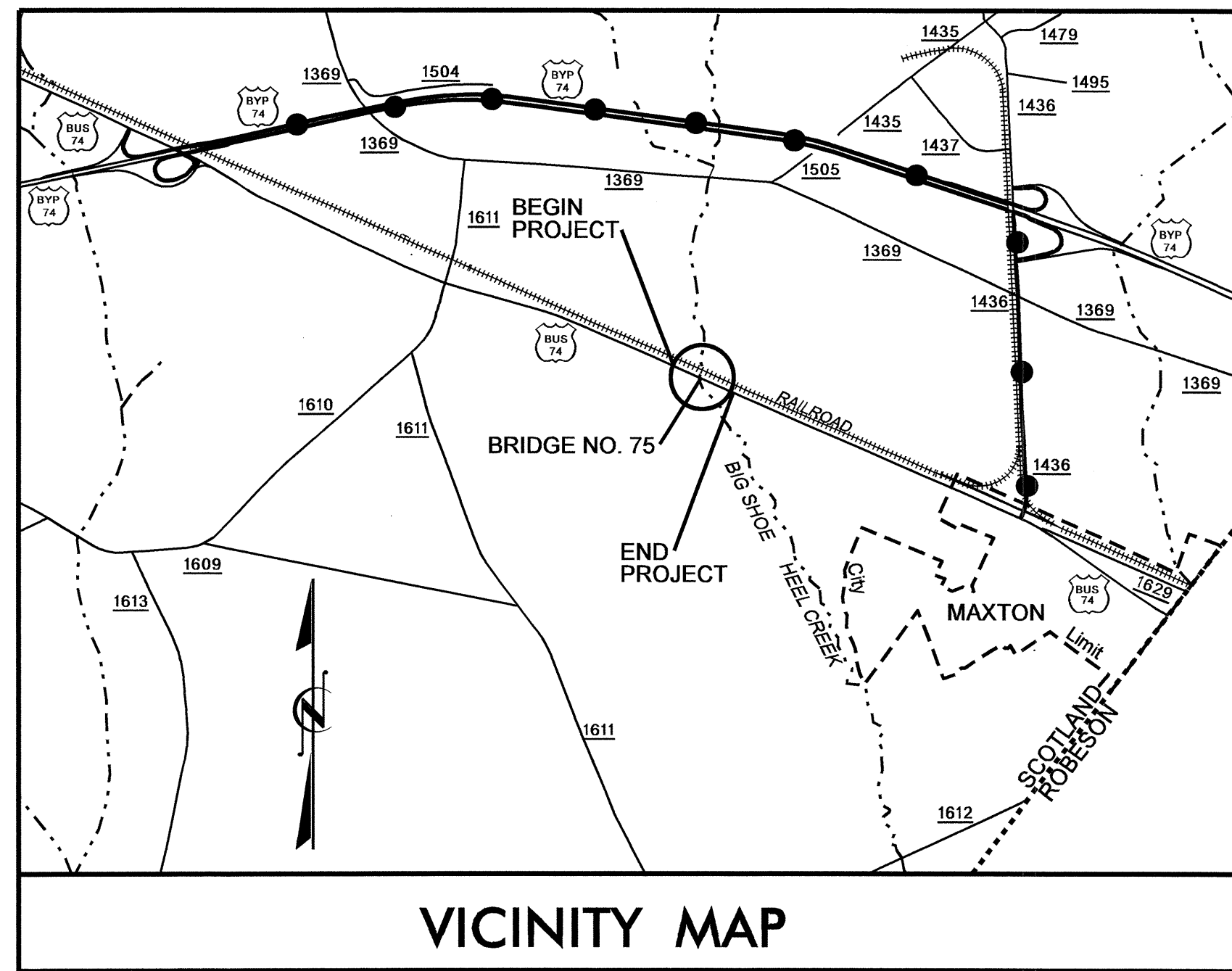


CONTRACT: C202328 TIP PROJECT: B-4641

STRUCTURE

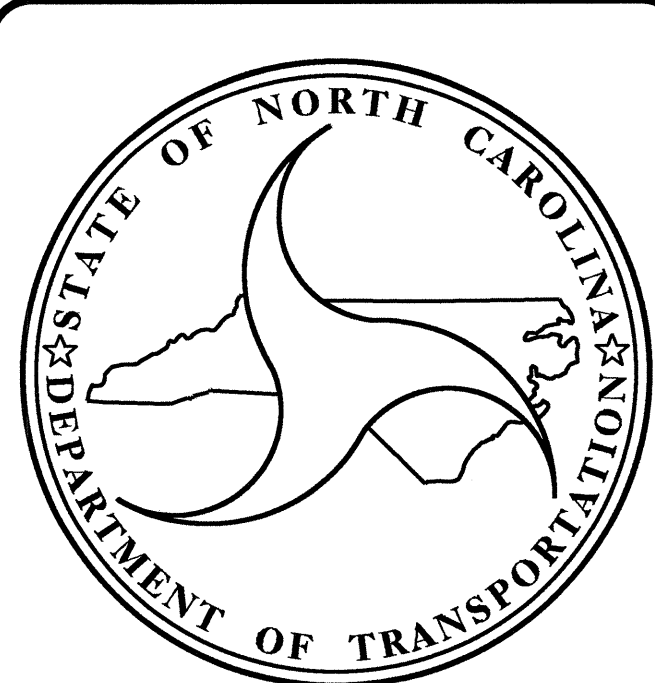
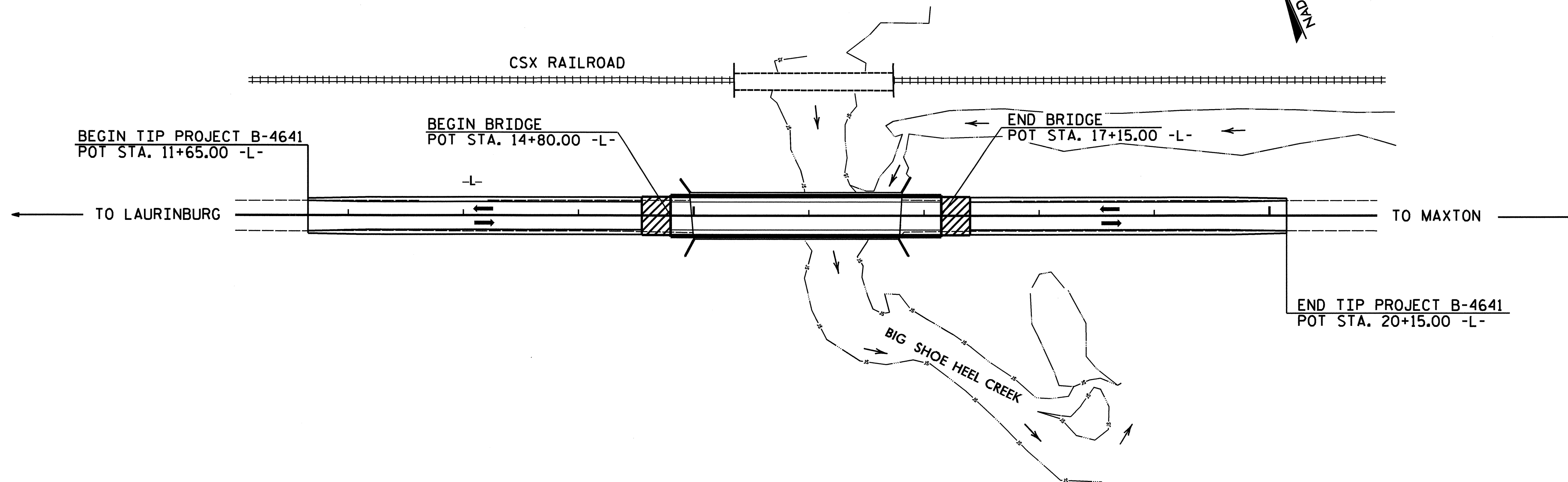


VICINITY MAP
LEGEND ●—● Offsite Detour Route

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SCOTLAND COUNTY

LOCATION: BRIDGE NO. 75 OVER BIG SHOE HEEL CREEK ON US 74 BUSINESS
TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4641		
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33809.1.1	BRSTP-0074(61)	P.E.	
33809.2.1	BRSTP-0074(61)	UTIL. & RW	
33809.3.1	BRSTP-0074(61)	CONST.	



DESIGN DATA

ADT 2010 =	6,800
ADT 2030 =	10,400
DHV =	10 %
D =	60 %
T =	8 % *
V =	60 MPH
FUNC. CLASS =	RURAL MAJOR COLLECTOR
* TTST 3 %	DUAL 5 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4641	=	0.116 mi.
LENGTH STRUCTURE TIP PROJECT B-4641	=	0.045 mi.
TOTAL LENGTH TIP PROJECT B-4641	=	0.161 mi.

Prepared in the Office of:
DIVISION OF HIGHWAYS
2006 STANDARD SPECIFICATIONS

LETTING DATE : MAY 18, 2010	J. C. FRYE, P.E. PROJECT ENGINEER
	T. H. FANG, P.E. PROJECT DESIGN ENGINEER

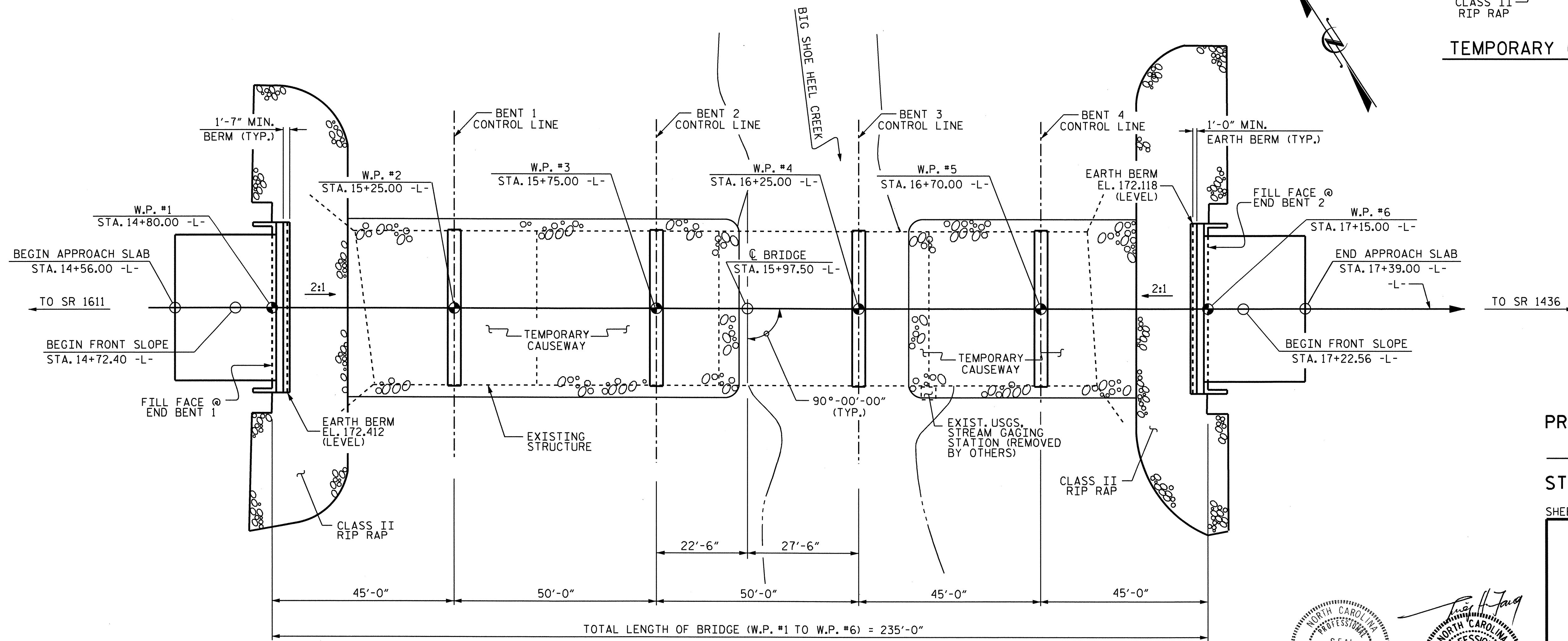
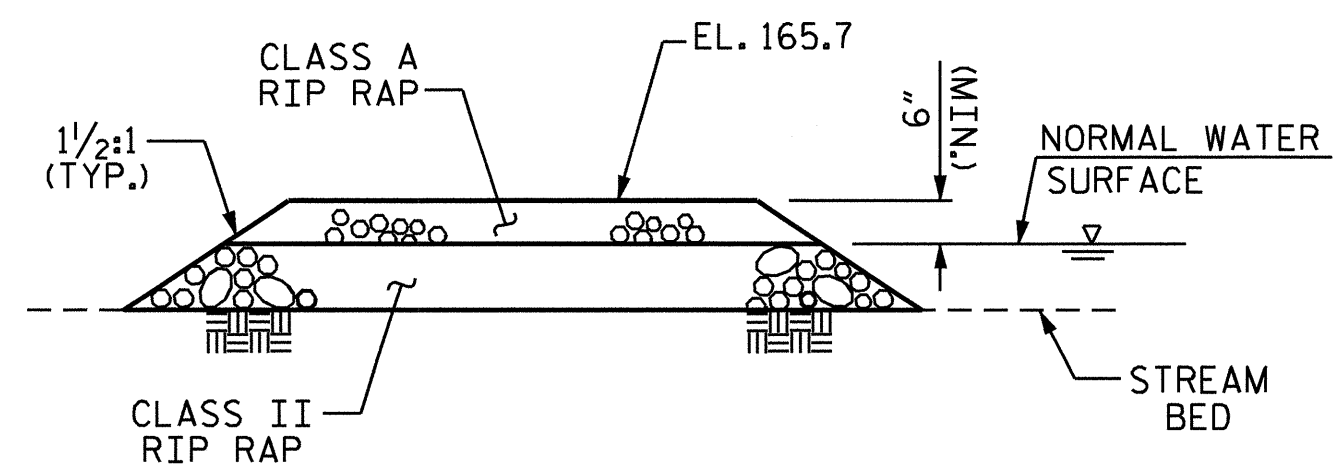
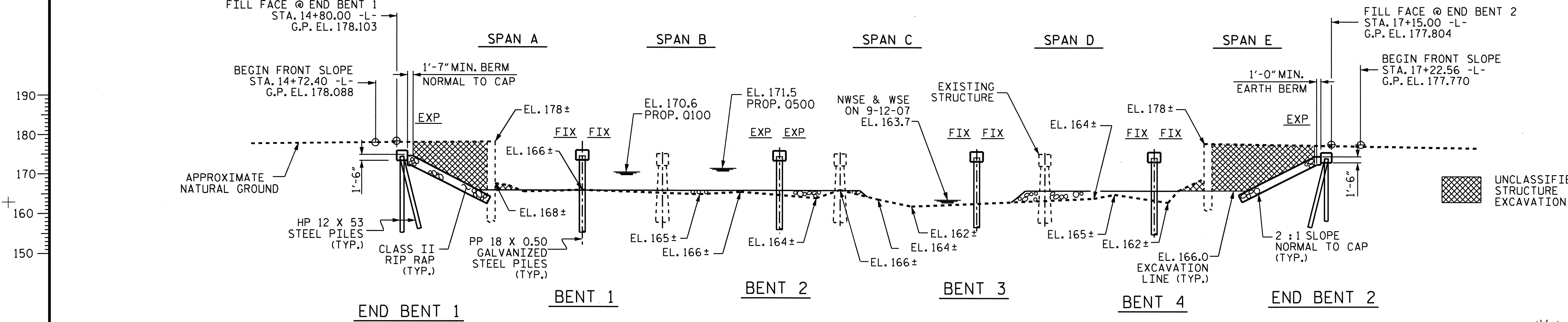
STRUCTURE DESIGN UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER _____ P.E.
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

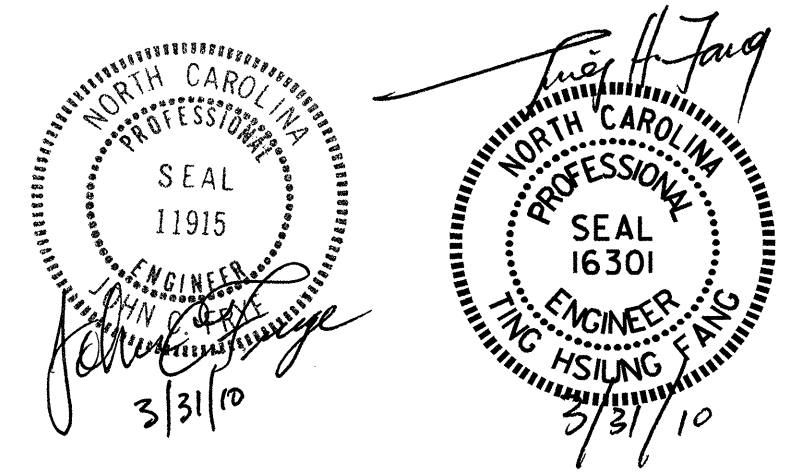
APPROVED _____ DATE _____
DIVISION ADMINISTRATOR

GRADE DATA
 P.I. STA. = 15+85.00 -L-
 EL. = 178.45
 V.C. = 300'



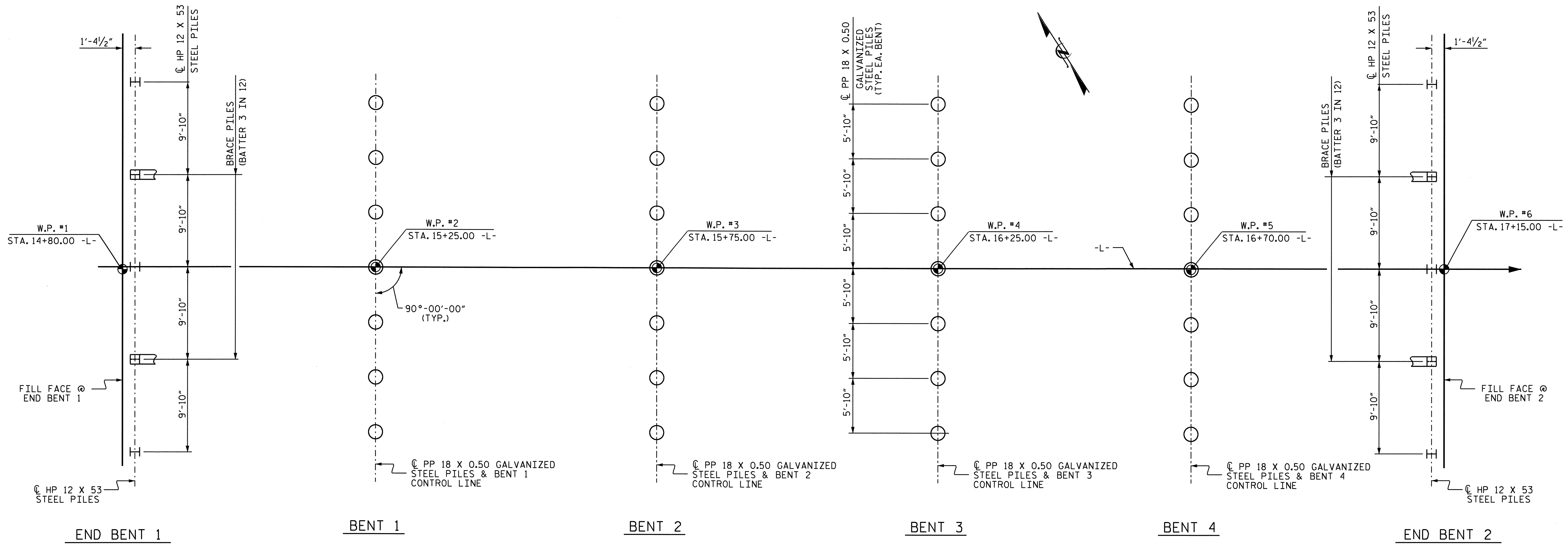
PROJECT NO. B-4641
 SCOTLAND COUNTY
 STATION: 15+97.50 -L-
 SHEET 1 OF 3 REPLACES BRIDGE NO. 75

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING					
FOR BRIDGE OVER BIG SHOE HEEL CREEK ON US 74 BUSINESS BETWEEN SR 1611 AND SR 1436					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 25



DRAWN BY: HARISH SHAH DATE: 04-08
 CHECKED BY: T. H. FANG DATE: 08-09

31-MAR-2010 12:39
 K:\TIP\Projects-B\B4641\Structures\Final Plans\B-4641.sd.gdgn
 ttfang



FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO THE CENTERLINE OF PILES.
ALL PP 18 X 0.50 GALVANIZED STEEL PILES ARE VERTICAL.

NOTES

FOR PILES, SEE SPECIAL PROVISIONS.

PILES AT END BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

TESTING PILES WITH THE PILE DRIVING ANALYZER (PDA) DURING DRIVING, RESTRIKING OR REDRIVING MAY BE REQUIRED AT END BENTS 1 & 2, AND ALL INTERIOR BENTS. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PILE DRIVING ANALYZER, SEE PILES SPECIAL PROVISIONS.

PILES AT BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 125 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 208 TONS PER PILE.

INSTALL PILES AT BENT 1 TO A TIP ELEVATION NO HIGHER THAN 135 FT.

THE SCOUR CRITICAL ELEVATION FOR BENT 1 IS ELEVATION 151 FT., BENT 2 IS ELEVATION 151.5 FT., BENT 3 IS ELEVATION 144 FT., AND BENT 4 IS ELEVATION 150 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

PILES AT BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 130 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 217 TONS PER PILE.

INSTALL PILES AT BENT 2 TO A TIP ELEVATION NO HIGHER THAN 137 FT.

PILES AT BENT 3 ARE DESIGNED FOR A FACTORED RESISTANCE OF 125 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 208.3 TONS PER PILE.

INSTALL PILES AT BENT 3 TO A TIP ELEVATION NO HIGHER THAN 133 FT.

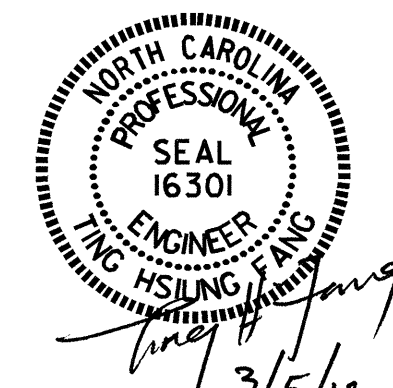
PILES AT BENT 4 ARE DESIGNED FOR A FACTORED RESISTANCE OF 120 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 200 TONS PER PILE.

INSTALL PILES AT BENT 4 TO A TIP ELEVATION NO HIGHER THAN 135 FT.

PILES AT END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

PROJECT NO. B-4641
SCOTLAND COUNTY
STATION: 15+97.50 -L-

SHEET 2 OF 3



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING					
FOR BRIDGE OVER BIG SHOE HEEL CREEK ON US 74 BUSINESS BETWEEN SR 1611 AND SR 1436					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-2
					TOTAL SHEETS 25

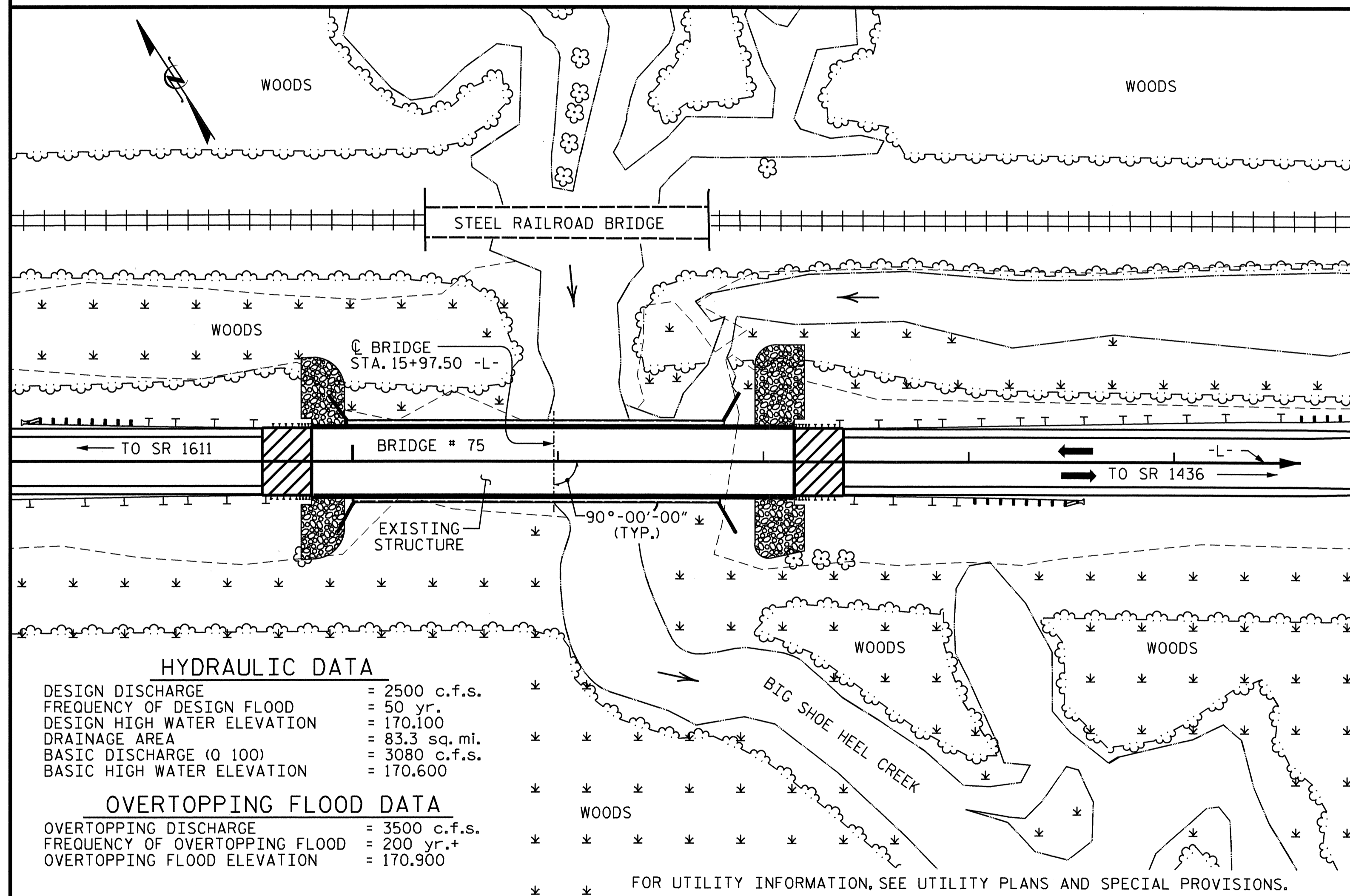
DRAWN BY : J. E. JONES DATE : 3/10/09
CHECKED BY : T. H. FANG DATE : 11/30/09

04-MAR-2010 15:27
N:\Structures\Final Plans\b-4641.sd.gdn
sdombrowski

TOTAL BILL OF MATERIAL

	CONST. MAINT. & REMOVAL OF TEMP. ACCESS	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	PDA TESTING	PDA ASSISTANCE	CONCRETE WEARING SURFACE	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES	PP 18 X 0.50 GALVANIZED STEEL PILES	PILE REDRIVES	VERTICAL 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	LUMP SUM	EACH	EACH	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						7,870	8,557							465.5					LUMP SUM	LUMP SUM	60	2,787.0		
END BENT 1								15.0		2185	5	475			5		200	220						
BENT 1								12.1		2223			7	525	7									
BENT 2								12.1		2223			7	490	7									
BENT 3								12.1		2223			7	455	7									
BENT 4								12.1		2223			7	455	7									
END BENT 2								15.0		2185	5	475			5		190	210						
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	3	3	7,870	8,557	78.4	LUMP SUM	13,262	10	950	28	1,925	38	465.5	390	430	LUMP SUM	LUMP SUM	60	2,787.0		

BM #2 : RR SPIKE IN BASE OF 24" WATER OAK, -L- POT STA. 16+34.67, 122.51' RT., EL. 166.95'



HYDRAULIC DATA

DESIGN DISCHARGE = 2500 c.f.s.
 FREQUENCY OF DESIGN FLOOD = 50 yr.
 DESIGN HIGH WATER ELEVATION = 170.100
 DRAINAGE AREA = 83.3 sq. mi.
 BASIC DISCHARGE (Q 100) = 3080 c.f.s.
 BASIC HIGH WATER ELEVATION = 170.600

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 3500 c.f.s.
 FREQUENCY OF OVERTOPPING FLOOD = 200 yr.
 OVERTOPPING FLOOD ELEVATION = 170.900

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

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

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

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

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

AFTER SERVING AS A TEMPORARY STRUCTURE, THE EXISTING STRUCTURE CONSISTING OF 4 SPANS: 1 @ 41'-8", 1 @ 42'-4", 1 @ 42'-8" & 1 @ 41'-2"; 35'-8" CLEAR ROADWAY WIDTH AND REINFORCED CONCRETE DECK GIRDERS; SUBSTRUCTURE CONSISTING OF FULL HEIGHT RC ABUTMENTS, INTERIOR BENTS, RC POSTS & WALL ON PILE FOOTINGS AND LOCATED ON THE PROPOSED STRUCTURE SITE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

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 STANDARD SPECIFICATIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 20 FT. LEFT SIDE, 25 FT. RIGHT SIDE AT END BENT 1 AND 35 FT. LEFT SIDE, 50 FT. RIGHT SIDE AT END BENT 2 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 SPECIFICATION.

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.

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 15+97.50 -L-.

FOR INTERIOR BENTS 1 THRU 4, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED, SEE SUBSTRUCTURE "BENTS 1 THRU 4" SHEETS.

FOR VERTICAL CONCRETE BARRIER RAIL, SEE SPECIAL PROVISIONS.

FOR CONSTRUCTION MAINTENANCE & REMOVAL OF TEMPORARY ACCESS, SEE SPECIAL PROVISIONS.

FOR PLACING LOAD ON STRUCTURE MEMBERS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CURING CONCRETE, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

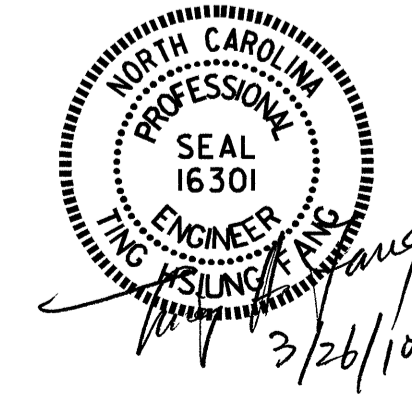
PROJECT NO. B-4641
SCOTLAND COUNTY
 STATION: 15+97.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER
 BIG SHOE HEEL CREEK
 ON US 74 BUSINESS BETWEEN
 SR 1611 AND SR 1436



REVISIONS

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

SHEET NO.

S-3
 TOTAL SHEETS 25

DRAWN BY: E. C. LOCKLEAR DATE: 10/08
 CHECKED BY: T. H. FANG DATE: 12/09

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE CORED SLAB UNITS

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	1.018	--	1.75	0.277	1.02	B	EL	24.438	0.531	1.07	B	EL	4.888	0.80	0.277	1.06	B	EL	24.438		
	HL-93 (OPERATING)	N/A		1.320	--	1.35	0.277	1.32	B	EL	24.438	0.531	1.38	B	EL	4.888	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	2	1.263	45,456	1.75	0.277	1.26	B	EL	24.438	0.531	1.27	B	EL	4.888	0.80	0.277	1.31	B	EL	24.438		
	HS-20 (OPERATING)	36.000		1.637	58,924	1.35	0.277	1.64	B	EL	24.438	0.531	1.64	B	EL	4.888	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		2.672	36.076	1.4	0.277	3.21	B	EL	24.438	0.531	3.54	B	EL	4.888	0.80	0.277	2.67	B	EL	24.438	
		SNGARBS2	20.000		2.111	42.227	1.4	0.277	2.54	B	EL	24.438	0.531	2.59	B	EL	4.888	0.80	0.277	2.11	B	EL	24.438	
		SNAGRIS2	22.000		2.054	45.194	1.4	0.277	2.47	B	EL	24.438	0.531	2.43	B	EL	4.888	0.80	0.277	2.05	B	EL	24.438	
		SNCOTTS3	27.250		1.333	36.326	1.4	0.277	1.6	B	EL	24.438	0.531	1.77	B	EL	4.888	0.80	0.277	1.33	B	EL	24.438	
		SNAGGRS4	34.925		1.159	40.489	1.4	0.277	1.39	B	EL	24.438	0.531	1.52	B	EL	4.888	0.80	0.277	1.16	B	EL	24.438	
		SNS5A	35.550		1.130	40.189	1.4	0.277	1.36	B	EL	24.438	0.531	1.57	B	EL	4.888	0.80	0.277	1.13	B	EL	24.438	
		SNS6A	39.950		1.057	42.235	1.4	0.277	1.27	B	EL	24.438	0.531	1.45	B	EL	4.888	0.80	0.277	1.06	B	EL	24.438	
	SNS7B	42.000		1.008	42.317	1.4	0.277	1.21	B	EL	24.438	0.531	1.46	B	EL	4.888	0.80	0.277	1.01	B	EL	24.438		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.295	42.743	1.4	0.277	1.56	B	EL	24.438	0.531	1.71	B	EL	4.888	0.80	0.277	1.30	B	EL	24.438	
		TNT4A	33.075		1.307	43.216	1.4	0.277	1.57	B	EL	24.438	0.531	1.65	B	EL	4.888	0.80	0.277	1.31	B	EL	24.438	
		TNT6A	41.600		1.088	45.282	1.4	0.277	1.31	B	EL	24.438	0.531	1.6	B	EL	4.888	0.80	0.277	1.09	B	EL	24.438	
		TNT7A	42.000		1.105	46.411	1.4	0.277	1.33	B	EL	24.438	0.531	1.48	B	EL	4.888	0.80	0.277	1.11	B	EL	24.438	
		TNT7B	42.000		1.152	48.385	1.4	0.277	1.38	B	EL	24.438	0.531	1.4	B	EL	4.888	0.80	0.277	1.15	B	EL	24.438	
		TNAGRIT4	43.000		1.093	47.012	1.4	0.277	1.31	B	EL	24.438	0.531	1.35	B	EL	4.888	0.80	0.277	1.09	B	EL	24.438	
TNAGT5A		45.000		1.021	45.956	1.4	0.277	1.23	B	EL	24.438	0.531	1.38	B	EL	4.888	0.80	0.277	1.02	B	EL	24.438		
TNAGT5B	45.000		3	1.000	45.000	1.4	0.277	1.2	B	EL	24.438	0.531	1.28	B	EL	4.888	0.80	0.277	1.00	B	EL	24.438		

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	326
FUTURE	2030	499

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. SPAN C RATING IS IDENTICAL TO SPAN B.
- 2.
- 3.
- 4.

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

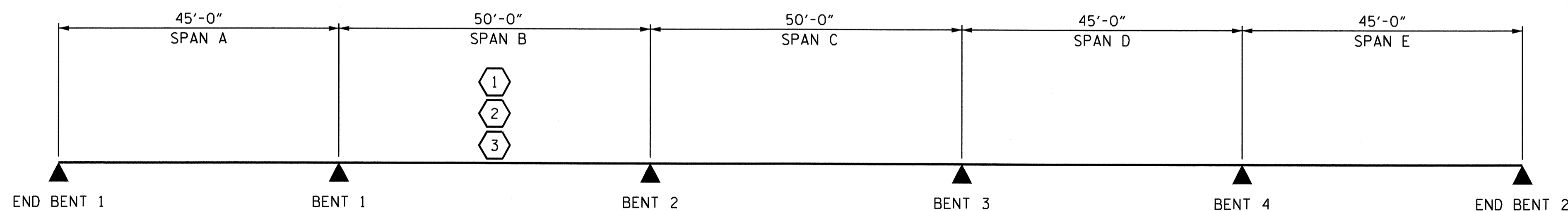
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

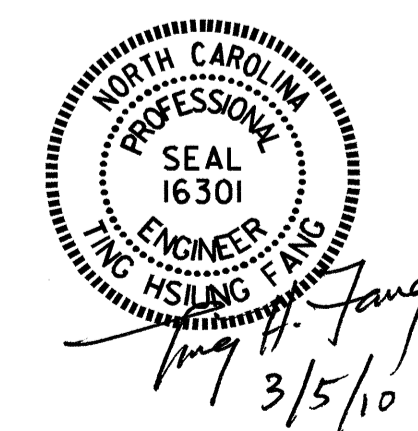
GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. B-4641
SCOTLAND COUNTY
 STATION: 15+97.50 -L-

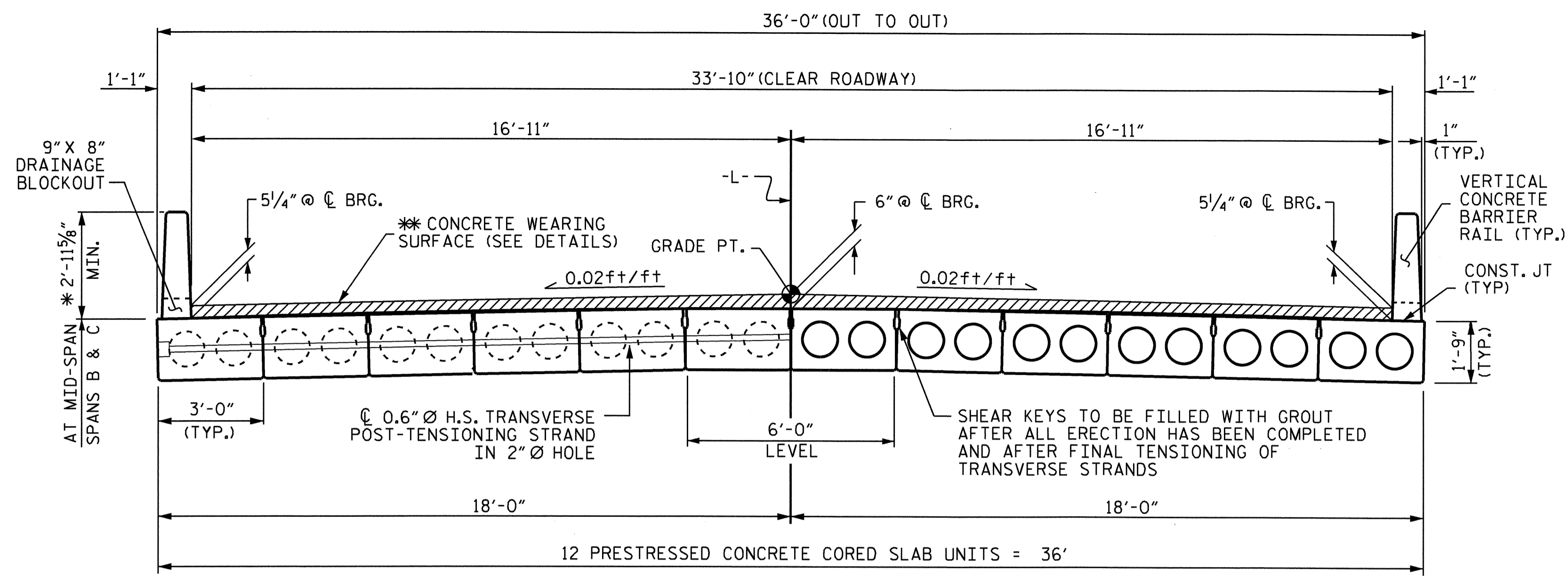


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			25

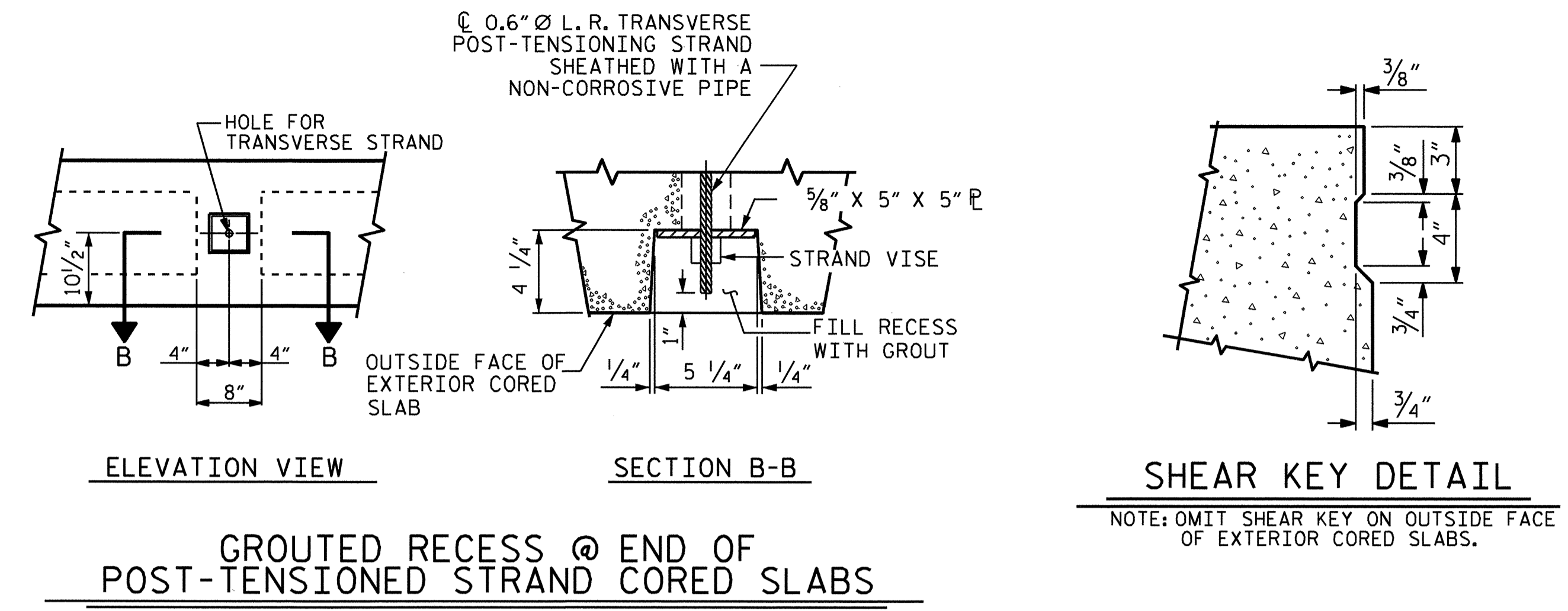
ASSEMBLED BY : S. F. DOMBROWSKI DATE : 12/4/09
 CHECKED BY : T. H. FANG DATE : 12/4/09
 DRAWN BY : MAA 1/08 REV. 11/12/08RR MAA/GM
 CHECKED BY : GM/DI 2/08



TYPICAL SECTION

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

* SEE RAIL HEIGHT TABLE
* SEE CONCRETE WEARING SURFACE THICKNESS TABLE

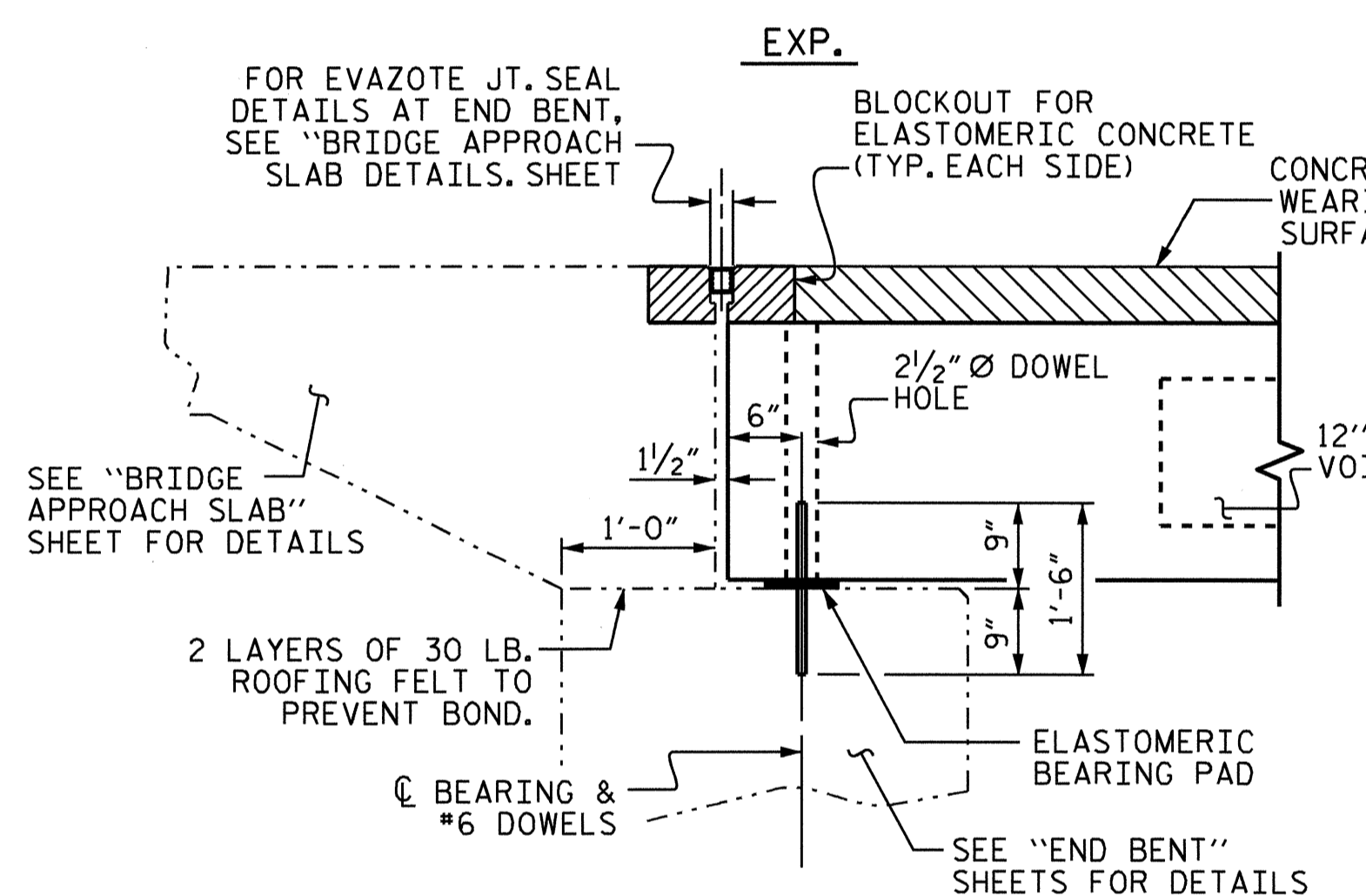


GROUTED RECESS @ END OF POST-TENSIONED STRAND CORED SLABS

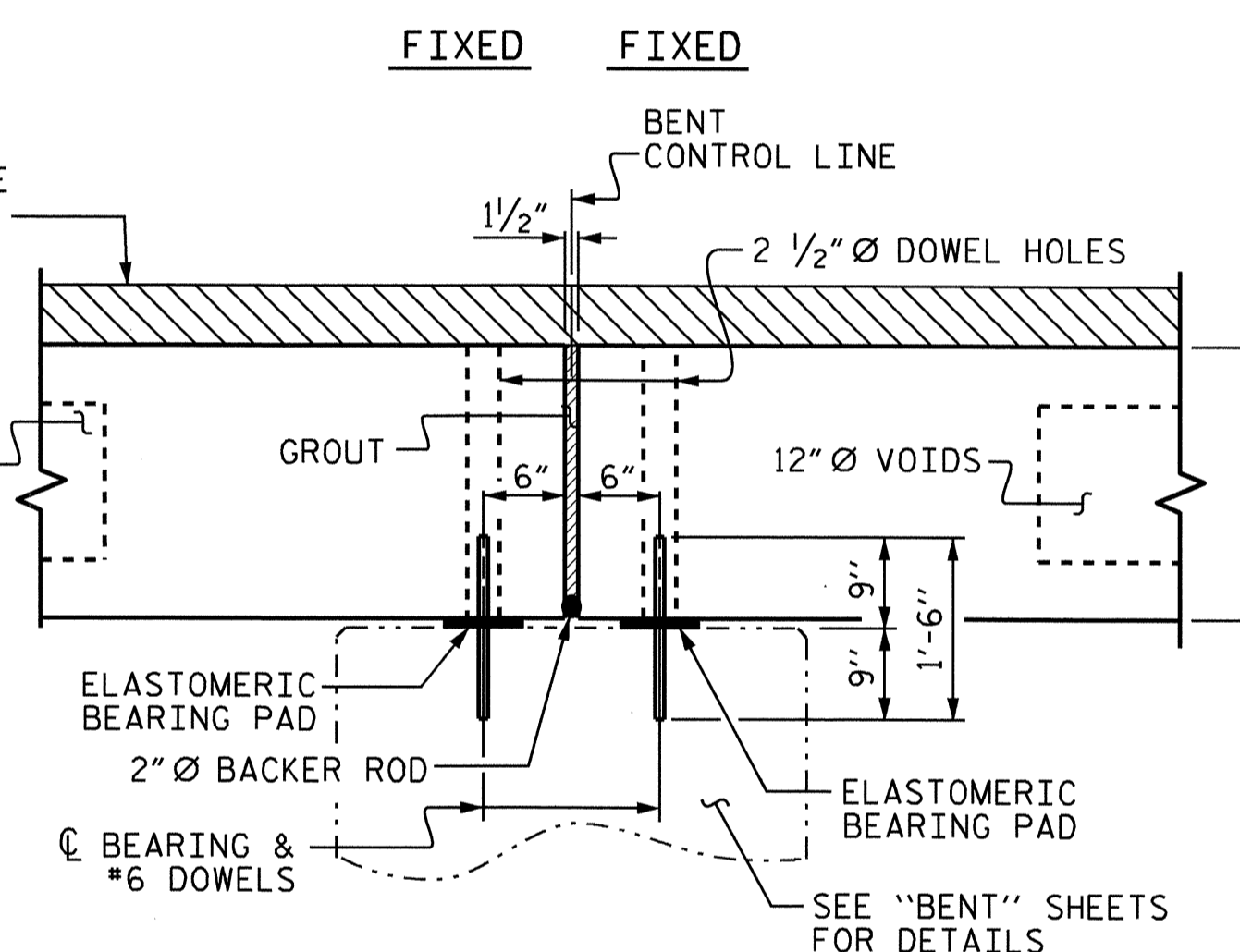
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

RAIL HEIGHT TABLE
BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS.

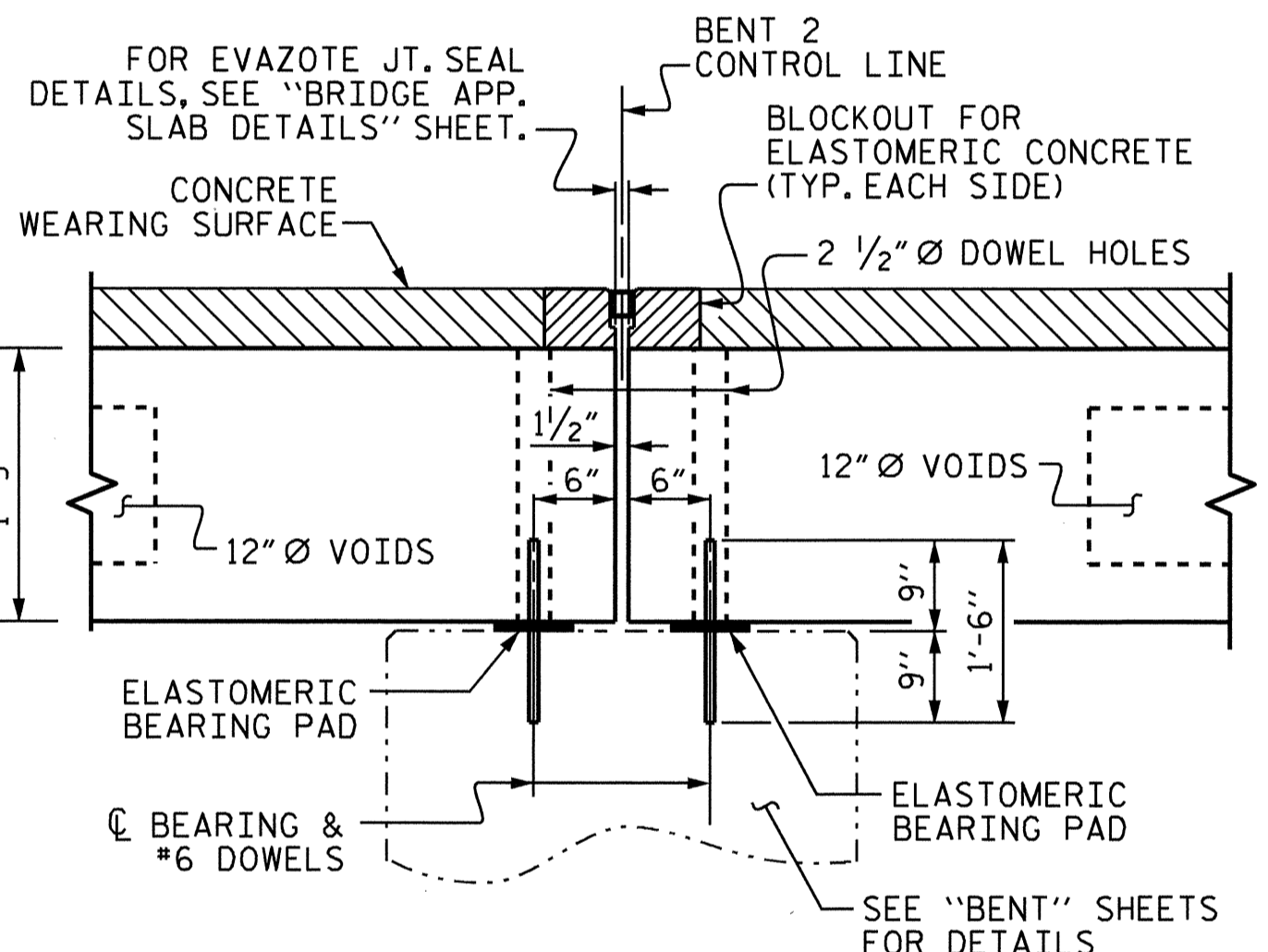
SPAN	* AT @ BEARINGS	* AT MID-SPAN
A	3'-1 1/4"	3'-0 7/8"
B	3'-1 1/4"	2'-11 5/8"
C	3'-1 1/4"	2'-11 5/8"
D	3'-1 1/4"	3'-0 7/8"
E	3'-1 1/4"	3'-0 7/8"



SECTION AT END BENTS



SECTION AT BENTS 1, 3 & 4

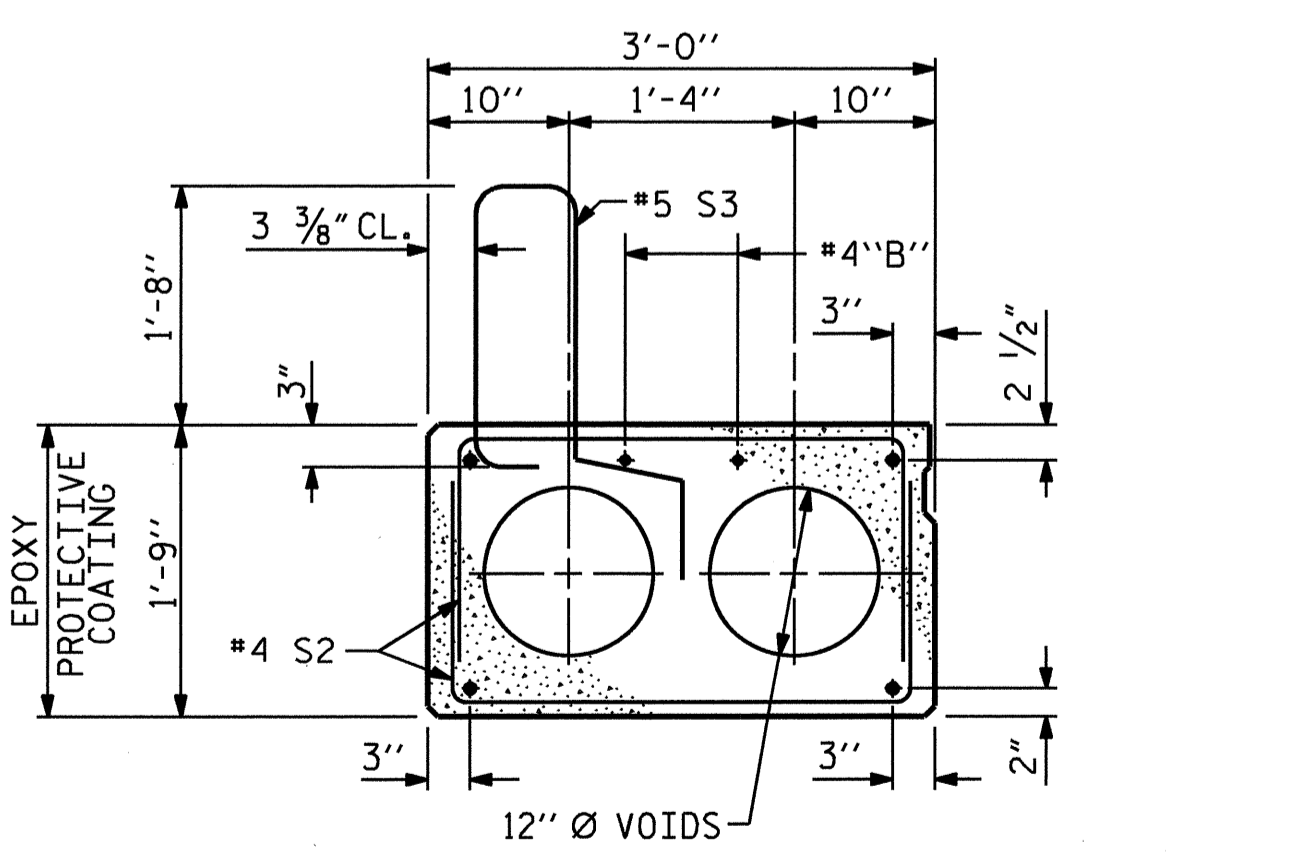


SECTION AT BENT 2

CONCRETE WEARING SURFACE THICKNESS TABLE
BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS.

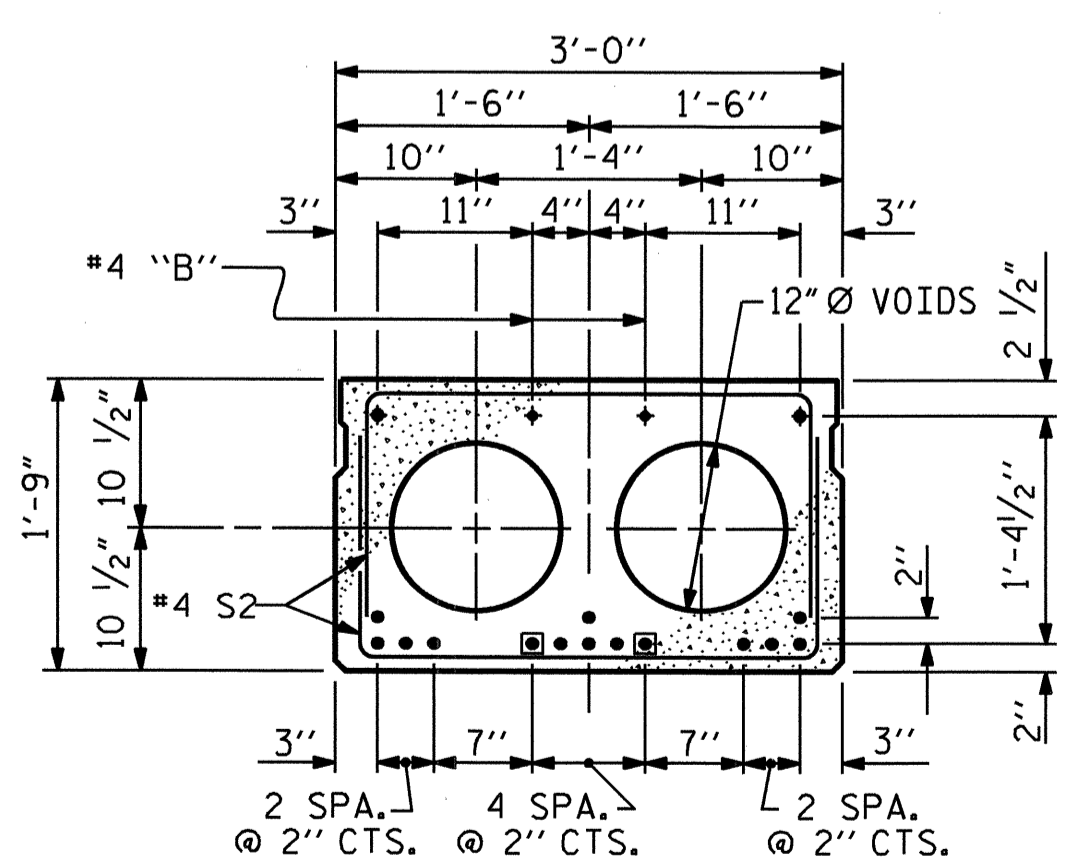
SPAN	** AT @ BEARINGS		** AT MID-SPAN	
	GUTTERS	GRADE PT.	GUTTERS	GRADE PT.
A	5 1/4"	6"	4 3/16"	4 15/16"
B	5 1/4"	6"	3 9/16"	4 1/4"
C	5 1/4"	6"	3 9/16"	4 1/4"
D	5 1/4"	6"	4 3/16"	4 15/16"
E	5 1/4"	6"	4 3/16"	4 15/16"

NOTE: THICKNESS VARIES BETWEEN @ BEARING AND MID-SPAN FOR ALL SPANS.

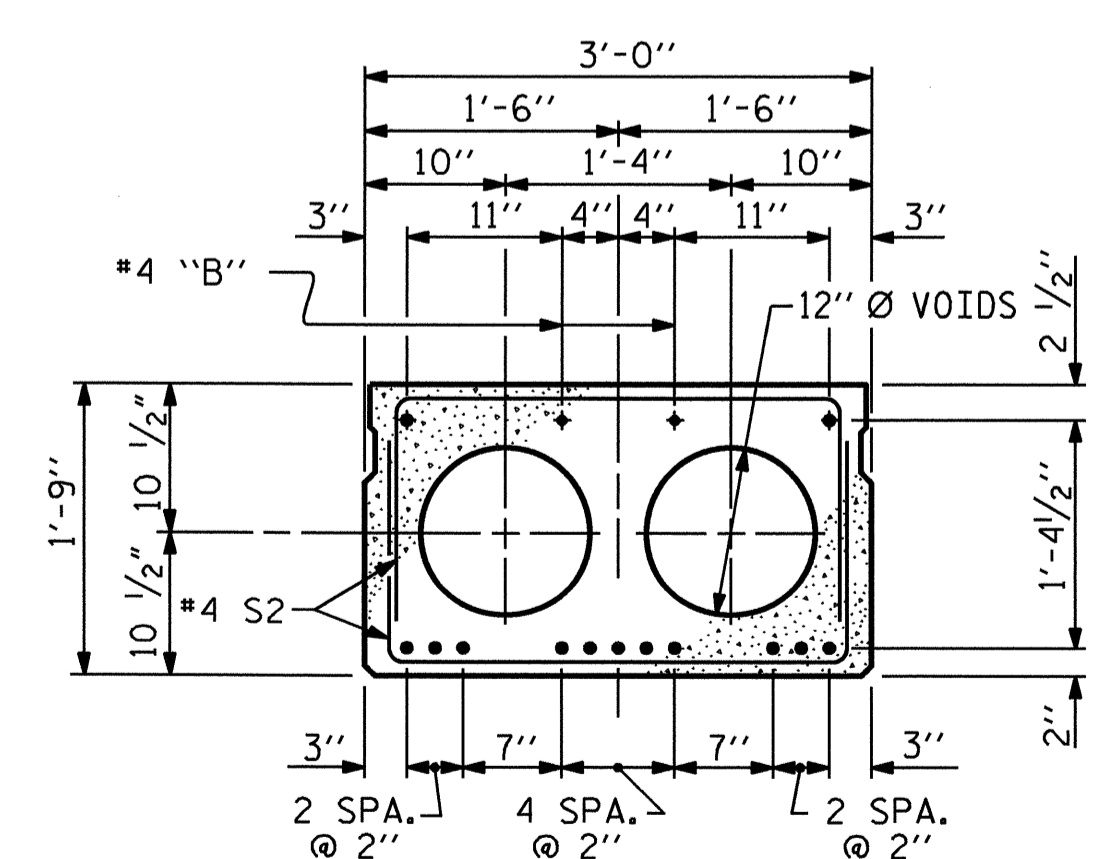


EXTERIOR SLAB SECTION

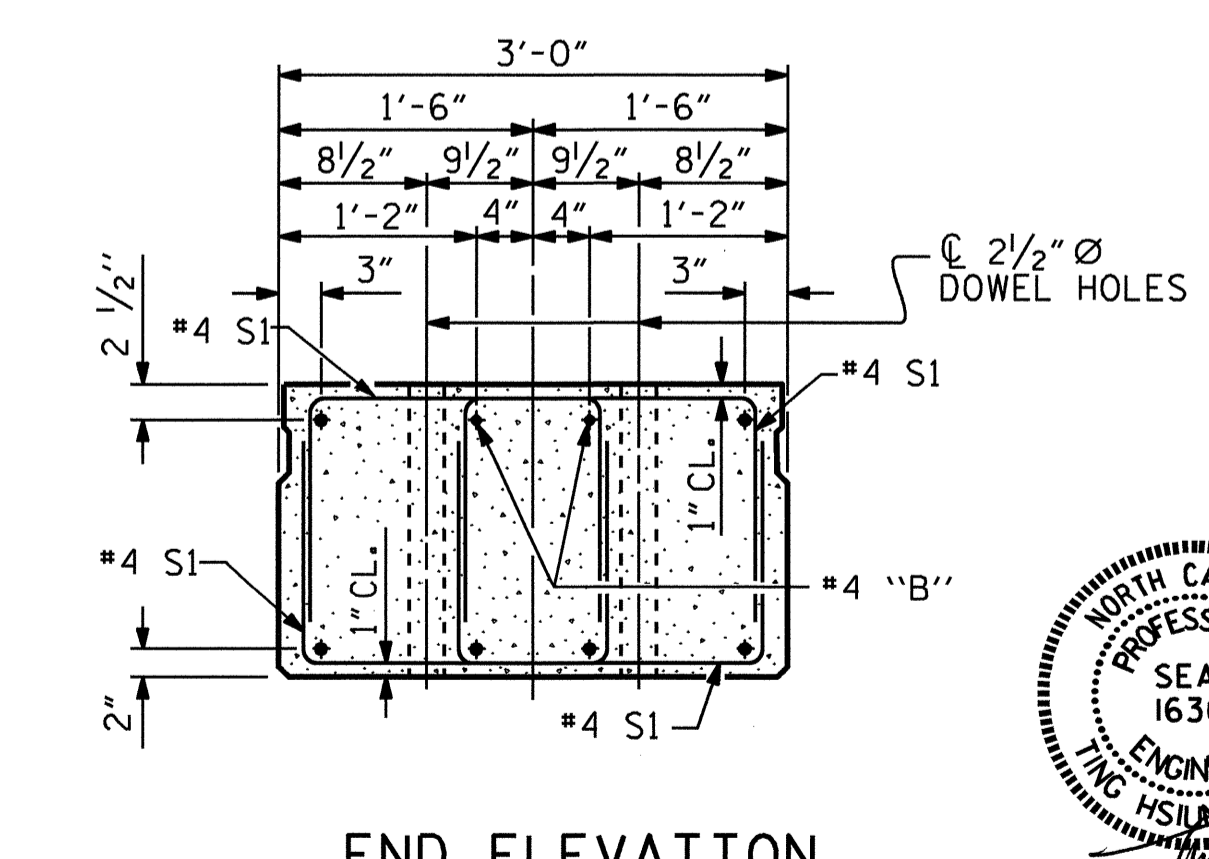
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



INTERIOR SLAB SECTION (16 STRANDS) (SPANS B & C)

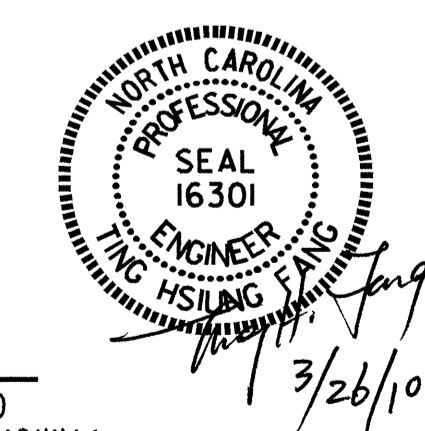


INTERIOR SLAB SECTION (13 STRANDS) (SPANS A, D & E)



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-4641
SCOTLAND COUNTY
STATION: 15+97.50 -L-

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

ASSEMBLED BY: Z. H. BROWN DATE: 6/26/08
CHECKED BY: T. H. FANG DATE: 12/07/09

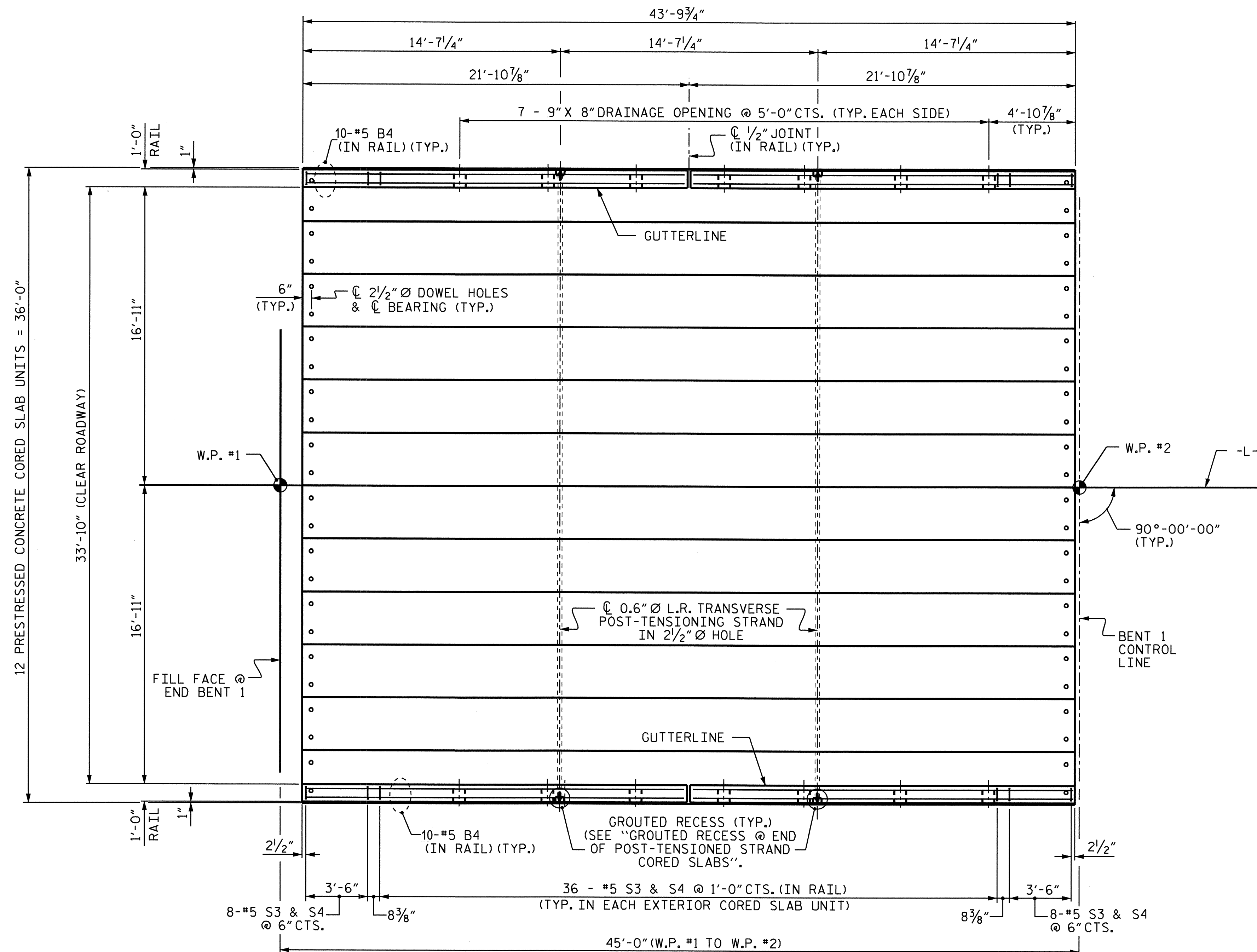
DRAWN BY: WJH 4/89 REV. 10/17/00 RWW/LES
CHECKED BY: FCJ 5/89 REV. 7/10/01RR RWW/LES
REV. 5/1/06 REV. 5/1/06 TLA/GM

0.6" Ø LOW RELAXATION STRAND LAYOUT

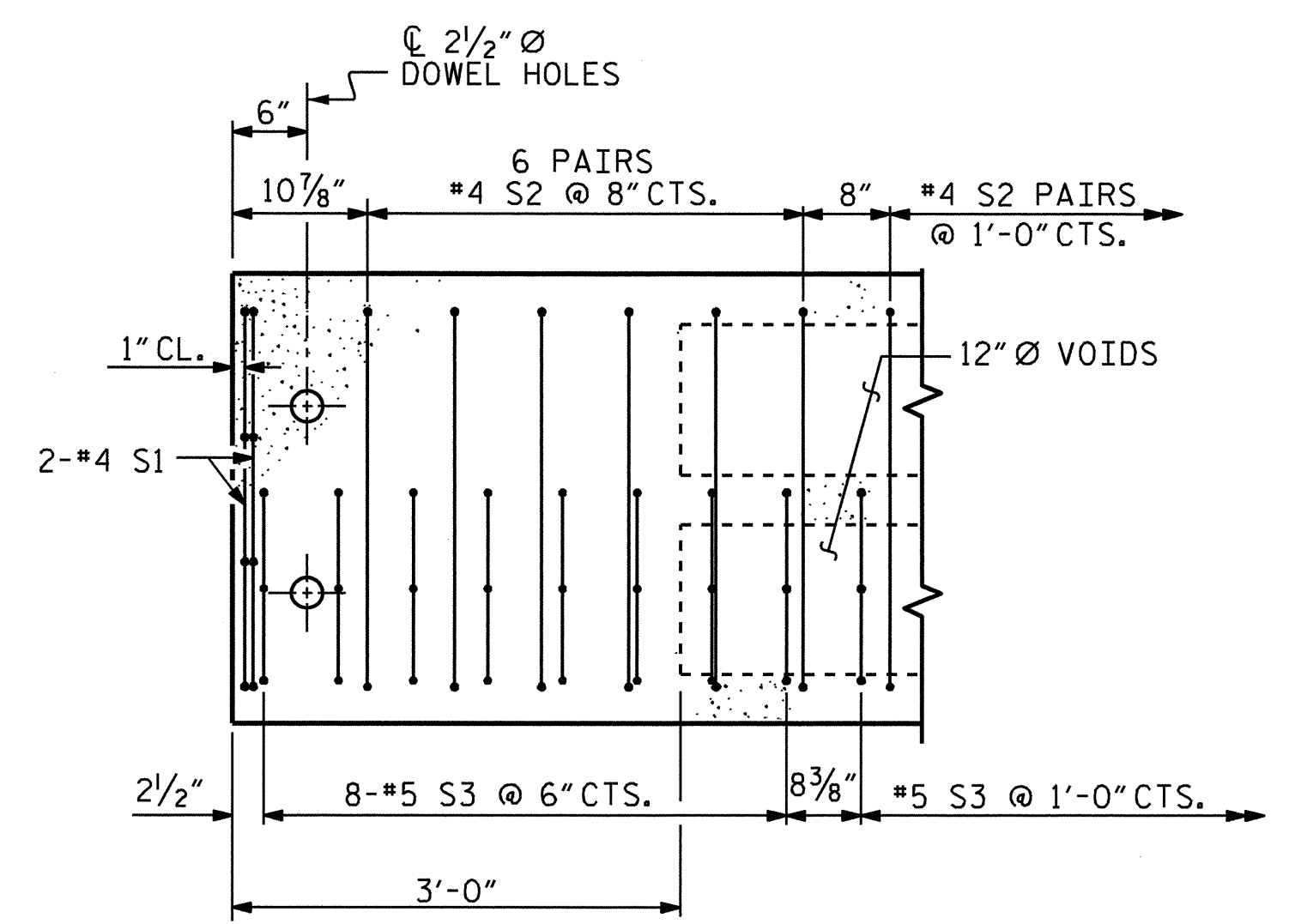
□ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF CORED SLAB UNIT, SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.

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

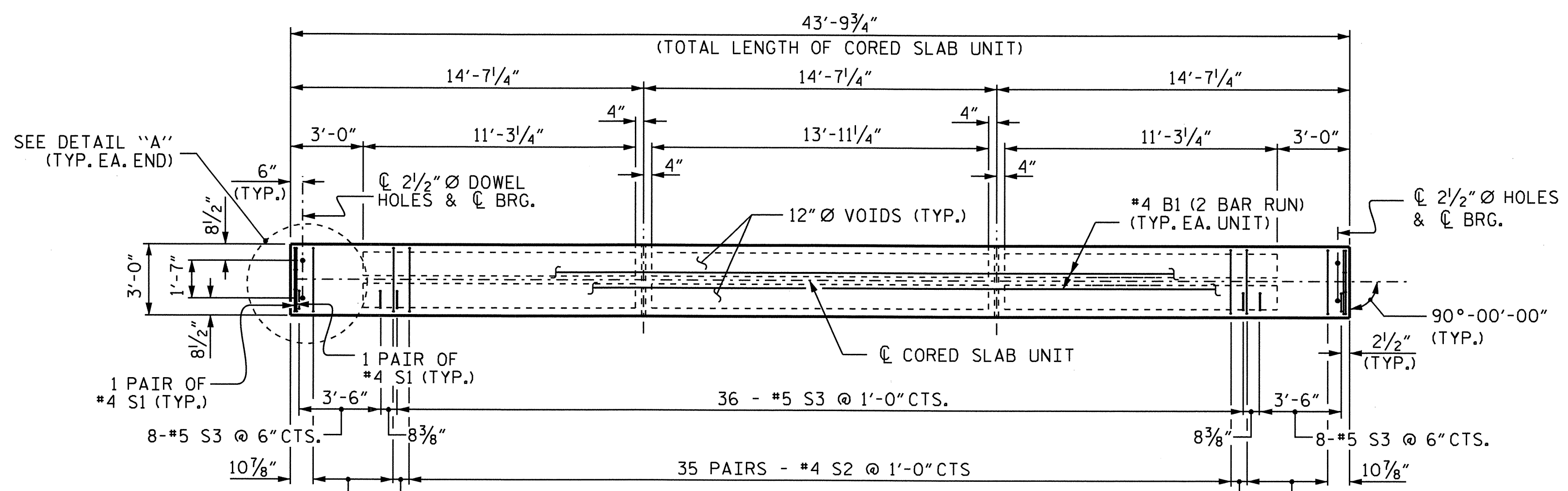
TOTAL SHEETS: 25



PLAN OF SPAN A



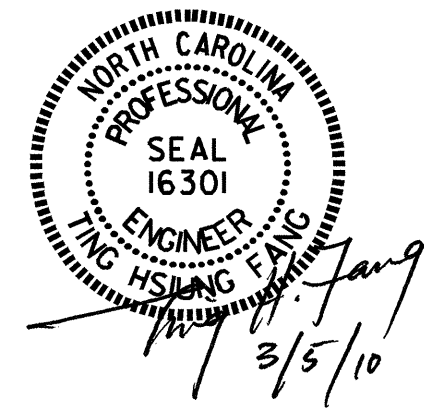
DETAIL "A"
PART PLAN-EXTERIOR SECTION
NOTE: EXTERIOR SECTION SHOWN-INTERIOR SECTION SIMILAR EXCEPT OMIT S3 BARS.



PLAN OF EXTERIOR CORED SLAB UNIT
PLAN FOR INTERIOR CORED SLAB IDENTICAL EXCEPT OMIT #5 S3 BARS.

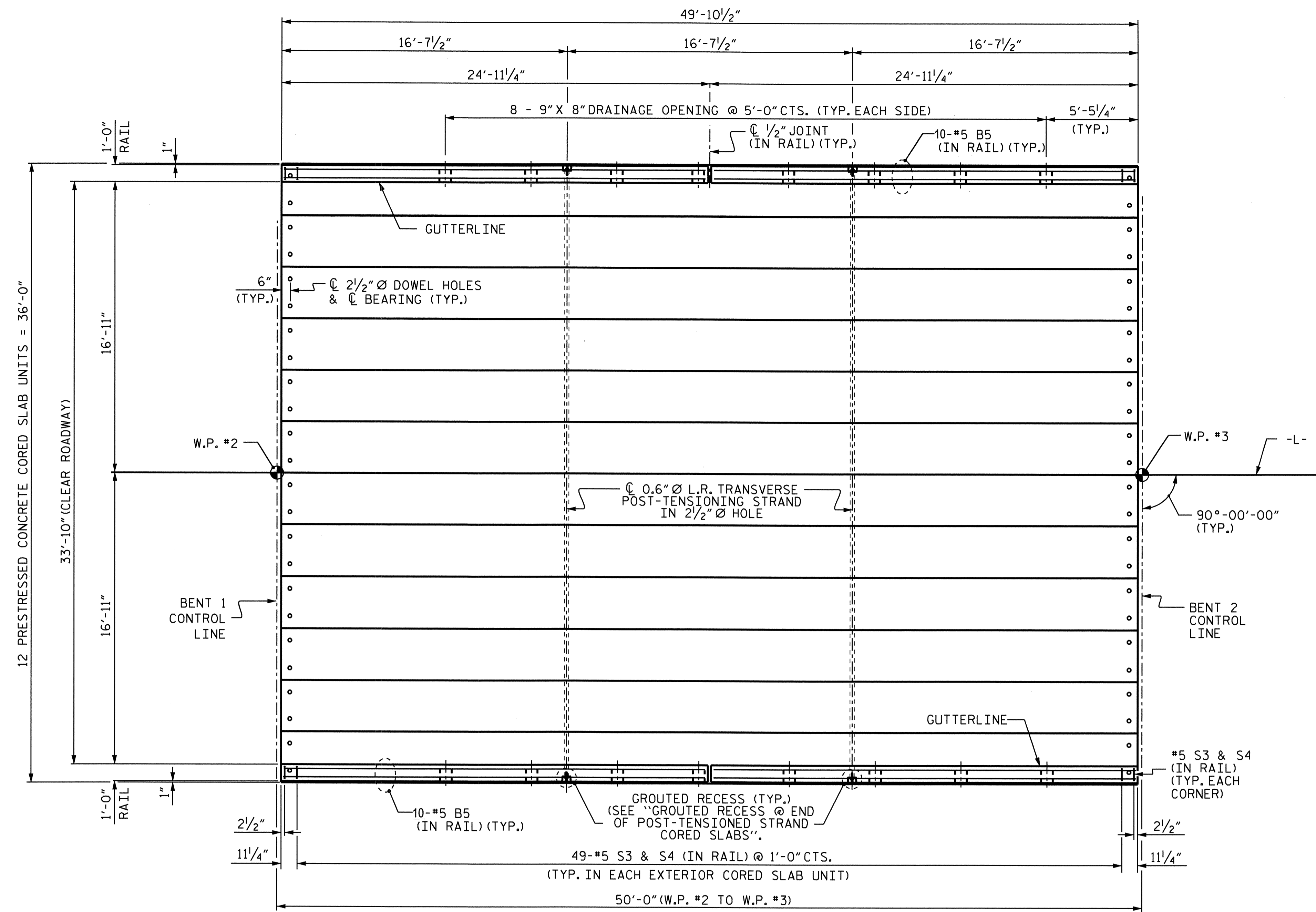
PROJECT NO. B-4641
SCOTLAND COUNTY
 STATION: 15+97.50 -L-
 SHEET 1 OF 5

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-6
SUPERSTRUCTURE						TOTAL SHEETS 25
PLAN OF SPAN SPAN A						
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

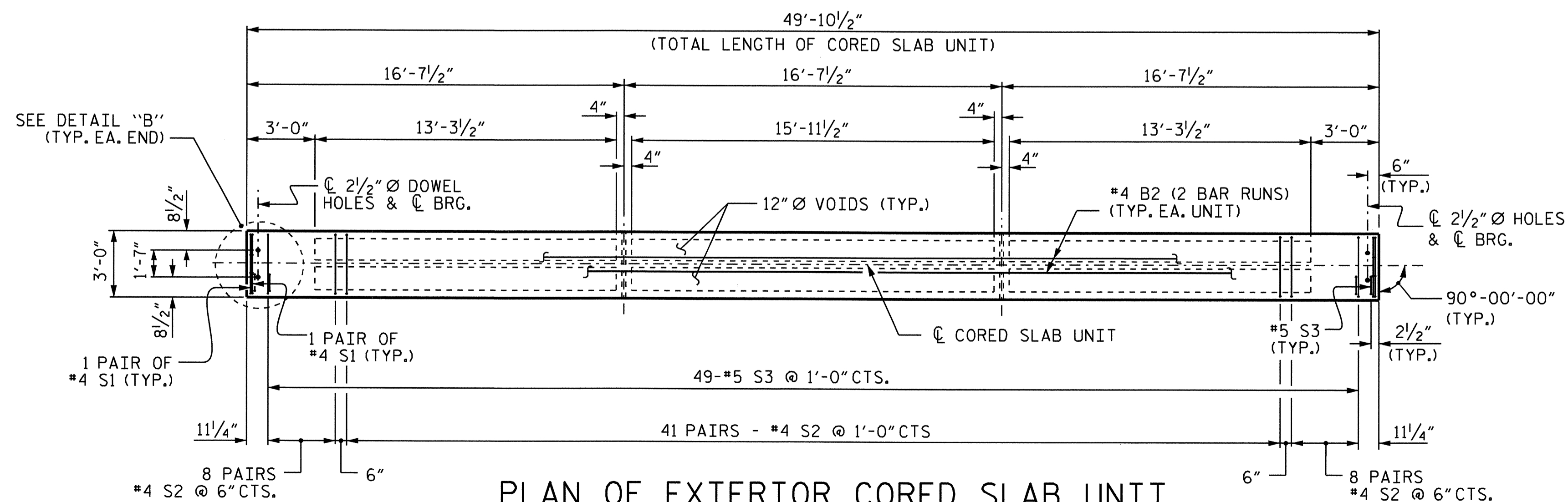


DRAWN BY : Z. H. BROWN DATE : 6/26/08
 CHECKED BY : T. H. FANG DATE : 11/16/09

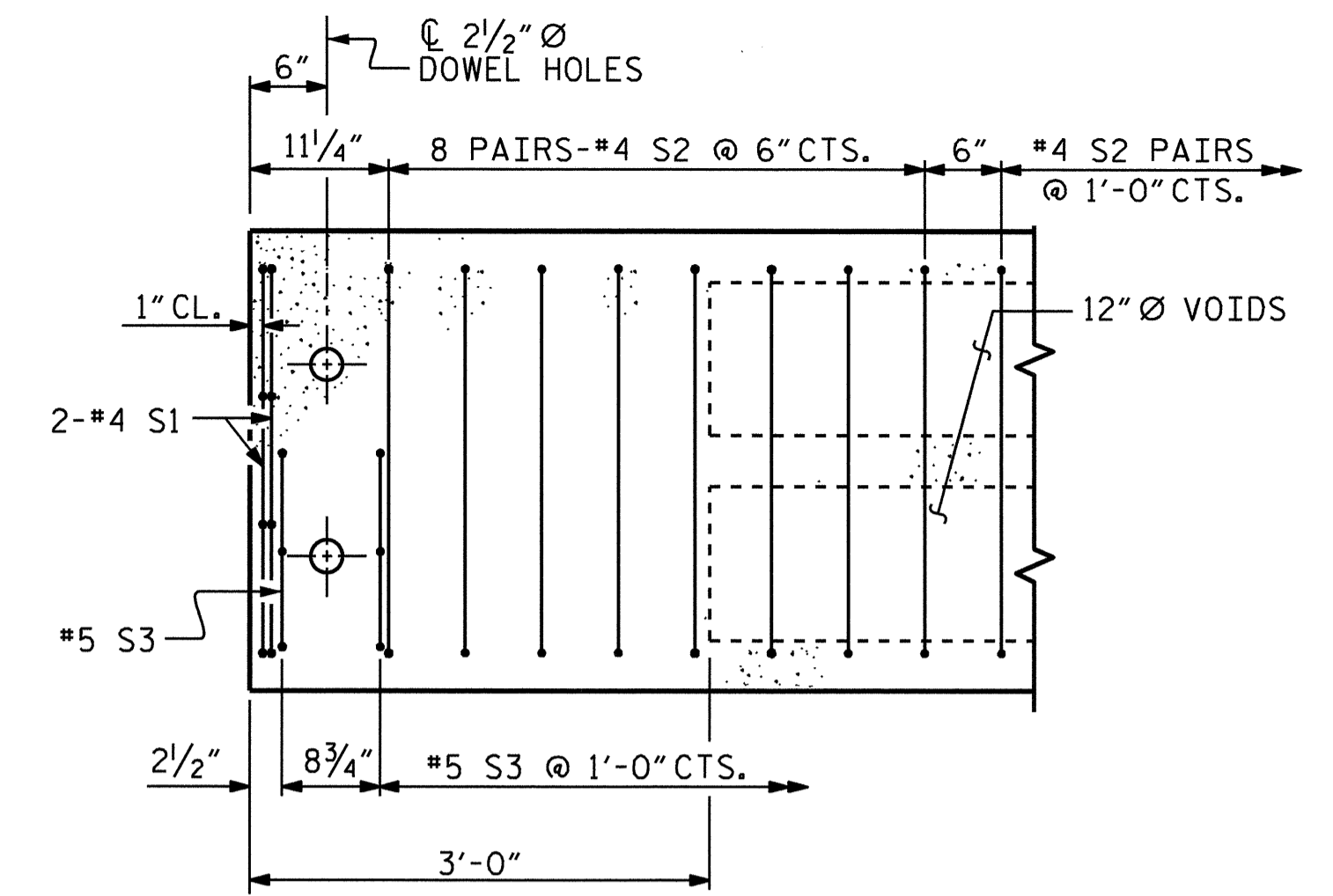
04-MAR-2010 15:27
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 sdbrowski



PLAN OF SPAN B



PLAN OF EXTERIOR CORED SLAB UNIT
 PLAN FOR INTERIOR CORED SLAB IDENTICAL EXCEPT OMIT #5 S3 BARS



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

DRAWN BY : Z. H. BROWN DATE : 6/26/08
 CHECKED BY : T. H. FANG DATE : 11/16/09

04-MAR-2010 15:27
 N:\Structures\Final Plans\B-4641.sd.cs.dgn
 sdombrowski

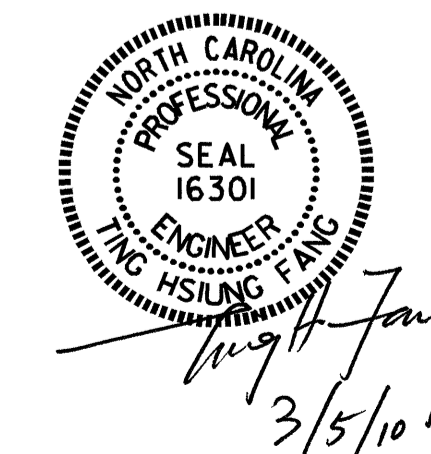
PROJECT NO. B-4641
 SCOTLAND COUNTY
 STATION: 15+97.50 -L-

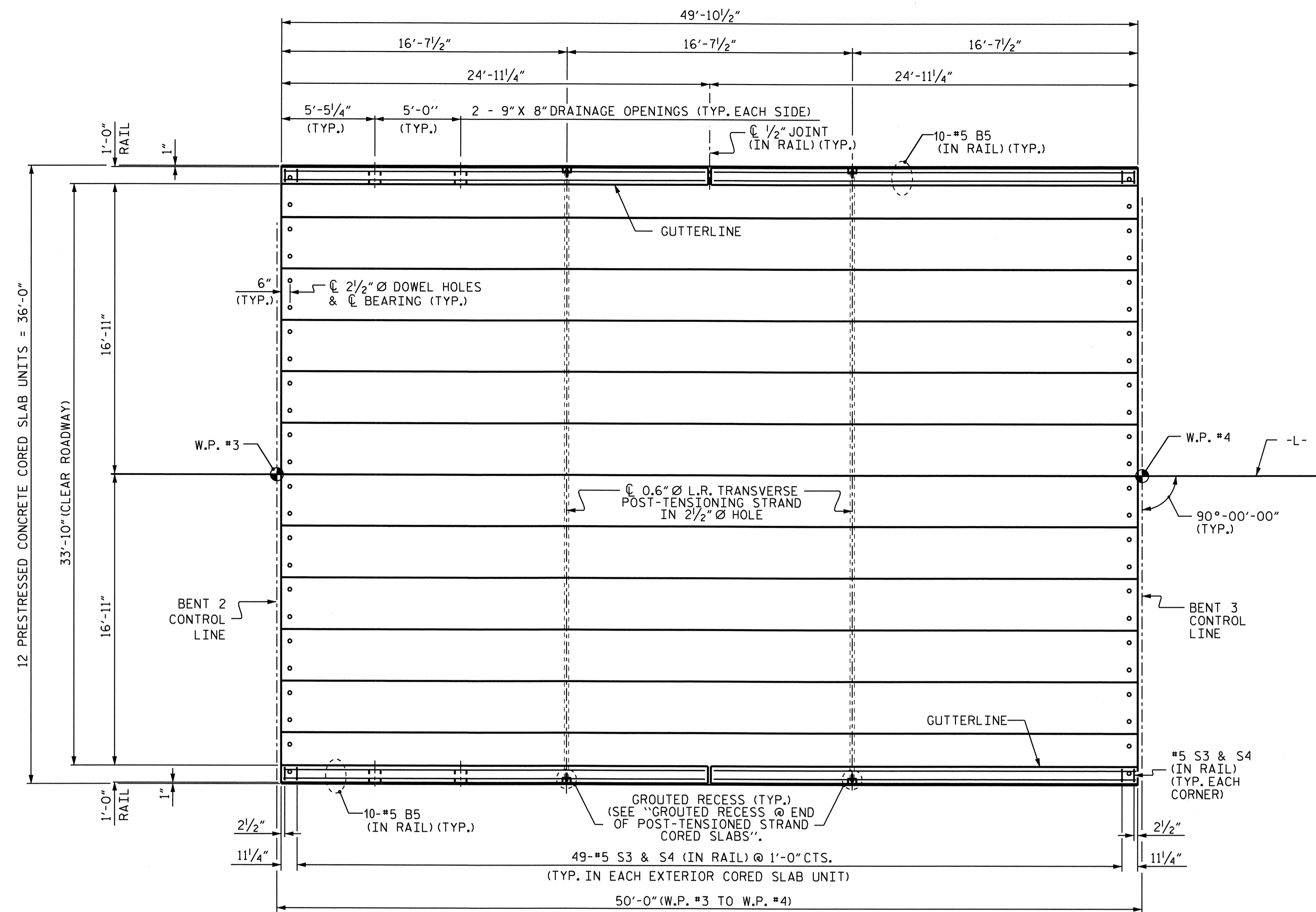
SHEET 2 OF 5

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

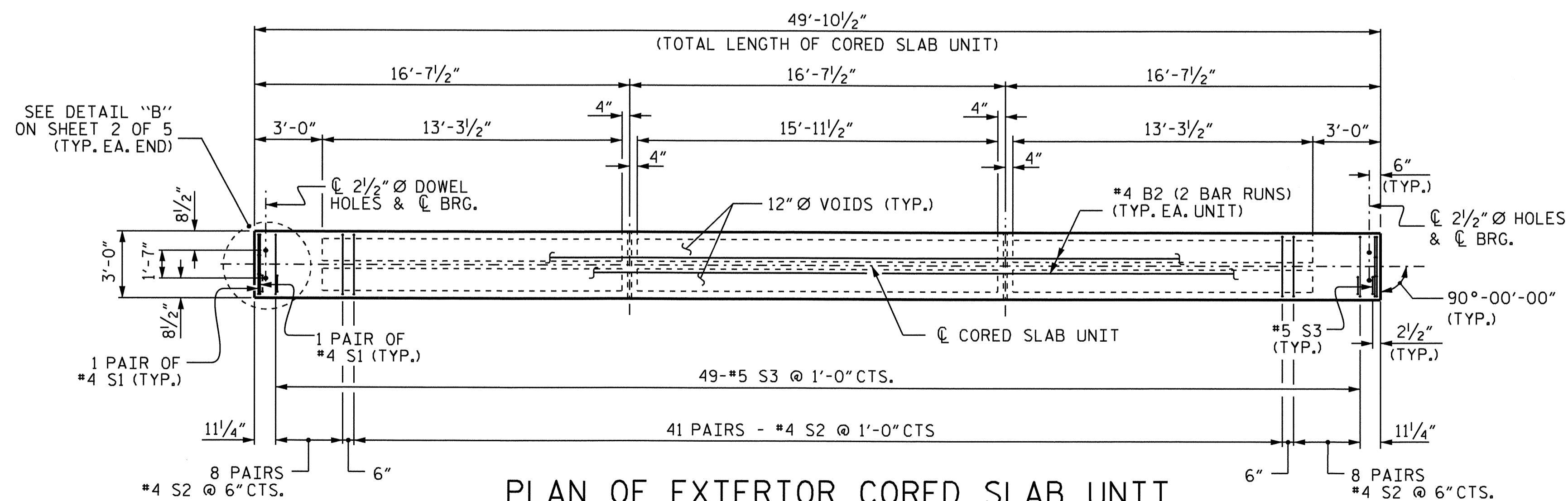
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 25





PLAN OF SPAN C

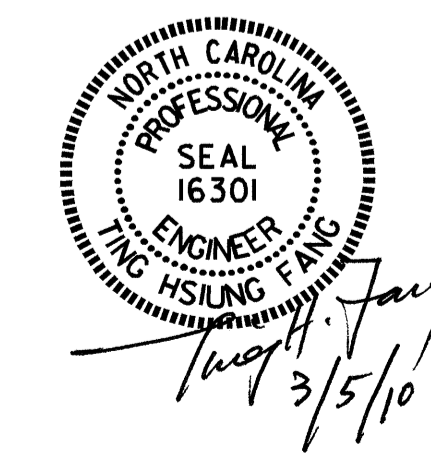


PLAN OF EXTERIOR CORED SLAB UNIT
 PLAN FOR INTERIOR CORED SLAB IDENTICAL EXCEPT OMIT #5 S3 BARS

PROJECT NO. B-4641
SCOTLAND COUNTY
 STATION: 15+97.50 -L-

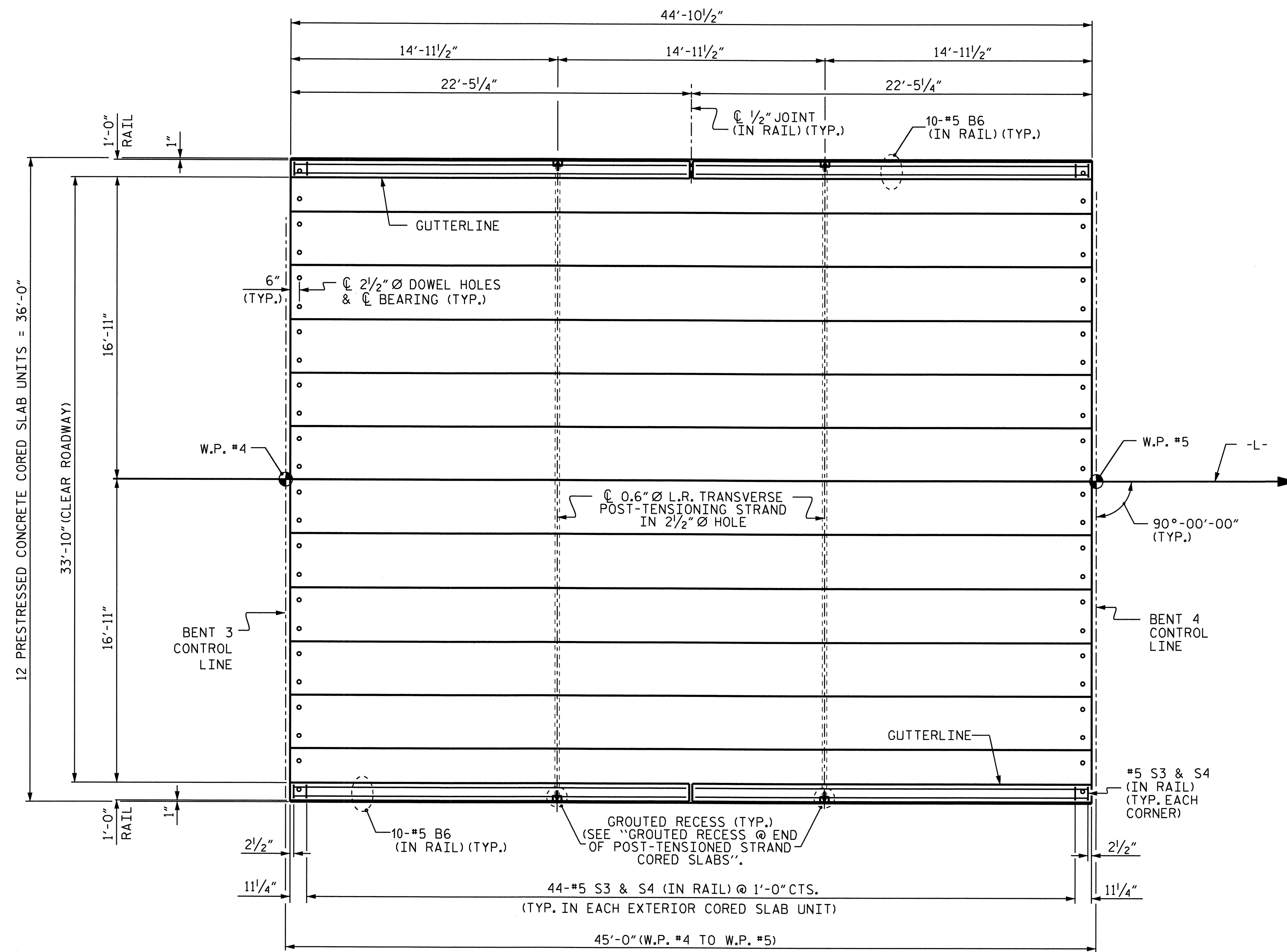
SHEET 3 OF 5

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

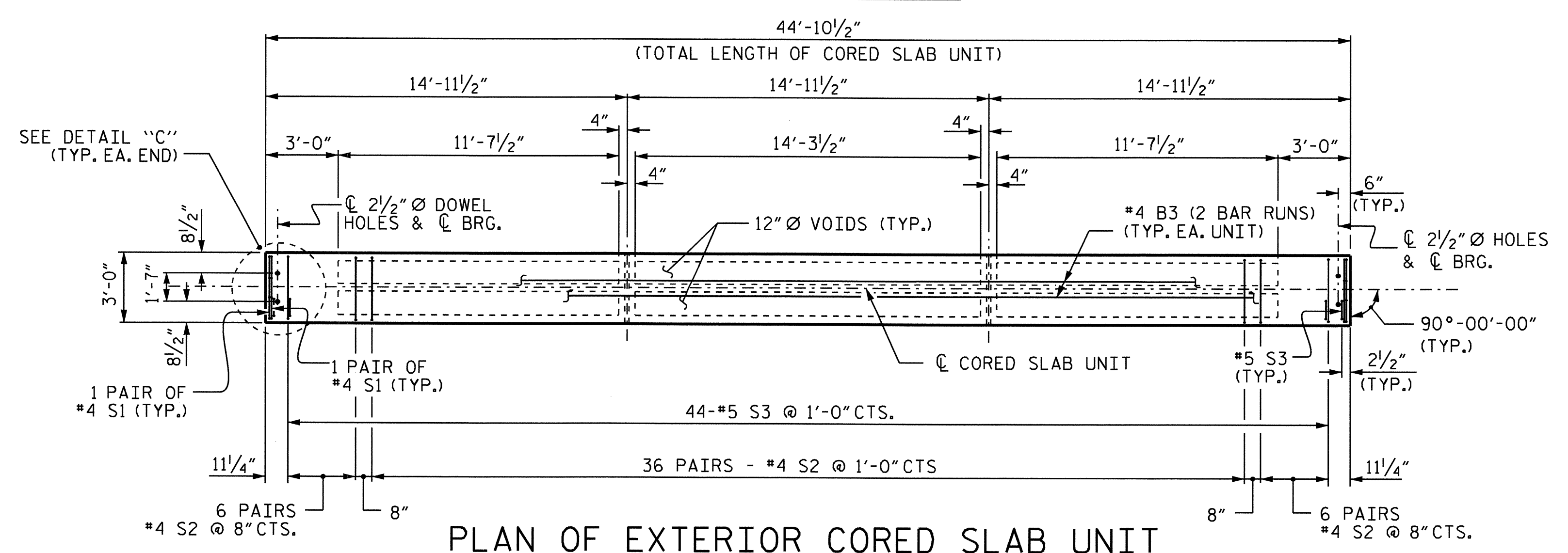


DRAWN BY : Z. H. BROWN DATE : 6/26/08
 CHECKED BY : T. H. FANG DATE : 11/16/09

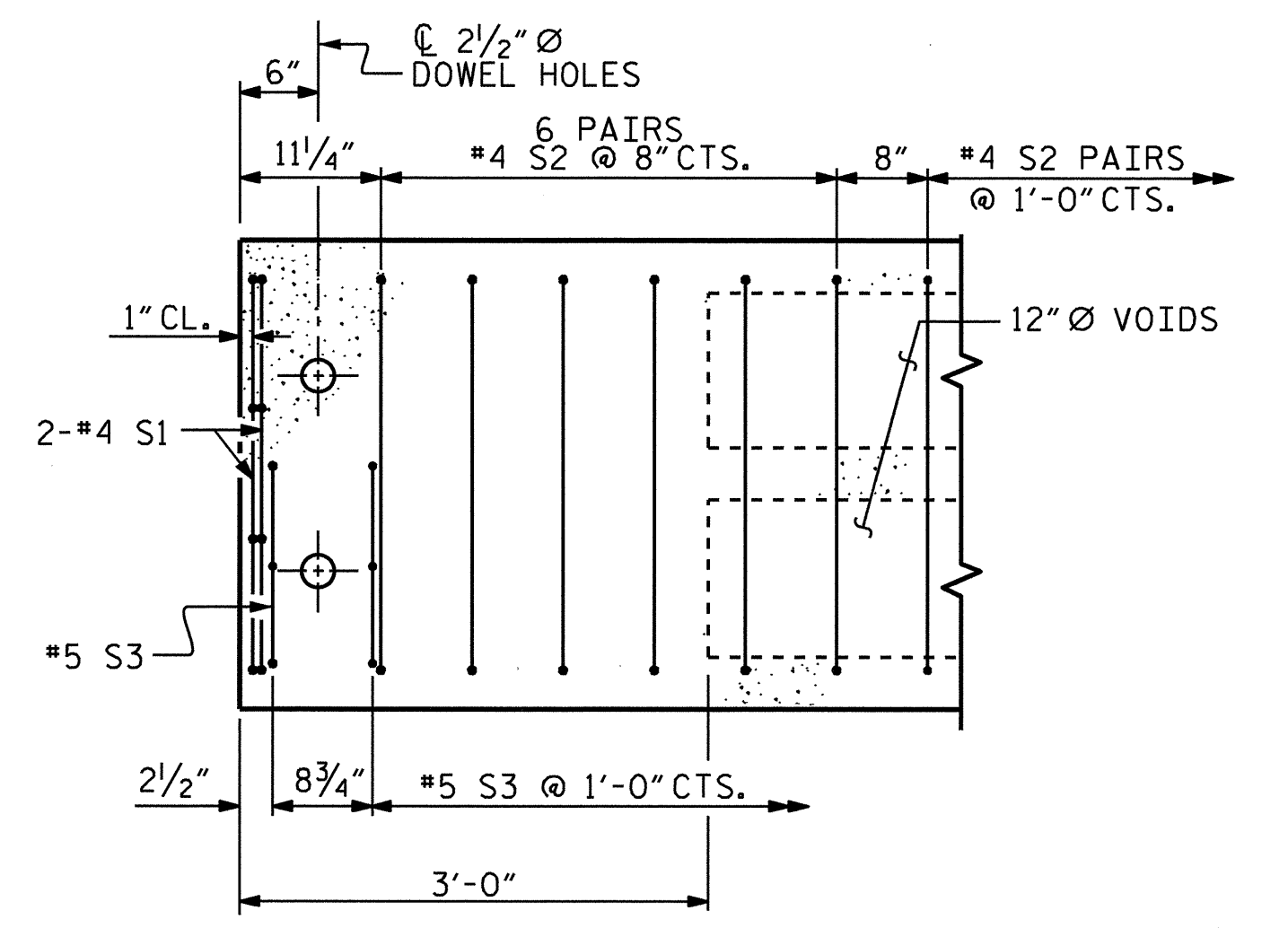
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-B
1			3			TOTAL SHEETS
2			4			25



PLAN OF SPAN D



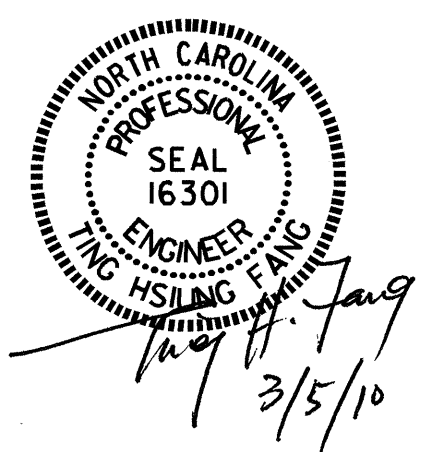
PLAN OF EXTERIOR CORED SLAB UNIT
 PLAN FOR INTERIOR CORED SLAB IDENTICAL EXCEPT OMIT #5 S3 BARS



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

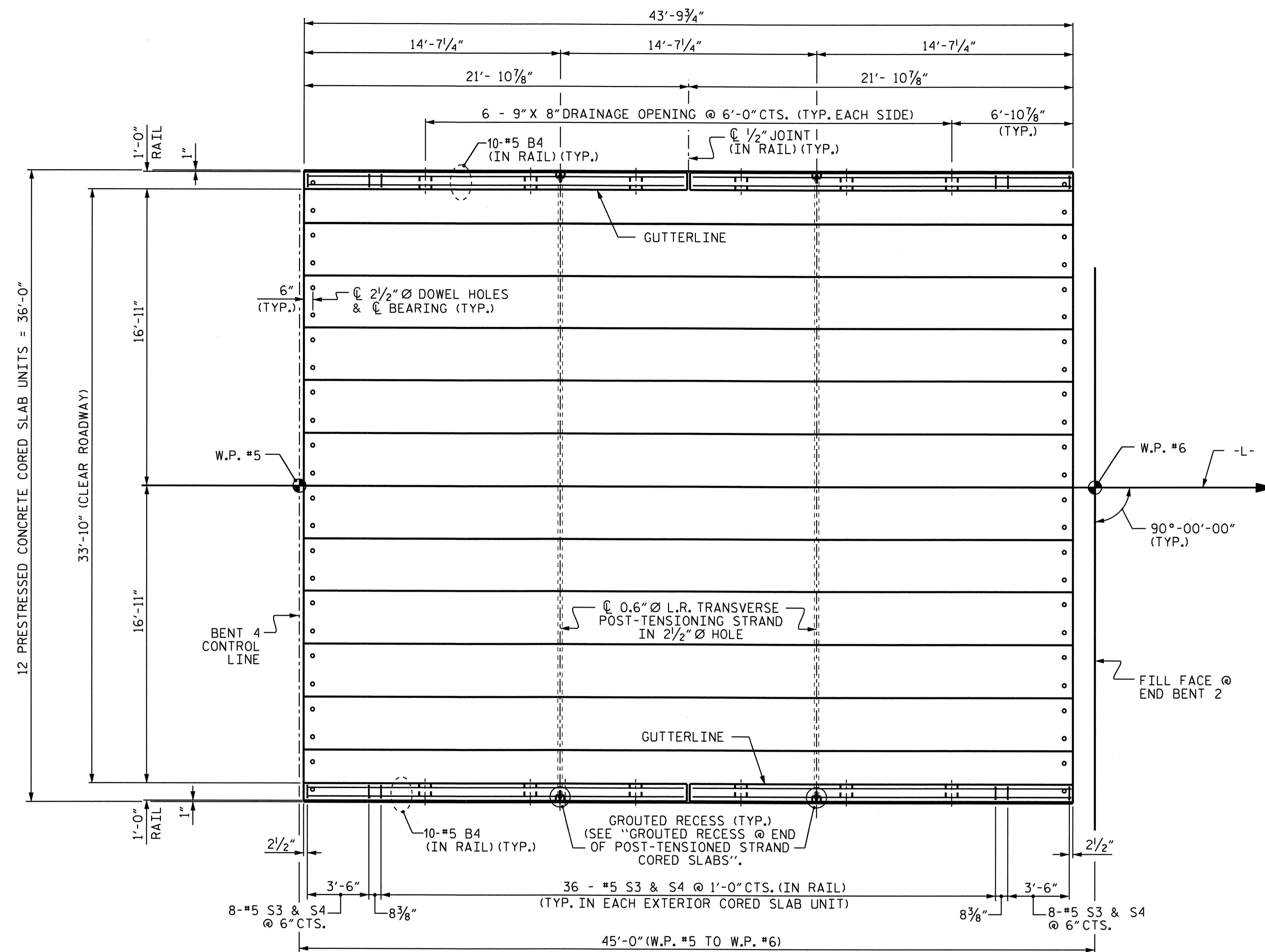
PROJECT NO. B-4641
SCOTLAND COUNTY
 STATION: 15+97.50 -L-
 SHEET 4 OF 5

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

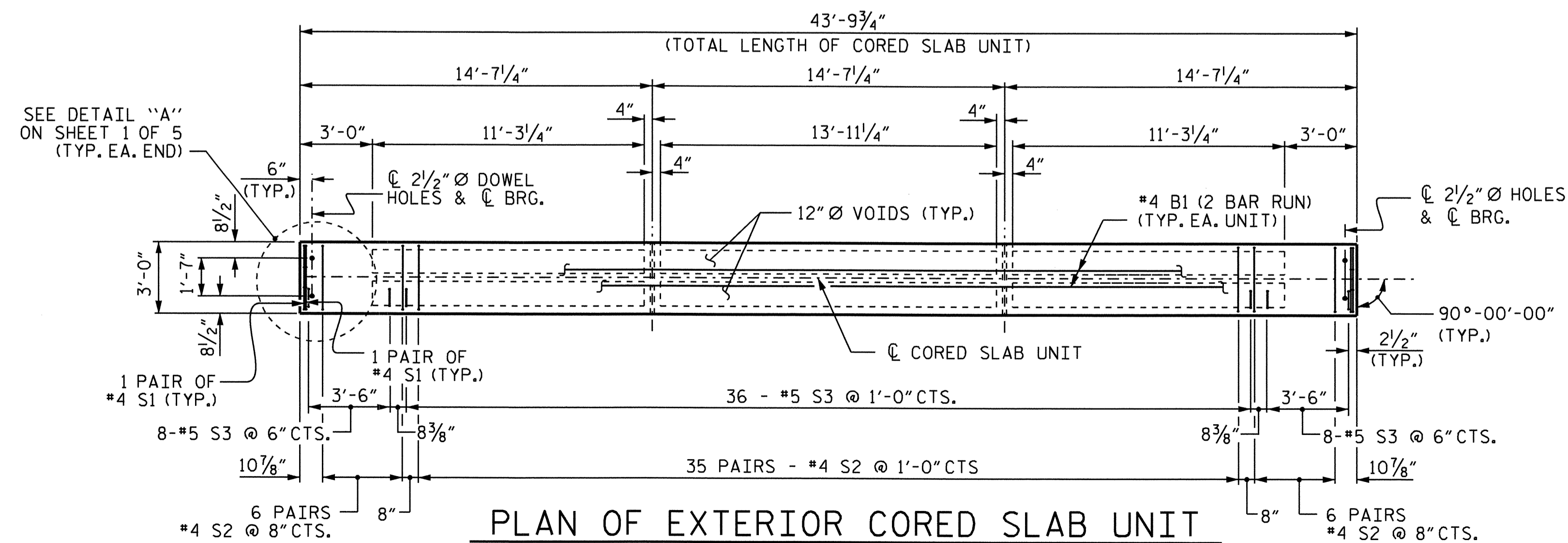


DRAWN BY: Z. H. BROWN DATE: 6/26/08
 CHECKED BY: T. H. FANG DATE: 11/16/09

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			25



PLAN OF SPAN E



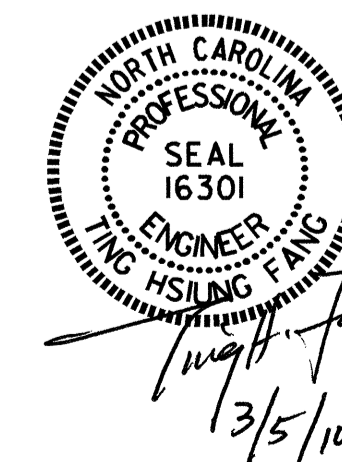
PLAN OF EXTERIOR CORED SLAB UNIT

PLAN FOR INTERIOR CORED SLAB IDENTICAL EXCEPT OMIT #5 S3 BARS.

PROJECT NO. B-4641
SCOTLAND COUNTY
 STATION: 15+97.50 -L-

SHEET 5 OF 5

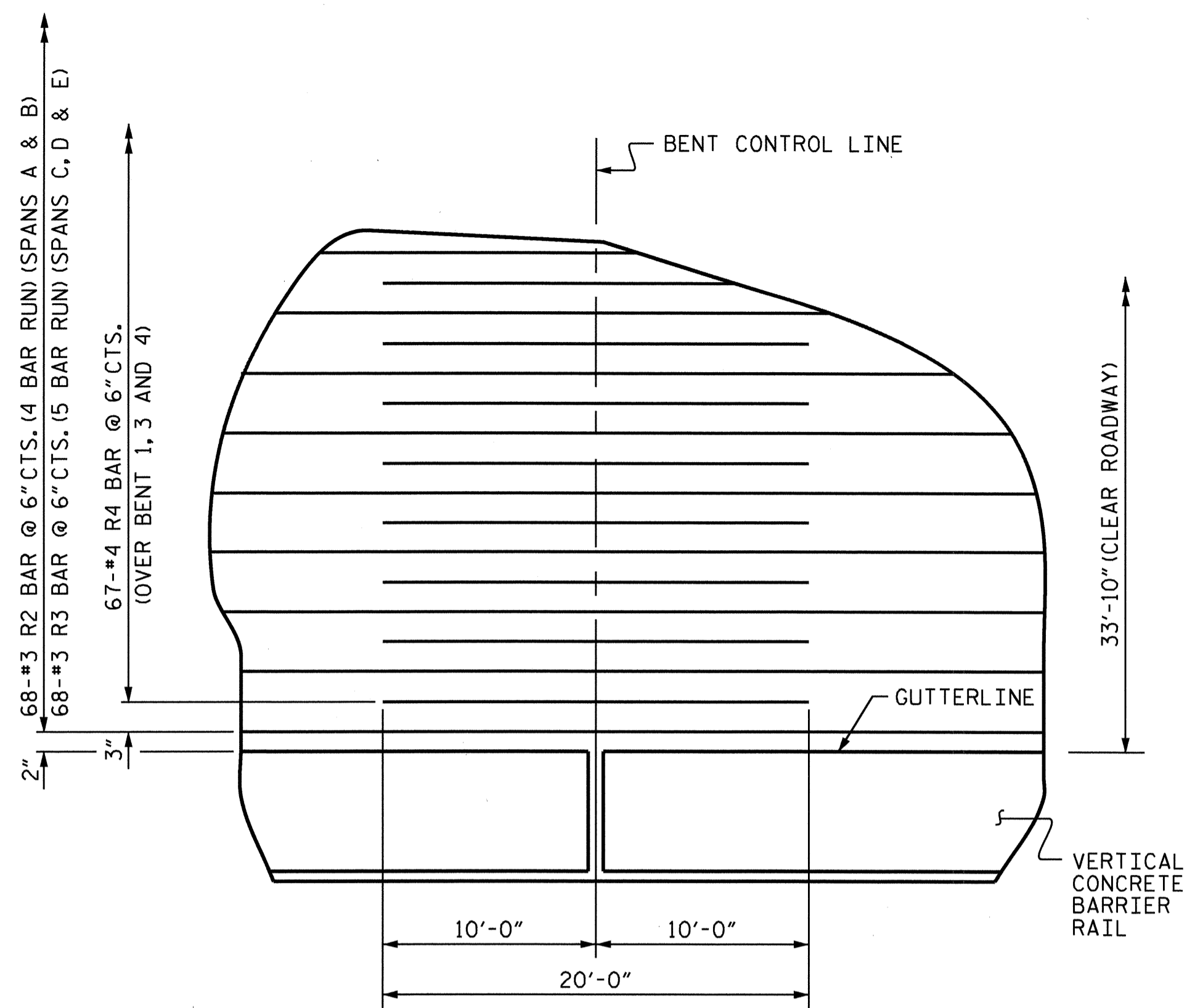
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN
 SPAN E



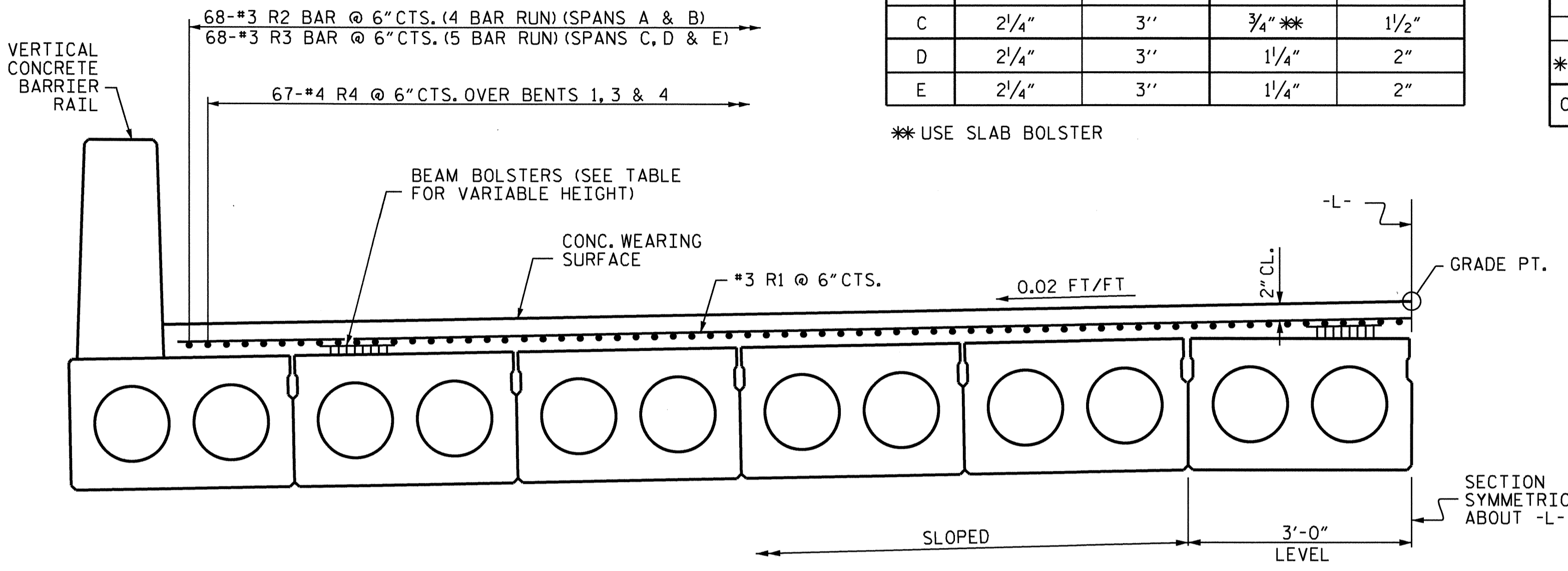
DRAWN BY: Z. H. BROWN DATE: 6/26/08
 CHECKED BY: T. H. FANG DATE: 11/16/09

04-MAR-2010 15:27
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			25



PLAN @ BENTS 1, 3 & 4
R1 BARS NOT SHOWN FOR CLARITY.



REINFORCING STEEL AND BEAM BOLSTER HEIGHTS

NOTE: BEAM AND SLAB BOLSTER HEIGHTS BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATION AND VARY BETWEEN \bar{C} BEARING AND MID-SPAN FOR ALL SPANS.

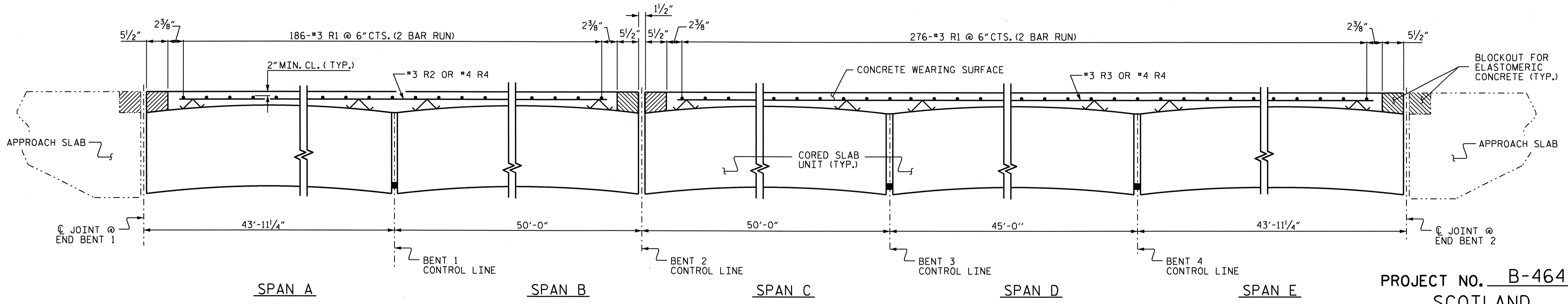
BEAM BOLSTER HEIGHT				
SPAN	AT \bar{C} BEARINGS		AT MID-SPAN	
	GUTTERS	GRADE PT.	GUTTERS	GRADE PT.
A	2 1/4"	3"	1 1/4"	2"
B	2 1/4"	3"	3/4" **	1 1/2"
C	2 1/4"	3"	3/4" **	1 1/2"
D	2 1/4"	3"	1 1/4"	2"
E	2 1/4"	3"	1 1/4"	2"

** USE SLAB BOLSTER

BILL OF MATERIAL					
CONCRETE WEARING SURFACE					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*R1	924	#3	STR	17'-5"	6051
*R2	272	#3	STR	24'-1"	2463
*R3	340	#3	STR	28'-7"	3654
*R4	201	#4	STR	20'-0"	2685

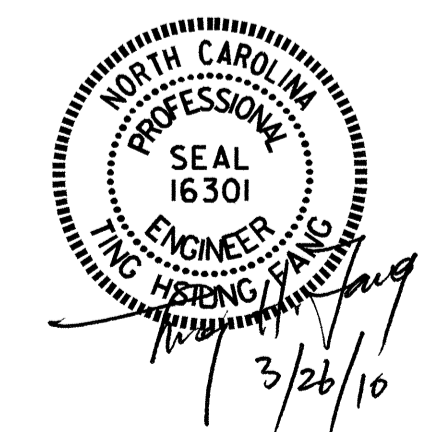
* EPOXY COATED REINF. STEEL = 14,853 LBS
CONCRETE WEARING SURFACE = 7,870 SQ. FT.

SPLICE LENGTH CHART	
BAR SIZE	EPOXY COATED
#3	1'-3"



ELEVATION OF THE CONCRETE WEARING SURFACE

NOTES:
 PLACEMENT OF THE CONCRETE WEARING SURFACE SHALL OCCUR AFTER CASTING THE VERTICAL CONCRETE BARRIER RAILS. THE COST OF THE REINFORCING STEEL 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.
 ALL REINFORCING FOR THE CONCRETE WEARING SURFACE SHALL BE EPOXY COATED.
 FOR ELASTOMERIC CONCRETE, SEE "BRIDGE APPROACH SLAB DETAILS" SHEET.



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 SCOTLAND COUNTY
 STATION: 15+97.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE

CONCRETE WEARING SURFACE DETAILS

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11	
1			3			TOTAL SHEETS 25	
2			4				

DRAWN BY: Z. H. BROWN DATE: 7/2/08
 CHECKED BY: T. H. FANG DATE: 11/16/09

NOTES

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

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

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 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.

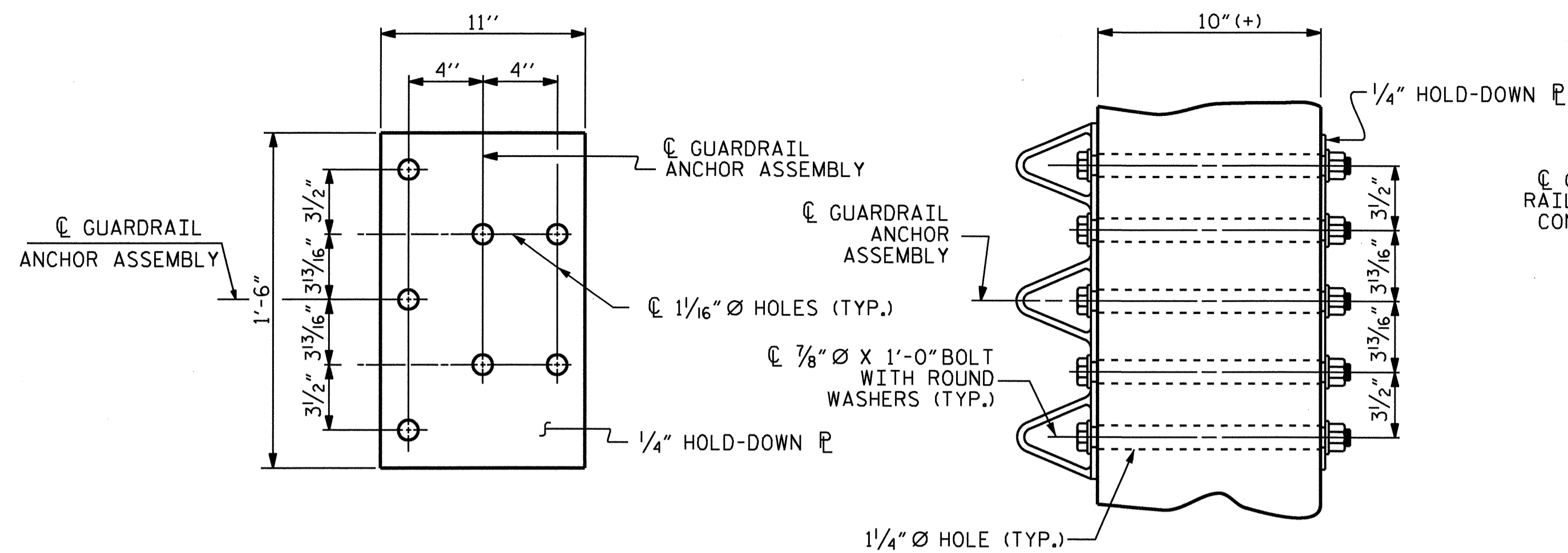
AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

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

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

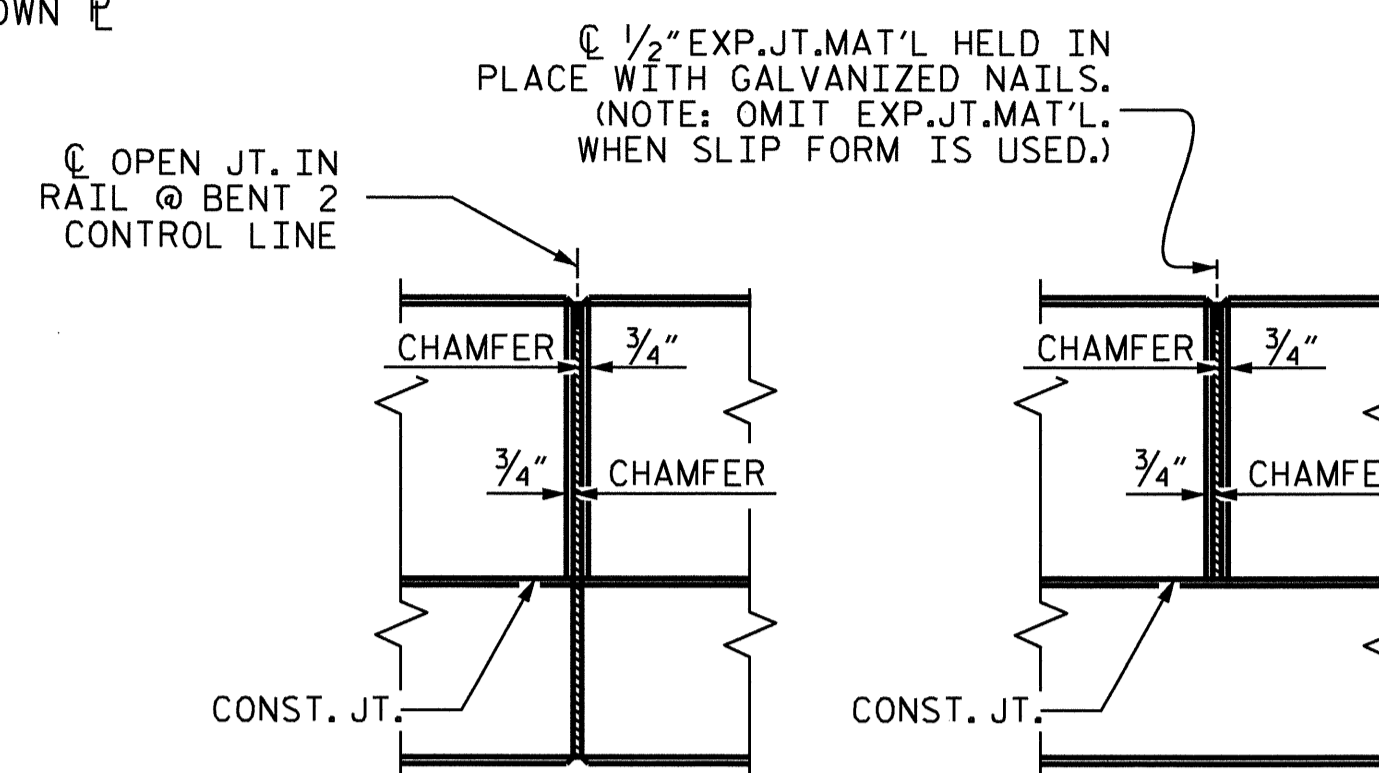
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

FOR VERTICAL CONCRETE BARRIER RAIL, SEE SPECIAL PROVISIONS.



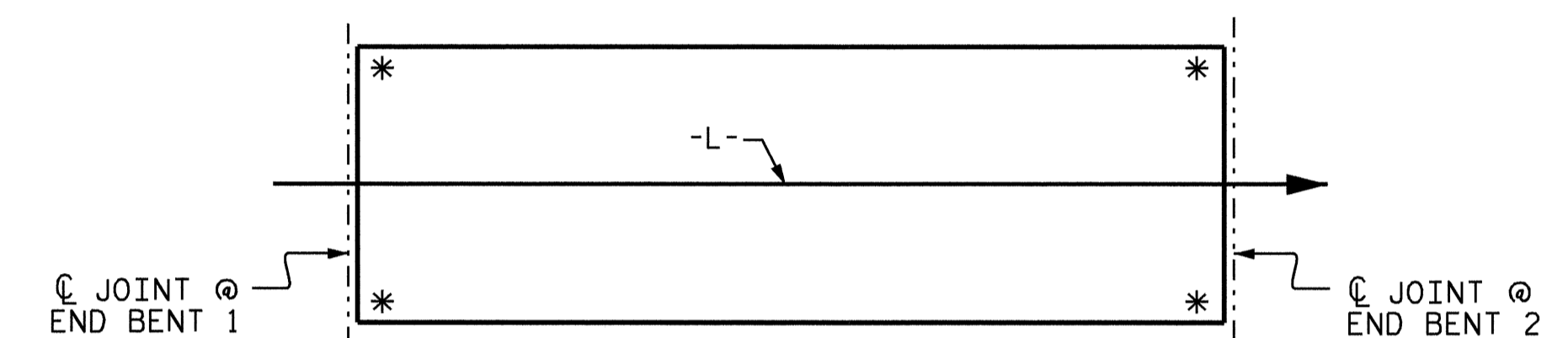
PLAN

END VIEW



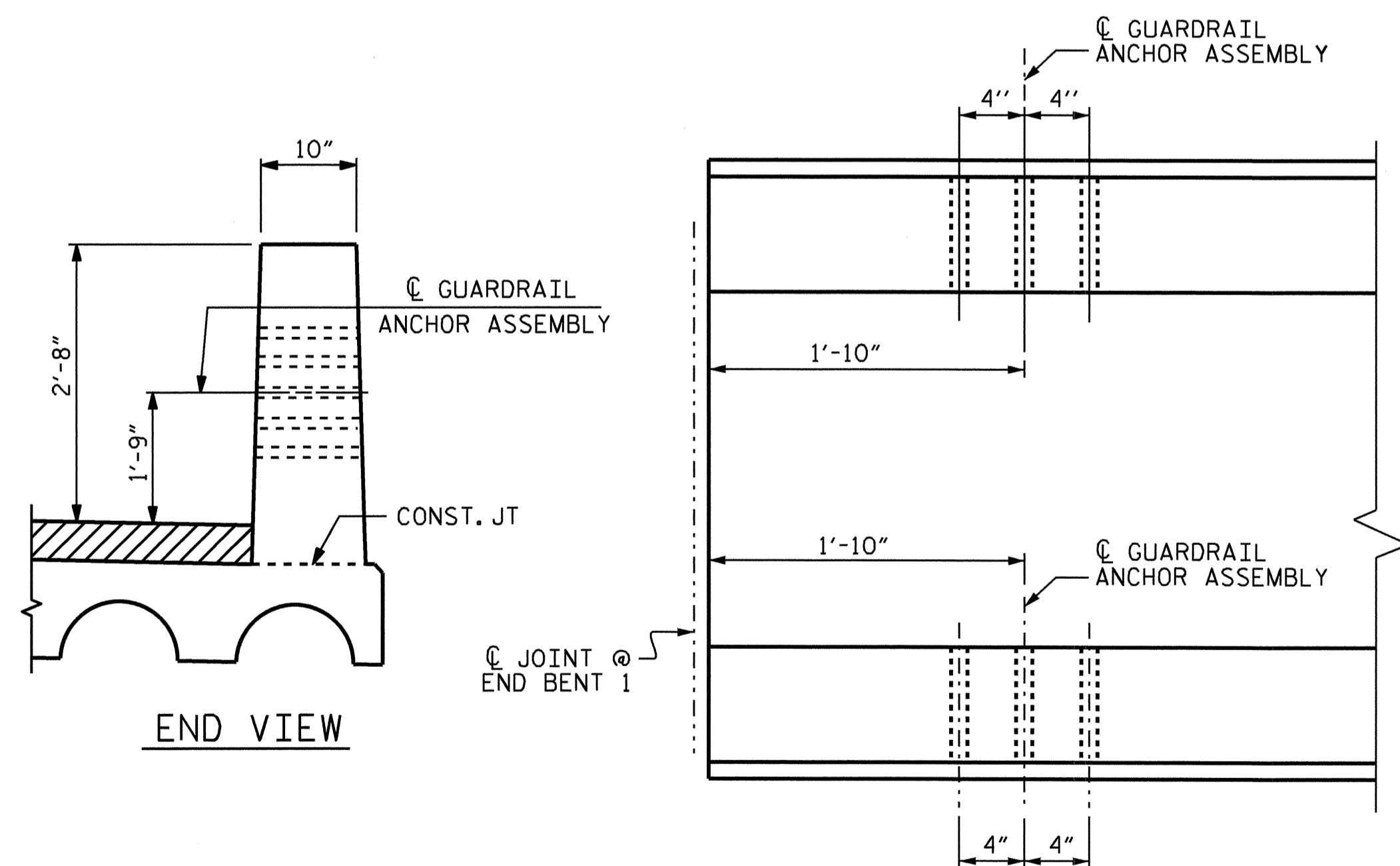
ELEVATION AT EXPANSION JOINTS

GUARDRAIL ANCHOR ASSEMBLY DETAILS



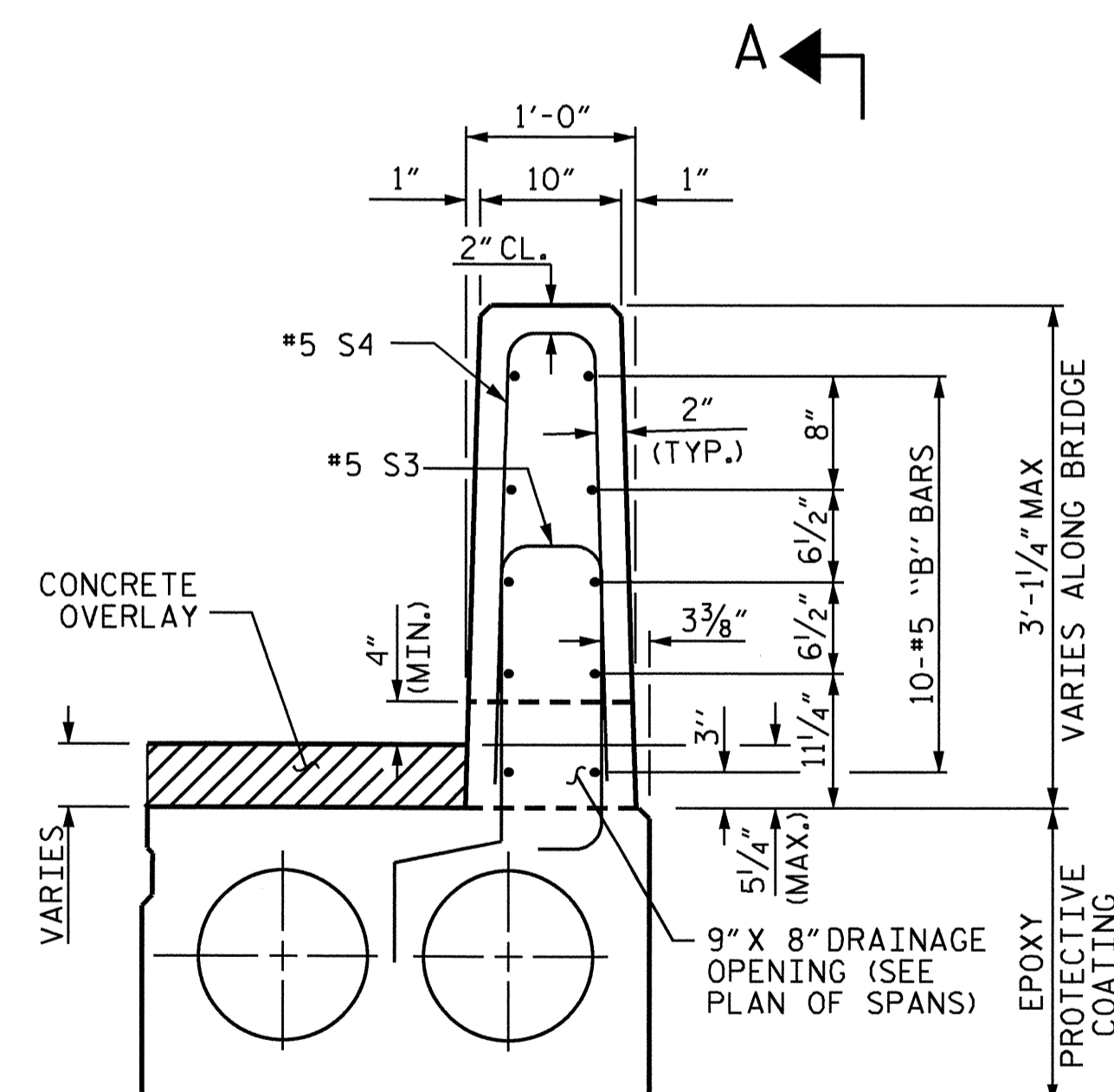
SKETCH SHOWING POINTS OF ATTACHMENT

* LOCATION OF GUARDRAIL ATTACHMENT

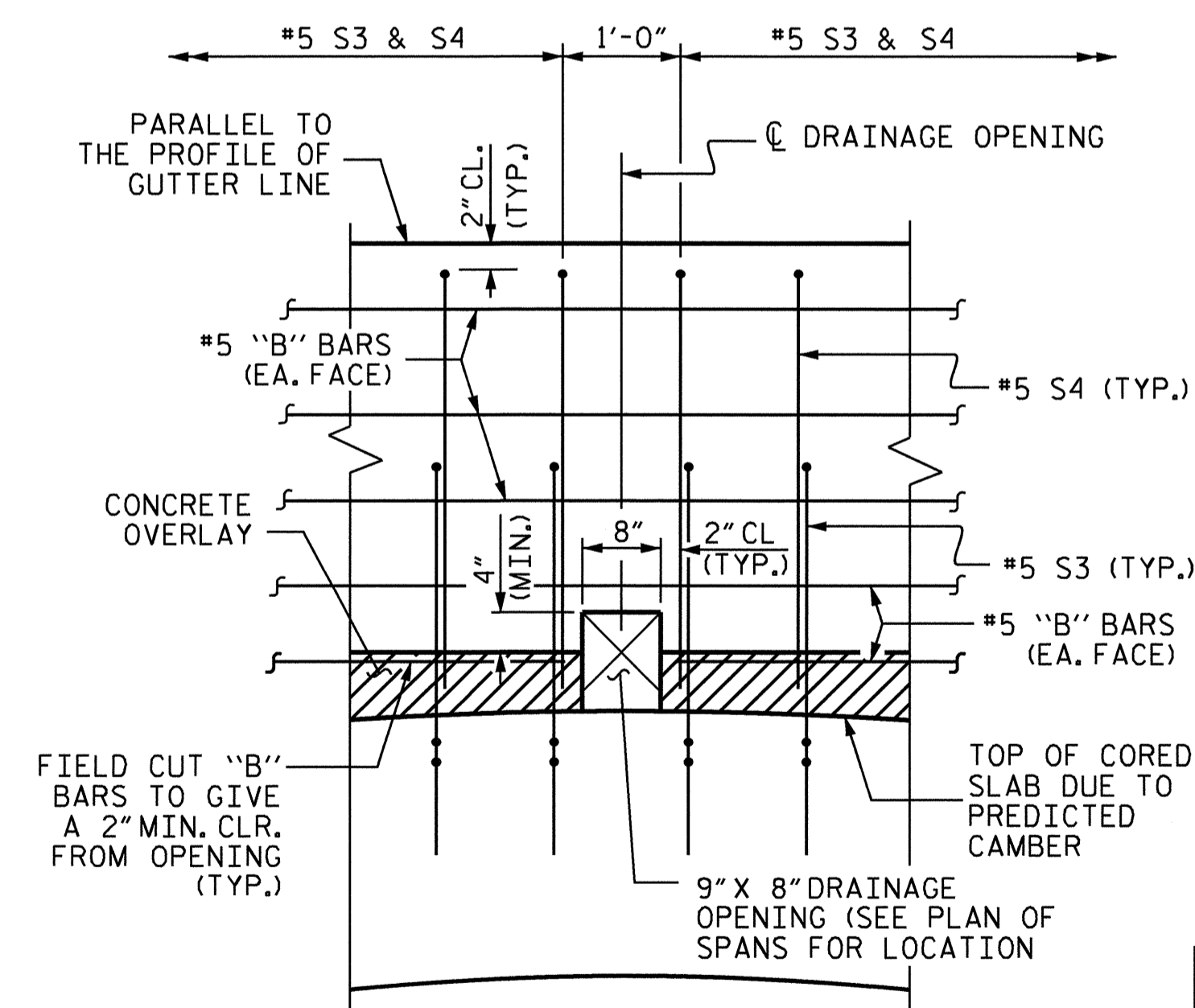


LOCATION OF GUARDRAIL ANCHOR

END BENT 1 SHOWN, END BENT 2 SIMILAR.



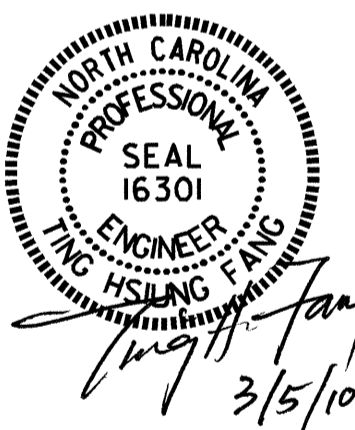
SECTION THRU RAIL WITH DRAINAGE OPENINGS



VIEW A-A

VERTICAL CONCRETE BARRIER RAIL DETAILS

FOR PLAN VIEW OF VERTICAL CONCRETE BARRIER RAIL, SEE "PLAN OF SPAN" SHEETS.



PROJECT NO. B-4641
SCOTLAND COUNTY
STATION: 15+97.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

VERTICAL CONCRETE BARRIER RAIL AND GUARDRAIL ANCHORAGE DETAILS

ASSEMBLED BY :	S. DOMBROWSKI	DATE:	3/3/09
CHECKED BY :	E.C. LOCKLEAR	DATE:	5/21/09
DRAWN BY :	EEM 6/94	REV. 8/16/99	RWW/LES
CHECKED BY :	RGW 6/94	REV. 10/17/00	RWW/LES
		REV. 5/7/03	RWW/JTE

REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					25

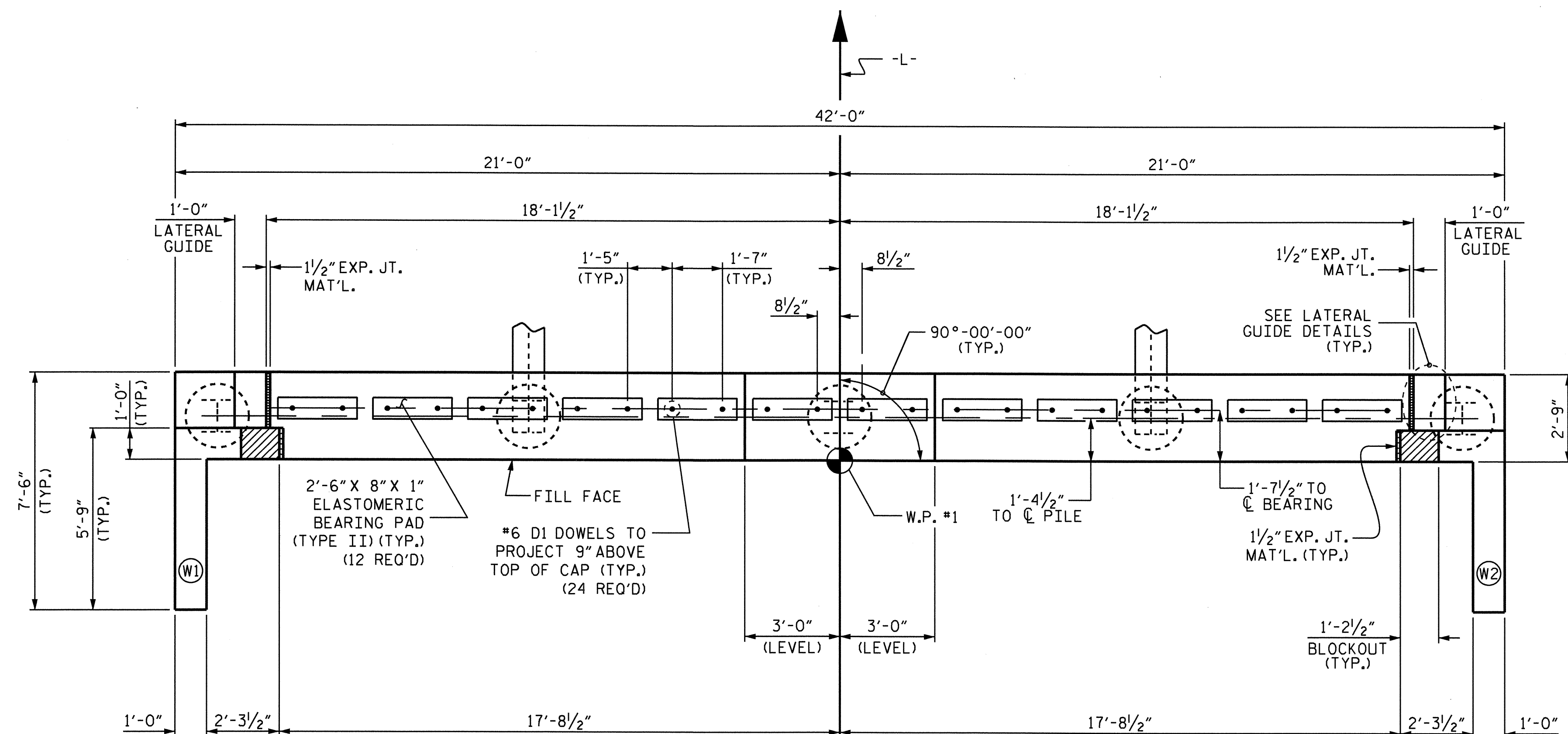
NOTES

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

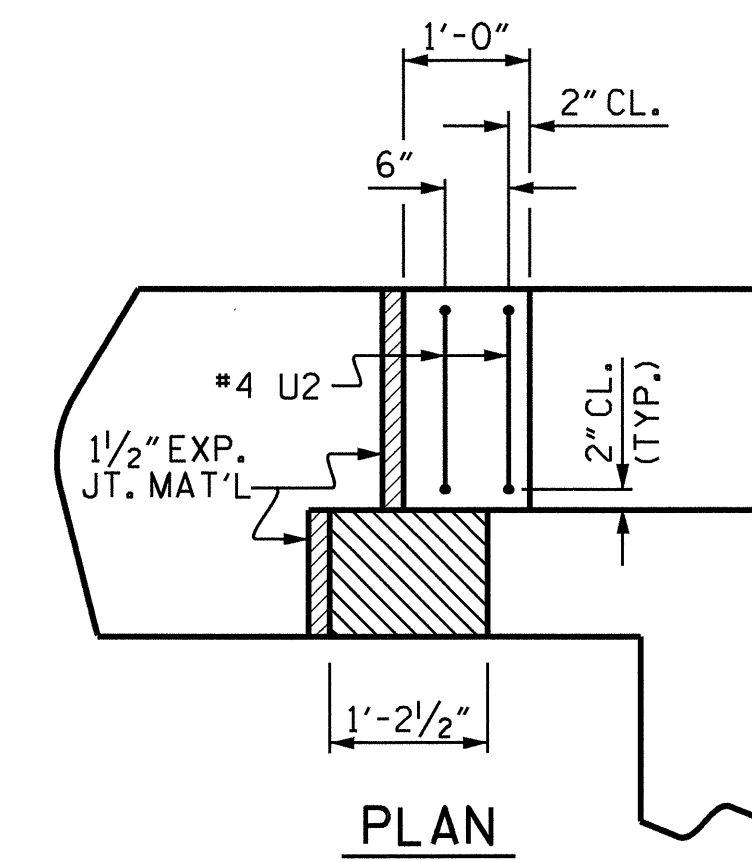
THE LATERAL GUIDE AT EACH END OF CAP IS NOT TO BE POURED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE CONCRETE WEARING SURFACE AND APPROACH SLAB HAS BEEN SAWED AND THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

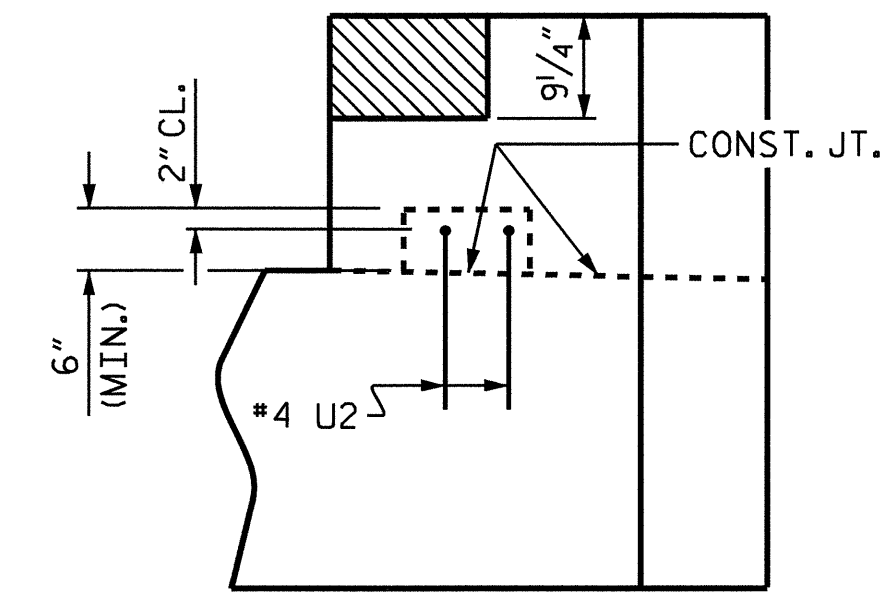
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



PLAN



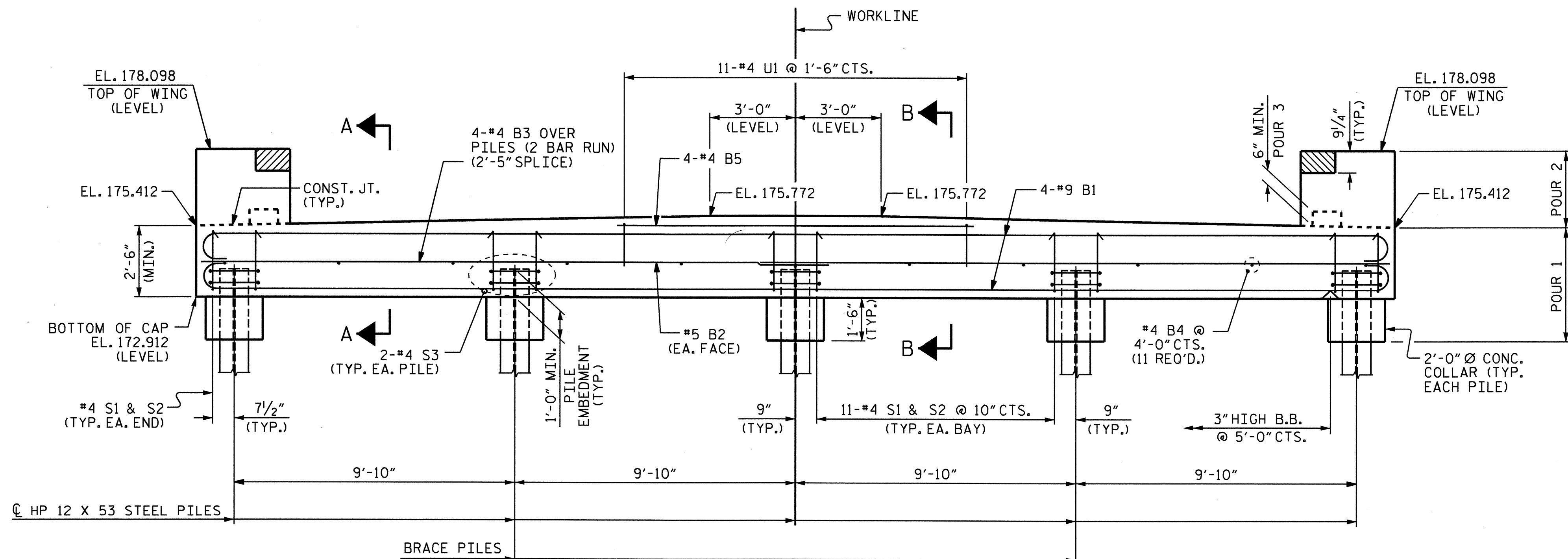
PLAN



ELEVATION

LATERAL GUIDE DETAILS

(EACH END SIMILAR)



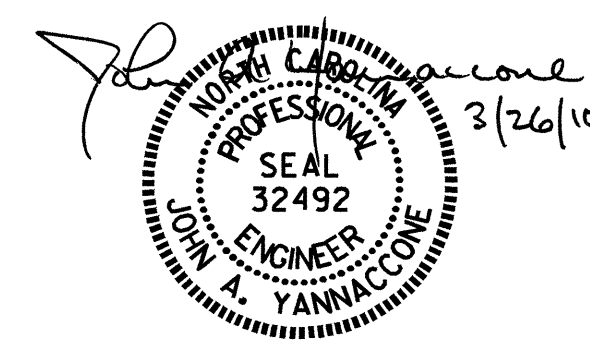
ELEVATION

WINGS NOT SHOWN FOR CLARITY FOR REINFORCING STEEL & DETAILS OF WINGS, SEE SHEET 2 OF 3.

PROJECT NO. B-4641
SCOTLAND COUNTY
 STATION: 15+97.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 1

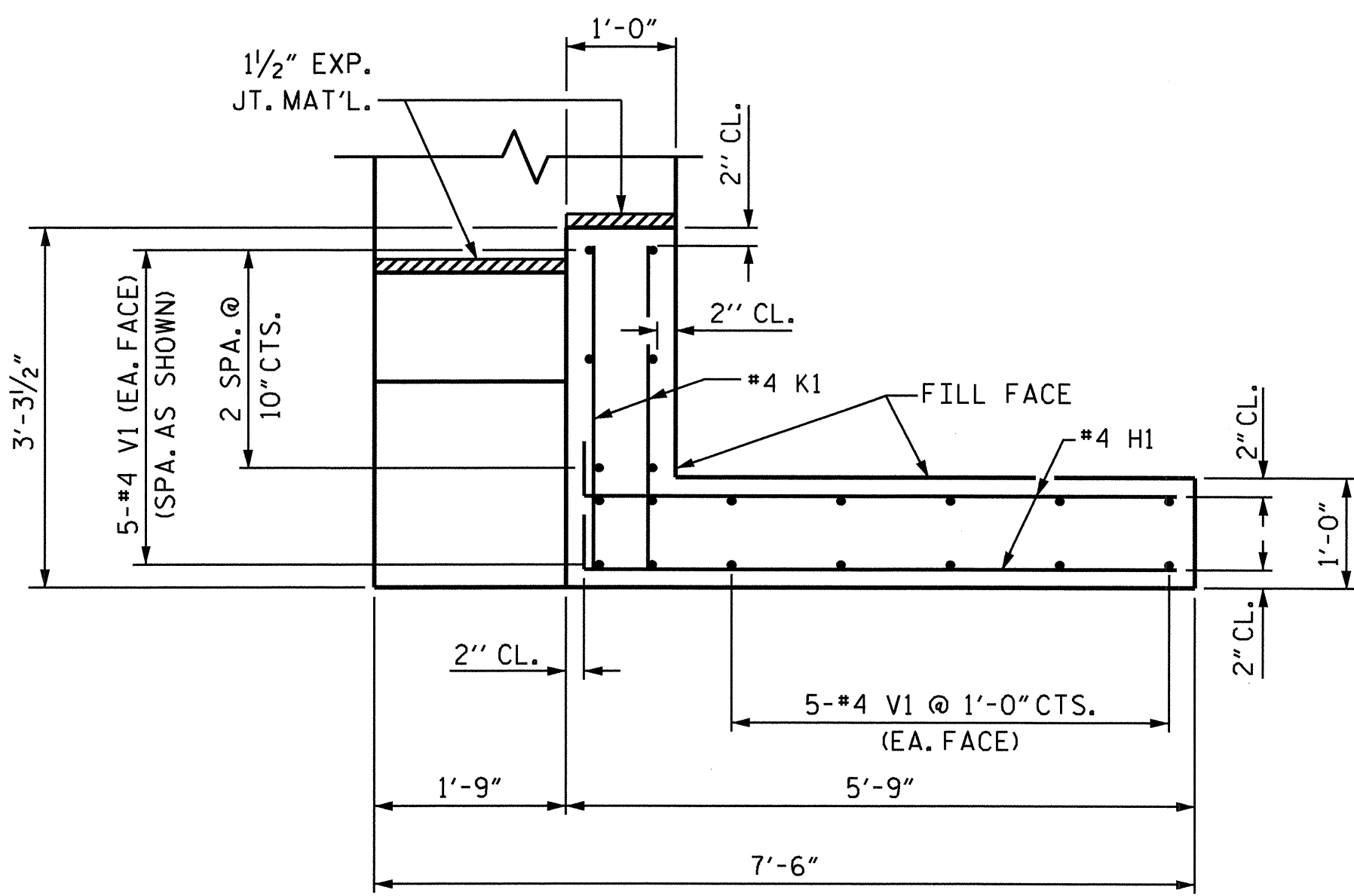


DRAWN BY: J.A. YANNAACONE DATE: 11-5-09
 CHECKED BY: T. H. FANG DATE: 12-9-09

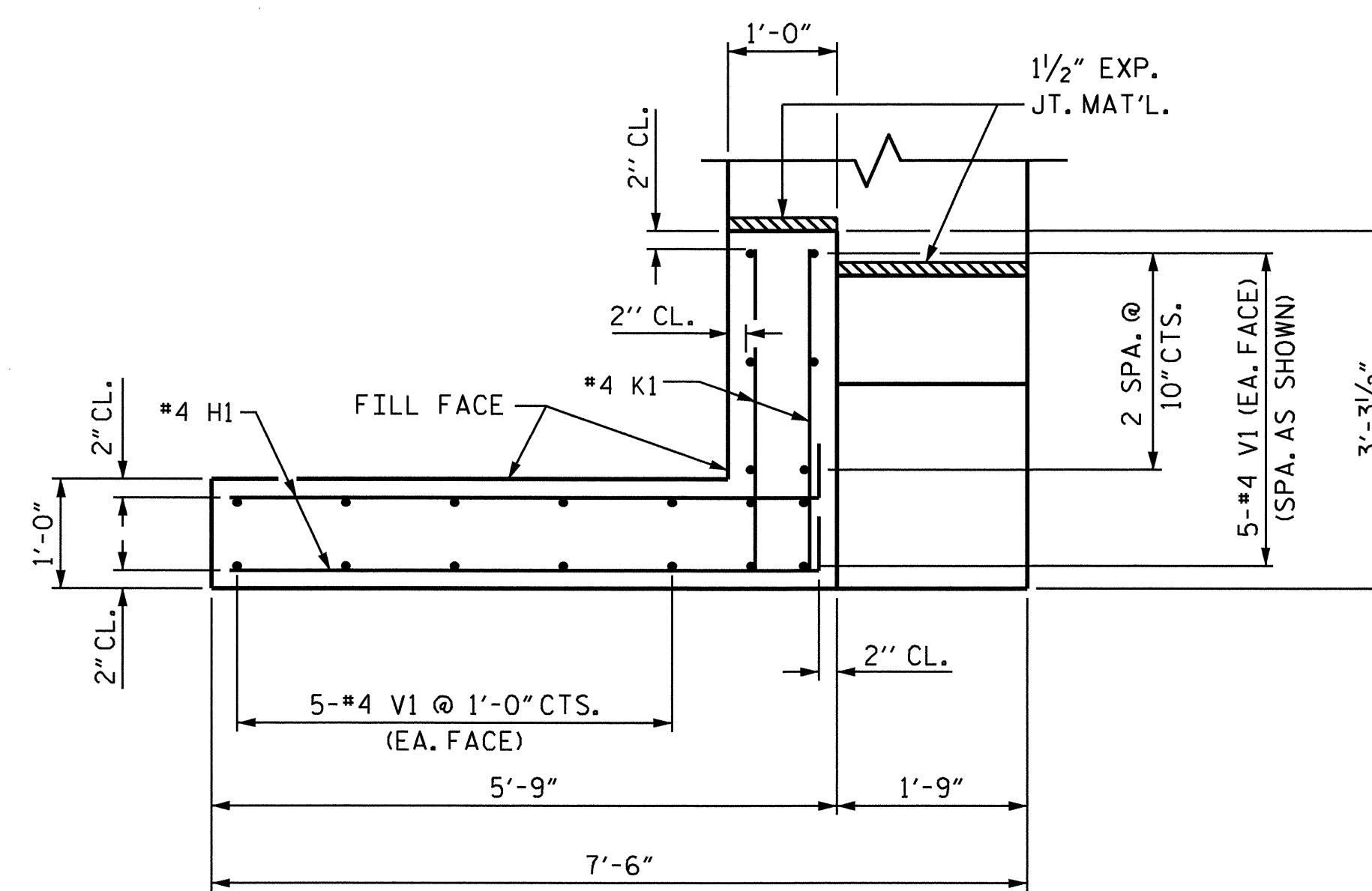
26-MAR-2010 10:55
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 jayannaccone

REVISIONS						SHEET NO. S-14
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 25
2			4			

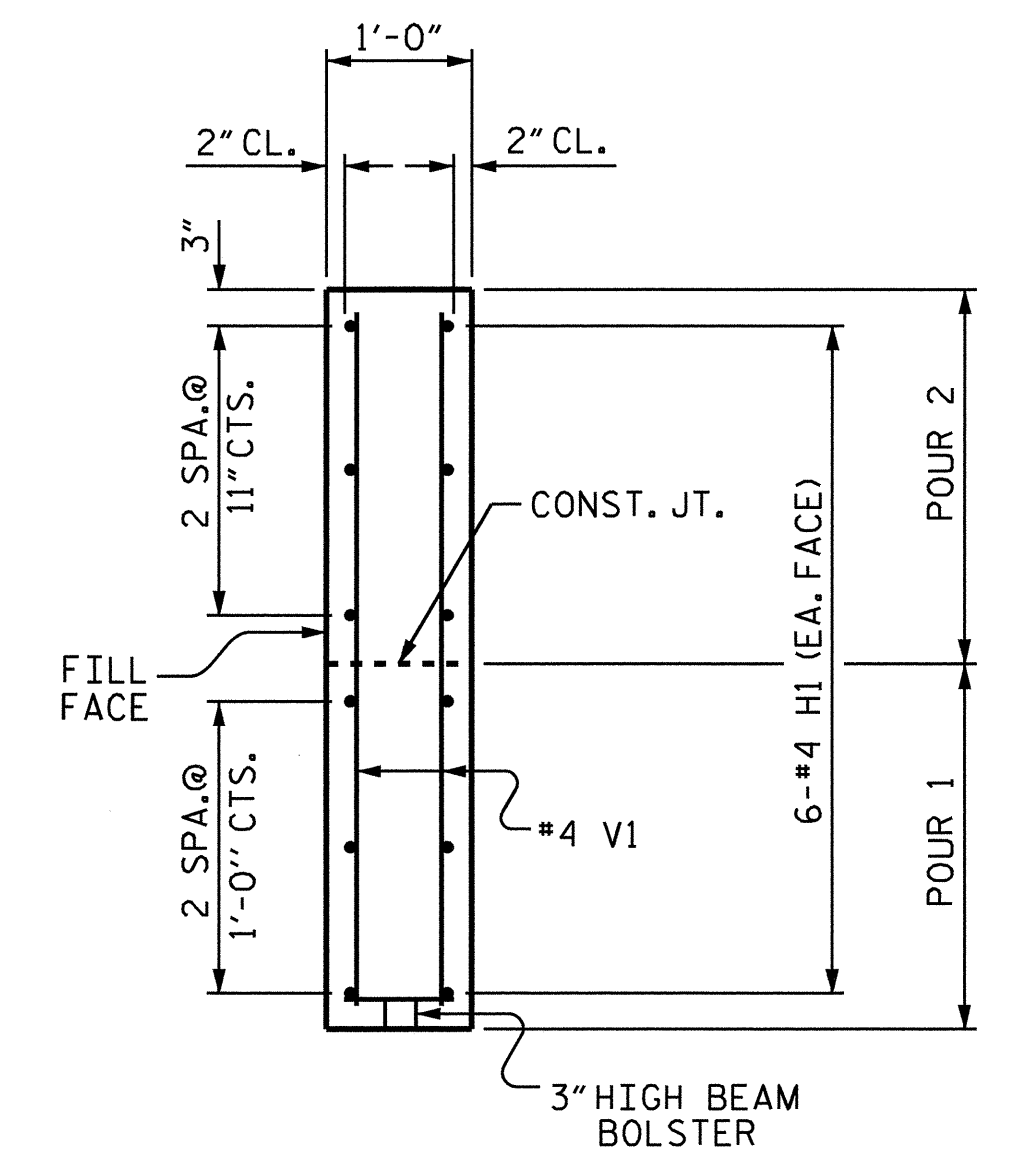
NCODS



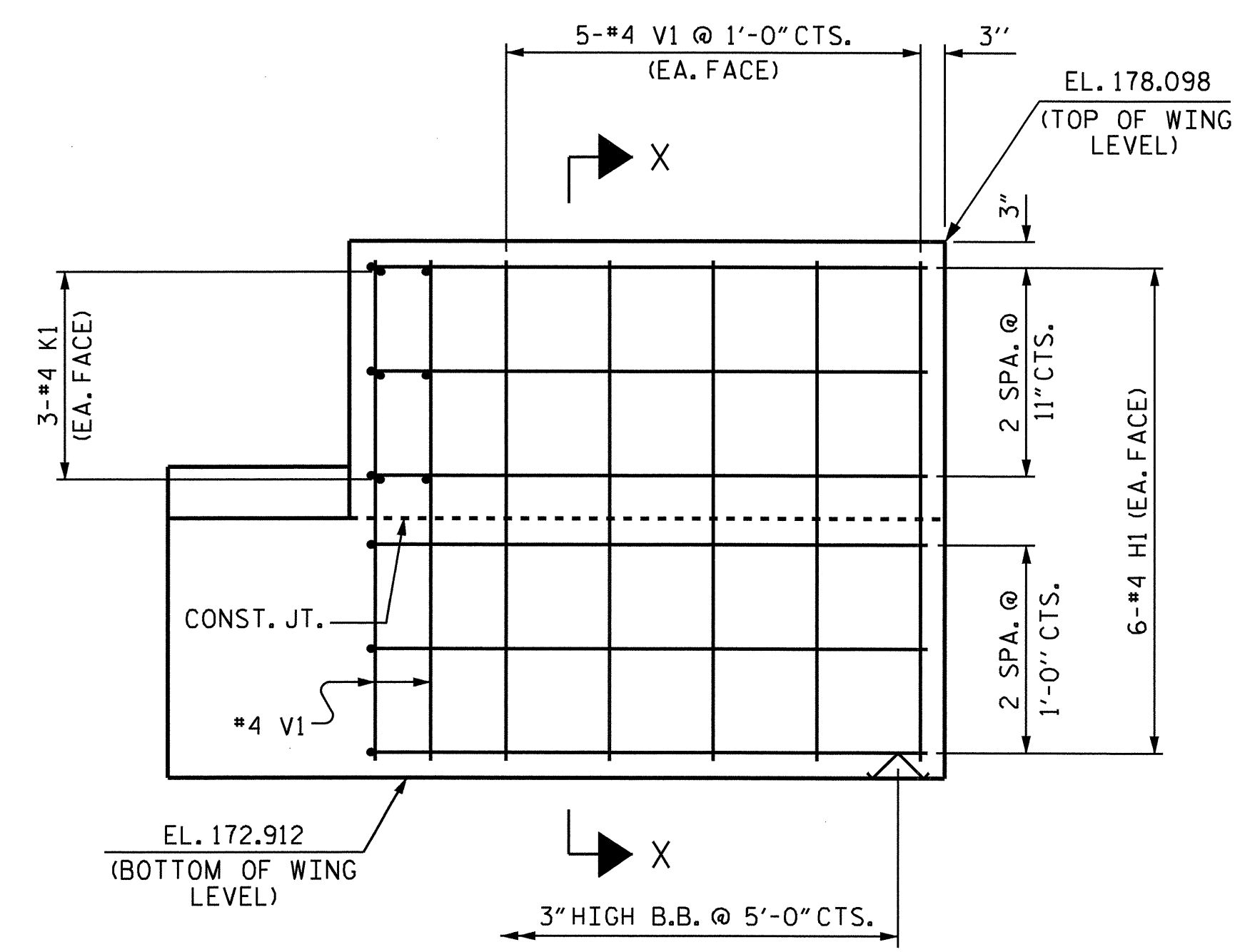
PLAN OF WING W1



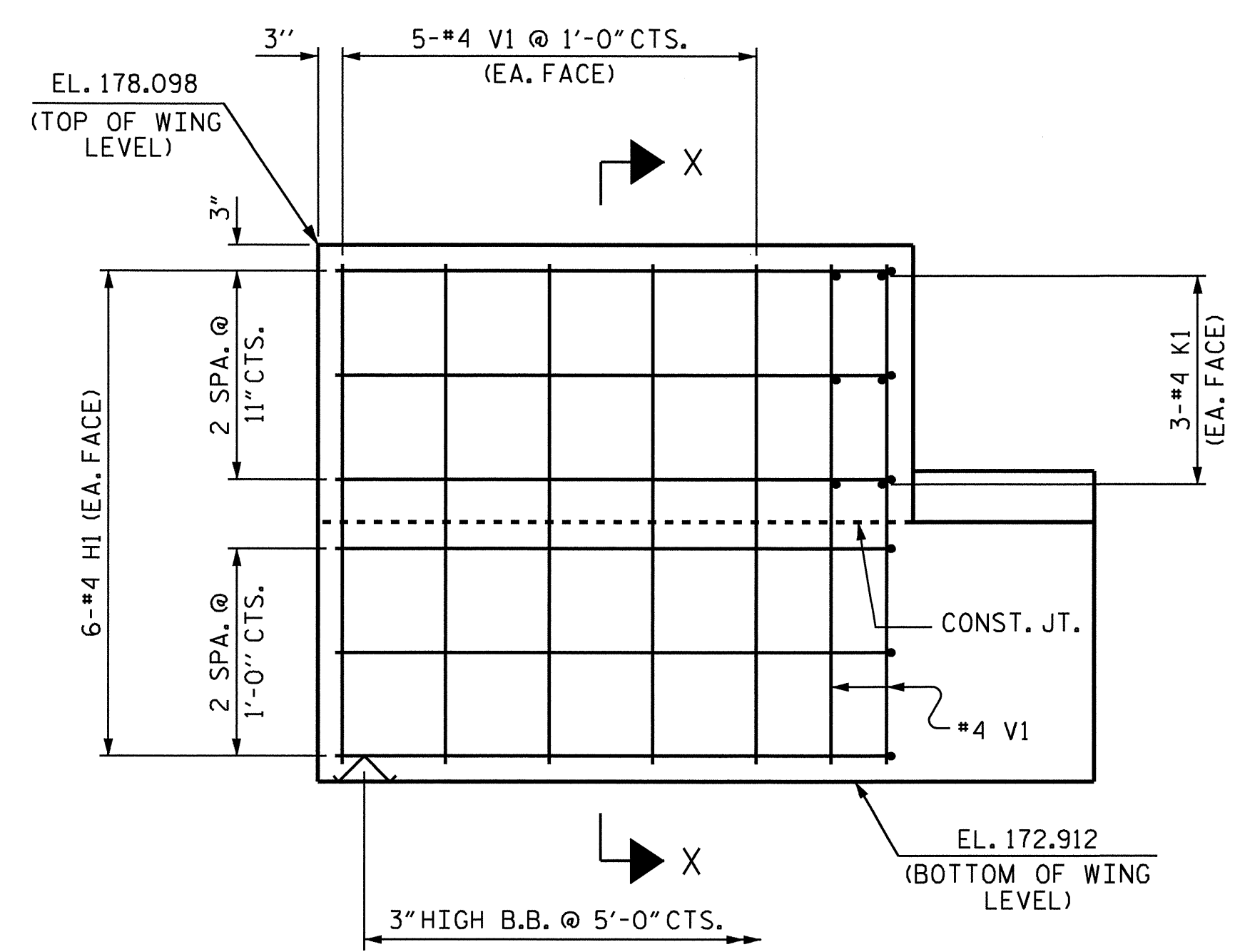
PLAN OF WING W2



SECTION X-X



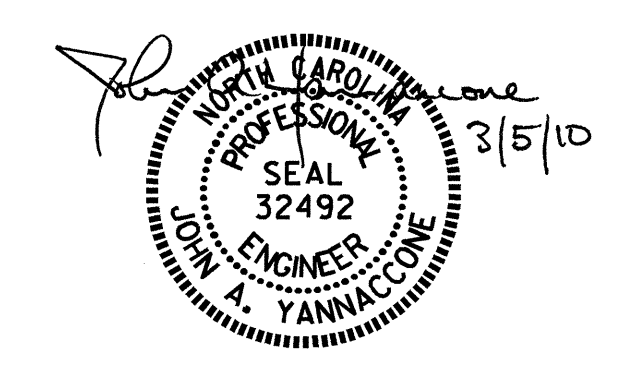
ELEVATION OF WING W1



ELEVATION OF WING W2

PROJECT NO. B-4641
 SCOTLAND COUNTY
 STATION: 15+97.50 -L-
 SHEET 2 OF 3

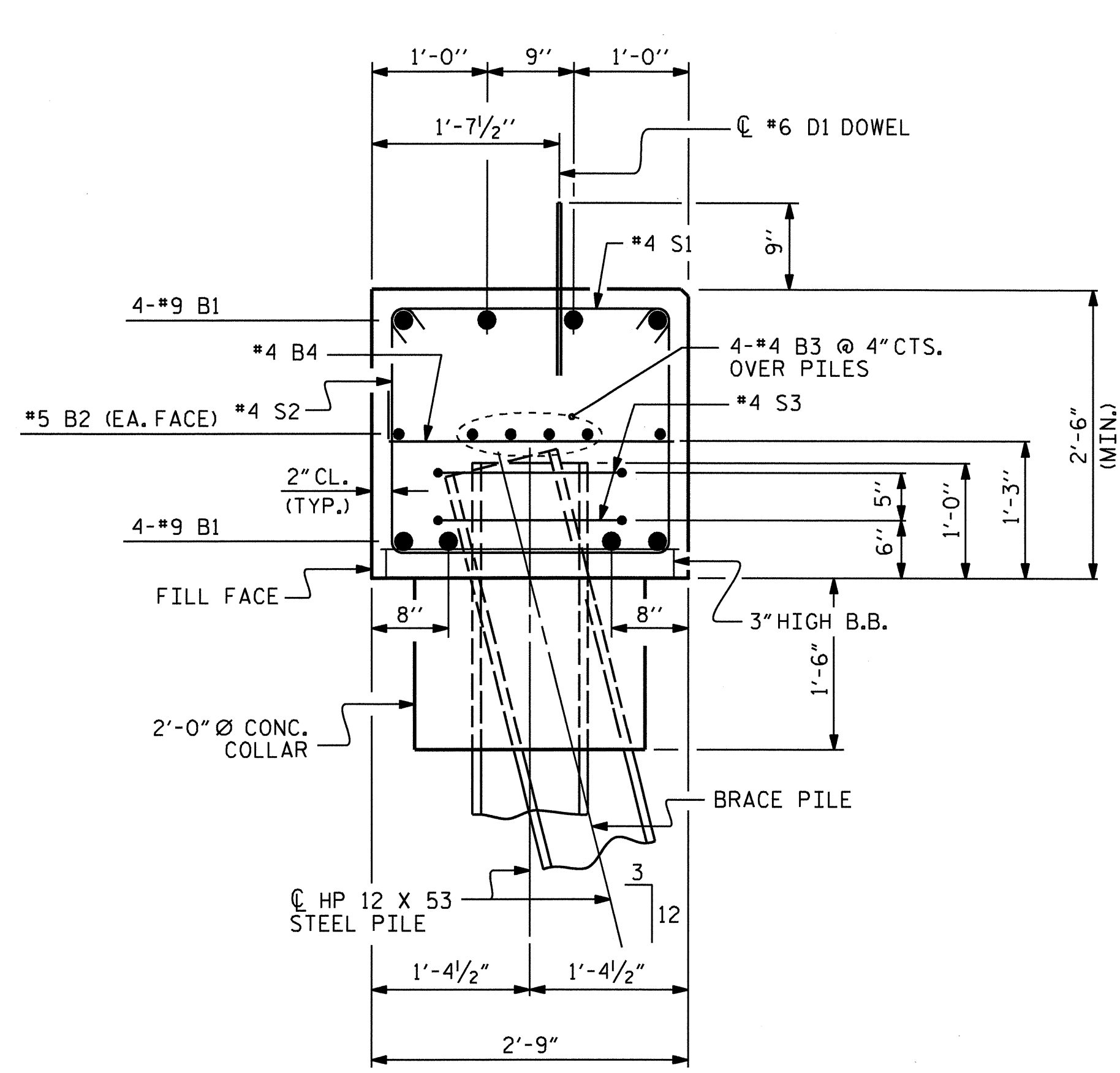
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 1



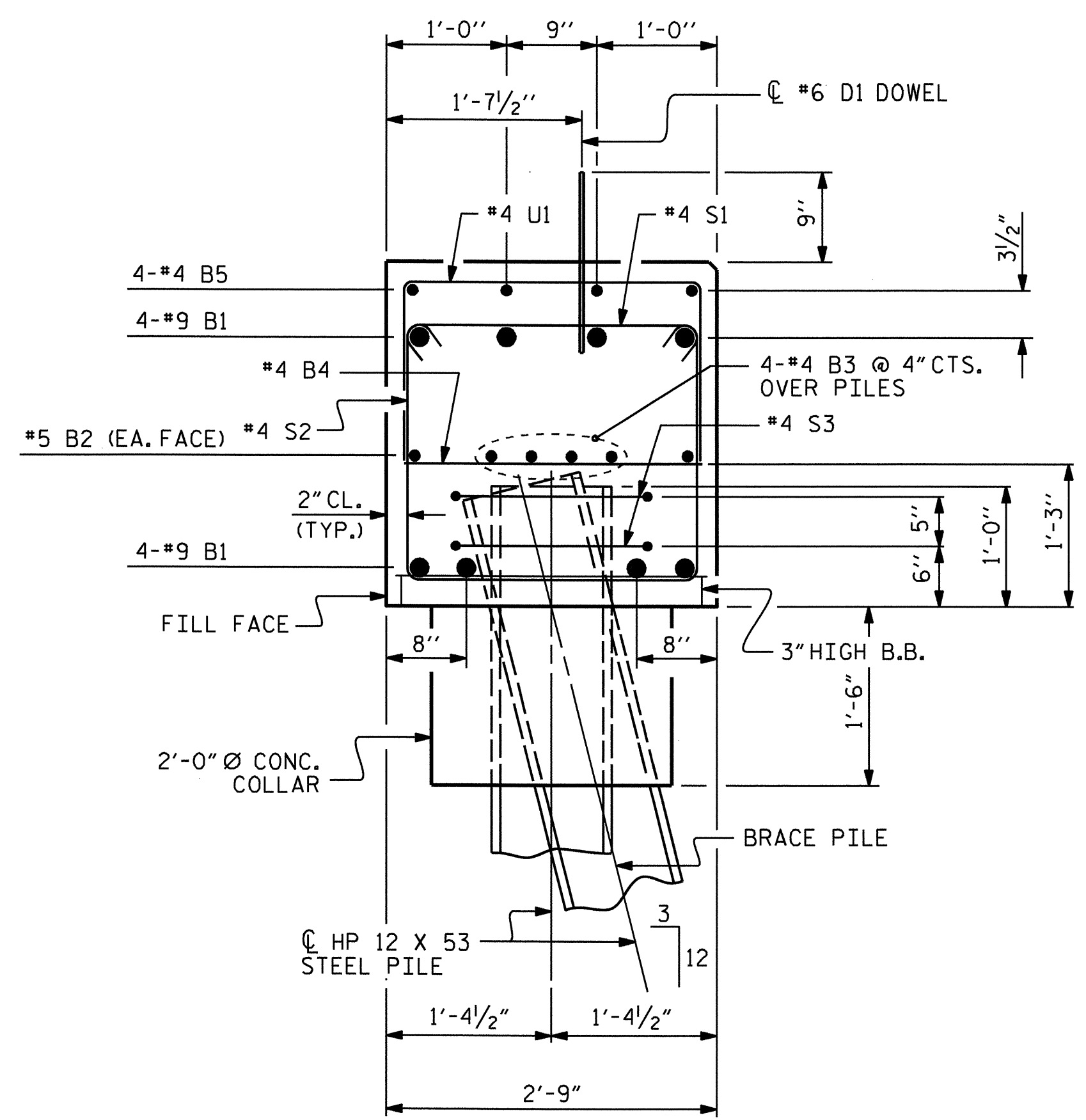
DRAWN BY: J.A. YANNAKCONE DATE: 11-5-09
 CHECKED BY: T. H. FANG DATE: 12-9-09

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
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2			4			25

04-MAR-2010 15:27
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 sdombrowski

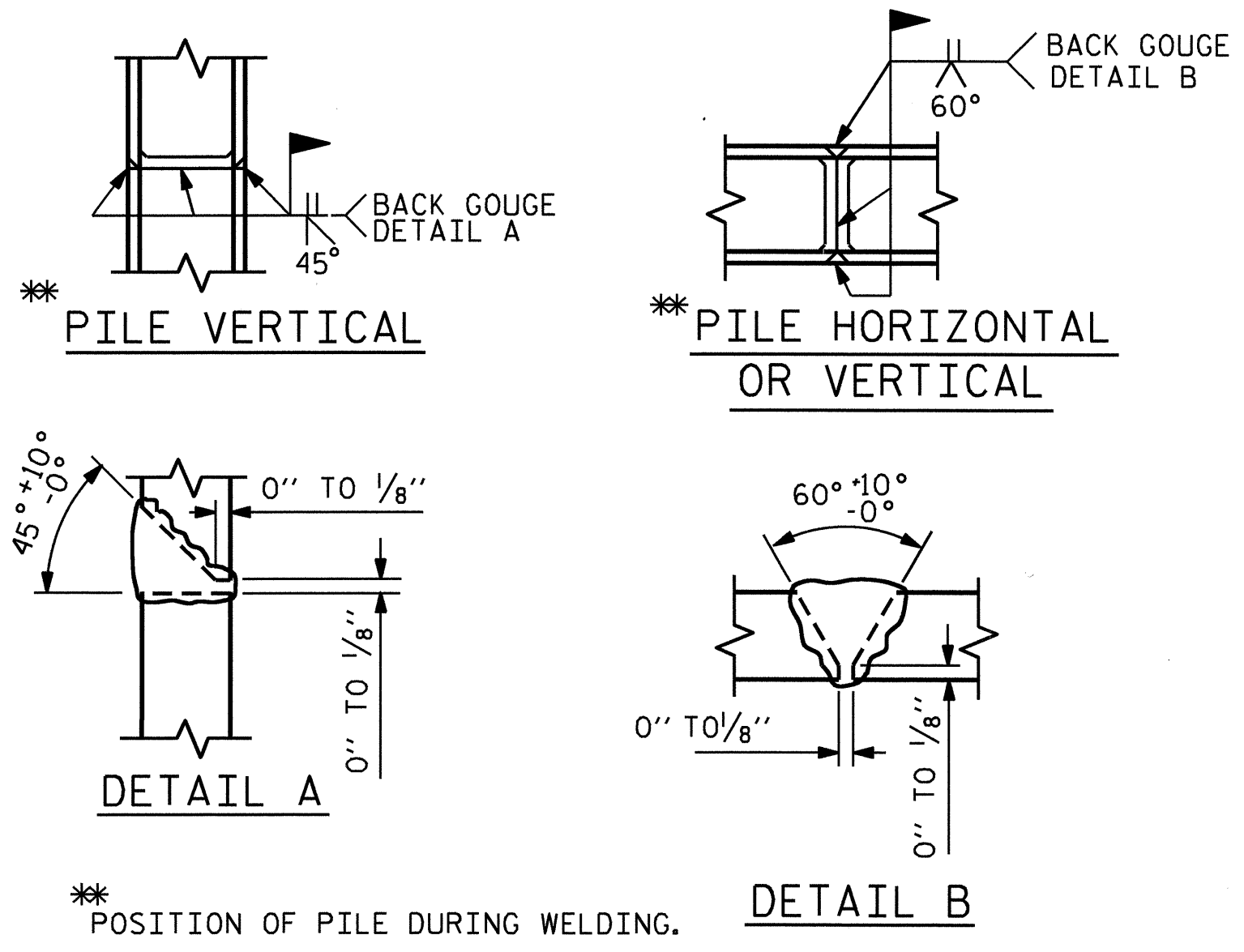


SECTION A-A

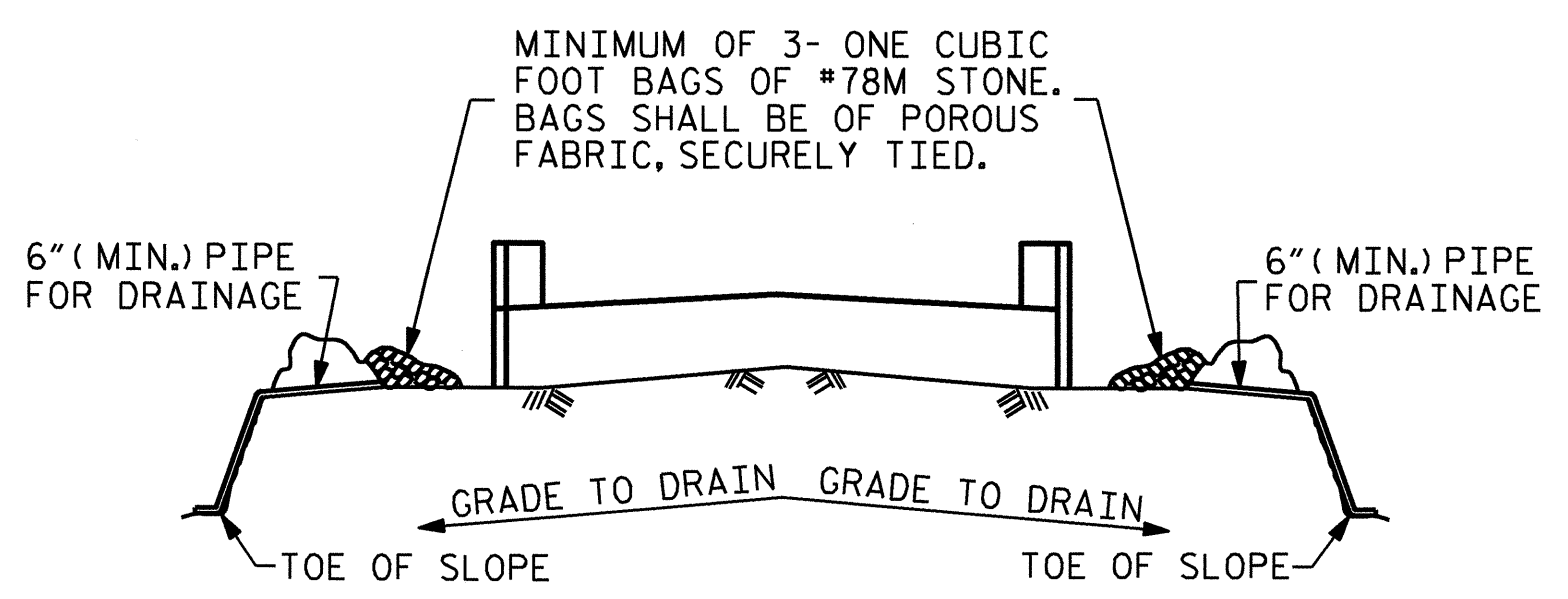


SECTION B-B

BAR TYPES					BILL OF MATERIAL						
					END BENT 1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		44'-0"	1197	B1	8	#9		44'-0"	1197
B2	2	#5	STR	41'-8"	87	B2	2	#5	STR	41'-8"	87
B3	8	#4	STR	22'-1"	118	B3	8	#4	STR	22'-1"	118
B4	11	#4	STR	2'-5"	18	B4	11	#4	STR	2'-5"	18
B5	4	#4	STR	15'-6"	41	B5	4	#4	STR	15'-6"	41
D1	24	#6	STR	1'-6"	54	D1	24	#6	STR	1'-6"	54
H1	24	#4		6'-1"	98	H1	24	#4		6'-1"	98
K1	12	#4	STR	2'-11"	23	K1	12	#4	STR	2'-11"	23
S1	46	#4		3'-2"	97	S1	46	#4		3'-2"	97
S2	46	#4		7'-5"	228	S2	46	#4		7'-5"	228
S3	10	#4		6'-6"	43	S3	10	#4		6'-6"	43
U1	11	#4		5'-5"	40	U1	11	#4		5'-5"	40
U2	4	#4		4'-5"	12	U2	4	#4		4'-5"	12
V1	40	#4	STR	4'-10"	129	V1	40	#4	STR	4'-10"	129
REINFORCING STEEL					LBS.	2185					
CLASS A CONCRETE BREAKDOWN											
POUR 1 (CONCRETE COLLARS, CAP & LOWER WINGS) C.Y. 13.3											
POUR 2 (UPPER WINGS) C.Y. 1.6											
POUR 3 (LATERAL GUIDES) C.Y. 0.1											
TOTAL C.Y. 15.0											
HP 12 X 53 STEEL PILES											
NO. 5 LIN. FT. = 475											
PILE REDRIVES EACH 5											



PILE SPLICE DETAILS



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

6" (MIN.) PIPE FOR DRAINAGE

GRADE TO DRAIN

TOE OF SLOPE

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

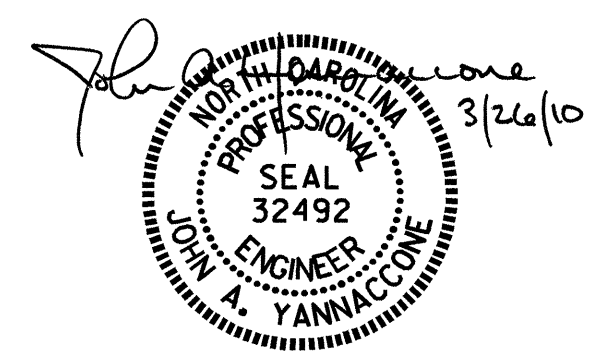
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

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

TEMPORARY DRAINAGE AT END BENT

PROJECT NO. B-4641
SCOTLAND COUNTY
STATION: 15+97.50 -L-

SHEET 3 OF 3
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 1



DRAWN BY: J.A. YANNACONE DATE: 11-5-09
CHECKED BY: T.H. FANG DATE: 12-9-09

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16	
1			3			TOTAL SHEETS	
2			4			25	

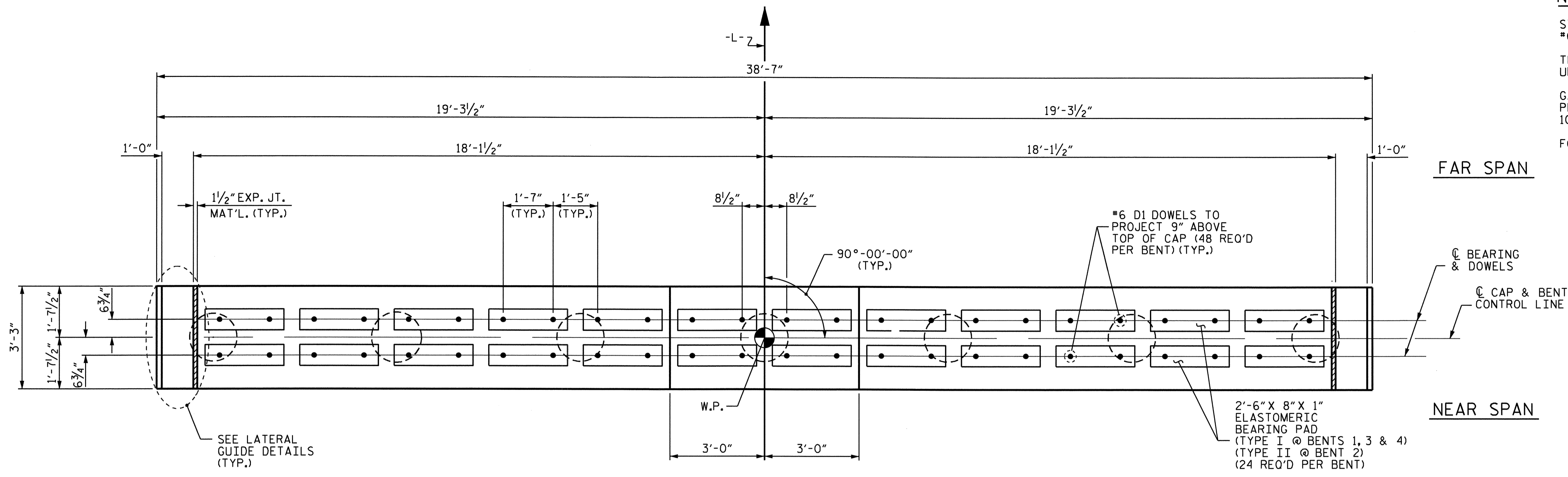
NOTES

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

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

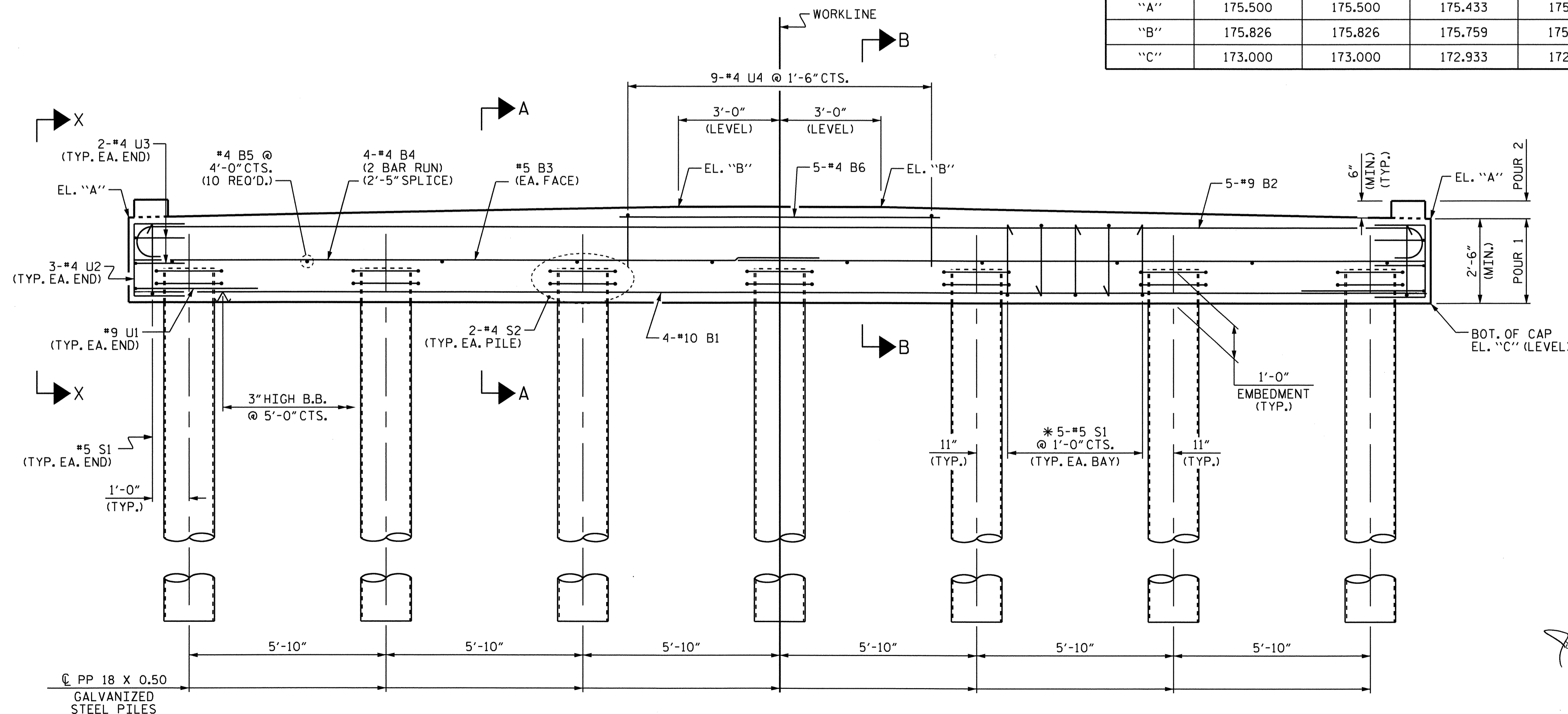
GALVANIZE THE TOP 30 FEET AT ALL INTERIOR BENTS OF EACH PP 18 X 0.5 STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR PP 18 X 0.5 STEEL PIPE PILES, SEE SHEET 3 OF 3.



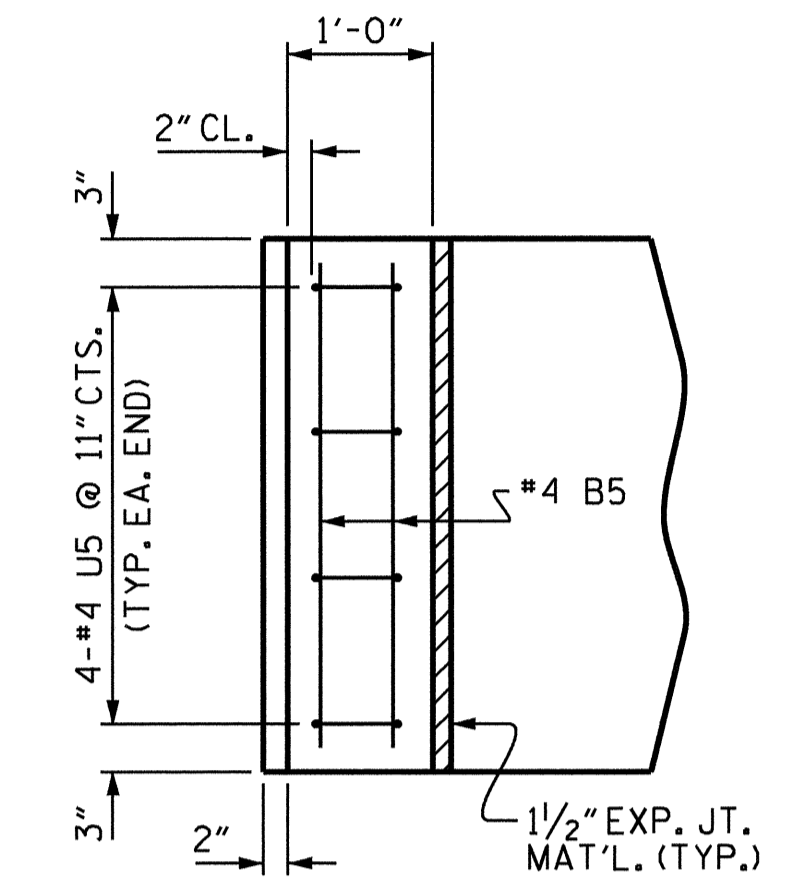
PLAN

ELEVATION				
ELEV. PT.	BENT 1	BENT 2	BENT 3	BENT 4
"A"	175.500	175.500	175.433	175.316
"B"	175.826	175.826	175.759	175.642
"C"	173.000	173.000	172.933	172.816

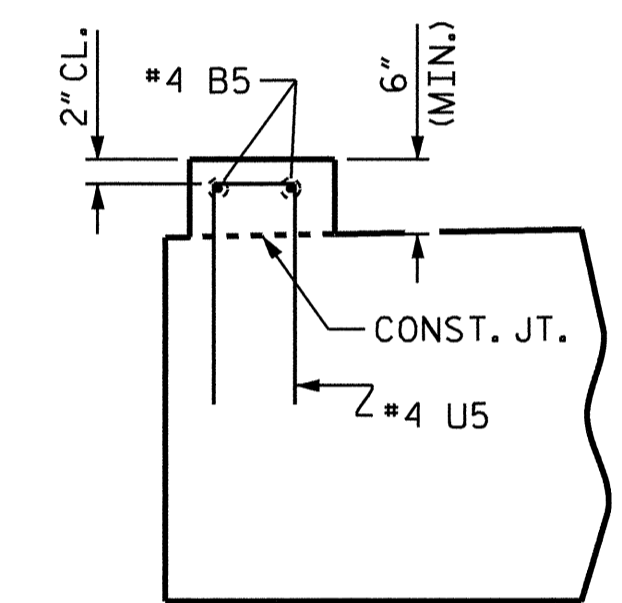


ELEVATION

* INVERT ALTERNATE STIRRUPS



PLAN



ELEVATION

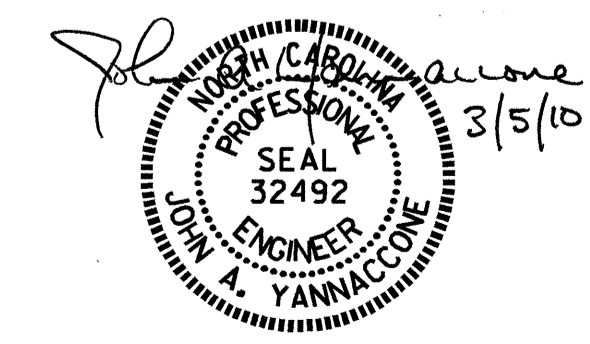
LATERAL GUIDE DETAILS

PROJECT NO. B-4641
SCOTLAND COUNTY
 STATION: 15+97.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

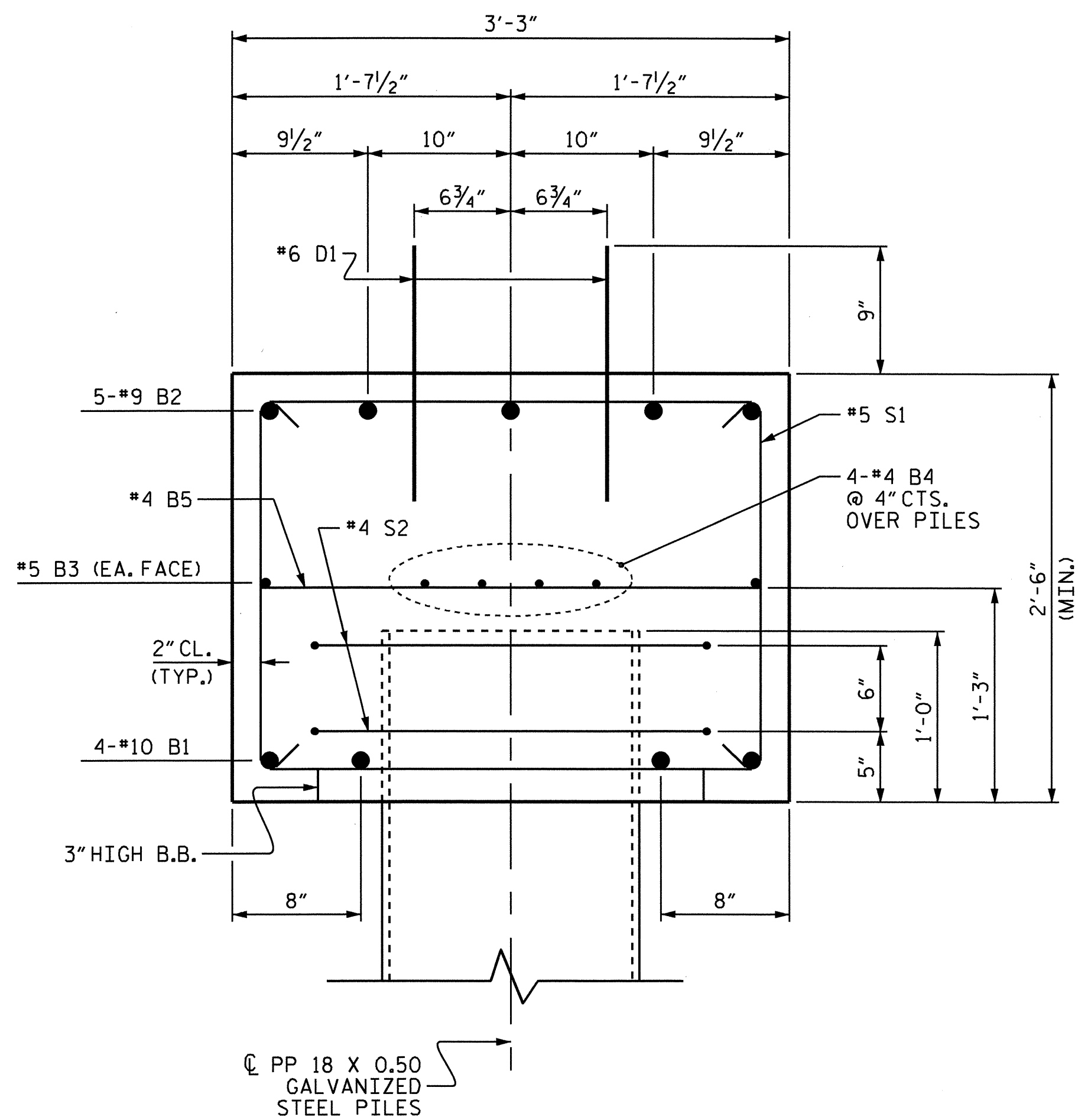
BENTS 1 THRU 4



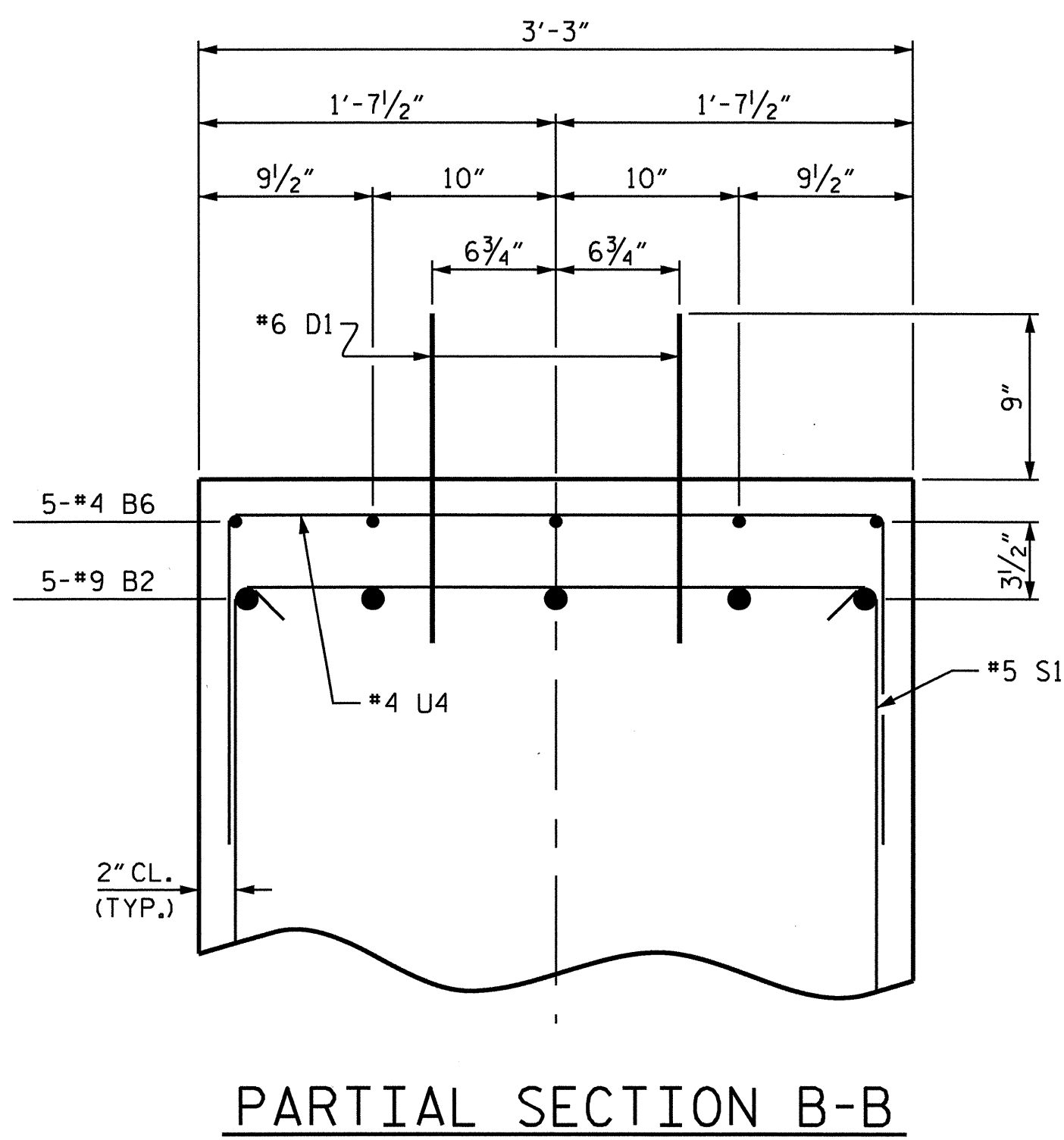
DRAWN BY: J.A. YANNACCONE DATE: 11-3-09
 CHECKED BY: T. H. FANG DATE: 11-23-09

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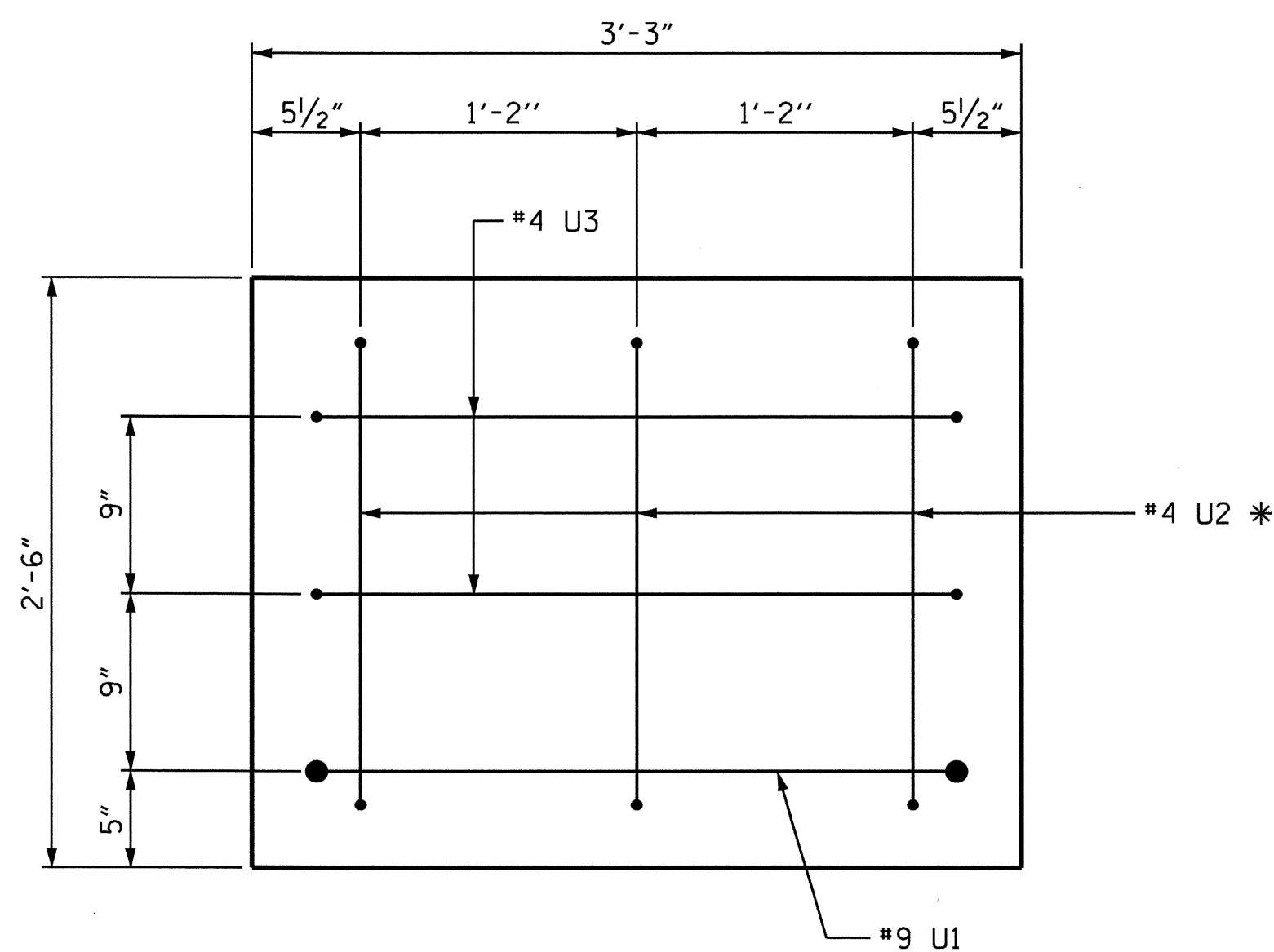
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			25



SECTION A-A



PARTIAL SECTION B-B



VIEW X-X

* BOTTOM LEG OF U2 MAY BE CUT TO KEEP 2" CLR. OF PILE.

BILL OF MATERIAL

FOR ONE BENT (4 REQUIRED)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	STR	38'-3"	658
B2	5	#9	1	40'-7"	690
B3	2	#5	STR	38'-3"	80
B4	8	#4	STR	20'-4"	109
B5	14	#4	STR	2'-11"	27
B6	5	#4	STR	12'-6"	42
D1	48	#6	STR	1'-6"	108
S1	32	#5	2	8'-1"	270
S2	14	#4	4	8'-7"	80
U1	2	#9	3	10'-1"	69
U2	6	#4	3	5'-0"	20
U3	4	#4	3	5'-9"	15
U4	9	#4	3	5'-11"	36
U5	8	#4	3	3'-6"	19

REINFORCING STEEL = 2223 LBS

CLASS A CONCRETE BREAKDOWN

** POUR #1 (CAP) C.Y. 12.0

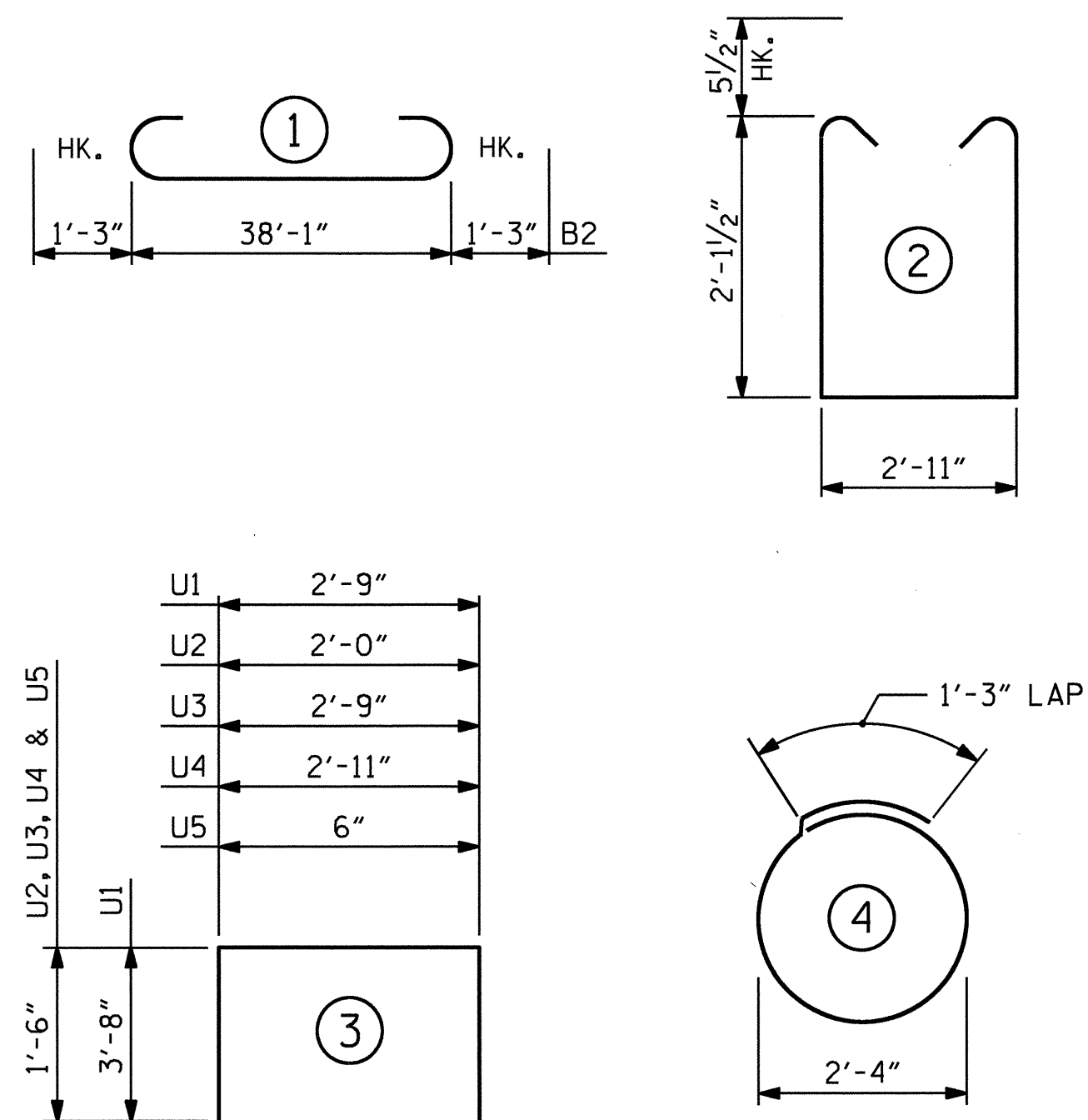
POUR #2 (LAT. GUIDES) C.Y. 0.1

**TOTAL CLASS A CONCRETE C.Y. 12.1

PP 18 X 0.50 GALVANIZED STEEL PILES

	NO.	LIN. FT.	PILE REDRIVES
BENT 1	7	525	7
BENT 2	7	490	7
BENT 3	7	455	7
BENT 4	7	455	7

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

** CONCRETE DISPLACED BY THE PP 18 X 0.50 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE CONCRETE TOTAL.

PROJECT NO. B-4641

SCOTLAND COUNTY

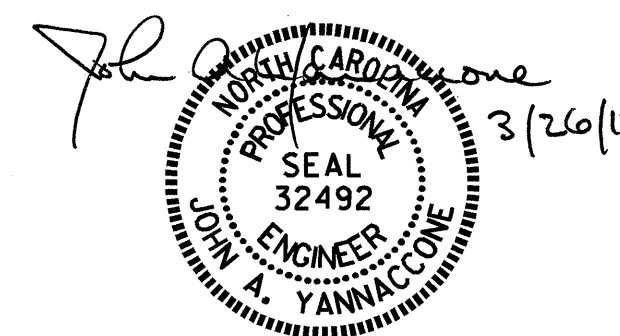
STATION: 15+97.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

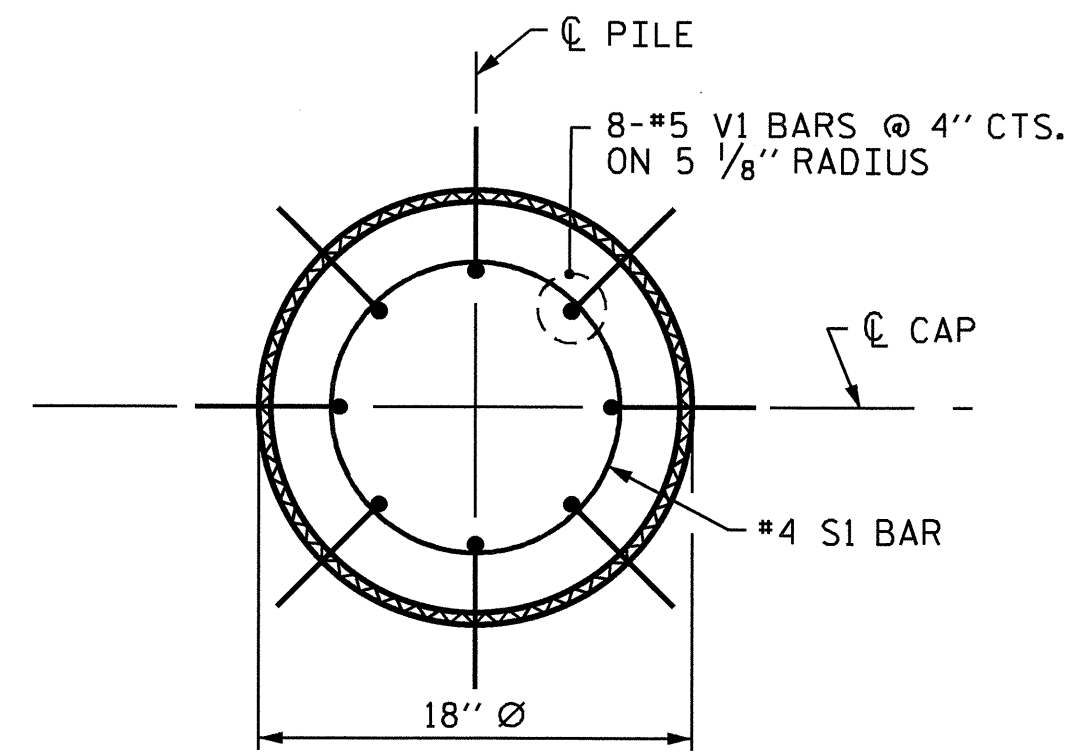
BENTS 1 THRU 4



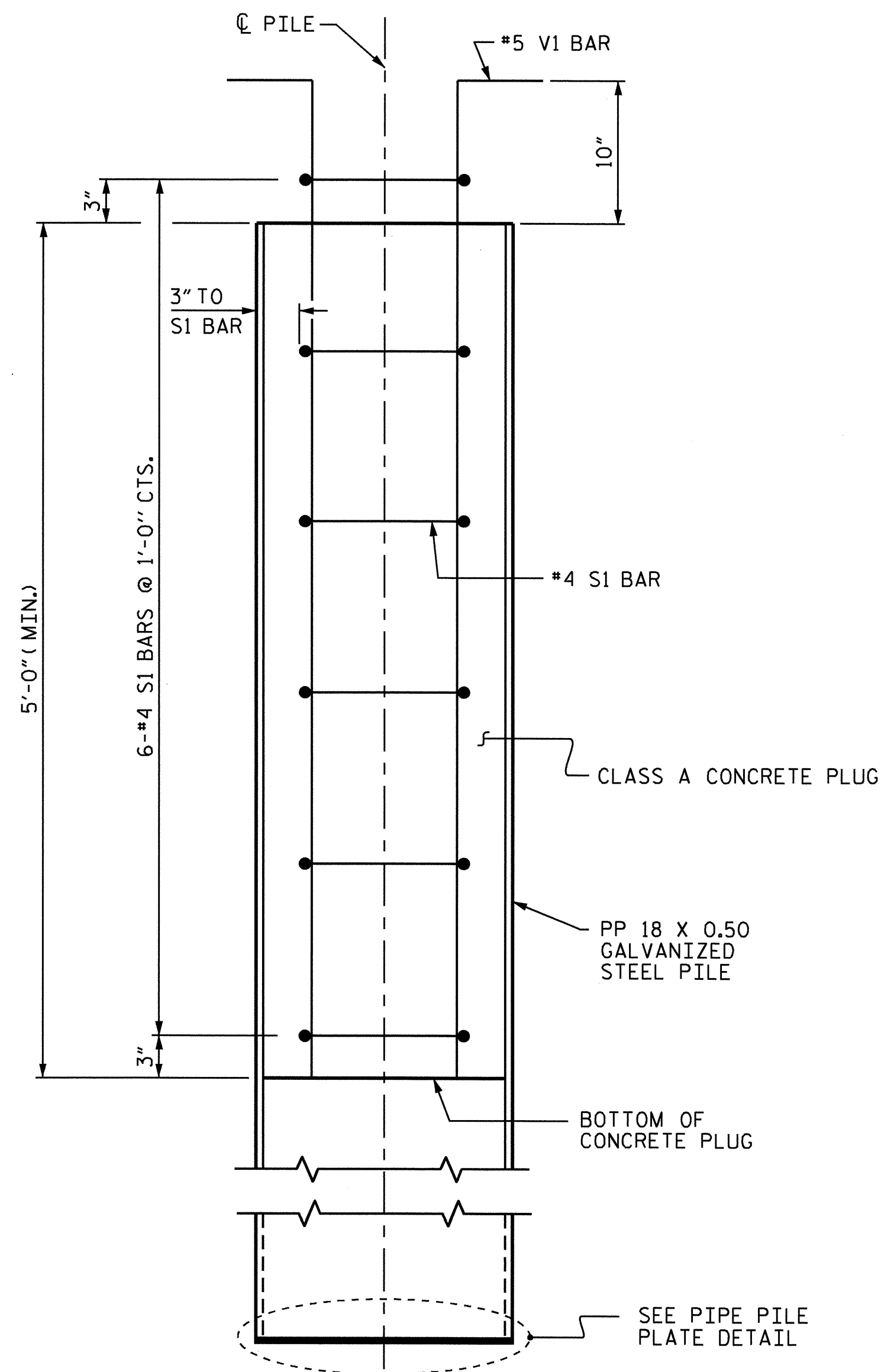
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CHECKED BY : T. H. FANG DATE : 11-23-09

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
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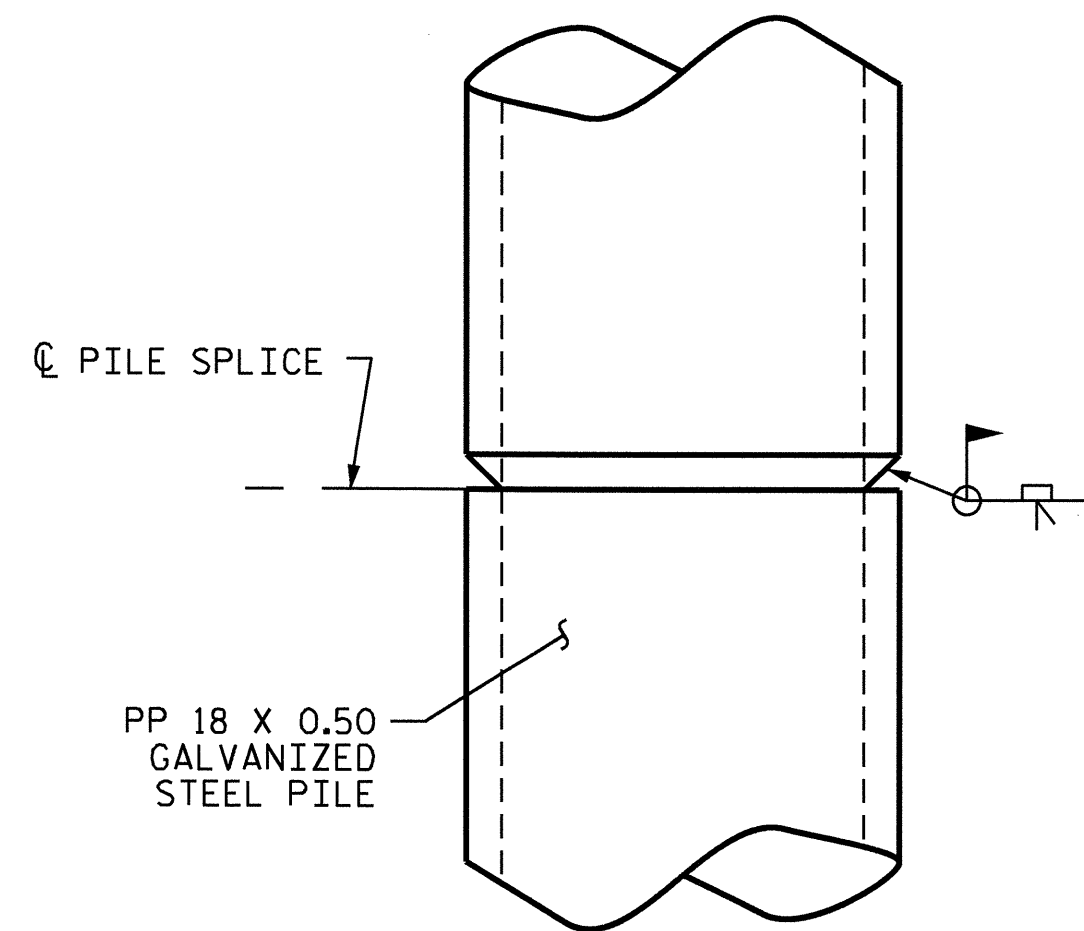


PLAN

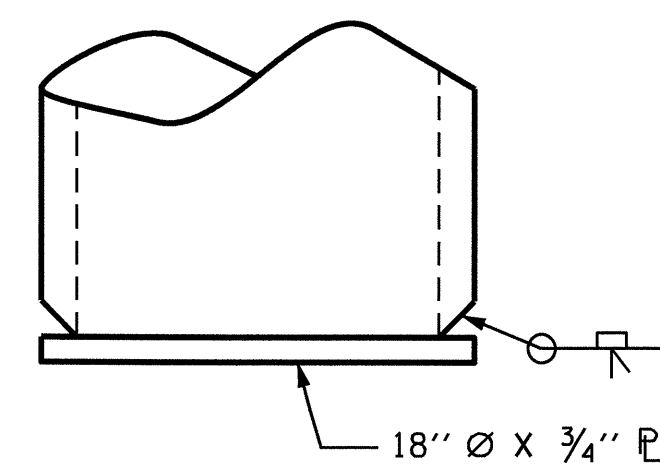


ELEVATION

PP 18 X 0.50 GALVANIZED STEEL PILE
(CLOSED END)



PIPE PILE SPLICE DETAIL



PIPE PILE PLATE DETAIL

NOTES

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

GALVANIZE THE TOP 30 FEET OF EACH STEEL PIPE PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED. GALVANIZING OR METALLIZING PIPE PILE PLATES IS NOT REQUIRED.

PIPE PILE PLATES, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

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

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

FOR CLOSED END PIPE PILES, REMOVE ALL SOIL AND WATER FROM INSIDE THE PILES JUST PRIOR TO PLACING REINFORCING STEEL AND CONCRETE FOR THE CONCRETE PLUG.

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

THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 18 X 0.50 GALVANIZED STEEL PILES.

BILL OF MATERIAL

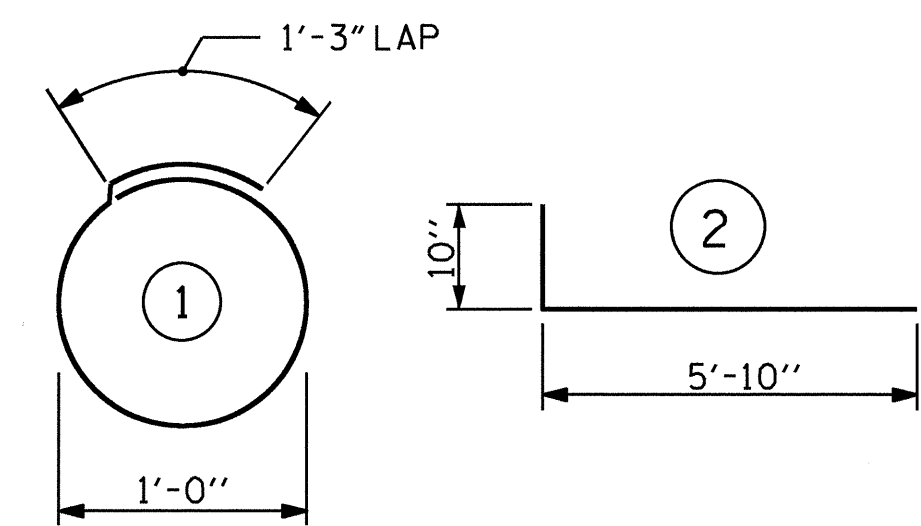
FOR ONE PP 18 X 0.50 GALVANIZED STEEL PILE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	4'-5"	18
V1	8	#5	2	6'-8"	56

REINFORCING STEEL = 74 lbs

CLASS A CONCRETE
5'-0" MIN. PLUG 0.3 CY

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

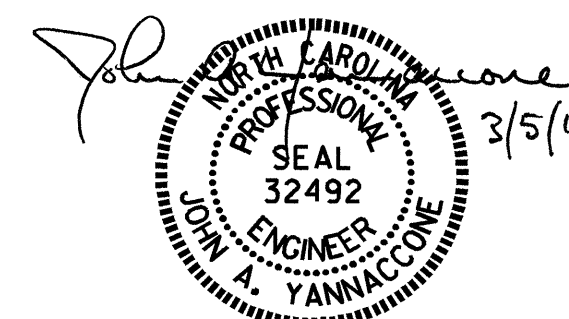
7 PILES REQUIRED PER BENT
TOTAL PILES REQ'D = 28

PROJECT NO. B-4641
SCOTLAND COUNTY
STATION: 15+97.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
18" GALVANIZED
STEEL PIPE PILE
FOR BENTS 1 THRU 4



ASSEMBLED BY : J.A. YANNACONE	DATE : 11-3-09
CHECKED BY : T. H. FANG	DATE : 11-23-09
DRAWN BY : RWW 1/01	REV. 5/7/03 RWW/JTE
CHECKED BY : LES 1/01	REV. 10/1/05 LBG/TLA
	REV. 5/1/06R MAA/KMM

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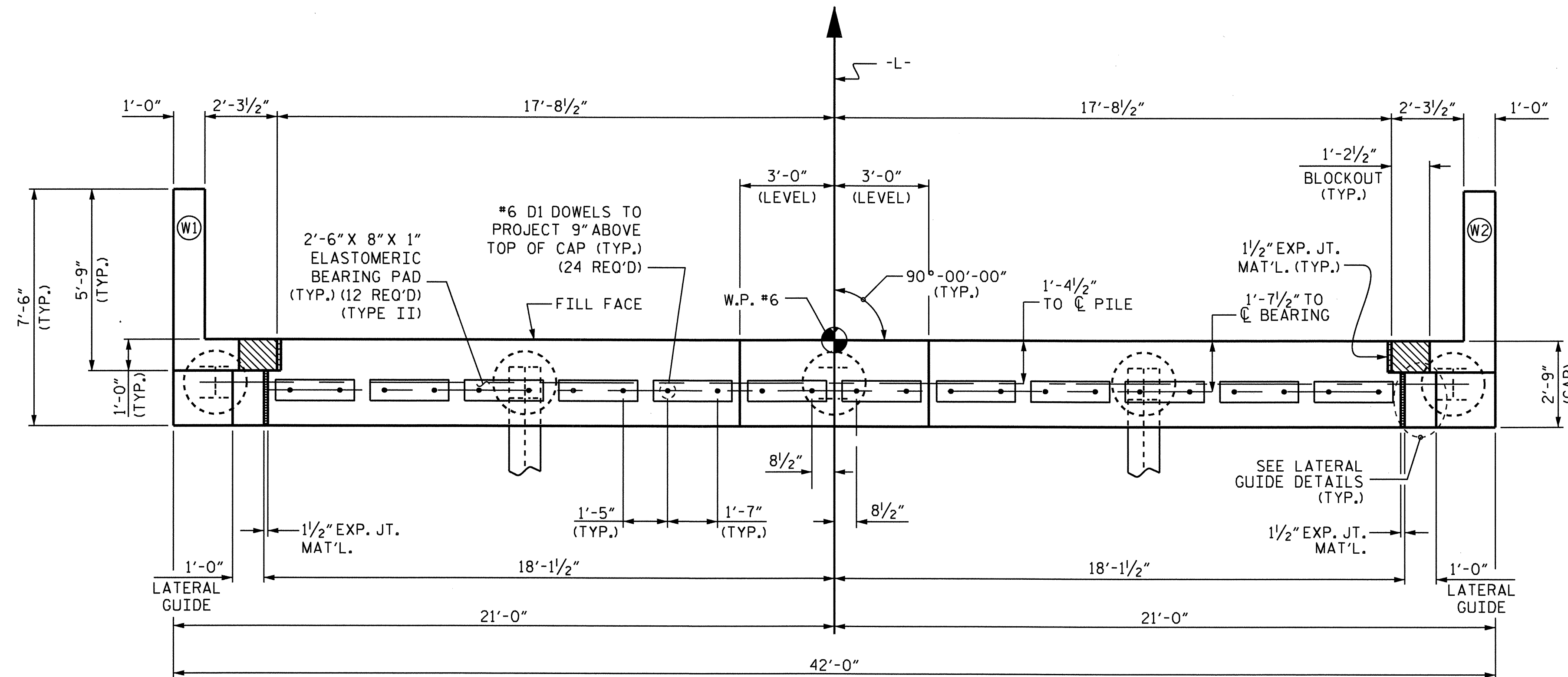
NOTES

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

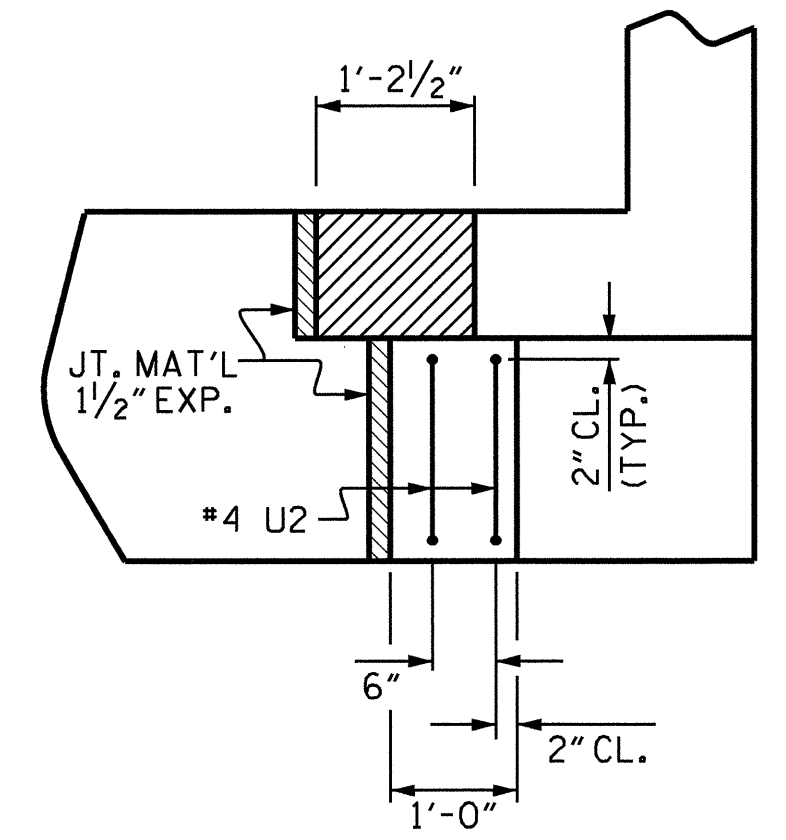
THE LATERAL GUIDE AT EACH END OF CAP IS NOT TO BE POURED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE CONCRETE WEARING SURFACE AND APPROACH SLAB HAS BEEN SAWED AND THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

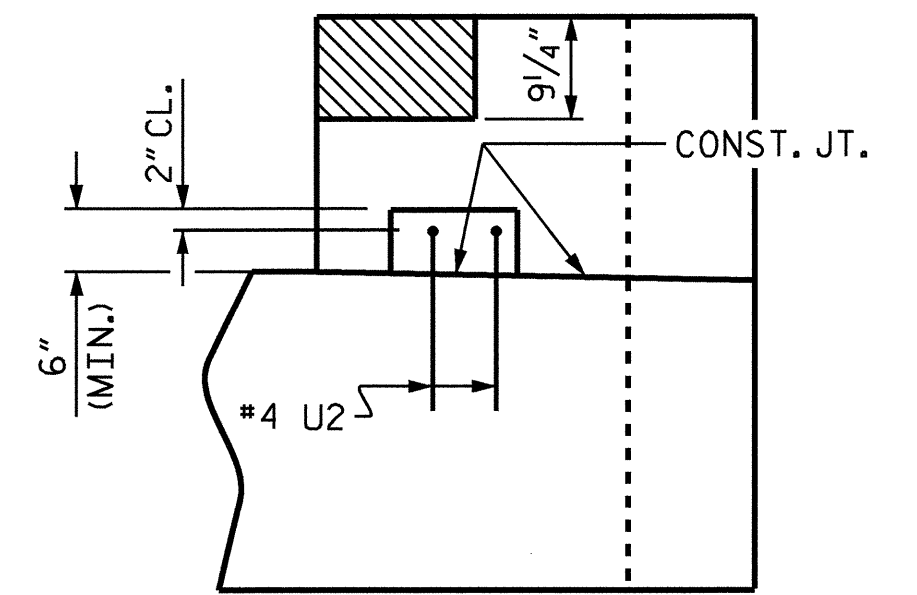
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



PLAN



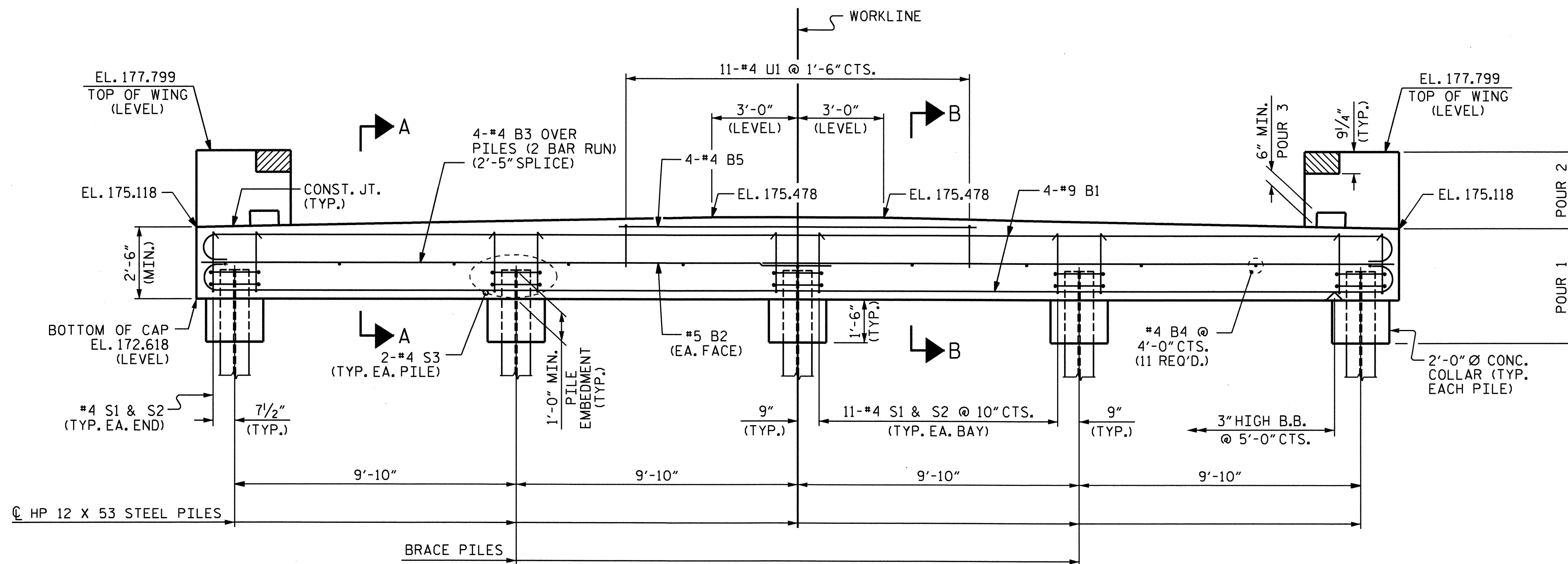
PLAN



ELEVATION

LATERAL GUIDE DETAILS

(EACH END SIMILAR)



ELEVATION

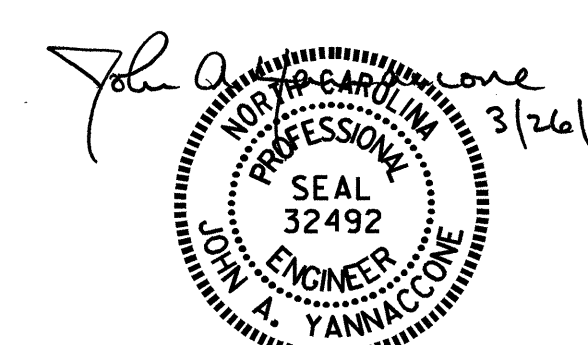
WINGS NOT SHOWN FOR CLARITY FOR REINFORCING STEEL & DETAILS OF WINGS, SEE SHEET 2 OF 3.

PROJECT NO. B-4641
SCOTLAND COUNTY
 STATION: 15+97.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

END BENT 2

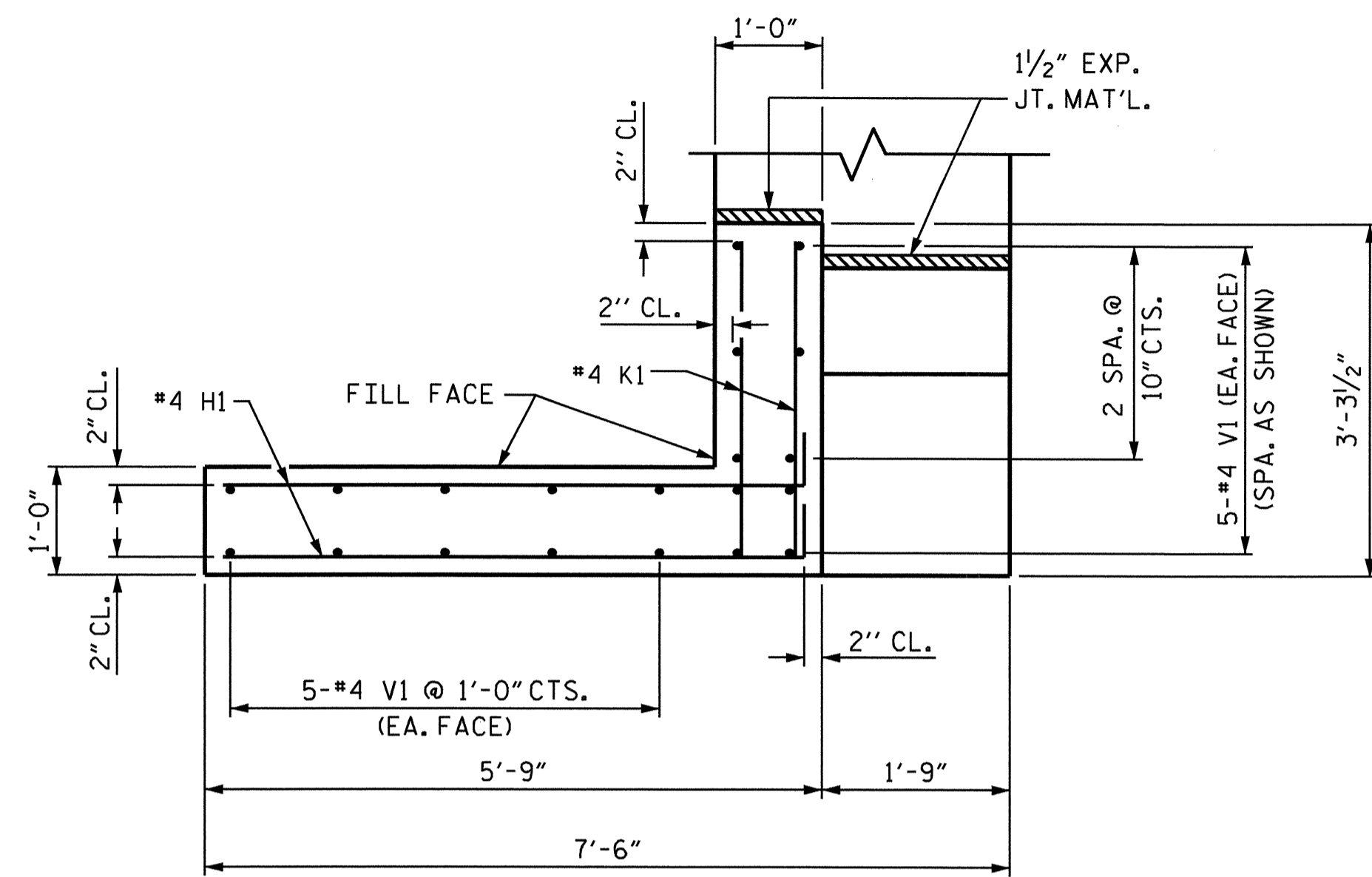


DRAWN BY : J.A. YANNACCONI DATE : 11-5-09
 CHECKED BY : T.H. FANG DATE : 12-9-09

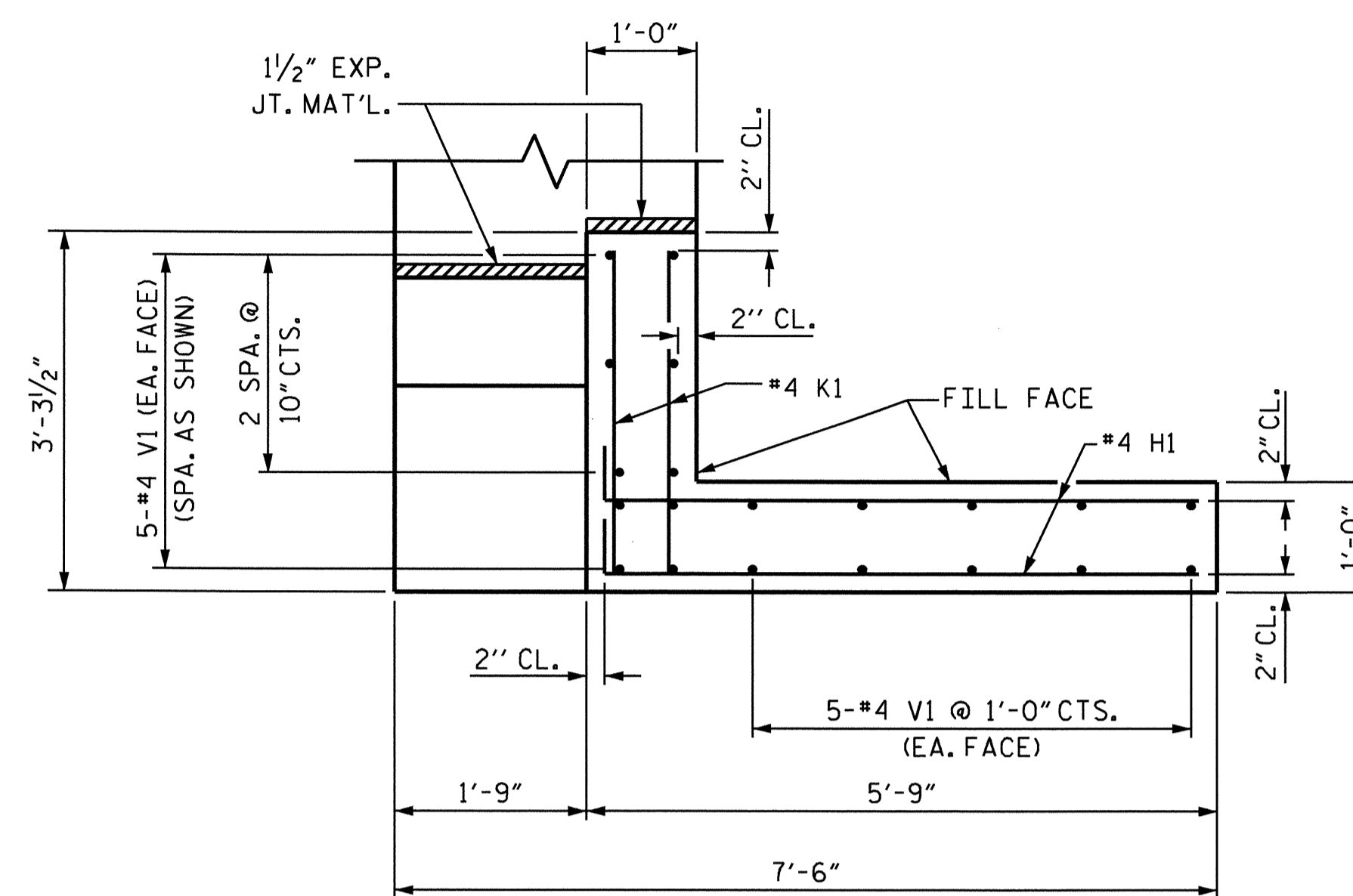
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2			4				

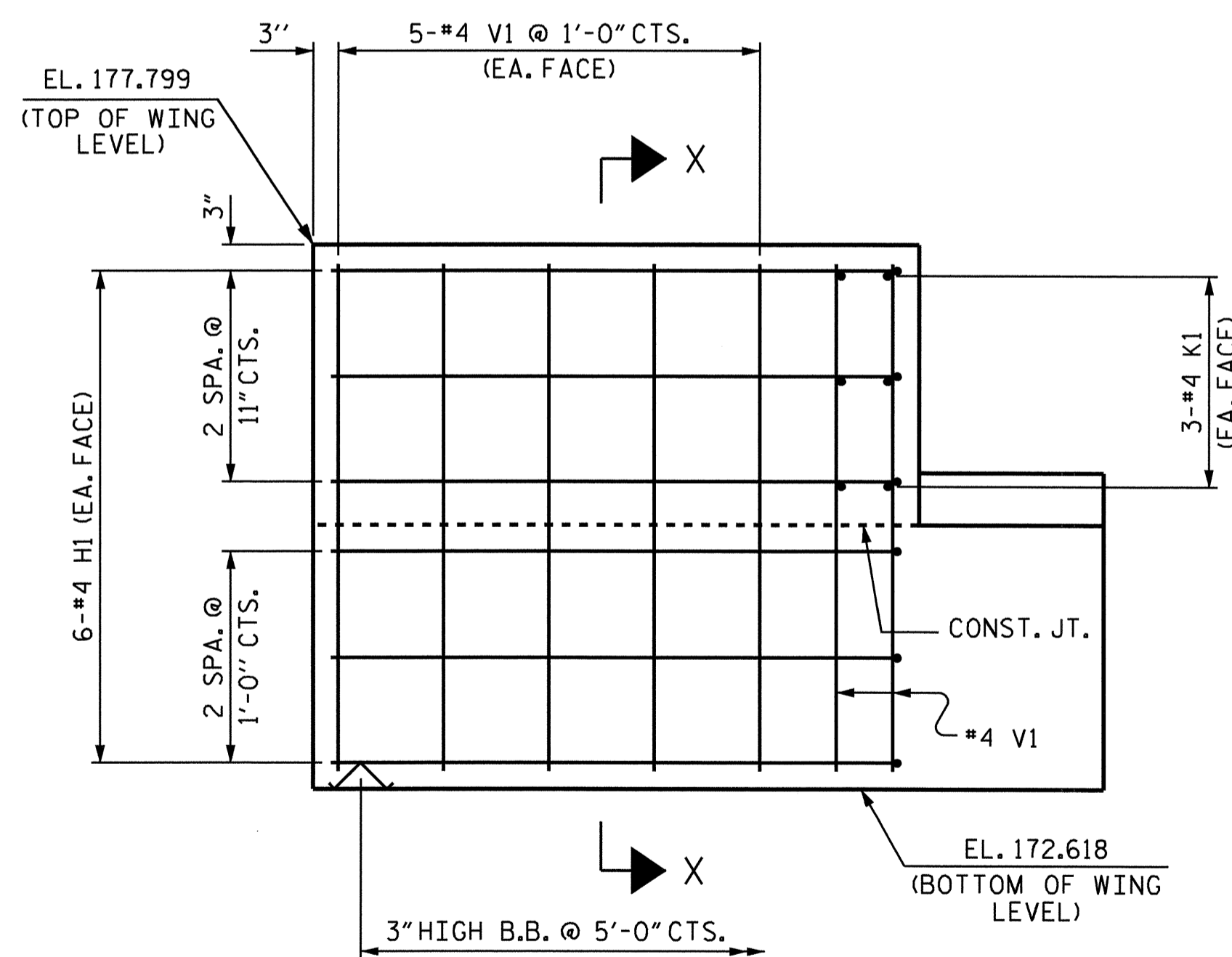
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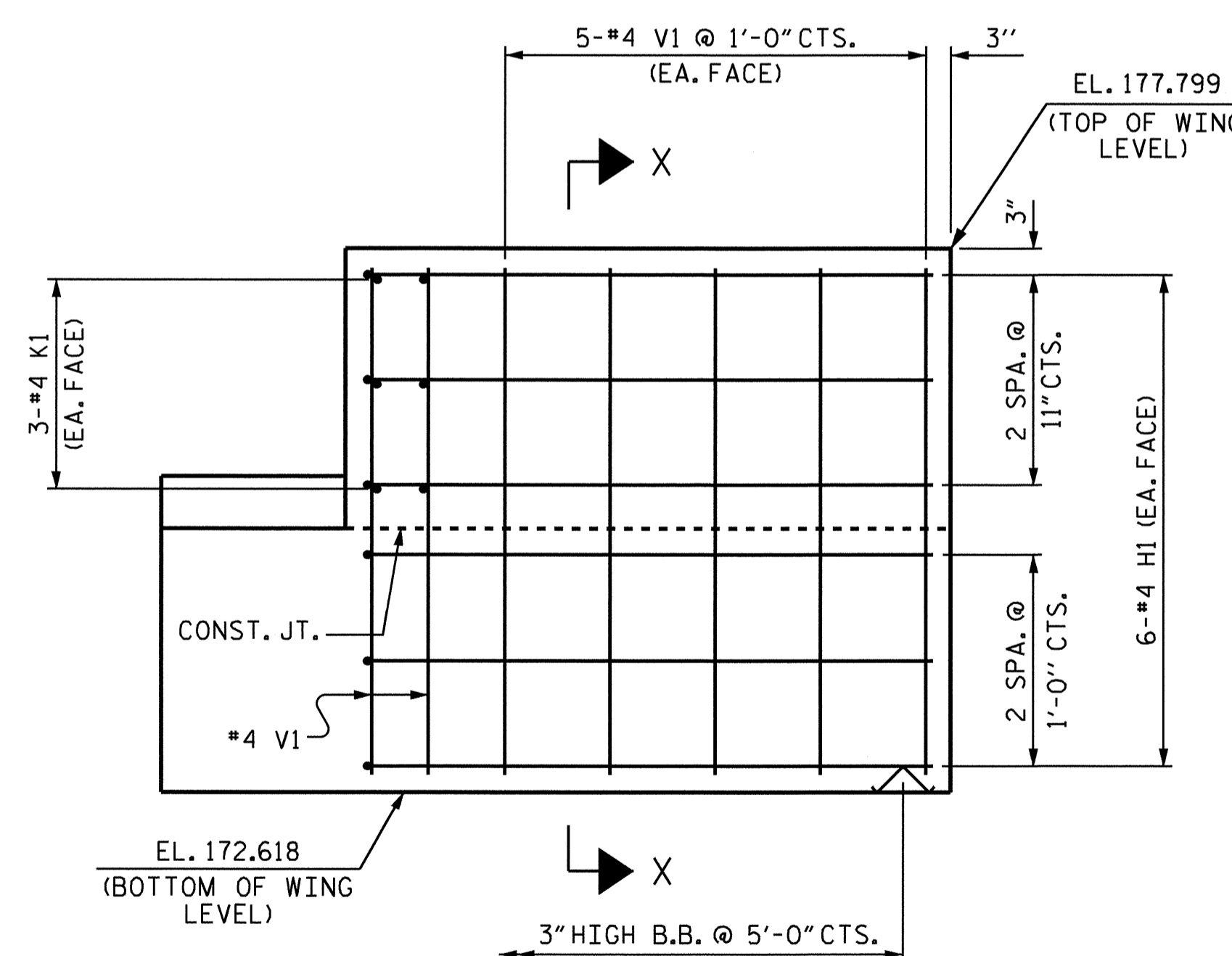
PLAN OF WING W1



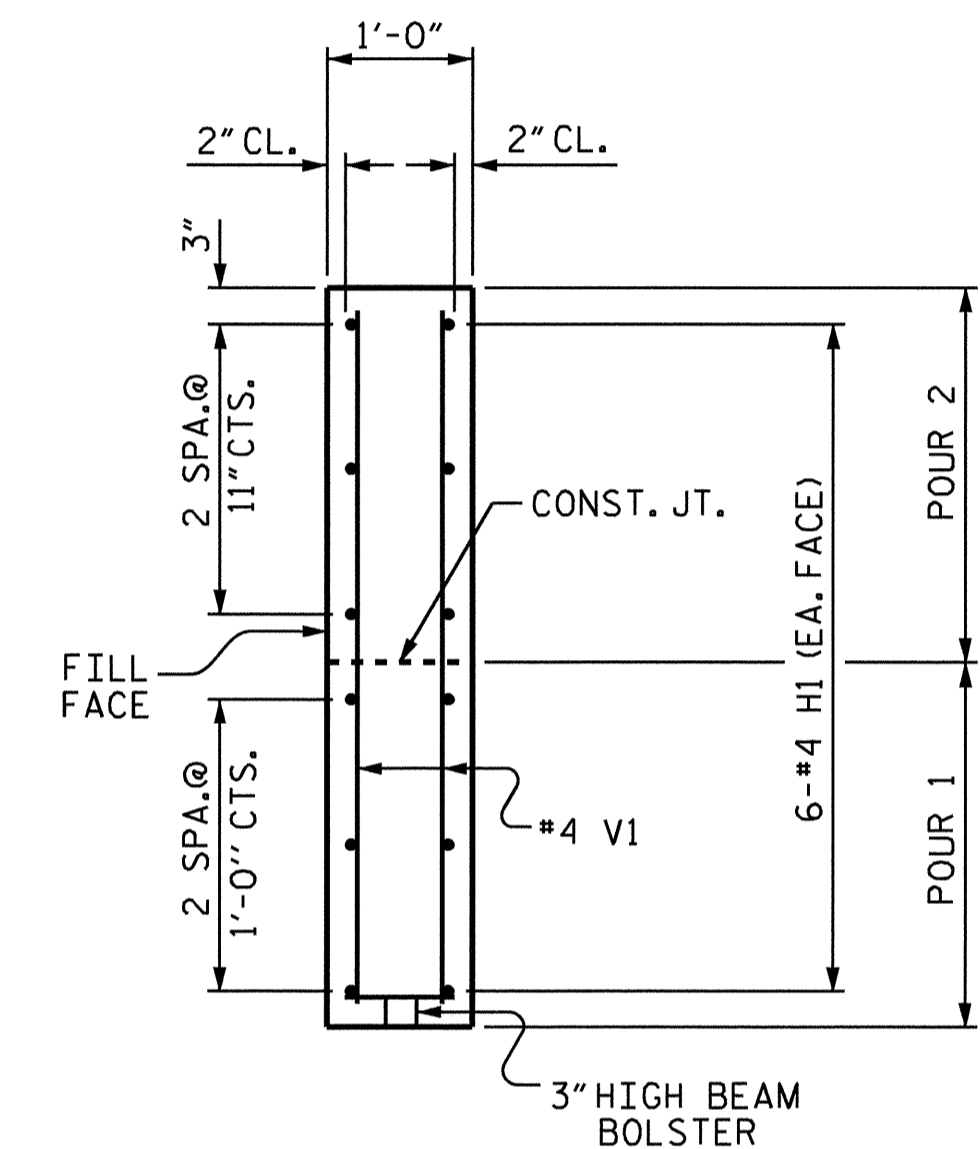
PLAN OF WING W2



ELEVATION OF WING W1



ELEVATION OF WING W2



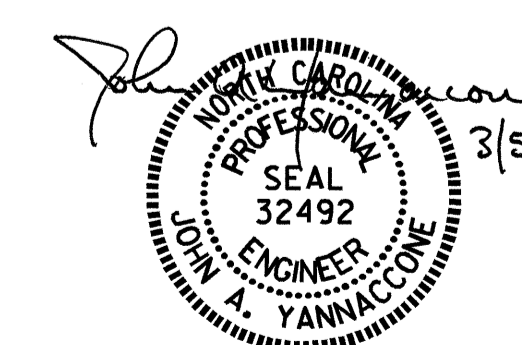
SECTION X-X

PROJECT NO. B-4641
SCOTLAND COUNTY
 STATION: 15+97.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

END BENT 2

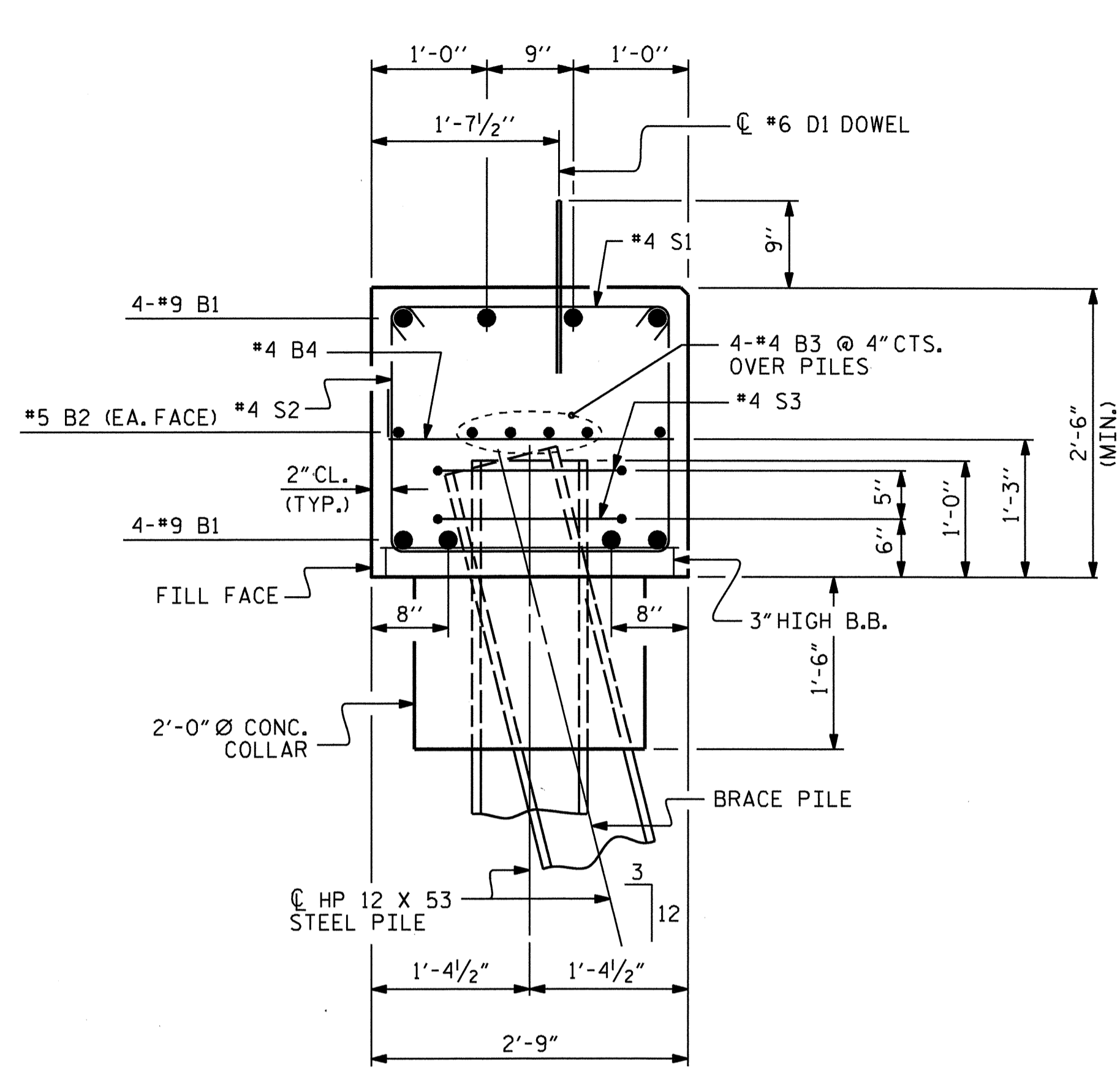


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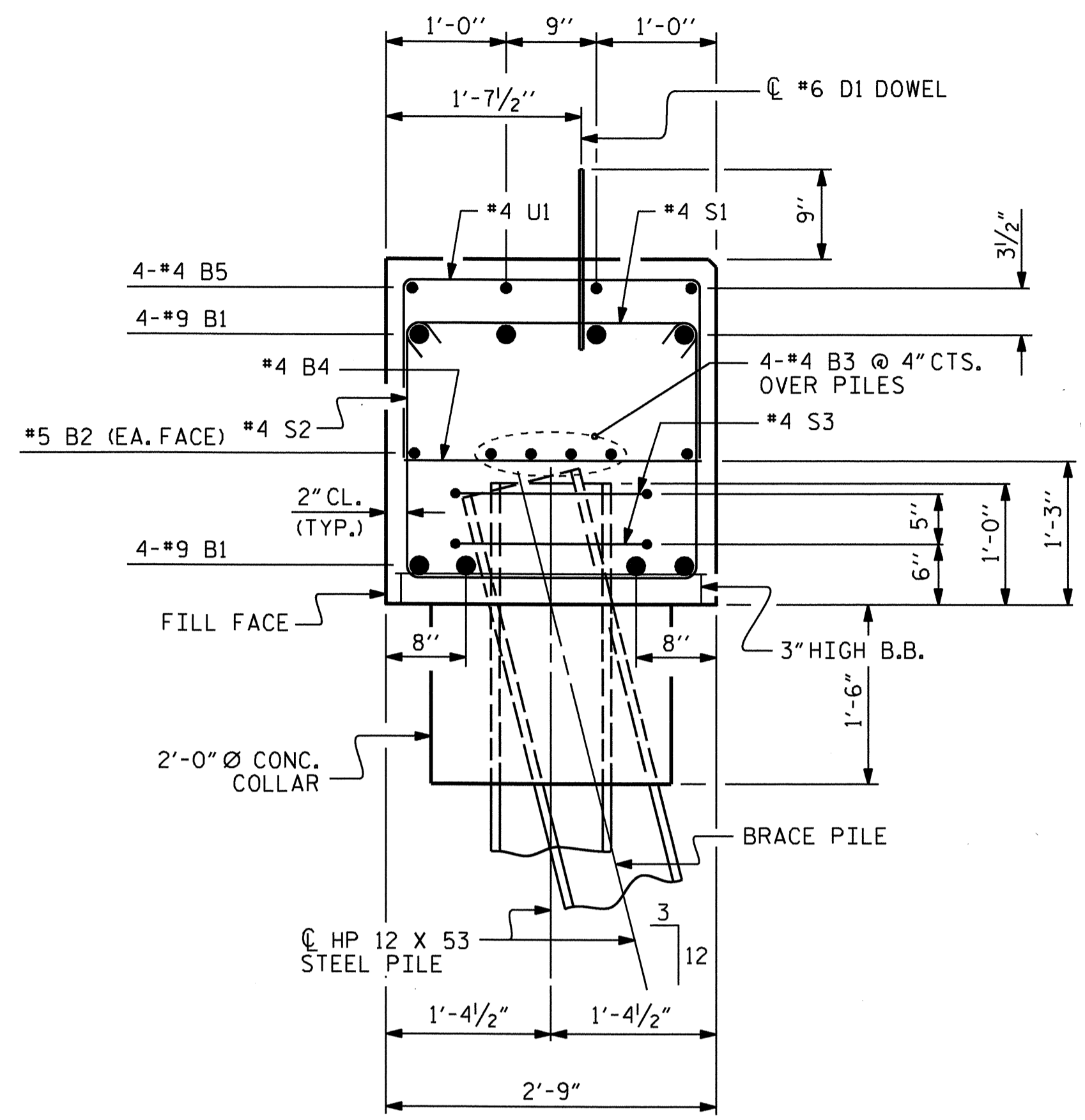
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 sdbrowski

REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
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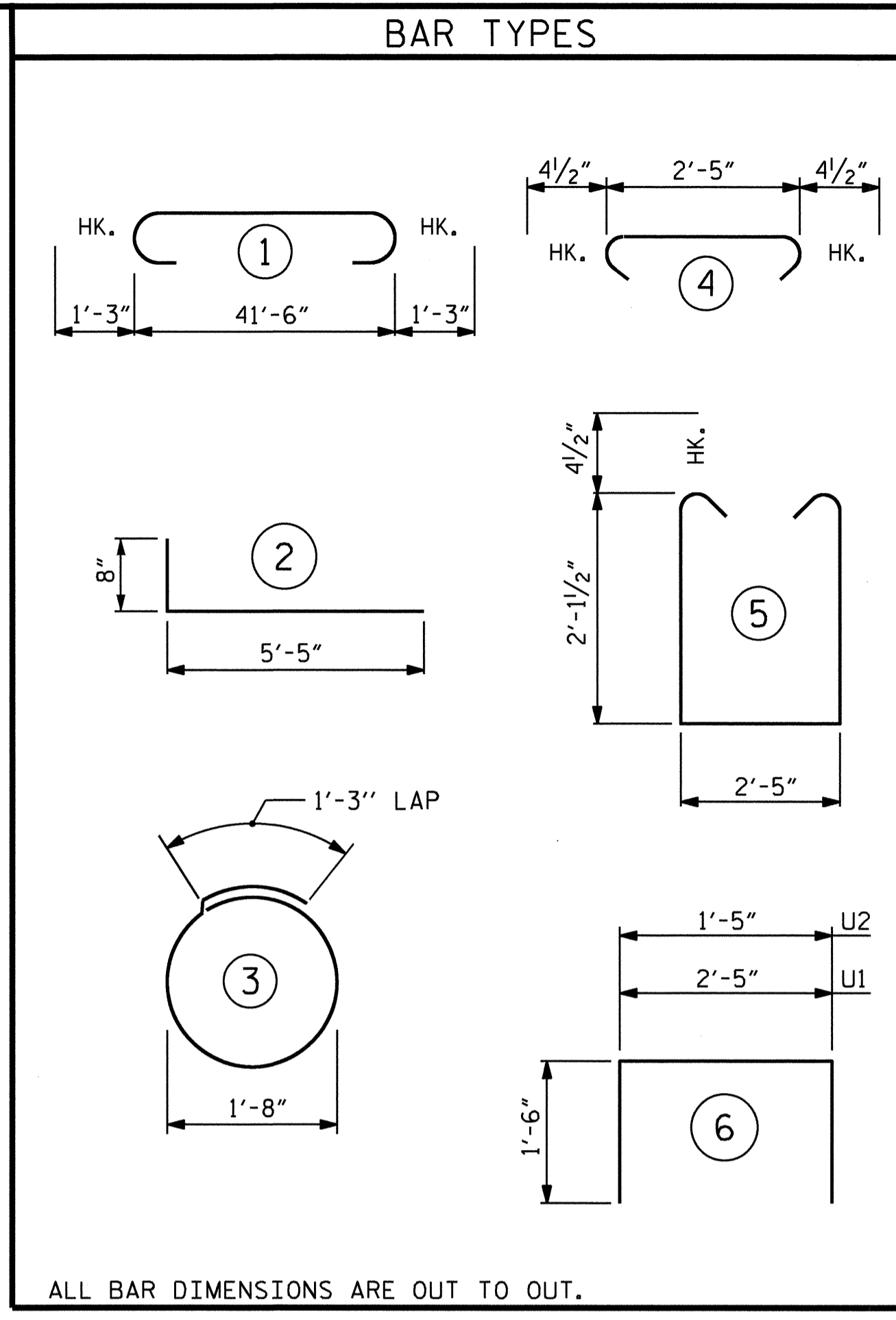
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SECTION A-A

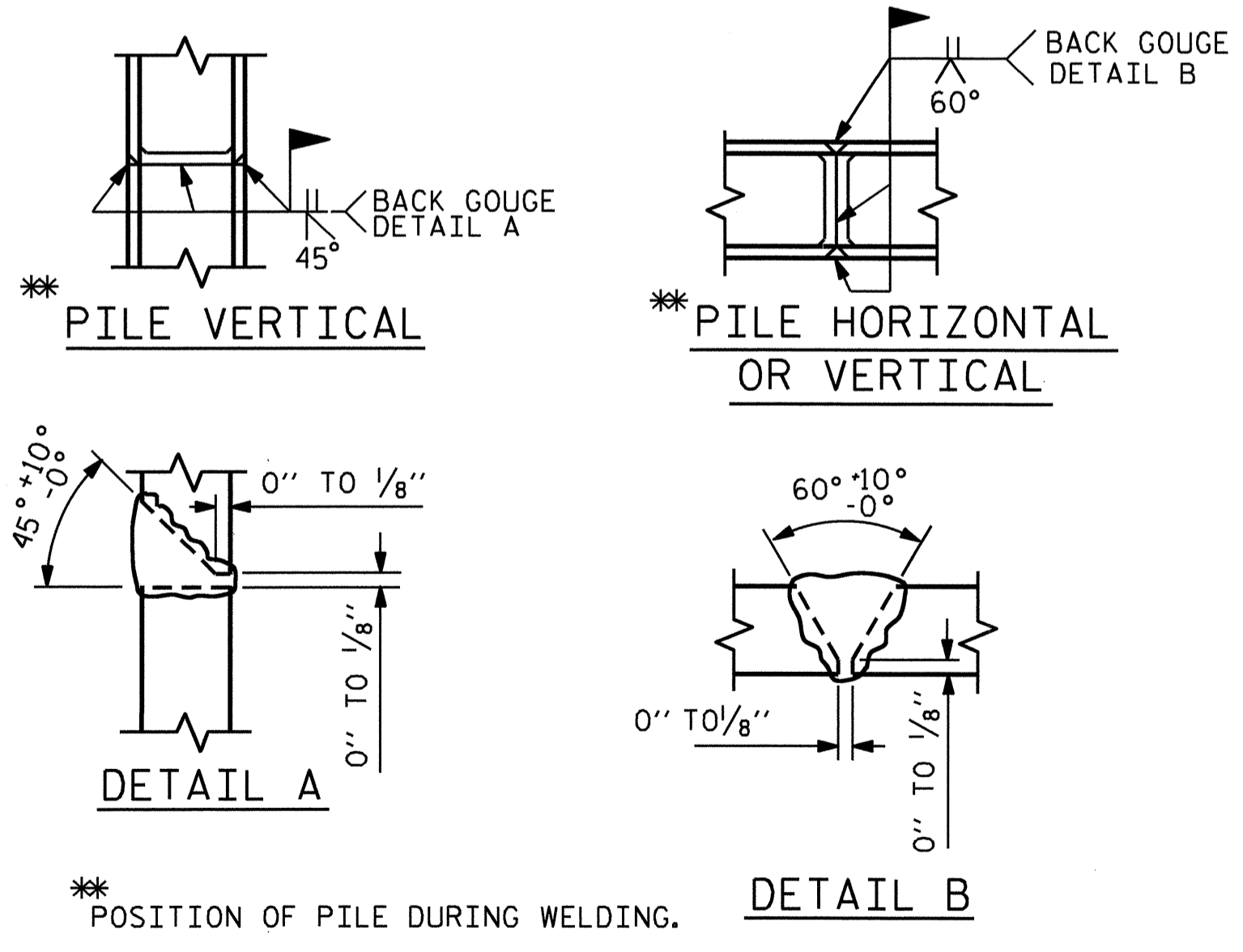


SECTION B-B

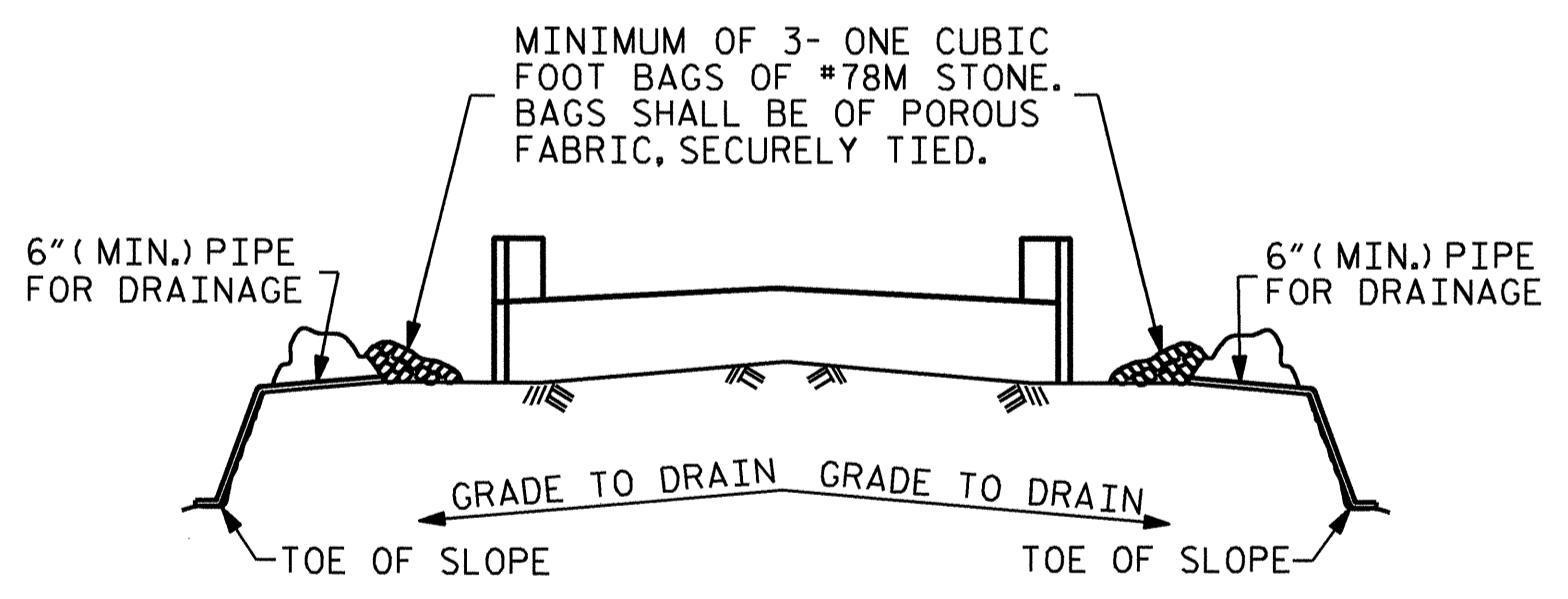


ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		44'-0"	1197
B2	2	#5	STR	41'-8"	87
B3	8	#4	STR	22'-1"	118
B4	11	#4	STR	2'-5"	18
B5	4	#4	STR	15'-6"	41
D1	24	#6	STR	1'-6"	54
H1	24	#4	2	6'-1"	98
K1	12	#4	STR	2'-11"	23
S1	46	#4	4	3'-2"	97
S2	46	#4	5	7'-5"	228
S3	10	#4	3	6'-6"	43
U1	11	#4	6	5'-5"	40
U2	4	#4	6	4'-5"	12
V1	40	#4	STR	4'-10"	129
REINFORCING STEEL					LBS. 2185
CLASS A CONCRETE BREAKDOWN					
POUR 1 (CONCRETE COLLARS, CAP & LOWER WINGS)				C.Y.	13.3
POUR 2 (UPPER WINGS)				C.Y.	1.6
POUR 3 (LATERAL GUIDES)				C.Y.	0.1
TOTAL				C.Y.	15.0
HP 12 X 53 STEEL PILES					
NO. 5				LIN. FT. =	475
PILE REDRIVES				EACH	5



PILE SPLICE DETAILS



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

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

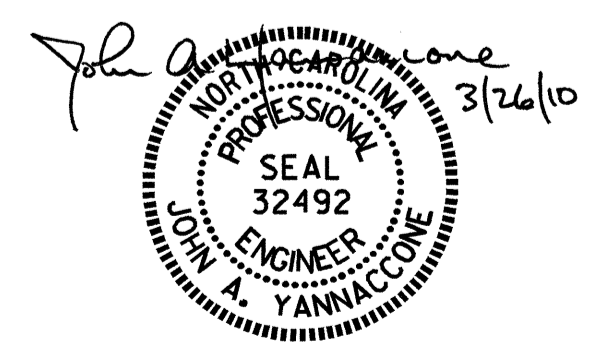
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR 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-4641
SCOTLAND COUNTY
 STATION: 15+97.50 -L-
 SHEET 3 OF 3

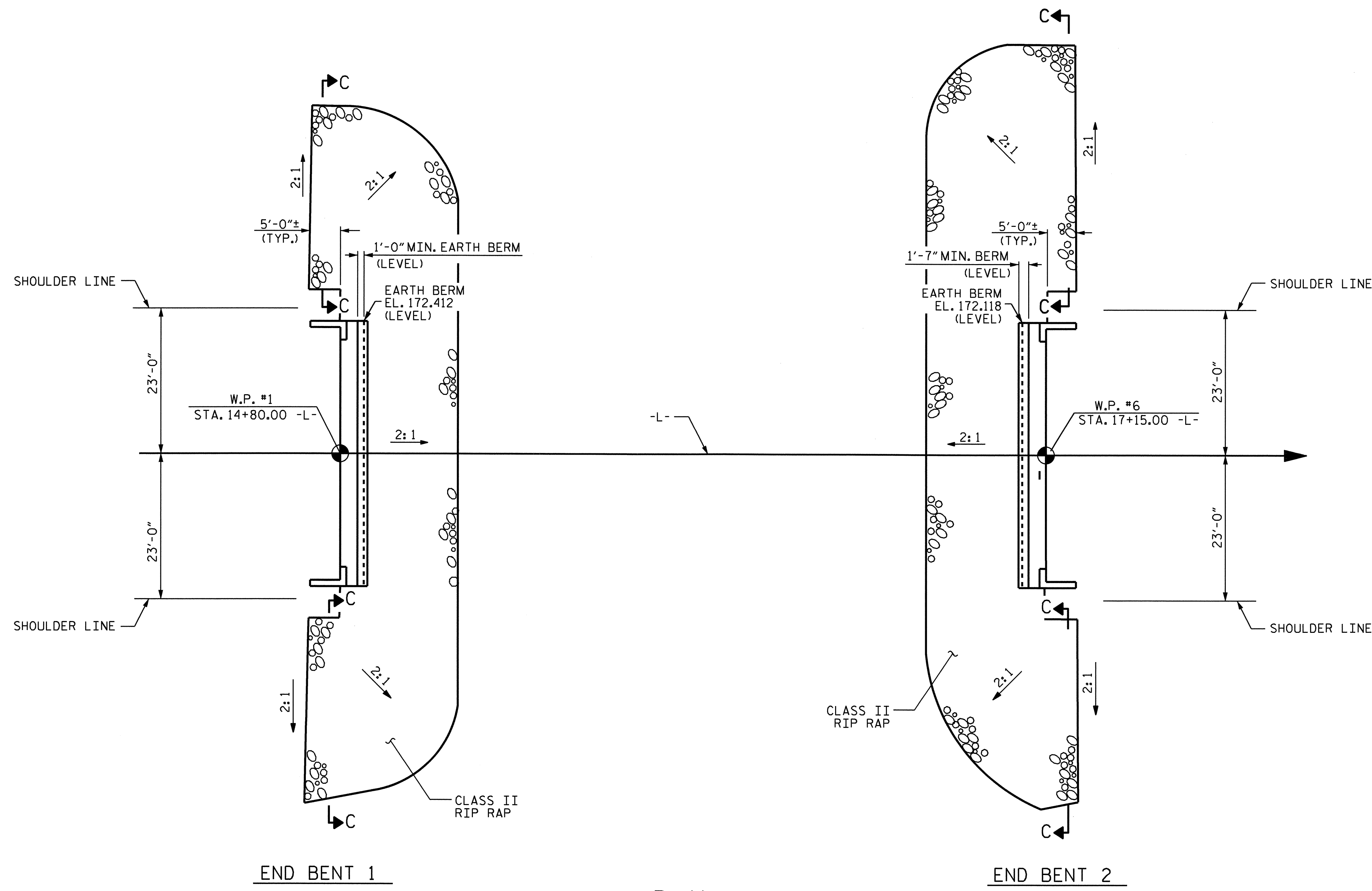
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 2



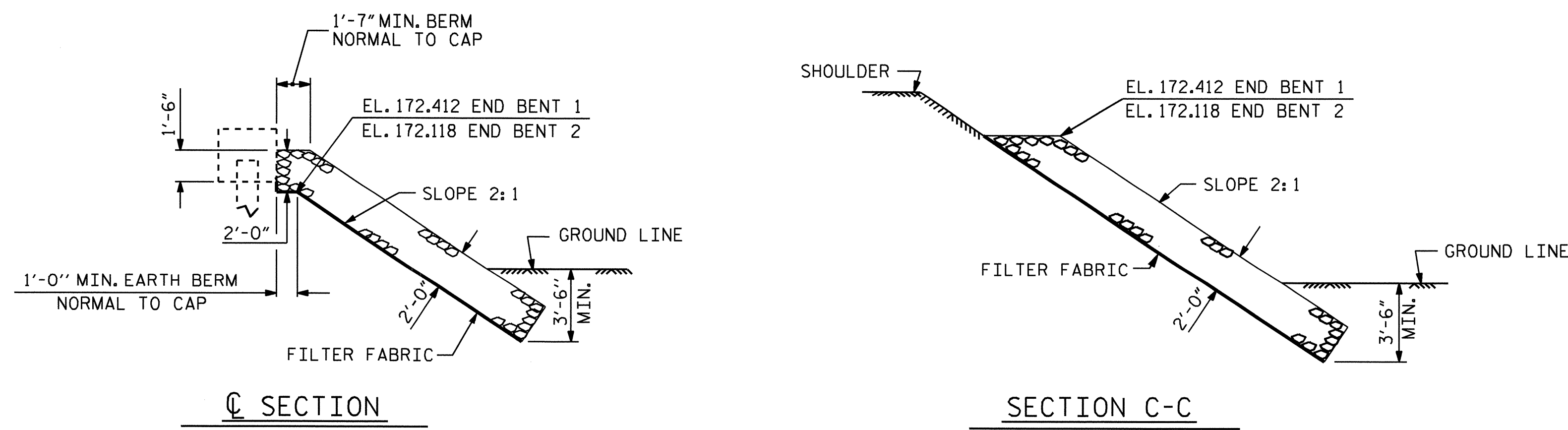
DRAWN BY : J.A. YANNAKONE DATE : 11-5-09
 CHECKED BY : T. H. FANG DATE : 12-9-09

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			25

ESTIMATED QUANTITIES		
BRIDGE @ STA. 15+97.50 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	200	220
END BENT 2	190	210
TOTAL	390	430



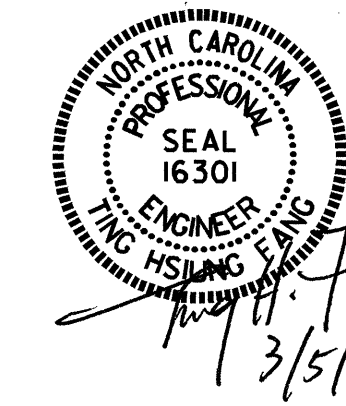
PLAN



BERM RIP RAPPED

PROJECT NO. B-4641
SCOTLAND COUNTY
 STATION: 15+97.50 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					25

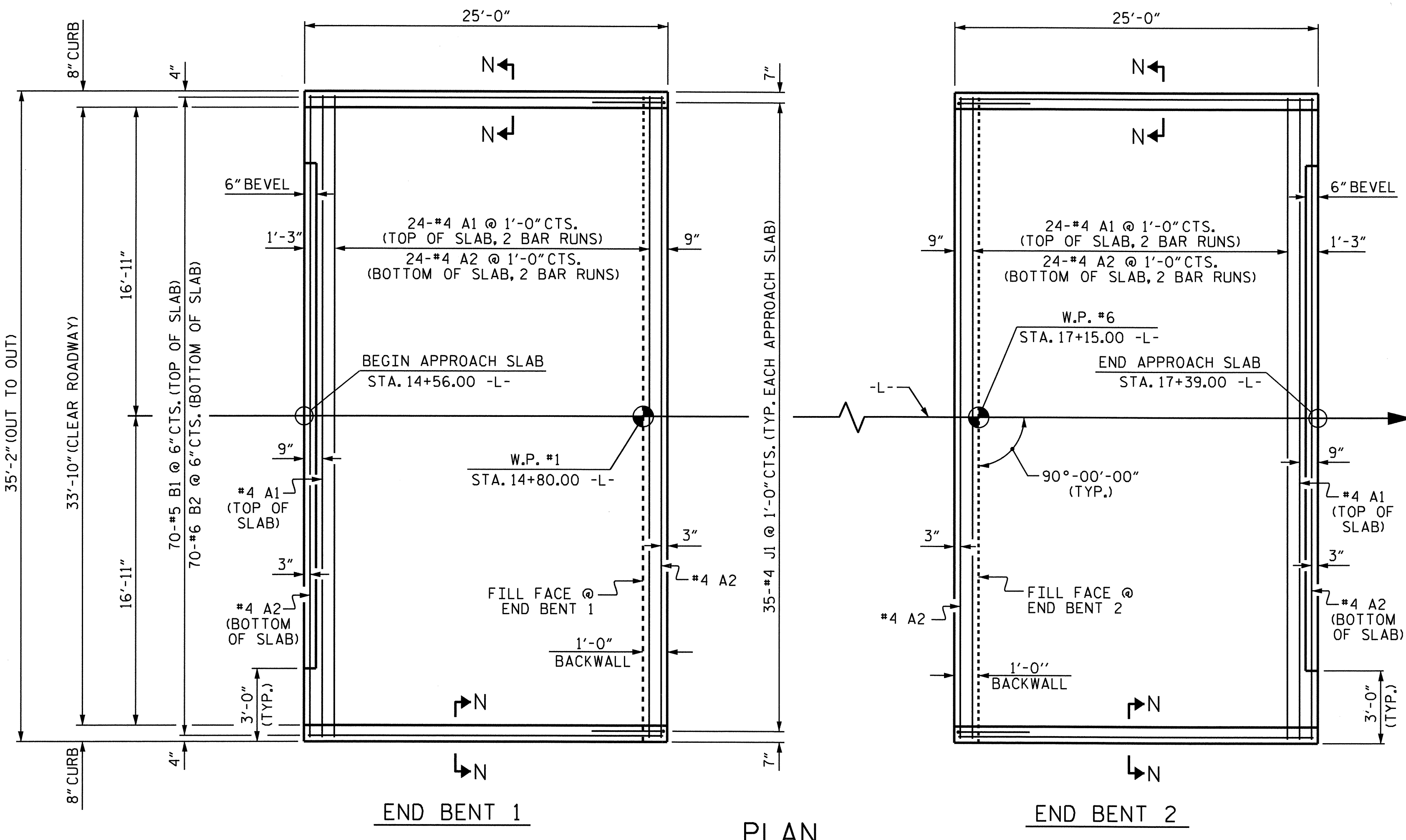


ASSEMBLED BY: Z. H. BROWN	DATE: 7/7/08
CHECKED BY: T. H. FANG	DATE: 12/3/09
DRAWN BY: FCJ 2/88	REV. 7/17/98 REK/RWW
CHECKED BY: ARB 8/88	REV. 8/16/99 RWW/LES
	REV. 10/17/00 RWW/LES

04-MAR-2010 15:26
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 sdombrowski

SKREW 90°

STD. NO. RR2



PLAN
DIMENSIONS & REINFORCING STEEL SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS.

NOTES

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

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

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

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL EXTEND 1'-0" BEYOND THE 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 EXTEND 1'-0" BEYOND THE 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.

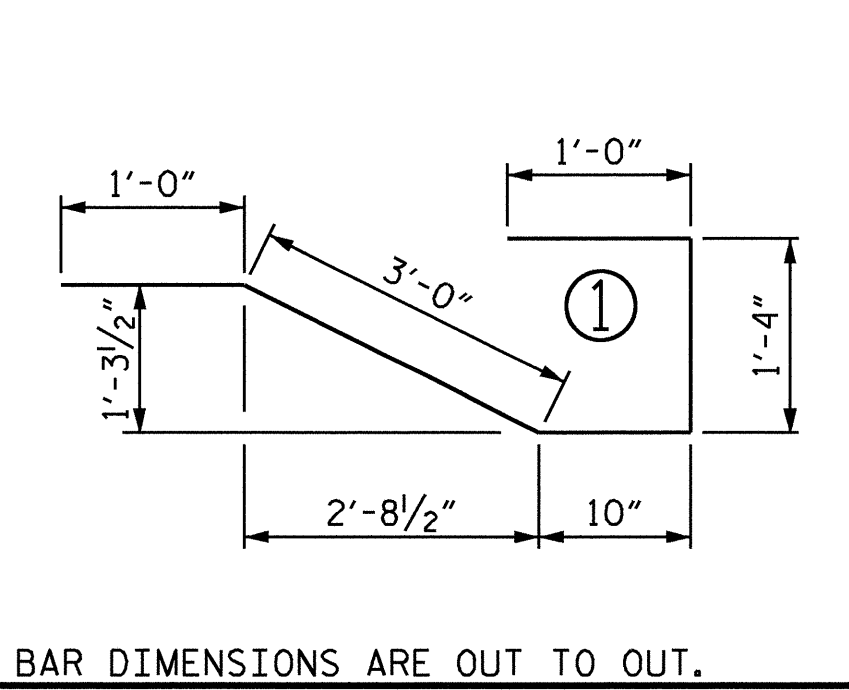
WITH EVAZOTE JOINT SEAL
FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.
THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE EVAZOTE JOINT SEAL SHALL BE 2 1/2".
FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

WITH CONCRETE WEARING SURFACE
APPROACH SLABS SHALL BE POURED AFTER CONCRETE OVERLAY IS POURED.

BILL OF MATERIAL

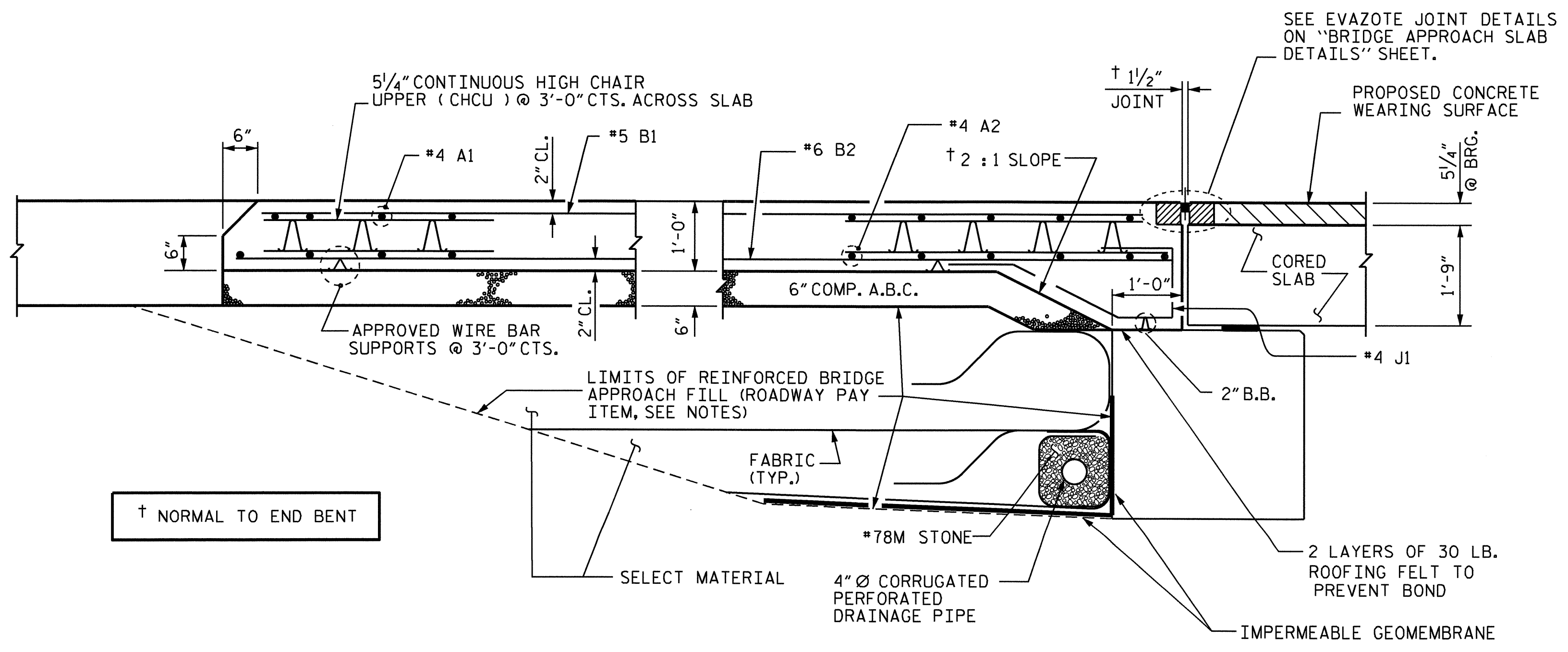
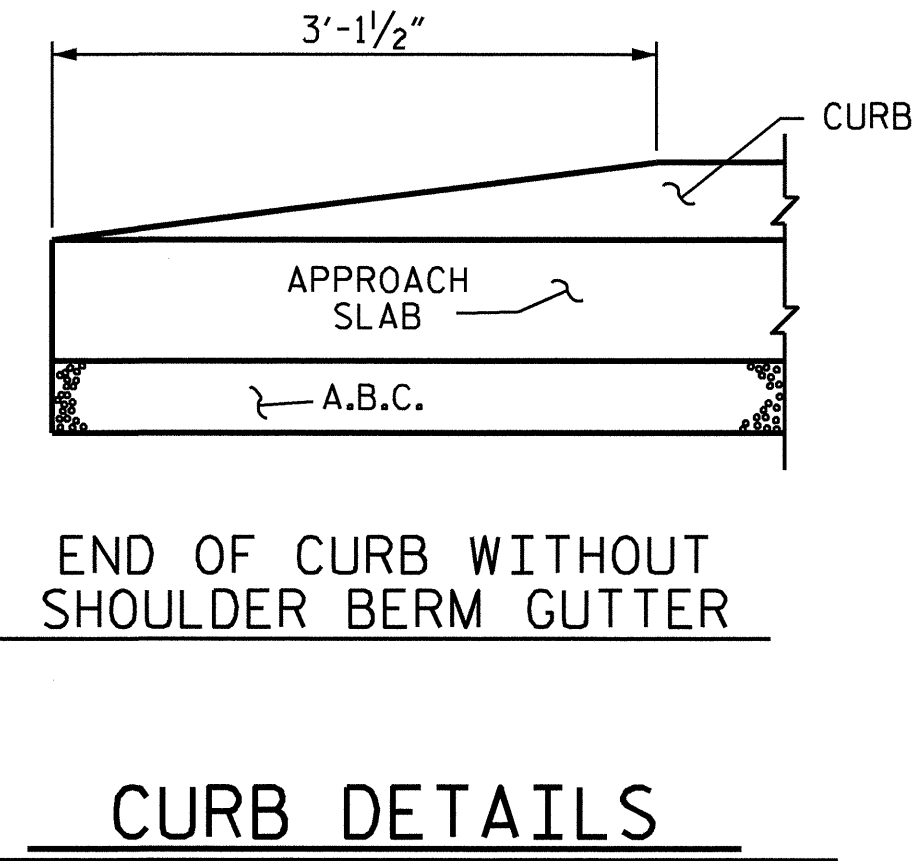
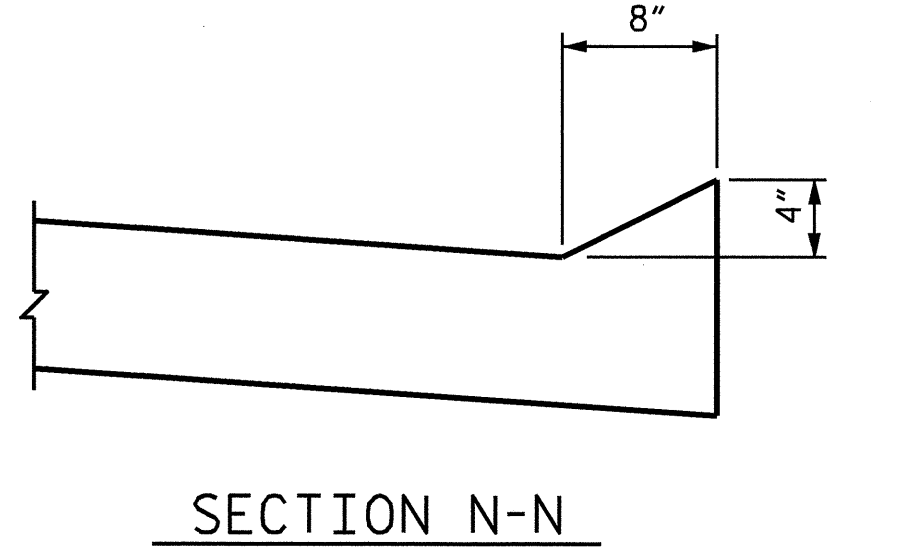
FOR ONE APPROACH SLAB
(2 REQUIRED)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	50	#4	STR	18'-5"	615
A2	52	#4	STR	18'-4"	637
* B1	70	#5	STR	23'-8"	1728
B2	70	#6	STR	24'-8"	2593
J1	35	#4	1	7'-2"	168
REINFORCING STEEL				LBS.	3398
* EPOXY COATED REINFORCING STEEL				LBS.	2343
CLASS AA CONCRETE				C. Y.	36.4



SPLICE CHART

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



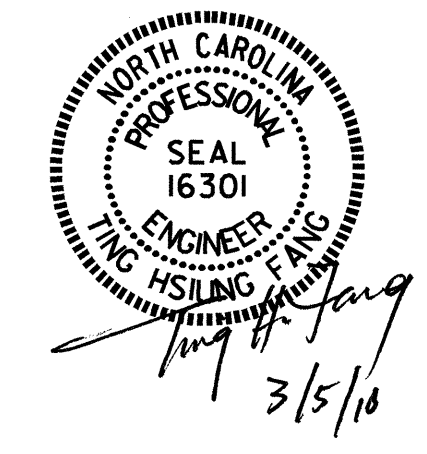
SECTION THRU SLAB

PROJECT NO. B-4641
SCOTLAND COUNTY
 STATION: 15+97.50 -L-

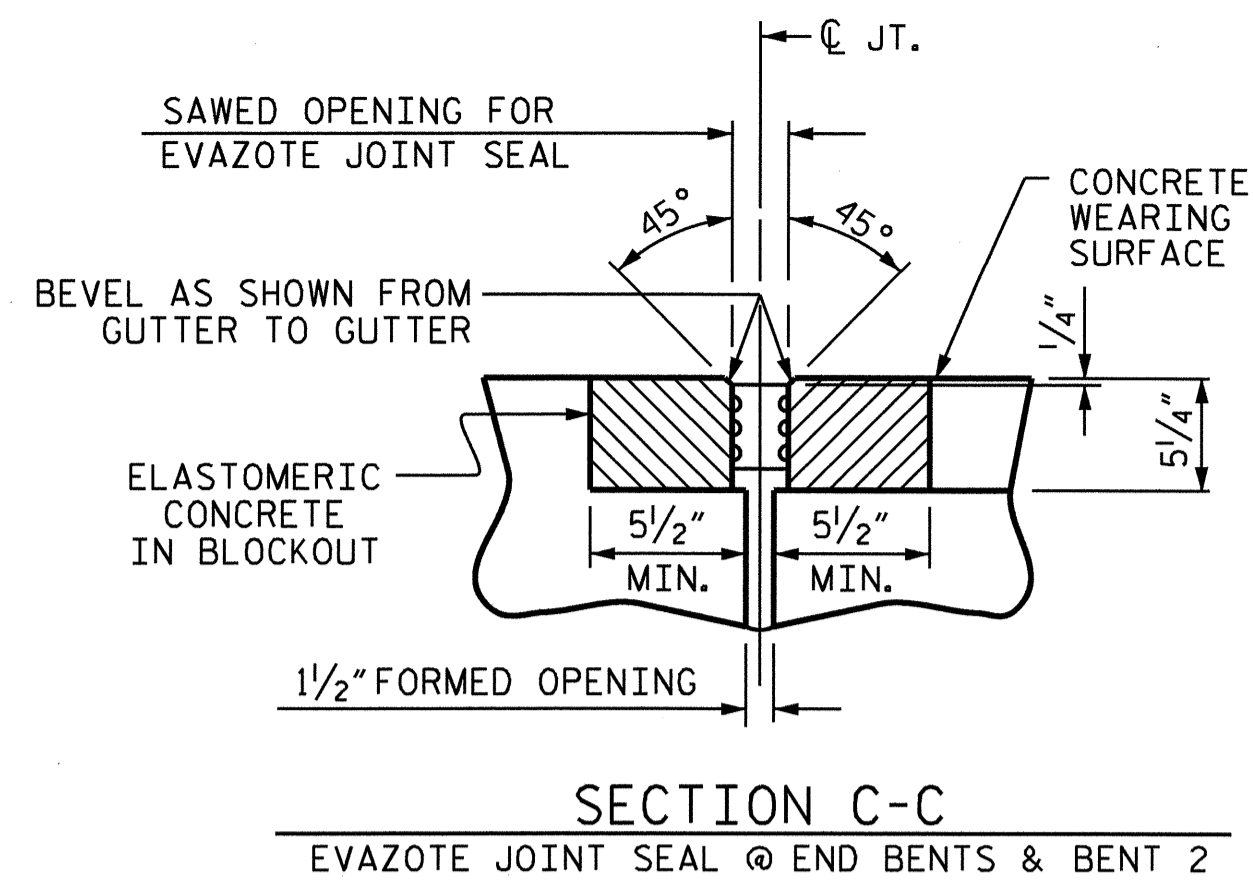
SHEET 1 OF 2

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

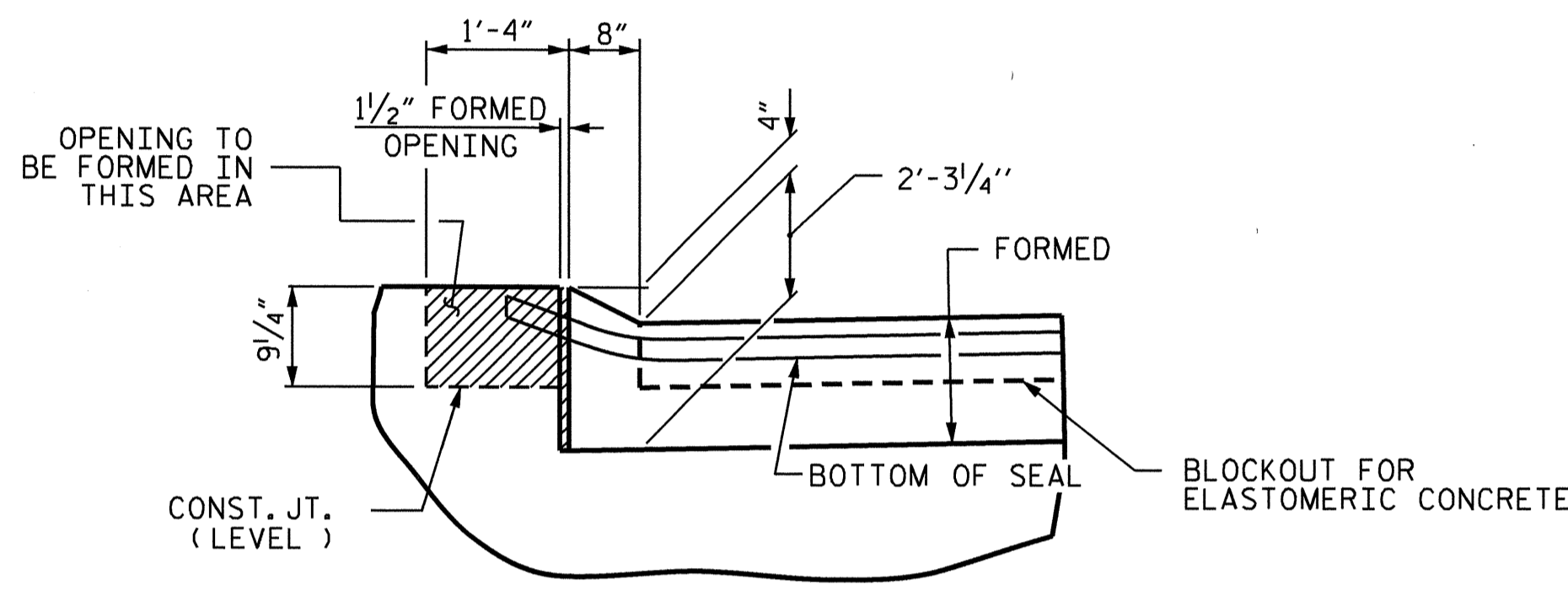
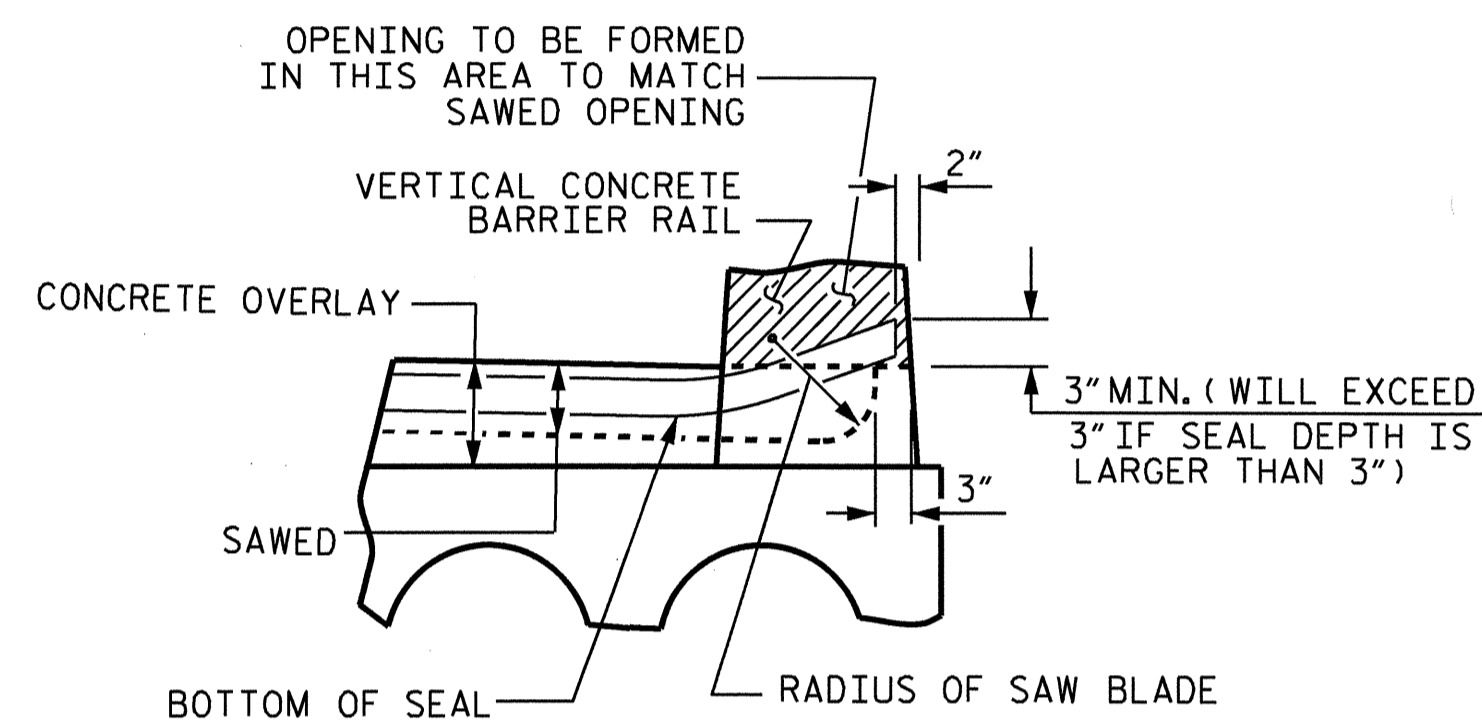
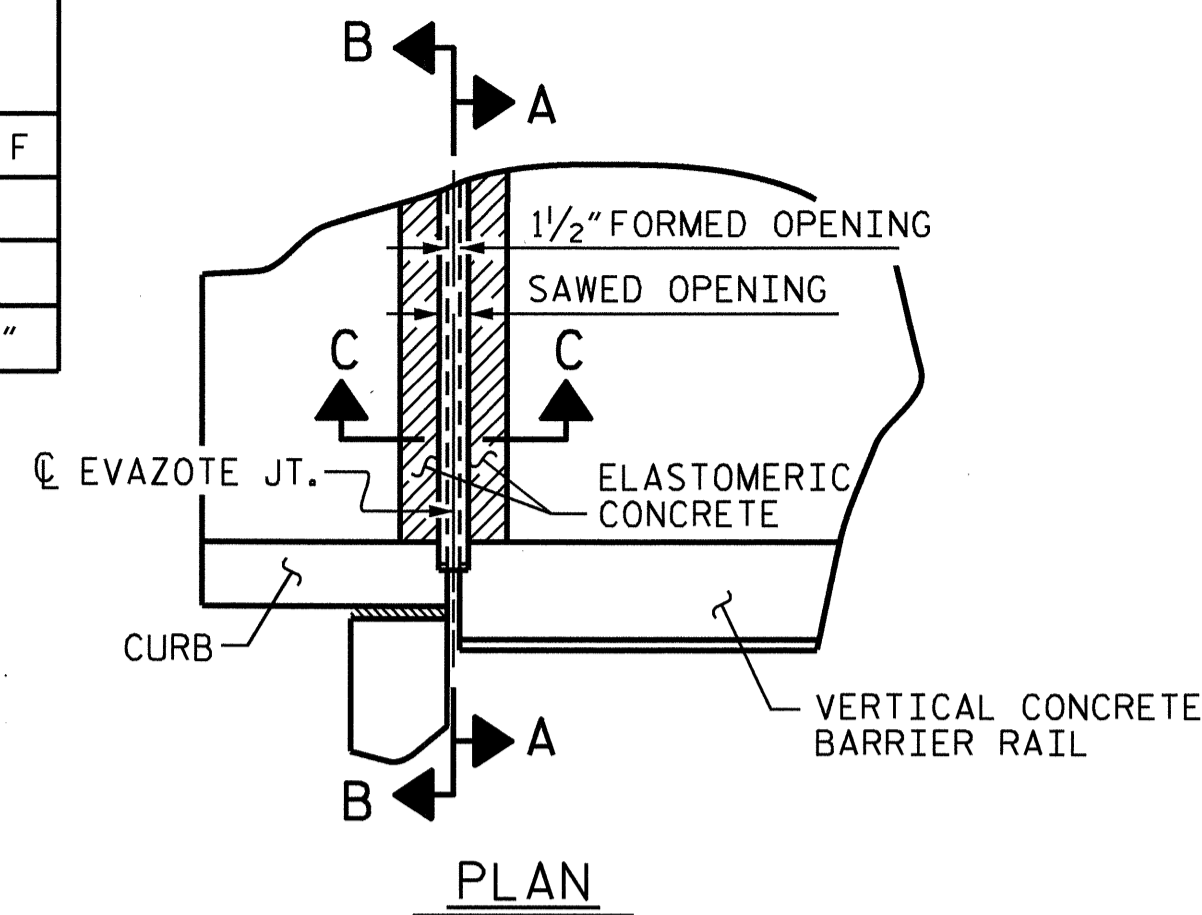
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			25



ASSEMBLED BY : J. E. JONES DATE : 3/10/09
 CHECKED BY : T. H. FANG DATE : 12/1/09
 DRAWN BY : FCJ 6/87 REV. 7/10/01 LES/RDR
 CHECKED BY : EGA 6/87 REV. 5/7/03R RWW/JTE
 REV. 5/1/06 TLA/GM



TEMPERATURE SETTING FOR EVAZOTE JOINT SEAL			
LOCATION	@ 45° F	@ 60° F	@ 90° F
END BENT 1	2 1/16"	2"	2 7/8"
BENT 2	2 3/16"	2"	2 5/8"
END BENT 2	2 1/8"	2"	2 13/16"



SECTION A-A

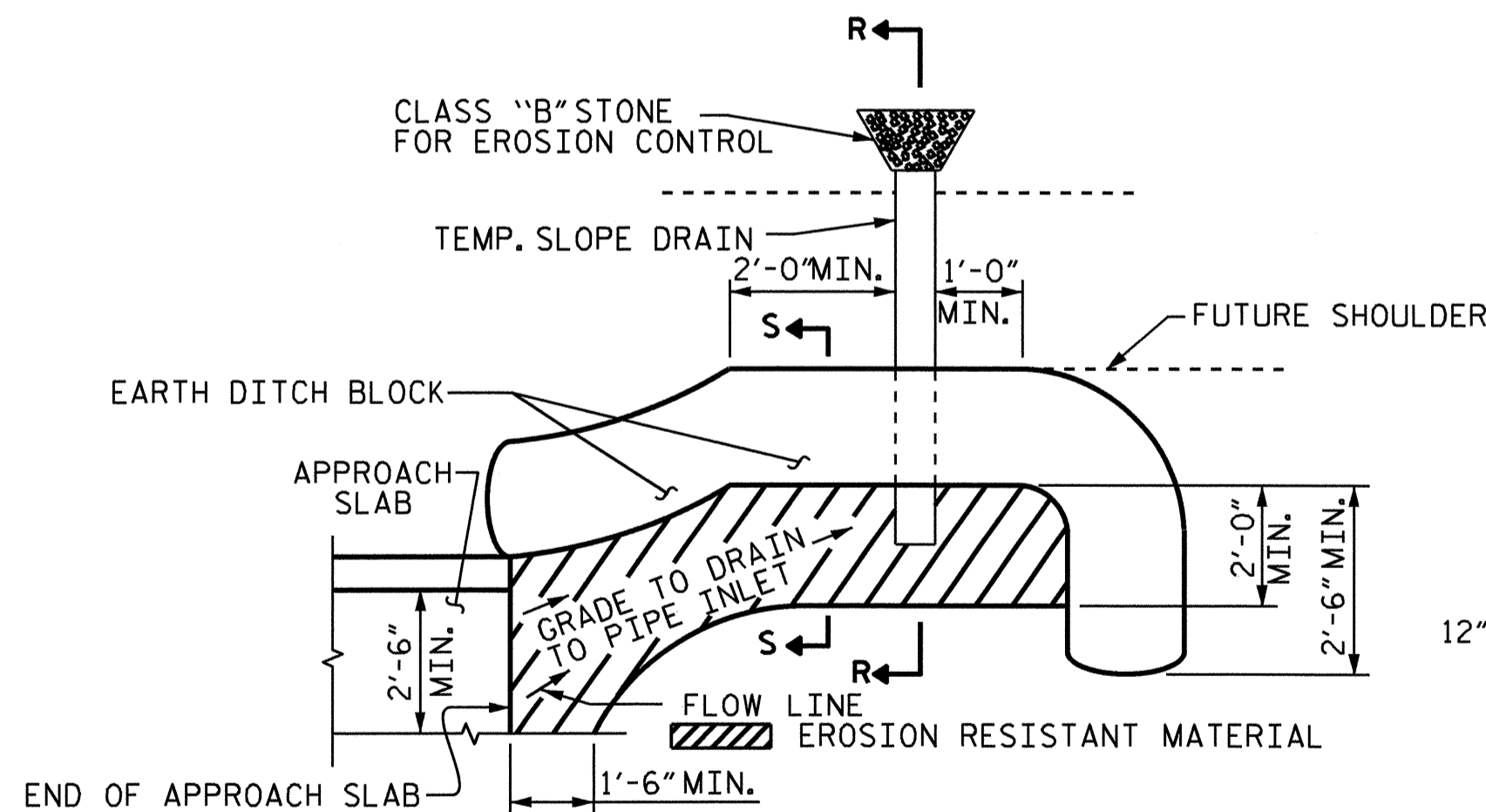
SECTION B-B

JOINT SEAL DETAILS @ END BENTS

ALSO SHOWN TEMPERATURE SETTING @ BENT 2

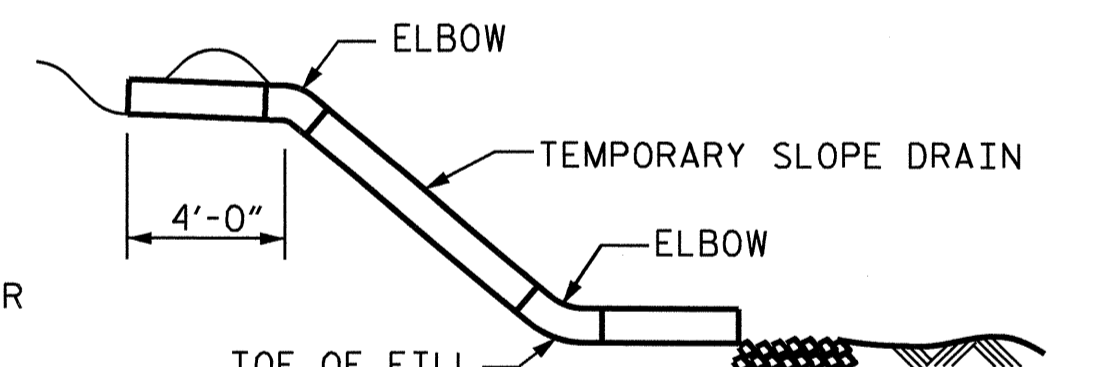
ELASTOMERIC CONCRETE	
LOCATION	ELASTOMERIC CONCRETE * (CU. FT.)
END BENT 1	10.34
BENT 2	10.34
END BENT 2	10.34
TOTAL	31.02

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

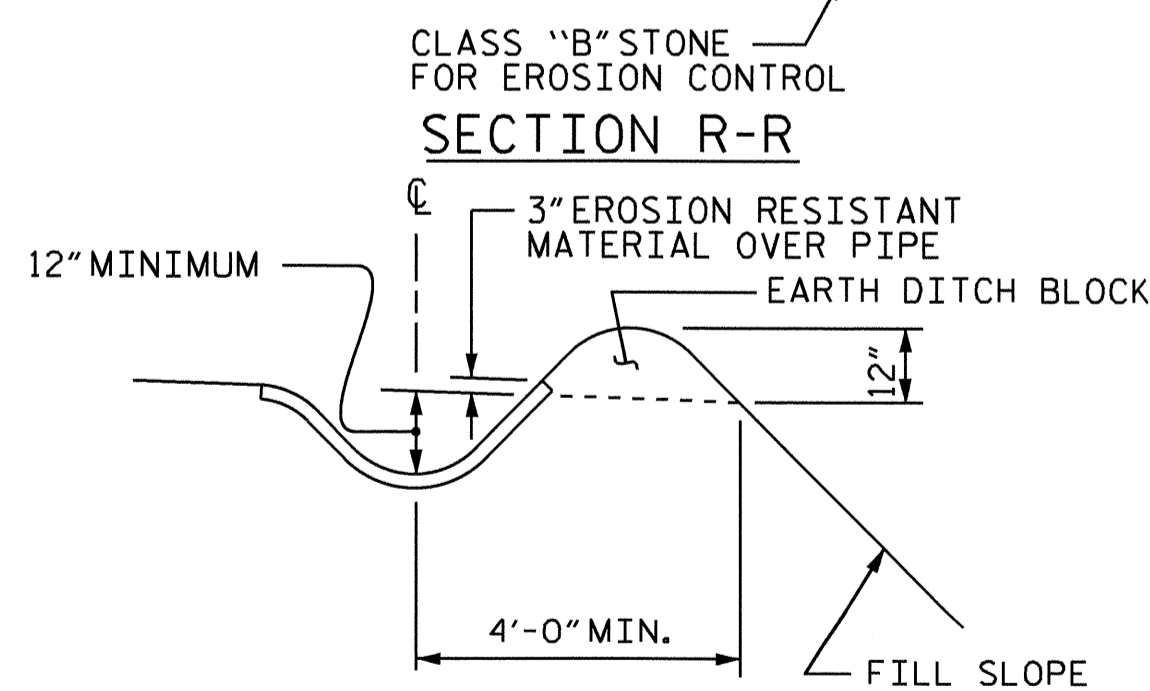


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2\"/>

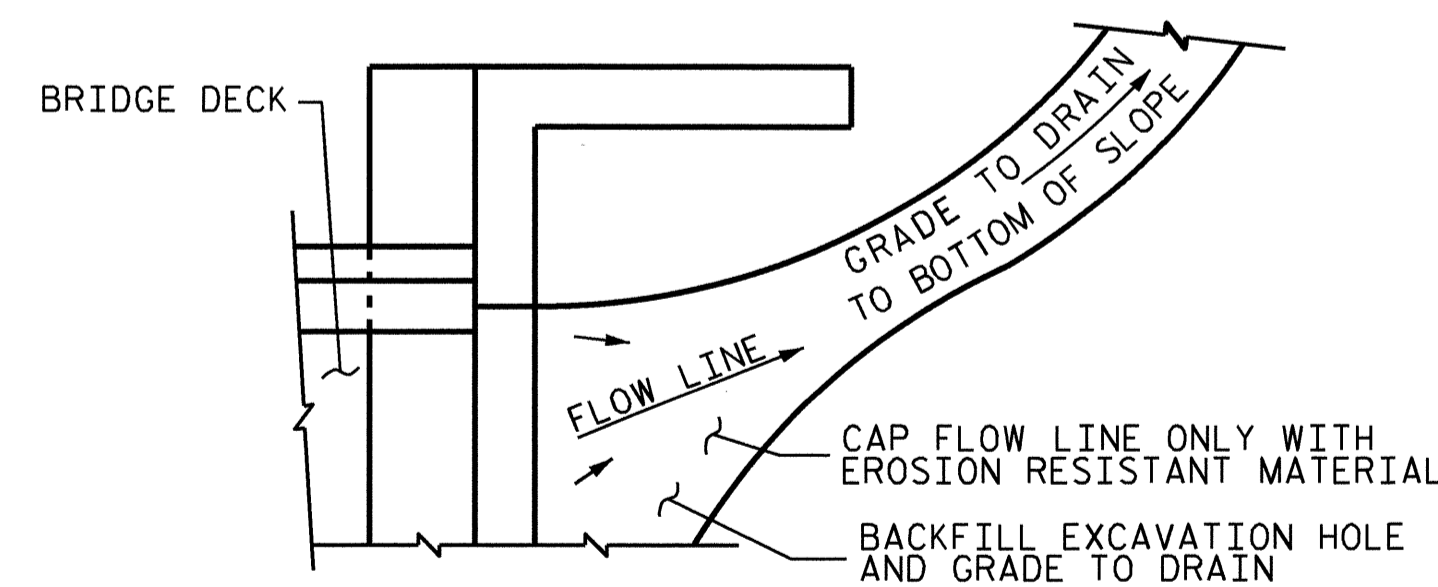
PLAN VIEW



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

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

PROJECT NO. B-4641
SCOTLAND COUNTY
 STATION: 15+97.50 -L-

SHEET 2 OF 2

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



ASSEMBLED BY : J. E. JONES	DATE : 2/03/09
CHECKED BY : T. H. FANG	DATE : 12/04/09
DRAWN BY : FCJ 11/88	REV. 10/17/00 RWW/LES
CHECKED BY : ARB 11/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			25

STD. NO. BAS10

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION		
GRADE 60	--	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	-----	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN 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" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINISHES 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