

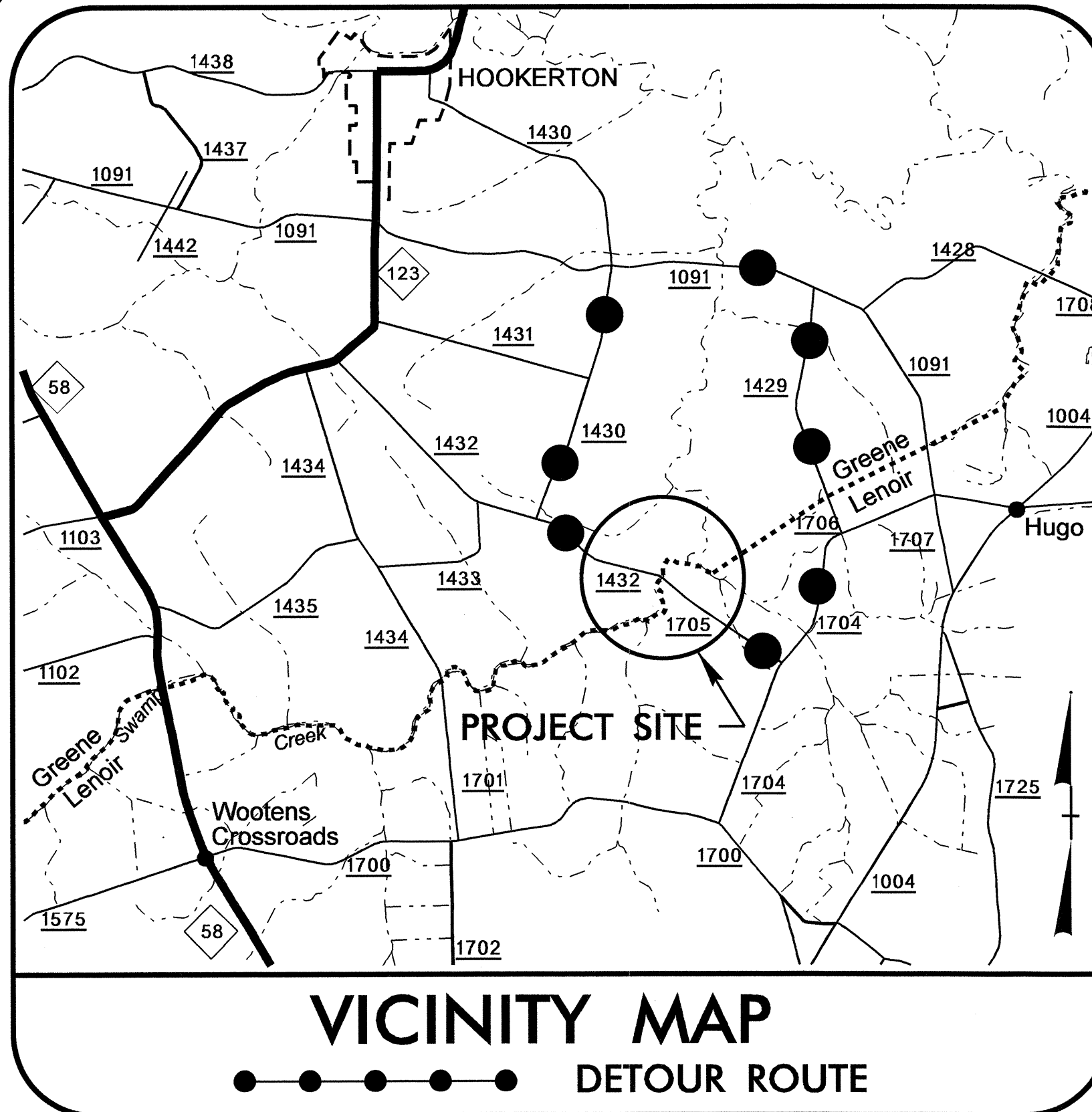
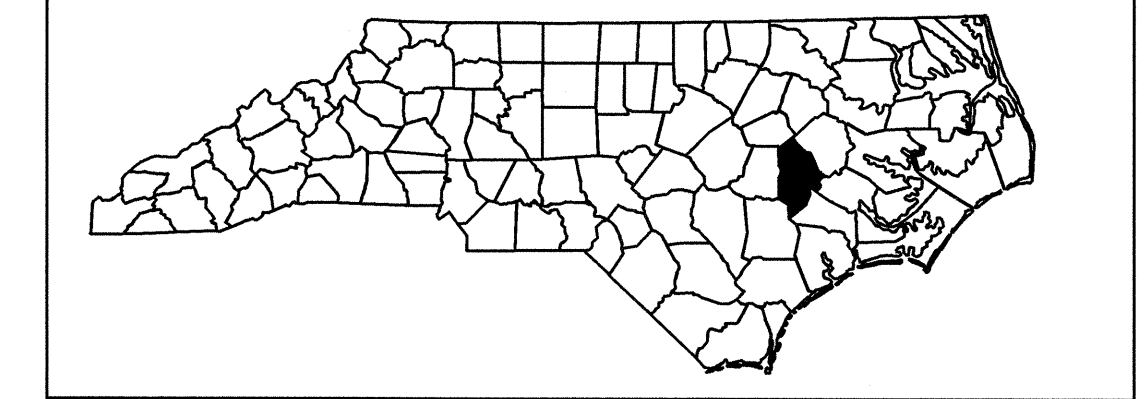
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GREENE / LENOIR COUNTIES

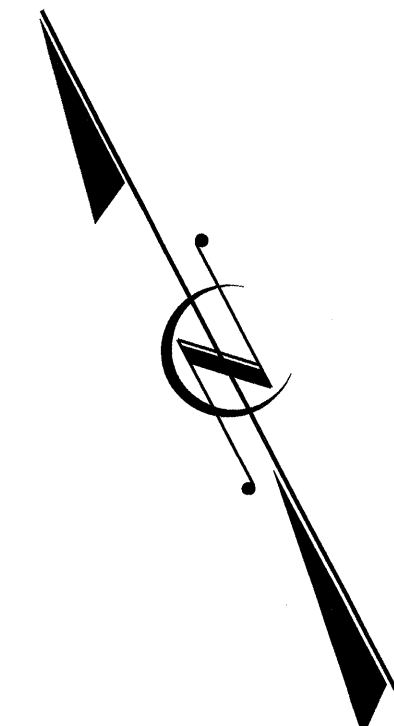
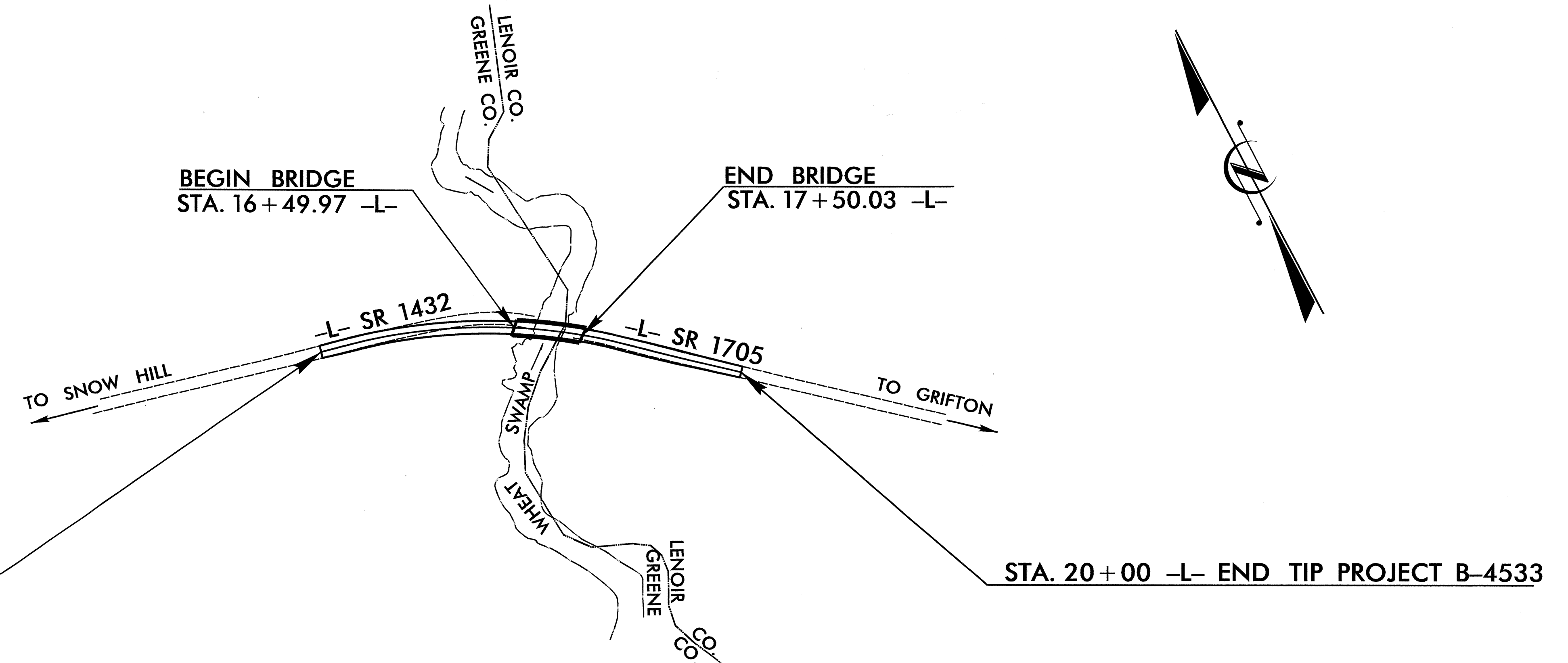
**LOCATION: BRIDGE NO. 48 OVER WHEAT SWAMP CREEK
ON SR 1432**

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4533		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33752.1.1	BRZ-1432 (3)	PE	
33752.2.1	BRZ-1432 (3)	RW & UTIL.	
33752.3.1	BRZ-1432 (3)	CONST.	



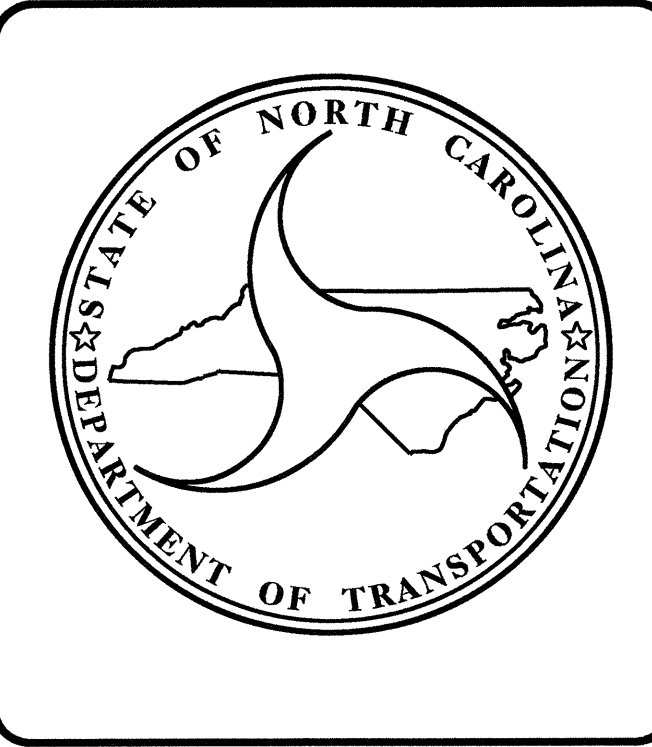
STRUCTURE



** DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVE RADIUS (45 MPH) AND HORIZONTAL STOPPING SIGHT DISTANCE (36 MPH).

16-SEP-2011 09:10: P:\Structure\Files\Mod Plans\B4533.scd.tsh_01.dgn
jkharriv

CONTRACT: C202731 TIP PROJECT: B-4533



DESIGN DATA

ADT 2011 =	637
ADT 2031 =	1230
DHV =	10 %
D =	60 %
T =	3 % *
V =	60 MPH**
* TTST 1% DUAL 2%	
FUNC. CLASS = LOCAL RURAL	
SUB - REGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-4533 =	0.104 MI.
LENGTH OF STRUCTURE TIP PROJECT B-4533 =	0.019 MI.
TOTAL LENGTH OF TIP PROJECT B-4533 =	0.123 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
	A. K. PASCHAL, 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

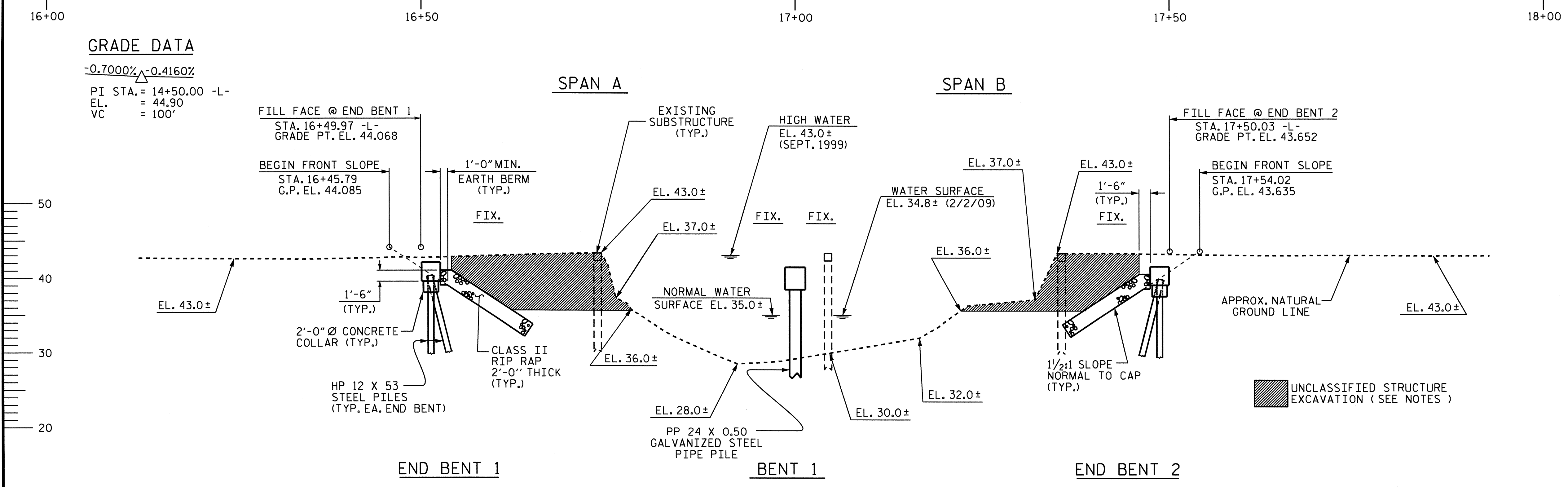
DATE

GRADE DATA

-0.7000% Δ -0.4160%
 PI STA. = 14+50.00 -L-
 EL. = 44.90
 VC = 100'

GRADE DATA

-0.4160% Δ -0.5200%
 PI STA. = 19+50.00 -L-
 EL. = 42.820
 VC = 100'

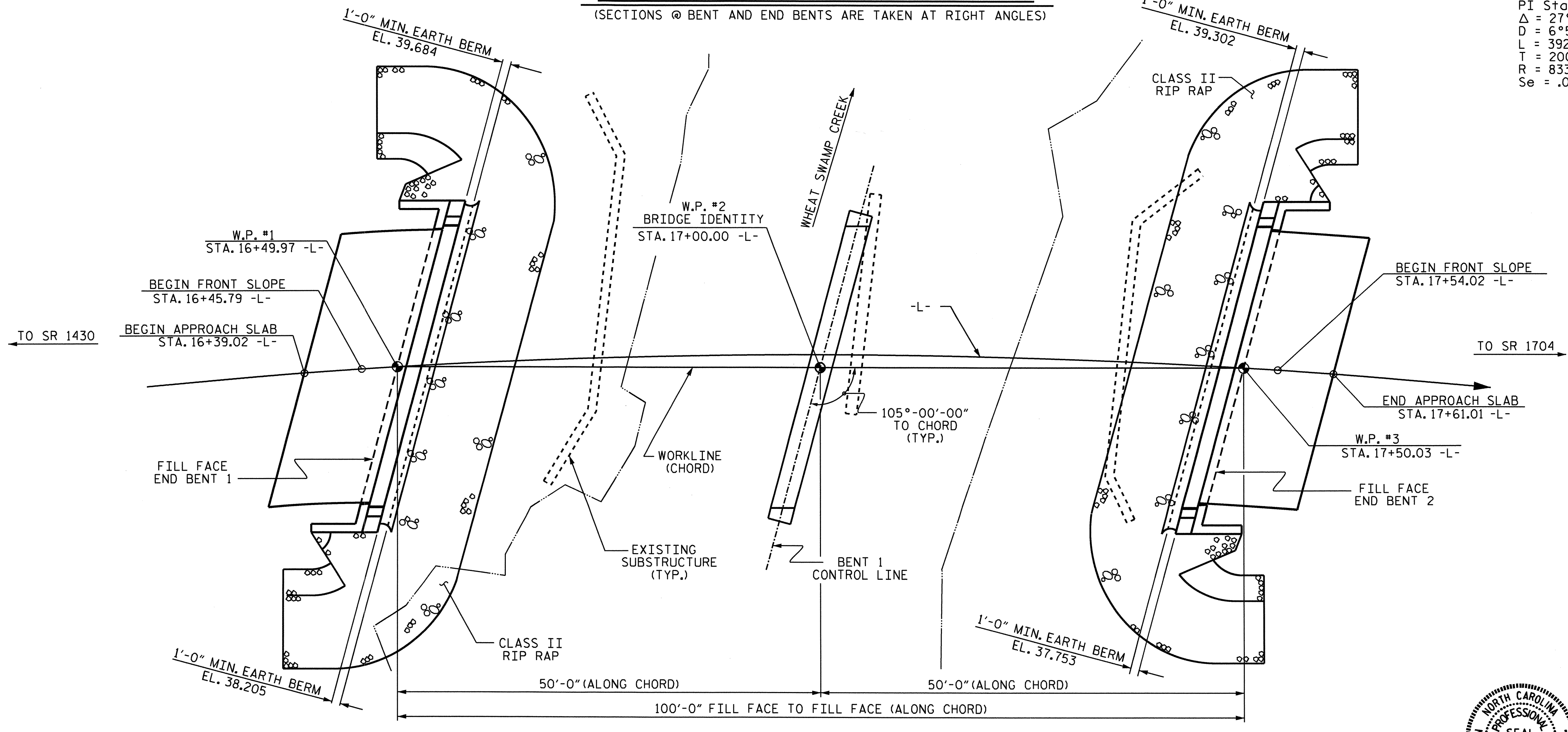


SECTION ALONG CHORD

(SECTIONS @ BENT AND END BENTS ARE TAKEN AT RIGHT ANGLES)

HORIZONTAL CURVE DATA

PI Sta 16+09.03 -L-
 Δ = 27°00'12.2" (RT)
 D = 6°52'41.7"
 L = 392.59'
 T = 200.01'
 R = 833.00'
 Se = .04



PLAN

(PILES NOT SHOWN IN PLAN VIEW FOR CLARITY)

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

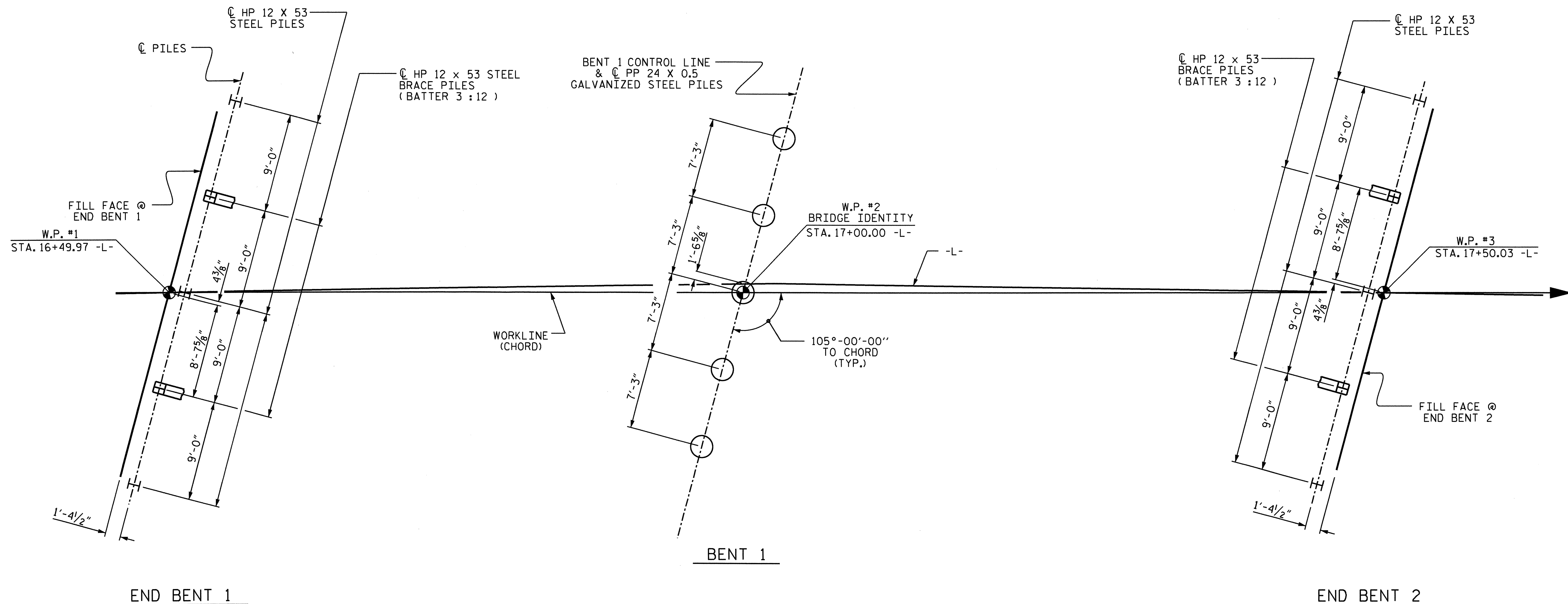
PROJECT NO. B-4533
GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-
 SHEET 1 OF 3 REPLACES BRIDGE NO.48

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 BRIDGE OVER WHEAT SWAMP
 CREEK ON SR 1432/1705
 BETWEEN SR 1430 AND SR 1704

(Professional Engineer Seal and Signature)
 NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 12929
 NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22005
 9/20/11

DRAWN BY: M. E. FOWLER DATE: 12/6/10
 CHECKED BY: J. G. KHARVA DATE: 5/3/11

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



FOUNDATION LAYOUT

(DIMENSIONS LOCATING END BENT PILES & BENT PIPE PILES ARE SHOWN TO CENTERLINE OF PILES & PIPE PILES)

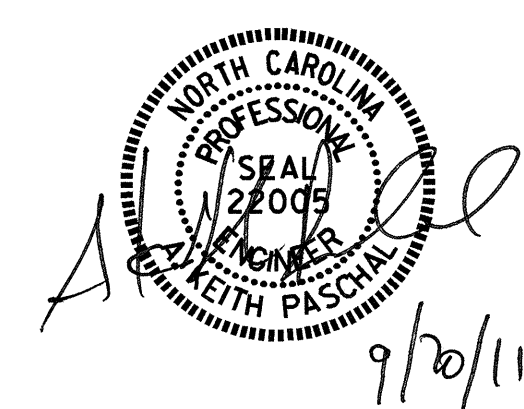
FOUNDATION NOTES

- FOR PILES, SEE SPECIAL PROVISIONS.
- PILES AT END BENT 1 AND END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE.
- DRIVE PILES AT END BENT 1 AND END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.
- PILES AT BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 150 TONS PER PILE.
- DRIVE PILES AT BENT 1 TO A REQUIRED DRIVING RESISTANCE OF 270 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.
- INSTALL PILES AT BENT 1 TO A TIP ELEVATION NO HIGHER THAN -4.0 FT.
- THE SCOUR CRITICAL ELEVATION FOR BENT 1 IS ELEVATION 16.0 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
- TESTING THE FIRST PRODUCTION PILE WITH THE PILE DRIVING ANALYZER DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT BENT 1 FOR PILE DRIVING ANALYZER, SEE PILES PROVISION.
- GALVANIZED STEEL PILES ARE REQUIRED AT BENT 1 IN ACCORDANCE WITH THE PILES PROVISION.

PROJECT NO. B-4533
GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING					
BRIDGE ON SR 1432/1705 OVER WHEAT SWAMP CREEK BETWEEN SR 1430 AND SR 1704					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-2
					TOTAL SHEETS 20



DRAWN BY : M. E. FOWLER DATE : 12/14/10
 CHECKED BY : J. G. KHARVA DATE : 5/3/11

TOTAL BILL OF MATERIAL

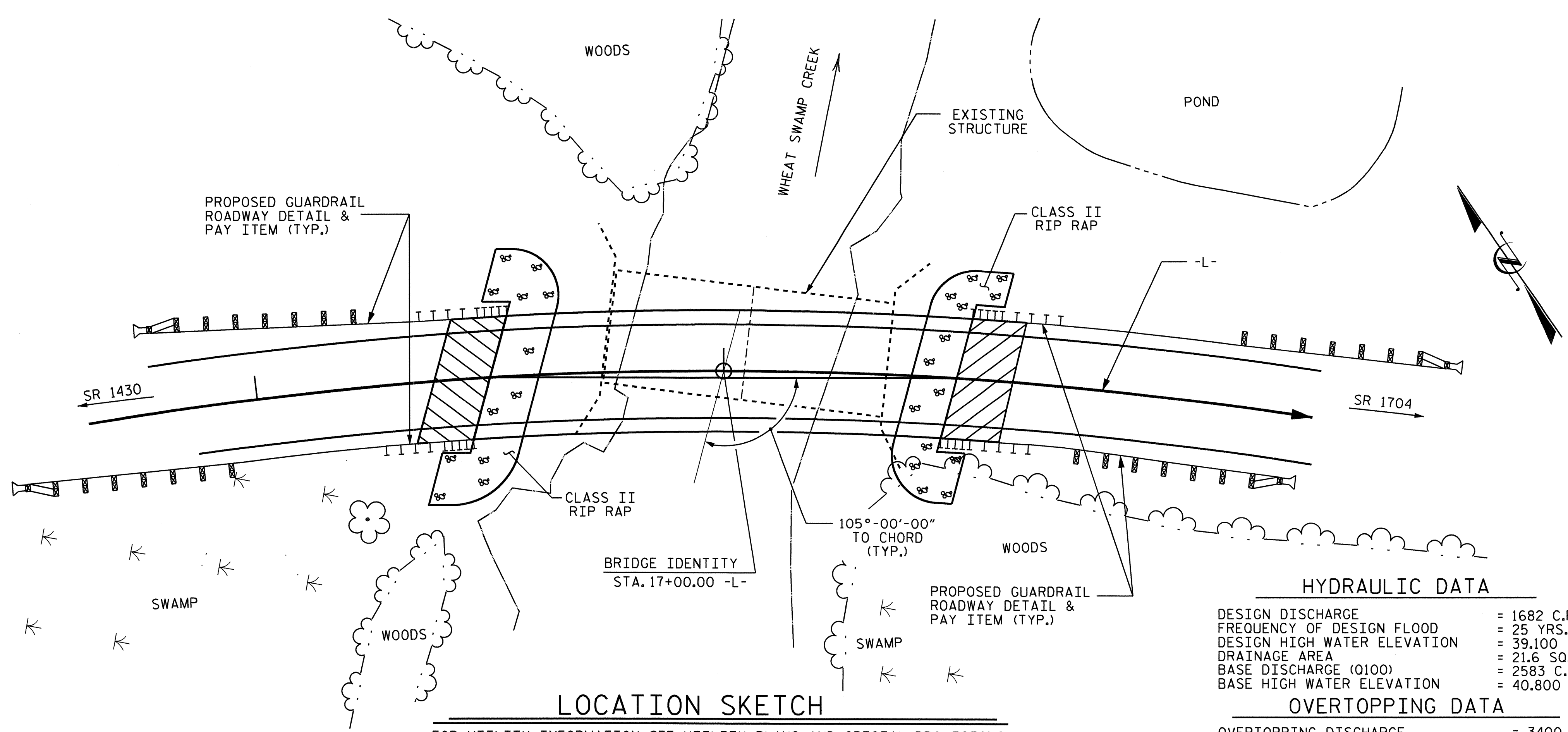
	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	PDA ASSISTANCE	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES		PP 24 X 0.5 GALVANIZED STEEL PILES		PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	
								NO.	LIN. FT.	NO.	LIN. FT.						NO.	LIN. FT.
	LUMP SUM	EA.	EA.	LUMP SUM	CU. YDS.	LUMP SUM	LBS.									LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE						LUMP SUM							195.34			LUMP SUM	22	1072.96
END BENT 1				LUMP SUM	13.4		1961	5	250			3		111	123			
BENT 1		1	1		15.7		2816			5	225	3						
END BENT 2				LUMP SUM	13.4		1961	5	225			3		106	118			
TOTAL	LUMP SUM	1	1	LUMP SUM	42.5	LUMP SUM	6738	10	475	5	225	9	195.34	217	241	LUMP SUM	22	1072.96

▲ FOR INTERIOR BENT 1, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT 1 SHEET FOR REQUIRED GALVANIZED LENGTHS. PAYMENT FOR PARTIALLY GALVANIZED PILES WILL BE MADE UNDER CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.

NOTES:

ASSUMED LIVE LOAD = HL 93 OR ALTERNATE LOADING.
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
 FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
 THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
 THE EXISTING STRUCTURE CONSISTING OF TWO (2 @ 30'-0" TOTAL 60'-0") PRESTRESSED CONCRETE CHANNEL SPANS WITH A CLEAR ROADWAY WIDTH OF 24'-6" ON PRESTRESSED CONCRETE CAP WITH TIMBER PILE END BENTS AND BENT AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. SEE SPECIAL PROVISION FOR "REMOVAL OF EXISTING STRUCTURE @ STA. 17+00.00 -L-."
 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.
 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 17+00.00 -L-."
 THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 35 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNIT UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 4120 OF THE STANDARD SPECIFICATIONS.

B.M.: -BL- 2, NCDOT L&S MONUMENT, 27.77' LEFT -L- STA. 16+63.88 ELEV. 43.370'



HYDRAULIC DATA

DESIGN DISCHARGE	= 1682 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 25 YRS.
DESIGN HIGH WATER ELEVATION	= 39.100
DRAINAGE AREA	= 21.6 SQ. MI.
BASE DISCHARGE (0100)	= 2583 C.F.S.
BASE HIGH WATER ELEVATION	= 40.800

OVERTOPPING DATA

OVERTOPPING DISCHARGE	= 3400 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 100+ YRS.
OVERTOPPING FLOOD ELEVATION	= 42.600

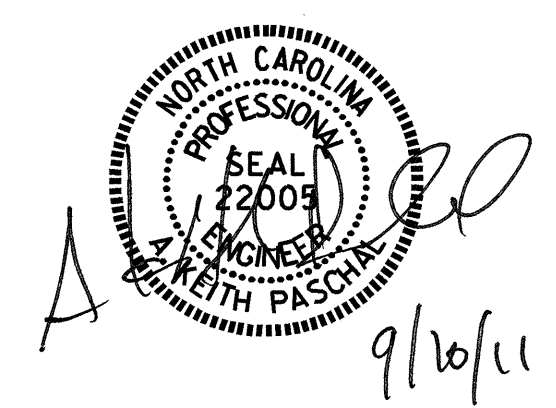
PROJECT NO. B-4533
GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE ON SR 1432/1705 OVER
 WHEAT SWAMP CREEK BETWEEN
 SR 1430 AND SR 1704

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



DRAWN BY : M. E. FOWLER DATE : 12/10/09
 CHECKED BY : J. G. KHARVA DATE : 5/3/11

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(Inv)	N/A	1	1.01	--	1.75	0.271	1.5	A	EL	23.868	0.616	1.01	A	EL	2.387	0.80	0.271	1.14	A	EL	23.868		
	HL-93(0pr)	N/A	--	1.31	--	1.35	0.271	1.95	A	EL	23.868	0.616	1.31	A	EL	2.387	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.202	43.281	1.75	0.271	1.86	A	EL	23.868	0.616	1.2	A	EL	2.387	0.80	0.271	1.41	A	EL	23.868		
	HS-20(0pr)	36.000	--	1.558	56.105	1.35	0.271	2.41	A	EL	23.868	0.616	1.56	A	EL	2.387	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.839	38.32	1.4	0.271	4.69	A	EL	23.868	0.616	3.38	A	EL	2.387	0.80	0.271	2.84	A	EL	23.868	
		SNGARBS2	20.000	--	2.253	45.061	1.4	0.271	3.72	A	EL	23.868	0.616	2.46	A	EL	2.387	0.80	0.271	2.25	A	EL	23.868	
		SNAGRIS2	22.000	--	2.193	48.254	1.4	0.271	3.6	A	EL	19.094	0.616	2.31	A	EL	2.387	0.80	0.271	2.19	A	EL	23.868	
		SNCOTTS3	27.250	--	1.416	38.594	1.4	0.271	2.34	A	EL	23.868	0.616	1.69	A	EL	2.387	0.80	0.271	1.42	A	EL	23.868	
		SNAGGRS4	34.925	--	1.235	43.149	1.4	0.271	2.04	A	EL	23.868	0.616	1.45	A	EL	2.387	0.80	0.271	1.24	A	EL	23.868	
		SNS5A	35.550	--	1.205	42.821	1.4	0.271	1.99	A	EL	23.868	0.616	1.49	A	EL	2.387	0.80	0.271	1.20	A	EL	23.868	
		SNS6A	39.950	--	1.128	45.07	1.4	0.271	1.86	A	EL	23.868	0.616	1.38	A	EL	2.387	0.80	0.271	1.13	A	EL	23.868	
	TTST	SNS7B	42.000	--	1.075	45.159	1.4	0.271	1.77	A	EL	23.868	0.616	1.38	A	EL	2.387	0.80	0.271	1.08	A	EL	23.868	
		TNAGRIT3	33.000	--	1.383	45.628	1.4	0.271	2.28	A	EL	23.868	0.616	1.62	A	EL	2.387	0.80	0.271	1.38	A	EL	23.868	
		TNT4A	33.075	--	1.395	46.15	1.4	0.271	2.3	A	EL	23.868	0.616	1.56	A	EL	2.387	0.80	0.271	1.40	A	EL	23.868	
		TNT6A	41.600	--	1.164	48.43	1.4	0.271	1.92	A	EL	23.868	0.616	1.51	A	EL	2.387	0.80	0.271	1.16	A	EL	23.868	
		TNT7A	42.000	--	1.183	49.68	1.4	0.271	1.95	A	EL	23.868	0.616	1.4	A	EL	2.387	0.80	0.271	1.18	A	EL	23.868	
		TNT7B	42.000	--	1.233	51.778	1.4	0.271	2.03	A	EL	23.868	0.616	1.33	A	EL	2.387	0.80	0.271	1.23	A	EL	23.868	
		TNAGRIT4	43.000	--	1.171	50.346	1.4	0.271	1.93	A	EL	23.868	0.616	1.28	A	EL	2.387	0.80	0.271	1.17	A	EL	23.868	
TNAGT5A	45.000	--	1.093	49.176	1.4	0.271	1.8	A	EL	23.868	0.616	1.3	A	EL	2.387	0.80	0.271	1.09	A	EL	23.868			
TNAGT5B	45.000	3	1.07	48.143	1.4	0.271	1.77	A	EL	23.868	0.616	1.21	A	EL	2.387	0.80	0.271	1.07	A	EL	23.868			

NOTES:

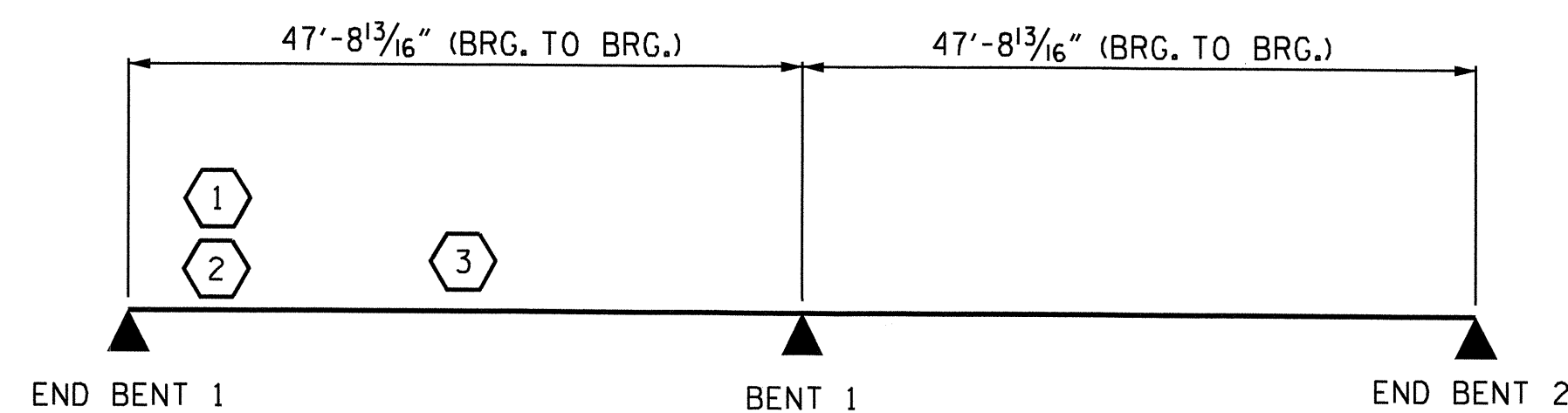
MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

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

COMMENTS:

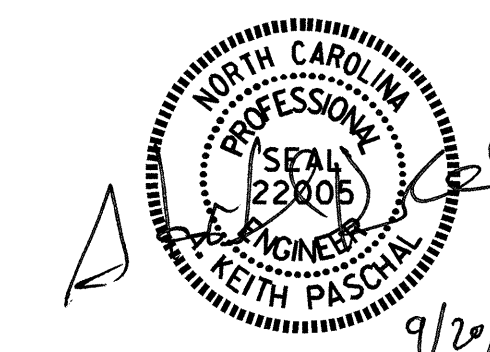
- 1.
- 2.
- 3.
- 4.

#	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

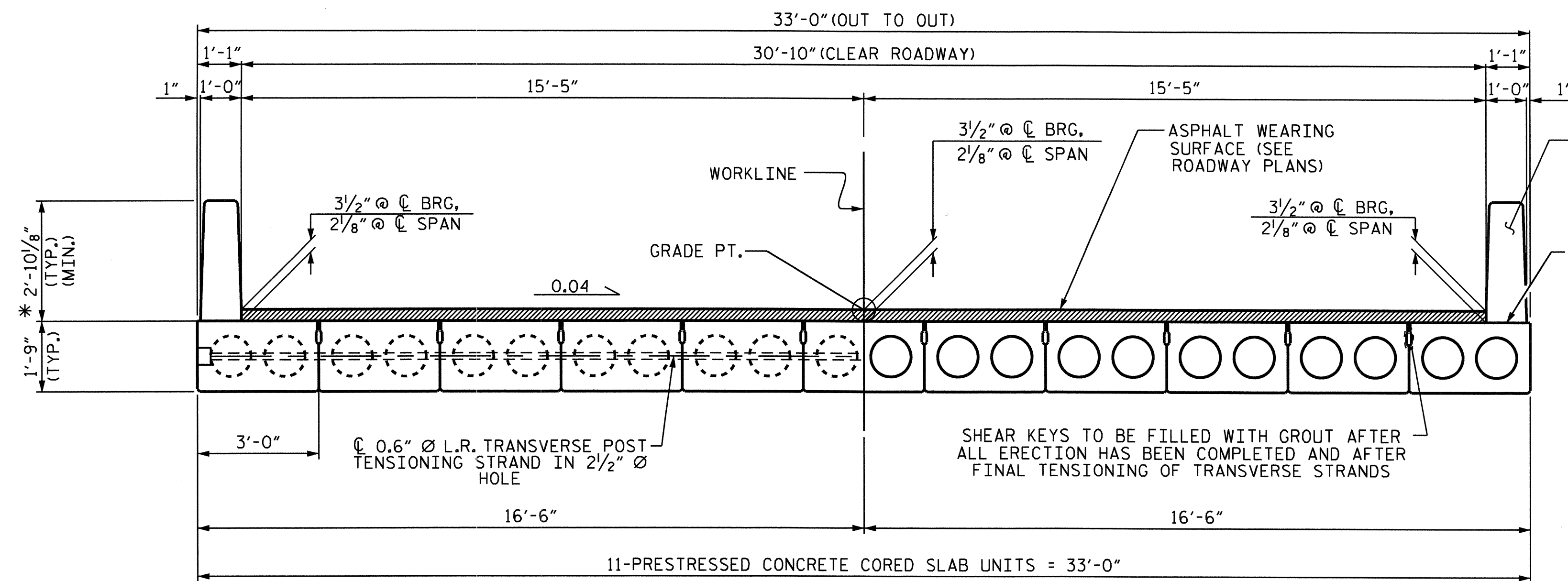
PROJECT NO. B-4533
GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-



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

ASSEMBLED BY : J. G. KHARVA	DATE : 5/27/11
CHECKED BY : O. PUIGSERVER	DATE : 6/17/11
DRAWN BY : MAA 1/08	REV. 11/12/08R MAA/GM
CHECKED BY : GM/DI 2/08	

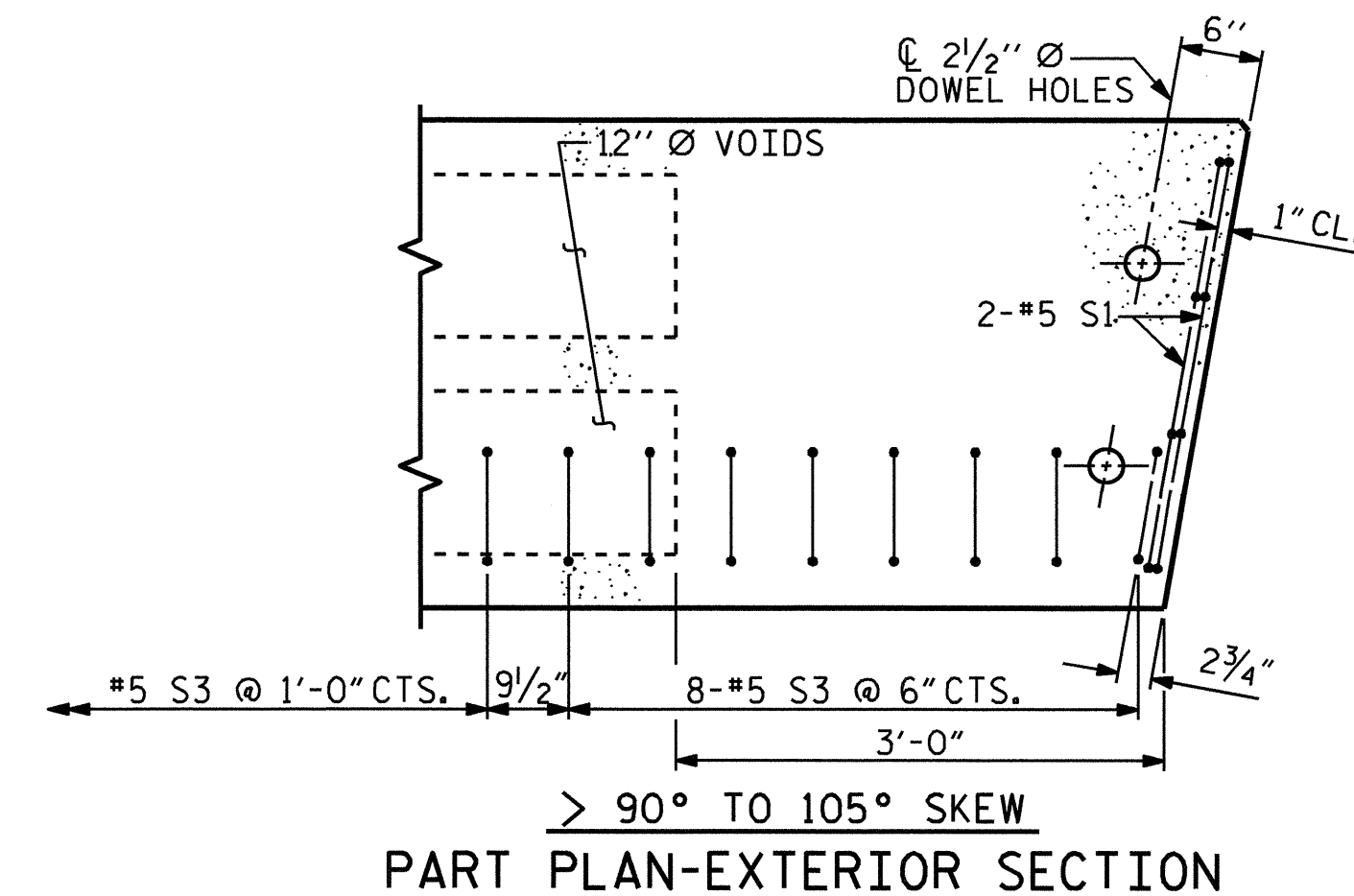
REVISIONS						SHEET NO. S-4
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 19
2			4			



HALF SECTION @ DIAPHRAGMS

HALF SECTION @ VOIDS

TYPICAL SECTION



PART PLAN-EXTERIOR SECTION

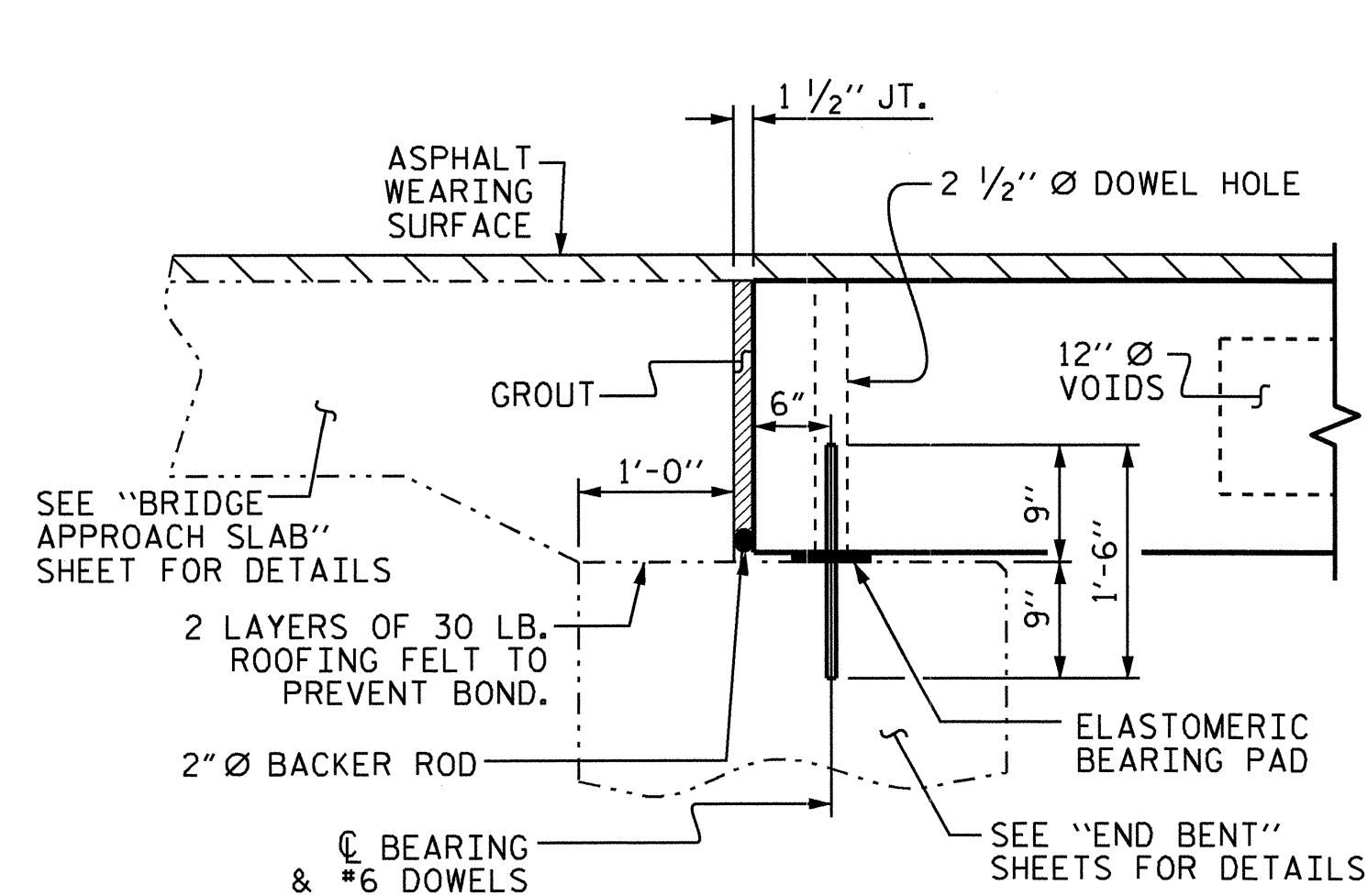
NOTE: EXTERIOR SECTION SHOWN-INTERIOR SECTION SIMILAR EXCEPT OMIT S3 BARS.

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

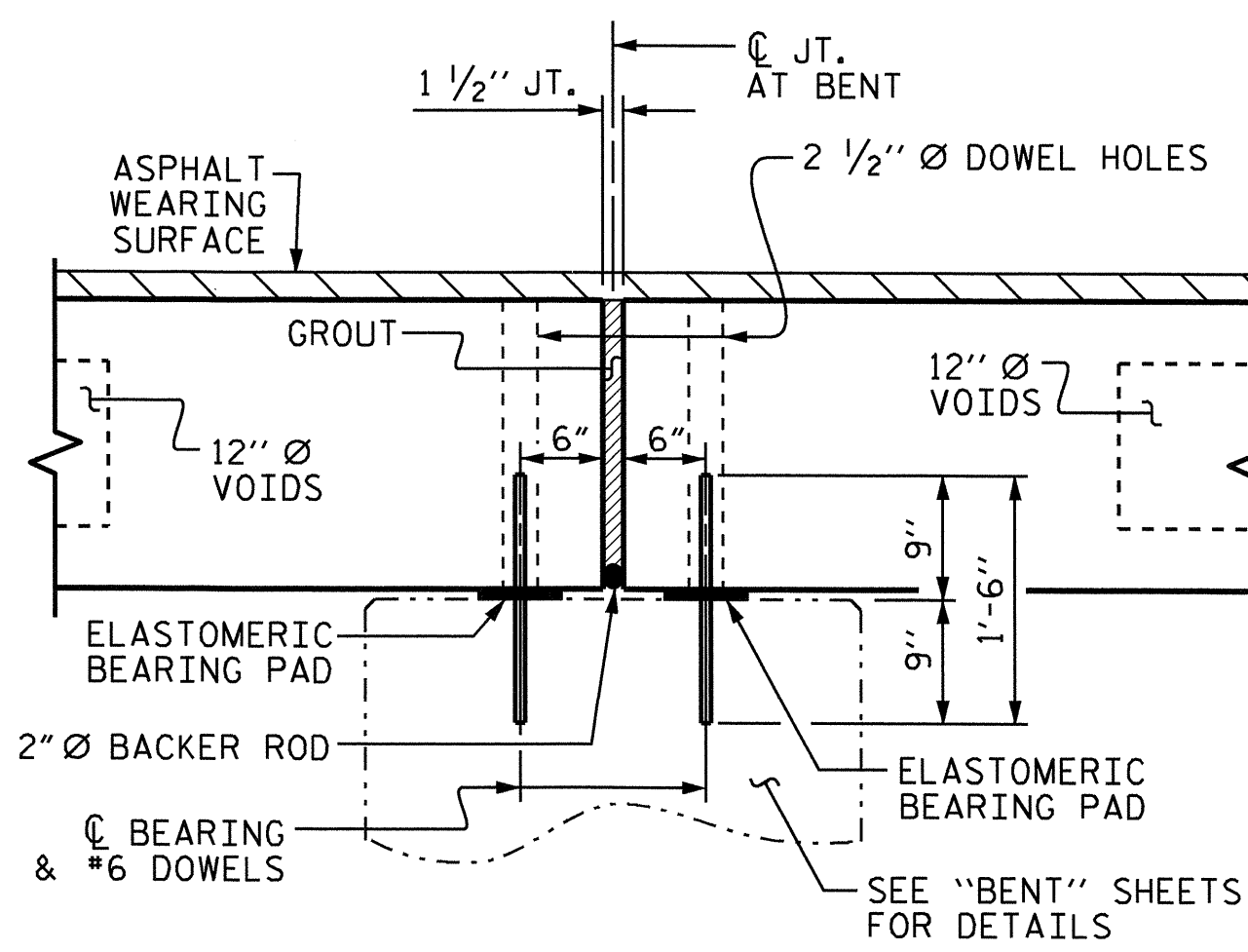
FIXED END

FIXED END

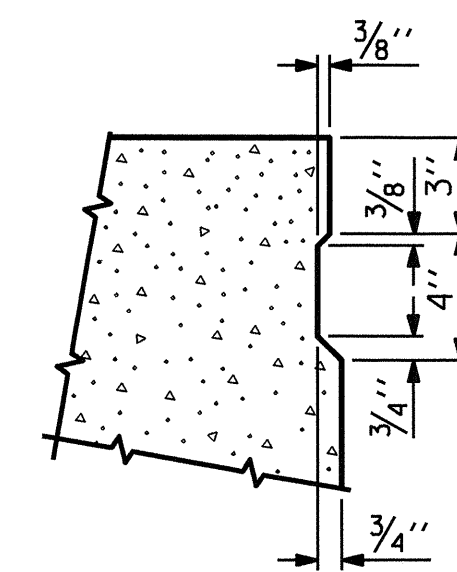
FIXED END



SECTION AT END BENT

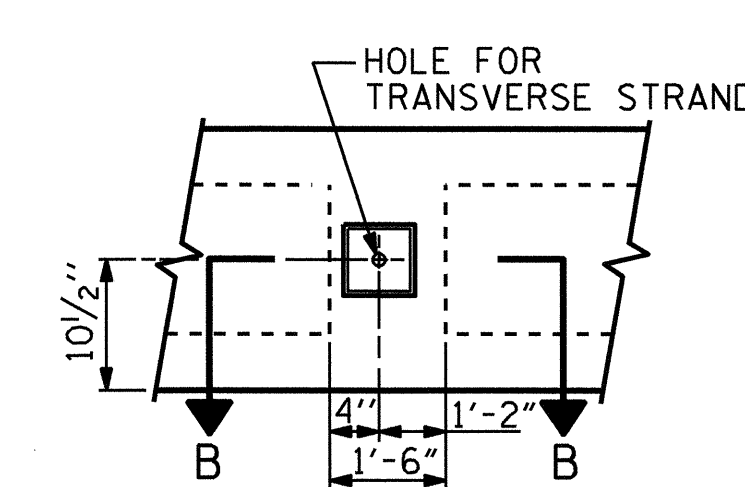


SECTION AT BENT

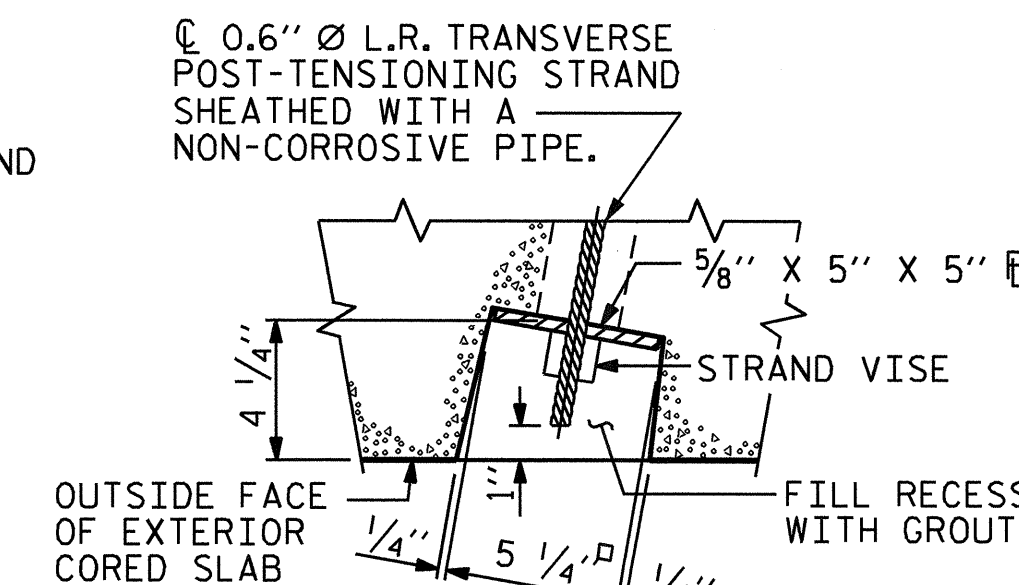


SHEAR KEY DETAIL

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

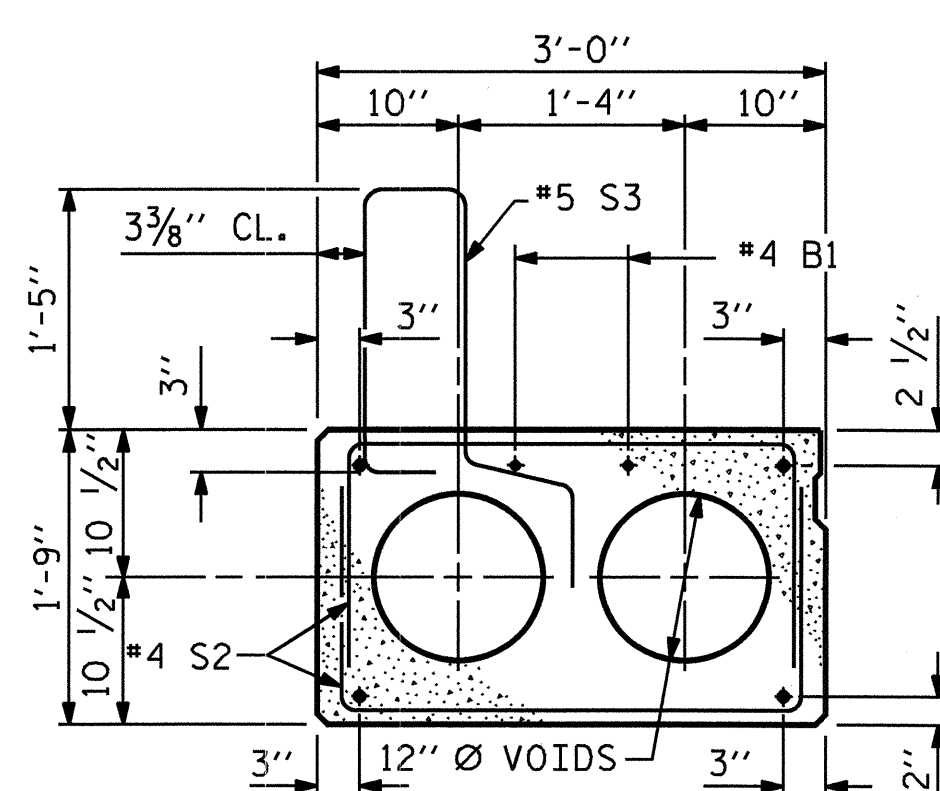


ELEVATION VIEW



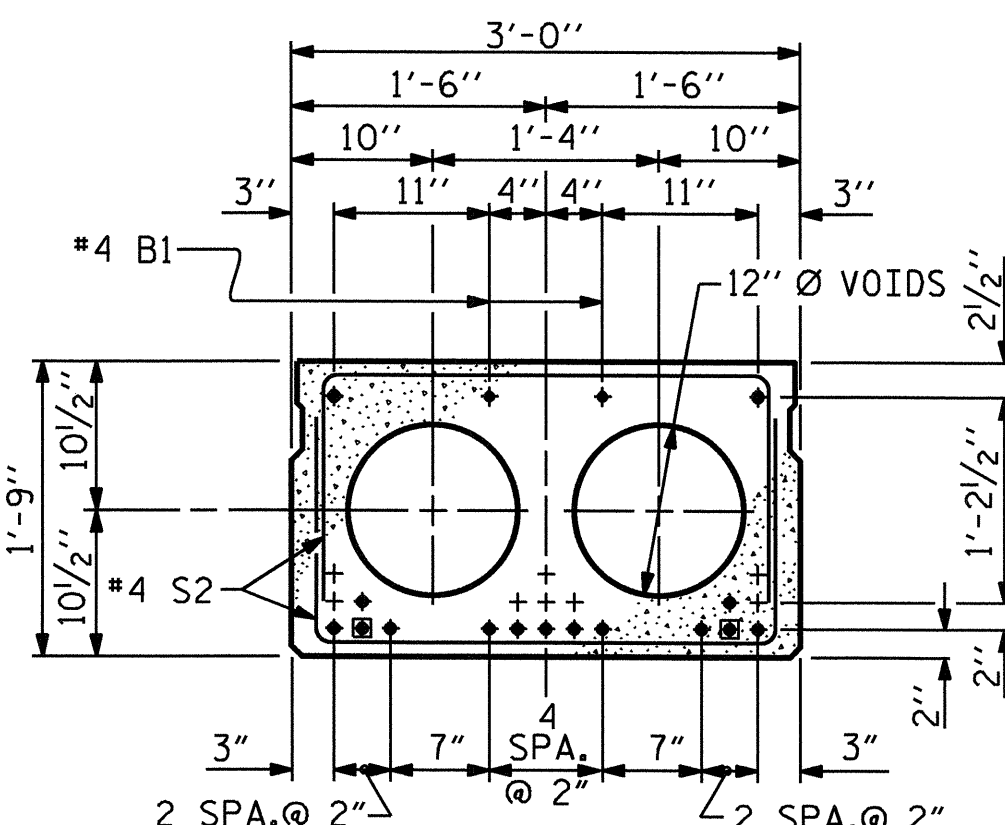
SECTION B-B

GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS



EXTERIOR SLAB SECTION

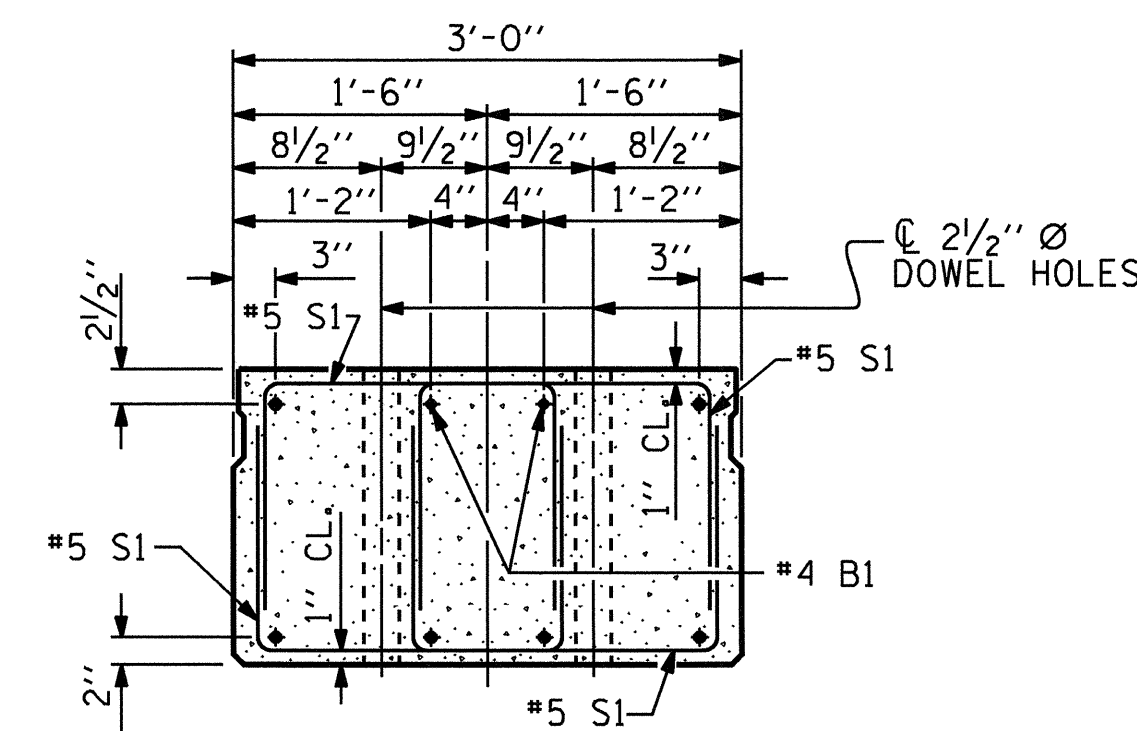
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



INTERIOR SLAB SECTION

0.6" Ø LOW RELAXATION STRAND LAYOUT

(15 STRANDS REQ'D.)
 THE BOND SHALL BE BROKEN ON THE STRANDS FOR A DISTANCE OF 2'-0" FROM END OF CORE SLAB UNIT. SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.



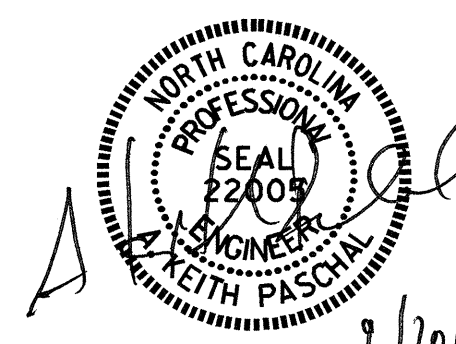
END ELEVATION

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.

PROJECT NO. B-4533
 GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-

SHEET 1 OF 3

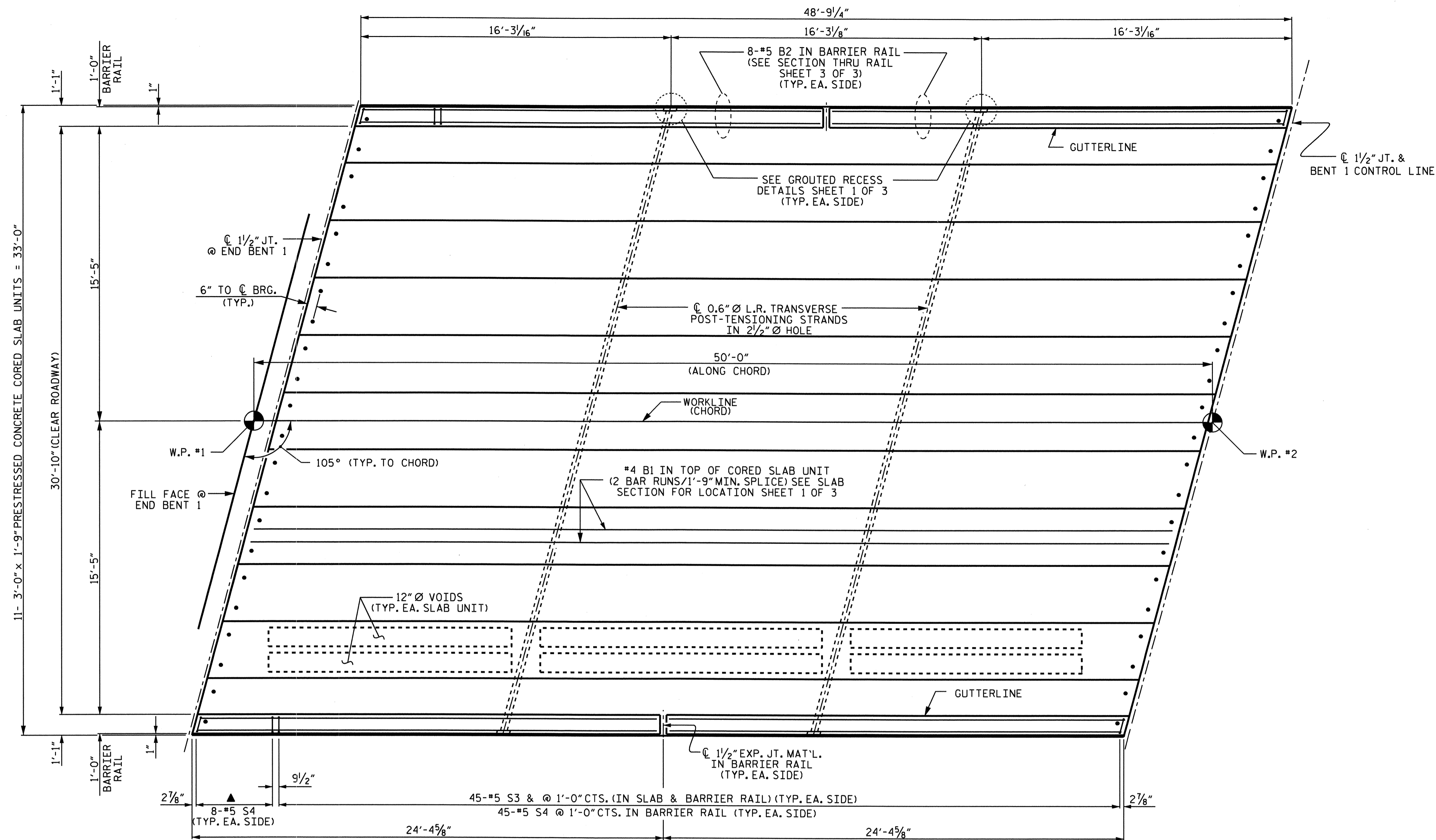
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 3'-0" X 1'-9"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT



ASSEMBLED BY : J. G. KHARVA	DATE : 09-09-09
CHECKED BY : J. D. HAWK	DATE : 06-17-11
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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			20

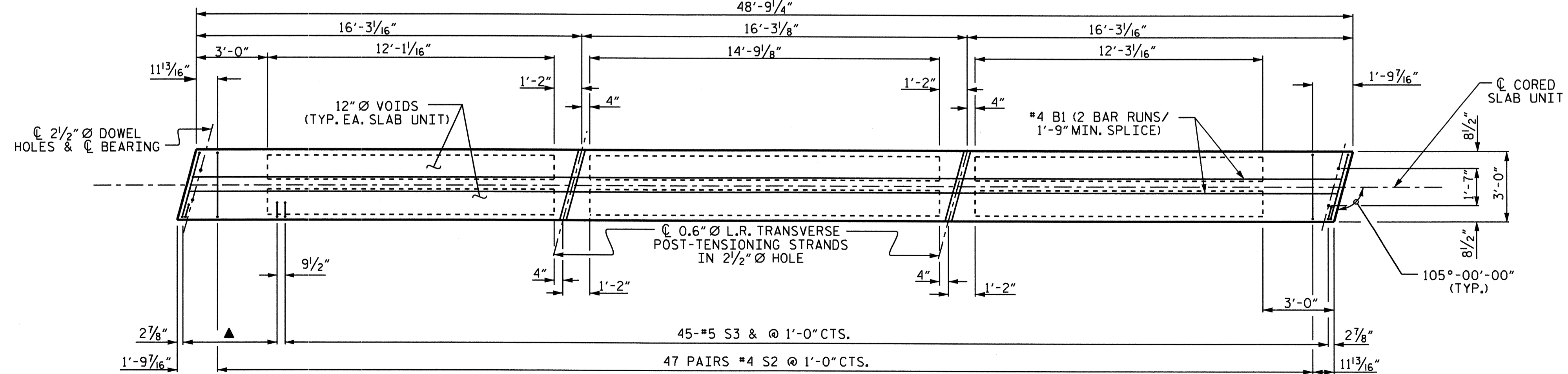
(SHT 4B) STD. NO. PCS2



PLAN OF SPAN A

(SPAN B SIMILAR)

▲ SEE PART PLAN-EXTERIOR SECTION ON SHEET 1 OF 3 FOR ADDITIONAL #5 S3 BARS

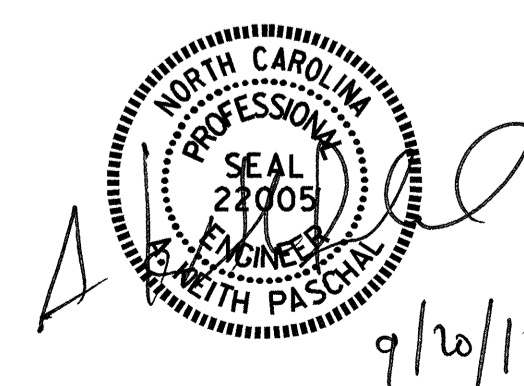


PLAN OF CORED SLAB UNIT

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS, FOR LOCATION OF ADDITIONAL REINFORCING STEEL AT END OF SLAB UNIT, SEE "PART-PLAN EXTERIOR SECTION" SHEET 1 OF 3.

DRAWN BY : J. G. KHARVA DATE : 9/21/09
 CHECKED BY : J. D. HAWK DATE : 06/13/11

16-SEP-2011 09:15
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 jkharva



PROJECT NO. B-4533
GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-
 SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-6
SUPERSTRUCTURE PLAN OF SPANS A & B						
REVISIONS						TOTAL SHEETS 20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

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 5500 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

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

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

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR VERTICAL CONCRETE BARRIER RAIL, SEE SPECIAL PROVISIONS.

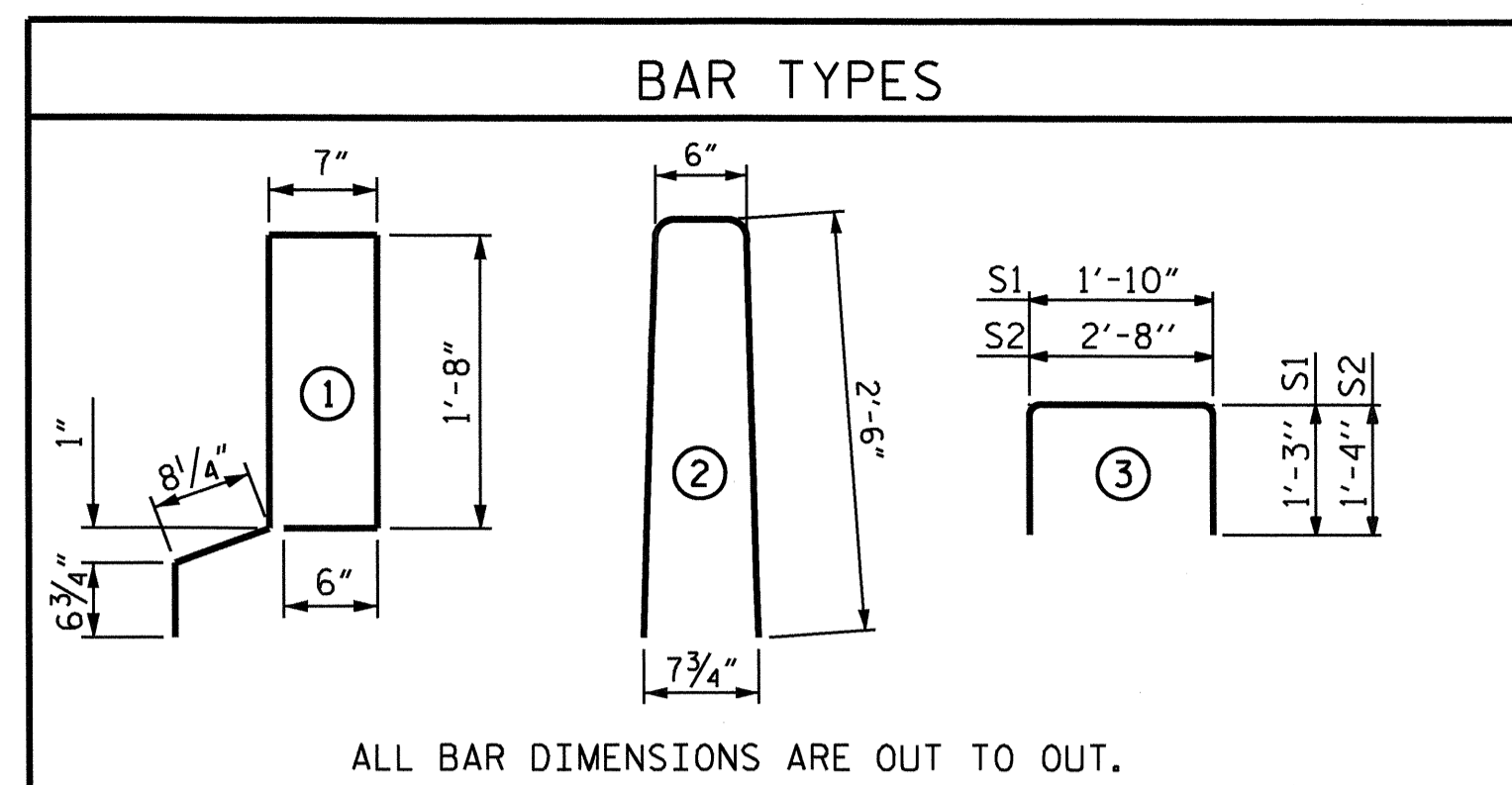
THE MINIMUM HEIGHT OF THE BARRIER RAIL IS SHOWN. THE HEIGHT OF THE BARRIER RAIL VARIES WHILE THE TOP OF THE RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE.

DEAD LOAD DEFLECTION AND CAMBER	
	SPAN A & B
	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1 1/16"
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/4"
FINAL CAMBER	1 1/16"

** INCLUDES FUTURE WEARING SURFACE

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

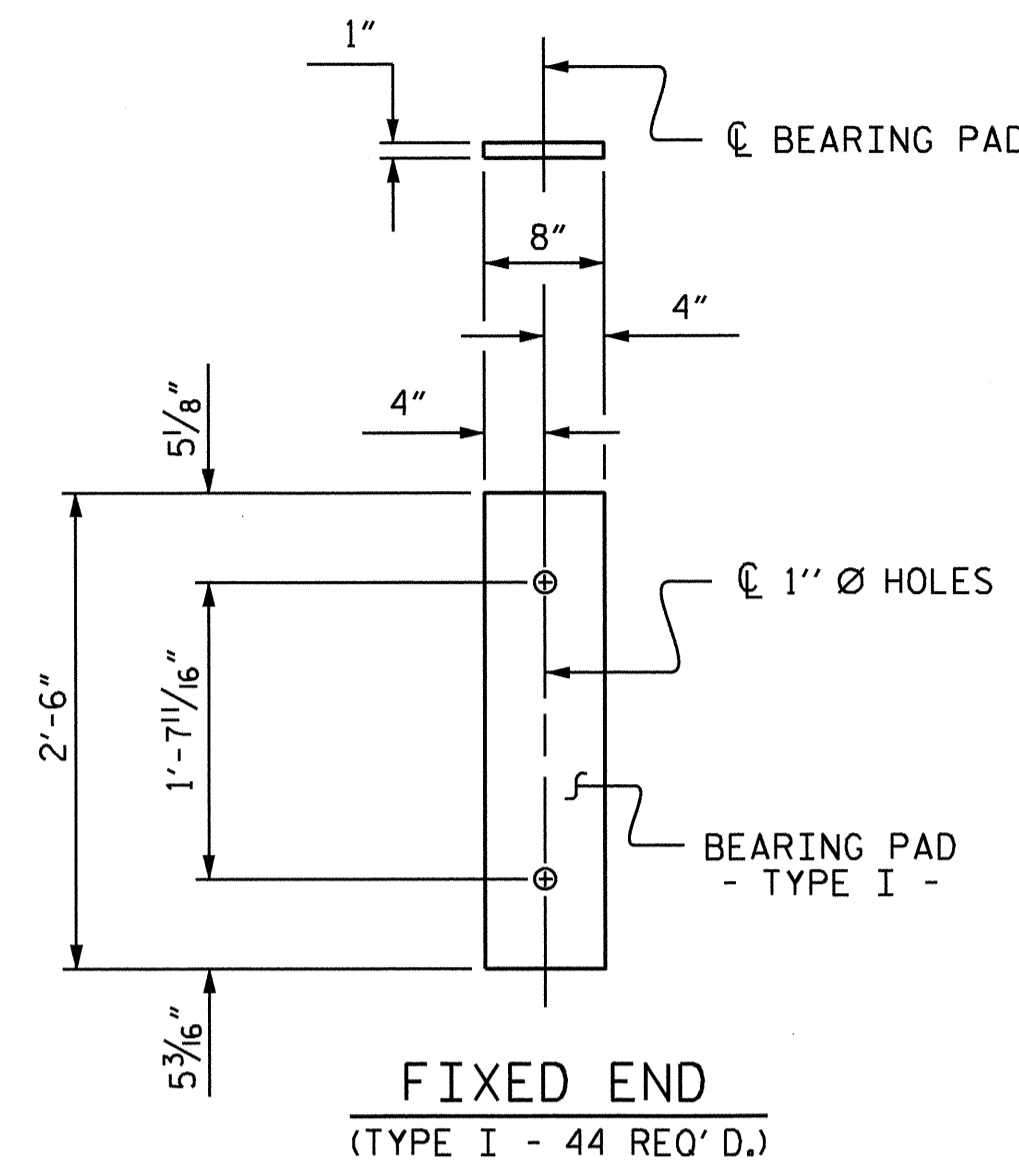
CORED SLABS REQUIRED			
	NUMBER PER SPAN	LENGTH	TOTAL LENGTH
EXTERIOR C.S. - SPAN A	2	48'-9 1/4"	97'-6 1/2"
INTERIOR C.S. - SPAN A	9	48'-9 1/4"	438'-11 1/4"
EXTERIOR C.S. - SPAN B	2	48'-9 1/4"	97'-6 1/2"
INTERIOR C.S. - SPAN B	9	48'-9 1/4"	438'-11 1/4"
TOTAL	22	48'-9 1/4"	1072'-11 1/2"



ALL BAR DIMENSIONS ARE OUT TO OUT.

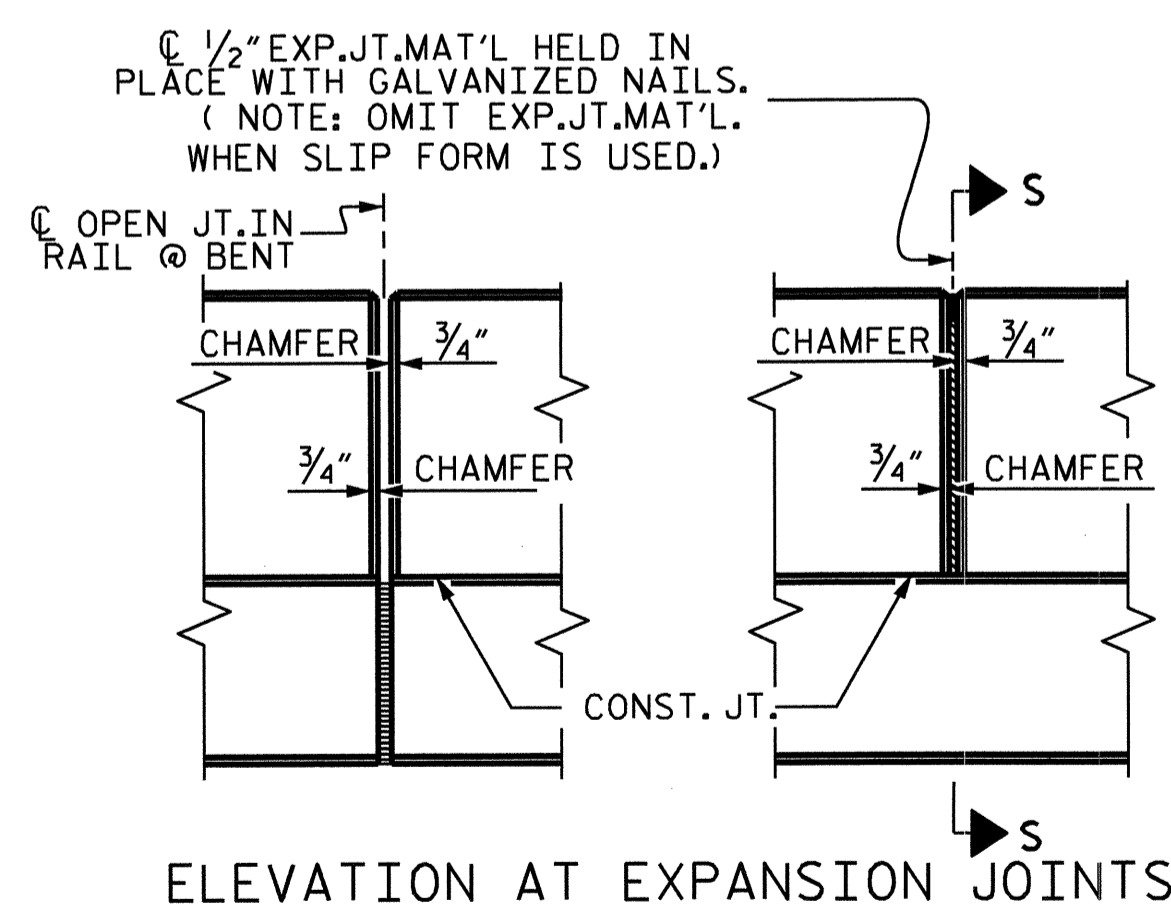
BILL OF MATERIAL FOR ONE CORED SLAB SECTION							
SPAN A & B				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B1	4	#4	STR	25'-1"	67	25'-1"	67
S1	8	#5	3	4'-4"	36	4'-4"	36
S2	94	#4	3	5'-4"	335	5'-4"	335
*S3	53	#5	1	5'-8"	313		
REINFORCING STEEL				LBS.	438	438	
*EPOXY COATED REINFORCING STEEL				LBS.	313	313	
7,400 P.S.I. CONCRETE				CU. YDS.	7.2	7.1	
0.6" Ø L.R. STRANDS				No.	15		

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL					
BAR	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
*B2	64	#5	STR	23'-9"	1585
*S4	212	#5	2	5'-6"	1216
*EPOXY COATED REINFORCING STEEL				LBS.	2801
CLASS AA CONCRETE				C. Y.	19.2
TOTAL LENGTH OF VERTICAL CONCRETE BARRIER RAIL				LIN. FT.	195.34

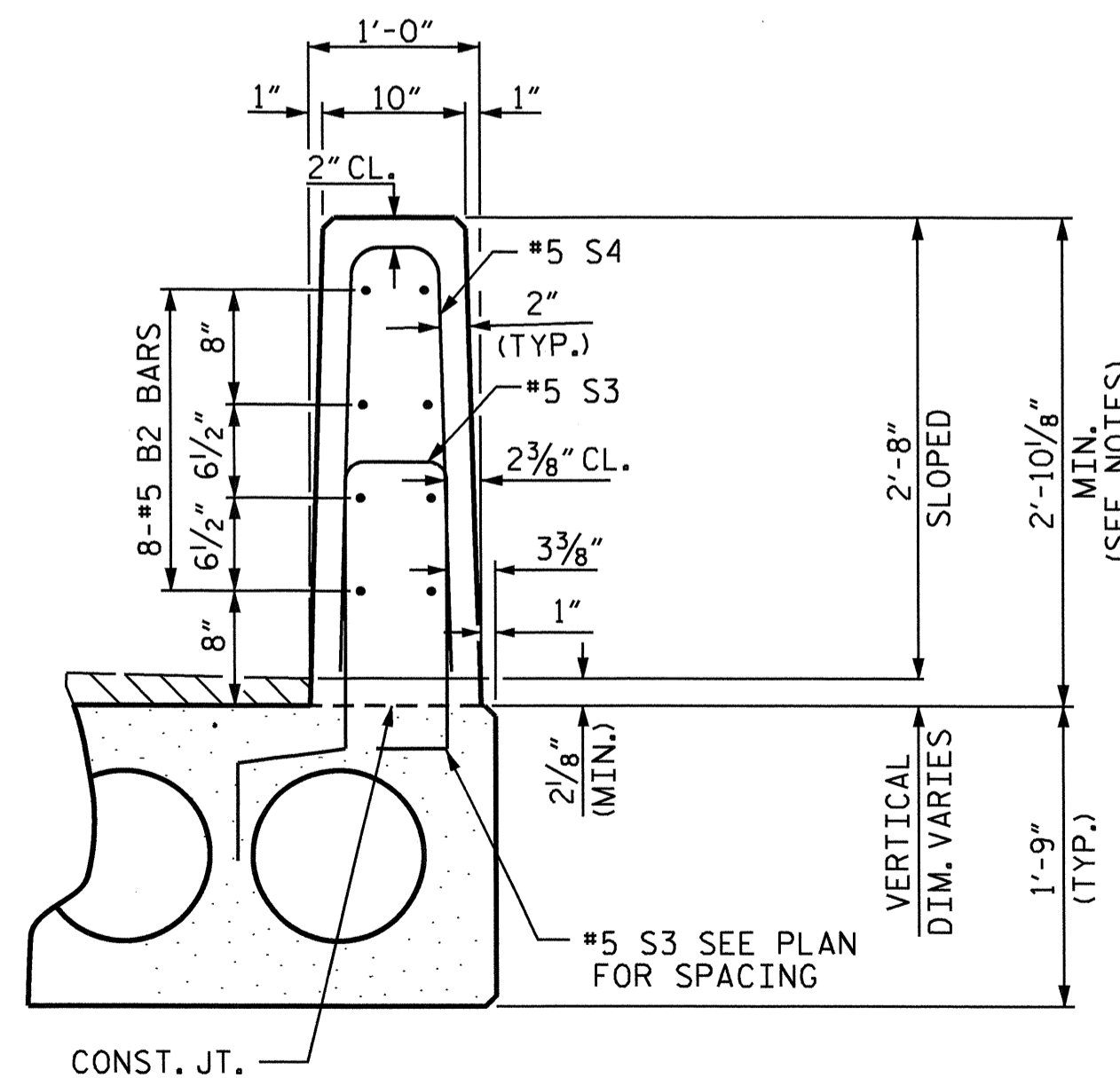


ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

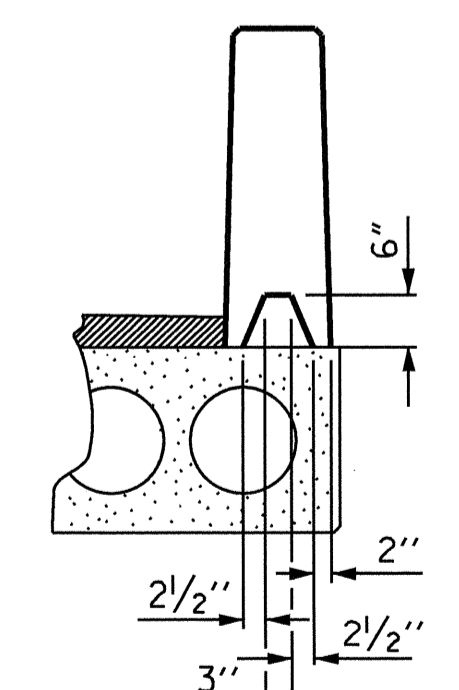


ELEVATION AT EXPANSION JOINTS



SECTION THRU RAIL

VERTICAL CONCRETE BARRIER RAIL DETAILS



SECTION S-S

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

PROJECT NO. B-4533
 GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-
 SHEET 3 OF 3



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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			20

ASSEMBLED BY : J. G. KHARVA	DATE : 9/22/09
CHECKED BY : J. D. HAWK	DATE : 06-17-11
DRAWN BY : WJH 4/89	REV. 7/10/01 RWW/LES
CHECKED BY : FCJ 5/89	REV. 5/7/03RRR RWW/JTE
	REV. 5/1/06R TLA/GM

NOTES

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

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

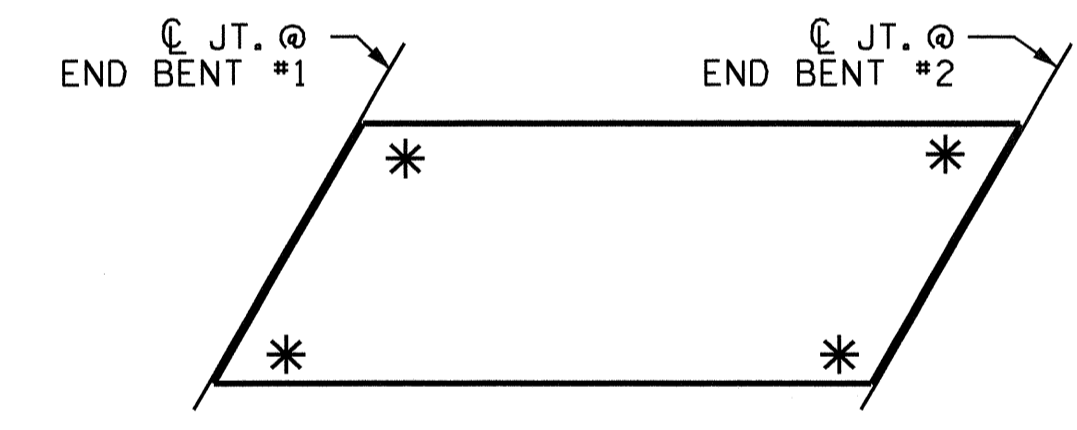
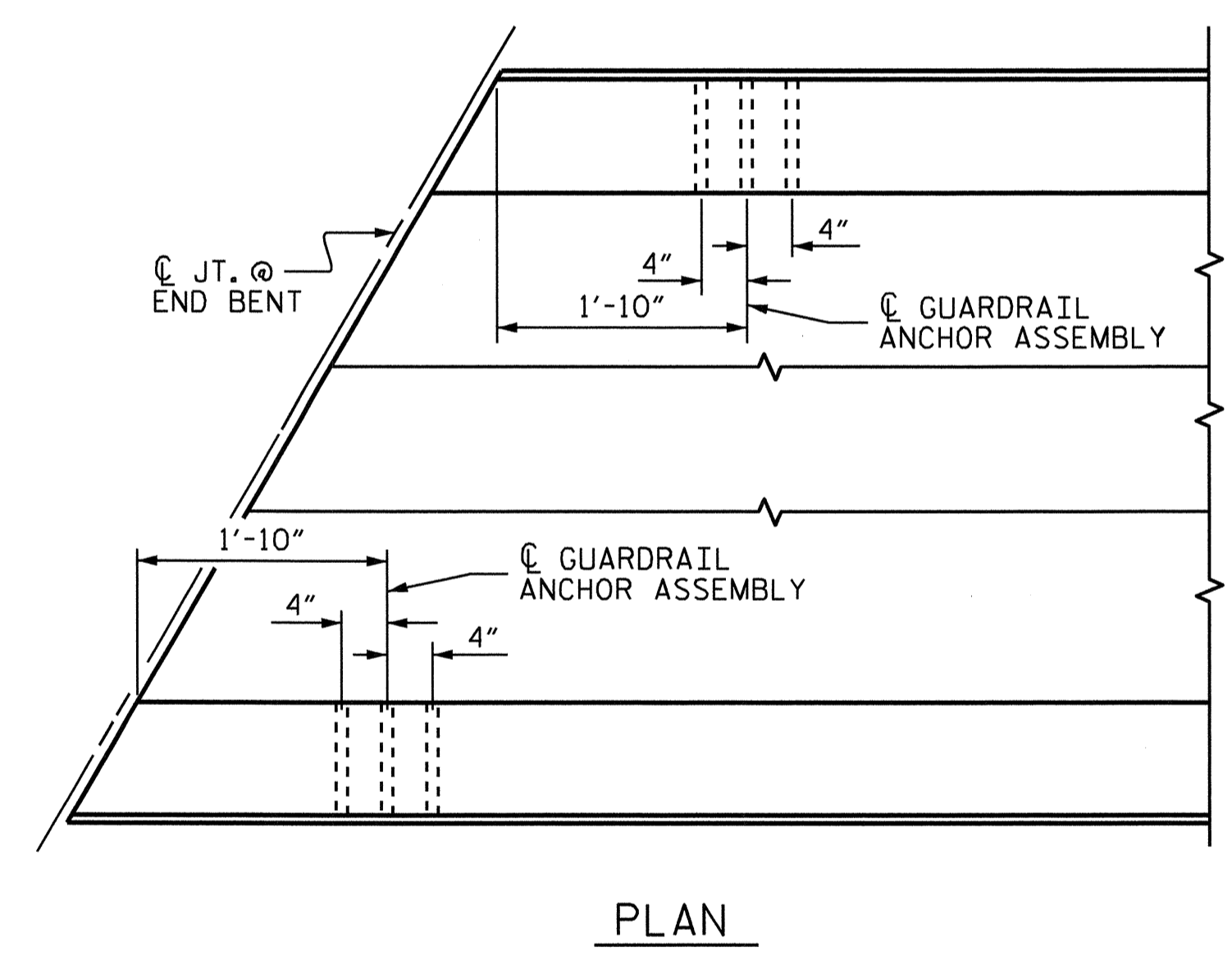
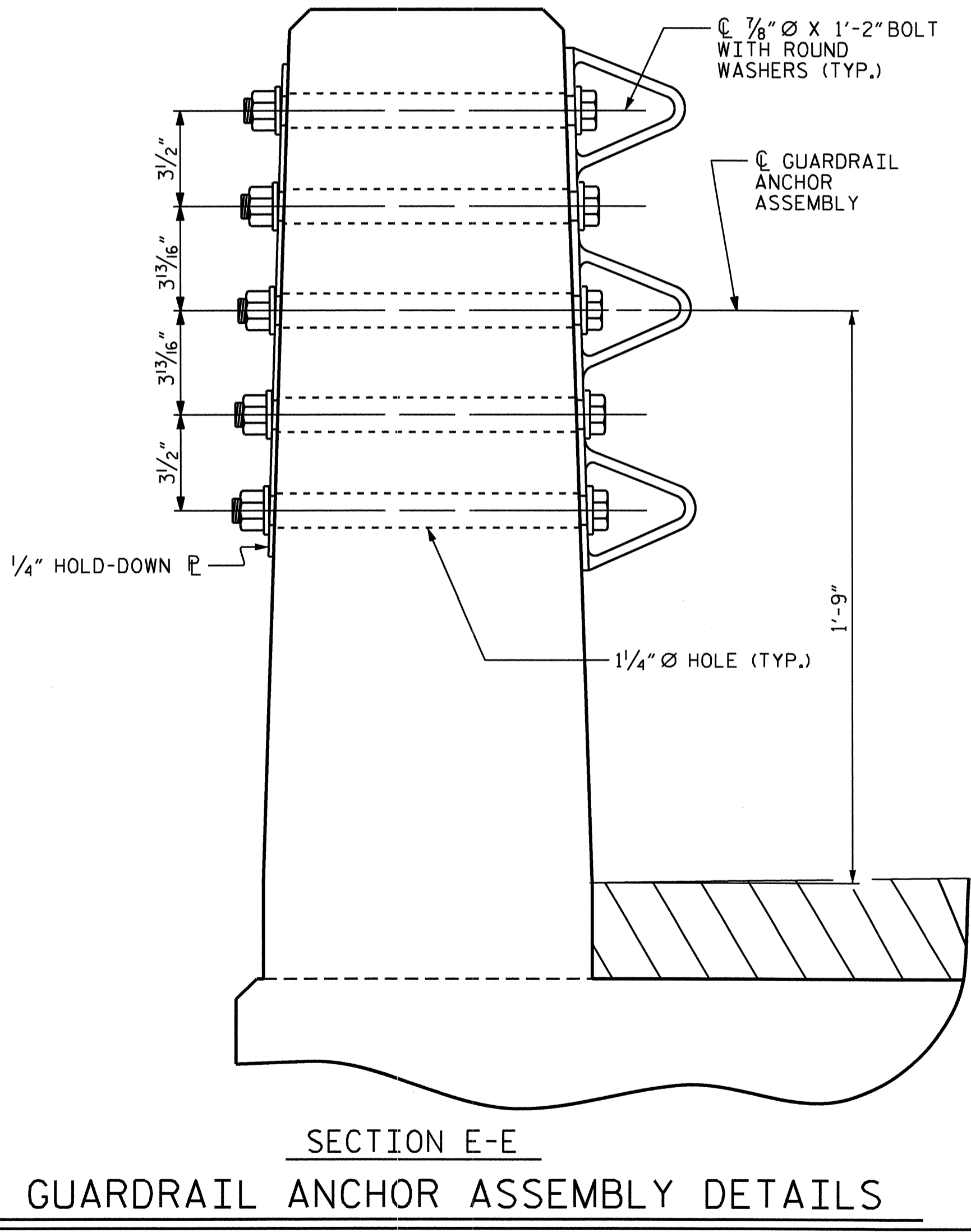
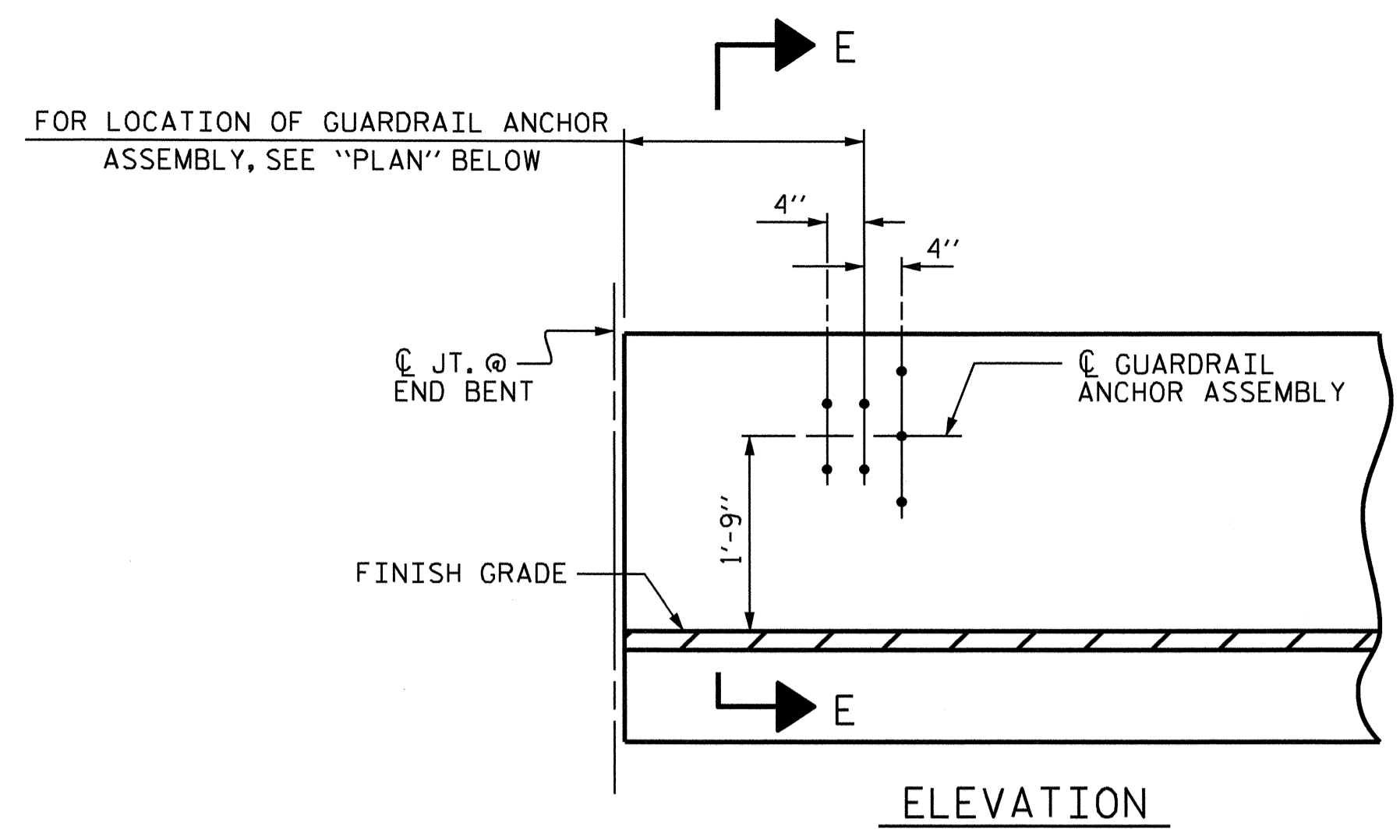
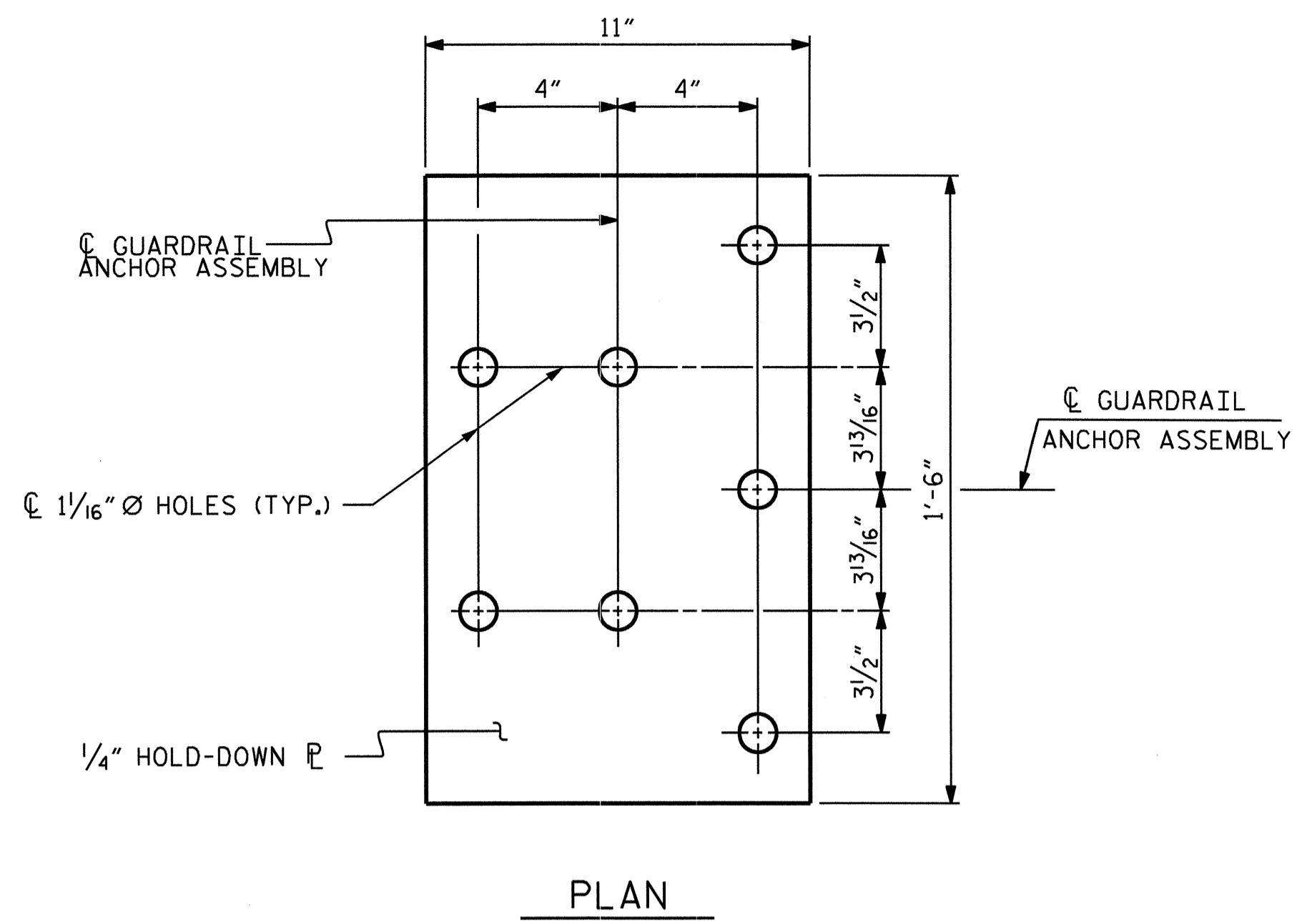
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

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

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

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

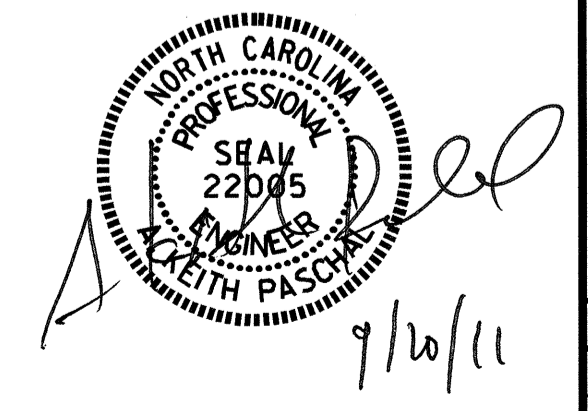


LOCATION OF ANCHORS FOR GUARDRAIL
END BENT #1 SHOWN, END BENT #2 SIMILAR.

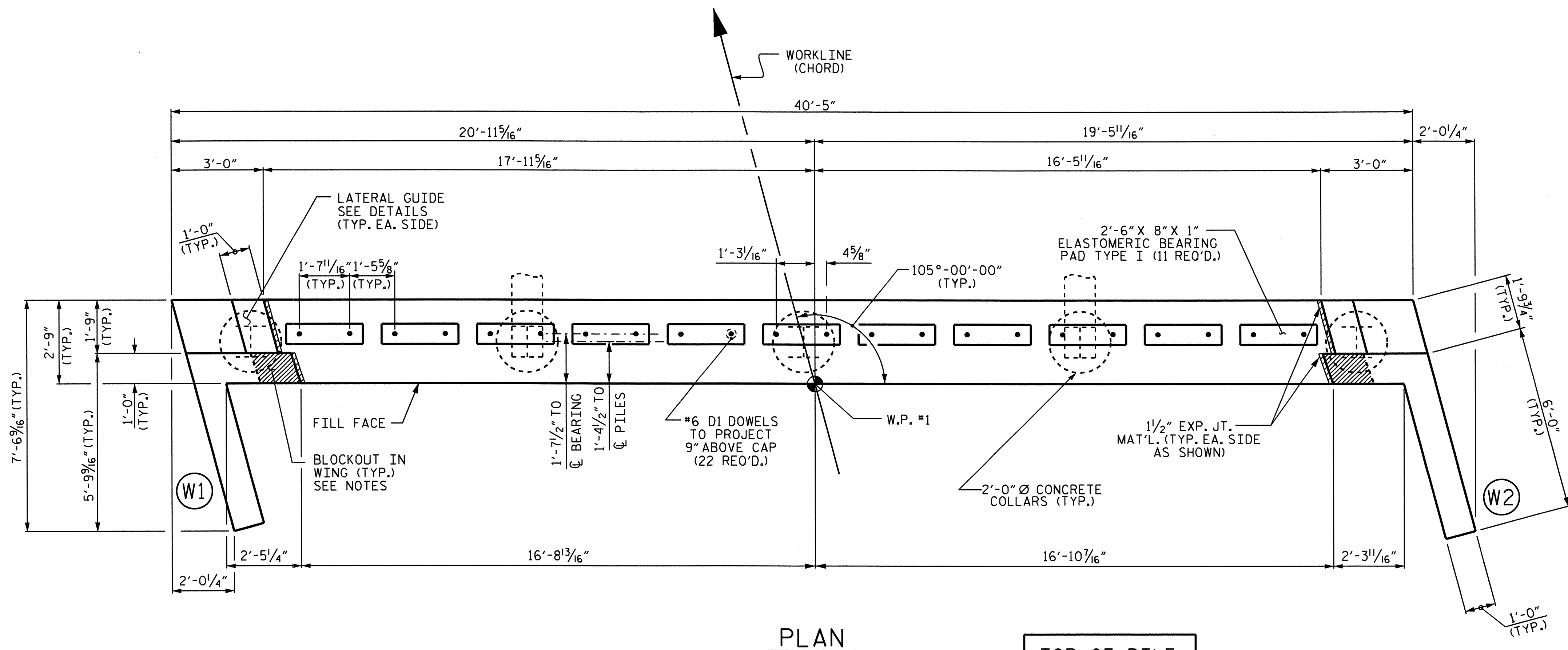
SKETCH SHOWING POINTS OF ATTACHMENT
* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4533
GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD GUARDRAIL ANCHORAGE FOR VERTICAL CONCRETE BARRIER RAIL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-8					TOTAL SHEETS 20

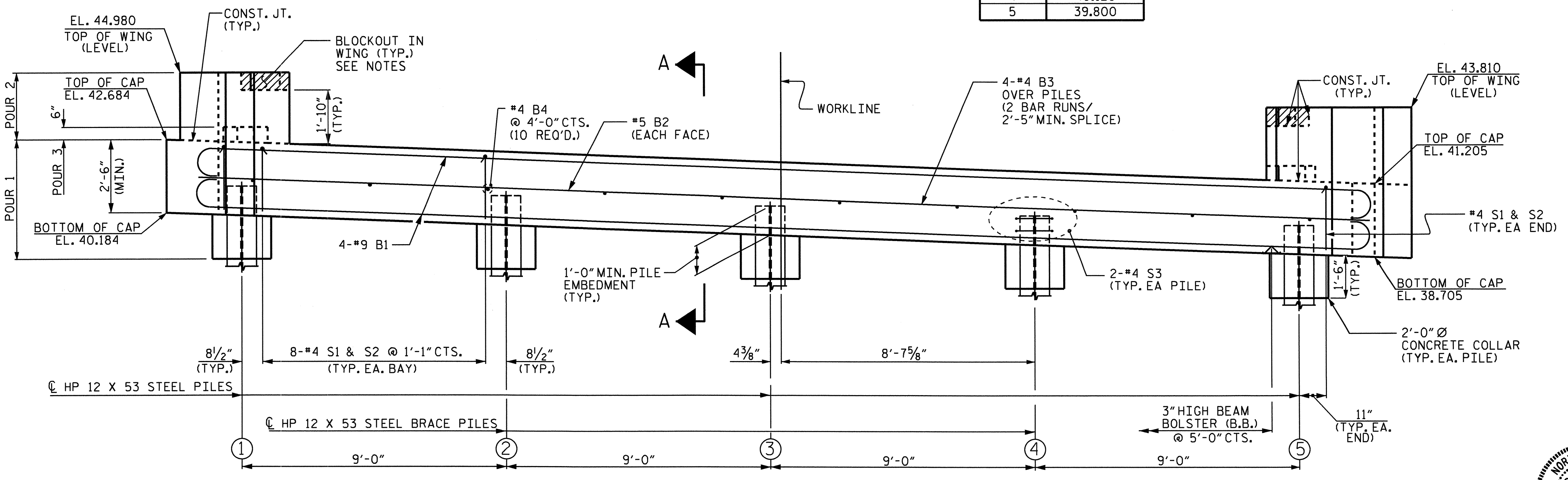


ASSEMBLED BY : J. G. KHARVA	DATE : 07-20-11
CHECKED BY : J.D. HAWK	DATE : 07-22-11
DRAWN BY : MAA 5/10	ADDED 5/6/10
CHECKED BY : GM 5/10	



PLAN

TOP OF PILE ELEVATIONS	
PILE NO.	ELEVATION
1	41.117
2	40.788
3	40.458
4	40.129
5	39.800



ELEVATION

NOTES

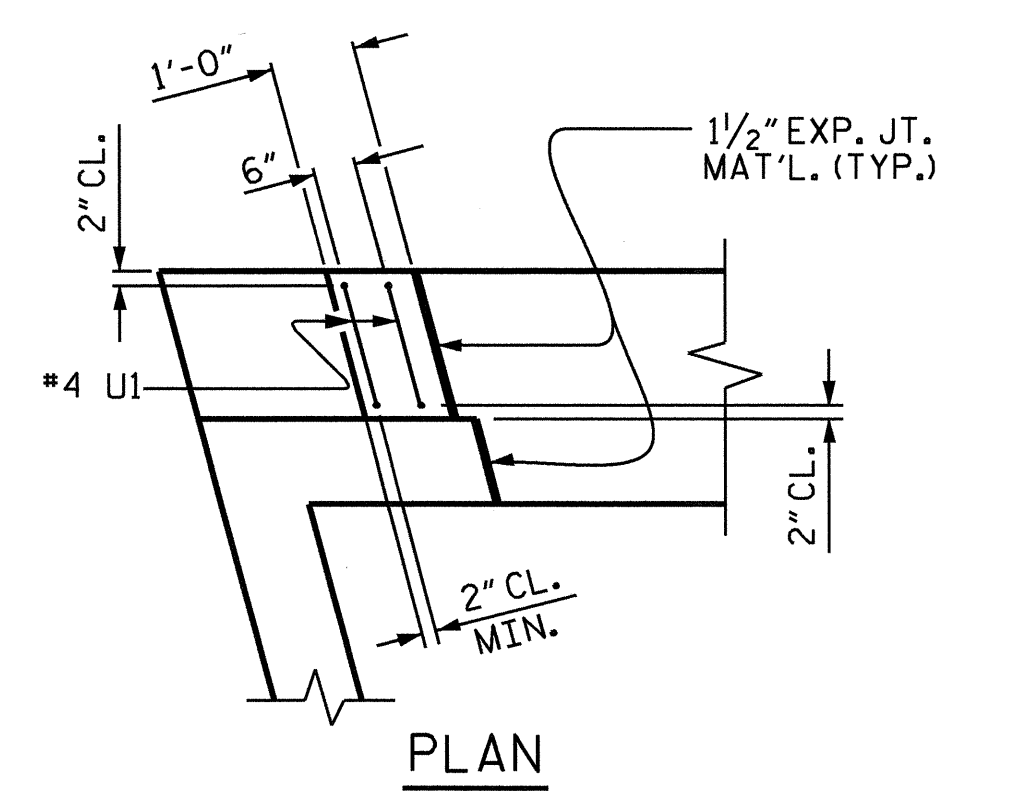
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

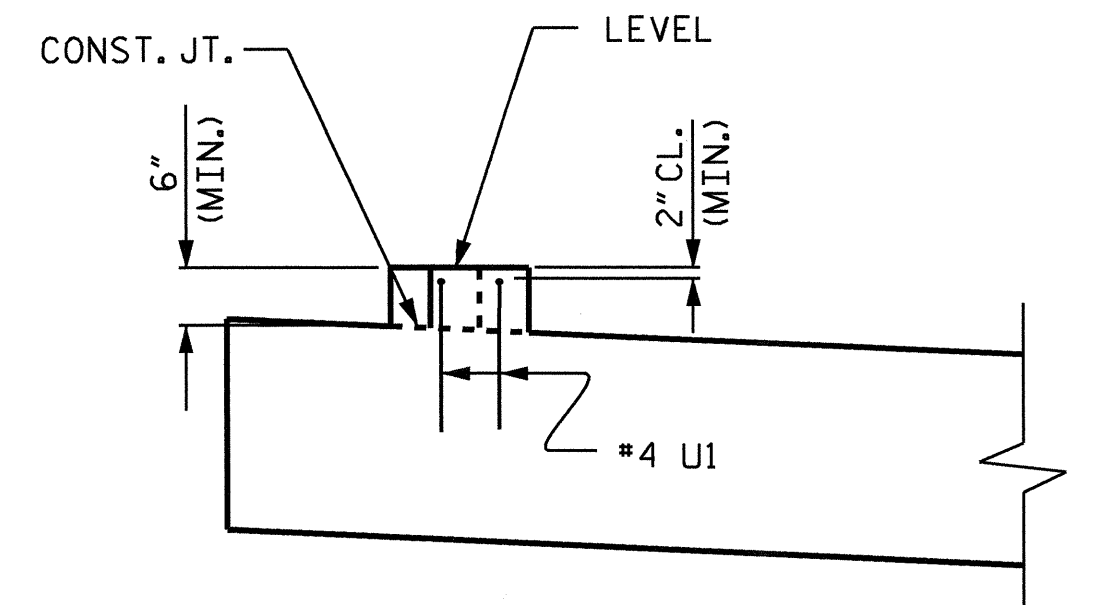
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

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



PLAN



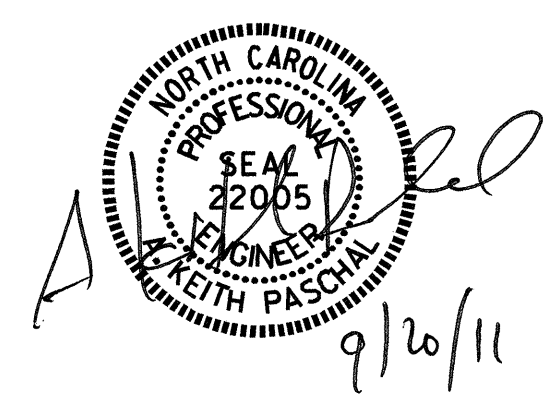
ELEVATION

LATERAL GUIDE DETAILS

PROJECT NO. B-4533
GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-
 SHEET 1 OF 3

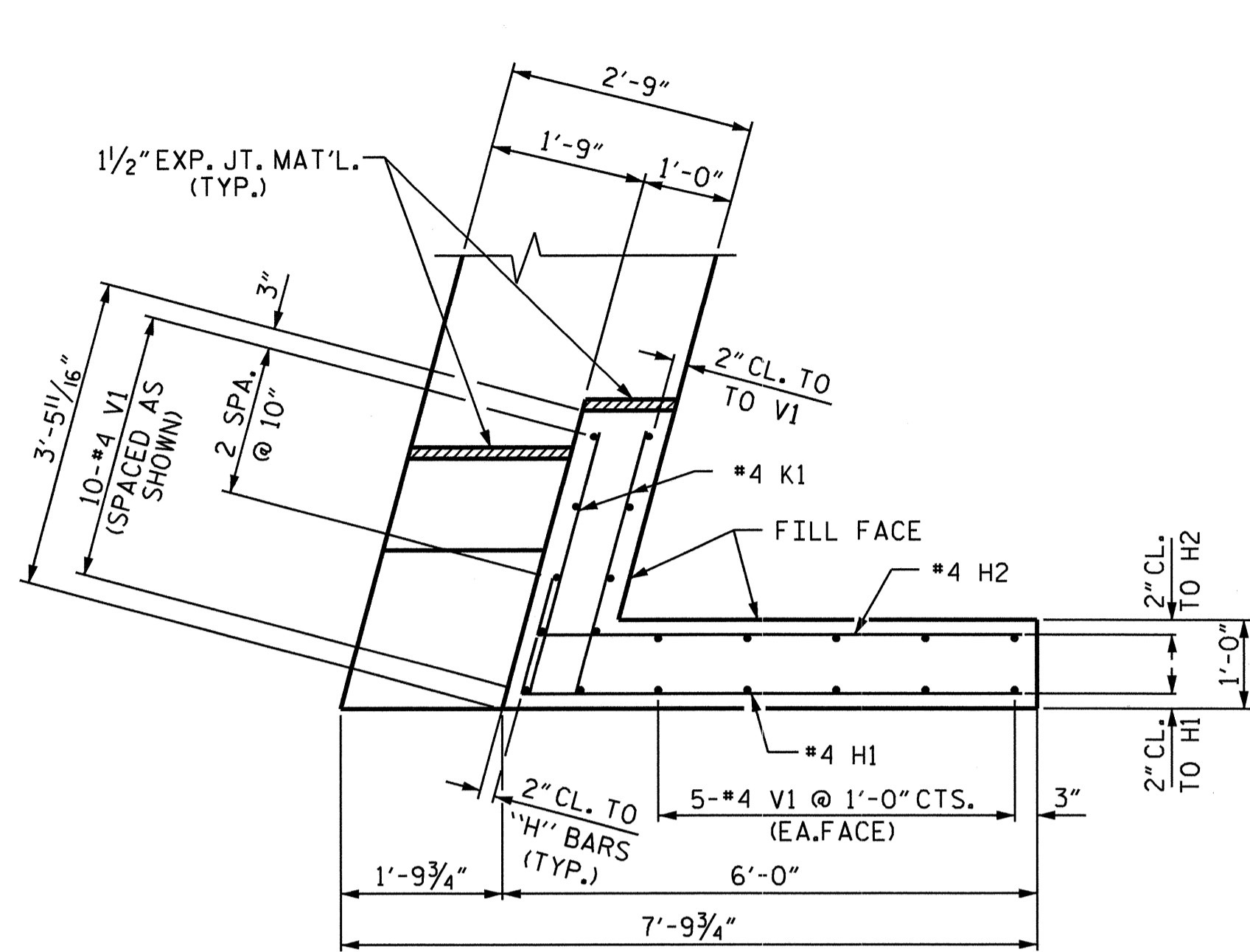
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT 1**

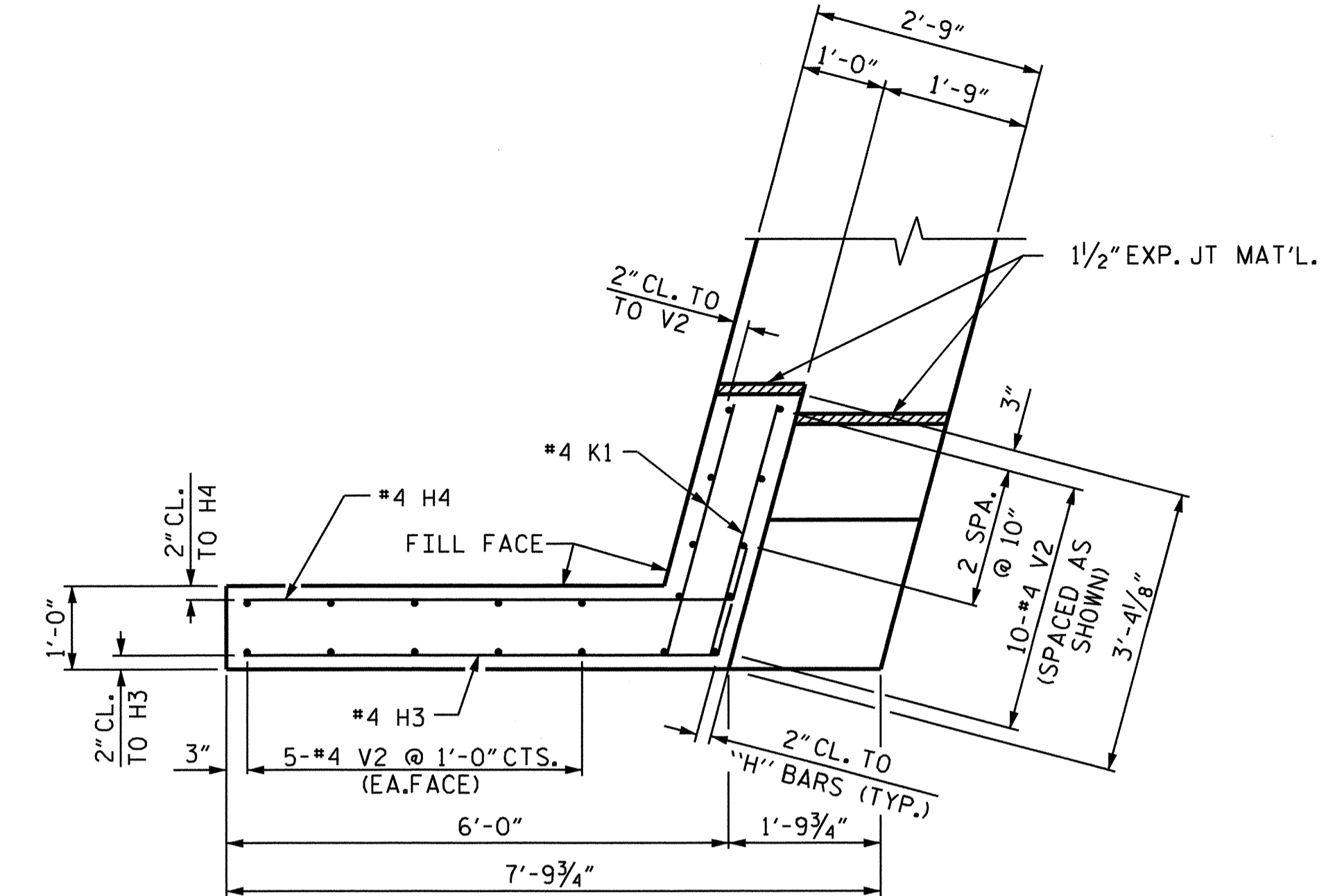


DRAWN BY : J. G. KHARVA DATE : 9/25/9
 CHECKED BY : M. E. FOWLER DATE : 11/23/10

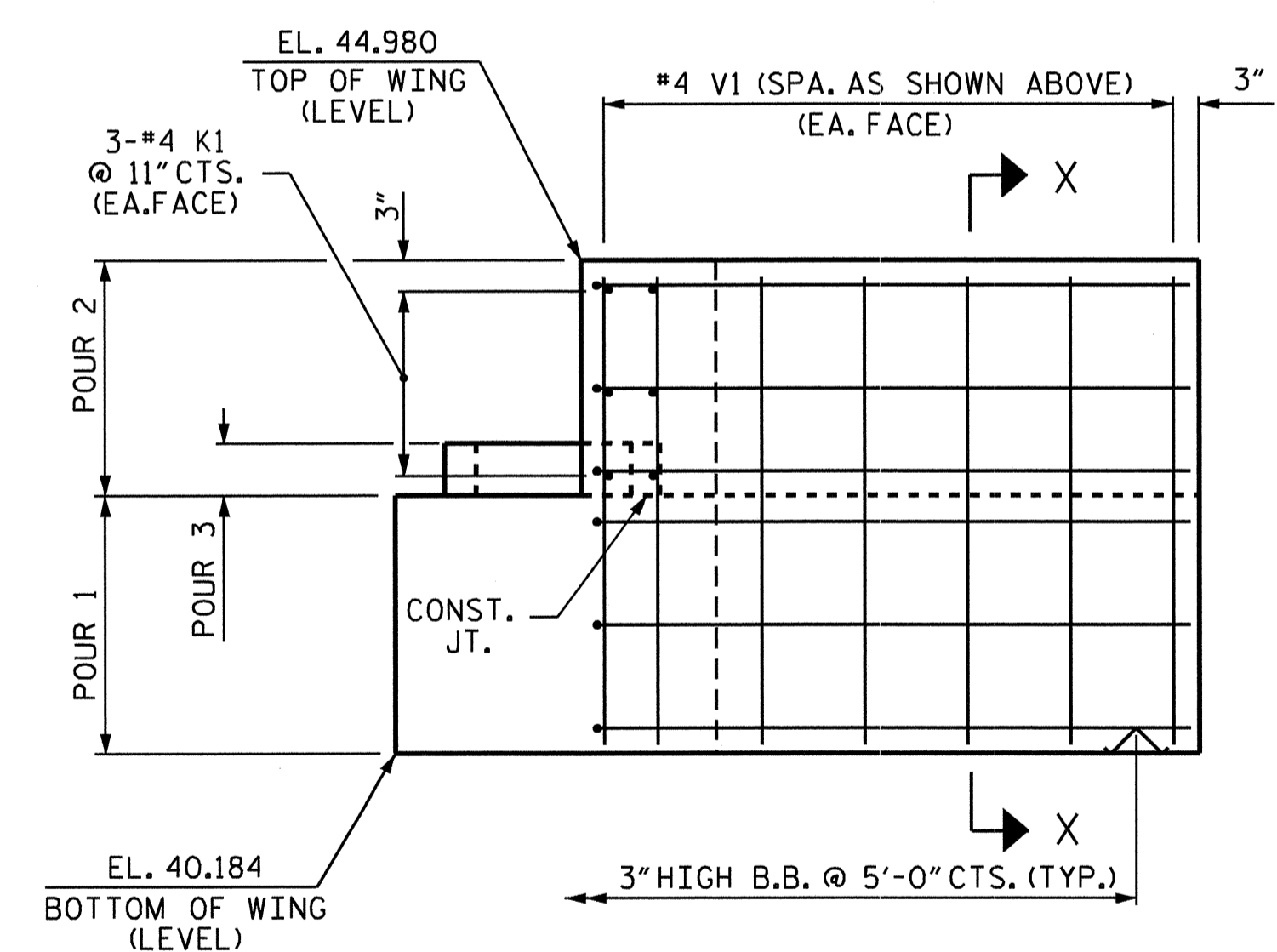
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			20



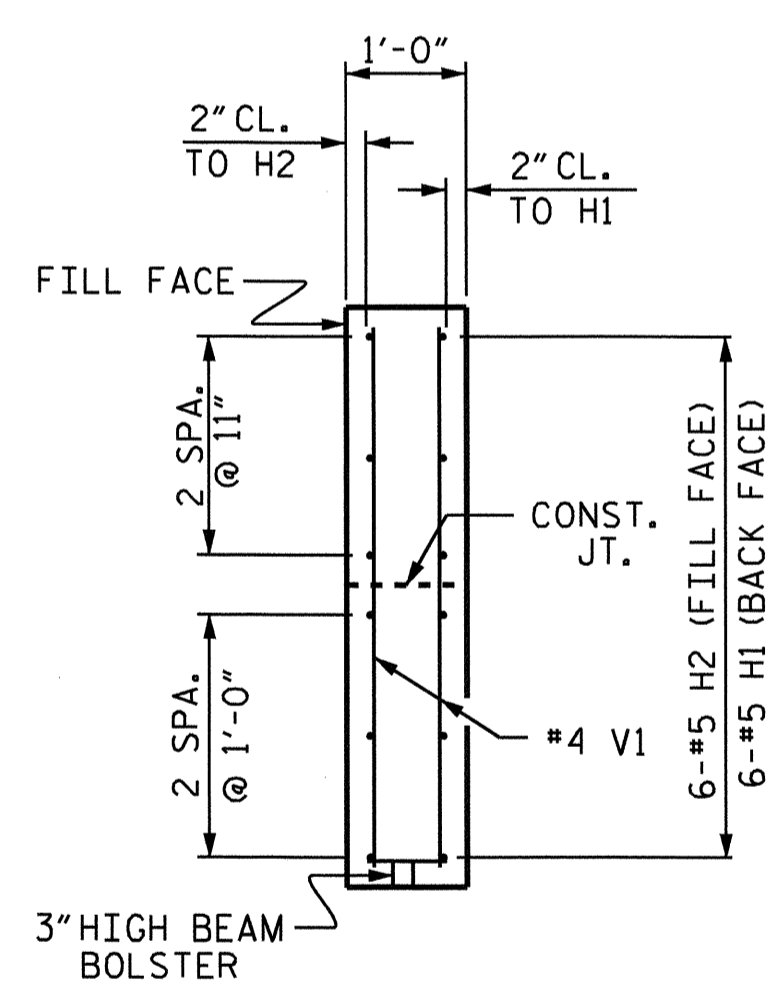
PLAN OF WING (W1)



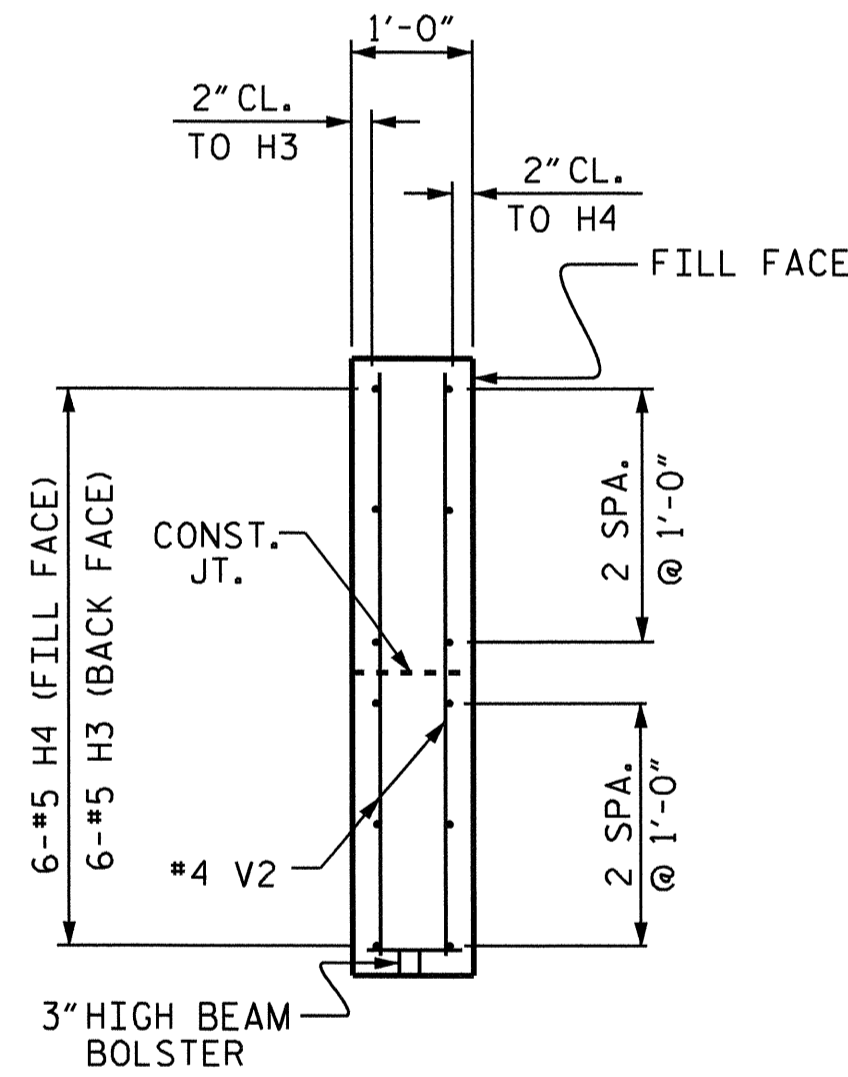
PLAN OF WING (W2)



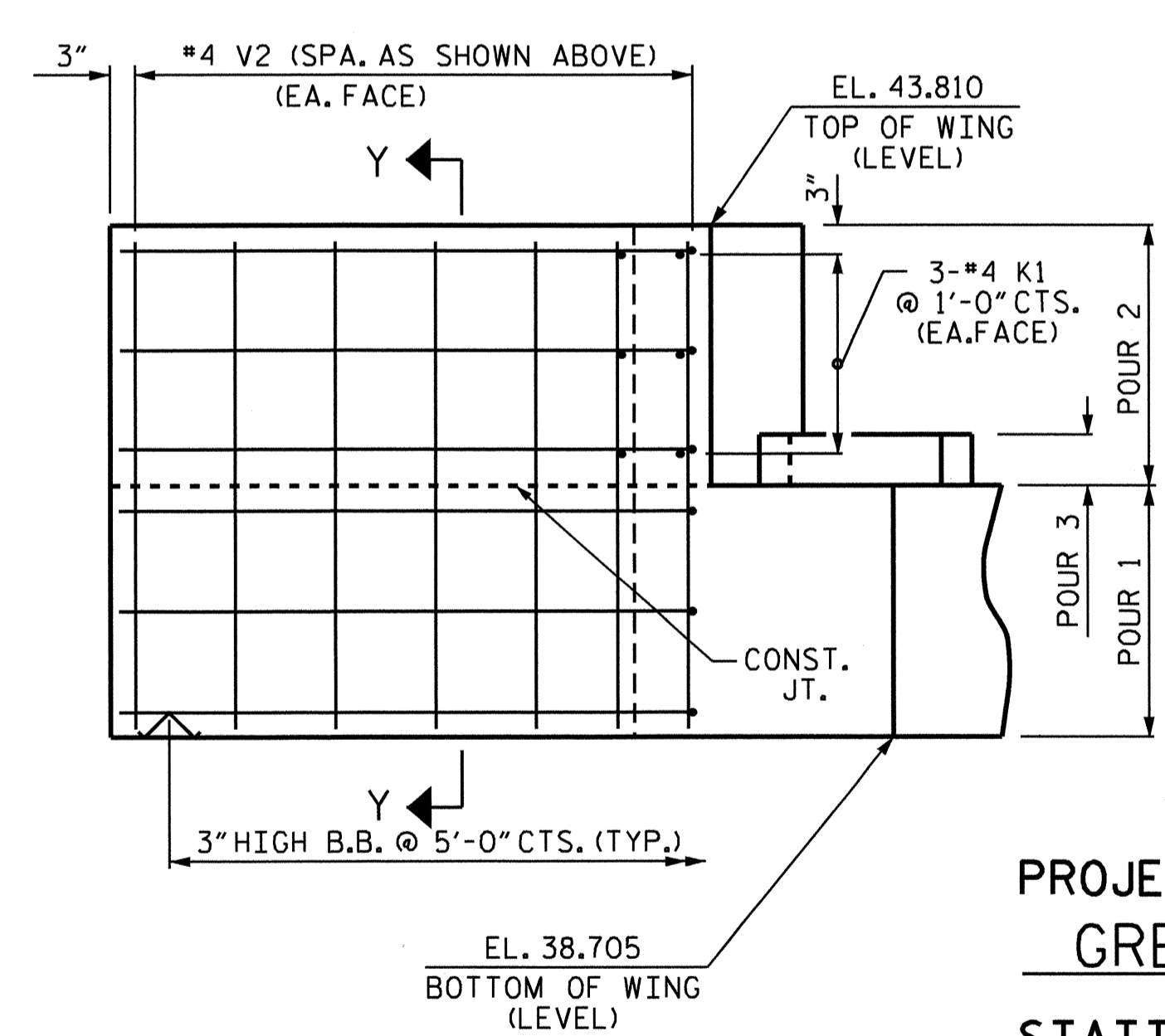
ELEVATION OF WING (W1)



SECTION X-X



SECTION Y-Y



ELEVATION OF WING (W2)

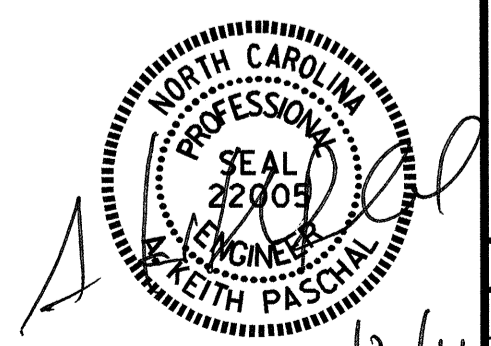
PROJECT NO. B-4533
GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

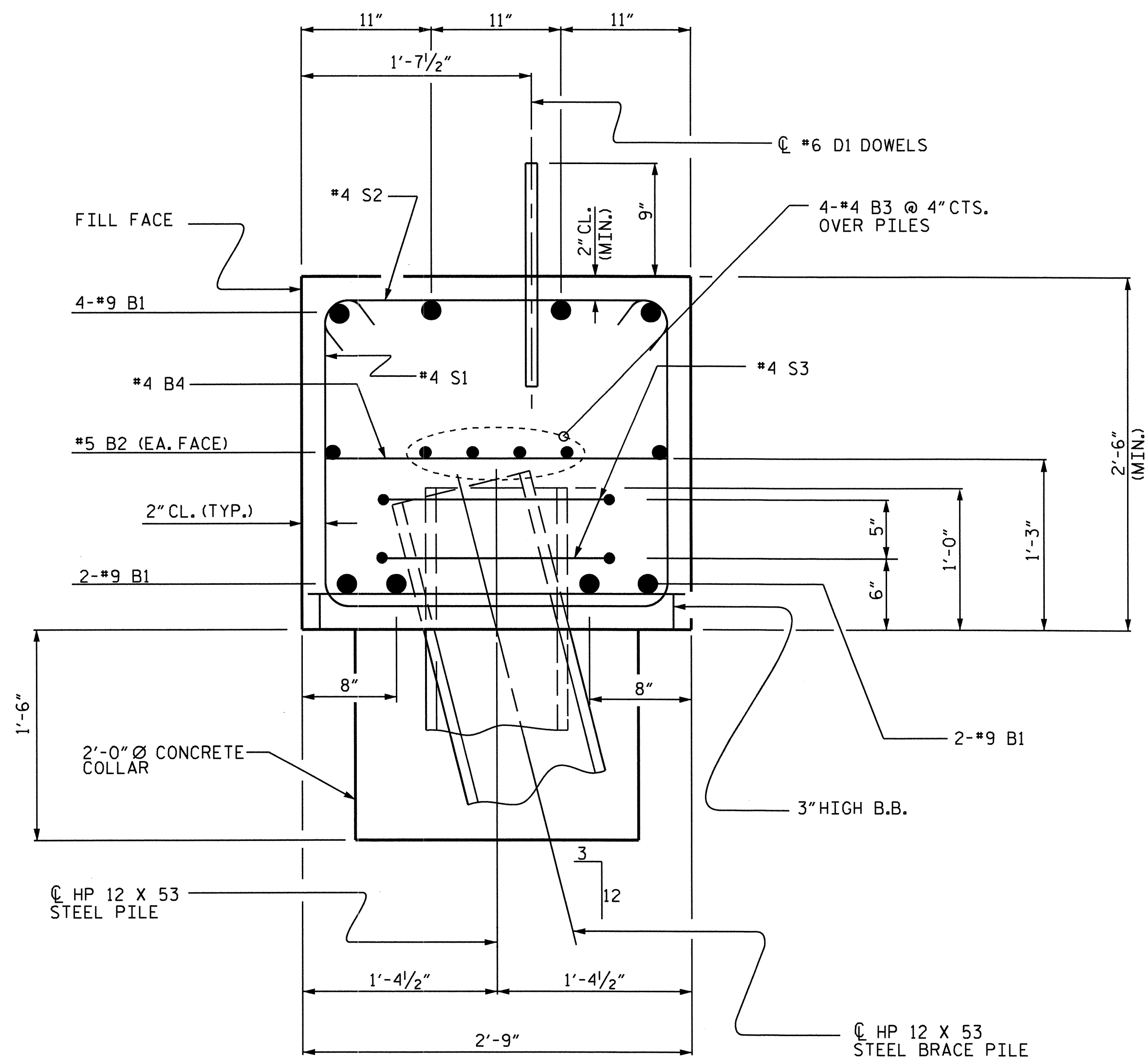
SUBSTRUCTURE
 END BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			20

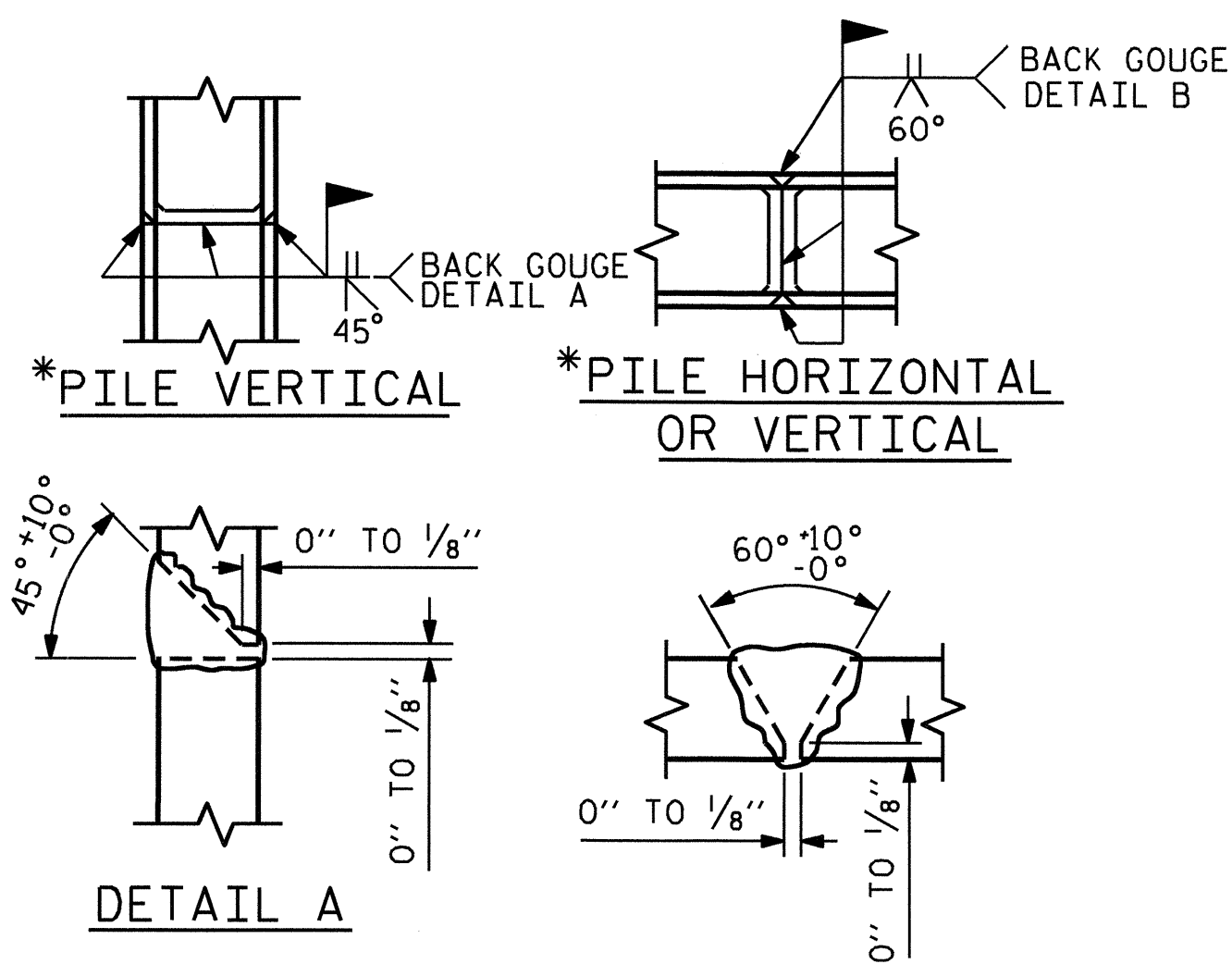


DRAWN BY: J.G. KHARVA DATE: 9/25/09
 CHECKED BY: M.E. FOWLER DATE: 11/23/10

16-SEP-2011 09:18
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 jkharva



SECTION A-A

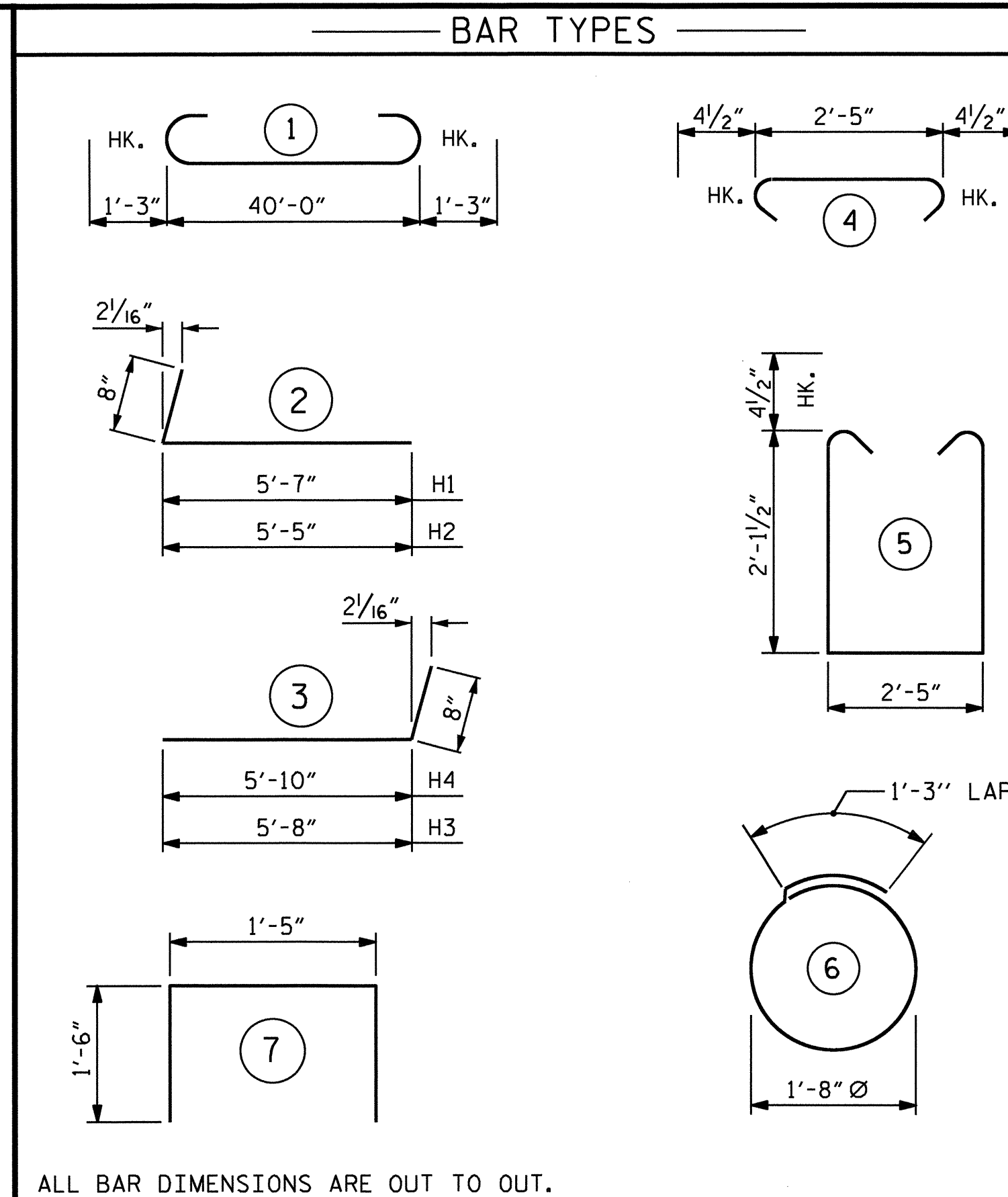


*POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

DRAWN BY : J. G. KHARVA DATE : 9/29/09
 CHECKED BY : M. E. FOWLER DATE : 11/23/10

16-SEP-2011 09:18
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 jkharva



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

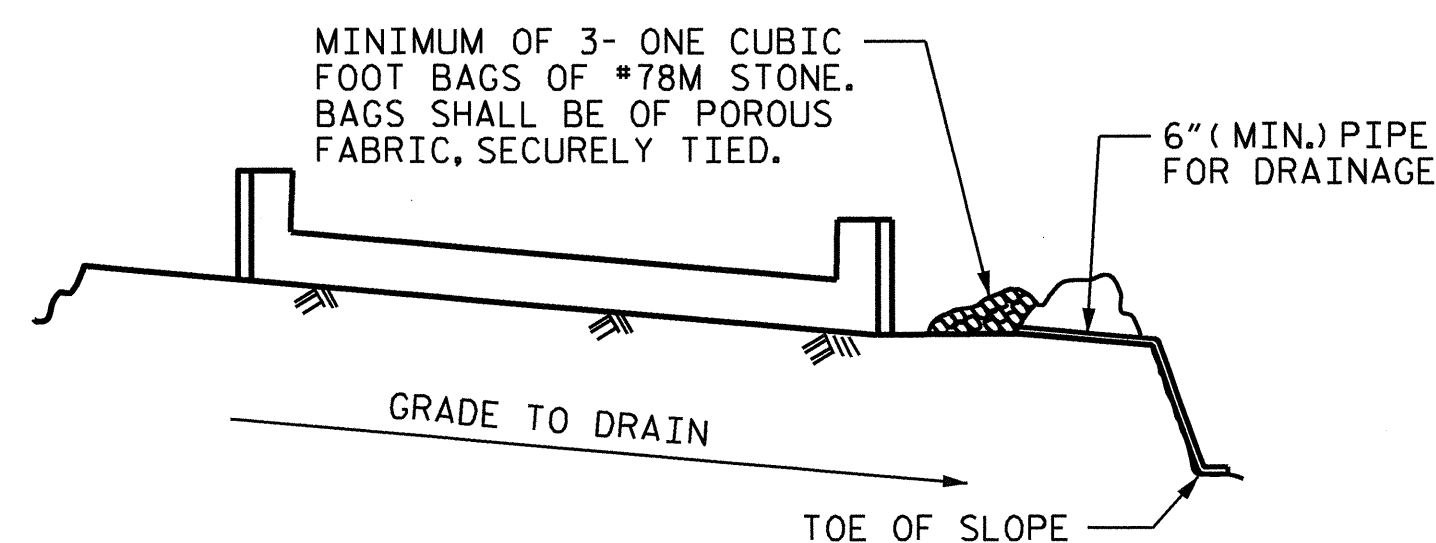
END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	42'-6"	1156
B2	2	#5	STR	40'-1"	84
B3	8	#4	STR	21'-3"	114
B4	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	6	#4	2	6'-3"	25
H2	6	#4	2	6'-1"	24
H3	6	#4	3	6'-4"	25
H4	6	#4	3	6'-6"	26
K1	12	#4	STR	3'-0"	24
S1	34	#4	5	7'-5"	168
S2	34	#4	4	3'-2"	72
S3	10	#4	6	6'-6"	43
U1	4	#4	7	4'-5"	12
V1	20	#4	STR	4'-5"	59
V2	20	#4	STR	4'-9"	63

TOTAL REINFORCING STEEL = 1961 LBS

CLASS A CONCRETE BREAKDOWN

POUR 1	(CAP, COLLARS & LOWER PART OF WINGS)	11.8 C.Y.
POUR 2	(UPPER PART OF WINGS)	1.5 C.Y.
POUR 3	(LATERAL GUIDE)	0.1 C.Y.
TOTAL CLASS A CONCRETE		13.4 C.Y.

HP 12 X 53 STEEL PILES
 NO. : 5 LIN. FT. 250
 PILE REDRIVES NO. : 3



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

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

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

TEMPORARY DRAINAGE AT END BENT

PROJECT NO. B-4533
 GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

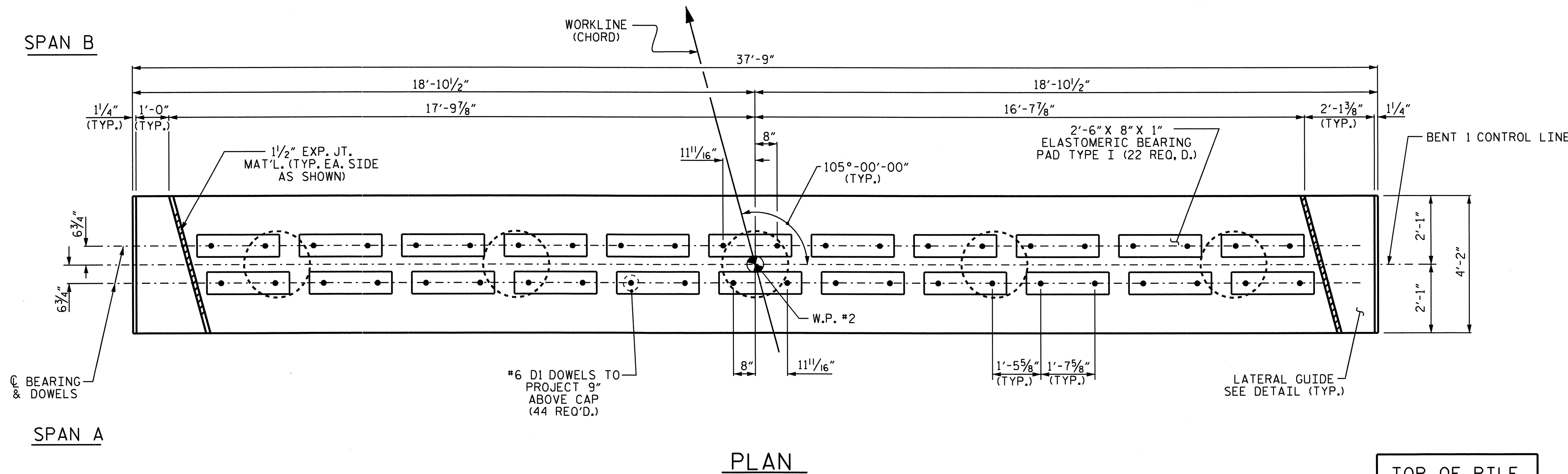
SUBSTRUCTURE
 END BENT 1



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			20

SPAN B

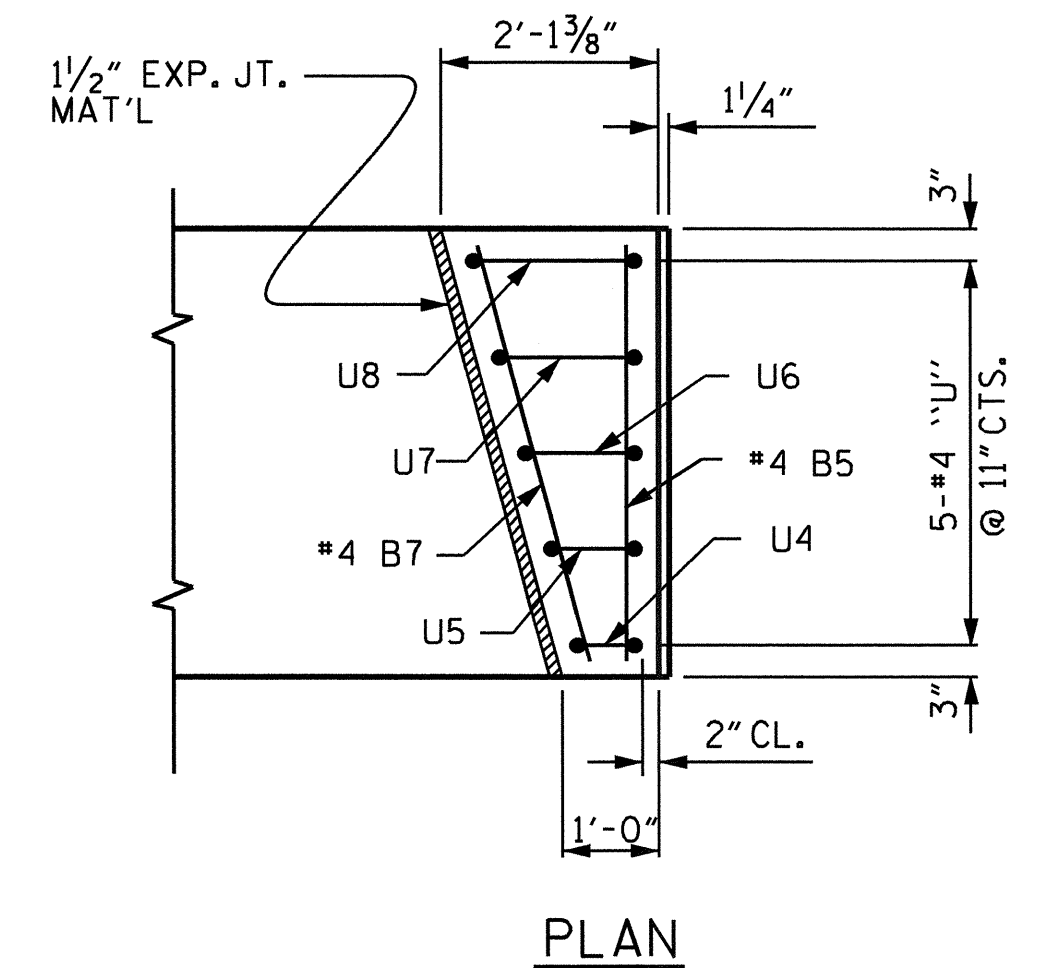
SPAN A



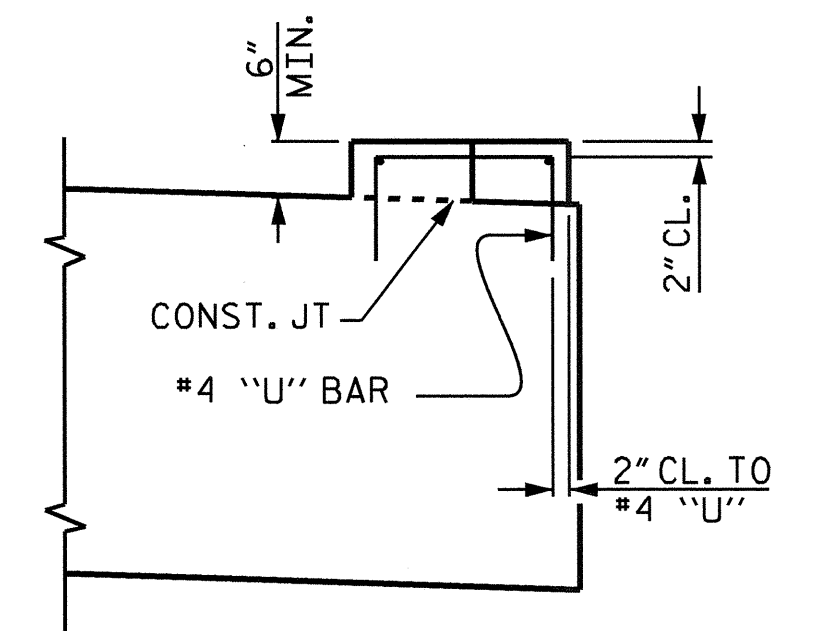
PLAN

TOP OF PILE ELEVATIONS	
PILE NO.	ELEVATION
1	40.472
2	40.200
3	39.928
4	39.655
5	39.383

NOTES:
 STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 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 HAS THE OPTION TO OMIT THE LATERAL GUIDES IF APPROVED BY THE ENGINEER.
 A MINIMUM OF 30'-0" OF THE TOP OF EACH PILE SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

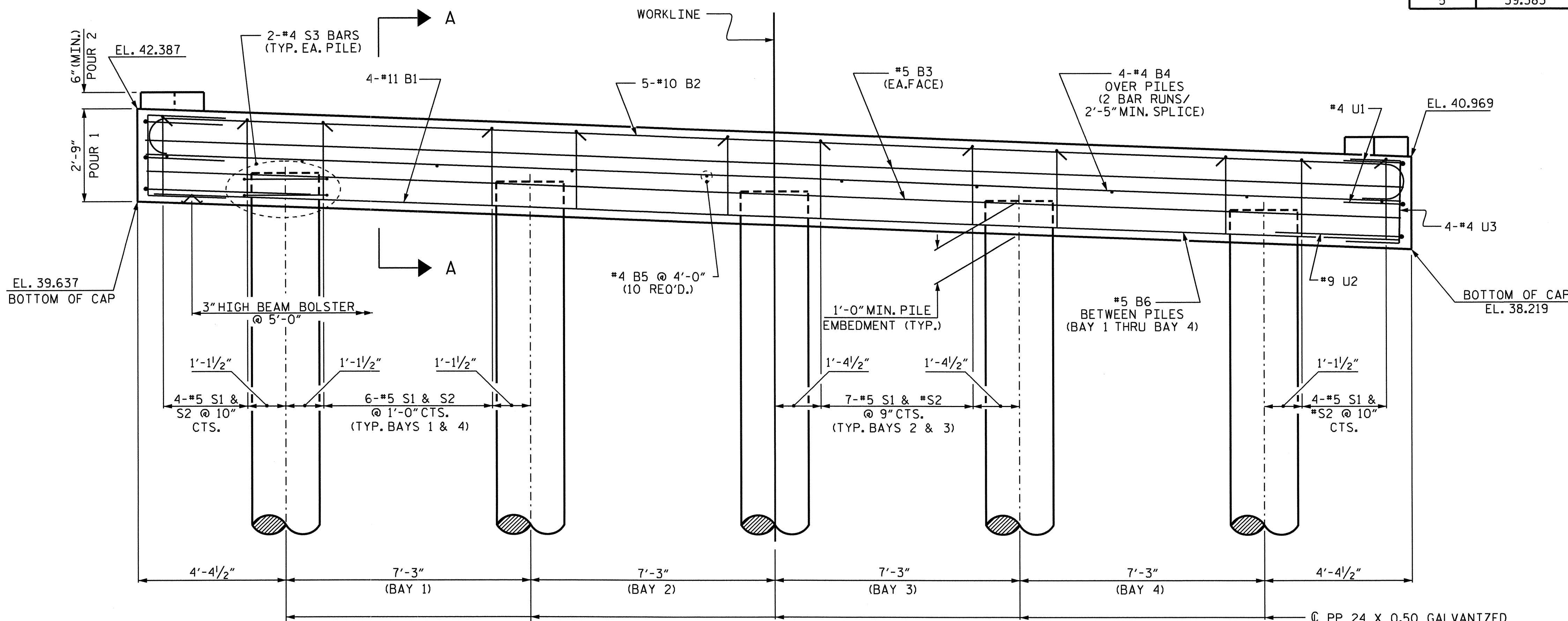


PLAN



ELEVATION

LATERAL GUIDE DETAILS



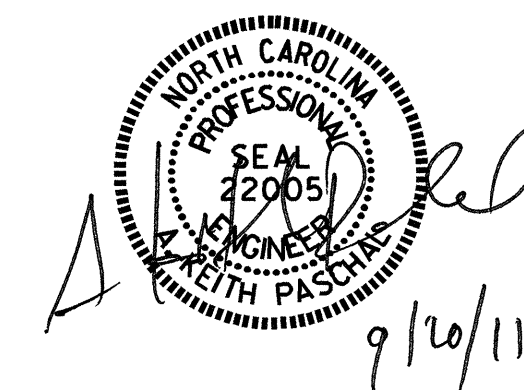
ELEVATION

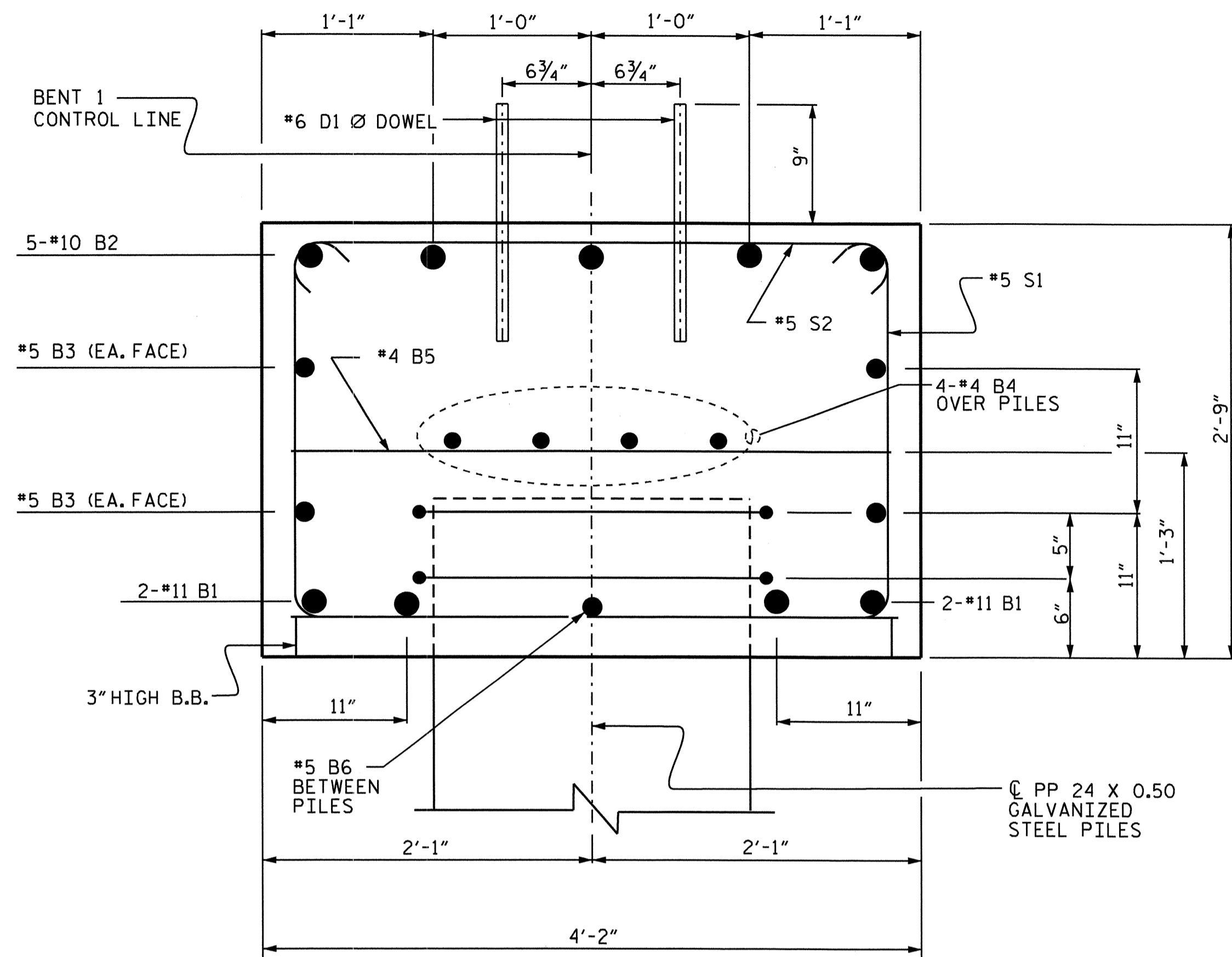
PROJECT NO. B-4533
GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-
 SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT 1					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-12
					TOTAL SHEETS 20

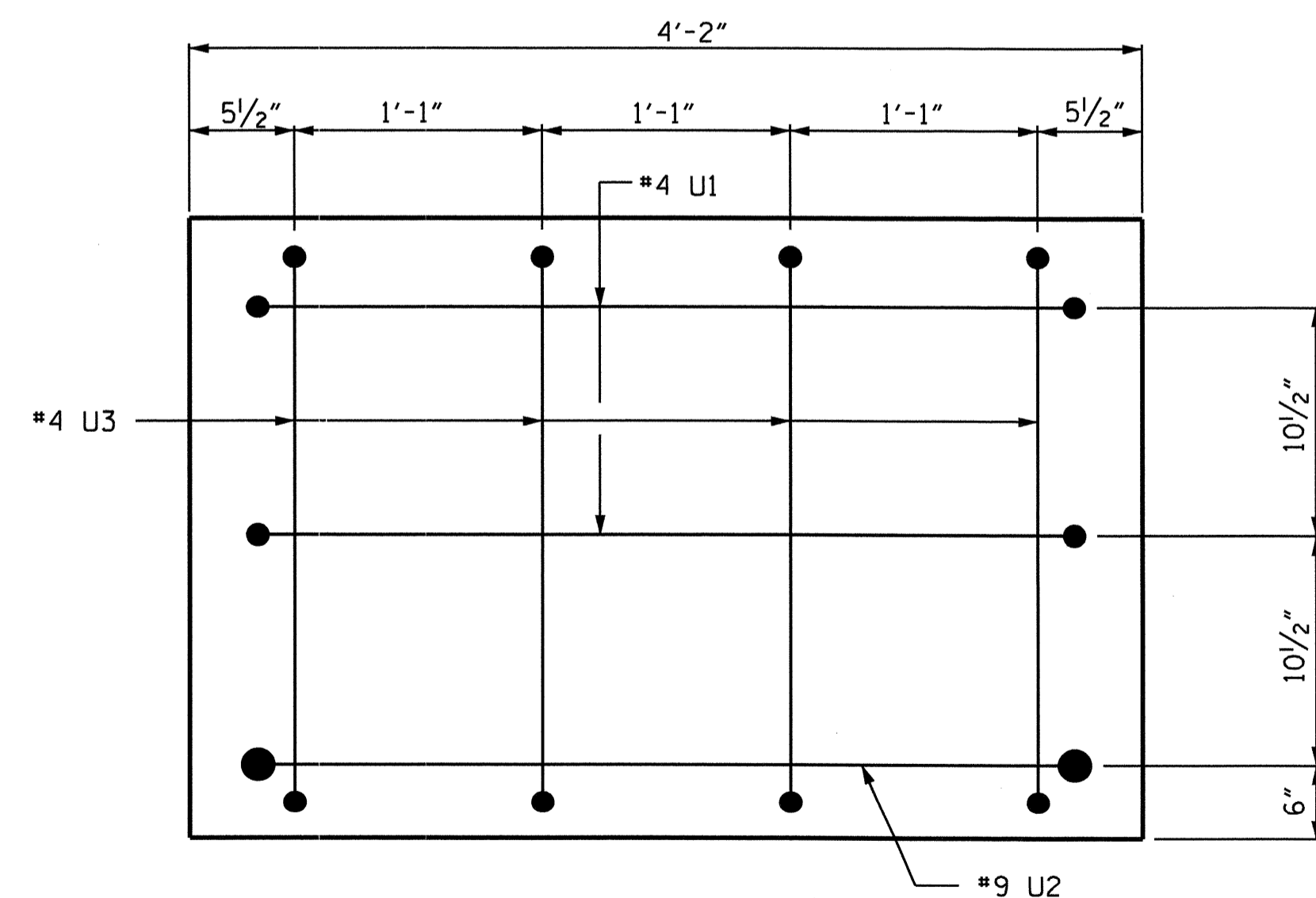
DRAWN BY : J. G. KHARVA DATE : 10-02-09
 CHECKED BY : M. E. FOWLER DATE : 12-02-10

16-SEP-2011 09:21
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 jkharva





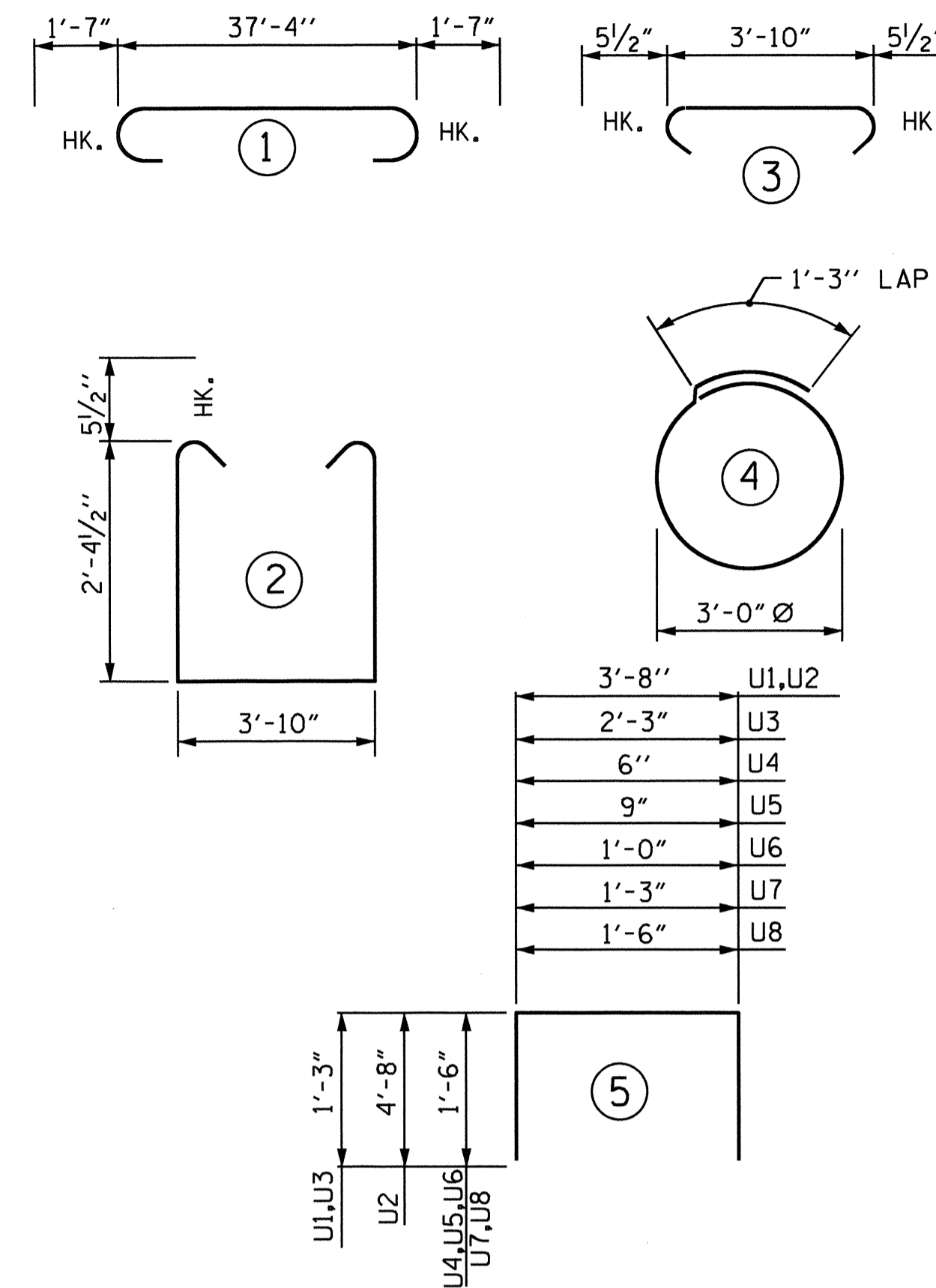
SECTION A-A



END VIEW

(TYP. EA. END)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#11	STR	37'-5"	795
B2	5	#10	1	40'-6"	871
B3	4	#5	STR	37'-5"	156
B4	8	#4	STR	19'-11"	106
B5	12	#4	STR	3'-10"	31
B6	4	#5	STR	4'-11"	21
B7	2	#4	STR	3'-11"	5
D1	44	#6	STR	1'-6"	99
S1	34	#5	2	9'-6"	337
S2	34	#5	3	4'-9"	168
S3	10	#4	4	10'-8"	71
U1	4	#4	5	6'-2"	16
U2	2	#9	5	13'-0"	88
U3	8	#4	5	4'-9"	25
U4	2	#4	5	3'-6"	5
U5	2	#4	5	3'-9"	5
U6	2	#4	5	4'-0"	5
U7	2	#4	5	4'-3"	6
U8	2	#4	5	4'-6"	6

REINFORCING STEEL LBS 2816

CLASS A CONCRETE BREAKDOWN		
POUR 1 (CAP) ▲	C.Y.	15.4
POUR 2 (LATERAL GUIDE)	C.Y.	0.3
▲ TOTAL	C.Y.	15.7

PP 24 X 0.50 GALVANIZED STEEL PILES :
NO. : 5 LIN. FT. : 225

PILE REDRIVES	NO. : 3
PDA TESTING	EA. 1
PDA ASSISTANCE	EA. 1

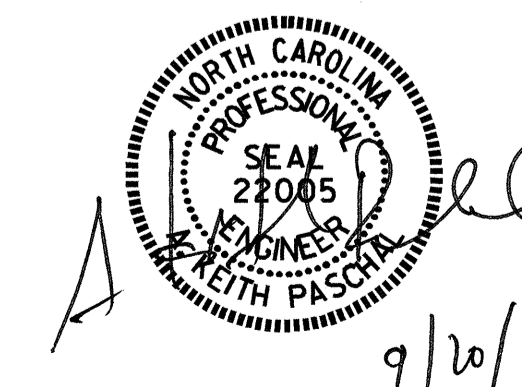
▲ CONCRETE DISPLACED BY THE 24" STEEL PIPE PILES HAS BEEN DEDUCTED FROM THE CONCRETE TOTAL

PROJECT NO. B-4533
GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-

SHEET 2 OF 2

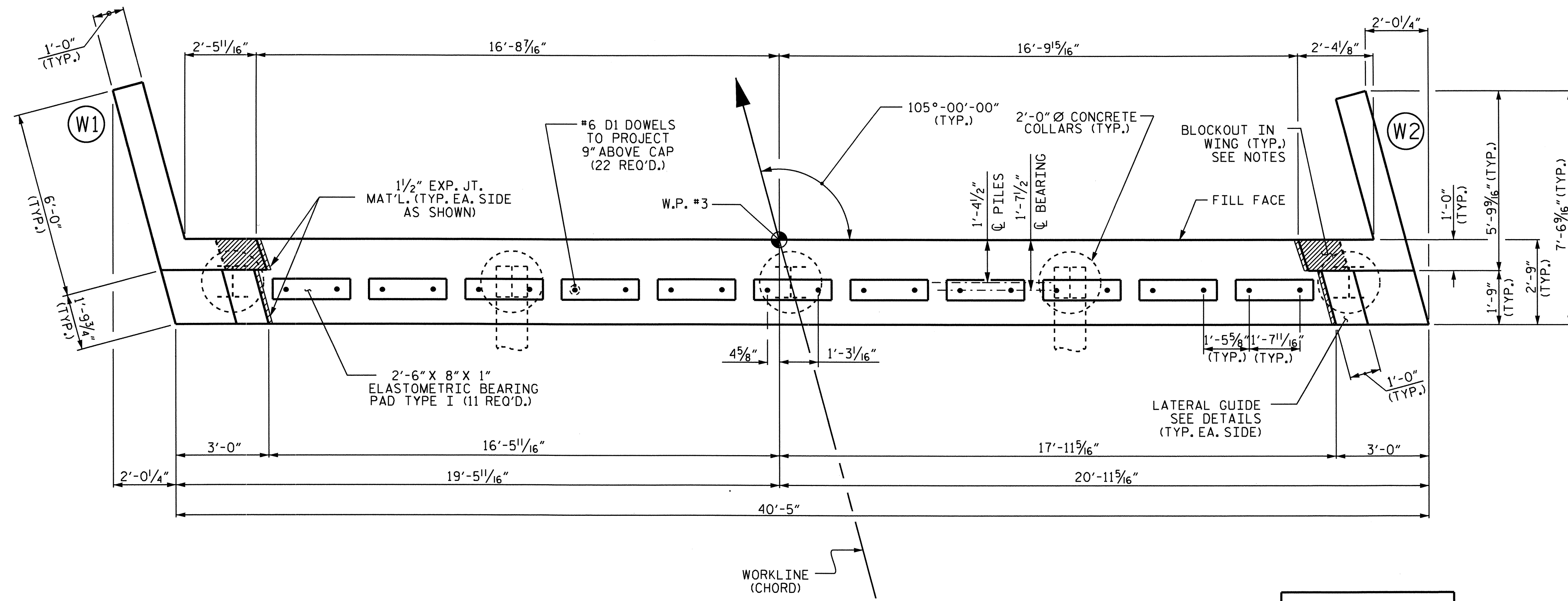
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 1



DRAWN BY : J. G. KHARVA DATE : 10-02-09
 CHECKED BY : M. E. FOWLER DATE : 12-02-10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			20



PLAN

NOTES

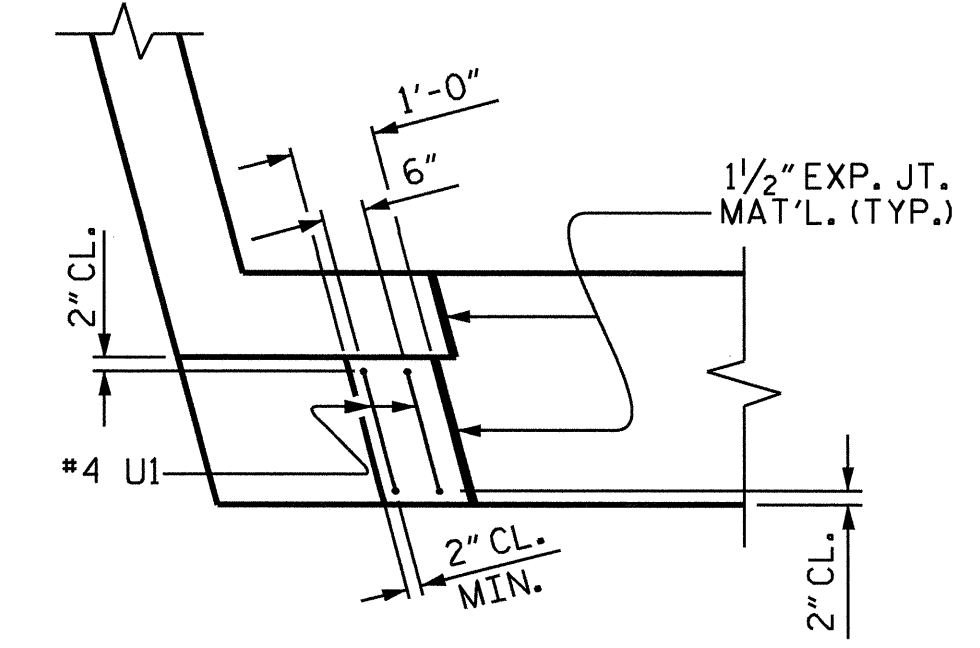
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

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

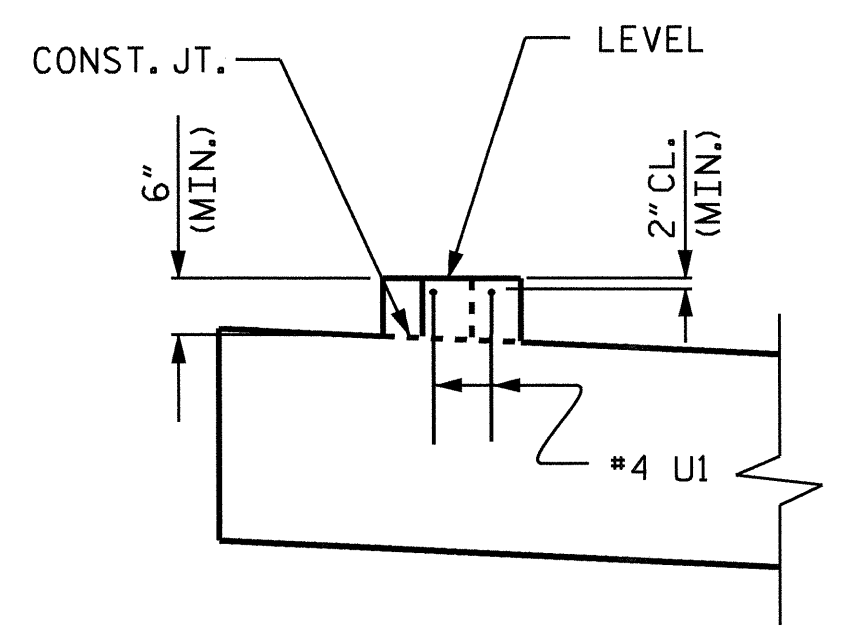
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

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



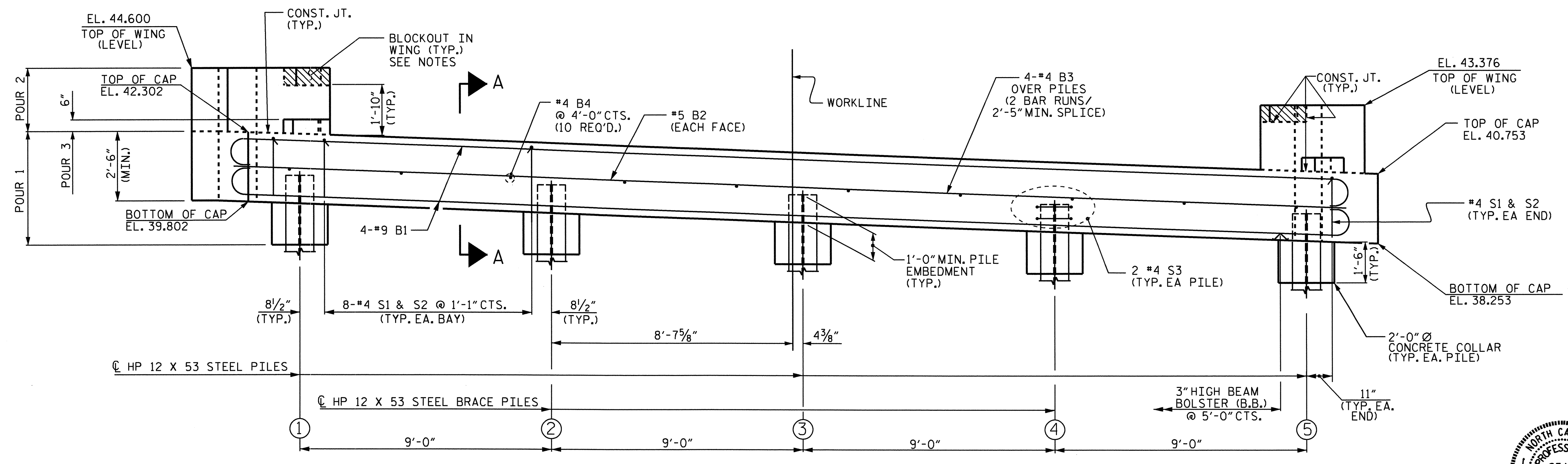
PLAN

TOP OF PILE ELEVATIONS	
PILE NO.	ELEVATION
1	40.703
2	40.358
3	40.014
4	39.669
5	39.324



ELEVATION

LATERAL GUIDE DETAILS



ELEVATION

PROJECT NO. B-4533
 GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-

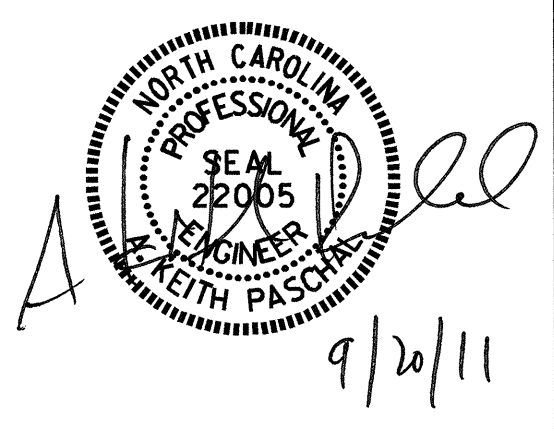
SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

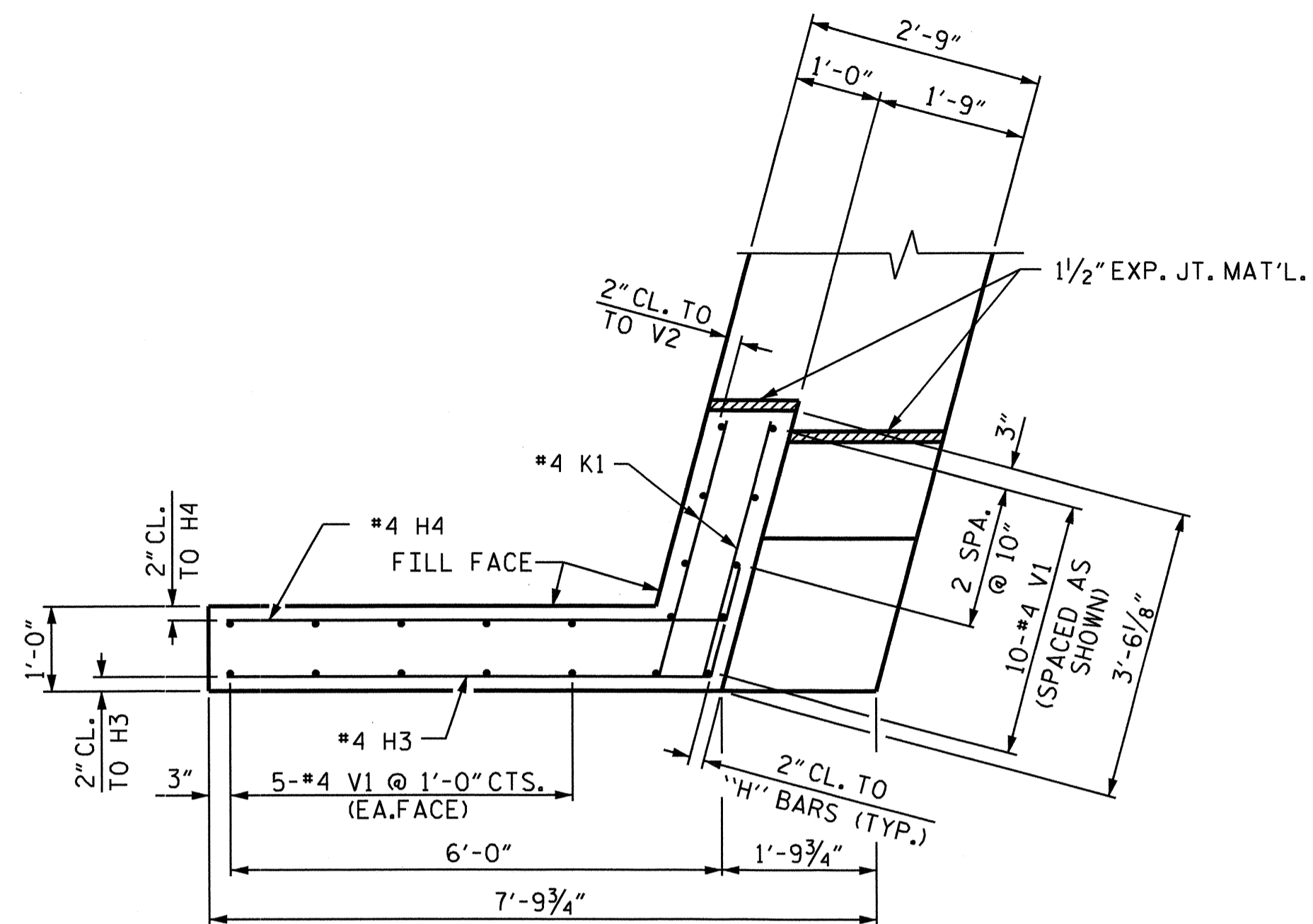
SUBSTRUCTURE
 END BENT 2

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

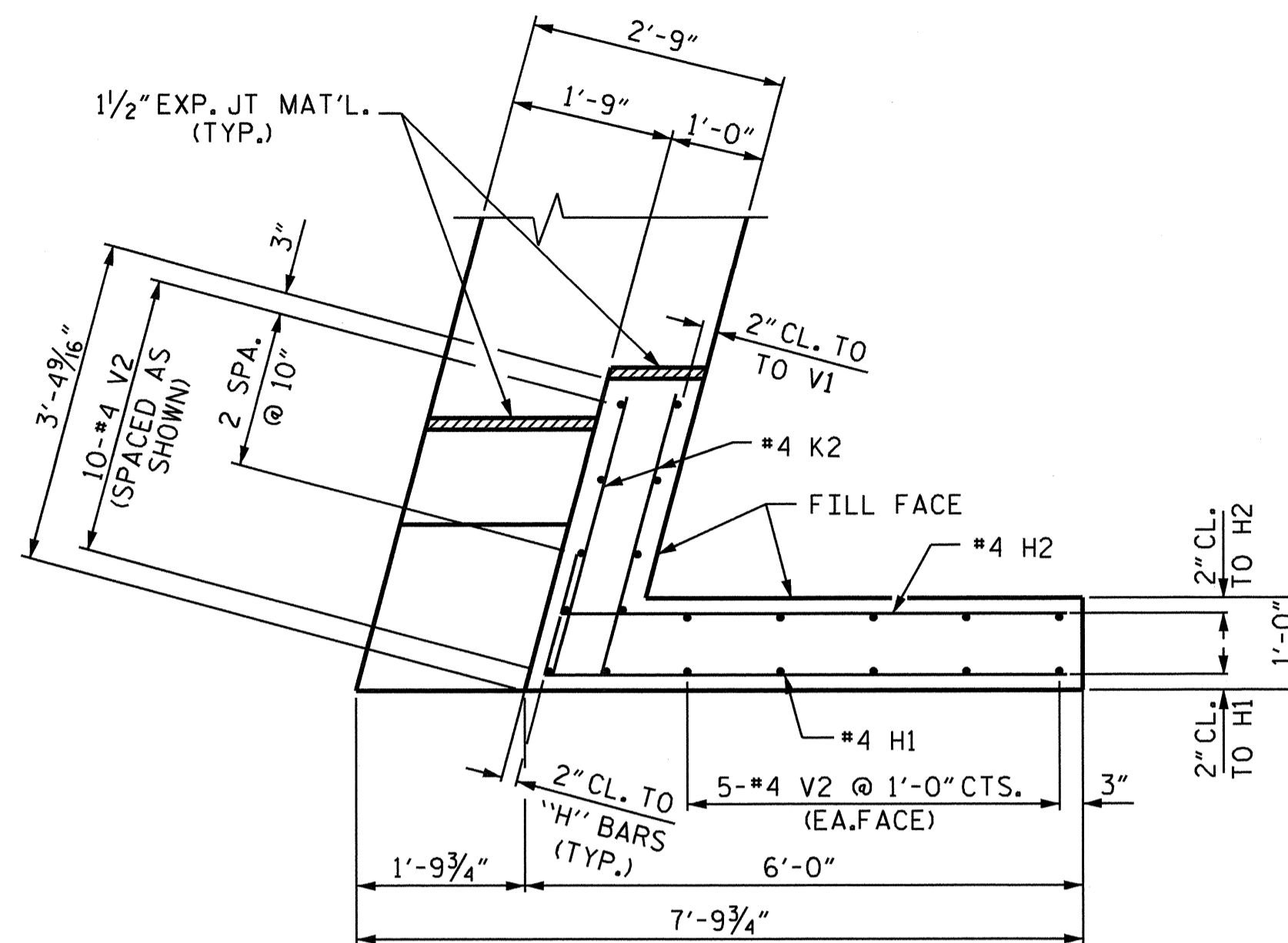
SHEET NO. S-14
 TOTAL SHEETS 20



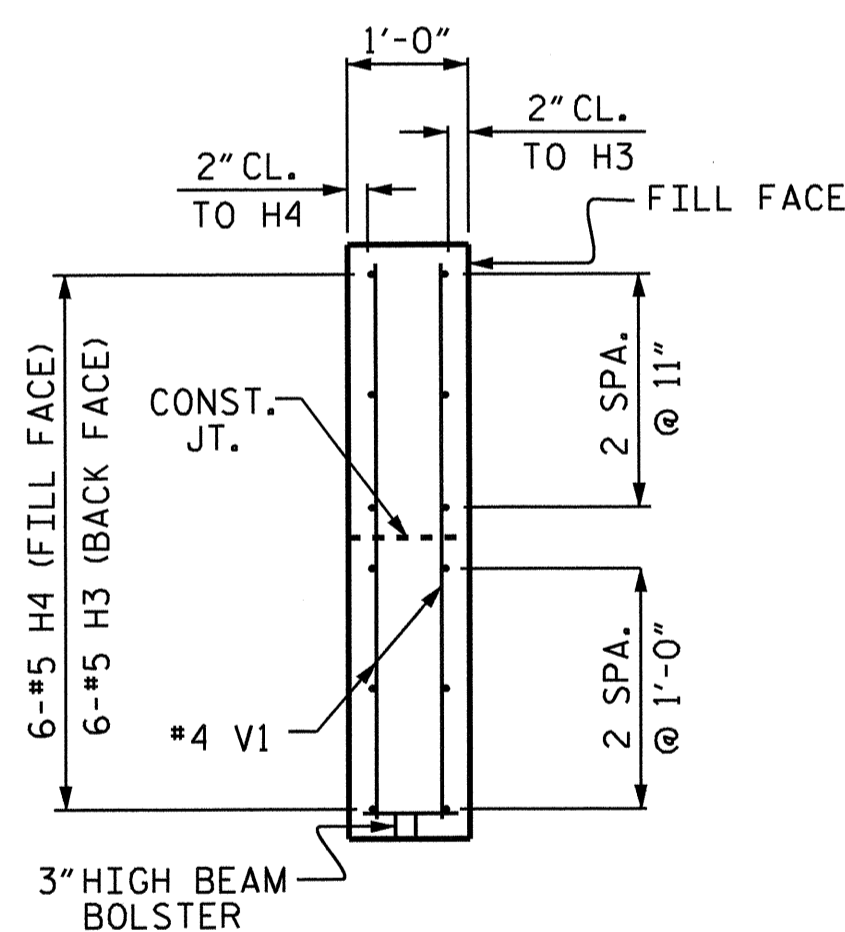
DRAWN BY: J. G. KHARVA DATE: 9/25/9
 CHECKED BY: M. E. FOWLER DATE: 8/23/10



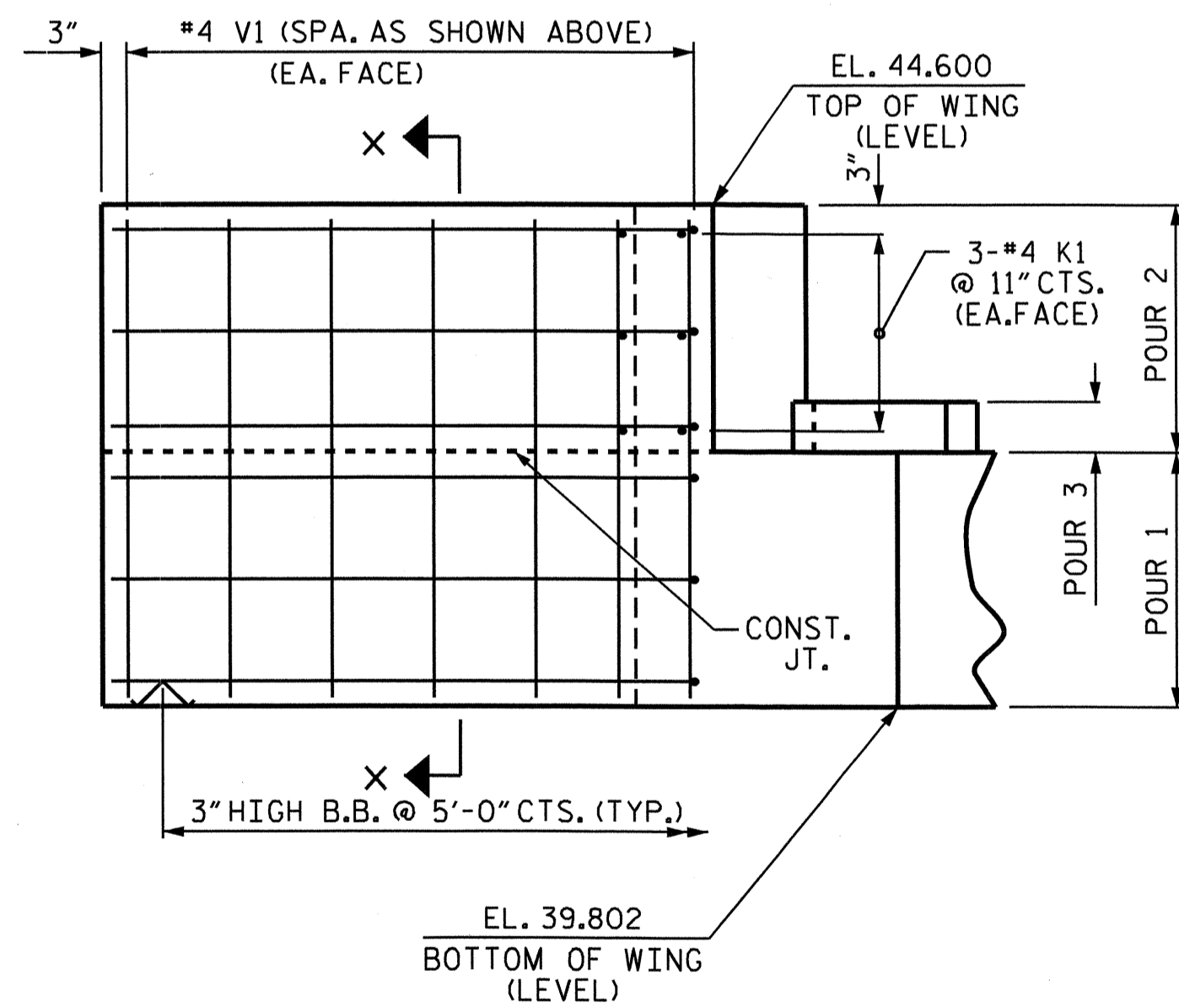
PLAN OF WING (W1)



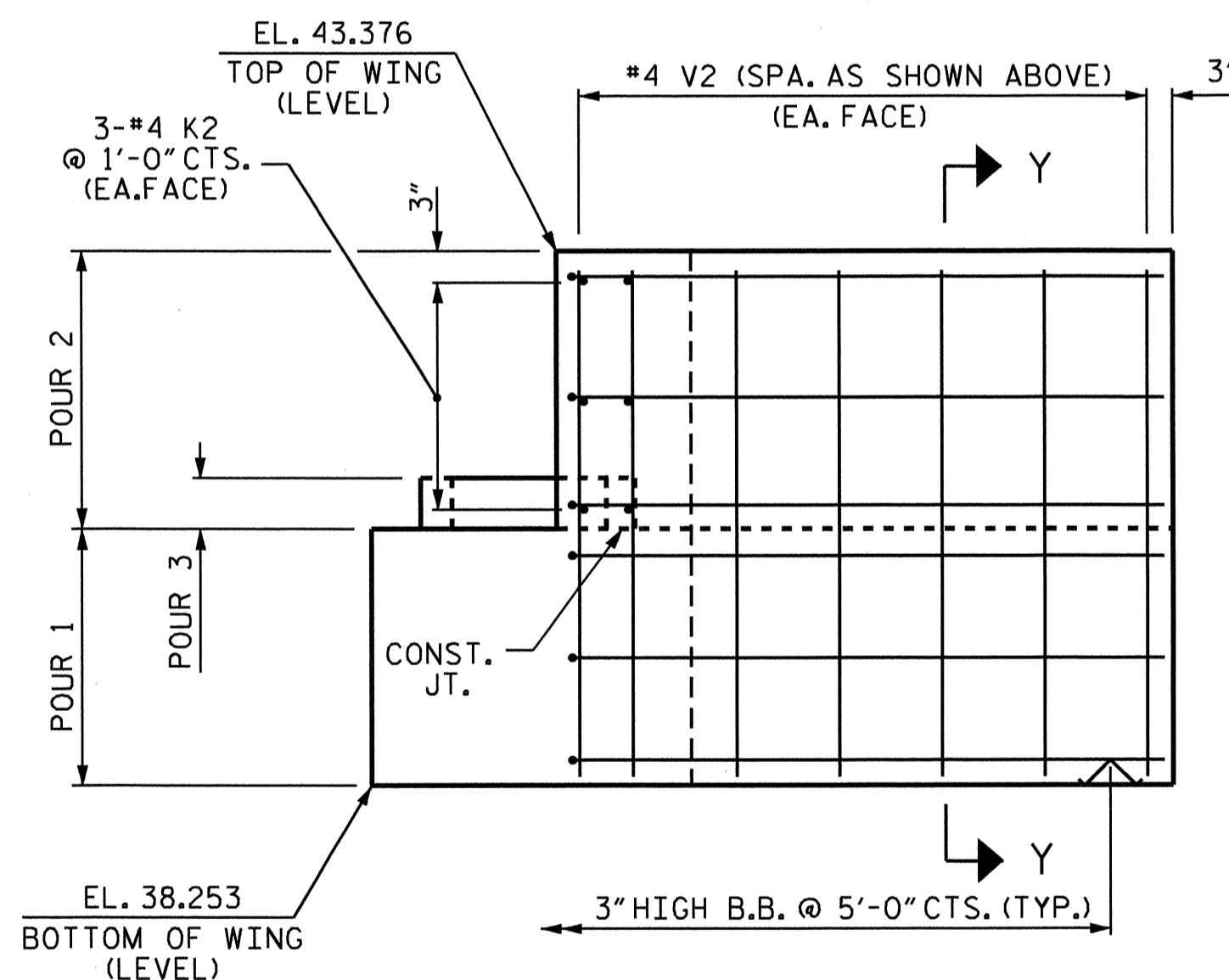
PLAN OF WING (W2)



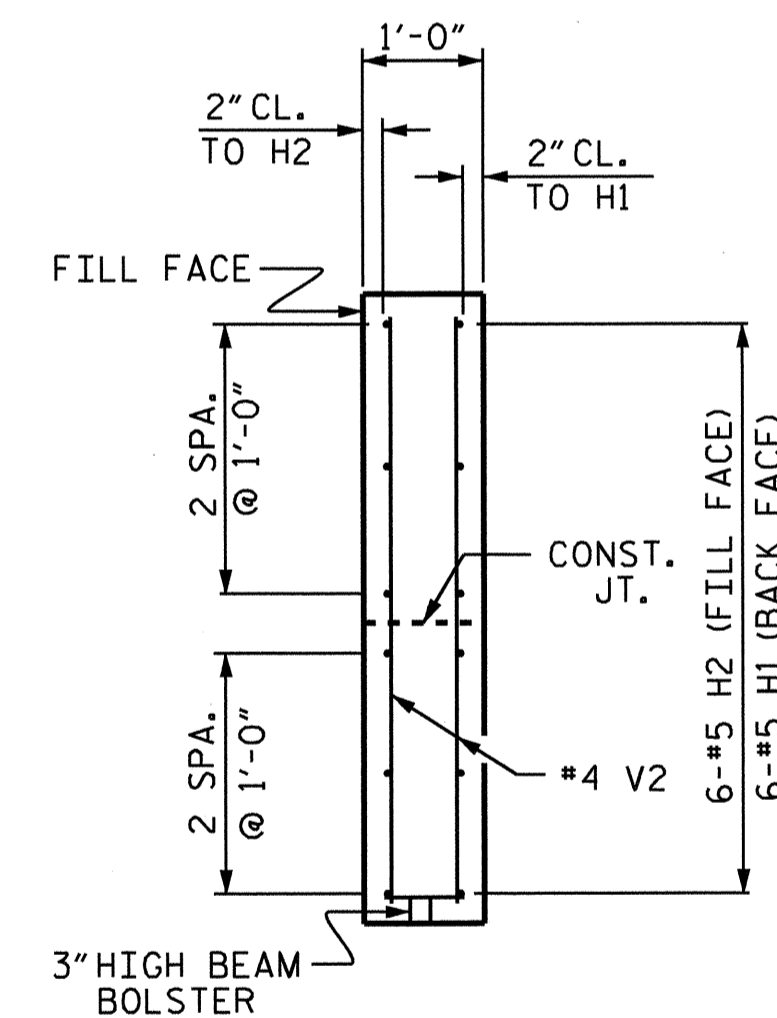
SECTION X-X



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



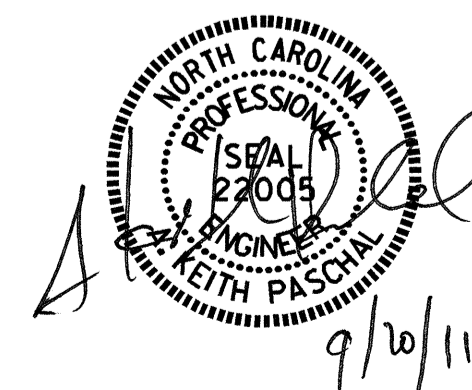
SECTION Y-Y

PROJECT NO. B-4533
GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

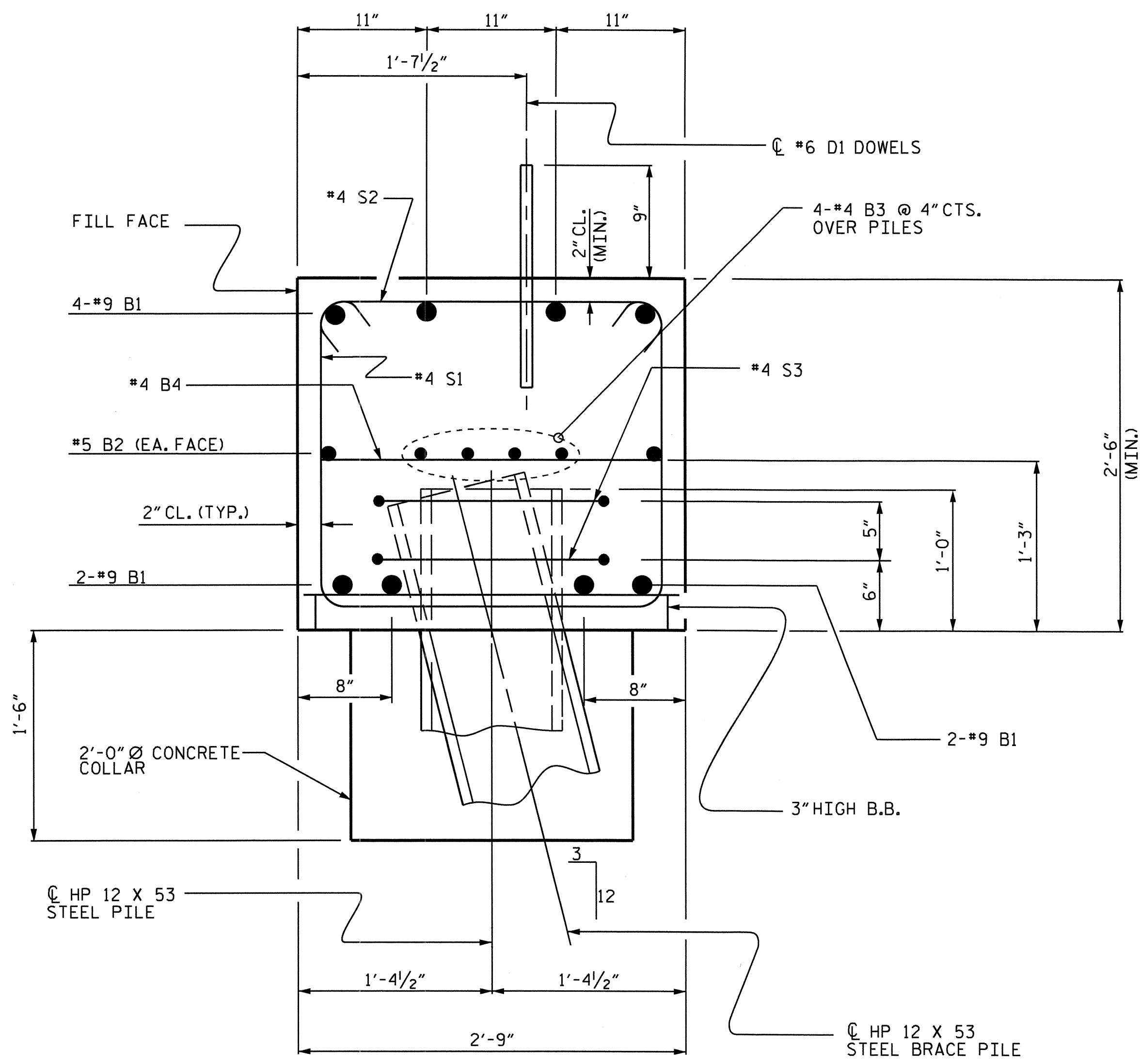
SUBSTRUCTURE
 END BENT 2



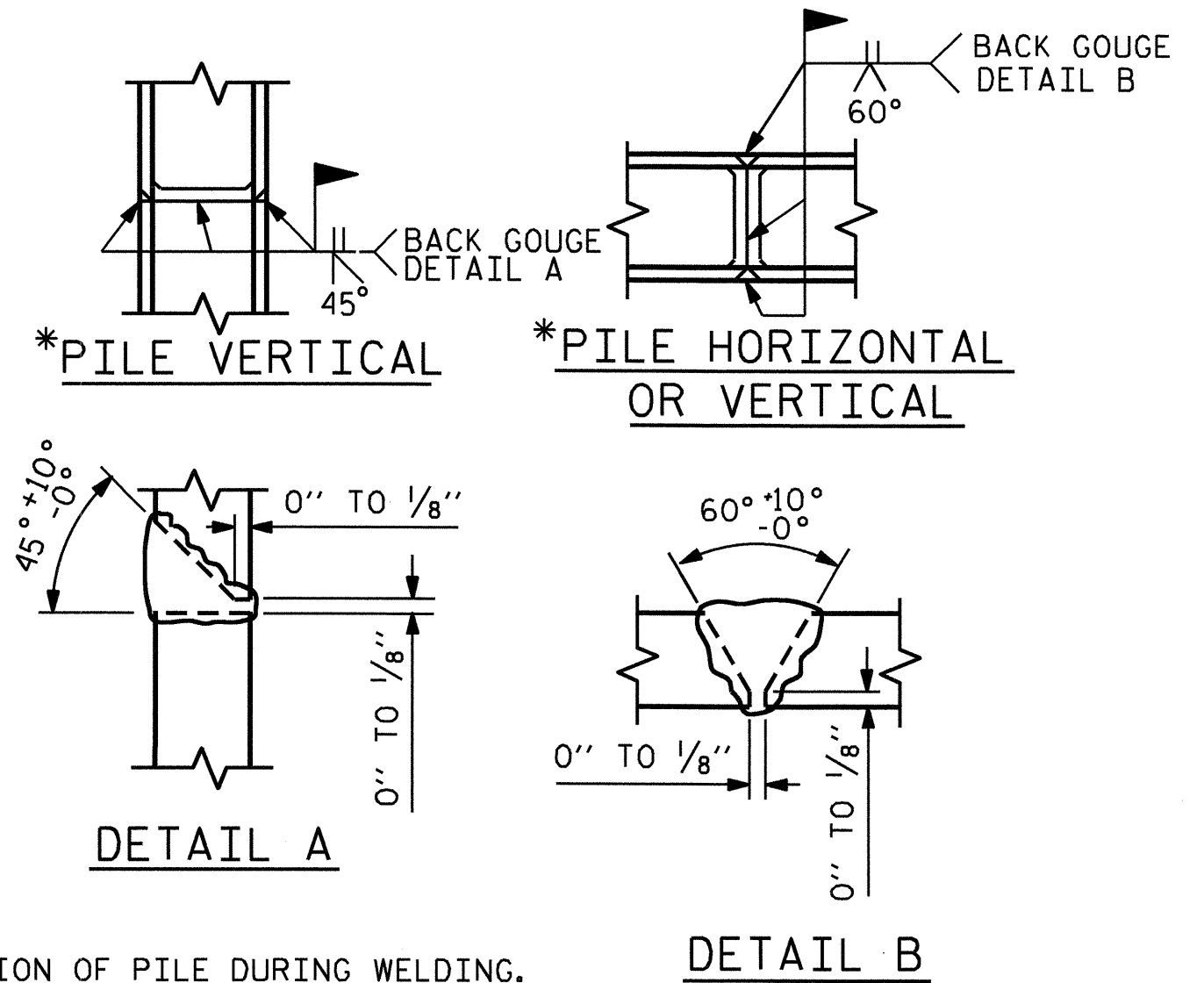
DRAWN BY: J.G. KHARVA DATE: 9/25/09
 CHECKED BY: M.E. FOWLER DATE: 11/23/10

16-SEP-2011 09:19
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 jkharva

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			20



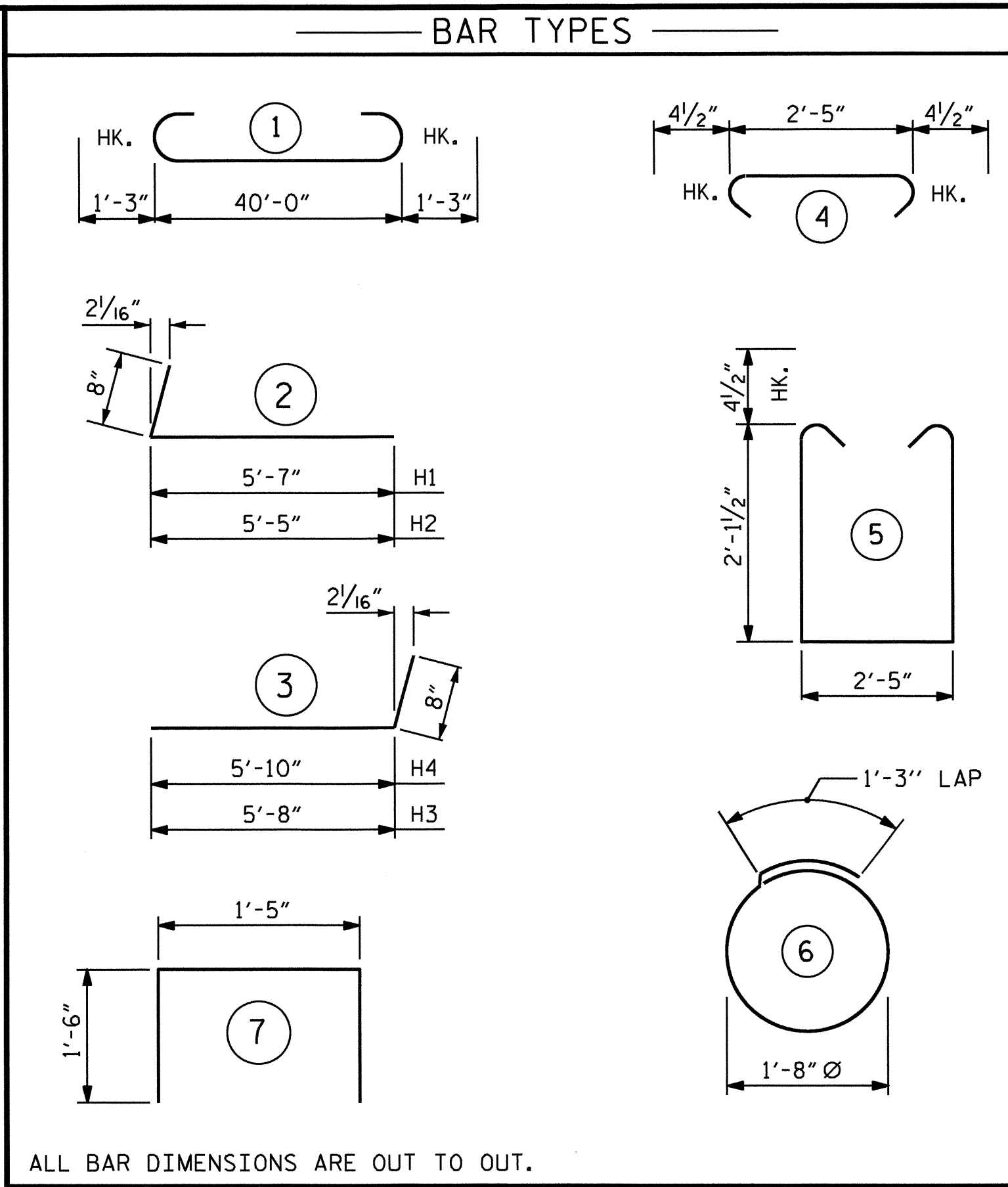
SECTION A-A



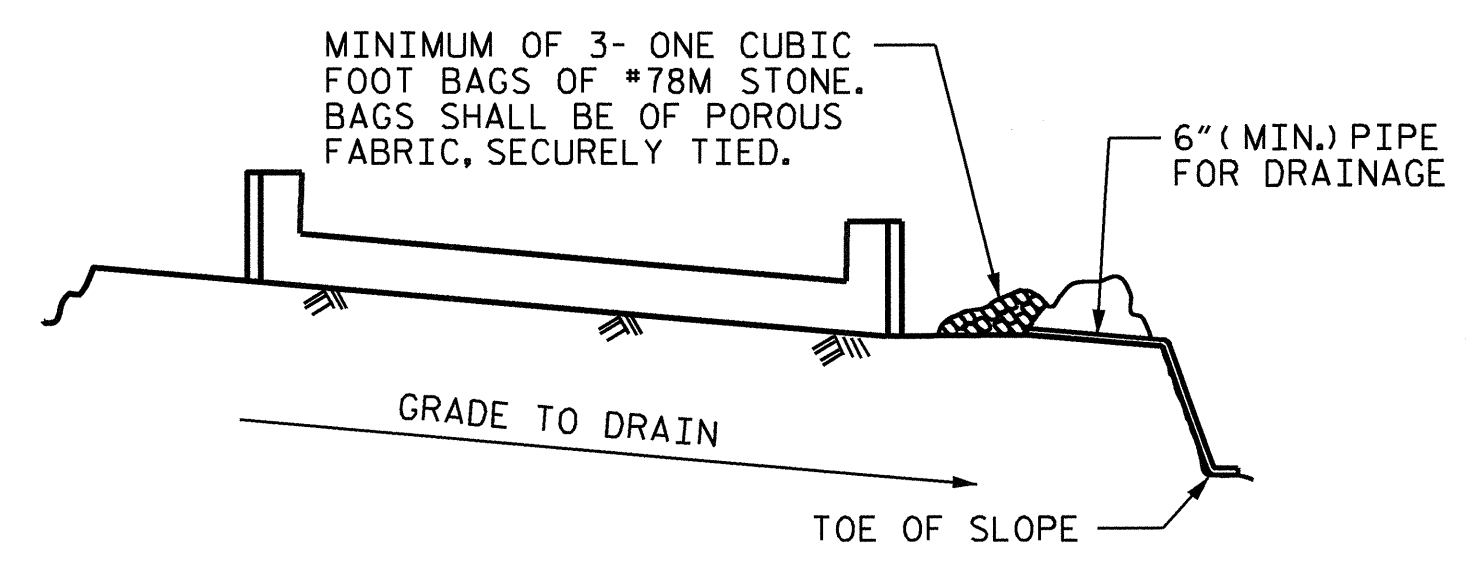
PILE SPLICE DETAILS

DRAWN BY : J. G. KHARVA DATE : 9/29/09
 CHECKED BY : M. E. FOWLER DATE : 11/23/10

16-SEP-2011 09:19
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 jkharva



BILL OF MATERIAL					
END BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	42'-6"	1156
B2	2	#5	STR	40'-1"	84
B3	8	#4	STR	21'-3"	114
B4	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	6	#4	2	6'-3"	25
H2	6	#4	2	6'-1"	24
H3	6	#4	3	6'-4"	25
H4	6	#4	3	6'-6"	26
K1	12	#4	STR	3'-0"	24
S1	34	#4	5	7'-5"	168
S2	34	#4	4	3'-2"	72
S3	10	#4	6	6'-6"	43
U1	4	#4	7	4'-5"	12
V1	20	#4	STR	4'-5"	59
V2	20	#4	STR	4'-9"	63
TOTAL REINFORCING STEEL = 1961 LBS					
CLASS A CONCRETE BREAKDOWN					
POUR 1	(CAP, COLLARS & LOWER PART OF WINGS)				11.8 C.Y.
POUR 2	(UPPER PART OF WINGS)				1.5 C.Y.
POUR 3	(LATERAL GUIDE)				0.1 C.Y.
TOTAL CLASS A CONCRETE					13.4 C.Y.
HP 12 X 53 STEEL PILES					
NO. : 5					LIN. FT. 225
PILE REDRIVES					NO. : 3



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

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

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

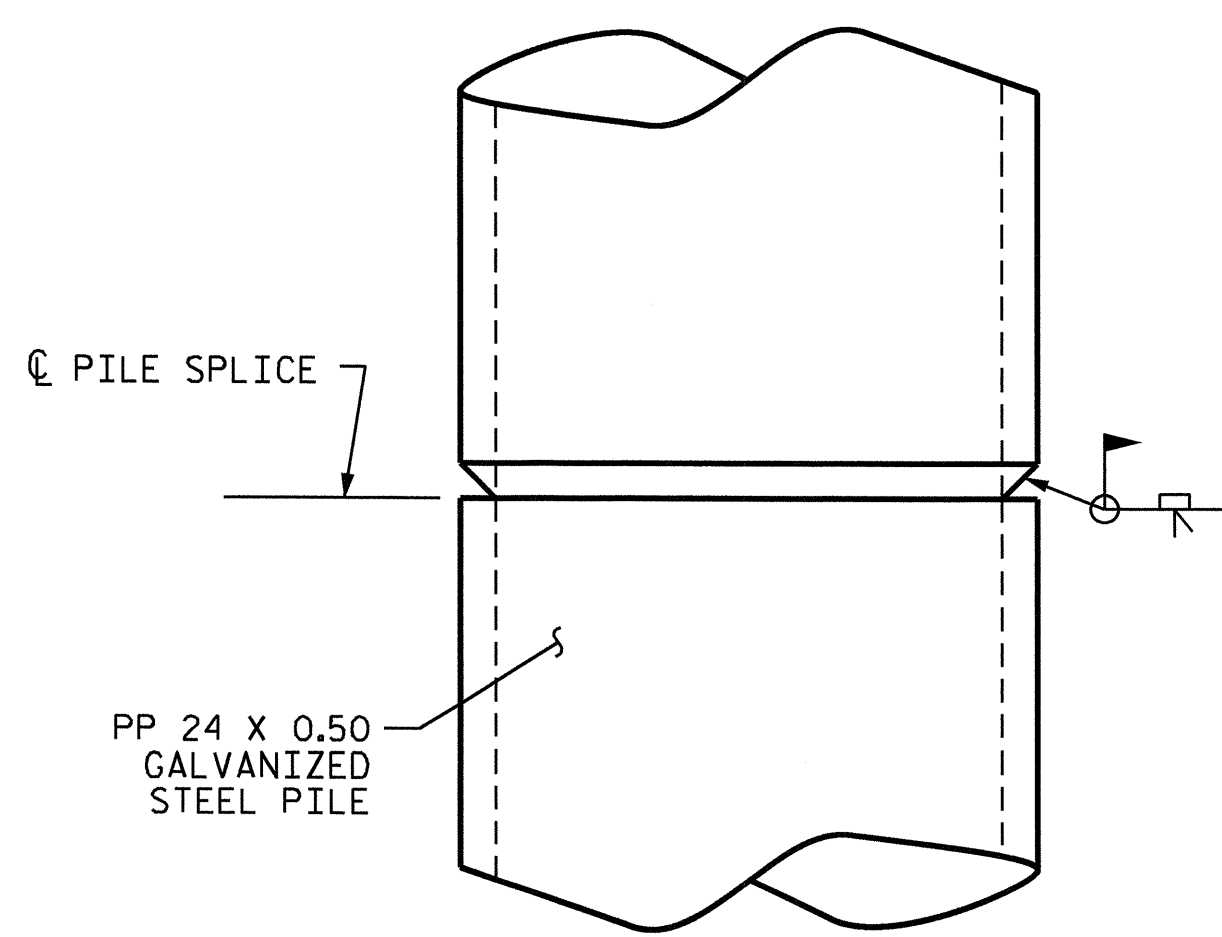
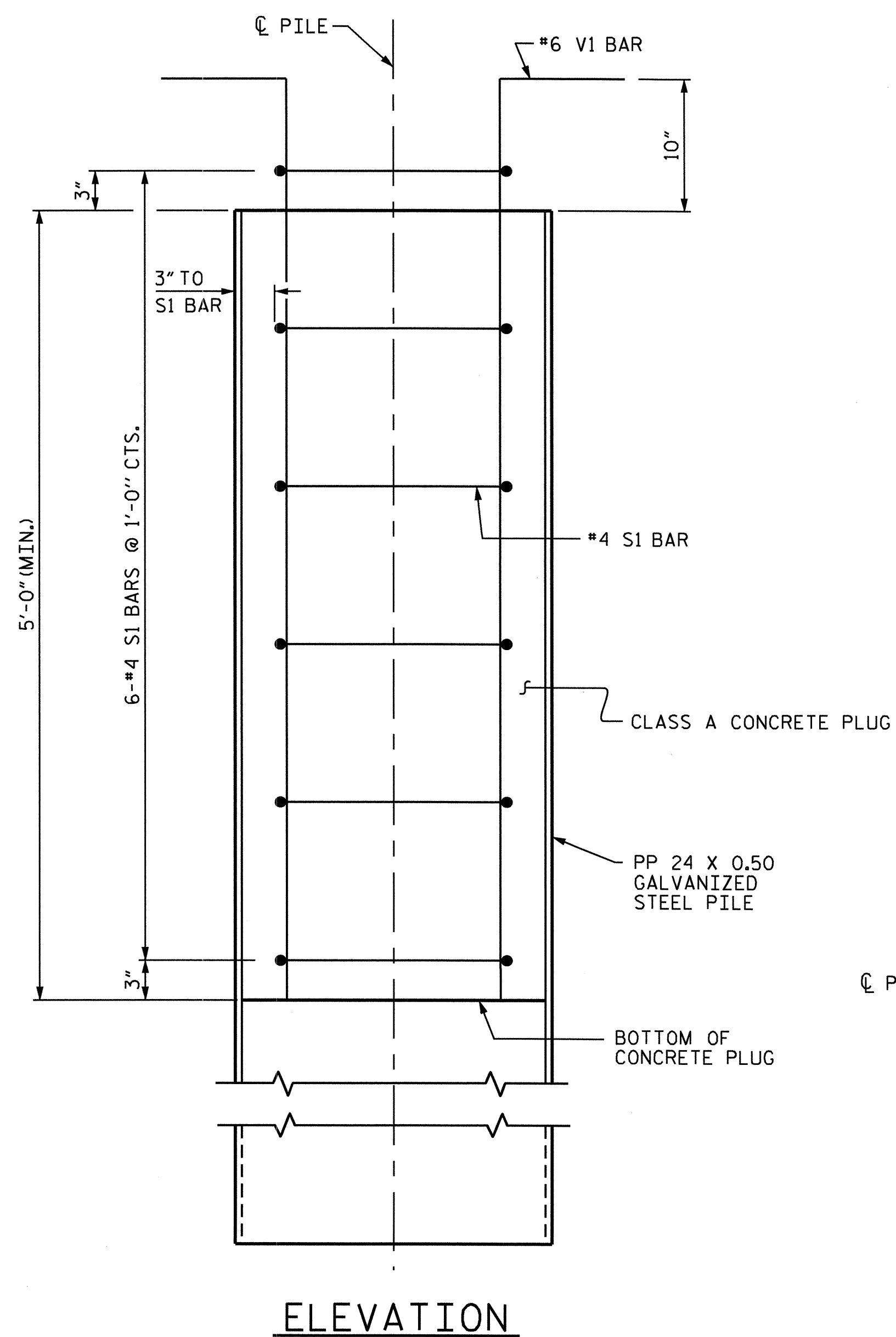
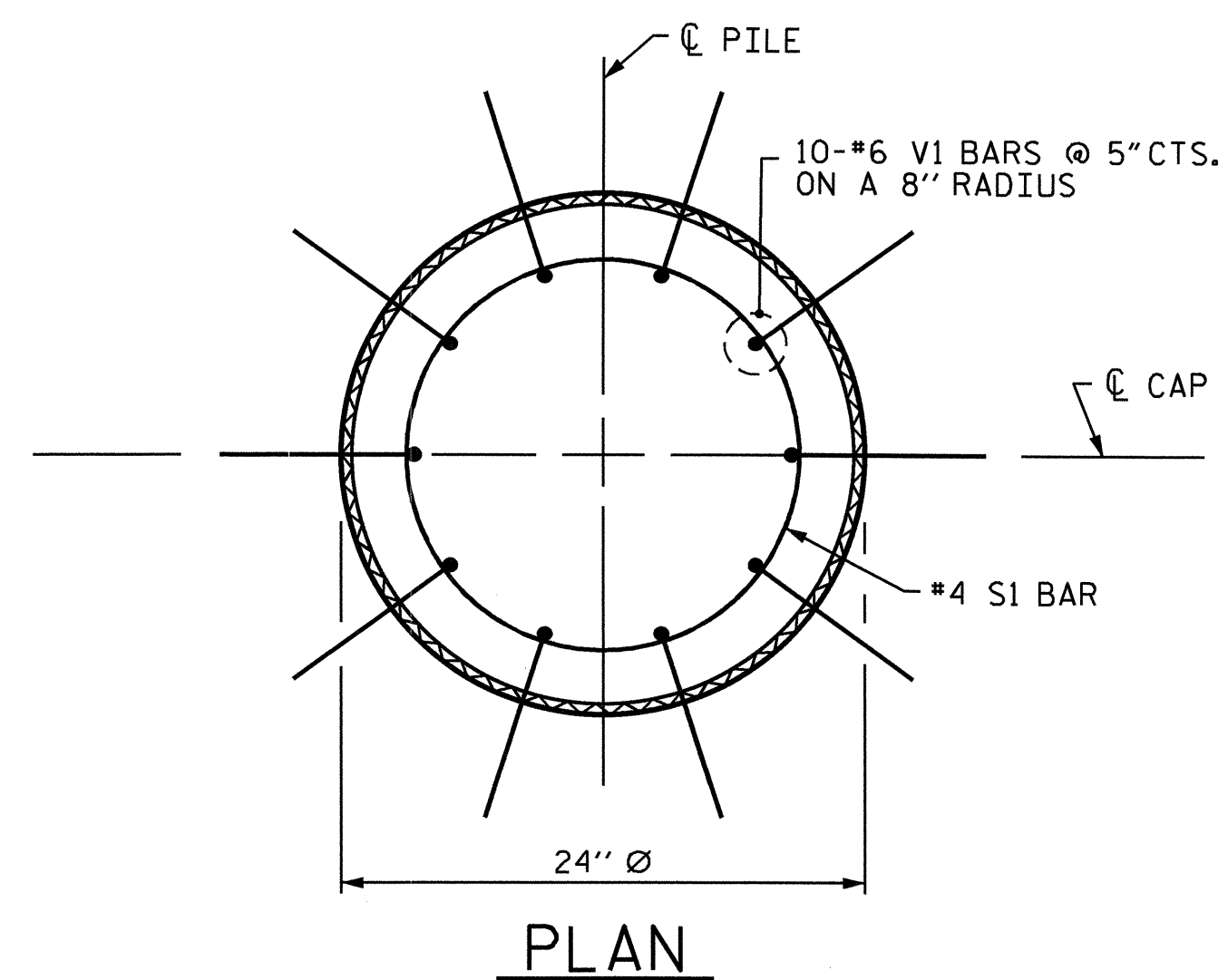
TEMPORARY DRAINAGE AT END BENT

PROJECT NO. B-4533
GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-
 SHEET 3 OF 3

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

SHEET NO. **S-16**
TOTAL SHEETS **20**

Professional Engineer Seal
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SERIAL 27005
 KEITH PASCH
 9/29/11



PP 24 X 0.50 GALVANIZED STEEL PILE
(OPEN END)

NOTES

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

GALVANIZE STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED. GALVANIZING OR METALLIZING PIPE PILE PLATES IS NOT REQUIRED.

REMOVE AND REPLACE OR REPAIR TO THE SATISFACTION OF THE ENGINEER PILES THAT ARE DAMAGED, DEFORMED OR COLLAPSED DURING INSTALLATION OR DRIVING.

PILE SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AWS D1.1.

FOR OPEN END PIPE PILES, REMOVE ENOUGH SOIL AND WATER FROM INSIDE THE PILES TO CONSTRUCT THE CONCRETE PLUG WITHOUT FOULING THE CONCRETE.

FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE BENT CAP UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 24 X 0.50 GALVANIZED STEEL PILES.

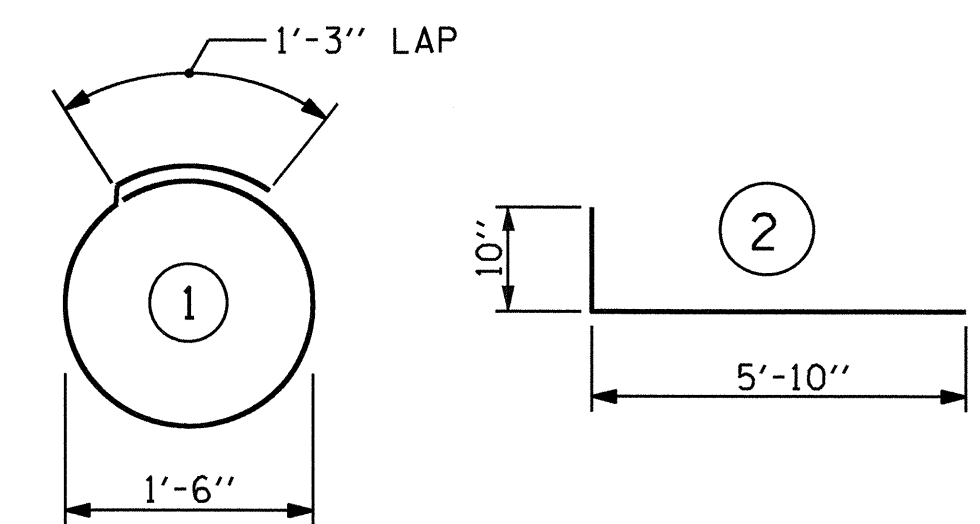
BILL OF MATERIAL FOR ONE
PP 24 X 0.50 GALVANIZED STEEL PILE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	6'-0"	24
V1	10	#6	2	6'-8"	100
REINFORCING STEEL =				124	lbs

CLASS A CONCRETE

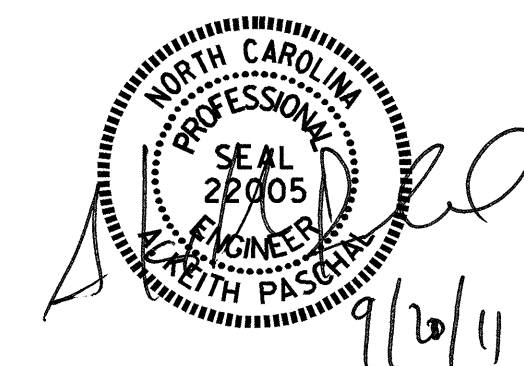
5'-0" MINIMUM PLUG 0.5 CY

BAR TYPES



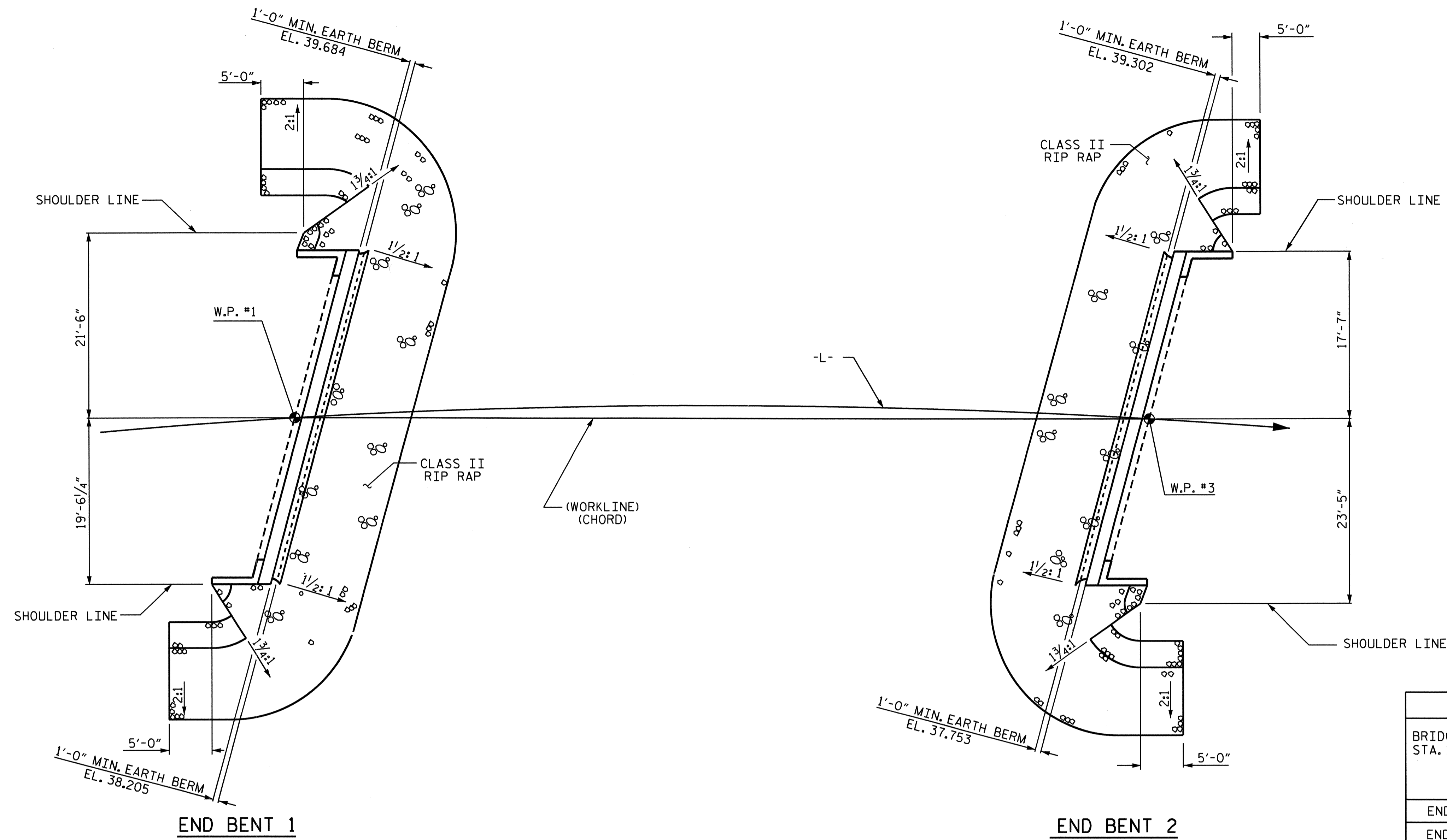
PROJECT NO. B-4533
GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-

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



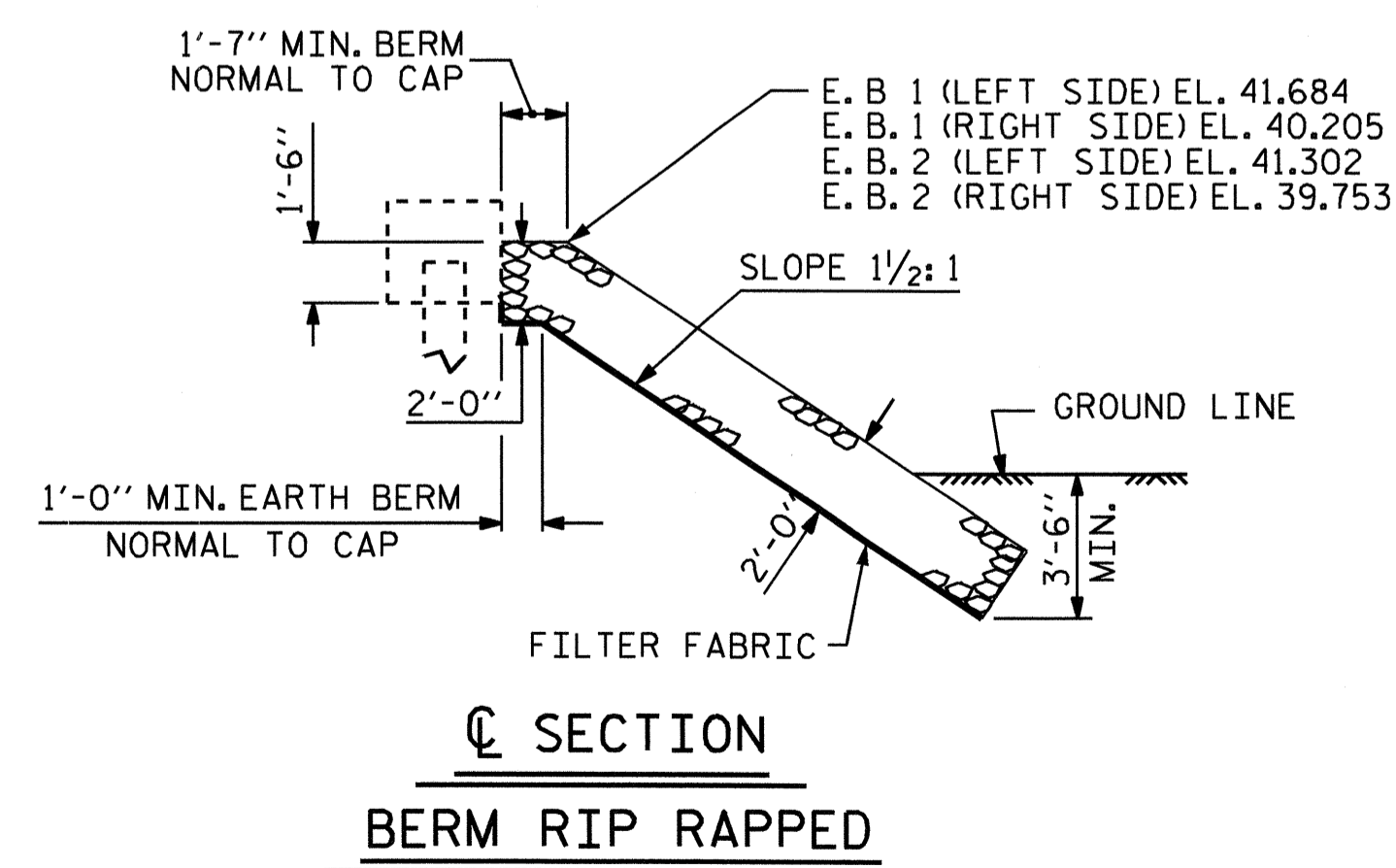
ASSEMBLED BY : J. G. KHARVA	DATE : 10/02/09
CHECKED BY : M. E. FOWLER	DATE : 12/02/10
DRAWN BY : TLA 8/05	ADDED 10/11/05
CHECKED BY : GM 9/05	REV. 5/1/06R MAA/KMM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			20

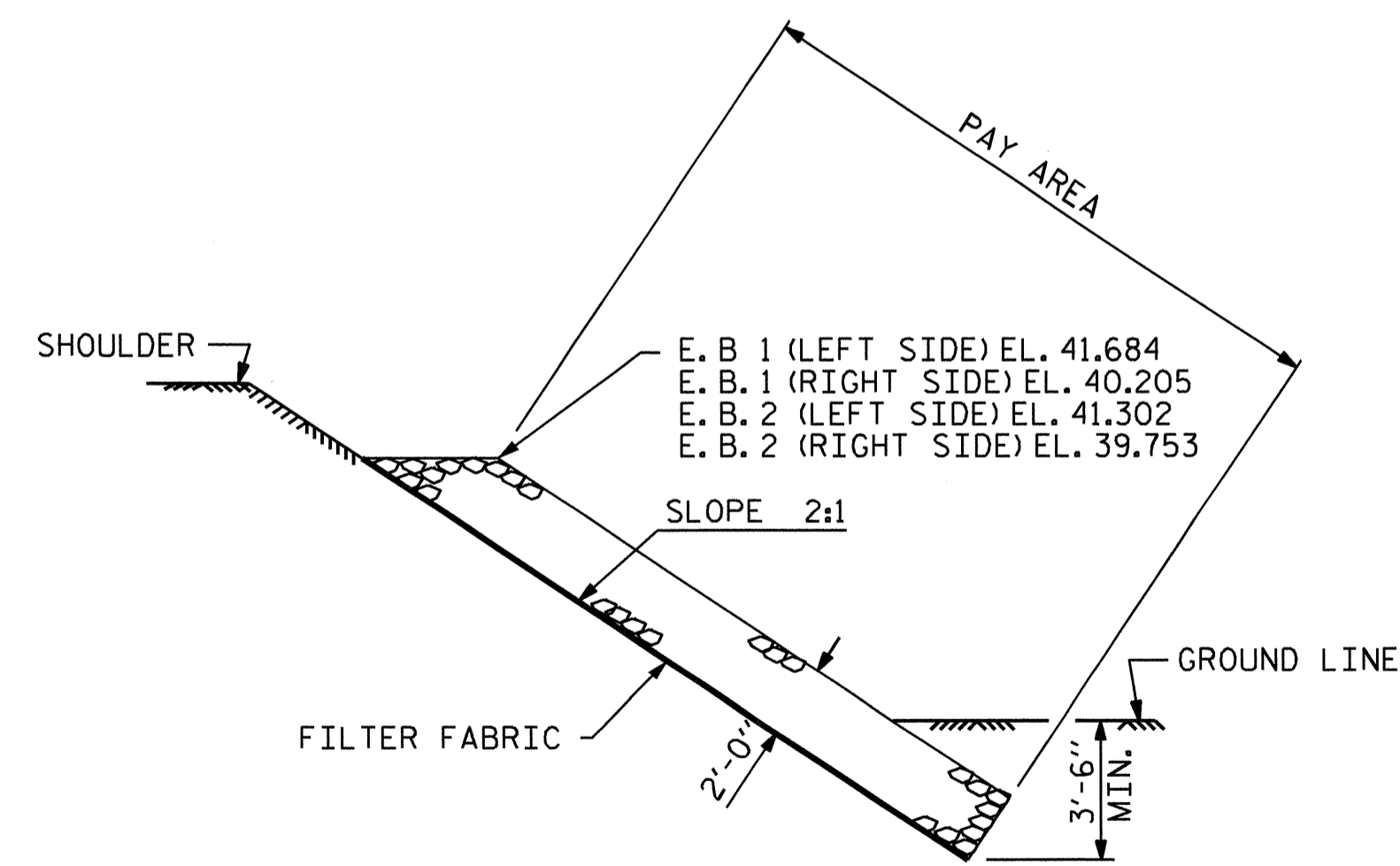


PLAN

ESTIMATED QUANTITIES		
BRIDGE @ STA. 17+00.00 -L-	CLASS II RIP RAP (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	111	123
END BENT 2	106	118



SECTION B-B
BERM RIP RAPPED



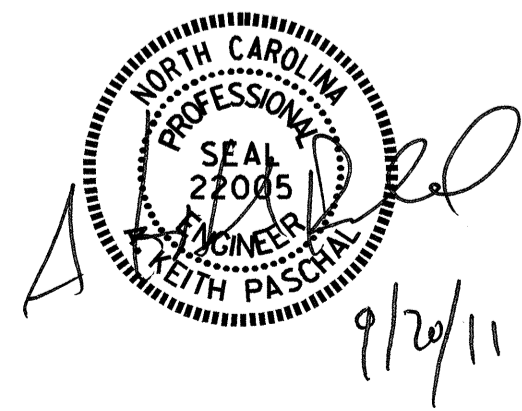
SECTION C-C

PROJECT NO. B-4533
 GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-

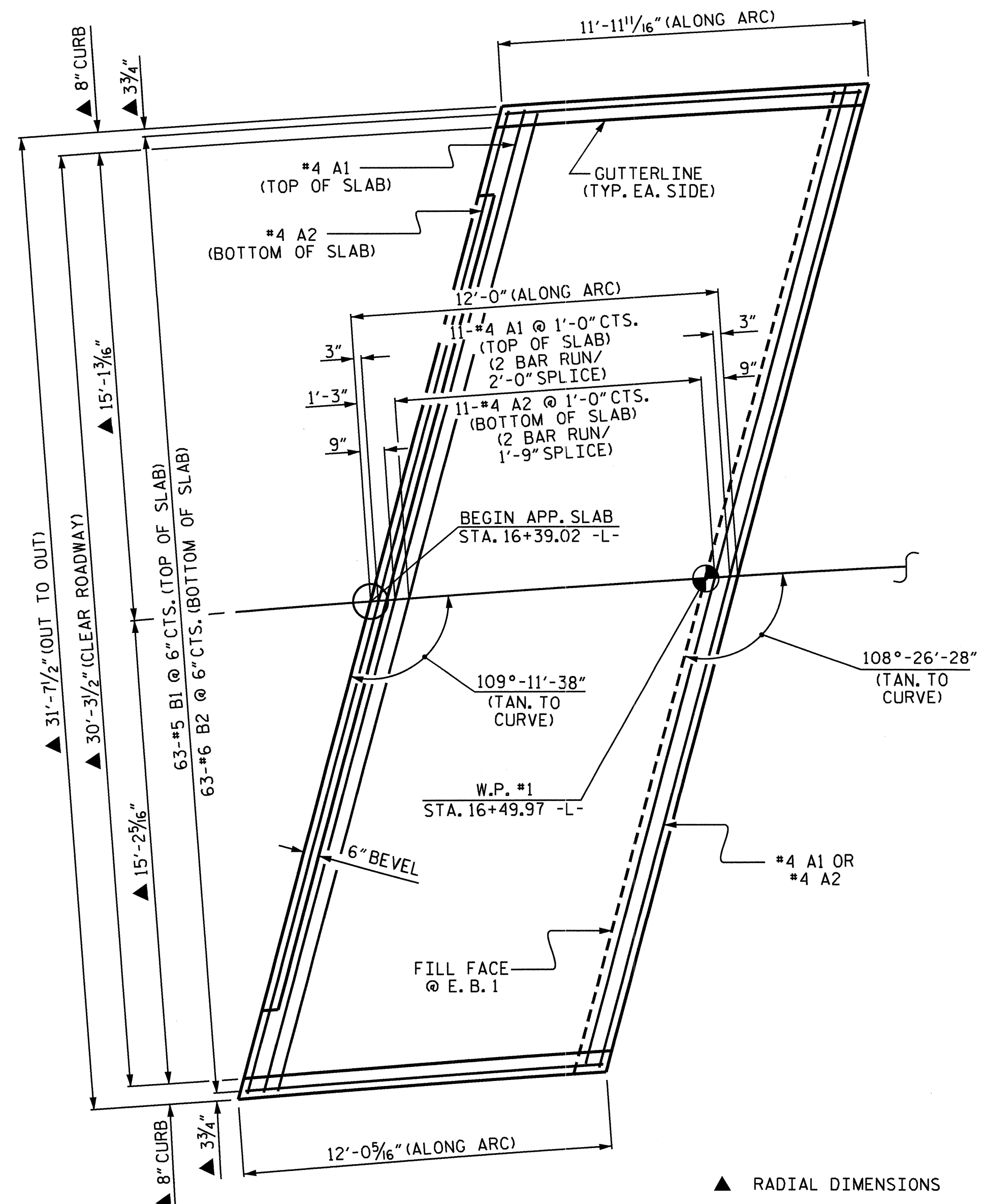
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 RIP RAP DETAILS

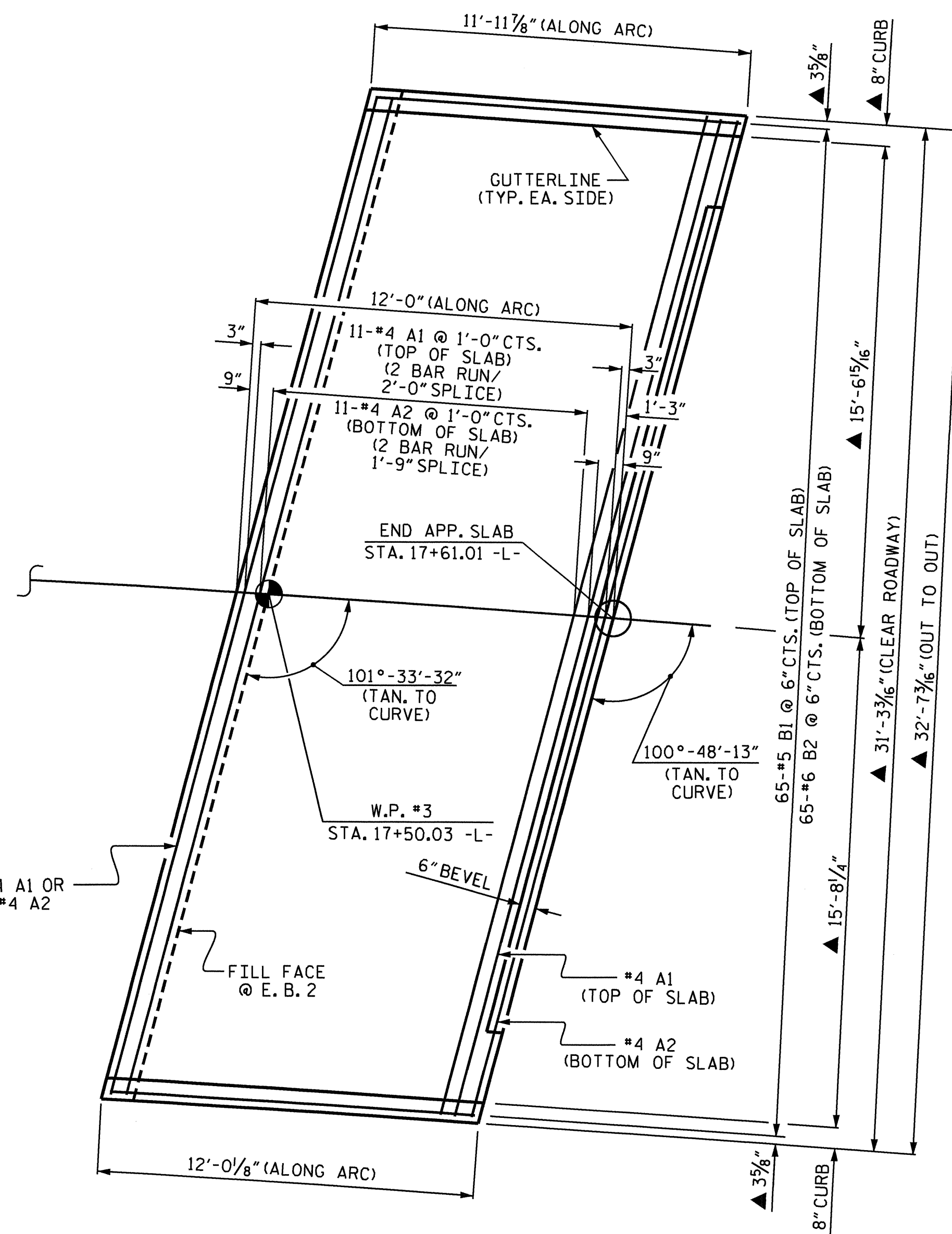
REVISIONS						SHEET NO. S-18
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			



DRAWN BY : J. G. KHARVA DATE : 10/04/09
 CHECKED BY : M. E. FOWLER DATE : 3/17/10

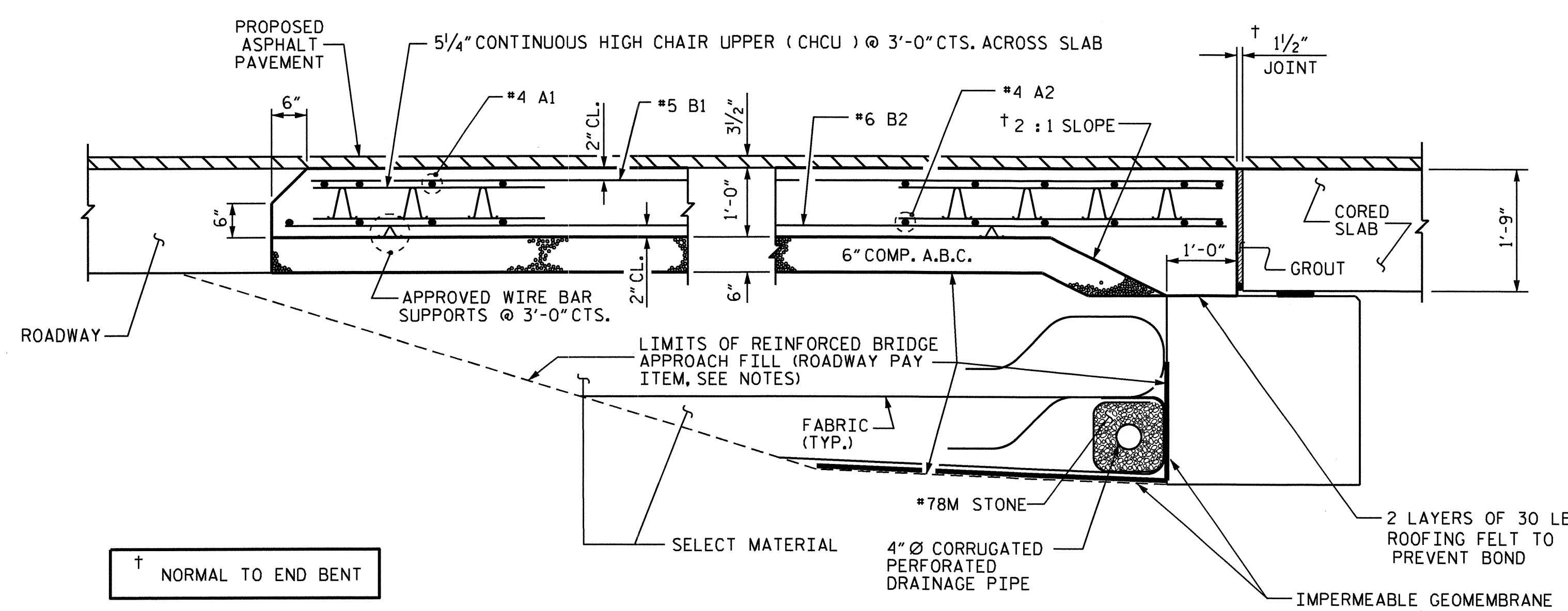


PLAN AT END BENT 1

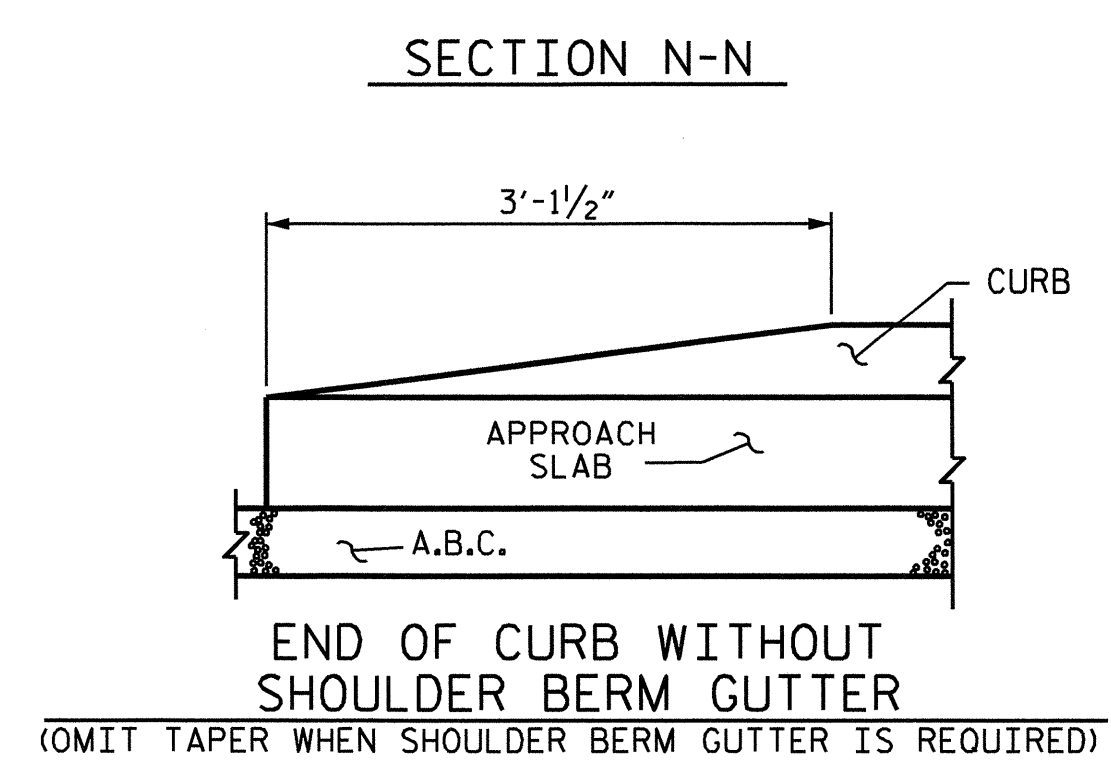
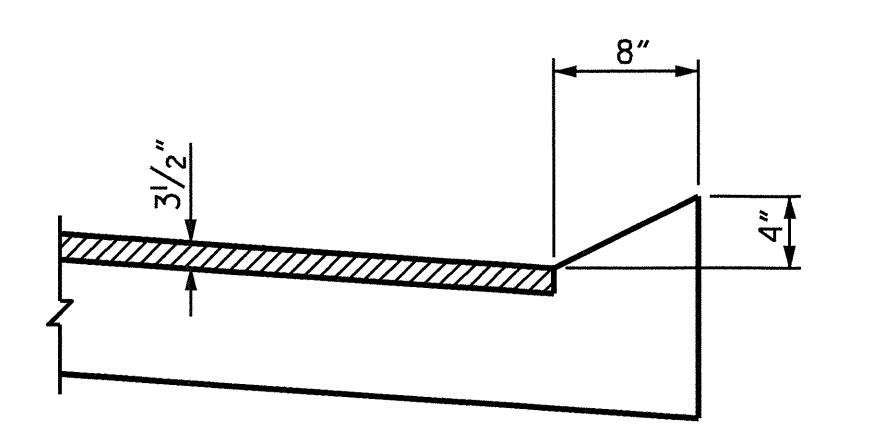


PLAN AT END BENT 2

NOTE : ARC OFFSETS ARE NEGLIGIBLE, THEREFORE NOT SHOWN.



SECTION THRU SLAB



CURB DETAILS

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.

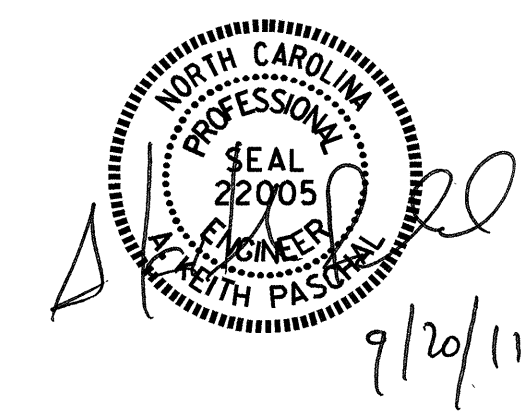
APPROACH SLAB GROOVING IS NOT REQUIRED.

BILL OF MATERIAL

APPROACH SLAB @ END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	26	#4	STR	17'-6"	304
A2	26	#4	STR	17'-5"	302
*B1	63	#5	STR	11'-2"	734
B2	63	#6	STR	11'-8"	1104
REINFORCING STEEL				LBS.	1038
*EPOXY COATED REINFORCING STEEL				LBS.	1406
CLASS AA CONCRETE : SLAB AND CURB				C. Y.	16.3
APPROACH SLAB @ END BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	26	#4	STR	17'-5"	302
A2	26	#4	STR	17'-4"	301
*B1	65	#5	STR	11'-2"	757
B2	65	#6	STR	11'-8"	1139
REINFORCING STEEL				LBS.	1059
*EPOXY COATED REINFORCING STEEL				LBS.	1440
CLASS AA CONCRETE : SLAB AND CURB				C. Y.	16.8

ASSEMBLED BY : J. G. KHARVA DATE : 03-29-10
 CHECKED BY : M. E. FOWLER DATE : 06-03-11
 DRAWN BY : FCJ 6/87 REV. 7/10/01 LES/RDR
 CHECKED BY : EGA 6/87 REV. 5/7/03R RWW/JTE
 REV. 5/1/06 REV. 5/1/06 TLA/GM

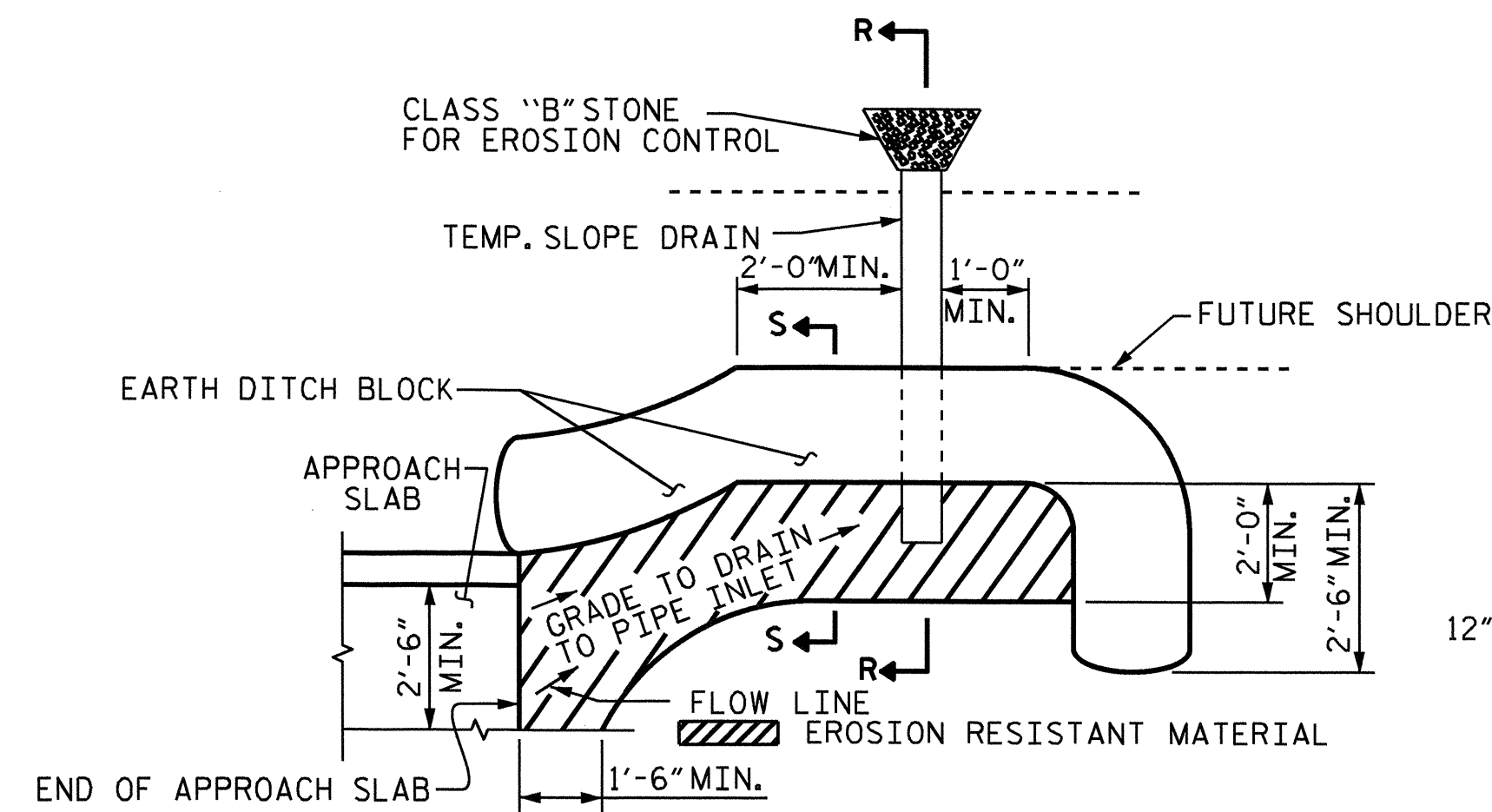
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 jkharva



PROJECT NO. B-4533
 GREENE/LENOIR COUNTY
 STATION: 17+00.00 -L-

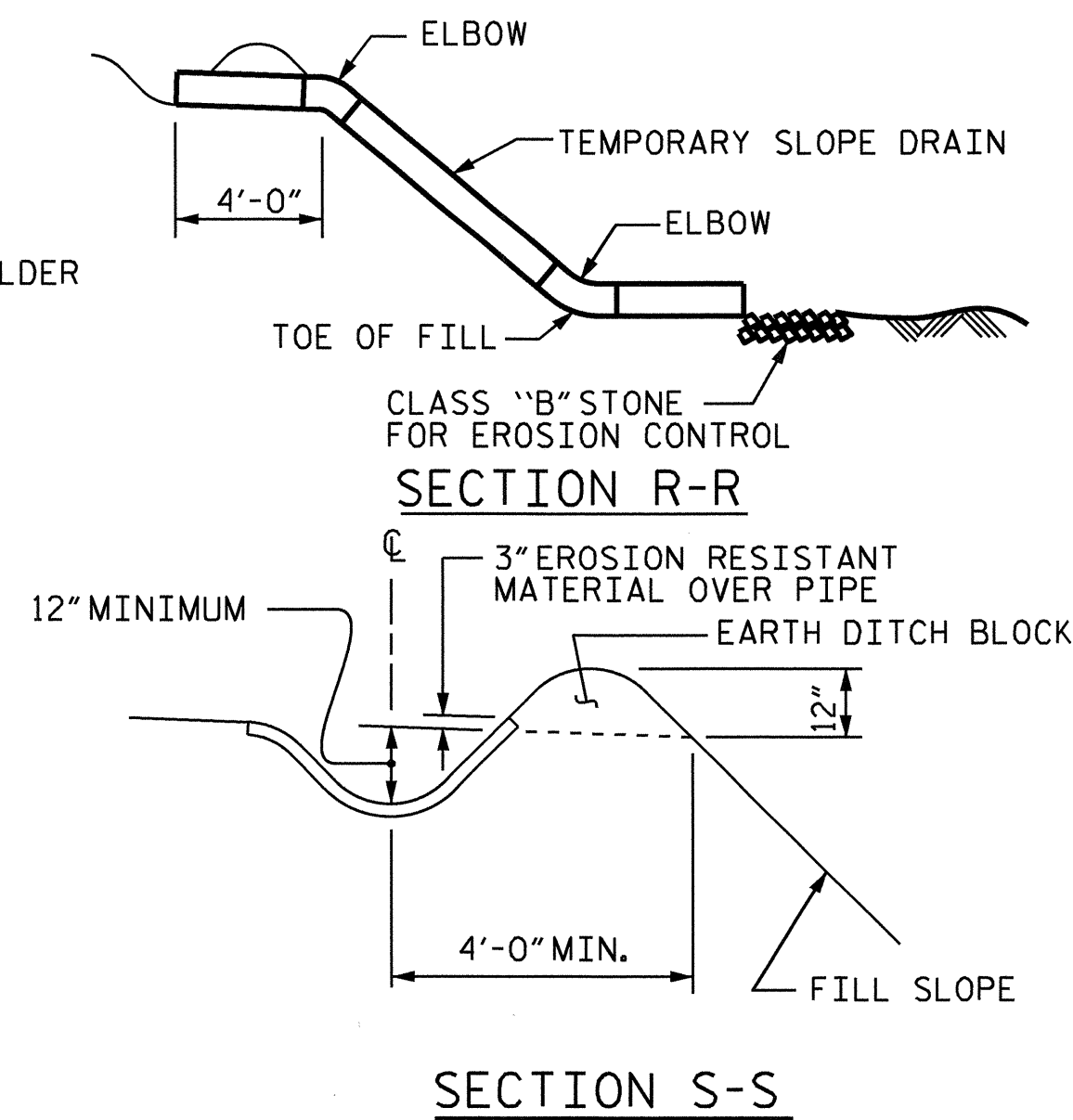
SHEET 1 OF 2
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 CORED SLAB UNIT
 (SUB-REGIONAL TIER)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			20



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.

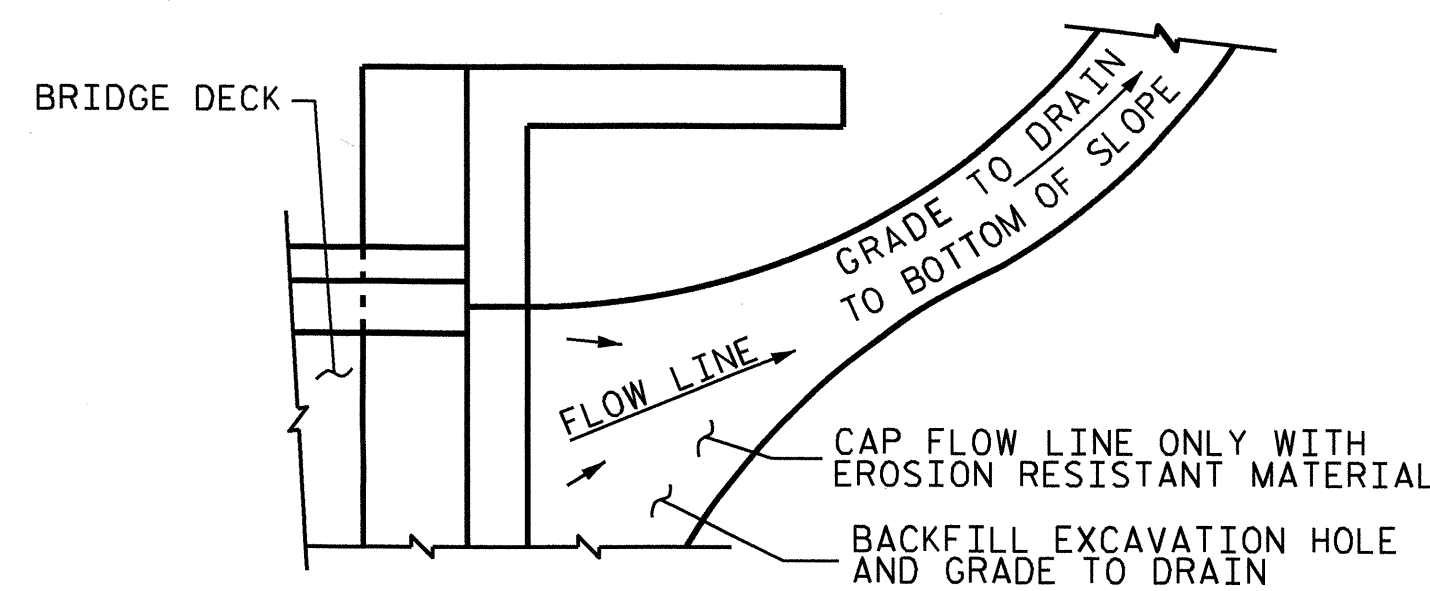
PLAN VIEW



SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



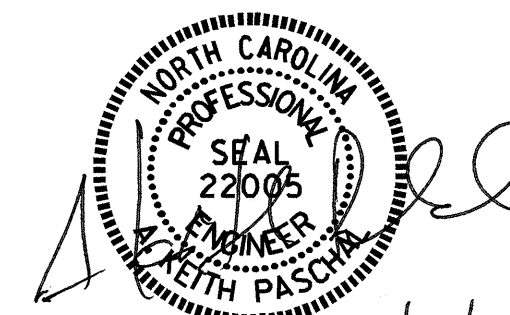
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT 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-4533
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 STATION: 17+00.00 -L-

SHEET 2 OF 2

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



ASSEMBLED BY : J. G. KHARVA	DATE : 10-09-09
CHECKED BY : M. E. FOWLER	DATE : 06-03-11
DRAWN BY : FCJ 11/88	REV. 10/17/00 RWW/LJS
CHECKED BY : ARB 11/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06R MAA/KMM

16-SEP-2011 09:23
 P:\Structures\Final Plans\B-4533.sd.AS.dgn
 jkharva

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

STD. NO. BAS10 (SHT 6)

