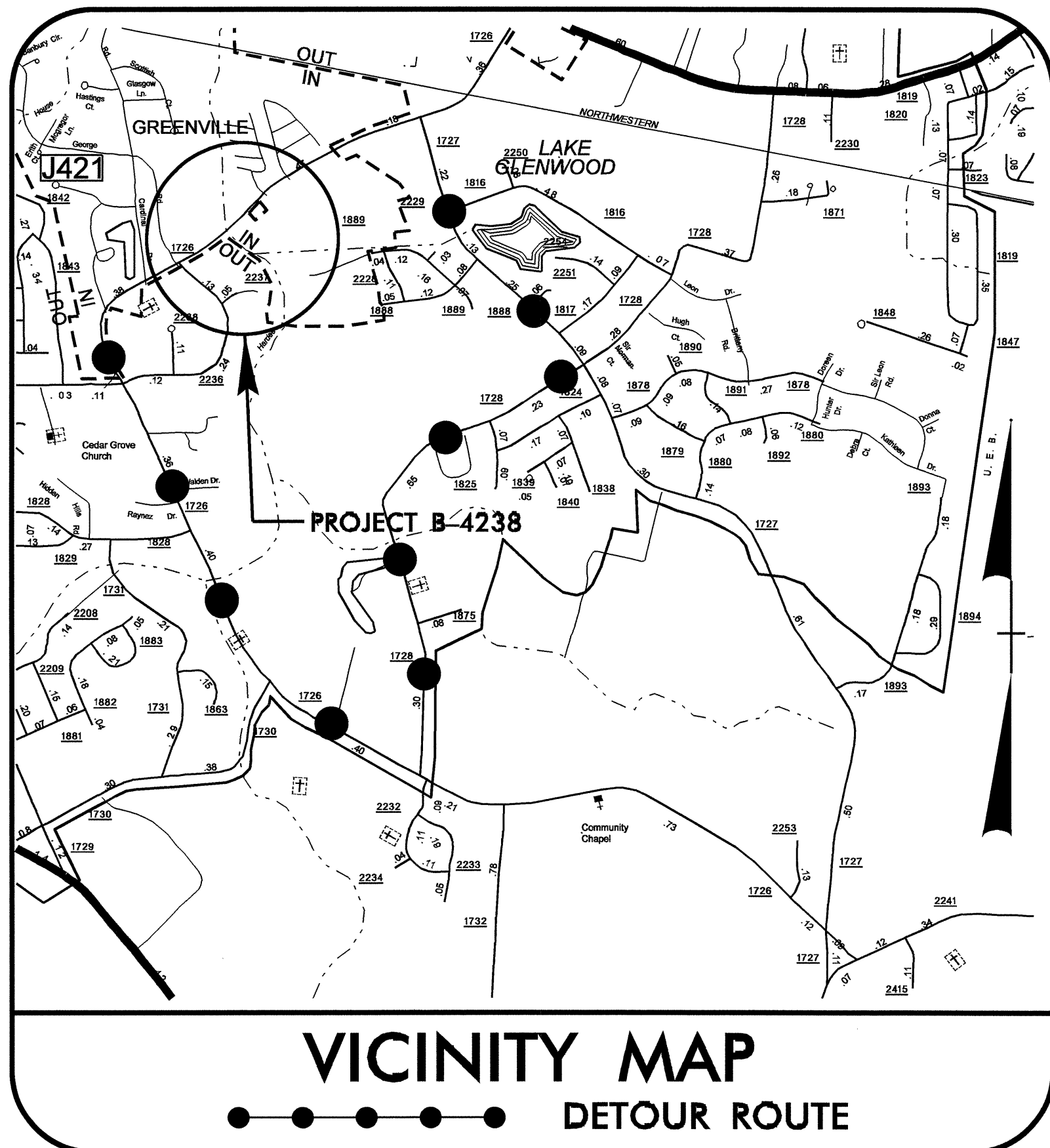


CONTRACT: C202375 TIP PROJECT: B-4238



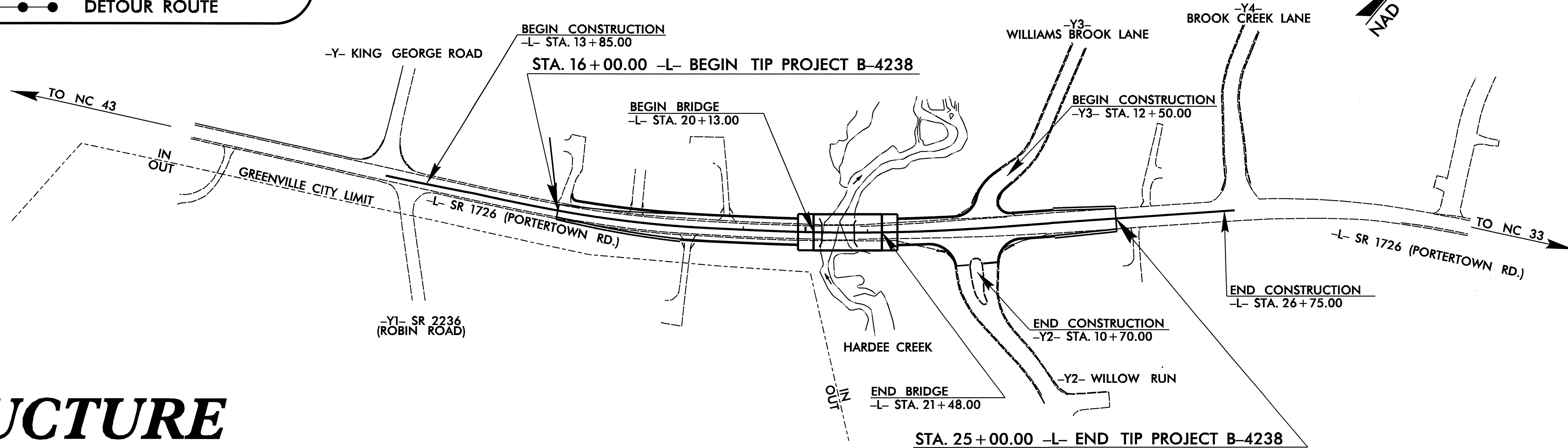
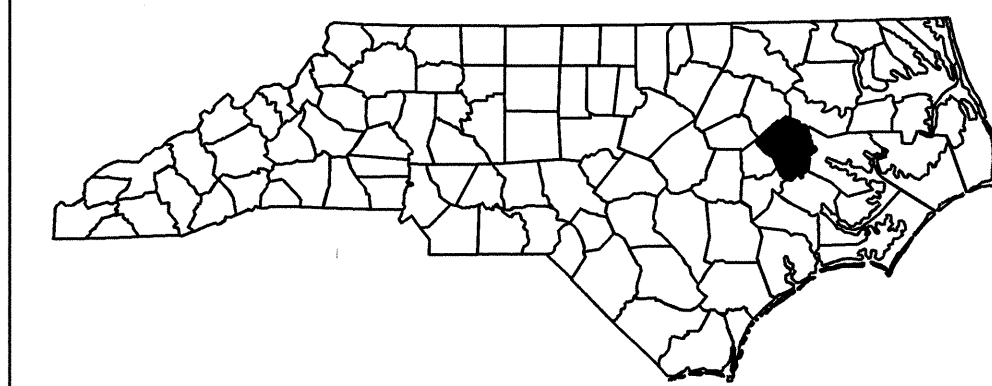
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PITT COUNTY

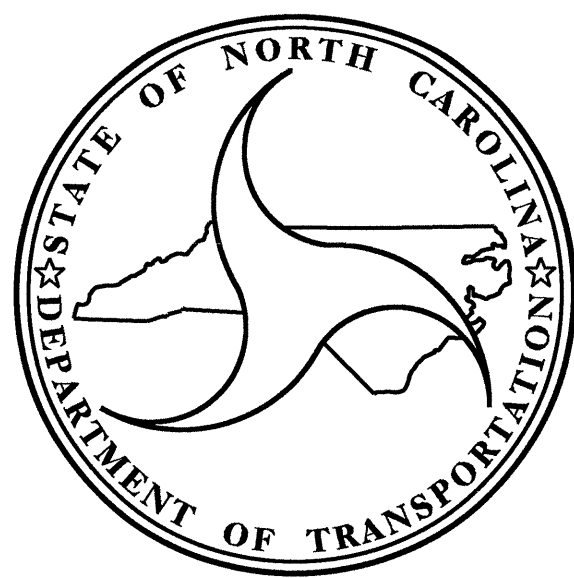
**LOCATION: BRIDGE NO. 219 OVER HARDEE CREEK ON SR 1726
(PORTERTOWN ROAD) IN GREENVILLE**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, CURB & GUTTER,
STRUCTURE, AND TEMPORARY SIGNAL**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4238		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33581.1.1	BSTP-1726(1)	PE	
33581.2.1	BSTP-1726(1)	R/W & UTIL.	
33581.3.1	BSTP-1726(1)	CONST.	



STRUCTURE



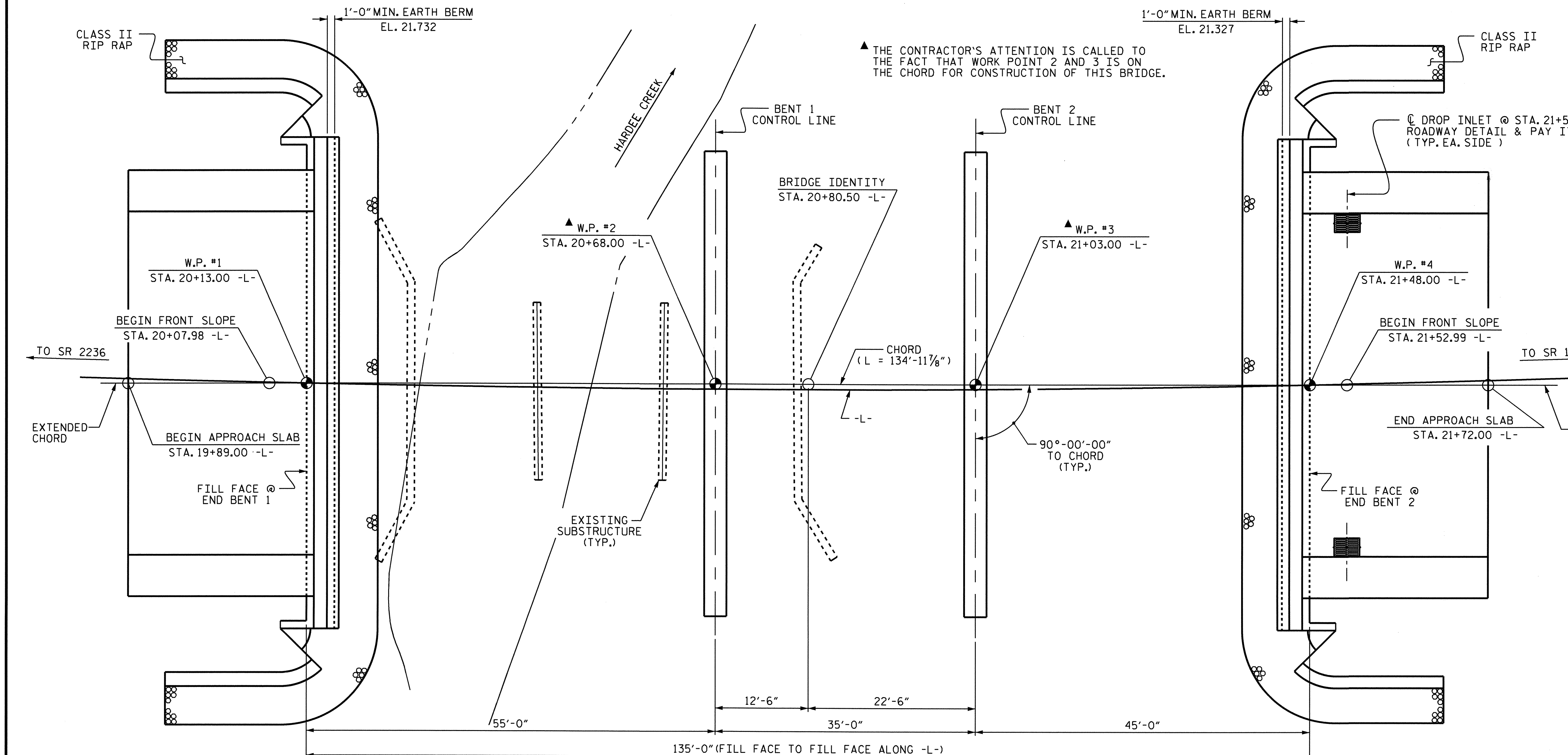
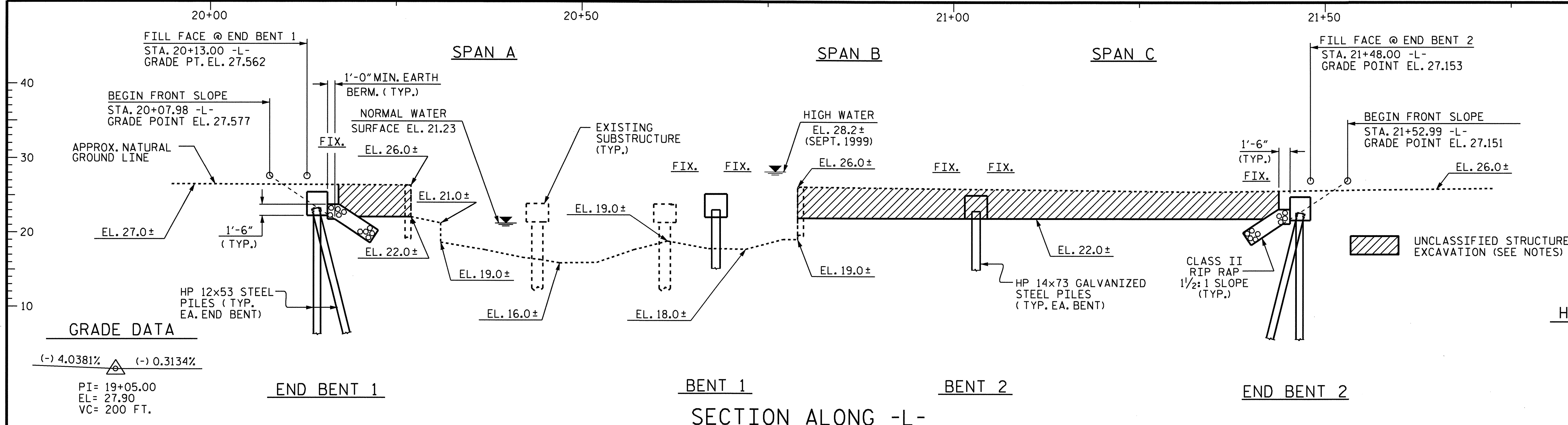
DESIGN DATA	
ADT 2010	= 10,580
ADT 2025	= 15,600
DHV	= 10 %
D	= 60 %
T	= 5 % *
V	= 40 MPH
* TTST 2% DUAL 3%	
FUNC. CLASS = URBAN COLLECTOR	

PROJECT LENGTH	
LENGTH OF ROADWAY TIP PROJECT B-4238	= 0.145 MI.
LENGTH OF STRUCTURE TIP PROJECT B-4238	= 0.026 MI.
TOTAL LENGTH OF TIP PROJECT B-4238	= 0.171 MI.

Prepared In the Office of: DIVISION OF HIGHWAYS 1000 BIRCH RIDGE DR. RALEIGH, NC 27610	
2006 STANDARD SPECIFICATIONS	
LETTING DATE: APRIL 20, 2010	N. N. BULLOCK, PE PROJECT ENGINEER
	D. R. CALHOUN, PE PROJECT DESIGN ENGINEER

STRUCTURE DESIGN UNIT	
	P.E.
	STATE DESIGN ENGINEER
	DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
APPROVED DIVISION ADMINISTRATOR	DATE

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA	
	P.E.
	STATE DESIGN ENGINEER
	DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
APPROVED DIVISION ADMINISTRATOR	DATE



DRAWN BY : J.L. WALTON DATE : 4-08
 CHECKED BY : D.R. CALHOUN DATE : 6-08

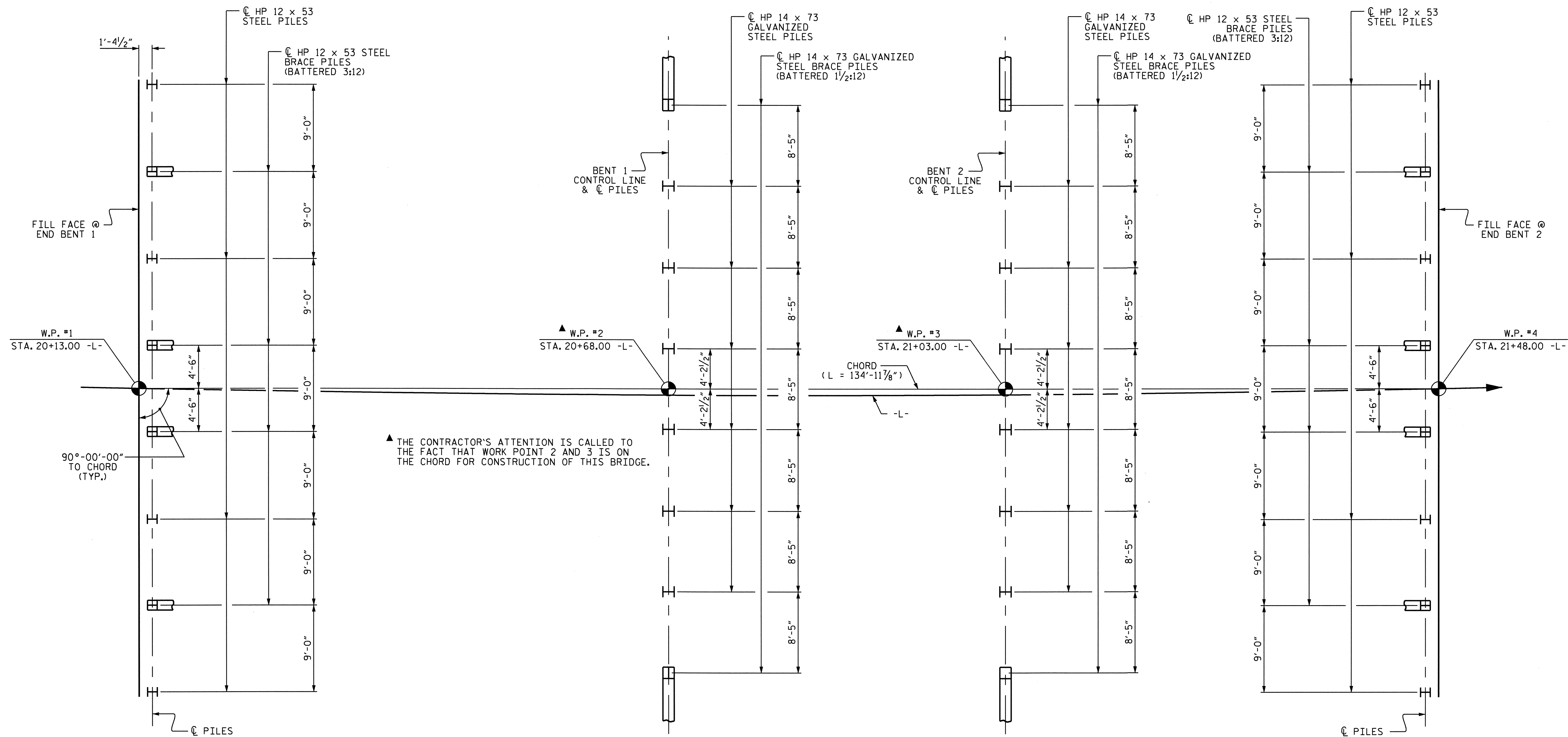
PLAN
 (PILES ARE NOT SHOWN FOR CLARITY)

PROJECT NO. B-4238
 PITT COUNTY
 STATION: 20+80.50 -L-
 SHEET 1 OF 3 REPLACES BRIDGE NO. 219

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE ON SR 1726
 OVER HARDEE CREEK
 BETWEEN SR 2236 AND SR 1727

REVISIONS						SHEET NO. S-1
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 27
2			4			



FOUNDATION LAYOUT

(DIMENSIONS LOCATING PILES ARE SHOWN TO THE CENTERLINE OF PILES)

FOUNDATION NOTES:

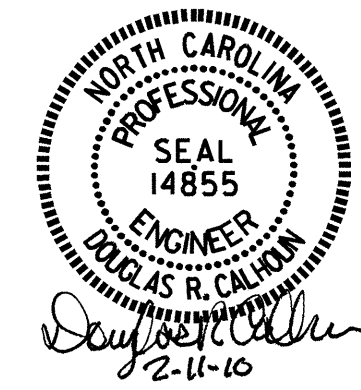
- FOR PILES, SEE SPECIAL PROVISIONS.
- PILES AT END BENT 1 AND END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.
- PILES AT BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 165 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 295 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAW OR SCOUR.
- PILES AT BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 155 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 255 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAW OR SCOUR.
- INSTALL PILES AT BENT 1 & BENT 2 TO A TIP ELEVATION NO HIGHER THAN -10.0 FT.
- SCOUR CRITICAL ELEVATION FOR BENT 1 IS ELEVATION 4.0 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
- SCOUR CRITICAL ELEVATION FOR BENT 2 IS ELEVATION 11.0 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40-60 FT.-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT 1 AND END BENT 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH THE PILES PROVISION.
- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 55-95 FT.-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT 1 AND BENT 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH THE PILES PROVISION.

PROJECT NO. B-4238
PITT COUNTY
 STATION: 20+80.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

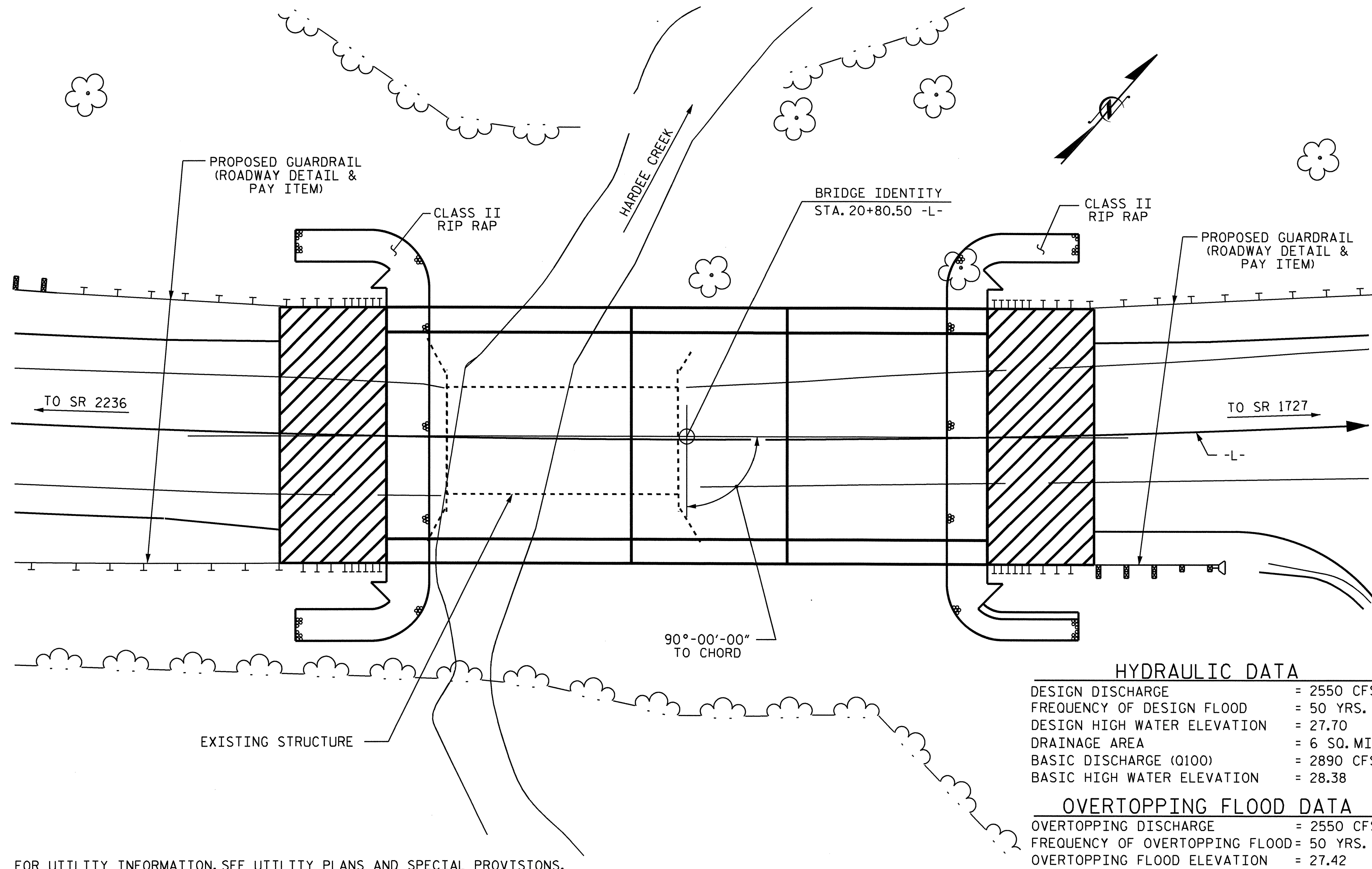
GENERAL DRAWING
 FOR BRIDGE ON SR 1726
 OVER HARDEE CREEK
 BETWEEN SR 2236 AND SR 1727



DRAWN BY : B.N. GRADY DATE : 12/18/09
 CHECKED BY : E.G. ALLEN DATE : 1/12/09

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			27

B.M. #1 : BRIDGE SPIKE SET IN 24" HARDWOOD 140.65' RIGHT OF STA. 20+22.11 -L-, ELEV. 25.83



HYDRAULIC DATA

DESIGN DISCHARGE	= 2550 CFS
FREQUENCY OF DESIGN FLOOD	= 50 YRS.
DESIGN HIGH WATER ELEVATION	= 27.70
DRAINAGE AREA	= 6 SQ. MI.
BASIC DISCHARGE (Q100)	= 2890 CFS
BASIC HIGH WATER ELEVATION	= 28.38

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 2550 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 50 YRS.
OVERTOPPING FLOOD ELEVATION	= 27.42

LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

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 THREE (2 @ 17'-7", 1 @ 17'-1") REINFORCED CONCRETE DECK SPANS ON TIMBER JOISTS WITH A CLEAR ROADWAY WIDTH OF 24'-0" ON TIMBER CAP AND TIMBER PILE END BENTS AND BENTS AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED.
- 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 35 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.
- 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", MAY, 2001.
- 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.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR CURING CONCRETE, SEE SPECIAL PROVISIONS.
- THIS BRIDGE SHALL BE CONSTRUCTED USING TOP-DOWN CONSTRUCTION METHODS FOR SPANS B AND C ONLY. THE USE OF A TEMPORARY CAUSEWAY OR WORK BRIDGE IS NOT PERMITTED.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS AA CONCRETE	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL	HP 12 X 53 STEEL PILES	▲ HP 14 X 73 GALVANIZED STEEL PILES	PILE REDRIVES	THREE BAR METAL RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS				
	LUMP SUM	LUMP SUM	CU. YDS.	CU. YDS.	LUMP SUM	LBS.	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN. FT.	
SUPERSTRUCTURE			63.5		LUMP SUM		1475					250.50			LUMP SUM	60	2650.00		
END BENT 1		LUMP SUM		23.0		3575		8	480			4		106	117				
BENT 1				19.7		3968				8	440	4							
BENT 2				19.6		3968				8	480	4							
END BENT 2		LUMP SUM		23.0		3575		8	440			4		95	105				
TOTAL	LUMP SUM	LUMP SUM	63.5	85.3	LUMP SUM	15,086	1475	16	920	16	920	16	250.50	201	222	LUMP SUM	60	2650.00	

▲ FOR INTERIOR BENTS 1 AND 2, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENTS FOR DETAILS.

PROJECT NO. B-4238
PITT COUNTY
 STATION: 20+80.50 -L-
 SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 FOR BRIDGE ON SR 1726
 OVER HARDEE CREEK
 BETWEEN SR 2236 AND SR 1727



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS 27
2			4			

DRAWN BY : J.L. WALTON DATE : 4-08
 CHECKED BY : D.R. CALHOUN DATE : 6-08

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

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVE-LOAD FACTORS (γ _{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS (γ _{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	1	1.14	--	1.75	0.281	1.45	A	ER	26.406	0.518	1.14	A	ER	2.641	0.80	0.281	1.18	A	ER	26.406		
	HL-93 (OPERATING)	N/A		1.48	--	1.35	0.281	1.88	A	ER	26.406	0.518	1.48	A	ER	2.641	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	2	1.31	47.160	1.75	0.281	1.84	A	ER	26.406	0.554	1.31	B	ER	1.694	0.80	0.281	1.54	A	ER	26.406		
	HS-20 (OPERATING)	36.000		1.74	62.640	1.35	0.281	2.46	A	ER	26.406	0.554	1.74	B	ER	1.694	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.05	41.175	1.40	0.281	4.16	B	ER	16.938	0.554	3.05	B	ER	1.694	0.80	0.281	3.21	A	ER	26.406	
		SNGARBS2	20.000		2.30	46.000	1.40	0.281	3.40	A	ER	26.406	0.554	2.30	B	ER	1.694	0.80	0.281	2.50	A	ER	26.406	
		SNAGRIS2	22.000		2.20	48.400	1.40	0.281	3.28	A	ER	31.688	0.554	2.20	B	ER	1.694	0.80	0.281	2.43	A	ER	26.406	
		SNCOTTS3	27.250		1.53	41.693	1.40	0.281	2.08	B	ER	16.938	0.554	1.53	B	ER	1.694	0.80	0.281	1.60	A	ER	26.406	
		SNAGGRS4	34.925		1.37	47.847	1.40	0.281	1.87	A	ER	26.406	0.554	1.37	B	ER	1.694	0.80	0.281	1.38	A	ER	26.406	
		SNS5A	35.550		1.35	47.993	1.40	0.281	1.83	A	ER	26.406	0.554	1.45	B	ER	1.694	0.80	0.281	1.35	A	ER	26.406	
		SNS6A	39.950		1.25	49.938	1.40	0.281	1.70	A	ER	26.406	0.554	1.36	B	ER	1.694	0.80	0.281	1.25	A	ER	26.406	
		SNS7B	42.000		1.20	50.400	1.40	0.281	1.62	A	ER	26.406	0.554	1.39	B	ER	1.694	0.80	0.281	1.20	A	ER	26.406	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.54	50.820	1.40	0.281	2.08	A	ER	26.406	0.554	1.59	B	ER	1.694	0.80	0.281	1.54	A	ER	26.406	
		TNT4A	33.075		1.50	49.613	1.40	0.281	2.10	A	ER	26.406	0.554	1.50	B	ER	1.694	0.80	0.281	1.55	A	ER	26.406	
		TNT6A	41.600		1.29	53.664	1.40	0.281	1.74	A	ER	26.406	0.554	1.47	B	ER	1.694	0.80	0.281	1.29	A	ER	26.406	
		TNT7A	42.000		1.30	54.600	1.40	0.281	1.76	A	ER	26.406	0.554	1.37	B	ER	1.694	0.80	0.281	1.30	A	ER	26.406	
		TNT7B	42.000		1.33	55.860	1.40	0.281	1.84	A	ER	26.406	0.554	1.33	B	ER	1.694	0.80	0.281	1.35	A	ER	26.406	
		TNAGRIT4	43.000		1.27	54.610	1.40	0.281	1.74	A	ER	26.406	0.554	1.27	B	ER	1.694	0.80	0.281	1.29	A	ER	26.406	
TNAGT5A	45.000		1.20	54.000	1.40	0.281	1.63	A	ER	26.406	0.518	1.33	A	ER	2.641	0.80	0.281	1.20	A	ER	26.406			
TNAGT5B	45.000		3	1.18	53.100	1.40	0.281	1.60	A	ER	26.406	0.554	1.20	B	ER	1.694	0.80	0.281	1.18	A	ER	26.406		

LOAD FACTORS:

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

	YEAR	ADTT
CURRENT	2010	317
FUTURE	2025	468

NOTES:

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

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

COMMENTS:

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

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

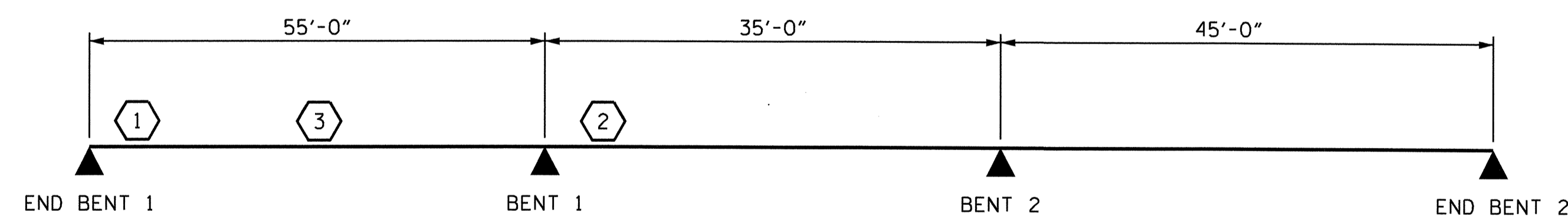
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

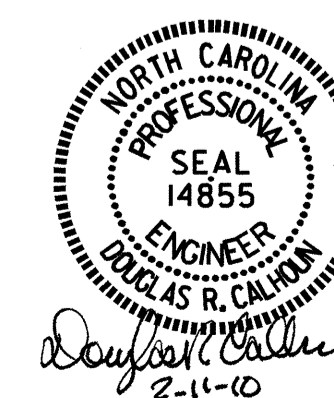
I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER



LRFR SUMMARY

PROJECT NO. B-4238
PITT COUNTY
 STATION: 20+80.50 -L-

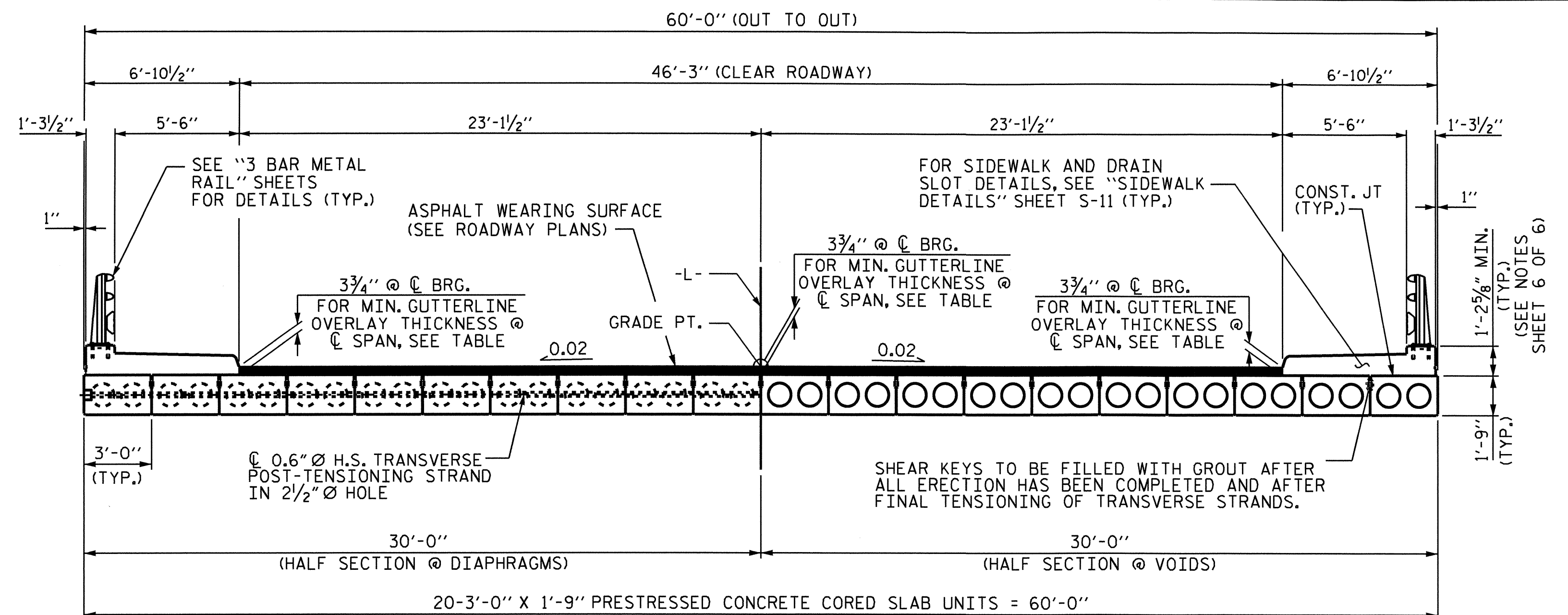
ASSEMBLED BY : J.L. WALTON DATE : 9/8/09
 CHECKED BY : W.A. ARAFAT DATE : 9/10/09
 DRAWN BY : MAA 1/08 REV. 11/27/08RR MAA/GM
 CHECKED BY : GM/DI 2/08



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

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

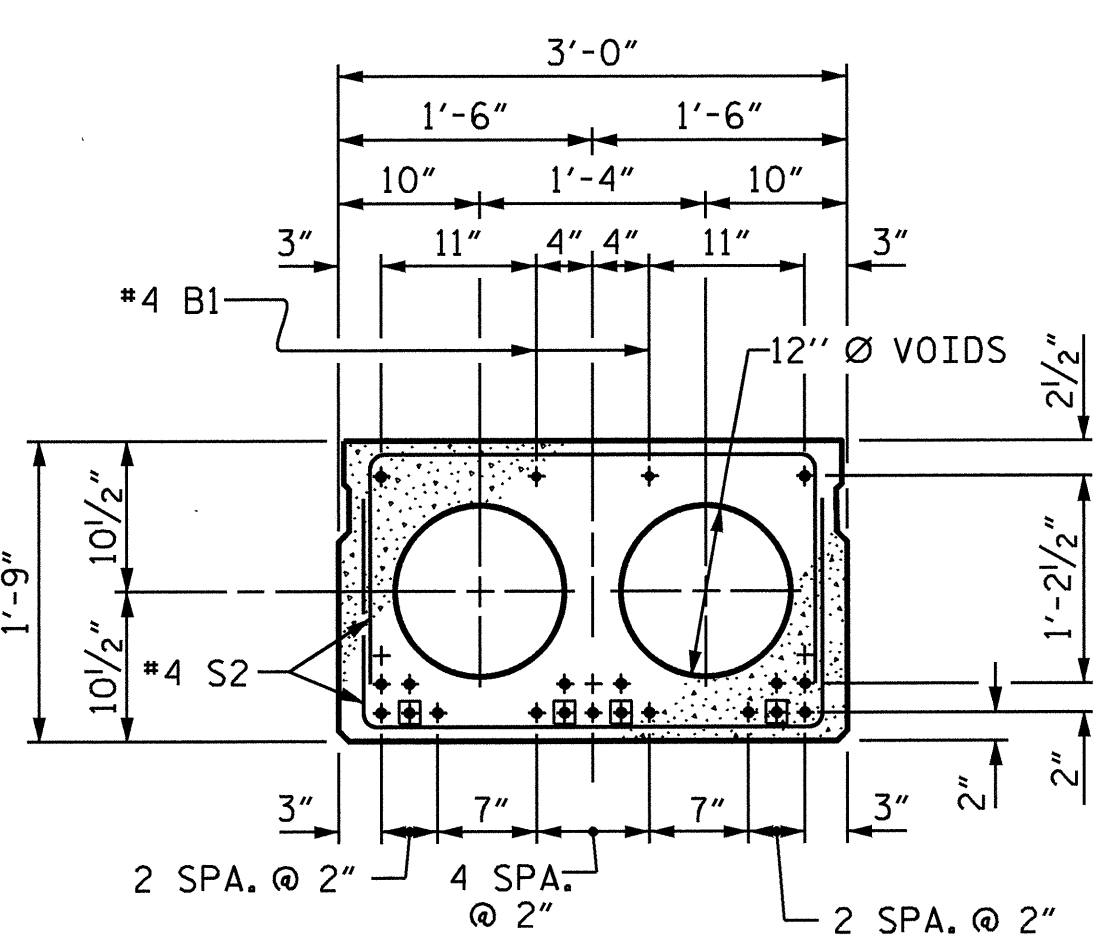
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			27



TYPICAL SECTION

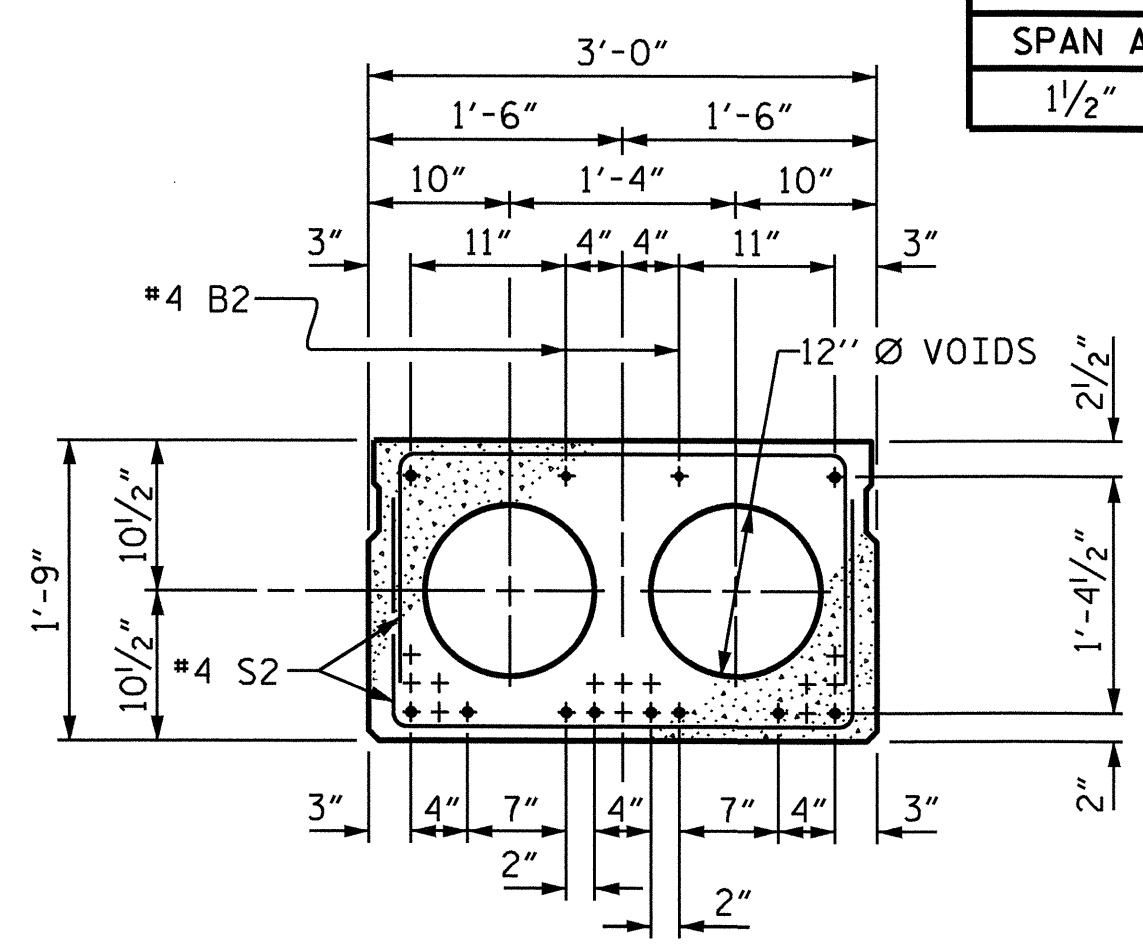
MIN. OVERLAY THICKNESS @ C SPAN

SPAN A	SPAN B	SPAN C
1 1/2"	3/4"	2 3/8"



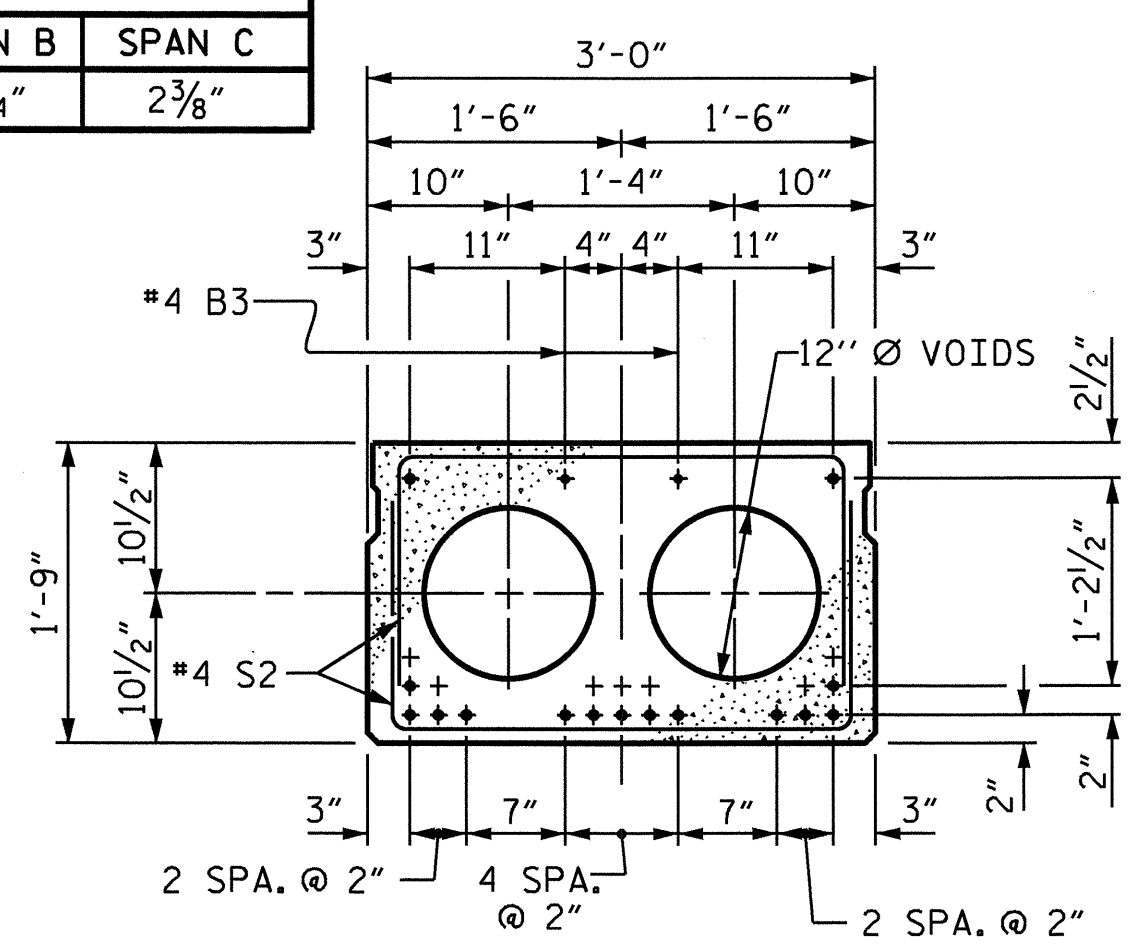
INTERIOR SLAB SECTION
0.6" Ø LOW RELAXATION STRAND LAYOUT
(19 STRANDS, 4 SHEATHED)

SPAN A



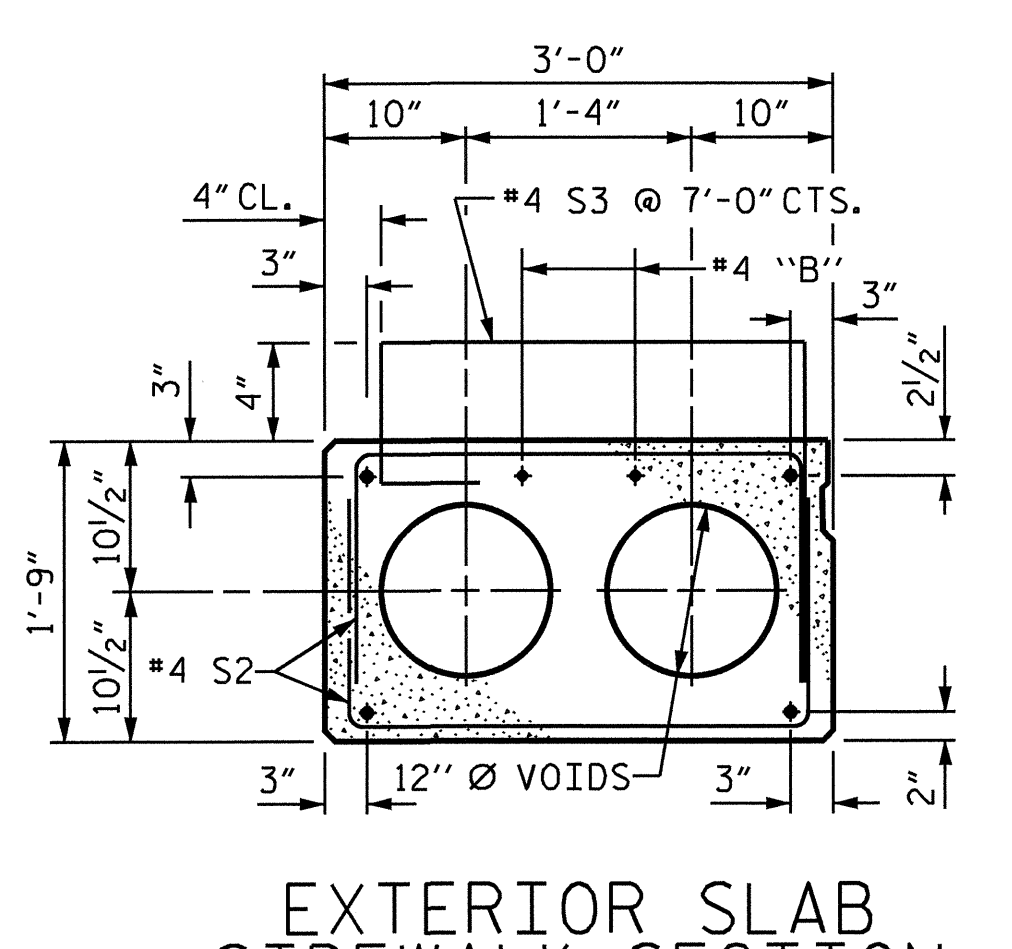
INTERIOR SLAB SECTION
0.6" Ø LOW RELAXATION STRAND LAYOUT
(10 STRANDS)

SPAN B

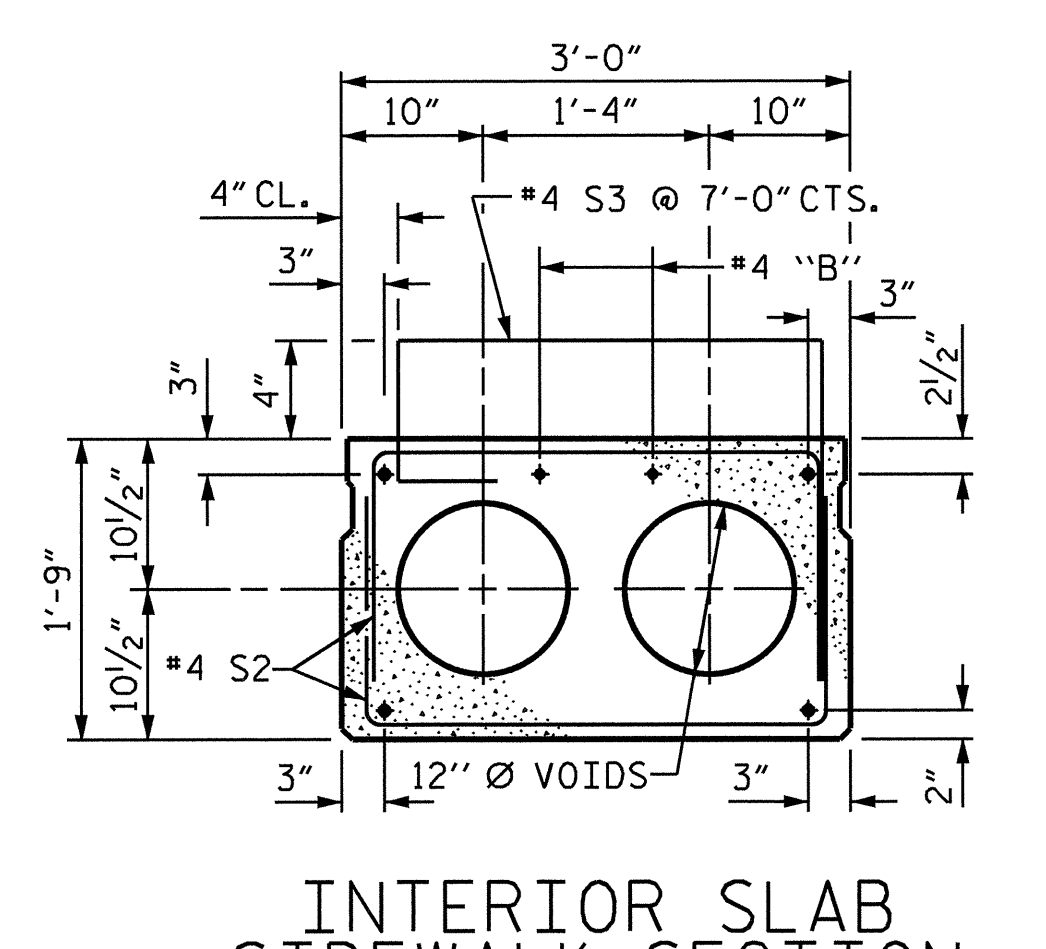


INTERIOR SLAB SECTION
0.6" Ø LOW RELAXATION STRAND LAYOUT
(15 STRANDS)

SPAN C

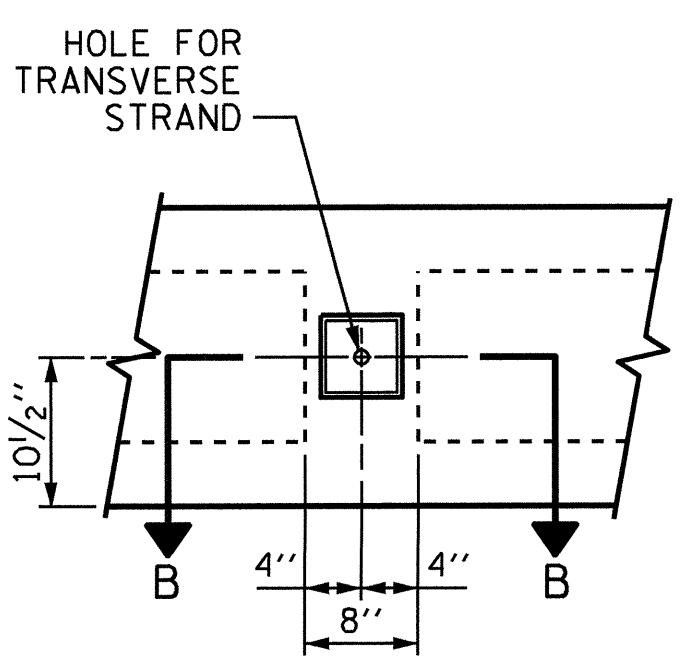


EXTERIOR SLAB
-SIDEWALK SECTION-
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)

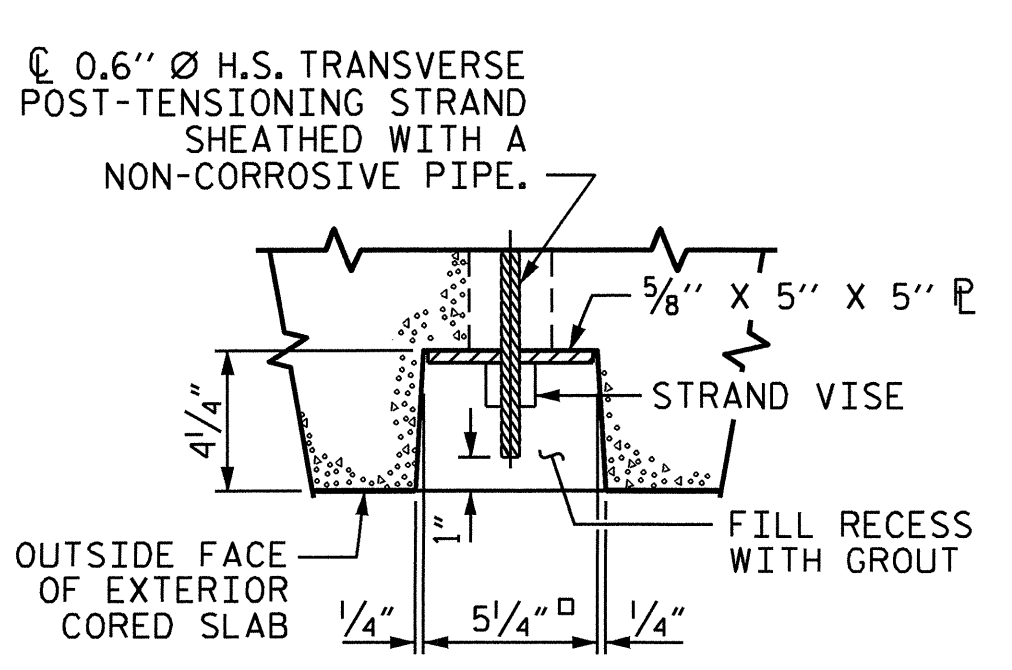


INTERIOR SLAB
-SIDEWALK SECTION-
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)

THE BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF THE CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.

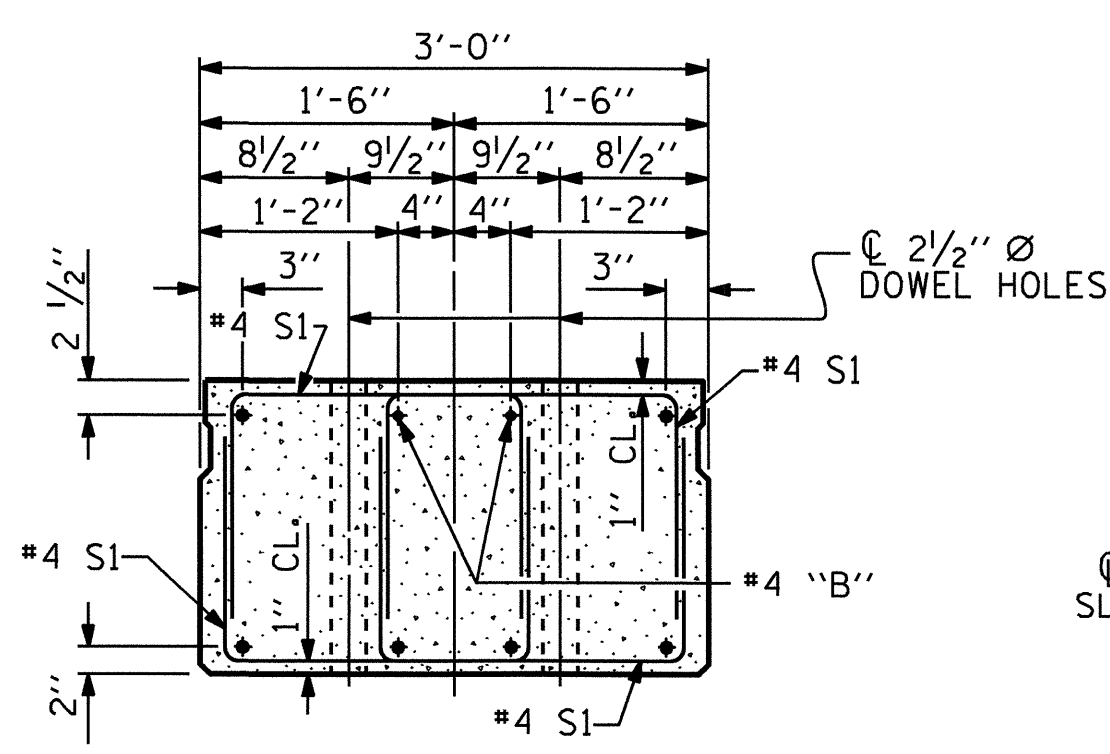


ELEVATION VIEW



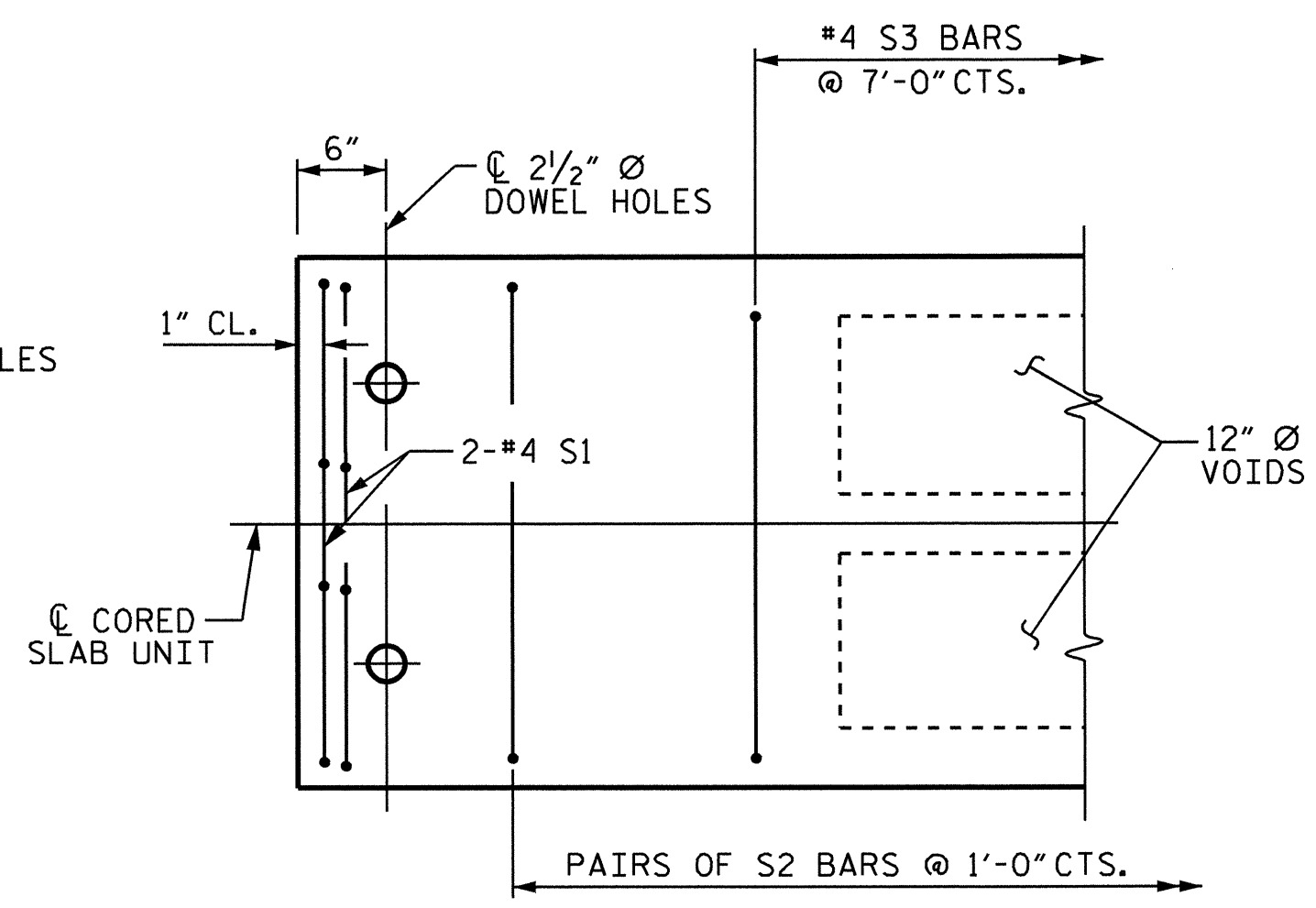
SECTION B-B

GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS



END ELEVATION

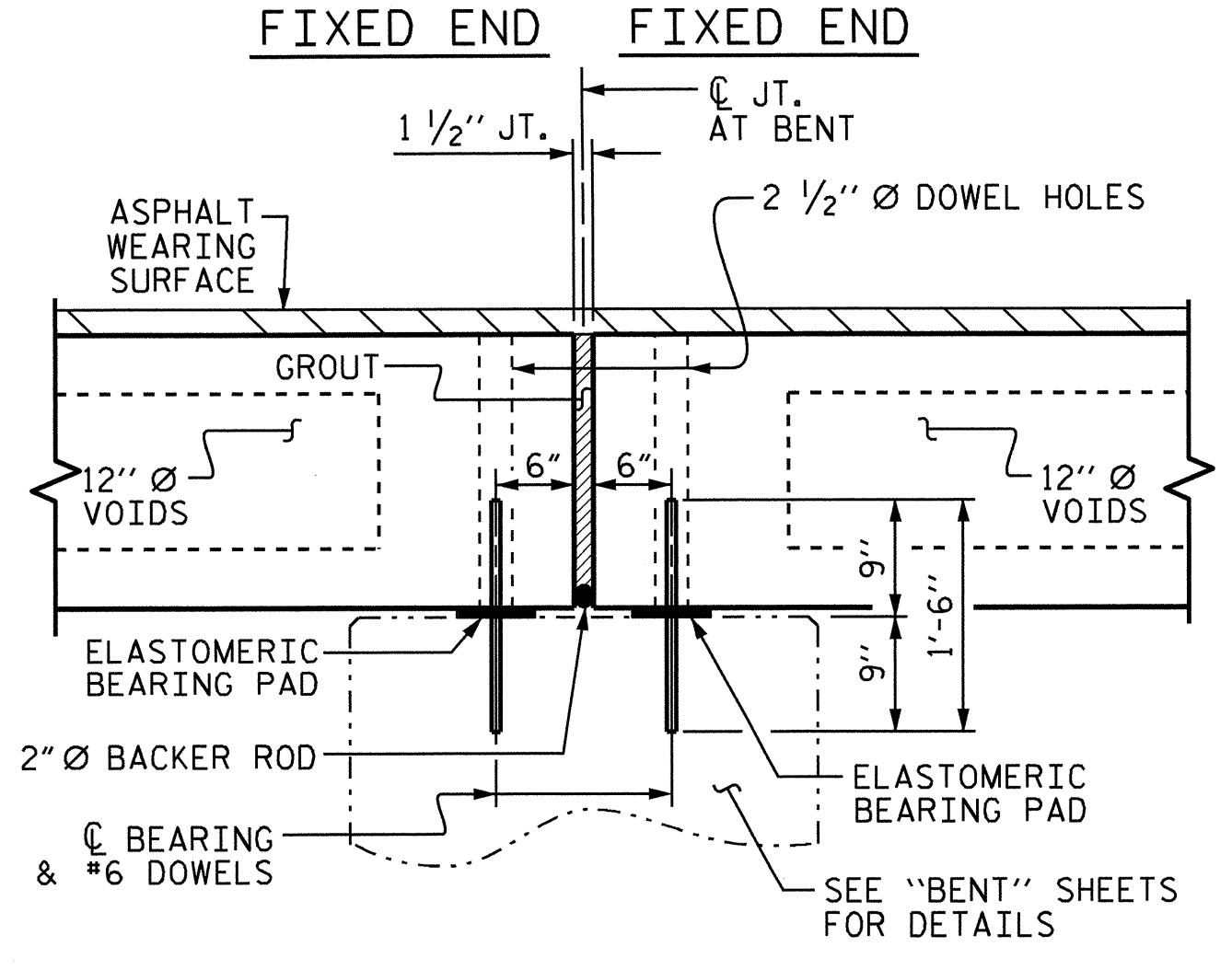
SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB SECTION SHOWN-EXTERIOR SLAB SECTION SIMILAR EXCEPT SHEAR KEY LOCATION.



PART PLAN-EXTERIOR AND INTERIOR (SIDEWALK) SECTION

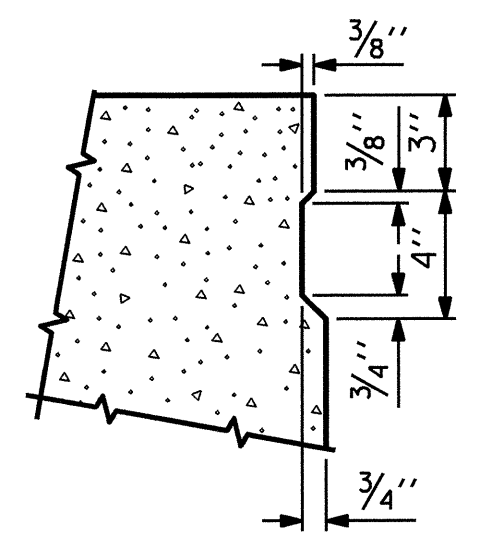
EXTERIOR AND INTERIOR SECTION (SIDEWALK) SHOWN. INTERIOR SECTION SIMILAR EXCEPT OMIT S3 BARS. SEE PLAN OF SPANS FOR END SPACING.

SECTION AT END BENT



SECTION AT BENT

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



PROJECT NO. B-4238
PITT COUNTY
STATION: 20+80.50 -L-
SHEET 1 OF 6

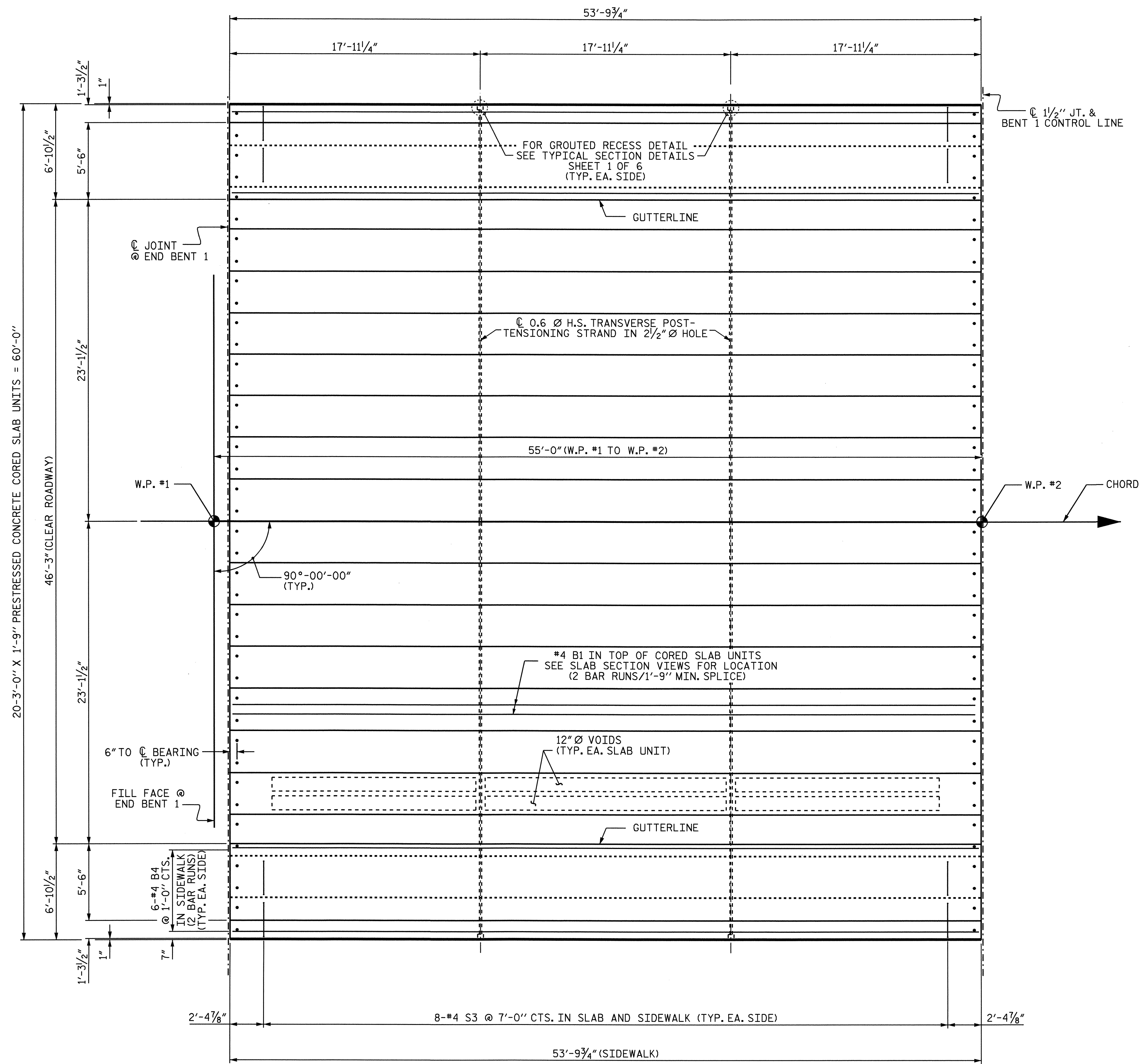
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS 27
2			4			



ASSEMBLED BY : J. MYA DATE : 3-19-09
CHECKED BY : J. L. WALTON DATE : 4-22-09
DRAWN BY : WJH 4/89 REV. 10/17/00 RWW/LES
CHECKED BY : FCJ 5/89 REV. 7/10/01RR RWW/LES
REV. 5/1/06 TLA/GM



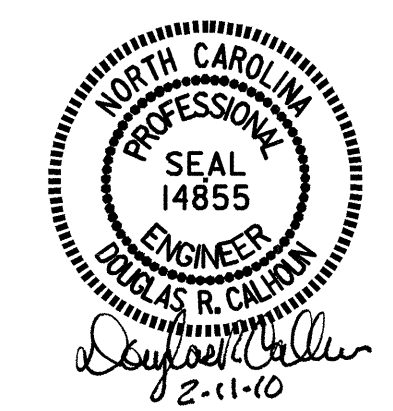
DRAWN BY : J. MYA DATE : 4-2-09
 CHECKED BY : J. L. WALTON DATE : 4-22-09

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SPAN A
 (FOR PLAN OF CORED SLAB UNIT, SEE SHEET 5 OF 6)

PROJECT NO. B-4238
PITT COUNTY
 STATION: 20+80.50 -L-

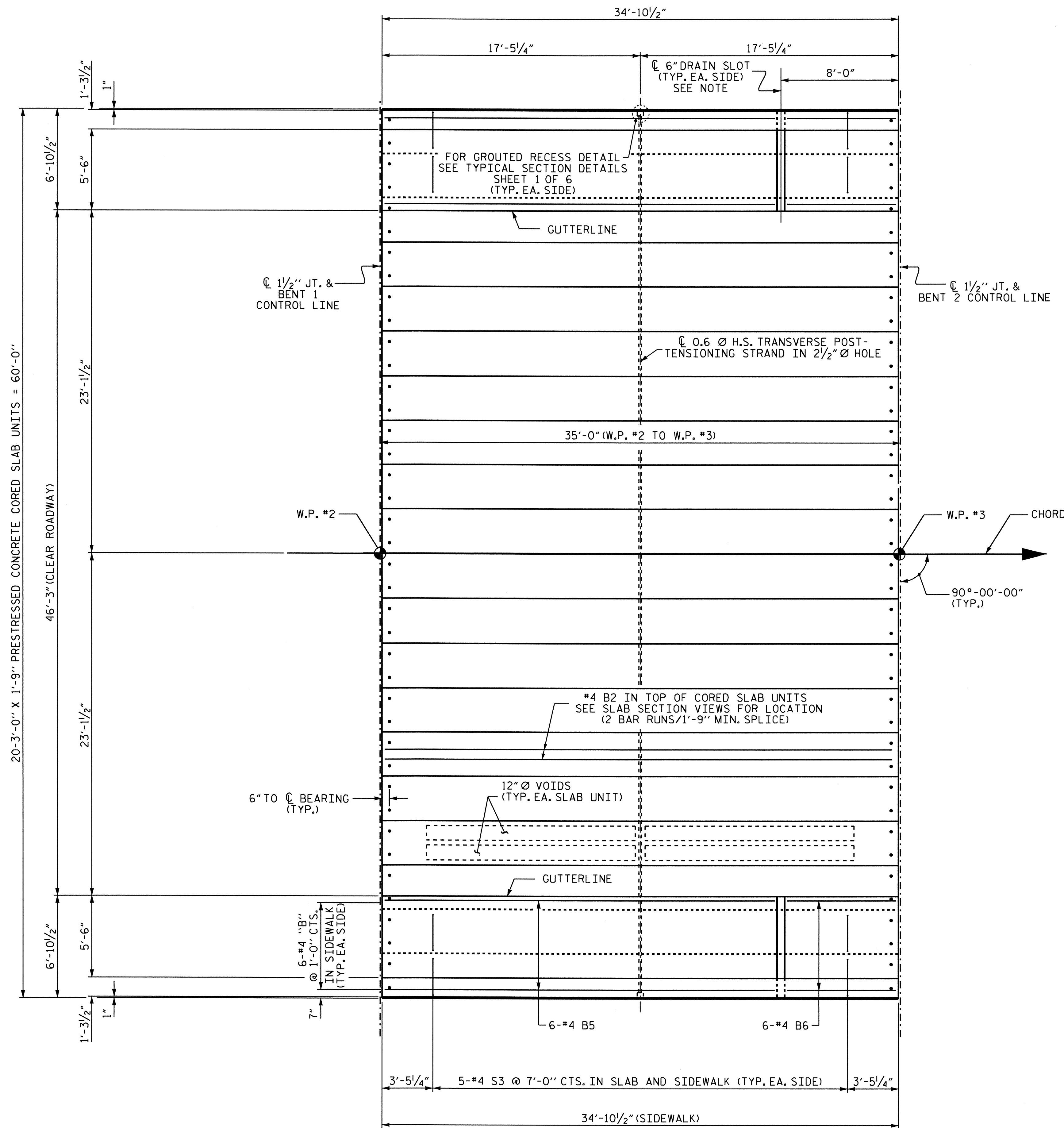
SHEET 2 OF 6



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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			27
2			4			

NOTE : FOR DRAIN SLOT DETAILS, SEE SHEET S-11.



SPAN B

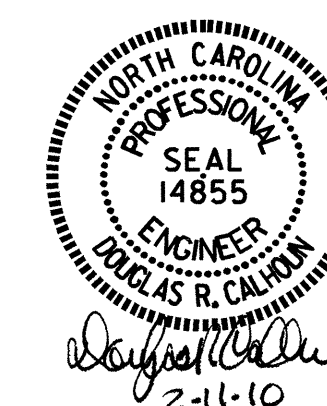
(FOR PLAN OF CORED SLAB UNIT, SEE SHEET 5 OF 6)

PROJECT NO. B-4238
PITT COUNTY
 STATION: 20+80.50 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPAN B

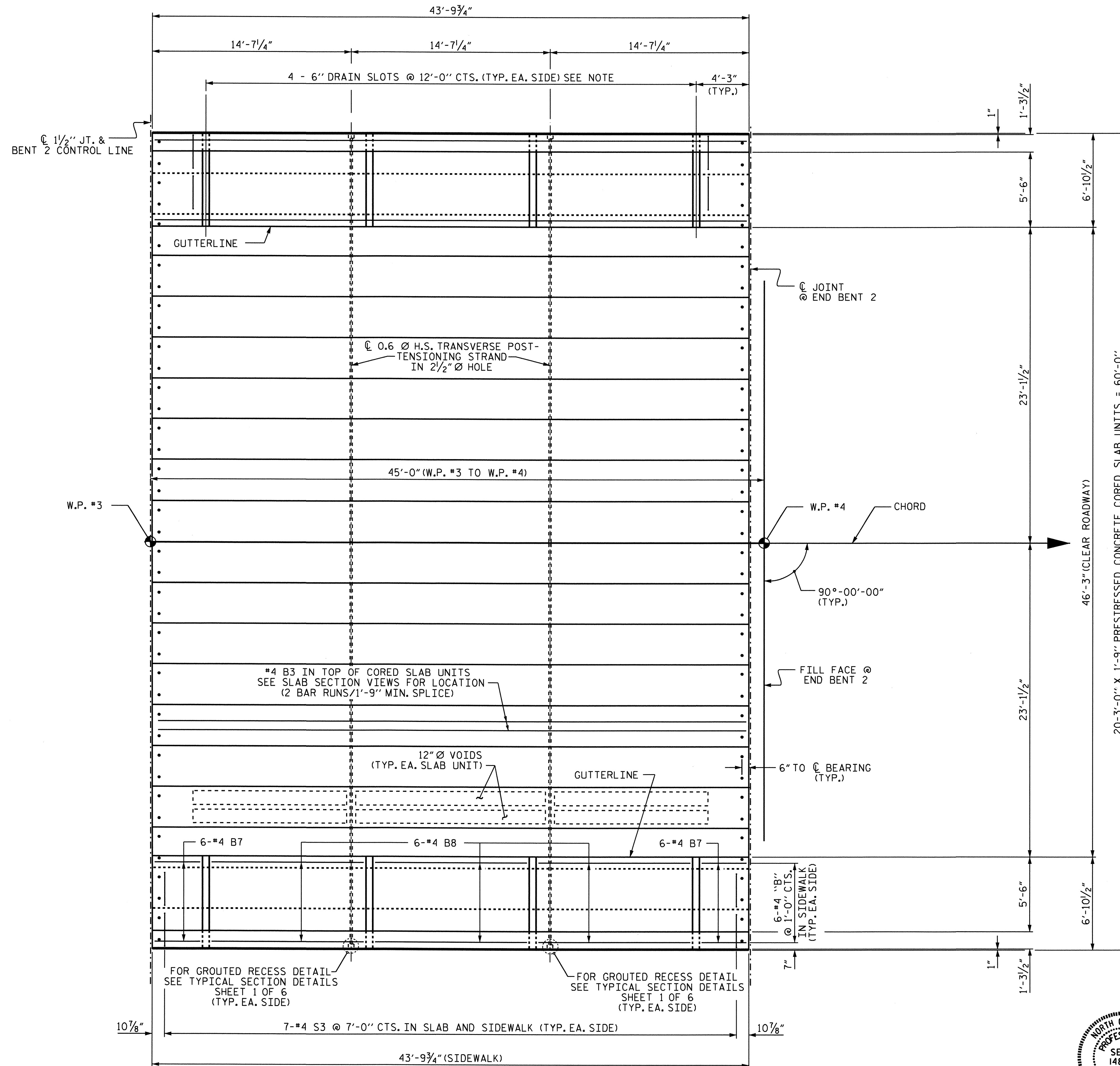


DRAWN BY : J. MYA DATE : 4-2-09
 CHECKED BY : J. L. WALTON DATE : 4-22-09

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REVISIONS						SHEET NO. S-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 27
2			4			

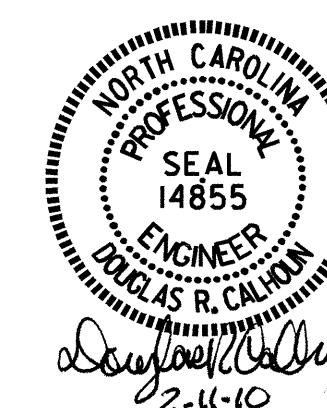
NOTE : FOR DRAIN SLOT DETAILS, SEE SHEET S-11.



PROJECT NO. B-4238
PITT COUNTY
 STATION: 20+80.50 -L-
 SHEET 4 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

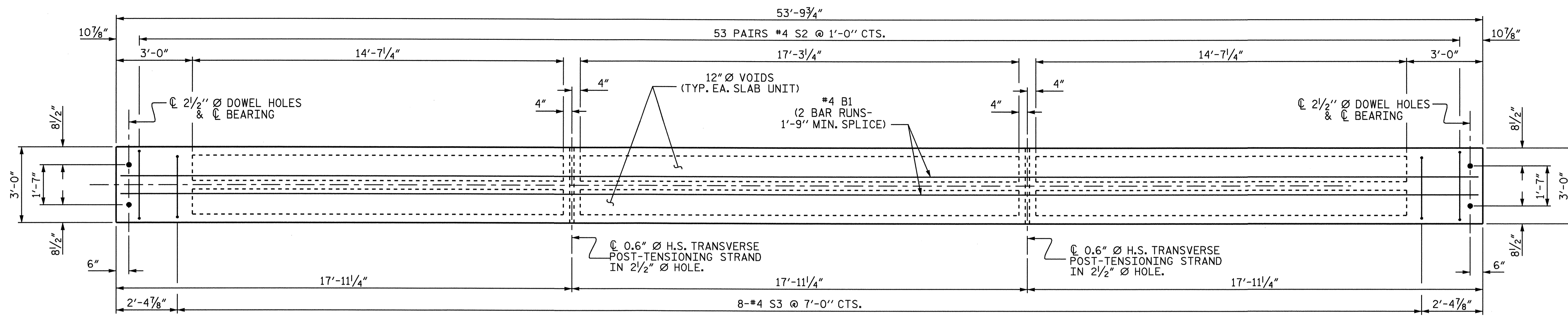
SUPERSTRUCTURE
 PLAN OF SPAN C



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			27

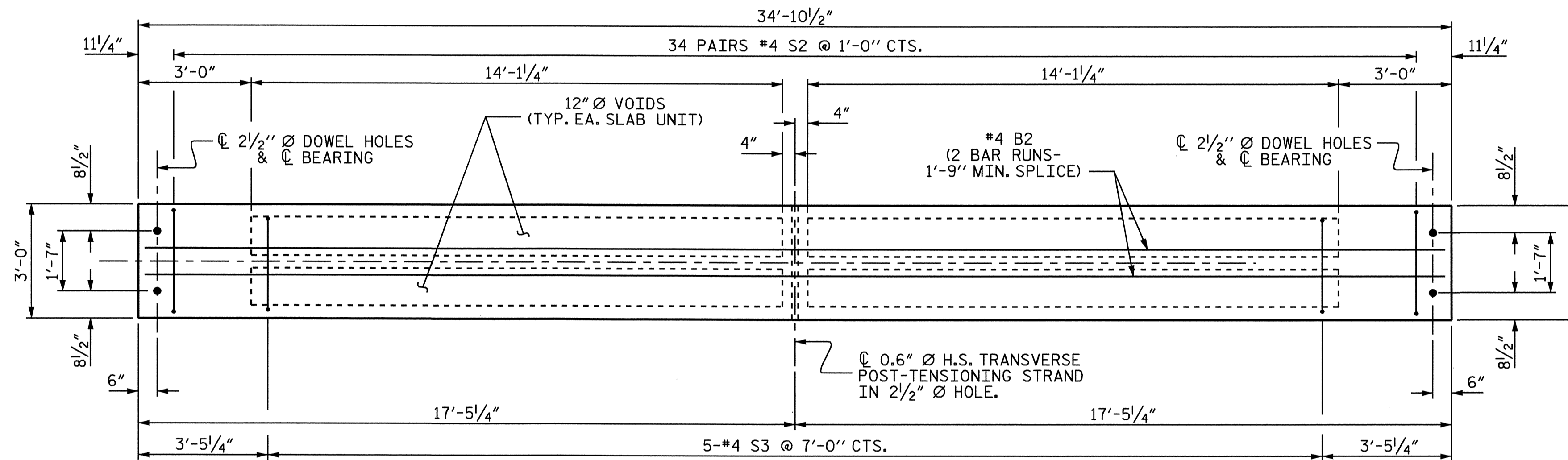
DRAWN BY : J. MYA DATE : 4-2-09
 CHECKED BY : J. L. WALTON DATE : 4-22-09

SPAN C
 (FOR PLAN OF CORED SLAB UNIT, SEE SHEET 5 OF 6)



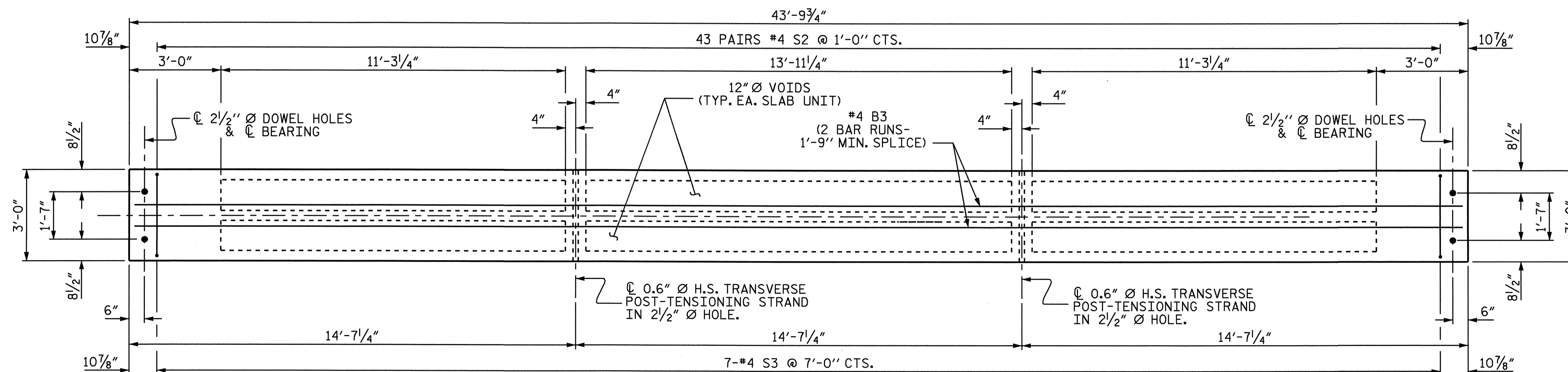
PLAN OF CORED SLAB UNIT - SPAN A

EXTERIOR AND INTERIOR (SIDEWALK) SECTION SHOWN, INTERIOR SECTION SIMILAR EXCEPT OMIT S3 BARS. FOR THE LOCATION OF ADDITIONAL REINFORCING STEEL AT END OF SLAB, SEE "PART-PLAN - EXTERIOR AND INTERIOR (SIDEWALK) SECTION", SHEET 1 OF 6.



PLAN OF CORED SLAB UNIT - SPAN B

EXTERIOR AND INTERIOR (SIDEWALK) SECTION SHOWN, INTERIOR SECTION SIMILAR EXCEPT OMIT S3 BARS. FOR THE LOCATION OF ADDITIONAL REINFORCING STEEL AT END OF SLAB, SEE "PART-PLAN - EXTERIOR AND INTERIOR (SIDEWALK) SECTION", SHEET 1 OF 6.



PLAN OF CORED SLAB UNIT - SPAN C

EXTERIOR AND INTERIOR (SIDEWALK) SECTION SHOWN, INTERIOR SECTION SIMILAR EXCEPT OMIT S3 BARS. FOR THE LOCATION OF ADDITIONAL REINFORCING STEEL AT END OF SLAB, SEE "PART-PLAN - EXTERIOR AND INTERIOR (SIDEWALK) SECTION", SHEET 1 OF 6.



PROJECT NO. B-4238
PITT COUNTY
 STATION: 20+80.50 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 CORED SLAB DETAILS

DRAWN BY: J. MYA DATE: 4-2-09
 CHECKED BY: J. L. WALTON DATE: 4-22-09

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			27

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, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH, AT LEAST THREE 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.

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 5000 PSI FOR SPANS A & C, AND 4000 PSI FOR SPAN B.

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

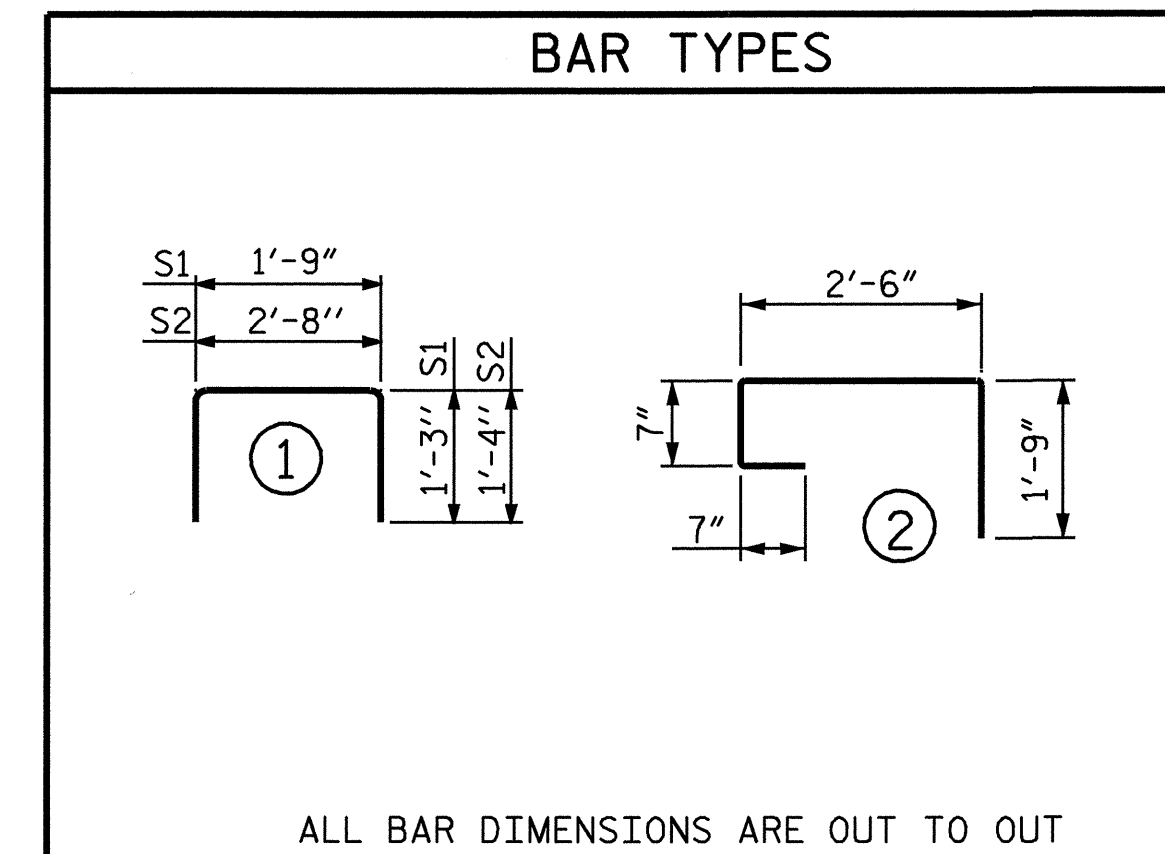
THE MINIMUM HEIGHT OF THE SIDEWALK IS SHOWN. THE HEIGHT OF THE SIDEWALK VARIES WHILE THE TOP OF THE SIDEWALK FOLLOWS THE PROFILE OF THE GUTTERLINE.

TRANSVERSE POST TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, EXCEPT THAT THE STRANDS SHALL BE 0.6" Ø AND TENSIONED TO 43,950 POUNDS.

DEAD LOAD DEFLECTION AND CAMBER			
	SPAN A	SPAN B	SPAN C
CAMBER (SLAB ALONE IN PLACE) ↑	2 1/2"	9/16"	1 1/16"
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD** ↓	5/16"	1/16"	1/8"
FINAL CAMBER ↑	2 3/16"	1/2"	1 5/16"

** INCLUDES FUTURE WEARING SURFACE

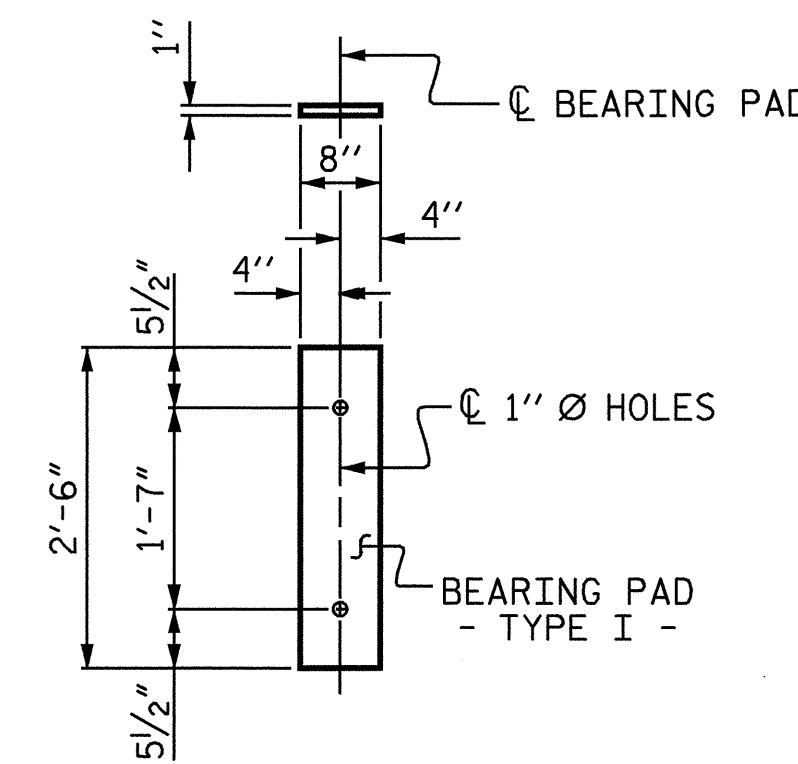
CORED UNITS SLABS REQUIRED			
	NUMBER PER SPAN	LENGTH	TOTAL LENGTH
EXTERIOR C.S.-SPAN A	2	53'-9 3/4"	107'-7 1/2"
INTERIOR C.S.-SPAN A	18	53'-9 3/4"	968'-7 1/2"
EXTERIOR C.S.-SPAN B	2	34'-10 1/2"	69'-9"
INTERIOR C.S.-SPAN B	18	34'-10 1/2"	627'-9"
EXTERIOR C.S.-SPAN C	2	43'-9 3/4"	87'-7 1/2"
INTERIOR C.S.-SPAN C	18	43'-9 3/4"	788'-7 1/2"
TOTAL	60		2650'-0"



ALL BAR DIMENSIONS ARE OUT TO OUT

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

BILL OF MATERIAL FOR ONE CORED SLAB SECTION											
SPAN A											
BAR	SIZE	TYPE	INTERIOR UNIT			INT. (SIDEWALK)			EXT. (SIDEWALK)		
			NUMBER	LENGTH	WEIGHT	NUMBER	LENGTH	WEIGHT	NUMBER	LENGTH	WEIGHT
B1	# 4	STR	4	27'-8"	74	4	27'-8"	74	4	27'-8"	74
S1	# 4	1	8	4'-3"	23	8	4'-3"	23	8	4'-3"	23
S2	# 4	1	106	5'-4"	378	106	5'-4"	378	106	5'-4"	378
* S3	# 4	2				8	5'-5"	29	8	5'-5"	29
REINFORCING STEEL			475 LBS.			475 LBS.			475 LBS.		
* EPOXY COATED REINFORCING STEEL			0			29 LBS.			29 LBS.		
7,000 P.S.I. CONCRETE			7.6 C. Y.			7.6 C. Y.			7.7 C. Y.		
0.6" Ø L.R. STRANDS			19			19			19		
SPAN B											
BAR	SIZE	TYPE	INTERIOR UNIT			INT. (SIDEWALK)			EXT. (SIDEWALK)		
			NUMBER	LENGTH	WEIGHT	NUMBER	LENGTH	WEIGHT	NUMBER	LENGTH	WEIGHT
B2	# 4	STR	4	18'-2"	49	4	18'-2"	49	4	18'-2"	49
S1	# 4	1	8	4'-3"	23	8	4'-3"	23	8	4'-3"	23
S2	# 4	1	68	5'-4"	242	68	5'-4"	242	68	5'-4"	242
* S3	# 4	2				5	5'-5"	18	5	5'-5"	18
REINFORCING STEEL			314 LBS.			314 LBS.			314 LBS.		
* EPOXY COATED REINFORCING STEEL			0			18 LBS.			18 LBS.		
5,000 P.S.I. CONCRETE			5.0 C. Y.			5.0 C. Y.			5.1 C. Y.		
0.6" Ø L.R. STRANDS			10			10			10		
SPAN C											
BAR	SIZE	TYPE	INTERIOR UNIT			INT. (SIDEWALK)			EXT. (SIDEWALK)		
			NUMBER	LENGTH	WEIGHT	NUMBER	LENGTH	WEIGHT	NUMBER	LENGTH	WEIGHT
B3	# 4	STR	4	22'-8"	61	4	22'-8"	61	4	22'-8"	61
S1	# 4	1	8	4'-3"	23	8	4'-3"	23	8	4'-3"	23
S2	# 4	1	86	5'-4"	306	86	5'-4"	306	86	5'-4"	306
* S3	# 4	2				7	5'-5"	25	7	5'-5"	25
REINFORCING STEEL			390 LBS.			390 LBS.			390 LBS.		
* EPOXY COATED REINFORCING STEEL			0			25 LBS.			25 LBS.		
7,000 P.S.I. CONCRETE			6.3 C. Y.			6.3 C. Y.			6.4 C. Y.		
0.6" Ø L.R. STRANDS			15			15			15		



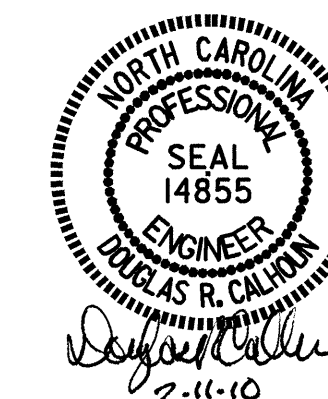
FIXED END
(TYPE I - 120 REQ'D)

ELASTOMERIC BEARING DETAILS

(50 DUROMETER HARDNESS)

PROJECT NO. B-4238
PITT COUNTY
 STATION: 20+80.50 -L-

SHEET 6 OF 6



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-10
2			4			TOTALS 27

STD. NO. PCS3

ASSEMBLED BY : J. MYA	DATE : 4-2-09
CHECKED BY : J. L. WALTON	DATE : 4-22-09
DRAWN BY : WJH 4/89	REV. 7/10/01 RWW/LES
CHECKED BY : FCJ 5/89	REV. 5/7/03RRR RWW/JTE
	REV. 5/1/06 TLA/GM

NOTES :

FOR METAL RAILS AND GUARDRAIL ANCHOR ASSEMBLIES, SEE "GUARDRAIL ANCHORAGE DETAILS" SHEET 6 OF 6.

FOR DETAILS OF CONCRETE INSERTS, SEE "3 BAR METAL RAIL" SHEET 5 OF 6.

ALL REINFORCING STEEL IN SIDEWALK AND END POST SHALL BE EPOXY COATED.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE SIDEWALK IN ACCORDANCE WITH ARTICLE 825-10 (B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FT. TO 10 FT. BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.

THE COST OF THE SIDEWALKS AND END POSTS ARE INCLUDED IN THE PAY ITEMS FOR CLASS AA CONCRETE AND EPOXY COATED REINFORCING STEEL.

THE MINIMUM HEIGHT OF THE SIDEWALK IS SHOWN. THE HEIGHT OF THE SIDEWALK VARIES WHILE THE TOP OF THE SIDEWALK FOLLOWS THE PROFILE OF THE GUTTERLINE.

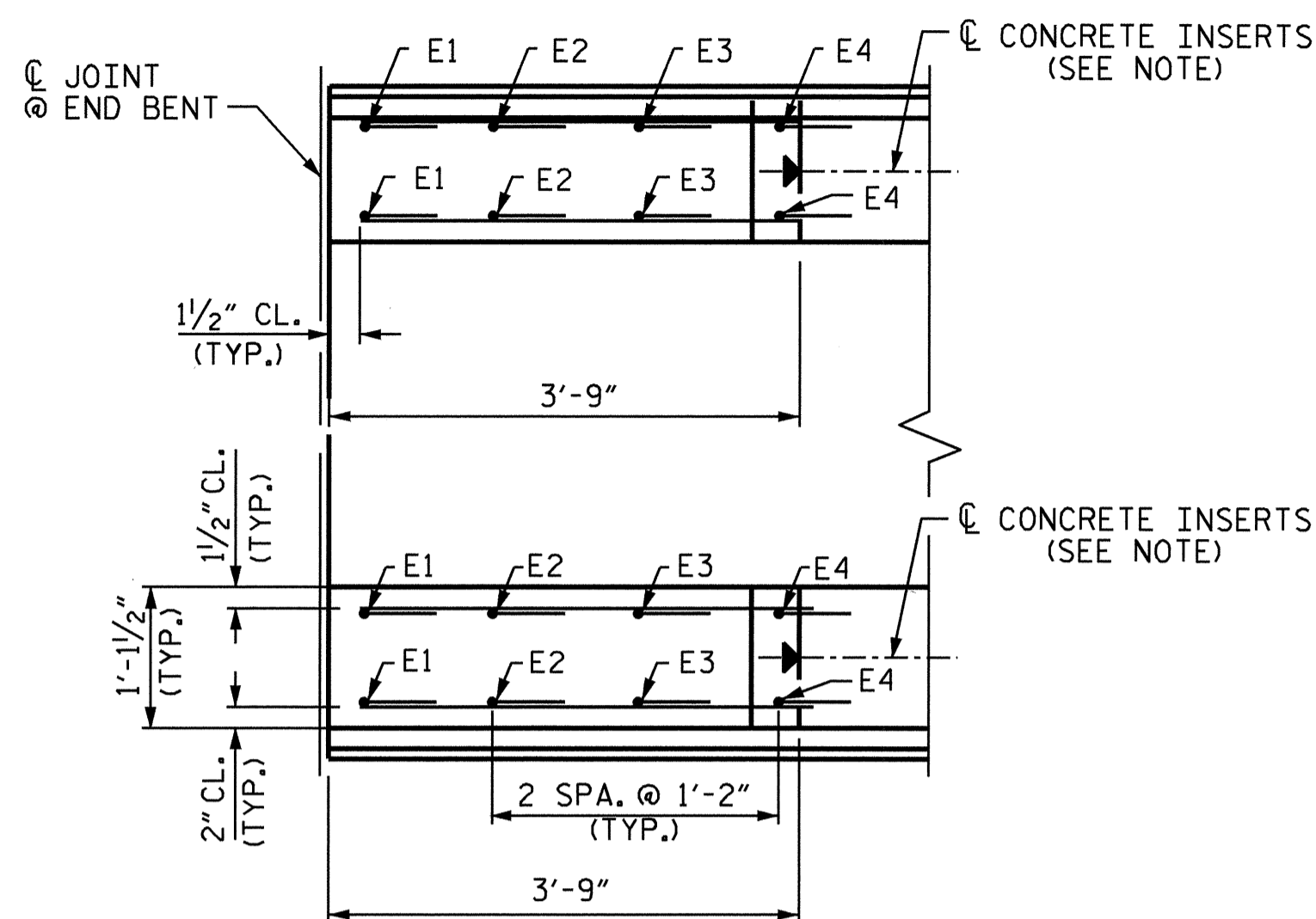
THE STEEL PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 OR APPROVED EQUAL. AFTER FABRICATION, THE PLATES SHALL BE COMMERCIALY BLAST CLEANED AND COATED WITH A MINIMUM THICKNESS OF 4 MILS (DRY) OF ZINC RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. AT THE CONTRACTORS OPTION, THESE SURFACES MAY BE METALLIZED TO A MINIMUM THICKNESS OF 6 MILS. SEE SPECIAL PROVISIONS FOR THERMAL SPRAYED COATINGS (METALLIZATION).

THE 3/4" DIAMETER HEX HEAD BOLTS SHALL CONFORM TO ASTM F593 ALLOY 304 STAINLESS STEEL.

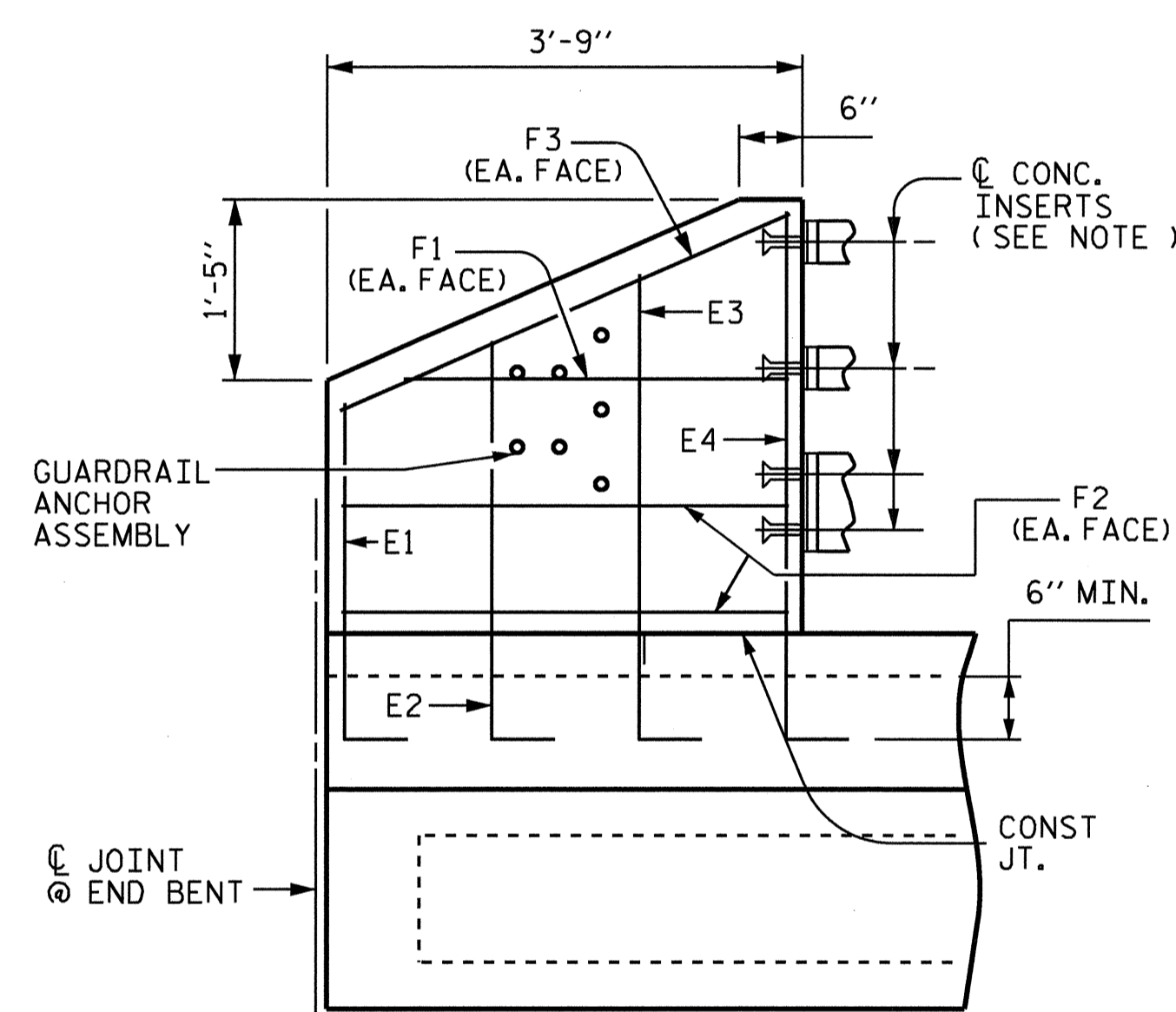
THE 3/4" CONCRETE INSERTS SHALL BE CLOSED-END FERRULES WITH LOOPED WIRE STRUTS ATTACHED TO THEM. THE INSERTS SHALL CONFORM TO AASHTO M169, GRADE 12L14 AND SHALL HAVE A TENSILE WORKING LOAD CAPACITY OF 3000 LBS.

NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE COVER PLATES. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE PAY ITEM "CLASS AA CONCRETE" FOR THE SIDEWALK.

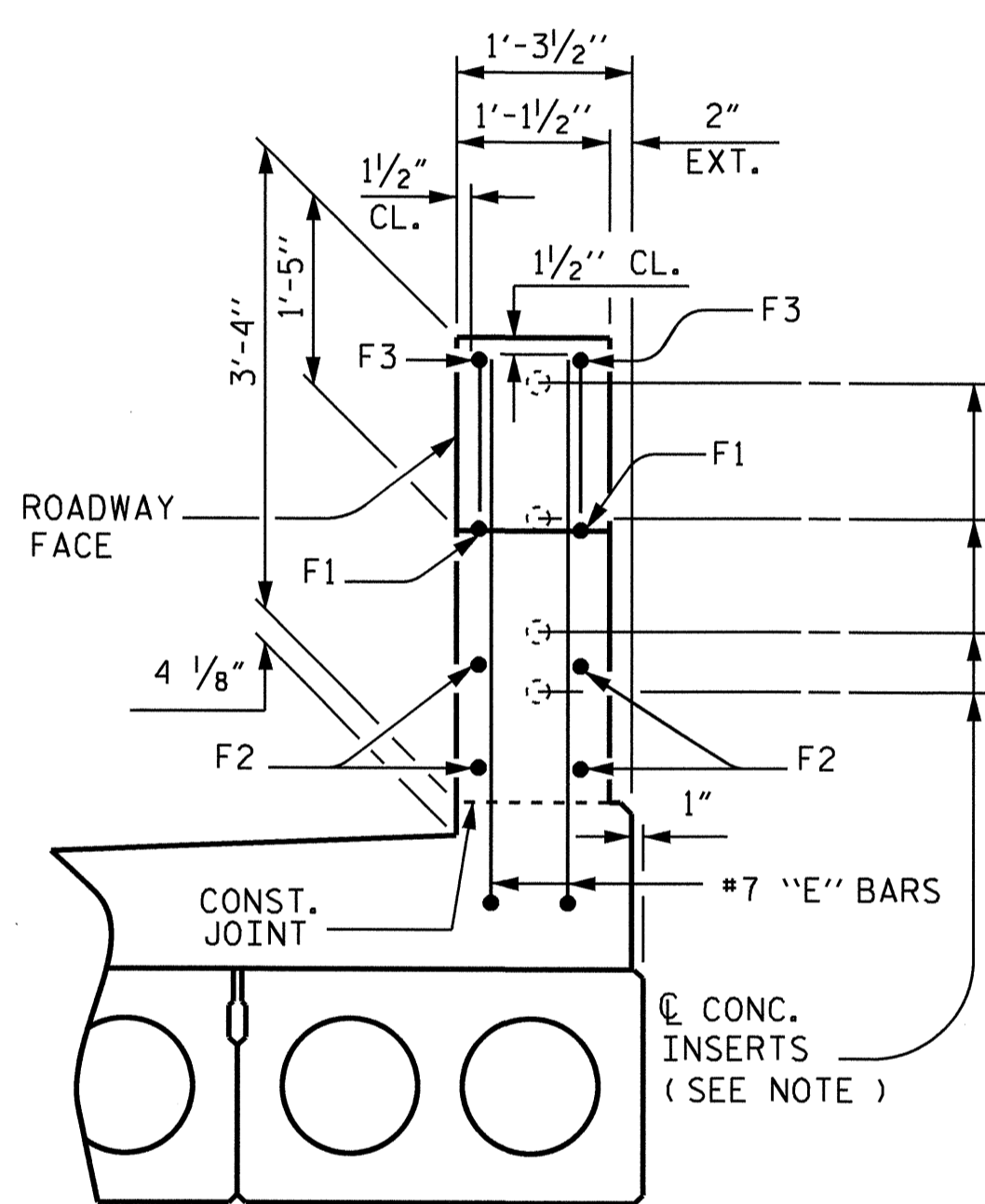
APPLY EPOXY PROTECTIVE COATING TO EXTERIOR CORED SLAB UNIT UNDER EACH DRAIN SLOT.



PLAN

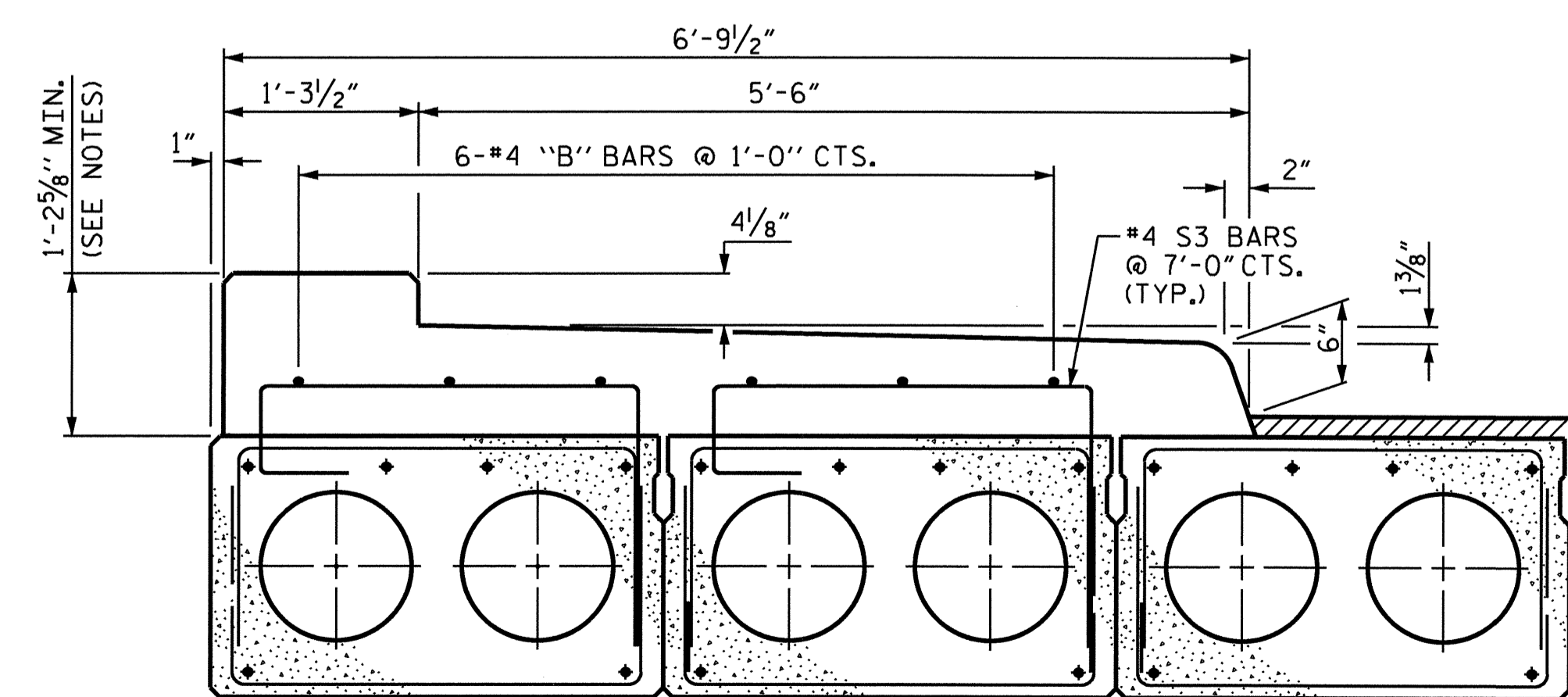


ELEVATION

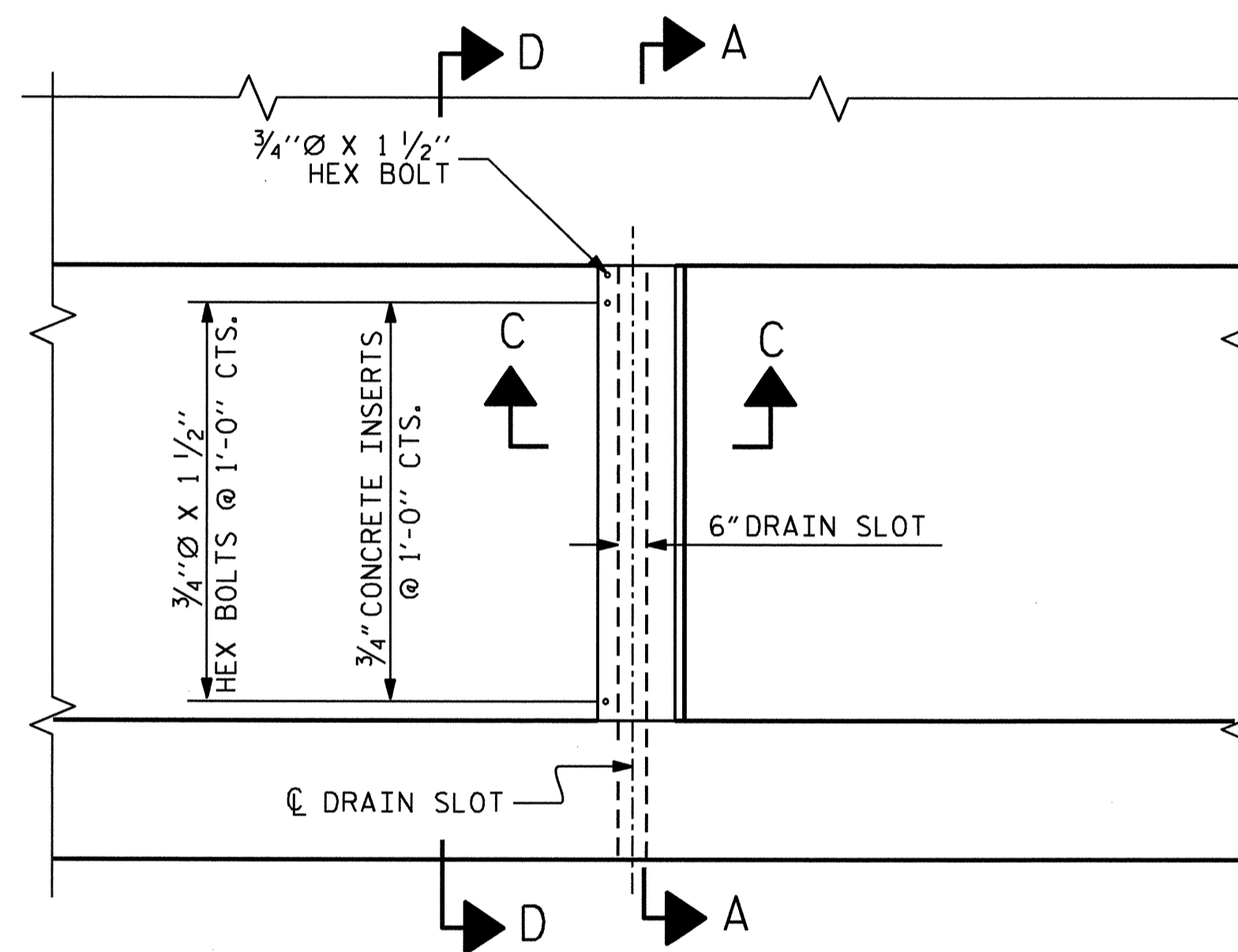


END VIEW

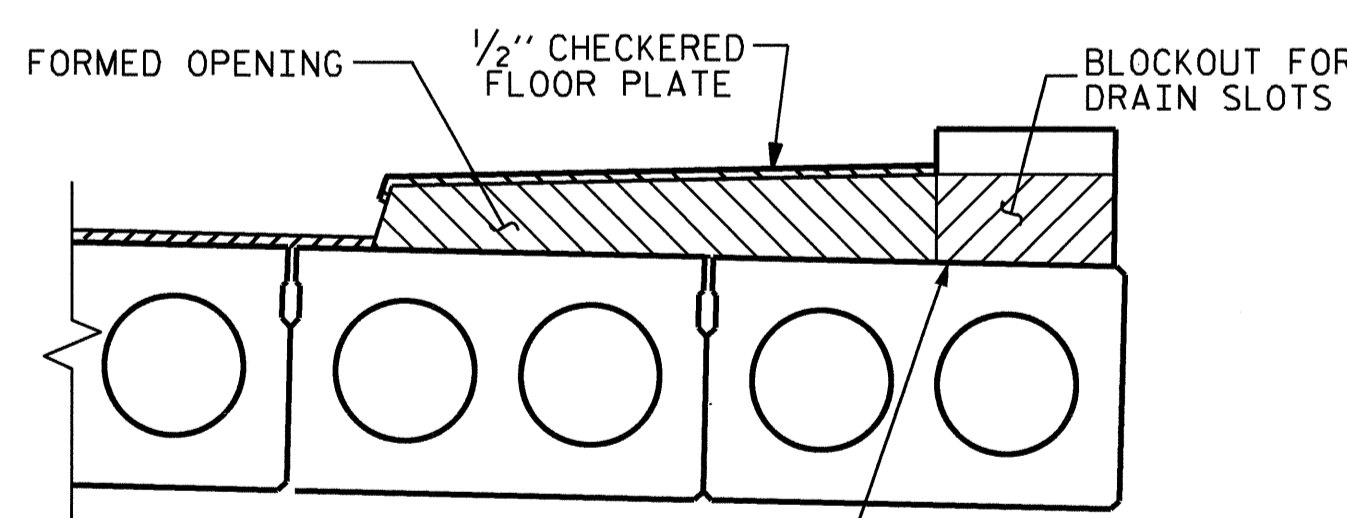
END POST DETAILS



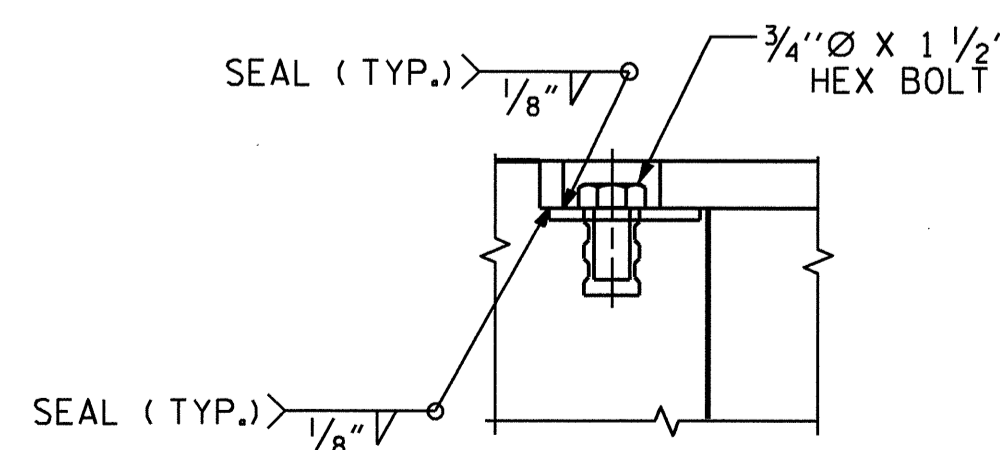
SECTION THROUGH SIDEWALK



PLAN OF DRAIN SLOT WITH COVER PLATE



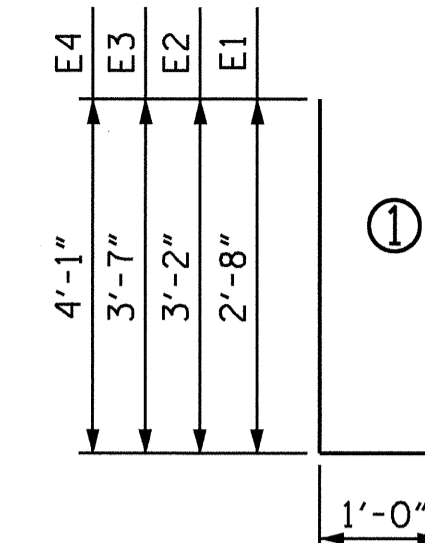
SECTION A-A



DETAIL "A"

SIDEWALK COVER PLATE DETAILS

BAR TYPE



BILL OF MATERIAL FOR 4 END POSTS AND SIDEWALK

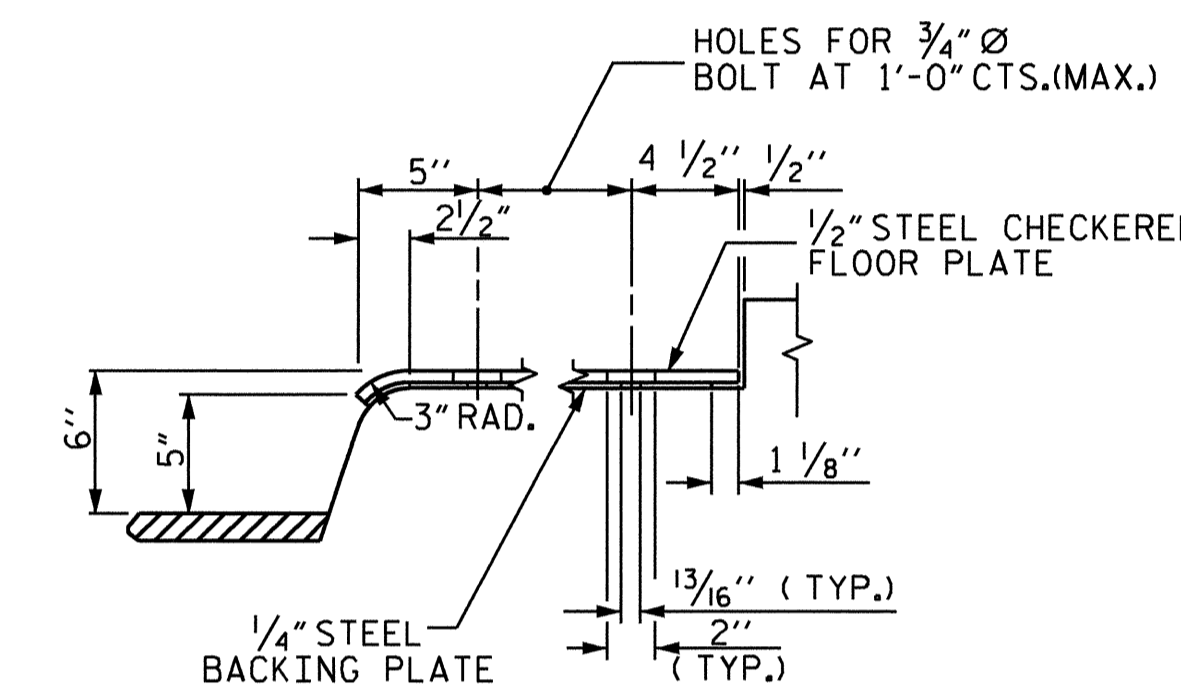
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B4	24	4	STR	27'-9"	445
* B5	12	4	STR	26'-4"	211
* B6	12	4	STR	7'-4"	59
* B7	24	4	STR	3'-4"	53
* B8	36	4	STR	11'-2"	269
* E1	8	7	1	3'-8"	60
* E2	8	7	1	4'-2"	68
* E3	8	7	1	4'-7"	75
* E4	8	7	1	5'-1"	83
* F1	8	6	STR	2'-4"	28
* F2	16	6	STR	3'-5"	82
* F3	8	6	STR	3'-6"	42

BAR DIMENSIONS ARE OUT TO OUT

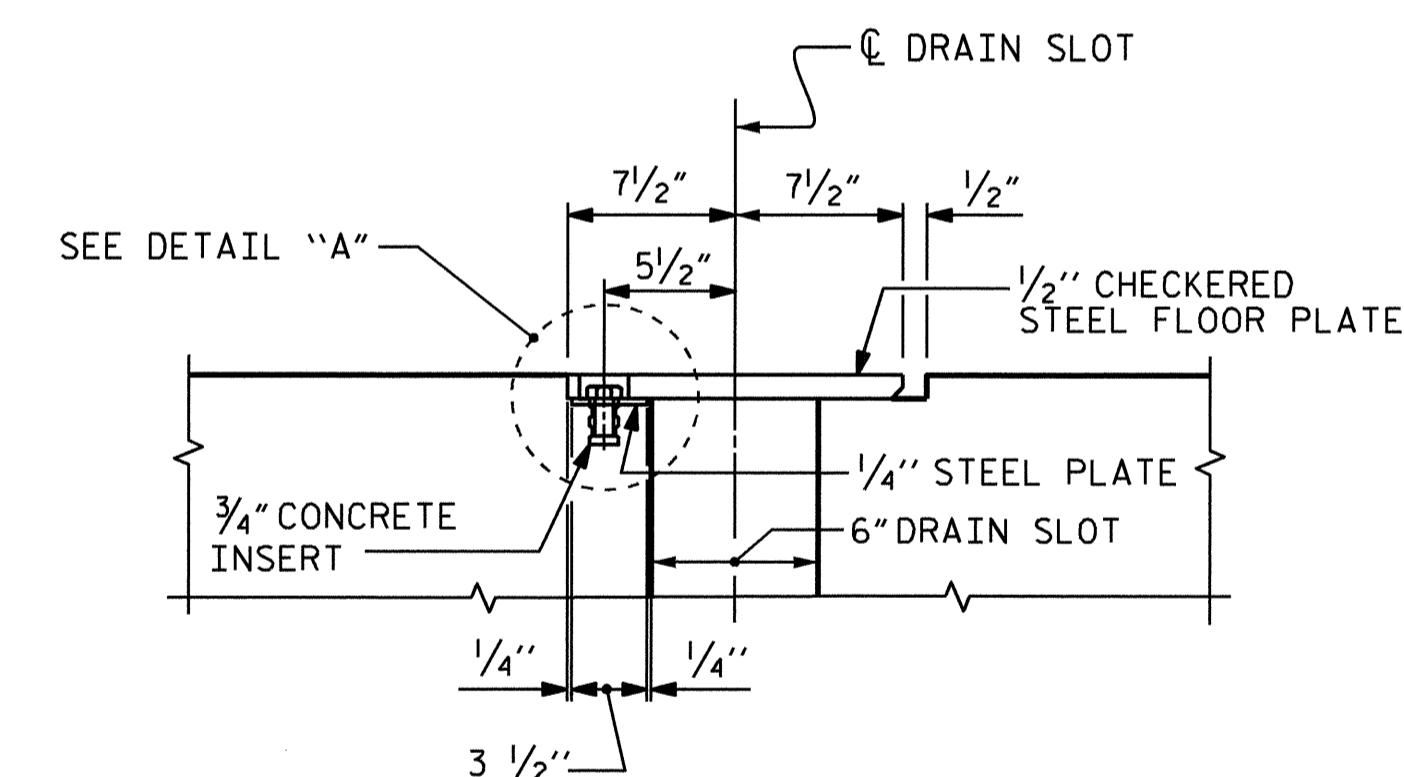
SPLICE LENGTH CHART

BAR	SIZE	LENGTH
B4	4	2'-0"

* EPOXY COATED REINFORCING STEEL 1475 LBS.
CLASS AA CONCRETE 63.5 CU.YDS.



SECTION D-D



SECTION C-C

PROJECT NO. B-4238

PITT COUNTY

STATION: 20+80.50 -L-

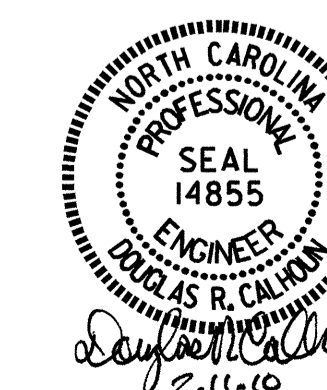
SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

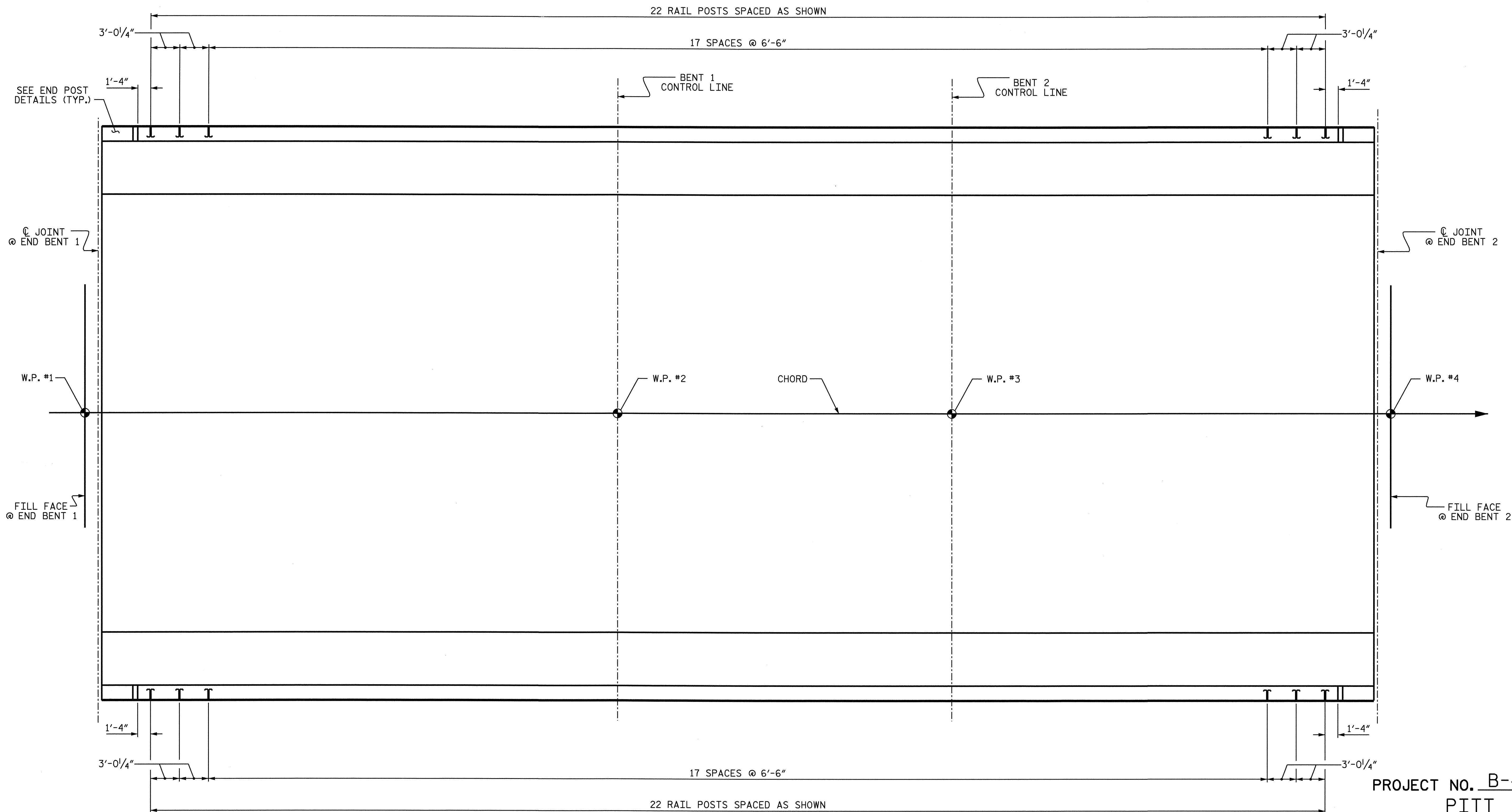
**3 BAR METAL RAIL
END POST & SIDEWALK
DETAILS**

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-11
2			4			TOTAL SHEETS 27



DRAWN BY : J. MYA DATE : 4-2-09
CHECKED BY : J. L. WALTON DATE : 4-22-09



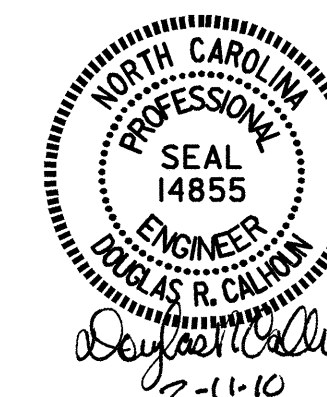
PLAN OF RAIL POST SPACINGS

PROJECT NO. B-4238
PITT COUNTY
 STATION: 20+80.50 -L-

SHEET 2 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

RAIL POST SPACINGS
 FOR THREE BAR METAL RAIL



DRAWN BY: J. MYA DATE: 4-2-09
 CHECKED BY: J. L. WALTON DATE: 4-22-09

15-JAN-2010 07:51
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			27

NOTES

AT THE CONTRACTOR'S OPTION, METAL RAIL MAY BE EITHER ALUMINUM OR GALVANIZED STEEL IN ACCORDANCE WITH THE REQUIREMENTS OF THE GENERAL NOTES AND THE FOLLOWING SPECIFICATIONS FOR THE ALTERNATE MATERIALS; HOWEVER, THE CONTRACTOR WILL BE REQUIRED TO USE THE SAME RAIL MATERIAL ON ALL STRUCTURES ON THE PROJECT FOR WHICH METAL RAIL IS DESIGNATED.

ALUMINUM RAILS

MATERIAL FOR POSTS, BASES AND RAILS, EXPANSION BARS AND CLAMP BARS SHALL BE ASTM B221 ALLOY 6061-T6. MATERIAL FOR RIVETS SHALL BE ASTM B316 ALLOY 6061-T6. RIVETS SHALL BE STANDARD BUTTON HEAD AND CONE POINT COLD DRIVEN AS PER DRAWING. THE BASE OF RAIL POSTS, OR ANY OTHER ALUMINUM SURFACE IN CONTACT WITH CONCRETE SHALL BE THOROUGHLY COATED WITH AN ALUMINUM IMPREGNATED CAULKING COMPOUND OF APPROVED QUALITY. MATERIAL FOR SHIMS TO BE ASTM B209 ALLOY 6061-T6.

GALVANIZED STEEL RAILS

MATERIAL AND GALVANIZING ARE TO CONFORM TO THE FOLLOWING SPECIFICATIONS: POST, POST BASES, RAILS, EXPANSION BARS AND CLAMP BARS : AASHTO M270 GRADE 36 STRUCTURAL STEEL - GALVANIZED TO AASHTO M111. RIVETS: RIVETS SHALL MEET THE REQUIREMENTS OF ASTM A502 FOR GRADE 1 RIVETS. THE CUT ENDS OF GALVANIZED STEEL RAILING, AFTER GRINDING SMOOTH SHALL BE GIVEN TWO COATS OF ZINC RICH PAINT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION MIL-P-26915 USAF TYPE 1, OR OF FEDERAL SPECIFICATIONS TT-P-641.

SHIMS: SHIMS SHALL MEET THE REQUIREMENTS OF ASTM A570 FOR GRADE 33 OR A611 FOR GRADE C AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111. RAIL CAPS: RAIL CAPS SHALL MEET THE REQUIREMENTS OF ASTM A570 FOR GRADE 33 OR A611 FOR GRADE C AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.

GENERAL NOTES

RAILING SHALL BE CONTINUOUS FROM END POST TO END POST OF BRIDGE. EACH JOINT IN RAIL LENGTH SHALL BE SPLICED AS DETAILED. PANEL LENGTHS OF RAIL SHALL BE ATTACHED TO A MINIMUM OF THREE POSTS. PLACE ONE JOINT SPLICE JUST BEYOND THE 3RD RAIL POST FROM EACH END, TYPICALLY 14' FROM THE END. PLACE OTHER JOINTS AS NEEDED.

FOR END OF RAIL TO CLEAR FACE OF CONCRETE END POST DIMENSION, SEE STANDARD NO. BMR7.

CAP SCREWS SHALL BE ASTM F593 ALLOY 305 STAINLESS STEEL. WASHERS FOR RAIL ATTACHMENT SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

CERTIFIED MILL REPORTS ARE REQUIRED FOR RAILS AND POSTS. SHOP INSPECTION IS NOT REQUIRED.

METAL RAIL POSTS SHALL BE SET NORMAL TO CURB GRADE.

METHOD OF MEASUREMENT FOR METAL RAILS: FOR LENGTH OF METAL RAILS TO BE PAID FOR, SEE THE STANDARD SPECIFICATIONS.

CURVED RAIL USAGE: WHERE RAILS ARE TO BE USED ON BRIDGES ON HORIZONTAL AND/OR VERTICAL CURVATURE THE CONTRACTOR MAY, AT HIS OPTION, HAVE THE REQUIRED CURVATURE IN THE RAIL FORMED IN THE SHOP OR IN THE FIELD. IN EITHER EVENT, THE RAIL SHALL CONFORM WITHOUT BUCKLING OR KINKING TO THE REQUIRED CURVATURE IN A UNIFORM MANNER ACCEPTABLE TO THE ENGINEER.

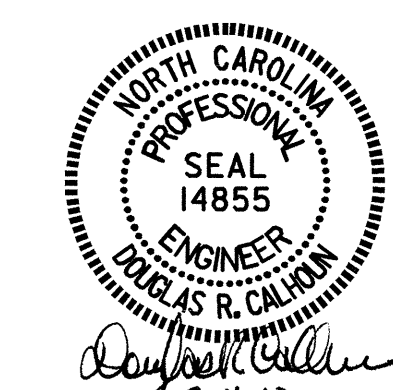
TO INSURE FUTURE IDENTIFICATION OF THE FABRICATOR, A PERMANENT IDENTIFYING MARK SHALL BE PLACED ON EACH POST. THE METHOD OF MARKING AND LOCATION SHALL BE SUCH THAT IT DOES NOT DETRACT FROM THE APPEARANCE OF THE POST, BUT REMAIN VISIBLE AFTER RAIL PLACEMENT.

SHIMS SHALL BE USED AS NECESSARY FOR POST ALIGNMENT.

ALLOY 6351-T5 MAY BE SUBSTITUTED FOR ALLOY 6061-T6 WHERE APPLICABLE.

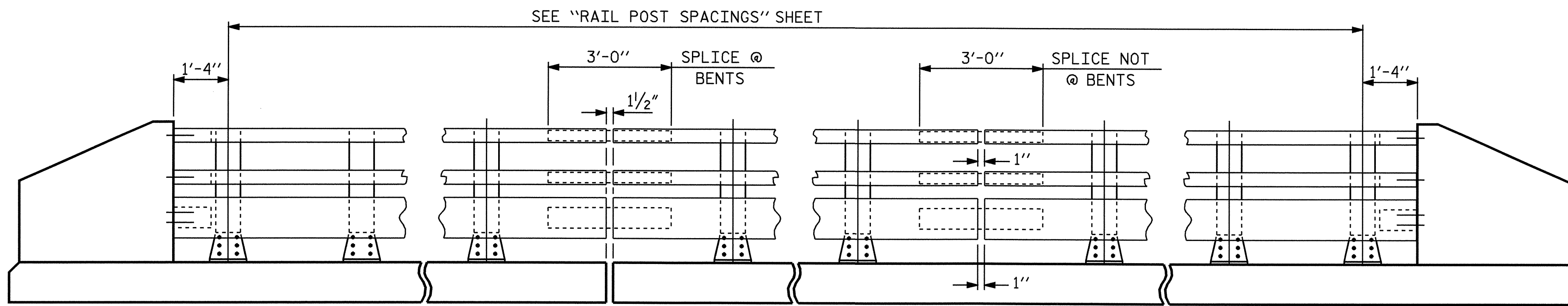
MINOR VARIATIONS IN DETAILS OF METAL RAIL WILL BE CONSIDERED. DETAILS OF SUCH VARIATIONS, IF DESIRED, SHALL BE SUBMITTED FOR APPROVAL.

PAY LENGTH = 250.50 LIN.FT.



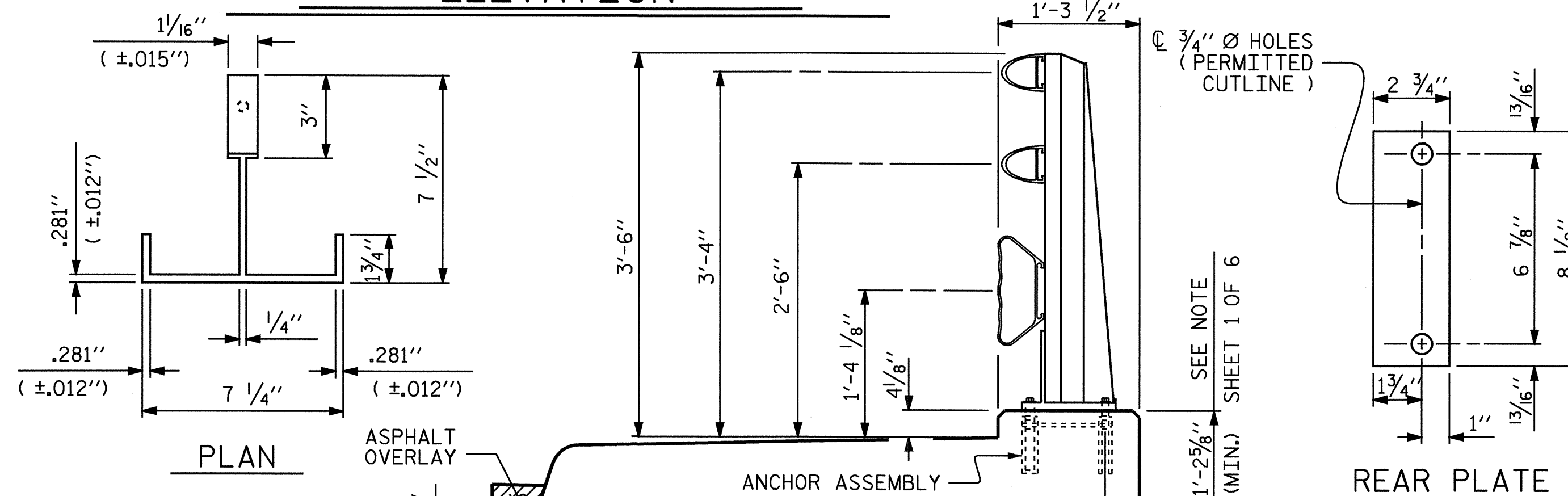
PROJECT NO. **B-4238**
PITT COUNTY
 STATION: **20+80.50 -L-**
 SHEET 3 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD					
3 BAR METAL RAIL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-13 TOTAL SHEETS 27



NOTE:
FOR ATTACHMENT OF METAL RAIL TO END POST, SEE STANDARD NO. BMR7.

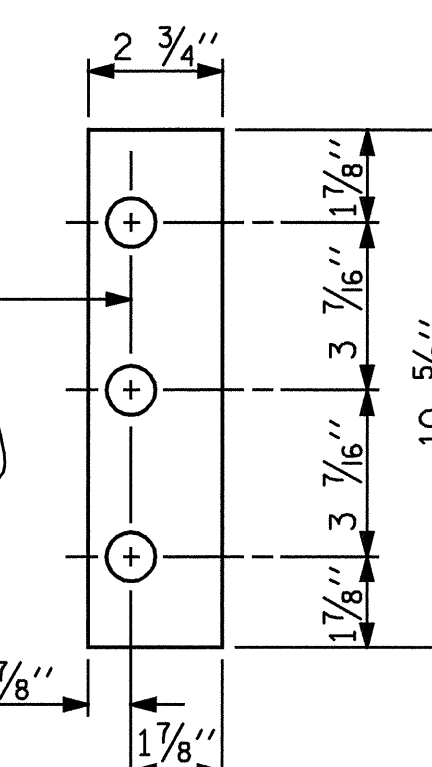
ELEVATION



SECTION THRU RAIL

FOR ANCHOR ASSEMBLY, SEE "3 BAR METAL RAIL" STD.No.BMR6

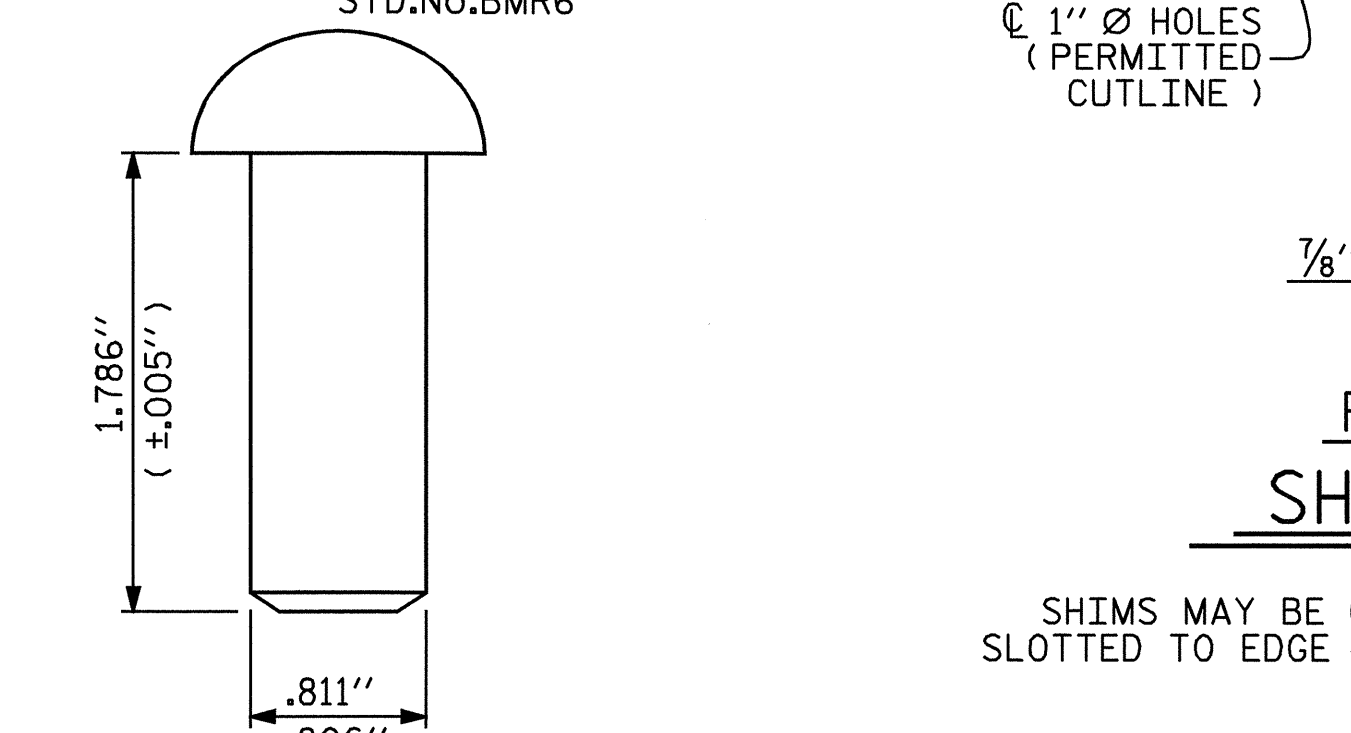
REAR PLATE



FRONT PLATE SHIM DETAILS

NOTE:
SHIMS MAY BE CUT ALONG PERMITTED CUTLINE OR SLOTTED TO EDGE OF PLATE TO FACILITATE PLACEMENT.

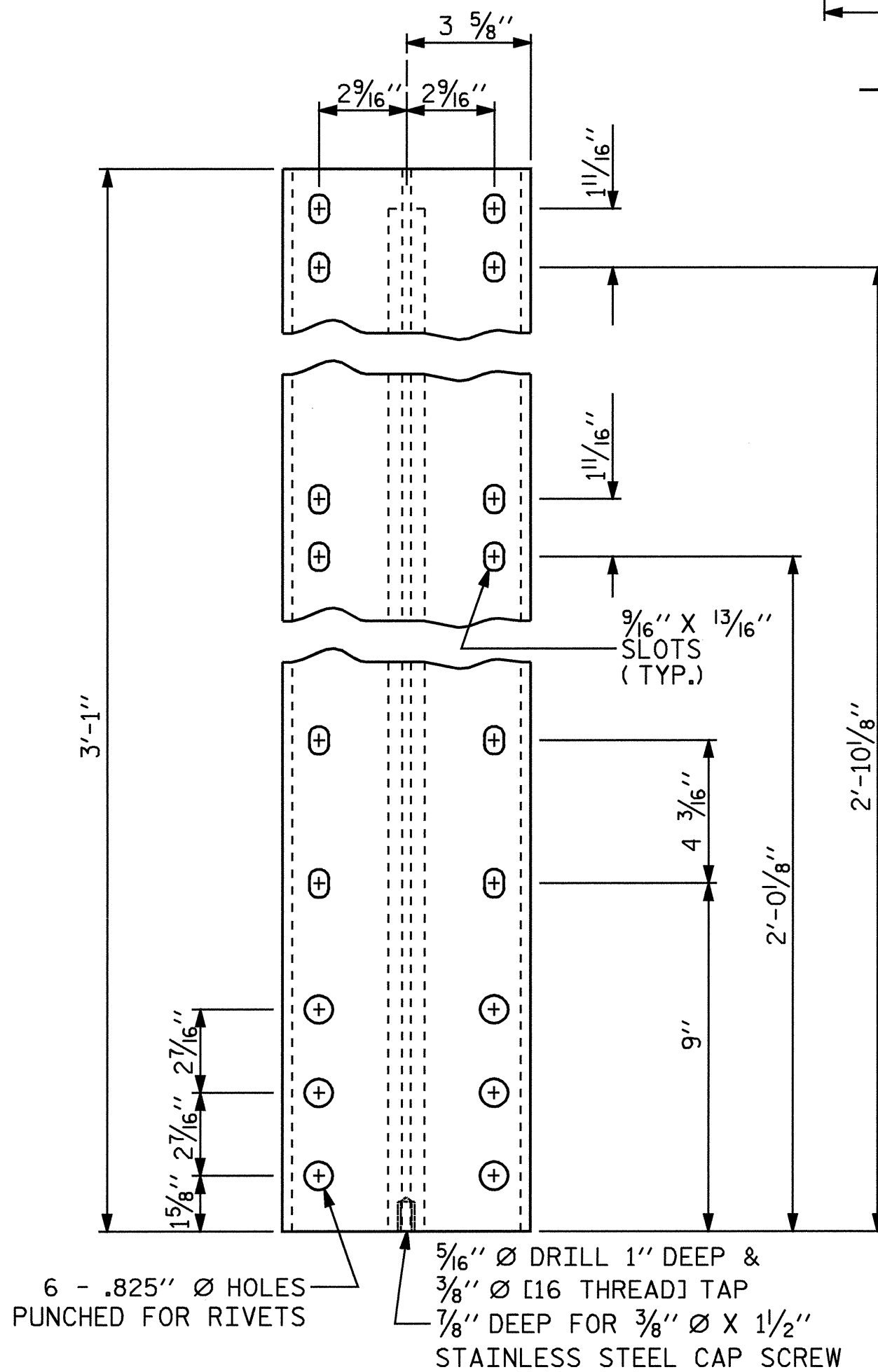
RIVET DETAIL



FRONT ELEVATION

SIDE ELEVATION

POST BASE DETAILS

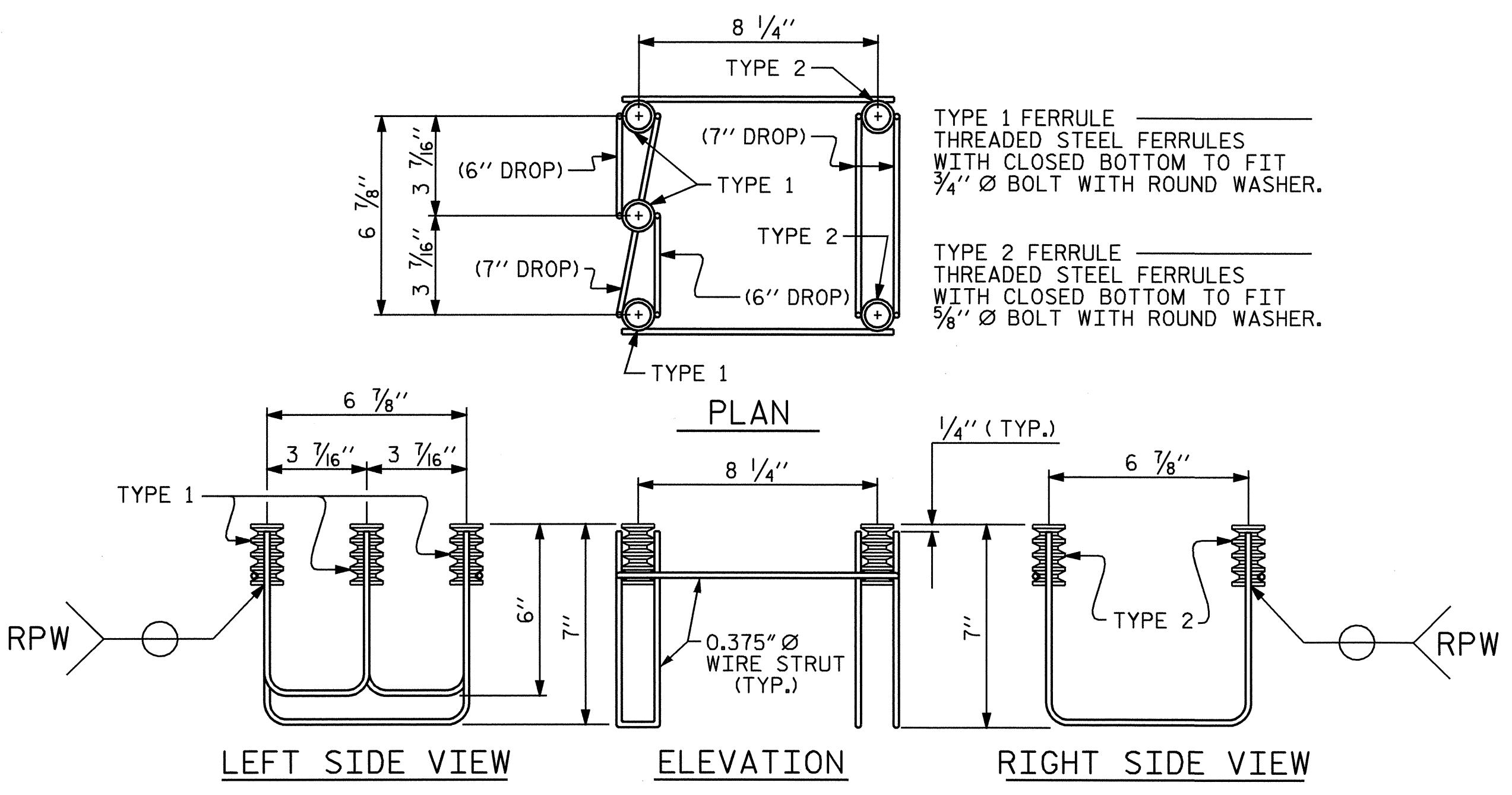


FRONT ELEVATION

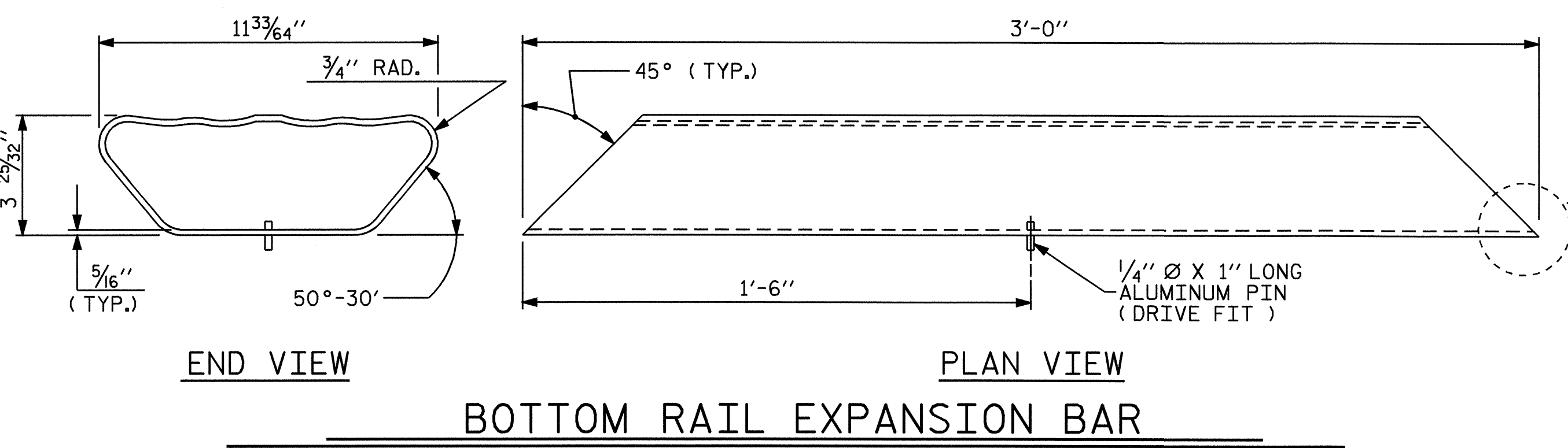
SIDE ELEVATION

DETAILS OF POST

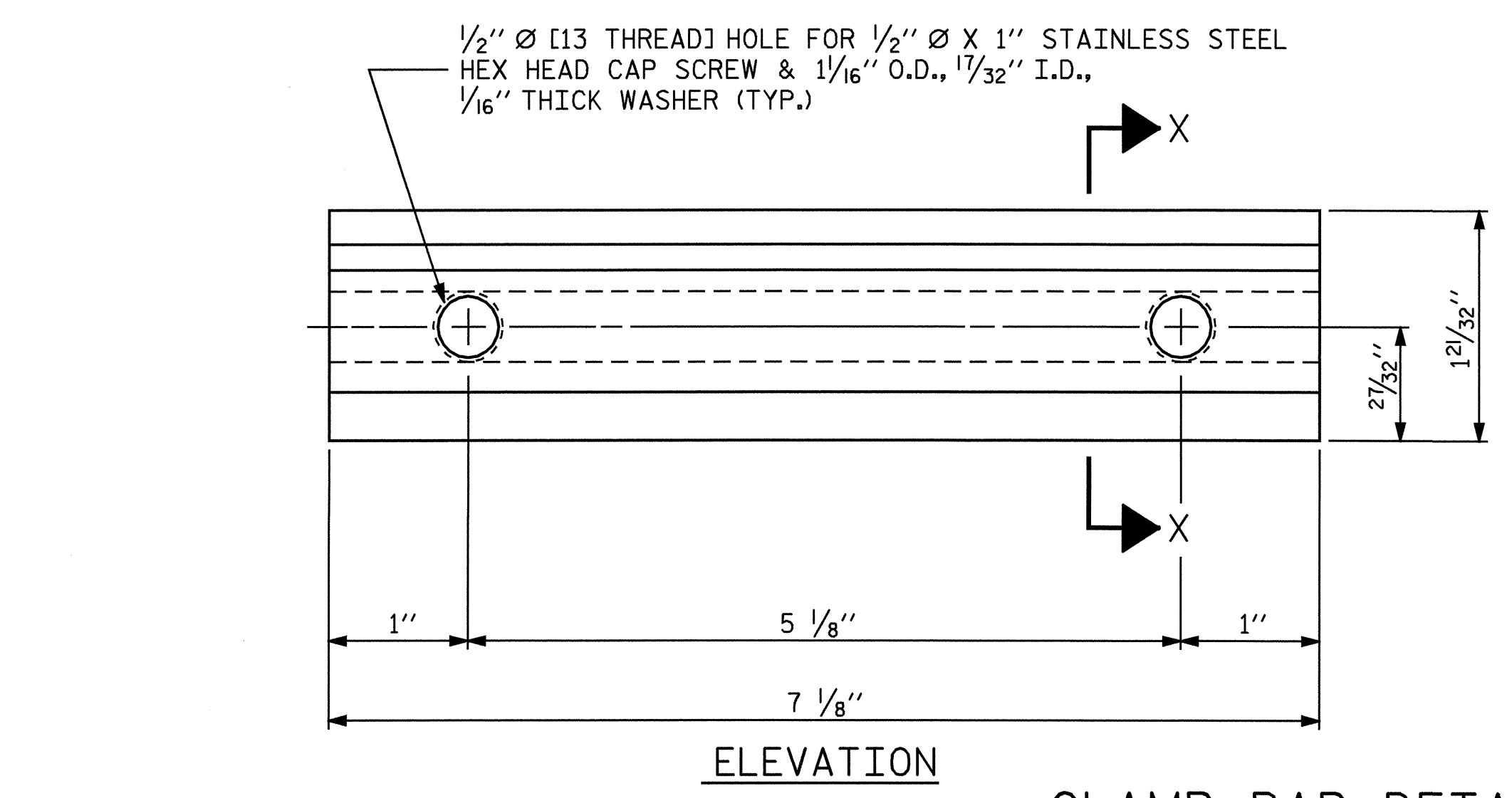
ASSEMBLED BY : J. MYA	DATE : 4-2-09
CHECKED BY : J. L. WALTON	DATE : 4-22-09
DRAWN BY : JMB 1/88	REV. 10/17/00 RWW/LES
CHECKED BY : GGH 1/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM



5-BOLT METAL RAIL ANCHOR ASSEMBLY
(44 ASSEMBLIES REQUIRED)



BOTTOM RAIL EXPANSION BAR



CLAMP BAR DETAIL
(6 REQUIRED PER POST)

NOTES
STRUCTURAL CONCRETE ANCHOR ASSEMBLY

THE STRUCTURAL CONCRETE ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:

A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2" FOR 3/4" FERRULES AND 1 3/4" FOR 5/8" FERRULES.

B. 3 - 3/4" Ø X 2 1/2" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø X 2 1/2" GALVANIZED BOLTS 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.

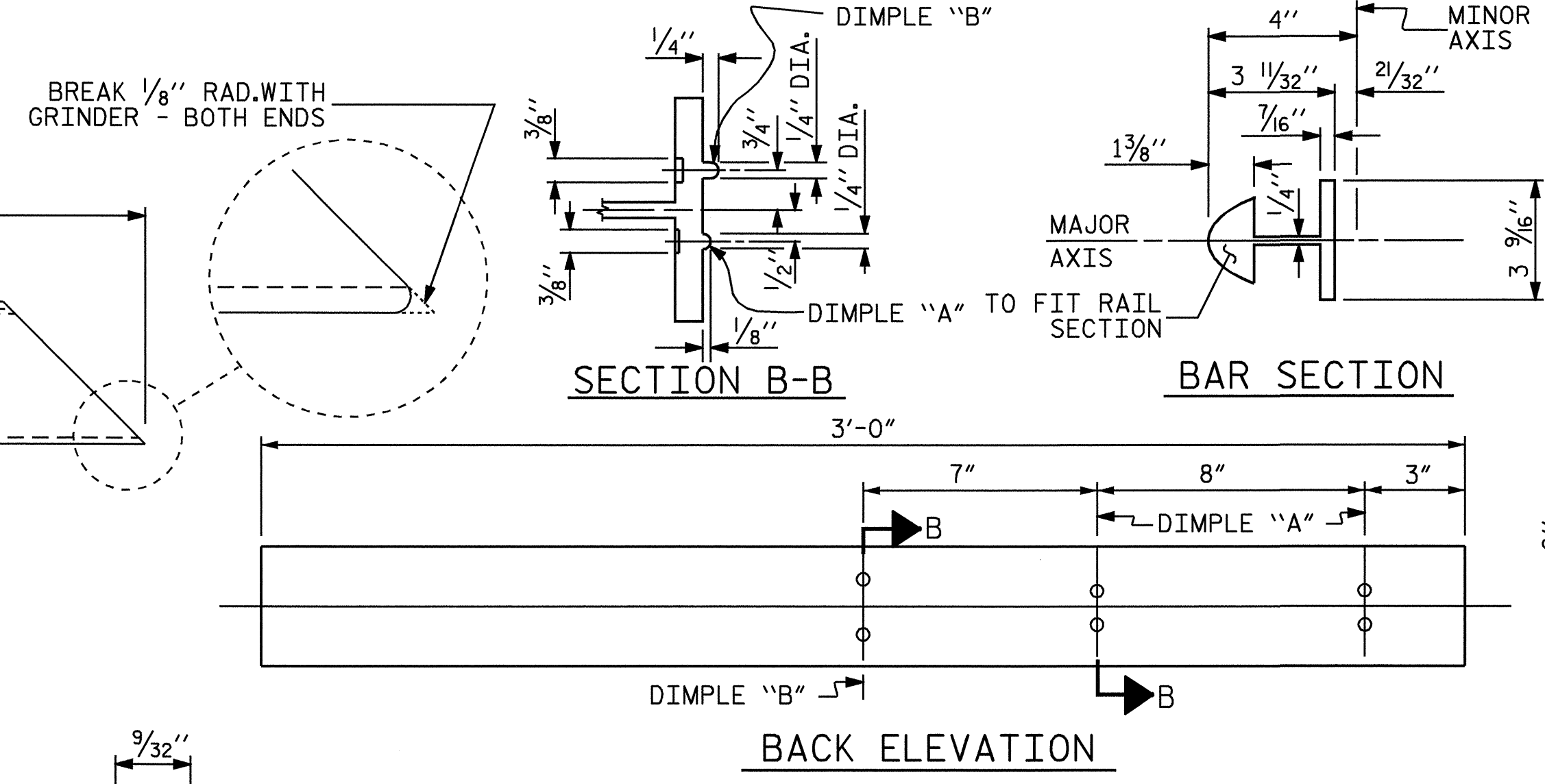
C. 2 - 5/8" Ø X 2 1/4" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 5/8" Ø X 2 1/4" GALVANIZED BOLTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.

D. WIRE STRUT SHOWN IN THE CONCRETE ANCHOR ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 7/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.

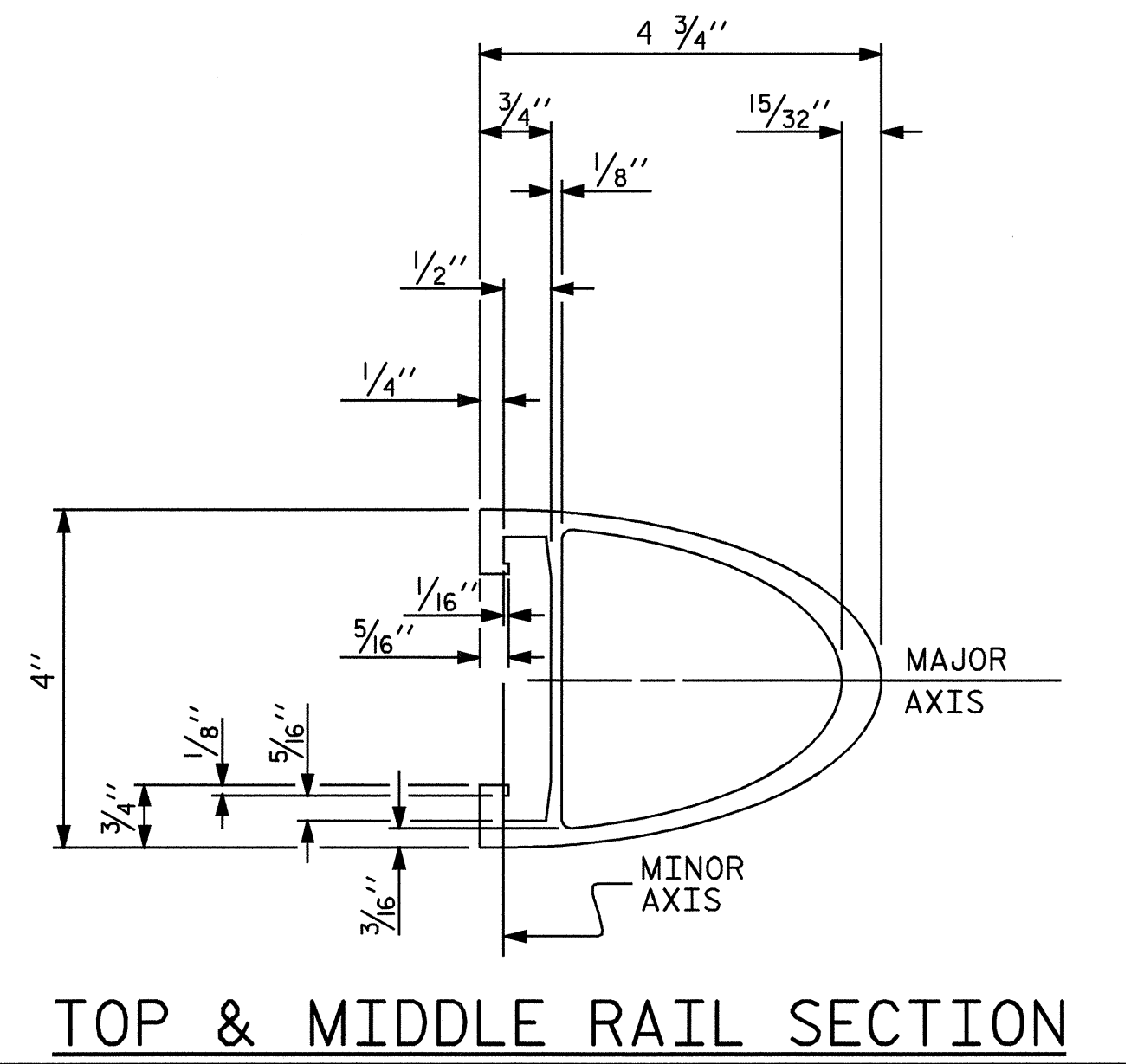
E. THE METAL RAIL ANCHOR ASSEMBLIES TO BE HOT DIPPED GALVANIZED TO CONFORM TO REQUIREMENTS OF AASHTO M111.

F. THE COST OF THE METAL RAIL ANCHOR ASSEMBLY WITH BOLTS AND WASHERS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF METAL RAIL.

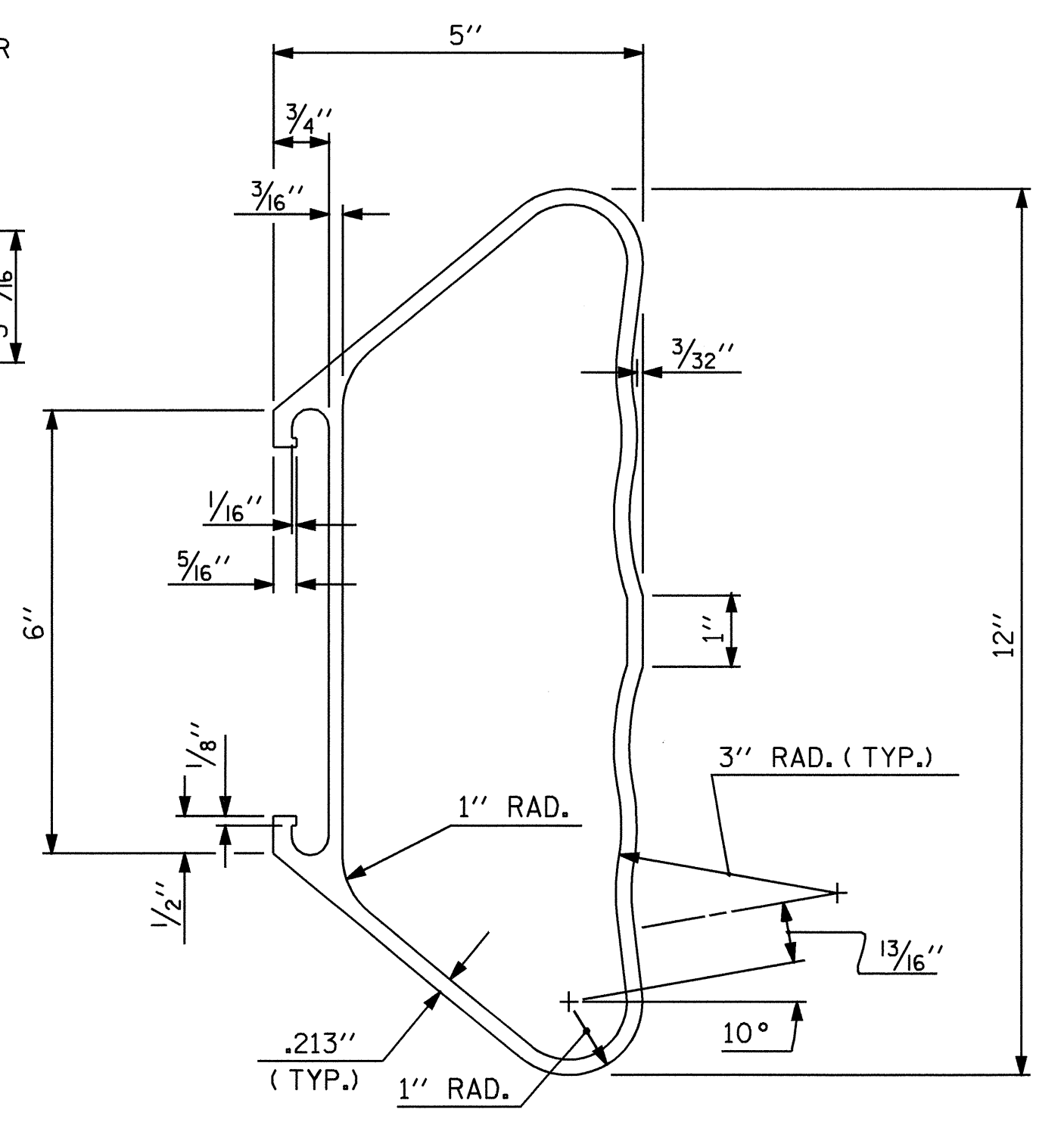
G. BOLTS TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM A FINGER-TIGHT POSITION.



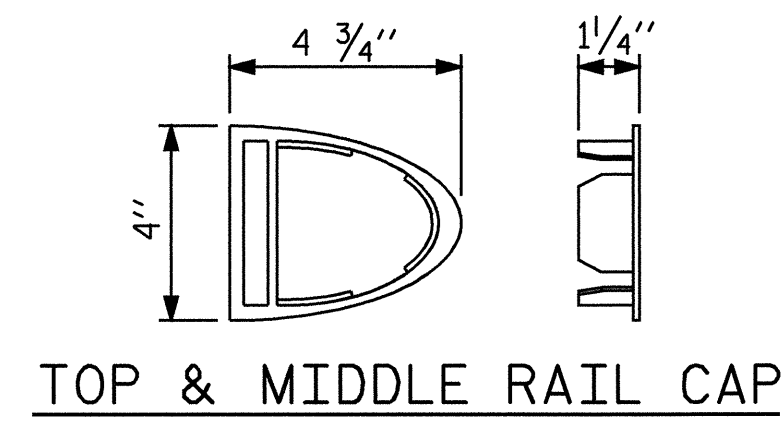
TOP & MIDDLE RAIL EXPANSION BAR



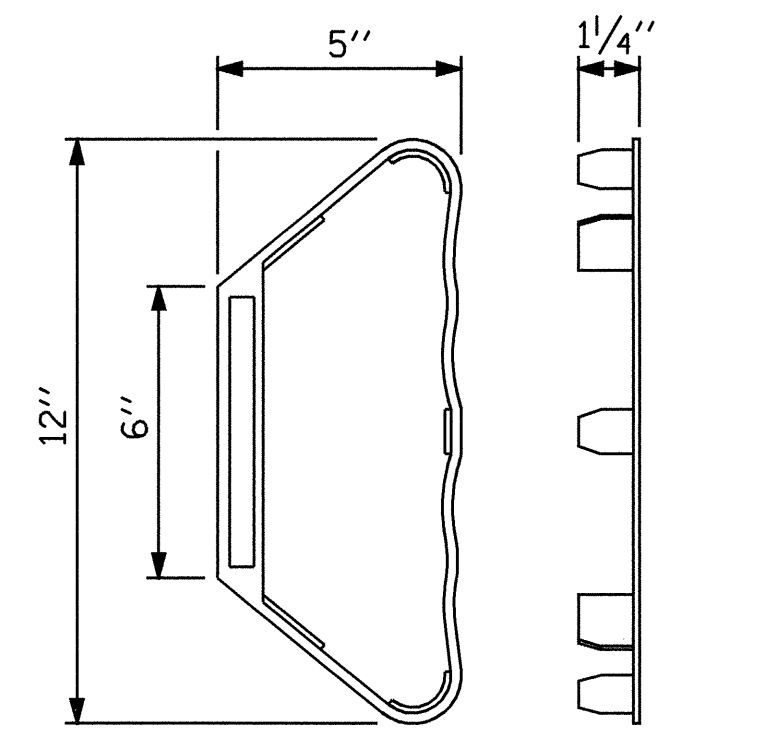
TOP & MIDDLE RAIL SECTION



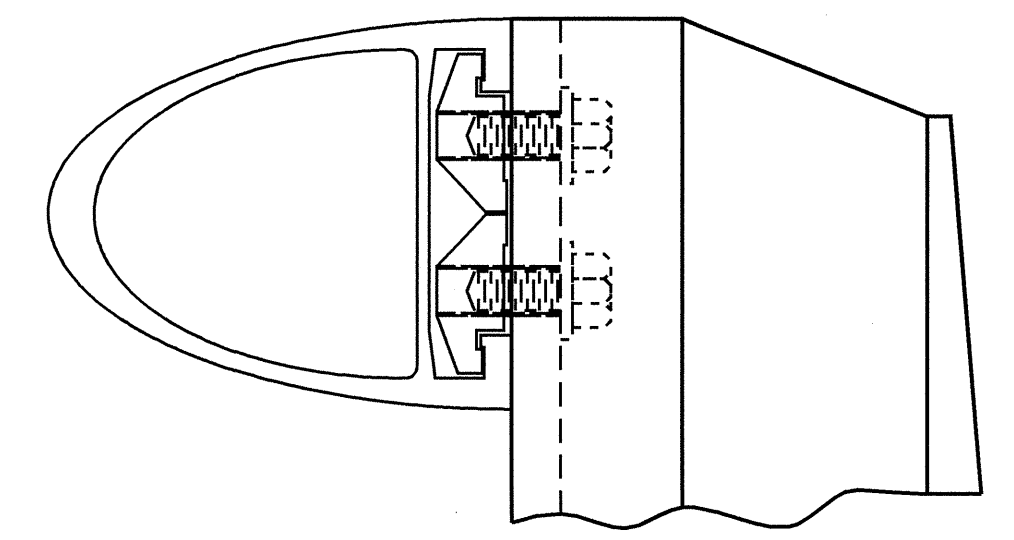
BOTTOM RAIL SECTION



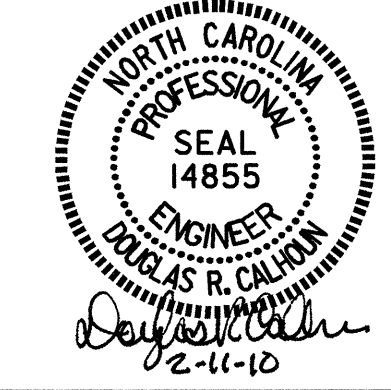
TOP & MIDDLE RAIL CAP



BOTTOM RAIL CAP



CLAMP ASSEMBLY
TOP RAIL SHOWN
(MIDDLE & BOTTOM RAIL ARE SIMILAR)



PROJECT NO. **B-4238**
PITT COUNTY
STATION: **20+80.50 -L-**
SHEET 4 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD					
3 BAR METAL RAIL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. **S-14**
TOTAL SHEETS **27**

ASSEMBLED BY : J. MYA	DATE : 24-2-09
CHECKED BY : J. L. WALTON	DATE : 4-22-09
DRAWN BY : JMB 1/88	REV. 7/10/01 RWW/LJS
CHECKED BY : GGH 1/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM

NOTES

METAL RAIL TO END POST CONNECTION

THE METAL RAIL TO END POST CONNECTION SHALL CONSIST OF THE FOLLOWING COMPONENTS:

- A. 1/2" PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 AND SHALL BE GALVANIZED AFTER FABRICATION.
- B. 3/4" STRUCTURAL CONCRETE INSERT SHALL HAVE A WORKING LOAD SHEAR CAPACITY OF 4800 LBS. THE FERRULES SHALL ENGAGE A 3/4" Ø X 1 5/8" BOLT WITH 2" O.D. WASHER IN PLACE. THE 3/4" Ø X 1 5/8" BOLT SHALL HAVE N. C. THREADS.
- C. CAP SCREWS FOR RAIL ATTACHMENT TO ANGLE SHALL CONFORM TO THE REQUIREMENTS OF ASTM F593 ALLOY 305 STAINLESS STEEL. CAP SCREWS TO BE CENTERED IN SLOTS AT 60° F. WASHERS FOR RAIL ATTACHMENT SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.
- D. STANDARD CLAMP BARS (STD. No. BMR6).

THE COST OF THE STANDARD CLAMP BARS AND CAP SCREWS USED IN THE METAL RAIL TO END POST CONNECTION SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR LINEAR FEET OF 3 BAR METAL RAIL.

THE 3/4" STRUCTURAL CONCRETE INSERT WITH BOLT SHALL BE ASSEMBLED IN THE SHOP.

THE COST OF THE 3/4" STRUCTURAL CONCRETE INSERT ASSEMBLY, AND THE 1/2" PLATES COMPLETE IN PLACE SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

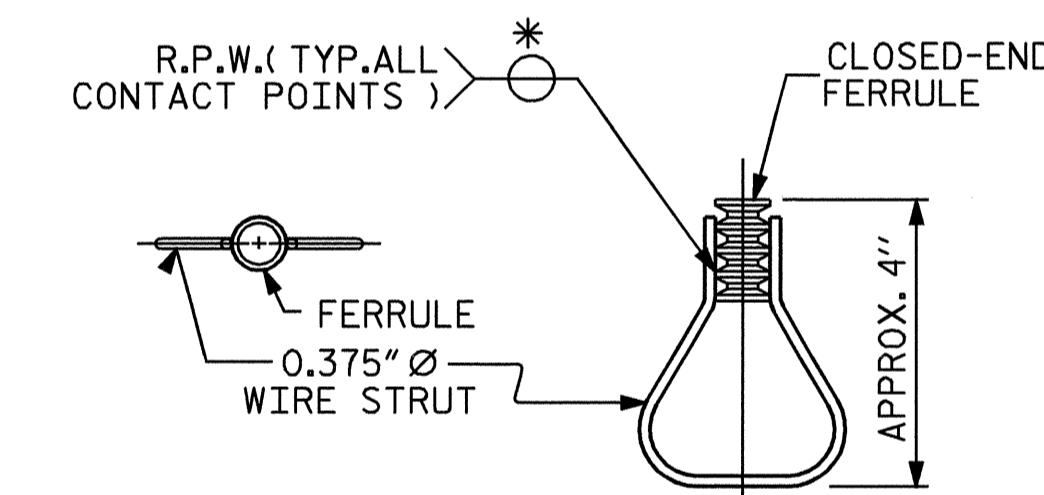
THE CONTRACTOR, AT HIS OPTION, MAY USE AN ADHESIVE BONDING SYSTEM IN LIEU OF THE STRUCTURAL CONCRETE INSERT EMBEDDED IN THE END POST. IF THE ADHESIVE BONDING SYSTEM IS USED, THE 3/4" Ø X 1 5/8" BOLT WITH WASHER SHALL BE REPLACED WITH A 3/4" Ø X 6 1/2" BOLT AND 2" O.D. WASHER. ALL SPECIFICATIONS THAT APPLY TO THE 3/4" Ø X 1 5/8" BOLT SHALL APPLY TO THE 3/4" Ø X 6 1/2" BOLT. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

NOTES

STRUCTURAL CONCRETE INSERT

THE STRUCTURAL CONCRETE INSERT ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:

- A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 1 1/2".
- B. 1 - 3/4" Ø X 1 5/8" BOLT WITH WASHER. BOLT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLT AND WASHER SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLT AND WASHER MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø X 1 5/8" GALVANIZED BOLT AND WASHER. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.
- C. WIRE STRUT SHOWN IN THE CONCRETE INSERT ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 1/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.



PLAN ELEVATION

STRUCTURAL CONCRETE INSERT

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

PROJECT NO. B-4238

PITT COUNTY

STATION: 20+80.50 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

3 BAR METAL RAIL

REVISIONS

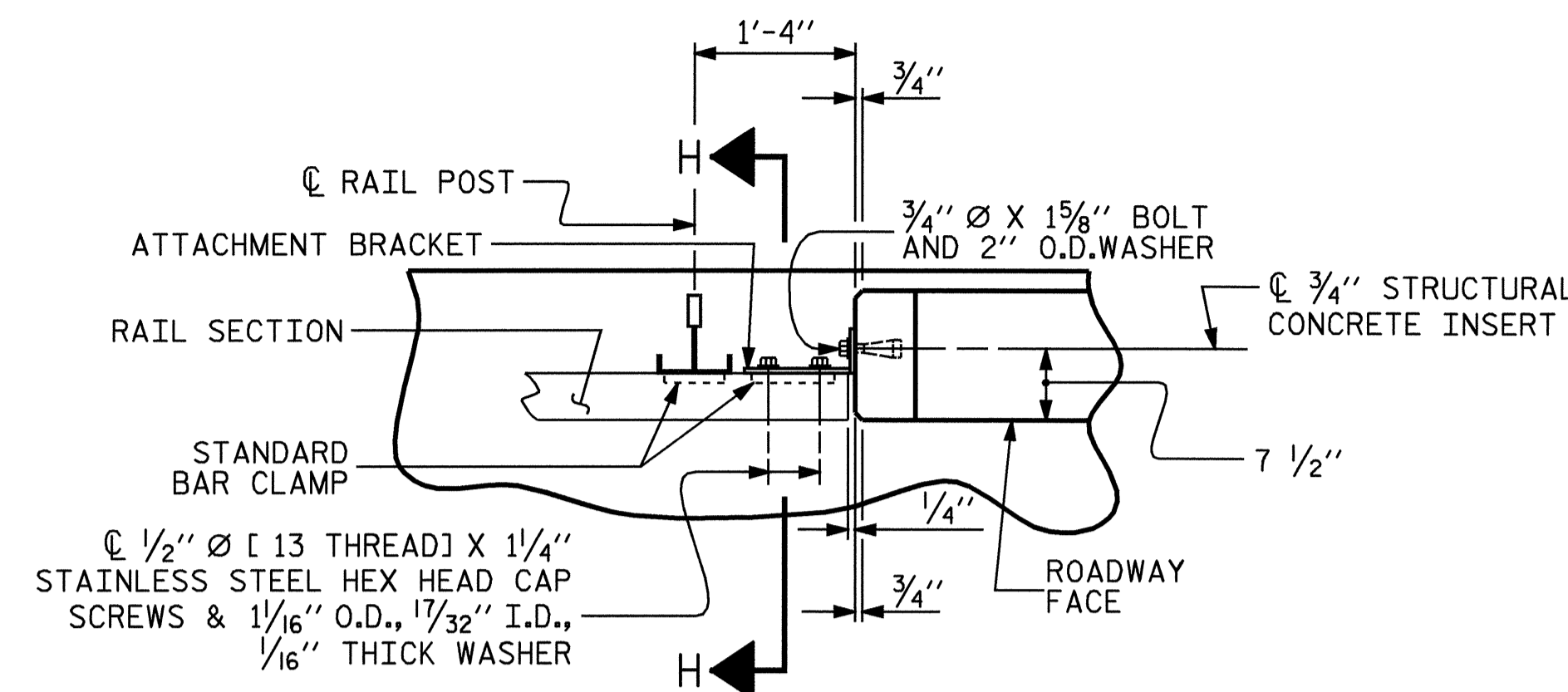
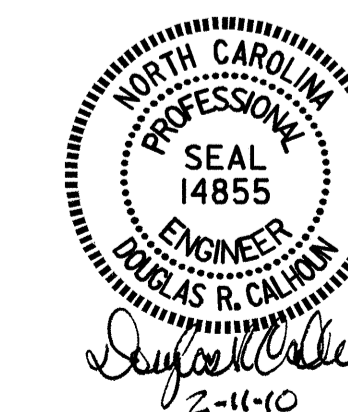
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.

S-15

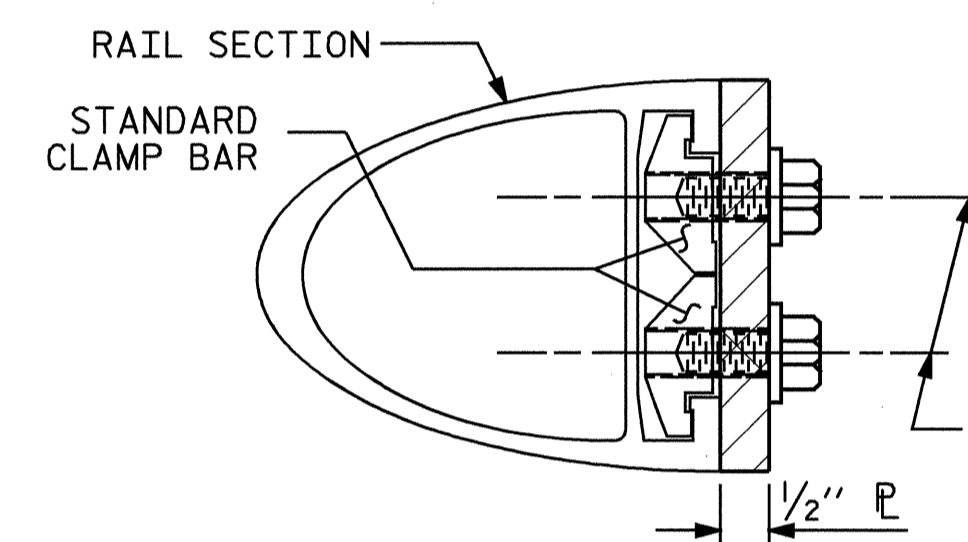
TOTAL SHEETS

27



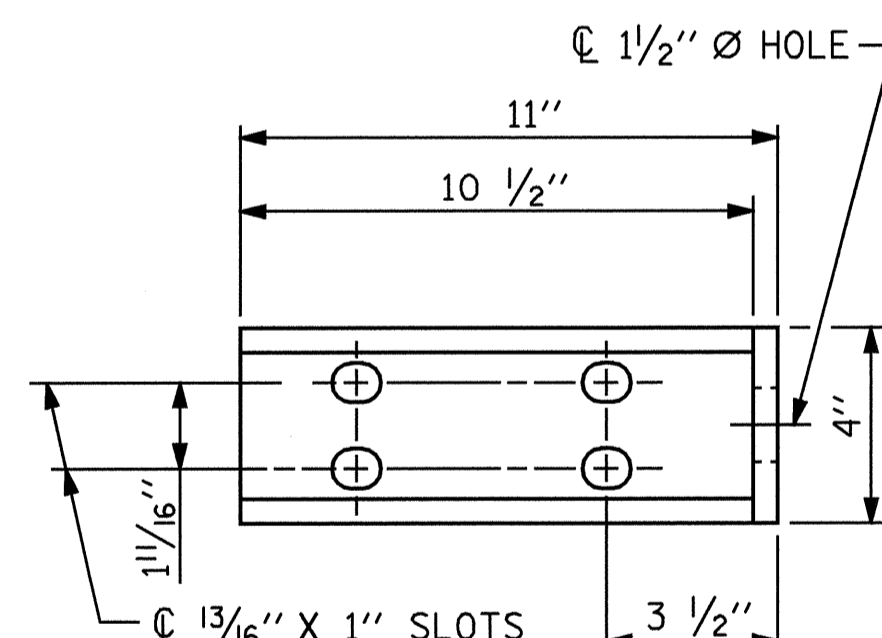
PLAN OF RAIL AND END POST

(STIFFENER ON 1/2" P NOT SHOWN FOR CLARITY)

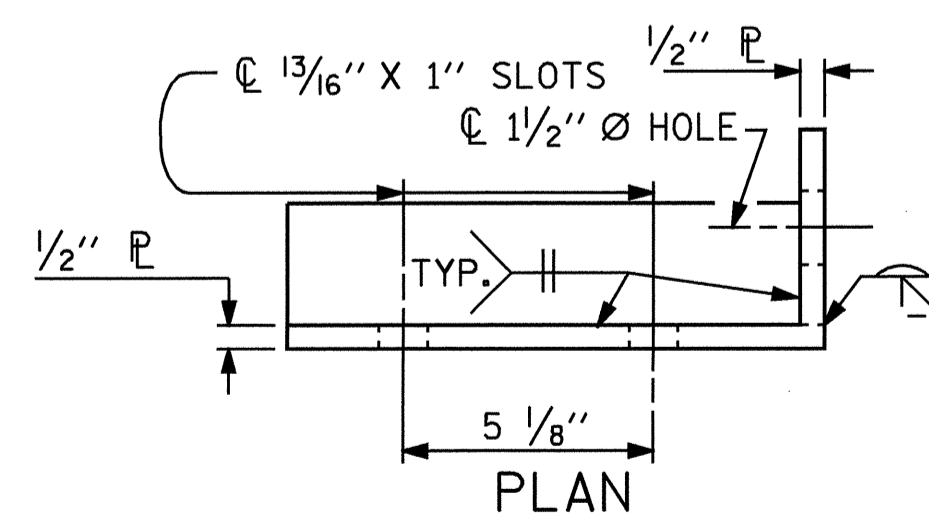


SECTION H-H

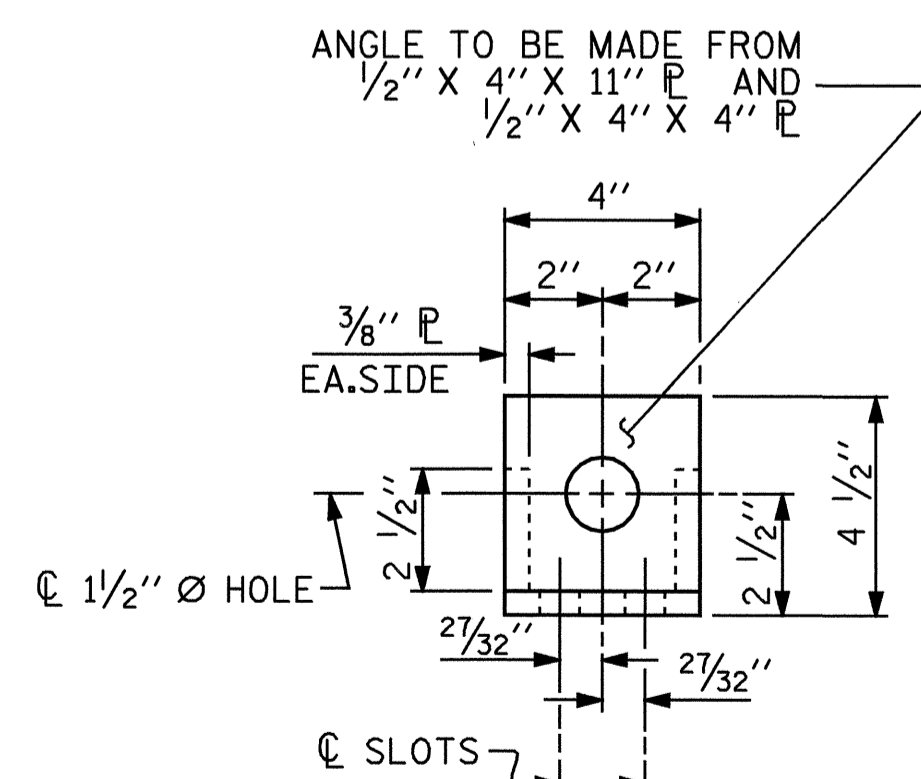
(FOR TOP & MIDDLE RAIL)



ELEVATION



PLAN

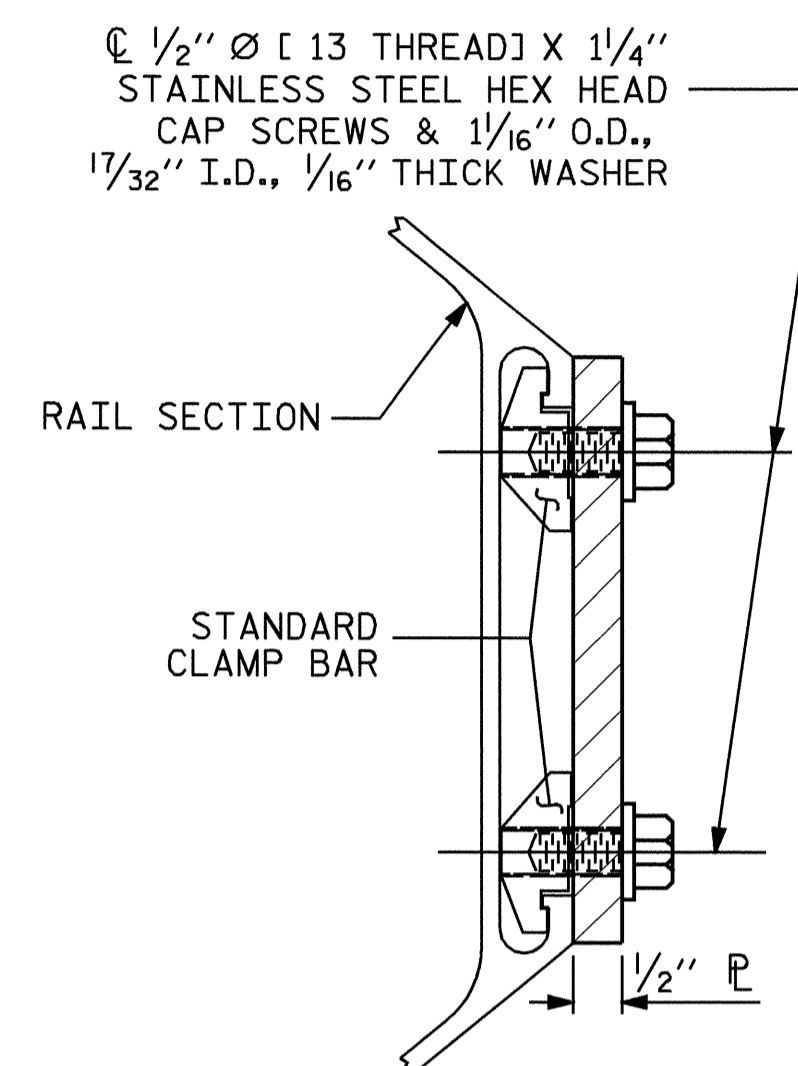


END VIEW

(FIX. AND EXP.)

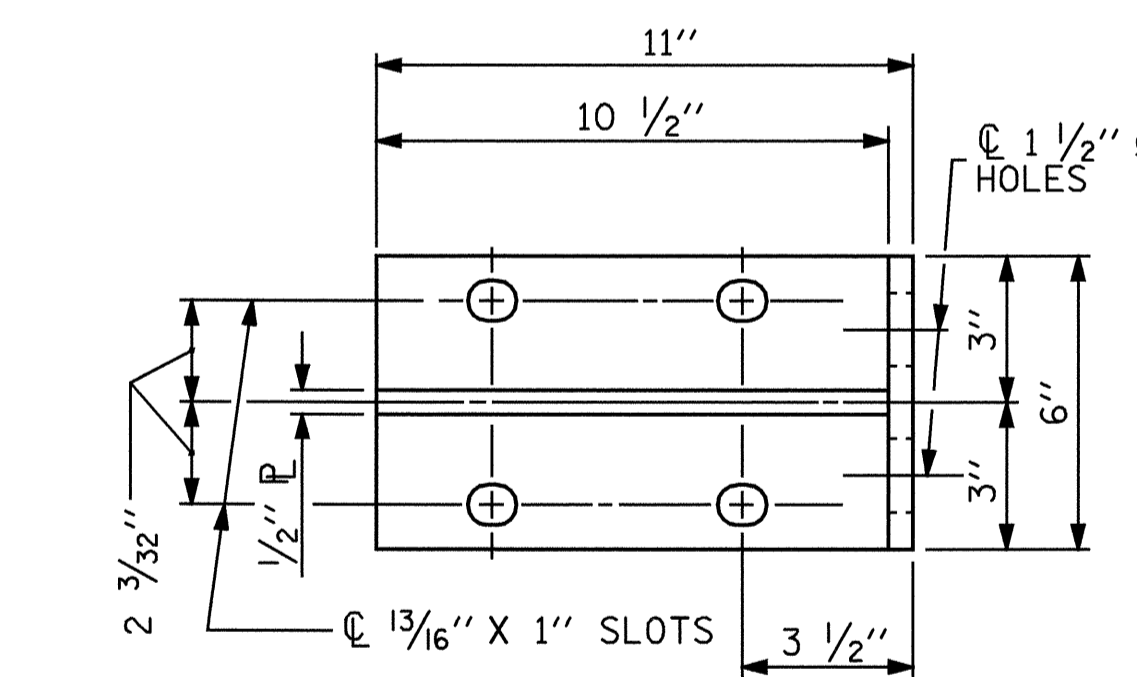
DETAILS FOR ATTACHMENT BRACKET

(TOP & MIDDLE RAIL ONLY)

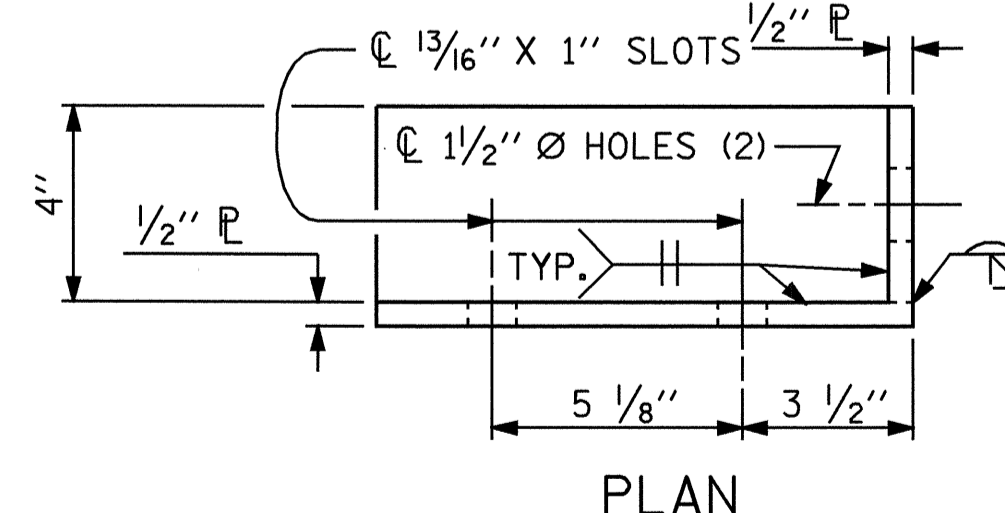


SECTION H-H

(FOR BOTTOM RAIL)



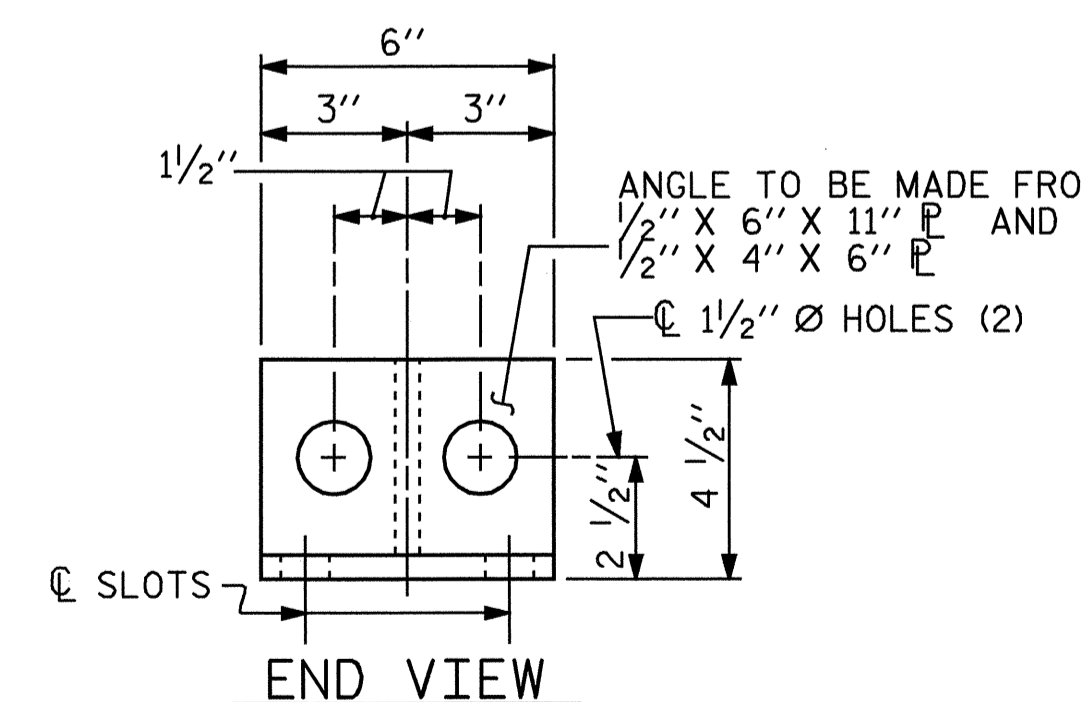
ELEVATION



PLAN

DETAILS FOR ATTACHMENT BRACKET

(BOTTOM RAIL ONLY)



END VIEW

ASSEMBLED BY : J. MYA	DATE : 4-2-09
CHECKED BY : J. L. WALTON	DATE : 4-22-09
DRAWN BY : JMB 1/88	REV. 7/10/01 RWW/LES
CHECKED BY : GGH 1/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 7/8" 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 M11.

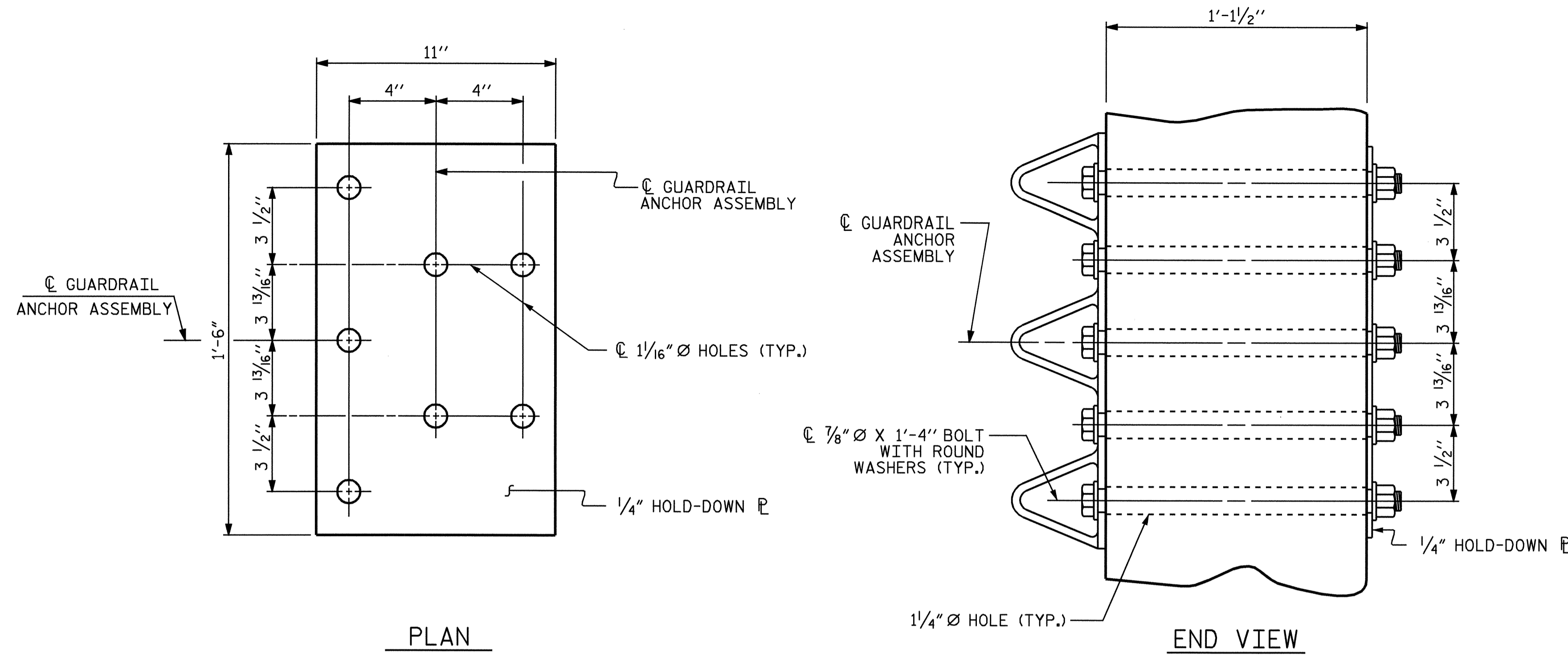
BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.

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

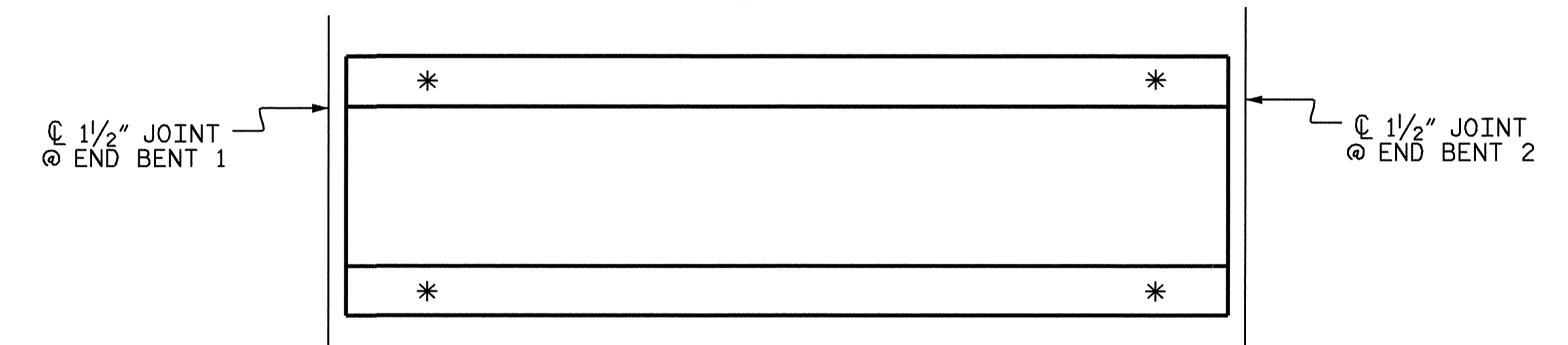
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS, NUTS AND WASHERS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE END POST 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.

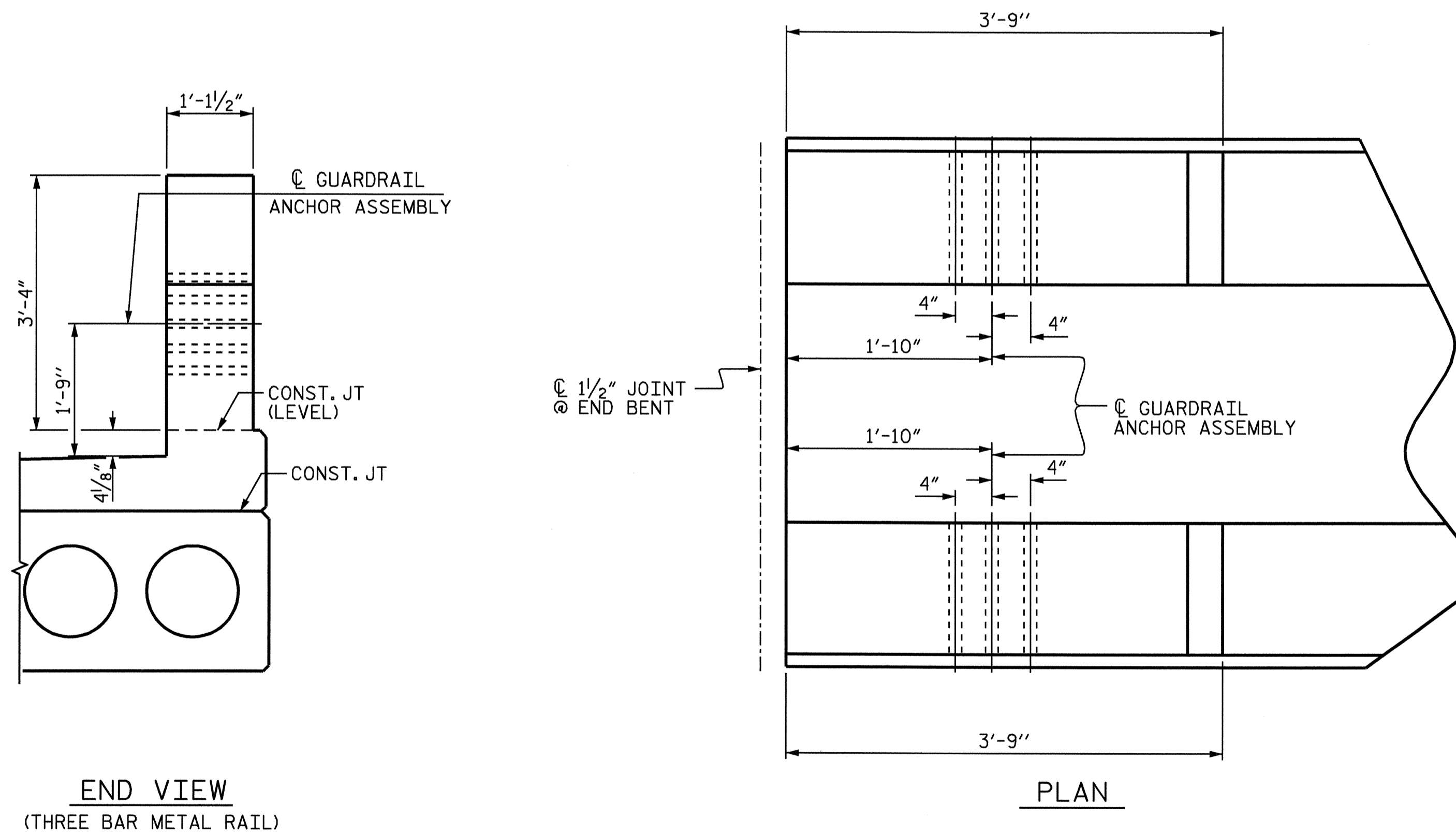


GUARDRAIL ANCHOR ASSEMBLY DETAILS



SKETCH SHOWING POINTS OF ATTACHMENT

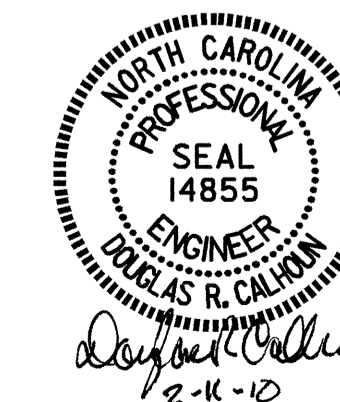
* LOCATION OF GUARDRAIL ATTACHMENT



LOCATION OF GUARDRAIL ANCHOR AT END POST

PROJECT NO. B-4238
 PITT COUNTY
 STATION: 20+80.50 -L-

SHEET 6 OF 6



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 DETAILS
 FOR METAL RAILS

ASSEMBLED BY : J. MYA	DATE : 4-2-09
CHECKED BY : J. L. WALTON	DATE : 4-22-09
DRAWN BY : EEM 6/94	REV. 10/17/00 RWW/LES
CHECKED BY : RGW 6/94	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM

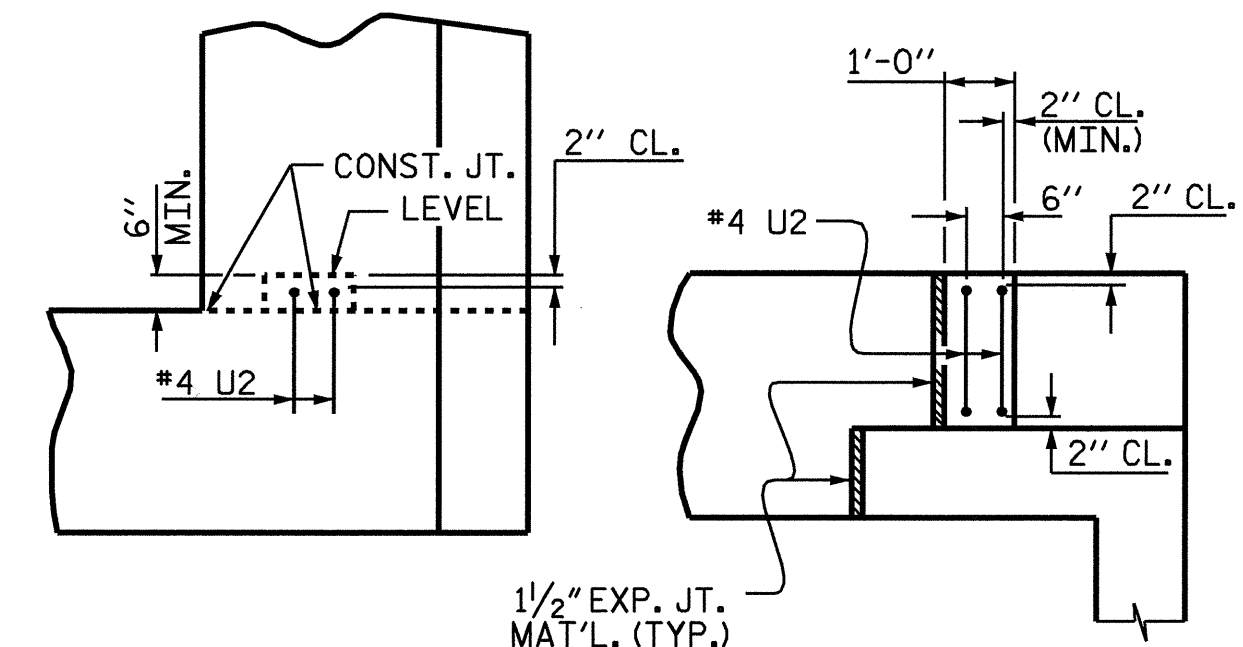
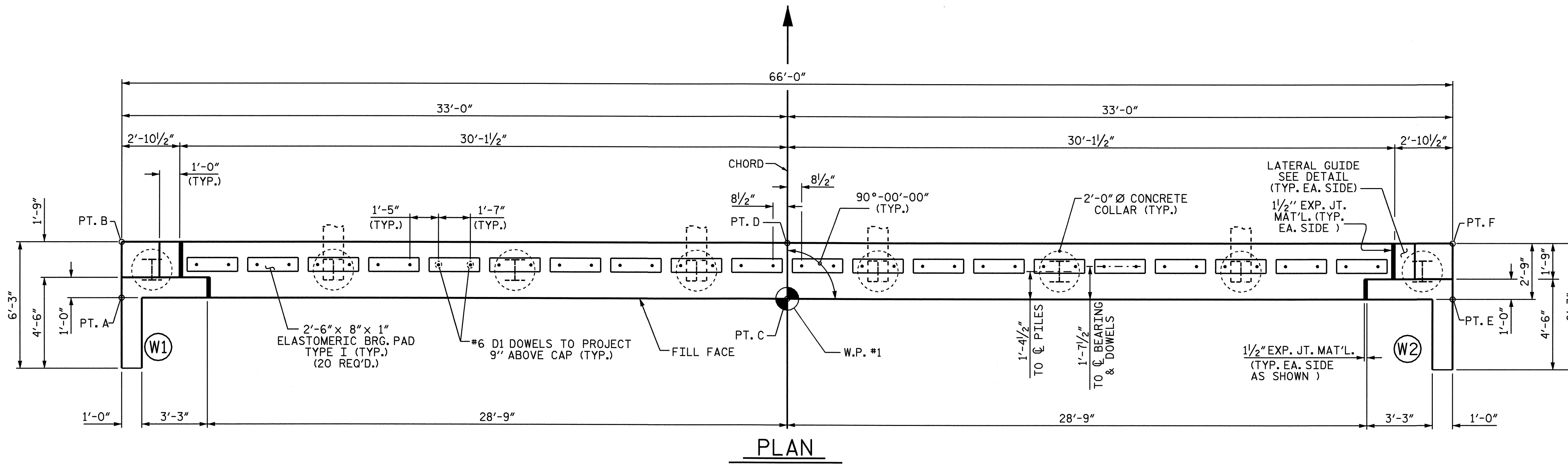
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			27

NOTES

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

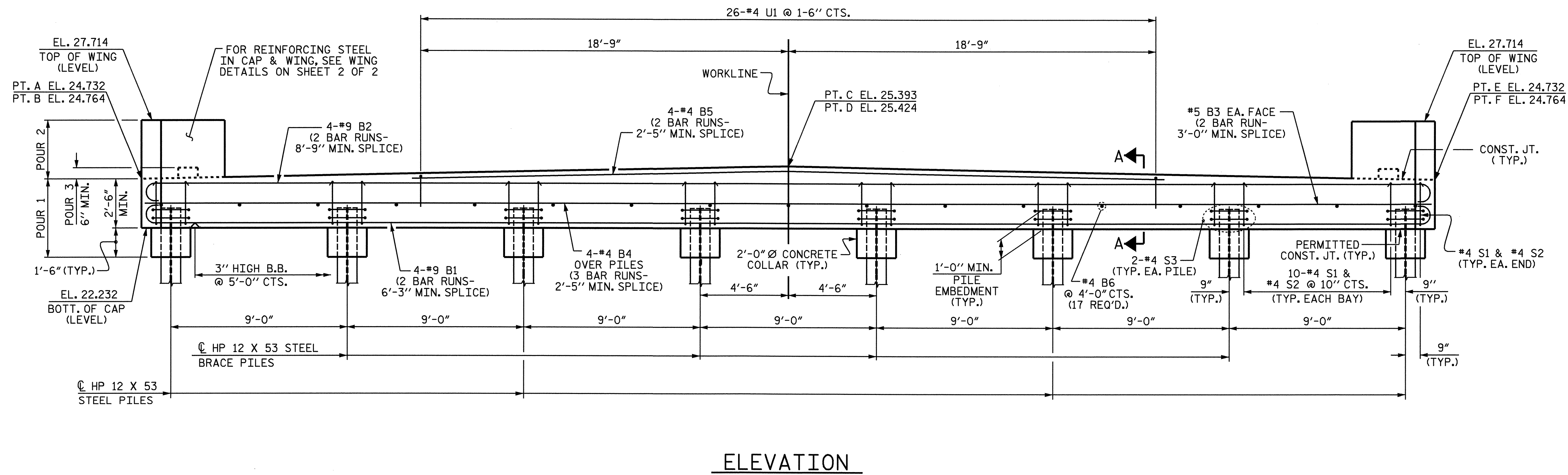
THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



LATERAL GUIDE

(RIGHT SIDE SHOWN, LEFT SIDE SIMILAR)



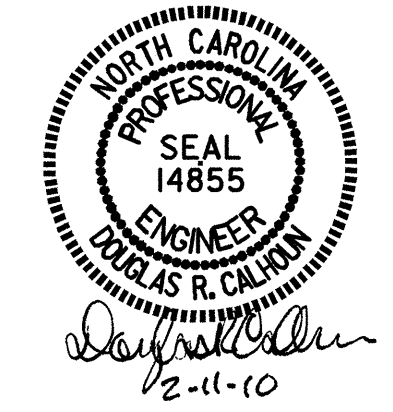
PROJECT NO. B-4238
 PITT COUNTY
 STATION: 20+80.50 -L-

SHEET 1 OF 2

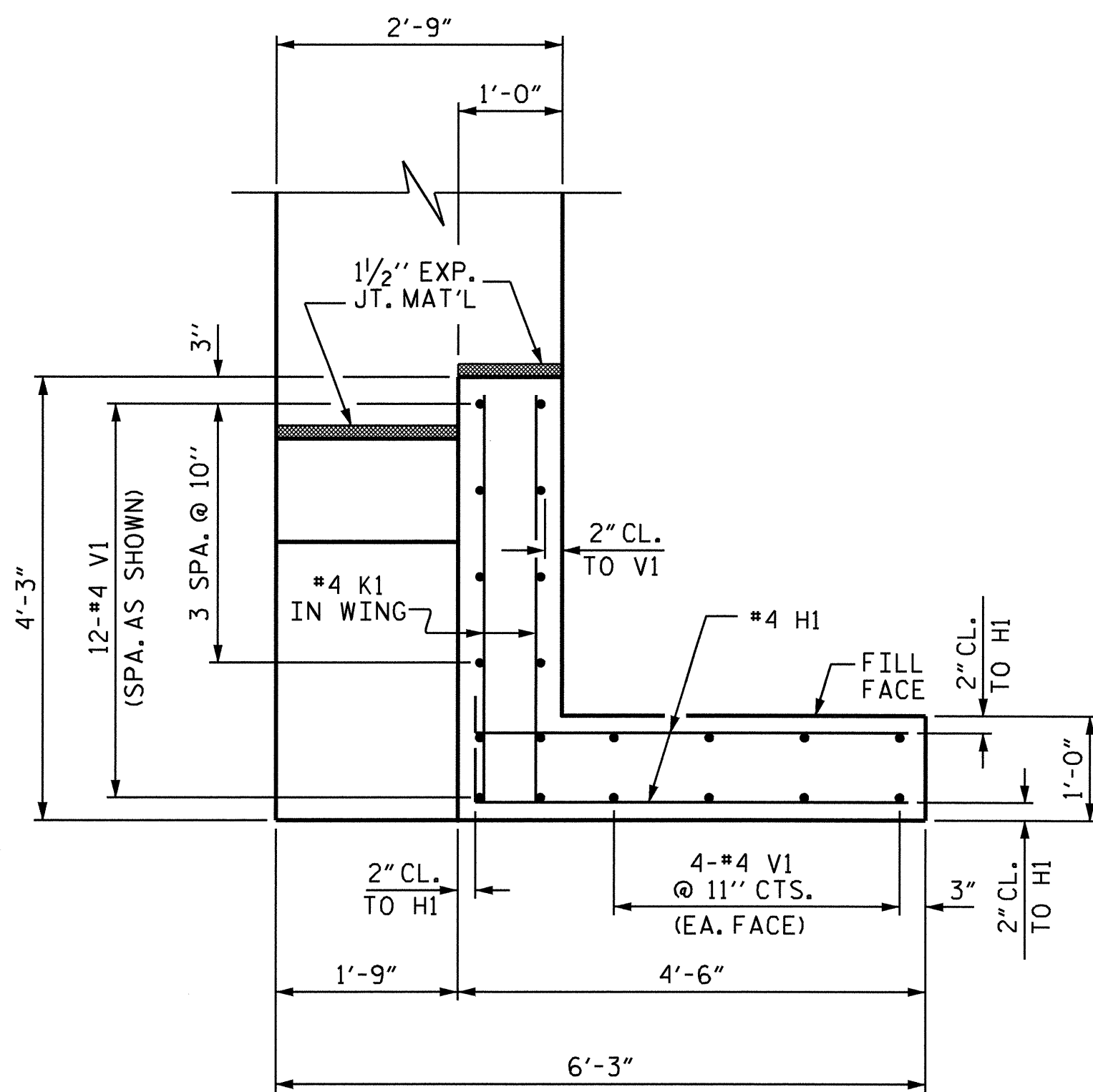
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT 1

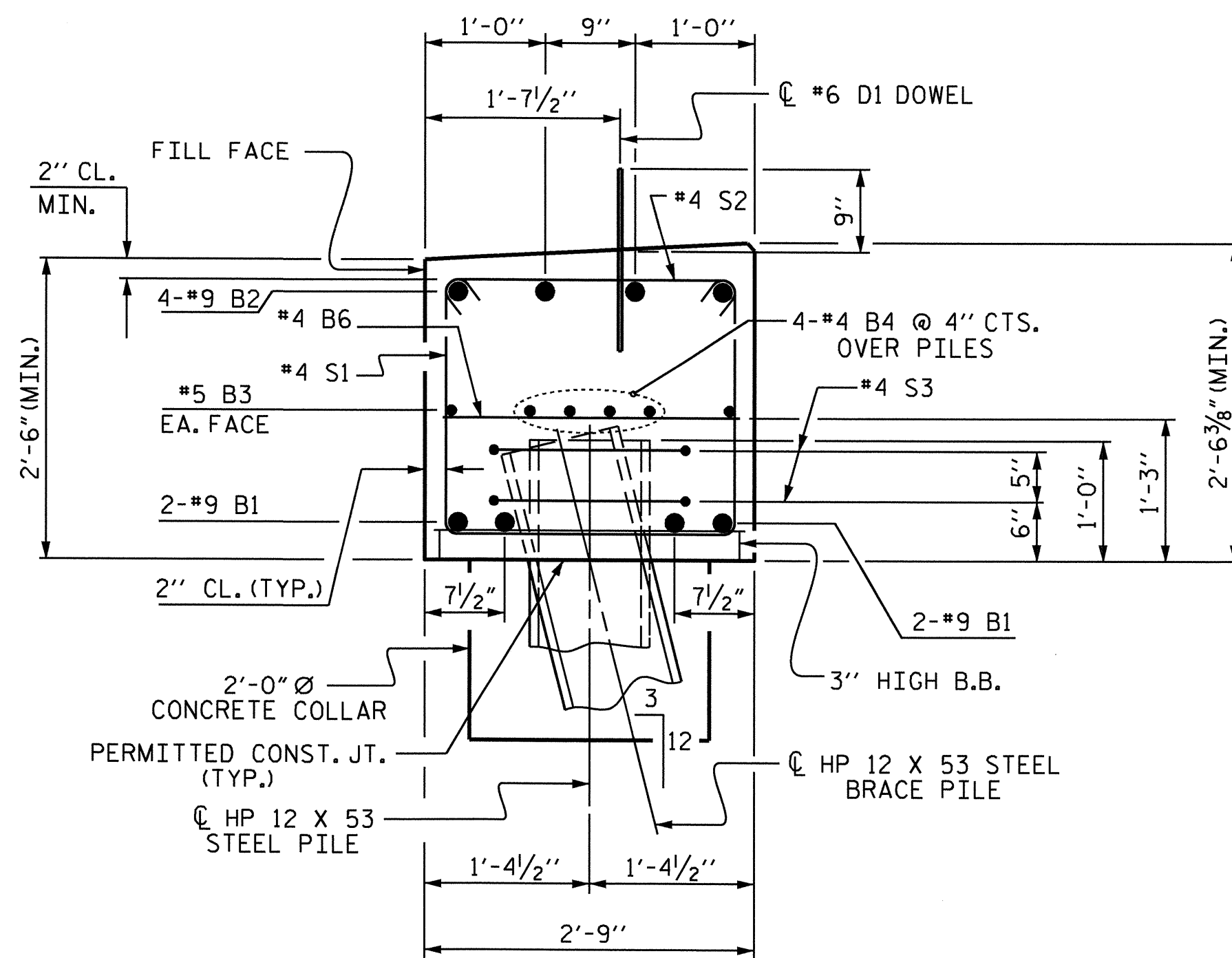
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			27



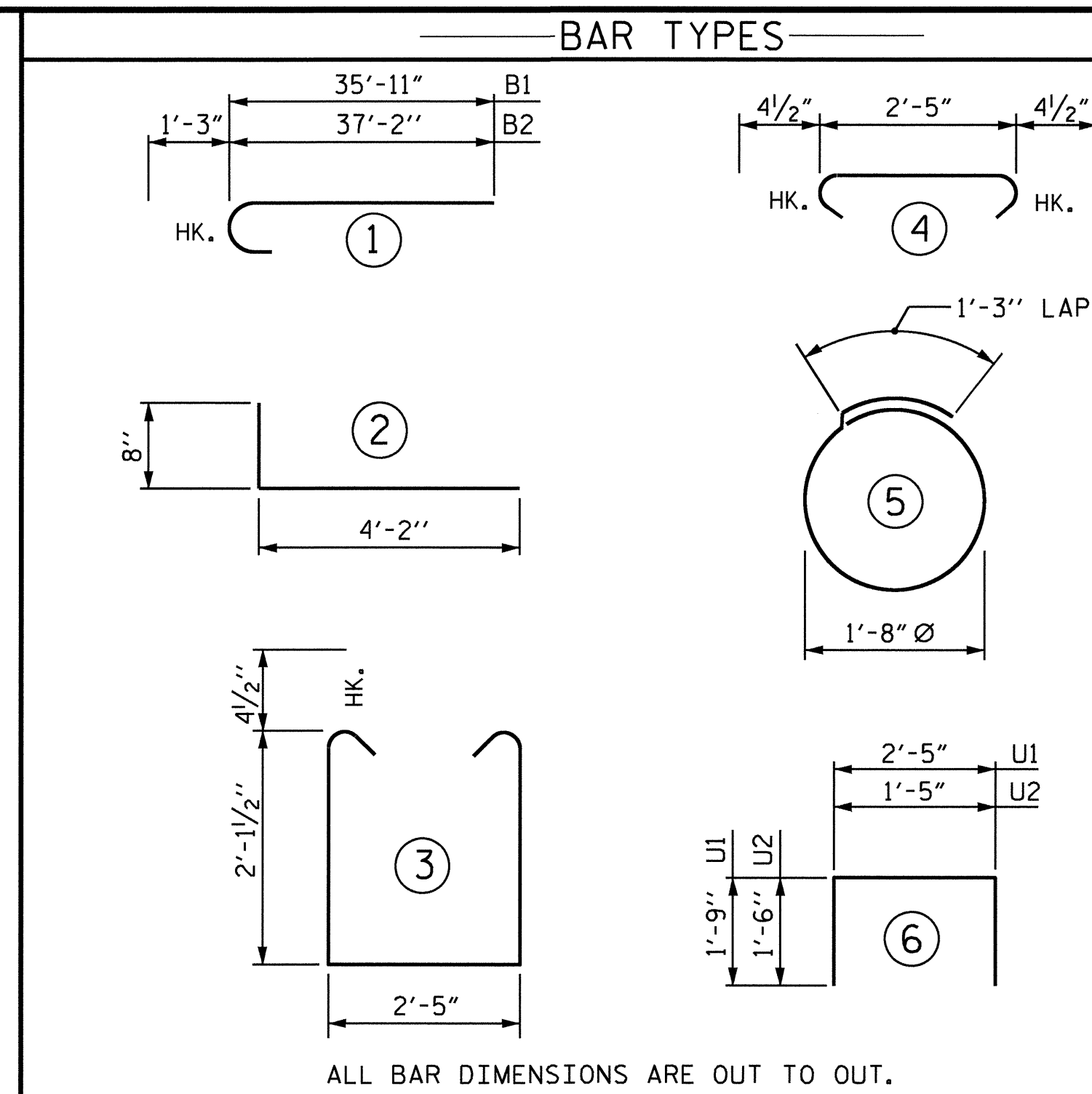
DRAWN BY : J. MYA DATE : 4-1-09
 CHECKED BY : J. L. WALTON DATE : 4-28-09



PLAN OF WING - W1
(WING W2 SIMILAR)



SECTION A-A

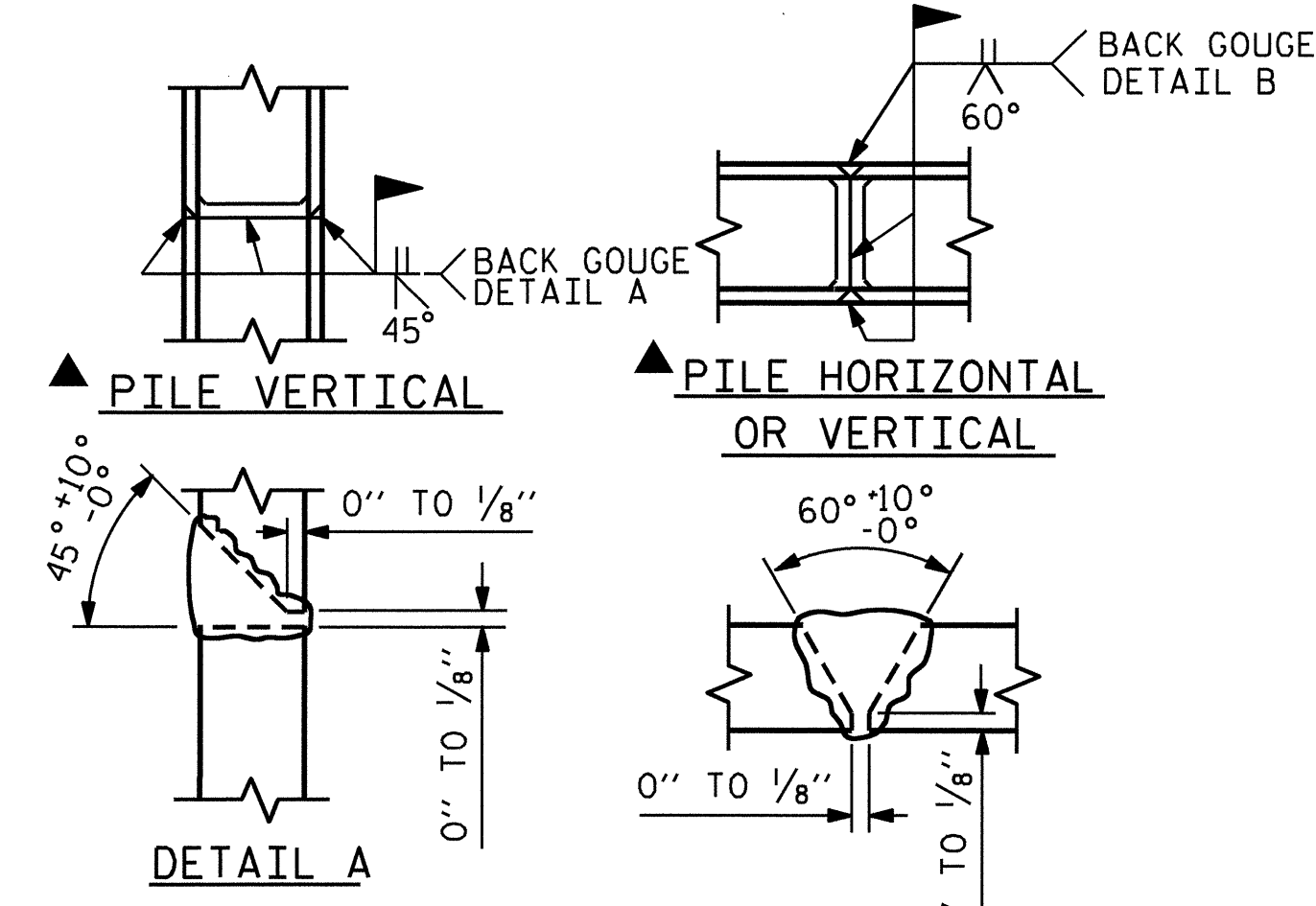


ALL BAR DIMENSIONS ARE OUT TO OUT.

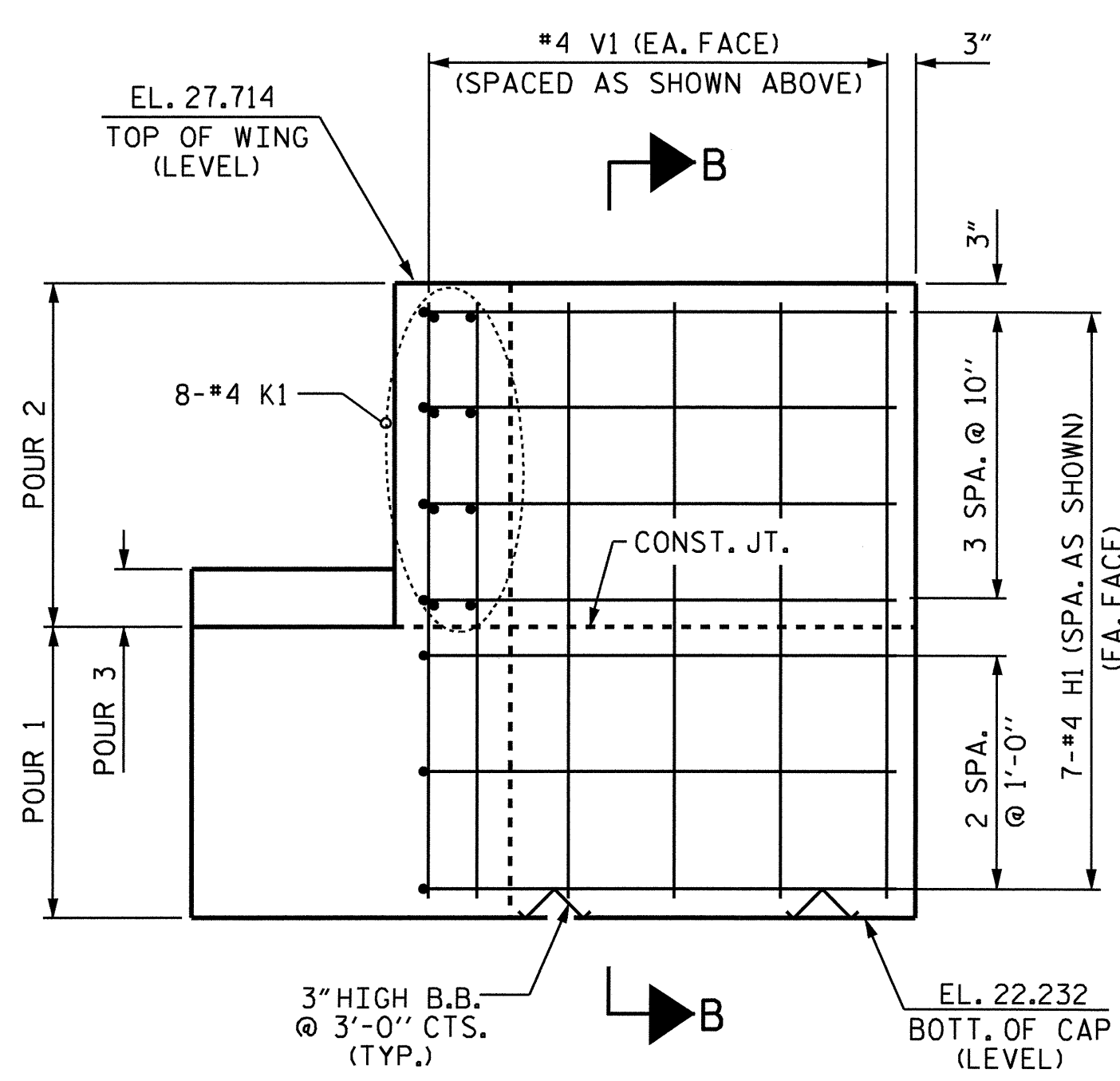
BILL OF MATERIAL					
END BENT 1					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	37'-2"	1011
B2	8	#9	1	38'-5"	1045
B3	4	#5	STR	34'-4"	143
B4	12	#4	STR	23'-6"	188
B5	8	#4	STR	20'-6"	110
B6	17	#4	STR	2'-5"	27
D1	40	#6	STR	1'-6"	90
H1	28	#4	2	4'-10"	90
K1	16	#4	STR	3'-11"	42
S1	72	#4	3	7'-5"	357
S2	72	#4	4	3'-2"	152
S3	16	#4	5	6'-6"	69
U1	26	#4	6	5'-11"	103
U2	4	#4	6	4'-5"	12
V1	40	#4	STR	5'-1"	136
REINFORCING STEEL				LBS.	3575

CLASS A CONCRETE BREAKDOWN	
POUR 1 (CAP, CONCRETE COLLARS & LOWER PART OF WINGS)	C.Y. 21.2
POUR 2 (UPPER PART OF WINGS)	C.Y. 1.7
POUR 3 (LATERAL GUIDES)	C.Y. 0.1
TOTAL	C.Y. 23.0

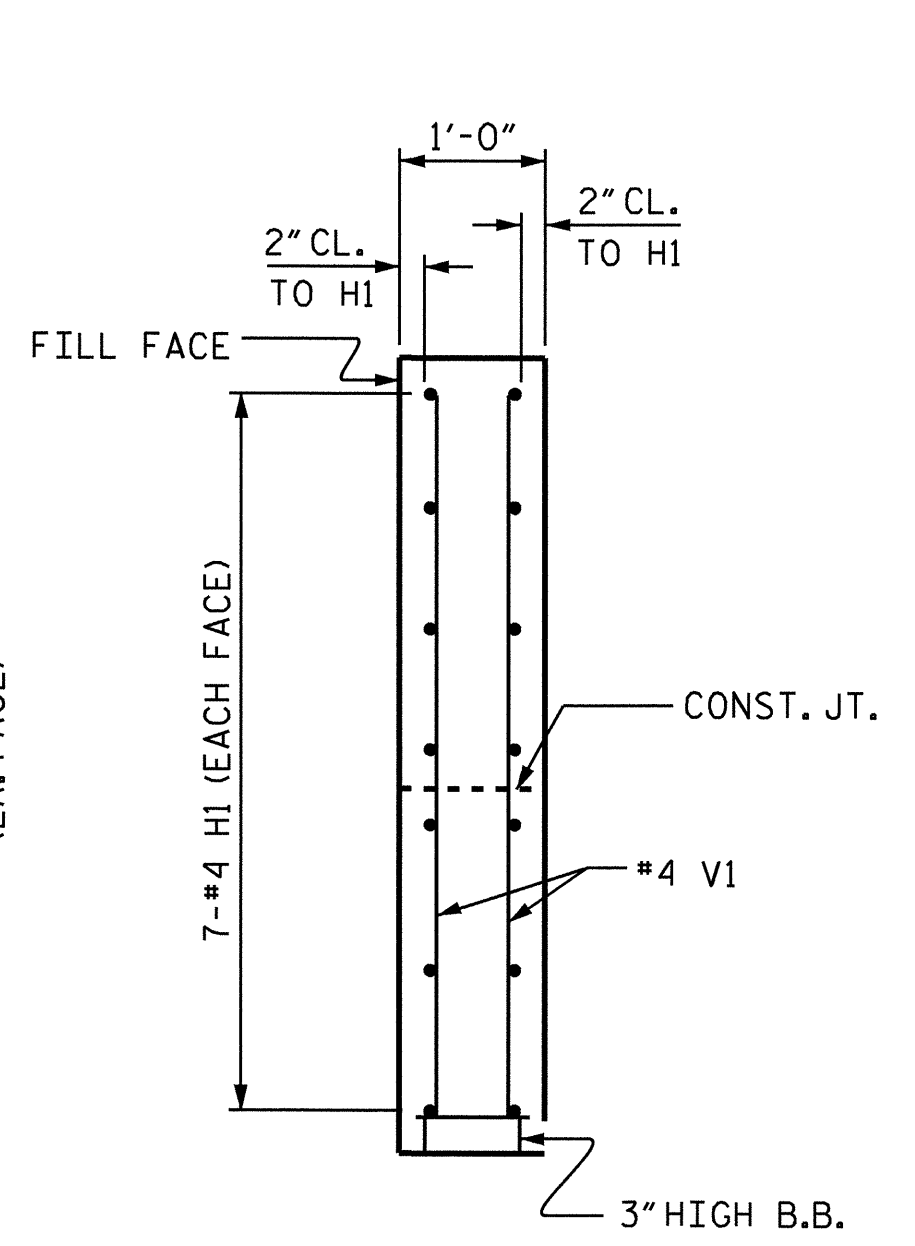
HP 12 X 53 STEEL PILES :	
NO. : 8	LIN. FT. : 480
PILE REDRIVES :	NO. : 4



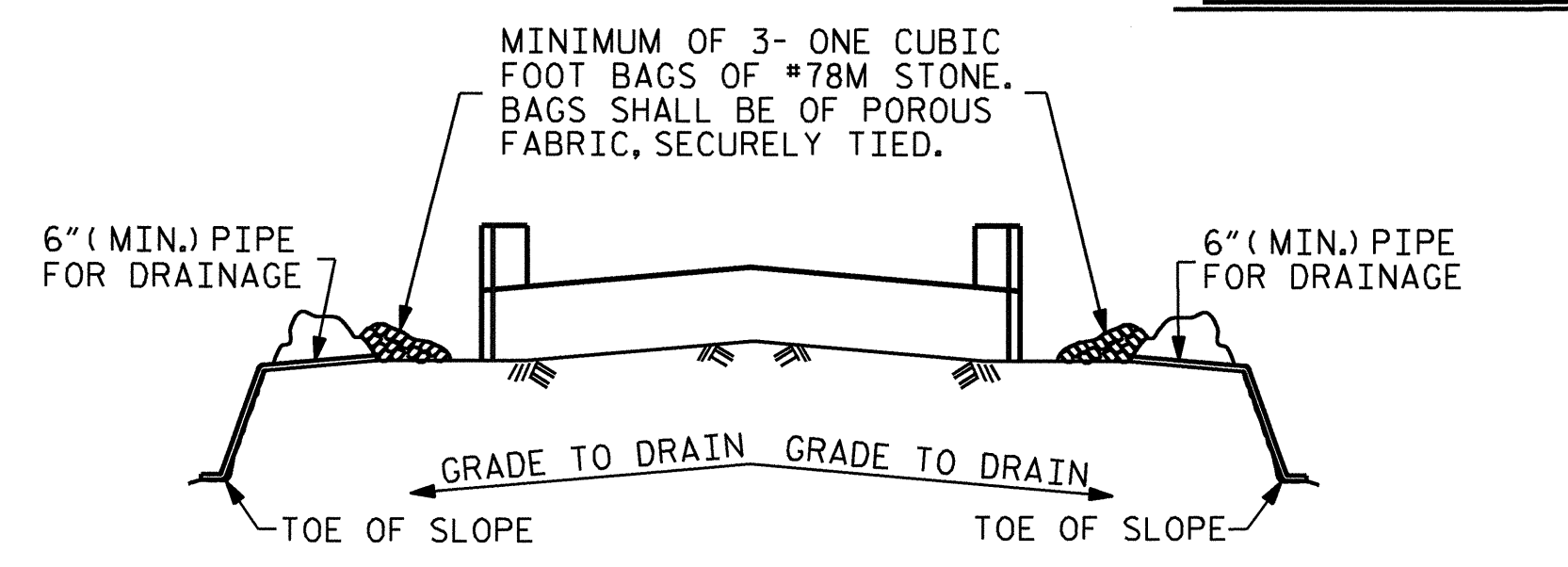
PILE SPLICE DETAILS



ELEVATION OF WING - W1
(WING W2 SIMILAR)



SECTION B-B



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



PROJECT NO. B-4238
PITT COUNTY
 STATION: 20+80.50 -L-
 SHEET 2 OF 2

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

SHEET NO.	
S-18	TOTAL SHEETS
27	

DRAWN BY : J. MYA DATE : 4-1-09
 CHECKED BY : J. L. WALTON DATE : 4-28-09

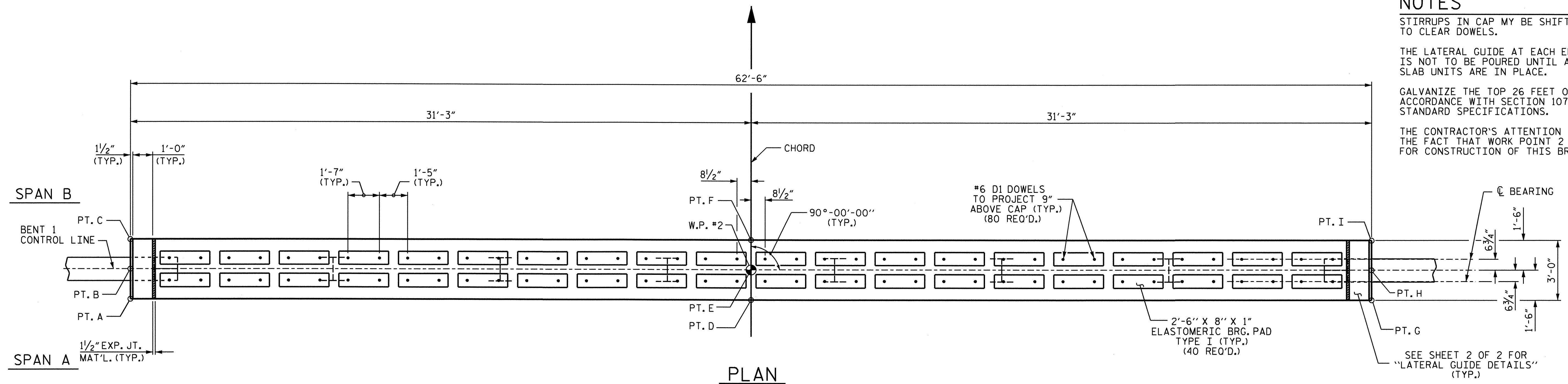
NOTES

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

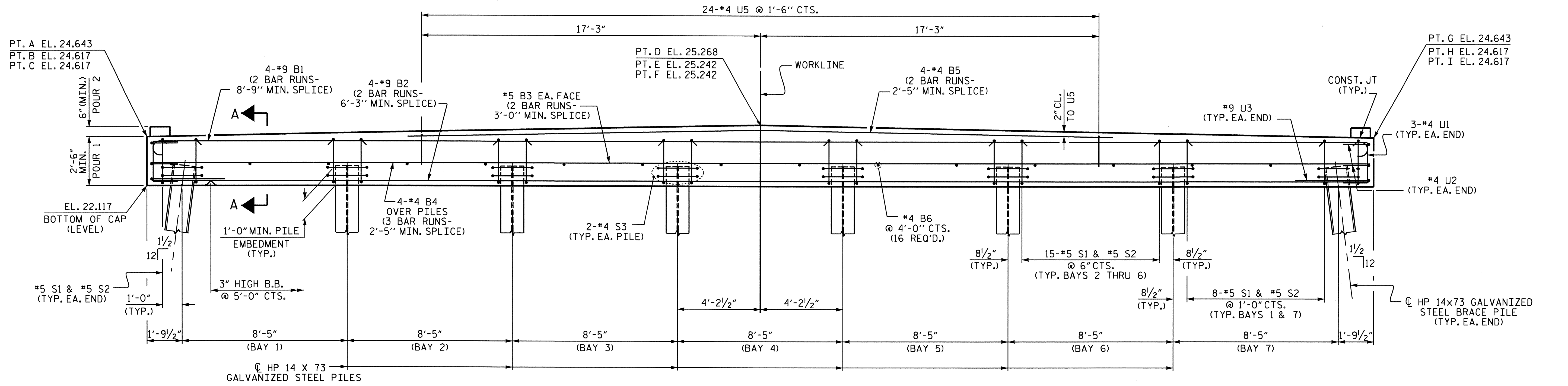
THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

GALVANIZE THE TOP 26 FEET OF EACH PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT WORK POINT 2 IS ON THE CHORD FOR CONSTRUCTION OF THIS BRIDGE.



PLAN



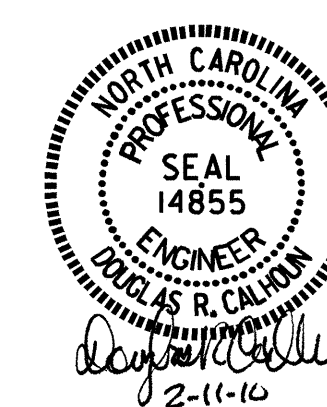
ELEVATION

PROJECT NO. B-4238
PITT COUNTY
 STATION: 20+80.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

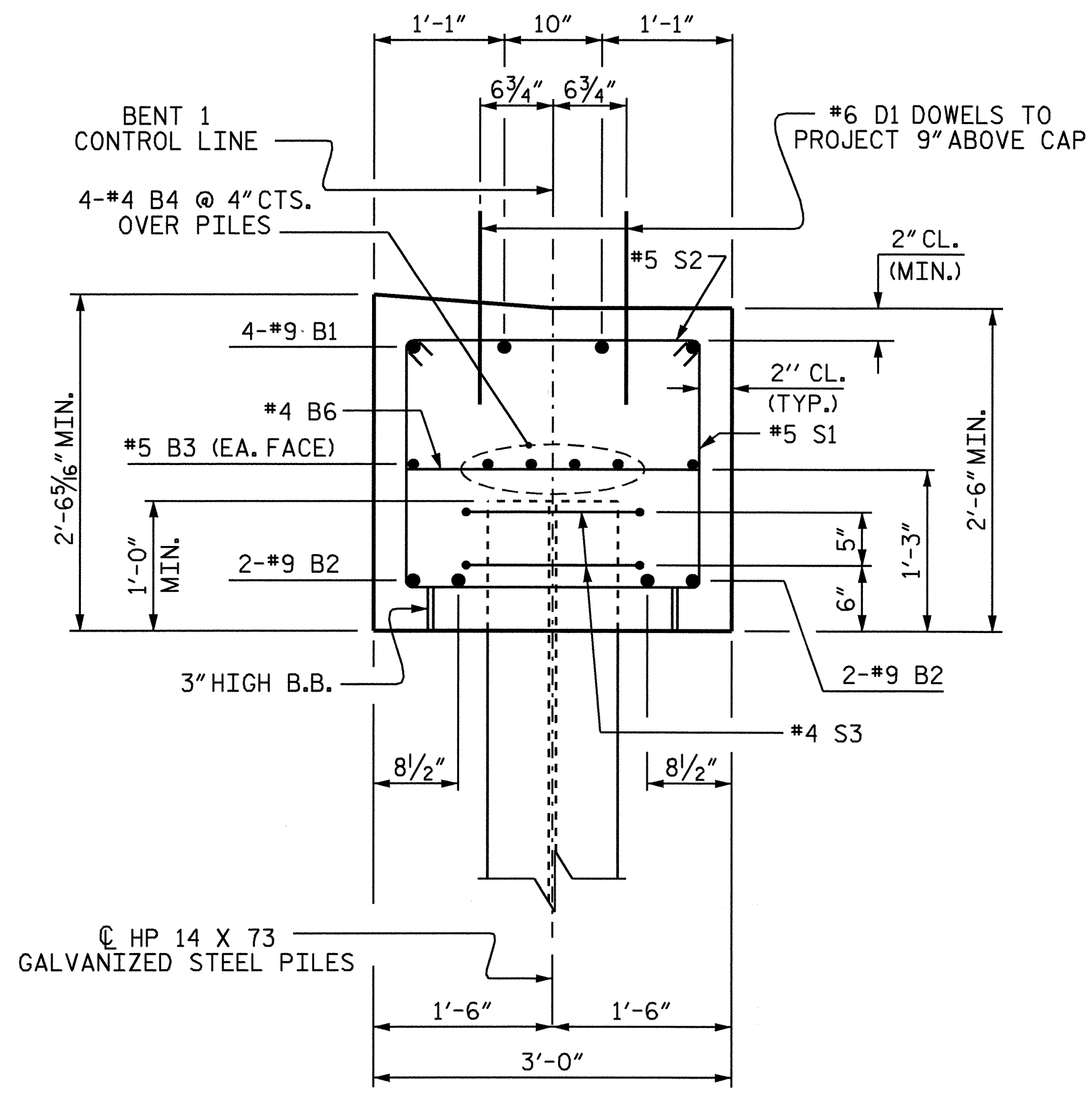
SUBSTRUCTURE
 BENT 1



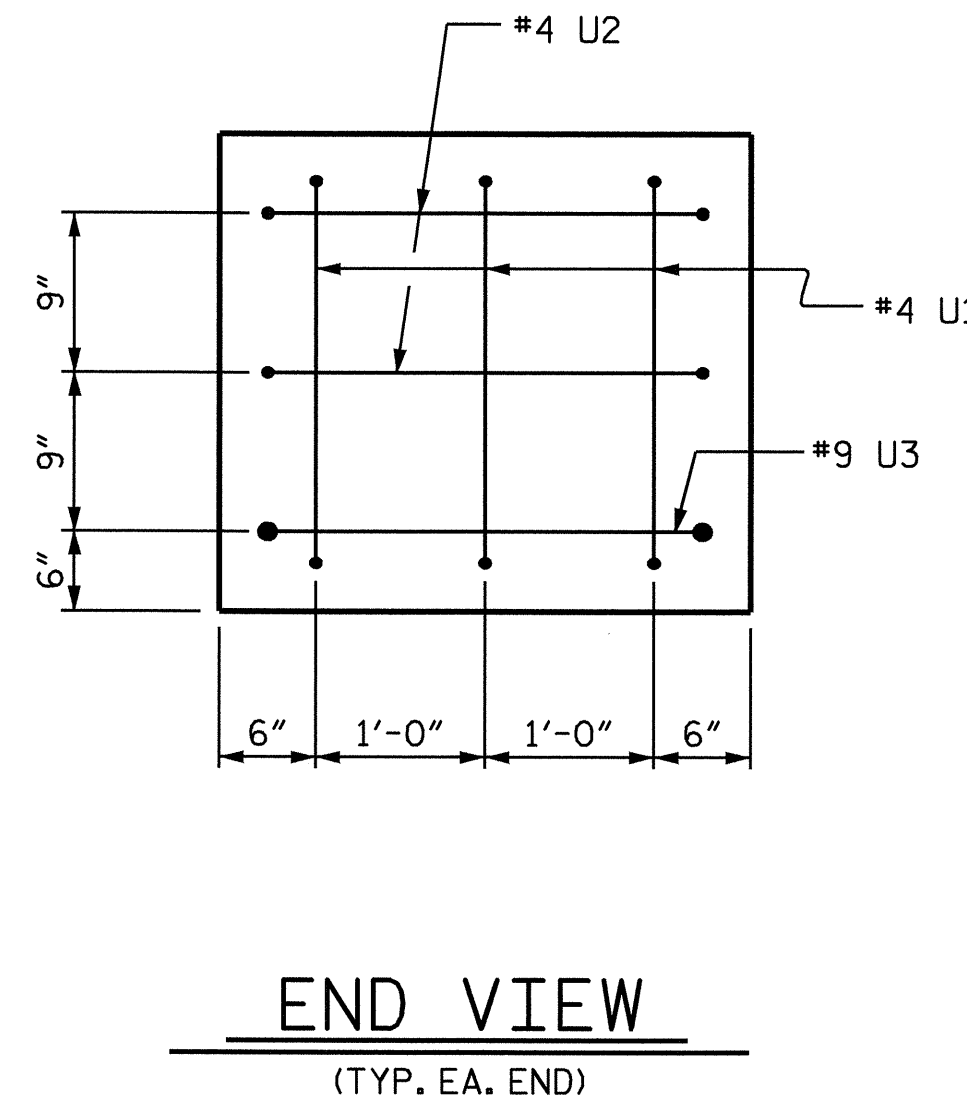
DRAWN BY : J. MYA DATE : 4-15-09
 CHECKED BY : J. L. WALTON DATE : 5-1-09

10-FEB-2010 12:28
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 gallen

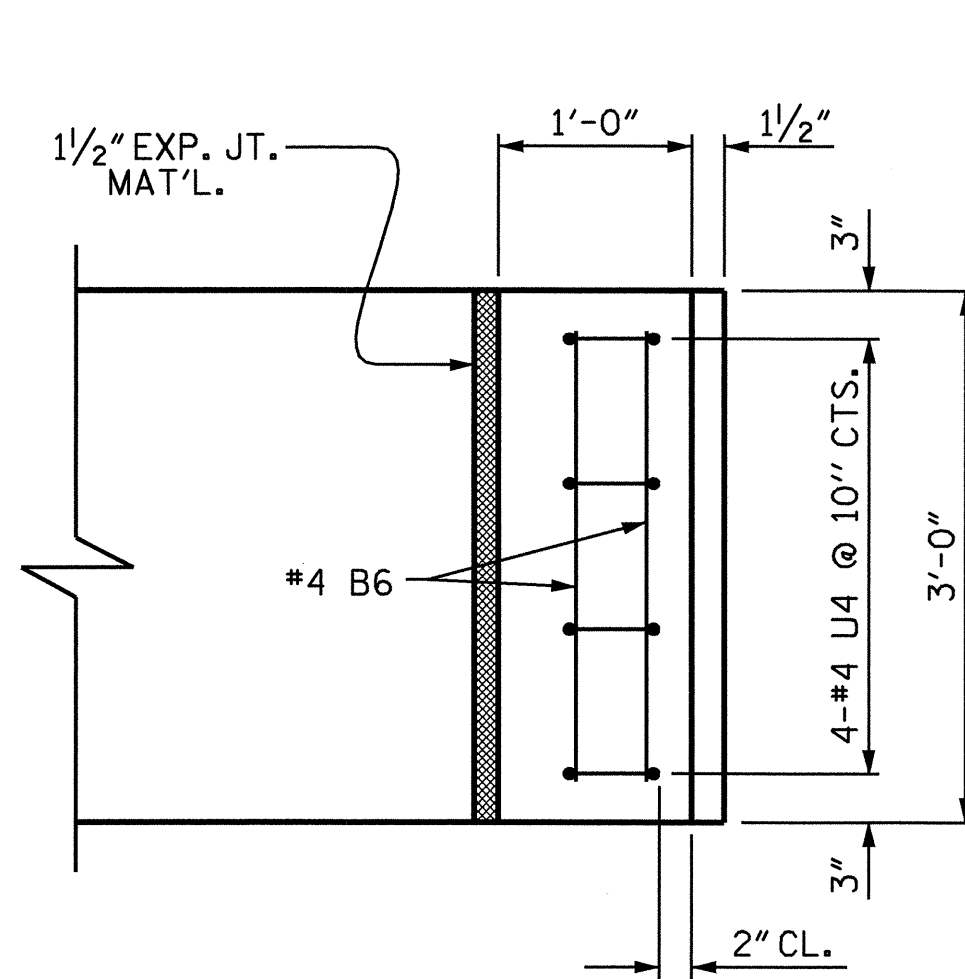
REVISIONS						SHEET NO. S-19
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 27
2			4			



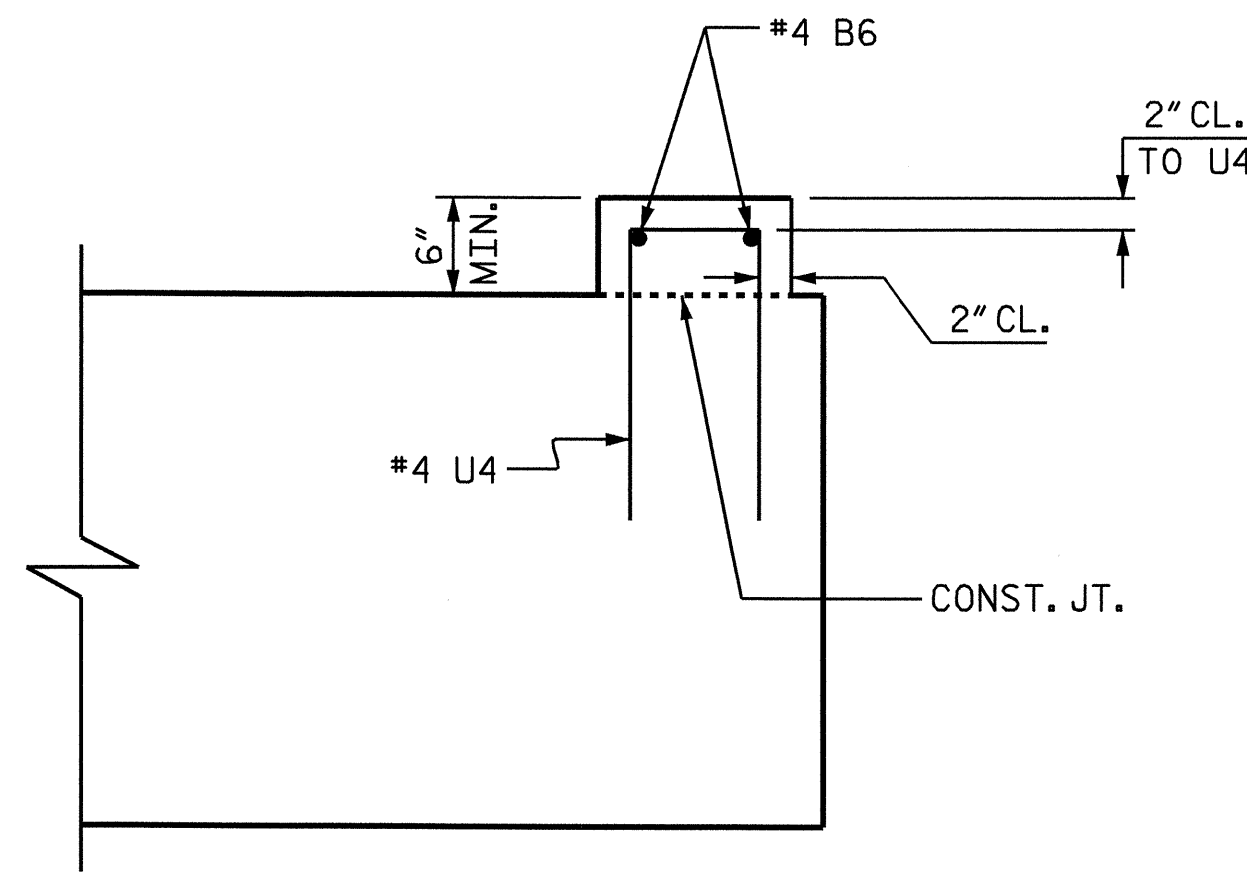
SECTION A-A



END VIEW
(TYP. EA. END)



PLAN

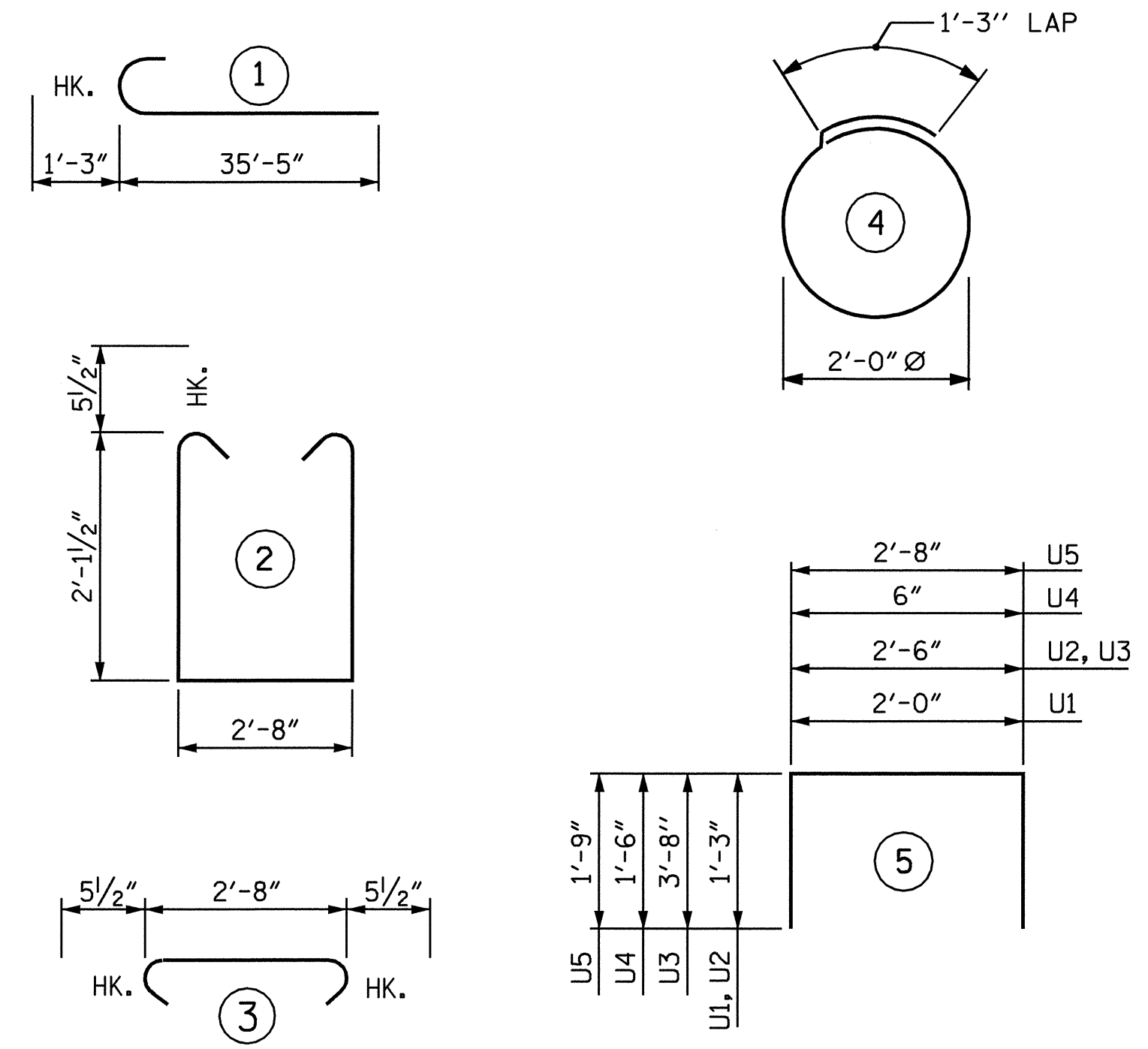


ELEVATION

LATERAL GUIDE REINFORCING DETAIL

(RIGHT END OF THE CAP SHOWN, LEFT END SIMILAR)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 1

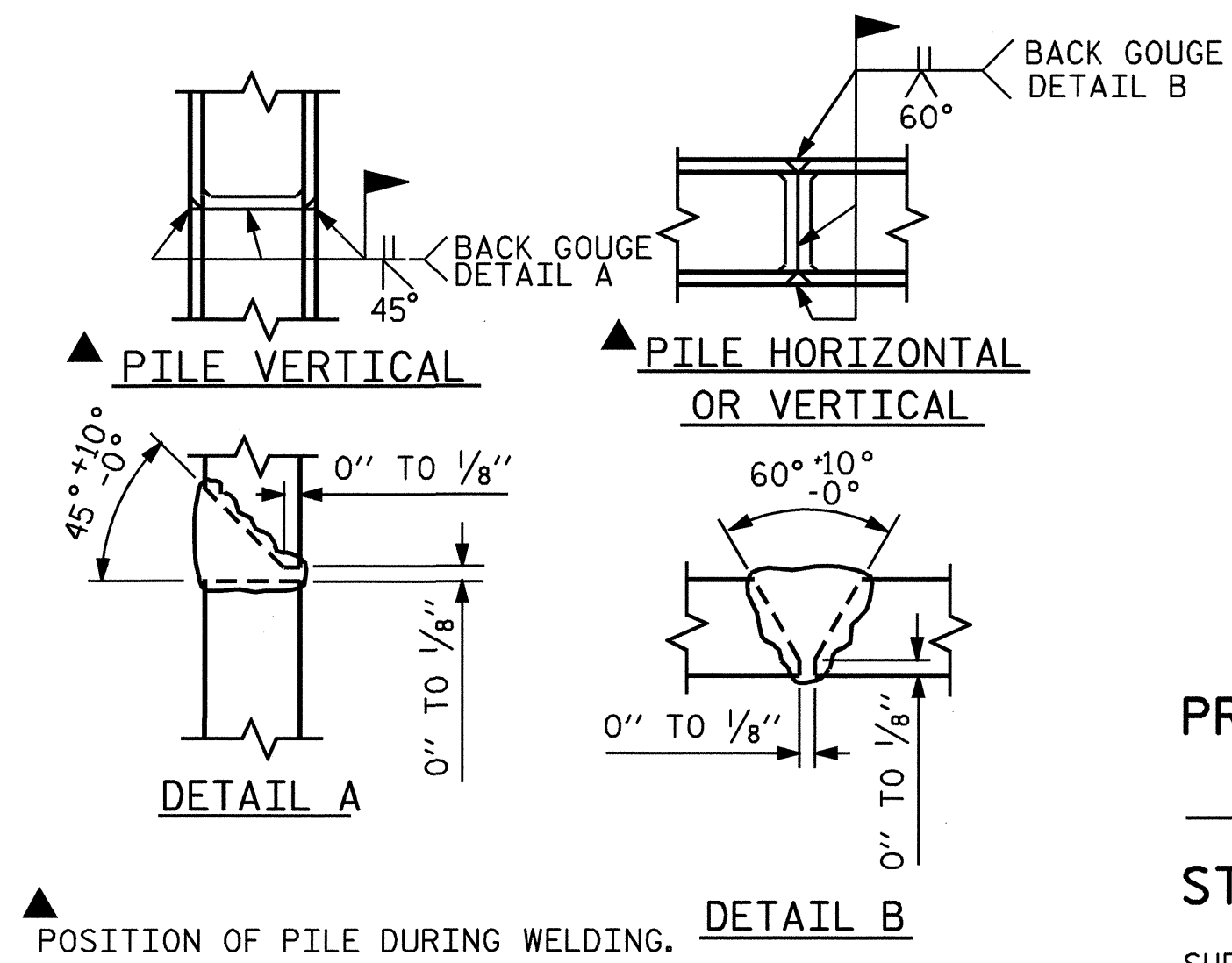
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		36'-8"	997
B2	8	#9	STR	34'-3"	932
B3	4	#5	STR	32'-7"	136
B4	12	#4	STR	22'-4"	179
B5	8	#4	STR	19'-3"	103
B6	20	#4	STR	2'-8"	36
D1	80	#6	STR	1'-6"	180
S1	93	#5	2	7'-10"	760
S2	93	#5	3	3'-7"	348
S3	16	#4	4	7'-7"	81
U1	6	#4	5	4'-6"	18
U2	4	#4	5	5'-0"	13
U3	2	#9	5	9'-10"	67
U4	8	#4	5	3'-6"	19
U5	24	#4	5	6'-2"	99

REINFORCING STEEL 3968 LBS.

CLASS A CONCRETE
POUR 1 (CAP) C.Y. 19.6
POUR 2 (LATERAL GUIDES) C.Y. 0.1
TOTAL C.Y. 19.7

HP 14 X 73 GALVANIZED STEEL PILES
NO. : 8 LIN. FT. 440

PILE REDRIVES : NO. : 4



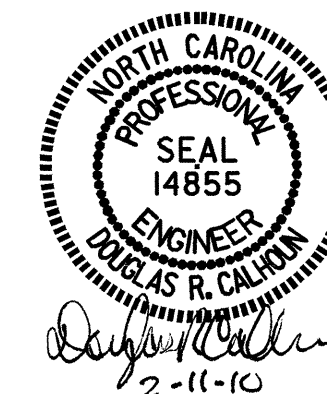
PILE SPLICE DETAILS

PROJECT NO. B-4238
PITT COUNTY
STATION: 20+80.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 1



REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20	
1			3			TOTAL SHEETS 27	
2			4				

DRAWN BY : J. MYA DATE : 4-15-09
CHECKED BY : J. L. WALTON DATE : 5-1-09

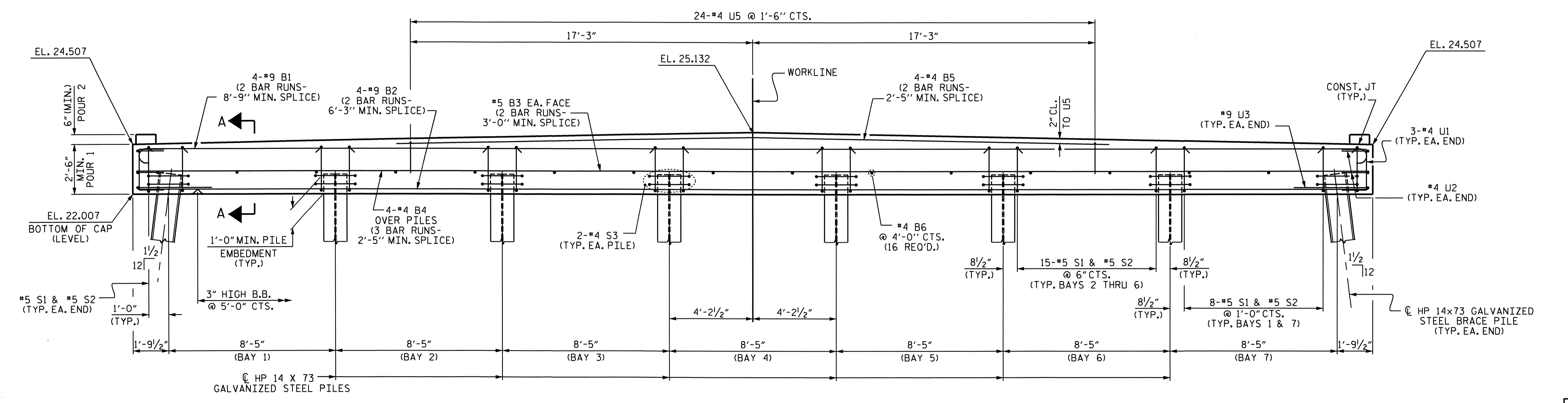
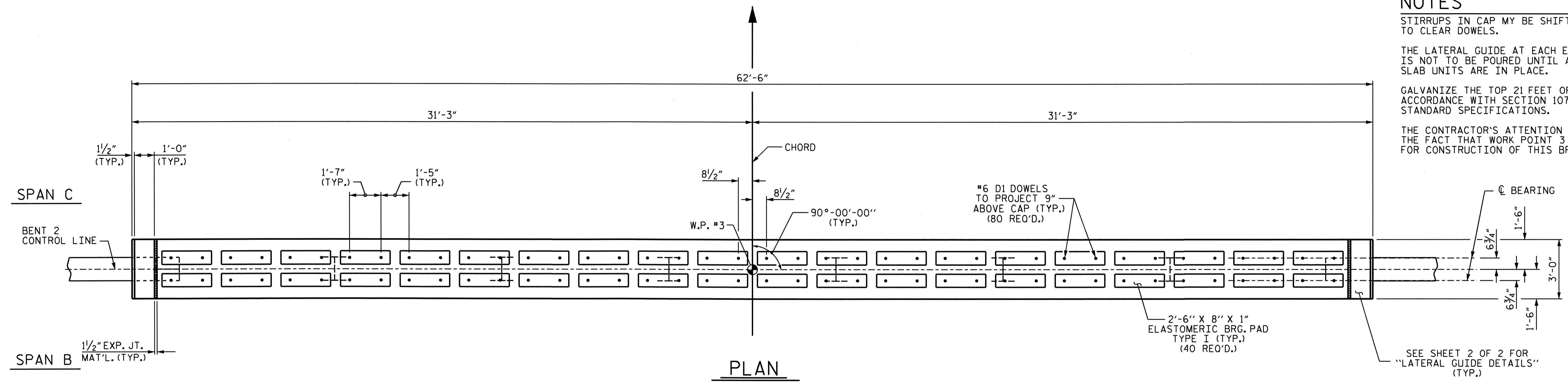
NOTES

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

THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

GALVANIZE THE TOP 21 FEET OF EACH PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT WORK POINT 3 IS ON THE CHORD FOR CONSTRUCTION OF THIS BRIDGE.

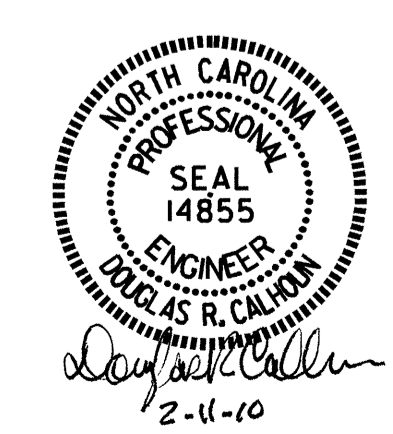


PROJECT NO. B-4238
PITT COUNTY
 STATION: 20+80.50 -L-
 SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

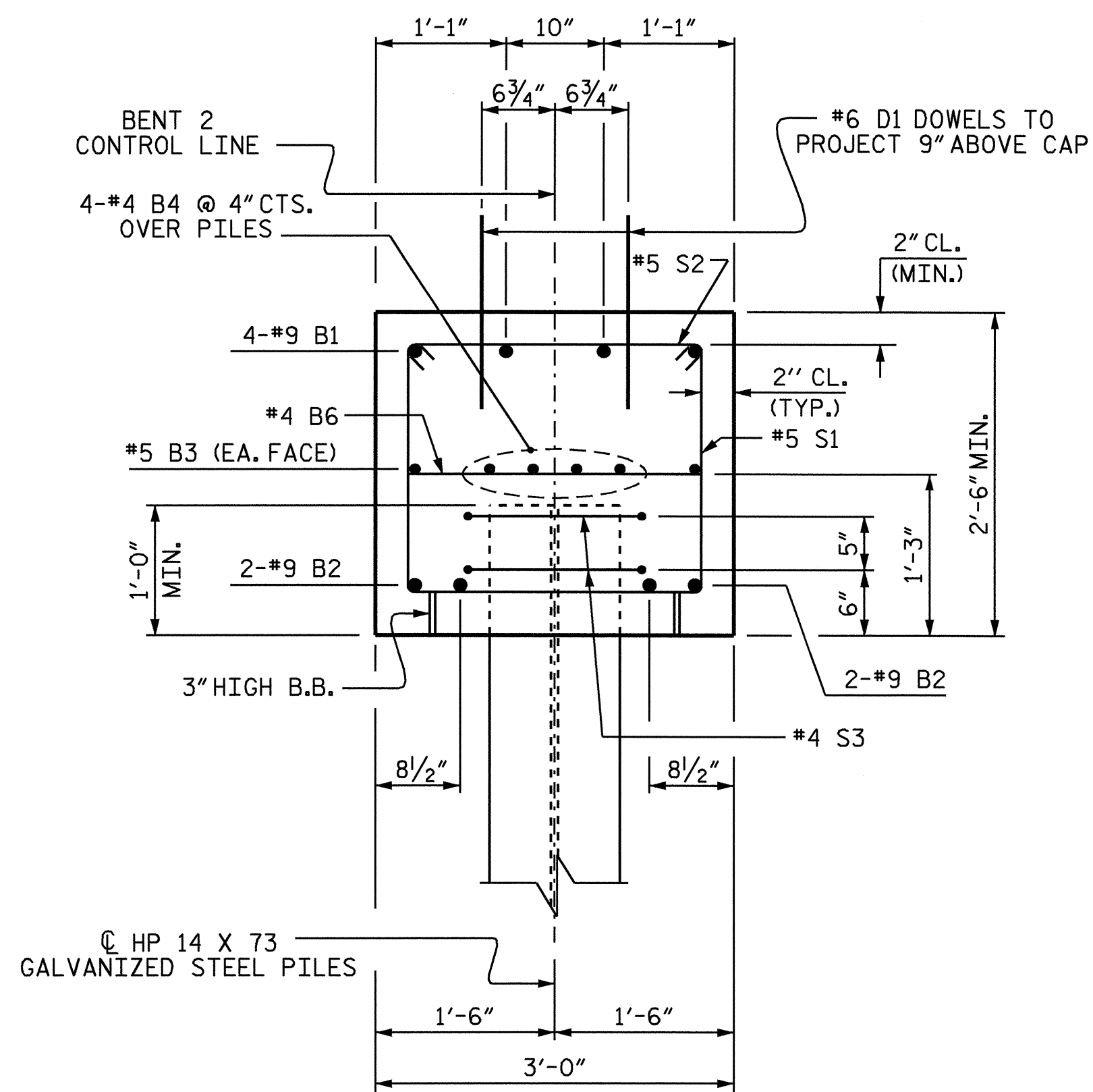
SUBSTRUCTURE BENT 2

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2			4			27

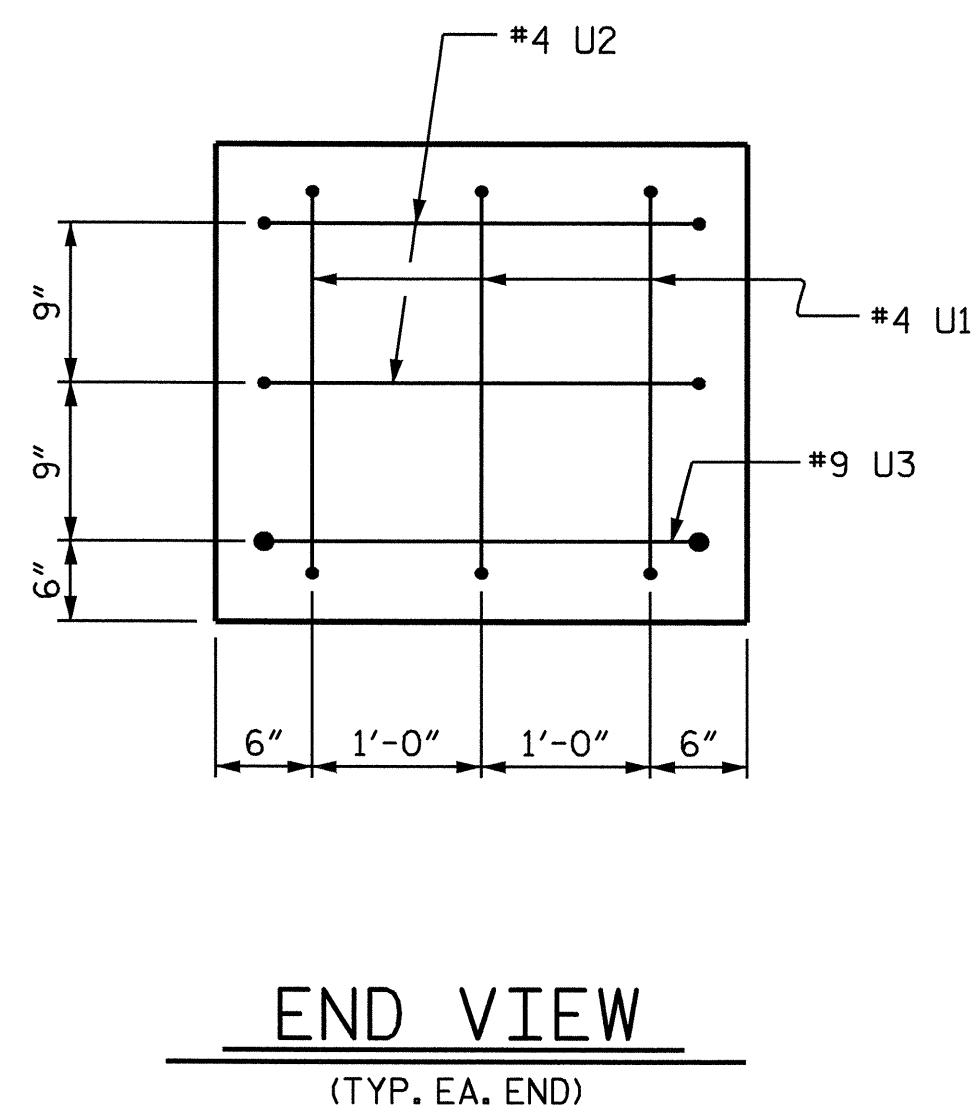


DRAWN BY : B.N. GRADY DATE : 11/3/09
 CHECKED BY : D.R. CALHOUN DATE : 1/11/10

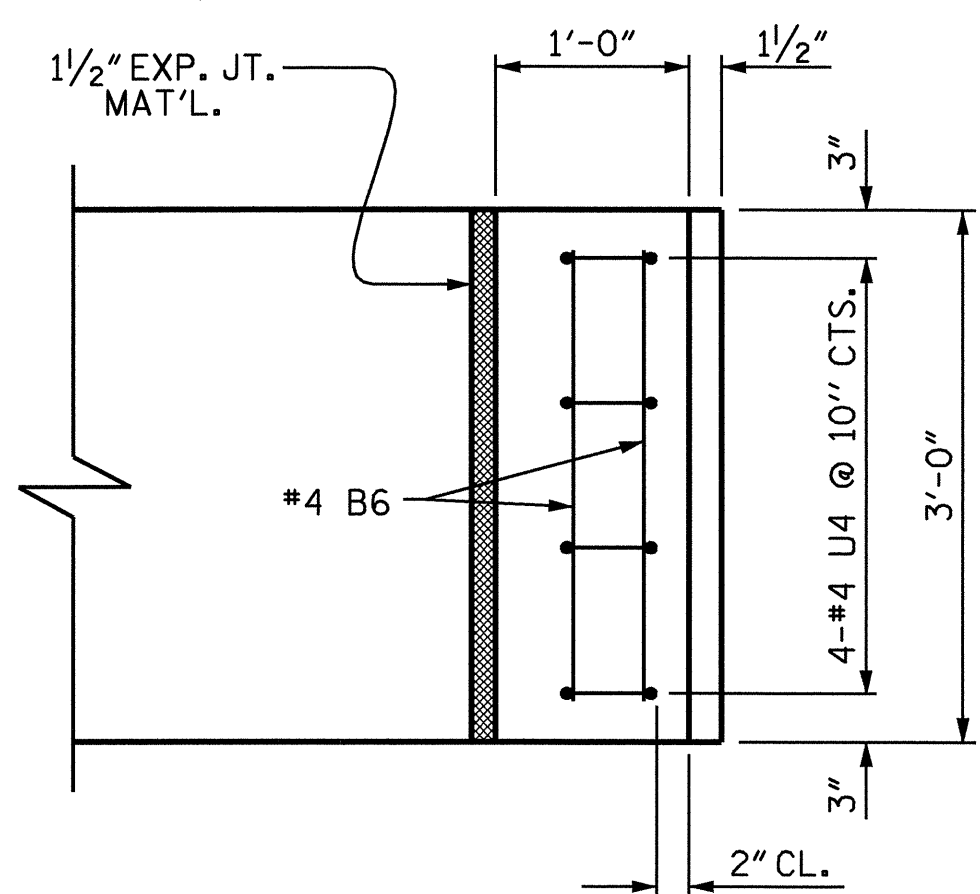
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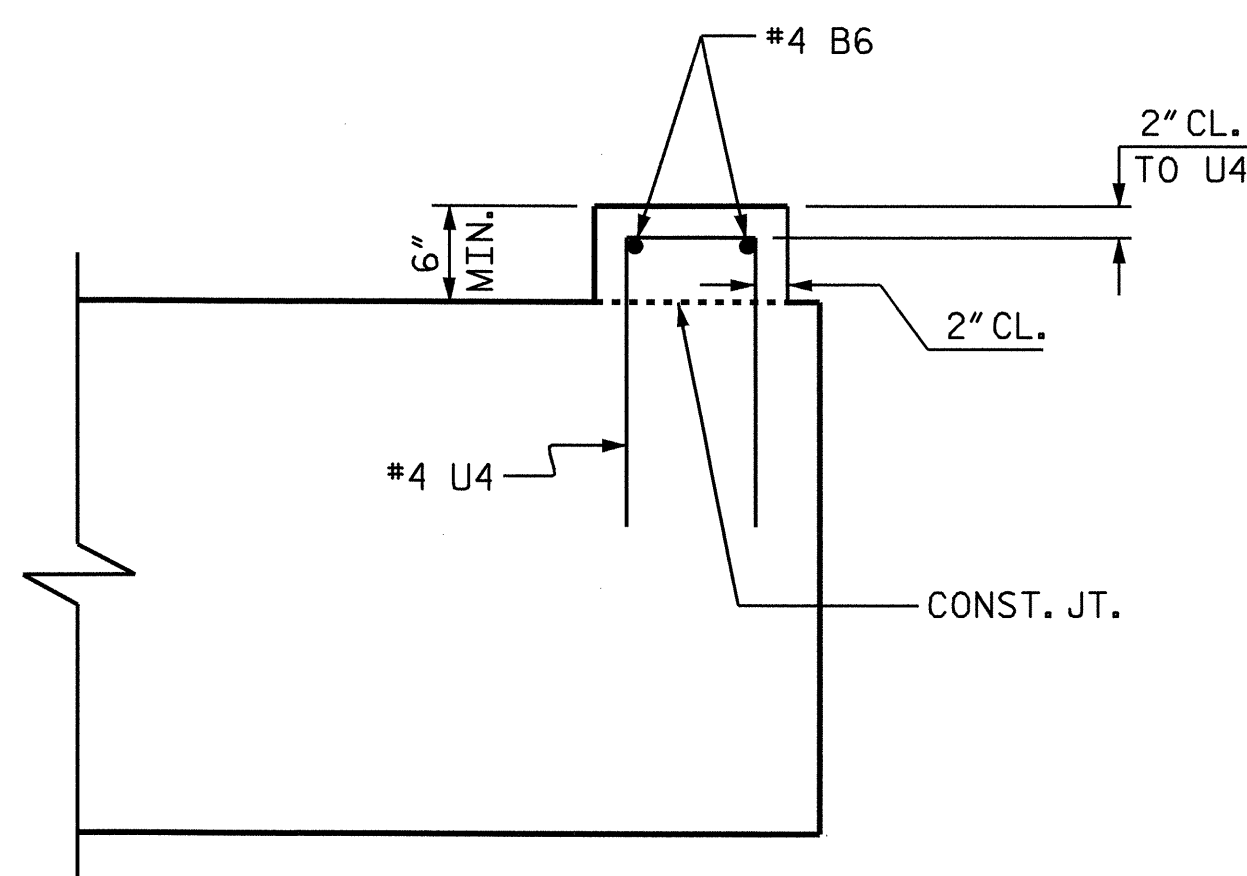
SECTION A-A



END VIEW
(TYP. EA. END)



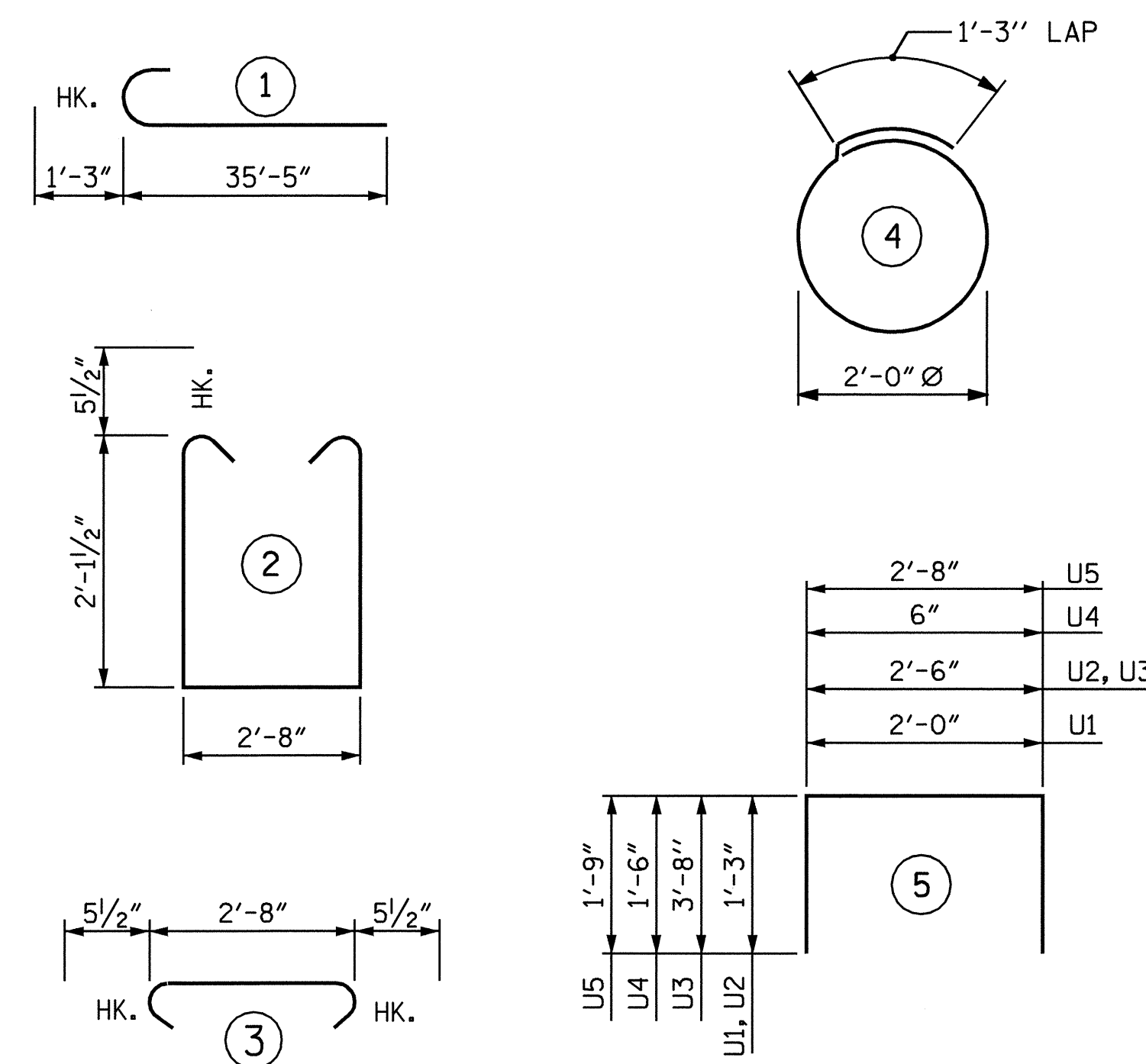
PLAN



ELEVATION

LATERAL GUIDE REINFORCING DETAIL
(RIGHT END OF THE CAP SHOWN, LEFT END SIMILAR)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 2

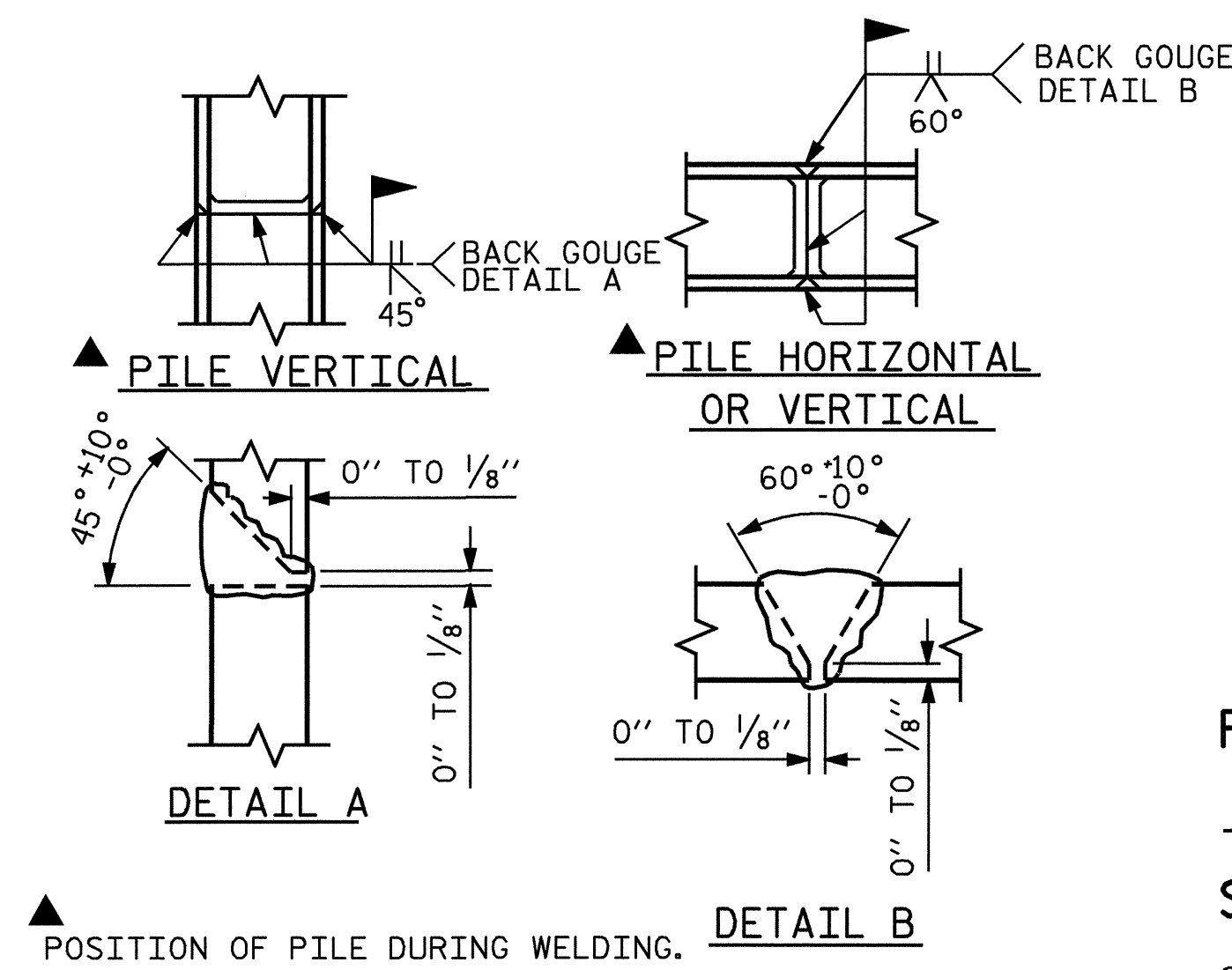
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		36'-8"	997
B2	8	#9	STR	34'-3"	932
B3	4	#5	STR	32'-7"	136
B4	12	#4	STR	22'-4"	179
B5	8	#4	STR	19'-3"	103
B6	20	#4	STR	2'-8"	36
D1	80	#6	STR	1'-6"	180
S1	93	#5		7'-10"	760
S2	93	#5		3'-7"	348
S3	16	#4		7'-7"	81
U1	6	#4		4'-6"	18
U2	4	#4		5'-0"	13
U3	2	#9		9'-10"	67
U4	8	#4		3'-6"	19
U5	24	#4		6'-2"	99

REINFORCING STEEL 3968 LBS.

CLASS A CONCRETE
POUR 1 (CAP) C.Y. 19.5
POUR 2 (LATERAL GUIDES) C.Y. 0.1
TOTAL C.Y. 19.6

HP 14 X 73 GALVANIZED STEEL PILES
NO. : 8 LIN. FT. 480

PILE REDRIVES : NO. : 4

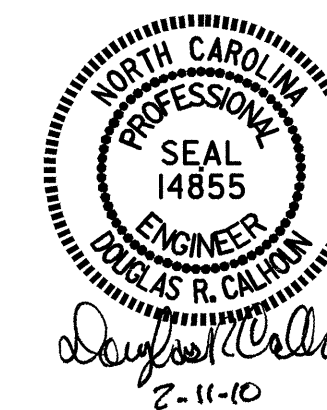


PILE SPLICE DETAILS

PROJECT NO. **B-4238**
PITT COUNTY
STATION: **20+80.50 -L-**
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 2



DRAWN BY : B.N. GRADY DATE : 11/3/09
CHECKED BY : D.R. CALHOUN DATE : 1/11/10

15-JAN-2010 07:51
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bngrady

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

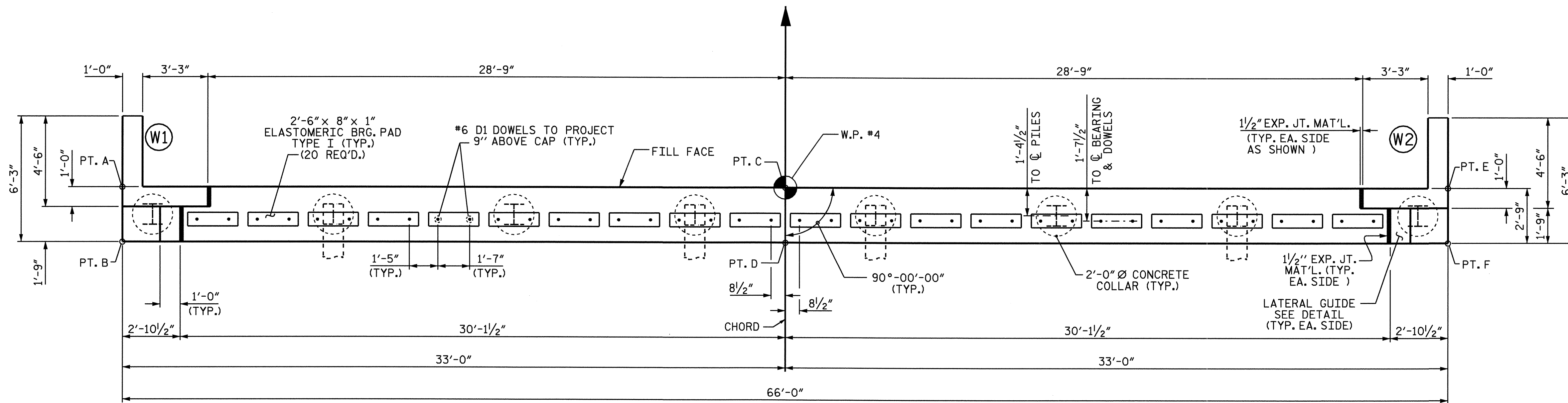
TOTAL SHEETS: 27

NOTES

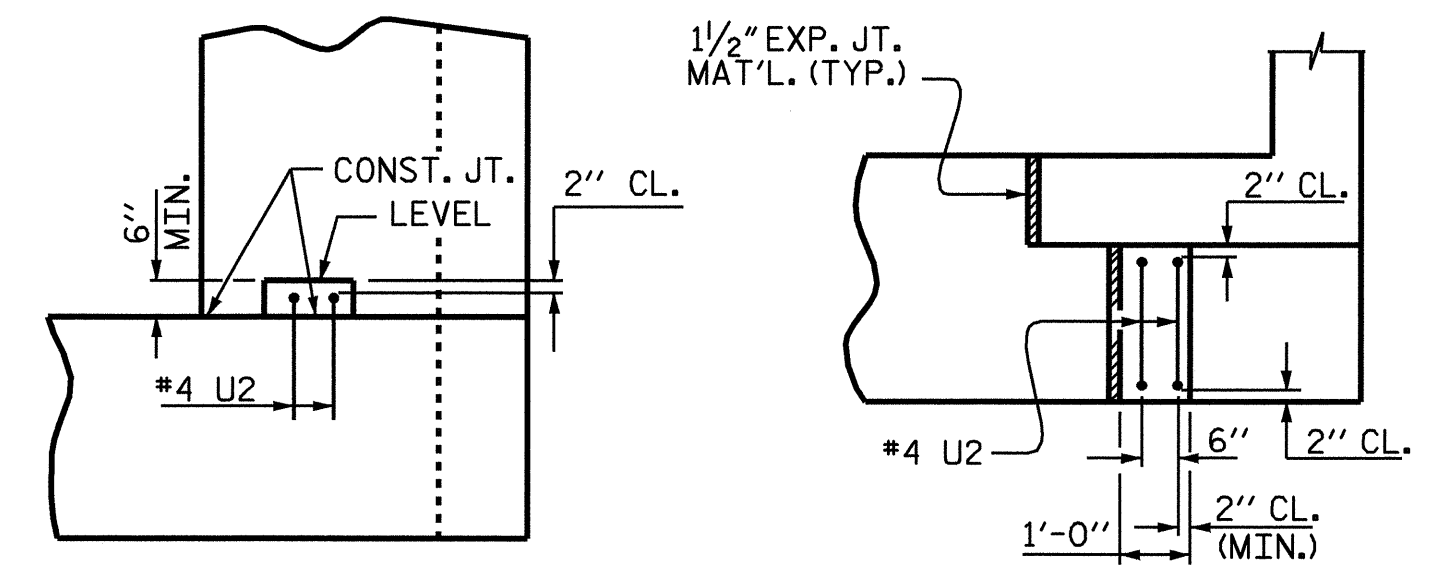
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



PLAN

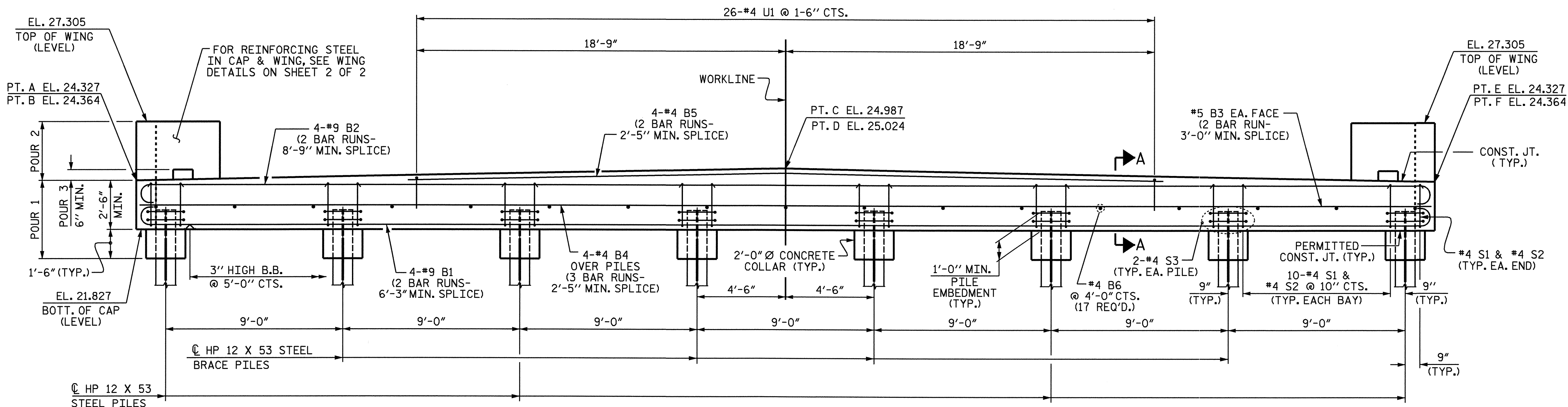


ELEVATION

PLAN

LATERAL GUIDE

(RIGHT SIDE SHOWN, LEFT SIDE SIMILAR)



ELEVATION

PROJECT NO. B-4238

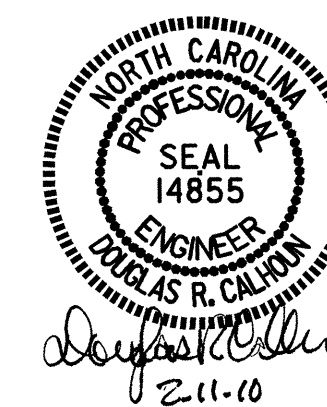
PITT COUNTY

STATION: 20+80.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

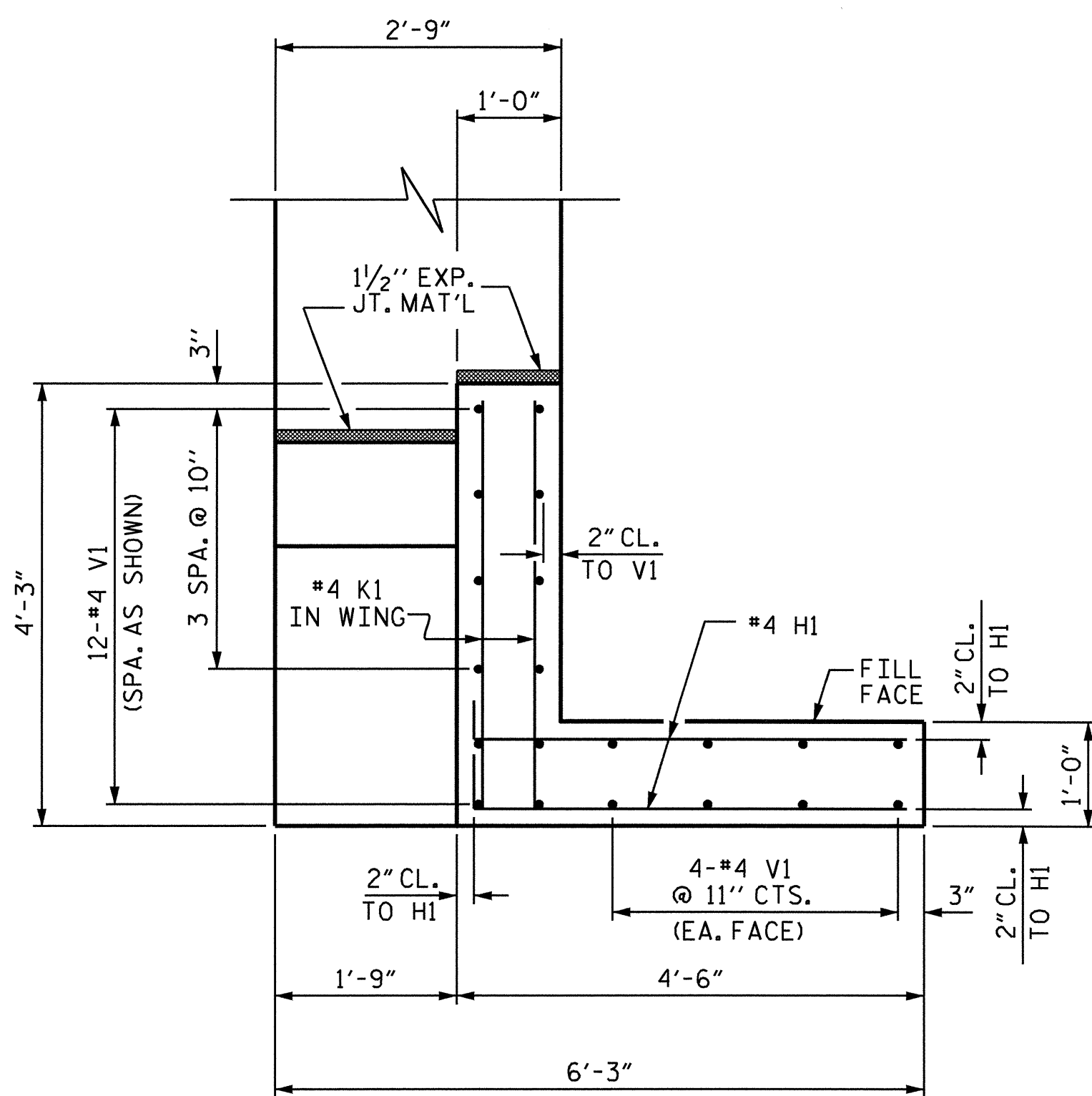
SUBSTRUCTURE
END BENT 2



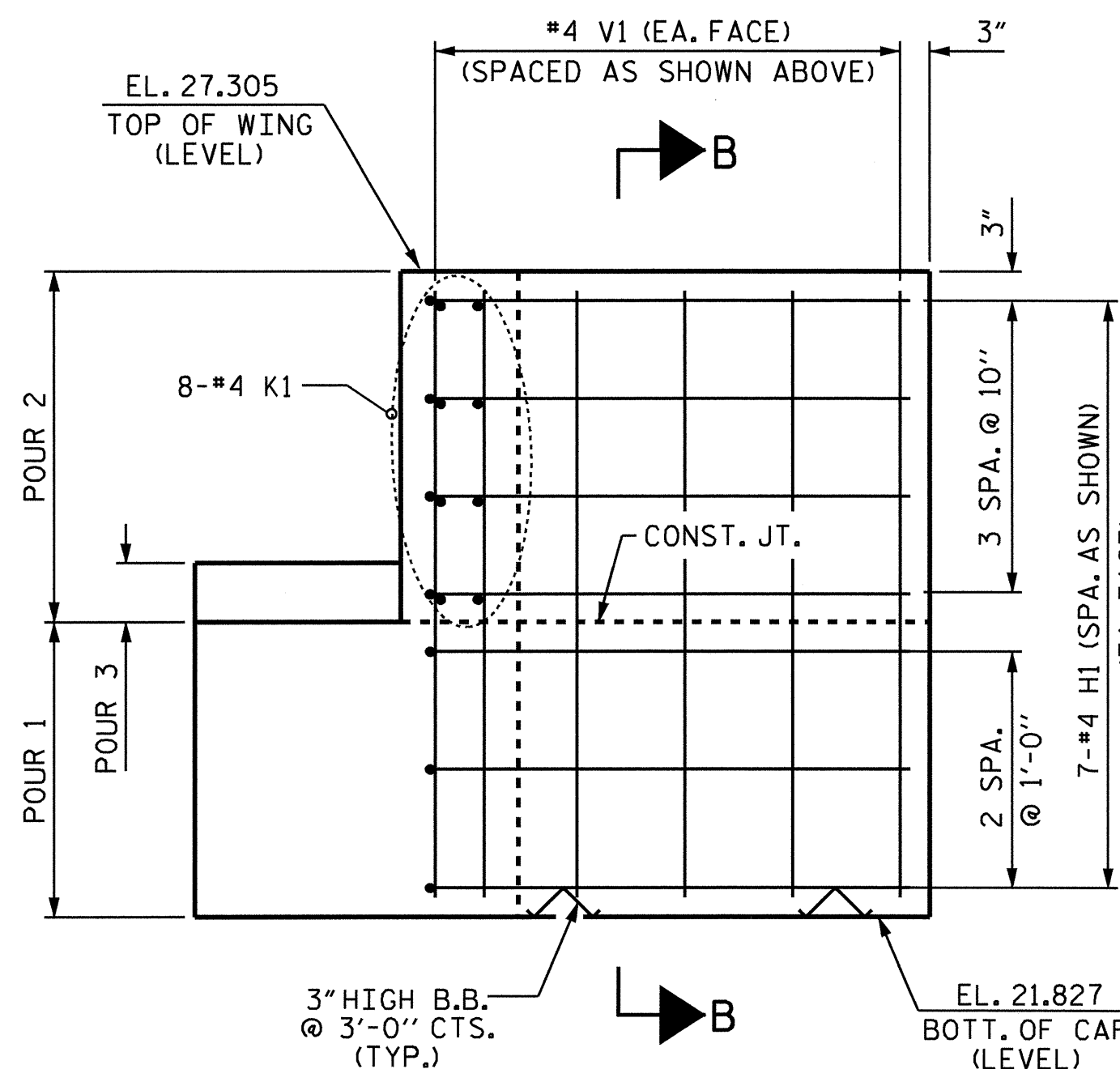
DRAWN BY: J. MYA DATE: 4-1-07
CHECKED BY: J. L. WALTON DATE: 4-28-09

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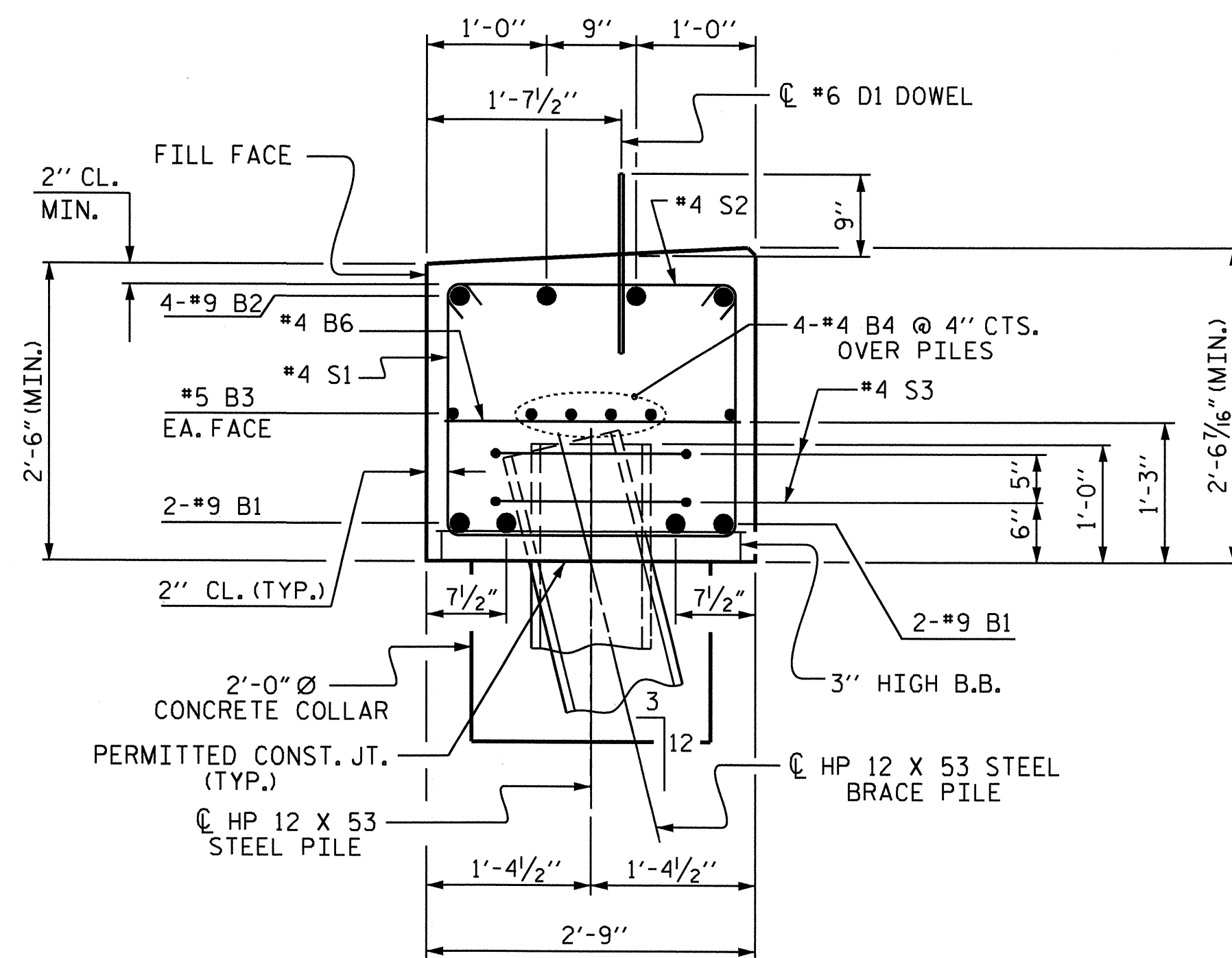
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			27



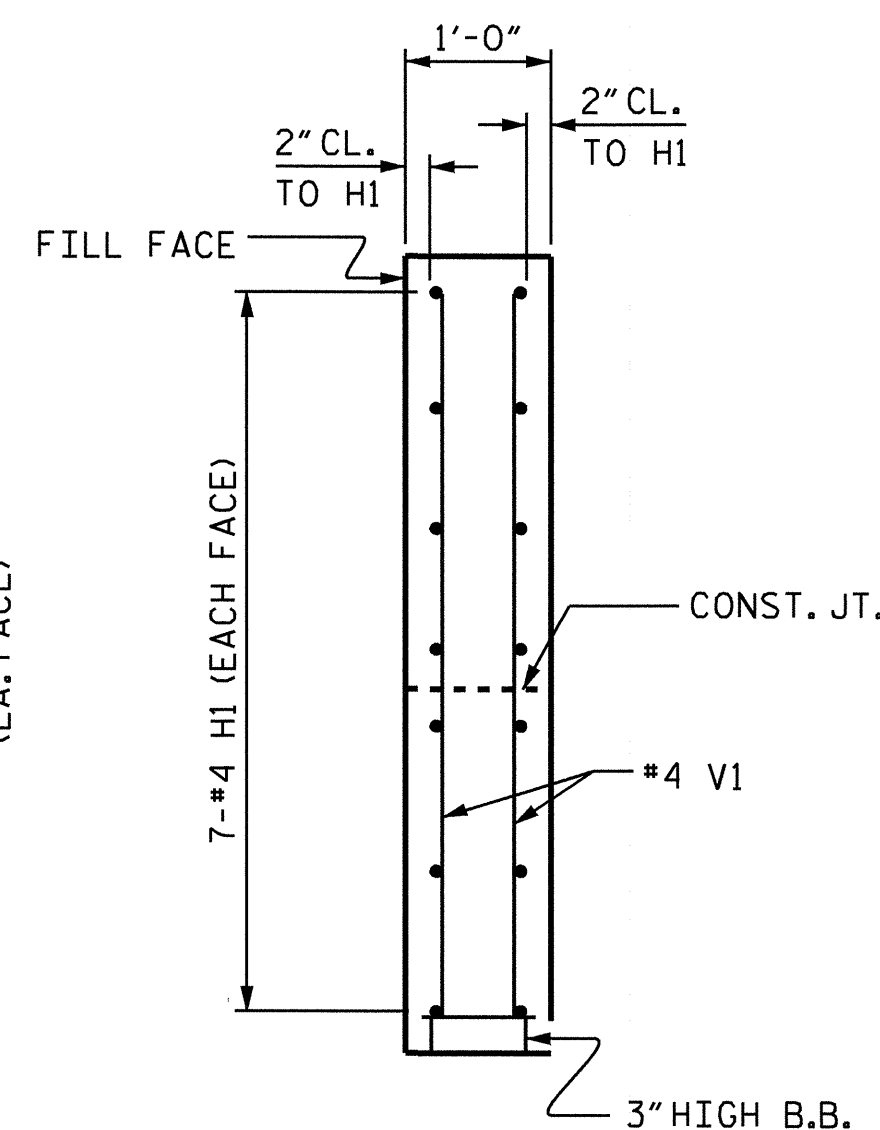
PLAN OF WING - W2
(WING W1 SIMILAR)



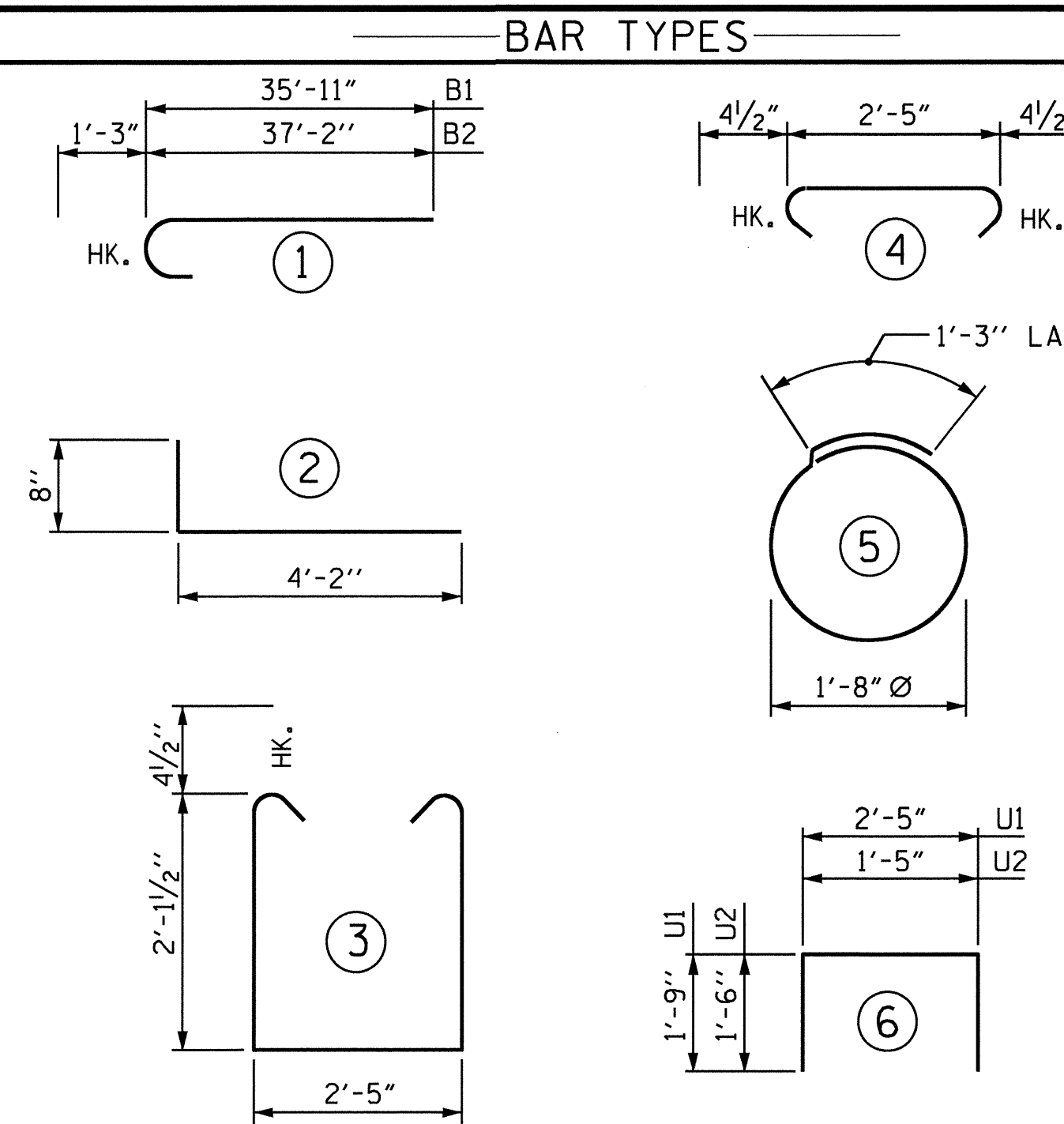
ELEVATION OF WING - W2
(WING W1 SIMILAR)



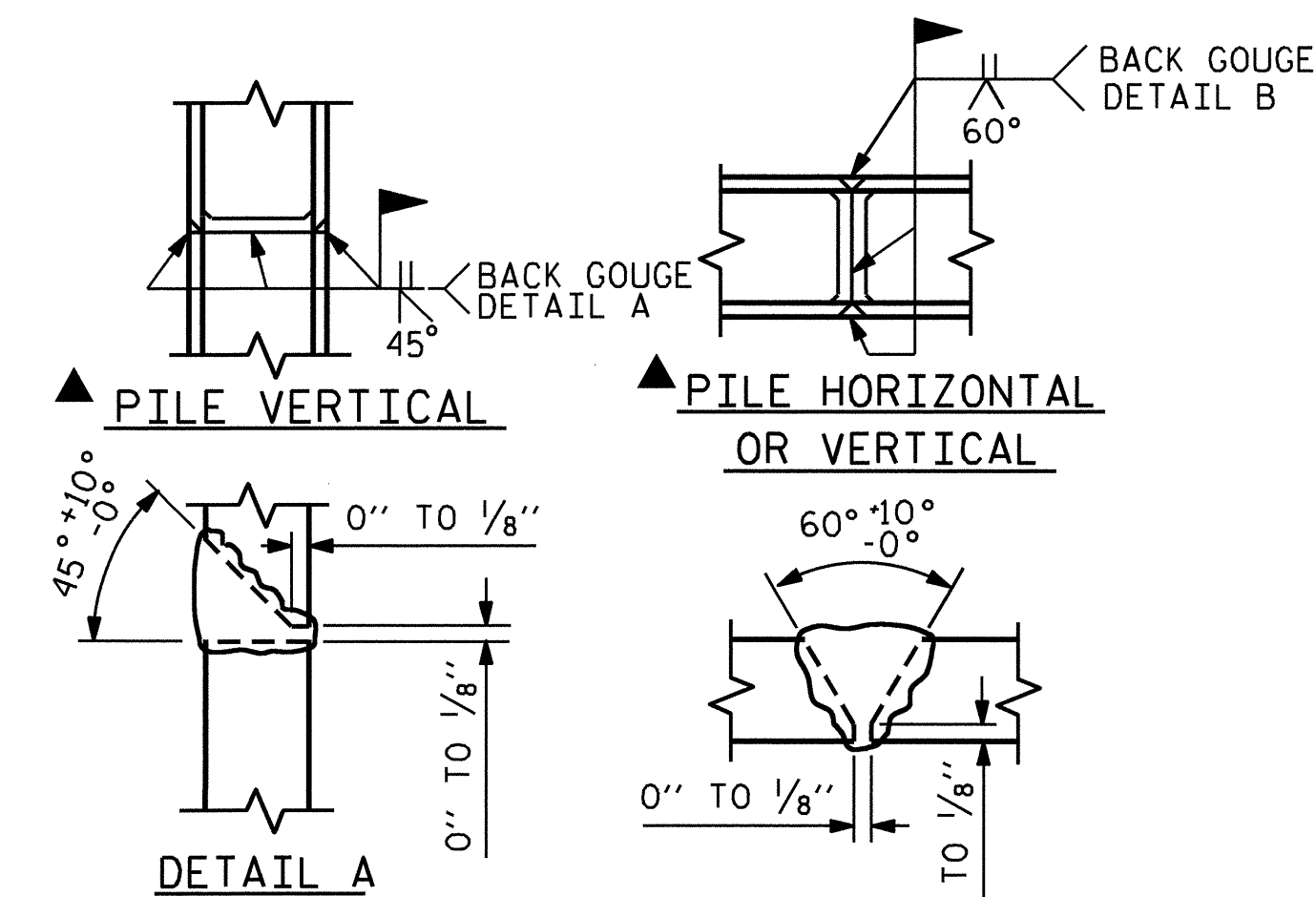
SECTION A-A



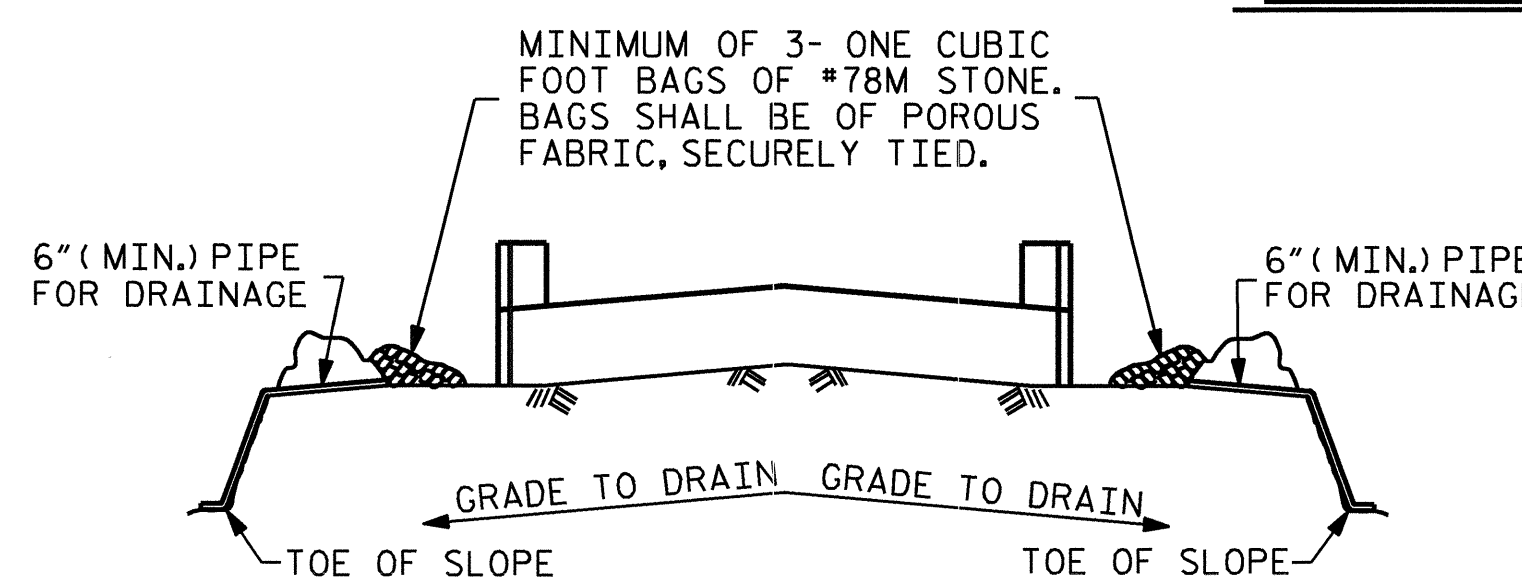
SECTION B-B



ALL BAR DIMENSIONS ARE OUT TO OUT.



POSITION OF PILE DURING WELDING. DETAIL B
PILE SPLICE 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

BILL OF MATERIAL

END BENT 2

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	#9	1	37'-2"	1011
B2	#9	1	38'-5"	1045
B3	#5	STR	34'-4"	143
B4	#4	STR	23'-6"	188
B5	#4	STR	20'-6"	110
B6	#4	STR	2'-5"	27
D1	#6	STR	1'-6"	90
H1	#4	2	4'-10"	90
K1	#4	STR	3'-11"	42
S1	#4	3	7'-5"	357
S2	#4	4	3'-2"	152
S3	#4	5	6'-6"	69
U1	#4	6	5'-11"	103
U2	#4	6	4'-5"	12
V1	#4	STR	5'-1"	136
REINFORCING STEEL				LBS. 3575

CLASS A CONCRETE BREAKDOWN

POUR 1 (CAP, CONCRETE COLLARS & LOWER PART OF WINGS)	C.Y.	21.2
POUR 2 (UPPER PART OF WINGS)	C.Y.	1.7
POUR 3 (LATERAL GUIDES)	C.Y.	0.1
TOTAL	C.Y.	23.0

HP 12 X 53 STEEL PILES :

NO. : 8 LIN. FT. : 440

PILE REDRIVES : NO. : 4

PROJECT NO. B-4238

PITT COUNTY

STATION: 20+80.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2

REVISIONS

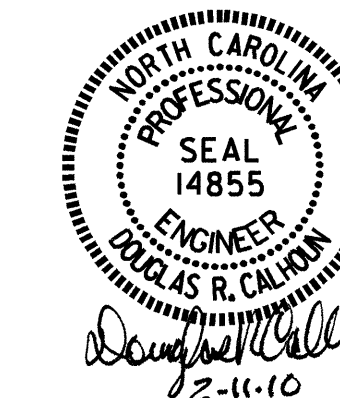
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1			3		
2			4		

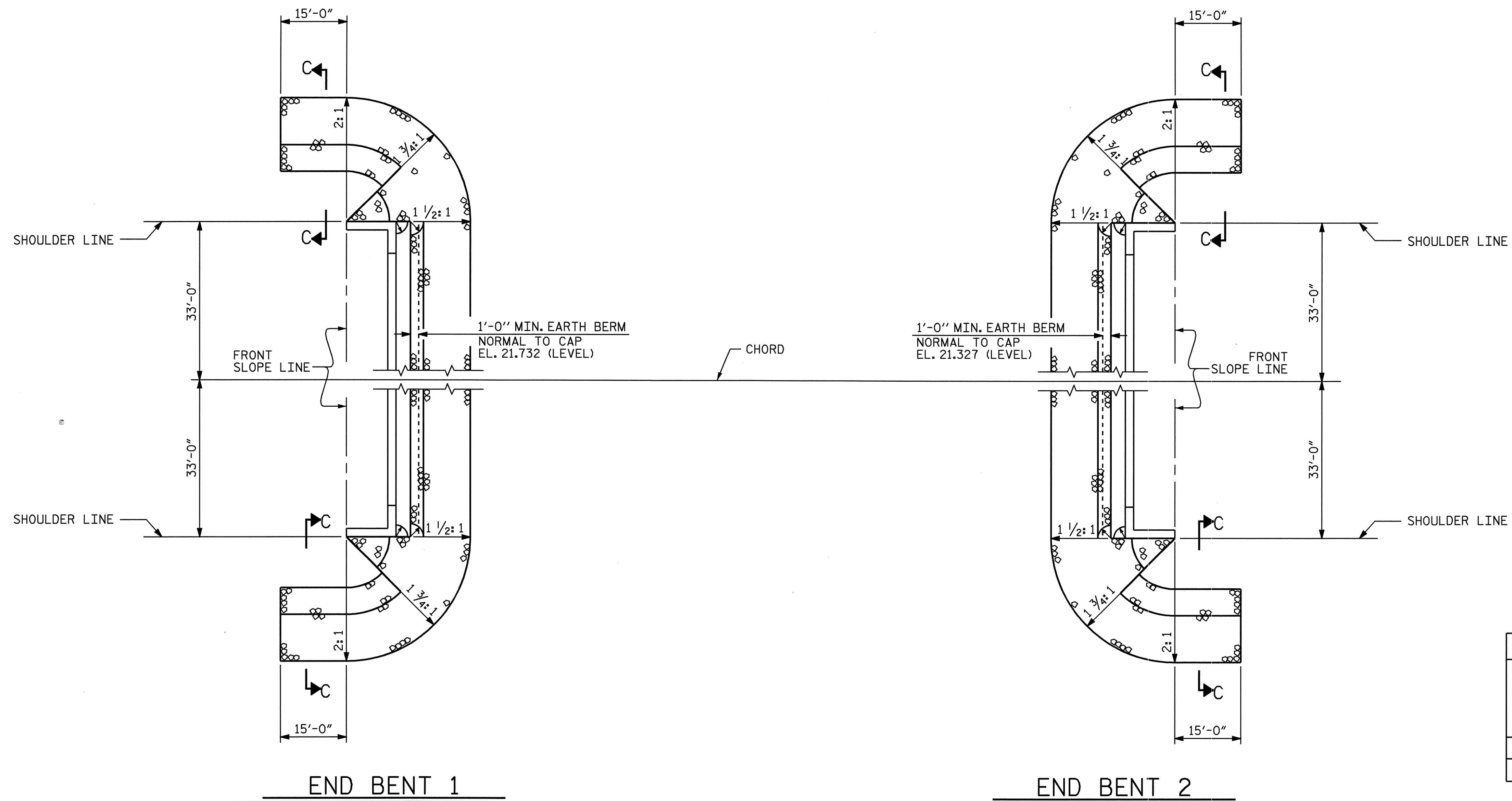
SHEET NO.

S-24

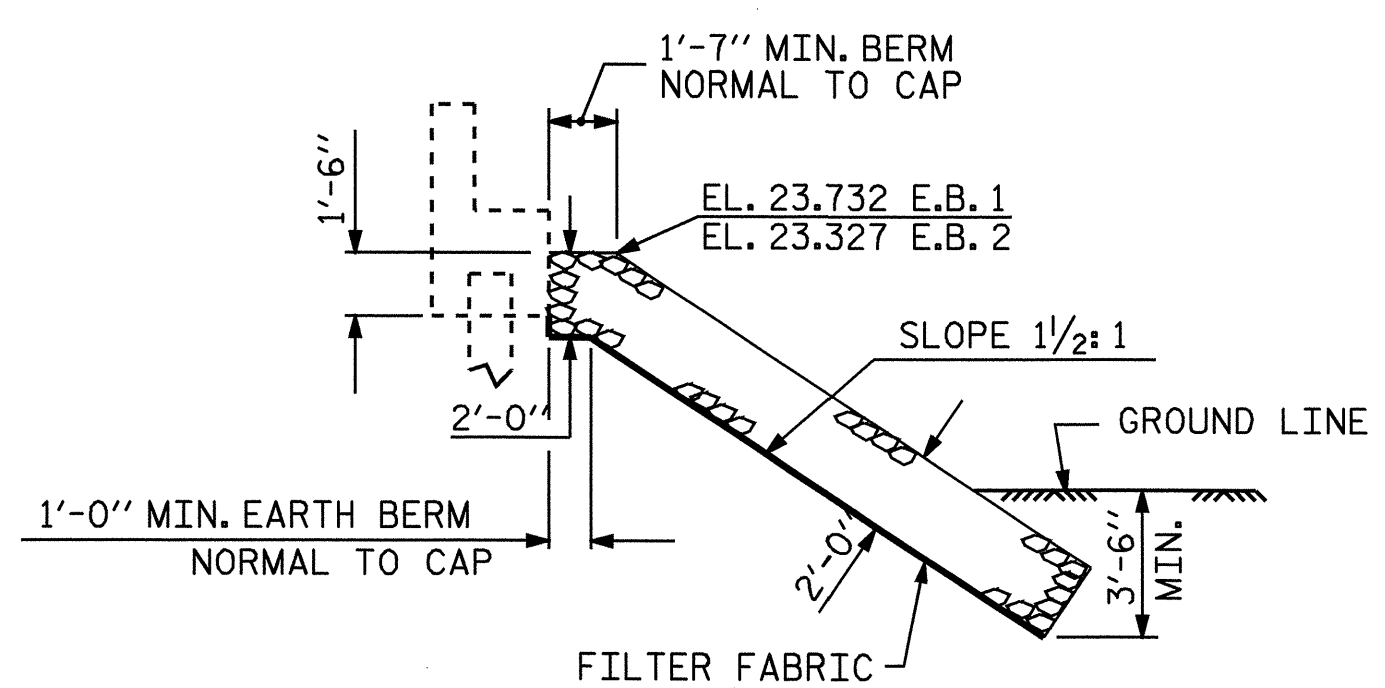
TOTAL SHEETS 27

DRAWN BY : J. MYA DATE : 4-1-09
CHECKED BY : J. L. WALTON DATE : 4-28-09

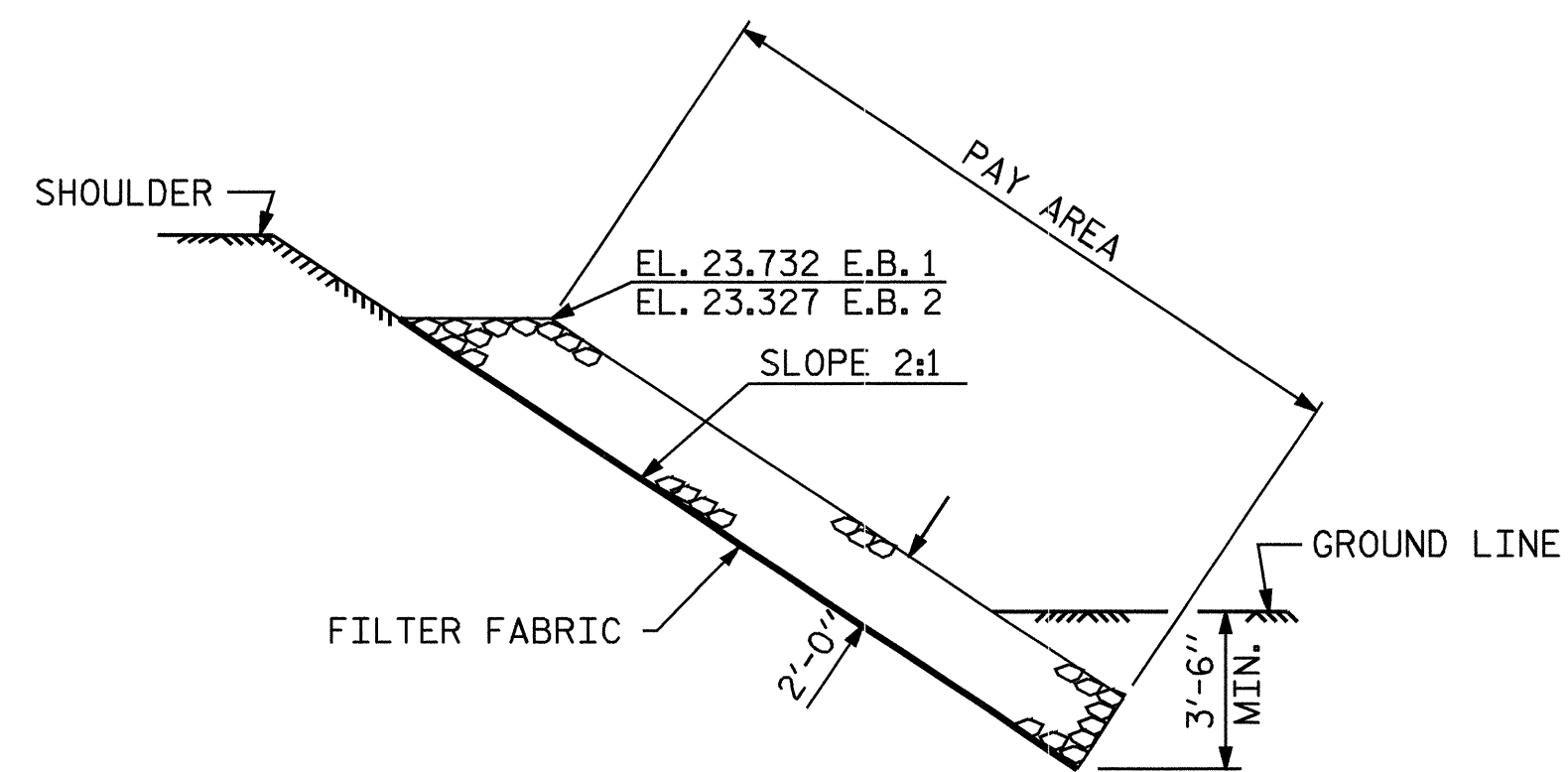




ESTIMATED QUANTITIES		
BRIDGE @ STA. 20+80.50 -L-	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	106	117
END BENT 2	95	105



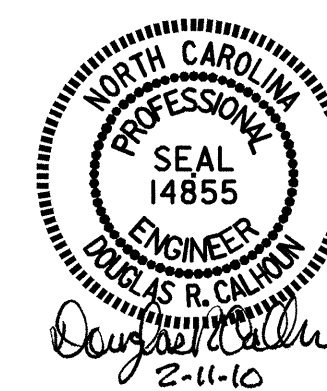
SECTION BERM RIP RAPPED



SECTION C-C

PROJECT NO. B-4238
PITT COUNTY
STATION: 20+80.50 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD RIP RAP DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-25
					TOTAL SHEETS 27

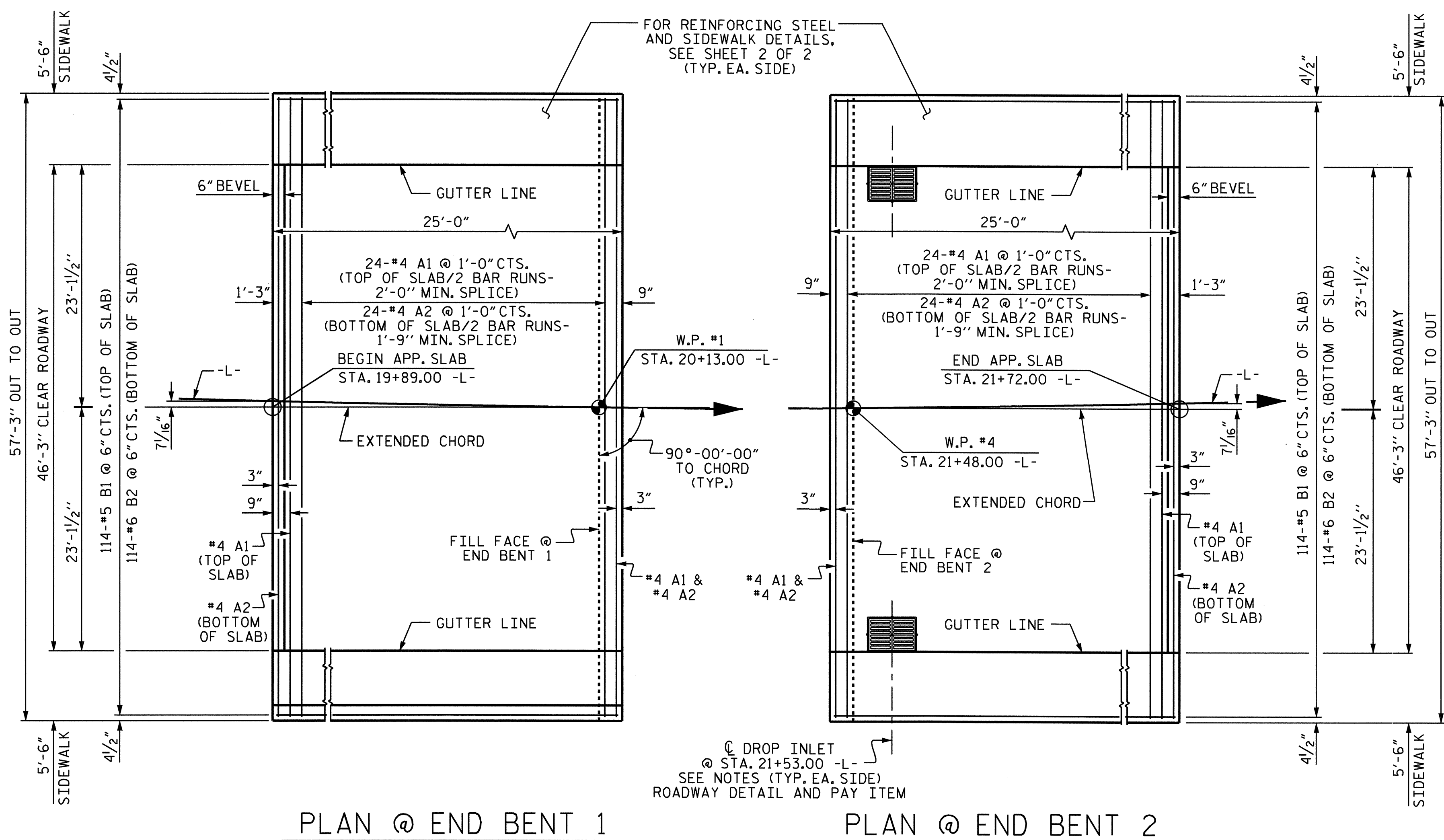


ASSEMBLED BY : B.N. GRADY DATE : 12/28/09
CHECKED BY : J.D. LOEHR DATE : 1/4/10
DRAWN BY : FCJ 2/88 REV. 8/16/99 RWW/LES
CHECKED BY : ARB 8/88 REV. 10/17/00 RWW/LES
REV. 5/1/06 TLA/GM

15-JAN-2010 07:51
R:\Structures\Final Plans\B4238_sd.RR.dgn
bngrady

SKEW 90°

STD. NO. RR2



NOTES

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, 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.

THE 6" COMP. A.B.C. SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB AND SHALL EXTEND 1'-0" OUTSIDE OF EACH EDGE OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

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

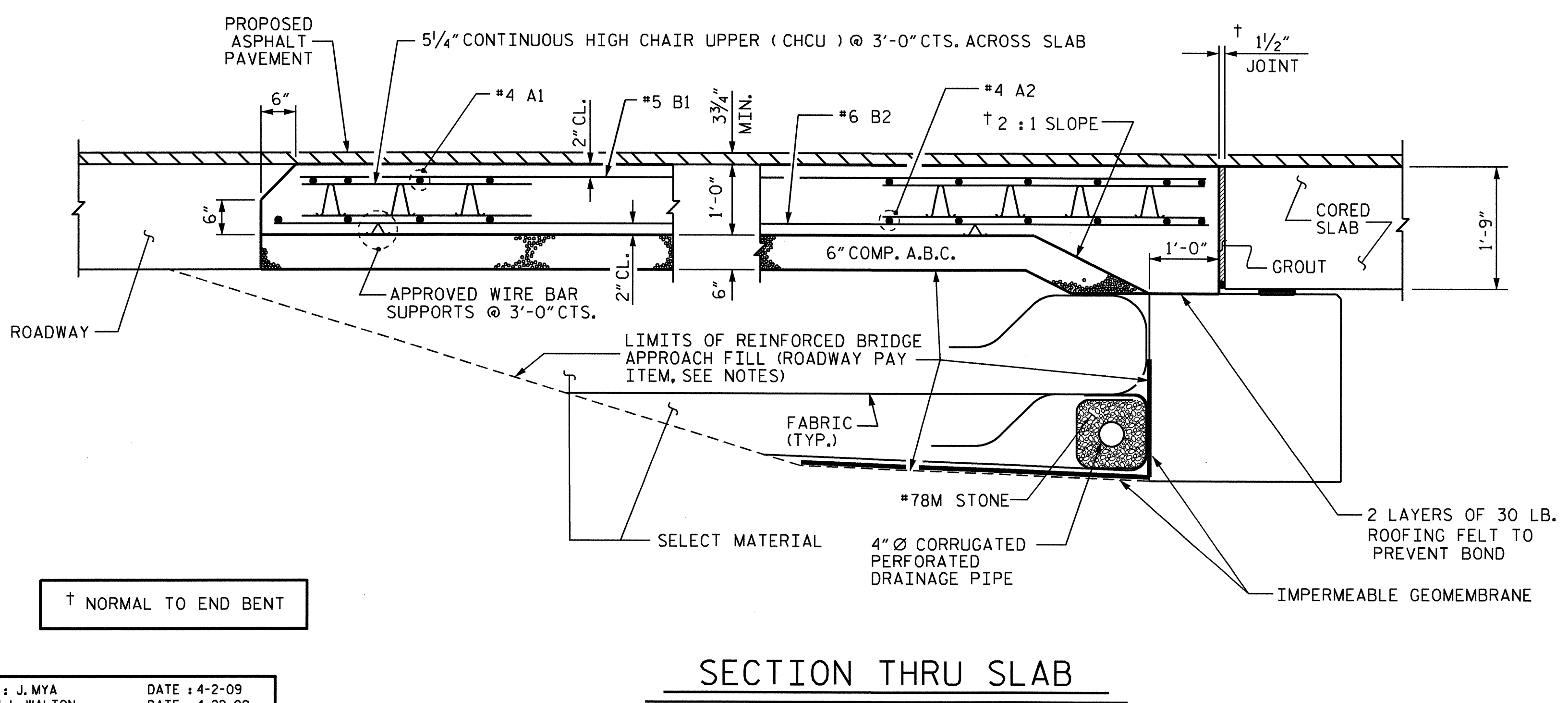
THE JOINT AT THE END BENT SHALL BE GROUTED AS SOON AS PRACTICAL AFTER THE CONSTRUCTION OF THE APPROACH SLABS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

REINFORCING STEEL MAY BE CUT AS NECESSARY FOR INSTALLATION OF DROP INLET AT END BENT 2. SEE ROADWAY PLANS FOR DETAILS OF DROP INLET.

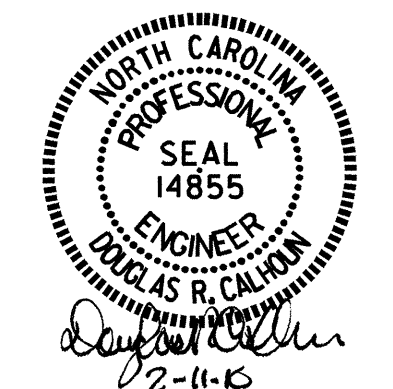
GROOVED CONTRACTION JOINTS 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF SIDEWALK IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FEET TO 10 FEET BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.

BILL OF MATERIAL					
FOR ONE APPROACH SLAB (2 REQ'D)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	52	#4	STR	29'-6"	1025
A2	52	#4	STR	29'-4"	1019
*B1	114	#5	STR	24'-3"	2883
B2	114	#6	STR	24'-8"	4224
*B3	8	#4	STR	24'-8"	132
*D1	32	#4	STR	1'-2"	25
*G1	50	#4	STR	5'-0"	167
REINFORCING STEEL				LBS.	5243
*EPOXY COATED REINFORCING STEEL				LBS.	4232
CLASS AA CONCRETE BREAKDOWN					
SLAB				C. Y.	56.0
SIDEWALK				C. Y.	8.7
TOTAL CLASS AA CONCRETE				C. Y.	64.7



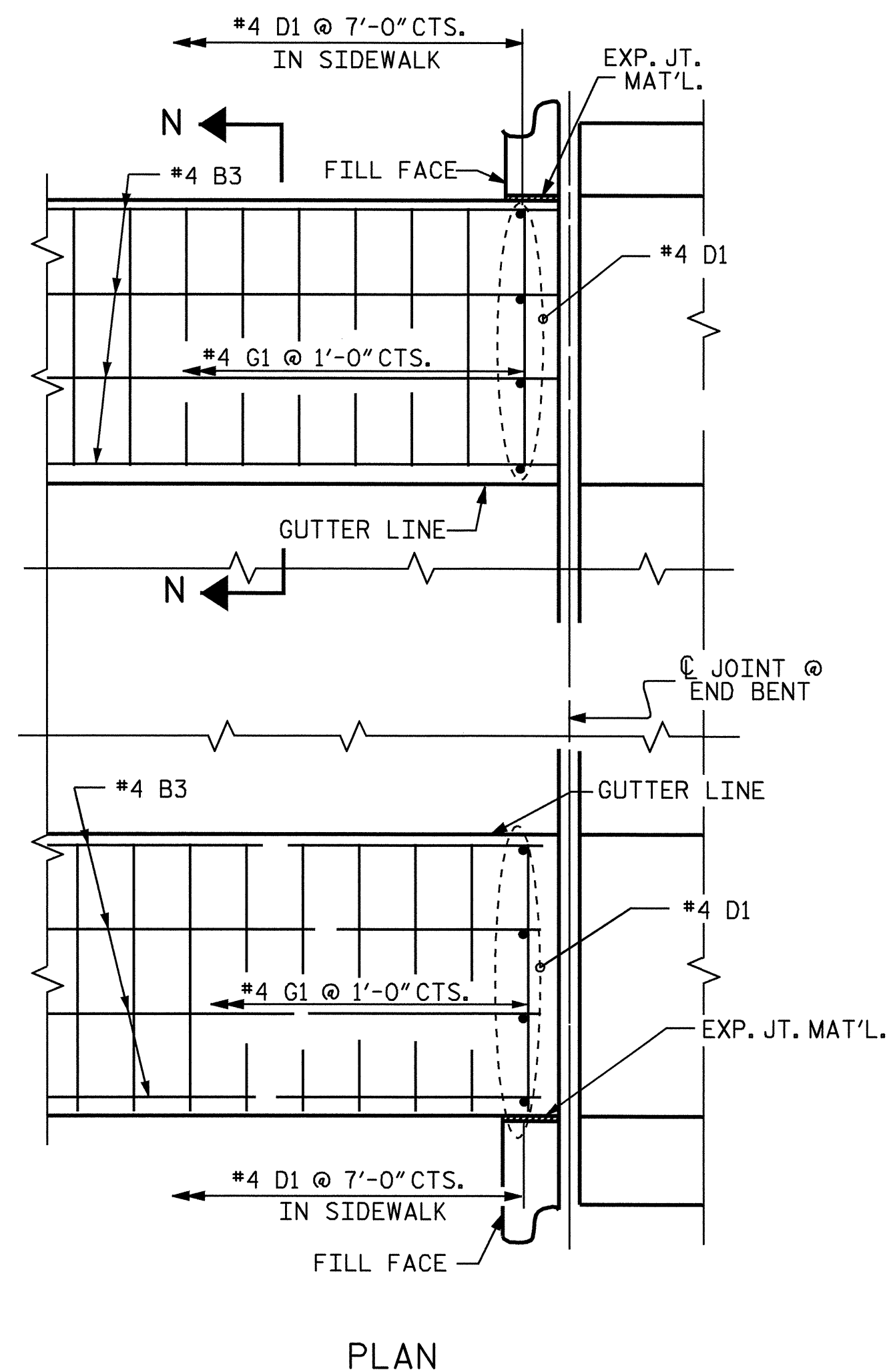
PROJECT NO. B-4238
PITT COUNTY
 STATION: 20+80.50 -L-
 SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 CORED SLAB

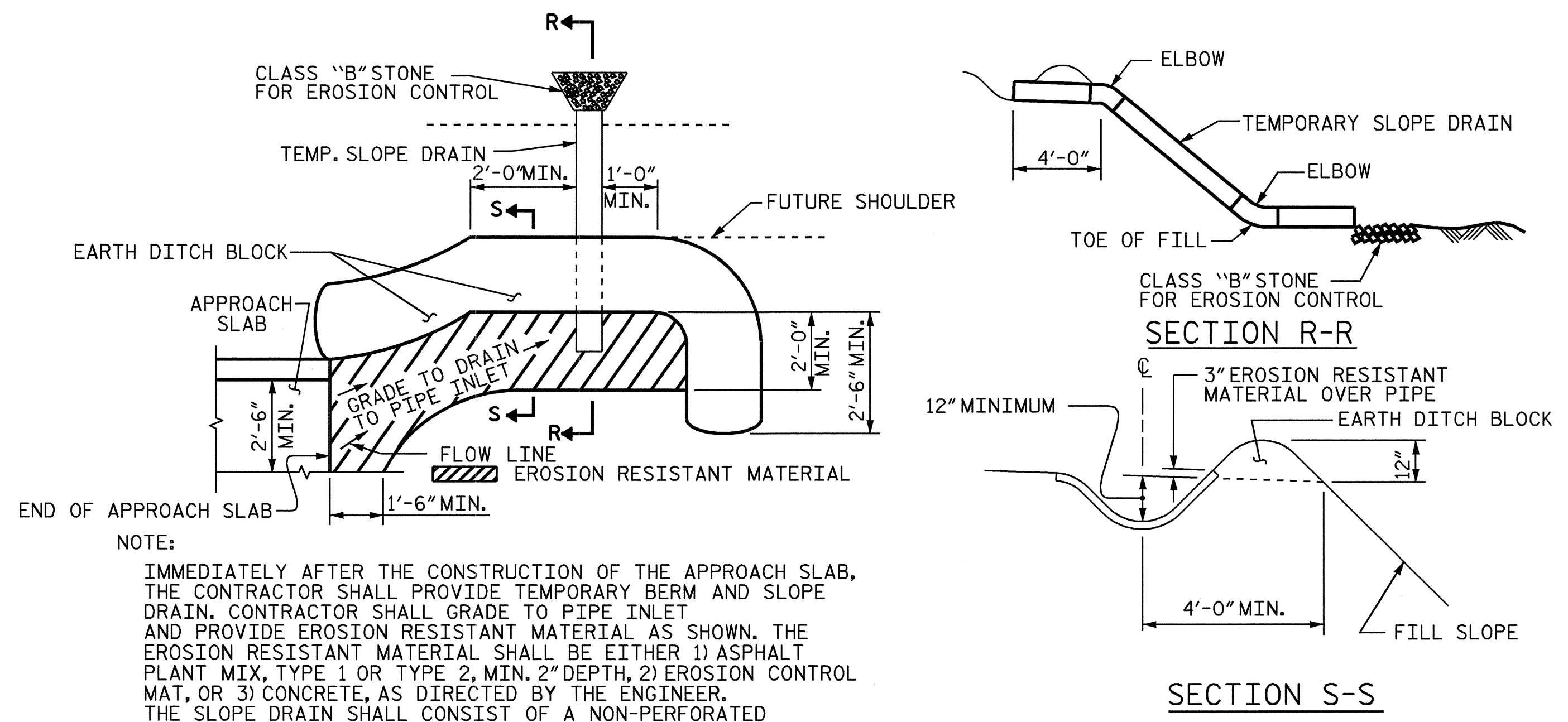


REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

ASSEMBLED BY : J. MYA	DATE : 4-2-09
CHECKED BY : J. L. WALTON	DATE : 4-22-09
DRAWN BY : FCJ 6/87	REV. 7/10/01 LES/RDR
CHECKED BY : EGA 6/87	REV. 5/7/03R RWW/JTE
	REV. 5/1/06R KMM/GM

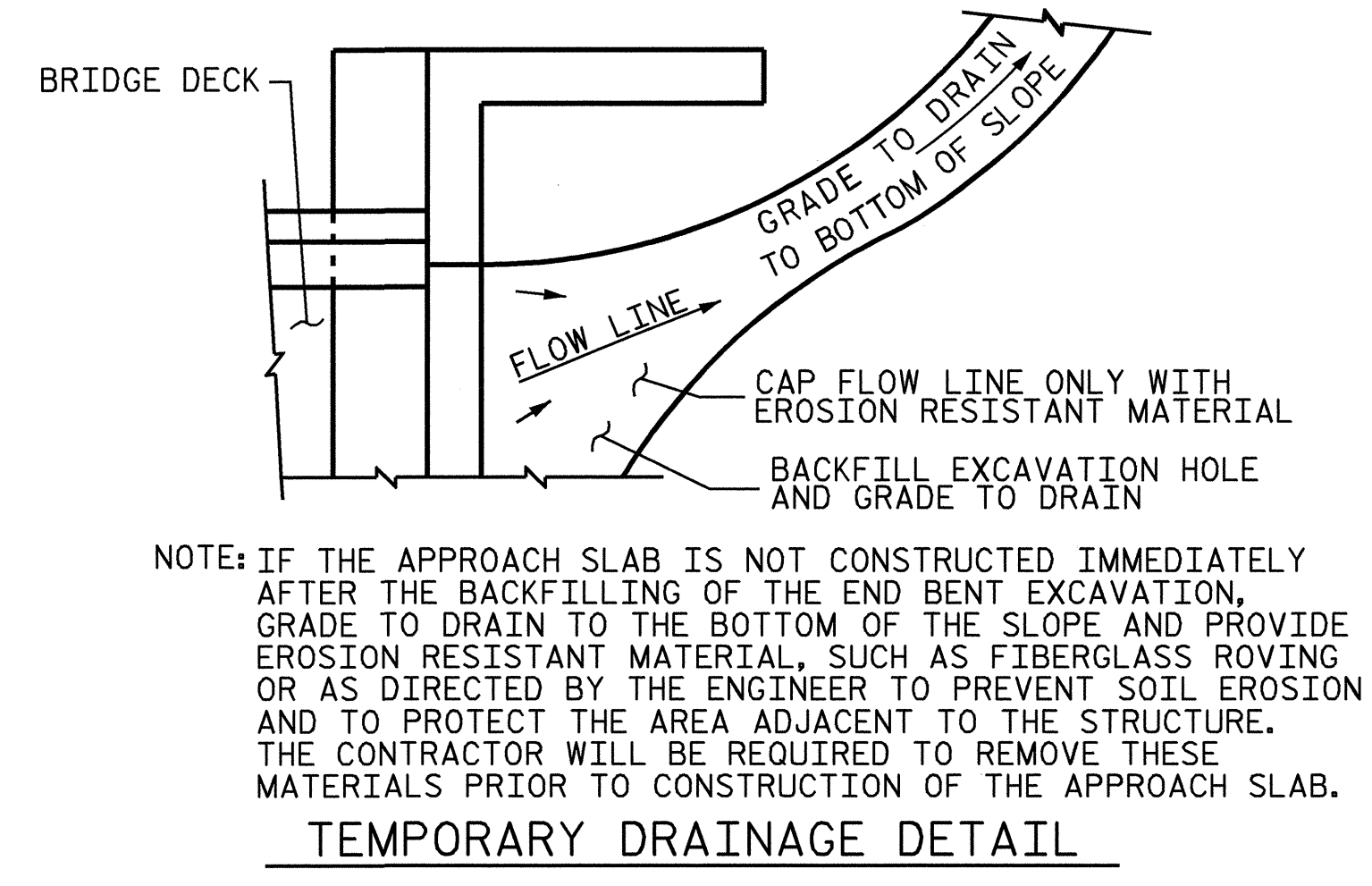
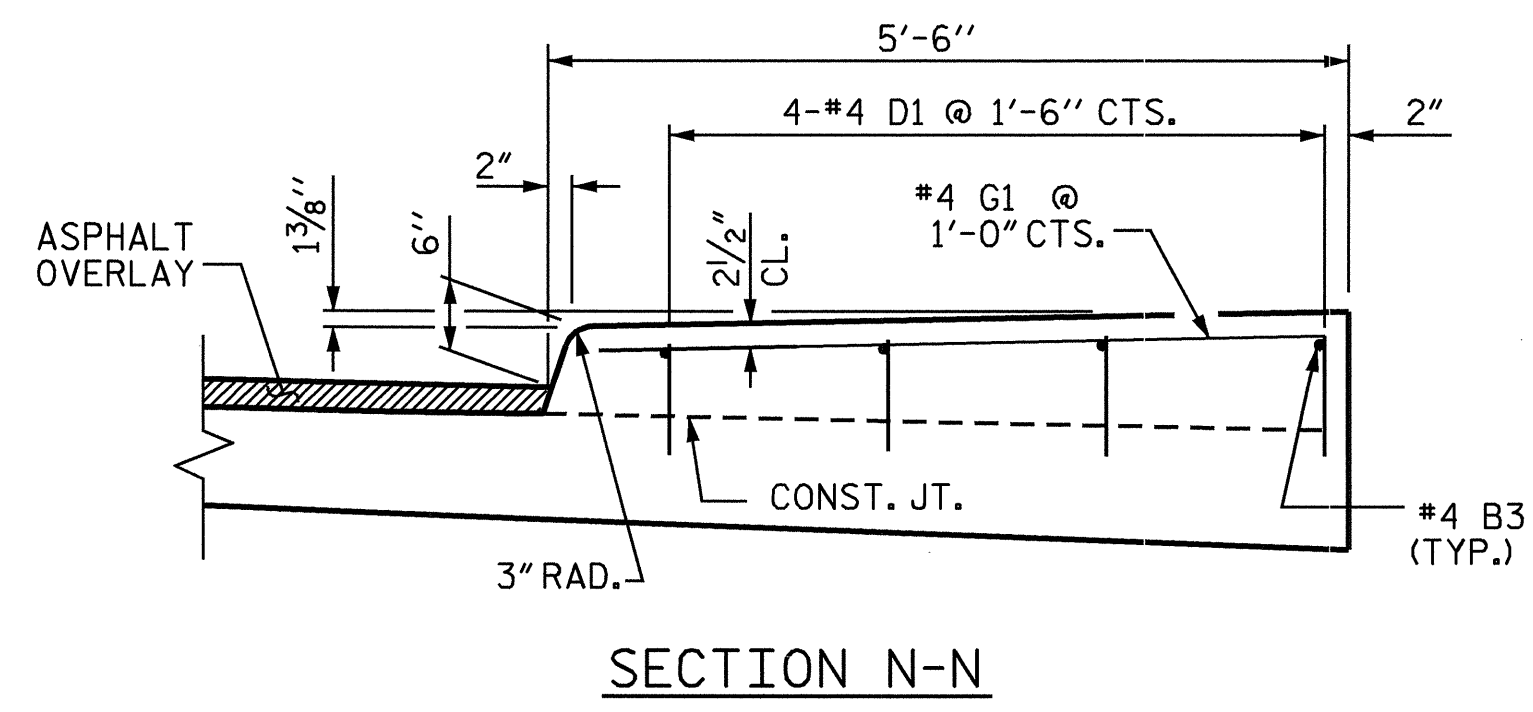


SIDEWALK DETAILS



TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



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

ASSEMBLED BY : J. MYA	DATE : 4-8-09
CHECKED BY : J. L. WALTON	DATE : 4-27-09
DRAWN BY : FCJ 11/88	REV. 10/17/00 RWW/LJS
CHECKED BY : ARB 11/88	REV. 5/1/03 RWW/JTE
	REV. 5/1/06R MAA/KMM

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PROJECT NO. B-4238
PITT COUNTY
 STATION: 20+80.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD BRIDGE APPROACH SLAB DETAILS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					27

STD. NO. BAS10

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	-----	375 LBS. PER SQ. IN.
OF TIMBER		
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 2006 "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

STD. NO. SN