

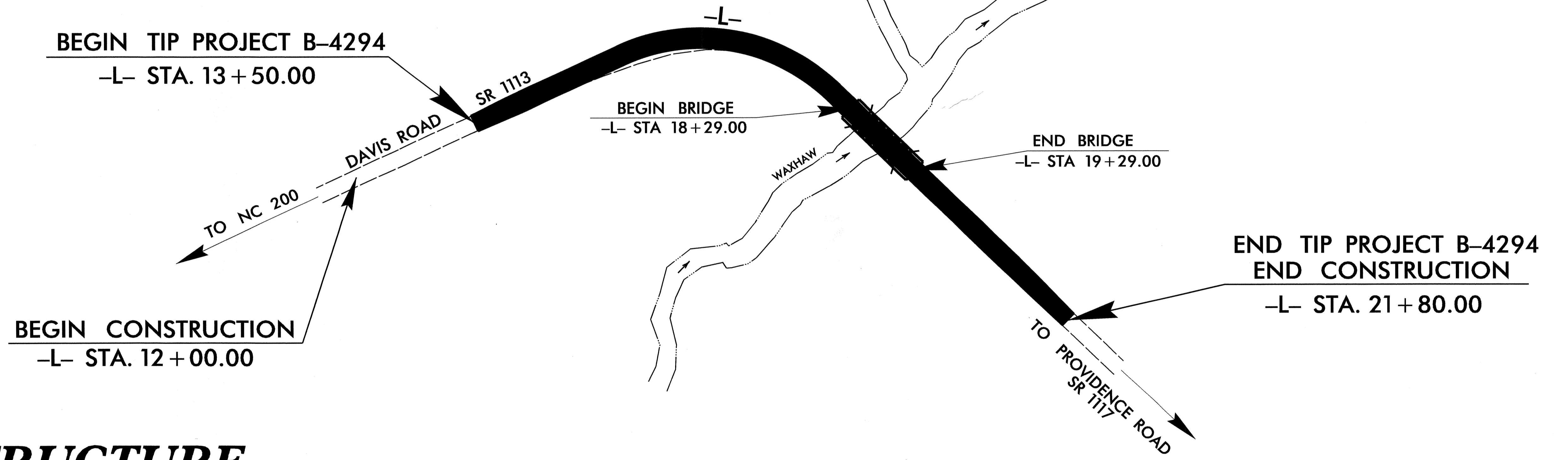
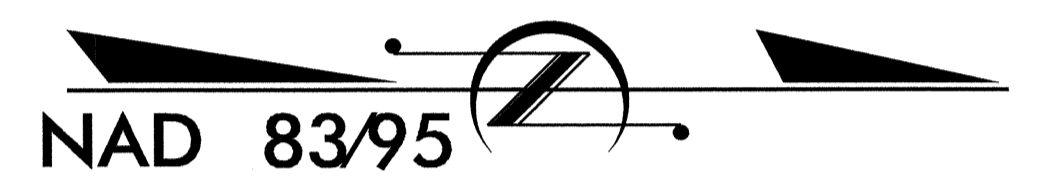
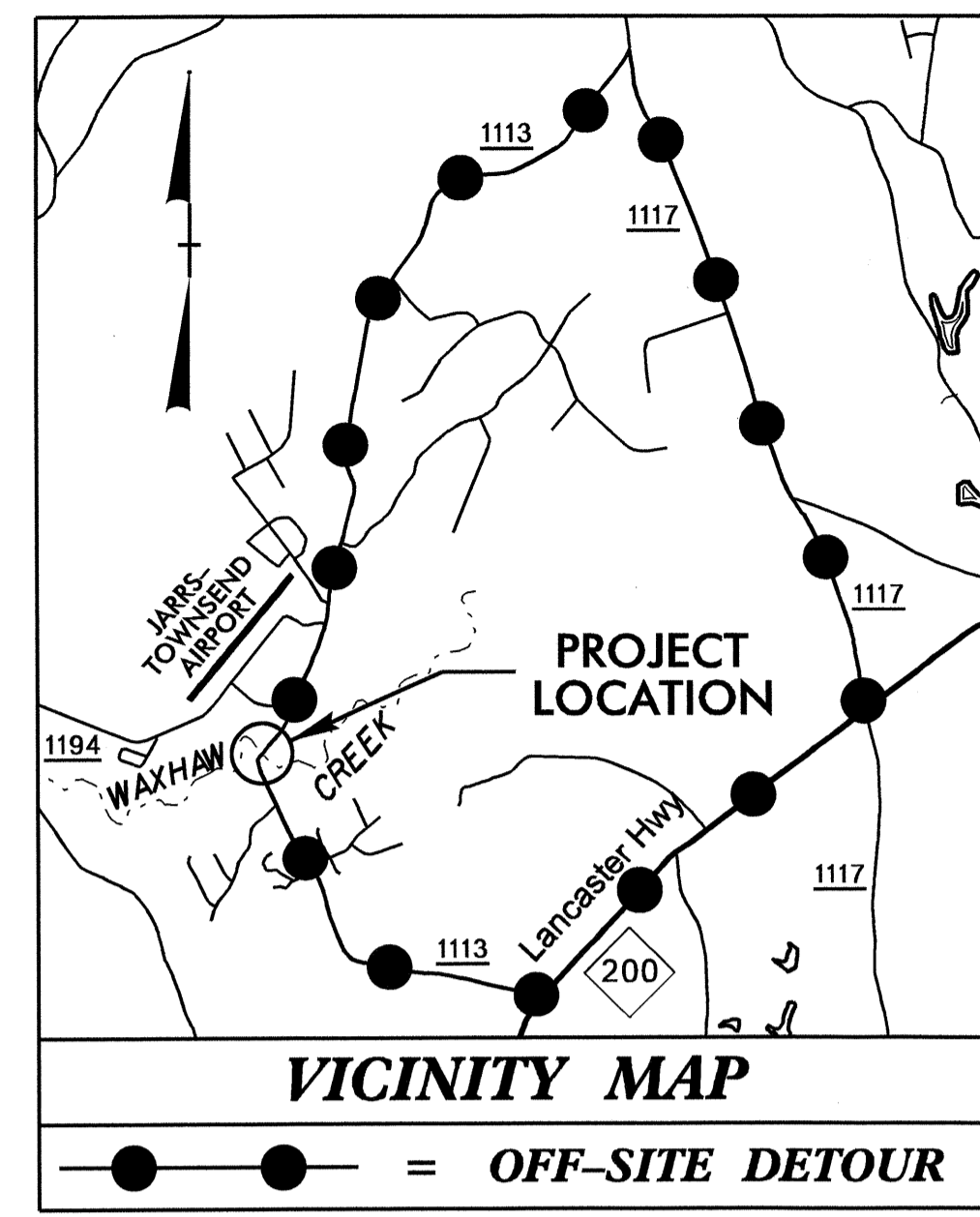
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4294		
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33632.1.1	BRZ-1113(3)	P.E.	
33632.2.1	BRZ-1113(3)	RW, UTIL.	
33632.3.1	BRZ-1113(3)	CONSTR.	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**UNION COUNTY**

LOCATION: BRIDGE NO. 184 OVER WAXHAW CREEK AND APPROACHES ON SR 1113 (DAVIS ROAD)

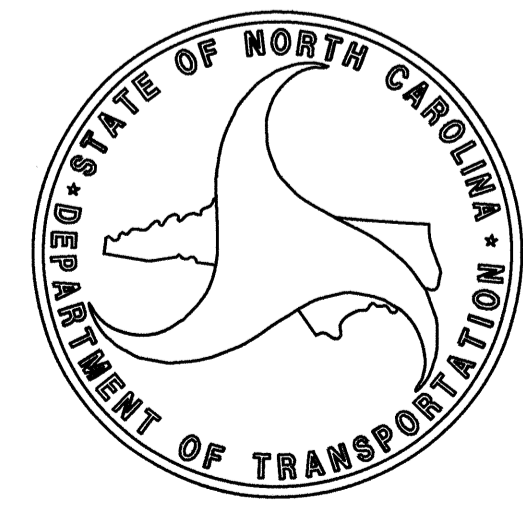
TYPE OF WORK: GRADING, PAVING, DRAINAGE, & STRUCTURE



**STRUCTURE**

\*\* DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.



**DESIGN DATA**

ADT 2008 =	1,790
ADT 2025 =	2,600
DHV =	10 %
D =	60 %
T =	4 %*
**V =	30 MPH
* (TTST 1% + DUAL 3%)	
FUNC CLASS=LOCAL RURAL	

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJ. B-4294 =	0.138 mile
LENGTH STRUCTURE TIP PROJ. B-4294 =	0.019 mile
TOTAL LENGTH OF TIP PROJ. B-4294 =	0.157 mile

Prepared in the Office of:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

LETTING DATE:  
JANUARY 17, 2012

B. C. HUNT, P.E.  
PROJECT ENGINEER

V. A. PATEL, P.E.  
PROJECT DESIGN ENGINEER

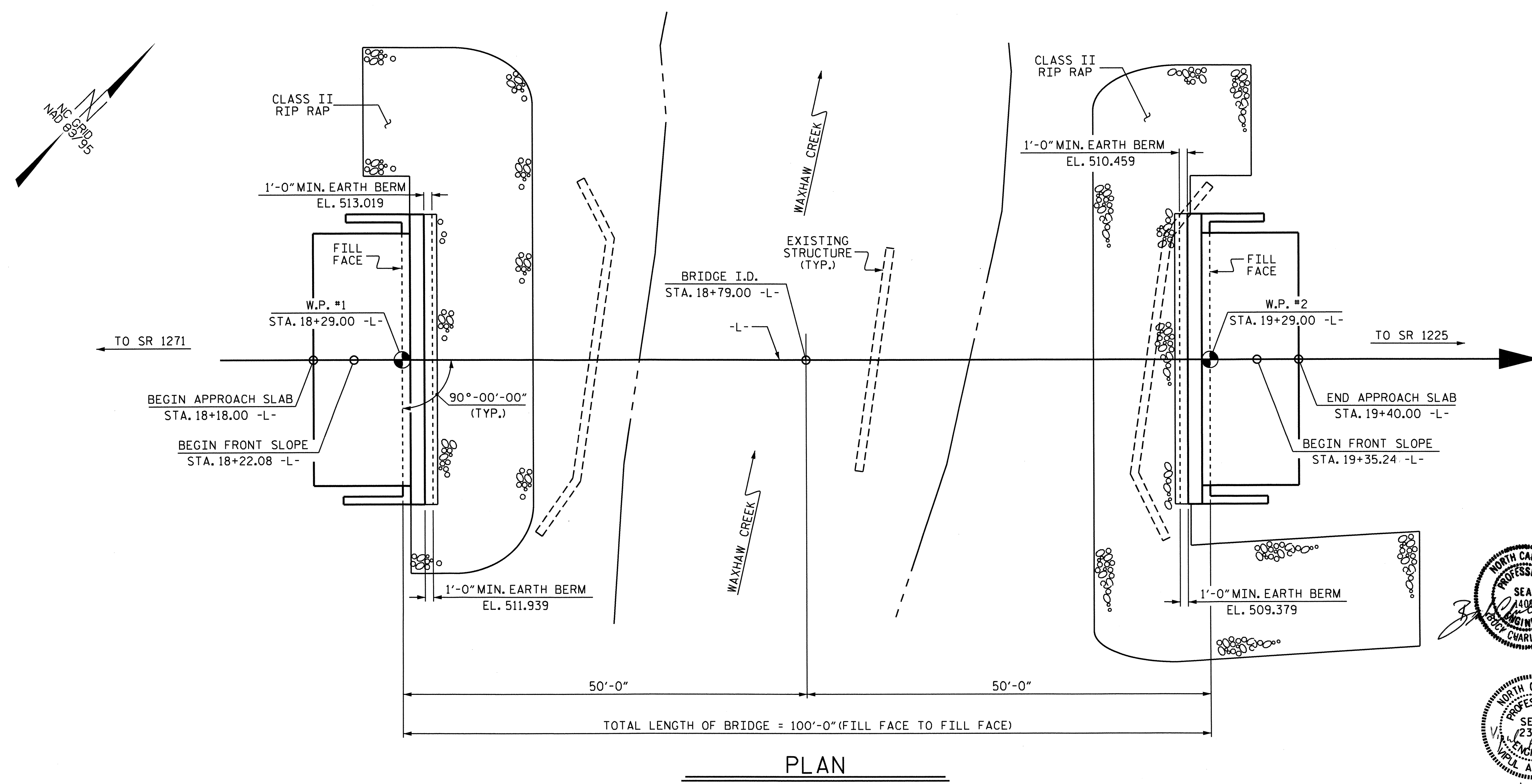
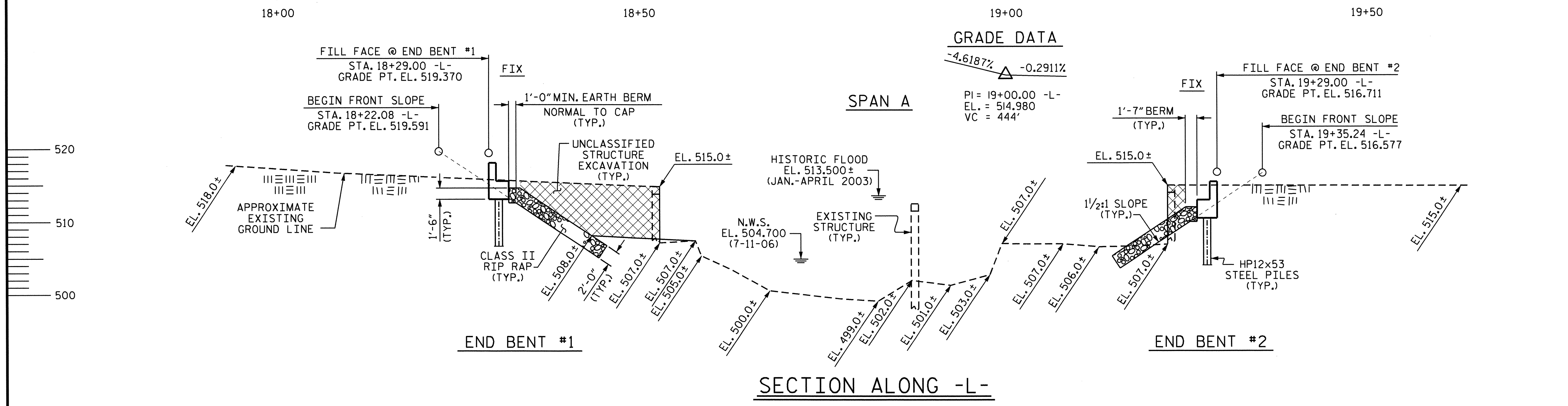
STRUCTURE DESIGN UNIT

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

TIP PROJECT: B-4294

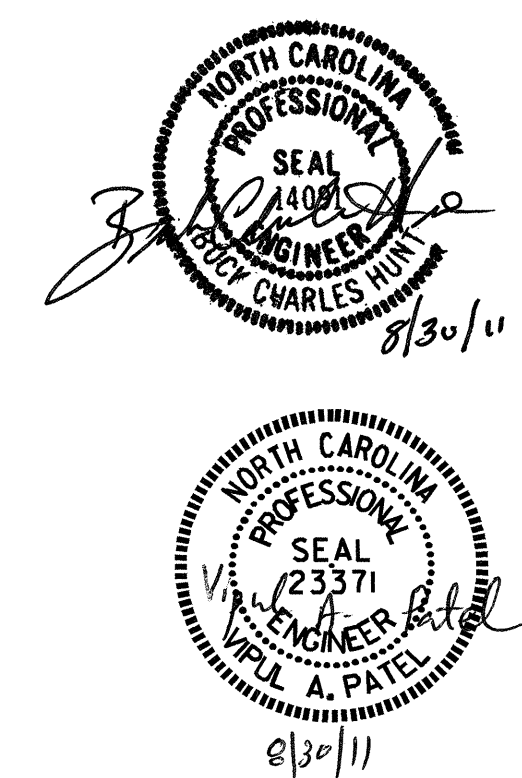
CONTRACT: C202725

26-OCT-2011 07:57  
\$\$\$\$\$DCN\$\$\$\$\$  
VDPTEL



I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. B-4294  
 UNION COUNTY  
 STATION: 18+79.00 -L-  
 SHEET 1 OF 3    REPLACES BRIDGE #184



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**  
 FOR BRIDGE OVER  
 WAXHAW CREEK ON  
 SR 1113 (DAVIS RD.)  
 BETWEEN  
 SR 1271 AND SR 1225

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

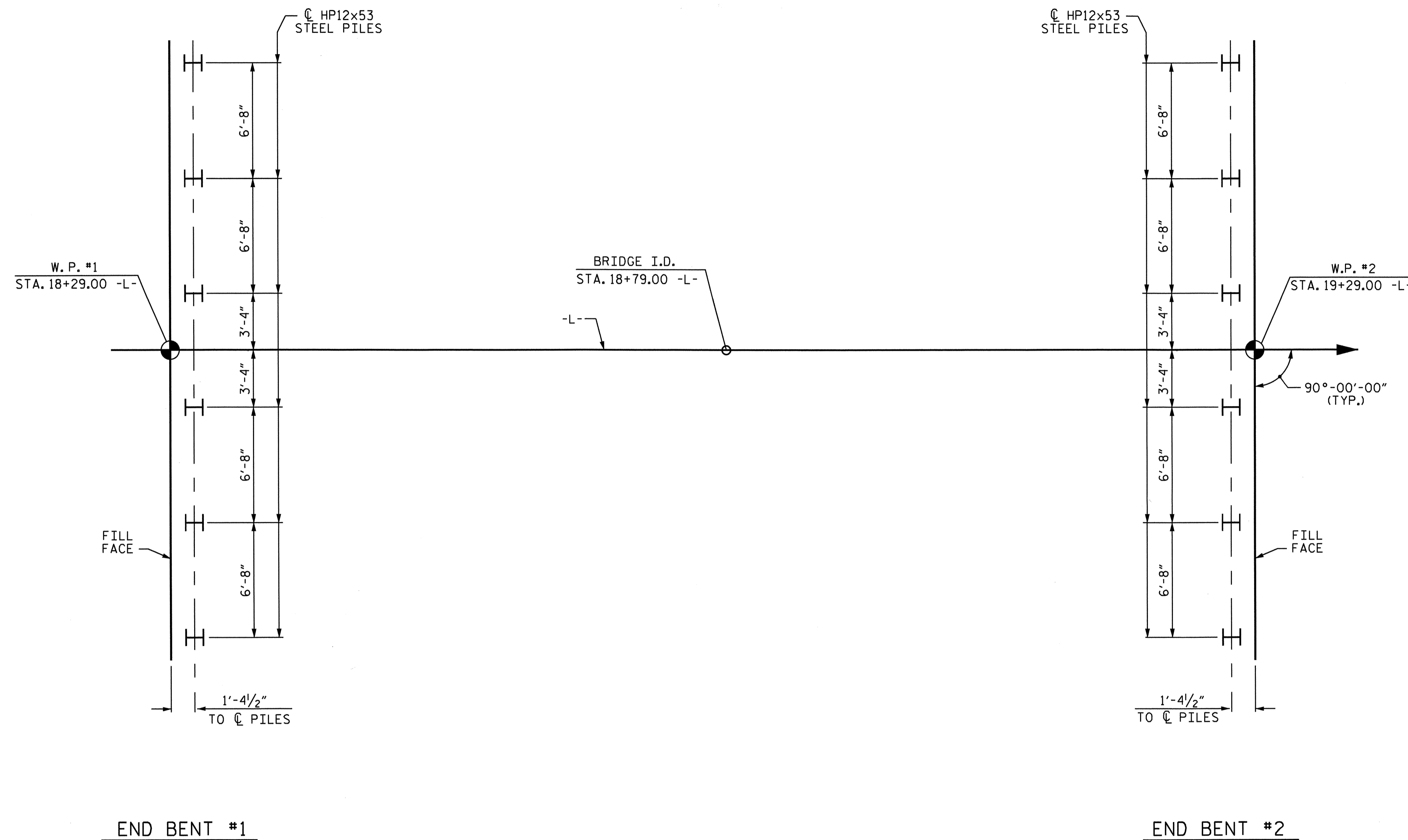
DRAWN BY : R. G. EMERSON    DATE : 06/09  
 CHECKED BY : J. P. ADAMS    DATE : 06/09

30-AUG-2011 08:25  
 R:\Structures\Plans\B-4294.SD.GD.dgn  
 vpatel

NOTES

FOR PILES, SEE SPECIAL PROVISIONS.

PILES AT END BENT #1 AND END BENT #2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 105 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 175 TONS PER PILE.



FOUNDATION LAYOUT

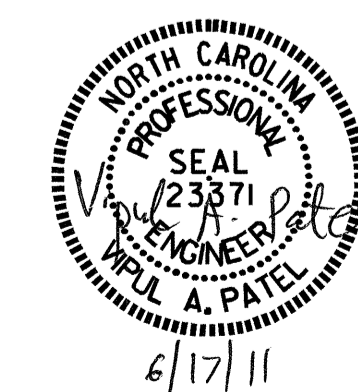
DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE. ALL PILES ARE HP12X53

PROJECT NO. B-4294  
UNION COUNTY  
 STATION: 18+79.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

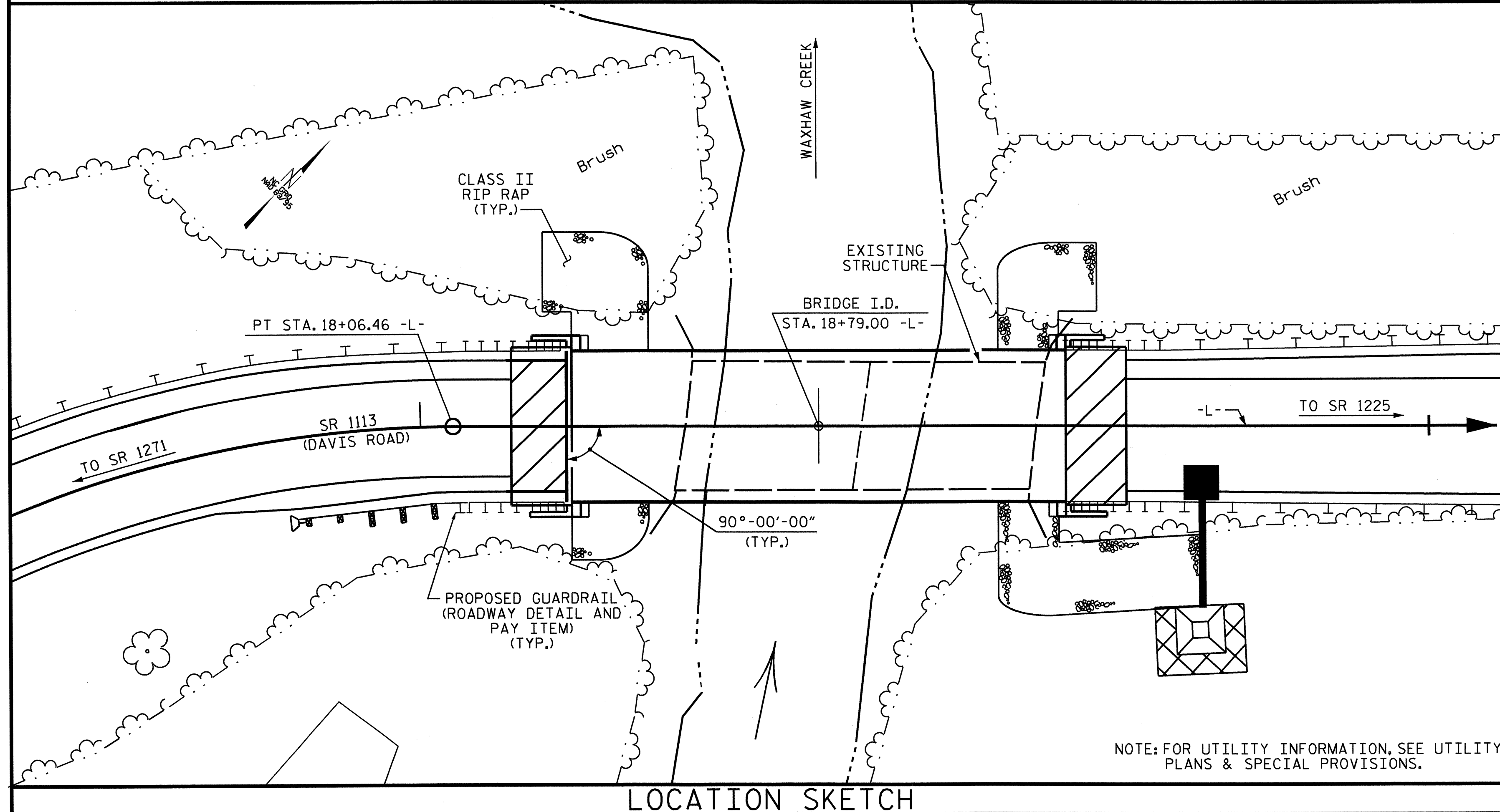
GENERAL DRAWING  
 FOR BRIDGE OVER  
 WAXHAW CREEK ON  
 SR 1113 (DAVIS RD.)  
 BETWEEN  
 SR 1271 AND SR 1225



DRAWN BY : R. G. EMERSON DATE : 06/09  
 CHECKED BY : J. P. ADAMS DATE : 06/09

14-JUN-2011 11:49  
 Q:\Structures\Plans\B-4294.SD.GD.dgn  
 klayne

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



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

LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HL 93 OR ALTERNATE LOADING.

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

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

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

THE EXISTING STRUCTURE CONSISTING OF 2 SPANS @ 35'-3" WITH A TIMBER DECK ON 10 LINES OF W16X36 I-BEAMS @ 2'-7" CENTERS WITH A CLEAR ROADWAY WIDTH OF 24'-0" ON A SUBSTRUCTURE CONSISTING OF END BENTS AND AN INTERIOR BENT (CRUTCH); TIMBER CAP, PILES, AND TIMBER BULKHEADS; AND LOCATED AT PROPOSED STRUCTURE SITE, SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

NO SAWING OF ANY TIMBER MEMBER ON THE EXISTING BRIDGE IS PERMITTED.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 25 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.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 18+79.00 -L-."

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. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

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 VERTICAL CONCRETE BARRIER RAIL, SEE SPECIAL PROVISIONS.

FOR CURING CONCRETE, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP12x53 STEEL PILES		VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 3'-3" PRESTRESSED CONCRETE BOX BEAMS	
						NO.	LIN. FT.					LIN. FT.	TONS
	LUMP SUM	LUMP SUM	CU. YDS.	LUMP SUM	LBS.			195.5			LUMP SUM	10	977.5
SUPERSTRUCTURE				LUMP SUM									
END BENT #1			17.2		2538	6	150		190	210			
END BENT #2			17.2		2538	6	210		270	300			
TOTAL	LUMP SUM	LUMP SUM	34.4	LUMP SUM	5076	12	360	195.5	460	510	LUMP SUM	10	977.5

HYDRAULIC DATA

DESIGN DISCHARGE	= 3190 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 25 YR.
DESIGN HIGH WATER ELEVATION	= 512.300
DRAINAGE AREA	= 19.1 SQ.MI.
BASIC DISCHARGE (Q100)	= 4755 C.F.S.
BASIC HIGH WATER ELEVATION	= 514.600

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 4600 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 100± YR.
OVERTOPPING FLOOD ELEVATION	= 514.200

PROJECT NO. B-4294  
 UNION COUNTY  
 STATION: 18+79.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL DRAWING  
 FOR BRIDGE OVER  
 WAXHAW CREEK ON  
 SR 1113 (DAVIS RD.)  
 BETWEEN  
 SR 1271 AND SR 1225



6/17/11

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

DRAWN BY: R. G. EMERSON DATE: 06/09  
 CHECKED BY: J. P. ADAMS DATE: 06/09

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

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.114	--	1.75	0.273	1.32	A	EL	48.125	0.49	1.38	A	EL	4.813	0.80	0.273	1.11	A	EL	48.125		
	HL-93(0pr)	N/A	--	1.716	--	1.35	0.273	1.72	A	EL	48.125	0.49	1.79	A	EL	4.813	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.542	55.517	1.75	0.273	1.83	A	EL	48.125	0.49	1.86	A	EL	4.813	0.80	0.273	1.54	A	EL	48.125		
	HS-20(0pr)	36.000	--	2.374	85.481	1.35	0.273	2.37	A	EL	48.125	0.49	2.41	A	EL	4.813	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.644	49.195	1.4	0.273	5.41	A	EL	48.125	0.49	5.72	A	EL	4.813	0.80	0.273	3.64	A	EL	48.125	
		SNGARBS2	20.000	--	2.645	52.891	1.4	0.273	3.93	A	EL	48.125	0.49	4	A	EL	4.813	0.80	0.273	2.64	A	EL	48.125	
		SNAGRIS2	22.000	--	2.476	54.467	1.4	0.273	3.68	A	EL	48.125	0.49	3.69	A	EL	4.813	0.80	0.273	2.48	A	EL	48.125	
		SNCOTTS3	27.250	--	1.811	49.358	1.4	0.273	2.69	A	EL	48.125	0.49	2.85	A	EL	4.813	0.80	0.273	1.81	A	EL	48.125	
		SNAGGRS4	34.925	--	1.486	51.909	1.4	0.273	2.21	A	EL	48.125	0.49	2.32	A	EL	4.813	0.80	0.273	1.49	A	EL	48.125	
		SNS5A	35.550	--	1.455	51.735	1.4	0.273	2.16	A	EL	48.125	0.49	2.33	A	EL	4.813	0.80	0.273	1.46	A	EL	48.125	
		SNS6A	39.950	--	1.324	52.896	1.4	0.273	1.97	A	EL	48.125	0.49	2.11	A	EL	4.813	0.80	0.273	1.32	A	EL	48.125	
	SNS7B	42.000	--	1.26	52.94	1.4	0.273	1.87	A	EL	48.125	0.49	2.05	A	EL	4.813	0.80	0.273	1.26	A	EL	48.125		
	TTST	TNAGRIT3	33.000	--	1.611	53.174	1.4	0.273	2.39	A	EL	48.125	0.49	2.52	A	EL	4.813	0.80	0.273	1.61	A	EL	48.125	
		TNT4A	33.075	--	1.615	53.43	1.4	0.273	2.4	A	EL	48.125	0.49	2.47	A	EL	4.813	0.80	0.273	1.62	A	EL	48.125	
		TNT6A	41.600	--	1.31	54.511	1.4	0.273	1.95	A	EL	48.125	0.49	2.14	A	EL	4.813	0.80	0.273	1.31	A	EL	48.125	
		TNT7A	42.000	--	1.311	55.079	1.4	0.273	1.95	A	EL	48.125	0.49	2.11	A	EL	4.813	0.80	0.273	1.31	A	EL	48.125	
		TNT7B	42.000	--	1.343	56.417	1.4	0.273	1.99	A	EL	48.125	0.49	2.02	A	EL	4.813	0.80	0.273	1.34	A	EL	48.125	
		TNAGRIT4	43.000	--	1.288	55.375	1.4	0.273	1.91	A	EL	48.125	0.49	1.96	A	EL	4.813	0.80	0.273	1.29	A	EL	48.125	
TNAGT5A		45.000	--	1.219	54.852	1.4	0.273	1.81	A	EL	48.125	0.49	1.92	A	EL	4.813	0.80	0.273	1.22	A	EL	48.125		
TNAGT5B	45.000	3	1.208	54.379	1.4	0.273	1.79	A	EL	48.125	0.49	1.86	A	EL	4.813	0.80	0.273	1.21	A	EL	48.125			

LOAD FACTORS:

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

NOTES:

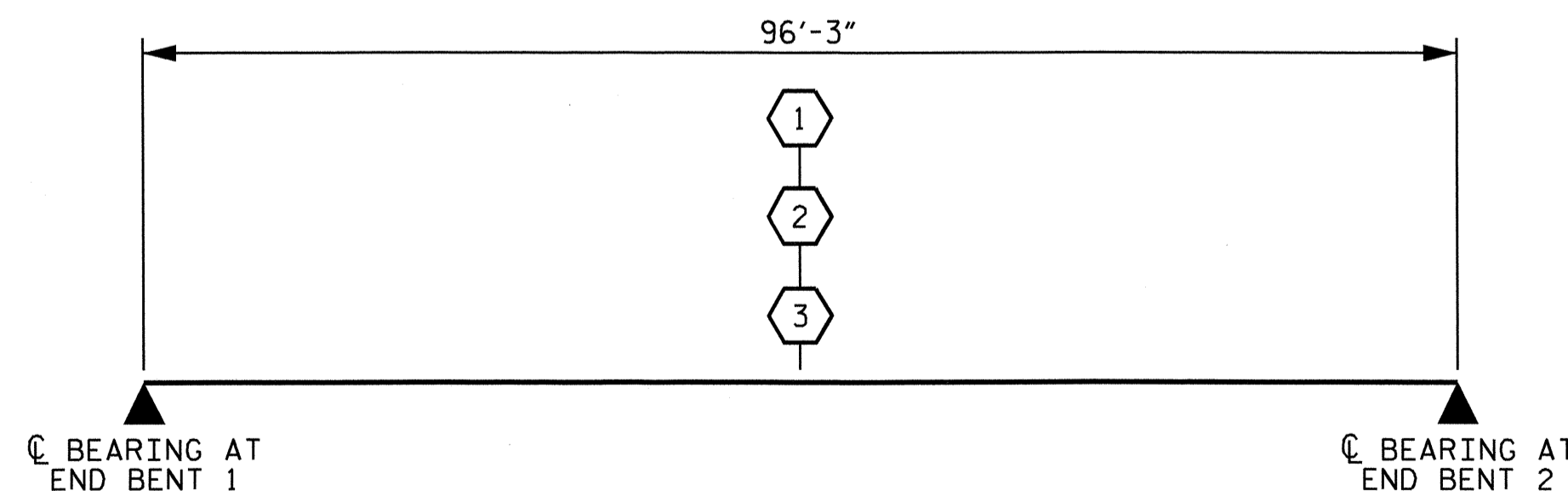
MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

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

COMMENTS:

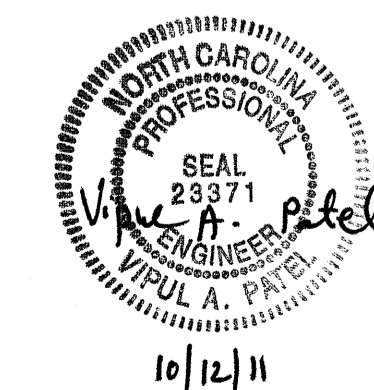
- 1.
- 2.
- 3.
- 4.

#	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-4294  
UNION COUNTY  
 STATION: 18+79.00 -L-



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

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

ASSEMBLED BY : R. L. CHESSON    DATE : 2010 DEC  
 CHECKED BY : B. L. GREEN        DATE : 2010 DEC  
 DRAWN BY : MAA    1/08    REV. 11/12/08R    MAA/GM  
 CHECKED BY : GM/DI 2/08

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 BOX BEAM SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE BOX BEAMS.

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

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF BOX BEAM 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.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE BOX BEAM UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 5500 PSI.

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

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE BOX BEAM UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO BOX BEAM UNIT ENDS.

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

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

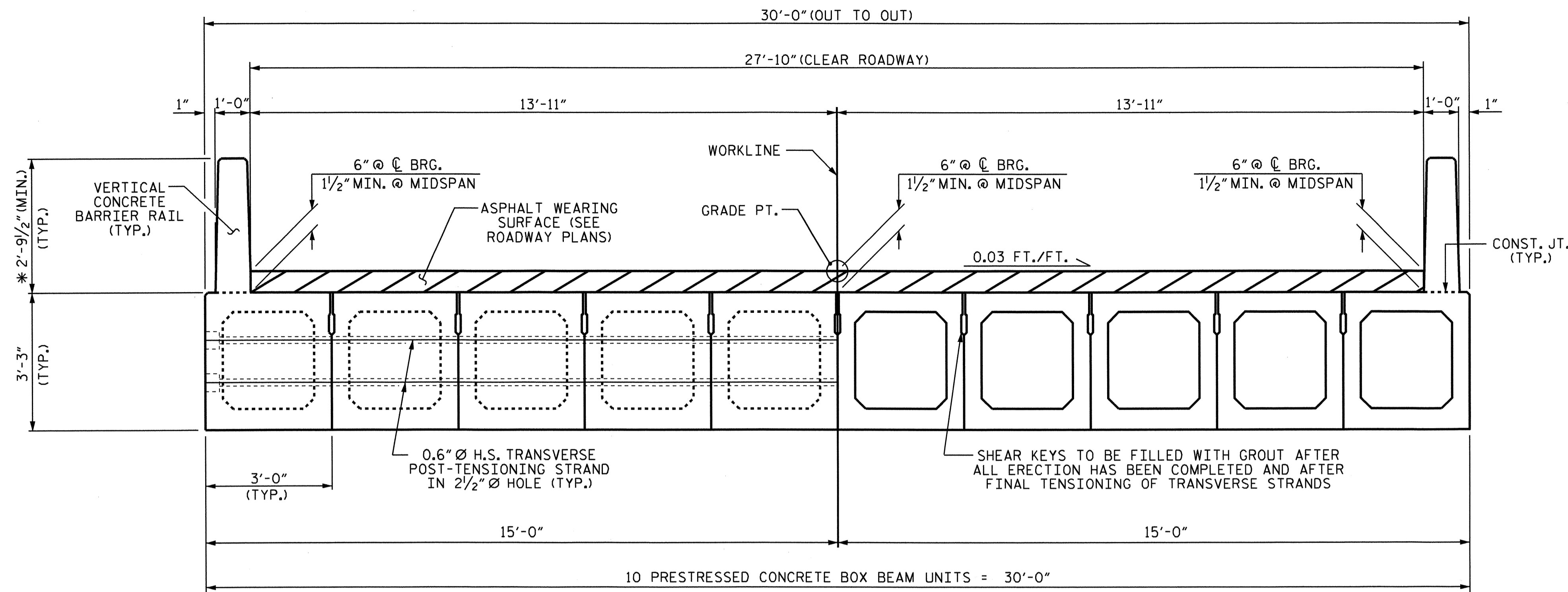
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR VERTICAL CONCRETE BARRIER RAIL, SEE SPECIAL PROVISIONS.

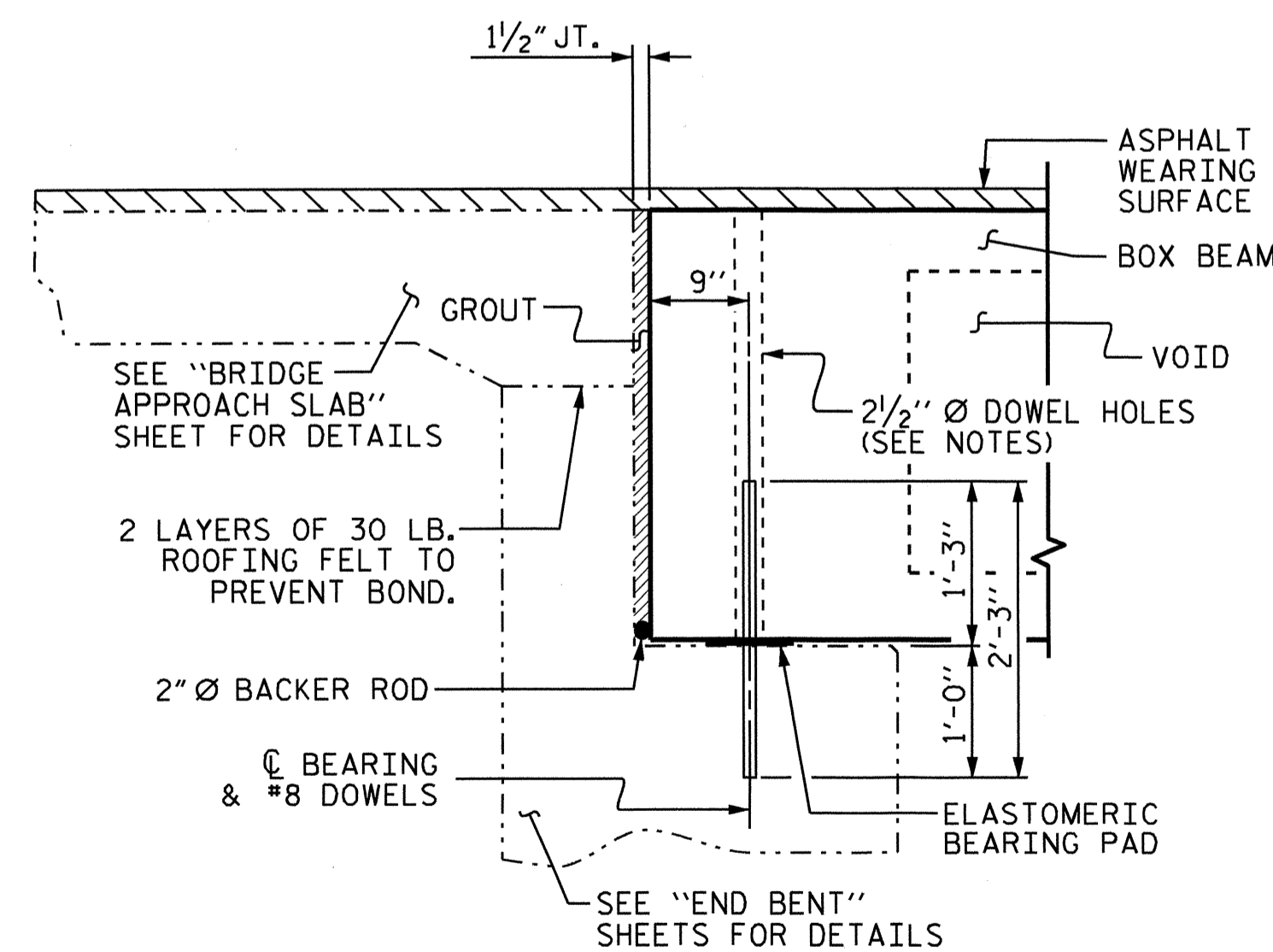
THE LOCATION OF THE VOID DRAINS MAY BE SHIFTED SLIGHTLY WHERE NECESSARY TO CLEAR PRESTRESSING STRANDS OR TRANSVERSE REINFORCING STEEL.

\* THE MINIMUM HEIGHT OF THE VERTICAL CONCRETE BARRIER RAIL IS SHOWN. THE HEIGHT OF THE BARRIER RAIL VARIES WHILE THE TOP OF THE RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE.

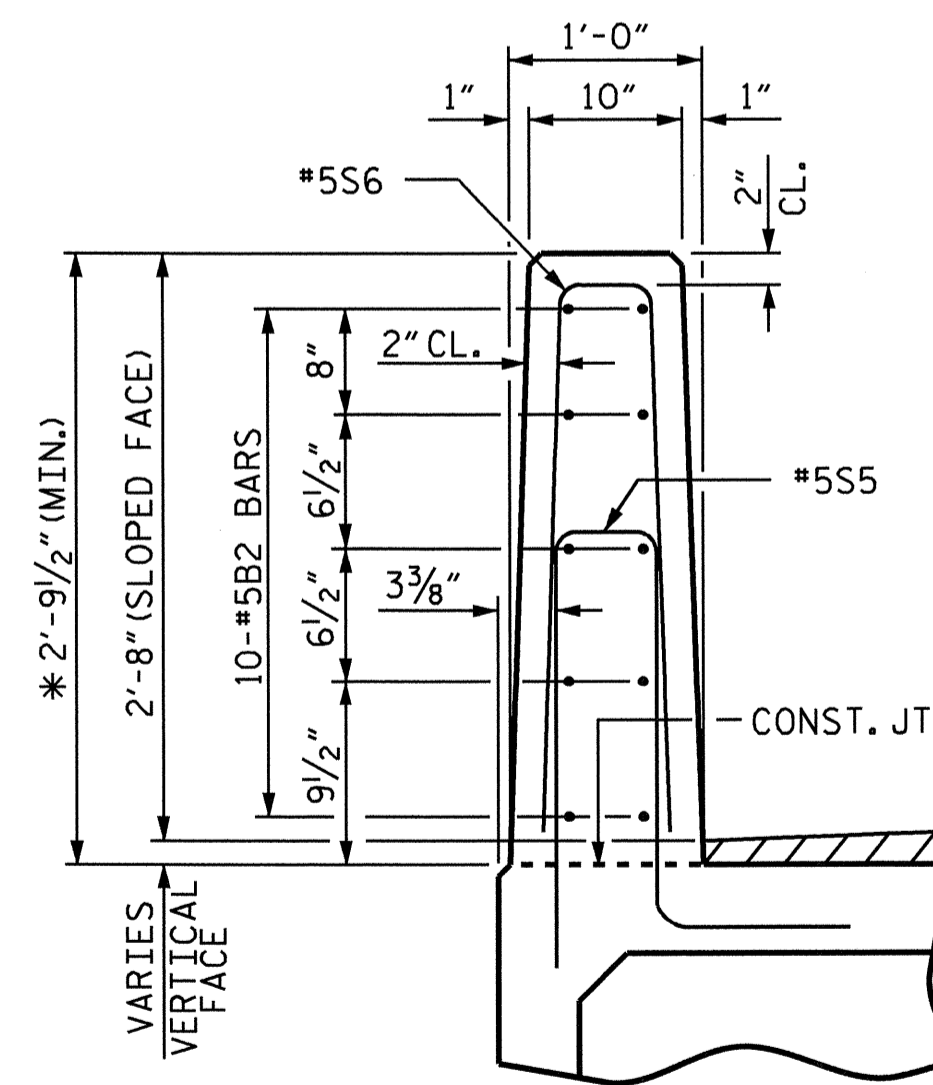
TRANSVERSE POST TENSIONING OF THE BOX BEAM SECTIONS SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS, EXCEPT THAT THE 0.6" Ø STRANDS SHALL BE TENSIONED TO 43,950 POUNDS.



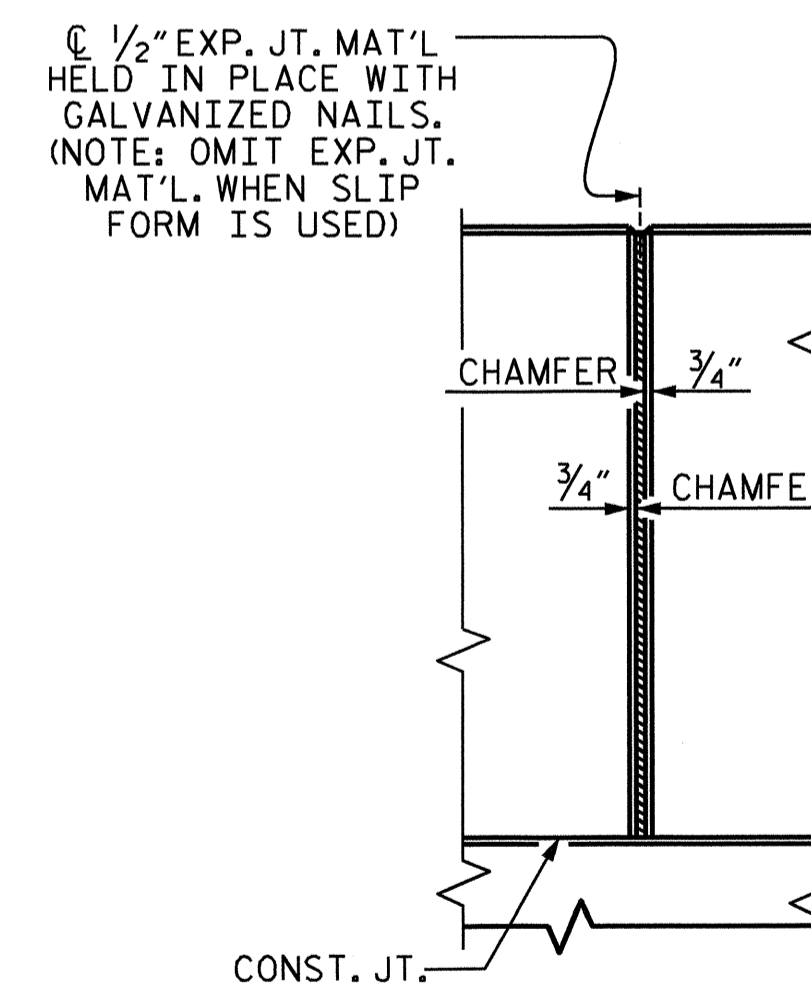
TYPICAL SECTION



SECTION AT END BENT



SECTION THRU RAIL

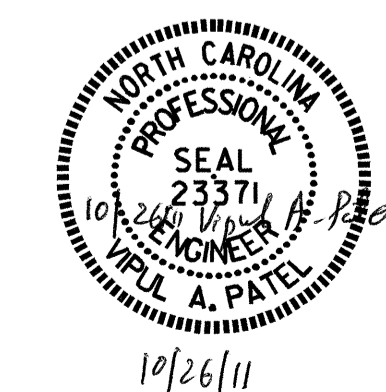


ELEVATION AT EXPANSION JOINTS

VERTICAL CONCRETE BARRIER RAIL DETAILS

PROJECT NO. B-4294  
 UNION COUNTY  
 STATION: 18+79.00 -L-

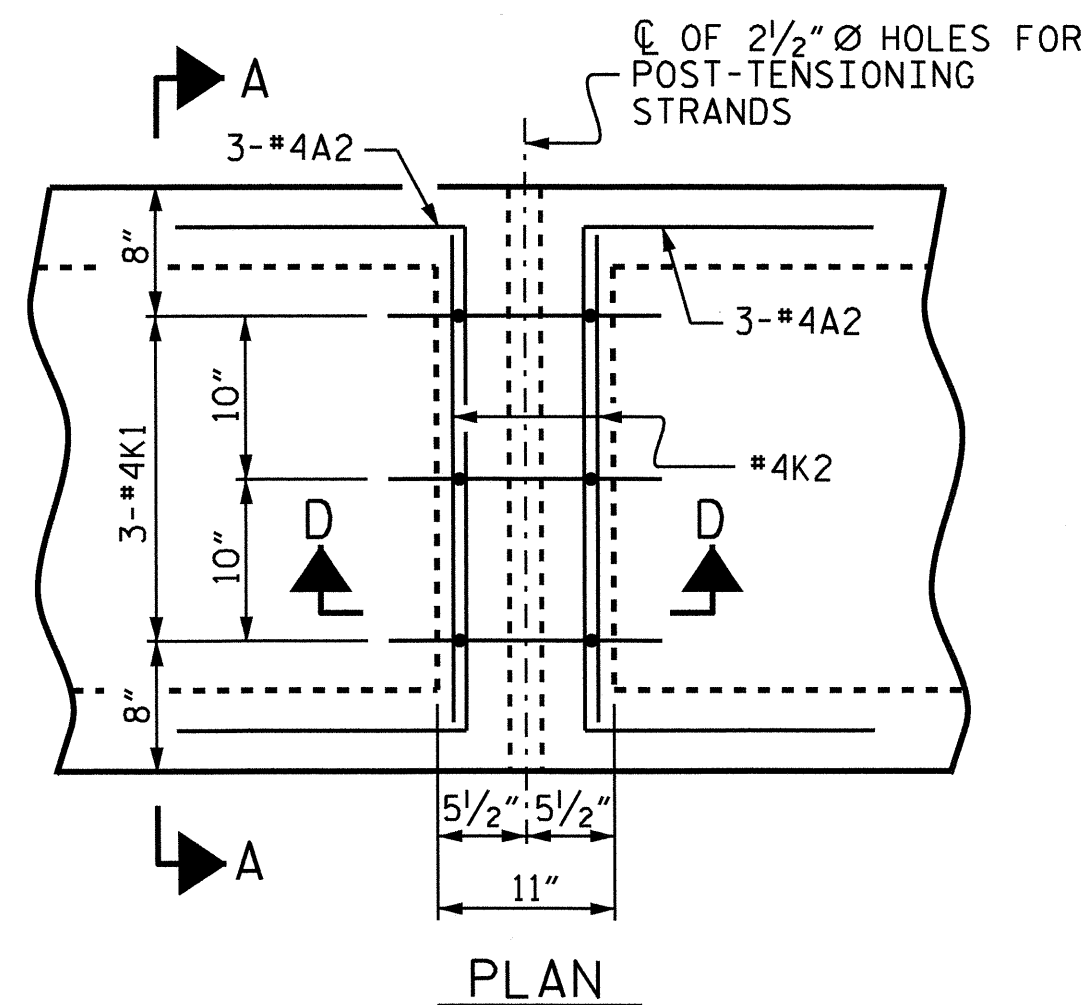
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 3'-0" X 3'-3"  
 PRESTRESSED CONCRETE  
 BOX BEAM UNIT



ASSEMBLED BY : M.K. BEARD DATE : 12/5/08  
 CHECKED BY : J.P. ADAMS DATE : 1/13/09  
 DRAWN BY : TLA 5/05  
 CHECKED BY : GM 6/05  
 ADDED 7/11/05R  
 REV. 5/1/06R KMM/GM

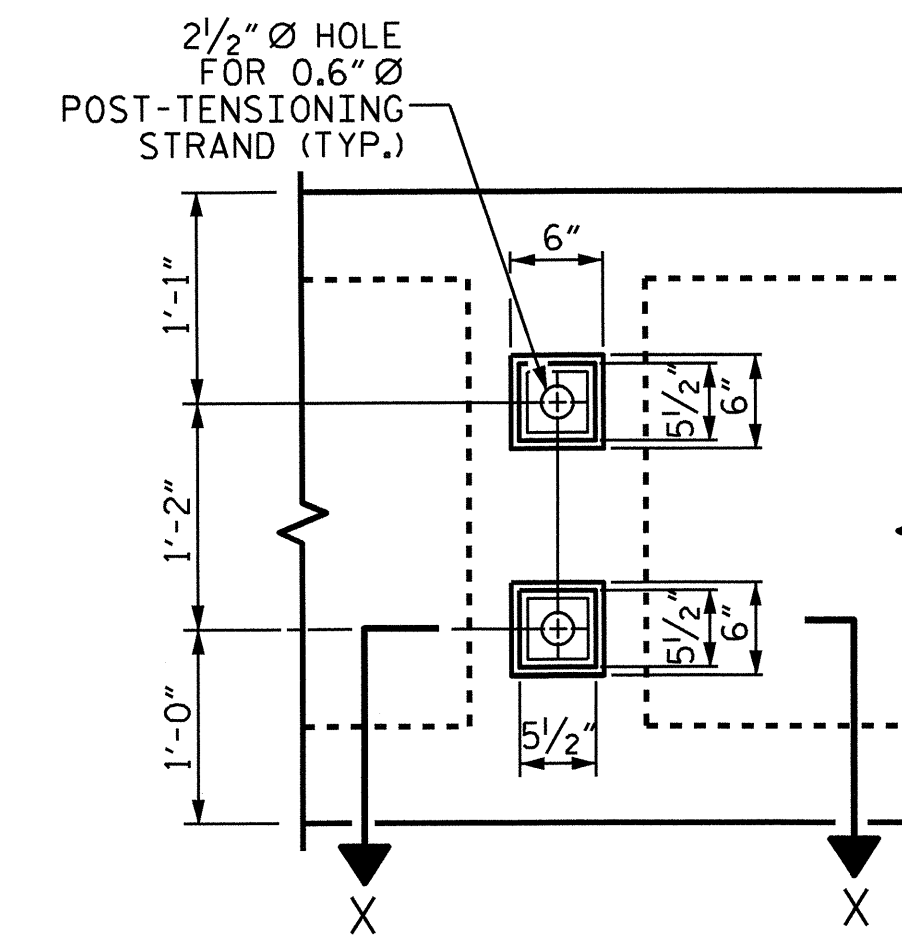
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS	
1			3			S-5	
2			4			18	



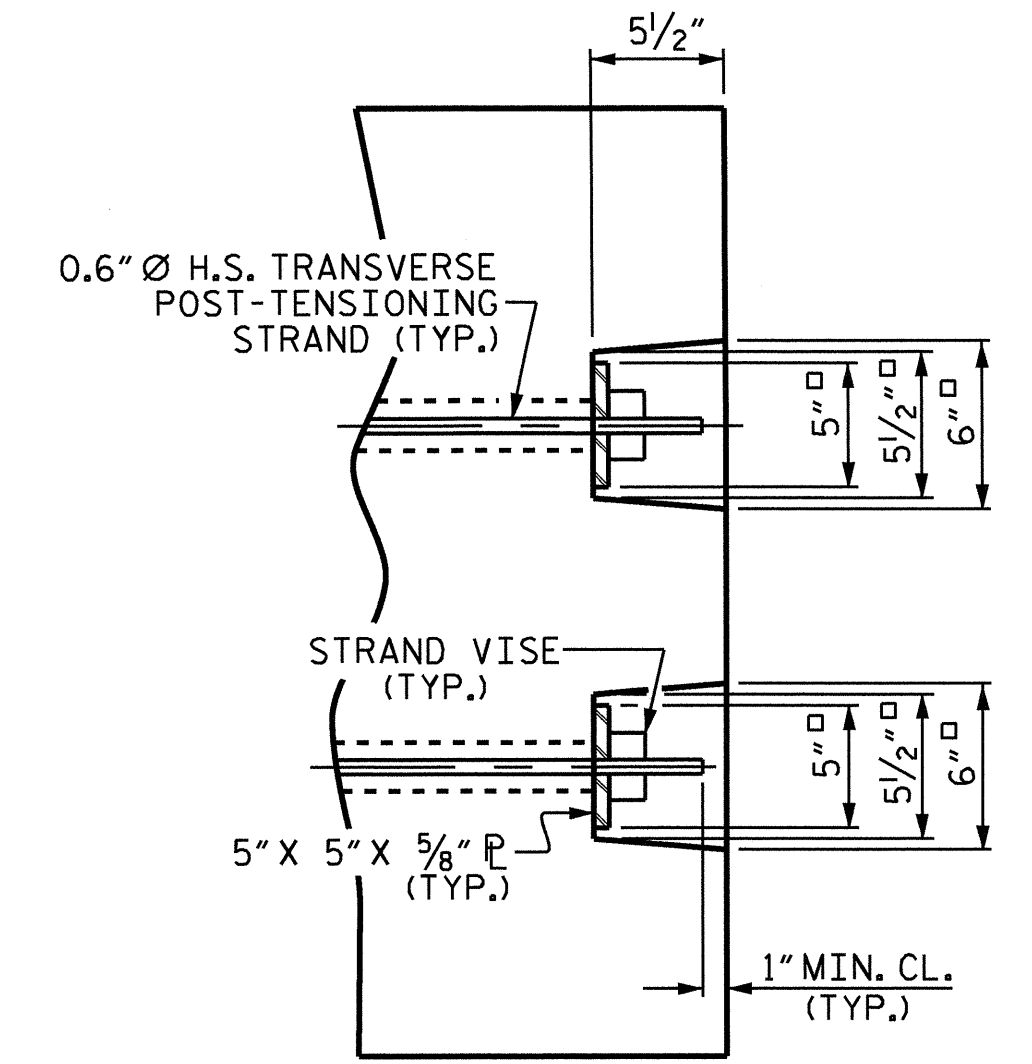


DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 3'-3"
	0.6" Ø L.R. STRAND
CAMBER (BEAM ALONE IN PLACE) ↑	4 3/8"
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD ** ↓	1 1/8"
FINAL CAMBER ↑	3 1/4"

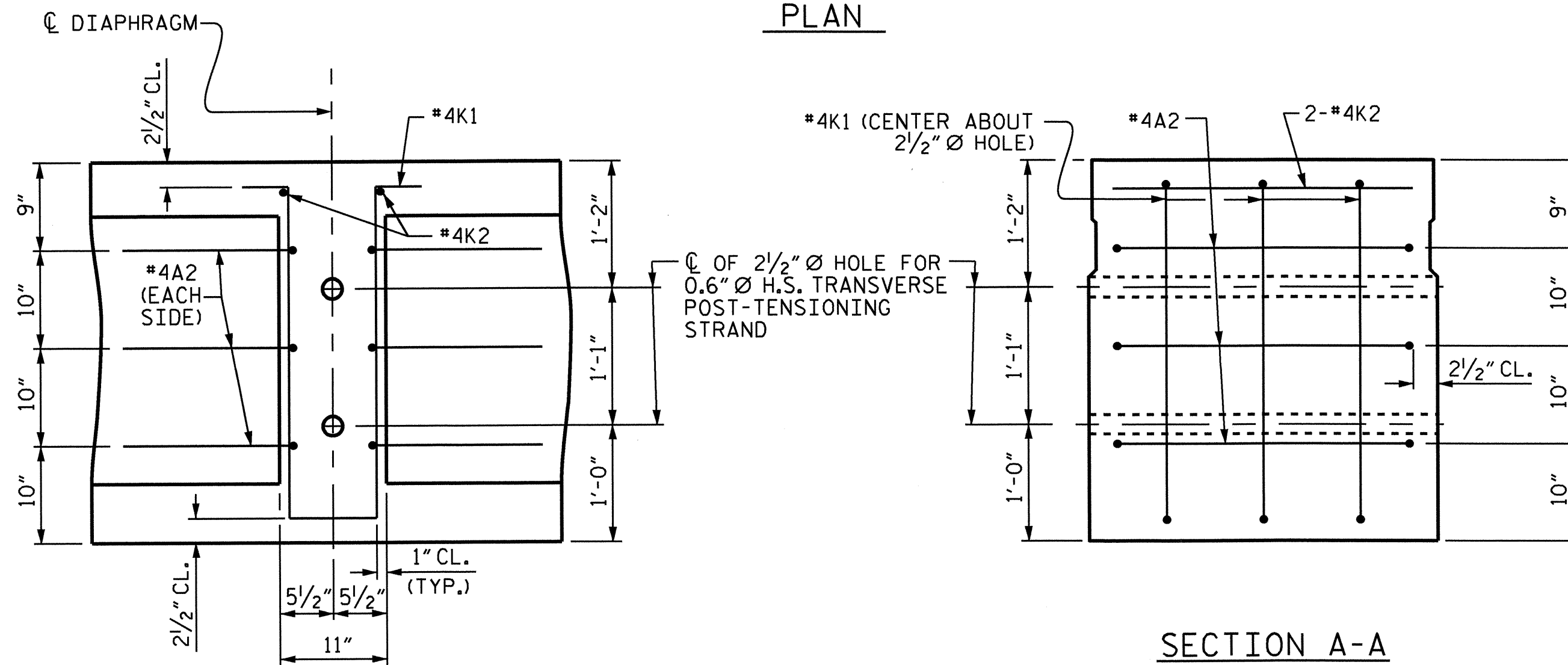
\*\* INCLUDES FUTURE WEARING SURFACE.



VIEW Y-Y  
SHOWING ELEVATION VIEW OF GROUDED RECESS



DETAIL 'C'

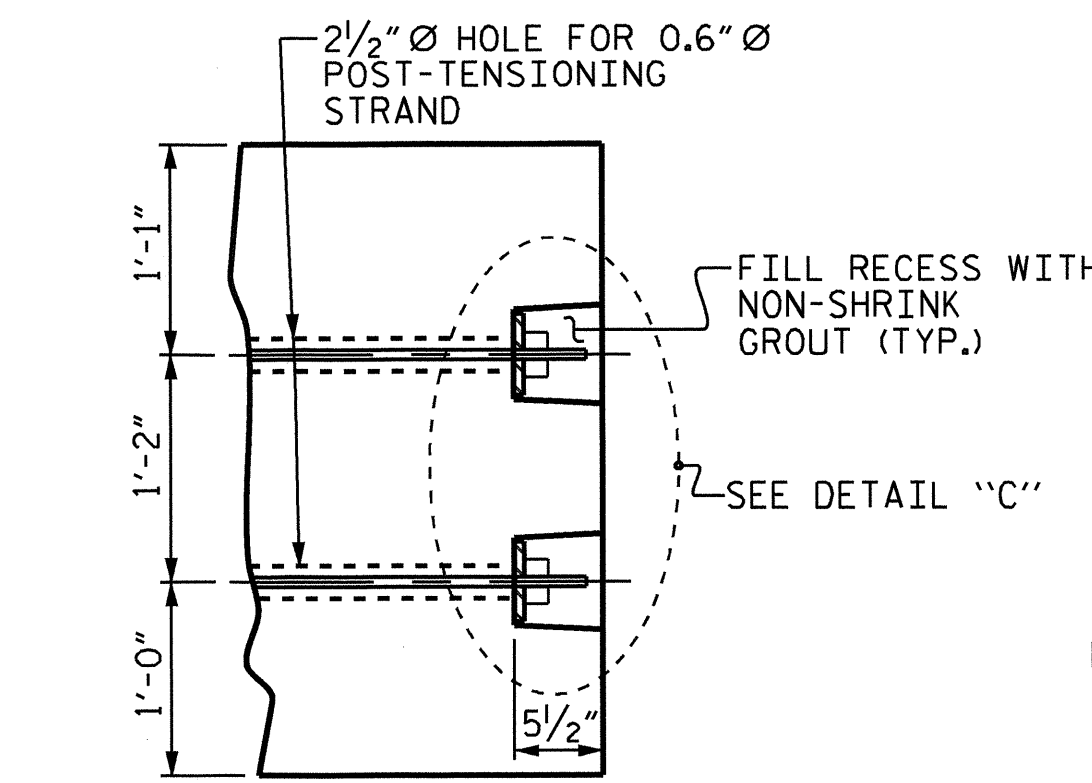


SECTION D-D

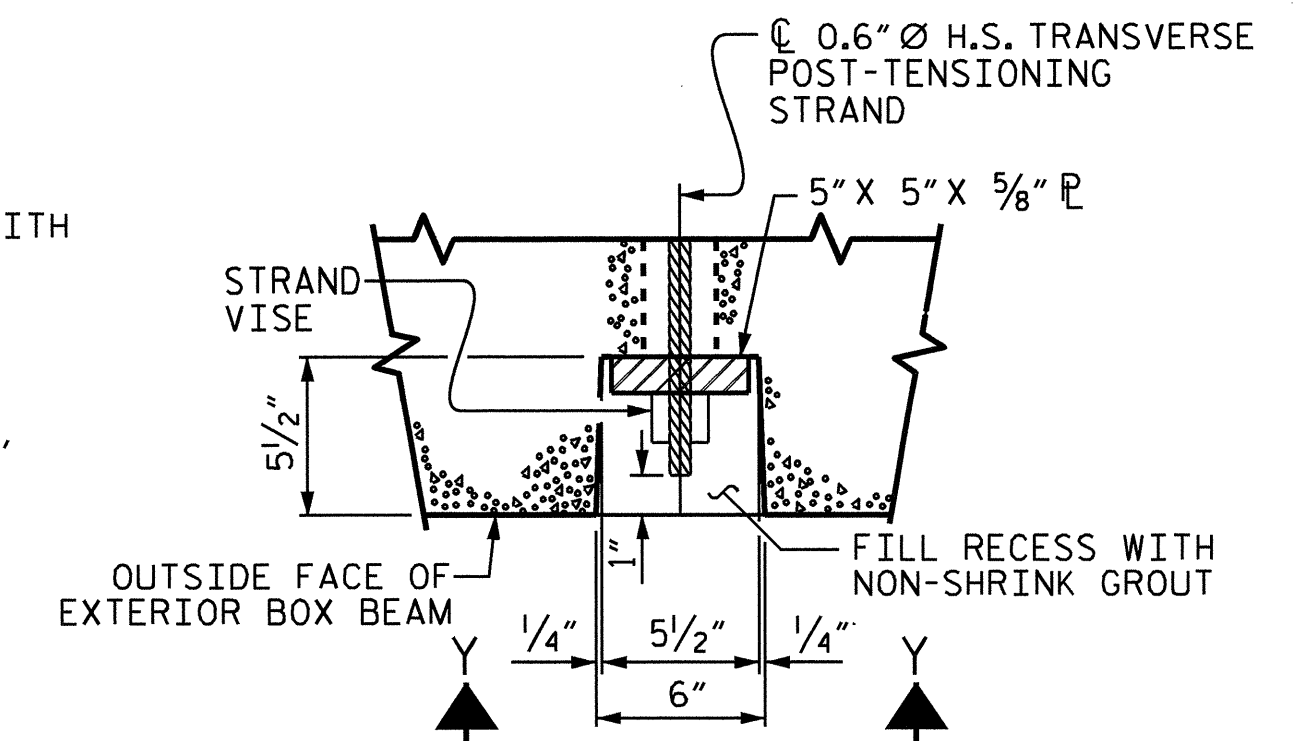
SECTION A-A  
VOIDS NOT SHOWN

**DOUBLE DIAPHRAGM DETAILS**

#4 "S" BARS NOT SHOWN. #4 "S" BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 2 1/2" Ø HOLE.

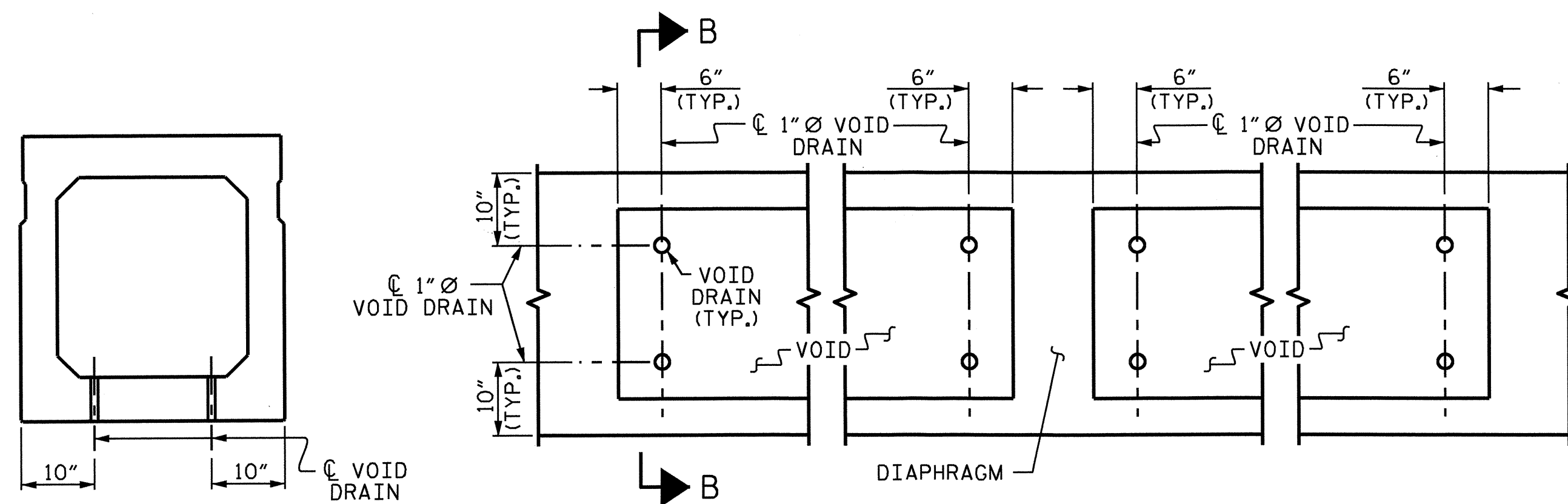


PART SECTION AT RECESS



SECTION X-X

**GROUDED RECESS DETAIL AT END OF POST-TENSIONED STRANDS OF EXTERIOR BOX BEAM**

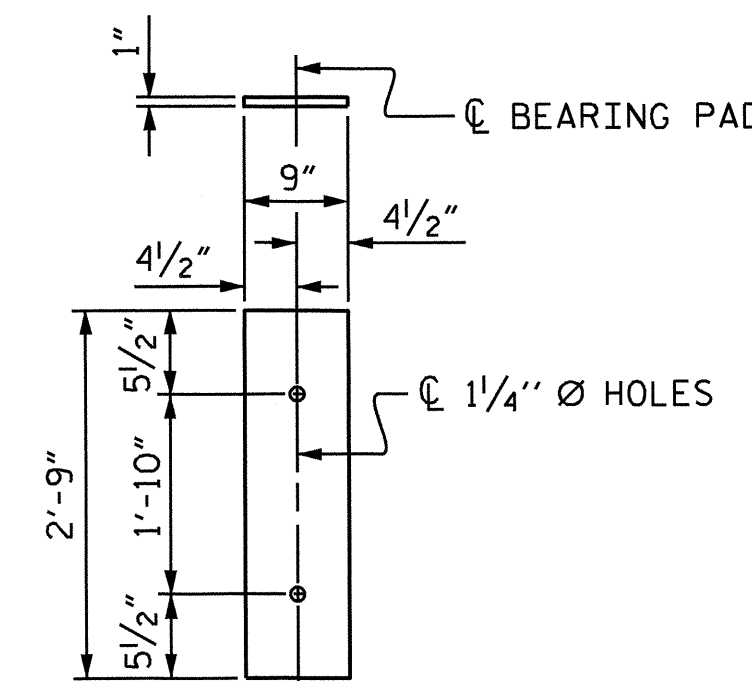


SECTION B-B

PART PLAN

**VOID DRAIN DETAILS**

(DIMENSIONS SHOWN ARE TYPICAL FOR EACH VOID)



FIXED END  
(TYPE I - 20 REQ'D.)

**ELASTOMERIC BEARING DETAILS**

ELASTOMER IN ALL BEARINGS  
SHALL BE 60 DUROMETER HARDNESS

PROJECT NO. B-4294  
UNION COUNTY  
STATION: 18+79.00 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD					
3'-0" X 3'-3"					
PRESTRESSED CONCRETE					
BOX BEAM UNIT					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					18



6/17/11

ASSEMBLED BY : M.K. BEARD DATE : 12/12/08  
CHECKED BY : J.P. ADAMS DATE : 1/13/09  
DRAWN BY : TLA 5/05  
CHECKED BY : CM 6/05  
ADDED 7/11/05  
REV. 5/11/06 TLA/GM

14-JUN-2011 11:49  
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Klayne

STD. NO. PCBB7





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.

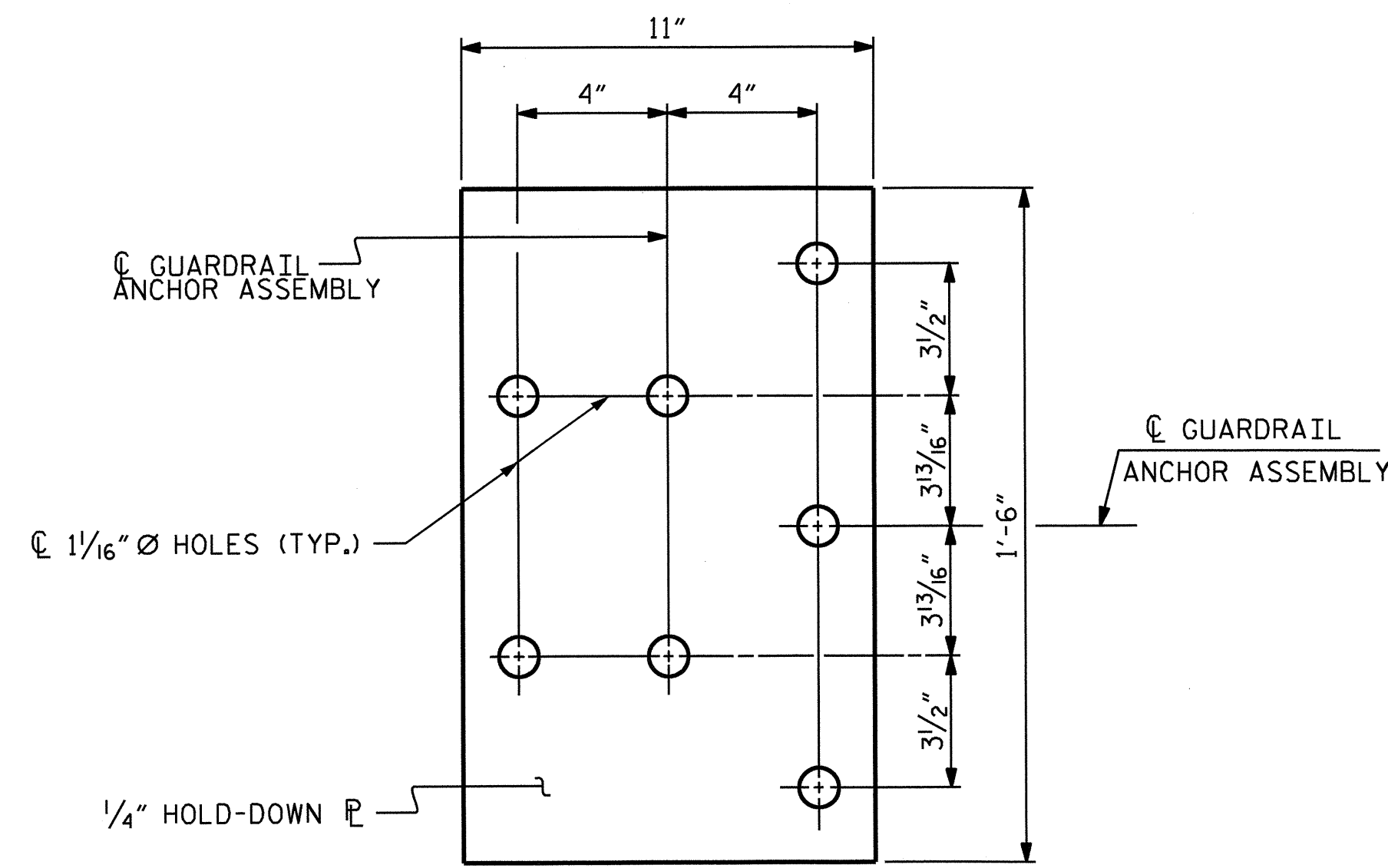
BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS.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

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

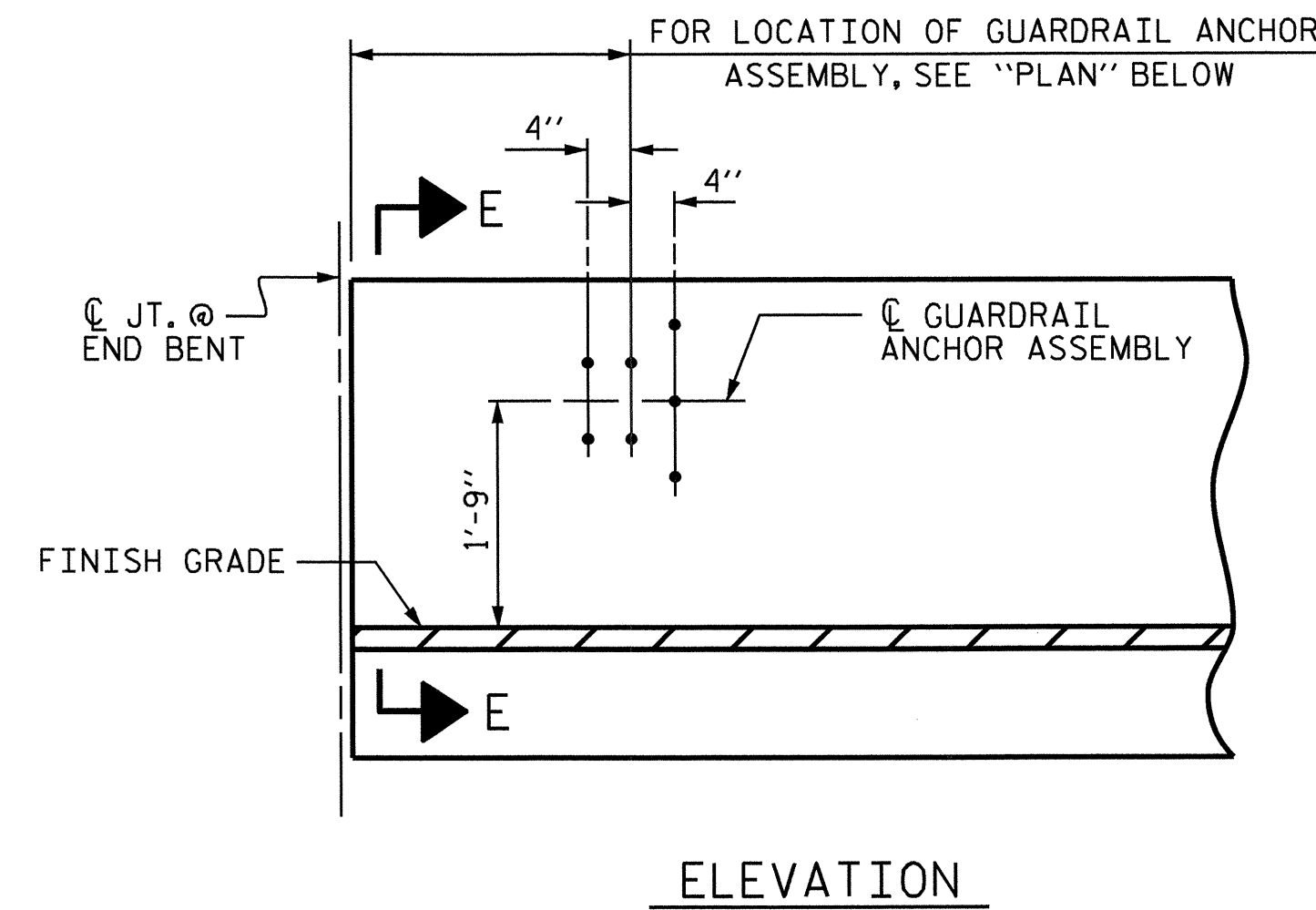
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS, NUTS AND WASHERS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

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

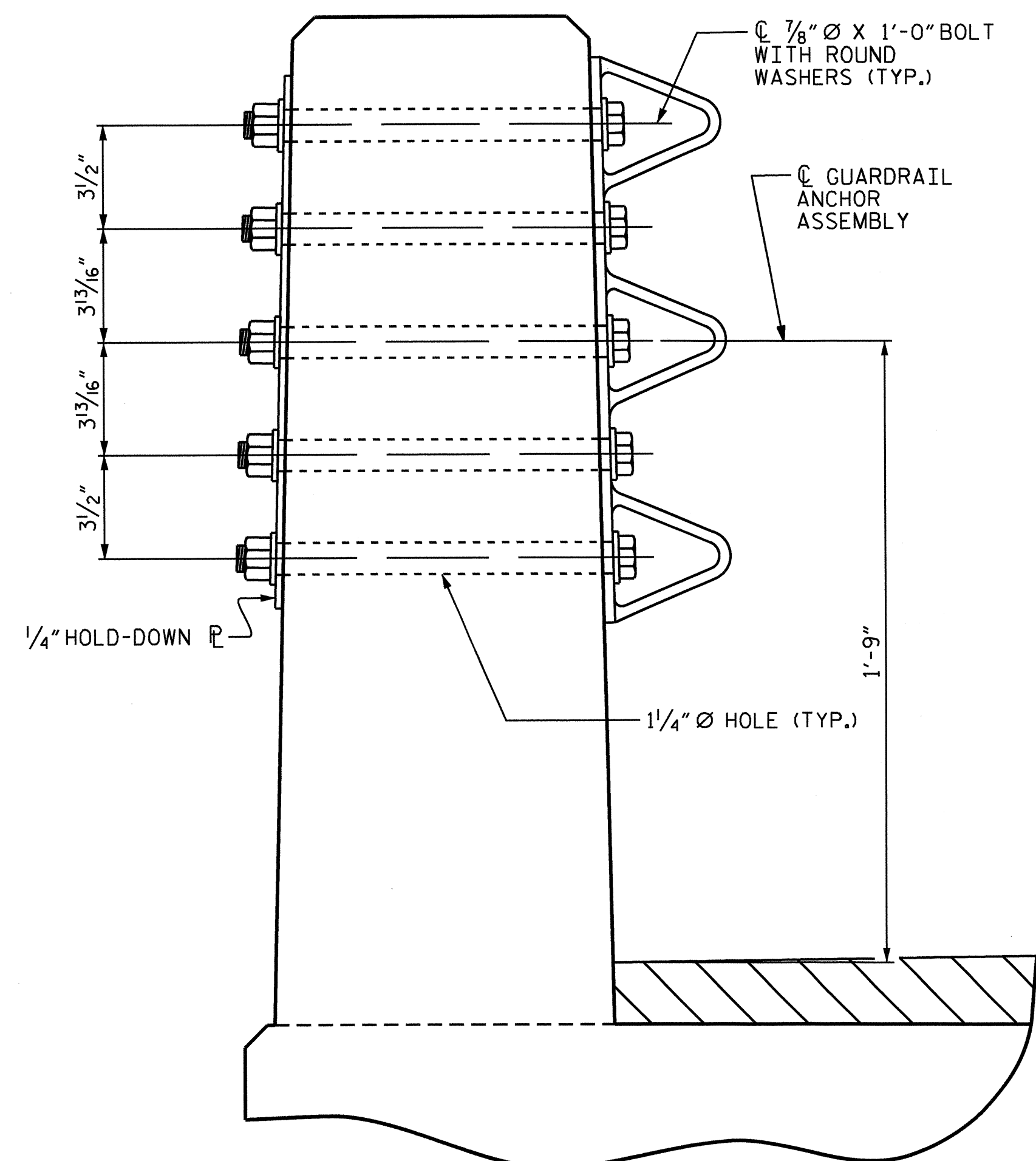
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



PLAN

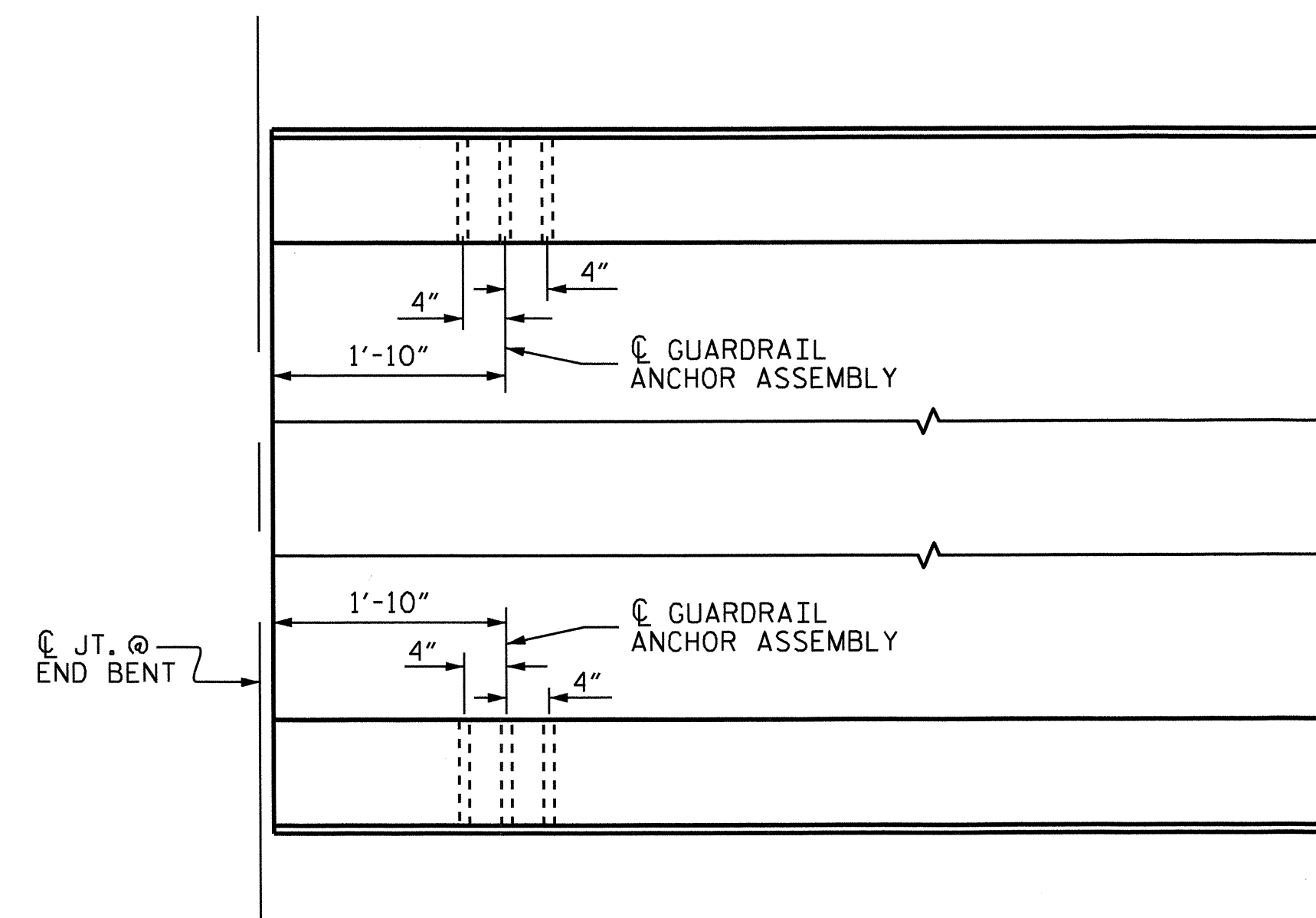


ELEVATION



SECTION E-E

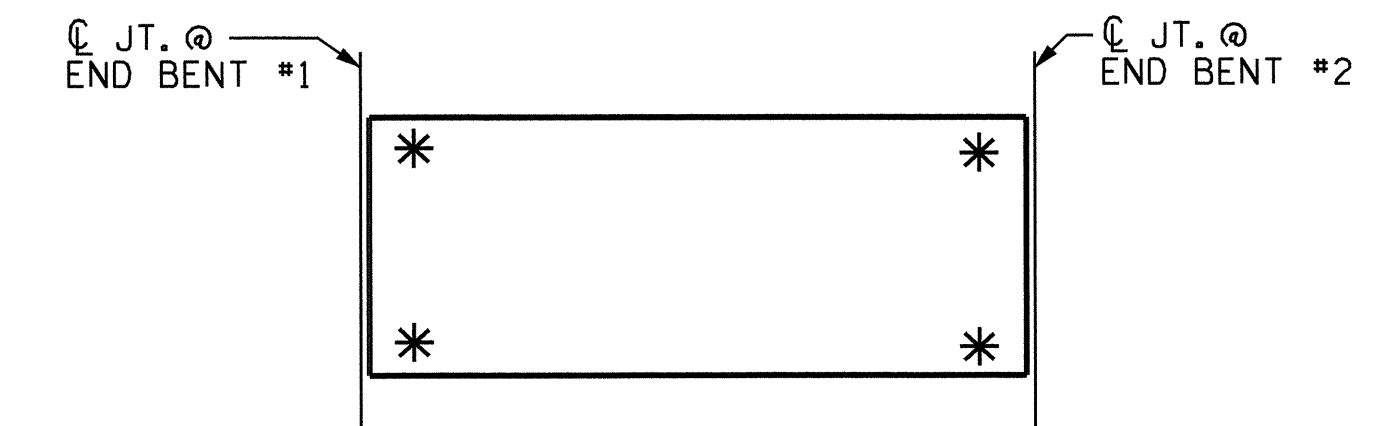
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

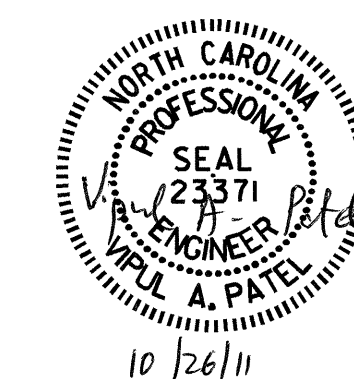
END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENTS

\* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4294  
 UNION COUNTY  
 STATION: 18+79.00 -L-



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

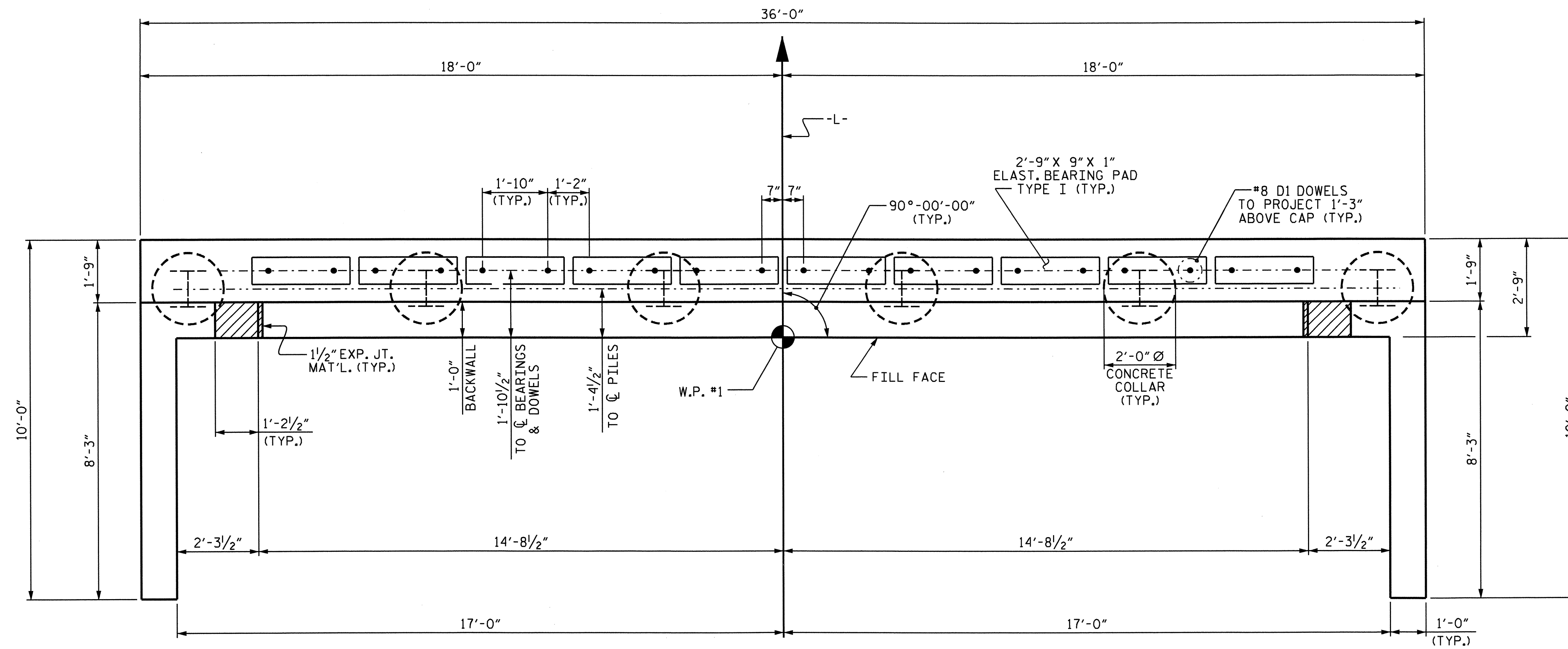
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			18

ASSEMBLED BY : M.K. BEARD	DATE : 12/15/08
CHECKED BY : J.P. ADAMS	DATE : 1/13/09
DRAWN BY : MAA 12/06	ADDED 12/15/06
CHECKED BY : GM 12/06	

**NOTES**

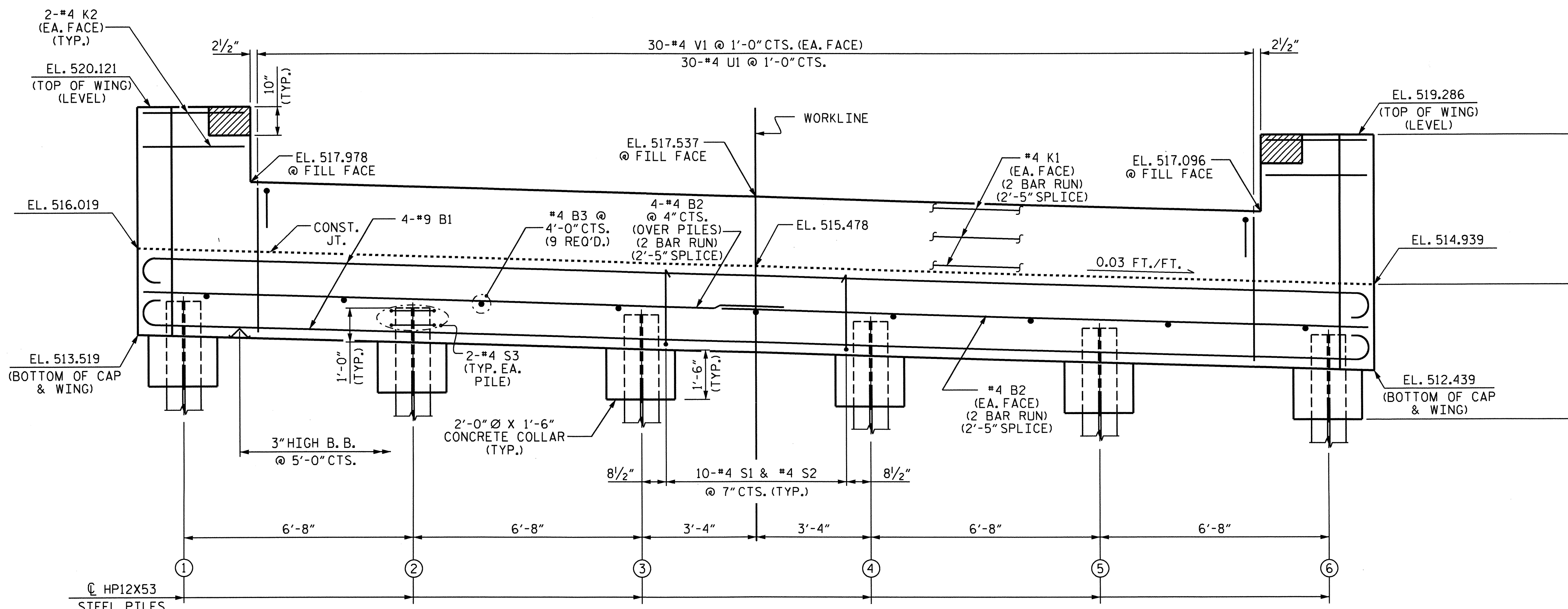
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #8 DI DOWELS.

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



**PLAN**

PILE	TOP OF PILE ELEVATIONS
1	EL. 514.494
2	EL. 514.295
3	EL. 514.095
4	EL. 513.896
5	EL. 513.697
6	EL. 513.497



**ELEVATION**

PROJECT NO. B-4294  
 UNION COUNTY  
 STATION: 18+79.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

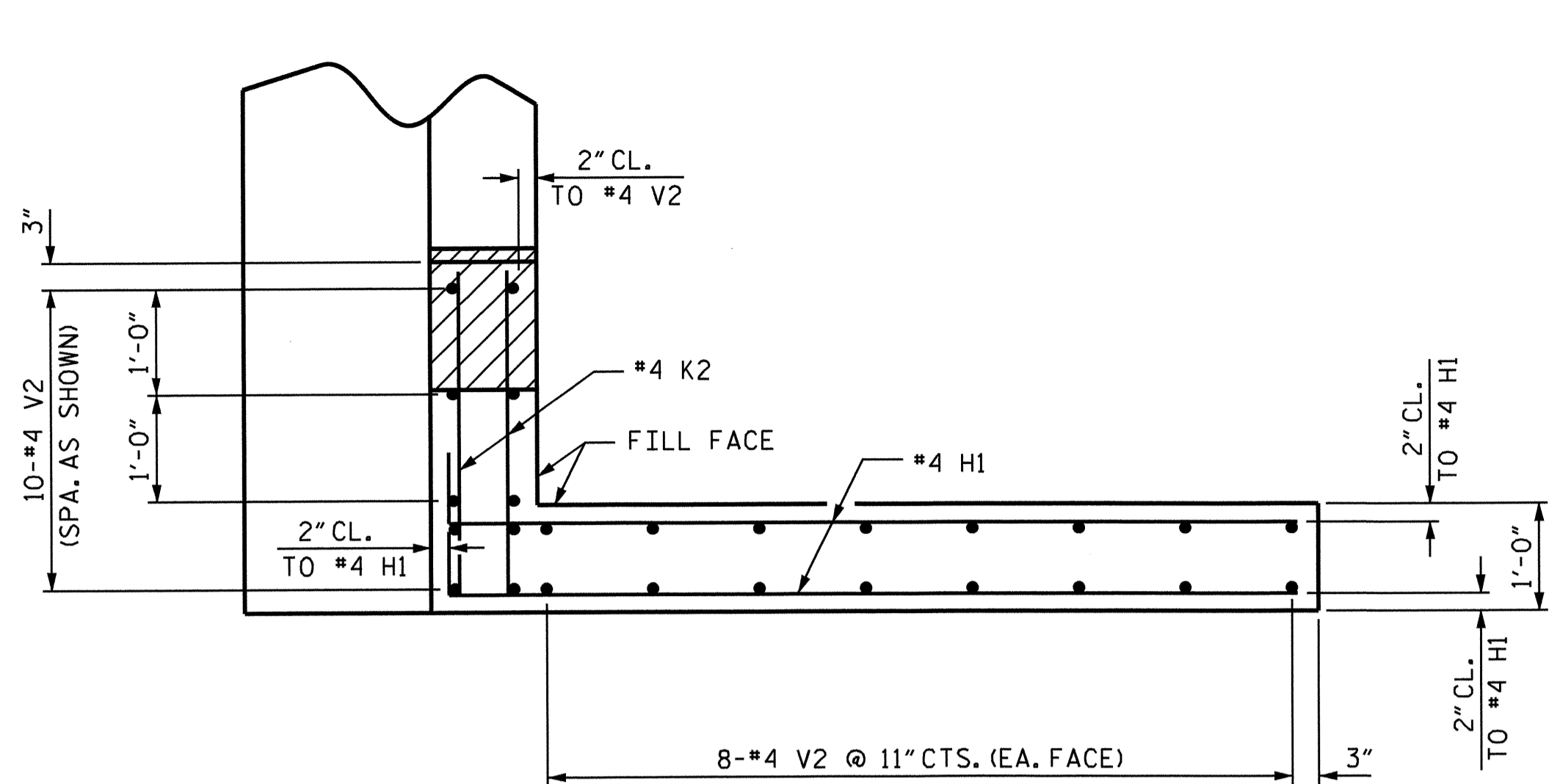
**SUBSTRUCTURE  
 END BENT #1**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			18

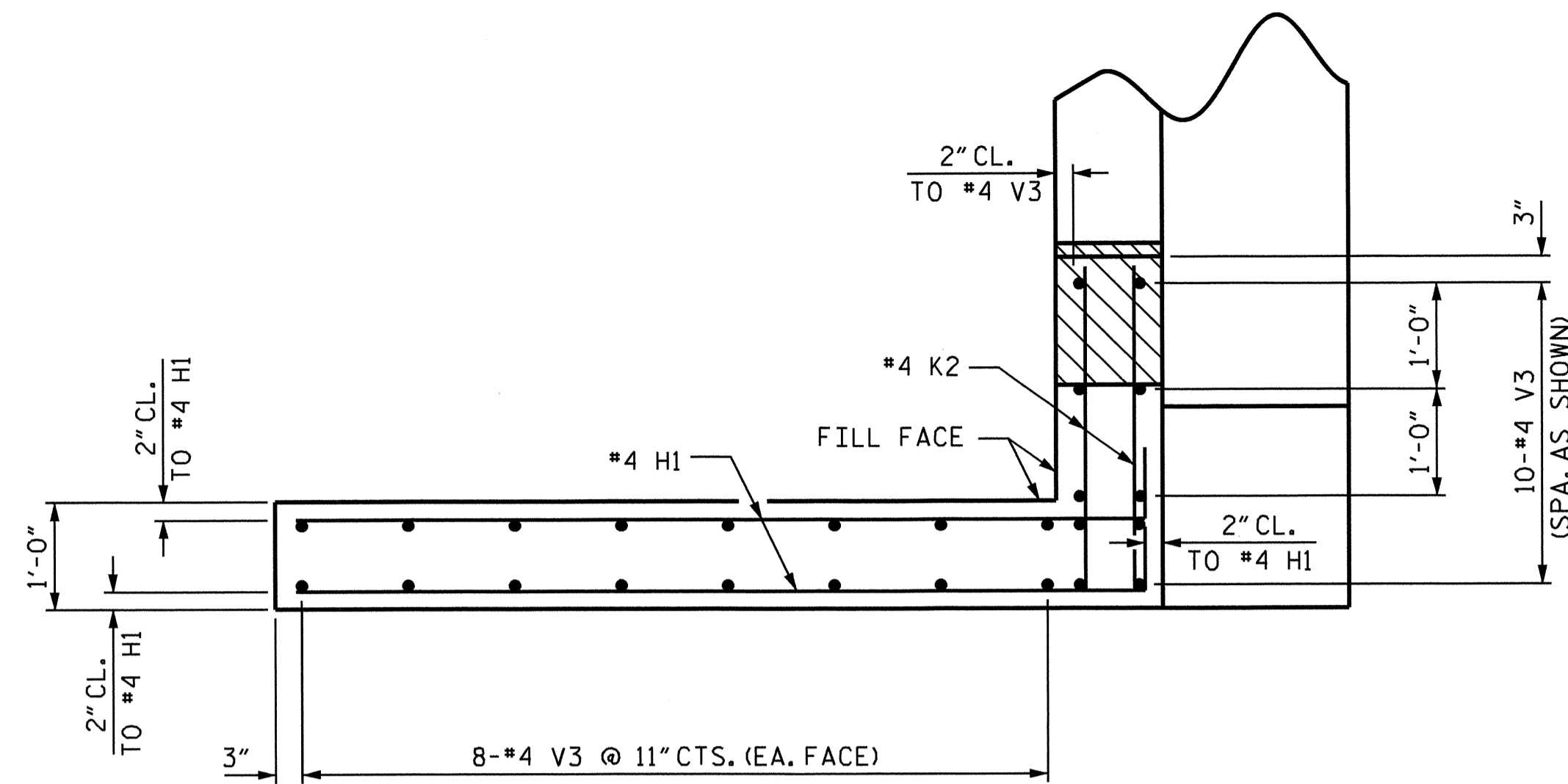


DRAWN BY : R. G. EMERSON DATE : 06/09  
 CHECKED BY : M. K. BEARD DATE : 07/09

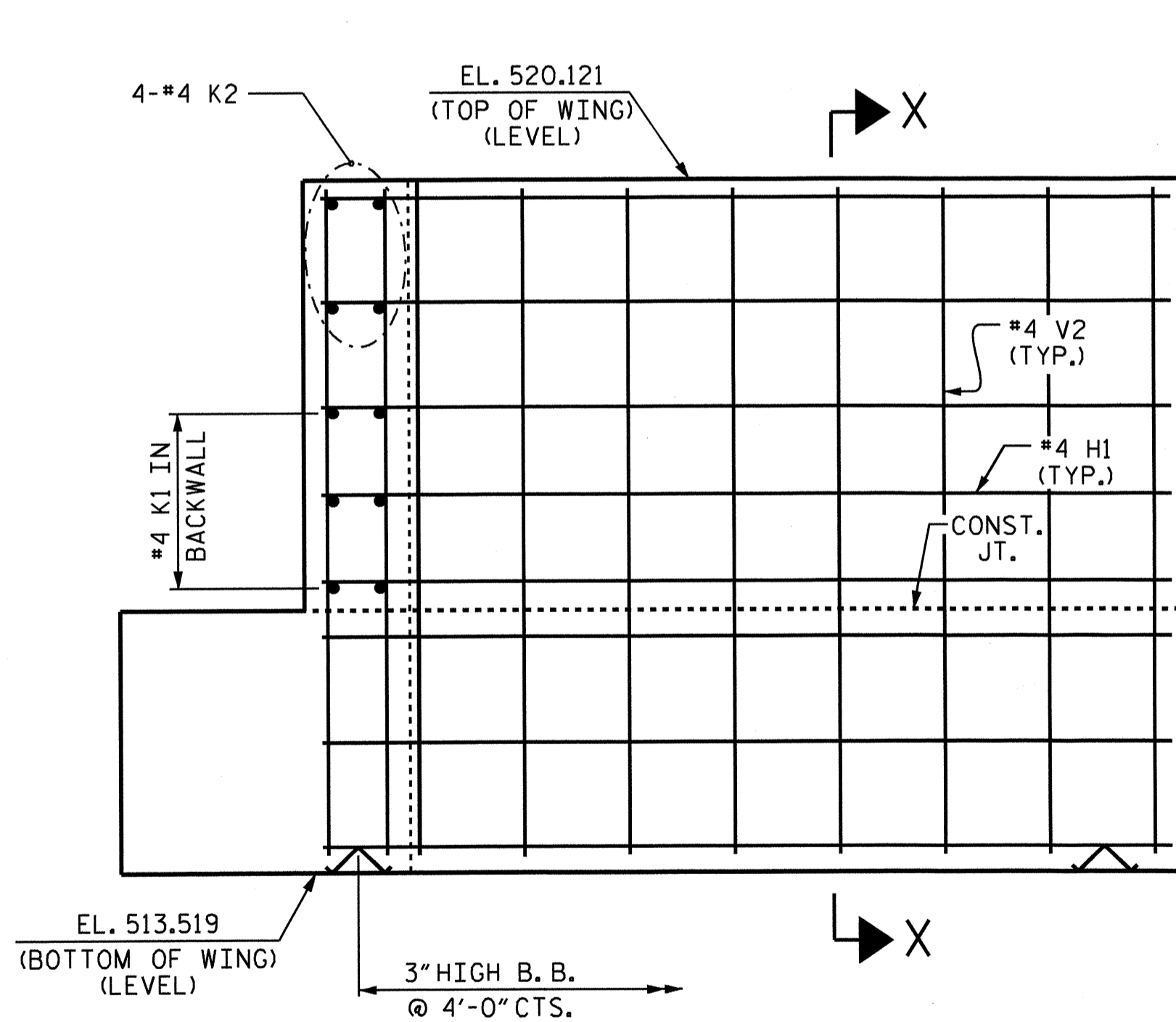
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 Klayne



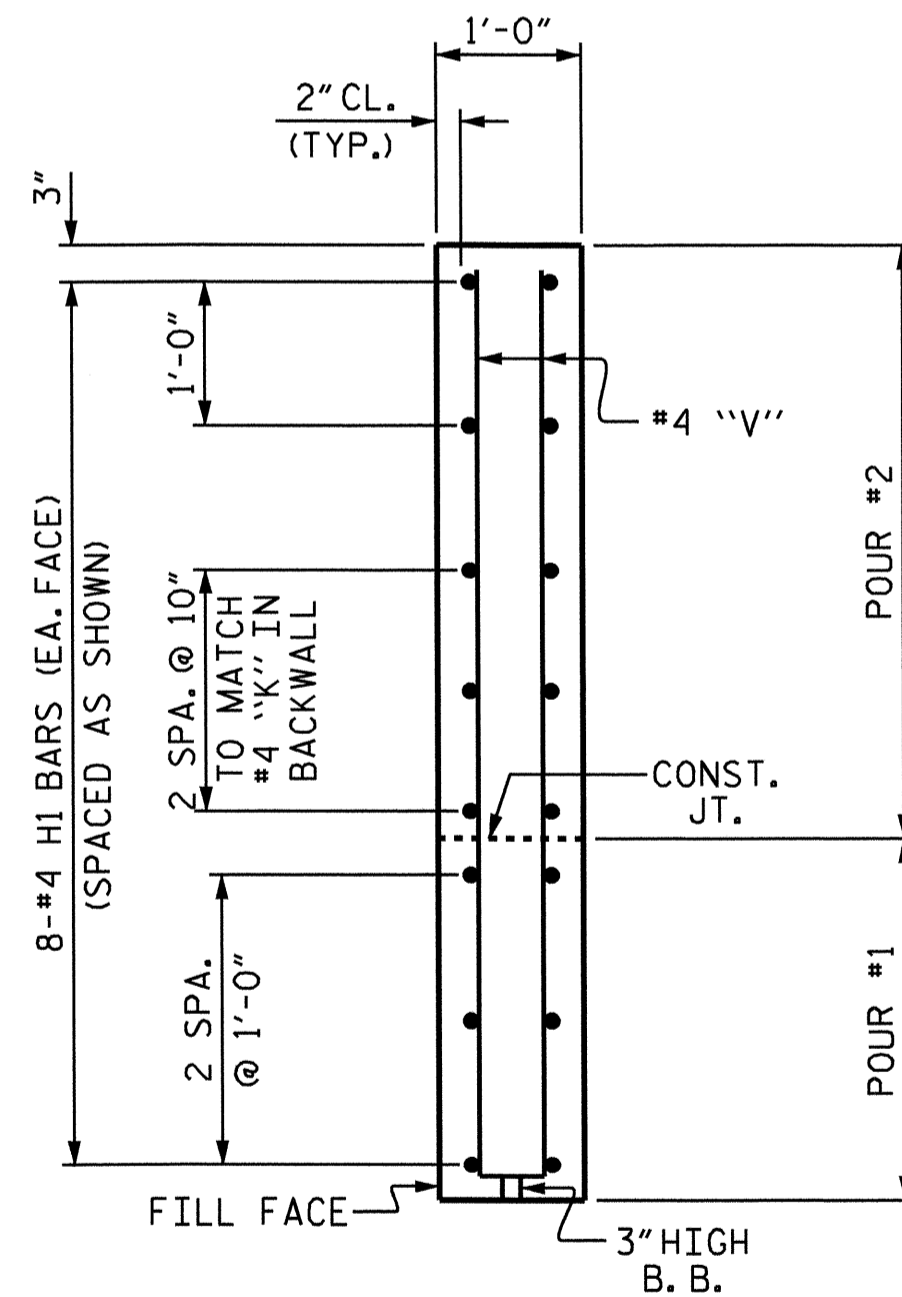
PLAN OF LEFT WING



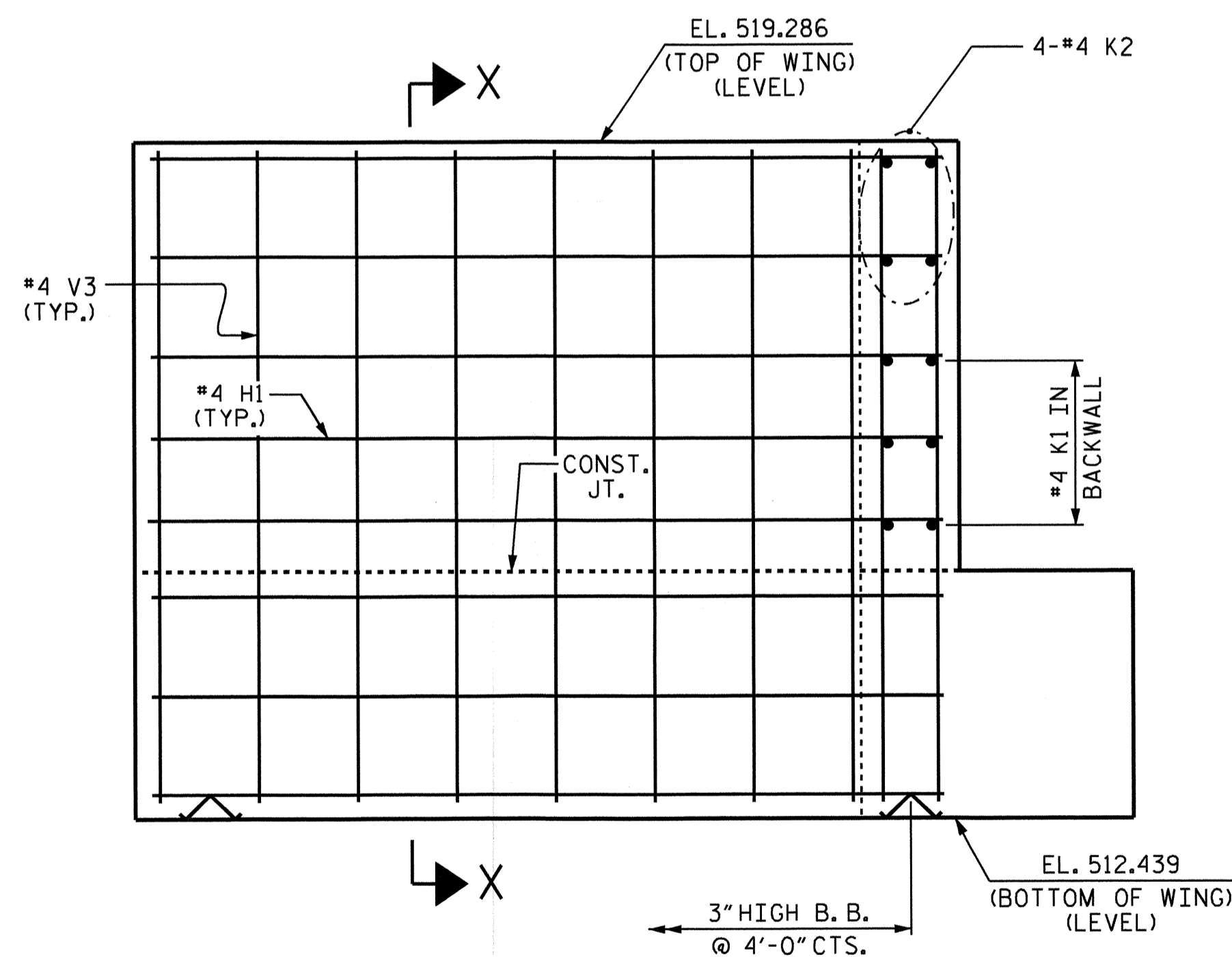
PLAN OF RIGHT WING



ELEVATION OF LEFT WING



SECTION X-X



ELEVATION OF RIGHT WING

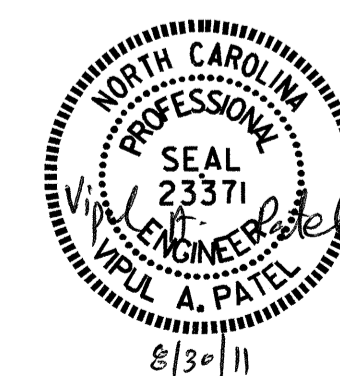
PROJECT NO. B-4294  
UNION COUNTY  
 STATION: 18+79.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE

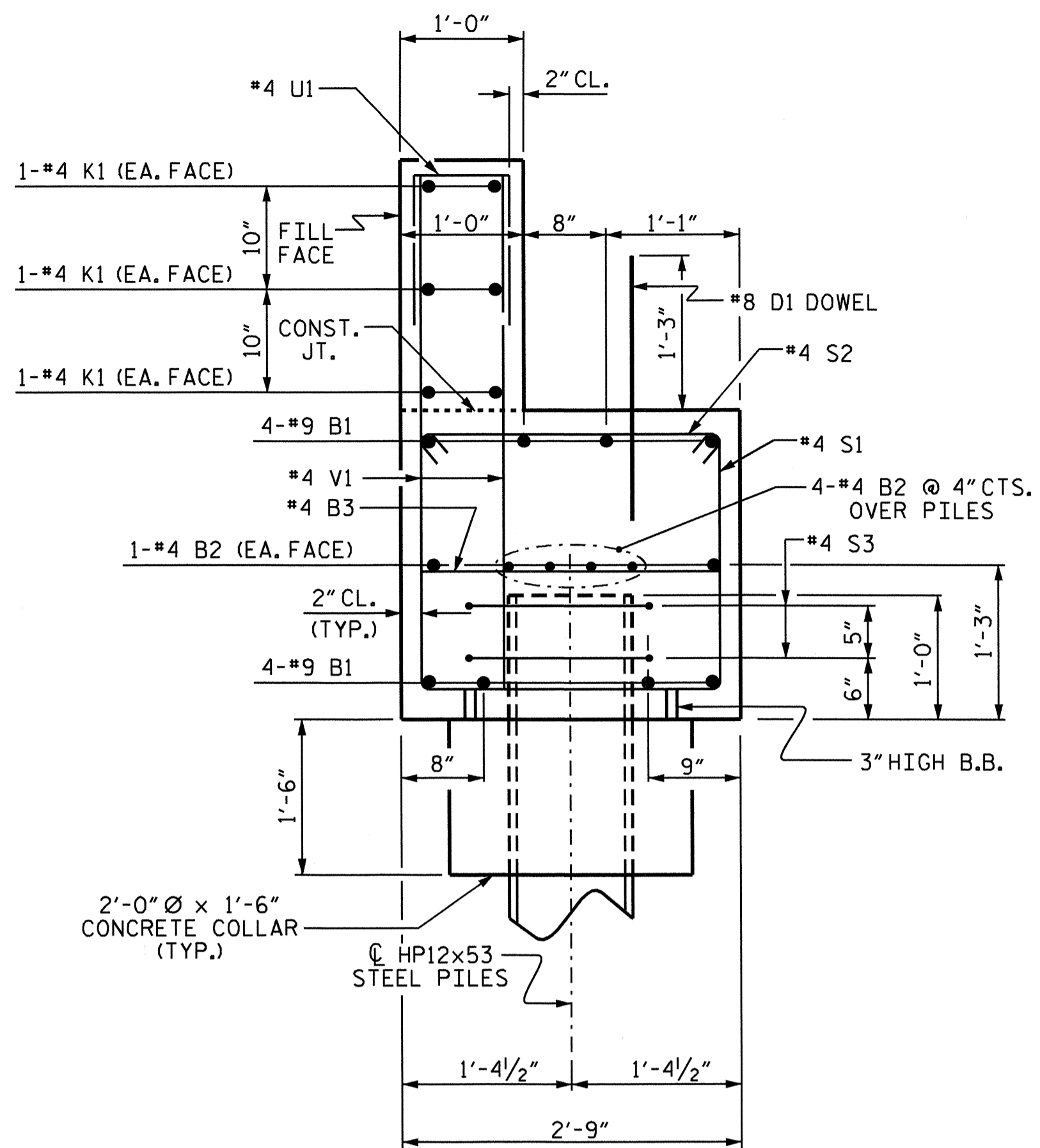
END BENT #1



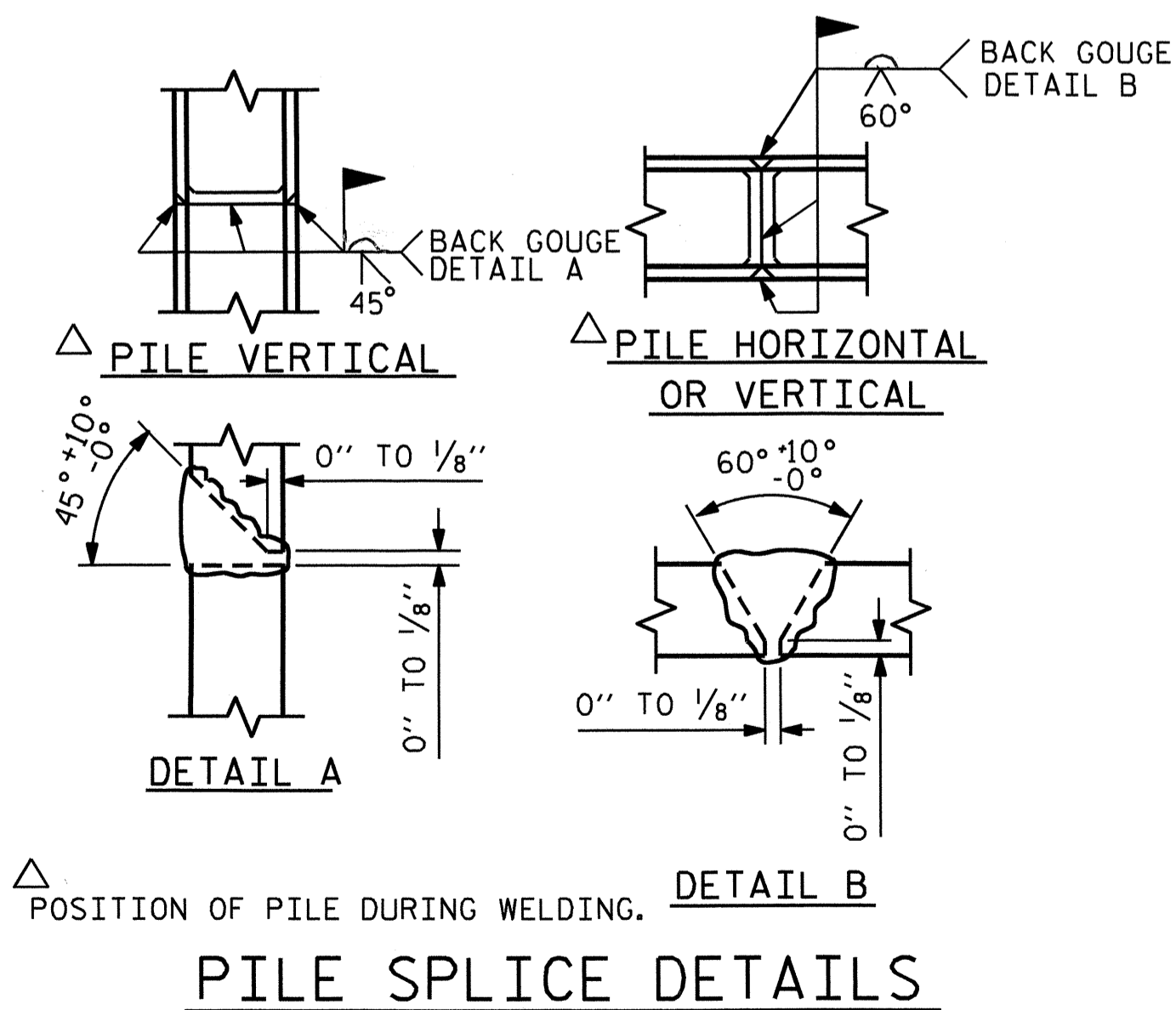
DRAWN BY: R. G. EMERSON DATE: 06/09  
 CHECKED BY: M. K. BEARD DATE: 07/09

30-AUG-2011 08:18  
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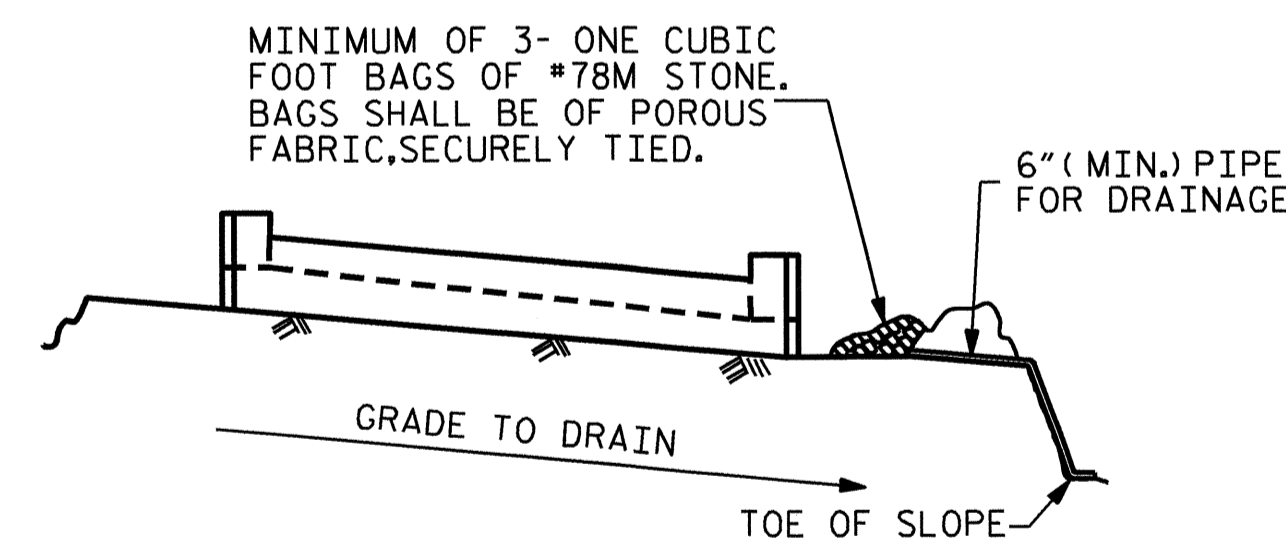
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			18



SECTION THRU CAP



PILE SPLICE DETAILS

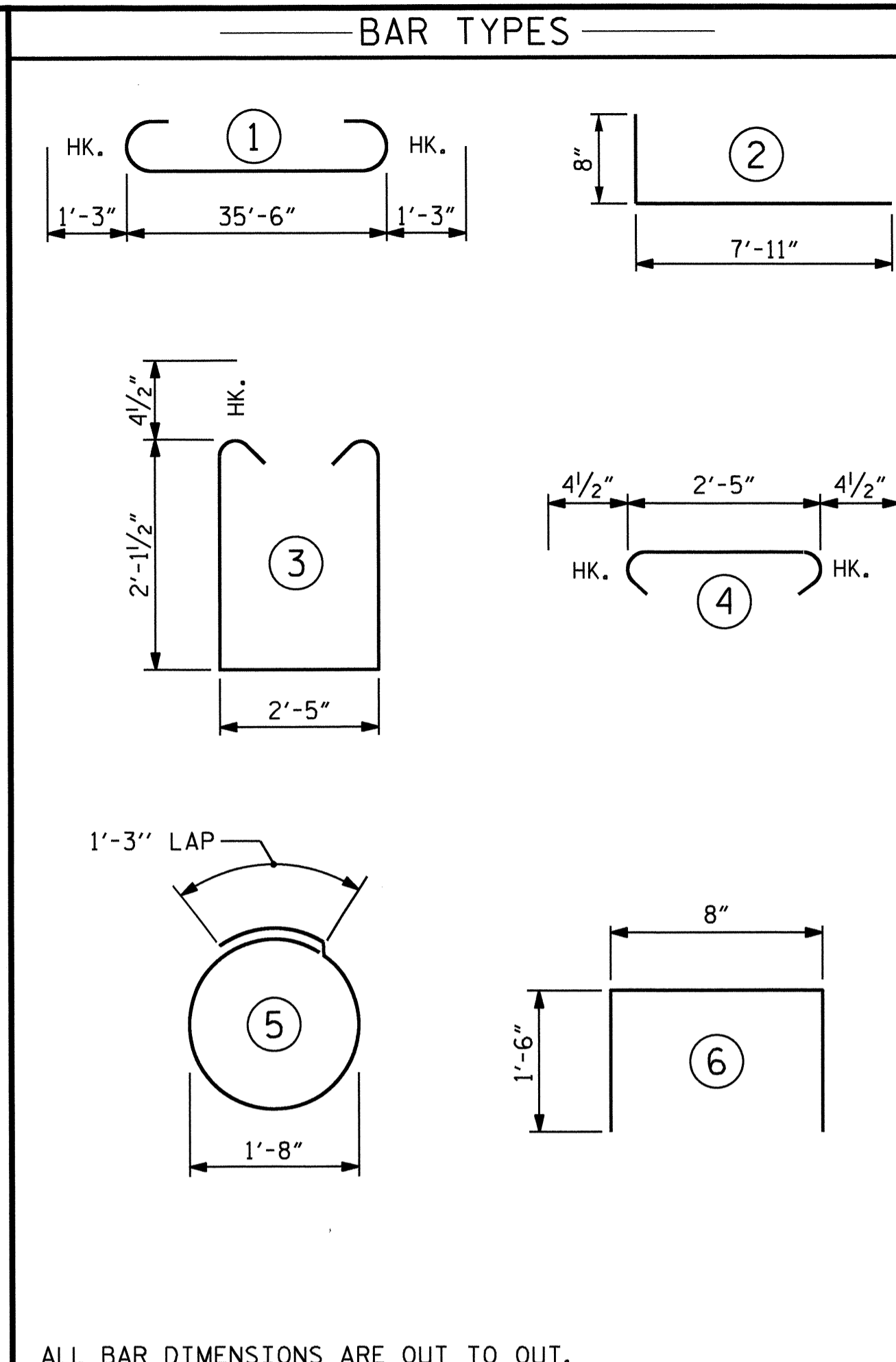


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

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TEMPORARY DRAINAGE AT END BENT



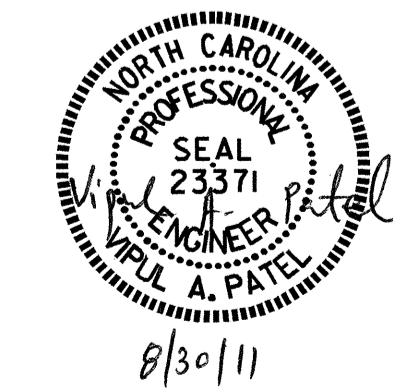
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		38'-0"	1034
B2	12	#4	STR.	19'-1"	153
B3	9	#4	STR.	2'-5"	15
D1	20	#8	STR.	2'-3"	120
H1	32	#4	2	8'-7"	183
K1	12	#4	STR.	19'-1"	153
K2	8	#4	STR.	2'-11"	16
S1	50	#4	3	7'-5"	248
S2	50	#4	4	3'-2"	106
S3	12	#4	5	6'-6"	52
U1	30	#4	6	3'-8"	73
V1	60	#4	STR.	4'-2"	167
V2	26	#4	STR.	6'-2"	107
V3	26	#4	STR.	6'-5"	111
REINFORCING STEEL				2538	
CLASS "A" CONCRETE					
POUR #1 CAP, LOWER WINGS & COLLARS				CU. YDS.	11.6
POUR #2 UPPER WINGS & BACKWALL				CU. YDS.	5.6
TOTAL				CU. YDS.	17.2
HP12X53 STEEL PILES No. 6				LIN. FT.	150.0

PROJECT NO. B-4294  
 UNION COUNTY  
 STATION: 18+79.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE					
END BENT #1					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					18

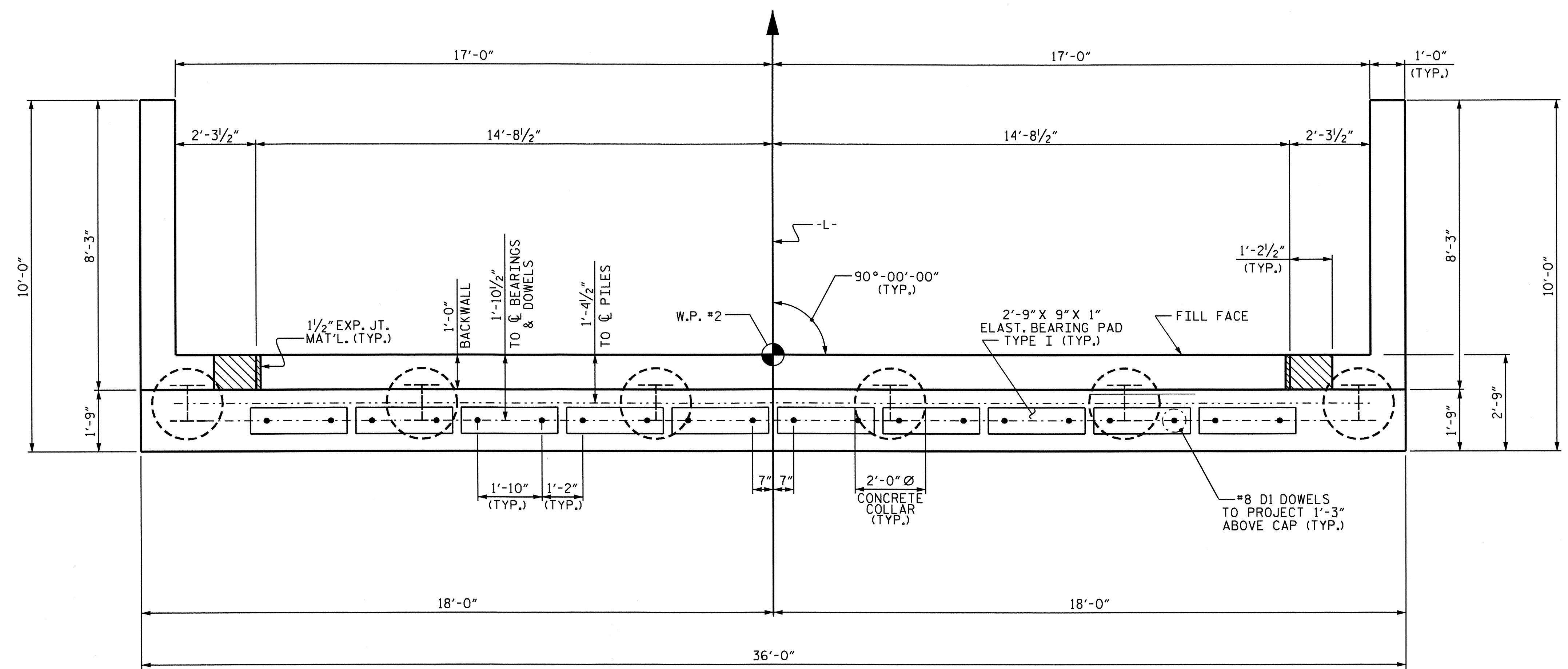


DRAWN BY: R. G. EMERSON DATE: 06/09  
 CHECKED BY: M. K. BEARD DATE: 07/09

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 vpatel

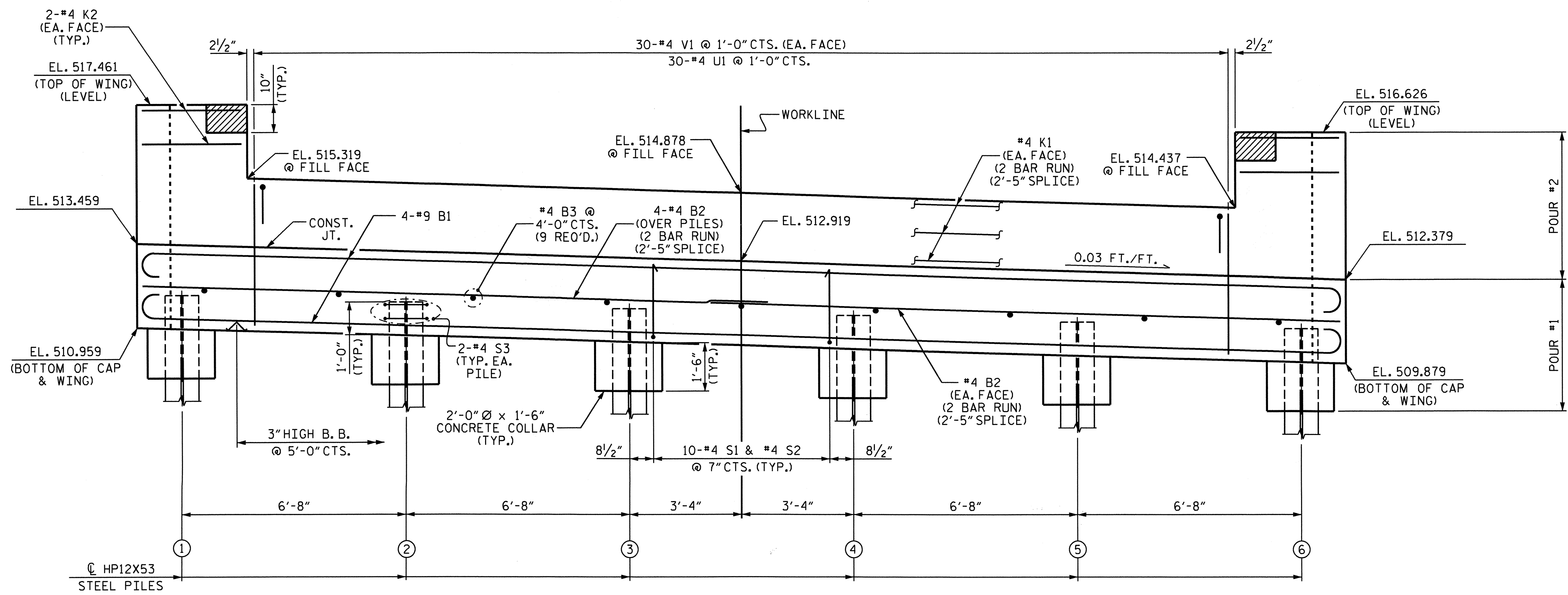
**NOTES**

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #8 DI DOWELS.  
 THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.



**PLAN**

PILE	TOP OF PILE ELEVATIONS
1	EL. 511.934
2	EL. 511.735
3	EL. 511.535
4	EL. 511.336
5	EL. 511.137
6	EL. 510.937

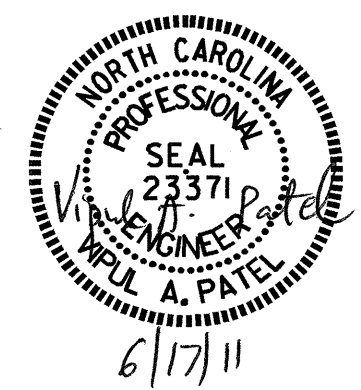


**ELEVATION**

PROJECT NO. B-4294  
 UNION COUNTY  
 STATION: 18+79.00 -L-

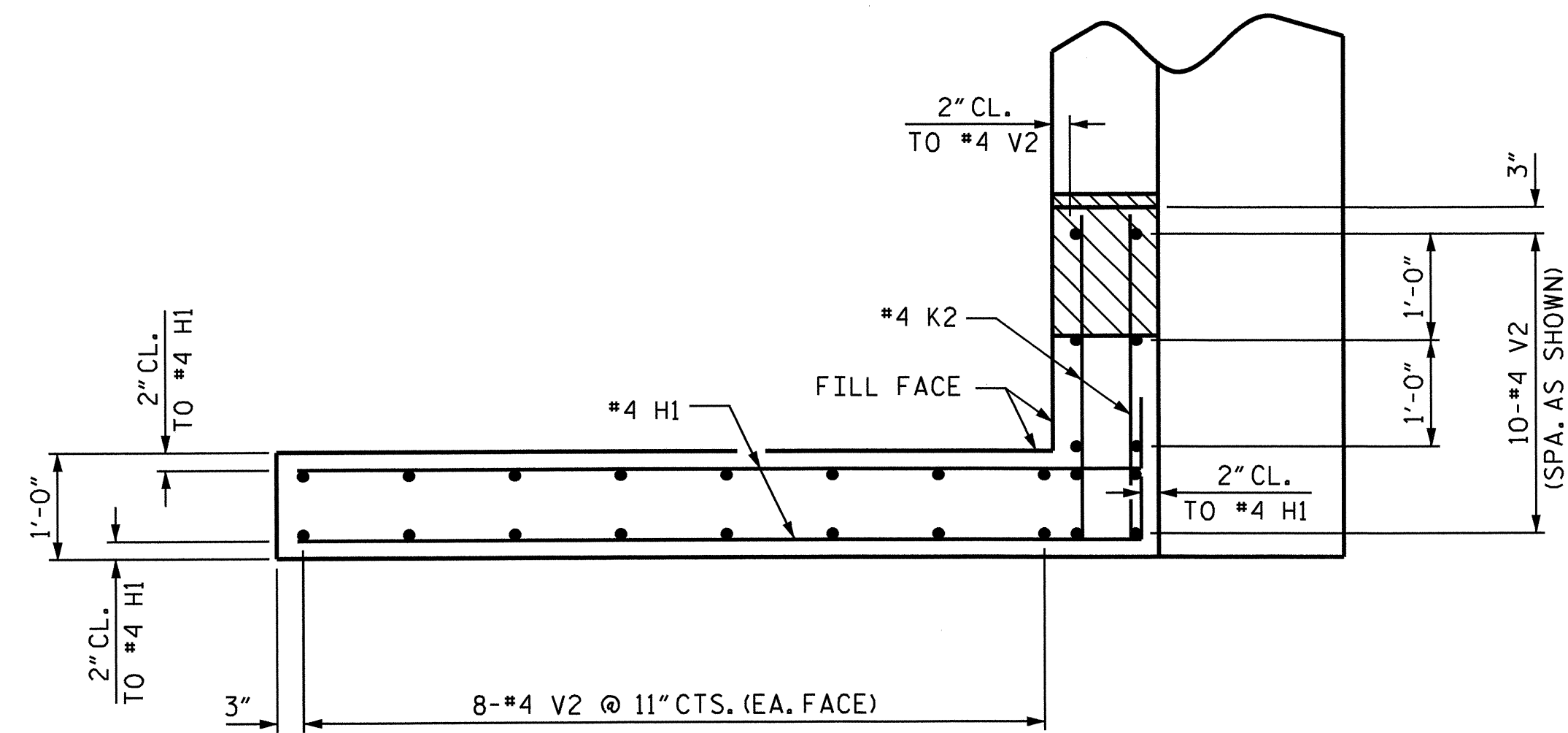
SHEET 1 OF 3

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

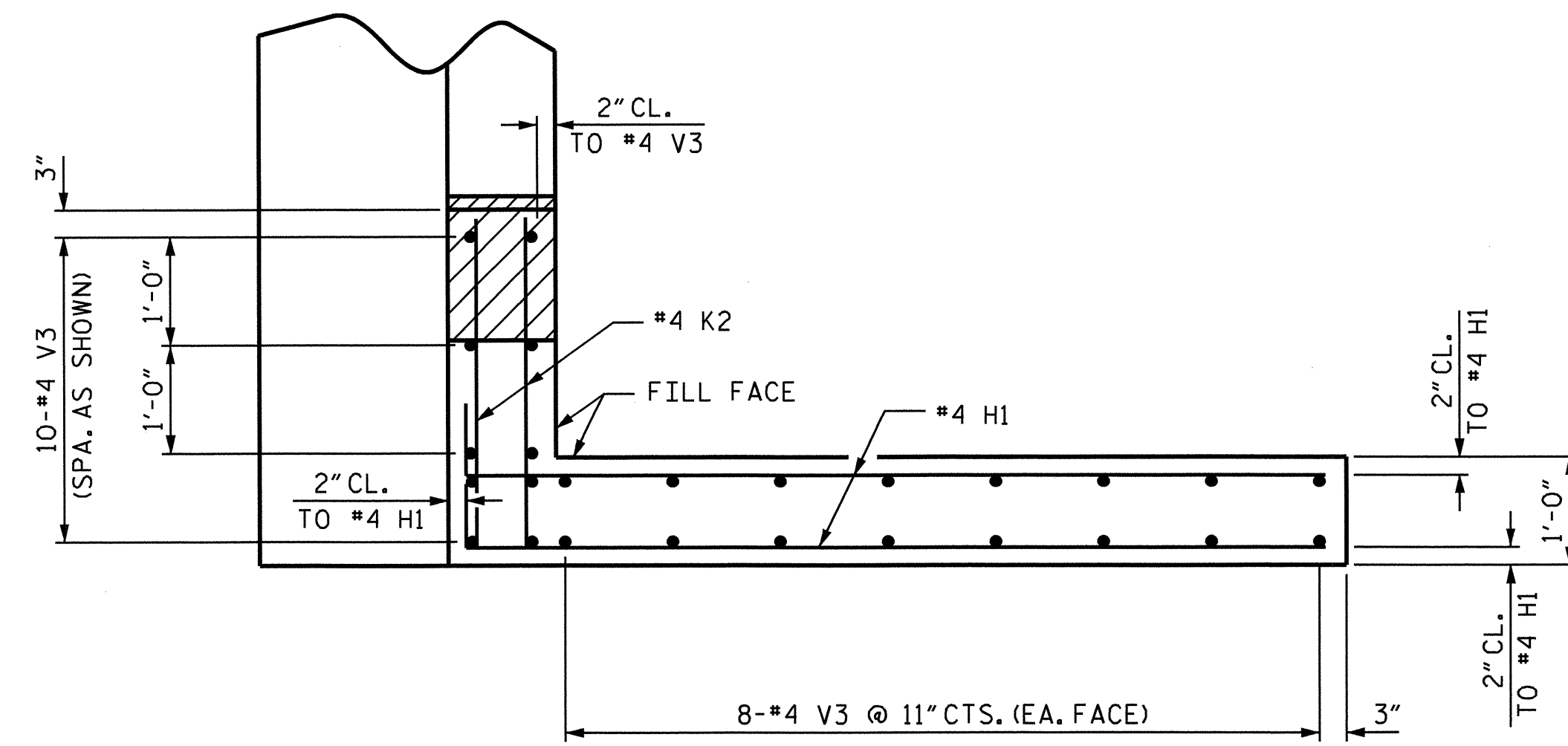


DRAWN BY: R. G. EMERSON DATE: 06/09  
 CHECKED BY: M. K. BEARD DATE: 07/09

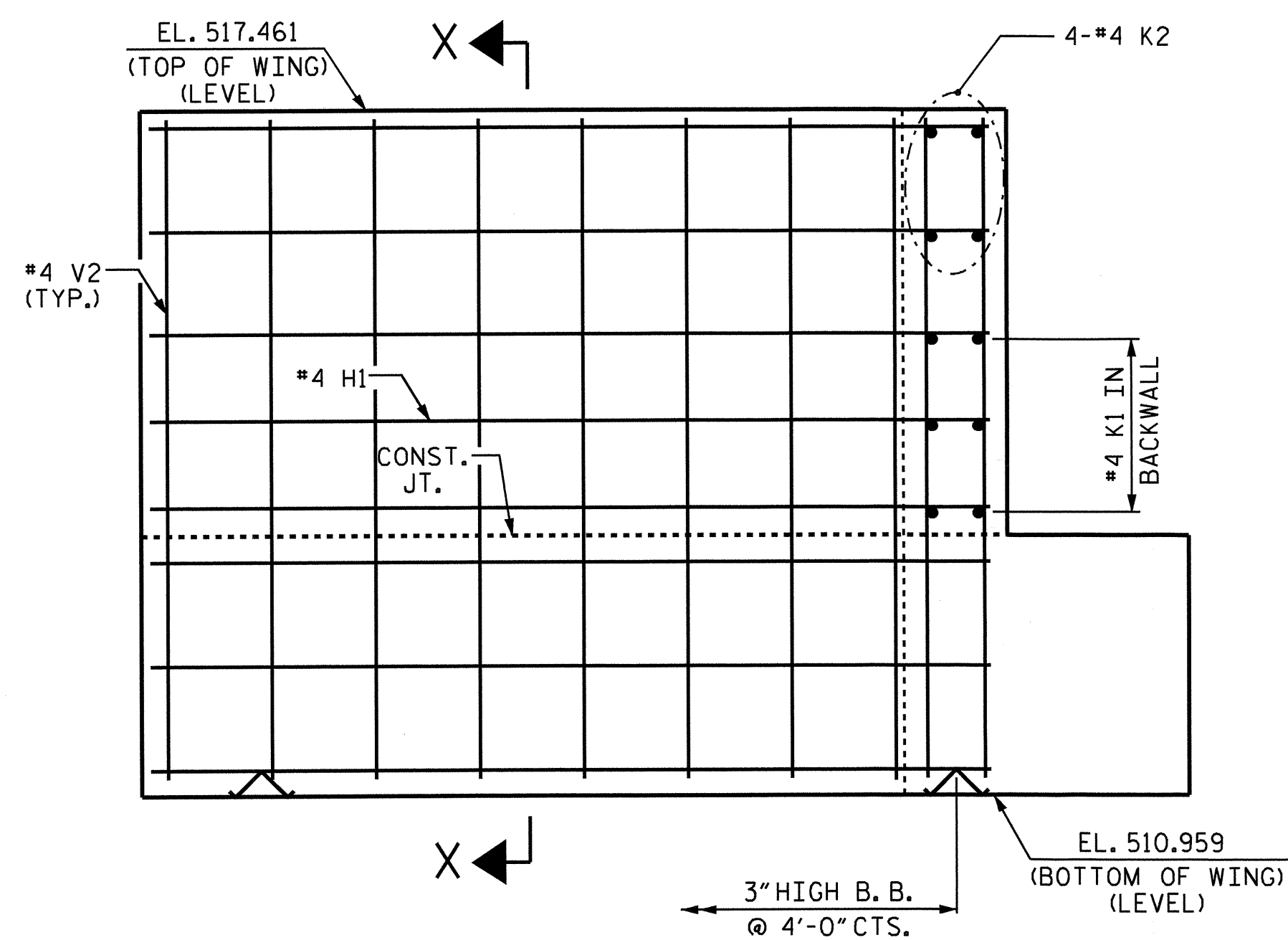
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13	
1			3			TOTAL SHEETS	
2			4			18	



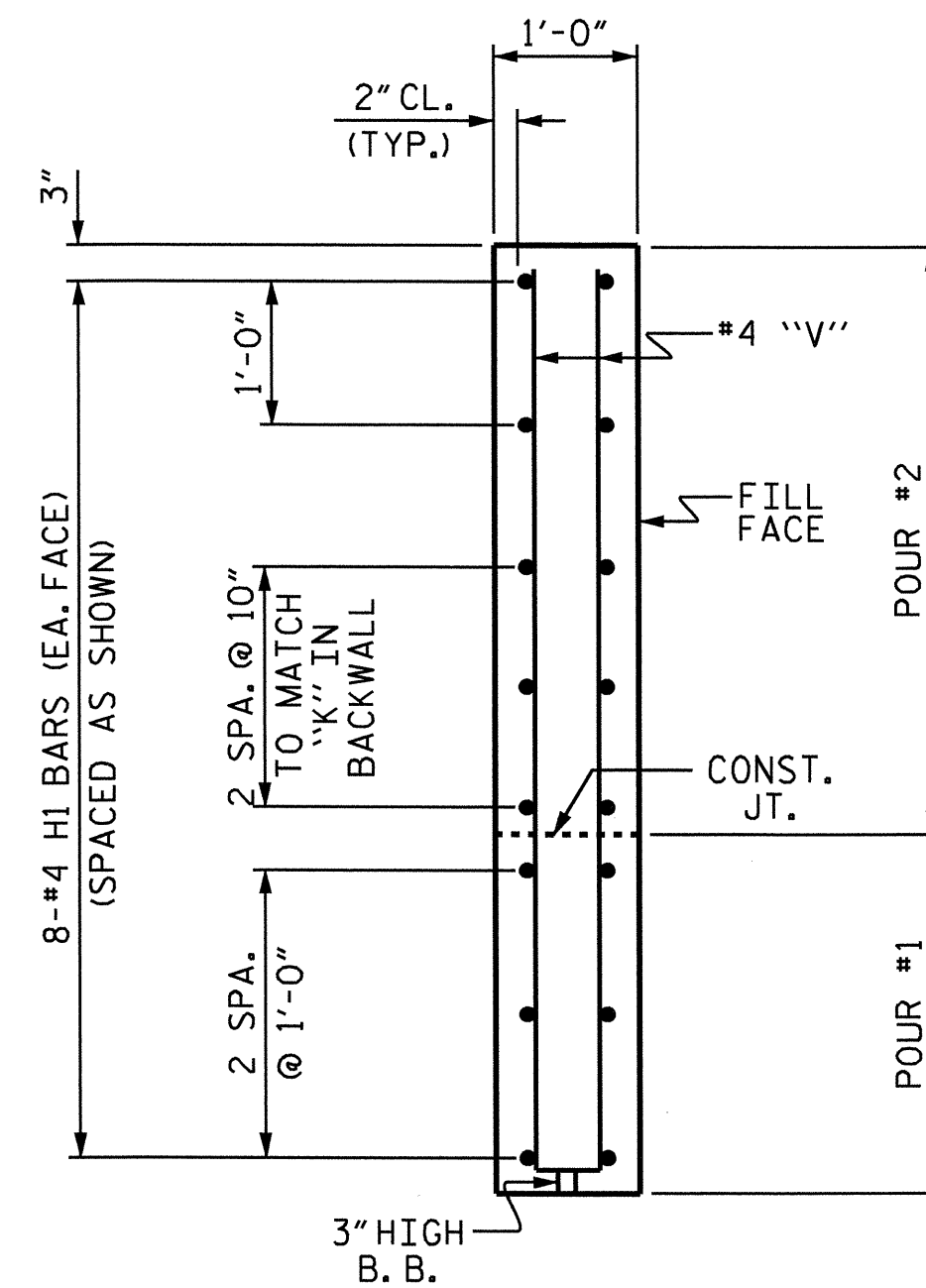
PLAN OF LEFT WING



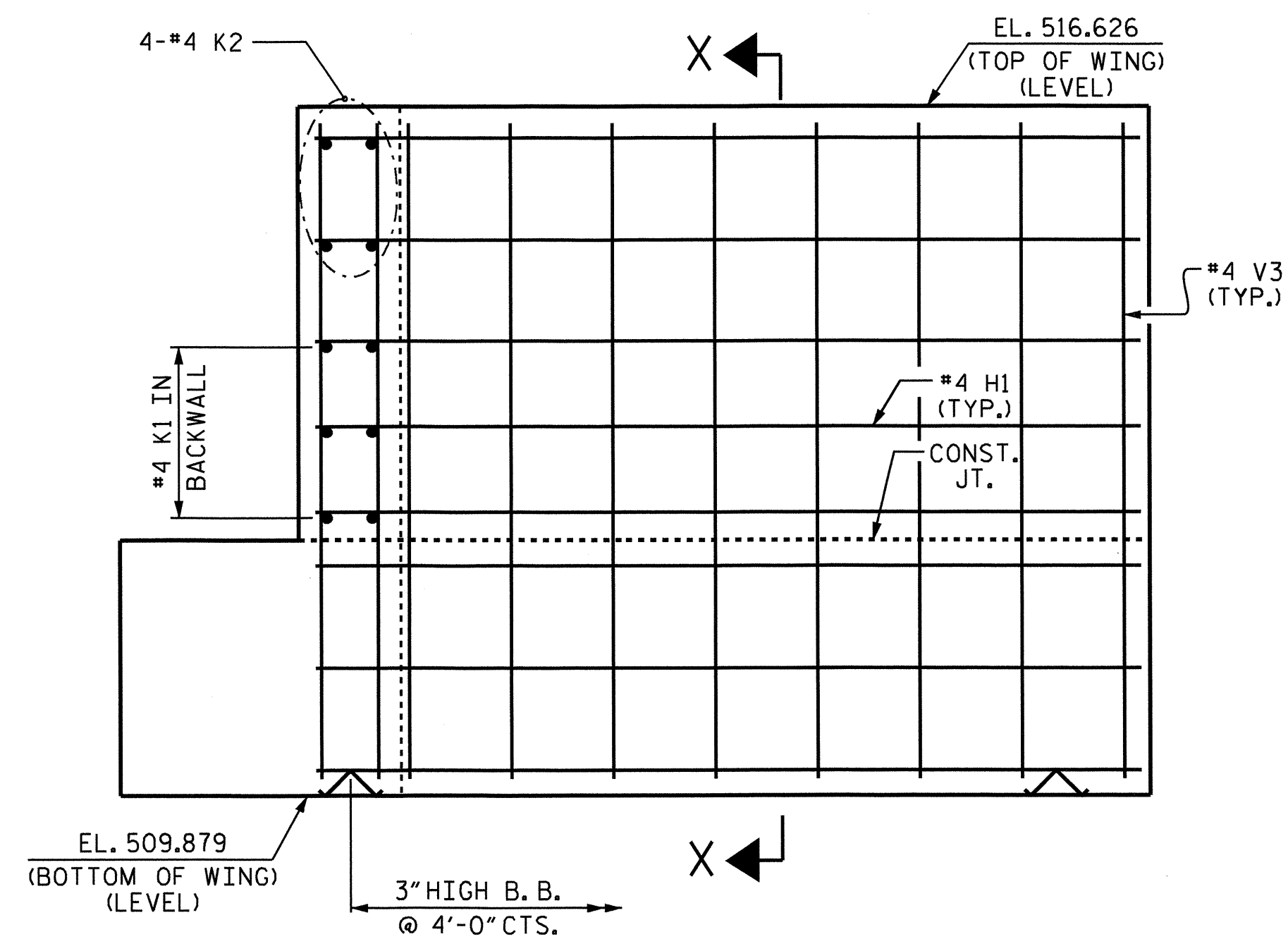
PLAN OF RIGHT WING



ELEVATION OF LEFT WING



SECTION X-X



ELEVATION OF RIGHT WING

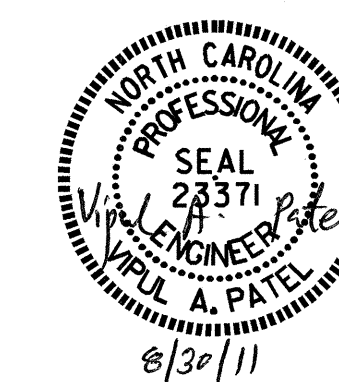
PROJECT NO. B-4294  
UNION COUNTY  
 STATION: 18+79.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE

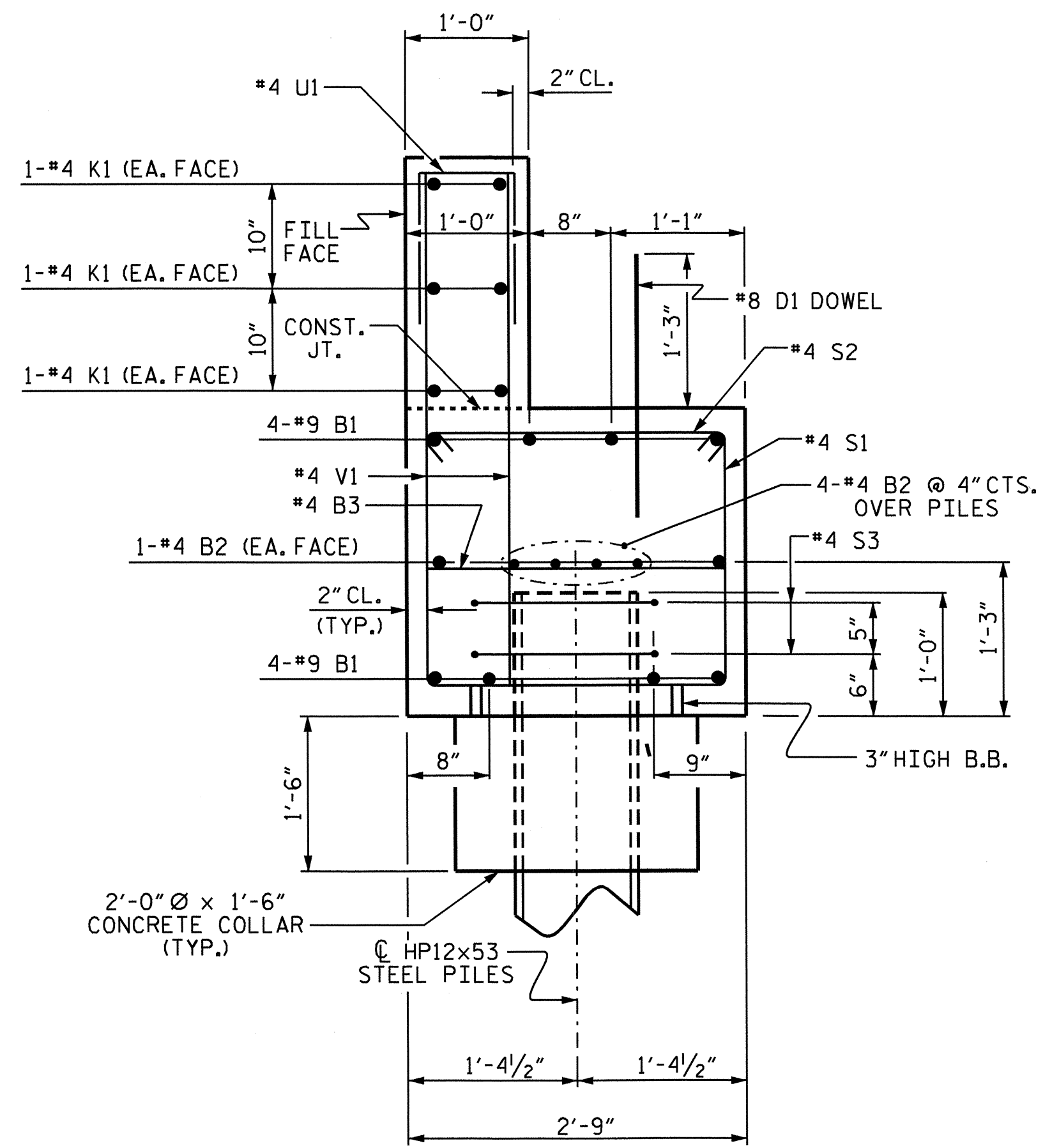
END BENT #2



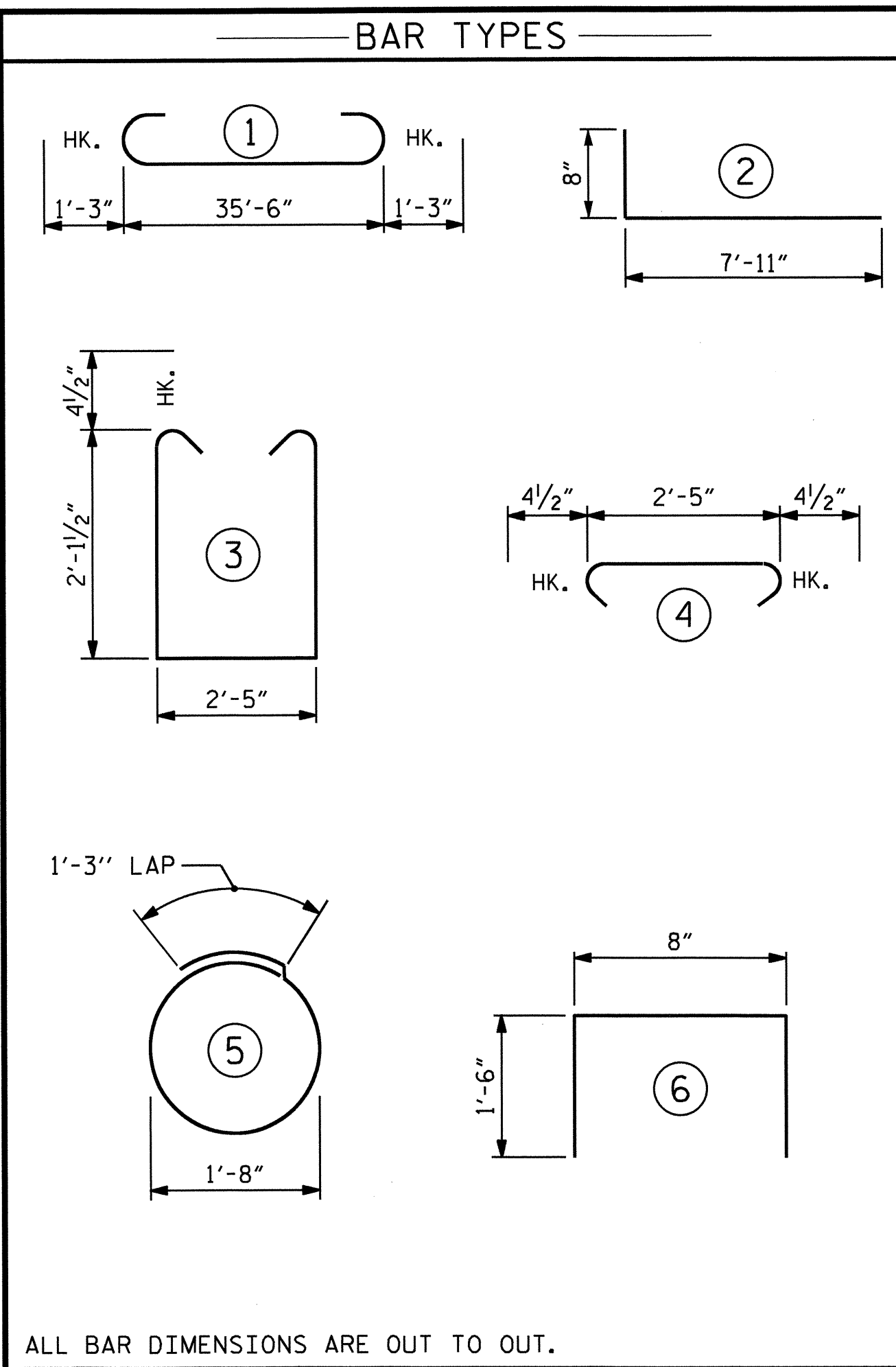
DRAWN BY: R. G. EMERSON DATE: 06/09  
 CHECKED BY: M. K. BEARD DATE: 07/09

30-AUG-2011 08:19  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			18

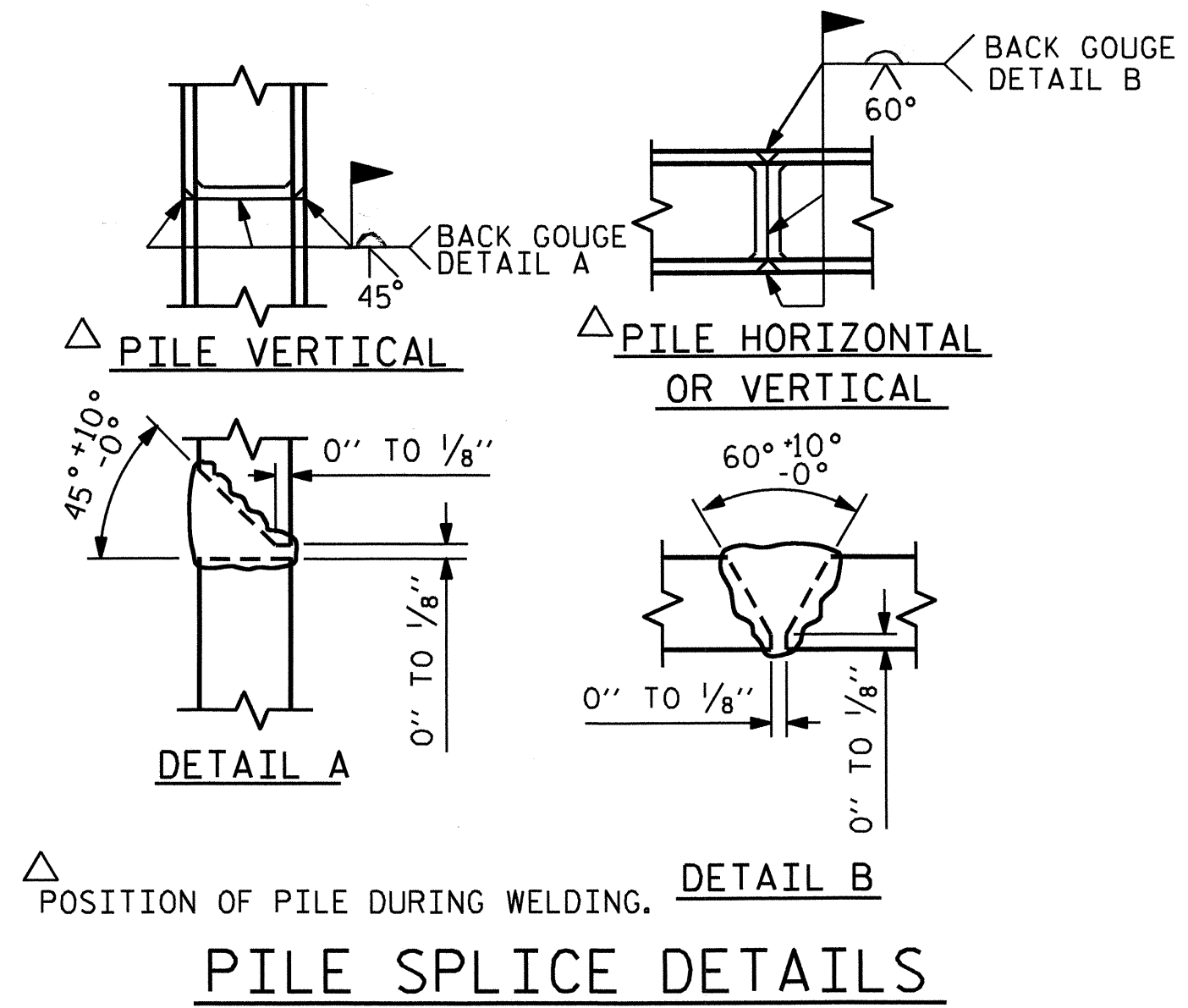


**SECTION THRU CAP**

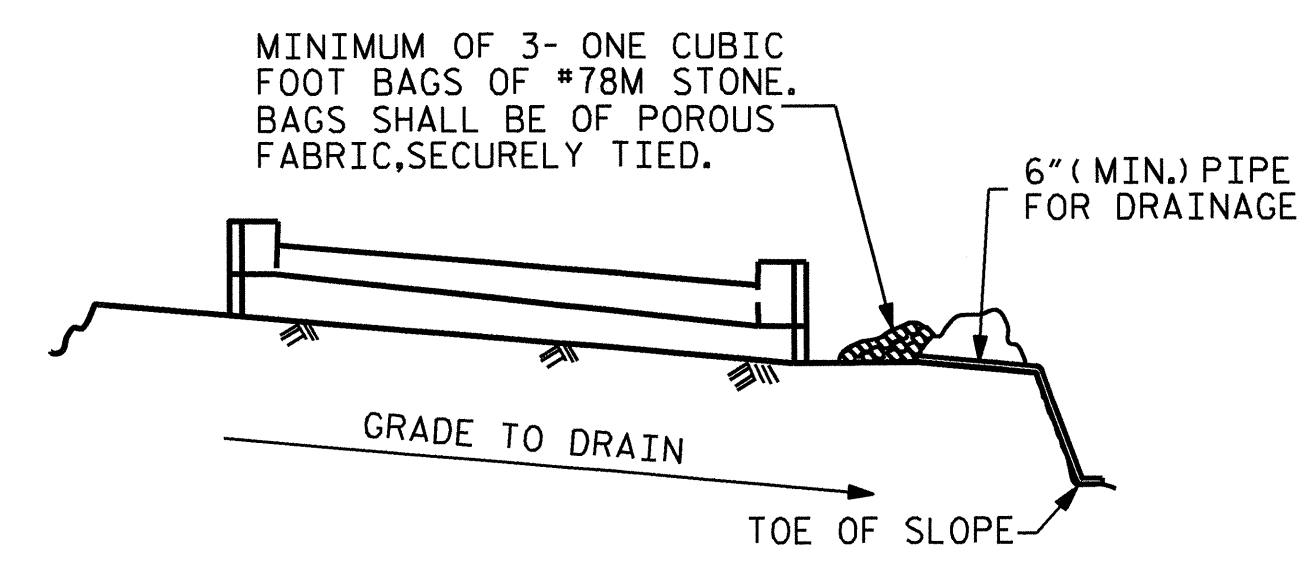


ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		38'-0"	1034
B2	12	#4	STR.	19'-1"	153
B3	9	#4	STR.	2'-5"	15
D1	20	#8	STR.	2'-3"	120
H1	32	#4	2	8'-7"	183
K1	12	#4	STR.	19'-1"	153
K2	8	#4	STR.	2'-11"	16
S1	50	#4	3	7'-5"	248
S2	50	#4	4	3'-2"	106
S3	12	#4	5	6'-6"	52
U1	30	#4	6	3'-8"	73
V1	60	#4	STR.	4'-2"	167
V2	26	#4	STR.	6'-2"	107
V3	26	#4	STR.	6'-5"	111
REINFORCING STEEL					2538
CLASS "A" CONCRETE					
POUR #1 CAP, LOWER WINGS & COLLARS					CU. YDS. 11.6
POUR #2 UPPER WINGS & BACKWALL					CU. YDS. 5.6
TOTAL					CU. YDS. 17.2
HP12X53 STEEL PILES No. 6					LIN. FT. 210.0



**PILE SPLICE DETAILS**



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

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 DETEIORATED 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**

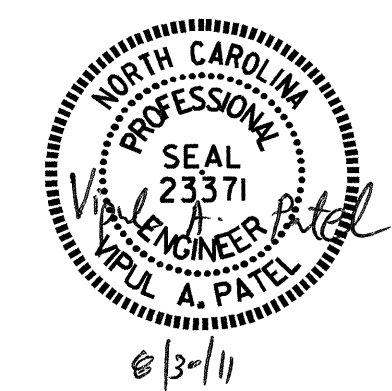
PROJECT NO. B-4294  
UNION COUNTY  
 STATION: 18+79.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE

END BENT #2



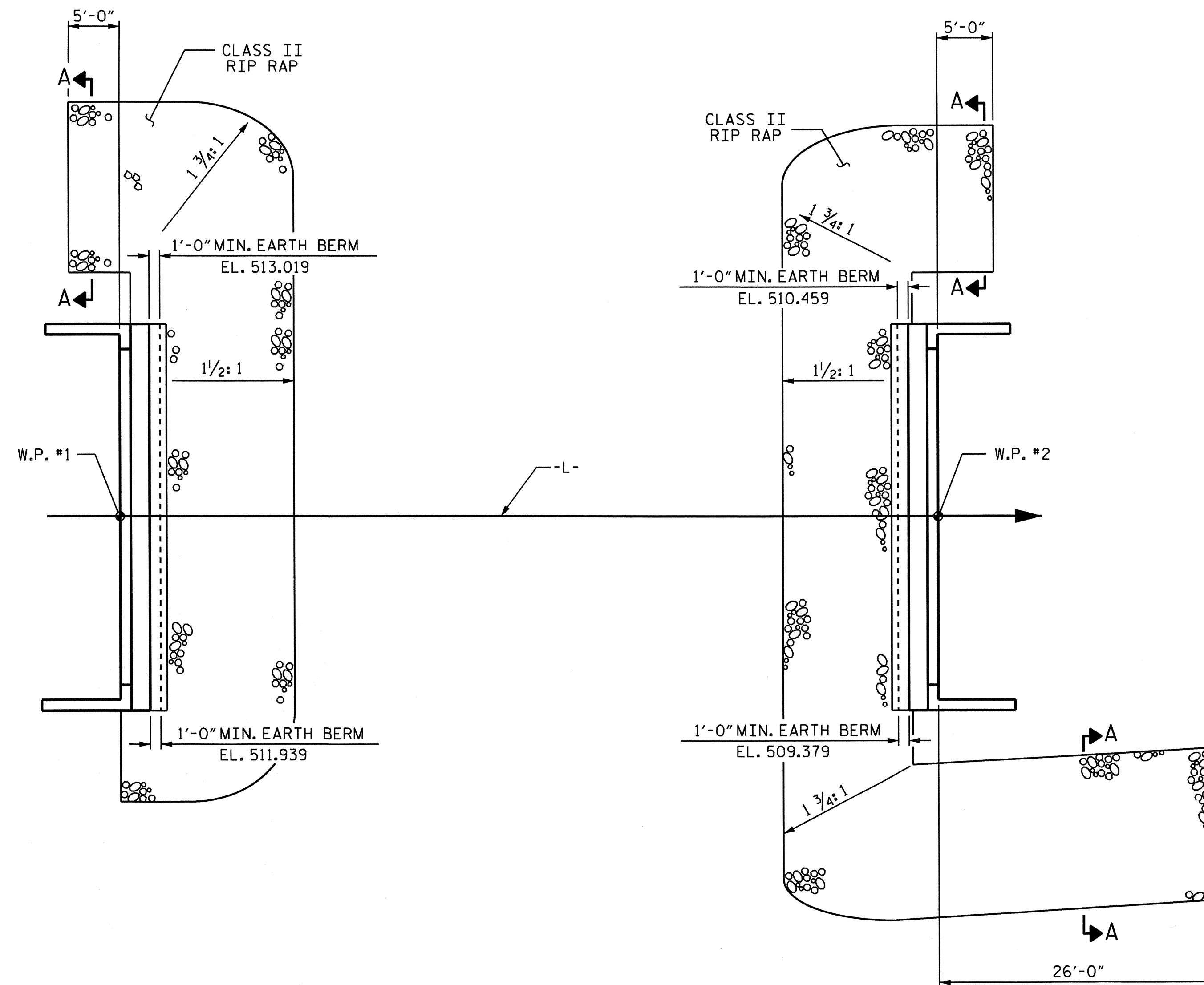
DRAWN BY : R. G. EMERSON DATE : 06/09  
 CHECKED BY : M. K. BEARD DATE : 07/09

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 30-AUG-2011 08:19  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			18



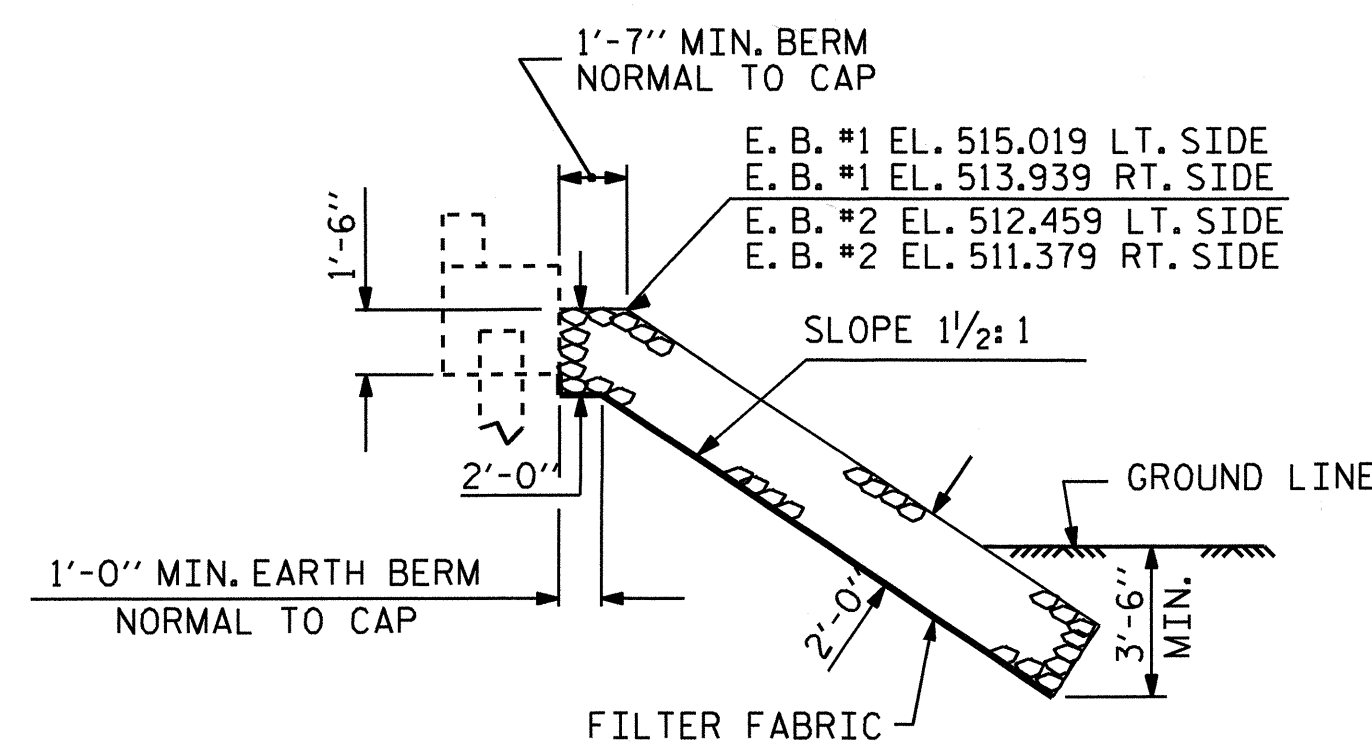
ESTIMATED QUANTITIES		
BRIDGE @ STA. 18+79.00 -L-	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT #1	190	210
END BENT #2	270	300



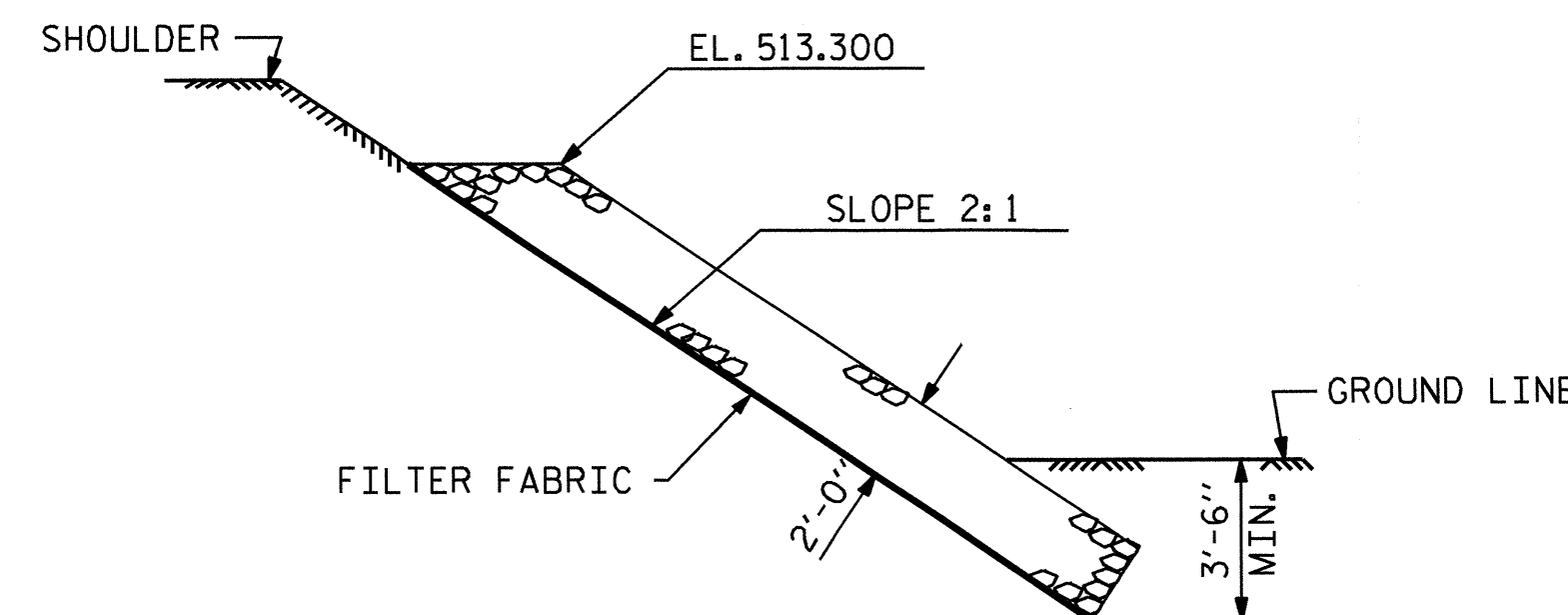
END BENT #1

END BENT #2

PLAN OF RIP RAP



SECTION C-C  
BERM RIP RAPPED



SECTION A-A

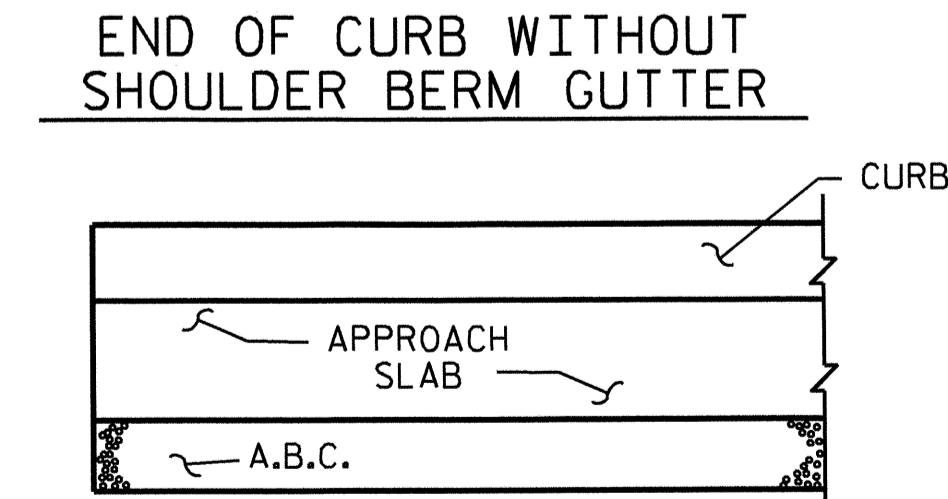
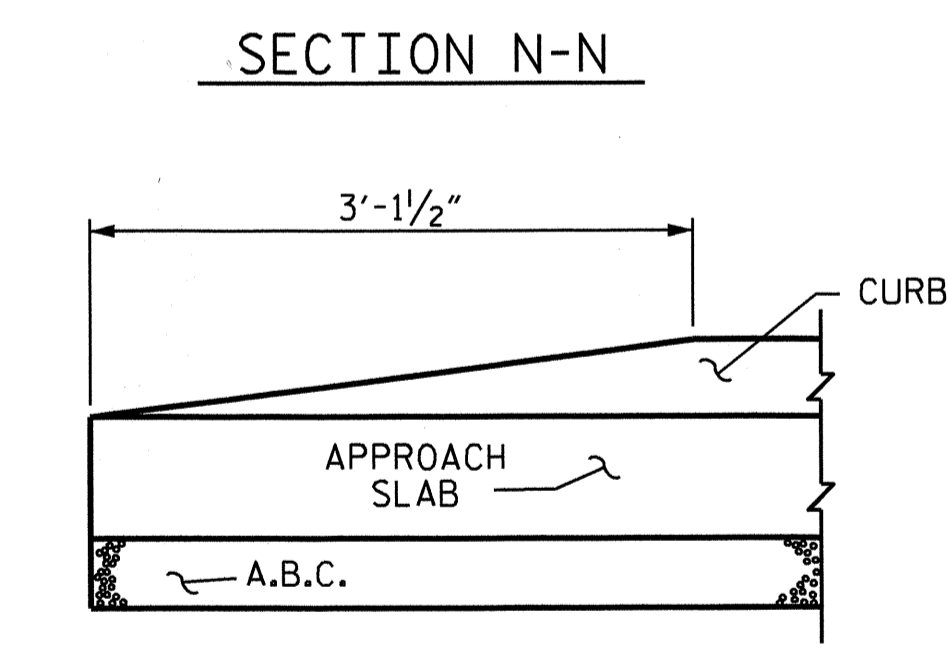
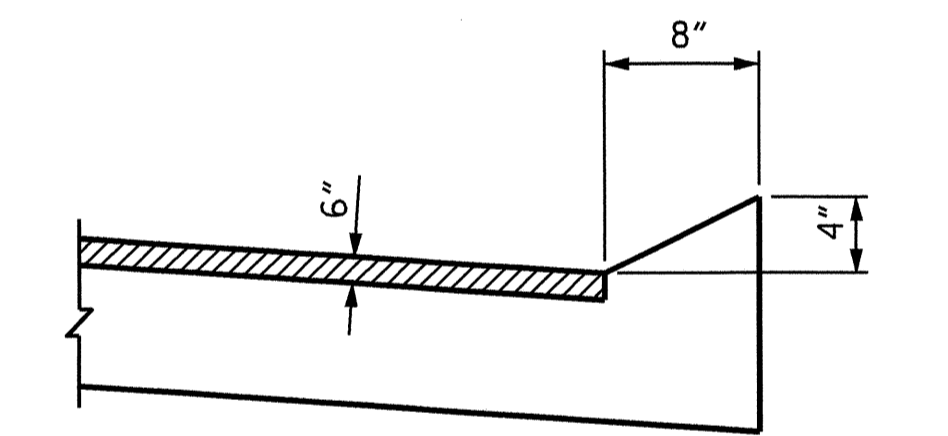
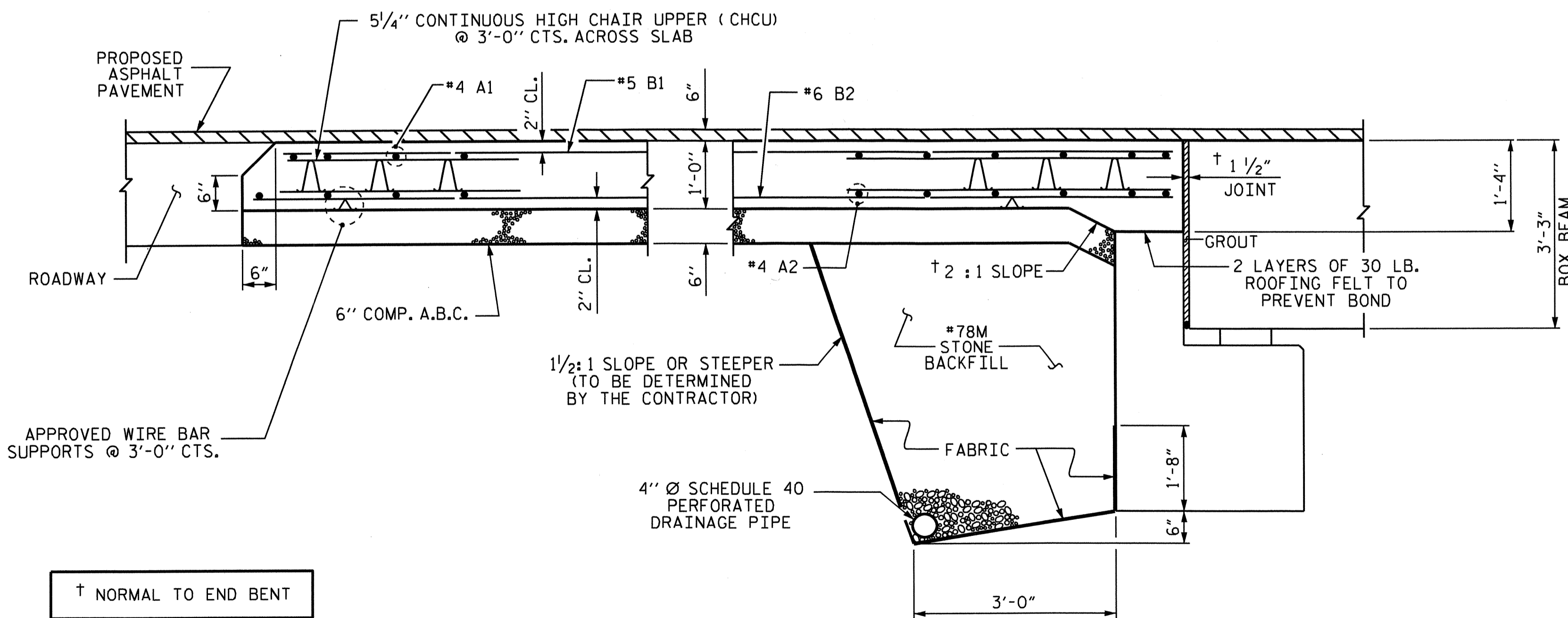
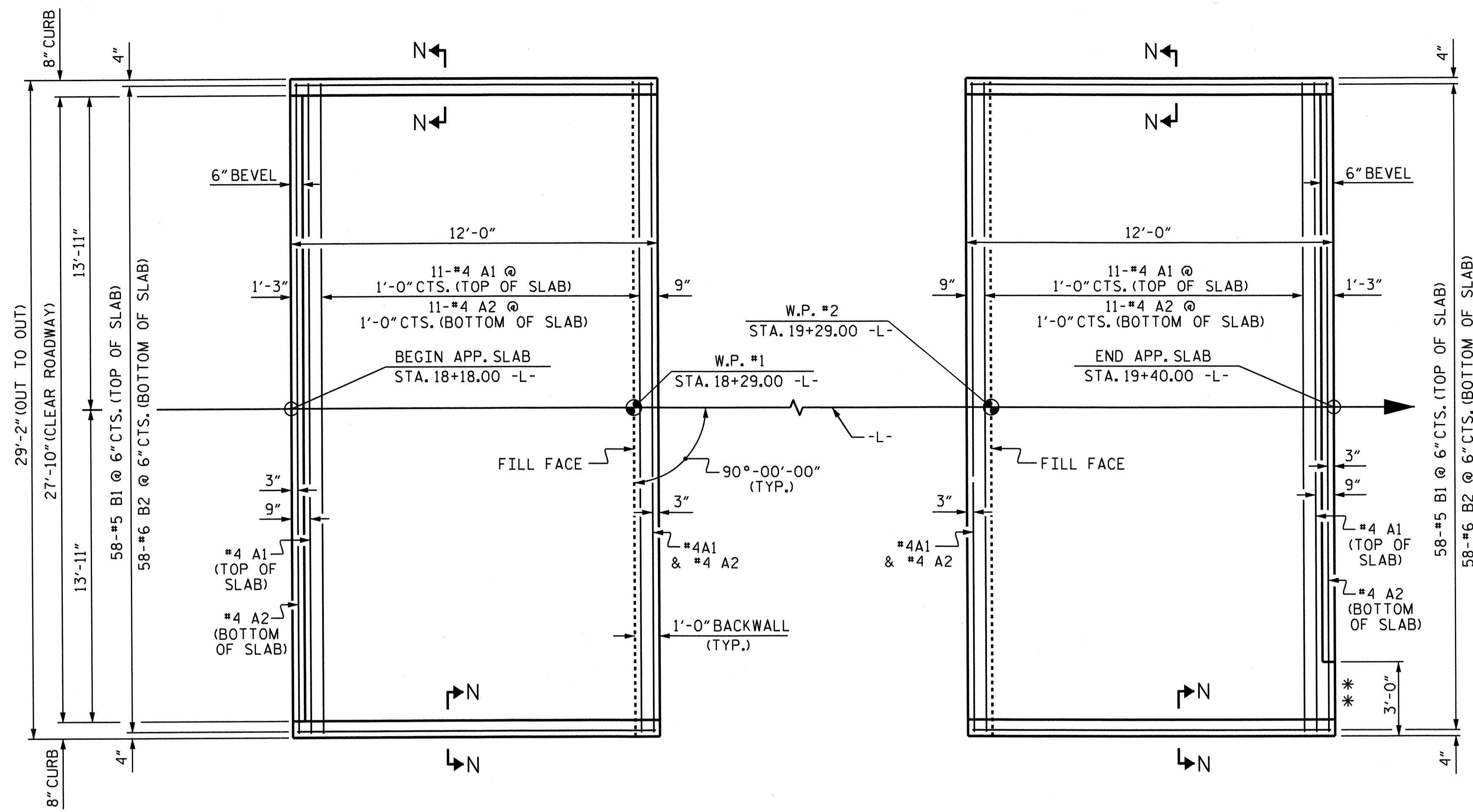
PROJECT NO. B-4294  
UNION COUNTY  
 STATION: 18+79.00 -L-



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-16
TOTAL SHEETS	18

ASSEMBLED BY : R. G. EMERSON	DATE : 02/09
CHECKED BY : M. K. BEARD	DATE : 03/09
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



CURB DETAILS

NOTES

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

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

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

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

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

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

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

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 BOX BEAM UNIT" SHEETS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

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

BILL OF MATERIAL

APPROACH SLAB FOR ONE (2 REQ'D.)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	28'-10"	250
A2	13	#4	STR	28'-10"	250
*B1	58	#5	STR	11'-2"	676
B2	58	#6	STR	11'-8"	1016
REINFORCING STEEL				LBS.	1266
* EPOXY COATED REINFORCING STEEL				LBS.	926
CLASS AA CONCRETE				C. Y.	13.8

PROJECT NO. B-4294  
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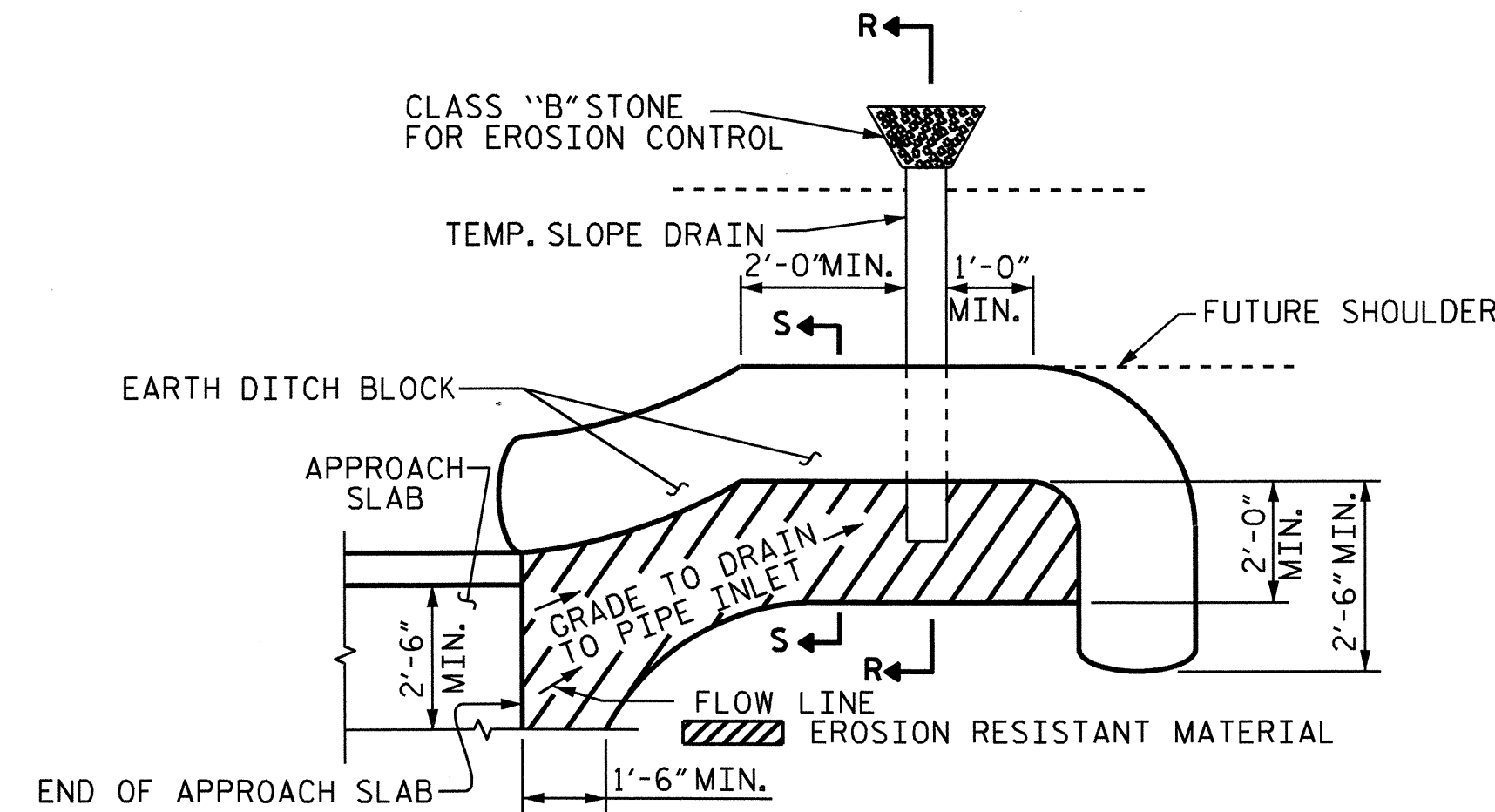
SHEET 1 OF 2

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			18

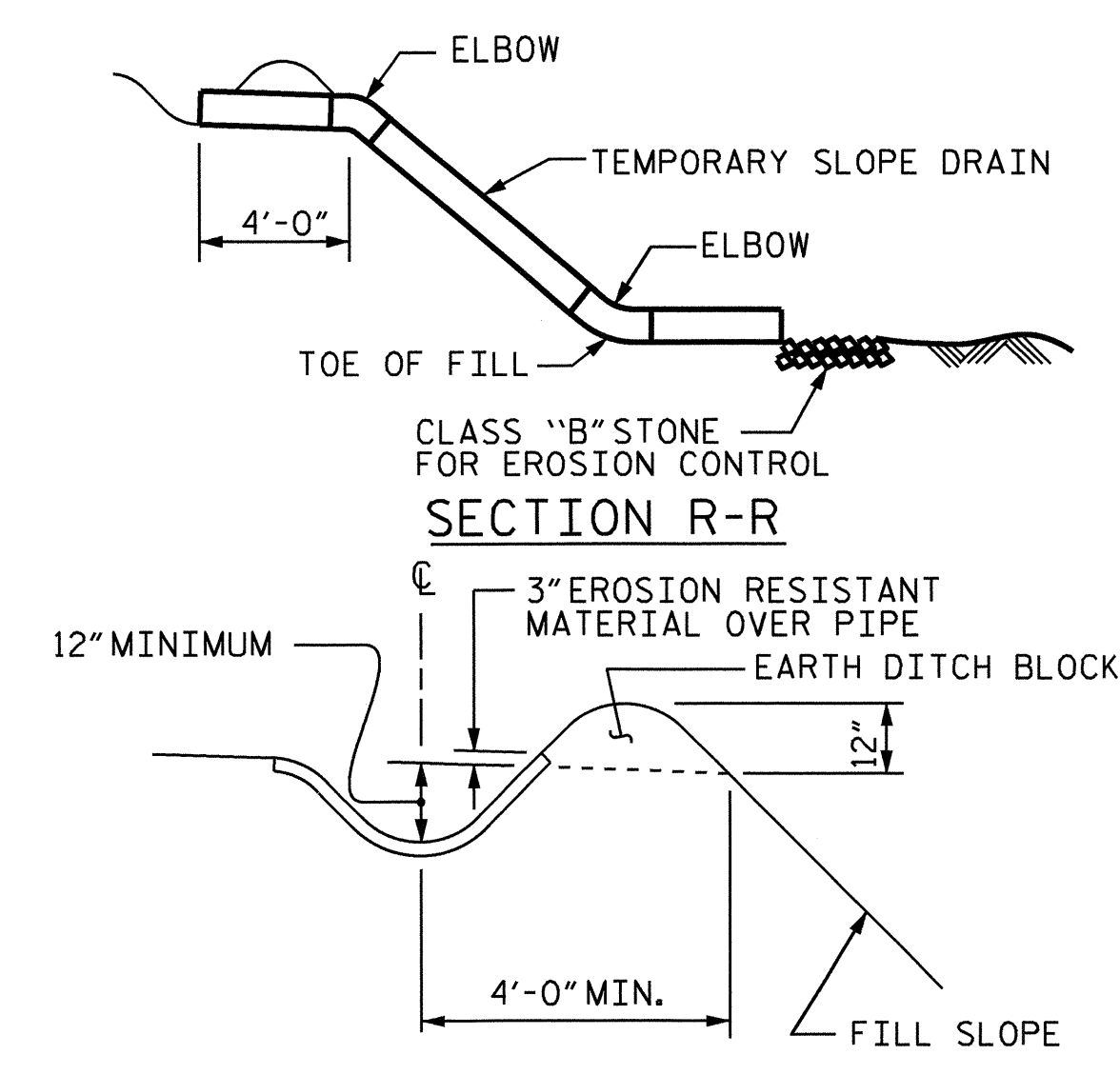


ASSEMBLED BY: R. G. EMERSON DATE: 02/09  
 CHECKED BY: G. M. GILLAND DATE: 03/09  
 DRAWN BY: KMM 3-08  
 CHECKED BY: GM 3-08



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

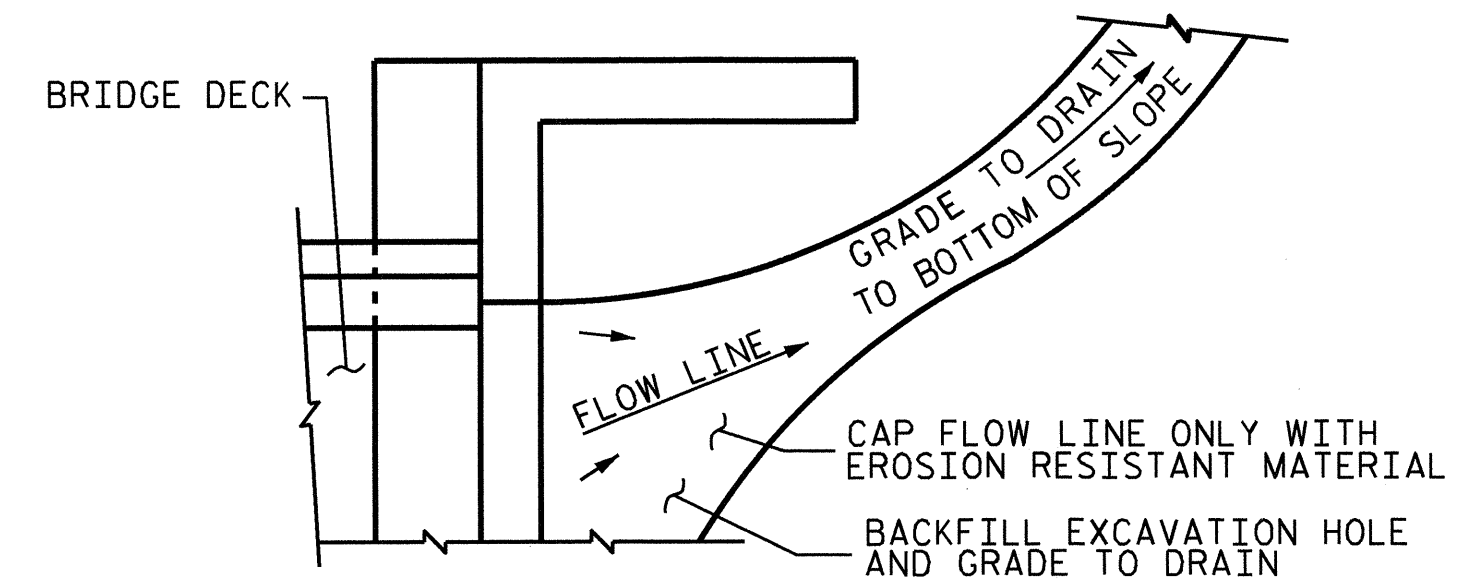
PLAN VIEW



SECTION S-S

### TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



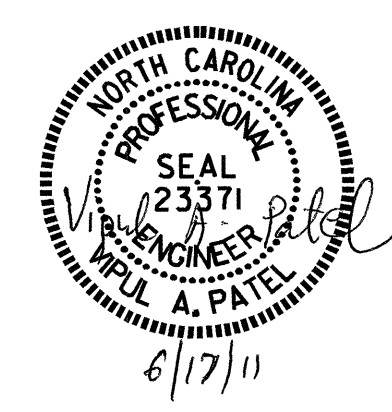
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT 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-4294  
UNION COUNTY  
 STATION: 18+79.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 BRIDGE APPROACH  
 SLAB DETAILS



ASSEMBLED BY : R. G. EMERSON	DATE : 02/09
CHECKED BY : G. M. GILLAND	DATE : 03/09
DRAWN BY : FCJ 11/88	REV. 10/17/00 RWW/LJS
CHECKED BY : ARB 11/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM

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

