

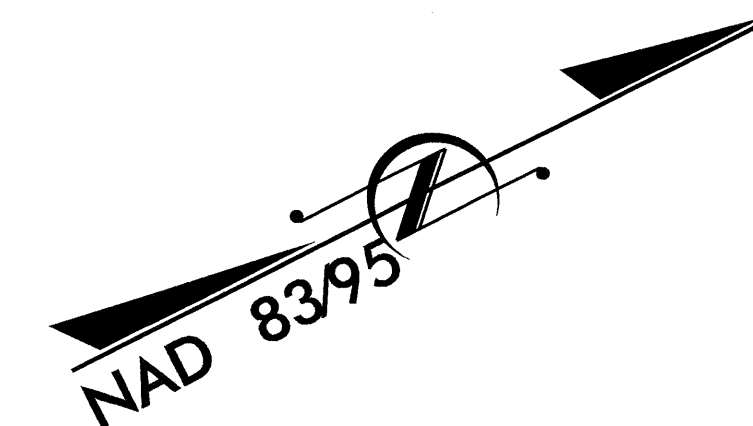
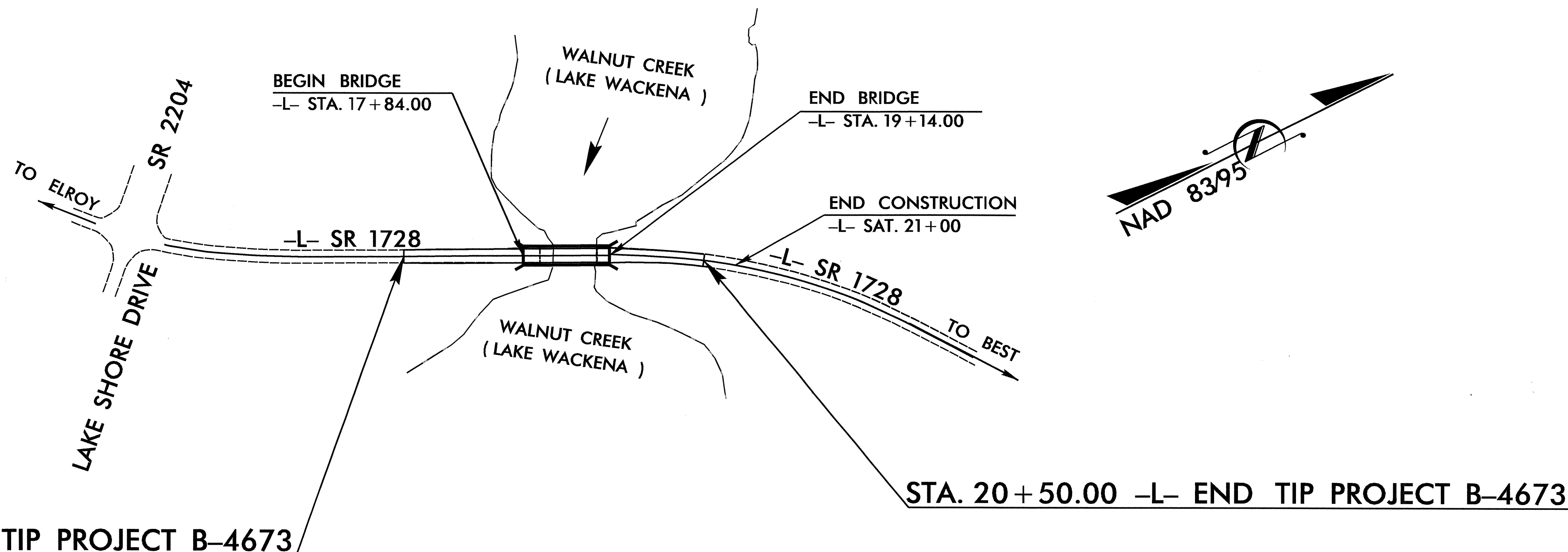
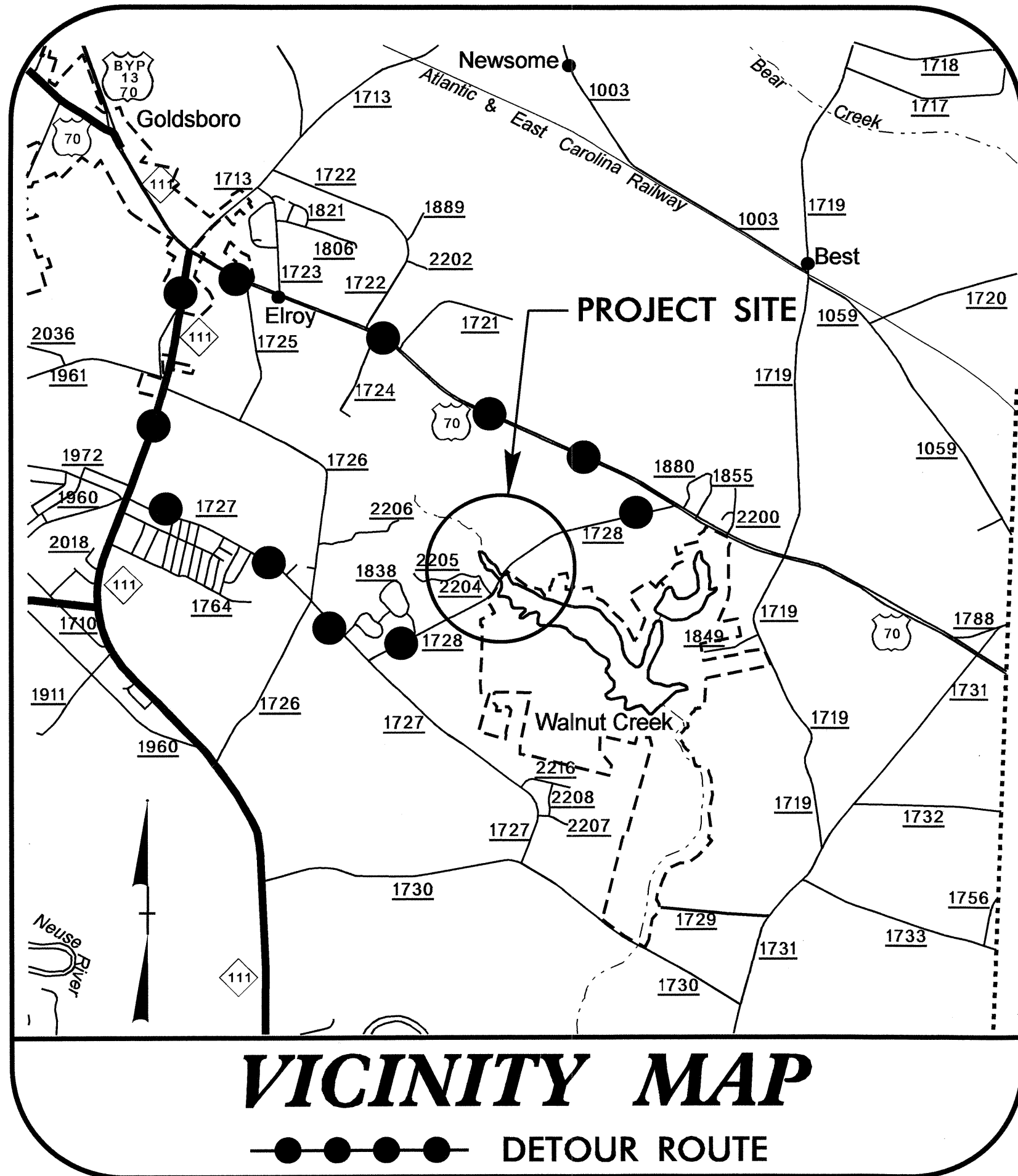
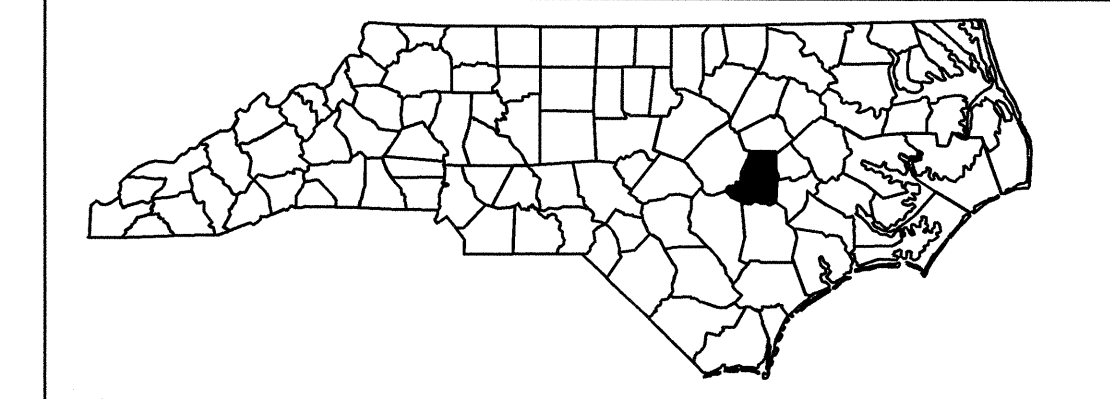
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAYNE COUNTY

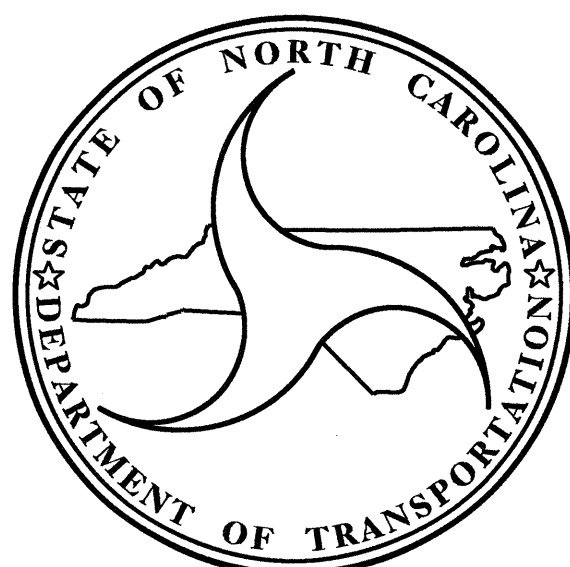
LOCATION : BRIDGE NO.120 ON SR 1728 OVER WALNUT CREEK

TYPE OF WORK : GRADING, PAVING, DRAINAGE AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4673		
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33828.1.1	BRZ-1728 (2)	PE	
33828.2.1	BRZ-1728 (2)	RAW & UTIL.	
33828.3.1	BRZ-1728 (2)	CONST.	



STRUCTURE



DESIGN DATA

ADT 2011 = 3,349
ADT 2031 = 5,719
DHV = 10 %
D = 60 %
T = 3 % *
V = 50 MPH
* TTST 1% DUAL 2 %
FUNC CLASS = LOCAL RURAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-4673 = 0.064 MI.
LENGTH OF STRUCTURE TIP PROJECT B-4673 = 0.025 MI.
TOTAL LENGTH OF TIP PROJECT B-4673 = 0.089 MI.

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

2006 STANDARD SPECIFICATIONS

LETTING DATE:
NOVEMBER 15, 2011

N. N. BULLOCK, PE
PROJECT ENGINEER

D. R. CALHOUN, PE
PROJECT DESIGN ENGINEER

STRUCTURE DESIGN UNIT

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR

DATE

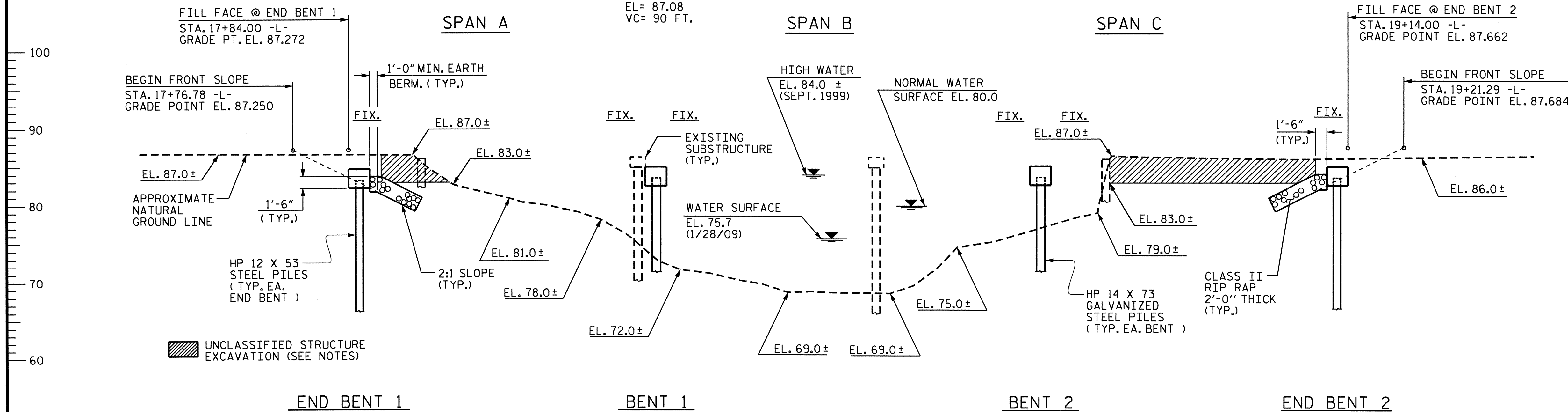
GRADE DATA

-0.7571 % +0.3000 %

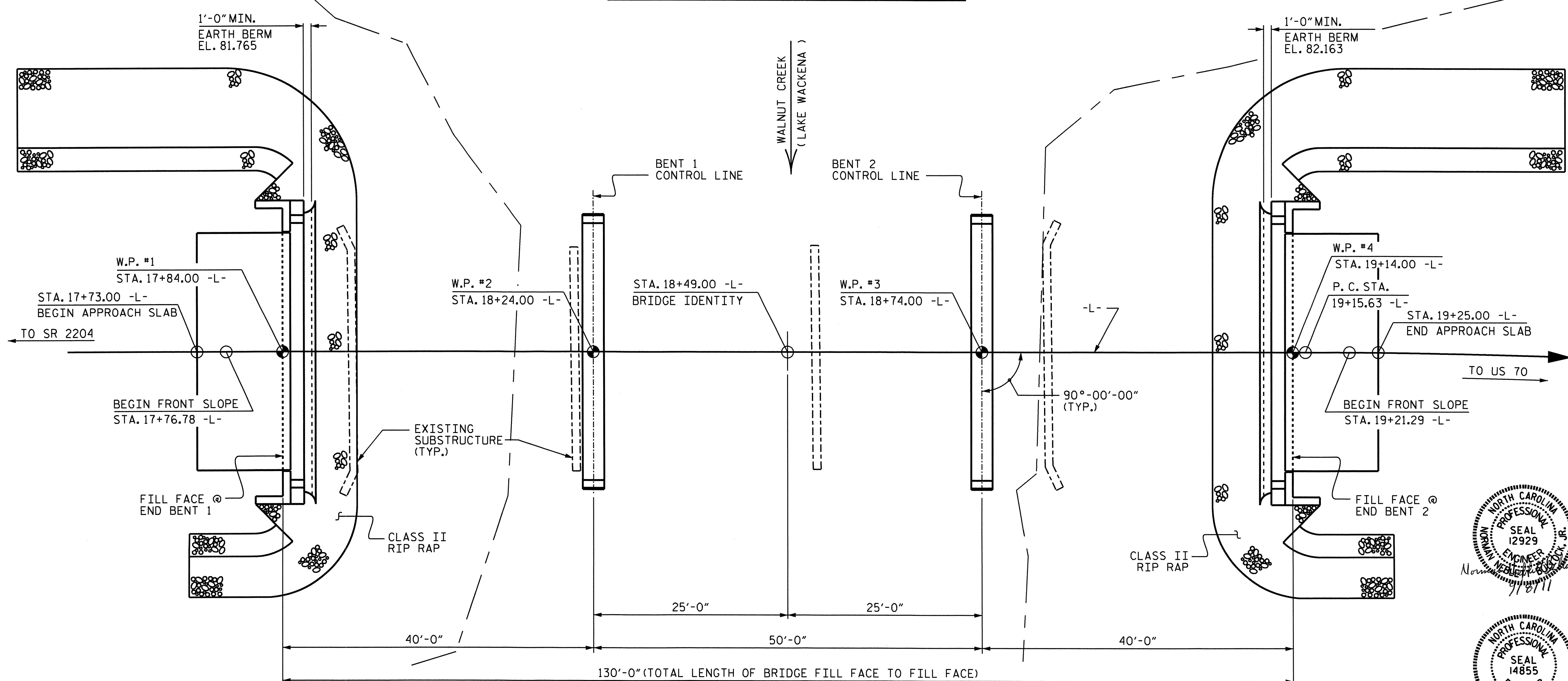
PI= 17+20.00 -L-
EL= 87.08
VC= 90 FT.

NOTES:

FOR NOTES SEE SHEET 2 OF 3.



SECTION ALONG -L-



PLAN

(PILES ARE NOT SHOWN FOR CLARITY)

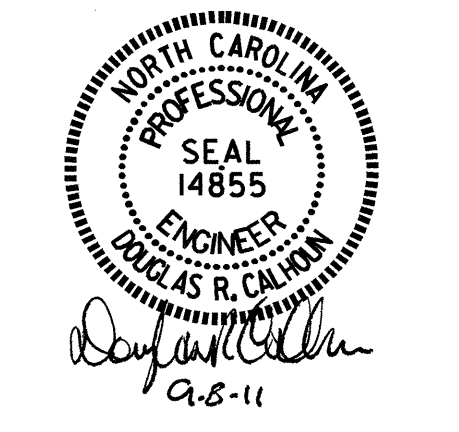
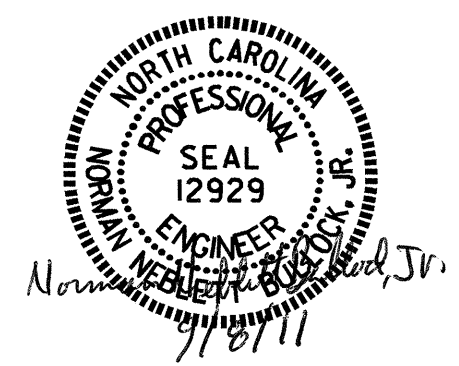
I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. B-4673
WAYNE COUNTY
 STATION: 18+49.00 -L-

SHEET 1 OF 3 REPLACES BRIDGE NO. 120

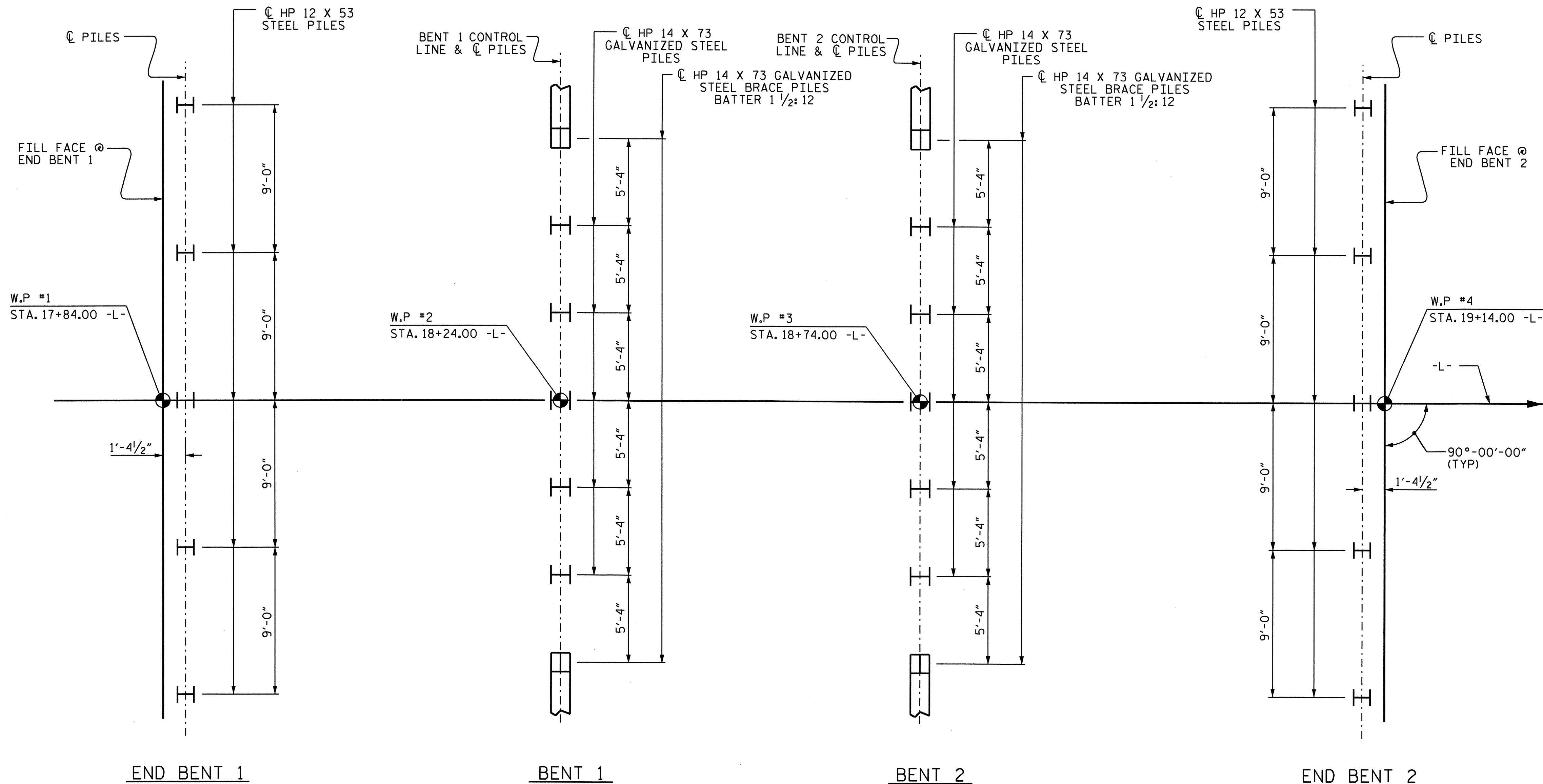
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE ON SR 1728
 OVER WALNUT CREEK
 BETWEEN SR 2204 AND US 70



DRAWN BY: E. G. ALLEN DATE: 4-27-11
 CHECKED BY: D. R. CALHOUN DATE: 5-4-11

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



FOUNDATION NOTES :

FOR PILES, SEE SPECIAL PROVISIONS.

PILES AT END BENT 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 80 TONS PER PILE.

DRIVE PILES AT END BENT 1 AND 2 TO A REQUIRED DRIVING RESISTANCE OF 135 TONS PER PILE.

PILES AT BENT 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 110 TONS PER PILE.

DRIVE PILES AT BENT 1 AND 2 TO A REQUIRED DRIVING RESISTANCE OF 200 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAW OR SCOUR.

INSTALL PILES AT BENT 1 AND 2 TO A TIP ELEVATION NO HIGHER THAN 41.0 FT.

THE SCOUR CRITICAL ELEVATION FOR BENT 1 IS ELEVATION 56.0 FT. AND BENT 2 IS 57.0 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 40,000 FT-LBS TO 59,800 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT 1 AND 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH THE PILES PROVISION.

FOUNDATION LAYOUT

(DIMENSIONS LOCATING PILES ARE SHOWN TO CENTERLINE OF PILES)

NOTES :

ASSUMED LIVE LOAD = HL 93 OR ALTERNATE LOADING.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

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

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

THE EXISTING STRUCTURE CONSISTING OF 3 @ 30'-0" PRESTRESSED PRECAST CONCRETE CHANNEL SPANS WITH A CLEAR ROADWAY WIDTH OF 29'-1" SUPPORTED BY PRESTRESSED PRECAST END BENTS AND BENTS ON TIMBER PILES 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 SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", MAY, 2001.

THIS BRIDGE SHALL BE CONSTRUCTED USING TOP-DOWN CONSTRUCTION METHODS. THE USE OF A TEMPORARY CAUSEWAY OR WORK BRIDGE IS NOT PERMITTED.

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 SPICED 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 THE VARIOUS PAY ITEMS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 25 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.

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

ALL PAVEMENT MARKING WILL BE IN ACCORDANCE WITH THE PAVEMENT MARKING PLANS AND SHALL PROVIDE FOR BICYCLES.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR CURING CONCRETE, SEE SPECIAL PROVISIONS.

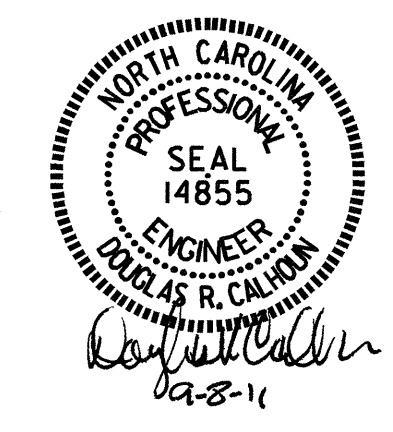
PROJECT NO. B-4673
WAYNE COUNTY
 STATION: 18+49.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE ON SR 1728
 OVER WALNUT CREEK
 BETWEEN SR 2204 AND US 70

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

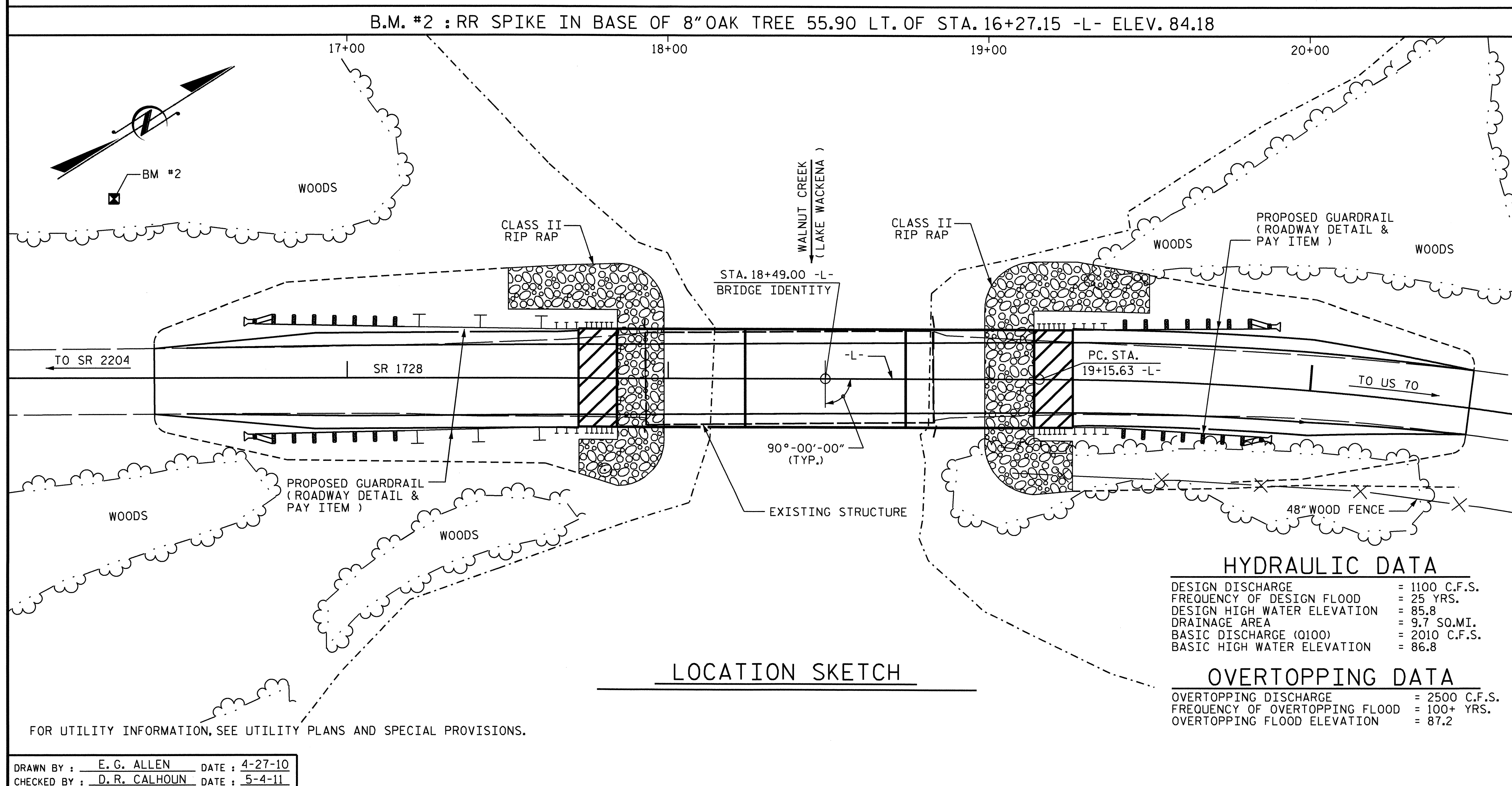


DRAWN BY : E. G. ALLEN DATE : 4-27-11
 CHECKED BY : D. R. CALHOUN DATE : 5-4-11

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	12 X 53 STEEL PILES		▲ 14 X 73 GALVANIZED STEEL PILES		PILE REDRIVES	TWO BAR METAL RAIL	1'-2" X 2'-7 1/2" CONCRETE PARAPET	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.	LUMP SUM	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	EACH	LIN. FT.	LIN. FT.	TONS	SO. YDS.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE				LUMP SUM							240.50	255.50			LUMP SUM	33	1402.50
END BENT 1		LUMP SUM	13.9		2013	5	225			3			113	126			
BENT 1			10.7		2233			7	420	4							
BENT 2			10.7		2233			7	420	4							
END BENT 2		LUMP SUM	13.8		2013	5	225			3			122	136			
TOTAL	LUMP SUM	LUMP SUM	49.1	LUMP SUM	8492	10	450	14	840	14	240.50	255.50	235	262	LUMP SUM	33	1402.50

▲ FOR INTERIOR BENTS 1 AND 2, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENTS FOR DETAILS. PAYMENT FOR THE PARTIALLY GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.

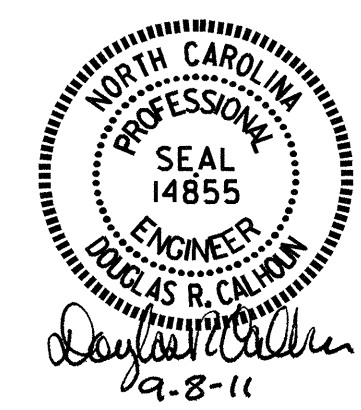


HYDRAULIC DATA

DESIGN DISCHARGE	= 1100 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 25 YRS.
DESIGN HIGH WATER ELEVATION	= 85.8
DRAINAGE AREA	= 9.7 SQ.MI.
BASIC DISCHARGE (Q100)	= 2010 C.F.S.
BASIC HIGH WATER ELEVATION	= 86.8

OVERTOPPING DATA

OVERTOPPING DISCHARGE	= 2500 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 100+ YRS.
OVERTOPPING FLOOD ELEVATION	= 87.2



PROJECT NO. B-4673
 WAYNE COUNTY
 STATION: 18+49.00 -L-
 SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE ON SR 1728
 OVER WALNUT CREEK
 BETWEEN SR 2204 AND US 70

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

DRAWN BY : E. G. ALLEN DATE : 4-27-10
 CHECKED BY : D. R. CALHOUN DATE : 5-4-11

LOAD FACTORS:

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

LOAD AND RESISTANCE FACTOR RATING (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 (INVENTORY)	N/A	1	1.085	--	1.75	0.274	1.57	B	EL	24.438	0.548	1.09	A	EL	1.891	0.80	0.274	1.26	B	EL	24.438		
	HL-93 (OPERATING)	N/A	--	1.407	--	1.35	0.274	2.03	B	EL	24.438	0.548	1.41	A	EL	1.891	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	2	1.26	45.355	1.75	0.274	1.94	B	EL	24.438	0.548	1.26	A	EL	1.891	0.80	0.274	1.57	B	EL	24.438		
	HS-20 (OPERATING)	36.000	--	1.633	58.793	1.35	0.274	2.52	B	EL	24.438	0.548	1.63	A	EL	1.891	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.184	42.982	1.4	0.279	4.86	A	EL	18.906	0.548	3.35	A	EL	1.891	0.80	0.274	3.18	B	EL	24.438	
		SNGARBS2	20.000	--	2.5	50.002	1.4	0.274	3.9	B	EL	24.438	0.548	2.5	A	EL	1.891	0.80	0.274	2.52	B	EL	24.438	
		SNAGRIS2	22.000	--	2.369	52.12	1.4	0.274	3.77	B	EL	19.55	0.548	2.37	A	EL	1.891	0.80	0.274	2.44	B	EL	24.438	
		SNCOTTS3	27.250	--	1.588	43.28	1.4	0.279	2.43	A	EL	18.906	0.548	1.68	A	EL	1.891	0.80	0.274	1.59	B	EL	24.438	
		SNAGGRS4	34.925	--	1.381	48.24	1.4	0.274	2.14	B	EL	24.438	0.548	1.48	A	EL	1.891	0.80	0.274	1.38	B	EL	24.438	
		SNS5A	35.550	--	1.347	47.883	1.4	0.274	2.09	B	EL	24.438	0.548	1.55	A	EL	1.891	0.80	0.274	1.35	B	EL	24.438	
		SNS6A	39.950	--	1.26	50.321	1.4	0.274	1.95	B	EL	24.438	0.548	1.45	A	EL	1.891	0.80	0.274	1.26	B	EL	24.438	
	SNS7B	42.000	--	1.2	50.418	1.4	0.274	1.86	B	EL	24.438	0.548	1.48	A	EL	1.891	0.80	0.274	1.20	B	EL	24.438		
	TTST	TNAGRIT3	33.000	--	1.543	50.925	1.4	0.274	2.39	B	EL	24.438	0.548	1.7	A	EL	1.891	0.80	0.274	1.54	B	EL	24.438	
		TNT4A	33.075	--	1.557	51.489	1.4	0.274	2.41	B	EL	24.438	0.548	1.61	A	EL	1.891	0.80	0.274	1.56	B	EL	24.438	
		TNT6A	41.600	--	1.297	53.95	1.4	0.274	2.01	B	EL	24.438	0.548	1.58	A	EL	1.891	0.80	0.274	1.30	B	EL	24.438	
		TNT7A	42.000	--	1.317	55.295	1.4	0.274	2.04	B	EL	24.438	0.548	1.46	A	EL	1.891	0.80	0.274	1.32	B	EL	24.438	
		TNT7B	42.000	--	1.373	57.647	1.4	0.274	2.13	B	EL	24.438	0.548	1.41	A	EL	1.891	0.80	0.274	1.37	B	EL	24.438	
		TNAGRIT4	43.000	--	1.303	56.012	1.4	0.274	2.02	B	EL	24.438	0.548	1.35	A	EL	1.891	0.80	0.274	1.30	B	EL	24.438	
TNAGT5A		45.000	--	1.217	54.753	1.4	0.274	1.89	B	EL	24.438	0.548	1.4	A	EL	1.891	0.80	0.274	1.22	B	EL	24.438		
TNAGT5B	45.000	3	1.192	53.641	1.4	0.274	1.85	B	EL	24.438	0.548	1.28	A	EL	1.891	0.80	0.274	1.19	B	EL	24.438			

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)

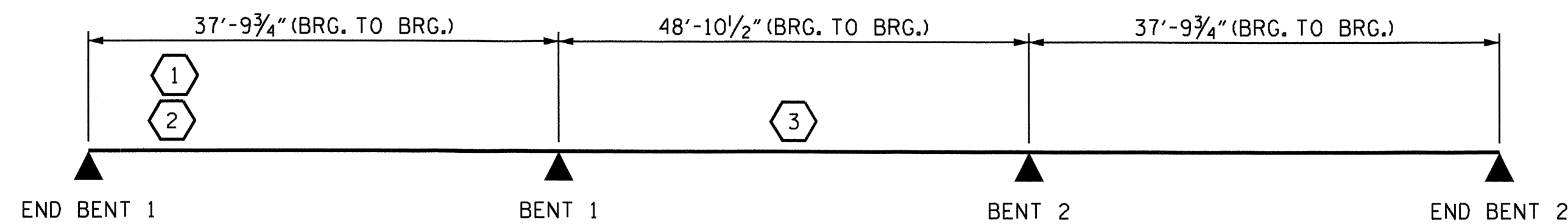
2 DESIGN LOAD RATING (HS-20)

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-4673
WAYNE COUNTY
 STATION: 18+49.00 -L-

ASSEMBLED BY : K. P. SEDAI DATE : 7/21/11
 CHECKED BY : W. S. ARAFAT DATE : 7/25/11
 DRAWN BY : MAA 1/08 REV. 11/12/OBR MAA/GM
 CHECKED BY : GM/DI 2/08

08-SEP-2011 11:49
 R:\Structures\Final Plans\B-4673_SD_LRFR.dgn
 galien

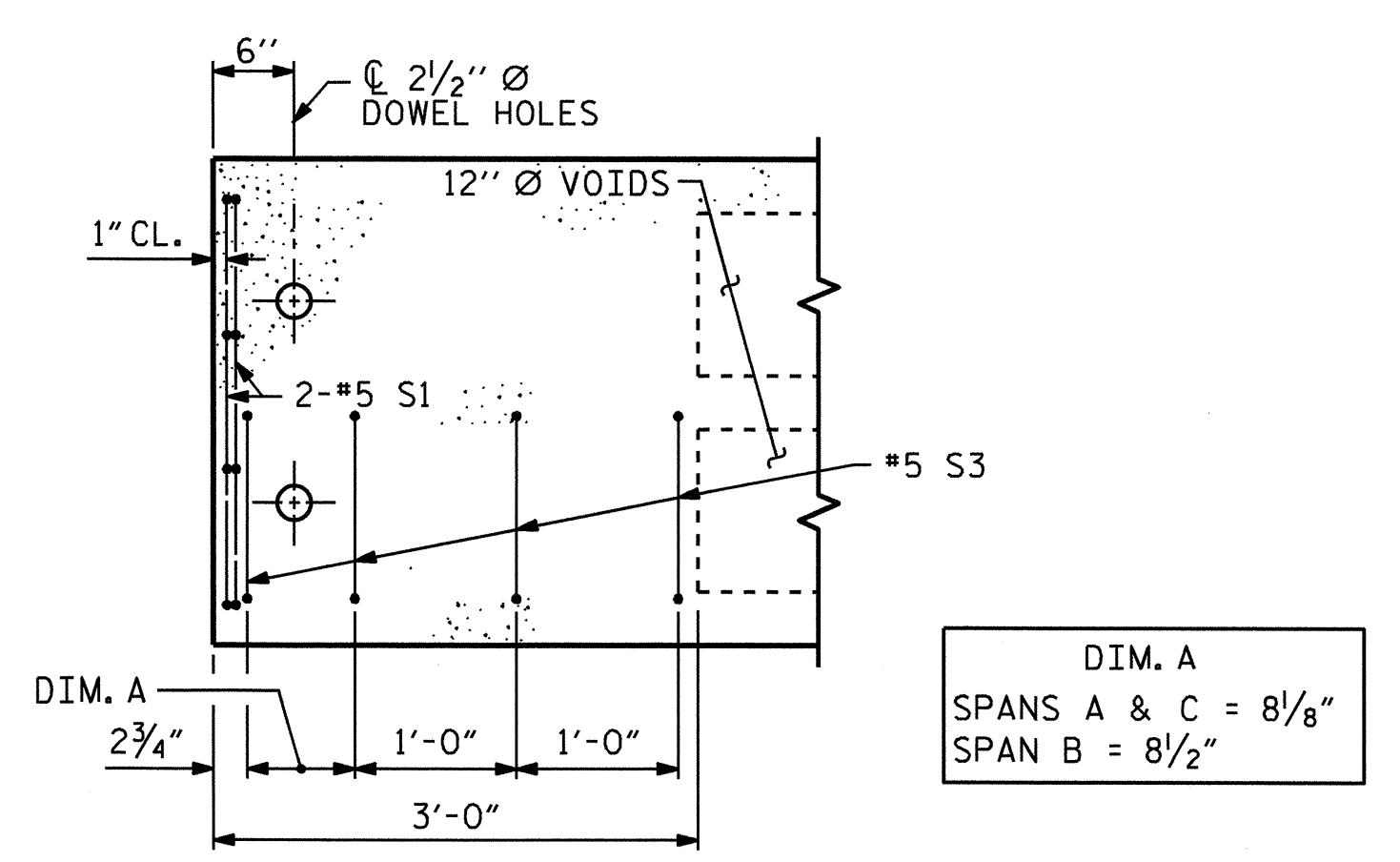
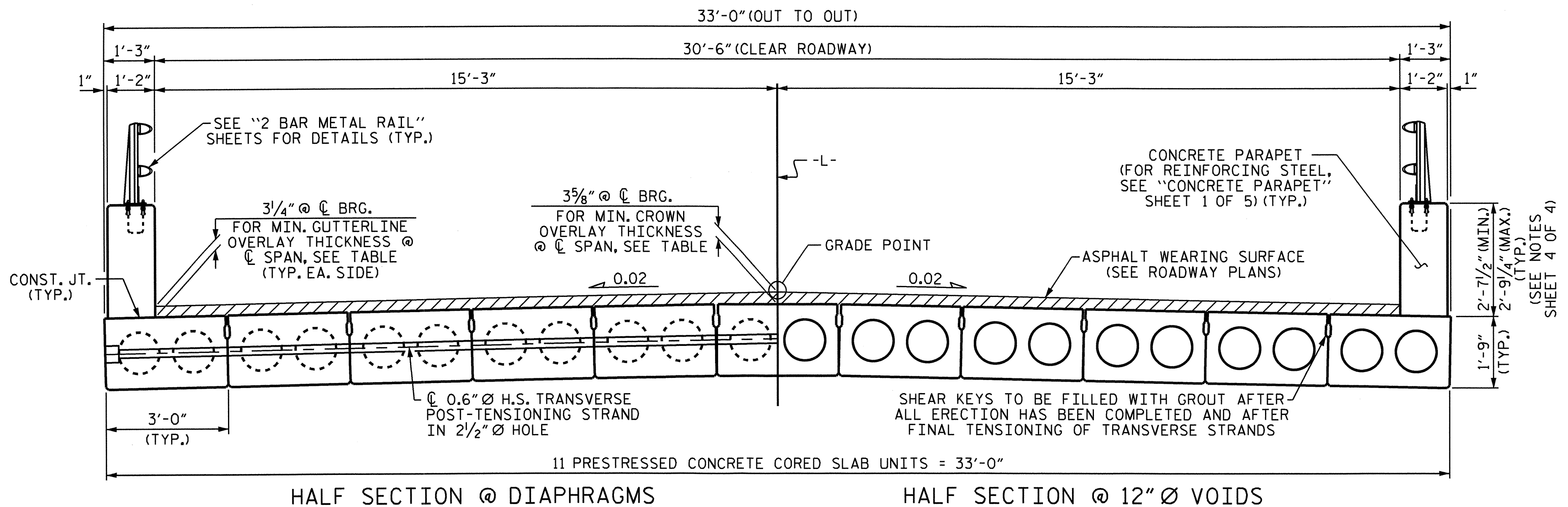


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

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			24

STD. NO. LRFR1

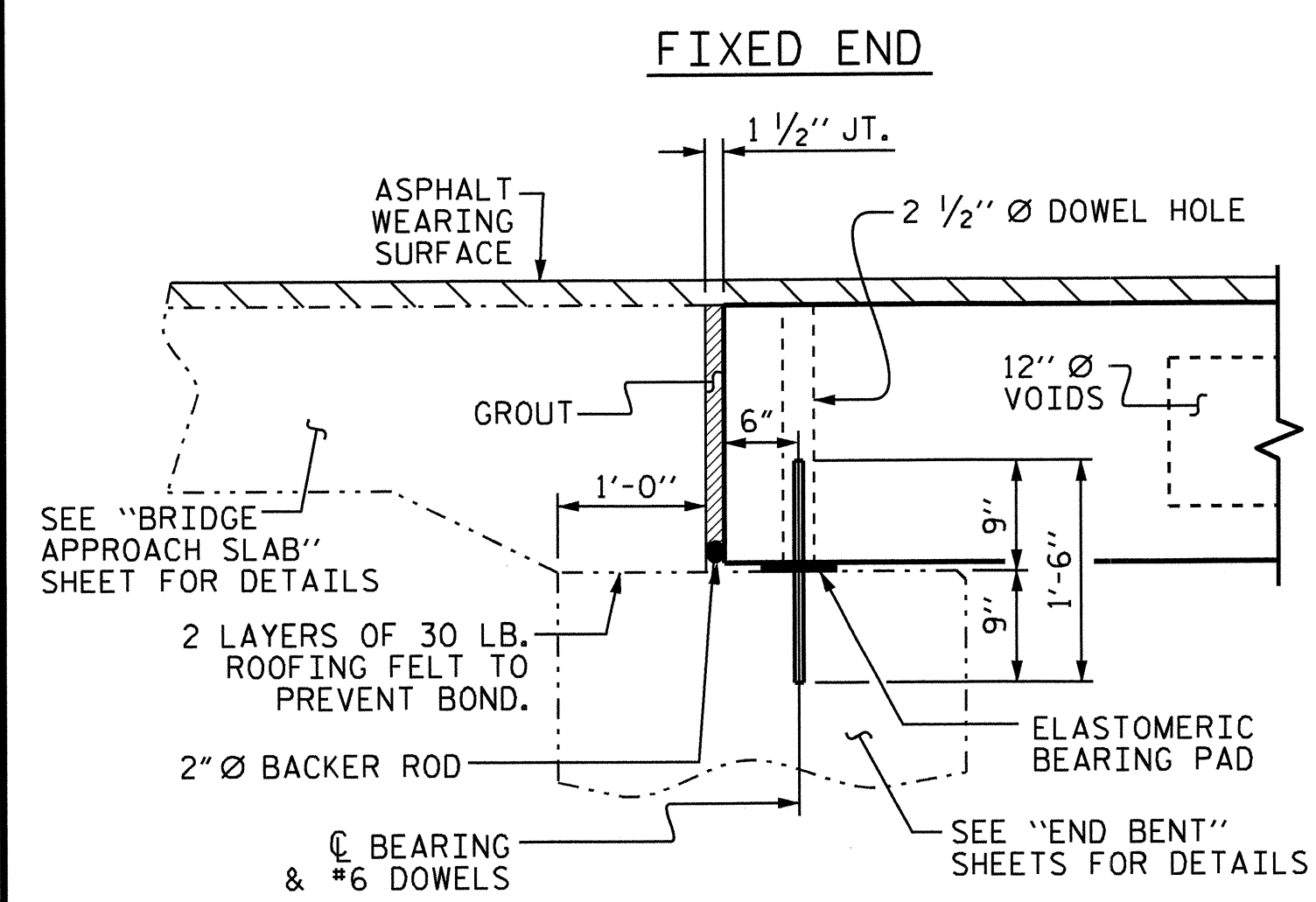


PART PLAN-EXTERIOR SECTION

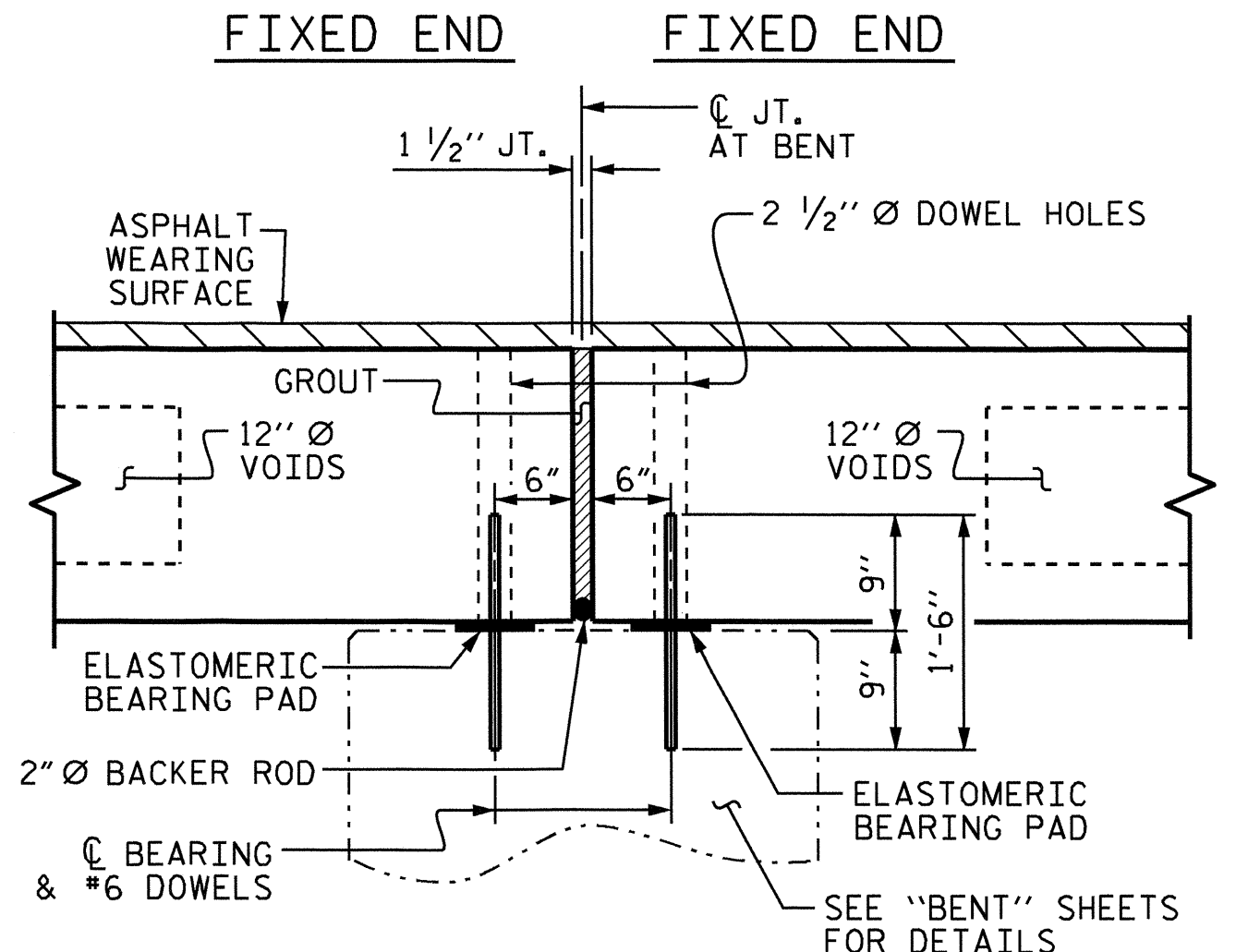
NOTE: EXTERIOR SECTION SHOWN-INTERIOR SECTION SIMILAR EXCEPT OMIT S3 BARS.

MIN. OVERLAY THICKNESS @ C SPAN		
SPAN	@ GUTTERLINE	@ CROWN
A & C	2 3/8"	2 3/4"
B	1 1/2"	1 7/8"

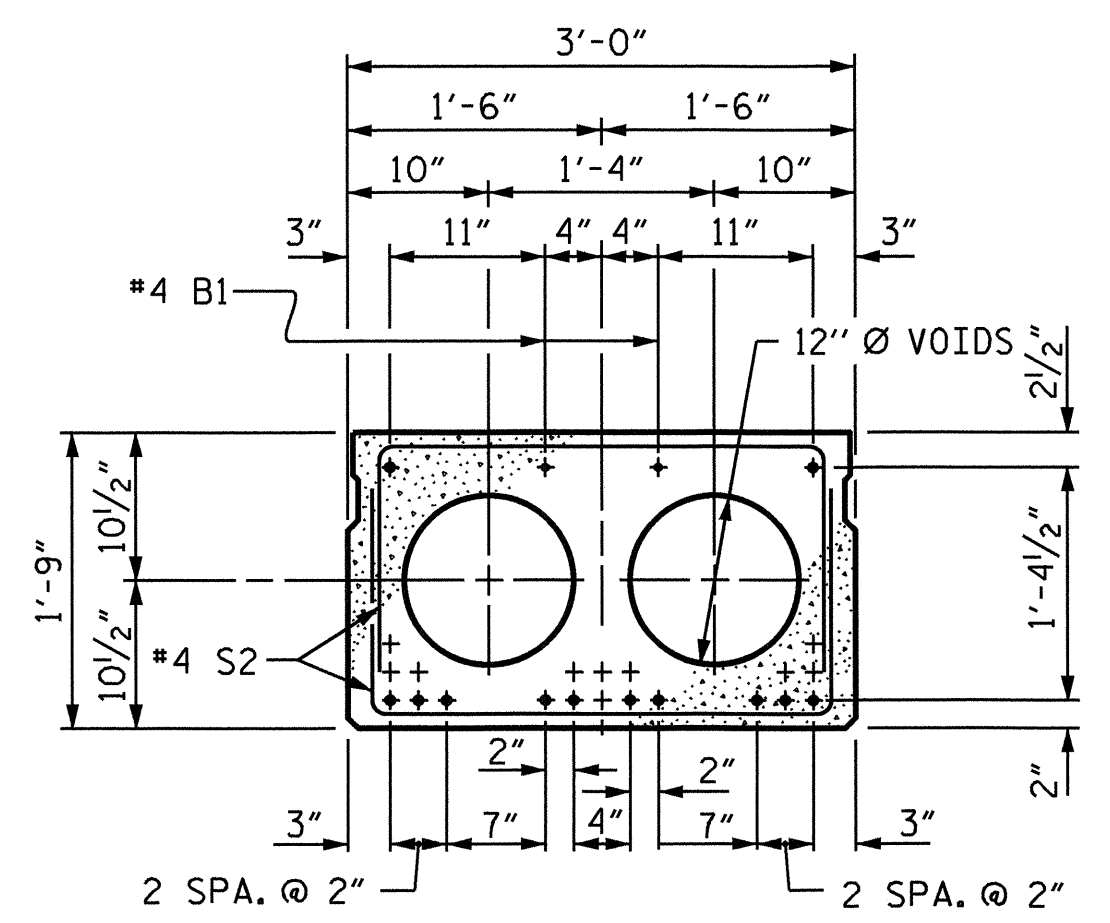
TYPICAL SECTION



SECTION AT END BENT

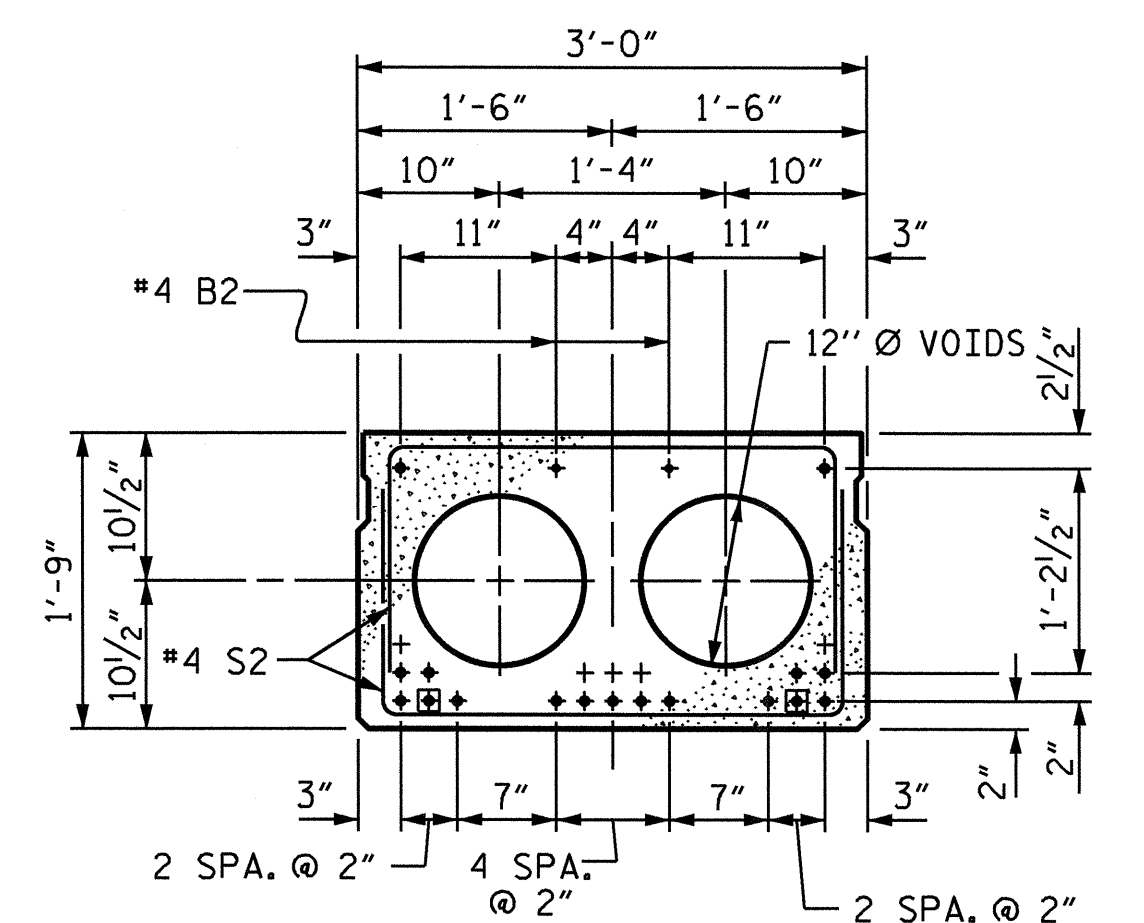


SECTION AT BENT



INTERIOR SLAB SECTION
0.6" Ø LOW RELAXATION STRAND LAYOUT (12 STRANDS)

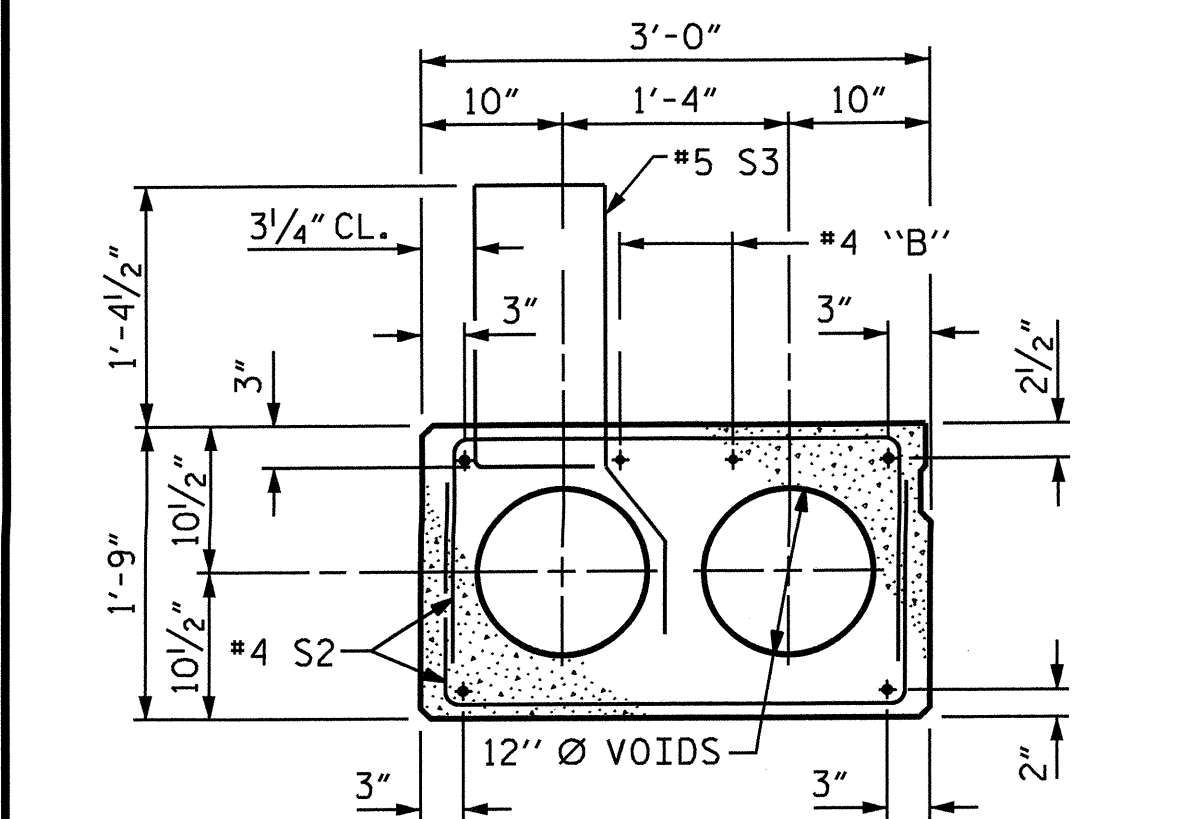
SPAN A & C



INTERIOR SLAB SECTION
0.6" Ø LOW RELAXATION STRAND LAYOUT (17 STRANDS, 2 SHEATHED)

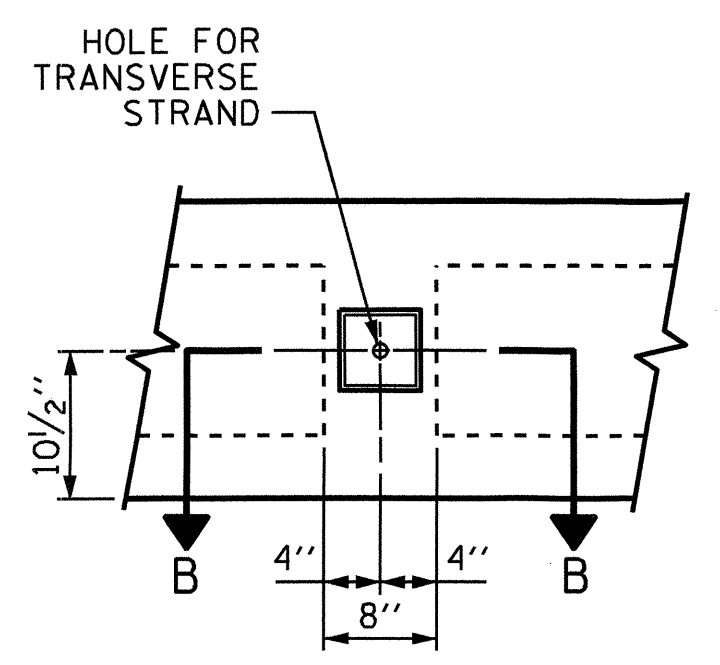
SPAN B

THE BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 4'-0" FROM END OF THE CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.

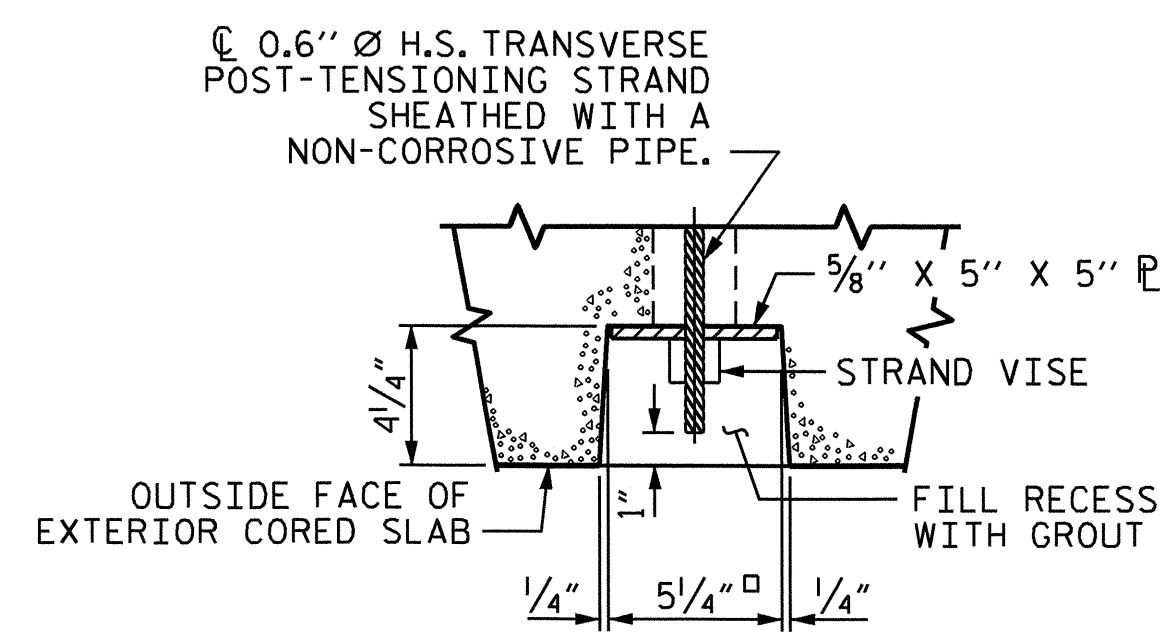


EXTERIOR SLAB SECTION

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

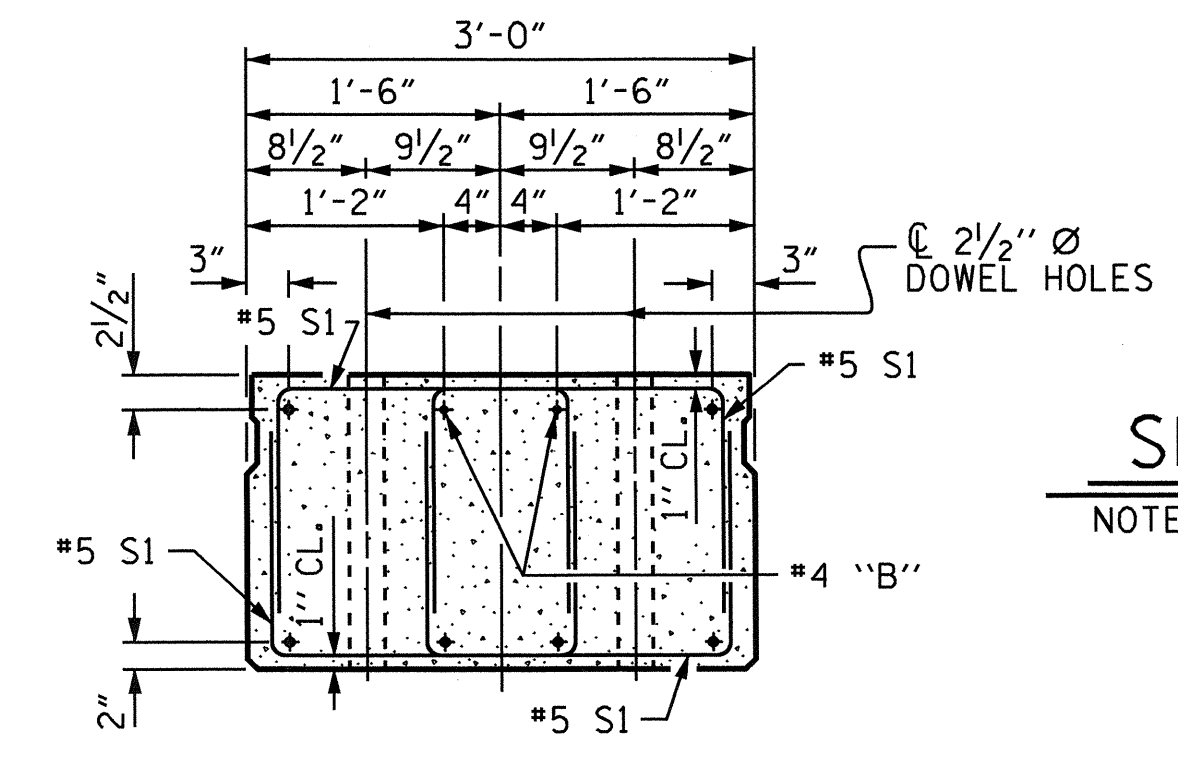


ELEVATION VIEW



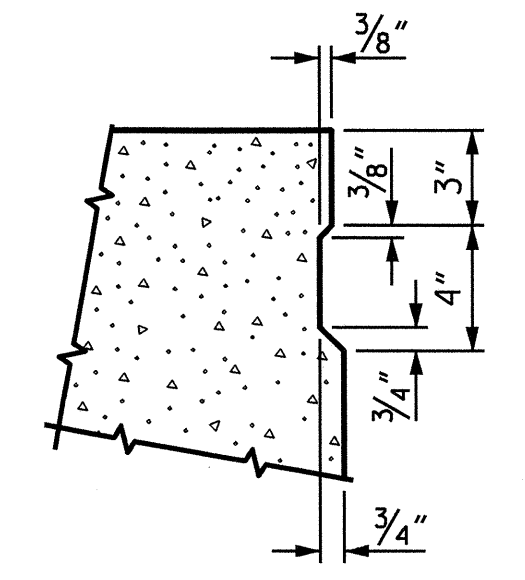
SECTION B-B

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



END ELEVATION

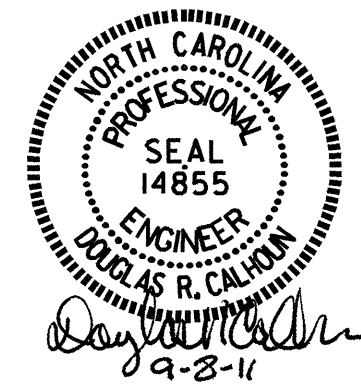
SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB SECTION SHOWN-EXTERIOR SLAB SECTION SIMILAR EXCEPT SHEAR KEY LOCATION.



SHEAR KEY DETAIL

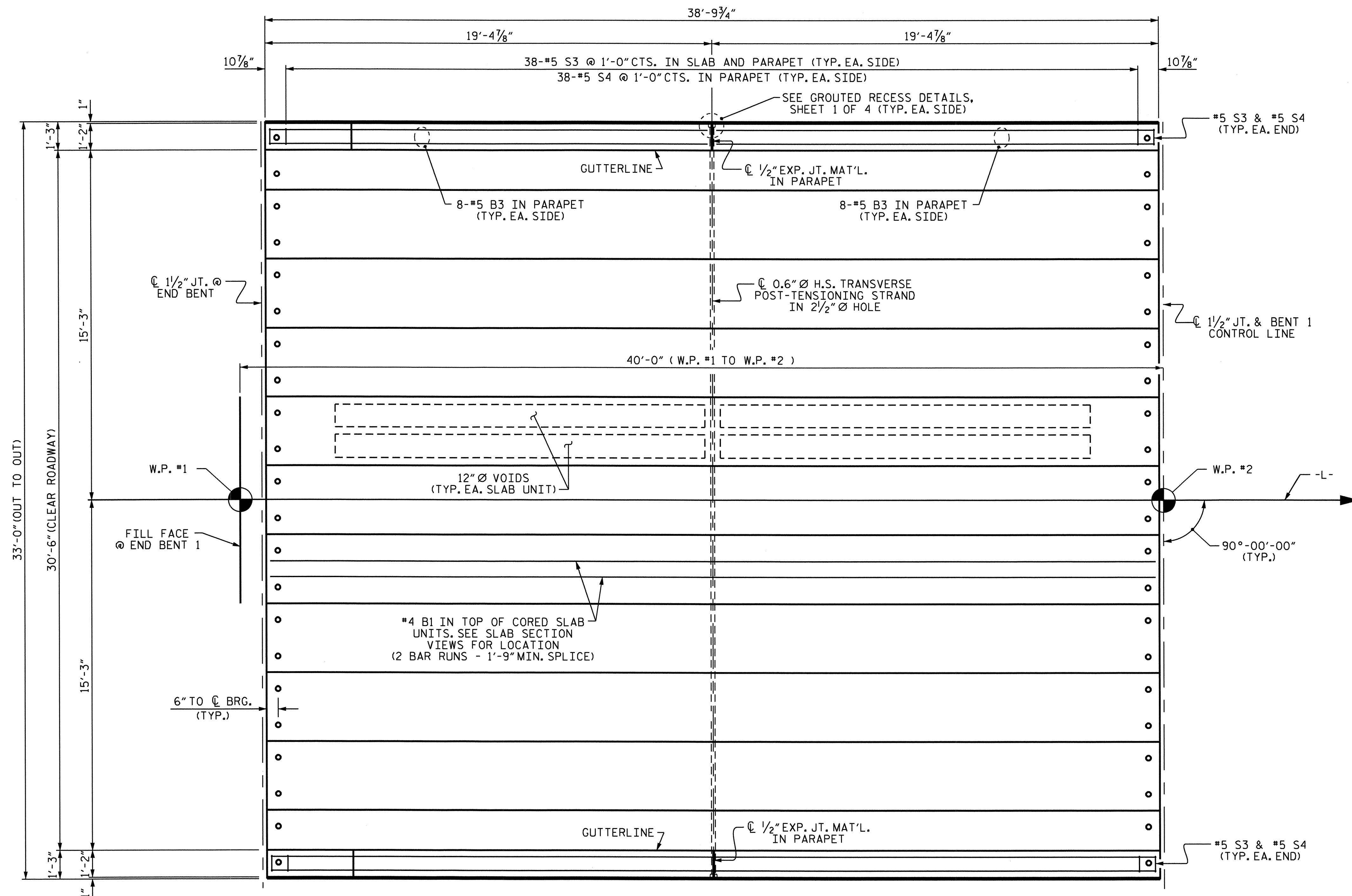
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

ASSEMBLED BY : B.N. GRADY	DATE : 2/17/10
CHECKED BY : J.L. WALTON	DATE : 2/24/10
DRAWN BY : WJH 4/89	REV. 10/17/00 RWW/LES
CHECKED BY : FCJ 5/89	REV. 7/10/01RR RWW/LES
	REV. 5/1/06R TLA/GM



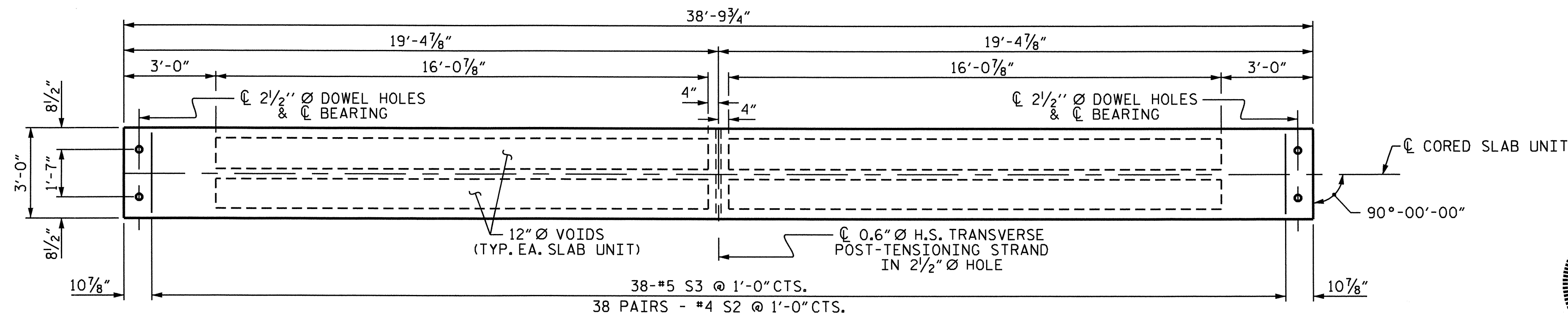
PROJECT NO. B-4673
WAYNE COUNTY
STATION: 18+49.00 -L-

SHEET 1 OF 4				STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH		STANDARD 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT	
REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.	
1			3			S-5	
2			4			TOTAL SHEETS 24	



PLAN OF SPAN A

(SPAN C SIMILAR)

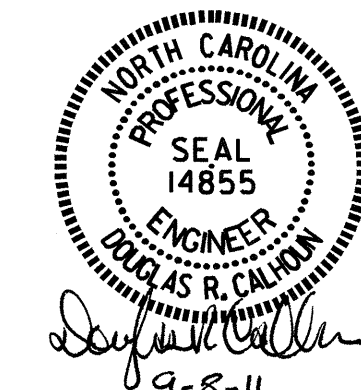


PLAN OF CORED SLAB UNIT

(EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT S3 BARS)
 FOR REINFORCING STEEL AT END OF CORED SLABS, SEE "PART PLAN EXTERIOR SECTION", SHEET 1 OF 4.

DRAWN BY : B.N. GRADY DATE : 2/17/10
 CHECKED BY : J.L. WALTON DATE : 2/24/10

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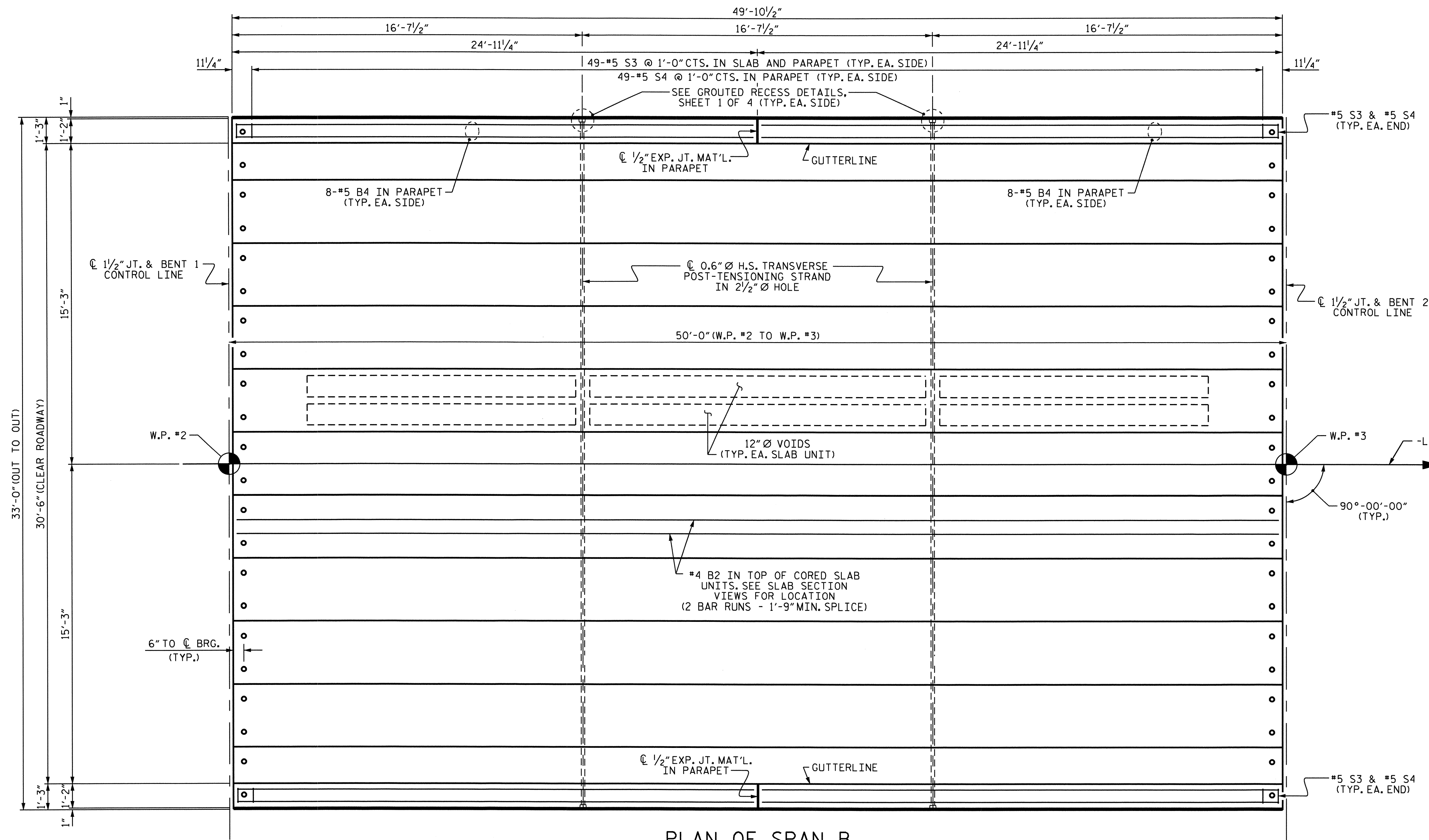
PROJECT NO. B-4673
WAYNE COUNTY
 STATION: 18+49.00 -L-

SHEET 2 OF 4

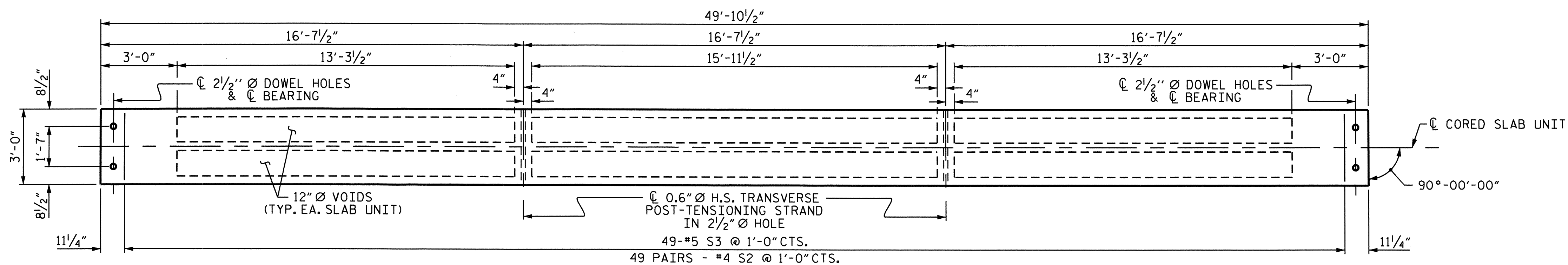
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 PLAN OF SPAN A & C**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS 24
2			4			

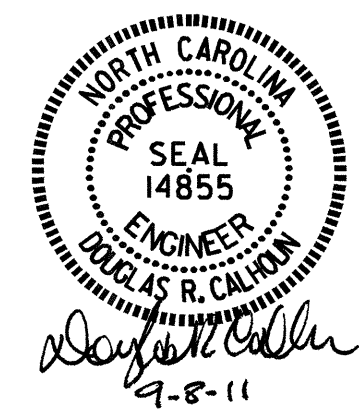


PLAN OF SPAN B



PLAN OF CORED SLAB UNIT

(EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT S3 BARS)
 FOR REINFORCING STEEL AT END OF CORED SLABS, SEE "PART PLAN EXTERIOR SECTION", SHEET 1 OF 4.



PROJECT NO. B-4673
WAYNE COUNTY
 STATION: 18+49.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

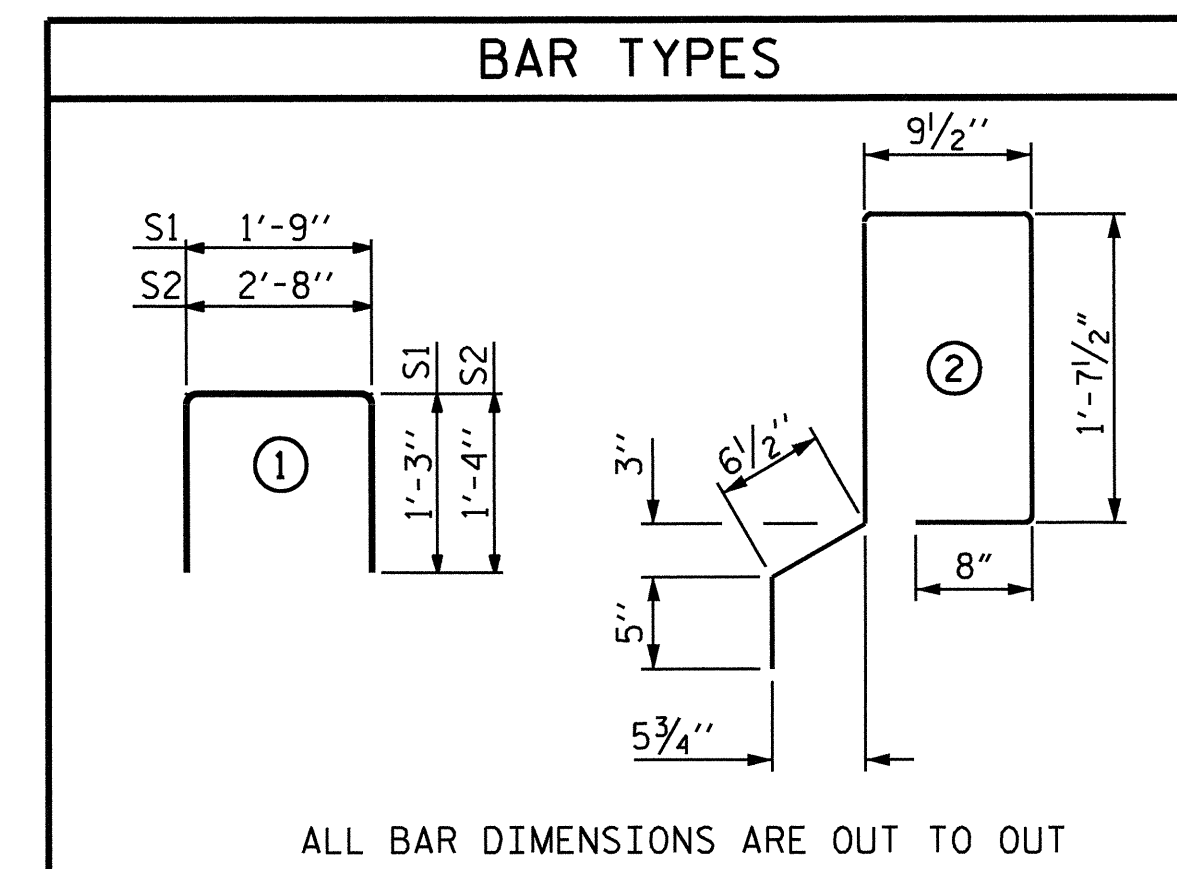
SUPERSTRUCTURE
 PLAN OF SPAN B

DRAWN BY: B.N. GRADY DATE: 2/17/10
 CHECKED BY: J.L. WALTON DATE: 2/24/10

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REVISIONS						SHEET NO. S-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 24
2			4			

BILL OF MATERIAL FOR ONE CORED SLAB SECTION															
SPAN A & C								SPAN B							
				EXTERIOR UNIT		INTERIOR UNIT						EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B1	4	#4	STR	20'-2"	54	20'-2"	54	B2	4	#4	STR	25'-8"	69	25'-8"	69
S1	8	#5	1	4'-3"	35	4'-3"	35	S1	8	#5	1	4'-3"	35	4'-3"	35
S2	76	#4	1	5'-4"	271	5'-4"	271	S2	98	#4	1	5'-4"	349	5'-4"	349
*S3	40	#5	2	5'-8"	236			*S3	51	#5	2	5'-8"	301		
REINFORCING STEEL				360 LBS.		360 LBS.		REINFORCING STEEL				453 LBS.		453 LBS.	
* EPOXY COATED REINFORCING STEEL				236 LBS.				* EPOXY COATED REINFORCING STEEL				301 LBS.			
5000 P.S.I. CONCRETE				5.6 CU. YDS.		5.6 CU. YDS.		6500 P.S.I. CONCRETE				7.2 CU. YDS.		7.1 CU. YDS.	
0.6" Ø L.R. STRANDS				No. 12		12		0.6" Ø L.R. STRANDS				No. 17		17	

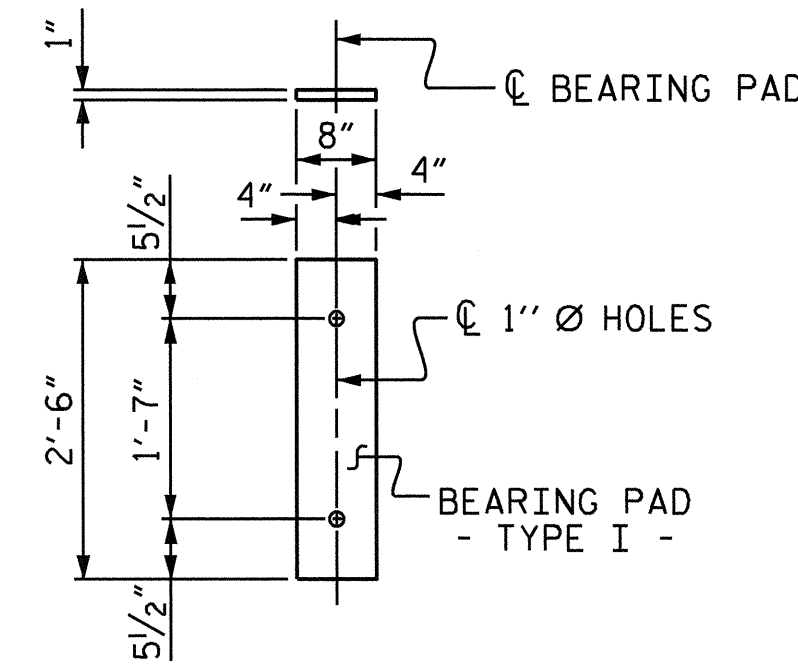


GRADE 270 STRANDS	
	0.6" Ø L.R.
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

DEAD LOAD DEFLECTION AND CAMBER		
	SPAN A & C	SPAN B
CAMBER (SLAB ALONE IN PLACE) †	1"	2 1/16"
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	1/8"	5/16"
FINAL CAMBER †	7/8"	1 3/4"

** INCLUDES FUTURE WEARING SURFACE

CORED SLAB UNITS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.-SPAN A & C	4	38'-9 3/4"	155'-3"
INTERIOR C.S.-SPAN A & C	18	38'-9 3/4"	698'-7 1/2"
EXTERIOR C.S.-SPAN B	2	49'-10 1/2"	99'-9"
INTERIOR C.S.-SPAN B	9	49'-10 1/2"	448'-10 1/2"
TOTAL	33		1402'-6"



FIXED END
(TYPE I - 66 REQ'D.)

ELASTOMERIC BEARING DETAILS

(50 DUROMETER HARDNESS)

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 GROUT.

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

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

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 4000 PSI FOR SPANS A & C, AND 5200 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.

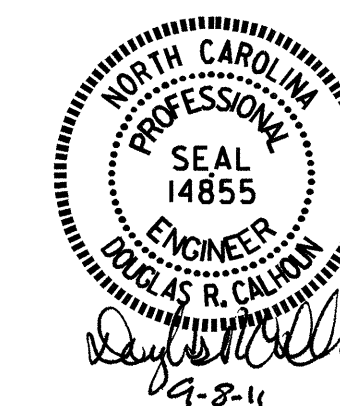
TRANSVERSE POST TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, EXCEPT THAT THE STRANDS SHALL BE 0.6" Ø AND TENSIONED TO 43,950 POUNDS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

THE HEIGHT OF THE PARAPET VARIES WHILE THE TOP OF THE PARAPET FOLLOWS THE PROFILE OF THE GUTTERLINE.

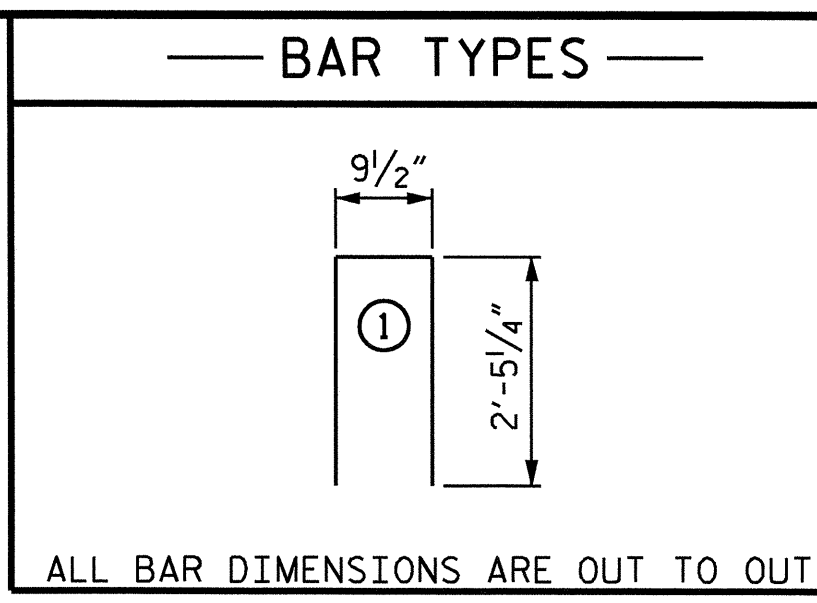
PROJECT NO. B-4673
WAYNE COUNTY
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SHEET 4 OF 4

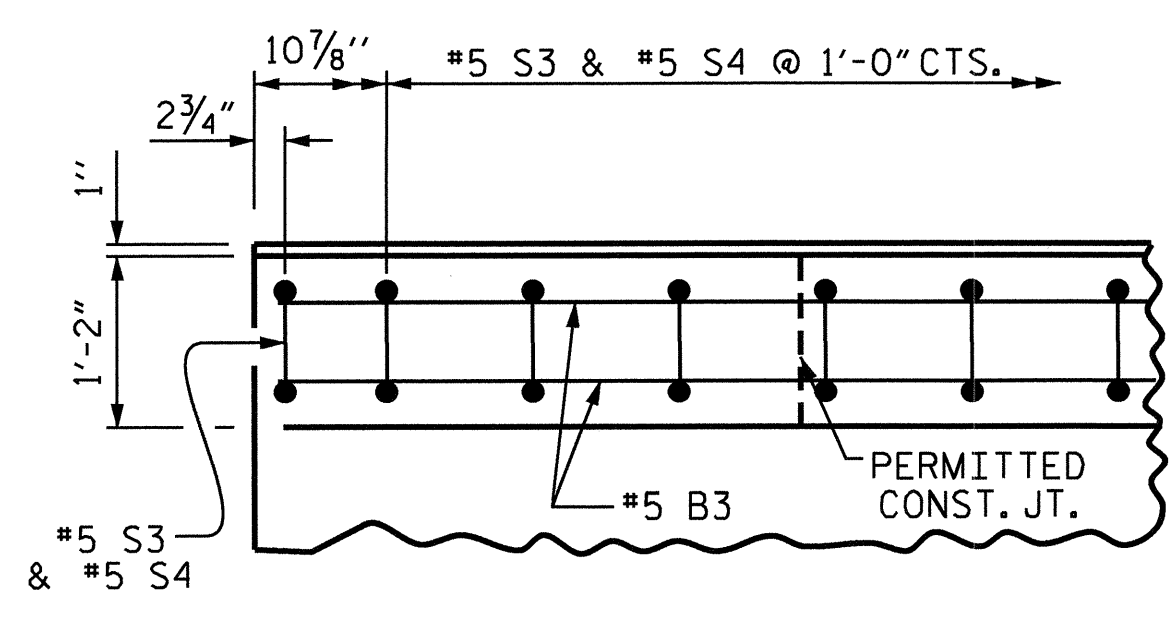


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-8
					TOTAL SHEETS 24

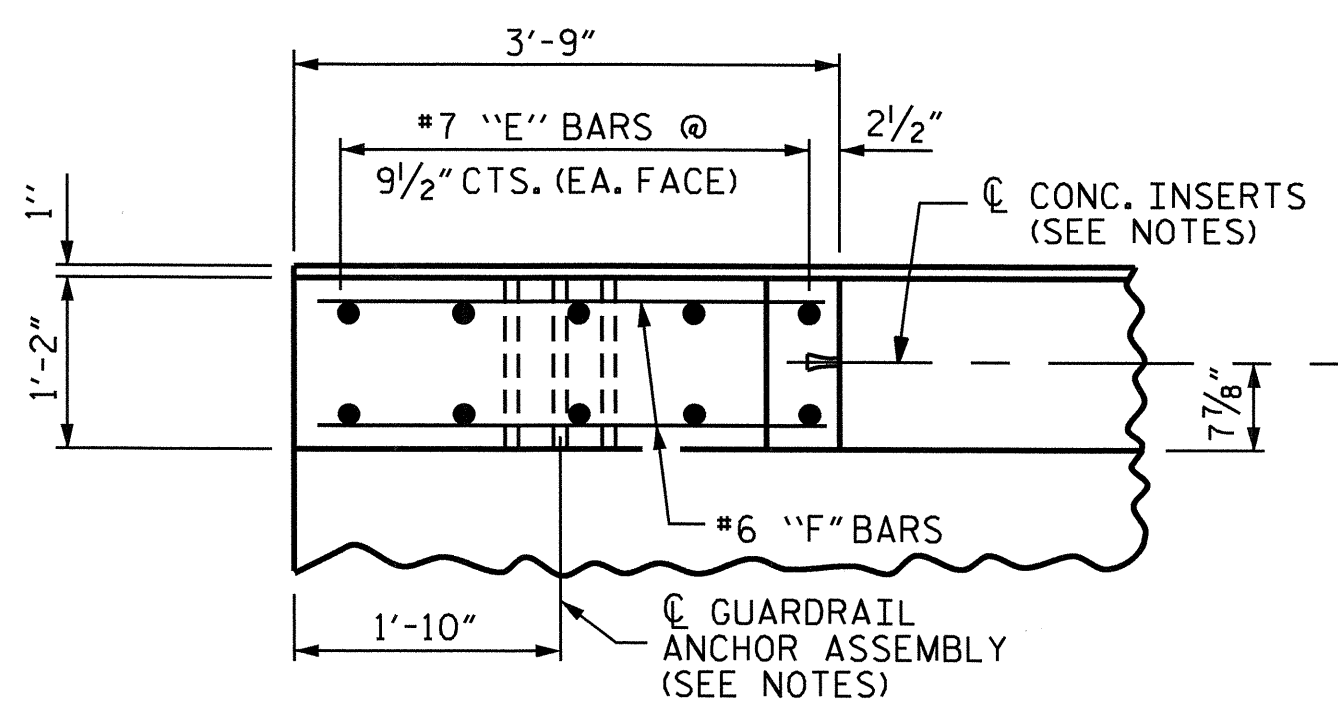
ASSEMBLED BY : B.N. GRADY	DATE : 2/18/10
CHECKED BY : J.L. WALTON	DATE : 2/24/10
DRAWN BY : W.JH 4/89	REV. 7/10/01 RWW/LES
CHECKED BY : FCJ 5/89	REV. 5/7/03RRR RWW/JTE
	REV. 5/1/06 TLA/GM



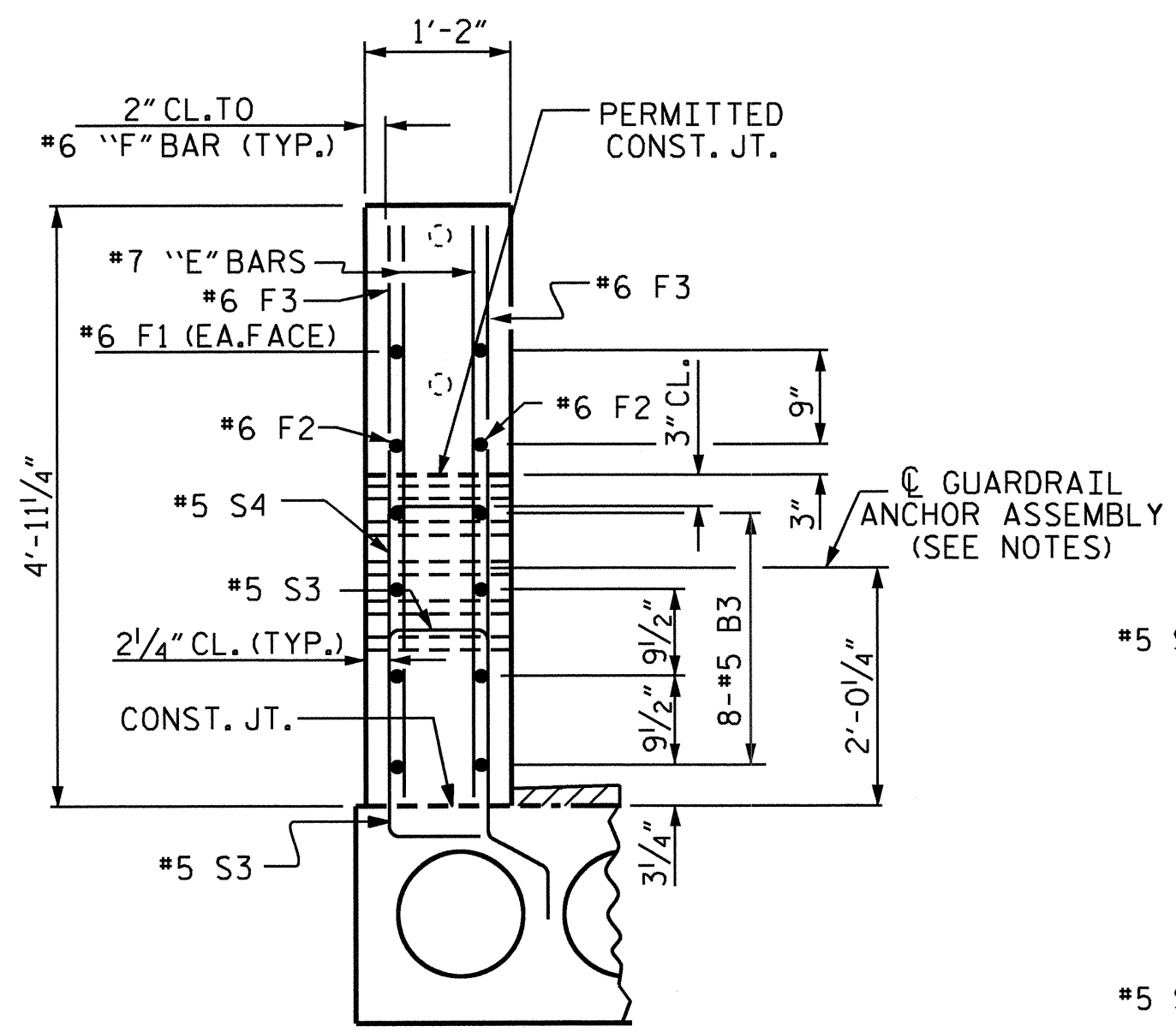
BILL OF MATERIAL PARAPETS AND END POSTS					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B3	64	#5	STR	19'-0"	1268
*B4	32	#5	STR	24'-7"	820
*E1	8	#7	STR	2'-8"	44
*E2	8	#7	STR	3'-2"	52
*E3	8	#7	STR	3'-8"	60
*E4	8	#7	STR	4'-3"	69
*E5	8	#7	STR	4'-7"	75
*F1	8	#6	STR	1'-10"	22
*F2	8	#6	STR	3'-0"	36
*F3	8	#6	STR	3'-8"	44
*S4	262	#5	1	5'-8"	1549
*EPOXY COATED REINF. STEEL =					4039 LBS
CLASS AA CONCRETE					30.8 C.Y.
CONCRETE PARAPET					255.50 L.F.



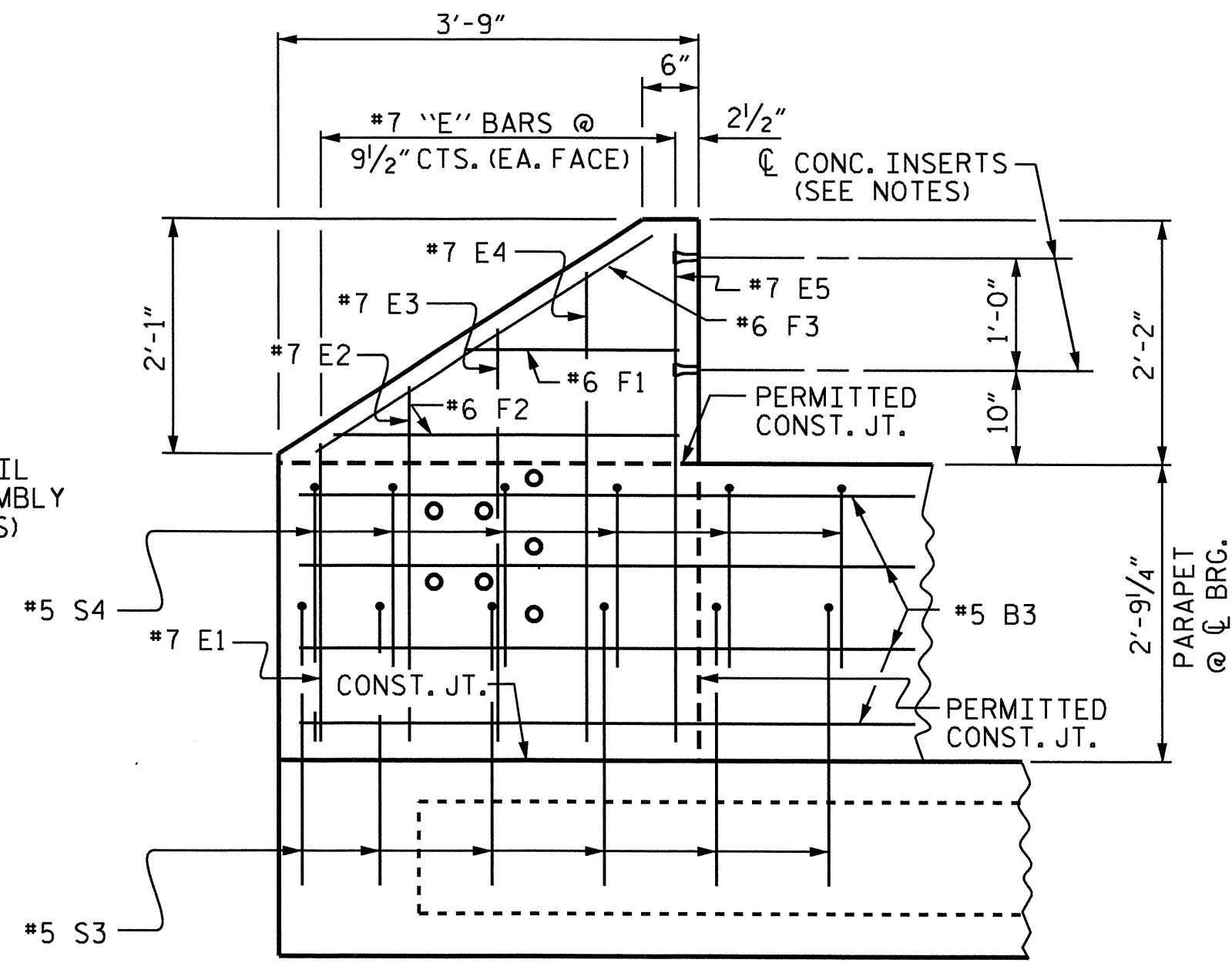
PLAN OF PARAPET



PLAN OF END POST

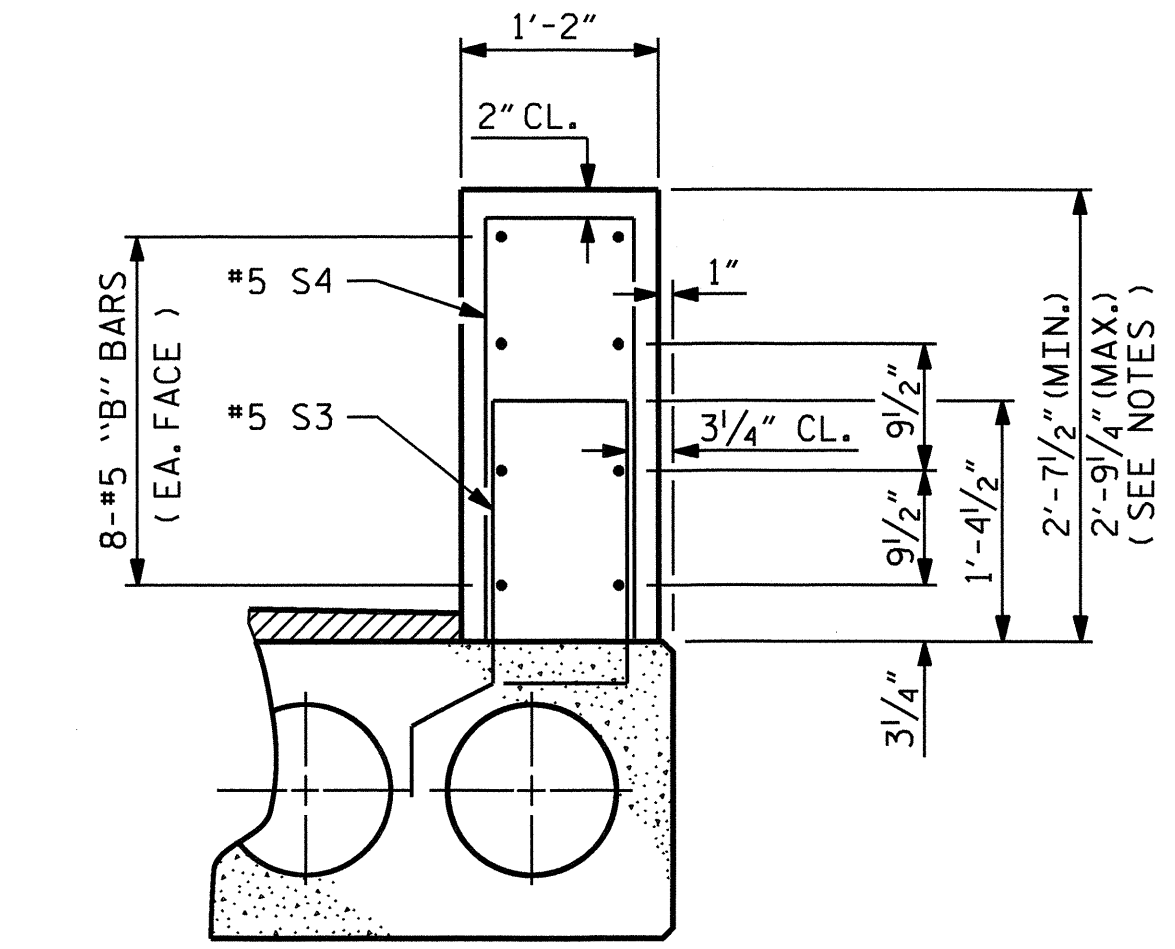


END VIEW



ELEVATION

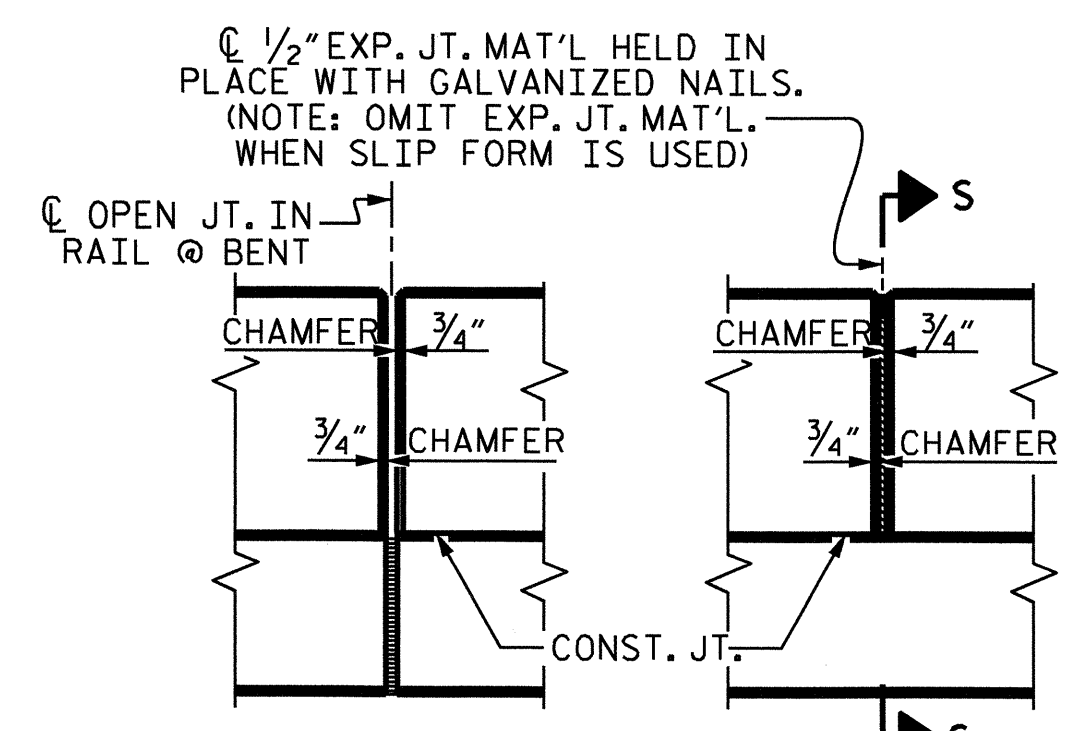
PARAPET AND END POST FOR TWO BAR METAL RAIL



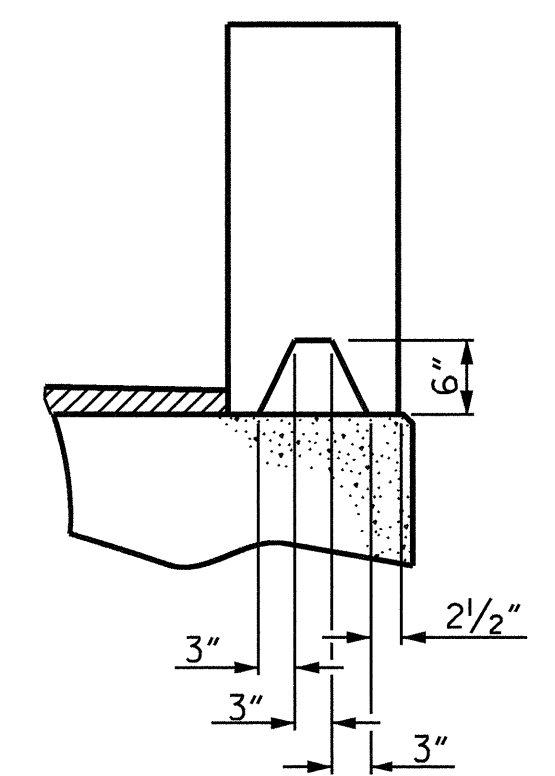
TWO BAR METAL RAIL PARAPET SECTION

NOTES

- ALL REINFORCING STEEL IN THE PARAPETS AND END POSTS SHALL BE EPOXY COATED.
- FOR DETAILS OF CONCRETE INSERT AND GUARDRAIL ANCHOR ASSEMBLY, SEE "RAIL POST SPACINGS AND END OF RAIL DETAILS" SHEET 4 OF 5 AND "GUARDRAIL ANCHORAGE DETAILS" SHEET 5 OF 5.
- *5 S3 BARS ARE INCLUDED IN THE BILL OF MATERIAL FOR CORED SLAB UNITS.
- GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE PARAPET IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINT 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 HEIGHT OF THE PARAPET VARIES WHILE THE TOP OF THE PARAPET FOLLOWS THE PROFILE OF THE GUTTERLINE.
- THE 1/2" EXPANSION JOINT IN THE PARAPET MAY BE SHIFTED SLIGHTLY IN ORDER TO MAINTAIN A 2" MINIMUM CLEARANCE TO THE #5 S3 & #5 S4 BARS.
- FOR REINFORCING STEEL LAYOUT, SEE PLAN OF SPANS.



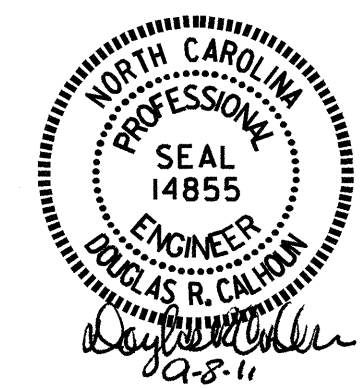
ELEVATION AT EXPANSION JOINTS



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

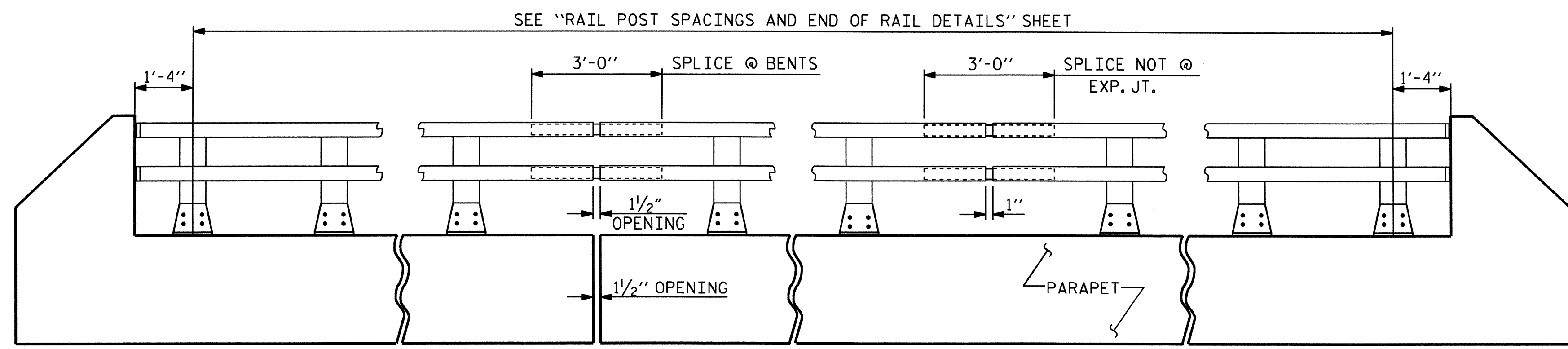
PROJECT NO. B-4673
WAYNE COUNTY
 STATION: 18+49.00 -L-
 SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 CONCRETE PARAPET AND
 PARAPET END POST
 DETAILS



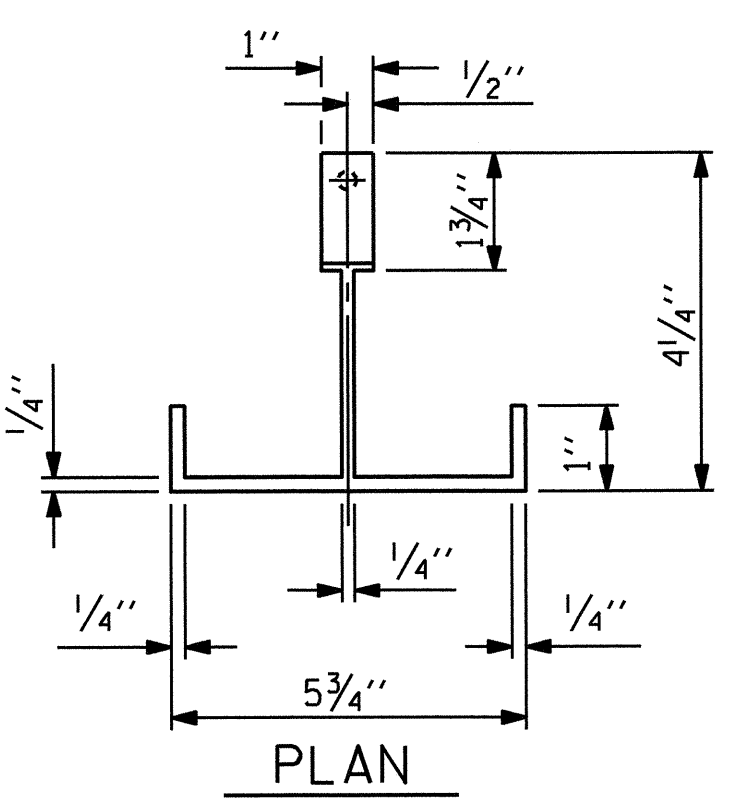
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9	
1			3			TOTAL SHEETS	24
2			4				

DRAWN BY : B.N. GRADY DATE : 2/18/10
 CHECKED BY : J.L. WALTON DATE : 2/24/10

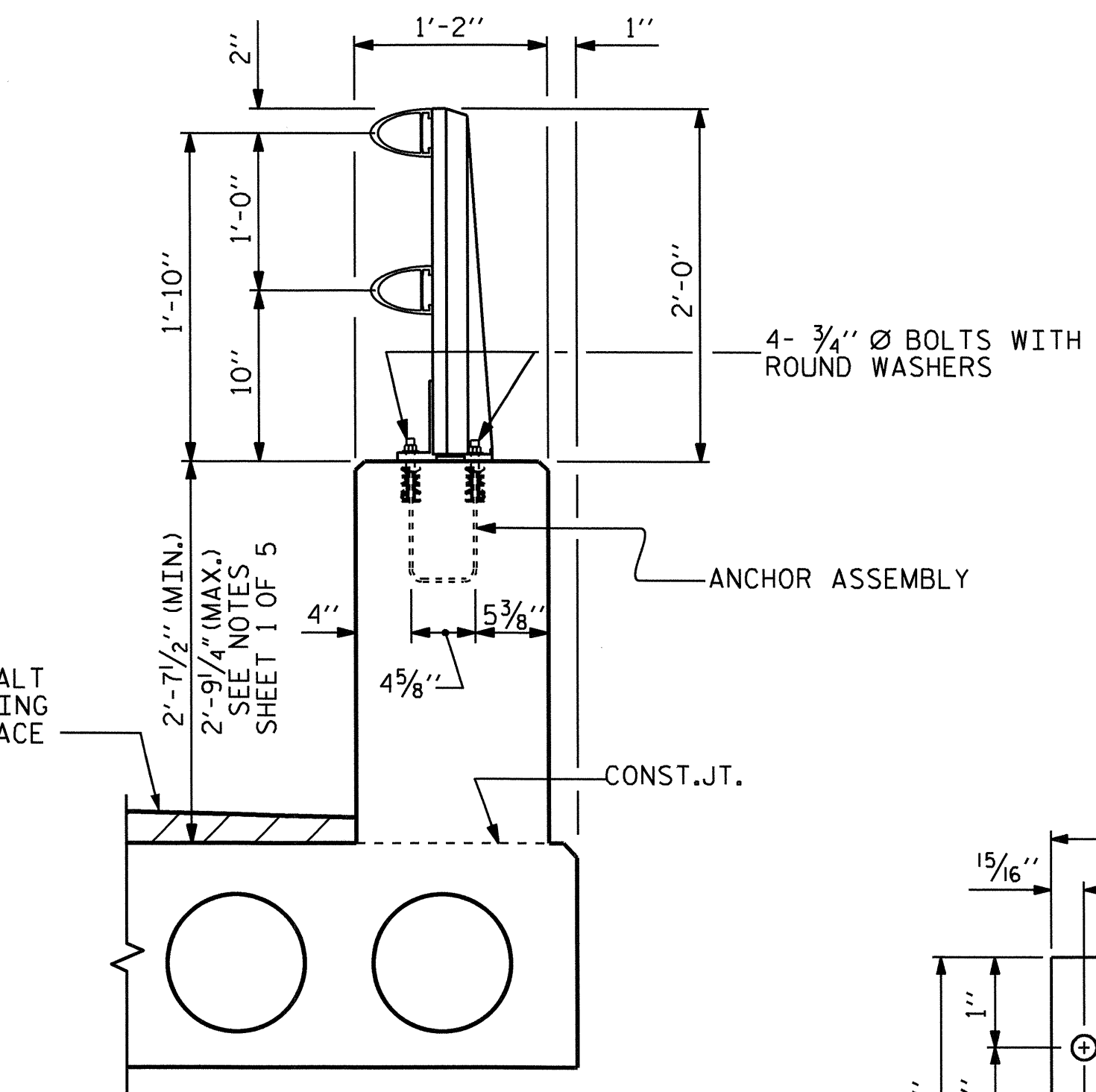


ELEVATION

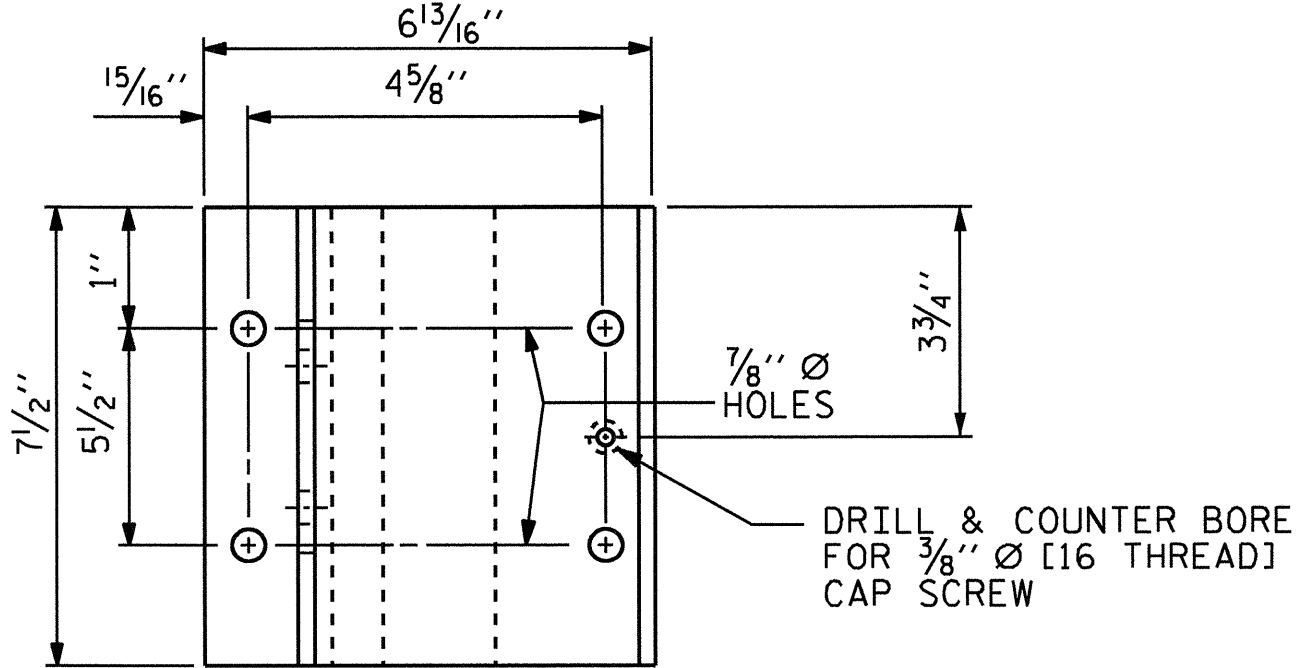
NOTE: FOR ATTACHMENT OF METAL RAIL TO END POST, SEE STANDARD NO. BMR2.



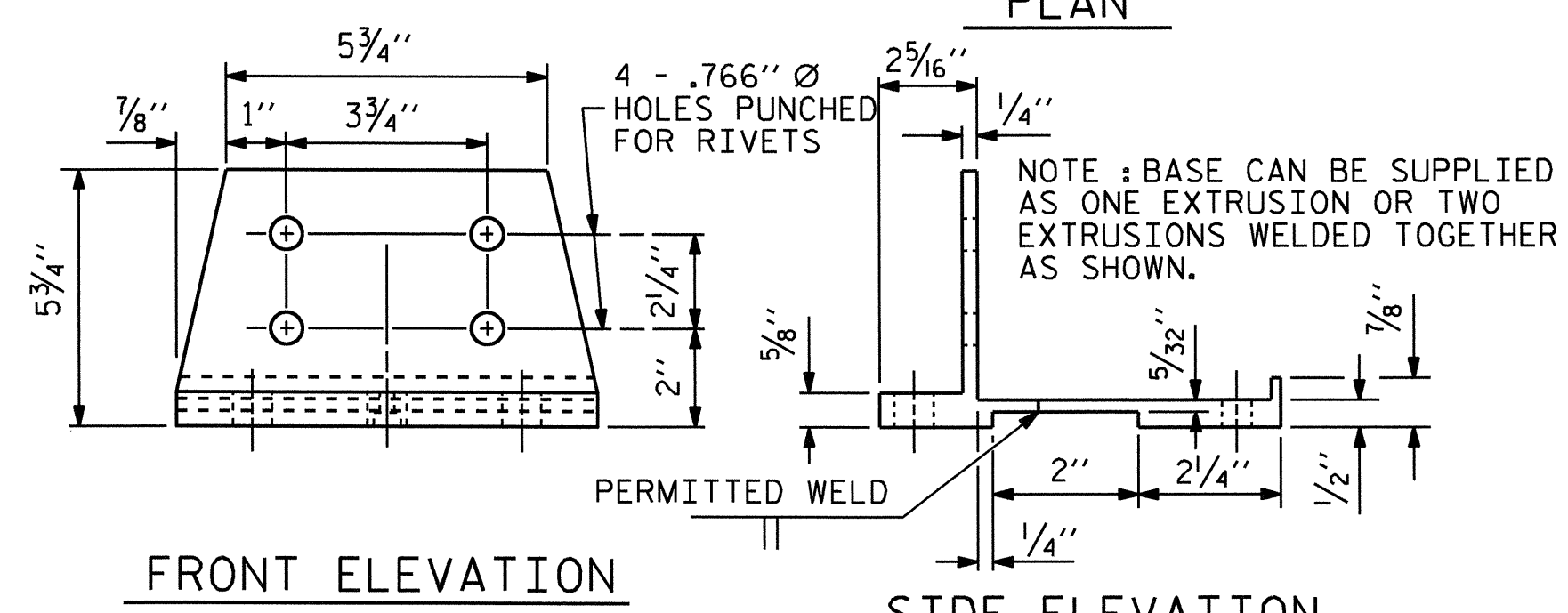
PLAN



SECTION THRU PARAPET AND RAIL



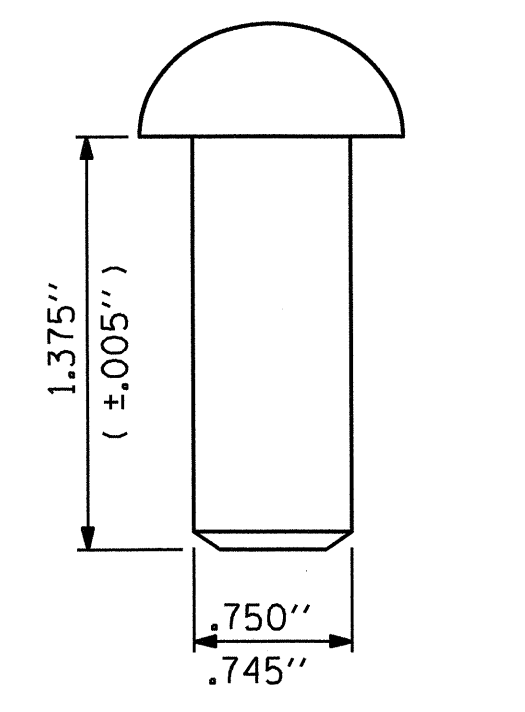
PLAN



FRONT ELEVATION

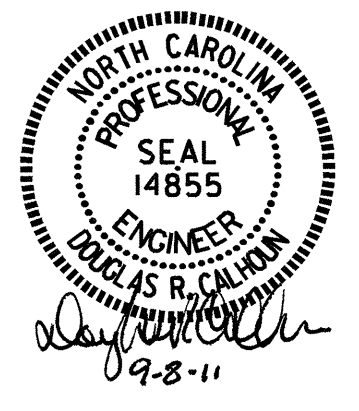
SIDE ELEVATION

POST BASE DETAILS



RIVET DETAIL

PAY LENGTH = 240.50 LIN. FT.



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 B-221 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.

FOR END OF RAIL TO CLEAR FACE OF CONCRETE END POST DIMENSION, SEE STANDARD NO. BMR2.

CAP SCREWS SHALL BE ASTM F593 ALLOY 305 STAINLESS STEEL. WASHERS 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 REMAINS 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.

PROJECT NO. B-4673
WAYNE COUNTY
 STATION: 18+49.00 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 2 BAR METAL RAIL

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10	
1			3			TOTAL SHEETS	24
2			4				

ASSEMBLED BY : B.N. GRADY	DATE : 2/18/10
CHECKED BY : J.L. WALTON	DATE : 2/24/10
DRAWN BY : EEM 6/94	REV. 10/17/00 LES/RDR
CHECKED BY : RGW 6/94	REV. 5/7/03R RWW/JTE
	REV. 5/1/06 TLA/GM

NOTES

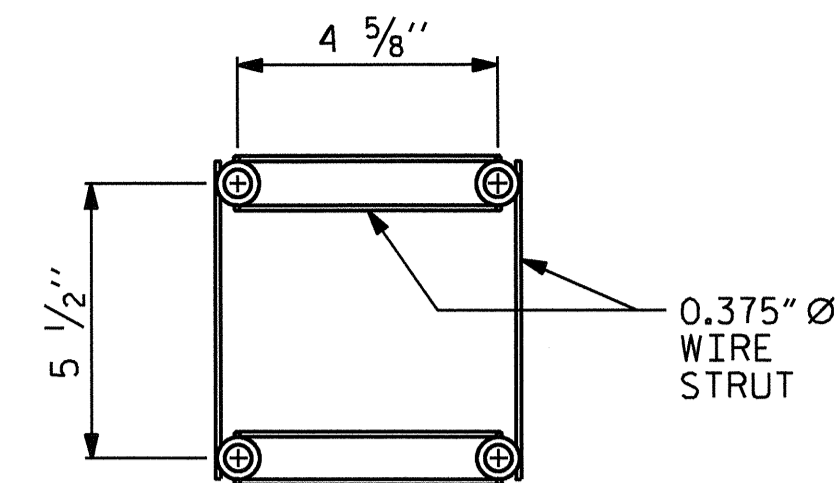
STRUCTURAL CONCRETE ANCHOR ASSEMBLY

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

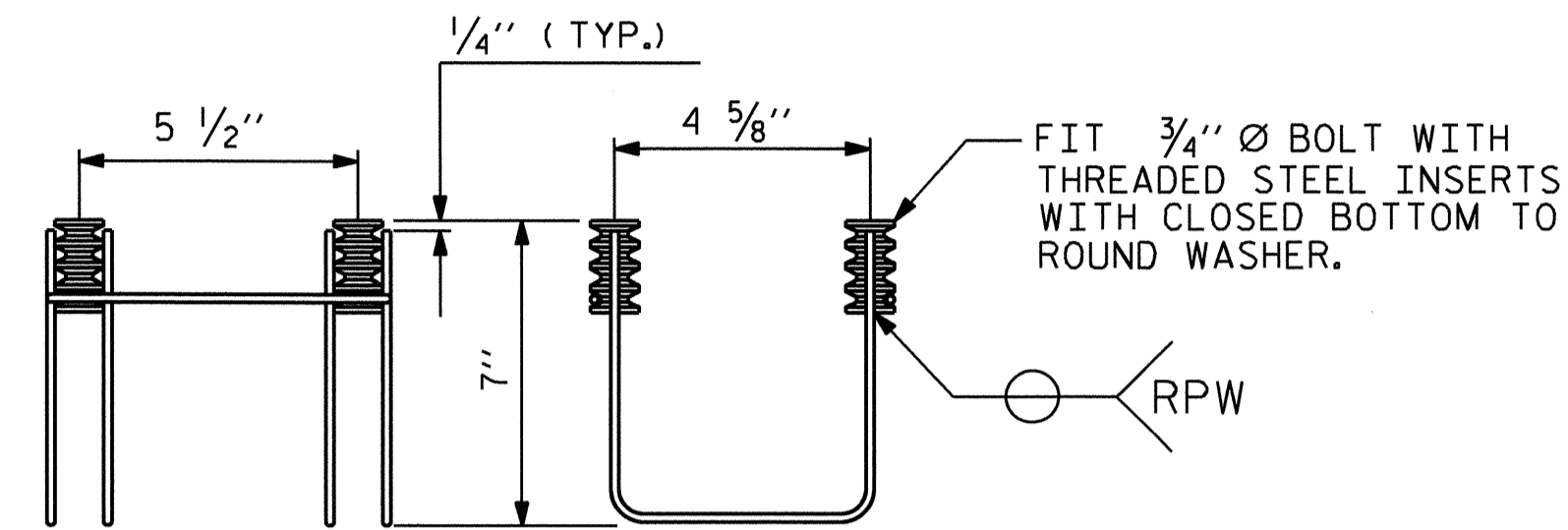
- A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2" FOR 3/4" FERRULES.
- B. 4 - 3/4" Ø X 2 1/2" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT 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. 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 1/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.
- D. THE METAL RAIL ANCHOR ASSEMBLIES TO BE HOT DIPPED GALVANIZED TO CONFORM TO REQUIREMENTS OF AASHTO M111.
- E. 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.
- F. BOLTS TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM A FINGER-TIGHT POSITION.

THE CONTRACTOR MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF THE METAL RAIL ANCHOR ASSEMBLY. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 10 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.

WHEN ADHESIVELY ANCHORED ANCHOR BOLTS ARE USED, BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F593 ALLOY 304 STAINLESS STEEL WITH MINIMUM 75,000 PSI ULTIMATE STRENGTH. NUTS SHALL MEET THE REQUIREMENTS OF ASTM F594 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.



PLAN

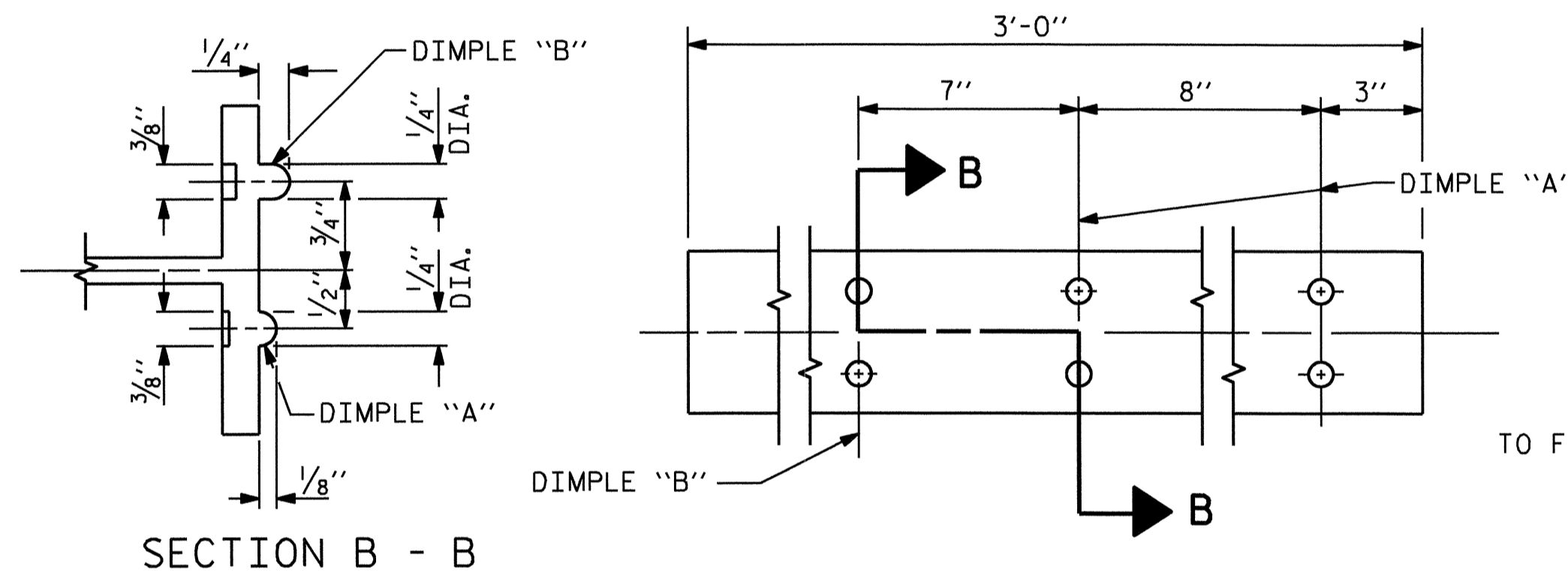


SIDE VIEW

ELEVATION

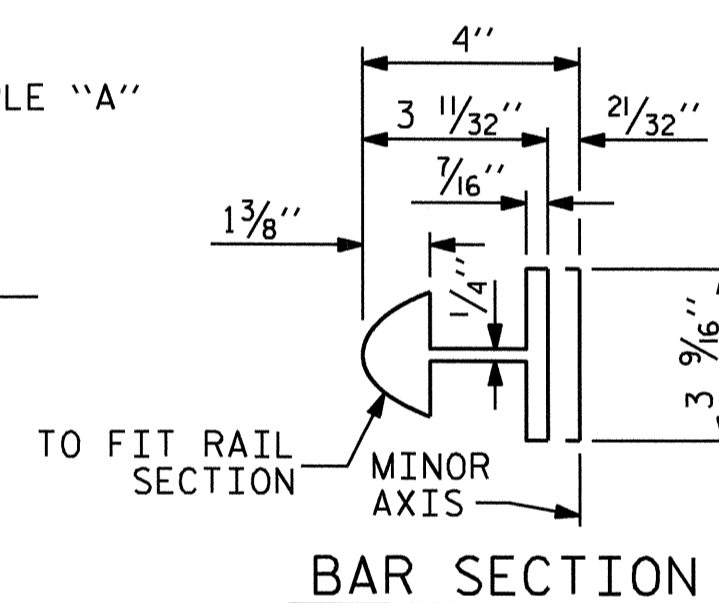
4-BOLT METAL RAIL ANCHOR ASSEMBLY

(44 ASSEMBLIES REQUIRED)

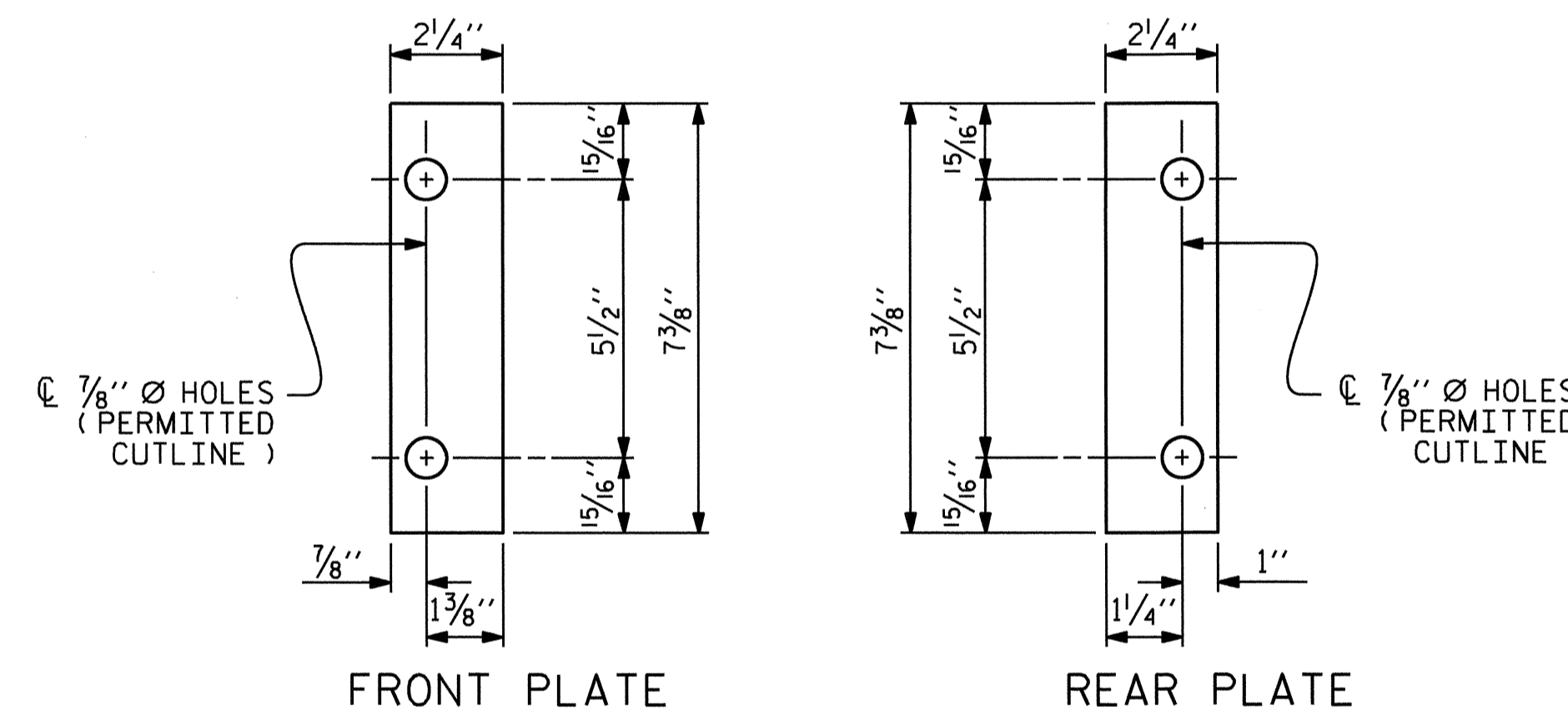


SECTION B - B

EXPANSION BAR DETAILS



BAR SECTION

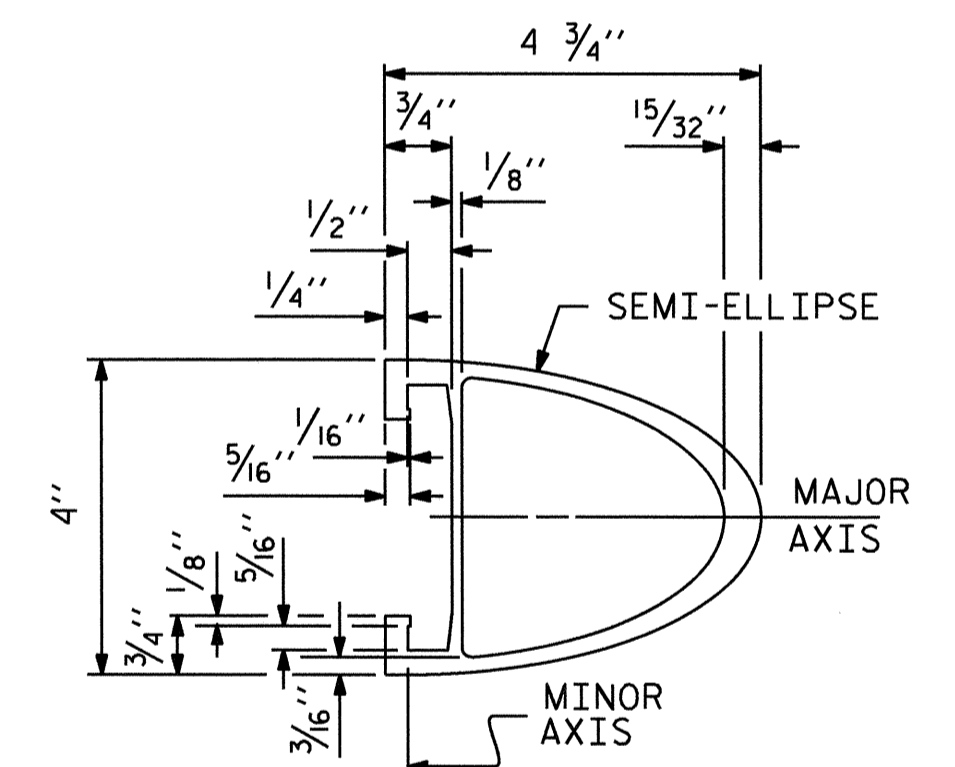


FRONT PLATE

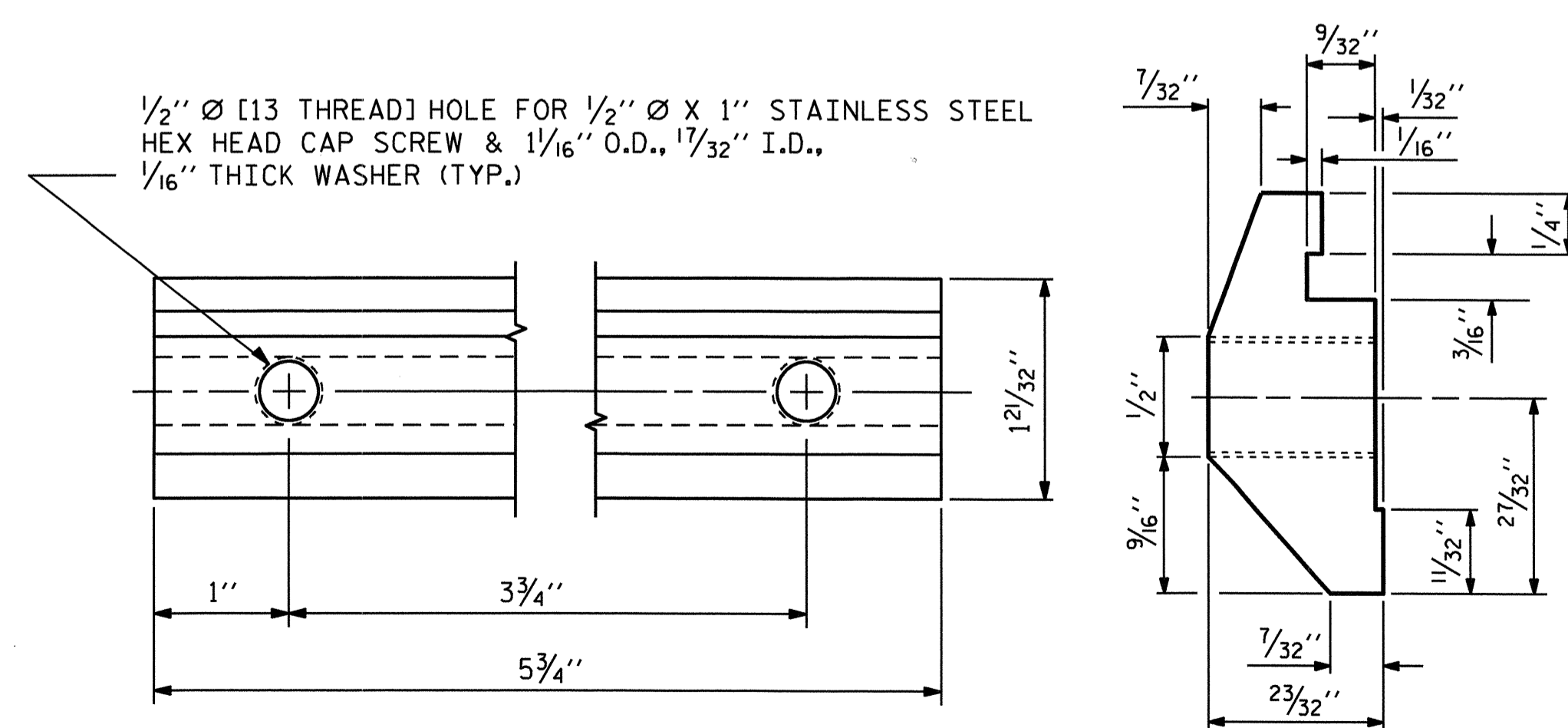
REAR PLATE

SHIM DETAILS

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

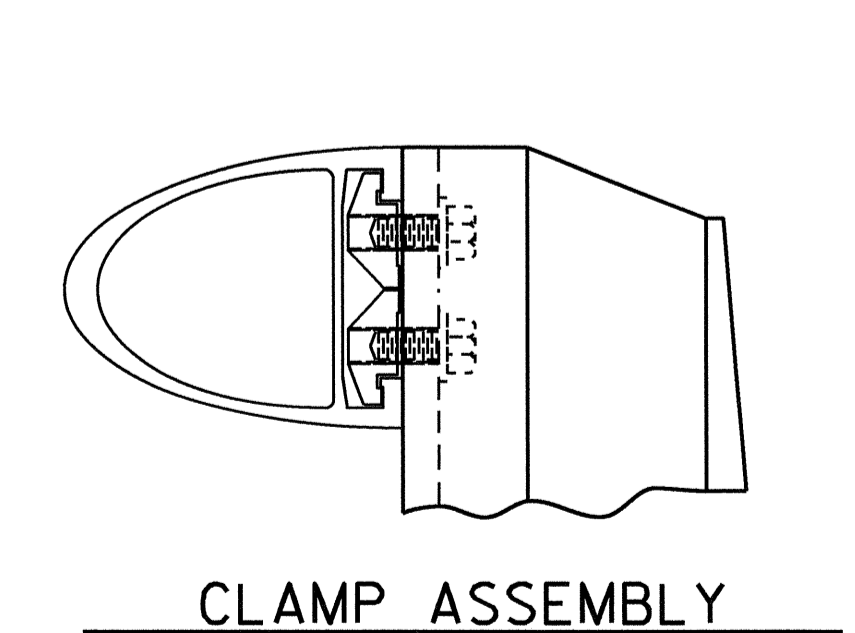


RAIL SECTION

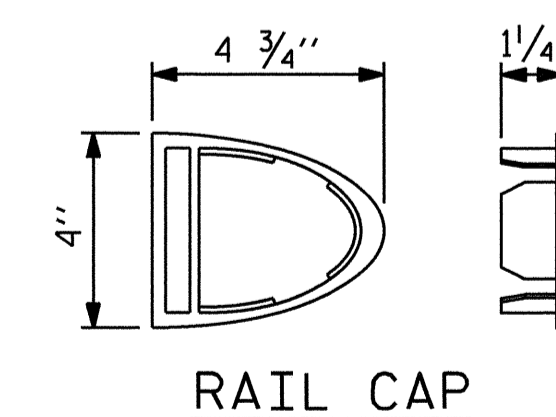


CLAMP BAR DETAIL

(4 REQUIRED PER POST)



CLAMP ASSEMBLY



RAIL CAP

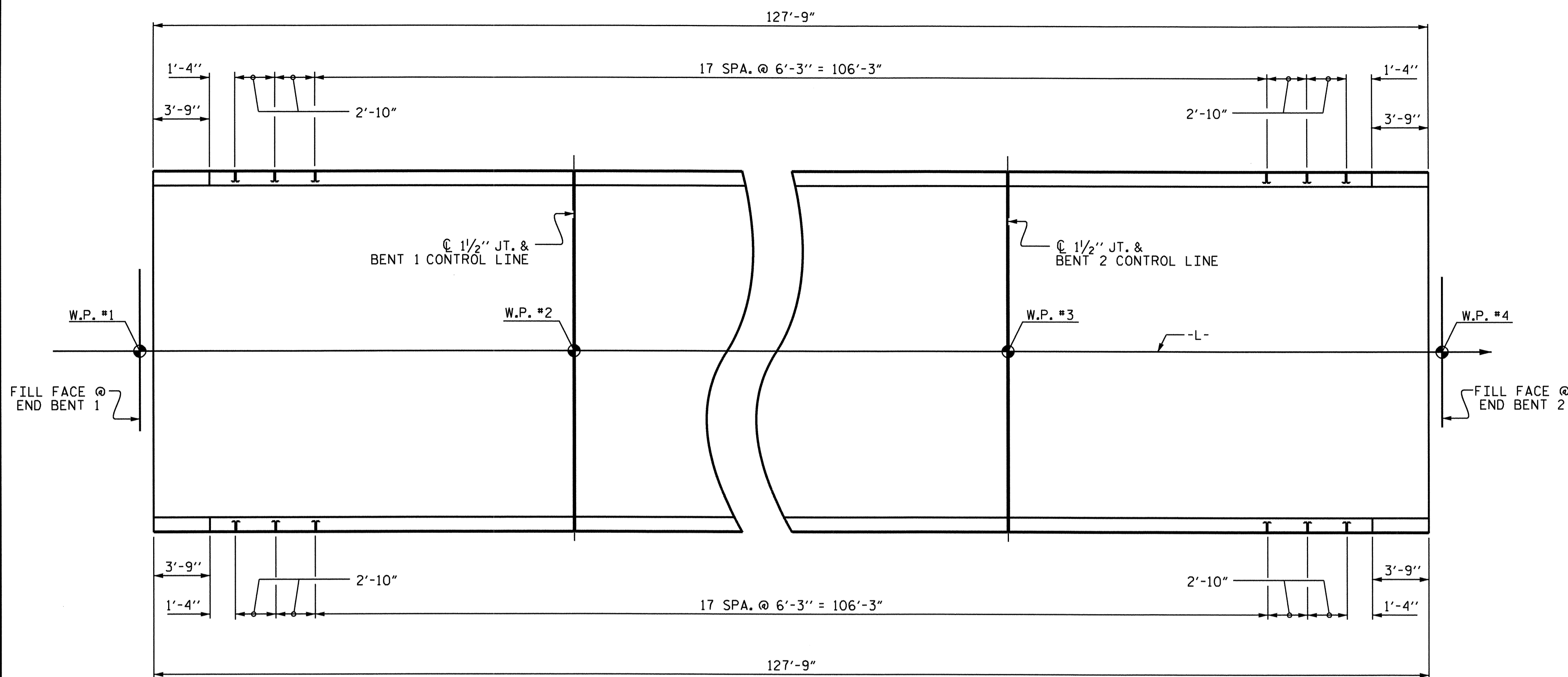
PROJECT NO. B-4673
WAYNE COUNTY
 STATION: 18+49.00 -L-

SHEET 3 OF 5

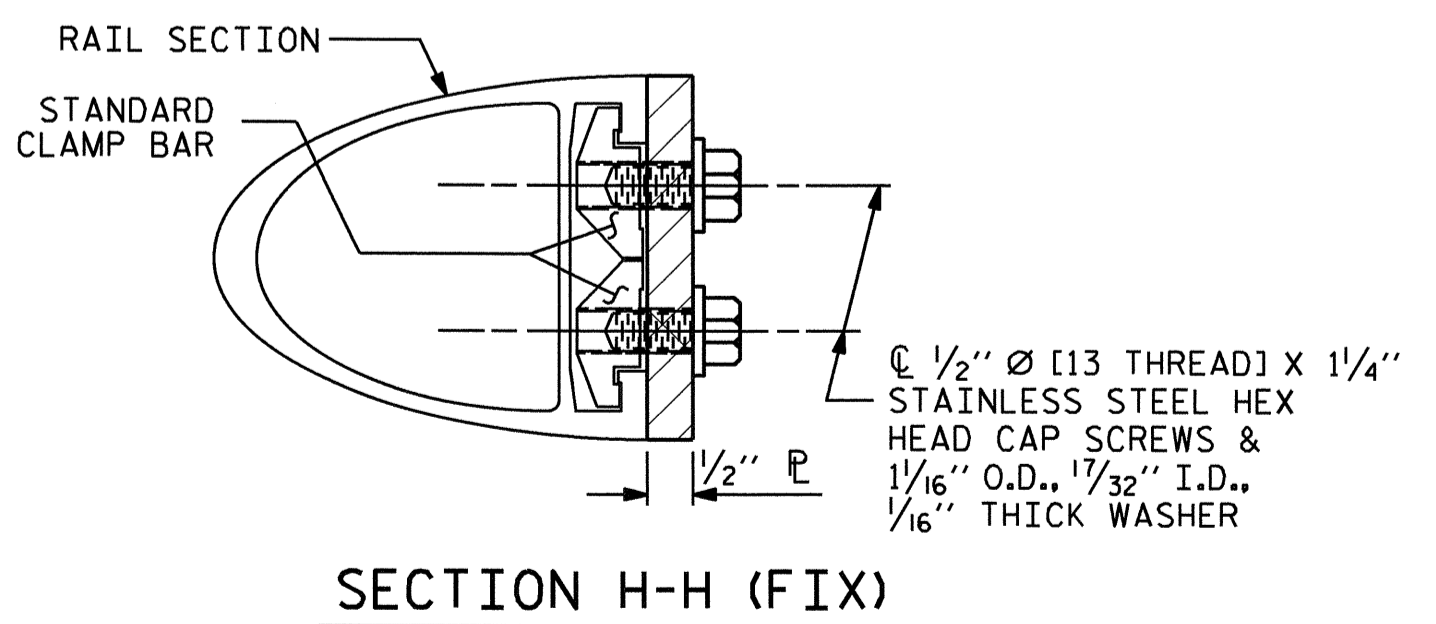
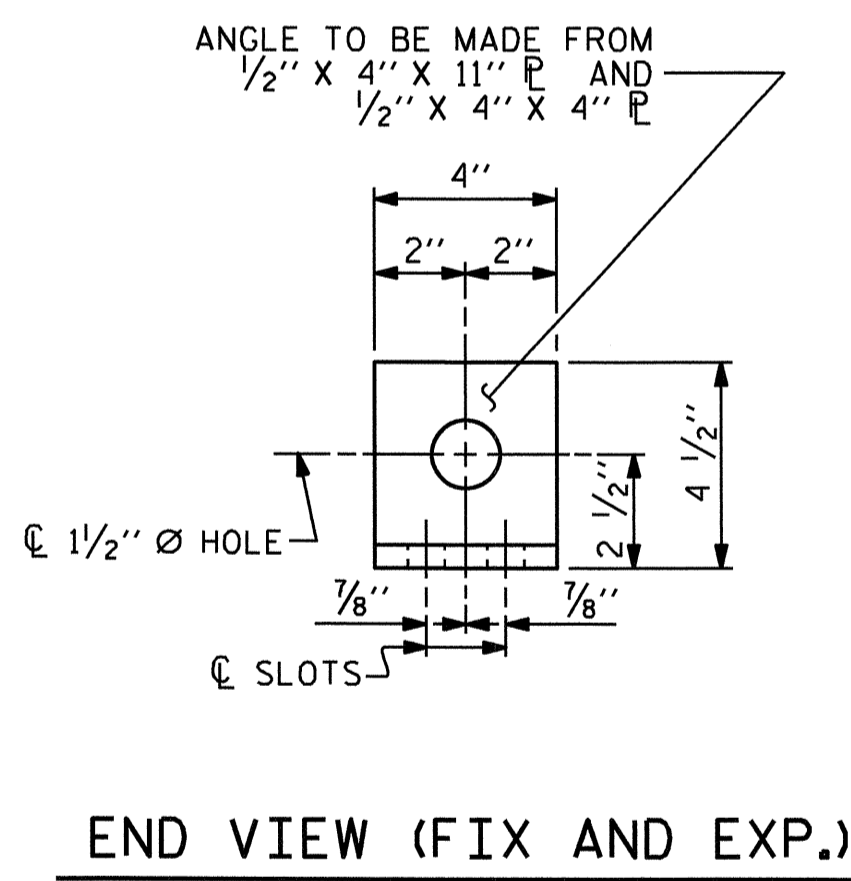
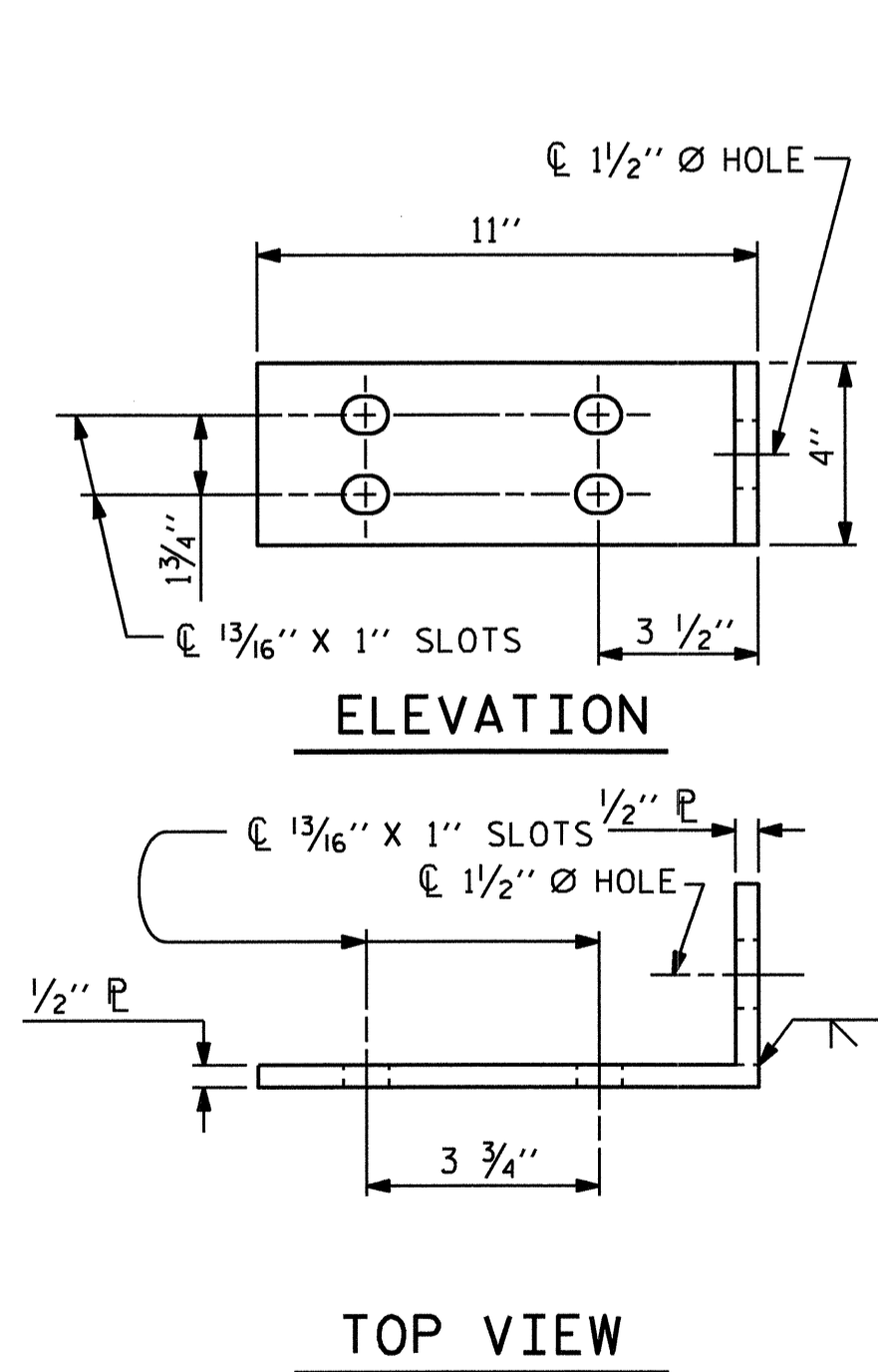


STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
STANDARD					
2 BAR METAL RAIL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-11
TOTAL SHEETS					24

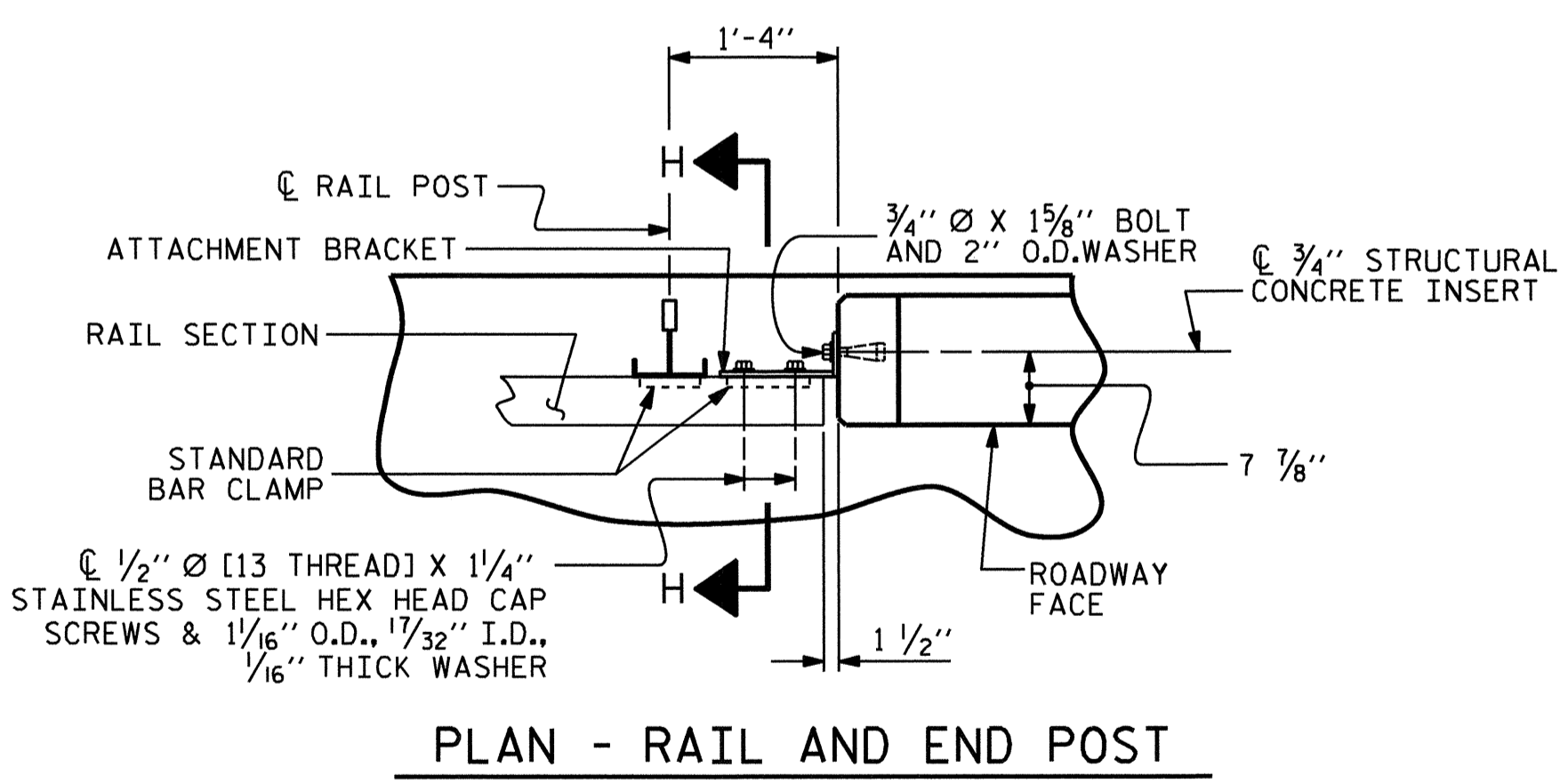
ASSEMBLED BY : B.N. GRADY	DATE : 2/18/10
CHECKED BY : J.L. WALTON	DATE : 2/24/10
DRAWN BY : EEM 6/94	REV. 2/6/97 EEM/RGW
CHECKED BY : RGW 6/94	REV. 8/16/99 MAB/LES
	REV. 5/1/06R KMM/GM



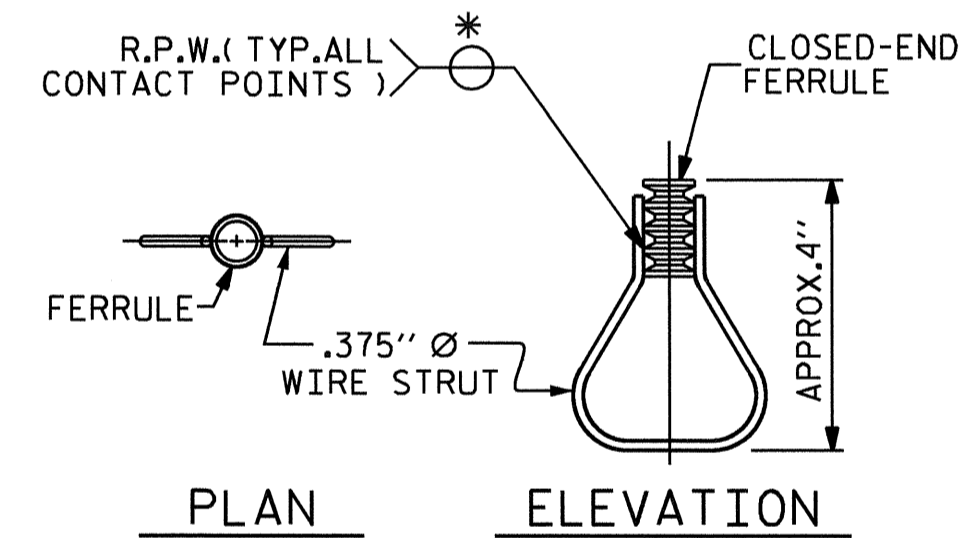
PLAN OF RAIL POST SPACINGS



FIXED



PLAN - RAIL AND END POST



STRUCTURAL CONCRETE INSERT

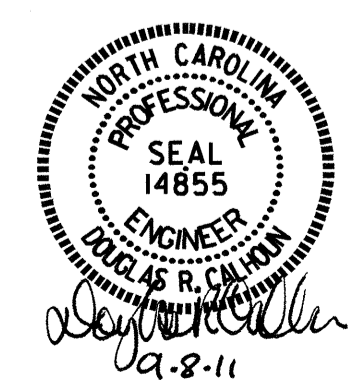
* EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.

PROJECT NO. B-4673
WAYNE COUNTY
 STATION: 18+49.00 -L-

SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 RAIL POST SPACINGS
 AND
 END OF RAIL DETAILS
 FOR ONE OR TWO BAR METAL RAILS



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 1/8" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.

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.
 - D. STANDARD CLAMP BARS (SEE METAL RAIL SHEET).
 - E. 1/2" Ø PIPE SLEEVES (IF REQUIRED) TO BE GALVANIZED.
- 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 1 OR 2 BAR METAL RAILS.
- 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.

ASSEMBLED BY : B.N. GRADY	DATE : 2/18/10
CHECKED BY : J.L. WALTON	DATE : 2/24/10
DRAWN BY : FCJ 1/88	REV. 10/17/00 LES/RDR
CHECKED BY : CRK 3/89	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM

DETAILS FOR ATTACHING METAL RAIL TO END POST

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

TOTAL SHEETS: 24

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 M111.

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

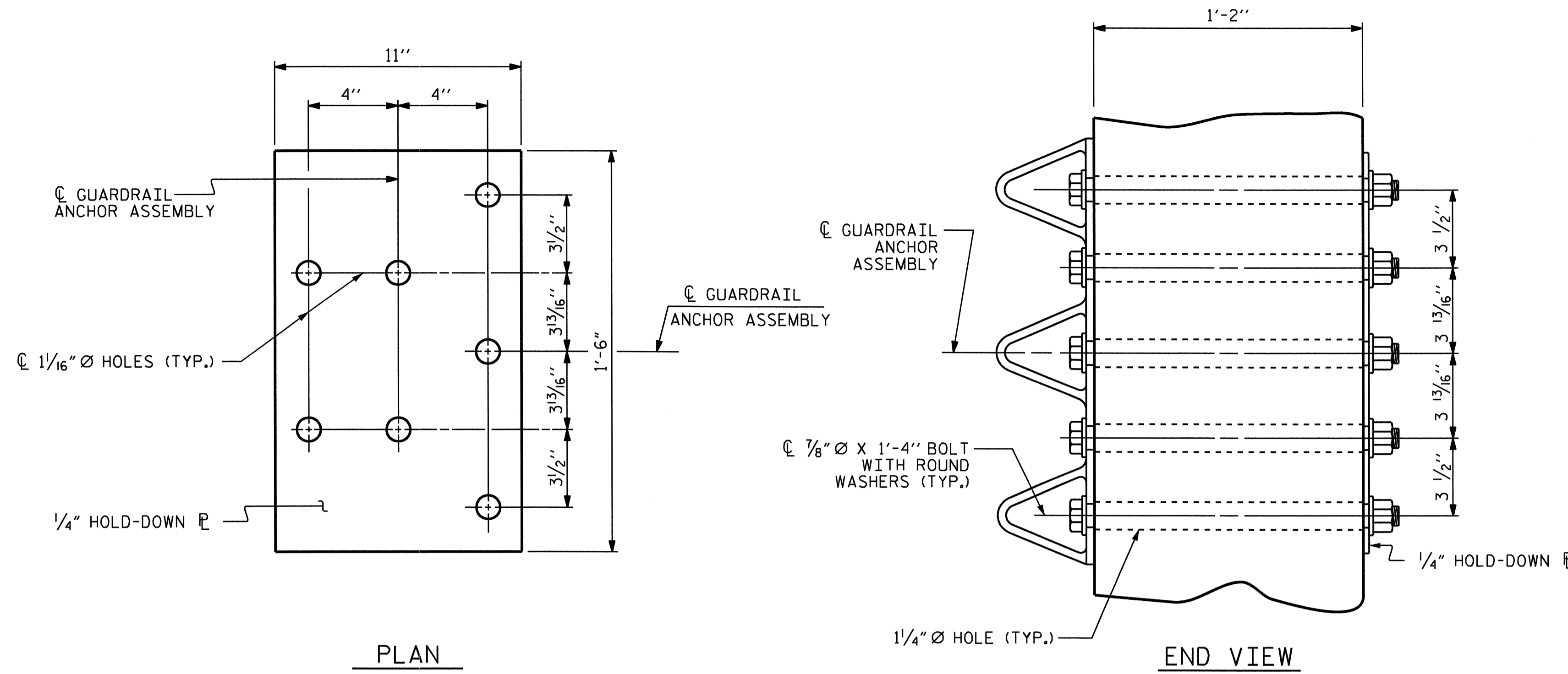
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF THE PARAPET. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

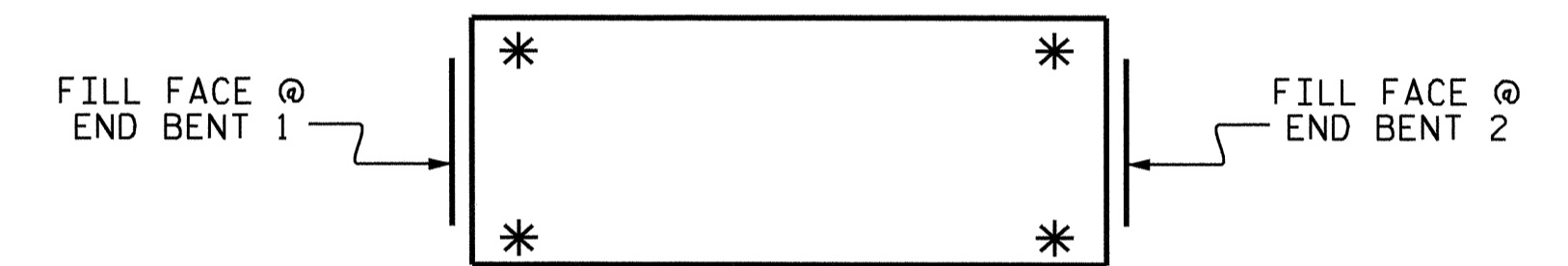
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS, NUTS AND WASHERS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

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.

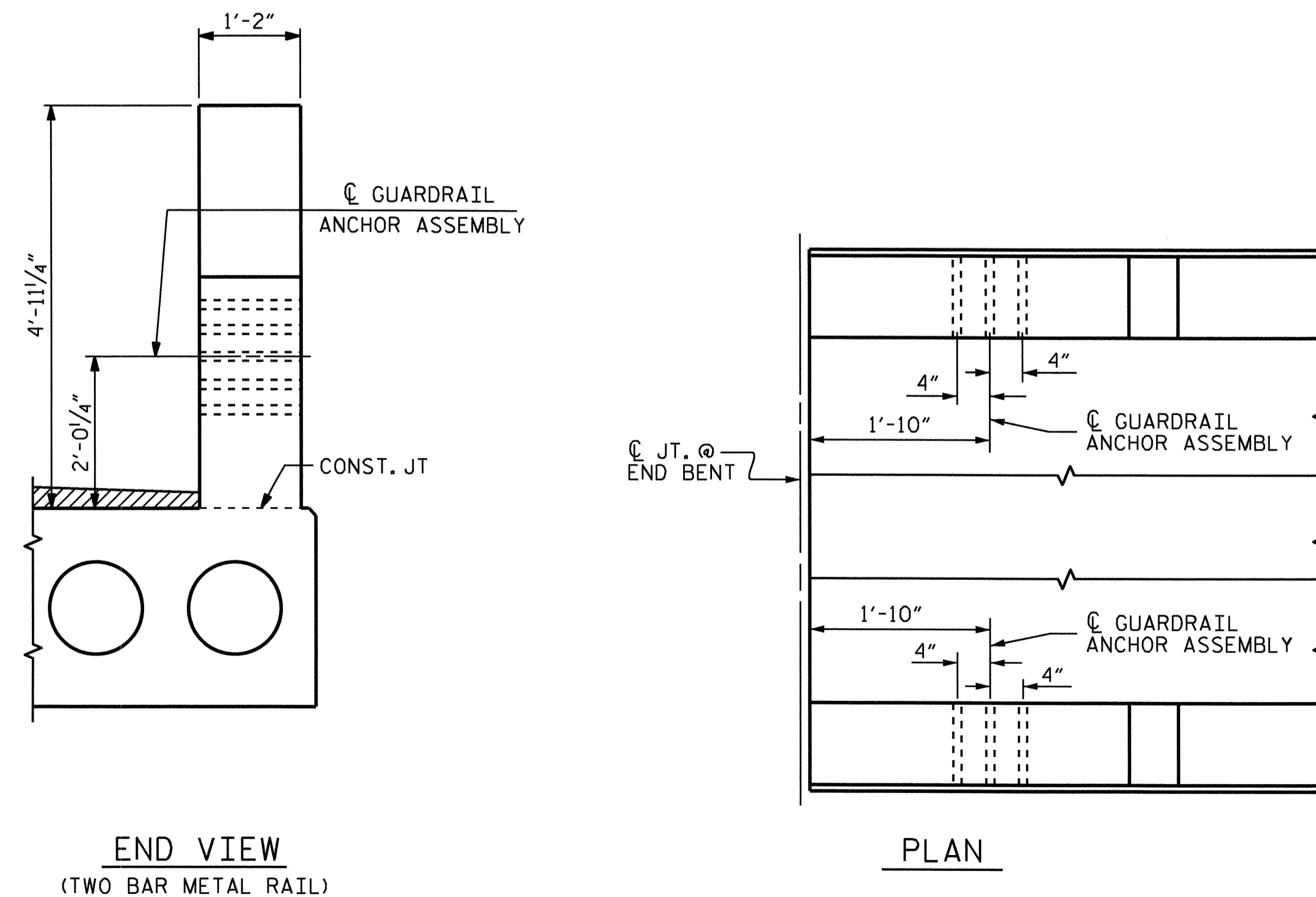


GUARDRAIL ANCHOR ASSEMBLY DETAILS



SKETCH SHOWING POINTS OF ATTACHMENT

* LOCATION OF GUARDRAIL ATTACHMENT



LOCATION OF GUARDRAIL ANCHOR AT END POST

ASSEMBLED BY : B.N. GRADY	DATE : 2/18/10
CHECKED BY : J.L. WALTON	DATE : 2/24/10
DRAWN BY : MAA 5/10	ADDED 5/6/10
CHECKED BY : GM 5/10	

26-JUL-2011 09:53
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gallen



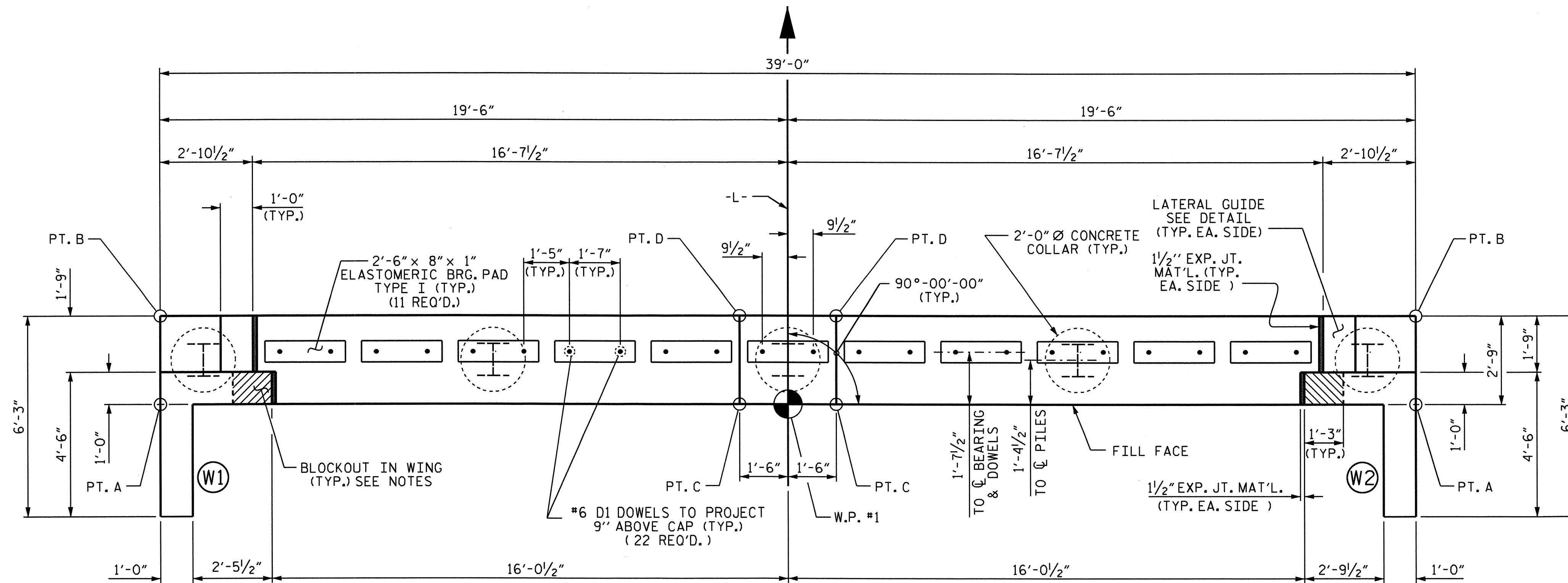
PROJECT NO. B-4673
WAYNE COUNTY
STATION: 18+49.00 -L-

SHEET 5 OF 5

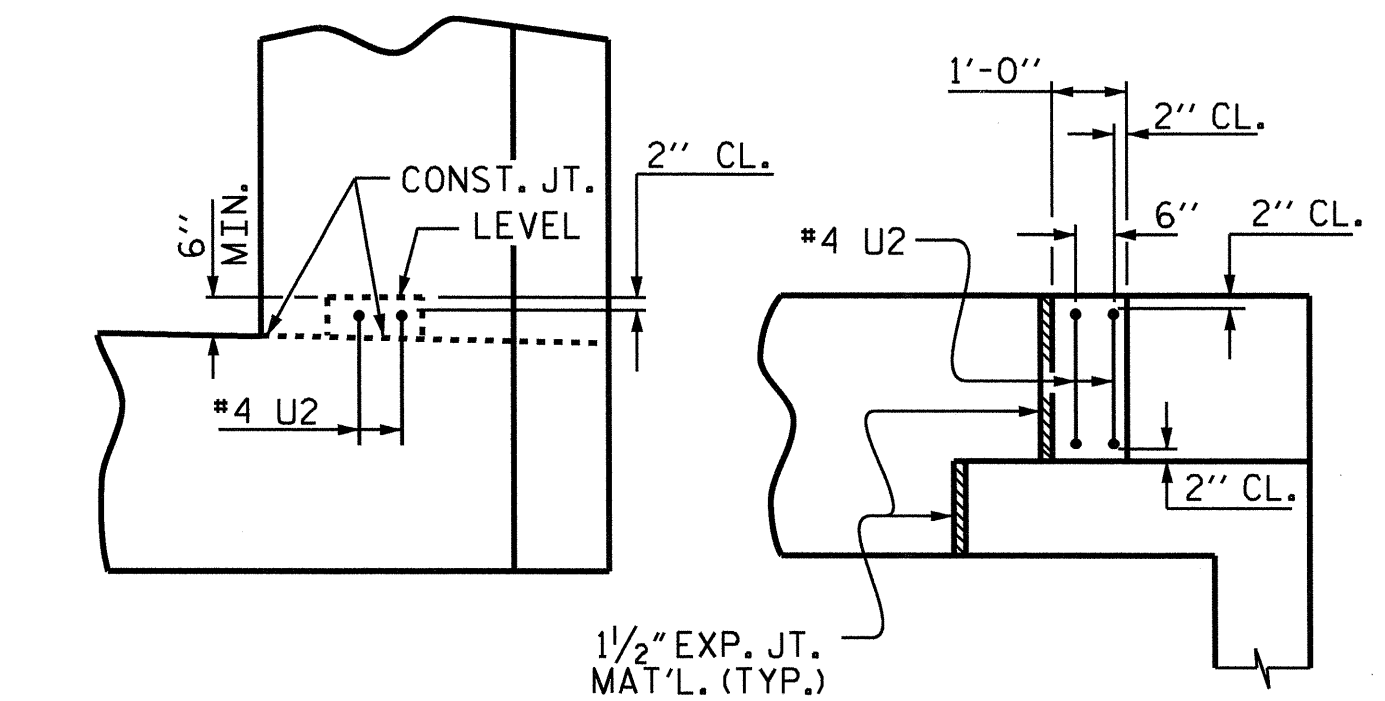
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
GUARDRAIL ANCHORAGE
DETAILS
FOR METAL RAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			24

(SHT 4) STD. NO. GRA3



PLAN

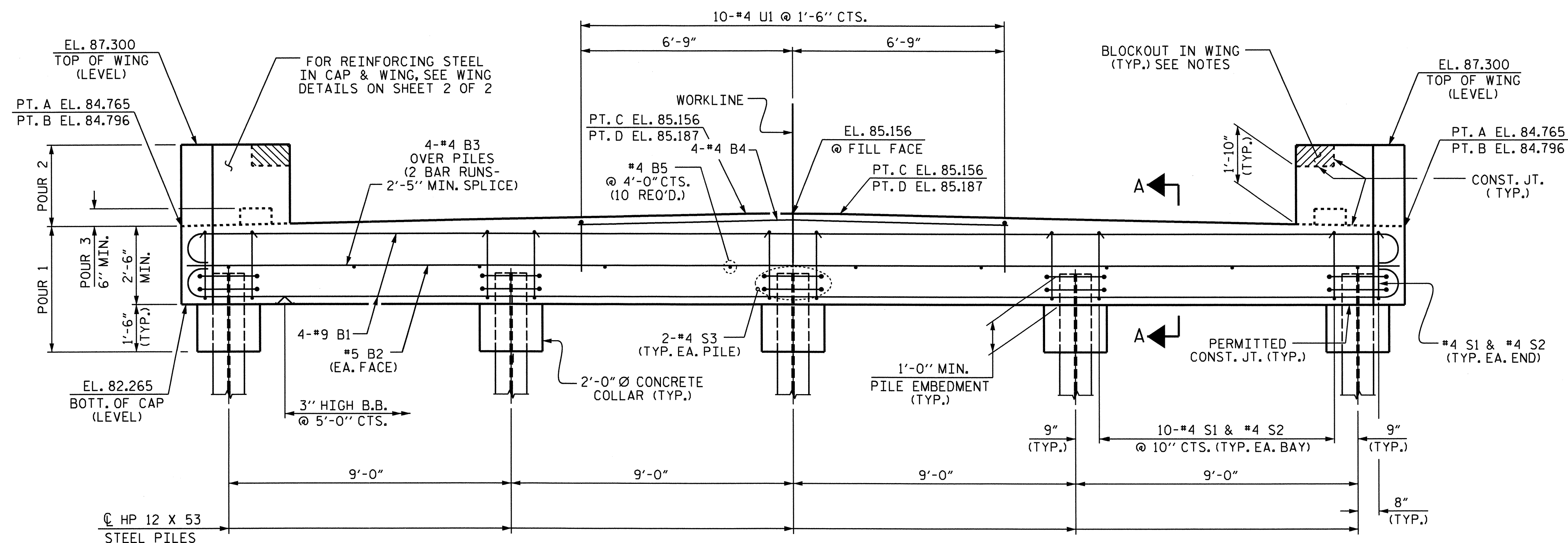


ELEVATION

PLAN

LATERAL GUIDE

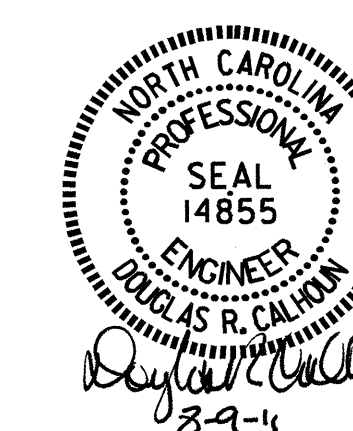
(RIGHT SIDE SHOWN, LEFT SIDE SIMILAR)



ELEVATION

DRAWN BY: J.L. WALTON DATE: 4-12-10
 CHECKED BY: W.S. ARAFAT DATE: 5-11-10

08-SEP-2011 10:15
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 gallen



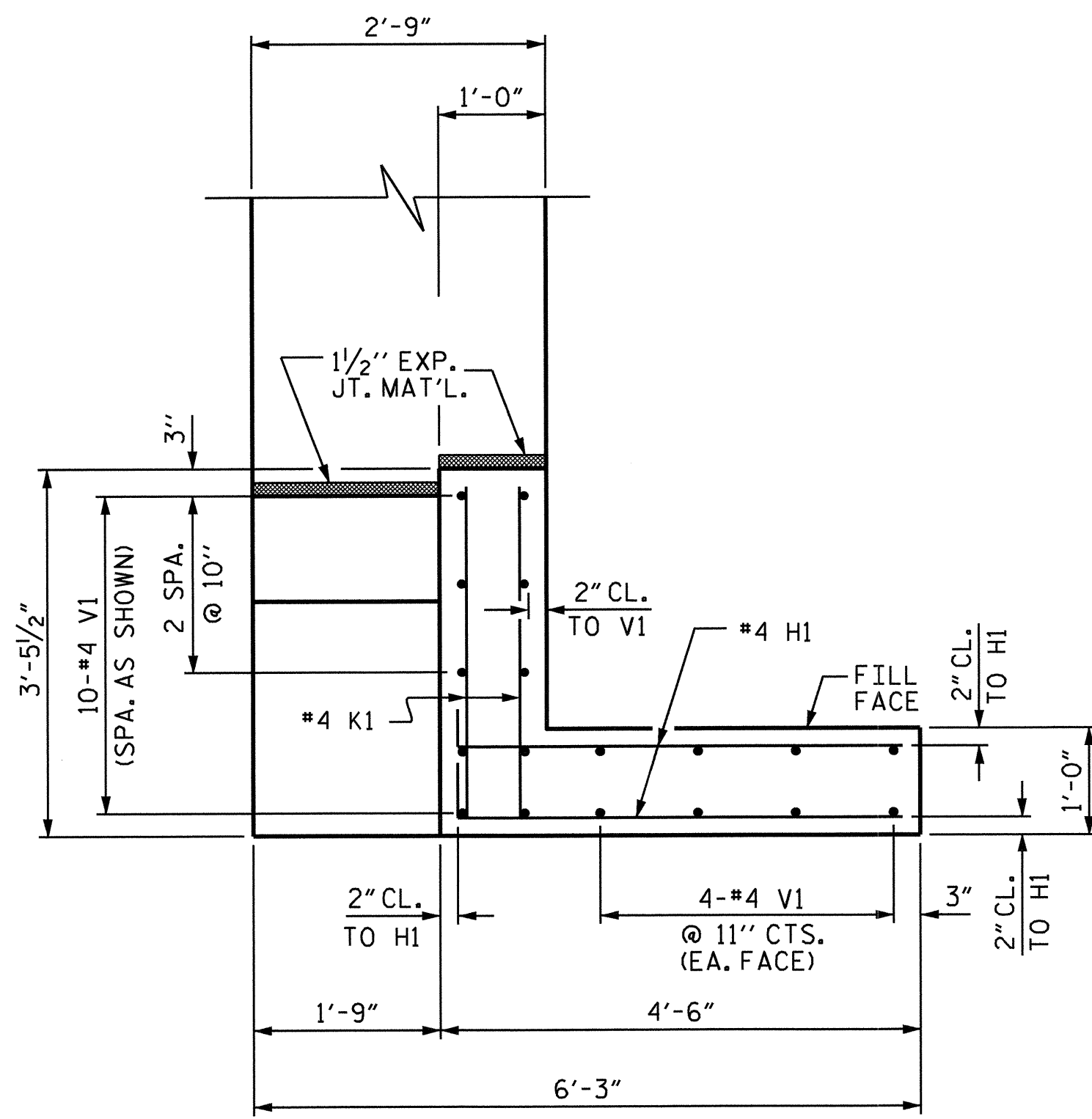
PROJECT NO. B-4673
 WAYNE COUNTY
 STATION: 18+49.00 -L-

SHEET 1 OF 2

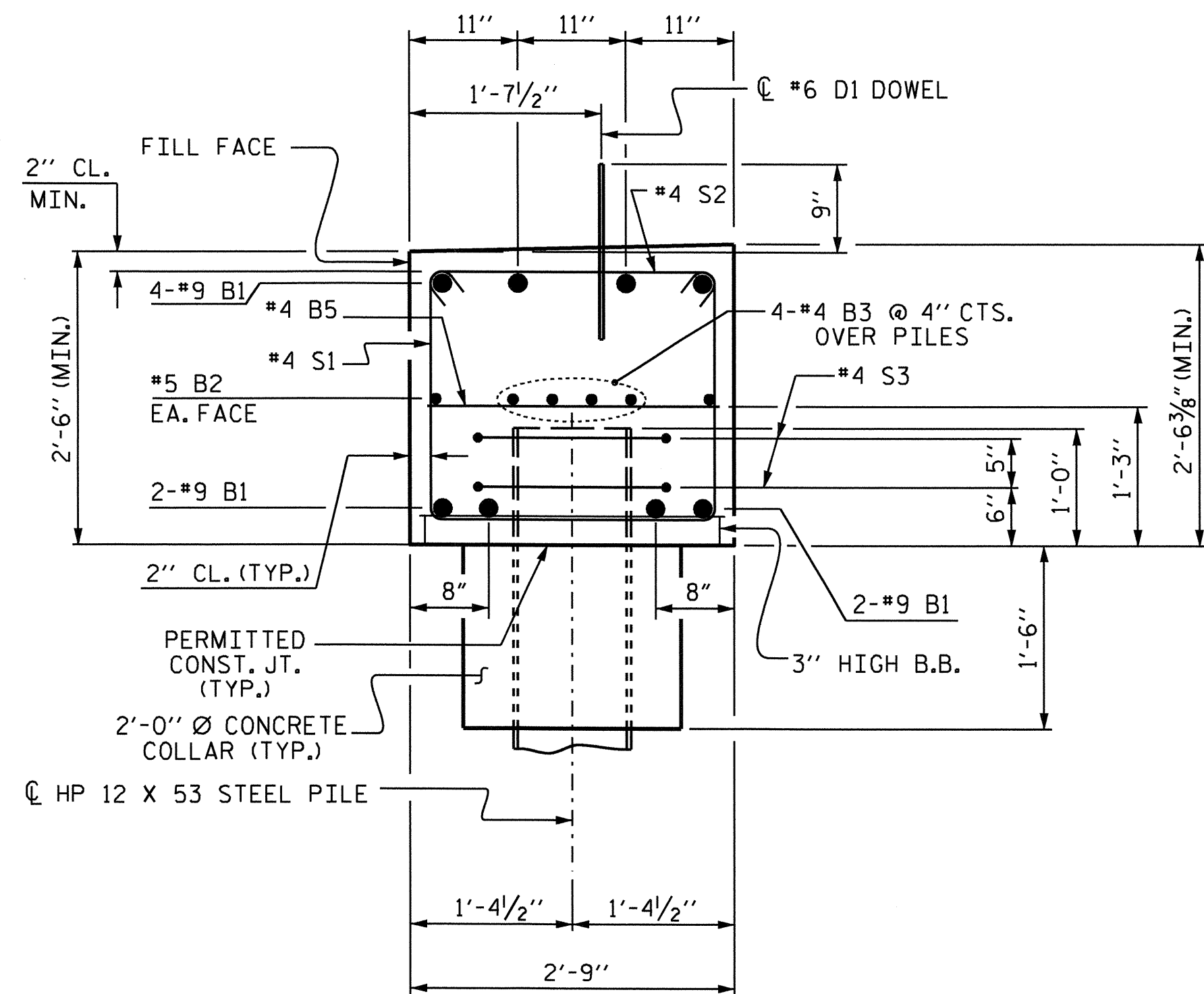
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT 1

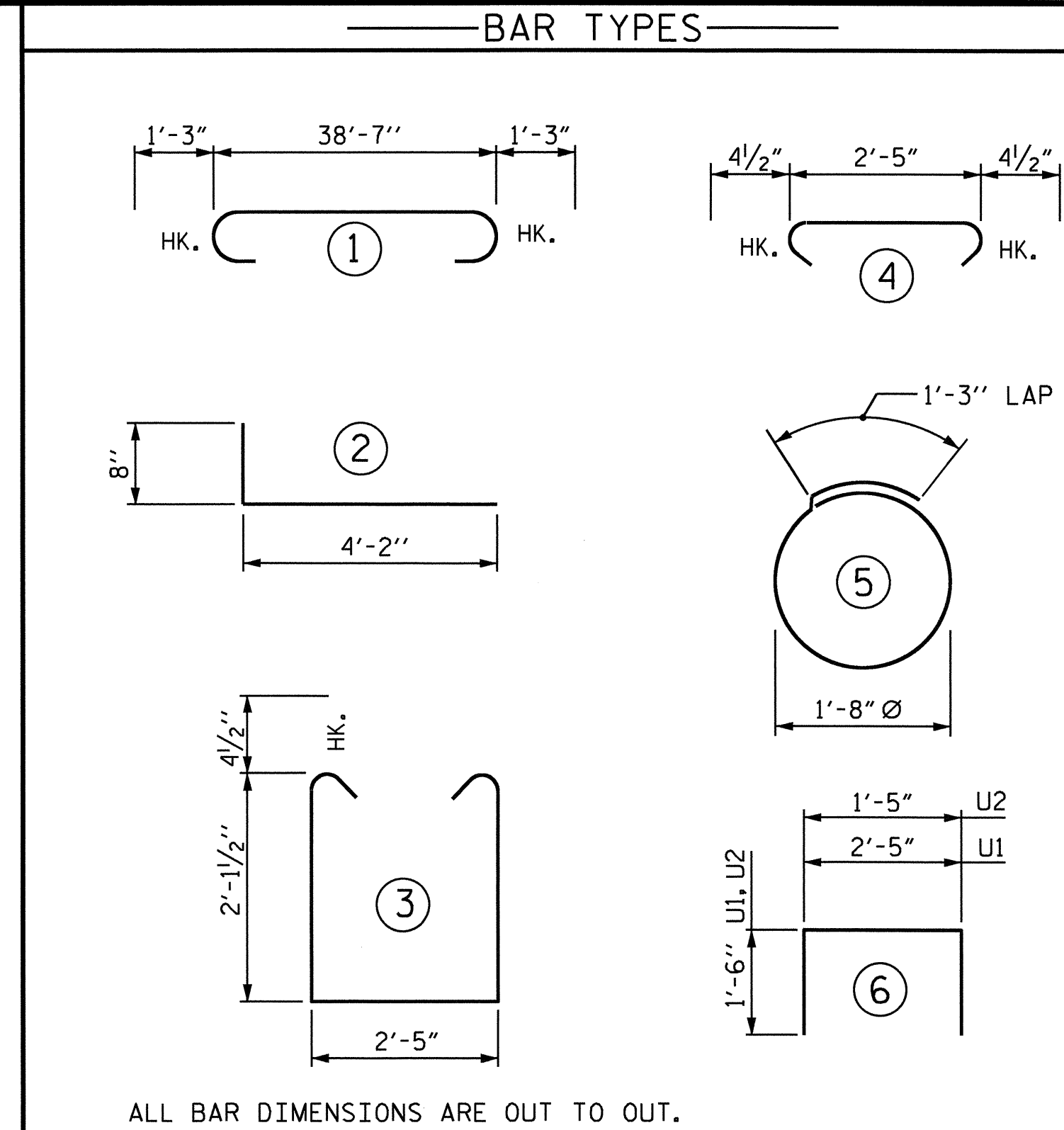
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			24



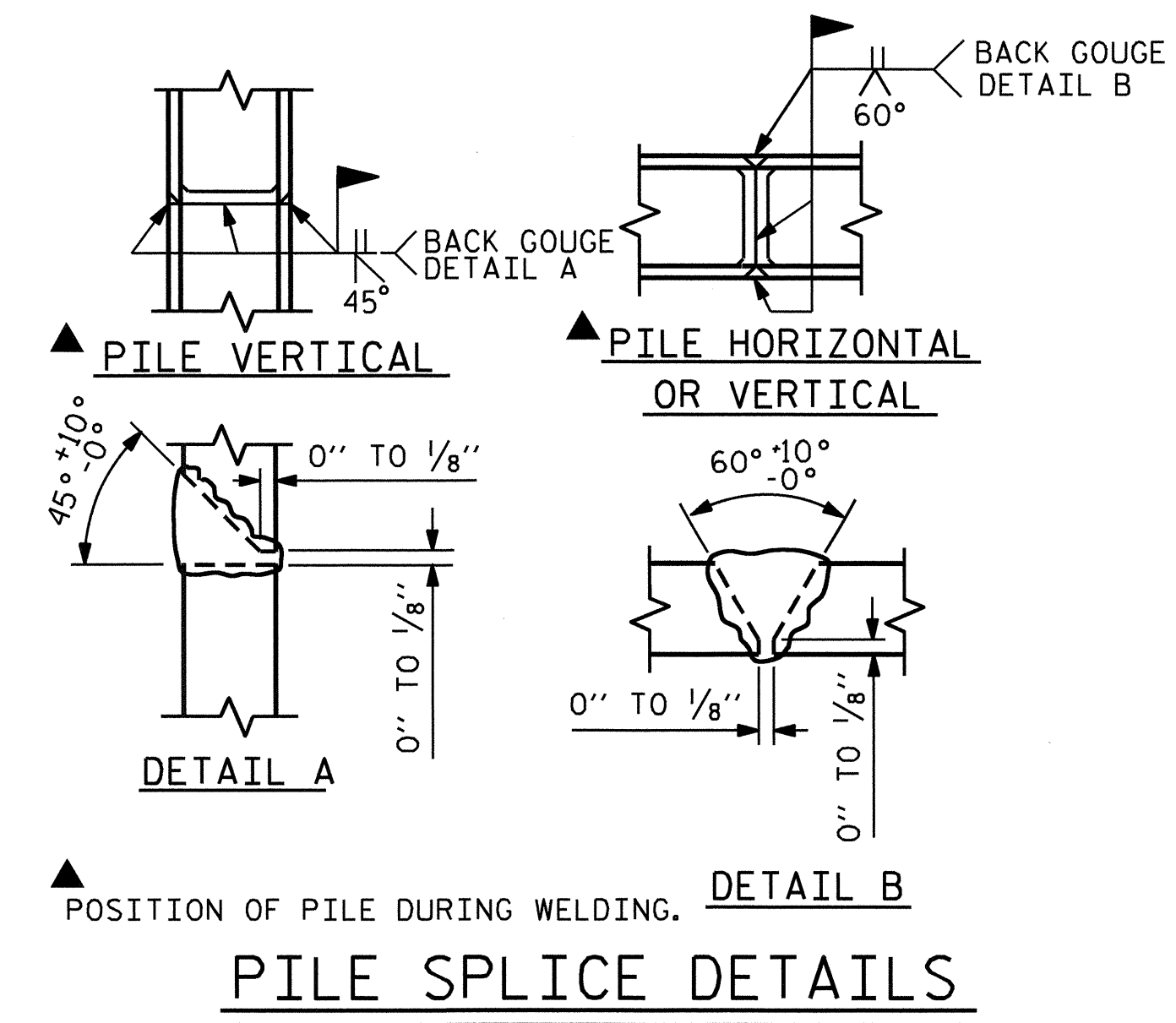
PLAN OF WING - W1
(WING W2 SIMILAR)



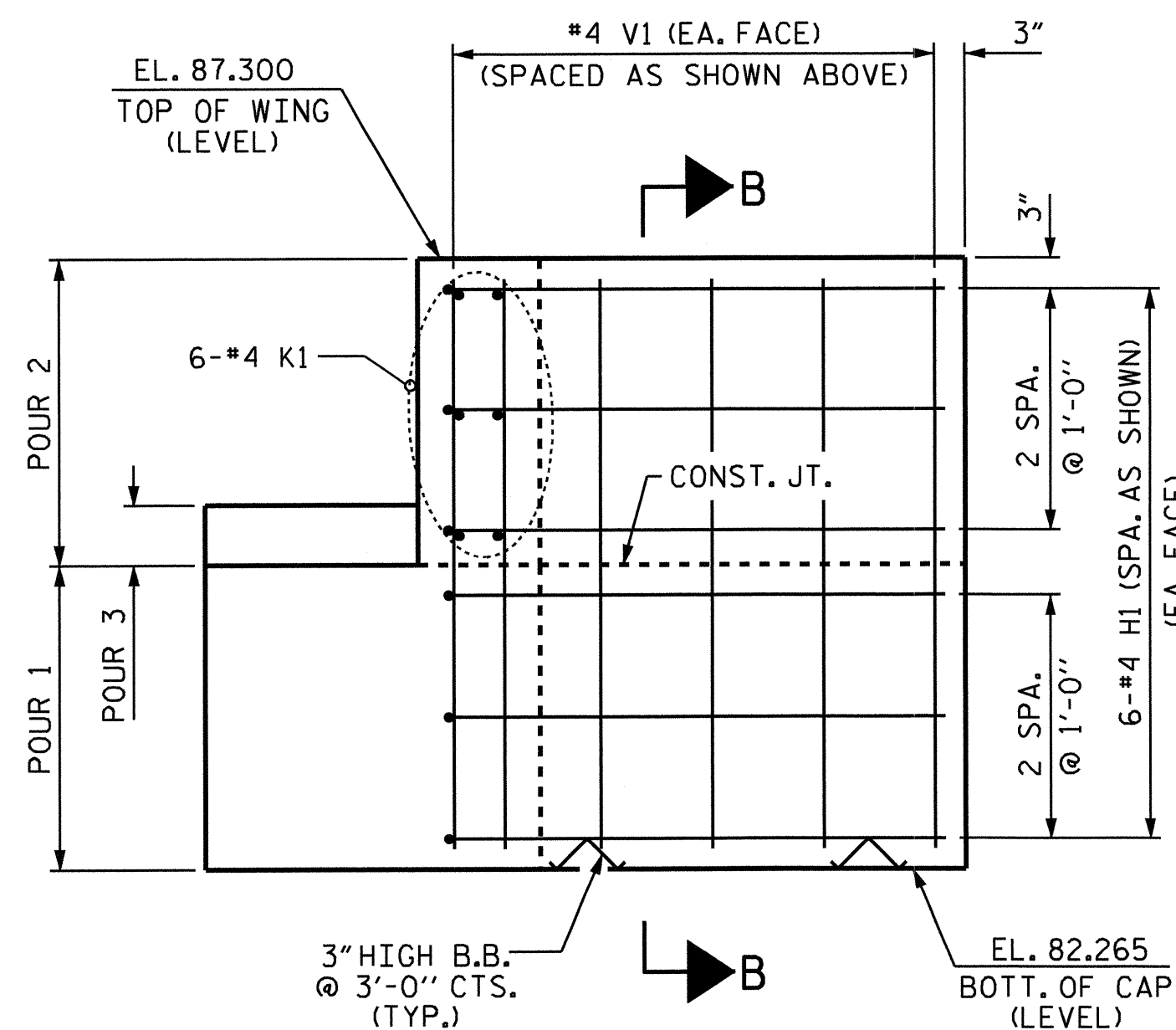
SECTION A-A



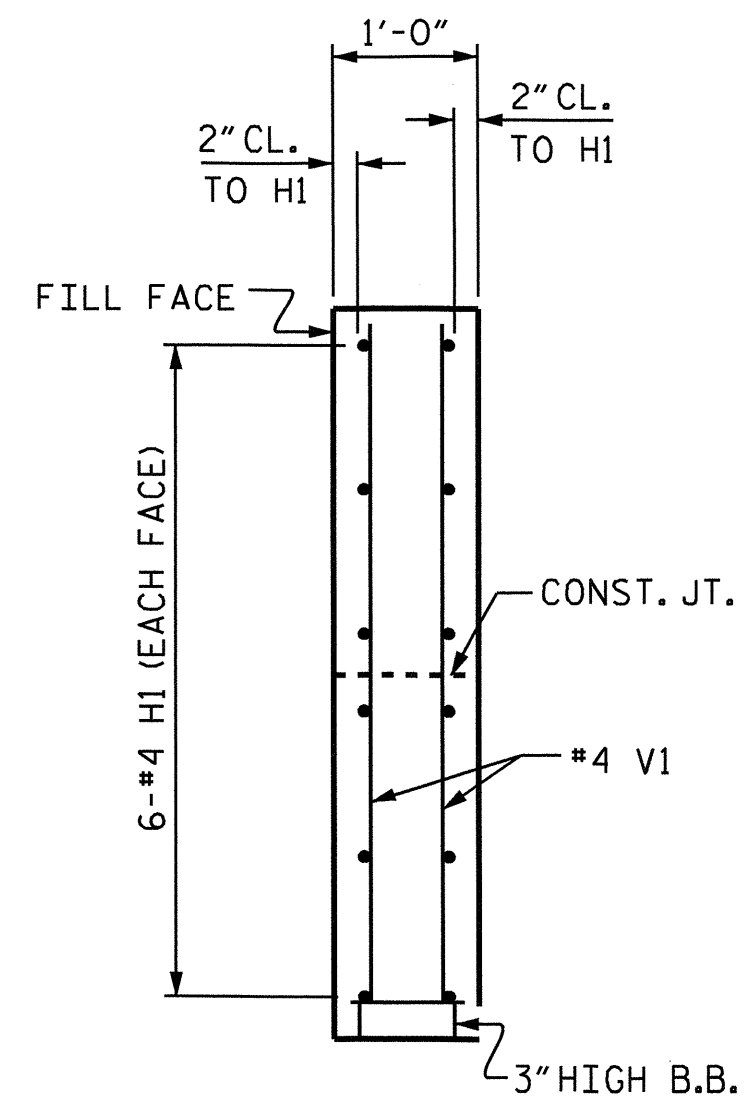
ALL BAR DIMENSIONS ARE OUT TO OUT.



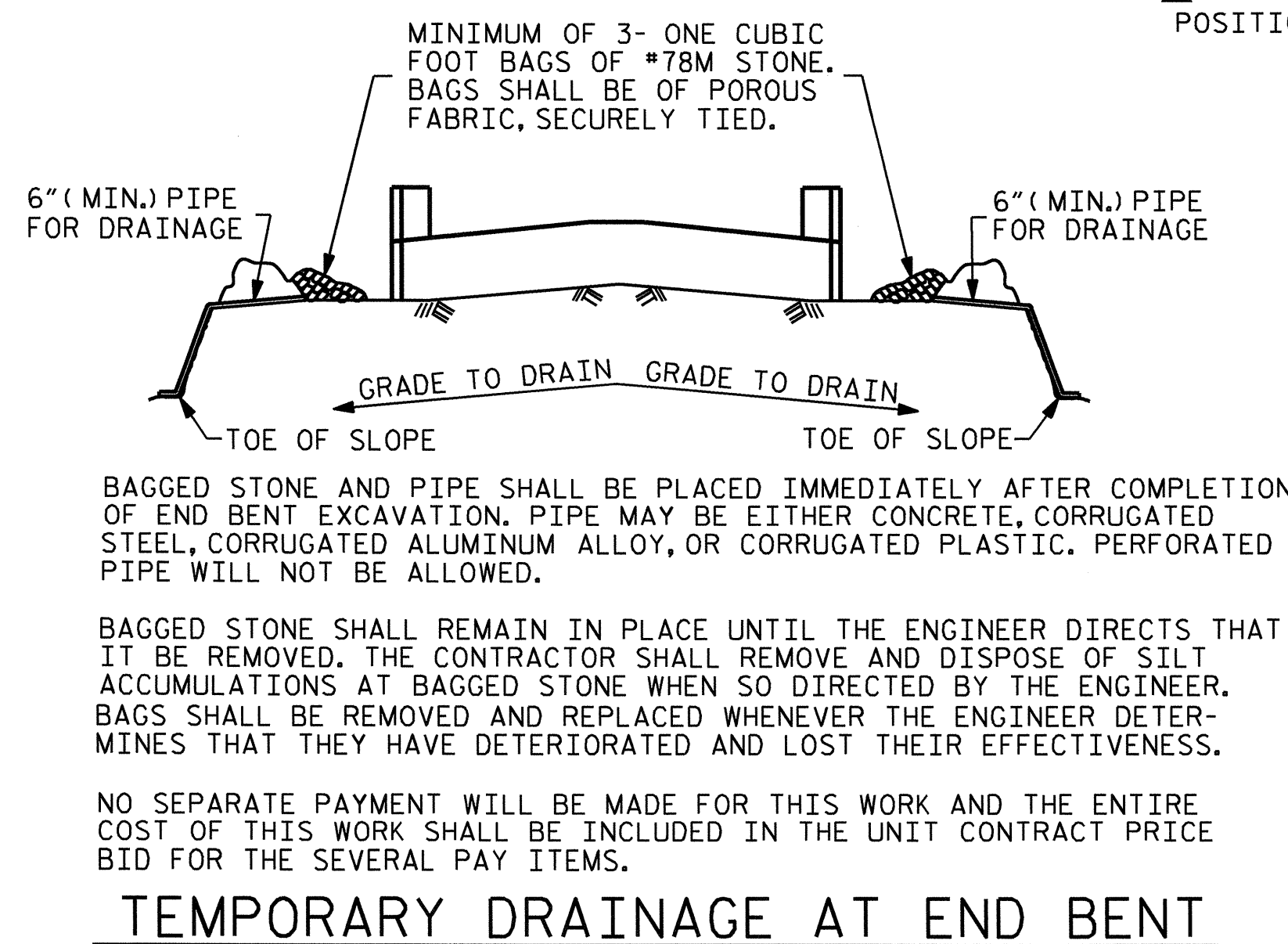
PILE SPLICE DETAILS



ELEVATION OF WING - W1
(WING W2 SIMILAR)



SECTION B-B



TEMPORARY DRAINAGE AT END BENT

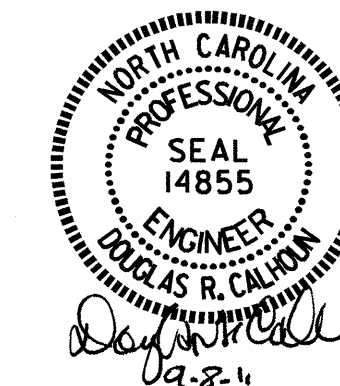
BILL OF MATERIAL					
END BENT 1					
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	#9	1	41'-1"	1117	
B2	#5	STR	38'-8"	81	
B3	#4	STR	20'-7"	110	
B4	#4	STR	13'-9"	37	
B5	#4	STR	2'-5"	16	
D1	#6	STR	1'-6"	50	
H1	#4	2	4'-10"	77	
K1	#4	STR	3'-1"	25	
S1	#4	3	7'-5"	208	
S2	#4	4	3'-2"	89	
S3	#4	5	6'-6"	43	
U1	#4	6	5'-5"	36	
U2	#4	6	4'-5"	12	
V1	#4	STR	4'-8"	112	
REINFORCING STEEL			LBS.	2013	
CLASS A CONCRETE BREAKDOWN					
POUR 1 (CAP, LOWER PART OF WINGS & CONCRETE COLLARS)			C.Y.	12.4	
POUR 2 (UPPER PART OF WINGS)			C.Y.	1.4	
POUR 3 (LATERAL GUIDES)			C.Y.	0.1	
TOTAL			C.Y.	13.9	
HP 12 X 53 STEEL PILES :					
NO. : 5				LIN. FT. : 225	
PILE REDRIVES			EACH :	3	

PROJECT NO. B-4673
WAYNE COUNTY
 STATION: 18+49.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

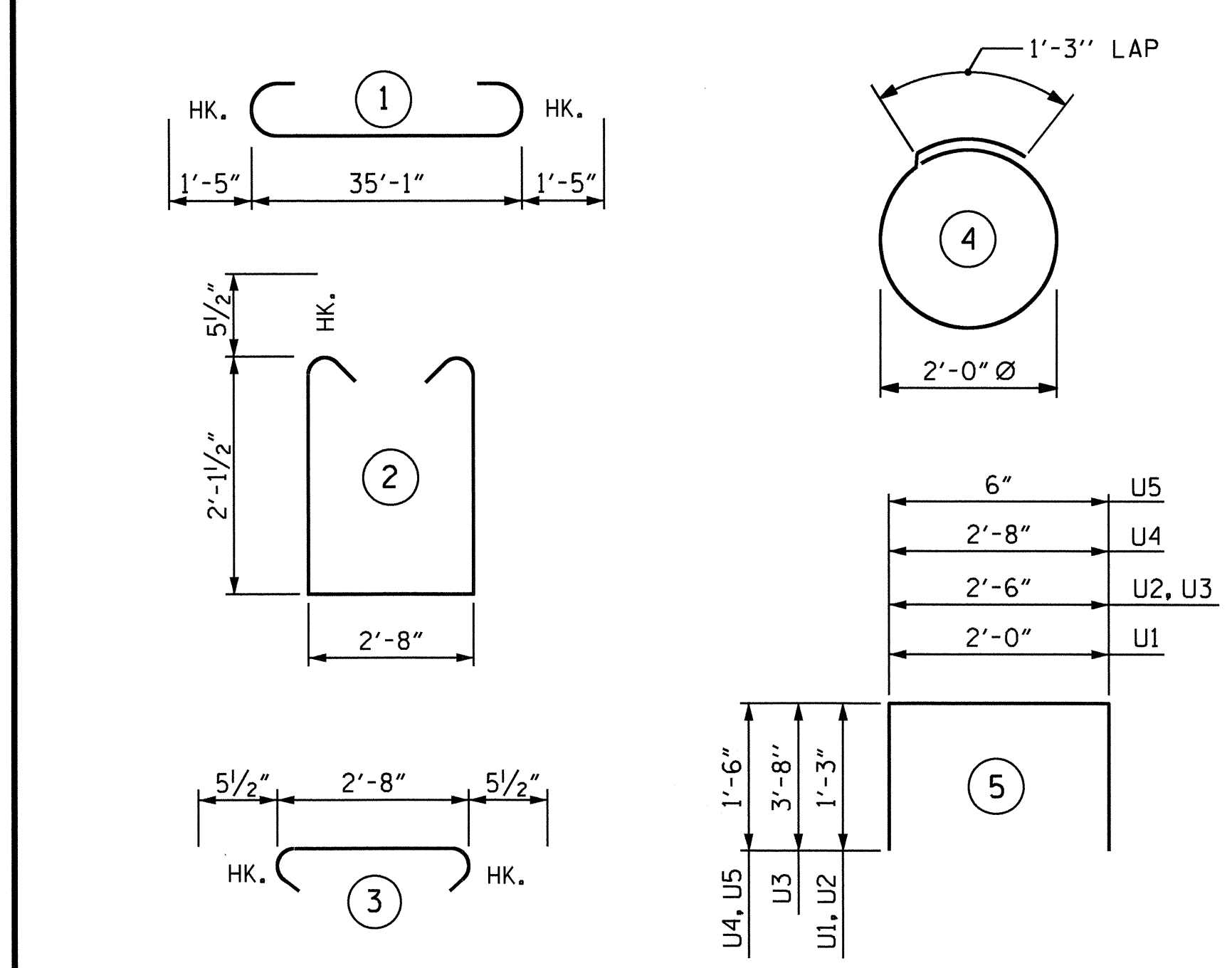
SUBSTRUCTURE
 END BENT 1



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			24

DRAWN BY: J.L. WALTON DATE: 4-12-10
 CHECKED BY: W.S. ARAFAT DATE: 5-11-10

BAR TYPES

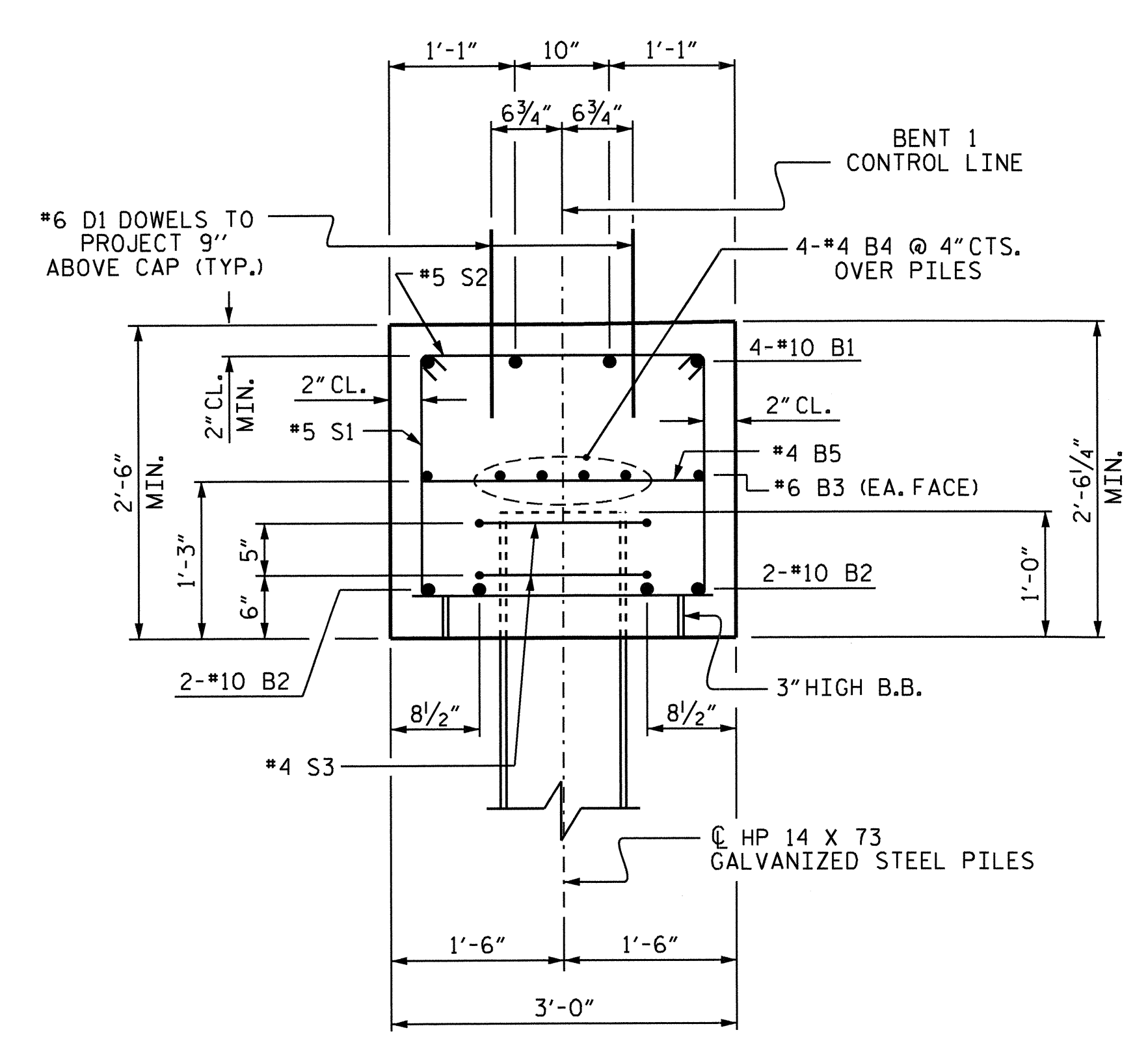


ALL BAR DIMENSIONS ARE OUT TO OUT.

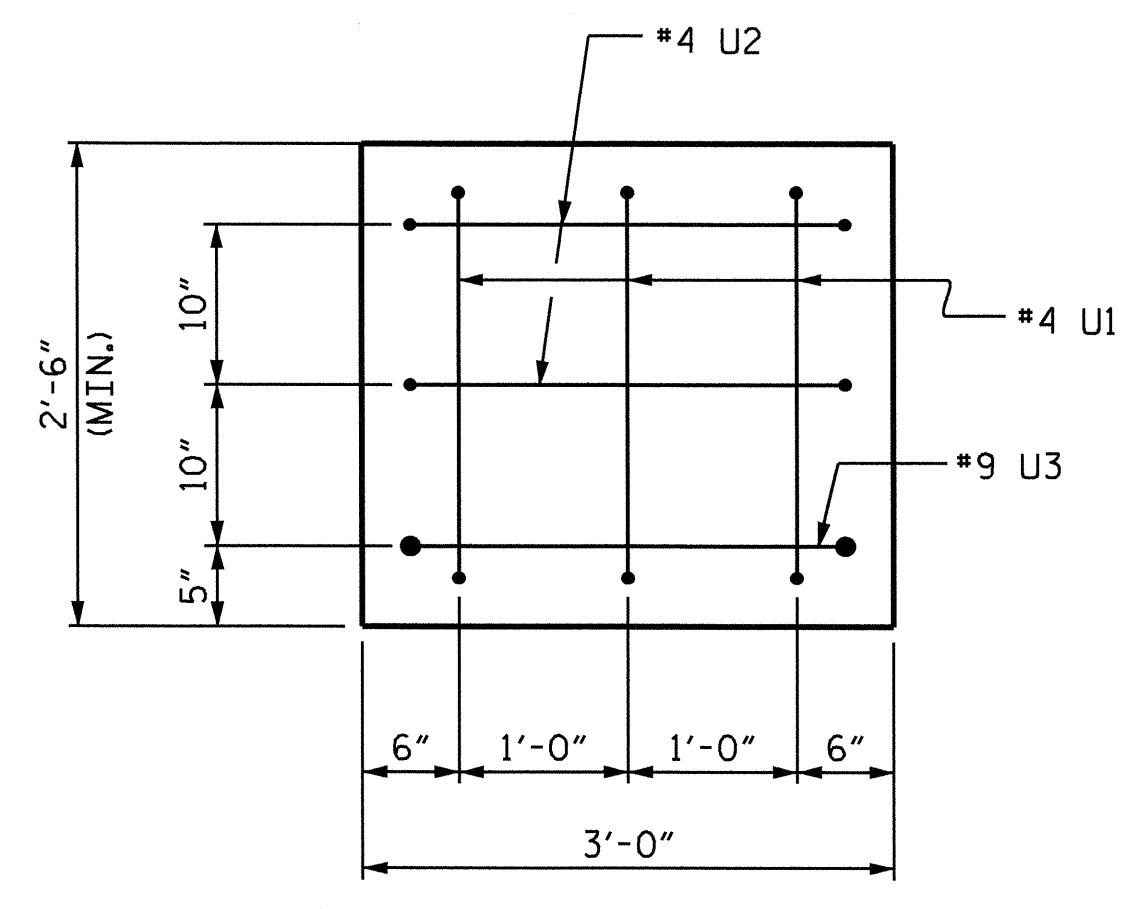
BILL OF MATERIAL

BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	37'-11"	653
B2	4	#10	STR	35'-2"	605
B3	2	#6	STR	35'-2"	106
B4	8	#4	STR	18'-10"	101
B5	13	#4	STR	2'-8"	25
B6	4	#4	STR	14'-0"	37
D1	44	#6	STR	1'-6"	99
S1	32	#5	2	7'-10"	261
S2	32	#5	3	3'-7"	120
S3	14	#4	4	7'-7"	71
U1	6	#4	5	4'-6"	18
U2	4	#4	5	5'-0"	13
U3	2	#9	5	9'-10"	67
U4	10	#4	5	5'-8"	38
U5	8	#4	5	3'-6"	19
REINFORCING STEEL					2233 LBS.
CLASS A CONCRETE					
POUR 1 (CAP)					C.Y. 10.6
POUR 2 (LATERAL GUIDES)					C.Y. 0.1
TOTAL					C.Y. 10.7
HP 14 X 73 GALVANIZED STEEL PILES					
NO. : 7					LIN. FT: 420
PILE REDRIVES					EA. 4

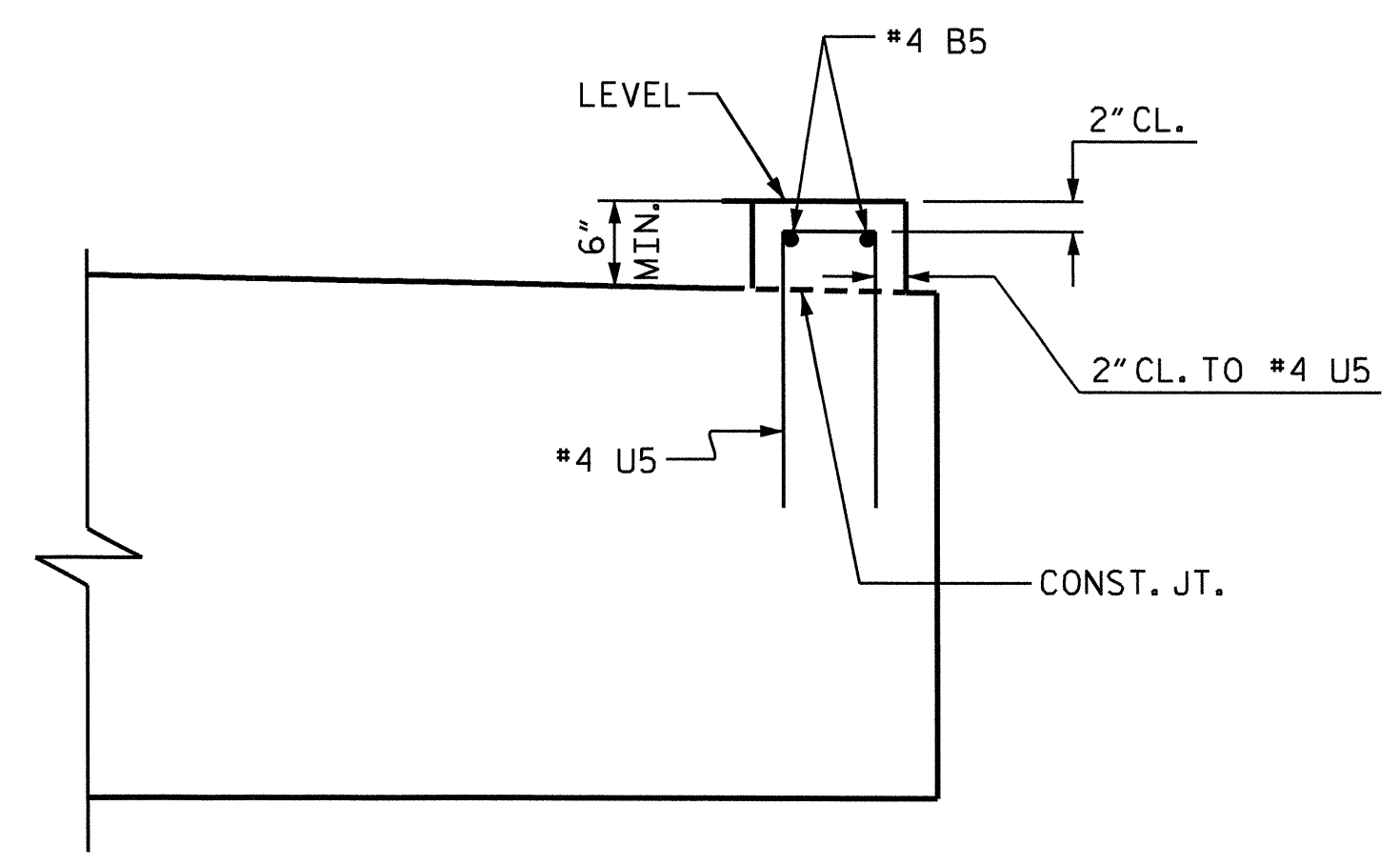
UPSTATION



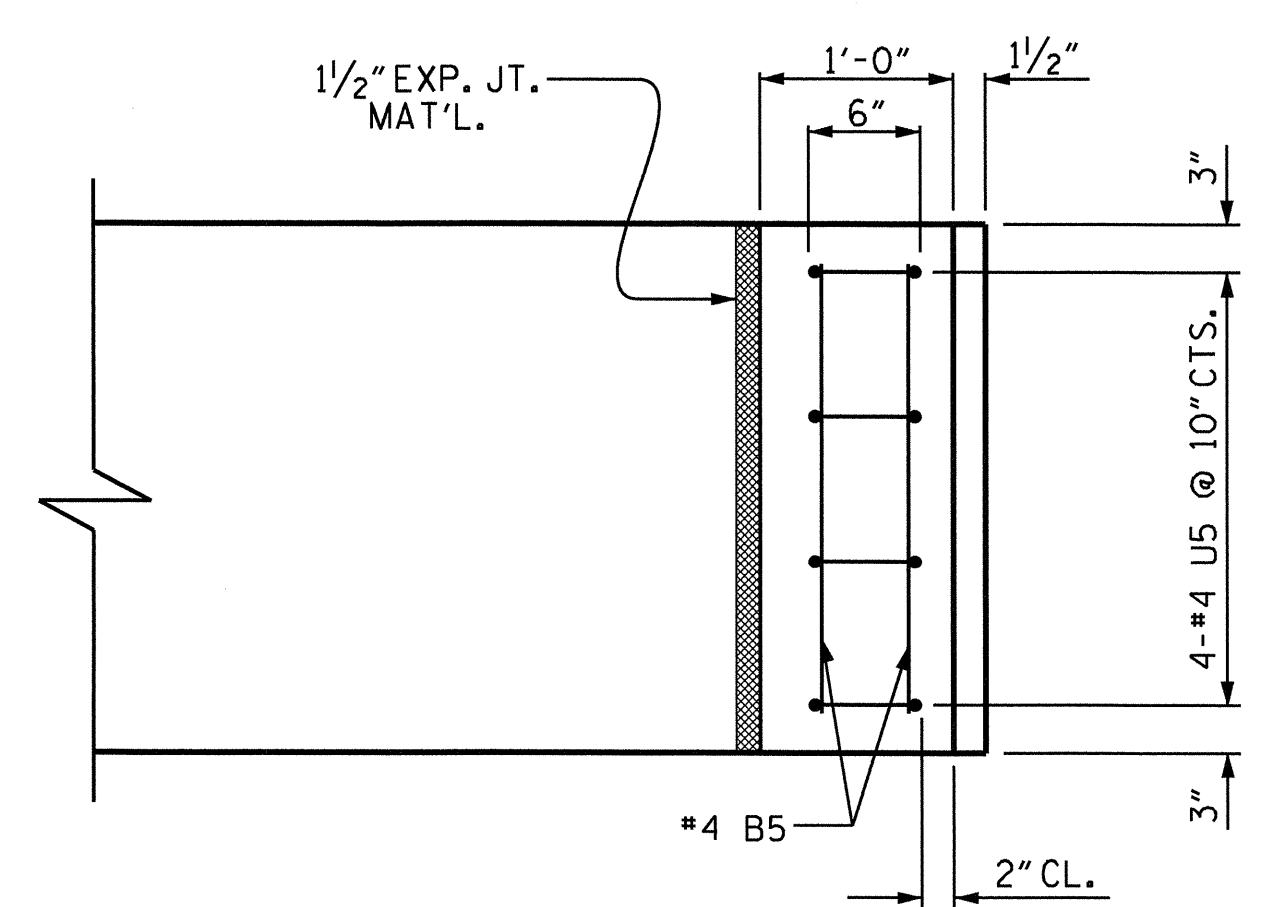
SECTION A-A



END VIEW
(TYP. EA. END)

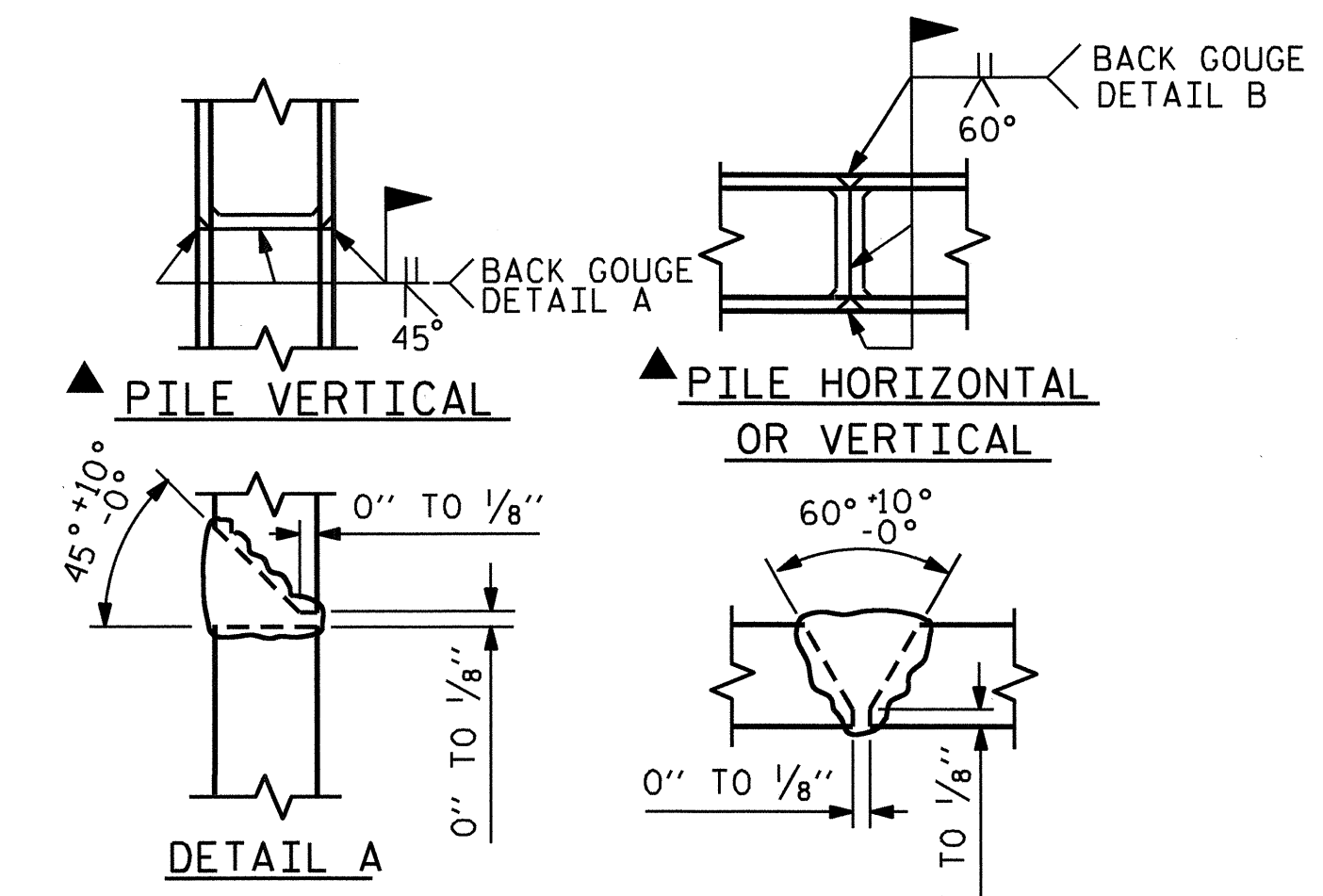


ELEVATION



PLAN

LATERAL GUIDE DETAIL
(EACH END SIMILAR)

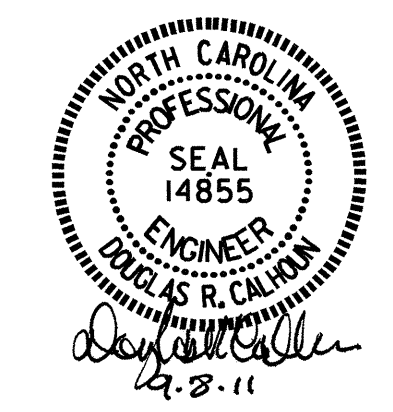


POSITION OF PILE DURING WELDING. DETAIL B
PILE SPLICE DETAILS

PROJECT NO. B-4673
WAYNE COUNTY
STATION: 18+49.00 -L-

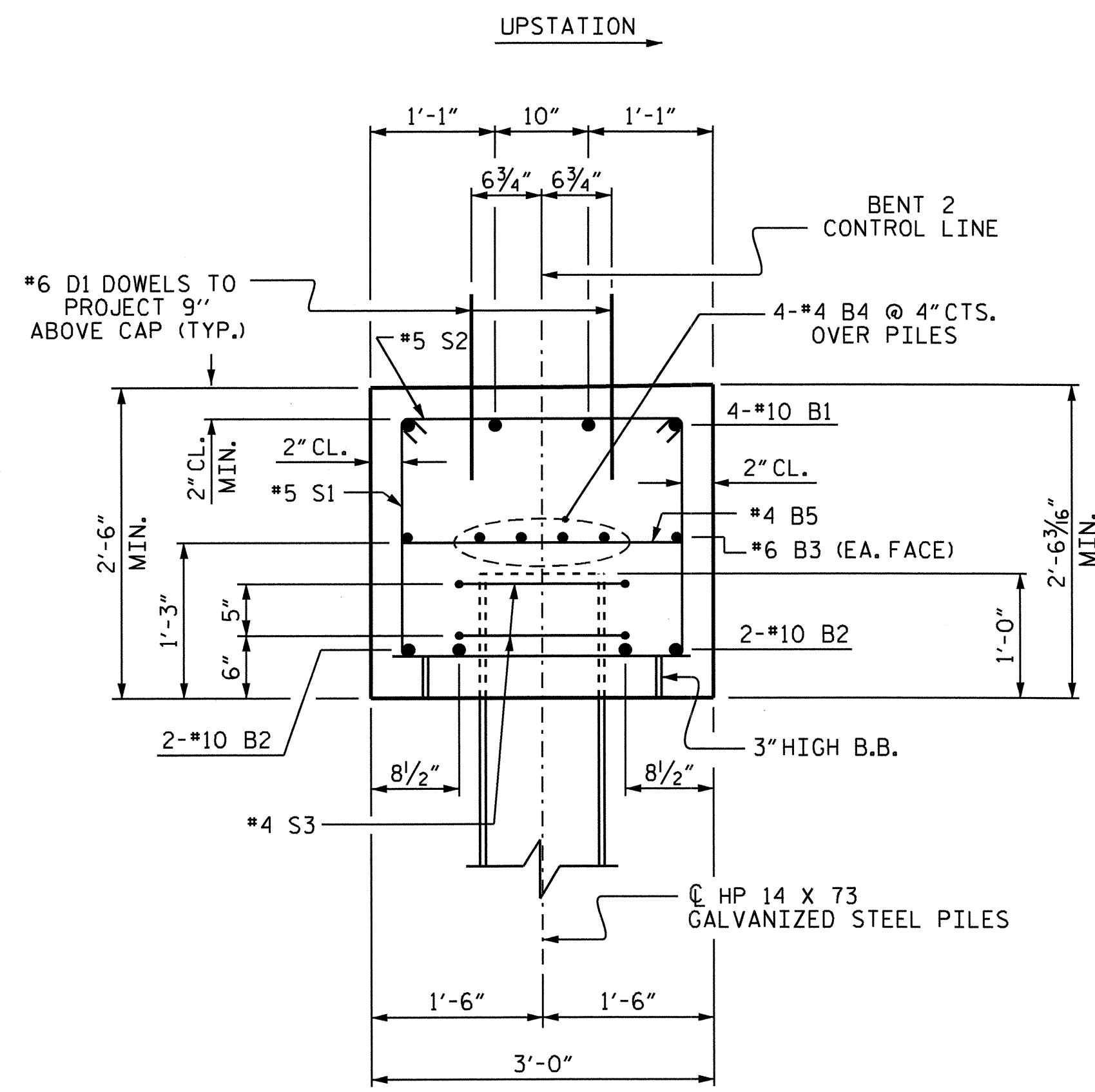
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
BENT 1

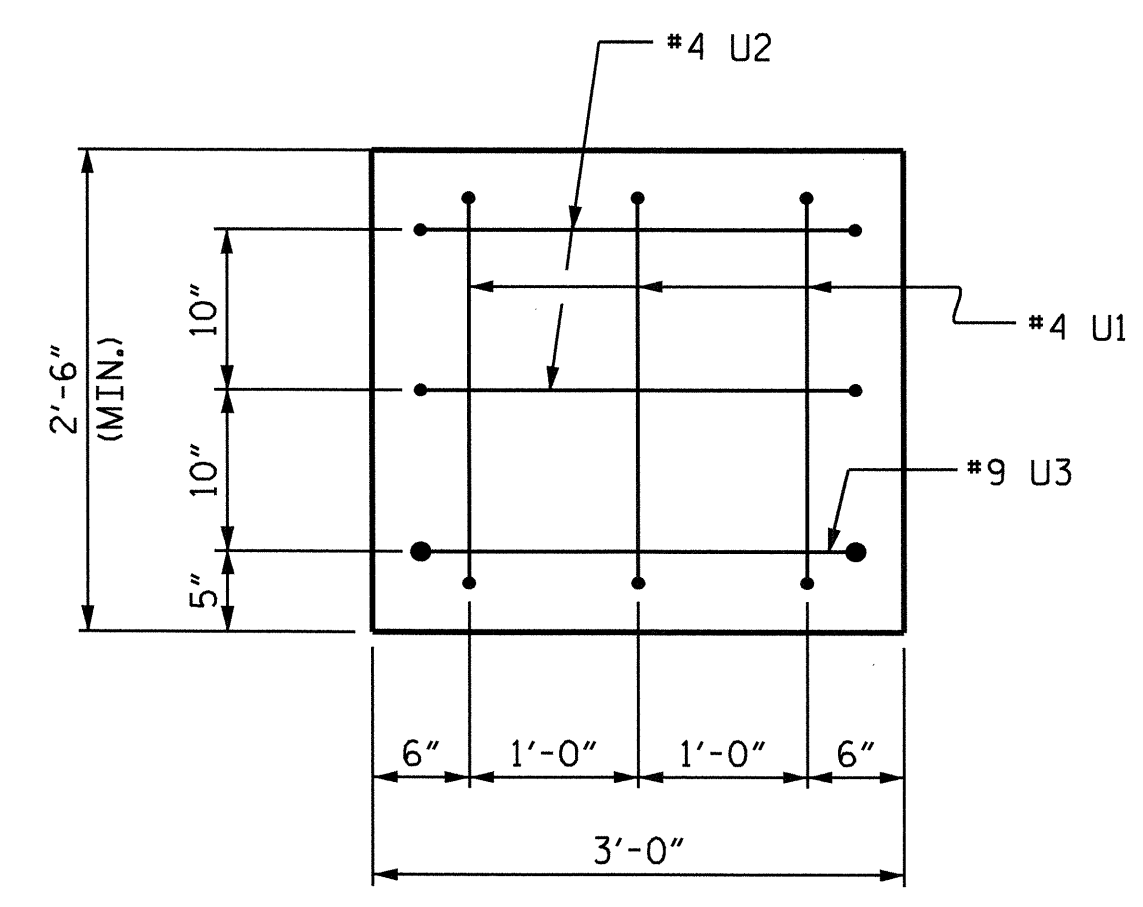


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			24

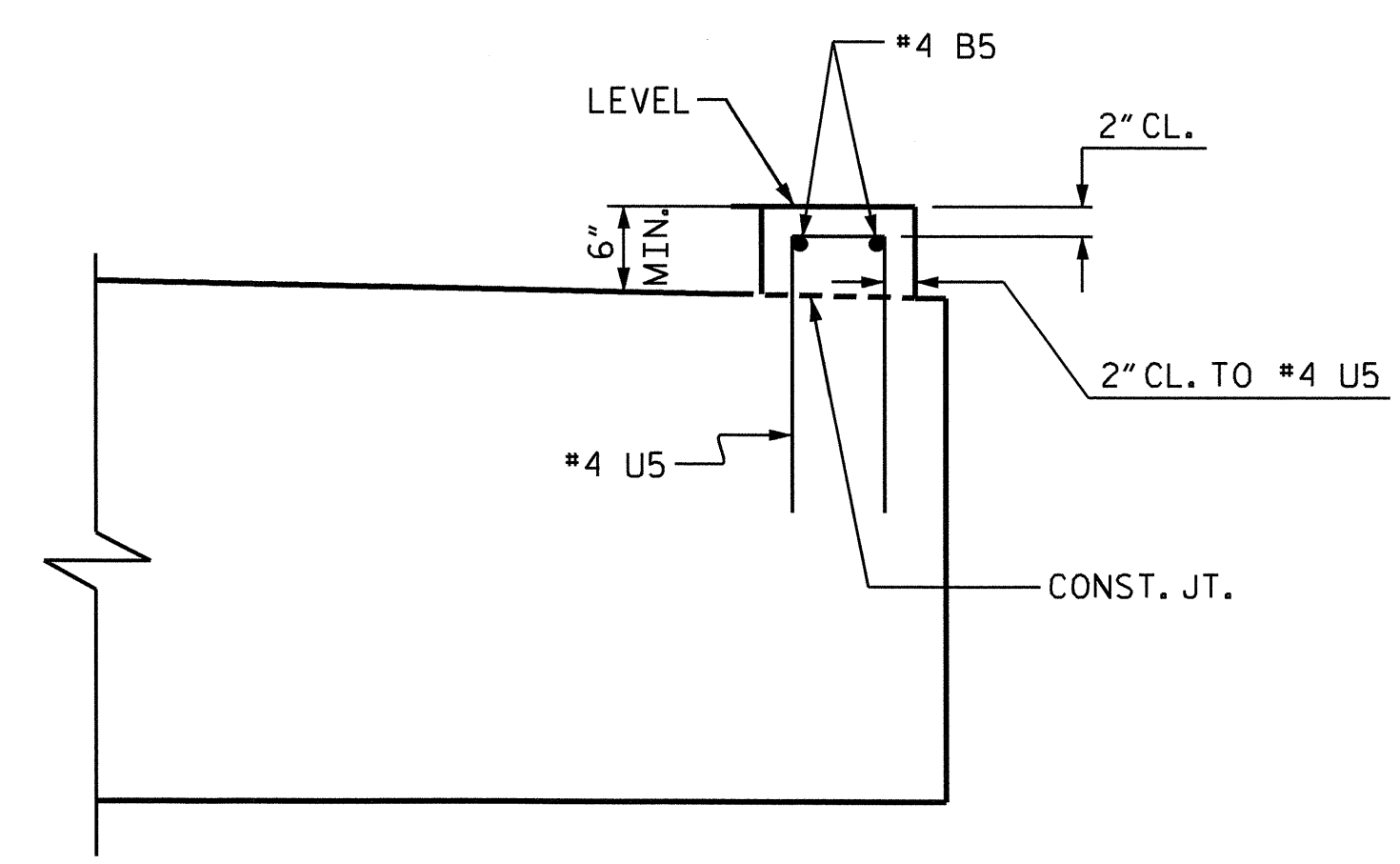
DRAWN BY : J. L. WALTON DATE : 6-24-10
CHECKED BY : K.P. SEDAI DATE : 3-10-11



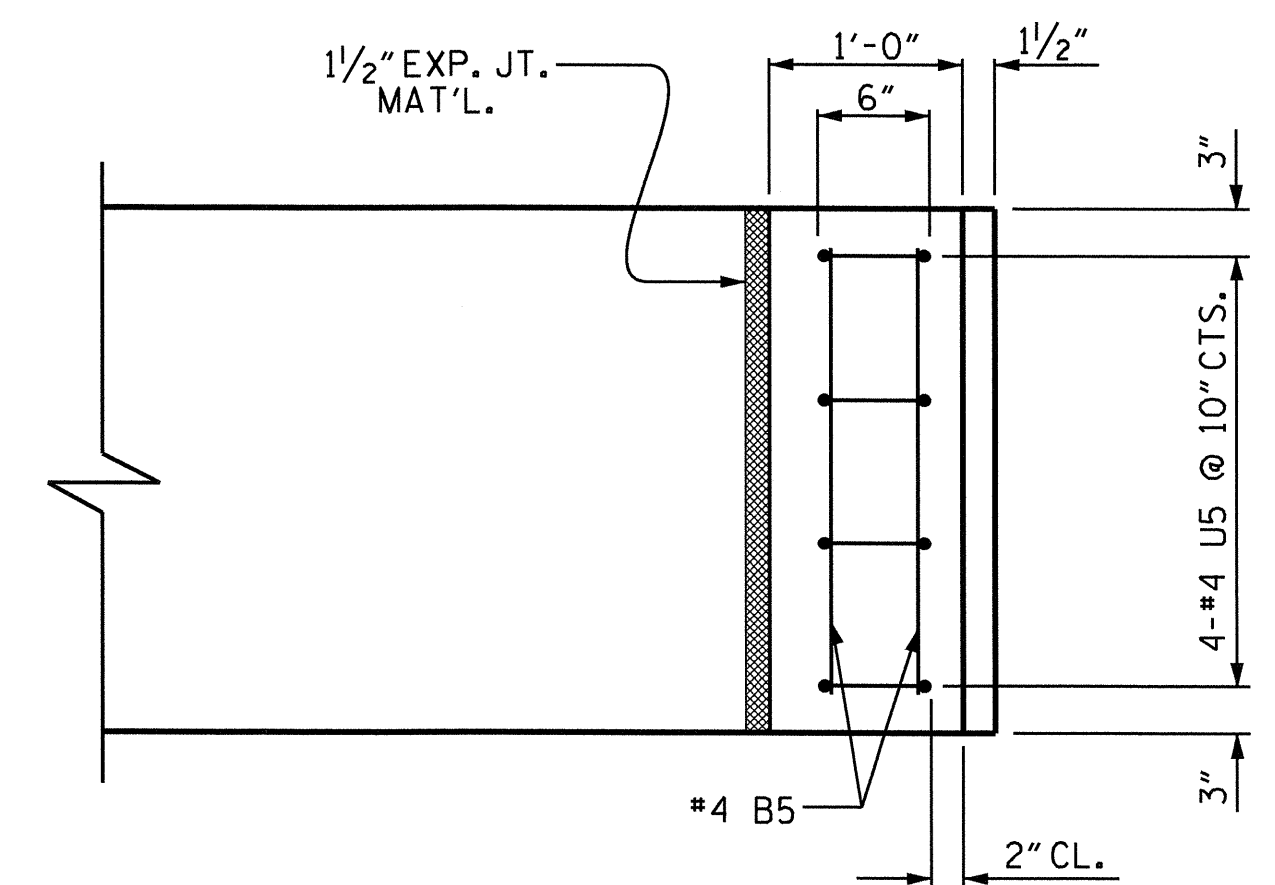
SECTION A-A



END VIEW
(TYP. EA. END)



ELEVATION

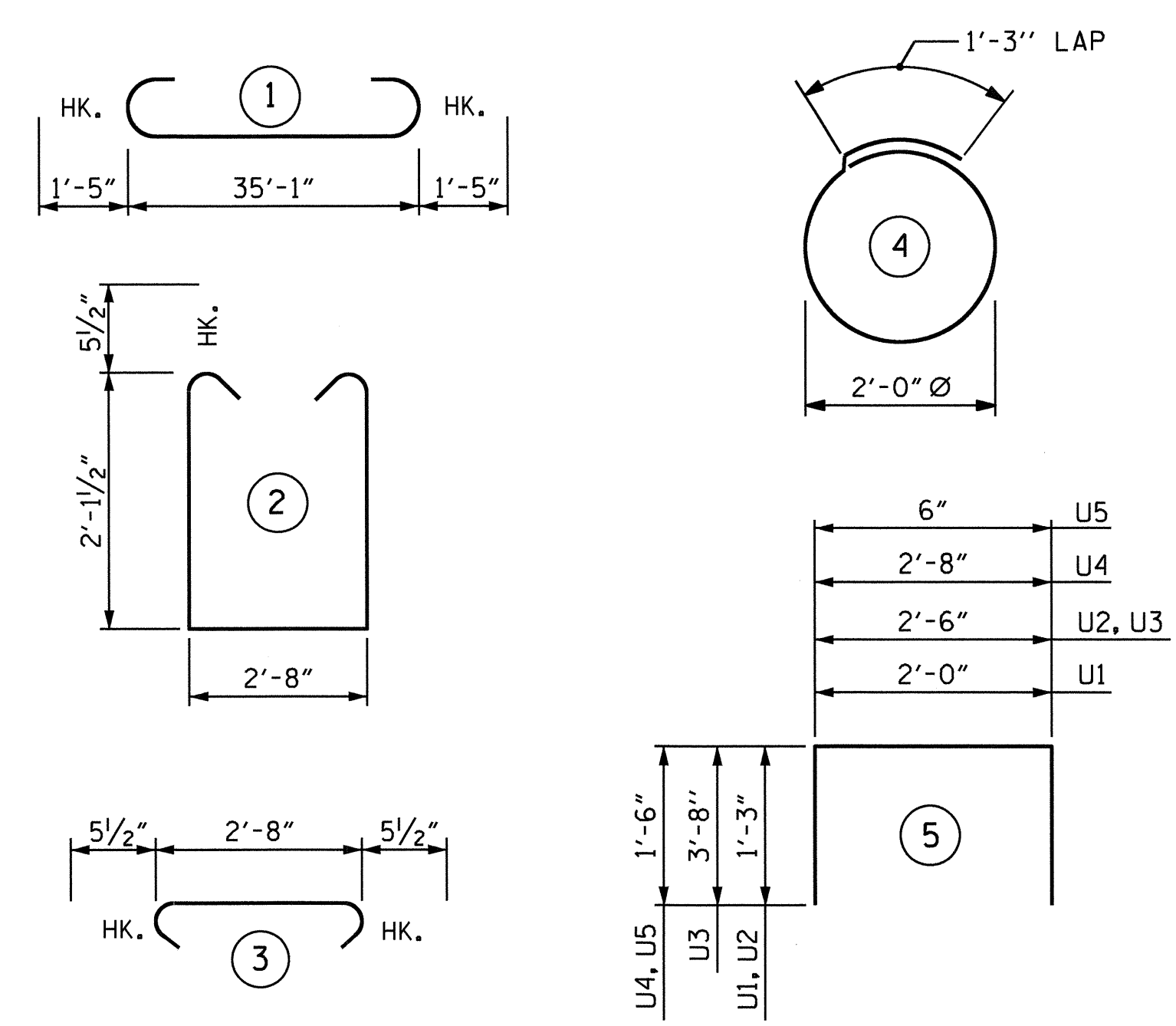


PLAN
LATERAL GUIDE DETAIL
(EACH END SIMILAR)

DRAWN BY : J. L. WALTON DATE : 6-24-10
CHECKED BY : K. P. SEDAI DATE : 3-10-11

08-SEP-2011 10:16
R:\Structures\Final Plans\B-4673.SD.B*.1.dgn
galen

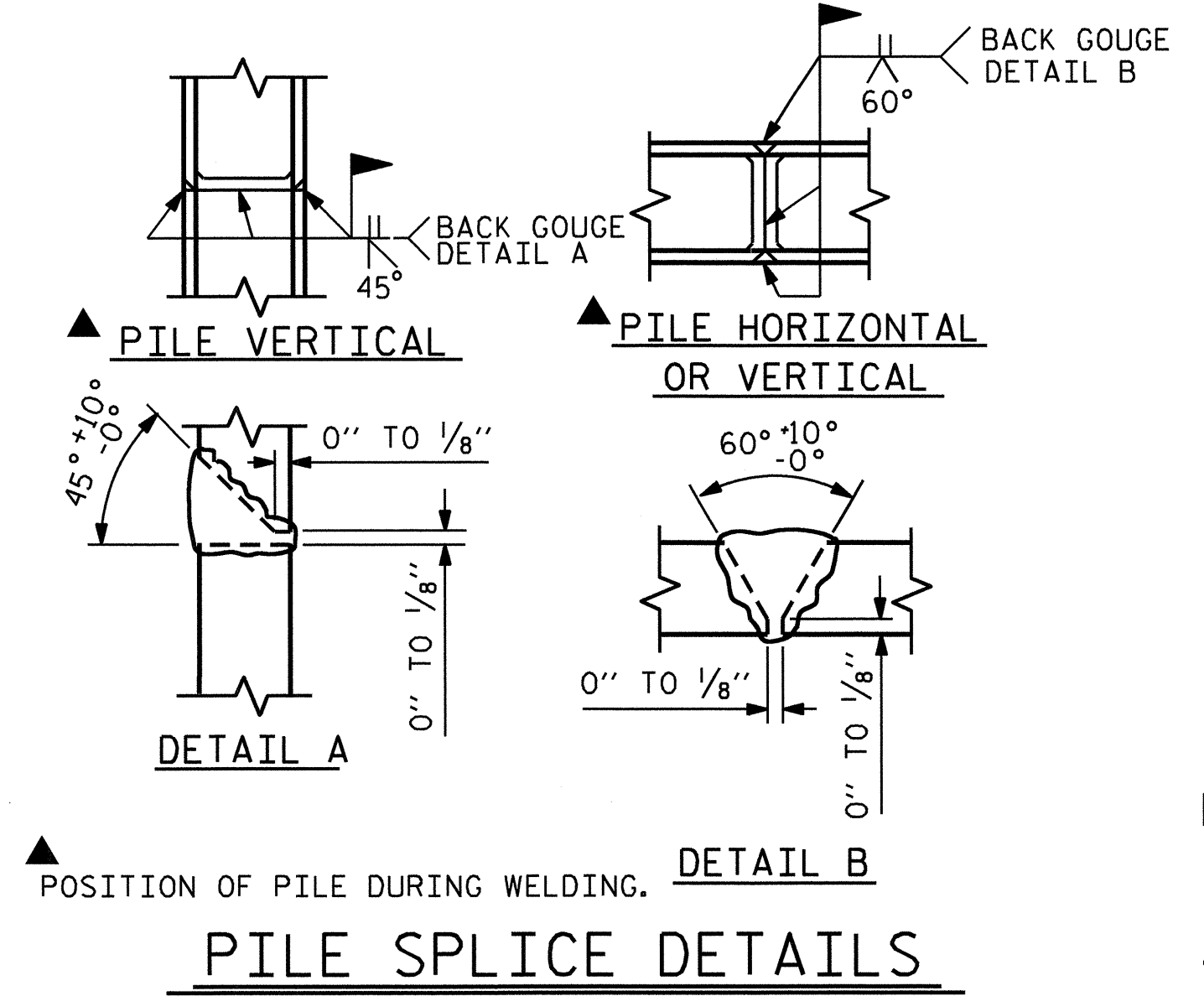
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

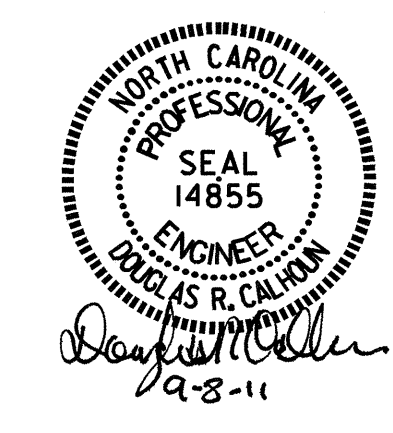
BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10		37'-11"	653
B2	4	#10	STR	35'-2"	605
B3	2	#6	STR	35'-2"	106
B4	8	#4	STR	18'-10"	101
B5	13	#4	STR	2'-8"	25
B6	4	#4	STR	14'-0"	37
D1	44	#6	STR	1'-6"	99
S1	32	#5	2	7'-10"	261
S2	32	#5	3	3'-7"	120
S3	14	#4	4	7'-7"	71
U1	6	#4	5	4'-6"	18
U2	4	#4	5	5'-0"	13
U3	2	#9	5	9'-10"	67
U4	10	#4	5	5'-8"	38
U5	8	#4	5	3'-6"	19
REINFORCING STEEL					2233 LBS.
CLASS A CONCRETE					
POUR 1 (CAP)					C.Y. 10.6
POUR 2 (LATERAL GUIDES)					C.Y. 0.1
TOTAL					C.Y. 10.7
HP 14 X 73 GALVANIZED STEEL PILES					
NO. : 7					LIN. FT: 420
PILE REDRIVES					EA. 4



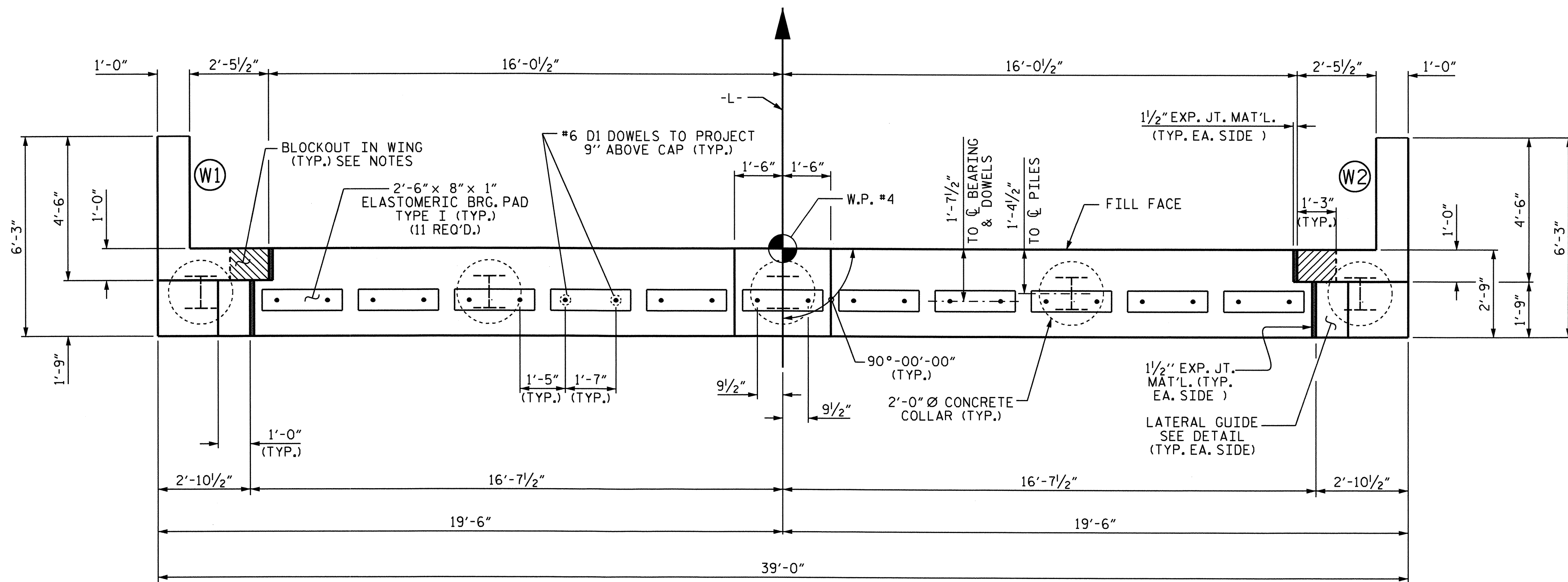
POSITION OF PILE DURING WELDING.
PILE SPLICE DETAILS

PROJECT NO. B-4673
WAYNE COUNTY
STATION: 18+49.00 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT 2					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-19
					TOTAL SHEETS 24



PLAN

NOTES

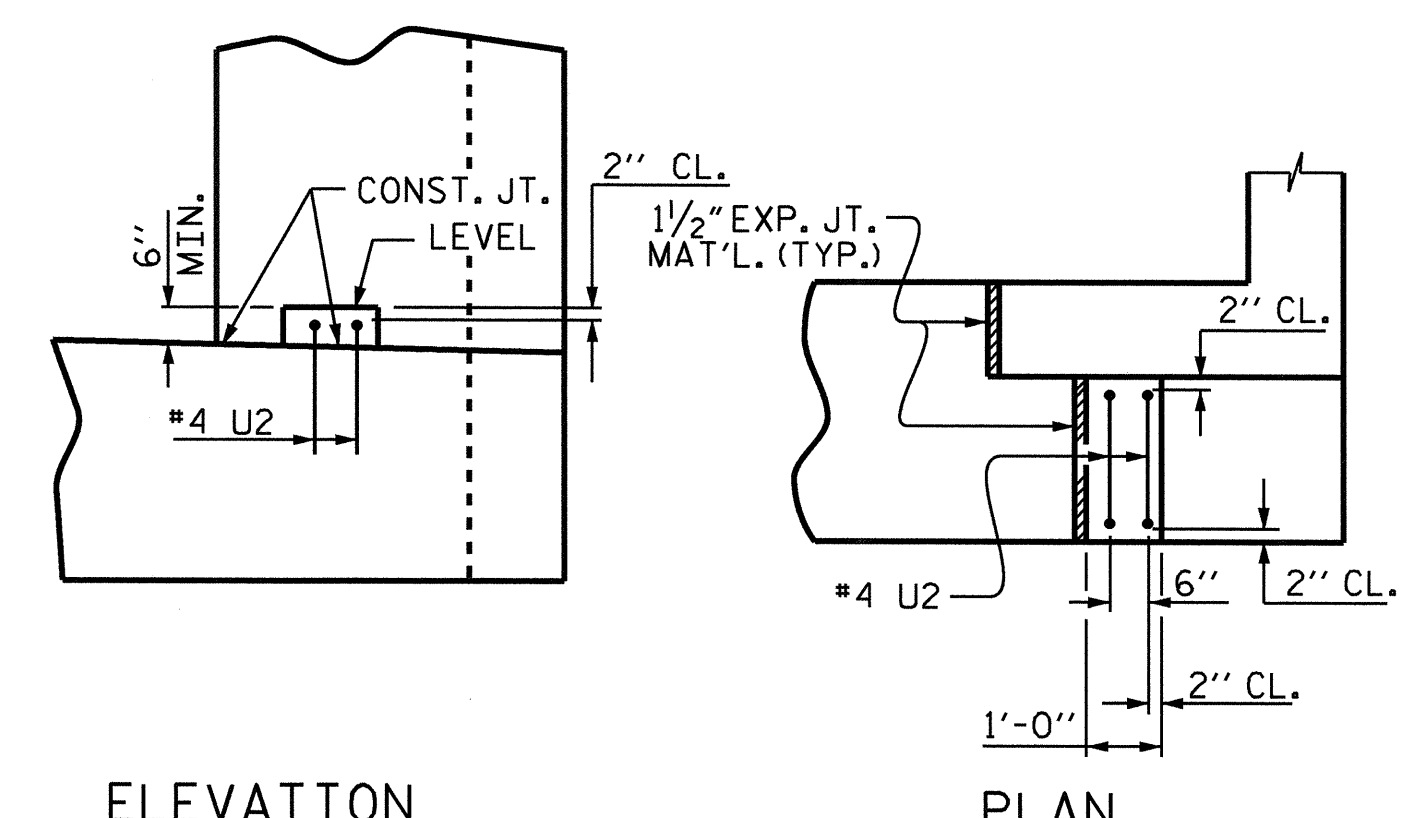
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE PARAPET AND END POST ARE CAST IF SLIP FORMING IS USED.

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

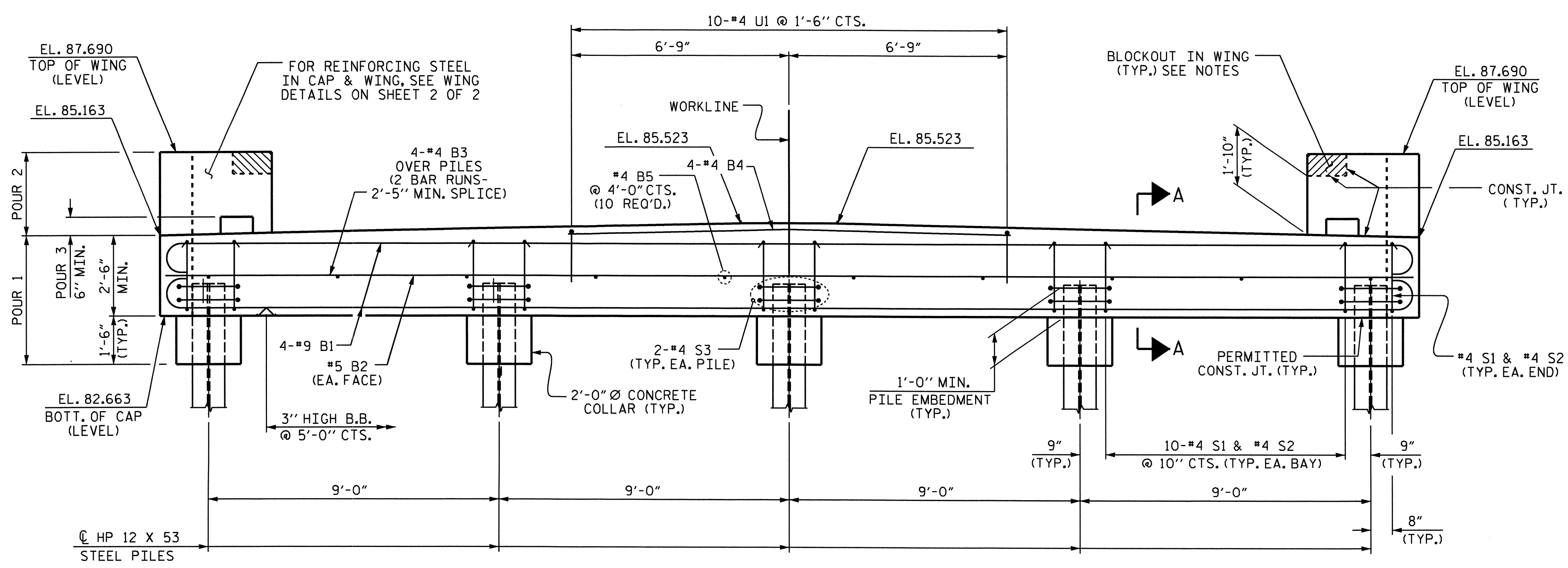


ELEVATION

PLAN

LATERAL GUIDE

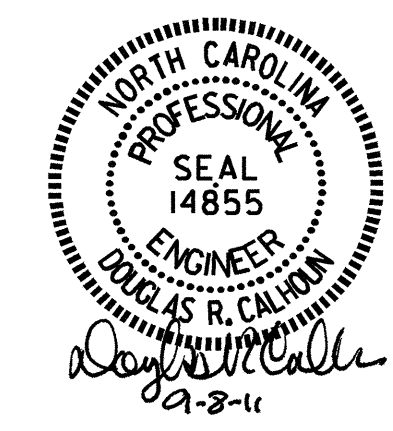
(RIGHT SIDE SHOWN, LEFT SIDE SIMILAR)



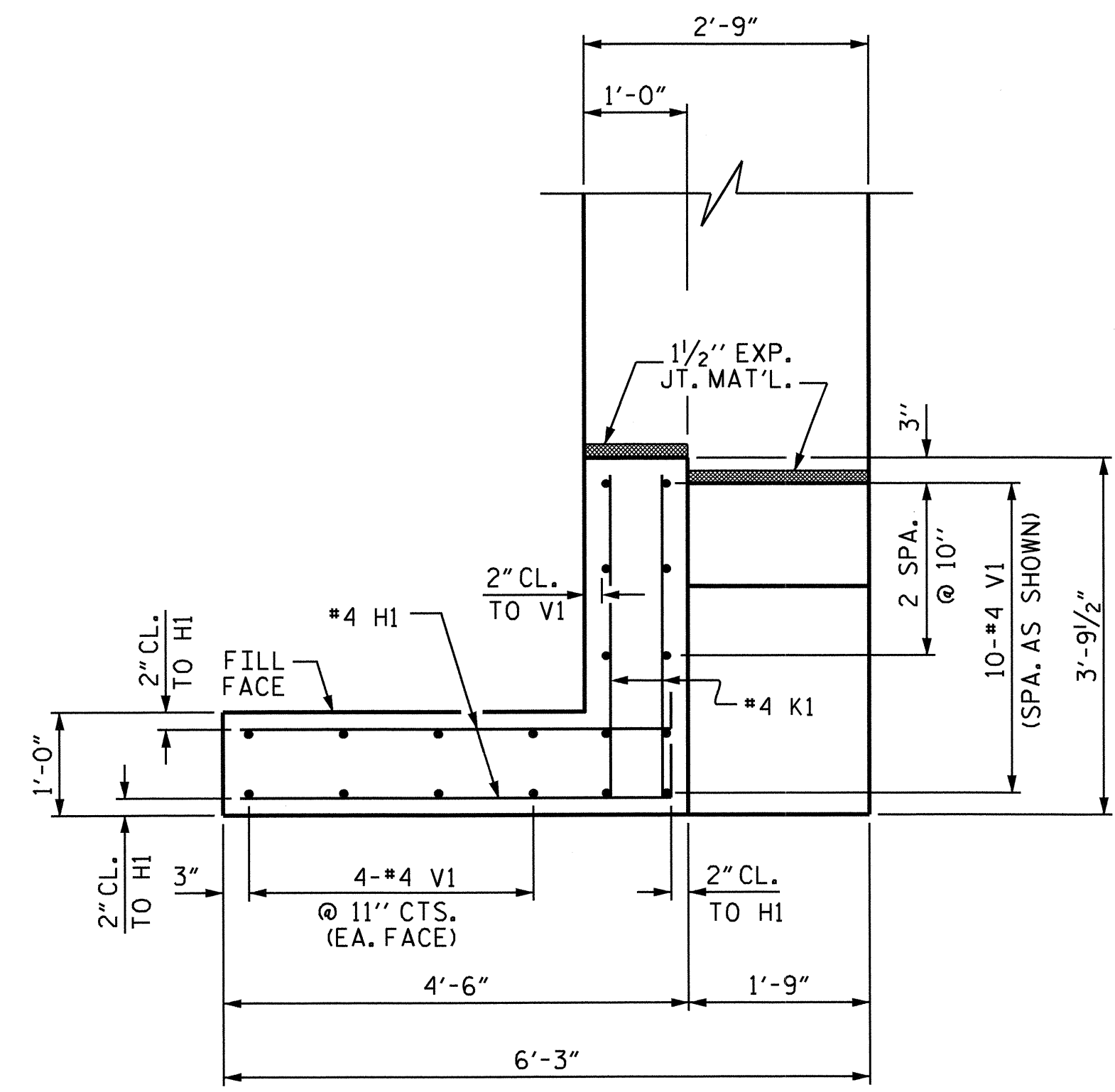
ELEVATION

PROJECT NO. B-4673
WAYNE COUNTY
 STATION: 18+49.00 -L-
 SHEET 1 OF 2

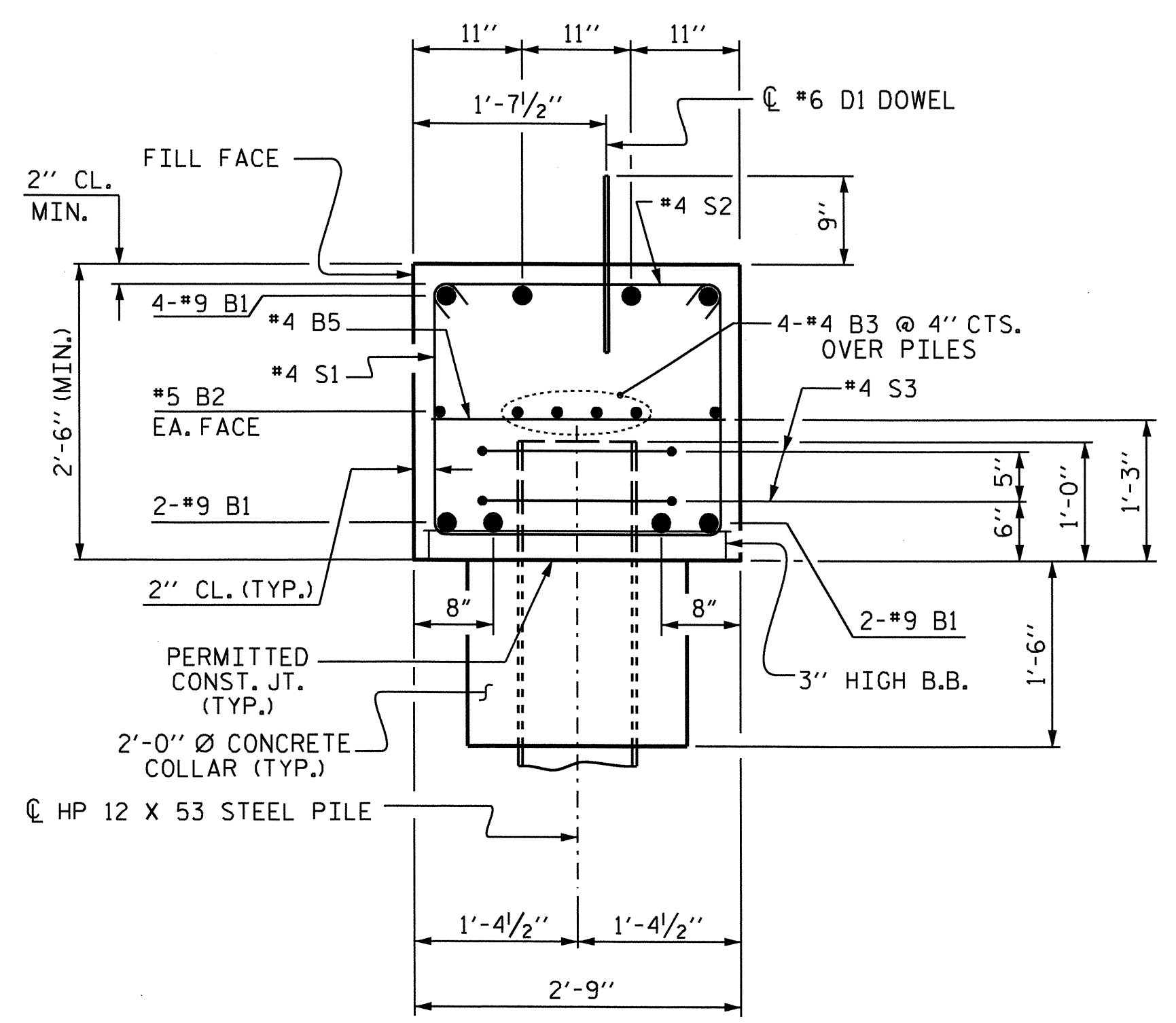
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-20
SUBSTRUCTURE END BENT 2						
REVISIONS						TOTAL SHEETS 24
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



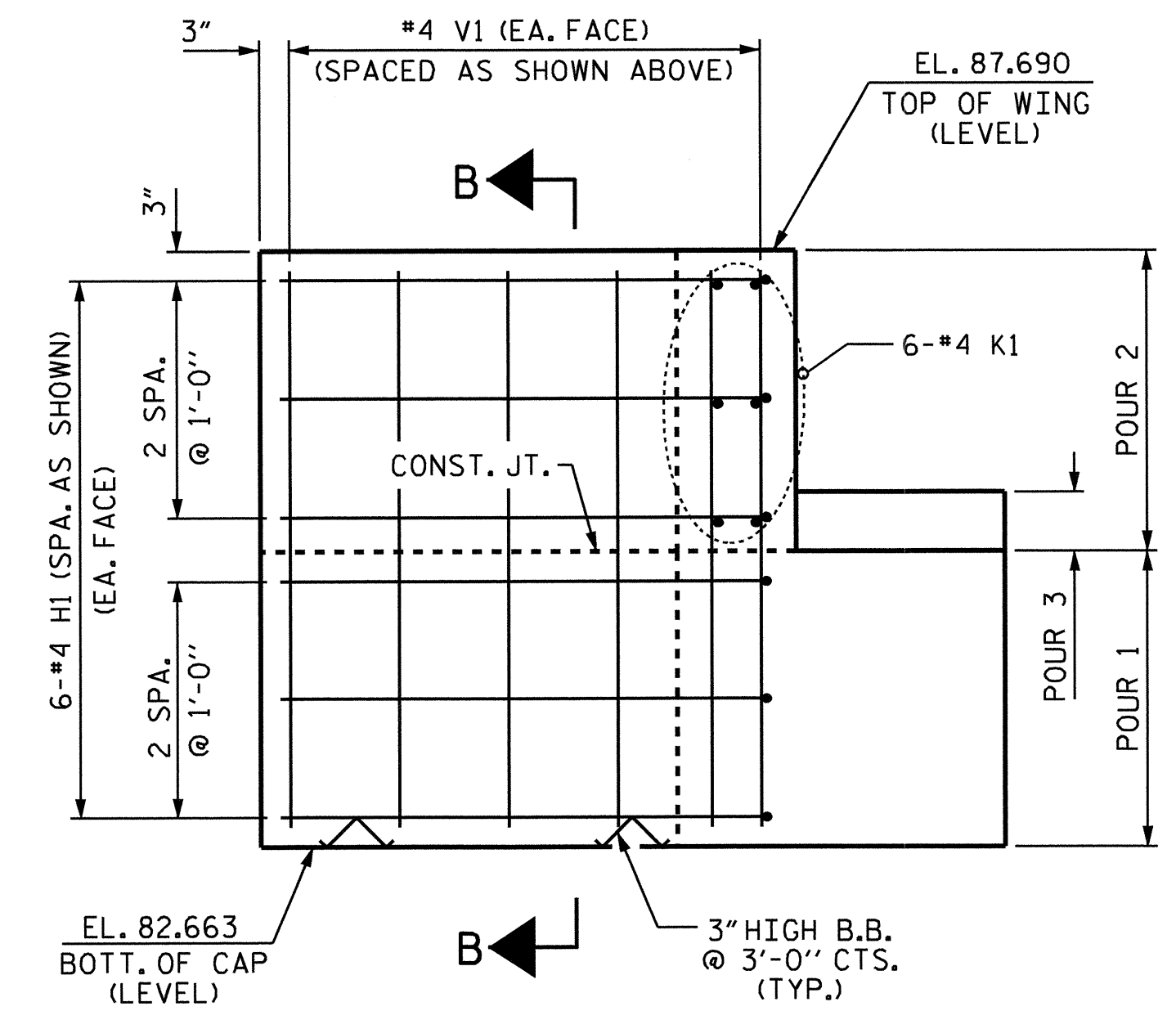
DRAWN BY: J.L. WALTON DATE: 4-12-10
 CHECKED BY: W.S. ARAFAT DATE: 5-11-10



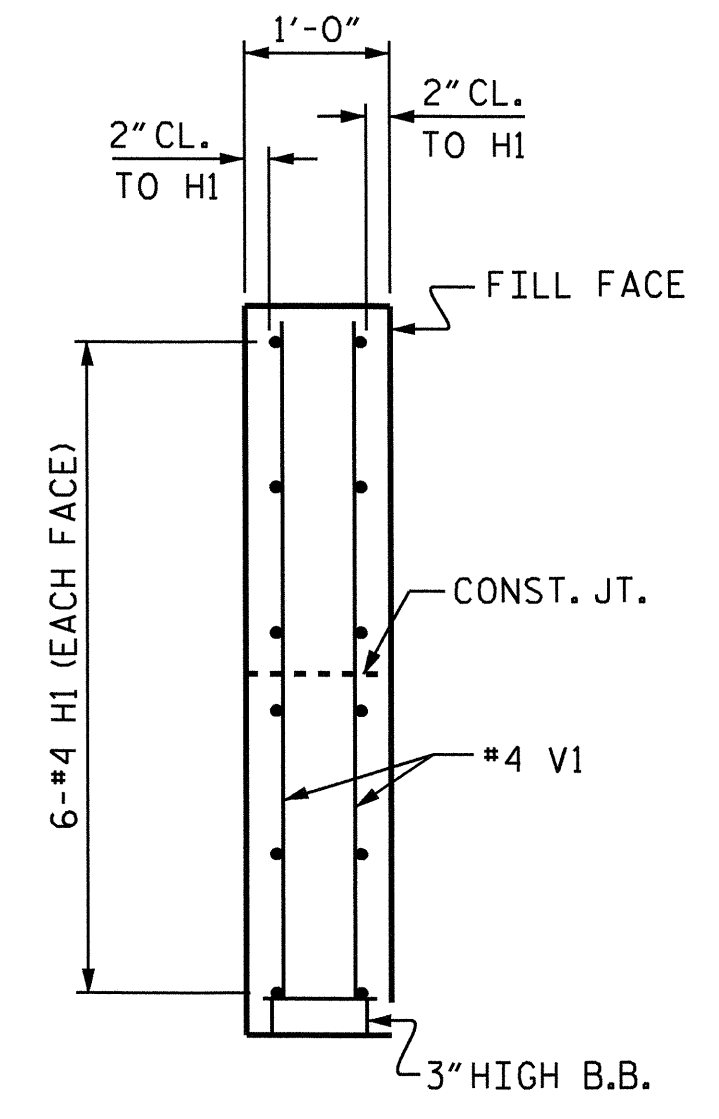
PLAN OF WING - W1
(WING W2 SIMILAR)



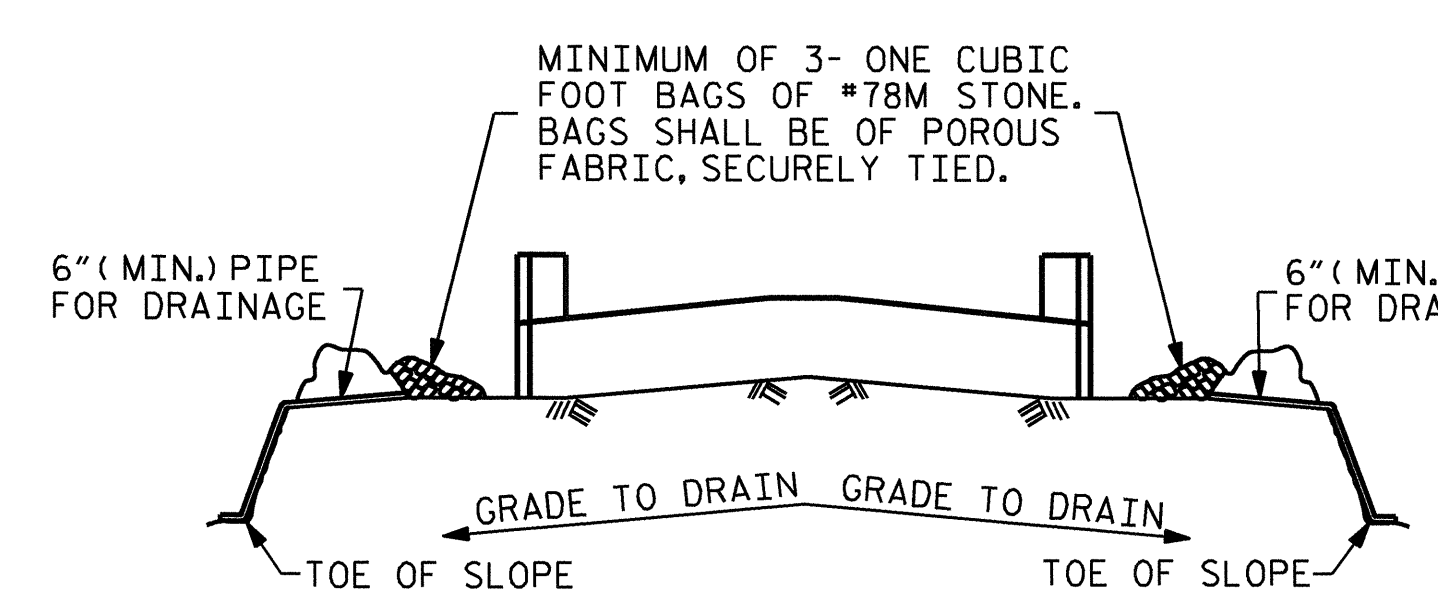
SECTION A-A



ELEVATION OF WING - W1
(WING W2 SIMILAR)



SECTION B-B



MINIMUM OF 3- ONE CUBIC FOOT BAGS OF #78M STONE. BAGS SHALL BE OF POROUS FABRIC, SECURELY TIED.

6" (MIN.) PIPE FOR DRAINAGE

6" (MIN.) PIPE FOR DRAINAGE

GRADE TO DRAIN

GRADE TO DRAIN

TOE OF SLOPE

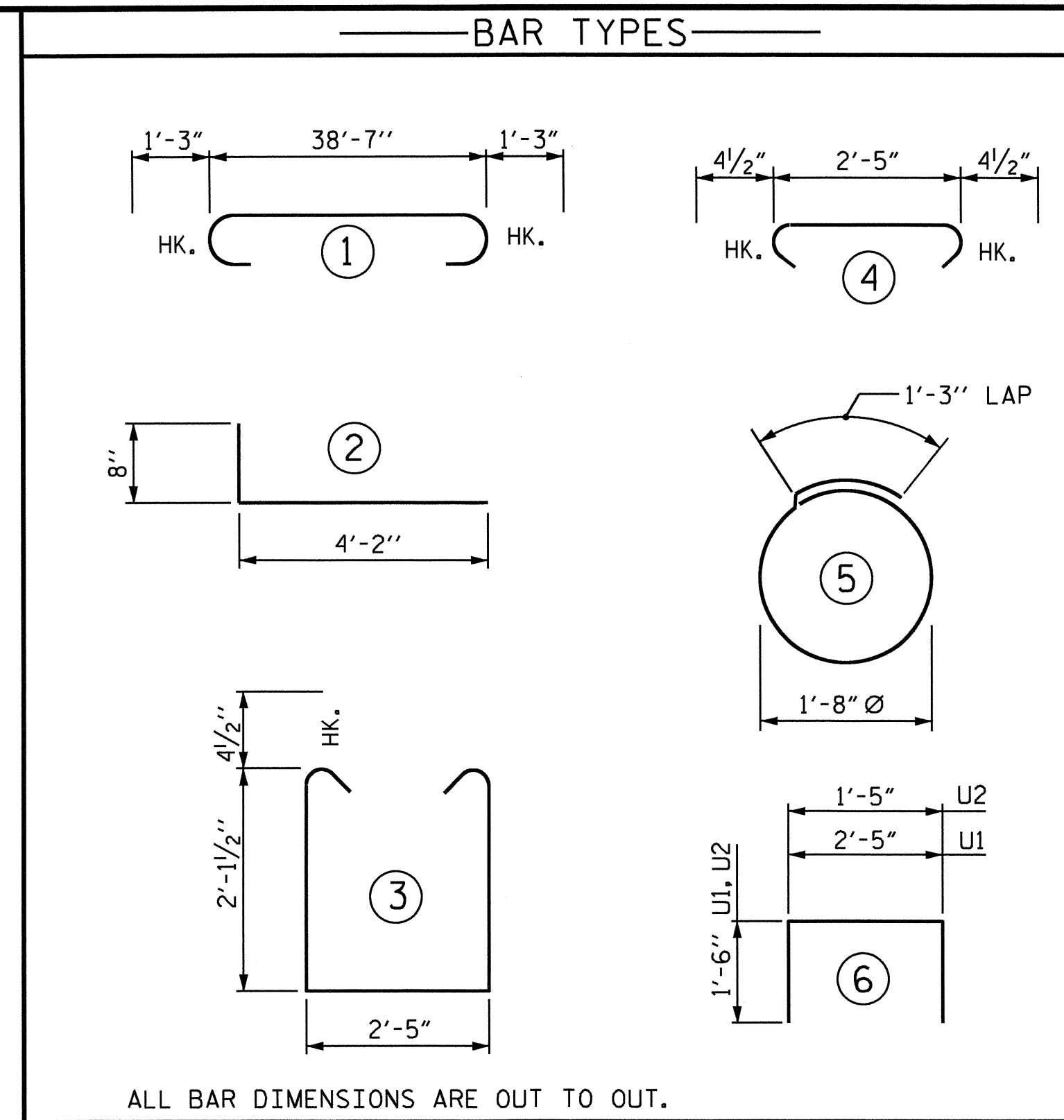
TOE OF SLOPE

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.

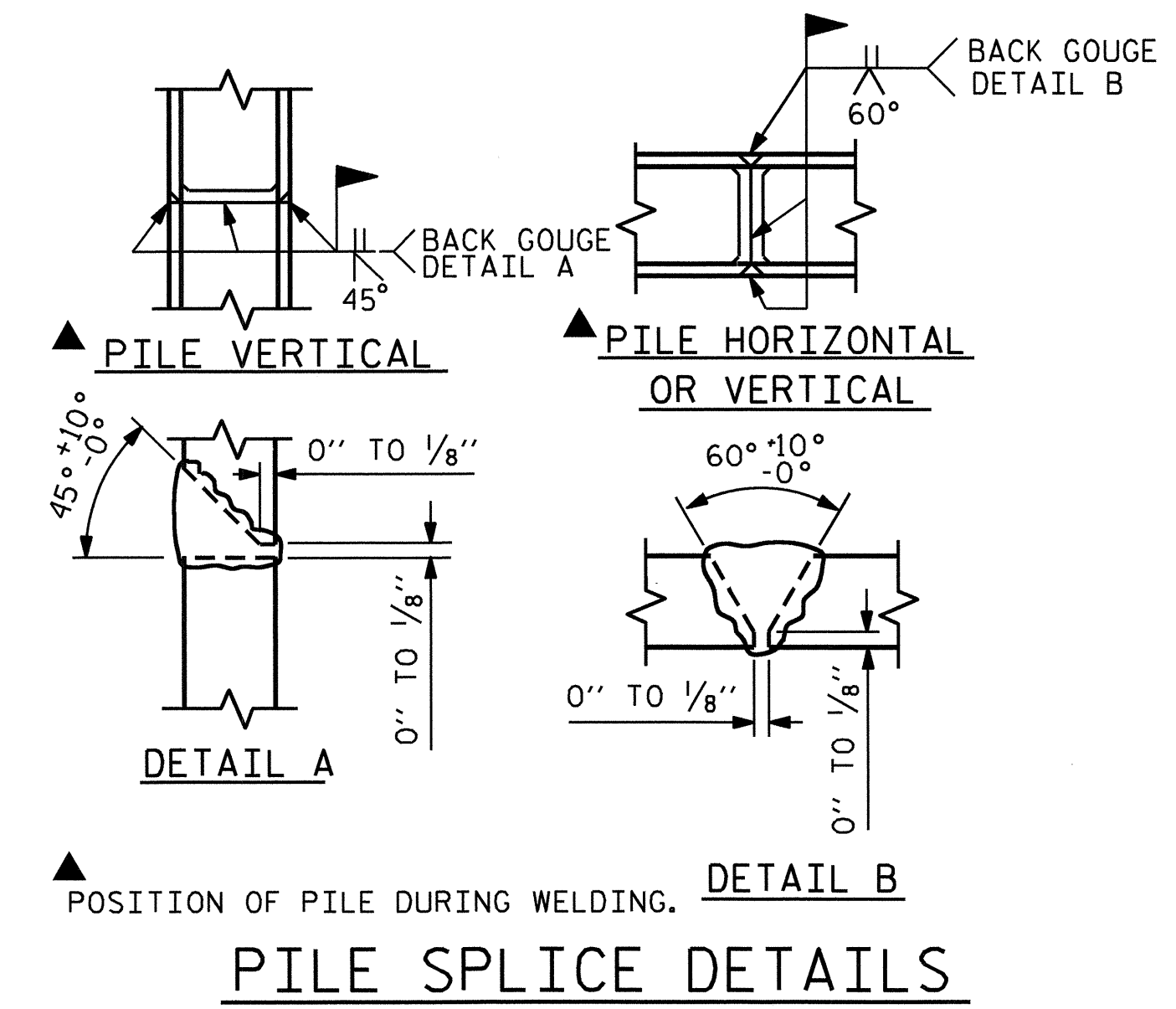
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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



ALL BAR DIMENSIONS ARE OUT TO OUT.



PILE SPLICE DETAILS

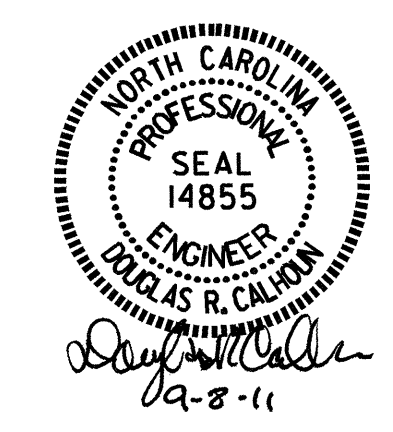
BILL OF MATERIAL						
END BENT 2						
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT		
B1	#9	1	41'-1"	1117		
B2	#5	STR	38'-8"	81		
B3	#4	STR	20'-7"	110		
B4	#4	STR	13'-9"	37		
B5	#4	STR	2'-5"	16		
D1	#6	STR	1'-6"	50		
H1	#4	2	4'-10"	77		
K1	#4	STR	3'-1"	25		
S1	#4	3	7'-5"	208		
S2	#4	4	3'-2"	89		
S3	#4	5	6'-6"	43		
U1	#4	6	5'-5"	36		
U2	#4	6	4'-5"	12		
V1	#4	STR	4'-8"	112		
REINFORCING STEEL				LBS.	2013	
CLASS A CONCRETE BREAKDOWN						
POUR 1 (CAP, LOWER PART OF WINGS & CONCRETE COLLARS)				C.Y.	12.3	
POUR 2 (UPPER PART OF WINGS)				C.Y.	1.4	
POUR 3 (LATERAL GUIDES)				C.Y.	0.1	
TOTAL				C.Y.	13.8	
HP 12 X 53 STEEL PILES :						
NO. : 5				LIN. FT. :	225	
PILE REDRIVES				EACH :	3	

PROJECT NO. B-4673
WAYNE COUNTY
STATION: 18+49.00 -L-

SHEET 2 OF 2

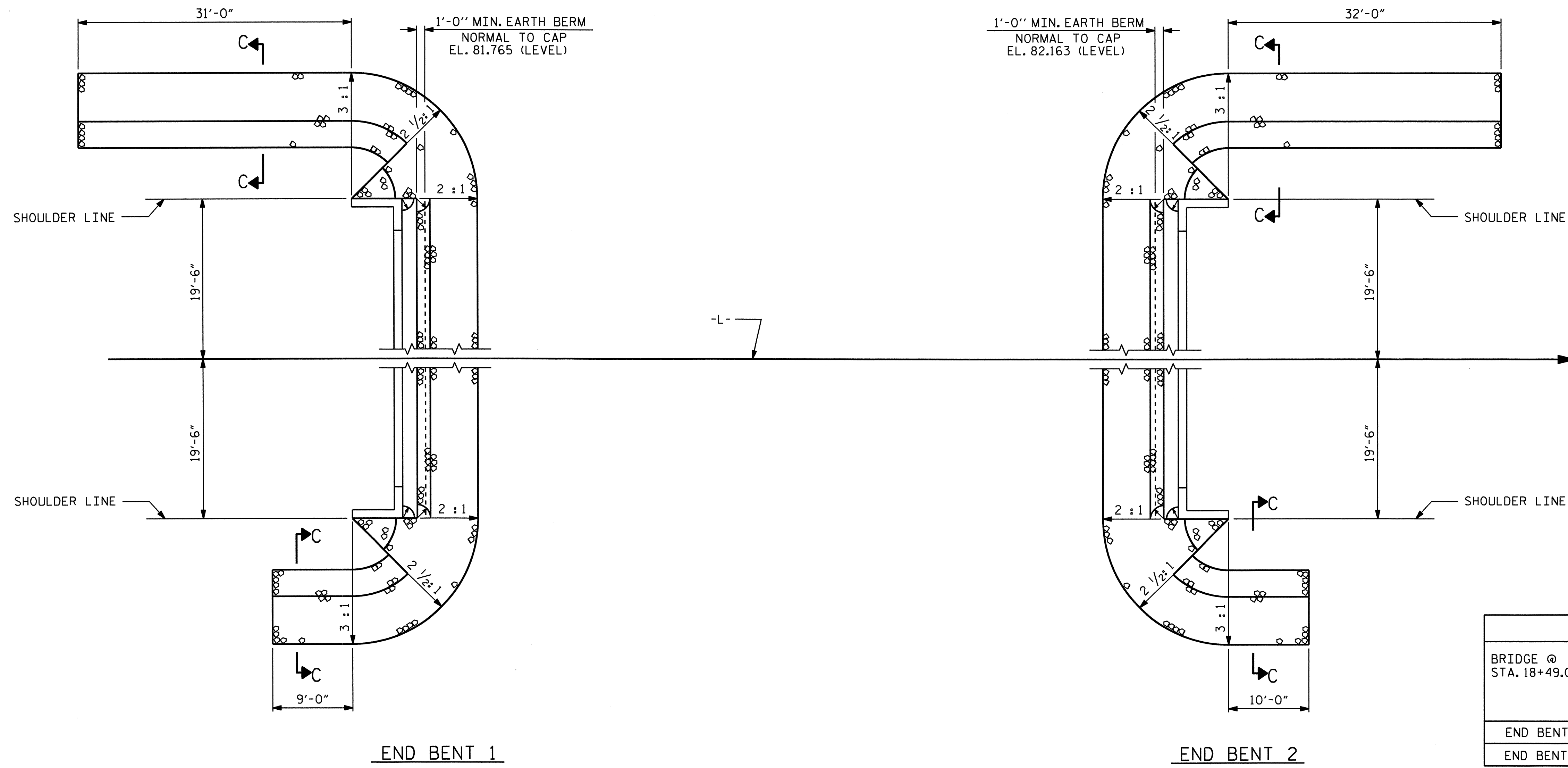
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2



REVISIONS						SHEET NO. S-21
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 24
2			4			

DRAWN BY: J.L. WALTON DATE: 4-12-10
CHECKED BY: W.S. ARAFAT DATE: 5-11-10

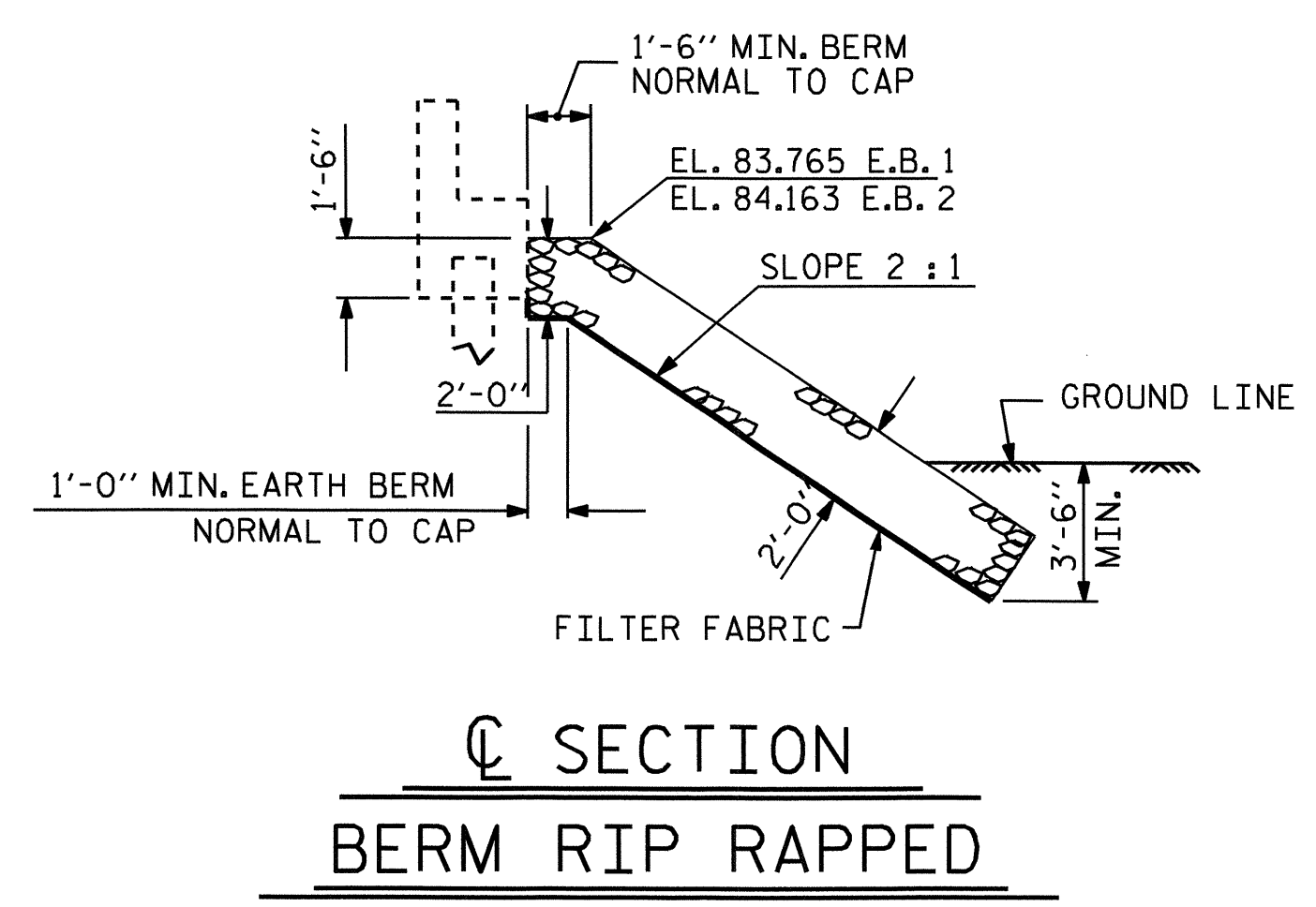


END BENT 1

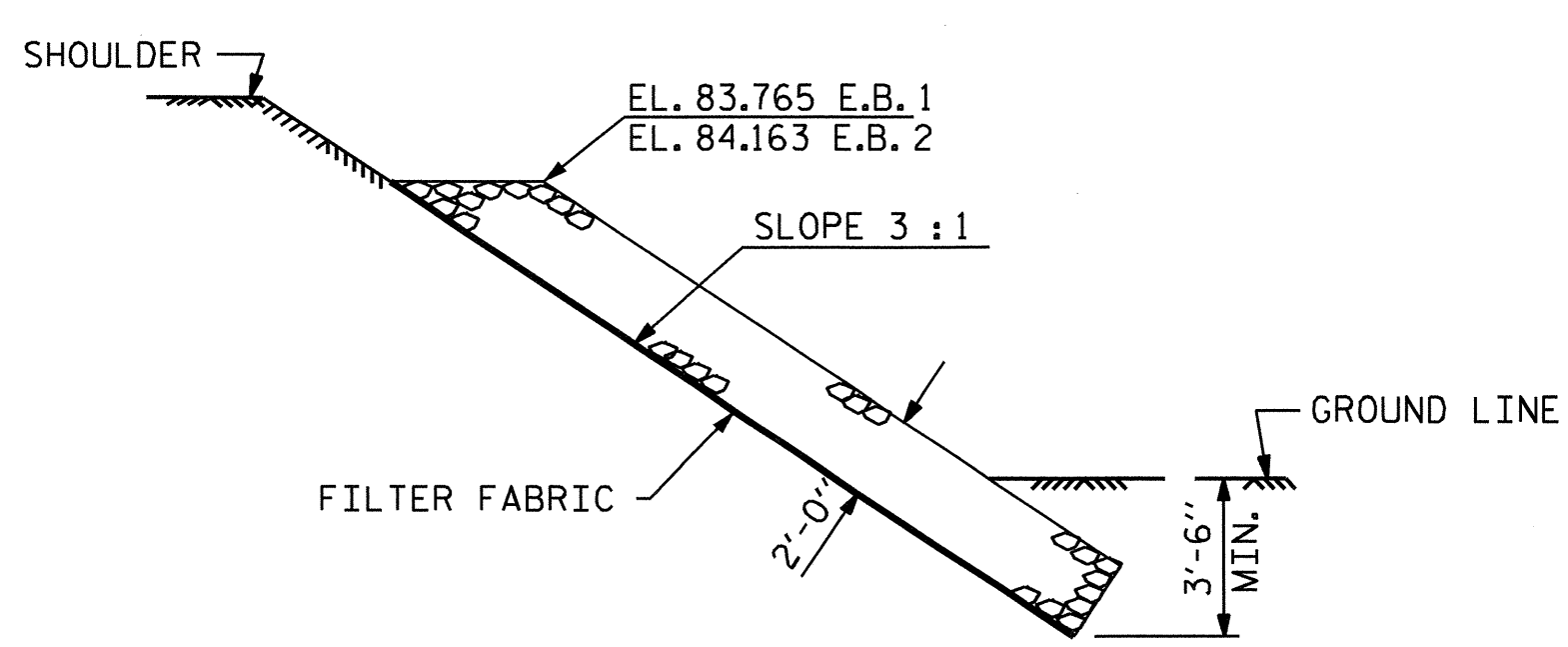
END BENT 2

PLAN

ESTIMATED QUANTITIES		
BRIDGE @ STA. 18+49.00 -L-	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	113	126
END BENT 2	122	136



SECTION C-C
BERM RIP RAPPED



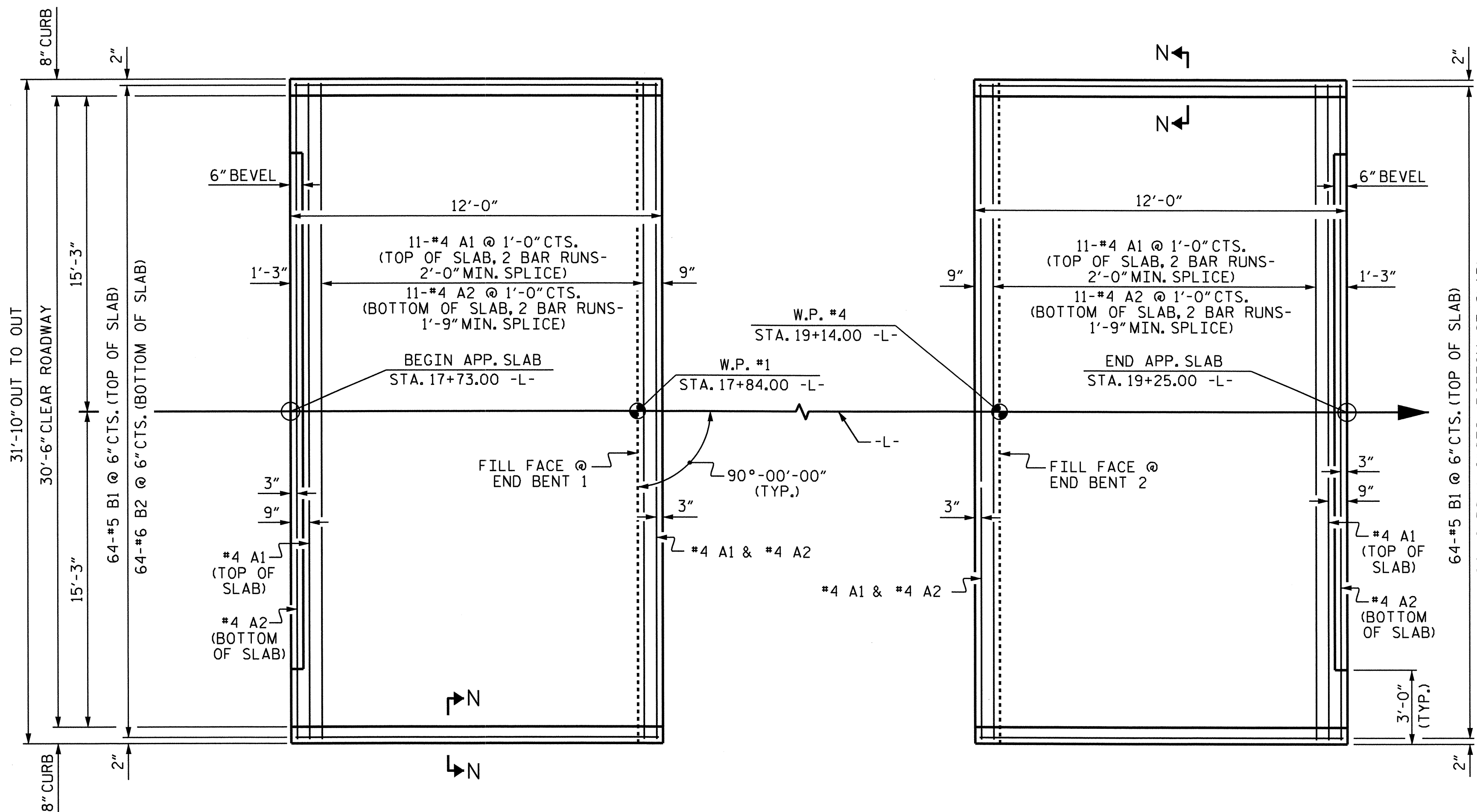
SECTION C-C

PROJECT NO. B-4673
WAYNE COUNTY
 STATION: 18+49.00 -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-22					TOTAL SHEETS 24

ASSEMBLED BY : J.L. WALTON DATE : 5-21-09
 CHECKED BY : K.P. SEDA DATE : 3-15-11
 DRAWN BY : FCJ 2/88 REV. 8/16/99 RWW/LES
 CHECKED BY : ARB 8/88 REV. 10/17/00 RWW/LES
 REV. 5/1/06R TLA/GM



PLAN @ END BENT 1

PLAN @ END BENT 2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

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.

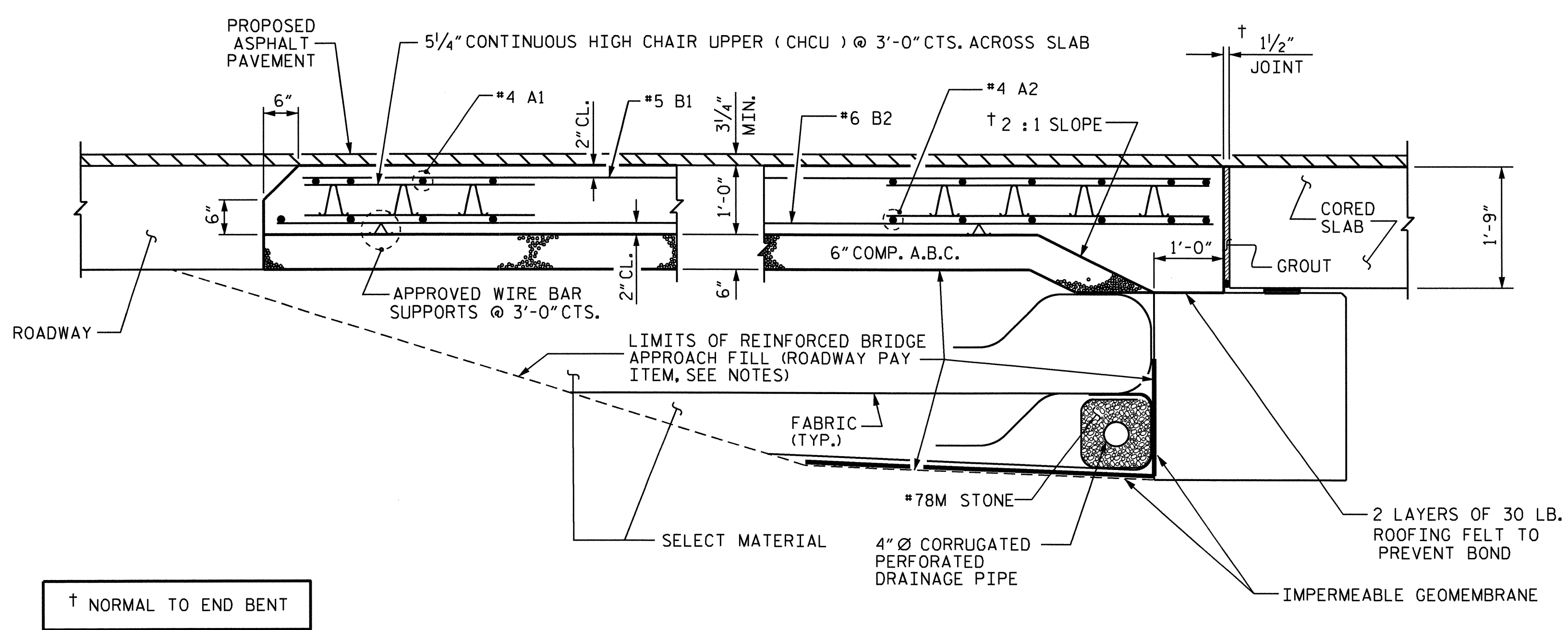
THE JOINT AT THE END BENT SHALL BE GROUTED AS SOON AS PRACTICAL AFTER THE CONSTRUCTION OF THE APPROACH SLABS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

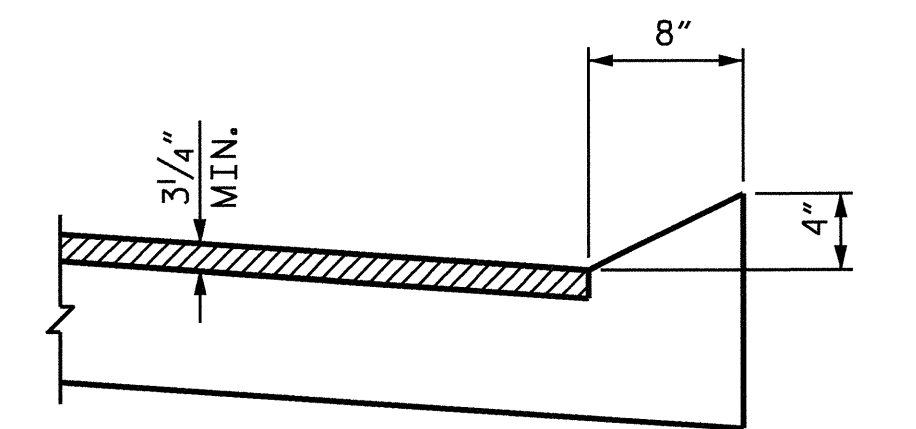
BILL OF MATERIAL

FOR ONE APPROACH SLAB (2 REQ'D)

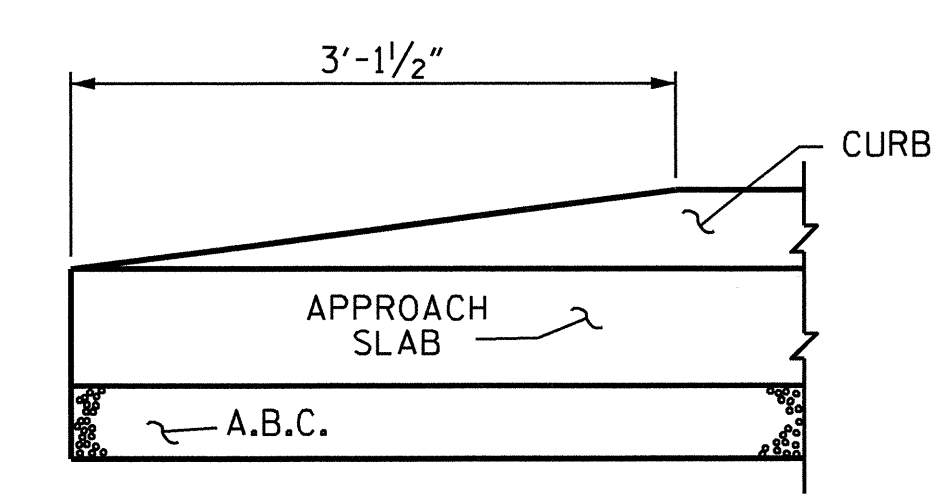
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	26	#4	STR	16'-9"	291
A2	26	#4	STR	16'-8"	289
*B1	64	#5	STR	11'-3"	751
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1410
*EPOXY COATED REINFORCING STEEL				LBS.	1042
CLASS AA CONCRETE				C. Y.	15.9



SECTION THRU SLAB



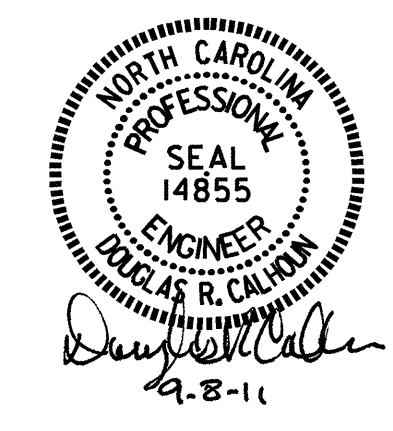
SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER (OMIT TAPER WHEN SHOULDER BERM GUTTER IS REQUIRED) CURB DETAILS

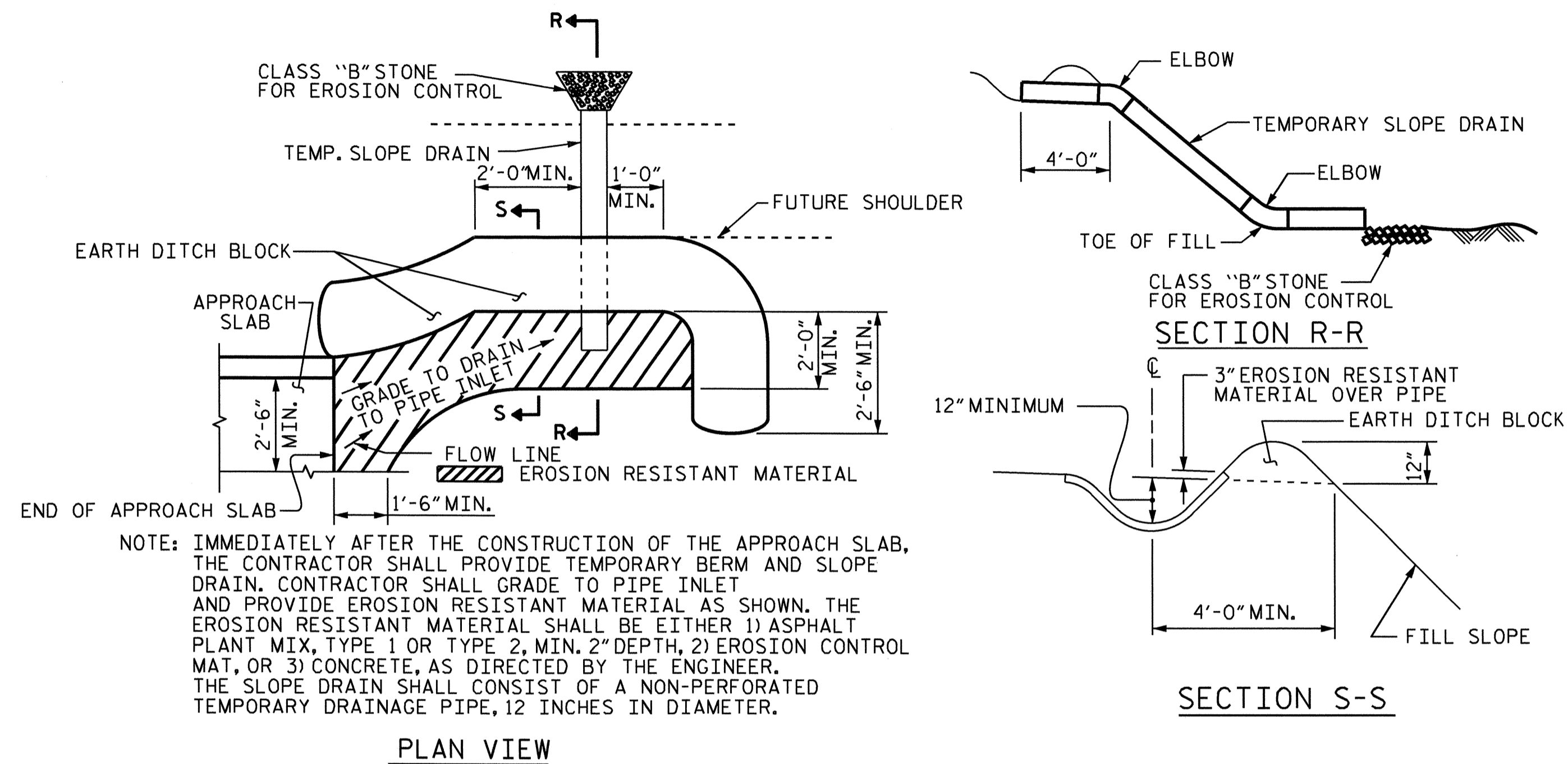
PROJECT NO. B-4673
 WAYNE COUNTY
 STATION: 18+49.00 -L-
 SHEET 1 OF 2

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



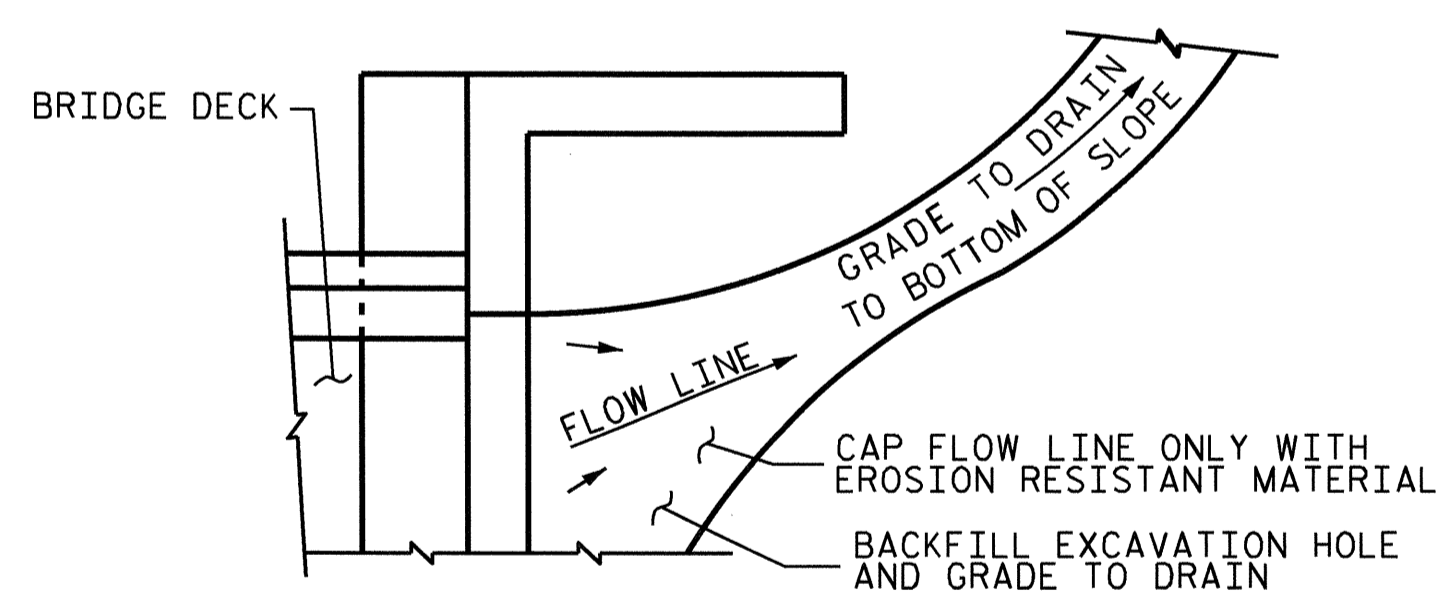
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS 24
2			4			

ASSEMBLED BY : J.L. WALTON	DATE : 6-30-10
CHECKED BY : K.P. SEDAI	DATE : 3-11-11
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



TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



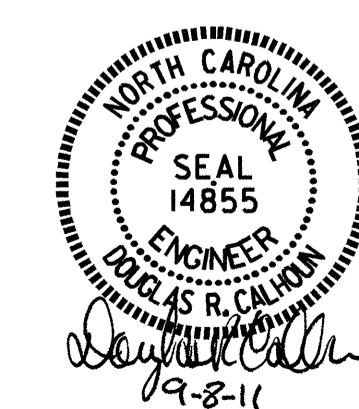
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

PROJECT NO. B-4673
 WAYNE COUNTY
 STATION: 18+49.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
STANDARD						S-24
BRIDGE APPROACH SLAB DETAILS						TOTAL SHEETS
REVISIONS						24
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



ASSEMBLED BY : J.L. WALTON	DATE : 6-30-10
CHECKED BY : K.P. SEDAI	DATE : 3-11-11
DRAWN BY : FCJ 11/88	REV. 10/17/00 RWW/LES
CHECKED BY : ARB 11/88	REV. 5/1/03 RWW/JTE
	REV. 5/1/06RR MAA/KNM

