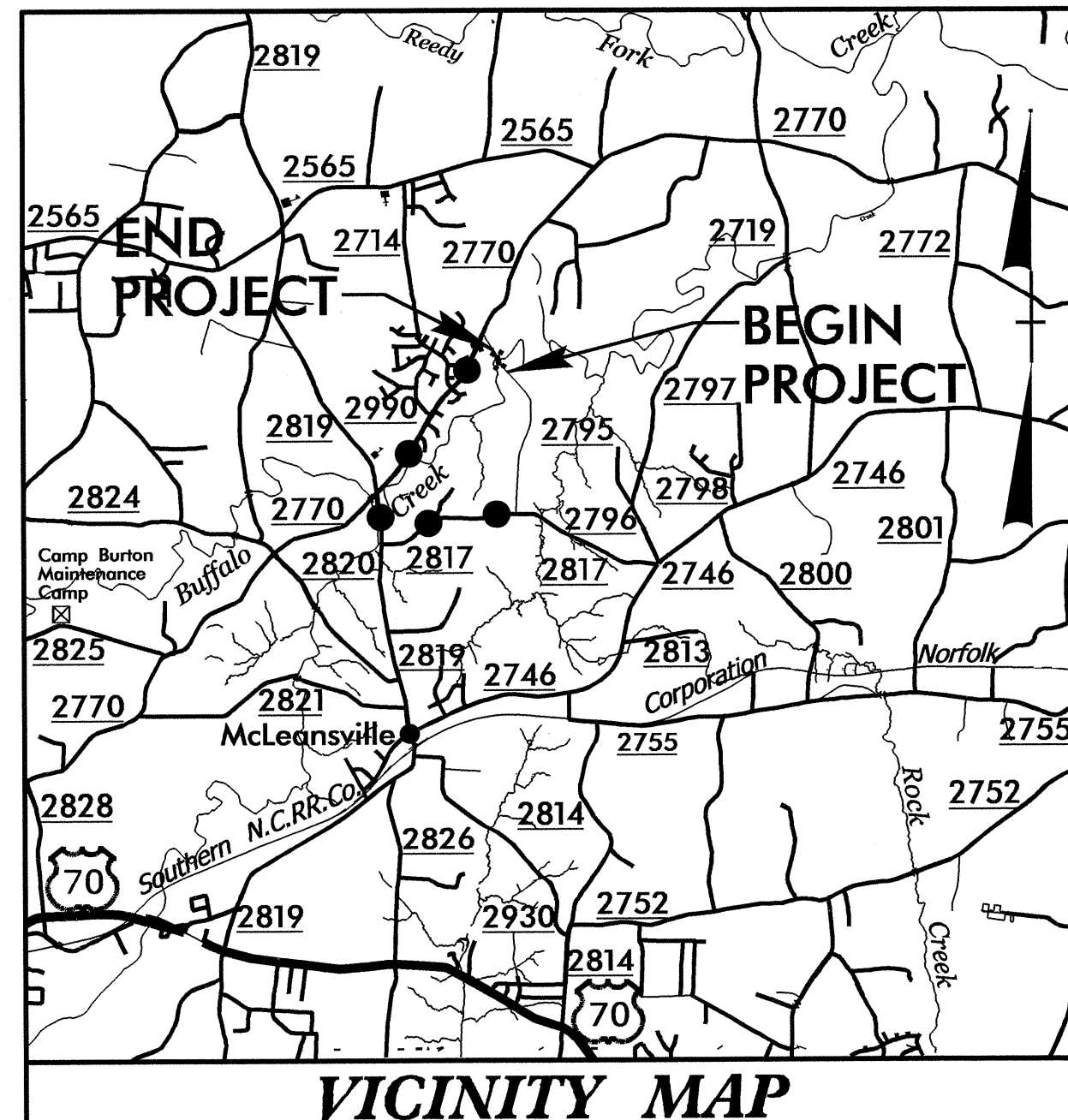


CONTRACT: C203151 TIP PROJECT: B-4757



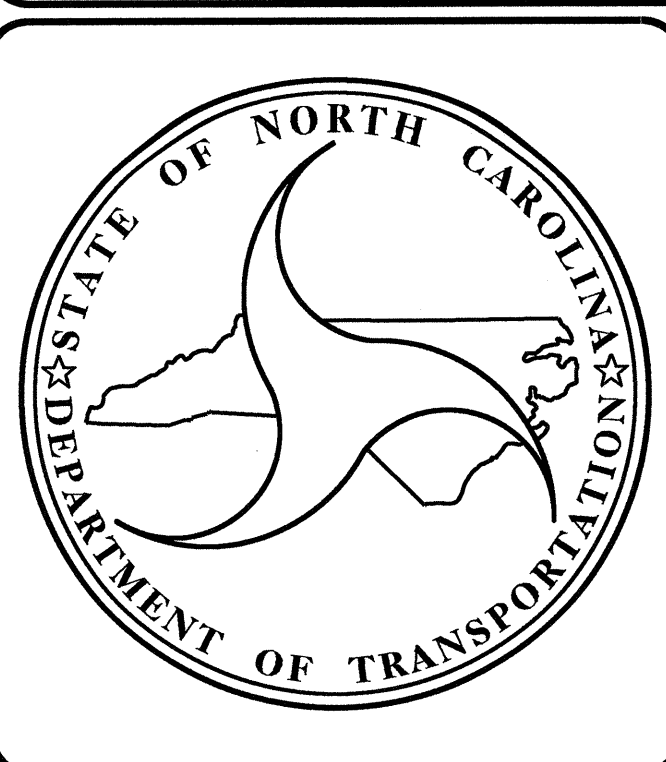
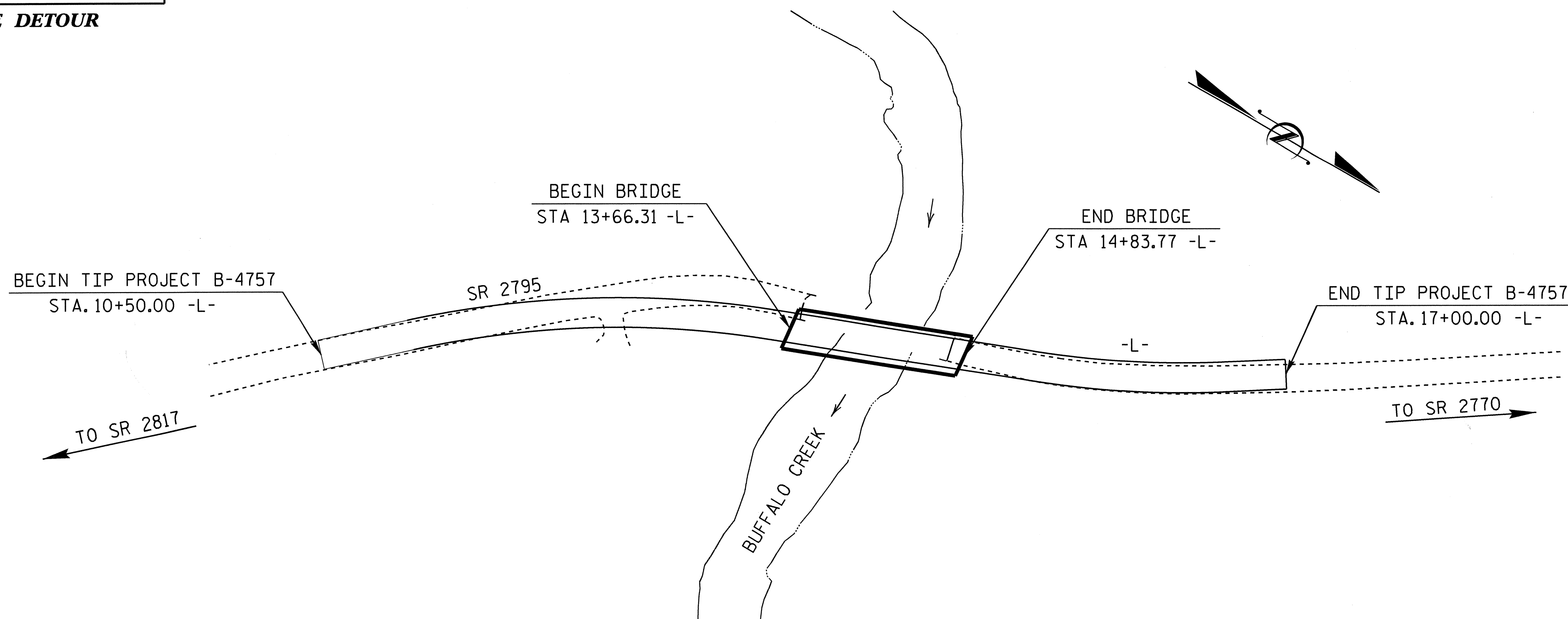
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
GUILFORD COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4757		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38529.1.1	BRZ-2795(1)	P. E.	
38529.2.1	BRZ-2795(1)	R/W, UTIL.	
38529.3.1	BRZ-2795(1)	CONST.	

LOCATION: BRIDGE #175 OVER BUFFALO CREEK ON SR 2795 (HUFFINE FARM RD.)

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

STRUCTURE



DESIGN DATA

ADT 2012	=	115
ADT 2035	=	200
DHV	=	10 %
D	=	60 %
T	=	3 % *
V	=	45 MPH

* TTST 1% DUAL 2%
FUNC. CLASS = LOCAL RURAL SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4757	=	0.101 MILE
LENGTH STRUCTURE TIP PROJECT B-4757	=	0.022 MILE
TOTAL LENGTH TIP PROJECT B-4757	=	0.123 MILE

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

2012 STANDARD SPECIFICATIONS

LETTING DATE :
 MAY 21, 2013

J.M. BAILEY, P.E.
PROJECT ENGINEER

D.R. CALHOUN, P.E.
PROJECT DESIGN ENGINEER

STRUCTURES MANAGEMENT UNIT

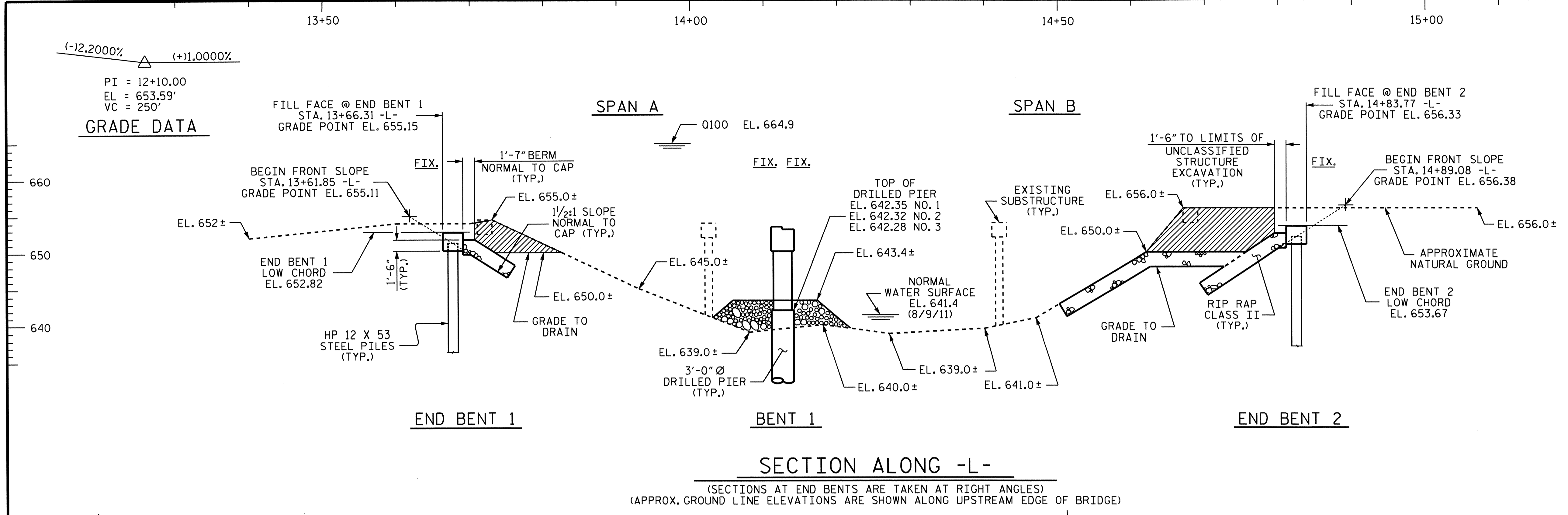
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

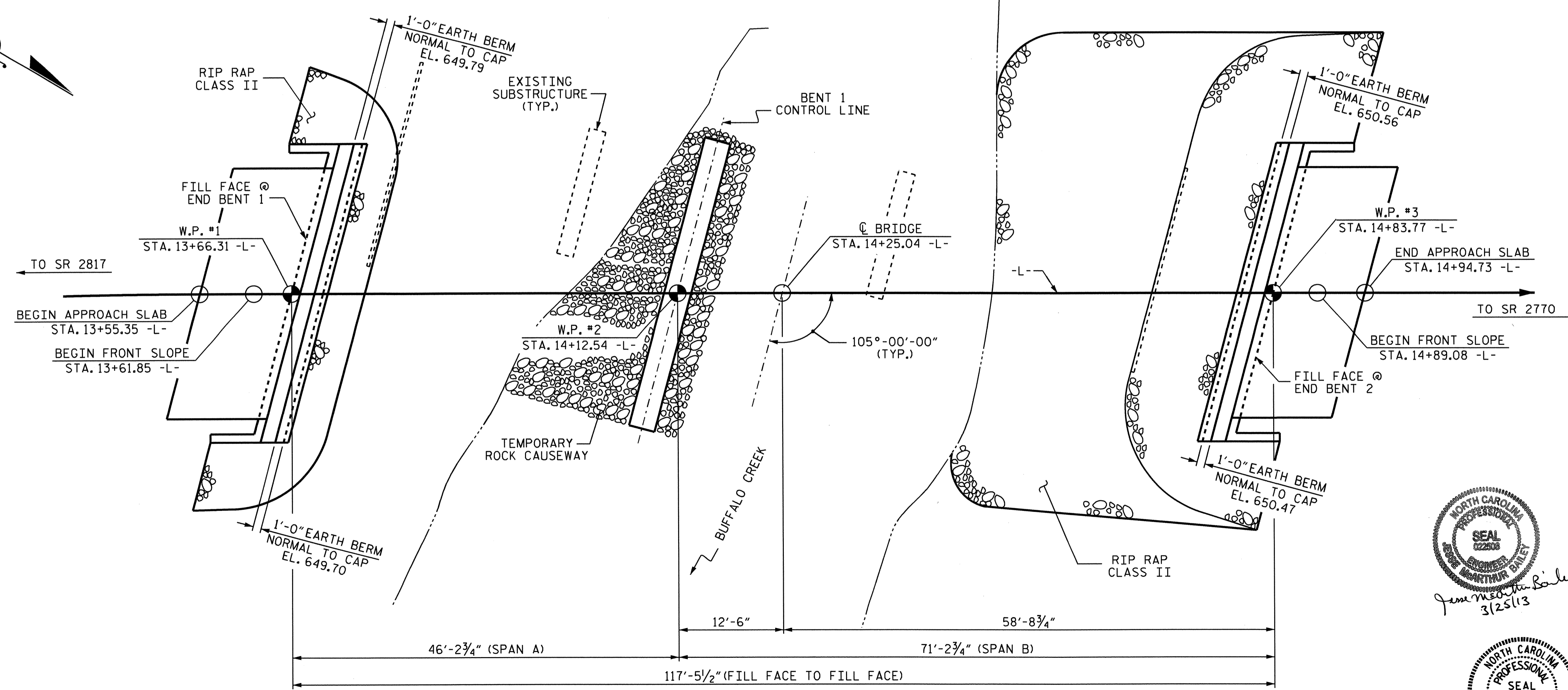
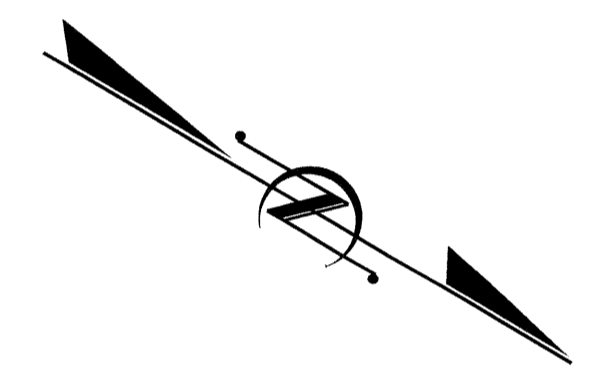
APPROVED _____
DIVISION ADMINISTRATOR

DATE _____



SECTION ALONG -L-

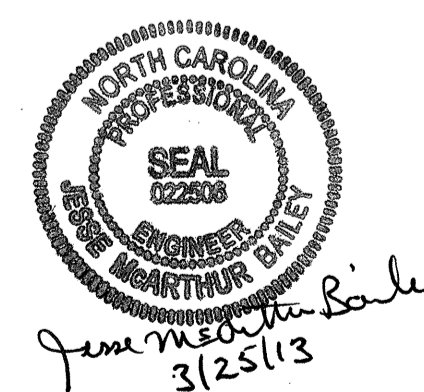
(SECTIONS AT END BENTS ARE TAKEN AT RIGHT ANGLES)
 (APPROX. GROUND LINE ELEVATIONS ARE SHOWN ALONG UPSTREAM EDGE OF BRIDGE)



PLAN

FOUNDATION NOT SHOWN FOR CLARITY

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS



PROJECT NO. B-4757
GUILFORD COUNTY
 STATION: 14+25.04 -L-

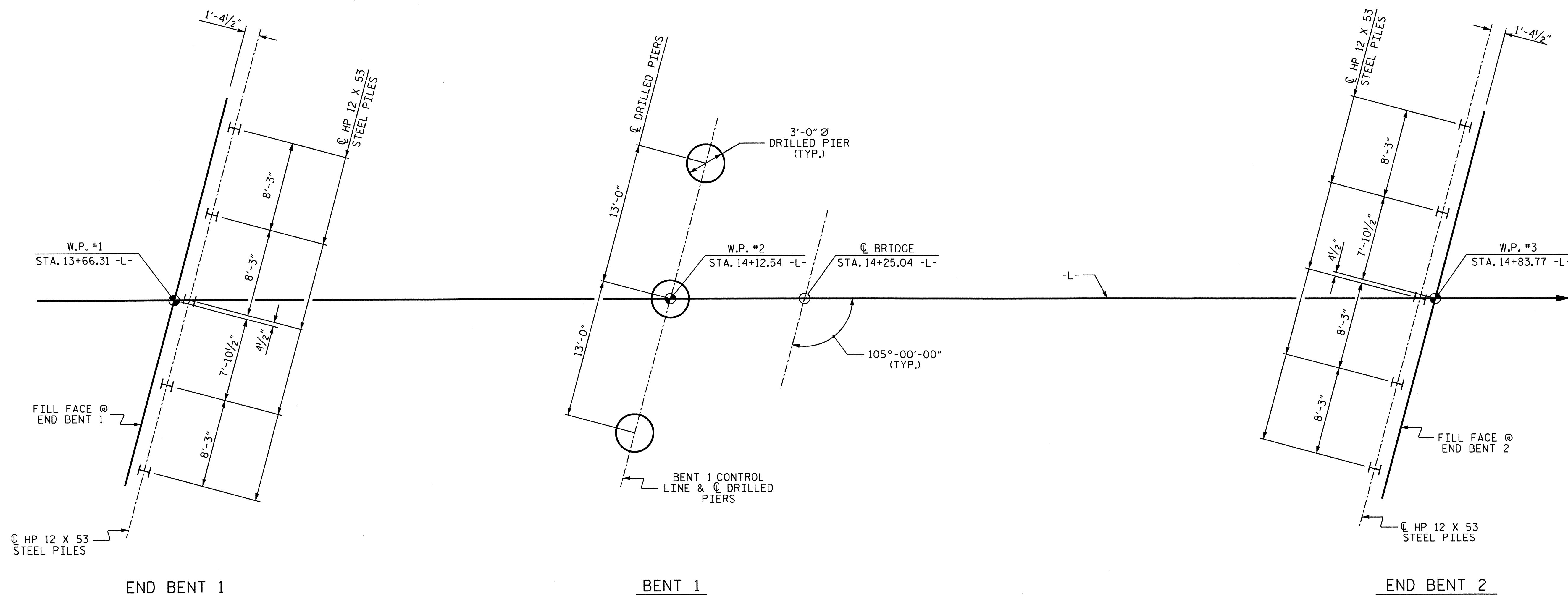
SHEET 1 OF 3 REPLACES BRIDGE NO. 175

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
BRIDGE OVER BUFFALO CREEK
ON SR 2795
BETWEEN SR 2817 AND SR 2770

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

DRAWN BY : A. SORSENGINH DATE : 6/2012
 CHECKED BY : W.F. PARKER DATE : 7/2012
 DESIGN ENGINEER OF RECORD: A.C. OUTLAW DATE : 6/2012



FOUNDATION LAYOUT
 DIMENSIONS LOCATING PILES AND DRILLED PIERS ARE SHOWN TO THE CENTERLINE OF PILES & DRILLED PIERS.

NOTES

FOR DRILLED PIERS, SEE SECTION 411 OF STANDARD SPECIFICATIONS.

DRILLED PIERS AT BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 400 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 57 TSF.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT 1. DO NOT EXTEND CASING BELOW ELEVATION 633 FT. WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

INSTALL DRILLED PIERS AT BENT 1 THAT EXTEND TO AN ELEVATION NO HIGHER THAN 625 FT. SATISFY THE REQUIRED TIP RESISTANCE AND HAVE A PENETRATION OF AT LEAST 4.5 FT. INTO ROCK AS DEFINED BY ARTICLE 411-1 OF THE STANDARD SPECIFICATIONS.

THE SCOUR CRITICAL ELEVATION FOR BENT 1 IS ELEVATION 631 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

SID INSPECTIONS MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTIONS. FOR SID INSPECTIONS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. FOR CSL TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENTS 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 74 TONS AND 97 TONS PER PILE, RESPECTIVELY.

DRIVE PILES AT END BENTS 1 AND 2 TO A REQUIRED DRIVING RESISTANCE OF 124 TONS AND 162 TONS PER PILE, RESPECTIVELY.

PROJECT NO. B-4757
GUILFORD COUNTY
 STATION: 14+25.04 -L-

SHEET 2 OF 3

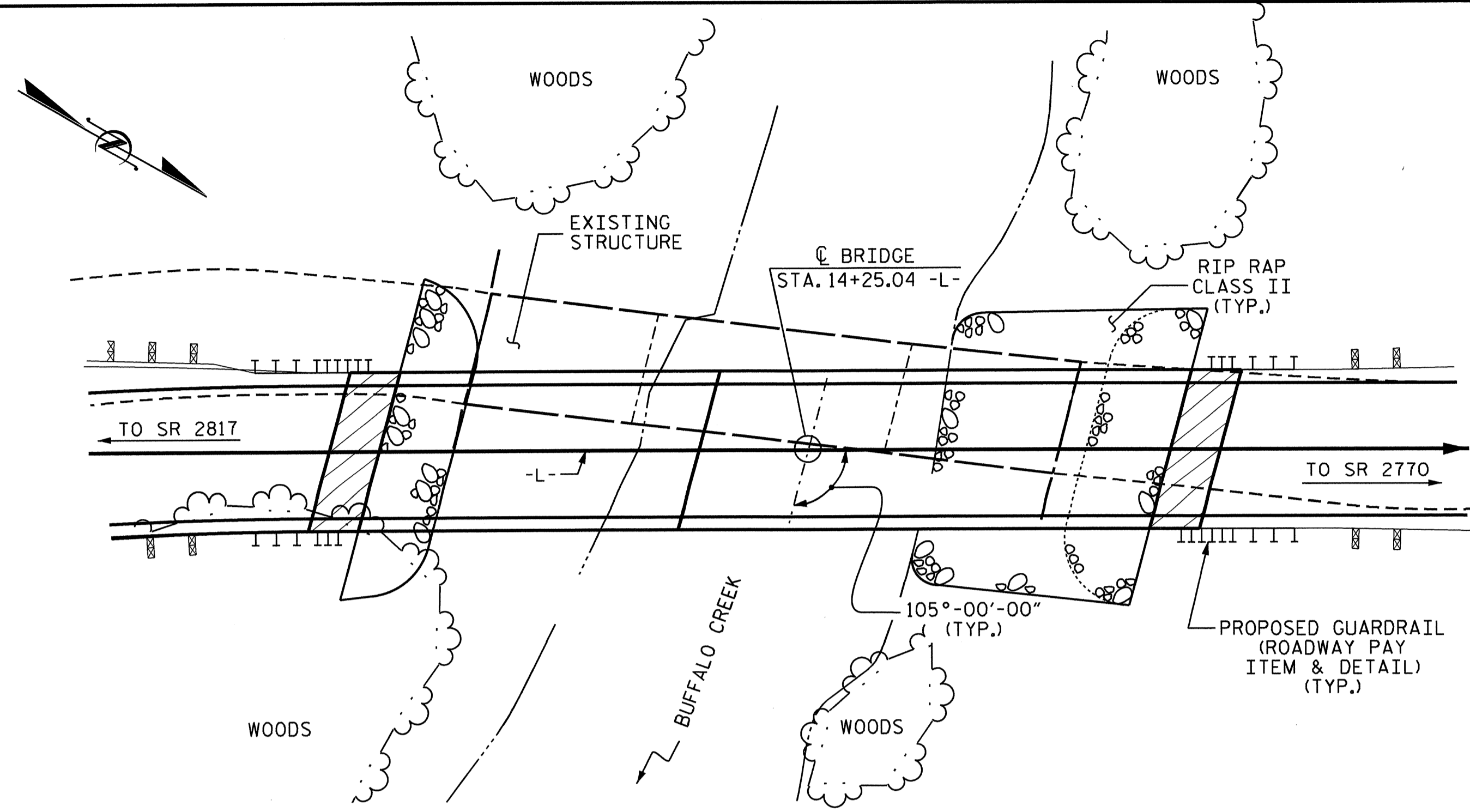


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 BRIDGE OVER BUFFALO CREEK
 ON SR 2795 BETWEEN
 SR 2817 AND SR 2770

DRAWN BY : A. SORSENGINH DATE : 6/2012
 CHECKED BY : W.F. PARKER DATE : 7/2012
 DESIGN ENGINEER OF RECORD : A.C. OUTLAW DATE : 6/2012

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

BM 1: RR SPIKE IN BASE OF 38" ELM -L- STA. 11+80.51, 205.33' LT., EL. 656.38'



HYDRAULIC DATA

DESIGN DISCHARGE = 2960 CFS
 FREQUENCY OF DESIGN FLOOD = 2 YR.
 DESIGN HIGH WATER ELEVATION = 654.21'
 DRAINAGE AREA = 91 SQ.MI.
 BASIC DISCHARGE (Q100) = 16570 CFS
 BASIC HIGH WATER ELEVATION = 664.93'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 3500 CFS
 FREQUENCY OF OVERTOPPING FLOOD = 2 YR.+
 OVERTOPPING FLOOD ELEVATION = 654.68'

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

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.

THE EXISTING STRUCTURE CONSISTING OF 3 SPANS 1 @ 25'-9", 1 @ 39'-0", 1 @ 25'-9" WITH 1.5" ASPHALT WEARING SURFACE OVER A TIMBER DECK ON I-BEAMS AND CHANNELS SUPERSTRUCTURE AND A CLEAR ROADWAY WIDTH OF 17'-1" ON A SUBSTRUCTURE CONSISTING OF TIMBER CAPS AND PILES FOR END BENTS AND TIMBER CAP, POST AND SILLS AND TIMBER BULKHEADS FOR INTERIOR BENTS AND LOCATED AT THE PROPOSED STRUCTURE LOCATION SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY CLOSED.

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 ON SHEET S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 25 FEET 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.

ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18-EVALUATING SCOUR AT BRIDGES."

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

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 14+25.04 -L-".

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 14+25.04 -L-.

TOTAL BILL OF MATERIAL

	CONSTRUCTION MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS	REMOVAL OF EXISTING STRUCTURE	3'-0" Ø DRILLED PIERS IN SOIL	3'-0" Ø DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER	SID INSPECTIONS	CSL TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS
	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	LUMP SUM	CU. YDS.	LUMP SUM
SUPERSTRUCTURE										LUMP SUM
END BENT 1								LUMP SUM	13.4	
BENT 1			39.00	13.50	27.95				17.0	
END BENT 2								LUMP SUM	13.6	
TOTAL	LUMP SUM	LUMP SUM	39.00	13.50	27.95	1	1	LUMP SUM	44.0	LUMP SUM

TOTAL BILL OF MATERIAL

	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	HP 12 X 53 STEEL PILES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLABS			
	LBS.	LBS.	NO.	LIN. FT.	LIN. FT.	TONS	SQ. YDS	LUMP SUM	NO.	LIN. FT.	NO.	LIN. FT.
SUPERSTRUCTURE					230.50			LUMP SUM	10	450.0	10	700.0
END BENT 1	1982		5	125		40	45					
BENT 1	9121	1320										
END BENT 2	1982		5	75		205	230					
TOTAL	13085	1320	10	200	230.50	245	275	LUMP SUM	10	450.0	10	700.0

DRAWN BY : A. SORSENGINH DATE : 6/2012
 CHECKED BY : W.F. PARKER DATE : 7/2012
 DESIGN ENGINEER OF RECORD: A.C. OUTLAW DATE : 6/2012

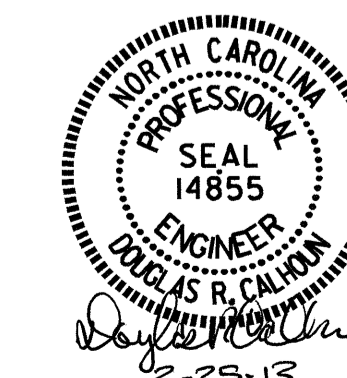
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PROJECT NO. B-4757
 GUILFORD COUNTY
 STATION: 14+25.04 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE OVER BUFFALO CREEK
 ON SR 2795
 BETWEEN SR 2817 AND SR 2770



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

SHEET NO. S-3

NC005

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

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						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	1.098	--	1.75	0.272	1.36	45'	EL	21.982	0.617	1.46	45'	EL	35.172	0.80	0.272	1.10	45'	EL	21.982		
	HL-93(0pr)	N/A	--	1.764	--	1.35	0.272	1.76	45'	EL	21.982	0.617	1.89	45'	EL	35.172	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.347	48.507	1.75	0.272	1.67	45'	EL	21.982	0.617	1.68	45'	EL	8.793	0.80	0.272	1.35	45'	EL	21.982		
	HS-20(0pr)	36.000	--	2.165	77.938	1.35	0.272	2.16	45'	EL	21.982	0.617	2.17	45'	EL	8.793	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.632	35.536	1.4	0.272	4.08	45'	EL	21.982	0.617	4.43	45'	EL	35.172	0.80	0.272	2.63	45'	EL	21.982	
		SNGARBS2	20.000	--	2.126	42.513	1.4	0.272	3.29	45'	EL	21.982	0.617	3.32	45'	EL	35.172	0.80	0.272	2.13	45'	EL	21.982	
		SNAGRIS2	22.000	--	2.085	45.877	1.4	0.272	3.19	45'	EL	17.586	0.617	3.15	45'	EL	35.172	0.80	0.272	2.09	45'	EL	21.982	
		SNCOTTS3	27.250	--	1.314	35.814	1.4	0.272	2.04	45'	EL	21.982	0.617	2.23	45'	EL	8.793	0.80	0.272	1.31	45'	EL	21.982	
		SNAGGRS4	34.925	--	1.16	40.51	1.4	0.272	1.8	45'	EL	21.982	0.617	1.97	45'	EL	35.172	0.80	0.272	1.16	45'	EL	21.982	
		SNS5A	35.550	--	1.13	40.167	1.4	0.272	1.75	45'	EL	21.982	0.617	2.06	45'	EL	8.793	0.80	0.272	1.13	45'	EL	21.982	
		SNS6A	39.950	--	1.064	42.522	1.4	0.272	1.65	45'	EL	21.982	0.617	1.94	45'	EL	35.172	0.80	0.272	1.06	45'	EL	21.982	
	SNS7B	42.000	3	1.015	42.617	1.4	0.272	1.57	45'	EL	21.982	0.617	1.98	45'	EL	35.172	0.80	0.272	1.01	45'	EL	21.982		
	TTST	TNAGRIT3	33.000	--	1.306	43.112	1.4	0.272	2.02	45'	EL	21.982	0.617	2.26	45'	EL	8.793	0.80	0.272	1.31	45'	EL	21.982	
		TNT4A	33.075	--	1.32	43.663	1.4	0.272	2.05	45'	EL	21.982	0.617	2.14	45'	EL	35.172	0.80	0.272	1.32	45'	EL	21.982	
		TNT6A	41.600	--	1.108	46.093	1.4	0.272	1.72	45'	EL	21.982	0.617	2.11	45'	EL	35.172	0.80	0.272	1.11	45'	EL	21.982	
		TNT7A	42.000	--	1.129	47.436	1.4	0.272	1.75	45'	EL	21.982	0.617	1.96	45'	EL	35.172	0.80	0.272	1.13	45'	EL	21.982	
		TNT7B	42.000	--	1.176	49.384	1.4	0.272	1.82	45'	EL	21.982	0.617	1.88	45'	EL	35.172	0.80	0.272	1.18	45'	EL	21.982	
		TNAGRIT4	43.000	--	1.12	48.157	1.4	0.272	1.74	45'	EL	21.982	0.617	1.8	45'	EL	35.172	0.80	0.272	1.12	45'	EL	21.982	
TNAGT5A		45.000	--	1.042	46.893	1.4	0.272	1.61	45'	EL	21.982	0.617	1.88	45'	EL	35.172	0.80	0.272	1.04	45'	EL	21.982		
TNAGT5B	45.000	--	1.017	45.785	1.4	0.272	1.58	45'	EL	21.982	0.617	1.7	45'	EL	35.172	0.80	0.272	1.02	45'	EL	21.982			

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{dc}	γ_{lw}
	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.

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

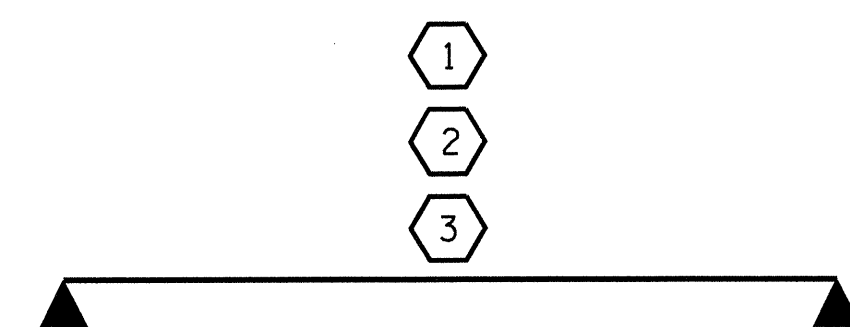
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

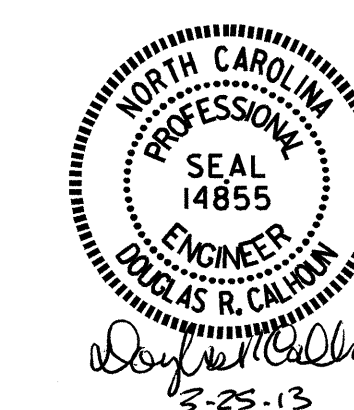
I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER



LRFR SUMMARY
FOR SPAN A

PROJECT NO. B-4757
GUILFORD COUNTY
 STATION: 14+25.04 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 LRFR SUMMARY FOR
 45' CORED SLAB UNIT
 105° SKEW
 (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-4
1			3			TOTAL SHEETS
2			4			22

ASSEMBLED BY :	O.T. NGUYEN	DATE :	9/24/11
CHECKED BY :	A. SORSENGINH	DATE :	11/2012
DRAWN BY :	CVC	6/10	
CHECKED BY :	DNS	6/10	

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

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						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	1.014	--	1.75	0.269	1.04	70'	EL	34.482	0.608	1.1	70'	EL	3.448	0.80	0.269	1.01	70'	EL	34.482		
	HL-93(Opr)	N/A	--	1.355	--	1.35	0.269	1.35	70'	EL	34.482	0.608	1.43	70'	EL	3.448	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.315	47.356	1.75	0.269	1.36	70'	EL	34.482	0.608	1.38	70'	EL	3.448	0.80	0.269	1.32	70'	EL	34.482		
	HS-20(Opr)	36.000	--	1.757	63.236	1.35	0.269	1.76	70'	EL	34.482	0.608	1.79	70'	EL	3.448	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.938	39.656	1.4	0.269	3.78	70'	EL	34.482	0.608	4.12	70'	EL	3.448	0.80	0.269	2.94	70'	EL	34.482	
		SNGARBS2	20.000	--	2.203	44.052	1.4	0.269	2.84	70'	EL	34.482	0.608	2.93	70'	EL	3.448	0.80	0.269	2.20	70'	EL	34.482	
		SNAGRIS2	22.000	--	2.092	46.016	1.4	0.269	2.69	70'	EL	34.482	0.608	2.72	70'	EL	3.448	0.80	0.269	2.09	70'	EL	34.482	
		SNCOTTS3	27.250	--	1.462	39.844	1.4	0.269	1.88	70'	EL	34.482	0.608	2.06	70'	EL	3.448	0.80	0.269	1.46	70'	EL	34.482	
		SNAGGRS4	34.925	--	1.227	42.856	1.4	0.269	1.58	70'	EL	34.482	0.608	1.71	70'	EL	3.448	0.80	0.269	1.23	70'	EL	34.482	
		SNS5A	35.550	--	1.2	42.646	1.4	0.269	1.54	70'	EL	34.482	0.608	1.73	70'	EL	3.448	0.80	0.269	1.20	70'	EL	34.482	
		SNS6A	39.950	--	1.103	44.058	1.4	0.269	1.42	70'	EL	34.482	0.608	1.58	70'	EL	3.448	0.80	0.269	1.10	70'	EL	34.482	
	SNS7B	42.000	--	1.05	44.113	1.4	0.269	1.35	70'	EL	34.482	0.608	1.55	70'	EL	3.448	0.80	0.269	1.05	70'	EL	34.482		
	TTST	TNAGRIT3	33.000	--	1.345	44.401	1.4	0.269	1.73	70'	EL	34.482	0.608	1.88	70'	EL	3.448	0.80	0.269	1.35	70'	EL	34.482	
		TNT4A	33.075	--	1.352	44.717	1.4	0.269	1.74	70'	EL	34.482	0.608	1.83	70'	EL	3.448	0.80	0.269	1.35	70'	EL	34.482	
		TNT6A	41.600	--	1.108	46.073	1.4	0.269	1.43	70'	EL	34.482	0.608	1.65	70'	EL	3.448	0.80	0.269	1.11	70'	EL	34.482	
		TNT7A	42.000	--	1.114	46.794	1.4	0.269	1.43	70'	EL	34.482	0.608	1.62	70'	EL	3.448	0.80	0.269	1.11	70'	EL	34.482	
		TNT7B	42.000	--	1.155	48.526	1.4	0.269	1.49	70'	EL	34.482	0.608	1.51	70'	EL	3.448	0.80	0.269	1.16	70'	EL	34.482	
		TNAGRIT4	43.000	--	1.097	47.174	1.4	0.269	1.41	70'	EL	34.482	0.608	1.46	70'	EL	3.448	0.80	0.269	1.10	70'	EL	34.482	
TNAGT5A		45.000	--	1.033	46.505	1.4	0.269	1.33	70'	EL	34.482	0.608	1.45	70'	EL	3.448	0.80	0.269	1.03	70'	EL	34.482		
TNAGT5B	45.000	3	1.02	45.905	1.4	0.269	1.31	70'	EL	34.482	0.608	1.39	70'	EL	3.448	0.80	0.269	1.02	70'	EL	34.482			

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:

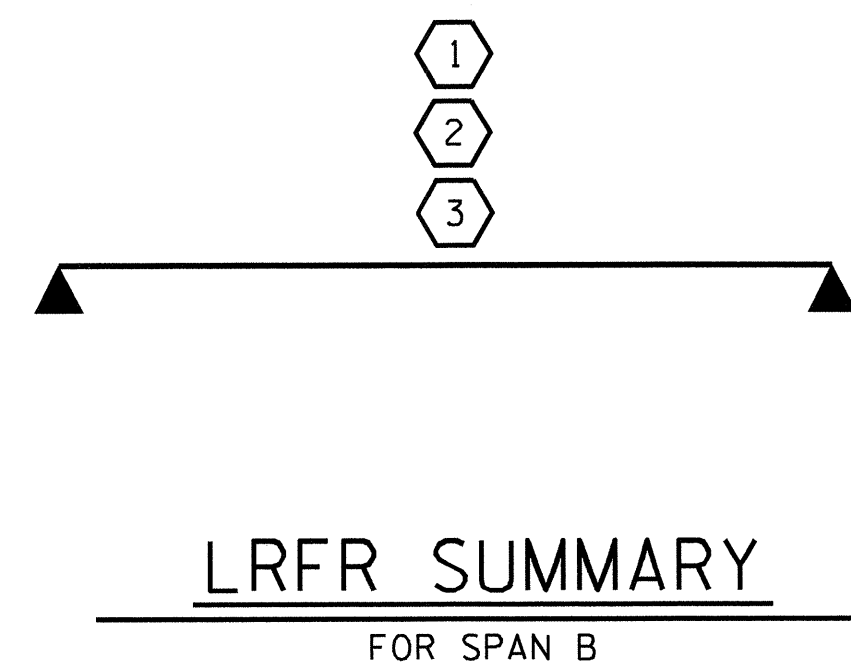
MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.
ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

*** CONTROLLING LOAD RATING**

① DESIGN LOAD RATING (HL-93)
② DESIGN LOAD RATING (HS-20)
③ LEGAL LOAD RATING **
** SEE CHART FOR VEHICLE TYPE

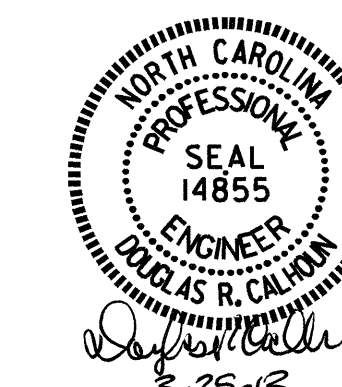
GIRDER LOCATION

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



PROJECT NO. B-4757
GUILFORD COUNTY
STATION: 14+25.04 -L-

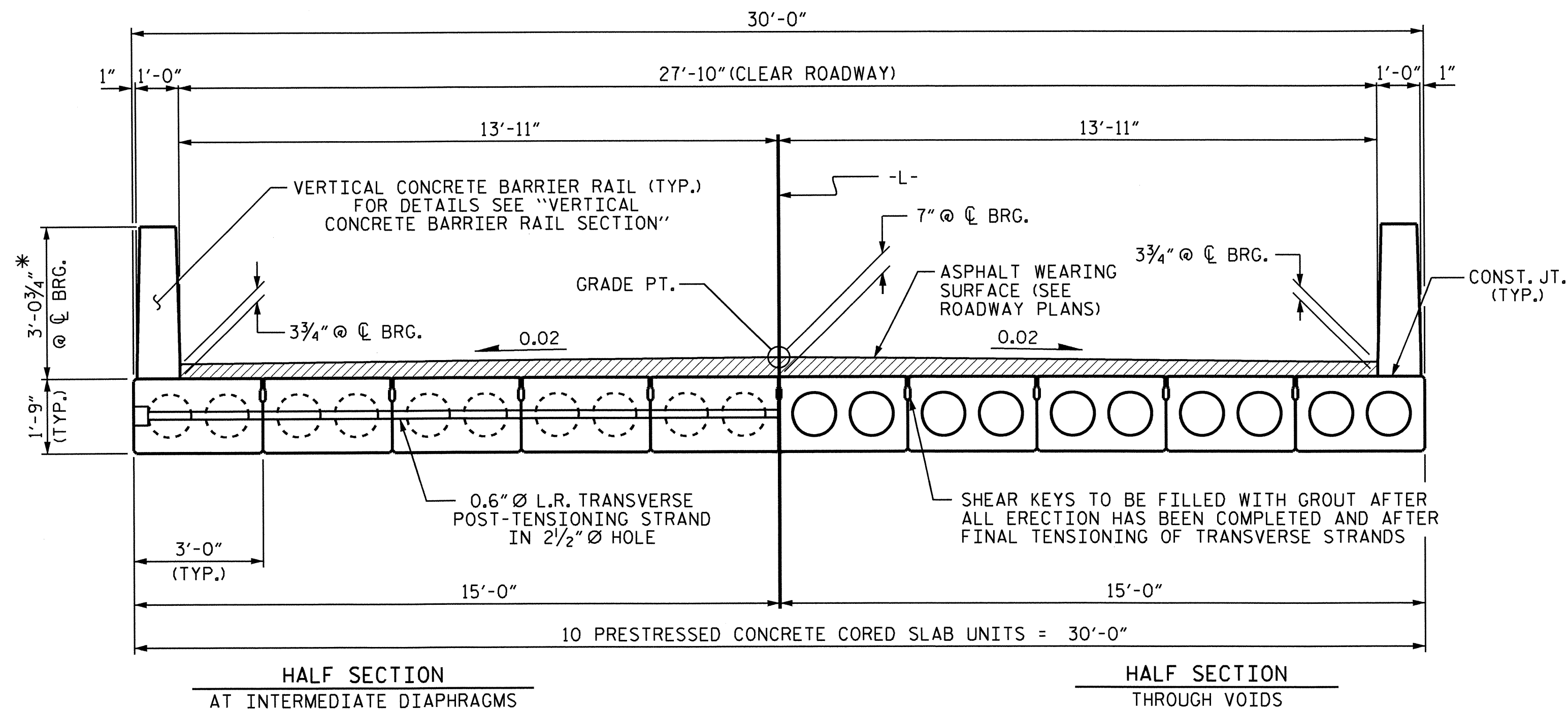
SHEET 2 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
70' CORED SLAB UNIT
105° SKEW
(NON-INTERSTATE TRAFFIC)

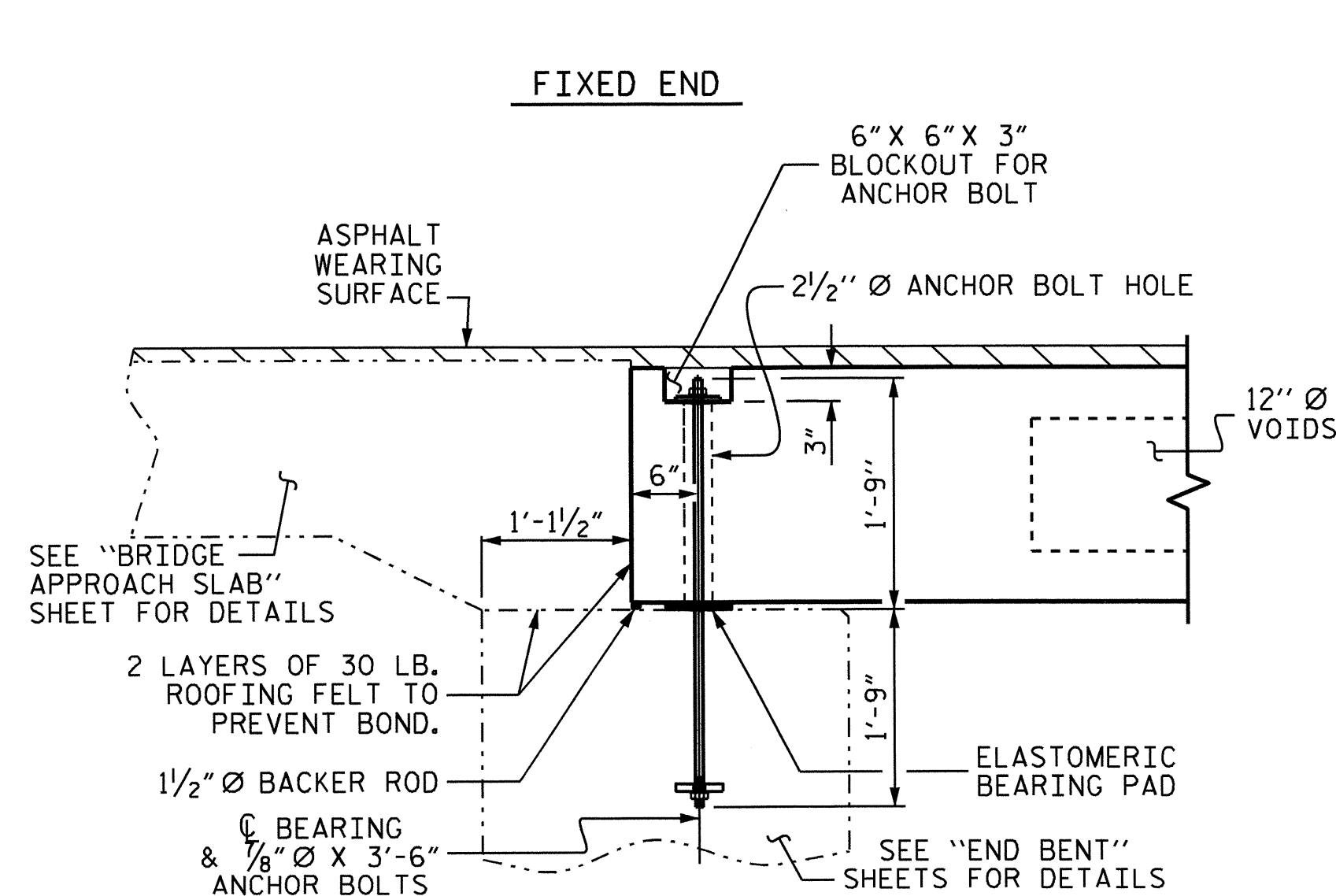
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-5
1			3			TOTAL SHEETS
2			4			22

ASSEMBLED BY : O.T. NGUYEN DATE : 9/24/11
CHECKED BY : A. SORSENGINH DATE : 11/20/12
DRAWN BY : CVC 6/10
CHECKED BY : DNS 6/10

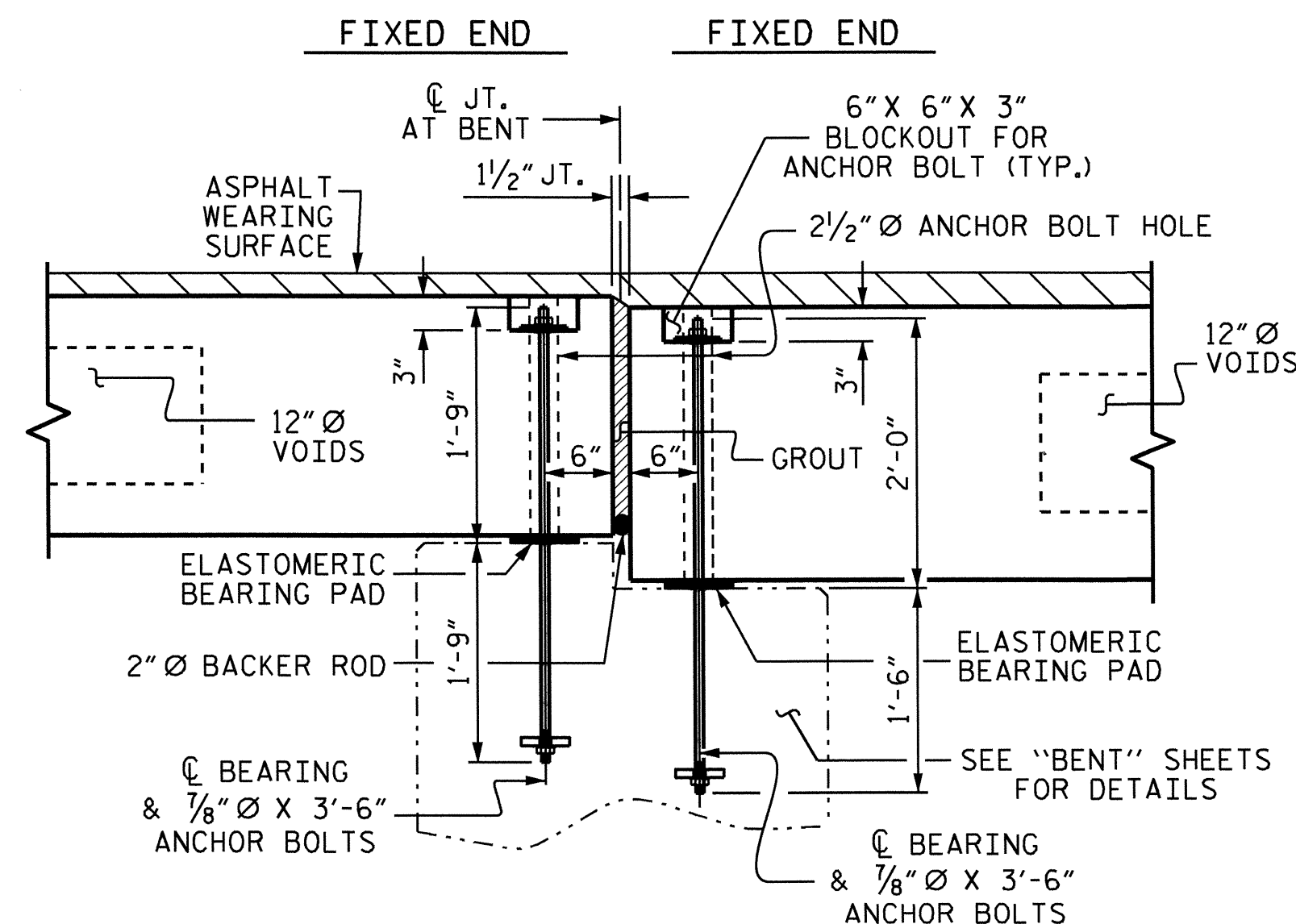


TYPICAL SECTION

* - 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.



SECTION AT END BENT 1

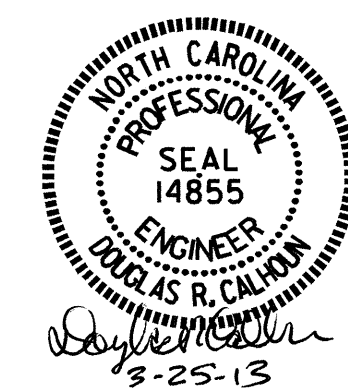


SECTION AT BENT 1

PROJECT NO. B-4757
GUILFORD COUNTY
 STATION: 14+25.04 -L-

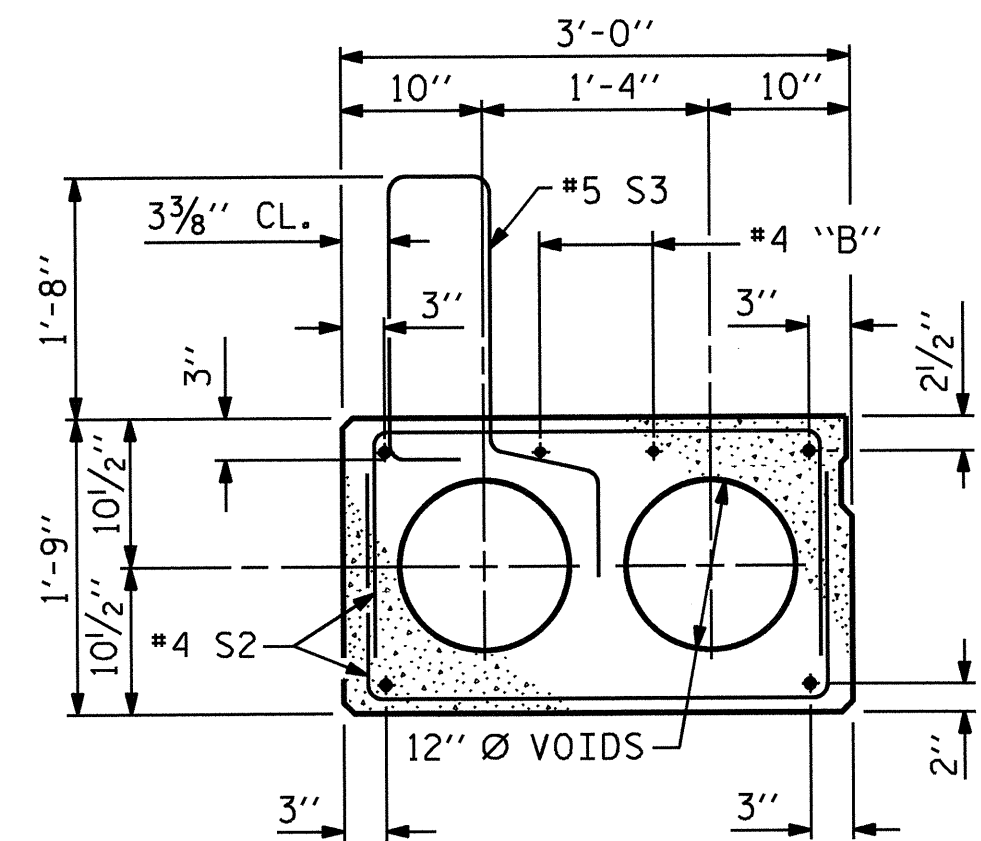
SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 3'-0" X 1'-9"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT
 105° SKEW
 SPAN A



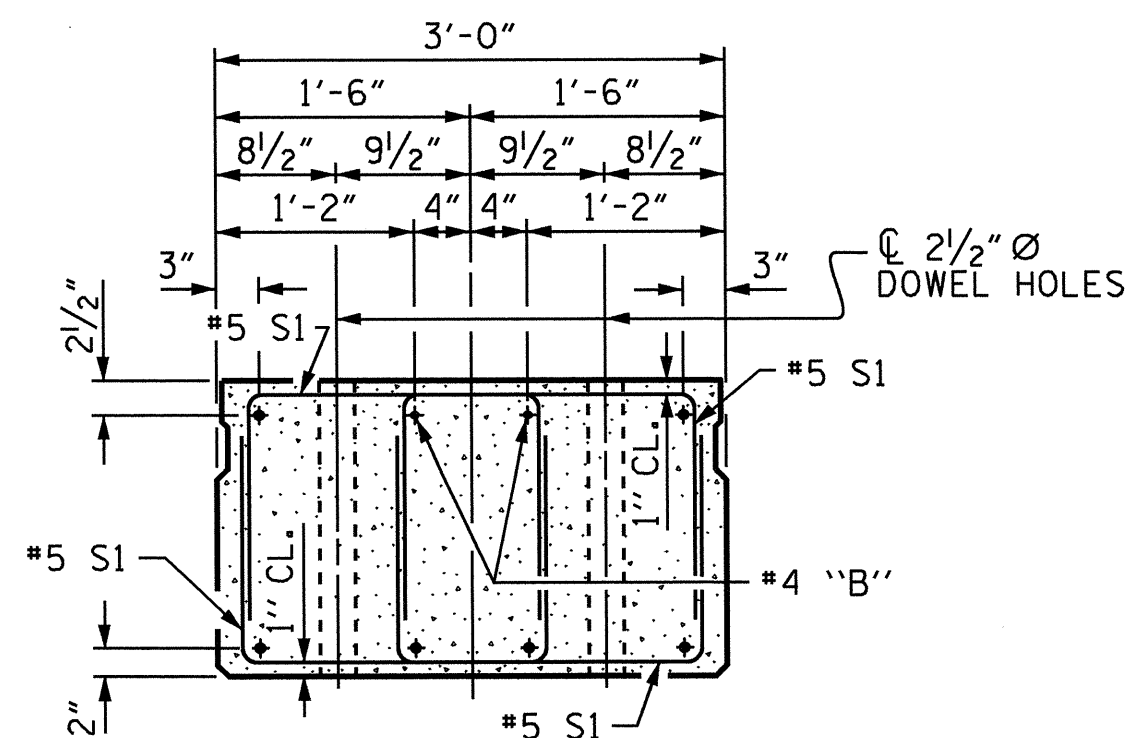
ASSEMBLED BY :	A.C. OUTLAW	DATE :	6/4/12
CHECKED BY :	A. SORSENGINH	DATE :	11/20/12
DRAWN BY :	DCE 5/09	REV. 12/11	MAA/AAC
CHECKED BY :	BCH 6/09		

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			22



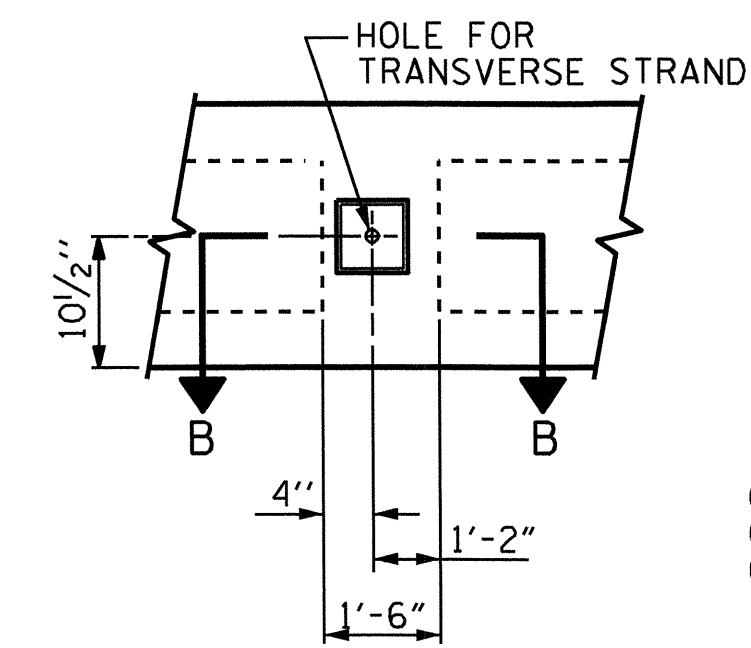
EXT. SLAB SECTION

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

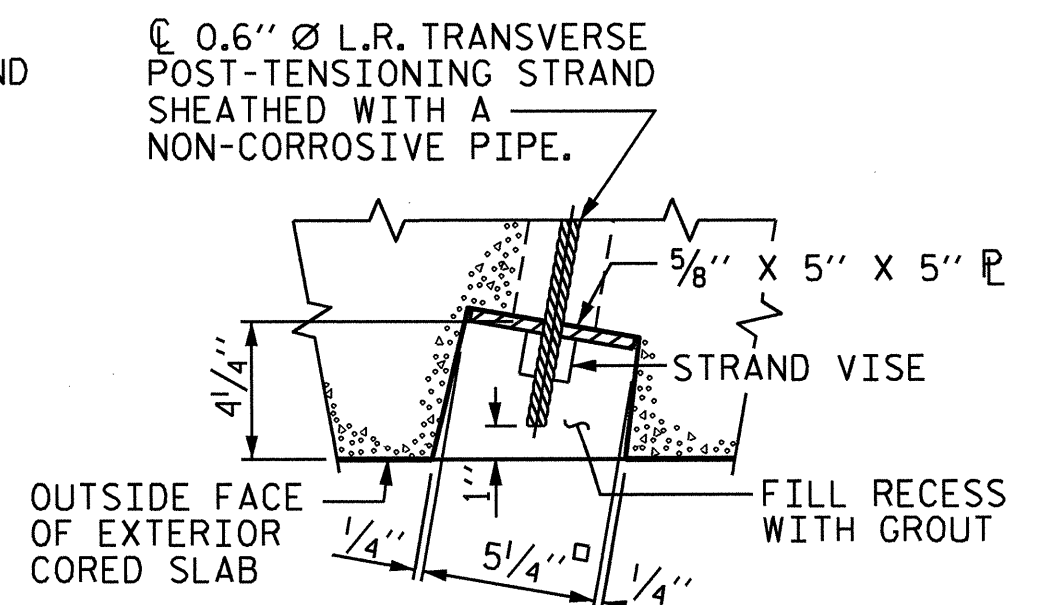


END ELEVATION

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.

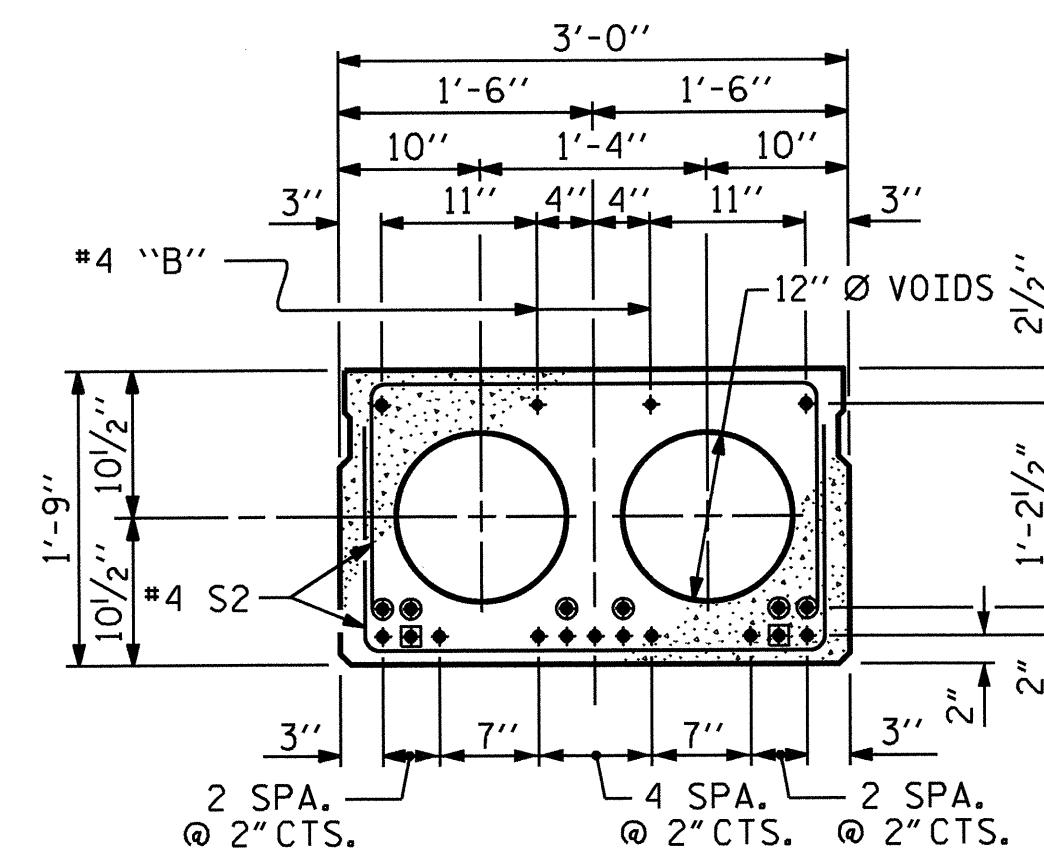


ELEVATION VIEW



SECTION B-B

GROUTED RECESS AT END OF POST-TENSIONED STRAND OF CORED SLABS

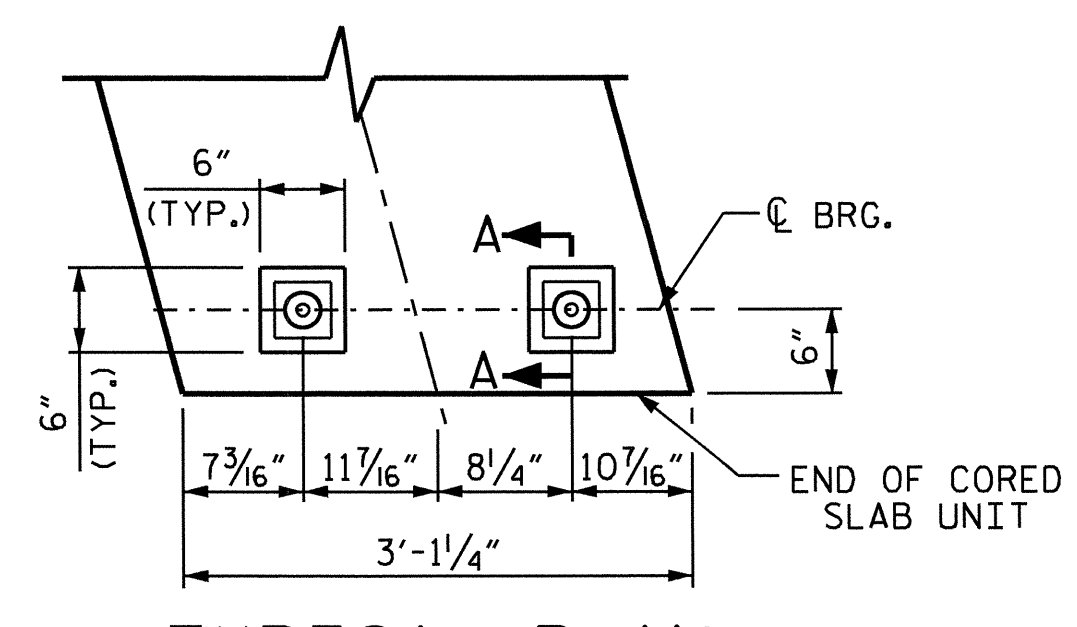


INTERIOR SLAB SECTION (45' UNIT)
(13 STRANDS REQUIRED)

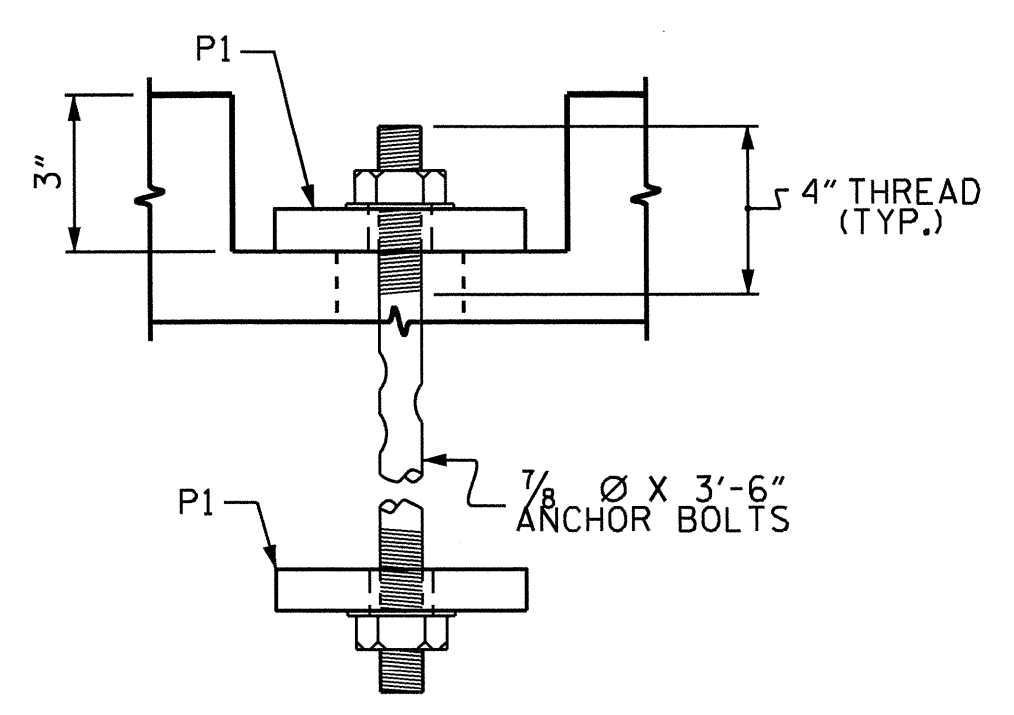
0.6" Ø LOW RELAXATION STRAND LAYOUT

- 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

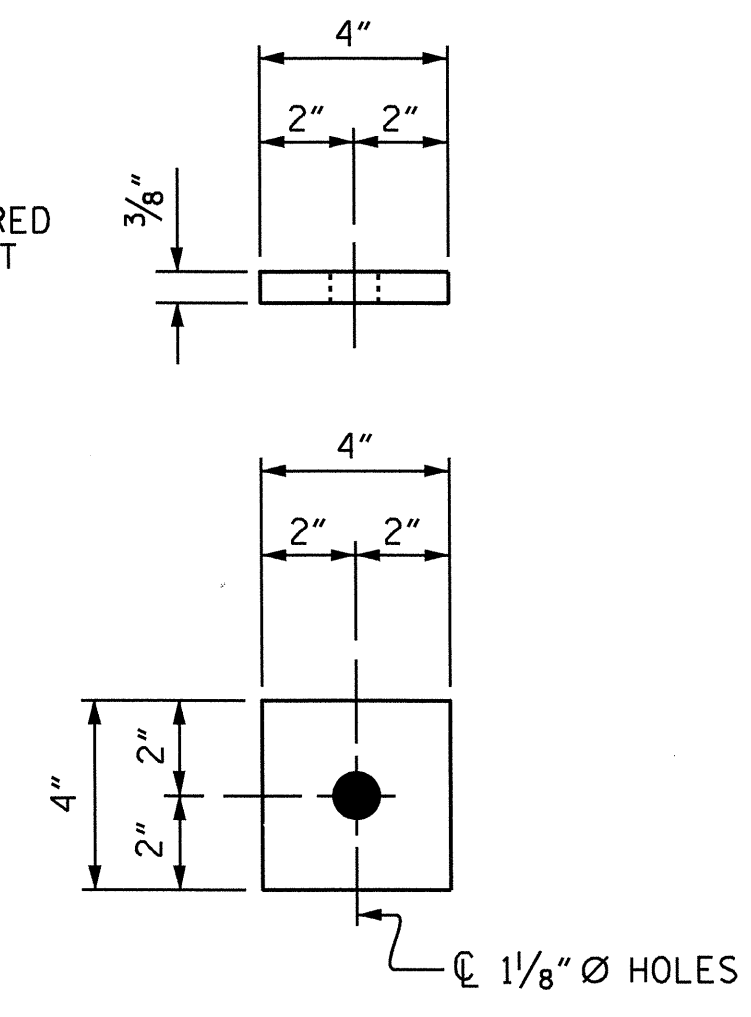


TYPICAL PLAN
FIXED END (TYP.)



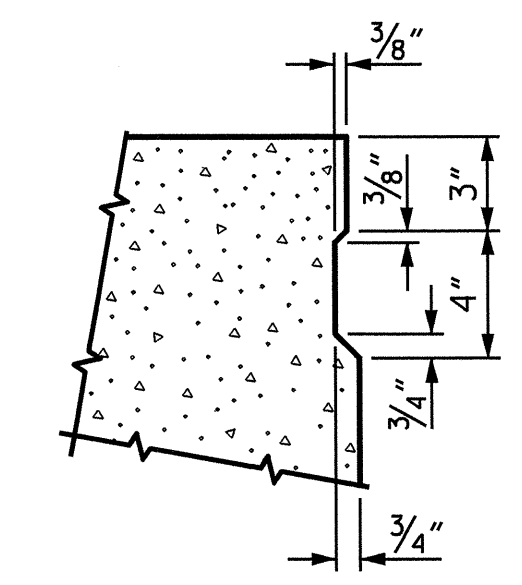
SECTION A-A
(FIXED)

BLOCKOUT DETAIL FOR ANCHOR BOLTS



P1
(FIXED)
P1 (80 REQ'D.)

PLATE DETAILS



SHEAR KEY DETAIL

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

PROJECT NO. B-4757
GUILFORD COUNTY
STATION: 14+25.04 -L-

SHEET 2 OF 4

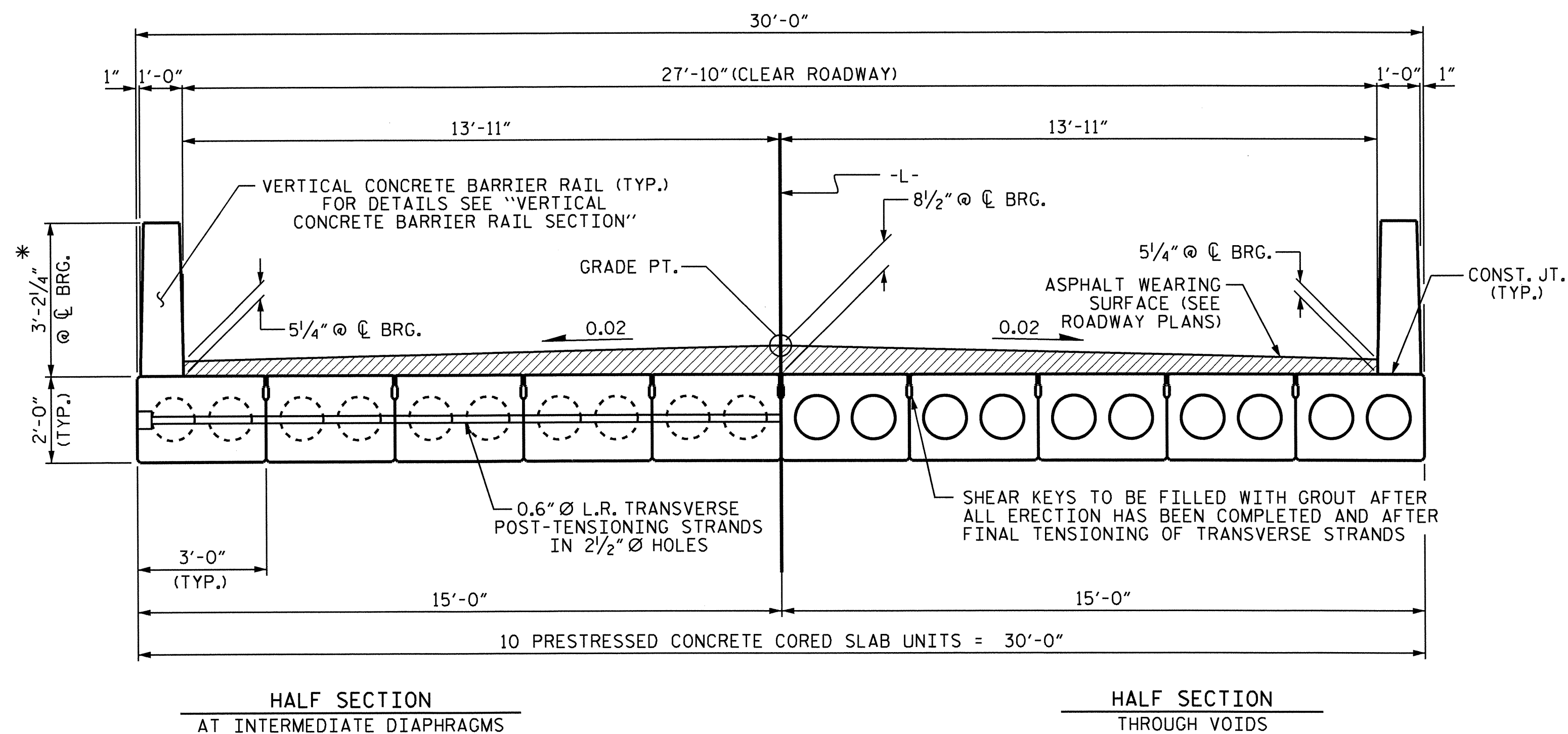
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT
105° SKEW
SPAN A



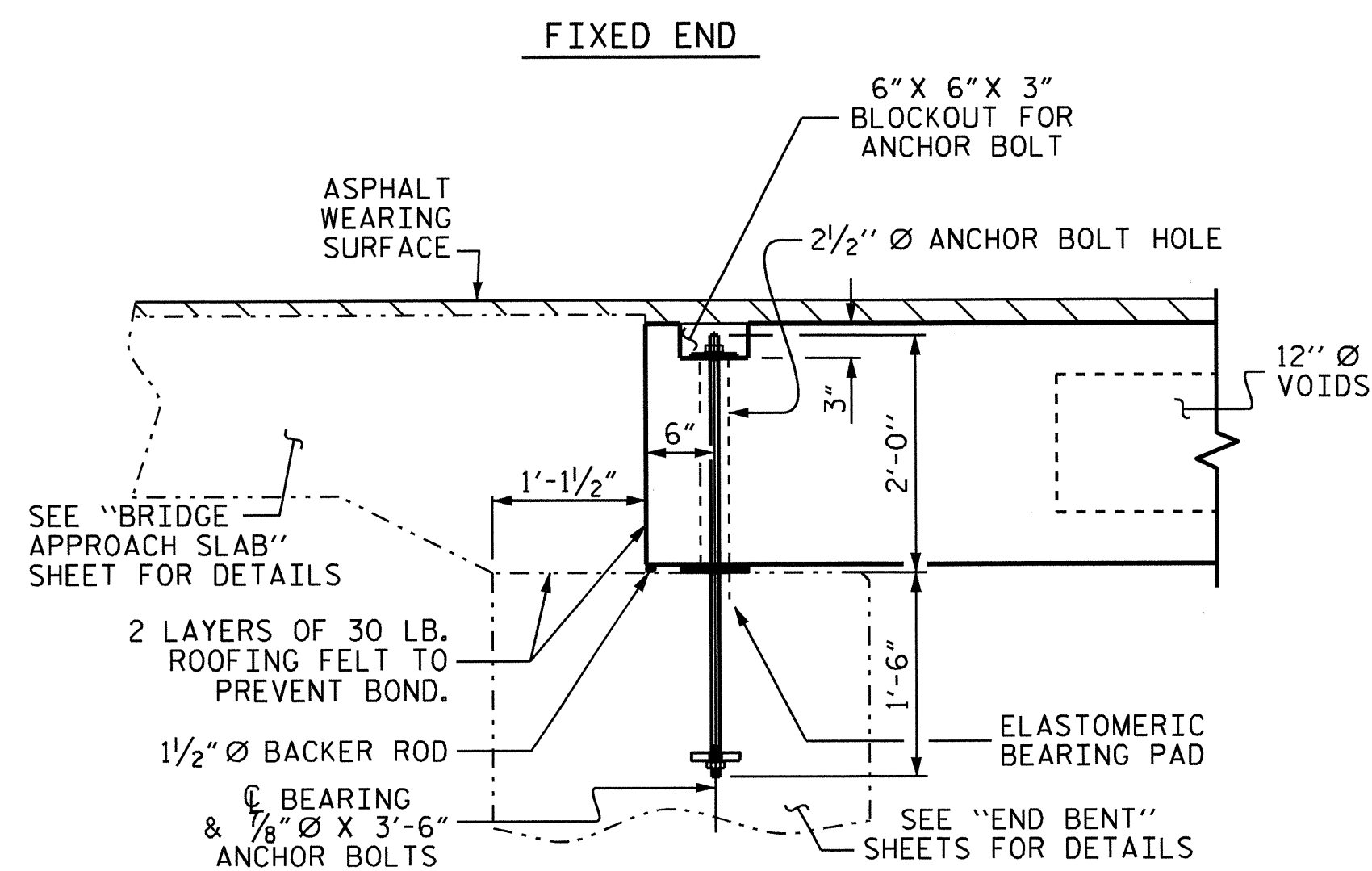
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			22

ASSEMBLED BY : A.C. OUTLAW	DATE : 6/4/12
CHECKED BY : A. SORSENGIH	DATE : 11/20/12
DRAWN BY : DGE 5/09	REV. 12/11
CHECKED BY : BCH 6/09	MAA/AAC

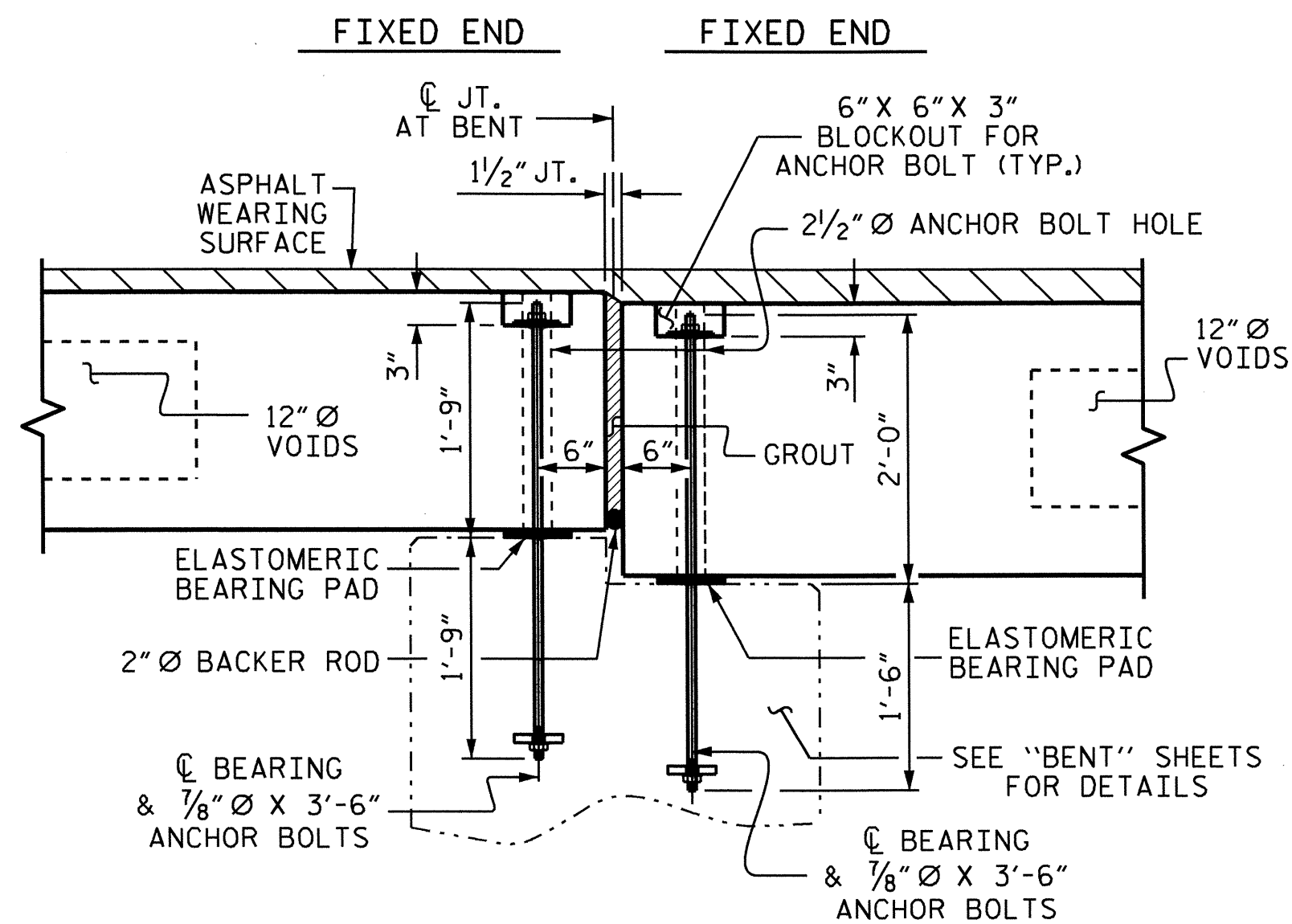


TYPICAL SECTION

* - 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.



SECTION AT END BENT 2
(TYP. FOR CORED SLABS 1, 4, 7 AND 10)

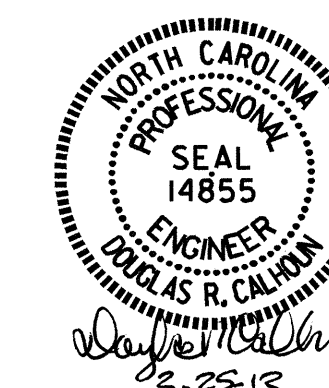


SECTION AT BENT 1

PROJECT NO. B-4757
GUILFORD COUNTY
 STATION: 14+25.04 -L-

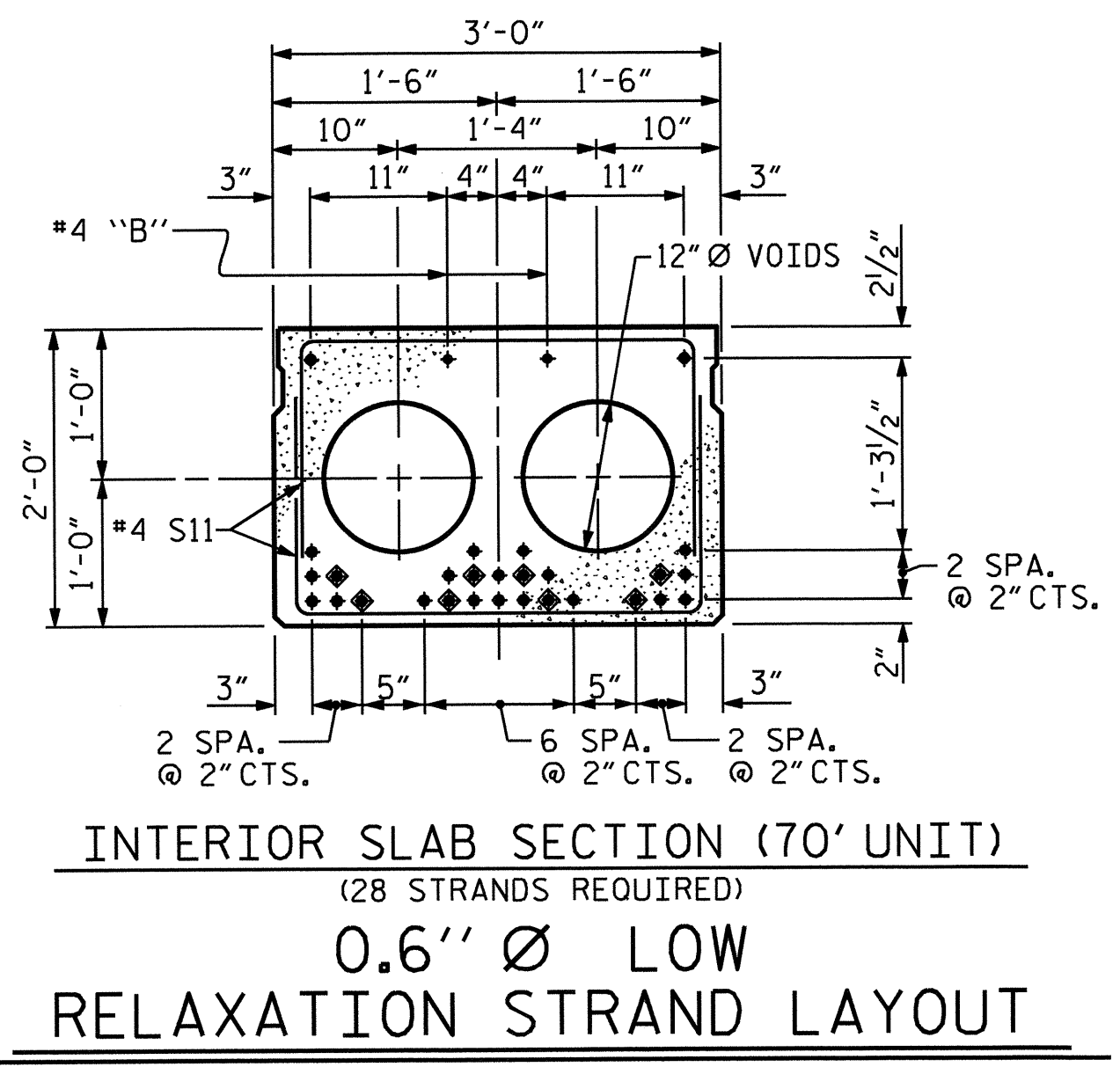
SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 3'-0" X 2'-0"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT
 105° SKEW
 SPAN B



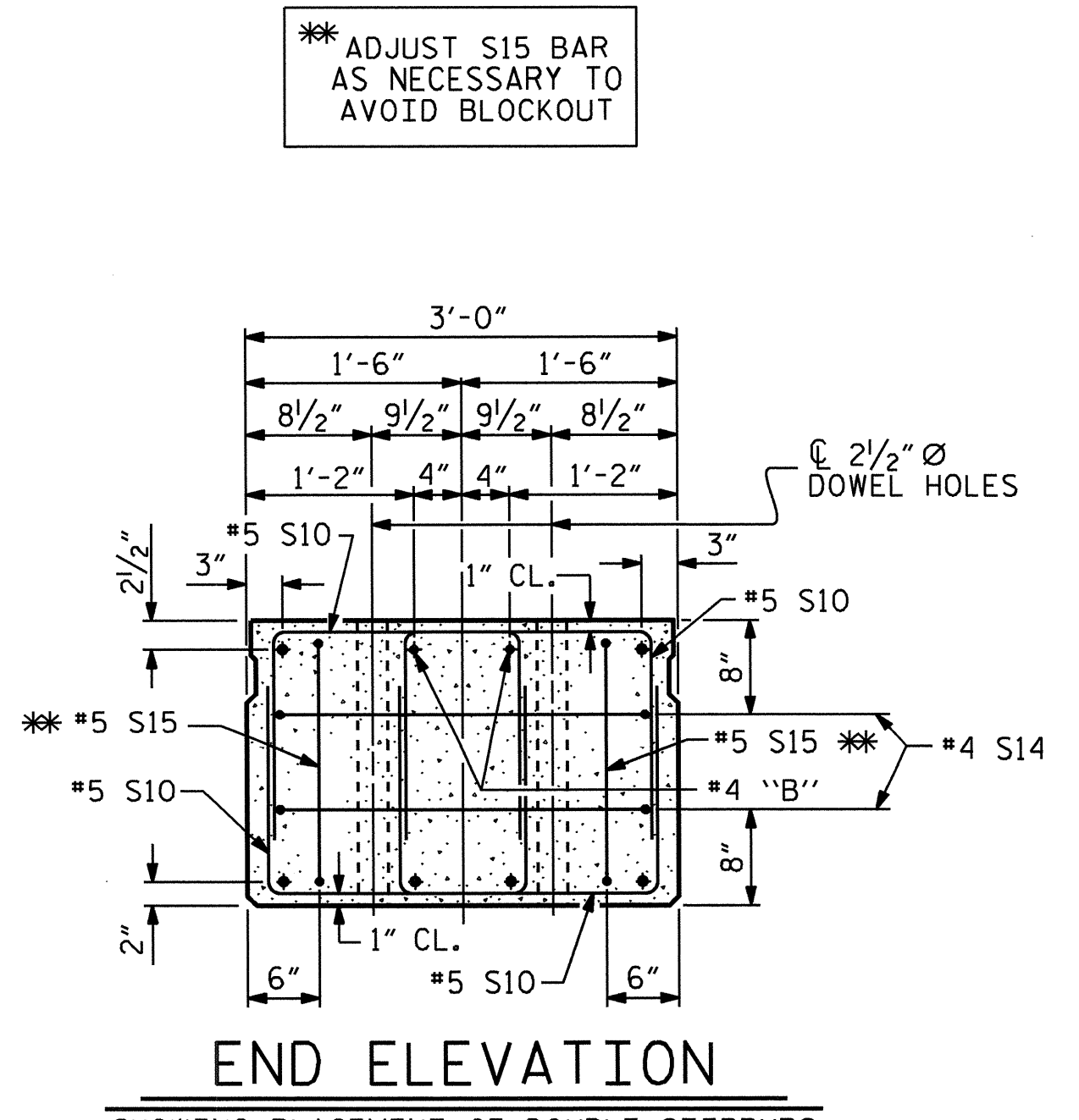
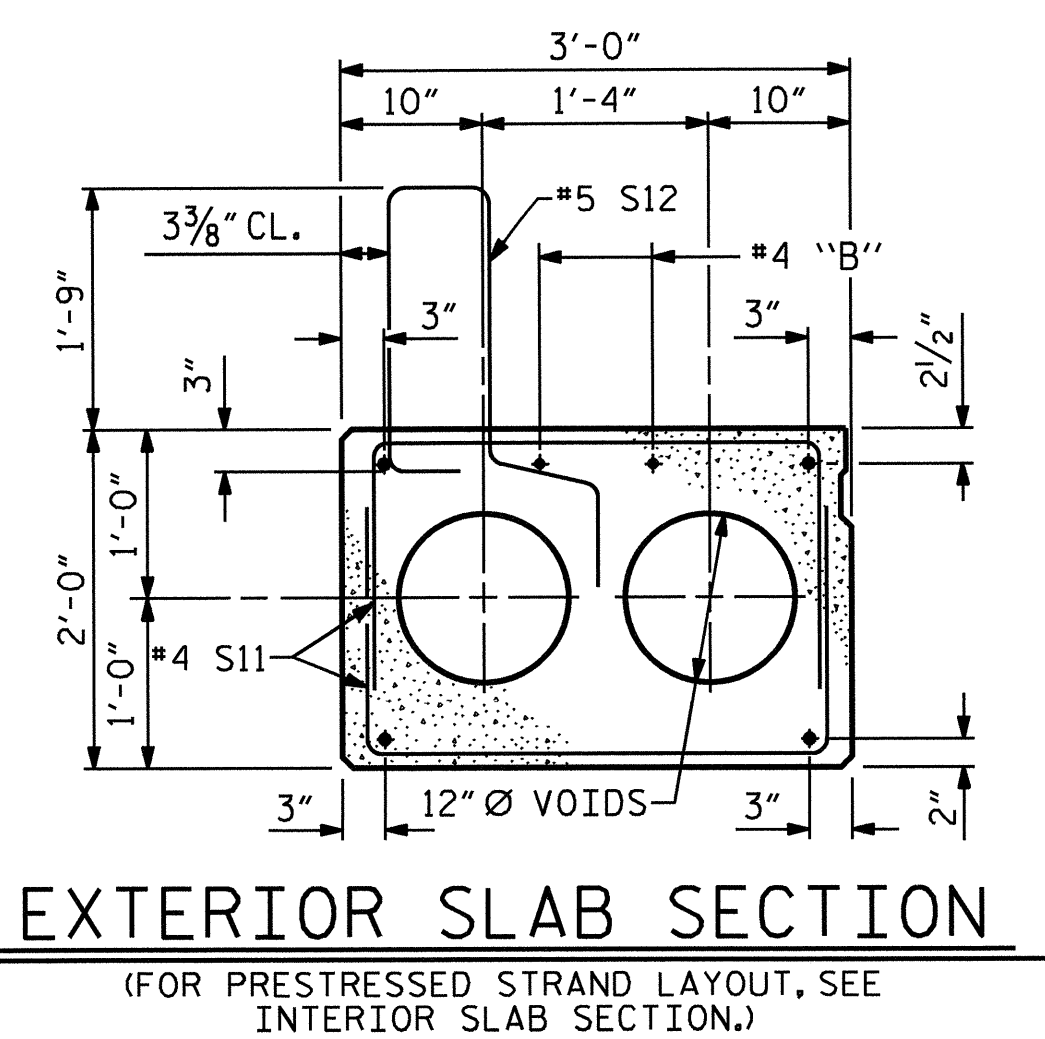
ASSEMBLED BY :	A.C. OUTLAW	DATE :	6/4/12
CHECKED BY :	A. SORSENGINH	DATE :	11/2012
DRAWN BY :	MAA	REV.	12/11
CHECKED BY :	MKT		MAA/AAC

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-10
2			4			22

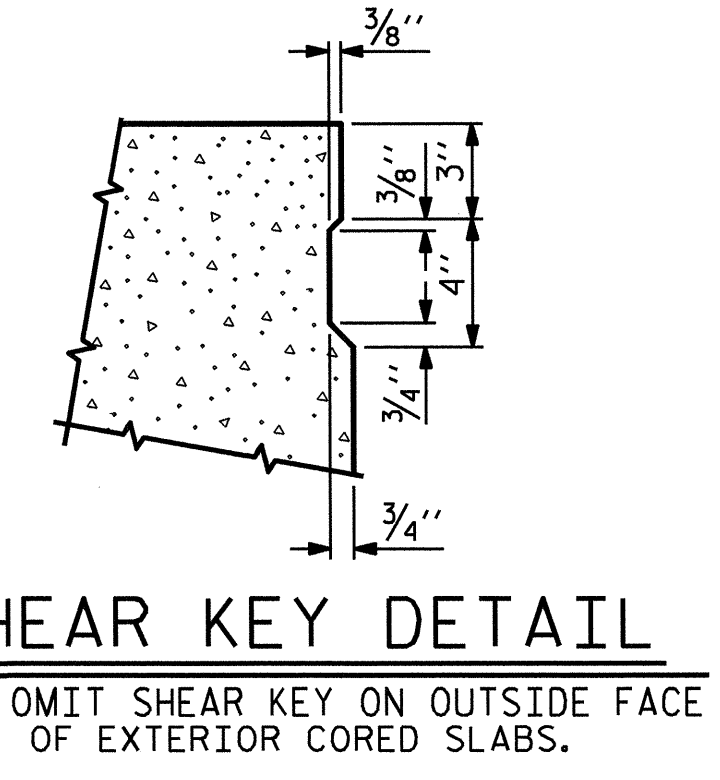
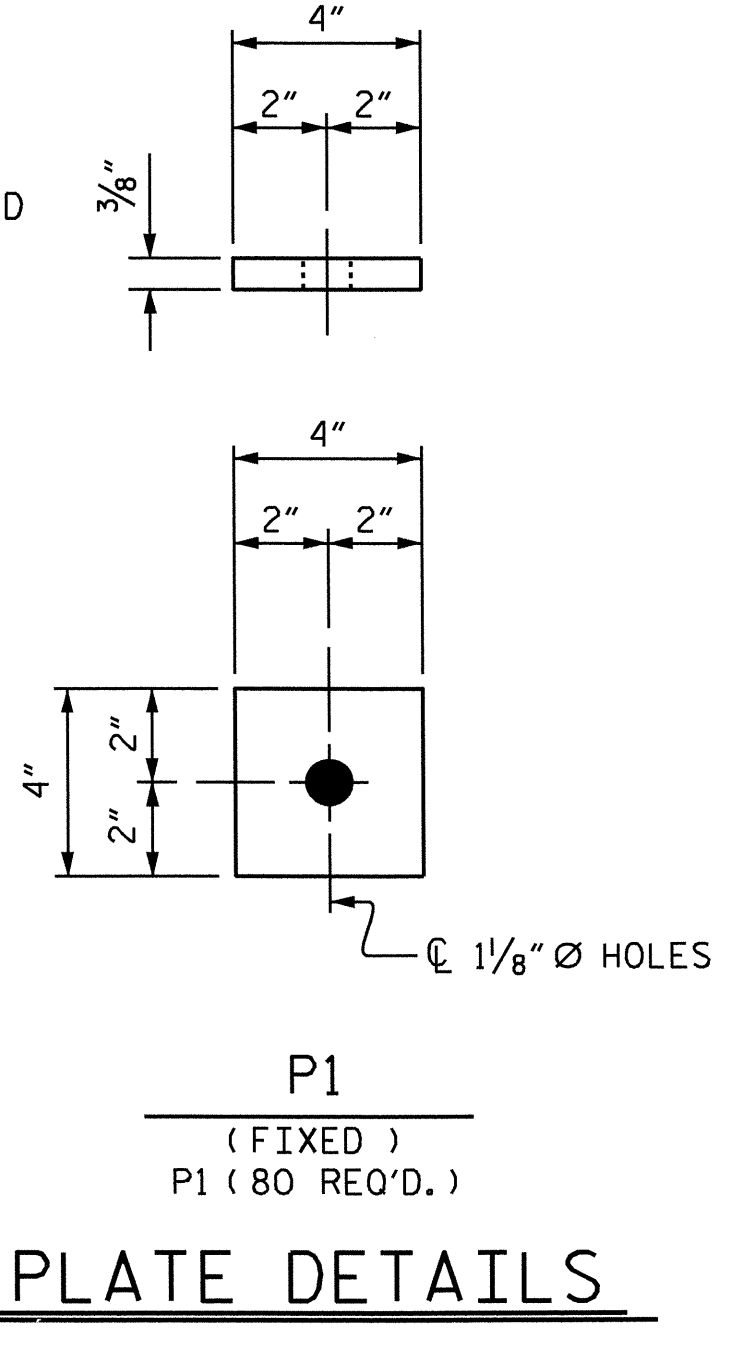
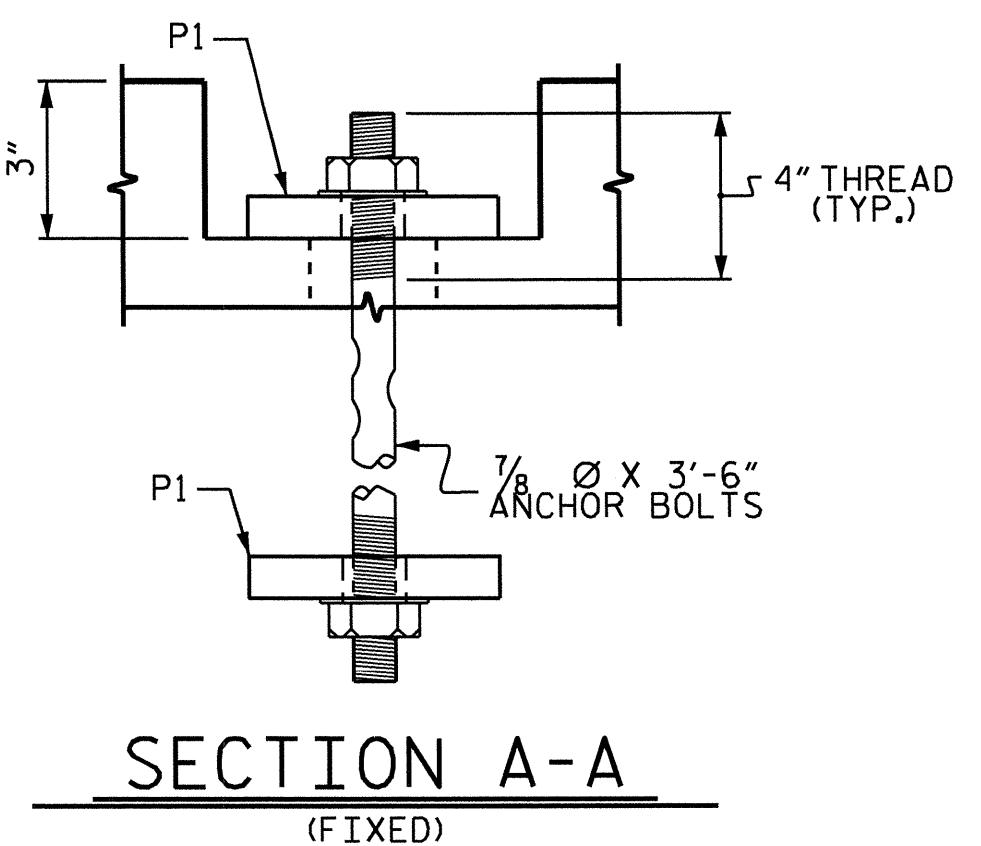
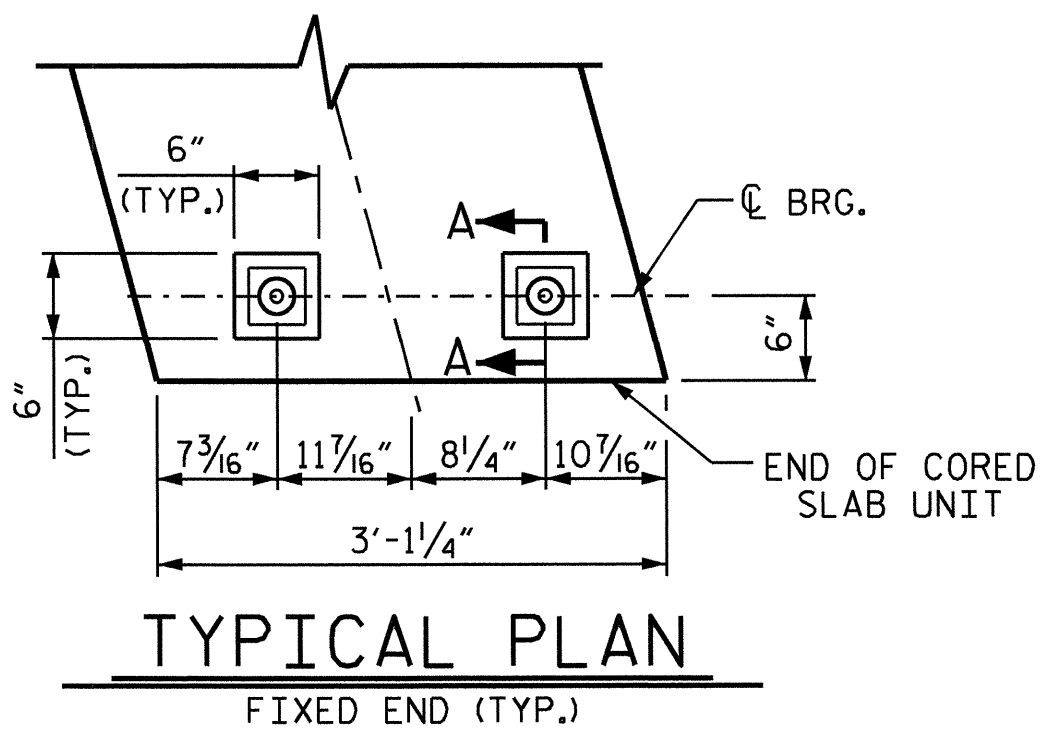
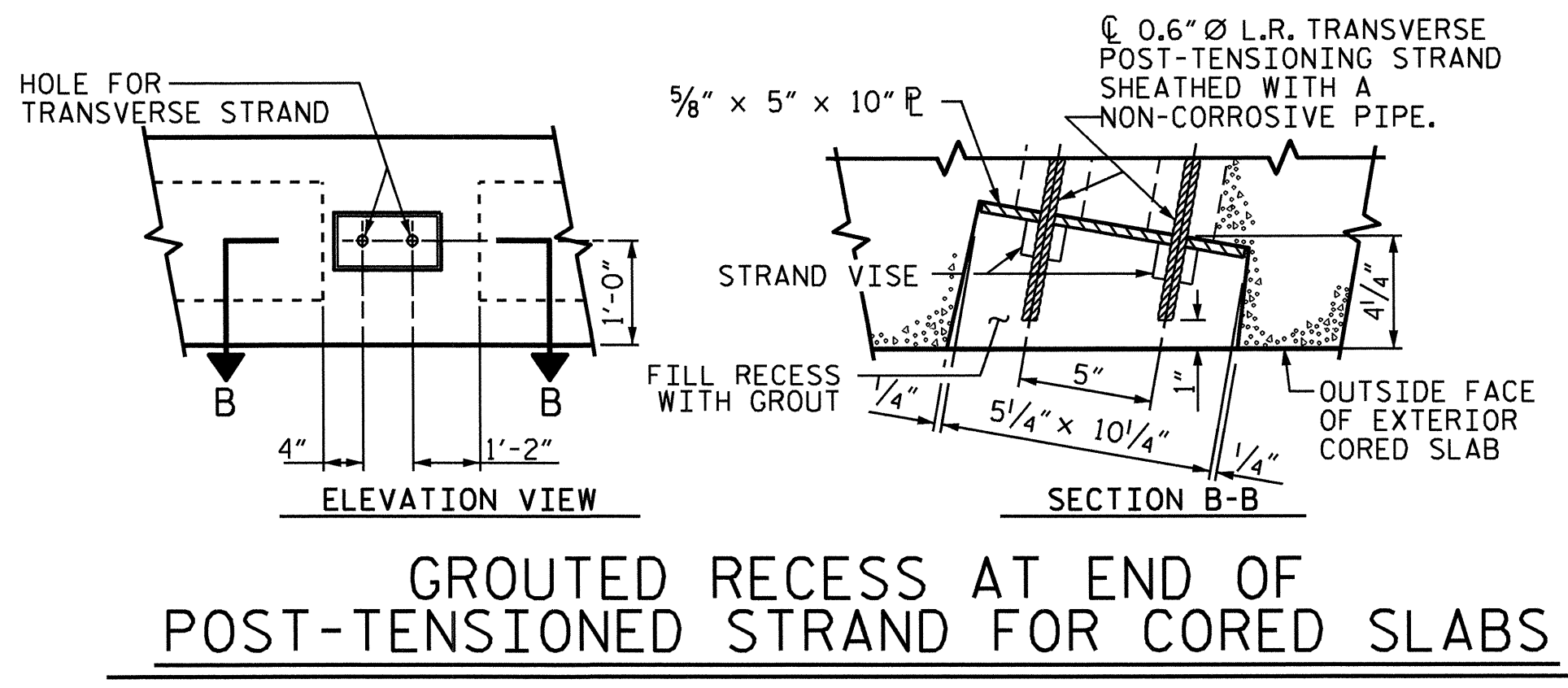


- ◆ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND



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.



BLOCKOUT DETAIL FOR ANCHOR BOLTS

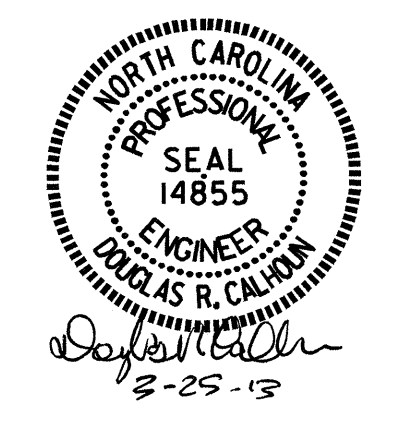
PROJECT NO. B-4757
GUILFORD COUNTY
STATION: 14+25.04 -L-

SHEET 2 OF 4

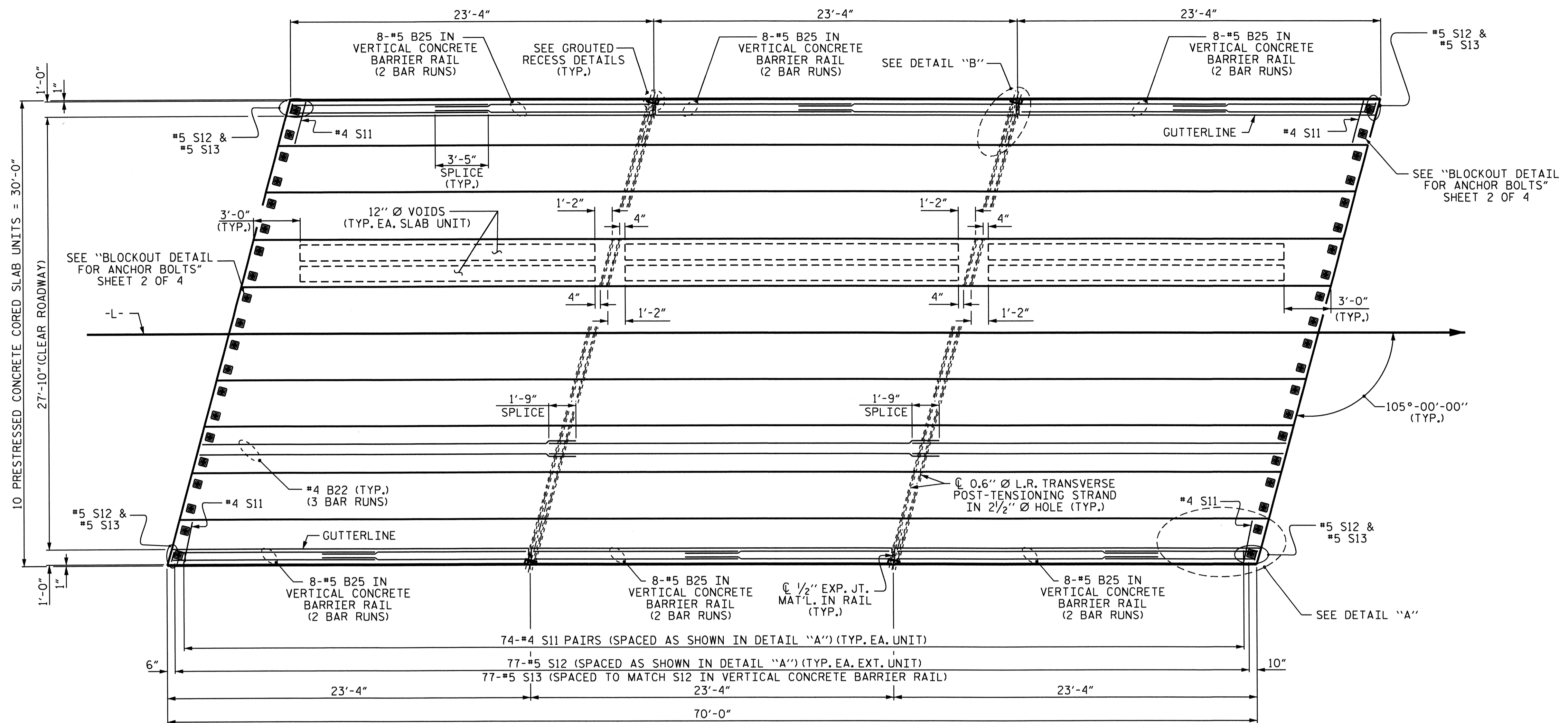
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB UNIT
105° SKEW
SPAN B

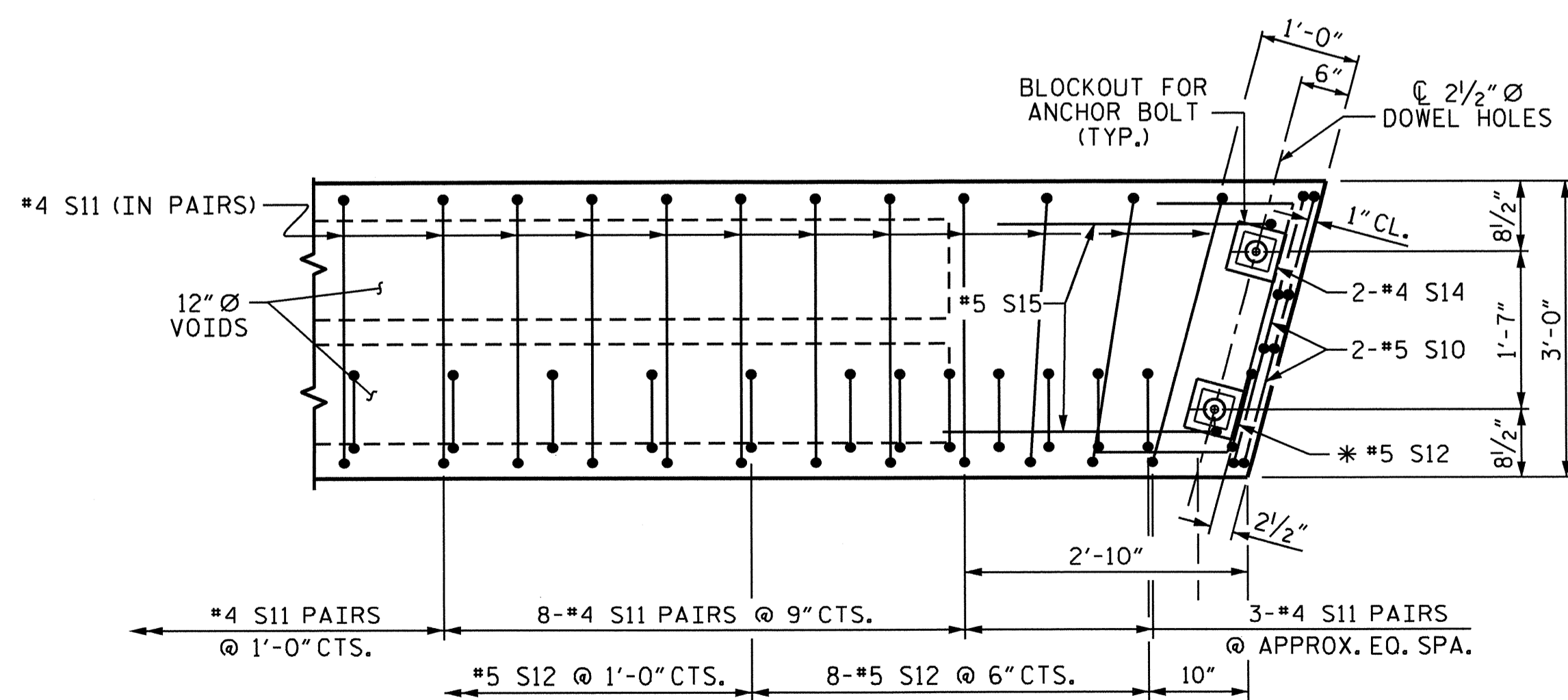
REVISIONS						SHEET NO. S-11
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			



ASSEMBLED BY : A.C. OUTLAW	DATE : 6/4/12
CHECKED BY : A. SORSENGINH	DATE : 11/20/12
DRAWN BY : MAA 6/10	REV. 12/11
CHECKED BY : MKT 7/10	MAA/AAC



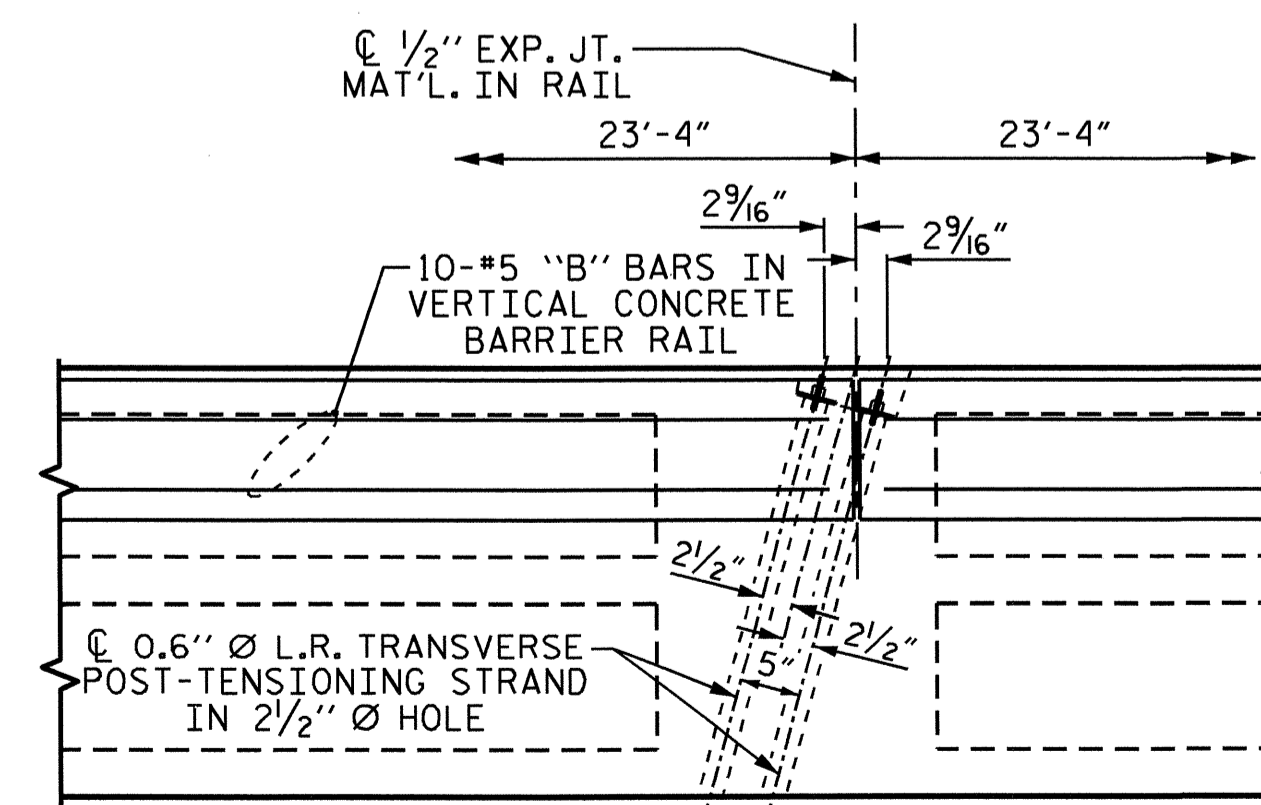
PLAN OF UNIT
SPAN B



DETAIL "A"

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.

* ADJUST THESE BARS AS NECESSARY TO AVOID BLOCKOUT



DETAIL "B"

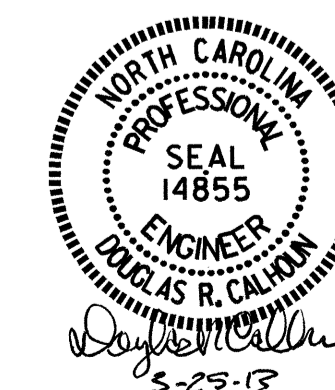
* #4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUDED RECESS AND 2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES

PROJECT NO. B-4757
GUILFORD COUNTY
STATION: 14+25.04 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 70' UNIT
27'-10" CLEAR ROADWAY
105° SKEW
SPAN B



ASSEMBLED BY :	A.C. OUTLAW	DATE :	6/4/12
CHECKED BY :	A. SORSENGIN	DATE :	11/2012
DRAWN BY :	MAA	6/10	REV. 12/5/11
CHECKED BY :	MKT	7/10	MAA/AAC

21-MAR-2013 09:11
R:\Structures\Plans\Drawings\Superstructure\B4757.SD_CS.dgn
asorsenginh

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			22

STD. NO. 24PCS_30_105S_70L

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 1/8" 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 1/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

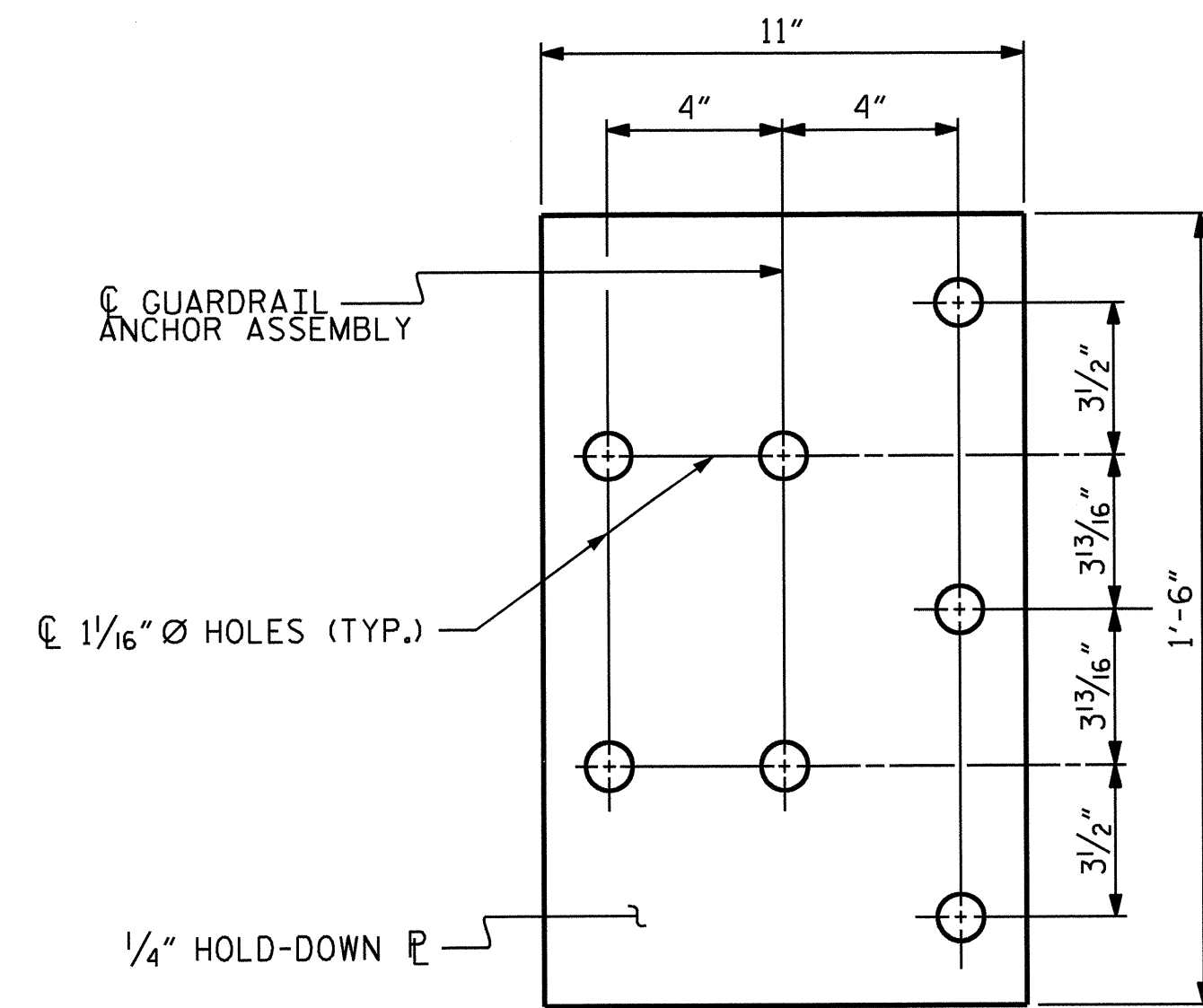
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

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

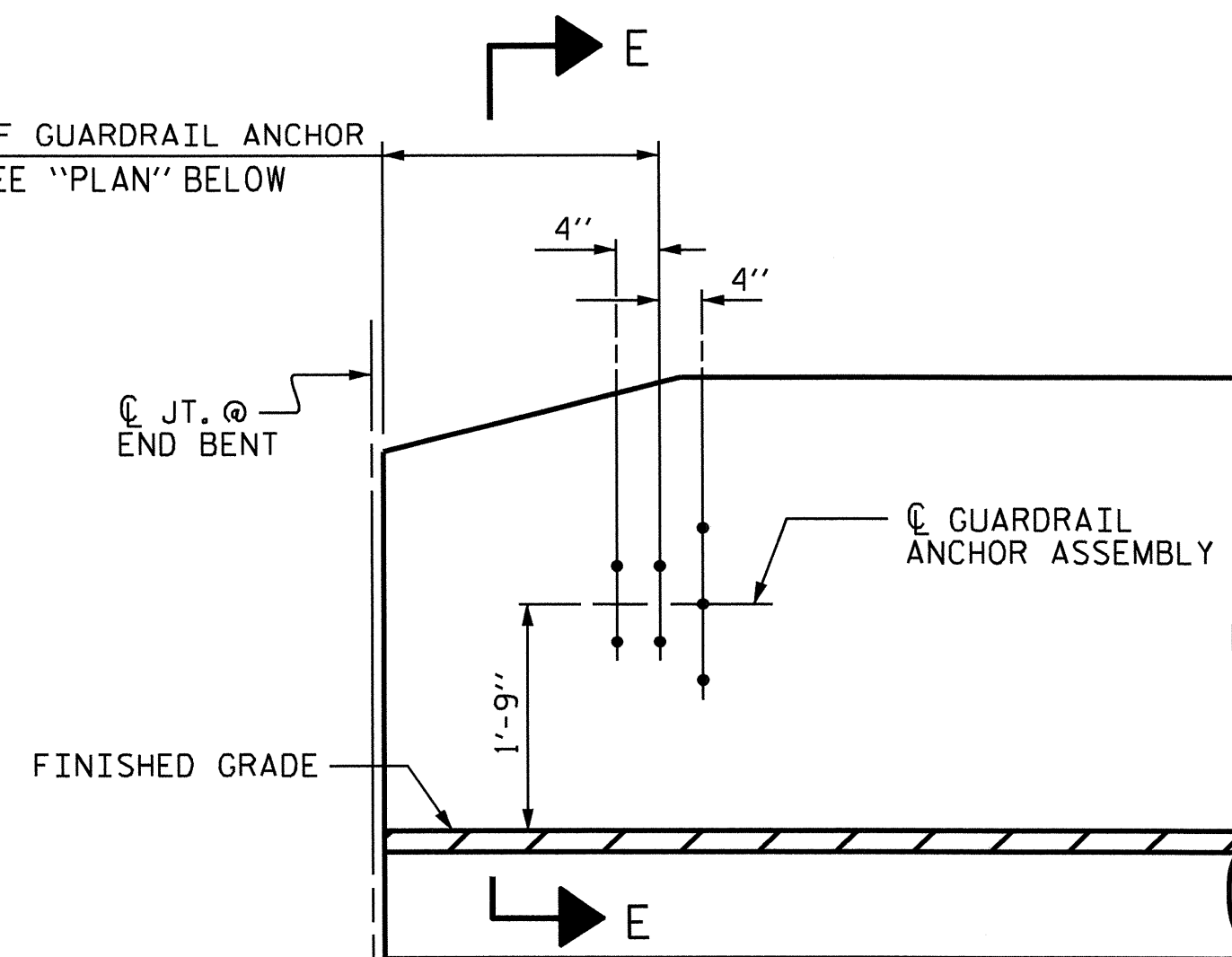
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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

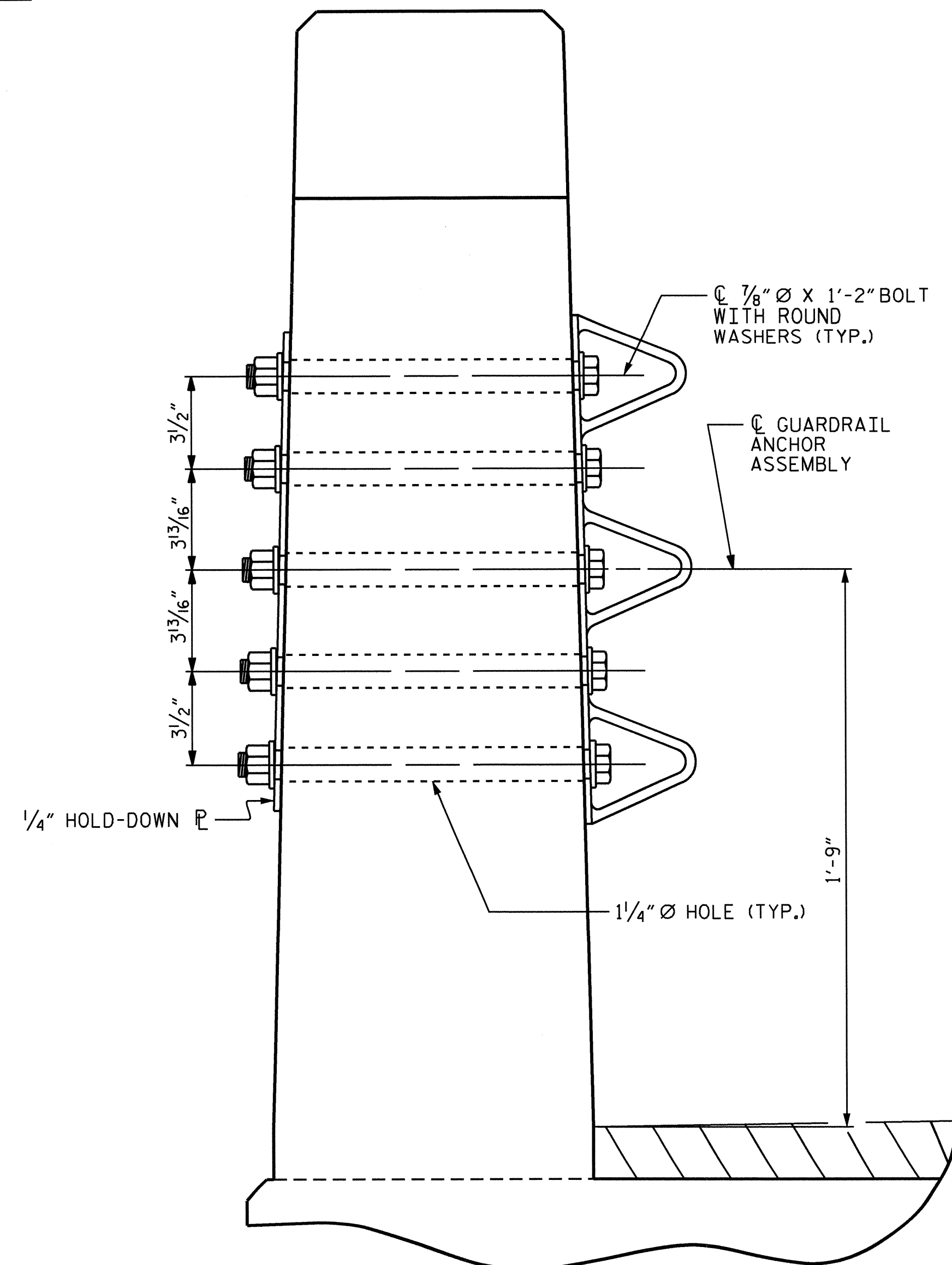


PLAN

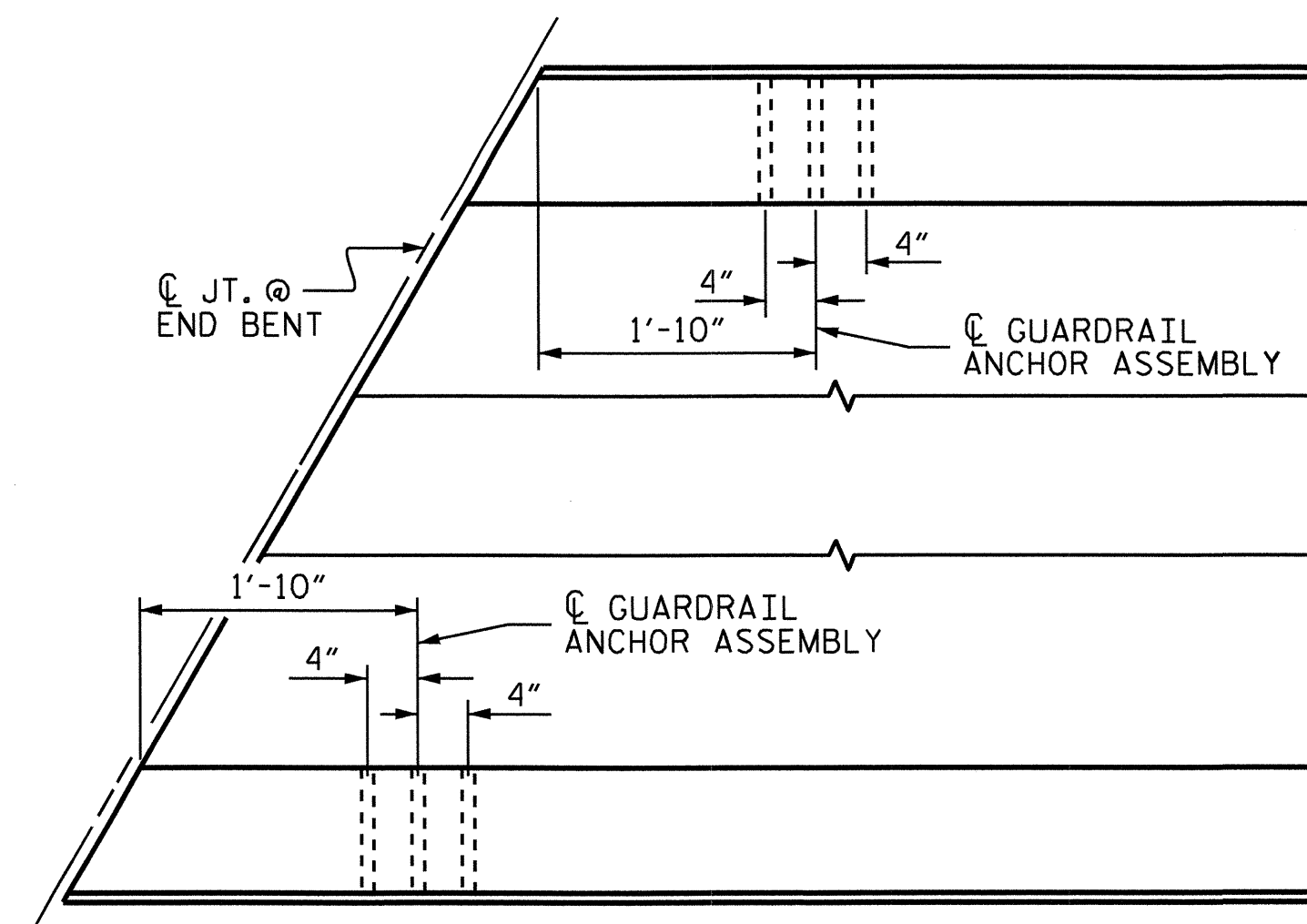
FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



ELEVATION



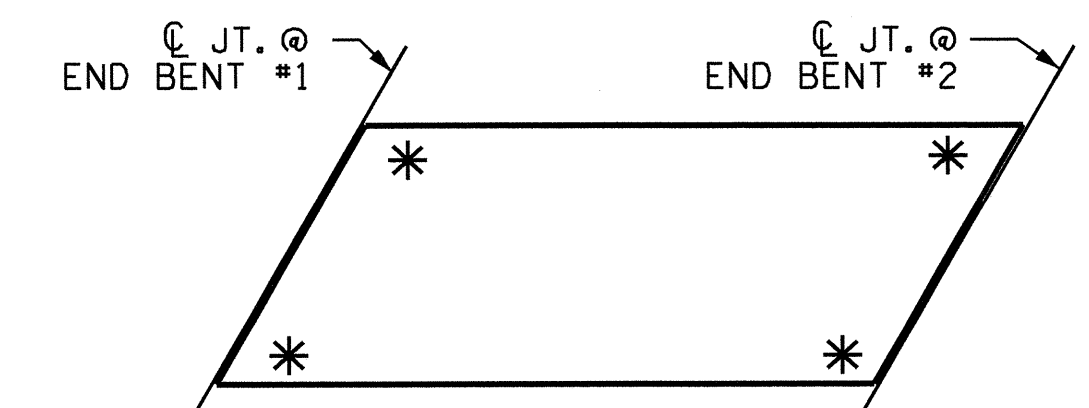
SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

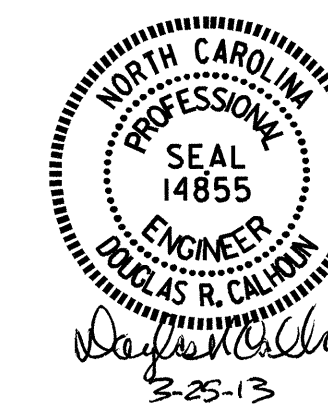
END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4757
GUILFORD COUNTY
 STATION: 14+25.04 -L-



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

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

ASSEMBLED BY : A.C. OUTLAW	DATE : 6/4/12
CHECKED BY : A. SORSENGINH	DATE : 11/2012
DRAWN BY : MAA 5/10	ADDED 5/6/10
CHECKED BY : GM 5/10	REV. 10/1/11 MAA/GM
	REV. 12/5/11 MAA/GM

NOTES

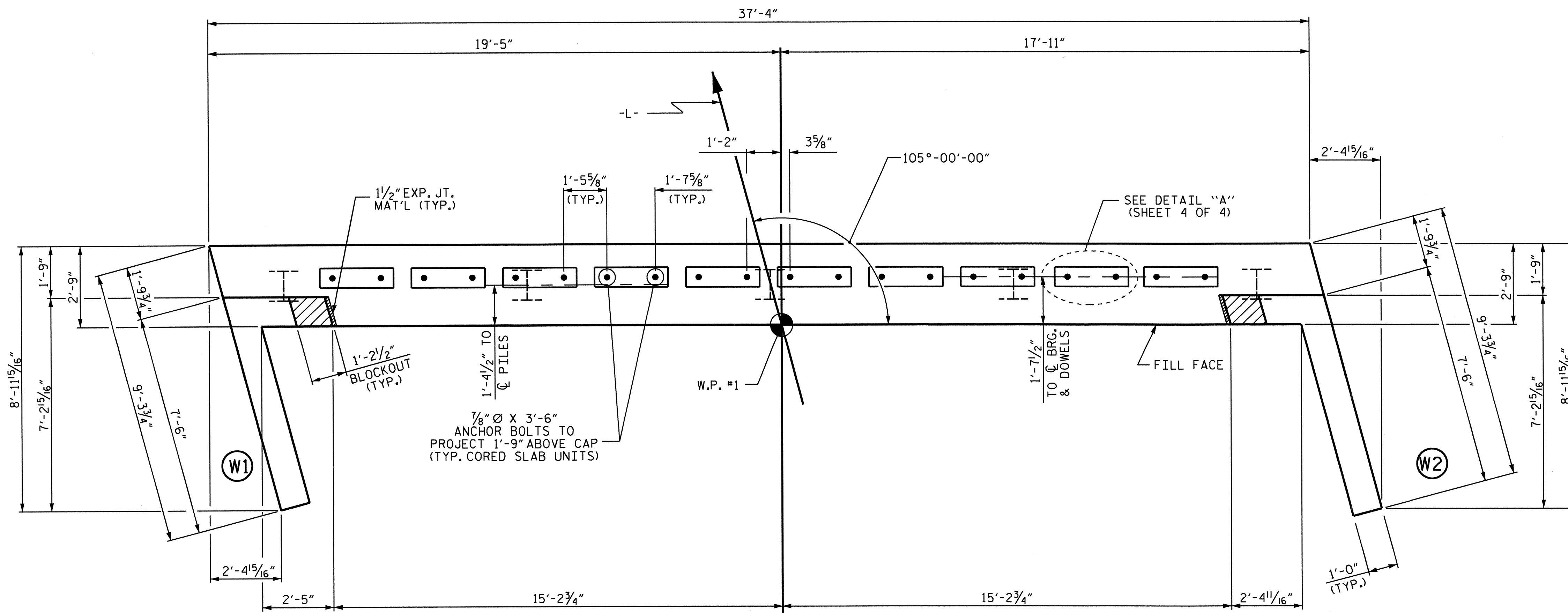
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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.

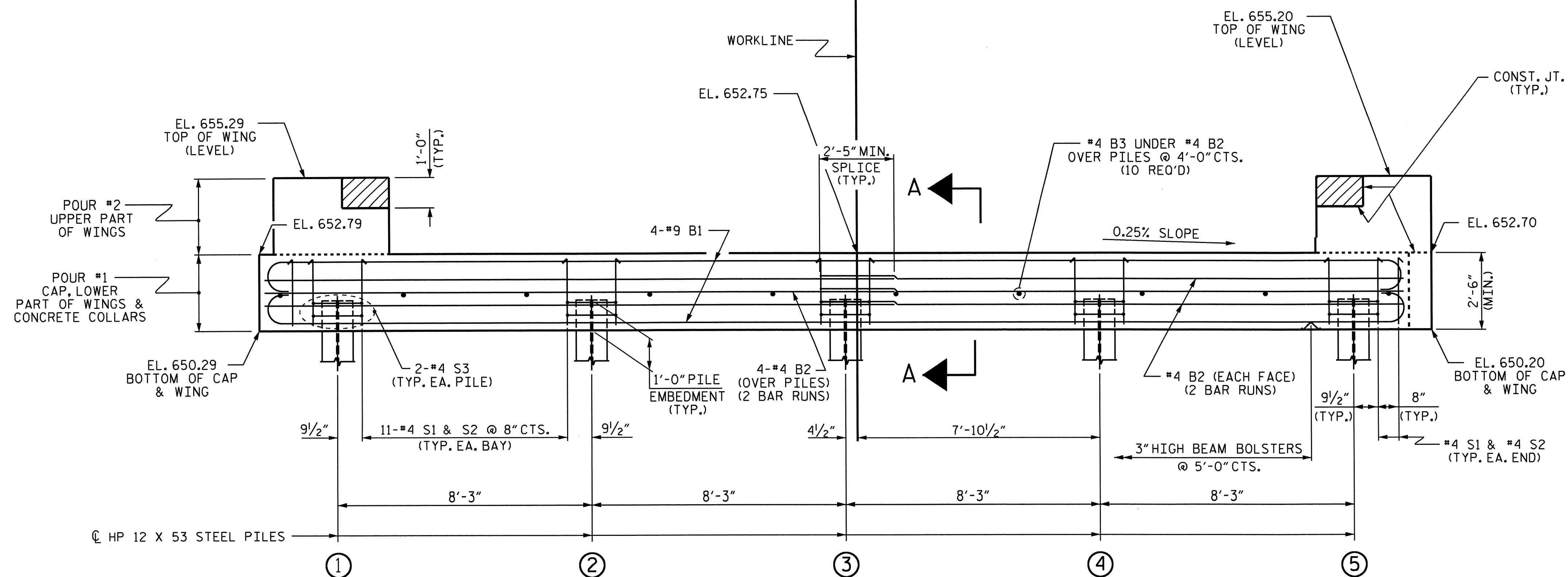
FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449 AND SHALL BE GALVANIZED. NO SEPARATE PAYMENT WILL BE MADE FOR THE ANCHOR BOLTS AND THE COST OF MATERIALS AND INSTALLATION SHALL BE INCLUDED IN OTHER PAY ITEMS.



PLAN



ELEVATION

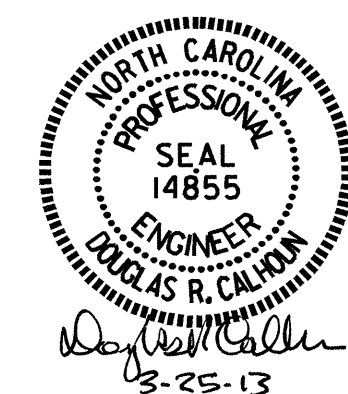
WINGS NOT SHOWN FOR CLARITY.
 FOR SECTION A-A, SEE SHEET 4 OF 4.
 CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
 SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

TOP OF PILE ELEVATIONS	
①	651.29
②	651.27
③	651.25
④	651.23
⑤	651.21

PROJECT NO. B-4757
GUILFORD COUNTY
 STATION: 14+25.04 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-15
SUBSTRUCTURE END BENT 1						
REVISIONS						TOTAL SHEETS 22
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



ASSEMBLED BY : A.C. OUTLAW DATE : 6/5/12
 CHECKED BY : A. SORSENGH DATE : 11/2012
 DRAWN BY : DGE 02/10
 CHECKED BY : MKT 02/10

NOTES

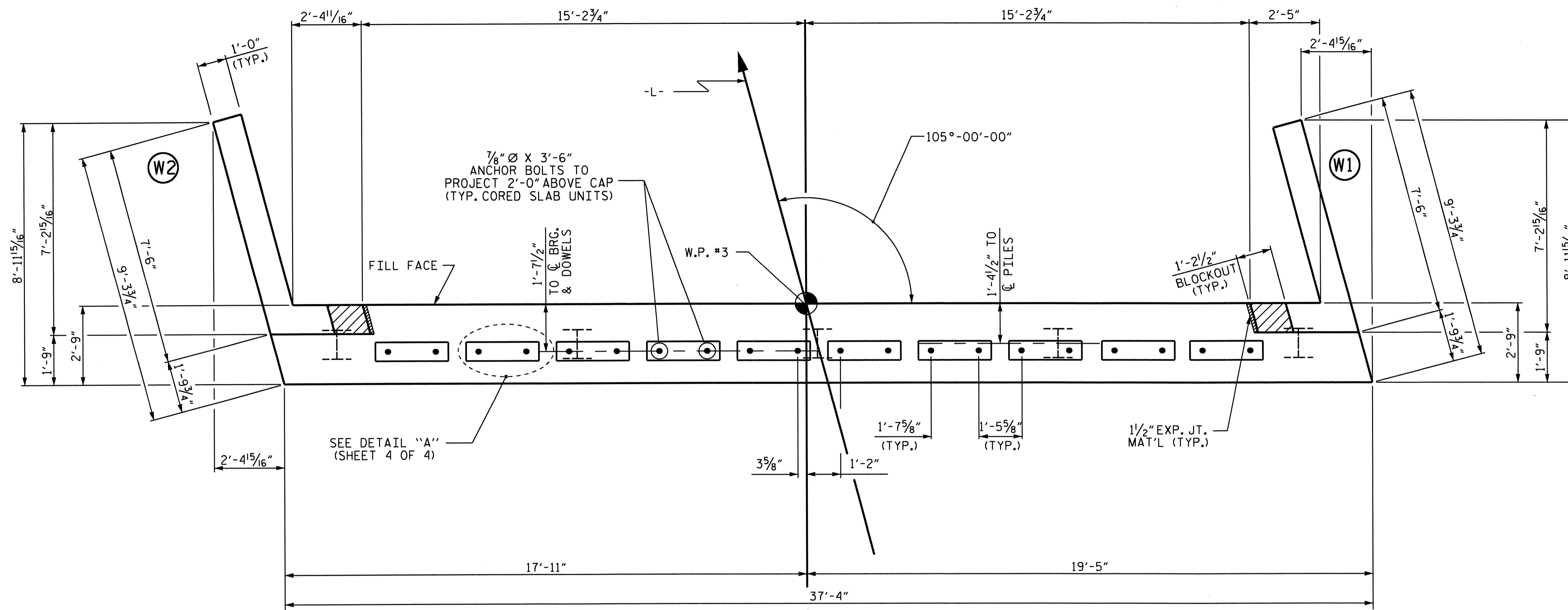
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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.

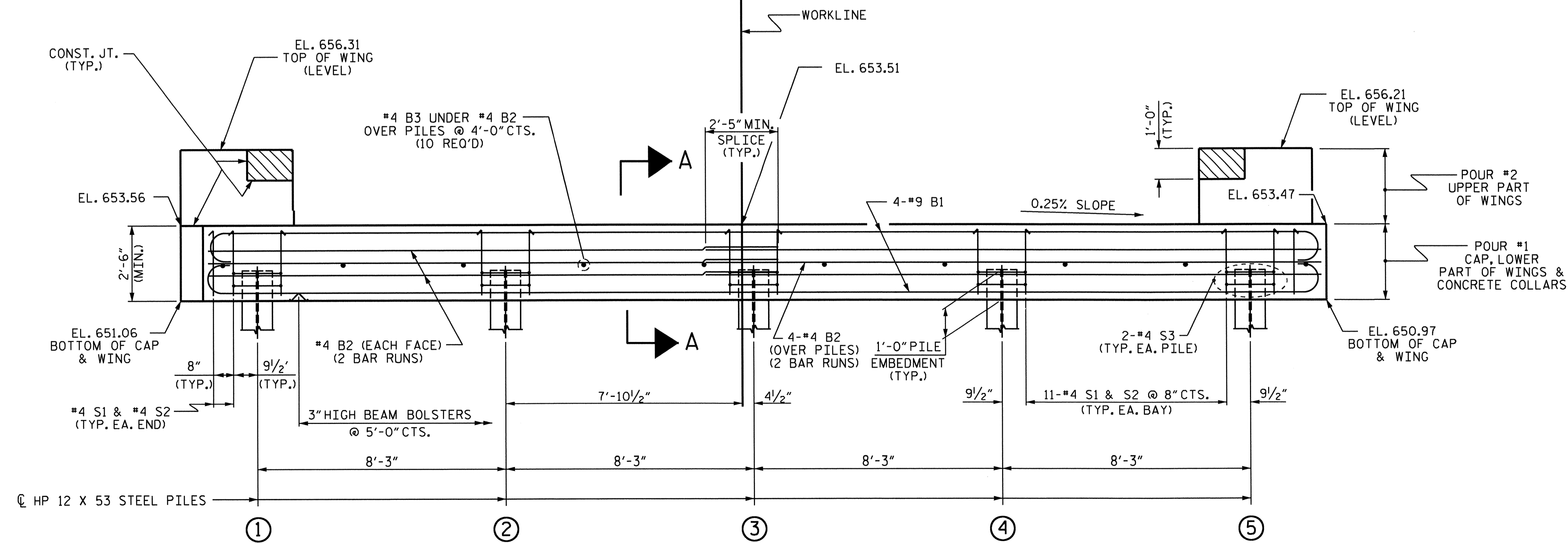
FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449 AND SHALL BE GALVANIZED. NO SEPARATE PAYMENT WILL BE MADE FOR THE ANCHOR BOLTS AND THE COST OF MATERIALS AND INSTALLATION SHALL BE INCLUDED IN OTHER PAY ITEMS.



PLAN



ELEVATION

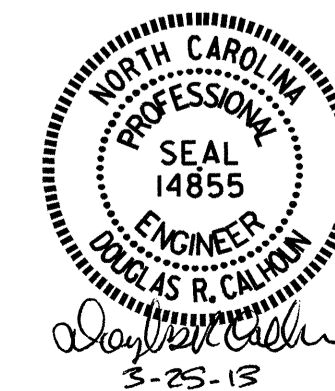
TOP OF PILE ELEVATIONS	
①	652.05
②	652.03
③	652.01
④	651.99
⑤	651.97

PROJECT NO. B-4757
GUILFORD COUNTY
 STATION: 14+25.04 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

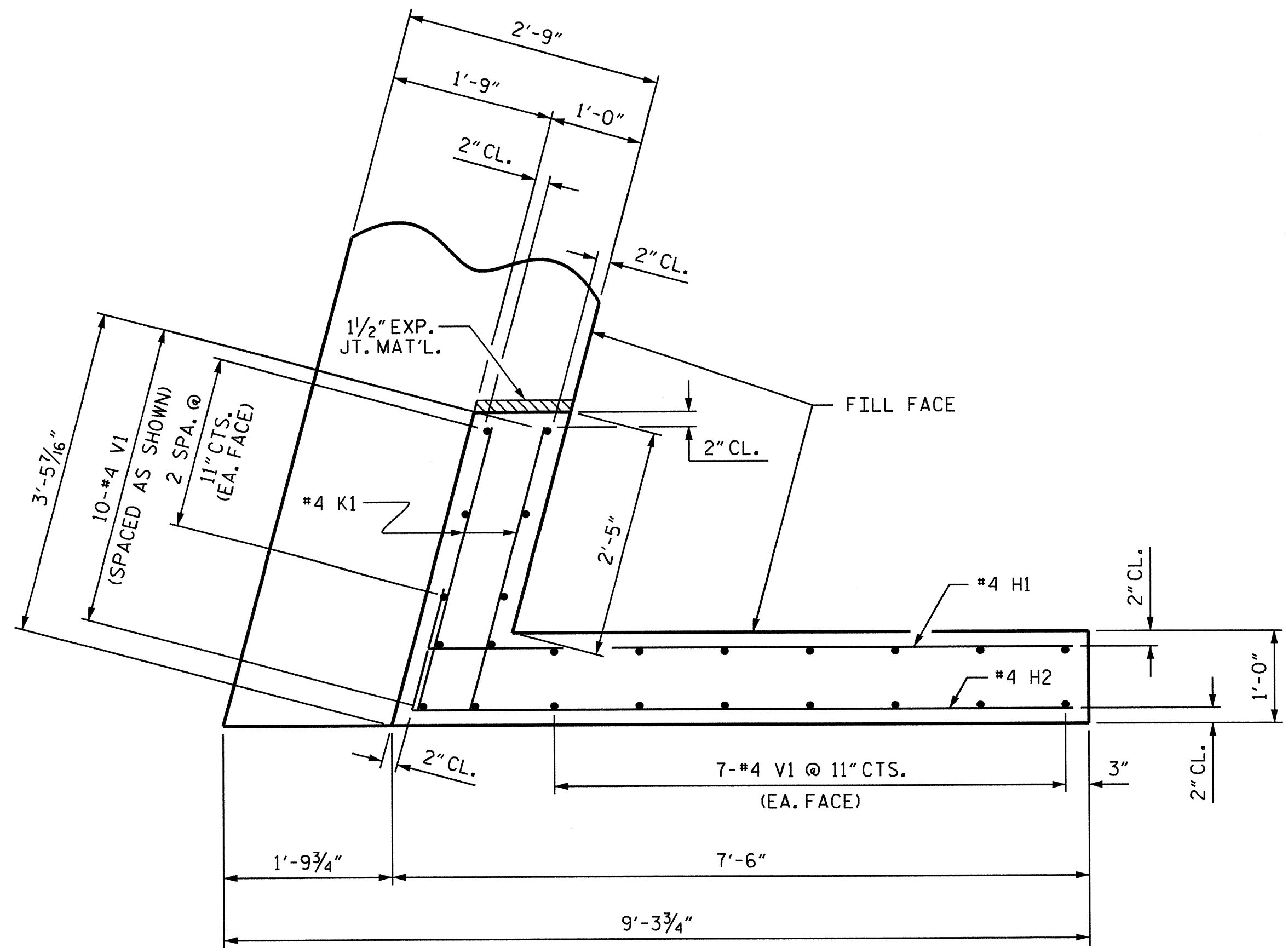
SUBSTRUCTURE
 END BENT 2



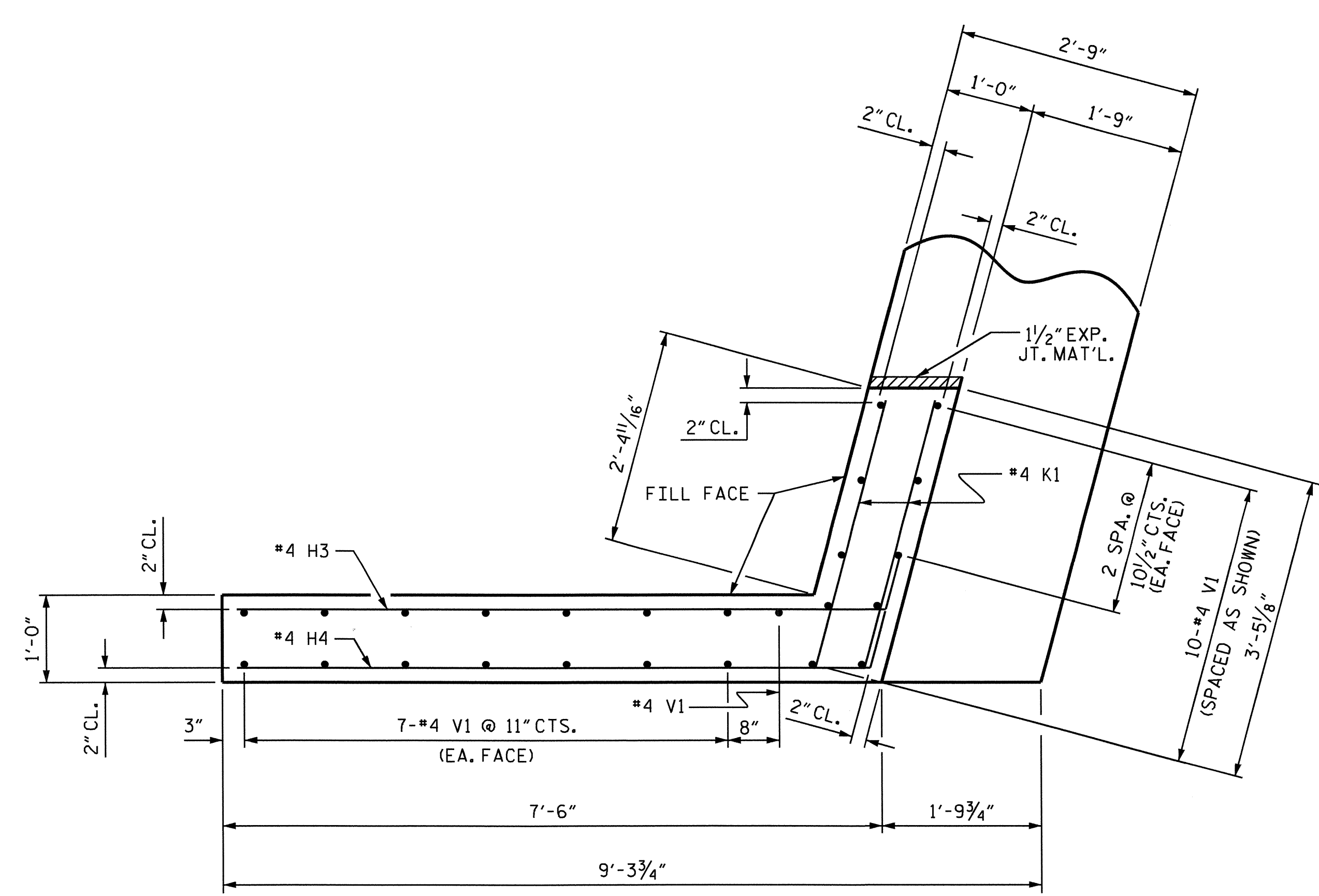
REVISIONS						SHEET NO. S-16
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			

ASSEMBLED BY : A.C. OUTLAW DATE : 6/5/12
 CHECKED BY : A. SORSENGH DATE : 11/20/12
 DRAWN BY : DGE 02/10
 CHECKED BY : MKT 02/10

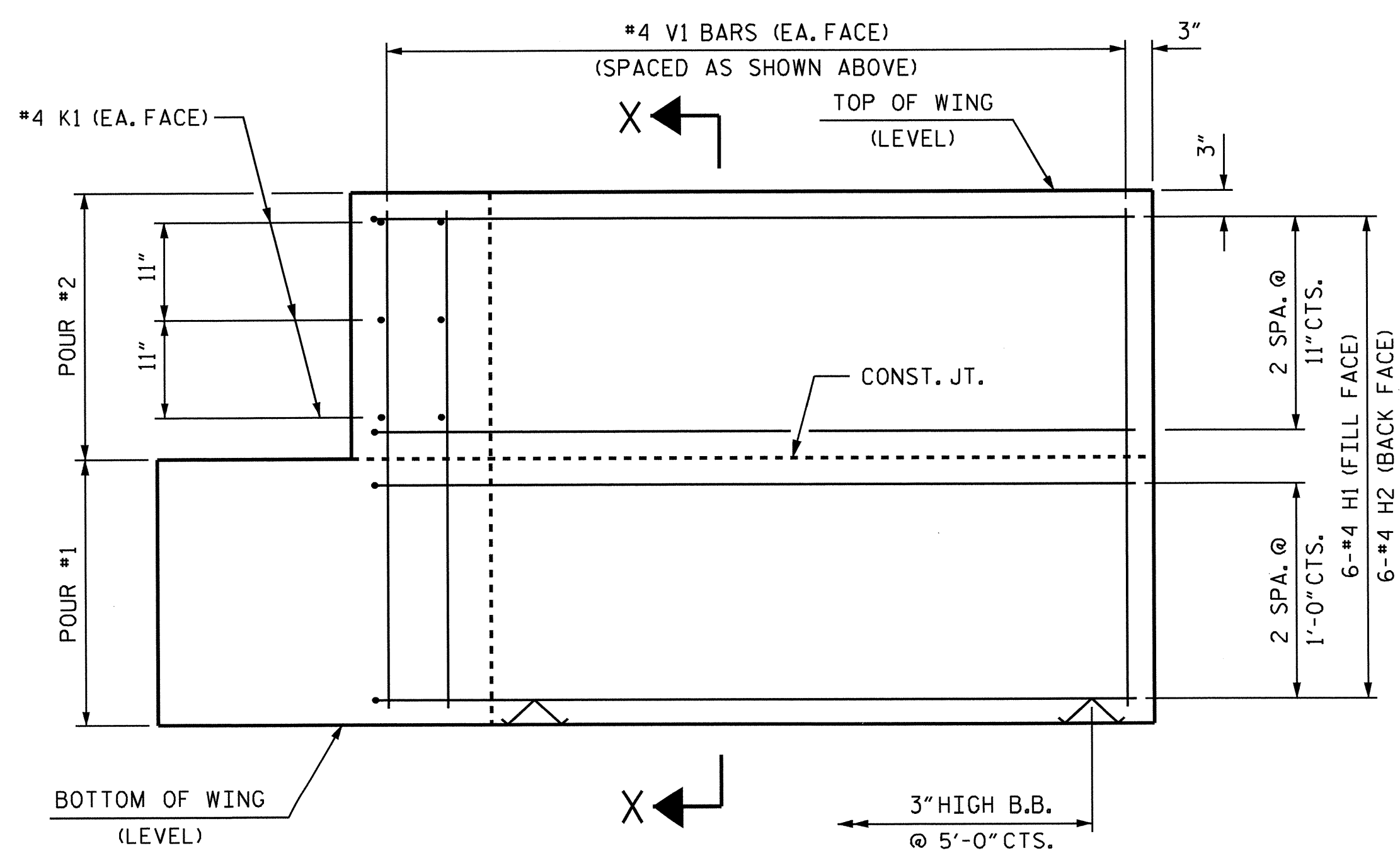
WINGS NOT SHOWN FOR CLARITY.
 FOR SECTION A-A, SEE SHEET 4 OF 4.
 CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
 SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.



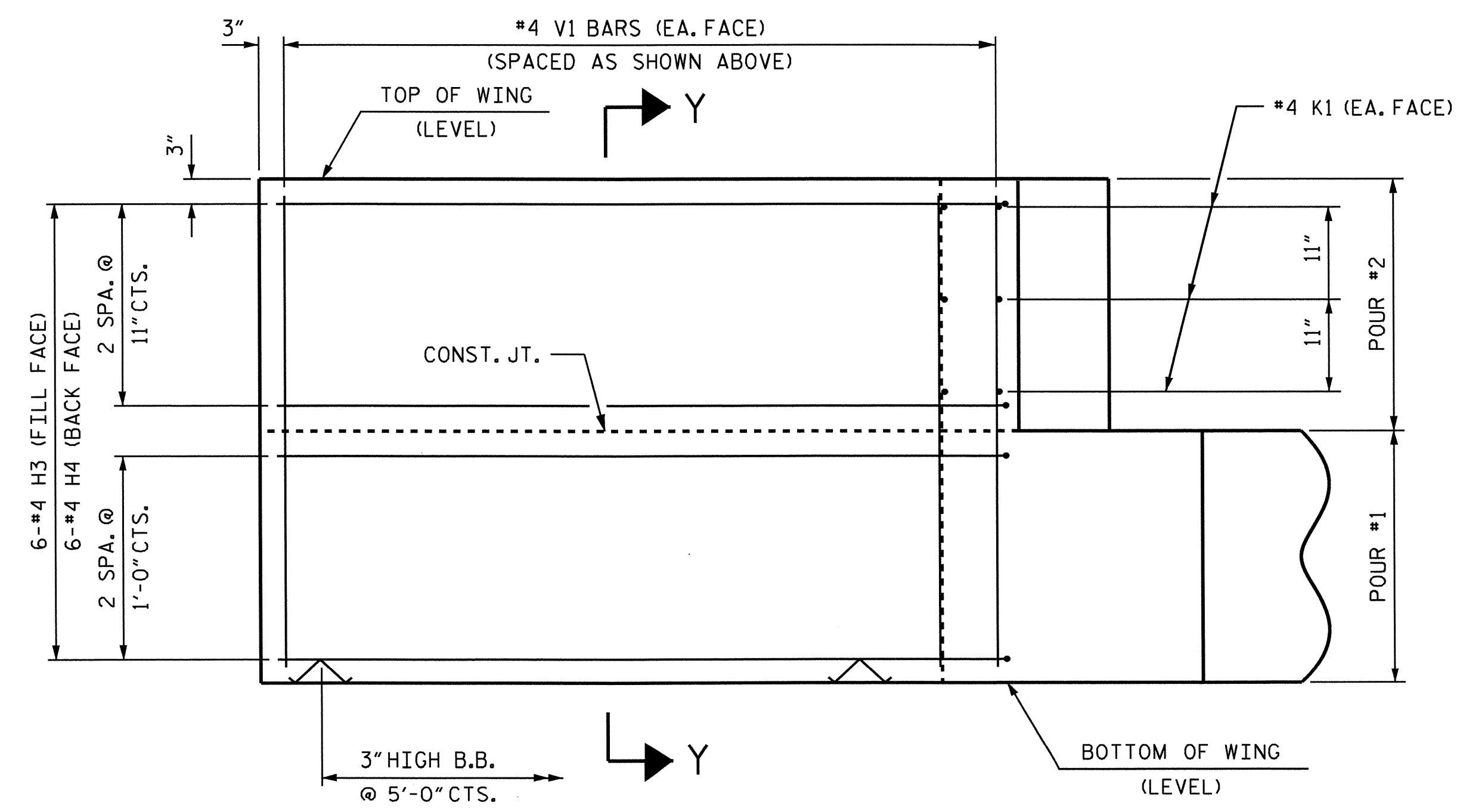
PLAN OF WING (W1)



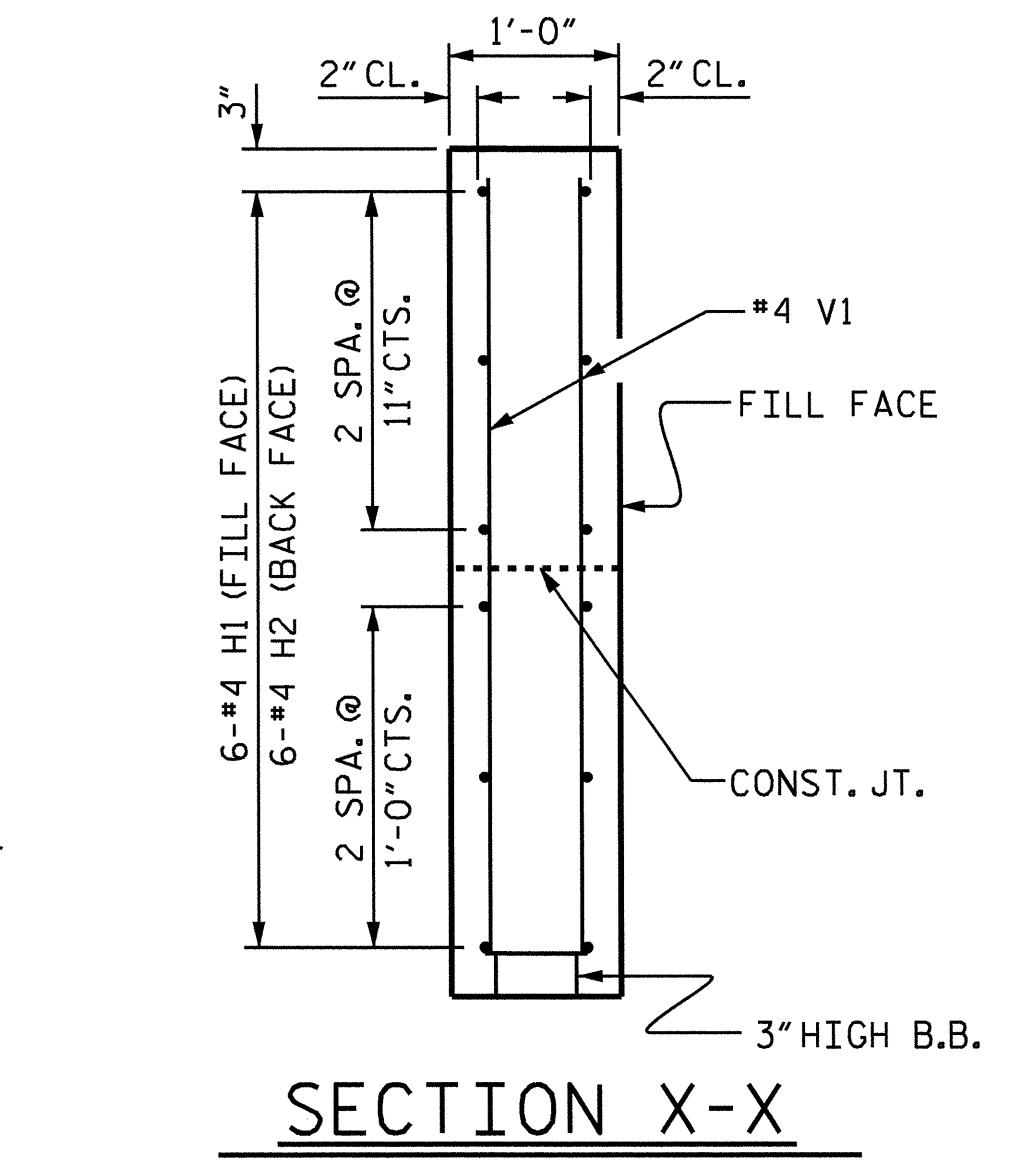
PLAN OF WING (W2)



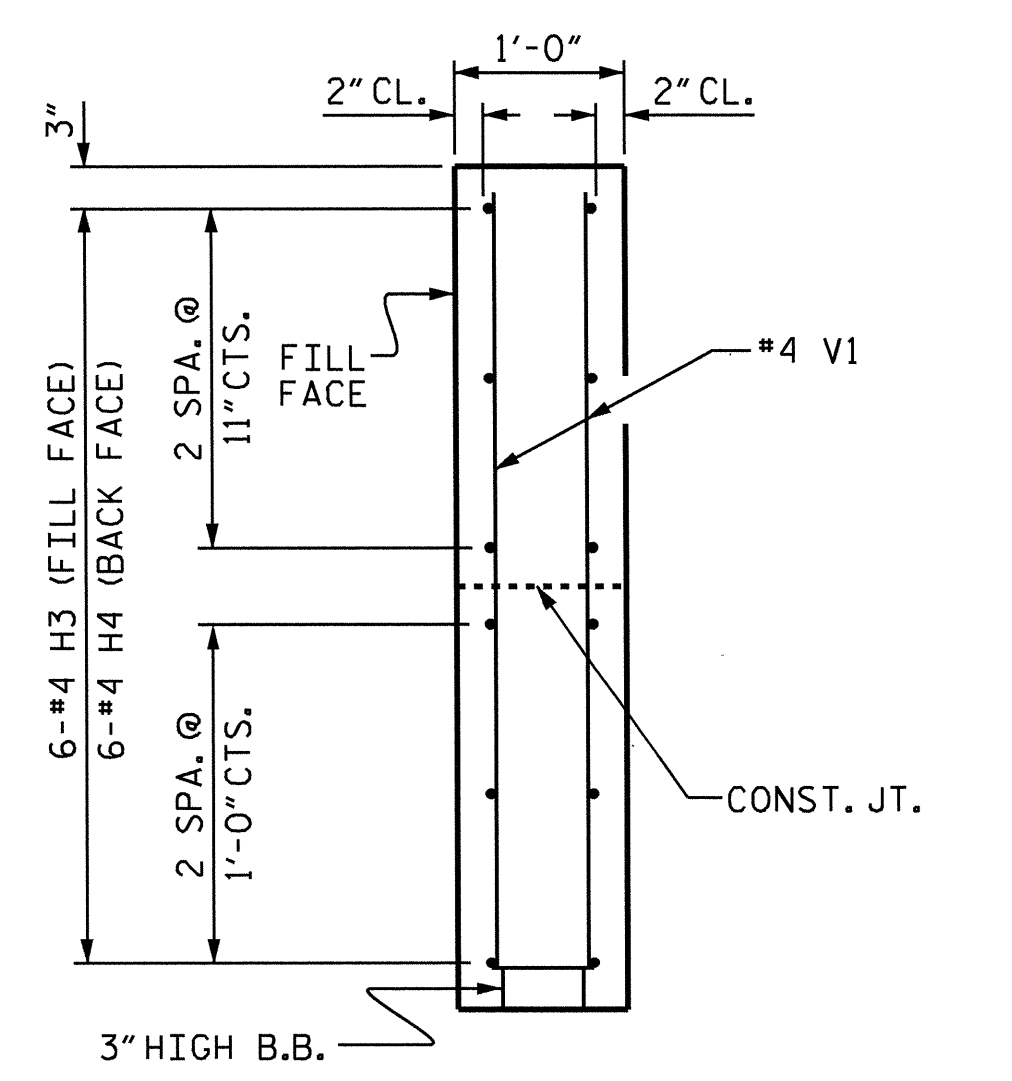
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X



SECTION Y-Y

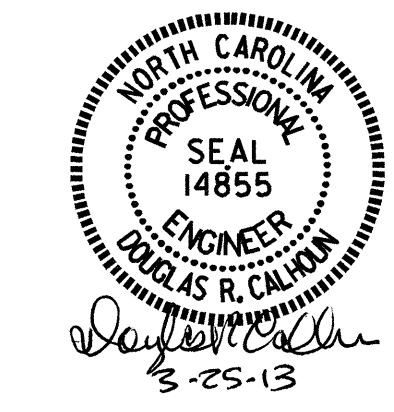
PROJECT NO. B-4757
 GUILFORD COUNTY
 STATION: 14+25.04 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT
 WING DETAILS

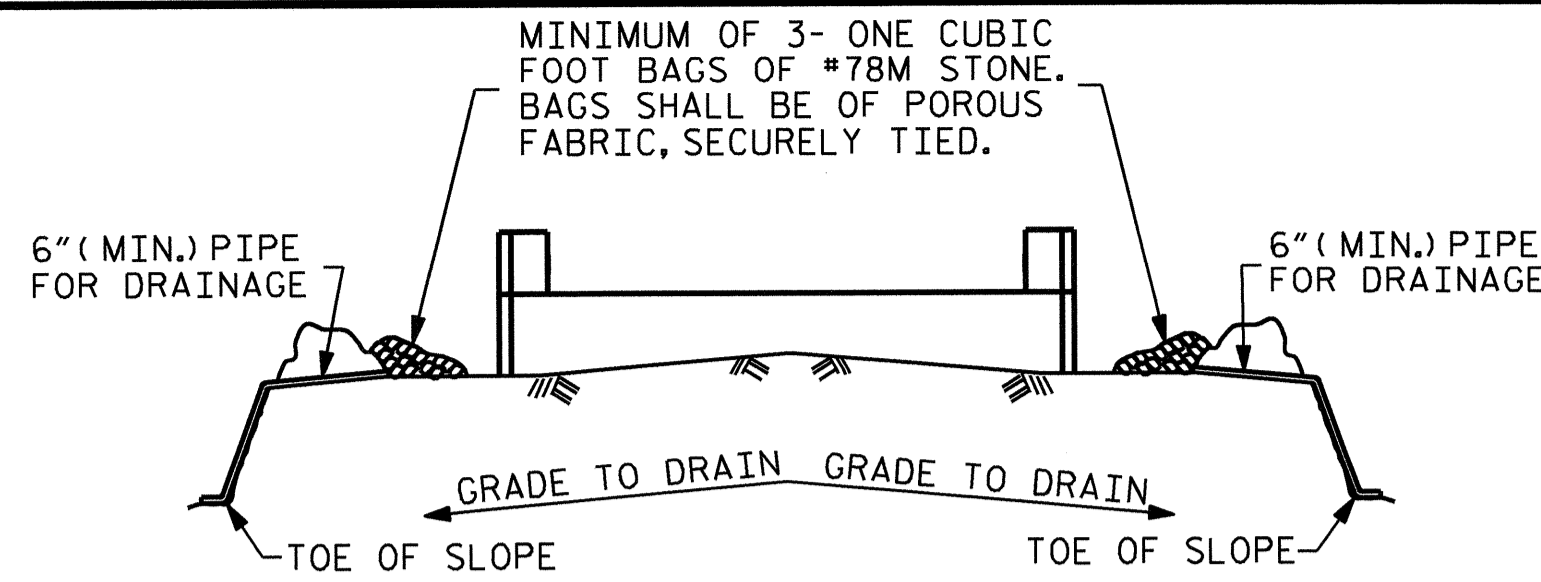
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			22



ASSEMBLED BY : A.C. OUTLAW DATE : 6/5/12
 CHECKED BY : A. SORSENGINH DATE : 11/2012
 DRAWN BY : DGE 03/10
 CHECKED BY : MKT 03/10

21-MAR-2013 09:08
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 asorsengin

WING DETAILS

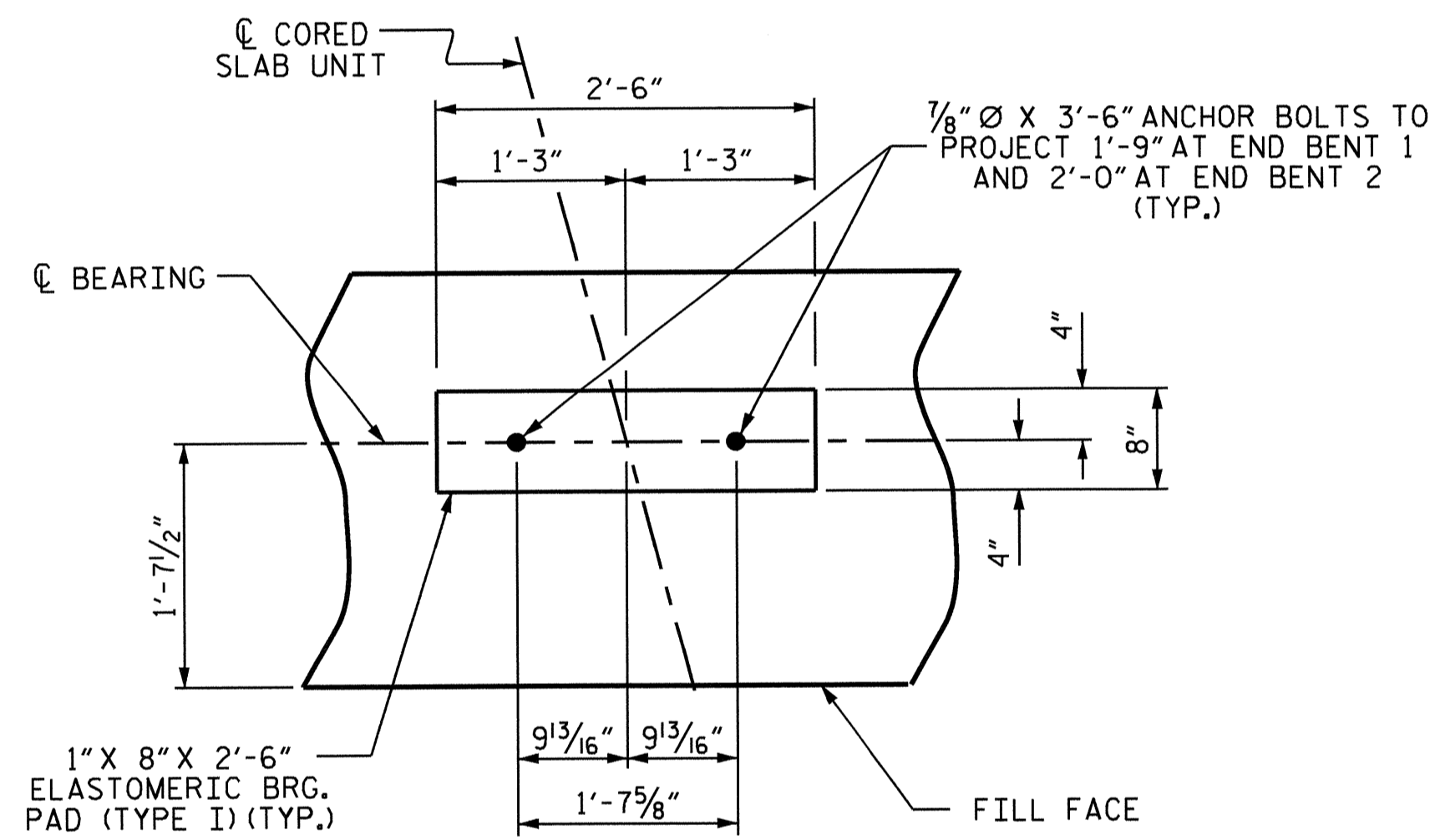


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

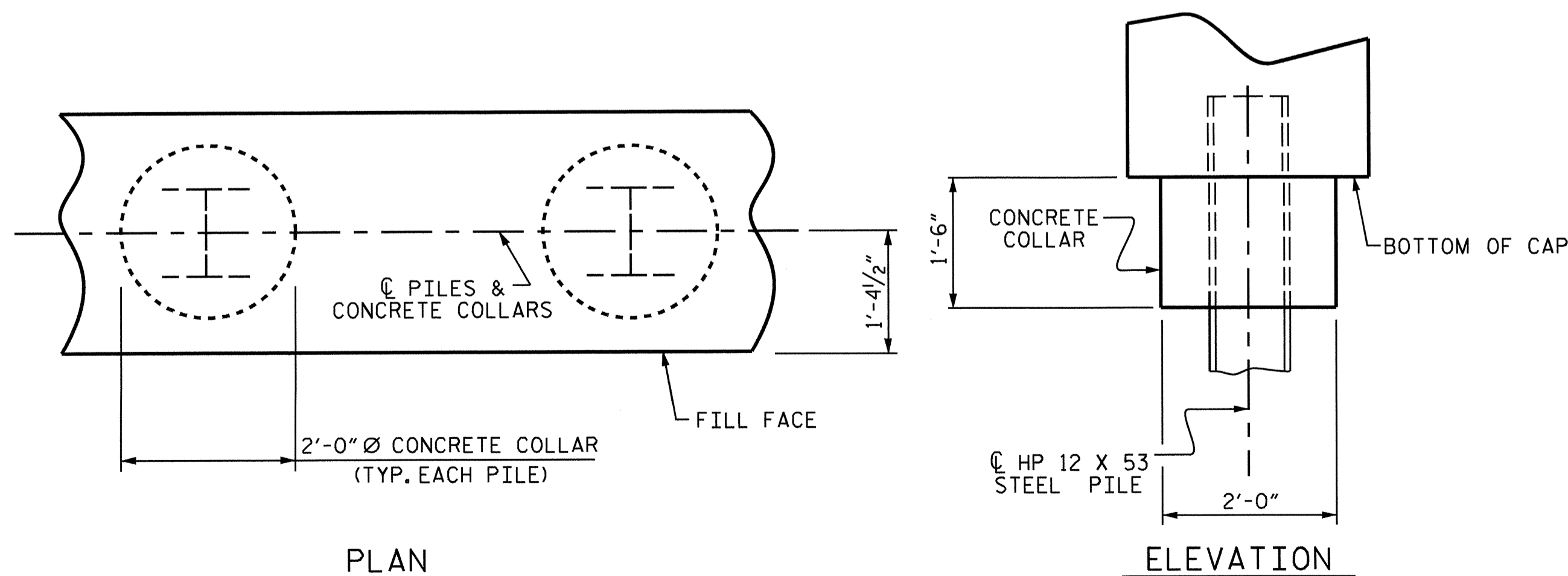
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



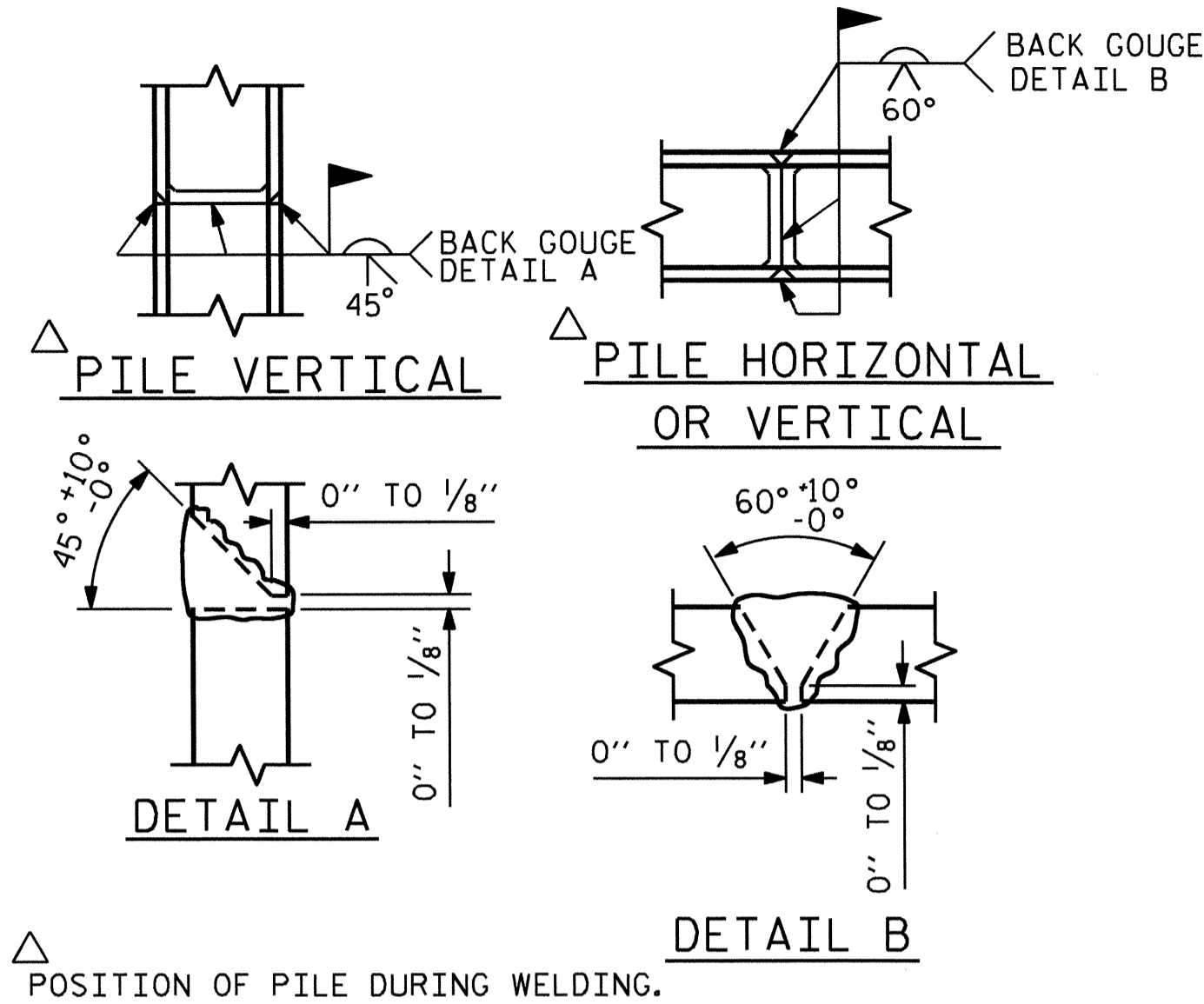
DETAIL "A"

(END BENT 1 SHOWN, END BENT 2 SIMILAR BY ROTATION)

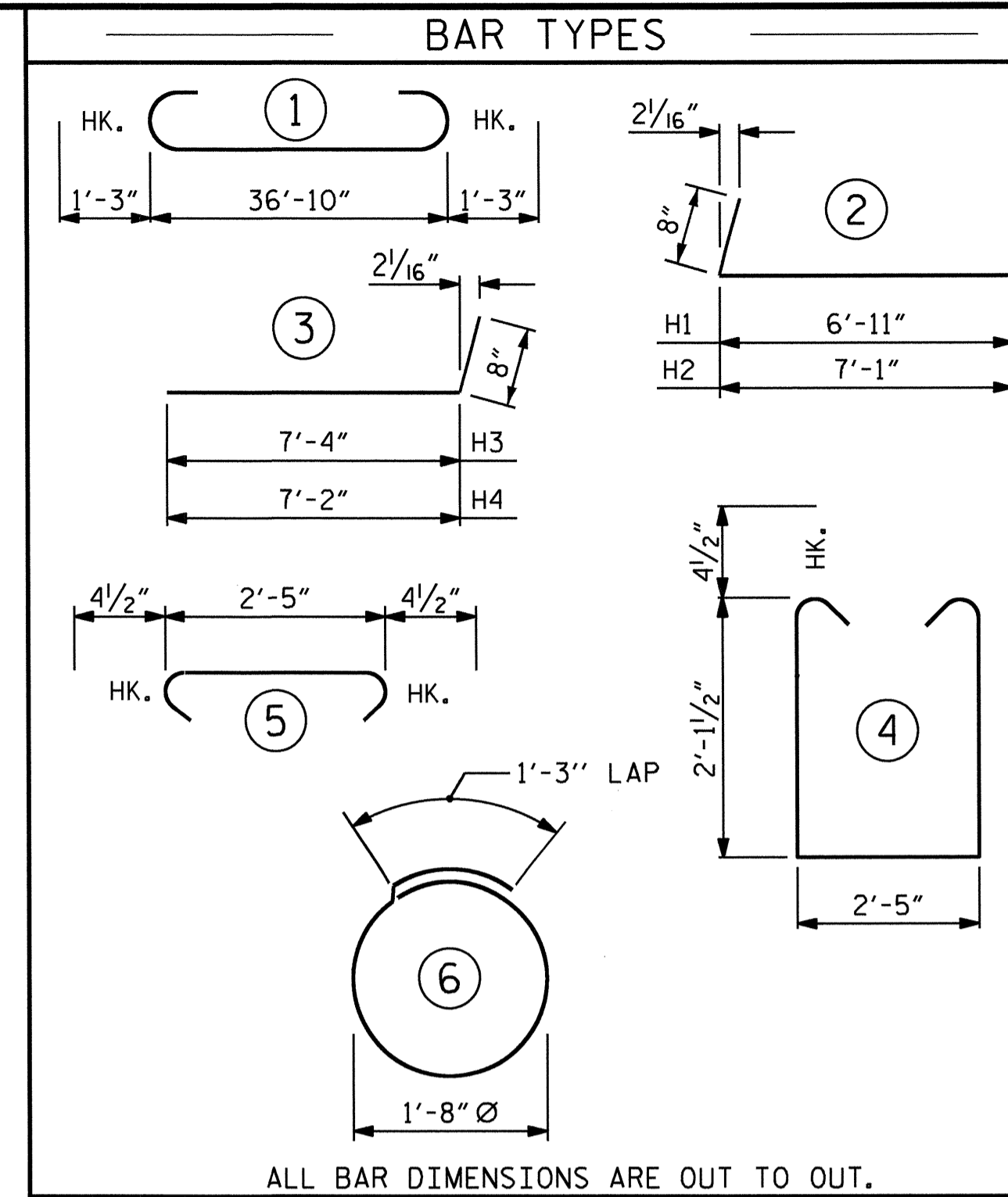


CORROSION PROTECTION FOR STEEL PILES DETAIL

(END BENT 1 SHOWN, END BENT 2 SIMILAR BY ROTATION)



PILE SPLICE DETAILS

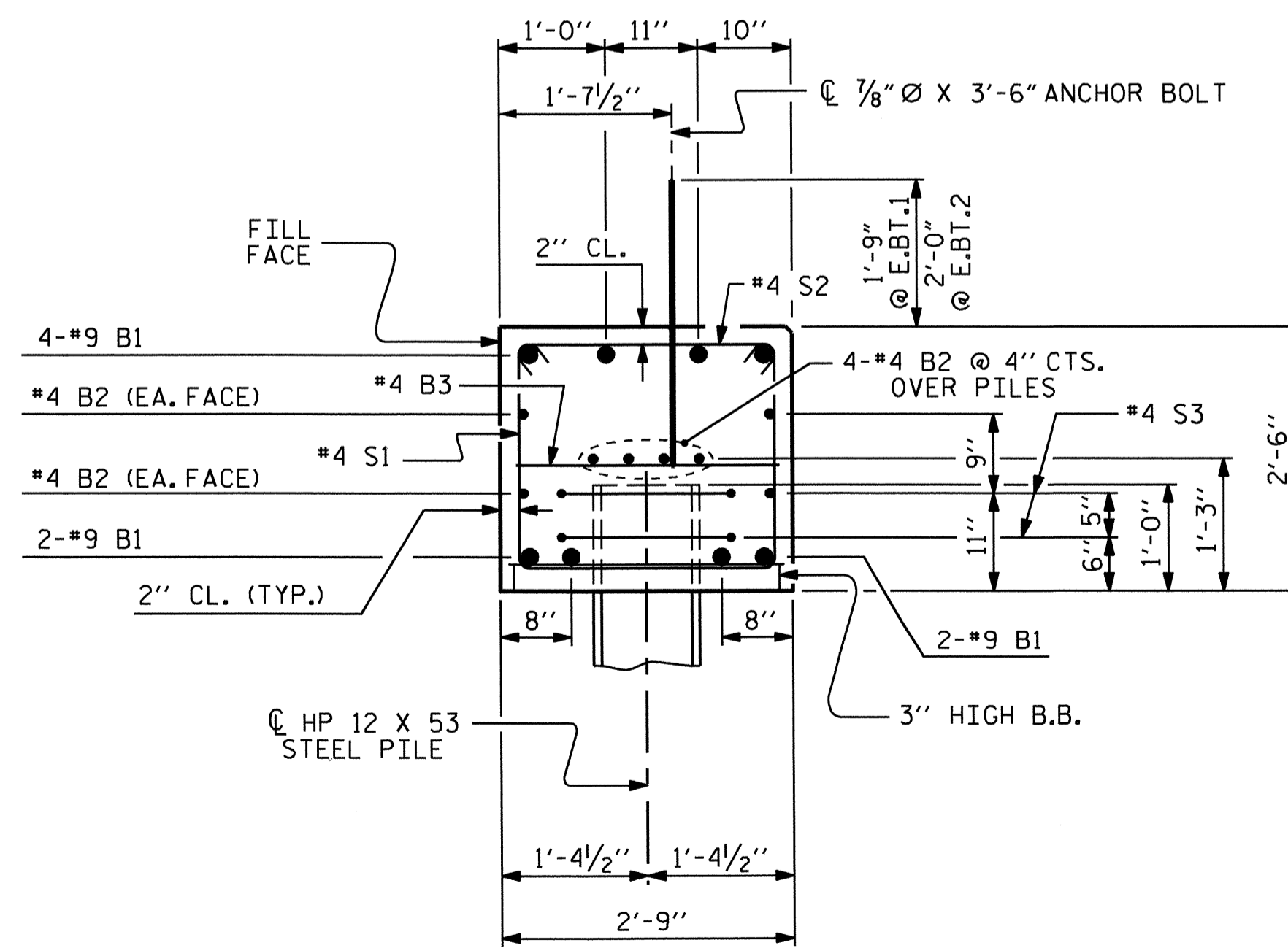


END BENT 1	END BENT 2
HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES
NO: 5	NO: 5
LIN. FT.= 125	LIN. FT.= 75

BILL OF MATERIAL FOR ONE END BENT					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		39'-4"	1070
B2	16	#4	STR	19'-9"	211
B3	10	#4	STR	2'-5"	16
H1	6	#4		7'-7"	30
H2	6	#4		7'-9"	31
H3	6	#4		8'-0"	32
H4	6	#4		7'-10"	31
K1	12	#4	STR	3'-1"	25
S1	48	#4		7'-5"	238
S2	48	#4		3'-2"	102
S3	10	#4		6'-6"	43
V1	49	#4	STR	4'-8"	153
REINFORCING STEEL (FOR ONE END BENT)					1982 LBS.

CLASS A CONCRETE BREAKDOWN (FOR END BENT 1)	
POUR #1 CAP, LOWER PART OF WINGS & COLLARS	11.6 C.Y.
POUR #2 UPPER PART OF WINGS	1.8 C.Y.
TOTAL CLASS A CONCRETE	13.4 C.Y.

CLASS A CONCRETE BREAKDOWN (FOR END BENT 2)	
POUR #1 CAP, LOWER PART OF WINGS & COLLARS	11.6 C.Y.
POUR #2 UPPER PART OF WINGS	2.0 C.Y.
TOTAL CLASS A CONCRETE	13.6 C.Y.



(CONCRETE COLLAR NOT SHOWN FOR CLARITY. SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")

PROJECT NO. B-4757

GUILFORD COUNTY

STATION: 14+25.04 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE					
END BENT 1 & 2 DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-18

TOTAL SHEETS 22



ASSEMBLED BY :	A.C. OUTLAW	DATE :	6/5/12
CHECKED BY :	A. SORSENGINH	DATE :	11/2012
DRAWN BY :	DGE 03/10		
CHECKED BY :	MKT 03/10		

NOTES

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

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

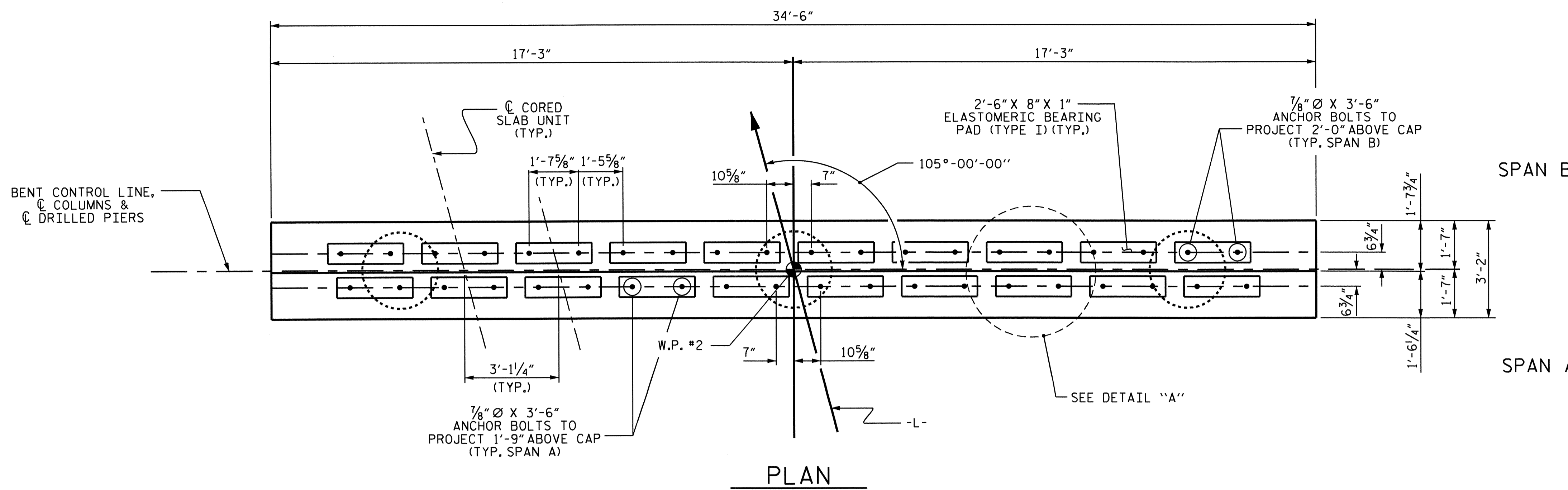
ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL."

★ INVERT ALTERNATE STIRRUPS.

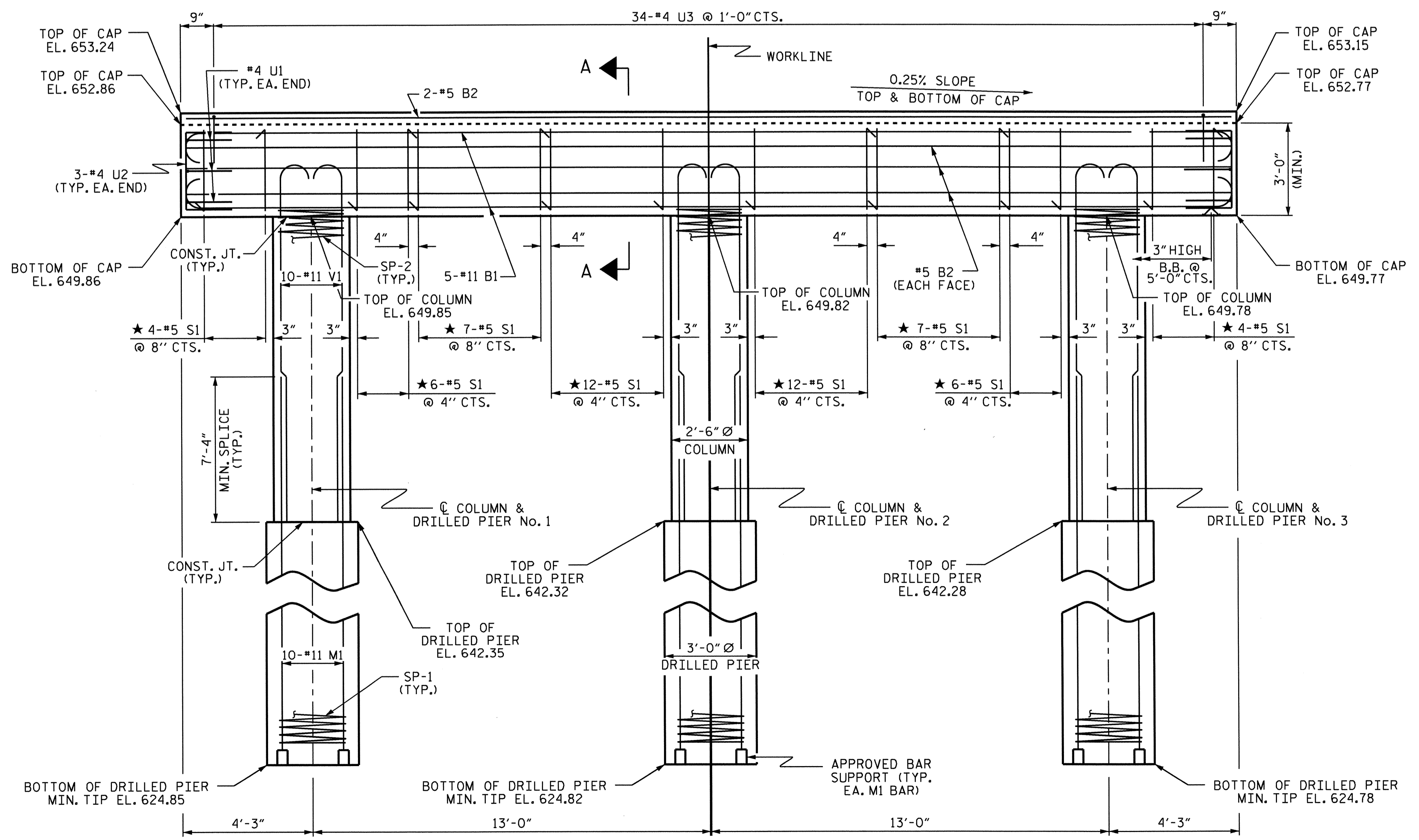
DRILLED PIERS SHALL BE TERMINATED ONE FOOT ± ABOVE NORMAL WATER SURFACE ELEVATION FOR SHAFTS LOCATED IN WATER.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449 AND SHALL BE GALVANIZED. NO SEPARATE PAYMENT WILL BE MADE FOR THE ANCHOR BOLTS AND THE COST OF MATERIALS AND INSTALLATION SHALL BE INCLUDED IN OTHER PAY ITEMS.

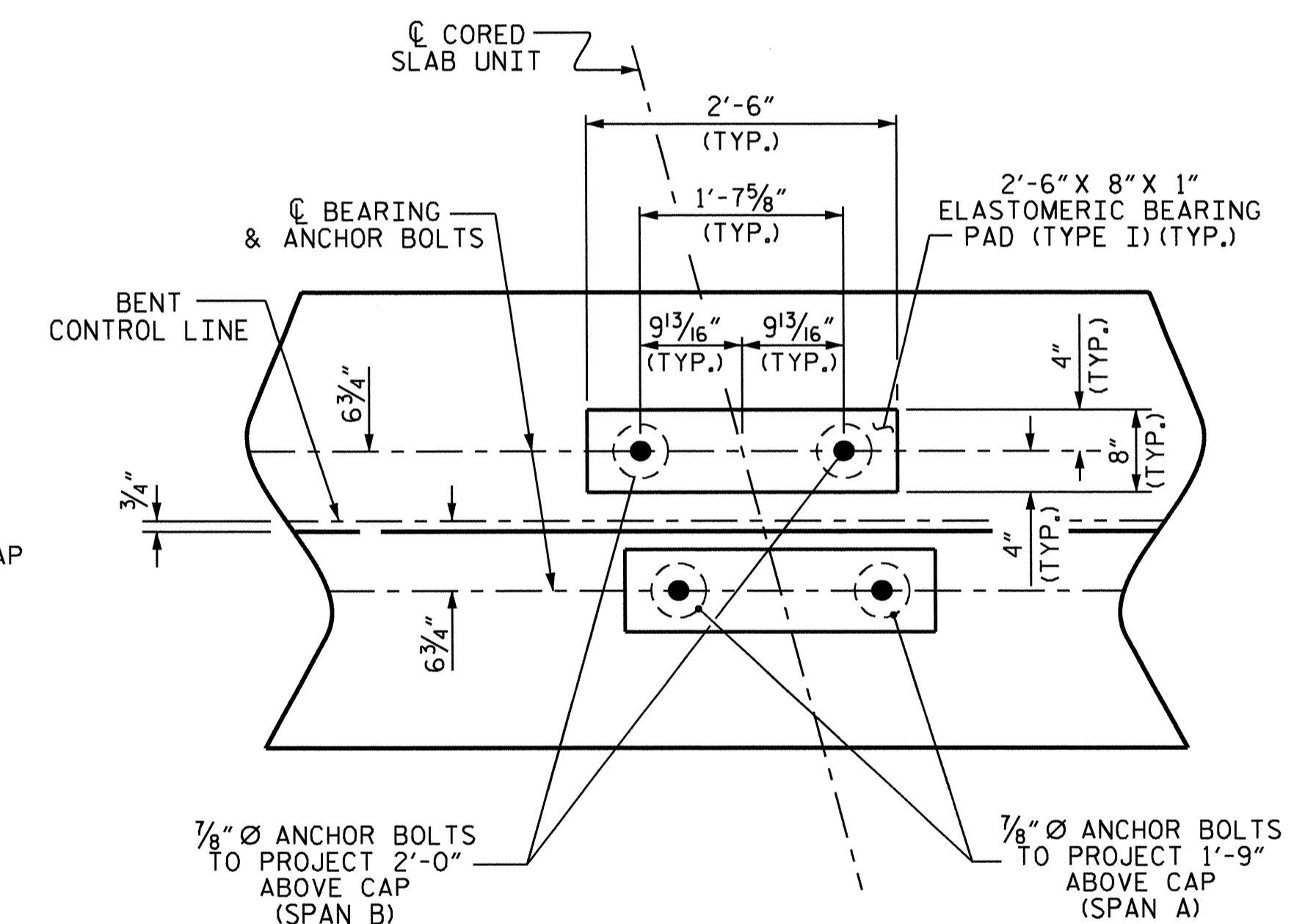


PLAN



ELEVATION

DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER UNLESS OTHERWISE NOTED.



DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

PROJECT NO. B-4757
GUILFORD COUNTY
 STATION: 14+25.04 -L-

SHEET 1 OF 2

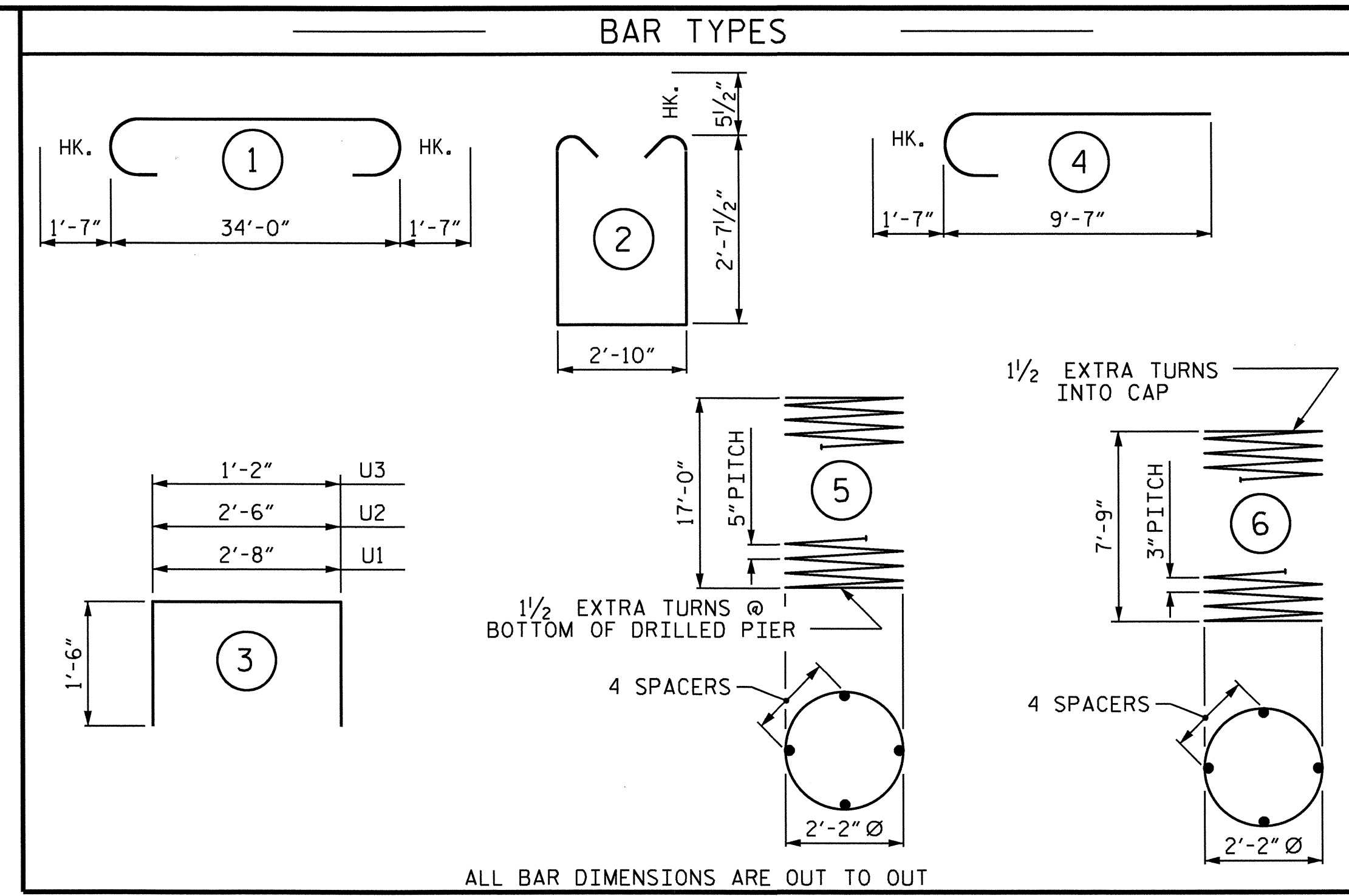
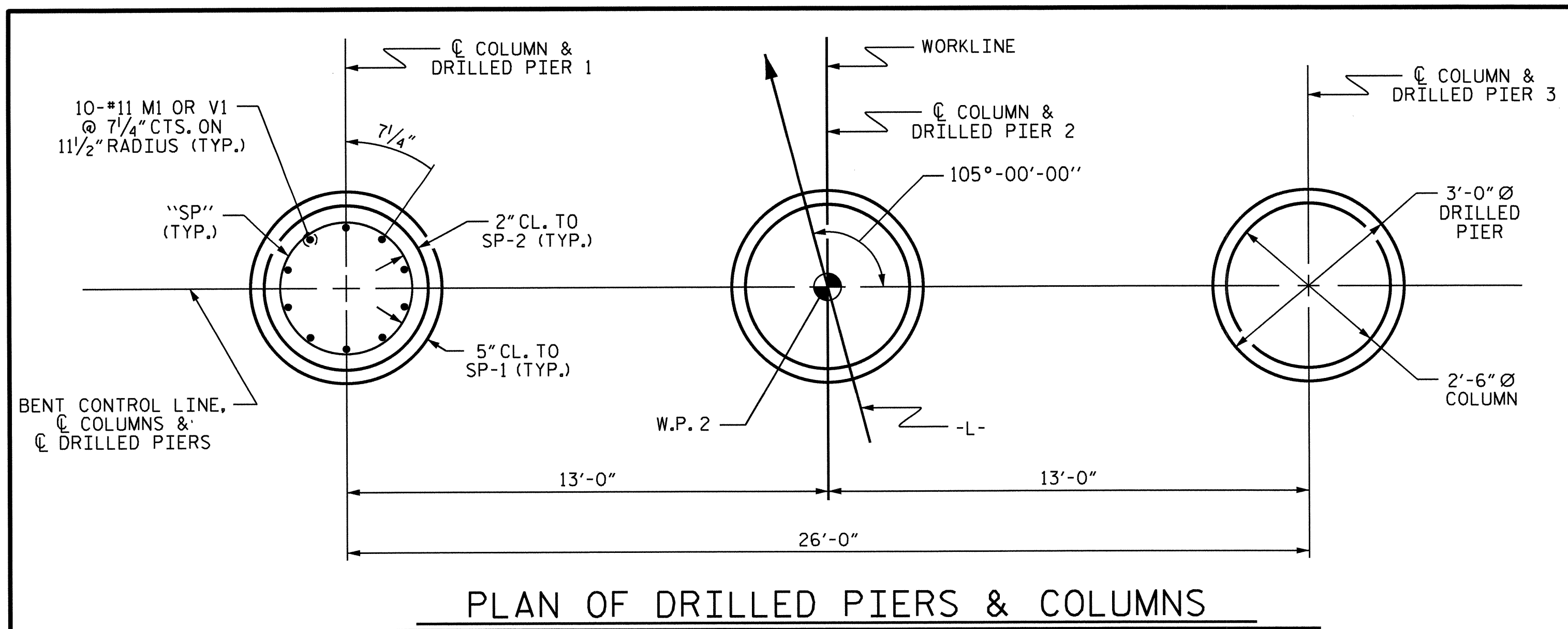
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 1

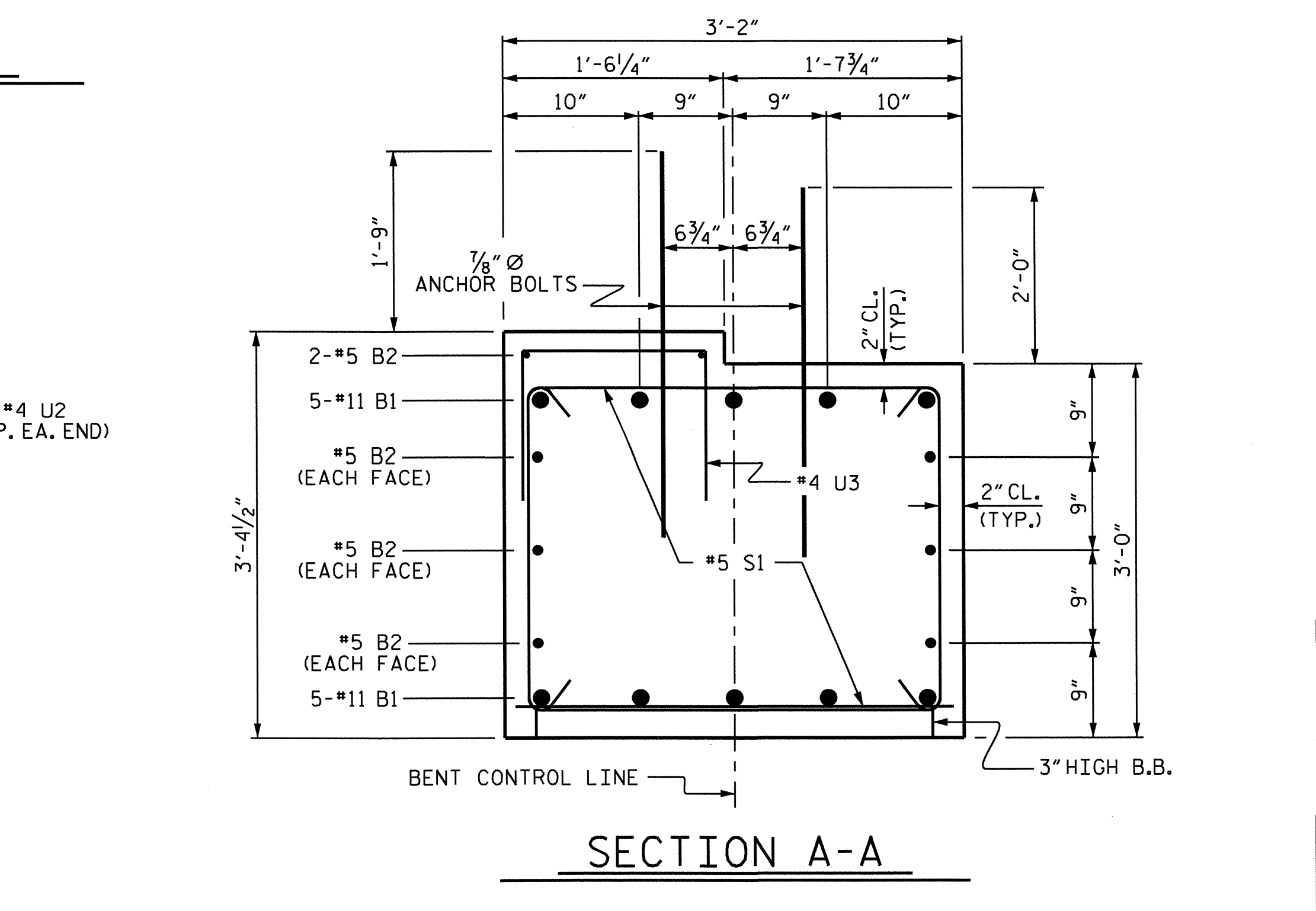
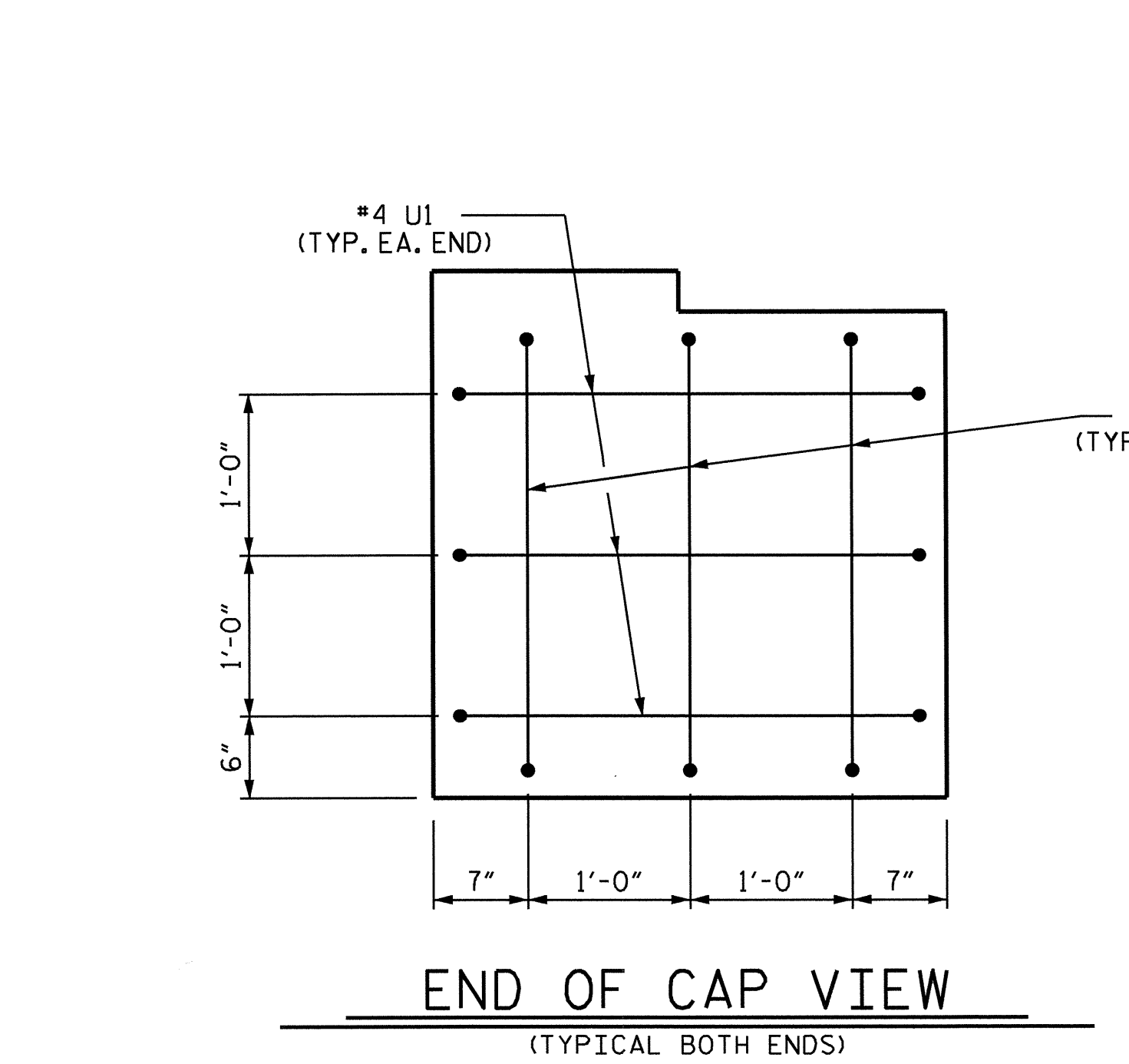
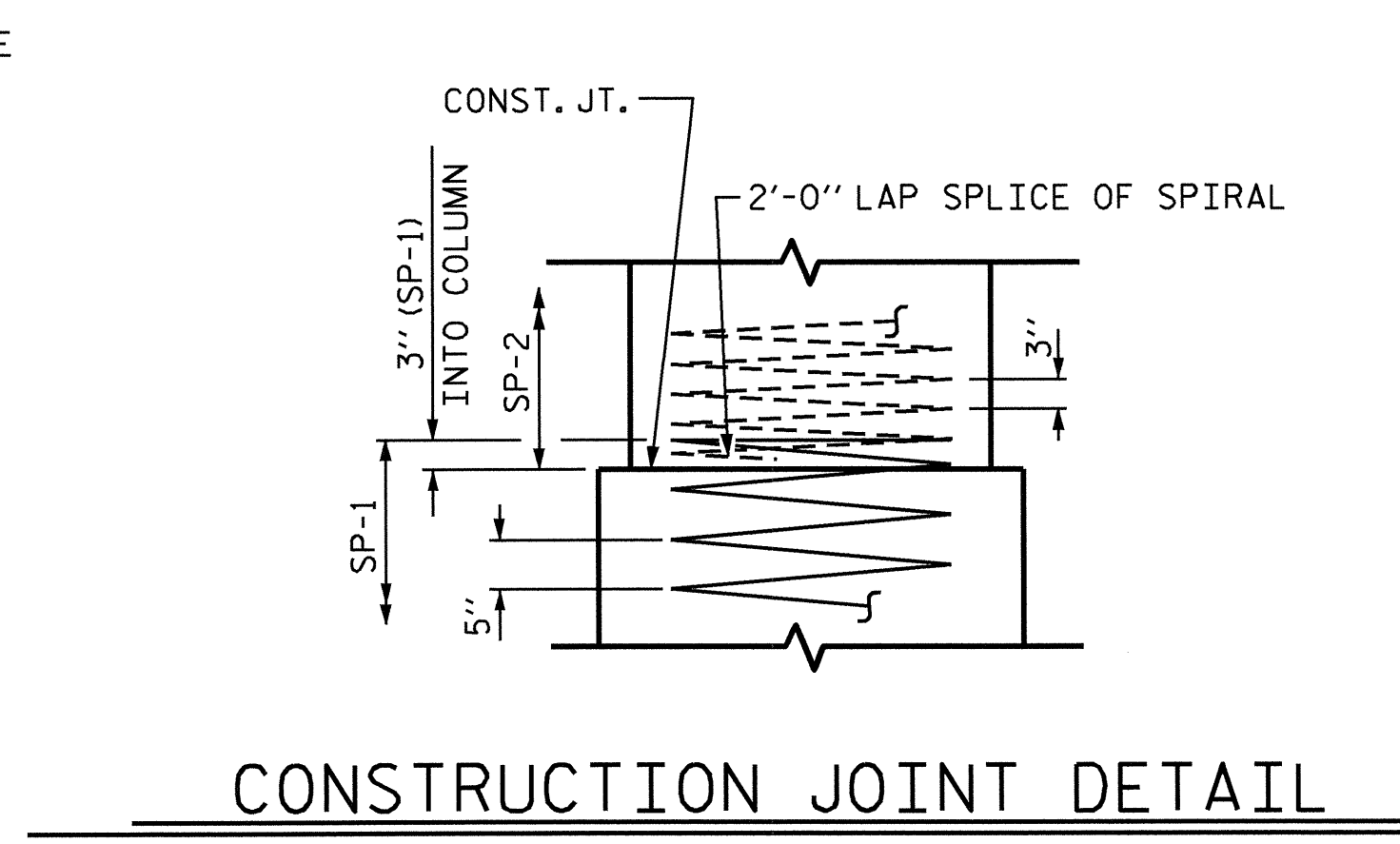
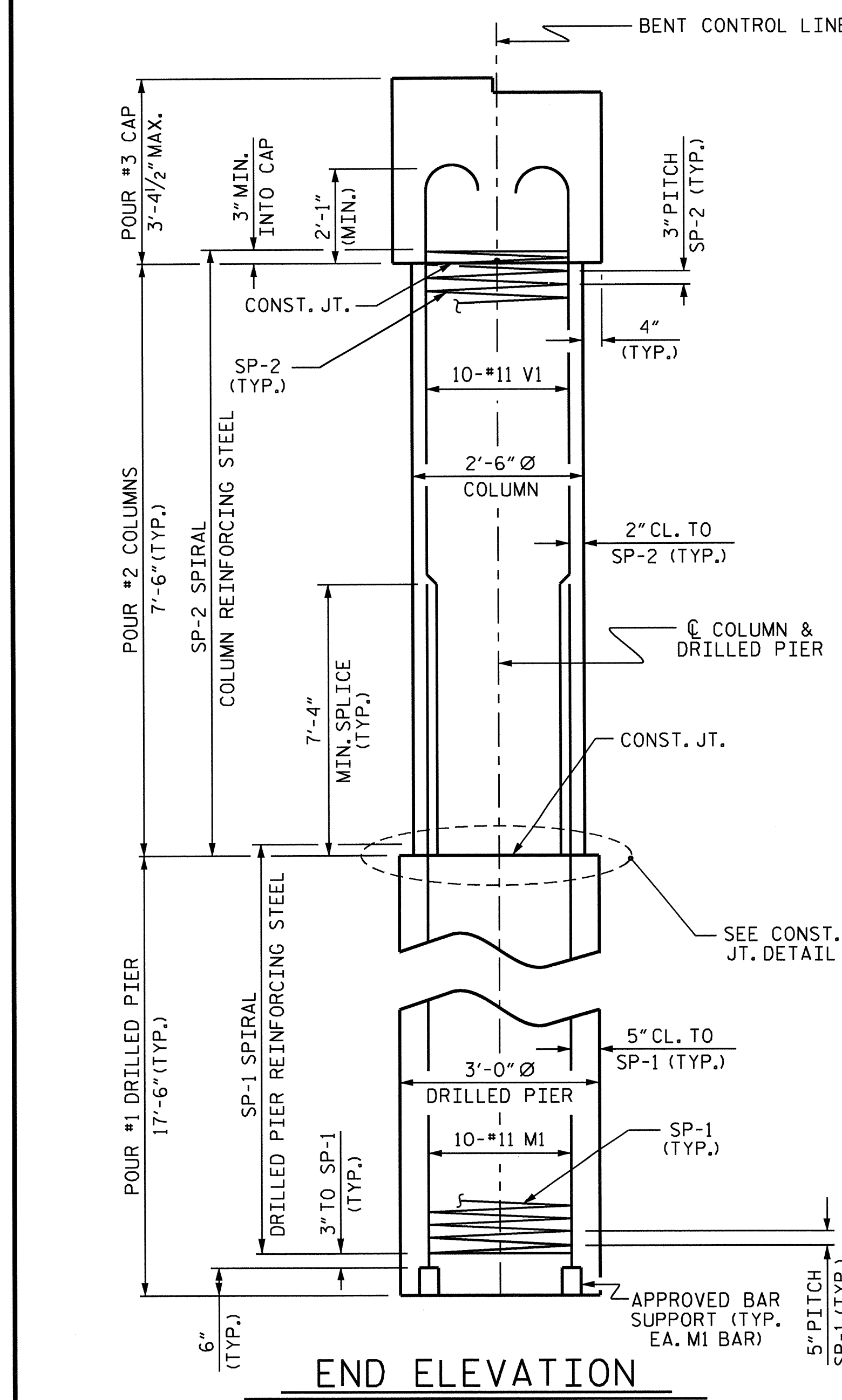


REVISIONS						SHEET NO. S-19
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			

ASSEMBLED BY :	A.C. OUTLAW	DATE :	6/5/12
CHECKED BY :	A. SORSENGINH	DATE :	11/2012
DRAWN BY :	DGE 04/10		
CHECKED BY :	MKT 04/10		



BILL OF MATERIAL					
BENT 1					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#11	1	37'-2"	1975
B2	8	#5	STR	34'-2"	285
M1	30	#11	STR	27'-7"	4397
S1	58	#5	2	9'-0"	544
U1	6	#4	3	5'-8"	23
U2	6	#4	3	5'-6"	22
U3	34	#4	3	4'-2"	95
V1	30	#11	4	11'-2"	1780
REINFORCING STEEL (FOR ONE BENT)					9121 LBS.
SP-1	3	*	5	282'-11"	885
SP-2	3	**	6	217'-2"	435
SPIRAL COLUMN REINFORCING STEEL (FOR ONE BENT)					1320 LBS.
* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					
** THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					



CLASS A CONCRETE BREAKDOWN	
POUR #2 (COLUMNS)	4.1 C.Y.
POUR #3 (CAP)	12.9 C.Y.
TOTAL CLASS A CONCRETE	17.0 C.Y.
DRILLED PIERS:	
DRILLED PIER CONCRETE POUR #1 (DRILLED PIERS)	13.7 C.Y.
3'-0" Ø DRILLED PIER NOT IN SOIL	13.50 LIN. FT.
3'-0" Ø DRILLED PIER IN SOIL	39.00 LIN. FT.
PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER	27.95 LIN. FT.
▲ CSL TUBES	228.00 LIN. FT.

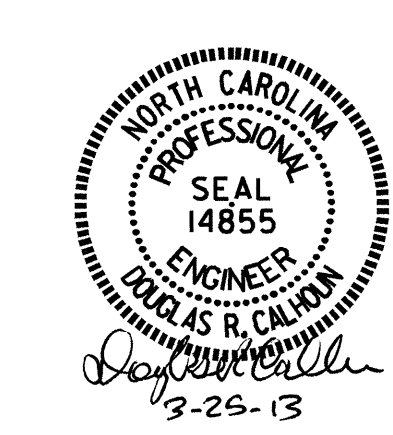
▲ NO SEPARATE PAYMENT WILL BE MADE FOR CSL TUBES. CSL TUBES WILL BE INCLUDED IN THE UNIT BID PRICE FOR DRILLED PIERS.

PROJECT NO. B-4757
 GUILFORD COUNTY
 STATION: 14+25.04 -L-

SHEET 2 OF 2

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

SHEET NO. S-20
 TOTAL SHEETS 22

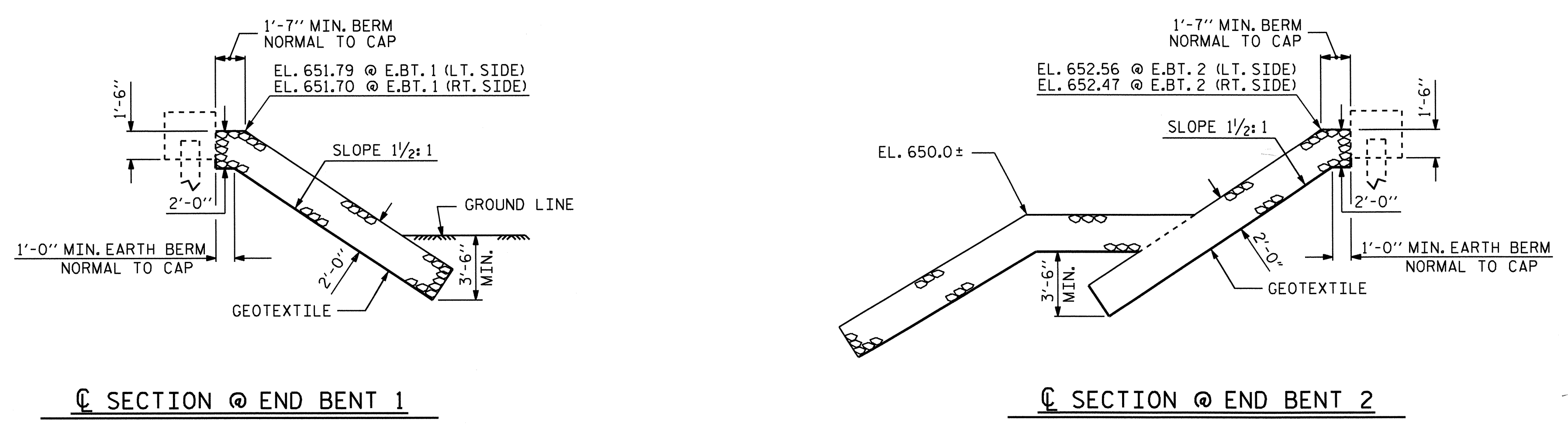
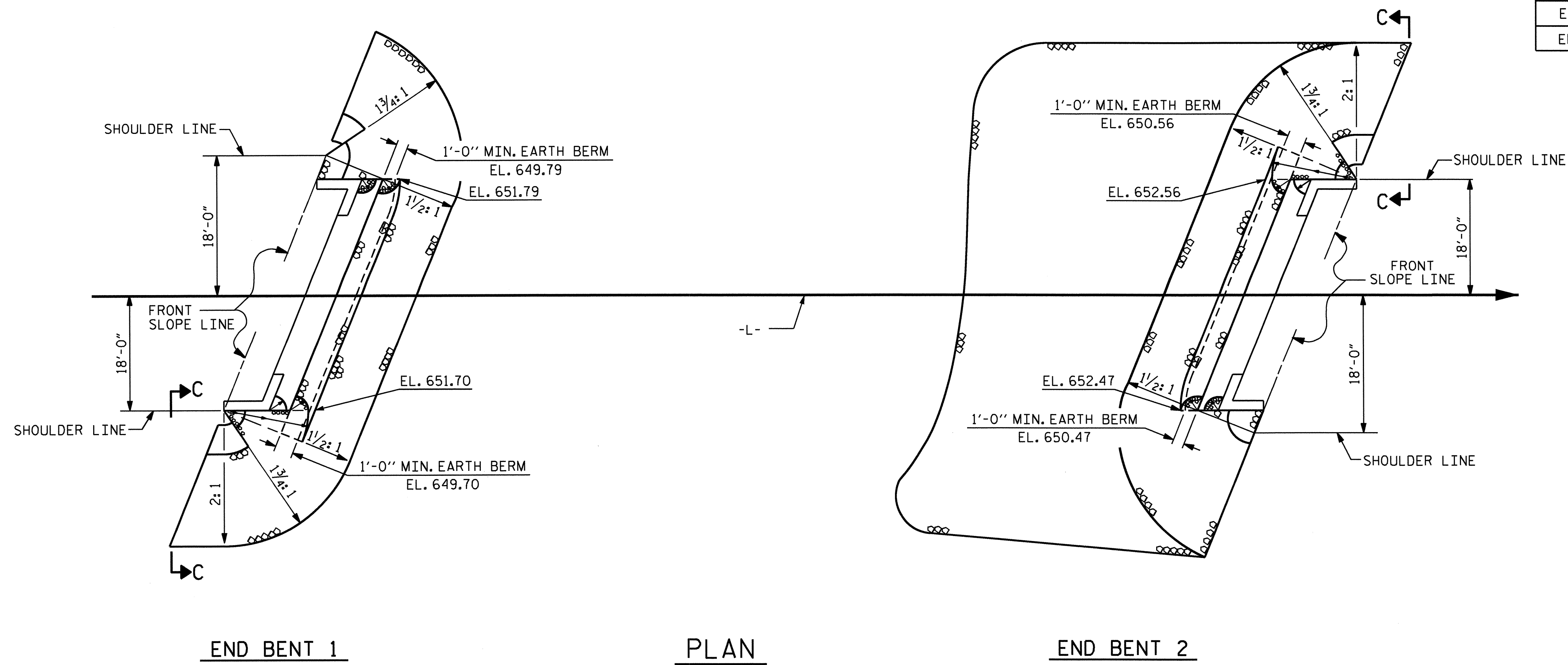


ASSEMBLED BY : A.C. OUTLAW DATE : 6/5/12
 CHECKED BY : A. SORSENGINH DATE : 11/2012
 DRAWN BY : DGE 03/10
 CHECKED BY : MKT 03/10

21-MAR-2013 09:07
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STD. NO. DP_BT_30_105S_<50'

ESTIMATED QUANTITIES		
BRIDGE @ STA. 14+25.04 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	40	45
END BENT 2	205	230

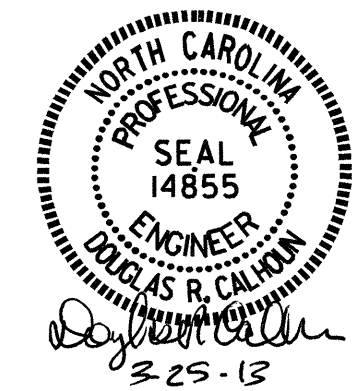


BERM RIP RAPPED

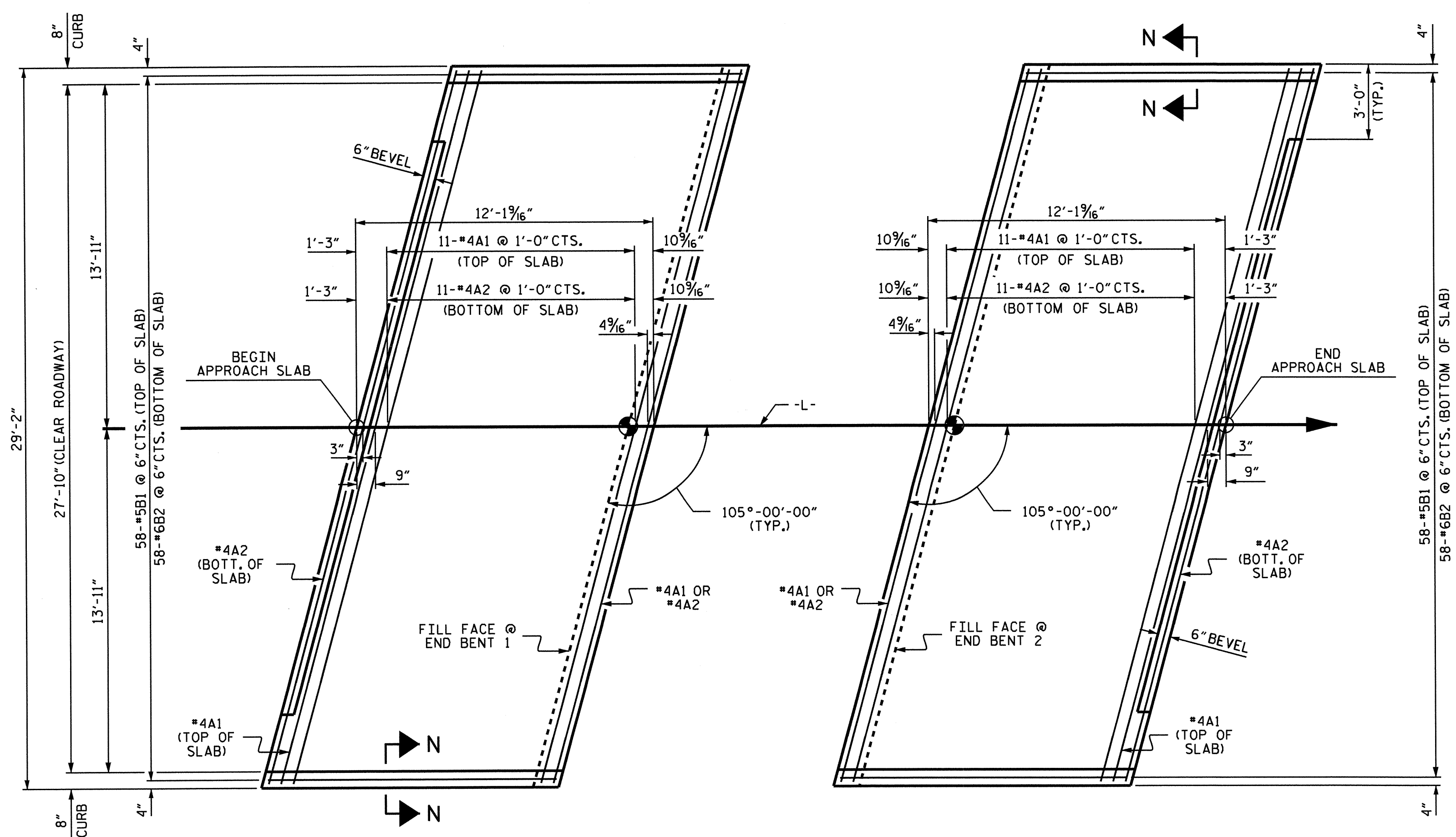
PROJECT NO. B-4757
GUILFORD COUNTY
 STATION: 14+25.04 -L-

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

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



ASSEMBLED BY : A. SORSENGIH DATE : 6/2012
 CHECKED BY : W.F. PARKER DATE : 7/2012
 DRAWN BY : REK 1/84 REV. 5/1/06R TLA/GM
 CHECKED BY : RDU 1/84 REV. 10/1/11 MAA/GM
 REV. 12/21/11 MAA/GM



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

NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 4" Ø DRAINAGE PIPE, AND #78M STONE BACKFILL, SEE ROADWAY PLANS.

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

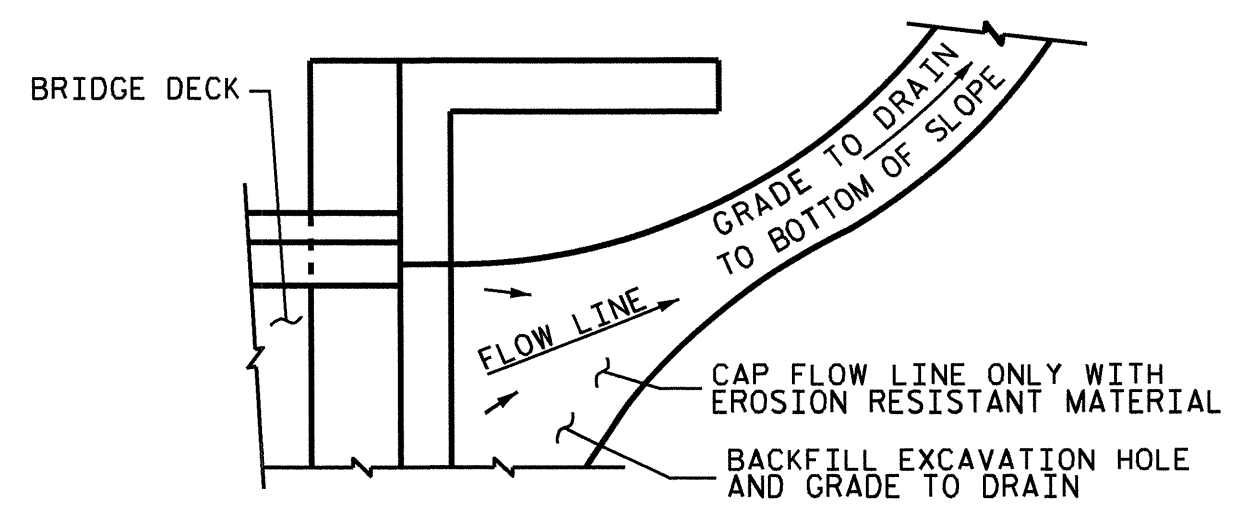
#78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

#78M STONE BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

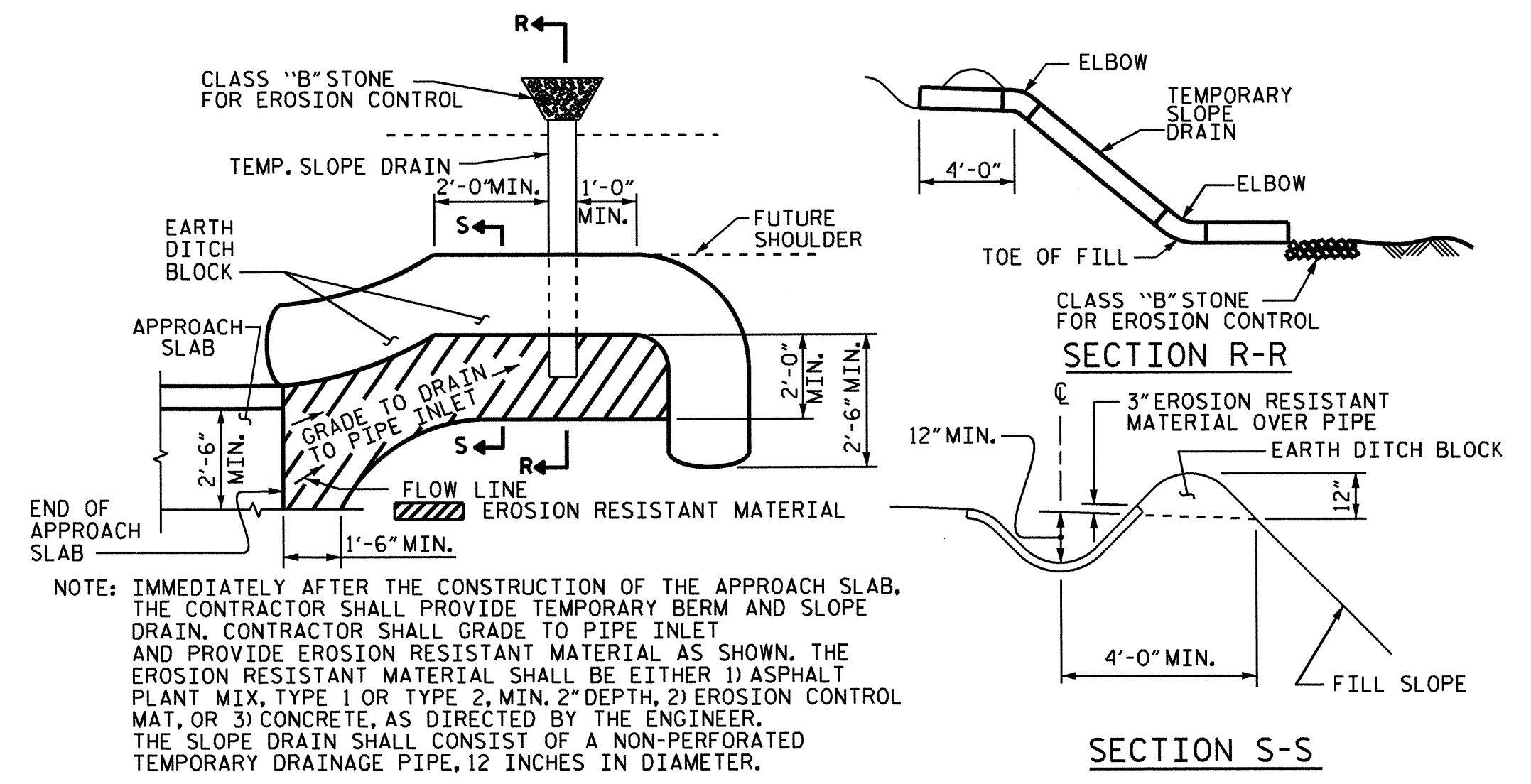
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



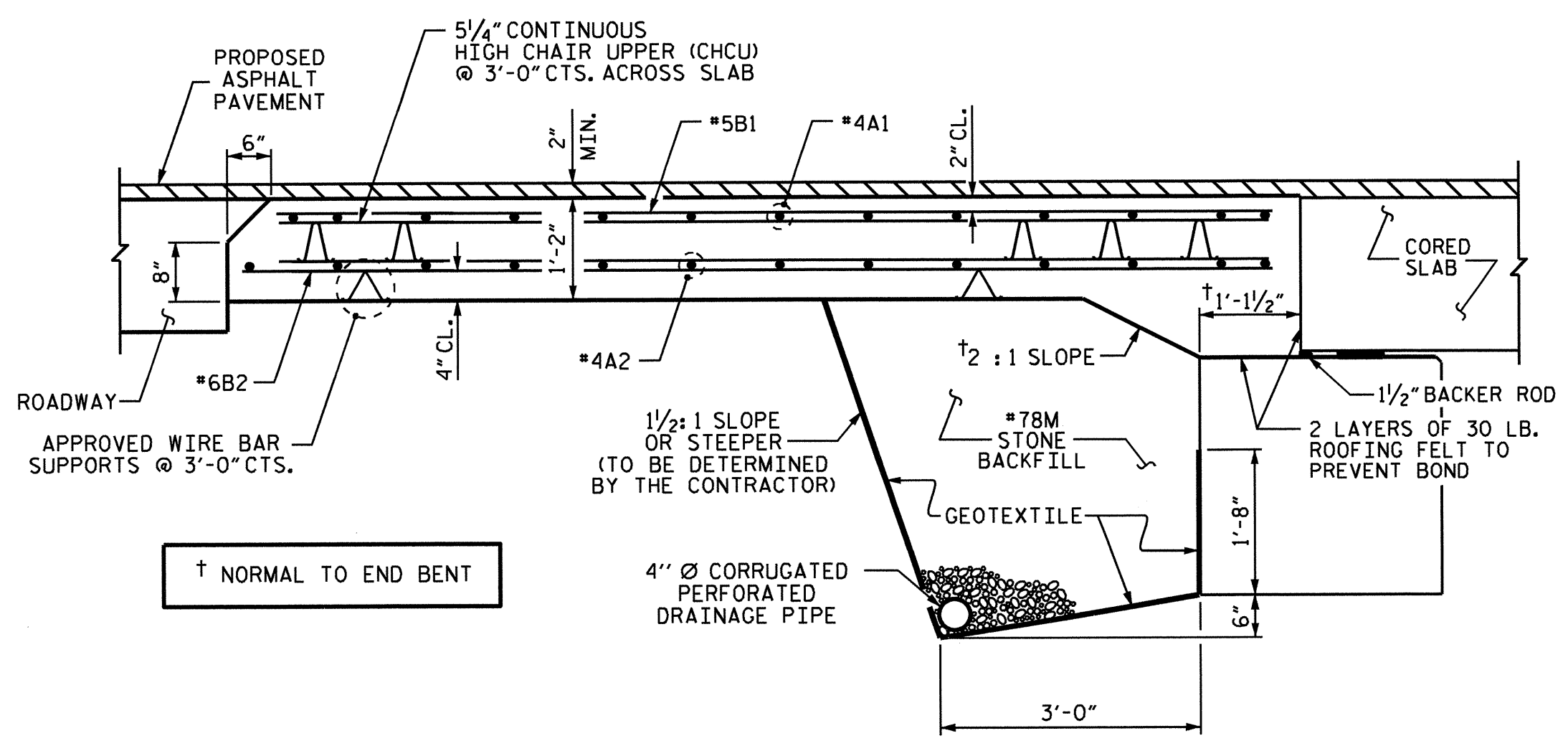
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

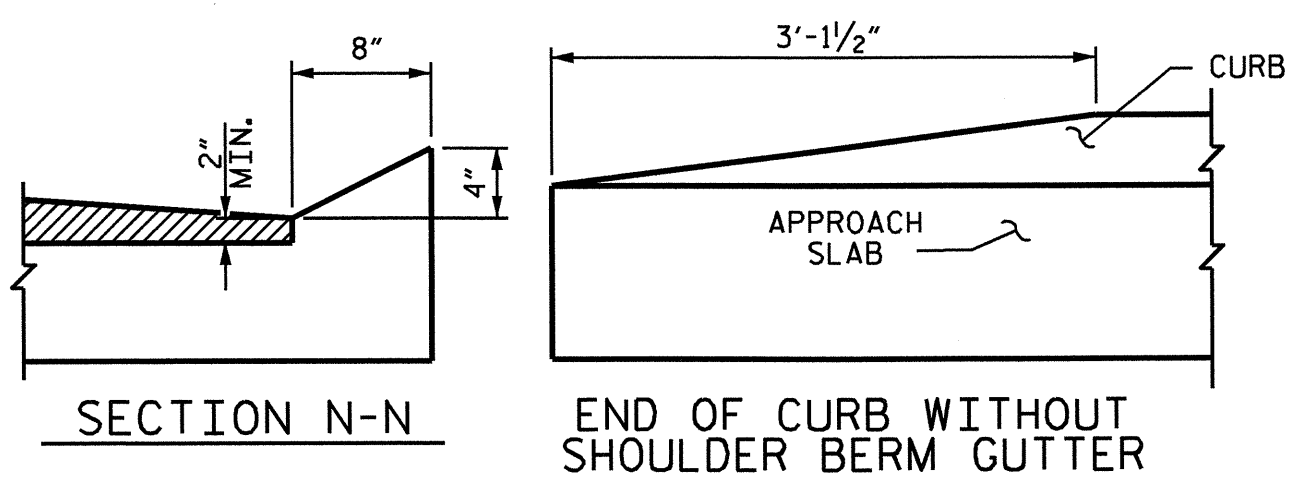


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 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.

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



SECTION THRU SLAB

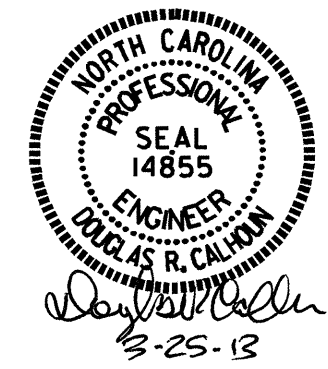


CURB DETAILS

SPlice LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"

BILL OF MATERIAL						
APPROACH SLAB AT EB 1						
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT		
*A1	13	#4	STR	29'-10"	259	
A2	13	#4	STR	29'-10"	259	
*B1	58	#5	STR	11'-1"	670	
B2	58	#6	STR	11'-7"	1009	
REINFORCING STEEL					LBS.	1268
*EPOXY COATED REINFORCING STEEL					LBS.	929
CLASS AA CONCRETE					C. Y.	16.9
APPROACH SLAB AT EB 2						
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT		
*A1	13	#4	STR	29'-10"	259	
A2	13	#4	STR	29'-10"	259	
*B1	58	#5	STR	11'-1"	670	
B2	58	#6	STR	11'-7"	1009	
REINFORCING STEEL					LBS.	1268
*EPOXY COATED REINFORCING STEEL					LBS.	929
CLASS AA CONCRETE					C. Y.	18.2

ASSEMBLED BY : A.C. OUTLAW DATE : 6/4/12
 CHECKED BY : A. SORSENGIN DATE : 11/2012
 DRAWN BY : SHS/MAA 5-09 REV. 12-11 MAA/AAC
 CHECKED BY : BCH 5-09



PROJECT NO. B-4757
GUILFORD COUNTY
 STATION: 14+25.04 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 CORED SLAB UNIT
 (SUB-REGIONAL TIER)
 105° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-22
1			3			TOTAL SHEETS 22
2			4			

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

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

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

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.
ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.
IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.
DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.
WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".
EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.
WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.
METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990