

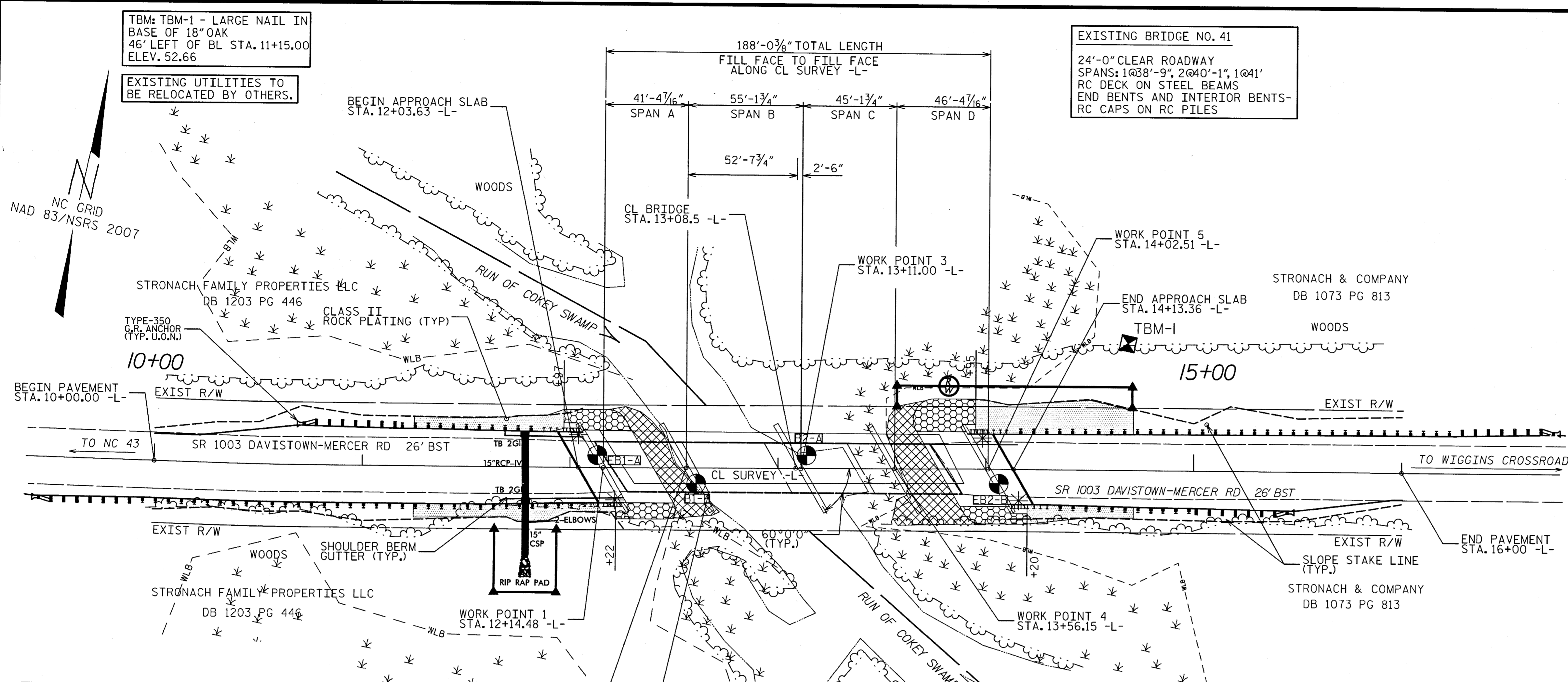
CONTRACT #DD00064
WBS #17BP.4.R.24

TBM: TBM-1 - LARGE NAIL IN BASE OF 18" OAK 46' LEFT OF BL STA. 11+15.00 ELEV. 52.66

EXISTING UTILITIES TO BE RELOCATED BY OTHERS.

EXISTING BRIDGE NO. 41
 24'-0" CLEAR ROADWAY
 SPANS: 1@38'-9", 2@40'-1", 1@41'
 RC DECK ON STEEL BEAMS
 END BENTS AND INTERIOR BENTS- RC CAPS ON RC PILES

NOTES
 ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
 FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.
 THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
 REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
 THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT. EACH SIDE OF CENTERLINE 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.
 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.
 THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, 'EVALUATING SCOUR AT BRIDGES', MAY, 2001.
 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
 ADT = 1600 FOR YEAR 2009
 ROADWAY APPROACH EMBANKMENT SHALL BE WIDENED AS NECESSARY FOR GUARDRAIL INSTALLATIONS.
 FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
 FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
 INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR REMOVAL OF EXISTING STRUCTURE AT STATION 13+08.5-L-.
 FOR INTERIOR BENT(S) 1,2,&3 ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEET(S) FOR REQUIRED GALVANIZED LENGTHS. PAYMENT FOR PARTIALLY GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.
 ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY.



HYDROGRAPHIC DATA

DESIGN DISCHARGE -	3840 CFS
FREQUENCY OF DESIGN FLOOD -	25 YEARS
DESIGN HIGH WATER ELEVATION -	52.5'
DRAINAGE AREA -	68.5 SQ. MI.
BASE DISCHARGE(Q100) -	5710 CFS
BASE HIGH WATER ELEVATION -	54.96'

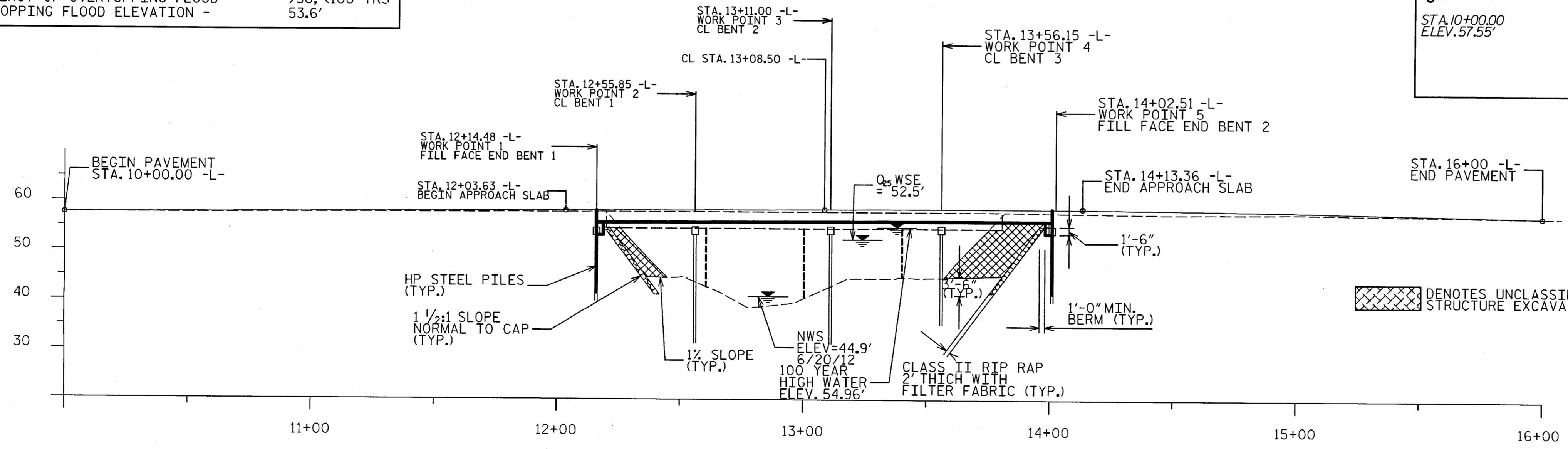
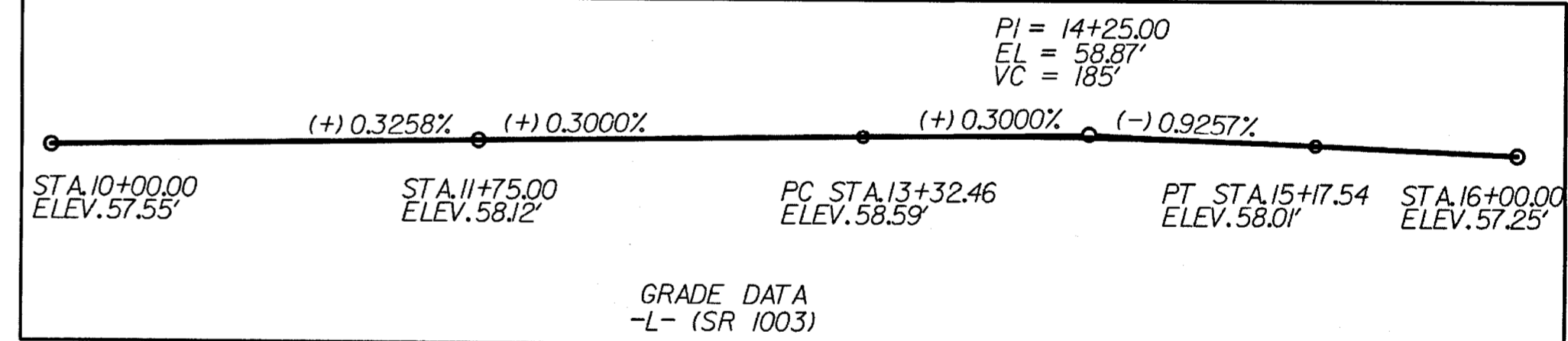
OVERTOPPING DATA

OVERTOPPING DISCHARGE -	4800 CFS
FREQUENCY OF OVERTOPPING FLOOD -	>50, <100 YRS
OVERTOPPING FLOOD ELEVATION -	53.6'

PLAN
 SCALE: 1"=30'

● DENOTES GEO-TECH BORE HOLE LOCATIONS.
 * DENOTES TYPE III GUARDRAIL CONNECTION REQ'D. SEE "GUARDRAIL ANCHORAGE FOR VERTICAL CONCRETE BARRIER RAIL" SHEET.

NOTE: GUARDRAIL LENGTHS AS SHOWN INCLUDE-ANCHOR UNITS.
 U.O.N. - UNLESS OTHERWISE NOTED
 FOR PAVEMENT LAYOUT SEE "ROADWAY DETAILS" SHEET 1 OF 2.



PROJECT NO. 17BP.4.R.24
EDGEcombe COUNTY
 STATION: 13+08.50 -L-

REPLACES BRIDGE NO. 41

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

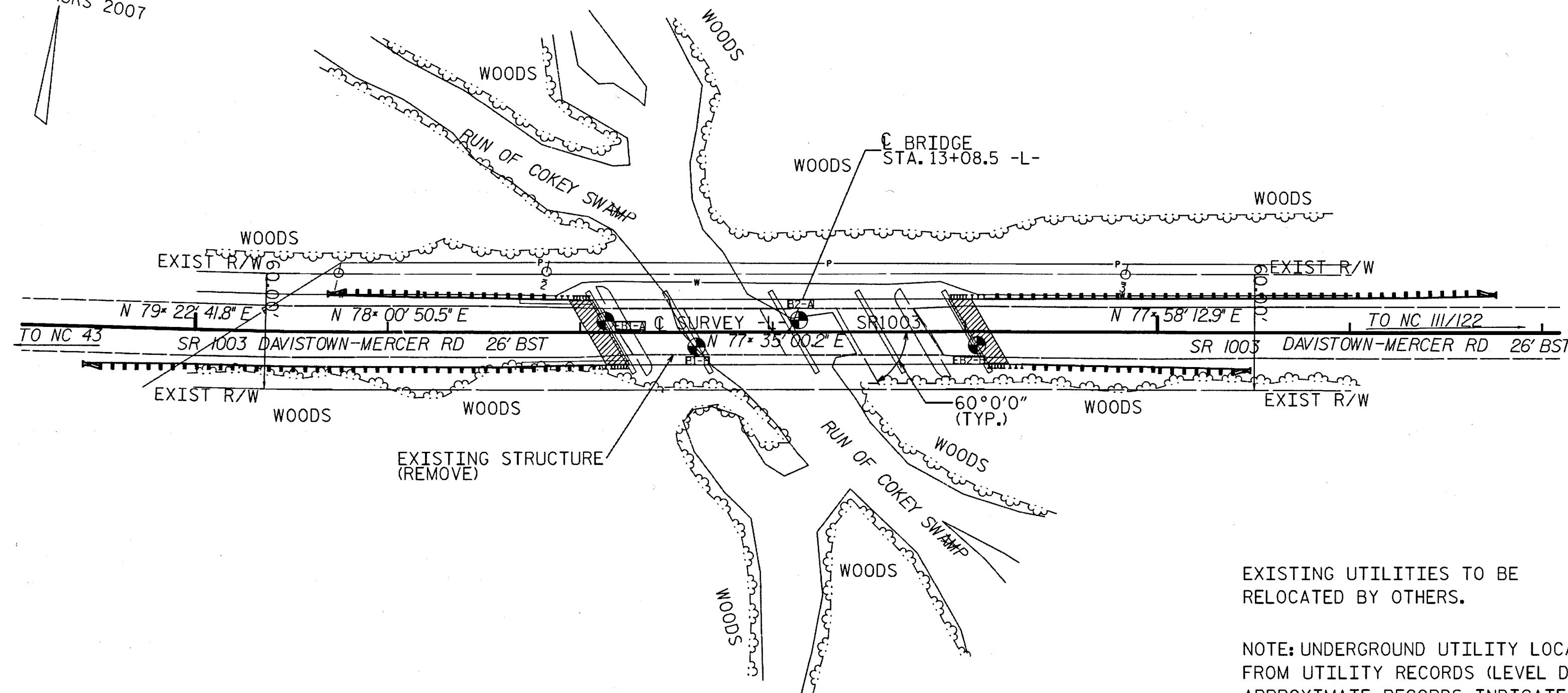
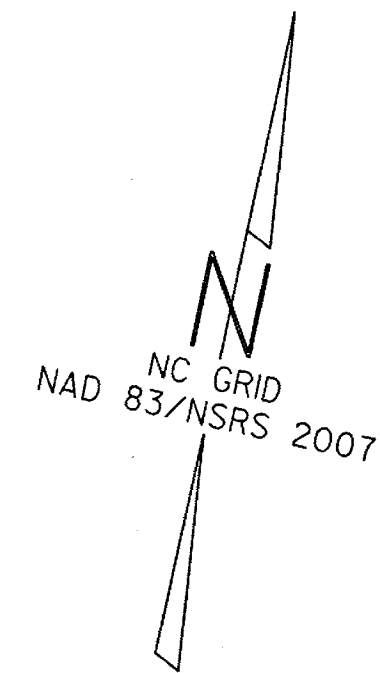
BRIDGE #41 ON SR 1003
 OVER COKEY SWAMP
 BETWEEN NC 43 & NC 111/122
 33'-10" CLEAR ROADWAY - 60° SKEW



MCKIM & CREED
 243 NORTH FRONT STREET
 WILMINGTON, NC 28401
 TEL. (910) 343-1049 FAX. (910) 790-8282
 NC LICENSE F-1222

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	1
1			3			TOTAL SHEETS
2			4			32

DRAWN BY: K.ESPINOZA/B.SMITH DATE: 10/12
 CHECKED BY: C.GLASS/R.MOORE DATE: 10/12



LOCATION SKETCH
SCALE: 1"=50'

- FOUNDATION NOTES:
- 1) FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
 - 2) PILES AT END BENT NO.1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 65 TONS PER PILE.
 - 3) DRIVE PILES AT END BENT NO.1 AND 2 TO A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE.
 - 4) PILES AT BENT NO.1, 2, AND 3 ARE DESIGNED FOR A FACTORED RESISTANCE OF 120 TONS PER PILE.
 - 5) DRIVE PILES AT BENT NO.1, 2, AND 3 TO A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAW OR SCOUR.
 - 6) INSTALL PILES AT BENT NO.1 AND 2 TO A TIP ELEVATION NO HIGHER THAN 13.0 FT.
 - 7) INSTALL PILES AT BENT NO.3 TO A TIP ELEVATION NO HIGHER THAN 17.0 FT.
 - 8) THE SCOUR CRITICAL ELEVATIONS FOR BENT NO.1, 2, AND 3 ARE ELEVATIONS 31.0 FT, 31.0 FT, AND 35.0 FT, RESPECTIVELY. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
 - 9) IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 30 TO 45 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BOTH END 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.
 - 10) IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40 TO 60 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT INTERIOR BENTS NO.1, 2 AND 3. 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.
 - 11) TESTING PILES WITH THE 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 AND FOR PILE DRIVING CRITERIA, SEE PILE DRIVING CRITERIA PROVISION.
 - 12) PIPE PILE PLATES MAY BE REQUIRED FOR STEEL PIPE PILES AT BENT NO.3. THE ENGINEER WILL DETERMINE THE NEED FOR PIPE PILES PLATES AFTER DRIVING TEST PILES OR A FEW INITIAL PRODUCTION PILES. USE PIPE PILE PLATES WITH A DIAMETER EQUAL TO THE PIPE PILE DIAMETER. FOR STEEL PIPE PILE PLATES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE @ STA.	FOUNDATION EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	PIPE PILE PLATES	HP 12 X 53 GALVANIZED STEEL PILES	PP 18" X 0.5" GALVANIZED STEEL PIPE PILES	PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	PLAIN RIP RAP CLASS II (2'-0" THICK)	ELASTOMERIC BEARING	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS			
	LUMP SUM	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO.	NO.	LIN.FT.	NO.	LIN.FT.	TONS	LUMP SUM	NO.	LIN.FT.		
SUPERSTRUCTURE	LUMP SUM			LUMP SUM						371.16		LUMP SUM	48	2,220		
END BENT NO. 1			17.0		2527		7	315	4		220.0					
BENT NO. 1			13.8		2675	8			4							
BENT NO. 2			13.8		2675	8		8	4							
BENT NO. 3			13.8		2675	8		8	4							
END BENT NO. 2			17.0		2527		7	315	4		210.0					
TOTAL	LUMP SUM	LUMP SUM	75.3	LUMP SUM	13079	24	14	630	24	1120	20	371.16	430.0	LUMP SUM	48	2,220

* IF QUANTITY OF "PDA TESTING" IS 3 OR LESS, PLEASE REFER TO THE "PILE DRIVING CRITERIA" PROVISION IN PDA NOTES.

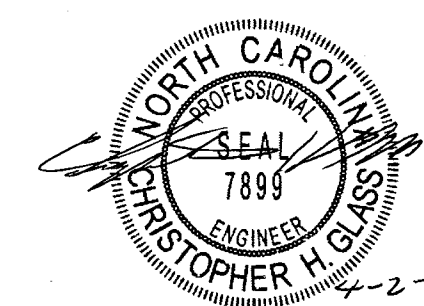
PROJECT NO. 17BP.4.R.24
EDGEcombe COUNTY
STATION: 13+08.50 -L-

REPLACES BRIDGE NO. 41

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LOCATION SKETCH &
TOTAL BILL OF MATERIAL

33'-10" CLEAR ROADWAY - 60°SKEW



MCKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NC 28401
TEL. (910) 343-1048 FAX. (910) 790-8282
NC LICENSE P-1222

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			2
2			4			TOTAL SHEETS
						32

DRAWN BY : K.ESPINOZA/B.SMITH DATE : 10/12
CHECKED BY : C.GLASS/R.MOORE DATE : 10/12

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

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								
						LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.352	--	1.75	0.252	1.95	40'	EL	19.423	0.653	1.35	40'	EL	7.769	0.80	0.252	1.72	40'	EL	19.423		
	HL-93(0pr)	N/A	--	1.753	--	1.35	0.252	2.52	40'	EL	19.423	0.653	1.75	40'	EL	7.769	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.544	55.583	1.75	0.252	2.45	40'	EL	19.423	0.653	1.54	40'	EL	7.769	0.80	0.252	2.14	40'	EL	19.423		
	HS-20(0pr)	36.000	--	2.001	72.053	1.35	0.252	3.17	40'	EL	19.423	0.653	2	40'	EL	7.769	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13,500	--	3.929	53.037	1.4	0.252	5.64	40'	EL	19.423	0.653	3.93	40'	EL	7.769	0.80	0.252	3.99	40'	EL	19.423	
		SNGARBS2	20,000	--	2.985	59.708	1.4	0.252	4.63	40'	EL	15.538	0.653	2.99	40'	EL	7.769	0.80	0.252	3.28	40'	EL	19.423	
		SNAGRIS2	22,000	--	2.852	62.746	1.4	0.252	4.53	40'	EL	15.538	0.653	2.85	40'	EL	7.769	0.80	0.252	3.23	40'	EL	15.538	
		SNCOTTS3	27,250	--	1.98	53.947	1.4	0.252	2.82	40'	EL	19.423	0.653	1.98	40'	EL	7.769	0.80	0.252	1.99	40'	EL	19.423	
		SNAGGRS4	34,925	--	1.782	62.222	1.4	0.252	2.54	40'	EL	19.423	0.653	1.78	40'	EL	7.769	0.80	0.252	1.79	40'	EL	19.423	
		SNS5A	35,550	--	1.746	62.059	1.4	0.252	2.47	40'	EL	19.423	0.653	1.89	40'	EL	7.769	0.80	0.252	1.75	40'	EL	19.423	
		SNS6A	39,950	--	1.662	66.381	1.4	0.252	2.35	40'	EL	19.423	0.653	1.79	40'	EL	7.769	0.80	0.252	1.66	40'	EL	19.423	
	SNS7B	42,000	--	1.585	66.556	1.4	0.252	2.24	40'	EL	19.423	0.653	1.86	40'	EL	7.769	0.80	0.252	1.58	40'	EL	19.423		
	TTST	TNAGRIT3	33,000	--	2.045	67.476	1.4	0.252	2.89	40'	EL	19.423	0.653	2.07	40'	EL	7.769	0.80	0.252	2.04	40'	EL	19.423	
		TNT4A	33,075	--	1.951	64.52	1.4	0.252	2.93	40'	EL	19.423	0.653	1.95	40'	EL	7.769	0.80	0.252	2.07	40'	EL	19.423	
		TNT6A	41,600	--	1.757	73.106	1.4	0.252	2.49	40'	EL	19.423	0.653	1.91	40'	EL	7.769	0.80	0.252	1.76	40'	EL	19.423	
		TNT7A	42,000	--	1.795	75.386	1.4	0.252	2.55	40'	EL	19.423	0.653	1.79	40'	EL	7.769	0.80	0.252	1.80	40'	EL	19.423	
		TNT7B	42,000	--	1.729	72.638	1.4	0.252	2.61	40'	EL	19.423	0.653	1.73	40'	EL	7.769	0.80	0.252	1.84	40'	EL	19.423	
		TNAGRIT4	43,000	--	1.661	71.441	1.4	0.252	2.53	40'	EL	15.538	0.653	1.66	40'	EL	7.769	0.80	0.252	1.79	40'	EL	19.423	
TNAGT5A		45,000	--	1.659	74.644	1.4	0.252	2.35	40'	EL	19.423	0.653	1.77	40'	EL	7.769	0.80	0.252	1.66	40'	EL	19.423		
TNAGT5B	45,000	3	1.568	70.561	1.4	0.252	2.28	40'	EL	19.423	0.653	1.57	40'	EL	7.769	0.80	0.252	1.61	40'	EL	19.423			

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.
ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

- 1.
- 2.
- 3.
- 4.

⊠ CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

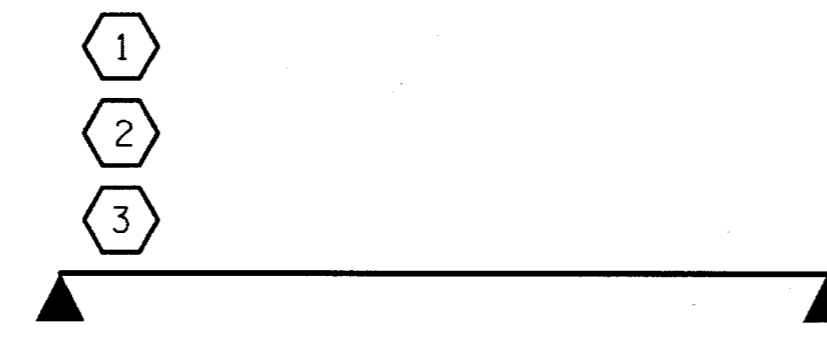
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



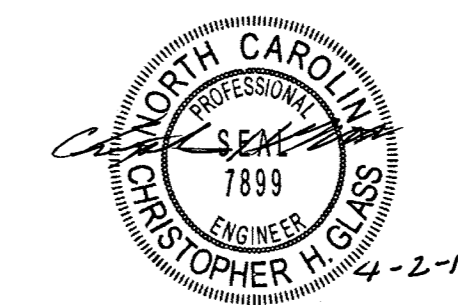
LRFR SUMMARY
FOR SPAN 'A'

PROJECT NO. 17BP.4.R.24
EDGEcombe COUNTY
STATION: 13+08.50 -L-

REPLACES BRIDGE NO. 41

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR
40' CORED SLAB UNIT
60° SKEW & 120° SKEW
(NON-INTERSTATE TRAFFIC)



MFKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NC 28401
TEL. (910) 343-1048 FAX. (910) 790-8282
NC LICENSE F-1222

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	3
1			3			TOTAL SHEETS
2			4			32

STD. NO. 21LRFR1_60&120S_40L

ASSEMBLED BY: JBS/KE DATE: 7/12
CHECKED BY: RAM/CG DATE: 7/12
DRAWN BY: K.ESP/ITH DATE: 10/1
CHECKED BY: C.GLAS/RE DATE: 10/1

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

LOAD FACTORS:

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

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

- 1.
- 2.
- 3.
- 4.

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT						
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.179	--	1.75	0.251	1.48	45'	EL	21.923	0.654	1.18	45'	EL	8.769	0.80	0.251	1.20	45'	EL	21.923		
	HL-93(0pr)	N/A	--	1.529	--	1.35	0.251	1.92	45'	EL	21.923	0.654	1.53	45'	EL	8.769	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.36	48.973	1.75	0.251	1.82	45'	EL	21.923	0.654	1.36	45'	EL	8.769	0.80	0.251	1.47	45'	EL	21.923		
	HS-20(0pr)	36.000	--	1.763	63.484	1.35	0.251	2.36	45'	EL	21.923	0.654	1.76	45'	EL	8.769	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.873	38.783	1.4	0.251	4.44	45'	EL	21.923	0.654	3.59	45'	EL	8.769	0.80	0.251	2.87	45'	EL	21.923	
		SNGARBS2	20.000	--	2.321	46.427	1.4	0.251	3.59	45'	EL	21.923	0.654	2.69	45'	EL	8.769	0.80	0.251	2.32	45'	EL	21.923	
		SNAGRIS2	22.000	--	2.277	50.09	1.4	0.251	3.48	45'	EL	17.538	0.654	2.55	45'	EL	8.769	0.80	0.251	2.28	45'	EL	21.923	
		SNCOTTS3	27.250	--	1.434	39.088	1.4	0.251	2.22	45'	EL	21.923	0.654	1.81	45'	EL	8.769	0.80	0.251	1.43	45'	EL	21.923	
		SNAGGRS4	34.925	--	1.266	44.231	1.4	0.251	1.96	45'	EL	21.923	0.654	1.6	45'	EL	8.769	0.80	0.251	1.27	45'	EL	21.923	
		SNS5A	35.550	--	1.234	43.856	1.4	0.251	1.91	45'	EL	21.923	0.654	1.67	45'	EL	8.769	0.80	0.251	1.23	45'	EL	21.923	
		SNS6A	39.950	--	1.162	46.437	1.4	0.251	1.8	45'	EL	21.923	0.654	1.57	45'	EL	8.769	0.80	0.251	1.16	45'	EL	21.923	
	SNS7B	42.000	3	1.108	46.54	1.4	0.251	1.71	45'	EL	21.923	0.654	1.61	45'	EL	8.769	0.80	0.251	1.11	45'	EL	21.923		
	TTST	TNAGRIT3	33.000	--	1.427	47.083	1.4	0.251	2.21	45'	EL	21.923	0.654	1.83	45'	EL	8.769	0.80	0.251	1.43	45'	EL	21.923	
		TNT4A	33.075	--	1.442	47.687	1.4	0.251	2.23	45'	EL	21.923	0.654	1.74	45'	EL	8.769	0.80	0.251	1.44	45'	EL	21.923	
		TNT6A	41.600	--	1.21	50.352	1.4	0.251	1.87	45'	EL	21.923	0.654	1.71	45'	EL	8.769	0.80	0.251	1.21	45'	EL	21.923	
		TNT7A	42.000	--	1.234	51.826	1.4	0.251	1.91	45'	EL	21.923	0.654	1.59	45'	EL	8.769	0.80	0.251	1.23	45'	EL	21.923	
		TNT7B	42.000	--	1.285	53.952	1.4	0.251	1.99	45'	EL	21.923	0.654	1.52	45'	EL	8.769	0.80	0.251	1.28	45'	EL	21.923	
		TNAGRIT4	43.000	--	1.224	52.616	1.4	0.251	1.89	45'	EL	21.923	0.654	1.46	45'	EL	8.769	0.80	0.251	1.22	45'	EL	21.923	
TNAGT5A		45.000	--	1.138	51.23	1.4	0.251	1.76	45'	EL	21.923	0.654	1.52	45'	EL	8.769	0.80	0.251	1.14	45'	EL	21.923		
TNAGT5B	45.000	--	1.111	50.015	1.4	0.251	1.72	45'	EL	21.923	0.654	1.38	45'	EL	8.769	0.80	0.251	1.11	45'	EL	21.923			

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

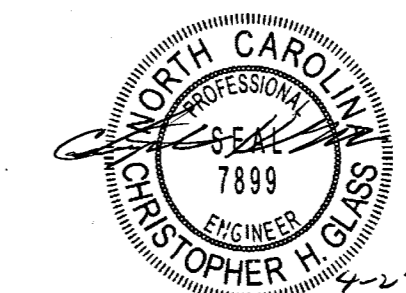
I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER

PROJECT NO. 17BP.4.R.24
EDGEcombe COUNTY
STATION: 13+08.50 -L-

REPLACES BRIDGE NO. 41

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

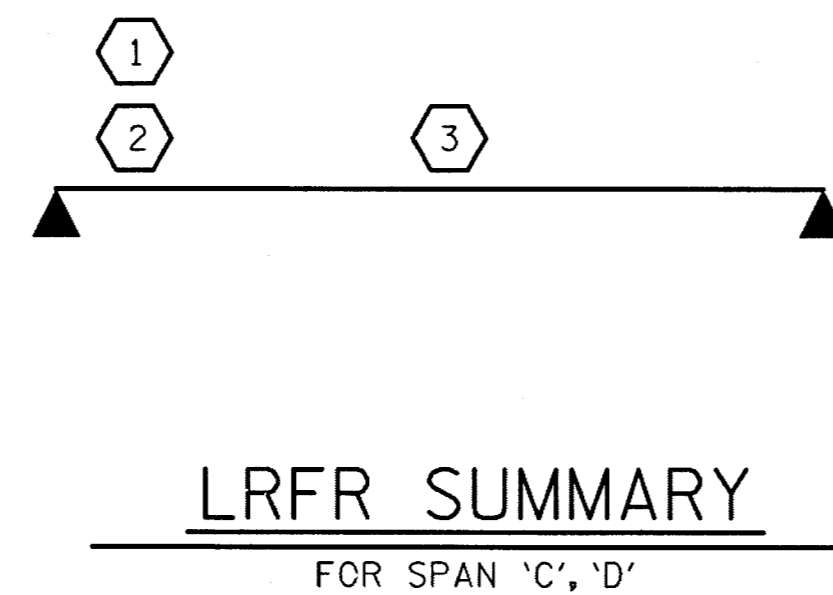
STANDARD
LRFR SUMMARY FOR
45' CORED SLAB UNIT
60° SKEW & 120° SKEW
(NON-INTERSTATE TRAFFIC)



MCKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NC 28401
TEL. (910) 343-1048 FAX. (910) 790-8282
NC LICENSE F-1222

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	4
1			3			TOTAL SHEETS
2			4			32

STD. NO. 21LRFR1_60&120S_45L



ASSEMBLED BY: JBS/KE DATE: 7/12
CHECKED BY: RAM/CG DATE: 7/12
DRAWN BY: K.ESPIN DATE: 10/1
CHECKED BY: C.GLA. DATE: 10/1

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

LOAD FACTORS:

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

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.
ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

- 1.
- 2.
- 3.
- 4.

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.163	--	1.75	0.249	1.36	55'	EL	26.923	0.659	1.21	55'	EL	10.769	0.80	0.249	1.16	55'	EL	26.923		
	HL-93(0pr)	N/A	--	1.564	--	1.35	0.249	1.76	55'	EL	26.923	0.659	1.56	55'	EL	10.769	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.424	51.265	1.75	0.249	1.7	55'	EL	26.923	0.659	1.42	55'	EL	10.769	0.80	0.249	1.46	55'	EL	26.923		
	HS-20(0pr)	36.000	--	1.846	66.455	1.35	0.249	2.2	55'	EL	26.923	0.659	1.85	55'	EL	10.769	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.057	41.264	1.4	0.249	4.46	55'	EL	26.923	0.659	3.96	55'	EL	10.769	0.80	0.249	3.06	55'	EL	26.923	
		SNGARBS2	20.000	--	2.374	47.473	1.4	0.249	3.46	55'	EL	26.923	0.659	2.9	55'	EL	10.769	0.80	0.249	2.37	55'	EL	26.923	
		SNAGRIS2	22.000	--	2.291	50.392	1.4	0.249	3.34	55'	EL	26.923	0.659	2.72	55'	EL	10.769	0.80	0.249	2.29	55'	EL	26.923	
		SNCOTTS3	27.250	--	1.524	41.521	1.4	0.249	2.22	55'	EL	26.923	0.659	1.98	55'	EL	10.769	0.80	0.249	1.52	55'	EL	26.923	
		SNAGGRS4	34.925	--	1.31	45.74	1.4	0.249	1.91	55'	EL	26.923	0.659	1.71	55'	EL	10.769	0.80	0.249	1.31	55'	EL	26.923	
		SNS5A	35.550	--	1.278	45.439	1.4	0.249	1.86	55'	EL	26.923	0.659	1.76	55'	EL	10.769	0.80	0.249	1.28	55'	EL	26.923	
		SNS6A	39.950	--	1.189	47.481	1.4	0.249	1.73	55'	EL	26.923	0.659	1.63	55'	EL	10.769	0.80	0.249	1.19	55'	EL	26.923	
	SNS7B	42.000	--	1.132	47.562	1.4	0.249	1.65	55'	EL	26.923	0.659	1.64	55'	EL	10.769	0.80	0.249	1.13	55'	EL	26.923		
	TTST	TNAGRIT3	33.000	--	1.454	47.984	1.4	0.249	2.12	55'	EL	26.923	0.659	1.92	55'	EL	10.769	0.80	0.249	1.45	55'	EL	26.923	
		TNT4A	33.075	--	1.465	48.451	1.4	0.249	2.14	55'	EL	26.923	0.659	1.85	55'	EL	10.769	0.80	0.249	1.46	55'	EL	26.923	
		TNT6A	41.600	--	1.213	50.478	1.4	0.249	1.77	55'	EL	26.923	0.659	1.81	55'	EL	10.769	0.80	0.249	1.21	55'	EL	26.923	
		TNT7A	42.000	--	1.228	51.576	1.4	0.249	1.79	55'	EL	26.923	0.659	1.67	55'	EL	10.769	0.80	0.249	1.23	55'	EL	26.923	
		TNT7B	42.000	--	1.282	53.827	1.4	0.249	1.87	55'	EL	26.923	0.659	1.58	55'	EL	10.769	0.80	0.249	1.28	55'	EL	26.923	
		TNAGRIT4	43.000	--	1.213	52.158	1.4	0.249	1.77	55'	EL	26.923	0.659	1.52	55'	EL	10.769	0.80	0.249	1.21	55'	EL	26.923	
TNAGT5A		45.000	--	1.136	51.134	1.4	0.249	1.66	55'	EL	26.923	0.659	1.55	55'	EL	10.769	0.80	0.249	1.14	55'	EL	26.923		
TNAGT5B	45.000	3	1.116	50.224	1.4	0.249	1.63	55'	EL	26.923	0.659	1.44	55'	EL	10.769	0.80	0.249	1.12	55'	EL	26.923			

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

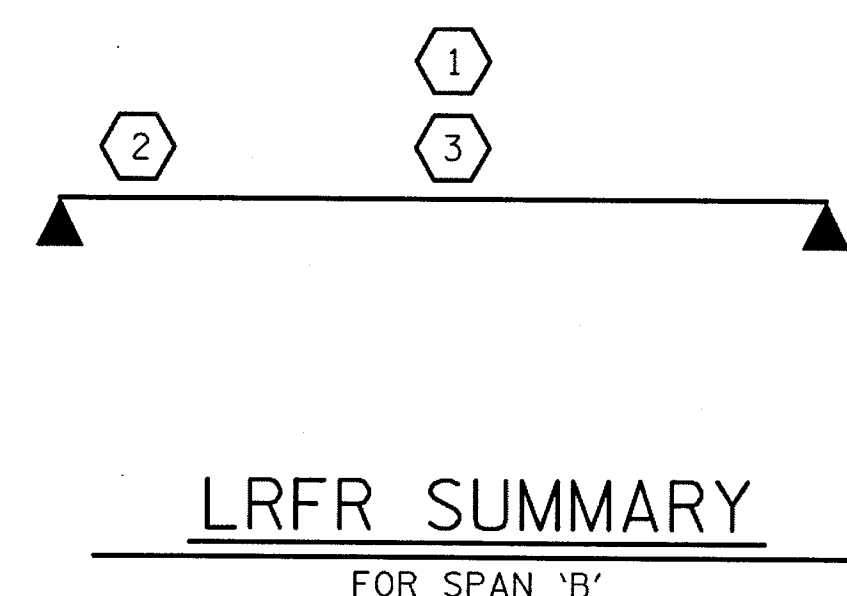
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

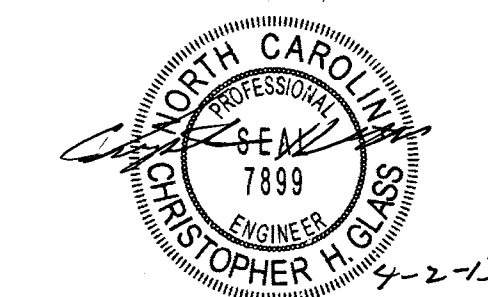
I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER



PROJECT NO. 17BP.4.R.24
EDGEcombe COUNTY
STATION: 13+08.50 -L-

REPLACES BRIDGE NO. 41

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

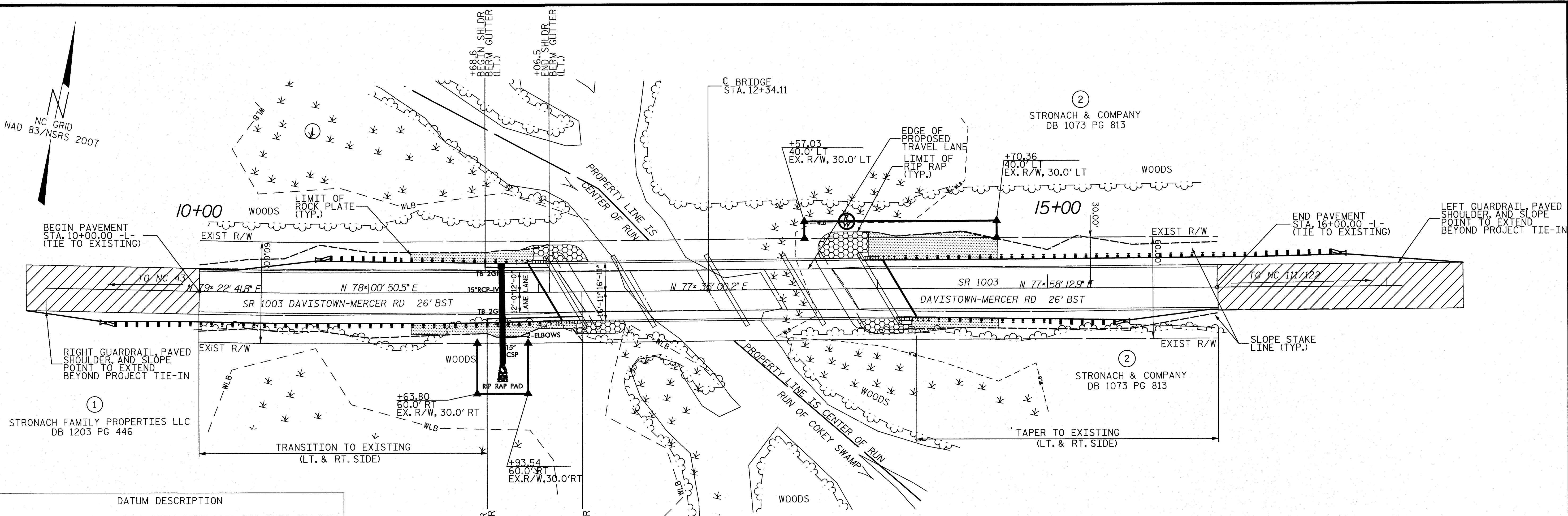
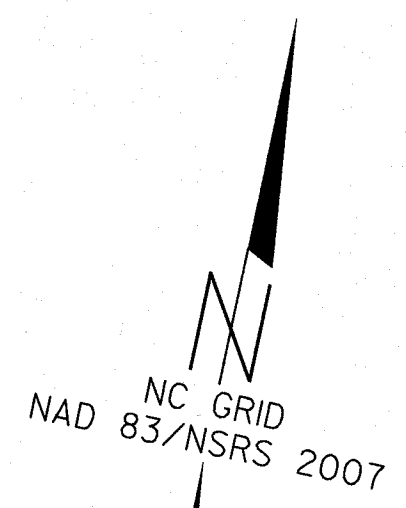


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NC LICENSE F-1222

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5
1			3			TOTAL SHEETS
2			4			32

STD. NO. 21LRFR1.60&120S_55L

ASSEMBLED BY: JBS/KE DATE: 7/12
CHECKED BY: RAM/CG DATE: 7/12
DRAWN BY: K.ESPIN WITH DATE: 10/1
CHECKED BY: C.GLA. JRE DATE: 10/1



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "BL-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 761233.73(fft) EASTING: 2399986.75(fft) ELEVATION: 57.82(fft)

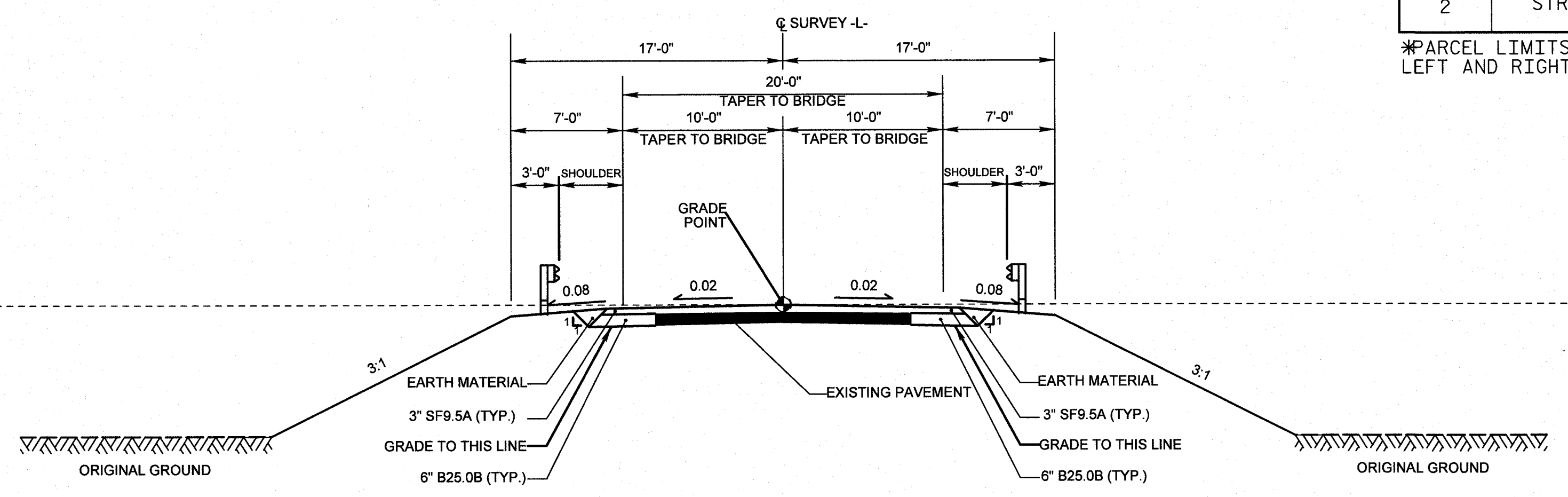
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999926908

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

PAVEMENT LAYOUT DETAIL
SCALE: 1"=30'

RIGHT OF WAY AREA DATA									
PARCEL NO.	PROPERTY OWNERS NAMES	TOTAL AREA (AC)	AREA TAKEN	AREA REMAINING (AC)	AREA REMAINING RT. (AC)	AREA REMAINING LT. (AC)	CONST. EASE.	PERM. DRAIN. EASE.	TEMP. DRAIN. EASE.
1	STRONACH FAMILY PROPERTIES LLC	496.60	900 SF	496.58	*	*			
2	STRONACH & COMPANY	506.92	1133 SF	506.89	*	*			

*PARCEL LIMITS EXTEND ON BOTH SIDES OF SR1003. EDGEcombe COUNTY, NC TAX RECORDS DO NOT DIFFERENTIATE BETWEEN LEFT AND RIGHT. RECORDS STATE TOTAL ACREAGE ONLY.



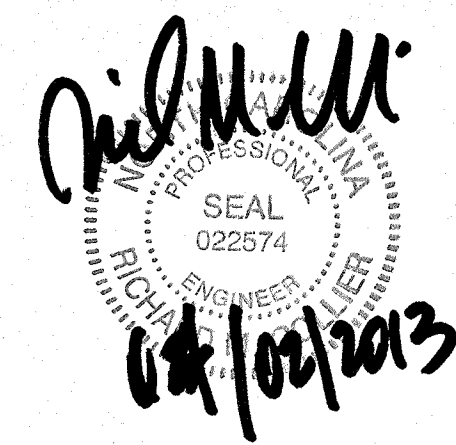
WIDENING PAVEMENT
FROM -L- STA. 15+00 TO -L- STA. 20+00
FROM -L- STA. 23+00 TO -L- STA. 25+00

TYPICAL ROADWAY SECTIONS
WITHIN CONSTRUCTION LIMITS

PROJECT NO. 17BP.4.R.24
EDGEcombe COUNTY
STATION: 13+08.50 -L-

REPLACES BRIDGE NO. 41

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
ROADWAY DETAILS

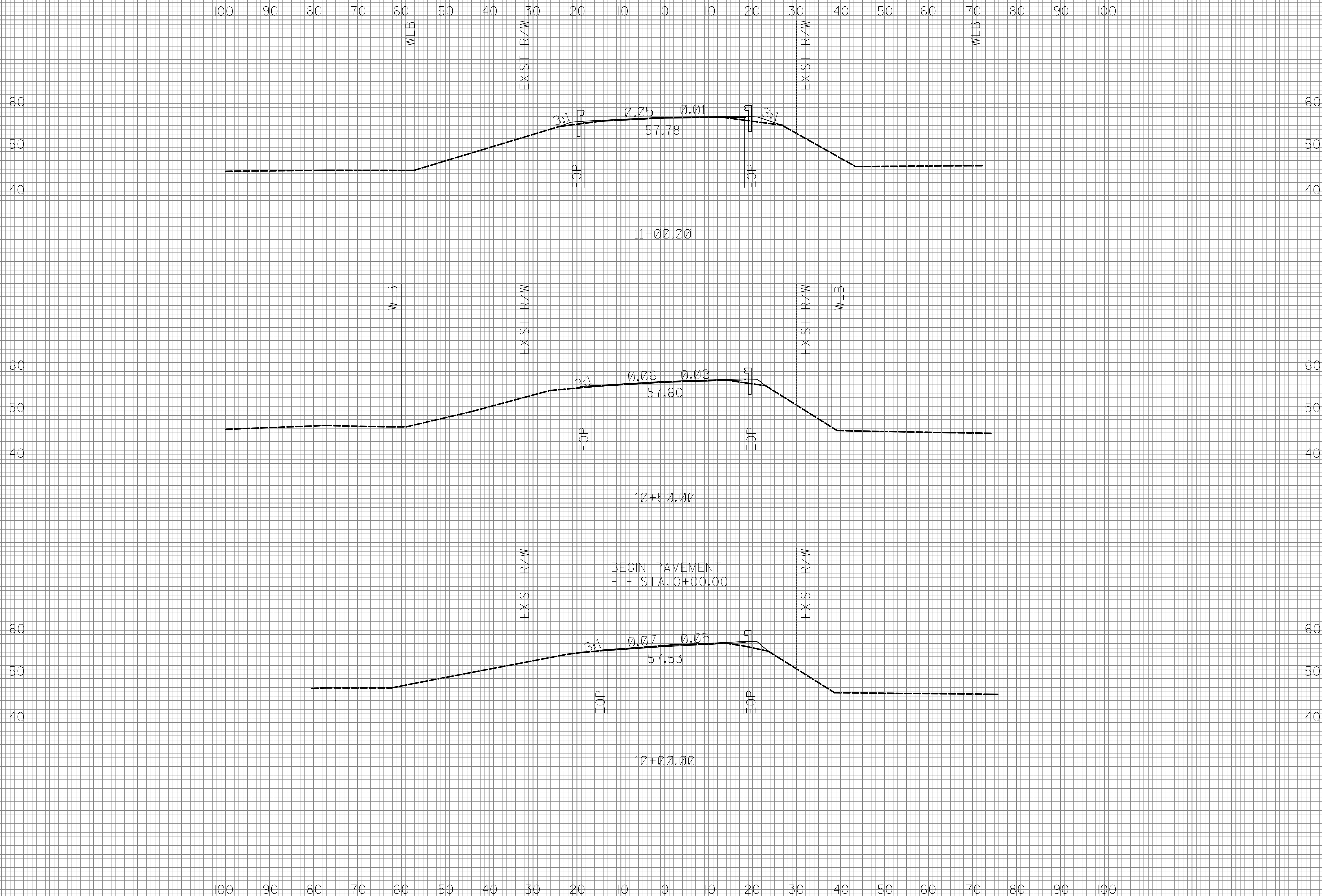


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WILMINGTON, NC 28401
TEL. (910) 343-1048 FAX. (910) 790-8282
NC LICENSE F-1222

REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	6
1			3			32
2			4			

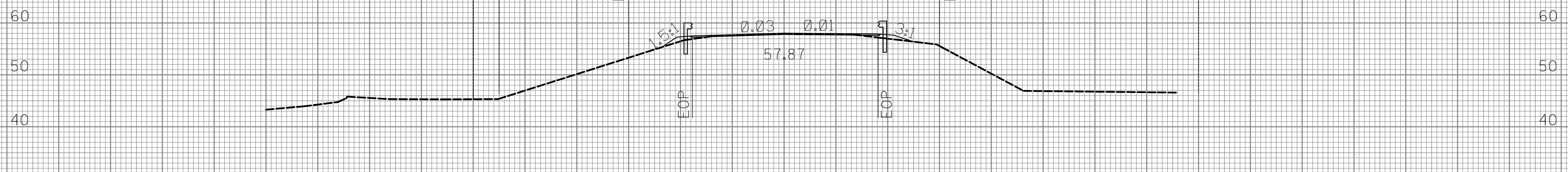
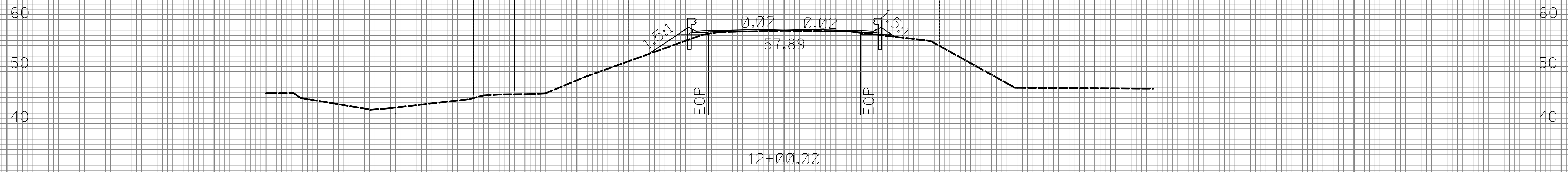
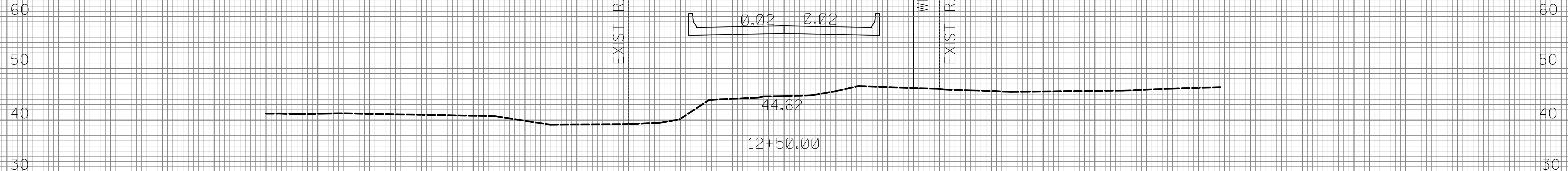
DRAWN BY : K.ESPINOZA/B.SMITH DATE : 10/12
CHECKED BY : C.GLASS/R.MOORE DATE : 10/12

DATES *TIMES *FILES

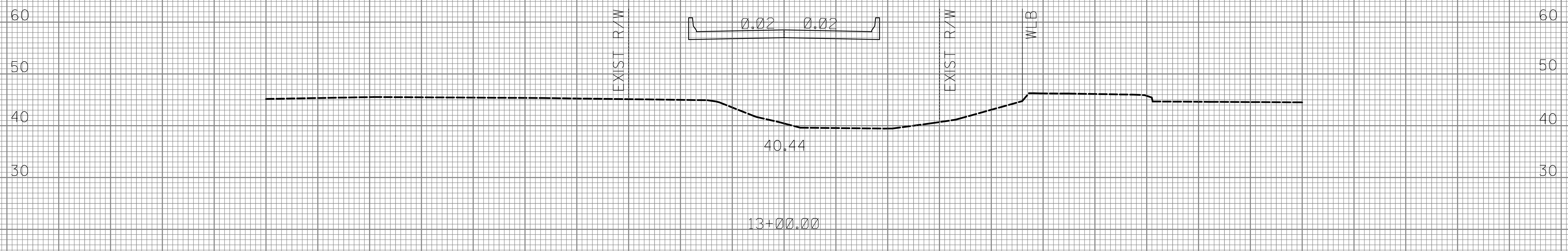
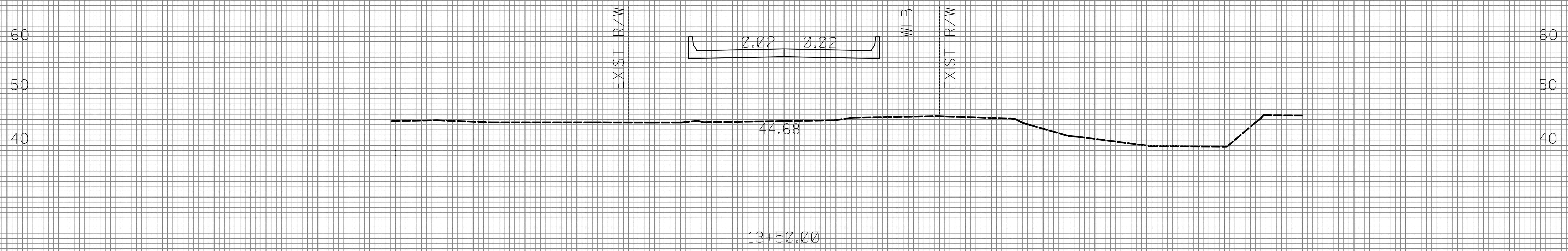
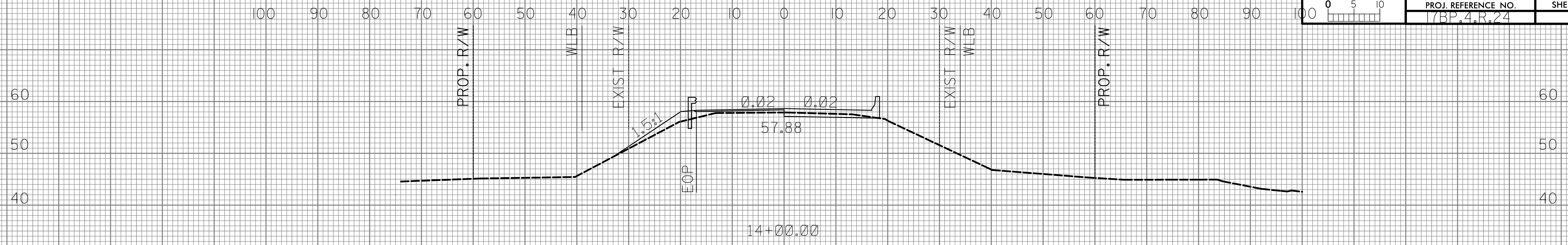


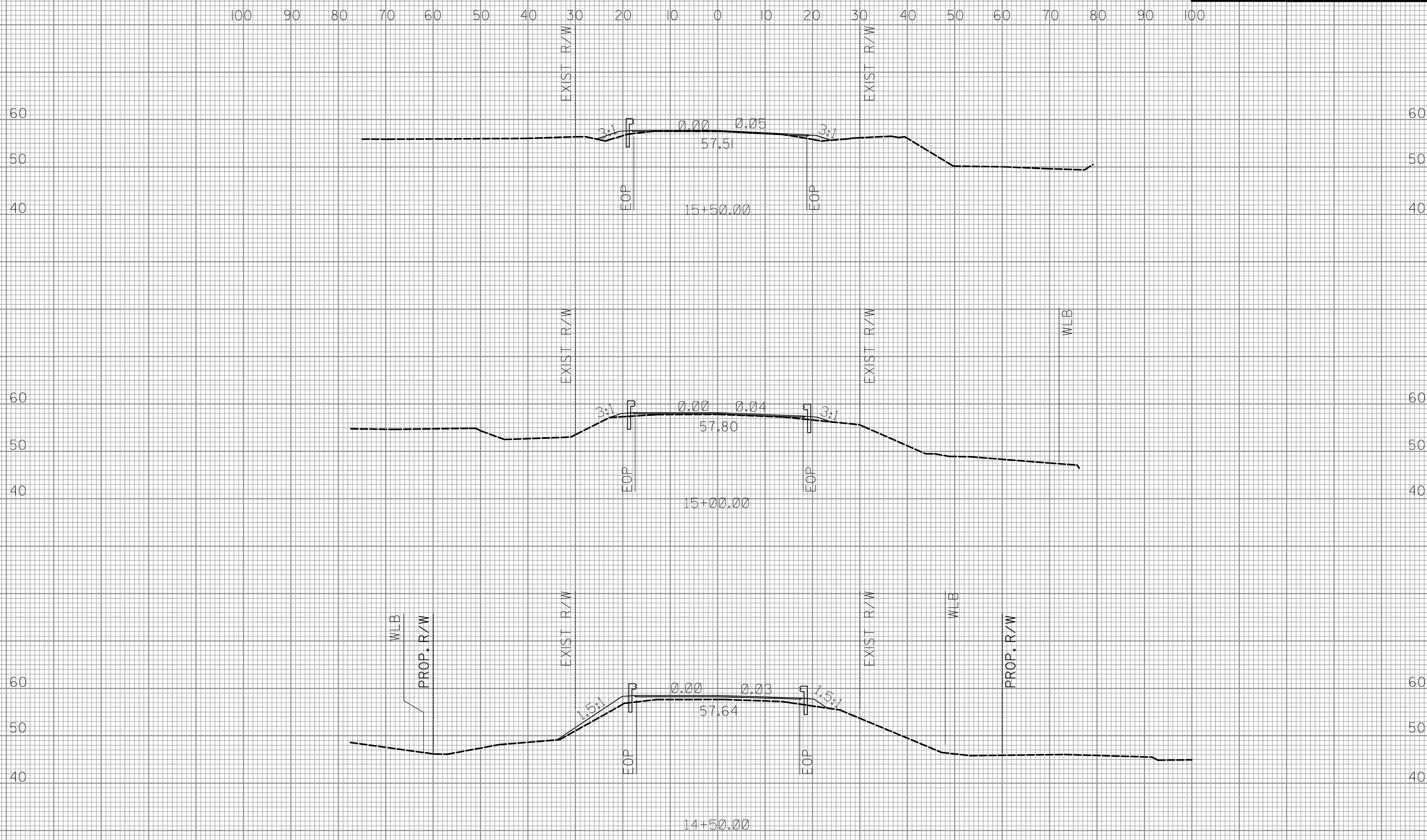
SYSTEMS TIME DESIGN CONSULTANTS

100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100



100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100





END APPROACH SLAB
 -L- STA. 14+13.36
 END BRIDGE
 -L- STA. 14+02.51

***** SYSTEMS *****
 ***** SERVICES *****
 ***** ENGINEERING *****
 ***** CONSULTING *****

8/23/99

100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100

60

50

40

60

50

40

EXIST R/W

EXIST R/W

END PAVEMENT
-L- STA. 16+00.00

3:1

0.02

0.06

57.25

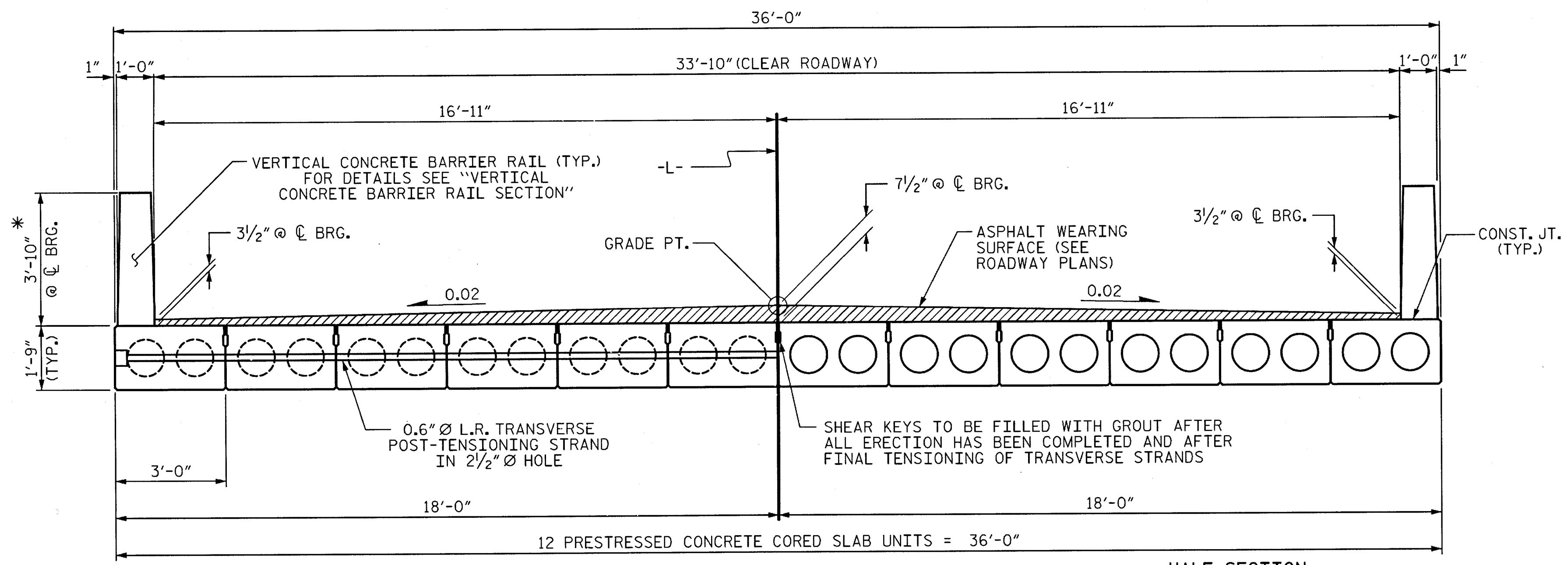
EOP

EOP

16+00.00

100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100

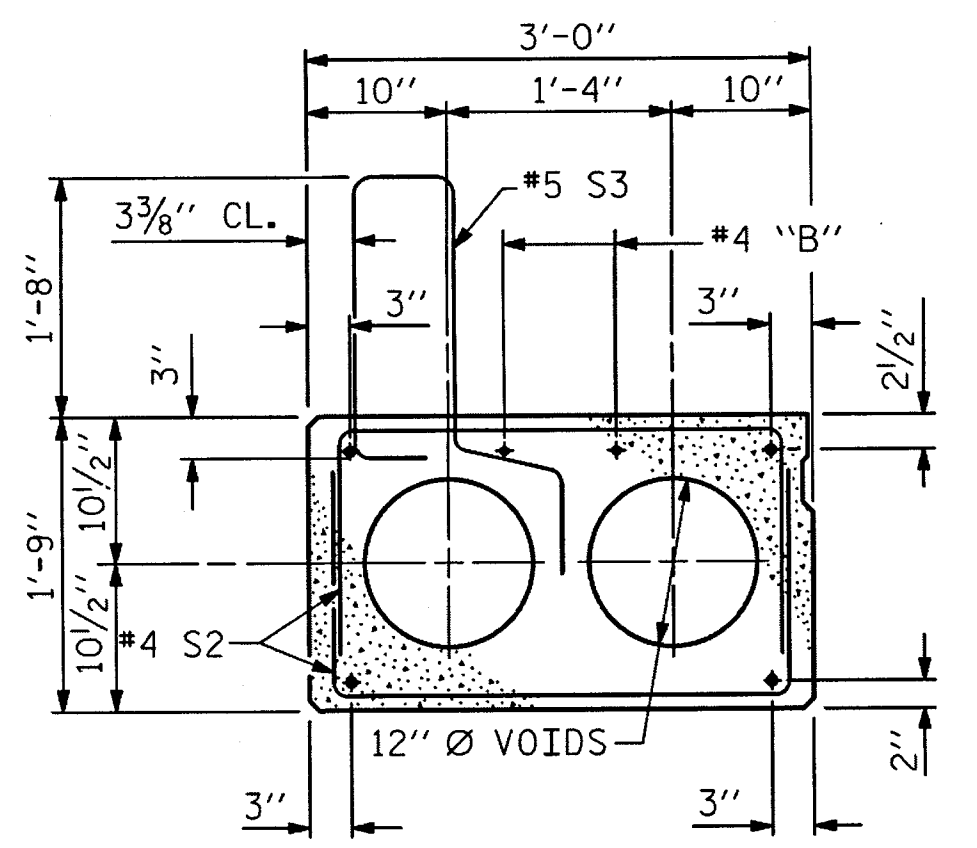
***** SYSTEMS *****
***** DESIGN *****
***** DRAWING *****



HALF SECTION AT INTERMEDIATE DIAPHRAGMS HALF SECTION THROUGH VOIDS

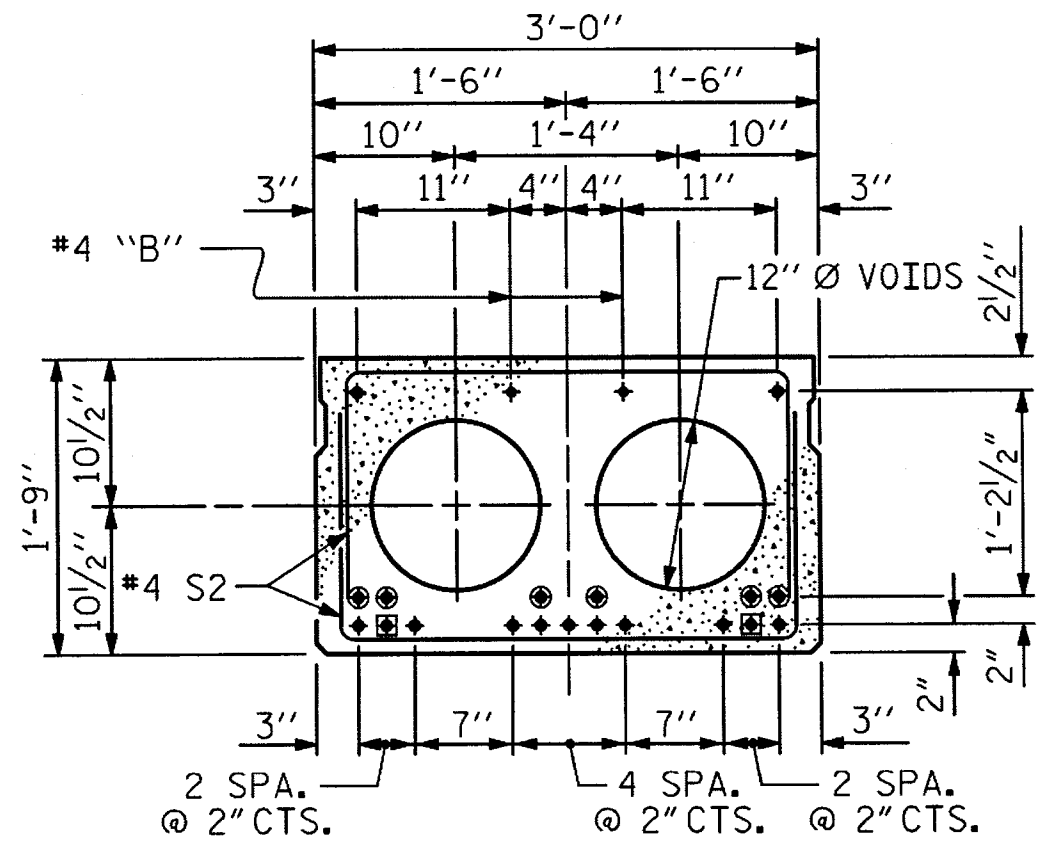
TYPICAL SECTION

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



EXT. SLAB SECTION

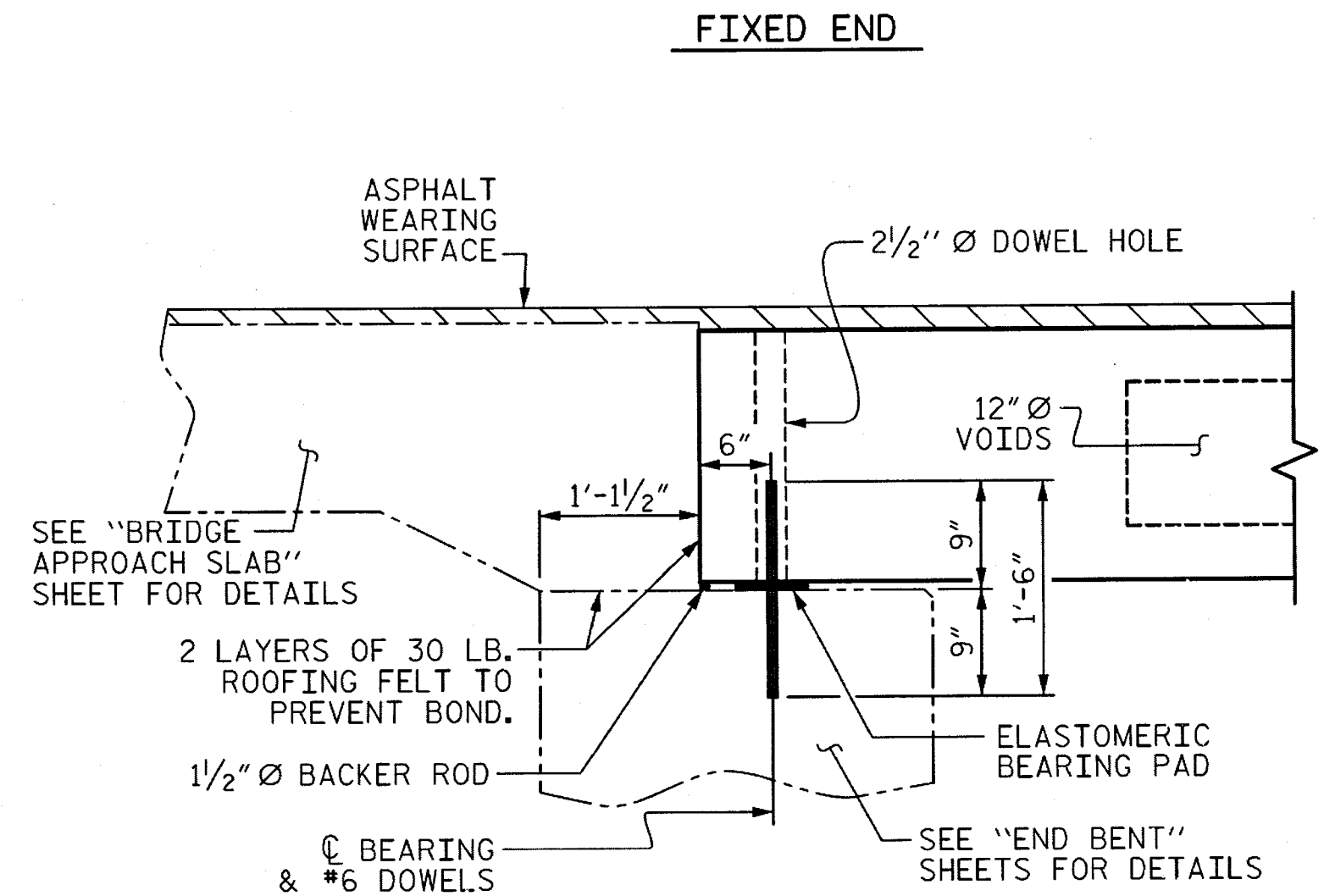
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



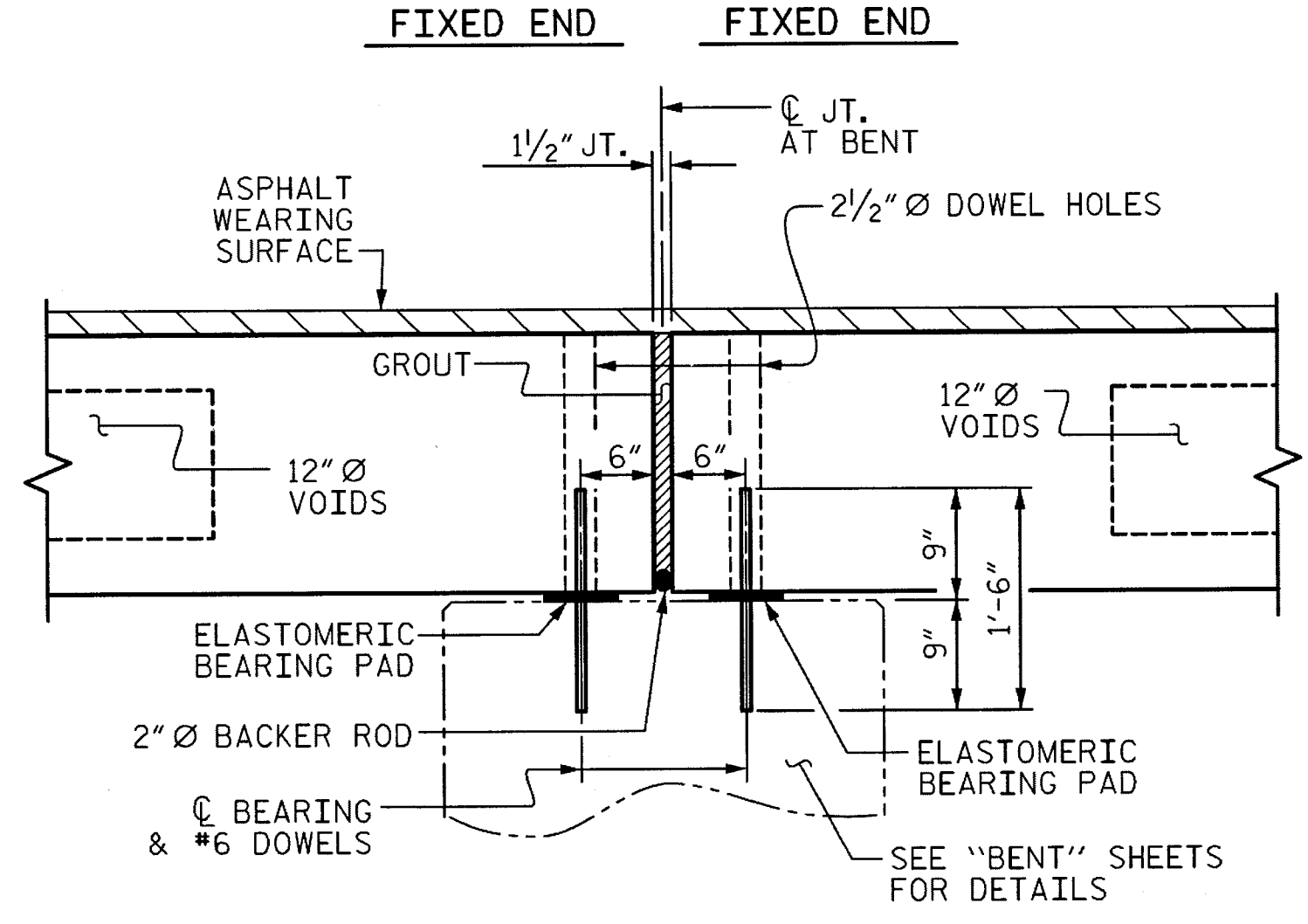
INTERIOR SLAB SECTION (40' & 45' UNIT)
(13 STRANDS REQUIRED)

- ▲ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 2'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

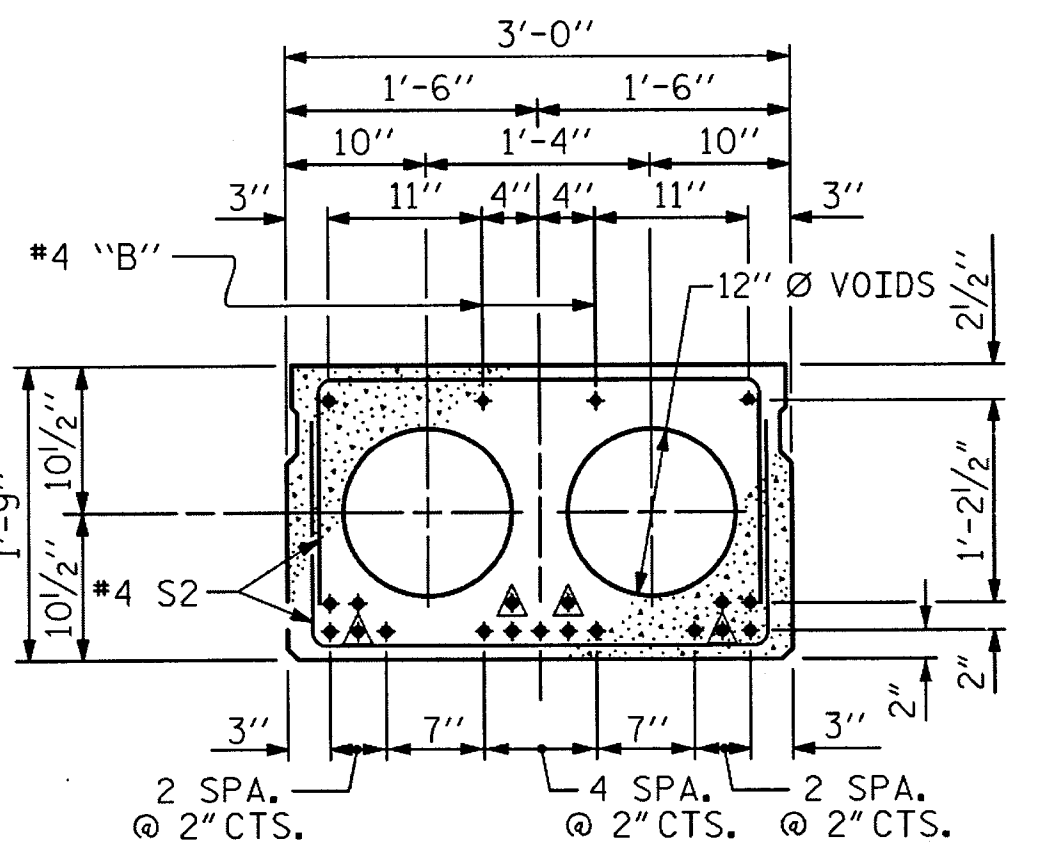
DEBONDING LEGEND



SECTION AT END BENT

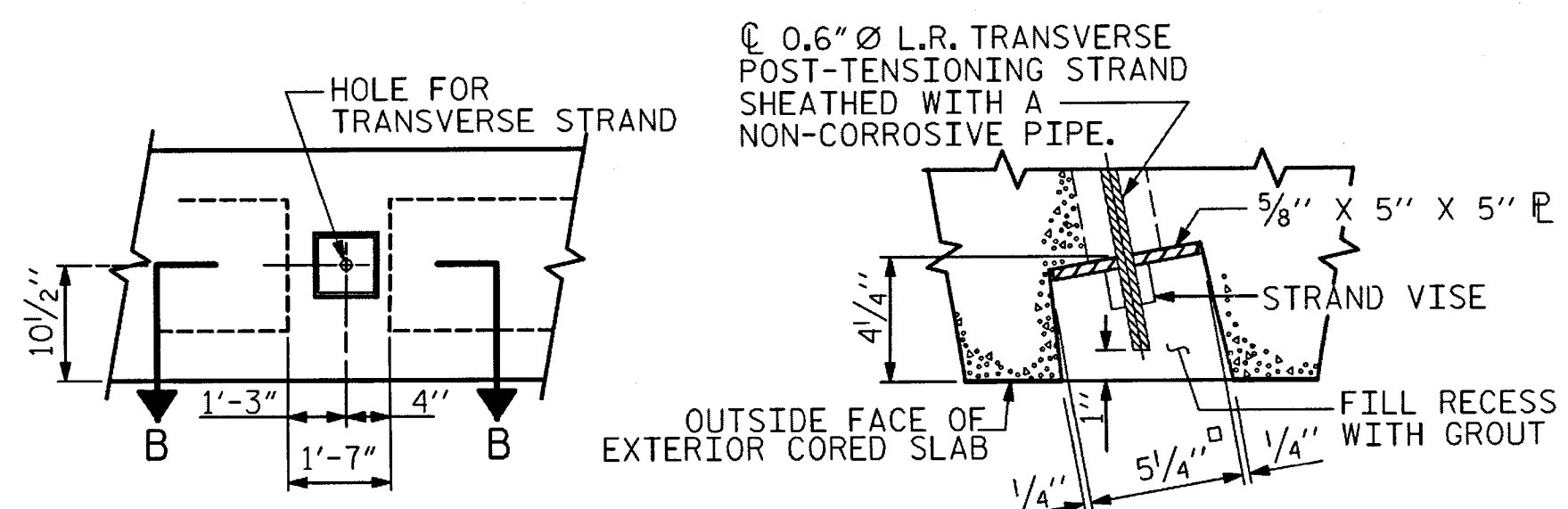


SECTION AT BENT

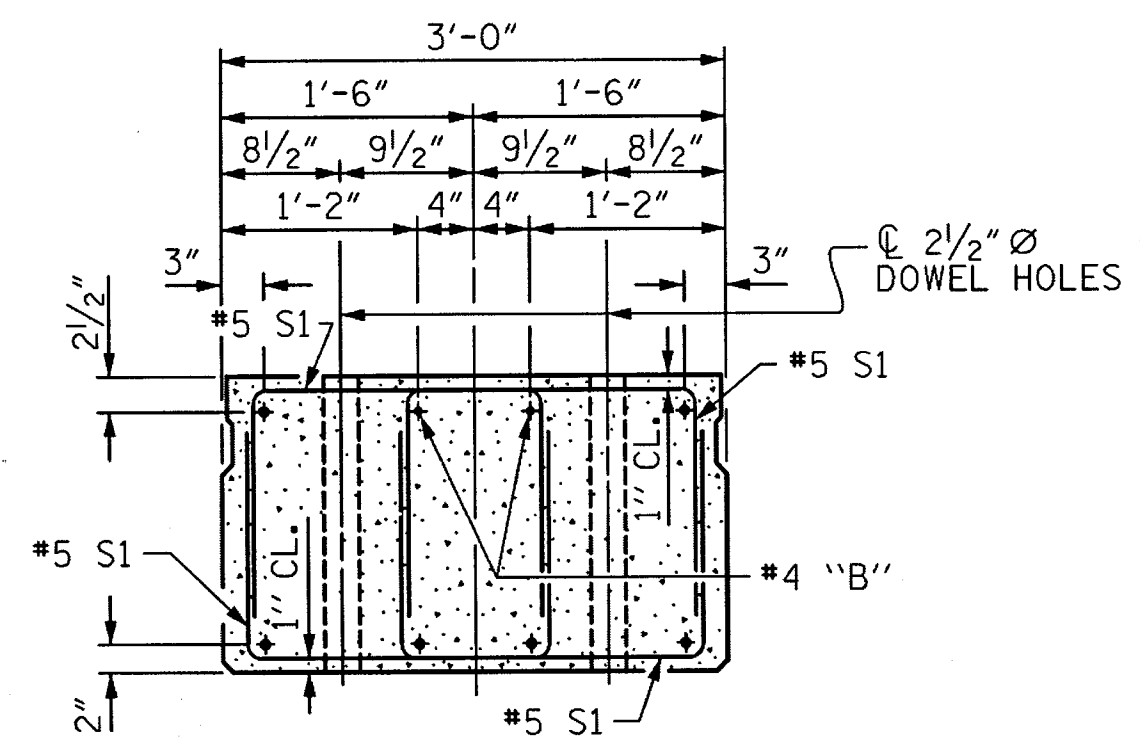


INTERIOR SLAB SECTION (50' & 55' UNIT)
(19 STRANDS REQUIRED)

0.6" Ø LOW RELAXATION STRAND LAYOUT

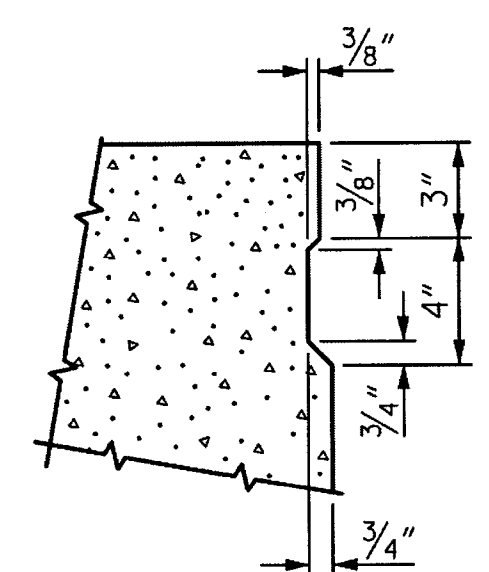


ELEVATION VIEW SECTION B-B
GROUTED RECESS AT END OF POST-TENSIONED STRAND OF CORED SLABS



END ELEVATION

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



SHEAR KEY DETAIL

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

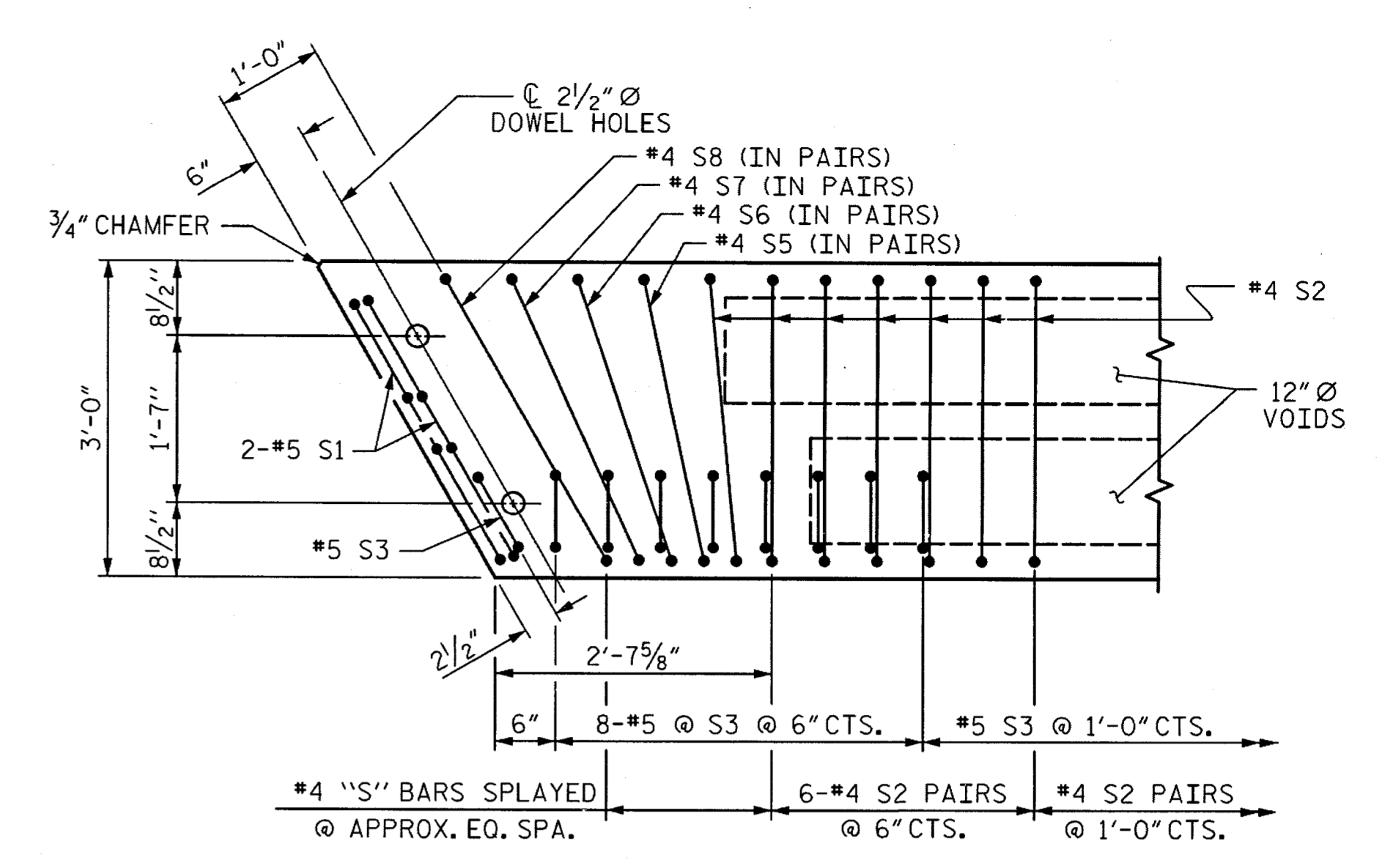
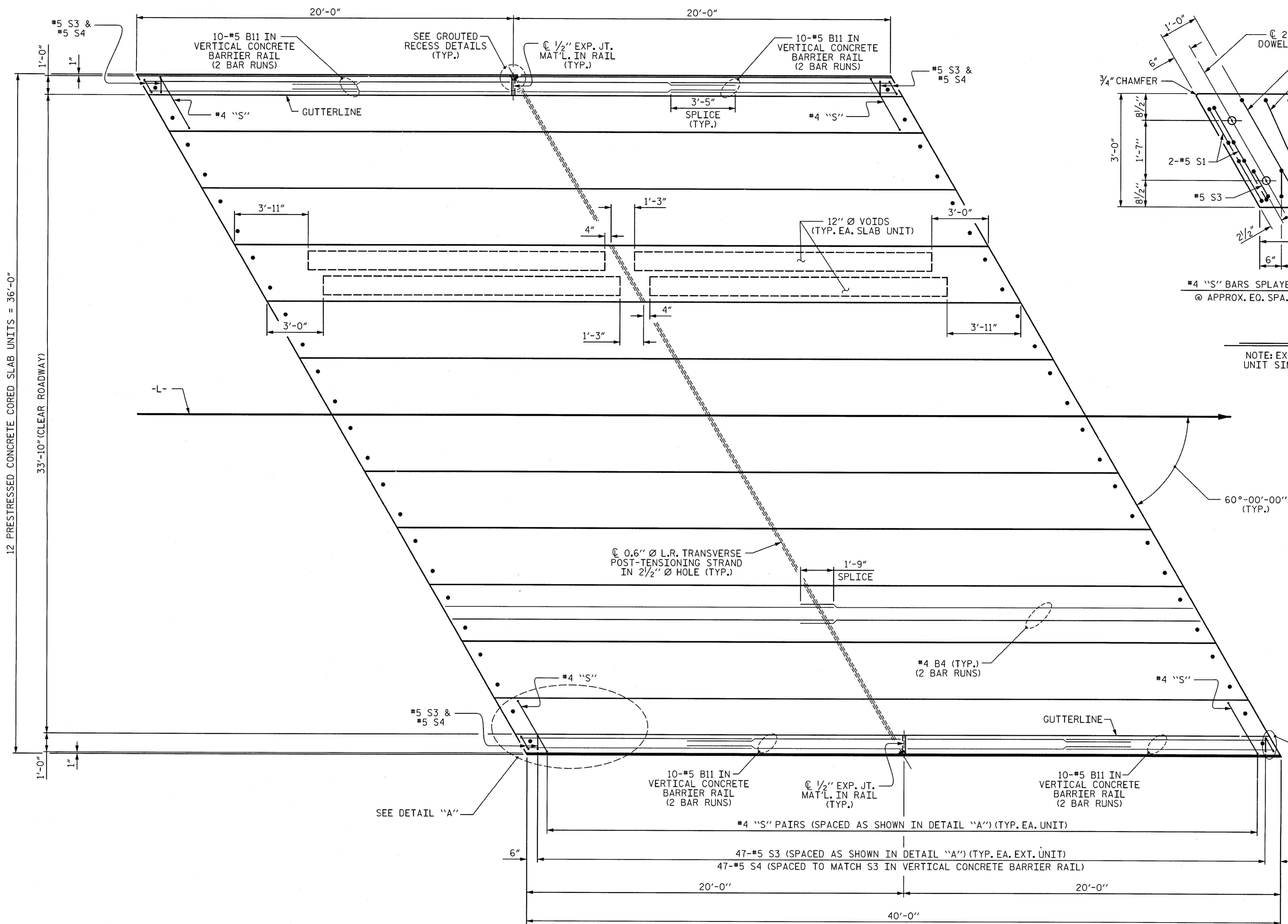
PROJECT NO. 17BP.4.R.24
EDGECOMBE COUNTY
STATION: 13+08.50 -L-
SHEET 1 OF 6

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

ASSEMBLED BY :	BS/KE	DATE :	10/12
CHECKED BY :	RAM/CG	DATE :	10/12
DRAWN BY :	DCE	5/09	REV. 12/11
CHECKED BY :	BCH	6/09	MAA/AAC

REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	13
1			3	TOTAL SHEETS
2			4	32

12 PRESTRESSED CONCRETE CORED SLAB UNITS = 36'-0"



DETAIL "A"

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

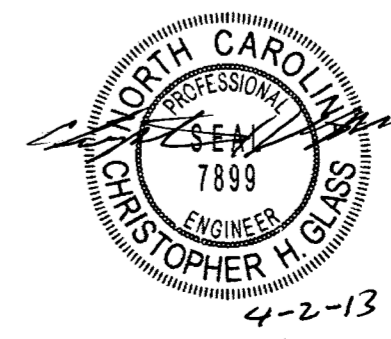
PLAN OF UNIT

PROJECT NO. 17BP.4.R.24
EDGECOMBE COUNTY
 STATION: 13+08.50 -L-

SHEET 2 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF 40' UNIT
 33'-10" CLEAR ROADWAY
 60° SKEW

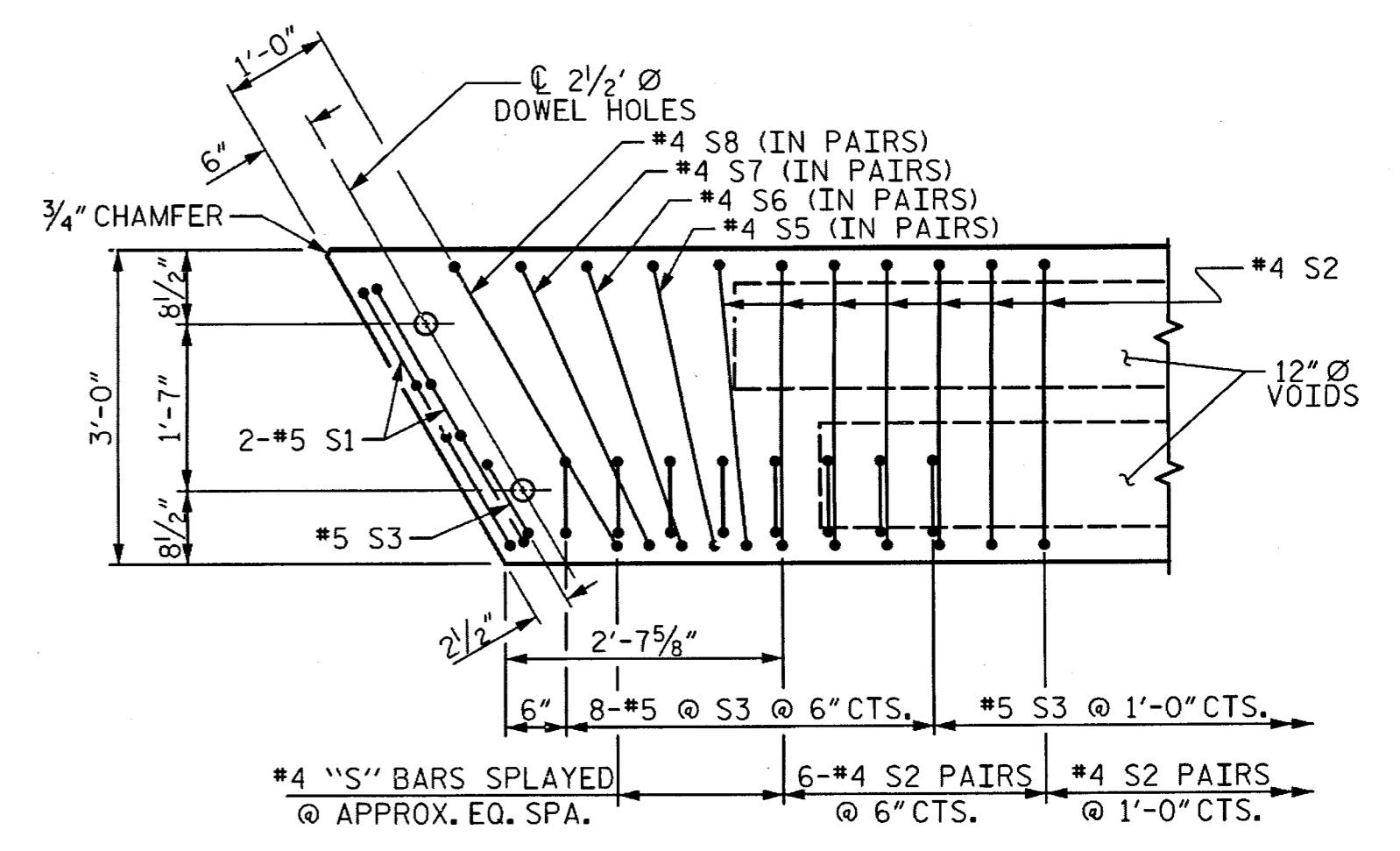
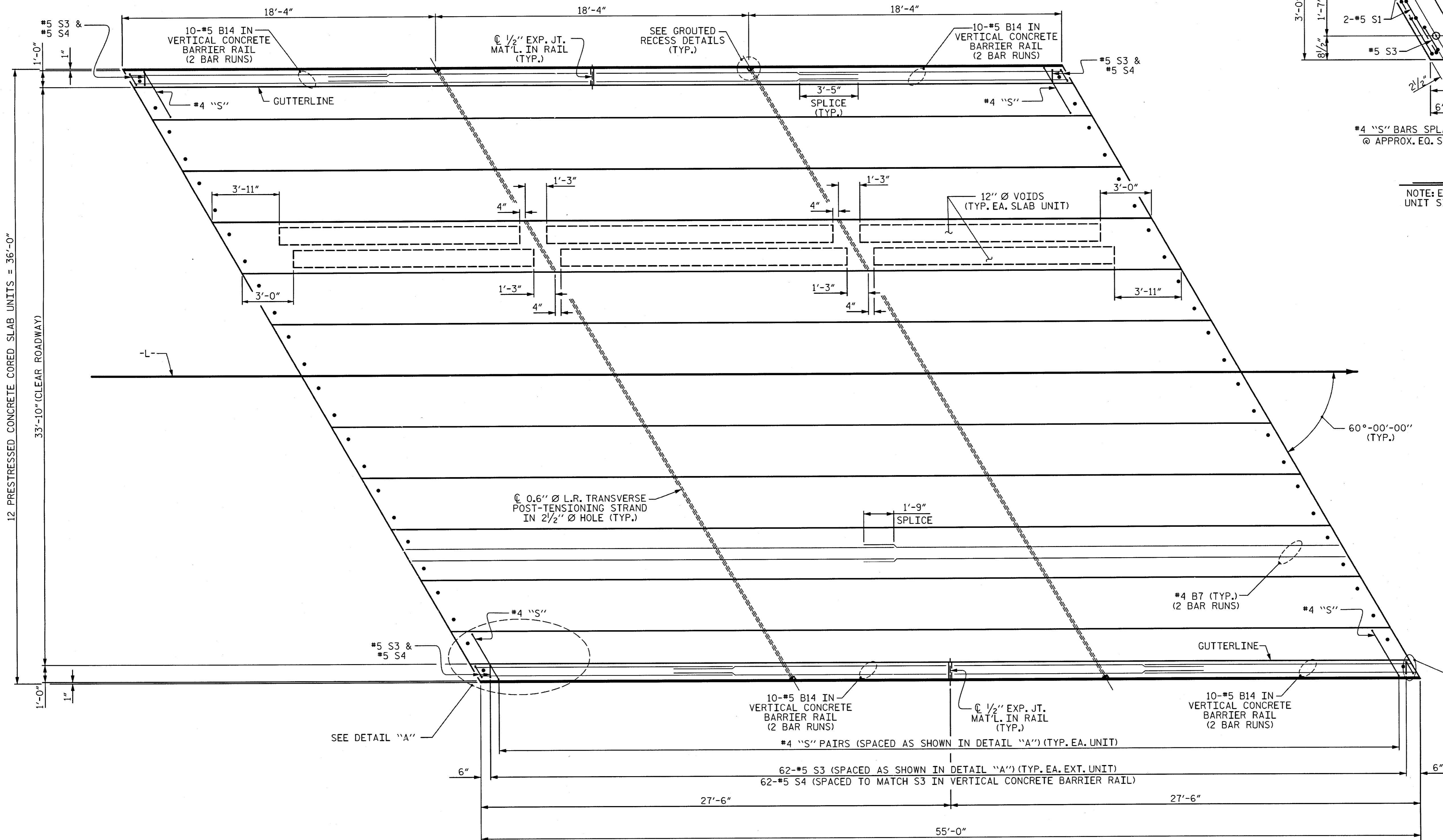


ASSEMBLED BY :	JBS/KE	DATE :	10/12
CHECKED BY :	RAM/CG	DATE :	10/12
DRAWN BY :	DGE 5/09	REV. 12/5/11	MAA/AAC
CHECKED BY :	BCH 6/09		

*****SYTIME*****
 *****DGN*****
 *****USERNAME*****

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	DATE:	TOTAL SHEETS
1			3		14
2			4		32

STD. NO. 21" PCS_36_60S_40L



DETAIL "A"
 NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

PLAN OF UNIT

PROJECT NO. 17BP.4.R.24
 EDGEcombe COUNTY
 STATION: 13+08.50 -L-
 SHEET 3 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF 55' UNIT
 33'-10" CLEAR ROADWAY
 60° SKEW

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

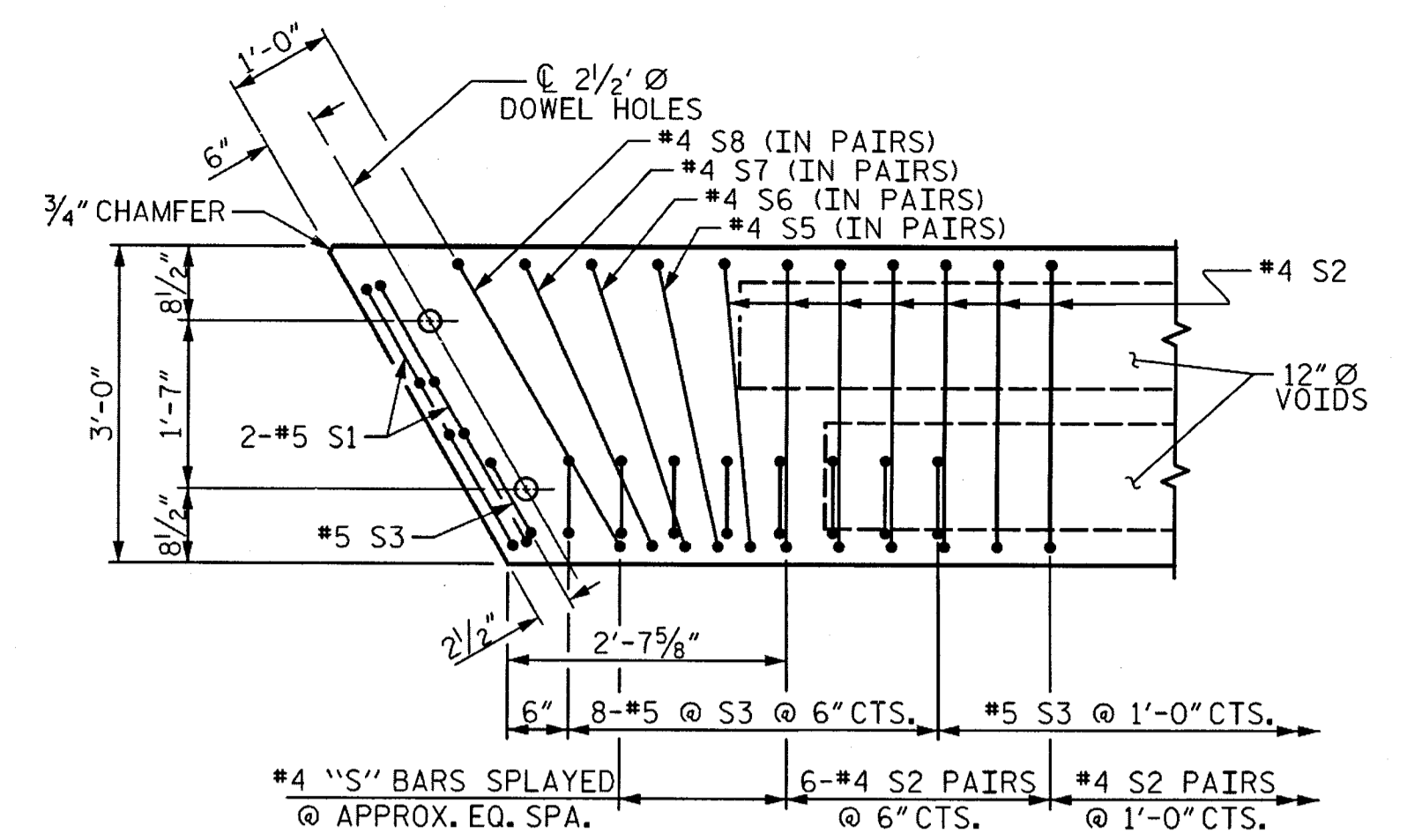
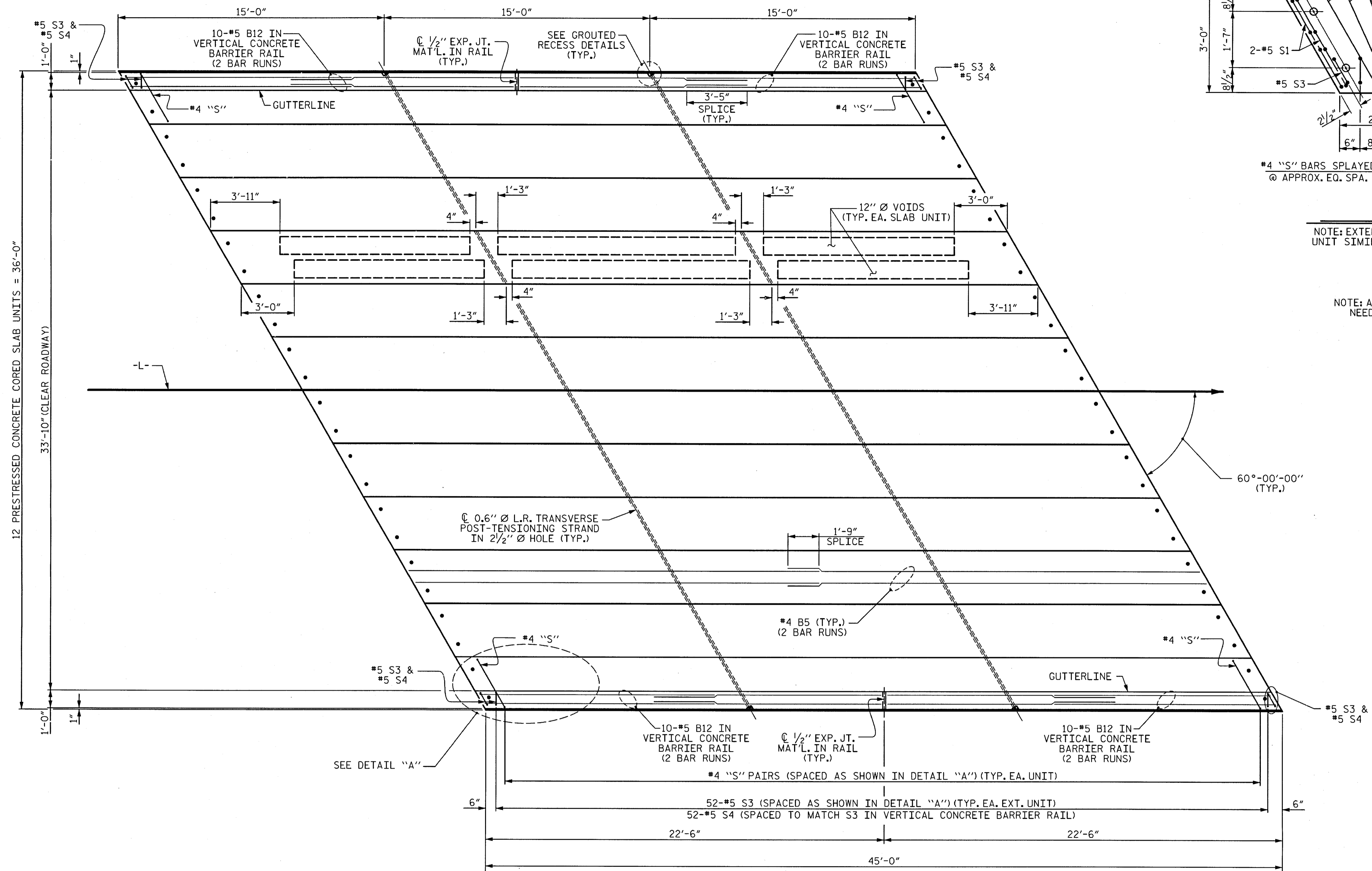
TOTAL SHEETS: 32



ASSEMBLED BY: JBS/KE DATE: 10/12
 CHECKED BY: RAM/CG DATE: 10/12
 DRAWN BY: DCE 5/09 REV. 12/5/11 MAA/AAC
 CHECKED BY: BCH 6/09

*****SYSTEM*****
 *****DCN*****
 *****USERNAME*****

STD. NO. 21" PCS_36_60S_55L



DETAIL "A"
 NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

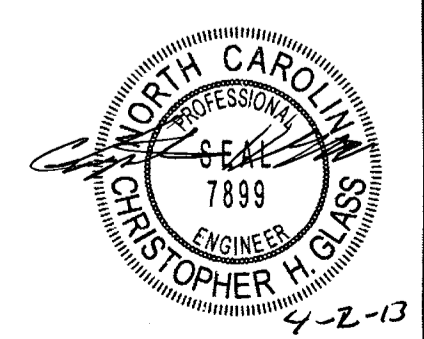
NOTE: ALTHOUGH 2-45' SPANS, ONLY NEED ONE 45' PLAN OF SPAN

PLAN OF UNIT

PROJECT NO. 17BP.4.R.24
EDGECOMBE COUNTY
 STATION: 13+08.50 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PLAN OF 45' UNIT
 33'-10" CLEAR ROADWAY
 60° SKEW



ASSEMBLED BY :	JBS/KE	DATE :	10/12
CHECKED BY :	RAM/CG	DATE :	10/12
DRAWN BY :	DGE 5/09	REV. 12/5/11	MAA/AAC
CHECKED BY :	BCH 6/09		

*****SYSTEM*****
 *****DGN*****
 *****USERNAME*****

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	16
1			3			TOTAL SHEETS
2			4			32

STD. NO. 21" PCS_36_60S_45L

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE 2" Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

ALL REINFORCING STEEL IN THE VERTICAL CONCRETE BARRIER RAIL SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

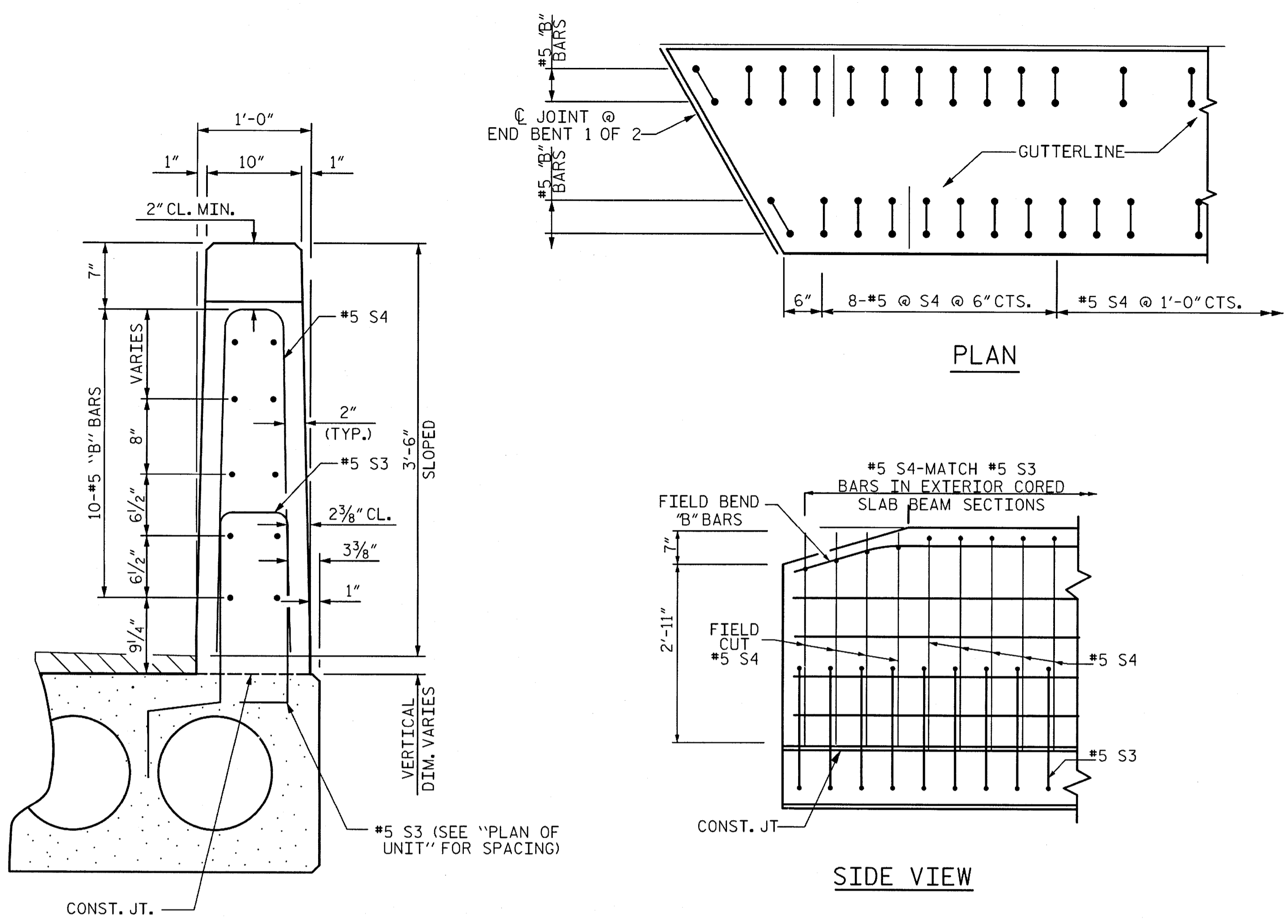
GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

TRANSVERSE POST TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC BEARING DETAILS, SEE 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT 60° SKEW SHEET 6 OF 6.



END OF VERTICAL CONCRETE BARRIER RAIL DETAILS

(FOR ELEVATION AT EXPANSION JOINTS AT INTERIOR BENTS AND SECTION SS - SEE SHEET 6 OF 6)

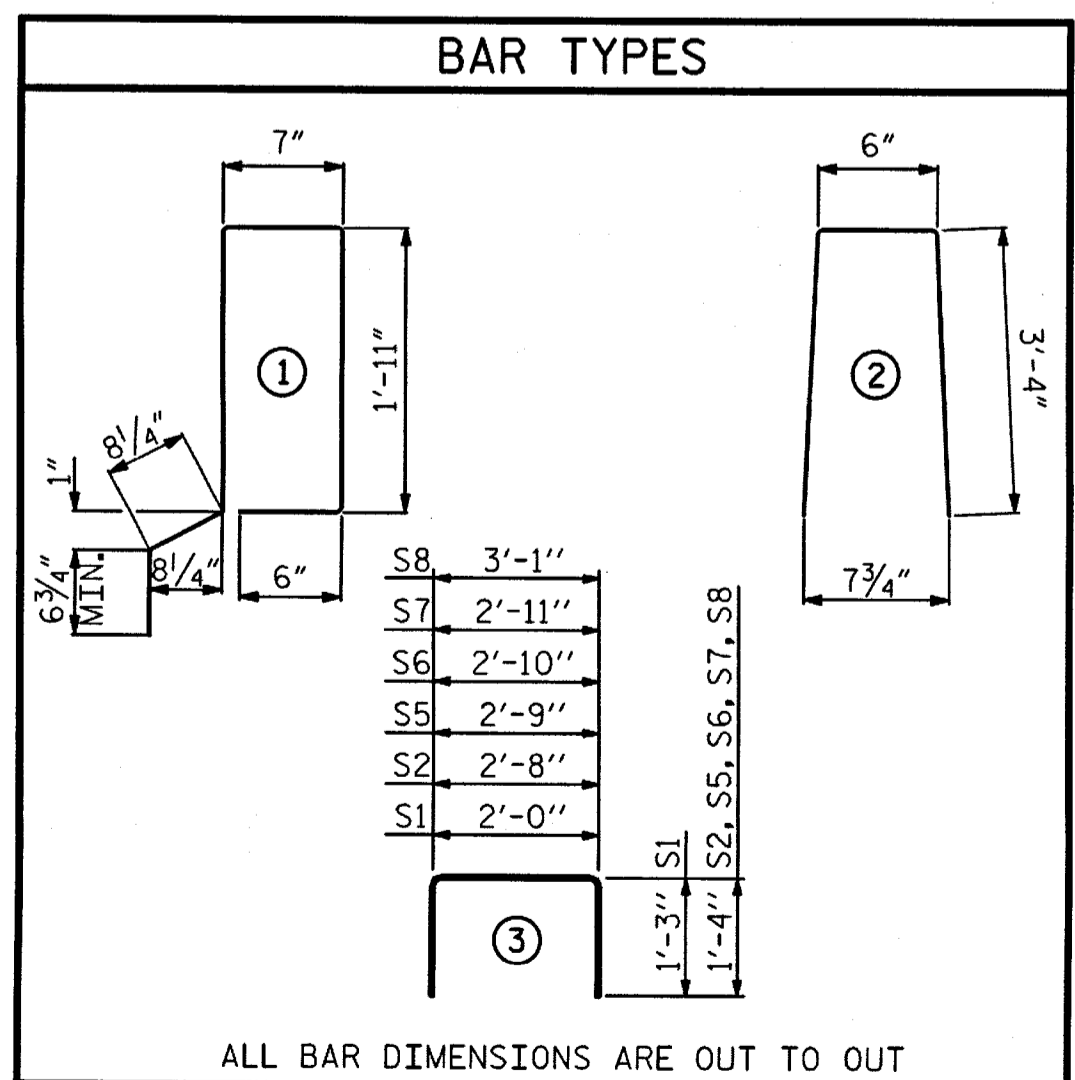
DEAD LOAD DEFLECTION AND CAMBER	
40' & 45' CORED SLAB UNIT	3'-0" x 1'-9" 0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1/4" ↓
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/8" ↓
FINAL CAMBER	1/8" ↑

** INCLUDES FUTURE WEARING SURFACE

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
40' UNIT			
EXTERIOR C.S.	2	40'-0"	80'-0"
INTERIOR C.S.	10	40'-0"	400'-0"
TOTAL	12		480'-0"

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
45' UNIT			
EXTERIOR C.S.	4	45'-0"	180'-0"
INTERIOR C.S.	20	45'-0"	900'-0"
TOTAL	24		1080'-0"

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
33'-10" CLEAR ROADWAY	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
	NORMAL CROWN SECTION	
40' & 45' UNITS	2 3/8"	3'-8 7/8"



BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
40' UNIT						
*B11	80	80	#5	STR	11'-9"	980
*S4	98	98	#5	2	7'-2"	733
* EPOXY COATED REINFORCING STEEL						LBS. 1713
CLASS AA CONCRETE						CU.YDS. 10.5
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN. FT. 80.29

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
45' UNIT						
*B12	64	128	#5	STR	13'-0"	1736
*S4	108	216	#5	2	7'-2"	1615
* EPOXY COATED REINFORCING STEEL						LBS. 3351
CLASS AA CONCRETE						CU.YDS. 23.6
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN. FT. 180.58

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

BILL OF MATERIAL FOR ONE 40' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B4	4	#4	STR	20'-8"	55	20'-8"	55
S1	8	#5	3	4'-6"	38	4'-6"	38
S2	82	#4	3	5'-4"	292	5'-4"	292
*S3	49	#5	1	6'-2"	315		
S5	4	#4	3	5'-5"	14	5'-5"	14
S6	4	#4	3	5'-6"	15	5'-6"	15
S7	4	#4	3	5'-7"	15	5'-7"	15
S8	4	#4	3	5'-9"	15	5'-9"	15
REINFORCING STEEL				LBS.	444	444	
* EPOXY COATED REINFORCING STEEL				LBS.	315		
6500 P.S.I. CONCRETE				CU. YDS.	5.9	5.9	
0.6" Ø L.R. STRANDS				No.	13	13	

BILL OF MATERIAL FOR ONE 45' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B5	4	#4	STR	23'-2"	62	23'-2"	62
S1	8	#5	3	4'-6"	38	4'-6"	38
S2	92	#4	3	5'-4"	328	5'-4"	328
*S3	54	#5	1	6'-2"	347		
S5	4	#4	3	5'-5"	14	5'-5"	14
S6	4	#4	3	5'-6"	15	5'-6"	15
S7	4	#4	3	5'-7"	15	5'-7"	15
S8	4	#4	3	5'-9"	15	5'-9"	15
REINFORCING STEEL				LBS.	487	487	
* EPOXY COATED REINFORCING STEEL				LBS.	347		
6500 P.S.I. CONCRETE				CU. YDS.	6.6	6.6	
0.6" Ø L.R. STRANDS				No.	13	13	

CONCRETE RELEASE STRENGTH	
UNIT	PSI
40' & 45' UNITS	4000
50' & 55' UNITS	4900

ASSEMBLED BY : JBS/KE DATE : 10/12
 CHECKED BY : RAM/CC DATE : 10/12
 DRAWN BY : DGE 5/09 REV. 12/11 MAA/AAC
 CHECKED BY : BCH 6/09

PROJECT No. 17BP.4.R.24
 EDGEcombe COUNTY
 STATION: 13+08.50 -L-

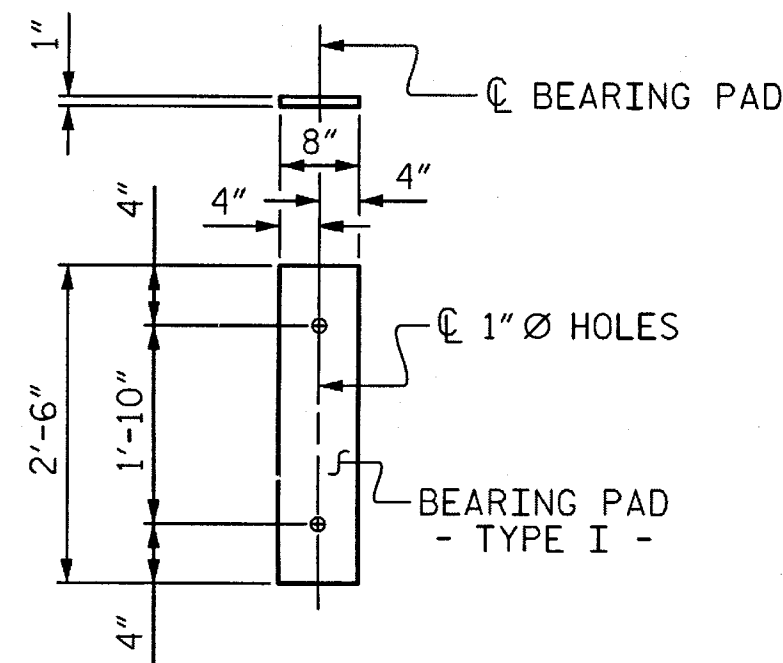
SHEET 5 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 3'-0" X 1'-9"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT
 60° SKEW

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

TOTAL SHEETS 32

STD. NO. 21" PCS3_36_60S

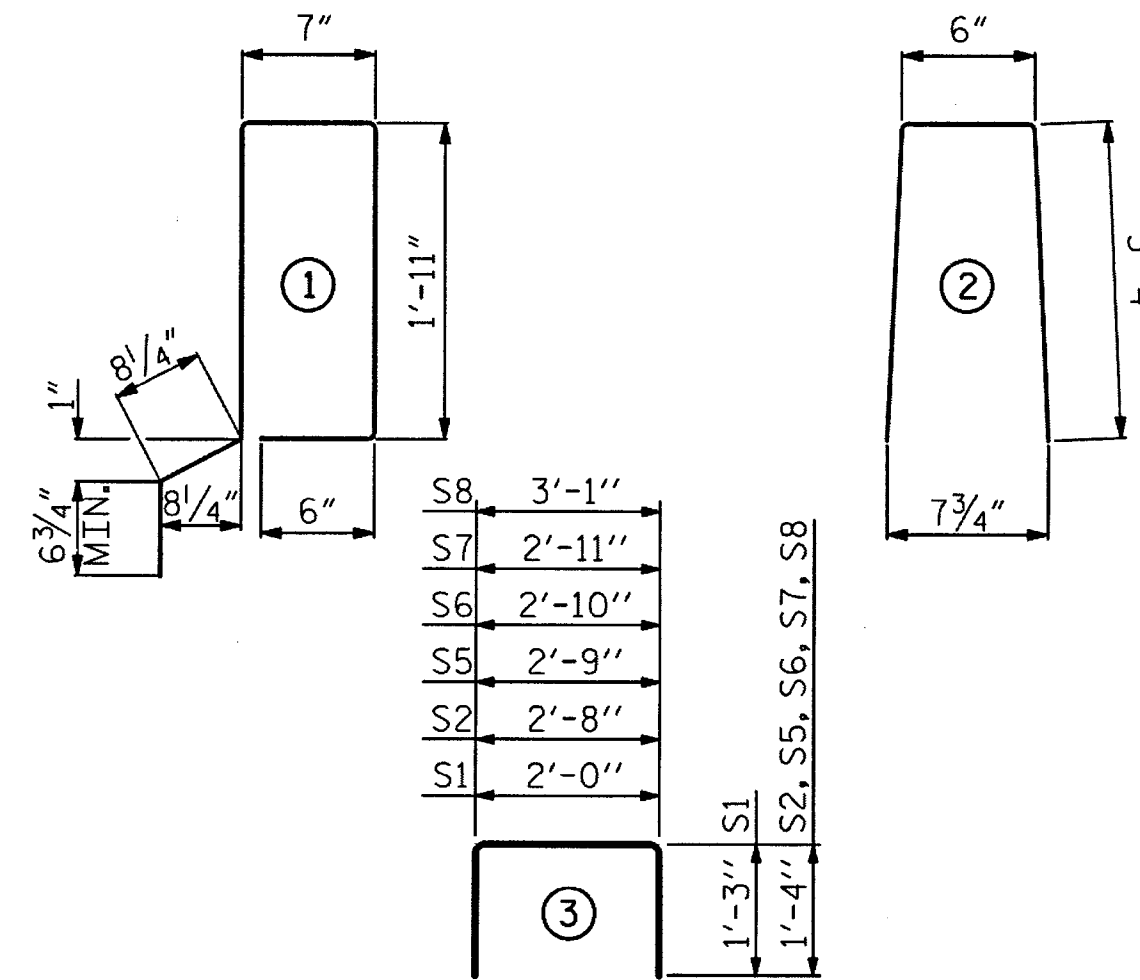


FIXED END
(TYPE I - 96 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE 2" Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

ALL REINFORCING STEEL IN THE VERTICAL CONCRETE BARRIER RAIL SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

TRANSVERSE POST TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 1'-9"
50' & 55' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2 1/2" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/4" ↓
FINAL CAMBER	2 1/4" ↑

** INCLUDES FUTURE WEARING SURFACE

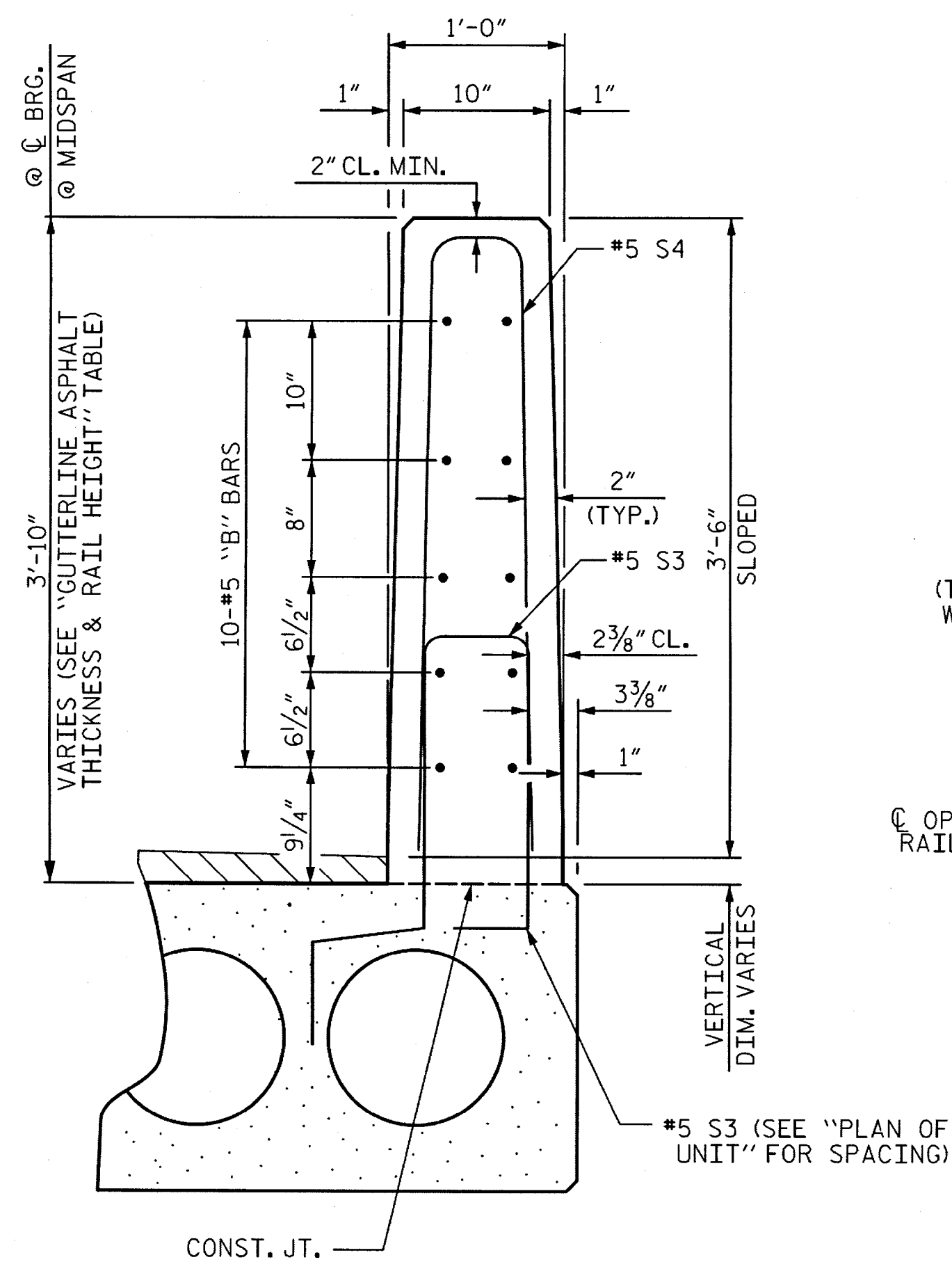
BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
55' UNIT						
*B14	64	64	#5	STR	15'-6"	1293
*S4	128	128	#5	2	7'-2"	957
*EPOXY COATED REINFORCING STEEL						LBS. 2250
CLASS AA CONCRETE						CU.YDS. 14.4
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN. FT. 110.29

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
33'-10" CLEAR ROADWAY	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
	NORMAL CROWN SECTION	
50' & 55' UNITS	1/4"	3'-7 3/4"

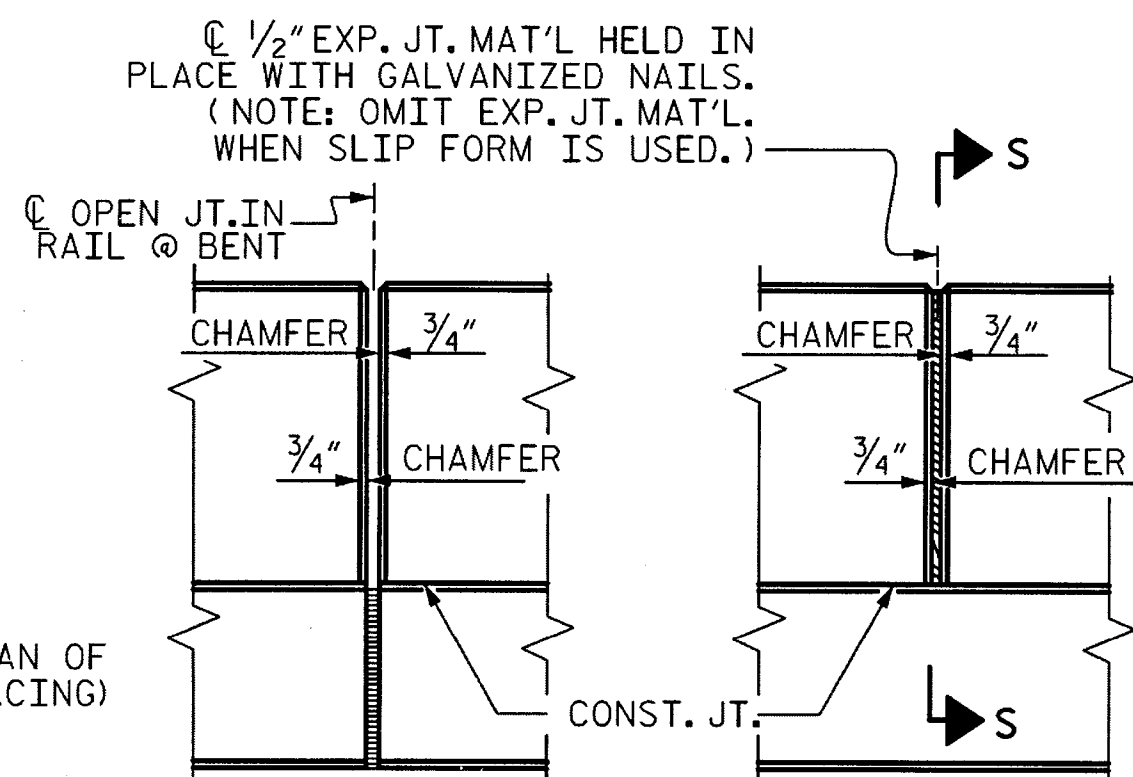
CONCRETE RELEASE STRENGTH	
UNIT	PSI
40' & 45' UNITS	4000
50' & 55' UNITS	4900

CORED SLABS REQUIRED			
55' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	55'-0"	110'-0"
INTERIOR C.S.	10	55'-0"	550'-0"
TOTAL	12		660'-0"

BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B7	4	#4	STR	28'-2"	75	28'-2"	75
S1	8	#5	3	4'-6"	38	4'-6"	38
S2	112	#4	3	5'-4"	399	5'-4"	399
*S3	64	#5	1	6'-2"	412		
S5	4	#4	3	5'-5"	14	5'-5"	14
S6	4	#4	3	5'-6"	15	5'-6"	15
S7	4	#4	3	5'-7"	15	5'-7"	15
S8	4	#4	3	5'-9"	15	5'-9"	15
REINFORCING STEEL				LBS.	571		571
*EPOXY COATED REINFORCING STEEL				LBS.	412		
6500 P.S.I. CONCRETE				CU. YDS.	8.0		8.0
0.6" Ø L.R. STRANDS				No.	19		19



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

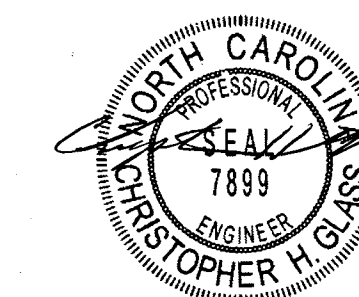


ELEVATION AT EXPANSION JOINTS

VERTICAL CONCRETE BARRIER RAIL SECTION

ASSEMBLED BY : BS/KE	DATE : 10/12
CHECKED BY : RAM/CC	DATE : 10/12
DRAWN BY : DGE 5/09	REV. 12/11
CHECKED BY : BCH 6/09	MAA/AAC

*****SYTIME*****
*****DCN*****
*****USERNAME*****



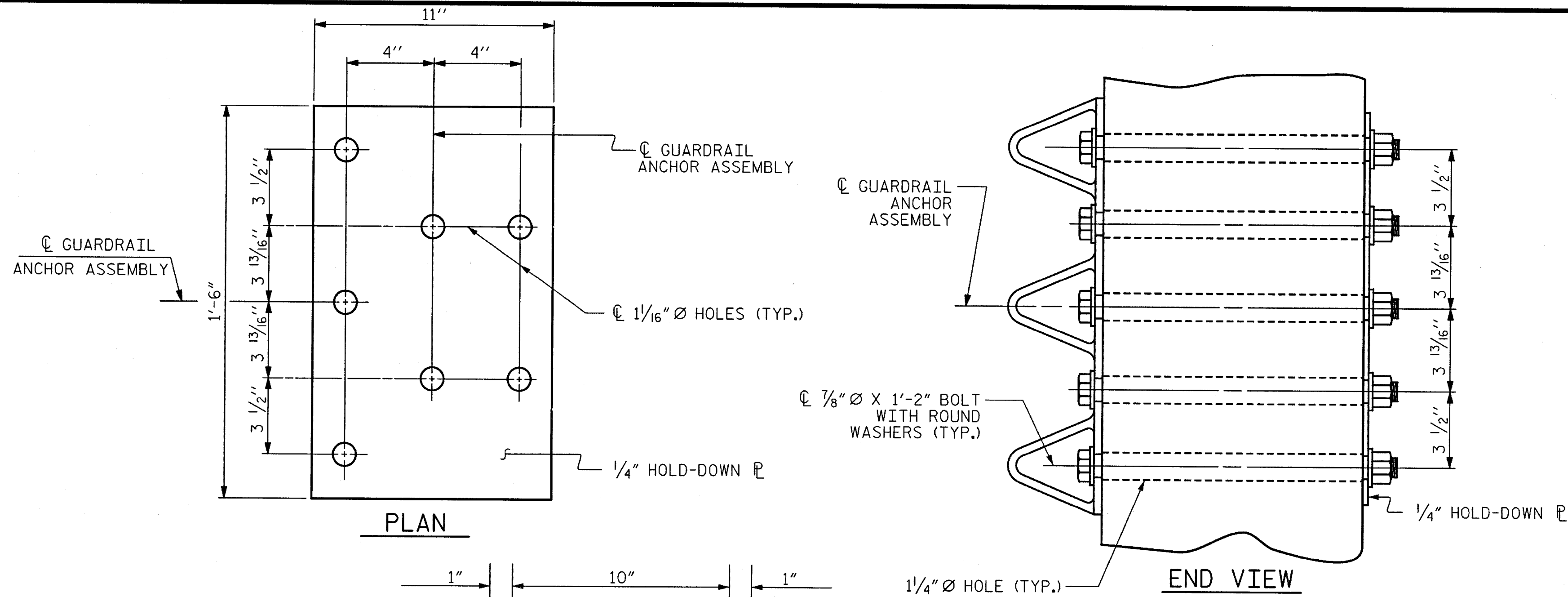
PROJECT No. 17BP.4.R.24
EDGEcombe COUNTY
STATION: 13+08.50 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
60° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	18
1			3			TOTAL SHEETS 32
2			4			

STD. NO. 21" PCS3_36_60S



GUARDRAIL ANCHOR ASSEMBLY DETAILS

NOTES (FOR VERTICAL CONCRETE BARRIER RAIL)

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 3/8" Ø BOLTS WITH NUTS AND WASHERS.

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

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 3/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

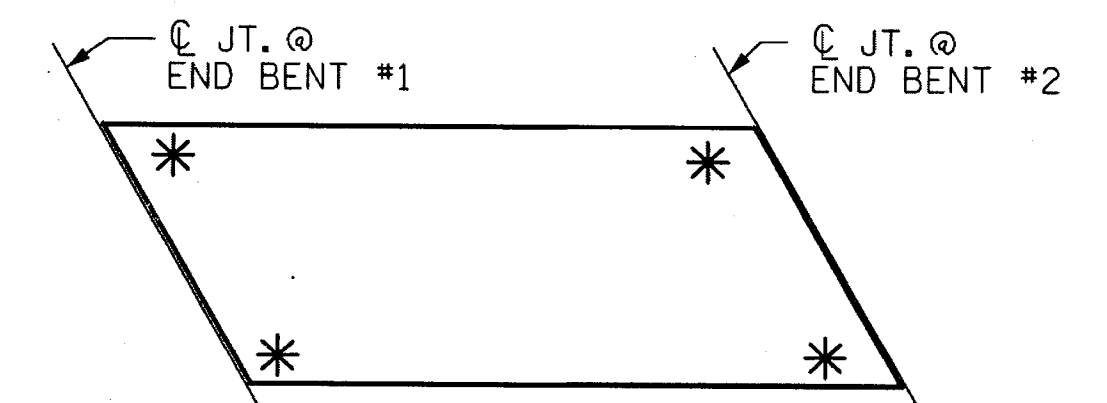
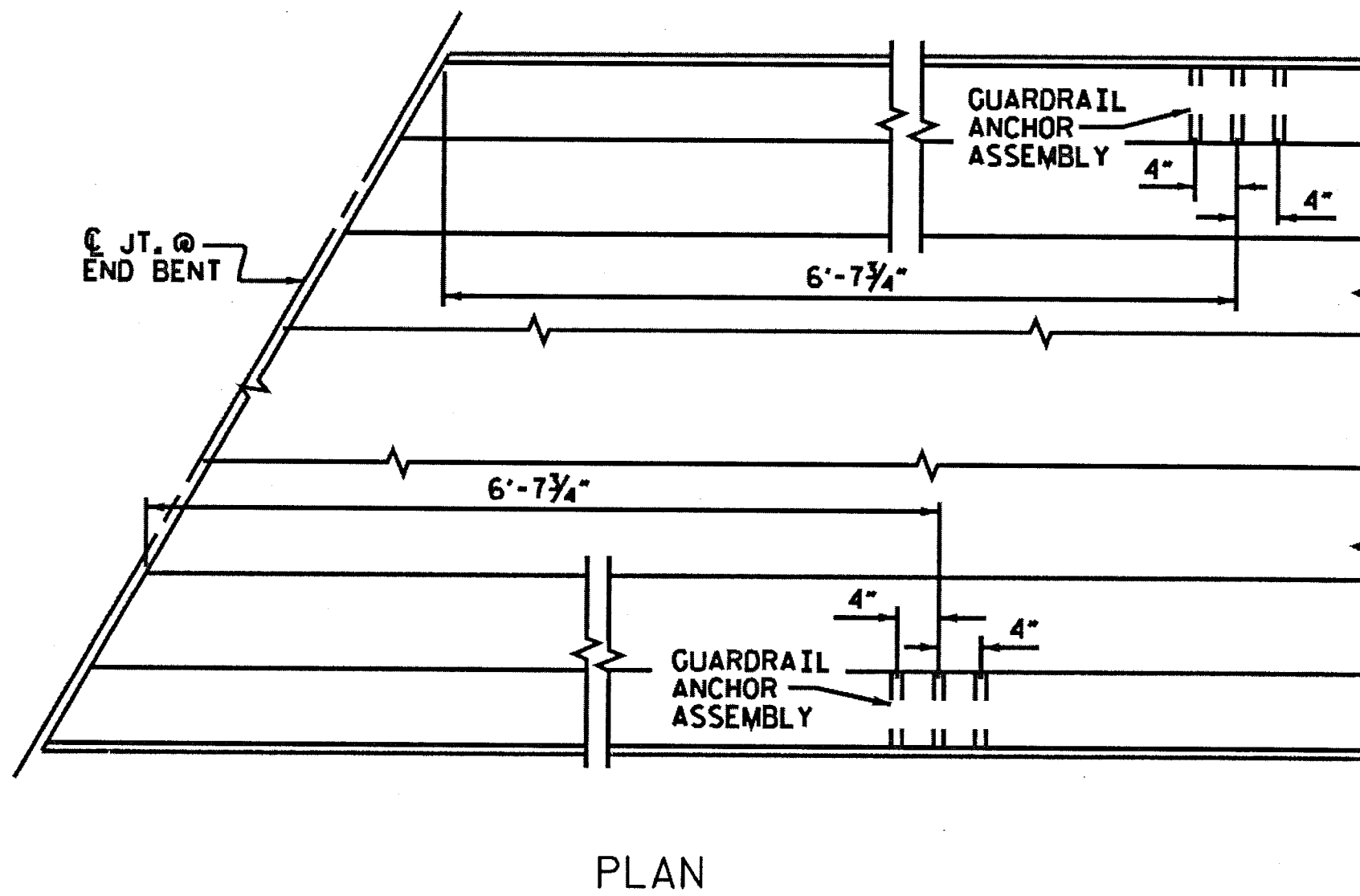
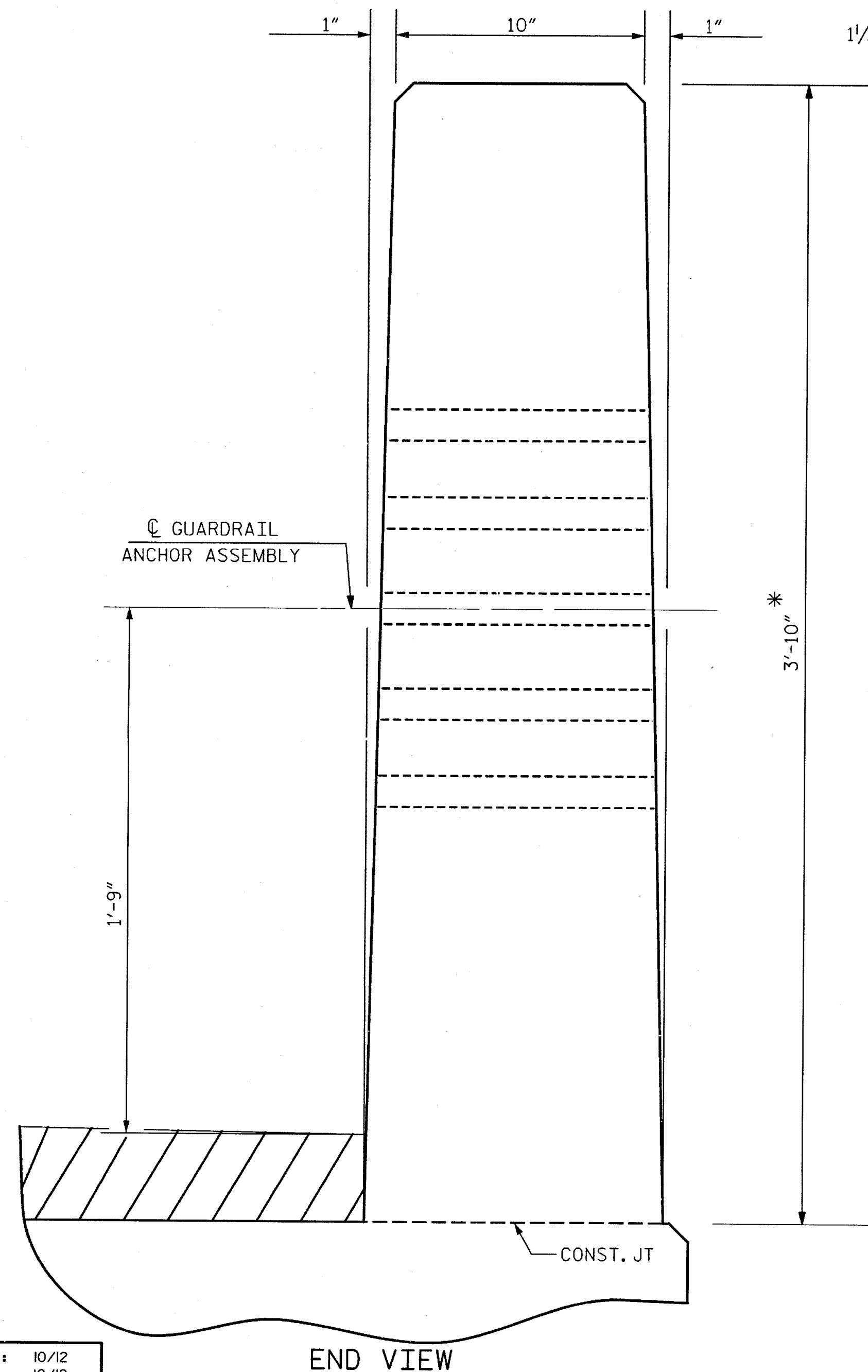
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

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

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

THE 1/4" 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.



SKETCH SHOWING POINTS OF ATTACHMENT

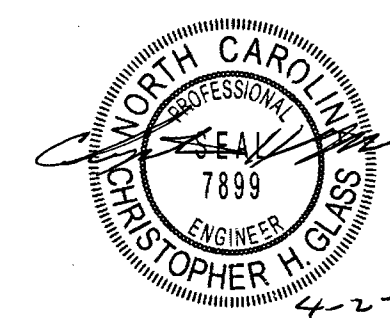
* DENOTES GUARDRAIL ANCHOR ASSEMBLY

LOCATION OF GUARDRAIL ANCHOR AT END POST

PROJECT NO. 17BP.4.R.24
EDGECOMBE COUNTY
 STATION: 13+08.5 -L-

ASSEMBLED BY :	BS/KE	DATE :	10/12
CHECKED BY :	RAM/CG	DATE :	10/12
DRAWN BY :	MAA 5/10	ADDED :	5/6/10
CHECKED BY :	GM 5/10	REV. :	10/1/11
		REV. :	12/5/11
		MAA/GM	
		MAA/GM	

END VIEW
 (VERTICAL CONCRETE BARRIER RAIL)
 * BASED ON 3/2" WEARING SURFACE



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 DETAILS FOR METAL
 RAILS & VERTICAL
 CONCRETE BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	19
1			3			TOTAL SHEETS
2			4			32

STD. NO. GRA3

*****SYSTEM*****
 *****DCN*****
 *****USERNAME*****

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

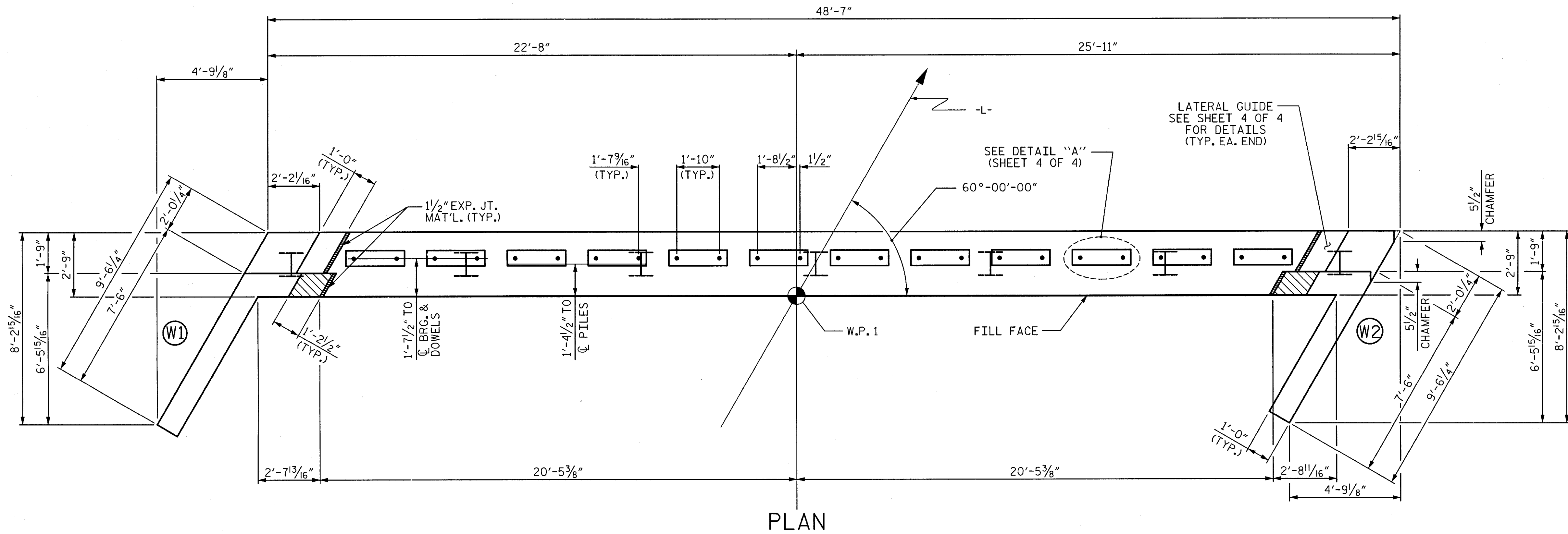
THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

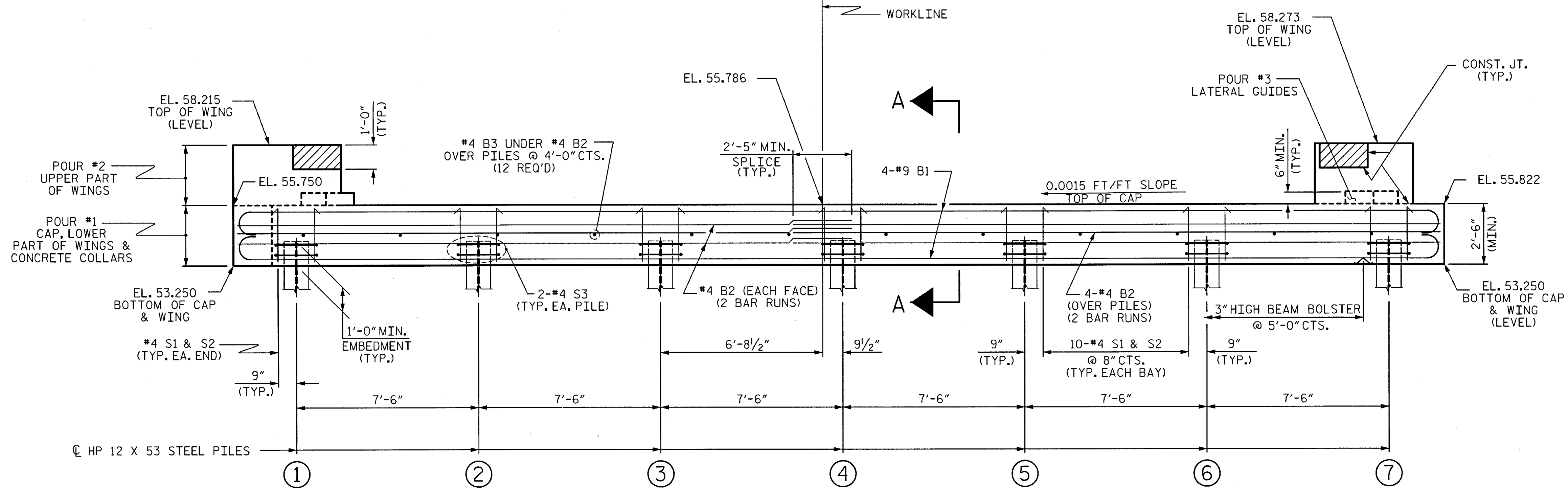
FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.



PLAN



ELEVATION

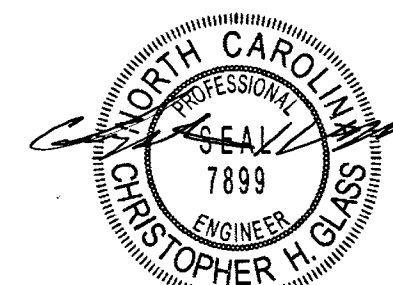
WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

PROJECT NO. 17BP.4.R.24
EDGEcombe COUNTY
STATION: 13+08.5 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 1



ASSEMBLED BY :	BS/KE	DATE :	10/12
CHECKED BY :	RAM/CG	DATE :	10/12
DRAWN BY :	DGE	02/10	
CHECKED BY :	MKT	02/10	

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

TOTAL SHEETS: 32

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

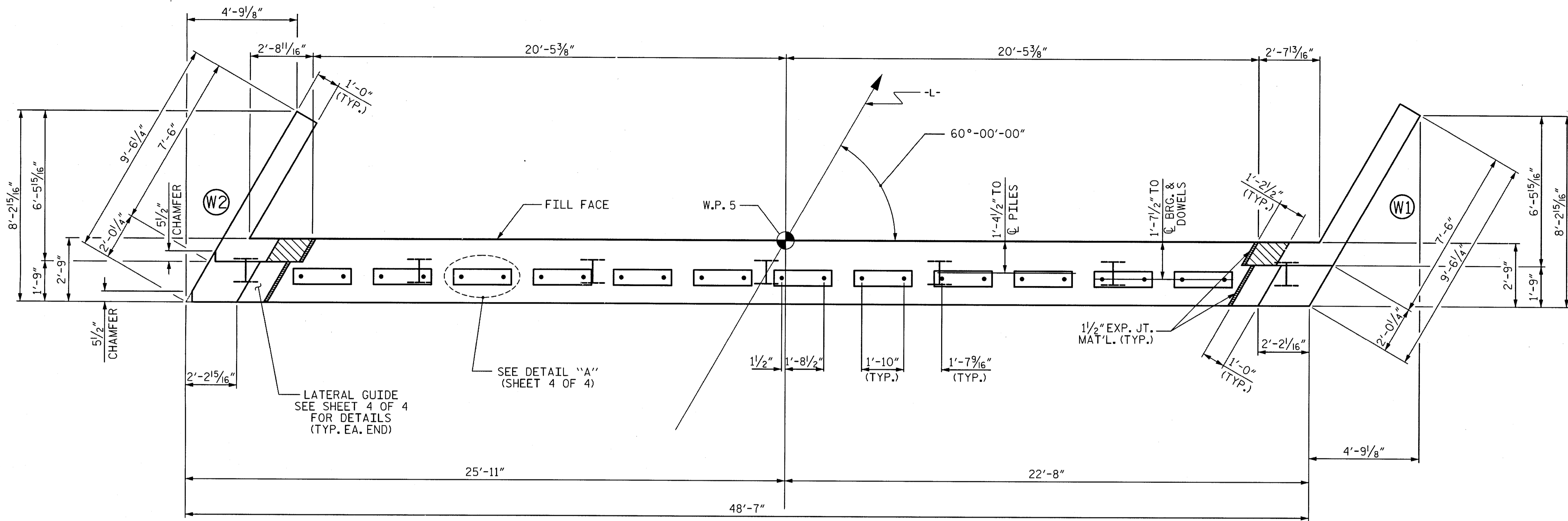
THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

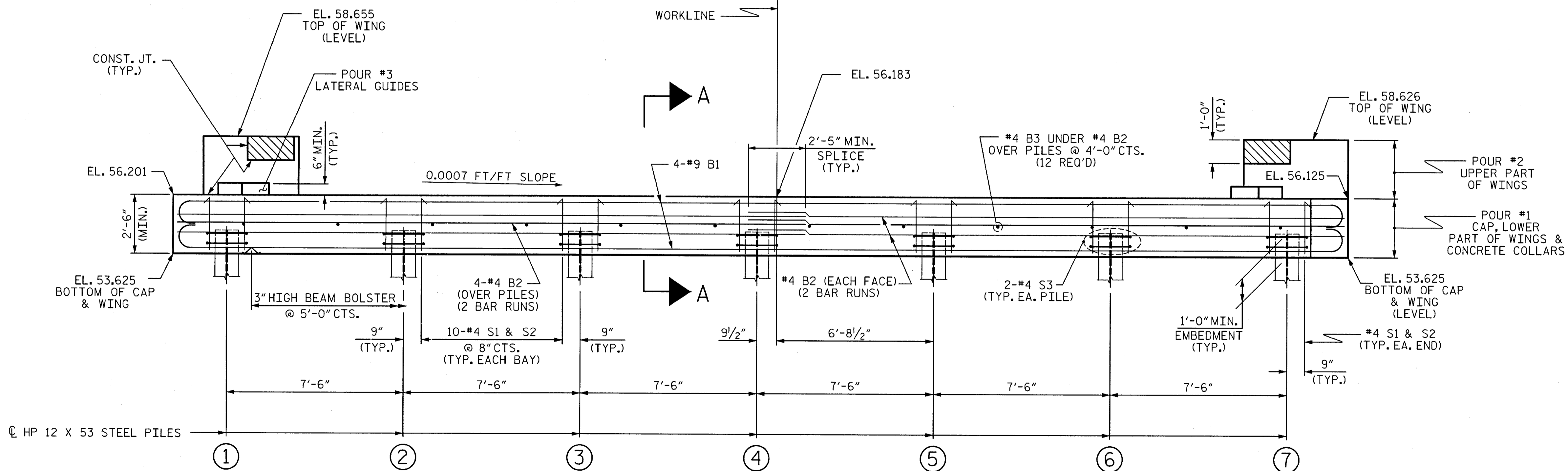
FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.



PLAN



ELEVATION

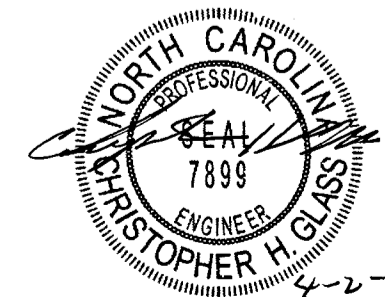
WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

PROJECT No. 17BP.4.R.24
EDGECOMBE COUNTY
STATION: 13+08.50 -L-

SHEET 2 OF 4

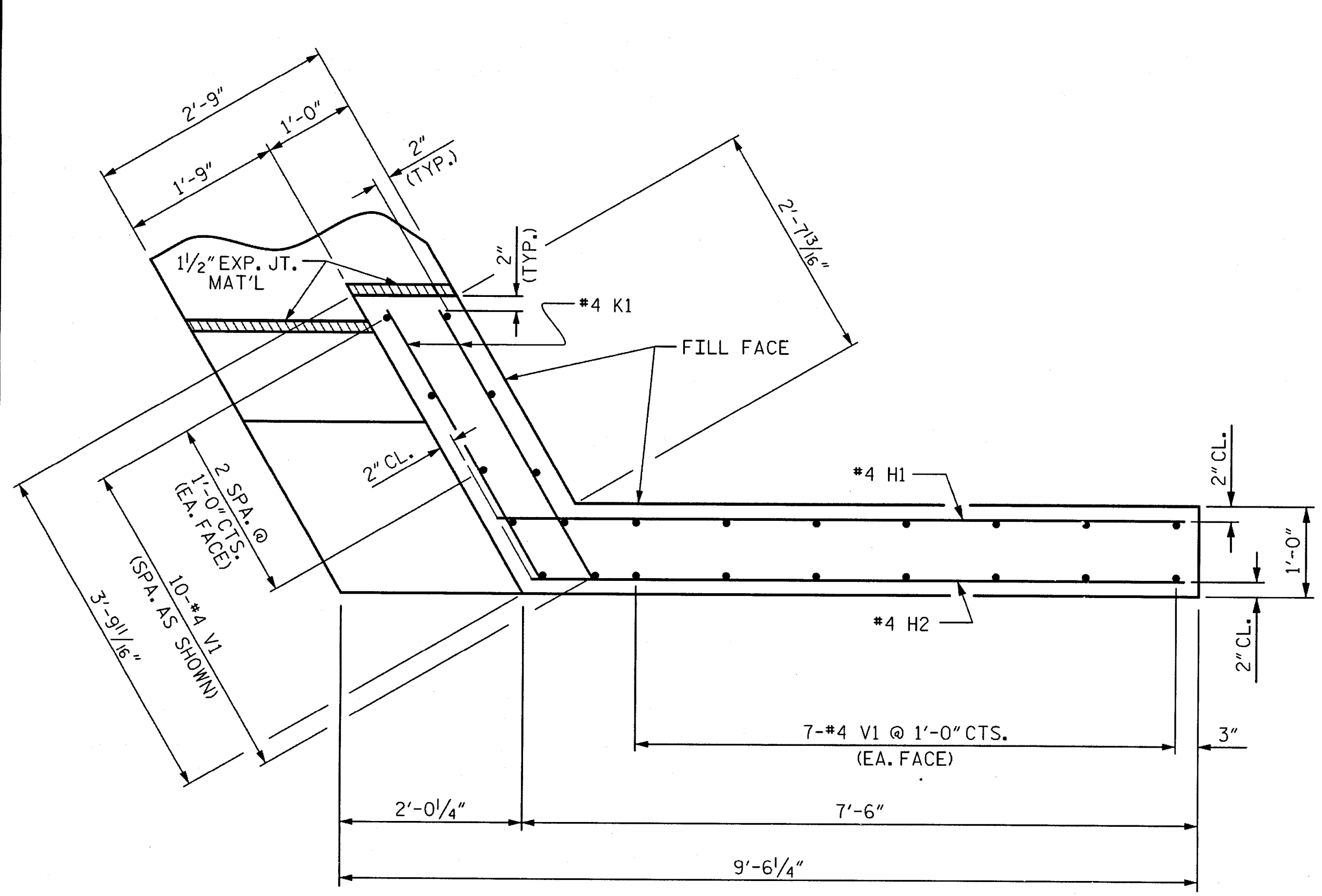
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 2

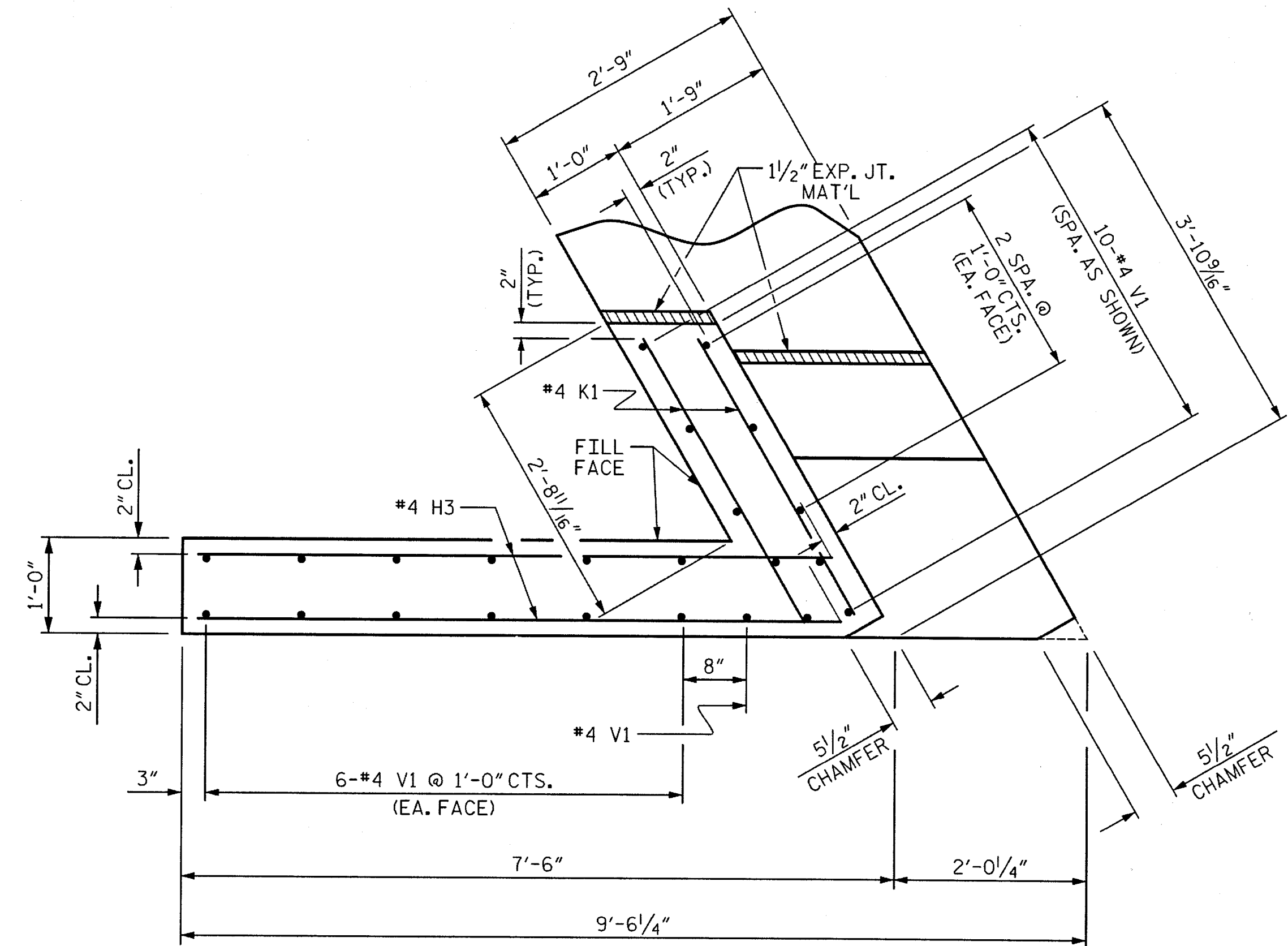


ASSEMBLED BY : BS/KE	DATE : 10/12
CHECKED BY : RAM/CG	DATE : 10/12
DRAWN BY : DGE 02/10	
CHECKED BY : MKT 02/10	

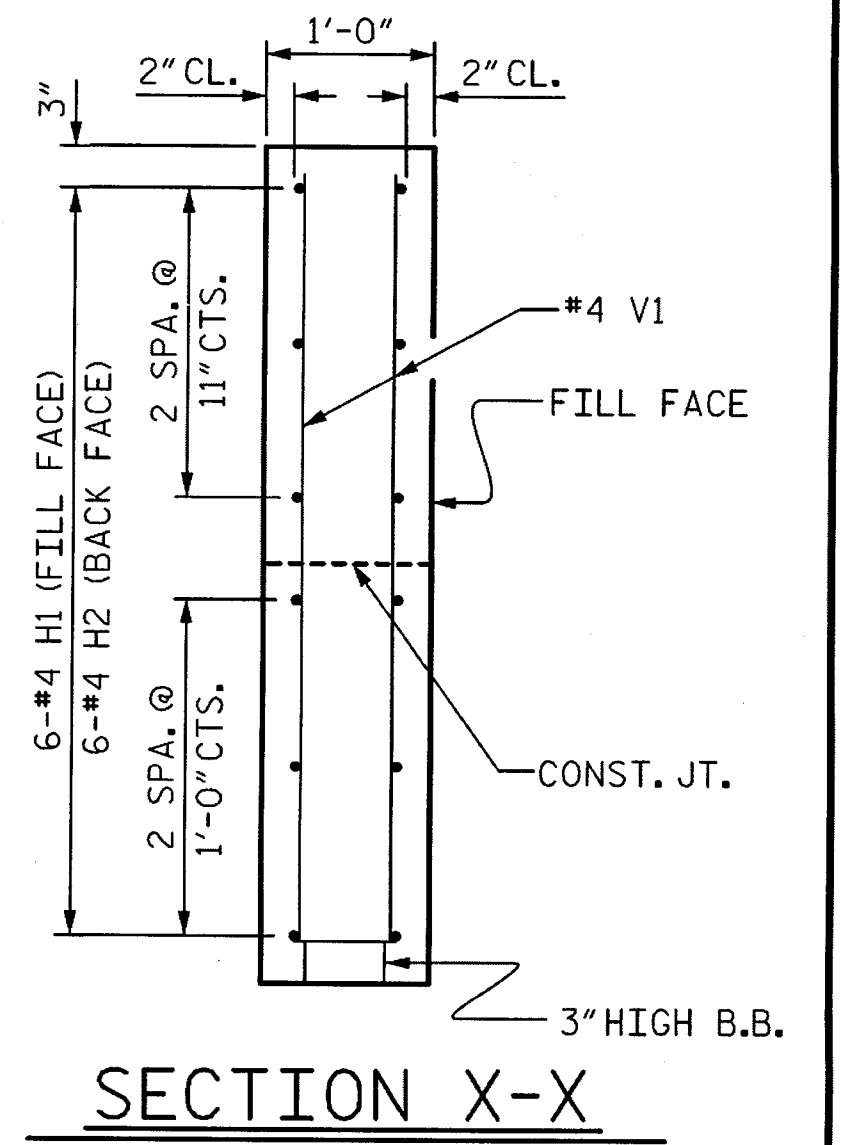
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	21
1			3			TOTAL SHEETS
2			4			32



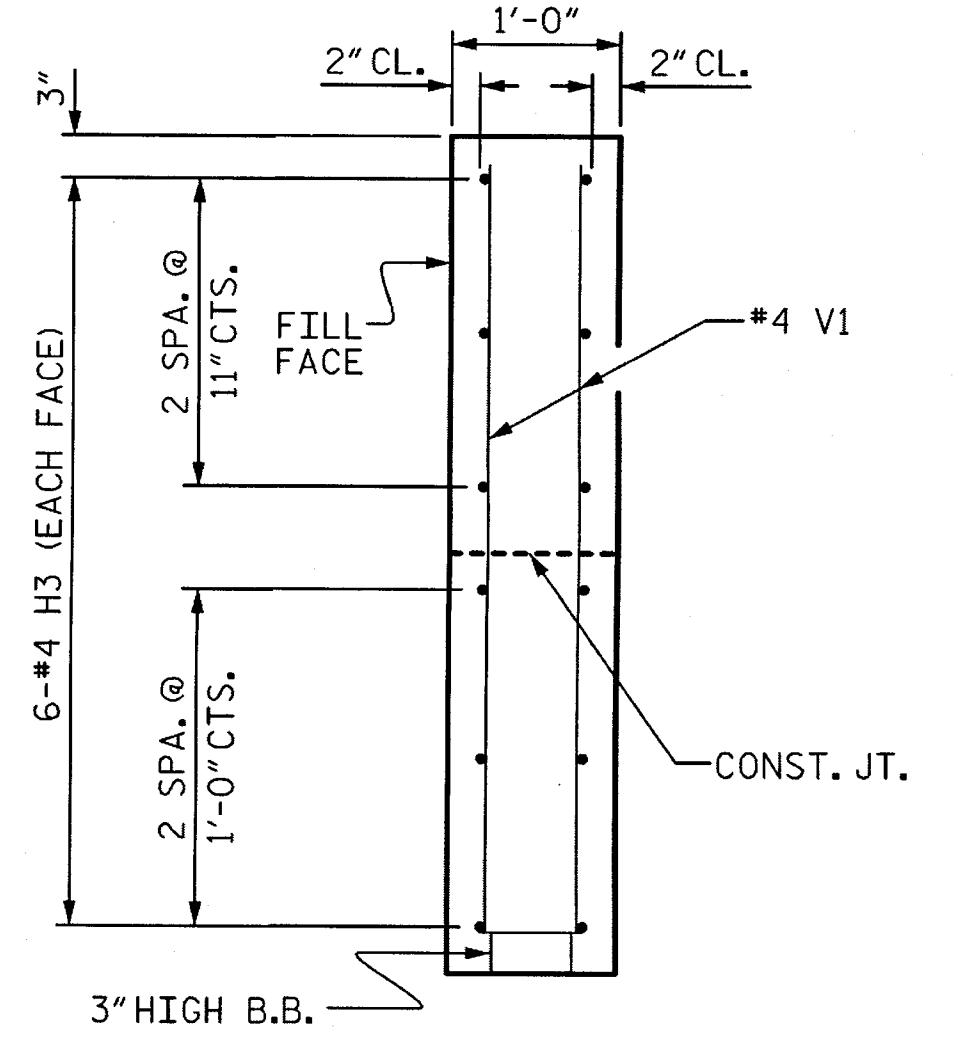
PLAN OF WING (W1)



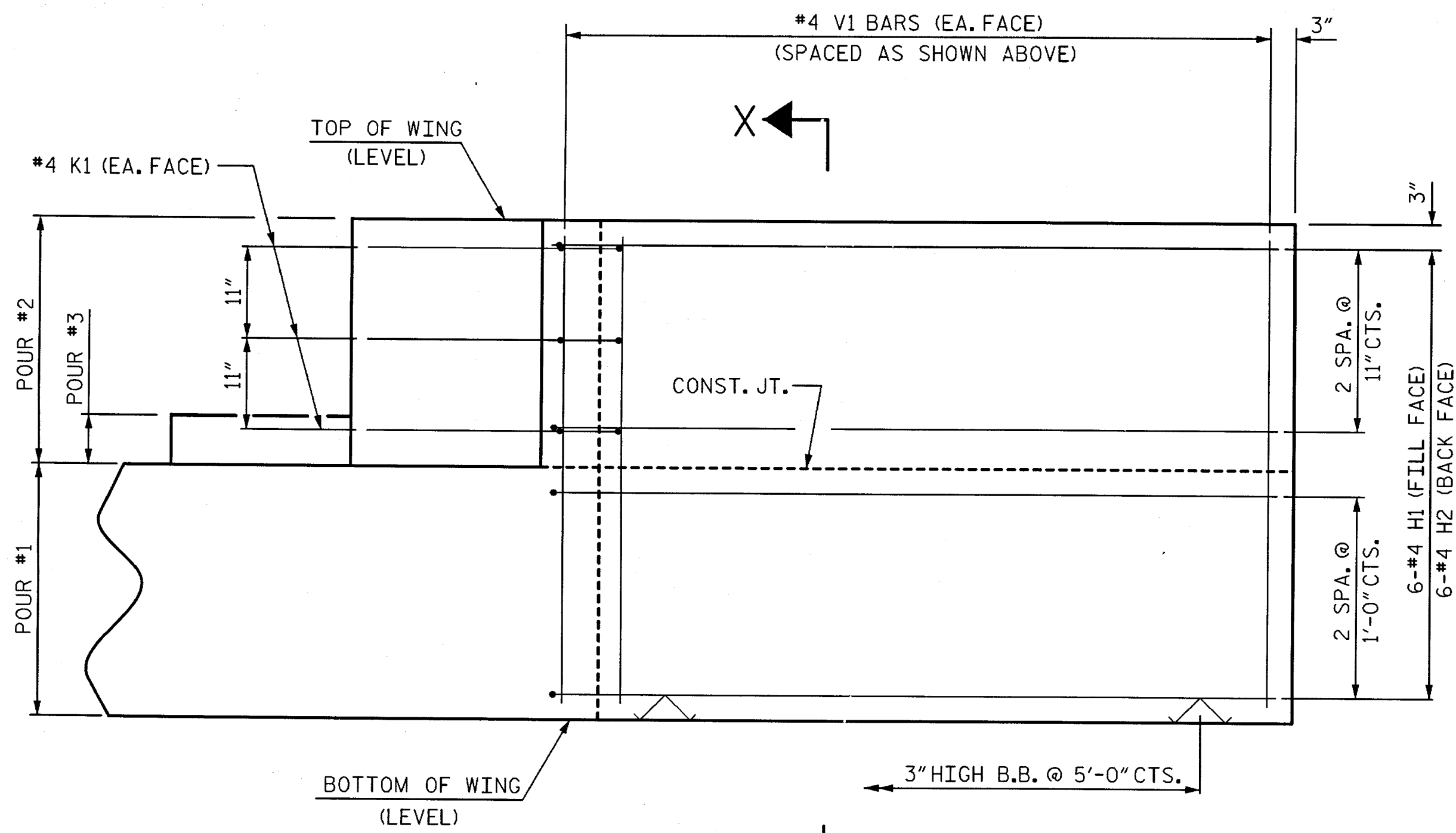
PLAN OF WING (W2)



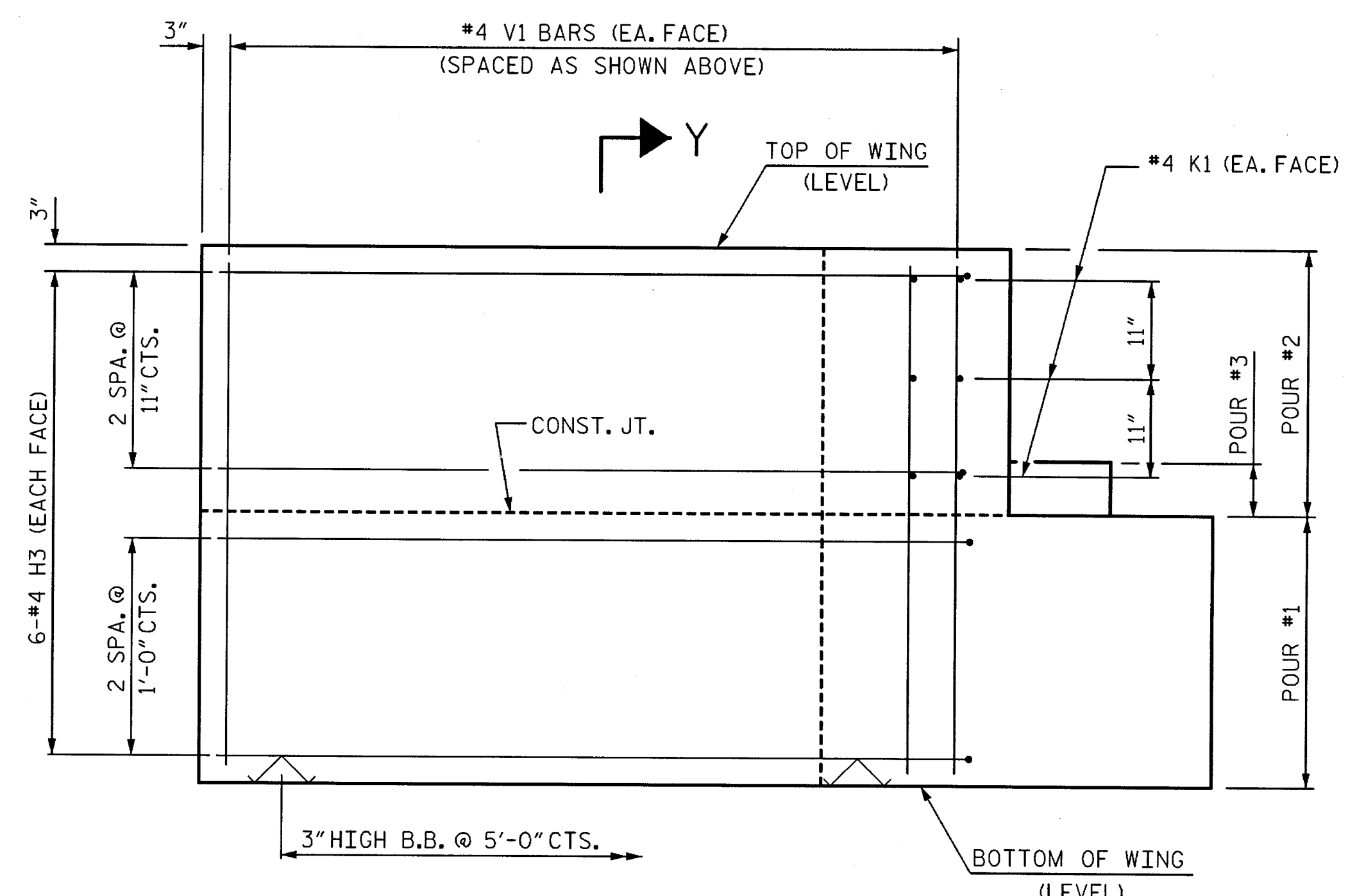
SECTION X-X



SECTION Y-Y



ELEVATION OF WING (W1)

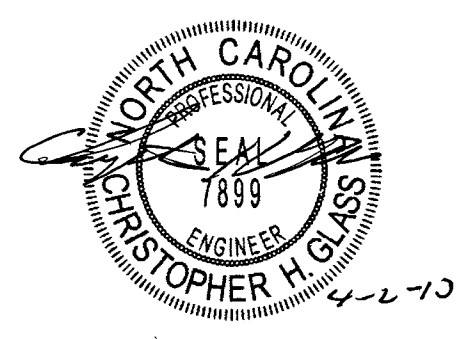


ELEVATION OF WING (W2)

WING DETAILS

ASSEMBLED BY : BS/KE
 CHECKED BY : RAM/CG
 DATE : 10/12
 DATE : 10/12
 DRAWN BY : DGE 02/10
 CHECKED BY : MKT 02/10

*****SYSTEM*****
 *****DGN*****
 *****USERNAME*****



PROJECT NO. 17BP.4.R.24
 EDGECOMBE COUNTY
 STATION: 13+08.5 -L-

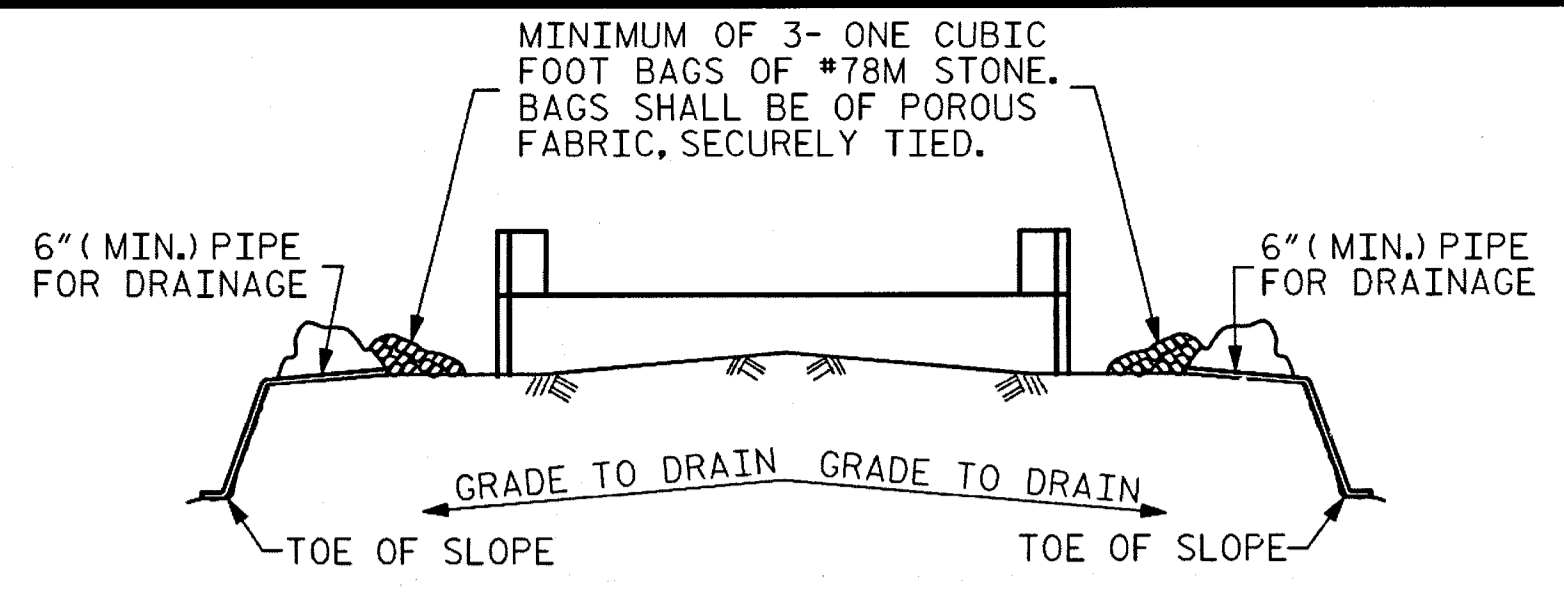
SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT
 WING DETAILS

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	22	
1			3			TOTAL SHEETS	
2			4			32	

STD. NO. EB-36-60S

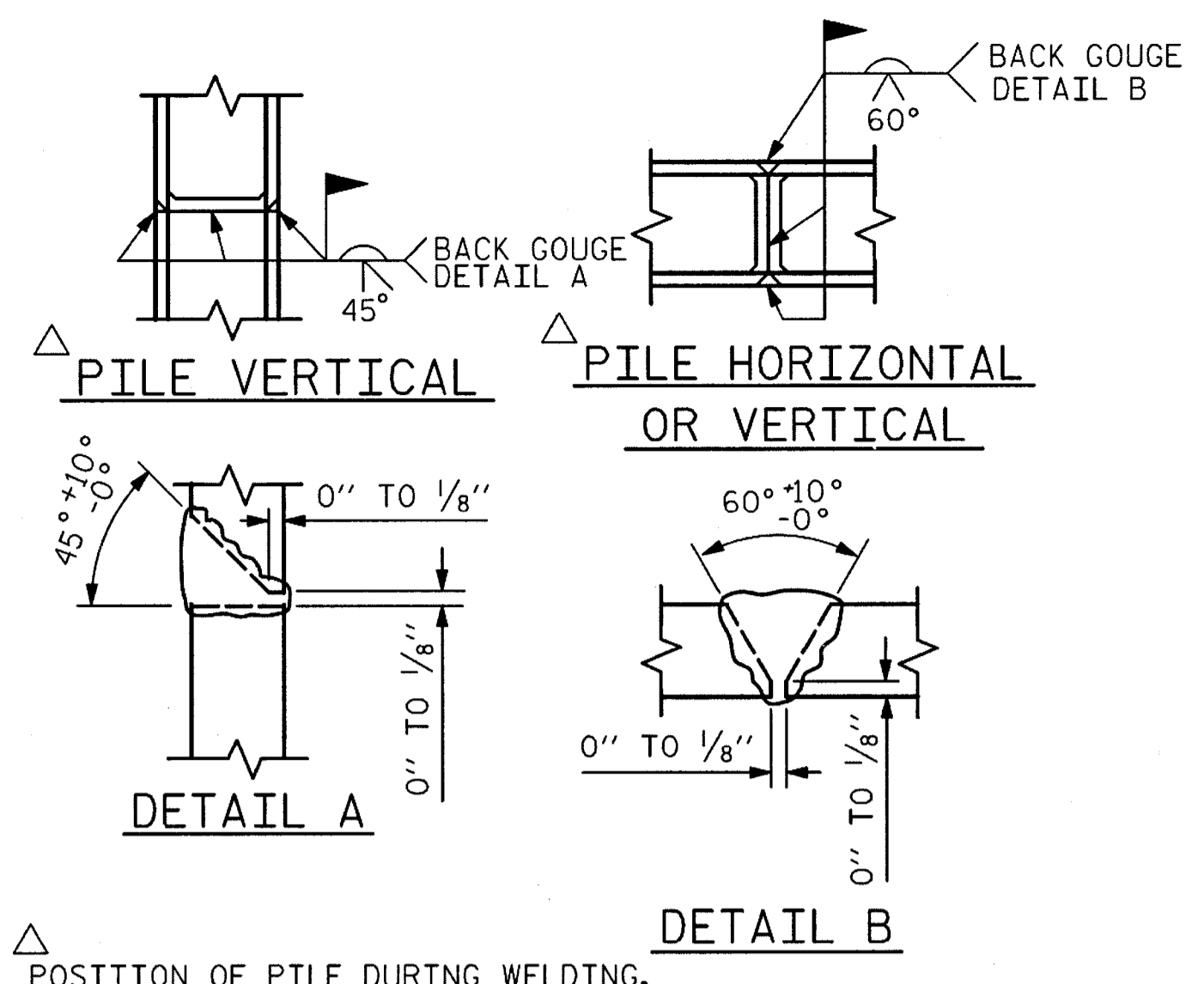


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

TEMPORARY DRAINAGE AT END BENT



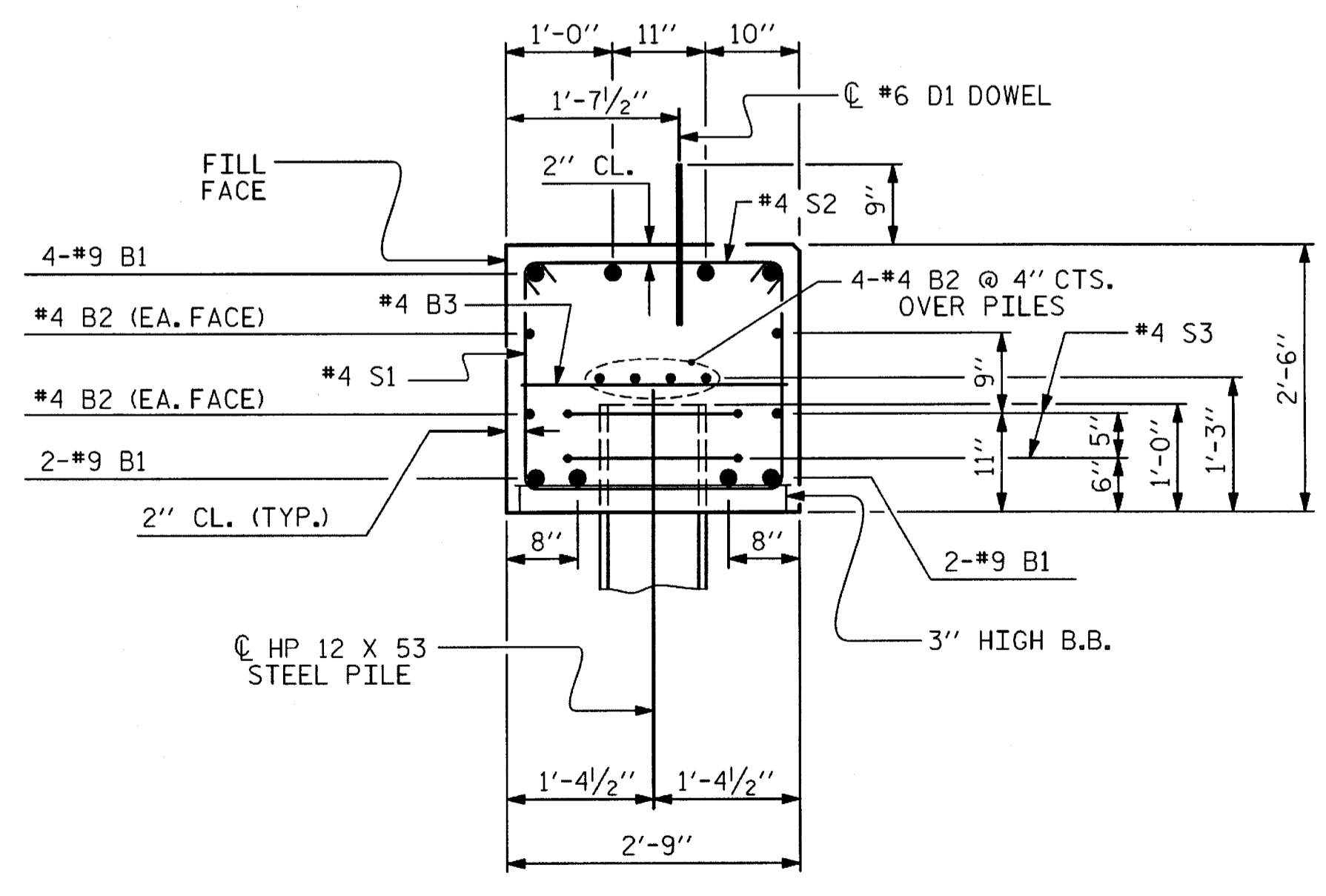
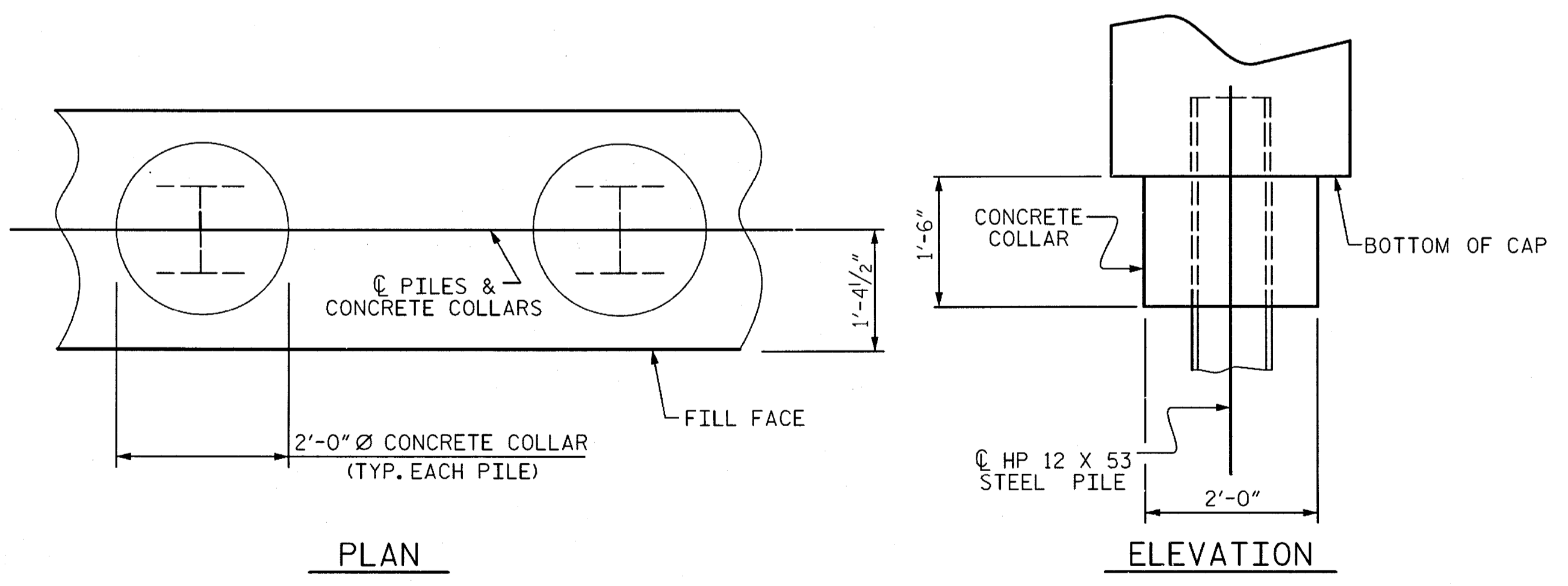
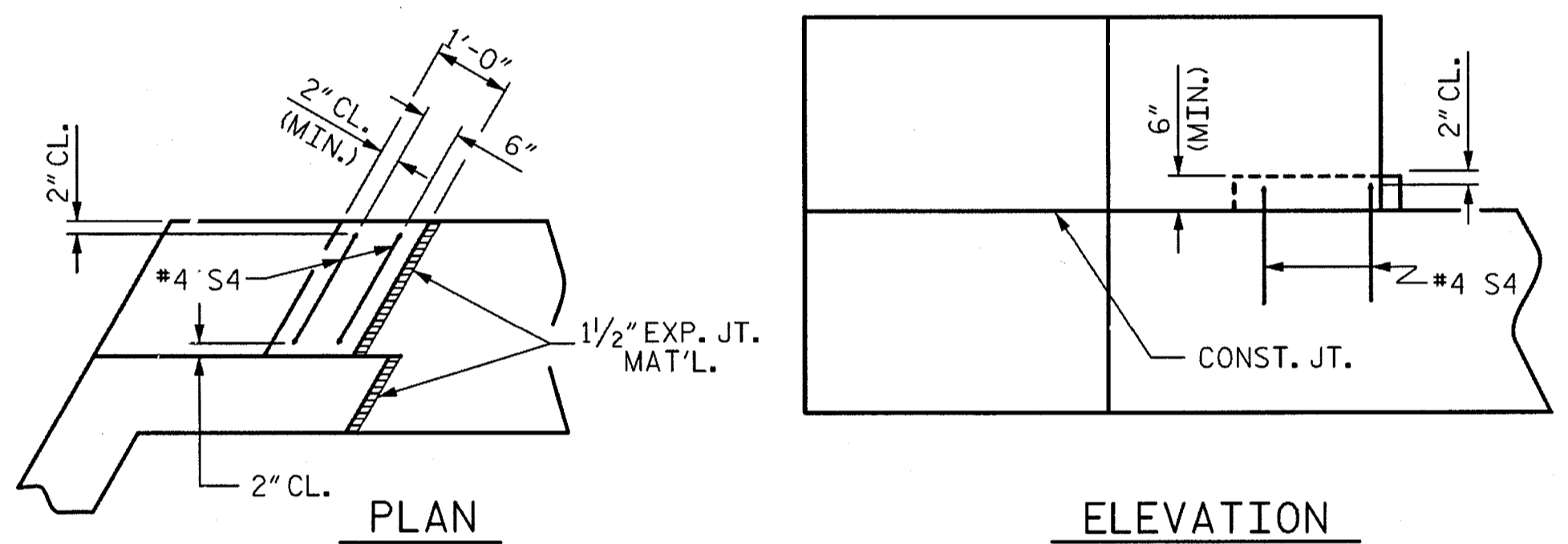
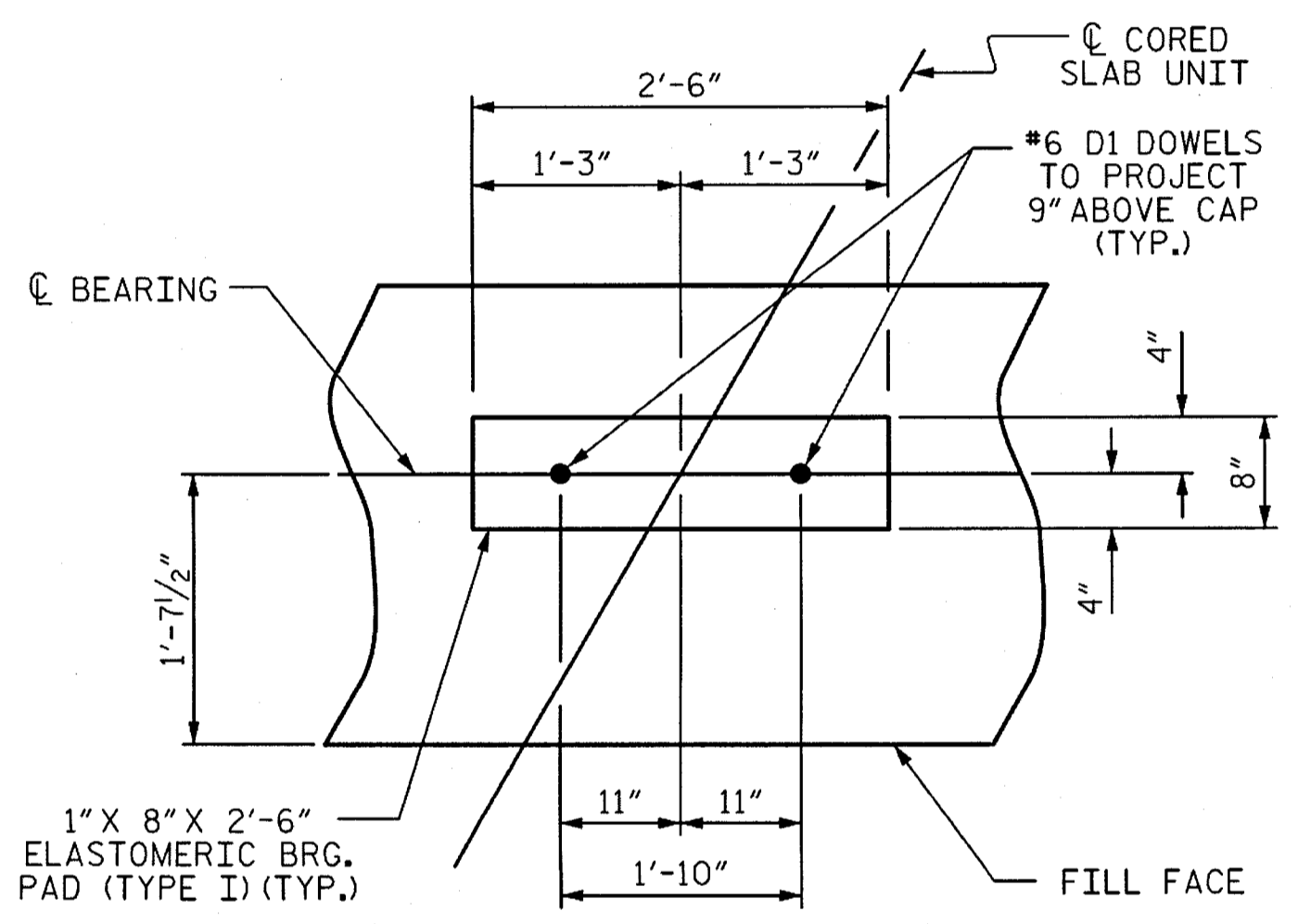
PILE SPLICE DETAILS

BILL OF MATERIAL FOR ONE END BENT				
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	#8	1	50'-7"	1376
B2	#4	STR	25'-4"	271
B3	#4	STR	2'-5"	19
D1	#6	STR	1'-6"	54
H1	#4	2	8'-3"	33
H2	#4	2	7'-10"	31
H3	#4	3	7'-4"	59
K1	#4	STR	3'-3"	26
S1	#4	4	7'-5"	307
S2	#4	5	3'-2"	131
S3	#4	6	6'-6"	61
S4	#4	7	4'-7"	12
V1	#4	STR	4'-8"	147
REINFORCING STEEL (FOR ONE END BENT)				2527 LBS.
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)				
POUR #1	CAP, LOWER PART OF WINGS & COLLARS			15.0 C.Y.
POUR #2	UPPER PART OF WINGS			1.9 C.Y.
POUR #3	LATERAL GUIDES			0.1 C.Y.
TOTAL CLASS A CONCRETE				17.0 C.Y.

BAR TYPES	
<p>①</p>	<p>②</p>
<p>③</p>	<p>④</p>
<p>⑤</p>	<p>⑥</p>
<p>⑦</p>	

ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT No. 1	END BENT No. 2
HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES
NO: 7 LIN. FT.= 315	NO: 7 LIN. FT.= 315



PROJECT NO. 17BP.4.R.24
 EDGEcombe COUNTY
 STATION: 13+08.5 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE

END BENT No. 1 & 2
 DETAILS

ASSEMBLED BY: BS/KE	DATE: 10/12
CHECKED BY: RAM/CG	DATE: 10/12
DRAWN BY: DGE 02/10	
CHECKED BY: MKT 02/10	

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

TOTAL SHEETS 32

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

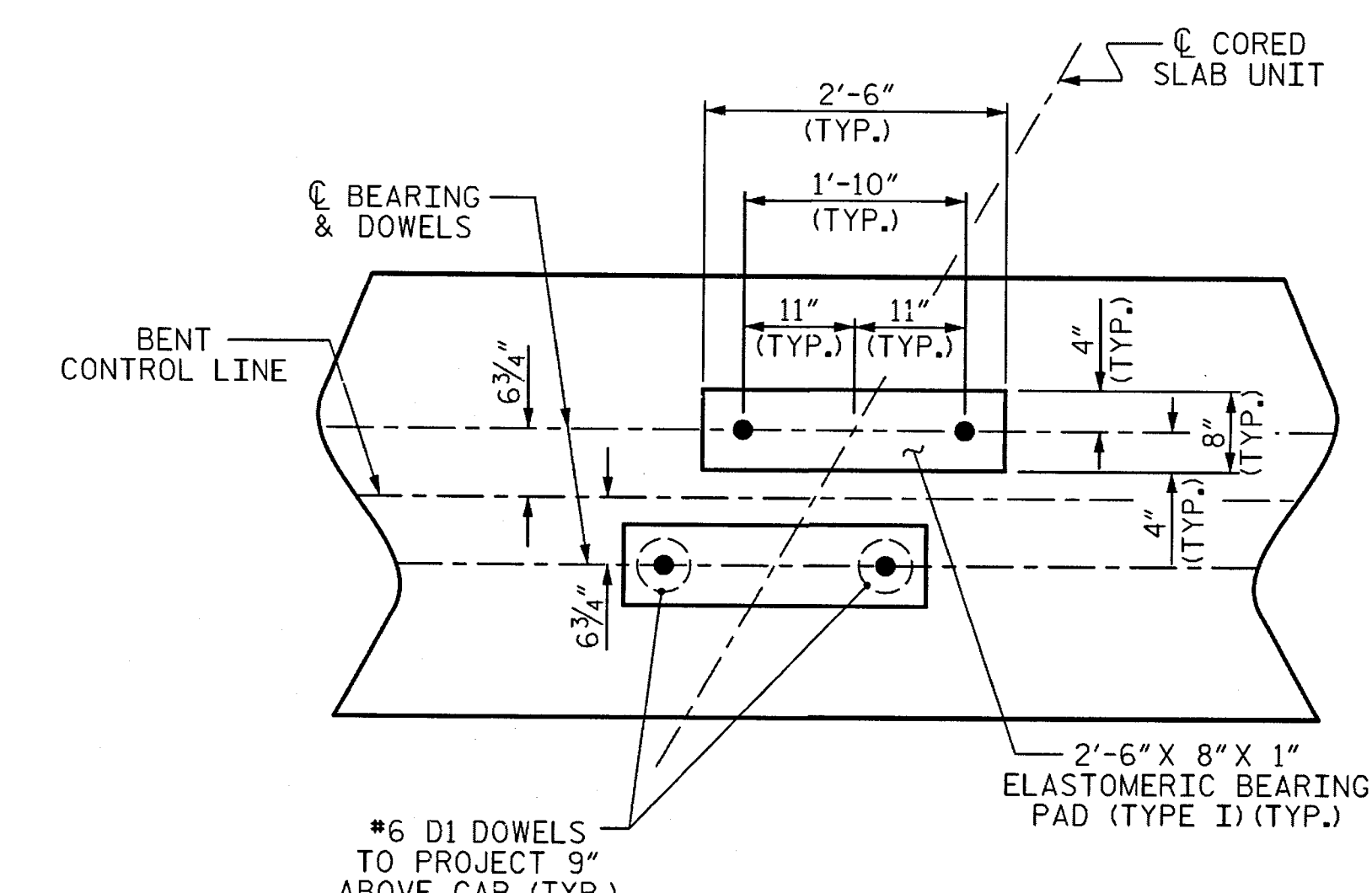
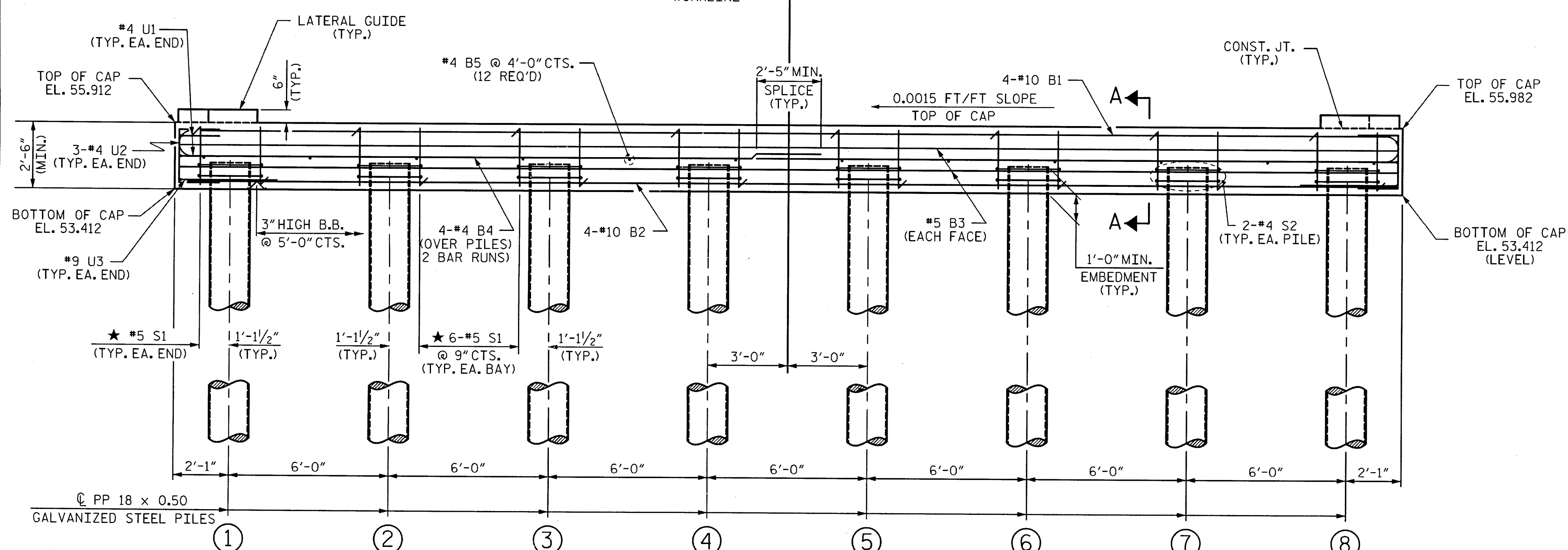
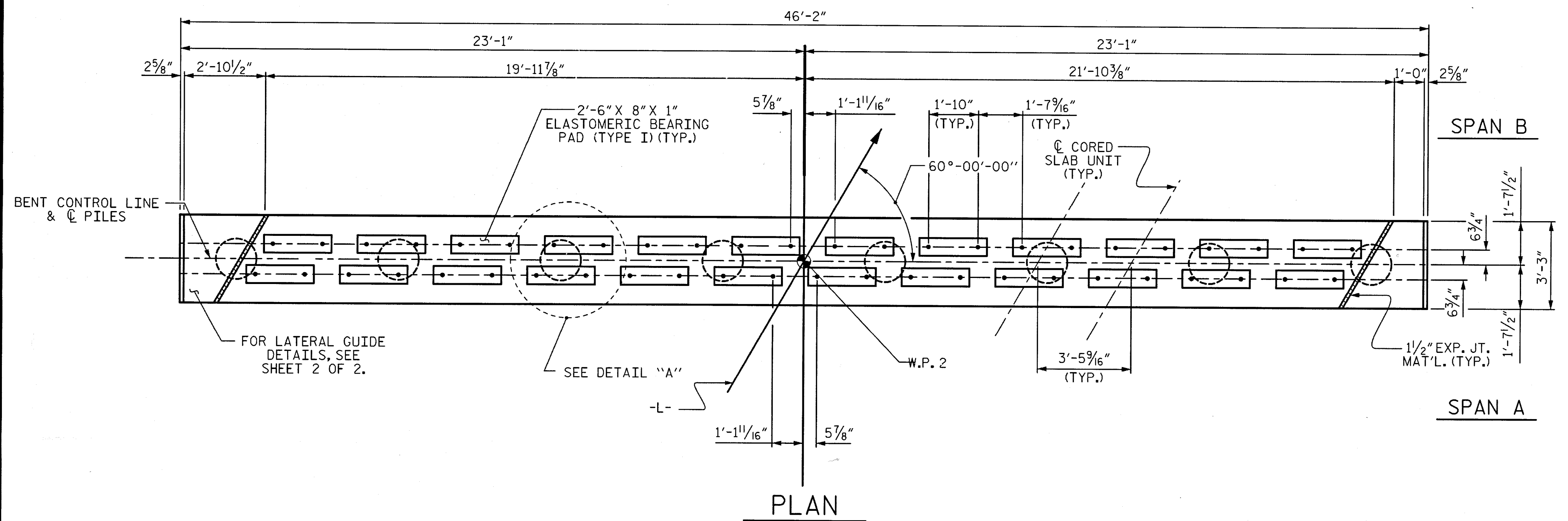
THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

★ INVERT ALTERNATE STIRRUPS.

FOR ADDITIONAL REINFORCING STEEL IN PP 18 x 0.50 GALVANIZED STEEL PILES, SEE 18" STEEL PIPE STANDARD SHEET.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 31 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.



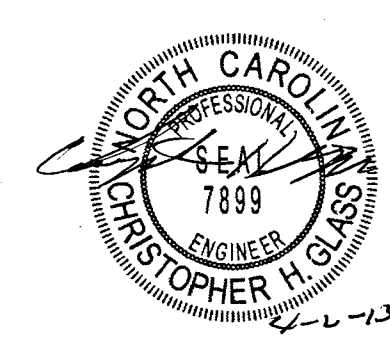
ELEVATION
FOR SECTION A-A, SEE SHEET 2 OF 3

PROJECT NO. 17BP.4.R.24
EDGECOMBE COUNTY
STATION: 13+08.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT No. 1



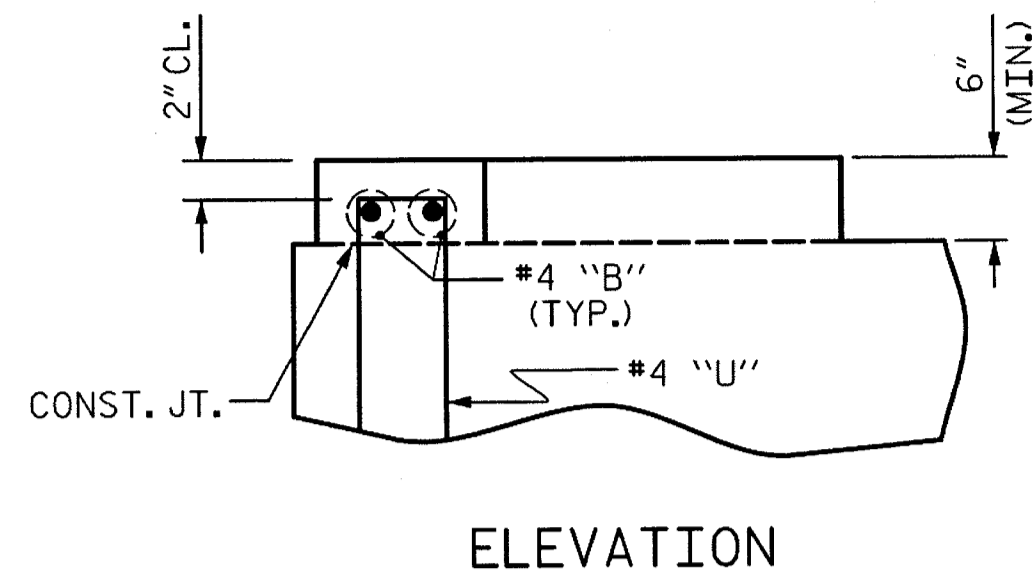
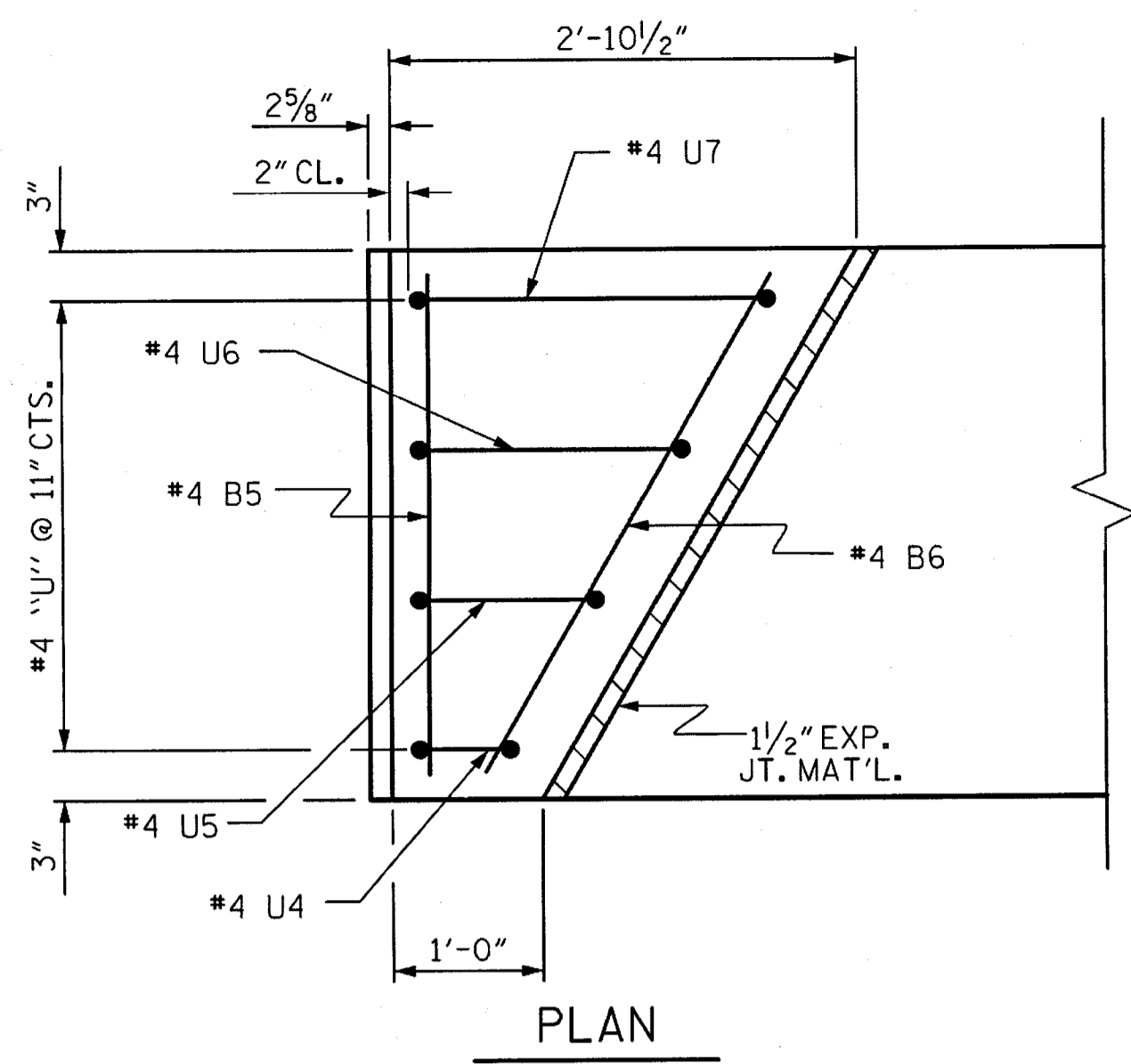
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	24	
1			3			TOTAL SHEETS	
2			4			32	

ASSEMBLED BY : JBS/KE
CHECKED BY : C.GLASS
DATE : 10/12

DRAWN BY : DGE 06/10
CHECKED BY : MKT 06/10

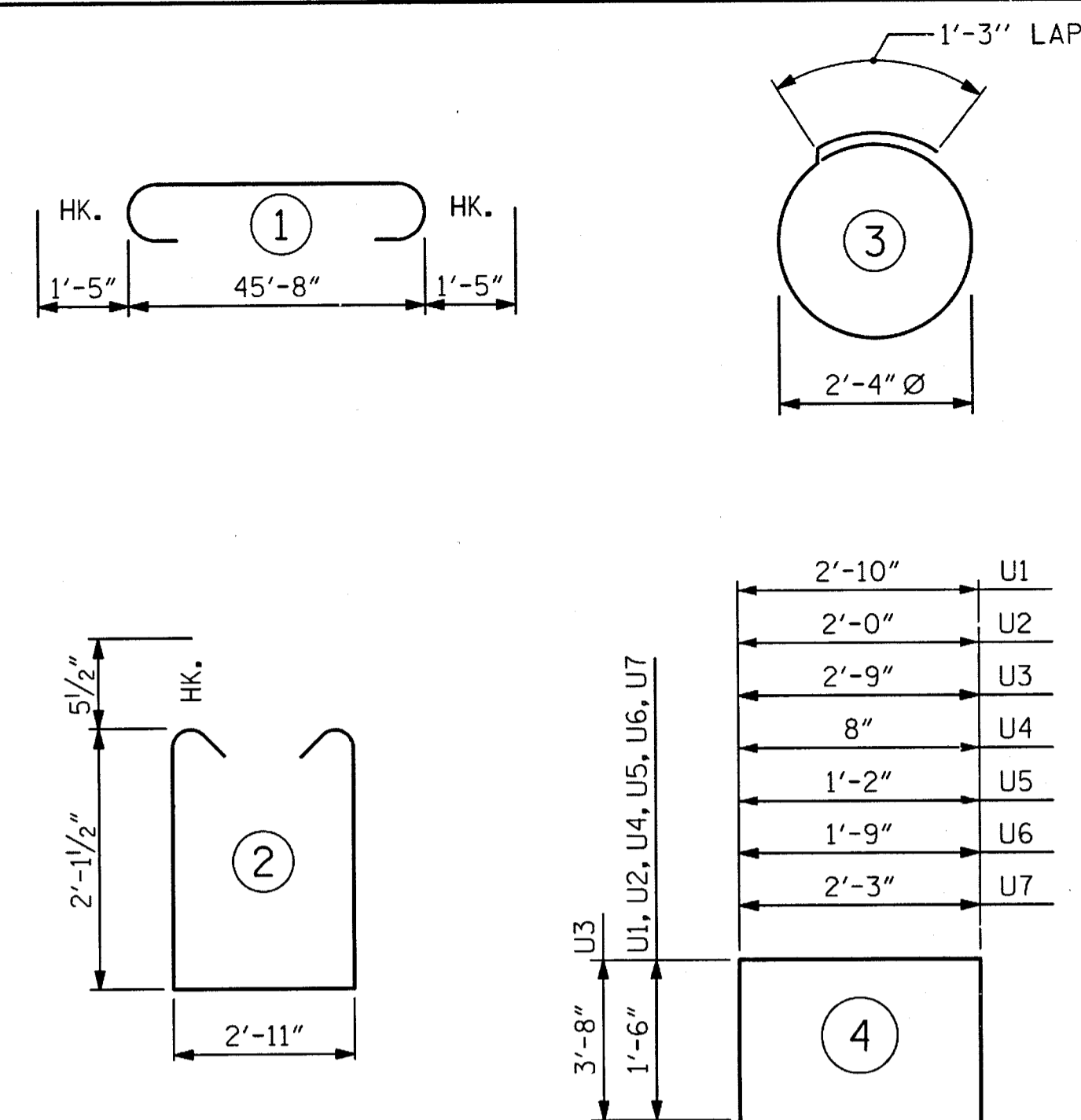
*****SYSTEM*****
*****DCGN*****
*****USERNAME*****

STD. NO. 18" PP_BT_36_60S_<60'



LATERAL GUIDE DETAILS
(LEFT LATERAL GUIDE SHOWN, RIGHT SIDE SIMILAR)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

FOR ONE BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	48'-6"	835
B2	4	#10	STR	45'-10"	789
B3	4	#5	STR	45'-10"	191
B4	8	#4	STR	24'-2"	129
B5	14	#4	STR	2'-11"	27
B6	2	#4	STR	3'-4"	4
D1	48	#6	STR	1'-6"	108
S1	44	#5	2	8'-1"	371
S2	16	#4	3	8'-7"	92
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	2	#4	4	3'-8"	5
U5	2	#4	4	4'-2"	6
U6	2	#4	4	4'-9"	6
U7	2	#4	4	5'-3"	7

REINFORCING STEEL (FOR ONE BENT) 2675 LBS

CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)

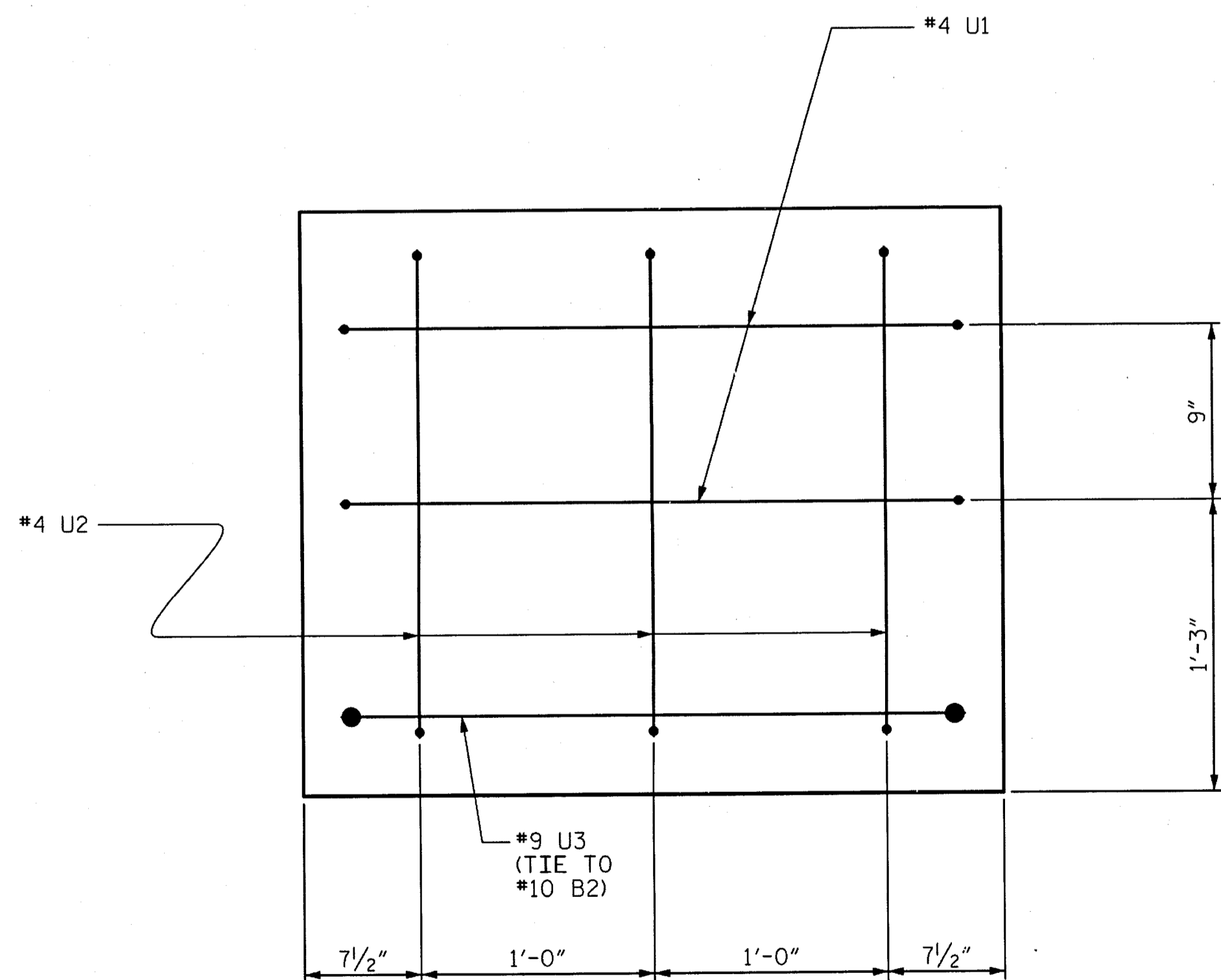
POUR #1 (CAP) ▲ 13.6 C.Y.
 POUR #2 (LATERAL GUIDES) 0.2 C.Y.
 TOTAL CLASS A CONCRETE 13.8 C.Y.

PP 18 x 0.50 GALVANIZED STEEL PILES (FOR ONE BENT)

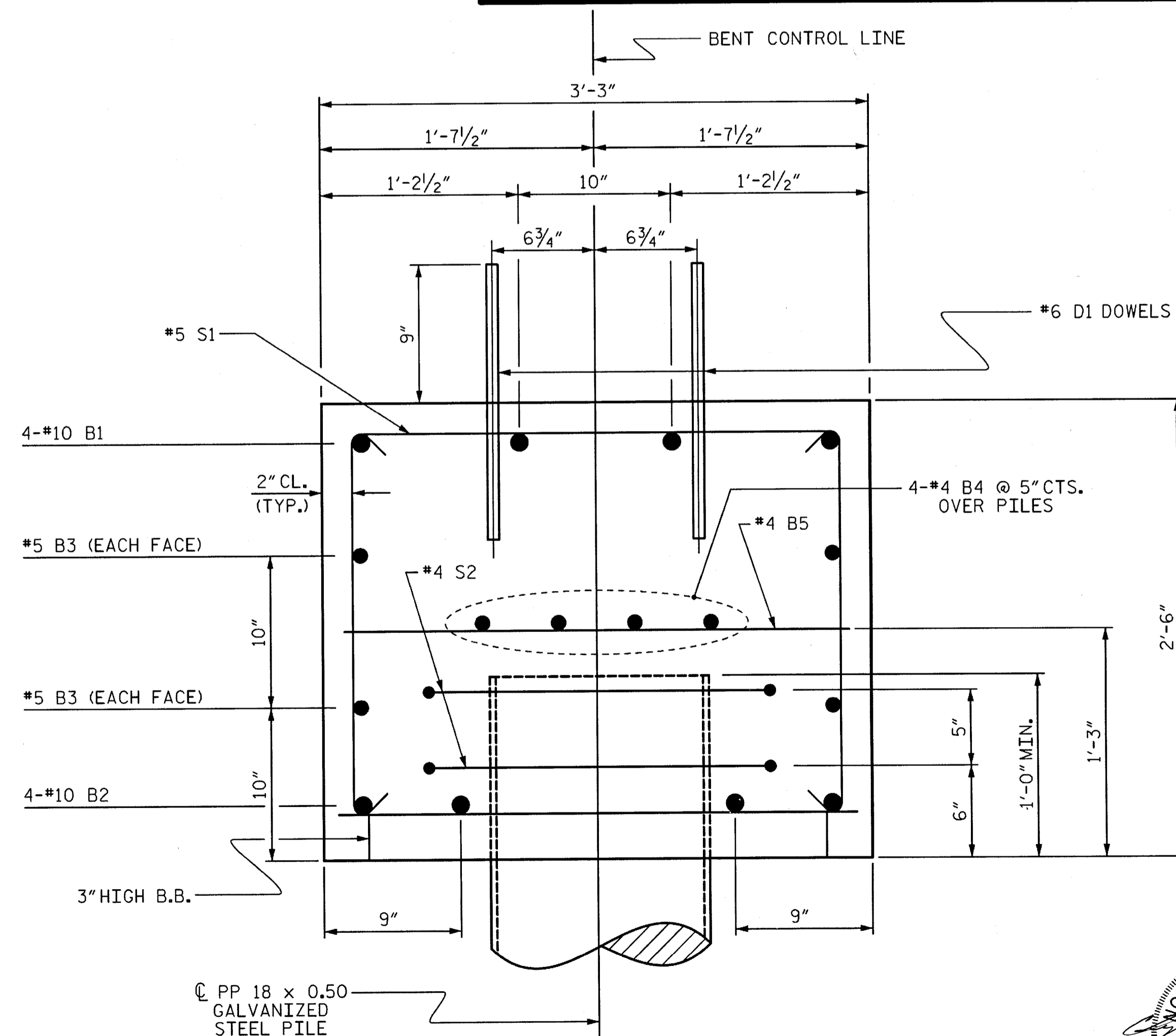
No. 8 LIN. FT. 400

PIPE PILE PLATES No. = 8

▲ CONCRETE DISPLACED BY THE PP 18 x 0.50 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.



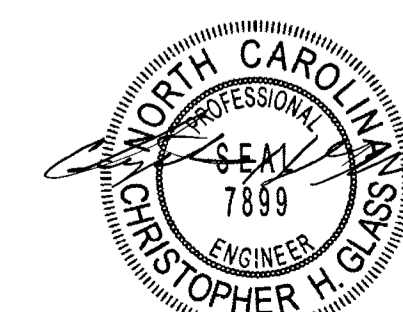
END OF CAP VIEW
(TYPICAL BOTH ENDS)



SECTION A-A

DRAWN BY : JBS/KE DATE : 10/12
 CHECKED BY : C.GLASS DATE : 10/12
 DRAWN BY : DGE 06/10
 CHECKED BY : MKT 06/10

*****SYSTEM*****
 *****DCGN*****
 *****USERNAME*****



PROJECT NO. 17BP.4.R.24
 EDGEcombe COUNTY
 STATION: 13+08.50 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT No. 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	25
1			3			TOTAL SHEETS 32
2			4			

STD.NO. 18" PP_BT_36_60S<60'

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

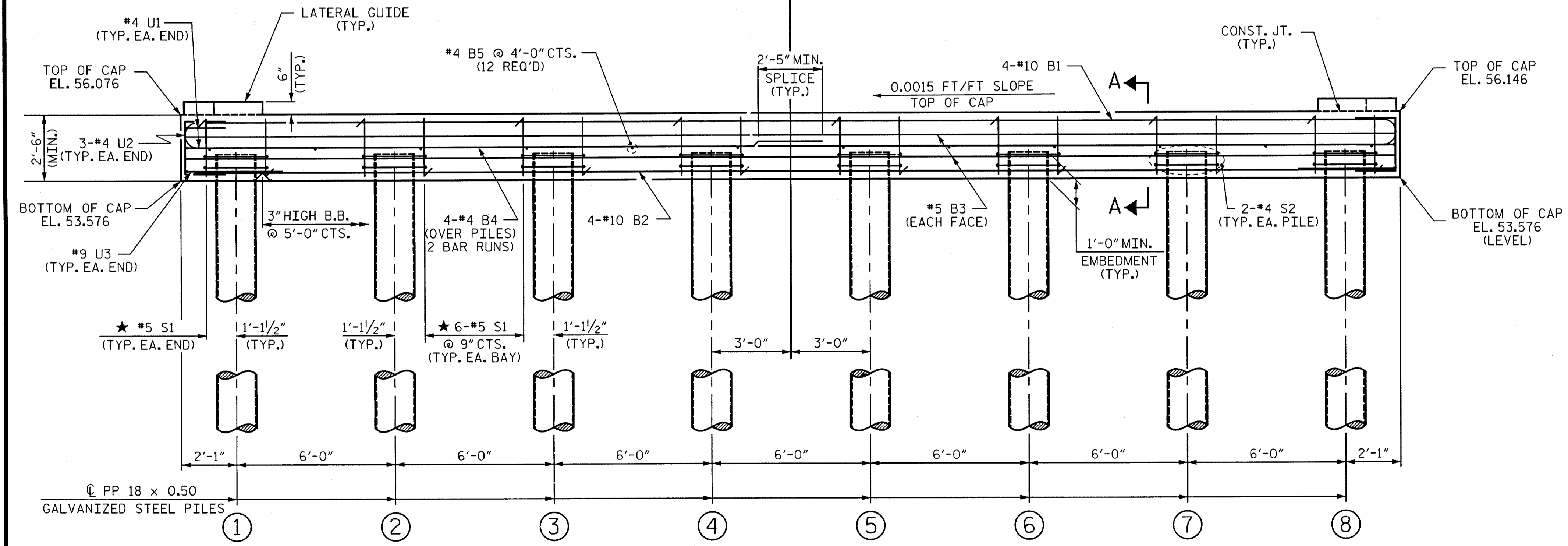
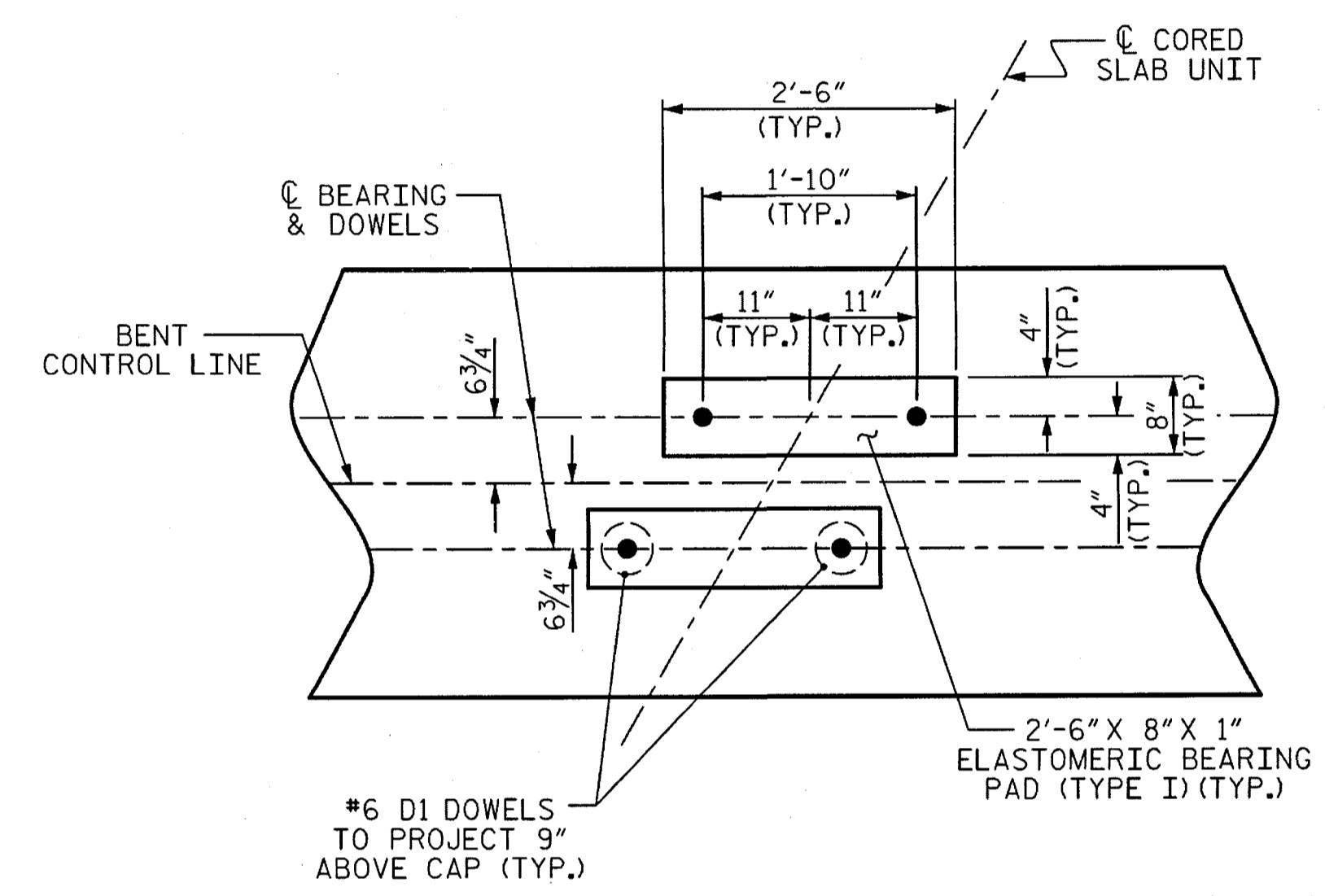
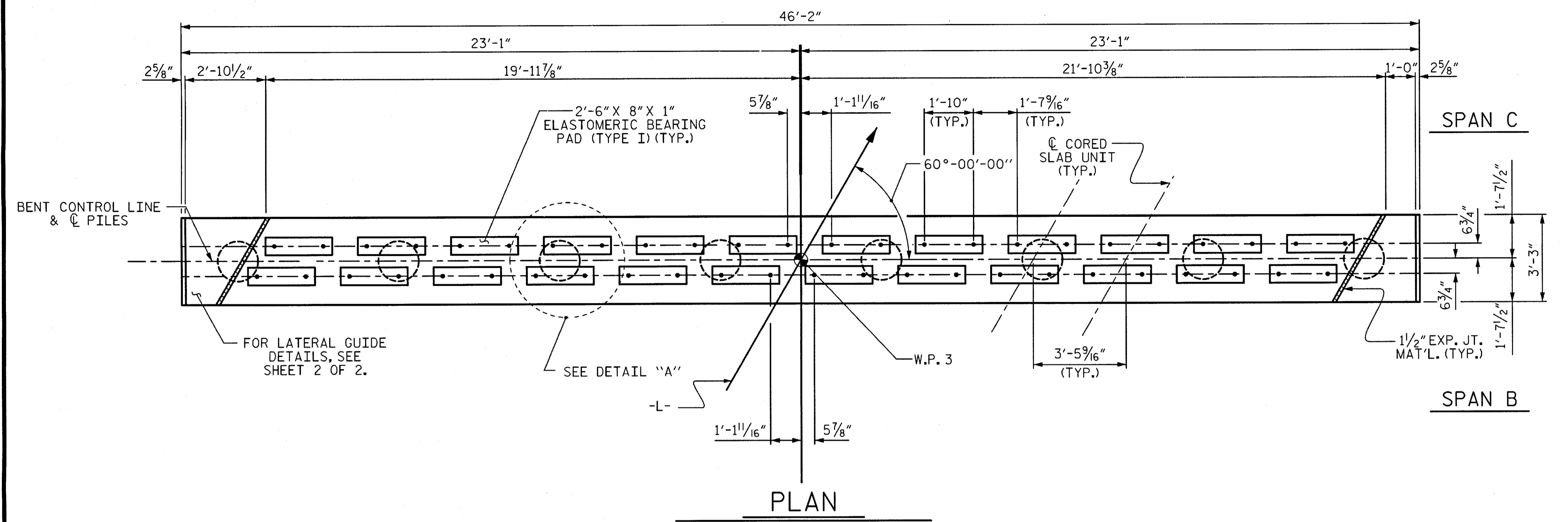
THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

★ INVERT ALTERNATE STIRRUPS.

FOR ADDITIONAL REINFORCING STEEL IN PP 18 x 0.50 GALVANIZED STEEL PILES, SEE 18" STEEL PIPE STANDARD SHEET.

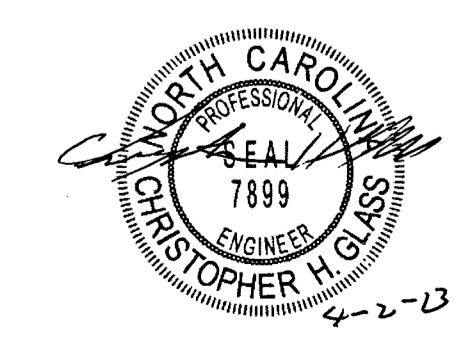
GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 33 FEET, GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.



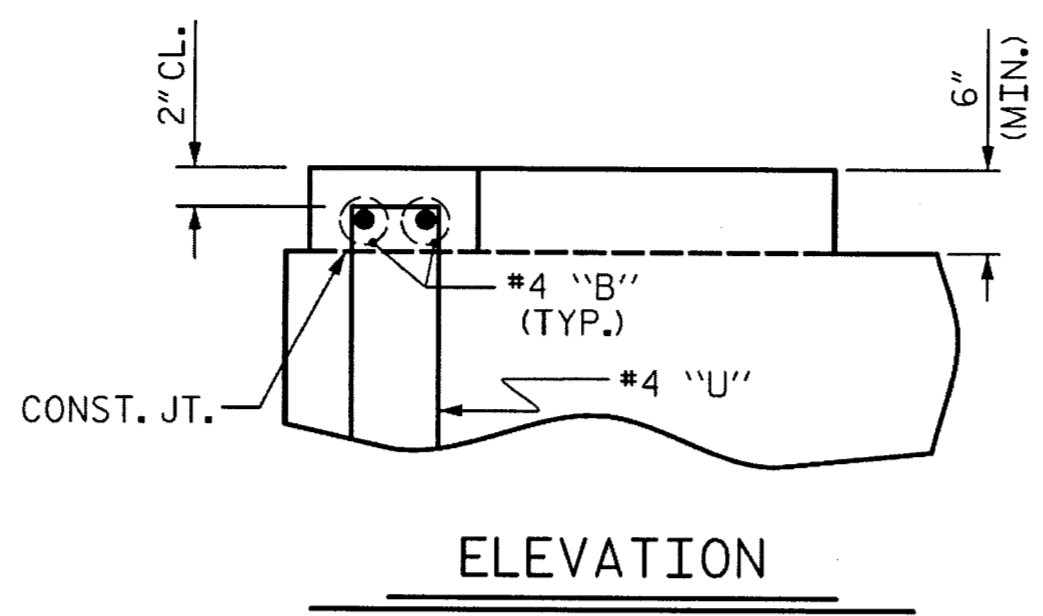
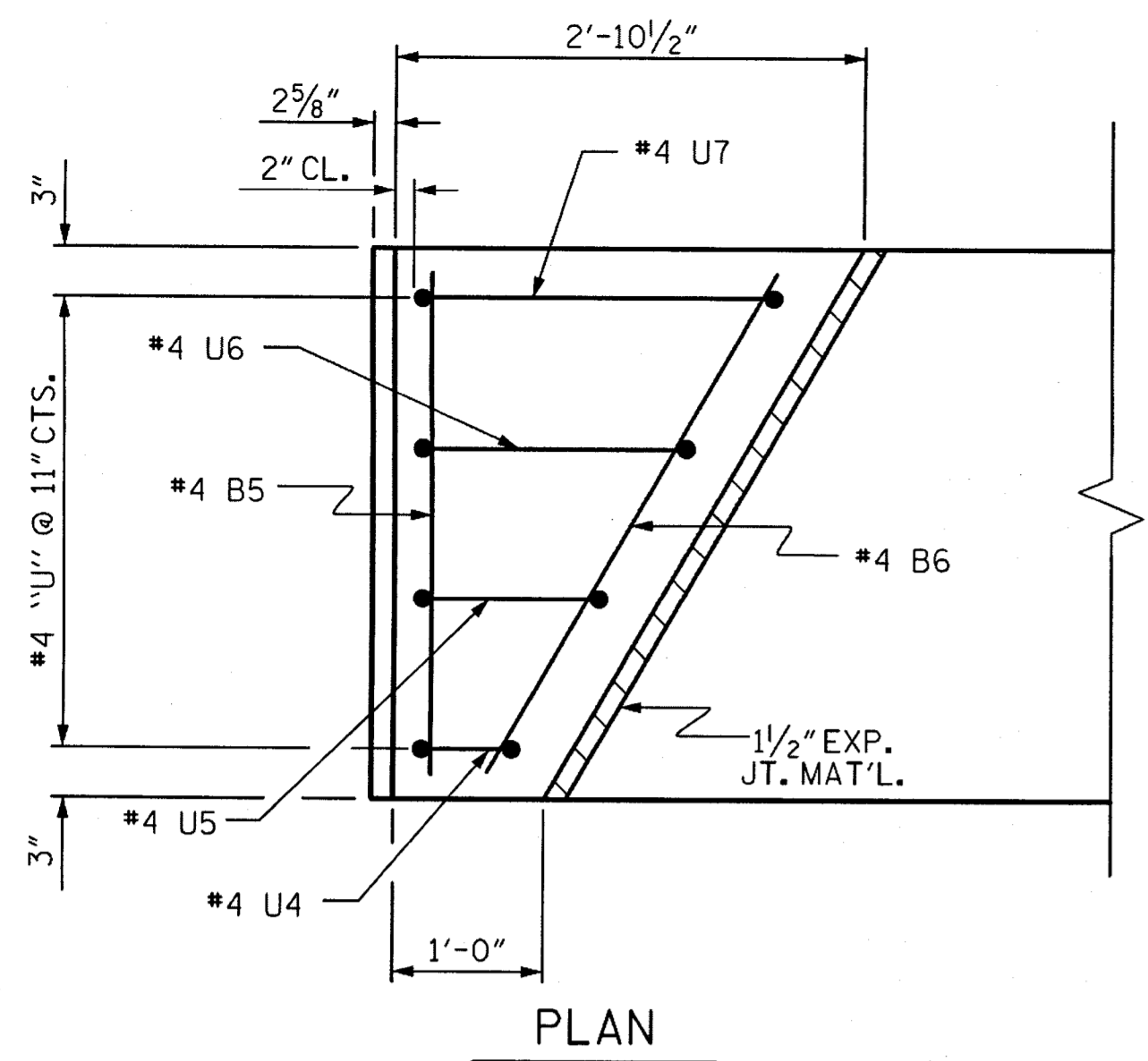
PROJECT NO. 17BP.4.R.24
 EDGEcombe COUNTY
 STATION: 13+08.50 -L-
 SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT No. 2					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					32

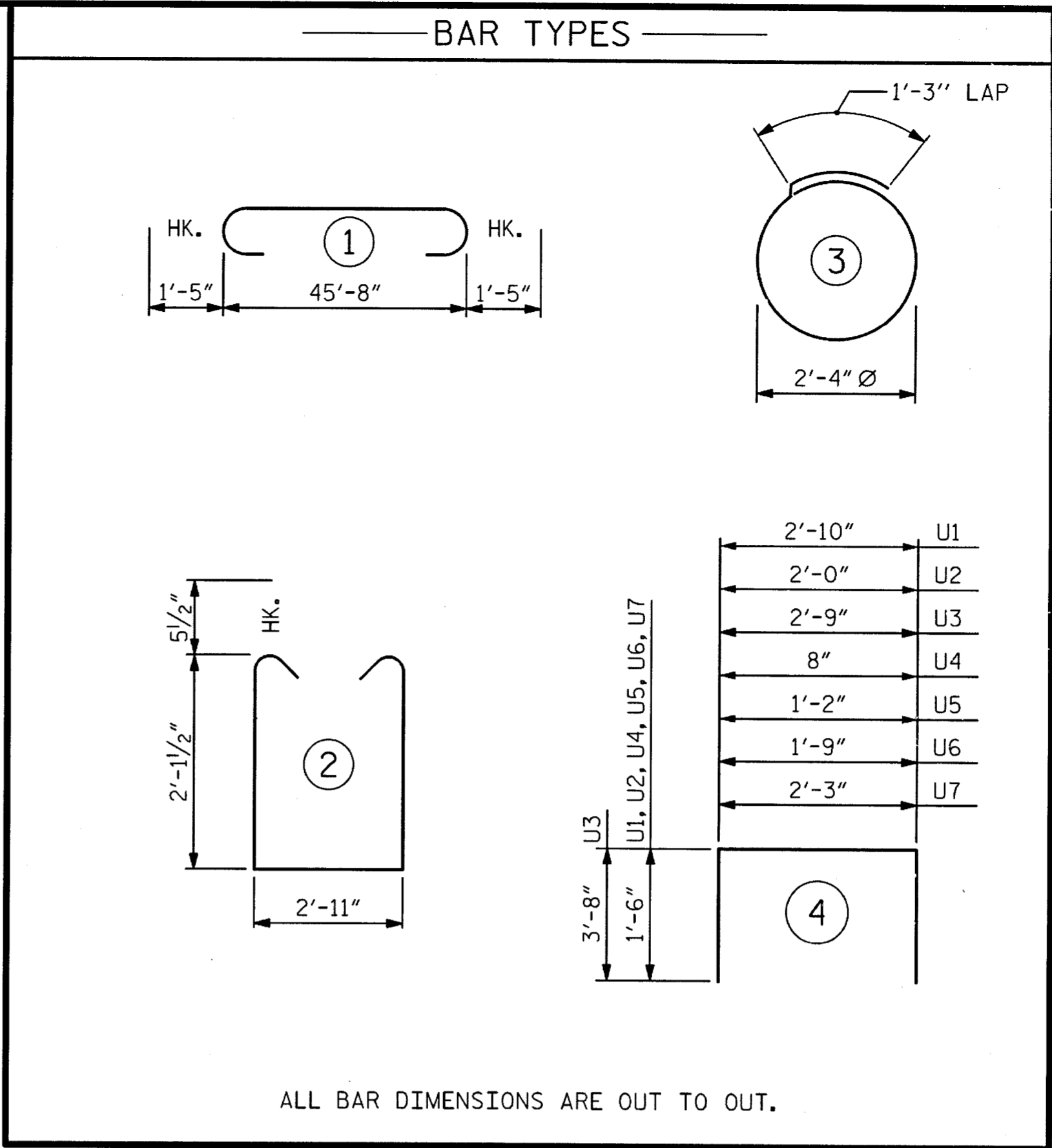


ASSEMBLED BY: JBS/KE DATE: 10/12
 CHECKED BY: C.GLASS DATE: 10/12
 DRAWN BY: DGE 06/10
 CHECKED BY: MKT 06/10

*****SYSTEM*****
 *****DGN*****
 *****USER*****



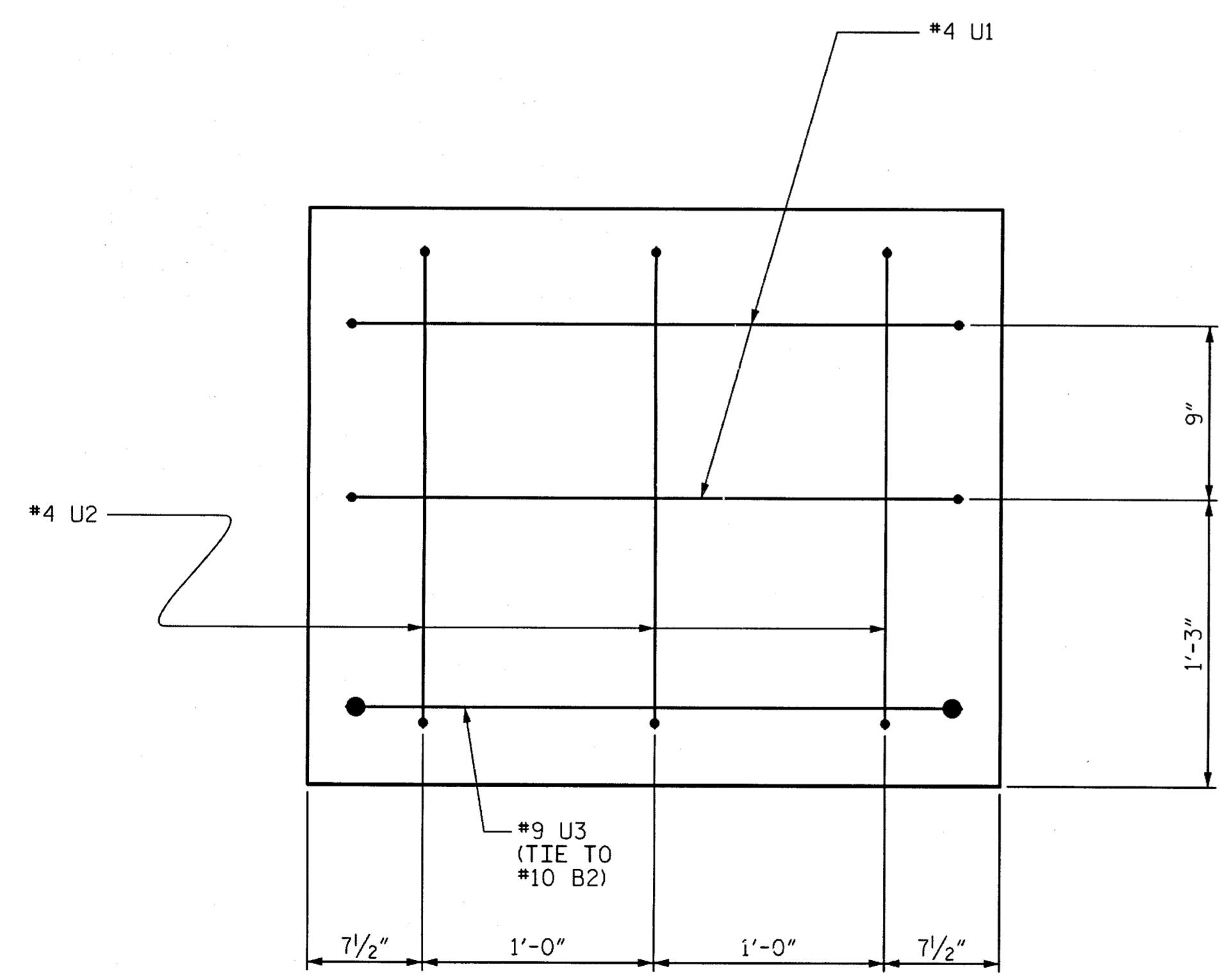
LATERAL GUIDE DETAILS
(LEFT LATERAL GUIDE SHOWN, RIGHT SIDE SIMILAR)



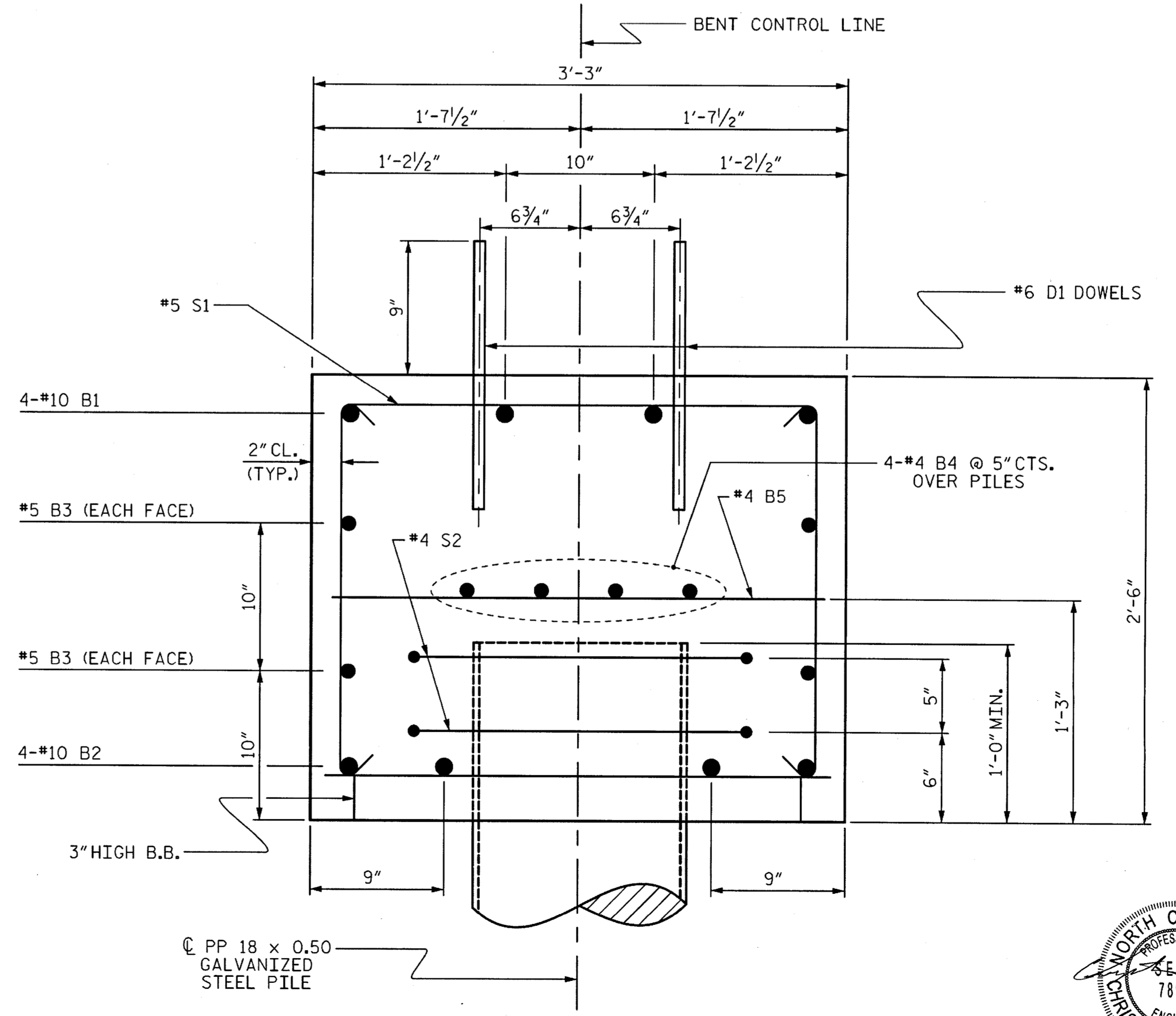
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	48'-6"	835
B2	4	#10	STR	45'-10"	789
B3	4	#5	STR	45'-10"	191
B4	8	#4	STR	24'-2"	129
B5	14	#4	STR	2'-11"	27
B6	2	#4	STR	3'-4"	4
D1	48	#6	STR	1'-6"	108
S1	44	#5	2	8'-1"	371
S2	16	#4	3	8'-7"	92
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	2	#4	4	3'-8"	5
U5	2	#4	4	4'-2"	6
U6	2	#4	4	4'-9"	6
U7	2	#4	4	5'-3"	7
REINFORCING STEEL (FOR ONE BENT)					2675 LBS
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
POUR #1 (CAP)				▲	13.6 C.Y.
POUR #2 (LATERAL GUIDES)					0.2 C.Y.
TOTAL CLASS A CONCRETE					13.8 C.Y.
PP 18 x 0.50 GALVANIZED STEEL PILES (FOR ONE BENT)					
No. 8				LIN. FT.	360
PIPE PILE PLATES No. = 8					

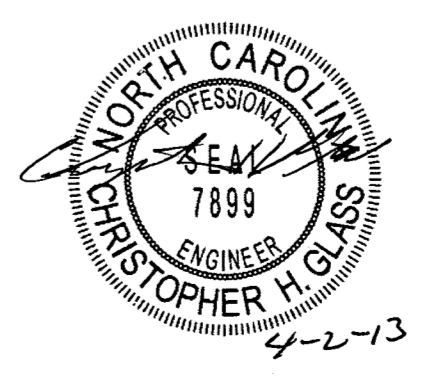
▲ CONCRETE DISPLACED BY THE PP 18 x 0.50 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.



END OF CAP VIEW
(TYPICAL BOTH ENDS)



SECTION A-A



DRAWN BY : JBS/KE DATE : 10/12
 CHECKED BY : C.GLASS DATE : 10/12
 DRAWN BY : DGE 06/10
 CHECKED BY : MKT 06/10

PROJECT NO. 17BP.4.R.24
 EDGEcombe COUNTY
 STATION: 13+08.50 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT No. 2					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					27
					32

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

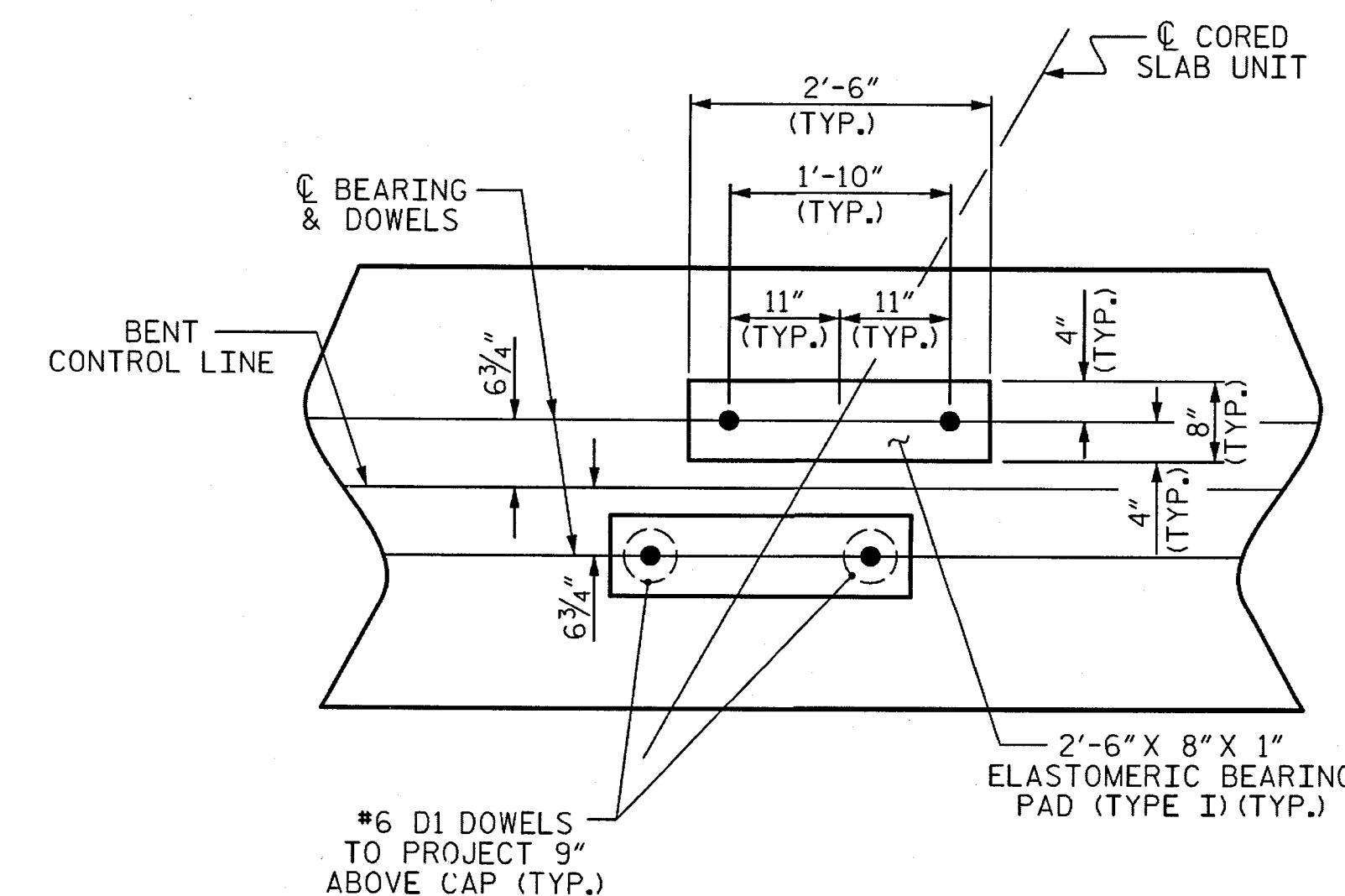
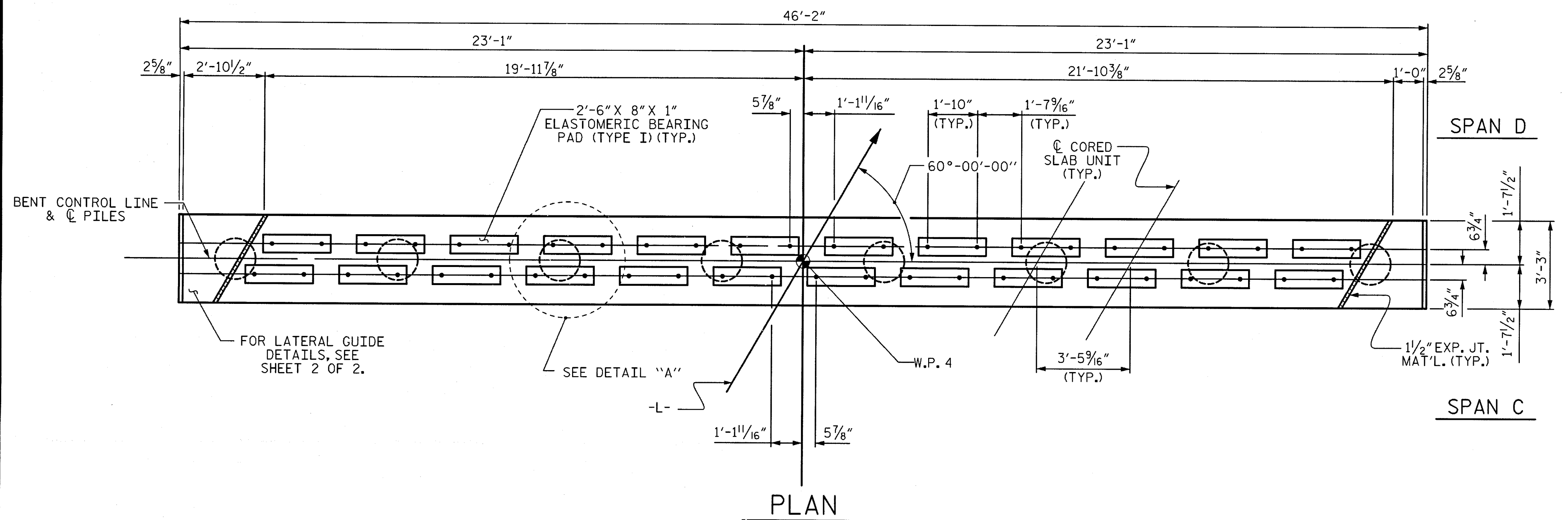
THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

★ INVERT ALTERNATE STIRRUPS.

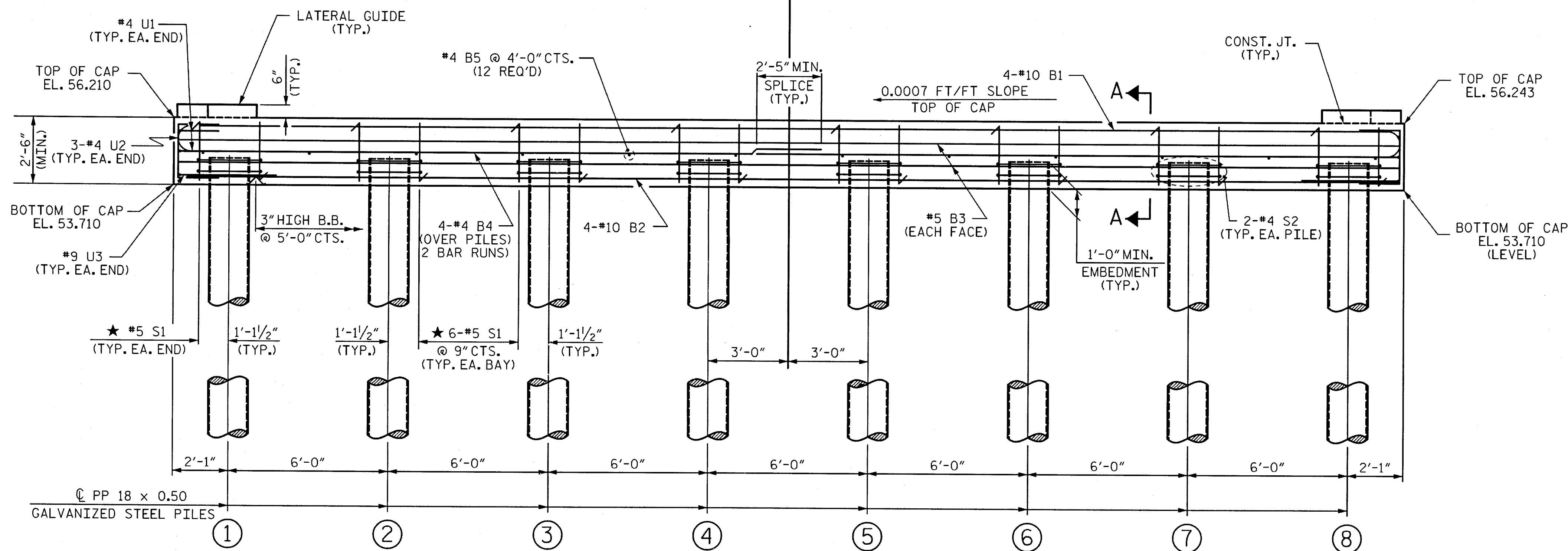
FOR ADDITIONAL REINFORCING STEEL IN PP 18 x 0.50 GALVANIZED STEEL PILES, SEE 18" STEEL PIPE STANDARD SHEET.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 30 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.



DETAIL "A"
(DIMENSIONS ARE TYPICAL EACH BEARING)



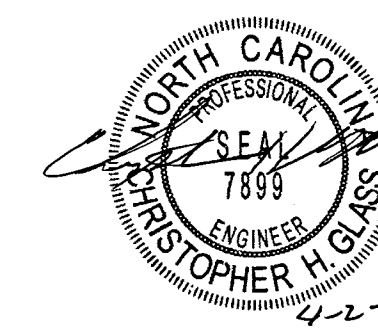
ELEVATION
FOR SECTION A-A, SEE SHEET 2 OF 3

PROJECT NO. 17BP.4.R.24
EDGEcombe COUNTY
STATION: 13+08.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT No. 3

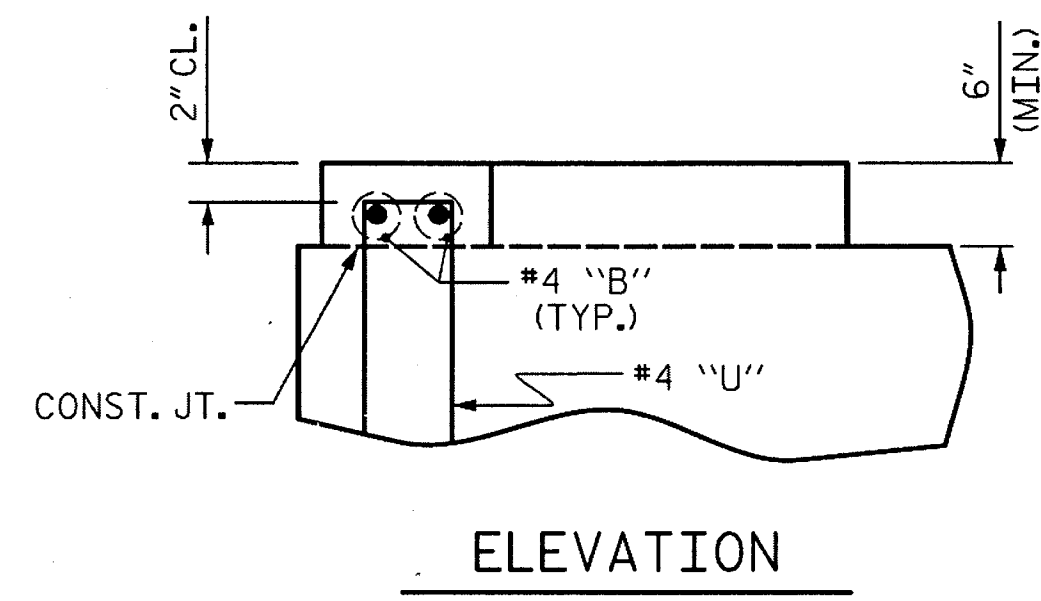
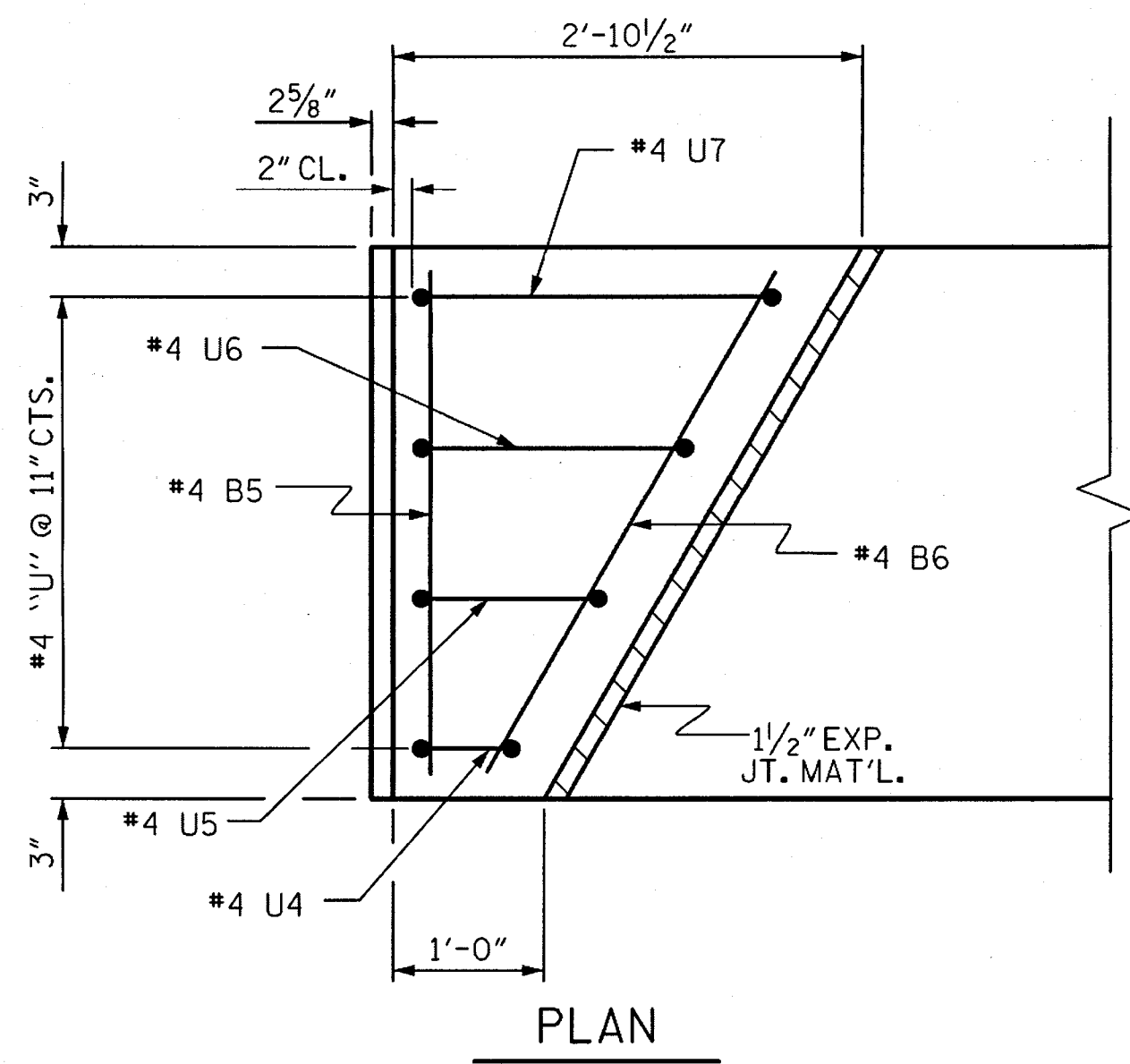


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	28
1			3			TOTAL SHEETS
2			4			32

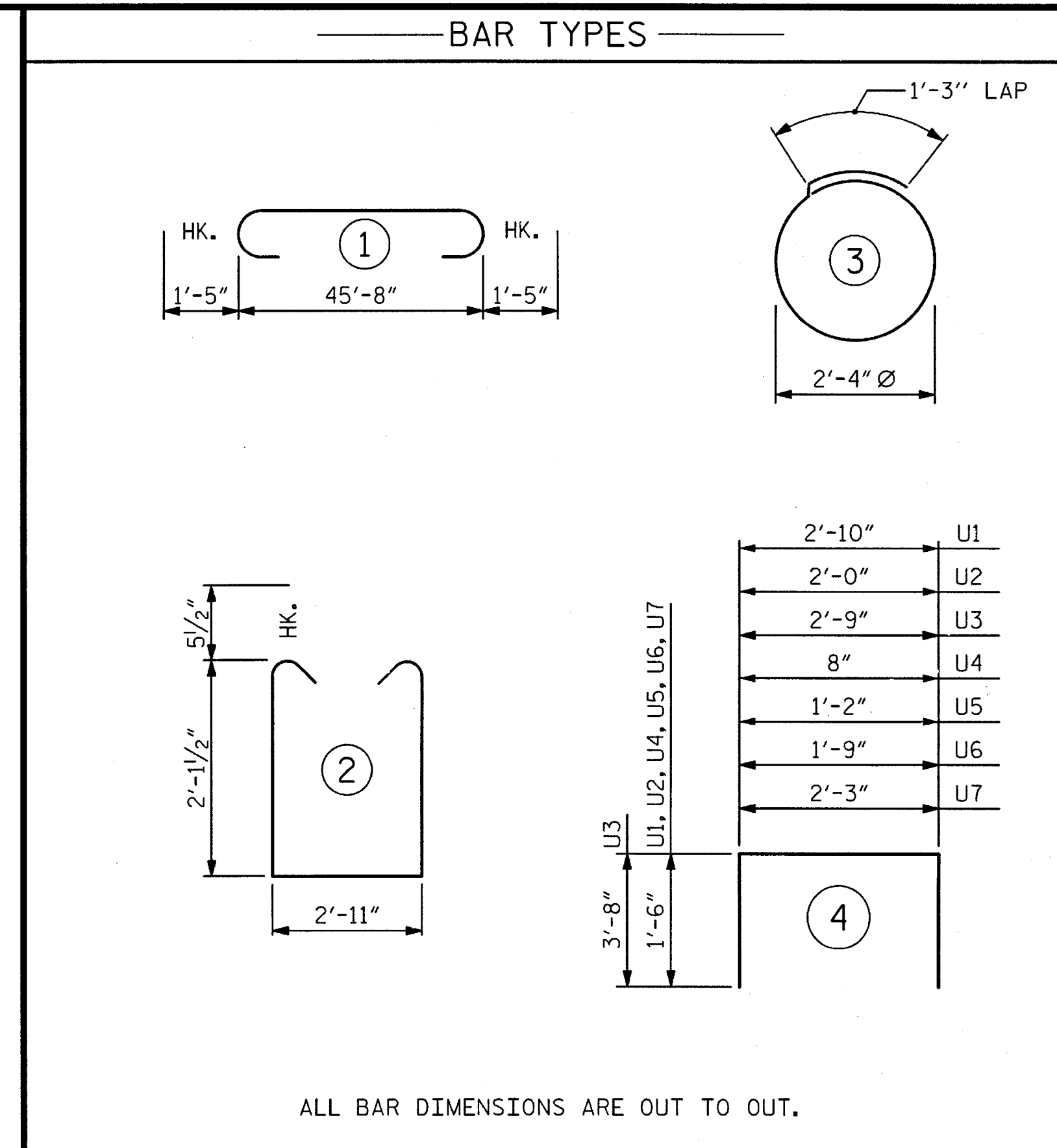
ASSEMBLED BY : JBS/KE
CHECKED BY : C.GLASS
DATE : 10/12
DATE : 10/12
DRAWN BY : DGE 06/10
CHECKED BY : MKT 06/10

*****SYSTEM*****
*****DCN*****
*****USERNAME*****

STD. NO. 18" PP_BT_36_60S_<60'



LATERAL GUIDE DETAILS
(LEFT LATERAL GUIDE SHOWN, RIGHT SIDE SIMILAR)



ALL BAR DIMENSIONS ARE OUT TO OUT.

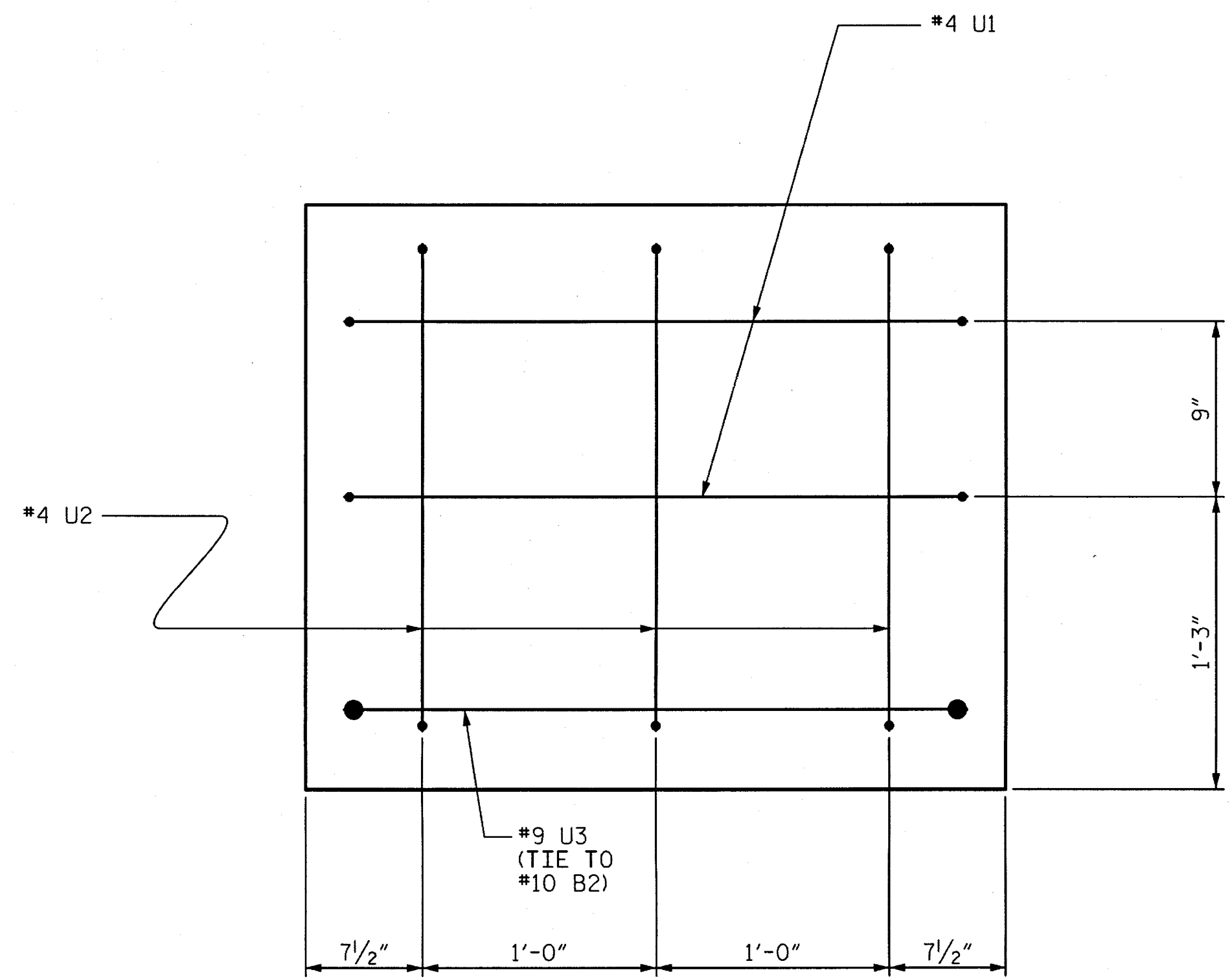
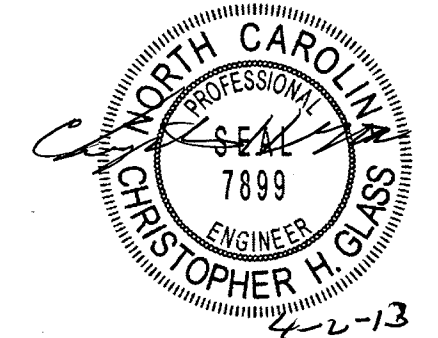
BILL OF MATERIAL FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	48'-6"	835
B2	4	#10	STR	45'-10"	789
B3	4	#5	STR	45'-10"	191
B4	8	#4	STR	24'-2"	129
B5	14	#4	STR	2'-11"	27
B6	2	#4	STR	3'-4"	4
D1	48	#6	STR	1'-6"	108
S1	44	#5	2	8'-1"	371
S2	16	#4	3	8'-7"	92
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	2	#4	4	3'-8"	5
U5	2	#4	4	4'-2"	6
U6	2	#4	4	4'-9"	6
U7	2	#4	4	5'-3"	7
REINFORCING STEEL (FOR ONE BENT)					2675 LBS
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
POUR #1 (CAP)					▲ 13.5 C.Y.
POUR #2 (LATERAL GUIDES)					0.2 C.Y.
TOTAL CLASS A CONCRETE					13.7 C.Y.
PP 18 x 0.50 GALVANIZED STEEL PILES (FOR ONE BENT)					
No. 8					LIN. FT. 360
PIPE PILE PLATES No. = 8					

▲ CONCRETE DISPLACED BY THE PP 18 x 0.50 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.

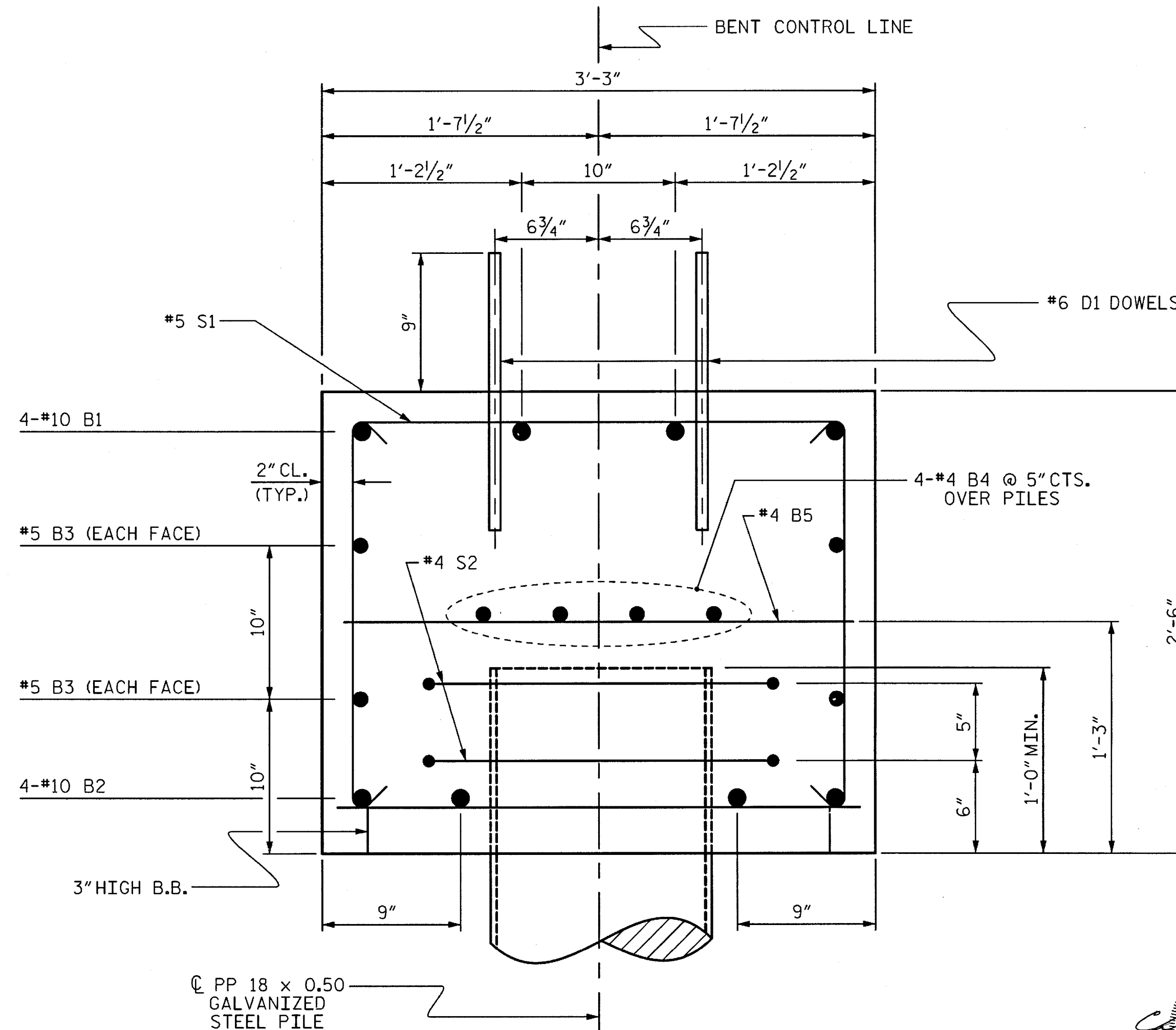
PROJECT NO. 17BP.4.R.24
EDGEcombe COUNTY
STATION: 13+08.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT No. 3					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					29
TOTAL SHEETS					32



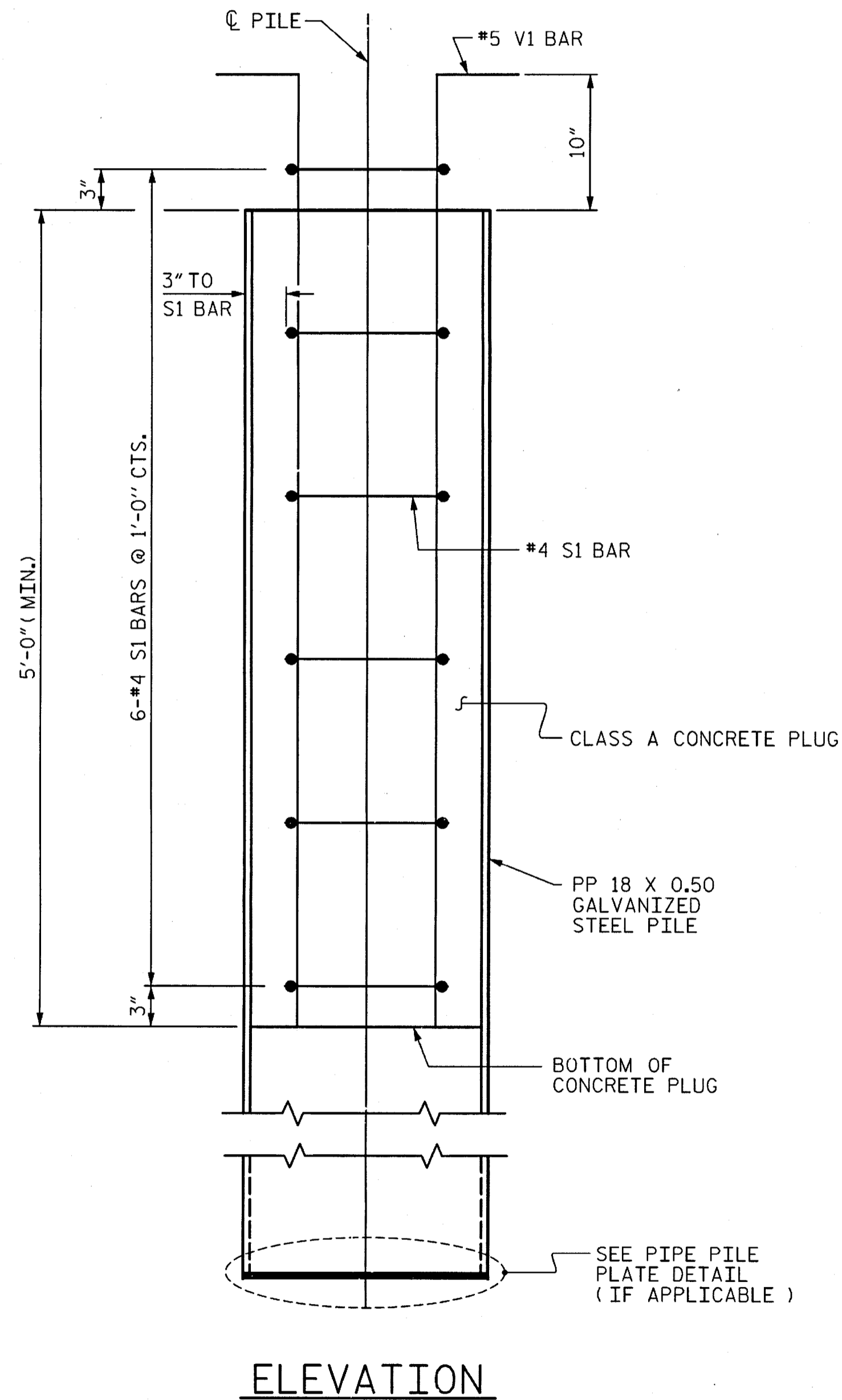
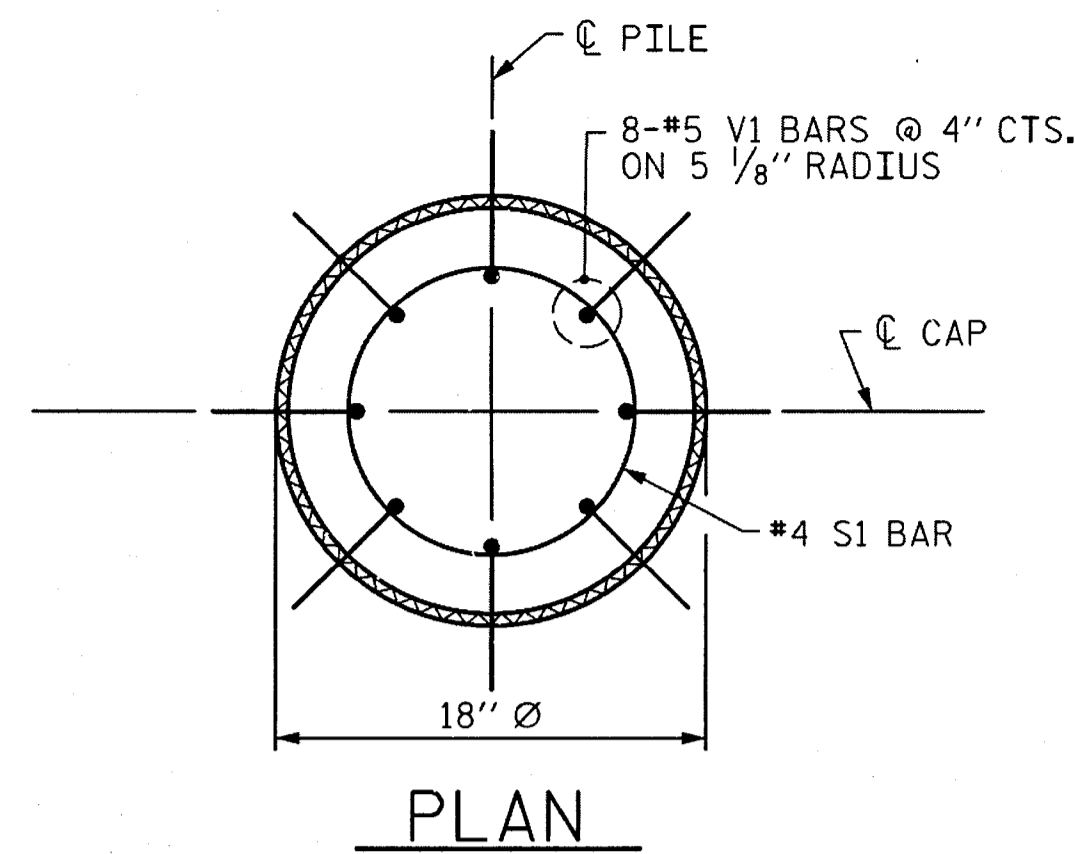
END OF CAP VIEW
(TYPICAL BOTH ENDS)



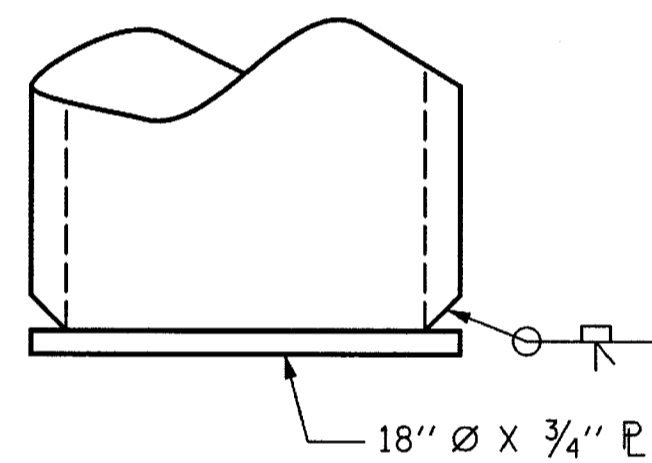
SECTION A-A

DRAWN BY: JBS/KE DATE: 10/12
CHECKED BY: C.GLASS DATE: 10/12
DRAWN BY: DGE 06/10
CHECKED BY: MKT 06/10

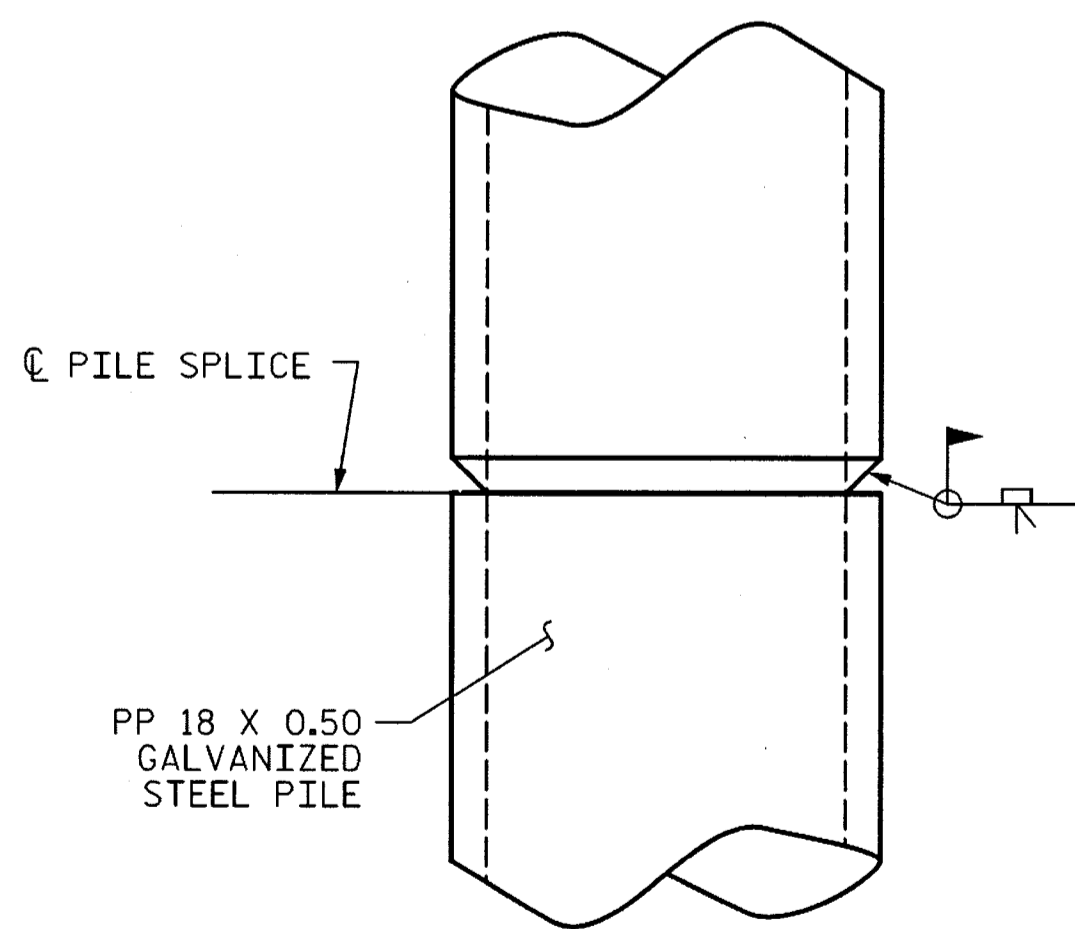
*****SYSTEM*****
*****USER*****



PP 18 X 0.50 GALVANIZED STEEL PILE
(OPEN OR CLOSED END)



PIPE PILE PLATE DETAIL
(IF APPLICABLE)



PIPE PILE SPLICE DETAIL

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.

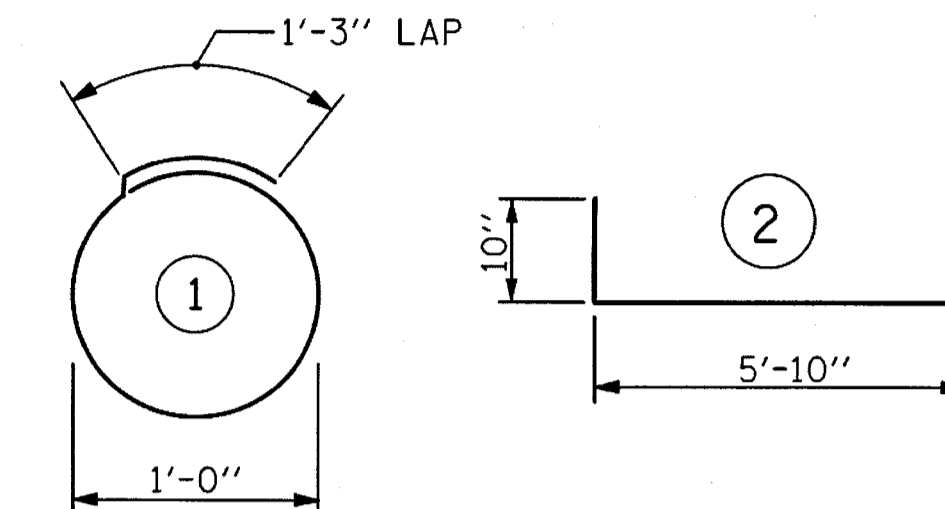
THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 18 X 0.50 GALVANIZED STEEL PILES.

**BILL OF MATERIAL FOR ONE
PP 18 X 0.50 GALVANIZED STEEL PILE**

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	4'-5"	18
V1	8	#5	2	6'-8"	56
REINFORCING STEEL =				74	lbs

CLASS A CONCRETE
5'-0" MINIMUM PLUG 0.3 CY

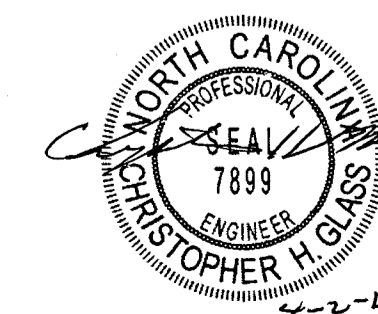
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. 17BP.4.R.24
EDGEcombe COUNTY
STATION: 13+08.50 -L-

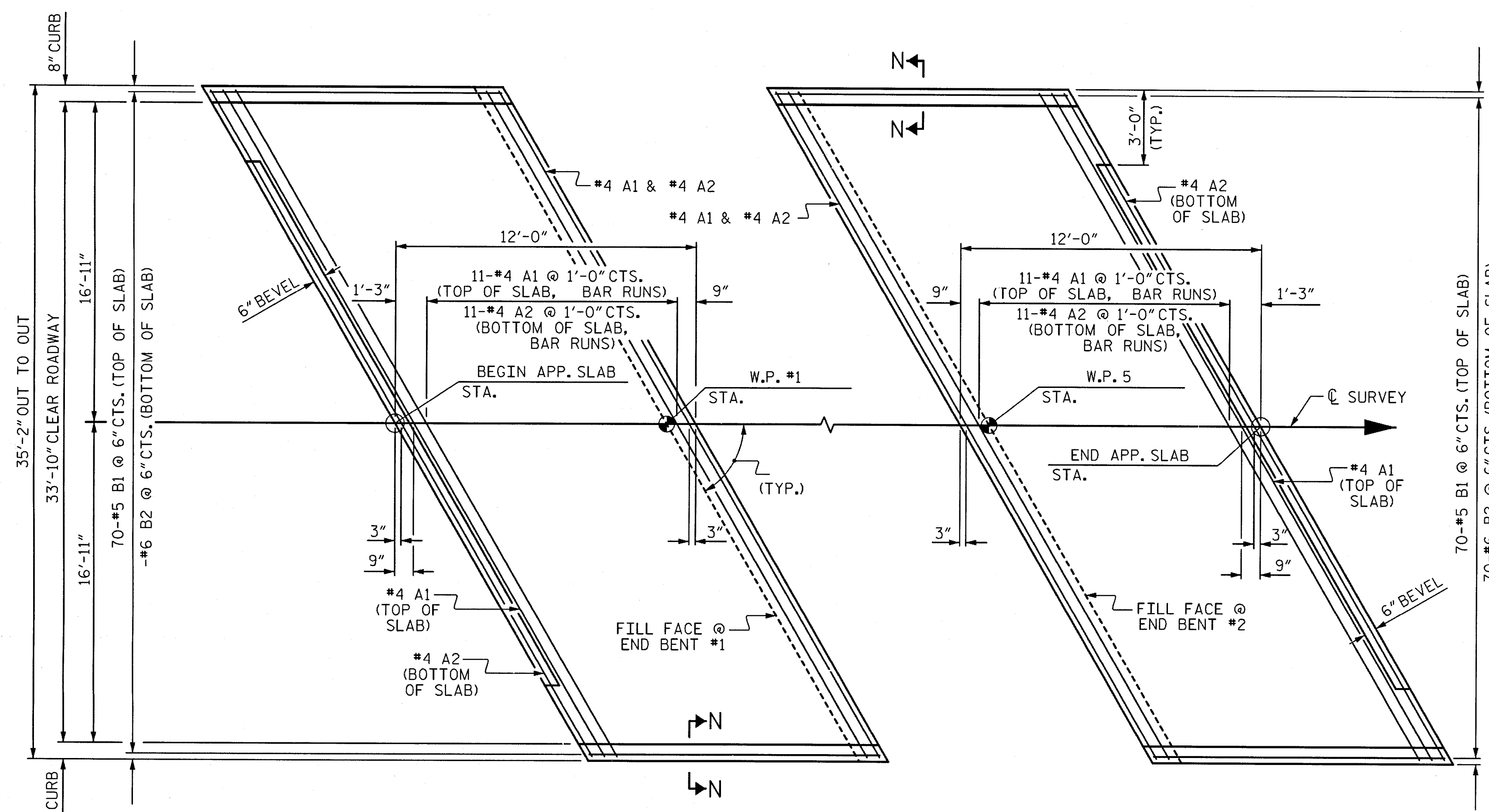
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
18" STEEL PIPE PILE



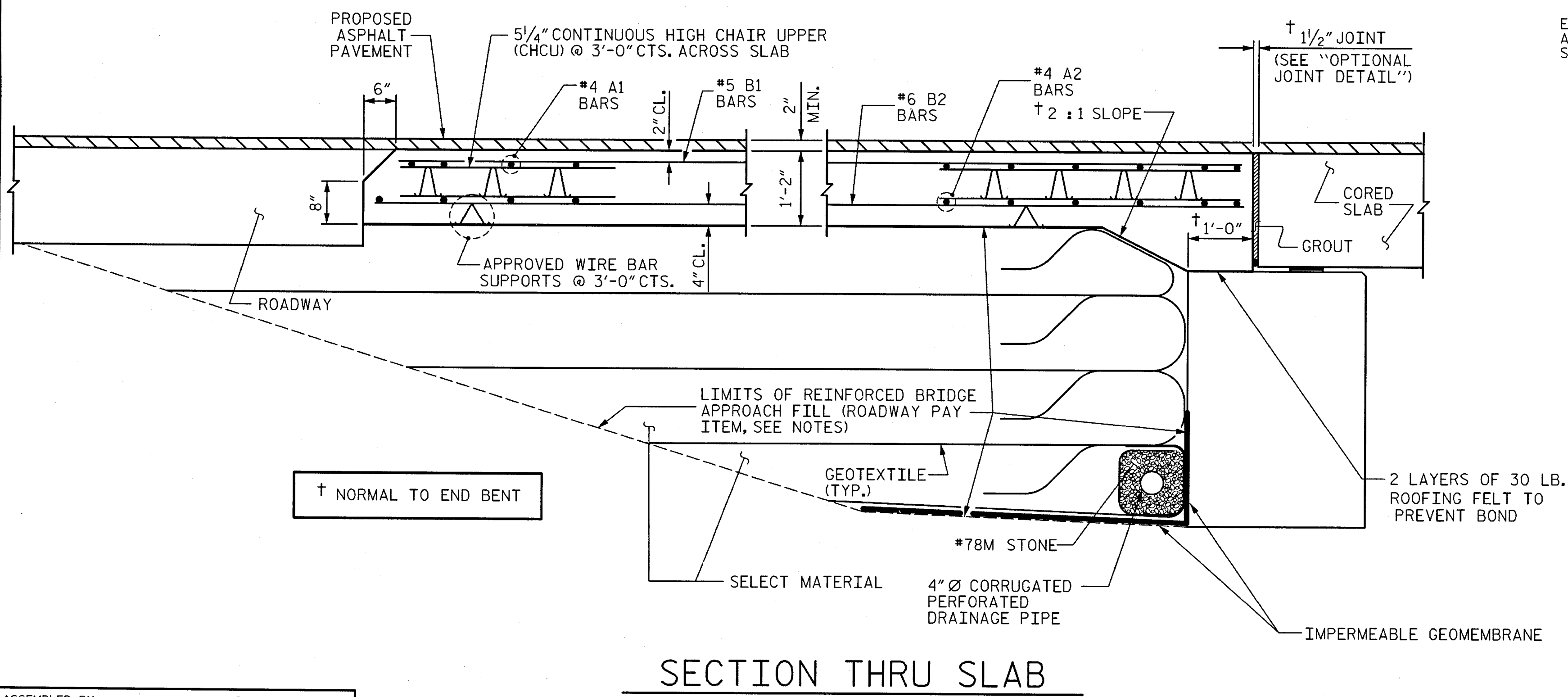
ASSEMBLED BY : JBS/KE	DATE : 10/12
CHECKED BY : C.GLASS	DATE : 10/12
DRAWN BY : RWW 1/01	REV. 10/1/05 LBG/TLA
CHECKED BY : LES 1/01	REV. 5/1/06R MAA/KMM
	REV. 10/1/11 MAA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	30
1			3			TOTAL SHEETS
2			4			32

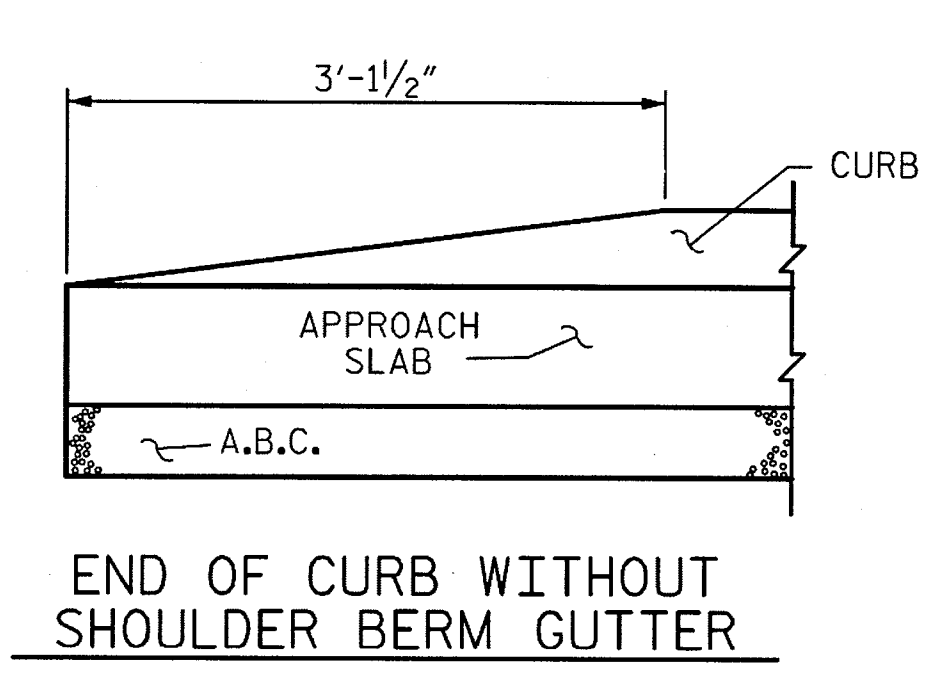
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*****USERNAME*****



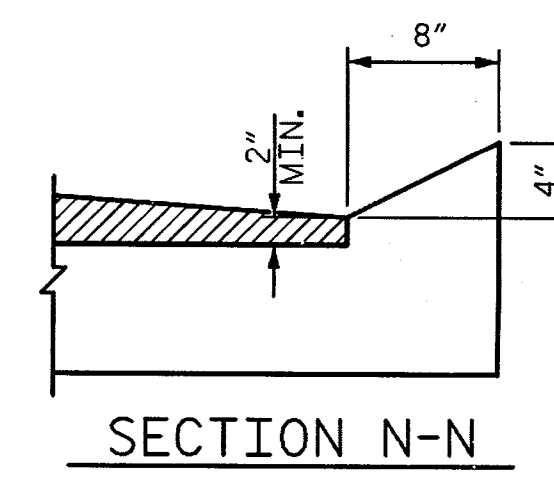
PLAN @ END BENT #1 PLAN @ END BENT #2
DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB



CURB DETAILS



SECTION N-N

SPLICE LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"

NOTES

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

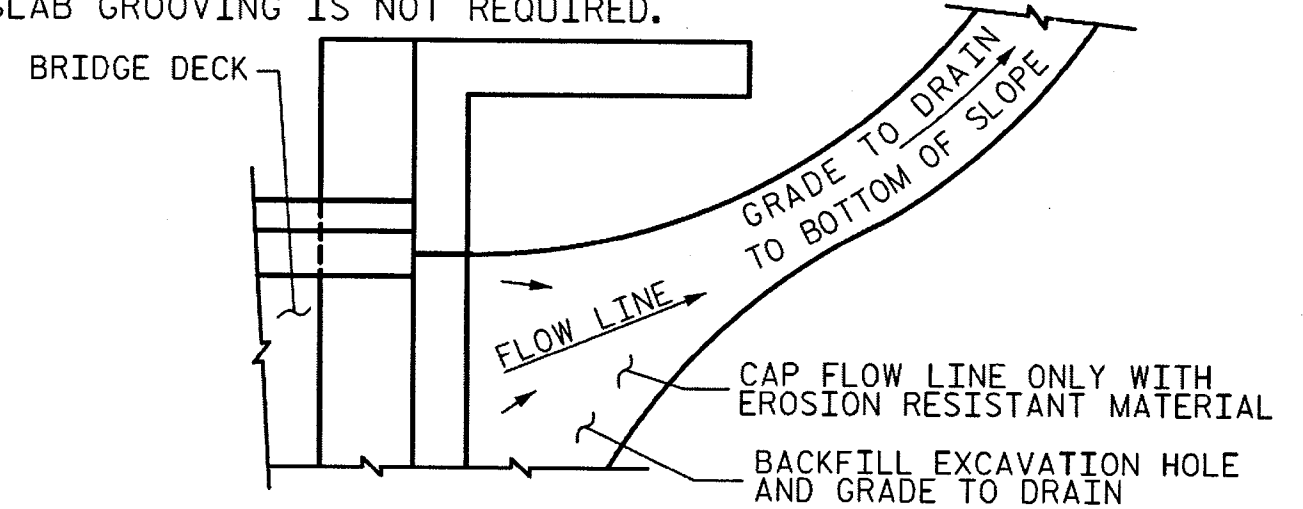
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

FOR JOINT DETAILS, SEE "PRESTRESSED CONCRETE CORED SLAB UNIT" SHEETS.

THE JOINT AT THE END BENT SHALL BE GROUTED AS SOON AS PRACTICAL AFTER THE CONSTRUCTION OF THE APPROACH SLABS.

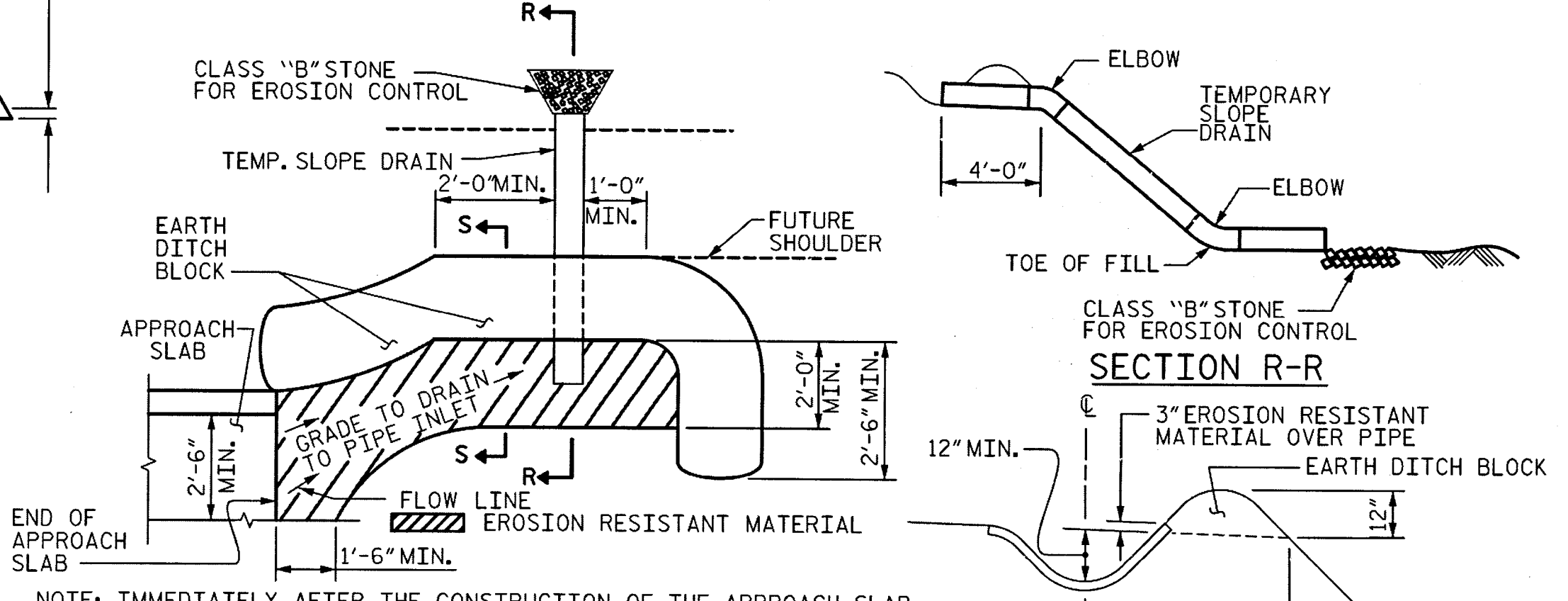
THE CONTRACTOR HAS THE OPTION TO OMIT GROUT BETWEEN THE APPROACH SLAB AND THE CORED SLAB UNITS AND POUR THE APPROACH SLAB DIRECTLY AGAINST THE CORED SLAB UNITS. SEE "OPTIONAL JOINT DETAIL".

APPROACH SLAB GROOVING IS NOT REQUIRED.



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

TEMPORARY DRAINAGE DETAIL



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.

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

BILL OF MATERIAL					
APPROACH SLAB AT EB #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	26	#4	STR	21'-2"	368
A2	26	#4	STR	21'-0"	365
*B1	70	#5	STR	11'-1"	809
B2	70	#6	STR	11'-7"	1218
REINFORCING STEEL				LBS.	1583
*EPOXY COATED REINFORCING STEEL				LBS.	1177
CLASS AA CONCRETE				C. Y.	20.6
APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	26	#4	STR	21'-2"	368
A2	26	#4	STR	21'-0"	365
*B1	70	#5	STR	11'-1"	809
B2	70	#6	STR	11'-7"	1177
REINFORCING STEEL				LBS.	1583
*EPOXY COATED REINFORCING STEEL				LBS.	1177
CLASS AA CONCRETE				C. Y.	20.6

ASSEMBLED BY :	DATE :
CHECKED BY :	DATE :
DRAWN BY : KMM 3-08	REV. 9/27/11 MAA/GM
CHECKED BY : GM 3-08	REV. 10/1/11 MAA/GM
	REV. 12/21/11 MAA/GM

*****SYSTEM*****
*****DCN*****
*****USERNAME*****

PROJECT NO. _____
COUNTY _____

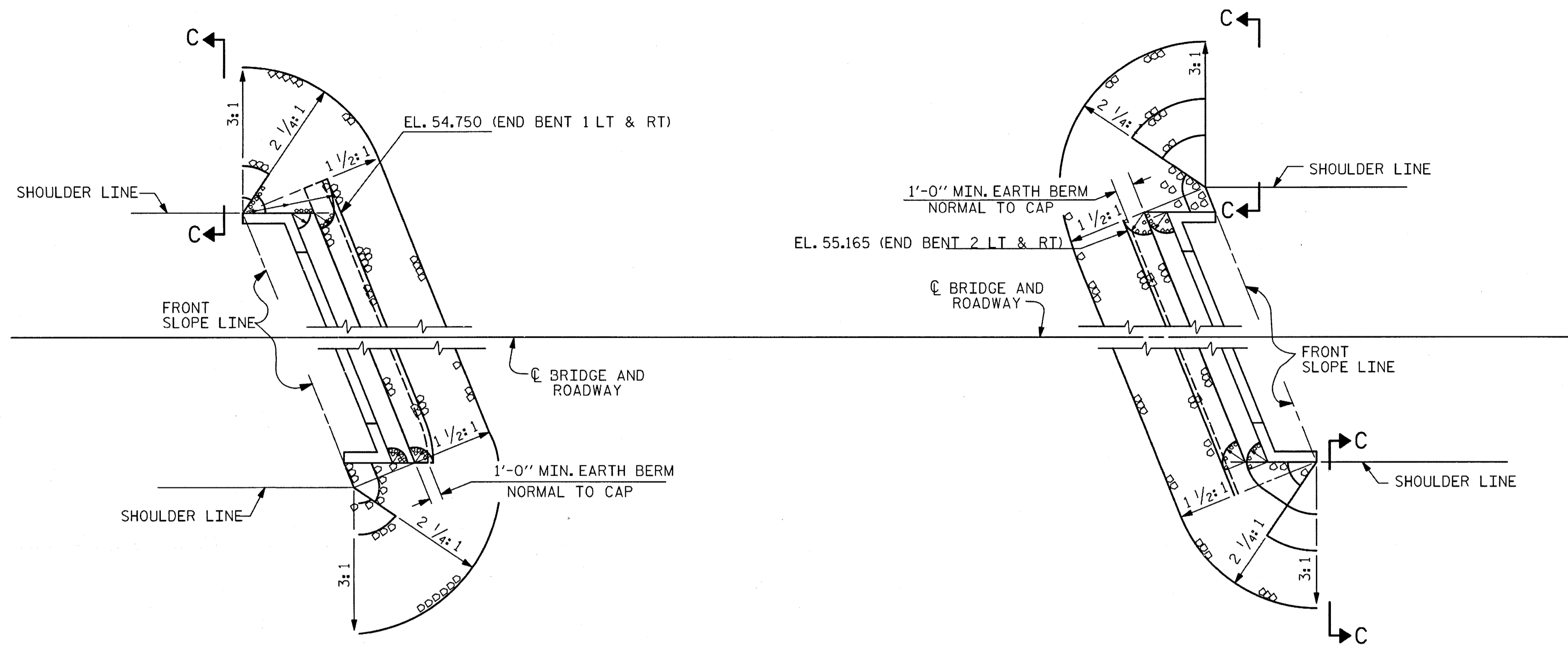
STATION: _____
SHEET 1 OF 2

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

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

(SHT 2b) STD. NO. BAS6

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

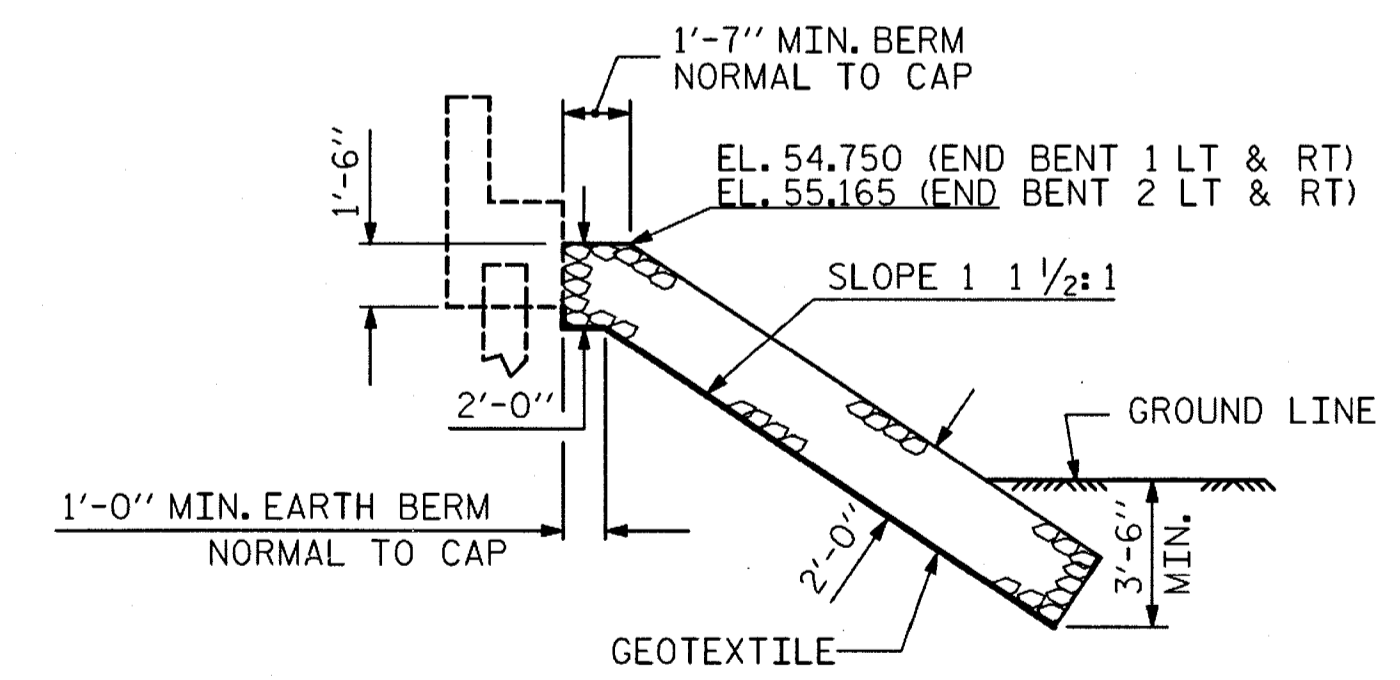


END BENT 1

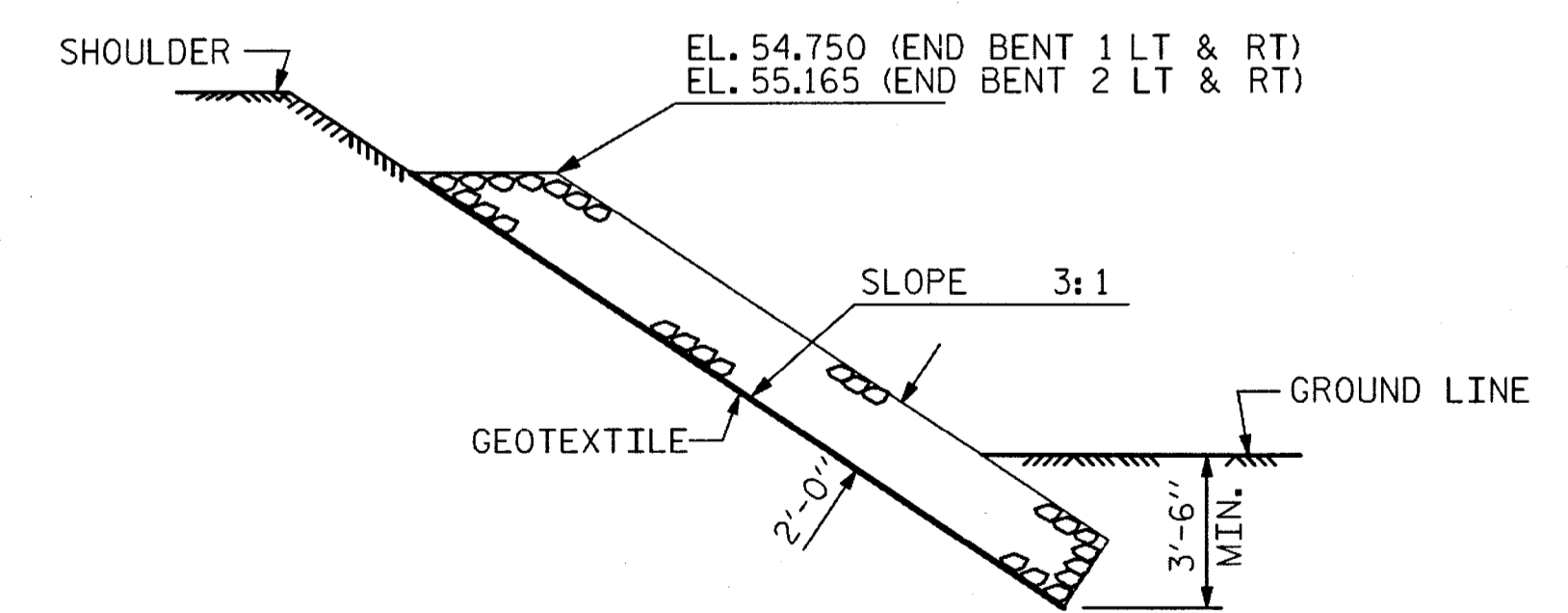
END BENT 2

PLAN OF RIP RAP

ESTIMATED QUANTITIES		
BRIDGE @ STA. 13+08.5 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	220	344
END BENT 2	210	342



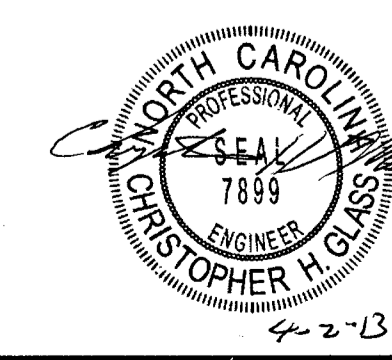
SECTION C-C
BERM RIP RAPPED



SECTION C-C

PROJECT NO. 17BP.4.R.24
EDGEcombe COUNTY
STATION: 13+08.5 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
RIP RAP DETAILS



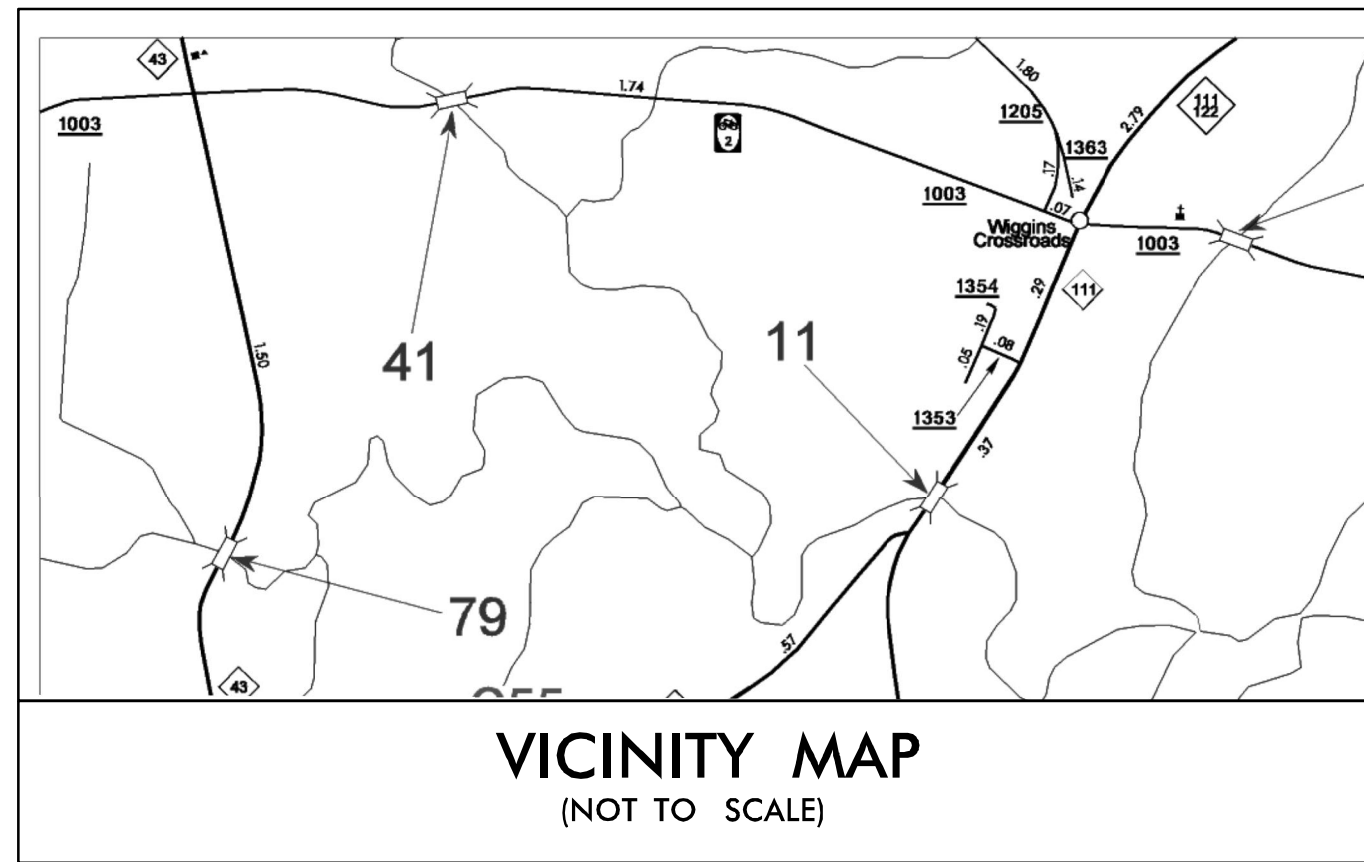
ASSEMBLED BY : JBS/KE	DATE : 10/12
CHECKED BY : C.GLASS	DATE : 10/12
DRAWN BY : REK 1/84	REV. 8/16/99 RWW/LES
CHECKED BY : RDU 1/84	REV. 10/17/00 RWW/LES
	REV. 5/1/06R TLA/GM

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	DATE:	TOTAL SHEETS
1			3		32
2			4		32

*****SYSTEM*****
*****DCN*****
*****USERNAME*****

EDGECOMBE #0041

PROJECT NO: 17BP.4.R.24

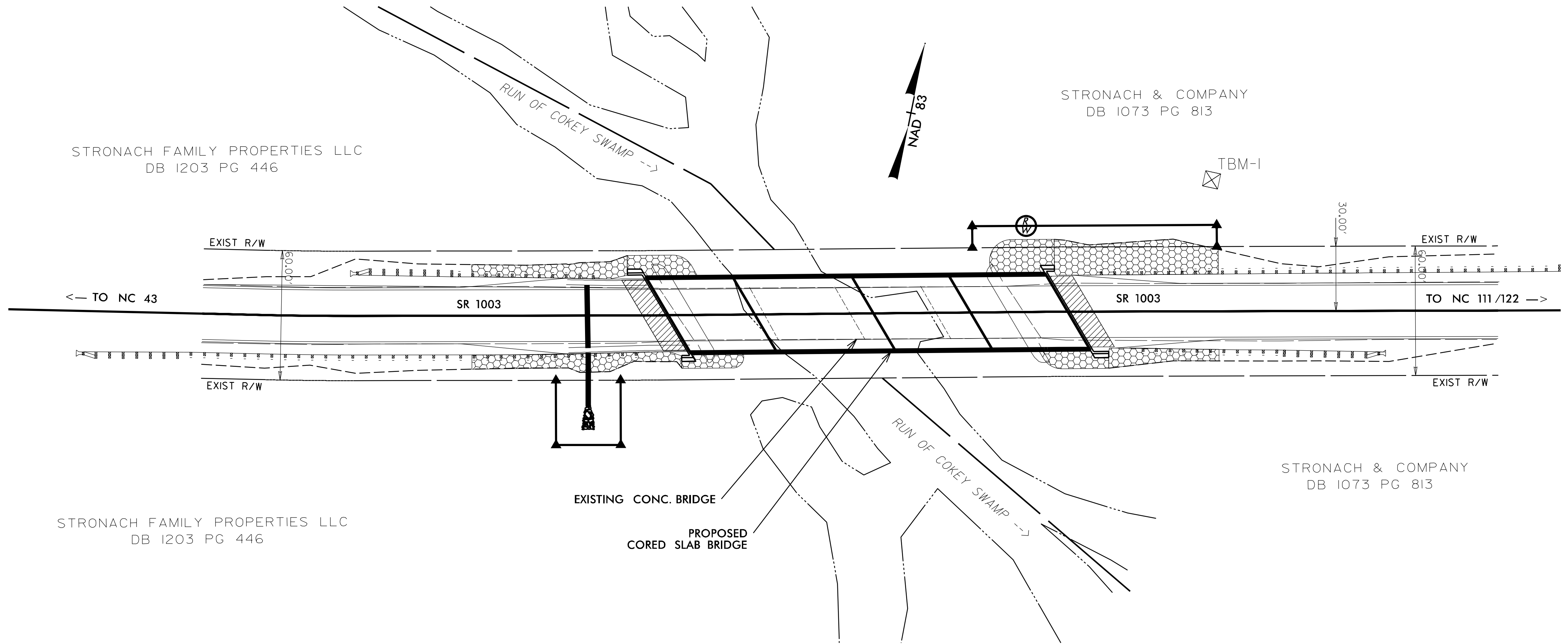


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

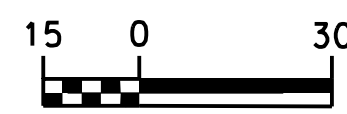
EDGECOMBE COUNTY

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.4.R.24	EC-1	3
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.4.R.24	N/A	BRIDGE REPLACEMENT	



GRAPHIC SCALE



PLANS

EXISTING STRUCTURE: (4) SPANS 1@38'-9", 2@40'-1", 1@41'
REINFORCED CONCRETE DECK
ON STEEL BEAMS ON REINF. CONC. CAPS
AND REINF. CONC. PILES

PROPOSED STRUCTURE: (2) SPANS 1@40', 1@55', 2@45'
21" PRESTRESSED CONCRETE CORED SLABS
ON REINFORCED CONCRETE 2'-6" END BENTS
AND STEEL PIPE PILES

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2012 STANDARD SPECIFICATIONS

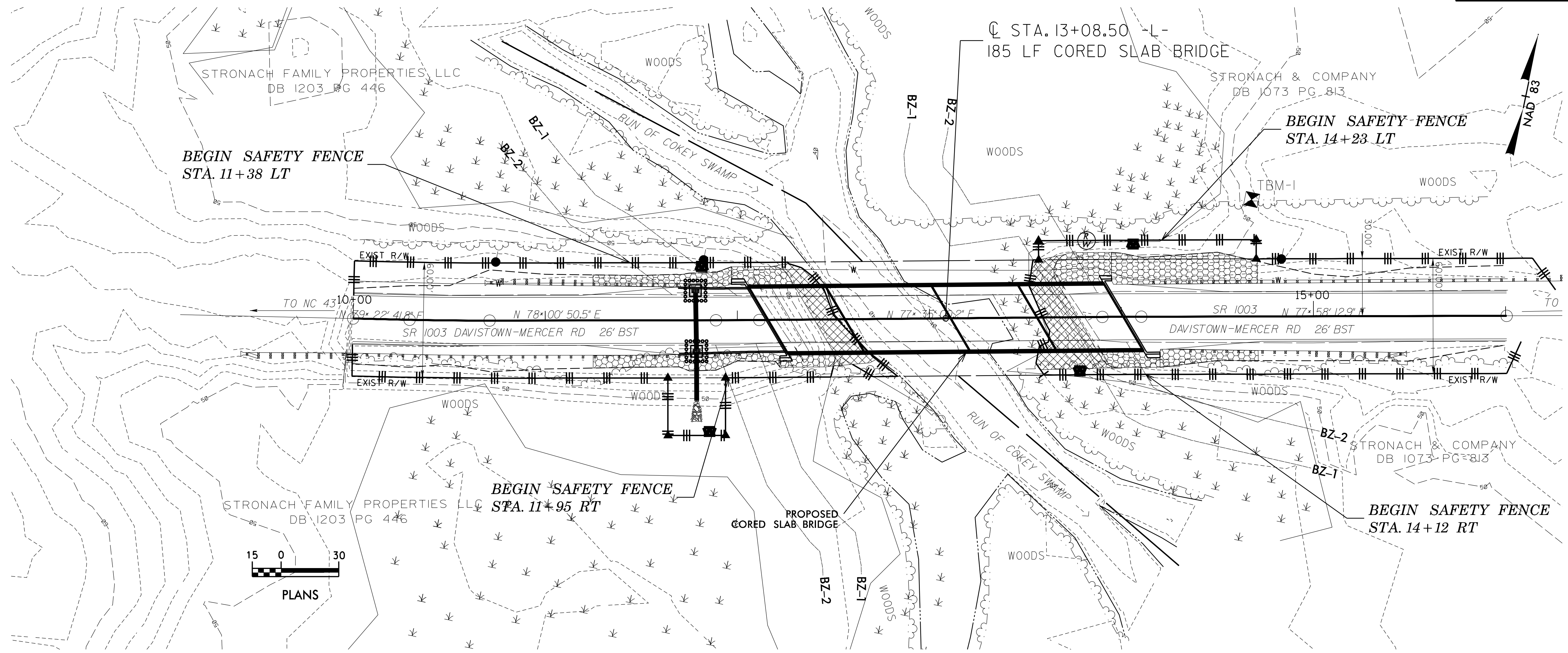
J. BRANCH SMITH
LEVEL III NAME

3355
LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type B	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Baffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	



ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT
 Refer To E. C. Special Provisions for Special Considerations.

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

EROSION CONTROL MEASURES

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1632.03	Rock Inlet Sediment Trap Type C	

GENERAL EROSION CONTROL NOTES:
 INSTALL EROSION/SEDIMENT CONTROL MEASURES ACCORDING TO PLANS, CONTRACT, AND SPECIAL PROVISIONS.
 TEMPORARY SILT FENCE SHALL BE INSTALLED TO ROW AS SHOWN. SILT FENCE OUTLETS MUST ALLOW FOR SEDIMENT TO DISCHARGE WITHIN ROW AND NOT OFFSITE.
 ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.
 ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.
 SEED ALL DISTURBED AREAS ACCORDING TO THE SITE STABILIZATION TIMEFRAMES.
INSTALLATION SCHEDULE:
 INSTALL EROSION/SEDIMENT CONTROL DEVICES PRIOR TO DEMOLITION OF EXISTING STRUCTURE.
 IF NEEDED, TEMPORARY CAUSEWAY IS PERMITTED, HOWEVER, CONTRACT CALLS FOR TOP-DOWN CONSTRUCTION.
 ESTABLISH RIP-RAP SLOPE PROTECTION FOR ABUTMENTS AND FOR FILL SLOPES STEEPER THAN 2:1.
 ESTABLISH PERMANENT VEGETATION AND REFORESTATION.
 REMOVE ALL EROSION/SEDIMENT CONTROL DEVICES AFTER PERMANENT VEGETATIVE COVER HAS BEEN ESTABLISHED ON DISTURBED AREAS.

SOIL STABILIZATION TIMEFRAMES

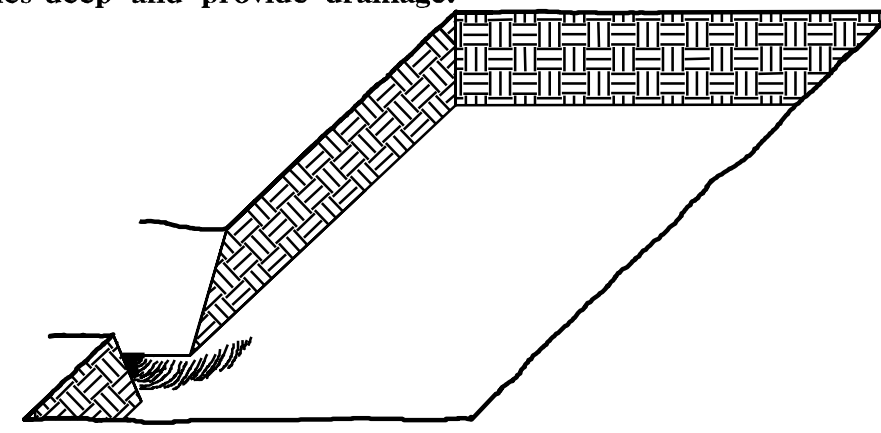
SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HOW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HOW ZONES.

PLANTING DETAILS

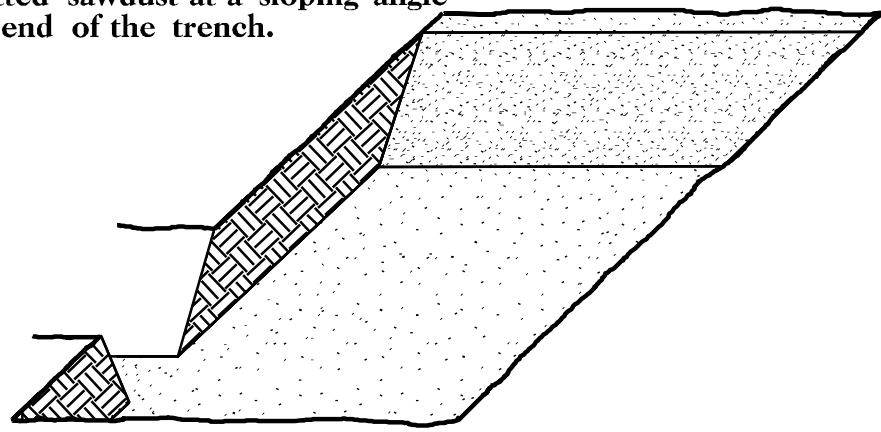
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

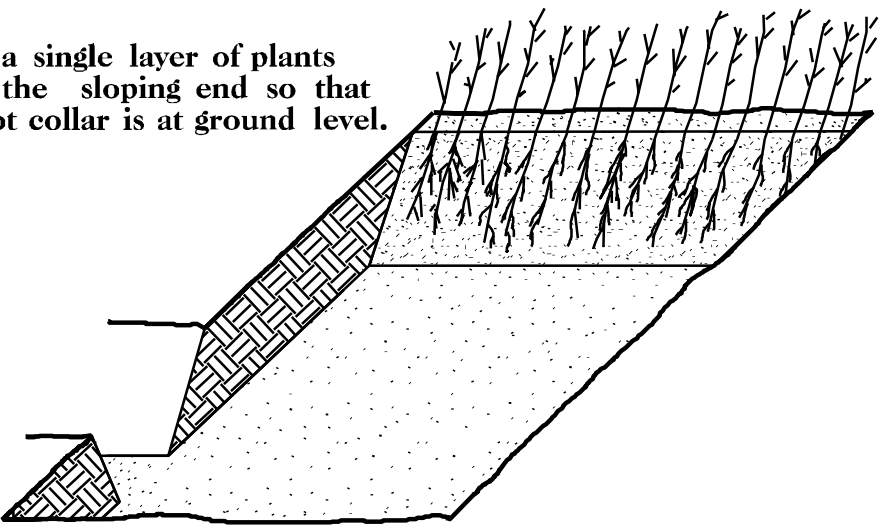
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



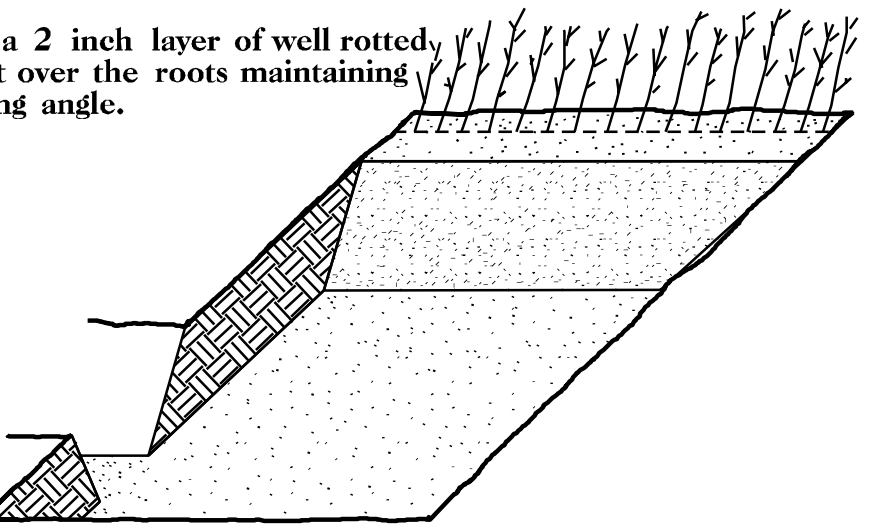
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

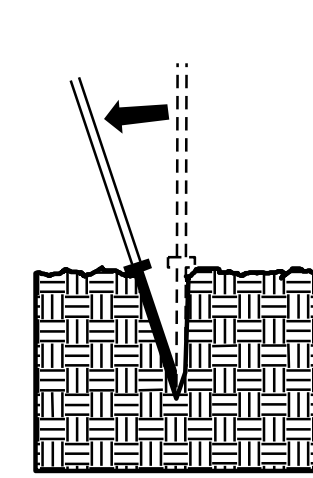


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

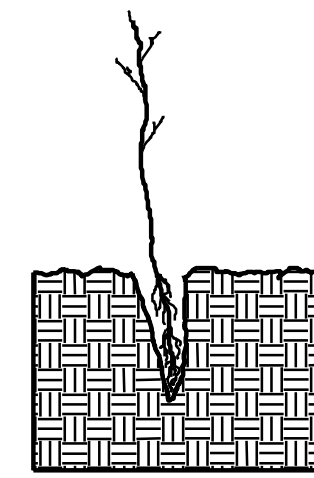


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

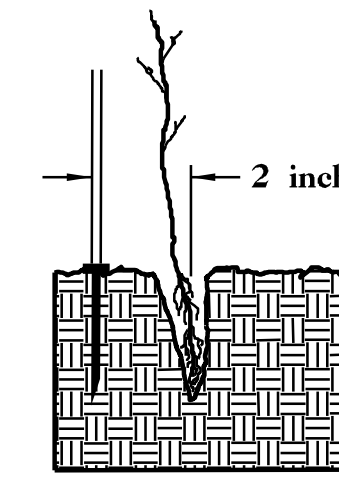
DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



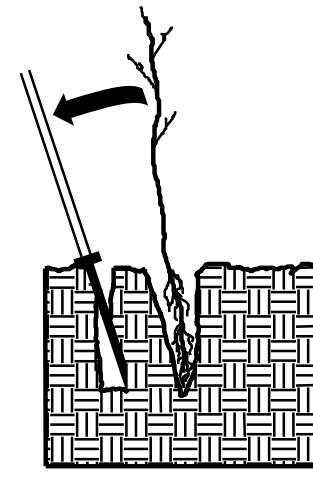
1. Insert planting bar as shown and pull handle toward planter.



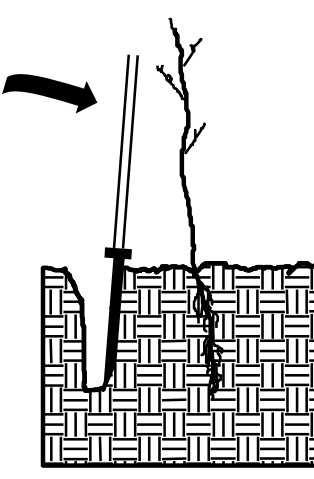
2. Remove planting bar and place seedling at correct depth.



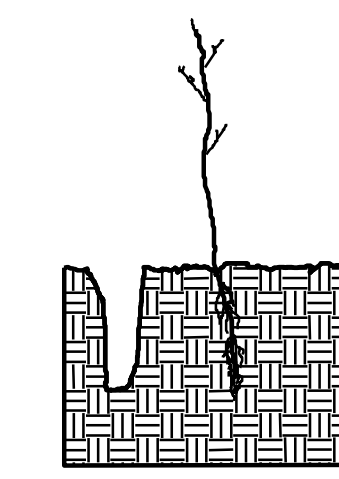
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



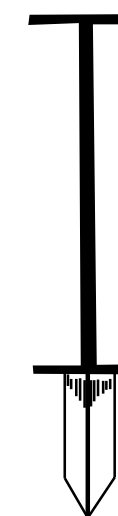
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

- TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
25%	PLATANUS OCCIDENTALIS	SYCAMORE	12 in - 18 in BR
25%	FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in BR
25%	BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

PROJECT: 17BP.4.R.24 ID: SF-320041

DRAWN BY: C.P. TURNER

SHEET	DESCRIPTION
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4	PROFILE
5-6	BORE LOGS

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STRUCTURE SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 17BP.4.R.24 (SF-320041) F.A. PROJ. _____
 COUNTY EDGECOMBE
 PROJECT DESCRIPTION BRIDGE NO. 41 ON SR 1003 (DAVISTOWN-
 MERCER ROAD) OVER COKEY SWAMP AT -L- STA. 13+08.50

STATE	STATE PROJECT REFERENCE NO.	SHEET	TOTAL SHEETS
N.C.	SF-320041	1	6

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF SITE PLAN, PLANNING, AND DESIGN AND NOT FOR CONSTRUCTION OR PAVEMENT PURPOSES. THE VARIOUS FIELD BORING LOGS, PNEUMATIC CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN FULL OR BY CONTRACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1700 TOLSON DRIVE, RENOIR, THE SUBSURFACE PLANS AND REPORTS, AND THE FIELD BORING LOGS, PNEUMATIC CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORNES OR BETWEEN SAMPLED STRATA WITHIN THE BORNES. THE LABORATORY SAMPLE DATA AND THE IN SITU IN-PLACE TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY PRESENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OF SOIL MOISTURE CONDITIONS INDICATED BY THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION, AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BODIES OF CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INDEPENDENT NATURE OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BODIES OF CONTRACTOR IS CAUTIONED TO MAKE SOON INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED BY THE SUBSURFACE INFORMATION.

PERSONNEL

C.M. WRIKE

R.E. SMITH

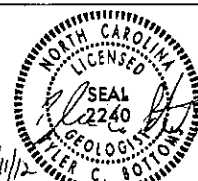
D.G. PINTER

INVESTIGATED BY F.C. BOTTOMS

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE SEPTEMBER 2012



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE PART OF THE PLANS.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE

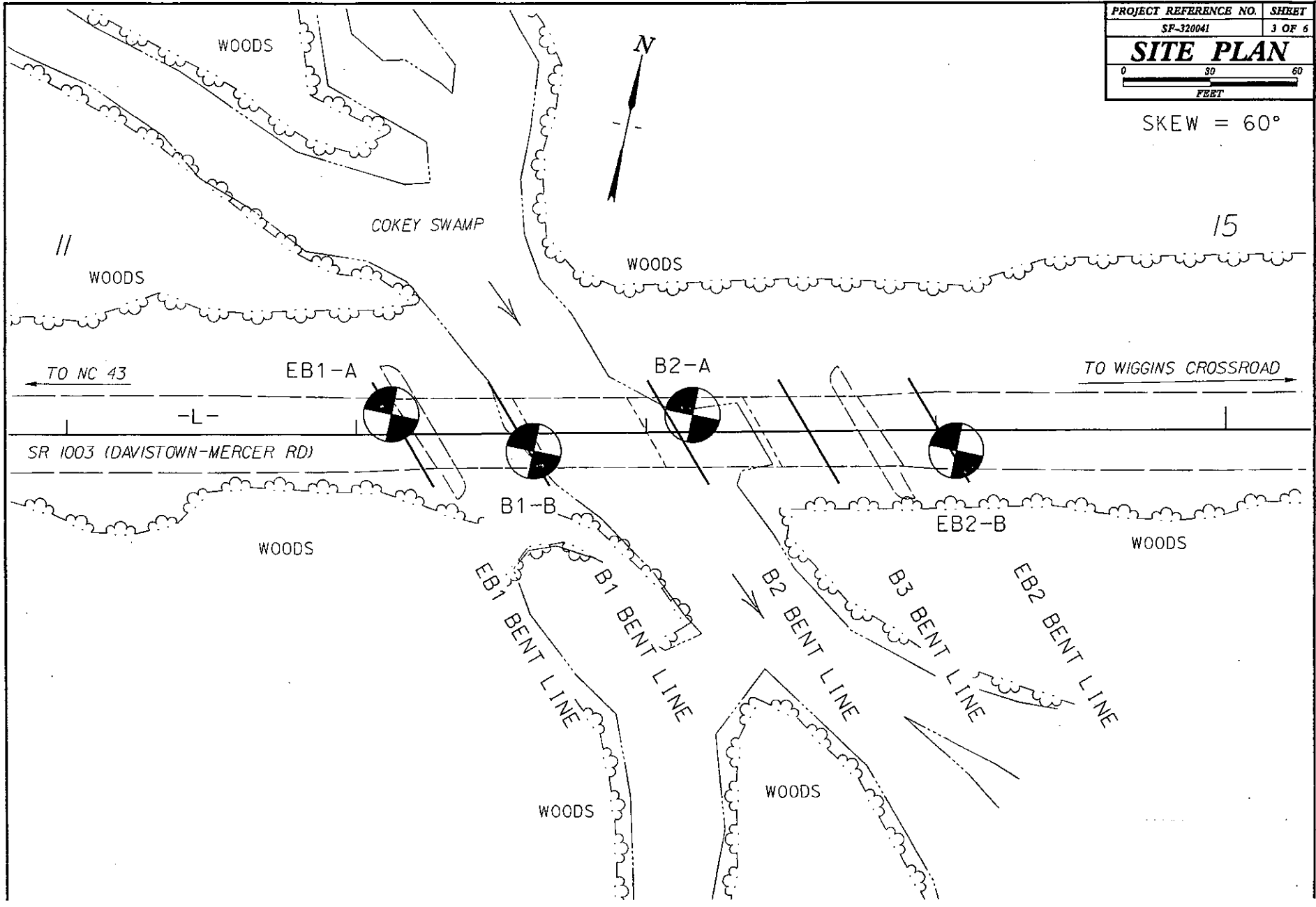
SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION		GRADATION		ROCK DESCRIPTION		TERMS AND DEFINITIONS																																																																																						
<p>SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONE PENETROMETER POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE HASSETT SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AMBIO CLASSIFICATION AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, UNSATURATED STATE, PLASTICITY, ETC. EXAMPLES: MAY DIFFER FROM THE ABOVE IF THE SOIL IS WEATHERED FROM A HARD ROCK.</p>		<p>WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNDESIRABLE - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. ALSO POORLY GRADED. SAP GRADED - INDICATES A Mixture OF UNIFORM PARTICLES OF TWO OR MORE SIZES.</p>		<p>HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPONGE SAMPLER DOWN TO OR LESS THAN 10 BLOWS PER FOOT OF NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:</p>		<p>ALUMINUM OXIDE - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUEOUS - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. ARTEFICIAL - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLECTED - ROCK FRAGMENTS MIXED WITH SOIL, DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (%) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF TESTER AND EXPRESSED AS A PERCENTAGE. CUT - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP) - THE DIRECTION ON BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE STRATA RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FOLD - A DEFORMATION OF STRATA ALONG CLOSELY SPACED PARALLEL PLANES. FRESH - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND UNDISCOLORED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FOLIATION (FOL.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TAMED IN THE FIELD. FRACTURE - FRACTURE IN ROCK ALONG WHICH MOVEMENT HAS OCCURRED. GRADE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOTT.) - IRREGULARLY MOTTLED WITH SPOTS OF DIFFERENT COLORS, MOTTLED IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PICKED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RESID.) - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE HELIX STRUCTURE OR FABRIC OF THE PARENT ROCK. SEVERAL HAND BLOWS OF THE GEOLOGIST'S PICK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR STRUCTURE OF THE INTRUSIVE ROCK. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS IN OR EQUIV. OF A 14 LB HAMMER FALLING 30 INCHES REQUIRED TO PENETRATE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPONGE SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 10 BLOWS PER FOOT OF SOIL. STRATA CORE RECOVERY (SCR) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA QUALITY DESIGNATION (SQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITH A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TENSILE STRENGTH (TS) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATERIAL. BENCH MARK: LARGE NAIL IN BASE OF 18" OAK AT -L- STA. 8+15, 46' LT ELEVATION: 52.66 FT.</p>																																																																																						
<p>SOIL LEGEND AND ASSAULT CLASSIFICATION</p> <table border="1"> <tr> <th>GENERAL CLASS.</th> <th>GRAVELLY MATERIALS (U.S. 30% PASSING #200)</th> <th>SILT-CLAY MATERIALS (U.S. 30% PASSING #200)</th> <th>ORGANIC MATERIALS</th> </tr> <tr> <td>GROUP CLASS.</td> <td>A-1, A-2, A-3</td> <td>A-4, A-5, A-6, A-7</td> <td>A-8, A-9, A-10</td> </tr> <tr> <td>SYMBOL</td> <td>[Symbol]</td> <td>[Symbol]</td> <td>[Symbol]</td> </tr> <tr> <td>% PASSING</td> <td></td> <td></td> <td></td> </tr> <tr> <td># 10</td> <td>58-100</td> <td>5-15</td> <td>10-15</td> </tr> <tr> <td># 40</td> <td>10-100</td> <td>5-15</td> <td>10-15</td> </tr> <tr> <td># 200</td> <td>10-100</td> <td>5-15</td> <td>10-15</td> </tr> </table>		GENERAL CLASS.	GRAVELLY MATERIALS (U.S. 30% PASSING #200)	SILT-CLAY MATERIALS (U.S. 30% PASSING #200)	ORGANIC MATERIALS	GROUP CLASS.	A-1, A-2, A-3	A-4, A-5, A-6, A-7	A-8, A-9, A-10	SYMBOL	[Symbol]	[Symbol]	[Symbol]	% PASSING				# 10	58-100	5-15	10-15	# 40	10-100	5-15	10-15	# 200	10-100	5-15	10-15	<p>MINERALOGICAL COMPOSITION</p> <p>MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, CALC., KALIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.</p> <p>COMPRESSIBILITY</p> <p>SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 35 MODERATELY COMPRESSIBLE LIQUID LIMIT EQUAL TO 35-50 HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50</p>		<p>CRYSTALLINE ROCK</p> <p>FINE TO COARSE GRAIN TENDRUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, DIORITE, ETC.</p> <p>NON-CRYSTALLINE ROCK</p> <p>FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN MATERIALS THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLITIS, SLATE, SANDSTONE, ETC.</p> <p>SEDIMENTARY ROCK</p> <p>COARSE PLAIN SEDIMENTS EXCEPTED INTO ROCK, BUT THAT WOULD YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CLAYED SHELL, MUD, ETC.</p>		<p>PERCENTAGE OF MATERIAL</p> <table border="1"> <tr> <th>ORGANIC MATERIAL</th> <th>GRAVELLY MATERIALS</th> <th>SILT - CLAY</th> <th>OTHER MATERIAL</th> </tr> <tr> <td>TRACE OF ORGANIC MATTER</td> <td>2 - 3%</td> <td>3 - 5%</td> <td>TRACE</td> </tr> <tr> <td>LITTLE ORGANIC MATTER</td> <td>3 - 5%</td> <td>5 - 12%</td> <td>LITTLE</td> </tr> <tr> <td>MODERATELY ORGANIC</td> <td>5 - 12%</td> <td>12 - 20%</td> <td>SOME</td> </tr> <tr> <td>MODERATELY ORGANIC</td> <td>12 - 20%</td> <td>20 - 35%</td> <td>MUCH</td> </tr> <tr> <td>MODERATELY ORGANIC</td> <td>35 - 50%</td> <td>35% AND ABOVE</td> <td>VERY MUCH</td> </tr> </table>		ORGANIC MATERIAL	GRAVELLY MATERIALS	SILT - CLAY	OTHER MATERIAL	TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE	LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE	MODERATELY ORGANIC	5 - 12%	12 - 20%	SOME	MODERATELY ORGANIC	12 - 20%	20 - 35%	MUCH	MODERATELY ORGANIC	35 - 50%	35% AND ABOVE	VERY MUCH																																	
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PROJECT REFERENCE NO.	SHEET
SF-320041	3 OF 6
SITE PLAN	
 0 30 60 FEET	

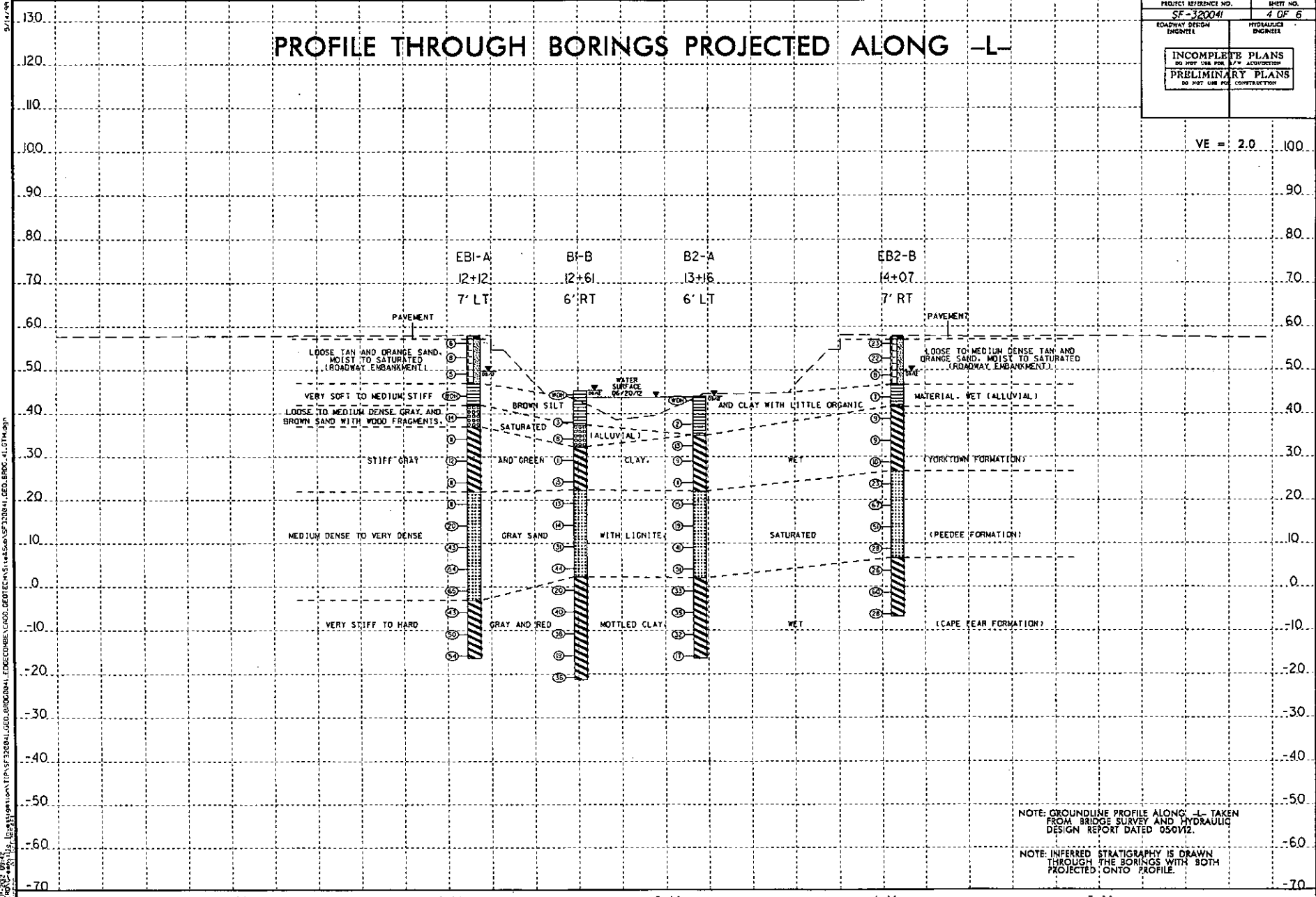
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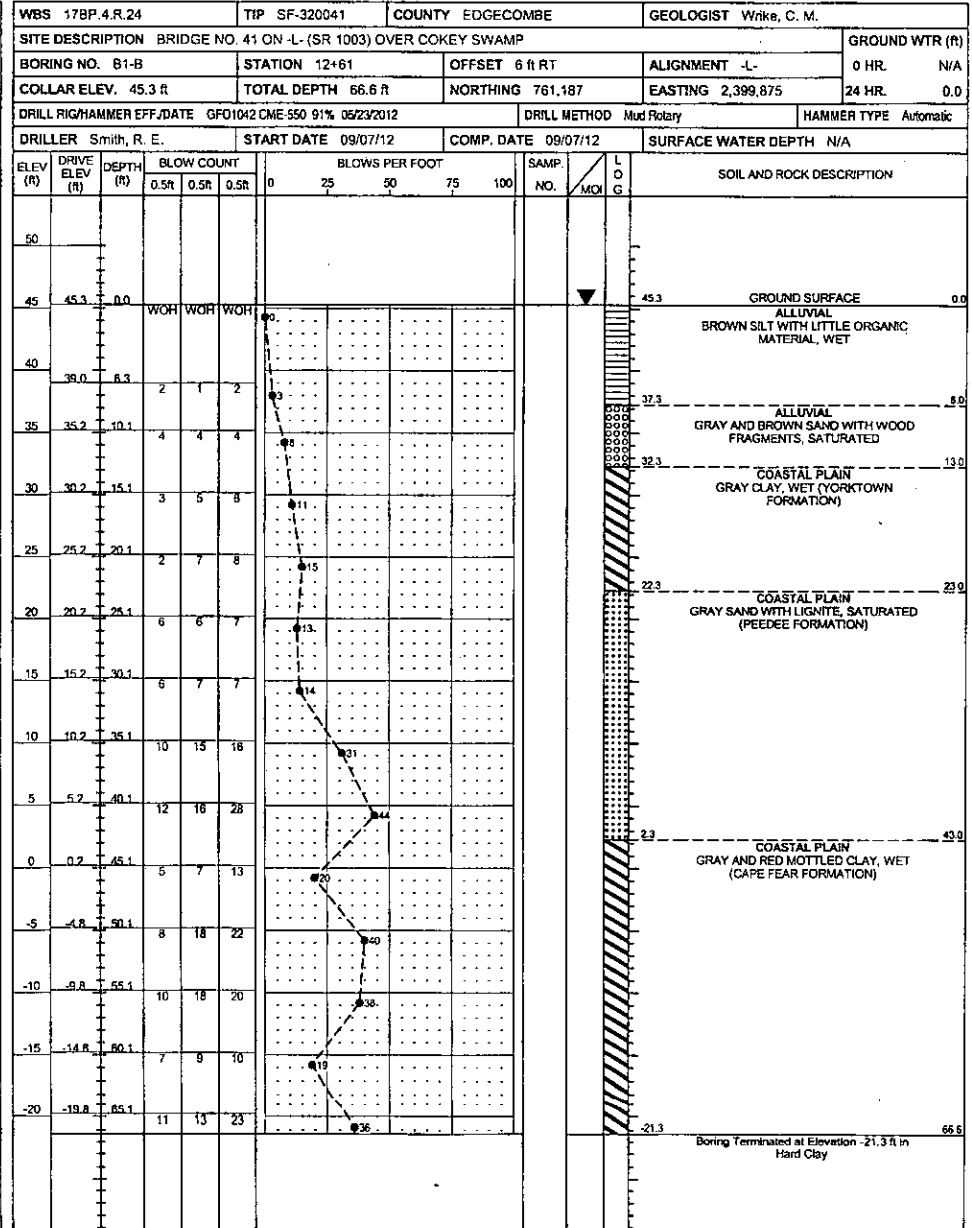
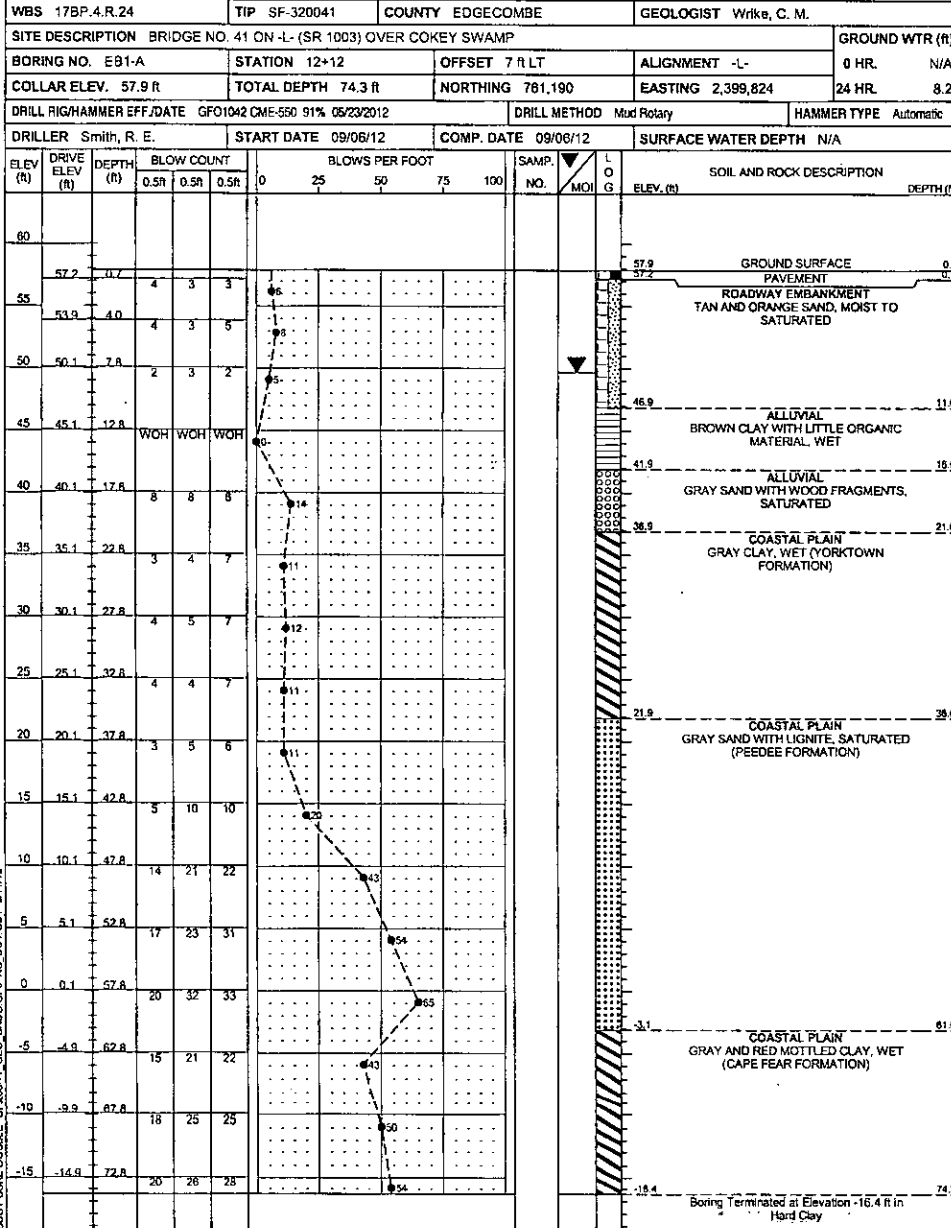
PROJECT REFERENCE NO. SF-320041
SHEET NO. 4 OF 6
ROADWAY DESIGN ENGINEER
HYDRAULIC ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PROFILE THROUGH BORINGS PROJECTED ALONG -L-





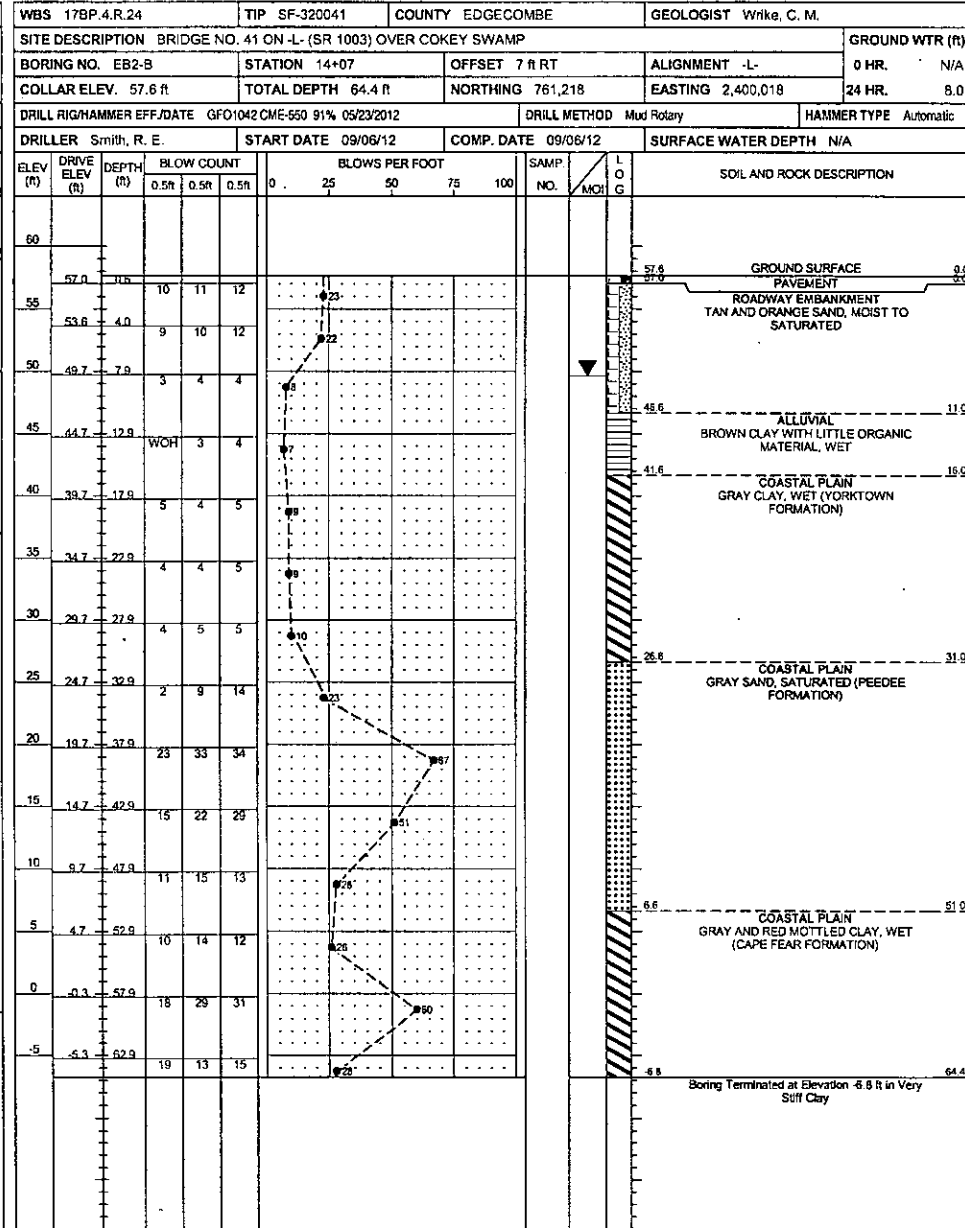
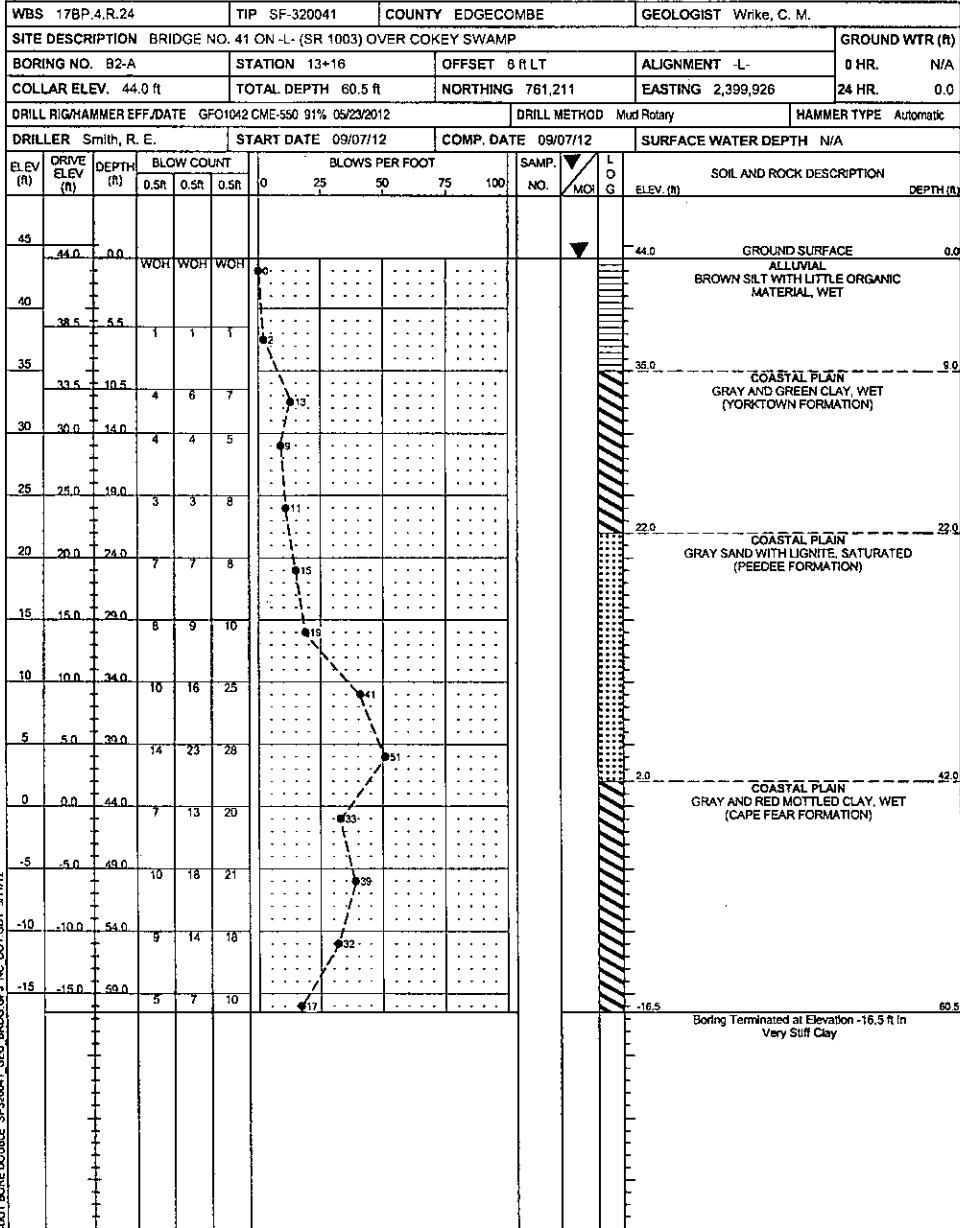
NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT



COORD BORE DOUBLE SP00041 GEO BRDG GPJ INC DOT GDT 8/11/12



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