

TIP PROJECT: B-3693

CONTRACT: C202549

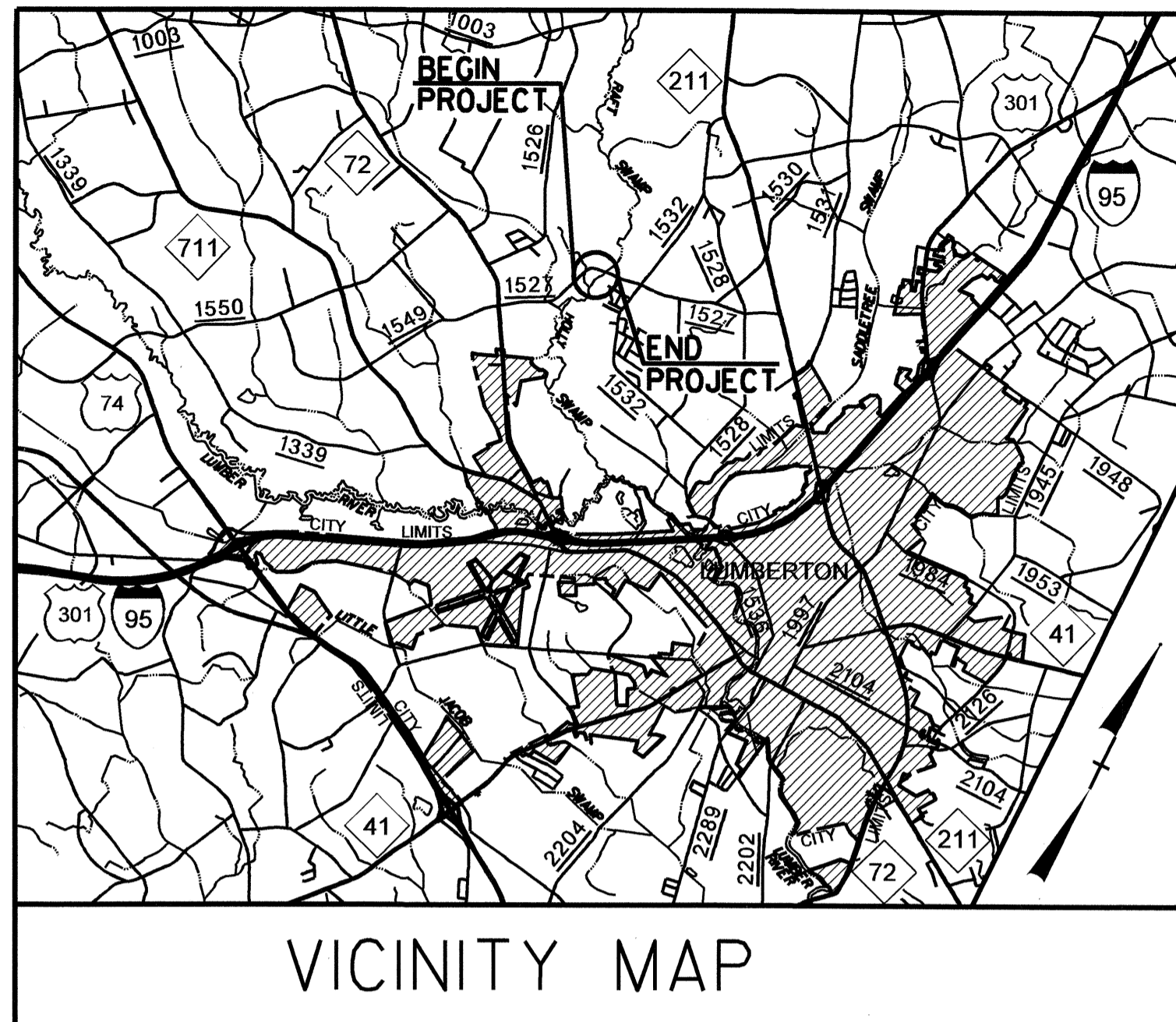
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROBESON COUNTY

LOCATION: BRIDGE NO. 207 OVER HOLLY SWAMP AND BRIDGE NOS. 210 AND 211 OVER RAFT SWAMP ON SR 1527

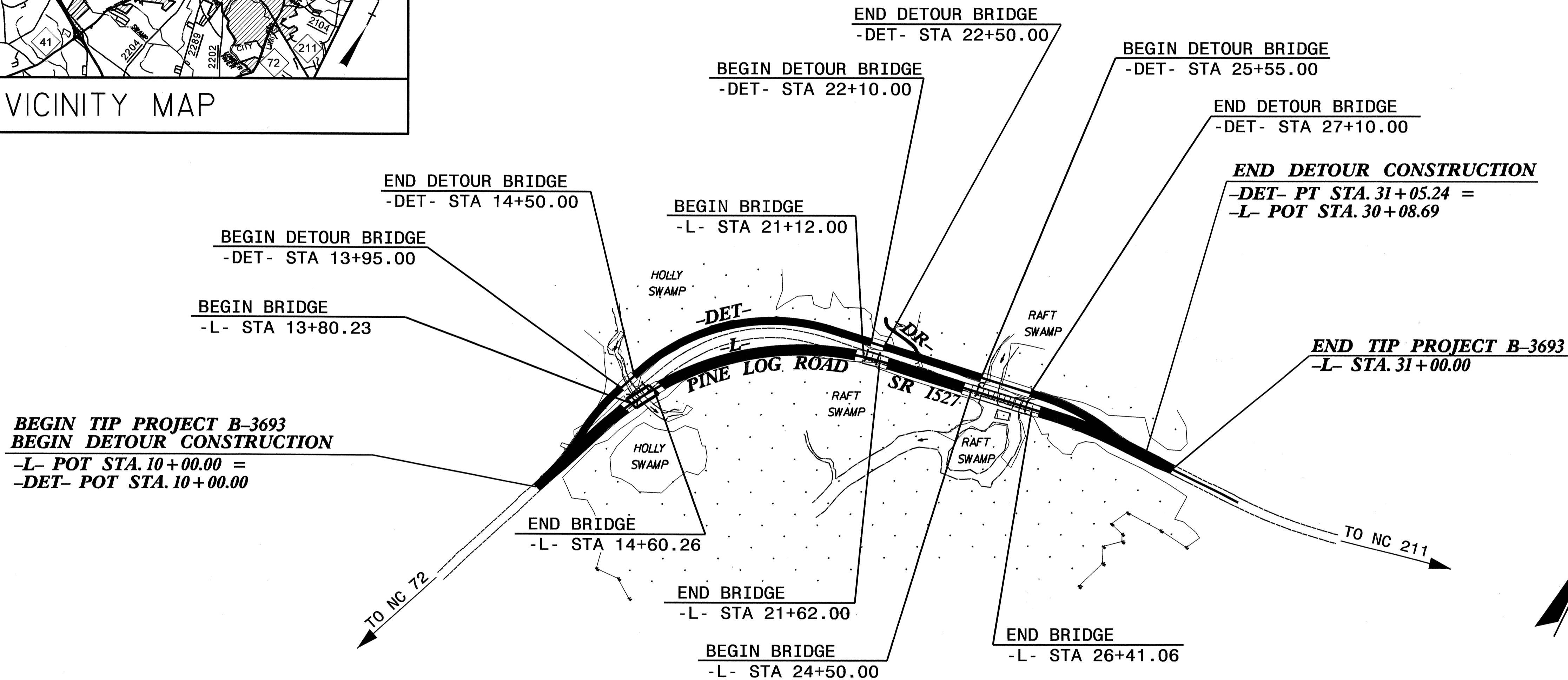
TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3693		
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33233.1.1	BRZ-1527(2)	P.E.	
33233.2.1	BRZ-1527(2)	R/W & UTIL.	
33233.3.2	BRZ-1527(6)	CONST.	



VICINITY MAP

STRUCTURES



**BEGIN TIP PROJECT B-3693
BEGIN DETOUR CONSTRUCTION**
-L- POT STA. 10+00.00 =
-DET- POT STA. 10+00.00

BEGIN BRIDGE
-L- STA 13+80.23

BEGIN DETOUR BRIDGE
-DET- STA 13+95.00

END DETOUR BRIDGE
-DET- STA 14+50.00

END BRIDGE
-L- STA 14+60.26

BEGIN BRIDGE
-L- STA 21+12.00

END BRIDGE
-L- STA 21+62.00

BEGIN BRIDGE
-L- STA 24+50.00

END DETOUR BRIDGE
-DET- STA 22+50.00

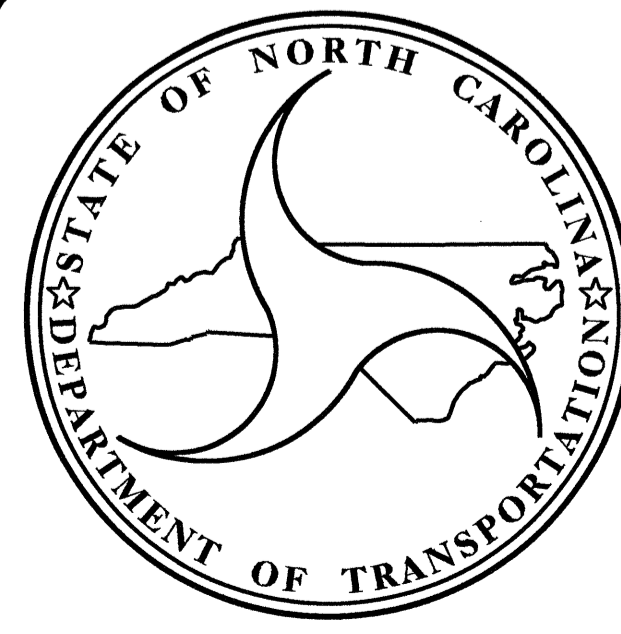
BEGIN DETOUR BRIDGE
-DET- STA 22+10.00

BEGIN DETOUR BRIDGE
-DET- STA 25+55.00

END DETOUR BRIDGE
-DET- STA 27+10.00

END DETOUR CONSTRUCTION
-DET- PT STA. 31+05.24 =
-L- POT STA. 30+08.69

END TIP PROJECT B-3693
-L- STA. 31+00.00



DESIGN DATA
RURAL MINOR COLLECTOR

ADT 2010 =	10,570
ADT 2030 =	17,150
DHV =	10 %
D =	57 %
T =	4 % *
V =	60 MPH**

* (TTST 2% + DUAL 2%)
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3693	=	0.337 MI.
LENGTH STRUCTURES TIP PROJECT B-3693	=	0.061 MI.
TOTAL LENGTH OF TIP PROJECT B-3693	=	0.398 MI.

Prepared in the Office of:

DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

LETTING DATE:
JUNE 15, 2010

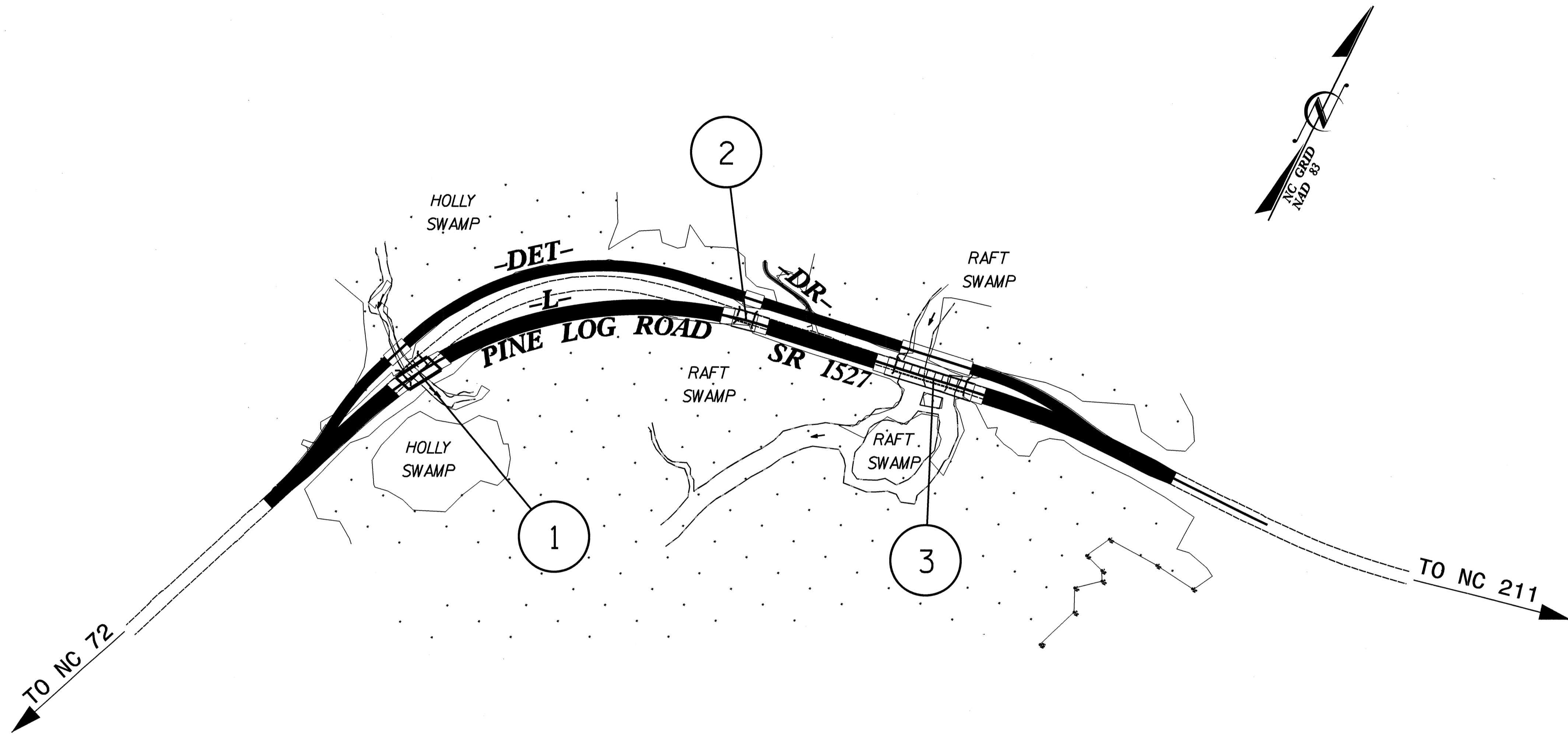
OMAR R. AZIZI, PE
PROJECT ENGINEER

TIMOTHY L. COGGINS, PE
PROJECT DESIGN ENGINEER

STRUCTURE DESIGN UNIT
1000 BIRCH RIDGE DRIVE
RALEIGH, N.C. 27610

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

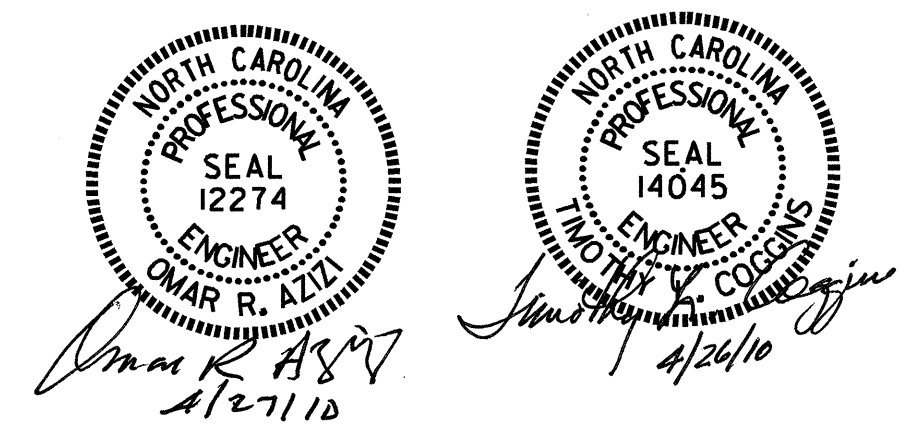
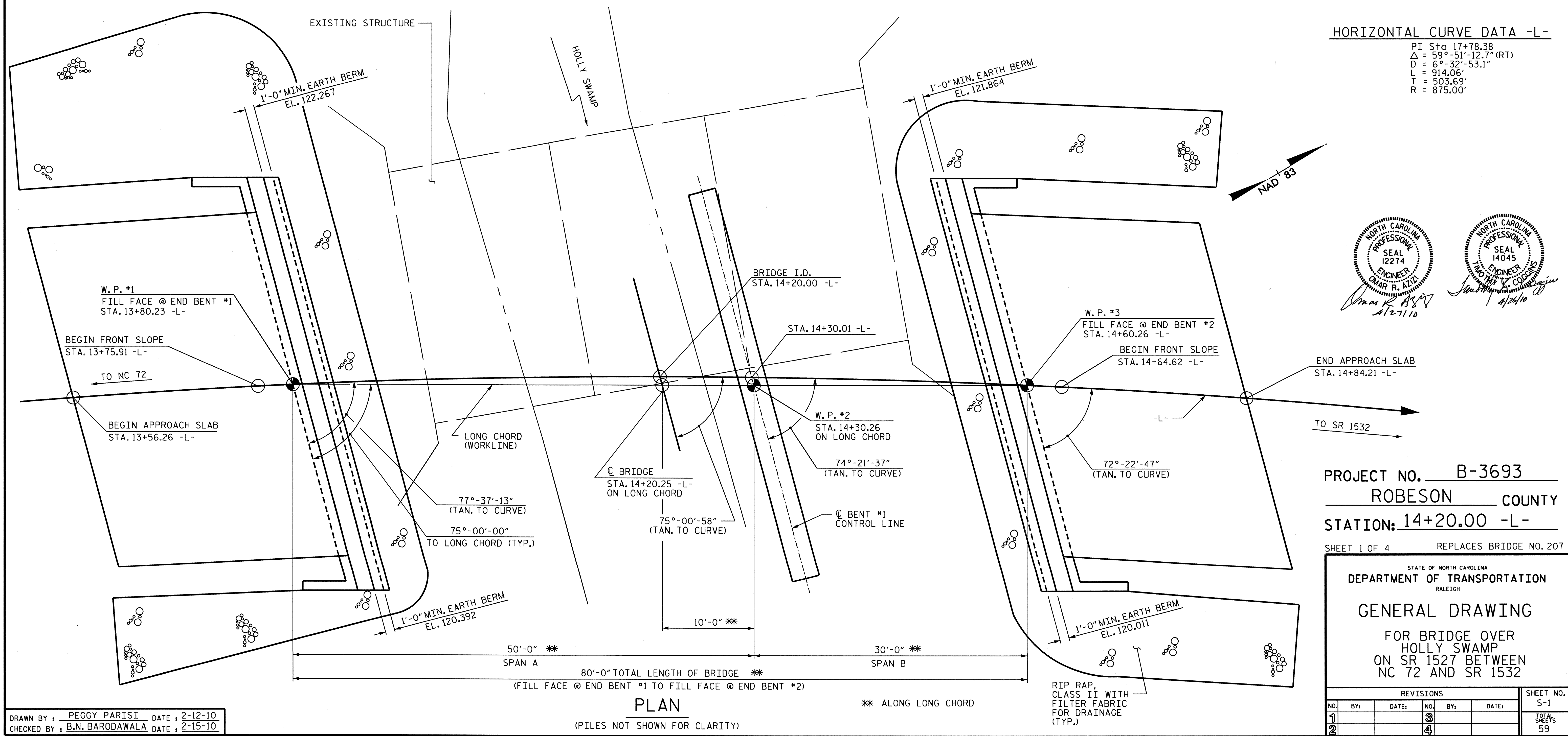
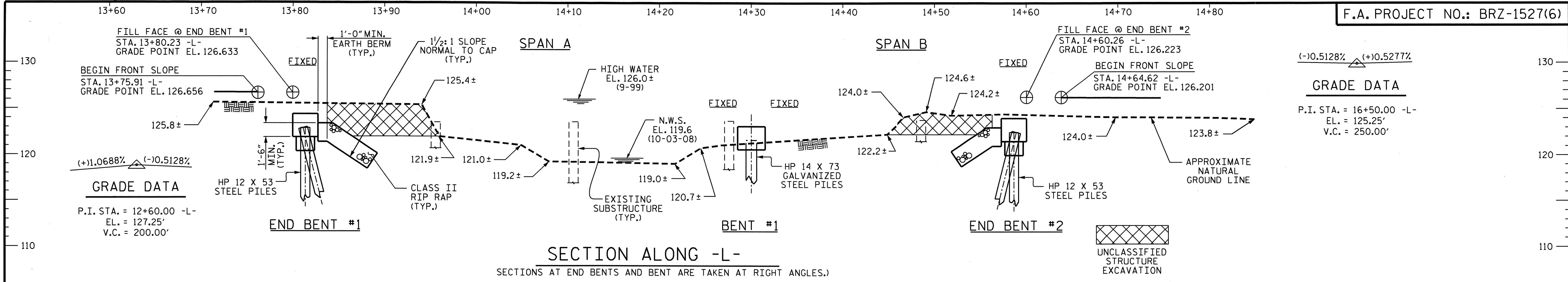
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+concrete



INDEX			
STR. NO.	STATION	DESCRIPTION	SHEETS
1	14+20.00 -L-	BRIDGE OVER HOLLY SWAMP	S1 THRU S20
2	21+37.00 -L-	BRIDGE OVER RAFT SWAMP (OVERFLOW)	S21 THRU S39
3	25+45.00 -L-	BRIDGE OVER RAFT SWAMP	S40 THRU S59

PROJECT NO. B-3693
ROBESON COUNTY

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
INDEX					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS



PROJECT NO. B-3693
 ROBESON COUNTY
 STATION: 14+20.00 -L-

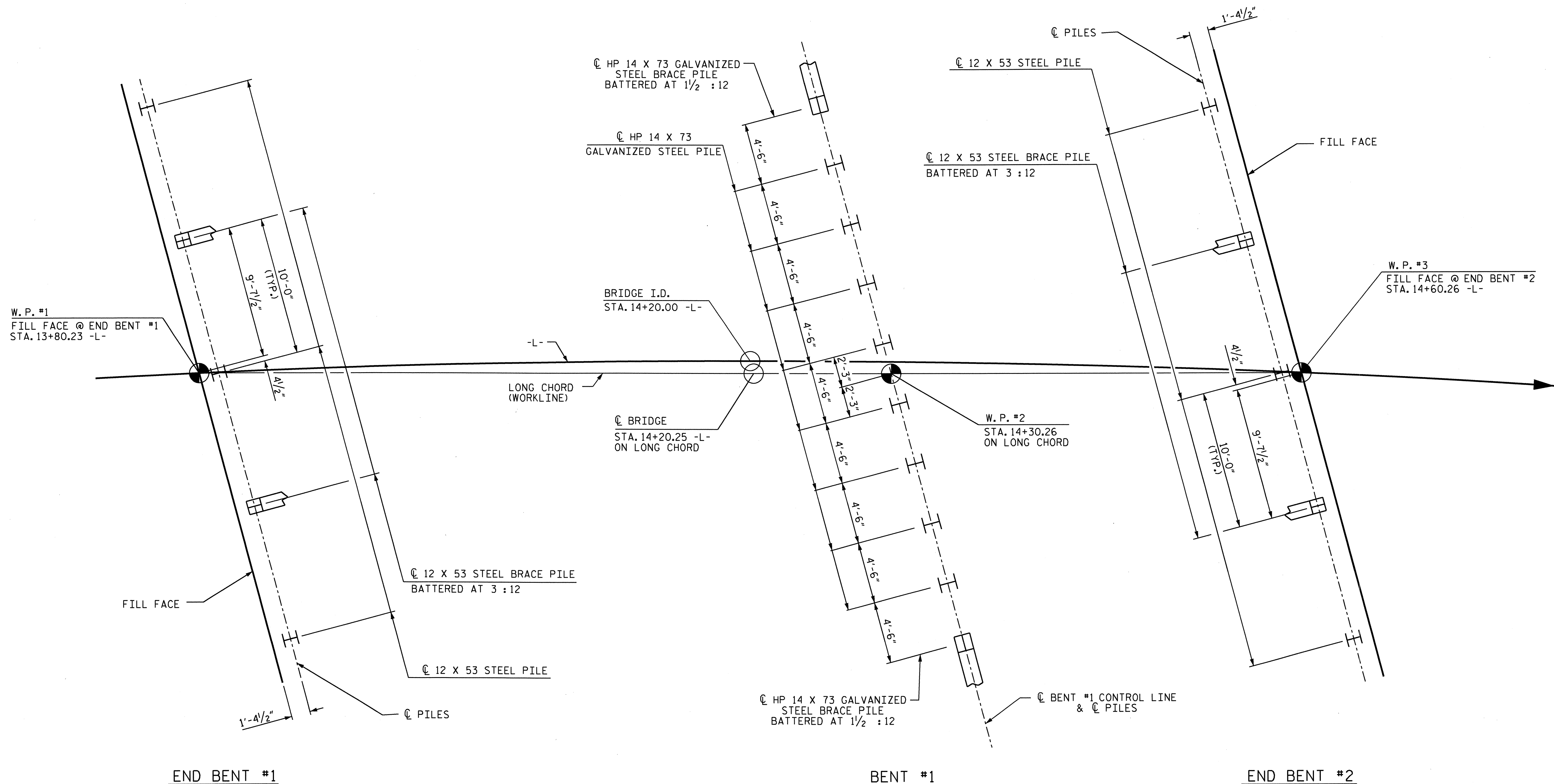
SHEET 1 OF 4 REPLACES BRIDGE NO. 207

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER
 HOLLY SWAMP
 ON SR 1527 BETWEEN
 NC 72 AND SR 1532

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS 59
2			4			

DRAWN BY : PEGGY PARISI DATE : 2-12-10
 CHECKED BY : B.N. BARODAWALA DATE : 2-15-10



END BENT #1

BENT #1

END BENT #2

FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE.

NOTES

FOR PILES, SEE SPECIAL PROVISIONS.

PILES AT END BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 105 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 175 TONS PER PILE.

PILES AT BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 85 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

PILES AT END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 80 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 135 TONS PER PILE.

INSTALL PILES AT BENT NO.1 TO A TIP ELEVATION NO HIGHER THAN 91.0 FT.

SCOUR CRITICAL ELEVATION FOR BENT NO.1 IS ELEVATION 112.0 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

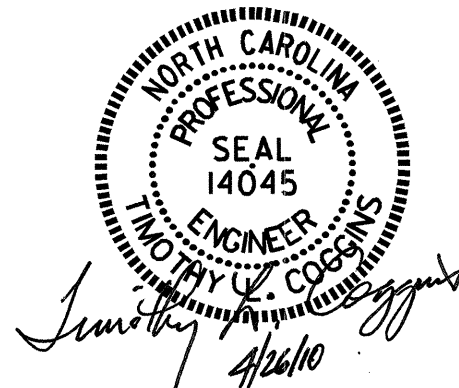
TESTING PILES WITH THE PILE DRIVING ANALYZER (PDA) DURING DRIVING, RESTRIKING OR REDRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PILE DRIVING ANALYZER, SEE PILES SPECIAL PROVISION.

GALVANIZED STEEL PILES ARE REQUIRED IN ACCORDANCE WITH THE PILES PROVISION.

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 14+20.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE OVER
 HOLLY SWAMP
 ON SR 1527 BETWEEN
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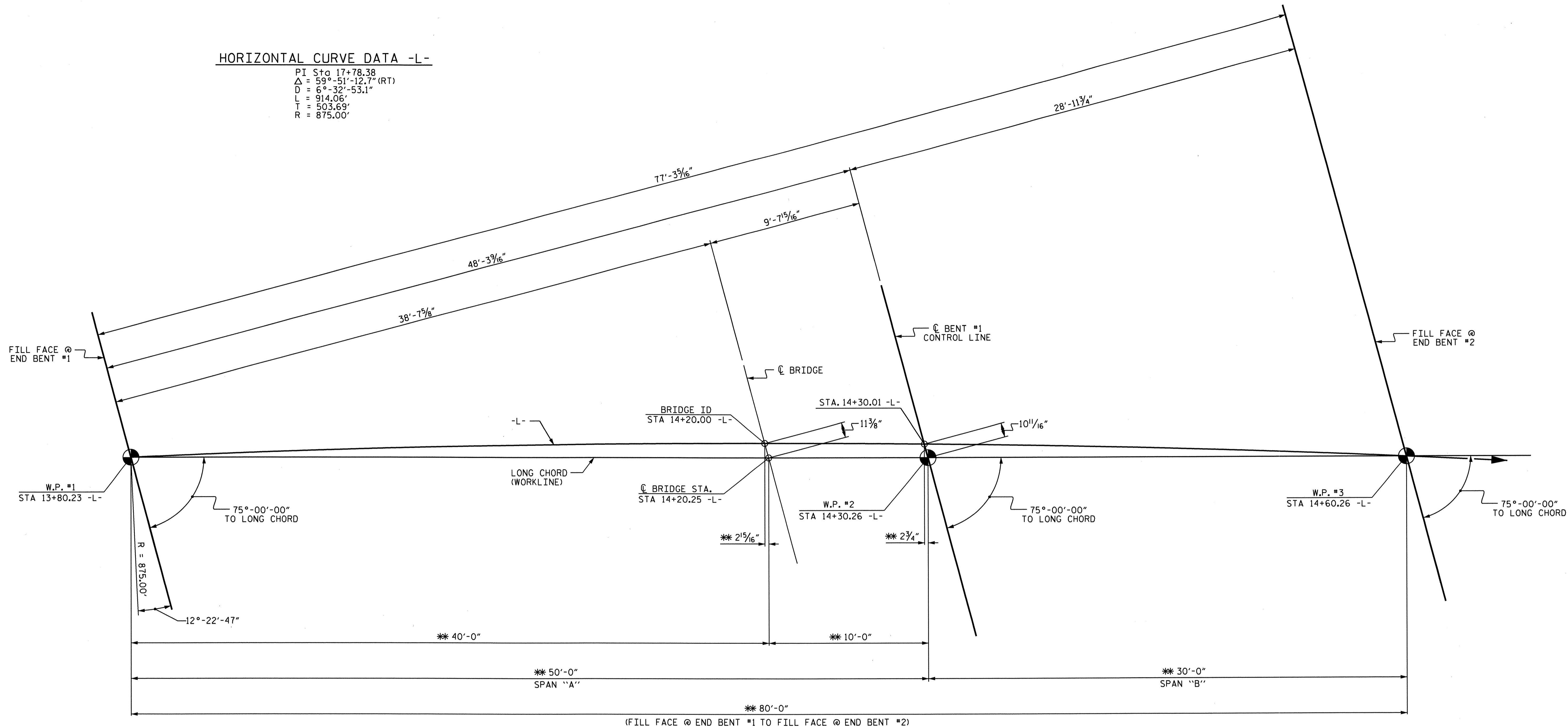


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			59

DRAWN BY : PEGGY PARISI DATE : 2-10-10
 CHECKED BY : B.N. BARODAWALA DATE : 2-12-10

HORIZONTAL CURVE DATA -L-

PI Sta 17+78.38
 $\Delta = 59^{\circ}-51'-12.7''$ (RT)
 $D = 6^{\circ}-32'-53.1''$
 $L = 914.06'$
 $T = 503.69'$
 $R = 875.00'$



(FILL FACE @ END BENT #1 TO FILL FACE @ END BENT #2)

LONG CHORD LAYOUT

THE END BENTS AND THE BENT ARE PARALLEL.
 W.P. #2 IS ON THE LONG CHORD.

** ALONG LONG CHORD

PROJECT NO. B-3693

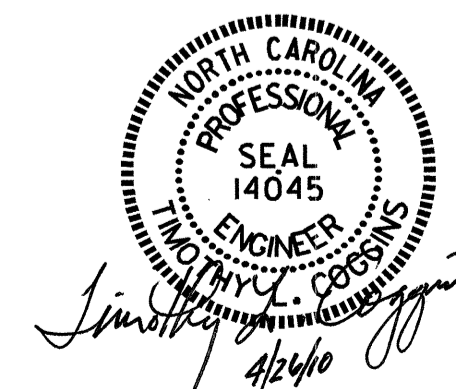
ROBESON COUNTY

STATION: 14+20.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER
 HOLLY SWAMP
 ON SR 1527 BETWEEN
 NC 72 AND SR 1532



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			59

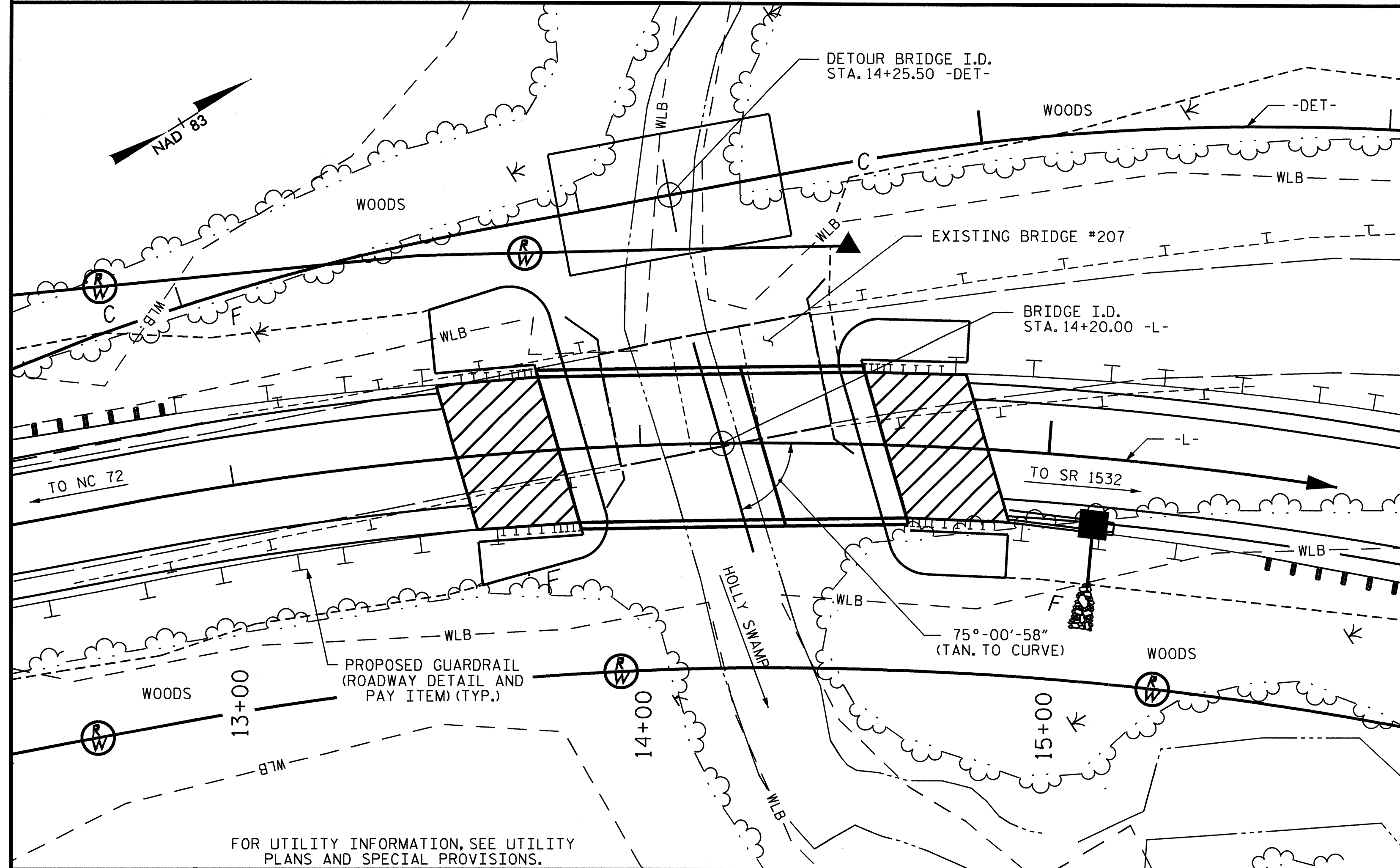
DRAWN BY : PEGGY PARISI DATE : 1-10-10
 CHECKED BY : B.N. BARODAWALA DATE : 2-15-10

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STR. #1

BM#80: R/R SPIKE IN BASE OF 24" GUM TREE, 33.94' RT. OF STA 11+44.40 -L-, EL. 122.95' NGVD 29.

NOTES



LOCATION SKETCH

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
 FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
 THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
 THE EXISTING STRUCTURE CONSISTING OF 3 SPANS, (1 @ 17'-10", 1 @ 17'-2" AND 1 @ 17'-10") WITH A CLEAR ROADWAY WIDTH OF 27.9' AND A CONCRETE DECK ON TIMBER JOISTS SUPPORTED BY A TIMBER CAP AND TIMBER PILES AT THE END BENTS AND BENTS AND LOCATED AT THE SITE OF THE PROPOSED STRUCTURE, 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. SEE SPECIAL PROVISION FOR "REMOVAL OF EXISTING STRUCTURE @ 14+20.00 -L-".
 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.
 REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
 THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 28 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 CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY STRUCTURE AT STATION 14+20.00 -L- FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS.
 THE BRIDGE RAILS ON THE TEMPORARY STRUCTURE SHALL BE DESIGNED FOR AASHTO LRFD TEST LEVEL 3 (TL-3) CRASH TEST CRITERIA. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS.
 THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", MAY, 2001.
 THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.
 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
 FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
 FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.
 FOR CURING CONCRETE, SEE SPECIAL PROVISIONS.
 FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.
 FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
 FOR INTERIOR BENT NO. 1, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEET FOR DETAILS.
 THIS BRIDGE SHALL BE CONSTRUCTED USING TOP-DOWN CONSTRUCTION METHODS. THE USE OF A TEMPORARY CAUSEWAY OR WORK BRIDGE IS NOT PERMITTED.

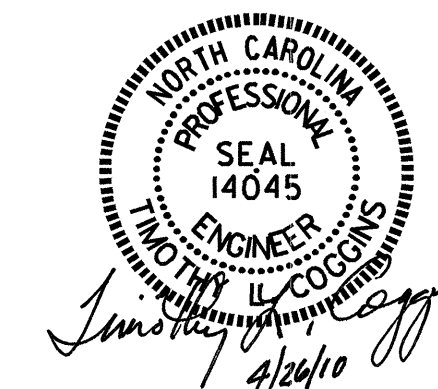
TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMPORARY STRUCTURE	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	PDA ASSISTANCE	UNCLASSIFIED STRUCTURE EXCAVATION	CONCRETE WEARING SURFACE	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES		HP 14 X 73 GALVANIZED STEEL PILES		PILE REDRIVES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS			
											NO.	LIN.FT.	NO.	LIN.FT.							EACH	LIN.FT.	TONS	SO.YDS.
SUPERSTRUCTURE	LUMP SUM	LUMP SUM	EACH	EACH	LUMP SUM	SO. FT.	SO. FT.	CU. YDS.	LUMP SUM	LBS.						155.60				LUMP SUM	LUMP SUM	26	1008.04	
END BENT NO. 1								15.5		2310	5	350			3		165	183						
BENT NO. 1								12.3		2718			10	550	5									
END BENT NO. 2								15.5		2308	5	275			3		165	183						
TOTAL	LUMP SUM	LUMP SUM	1	1	LUMP SUM	2749	4072	43.3	LUMP SUM	7336	10	625	10	550	11	155.60	330	366	LUMP SUM	LUMP SUM	26	1008.04		

PROJECT NO. B-3693
 ROBESON COUNTY
 STATION: 14+20.00 -L-

SHEET 4 OF 4

HYDRAULIC DATA		OVERTOPPING FLOOD DATA	
DESIGN DISCHARGE	= 450 CFS	OVERTOPPING DISCHARGE	= 520 CFS
FREQUENCY OF DESIGN FLOOD	= 25 YR.	FREQUENCY OF OVERTOPPING FLOOD	= 50± YR.
DESIGN HIGH WATER ELEVATION	= 124.7'	OVERTOPPING FLOOD ELEVATION	= 124.9'
DRAINAGE AREA	= 9 SQ. MILES		
BASIC DISCHARGE (Q100)	= 646 CFS		
BASIC HIGH WATER ELEVATION	= 125.4'		



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
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REVISIONS						SHEET NO. S-4
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 59
2			4			

DRAWN BY : PEGGY PARISI DATE : 2-12-10
 CHECKED BY : B.N. BARODAWALA DATE : 2-15-10

LOAD FACTORS:

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

	YEAR	ADTT
CURRENT	2010	241
FUTURE	2030	391

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.

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE								COMMENT NUMBER
						MOMENT					SHEAR					MOMENT								
						LIVE-LOAD FACTORS (%LL)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	LIVE-LOAD FACTORS (%LL)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)		
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.00	--	1.75	0.275	1.06	A	ER	23.868	0.483	1.00	B	I	1.387	0.80	0.275	1.39	A	ER	23.868		
	HL-93 (OPERATING)	N/A		1.30	--	1.35	0.275	1.38	A	ER	23.868	0.483	1.30	B	I	1.387	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	②	1.11	39.960	1.75	0.275	1.28	A	ER	23.868	0.483	1.11	B	I	1.387	0.80	0.275	1.36	A	ER	23.868		
	HS-20 (OPERATING)	36.000		1.47	52.920	1.35	0.275	1.71	A	ER	23.868	0.483	1.47	B	I	1.387	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		2.74	36.990	1.40	0.275	3.32	A	ER	23.868	0.483	2.74	B	I	1.387	0.80	0.275	2.76	A	ER	23.868	
		SNGARBS2	20.000		2.14	42.800	1.40	0.275	2.63	A	ER	23.868	0.483	2.14	B	I	1.387	0.80	0.275	2.19	A	ER	23.868	
		SNAGRIS2	22.000		2.07	45.540	1.40	0.275	2.57	A	ER	23.868	0.483	2.07	B	I	1.387	0.80	0.275	2.14	A	ER	23.868	
		SNCOTTS3	27.250		1.38	37.605	1.40	0.275	1.65	A	ER	23.868	0.483	1.39	B	I	1.387	0.80	0.275	1.38	A	ER	23.868	
		SNAGGRS4	34.925		1.20	41.910	1.40	0.275	1.44	A	ER	23.868	0.483	1.29	B	I	1.387	0.80	0.275	1.20	A	ER	23.868	
		SNS5A	35.550		1.18	41.949	1.40	0.275	1.41	A	ER	23.868	0.483	1.36	B	I	1.387	0.80	0.275	1.18	A	ER	23.868	
		SNS6A	39.950		1.10	43.945	1.40	0.275	1.32	A	ER	23.868	0.483	1.29	B	I	1.387	0.80	0.275	1.10	A	ER	23.868	
		SNS7B	42.000		1.05	44.100	1.40	0.275	1.26	A	ER	23.868	0.483	1.31	B	I	1.387	0.80	0.275	1.05	A	ER	23.868	
	TRUCK TRACTOR SEMI-TRAILER (TTS)	TNAGRIT3	33.000		1.35	44.550	1.40	0.275	1.62	A	ER	23.868	0.483	1.54	B	I	1.387	0.80	0.275	1.35	A	ER	23.868	
		TNT4A	33.075		1.36	44.982	1.40	0.275	1.63	A	ER	23.868	0.483	1.42	B	I	1.387	0.80	0.275	1.36	A	ER	23.868	
		TNT6A	41.600		1.14	47.424	1.40	0.275	1.36	A	ER	23.868	0.483	1.37	B	I	1.387	0.80	0.275	1.14	A	ER	23.868	
		TNT7A	42.000		1.15	48.300	1.40	0.275	1.38	A	ER	23.868	0.483	1.31	B	I	1.387	0.80	0.275	1.15	A	ER	23.868	
		TNT7B	42.000		1.20	50.400	1.40	0.275	1.44	A	ER	23.868	0.483	1.29	B	I	1.387	0.80	0.275	1.20	A	ER	23.868	
		TNAGRIT4	43.000		1.14	49.020	1.40	0.275	1.37	A	ER	23.868	0.483	1.25	B	I	1.387	0.80	0.275	1.14	A	ER	23.868	
		TNAGT5A	45.000		1.06	47.700	1.40	0.275	1.28	A	ER	23.868	0.483	1.33	B	I	1.387	0.80	0.275	1.06	A	ER	23.868	
		TNAGT5B	45.000	③	1.04	46.800	1.40	0.275	1.25	A	ER	23.868	0.483	1.17	B	I	1.387	0.80	0.275	1.04	A	ER	23.868	

CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

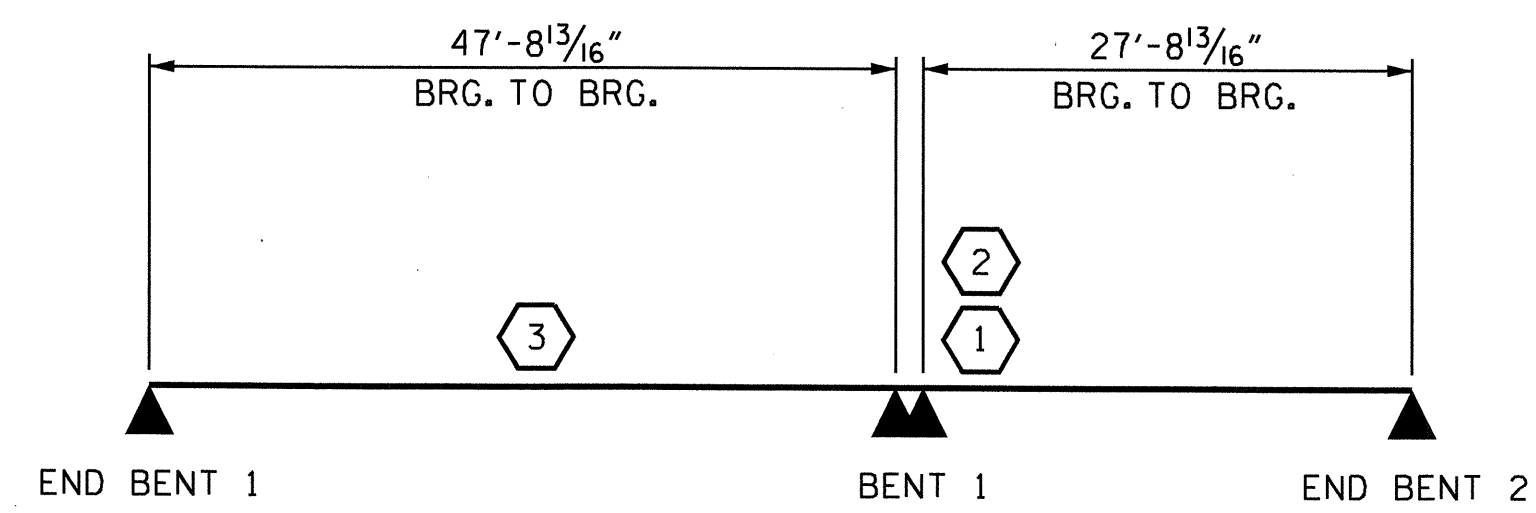
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



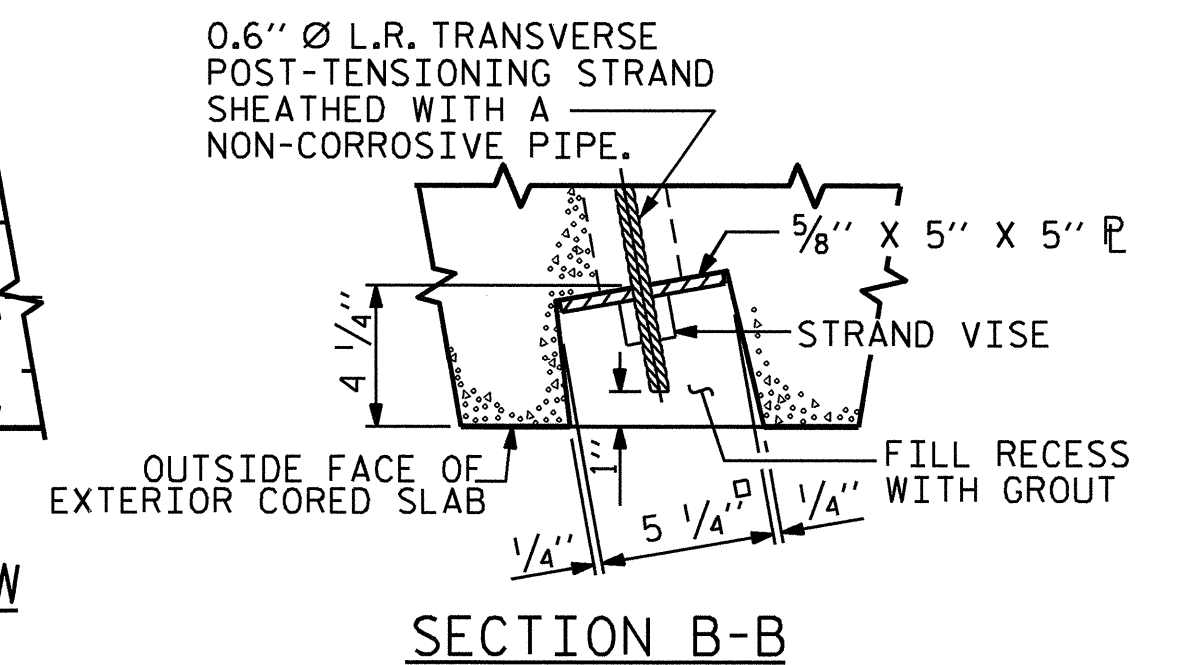
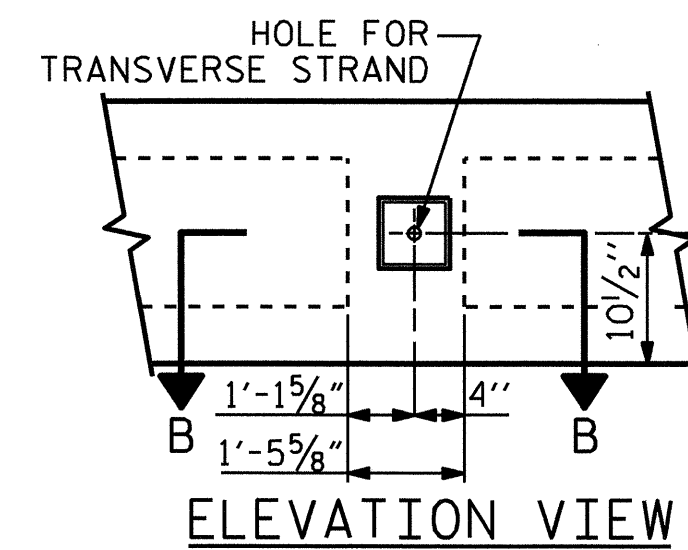
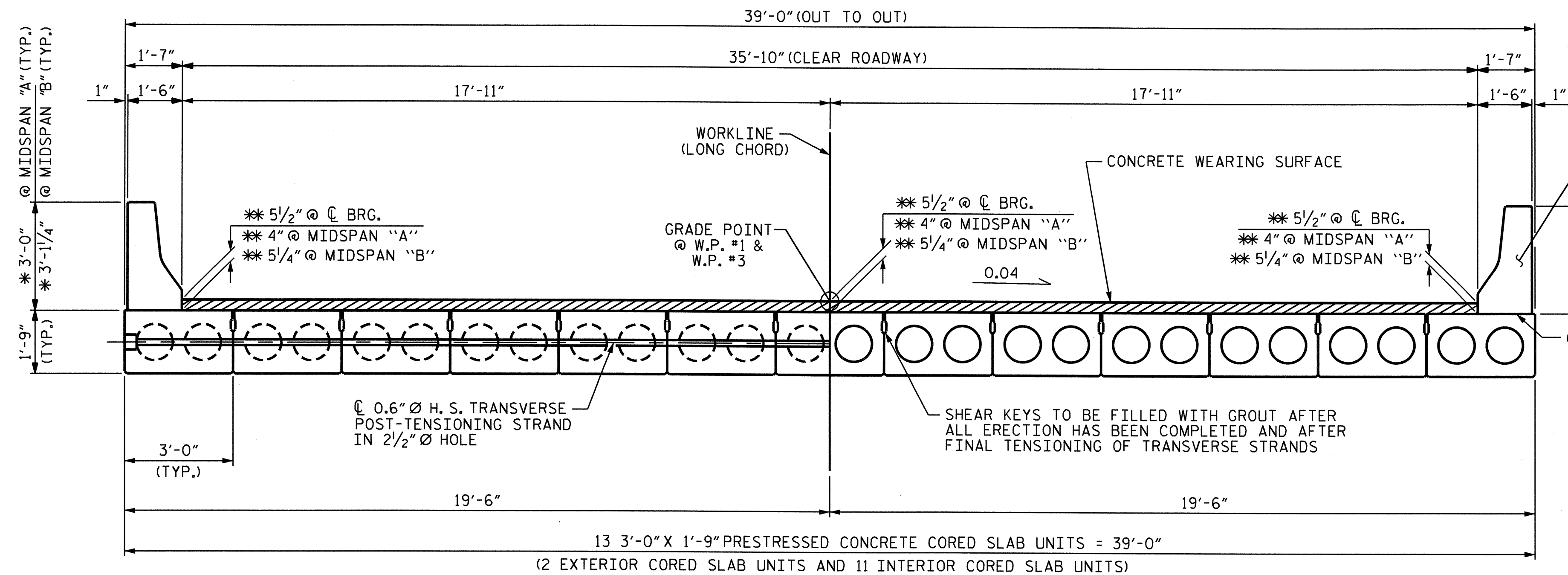
PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 14+20.00 -L-



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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS 59
2			4			

ASSEMBLED BY: M.GUJDL AUGSSON DATE: 12/02/09
 CHECKED BY: J.B. WILSON DATE: 01/11/10
 DRAWN BY: MAA 1/08
 CHECKED BY: GM/DI 2/08



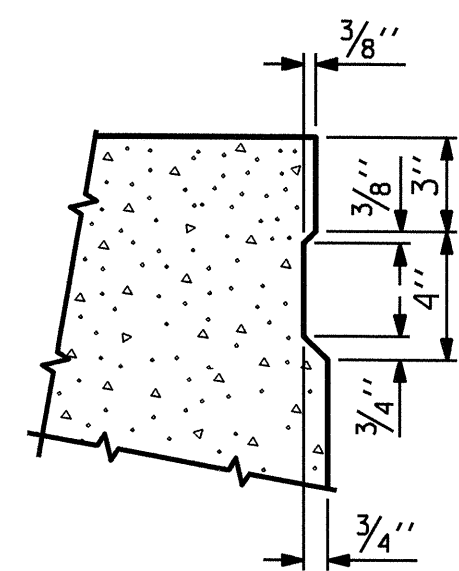
GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS

HALF SECTION @ INTERMEDIATE DIAPHRAGM

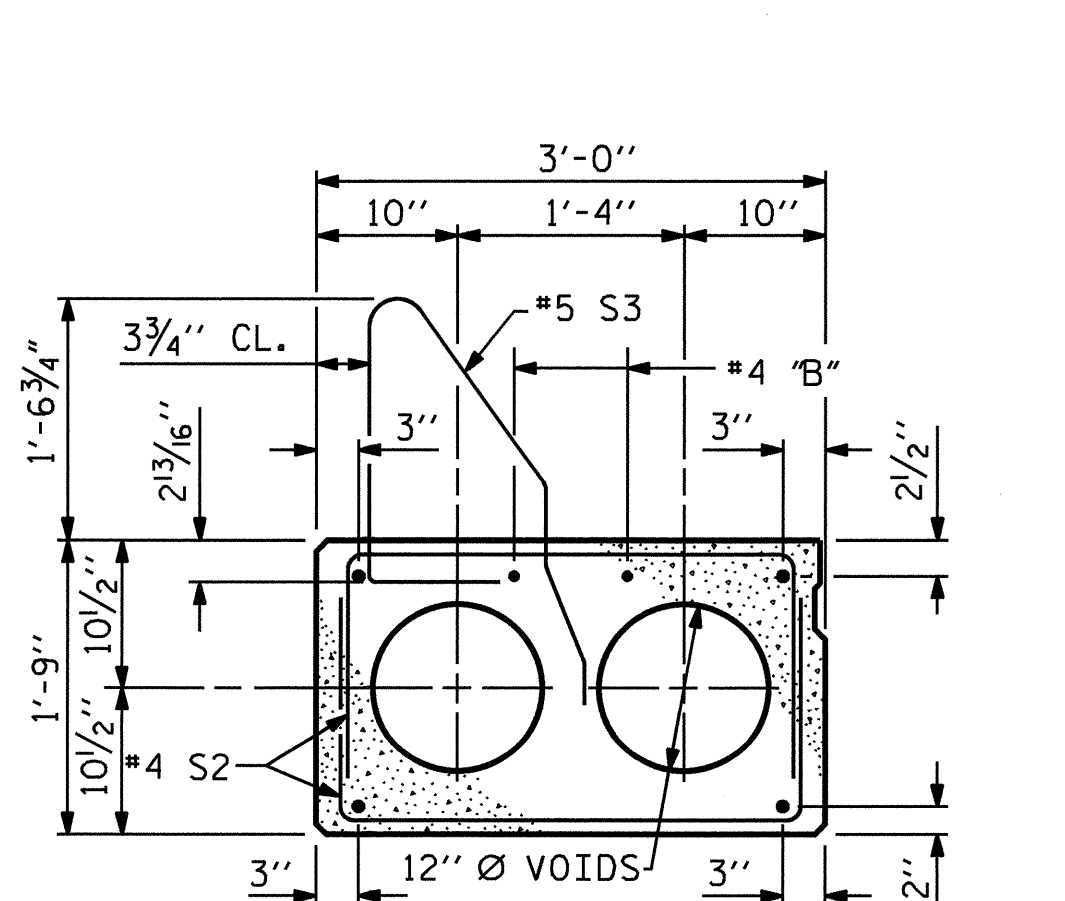
HALF SECTION @ END BENT & BENT

TYPICAL SECTION

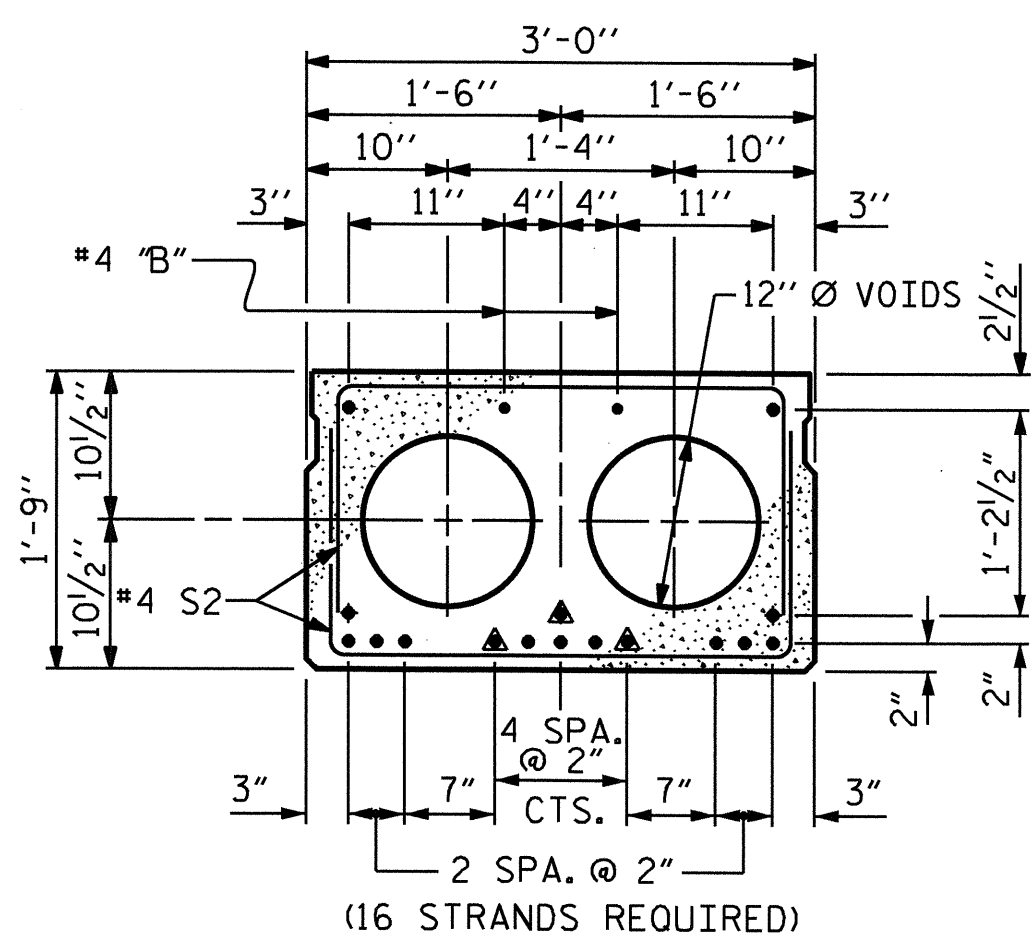
** BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS.
* THE MINIMUM HEIGHT OF THE BARRIER RAIL FOR EACH SPAN IS SHOWN. THE HEIGHT OF THE BARRIER RAIL VARIES WHILE THE TOP OF THE RAIL FOLLOWS THE PROFILE OF GUTTERLINE.



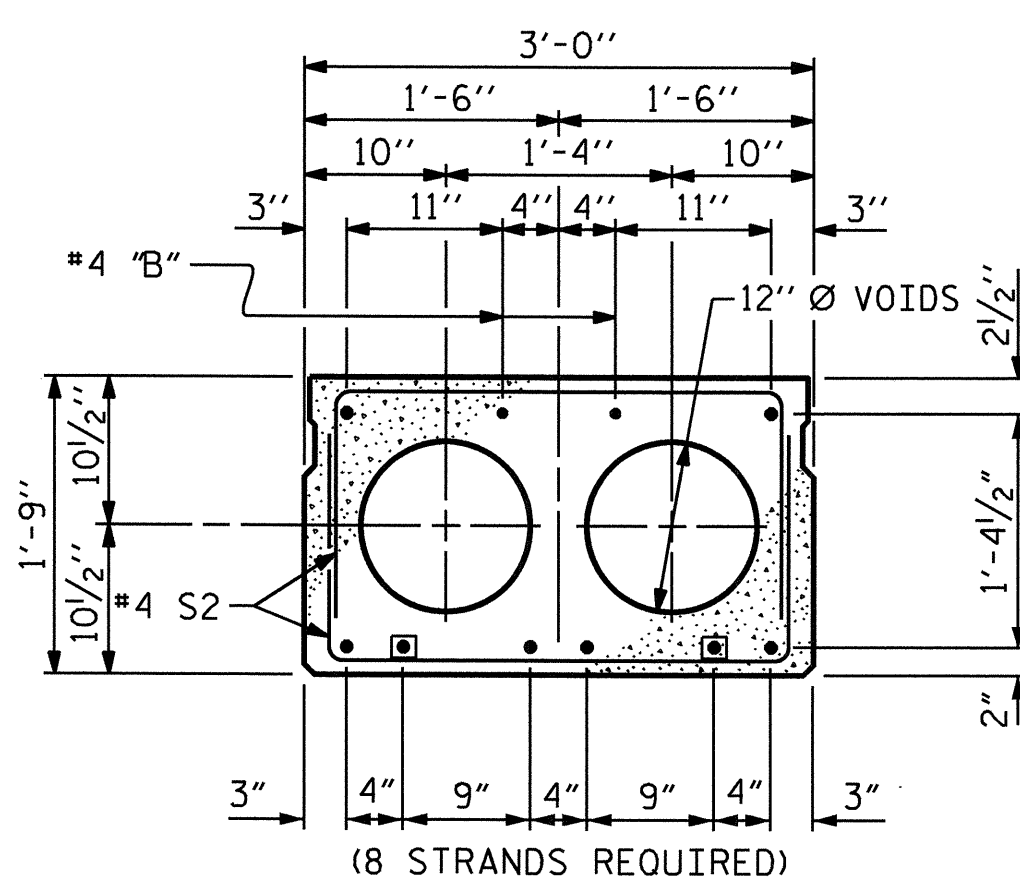
SHEAR KEY DETAIL
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.



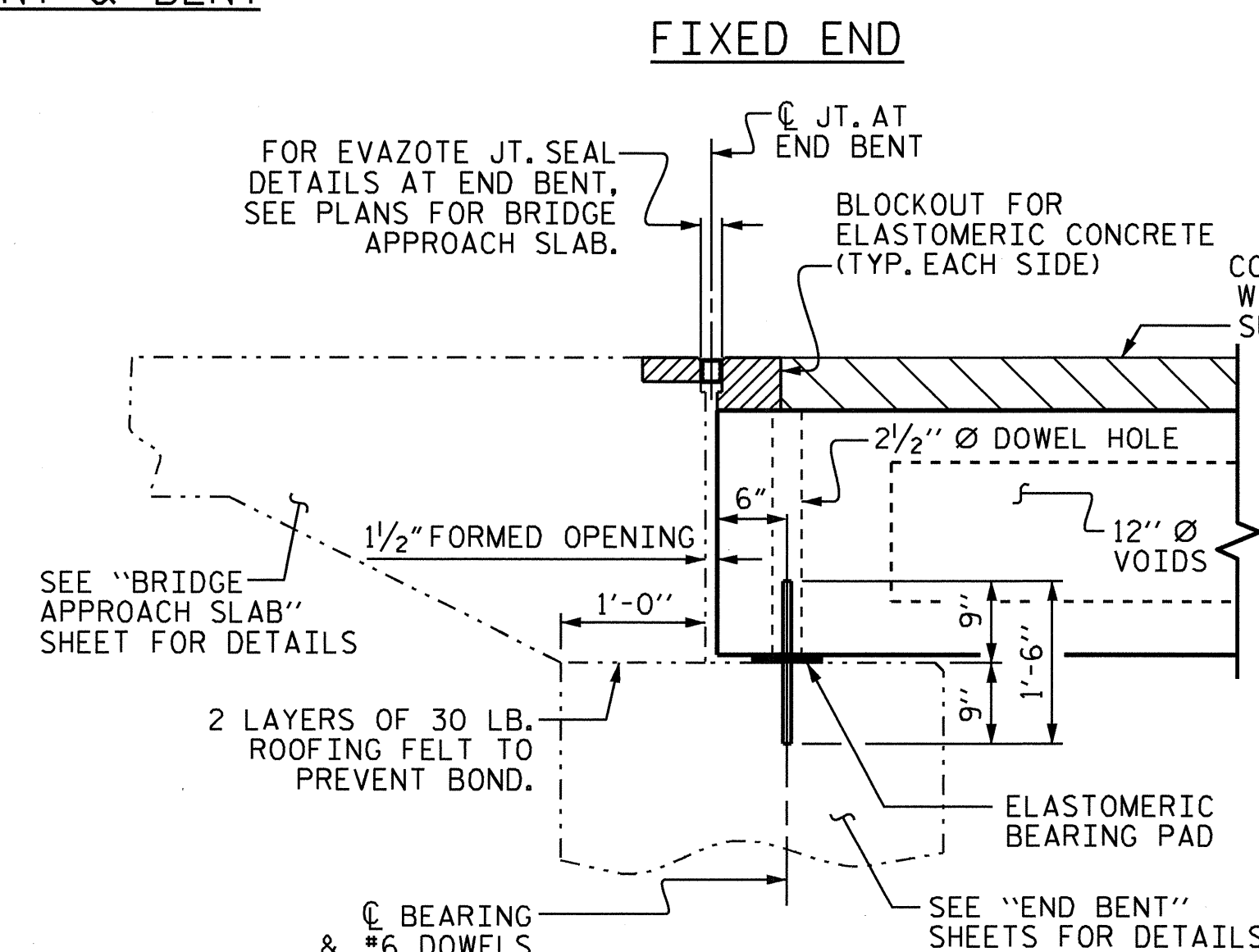
EXTERIOR SLAB SECTION
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



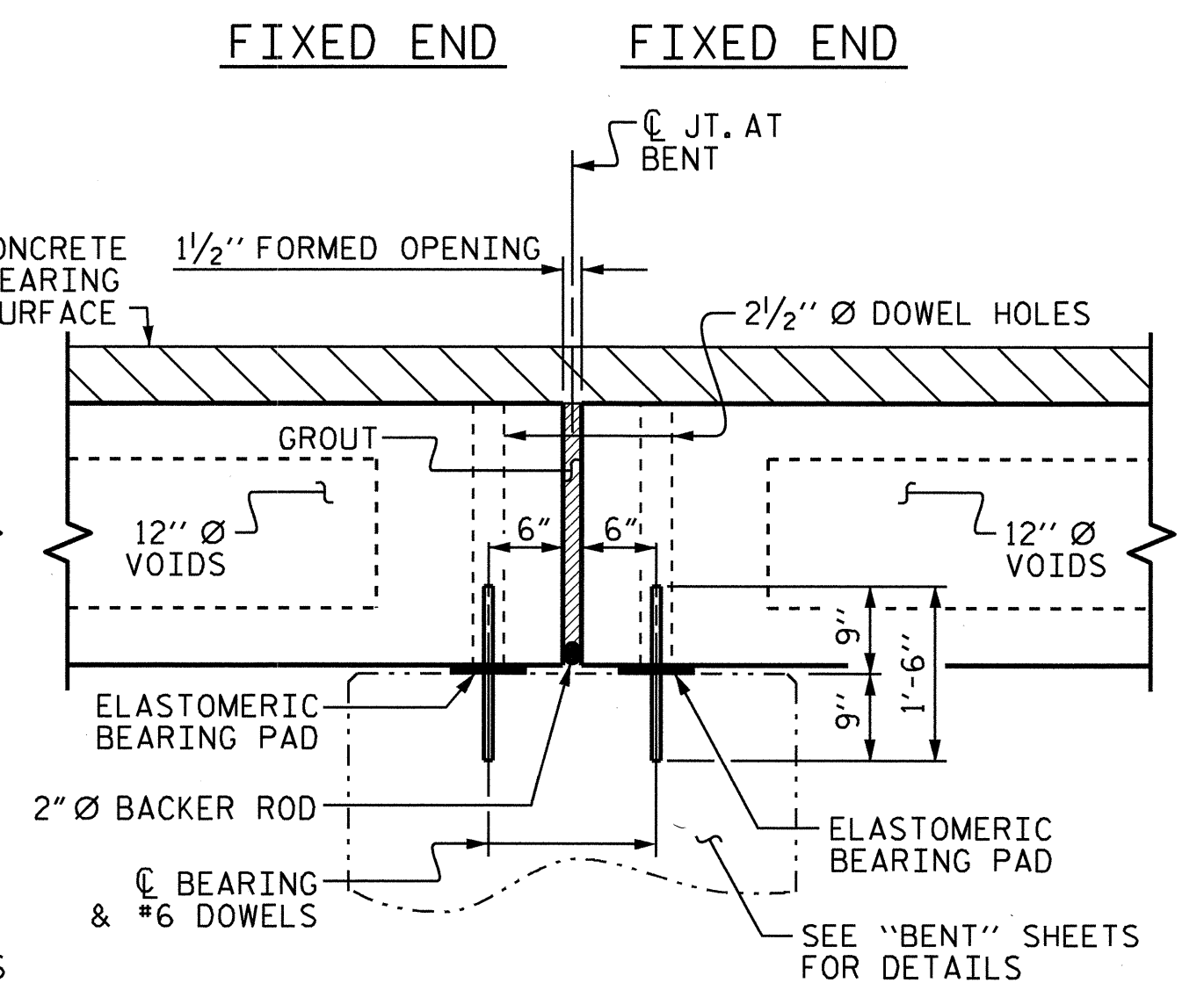
SPAN A INTERIOR SLAB SECTION
0.6" Ø LOW RELAXATION STRAND LAYOUT
(16 STRANDS REQUIRED)



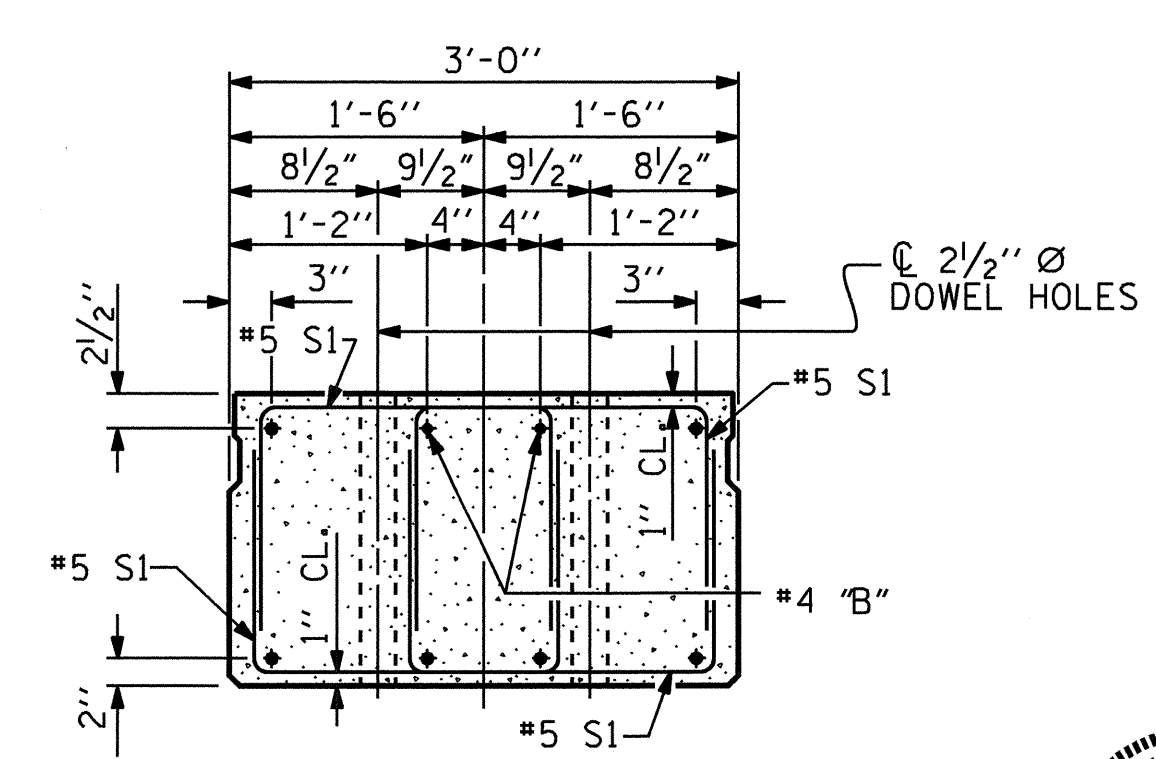
SPAN B INTERIOR SLAB SECTION
0.6" Ø LOW RELAXATION STRAND LAYOUT
(8 STRANDS REQUIRED)



SECTION AT END BENT

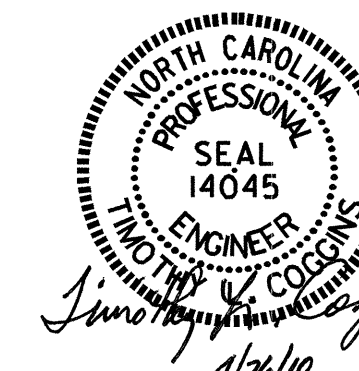


SECTION AT BENT



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-3693
ROBESON COUNTY
STATION: 14+20.00 -L-
SHEET 1 OF 5

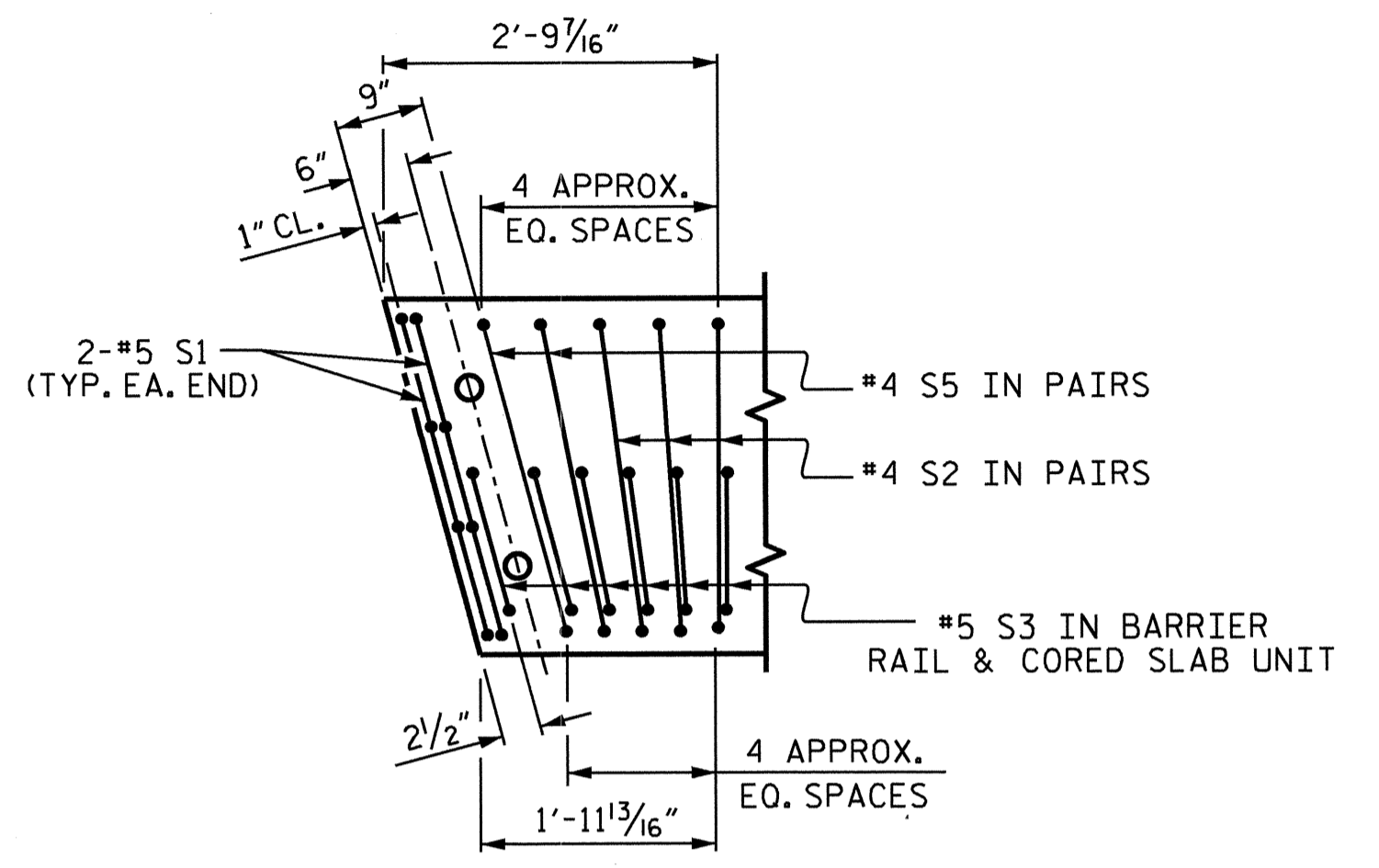
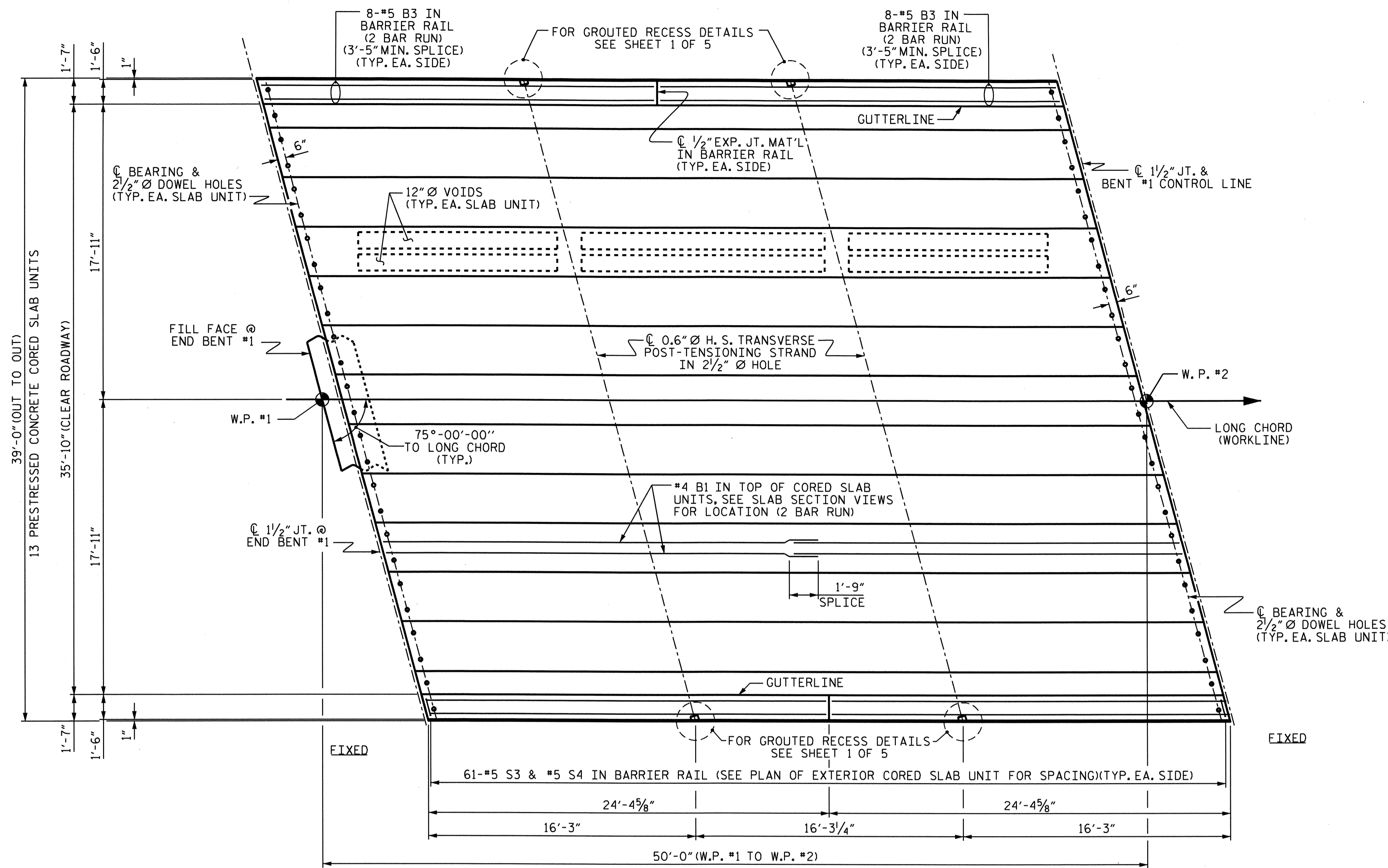
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH			
STANDARD 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT			
REVISIONS			
NO.	BY:	DATE:	DATE:
1		3	
2		4	

SHEET NO. S-6
TOTAL SHEETS 59

ASSEMBLED BY: M. GUDLAUGSSON DATE: 11/23/09
CHECKED BY: J.B. WILSON DATE: 01/11/10
DRAWN BY: WJH 4/89 REV. 10/17/00 RWW/LES
CHECKED BY: FCJ 5/89 REV. 7/10/01RR RWW/LES
REV. 5/1/06R TLA/GM

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

□ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 2'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7

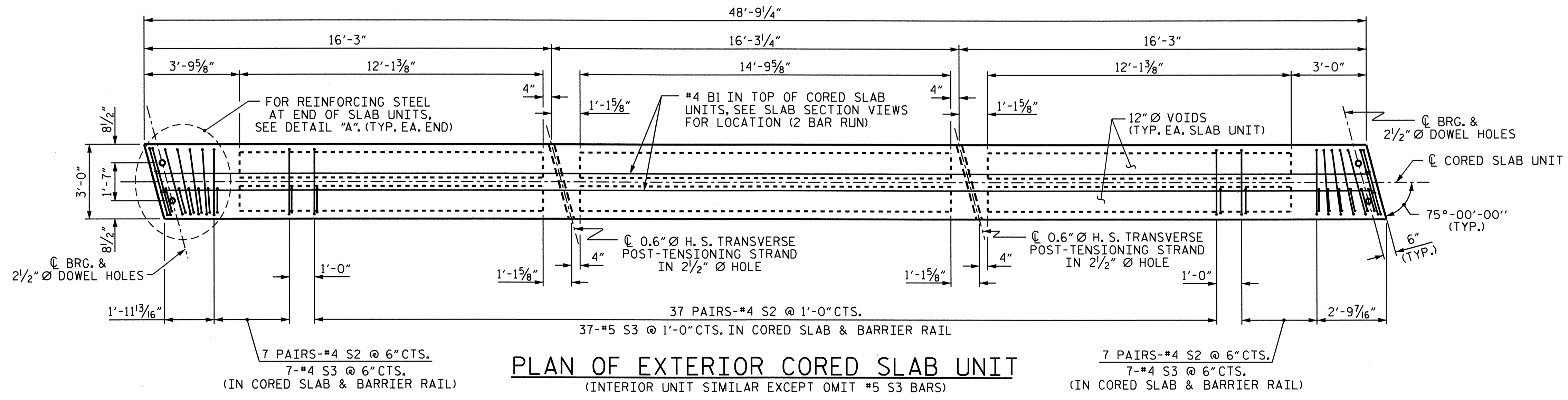


DETAIL "A"

EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT S3 (TYP. EA. END)

PLAN OF SPAN A

NOTE: W.P. #2 IS LOCATED ON THE LONG CHORD



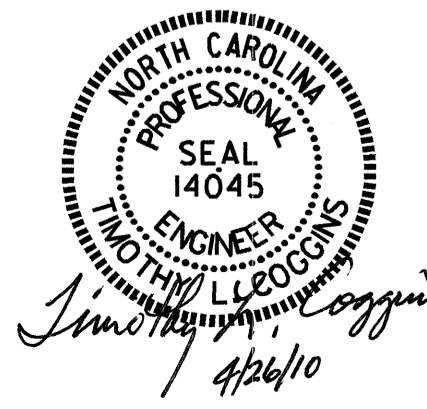
PLAN OF EXTERIOR CORED SLAB UNIT

(INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS)

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 14+20.00 -L-
 SHEET 2 OF 5

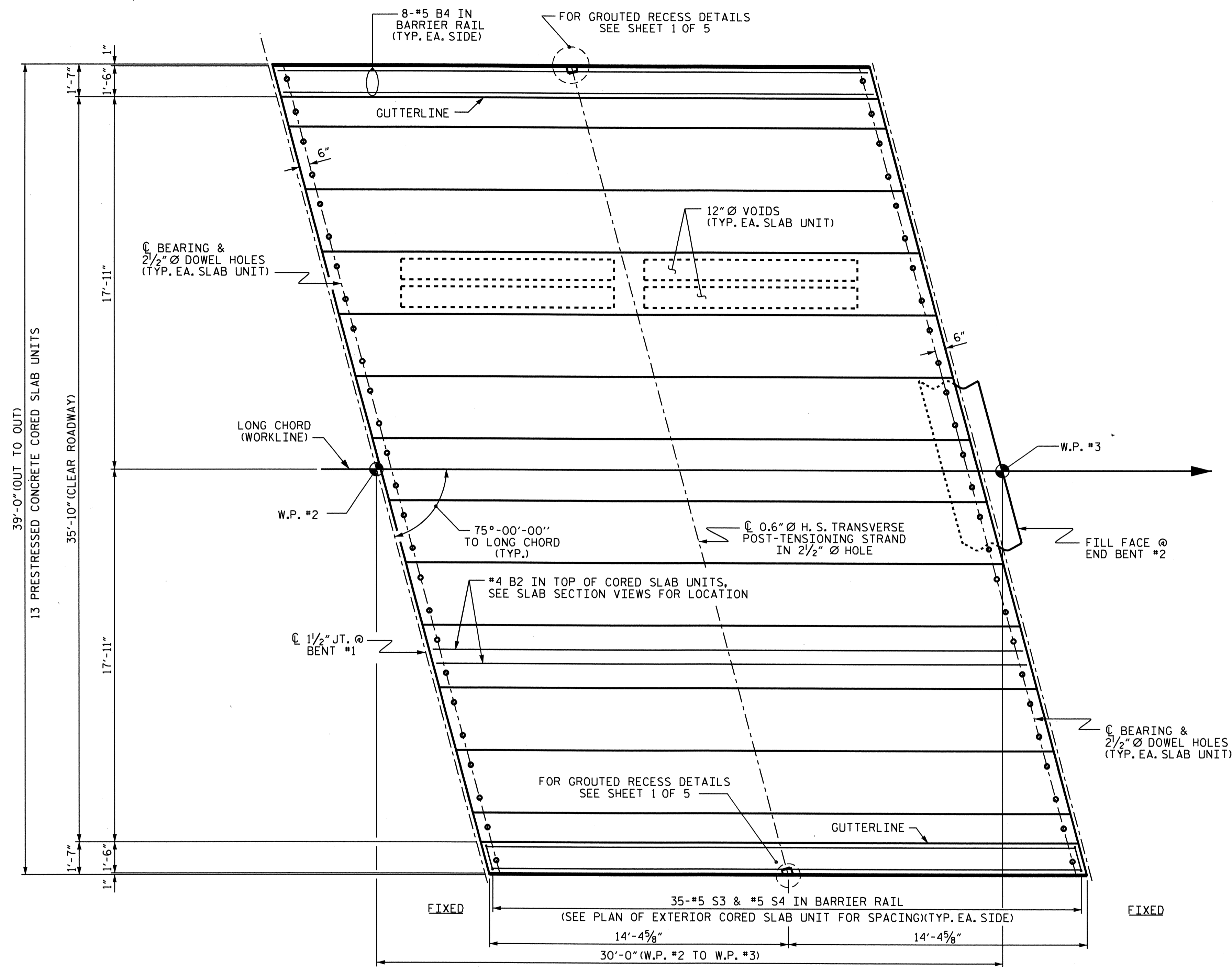
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPAN A



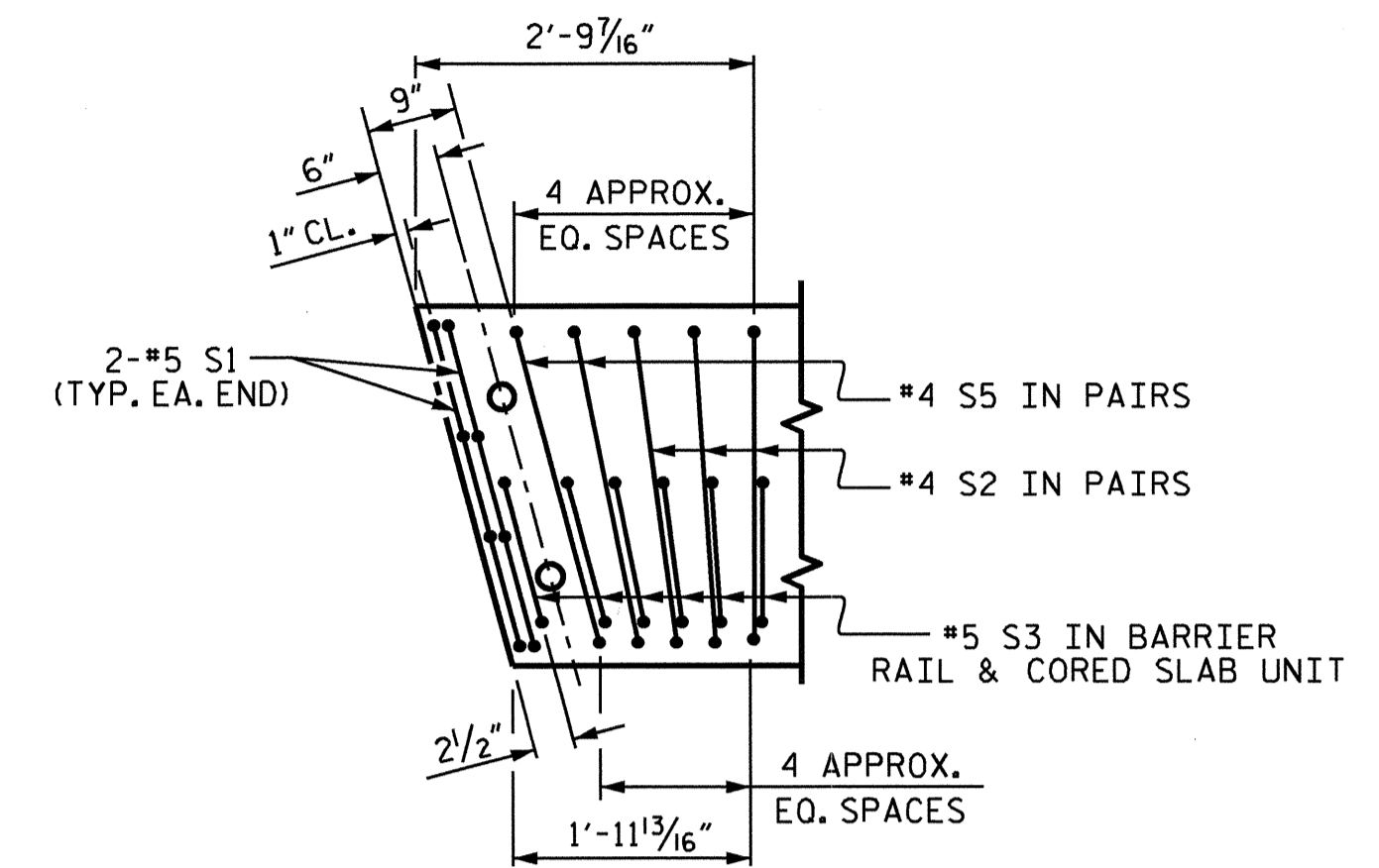
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

DRAWN BY: M. GUDLAUGSSON DATE: 11/23/09
 CHECKED BY: J.B. WILSON DATE: 01/11/10



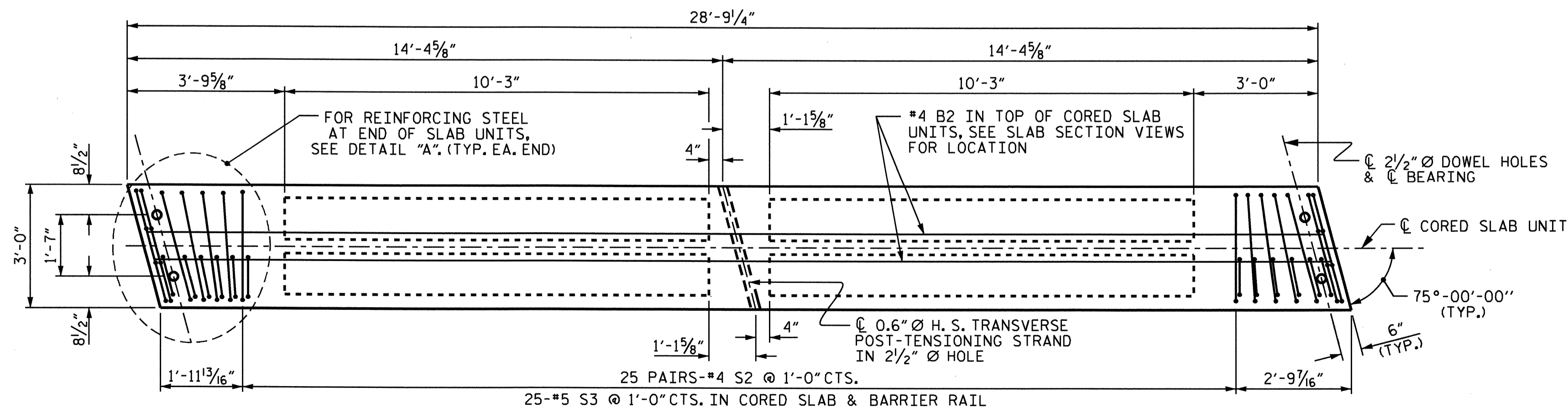
PLAN OF SPAN B

NOTE: W.P. #2 IS LOCATED ON THE LONG CHORD



DETAIL "A"

EXTERIOR UNIT SHOWN -
INTERIOR UNIT SIMILAR
EXCEPT OMIT S3
(TYP. EA. END)



PLAN OF EXTERIOR CORED SLAB UNIT

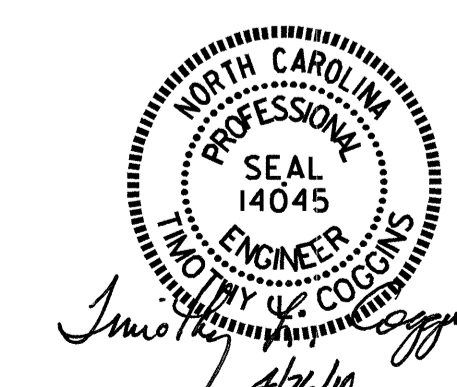
(INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS)

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 14+20.00 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPAN B



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			59

DRAWN BY: M. GUDLAUGSSON DATE: 11/23/09
 CHECKED BY: J.B. WILSON DATE: 01/11/10

26-APR-2010 08:21
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NOTES

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

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.)

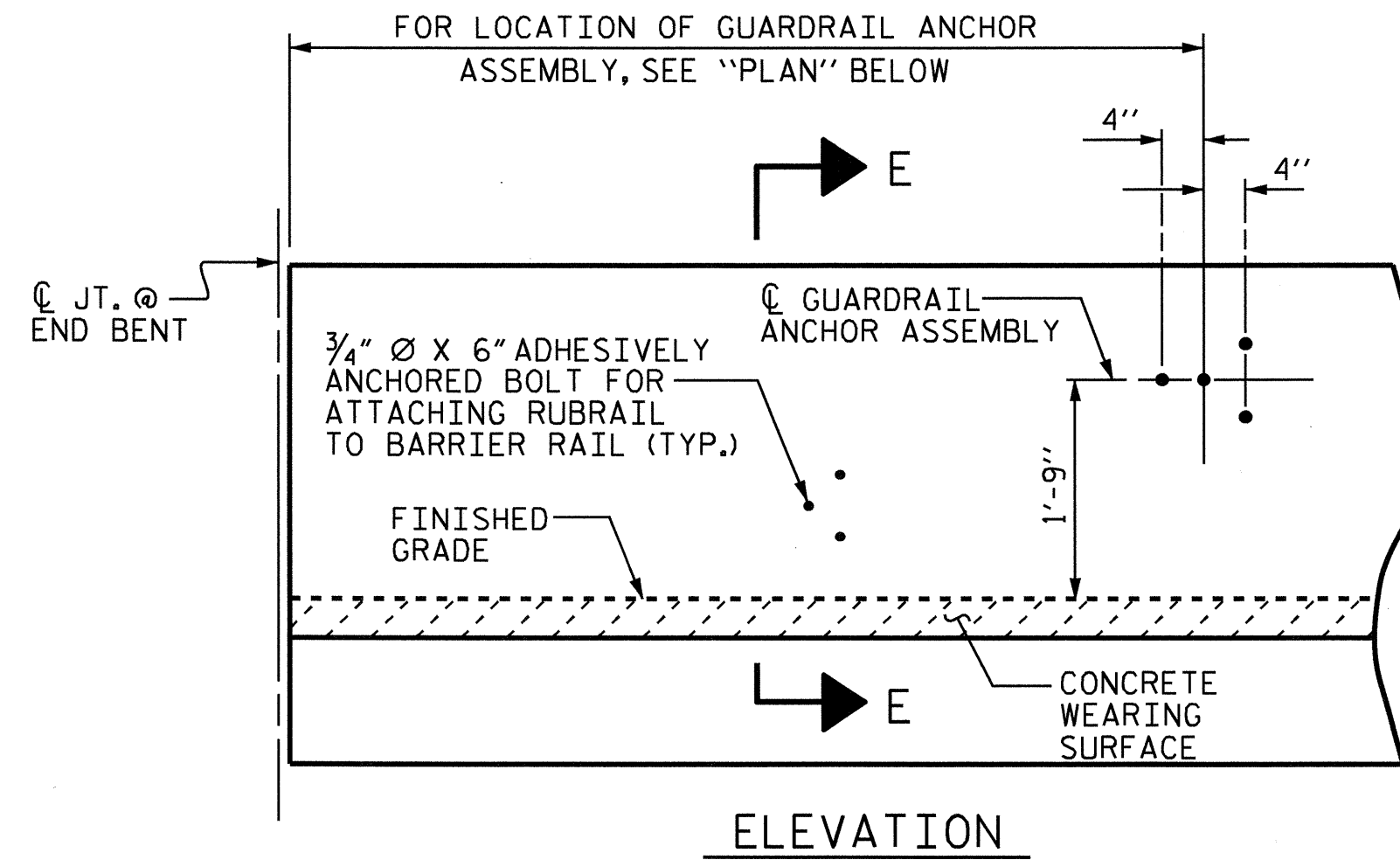
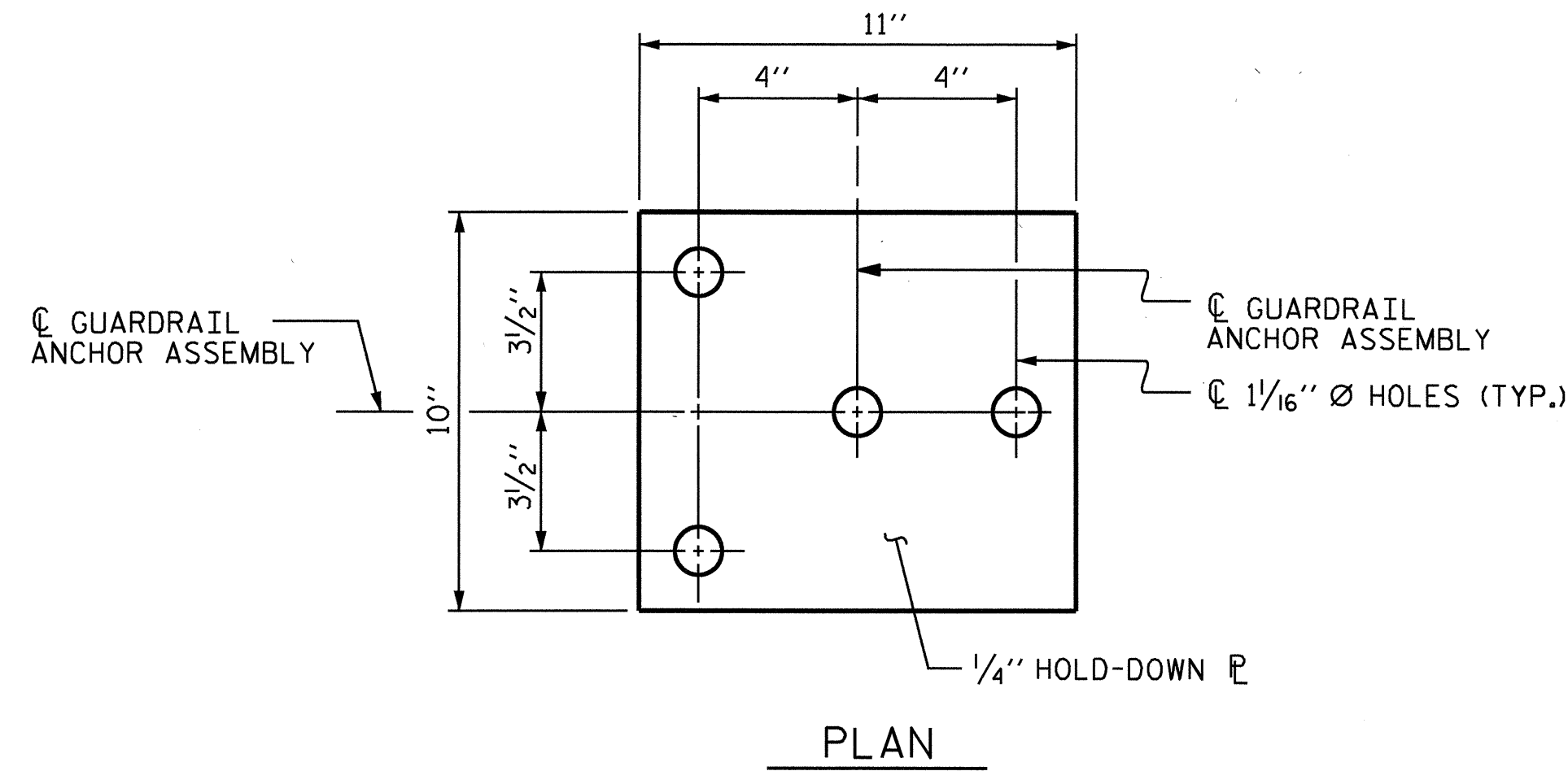
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

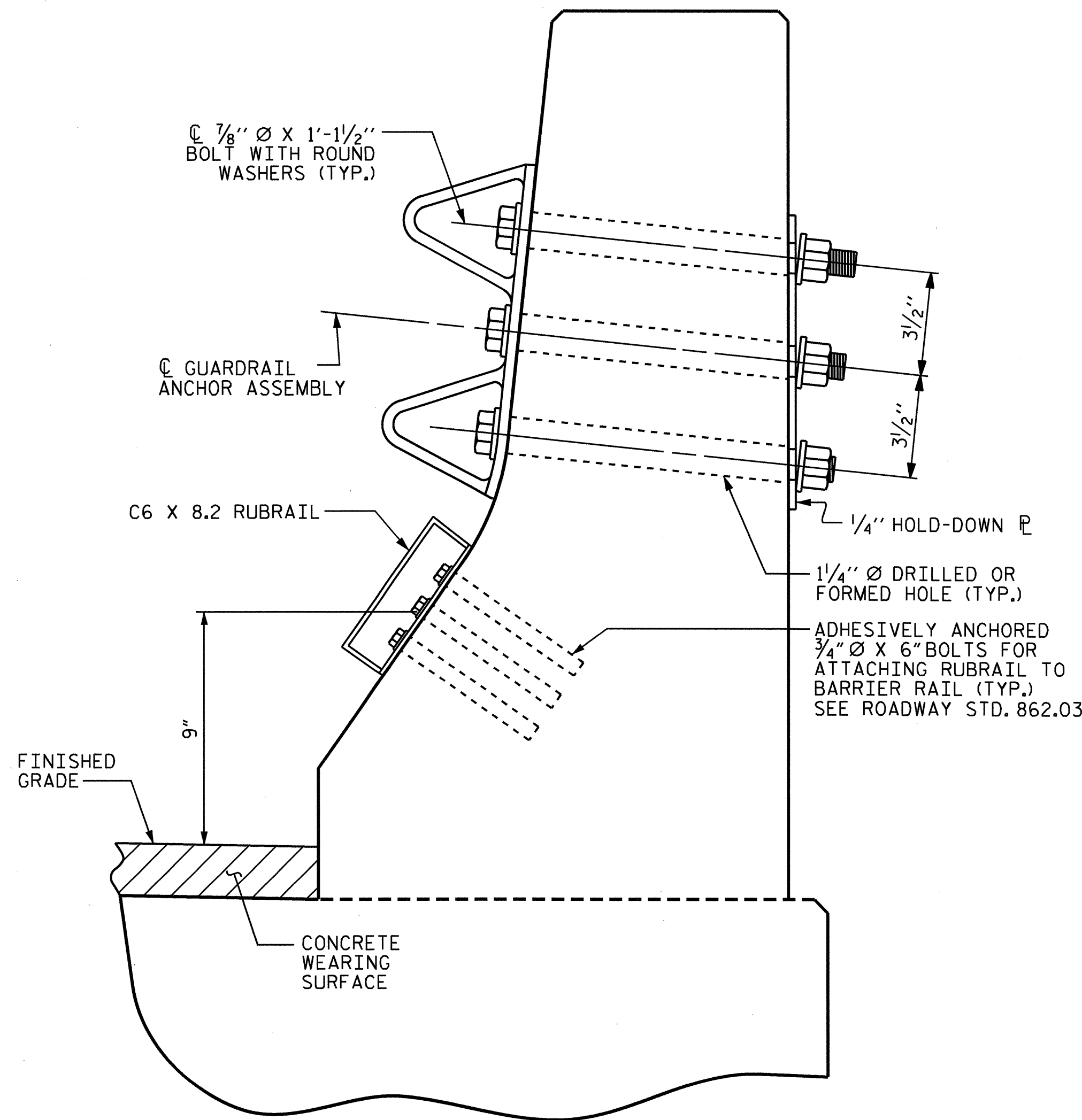
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

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.

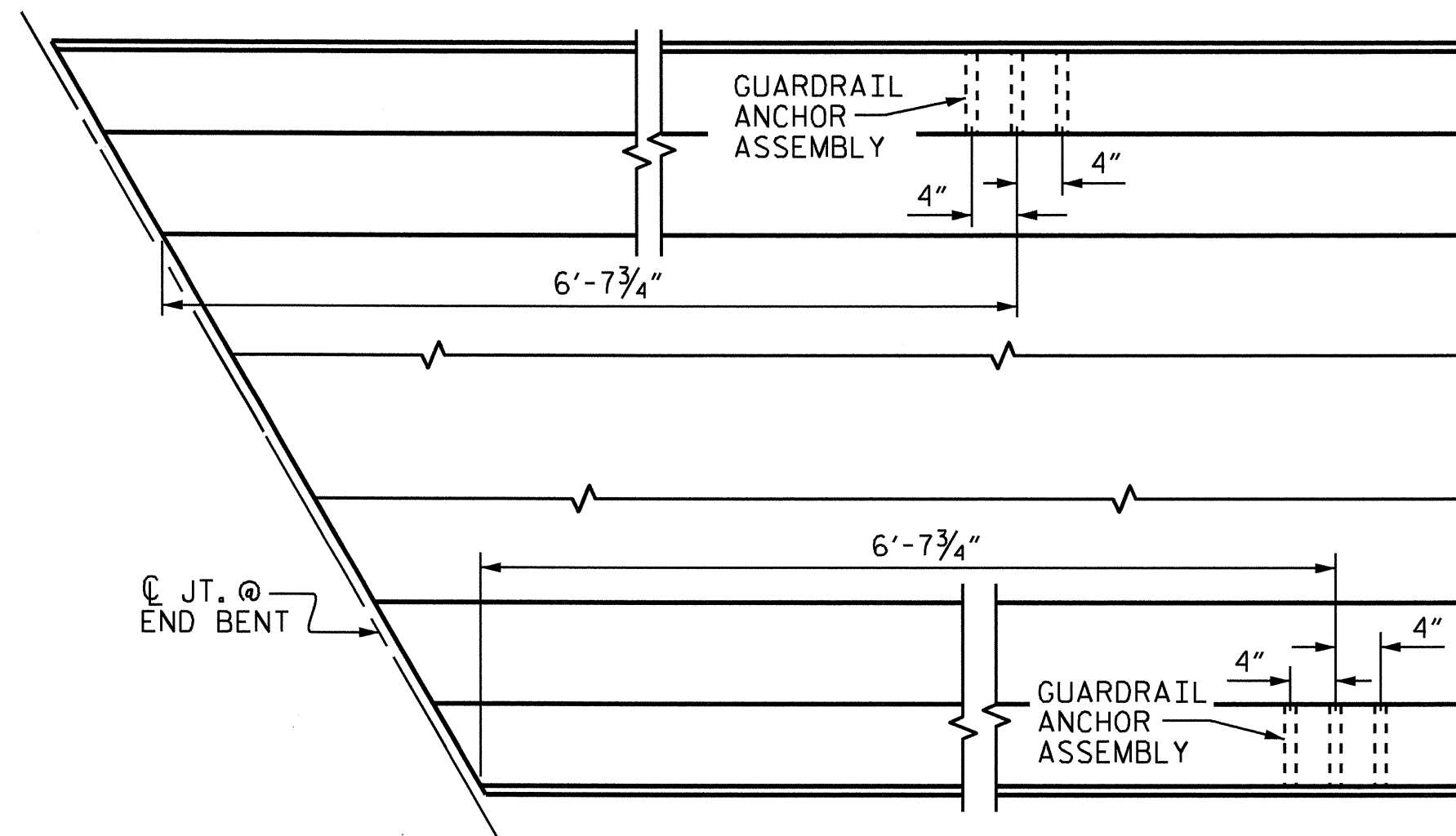
THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03

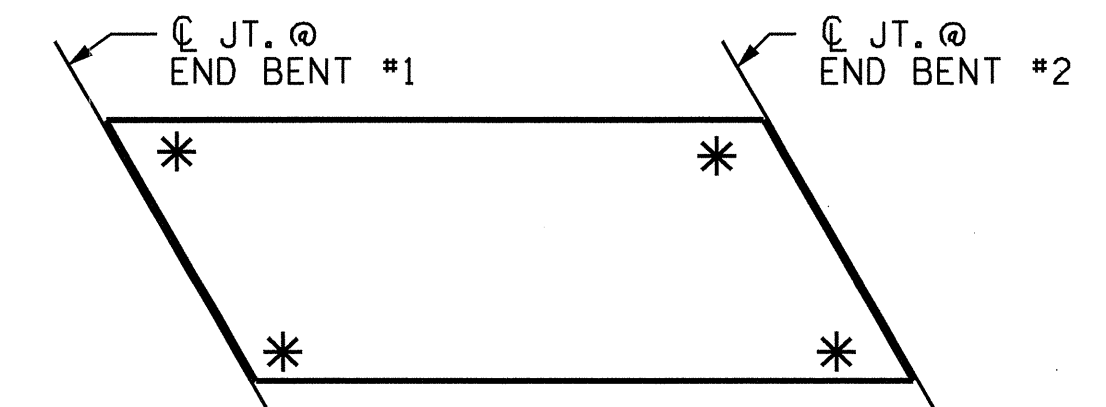


GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

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

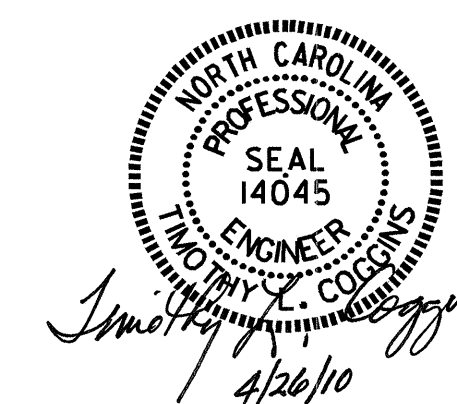


* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 14+20.00 -L-

SHEET 4 OF 5

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



ASSEMBLED BY : M. GUDLAUGSSON DATE : 11/23/09
 CHECKED BY : J.B. WILSON DATE : 01/11/10
 DRAWN BY : TLA 5/06
 CHECKED BY : GM 5/06

ADDED 5/1/06R KMM/GM

26-APR-2010 08:21
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			59

STR. #1 (SHT 6) STD. NO. GRA2

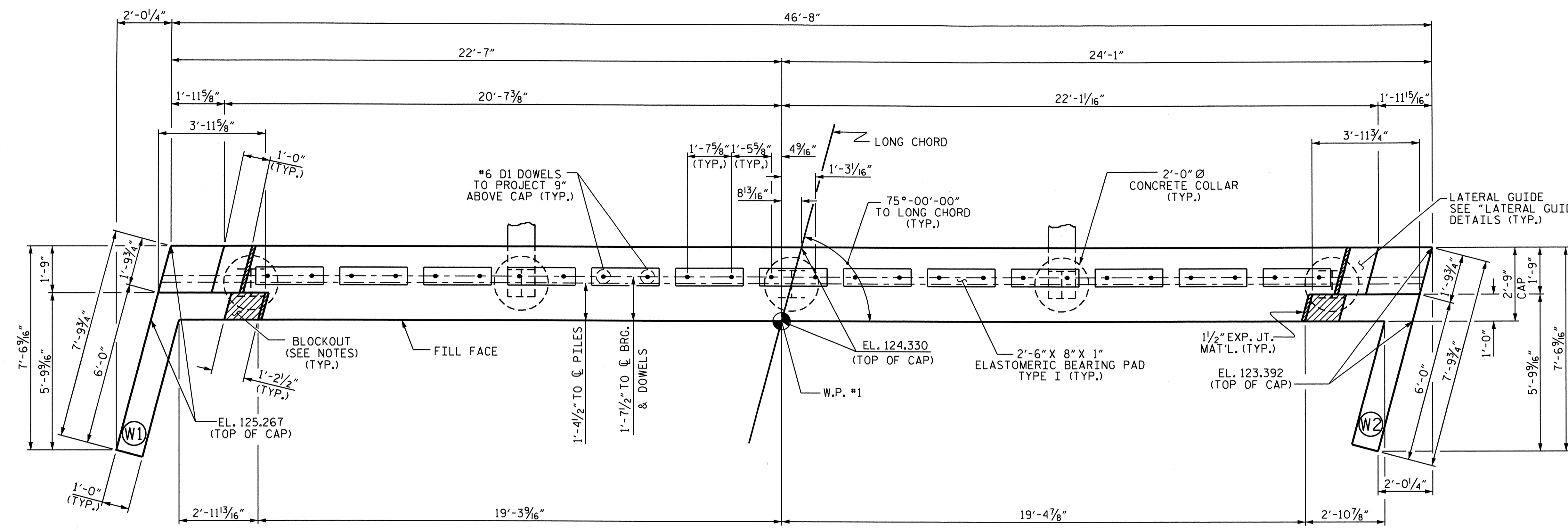
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6 D1 DOWELS.

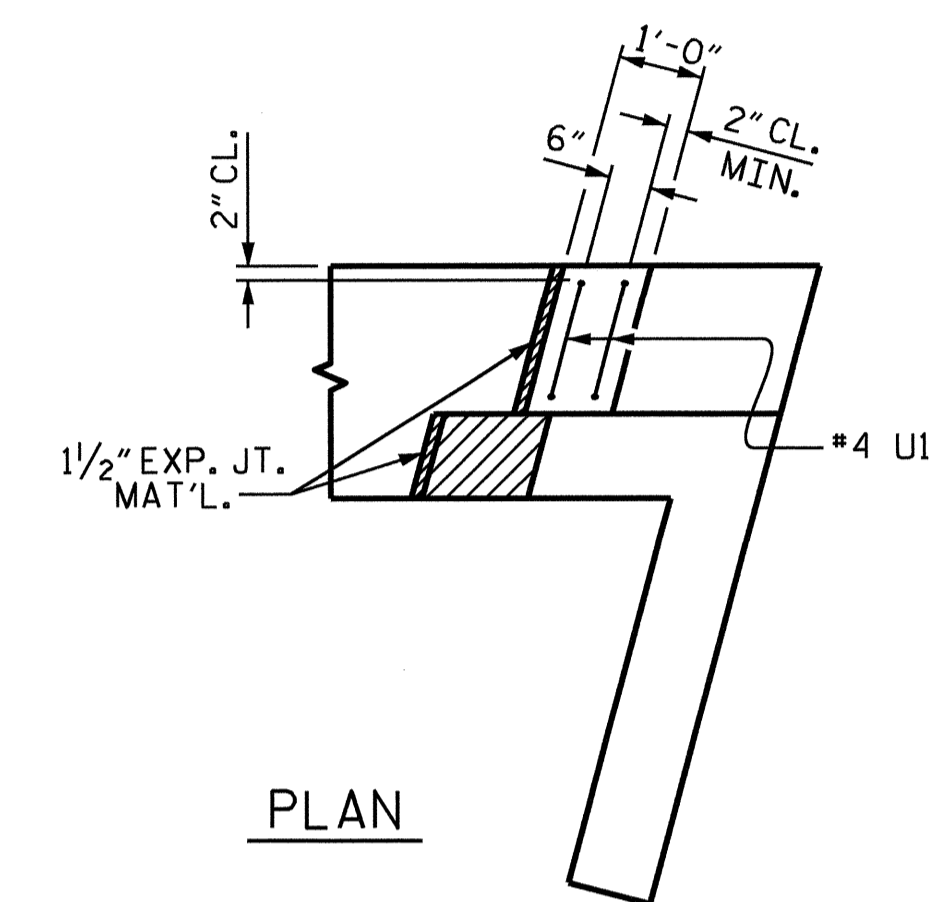
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER 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.

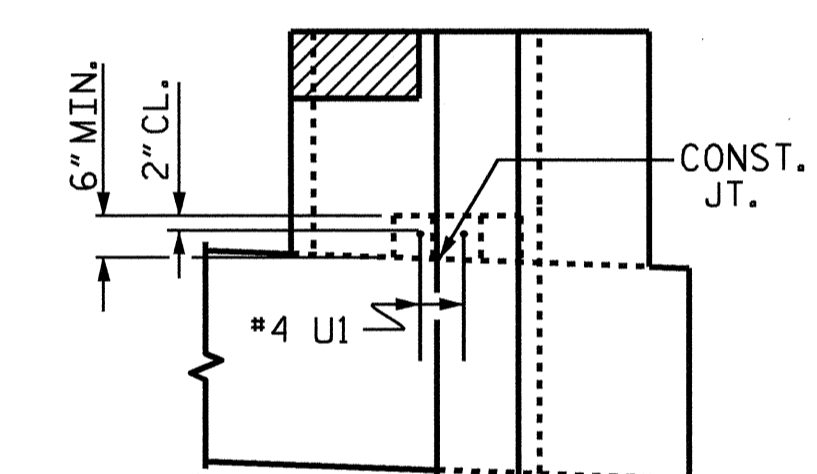


PLAN



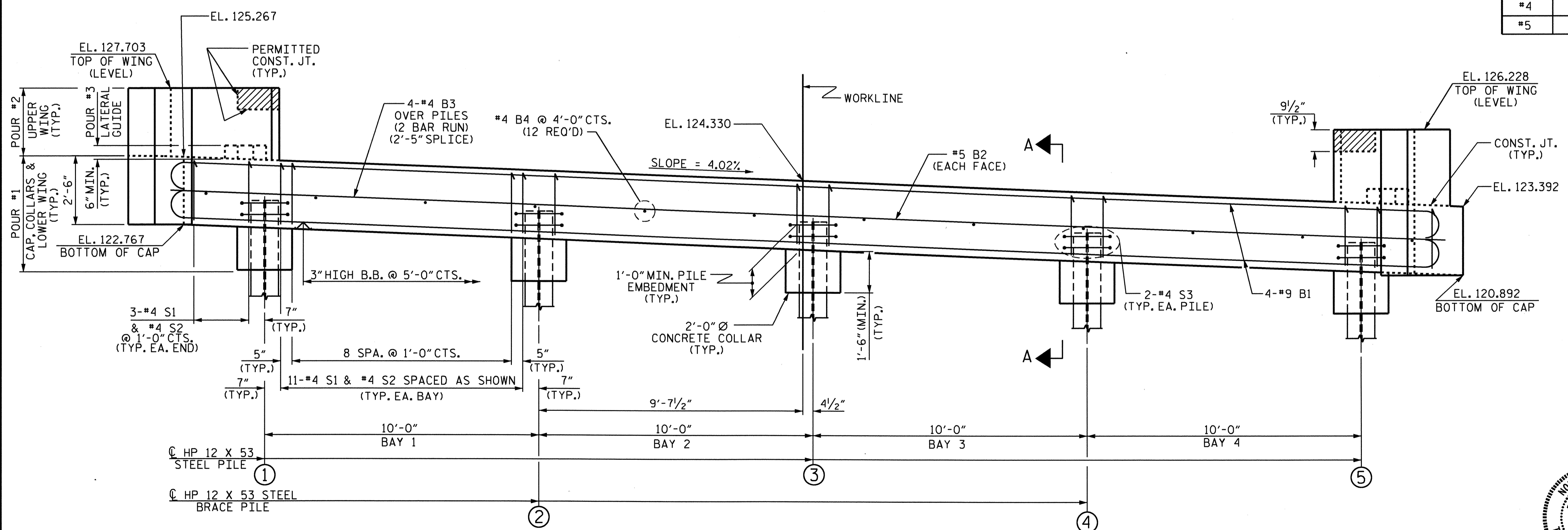
PLAN

TOP OF PILE ELEV. CHART	
PILE	ELEVATION
#1	123.668
#2	123.266
#3	122.865
#4	122.463
#5	122.061



ELEVATION

LATERAL GUIDE
(EACH END SIMILAR)

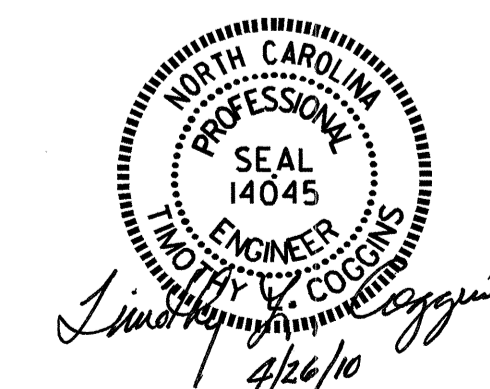


ELEVATION

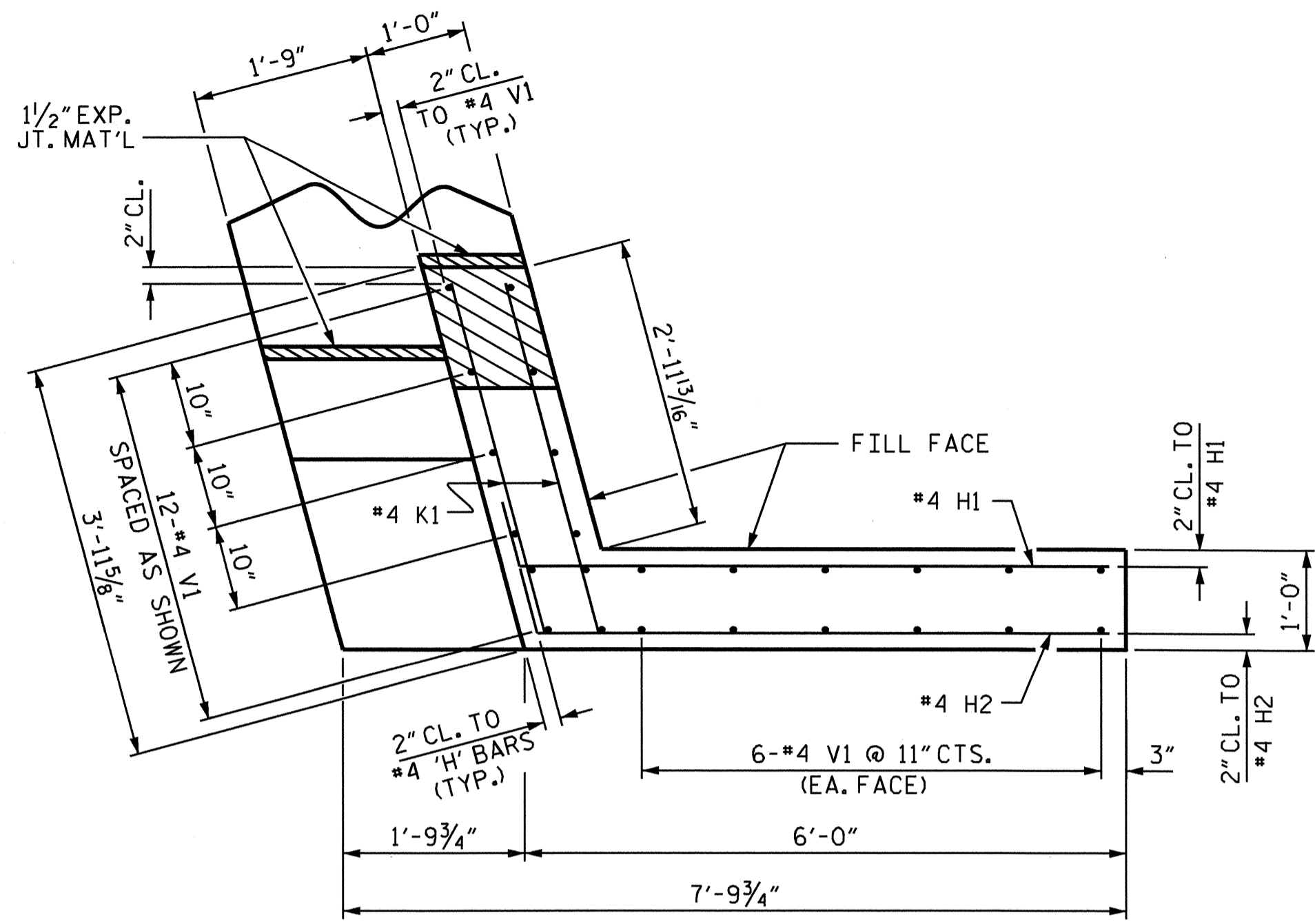
PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 14+20.00 -L-

SHEET 1 OF 3

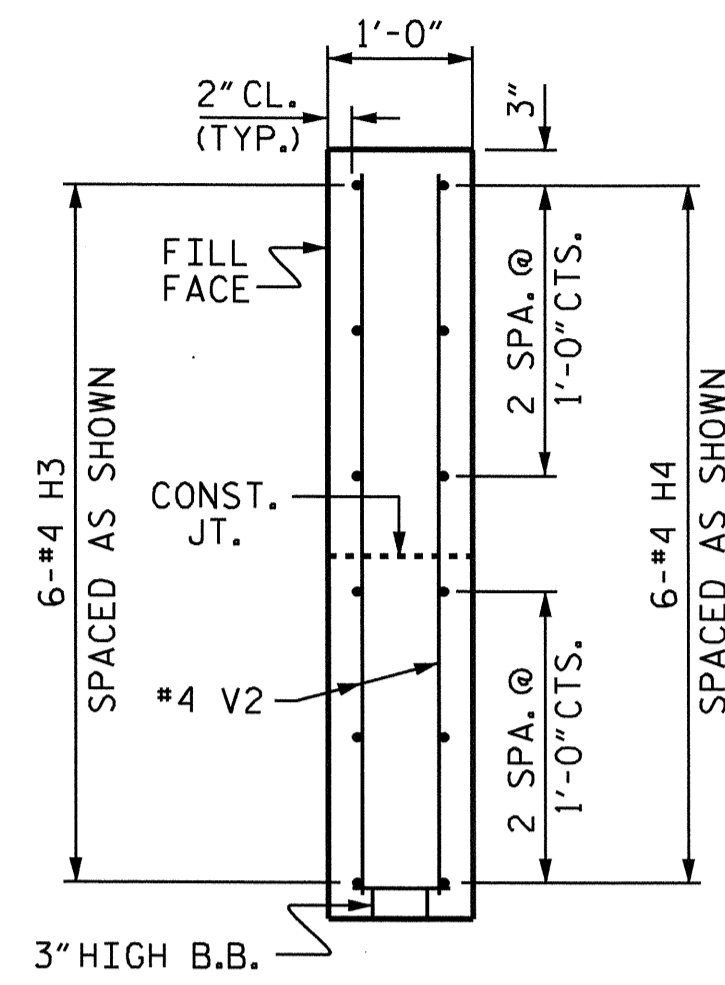
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-11
SUBSTRUCTURE						
END BENT #1						TOTAL SHEETS 59
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



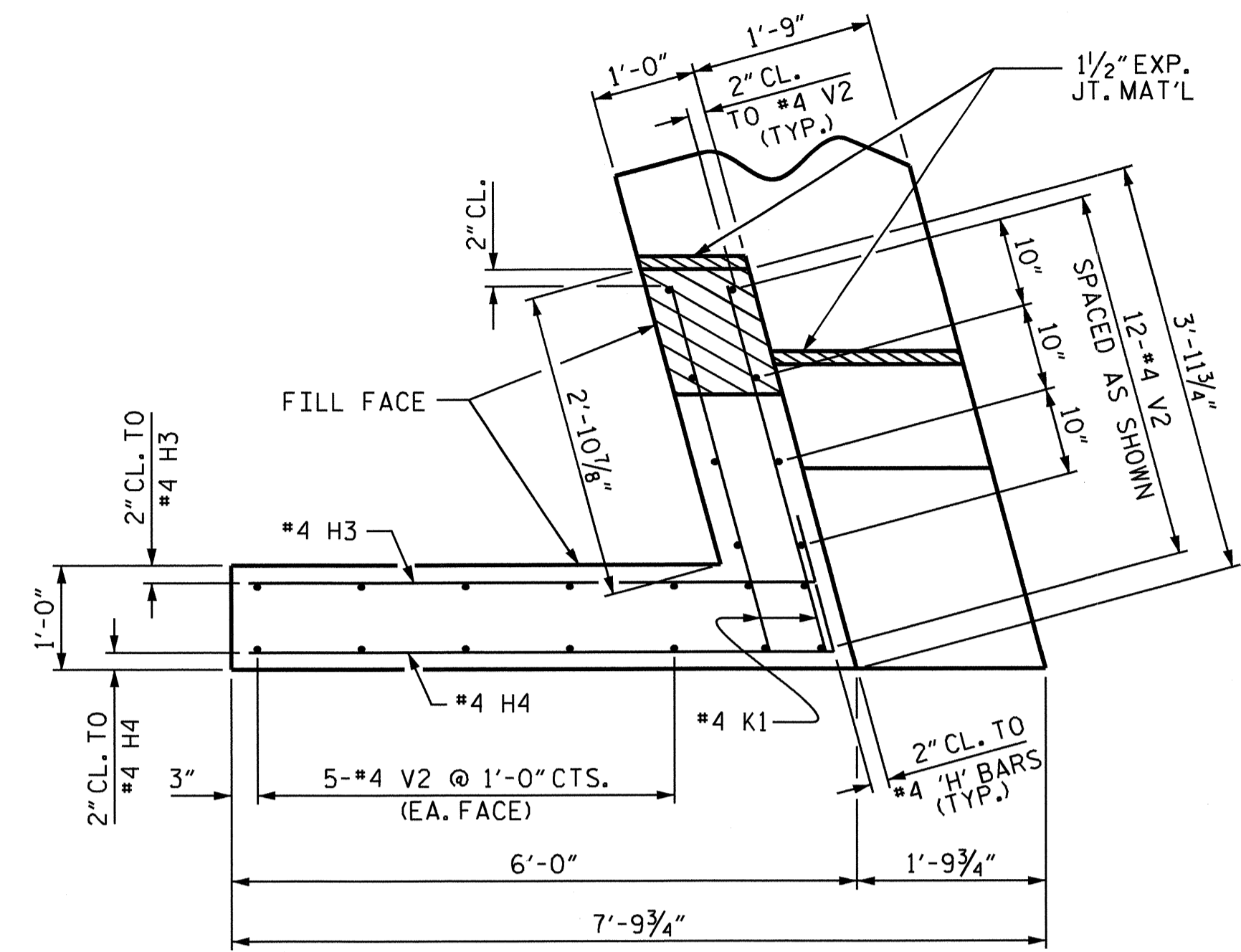
DRAWN BY: M. GUDLAUGSSON DATE: 01/05/10
 CHECKED BY: PEGGY PARISI DATE: 02/02/10



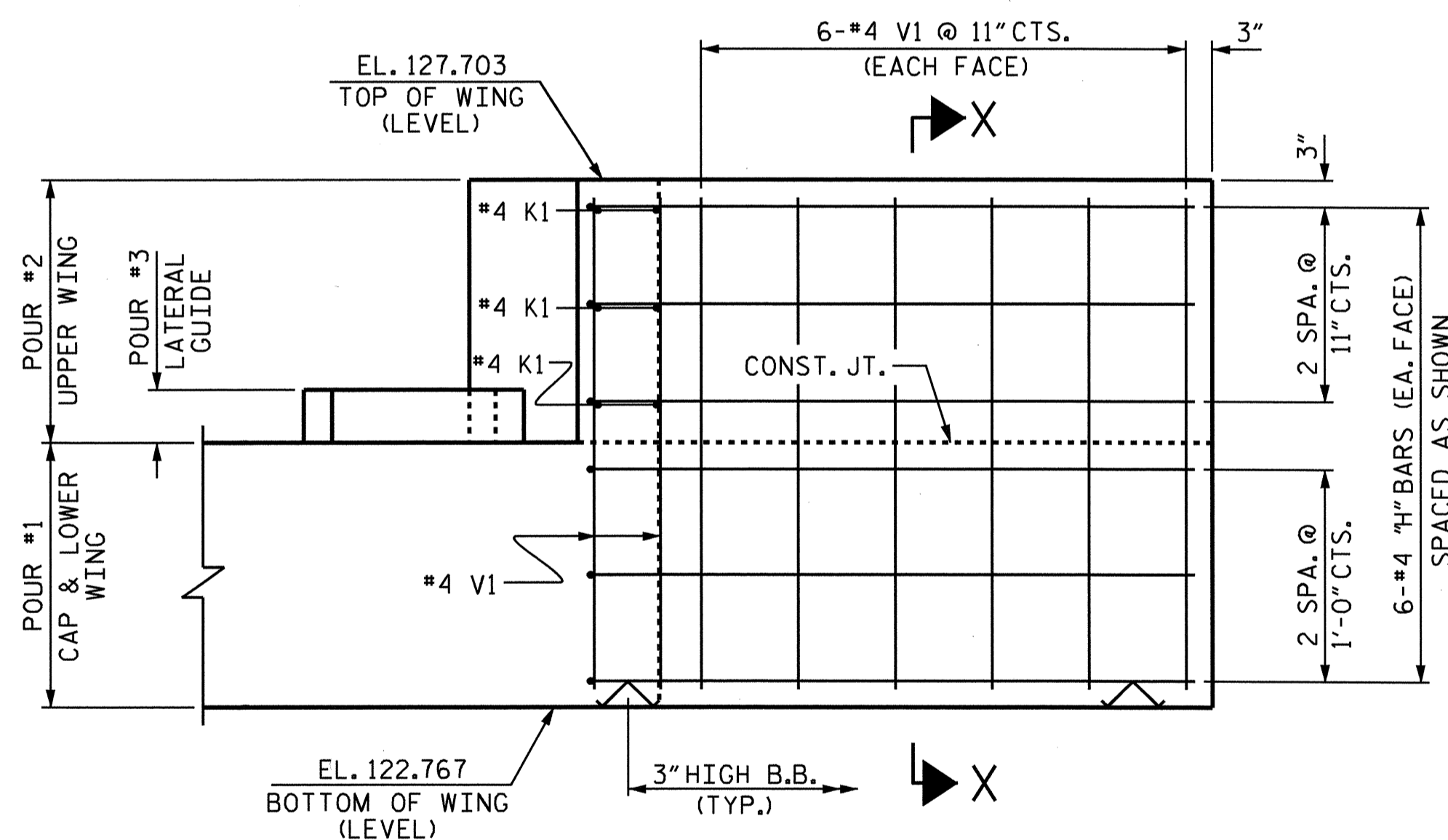
PLAN OF LEFT WING W1



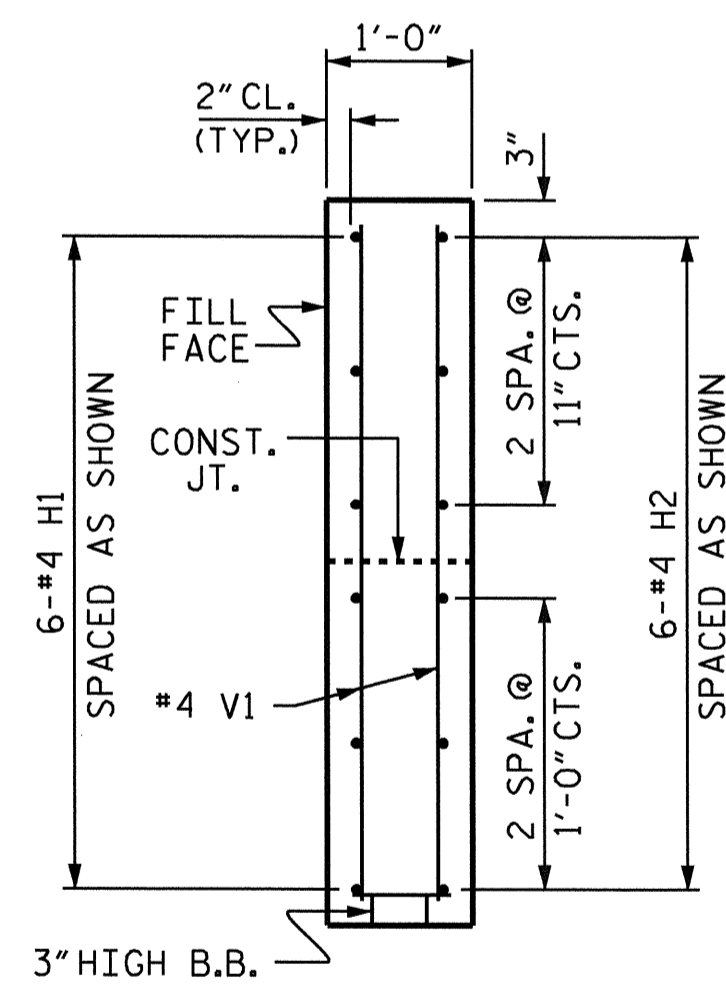
SECTION Y-Y



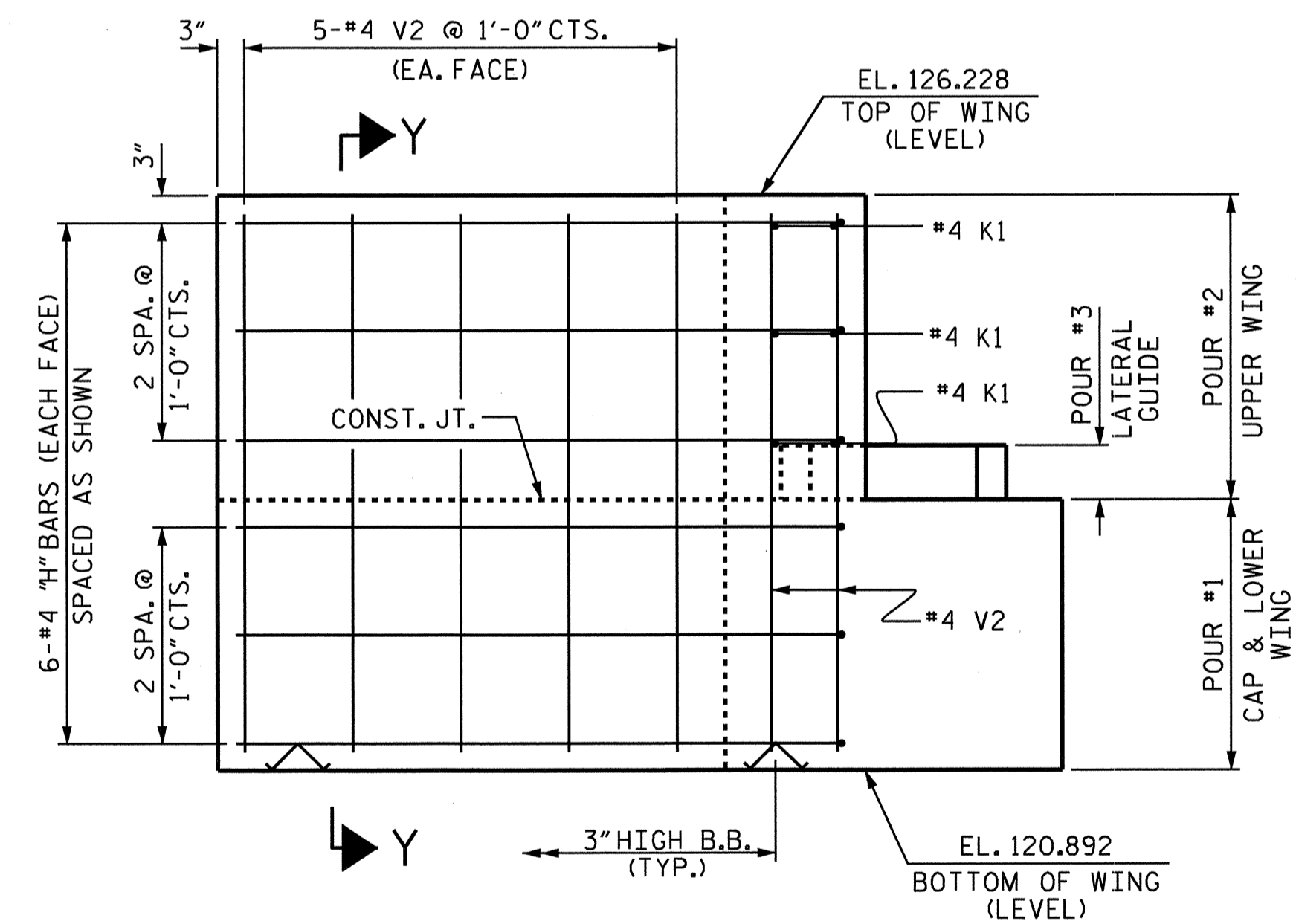
PLAN OF RIGHT WING W2



ELEVATION OF LEFT WING W1



SECTION X-X



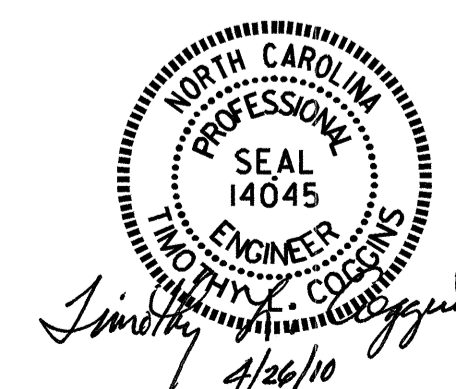
ELEVATION OF RIGHT WING W2

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 14+20.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #1

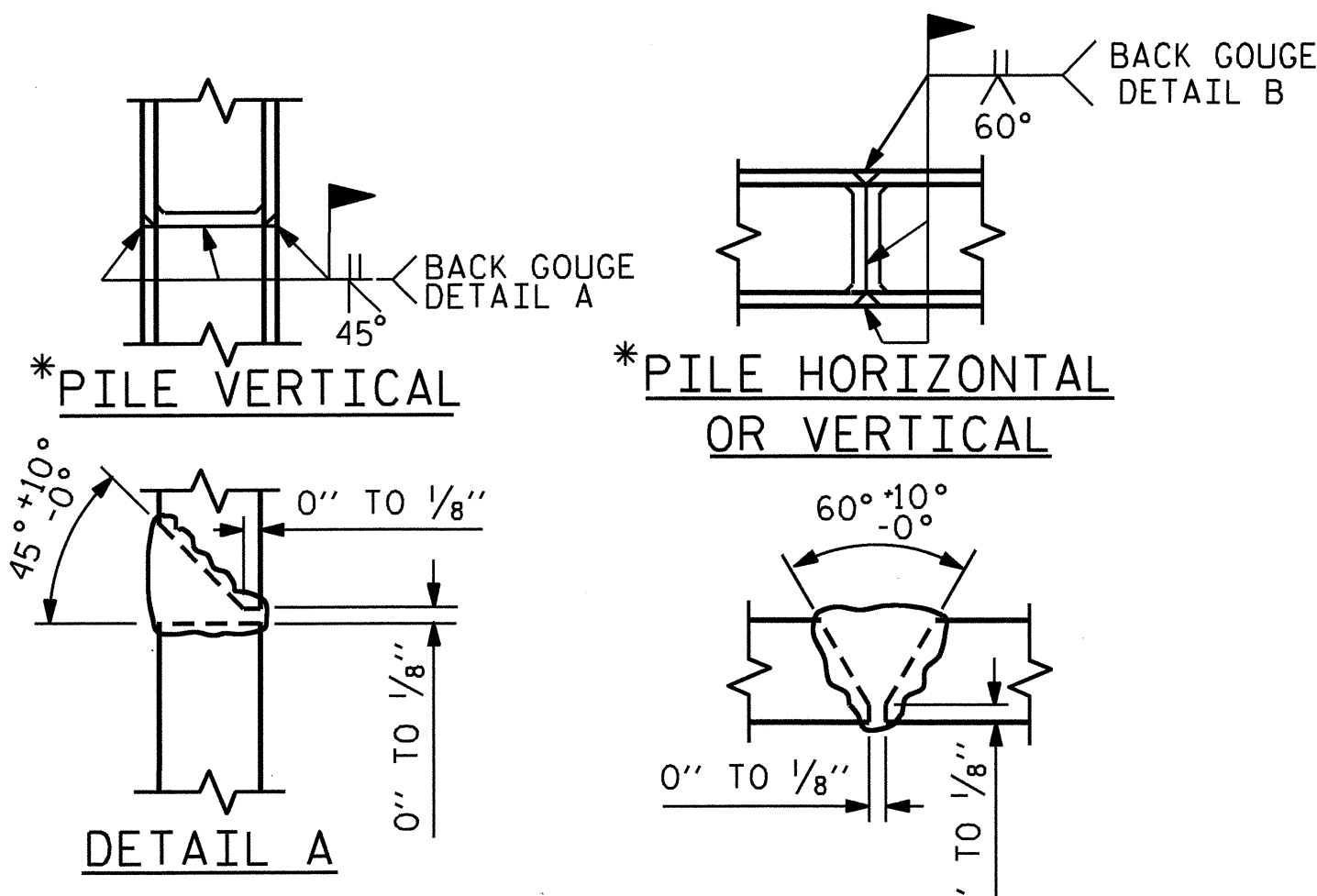


DRAWN BY : M. GUDLAUGSSON DATE : 01/05/10
 CHECKED BY : PEGGY PARISI DATE : 02/03/10

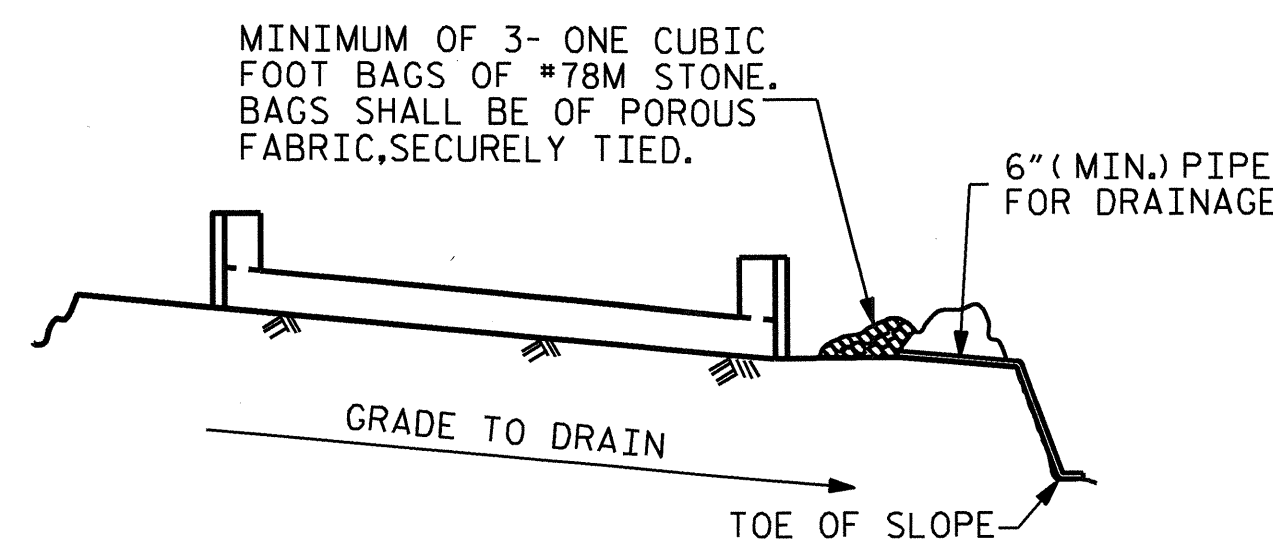
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 taverette

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			59

STR. #1



* POSITION OF PILE DURING WELDING.
PILE SPLICE DETAILS

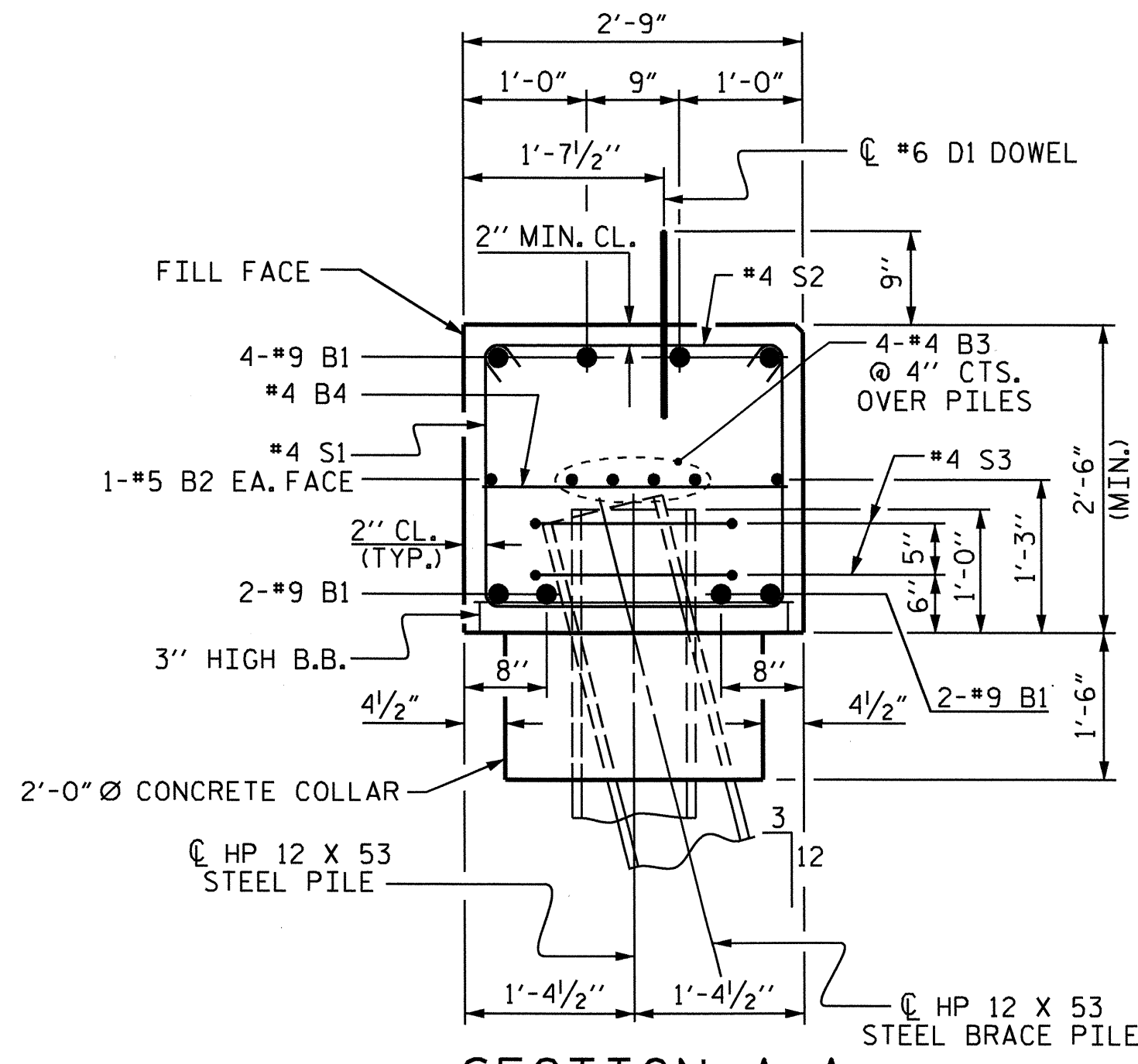


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

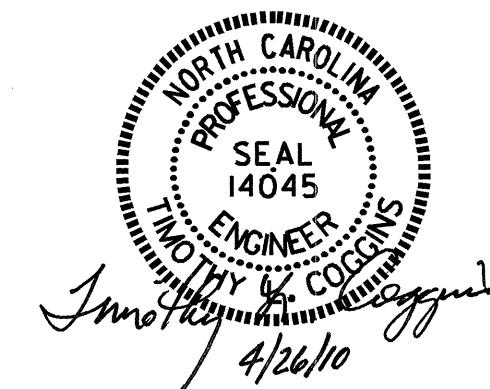
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



SECTION A-A

BAR TYPES		BILL OF MATERIAL				
END BENT #1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	8	#9	1	48'-8"	1324	
B2	2	#5	STR	46'-3"	96	
B3	8	#4	STR	24'-5"	130	
B4	12	#4	STR	2'-5"	19	
D1	26	#6	STR	1'-6"	59	
H1	6	#4	2	6'-6"	26	
H2	6	#4	2	6'-4"	25	
H3	6	#4	3	6'-1"	24	
H4	6	#4	3	6'-3"	25	
K1	12	#4	STR	3'-7"	29	
S1	50	#4	5	7'-5"	248	
S2	50	#4	4	3'-2"	106	
S3	10	#4	6	6'-6"	43	
U1	4	#4	7	4'-5"	12	
V1	24	#4	STR	4'-7"	73	
V2	22	#4	STR	4'-10"	71	
REINFORCING STEEL				LBS.	2310	
CLASS 'A' CONCRETE						
POUR #1						
CAP, COLLARS & LOWER WINGS				CU. YDS.	13.7	
POUR #2				CU. YDS.	1.7	
UPPER WINGS				CU. YDS.	0.1	
POUR #3				CU. YDS.	15.5	
LATERAL GUIDES				CU. YDS.	0.1	
TOTAL				CU. YDS.	15.5	
HP 12 x 53 STEEL PILES				350 LIN. FT.	3 EA.	
NO. 5				350 LIN. FT.	3 EA.	
PILE REDRIVES					3 EA.	

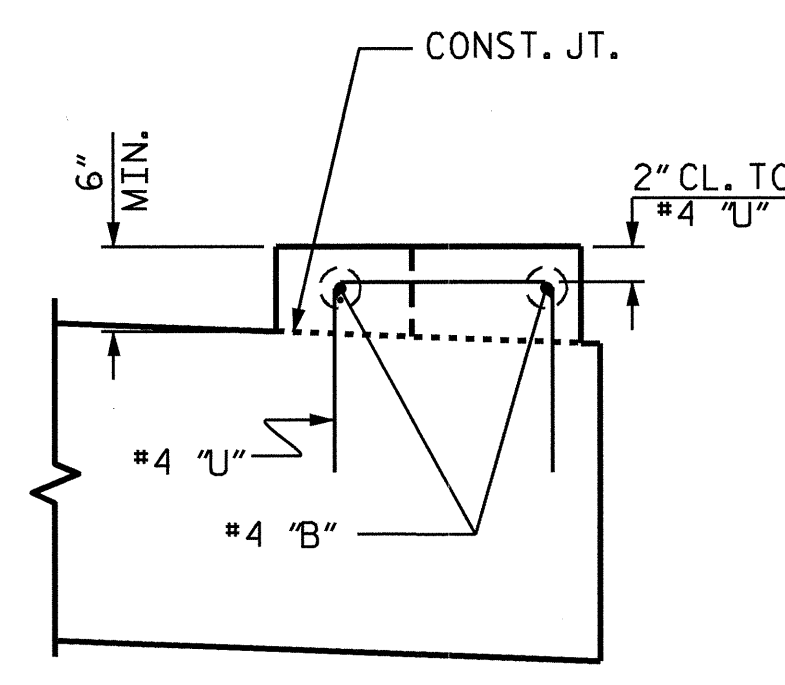
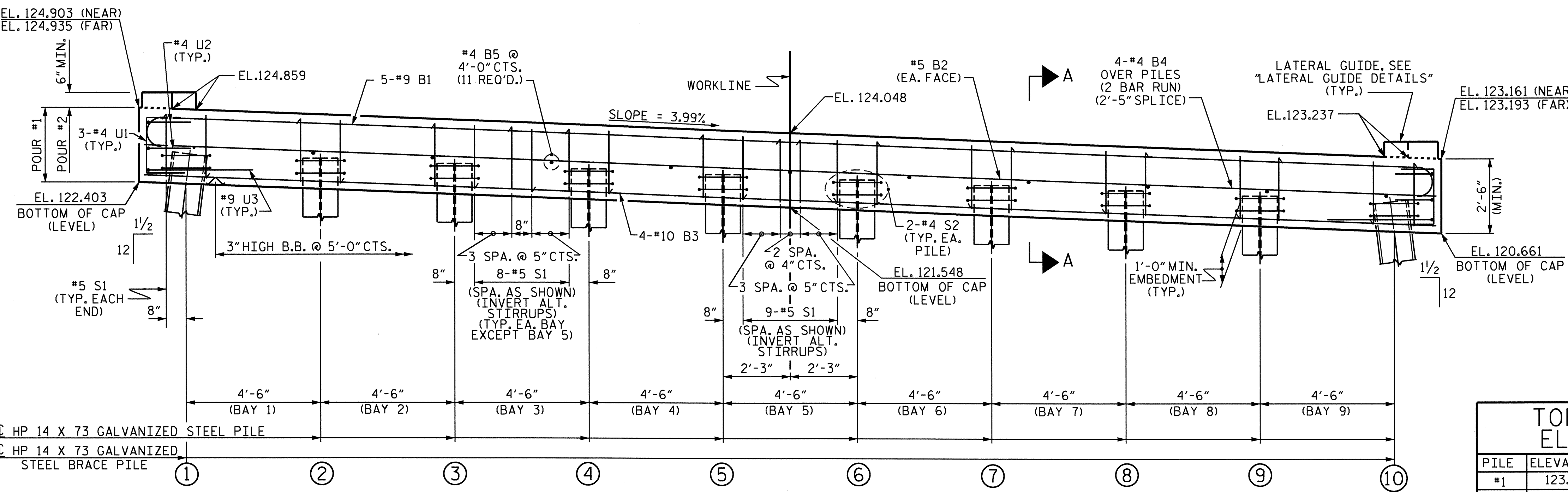
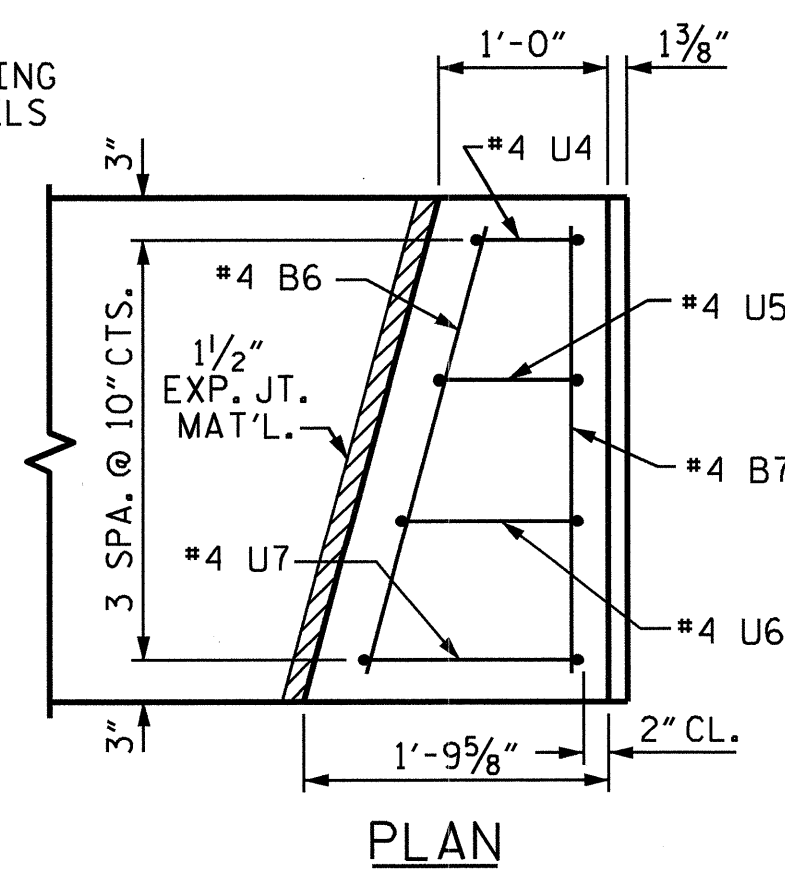
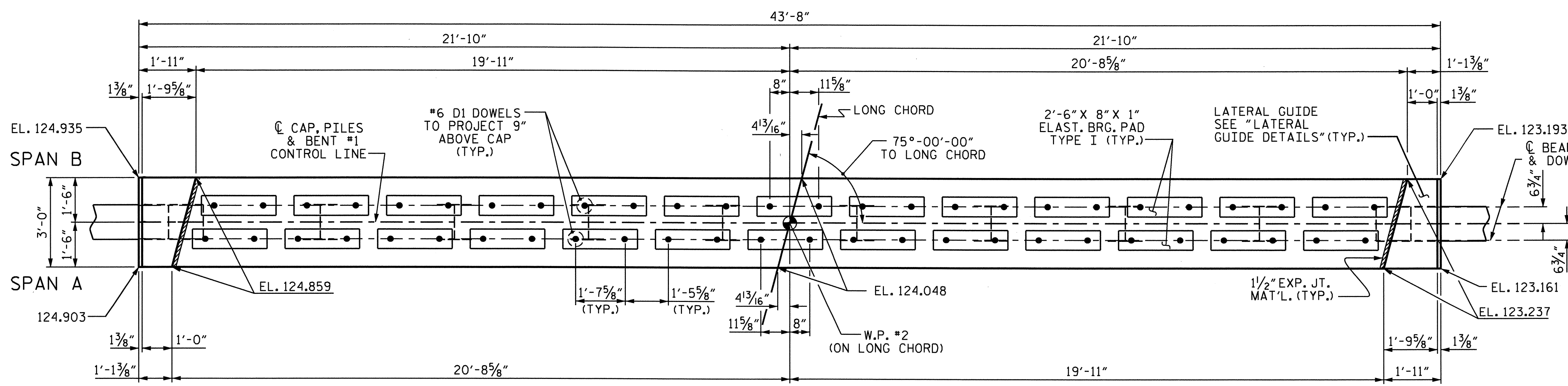


PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 14+20.00 -L-

SHEET 3 OF 3

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			59

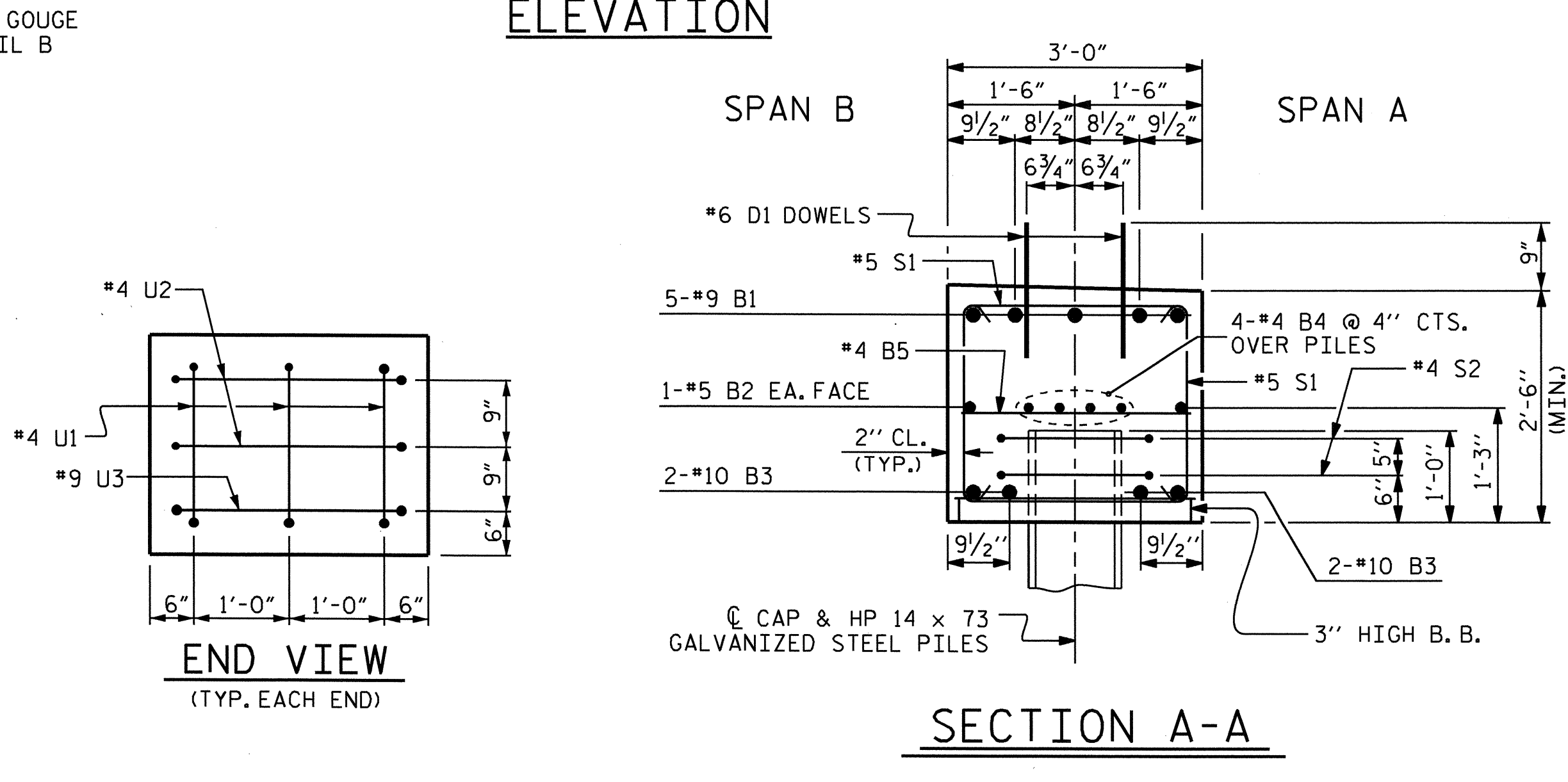
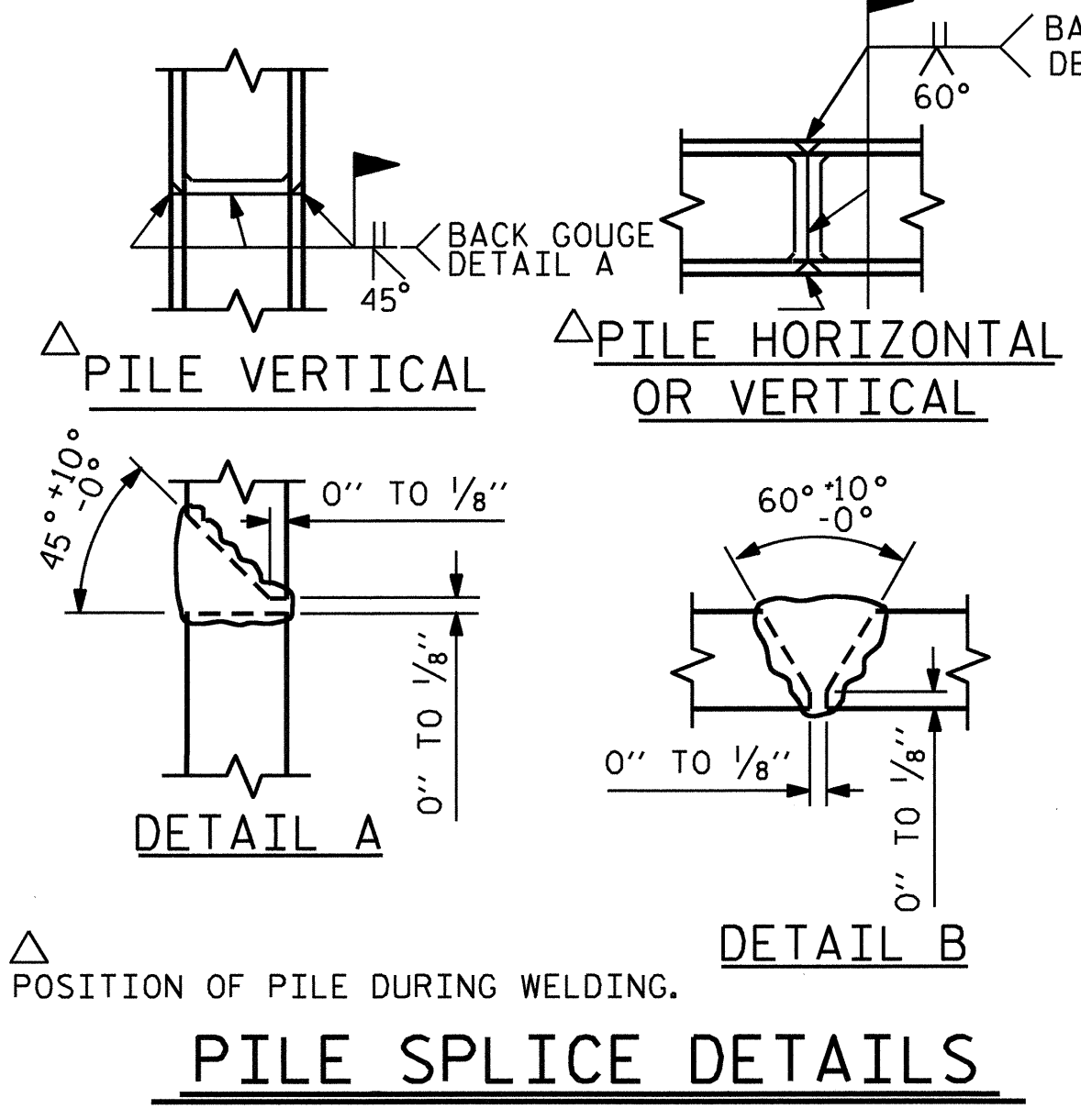
DRAWN BY : M. GUDLAUGSSON DATE : 01/05/10
 CHECKED BY : PEGGY PARISI DATE : 02/02/10



LATERAL GUIDE DETAILS
(TYP. EA. LATERAL GUIDE)

TOP OF PILE ELEV. CHART

PILE	ELEVATION	PILE	ELEVATION
#1	123.363	#6	122.465
#2	123.183	#7	122.286
#3	123.004	#8	122.106
#4	122.824	#9	121.927
#5	122.645	#10	121.747



NOTES

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

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

GALVANIZE THE TOP 20 FEET OF EACH INTERIOR BENT PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

BILL OF MATERIAL

BENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	5	#9		45'-9"	778
B2	2	#5	STR	43'-4"	90
B3	4	#10	STR	43'-4"	746
B4	8	#4	STR	22'-11"	122
B5	11	#4	STR	2'-8"	20
B6	2	#4	STR	2'-9"	4
B7	2	#4	STR	2'-8"	4
D1	52	#6	STR	1'-6"	117
S1	75	#5	2	7'-10"	613
S2	20	#4	3	7'-7"	101
U1	6	#4	4	5'-0"	20
U2	4	#4	4	5'-6"	15
U3	2	#9	4	9'-10"	67
U4	2	#4	4	3'-6"	5
U5	2	#4	4	3'-9"	5
U6	2	#4	4	4'-0"	5
U7	2	#4	4	4'-2"	6

TOTAL REINFORCING STEEL LBS. 2718

CLASS "A" CONCRETE BREAKDOWN

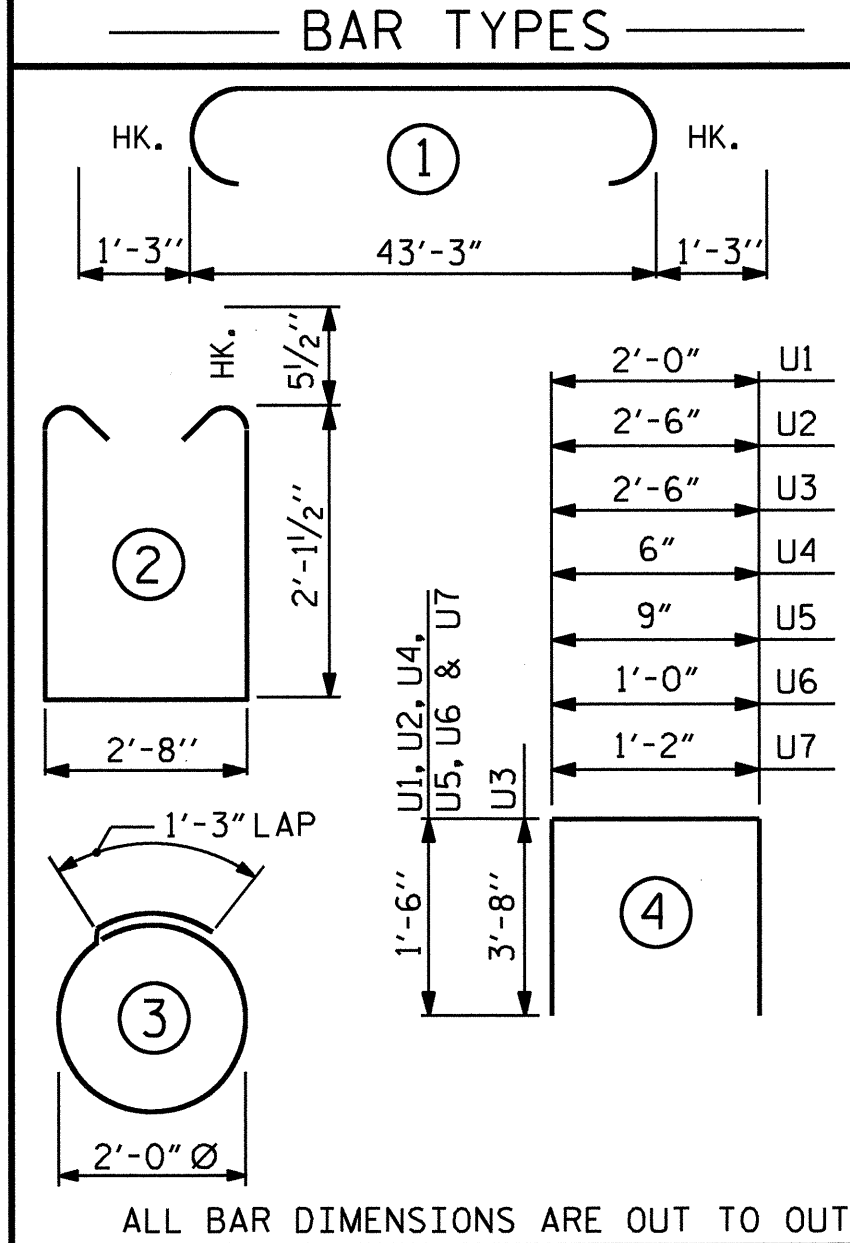
POUR #1 (CAP) C.Y. 12.1

POUR #2 (LATERAL GUIDE) C.Y. 0.2

TOTAL CLASS "A" CONCRETE C.Y. 12.3

HP 14 x 73 GALVANIZED STEEL PILES NO. 10 LIN. FT. 550

PILE REDRIVES 5 EA.



PROJECT NO. B-3693

ROBESON COUNTY

STATION: 14+20.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #1

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

TOTAL SHEETS 59

DRAWN BY: M.GUDLAUGSSON DATE: 01/21/10

CHECKED BY: PEGGY PARISI DATE: 02/03/10

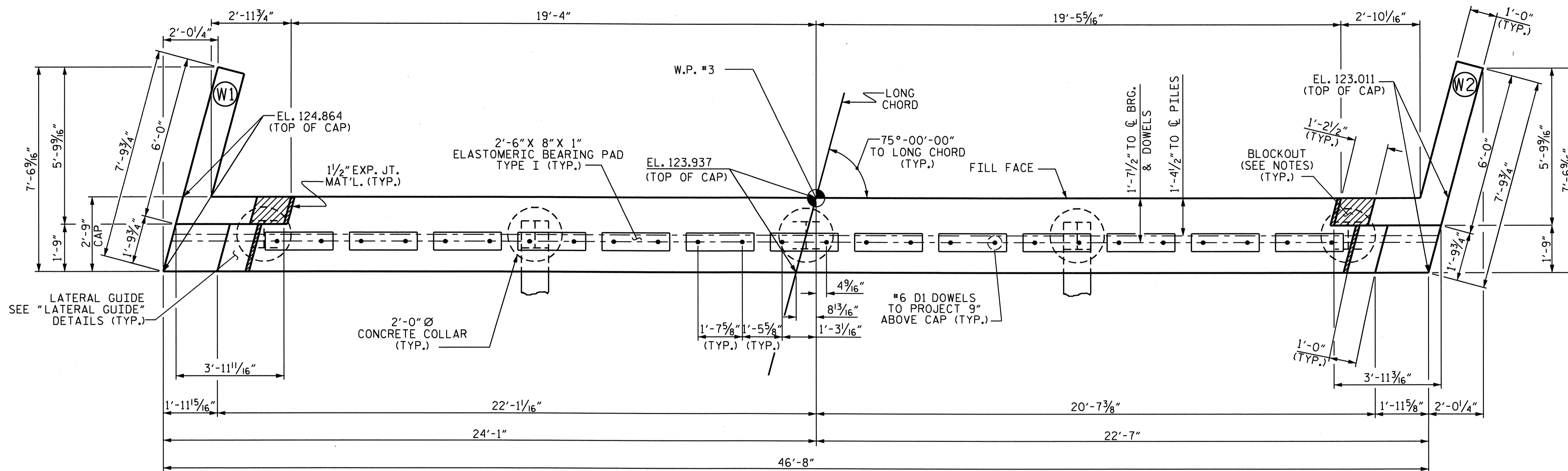
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6 DI DOWELS.

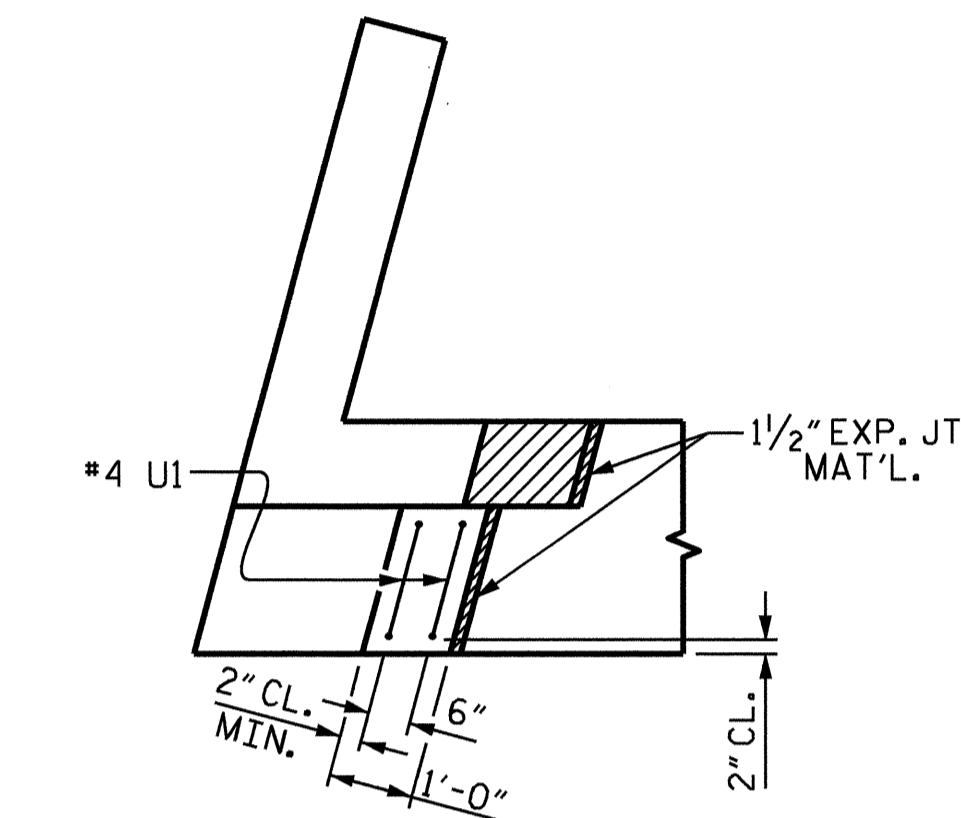
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER 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.

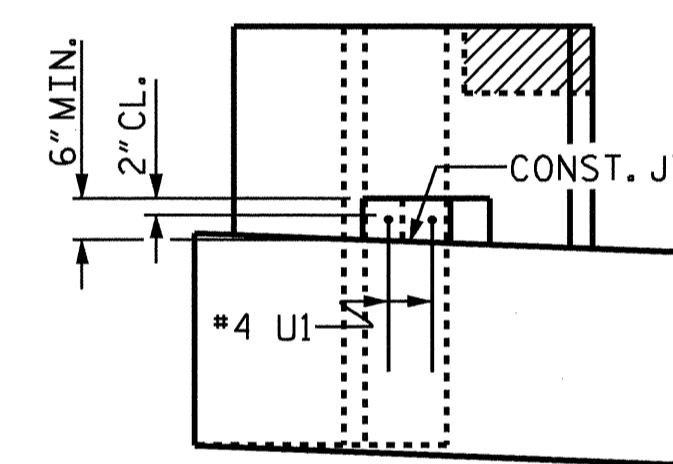


PLAN



PLAN

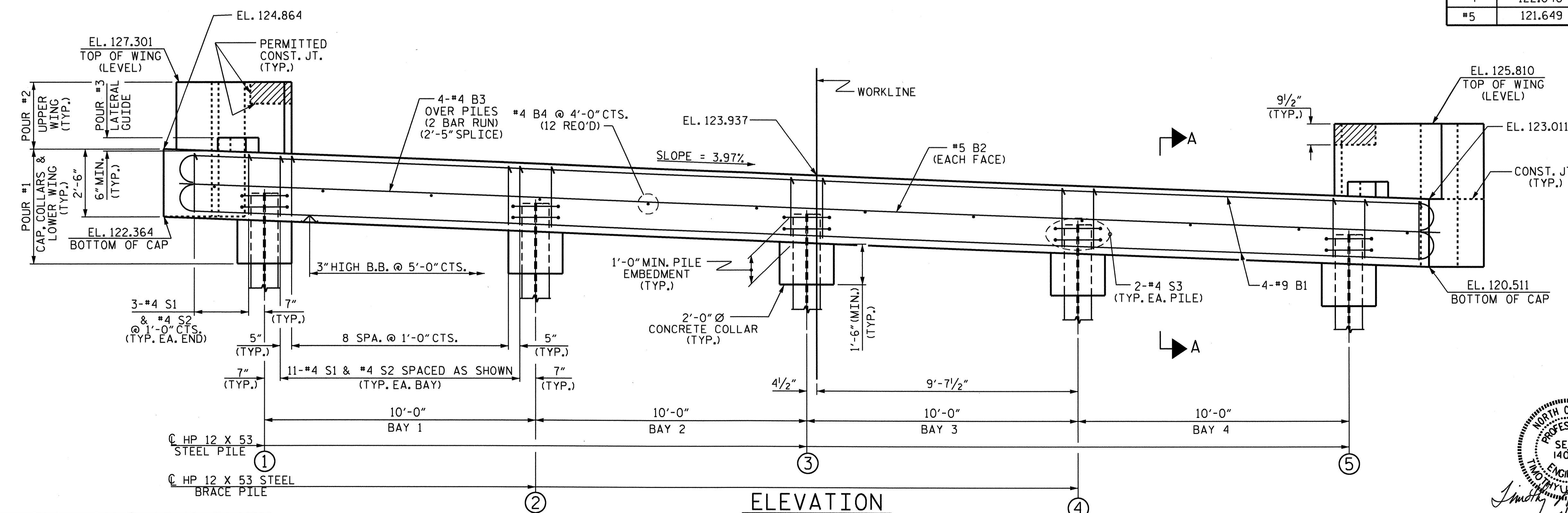
TOP OF PILE ELEV. CHART	
PILE	ELEVATION
#1	123.237
#2	122.840
#3	122.443
#4	122.046
#5	121.649



ELEVATION

LATERAL GUIDE

(EACH END SIMILAR)

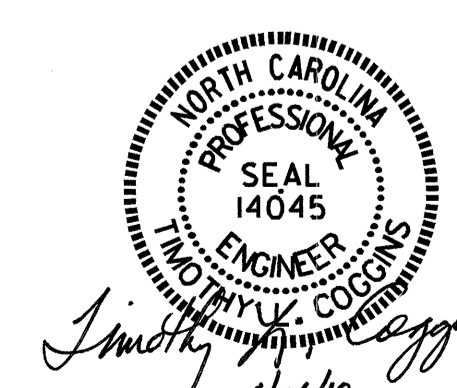


ELEVATION

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 14+20.00 -L-

SHEET 1 OF 3

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



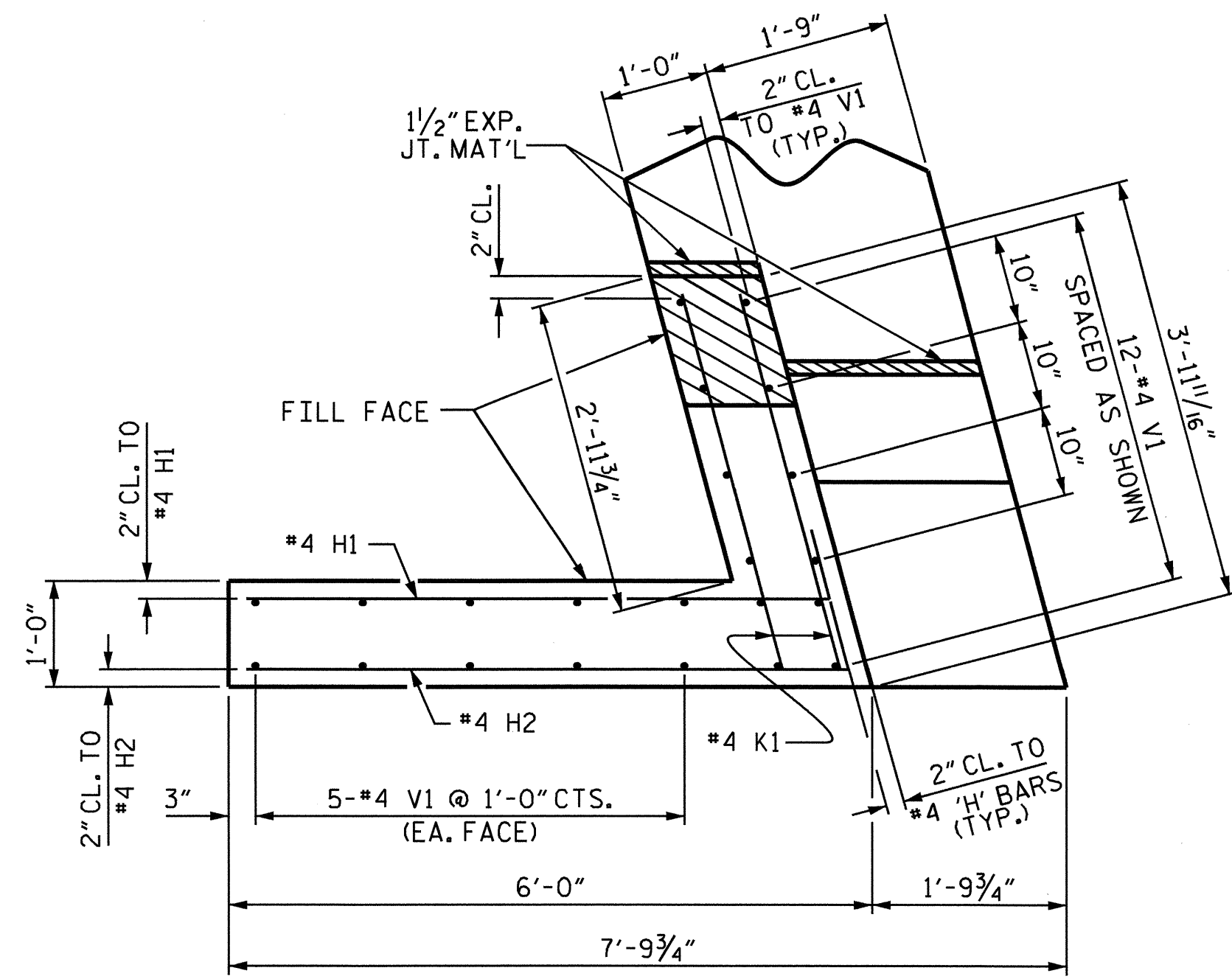
DRAWN BY: M. GUDLAUGSSON DATE: 01/05/10
 CHECKED BY: PEGGY PARISI DATE: 02/02/10

26-APR-2010 08:19
 G:\TIPR\Projects-B\B3693\Structures\Str#1\final.plans\b3693.sd.eb*.01.dgn
 toverette

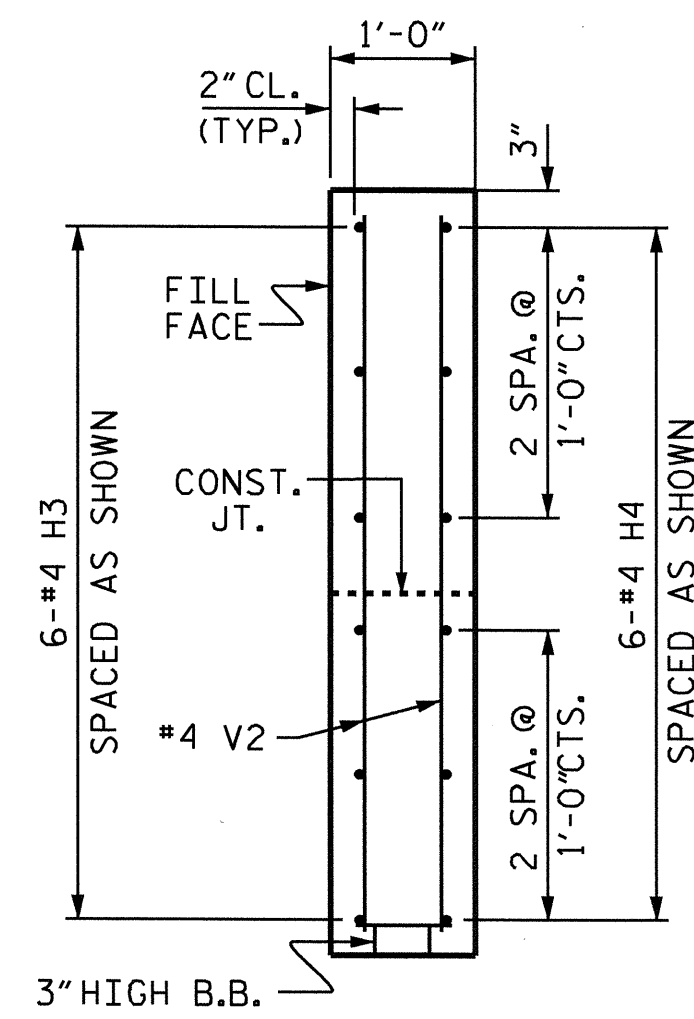
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 59

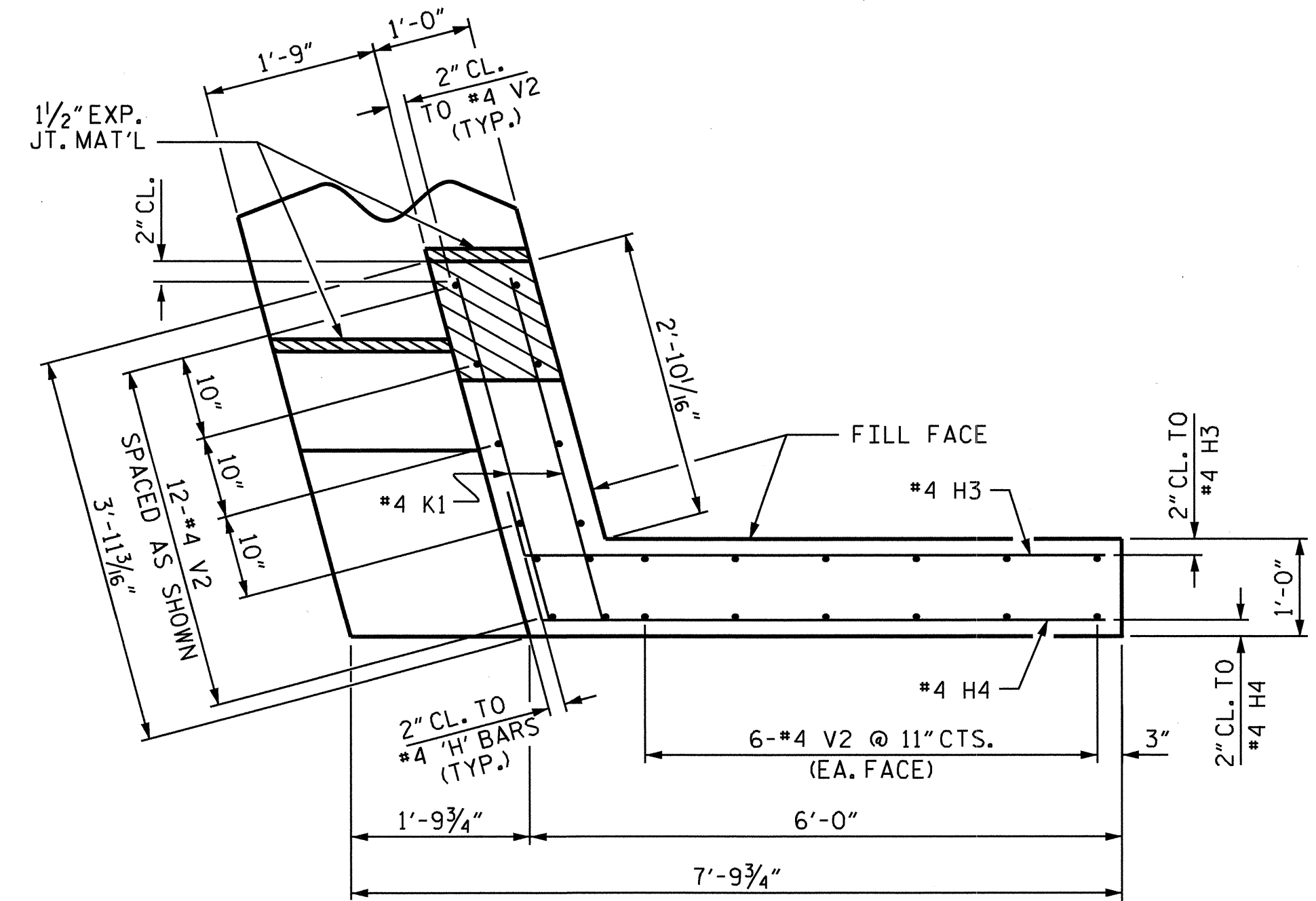
STR. #1



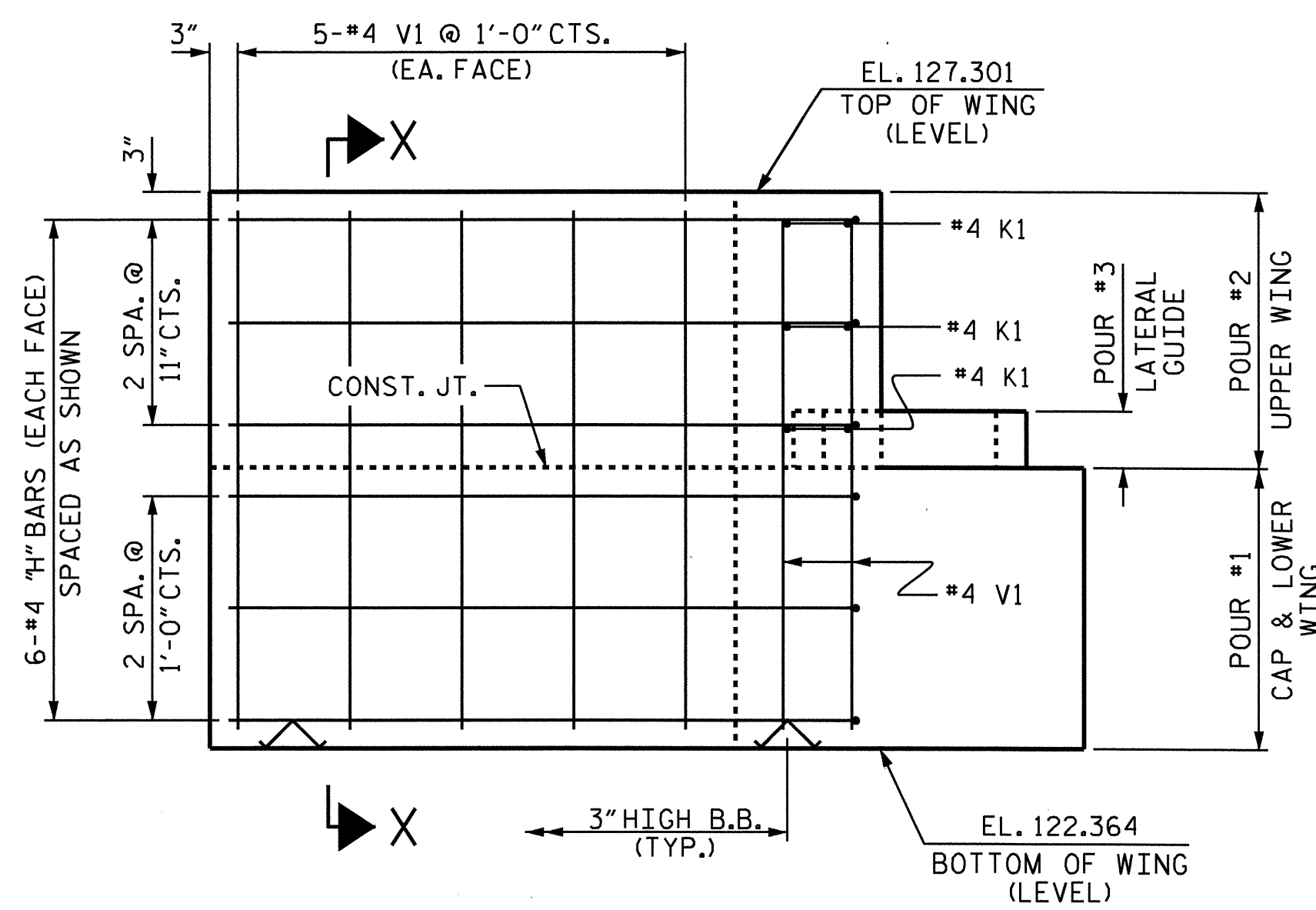
PLAN OF LEFT WING W1



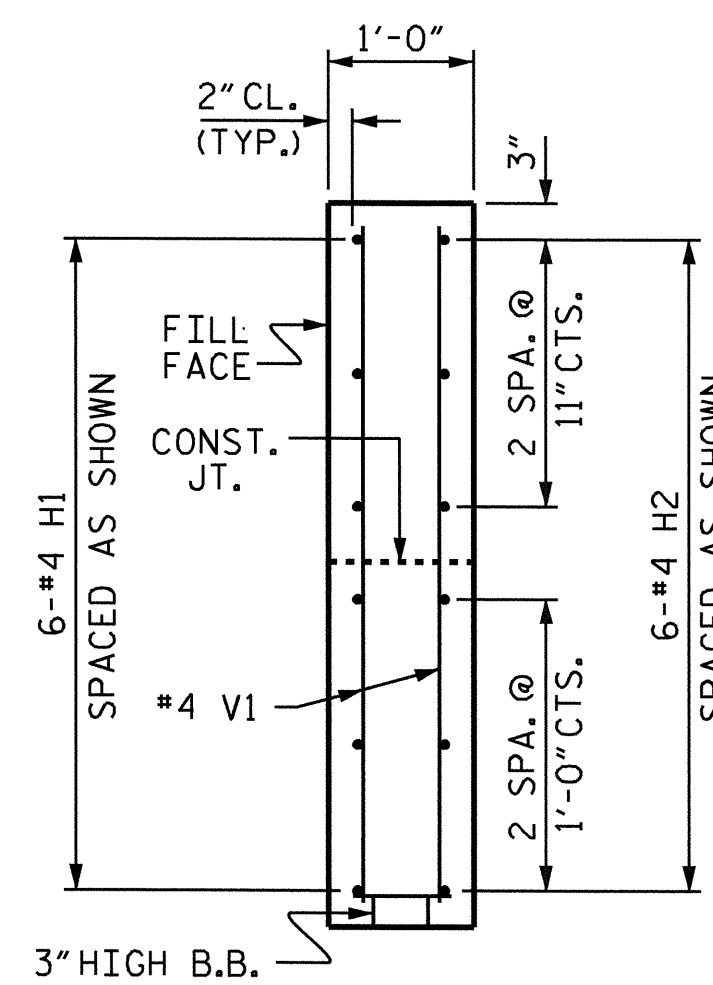
SECTION Y-Y



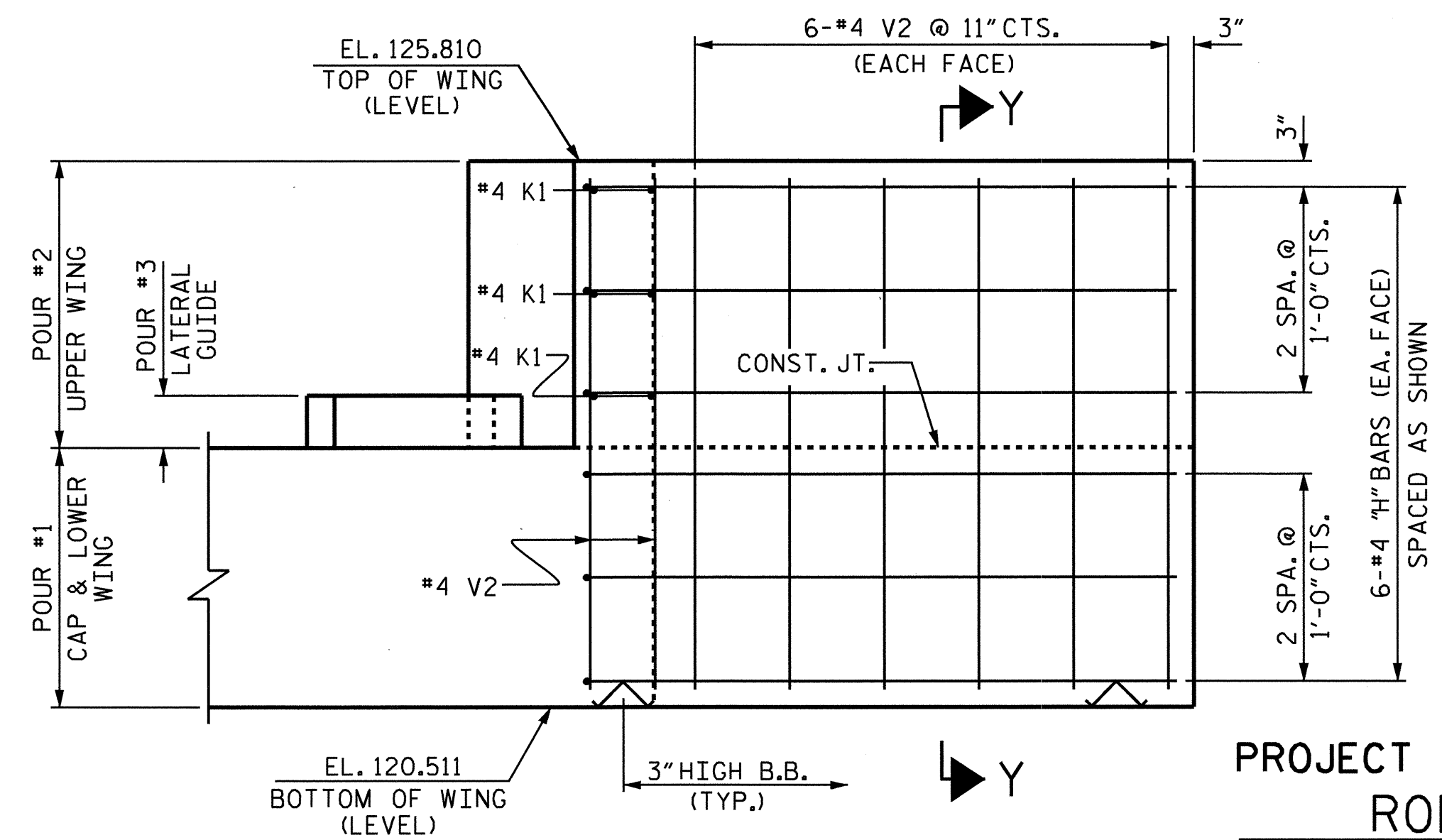
PLAN OF RIGHT WING W2



ELEVATION OF LEFT WING W1



SECTION X-X

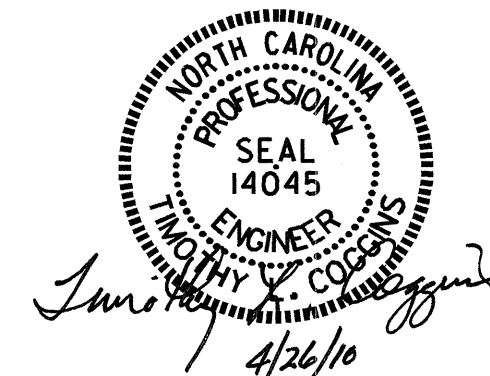


ELEVATION OF RIGHT WING W2

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 14+20.00 -L-

SHEET 2 OF 3

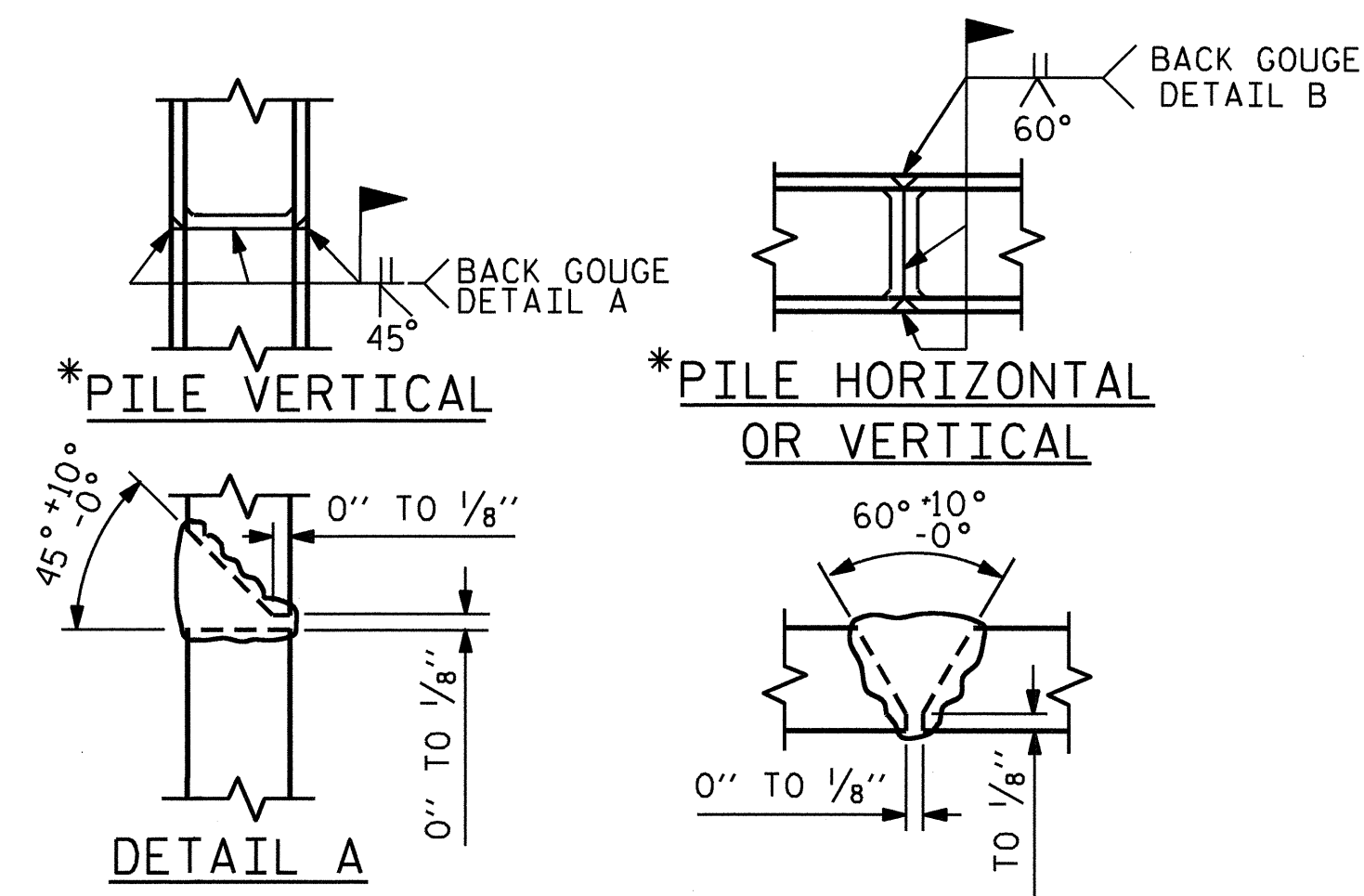
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT #2



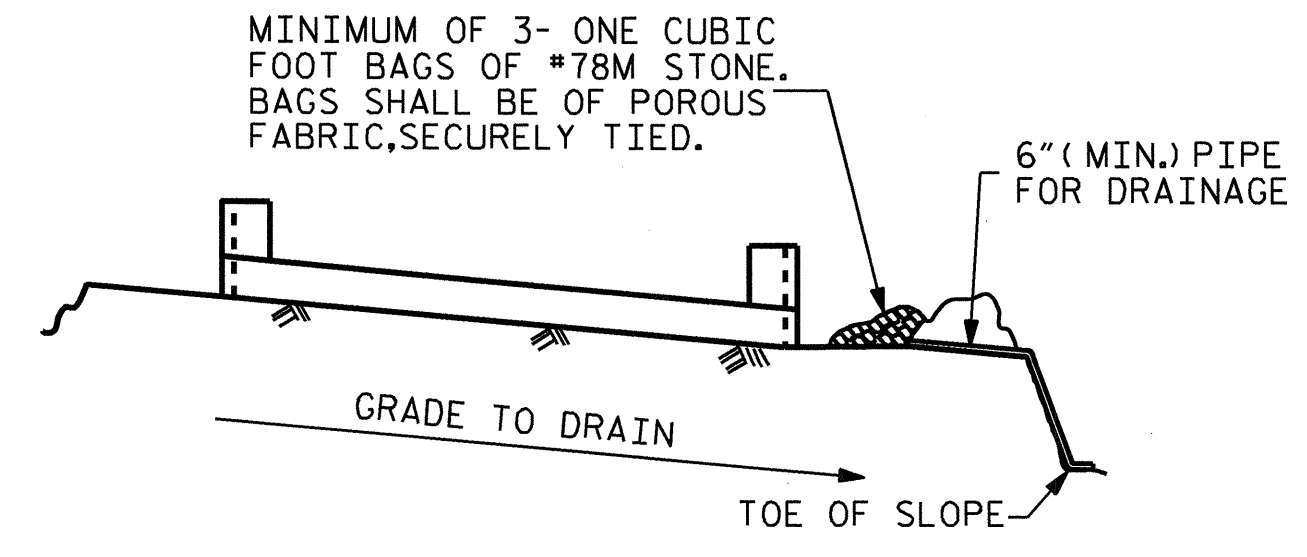
REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

TOTAL SHEETS: 59

DRAWN BY: M. GUDLAUGSSON DATE: 01/05/10
 CHECKED BY: PEGGY PARISI DATE: 02/03/10



* POSITION OF PILE DURING WELDING.
PILE SPLICE DETAILS

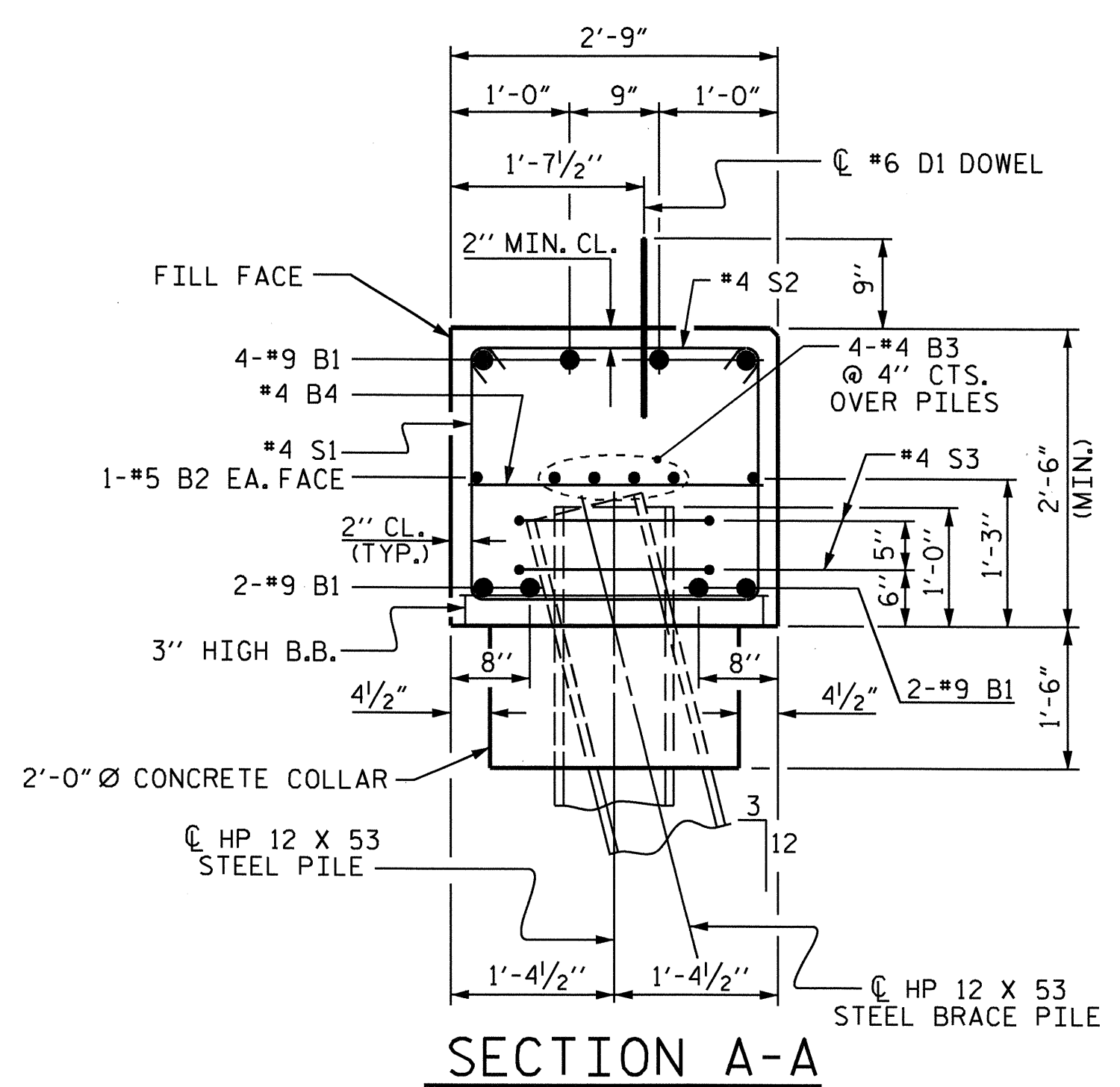


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

TEMPORARY DRAINAGE AT END BENT

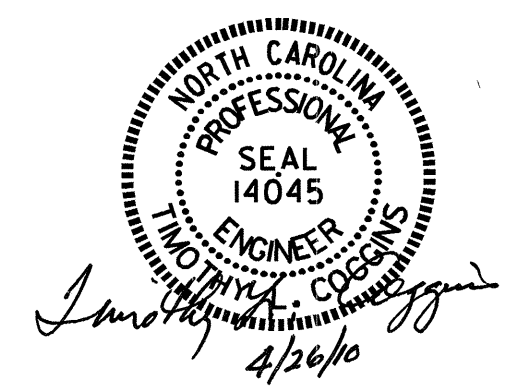


BAR TYPES		BILL OF MATERIAL				
		END BENT #2				
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	8	#9	1	48'-8"	1324	
B2	2	#5	STR	46'-3"	96	
B3	8	#4	STR	24'-5"	130	
B4	12	#4	STR	2'-5"	19	
D1	26	#6	STR	1'-6"	59	
H1	6	#4	3	6'-1"	24	
H2	6	#4	3	6'-3"	25	
H3	6	#4	2	6'-6"	26	
H4	6	#4	2	6'-4"	25	
K1	12	#4	STR	3'-6"	28	
S1	50	#4	5	7'-5"	248	
S2	50	#4	4	3'-2"	106	
S3	10	#4	6	6'-6"	43	
U1	4	#4	7	4'-5"	12	
V1	22	#4	STR	4'-7"	67	
V2	24	#4	STR	4'-9"	76	
REINFORCING STEEL				LBS.	2308	
CLASS 'A' CONCRETE						
POUR #1						
CAP, COLLARS & LOWER WINGS						CU. YDS. 13.7
POUR #2						
UPPER WINGS						CU. YDS. 1.7
POUR #3						
LATERAL GUIDES						CU. YDS. 0.1
TOTAL						CU. YDS. 15.5
HP 12 x 53 STEEL PILES						
NO. 5						275 LIN. FT.
PILE REDRIVES						3 EA.

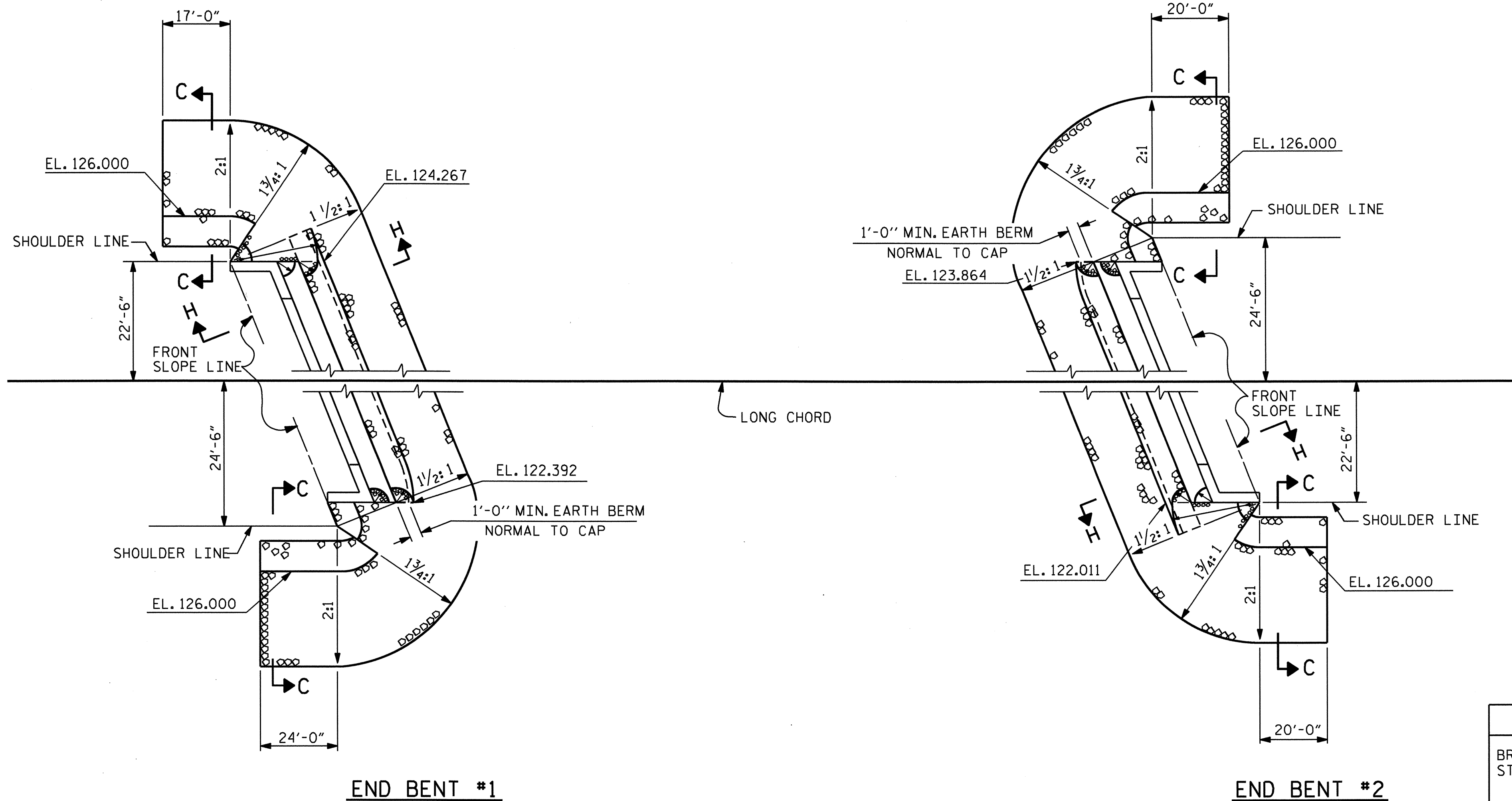
ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 14+20.00 -L-
 SHEET 3 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					SHEET NO. S-17
SUBSTRUCTURE END BENT #2					TOTAL SHEETS 59
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		



DRAWN BY : M. GUDLAUGSSON DATE : 01/05/10
 CHECKED BY : PEGGY PARISI DATE : 02/02/10

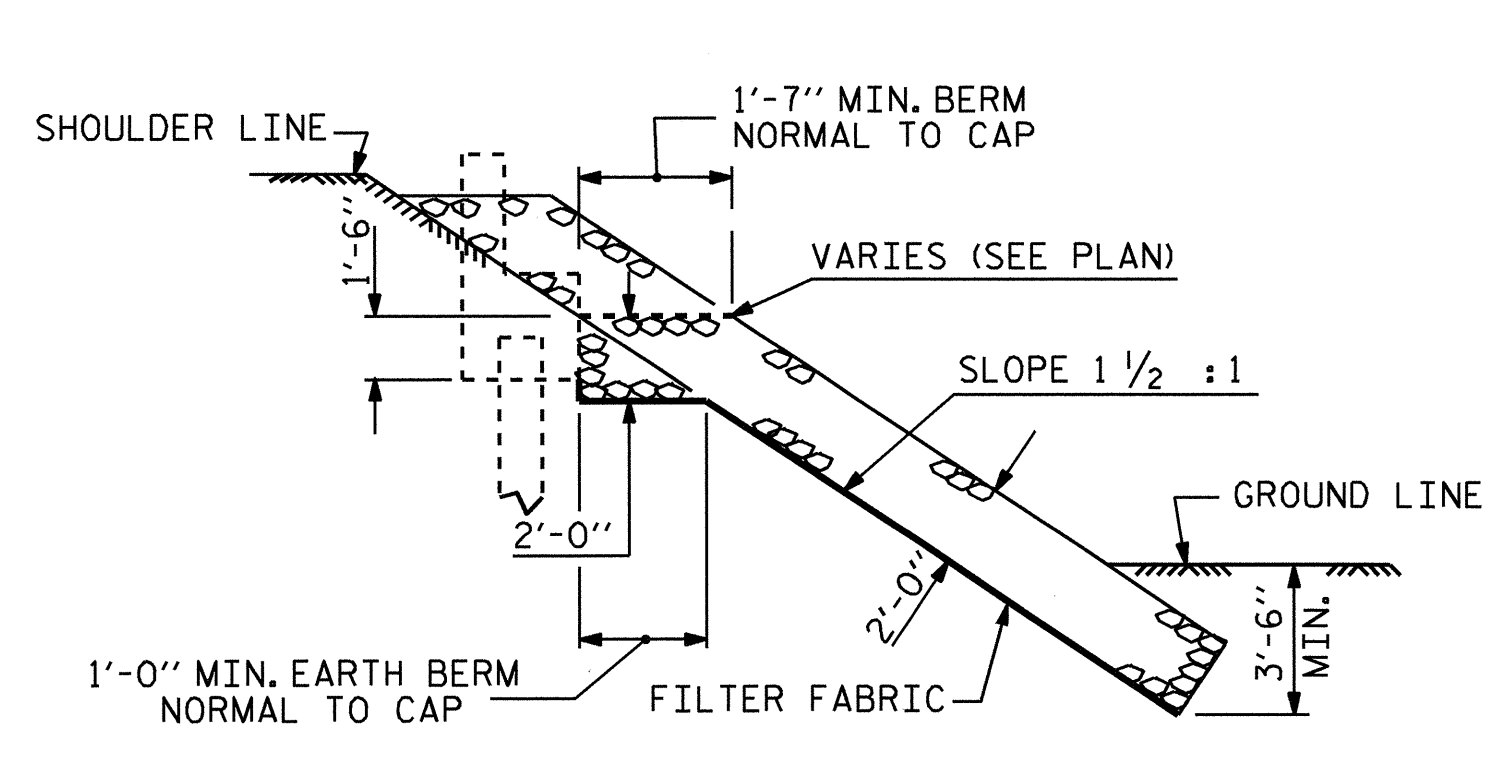


END BENT #1

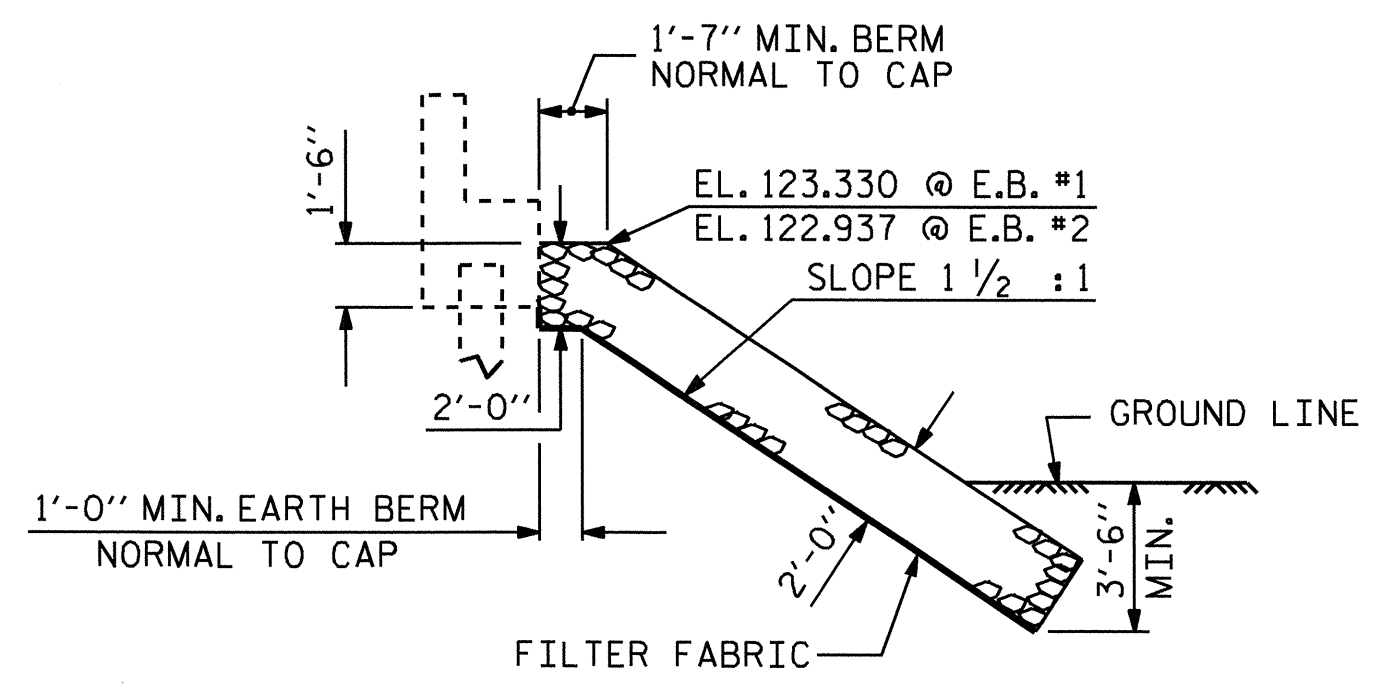
END BENT #2

PLAN

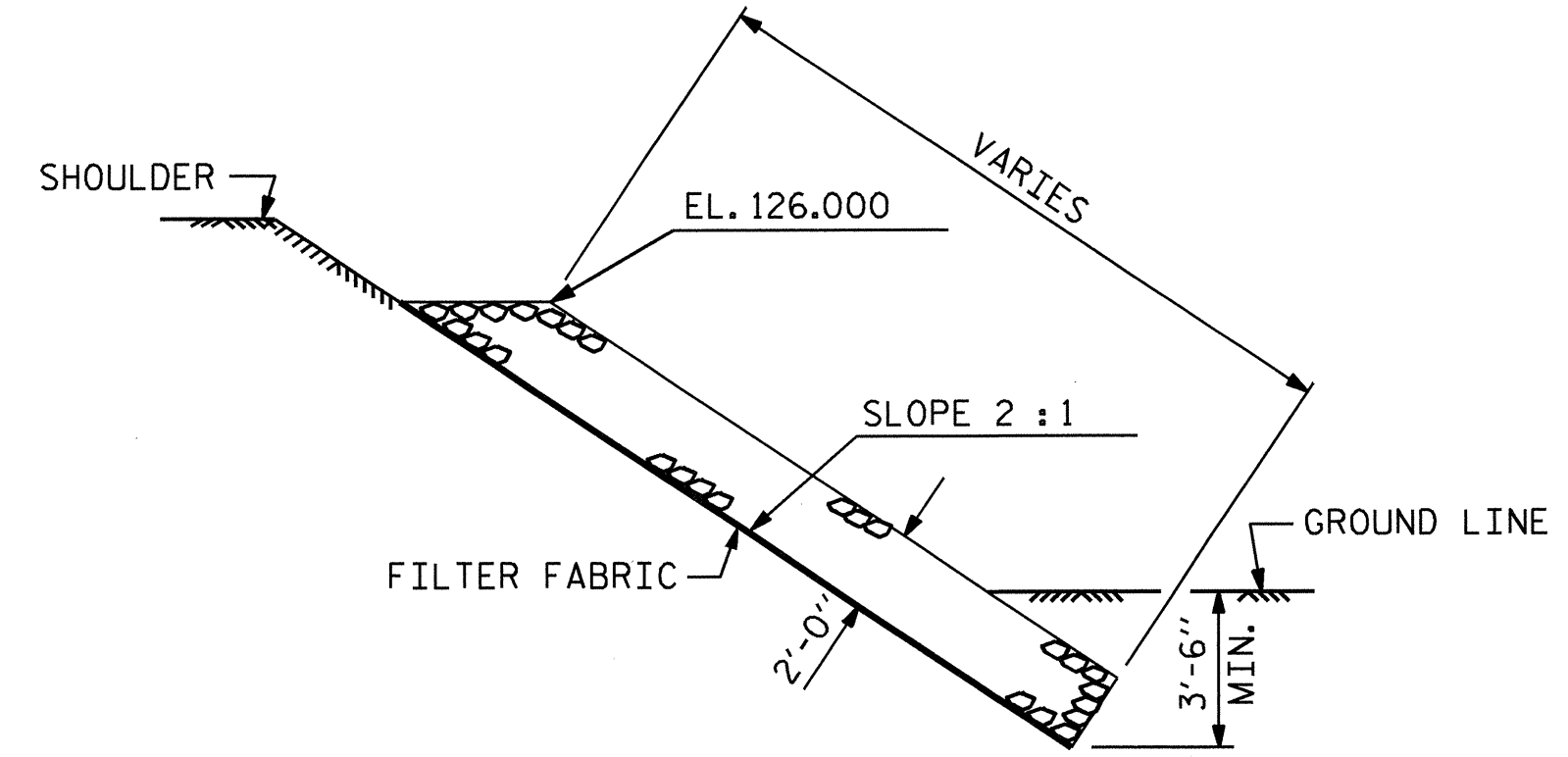
ESTIMATED QUANTITIES		
BRIDGE @ STA. 14+20.00 -L-	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	165	183
END BENT 2	165	183



SECTION H-H



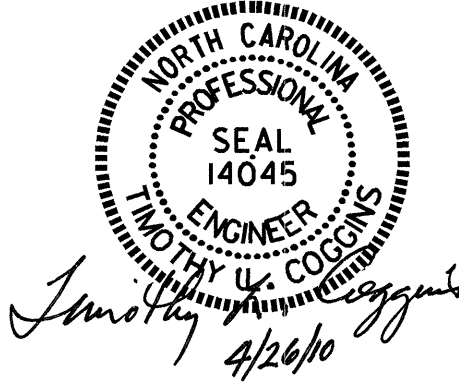
SECTION @ LONG CHORD



SECTION C-C

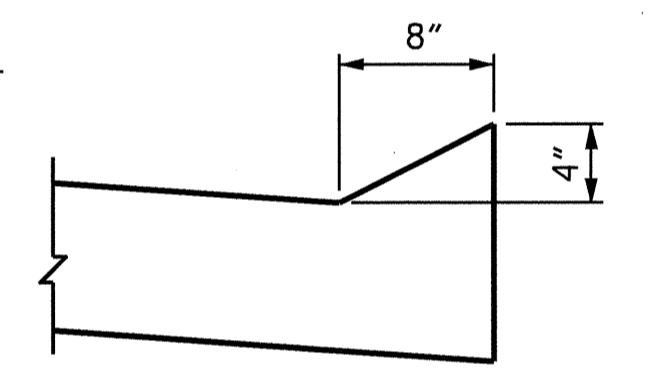
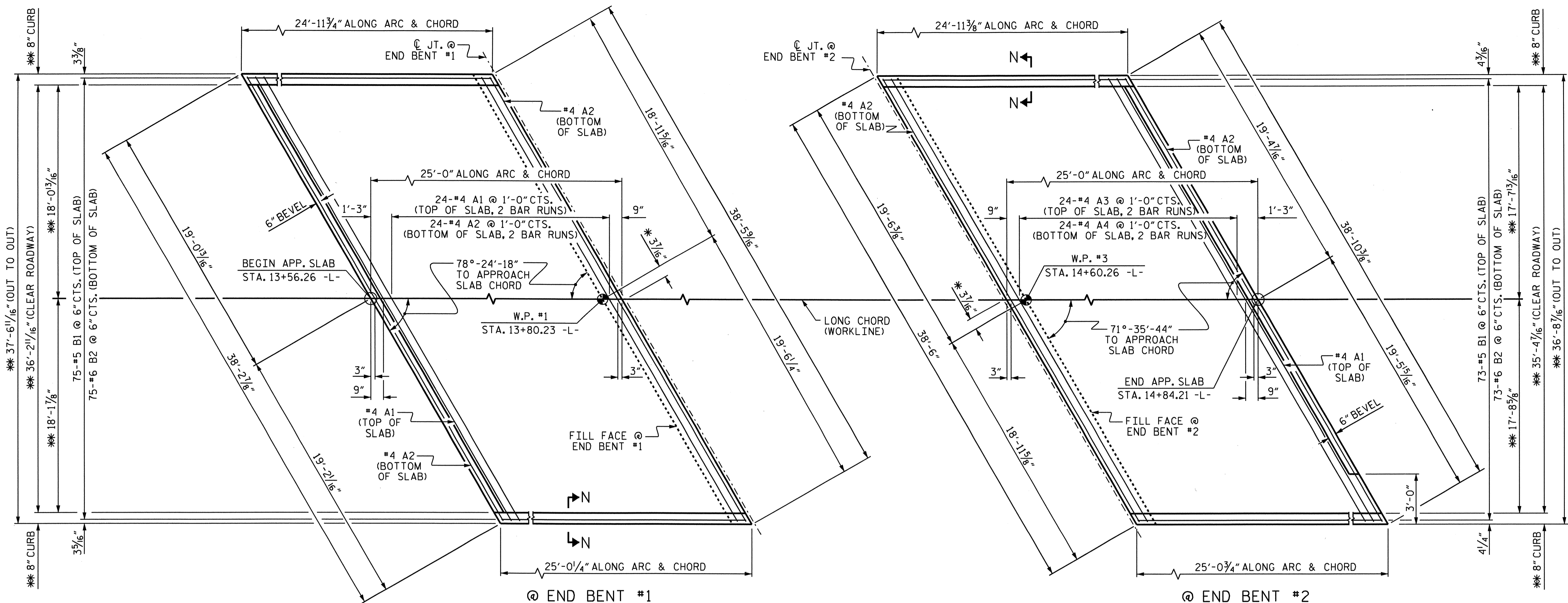
PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 14+20.00 -L-

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



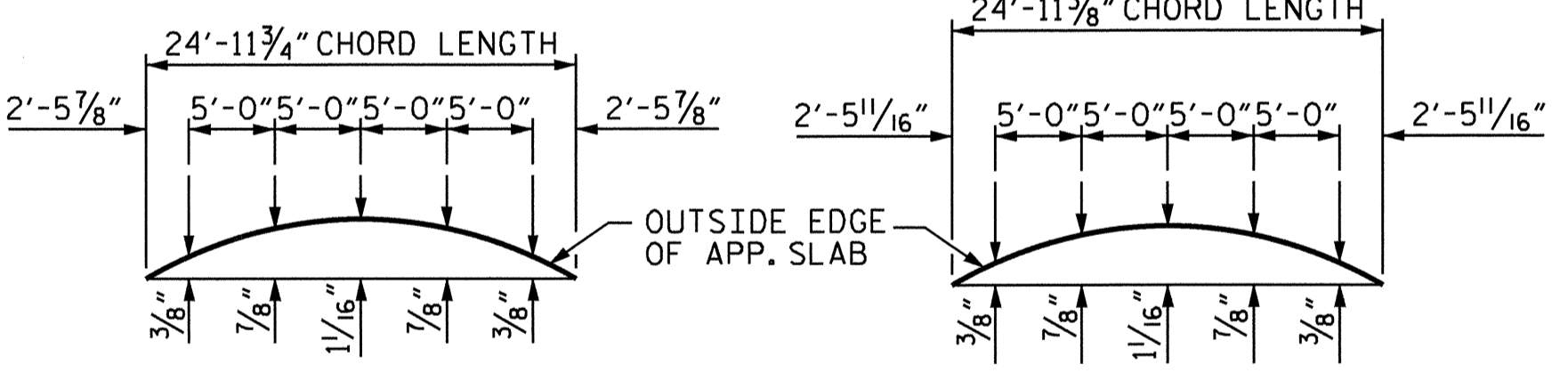
ASSEMBLED BY : J.B. WILSON	DATE : 1/14/10
CHECKED BY : B.N. BARODAWALA	DATE : 1/28/10
DRAWN BY : REK 1/84	REV. 8/16/99 RWW/LES
CHECKED BY : RDU 1/84	REV. 10/17/00 RWW/LES
	REV. 5/1/06 TLA/GM

REVISIONS						SHEET NO. S-18
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 59
2			4			

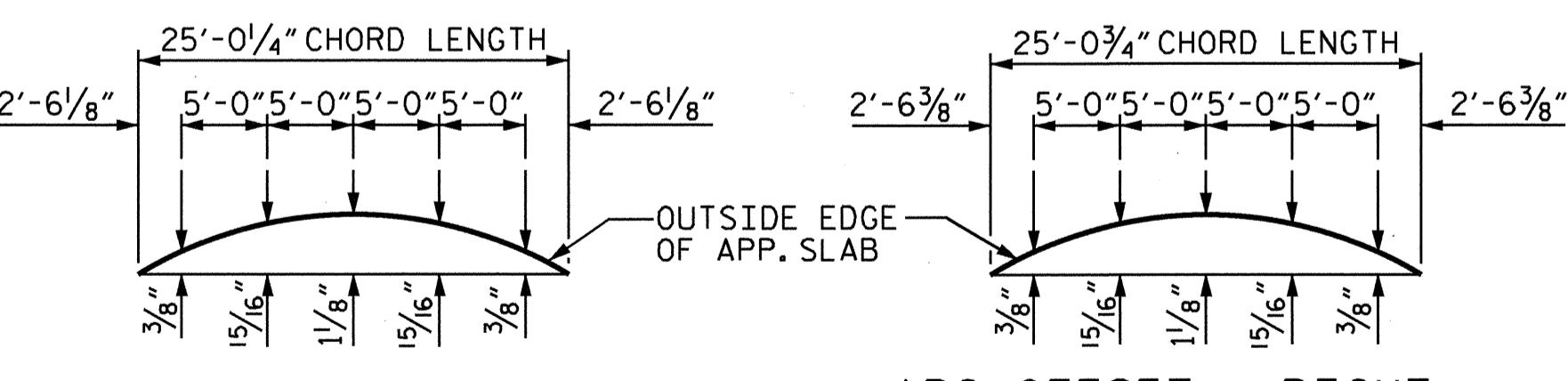


PLAN

* TO LONG CHORD
** RADIAL DIMENSIONS



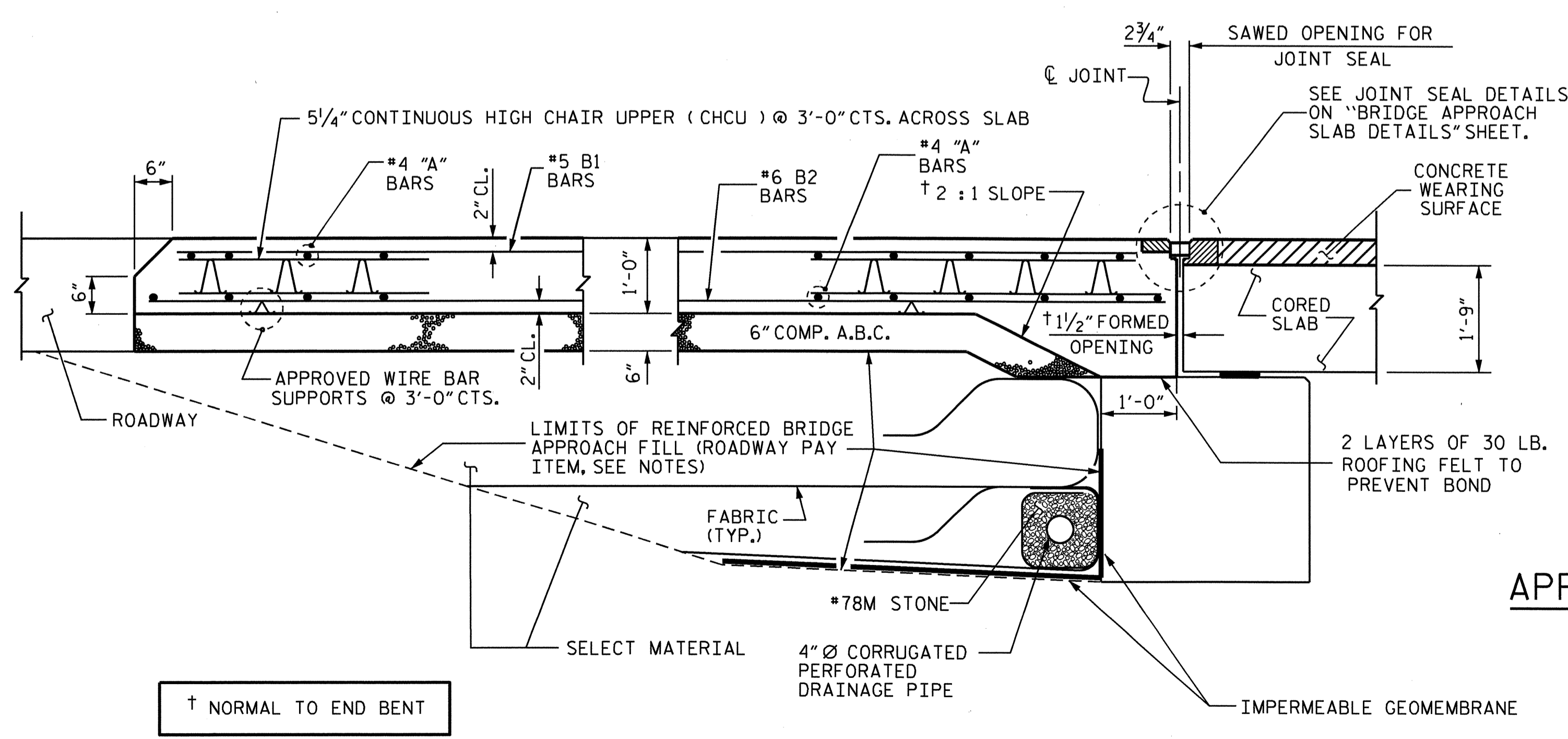
ARC OFFSET - LEFT



ARC OFFSET - RIGHT

ARC OFFSETS FOR APP. SLAB @ END BENT #1 ARC OFFSETS FOR APP. SLAB @ END BENT #2

END OF CURB WITHOUT SHOULDER BERM GUTTER



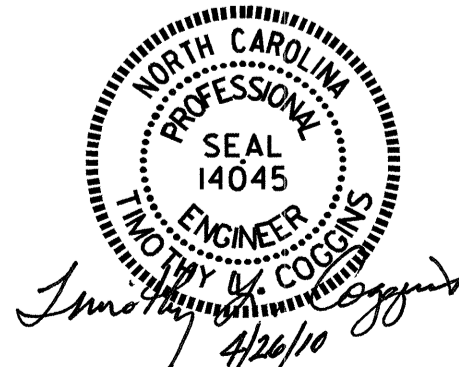
SECTION THRU SLAB

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 14+20.00 -L-

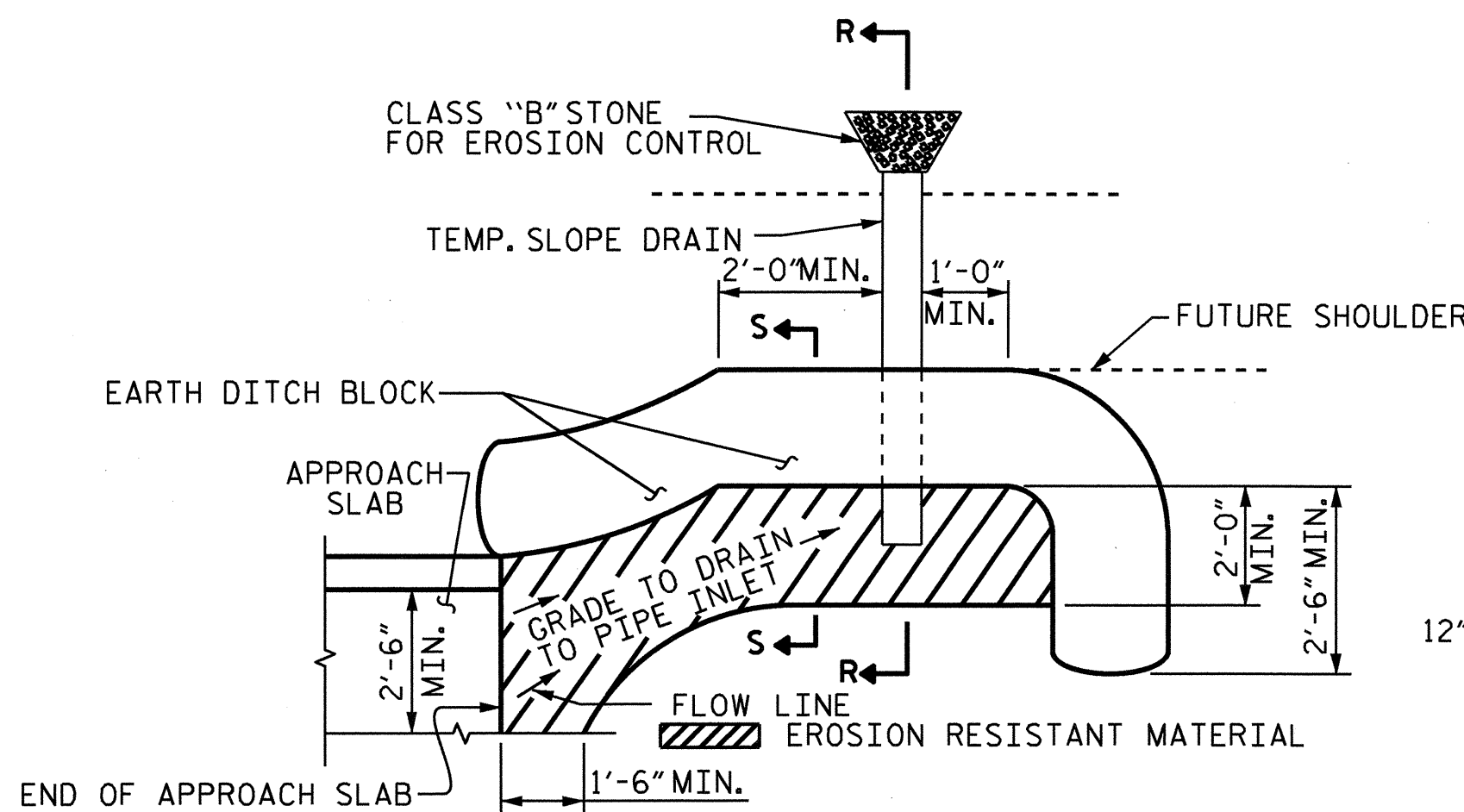
SHEET 1 OF 2
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 CORED SLAB

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

TOTAL SHEETS: 59



ASSEMBLED BY: M. GUDLAUGSSON DATE: 12/21/09
 CHECKED BY: PEGGY PARISI DATE: 01/22/10
 DRAWN BY: EEM 3/95
 CHECKED BY: VAP 3/95
 REV. 7/10/01 LES/RDR
 REV. 5/7/03R RWN/JTE
 REV. 5/1/06R KMM/GM

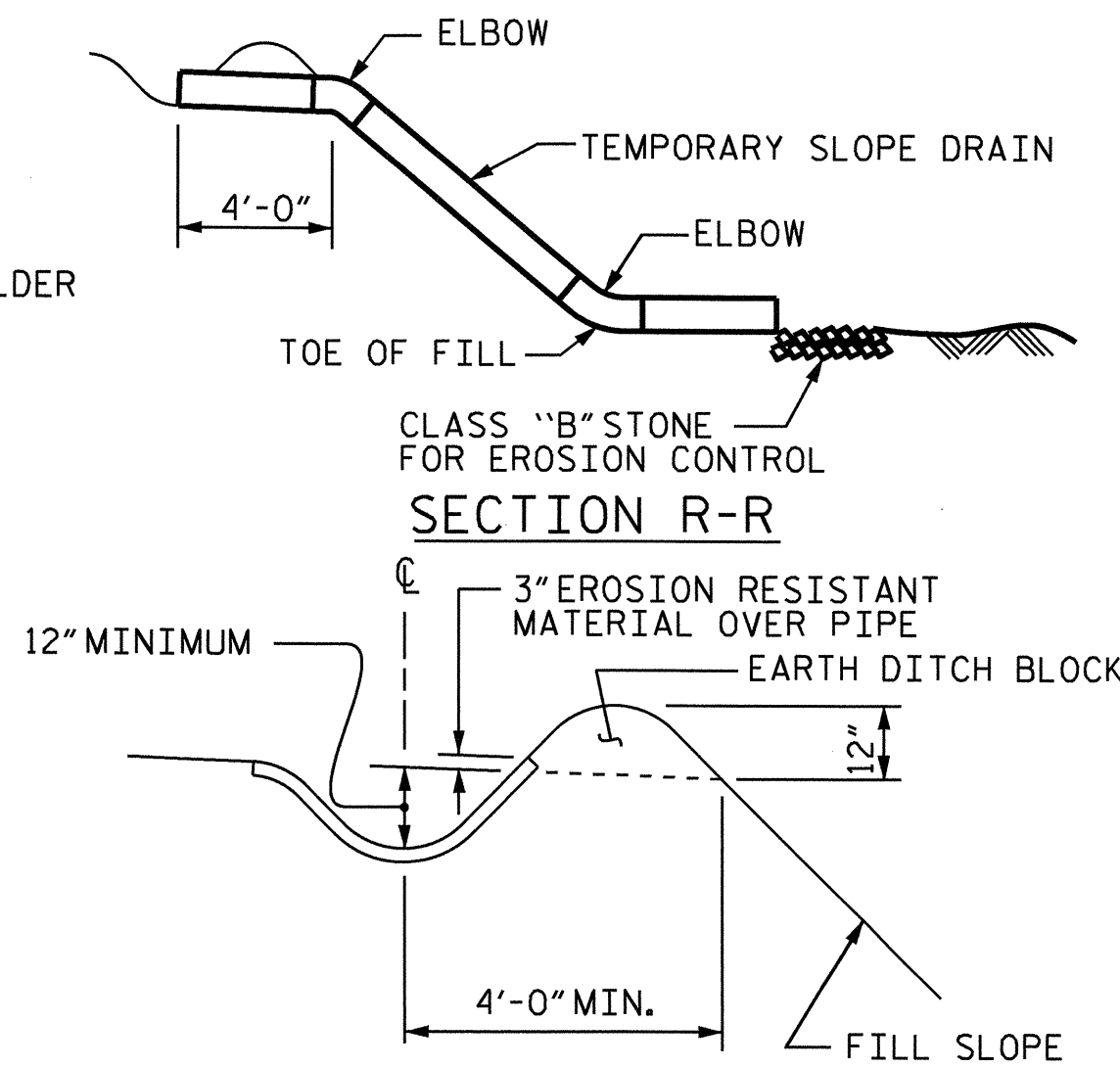


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

PLAN VIEW

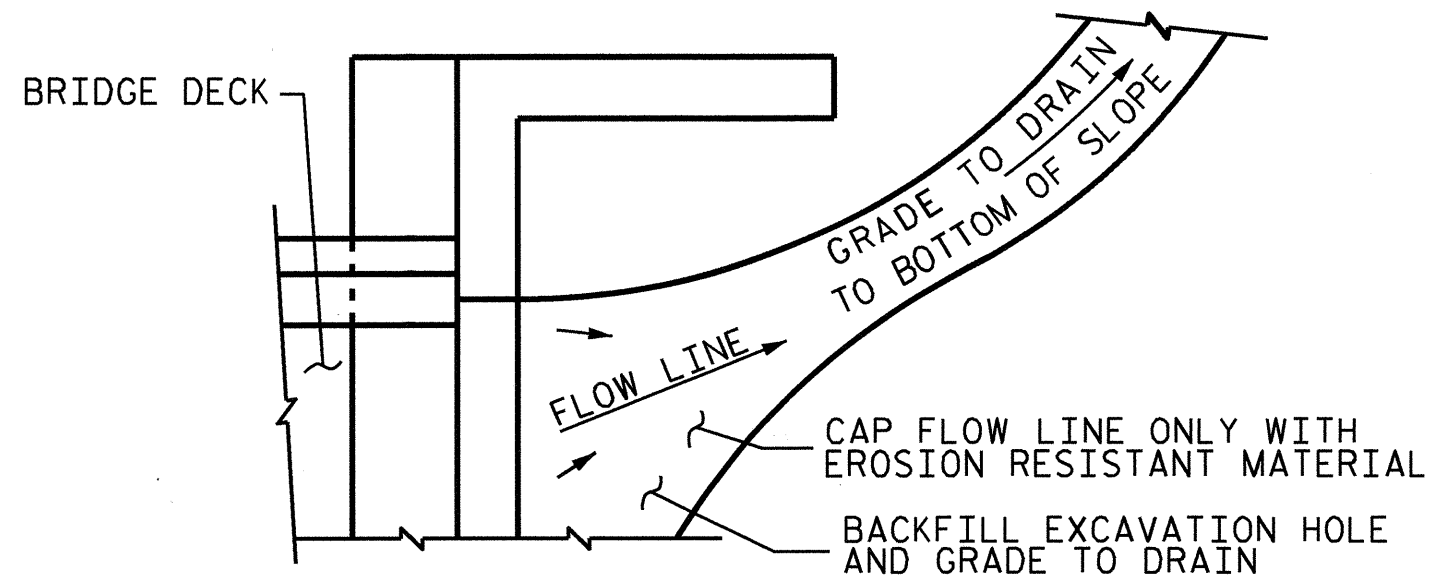
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



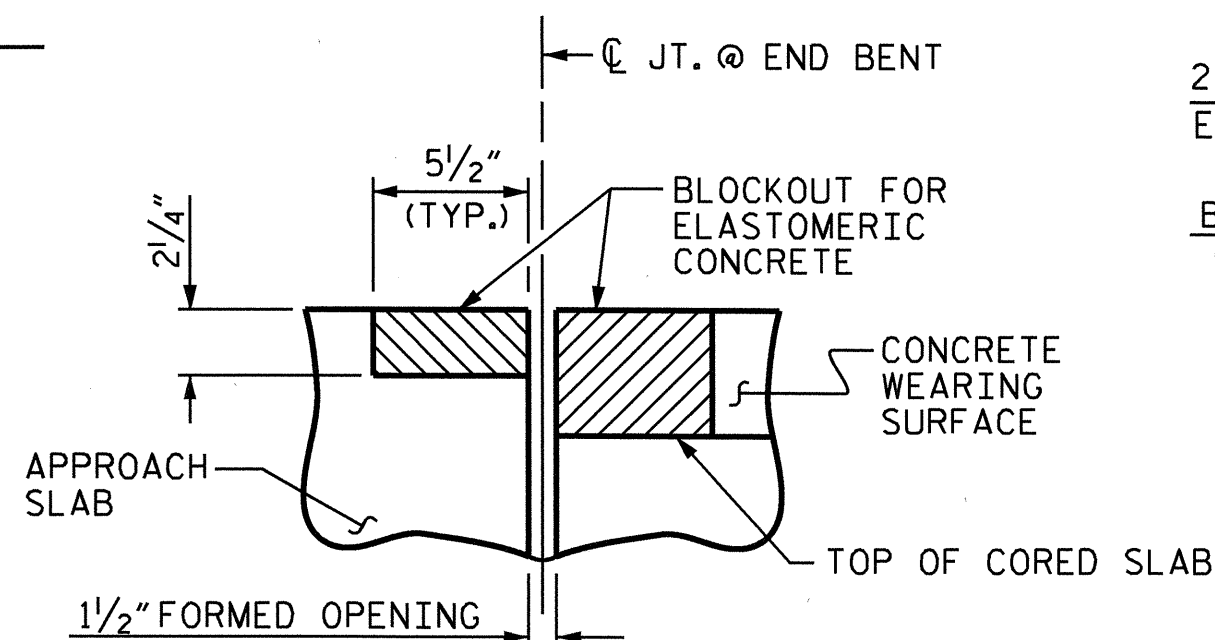
SECTION R-R

SECTION S-S

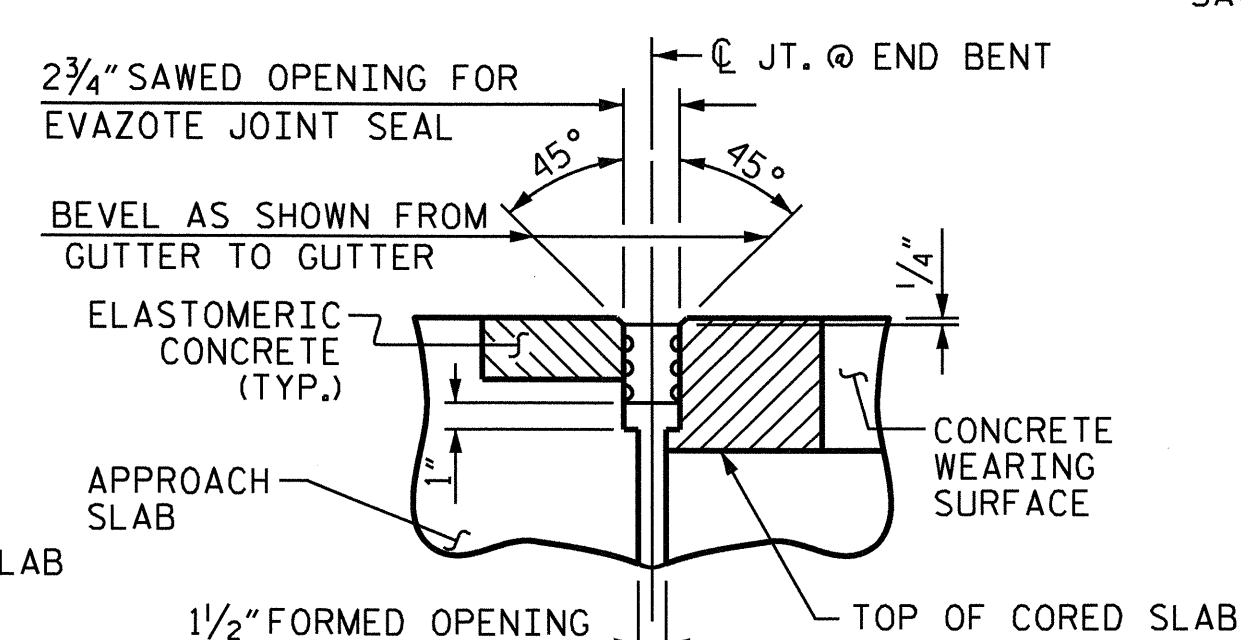


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL



SECTION C-C
EVAZOTE JOINT SEAL
(PRE-SAWED ELASTOMERIC
CONCRETE DIMENSIONS)



SECTION C-C
EVAZOTE JOINT SEAL
(FIXED)

JOINT SEAL DETAILS @ END BENT

EVAZOTE JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

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 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.

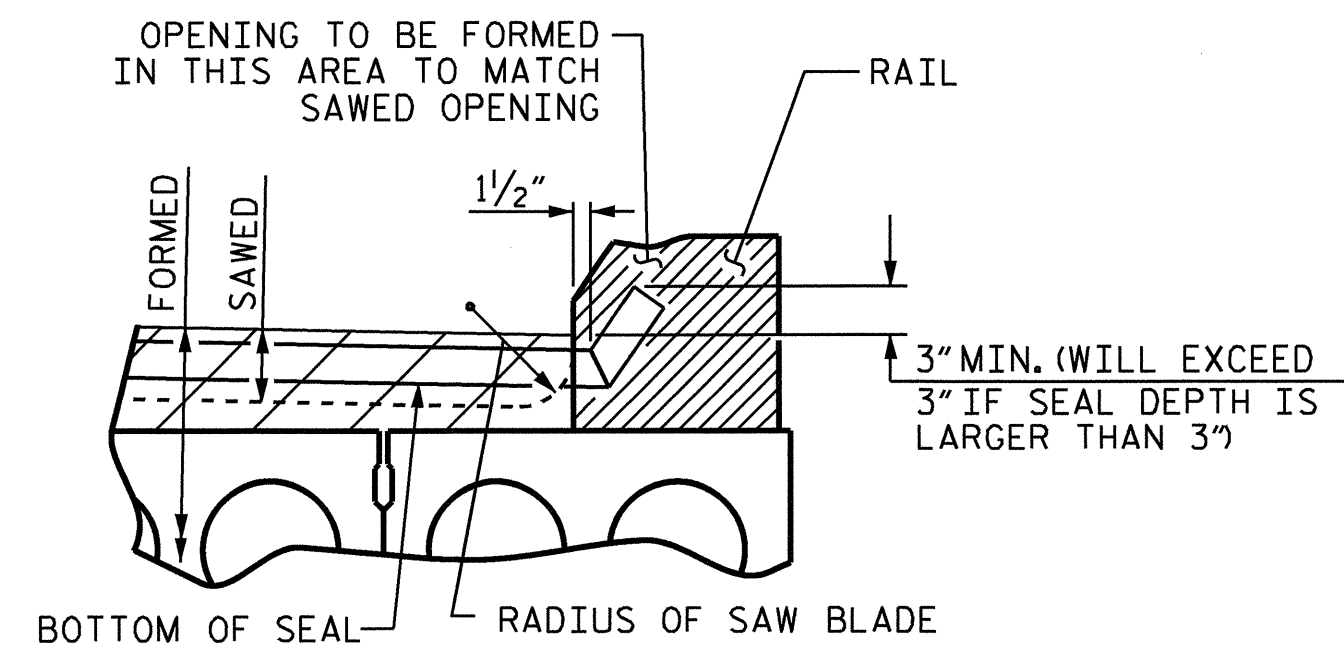
FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE EVAZOTE JOINT SEAL SHALL BE 3 1/16".

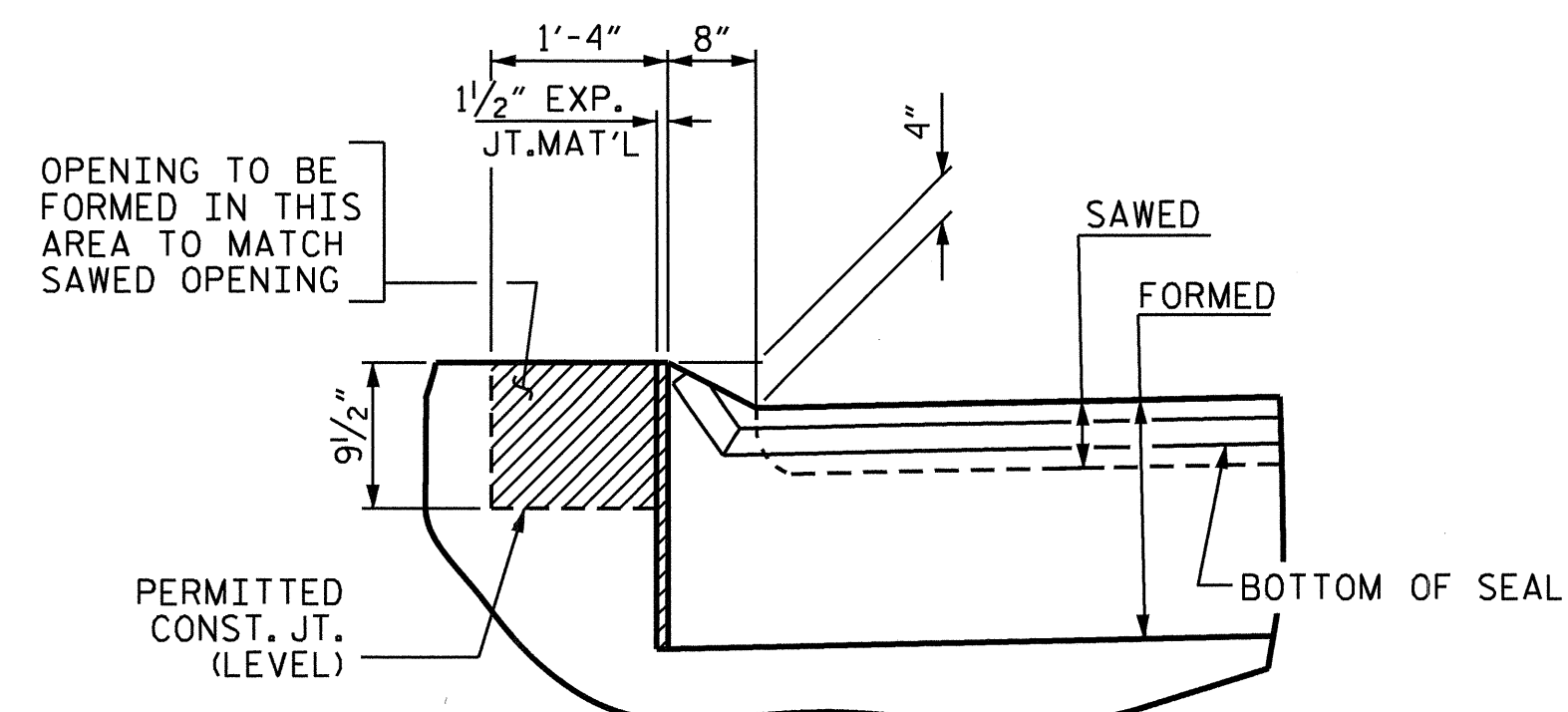
FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

APPROACH SLABS SHALL BE POURED AFTER CONCRETE OVERLAY IS POURED.

THE JOINT SHALL BE SAWED AFTER THE CASTING OF THE BARRIER RAIL.



SECTION A-A



SECTION B-B

BILL OF MATERIAL					
APPROACH SLAB AT EB #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	50	#4	STR	20'-1"	671
A2	52	#4	STR	20'-0"	695
*B1	75	#5	STR	23'-8"	1851
B2	75	#6	STR	24'-7"	2769
REINFORCING STEEL				LBS.	3464
*EPOXY COATED REINFORCING STEEL				LBS.	2522
CLASS AA CONCRETE				C. Y.	39.5
APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A3	50	#4	STR	20'-3"	676
A4	52	#4	STR	20'-2"	701
*B1	73	#5	STR	23'-8"	1802
B2	73	#6	STR	24'-7"	2695
REINFORCING STEEL				LBS.	3396
*EPOXY COATED REINFORCING STEEL				LBS.	2478
CLASS AA CONCRETE				C. Y.	39.9

SPLICE CHART	
BAR SIZE	SPLICE LENGTH
* #4 A1	2'-0"
#4 A2	1'-9"

ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE ** (CU. FT.)
1	11.0
2	11.0
TOTAL	22.0

** BASED ON THE MINIMUM BLOCKOUT SHOWN.

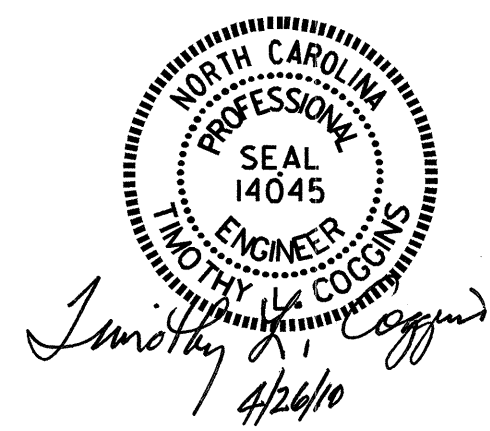
PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 14+20.00 -L-

SHEET 2 OF 2

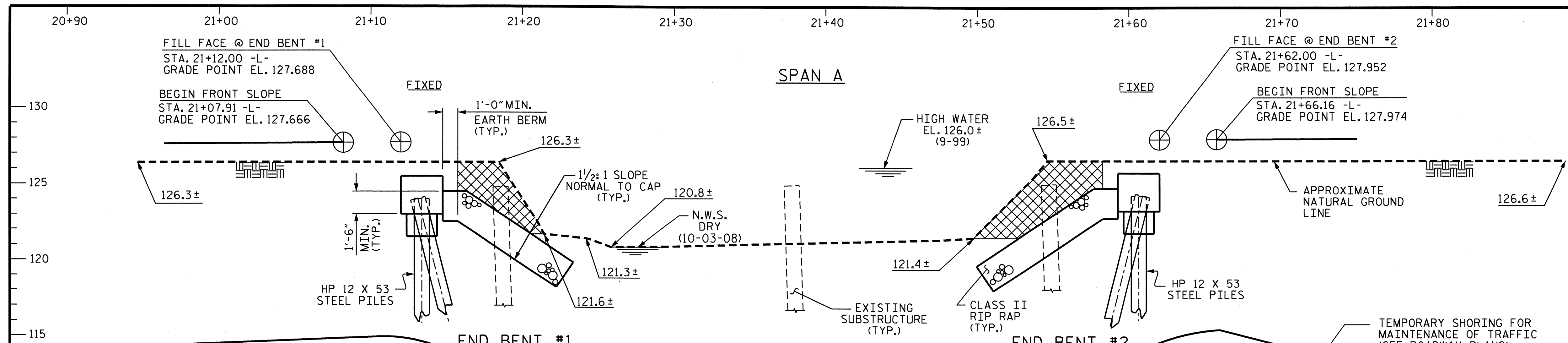
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 BRIDGE APPROACH
 SLAB DETAILS

REVISIONS						SHEET NO. S-20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 59
2			4			



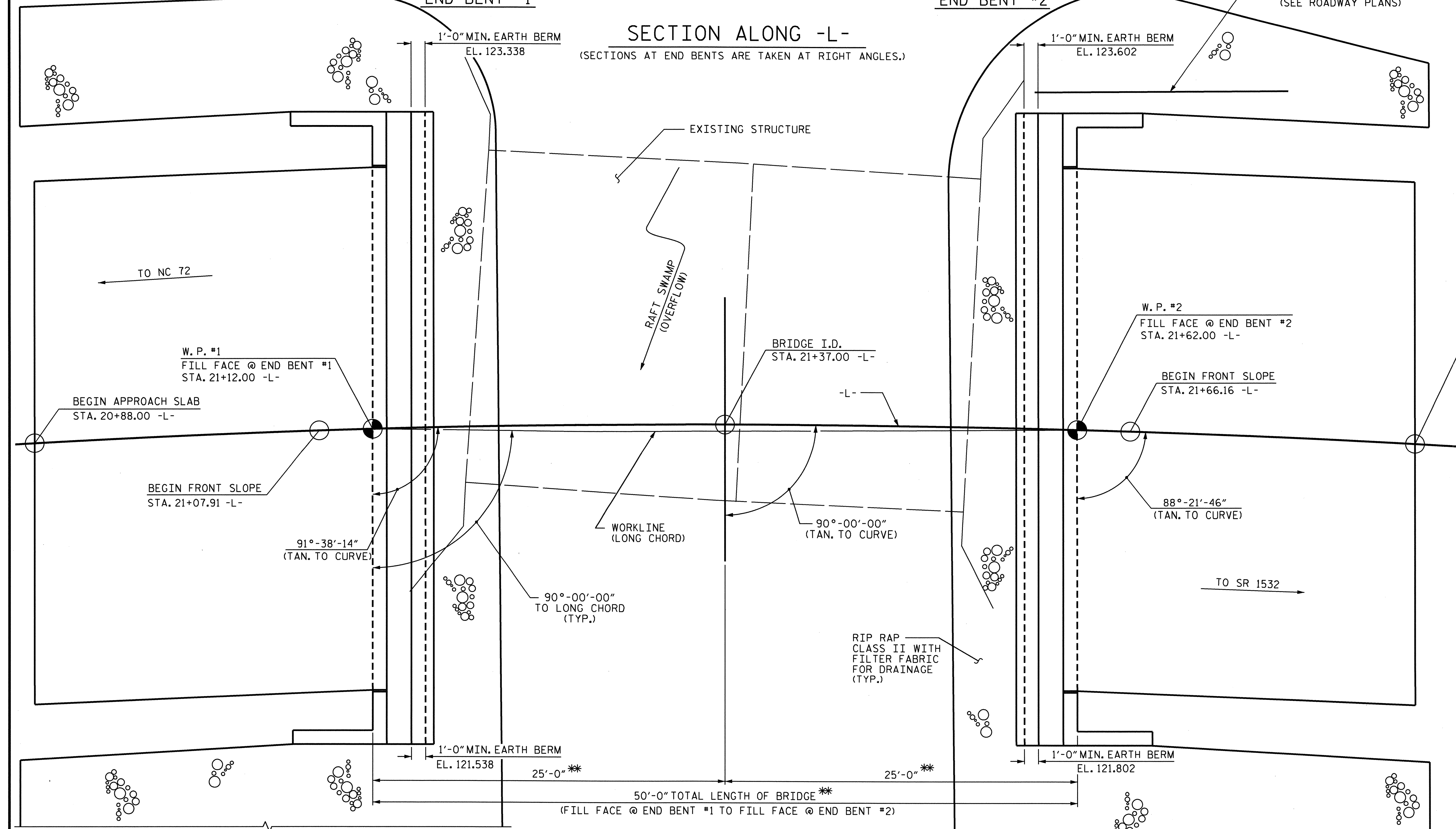
ASSEMBLED BY : M.GUDLAUGSSON	DATE : 12/21/09
CHECKED BY : PEGGY PARISI	DATE : 01/22/10
DRAWN BY : FCJ	11/88
CHECKED BY : ARB	11/88
REV. 10/17/00	RWW/LES
REV. 5/7/03	RWW/JTE
REV. 5/1/06R	MAA/KMM



GRADE DATA
 (+)0.5277% (-)0.3000%
 P.I. STA. = 23+00.00 -L-
 EL. = 128.68'
 V.C. = 150.00'

UNCLASSIFIED
 STRUCTURE
 EXCAVATION

HORIZONTAL CURVE DATA -L-
 PI Sta 17+78.38
 $\Delta = 59^{\circ}-51'-12.7"$ (RT)
 $D = 6^{\circ}-32'-53.1"$
 $L = 914.06'$
 $T = 503.69'$
 $R = 875.00'$



NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 12274
 NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14045
 4/27/10
 4/26/10

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 21+37.00 -L-

SHEET 1 OF 4 REPLACES BRIDGE #210

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE OVER
 RAFT SWAMP (OVERFLOW)
 ON SR 1527 BETWEEN
 NC 72 AND SR 1532

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

TOTAL SHEETS 59

DRAWN BY : PEGGY PARISI DATE : 1-29-10
 CHECKED BY : B.N. BARODAWALA DATE : 2-4-10

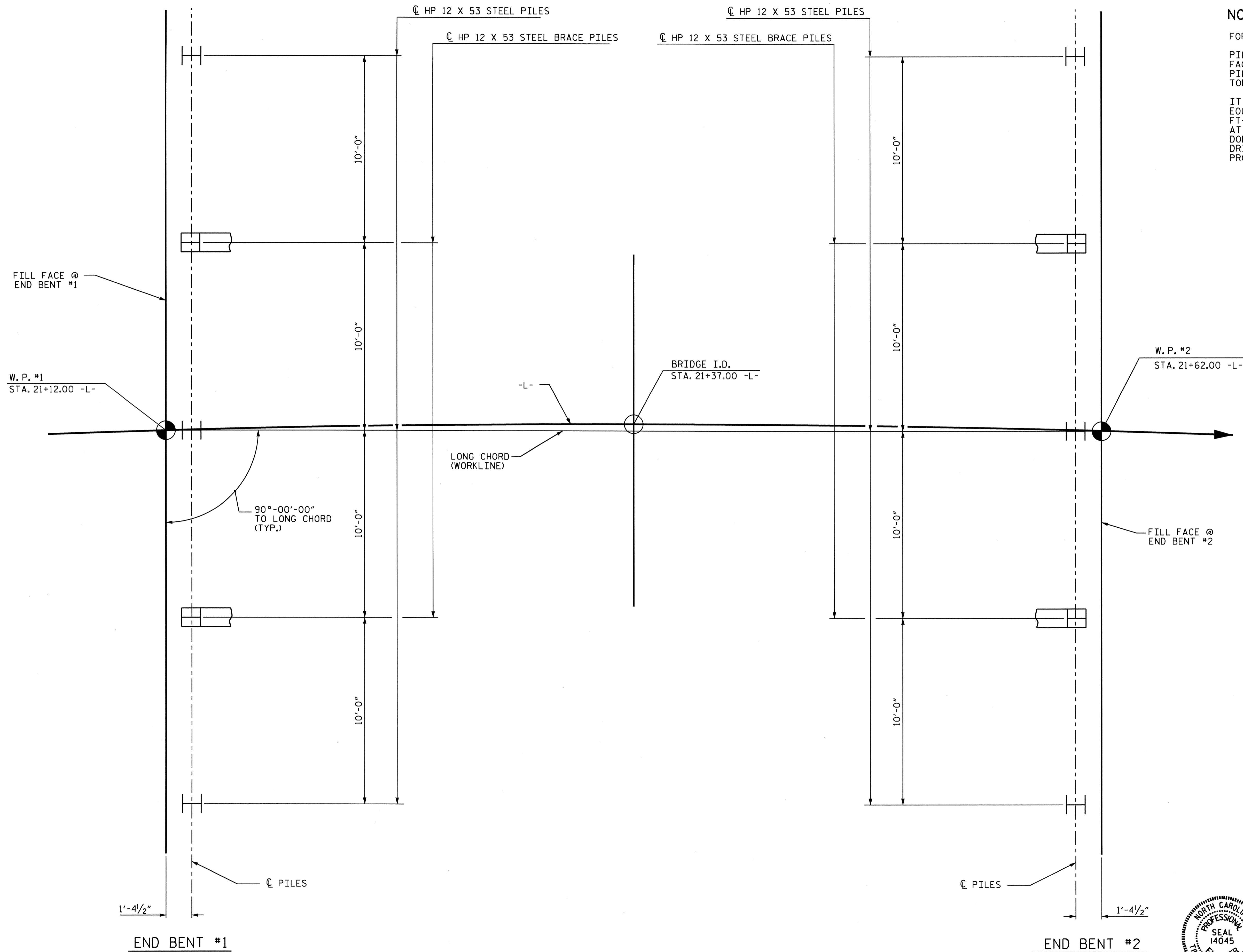
PLAN
 * ALONG LONG CHORD
 (PILES NOT SHOWN FOR CLARITY)

NOTES:

FOR PILES, SEE SPECIAL PROVISIONS.

PILES AT END BENT NOS. 1 & 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 95 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 155 TONS PER PILE.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40-60 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NOS. 1 & 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH THE PILES PROVISION.



FOUNDATION LAYOUT

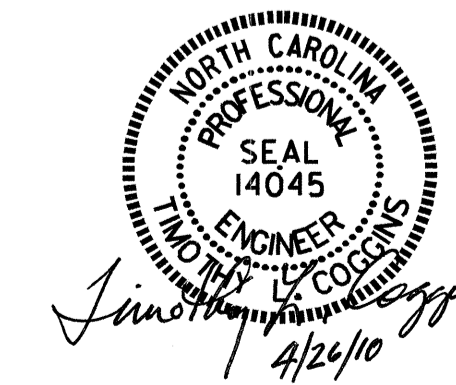
DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE.
BRACE PILES AT THE END BENTS ARE TO BE BATTERED @ 3 : 12.

PROJECT NO. B-3693
ROBESON COUNTY
STATION: 21+37.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER
RAFT SWAMP (OVERFLOW)
ON SR 1527 BETWEEN
NC 72 AND SR 1532



DRAWN BY : PEGGY PARISI DATE : 1-15-10
CHECKED BY : B.N. BARODAWALA DATE : 2-6-10

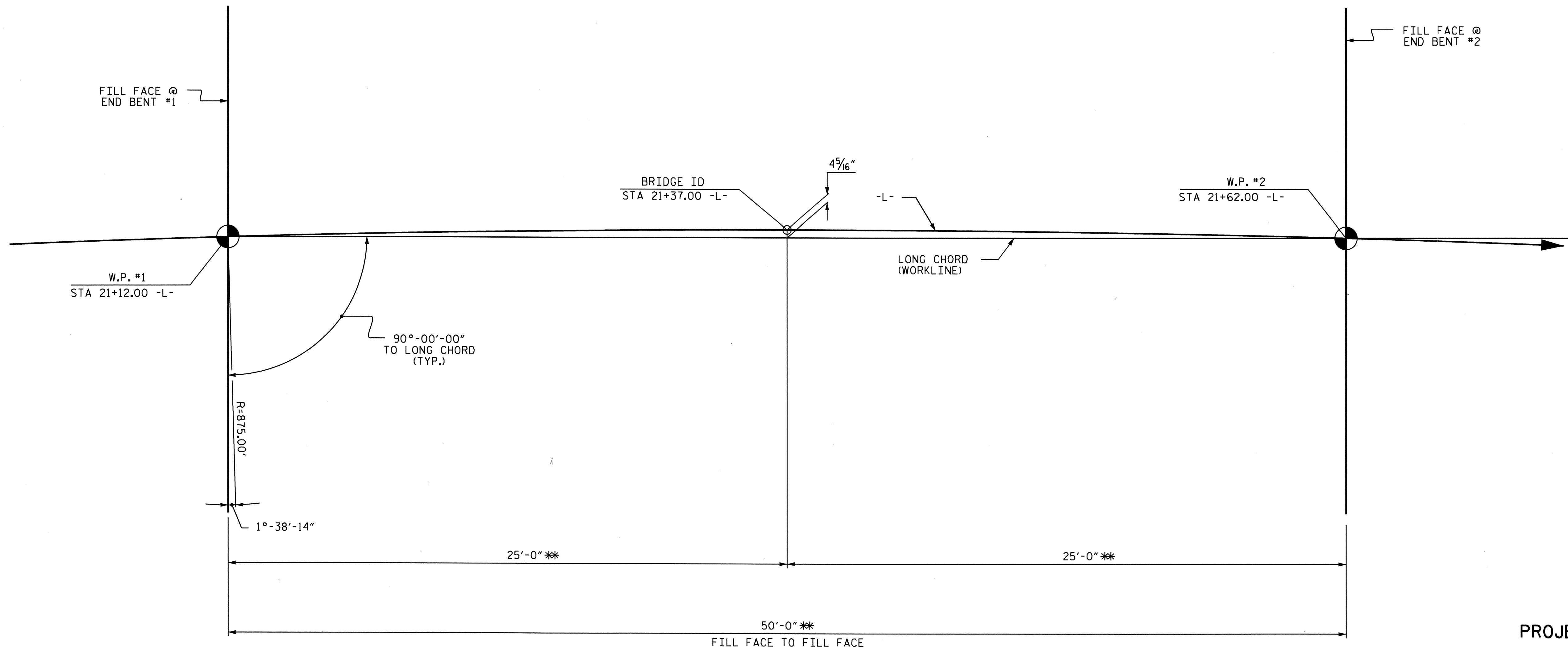
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REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	DATE:	S-22
1			3		TOTAL SHEETS
2			4		59

STR. #2

HORIZONTAL CURVE DATA -L-

PI Sta 17+78.38
 $\Delta = 59^{\circ}-51'-12.7''$ (RT)
 $D = 6^{\circ}-32'-53.1''$
 $L = 914.06'$
 $T = 503.69'$
 $R = 875.00'$



LONG CHORD LAYOUT
 ALL BENTS ARE PARALLEL.

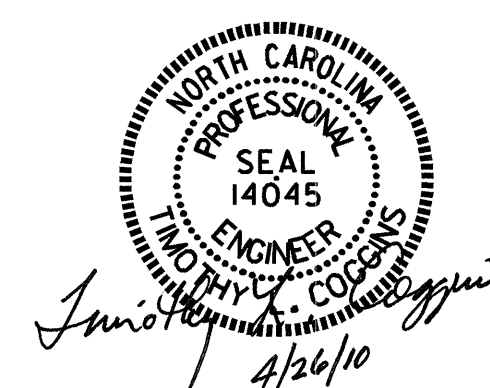
** ALONG LONG CHORD

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 21+37.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER
 RAFT SWAMP (OVERFLOW)
 ON SR 1527 BETWEEN
 NC 72 AND SR 1532



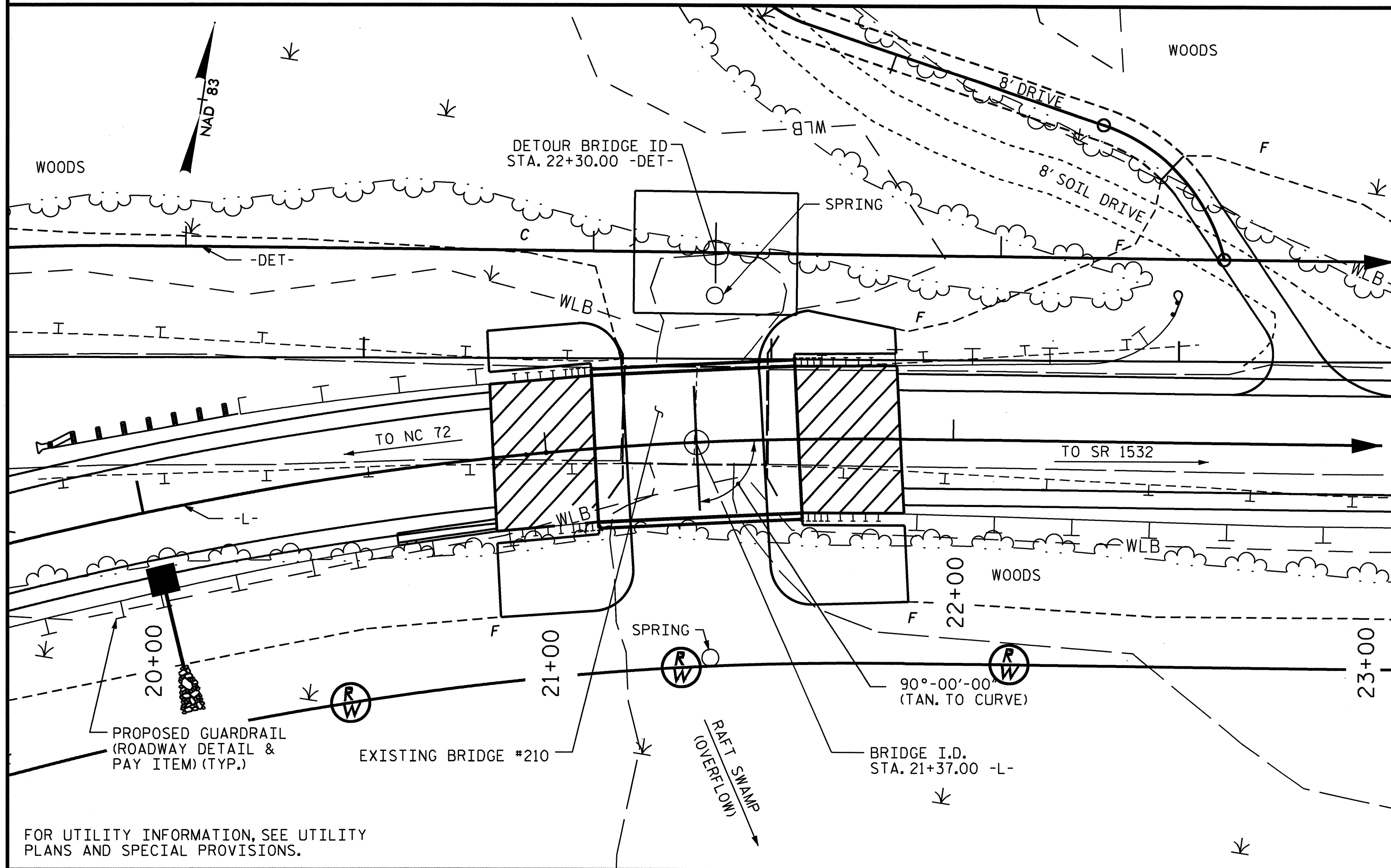
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 CHECKED BY : B.N. BARODAWALA DATE : 2-6-10

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 faverette

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			59

STR. #2

BM*80: R/R SPIKE IN BASE OF 24" GUM TREE, 33.94' RT. OF STA. 11+44.40 -L-, EL. 122.95' NGVD 29.



LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

HYDRAULIC DATA

DESIGN DISCHARGE = 3,400 CFS
 FREQUENCY OF DESIGN FLOOD = 25 YR.
 DESIGN HIGH WATER ELEVATION = 125.5'
 DRAINAGE AREA = 156 Sq. MILES
 BASIC DISCHARGE (Q100) = 4,810 CFS
 BASIC HIGH WATER ELEVATION = 126.2'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 5,700 CFS
 FREQUENCY OF OVERTOPPING FLOOD = 200± YR.
 OVERTOPPING FLOOD ELEVATION = 126.6'

THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY STRUCTURE @ STA. 21+37.00 -L- FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS.

THE BRIDGE RAILS ON THE TEMPORARY STRUCTURE SHALL BE DESIGNED FOR THE AASHTO LRFD TEST LEVEL 3 (TL-3) CRASH TEST CRITERIA. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS.

FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR CURING CONCRETE, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.

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

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, (1 @ 18'-0" AND 1 @ 17'-8") WITH A CLEAR ROADWAY WIDTH OF 24'-0" AND A CONCRETE DECK ON TIMBER JOISTS SUPPORTED BY A TIMBER CAP AND TIMBER PILES AT THE END BENTS AND BENT AND LOCATED AT THE SITE OF THE PROPOSED STRUCTURE, 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.

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

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 28 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.

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

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

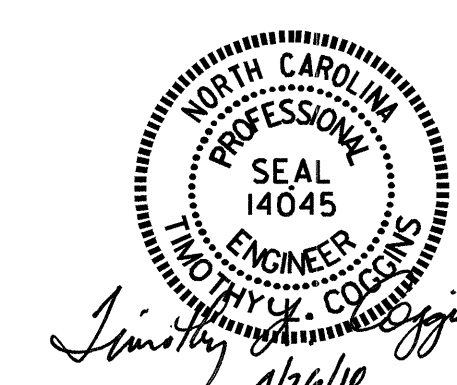
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMPORARY STRUCTURE	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	CONCRETE WEARING SURFACE	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES		PILE REDRIVES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	
									NO.	LIN.FT.							NO.	LIN.FT.
	LUMP SUM	LUMP SUM	LUMP SUM	SO. FT.	SO. FT.	CU. YDS.	LUMP SUM	LBS.			EACH	LIN.FT.	TONS	SO.YDS.	LUMP SUM	LUMP SUM		
SUPERSTRUCTURE				1678	3095		LUMP SUM					95.75			LUMP SUM	LUMP SUM	13	620.75
END BENT NO. 1						15.1		2225	5	275	5		240	267				
END BENT NO. 2						15.1		2225	5	275	5		220	244				
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	1678	3095	30.2	LUMP SUM	4450	10	550	10	95.75	460	511	LUMP SUM	LUMP SUM	13	620.75

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 21+37.00 -L-

SHEET 4 OF 4



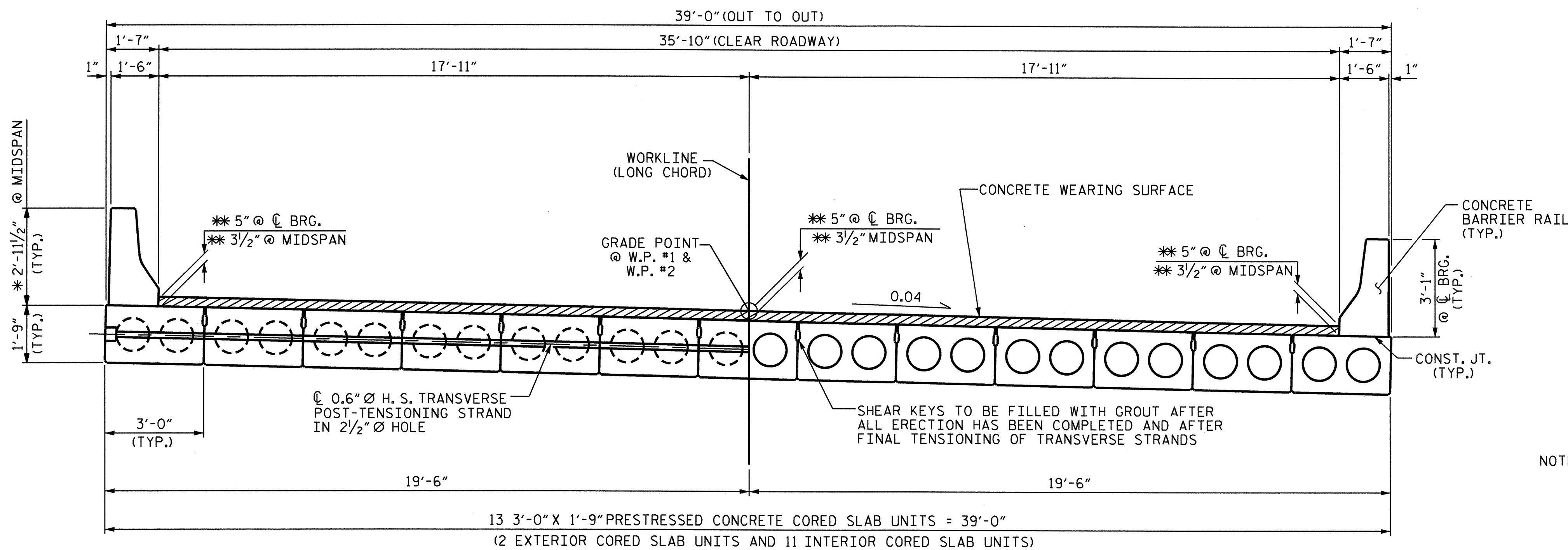
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER
 RAFT SWAMP (OVERFLOW)
 ON SR 1527 BETWEEN
 NC 72 AND SR 1532

REVISIONS						SHEET NO. S-24
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 59
2			4			

DRAWN BY: PEGGY PARISI DATE: 1-15-10
 CHECKED BY: B.N. BARODAWALA DATE: 2-4-10

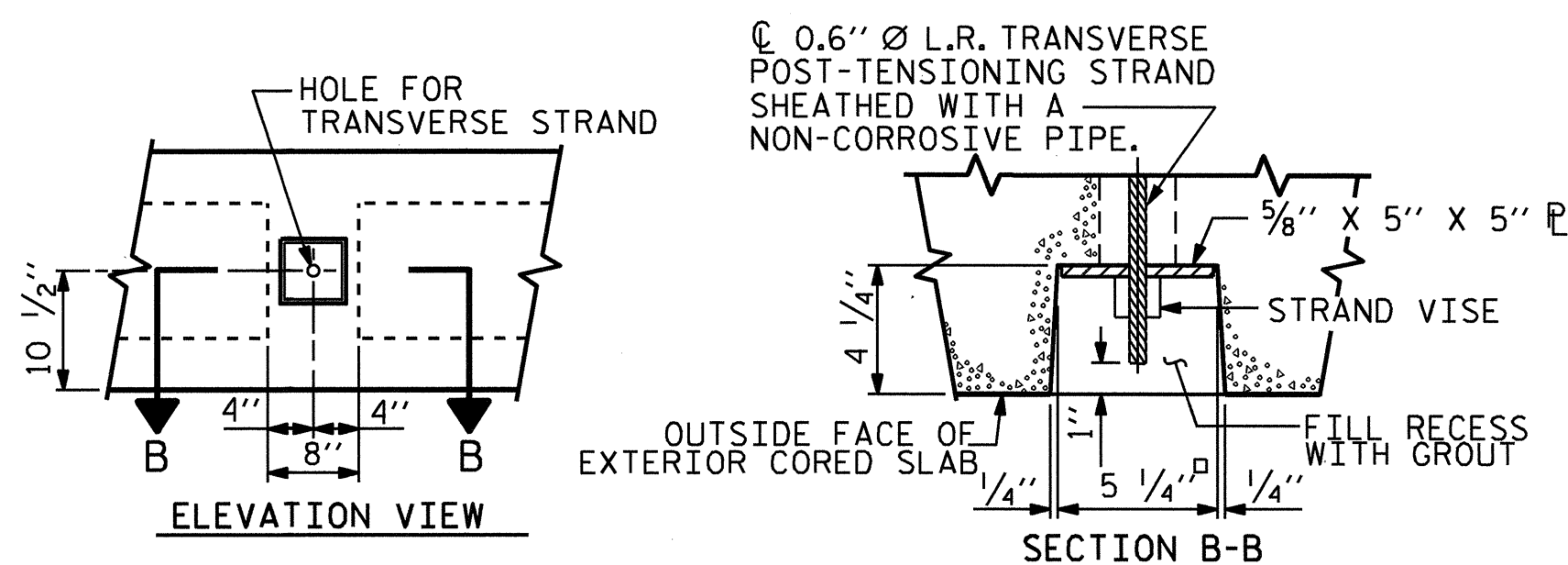


HALF SECTION @ INTERMEDIATE DIAPHRAGM

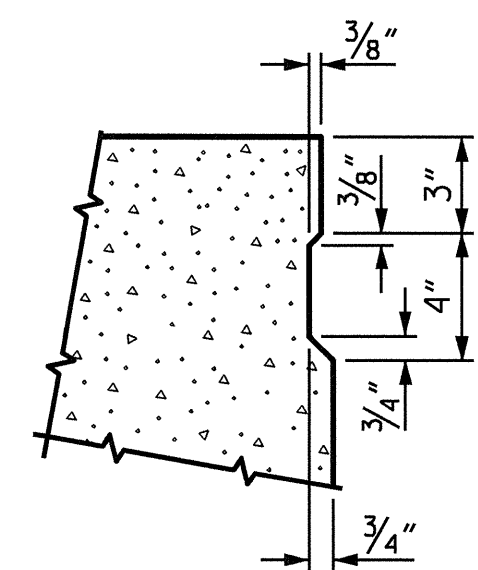
HALF SECTION @ END BENT

TYPICAL SECTION

* 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.
 ** BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS.

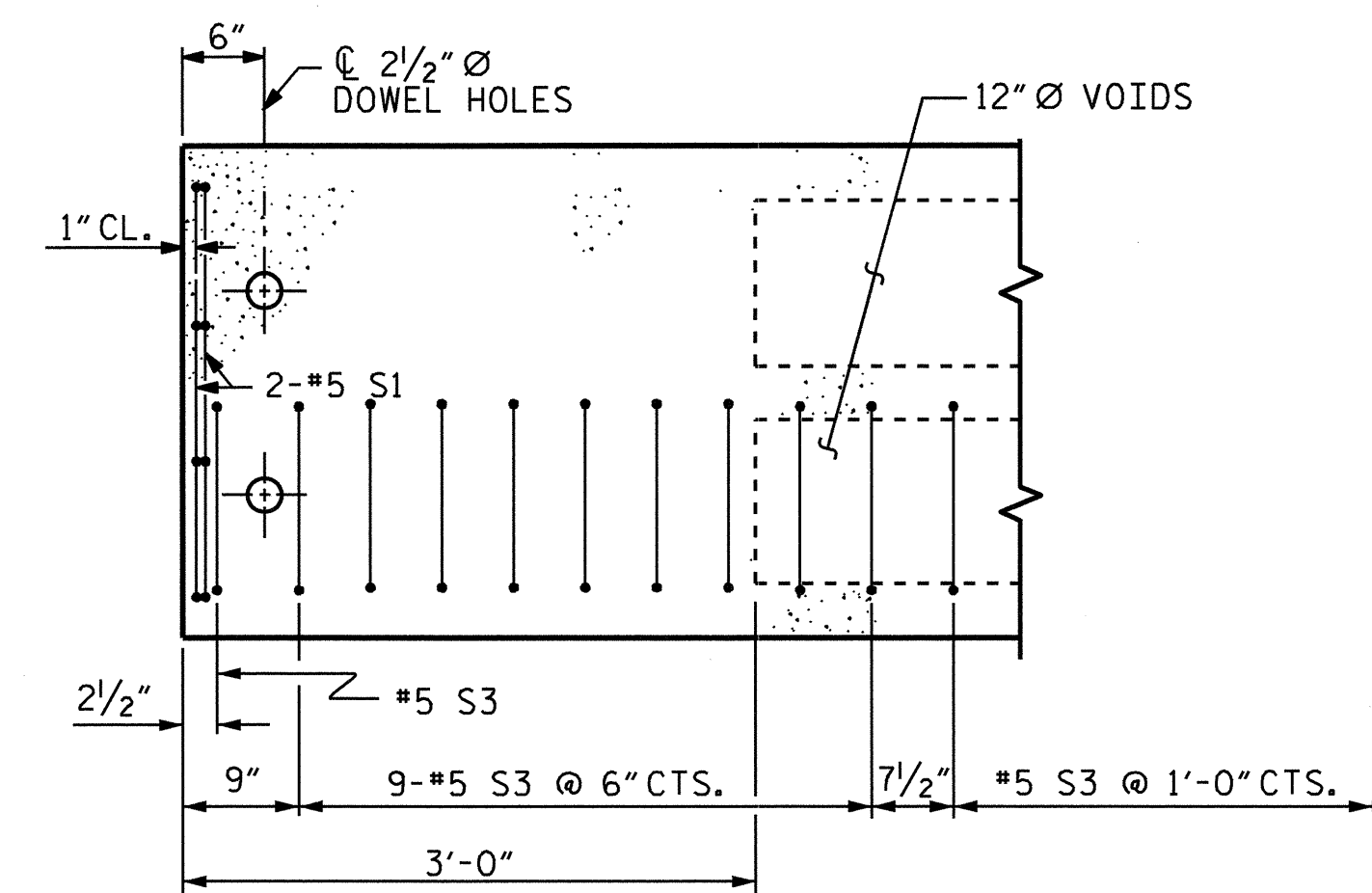


GROUTED RECESS AT END OF POST-TENSIONED STRAND-CORED SLABS



SHEAR KEY DETAIL

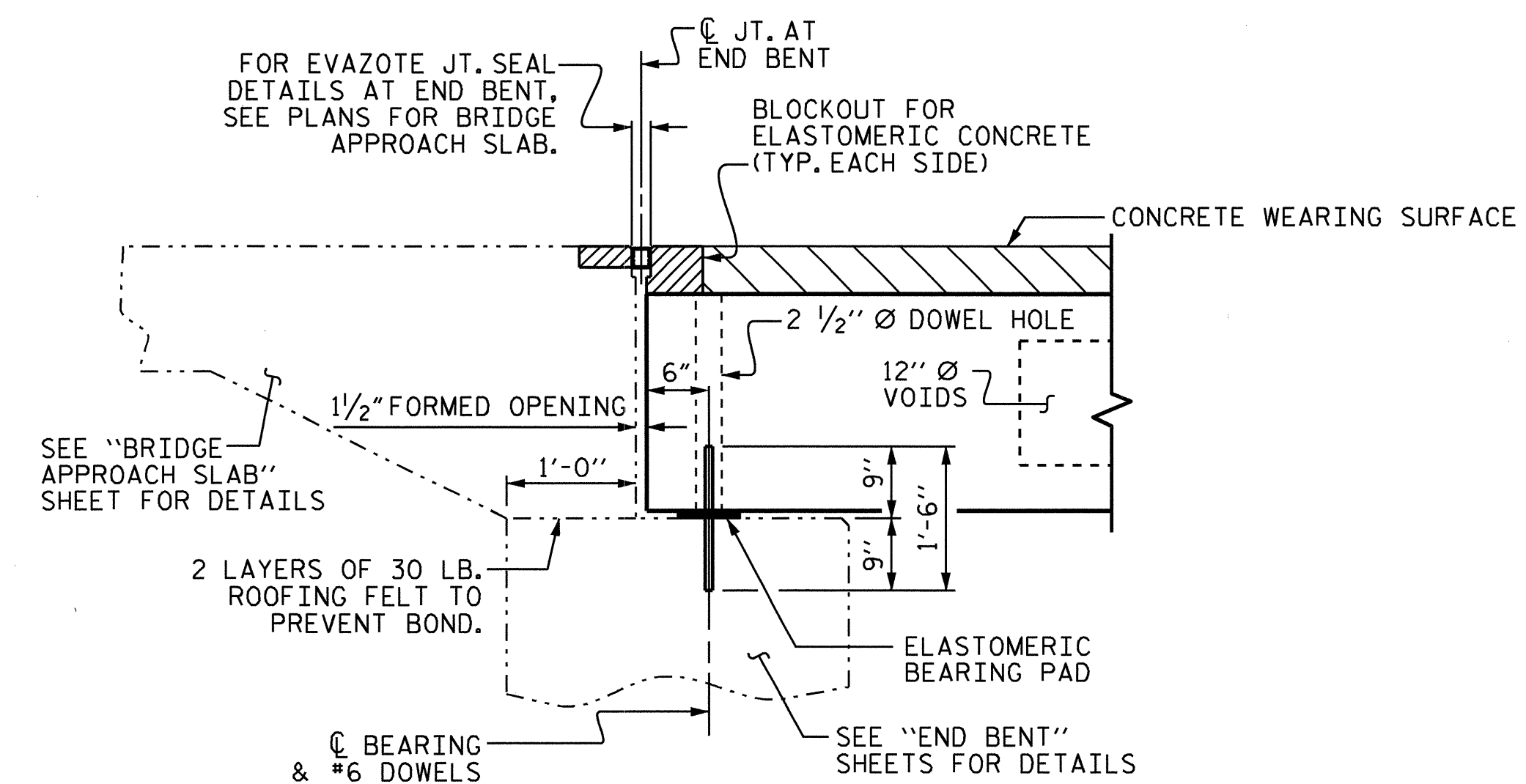
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.



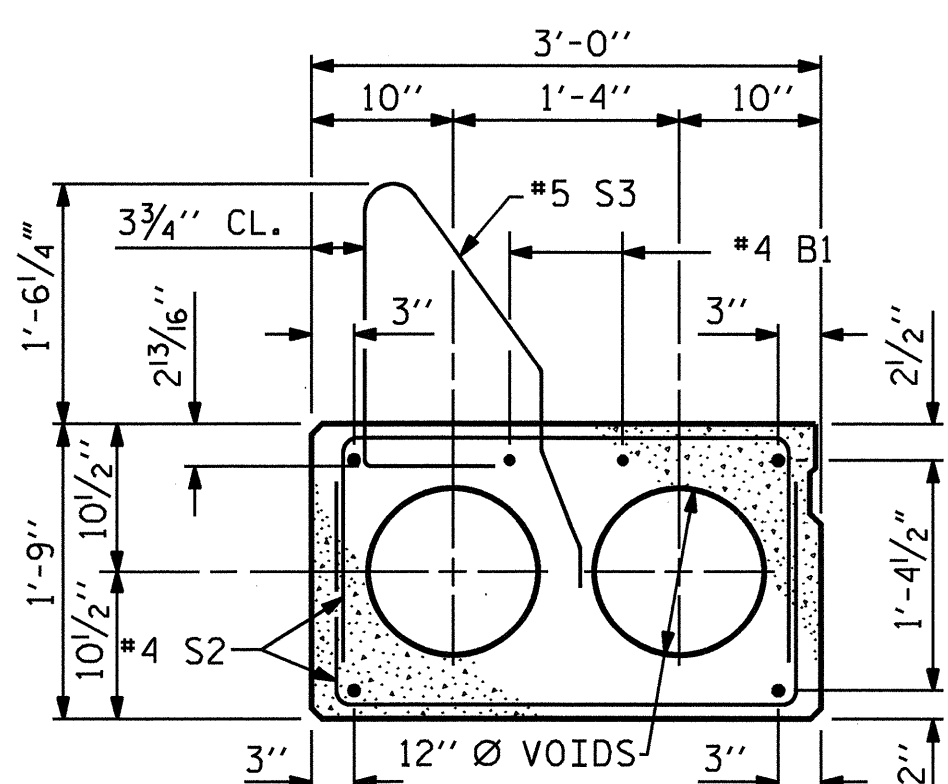
PART PLAN-EXTERIOR SECTION

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

FIXED END

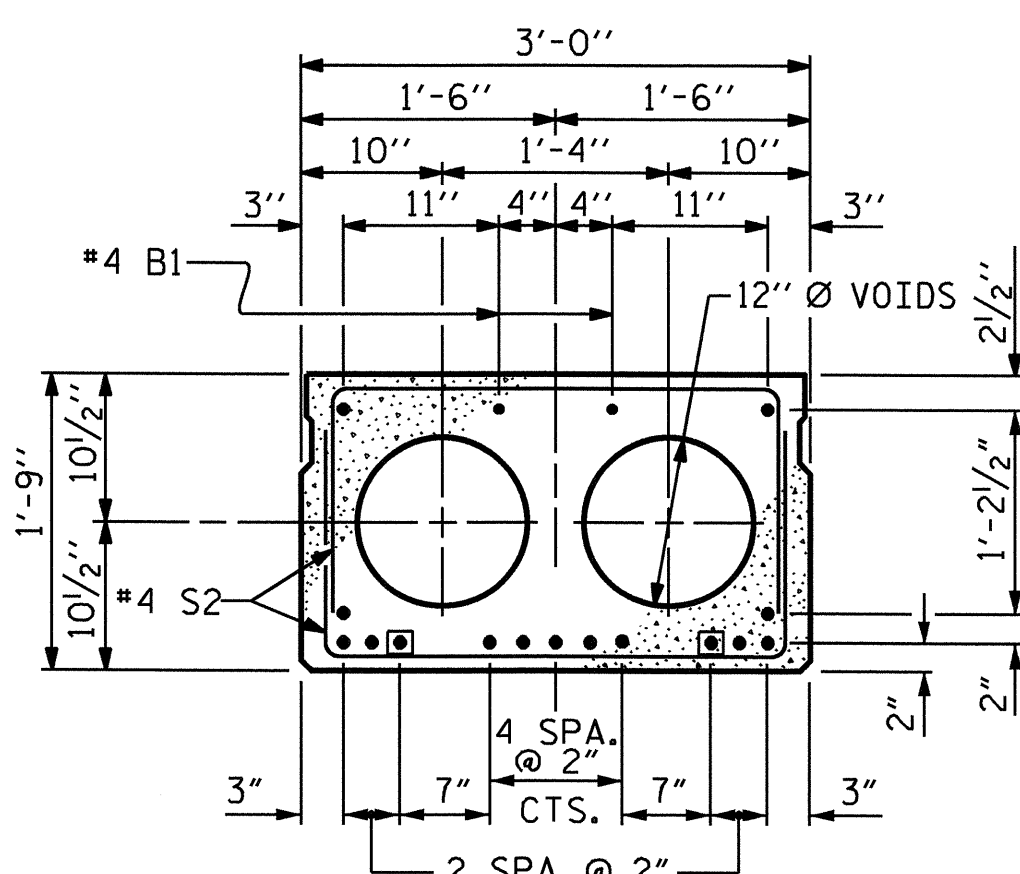


SECTION AT END BENT



EXTERIOR SLAB SECTION

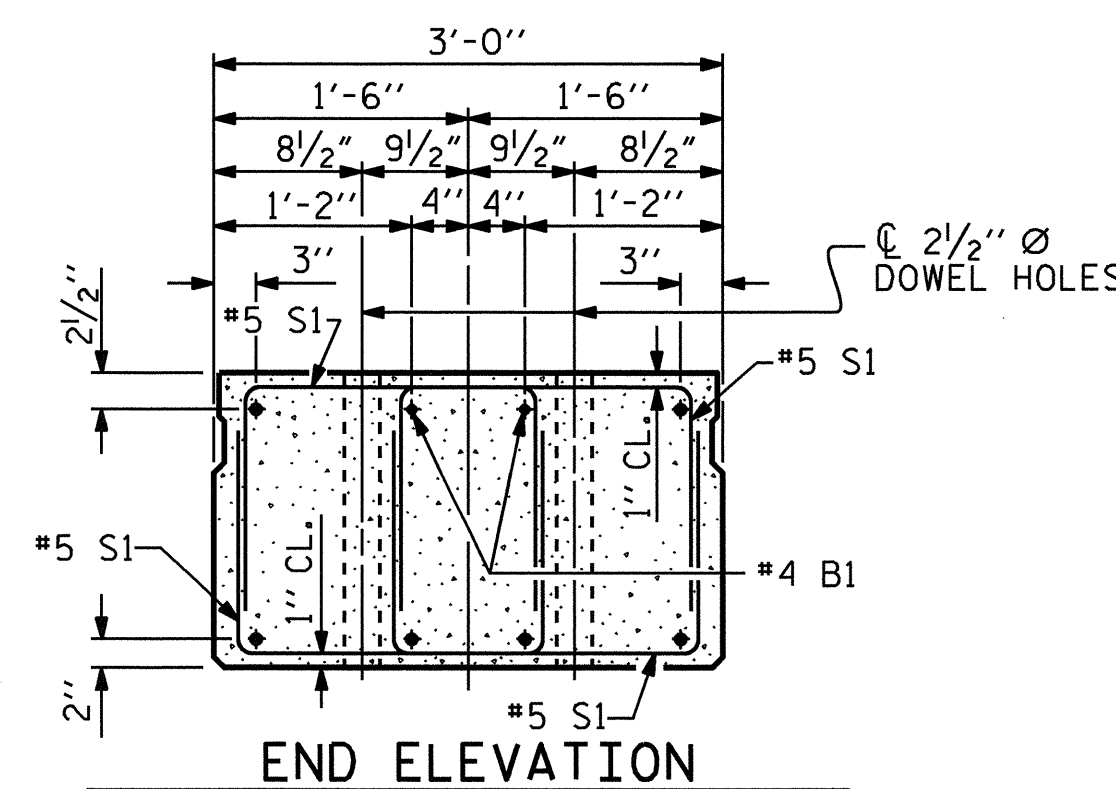
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



INTERIOR SLAB SECTION
0.6" Ø LOW RELAXATION STRAND LAYOUT

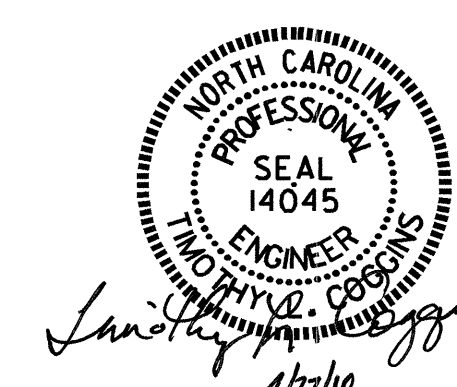
(15 STRANDS REQUIRED)

□ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 2'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7



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-3693
ROBESON COUNTY
 STATION: 21+37.00 -L-

SHEET 1 OF 5

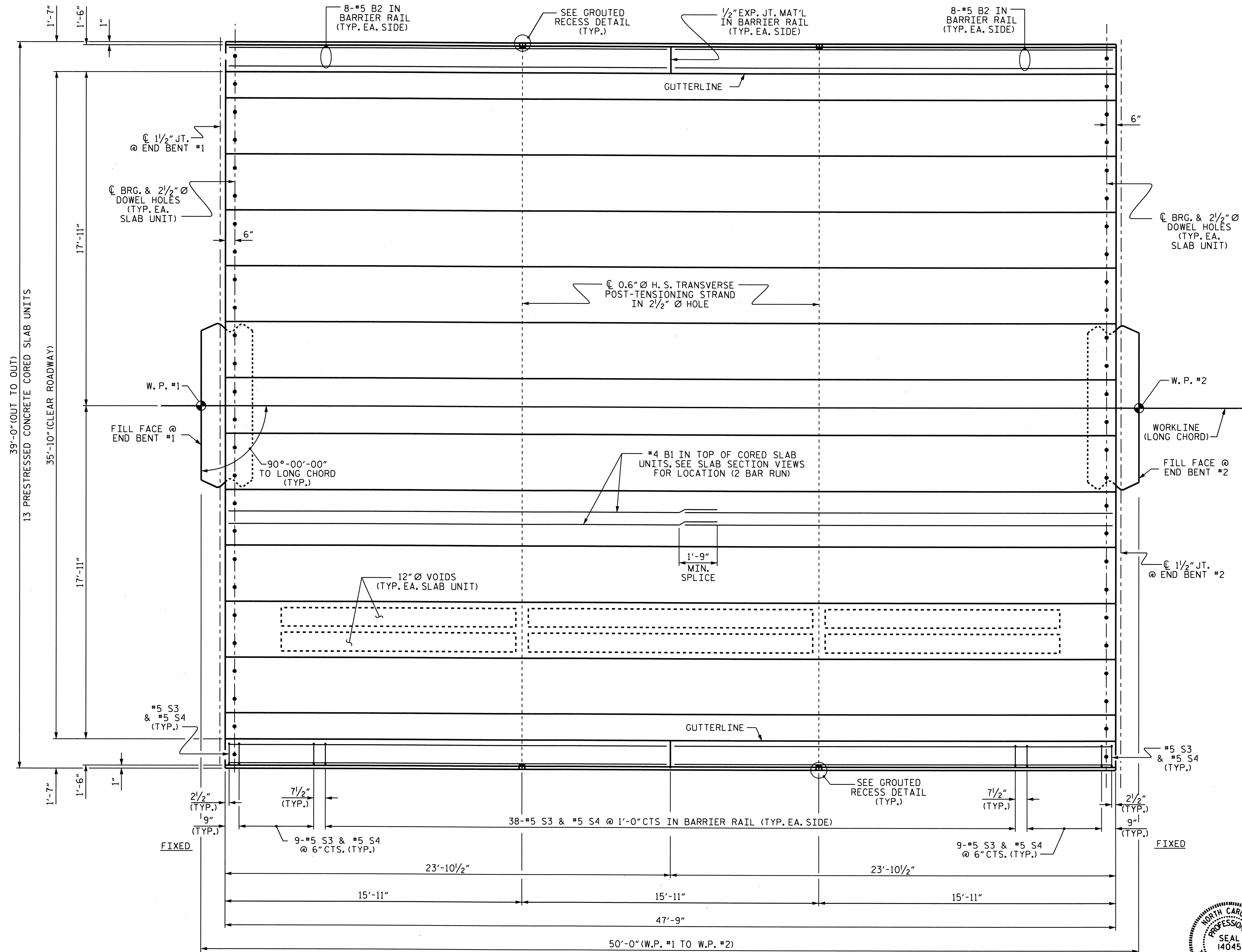
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 3'-0" X 1'-9"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT

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

STR #2

STD. NO. PCS2

ASSEMBLED BY : M.GUDLAUGSSON	DATE : 11/09/09
CHECKED BY : M.D. PISO	DATE : 11/18/09
DRAWN BY : WJH	4/89
CHECKED BY : FCJ	5/89
REV. 10/17/00	RWW/LES
REV. 7/10/01RR	RWW/LES
REV. 5/1/06R	TLA/GM

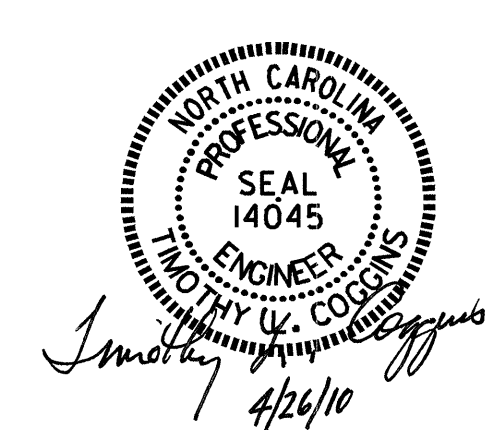


PLAN OF SPAN A

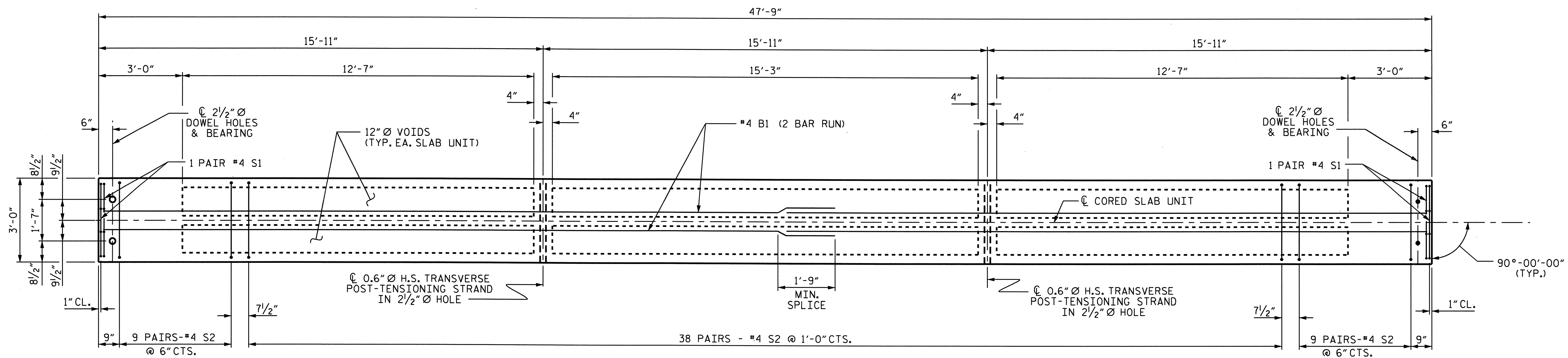
SEE SHEET 3 OF 5 FOR ADDITIONAL REINFORCING STEEL IN CORED SLAB UNITS.

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 21+37.00 -L-
 SHEET 2 OF 5

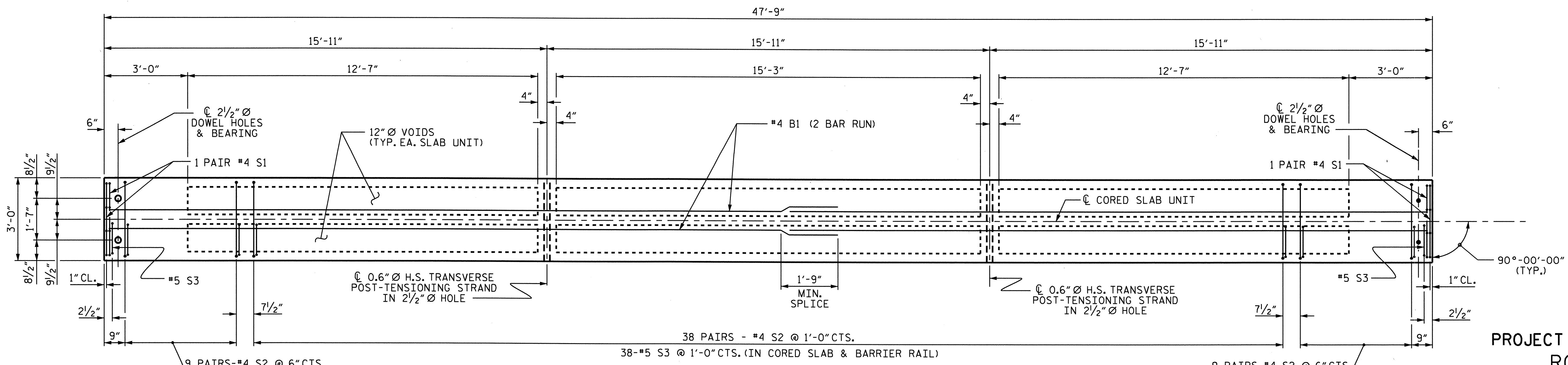
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE PLAN OF SPAN A					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-27 TOTAL SHEETS 59



DRAWN BY: M. GUDLAUGSSON DATE: 11/09/09
 CHECKED BY: M. D. PISO DATE: 11/18/09



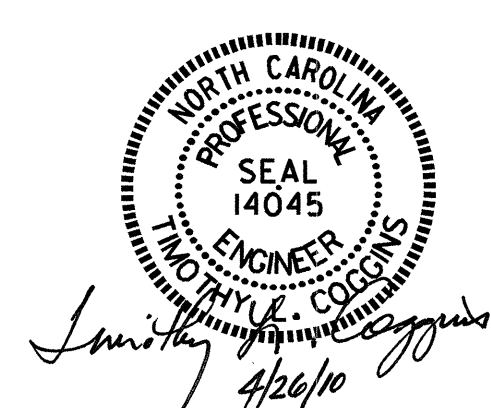
PLAN OF INTERIOR CORED SLAB UNIT - SPAN A



PLAN OF EXTERIOR CORED SLAB UNIT - SPAN A
(RIGHT EXTERIOR UNIT SHOWN, LEFT EXTERIOR UNIT SIMILAR)

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 21+37.00 -L-

SHEET 3 OF 5



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

DRAWN BY: M. GUDLAUGSSON DATE: 11/09/09
 CHECKED BY: M.D. PISO DATE: 11/18/09

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-28
1			3			TOTAL SHEETS
2			4			59

STR #2

NOTES

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

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 1/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

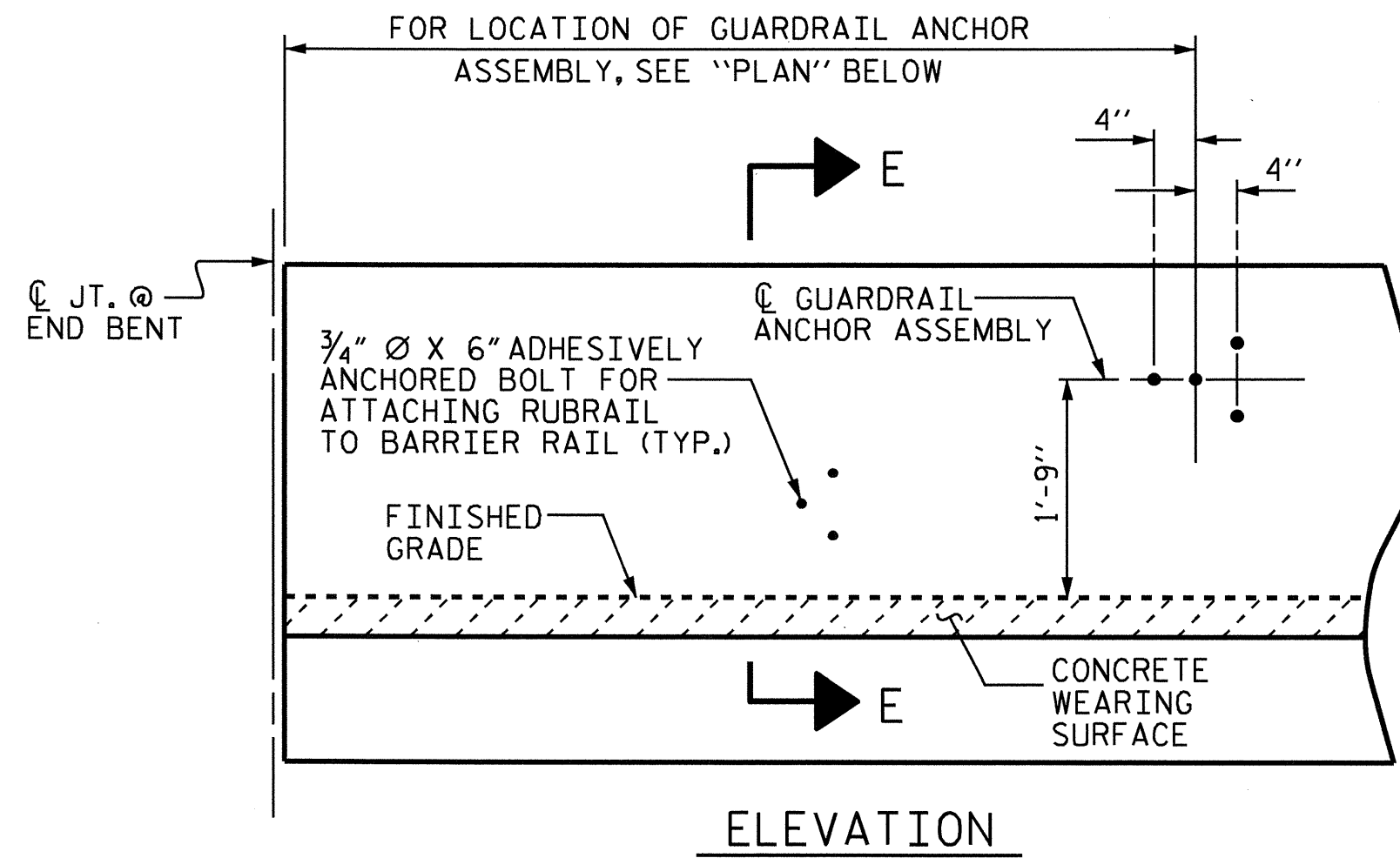
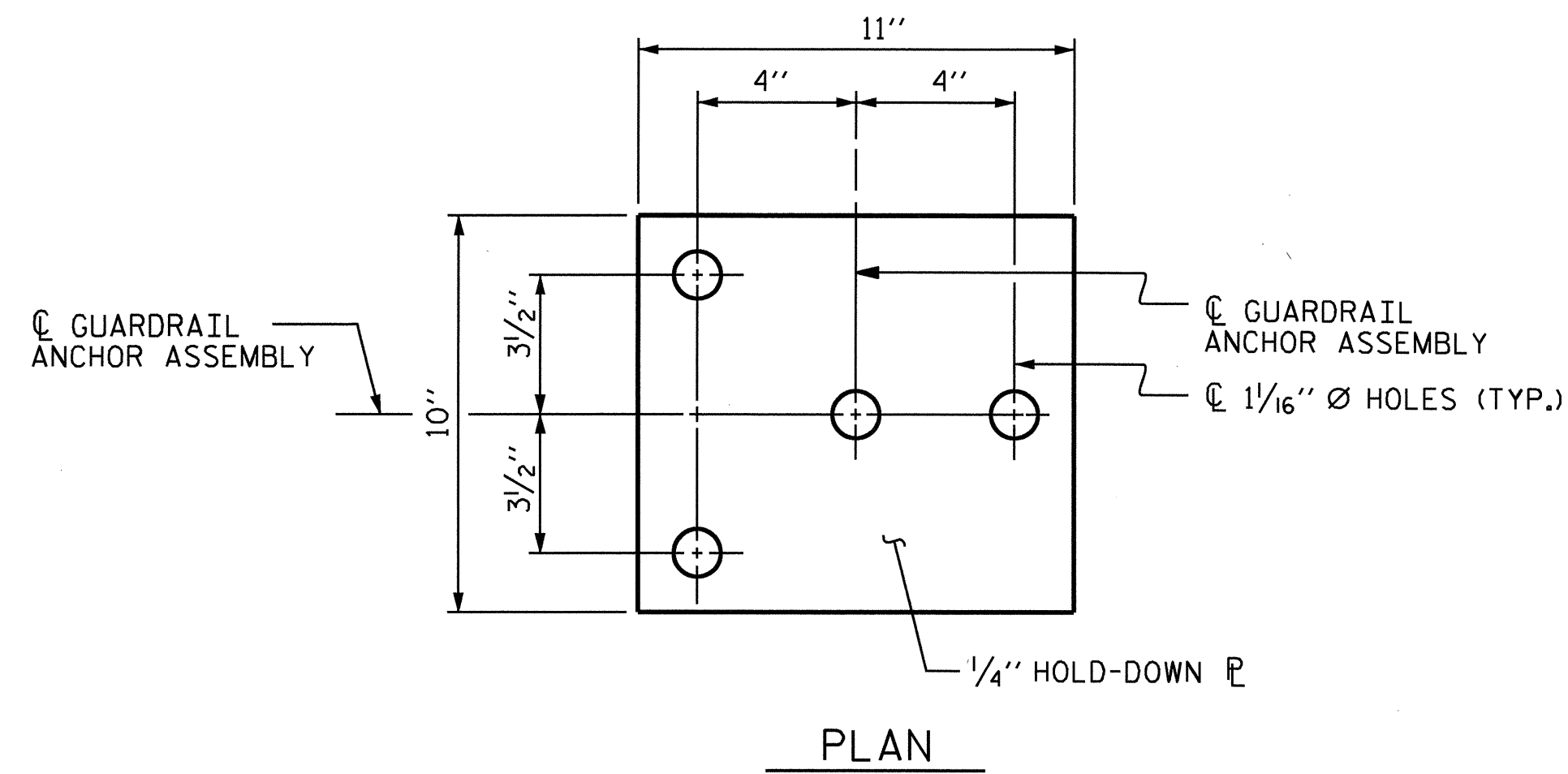
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

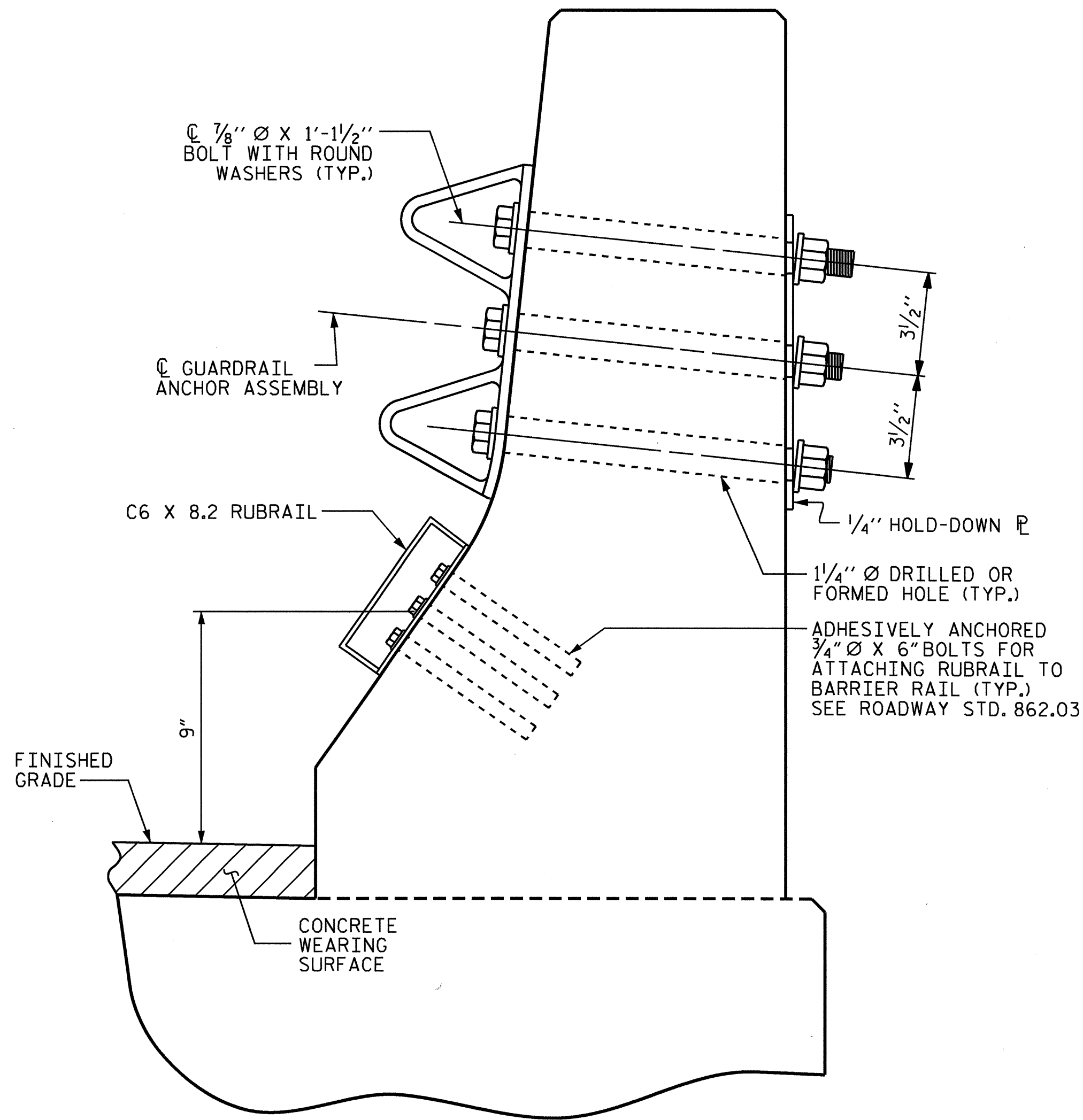
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

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.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.

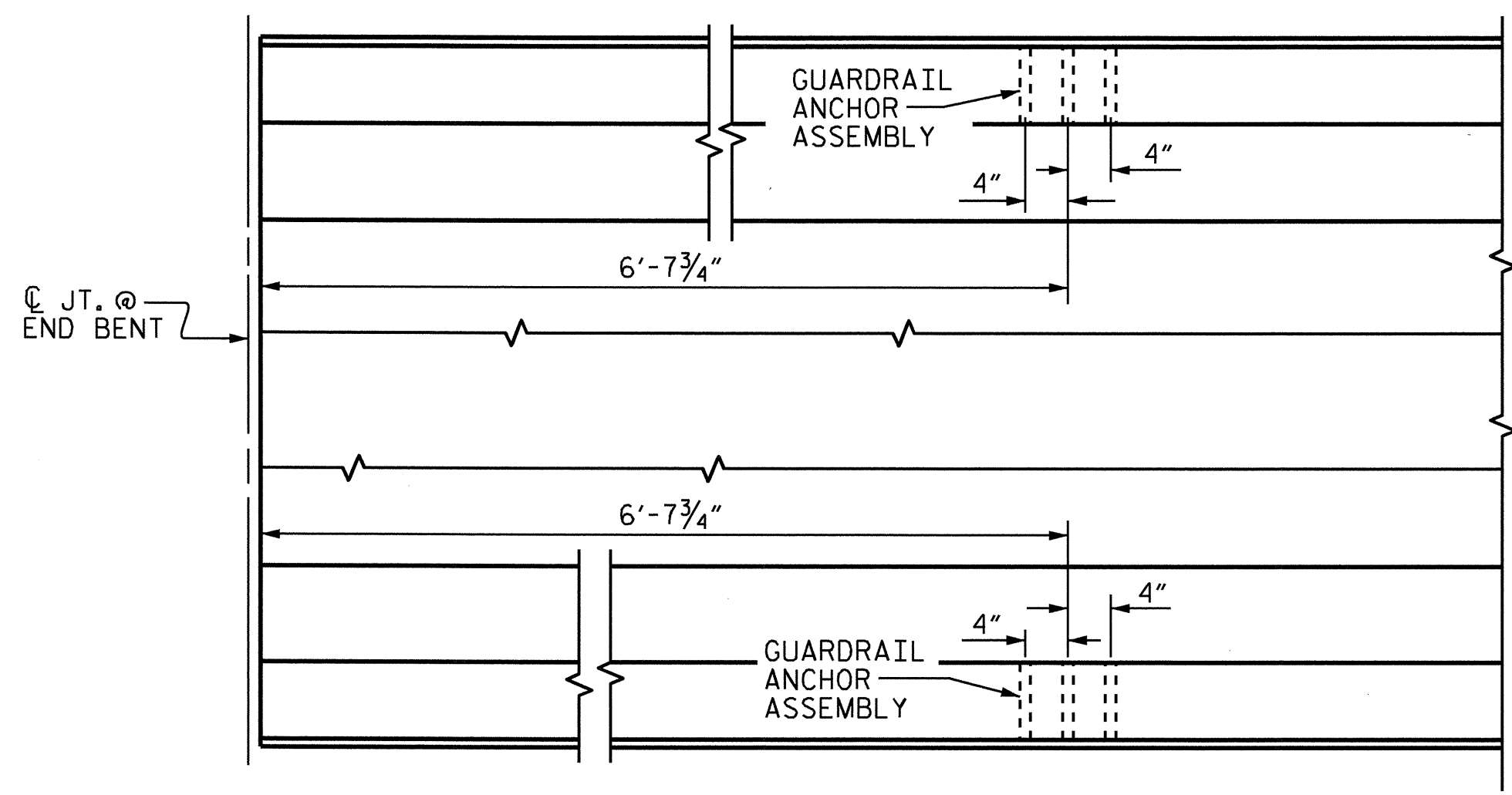


ELEVATION
FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03



SECTION E-E

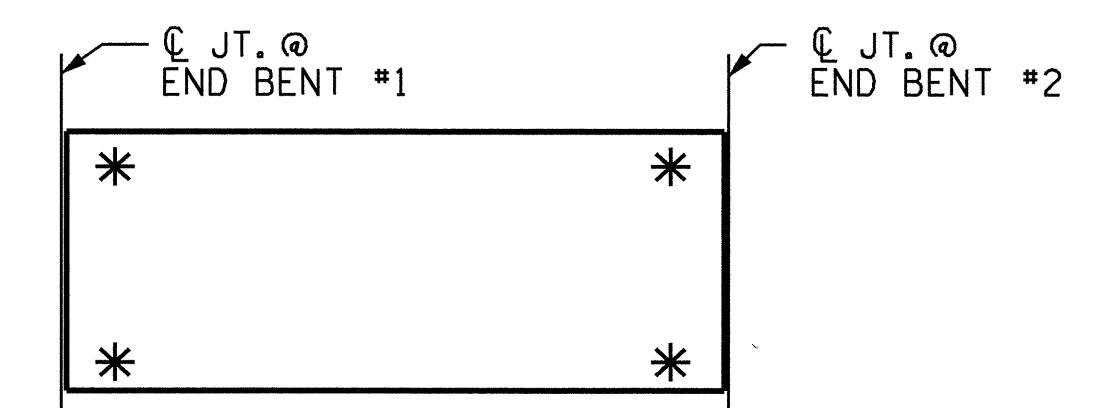
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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



SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

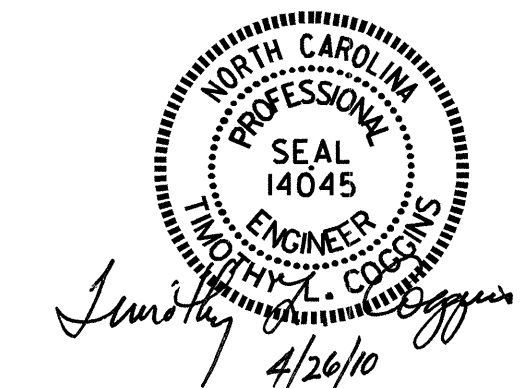
PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 21+37.00 -L-

SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 GUARDRAIL ANCHORAGE
 FOR BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS
2			4			59



ASSEMBLED BY : M.GUDLAUGSSON DATE : 11/23/09
 CHECKED BY : M.D. PISO DATE : 11/18/10
 DRAWN BY : TLA 5/06
 CHECKED BY : GM 5/06
 ADDED 5/1/06R KMM/GM

21-APR-2010 15:05
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STR. #2

STD. NO. GRA2

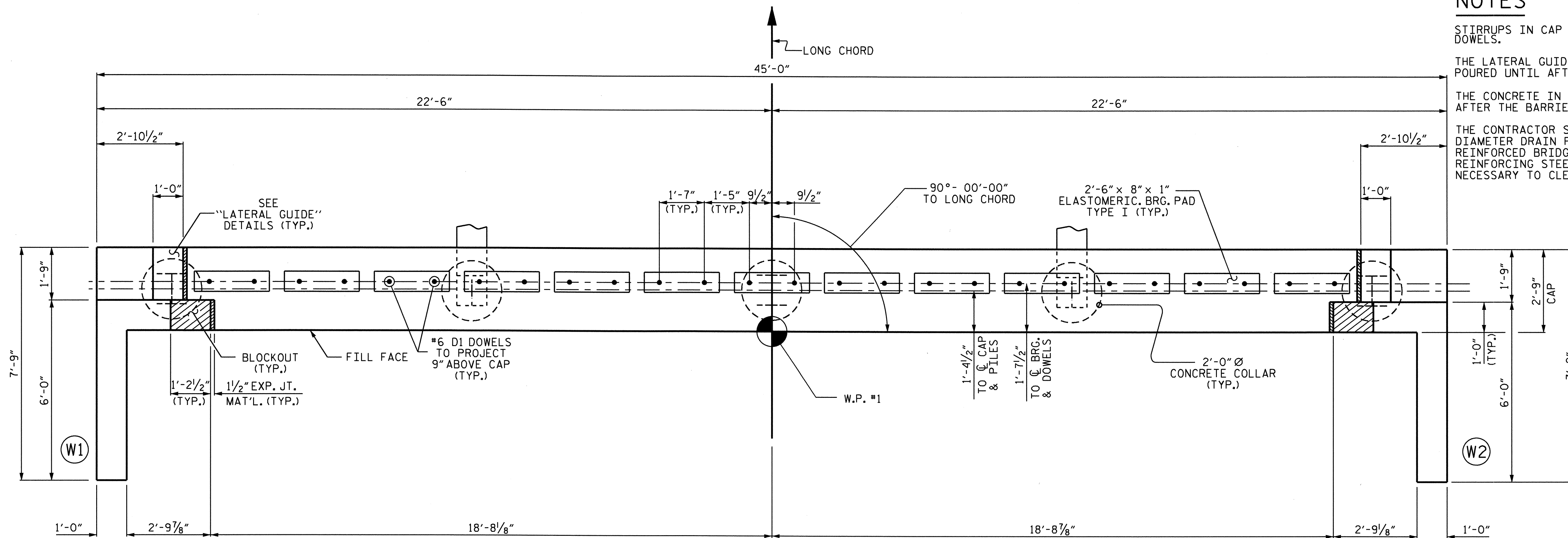
NOTES

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.

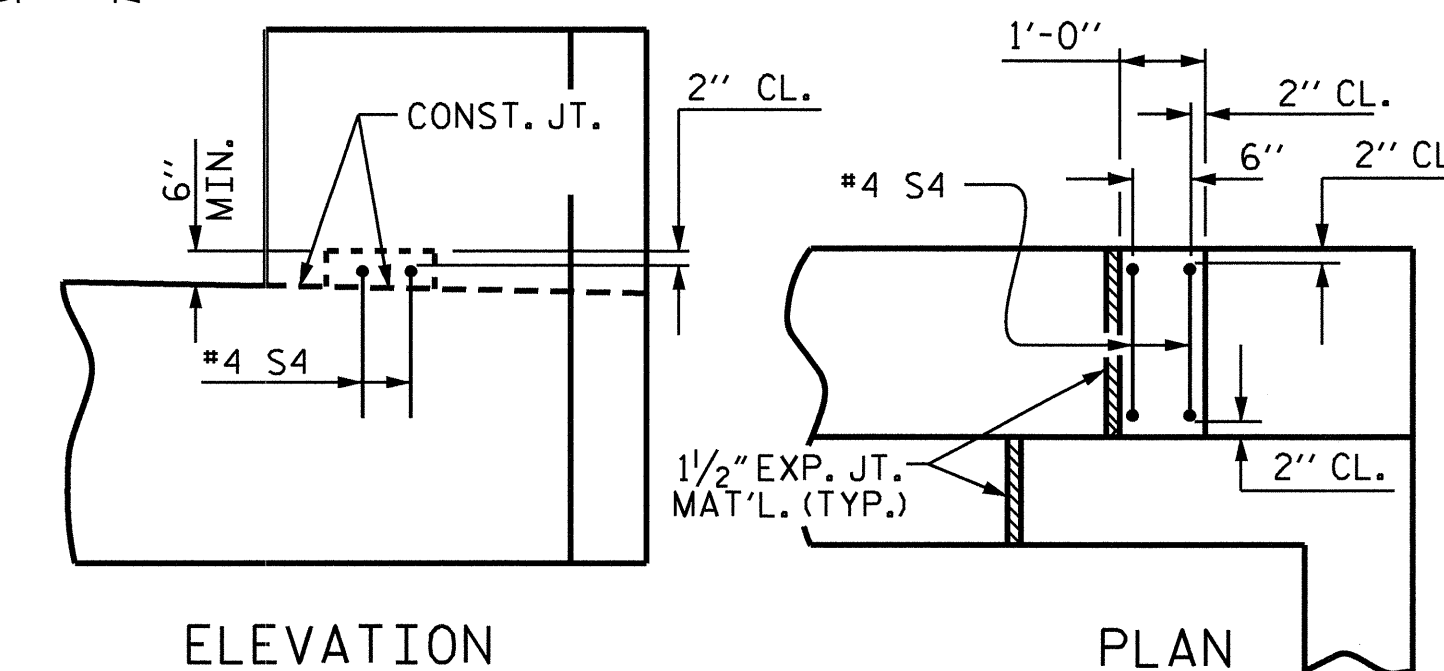
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

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.

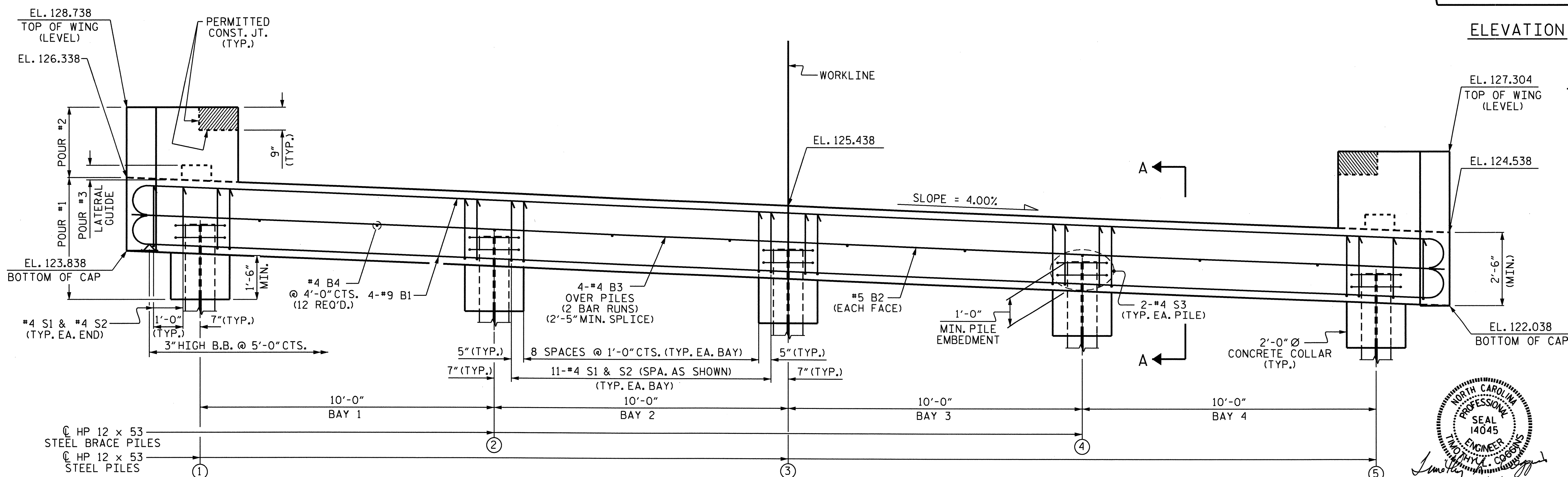


TOP OF PILE ELEVATION CHART

PILE	ELEVATION
#1	124.758
#2	124.358
#3	123.958
#4	123.558
#5	123.158



LATERAL GUIDE
(EACH END SIMILAR)

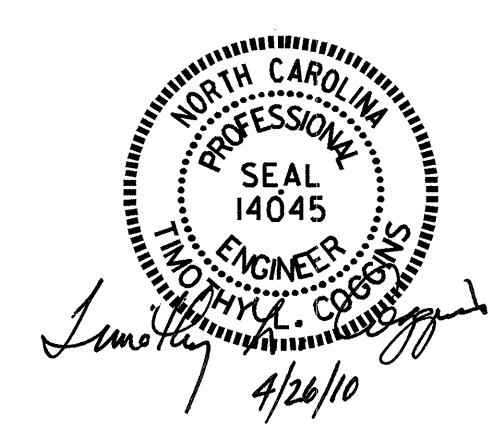


PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 21+37.00 -L-
 SHEET 1 OF 3

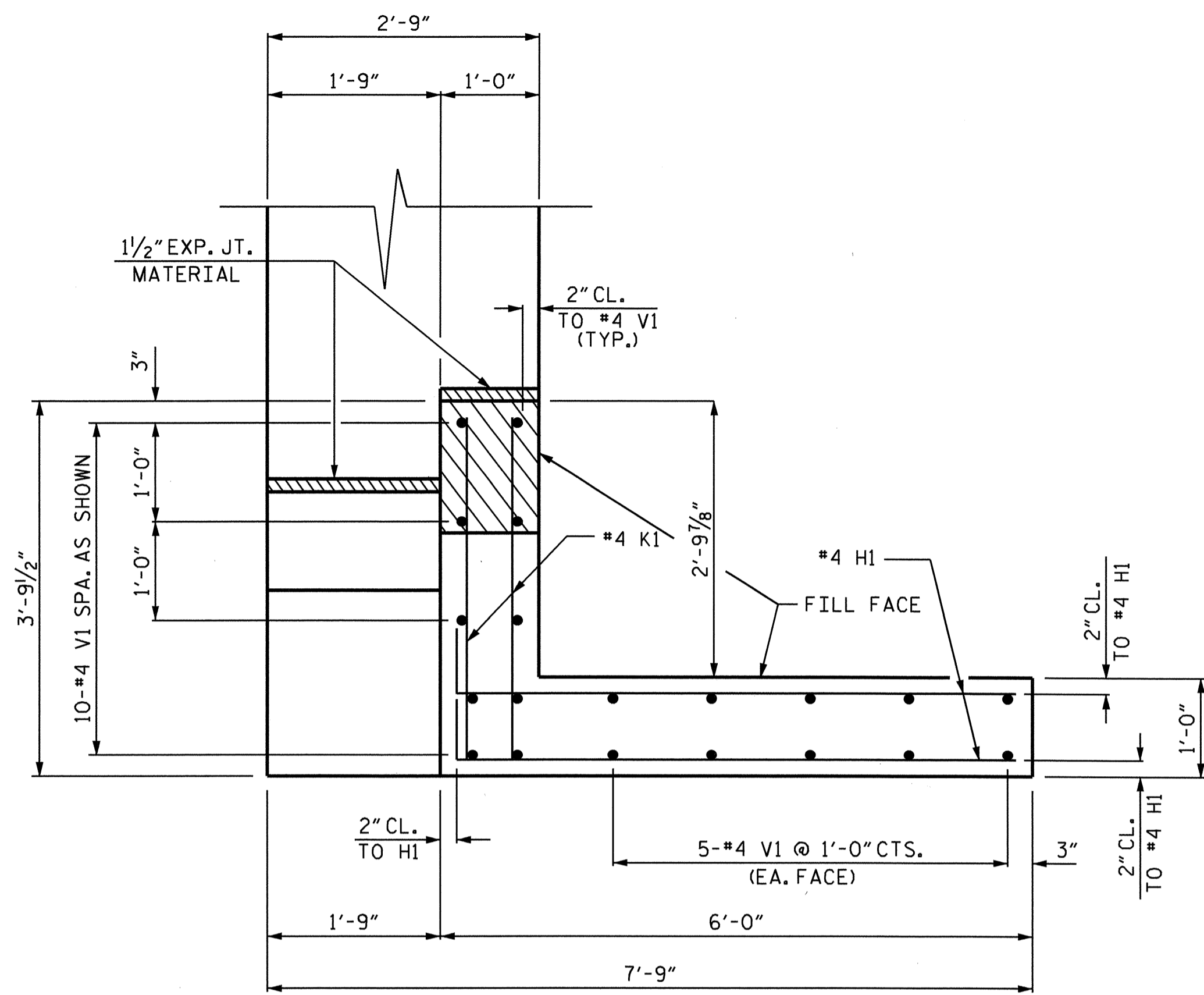
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT #1**

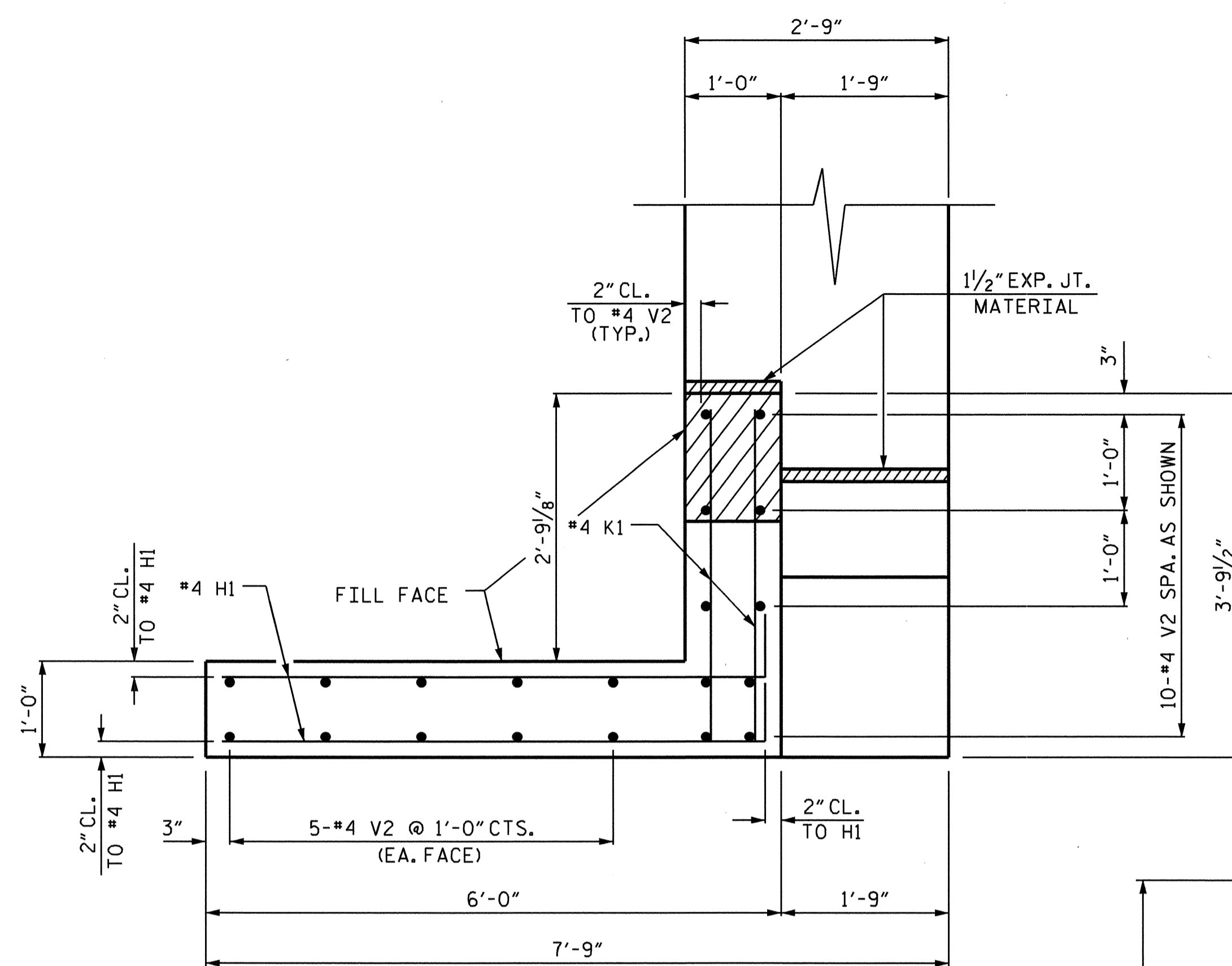
REVISIONS						SHEET NO. S-31
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 59
2			4			



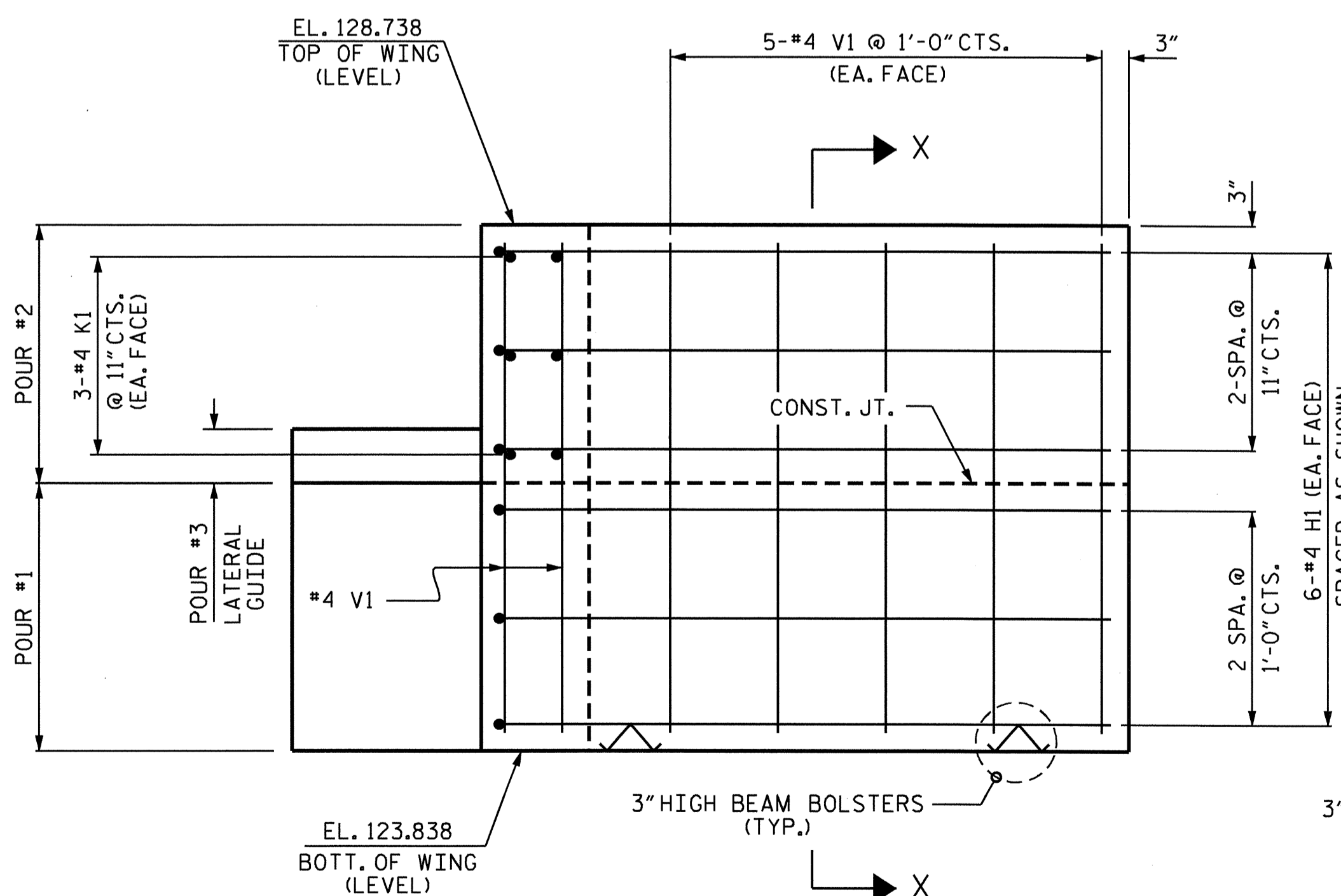
DRAWN BY: J.B. WILSON DATE: 12/28/09
 CHECKED BY: B.N. BARODAWALA DATE: 1/15/10



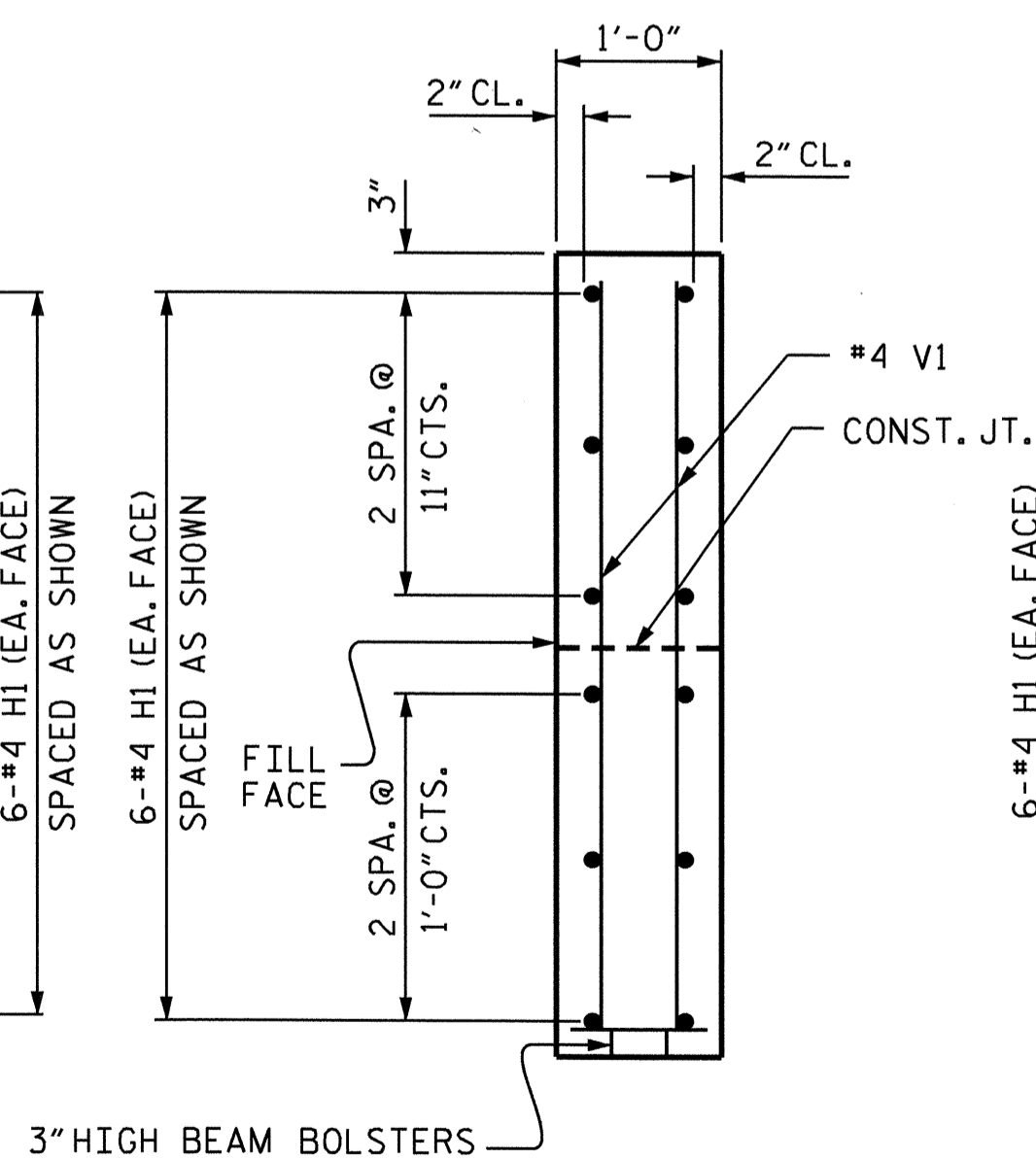
PLAN OF WING - (W1)



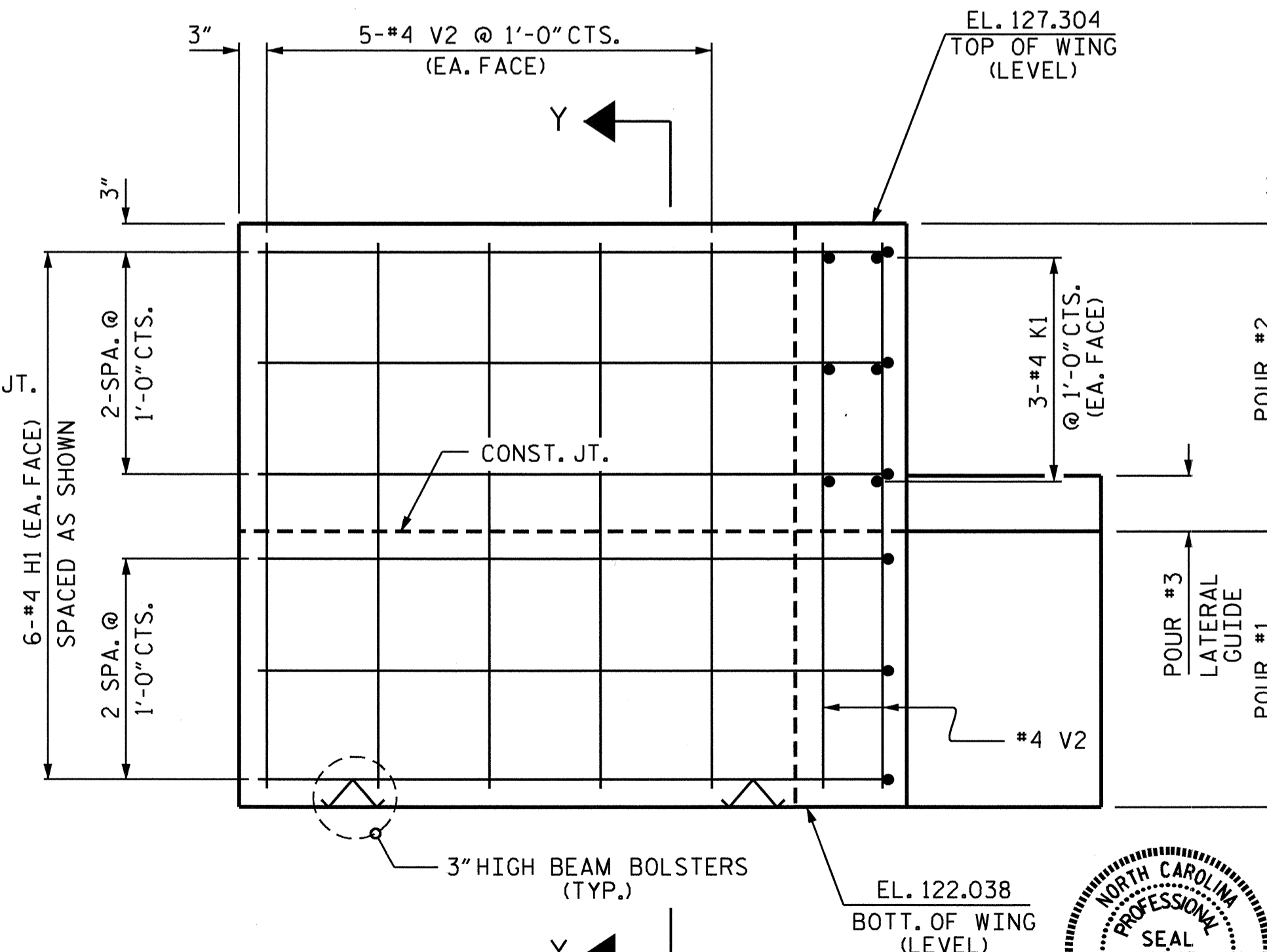
PLAN OF WING - (W2)



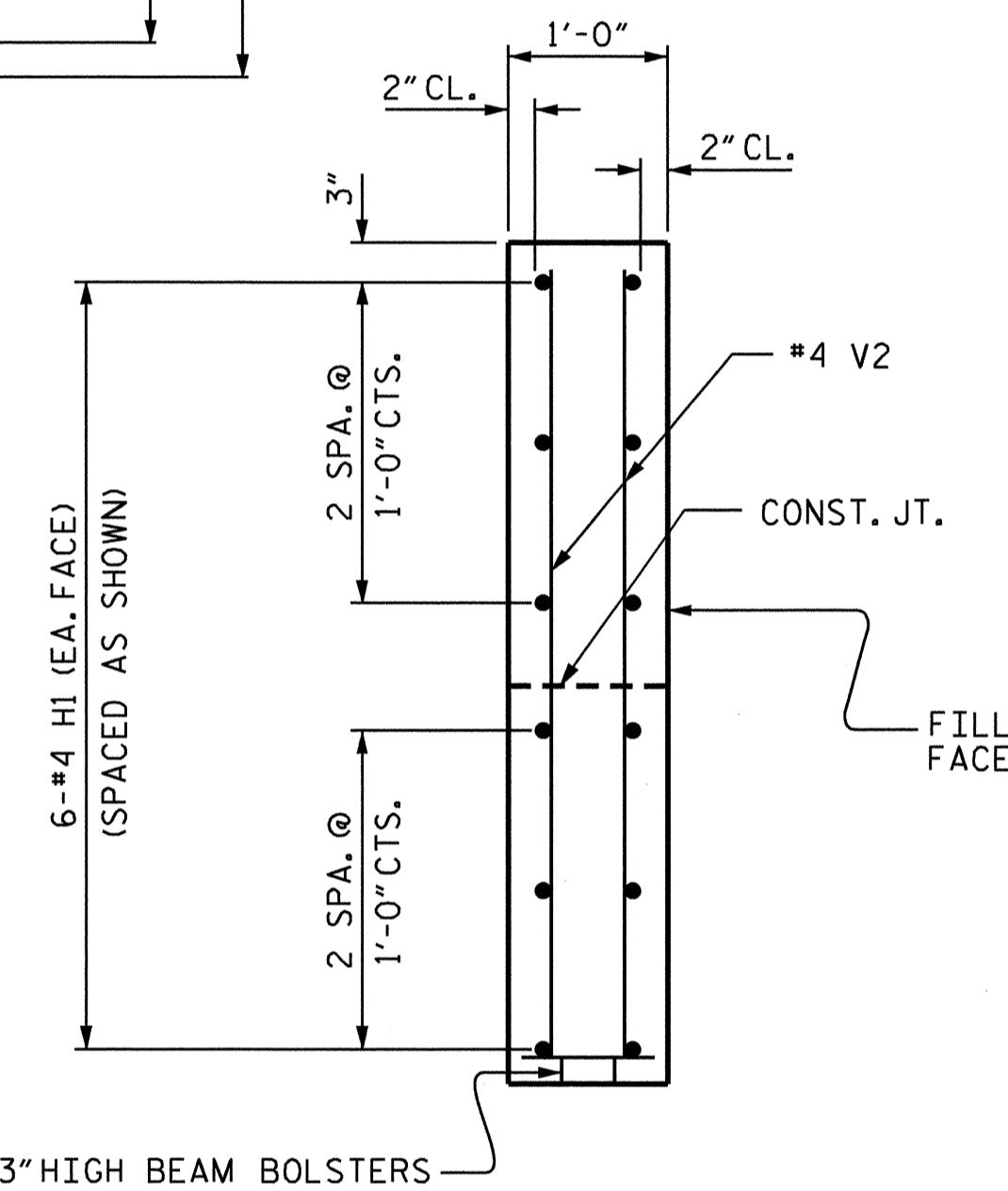
ELEVATION OF WING - (W1)



SECTION X-X



ELEVATION OF WING - (W2)



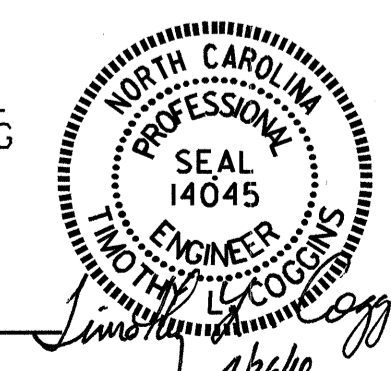
SECTION Y-Y

PROJECT NO. B-3693
 ROBESON COUNTY
 STATION: 21+37.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #1

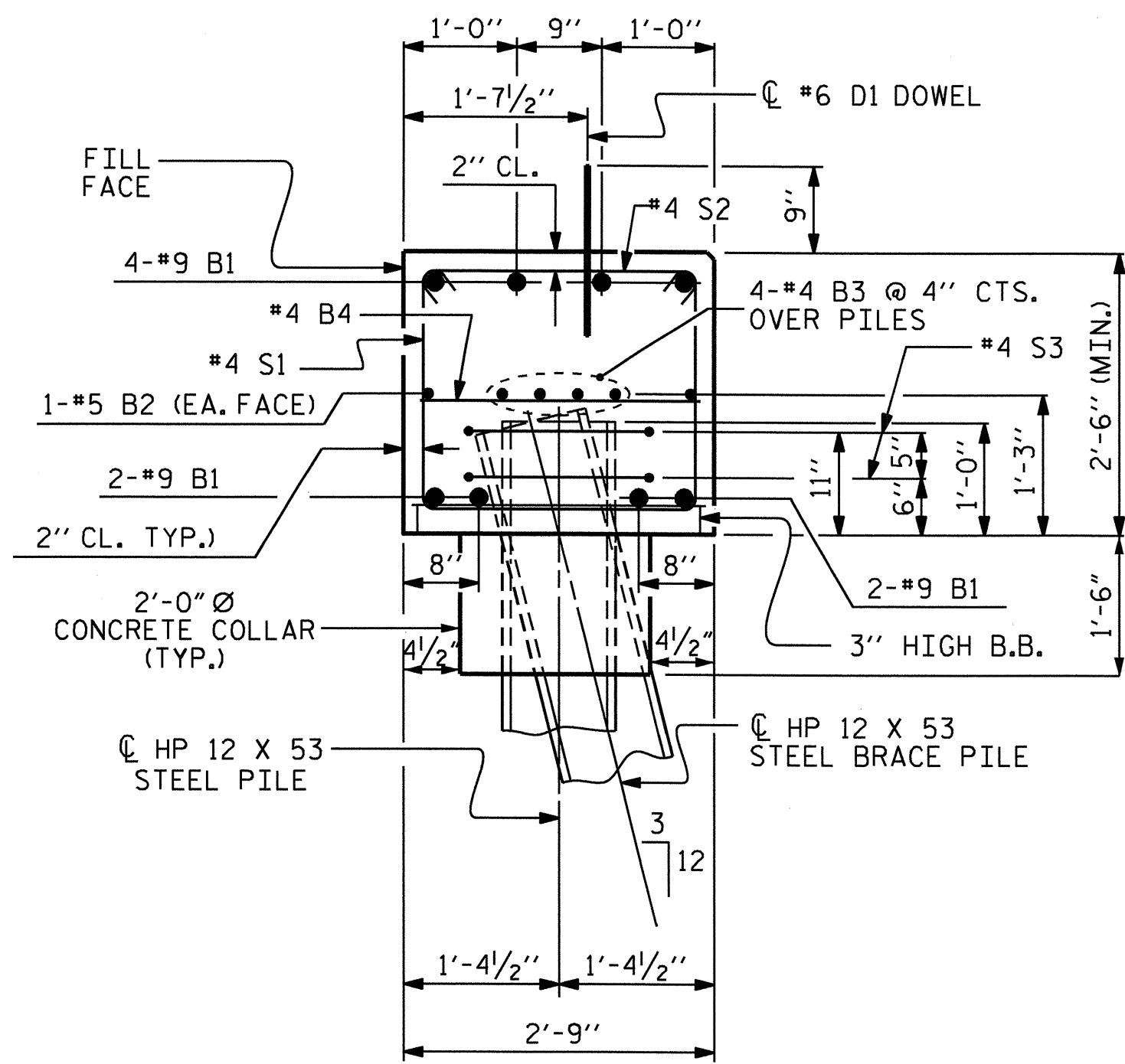


DRAWN BY: J.B. WILSON DATE: 12/30/09
 CHECKED BY: B.N. BARODAWALA DATE: 1/15/10

21-APR-2010 15:04
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 taverette

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

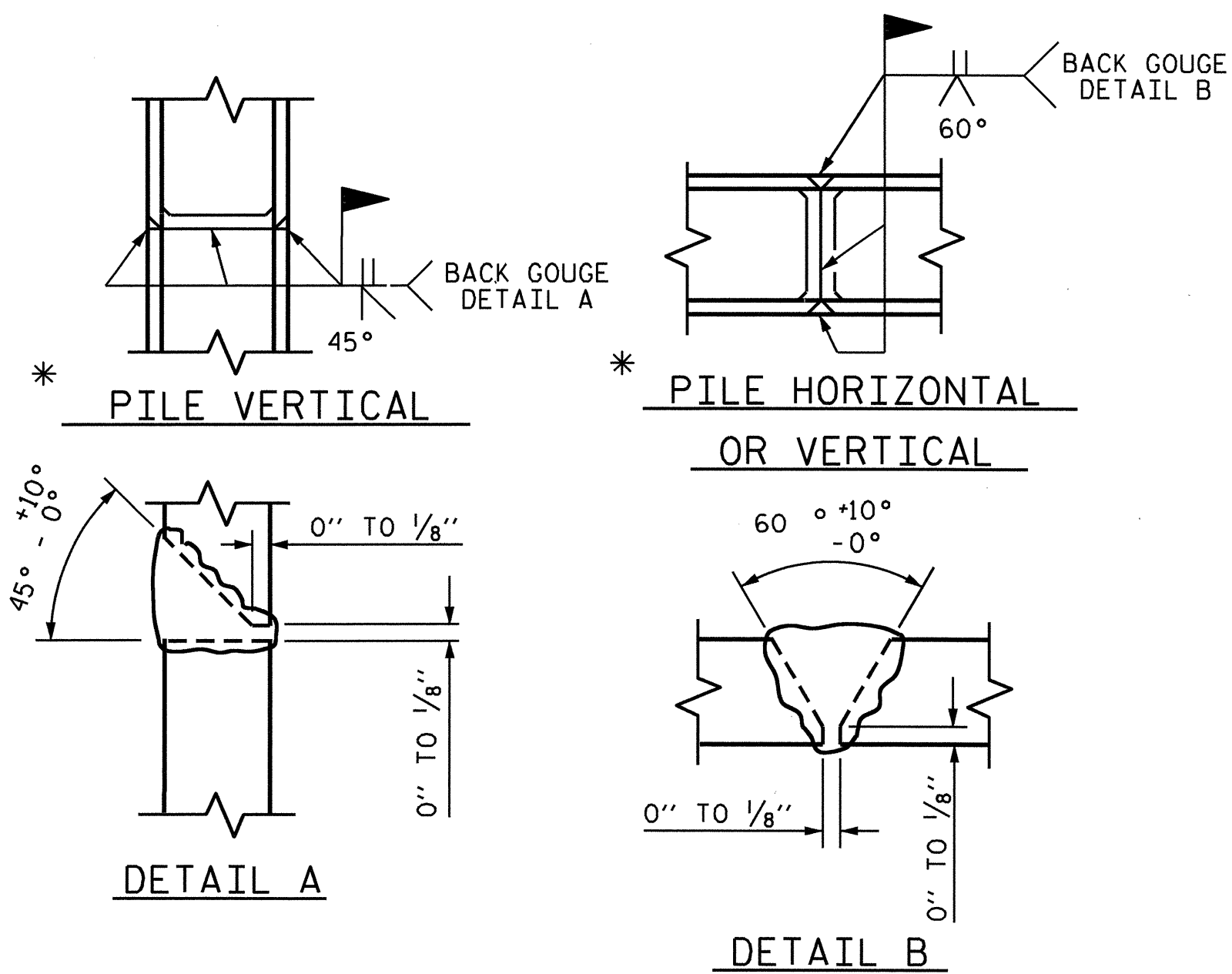
TOTAL SHEETS: 59



SECTION A-A

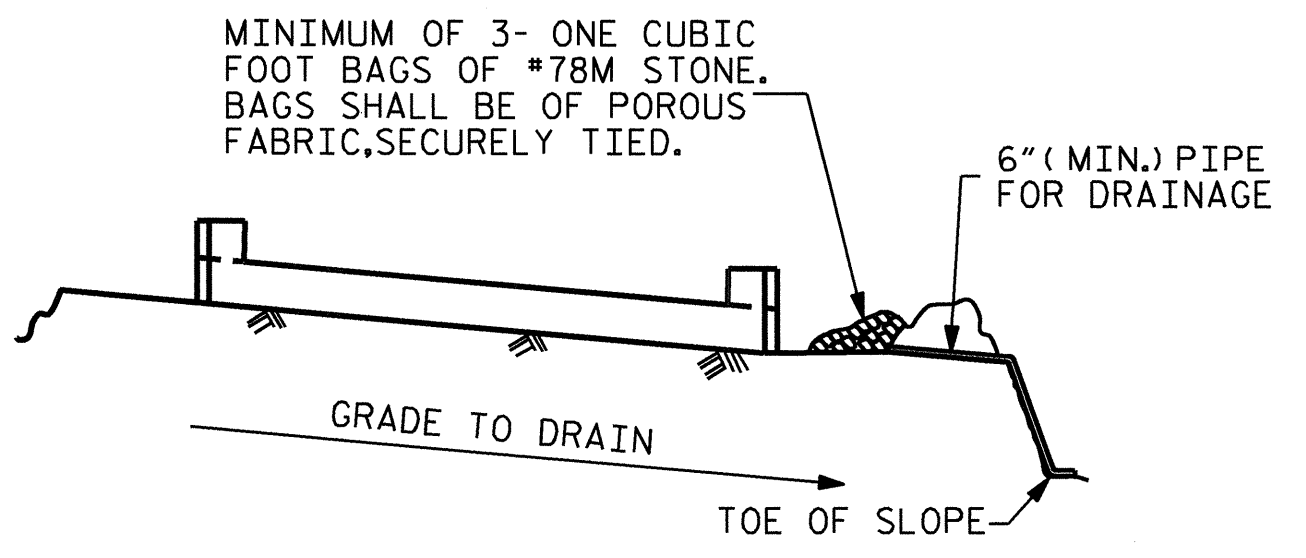
BAR TYPES						BILL OF MATERIAL END BENT #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	47'-1"	1281	D1	26	#6	STR	1'-6"	59
B2	2	#5	STR	44'-8"	93	H1	24	#4	2	6'-4"	102
B3	8	#4	STR	23'-7"	126	K1	12	#4	STR	3'-5"	27
B4	12	#4	STR	2'-5"	19	S1	48	#4	3	7'-5"	238
						S2	48	#4	4	3'-2"	102
						S3	10	#4	6	6'-6"	43
						S4	4	#4	5	4'-5"	12
						V1	20	#4	STR	4'-6"	60
						V2	20	#4	STR	4'-9"	63
REINFORCING STEEL = 2225 LBS						CLASS A CONCRETE BREAKDOWN					
						POUR 1 (CAP, PILE COLLAR & LOWER PART OF WINGS) C.Y. 13.3					
						POUR 2 (UPPER PART OF WINGS) C.Y. 1.7					
						POUR 3 (LATERAL GUIDES) C.Y. 0.1					
						TOTAL C.Y. 15.1					
						HP 12 X 53 STEEL PILES :					
						NO. : 5 LIN. FT. : 275					
						PILE REDRIVES EACH 5					

ALL BAR DIMENSIONS ARE OUT TO OUT.



* POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



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

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

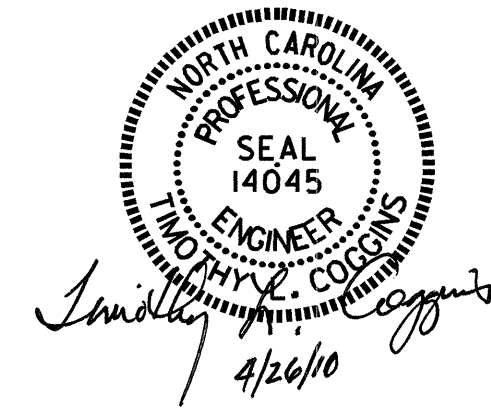
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 21+37.00 -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 59



DRAWN BY : J.B. WILSON DATE 12/30/09
 CHECKED BY : B.N. BARODAWALA DATE 1/15/10

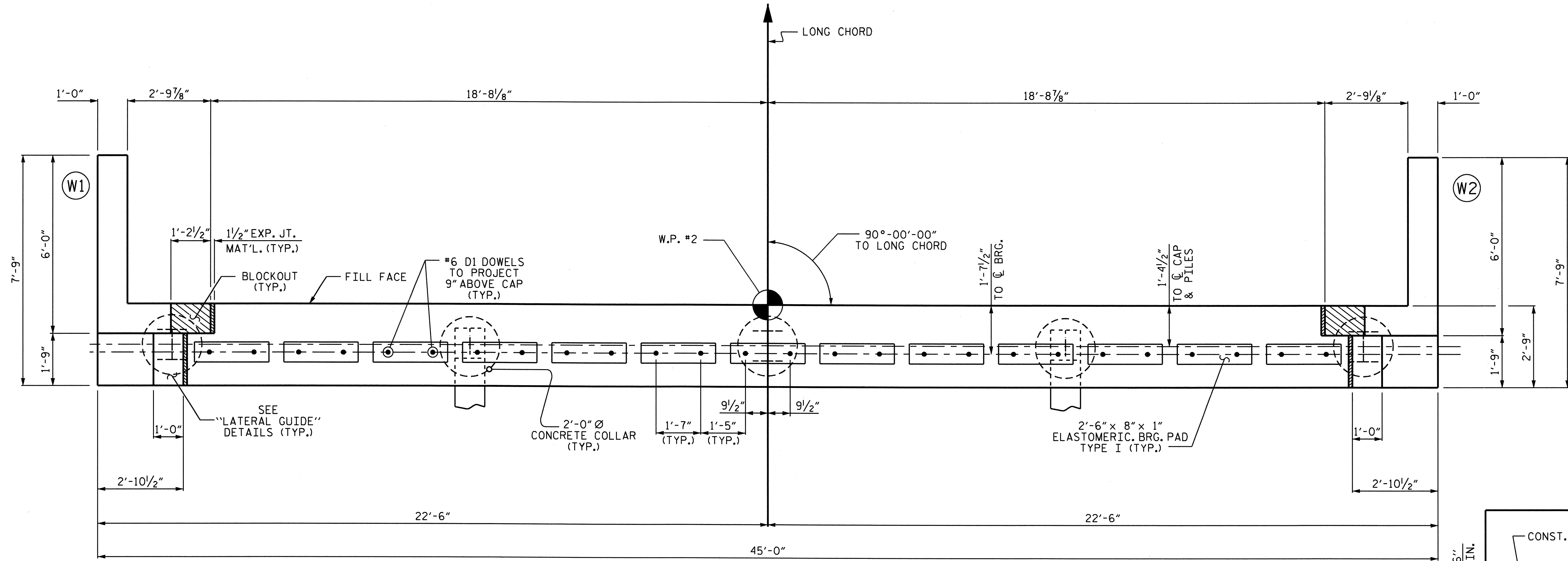
NOTES

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

THE LATERAL GUIDE AT EACH END OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

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

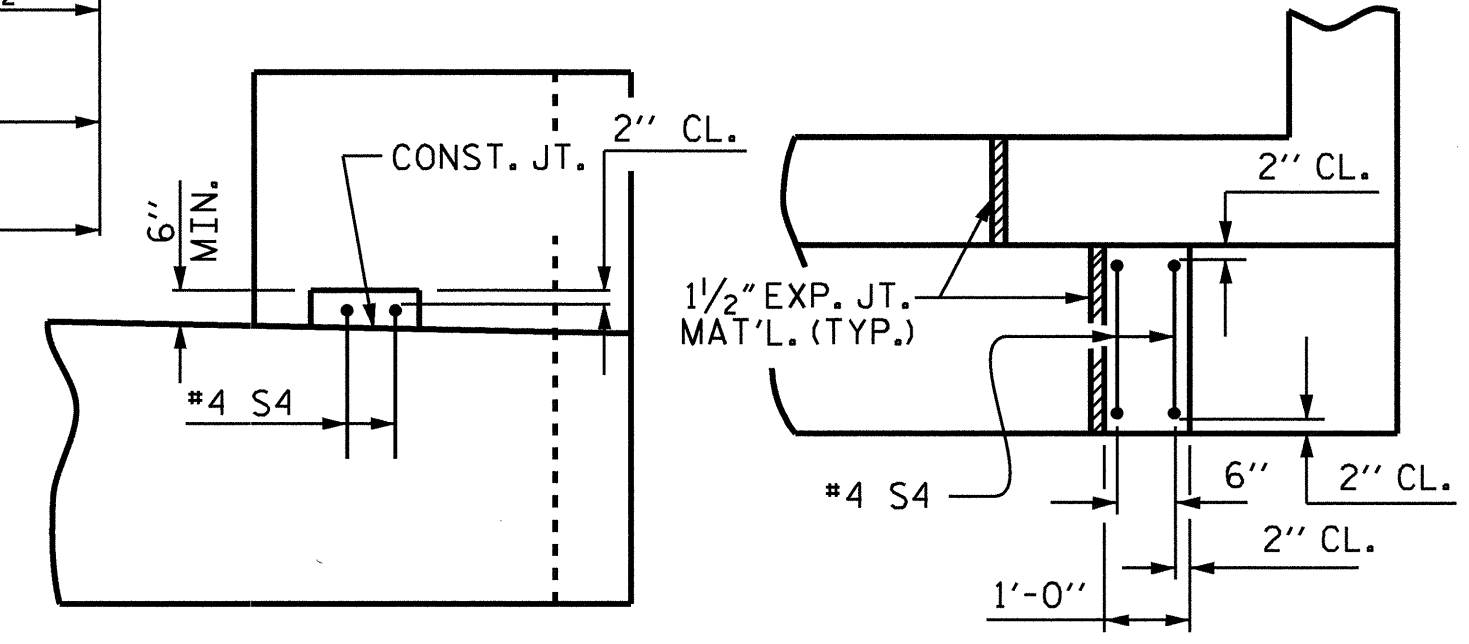
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



PLAN

TOP OF PILE ELEVATION CHART

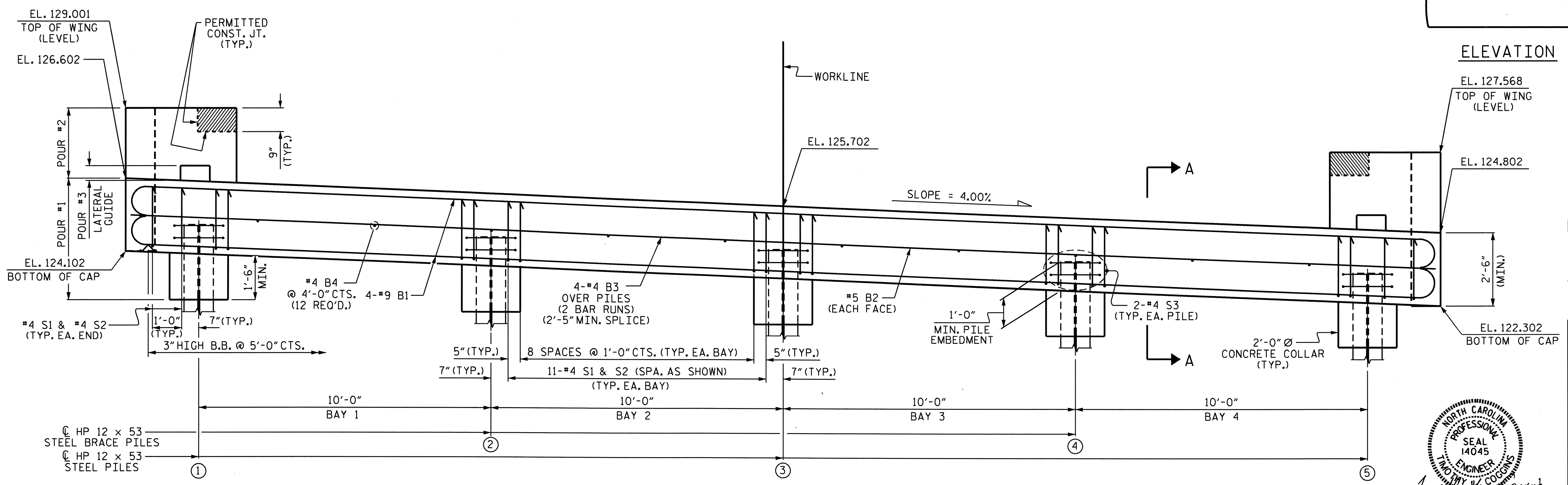
PILE	ELEVATION
#1	125.022
#2	124.622
#3	124.222
#4	123.822
#5	123.422



ELEVATION

PLAN

LATERAL GUIDE
(EACH END SIMILAR)



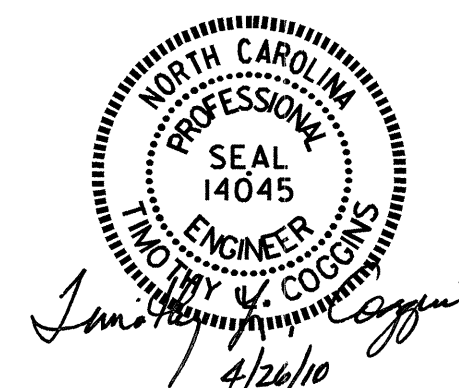
ELEVATION

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 21+37.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT #2**

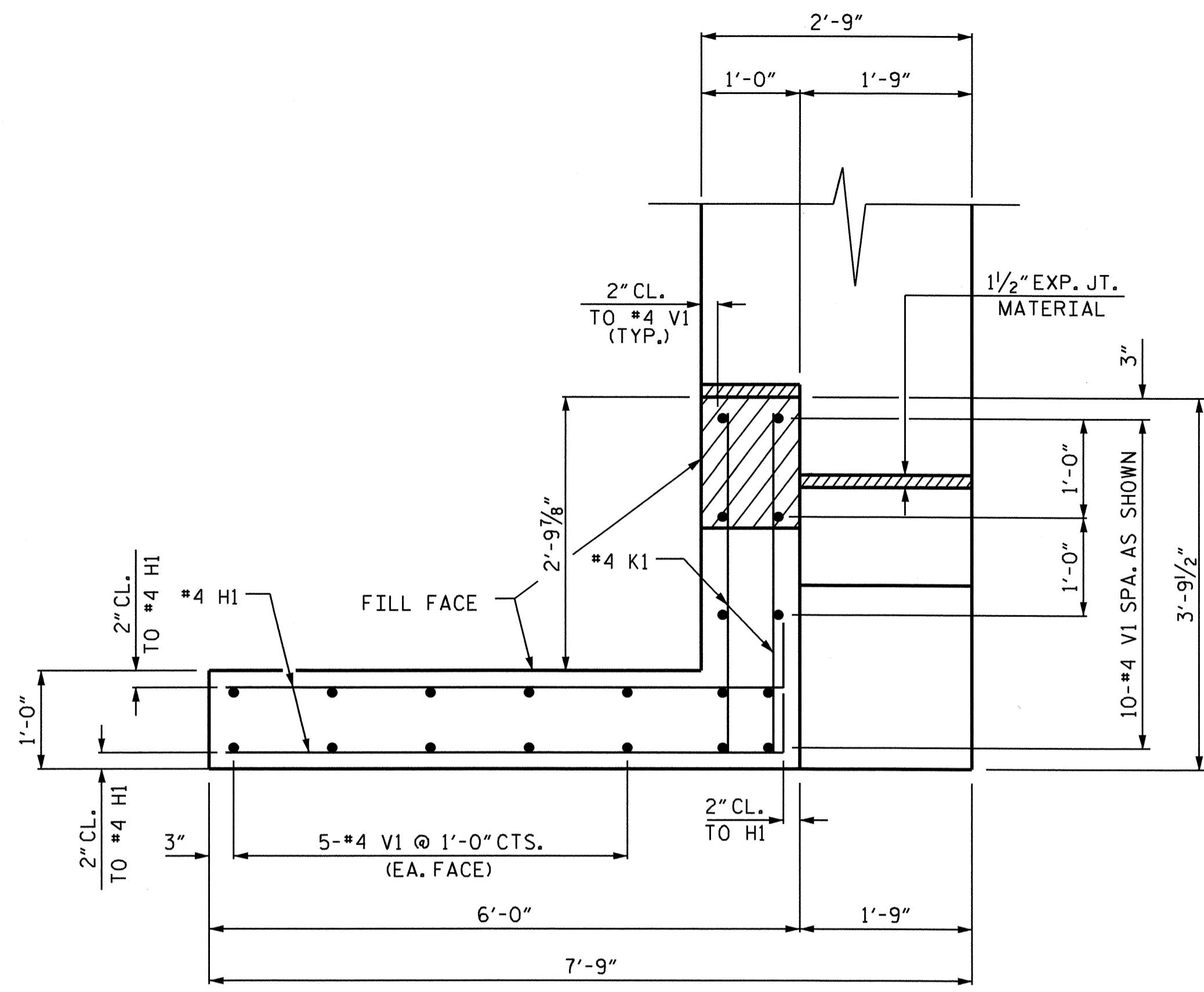


DRAWN BY: J.B. WILSON DATE: 12/28/09
 CHECKED BY: B.N. BARODAWALA DATE: 1/26/10

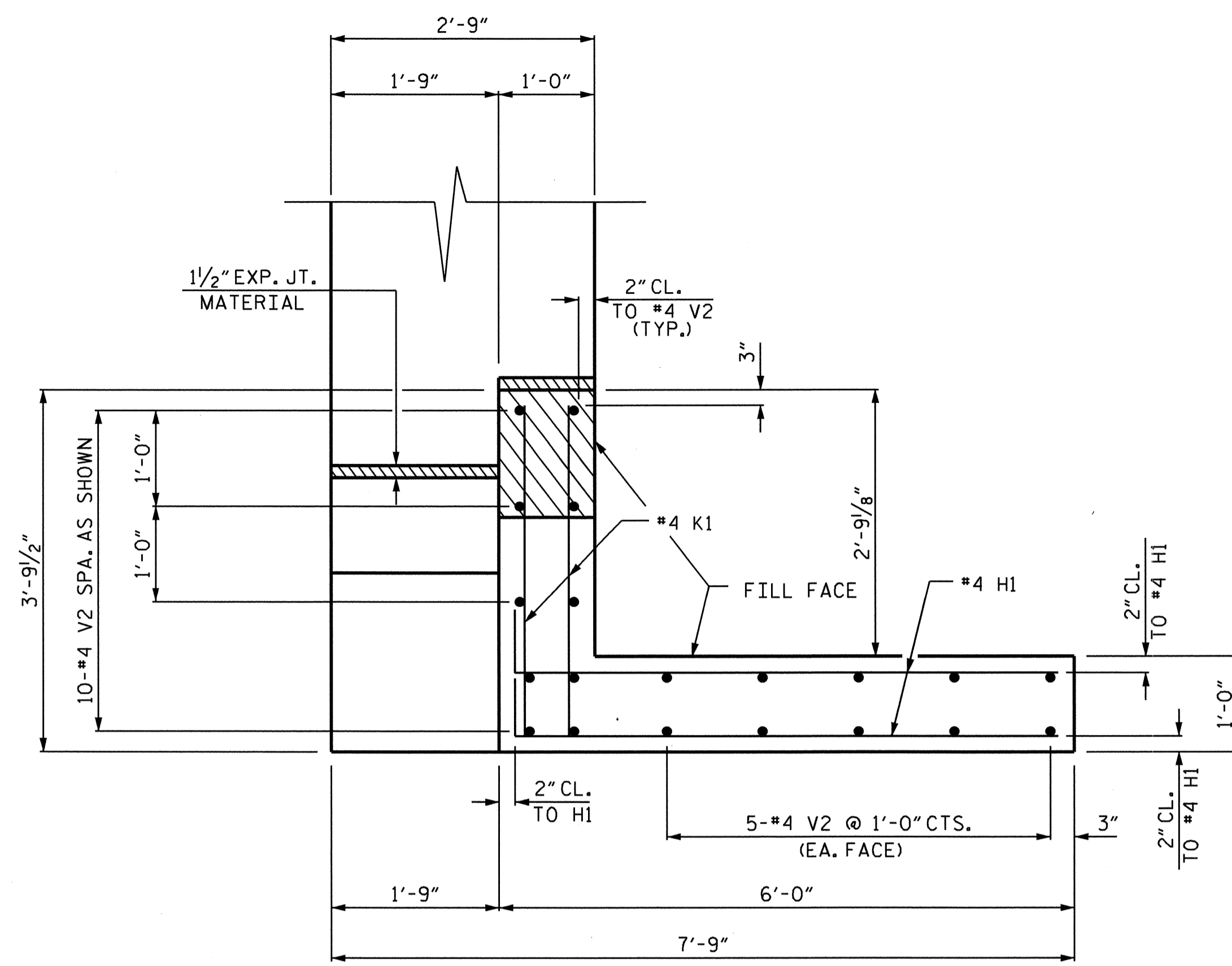
REVISIONS

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

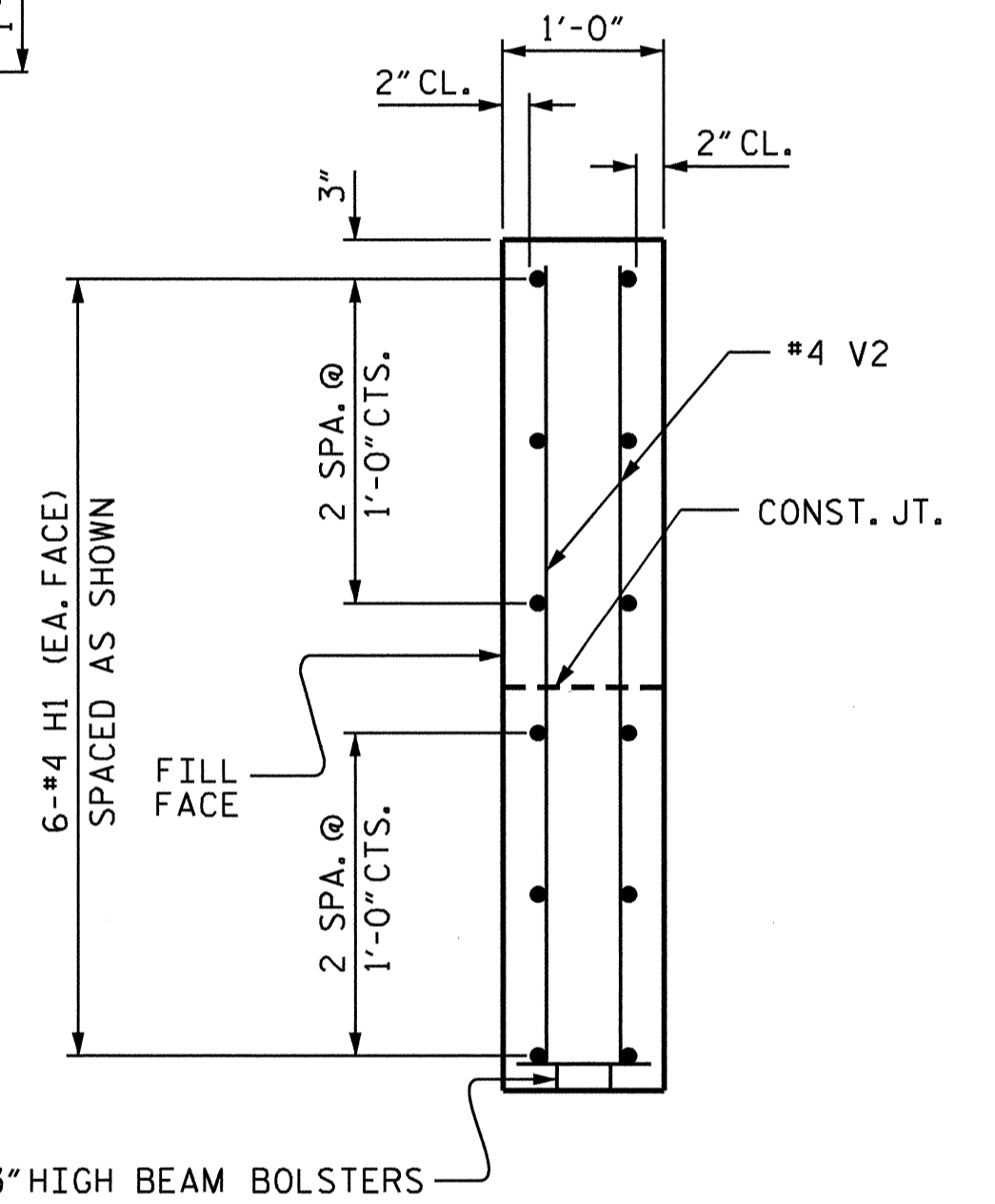
SHEET NO. S-34
 TOTAL SHEETS 59



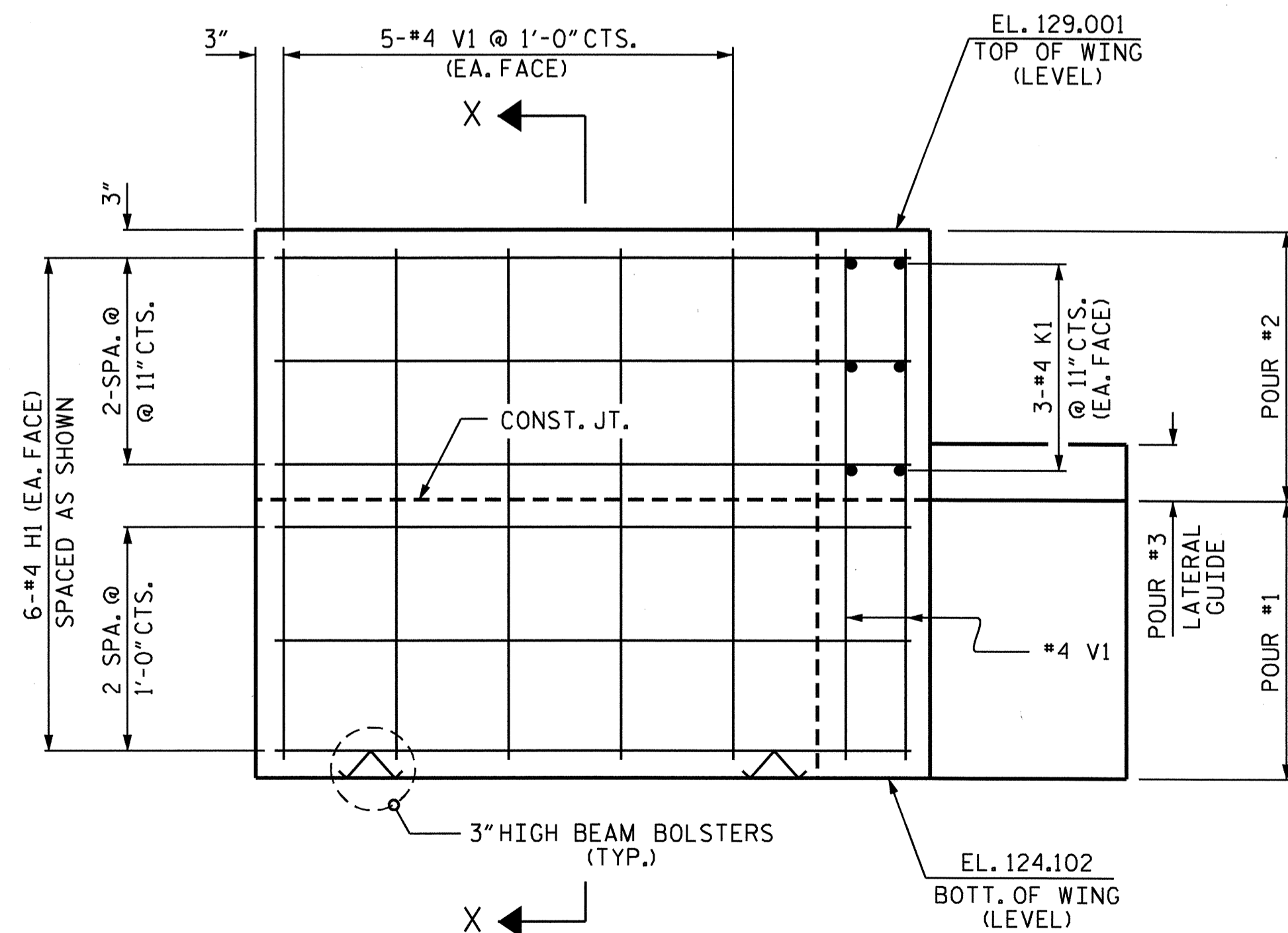
PLAN OF WING - (W1)



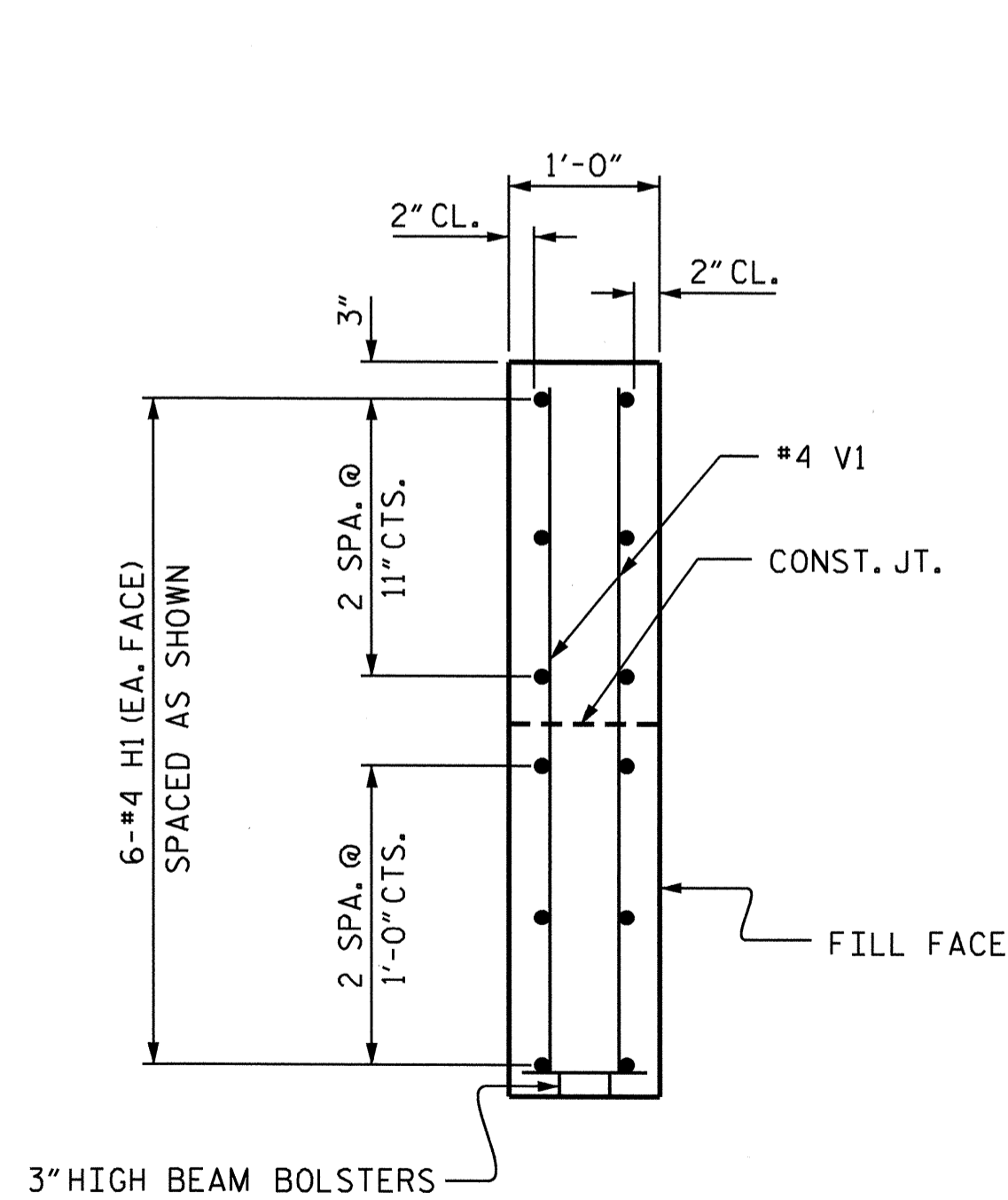
PLAN OF WING - (W2)



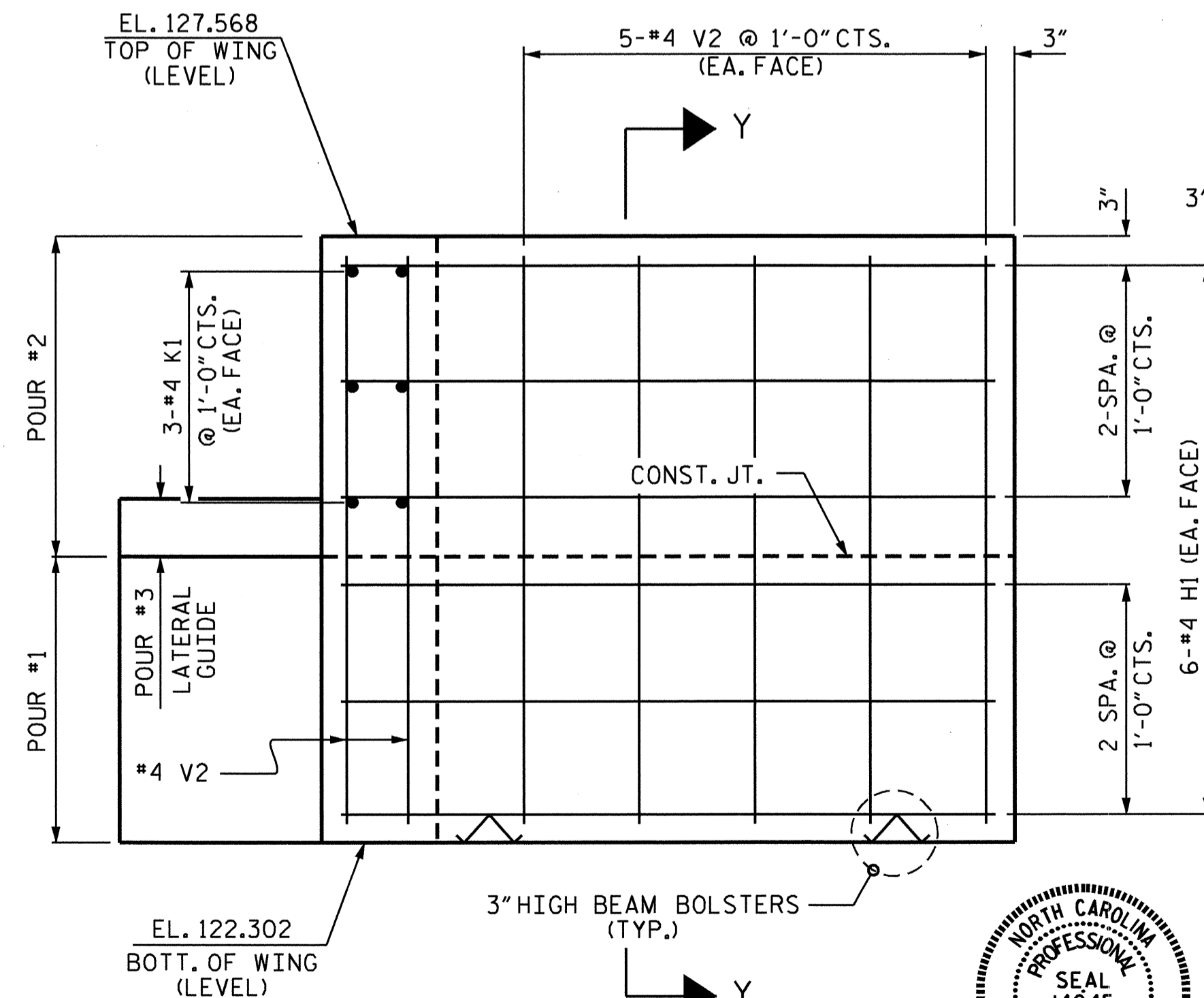
SECTION Y-Y



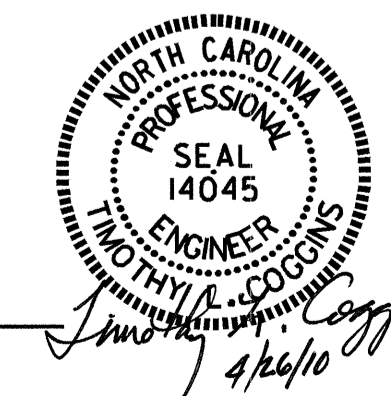
ELEVATION OF WING - (W1)



SECTION X-X



ELEVATION OF WING - (W2)



PROJECT NO. B-3693
 ROBESON COUNTY
 STATION: 21+37.00 -L-

SHEET 2 OF 3

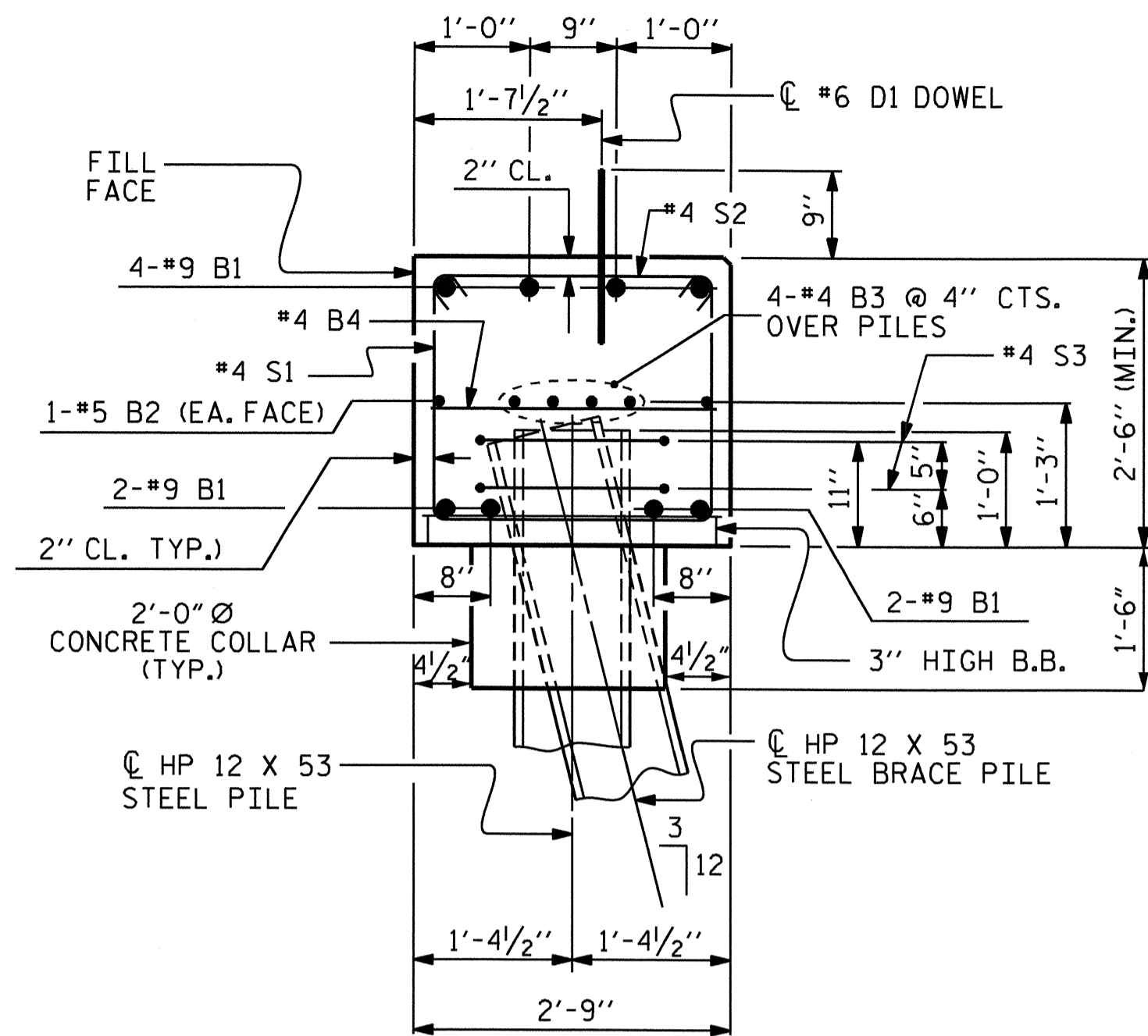
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #2

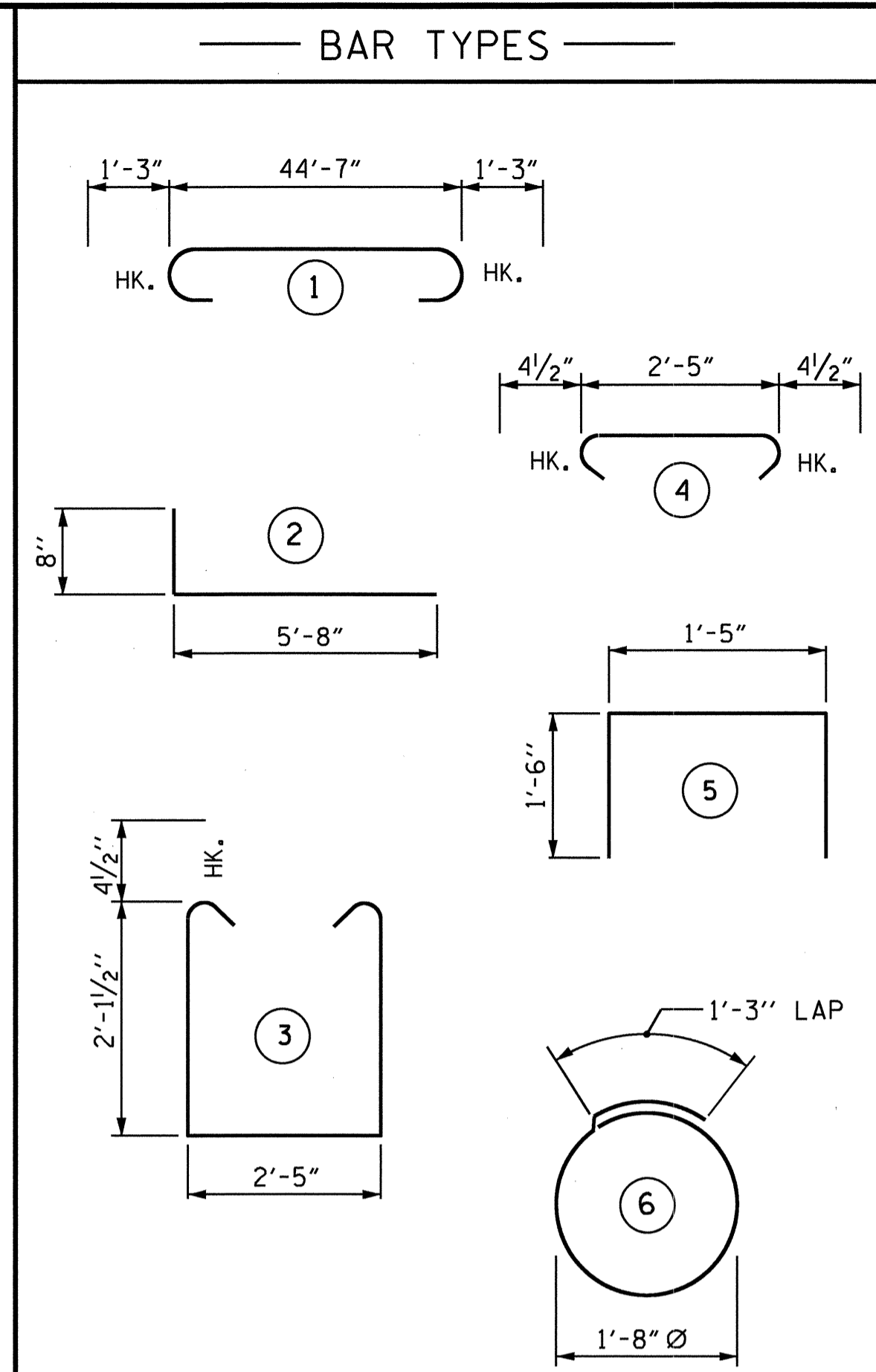
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-35
1			3			TOTAL SHEETS 59
2			4			

DRAWN BY: J.B. WILSON DATE: 12/30/09
 CHECKED BY: B.N. BARODAWALA DATE: 1/26/10

21-APR-2010 15:04
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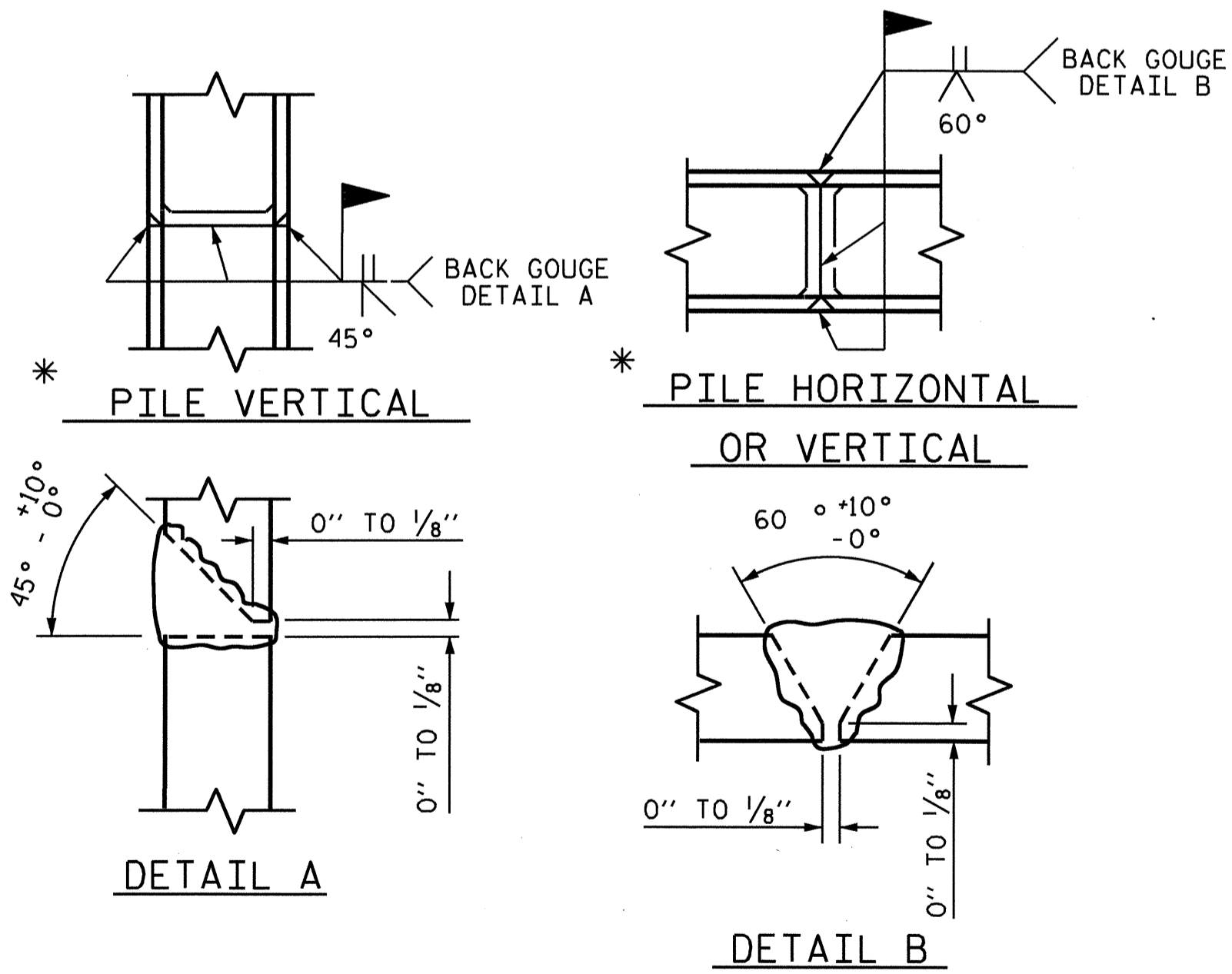


SECTION A-A



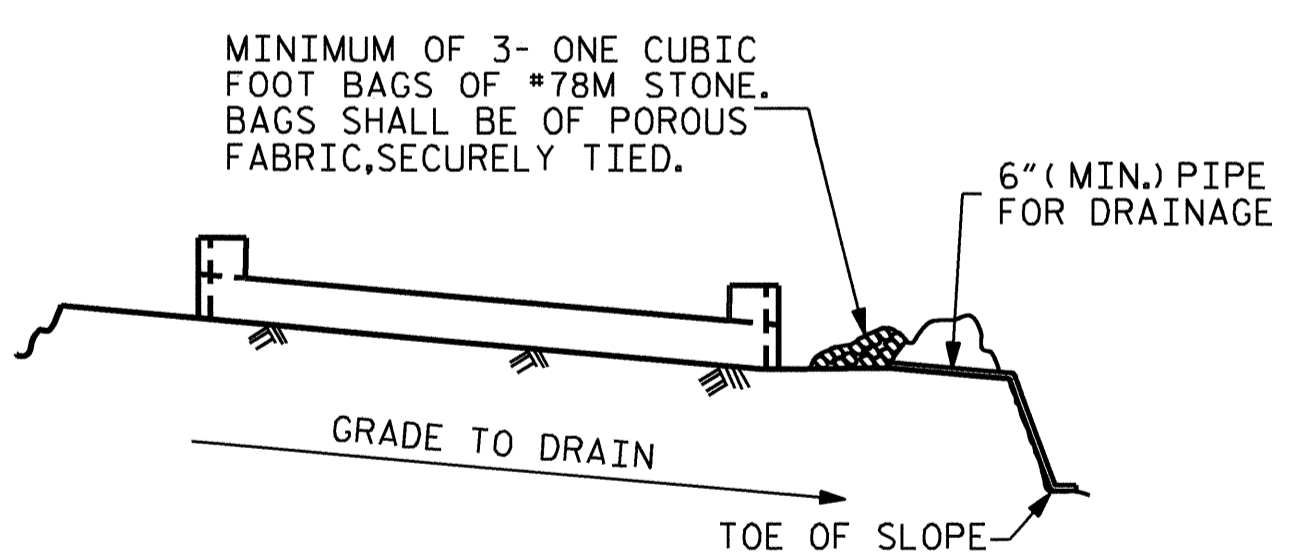
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL END BENT #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	47'-1"	1281
B2	2	#5	STR	44'-8"	93
B3	8	#4	STR	23'-7"	126
B4	12	#4	STR	2'-5"	19
D1	26	#6	STR	1'-6"	59
H1	24	#4	2	6'-4"	102
K1	12	#4	STR	3'-5"	27
S1	48	#4	3	7'-5"	238
S2	48	#4	4	3'-2"	102
S3	10	#4	6	6'-6"	43
S4	4	#4	5	4'-5"	12
V1	20	#4	STR	4'-6"	60
V2	20	#4	STR	4'-9"	63
REINFORCING STEEL					= 2225 LBS
CLASS A CONCRETE BREAKDOWN					
POUR 1 (CAP PILE COLLAR & LOWER PART OF WINGS)					C.Y. 13.3
POUR 2 (UPPER PART OF WINGS)					C.Y. 1.7
POUR 3 (LATERAL GUIDES)					C.Y. 0.1
TOTAL					C.Y. 15.1
HP 12 X 53 STEEL PILES :					
NO. : 5					LIN. FT. : 275
PILE REDRIVES					EACH 5



* POSITION OF PILE DURING WELDING.

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.

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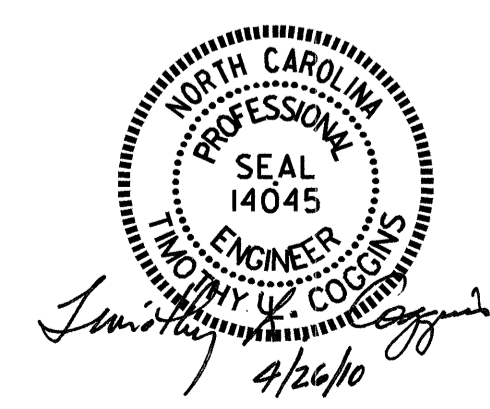
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

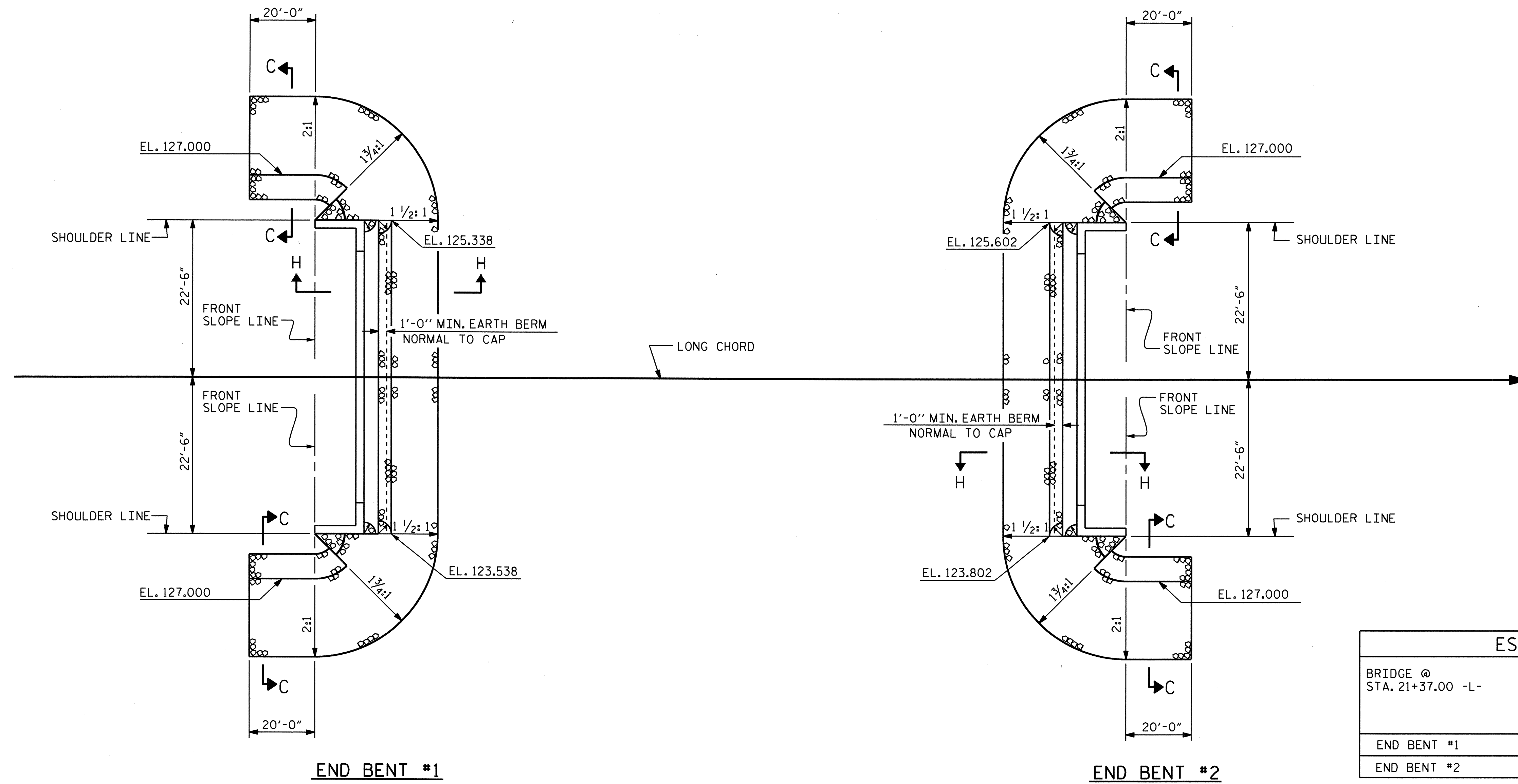
PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 21+37.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT #2					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 59

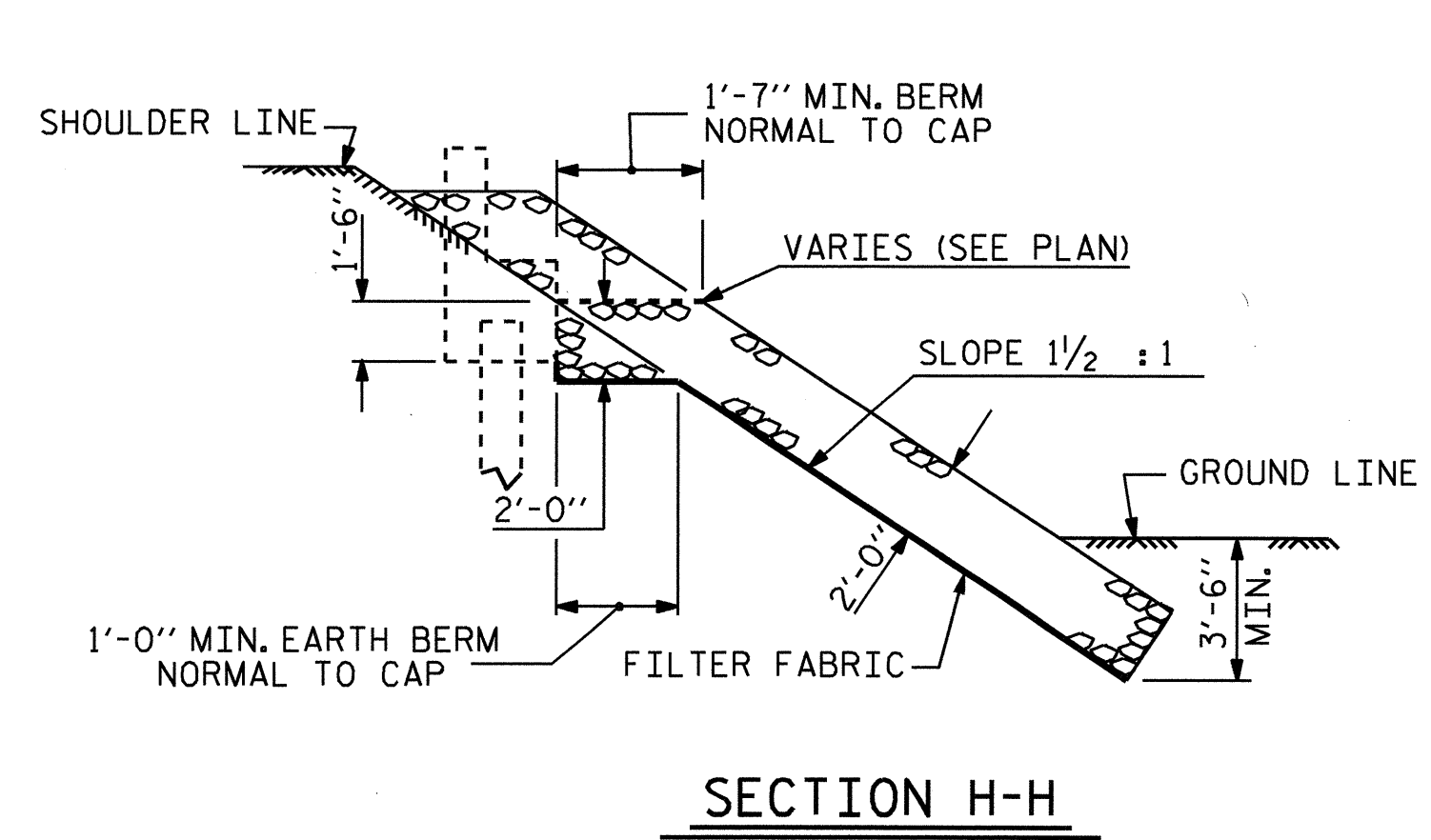


DRAWN BY : J.B. WILSON DATE: 12/30/09
 CHECKED BY : B.N. BARODAWALA DATE: 1/26/10

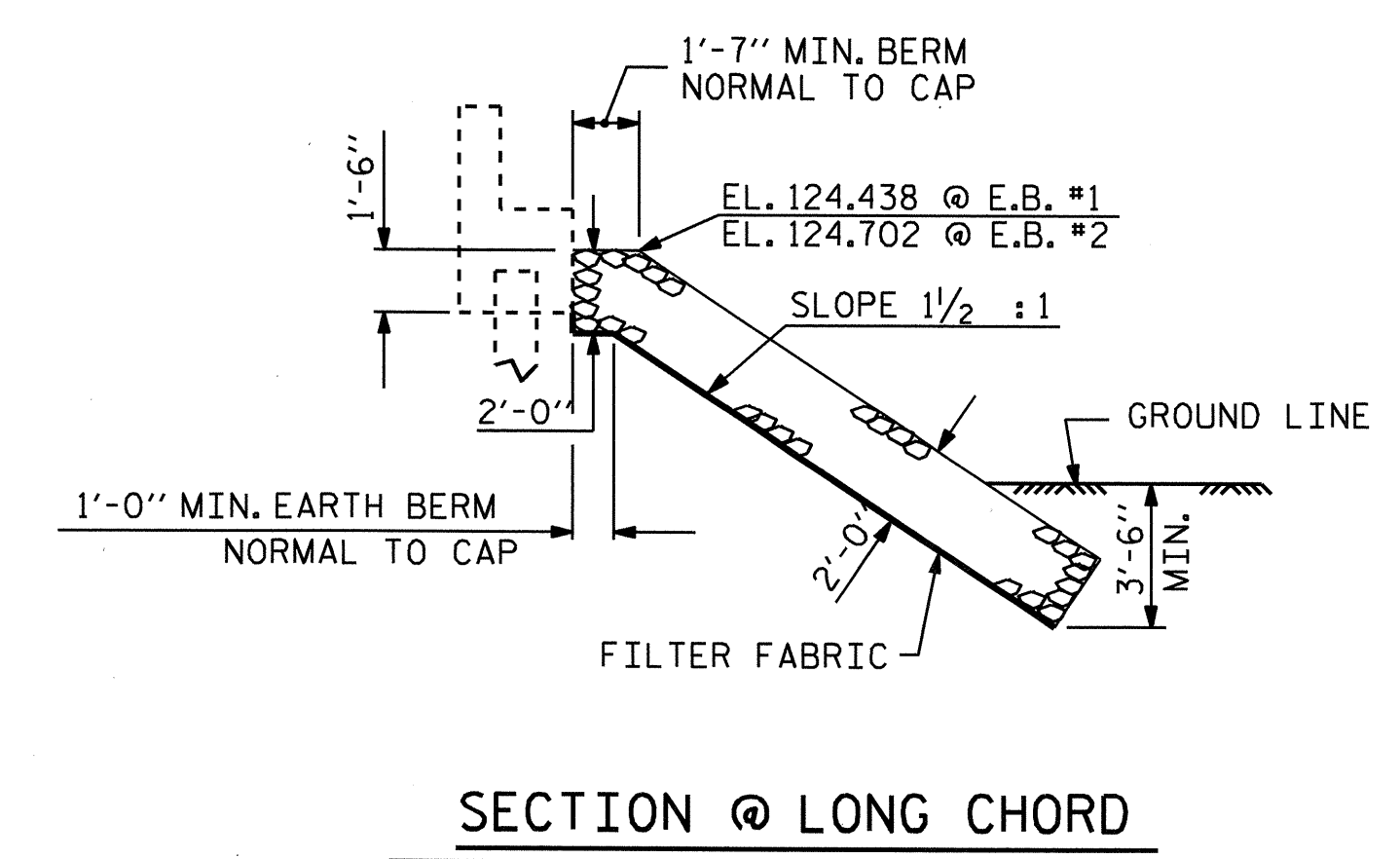


ESTIMATED QUANTITIES		
BRIDGE @ STA. 21+37.00 -L-	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT #1	240	267
END BENT #2	220	244

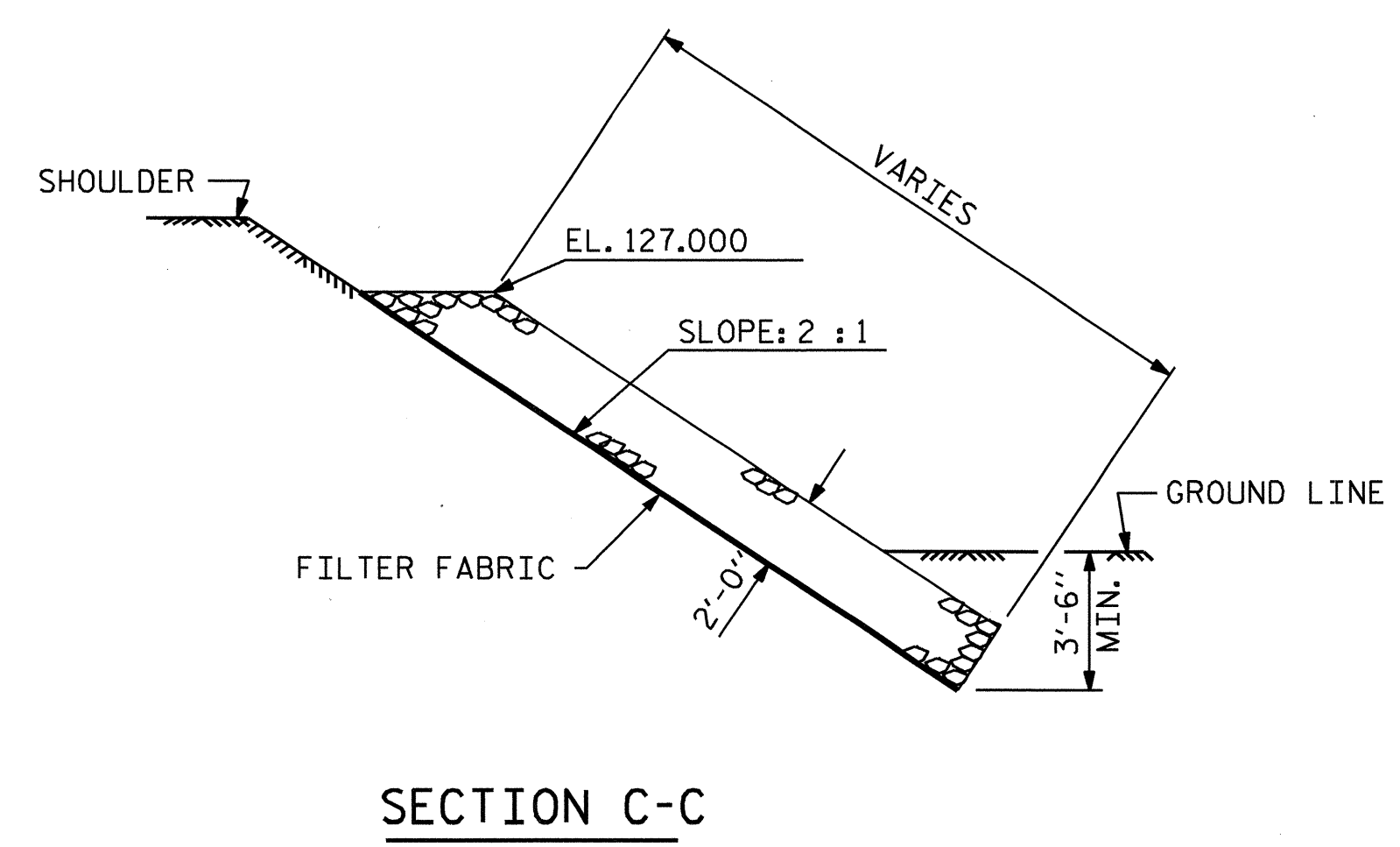
PLAN



SECTION H-H



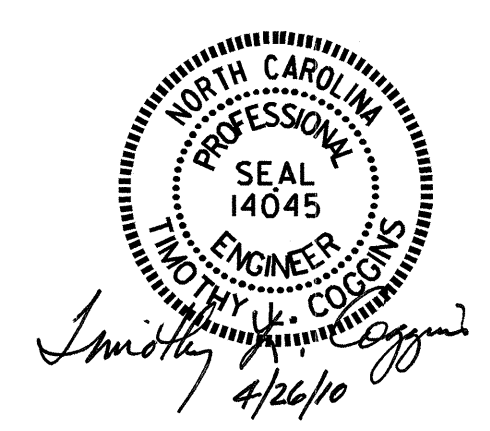
SECTION @ LONG CHORD



SECTION C-C

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 21+37.00 -L-

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

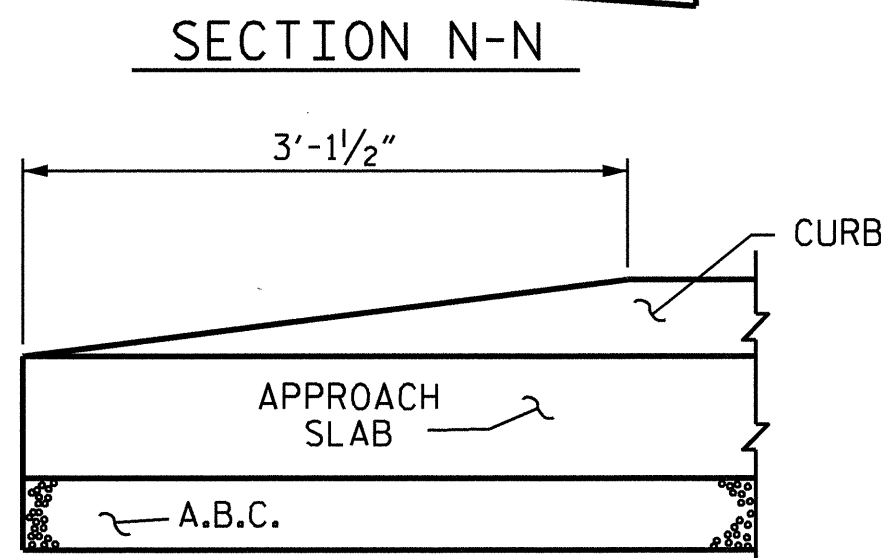
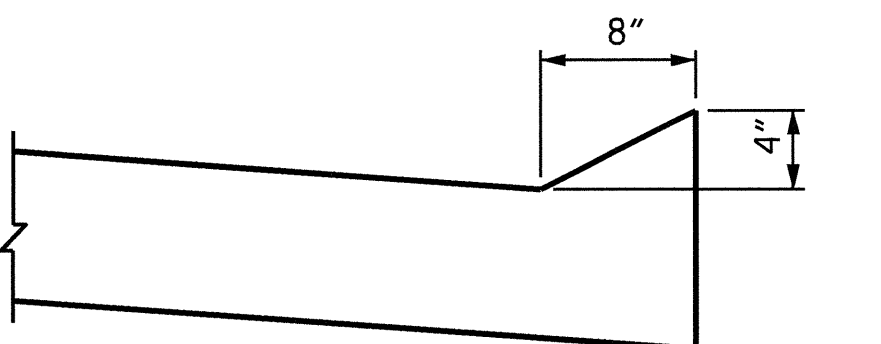


ASSEMBLED BY : J.B. WILSON DATE : 1/18/10
 CHECKED BY : B.N. BARODAWALA DATE : 1/28/10
 DRAWN BY : FCJ 2/88 REV. 8/16/99 RWW/LES
 CHECKED BY : ARB 8/88 REV. 10/17/00 RWW/LES
 REV. 5/1/06 TLA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-37
1			3			TOTAL SHEETS 59
2			4			

BILL OF MATERIAL					
APPROACH SLAB AT EB #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	50	#4	STR	19'-5"	649
A2	52	#4	STR	19'-4"	672
* B1	74	#5	STR	23'-8"	1827
B2	74	#6	STR	24'-8"	2742
REINFORCING STEEL					LBS. 3414
* EPOXY COATED REINFORCING STEEL					LBS. 2476
CLASS AA CONCRETE					C. Y. 38.3
APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	50	#4	STR	19'-5"	649
A2	52	#4	STR	19'-4"	672
* B1	74	#5	STR	23'-8"	1827
B2	74	#6	STR	24'-8"	2742
REINFORCING STEEL					LBS. 3414
* EPOXY COATED REINFORCING STEEL					LBS. 2476
CLASS AA CONCRETE					C. Y. 38.3

SPLICE CHART	
BAR SIZE	SPLICE LENGTH
* #4 A1	2'-0"
#4 A2	1'-9"



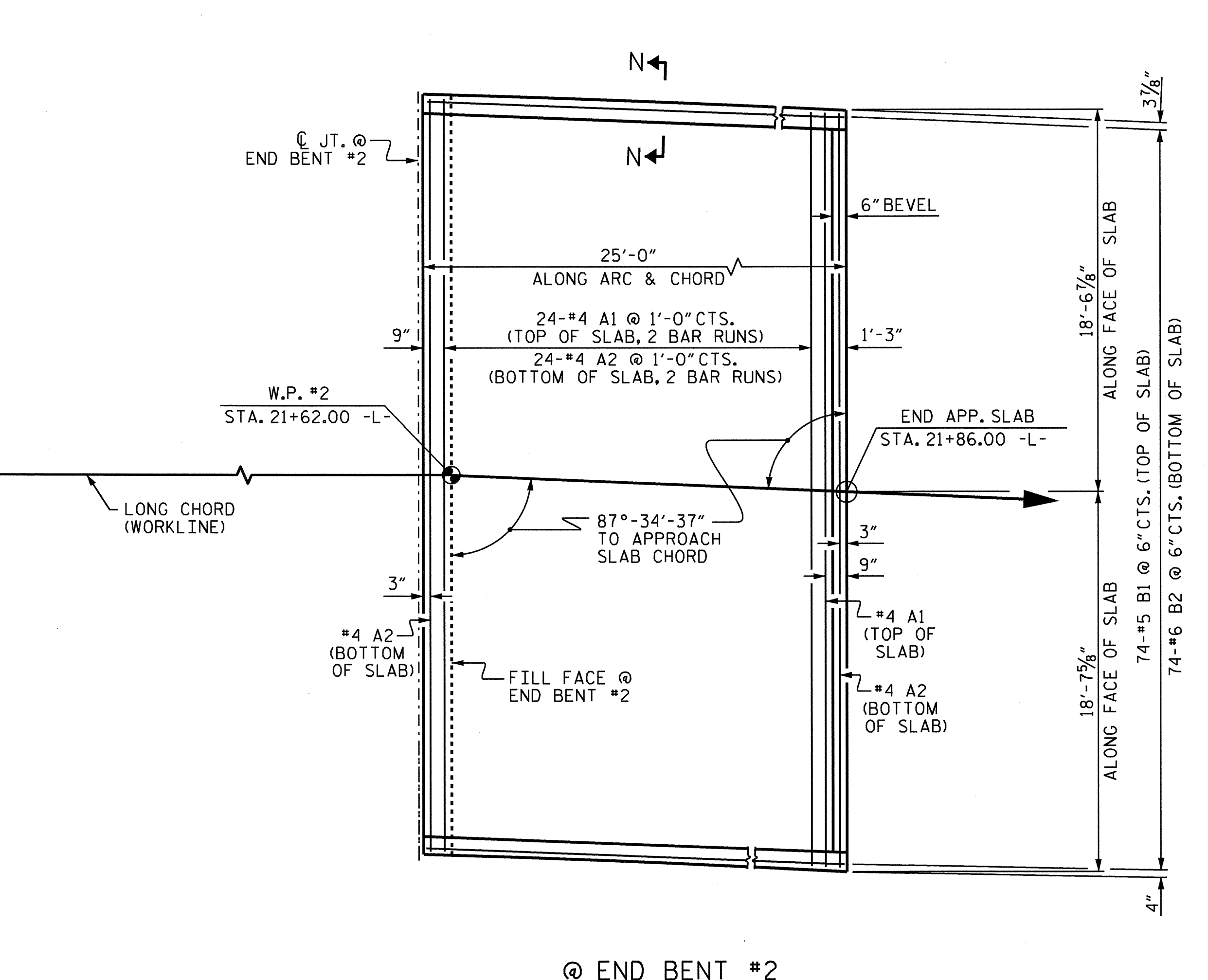
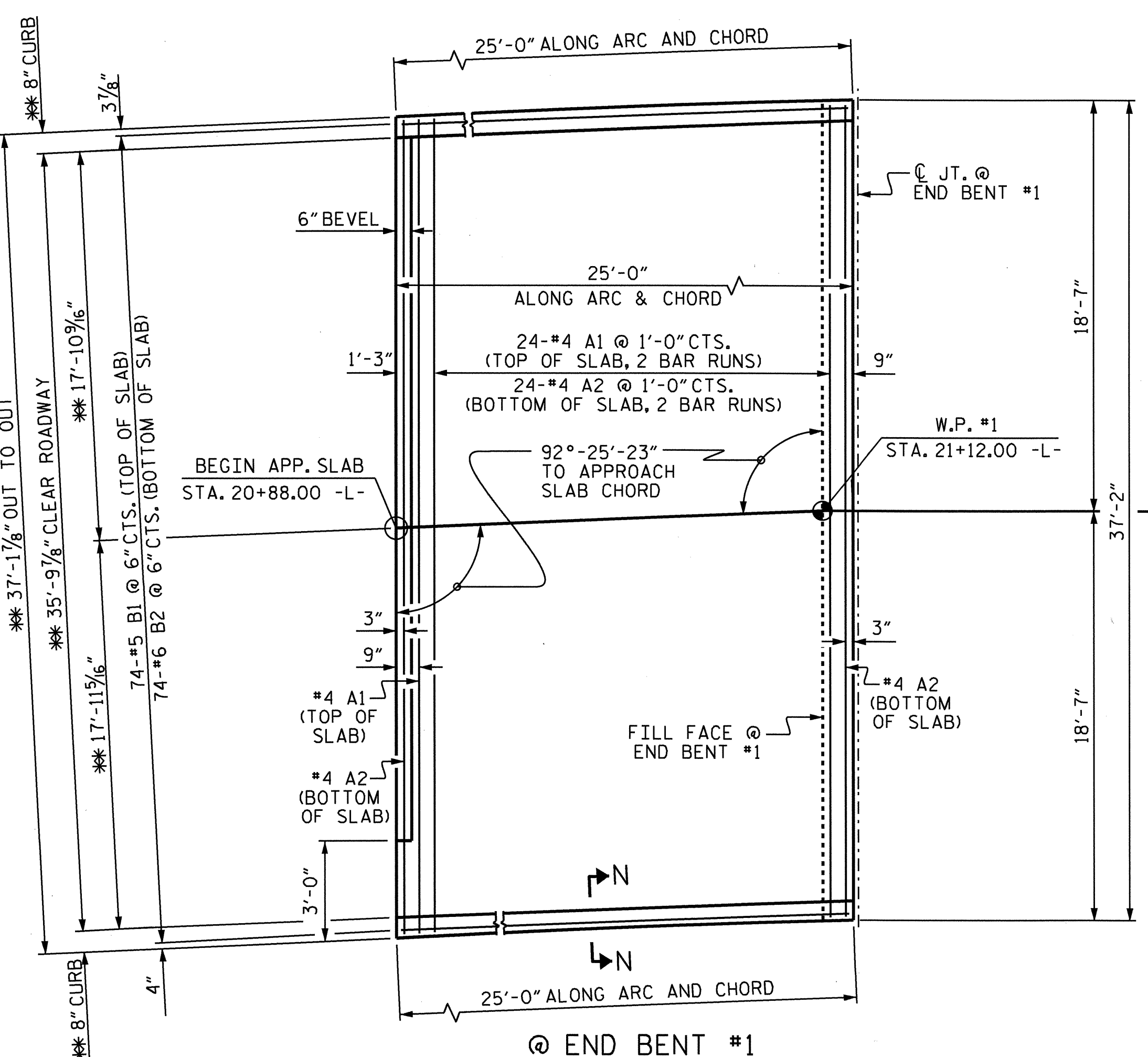
END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

PROJECT NO. B-3693
 ROBESON COUNTY
 STATION: 21+37.00 -L-

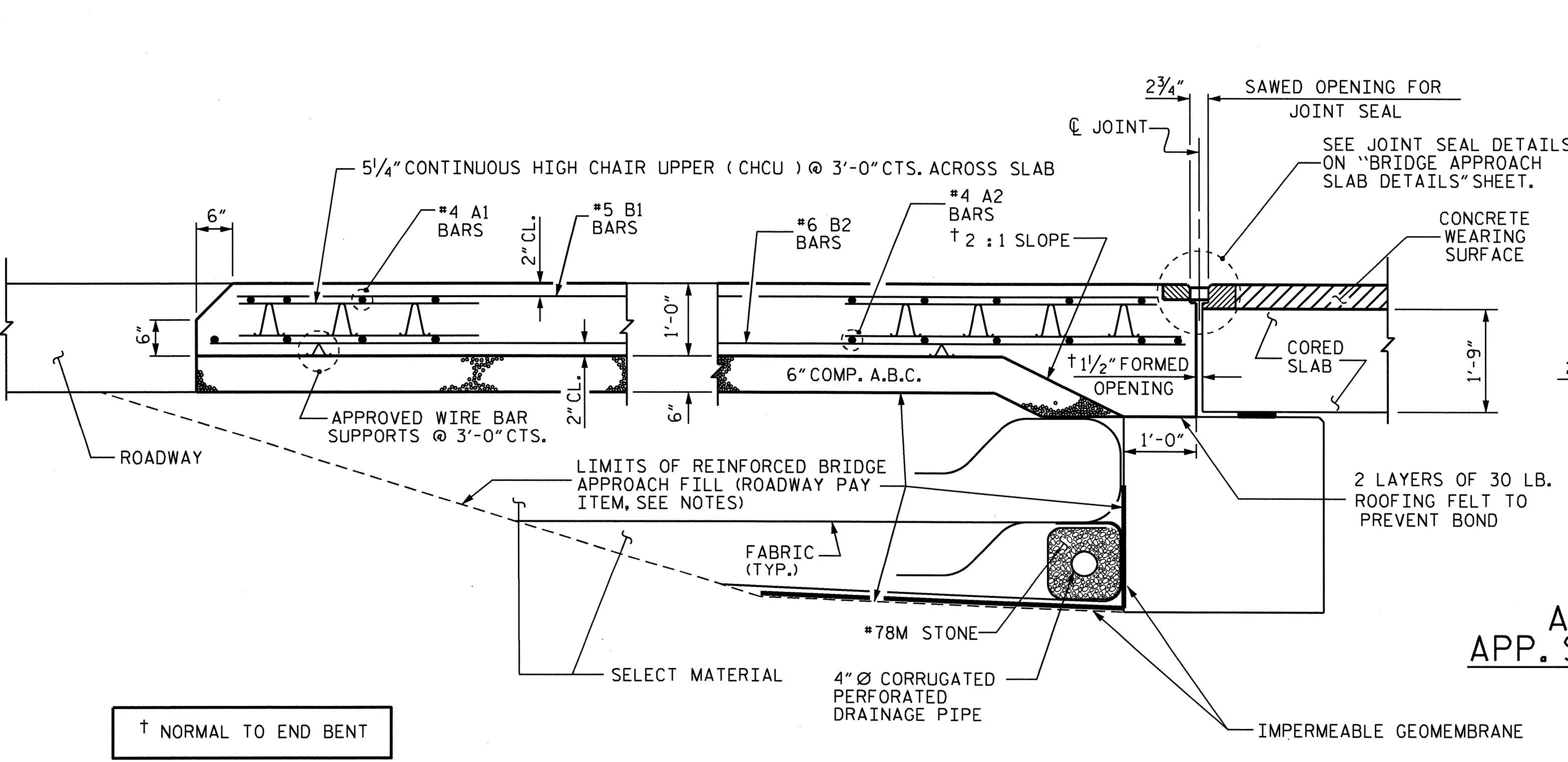
SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH			
STANDARD			
BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB			
REVISIONS			SHEET NO.
NO.	BY:	DATE:	S-38
1			TOTAL SHEETS
2			59

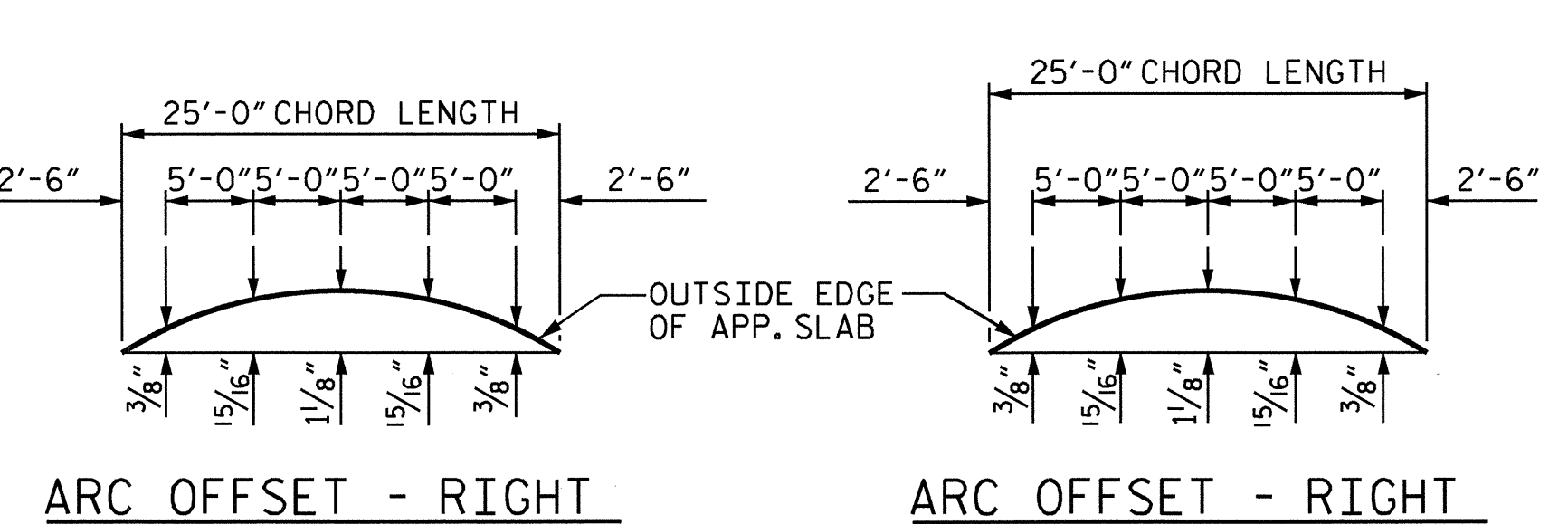
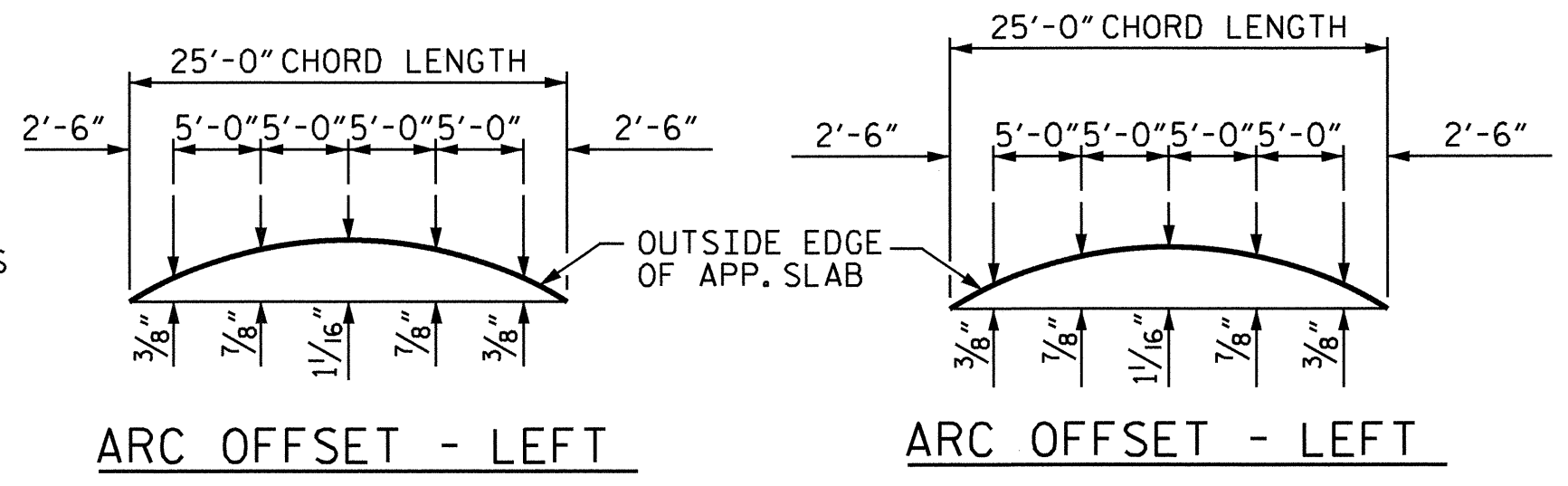


PLAN

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS
 ** RADIAL DIMENSIONS



SECTION THRU SLAB



ARC OFFSETS FOR APP. SLAB @ END BENT #1

ARC OFFSETS FOR APP. SLAB @ END BENT #2



ASSEMBLED BY: M. GUDLAUGSSON	DATE: 12/21/09
CHECKED BY: PEGGY PARISI	DATE: 01/20/10
DRAWN BY: FCJ	6/87
CHECKED BY: EGA	6/87
REV. 7/10/01	LES/RDR
REV. 5/7/03R	RWW/JTE
REV. 5/1/06R	KMM/GM

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 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.

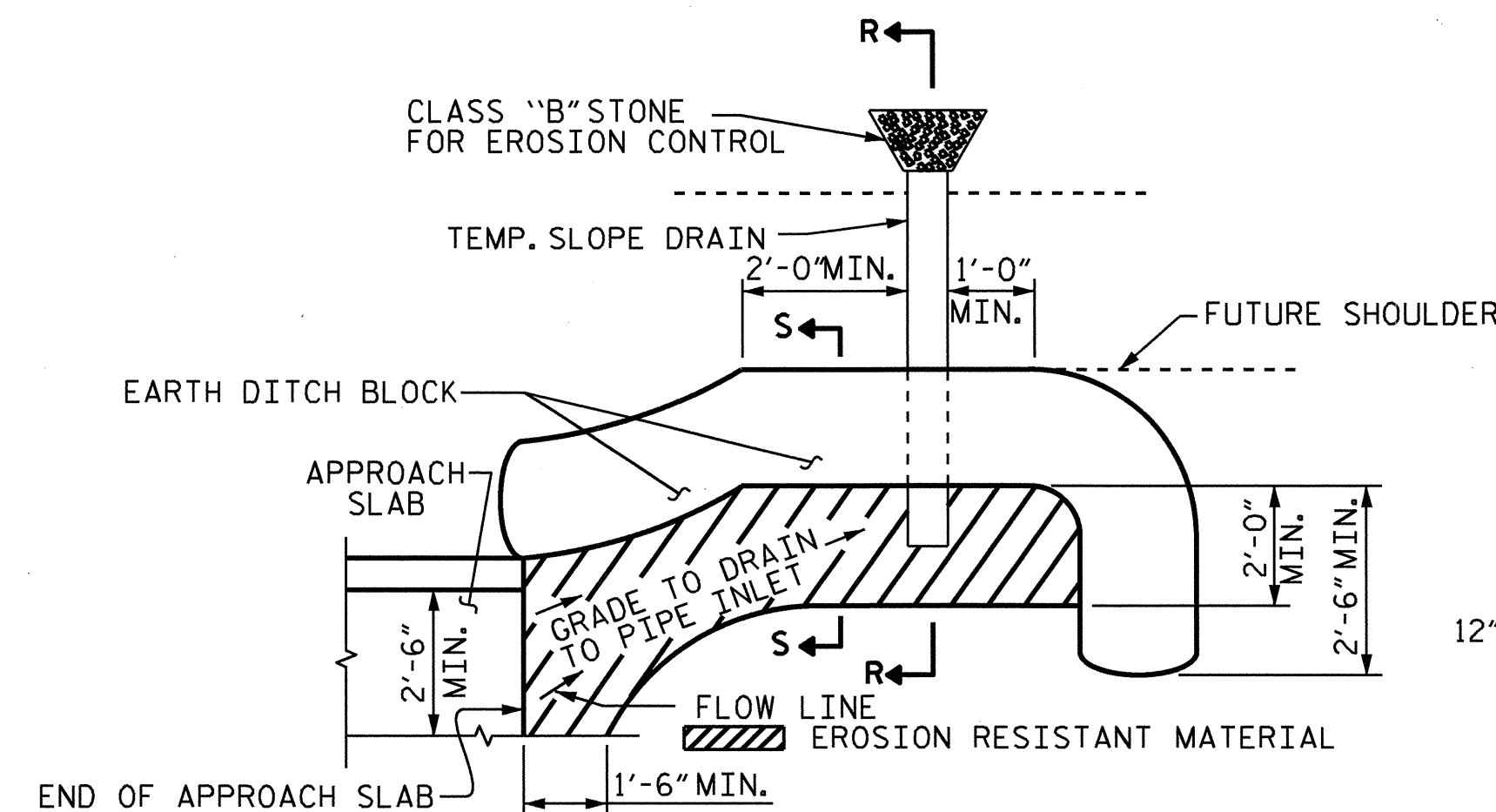
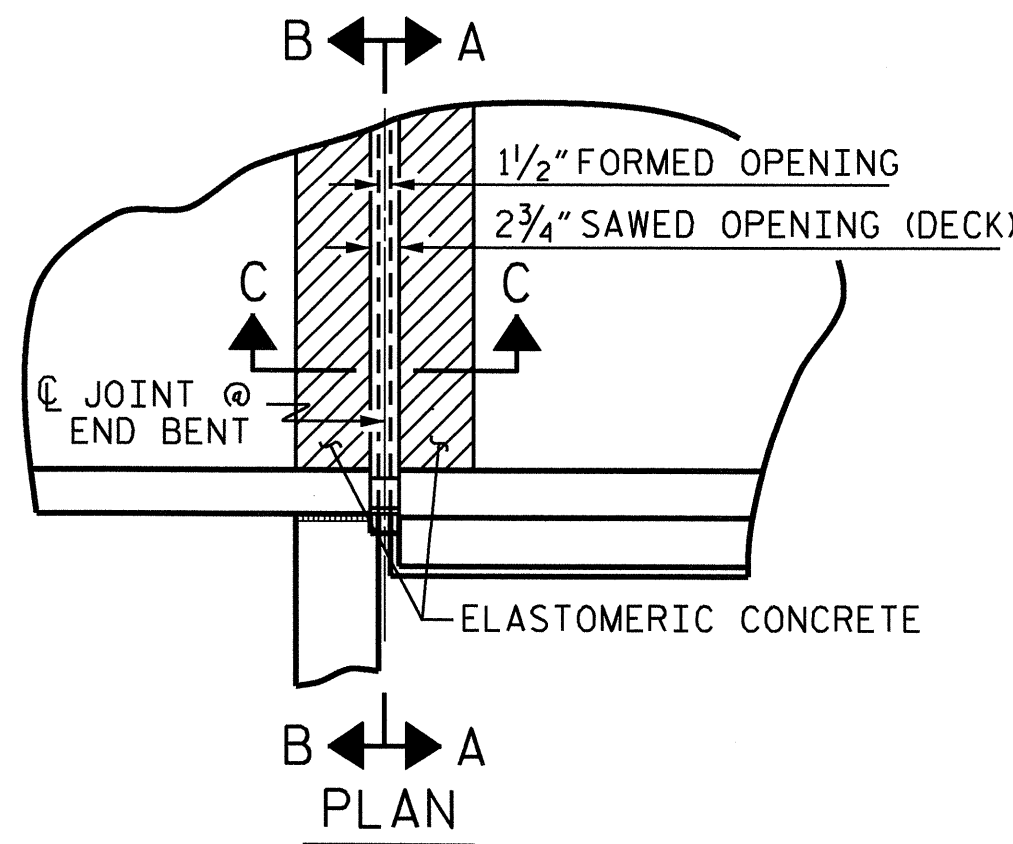
FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE EVAZOTE JOINT SEAL SHALL BE 3/16".

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

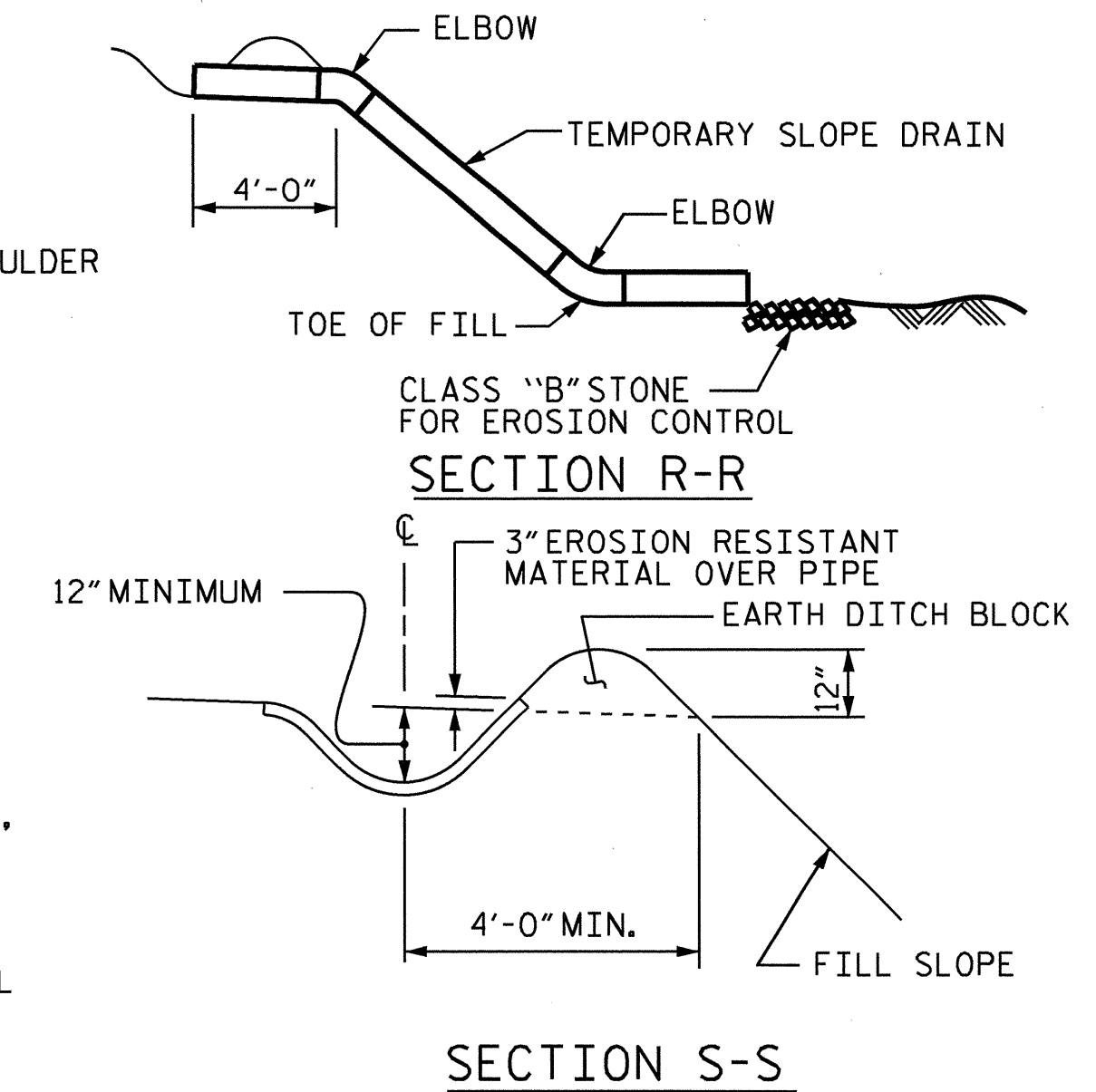
APPROACH SLABS SHALL BE POURED AFTER CONCRETE OVERLAY IS POURED.

THE JOINT SHALL BE SAWED AFTER THE CASTING OF THE BARRIER RAIL.



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

PLAN VIEW

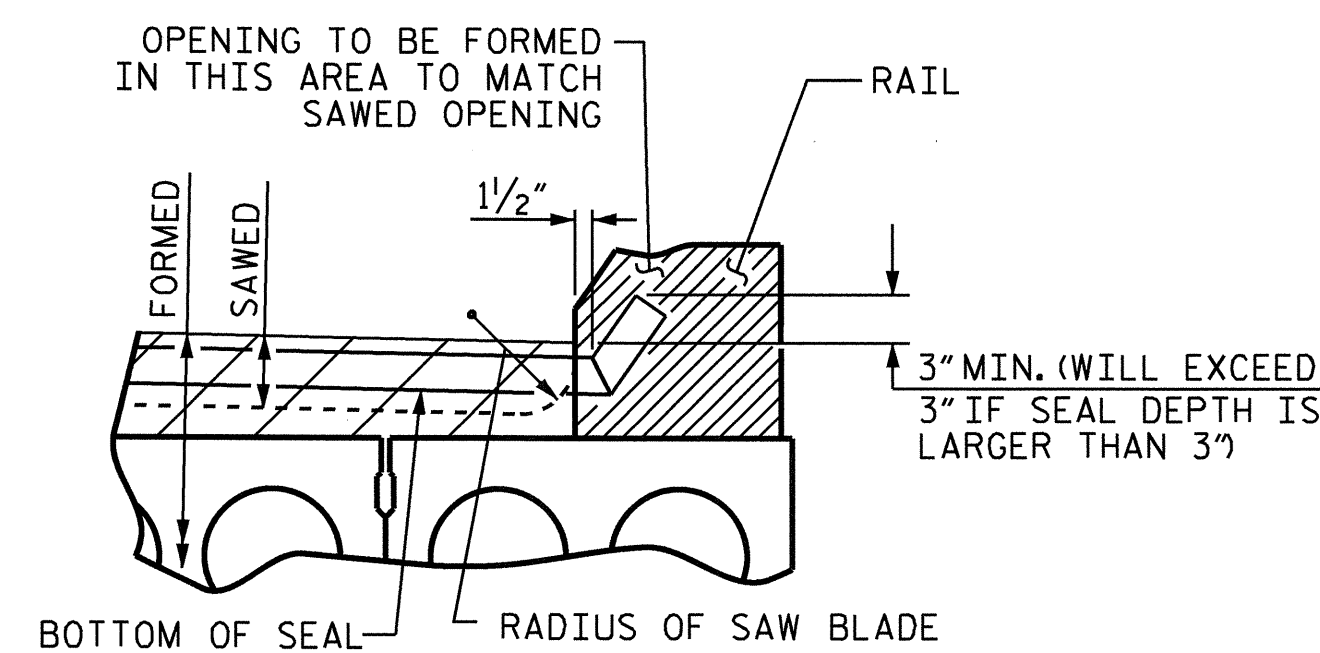
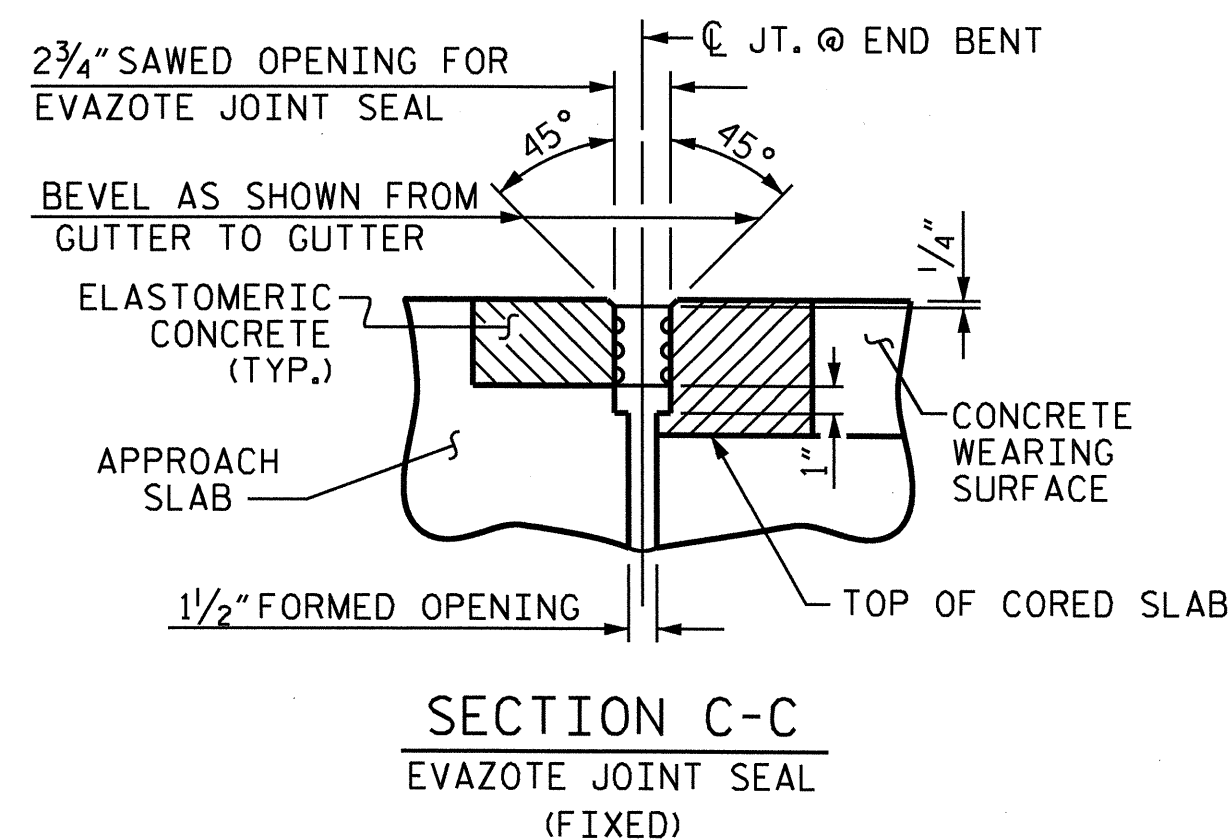


TEMPORARY BERM AND SLOPE DRAIN DETAILS

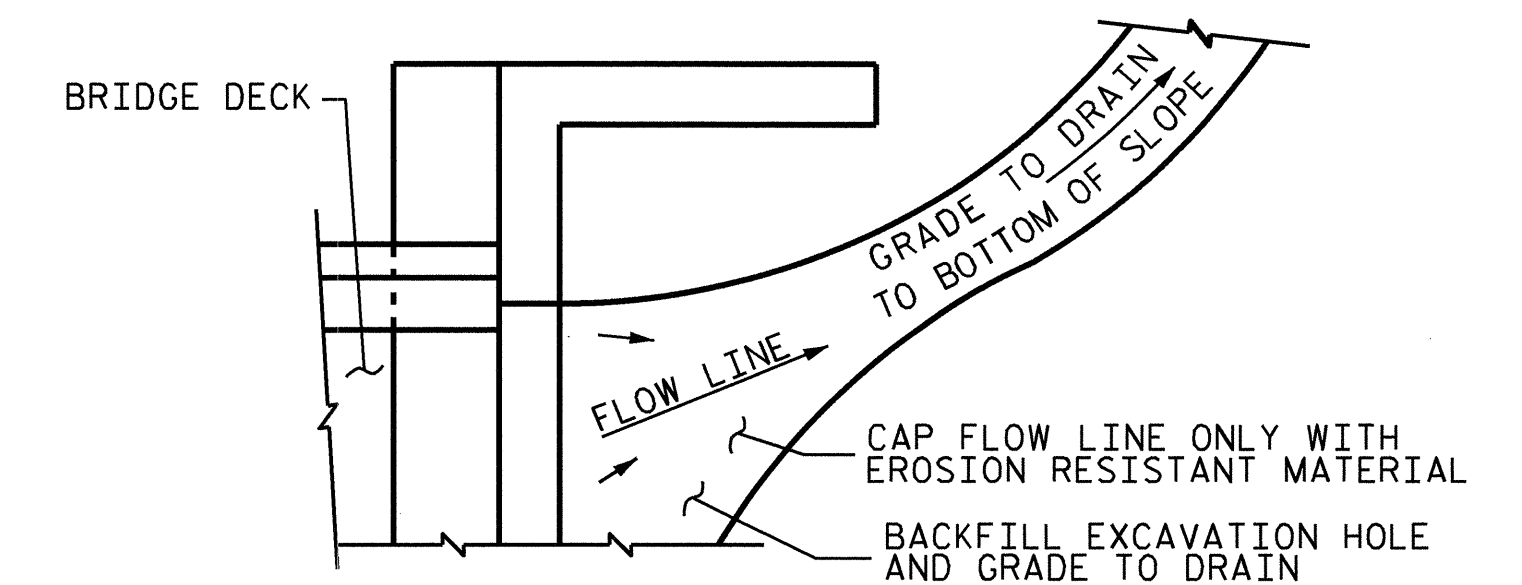
(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	9.9
2	9.9
TOTAL	18.8

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

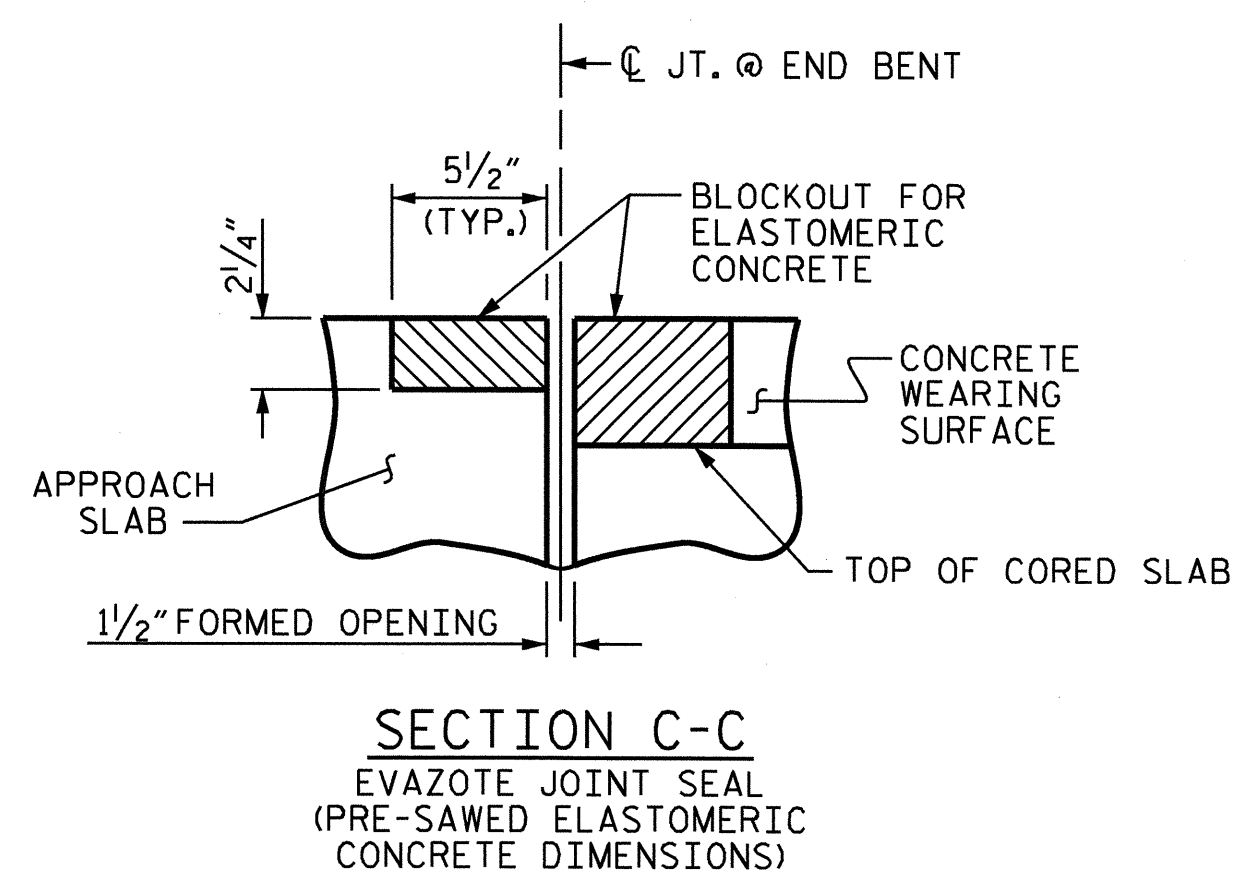


SECTION A-A

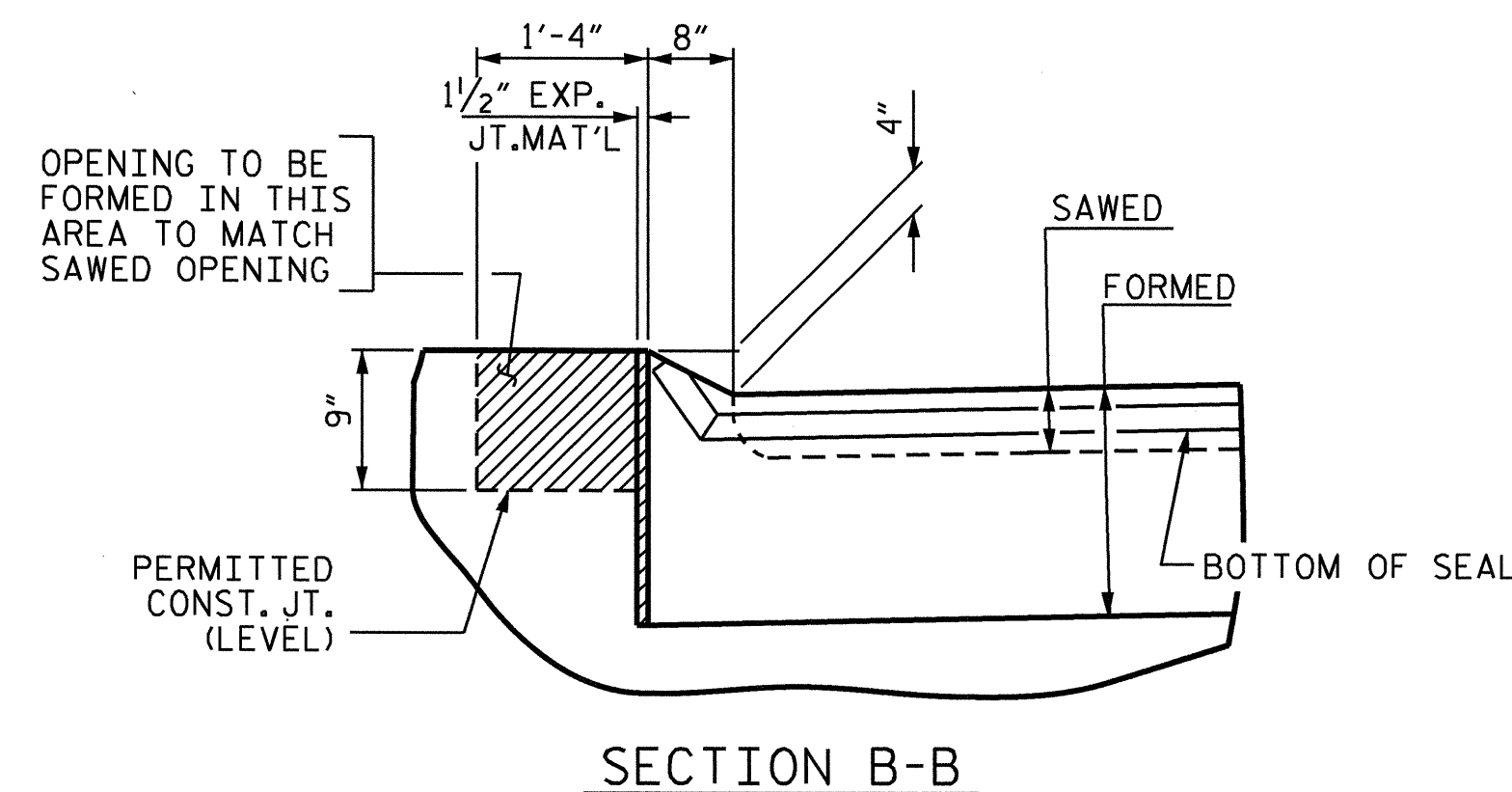


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL



SECTION C-C
EVAZOTE JOINT SEAL
(PRE-SAWED ELASTOMERIC
CONCRETE DIMENSIONS)



SECTION B-B

JOINT SEAL DETAILS @ END BENT

EVAZOTE JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

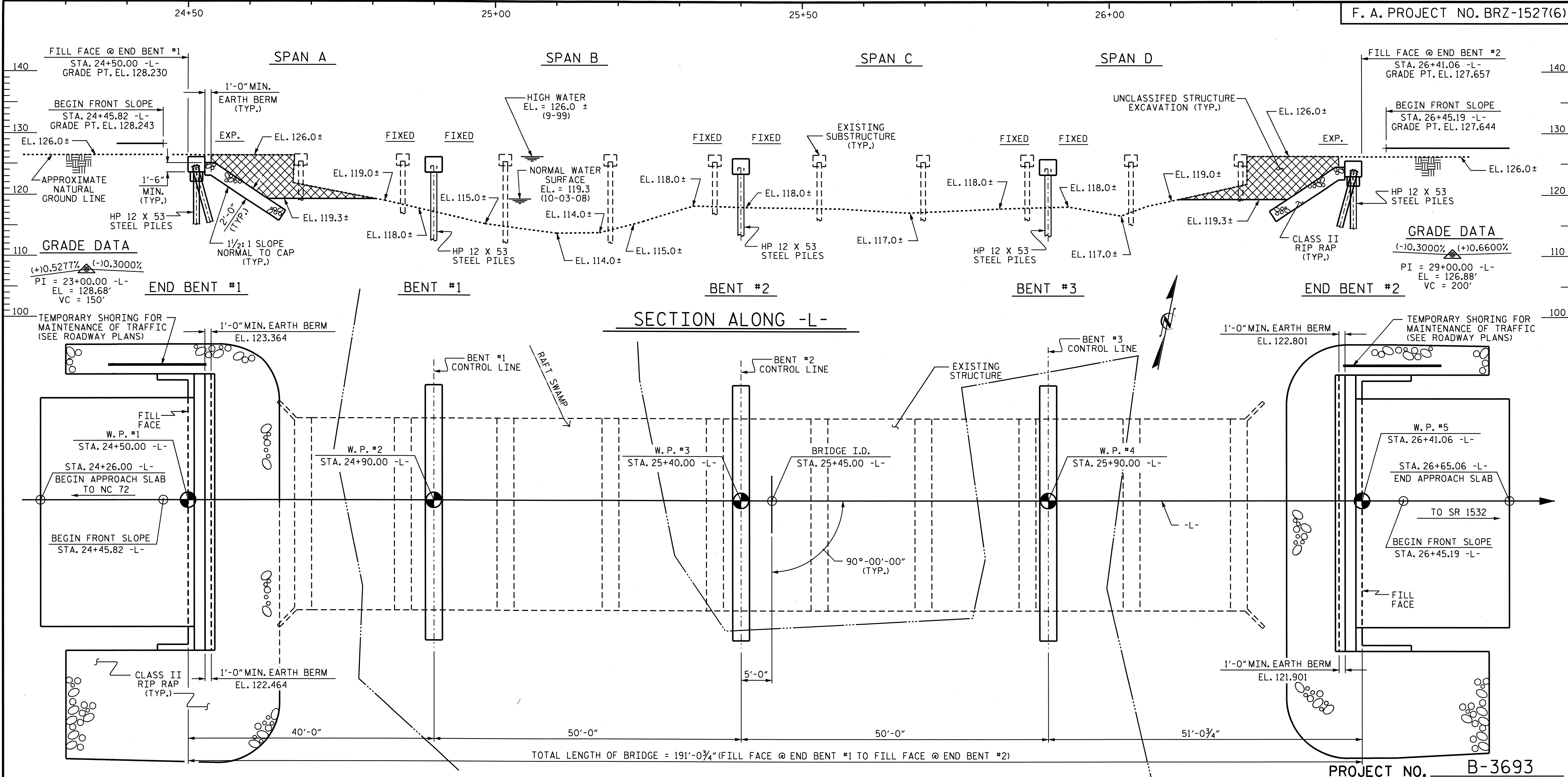
PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 21+37.00 -L-

SHEET 2 OF 2

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

NORTH CAROLINA
 PROFESSIONAL
 SEAL
 14045
 ENGINEER
 TIMOTHY K. COLEMAN
 4/26/10

ASSEMBLED BY: M.GUDLAUGSSON DATE: 12/21/09
 CHECKED BY: PEGGY PARISI DATE: 01/20/10
 DRAWN BY: FCJ 11/88 REV. 10/17/00 RWW/LES
 CHECKED BY: ARB 11/88 REV. 5/7/03 RWW/JTE
 REV. 5/1/06R MAA/KMM



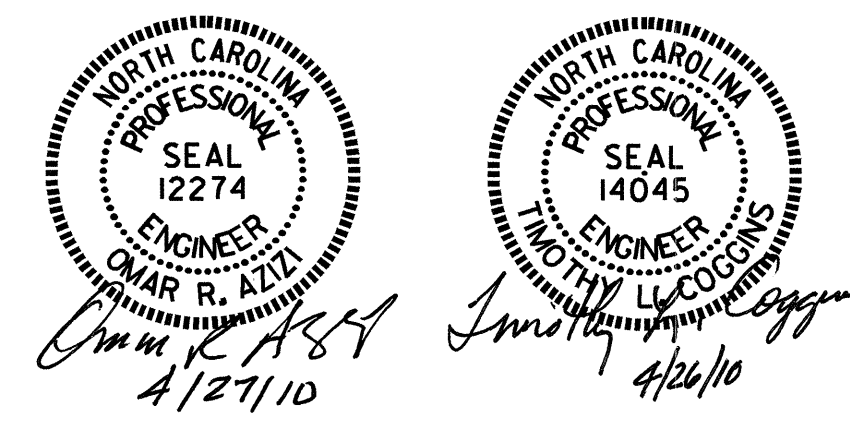
PLAN
 PILES NOT SHOWN IN PLAN VIEW FOR CLARITY

PROJECT NO. B-3693
 ROBESON COUNTY
 STATION: 25+45.00 -L-
 SHEET 1 OF 3 REPLACES BRIDGE #211

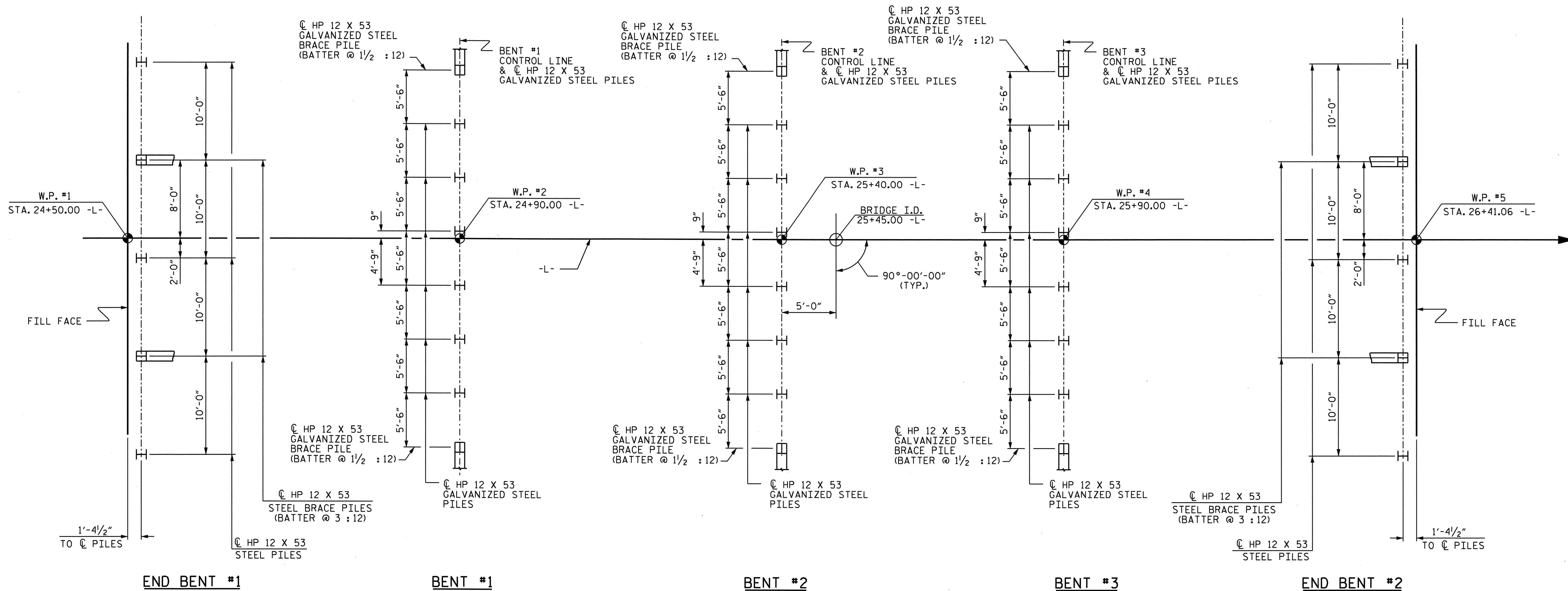
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER
 RAFT SWAMP ON
 SR 1527 BETWEEN
 NC 72 AND SR 1532

DRAWN BY: B.N.BARODAWALA DATE: 2-2-10
 CHECKED BY: PEGGY PARISI DATE: 2-9-10



REVISIONS				SHEET NO.
NO.	BY:	DATE:		S-40
1			3	TOTAL SHEETS
2			4	59



FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE.

NOTES

FOR PILES, SEE SPECIAL PROVISIONS.

PILES AT END BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

PILES AT BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 105 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 185 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

PILES AT BENT NO.2 AND BENT NO.3 ARE DESIGNED FOR A FACTORED RESISTANCE OF 115 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 200 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

PILES AT END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 100 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 170 TONS PER PILE.

INSTALL PILES AT BENT NO.1, BENT NO.2 AND BENT NO.3 TO A TIP ELEVATION NO HIGHER THAN 96.0 FT.

SCOUR CRITICAL ELEVATIONS FOR BENT NO.1, BENT NO.2 AND BENT NO.3 ARE ELEVATION 109.0 FT., 113.0 FT. AND 113.0 FT., RESPECTIVELY. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

TESTING PILES WITH THE PILE DRIVING ANALYZER (PDA) DURING DRIVING, RESTRIKING OR REDRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PILE DRIVING ANALYZER, SEE PILES SPECIAL PROVISION.

GALVANIZED STEEL PILES ARE REQUIRED IN ACCORDANCE WITH THE PILES PROVISION.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 35-70 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NO.1, BENT NO.1 AND END BENT NO.2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH THE PILES PROVISION.

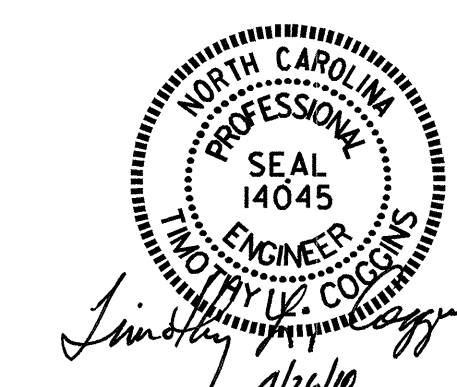
IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 45-70 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT NO.2 AND BENT NO.3. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH THE PILES PROVISION.

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 25+45.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER
 RAFT SWAMP ON
 SR 1527 BETWEEN
 NC 72 AND SR 1532

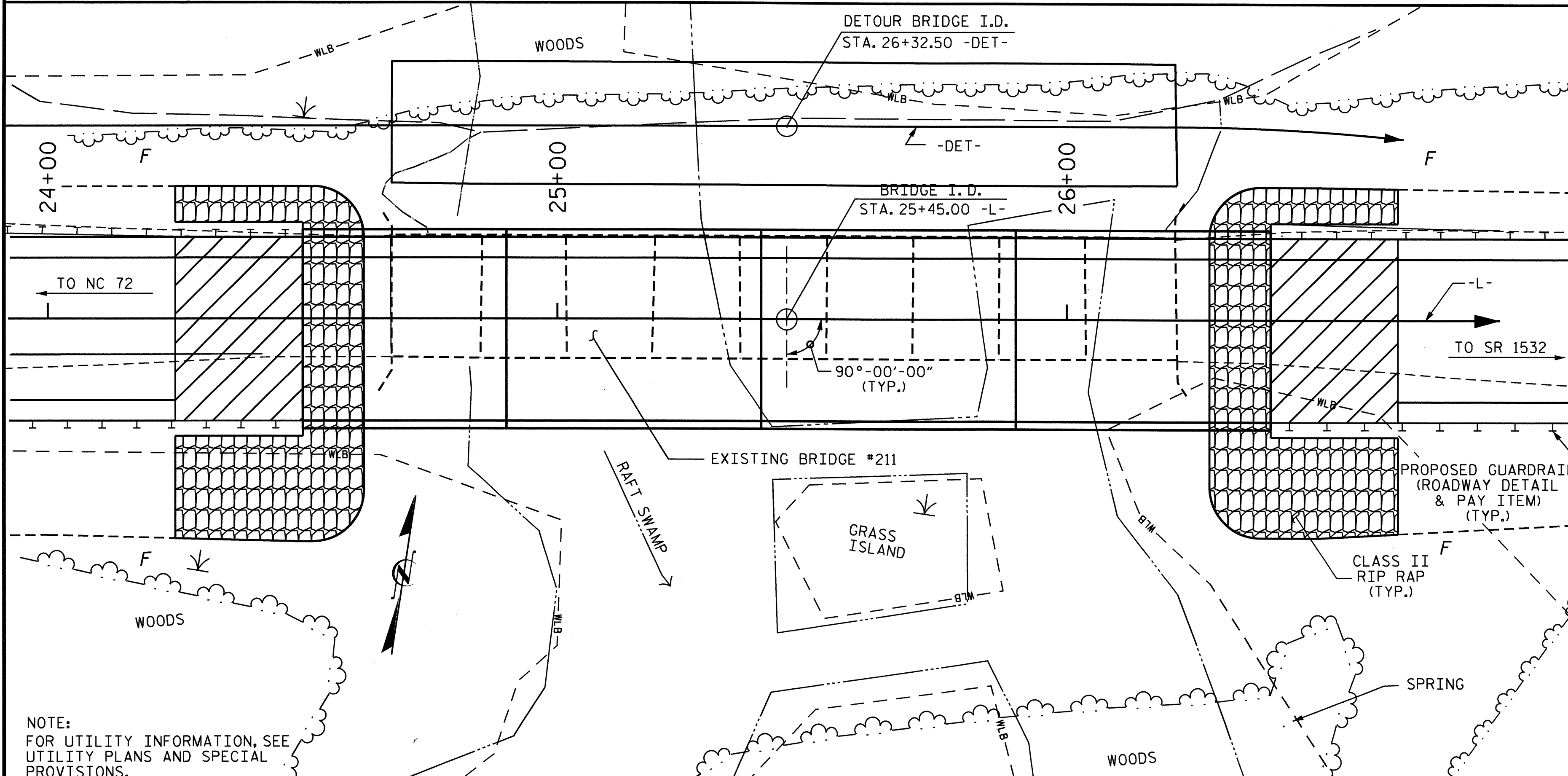


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-41
1			3			TOTAL SHEETS
2			4			59

DRAWN BY : B.N.BARODAWALA DATE : 2-2-10
 CHECKED BY : PEGGY PARISI DATE : 2-9-10

BM #80: R/R SPIKE IN BASE OF 24" GUM TREE, 33.94' RT. OF STA 11+44.40 -L-, ELEV. 122.95'; NGVD29.

NOTES



LOCATION SKETCH

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 9 SPANS, (1 @ 17'-10", 1 @ 17'-0", 1 @ 16'-8", 1 @ 17'-6", 2 @ 16'-10", 1 @ 17'-1", 1 @ 17'-2" & 1 @ 17'-10") WITH A CLEAR ROADWAY WIDTH OF 24'-0" AND A CONCRETE DECK ON TIMBER JOISTS SUPPORTED BY A TIMBER CAP AND TIMBER PILES AT THE END BENTS AND BENTS AND LOCATED AT THE SITE OF THE PROPOSED STRUCTURE, 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.

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.

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

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 28 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 CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY STRUCTURE AT STATION 25+45.00 -L- FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS.

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.

THE BRIDGE RAILS ON THE TEMPORARY STRUCTURE SHALL BE DESIGNED FOR THE AASHTO LRFD TEST LEVEL 3 (TL-3) CRASH TEST CRITERIA. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS.

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 CURING CONCRETE, SEE SPECIAL PROVISIONS.

FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR INTERIOR BENTS NO. 1, NO. 2 AND NO. 3, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEETS FOR DETAILS.

FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.

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

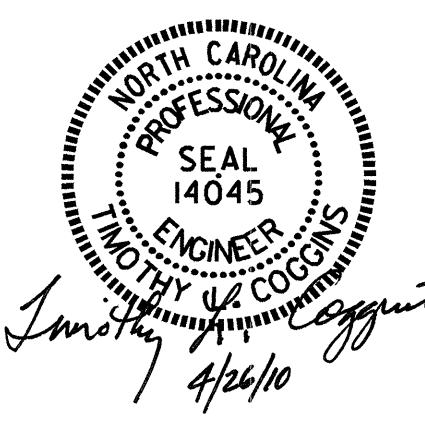
NOTE:
FOR UTILITY INFORMATION, SEE
UTILITY PLANS AND SPECIAL
PROVISIONS.

TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMPORARY STRUCTURE	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	PDA ASSISTANCE	UNCLASSIFIED STRUCTURE EXCAVATION	CONCRETE WEARING SURFACE	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES	HP 12 X 53 GALVANIZED STEEL PILES	PILE REDRIVES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS				
	LUMP SUM	LUMP SUM	EACH	EACH	LUMP SUM	SO. FT.	SO. FT.	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SO. YDS.	LUMP SUM	LUMP SUM	NO.	LIN. FT.	
SUPERSTRUCTURE						6733	7726		LUMP SUM					377.88				LUMP SUM	LUMP SUM	52	2449.69		
END BENT NO. 1								15.1		2225	5	275	3		260	289							
BENT NO. 1								10.7		2032		8	520	4									
BENT NO. 2								10.7		2032		8	560	4									
BENT NO. 3								10.7		2032		8	560	4									
END BENT NO. 2								15.1		2225	5	300	3		220	244							
TOTAL	LUMP SUM	LUMP SUM	1	1	LUMP SUM	6733	7726	62.3	LUMP SUM	10546	10	575	24	1640	18	377.88	480	533	LUMP SUM	LUMP SUM	52	2449.69	

HYDRAULIC DATA	
DESIGN DISCHARGE	3,400 CFS
FREQUENCY OF DESIGN FLOOD	25 YRS
DESIGN HIGH WATER ELEVATION	125.5'
DRAINAGE AREA	156 SQ. MI.
BASIC DISCHARGE (Q100)	4,810 CFS
BASIC HIGH WATER ELEVATION	126.2'
OVERTOPPING FLOOD DATA	
OVERTOPPING DISCHARGE	5,700 CFS
FREQUENCY OF OVERTOPPING FLOOD	200+/- YRS
OVERTOPPING FLOOD ELEVATION	126.6'

DRAWN BY : B.N.BARODAWALA DATE : 2-2-10
 CHECKED BY : PEGGY PARISI DATE : 2-9-10



PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 25+45.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER
 RAFT SWAMP ON
 SR 1527 BETWEEN
 NC 72 AND SR 1532

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-42
1			3			TOTAL SHEETS 59
2			4			

LOAD FACTORS:

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

	YEAR	ADTT
CURRENT	2010	241
FUTURE	2030	391

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
						LIVE-LOAD FACTORS (γ_{LL})	MOMENT					SHEAR					LIVE-LOAD FACTORS (γ_{LL})	MOMENT								
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)				
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	1	1.03	--	1.75	0.274	1.03	B	ER	24.438	0.540	1.07	A	ER	1.891	0.80	0.274	1.34	B	ER	24.438	1			
	HL-93 (OPERATING)	N/A		1.34	--	1.35	0.274	1.34	B	ER	24.438	0.540	1.39	A	ER	1.891	N/A	--	--	--	--	--	1			
	HS-20 (INVENTORY)	36.000	2	1.21	43,560	1.75	0.274	1.24	B	ER	24.438	0.540	1.21	A	ER	1.891	0.80	0.274	1.34	B	ER	24.438	1			
	HS-20 (OPERATING)	36.000		1.61	57,960	1.35	0.274	1.66	B	ER	24.438	0.540	1.61	A	ER	1.891	N/A	--	--	--	--	--	1			
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH					0.274	3.07	B	ER	24.438	0.540	3.12	A	ER	1.891	0.80	0.274	2.71	B	ER	24.438	1			
		SNGARBS2	20.000		2.14	42.800	1.40	0.274	2.43	B	ER	24.438	0.540	2.33	A	ER	1.891	0.80	0.274	2.14	B	ER	24.438	1		
		SNAGRIS2	22.000		2.09	45.980	1.40	0.274	2.36	B	ER	24.438	0.540	2.20	A	ER	1.891	0.80	0.274	2.09	B	ER	24.438	1		
		SNCOTTS3	27.250		1.35	36.788	1.40	0.274	1.53	B	ER	24.438	0.540	1.57	A	ER	1.891	0.80	0.274	1.35	B	ER	24.438	1		
		SNAGGRS4	34.925		1.18	41.212	1.40	0.274	1.33	B	ER	24.438	0.540	1.38	A	ER	1.891	0.80	0.274	1.18	B	ER	24.438	1		
		SNS5A	35.550		1.15	40.883	1.40	0.274	1.30	B	ER	24.438	0.540	1.44	A	ER	1.891	0.80	0.274	1.15	B	ER	24.438	1		
		SNS6A	39.950		1.08	43.146	1.40	0.274	1.21	B	ER	24.438	0.540	1.35	A	ER	1.891	0.80	0.274	1.08	B	ER	24.438	1		
		SNS7B	42.000		1.03	43.260	1.40	0.274	1.16	B	ER	24.438	0.540	1.38	A	ER	1.891	0.80	0.274	1.03	B	ER	24.438	1		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.31	43.230	1.40	0.274	1.49	B	ER	24.438	0.540	1.58	A	ER	1.891	0.80	0.274	1.31	B	ER	24.438	1		
		TNT4A	33.075		1.33	43.990	1.40	0.274	1.50	B	ER	24.438	0.540	1.50	A	ER	1.891	0.80	0.274	1.33	B	ER	24.438	1		
		TNT6A	41.600		1.10	45.760	1.40	0.274	1.25	B	ER	24.438	0.540	1.47	A	ER	1.891	0.80	0.274	1.10	B	ER	24.438	1		
		TNT7A	42.000		1.13	47.460	1.40	0.274	1.27	B	ER	24.438	0.540	1.36	A	ER	1.891	0.80	0.274	1.13	B	ER	24.438	1		
		TNT7B	42.000		1.16	48.720	1.40	0.274	1.32	B	ER	24.438	0.540	1.31	A	ER	1.891	0.80	0.274	1.16	B	ER	24.438	1		
		TNAGRIT4	43.000		1.11	47.730	1.40	0.274	1.26	B	ER	24.438	0.540	1.25	A	ER	1.891	0.80	0.274	1.11	B	ER	24.438	1		
TNAGT5A	45.000		1.04	46.800	1.40	0.274	1.17	B	ER	24.438	0.540	1.31	A	ER	1.891	0.80	0.274	1.04	B	ER	24.438	1				
TNAGT5B	45.000	3	1.01	45.450	1.40	0.274	1.15	B	ER	24.438	0.540	1.19	A	ER	1.891	0.80	0.274	1.01	B	ER	24.438	1				

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. SPANS B, C, & D ARE IDENTICAL.
 2.
 3.
 4.

CONTROLLING LOAD RATING

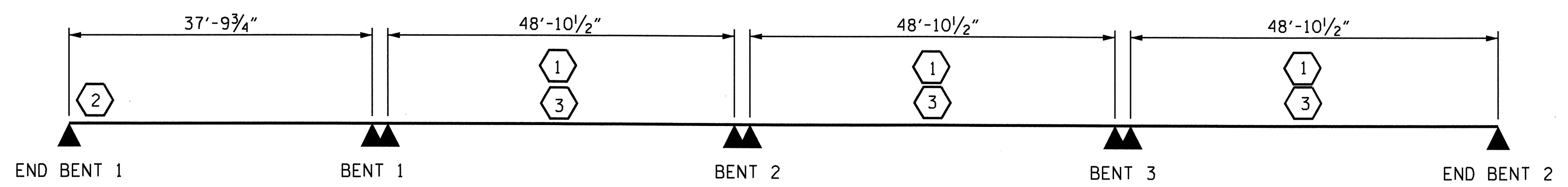
1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **
 ** SEE CHART FOR VEHICLE TYPE

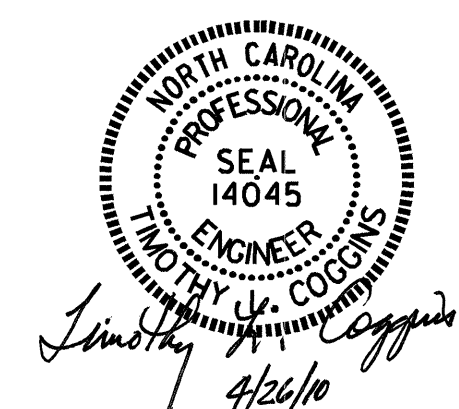
GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 25+45.00 -L-

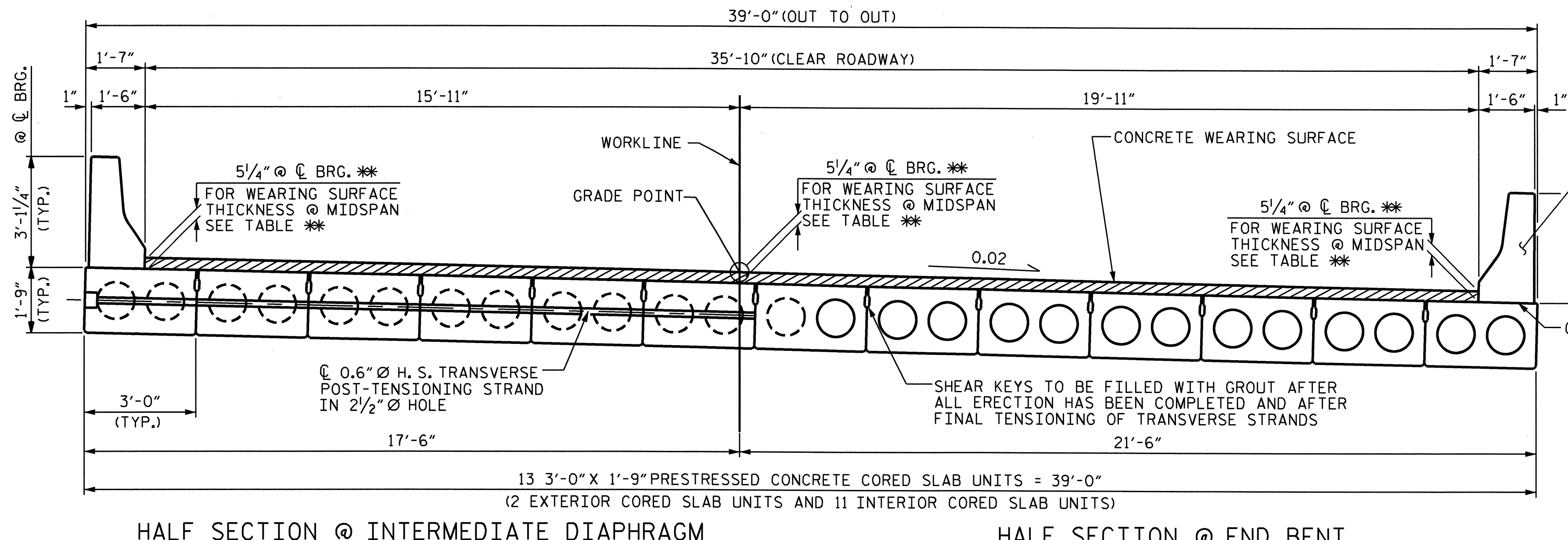


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 LRFR SUMMARY FOR
 PRESTRESSED
 CONCRETE GIRDERS
 (NON-INTERSTATE TRAFFIC)

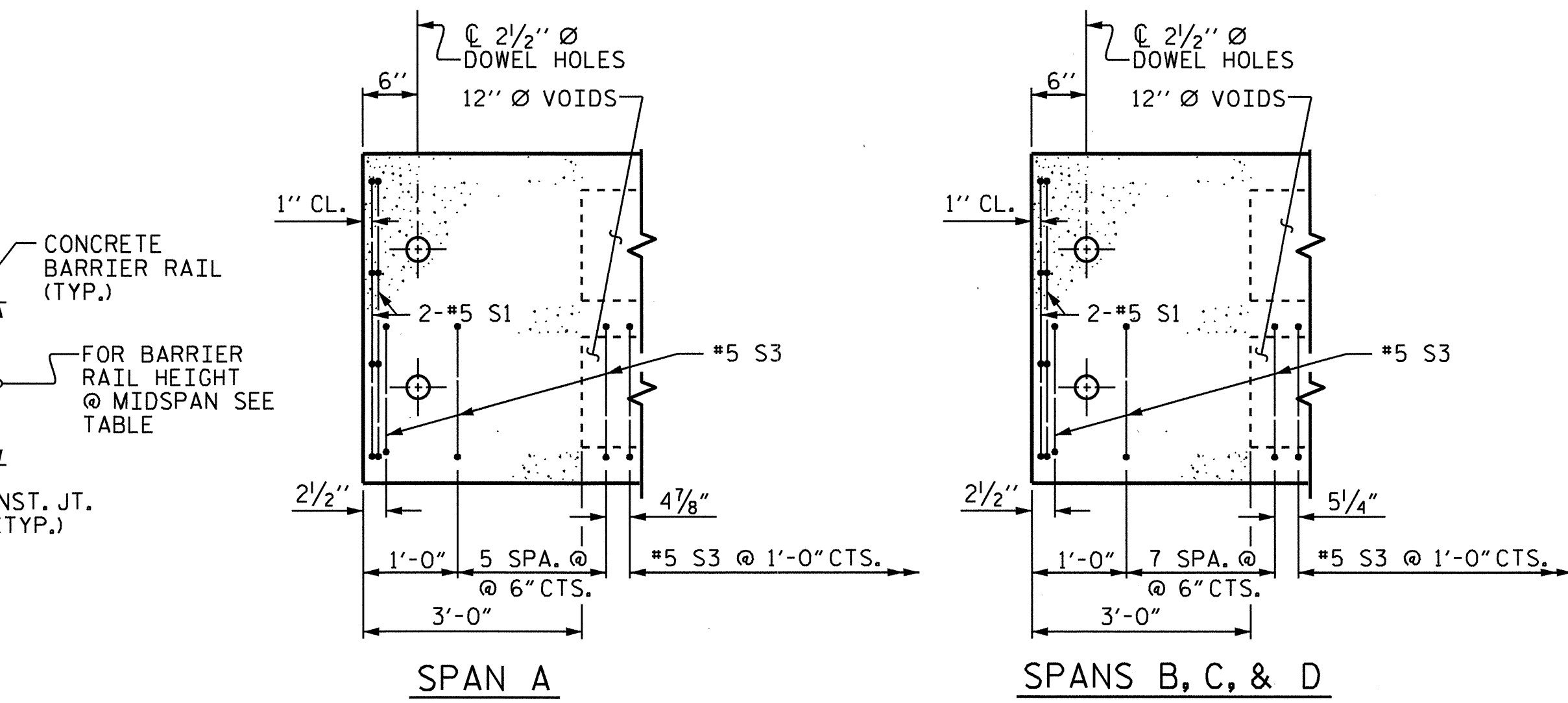
ASSEMBLED BY : M.D.PISO DATE : 12/09/09
 CHECKED BY : M.GUDLAUGSSON DATE : 01/07/10
 DRAWN BY : MAA 1/08 REV. 11/12/08RR MAA/GM
 CHECKED BY : GM/DI 2/08

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

26-APR-2010 15:35
 G:\TIPProjects-B\B3693\Structures\Str*3\final_plans\b3693_sd_lr_fr_03.std
 towerette



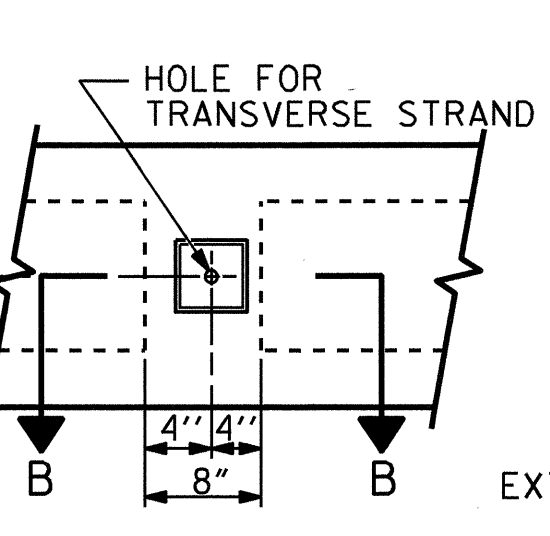
HALF SECTION @ INTERMEDIATE DIAPHRAGM
TYPICAL SECTION



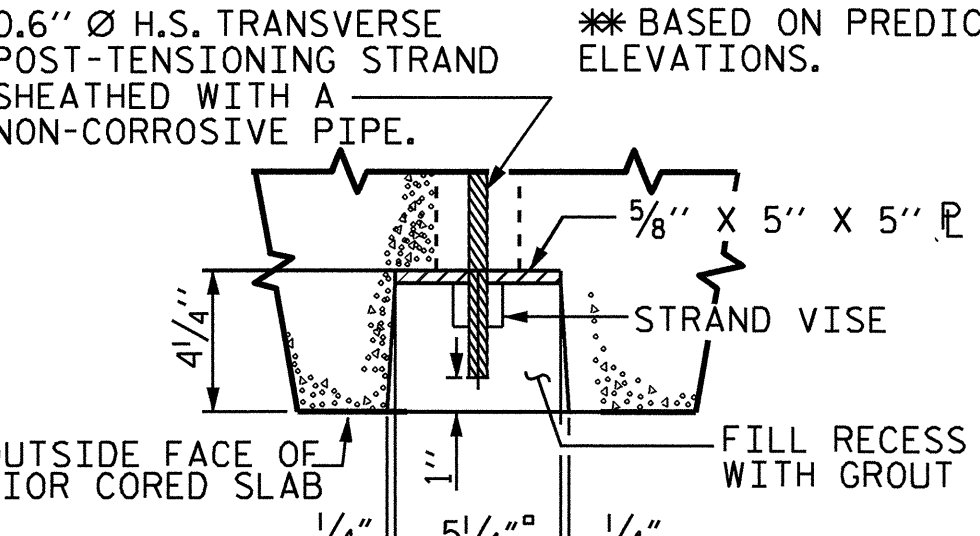
PART PLAN-EXTERIOR SECTION
NOTE: EXTERIOR SECTION SHOWN-INTERIOR SECTION SIMILAR EXCEPT OMIT S3 BARS.

SPAN	CONCRETE WEARING SURFACE THICKNESS @ MIDSPAN	BARRIER RAIL HEIGHT @ MIDSPAN
A	4 5/8"	* 3'-0 5/8"
B	3 5/8"	* 2'-11 5/8"
C	3 5/8"	* 2'-11 5/8"
D	3 5/8"	* 2'-11 5/8"

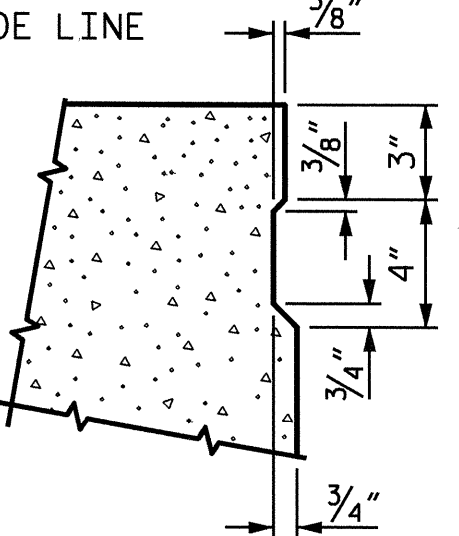
* NOTE: THE MINIMUM HEIGHT OF THE BARRIER RAIL FOR EACH SPAN IS SHOWN. THE HEIGHT OF THE BARRIER RAIL VARIES WHILE THE TOP OF THE RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE.
** BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS.



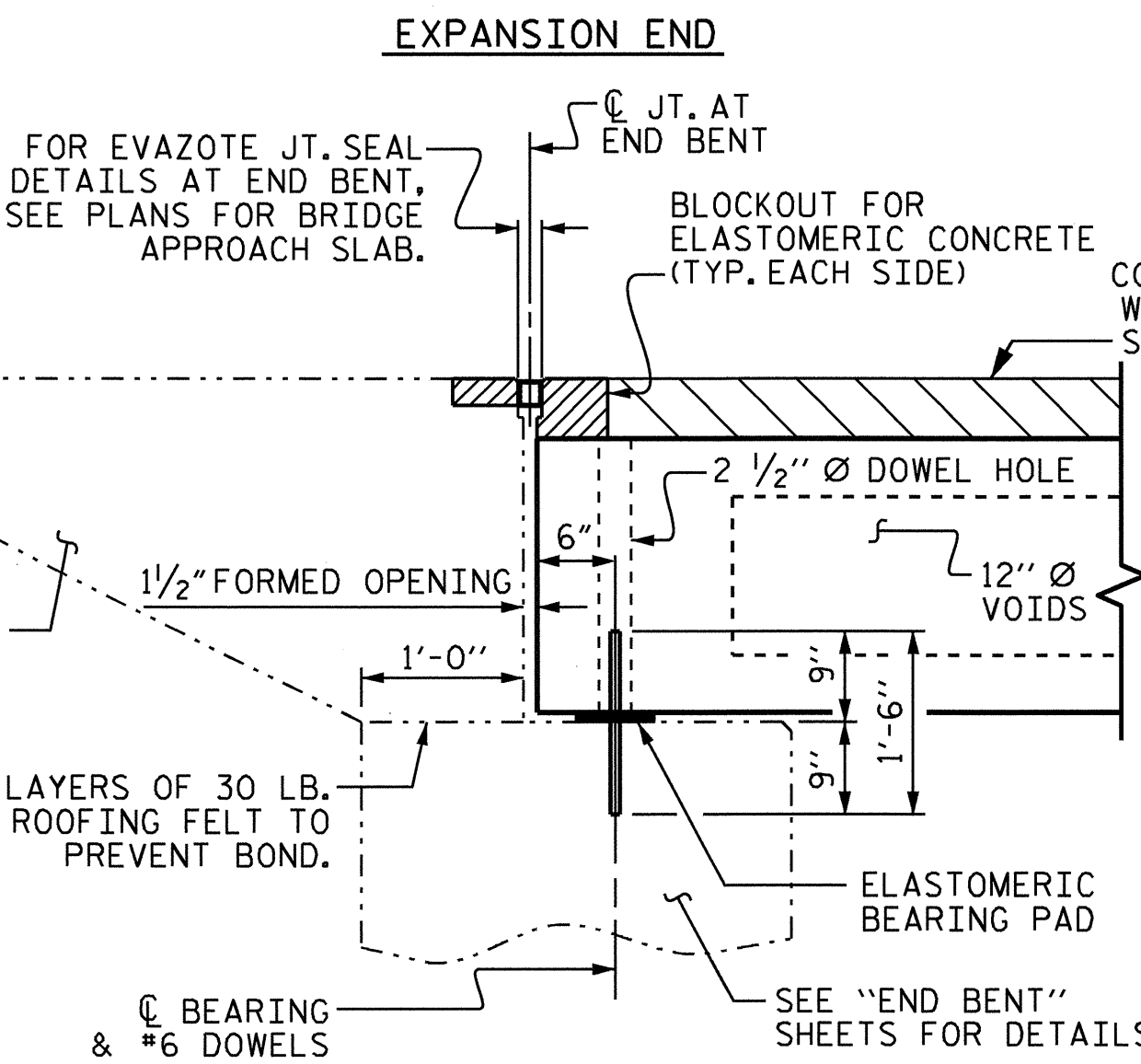
ELEVATION VIEW



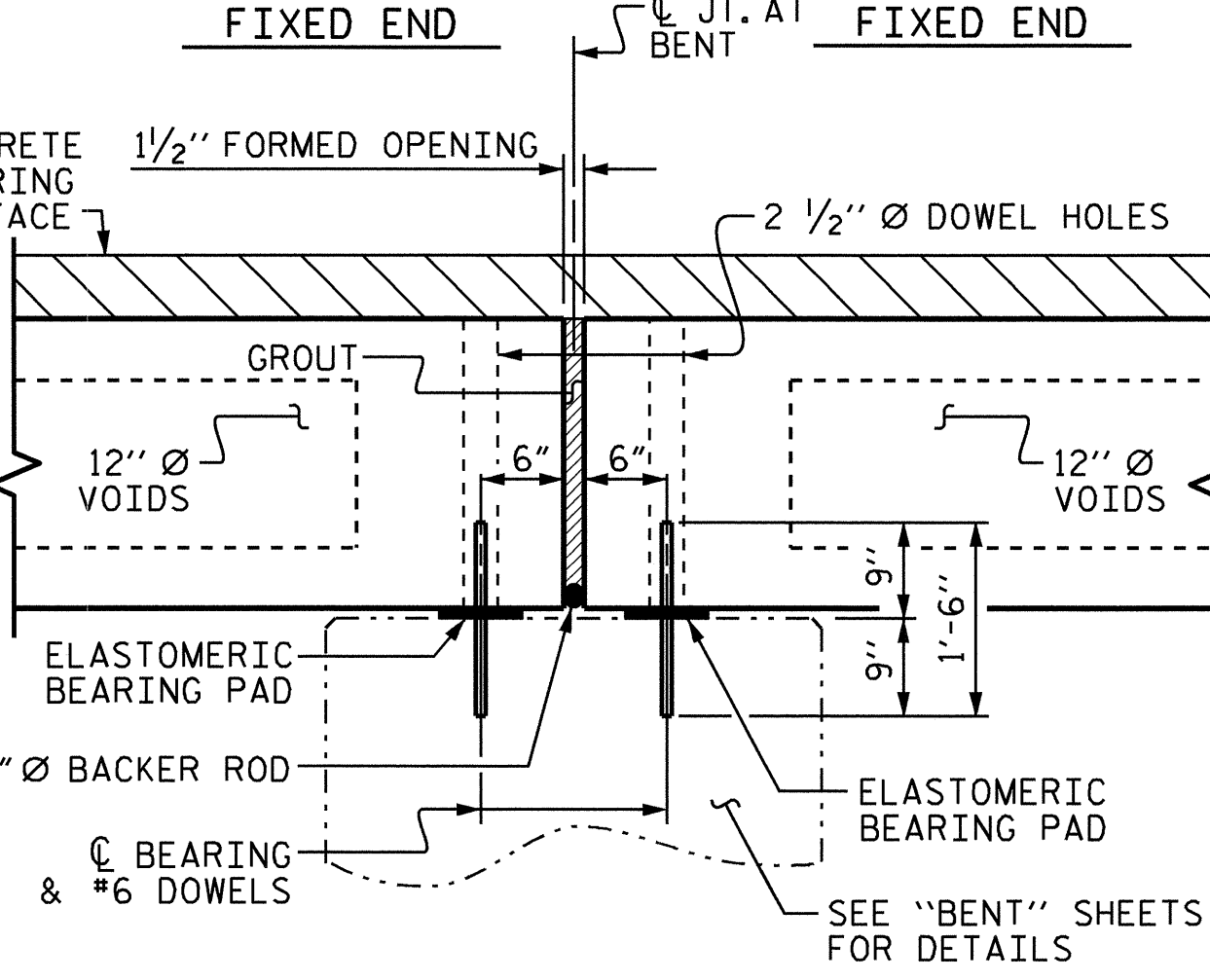
SECTION B-B
GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS



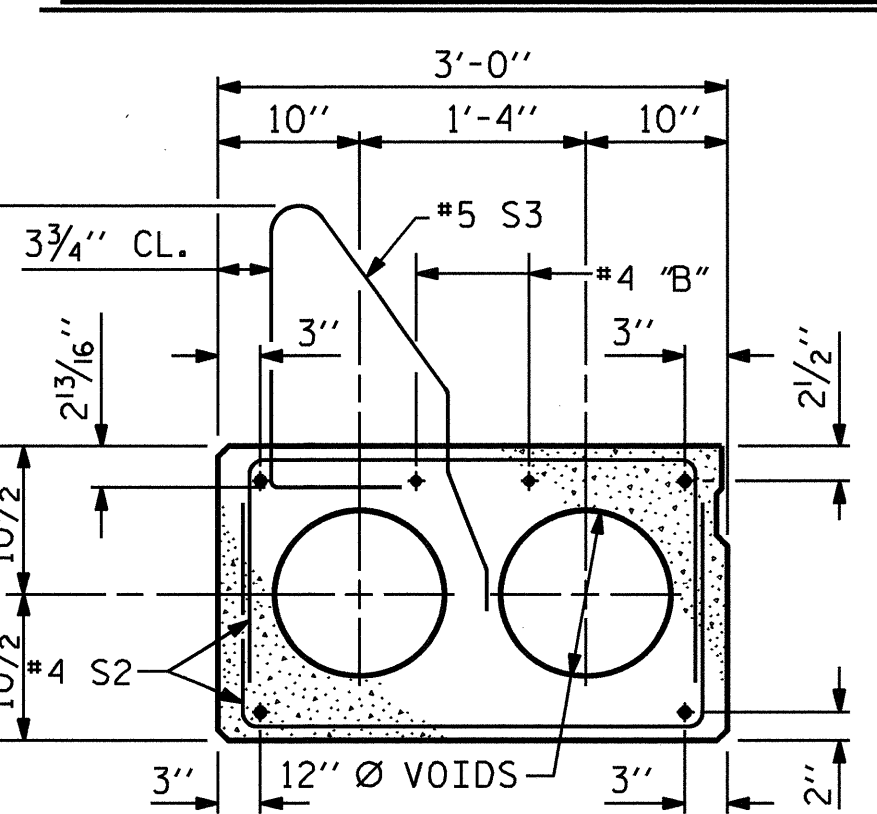
SHEAR KEY DETAIL
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.



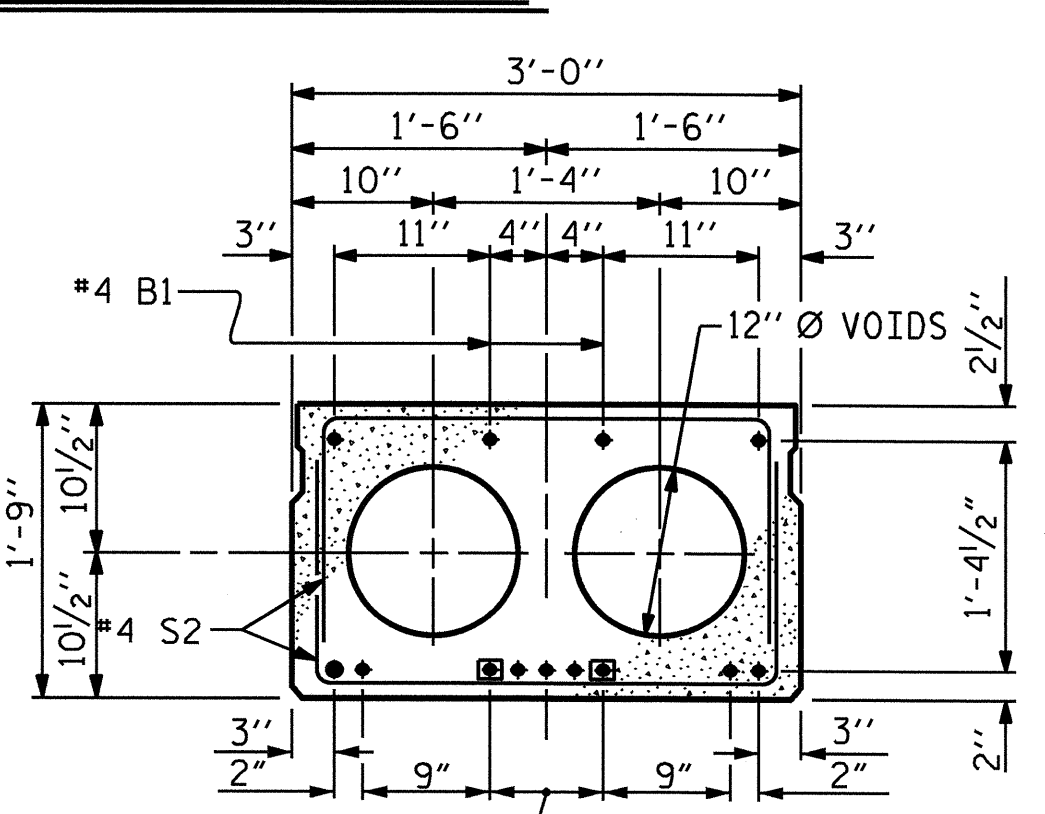
SECTION AT END BENT



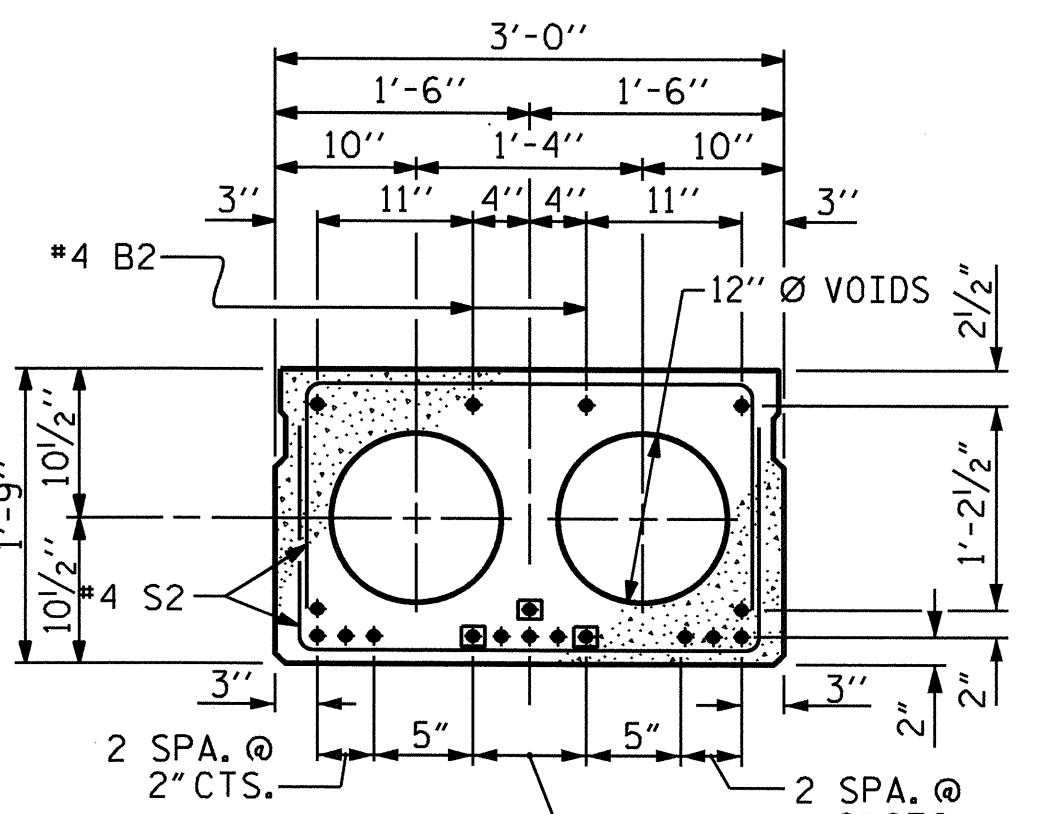
SECTION AT BENTS



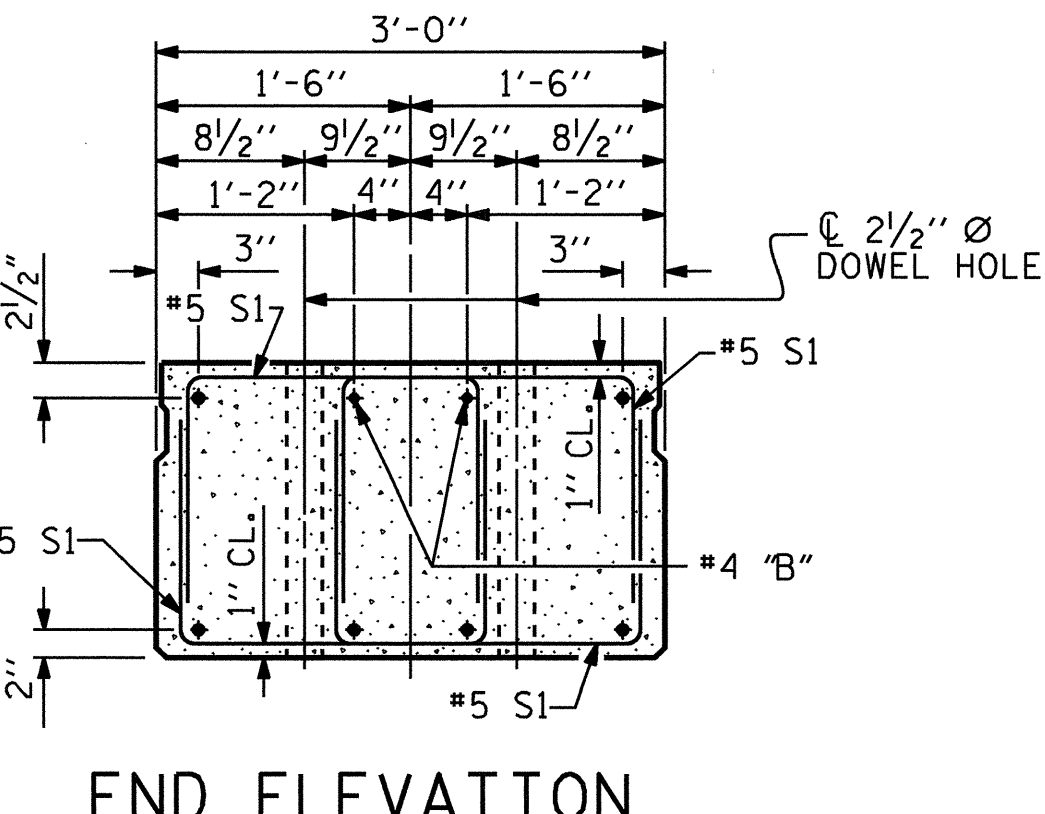
EXTERIOR SLAB SECTION
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



INTERIOR SLAB SECTION
0.6" Ø LOW RELAXATION STRAND LAYOUT
(11 TOTAL STRANDS)
2'-0" DEBONDING LENGTH



INTERIOR SLAB SECTION
0.6" Ø LOW RELAXATION STRAND LAYOUT
(16 TOTAL STRANDS)
6'-0" DEBONDING LENGTH

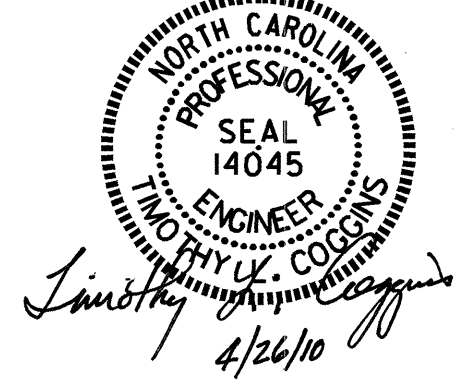


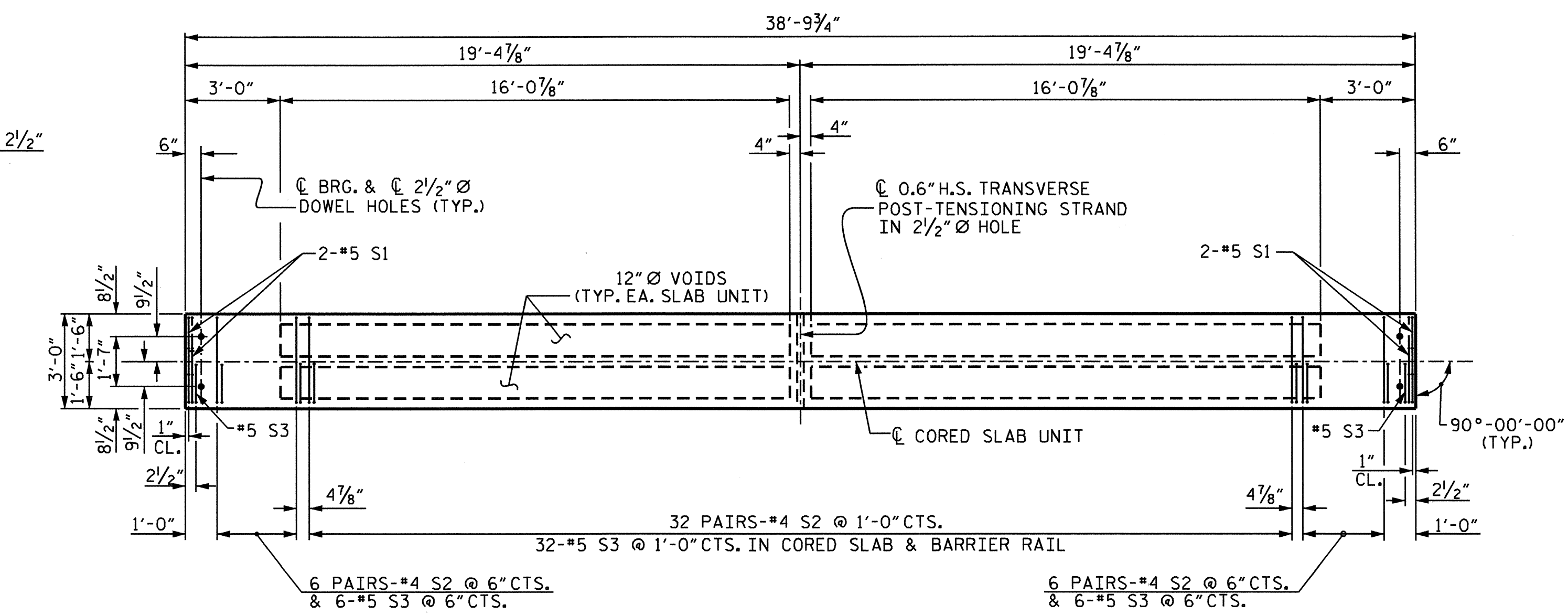
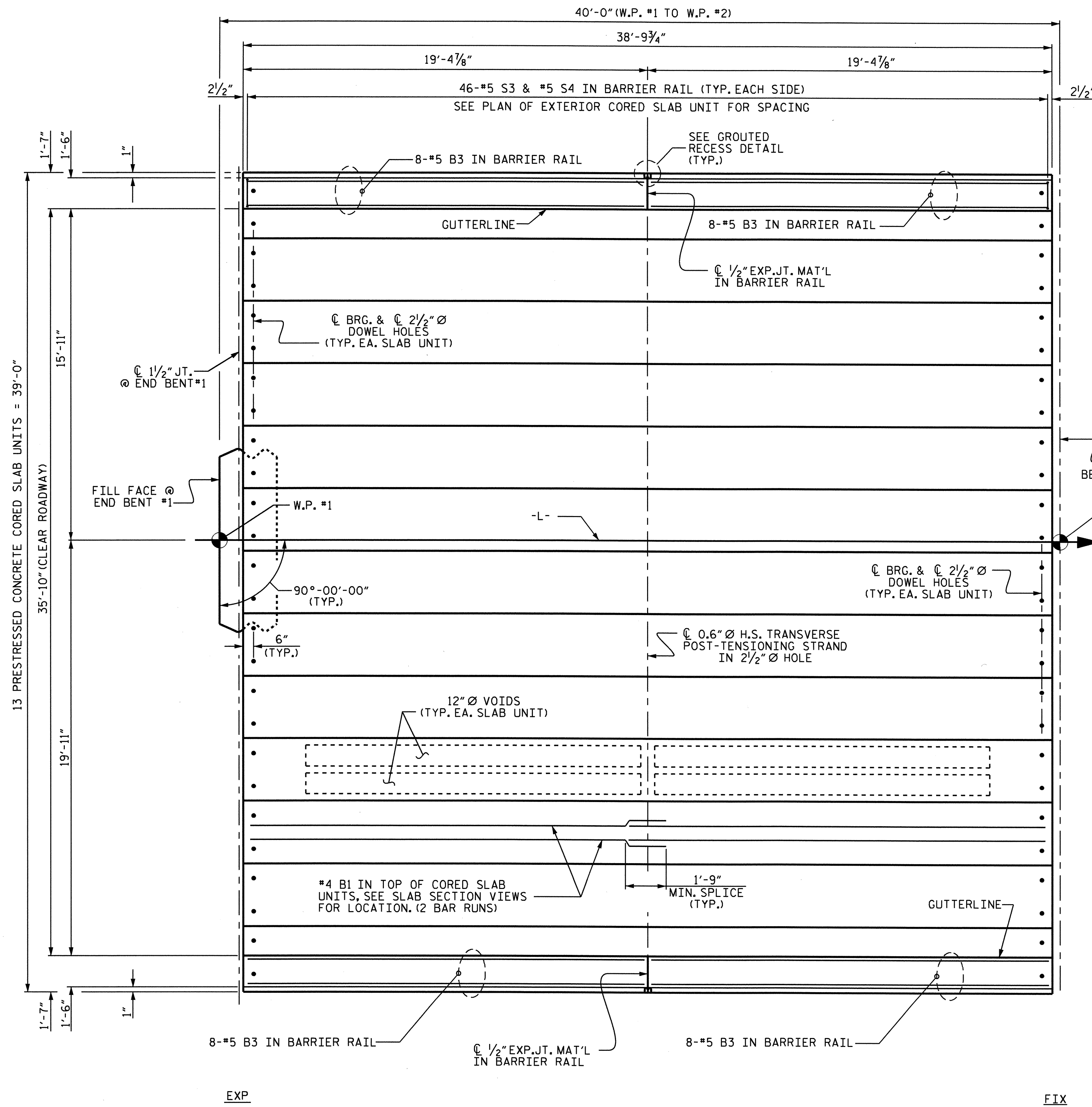
END ELEVATION
SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB SECTION SHOWN-EXTERIOR SLAB SECTION SIMILAR EXCEPT SHEAR KEY LOCATION.

PROJECT NO. **B-3693**
ROBESON COUNTY
STATION: **25+45.00 -L-**
SHEET 1 OF 7

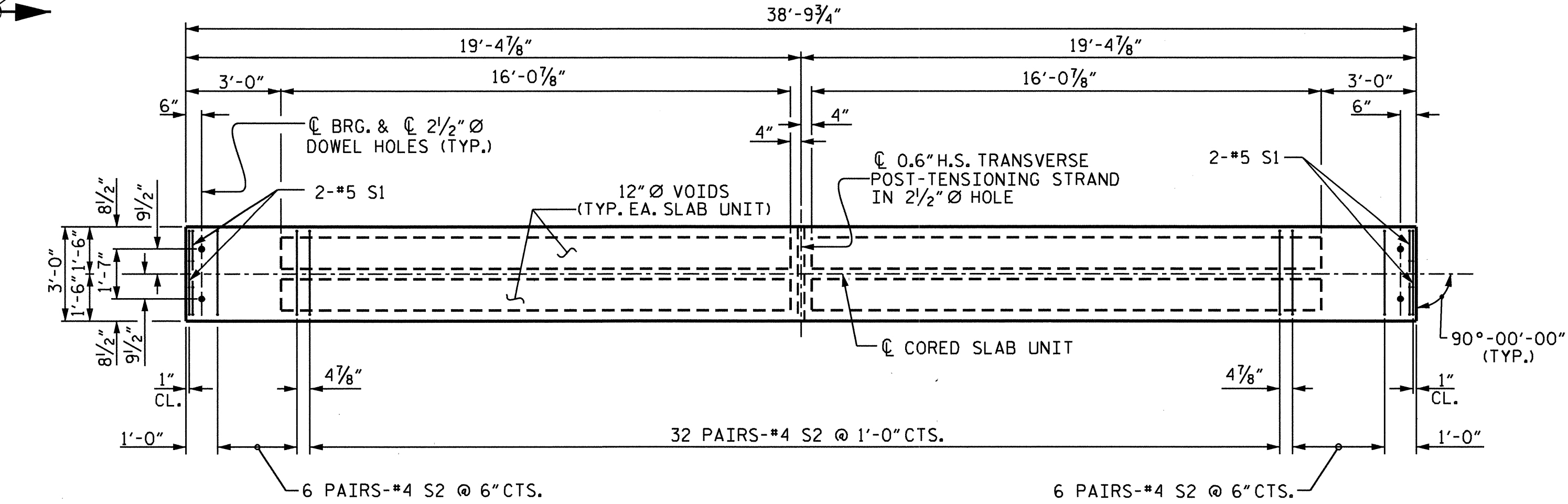
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD			NO.	DATE:	NO.	DATE:	BY:	DATE:	SHEET NO. S-44
3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT									TOTAL SHEETS 59
1	BY:	DATE:	2	DATE:	3	DATE:	4	DATE:	

ASSEMBLED BY: M.D.PISO	DATE: 11/16/09
CHECKED BY: M.GUDLAUGSSON	DATE: 01/07/10
DRAWN BY: WJH 4/89	REV. 10/17/00 RWW/LES
CHECKED BY: FCJ 5/89	REV. 7/10/OIRR RWW/LES
	REV. 5/1/06R TLA/GM





PLAN OF EXTERIOR CORED SLAB UNIT



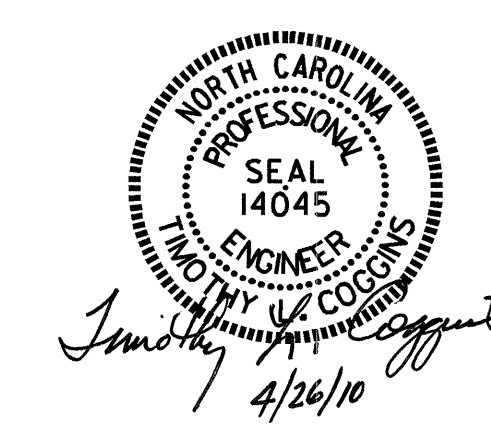
PLAN OF INTERIOR CORED SLAB UNIT

SPAN A

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 25+45.00 -L-

SHEET 2 OF 7

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

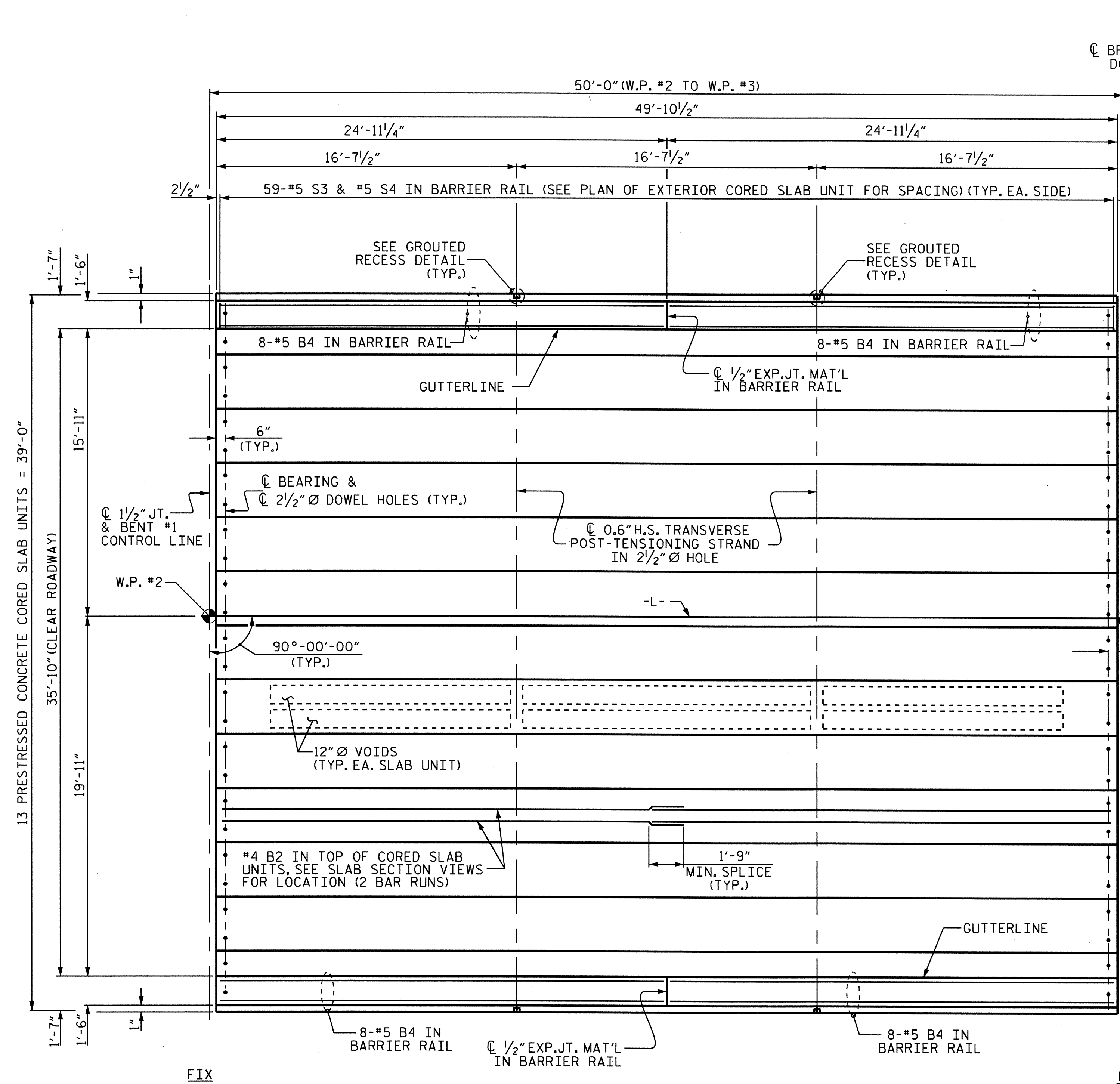


DRAWN BY: M.D.PISO DATE: 11/16/09
 CHECKED BY: M.GUDLAUGSSON DATE: 01/07/10

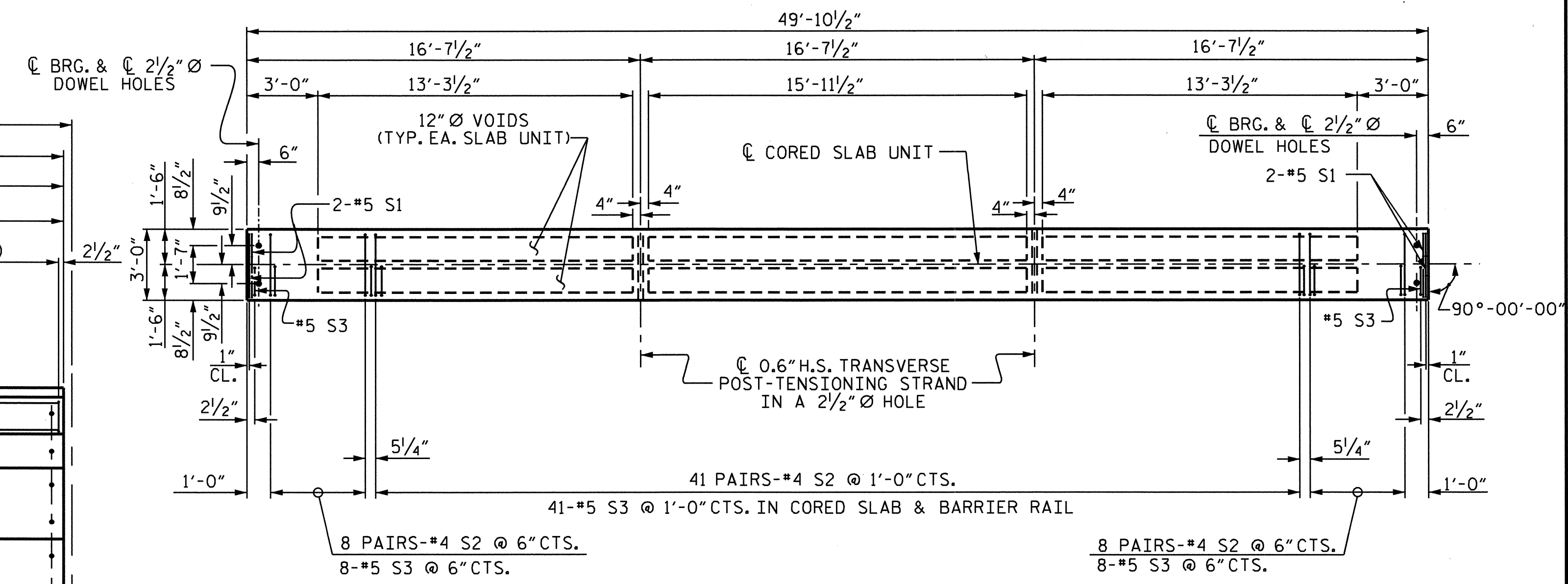
REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

S-45
 TOTAL SHEETS
 59

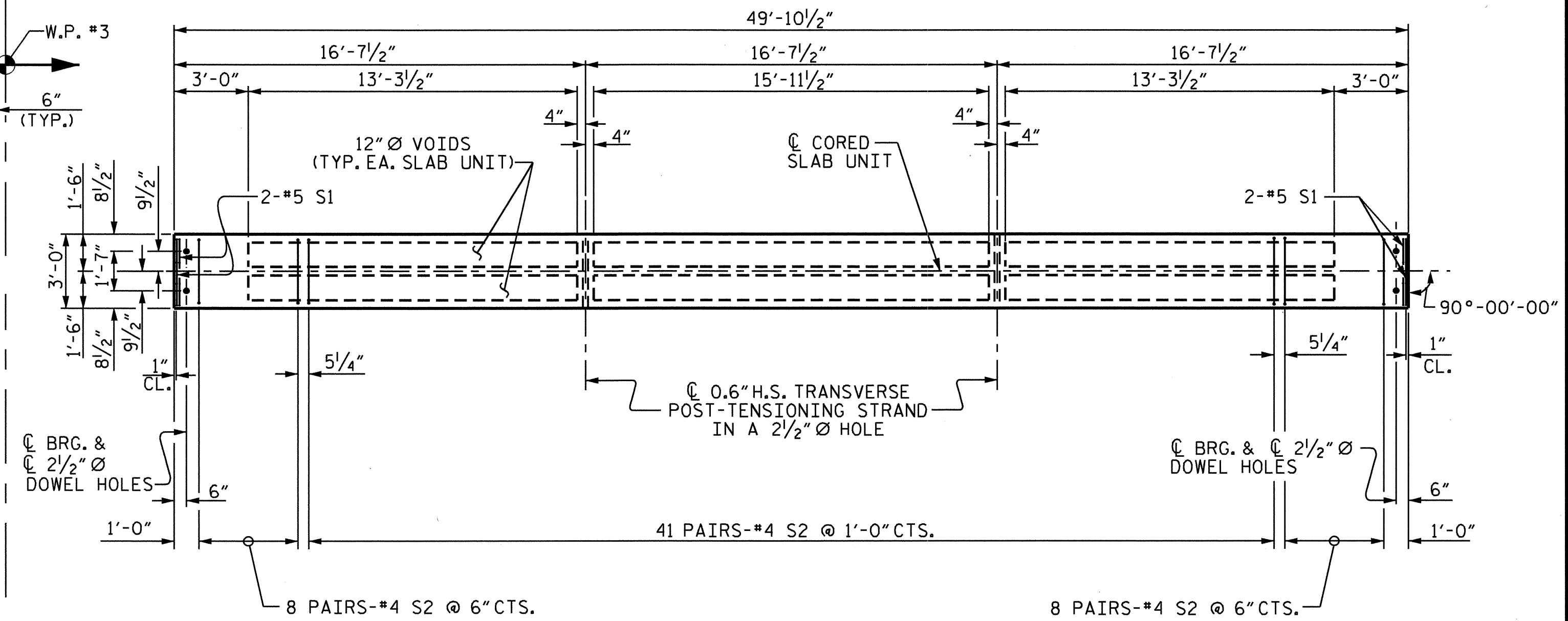
STR #3



SPAN "B" AND SPAN "C"
SPAN "B" SHOWN, SPAN "C" SIMILAR



PLAN OF EXTERIOR CORED SLAB UNIT



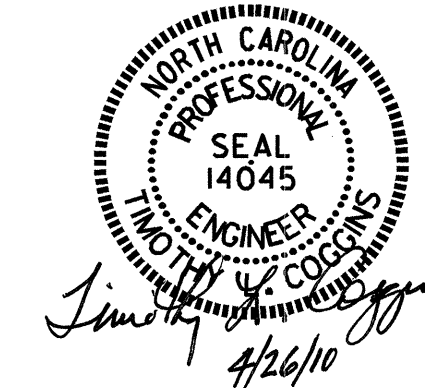
PLAN OF INTERIOR CORED SLAB UNIT

PROJECT NO. B-3693
ROBESON COUNTY
STATION: 25+45.00 -L-

SHEET 3 OF 7

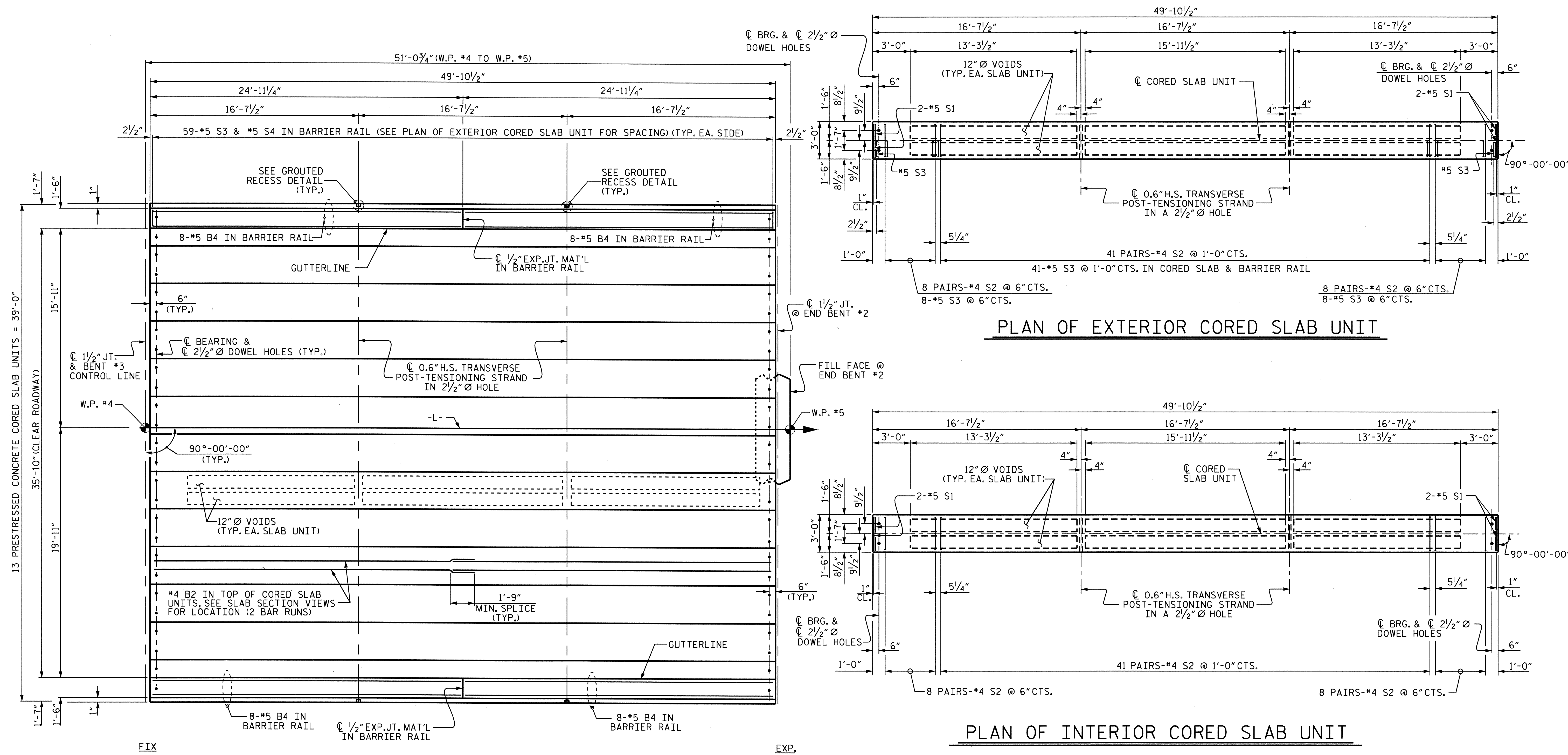
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
PLAN OF SPAN
"B" AND "C"

REVISIONS				SHEET NO. S-46
NO.	BY:	DATE:	DATE:	
1			3	TOTAL SHEETS 59
2			4	



DRAWN BY : M.D.PISO DATE : 11/16/09
CHECKED BY : M.GUDLAUGSSON DATE : 01/07/10

STR. #3



PLAN OF EXTERIOR CORED SLAB UNIT

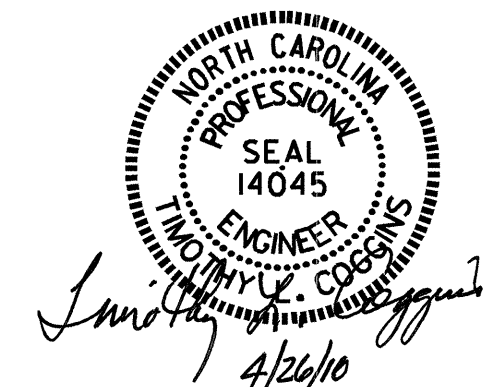
PLAN OF INTERIOR CORED SLAB UNIT

SPAN D

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 25+45.00 -L-

SHEET 4 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN "D"



REVISIONS					SHEET NO. S-47
NO.	BY:	DATE:	NO.	DATE:	
1			3		TOTAL SHEETS 59
2			4		

DRAWN BY: M.D.PISO DATE: 11/16/09
 CHECKED BY: M.GUDLAUGSSON DATE: 01/07/10

NOTES

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

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 1/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

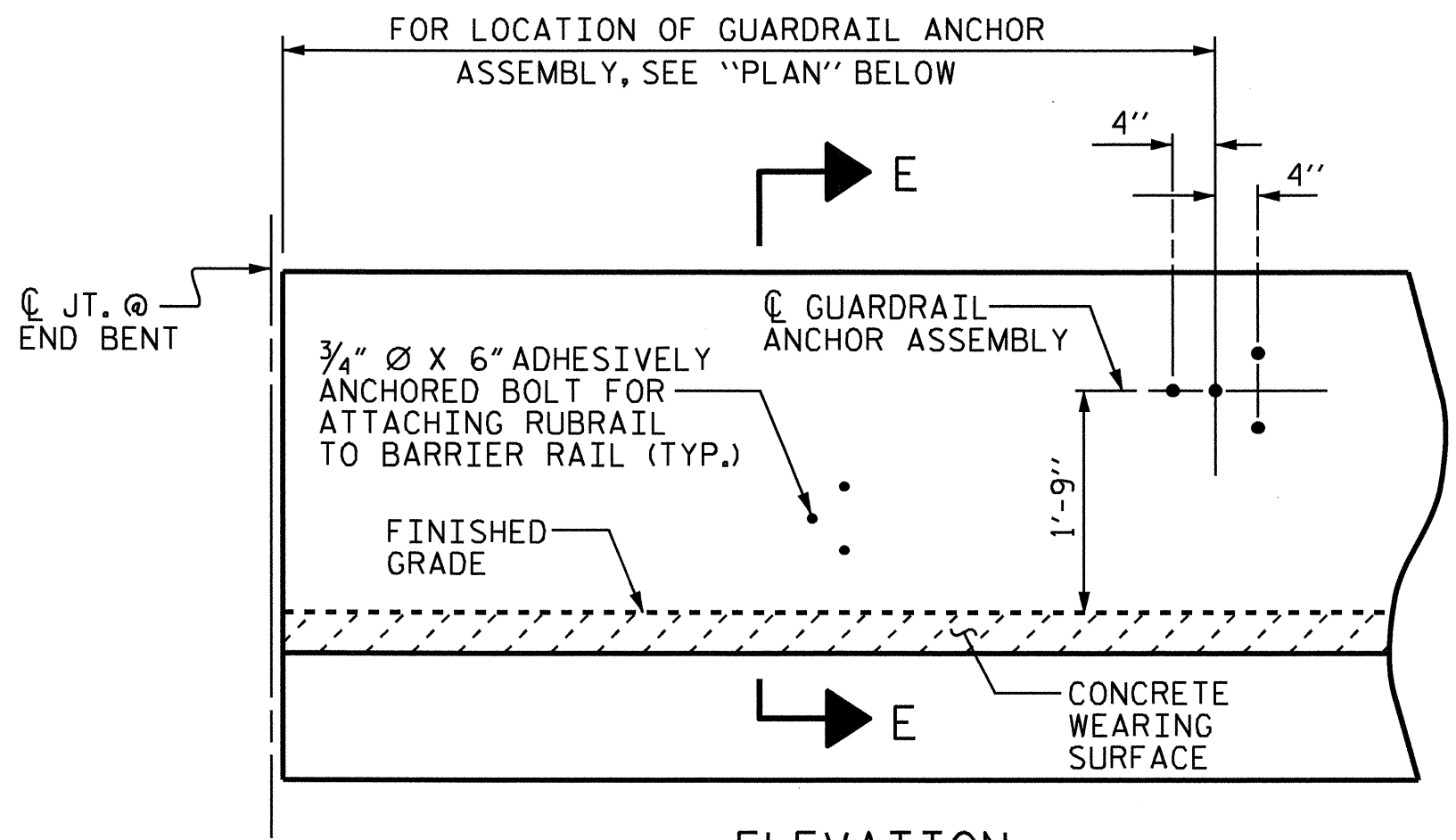
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

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

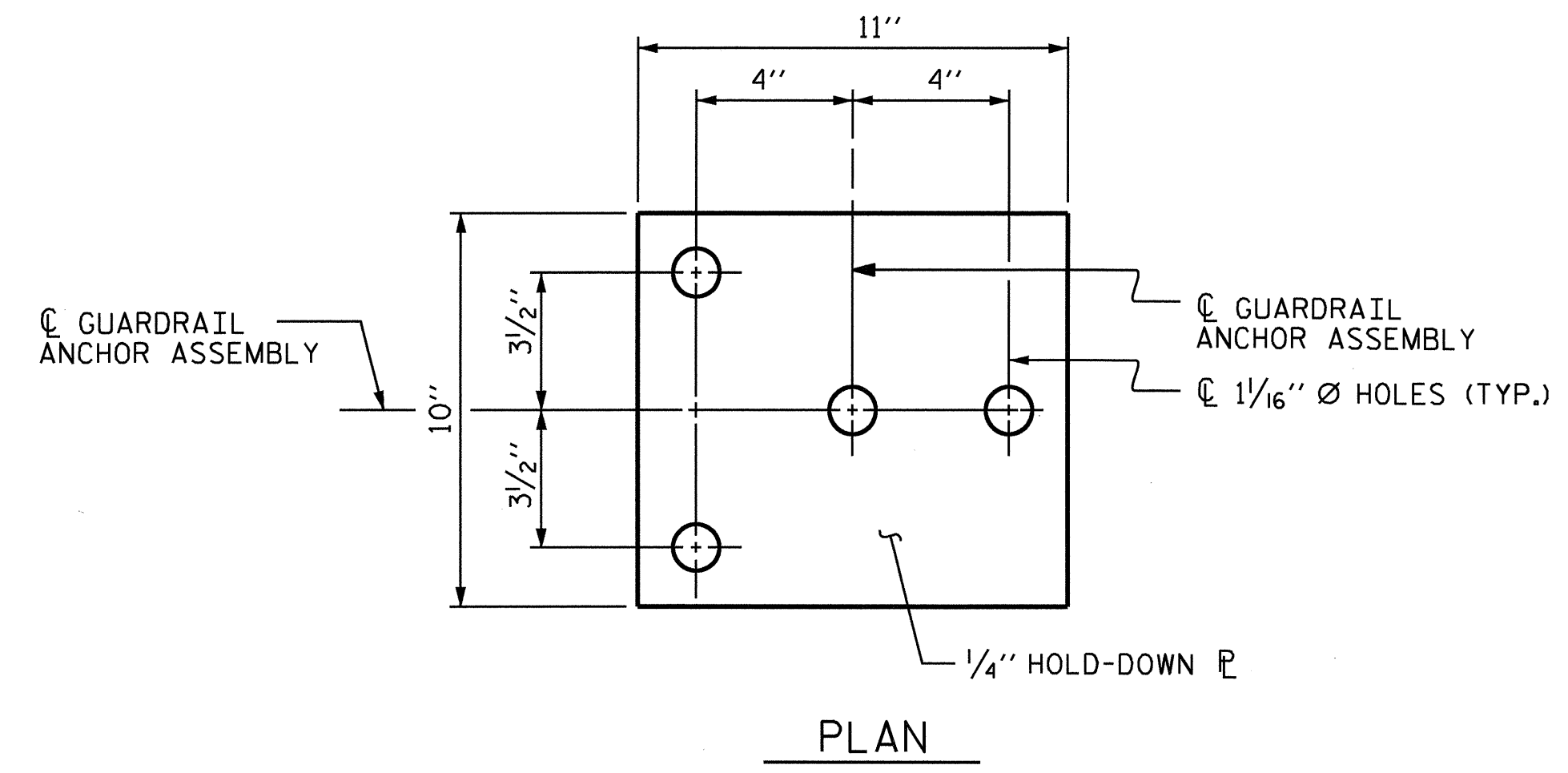
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.

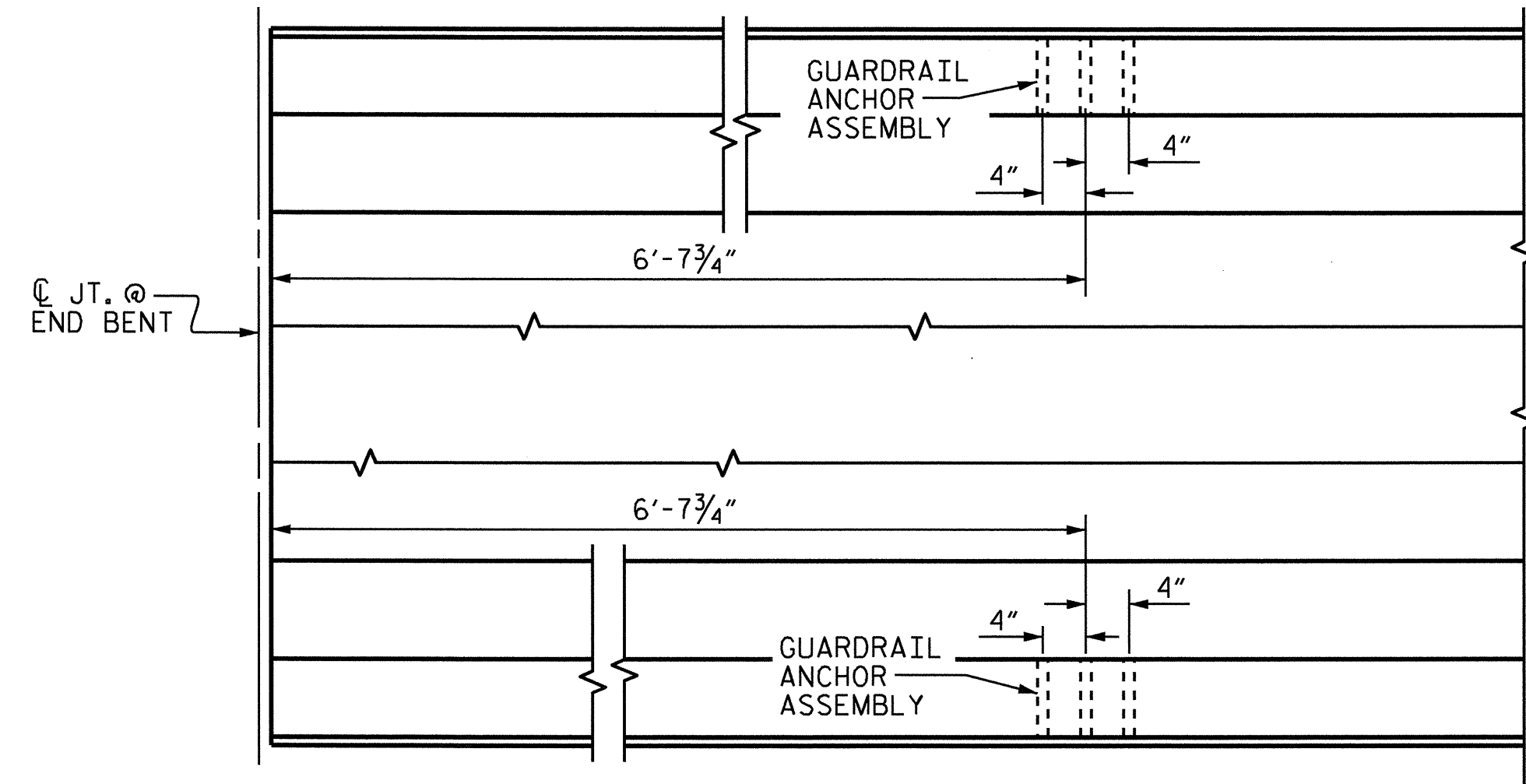


ELEVATION

FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03



PLAN



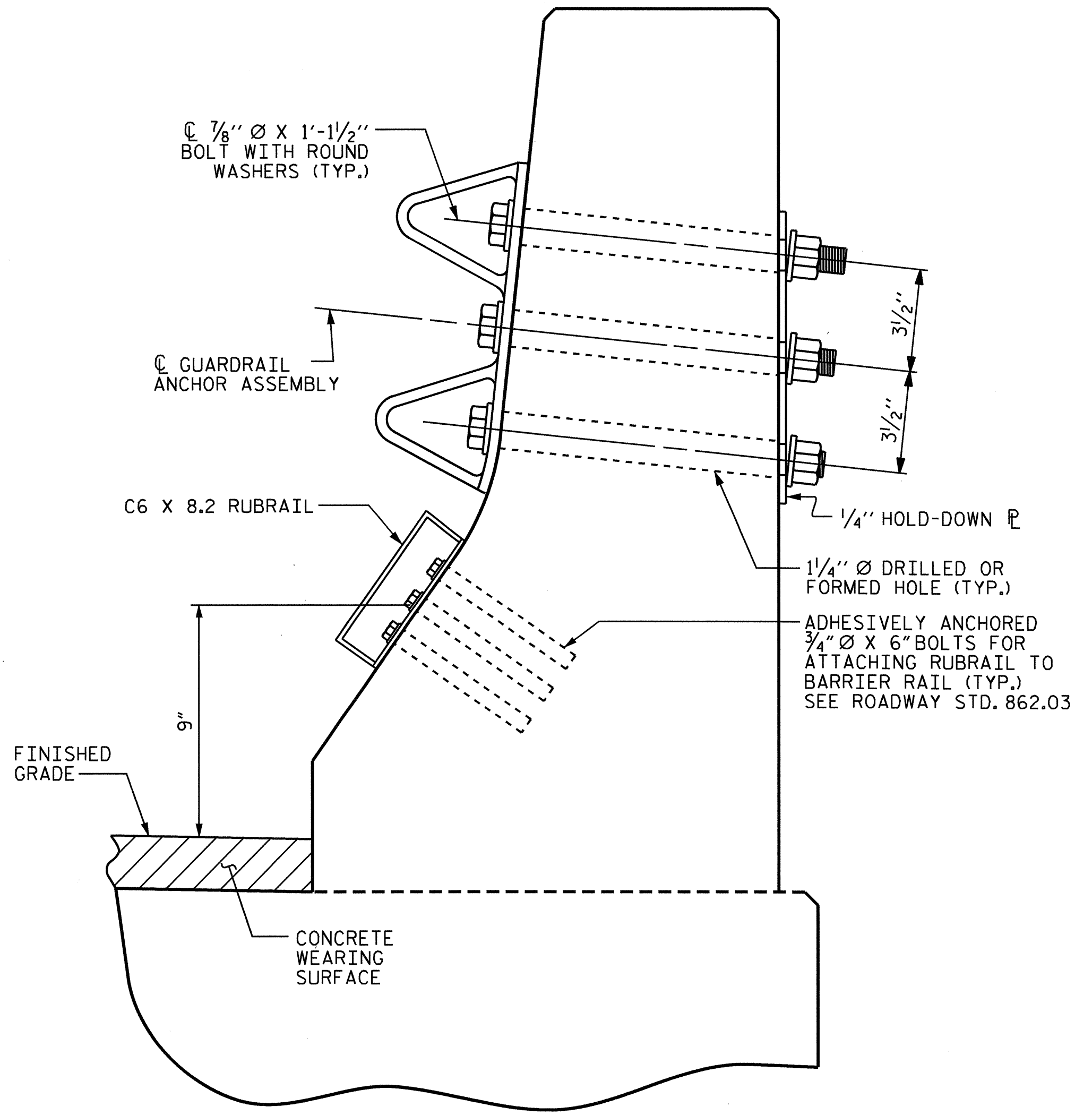
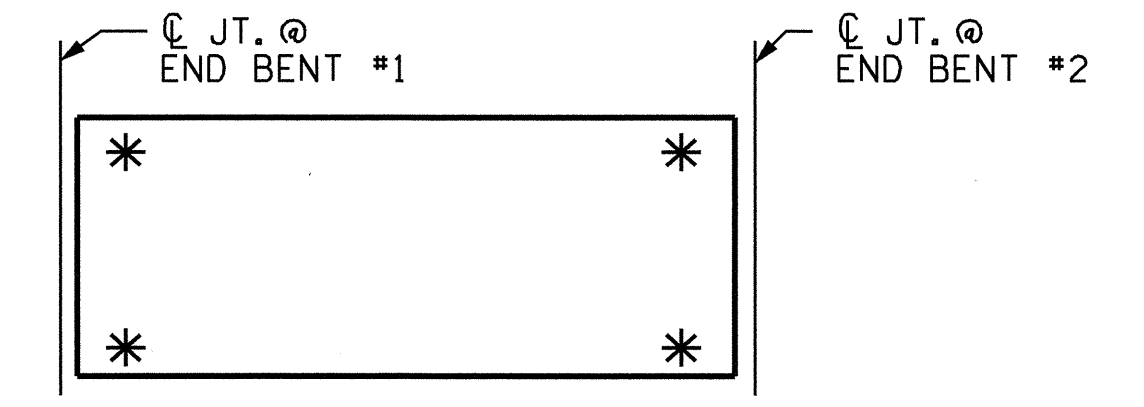
PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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

SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY



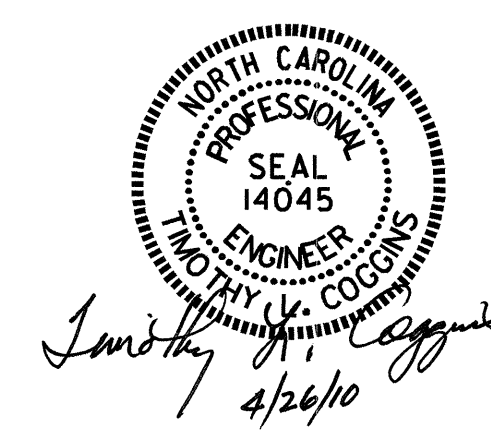
SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 25+45.00 -L-

SHEET 5 OF 7

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



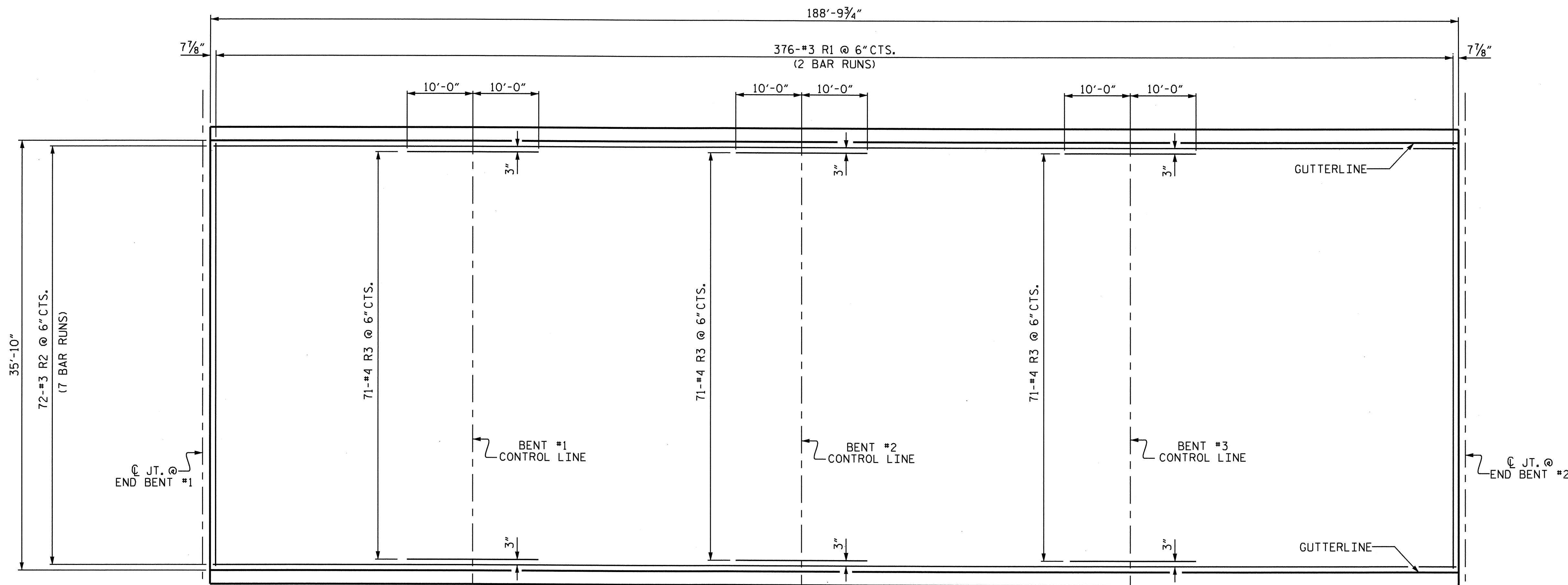
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					59

ASSEMBLED BY : M.D. PISO	DATE : 11/16/09
CHECKED BY : M. GUDLAUGSSON	DATE : 1/07/10
DRAWN BY : TLA	5/06
CHECKED BY : GM	5/06
ADDED	5/1/06R KMM/GM

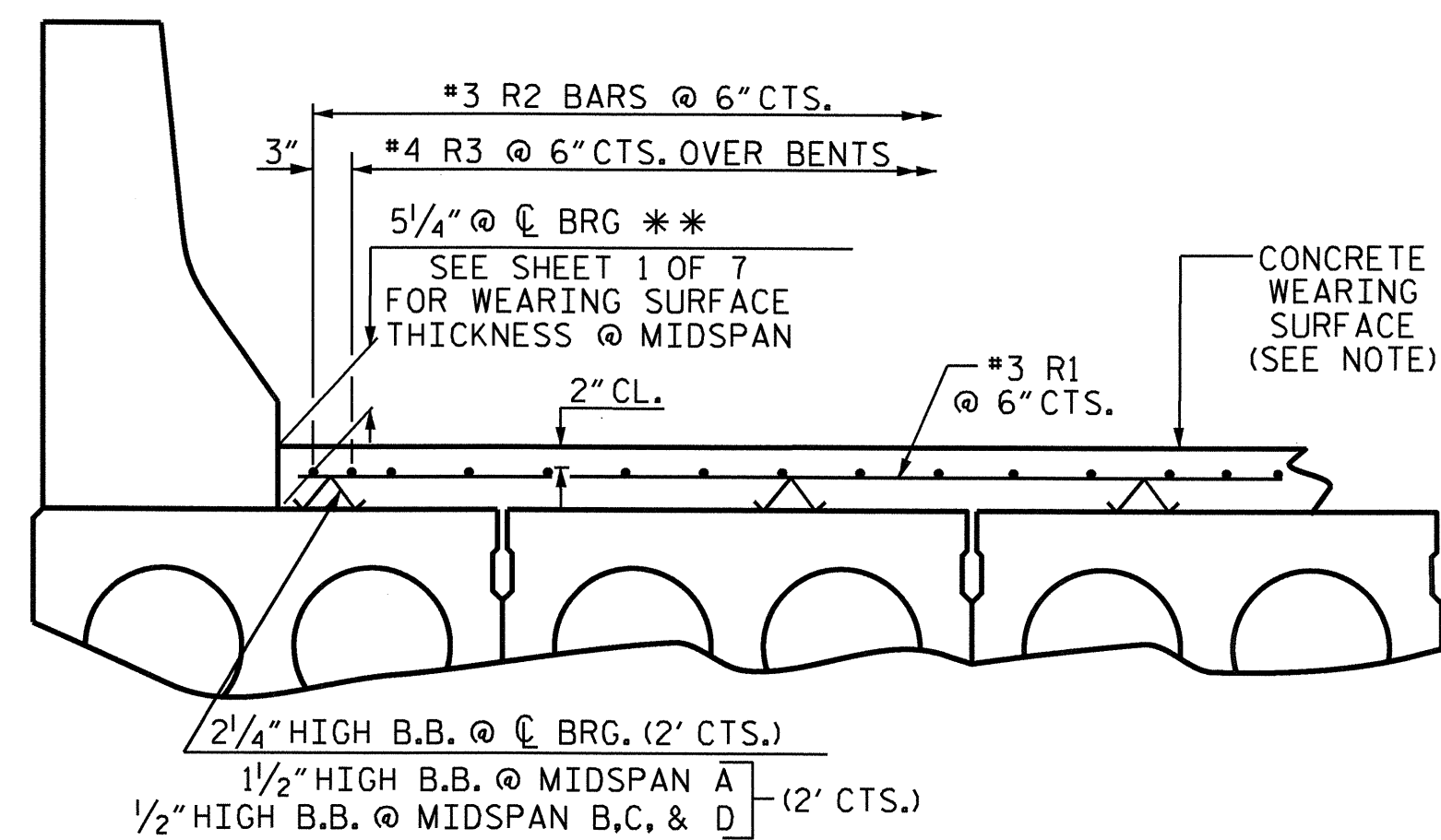
26-APR-2010 15:33
 G:\TIP\Projects-B\B3693\Structures\Str#3\final.plans\b3693.ed.cs.03.dgn
 toverette

NOTE:

PLACEMENT OF THE CONCRETE WEARING SURFACE SHALL OCCUR AFTER CASTING THE CONCRETE RAIL. THE COST OF THE #3 & #4 BARS CAST WITH THE CONCRETE WEARING SURFACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE WEARING SURFACE, FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.



PLAN SHOWING CONCRETE WEARING SURFACE REINFORCING STEEL



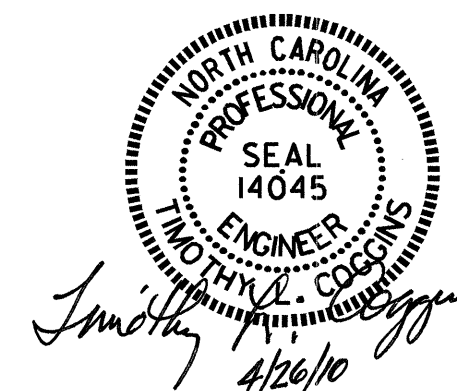
REINFORCING STEEL FOR CONCRETE WEARING SURFACE
 ** BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS

BILL OF MATERIAL FOR CONCRETE WEARING SURFACE					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* R1	752	#3	STR.	18'-9"	5302
* R2	504	#3	STR.	28'-7"	5417
* R3	213	#4	STR.	20'-0"	2846
* EPOXY COATED REINFORCING STEEL					LBS. 13565
CONCRETE WEARING SURFACE					SO. FT. 6733

SPLICE LENGTH CHART	
BAR SIZE	EPOXY COATED
#3 "R"	2'-0"

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 25+45.00 -L-

SHEET 6 OF 7



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					SHEET NO.
CONCRETE WEARING SURFACE DETAILS					S-49
REVISIONS					TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

DRAWN BY: M.D.PISO DATE: 11/16/09
 CHECKED BY: M.GUDLAUGSSON DATE: 01/07/10

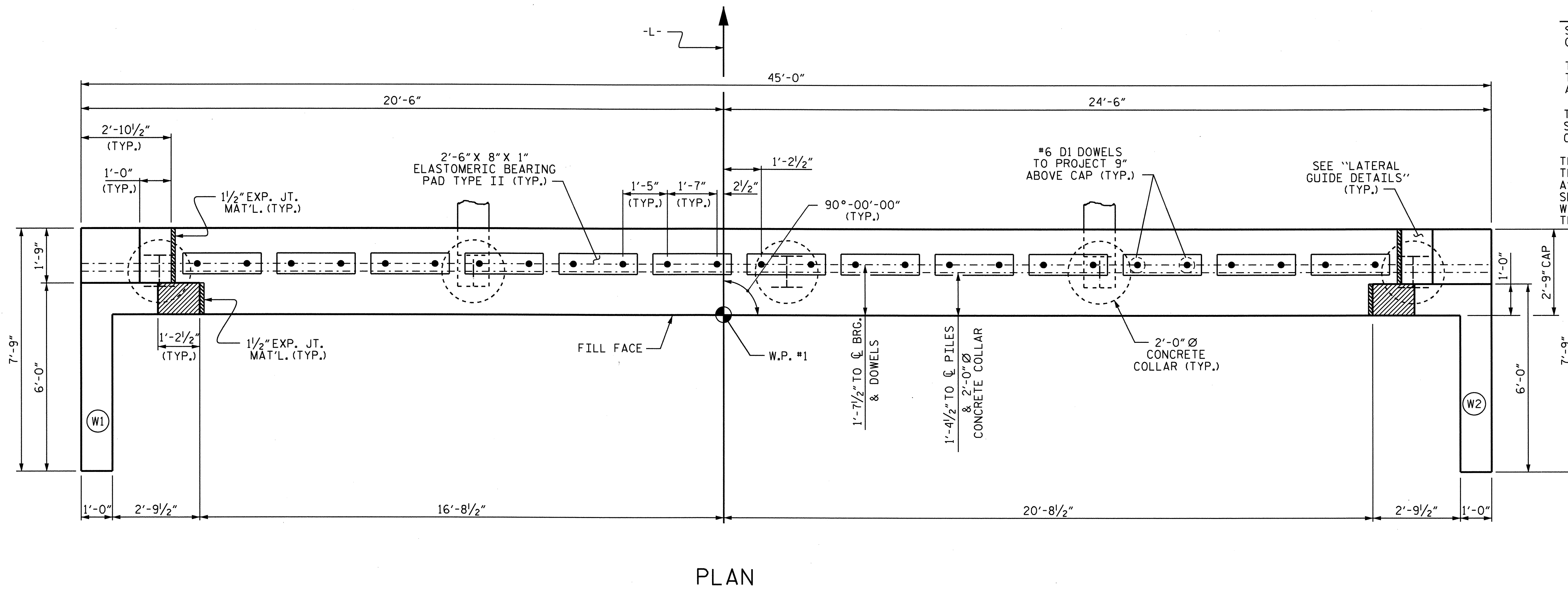
NOTES

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

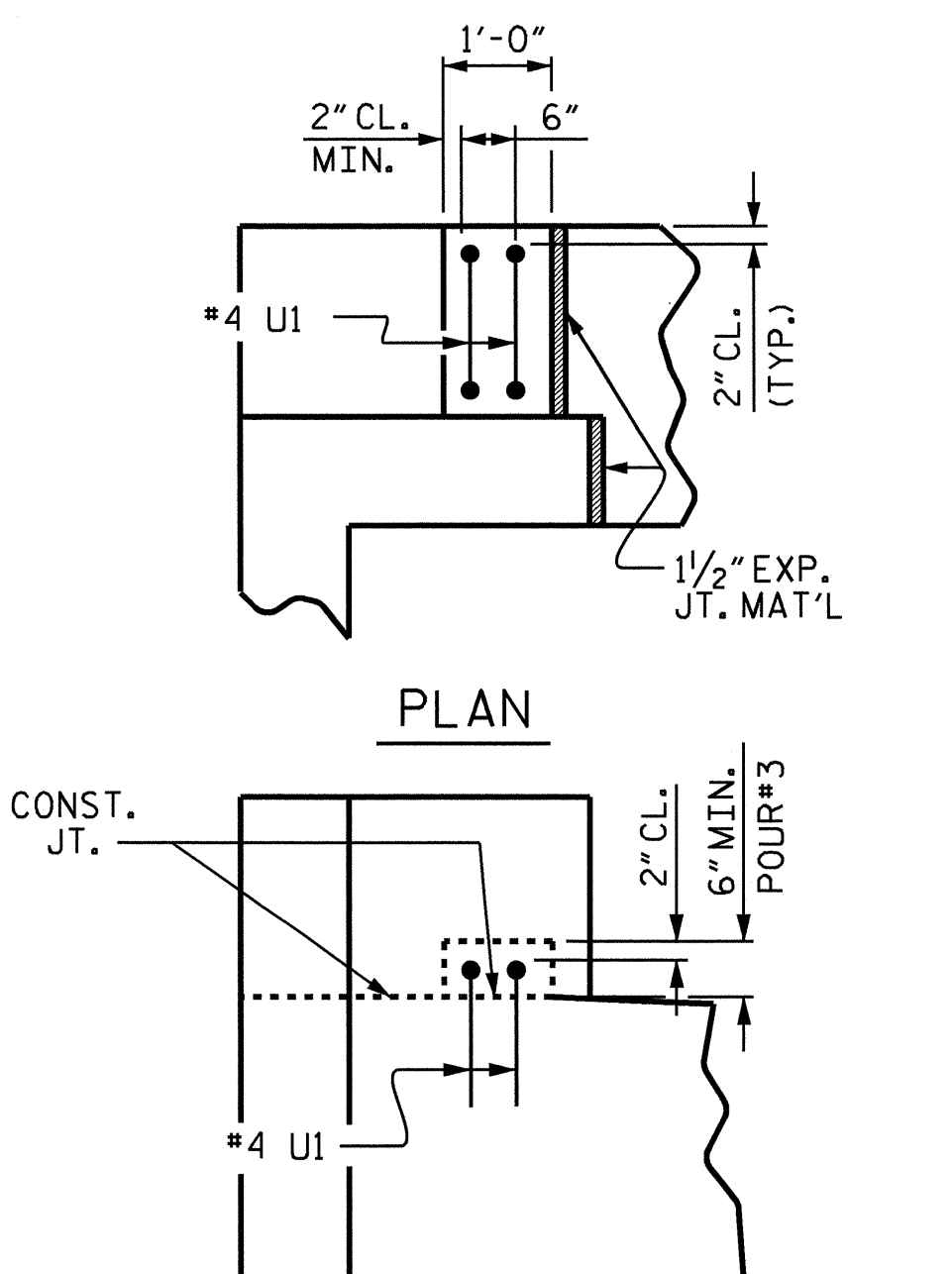
THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

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.



PLAN

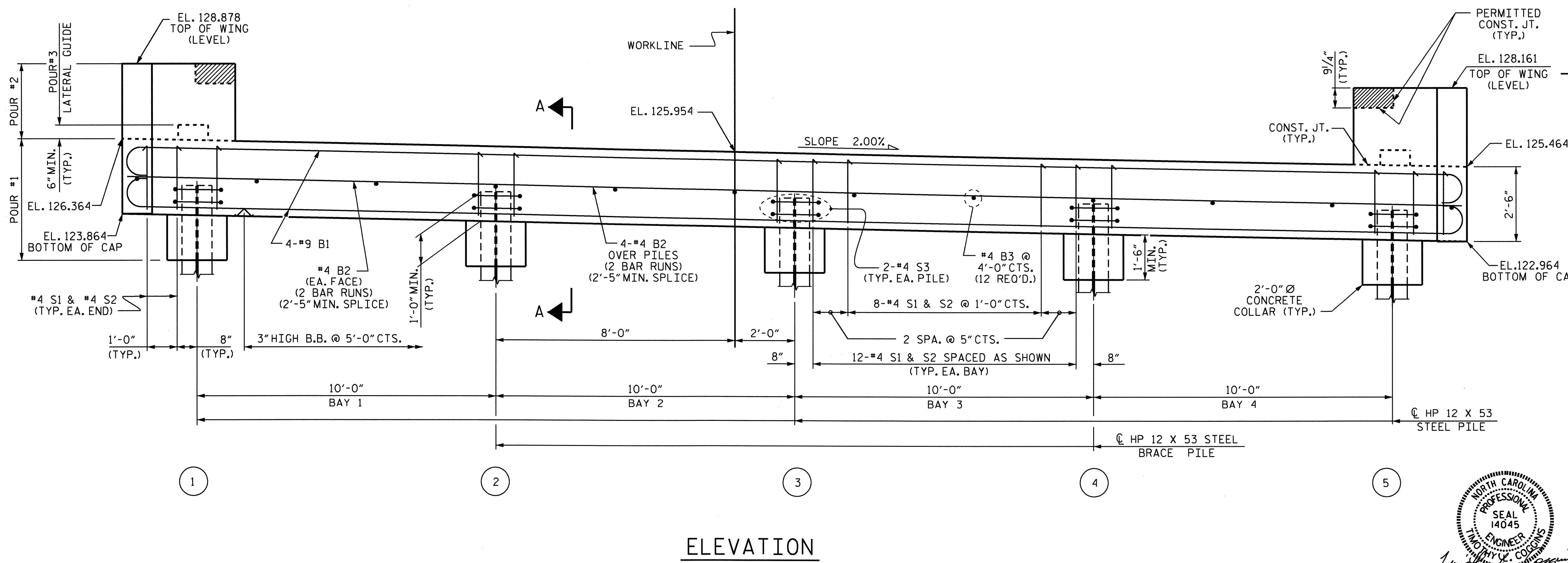


ELEVATION

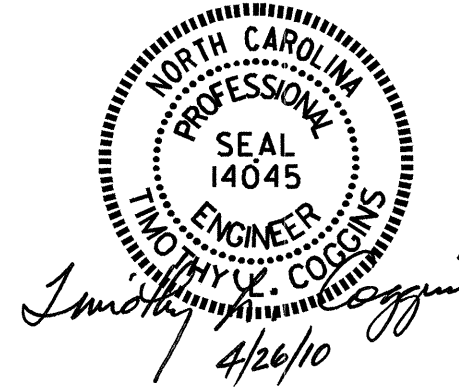
LATERAL GUIDE DETAILS

(EACH END SIMILAR)

TOP OF PILE ELEV. CHART	
PILE	ELEVATION
#1	124.824
#2	124.624
#3	124.424
#4	124.224
#5	124.024



ELEVATION



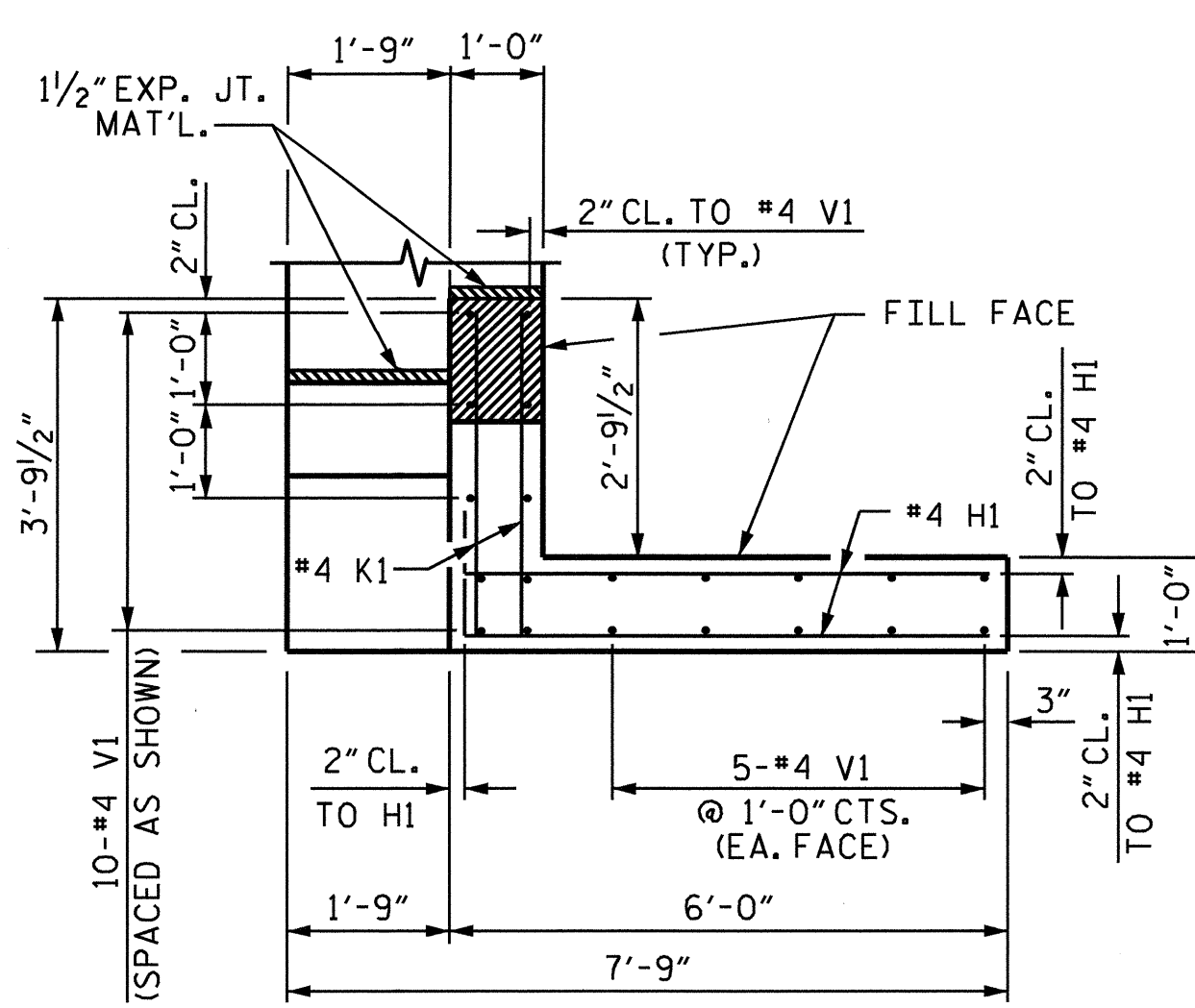
DRAWN BY: B.N. BARODAWALA DATE: 1-20-10
CHECKED BY: M.GUDLAUGSSON DATE: 2-5-10

PROJECT NO. B-3693
ROBESON COUNTY
STATION: 25+45.00 -L-

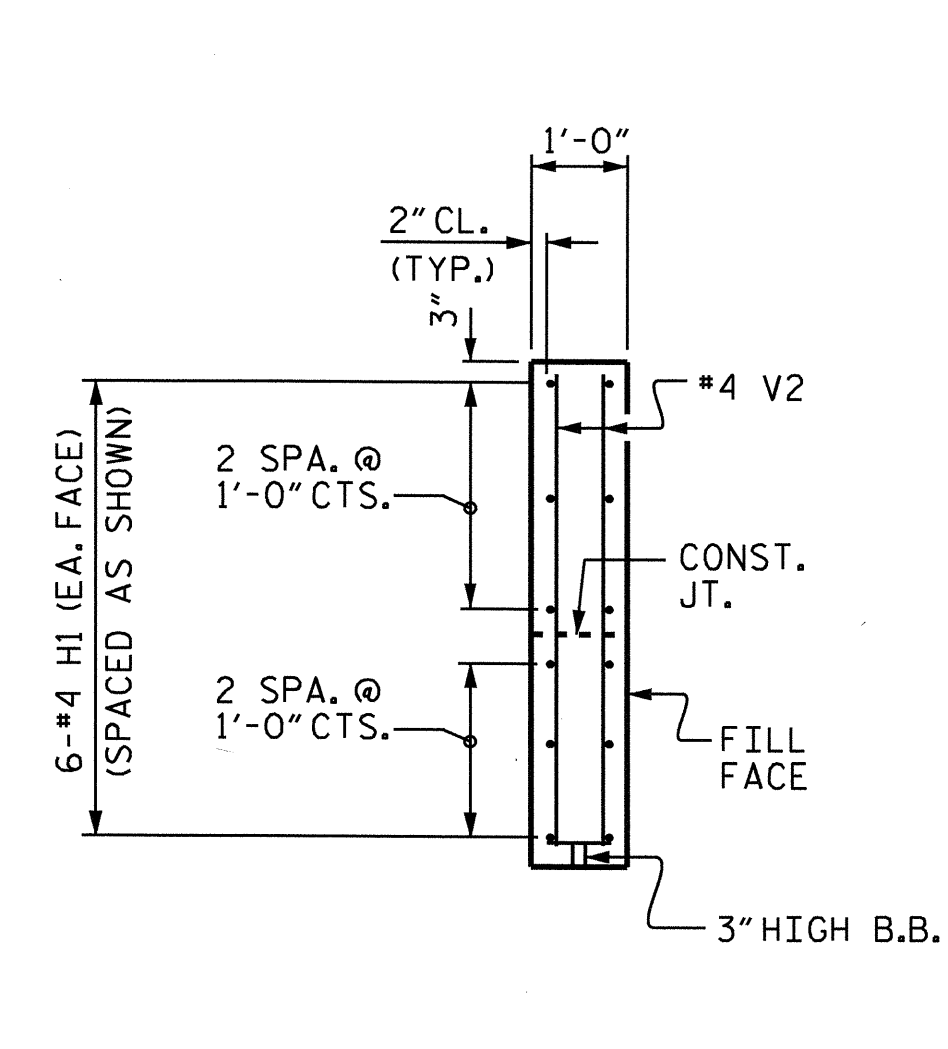
SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT #1					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					59

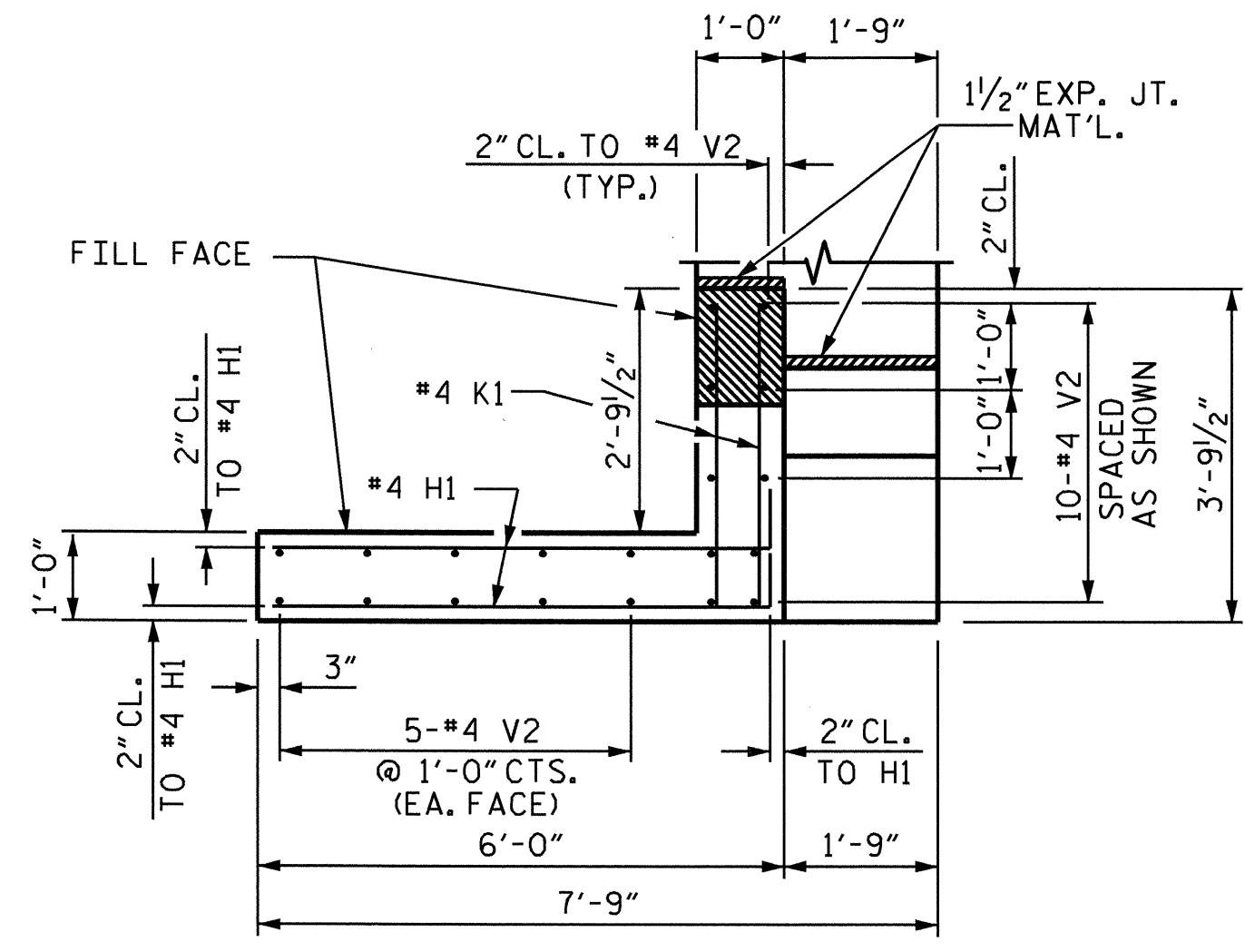
STR. #3



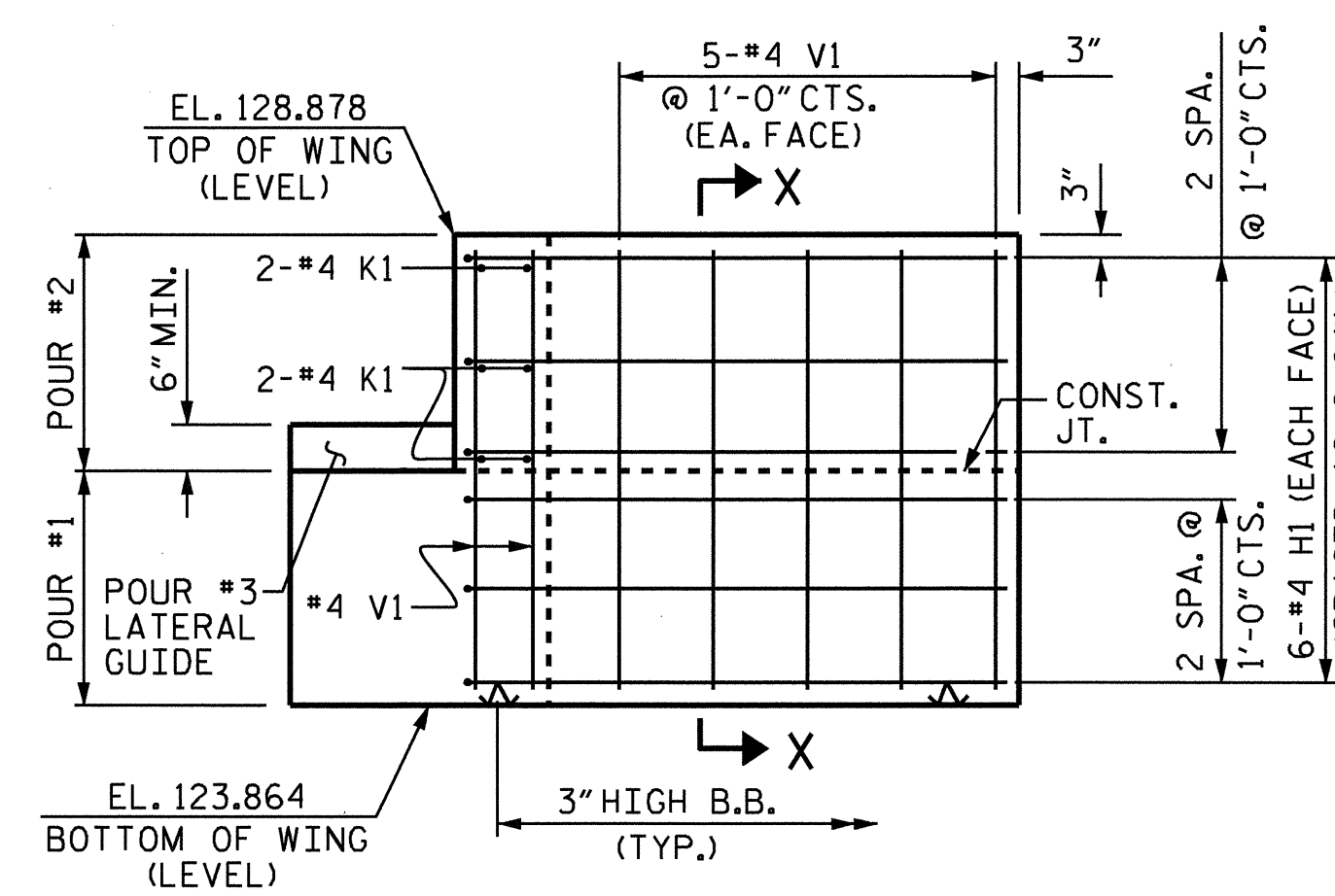
PLAN OF WING W1



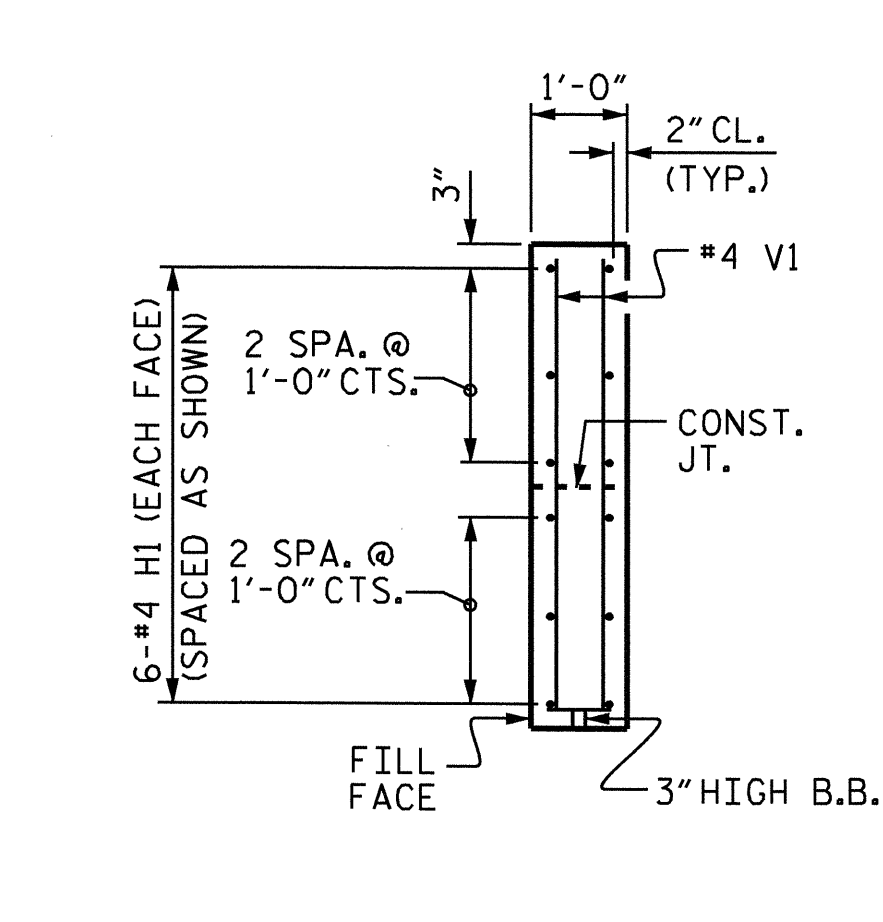
SECTION Y-Y



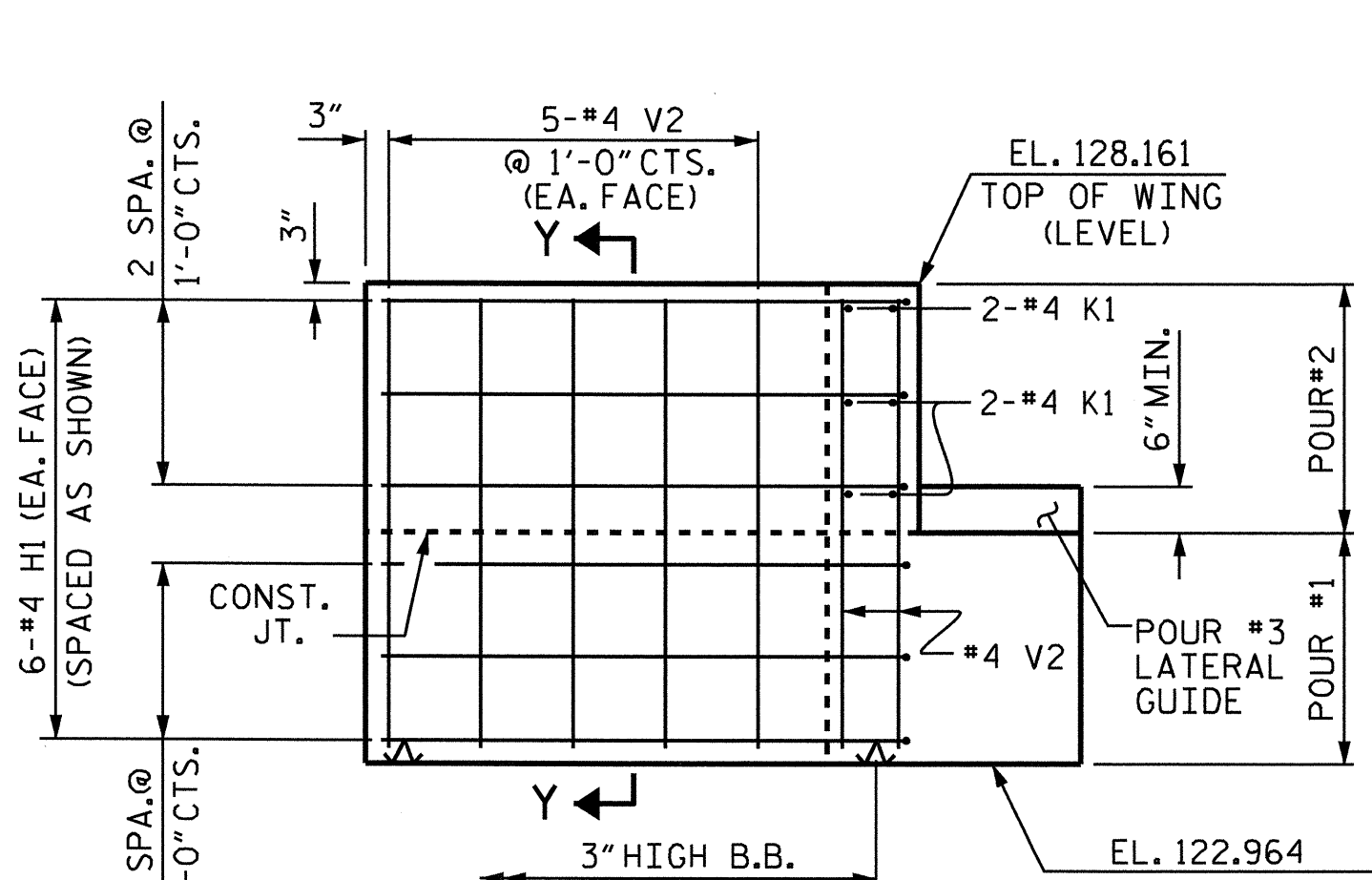
PLAN OF WING W2



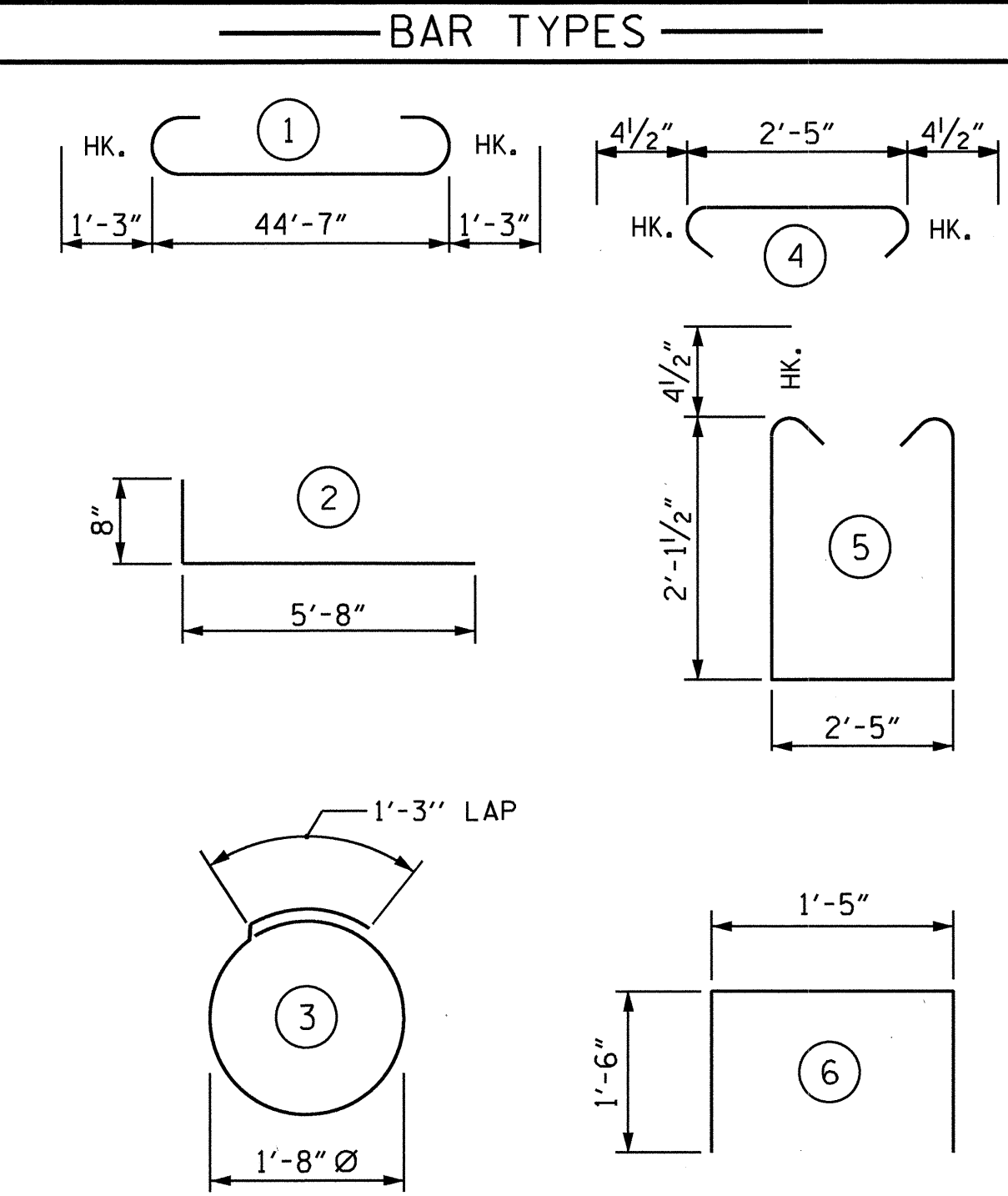
ELEVATION OF WING W1



SECTION X-X

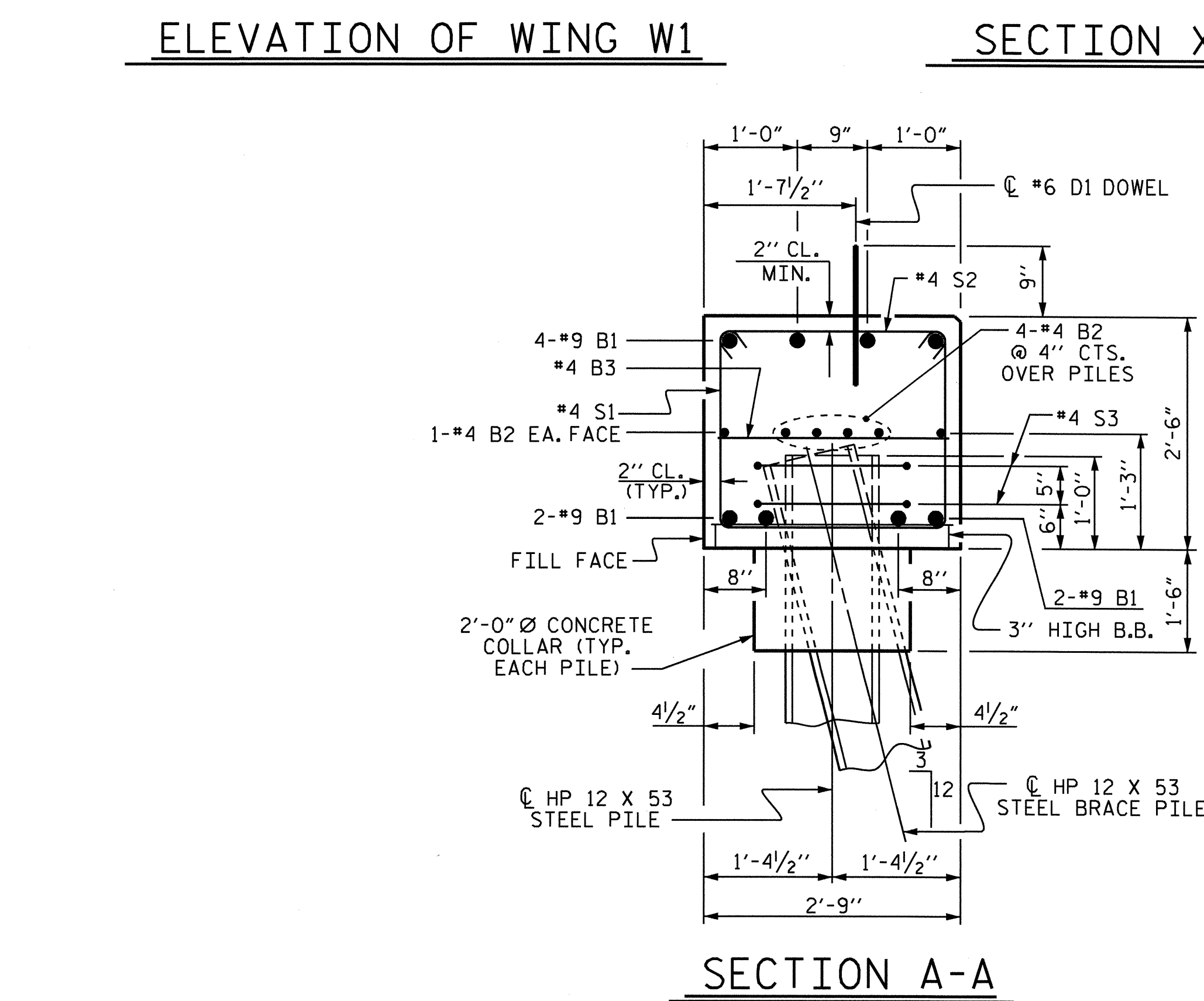


ELEVATION OF WING W2

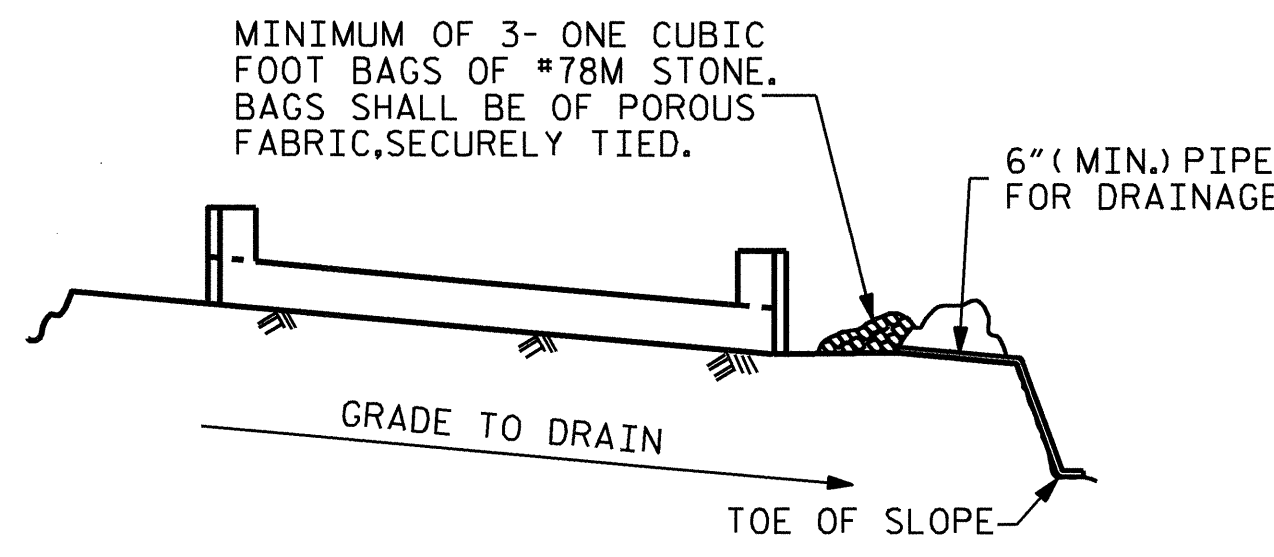


ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	47'-1"	1281
B2	12	#4	STR	23'-7"	189
B3	12	#4	STR	2'-5"	19
D1	26	#6	STR	1'-6"	59
H1	24	#4	2	6'-4"	102
K1	12	#4	STR	3'-5"	27
S1	52	#4	5	7'-5"	258
S2	52	#4	4	3'-2"	110
S3	10	#4	3	6'-6"	43
U1	4	#4	6	4'-5"	12
V1	20	#4	STR	4'-8"	62
V2	20	#4	STR	4'-9"	63
REINFORCING STEEL				LBS.	2225
CLASS A CONCRETE BREAKDOWN:					
POUR #1: CAP, PILE COLLAR & LOWER PART OF WINGS CU. YD. 13.3					
POUR #2: UPPER PART OF WINGS CU. YD. 1.7					
POUR #3: LATERAL GUIDES CU. YD. 0.1					
TOTAL CU. YD. 15.1					
HP 12 x 53 STEEL PILES					
NO. 5				LIN. FT.	275
PILE REDRIVES				EACH	3



SECTION A-A

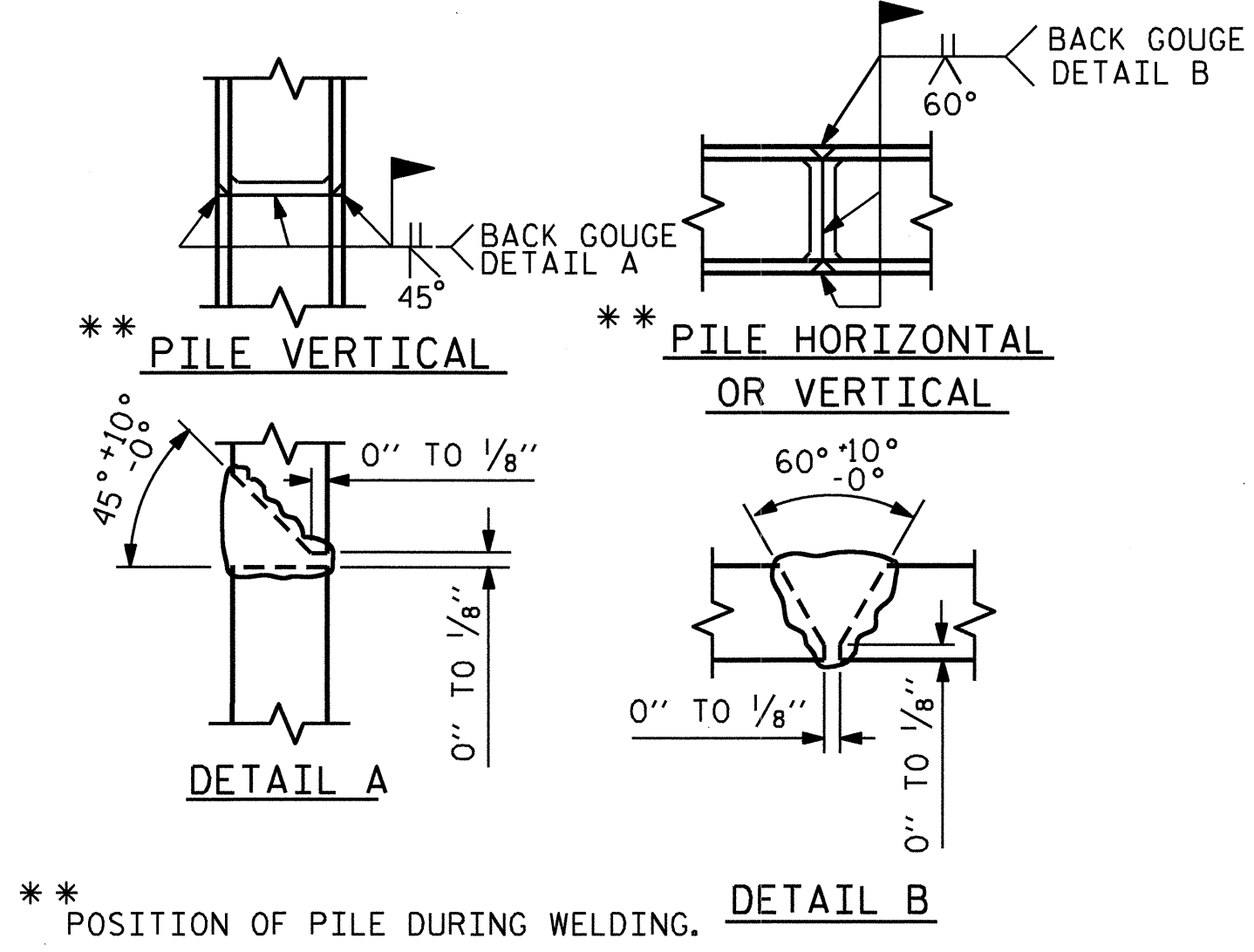


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

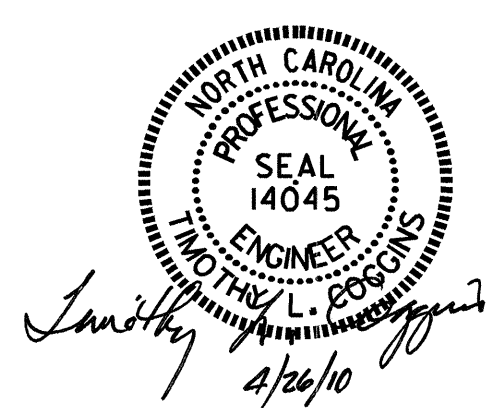
TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS

PROJECT NO. B-3693
ROBESON COUNTY
STATION: 25+45.00 -L-

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 59



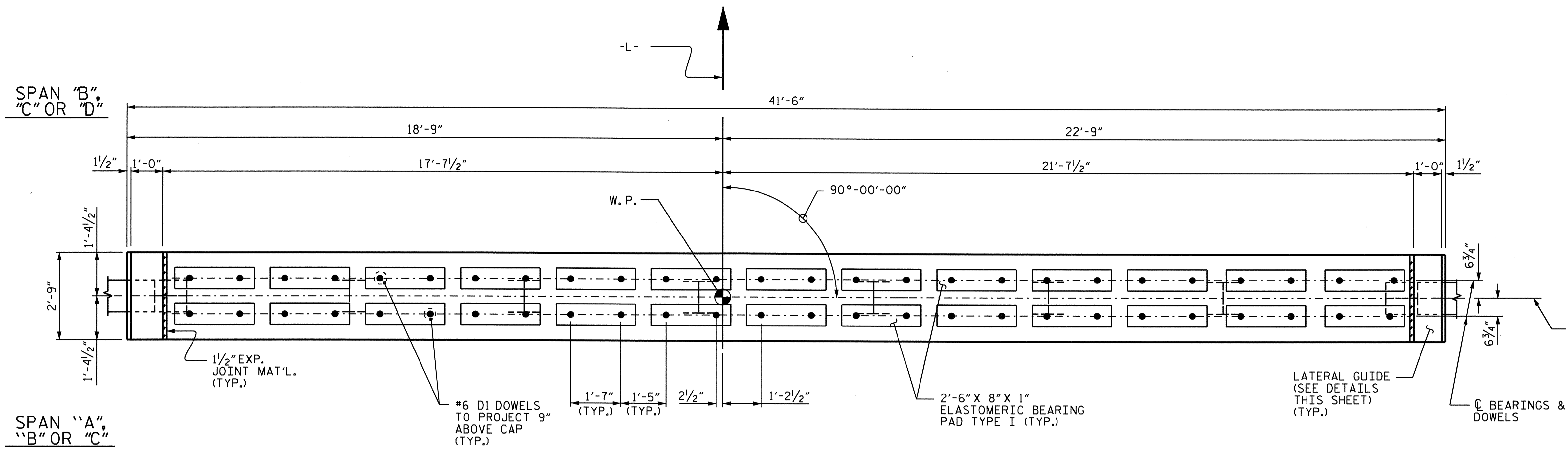
DRAWN BY: B.N.BARODAWALA DATE: 1-20-10
CHECKED BY: M.GUDLAUGSSON DATE: 2-5-10

NOTES:

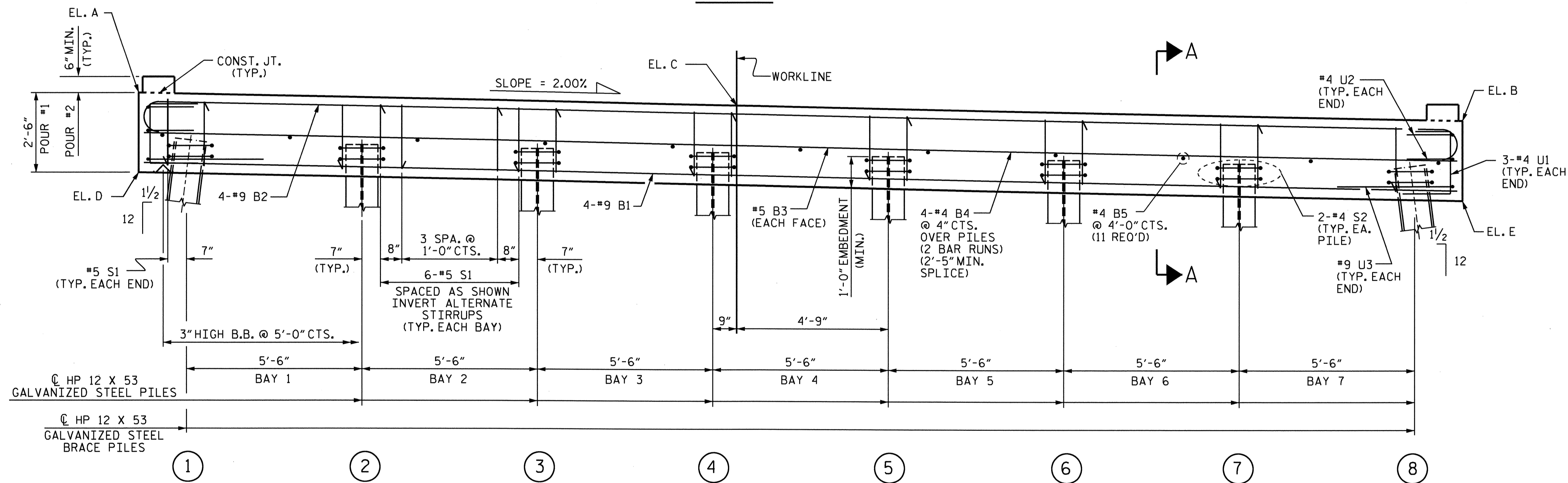
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

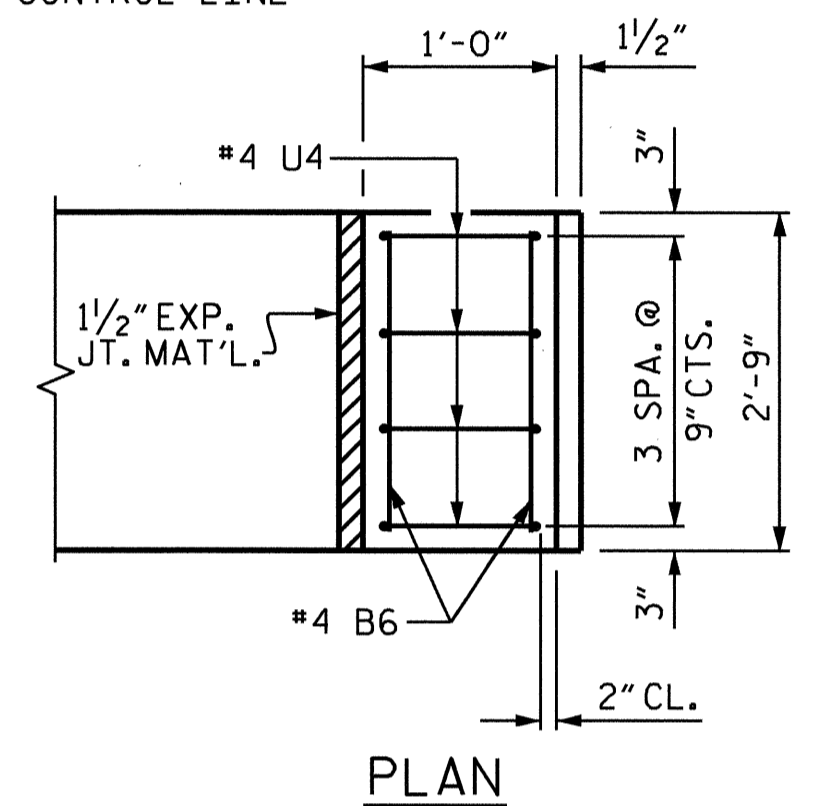
GALVANIZE THE TOP 27 FEET OF EACH INTERIOR BENT PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



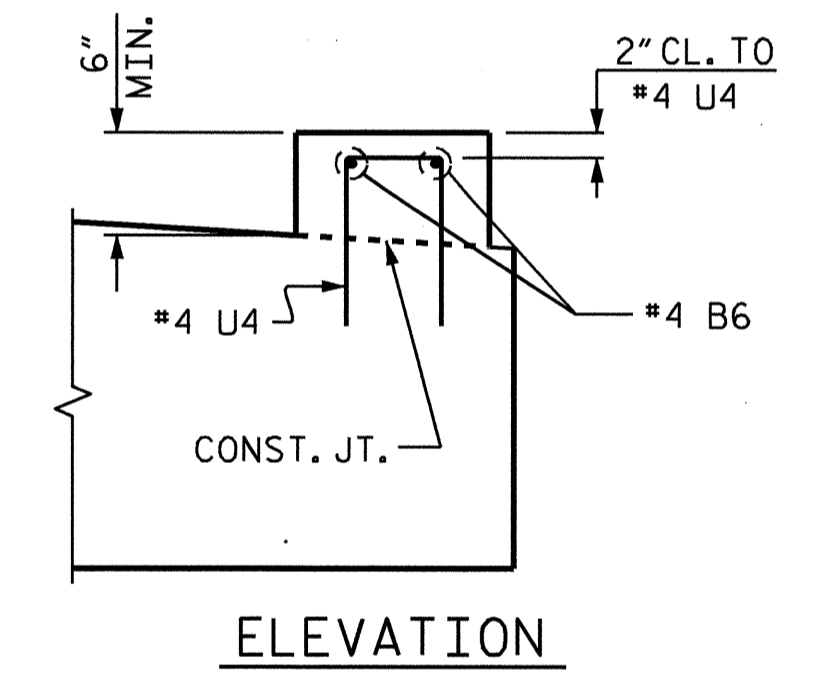
PLAN



ELEVATION



PLAN



ELEVATION

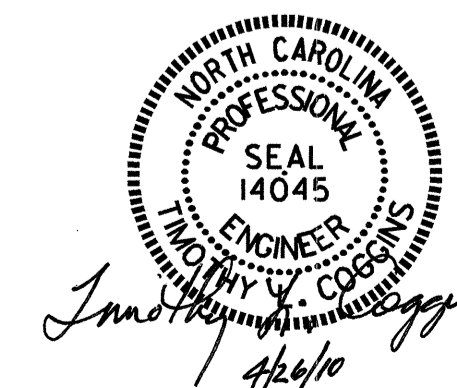
LATERAL GUIDE DETAILS
(TYP. EA. END)

PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 25+45.00 -L-

SHEET 1 OF 2

TOP OF PILE ELEVATIONS					
BENT #1		BENT #2		BENT #3	
PILE	ELEVATION	PILE	ELEVATION	PILE	ELEVATION
1	124.692	1	124.542	1	124.392
2	124.582	2	124.432	2	124.282
3	124.472	3	124.322	3	124.172
4	124.362	4	124.212	4	124.062
5	124.252	5	124.102	5	123.952
6	124.142	6	123.992	6	123.842
7	124.032	7	123.882	7	123.732
8	123.922	8	123.772	8	123.622

CAP ELEVATIONS			
	BENT #1	BENT #2	BENT #3
	ELEVATION	ELEVATION	ELEVATION
EL. A	126.212	126.062	125.912
EL. B	125.382	125.232	125.082
EL. C	125.837	125.687	125.537
EL. D	123.712	123.562	123.412
EL. E	122.882	122.732	122.582



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

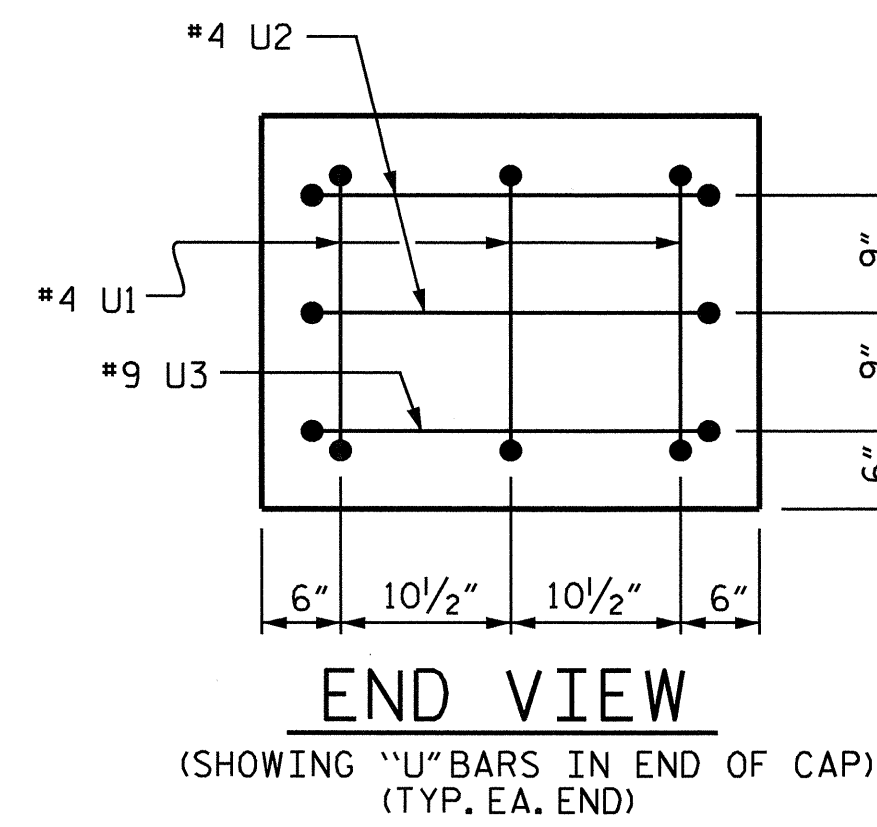
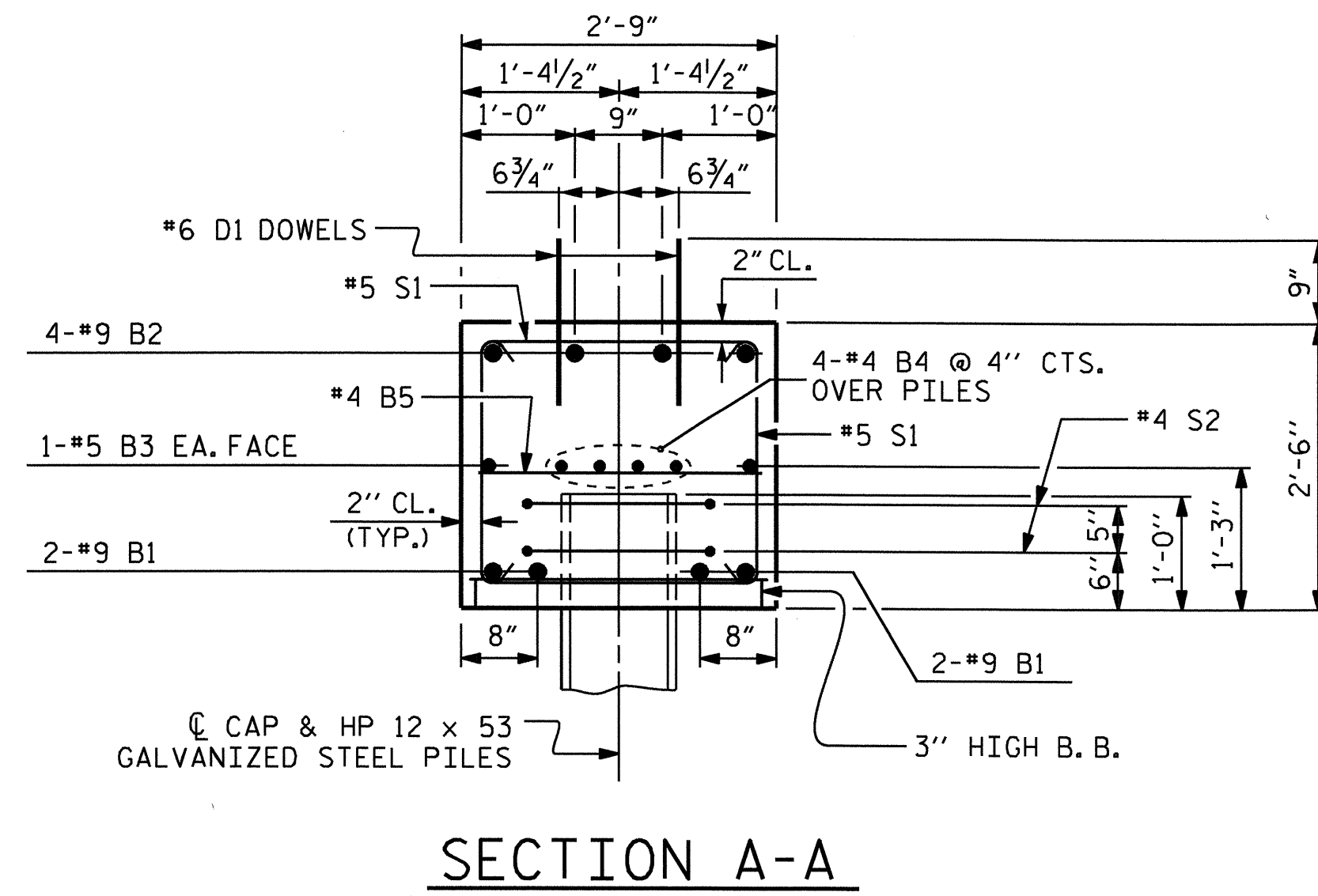
SUBSTRUCTURE

BENTS #1, #2 & #3

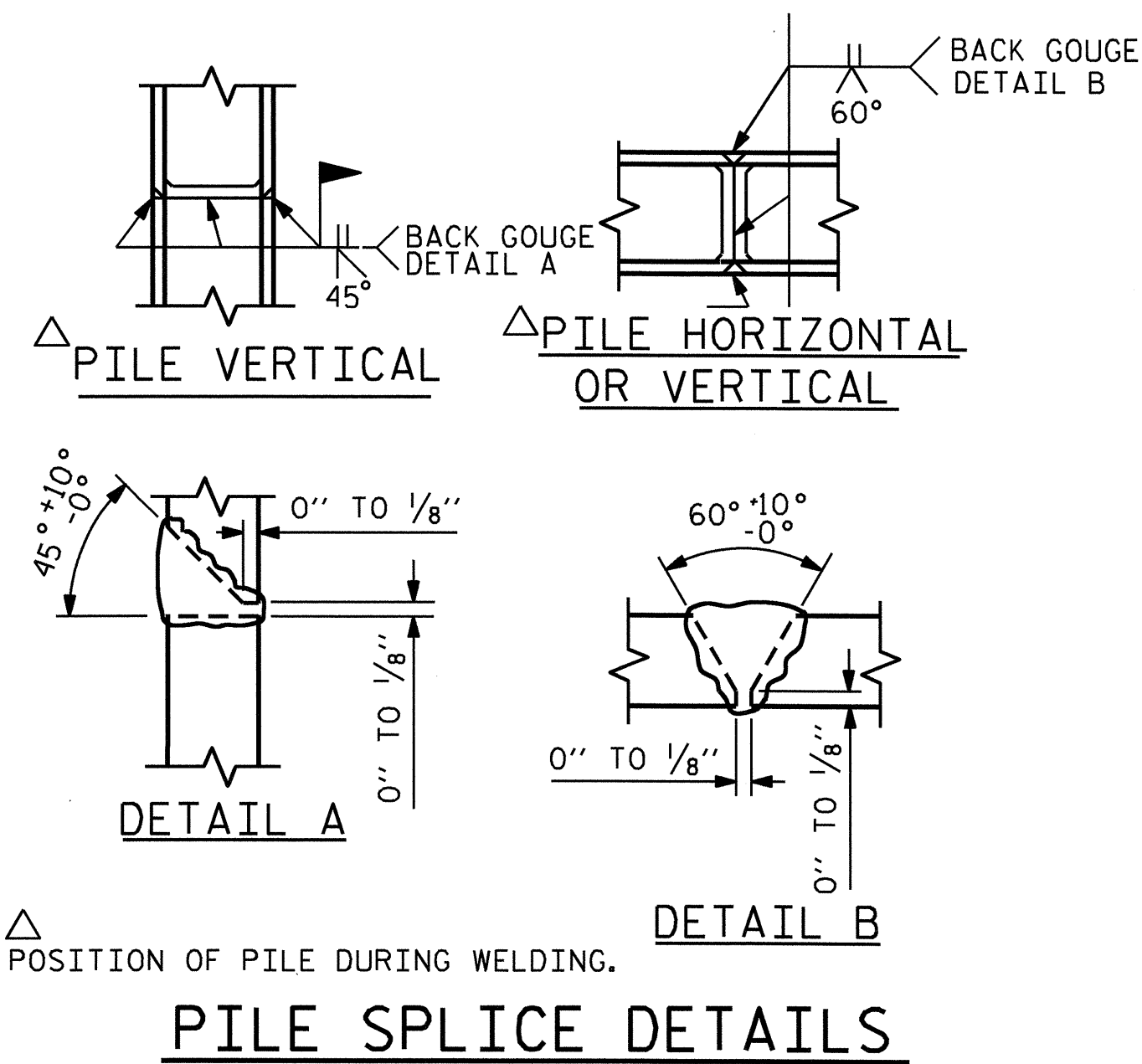
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 59

DRAWN BY: B.N. BARODAWALA DATE: 1-29-10
 CHECKED BY: PEGGY PARISI DATE: 2-4-10



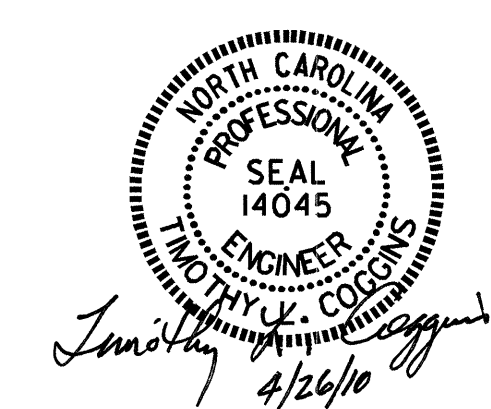
BAR TYPES		BILL OF MATERIAL				
		FOR ONE BENT (3 REQUIRED)				
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	4	#9	STR	41'-2"	560	
B2	4	#9	1	43'-7"	593	
B3	2	#5	STR	41'-2"	86	
B4	8	#4	STR	21'-10"	117	
B5	11	#4	STR	2'-5"	18	
B6	4	#4	STR	2'-5"	6	
D1	52	#6	STR	1'-6"	117	
S1	44	#5	2	7'-7"	348	
S2	16	#4	3	6'-6"	69	
U1	6	#4	4	5'-0"	20	
U2	4	#4	4	5'-3"	14	
U3	2	#9	4	9'-7"	65	
U4	8	#4	4	3'-6"	19	
TOTAL REINFORCING STEEL					LBS. 2032	
CLASS "A" CONCRETE BREAKDOWN						
POUR #1 (CAP)					C.Y. 10.6	
POUR #2 (LATERAL GUIDE)					C.Y. 0.1	
TOTAL CLASS "A" CONCRETE					C.Y. 10.7	
HP 12 x 53 GALVANIZED STEEL PILES						
BENT #1	NO. 8	LIN. FT. 520				
BENT #2	NO. 8	LIN. FT. 560				
BENT #3	NO. 8	LIN. FT. 560				
PILE REDRIVES						
BENT #1		4 EA.				
BENT #2		4 EA.				
BENT #3		4 EA.				



ALL BAR DIMENSIONS ARE OUT TO OUT.

DRAWN BY : B.N.BARODAWALA DATE : 1-29-10
 CHECKED BY : PEGGY PARISI DATE : 2-4-10

26-APR-2010 15:31
 G:\TIP\Projects-B\B3693\Structures\Str#3\final.plans\b3693.sd.b.03.dgn
 toverette



PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 25+45.00 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH				
SUBSTRUCTURE				
BENTS #1, #2 & #3				
REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	
				S-54
				TOTAL SHEETS 59

STR. #3

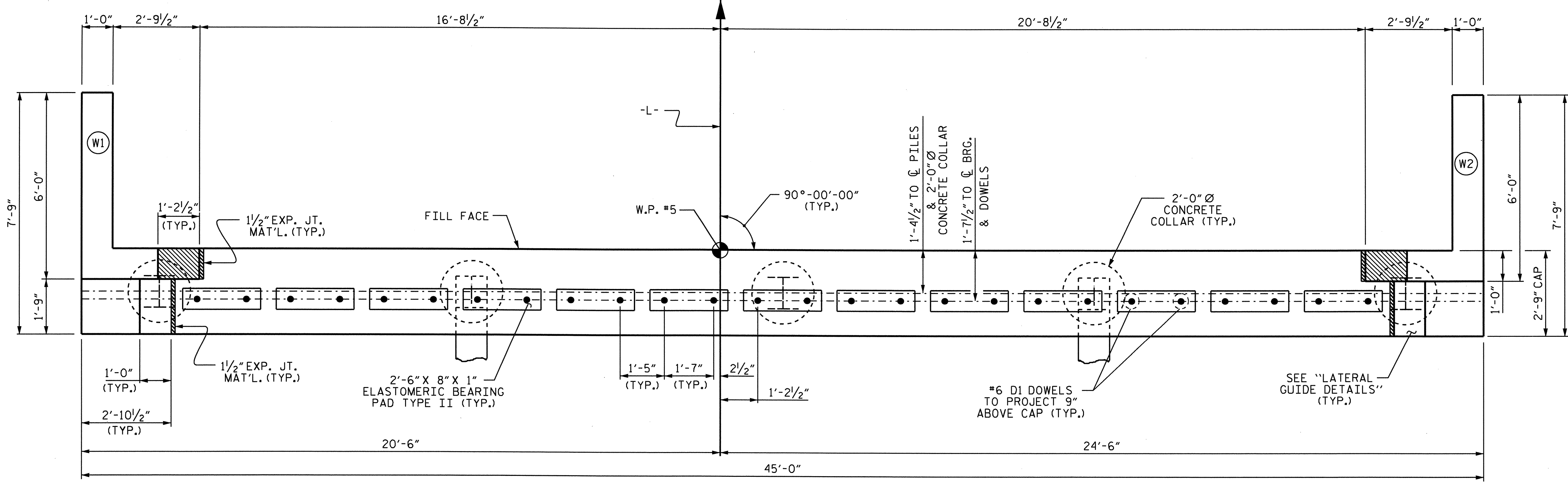
NOTES

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

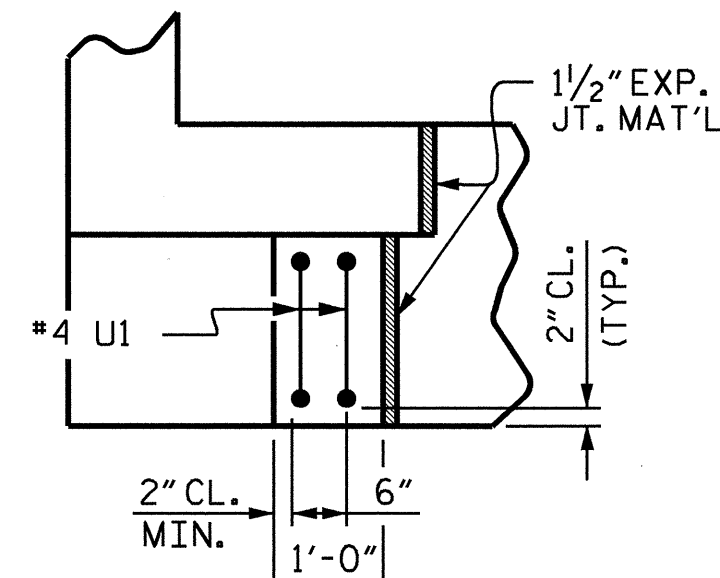
THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

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

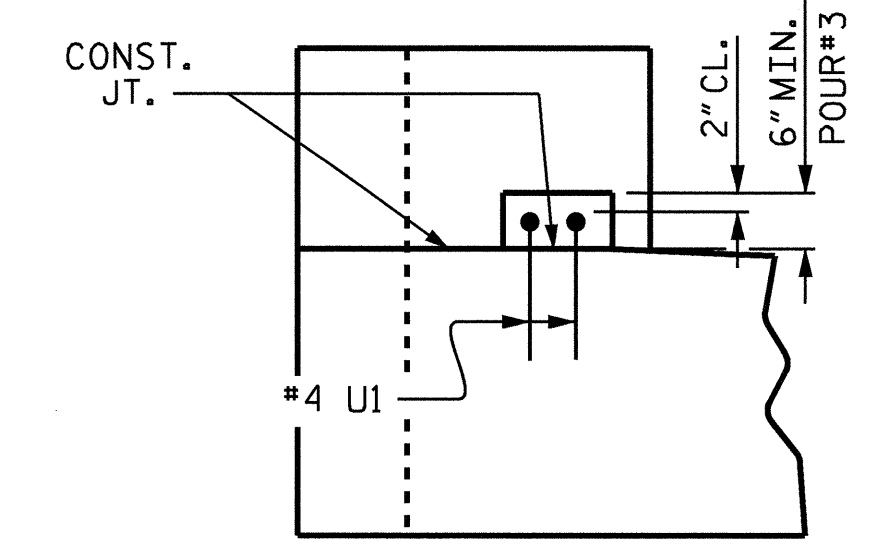
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



PLAN



PLAN



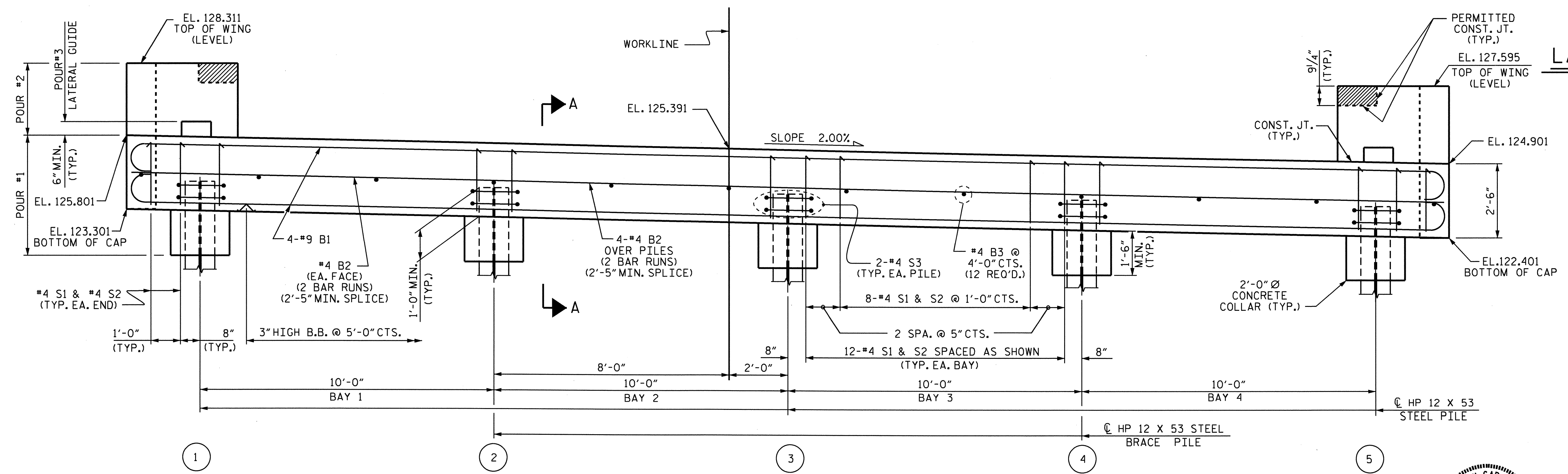
ELEVATION

LATERAL GUIDE DETAILS

(EACH END SIMILAR)

TOP OF PILE ELEV. CHART

PILE	ELEVATION
#1	124.261
#2	124.061
#3	123.861
#4	123.661
#5	123.461



ELEVATION

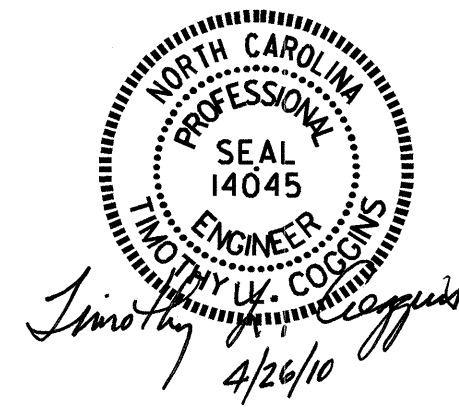
PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 25+45.00 -L-

SHEET 1 OF 2

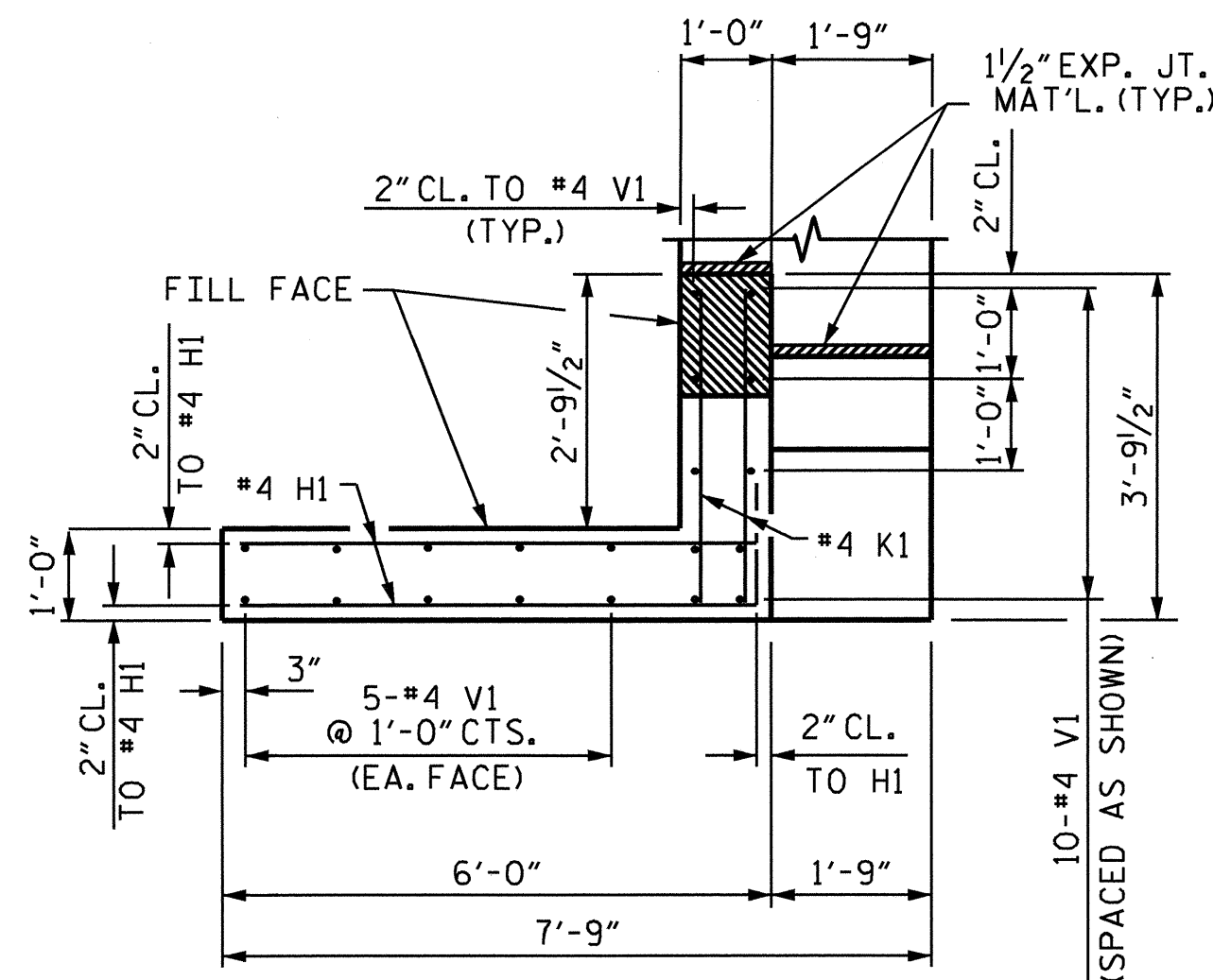
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT #2**

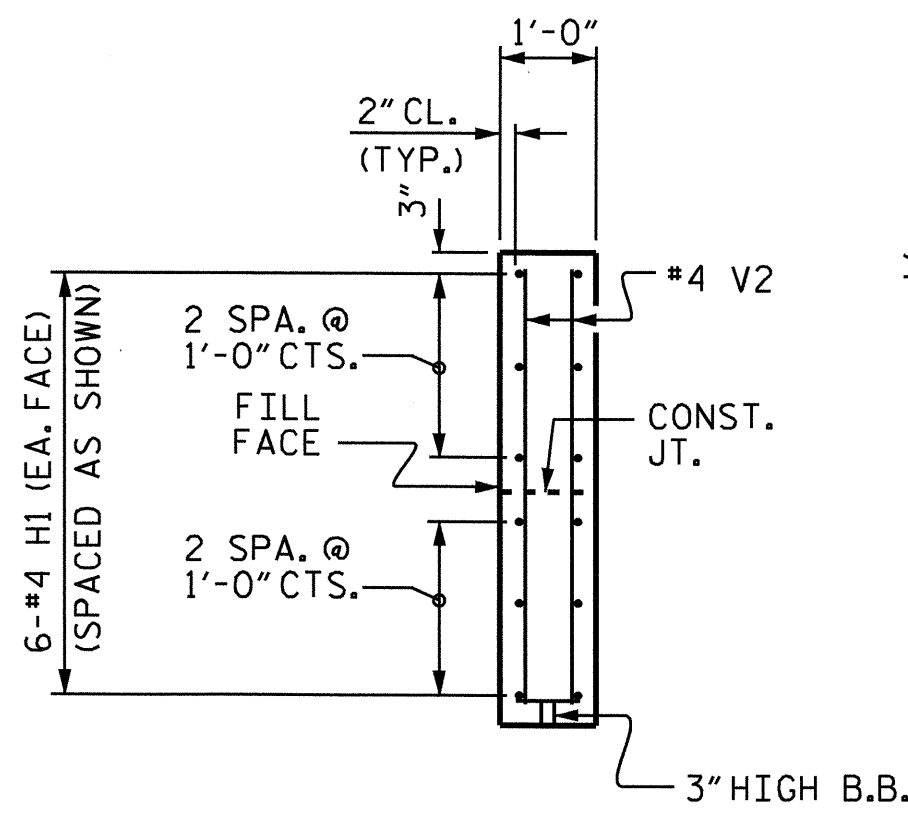
REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	S-55
1			3	TOTAL SHEETS 59
2			4	



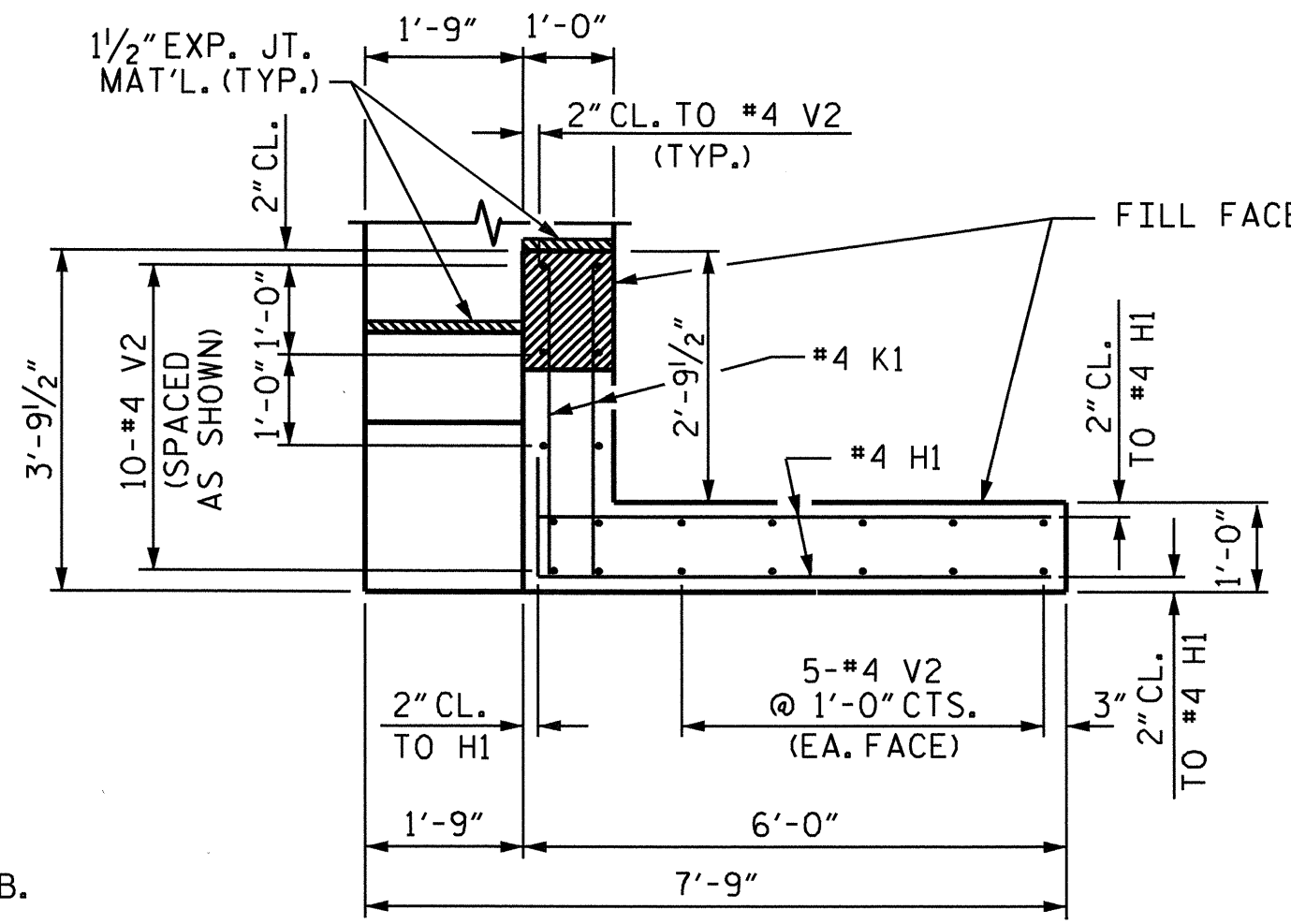
DRAWN BY: B.N.BARODAWALA DATE: 1-20-10
 CHECKED BY: M.GUDLAUGSSON DATE: 2-5-10



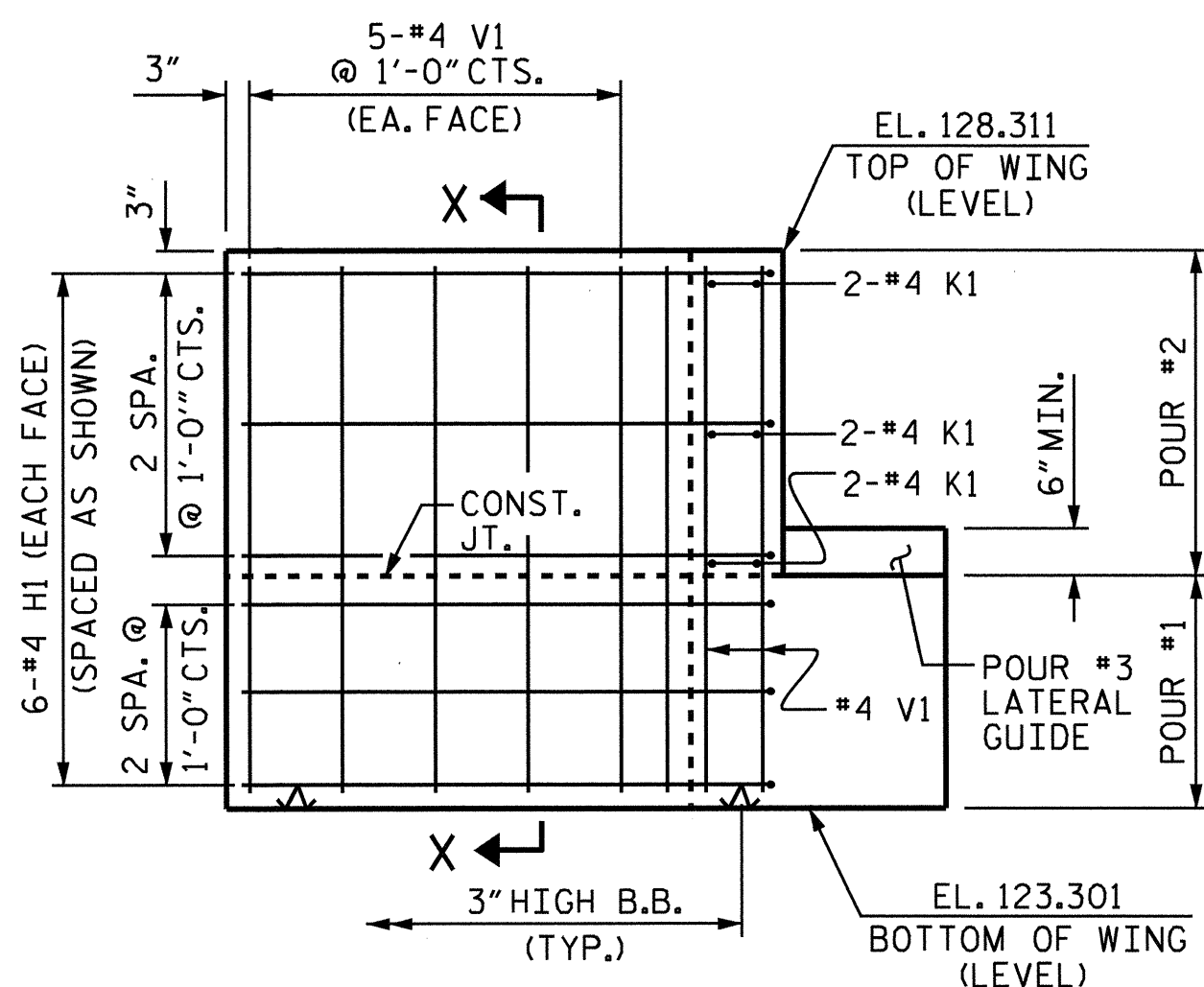
PLAN OF WING W1



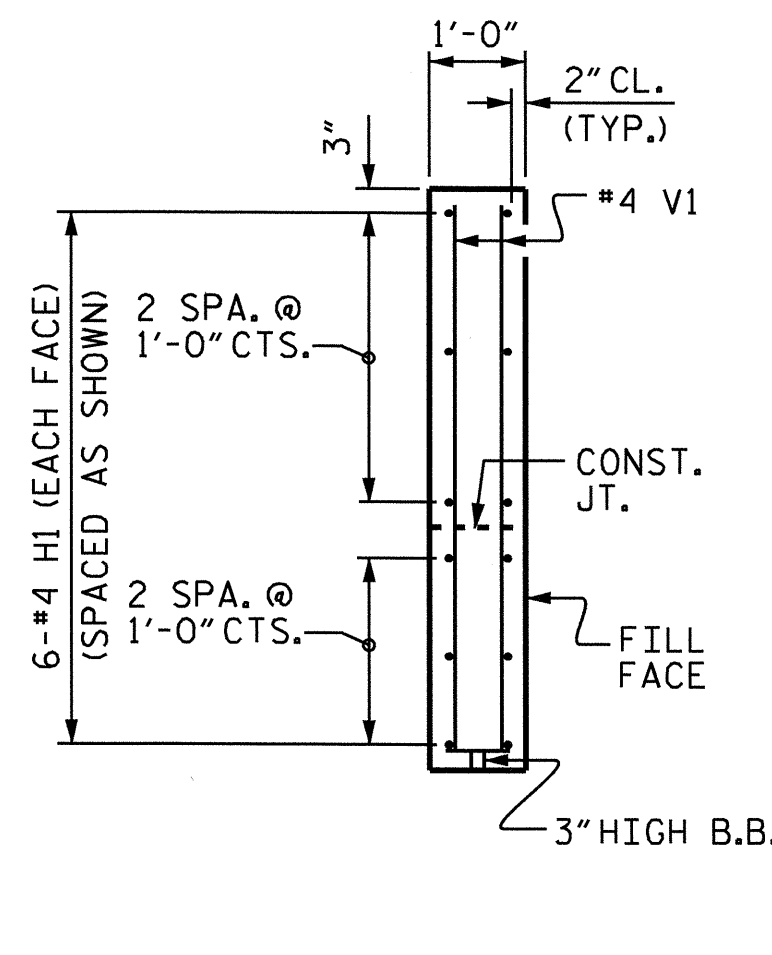
SECTION Y-Y



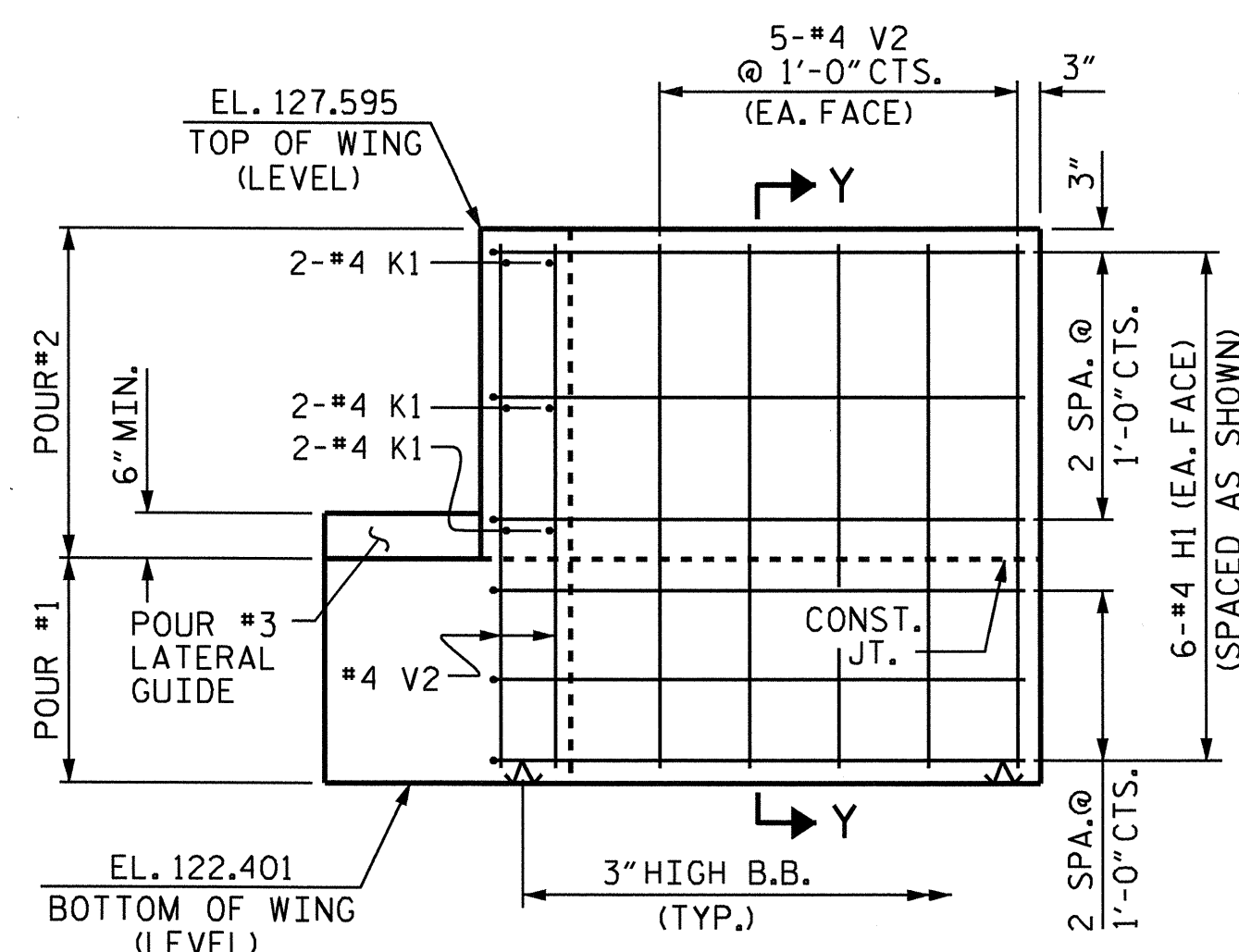
PLAN OF WING W2



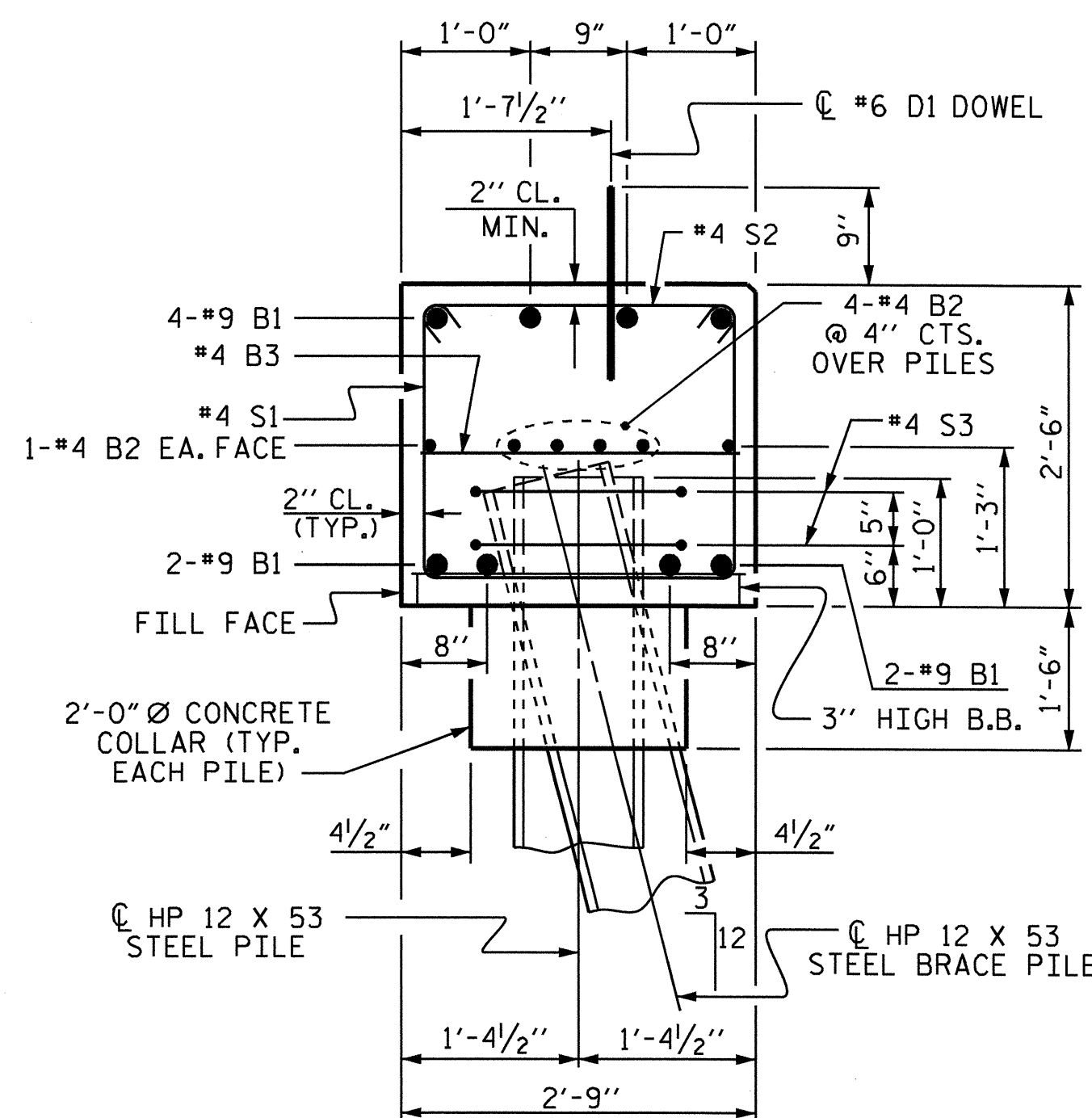
ELEVATION OF WING W1



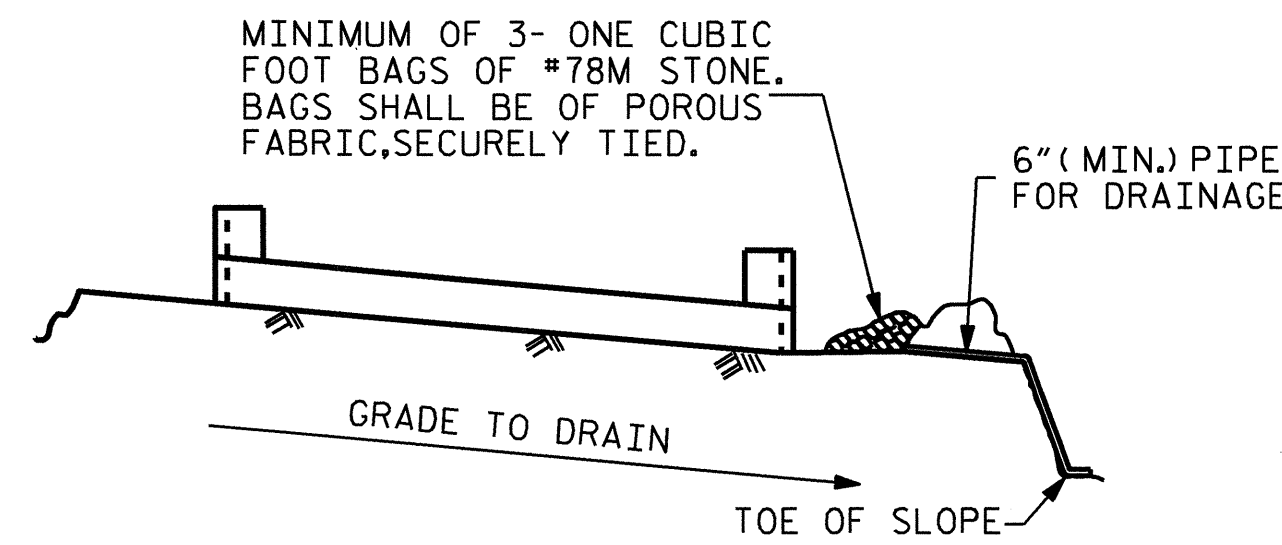
SECTION X-X



ELEVATION OF WING W2



SECTION A-A



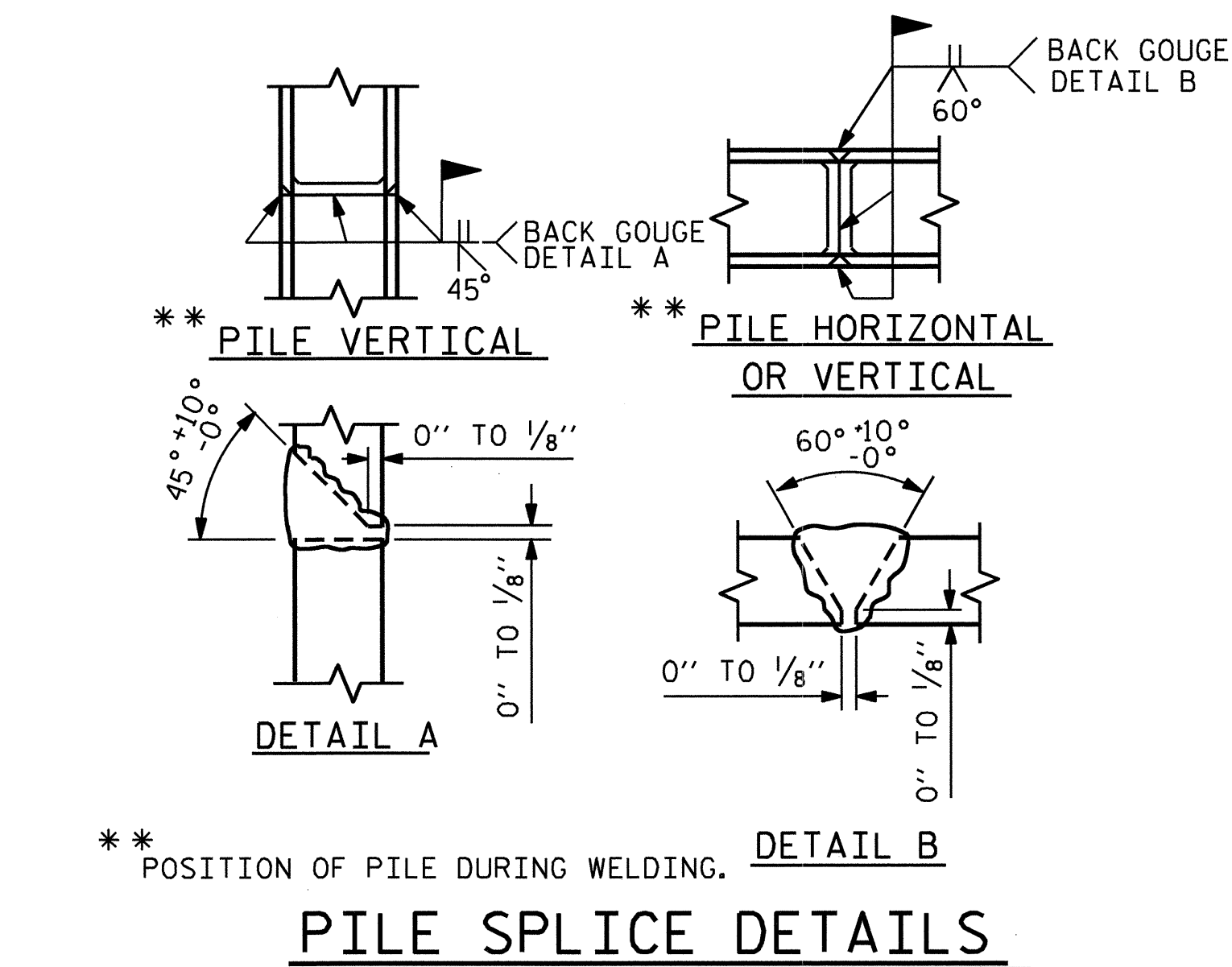
TEMPORARY DRAINAGE AT END BENT

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.

BILL OF MATERIAL					
END BENT #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	47'-1"	1281
B2	12	#4	STR	23'-7"	189
B3	12	#4	STR	2'-5"	19
D1	26	#6	STR	1'-6"	59
H1	24	#4	2	6'-4"	102
K1	12	#4	STR	3'-5"	27
S1	52	#4	5	7'-5"	258
S2	52	#4	4	3'-2"	110
S3	10	#4	3	6'-6"	43
U1	4	#4	6	4'-5"	12
V1	20	#4	STR	4'-8"	62
V2	20	#4	STR	4'-9"	63
REINFORCING STEEL					LBS 2225
CLASS A CONCRETE BREAKDOWN:					
POUR #1: CAP, PILE COLLAR & LOWER PART OF WINGS				CU. YD. 13.3	
POUR #2: UPPER PART OF WINGS				CU. YD. 1.7	
POUR #3: LATERAL GUIDES				CU. YD. 0.1	
TOTAL				CU. YD. 15.1	
HP 12 x 53 STEEL PILES					
NO. 5					LIN. FT. 300
PILE REDRIVES					EACH 3



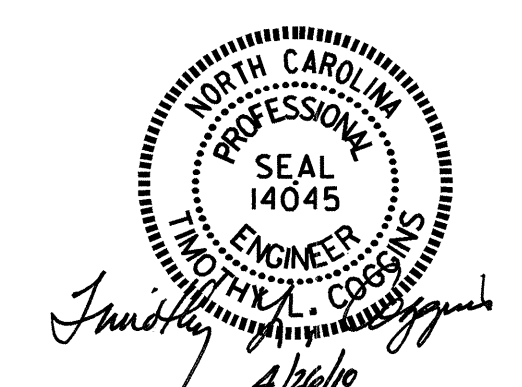
PILE SPLICE DETAILS

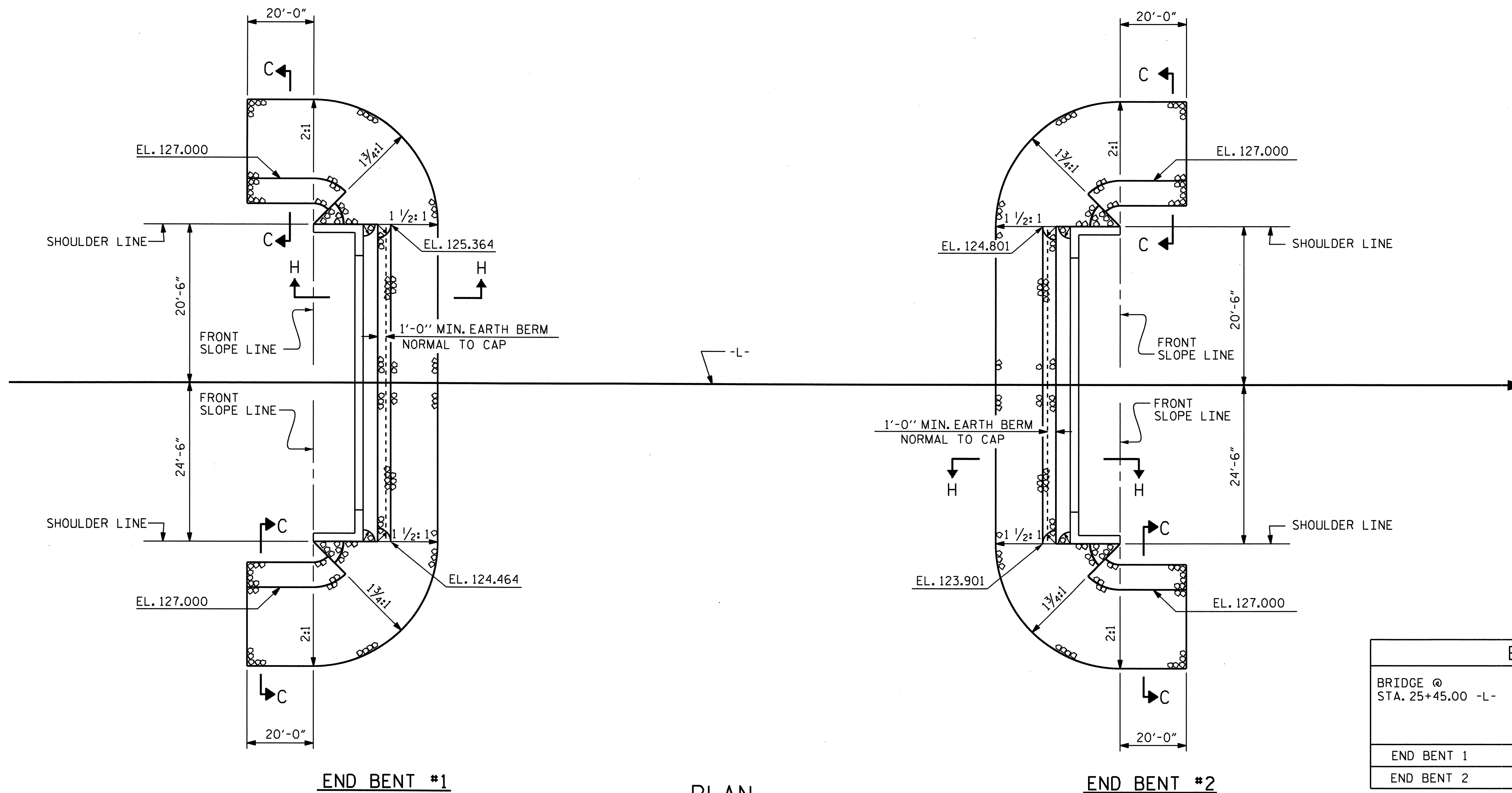
PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 25+45.00 -L-

SHEET 2 OF 2

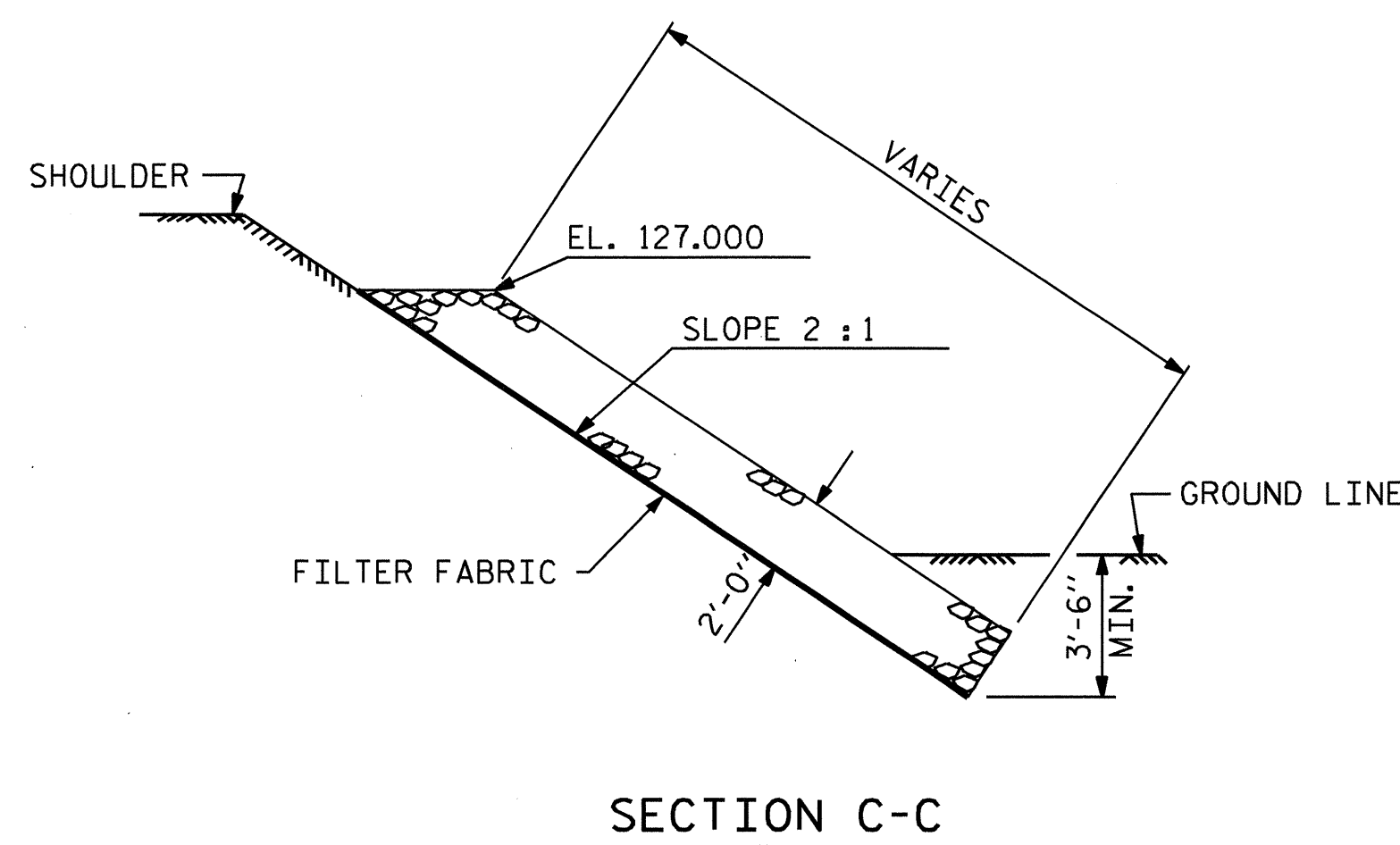
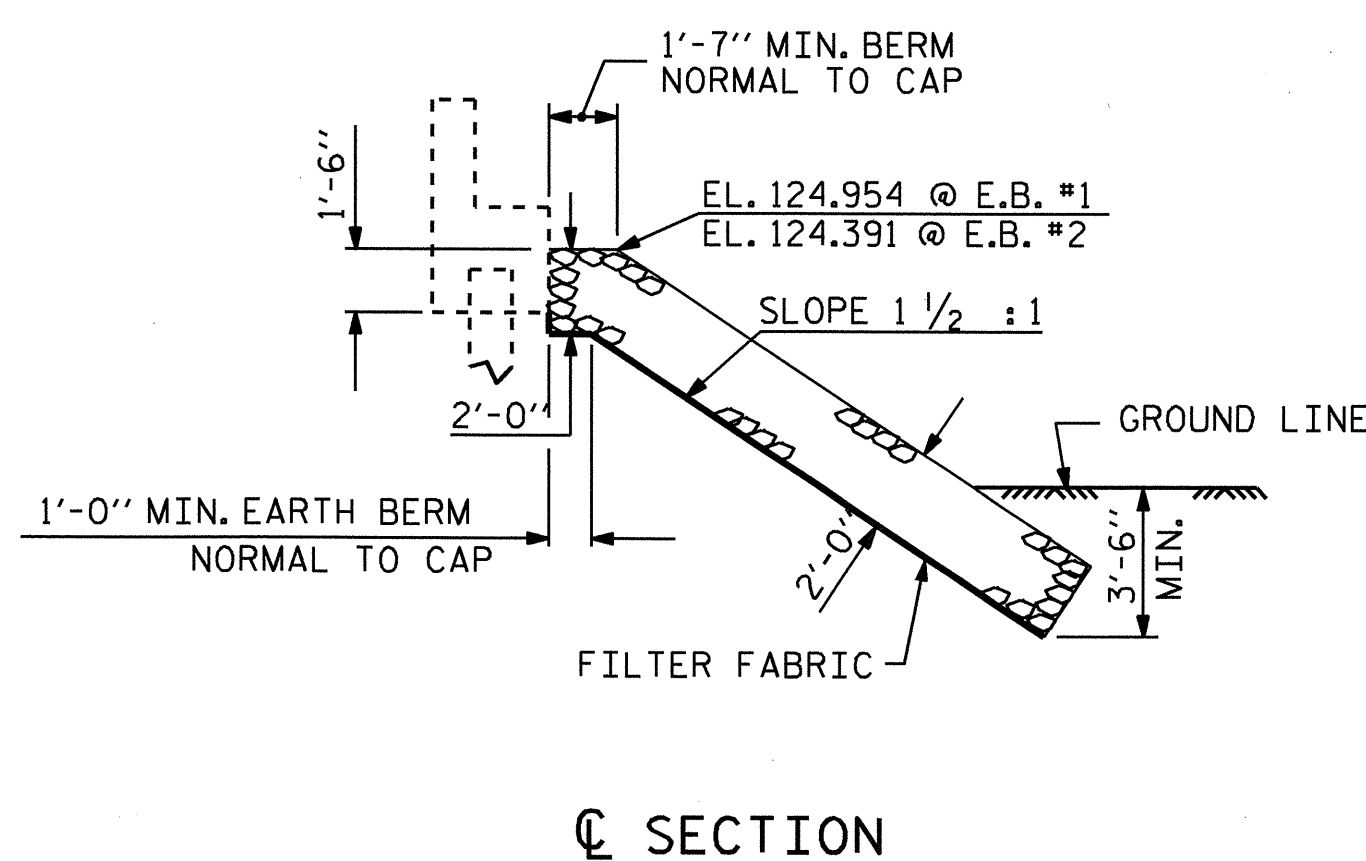
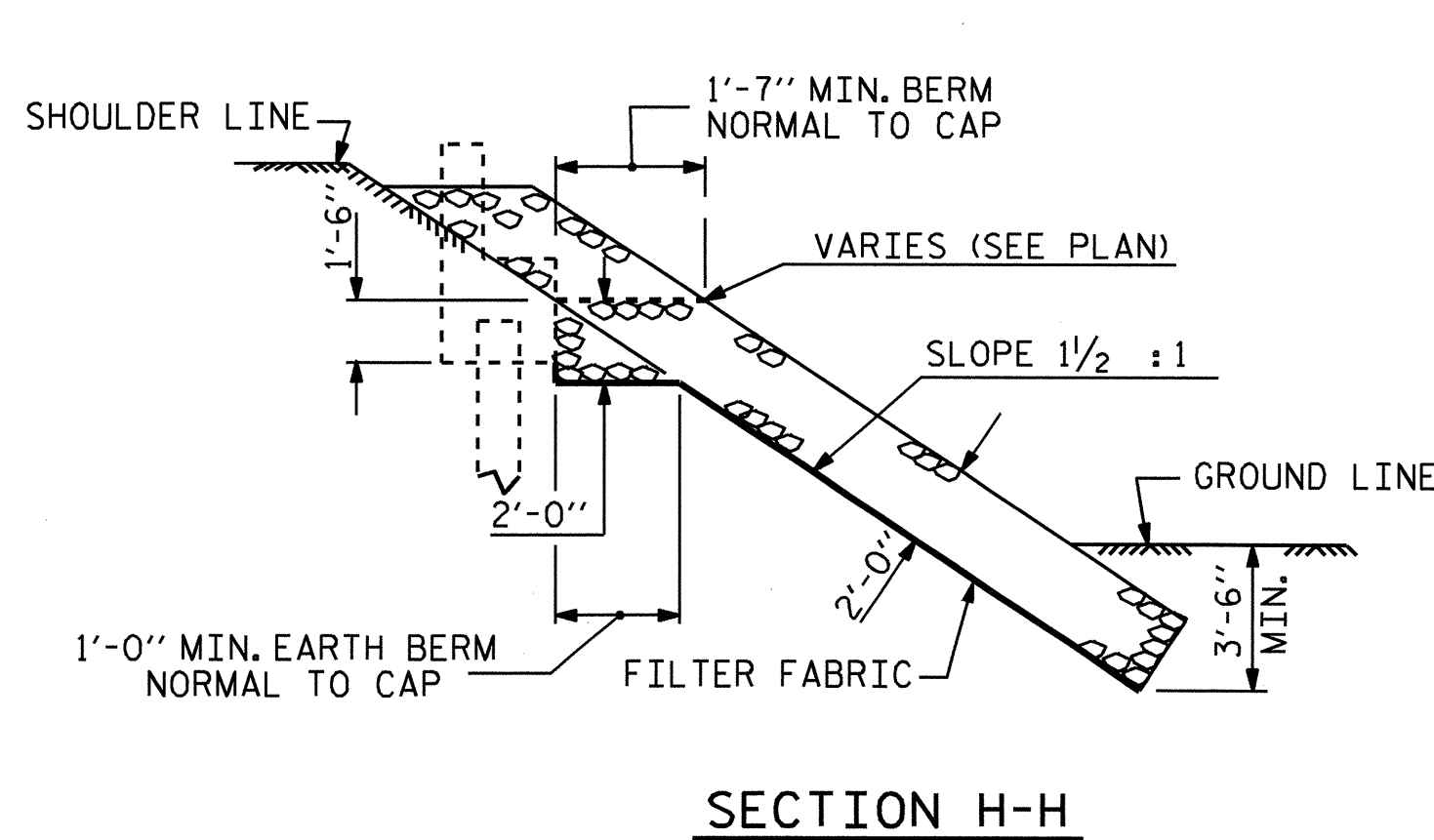
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT #2					
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS 59





ESTIMATED QUANTITIES		
BRIDGE @ STA. 25+45.00 -L-	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	260	289
END BENT 2	220	244

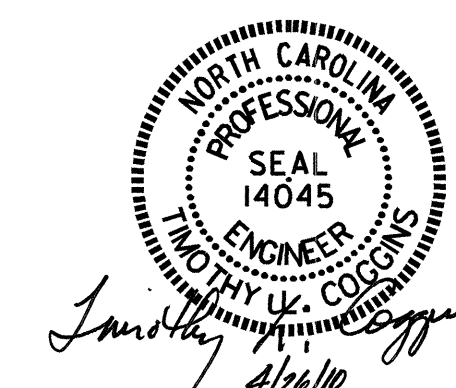


PROJECT NO. B-3693
ROBESON COUNTY
 STATION: 25+45.00 -L-

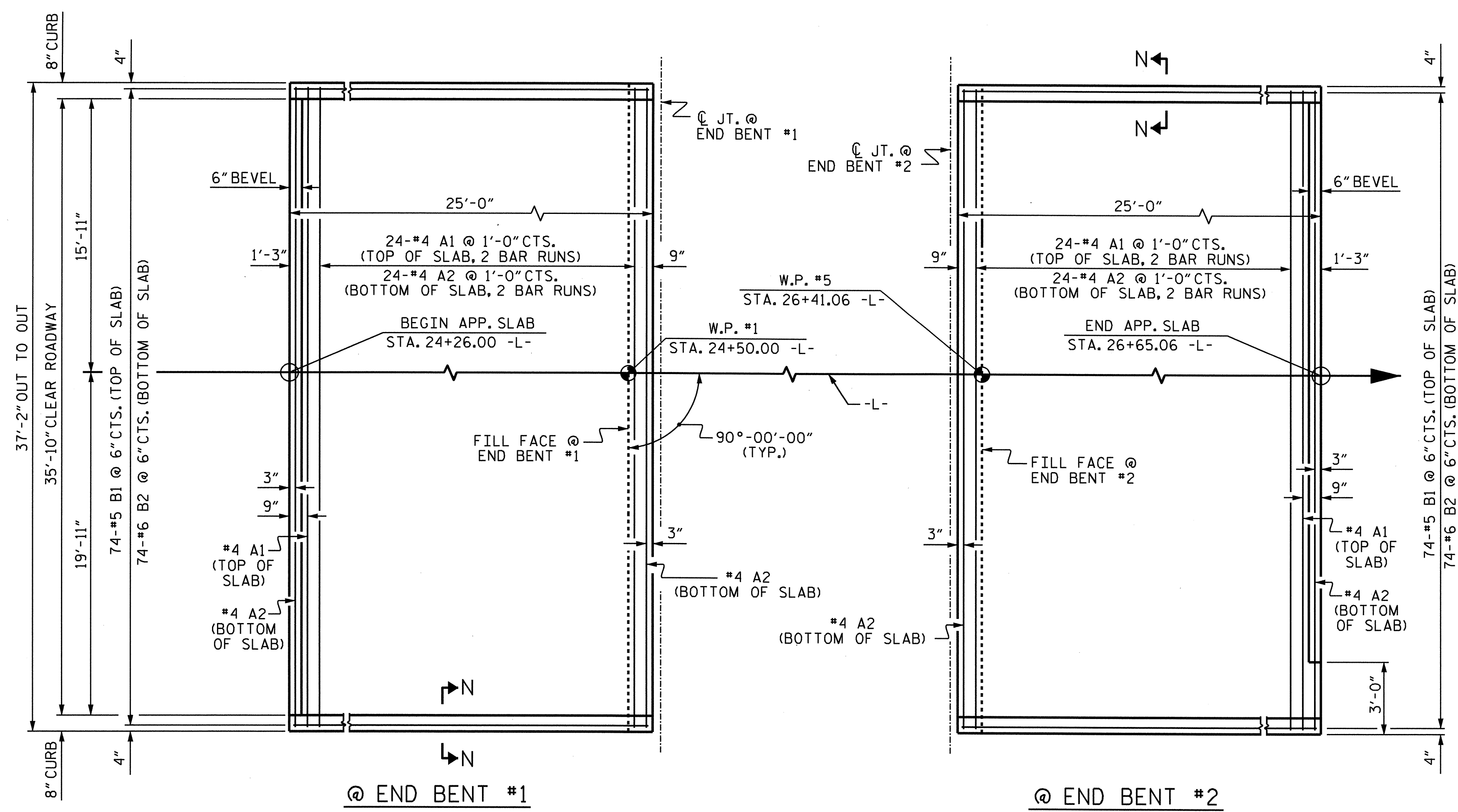
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 = RIP RAP DETAILS =

REVISIONS						SHEET NO. S-57
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 59
2			4			



ASSEMBLED BY : J.B. WILSON DATE : 1/18/10
 CHECKED BY : B.N. BARODAWALA DATE : 1/29/10
 DRAWN BY : FCJ 2/88 REV. 8/16/99 RWW/LES
 CHECKED BY : ARB 8/88 REV. 10/17/00 RWW/LES
 REV. 5/1/06 TLA/GM

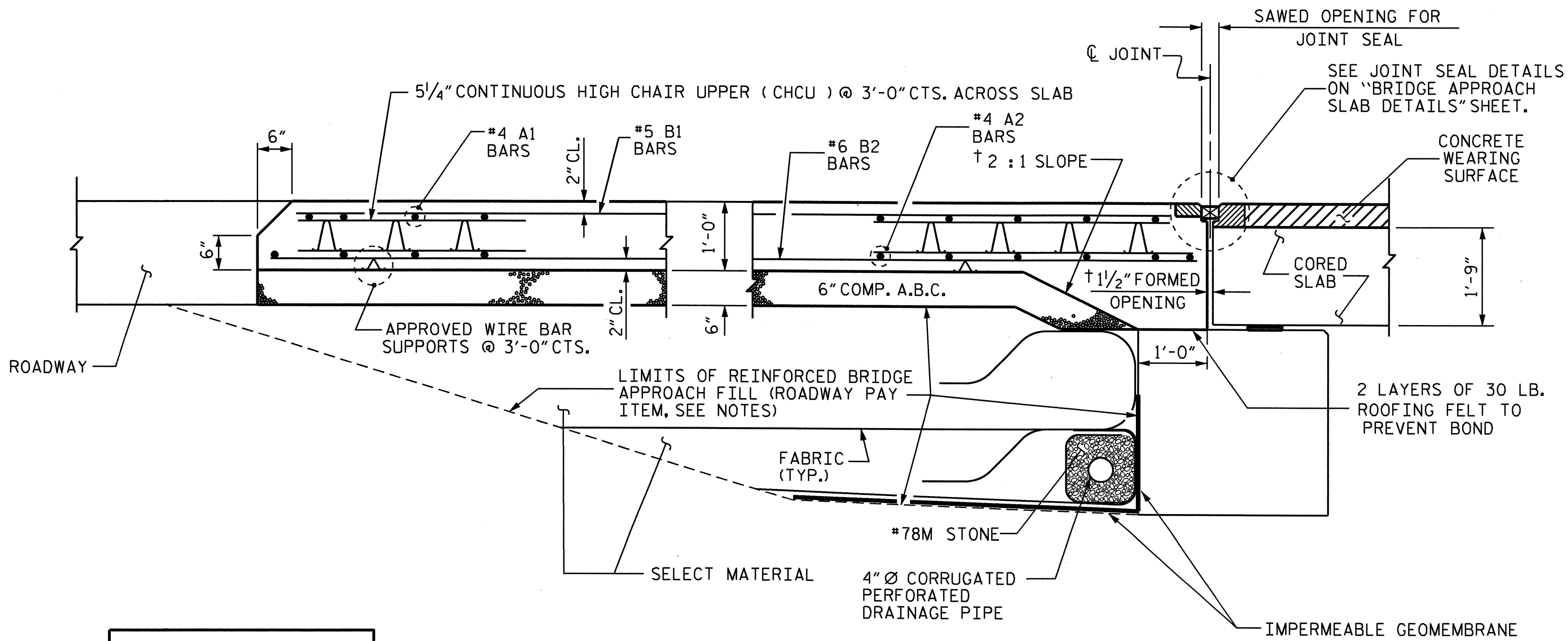


@ END BENT #1

@ END BENT #2

PLAN

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB

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 EACH EDGE OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF THE 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.

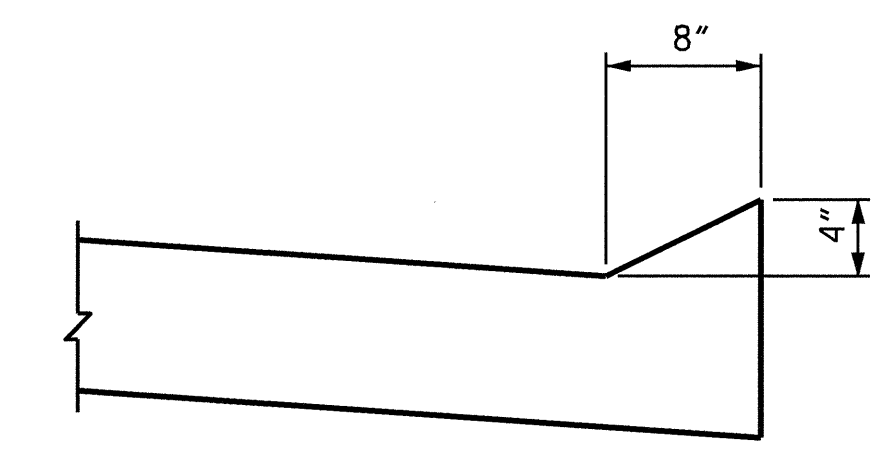
FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE EVAZOTE JOINT SEAL SHALL BE 3/16".

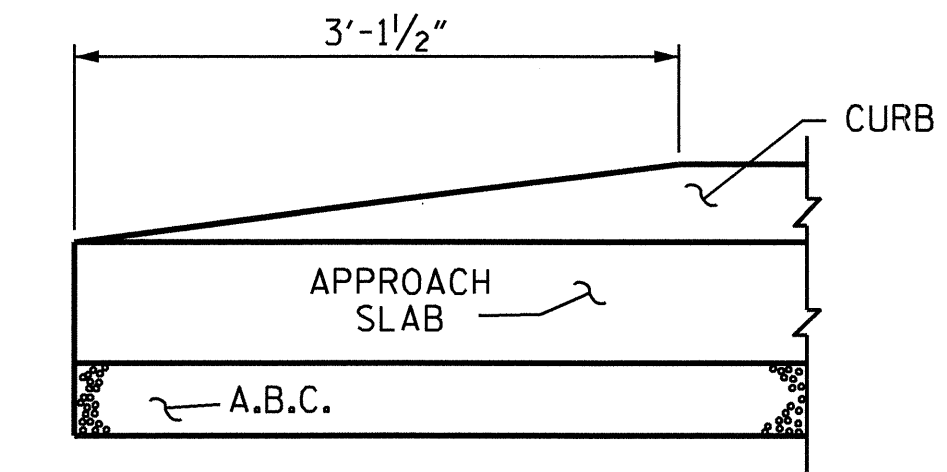
FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

APPROACH SLABS SHALL BE POURED AFTER CONCRETE OVERLAY IS POURED.

THE JOINT SHALL BE SAWED AFTER THE CASTING OF THE BARRIER RAIL.



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

BILL OF MATERIAL

FOR ONE APPROACH SLAB (2 REQUIRED)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	50	#4	STR	19'-5"	649
A2	52	#4	STR	19'-4"	672
*B1	74	#5	STR	23'-8"	1827
B2	74	#6	STR	24'-8"	2742

REINFORCING STEEL	LBS.	3414
*EPOXY COATED REINFORCING STEEL	LBS.	2476
CLASS AA CONCRETE	C. Y.	38.3

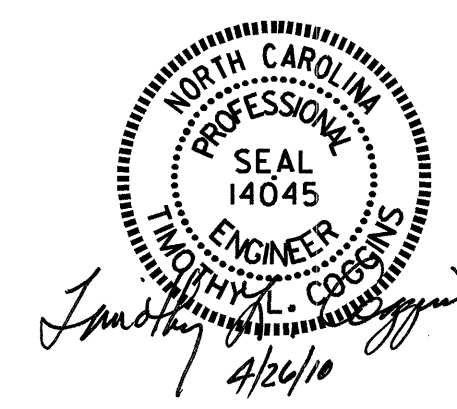
SPLICE CHART

*#4 A1	2'-0"
*#4 A2	1'-9"

PROJECT NO. B-3693
 ROBESON COUNTY
 STATION: 25+45.00 -L-

SHEET 1 OF 2

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

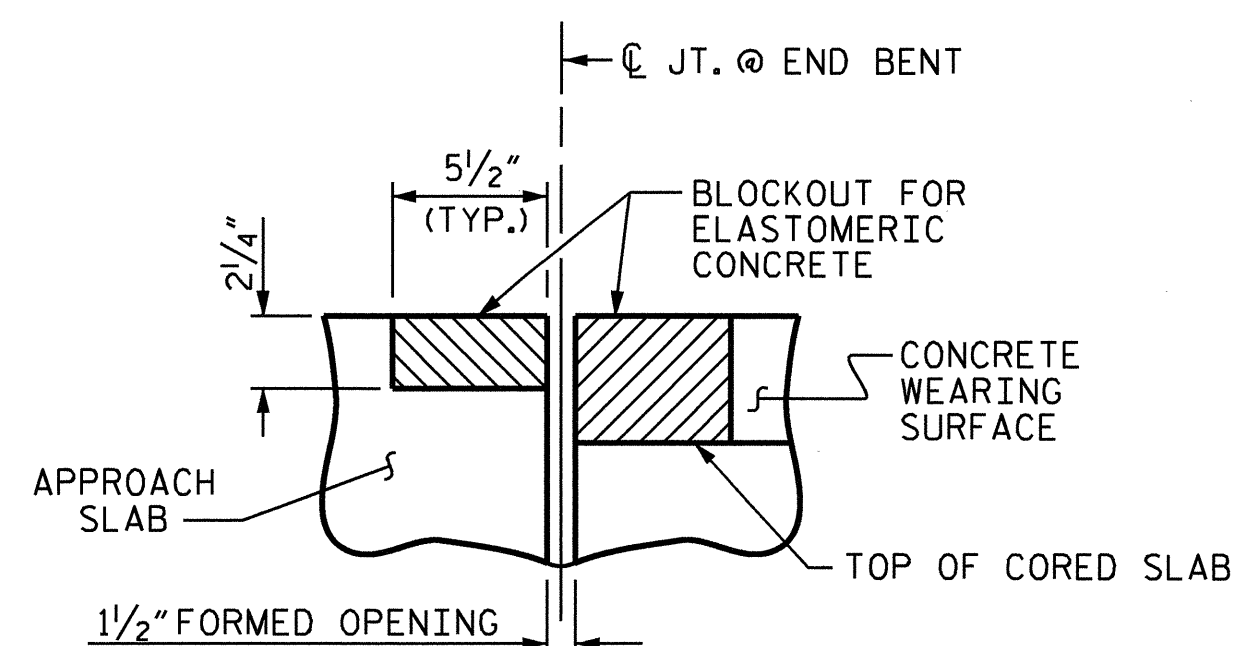


REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

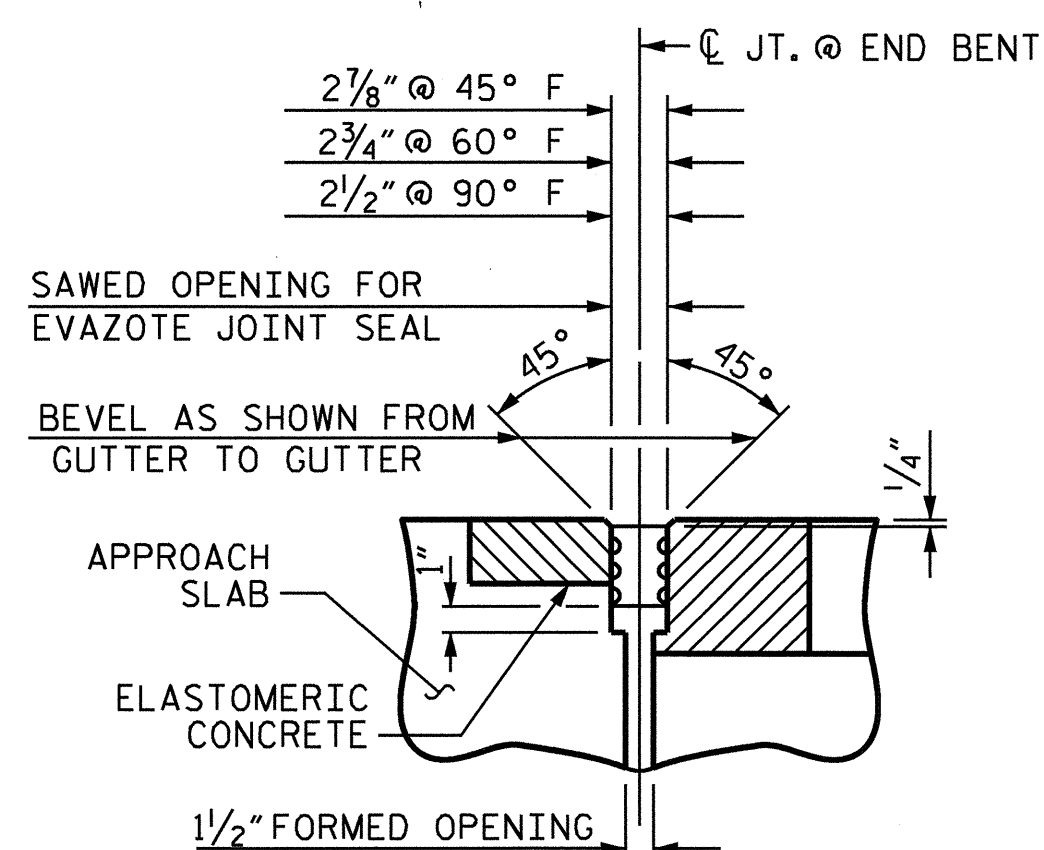
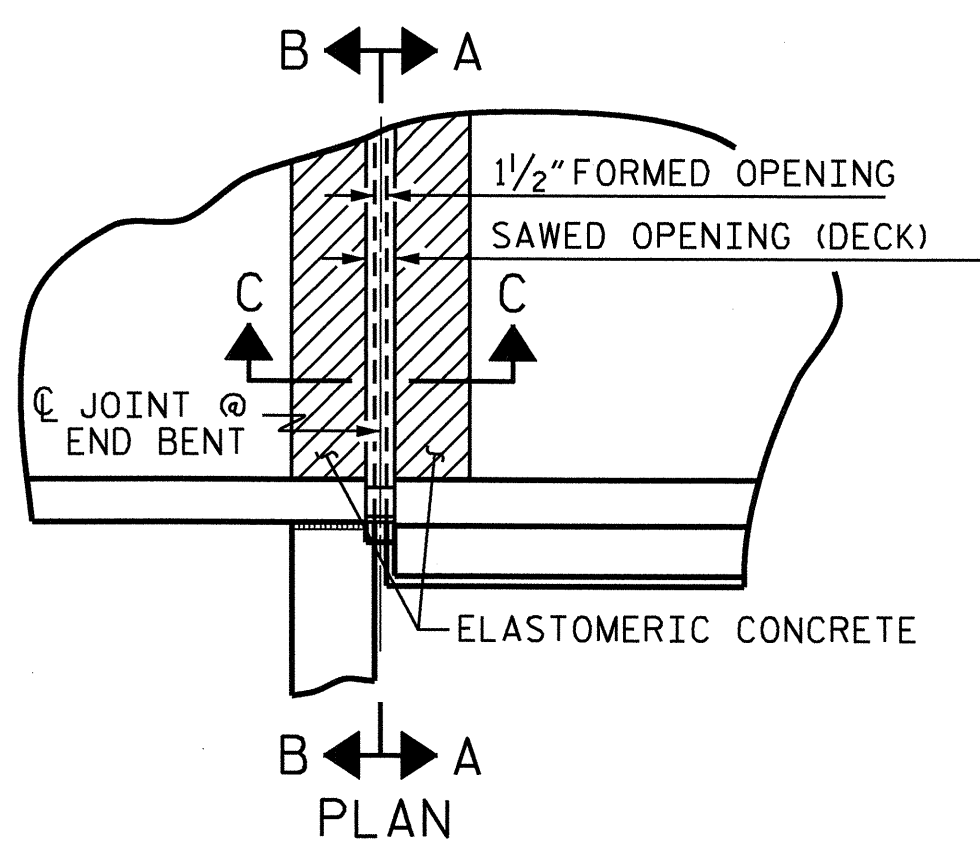
STR. #3 STD. NO. BAS7 (SHT 4)

ASSEMBLED BY: M. GUIDL AUGSSON DATE: 12/15/09
 CHECKED BY: PEGGY PARTI DATE: 01/22/10
 DRAWN BY: FCJ 6/87 REV. 7/10/01 LES/RDR
 CHECKED BY: EGA 6/87 REV. 5/17/03R RWW/JTE
 REV. 5/1/06R KMM/GM

† NORMAL TO END BENT



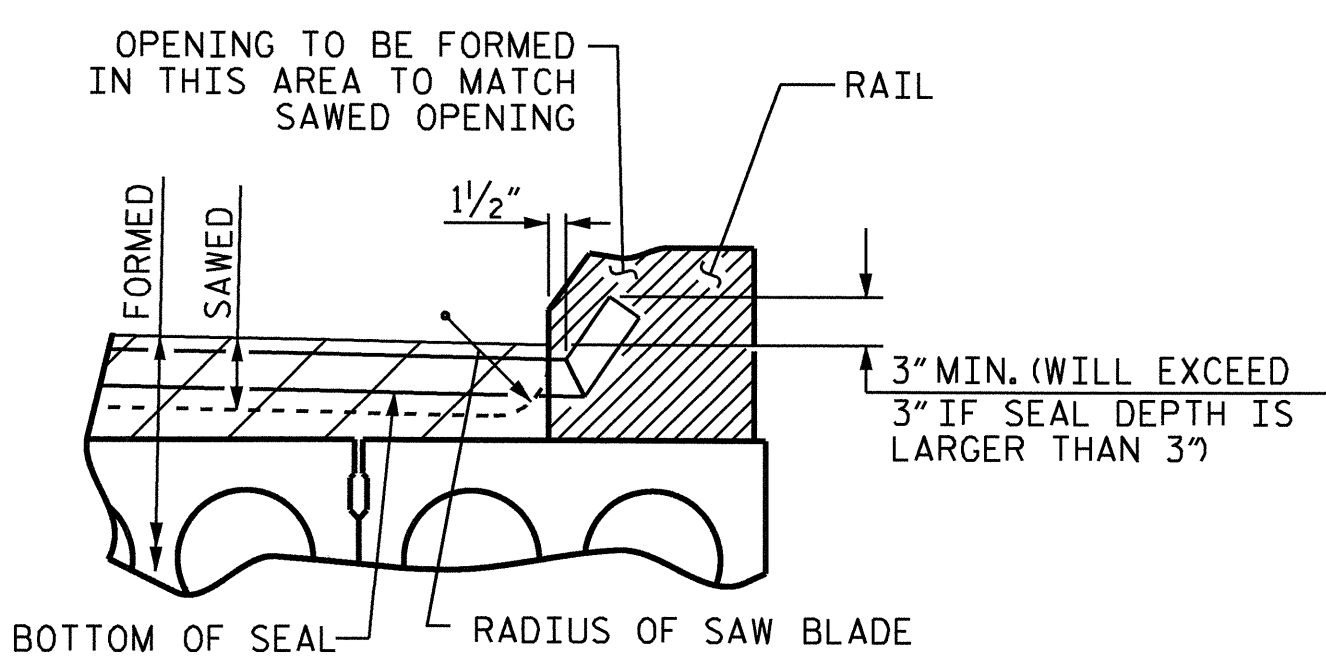
SECTION C-C
EVAZOTE JOINT SEAL
(PRE-SAWED ELASTOMERIC
CONCRETE DIMENSIONS)



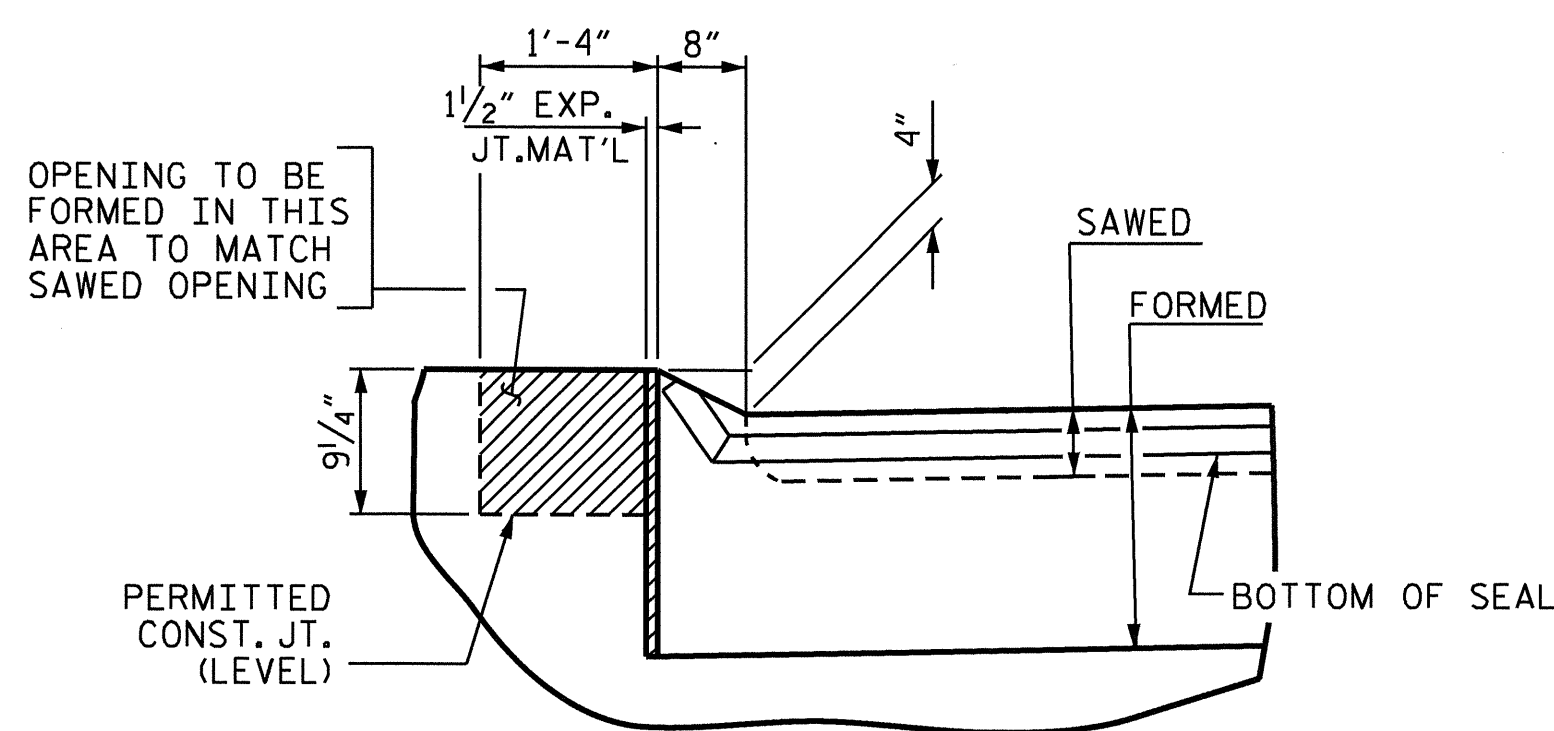
SECTION C-C
EVAZOTE JOINT SEAL
(EXPANSION)

ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	10.3
2	10.3
TOTAL	20.6

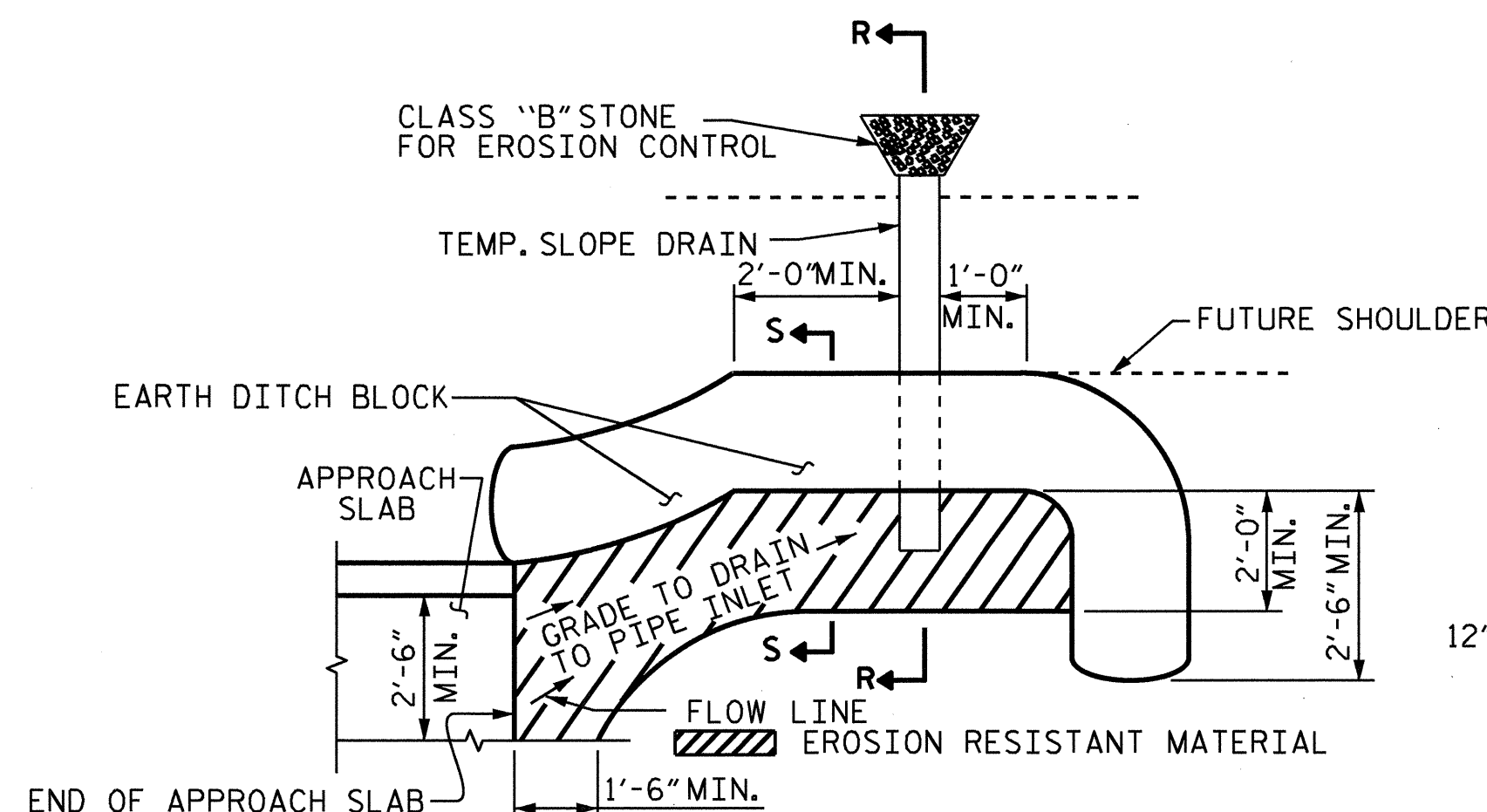
* BASED ON THE MINIMUM BLOCKOUT SHOWN.



SECTION A-A



SECTION B-B

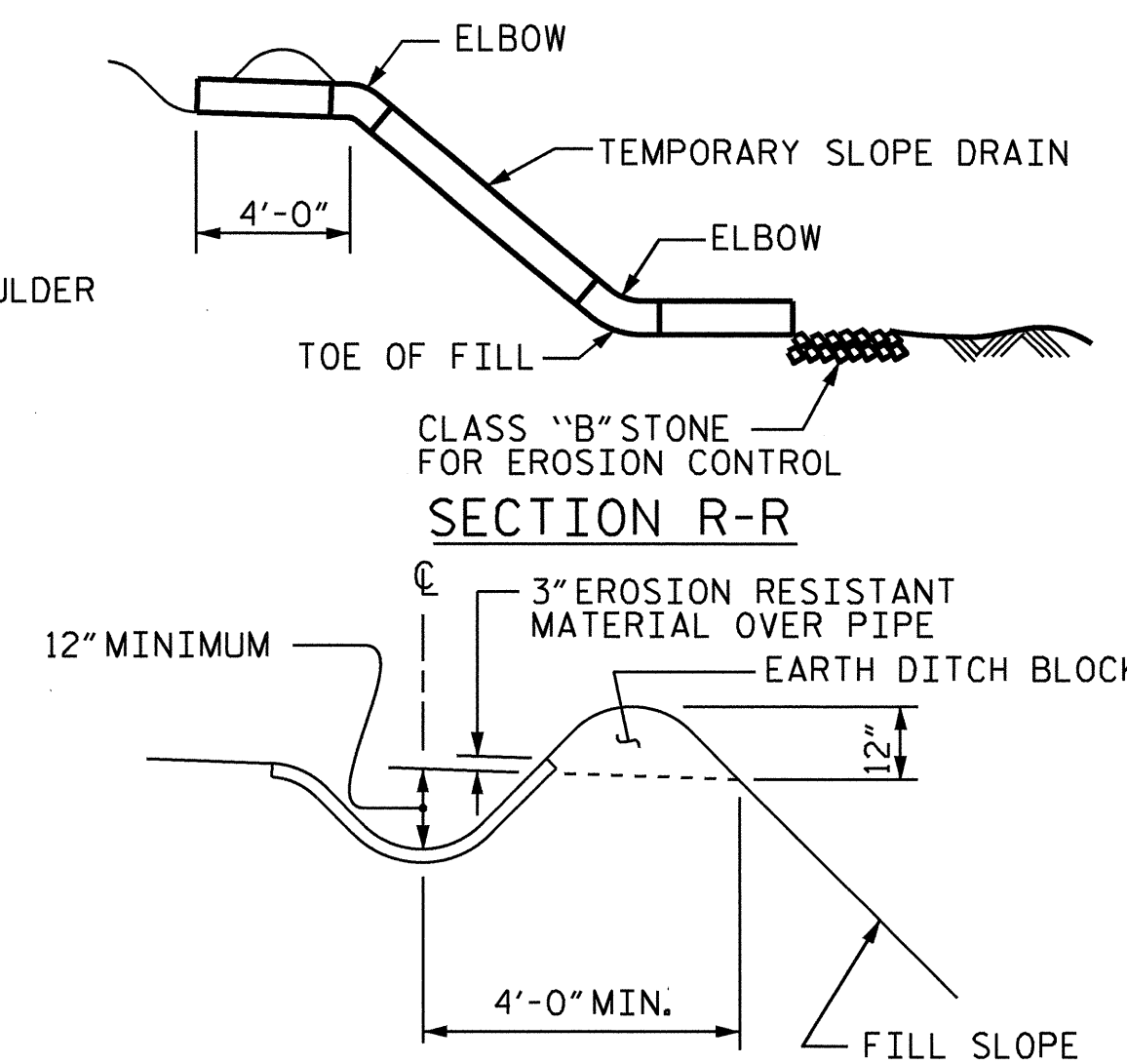


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

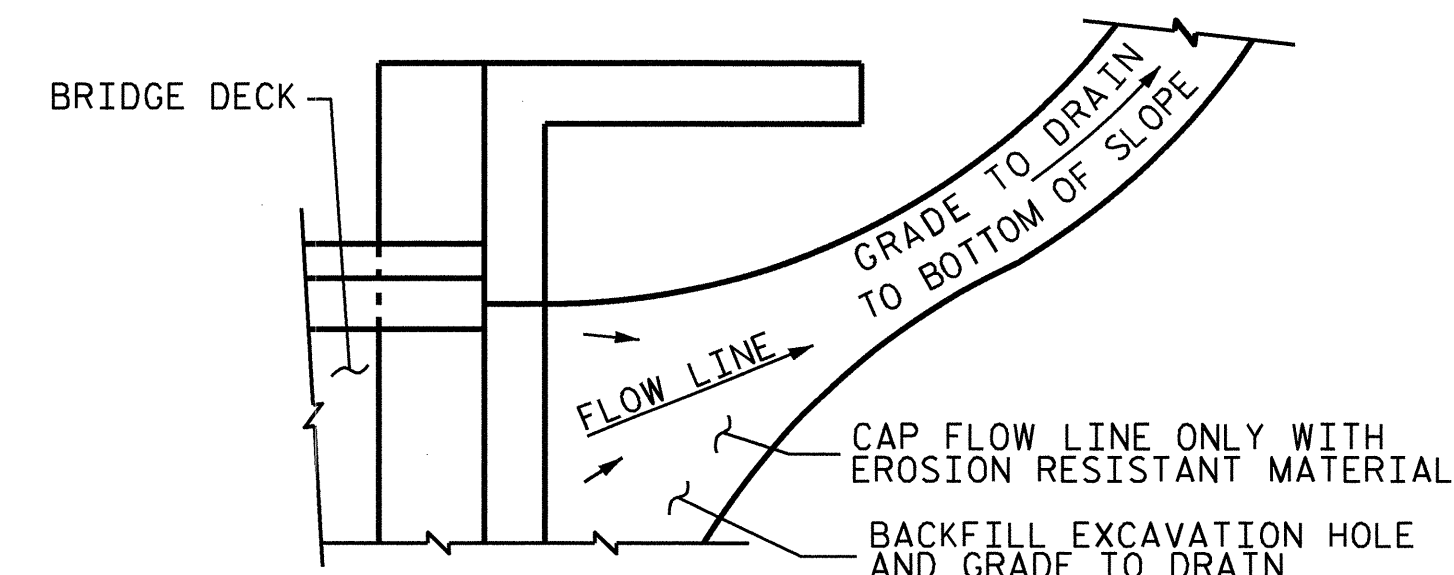
PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



SECTION R-R



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

JOINT SEAL DETAILS @ END BENT

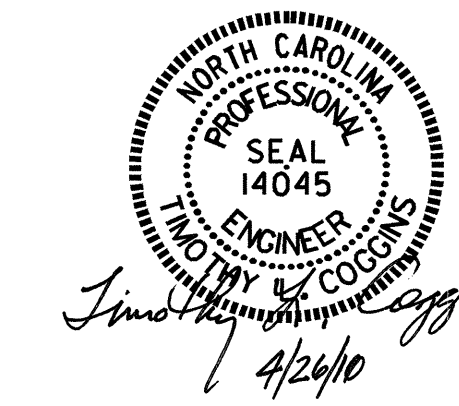
EVAZOTE JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

PROJECT NO. B-3693
ROBESON COUNTY
STATION: 25+45.00 -L-

SHEET 2 OF 2

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

REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					59



ASSEMBLED BY : M.GUDLAUGSSON DATE : 12/15/09
CHECKED BY : PEGGY PARISI DATE : 01/22/10
DRAWN BY : FCJ 11/88 REV. 10/17/00 RWW/LES
CHECKED BY : ARB 11/88 REV. 5/7/03 RWW/JTE
REV. 5/1/06R MAA/KMM

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2006 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

REINFORCING STEEL:

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

STRUCTURAL STEEL:

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

HANDRAILS AND POSTS:

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

STD. NO. SN