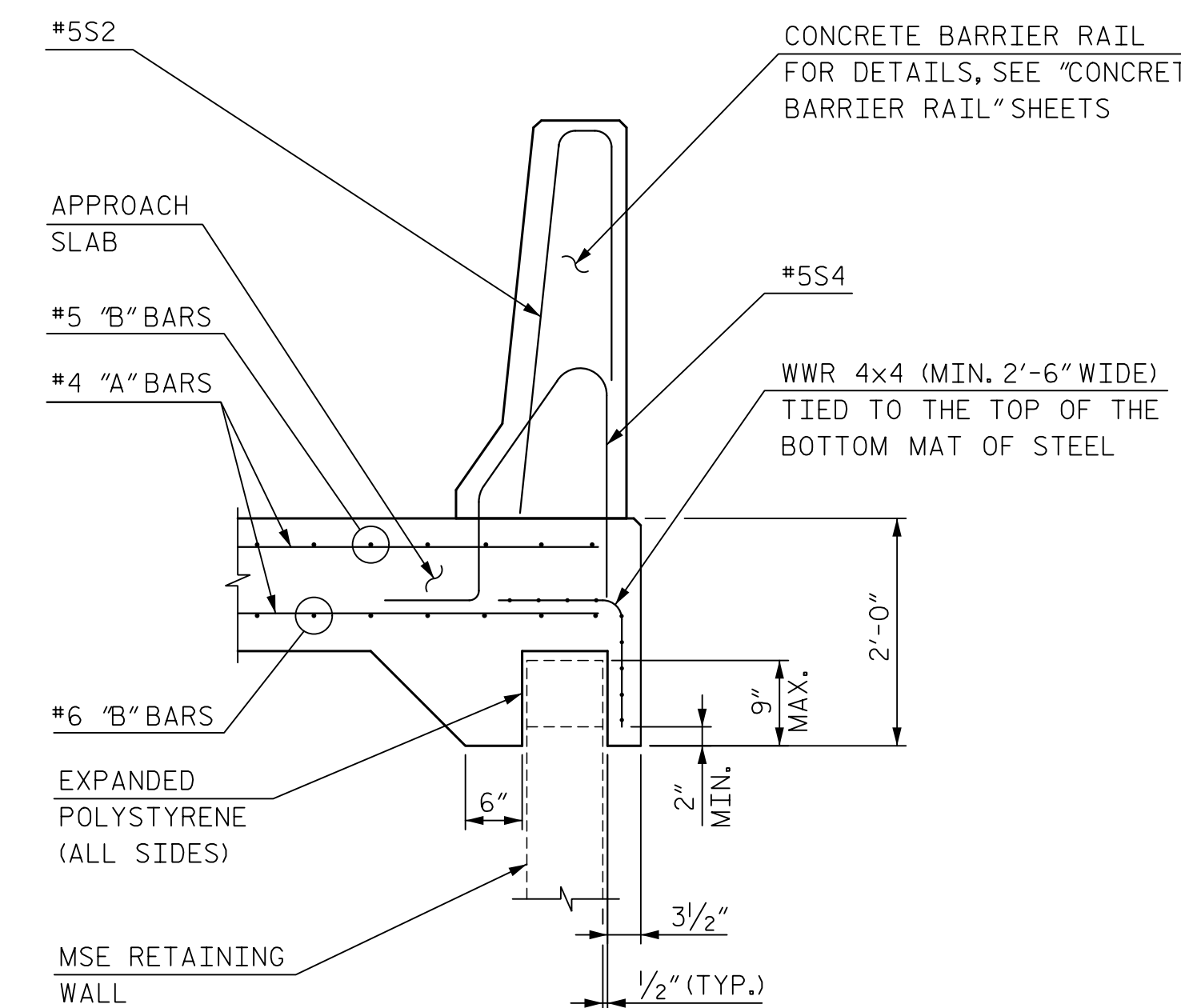
SECTION THRU SLAB

(TYPE I - STANDARD APPROACH FILL)



SECTION N-N

CURB DETAILS
APPROACH SLAB AT END BENT 1, ONLY



SECTION A-A
(B BARS IN RAIL NOT SHOWN)

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 7 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR RIGID PAVEMENT

ASSEMBLED BY : B. VAUGHN	DATE : 3/19
CHECKED BY : K. ERVIN	DATE : 3/19
DRAWN BY : RH 5/99	REV. 12/21/11 MAA/GM
CHECKED BY : RDR 5/99	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

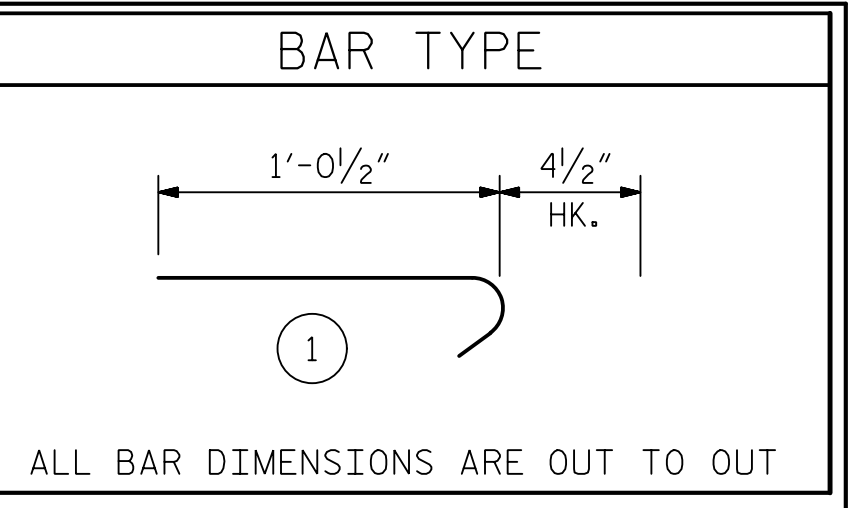
HNTB	HNTB NORTH CAROLINA, P.C.
	NC License No. C-1554 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609
DRAWN BY : B. VAUGHN	DATE : 3/19
CHECKED BY : K. ERVIN	DATE : 3/19
DESIGN ENGINEER OF RECORD : K. ERVIN	DATE : 3/19

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			81

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

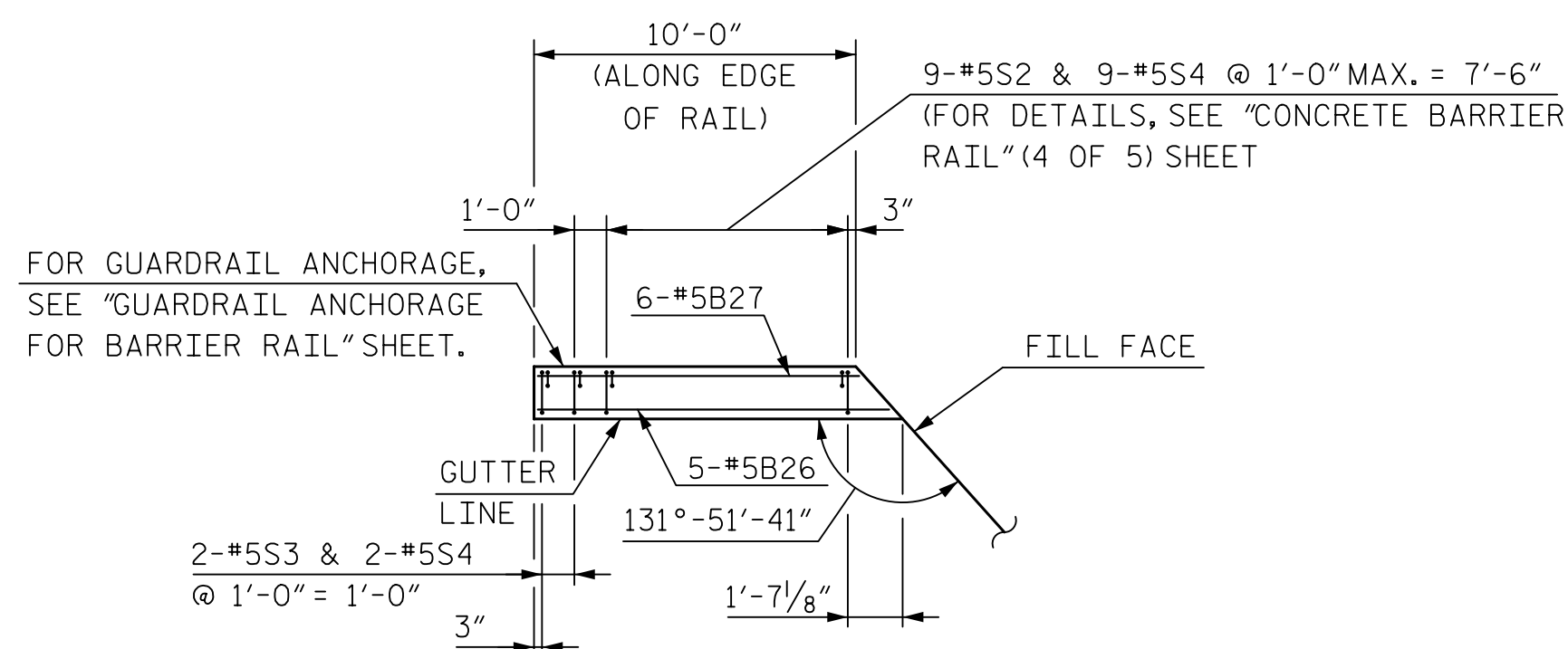
DWG. NO. 77

BILL OF REINFORCING						BILL OF REINFORCING						BILL OF REINFORCING						BILL OF REINFORCING						BILL OF REINFORCING						BILL OF REINFORCING						BAR TYPE							
APPROACH SLAB AT EB 1 (STAGE 2) EPOXY COATED						APPROACH SLAB AT EB 1 (STAGE 2) EPOXY COATED						APPROACH SLAB AT EB 1 (STAGE 2) EPOXY COATED						APPROACH SLAB AT EB 1 (STAGE 2) UNCOATED						APPROACH SLAB AT EB 1 (STAGE 2) UNCOATED						APPROACH SLAB AT EB 1 (STAGE 2) UNCOATED													
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT		
*A1	25	#4	STR	25'-8"	429	*B1	1	#5	STR	47'-8"	50	*B28	1	#5	STR	35'-7"	38	A101	25	#4	STR	25'-8"	429	B101	1	#6	STR	47'-8"	72	B128	1	#6	STR	35'-7"	54								
*A2	32	#4	STR	4'-8"	100	*B2	1	#5	STR	47'-2"	50	*B29	2	#5	STR	35'-1"	74	A102	32	#4	STR	4'-8"	100	B102	1	#6	STR	47'-2"	71	B129	2	#6	STR	35'-1"	106								
*A8	75	#4	STR	4'-4"	218	*B3	1	#5	STR	46'-9"	49	*B30	2	#5	STR	34'-8"	73	A108	75	#4	STR	4'-4"	218	B103	1	#6	STR	46'-9"	71	B130	2	#6	STR	34'-8"	105								
*A9	1	#4	STR	25'-3"	17	*B4	1	#5	STR	46'-4"	49	*B31	2	#5	STR	34'-3"	72	A109	1	#4	STR	25'-3"	17	B104	1	#6	STR	46'-4"	70	B131	2	#6	STR	34'-3"	103								
*A10	1	#4	STR	24'-2"	17	*B5	1	#5	STR	45'-10"	48	*B32	2	#5	STR	33'-9"	71	A110	1	#4	STR	24'-2"	17	B105	1	#6	STR	45'-10"	69	B132	2	#6	STR	33'-9"	102								
*A11	1	#4	STR	23'-1"	16	*B6	1	#5	STR	45'-0"	48	*B33	2	#5	STR	33'-4"	70	A111	1	#4	STR	23'-1"	16	B106	1	#6	STR	45'-0"	69	B133	2	#6	STR	33'-4"	101								
*A12	1	#4	STR	21'-11"	15	*B7	1	#5	STR	45'-0"	47	*B34	2	#5	STR	32'-10"	69	A112	1	#4	STR	21'-11"	15	B107	1	#6	STR	45'-0"	68	B134	2	#6	STR	32'-10"	99								
*A13	1	#4	STR	20'-10"	14	*B8	1	#5	STR	44'-6"	47	*B35	2	#5	STR	32'-5"	68	A113	1	#4	STR	20'-10"	14	B108	1	#6	STR	44'-6"	67	B135	2	#6	STR	32'-5"	98								
*A14	1	#4	STR	19'-8"	14	*B9	1	#5	STR	44'-1"	46	*B36	2	#5	STR	32'-0"	67	A114	1	#4	STR	19'-8"	14	B109	1	#6	STR	44'-1"	67	B136	2	#6	STR	32'-0"	97								
*A15	1	#4	STR	18'-7"	13	*B10	1	#5	STR	43'-7"	46	*B37	2	#5	STR	31'-6"	66	A115	1	#4	STR	18'-7"	13	B110	1	#6	STR	43'-7"	66	B137	2	#6	STR	31'-6"	95								
*A16	1	#4	STR	17'-6"	12	*B11	1	#5	STR	43'-2"	46	*B38	2	#5	STR	31'-1"	65	A116	1	#4	STR	17'-6"	12	B111	1	#6	STR	43'-2"	65	B138	2	#6	STR	31'-1"	94								
*A17	1	#4	STR	16'-4"	11	*B12	1	#5	STR	42'-9"	45	*B39	1	#5	STR	30'-8"	32	A117	1	#4	STR	16'-4"	11	B112	1	#6	STR	42'-9"	65	B139	1	#6	STR	30'-8"	47								
*A18	1	#4	STR	15'-3"	11	*B13	1	#5	STR	42'-3"	45	*B40	1	#5	STR	30'-2"	32	A118	1	#4	STR	15'-3"	11	B113	1	#6	STR	42'-3"	64	B140	1	#6	STR	30'-2"	46								
*A19	1	#4	STR	14'-1"	10	*B14	1	#5	STR	41'-10"	44	*B41	1	#5	STR	29'-9"	32	A119	1	#4	STR	14'-1"	10	B114	1	#6	STR	41'-10"	63	B141	1	#6	STR	29'-9"	45								
*A20	1	#4	STR	13'-0"	9	*B15	1	#5	STR	41'-5"	44	*B42	1	#5	STR	29'-3"	31	A120	1	#4	STR	13'-0"	9	B115	1	#6	STR	41'-5"	63	B142	1	#6	STR	29'-3"	44								
*A21	1	#4	STR	11'-11"	8	*B16	1	#5	STR	40'-11"	43	*B43	1	#5	STR	28'-10"	31	A121	1	#4	STR	11'-11"	8	B116	1	#6	STR	40'-11"	62	B143	1	#6	STR	28'-10"	44								
*A22	1	#4	STR	10'-9"	8	*B17	1	#5	STR	40'-6"	43	*B44	1	#5	STR	28'-5"	30	A122	1	#4	STR	10'-9"	8	B117	1	#6	STR	40'-6"	61	B144	1	#6	STR	28'-5"	43								
*A23	1	#4	STR	9'-8"	7	*B18	1	#5	STR	40'-0"	42	*B45	1	#5	STR	27'-11"	30	A123	1	#4	STR	9'-8"	7	B118	1	#6	STR	40'-0"	61	B145	1	#6	STR	27'-11"	42								
*A24	1	#4	STR	8'-6"	6	*B19	1	#5	STR	39'-7"	42	*B46	1	#5	STR	27'-6"	29	A124	1	#4	STR	8'-6"	6	B119	1	#6	STR	39'-7"	60	B146	1	#6	STR	27'-6"	42								
*A25	1	#4	STR	7'-5"	5	*B20	1	#5	STR	39'-2"	41	*B47	1	#5	STR	27'-1"	29	A125	1	#4	STR	7'-5"	5	B120	1	#6	STR	39'-2"	59	B147	1	#6	STR	27'-1"	41								
*A26	1	#4	STR	6'-4"	5	*B21	1	#5	STR	38'-8"	41	*B48	1	#5	STR	26'-7"	28	A126	1	#4	STR	6'-4"	5	B121	1	#6	STR	38'-8"	59	B148	1	#6	STR	26'-7"	40								
*A27	1	#4	STR	5'-2"	4	*B22	1	#5	STR	38'-3"	40	*B49	1	#5	STR	26'-2"	28	A127	1	#4	STR	5'-2"	4	B122	1	#6	STR	38'-3"	58	B149	1	#6	STR	26'-2"	40								
*A28	2	#4	STR	4'-1"	6	*B23	1	#5	STR	37'-10"	40	*B50	1	#5	STR	25'-8"	27	A128	2	#4	STR	4'-1"	6	B123	1	#6	STR	37'-10"	57	B150	1	#6	STR	25'-8"	39								
*A29	2	#4	STR	2'-11"	4	*B24	1	#5	STR	37'-4"	39	*B51	1	#5	STR	25'-3"	27	A129	2	#4	STR	2'-11"	4	B124	1	#6	STR	37'-4"	57	B151	1	#6	STR	25'-3"	38								
*A30	2	#4	STR	1'-10"	3	*B25	1	#5	STR	36'-11"	39	*B52	1	#5	STR	24'-10"	26	A130	2	#4	STR	1'-10"	3	B125	1	#6	STR	36'-11"	56	B152	1	#6	STR	24'-10"	38								
*A37	9	#5	STR	4'-0"	38	*B26	1	#5	STR	36'-5"	38						A137	9	#5	STR	4'-0"	38	B126	1	#6	STR	36'-5"	55															
						*B27	1	#5	STR	36'-0"	38	*J1	42	#4	1	1'-5"	40							B127	1	#6	STR	36'-0"	55														
																	*EPOXY COATED REINFORCING STEEL TOTAL:		3,375																			REINFORCING STEEL TOTAL:		4,353			

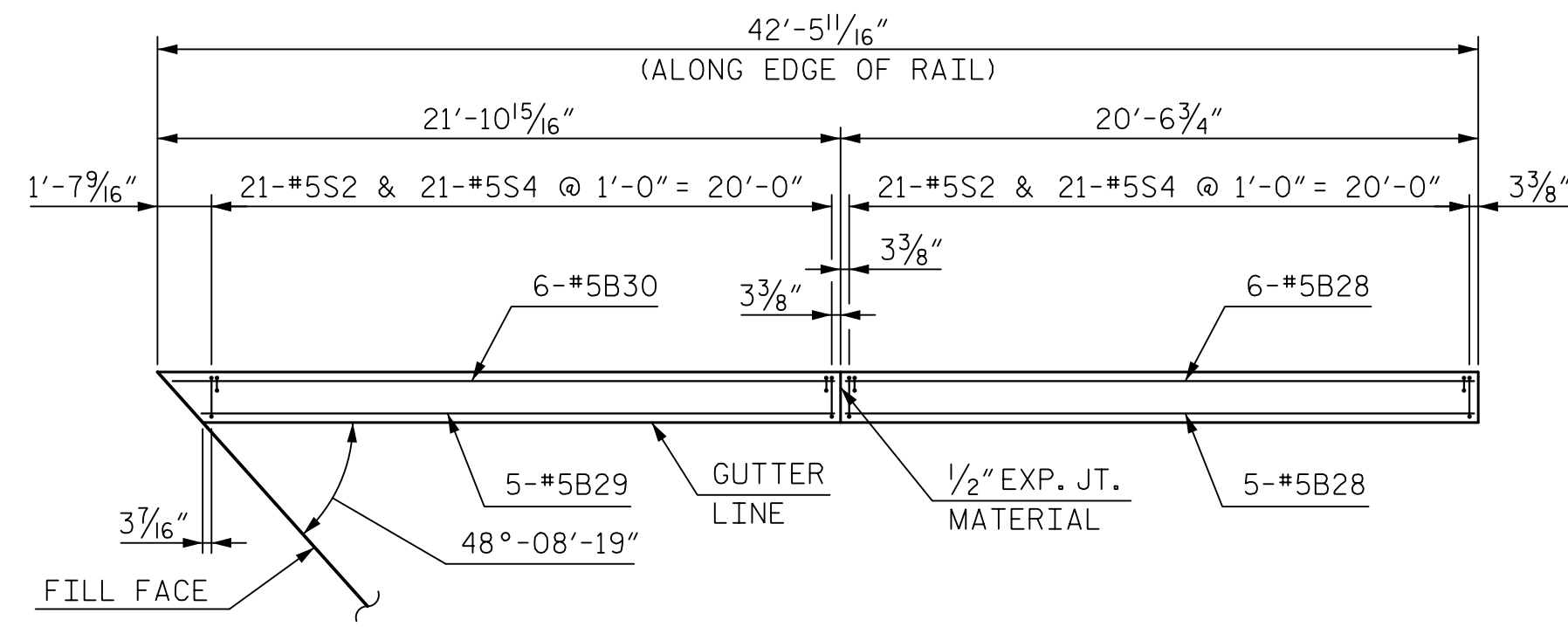


ALL BAR DIMENSIONS ARE OUT TO OUT

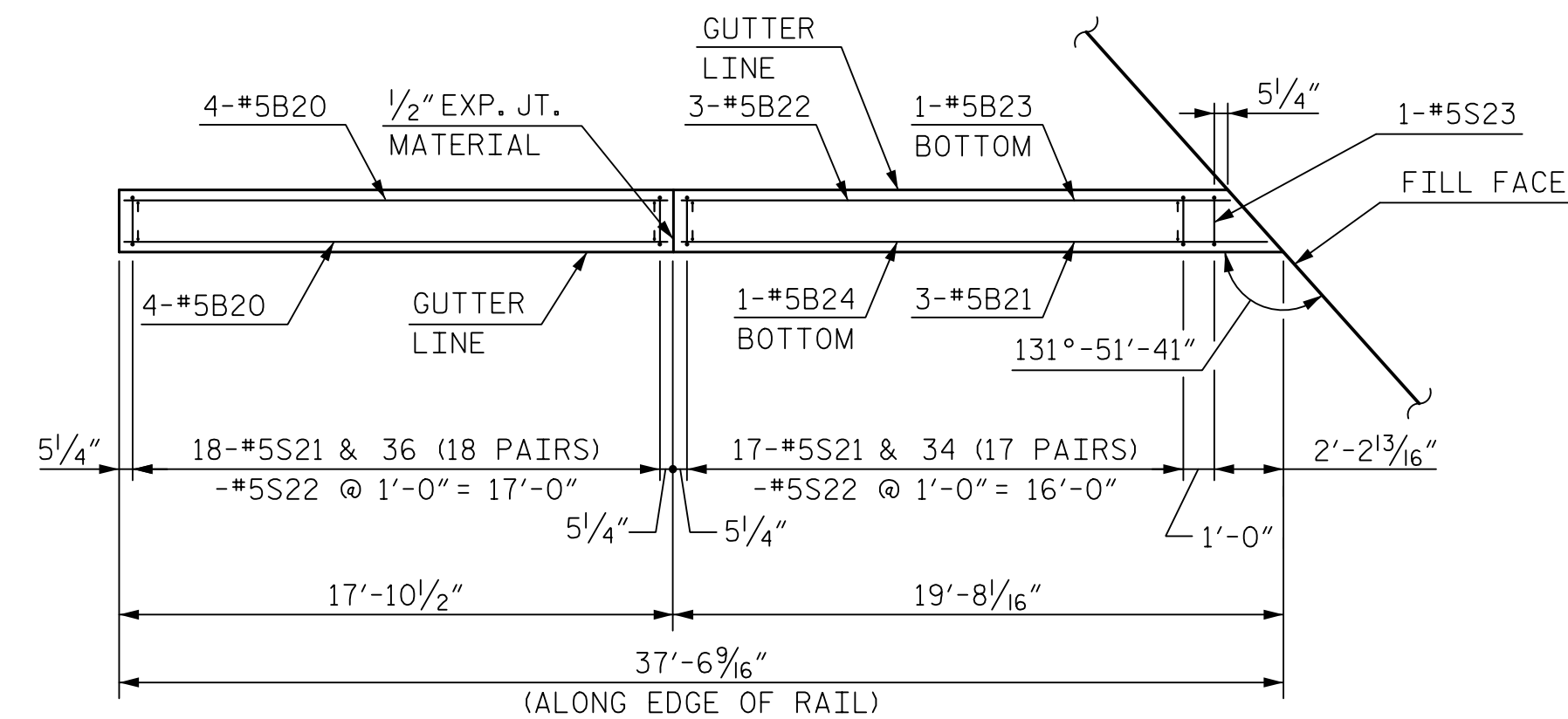
BILL OF REINFORCING						BILL OF REINFORCING						BILL OF REINFORCING						BILL OF REINFORCING					
APPROACH SLAB AT EB 2 (STAGE 2) EPOXY COATED						APPROACH SLAB AT EB 2 (STAGE 2) EPOXY COATED						APPROACH SLAB AT EB 2 (STAGE 2) UNCOATED						APPROACH SLAB AT EB 2 (STAGE 2) UNCOATED					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	25	#4	STR	25'-8"	429	*B15	1	#5	STR	41'-5"	44	A101	25	#4	STR	25'-8"	429	B115	1	#6	STR	41'-5"	63
*A2	26	#4	STR	4'-8"	82	*B16	1	#5	STR	40'-11"	43	A102	26	#4	STR	4'-8"	82	B116	1	#6	STR	40'-11"	62
*A8	75	#4	STR	4'-4"	218	*B17	1	#5	STR	40'-6"	43	A108	75	#4	STR	4'-4"	218	B117	1	#6	STR	40'-6"	61
*A9	1	#4	STR	25'-3"	17	*B18	1	#5	STR	40'-0"	42	A109	1	#4	STR	25'-3"	17	B118	1	#6	STR	40'-0"	61
*A10	1	#4	STR	24'-2"	17	*B19	1	#5	STR	39'-7"	42	A110	1	#4	STR	24'-2"	17	B119	1	#6	STR	39'-7"	60
*A11	1	#4	STR	23'-1"	16	*B20	1	#5	STR	39'-2"	41	A111	1	#4	STR	23'-1"	16	B120	1	#6	STR	39'-2"	59
*A12	1	#4	STR	21'-11"	15	*B21	1	#5	STR	38'-8"	41	A112	1	#4	STR	21'-11"	15	B121	1	#6	STR	38'-8"	59
*A13	1	#4	STR	20'-10"	14	*B22	1	#5	STR	38'-3"	40	A113	1	#4	STR	20'-10"	14	B122	1	#6	STR	38'-3"	58
*A14	1	#4	STR	19'-8"	14	*B23	1	#5	STR	37'-10"	40	A114	1	#4	STR	19'-8"	14	B123	1	#6	STR	37'-10"	57
*A15	1	#4	STR	18'-7"	13	*B24	1	#5	STR	37'-4"	39	A115	1	#4	STR	18'-7"	13	B124	1	#6	STR	37'-4"	57
*A16	1	#4	STR	17'-6"	12	*B25	1	#5	STR	36'-11"	39	A116	1	#4	STR	17'-6"	12	B125	1	#6	STR	36'-11"	56
*A17	1	#4	STR	16'-4"	11	*B26	1	#5	STR	36'-5"	38	A117	1	#4	STR	16'-4"	11	B126	1	#6	STR	36'-5"	55
*A18	1	#4	STR	15'-3"	11	*B27	1	#5	STR	36'-0"	38	A118	1	#4	STR	15'-3"	11	B127	1	#6	STR	36'-0"	55
*A19	1	#4	STR	14'-1"	10	*B28	1	#5	STR	35'-7"	38	A119	1	#4	STR	14'-1"	10	B128	1	#6	STR	35'-7"	54
*A20	1	#4	STR	13'-0"	9	*B29	1	#5	STR	35'-1"	37	A120	1	#4	STR	13'-0"	9	B129	1	#6	STR	35'-1"	53
*A21	1	#4	STR	11'-11"	8	*B30	1	#5	STR	34'-8"	37	A121	1	#4	STR	11'-11"	8	B130	1	#6	STR	34'-8"	53
*A22	1	#4	STR	10'-9"	8	*B31	1	#5	STR	34'-3"	36	A122	1	#4	STR	10'-9"	8	B131	1	#6	STR	34'-3"	52
*A23	1	#4	STR	9'-8"	7	*B32	1	#5	STR	33'-9"	36	A123	1	#4	STR	9'-8"	7	B132	1	#6	STR	33'-9"	51
*A24	1	#4	STR	8'-6"	6	*B33	1	#5	STR	33'-4"	35	A124	1	#4	STR	8'-6"	6	B133	1	#6	STR	33'-4"	51
*A25	1	#4	STR	7'-5"	5	*B34	1	#5	STR	32'-10"	35	A125	1	#4	STR	7'-5"	5	B134	1	#6	STR	32'-10"	50
*A26	1	#4	STR	6'-4"	5	*B35	1	#5	STR	32'-5"	34	A126	1	#4	STR	6'-4"	5	B135	1	#6	STR	32'-5"	49
*A27	1	#4	STR	5'-2"	4	*B36	1	#5	STR	32'-0"	34	A127	1	#4	STR	5'-2"	4	B136	1	#6	STR	32'-0"	49
*A28	2	#4	STR	4'-1"	6	*B37	1	#5	STR	31'-6"	33	A128	2	#4	STR	4'-1"	6	B137	1	#6	STR	31'-6"	48
*A29	2	#4	STR	2'-11"	4	*B38	1	#5	STR	31'-1"	33												



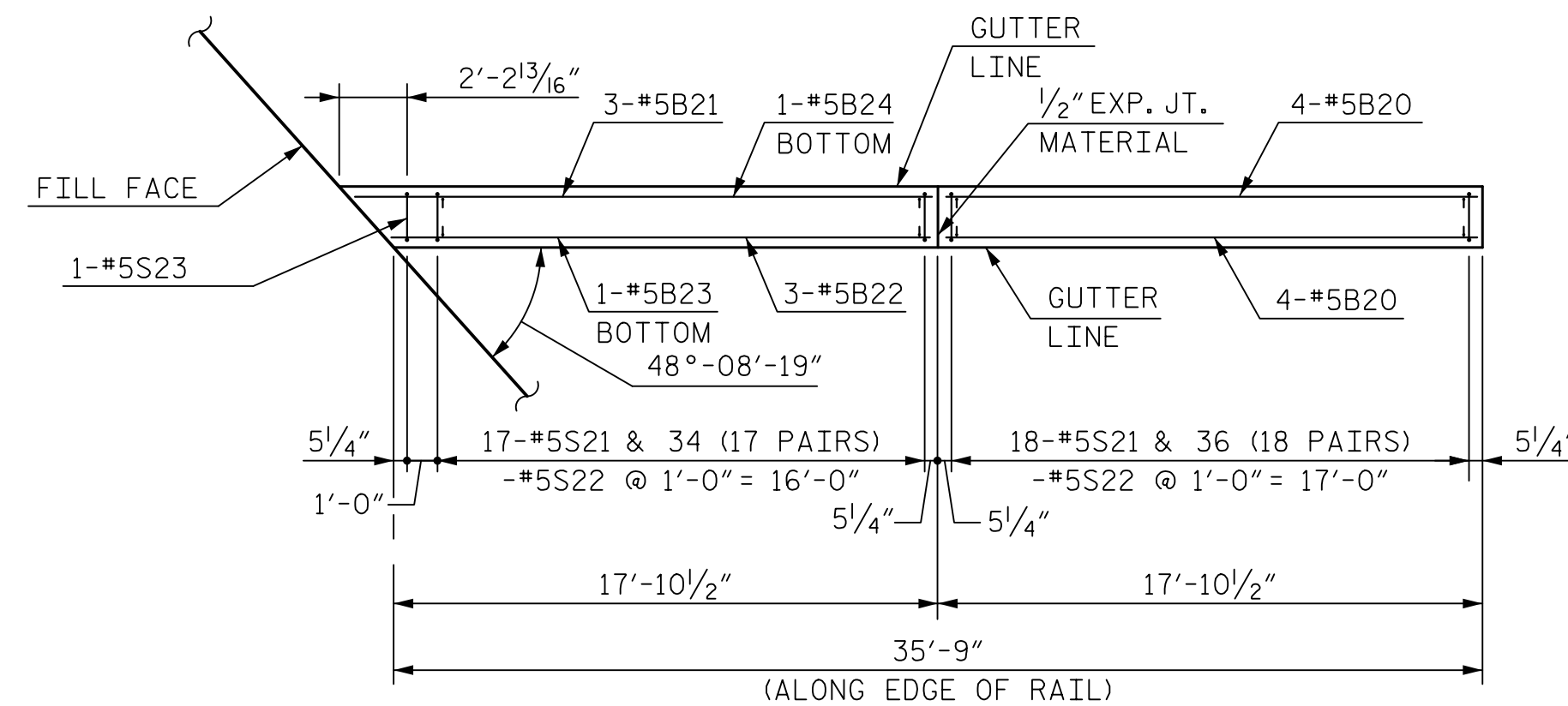
PLAN OF BARRIER RAIL AT APPROACH SLAB 1
(STAGE 3)



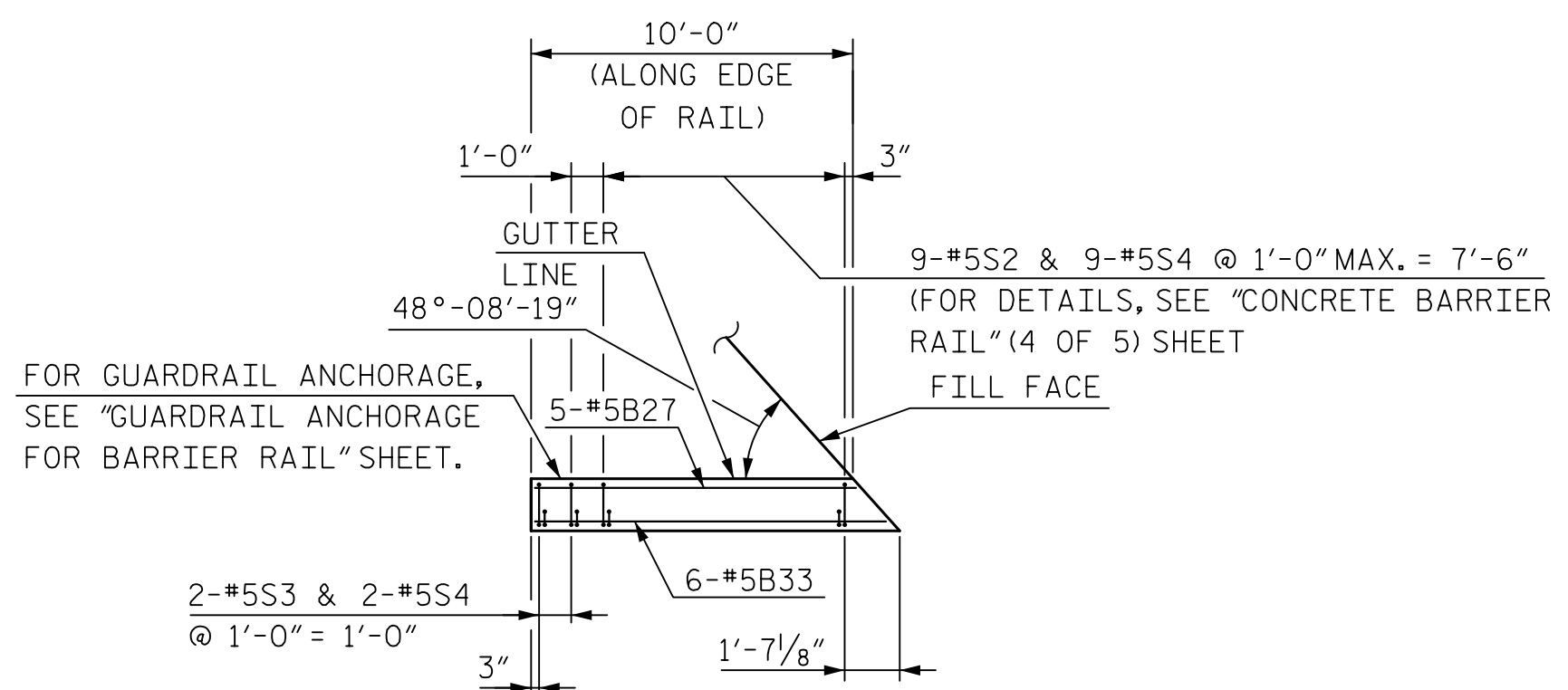
PLAN OF BARRIER RAIL AT APPROACH SLAB 2
(STAGE 3)



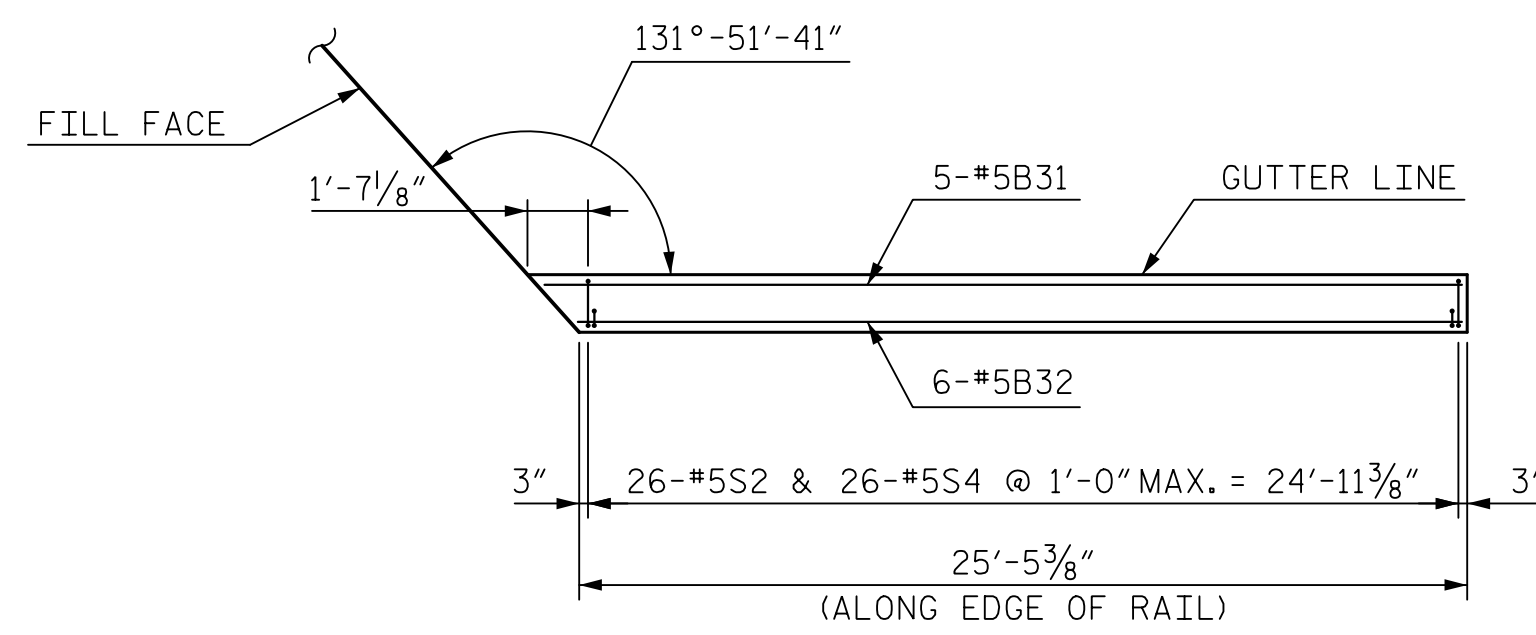
PLAN OF CONCRETE MEDIAN BARRIER AT APPROACH SLAB 1
(STAGE 2)



PLAN OF CONCRETE MEDIAN BARRIER AT APPROACH SLAB 2
(STAGE 2)



PLAN OF BARRIER RAIL AT APPROACH SLAB 1
(STAGE 4)



PLAN OF BARRIER RAIL AT APPROACH SLAB 2
(STAGE 4)

NOTES:

FOR BARRIER DETAILS, SEE "CONCRETE BARRIER RAIL" SHEETS.

FOR CONCRETE MEDIAN BARRIER DETAILS, SEE "CONCRETE MEDIAN BARRIER" SHEET.

BAR TYPES

SEE "SUPERSTRUCTURE - CONCRETE BARRIER RAIL" SHEET

BILL OF MATERIAL

FOR CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B26	5	#5	STR	10'-3"	54
* B27	11	#5	STR	9'-10"	113
* B28	11	#5	STR	20'-2"	232
* B29	5	#5	STR	20'-5"	107
* B30	6	#5	STR	21'-3"	133
* B31	5	#5	STR	25'-7"	134
* B32	6	#5	STR	25'-4"	159
* B33	6	#5	STR	10'-8"	67
* S2	86	#5	2	7'-0"	628
* S3	4	#5	2	5'-6"	23
* S4	90	#5	1	5'-1"	478

* EPOXY COATED REINFORCING STEEL	LBS.	2,128
CLASS AA CONCRETE	CU. YDS.	12.1
CONCRETE BARRIER RAIL	LIN. FT.	89.3

BAR TYPES

SEE "SUPERSTRUCTURE - CONCRETE MEDIAN BARRIER" SHEET

BILL OF MATERIAL

FOR CONCRETE MEDIAN BARRIER ONLY

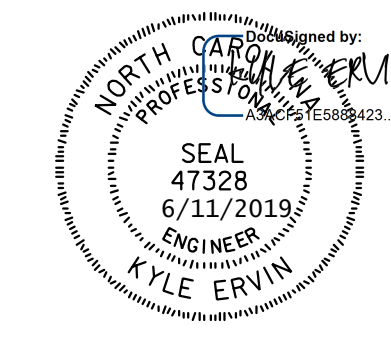
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B20	16	#5	STR	17'-6"	292
* B21	6	#5	STR	18'-7"	117
* B22	6	#5	STR	18'-2"	114
* B23	2	#5	STR	16'-7"	35
* B24	2	#5	STR	17'-11"	38
* S21	70	#5	1	5'-6"	402
* S22	140	#5	2	1'-6"	219
* S23	2	#5	3	3'-9"	8

* EPOXY COATED REINFORCING STEEL	LBS.	1,225
CLASS AA CONCRETE	CU. YDS.	7.5
CONCRETE MEDIAN BARRIER	LIN. FT.	73.3

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POT 659+58.95 -L-

SHEET 11 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 BRIDGE APPROACH SLAB
 FOR RIGID PAVEMENT



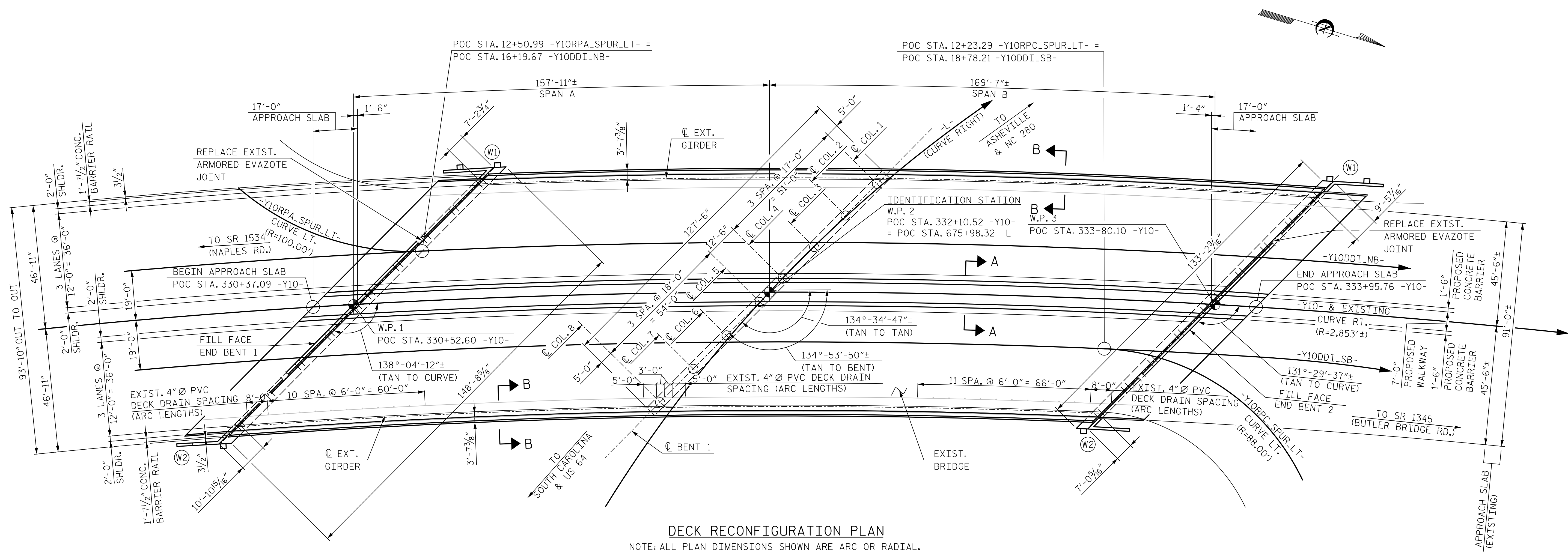
HNTB HNTB NORTH CAROLINA, P.C.
 NC License No. C-1554
 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY B. VAUGHN DATE 3/19
 CHECKED BY K. ERVIN DATE 3/19
 DESIGN ENGINEER OF RECORD K. ERVIN DATE 3/19

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

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			81
2			4			81

DWG. NO. 81



DECK RECONFIGURATION PLAN

NOTE: ALL PLAN DIMENSIONS SHOWN ARE ARC OR RADIAL.

NOTES:

DECK REMOVAL FOR RAIL CONSTRUCTION WILL BE BY HYDRO DEMOLITION.

FOR SCARIFYING BRIDGE DECK, HYDRO-DEMOLITION OF BRIDGE DECK, CLASS II AND CLASS III SURFACE PREPARATION, SEE "LMC OVERLAY SURFACE PREPARATION" SPECIAL PROVISION.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, 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.

FOR SHOTBLASTING BRIDGE DECK AND CONCRETE BRIDGE DECK CRACK SEALING, SEE SPECIAL PROVISION FOR CONCRETE BRIDGE DECK CRACK SEALING.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR LATEX MODIFIED CONCRETE OVERLAY AND FINISHING OF LATEX MODIFIED CONCRETE OVERLAY, SEE "LATEX MODIFIED CONCRETE OVERLAY" SPECIAL PROVISION.

FOR ARCHITECTURAL CONCRETE SURFACE TREATMENT, SEE SPECIAL PROVISIONS.

FOR APPLICATION OF BRIDGE COATING, SEE SPECIAL PROVISIONS.

SCOPE OF WORK:

REMOVE EXISTING BARRIER RAILS, CURBS AND SIDEWALKS.

REMOVE EXISTING CONCRETE IN BRIDGE DECK AND APPROACH SLABS TO THE LIMITS SHOWN ON SHEETS S2-3 THRU S2-5 BY USING HYDRO-DEMOLITION PROCESS, PLACE LATEX MODIFIED CONCRETE OVERLAY AND CONSTRUCT PROPOSED BARRIER RAILS.

SHOTBLAST BRIDGE DECK AND PLACE CONCRETE BRIDGE DECK CRACK SEALING TO THE LIMITS SHOWN ON SHEETS S2-3 THRU S2-5.

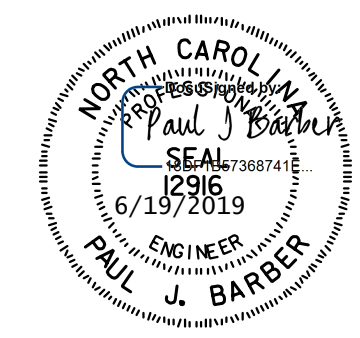
REPLACE EXISTING ARMORED EVAZOTE JOINTS WITH NEW FOAM JOINTS, AND ELASTOMERIC CONCRETE HEADERS.

REMOVE AND PLUG EXISTING DECK DRAINS.

SAMPLE BAR REPLACEMENT

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

NOTE:
SAMPLE BAR REPLACEMENT LENGTHS BASED ON 30" (SAMPLE LENGTH) PLUS TWO SPLICE LENGTHS AND fy = 60ksi.



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CHECKED BY: J. BARCOMB DATE: 3/19
DESIGN ENGINEER OF RECORD: P. BARBER DATE: 5/19

DWG. NO. 1

PROJECT NO. I-4400C
HENDERSON COUNTY
STATION: POC 332+10.52 -Y10-
= POC 675+98.32 -L-

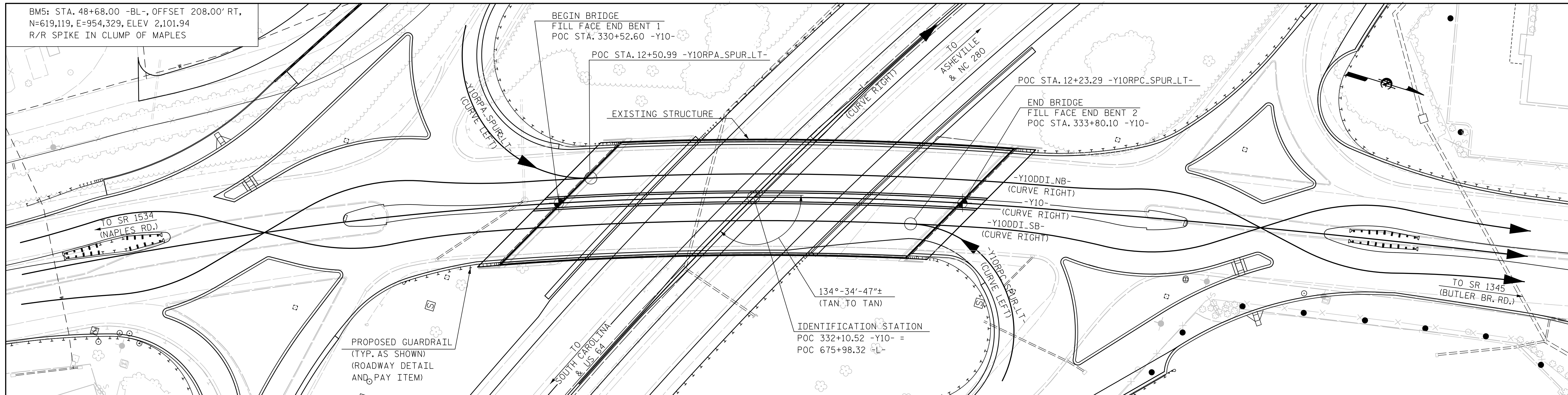
SHEET 1 OF 2 REHABILITATION OF BRIDGE NO. 181

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
US25 OVER I-26 BETWEEN
SR 1534 AND SR 1345

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S2-1
1			3			TOTAL SHEETS
2			4			12

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LOCATION SKETCH

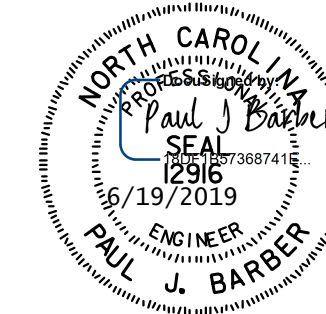
FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE AT STATION 332+10.52 -Y10-	ASBESTOS ASSESSMENT	GROOVING BRIDGE FLOORS	CONCRETE BARRIER RAIL	CLASS II SURFACE PREPARATION	CLASS III SURFACE PREPARATION	LATEX MODIFIED CONCRETE OVERLAY	PLACING & FINISHING OF LATEX MODIFIED CONCRETE OVERLAY	FOAM JOINT SEALS FOR PRESERVATION	SCARIFYING BRIDGE DECK	HYDRODEMOLITION OF BRIDGE DECK	BRIDGE JOINT DEMOLITION	CONCRETE BRIDGE DECK CRACK SEALING	SHOTBLASTING BRIDGE DECK	ELASTOMERIC CONCRETE FOR PRESERVATION	ARCHITECTURAL CONCRETE SURFACE TREATMENT	APPLICATION OF BRIDGE COATING
	LUMP SUM	LUMP SUM	SQ. FT.	L.F.	SQ. YDS.	SQ. YDS.	C.Y.	SQ. YDS.	L.F.	SQ. YDS.	SQ. YDS.	SQ. FT.	SQ. YDS.	SQ. YDS.	C.F.	SQ. FT.	LUMP SUM
SUPERSTRUCTURE	LUMP SUM	LUMP SUM	3,824	1,365.5	199.0	171.2	22.3	534.7	453.1	534.7	572.5	232.9	2519.4	2519.4	43.8	3,040.5	LUMP SUM
END BENT 1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	LUMP SUM
BENT 1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	LUMP SUM
END BENT 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	LUMP SUM
TOTAL	LUMP SUM	LUMP SUM	3,824	1,365.5	199.0	171.2	22.3	534.7	453.1	534.7	572.5	232.9	2519.4	2519.4	43.8	3,040.5	LUMP SUM

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POC 332+10.52 -Y10-

SHEET 2 OF 2



STATE OF NORTH CAROLINA
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GENERAL DRAWING
LOCATION SKETCH
& TOTAL BILL
OF MATERIAL

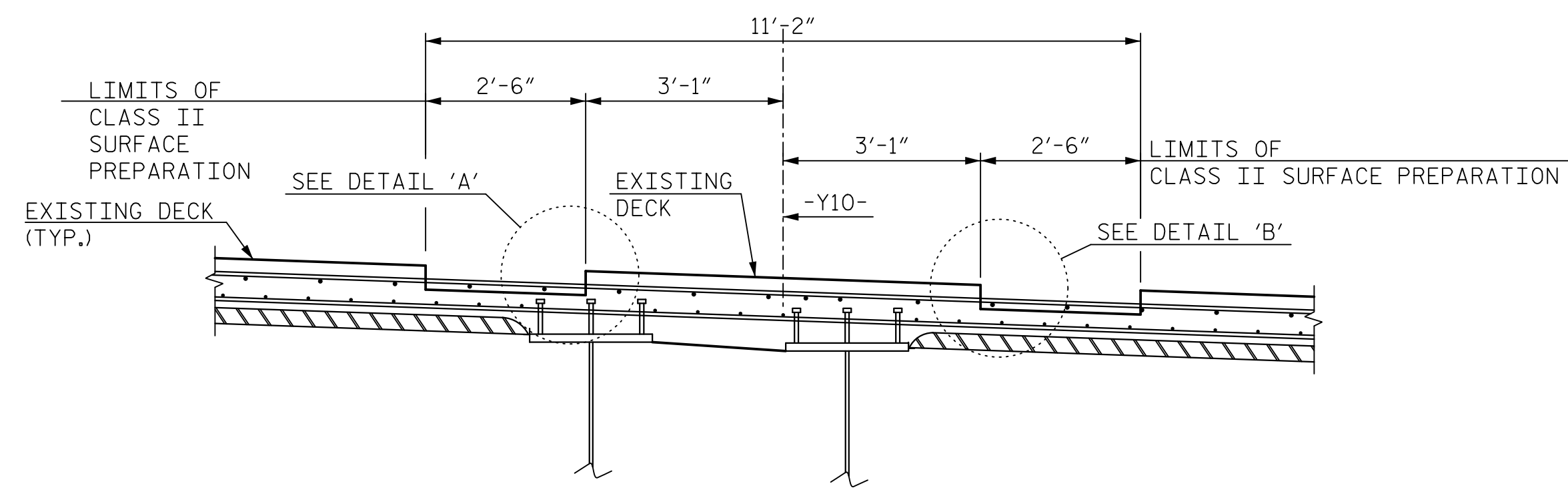
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DRAWN BY: M. WRIGHT DATE: 3/19
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DESIGN ENGINEER OF RECORD: P. BARBER DATE: 5/19

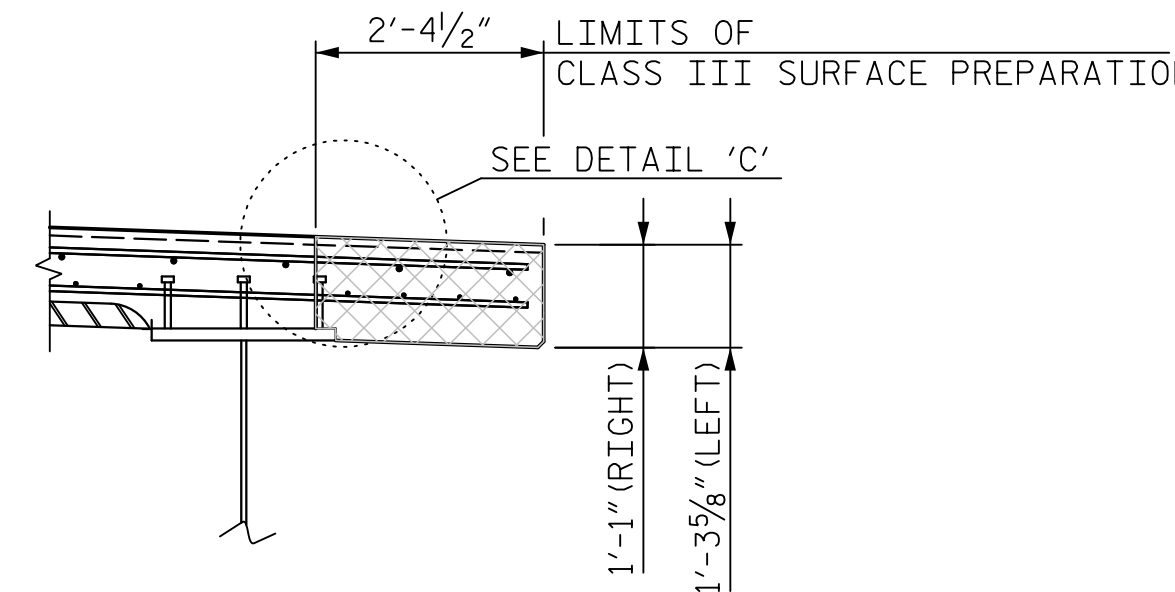
DWG. NO. 2

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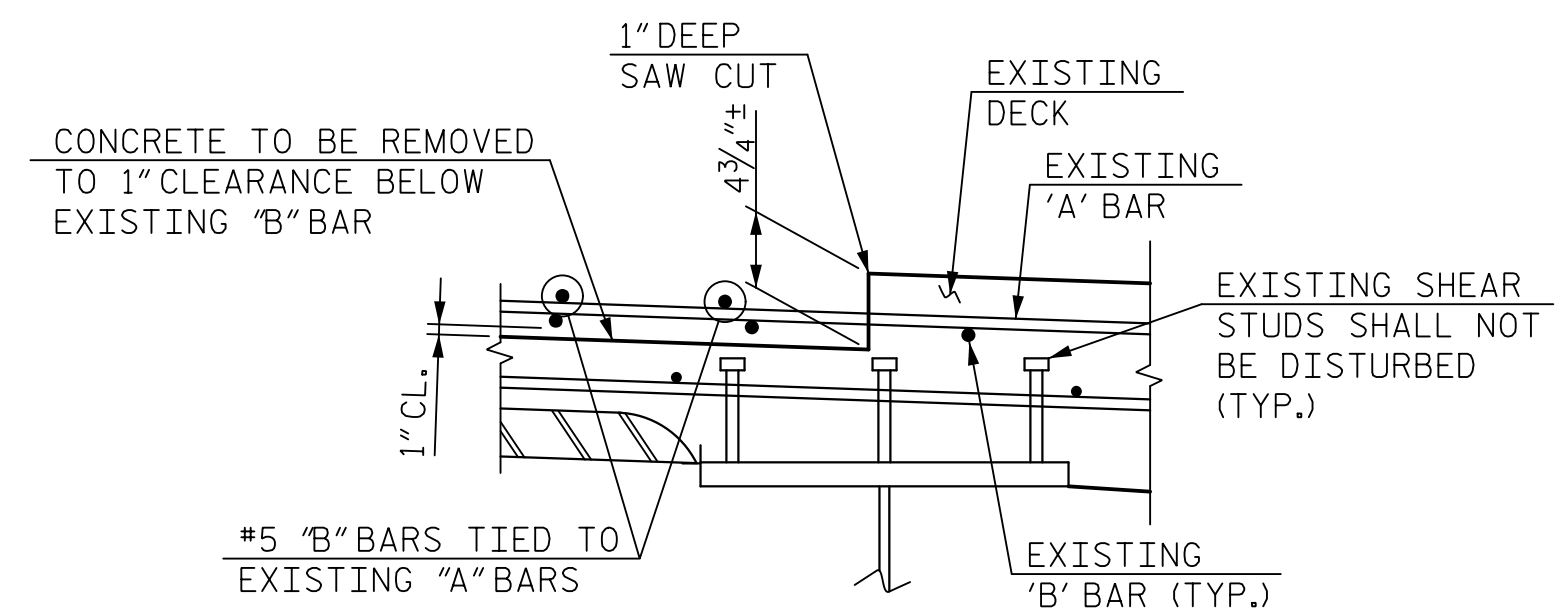
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			12
2			4			



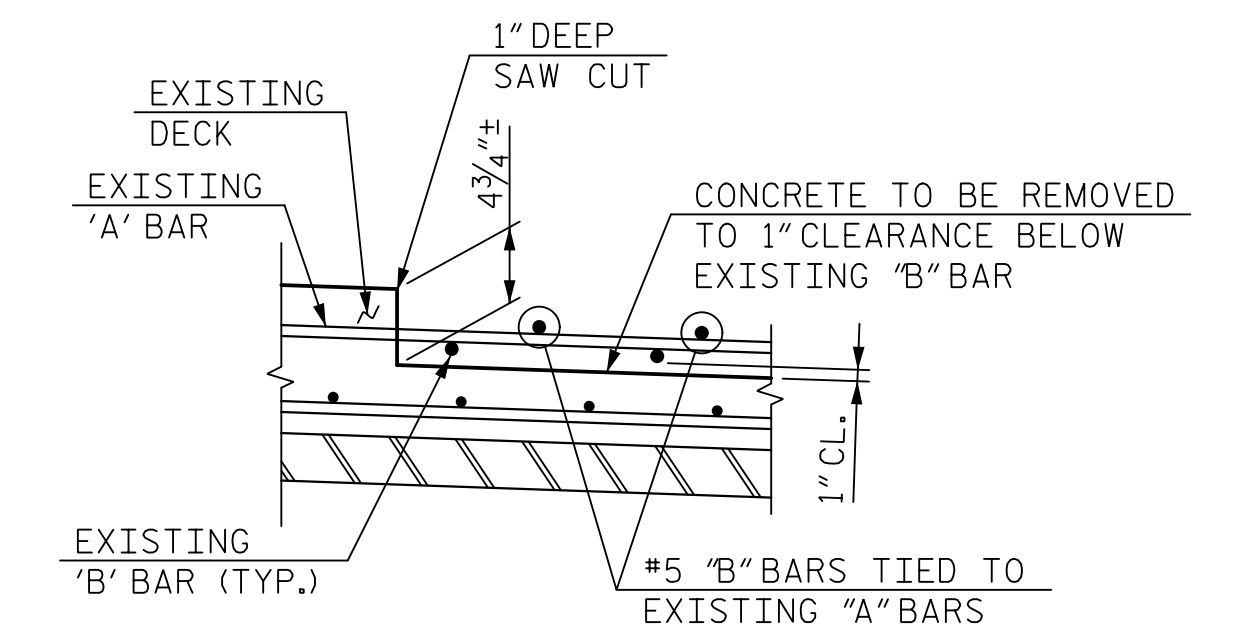
SECTION A-A
(PROPOSED)
(SHOWING BRIDGE DECK, APPROACH SLABS SIMILAR)



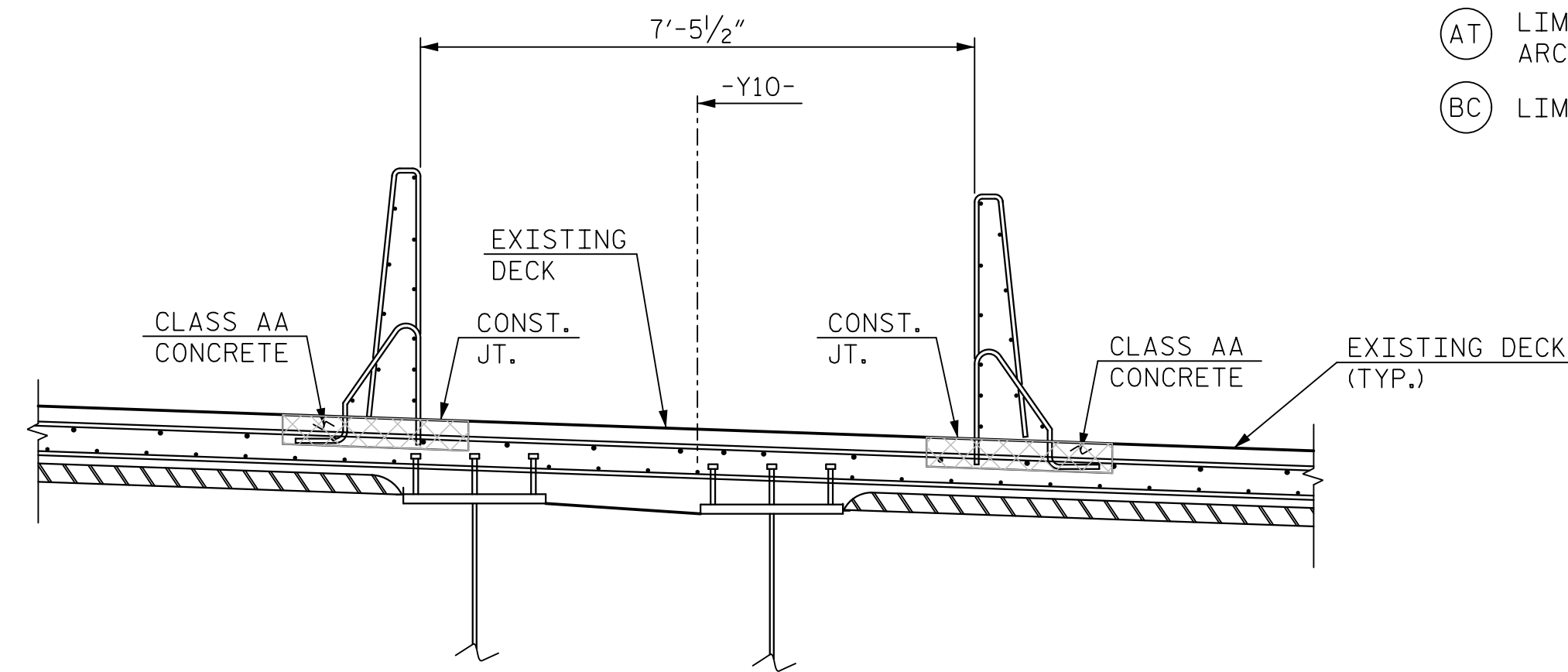
SECTION B-B
(PROPOSED)
(SHOWING RIGHT BRIDGE DECK OVERHANG, LEFT OVERHANG SIMILAR)



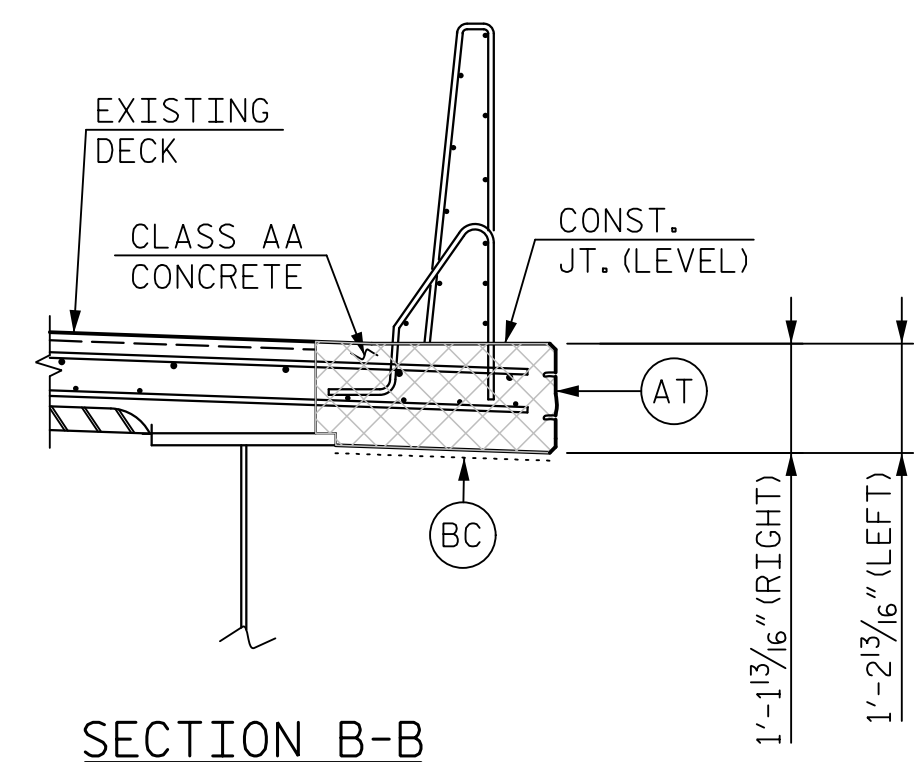
DETAIL 'A'



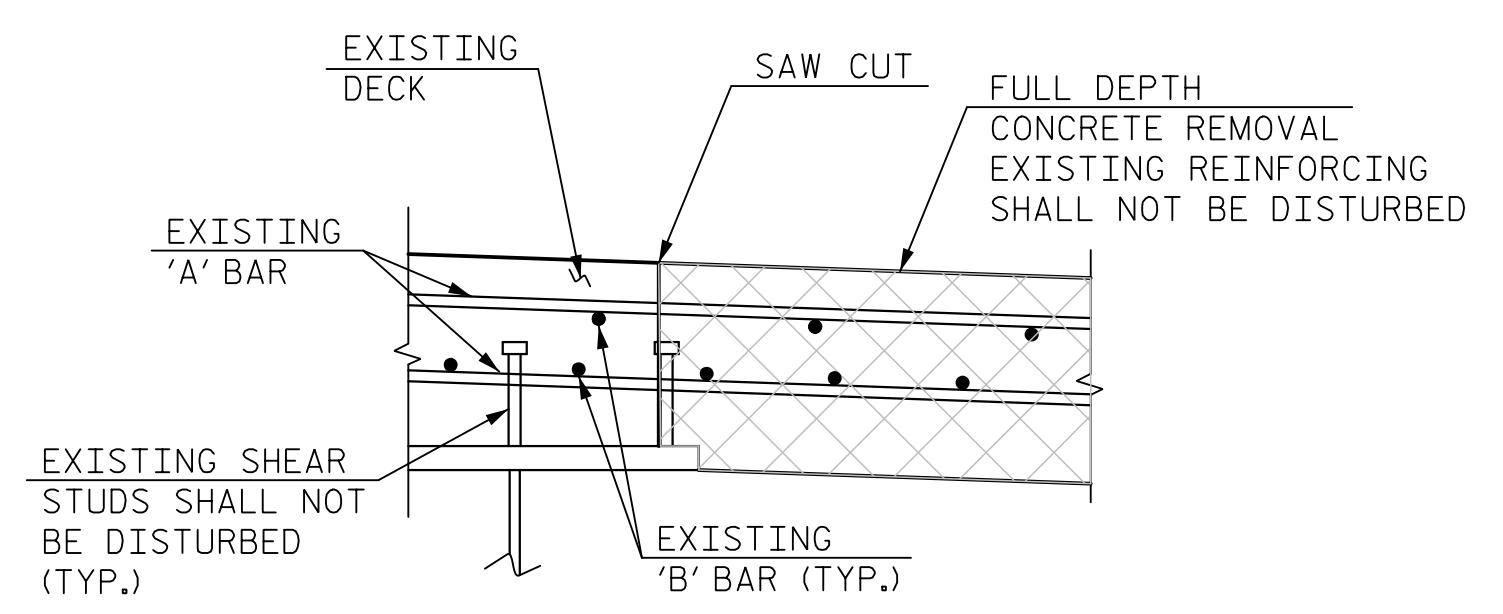
DETAIL 'B'



SECTION A-A
(PROPOSED)
(SHOWING BRIDGE DECK, APPROACH SLABS SIMILAR)

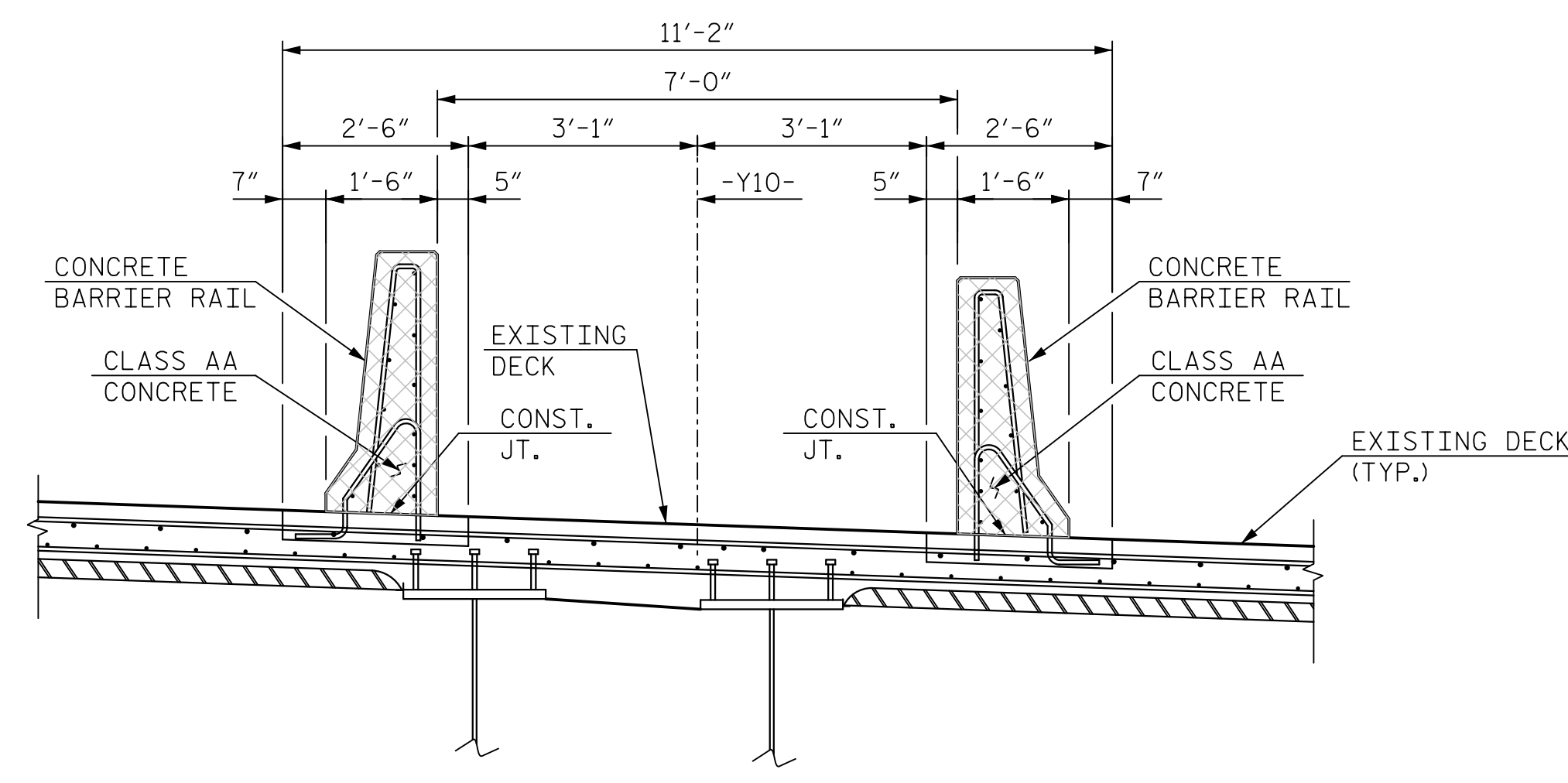


SECTION B-B
(PROPOSED)
(SHOWING RIGHT BRIDGE DECK OVERHANG, LEFT OVERHANG SIMILAR)

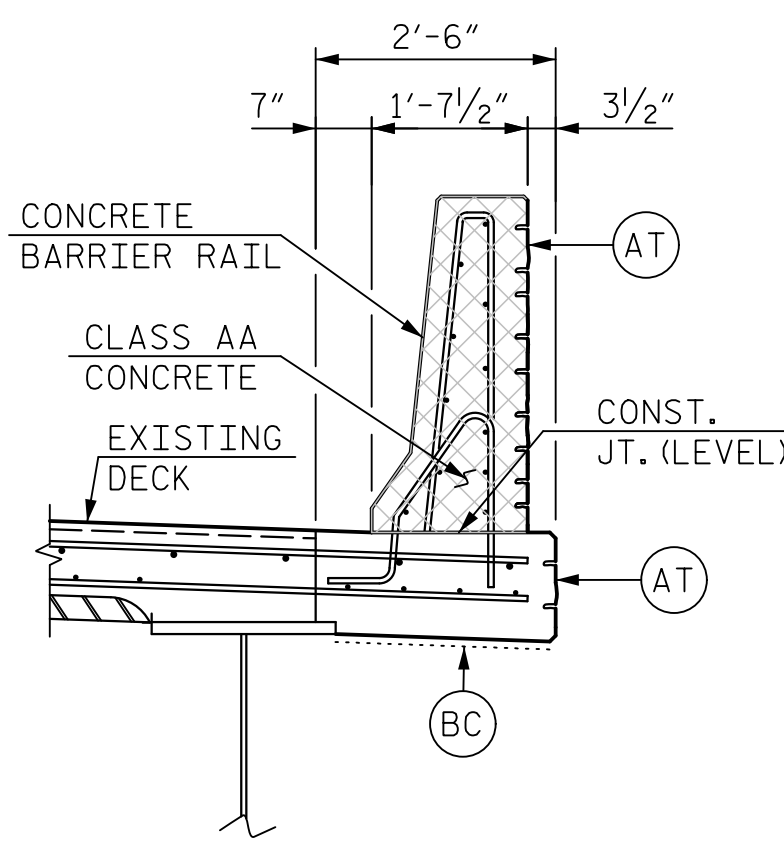


DETAIL 'C'

- (AT) LIMITS OF FORM LINED ARCHITECTURAL TREATMENT
- (BC) LIMITS OF BRIDGE COATING (LIGHT GRAY)

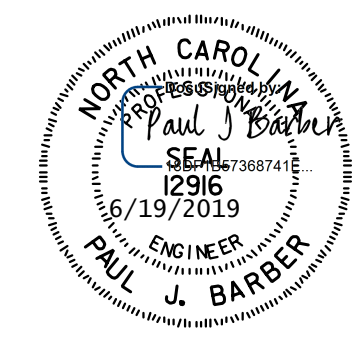


SECTION A-A
(PROPOSED)
(SHOWING BRIDGE DECK, APPROACH SLABS SIMILAR)



SECTION B-B
(PROPOSED)
(SHOWING RIGHT BRIDGE DECK OVERHANG, LEFT OVERHANG SIMILAR)

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POC 332+10.52 -Y10-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
TYPICAL SECTIONS

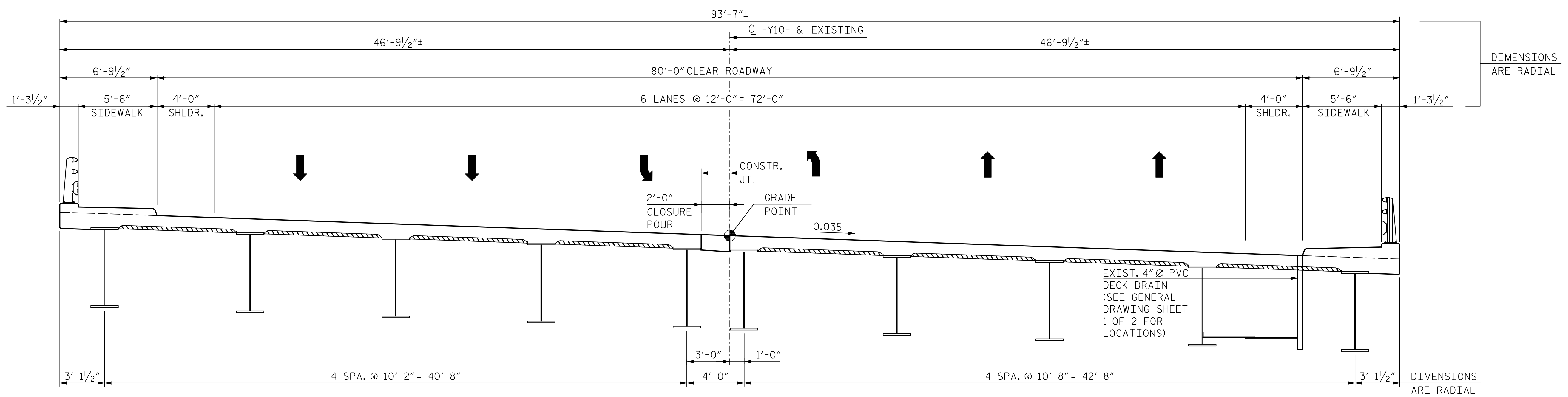
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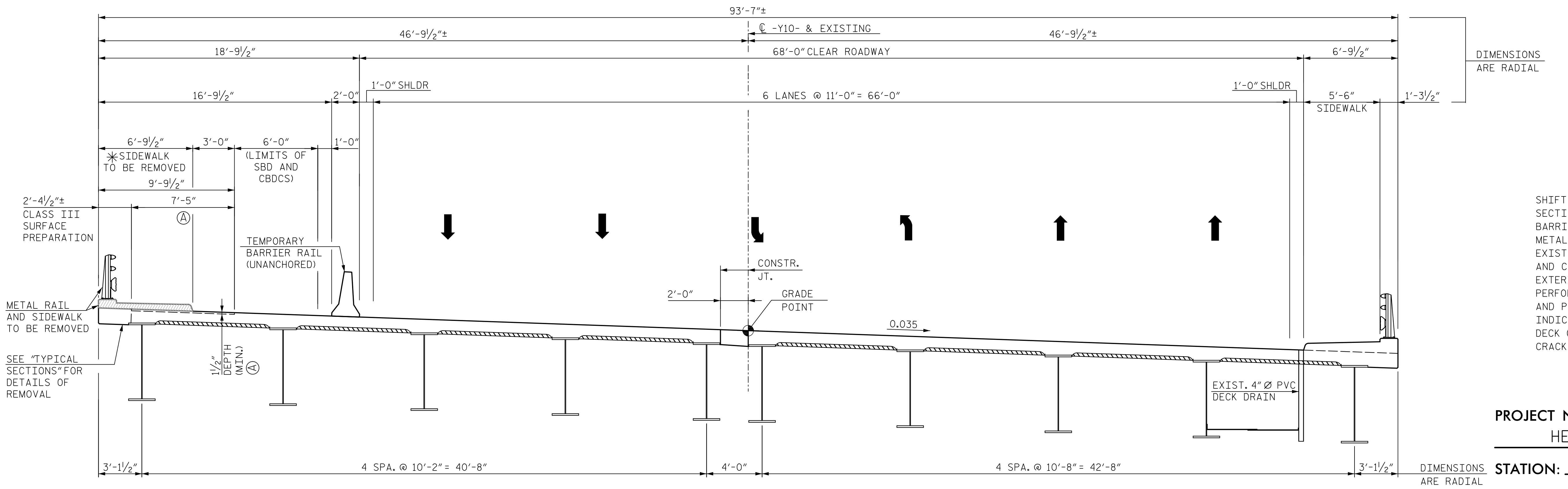
DWG. NO. 3

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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S2-3
1			3			TOTAL SHEETS
2			4			12



EXISTING BRIDGE LANE CONFIGURATION
(EXISTING GIRDERS ARE CONTINUOUS CURVED STEEL)



PROPOSED BRIDGE STAGE I LANE CONFIGURATION

SHIFT TRAFFIC RIGHT TO REDUCED SECTION AND INSTALL TEMPORARY BARRIER RAIL. REMOVE EXISTING METAL RAIL AND SIDEWALK, REMOVE EXISTING 2'-4 1/2" OVERHANG CONCRETE, AND CAST NEW 2'-6" OVERHANG WITH EXTERIOR CONCRETE BARRIER RAIL. PERFORM JOINT REPLACEMENT WORK AND PLACE OVERLAY. TREAT WIDTH INDICATED WITH SHOTBLASTING BRIDGE DECK (SBD) AND CONCRETE BRIDGE DECK CRACK SEALING (CBDCS).

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 HENDERSON COUNTY
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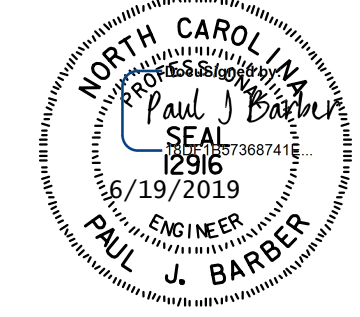
* SIDEWALK DOWELS FROM SLAB SHALL BE CUT TO PROVIDE 2 1/2" MIN. CLEAR TO FINISHED DECK SURFACE

Ⓐ LIMITS OF SCARIFYING BRIDGE DECK AND HYDRODEMOLITION OF BRIDGE DECK AND LATEX MODIFIED CONCRETE (LMC) OVERLAY

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONSTRUCTION STAGING



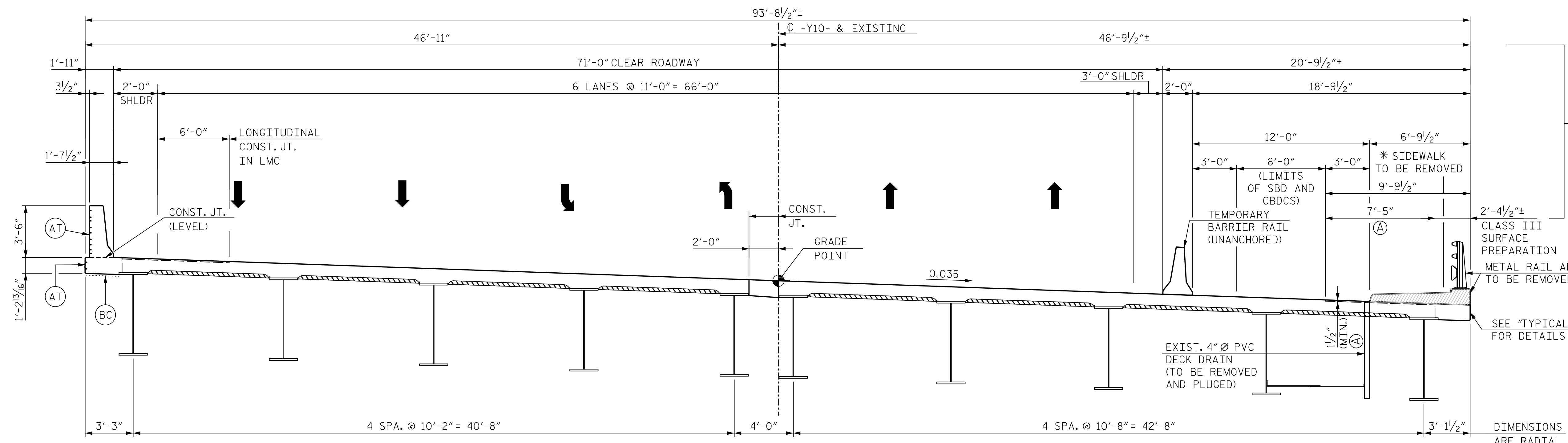
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DRAWN BY	M. WRIGHT	DATE	2/19
CHECKED BY	J. BARCOMB	DATE	3/19
DESIGN ENGINEER OF RECORD	P. BARBER	DATE	5/19

DWG. NO. 4

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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S2-4
1			3			TOTAL SHEETS
2			4			12



PROPOSED BRIDGE STAGE II LANE CONFIGURATION

- (AT) LIMITS OF FORM LINED ARCHITECTURAL TREATMENT
- (BC) LIMITS OF BRIDGE COATING (LIGHT GRAY)

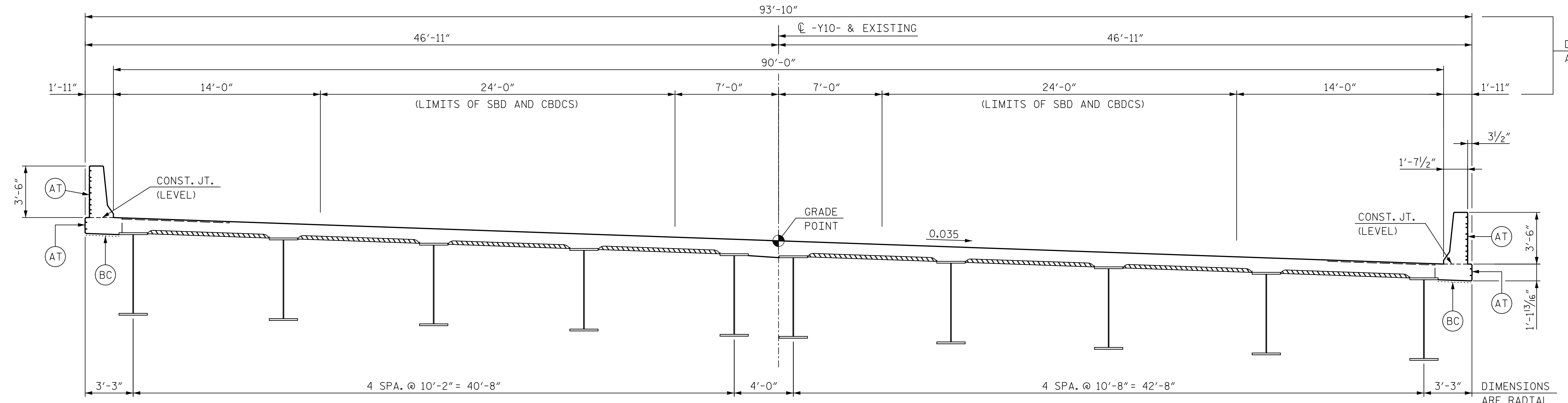
DIMENSIONS ARE RADIAL

SHIFT TRAFFIC LEFT TO REDUCED SECTION AND INSTALL TEMPORARY BARRIER RAIL. REMOVE EXISTING METAL RAIL AND SIDEWALK, REMOVE EXISTING 2'-4 1/2" OVERHANG CONCRETE, AND CAST NEW 2'-6" OVERHANG WITH EXTERIOR CONCRETE BARRIER RAIL. PERFORM JOINT REPLACEMENT WORK AND PLACE OVERLAY. TREAT WIDTH INDICATED WITH SBD AND CBDCS.

REMOVAL AND PLUGGING OF DECK DRAINS SHALL BE CONSIDERED INCIDENTAL TO HYDRO-DEMOLITION OF BRIDGE DECK.

(A) LIMITS OF SCARIFYING BRIDGE DECK AND HYDRODEMOLITION OF BRIDGE DECK AND LATEX MODIFIED CONCRETE (LMC) OVERLAY.

* SIDEWALK DOWELS FROM SLAB SHALL BE CUT TO PROVIDE 2 1/2" MIN. CLEAR TO FINISHED DECK SURFACE



PROPOSED BRIDGE STAGE III LANE CONFIGURATION

DIMENSIONS ARE RADIAL

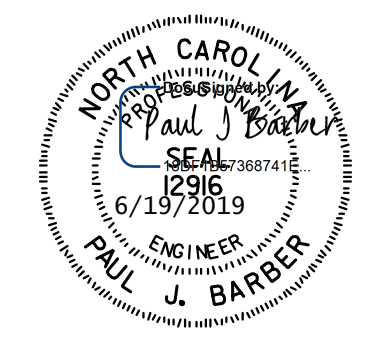
CLOSE BRIDGE TO TRAFFIC DURING TWO DAY WEEKEND CLOSURE TO SHIFT TRAFFIC PATTERN TO REDUCE WIDTH OF DIVERGING DIAMOND PATTERN. PERFORM JOINT REPLACEMENT WORK AND TREAT WIDTH INDICATED WITH SBD AND CBDCS.

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POC 332+10.52 -Y10-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONSTRUCTION STAGING



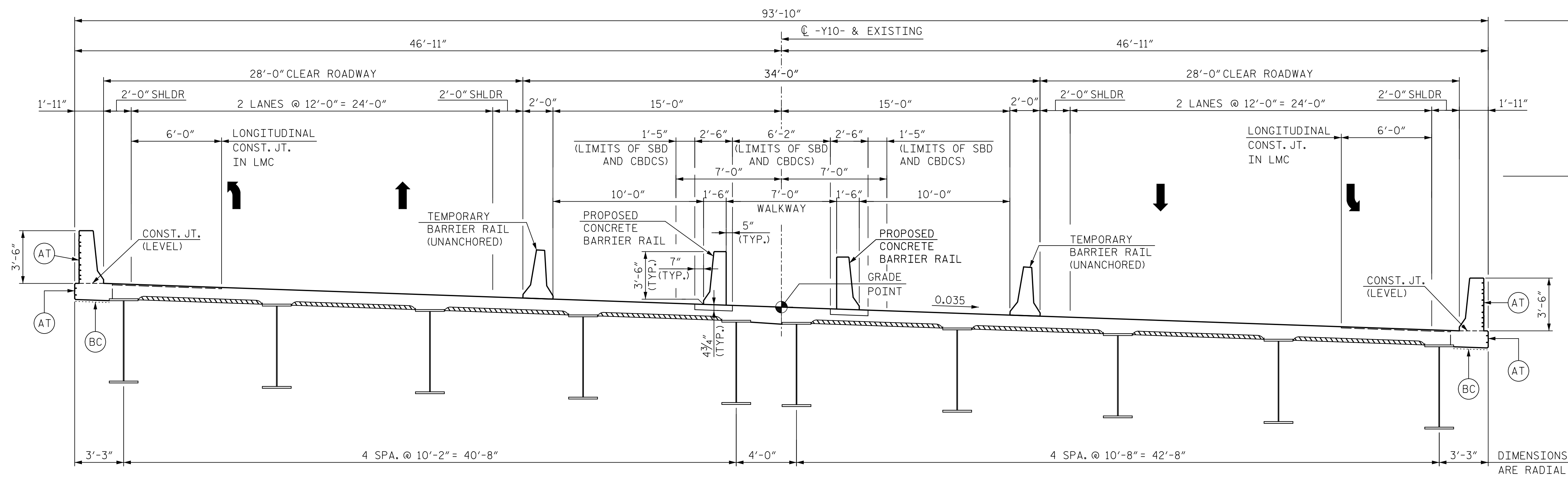
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 DESIGN ENGINEER OF RECORD: P. BARBER DATE: 5/19

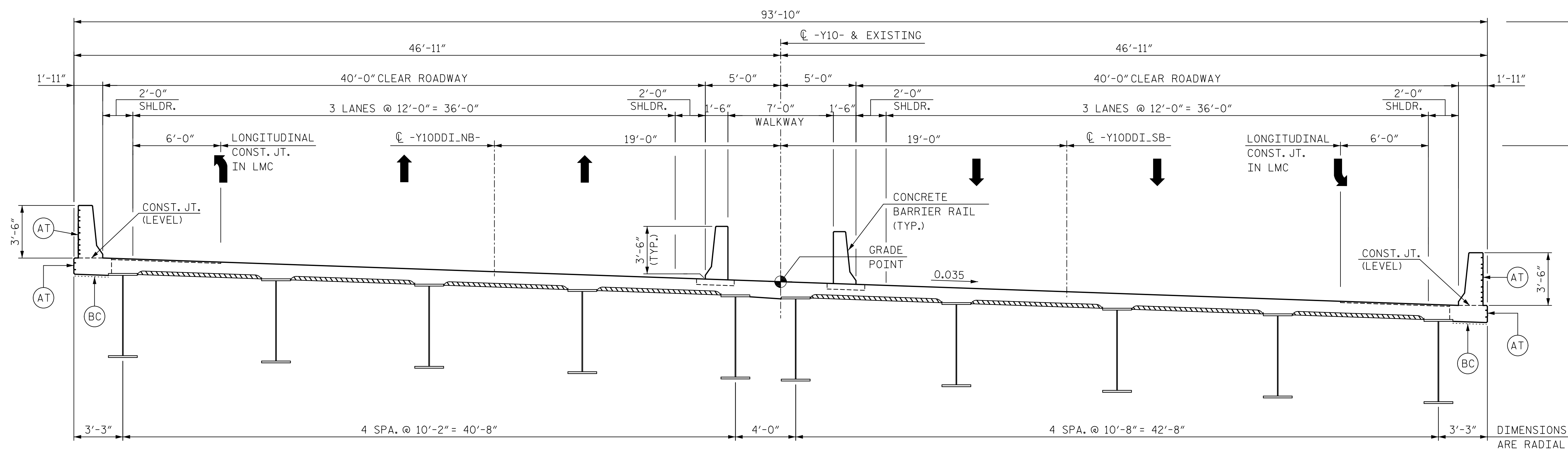
DWG. NO. 5

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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S2-5
1			3			TOTAL SHEETS
2			4			12



PROPOSED BRIDGE STAGE IV LANE CONFIGURATION



PROPOSED BRIDGE FINAL LANE CONFIGURATION

DIMENSIONS ARE RADIAL

AFTER SHIFTING TRAFFIC TO REDUCED WIDTH DIVERGING DIAMOND PATTERN, PLACE TEMPORARY BARRIER RAIL AND CONSTRUCT PERMANENT CONCRETE BARRIERS IN CENTER. PERFORM JOINT REPLACEMENT WORK AND TREAT WIDTH INDICATED WITH SBD AND CBDCS.

(AT) LIMITS OF FORM LINED ARCHITECTURAL TREATMENT

(BC) LIMITS OF BRIDGE COATING (LIGHT GRAY)

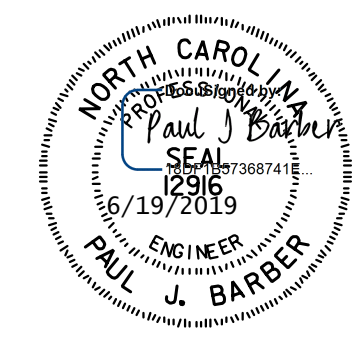
DIMENSIONS ARE RADIAL

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POC 332+10.52 -Y10-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONSTRUCTION STAGING

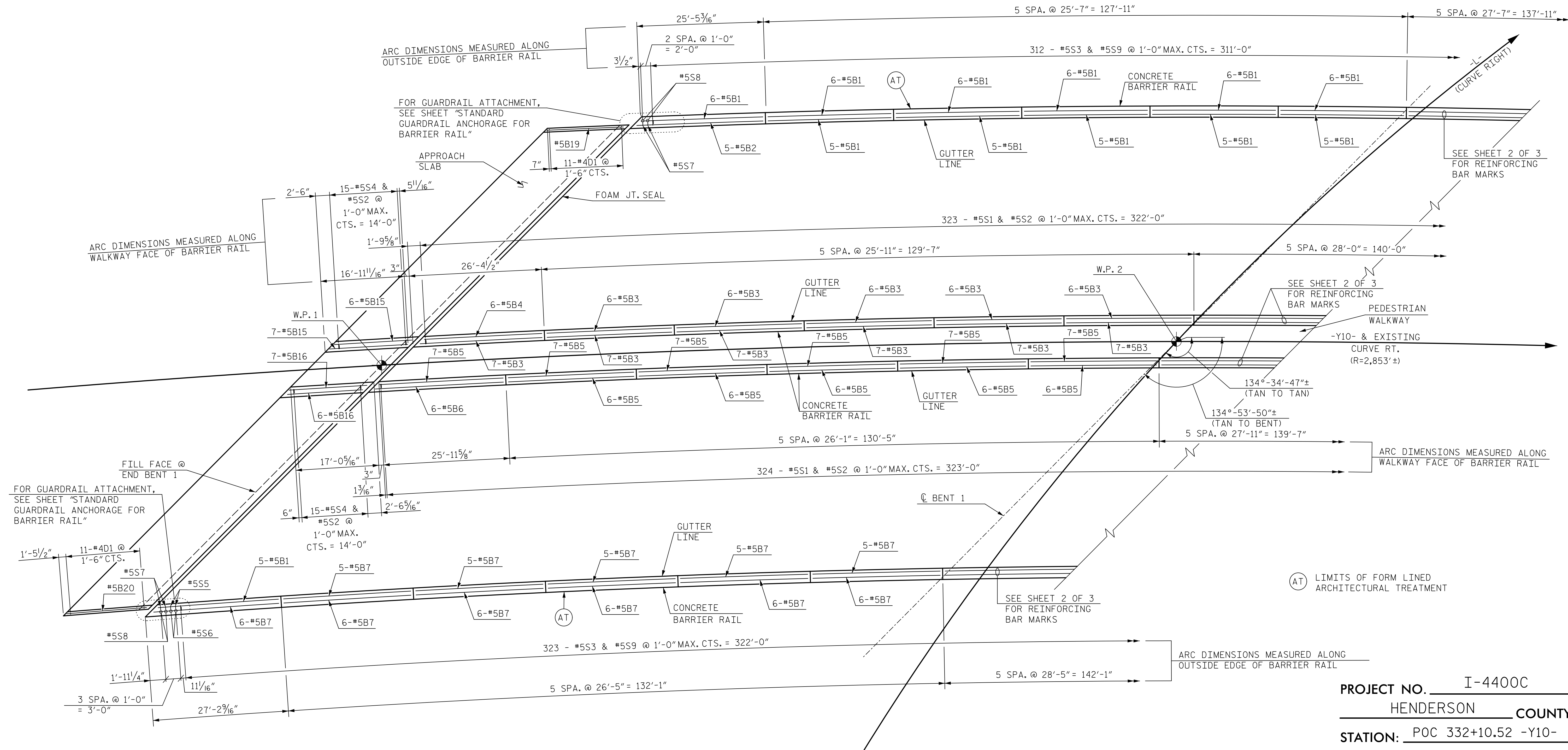


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DESIGN ENGINEER OF RECORD	P. BARBER	DATE	5/19

DWG. NO. 6

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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S2-6
1			3			TOTAL SHEETS
2			4			12



PLAN - SPAN A

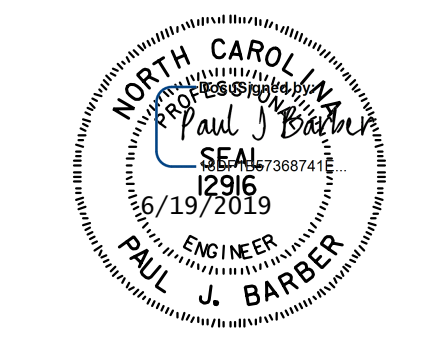
NOTES: ALL PLAN DIMENSIONS SHOWN ARE ARC OR RADIAL.
EDGE OF SLAB NOT SHOWN FOR CLARITY.

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POC 332+10.52 -Y10-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
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CONCRETE
 BARRIER RAIL
 (SPAN A)



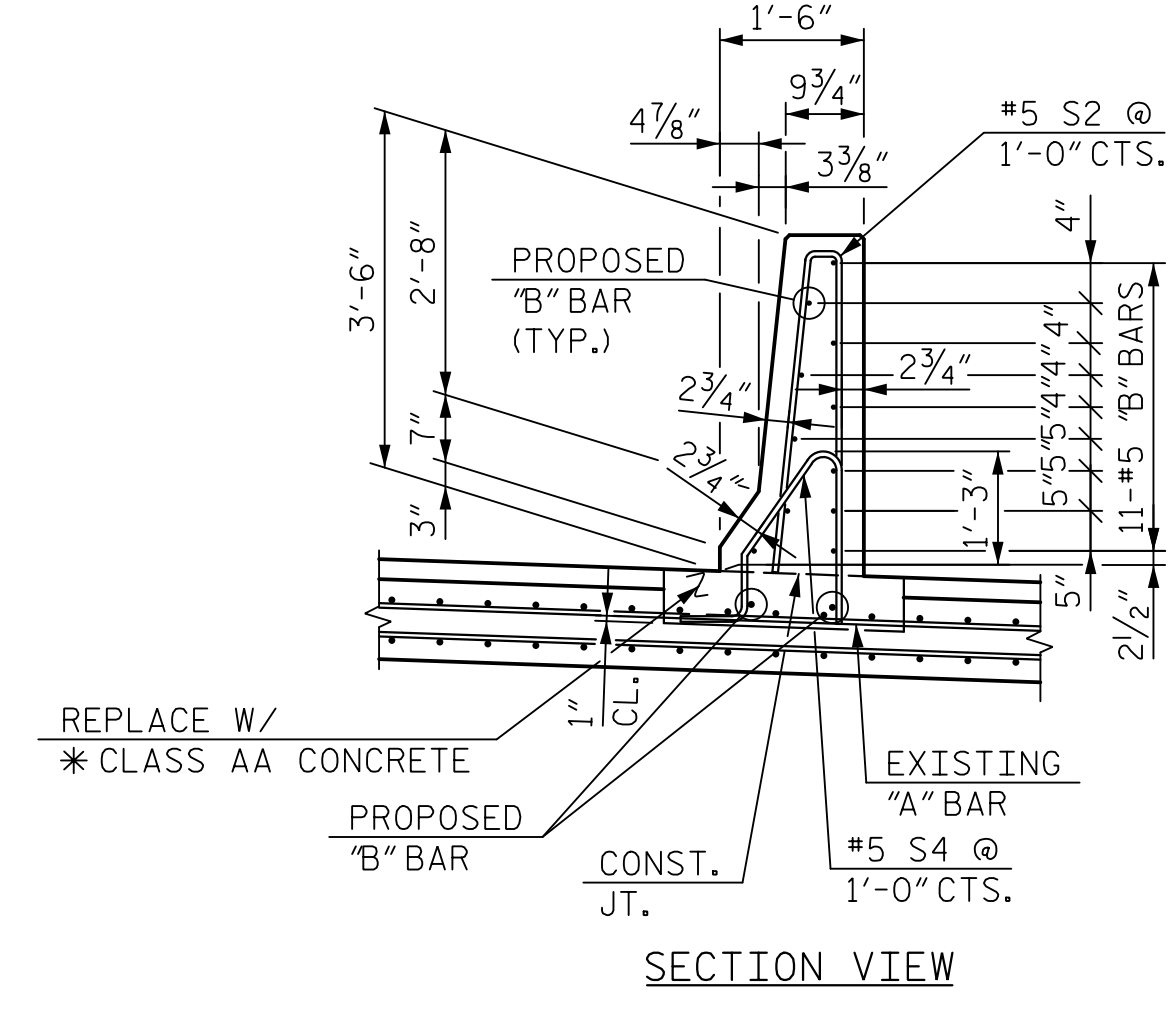
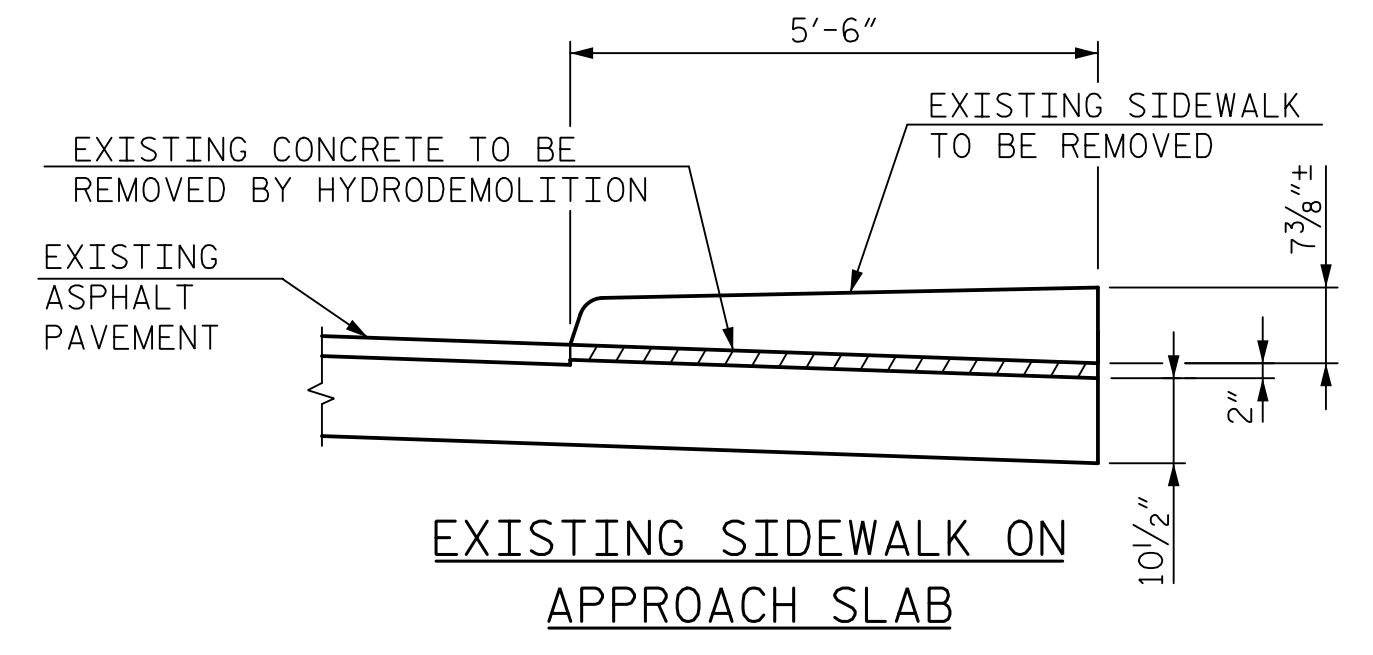
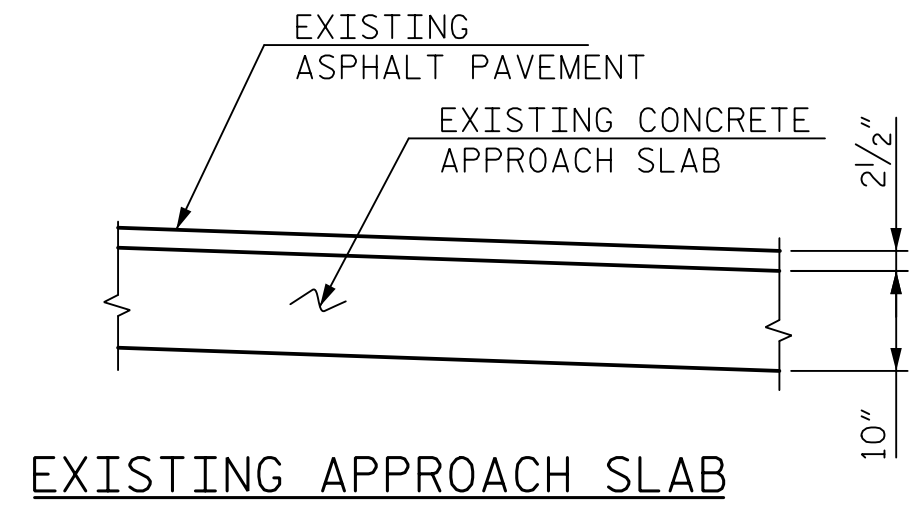
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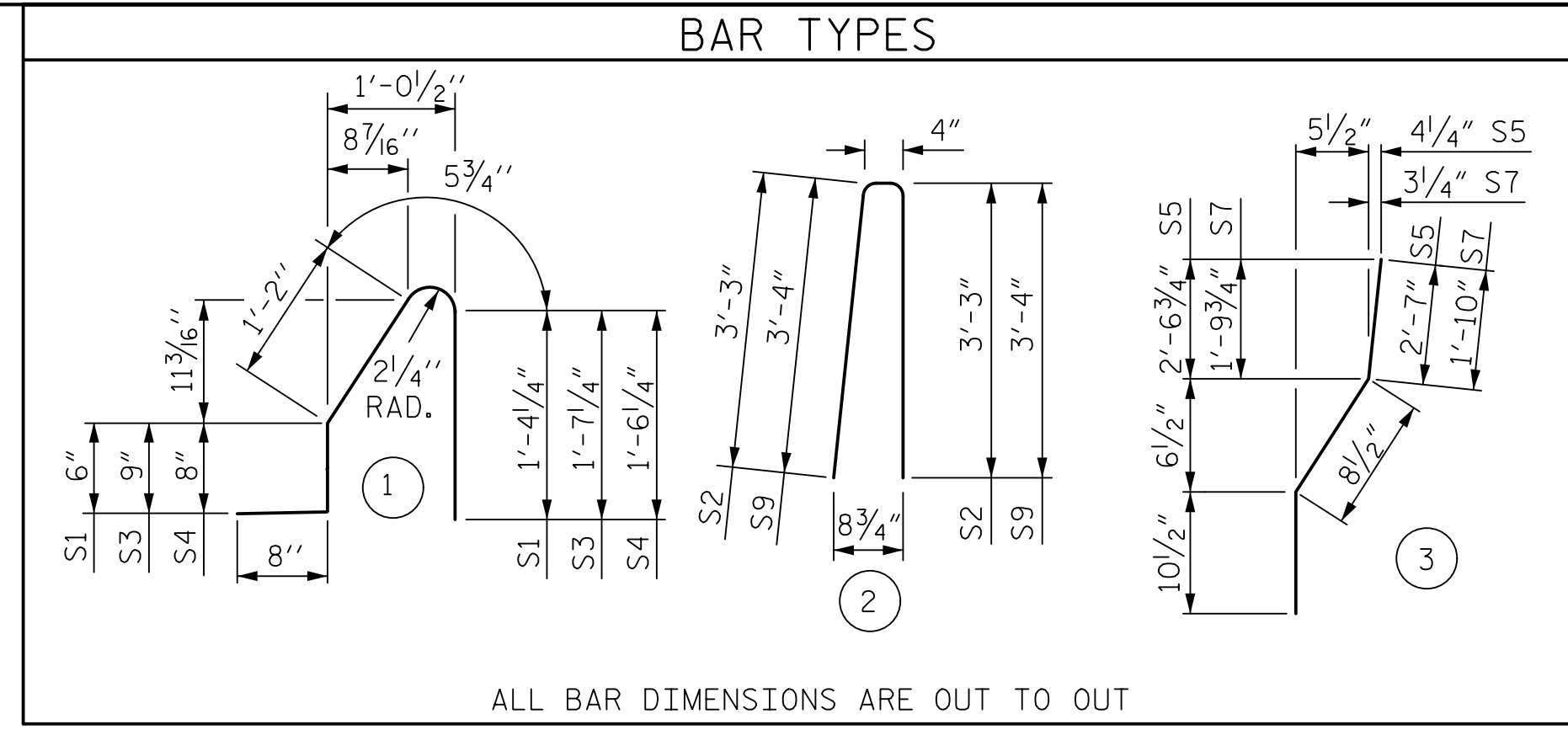
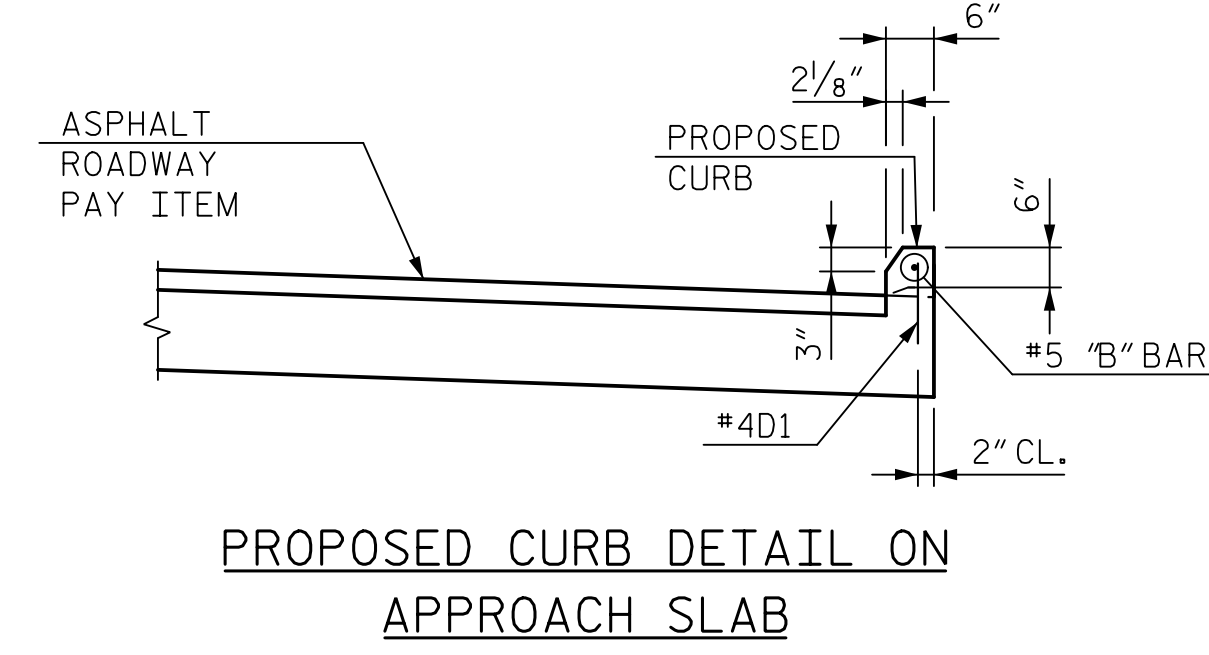
DWG. NO. 7

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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S2-7
1			3			TOTAL SHEETS
2			4			12



* EXISTING ASPHALT PAVEMENT REMOVAL SHALL BE INCIDENTAL CLASS II SURFACE PREPARATION



BILL OF MATERIAL					
FOR CONCRETE BARRIER RAIL ONLY					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	66	#5	STR	25'-2"	1,732
* B2	5	#5	STR	25'-9"	134
* B3	72	#5	STR	25'-6"	1,915
* B4	6	#5	STR	24'-7"	154
* B5	72	#5	STR	25'-8"	1,927
* B6	6	#5	STR	26'-2"	164
* B7	61	#5	STR	26'-0"	1,654
* B8	67	#5	STR	27'-1"	1,893
* B9	5	#5	STR	26'-3"	137
* B10	72	#5	STR	27'-7"	2,071
* B11	6	#5	STR	27'-11"	175
* B12	72	#5	STR	27'-6"	2,065
* B13	61	#5	STR	28'-0"	1,781
* B14	5	#5	STR	28'-7"	149
* B15	13	#5	STR	16'-3"	220
* B16	13	#5	STR	16'-4"	221
* B17	13	#5	STR	16'-5"	223
* B18	13	#5	STR	16'-6"	224
* B19	1	#5	STR	16'-1"	17
* B20	1	#5	STR	16'-9"	17
* B21	1	#5	STR	16'-3"	17
* B22	1	#5	STR	16'-8"	17
* D1	44	#4	STR	10"	24
* S1	647	#5	1	4'-2"	2,812
* S2	707	#5	2	6'-10"	5,039
* S3	635	#5	1	4'-8"	3,091
* S4	60	#5	1	4'-6"	282
* S5	4	#5	3	4'-2"	17
* S6	4	#5	STR	4'-0"	17
* S7	8	#5	3	3'-5"	29
* S8	8	#5	STR	3'-3"	27
* S9	635	#5	2	7'-0"	4,636
* EPOXY COATED REINFORCING STEEL					LBS. 32,881
CLASS AA CONCRETE					
DECK/APPROACH SLAB				CU. YDS.	99.8
BARRIER RAIL				CU. YDS.	196.3
TOTAL				CU. YDS.	296.1
CONCRETE BARRIER RAIL				LIN. FT.	1,365.5
ARCHITECTURAL CONCRETE SURFACE TREATMENT				SQ. FT.	3,044.8

NOTES

THE BARRIER RAIL IN EACH SPAN SHALL NOT BE CAST UNTIL ALL PREVIOUSLY CAST 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.

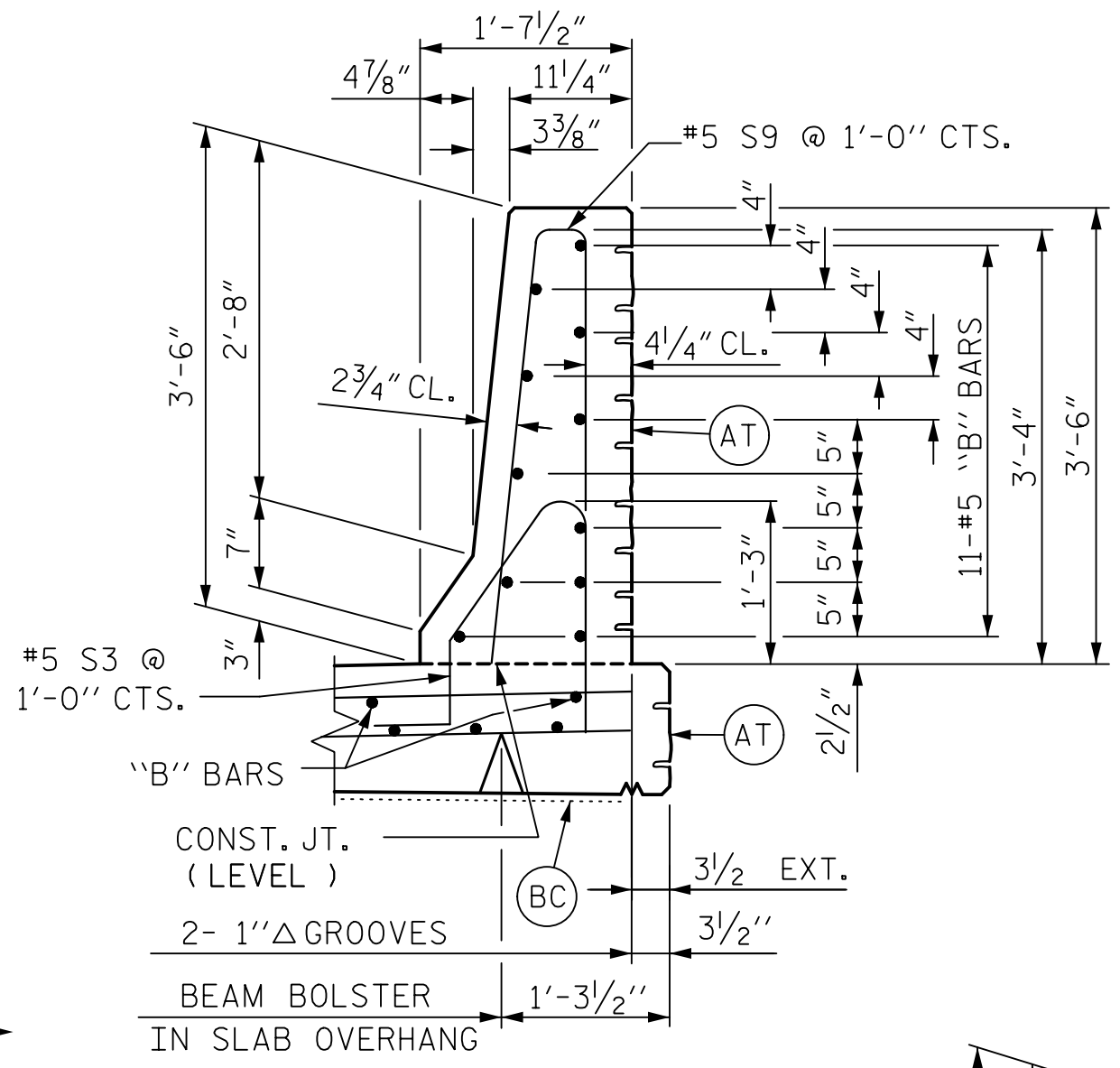
GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS 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.

COST FOR ALL REINFORCING STEEL & CLASS AA CONCRETE IN DECK, APPROACH SLABS, AND BARRIER RAIL SHALL BE PAID FOR UNDER THE PRICE BID FOR CONCRETE BARRIER RAIL.

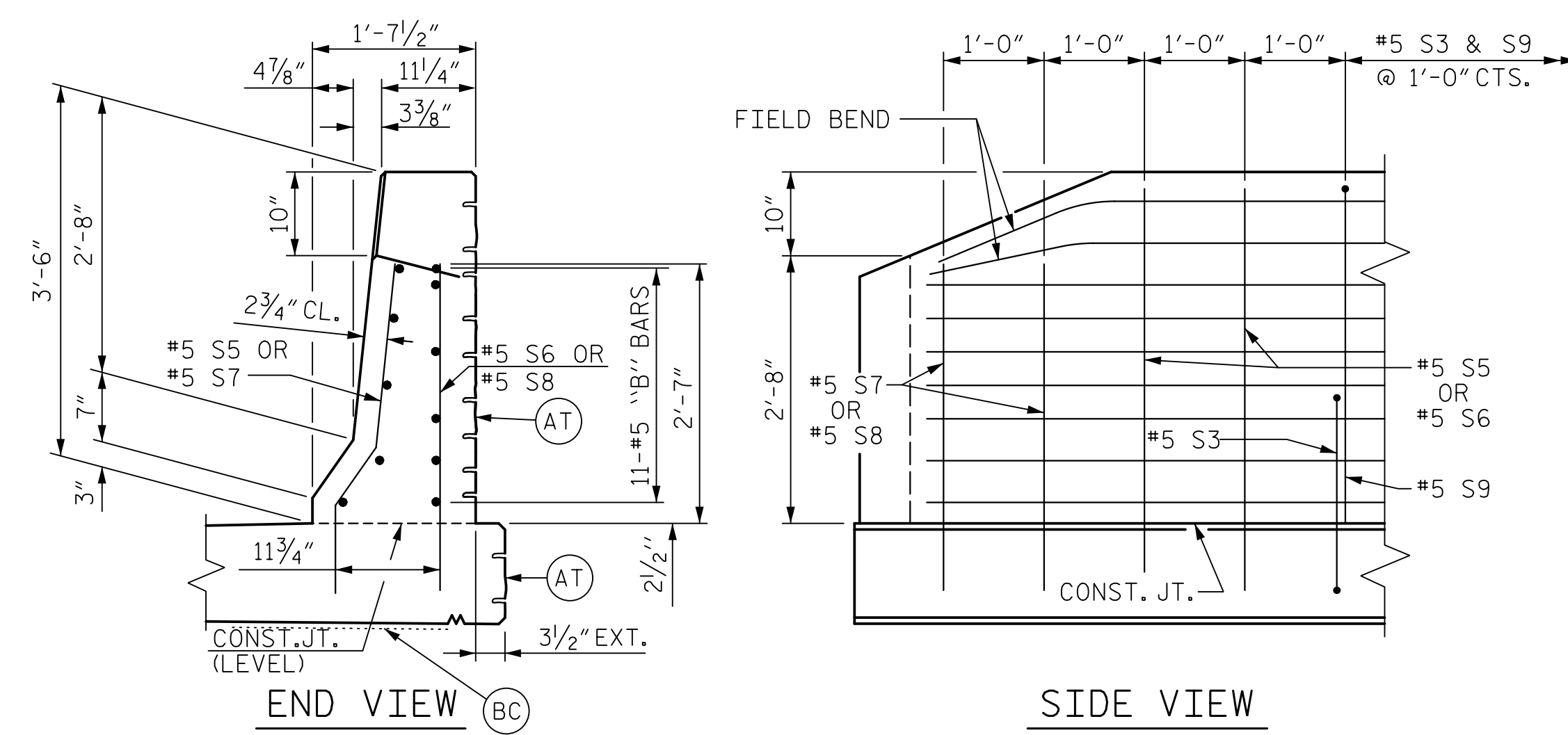
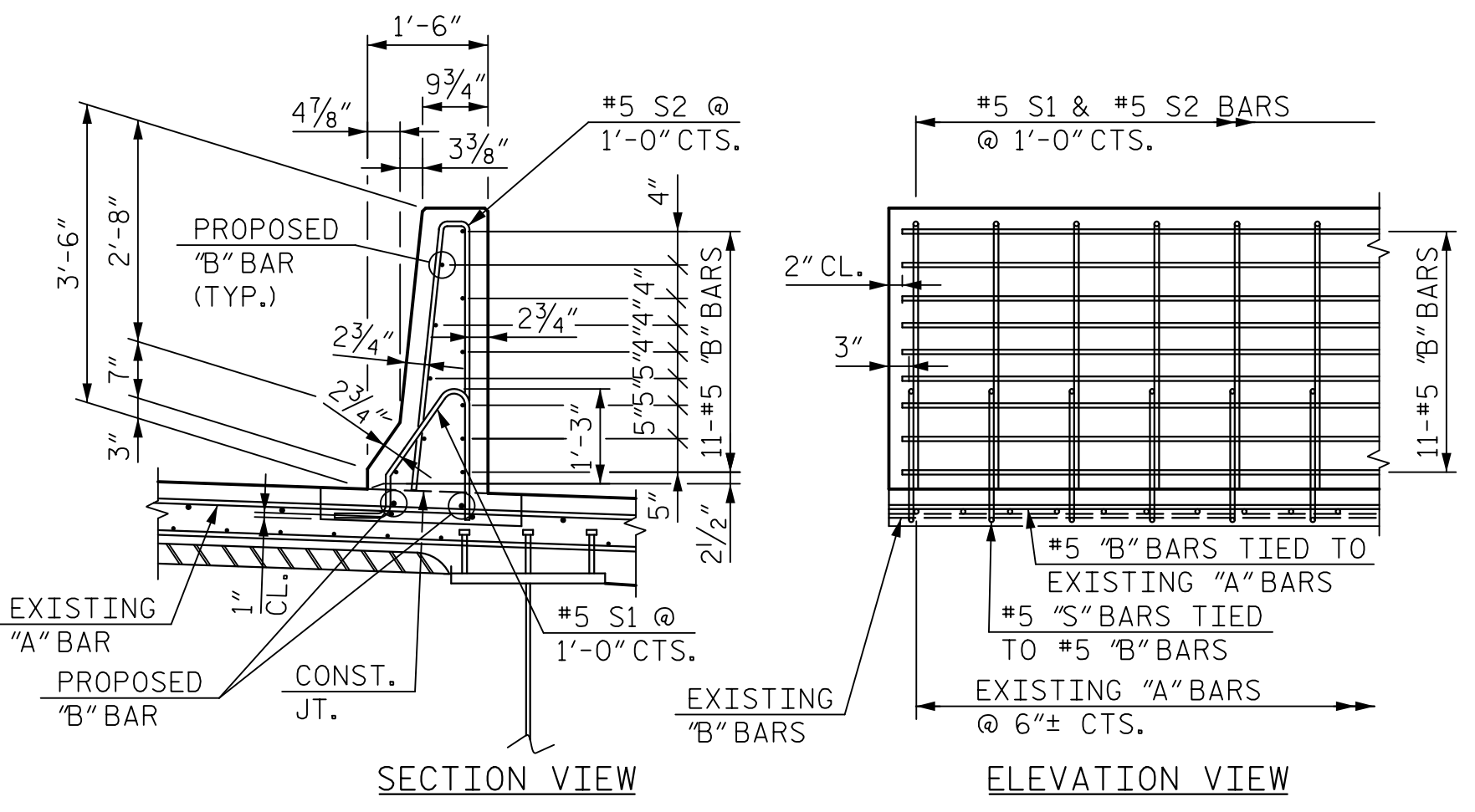
THE BARRIER RAIL SHALL NOT BE CAST UNTIL THE FOAM JOINT SEAL SAWED OPENING HAS BEEN SAWED. SEE "FOAM JOINT SEAL" SHEET.

*4D1 TO USE EPOXY ANCHORAGE IN EXISTING APPROACH SLAB IN ACCORDANCE WITH SECTION 420-13 OF THE STANDARD SPECIFICATIONS.

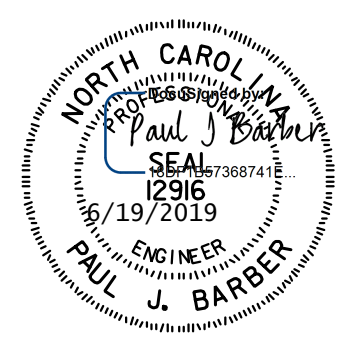
THE #5 S5, S6, S7, AND S8 BARS SHALL BE INSTALLED USING AN ADHESIVE ANCHORING SYSTEM, AFTER SAWING THE JOINT. THE YIELD LOAD FOR THE S5, S6, S7, AND S8 BARS IS 18.6 KIPS. FIELD TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.



- (AT) LIMITS OF FORM LINED ARCHITECTURAL TREATMENT
- (BC) LIMITS OF BRIDGE COATING (LIGHT GRAY)



END OF RAIL DETAILS
FOR ADHESIVE ANCHORING AT SAWED JOINTS
(OVERHANG RAIL SECTIONS)



PROJECT NO. I-4400C
HENDERSON COUNTY
STATION: POC 332+10.52 -Y10-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE BARRIER RAIL DETAILS

HNTB HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DRAWN BY: M. WRIGHT DATE: 3/19
CHECKED BY: J. BARCOMB DATE: 3/19
DESIGN ENGINEER OF RECORD: P. BARBER DATE: 5/19

DWG. NO. 9

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

TOTAL SHEETS: 12

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD-DOWN PLATE AND 4 - 1/8" 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 1/8" 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.

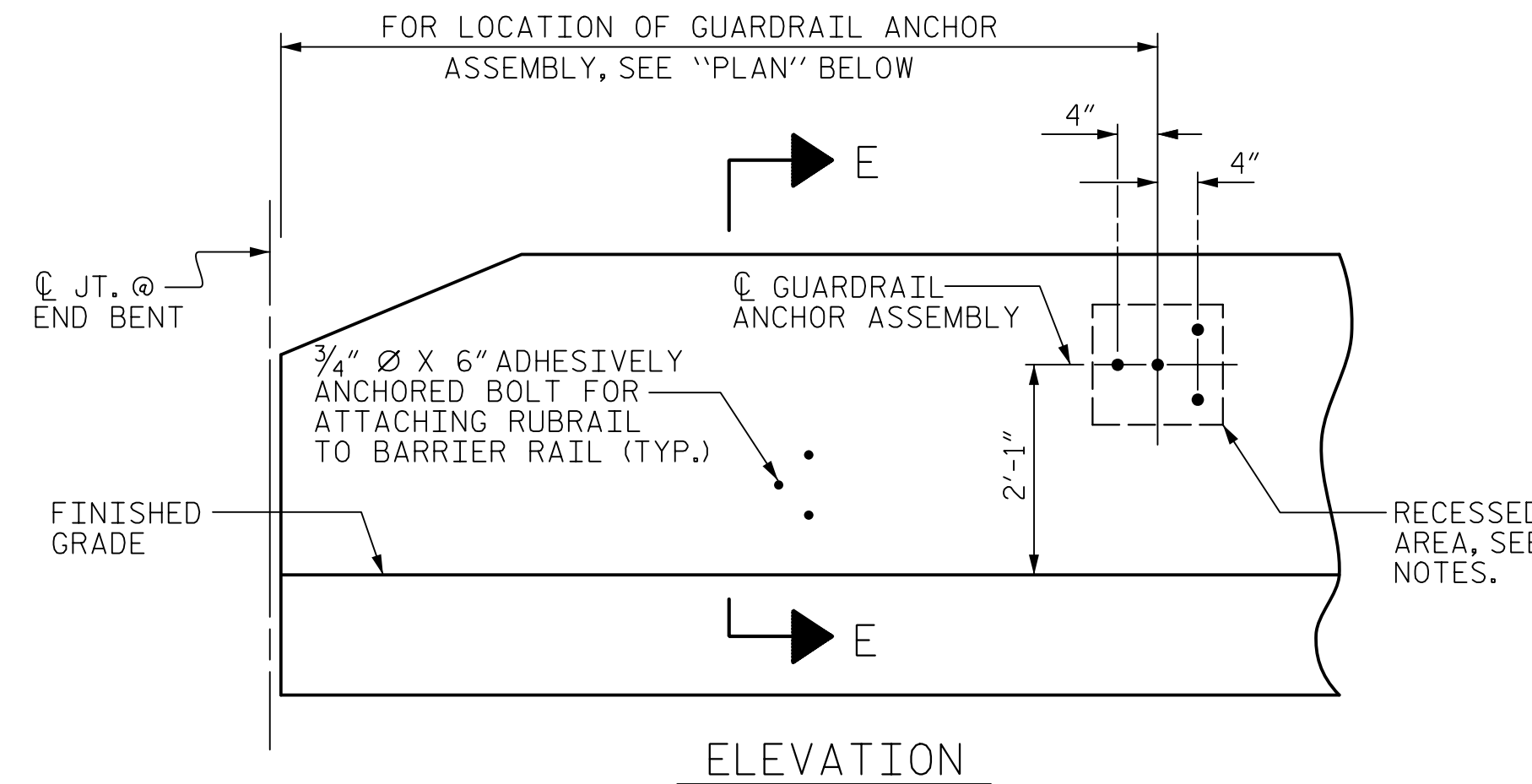
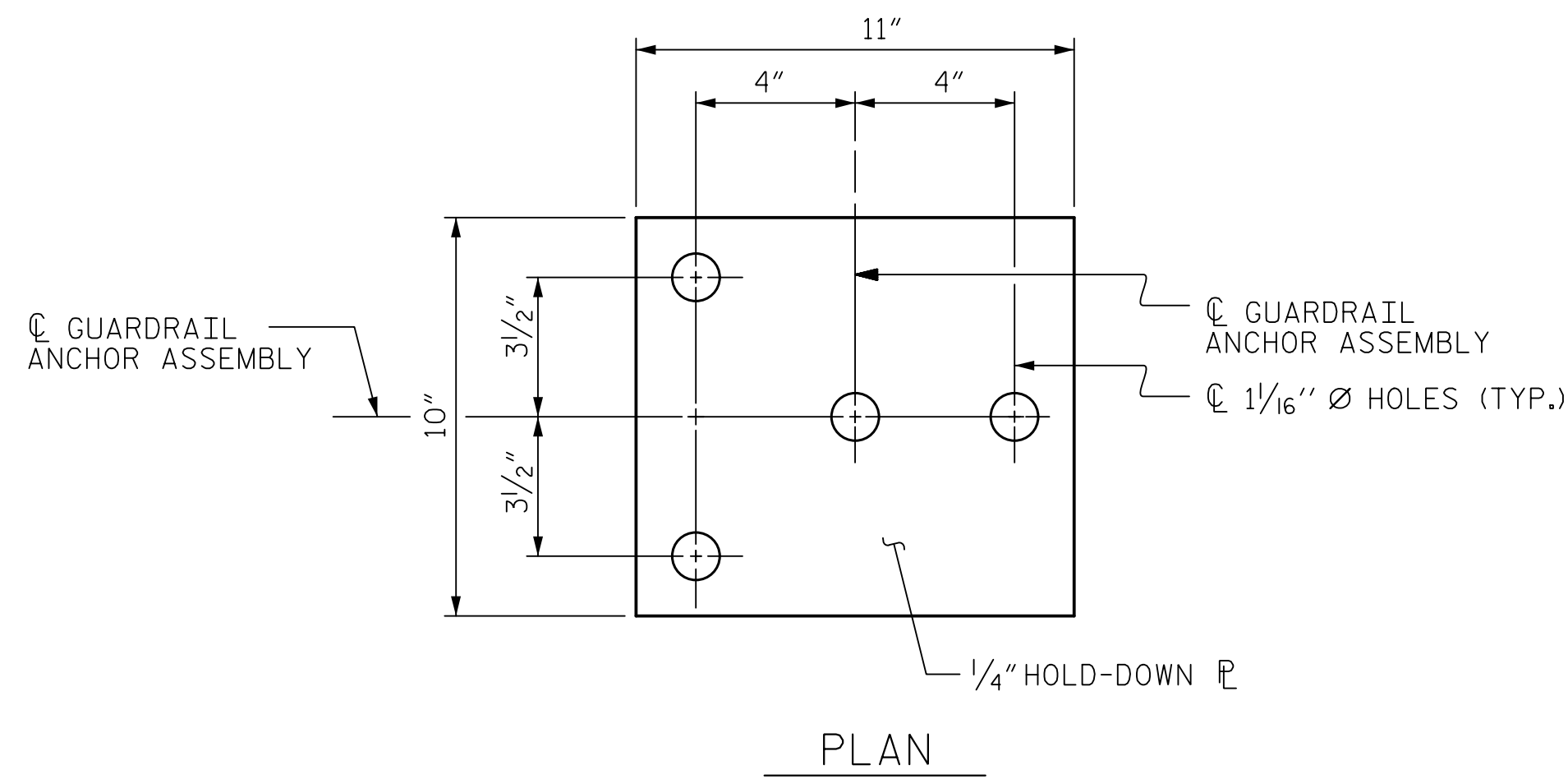
AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

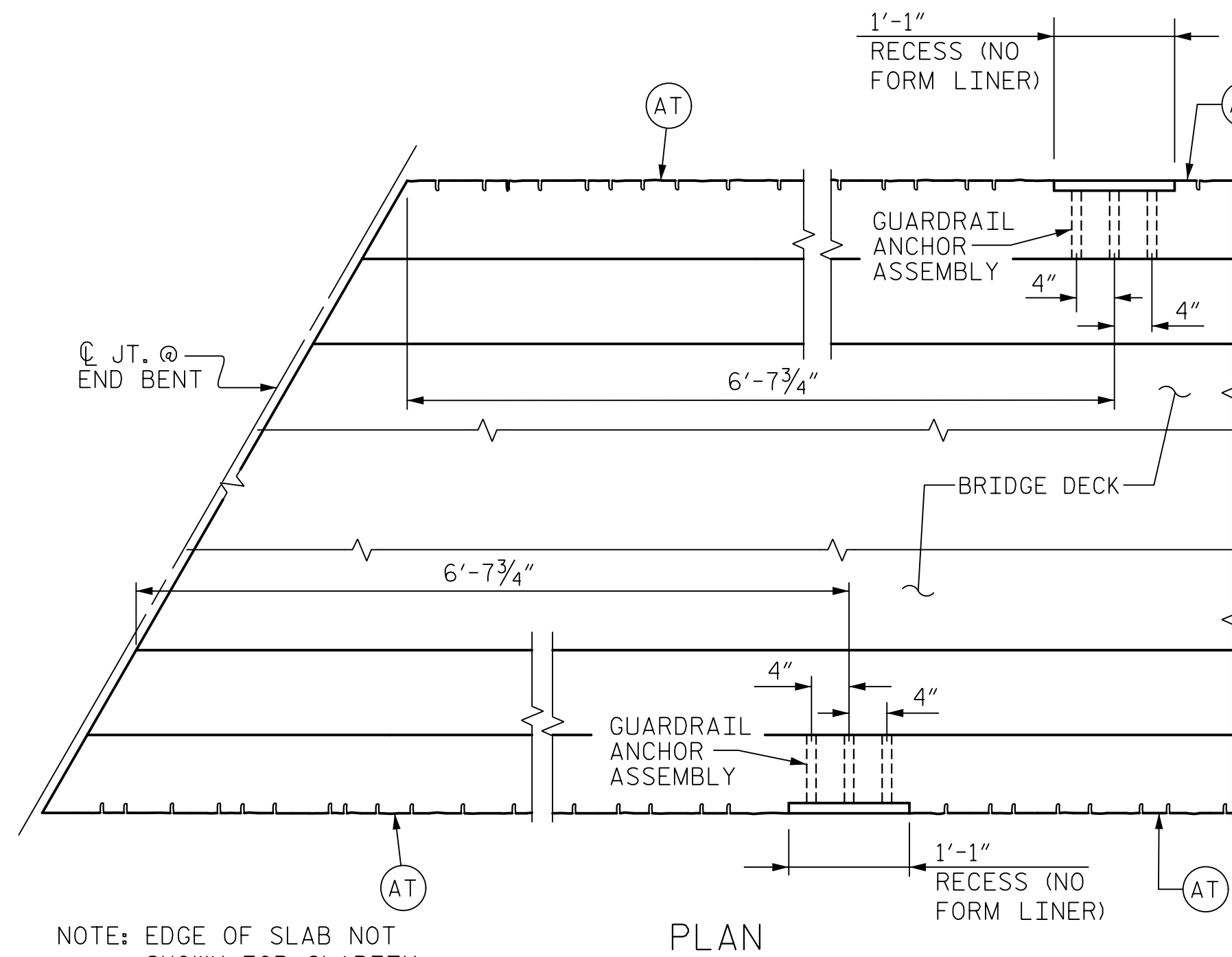
THE 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

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.

RECESSED AREA BELOW HOLD DOWN PLATE SHALL BE FINISHED SMOOTH TO ALLOW FOR COMPLETE SEATING OF PLATE AGAINST BACK OF CONCRETE BARRIER.



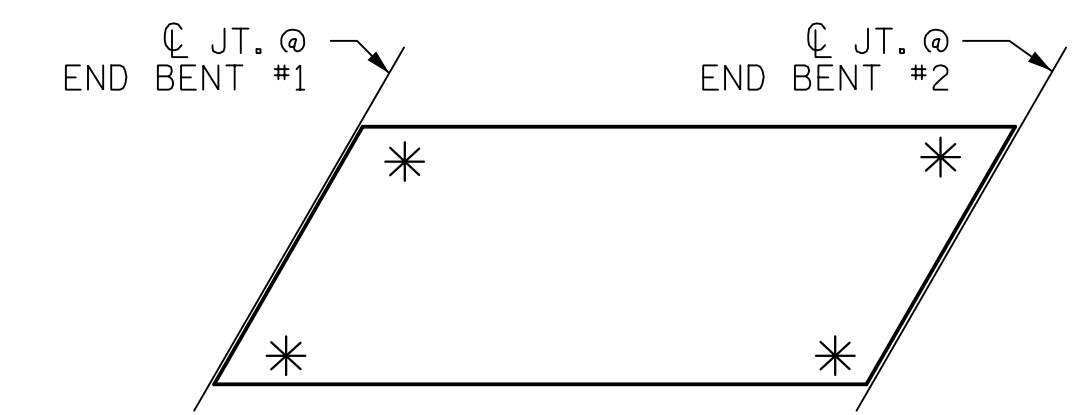
(AT) LIMITS OF FORM LINED ARCHITECTURAL TREATMENT



NOTE: EDGE OF SLAB NOT SHOWN FOR CLARITY.

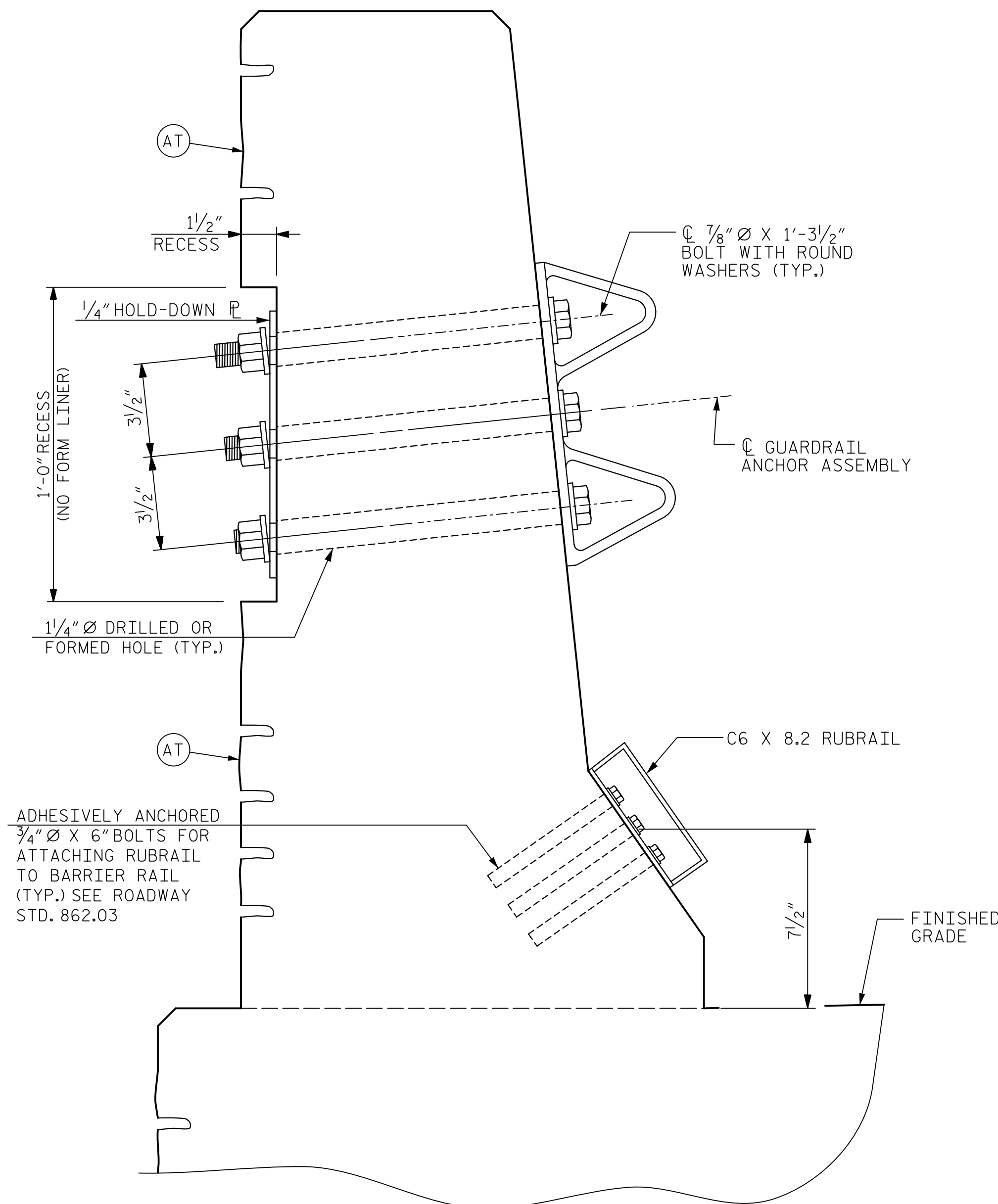
LOCATION OF ANCHORS FOR GUARDRAIL

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



SKETCH SHOWING POINTS OF ATTACHMENTS

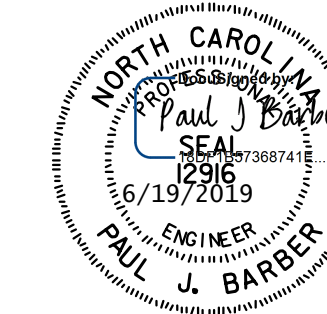
* DENOTES GUARDRAIL ANCHOR ASSEMBLY



SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POC 332+10.52 -Y10-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 FOR BARRIER RAIL

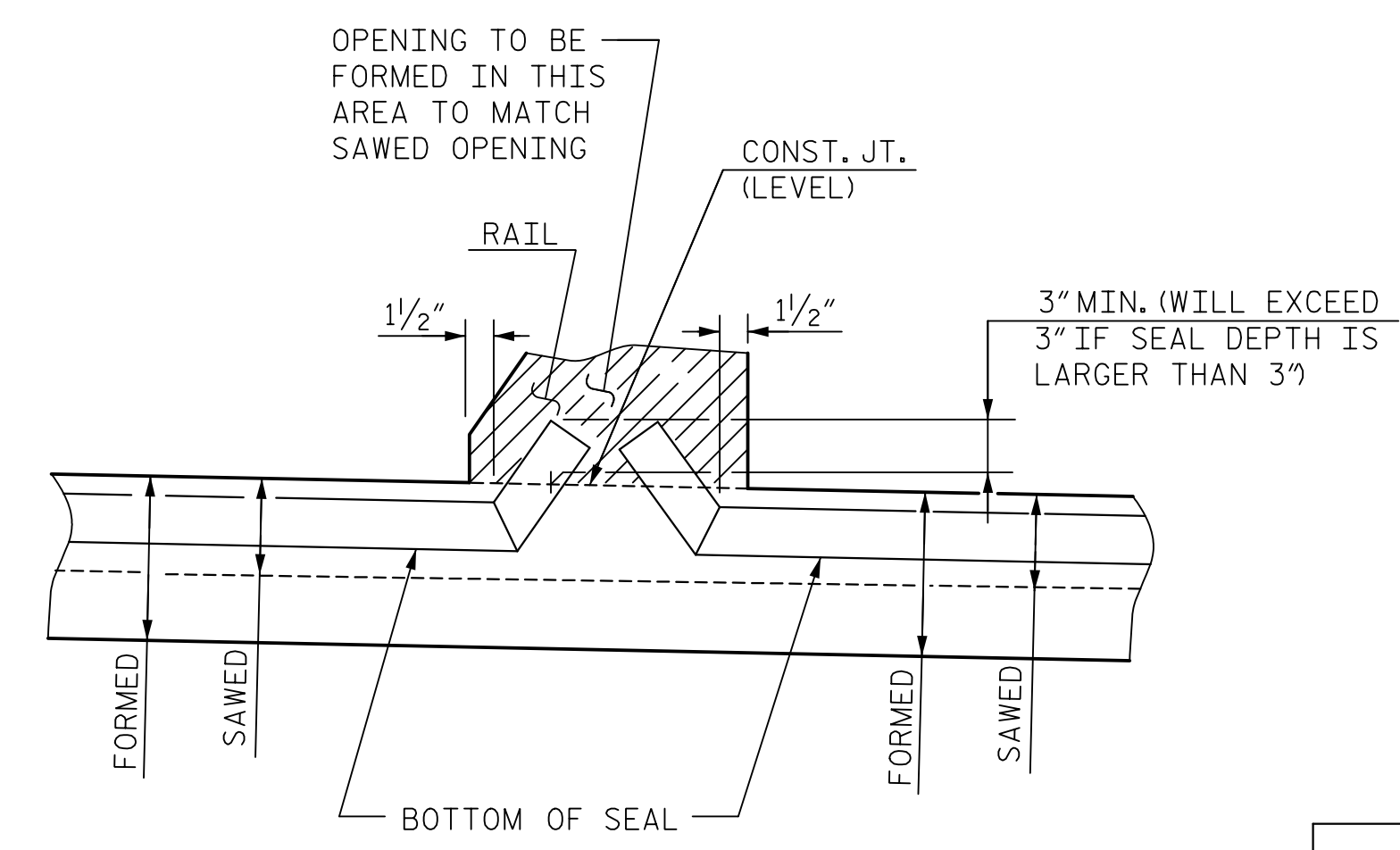
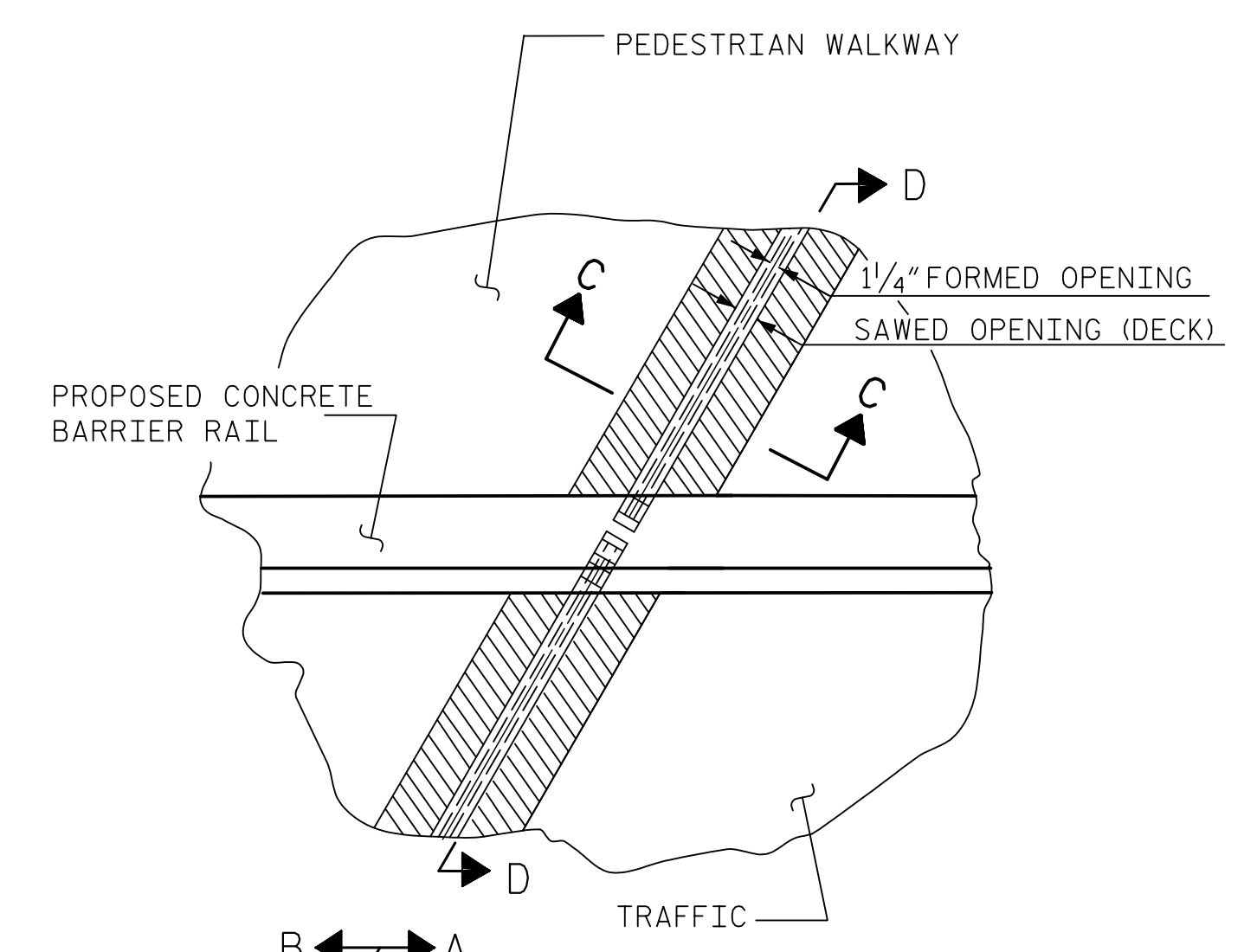
ASSEMBLED BY : M. WRIGHT DATE : 3/19
 CHECKED BY : N. HART DATE : 3/19
 DRAWN BY : TLA 5/06 REV. 7/12 MAA/GM
 CHECKED BY : CM 5/06 REV. 6/13 MAA/GM
 REV. 12/17 MAA/THC

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 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609
 DRAWN BY : M. WRIGHT DATE : 3/19
 CHECKED BY : J. BARCOMB DATE : 3/19
 DESIGN ENGINEER OF RECORD : P. BARBER DATE : 5/19

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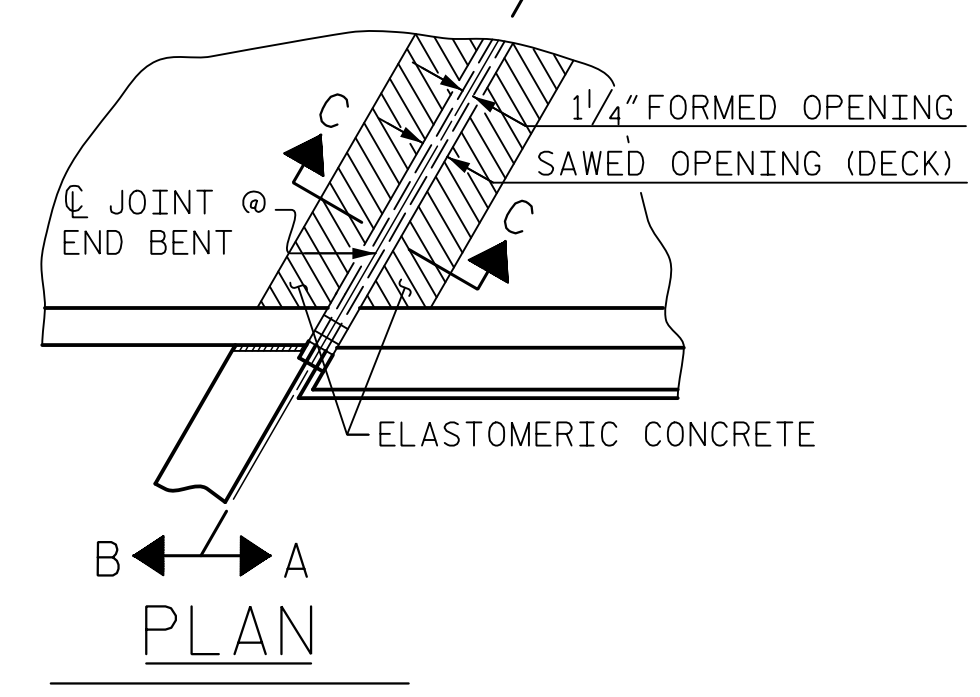
REVISIONS					SHEET NO.
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

TOTAL SHEETS: 12



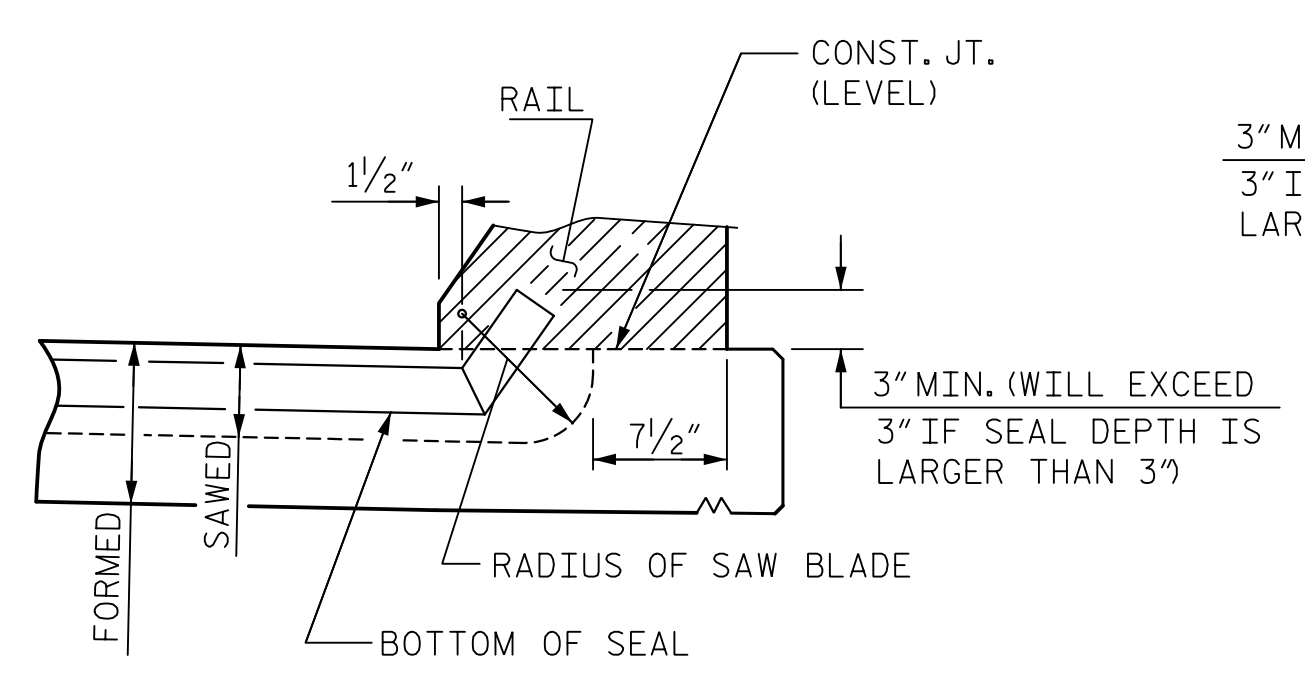
SECTION D-D

BILL OF MATERIAL	
END BENT NO.	ELASTOMERIC CONCRETE (CU. FT.)
1	23.1
2	20.7
TOTAL	43.8

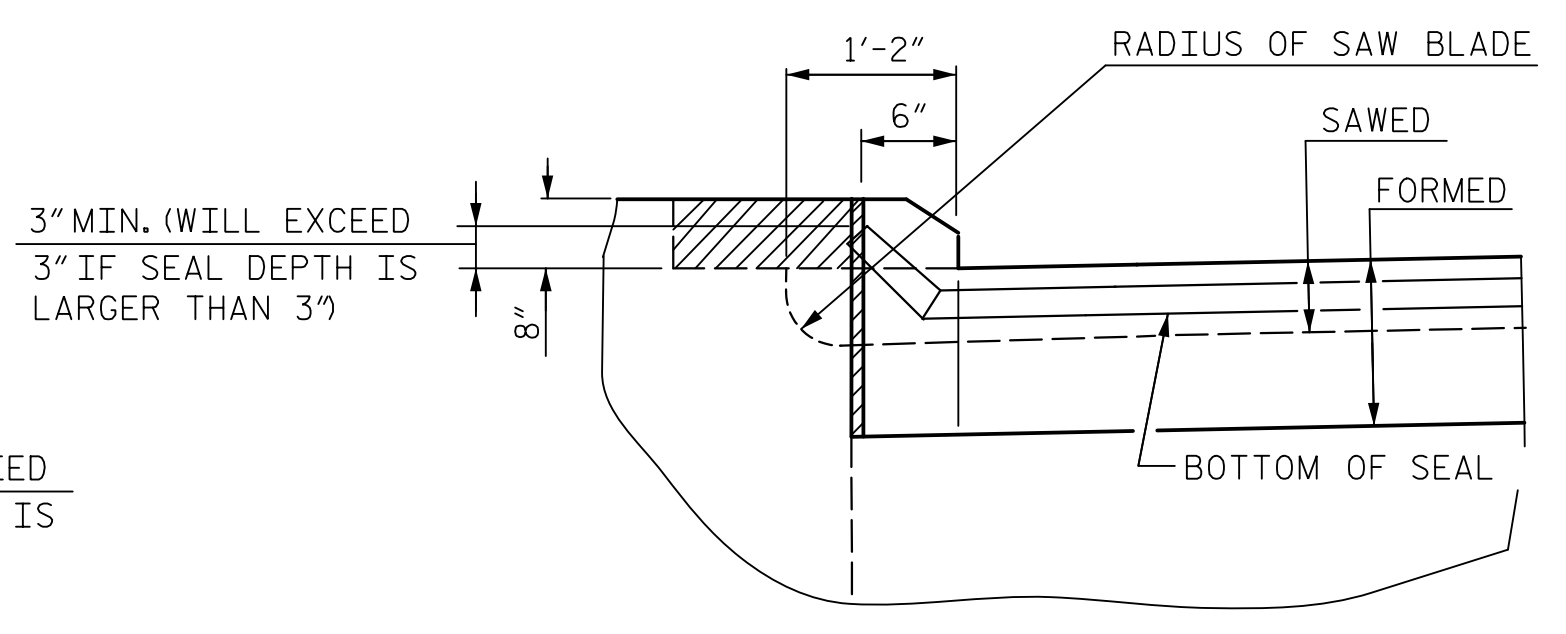


PLAN

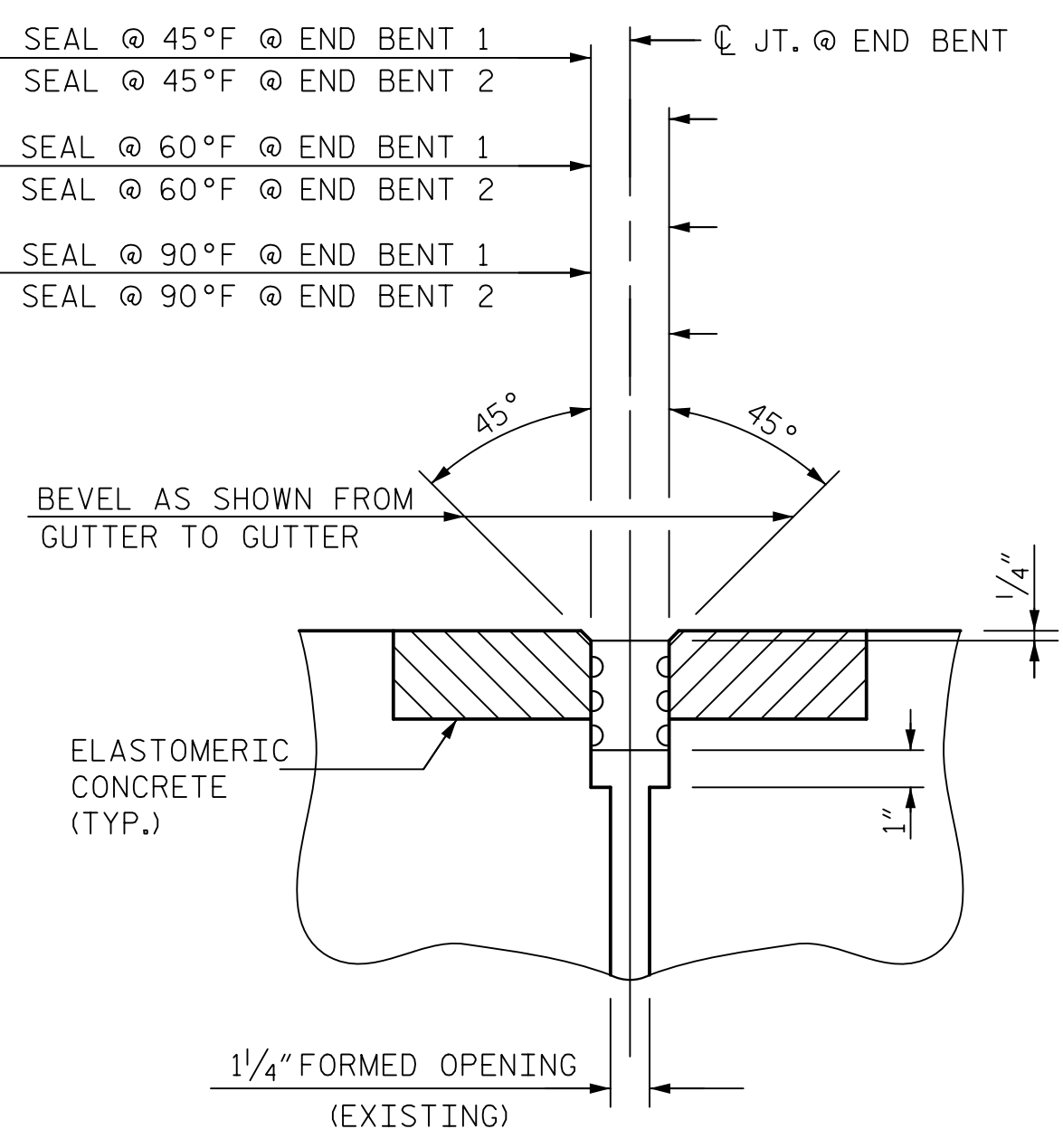
- 2 1/8" SAWED OPENING FOR FOAM JOINT SEAL @ 45°F @ END BENT 1
- 2 1/2" SAWED OPENING FOR FOAM JOINT SEAL @ 45°F @ END BENT 2
- 1 5/16" SAWED OPENING FOR FOAM JOINT SEAL @ 60°F @ END BENT 1
- 2 5/16" SAWED OPENING FOR FOAM JOINT SEAL @ 60°F @ END BENT 2
- 1 9/16" SAWED OPENING FOR FOAM JOINT SEAL @ 90°F @ END BENT 1
- 1 7/8" SAWED OPENING FOR FOAM JOINT SEAL @ 90°F @ END BENT 2



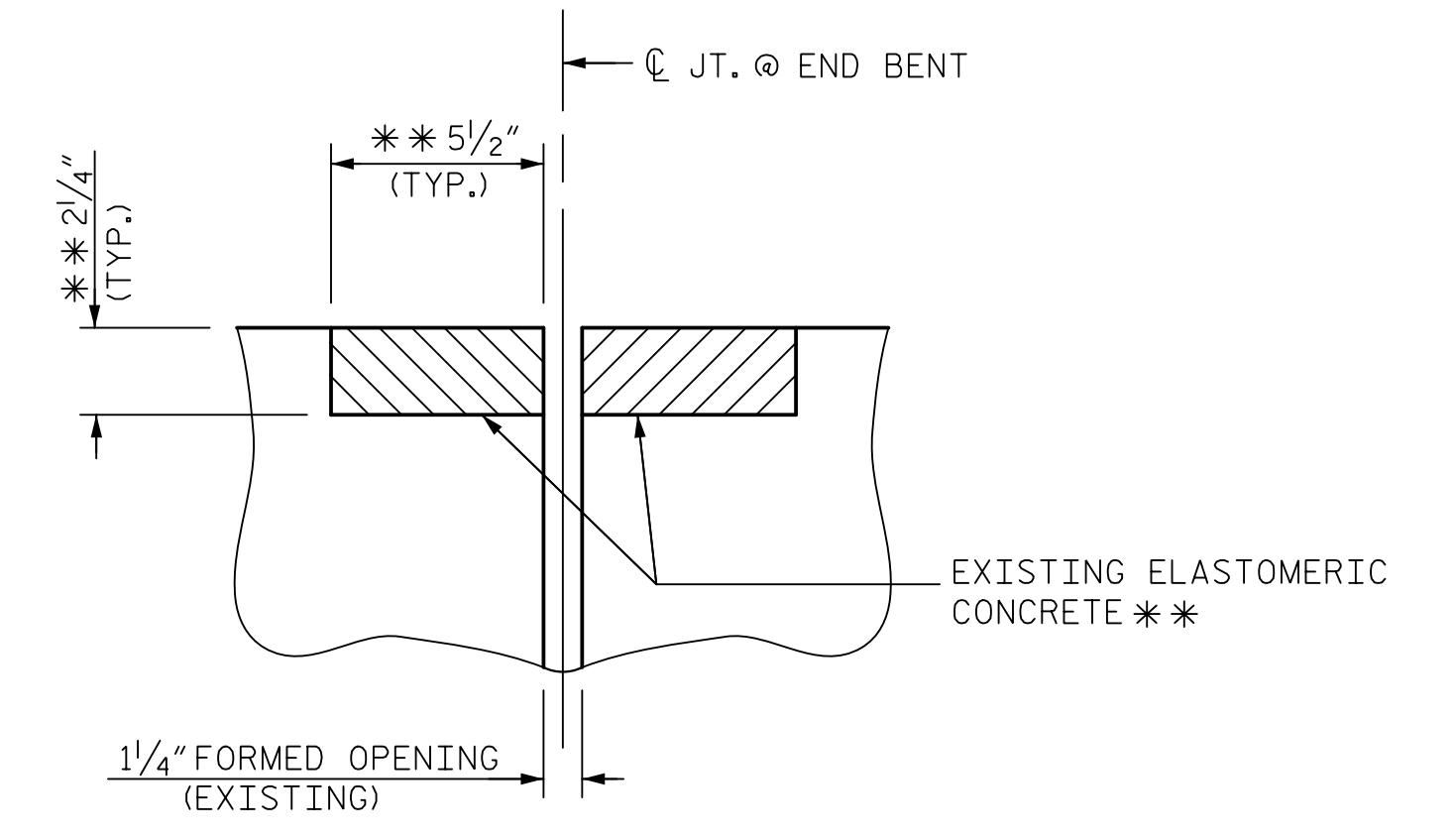
SECTION A-A



SECTION B-B



SECTION C-C



SECTION C-C

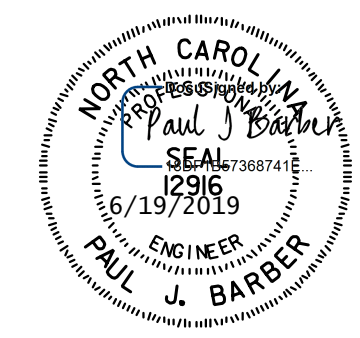
FOAM JOINT SEAL (PRE-SAWED ELASTOMERIC CONCRETE DIMENSIONS)

** EXISTING CONCRETE AND ELASTOMERIC CONCRETE IN DECK AND APPROACH SLABS TO BE REMOVED TO THE MINIMUM DIMENSIONS SHOWN AND TO THE EXTENTS NECESSARY TO REMOVE ALL THE EXISTING JOINT HEADER MATERIAL PRIOR TO PREPARATION AND INSTALLATION OF NEW ELASTOMERIC CONCRETE.

PROPOSED FOAM 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.

PROJECT NO. I-4400C
HENDERSON COUNTY
STATION: POC 332+10.52 -Y10-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

FOAM JOINT DETAILS

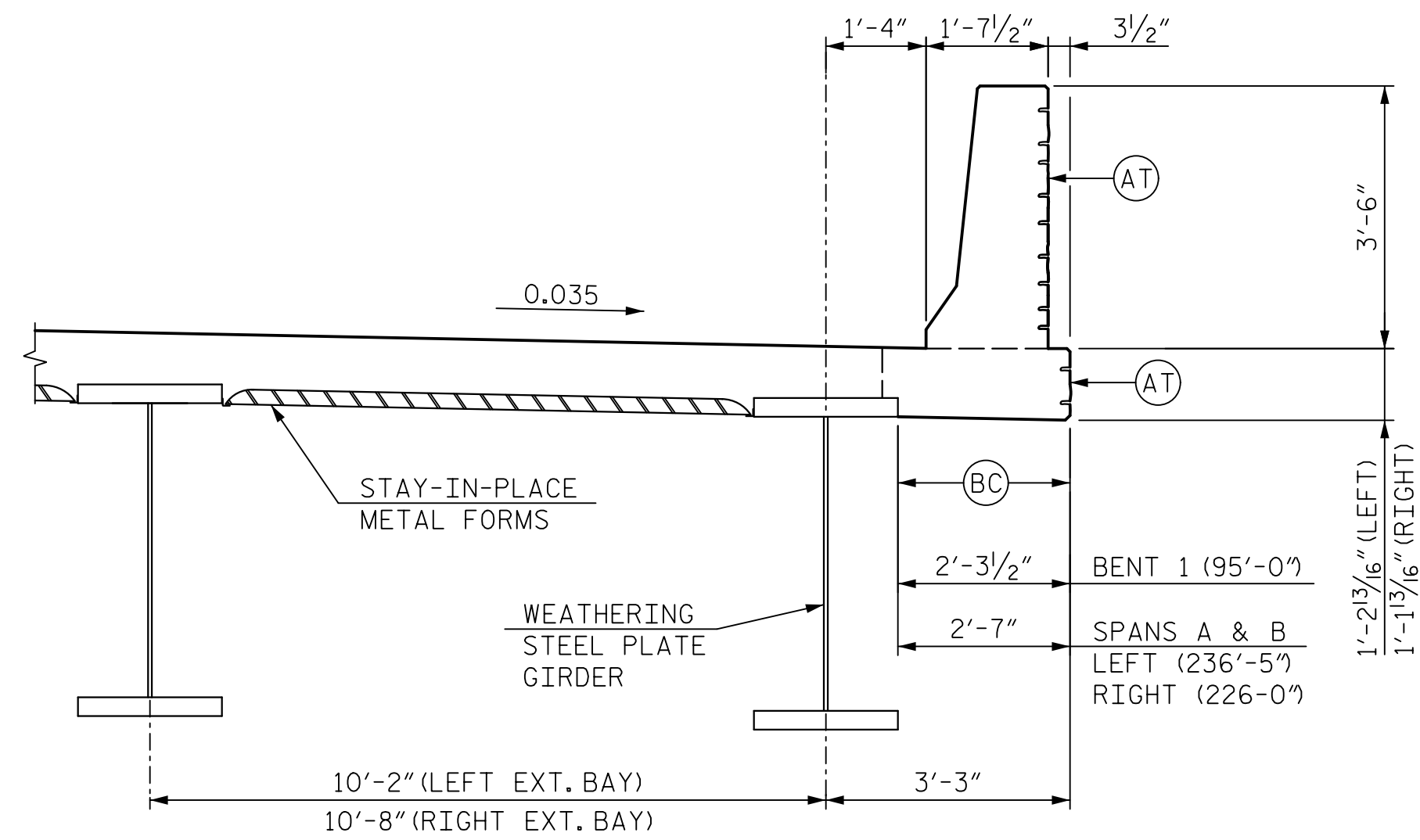
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DRAWN BY: D. WITHERSPOON DATE: 3/19
CHECKED BY: D. HAWKINS DATE: 3/19
DESIGN ENGINEER OF RECORD: P. BARBER DATE: 5/19

DWG. NO. II

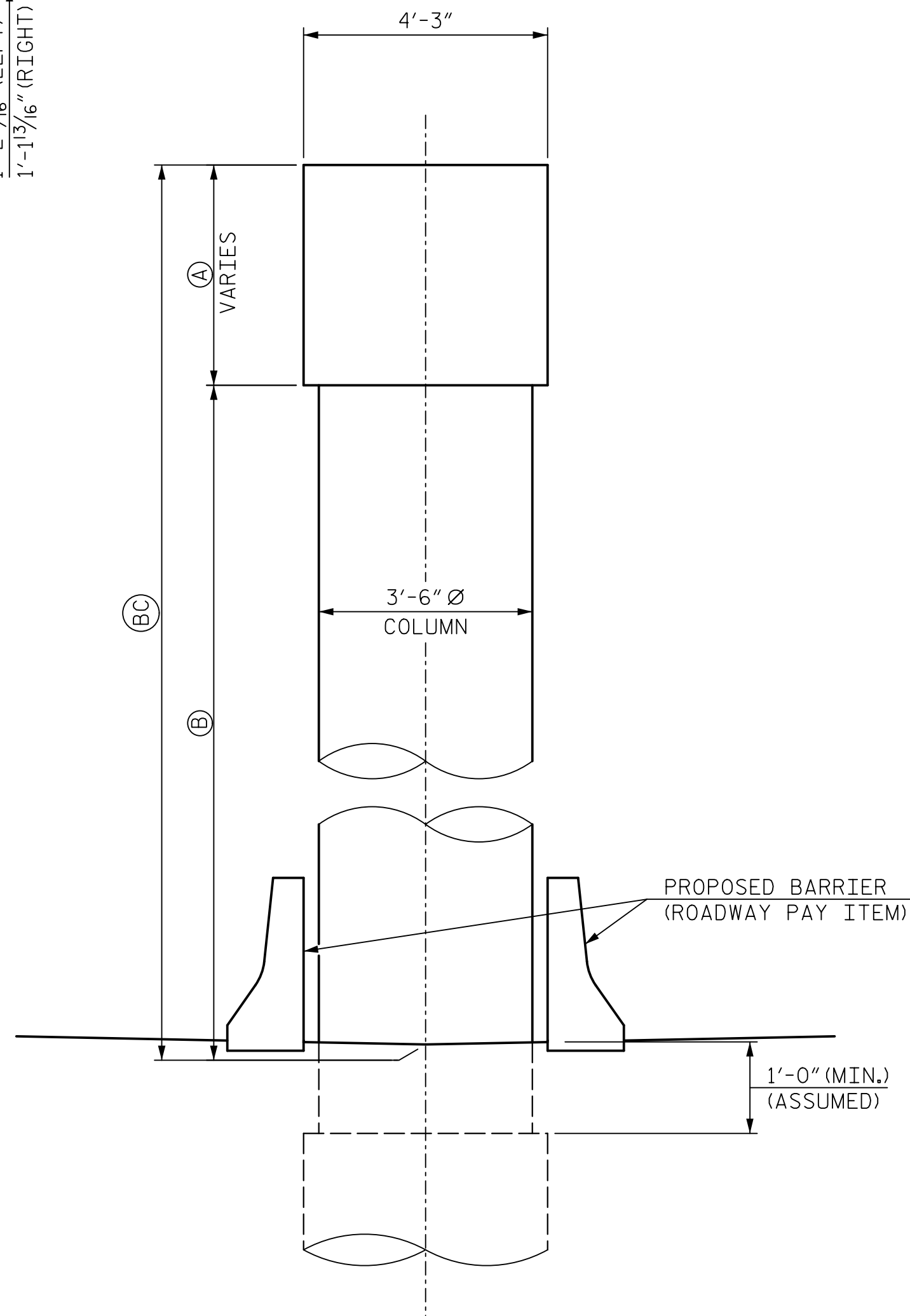
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S2-11
1			3			TOTAL SHEETS
2			4			12

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DECK OVERHANG TYPICAL SECTION

- (BC) LIMITS OF BRIDGE COATING
- (AT) LIMITS OF FORM LINED ARCHITECTURAL TREATMENT

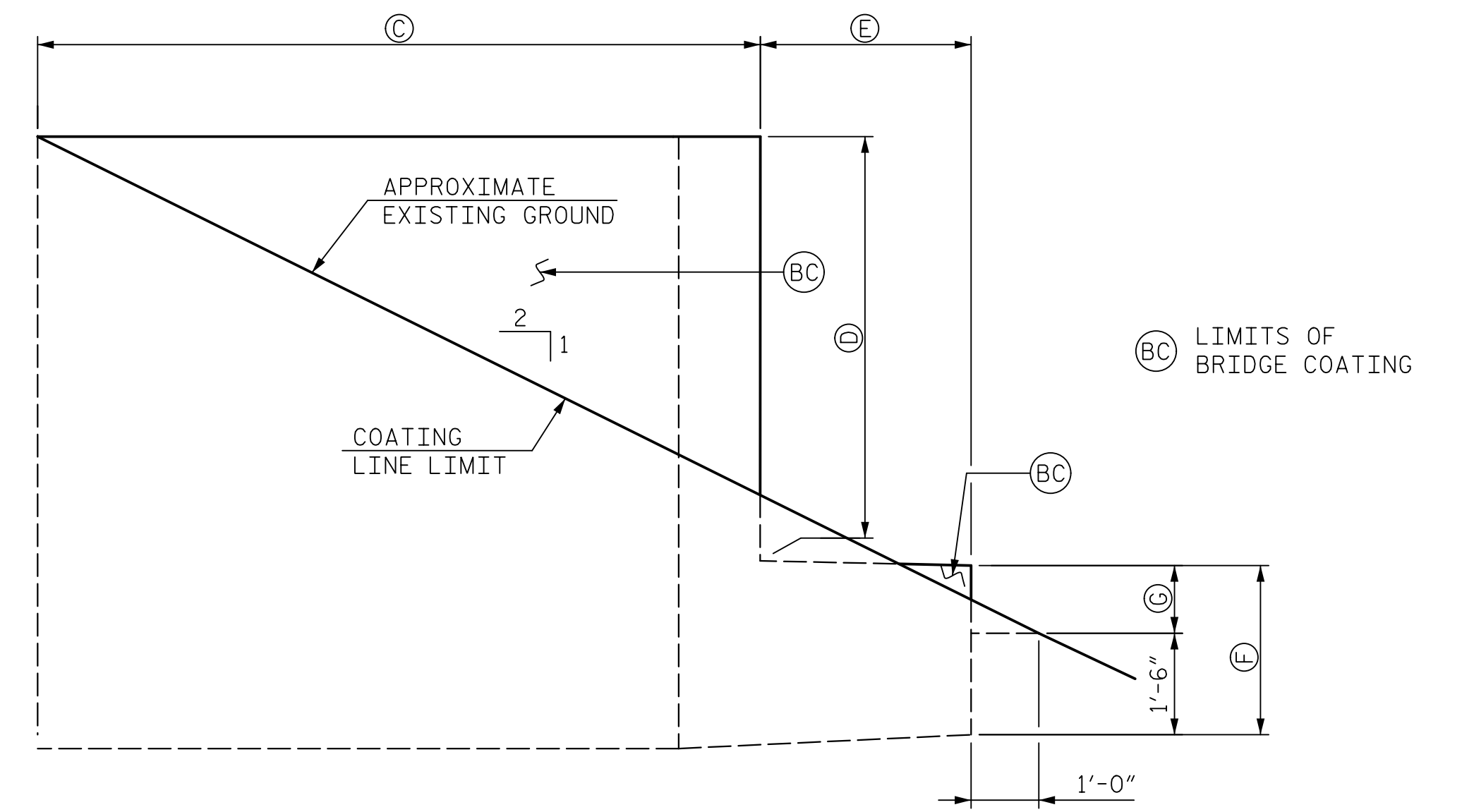


BENT 1 END ELEVATION

- (BC) LIMITS OF BRIDGE COATING

LOCATION	(A)		(B)							
	MIN.	MAX.	COL. 1	COL. 2	COL. 3	COL. 4	COL. 5	COL. 6	COL. 7	COL. 8
BENT 1	5'-6"	5'-10"	21'-4"	20'-10"	20'-5"	19'-11"	19'-7"	19'-1"	18'-7"	18'-2"

BENT 1 DIMENSION TABLE



TYPICAL END BENT WINGWALL ELEVATION

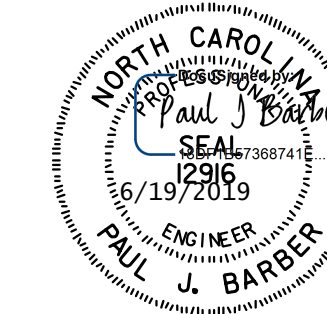
NOTE: END BENT 2, WINGWALL (W1) SHOWN - OTHERS SIMILAR.

END BENT DIMENSION TABLE					
LOCATION	(C)	(D)	(E)	(F)	(G)
END BENT 1 LEFT WINGWALL (W1)	19'-0"	7'-8"	4'-10 3/8"	3'-5"	1'-11"
END BENT 1 RIGHT WINGWALL (W2)	16'-0"	8'-6"	4'-10 3/8"	3'-3"	1'-9"
END BENT 2 LEFT WINGWALL (W1)	19'-0"	7'-8"	4'-4 1/16"	3'-1"	1'-7"
END BENT 2 RIGHT WINGWALL (W2)	16'-0"	8'-3"	4'-4 1/16"	3'-2"	1'-8"

COATING QUANTITIES TABLE	
LOCATION	SQ. FT.
SUPERSTRUCTURE	1,630
END BENT 1	546
BENT 1	3,657
END BENT 2	470
TOTAL:	6,303 SQ. FT.

NOTE: QUANTITIES SHOWN ARE BASED UPON DIMENSIONS PROVIDED ON DRAWINGS.

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POC 332+10.52 -Y10-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

COATING DETAILS

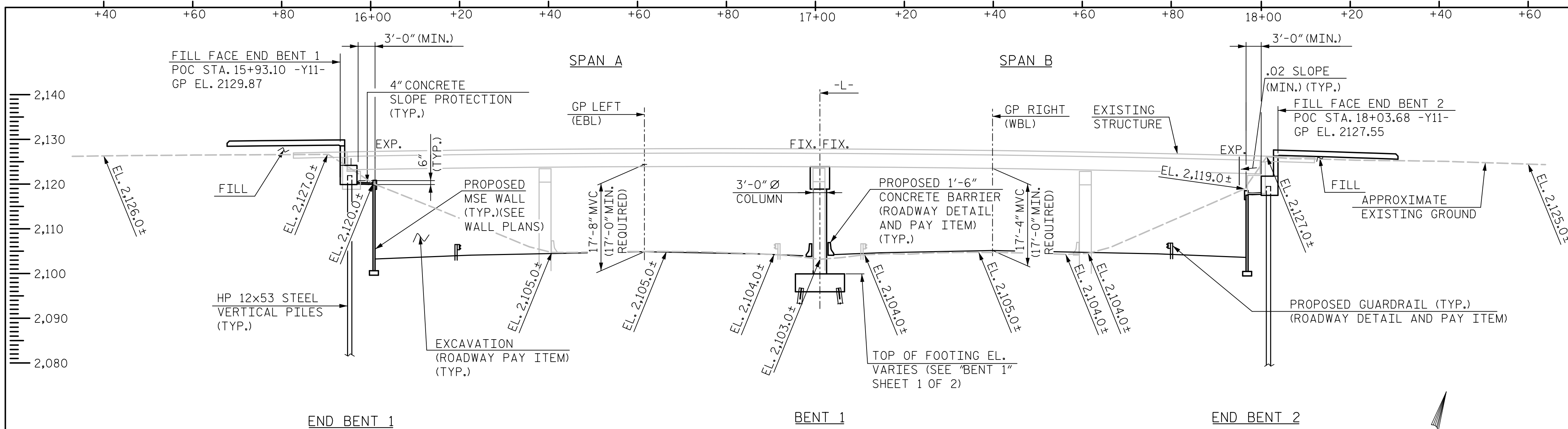
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DRAWN BY: M. WRIGHT DATE: 6/19
 CHECKED BY: N. HART DATE: 6/19
 DESIGN ENGINEER OF RECORD: P. BARBER DATE: 6/19

DWG. NO. 12

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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S2-12
1			3			TOTAL SHEETS
2			4			12



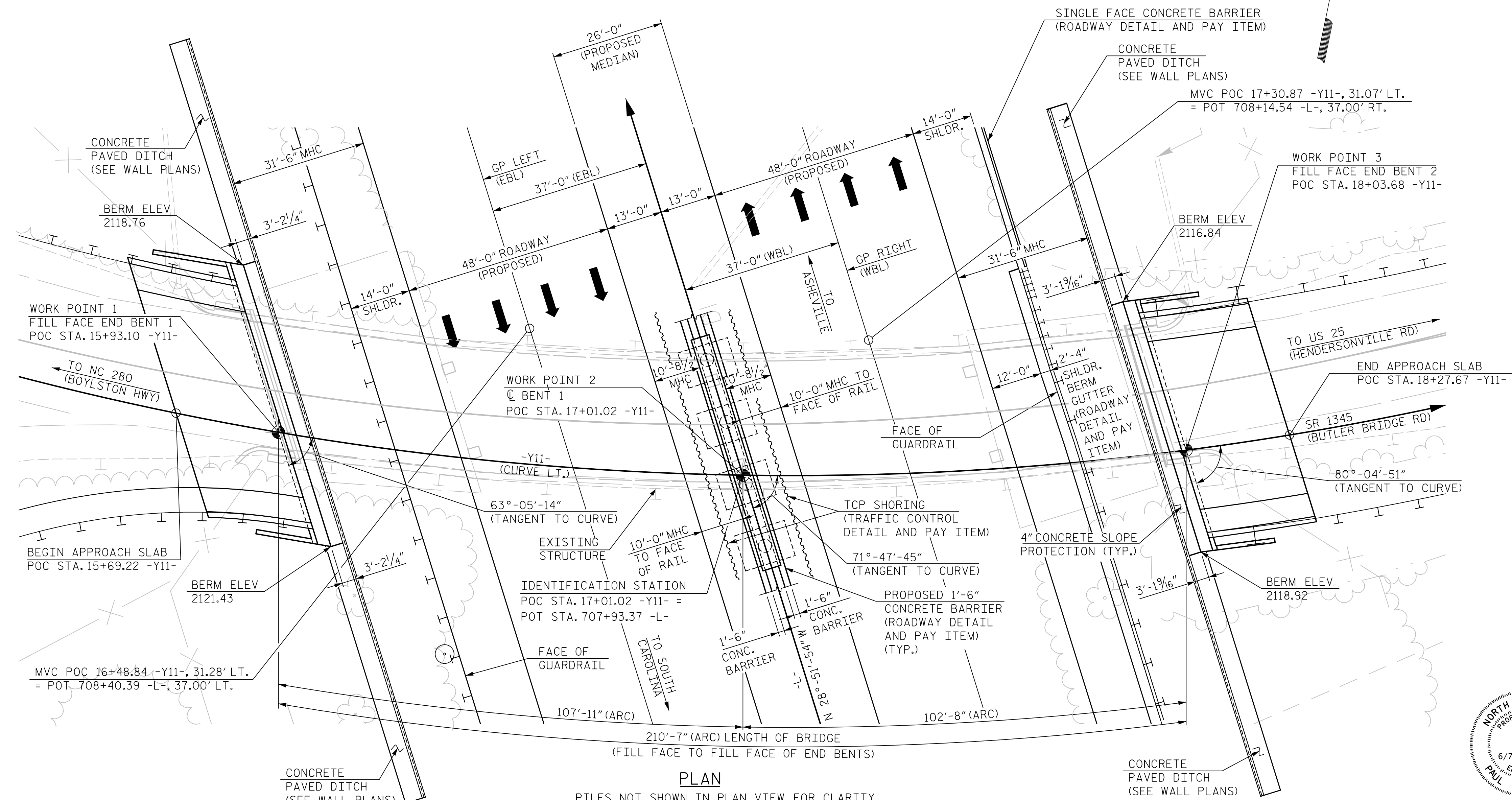
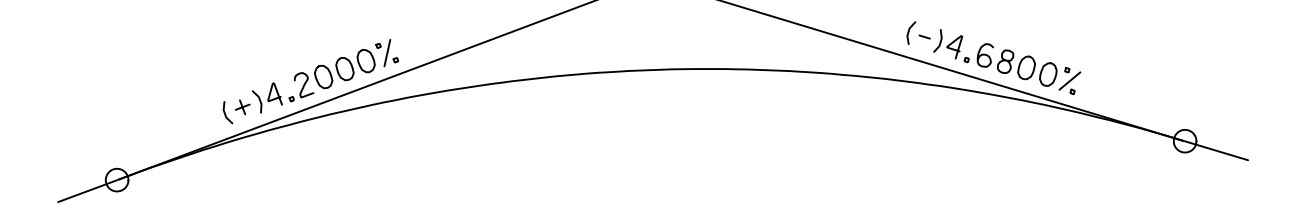
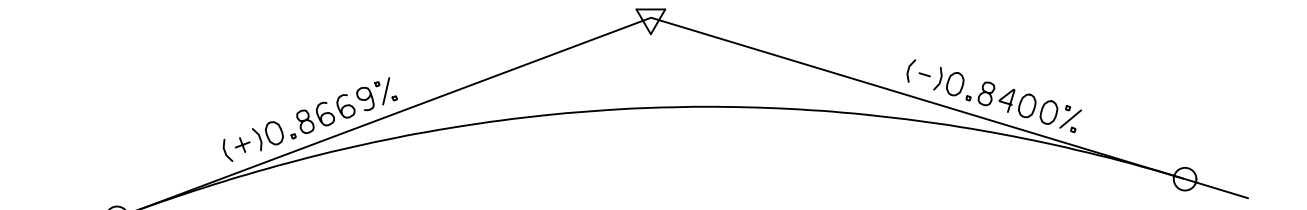
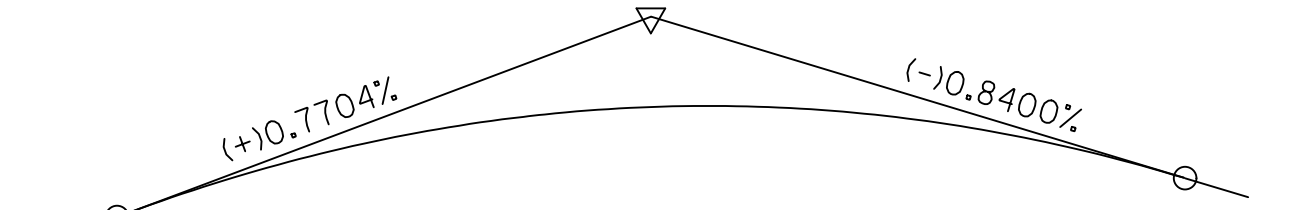
NOTES:
MVC = MIN. VERTICAL CLEARANCE
MHC = MIN. HORIZONTAL CLEARANCE

FOR GENERAL NOTES, SEE "LOCATION SKETCH, GENERAL NOTES & TOTAL BILL OF MATERIAL" SHEET.

HORIZONTAL CURVE DATA -Y11-

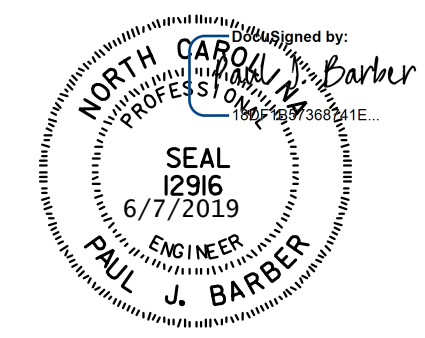
PI STA. = 16+13.57
Δ = 53°-55'-38" (LT)
D = 8°-04'-11"
L = 668.26'
T = 361.19'
R = 710.00'

PI STA. = 711+00.00
ELEV = 2,107.54
V.C. = 600'



PROJECT NO. I-4400C
HENDERSON COUNTY
STATION: POC 17+01.02 -Y11- = STA. 707+93.37 -L-

SHEET 1 OF 4 REPLACES BRIDGE NO. 232



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DRAWN BY	M. WRIGHT	DATE	3/19
CHECKED BY	D. HAWKINS	DATE	3/19
DESIGN ENGINEER OF RECORD	P. BARBER	DATE	5/19

DWG. NO. 1

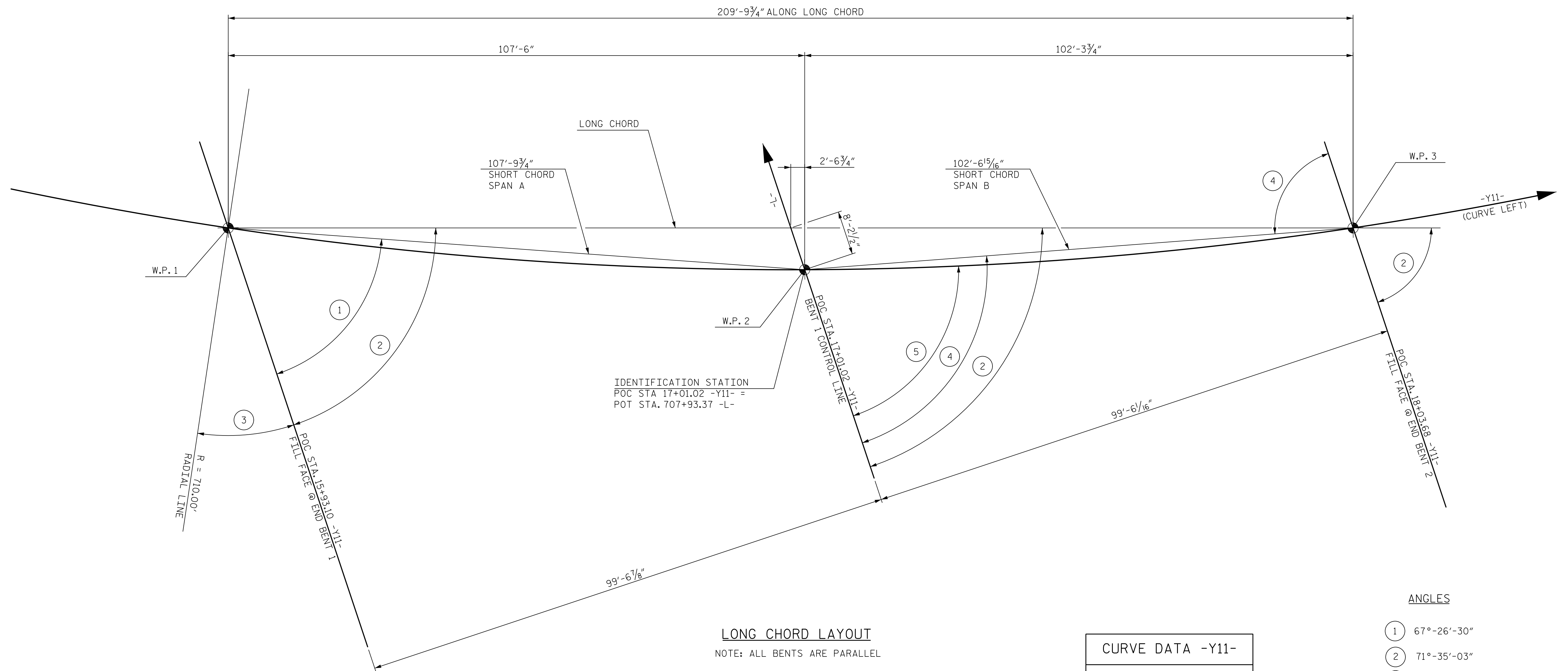
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE OVER I-26
ON SR 1345
(BUTLER BRIDGE ROAD)
BETWEEN NC 280 AND US 25

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

TOTAL SHEETS: 41

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LONG CHORD LAYOUT
NOTE: ALL BENTS ARE PARALLEL

CURVE DATA -Y11-	
PI STA.	= 16+13.57
Δ	= 53°-55'-38" (LT)
D	= 8°-04'-11"
L	= 668.26'
T	= 361.19'
R	= 710.00'

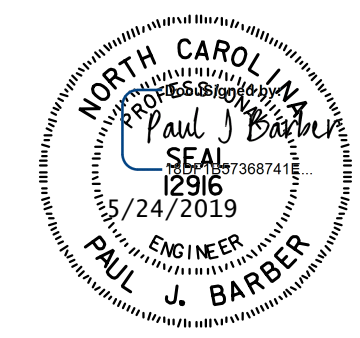
ANGLES

- ① 67°-26'-30"
- ② 71°-35'-03"
- ③ 26°-54'-46"
- ④ 75°-56'-18"
- ⑤ 71°-47'-45" TANGENT TO CURVE

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POC 17+01.02 -Y11-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 LONG CHORD LAYOUT

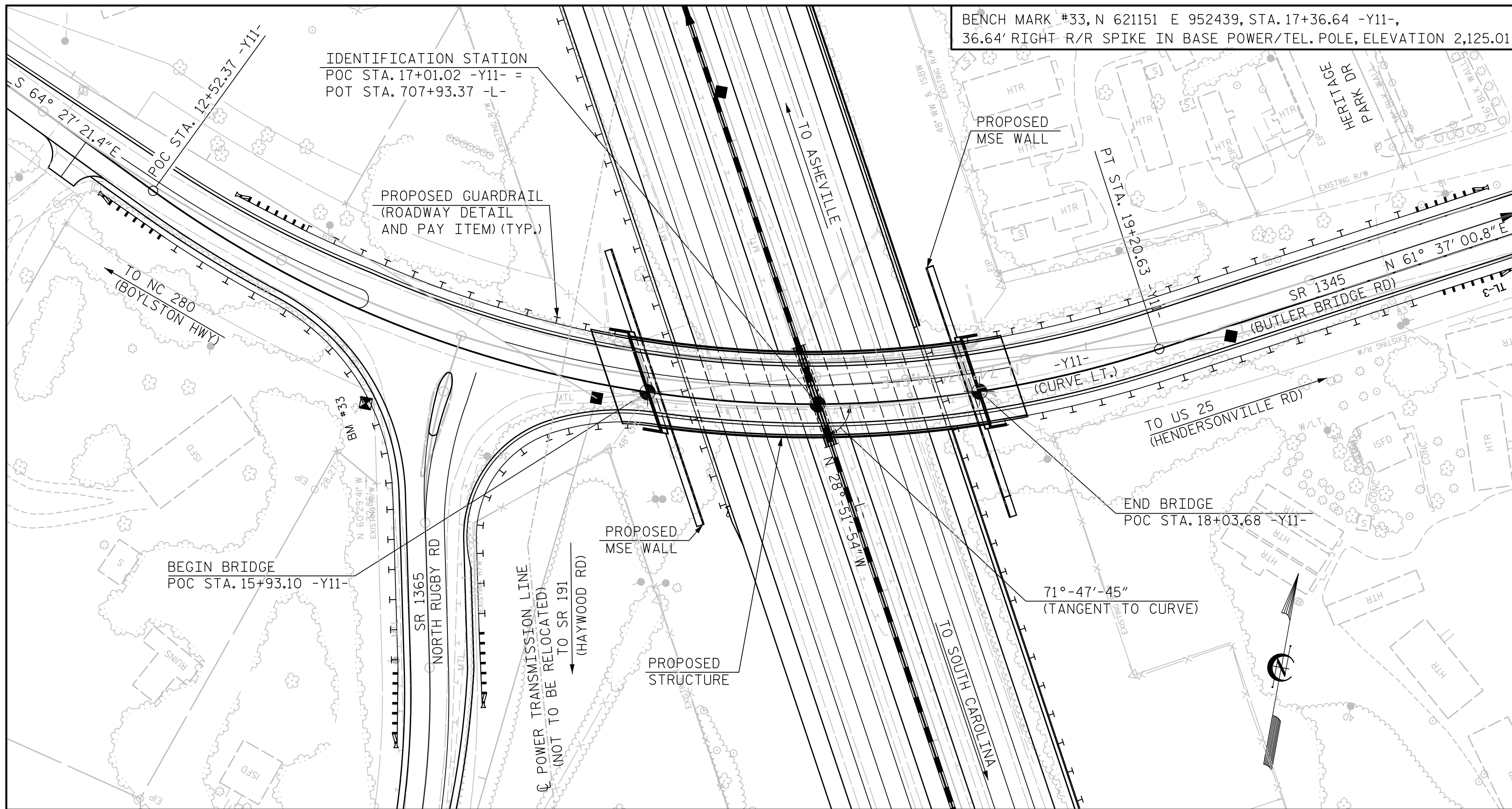


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DRAWN BY	M. WRIGHT	DATE	10/18
CHECKED BY	N. HART	DATE	10/18
DESIGN ENGINEER OF RECORD	P. BARBER	DATE	5/19

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

TOTAL SHEETS
41



LOCATION SKETCH

NOTE: FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

GENERAL NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

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.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE SAMPLE BARS SHOULD COME FROM STEEL ACTUALLY USED IN THE PROJECT AND THE SAMPLE BARS SHOULD BE REPLACED BY SPLICED BARS AS SPECIFIED IN THE SAMPLE BAR REPLACEMENT CHART. PAYMENT FOR THE SAMPLE BARS AND REPLACEMENT REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.

REMOVABLE FORMS MAY BE USED IN LEIU 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.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT POC STA. 17+01.02 -Y11-".

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

FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.

THE EXISTING STRUCTURE CONSISTING OF 4 SPANS AT 43'-8", 60'-3", 60'-3" AND 41'-6" WITH REINFORCED CONCRETE DECK; ON SPANS 1 AND 4, 2 LINES OF 36" STEEL I-BEAMS AND 2 LINES OF 33" STEEL I-BEAMS AND ON SPANS 2 AND 3 4 LINES OF 36" STEEL I-BEAMS WITH A CLEAR ROADWAY WIDTH OF 28'-0"; ON REINFORCED CONCRETE END BENTS WITH STEEL PILES AND ON REINFORCED CONCRETE INTERIOR BENT ON DRILLED PIERS LOCATED ON THE PROPOSED STRUCTURE SITE SHALL BE REMOVED.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

WORK SHALL NOT BE STARTED ON THIS BRIDGE UNTIL ROADWAY SECTION HAS BEEN EXCAVATED.

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

FOR ARCHITECTURAL CONCRETE SURFACE TREATMENT, SEE SPECIAL PROVISIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

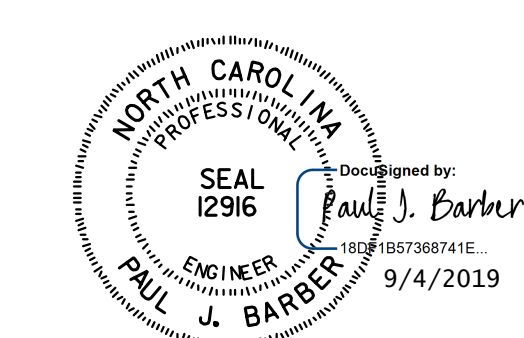
FOR APPLICATION OF BRIDGE COATING, SEE SPECIAL PROVISIONS.

FOR ANODIZED THREE BAR METAL RAIL, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL									
	REMOVAL OF EXISTING STRUCTURE AT POC STA. 17+01.02 -Y11-	ASBESTOS ASSESSMENT	FOUNDATION EXCAVATION FOR BENT 1 AT POC STATION 17+01.02 -Y11-	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPR. SLABS, POC STATION 17+01.02 -Y11-	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL
	LUMP SUM	LUMP SUM	LUMP SUM	SQ. FEET	SQ. FEET	CU. YARDS	LUMP SUM	LBS.	LBS.
SUPERSTRUCTURE	---	---	---	11,227	9,451	---	LUMP SUM	---	---
END BENT 1	---	---	---	---	---	60.6	---	10,081	---
BENT 1	---	---	---	---	---	123.3	---	21,511	1,636
END BENT 2	---	---	---	---	---	53.9	---	8,693	---
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	11,227	9,451	237.8	LUMP SUM	40,285	1,636

TOTAL BILL OF MATERIAL												
	54" PRESTRESSED CONCRETE GIRDERS		PILE DRIVING EQUIPMENT SETUP FOR HP 12x53 STEEL PILES	HP 12x53 STEEL PILES		ANODIZED THREE BAR METAL RAIL	4" SLOPE PROTECTION	ELASTOMERIC BEARINGS	EXPANSION JOINT SEALS	ELECTRICAL CONDUIT SYSTEM FOR SIGNALS AT STA. 17+01.02 -Y11-	ARCHITECTURAL CONCRETE SURFACE TREATMENT	APPLICATION OF BRIDGE COATING
	NO.	L.F.	EACH	NO.	L.F.	L.F.	SQ. YD.	LUMP SUM	LUMP SUM	LUMP SUM	SQ. FEET	LUMP SUM
SUPERSTRUCTURE	12	1,235.6	---	---	---	401.17	---	LUMP SUM	LUMP SUM	LUMP SUM	877.3	LUMP SUM
END BENT 1	---	---	10	10	900	---	22	---	---	---	520.3	LUMP SUM
BENT 1	---	---	24	24	1,560	---	---	---	---	---	629.7	LUMP SUM
END BENT 2	---	---	10	10	700	---	19	---	---	---	464.8	LUMP SUM
TOTAL	12	1,235.6	44	44	3,160	401.17	41	LUMP SUM	LUMP SUM	LUMP SUM	2,492.1	LUMP SUM

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 NC License No. C-1554
 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DESIGNED BY: M. WRIGHT DATE: 3/19
 CHECKED BY: N. HART DATE: 3/19
 DESIGN ENGINEER OF RECORD: P. BARBER DATE: 5/19

DWG. NO. 4

NOTE:
 SAMPLE BAR REPLACEMENT LENGTHS BASED ON 30" (SAMPLE LENGTH) PLUS TWO SPLICE LENGTHS AND fy = 60ksi.

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

PROJECT NO. I-4400C
HENDERSON COUNTY
 STATION: POC 17+01.02 -Y11-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 LOCATION SKETCH,
 GENERAL NOTES &
 TOTAL BILL OF MATERIAL

REVISIONS						SHEET NO. S3-4
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 41
2			4			

LOAD FACTORS:

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

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVE-LOAD FACTORS (γ_{LL})	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)	LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.00	--	1.75	0.74	1.53	A	ER	52.4	1.01	1.20	A	I	84.2	0.80	0.74	1.00	A	I	52.4	--	
	HL-93 (OPERATING)	N/A	--	1.60	--	1.35	0.74	1.98	A	ER	52.4	1.01	1.60	A	I	84.2	N/A	--	--	--	--	--	--	
	HS-20 (INVENTORY)	36.000	②	1.41	50.8	1.75	0.75	2.15	B	I	49.6	1.01	1.63	A	I	84.2	0.80	0.74	1.41	A	I	52.4	--	
	HS-20 (OPERATING)	36.000	--	2.16	77.8	1.35	0.75	2.79	B	I	49.6	1.01	2.16	A	I	84.2	N/A	--	--	--	--	--	--	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500	--	3.37	45.5	1.40	0.74	6.38	B	ER	49.6	1.01	5.32	A	I	84.2	0.80	0.74	3.37	A	I	52.4	--
		SNGARBS2	20.000	--	2.43	48.6	1.40	0.75	4.62	B	I	49.6	1.01	3.68	A	I	84.2	0.80	0.74	2.43	A	I	52.4	--
		SNAGRIS2	22.000	--	2.27	49.9	1.40	0.74	4.32	B	ER	49.6	1.01	3.39	A	I	84.2	0.80	0.74	2.27	A	I	52.4	--
		SNCOTTS3	27.250	--	1.68	45.8	1.40	0.75	3.17	B	I	49.6	1.01	2.57	A	I	84.2	0.80	0.74	1.68	A	I	52.4	--
		SNAGGRS4	34.925	--	1.37	47.8	1.40	0.75	2.60	B	I	49.6	1.01	2.07	A	I	84.2	0.80	0.74	1.37	A	I	52.4	--
		SNS5A	35.550	--	1.34	47.6	1.40	0.75	2.55	B	I	49.6	1.01	2.08	A	I	84.2	0.80	0.74	1.34	A	I	52.4	--
		SNS6A	39.950	--	1.22	48.7	1.40	0.74	2.31	B	ER	49.6	1.01	1.87	A	I	84.2	0.80	0.74	1.22	A	I	52.4	--
		SNS7B	42.000	--	1.16	48.7	1.40	0.75	2.20	B	I	49.6	1.01	1.82	A	I	84.2	0.80	0.74	1.16	A	I	52.4	--
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000	--	1.48	48.8	1.40	0.75	2.82	B	I	49.6	1.01	2.27	A	I	84.2	0.80	0.74	1.48	A	I	52.4	--
		TNT4A	33.075	--	1.48	49.0	1.40	0.75	2.82	B	I	49.6	1.01	2.22	A	I	84.2	0.80	0.74	1.48	A	I	52.4	--
		TNT6A	41.600	--	1.20	49.9	1.40	0.75	2.29	B	I	49.6	1.01	1.92	A	I	84.2	0.80	0.74	1.20	A	I	52.4	--
		TNT7A	42.000	--	1.20	50.4	1.40	0.75	2.29	B	I	49.6	1.01	1.88	A	I	84.2	0.80	0.74	1.20	A	I	52.4	--
		TNT7B	42.000	--	1.23	51.7	1.40	0.75	2.34	B	I	49.6	1.01	1.78	A	I	84.2	0.80	0.74	1.23	A	I	52.4	--
		TNAGRIT4	43.000	--	1.18	50.7	1.40	0.75	2.25	B	I	49.6	1.01	1.73	A	I	84.2	0.80	0.74	1.18	A	I	52.4	--
TNAGT5A	45.000	--	1.12	50.4	1.40	0.75	2.13	B	I	49.6	1.01	1.70	A	I	84.2	0.80	0.74	1.12	A	I	52.4	--		
TNAGT5B	45.000	③	1.11	50.0	1.40	0.75	2.11	B	I	49.6	1.01	1.64	A	I	84.2	0.80	0.74	1.11	A	I	52.4	--		

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.

③ CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

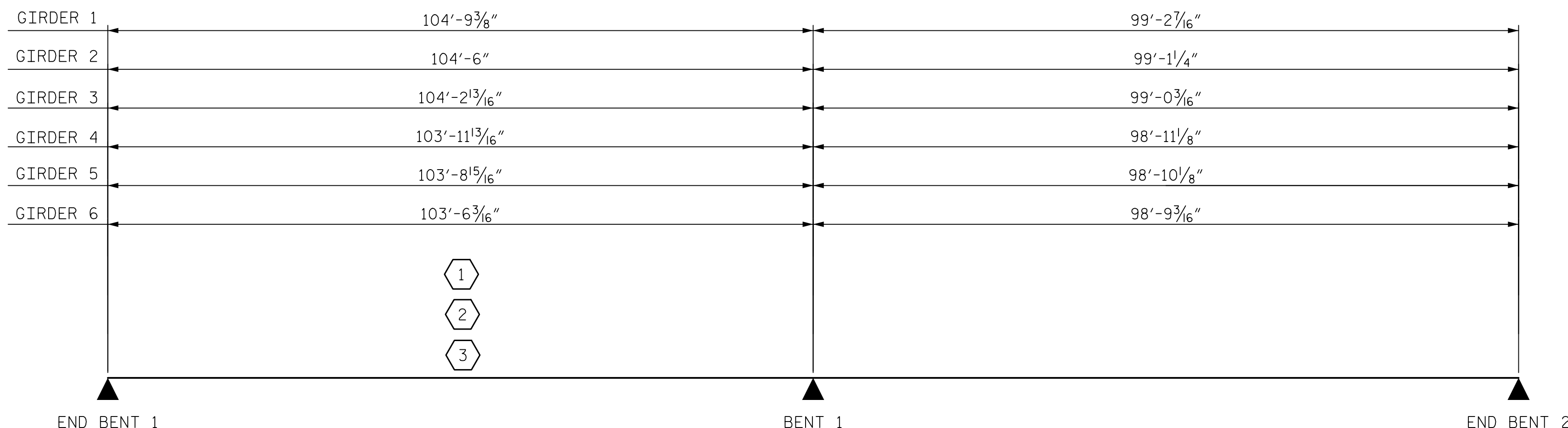
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

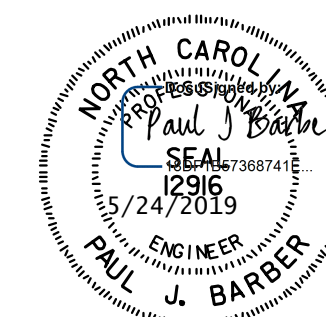
** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



PROJECT NO. I-4400C
HENDERSON COUNTY
STATION: POC 17+01.02 -Y11-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
PRESTRESSED
CONCRETE GIRDERS
(NON-INTERSTATE TRAFFIC)

ASSEMBLED BY : M. WRIGHT	DATE : 3/19
CHECKED BY : M. BARRAGAN	DATE : 3/19
DRAWN BY : MAA	1/08
CHECKED BY : GM/DI	2/08
REV. 11/12/08RR	MAA/GM
REV. 10/1/11	MAA/GM
REV. 12/17	MAA/THC

LRFR SUMMARY
NOTE: DIMENSIONS ARE FROM C BRG. TO C BRG.

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UNLESS ALL SIGNATURES COMPLETED

HNTB	HNTB NORTH CAROLINA, P.C.	
	NC License No. C-1554 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609	
DRAWN BY	D. WITHERSPOON	DATE 3/19
CHECKED BY	M. BARRAGAN	DATE 3/19
DESIGN ENGINEER OF RECORD	P. BARBER	DATE 5/19
DWG. NO. 5		

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S3-5
1			3			TOTAL SHEETS
2			4			41

NOTES

ALL HORIZONTAL DIMENSIONS SHOWN NORMAL TO \odot SURVEY UNLESS NOTED OTHERWISE.

PROVIDE 1 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF 'A' BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (CHCM) AT 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF 'A' BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.

LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.

PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

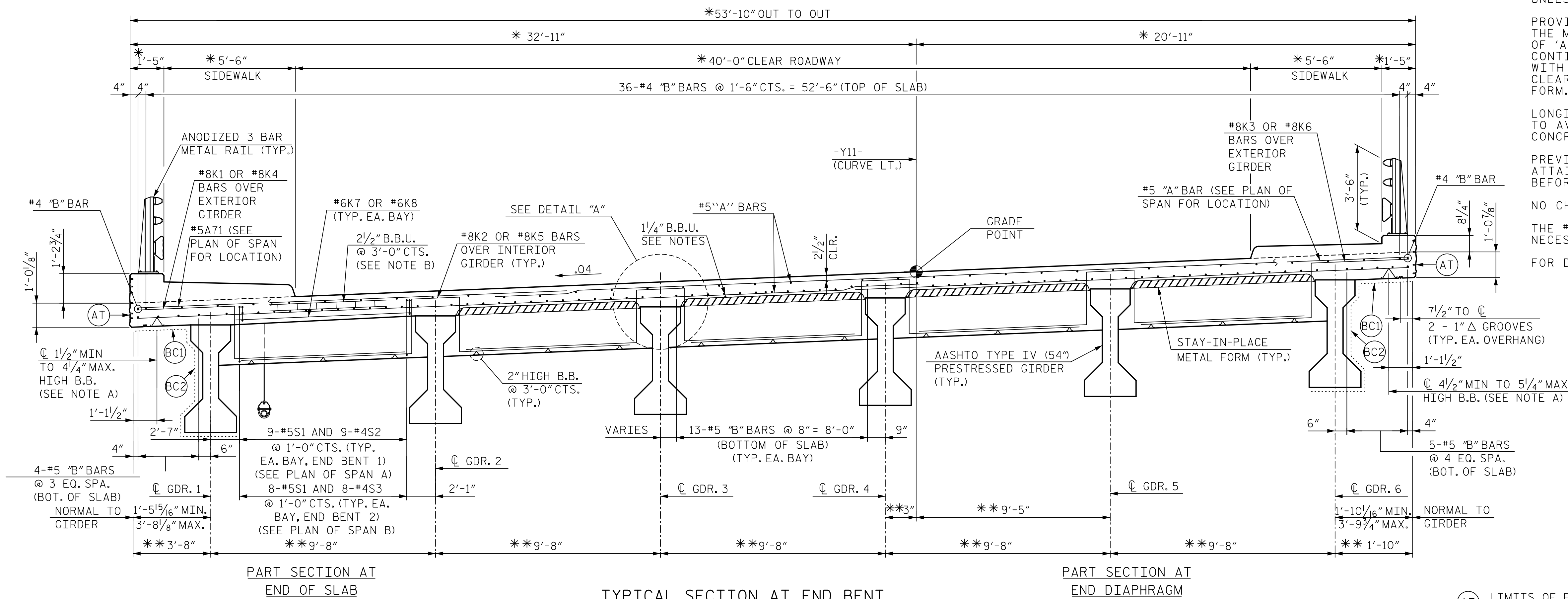
NO CHAMFER IS REQUIRED ON CORNERS OF GIRDER BUILDUPS.

THE #5G1 BAR AND #5G2 BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY TO CLEAR REINFORCING STEEL AND STIRRUPS.

FOR DETAIL A, SEE "TYPICAL SECTION" SHEET 2 OF 2.

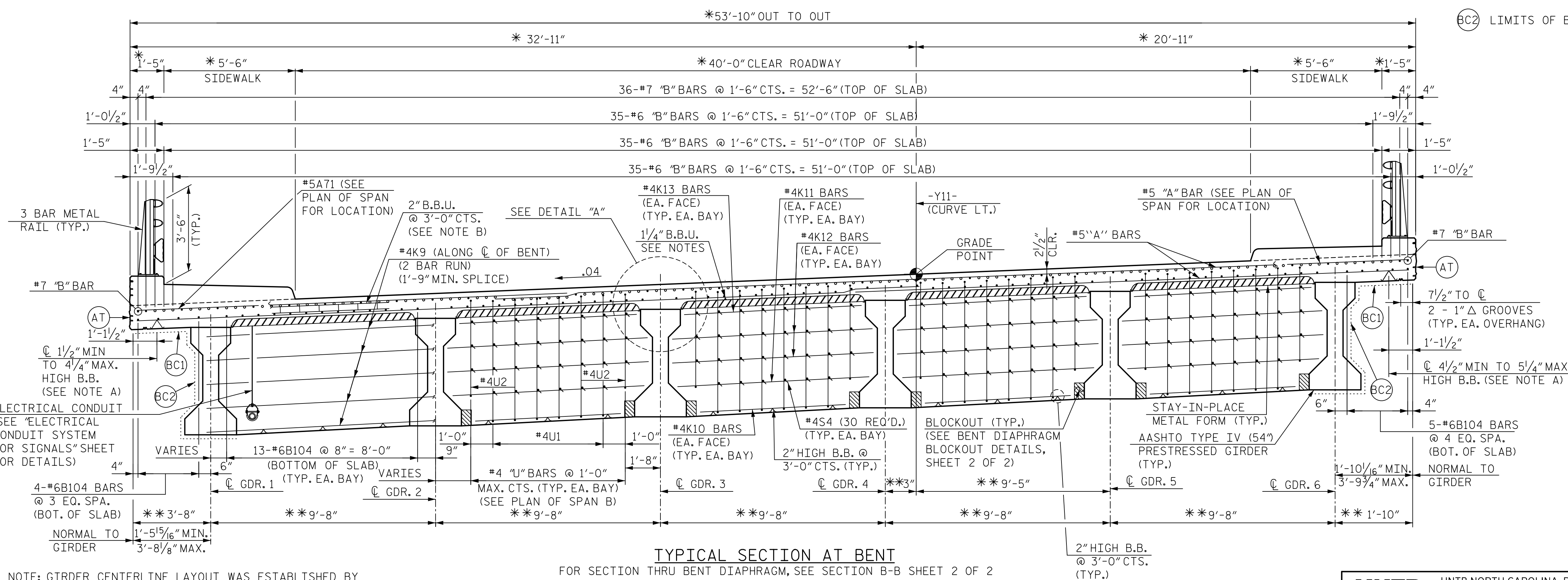
NOTE A: THE HEIGHT OF THE BEAM BOLSTER VARIES ALONG THE LENGTH OF THE SPAN DUE TO CAMBER AND THE VARYING HEIGHT REQUIRED FOR THE BUILDUP. THE CONTRACTOR SHALL HAVE SUFFICIENT SIZES TO PROPERLY SUPPORT THE REINFORCING STEEL.

NOTE B: TO MAINTAIN PROPER LOCATION OF "A" BARS IN TOP OF SLAB, BBU DEPTH MUST VARY IN UNIT AS THE MAXIMUM SIZE OF THE "B" BARS IN THE TOP OF SLAB VARIES. A 2 1/2" BBU SHALL BE USED WHERE ONLY #4 AND #5 "B" BARS ARE PRESENT. WHERE #6 "B" AND #7 "B" BARS ARE PRESENT, A 2" BBU SHALL BE USED.



TYPICAL SECTION AT END BENT
FOR SECTION THRU END BENT DIAPHRAGM, SEE SECTION A-A, SHEET 2 OF 2

- (AT) LIMITS OF FORM LINED ARCHITECTURAL TREATMENT
- (BC1) LIMITS OF BRIDGE COATING (LIGHT GRAY)
- (BC2) LIMITS OF BRIDGE COATING (DARK GRAY)



TYPICAL SECTION AT BENT
FOR SECTION THRU BENT DIAPHRAGM, SEE SECTION B-B SHEET 2 OF 2

- * RADIAL DIMENSIONS
- ** RADIAL TO CONCENTRIC ARCS AT CONTROL LINES

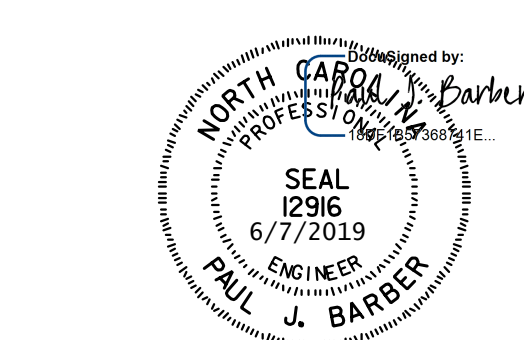
NOTE: GIRDER CENTERLINE LAYOUT WAS ESTABLISHED BY CHORDS THROUGH INTERSECTIONS OF CONCENTRIC ARCS OFFSET FROM -Y11- AND BENT CONTROL LINES/FILL FACE OF END BENTS.

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HNTB HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DESIGNED BY: M. WRIGHT DATE: 1/19
CHECKED BY: N. HART DATE: 3/19
DESIGN ENGINEER OF RECORD: P. BARBER DATE: 5/19

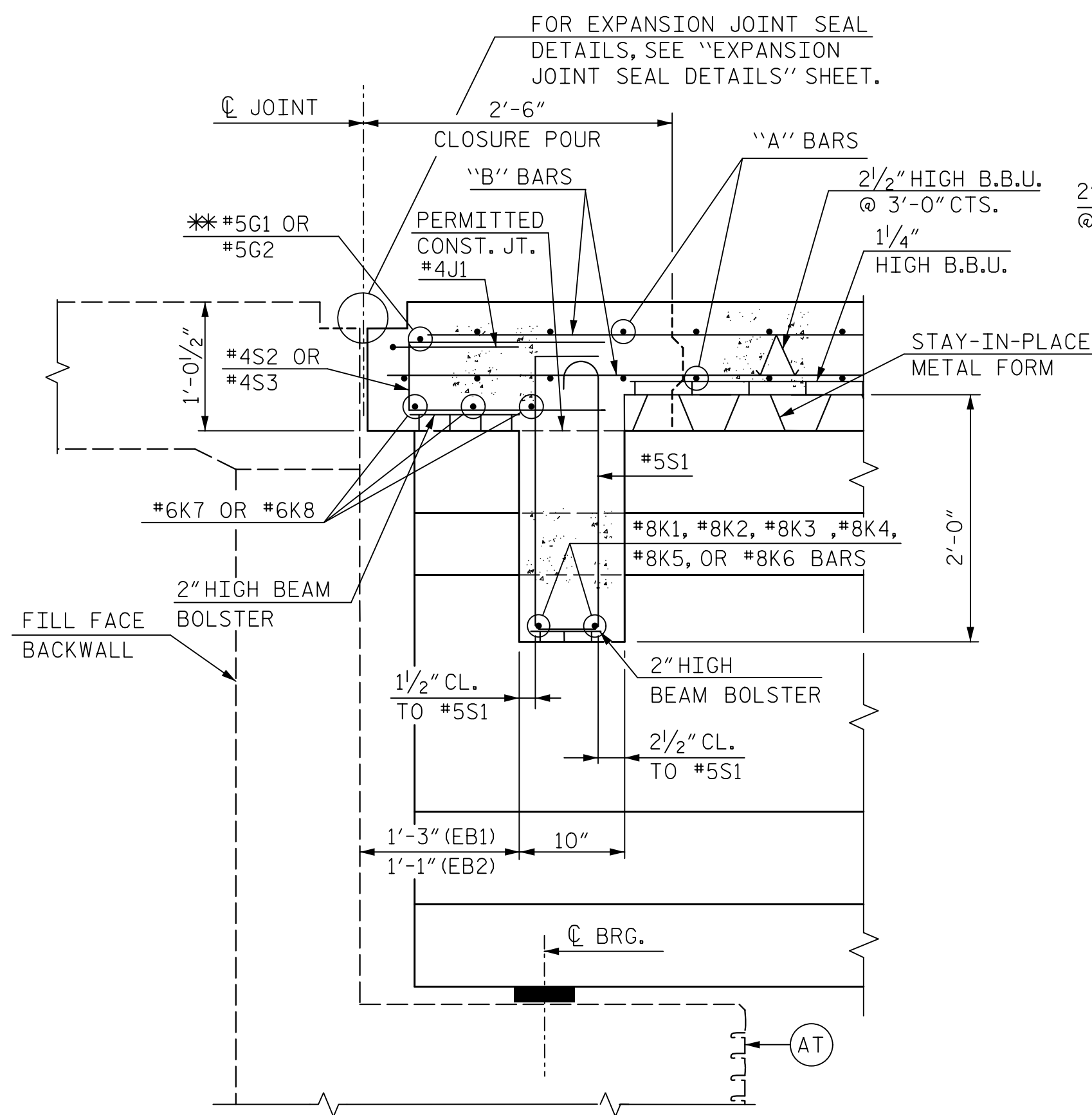
DWG. NO. 6



PROJECT NO. I-4400C
HENDERSON COUNTY
STATION: POC 17+01.02 -Y11-

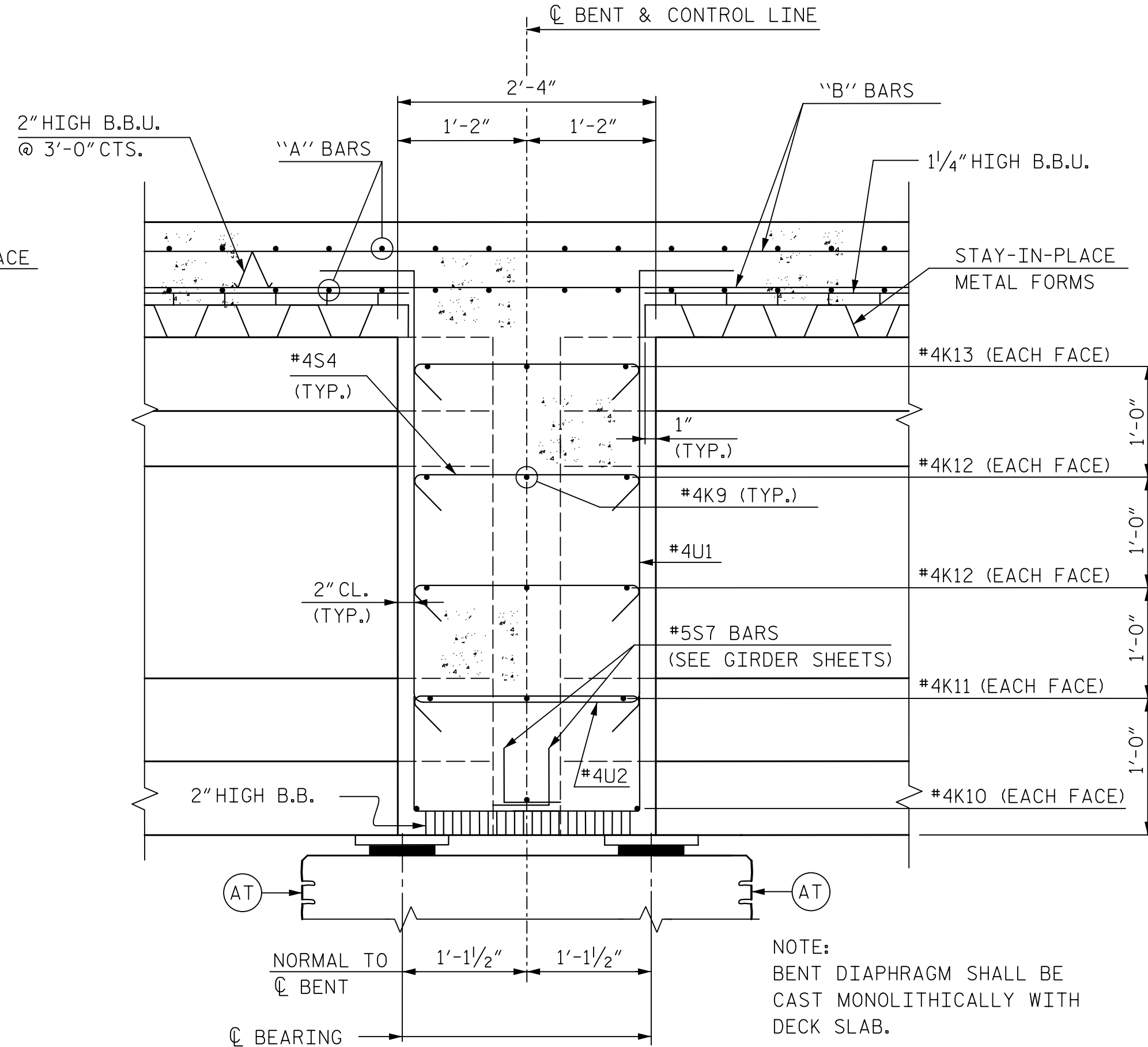
SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUPERSTRUCTURE TYPICAL SECTION					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					SHEET NO. S3-6 TOTAL SHEETS 41



SECTION A-A

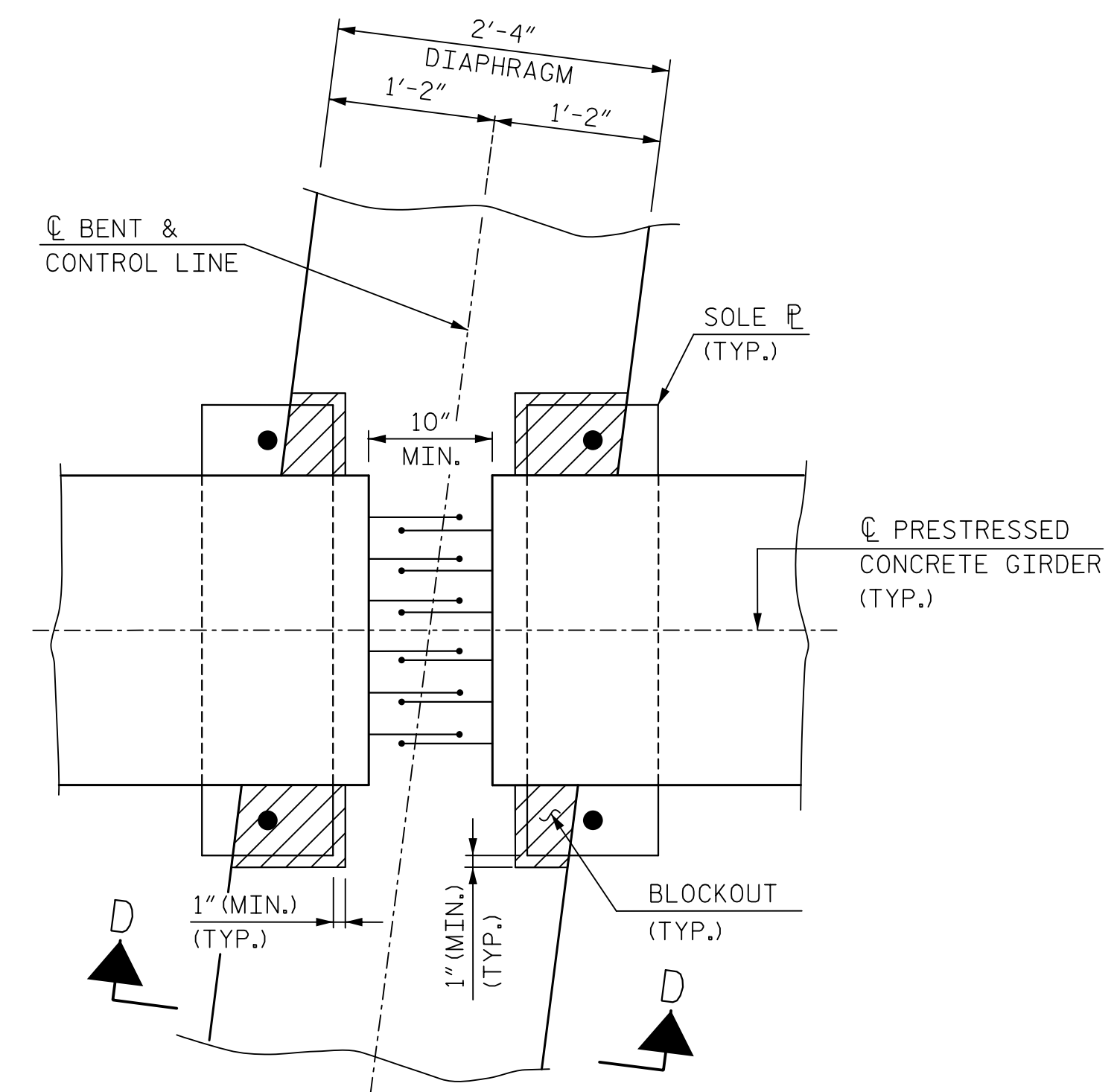
SECTION NORMAL THRU END BENT 1 DIAPHRAGM, END BENT 2 SIMILAR
 ** #5 "C" BAR MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR REINFORCING STEEL AND STIRRUPS.



SECTION B-B

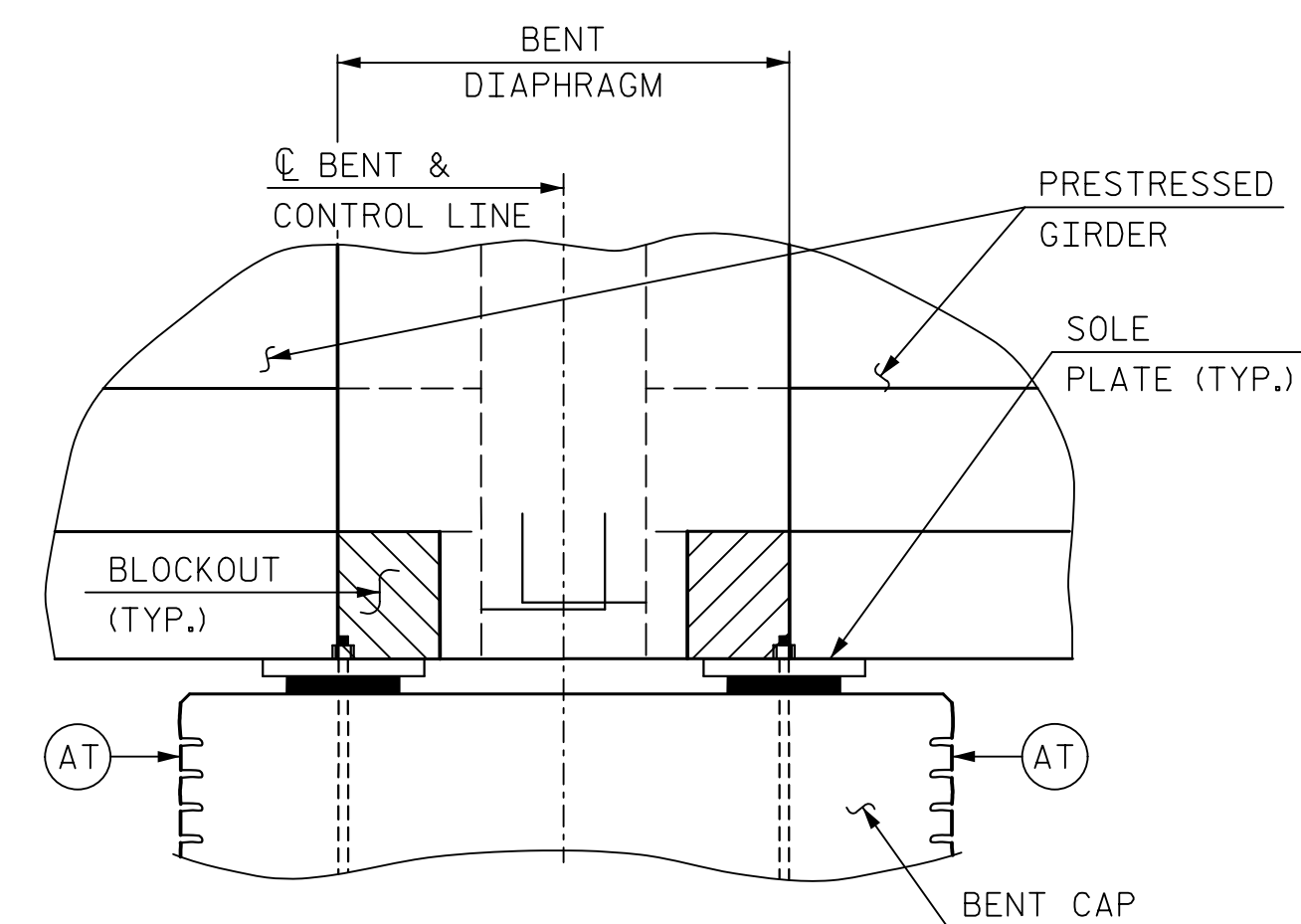
SECTION NORMAL THRU BENT 1 DIAPHRAGM

NOTE: BENT DIAPHRAGM SHALL BE CAST MONOLITHICALLY WITH DECK SLAB.



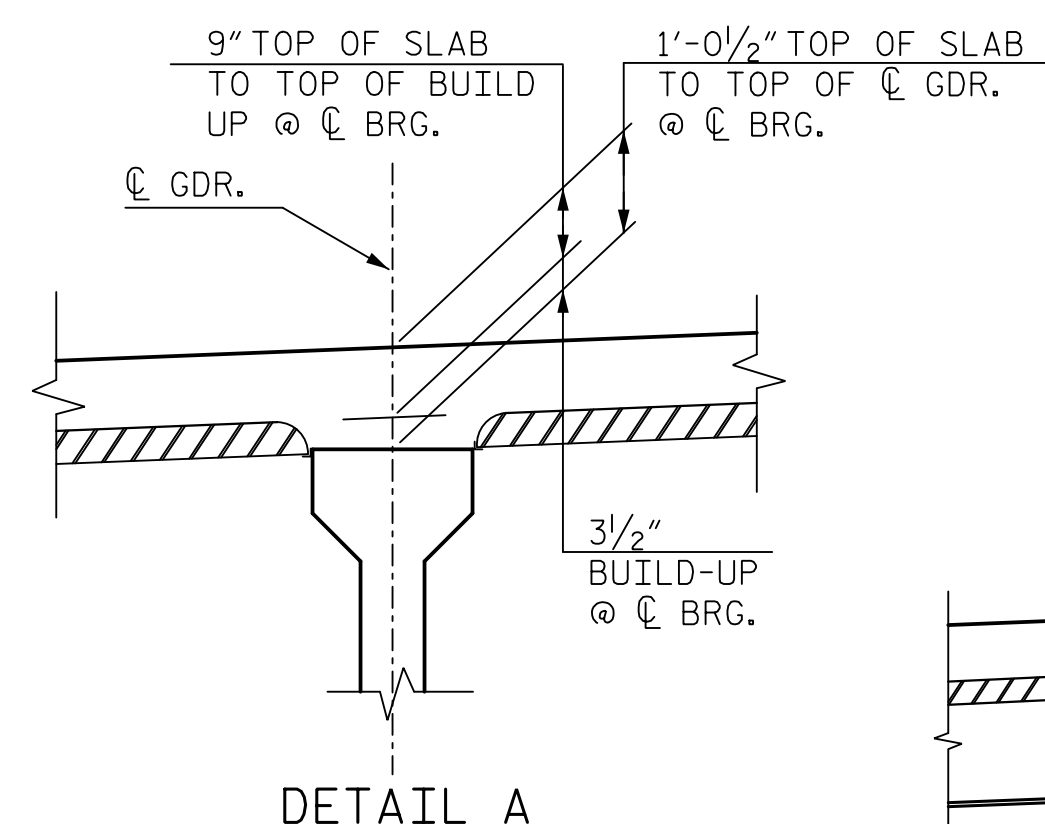
PLAN VIEW
(AT INTERIOR BENTS)

BENT DIAPHRAGM BLOCKOUT DETAILS

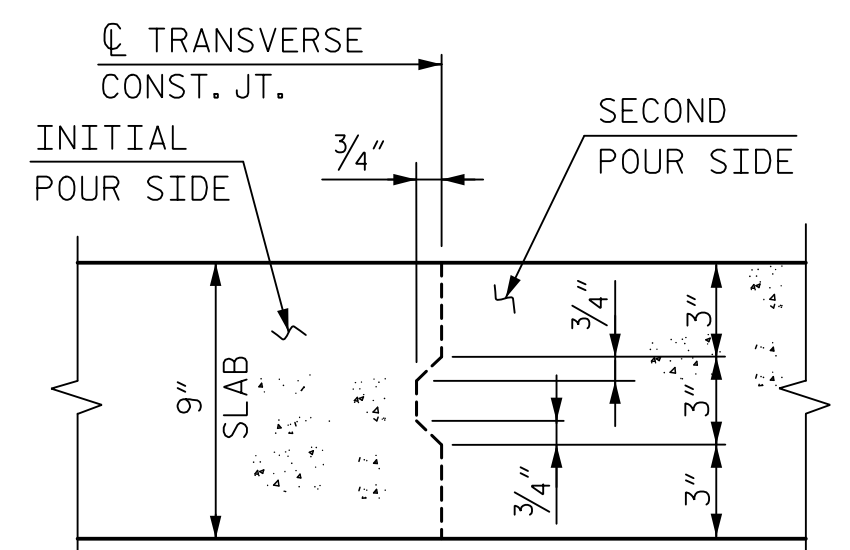


SECTION D-D

(AT) LIMITS OF FORM LINED ARCHITECTURAL TREATMENT

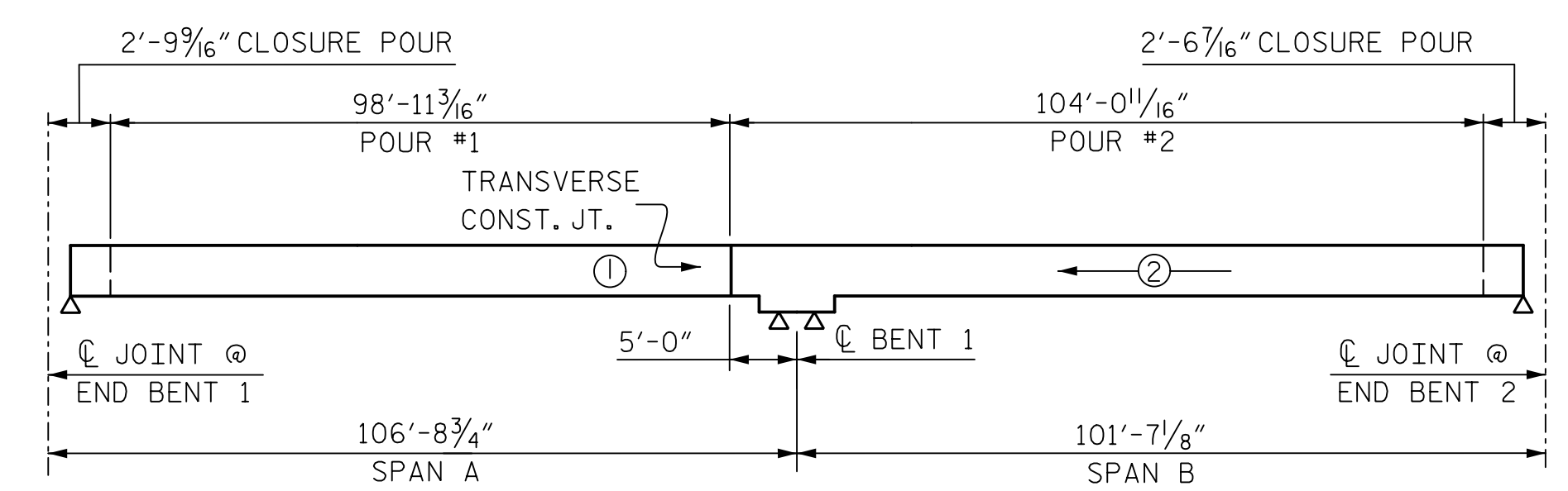


DETAIL A

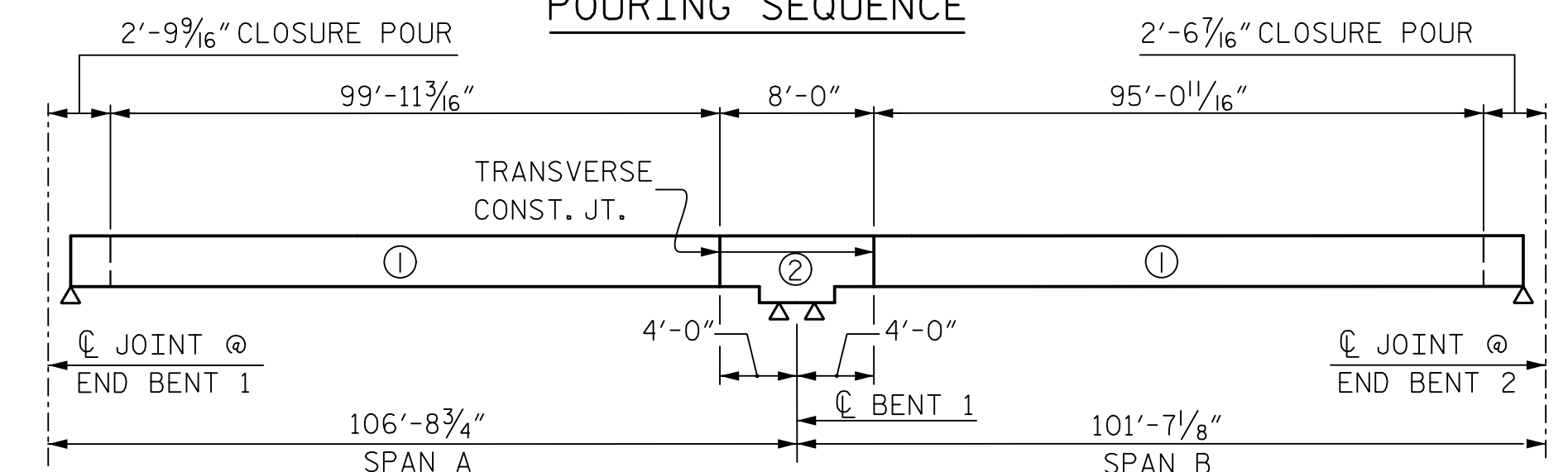


DECK SLAB TRANSVERSE CONSTRUCTION JOINT DETAIL

REINFORCING STEEL IN SLAB NOT SHOWN. LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THROUGH JOINT.



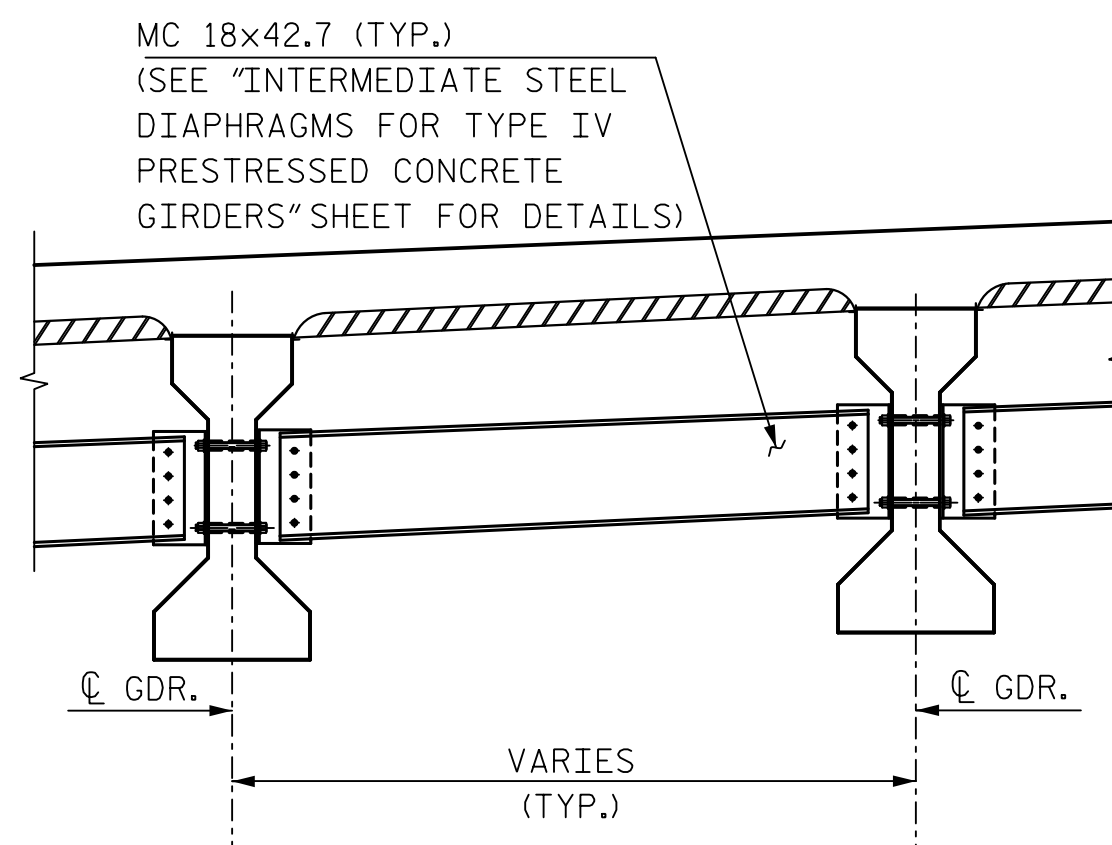
POURING SEQUENCE



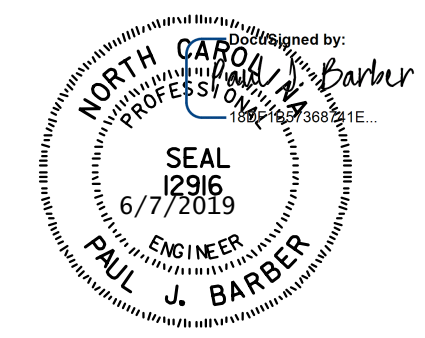
OPTIONAL POURING SEQUENCE

NOTE: POUR ② CAN NOT BE STARTED UNTIL BOTH ADJACENT ① POURS REACH A MINIMUM OF 3000 PSI

NOTE: ALL DIMENSIONS FOR POURING SEQUENCE AND OPTIONAL POURING SEQUENCE ARE ALONG -YII-.



PARTIAL TYPICAL SECTION
(SHOWING INTERMEDIATE DIAPHRAGM)



HNTB HNTB NORTH CAROLINA, P.C.
 NC License No. C-1554
 343 E. Six Forks Rd., Suite 200, Raleigh, N.C. 27609

DESIGNED BY: M. WRIGHT DATE: 1/19
 CHECKED BY: N. HART DATE: 3/19
 DESIGN ENGINEER OF RECORD: P. BARBER DATE: 5/19

DWG. NO. 7

PROJECT NO. I-4400C
 HENDERSON COUNTY
 STATION: POC 17+01.02 -Y11-

SHEET 2 OF 2

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S3-7
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2			4			41

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