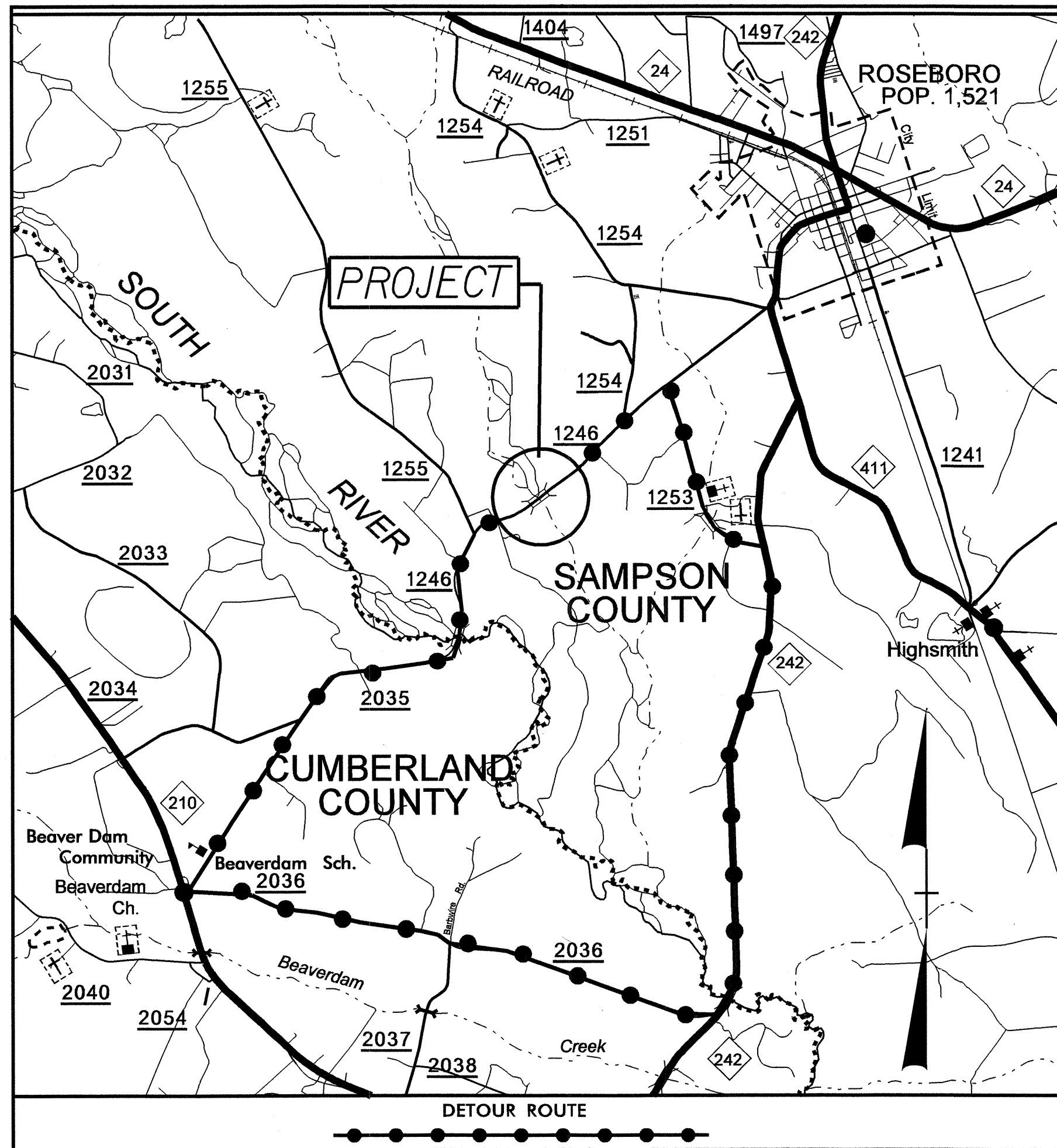


TIP PROJECT: B-4271

CONTRACT: C201499

STRUCTURE



VICINITY MAP

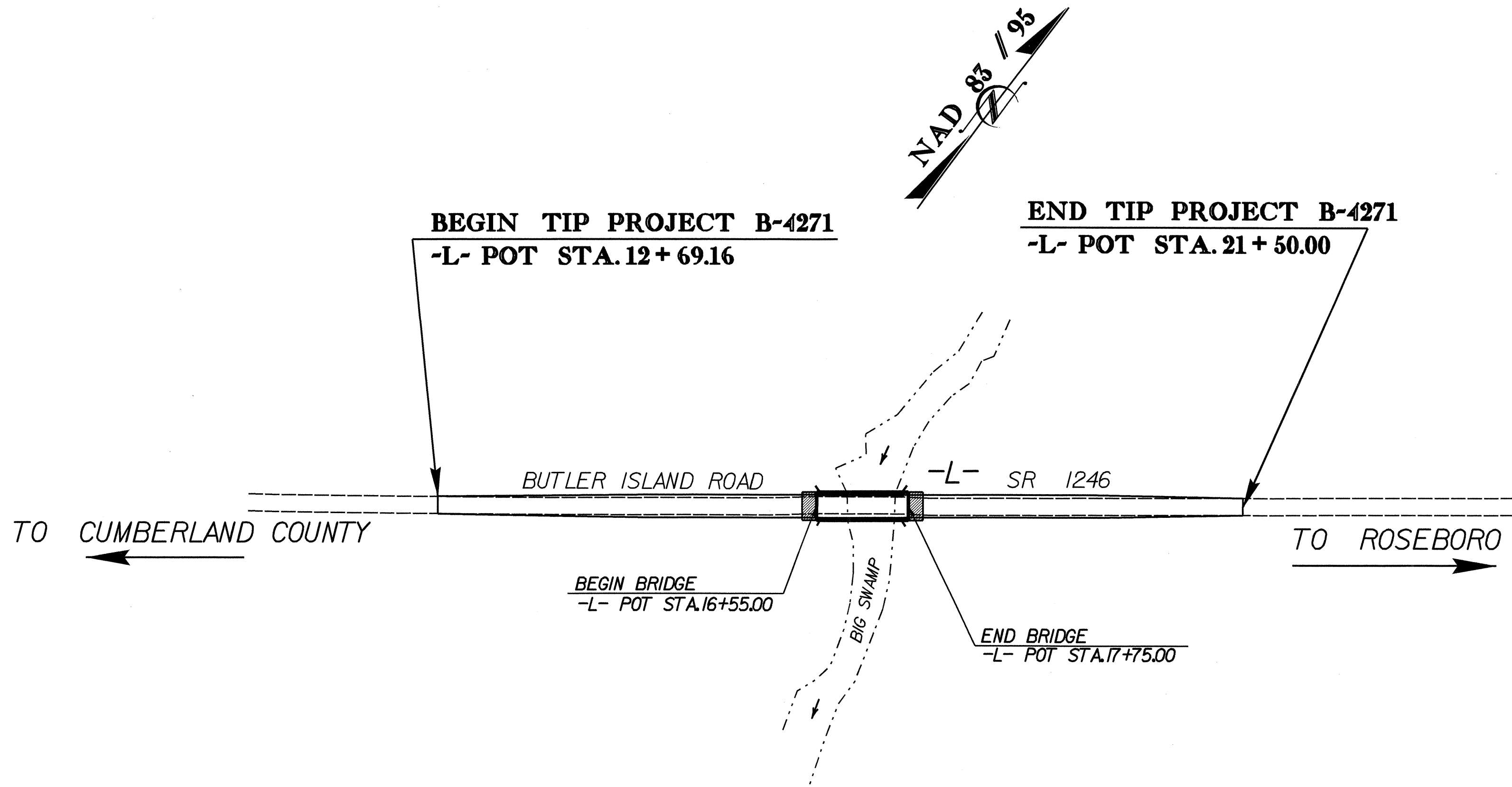
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SAMPSON COUNTY

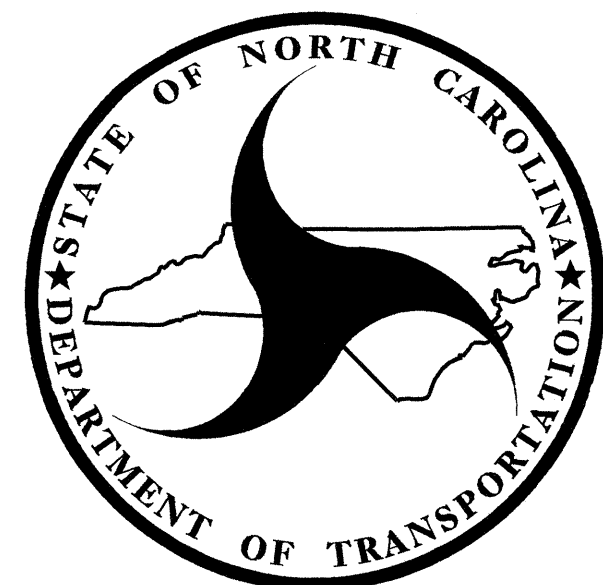
LOCATION: BRIDGE NO. 98 OVER BIG SWAMP ON SR 1246

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

STATE	STATE PROJECT REFERENCE NO.	
N.C.	B-4271	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
33612.1.1	BRZ-1246(2)	P.E.
33612.2.1	BRZ-1246(2)	R/W & UTIL.
33612.3.1	BRZ-1246(2)	CONST.



NOTES: (1) CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II
(2) THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.



DESIGN DATA	
ADT 2006 =	1650
ADT 2025 =	2600
DHV =	12 %
D =	60 %
* T =	6 %
V =	60 MPH
* TTST 4% +	DUAL 2%
FUNC. CLASS =	COLLECTOR

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT B-4271 =	0.143 MI
LENGTH STRUCTURE TIP PROJECT B-4271 =	0.023 MI
TOTAL LENGTH TIP PROJECT B-4271 =	0.166 MI
2006 STANDARDS SPECIFICATION	
LETTING DATE: AUGUST 21, 2007	

Prepared in the Office of:
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
1000 Birch Ridge Drive Raleigh, N.C. 27610

B. S. COX, P. E.
PROJECT ENGINEER

T. J. BEACH, P. E.
PROJECT DESIGN ENGINEER

STRUCTURE DESIGN UNIT

G. R. PERFECTI
6.20.07

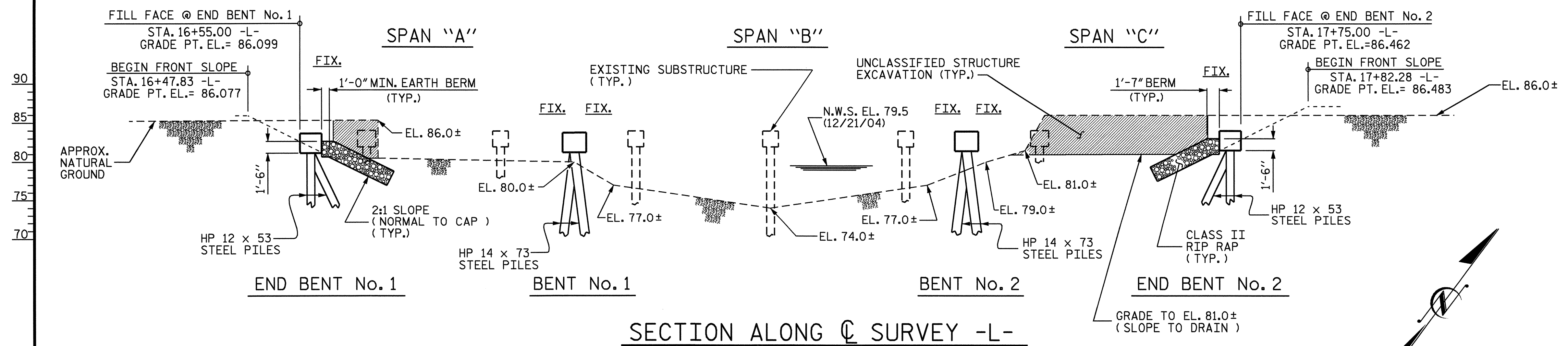
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY ENGINEER - DESIGN

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED FOR
DIVISION ADMINISTRATOR

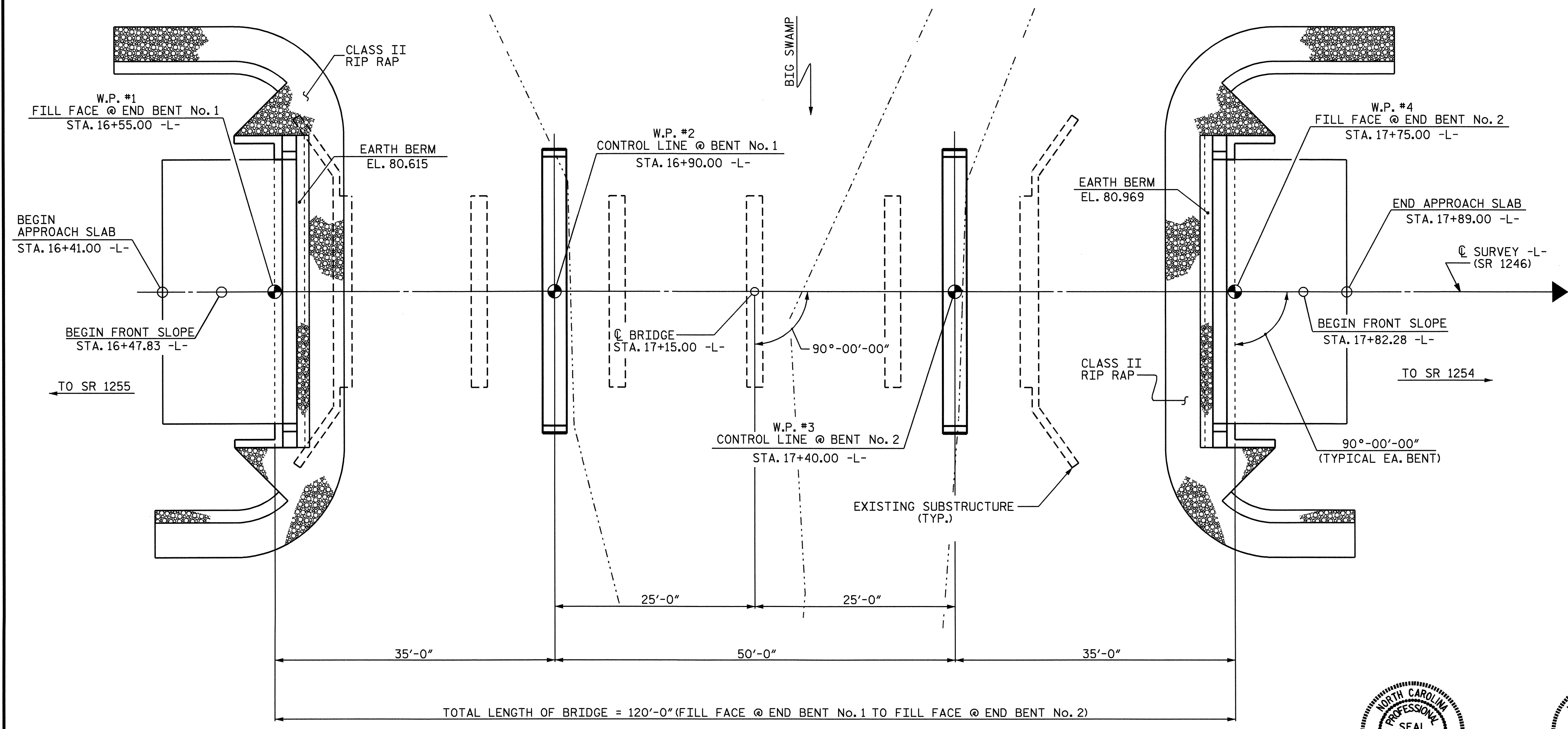
DATE



HYDROGRAPHIC DATA

DESIGN DISCHARGE----- 2650 CFS.
 FREQUENCY OF DESIGN FLOOD----- 25 YR.
 DESIGN HIGH WATER ELEVATION----- 83.65
 BASIC DISCHARGE (Q100)----- 4200 CFS.
 BASIC HIGH WATER ELEVATION----- 84.84

OVERTOPPING FLOOD DATA
 OVERTOPPING DISCHARGE----- 4200 CFS.
 FREQUENCY OF OVERTOPPING FLOOD----- 100+ YRS.
 OVERTOPPING FLOOD ELEVATION----- 84.95



PLAN
(FOR CLARITY, PILES NOT SHOWN IN PLAN VIEW)

PROJECT NO. B-4271
SAMPSON COUNTY
 STATION: 17+15.00 -L-

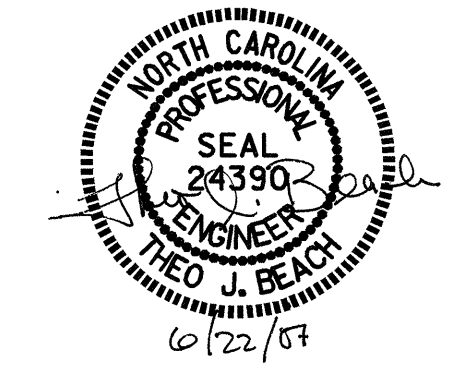
SHEET 1 OF 3 REPLACES BRIDGE No. 98

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE ON SR 1246
 (BUTLER ISLAND RD.)
 OVER BIG SWAMP
 BETWEEN SR 1254 AND SR 1255

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

DRAWN BY : N. PIERCE/JMB DATE : 4-12-06
 CHECKED BY : B.N. GRADY DATE : 4-13-06



NOTES :

ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING, EXCEPT THAT CORED SLAB UNITS HAVE BEEN DESIGNED FOR HS 25.

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

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

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

THIS BRIDGE HAS BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.

THE EXISTING STRUCTURE CONSISTING OF 5 SPANS OF 1 @ 17'-5"; 1 @ 17'-3"; 1 @ 17'-2"; 1 @ 17'-3" & 1 @ 17'-5" WITH REINFORCED CONCRETE FLOOR ON I-BEAMS WITH A CLEAR ROADWAY WIDTH OF 24'-0" ON REINFORCED CONCRETE CAPS/TIMBER PILE BENTS & END 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 DURING CONSTRUCTION OF THE PROPOSED STRUCTURE, 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 EXISTING PILES FROM A PREVIOUS STRUCTURE IN THE VICINITY OF THE PROPOSED BRIDGE SHALL ALSO BE REMOVED AS DIRECTED BY THE ENGINEER. ANY COST ASSOCIATED WITH THIS PILE REMOVAL SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 17+15.00 -L-".

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 20 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THE ESTIMATED QUANTITY IS LESS THAN 500 CUBIC YARDS. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION.

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.

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

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

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC PERFORMANCE CATEGORY A.

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

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 17+15.00 -L-".

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.

DRIVE PILES AT END BENT No. 1 AND END BENT No. 2 TO A REQUIRED BEARING CAPACITY OF 100 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO.

DRIVE PILES AT BENT No. 1 AND BENT No. 2 TO A REQUIRED BEARING CAPACITY OF 165 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO PLUS ANY ADDITIONAL CAPACITY TO ACCOUNT FOR DOWN DRAG OR NEGATIVE SKIN FRICTION AND SCOUR.

DRIVE PILES AT BENT No. 1 AND BENT No. 2 TO A TIP ELEVATION NO HIGHER THAN 45 FT.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT No. 1 AND END BENT No. 2 IS 50 TONS PER PILE.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT BENT No. 1 AND BENT No. 2 IS 70 TONS PER PILE.

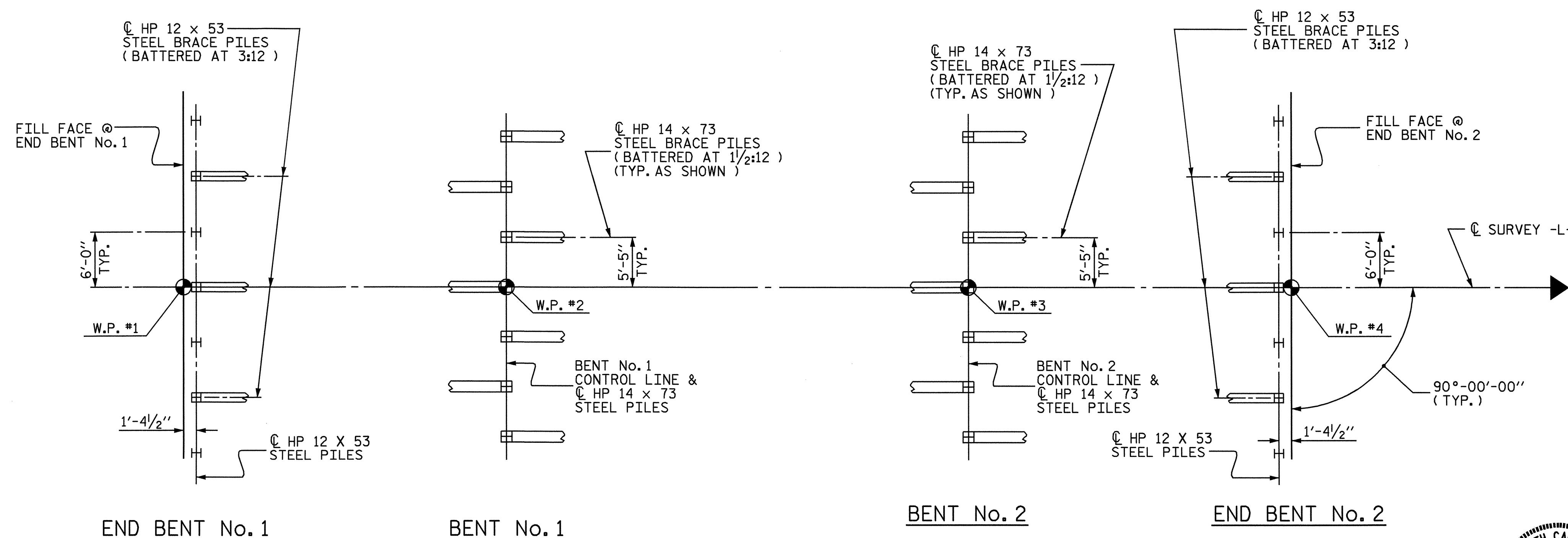
THE SCOUR CRITICAL ELEVATION FOR BENT No. 1 AND BENT No. 2 IS 57 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

FOR CONSTRUCTION OF SUPERSTRUCTURE, SEE SPECIAL PROVISIONS.

FOR CONSTRUCTION OF SUBSTRUCTURE, SEE SPECIAL PROVISIONS.

GALVANIZE HP 14 X 73 STEEL PILES IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

TESTING PILES WITH THE PILE DRIVING ANALYZER FOR LRFD MAY BE REQUIRED AT BENT No. 1 OR BENT No. 2. SEE PILE DRIVING ANALYZER FOR LRFD SPECIAL PROVISION.



FOUNDATION LAYOUT

(DIMENSIONS LOCATING PILES ARE TO THE CENTERLINE OF THE PILE AT THE BOTTOM OF THE CAP)

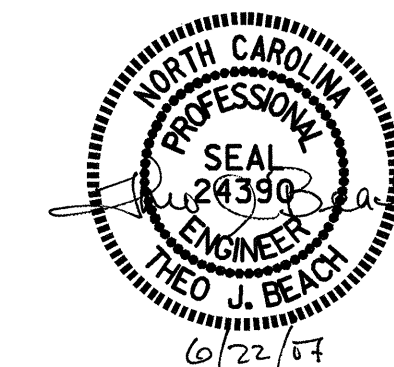
PROJECT NO. B-4271
SAMPSON COUNTY
 STATION: 17+15.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

BRIDGE ON SR 1246
 (BUTLER ISLAND RD.)
 OVER BIG SWAMP
 BETWEEN SR 1254 AND SR 1255



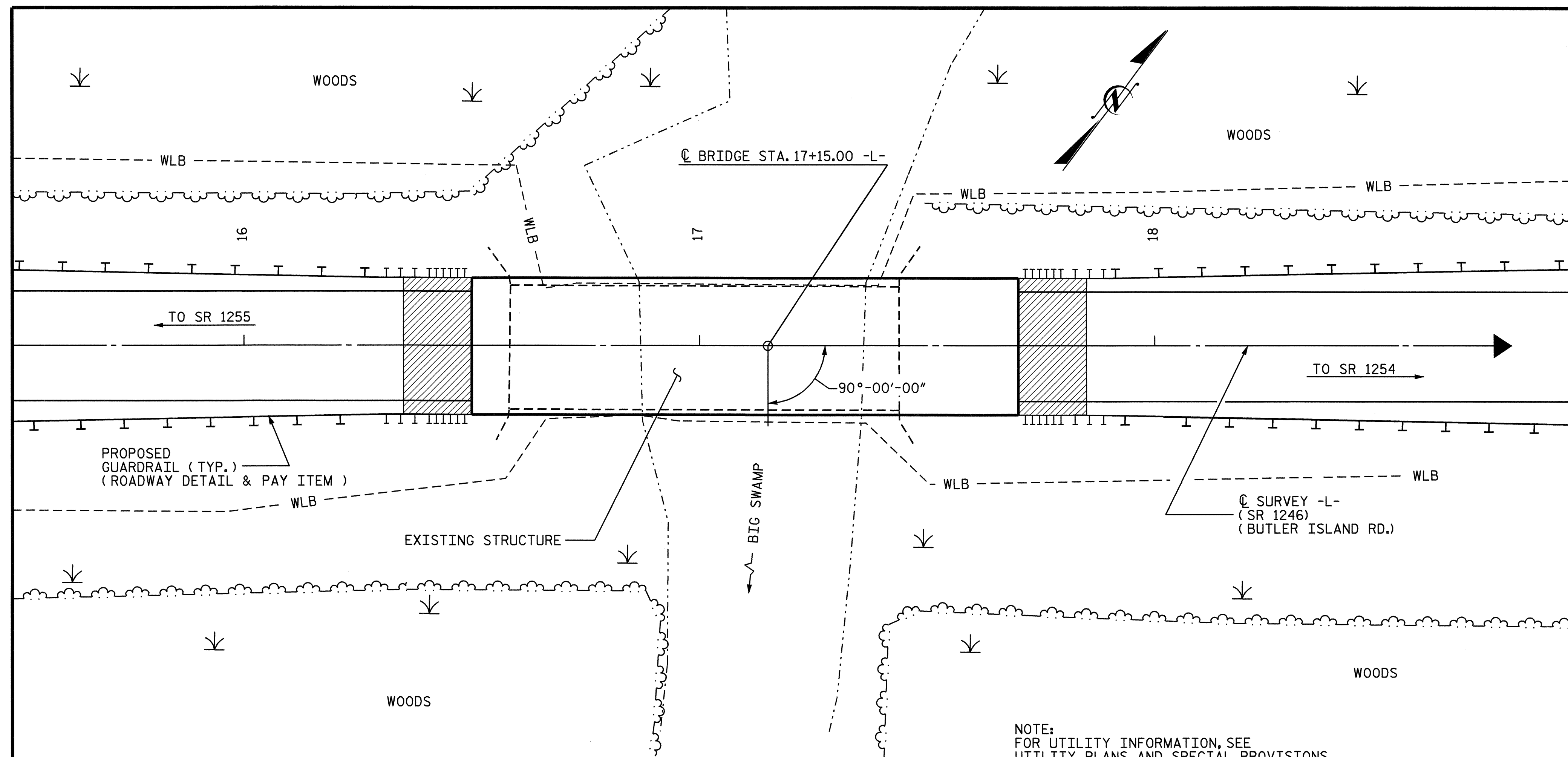
DRAWN BY : MIKE BRITT DATE : 4-12-06
 CHECKED BY : B.N. GRADY DATE : 4-13-06

20-JUN-2007 14:26
 R:\Structures\B-4271\NPI\pcoe\B4271.sd.dgn
 tbeach

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

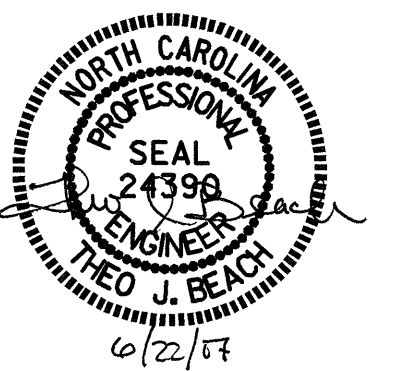
TOTAL BILL OF MATERIAL												
	REMOVAL OF EXISTING STRUCTURE	PDA ASSISTANCE	UNCLASSIFIED STRUCTURE EXCAVATION	BRIDGE APPROACH SLABS	HP 12 x 53 STEEL PILES		HP 14 x 73 GALVANIZED STEEL PILES		PILE REDRIVES	RIP RAP CLASS II (2'-0" THICK)	CONSTRUCTION OF SUBSTRUCTURE	CONSTRUCTION OF SUPERSTRUCTURE
	LUMP SUM	EACH	LUMP SUM	LUMP SUM	No.	LIN.FT.	No.	LIN.FT.	EACH	TONS	LUMP SUM	LUMP SUM
SUPERSTRUCTURE	LUMP SUM		LUMP SUM	LUMP SUM								LUMP SUM
END BENT No. 1					7	315				90		
BENT No. 1							7	350				
BENT No. 2							7	350				
END BENT No. 2					7	315				80		
TOTAL	LUMP SUM	1	LUMP SUM	LUMP SUM	14	630	14	700	16	170	LUMP SUM	LUMP SUM

B.M. #1 RAILROAD SPIKE SET IN 22" OAK 118.22' LT. OF STA. 16+07.50 -L-, EL.= 80.35



LOCATION SKETCH

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



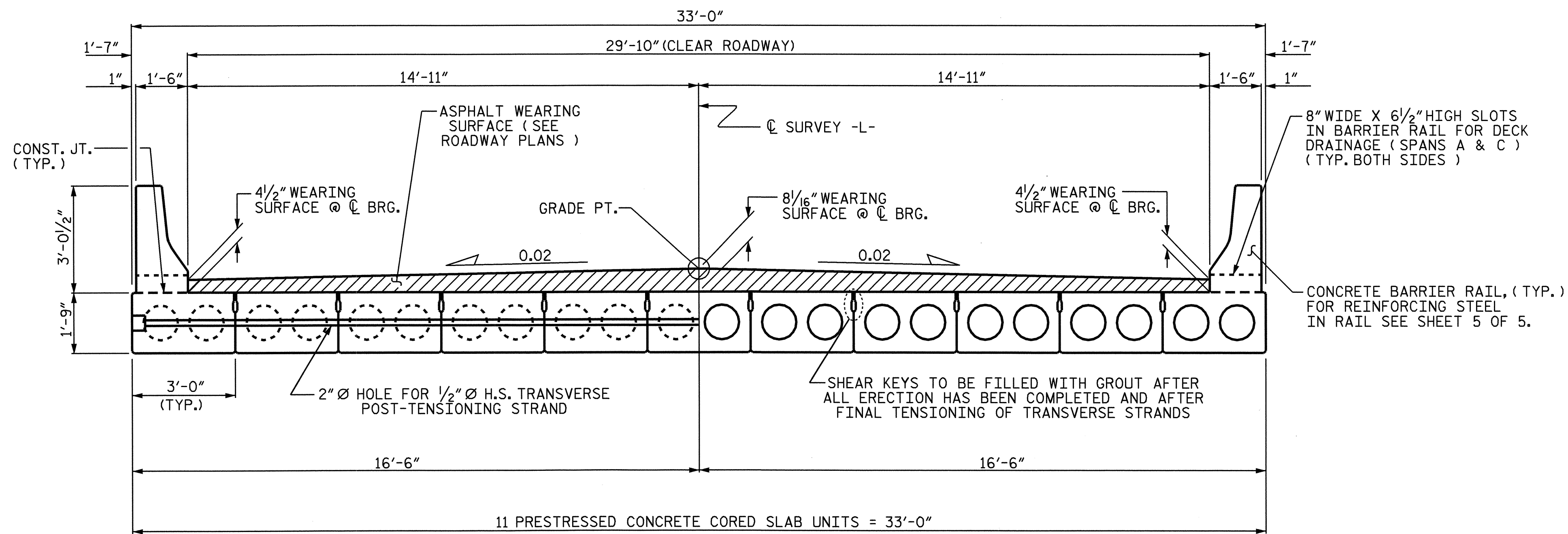
PROJECT NO. B-4271
SAMPSON COUNTY
 STATION: 17+15.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 BRIDGE ON SR 1246
 (BUTLER ISLAND RD.)
 OVER BIG SWAMP
 BETWEEN SR 1254 AND SR 1255

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

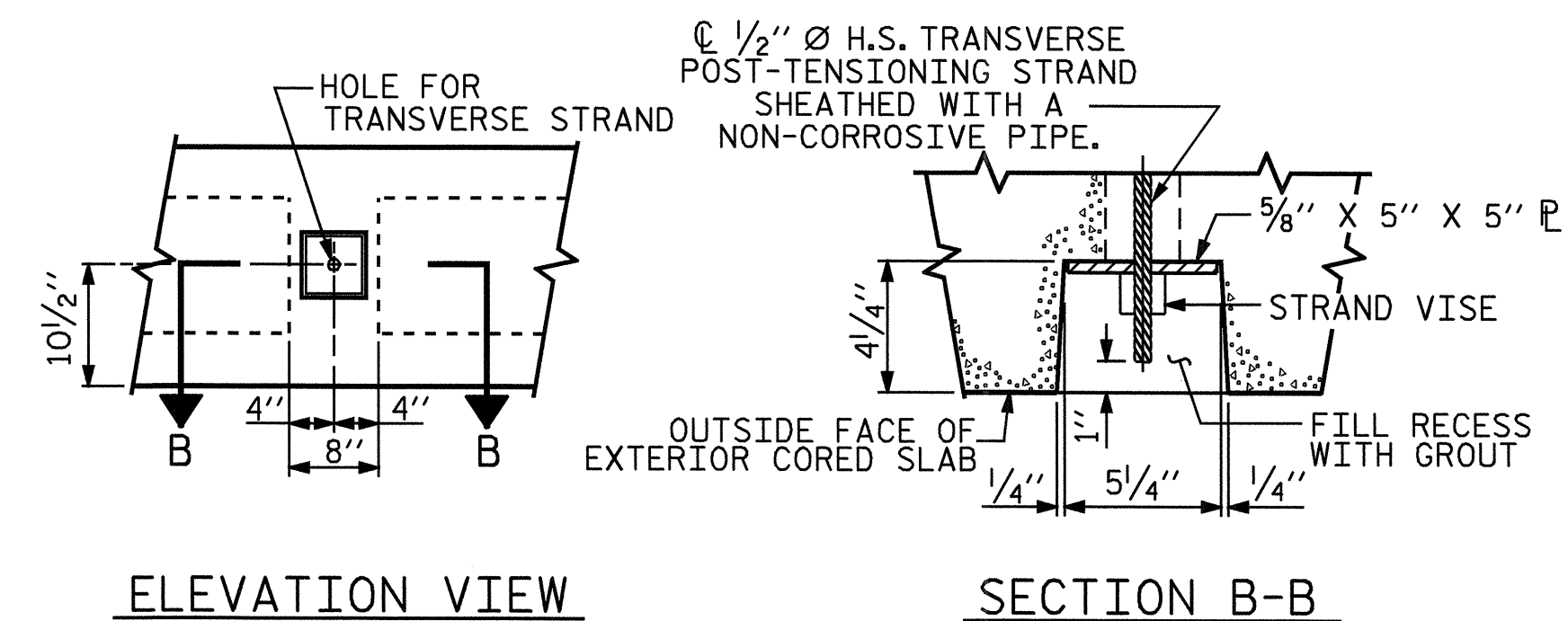
DRAWN BY : N. PIERCE/JMB DATE : 4-12-06
 CHECKED BY : B.N. GRADY DATE : 4-13-06



HALF-SECTION AT INTERMEDIATE DIAPHRAGMS

HALF-SECTION AT VOIDS

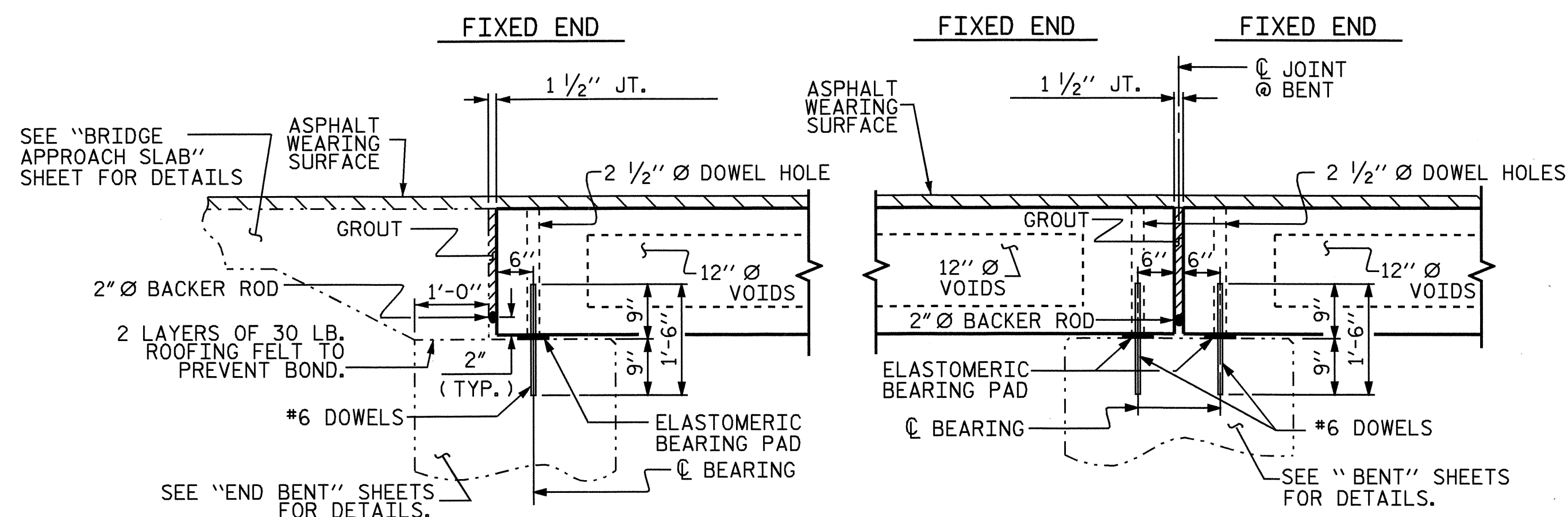
TYPICAL SECTION



ELEVATION VIEW

SECTION B-B

GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS

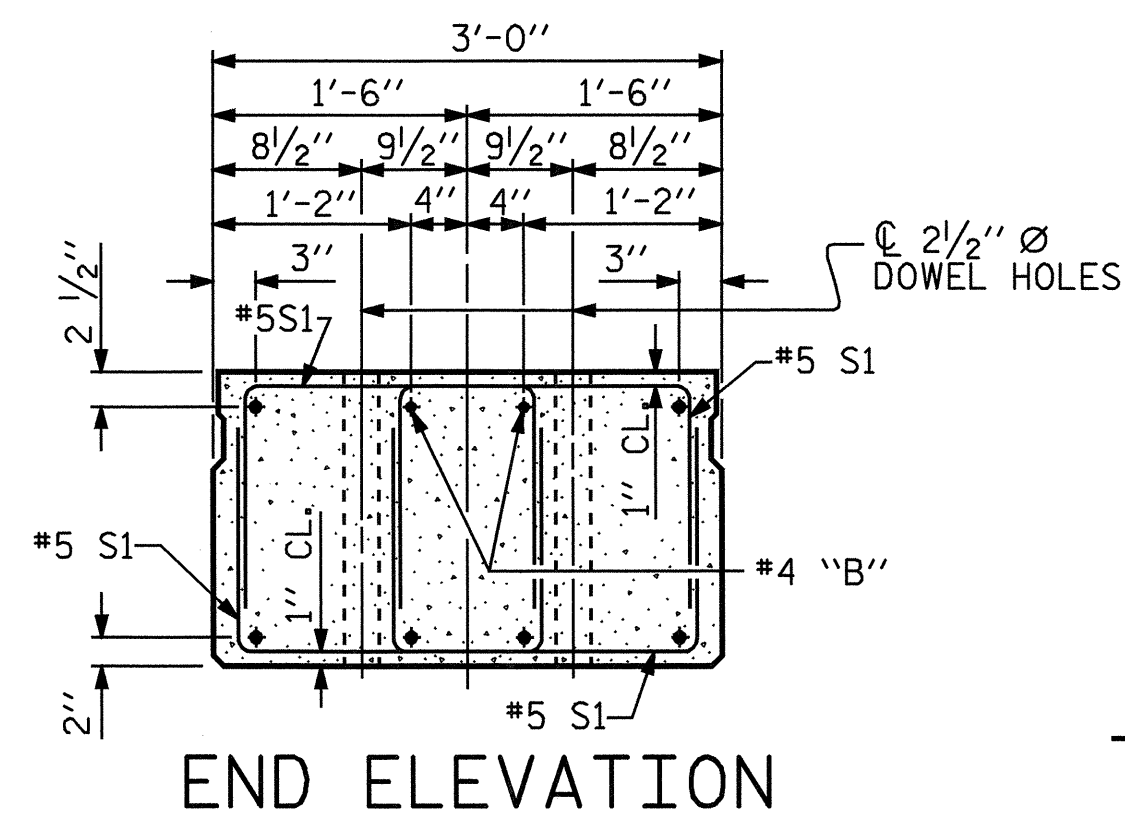


SECTION AT END BENT

SECTION AT BENT

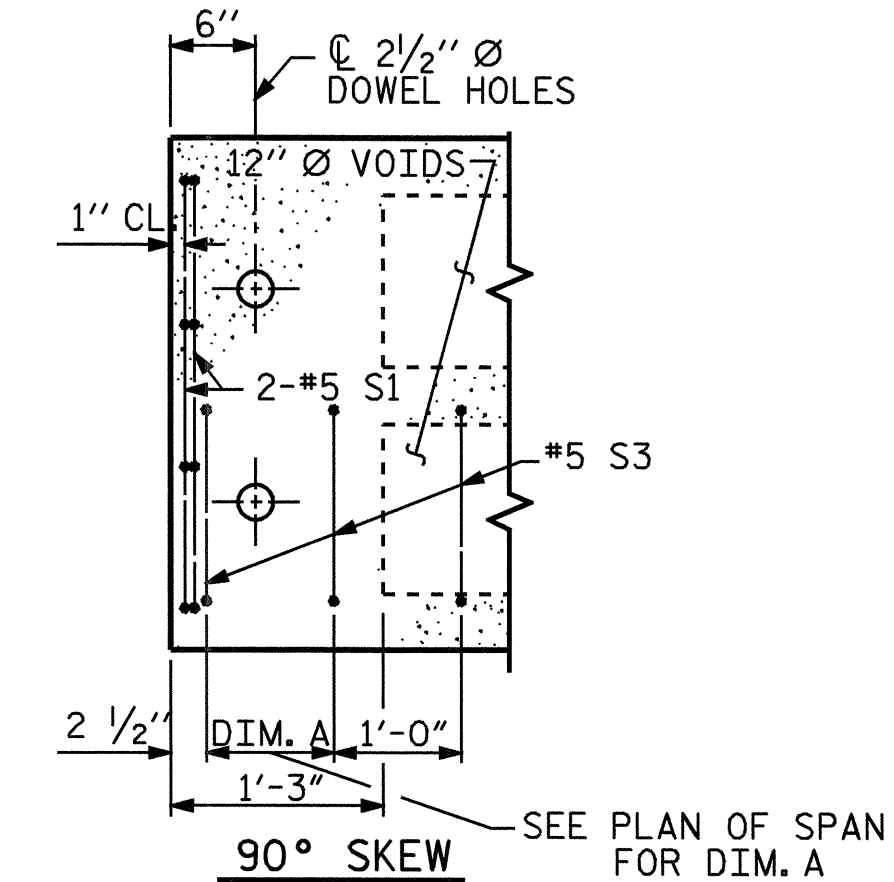
SHEAR KEY DETAIL

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



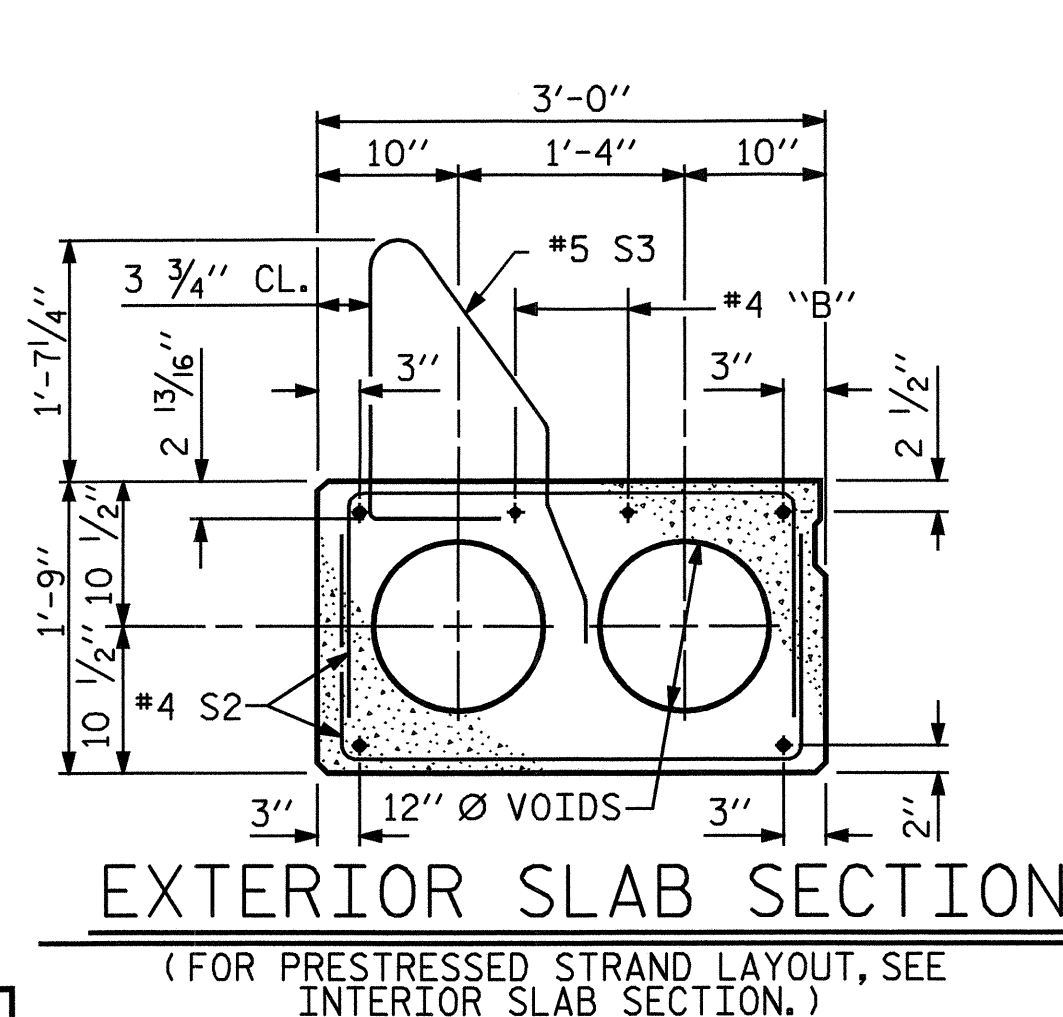
END ELEVATION

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



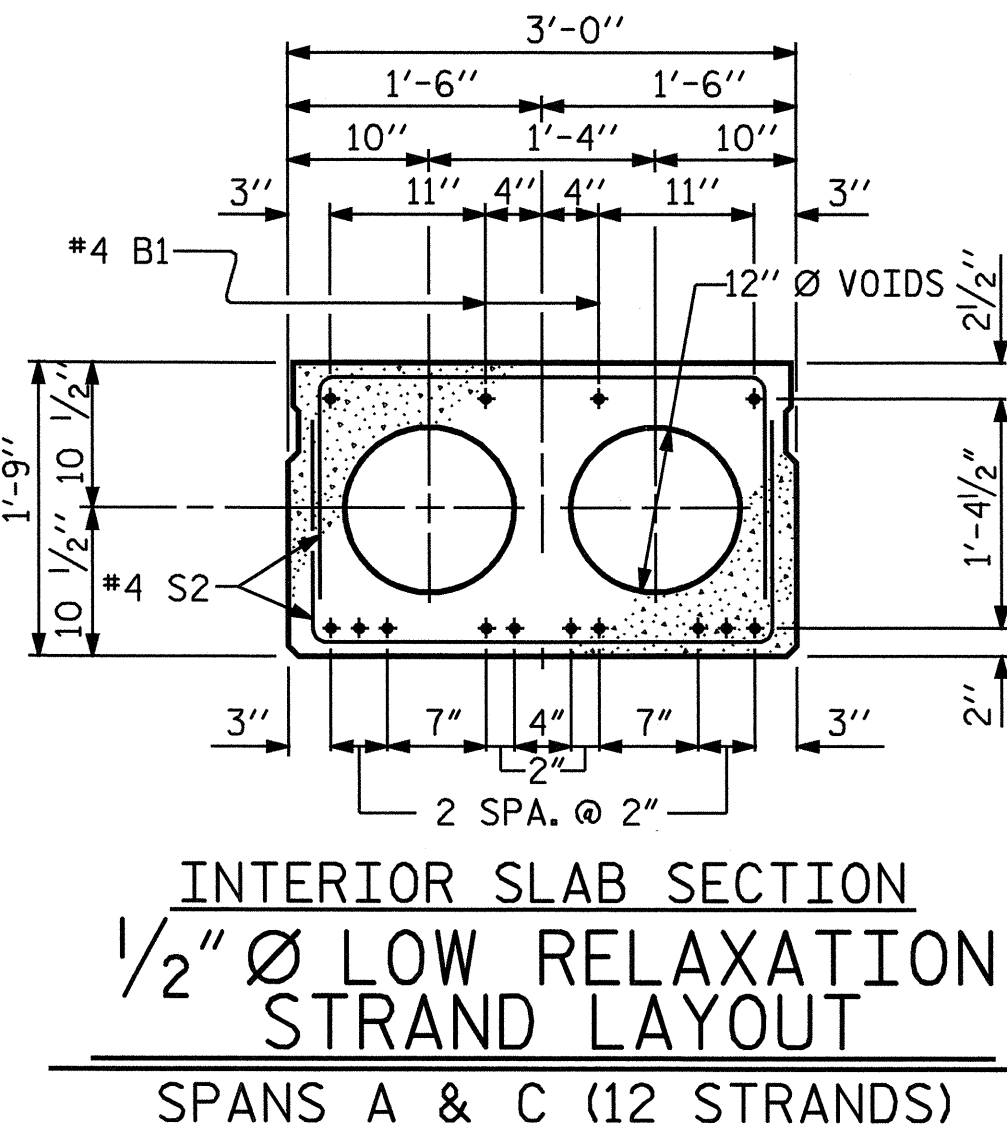
PART PLAN-EXTERIOR SECTION

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



EXTERIOR SLAB SECTION

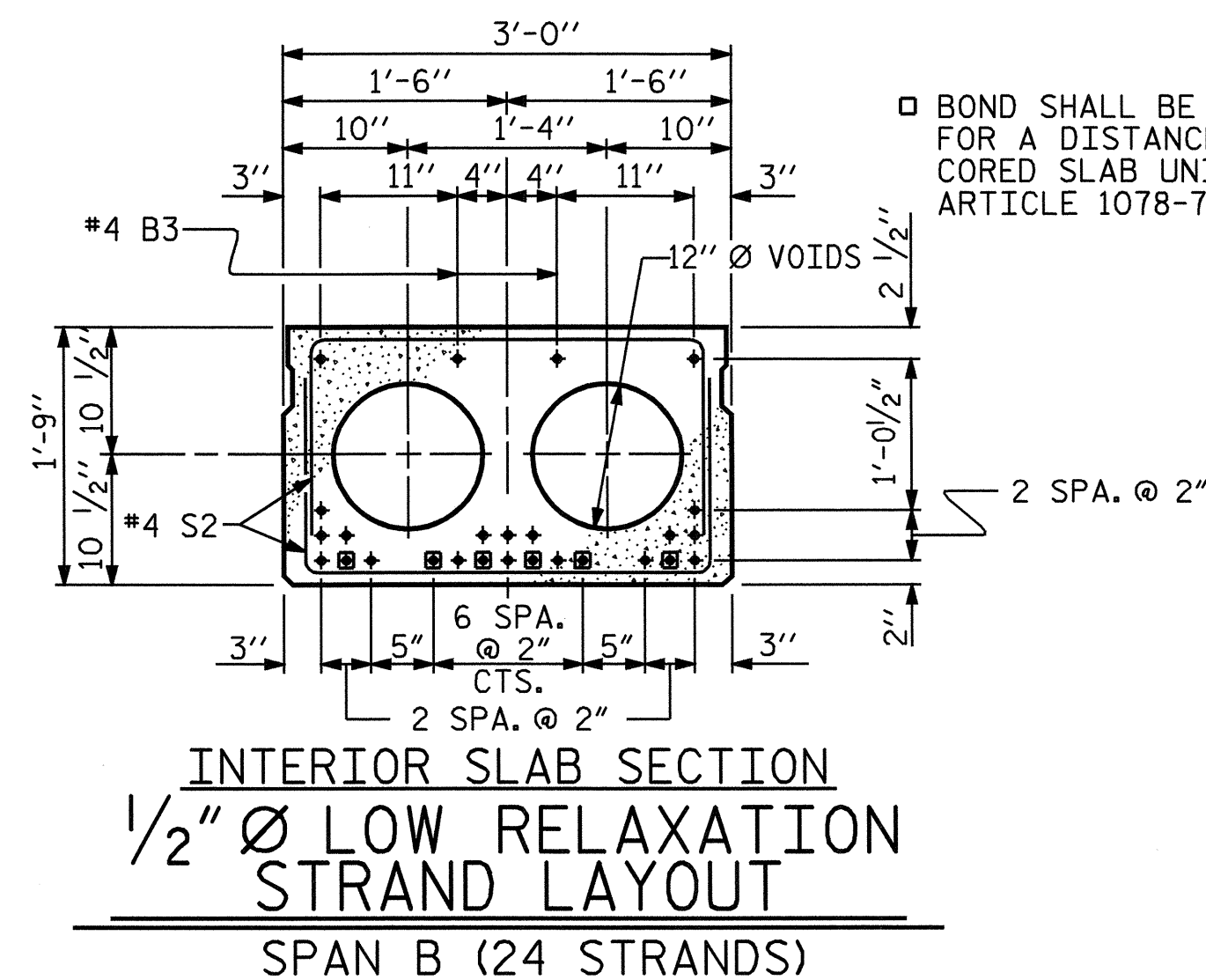
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



INTERIOR SLAB SECTION

1/2" Ø LOW RELAXATION STRAND LAYOUT

SPANS A & C (12 STRANDS)



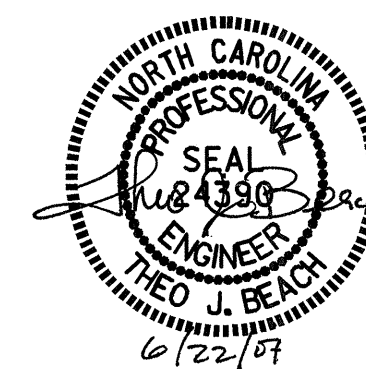
INTERIOR SLAB SECTION

1/2" Ø LOW RELAXATION STRAND LAYOUT

SPAN B (24 STRANDS)

□ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 4'-9" FROM THE END OF CORED SLAB UNIT, SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.

ASSEMBLED BY :	N. PIERCE	DATE :	6/05
CHECKED BY :	P.E. LACKEY	DATE :	6/05
DRAWN BY :	WJH	4/89	REV. 8/16/99 RWW/LES
CHECKED BY :	FCJ	5/89	REV. 10/17/00 RWW/LES
			REV. 7/10/01RR RWW/LES



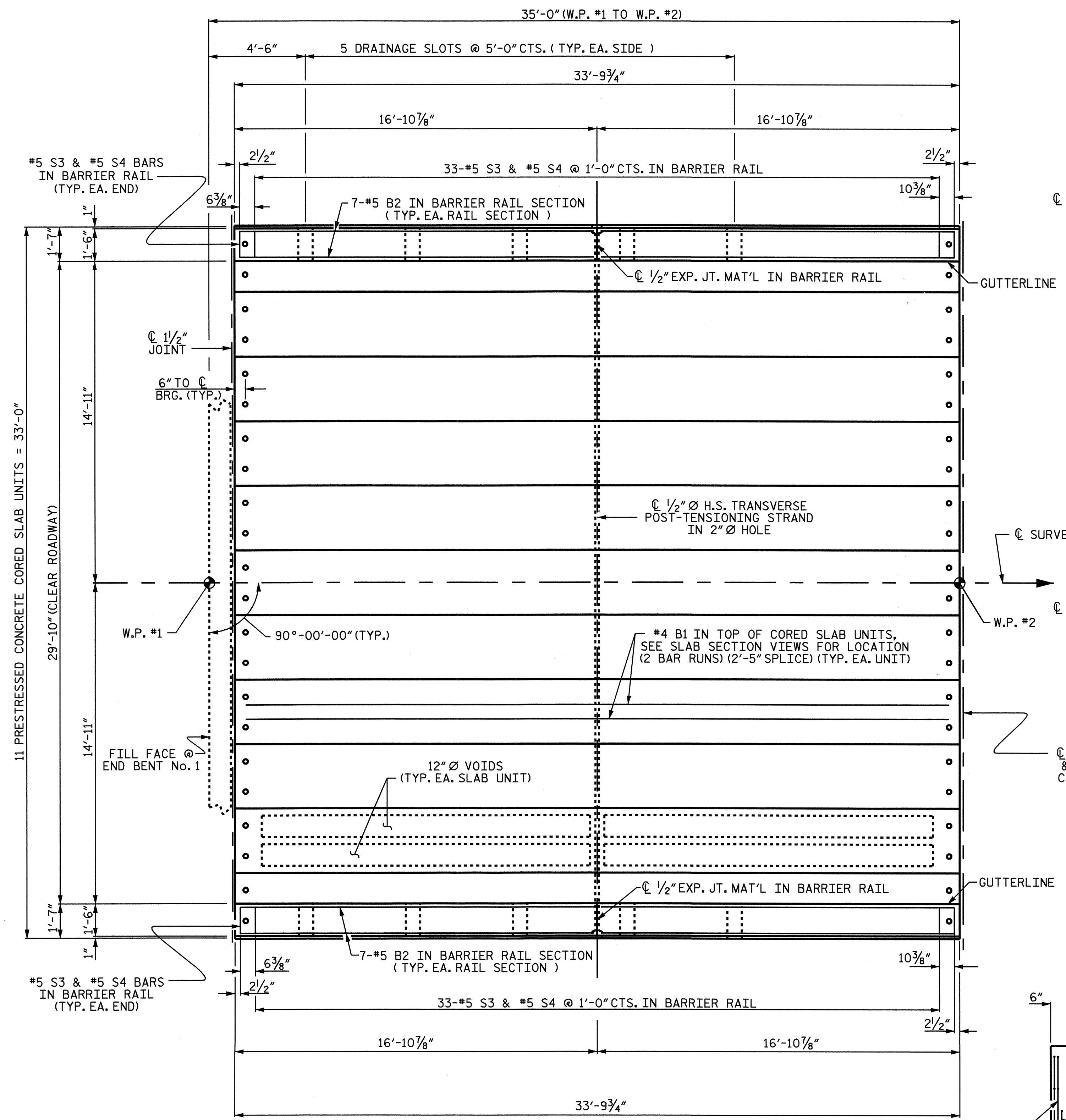
PROJECT NO. B-4271
SAMPSON COUNTY
 STATION: 17+15.00 -L-

SHEET 1 OF 5

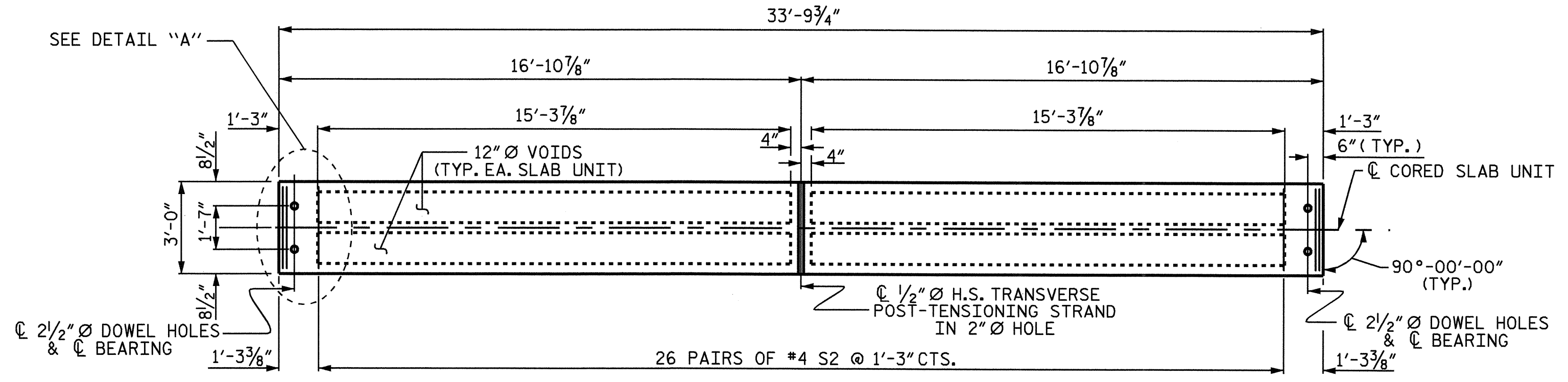
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 3'-0" X 1'-9"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT

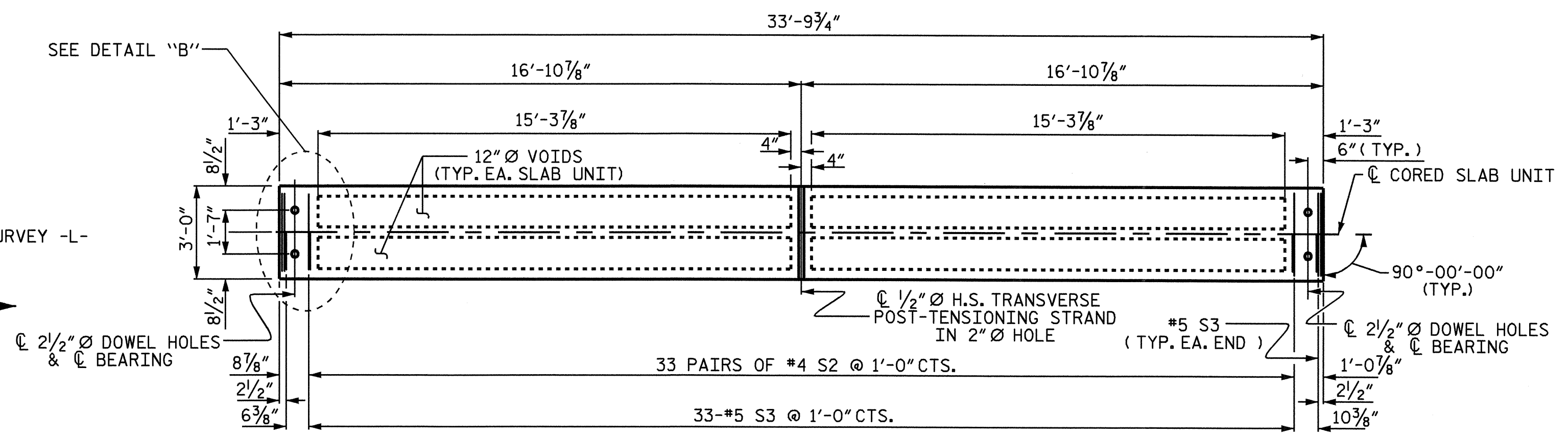
OCTOBER 1981					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-4
					TOTAL SHEETS 20



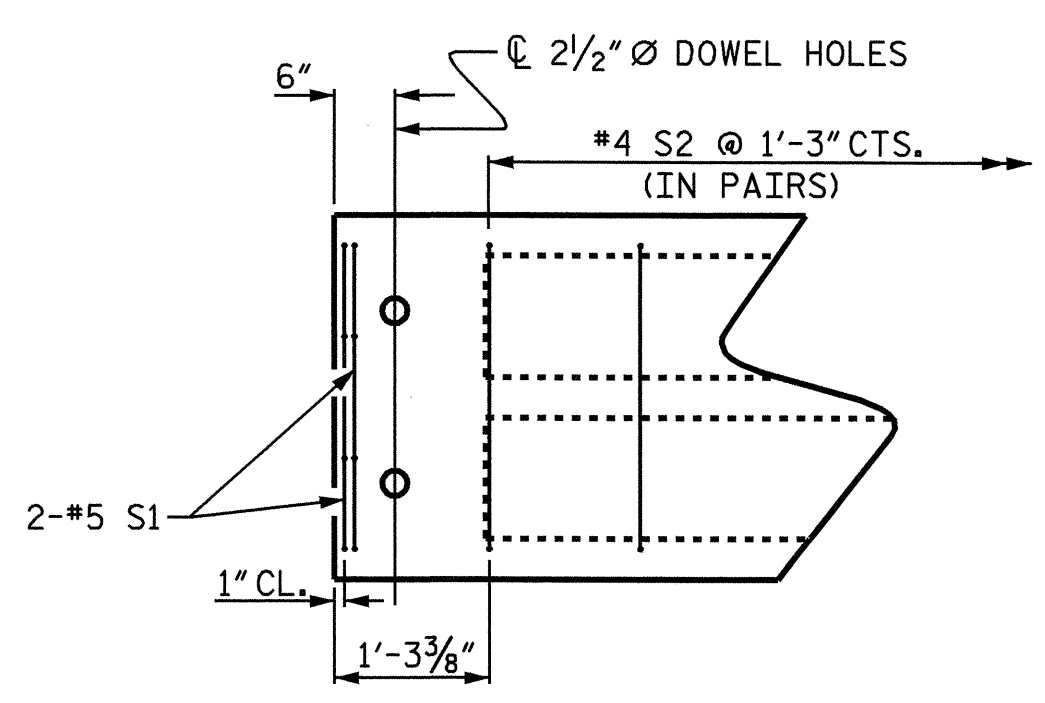
SPAN "A"



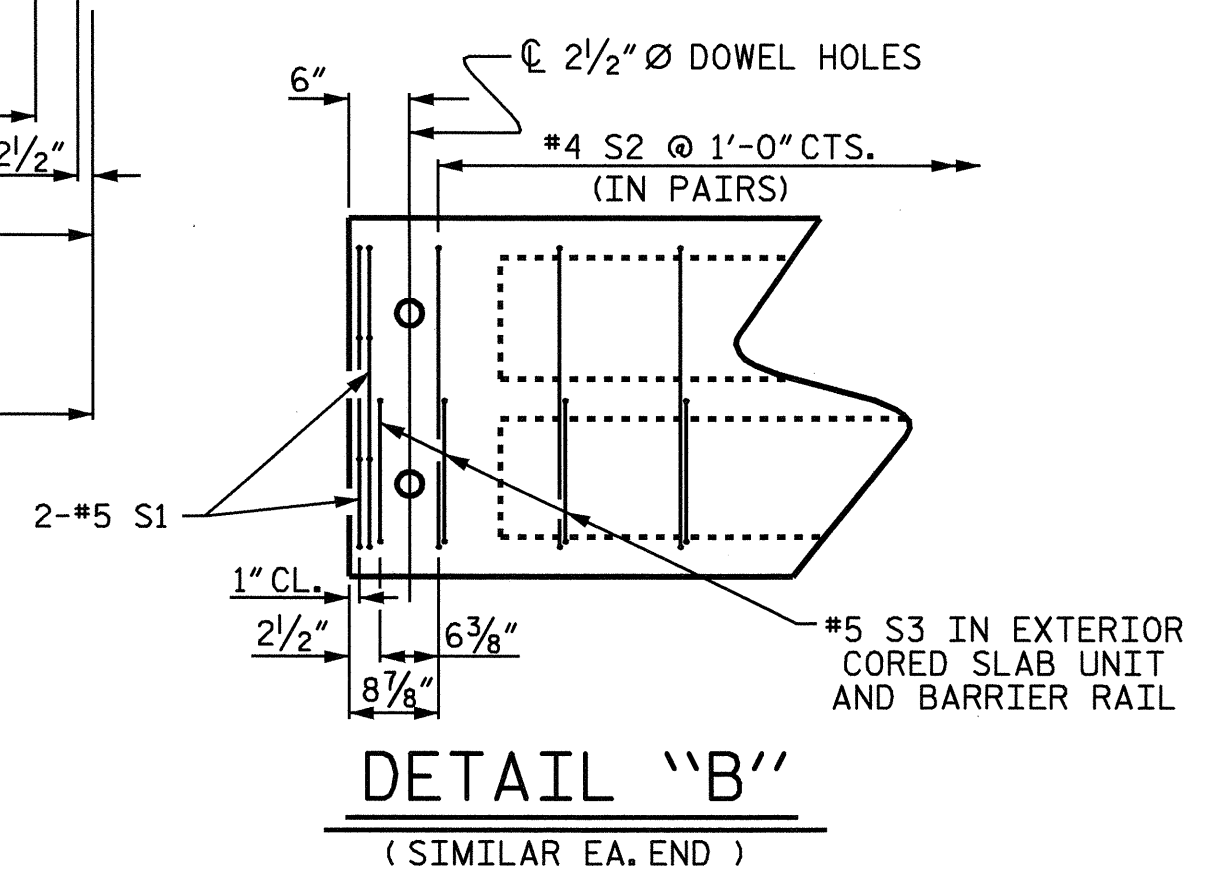
PLAN OF INTERIOR CORED SLAB UNIT



PLAN OF EXTERIOR CORED SLAB UNIT



DETAIL "A"
(TYP. EA. END)



DETAIL "B"
(SIMILAR EA. END)

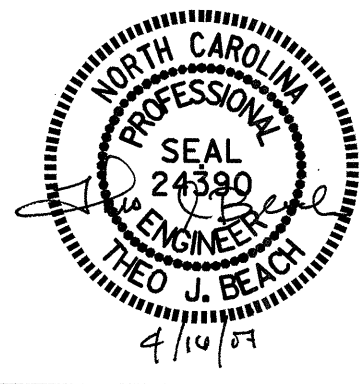
PROJECT NO. B-4271
SAMPSON COUNTY
STATION: 17+15.00 -L-

SHEET 2 OF 5

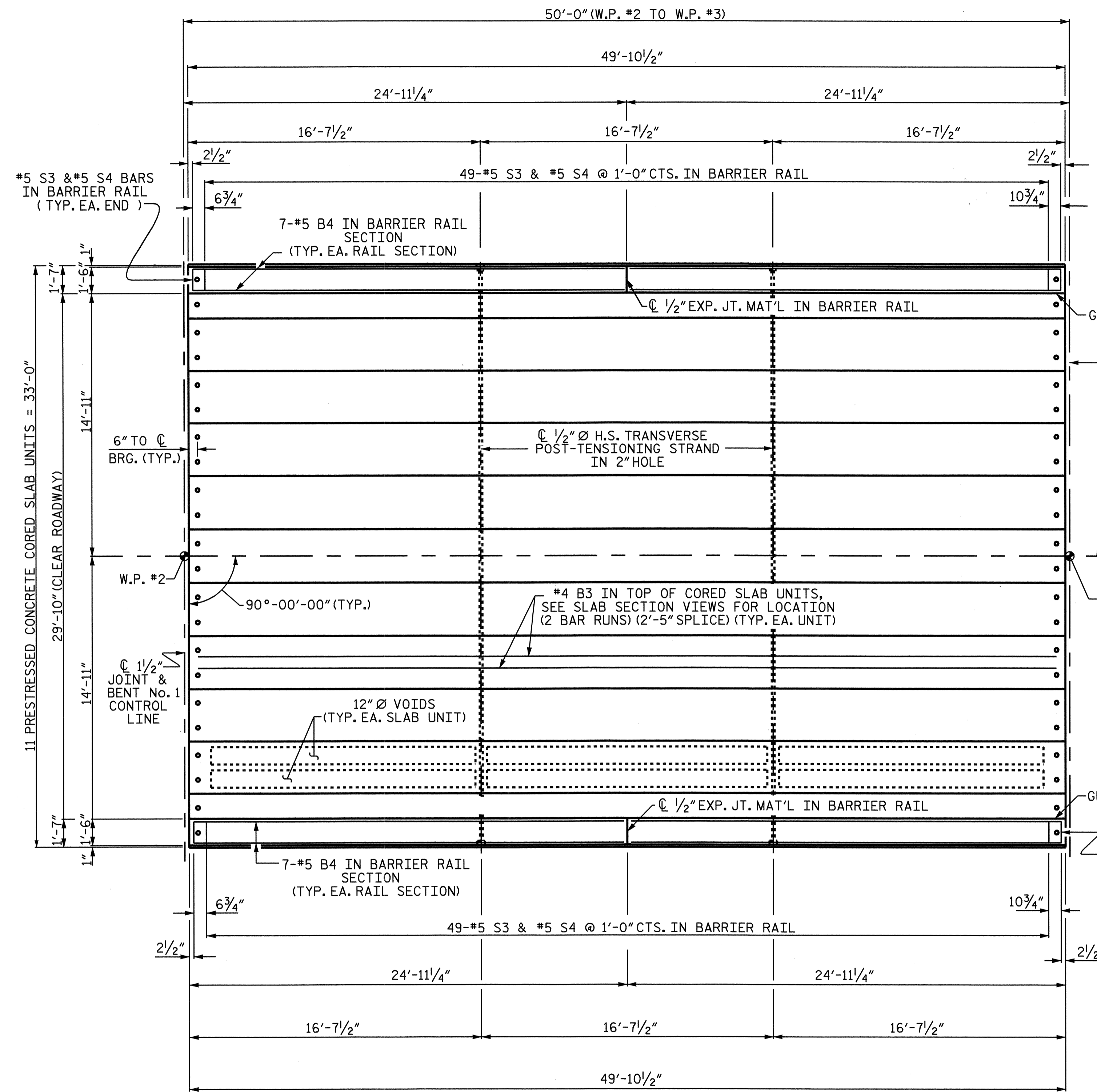
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF SPAN "A"

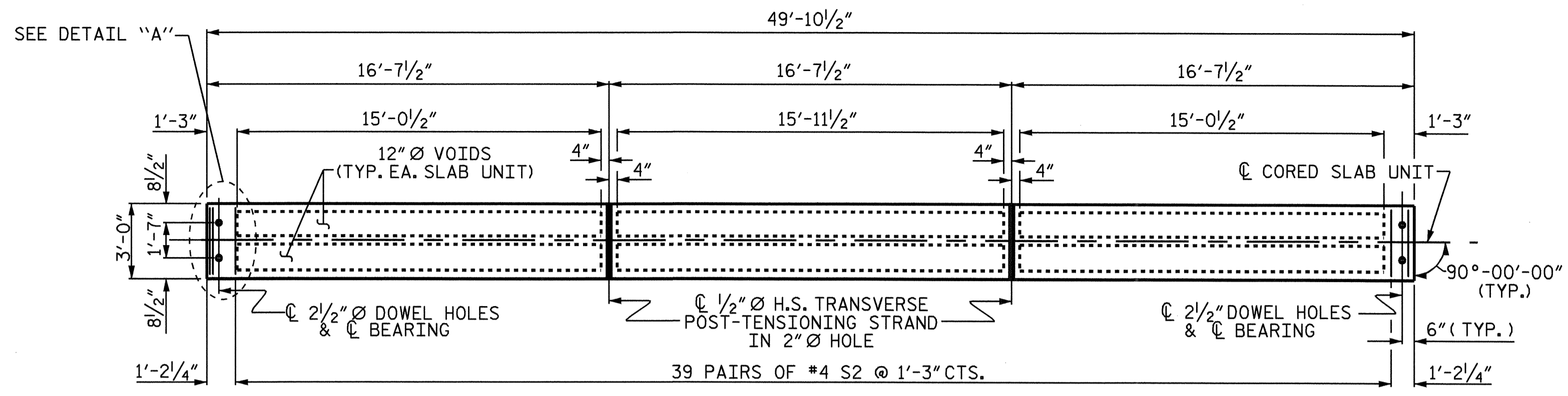
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			



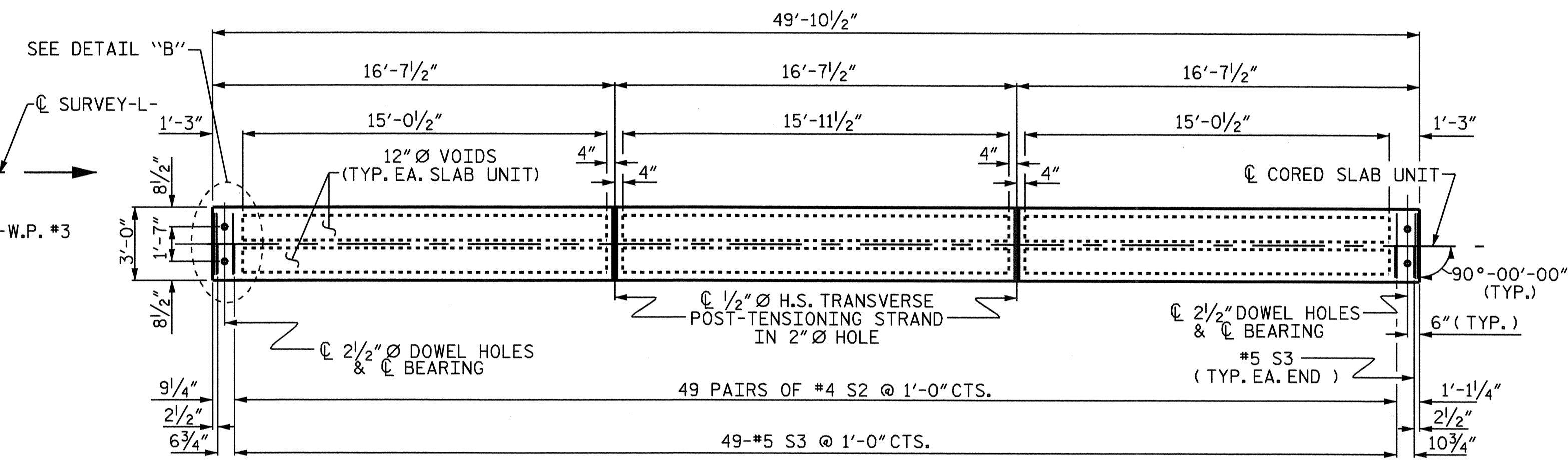
DRAWN BY: N. PIERCE DATE: 6/05
CHECKED BY: P.E. LACKEY DATE: 6/05



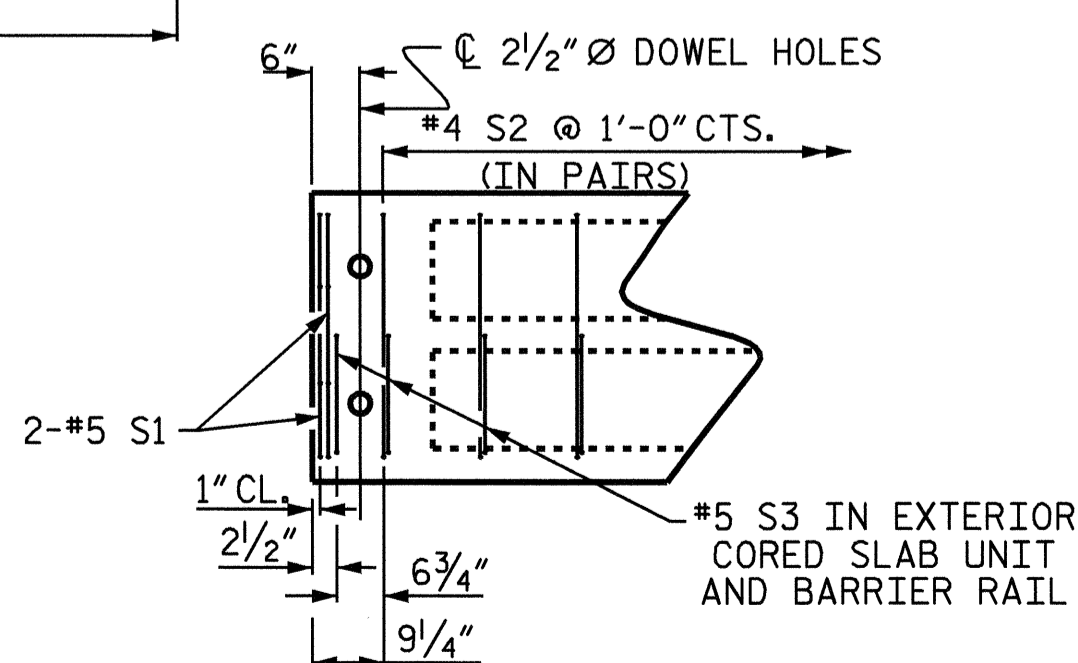
SPAN "B"



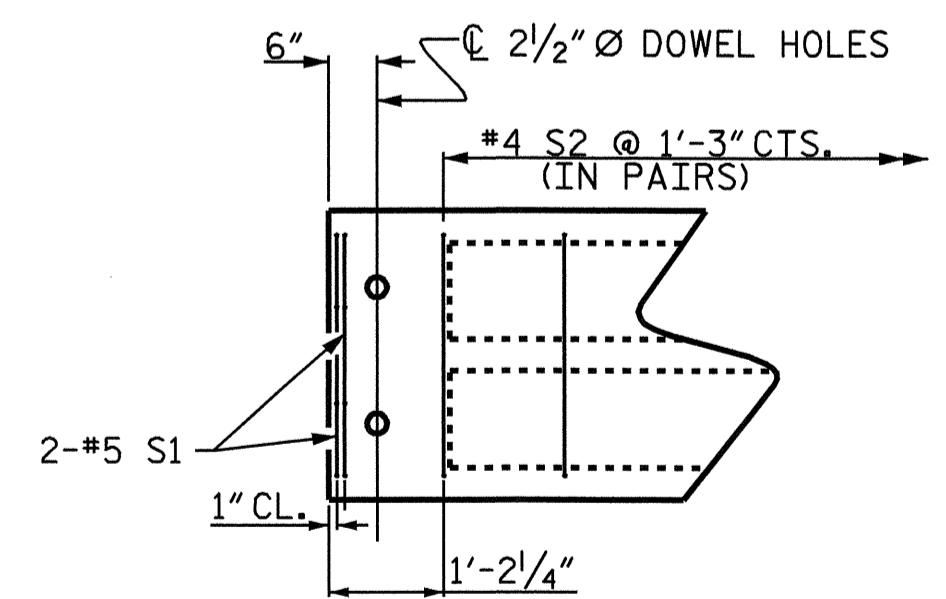
PLAN OF INTERIOR CORED SLAB UNIT



PLAN OF EXTERIOR CORED SLAB UNIT



DETAIL "B"
(SIMILAR EA. END)

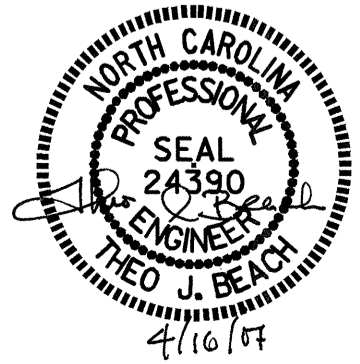


DETAIL "A"
(TYP. EA. END)

PROJECT NO. B-4271
SAMPSON COUNTY
STATION: 17+15.00 -L-

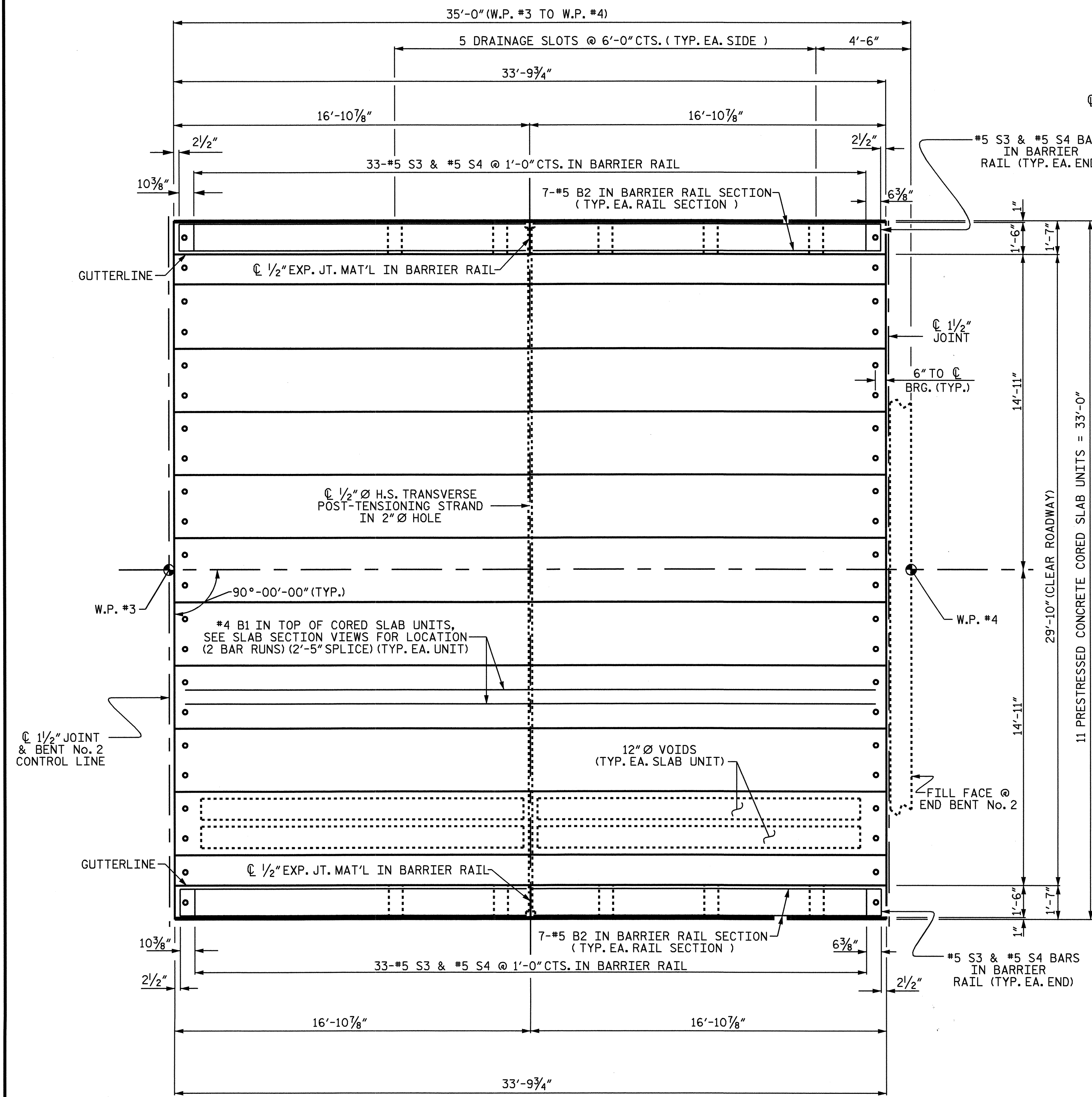
SHEET 3 OF 5

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

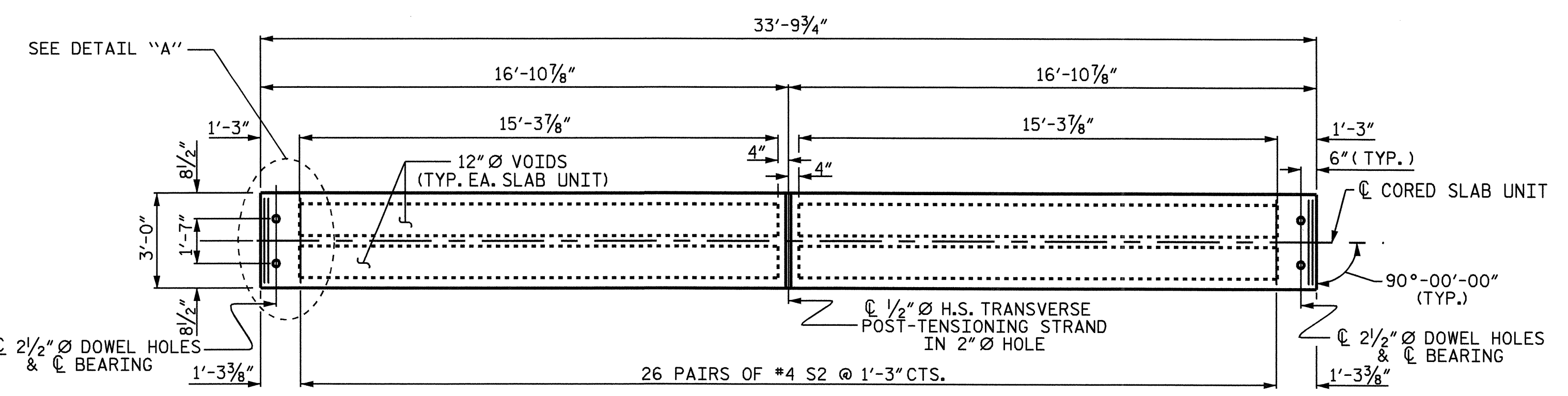


DRAWN BY: N. PIERCE DATE: 6/05
CHECKED BY: P.E. LACKEY DATE: 6/05

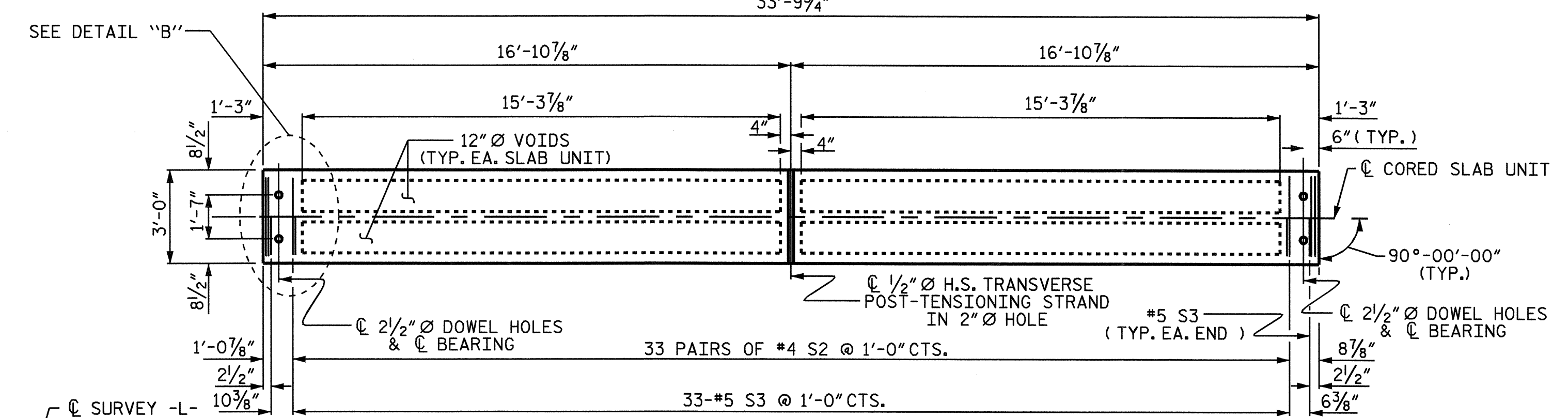
REVISIONS						SHEET NO. S-6
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			



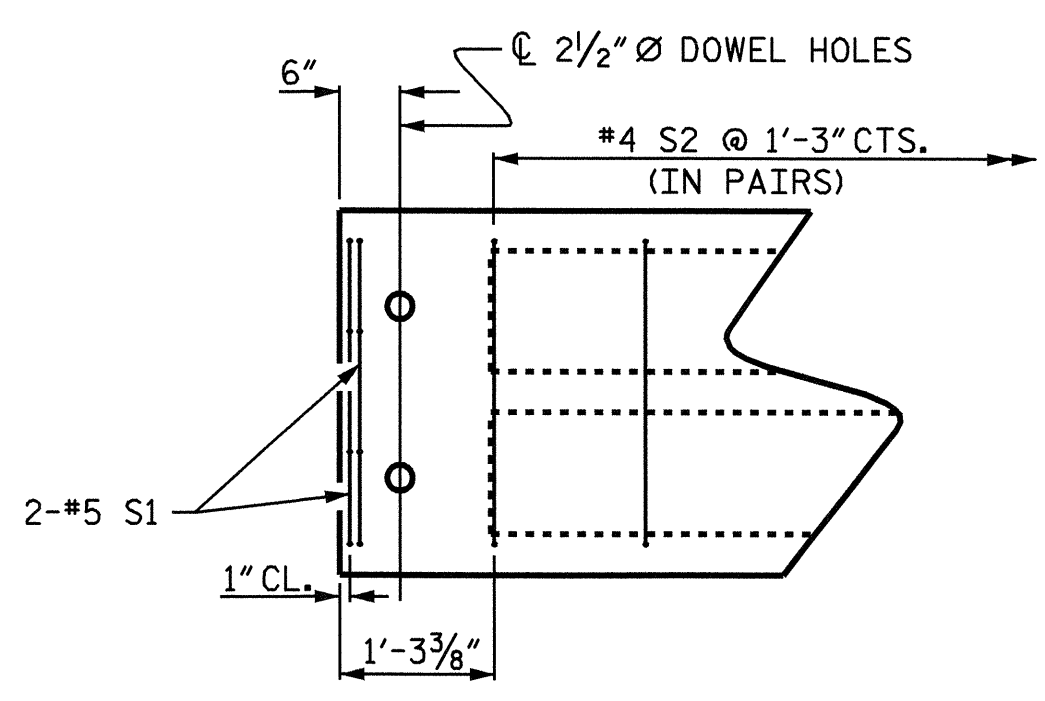
SPAN "C"



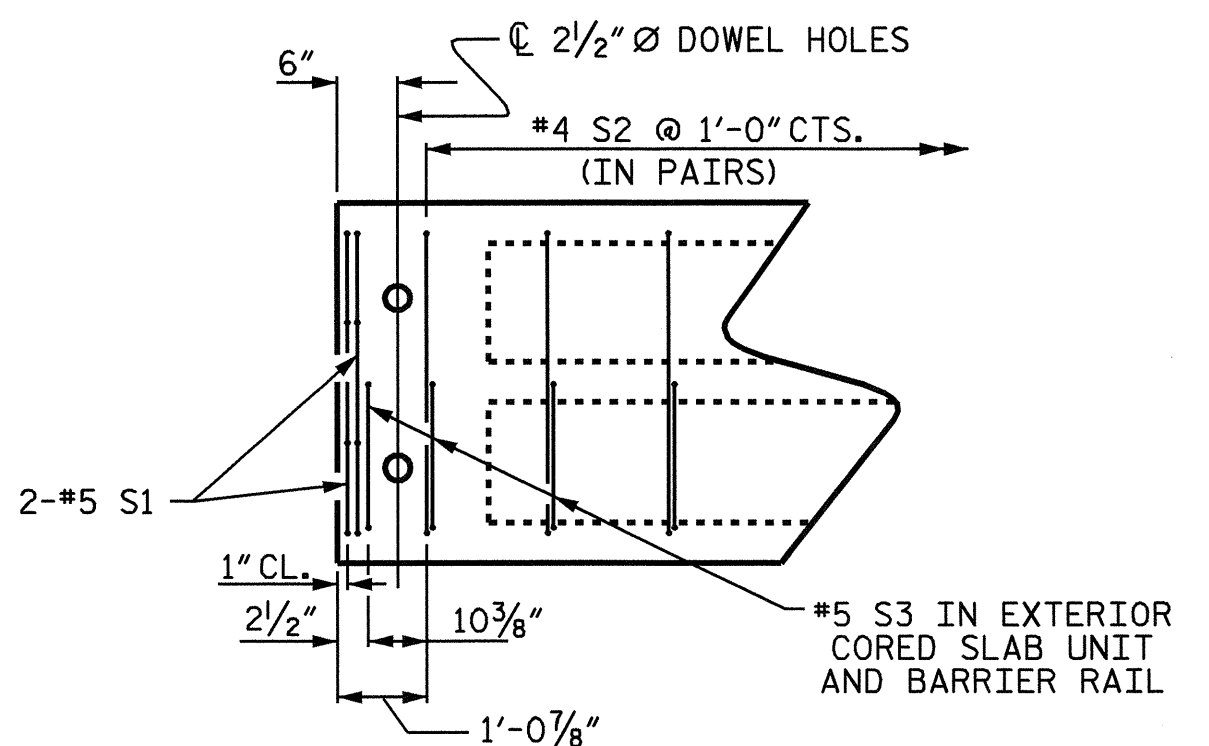
PLAN OF INTERIOR CORED SLAB UNIT



PLAN OF EXTERIOR CORED SLAB UNIT



DETAIL "A"
(TYP. EA. END)



DETAIL "B"
(SIMILAR EA. END)

PROJECT NO. B-4271
SAMPSON COUNTY
 STATION: 17+15.00 -L-

SHEET 4 OF 5

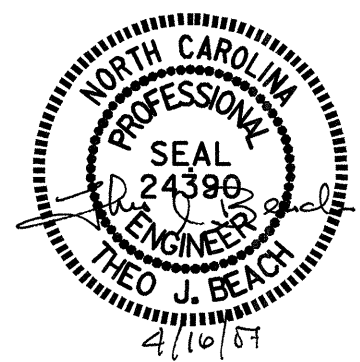
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPAN "C"

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

DRAWN BY : N. PIERCE DATE : 6/05
 CHECKED BY : P.E. LACKEY DATE : 6/05

16-APR-2007 10:02
 R:\Structures\B-4271\NPierce\B4271.ed.CS.dgn
 tbeach



NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR CONSTRUCTION OF SUPERSTRUCTURE.

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

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT.

THE 2" Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS. THE JOINT SHALL BE FILLED WITH NON-SHRINK GROUT.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

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

DRAINAGE SLOTS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR BARRIER RAIL REINFORCING STEEL.

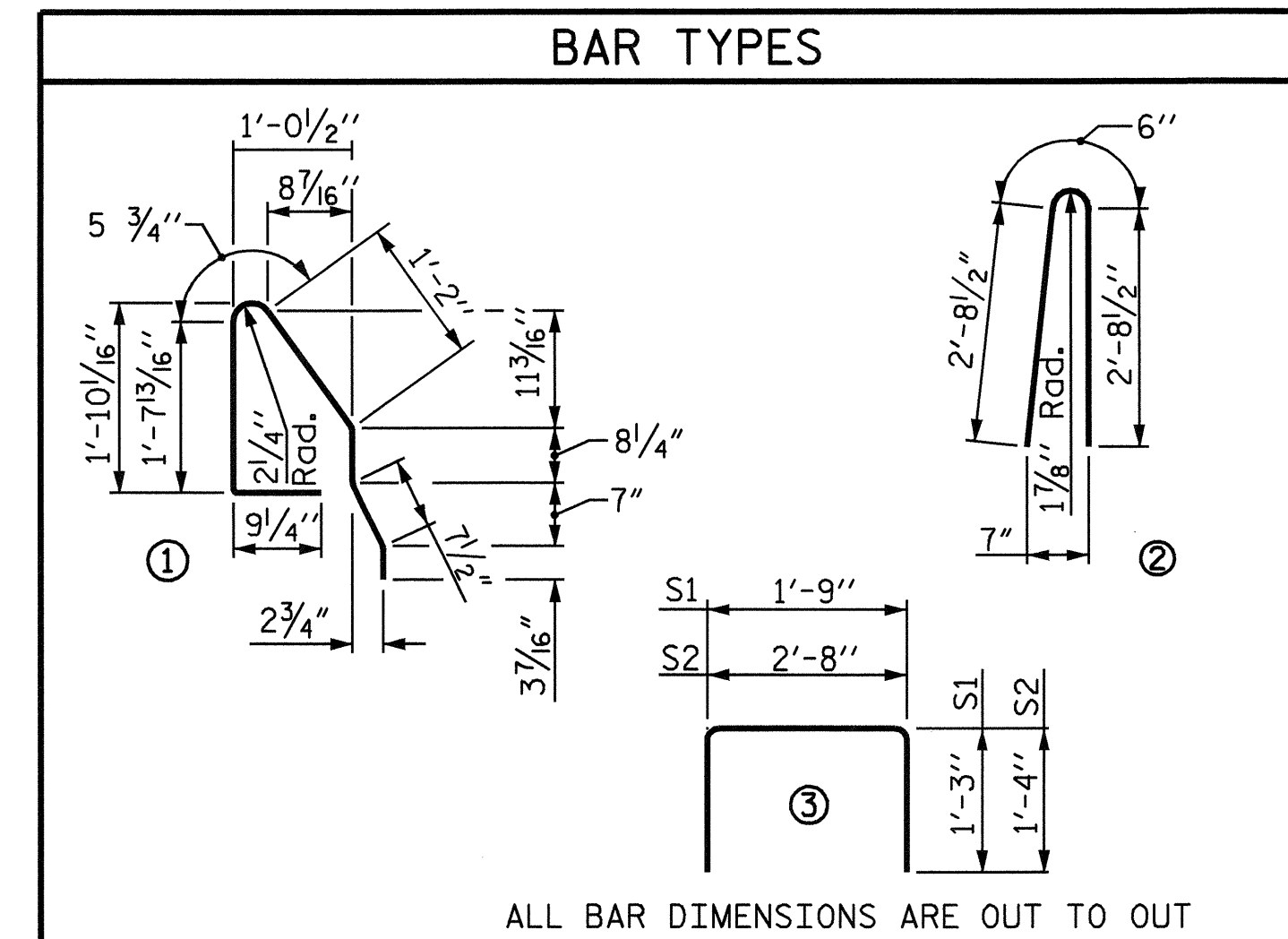
BILL OF MATERIAL FOR CONCRETE BARRIER RAIL								
BAR	BARS PER SPAN			TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	SPAN A	SPAN B	SPAN C					
* B2	28	-	28	56	# 5	STR	16'-6"	964
* B4	-	28	-	28	# 5	STR	24'-6"	715
* S4	70	102	70	242	# 5	2	5'-11"	1493
* EPOXY COATED REINFORCING STEEL							3172 LBS.	
CLASS AA CONCRETE							28.5 CU.YDS.	
TOTAL LIN. FT. OF CONCRETE BARRIER RAIL							235.00	

GRADE 270 STRANDS	
AREA (SQUARE INCHES)	0.153
ULTIMATE STRENGTH (LBS. PER STRAND)	41,300
APPLIED PRESTRESS (LBS. PER STRAND)	30,980

DEAD LOAD DEFLECTION AND CAMBER	
SPAN "A" OR "C"	3'-0" x 1'-9"
CAMBER (SLAB ALONE IN PLACE)	1/2" Ø L.R. STRAND 3/16" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/16" ↓
FINAL CAMBER	1/2" ↑
SPAN "B"	3'-0" x 1'-9"
CAMBER (SLAB ALONE IN PLACE)	1/2" Ø L.R. STRAND 2 1/16" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	7/16" ↓
FINAL CAMBER	2" ↑

** INCLUDES FUTURE WEARING SURFACE

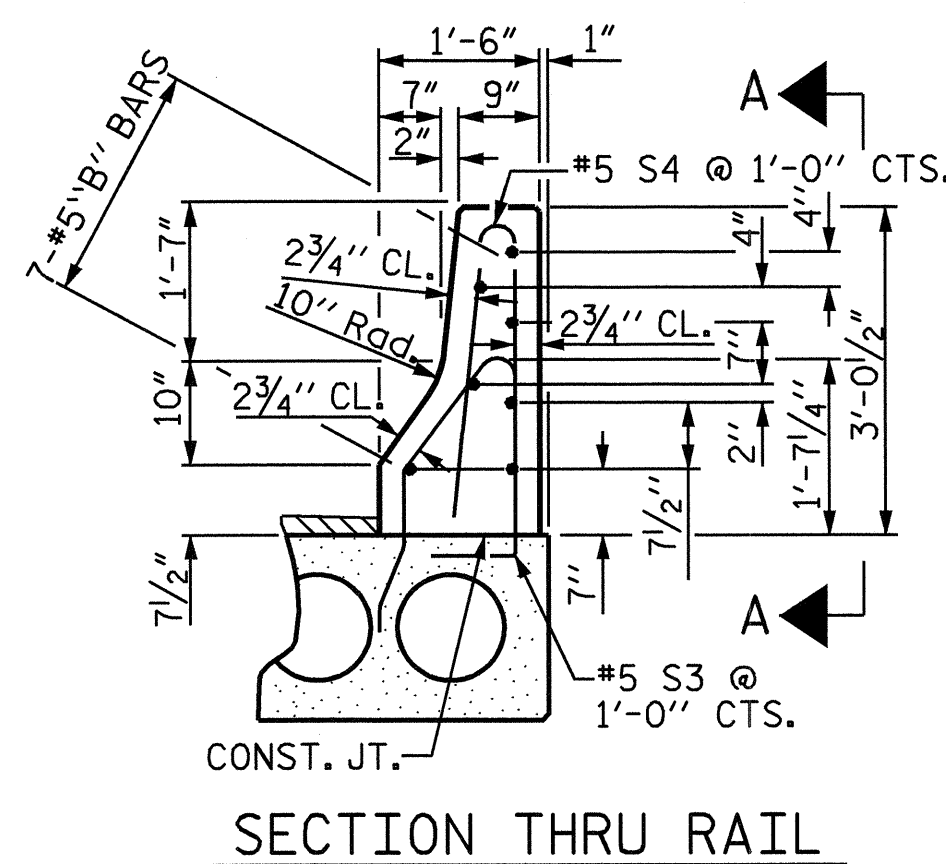
CORED SLABS REQUIRED			
SPAN "A" & "C"	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	4	33'-9 3/4"	135'-3"
INTERIOR C.S.	18	33'-9 3/4"	608'-7 1/2"
SPAN "B"	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	49'-10 1/2"	99'-9"
INTERIOR C.S.	9	49'-10 1/2"	448'-10 1/2"
TOTAL	33	-	1292'-6"



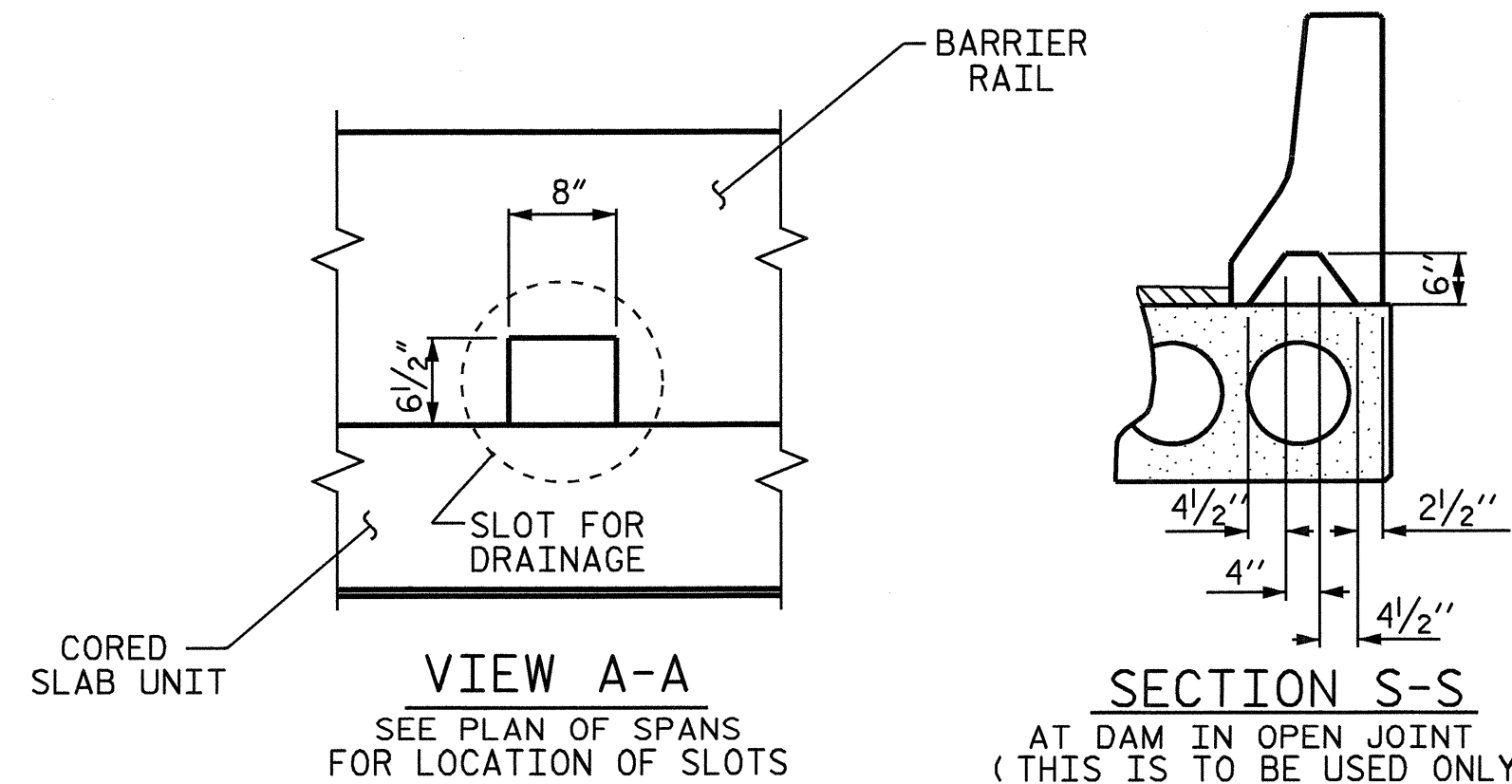
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE CORED SLAB SECTION							
SPAN "A" OR "C"				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B1	4	# 4	STR	17'-11"	48	17'-11"	48
S1	8	# 5	3	4'-3"	35	4'-3"	35
S2	66	# 4	3	5'-4"	235	-	-
S2	52	# 4	3	-	-	5'-4"	185
* S3	35	# 5	1	5'-8"	207	-	-
REINFORCING STEEL				318 LBS.		268 LBS.	
* EPOXY COATED REINFORCING STEEL				207 LBS.		-	
5,000 P.S.I. CONCRETE				4.8 CU.YDS.		4.8 CU.YDS.	
1/2" Ø L.R. STRANDS				No.	12		12

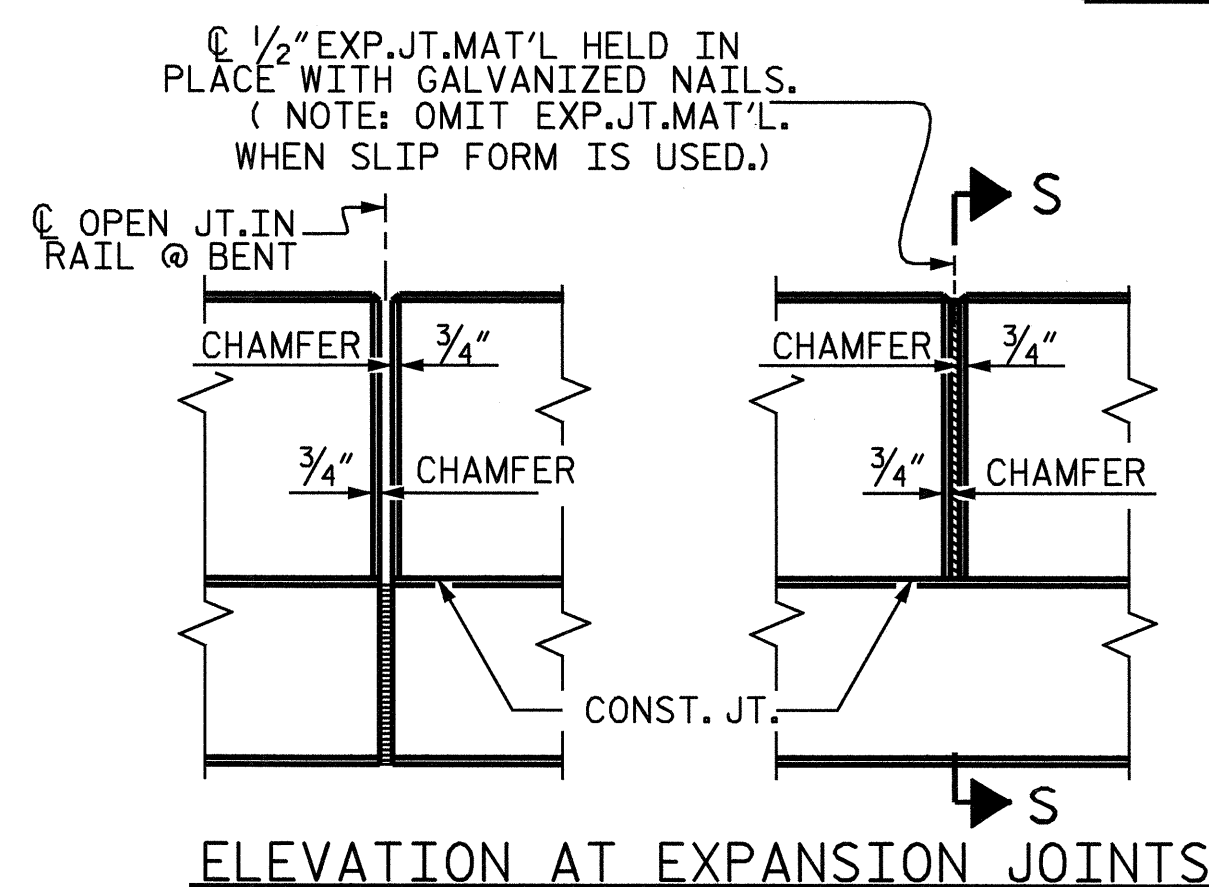
BILL OF MATERIAL FOR ONE CORED SLAB SECTION							
SPAN "B"				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B3	4	# 4	STR	25'-11"	69	25'-11"	69
S1	8	# 5	3	4'-3"	35	4'-3"	35
S2	98	# 4	3	5'-4"	349	-	-
S2	78	# 4	3	-	-	5'-4"	278
* S3	51	# 5	1	5'-8"	301	-	-
REINFORCING STEEL				453 LBS.		382 LBS.	
* EPOXY COATED REINFORCING STEEL				301 LBS.		-	
5,000 P.S.I. CONCRETE				7.0 CU.YDS.		7.0 CU.YDS.	
1/2" Ø L.R. STRANDS				No.	24		24



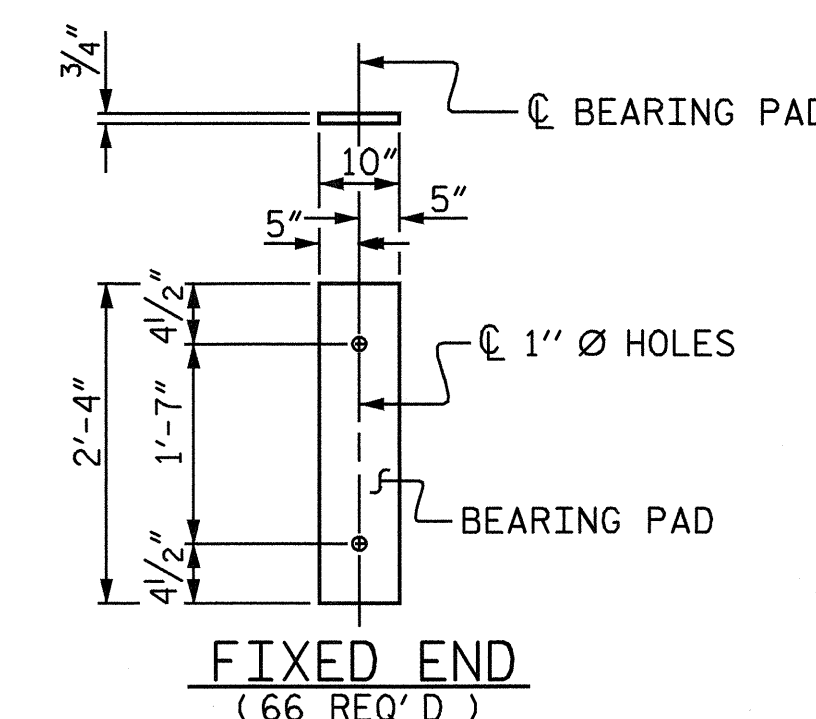
SECTION THRU RAIL



BARRIER RAIL DETAILS



ELEVATION AT EXPANSION JOINTS



ELASTOMERIC BEARING DETAILS

PROJECT NO. B-4271
SAMPSON COUNTY
 STATION: 17+15.00 -L-

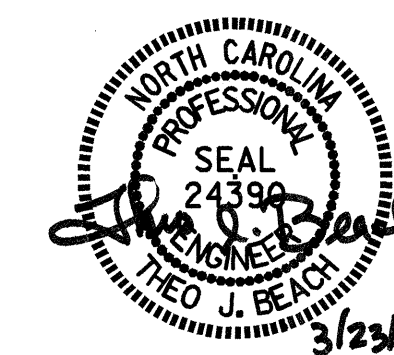
SHEET 5 OF 5

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

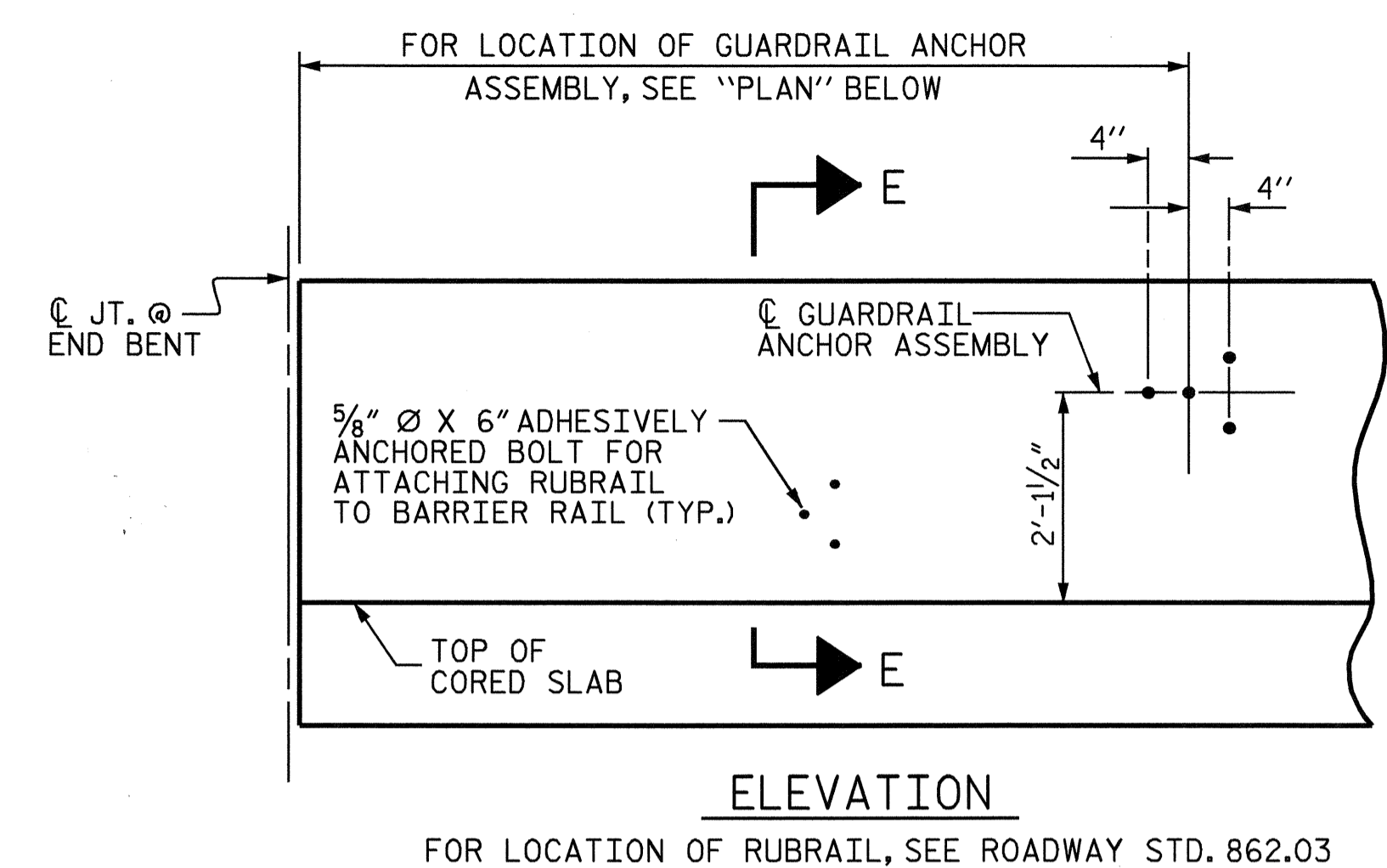
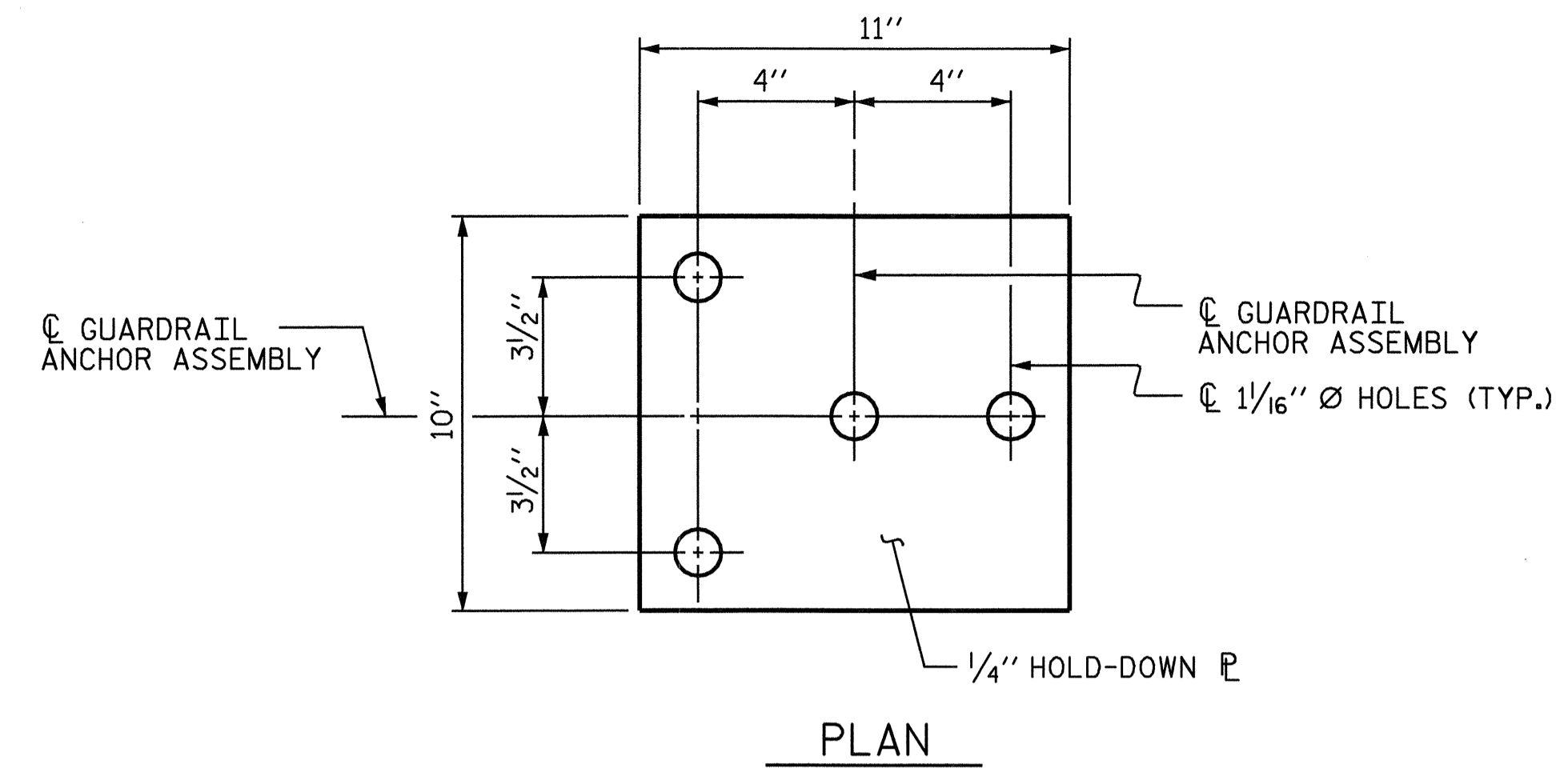
OCTOBER 1981

ASSEMBLED BY : N. PIERCE DATE : 6/05
 CHECKED BY : P.E. LACKEY DATE : 6/05
 DRAWN BY : WJH 4/89
 CHECKED BY : FCJ 5/89

REV. 10/17/00 RWW/LES
 REV. 7/10/01 RWW/LES
 REV. 5/7/03RRR RWW/JTE



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-8
2			4			TOTAL SHEETS 20



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.)

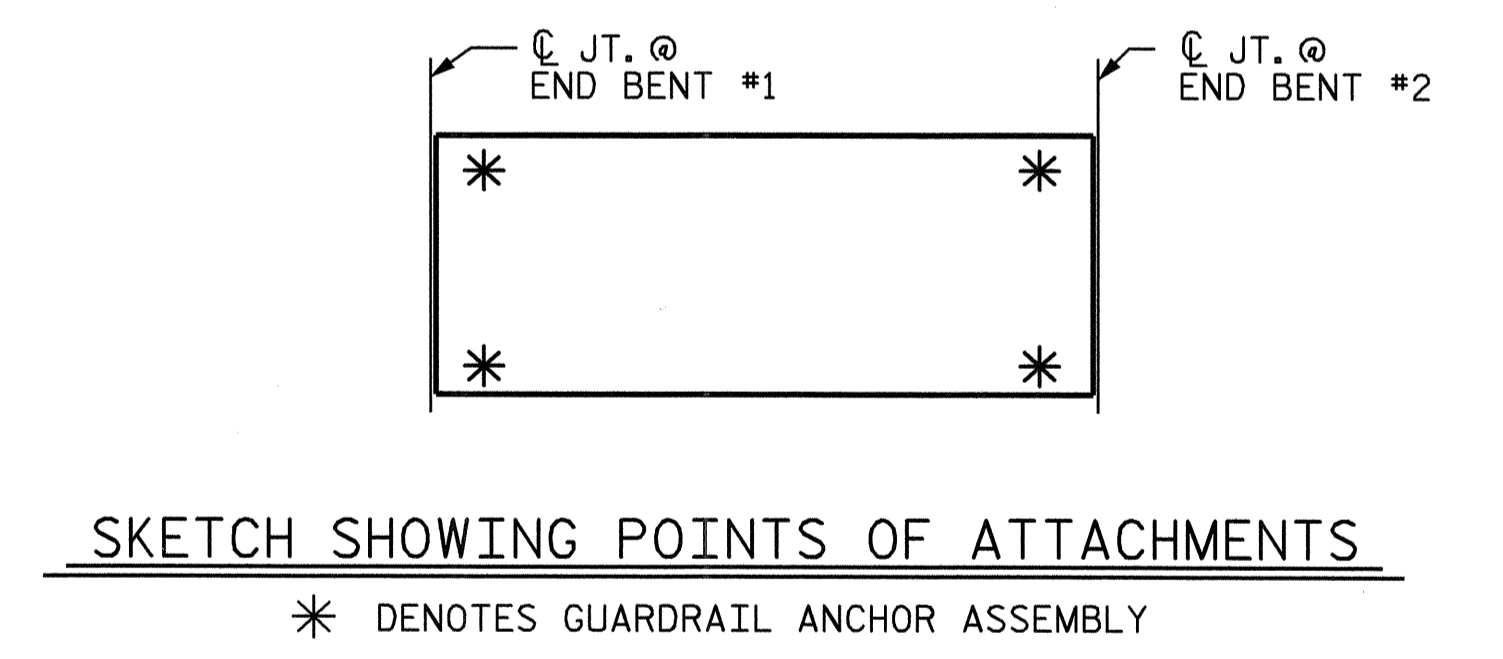
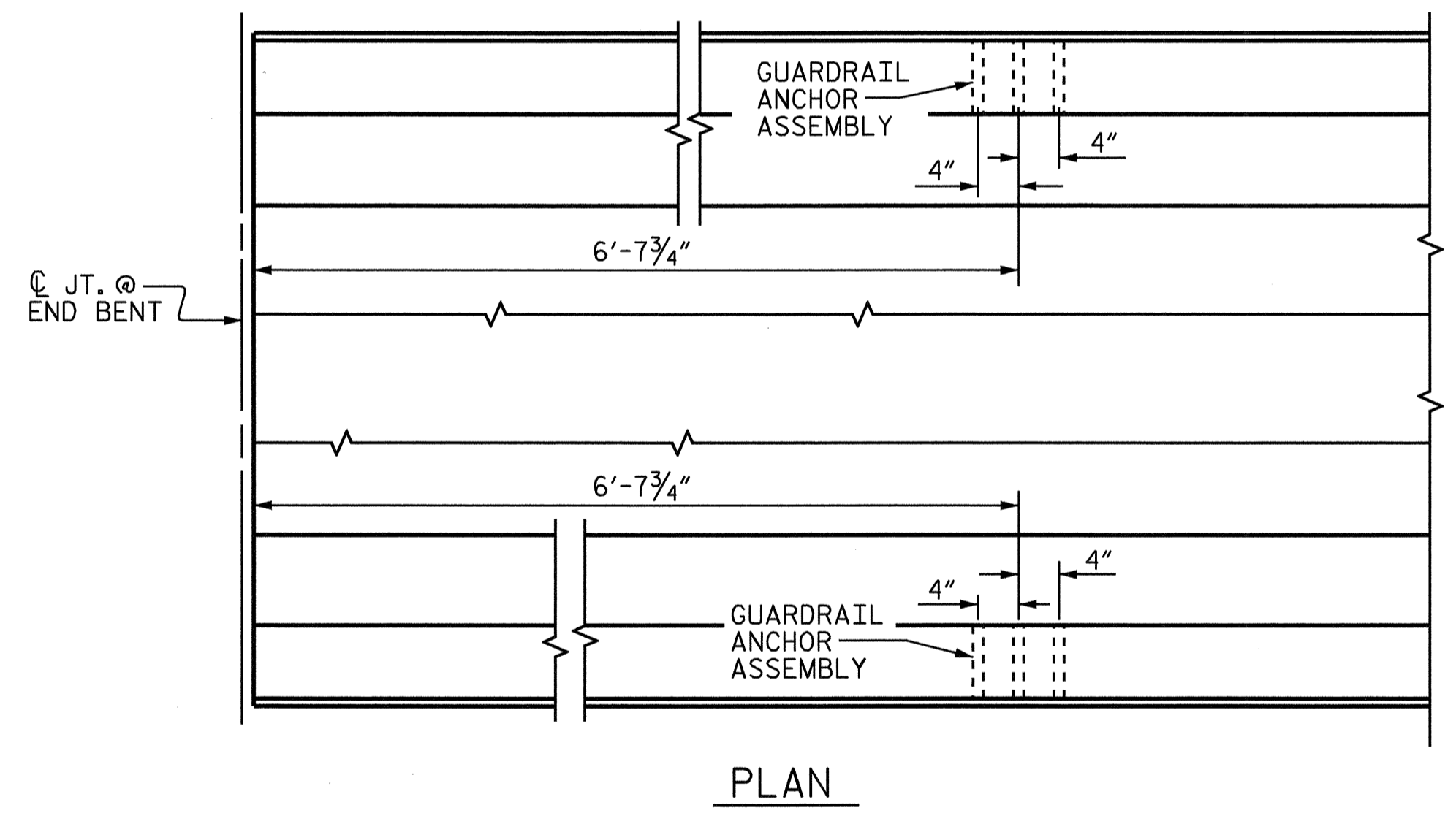
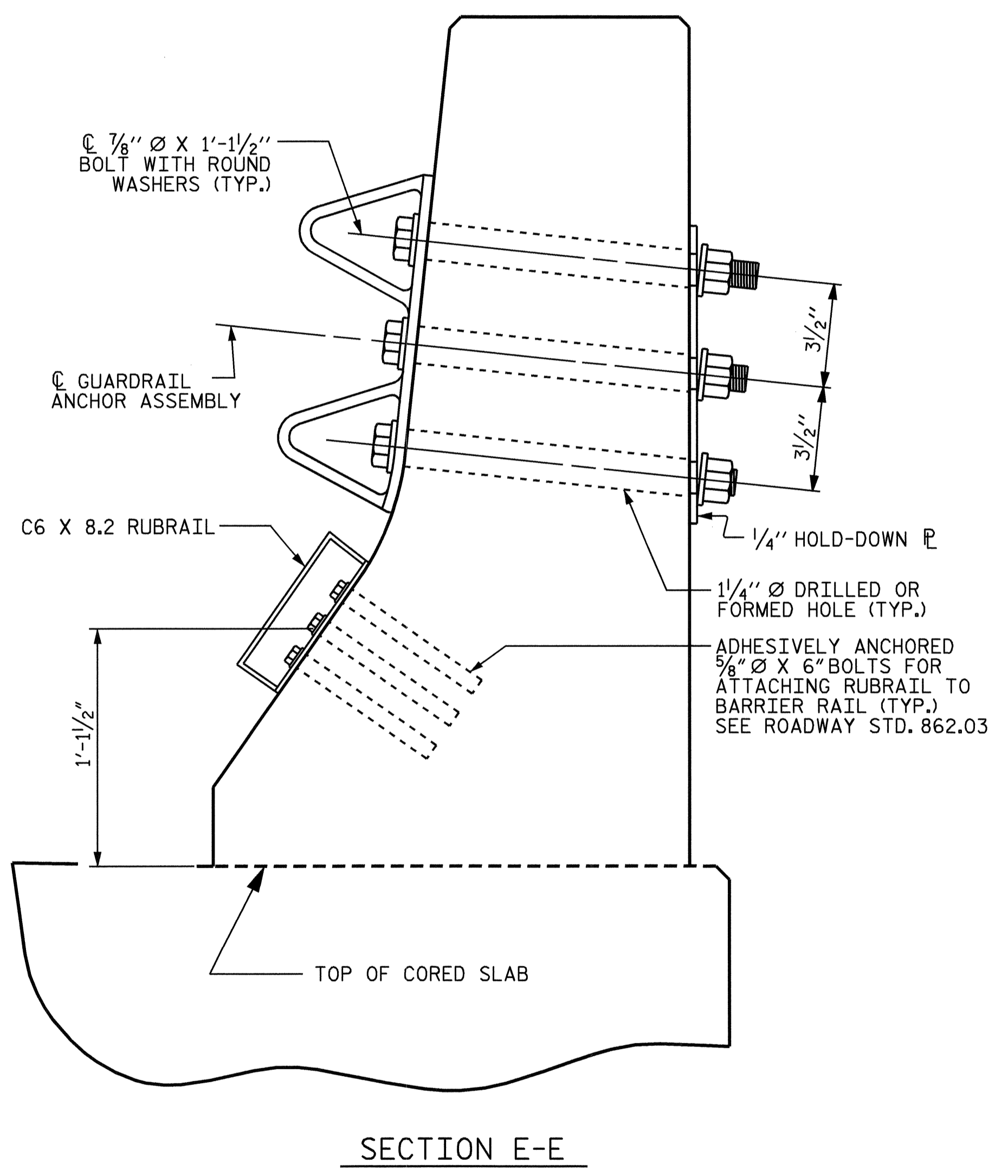
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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 CONSTRUCTION OF SUPERSTRUCTURE.

THE 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 5/8" Ø X 6" BOLTS WITH WASHERS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



GUARDRAIL ANCHOR ASSEMBLY DETAILS

LOCATION OF ANCHORS FOR GUARDRAIL

PROJECT NO. B-4271
SAMPSON COUNTY
 STATION: 17+15.00 -L-

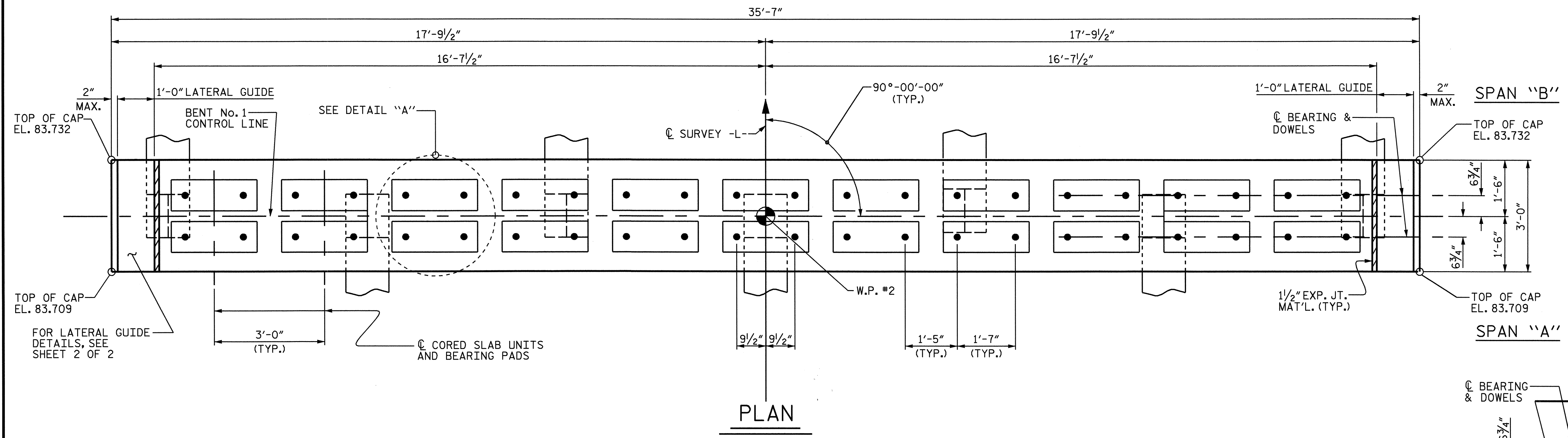
ASSEMBLED BY : N. PIERCE	DATE : 3/07
CHECKED BY : T. BEACH	DATE : 3/07
DRAWN BY : TLA 5/06	ADDED 5/1/06
CHECKED BY : GM 5/06	

16-APR-2007 10:04
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 tbeach



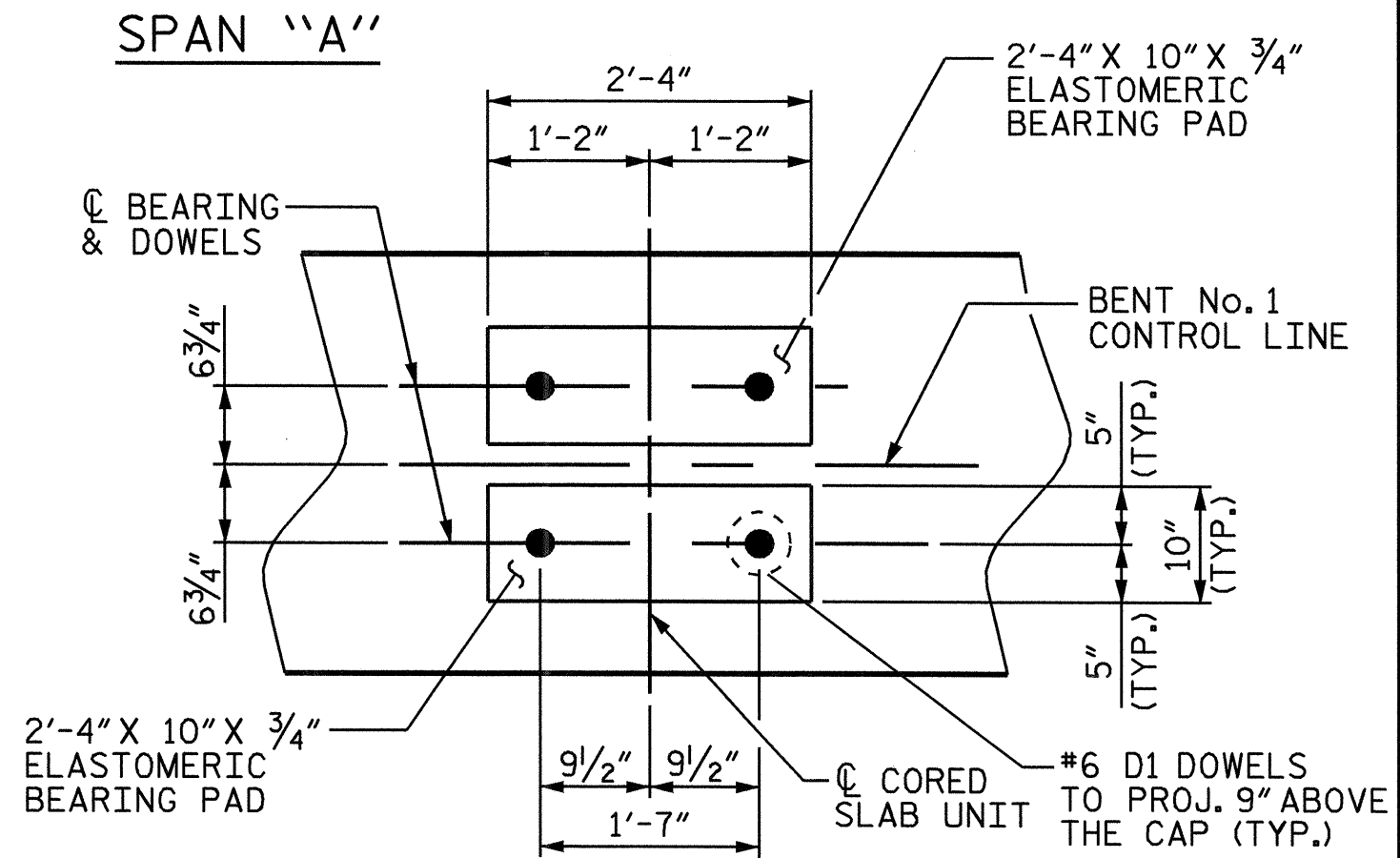
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 FOR BARRIER RAIL

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

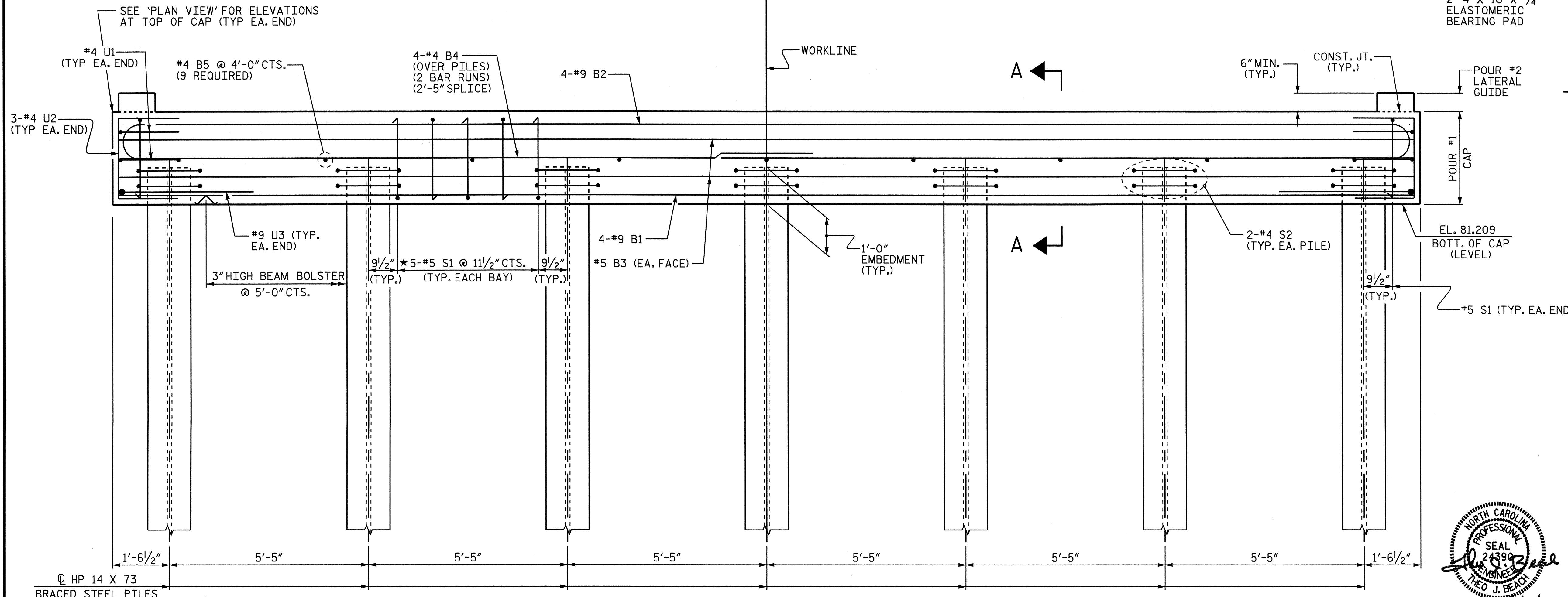


PLAN

NOTES
 STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
 THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.
 * INVERT ALTERNATE STIRRUPS AS SHOWN.



DETAIL "A"



ELEVATION

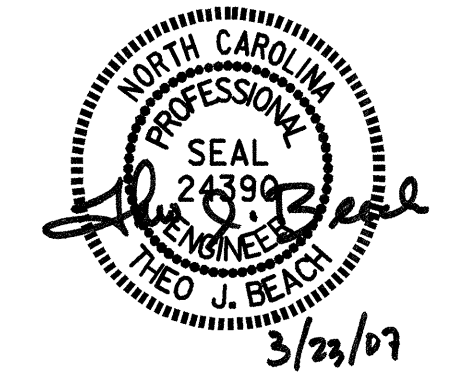
PROJECT NO. B-4271
SAMPSON COUNTY
 STATION: 17+15.00 -L-

SHEET 1 OF 2

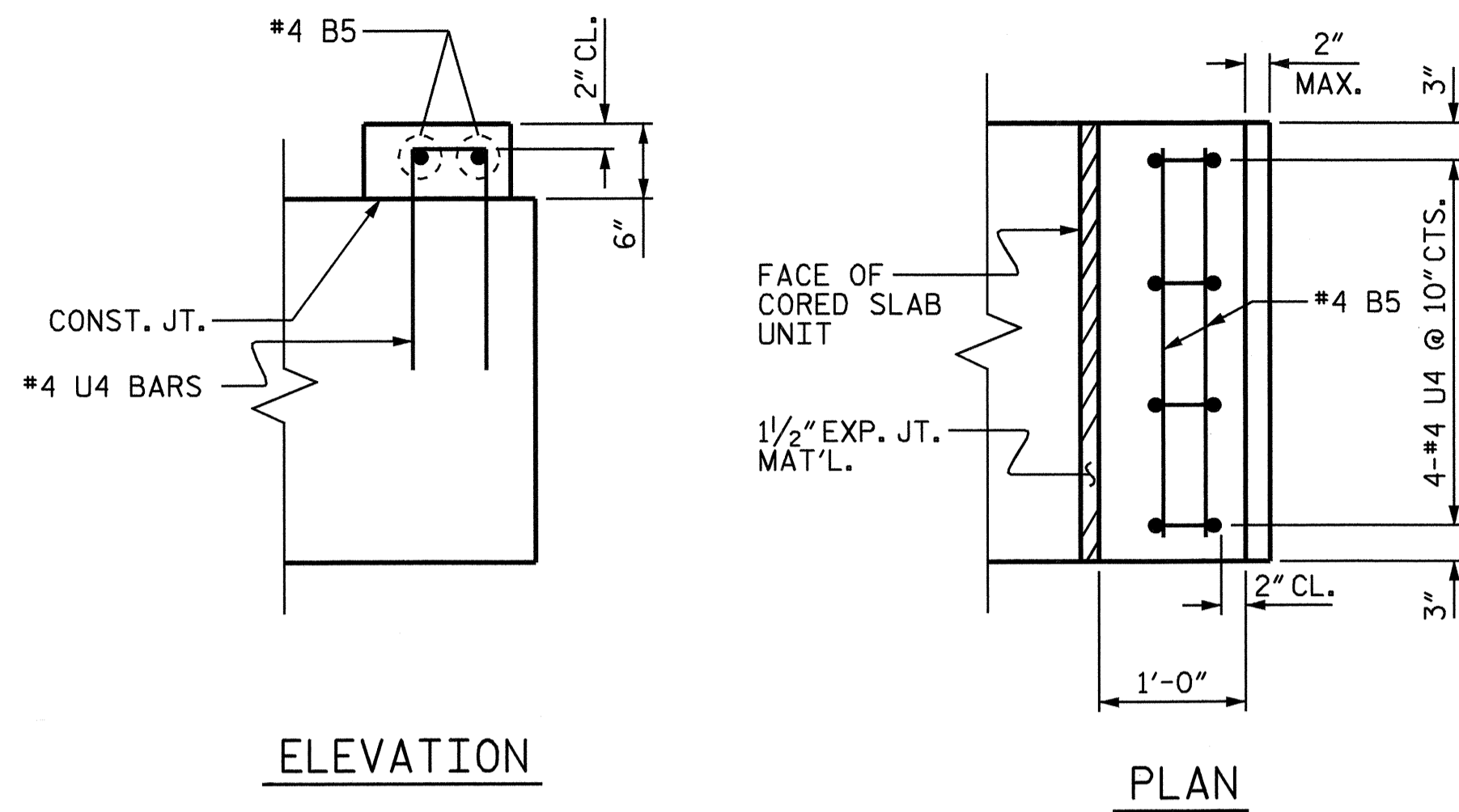
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT No. 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			20



DRAWN BY: A. K. PATEL DATE: 10/17/05
 CHECKED BY: S. B. WILLIAMS DATE: 11/09/05

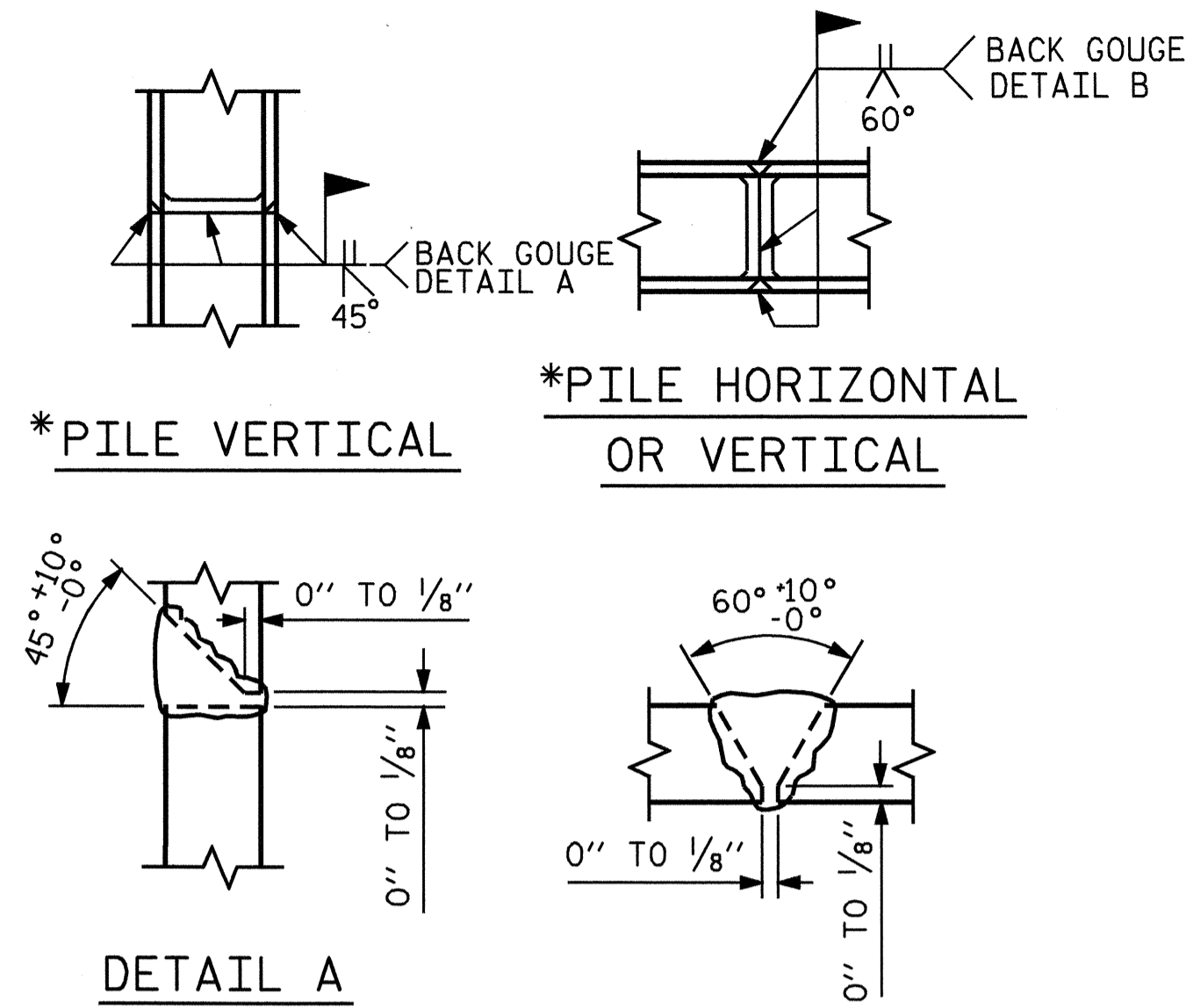


ELEVATION

PLAN

LATERAL GUIDE DETAIL

(RIGHT LATERAL GUIDE SHOWN, LEFT SIDE SIMILAR)



*PILE VERTICAL

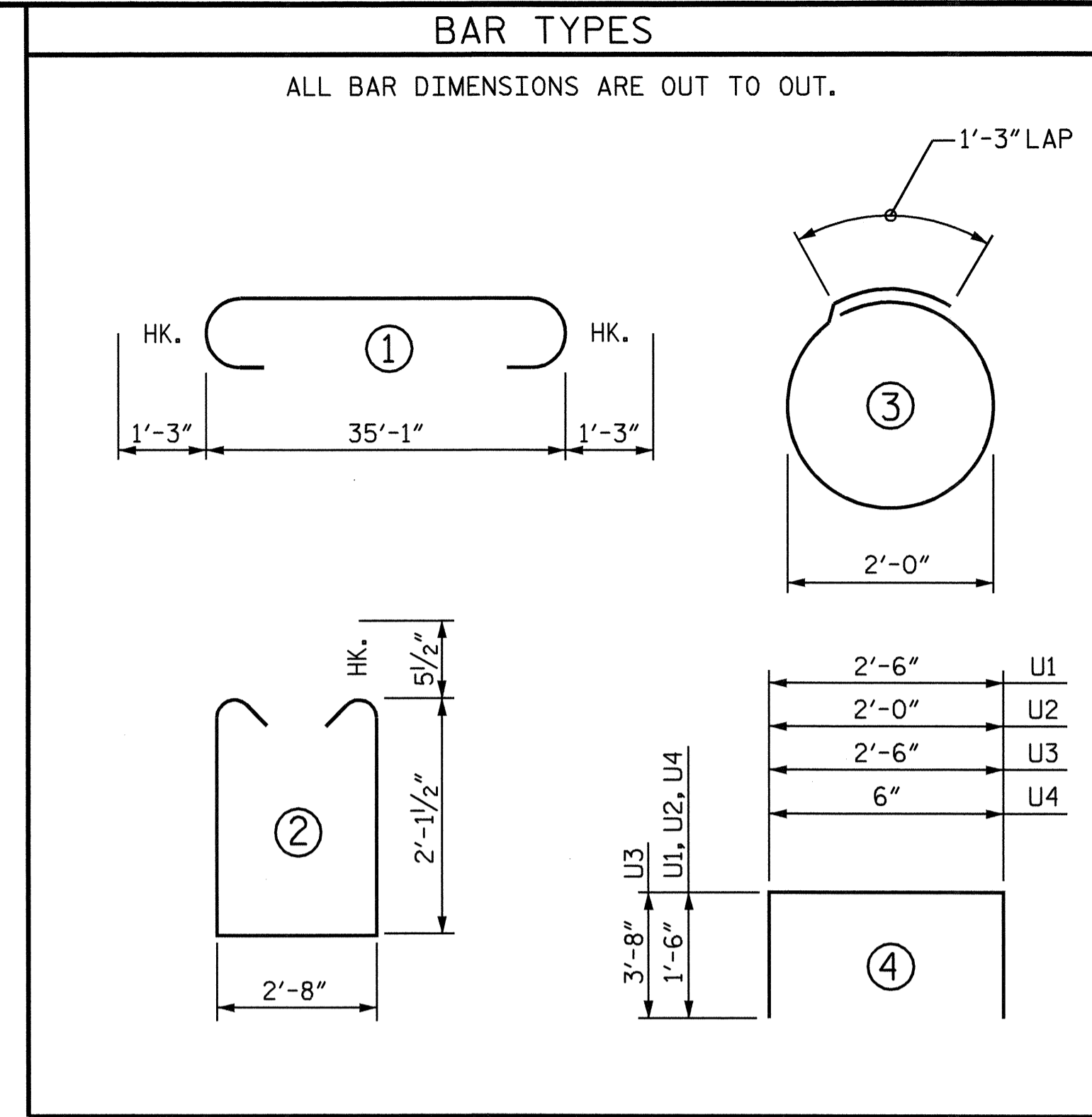
*PILE HORIZONTAL OR VERTICAL

DETAIL A

DETAIL B

* POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

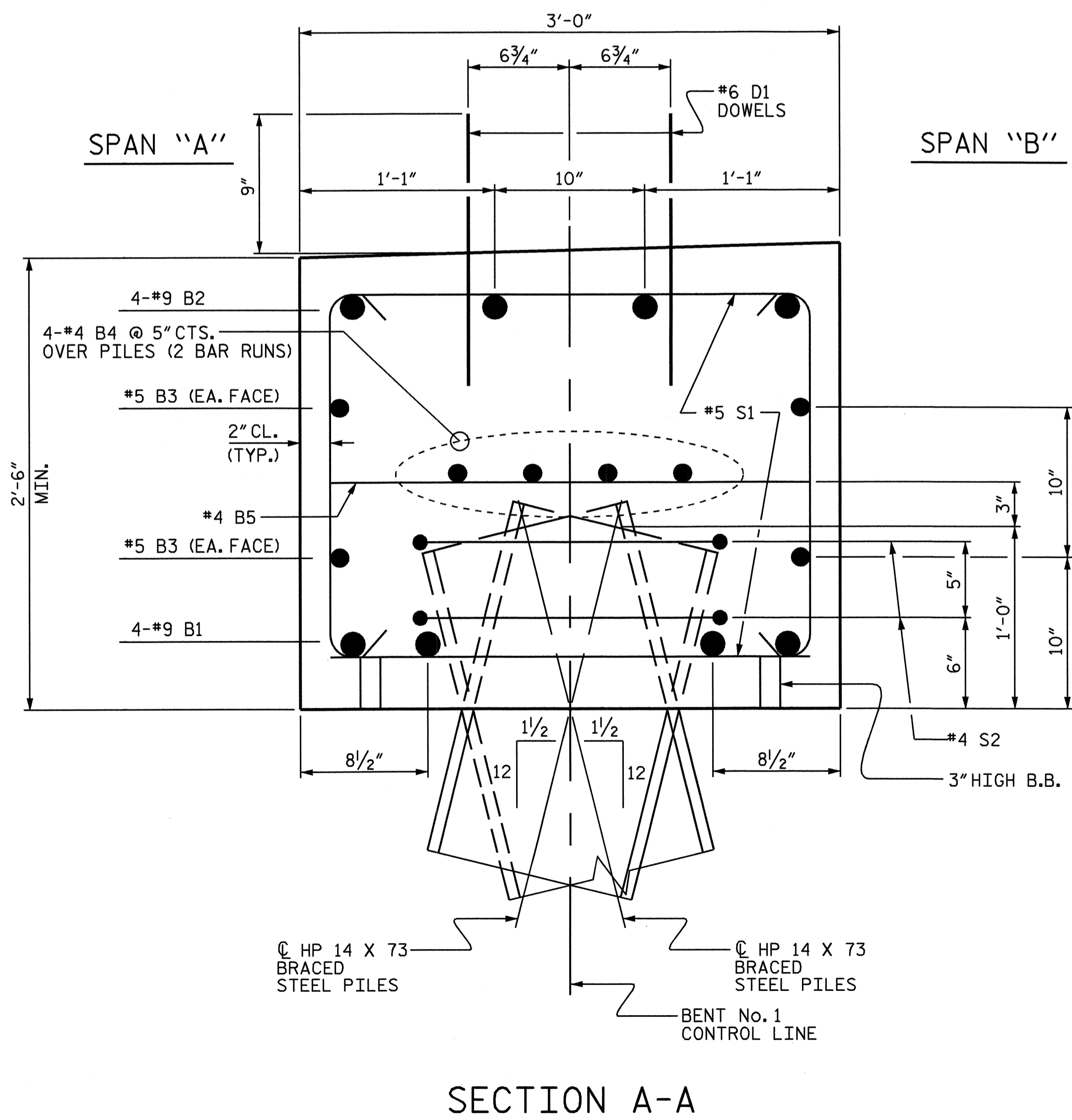
BENT No. 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#9	STR	35'-3"	479
B2	4	#9	1	37'-7"	511
B3	4	#5	STR	35'-3"	147
B4	8	#4	STR	18'-10"	101
B5	13	#4	STR	2'-8"	23
D1	44	#6	STR	1'-6"	99
S1	32	#5	2	7'-10"	261
S2	14	#4	3	7'-7"	71
U1	4	#4	4	5'-6"	15
U2	6	#4	4	5'-0"	20
U3	2	#9	4	9'-10"	67
U4	8	#4	4	3'-6"	19

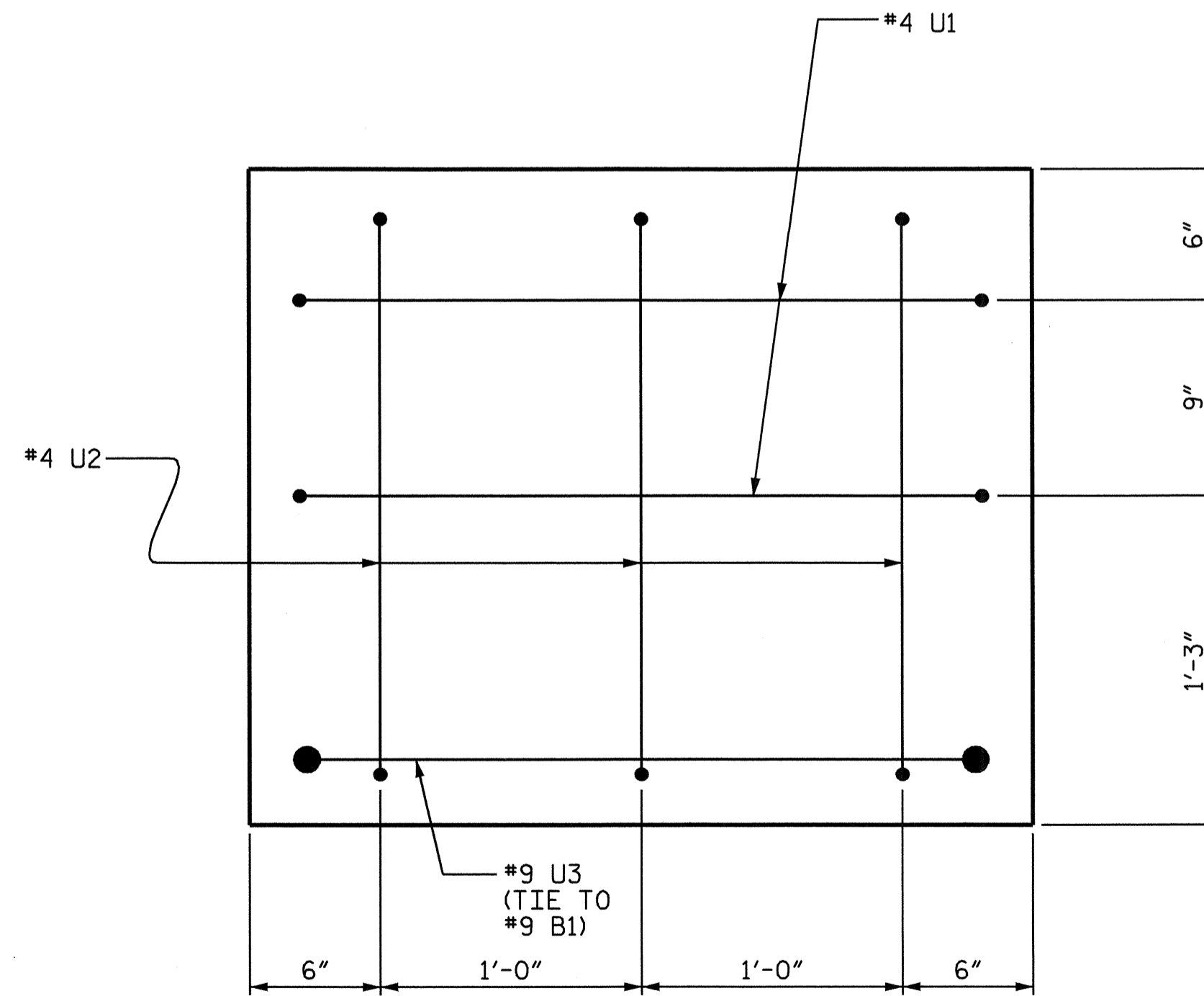
REINFORCING STEEL 1813 LBS

CLASS A CONCRETE BREAKDOWN
 POUR #1 (CAP) 9.9 C.Y.
 POUR #2 (LATERAL GUIDES) 0.1 C.Y.
 TOTAL CLASS A CONCRETE 10.0 C.Y.

HP 14 X 73 GALVANIZED STEEL PILES
 NO. 7 LIN. FT. 350.0



SECTION A-A



END OF CAP VIEW

PROJECT NO. B-4271
SAMPSON COUNTY
 STATION: 17+15.00 -L-

SHEET 2 OF 2

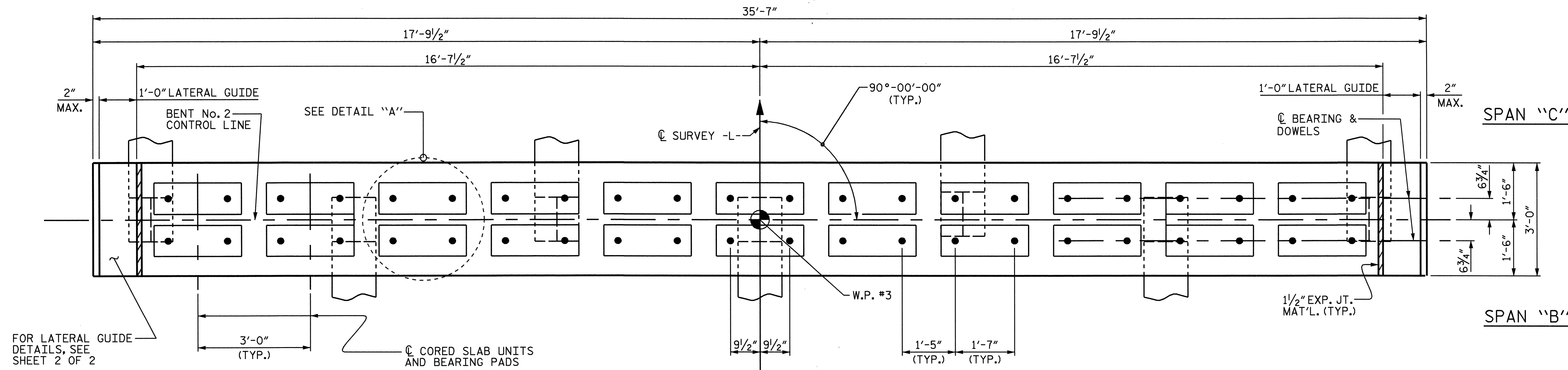
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT No. 1



DRAWN BY: A. K. PATEL DATE: 10/17/05
 CHECKED BY: S. B. WILLIAMS DATE: 11/09/05

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

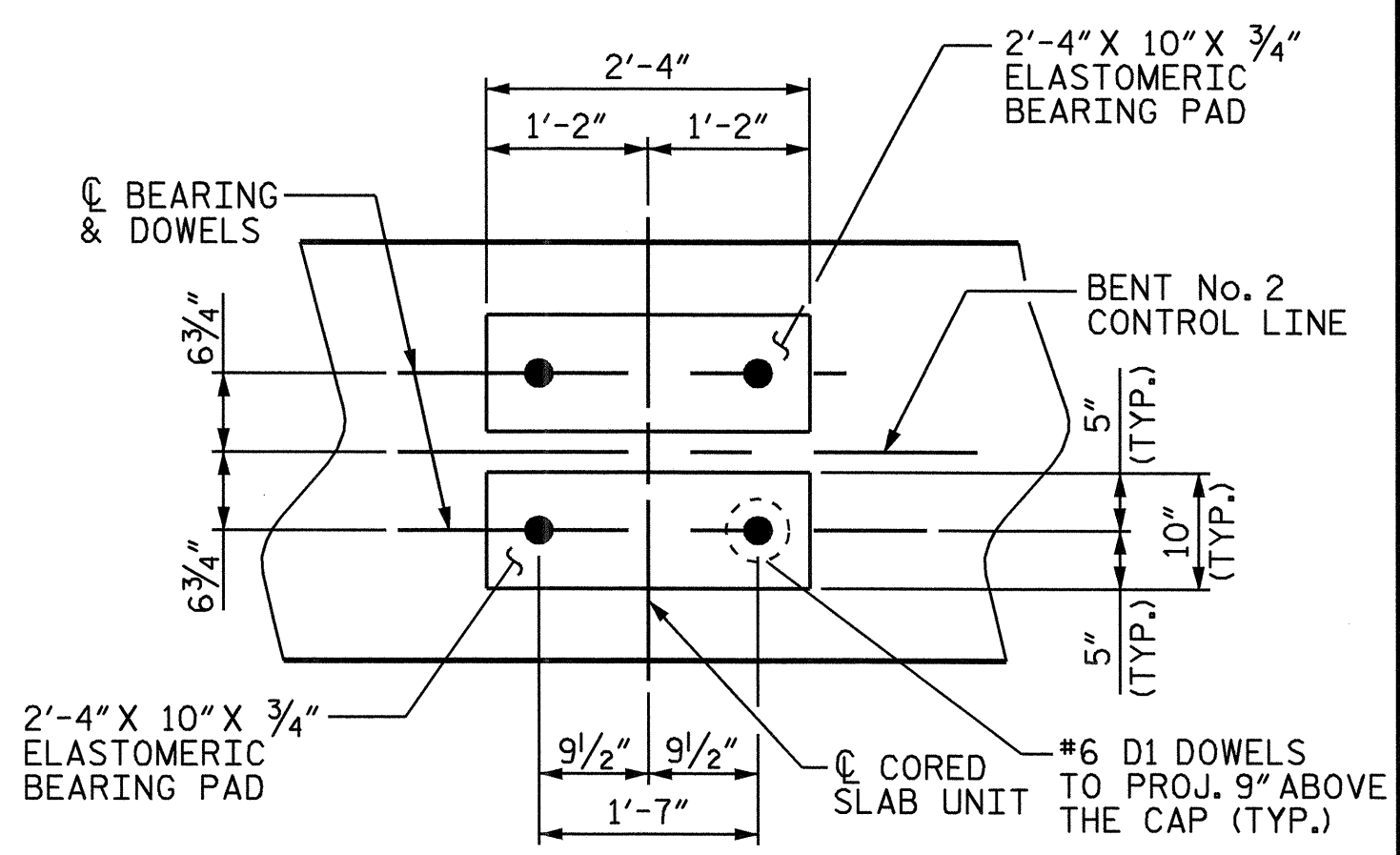


FOR LATERAL GUIDE DETAILS, SEE SHEET 2 OF 2

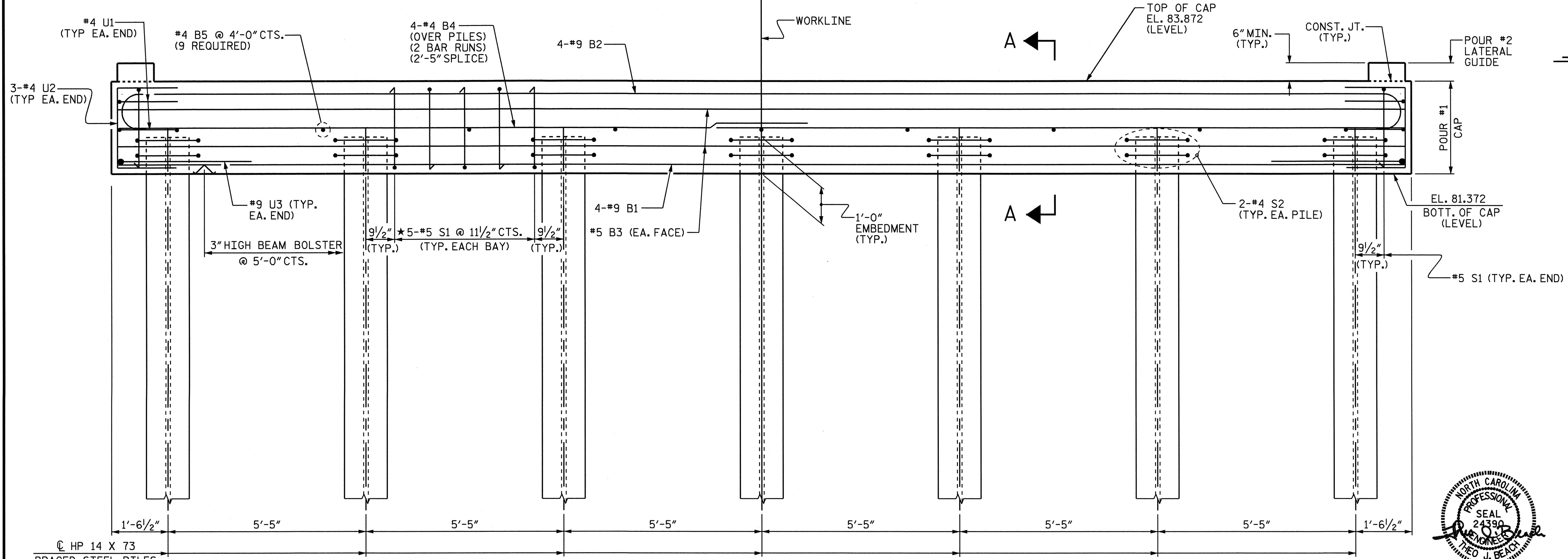
NOTES
 STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
 THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.
 * INVERT ALTERNATE STIRRUPS AS SHOWN.

PLAN

SPAN "B"



DETAIL "A"



ELEVATION

PROJECT NO. B-4271
SAMPSON COUNTY
 STATION: 17+15.00 -L-

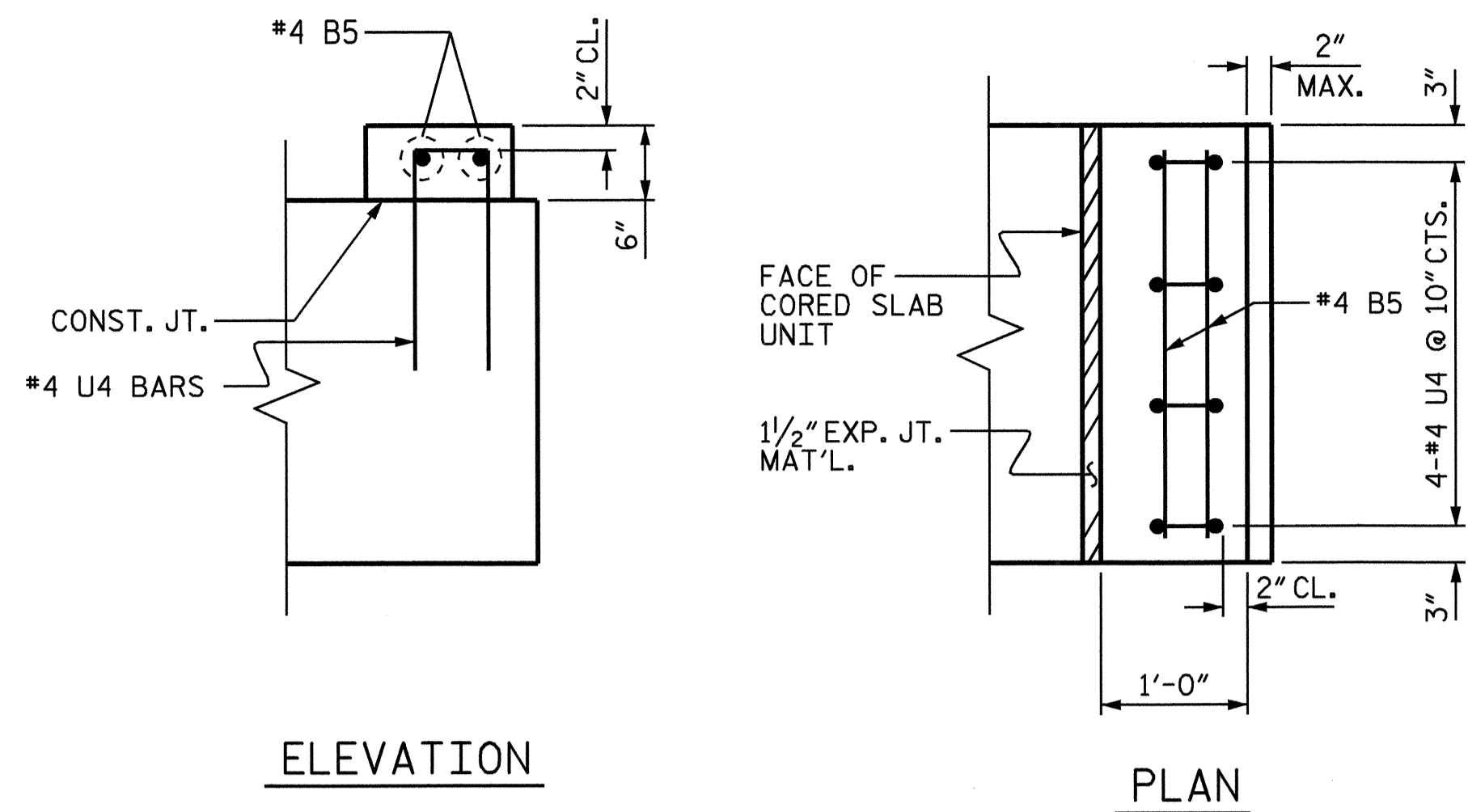
SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT No. 2



DRAWN BY: A. K. PATEL DATE: 11/28/05
 CHECKED BY: S. B. WILLIAMS DATE: 11/30/05

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14	
1			3			TOTAL SHEETS	
2			4			20	

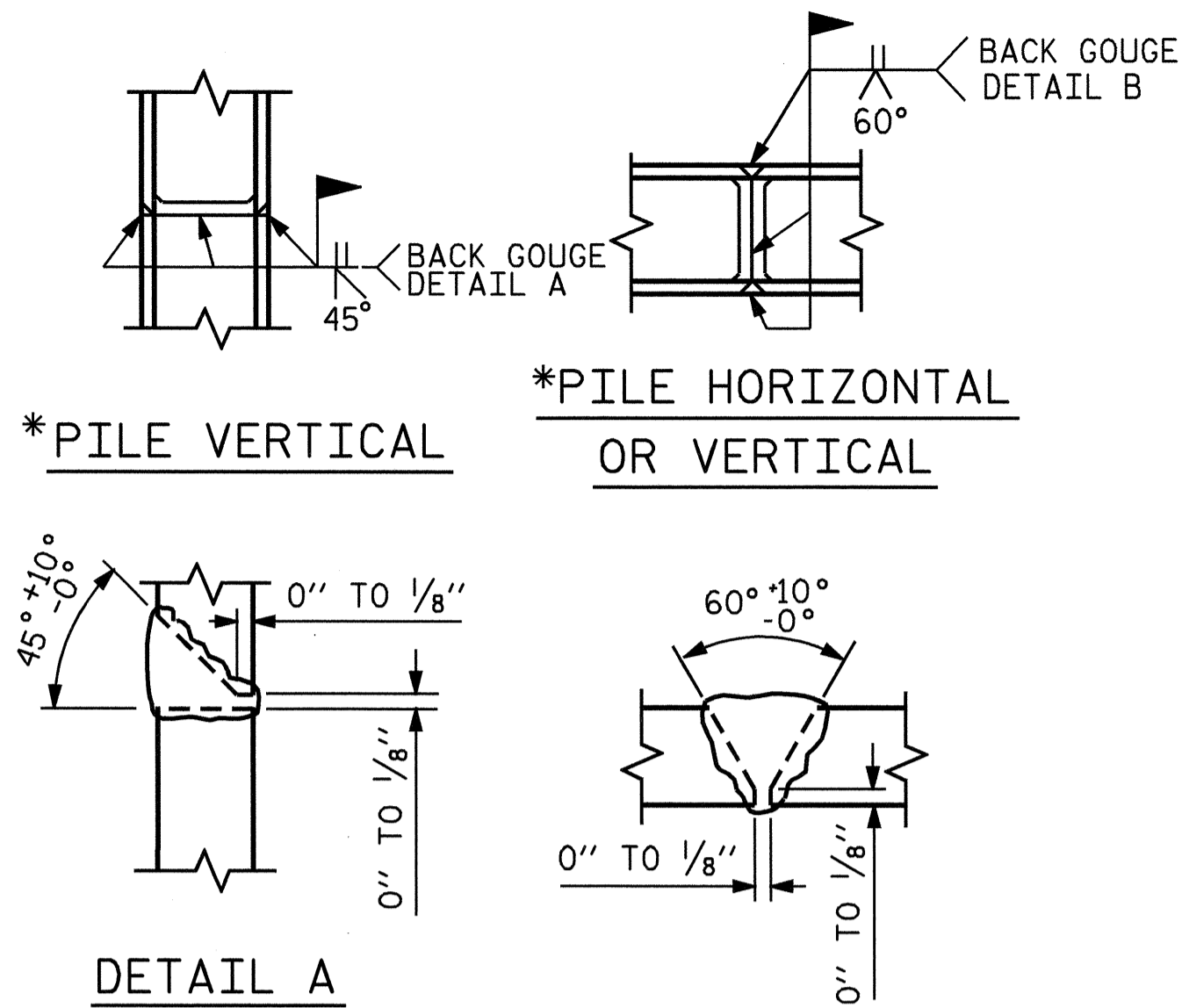


ELEVATION

PLAN

LATERAL GUIDE DETAIL

(RIGHT LATERAL GUIDE SHOWN, LEFT SIDE SIMILAR)



*PILE VERTICAL

*PILE HORIZONTAL OR VERTICAL

DETAIL A

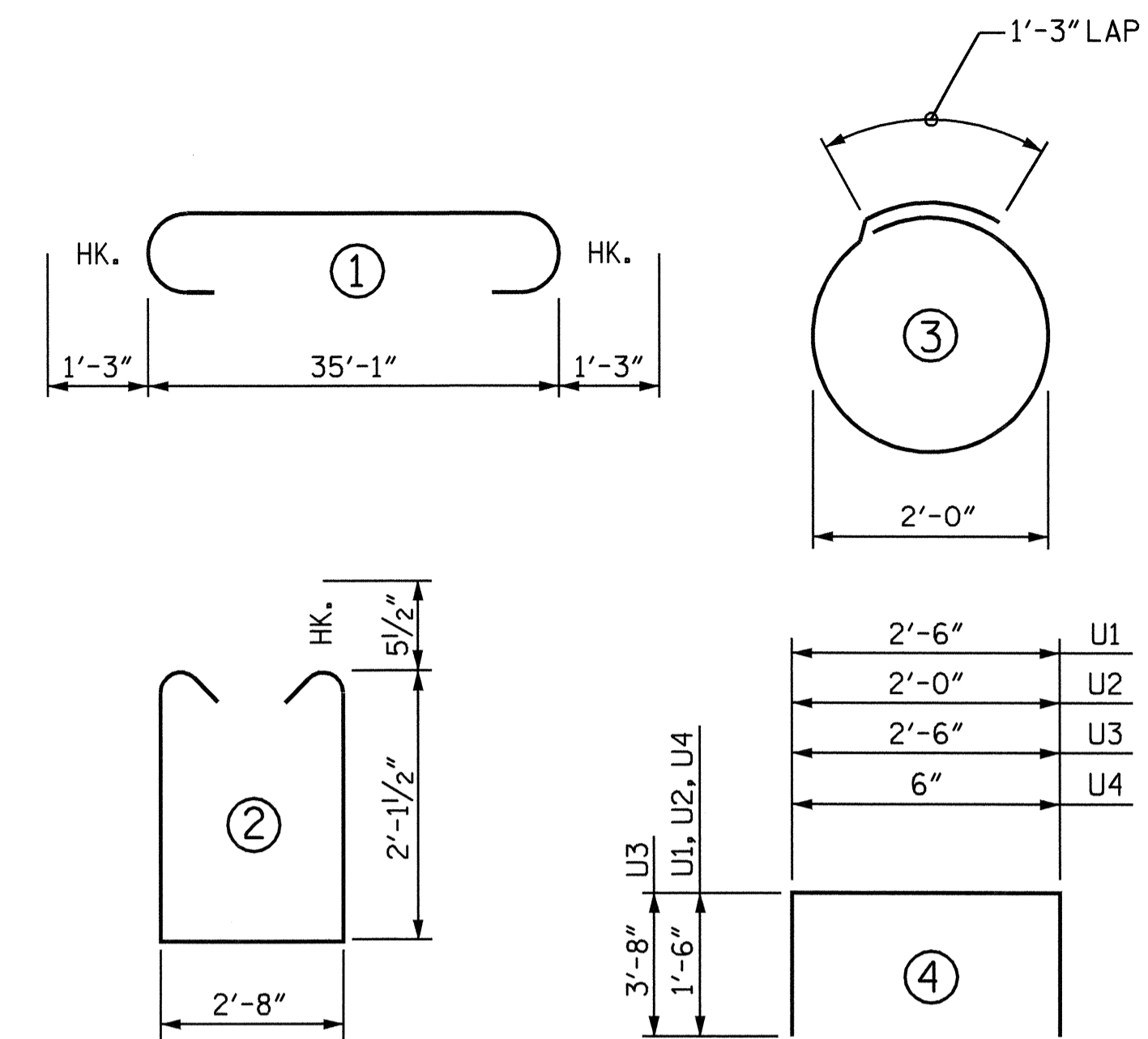
DETAIL B

* POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.



BILL OF MATERIAL

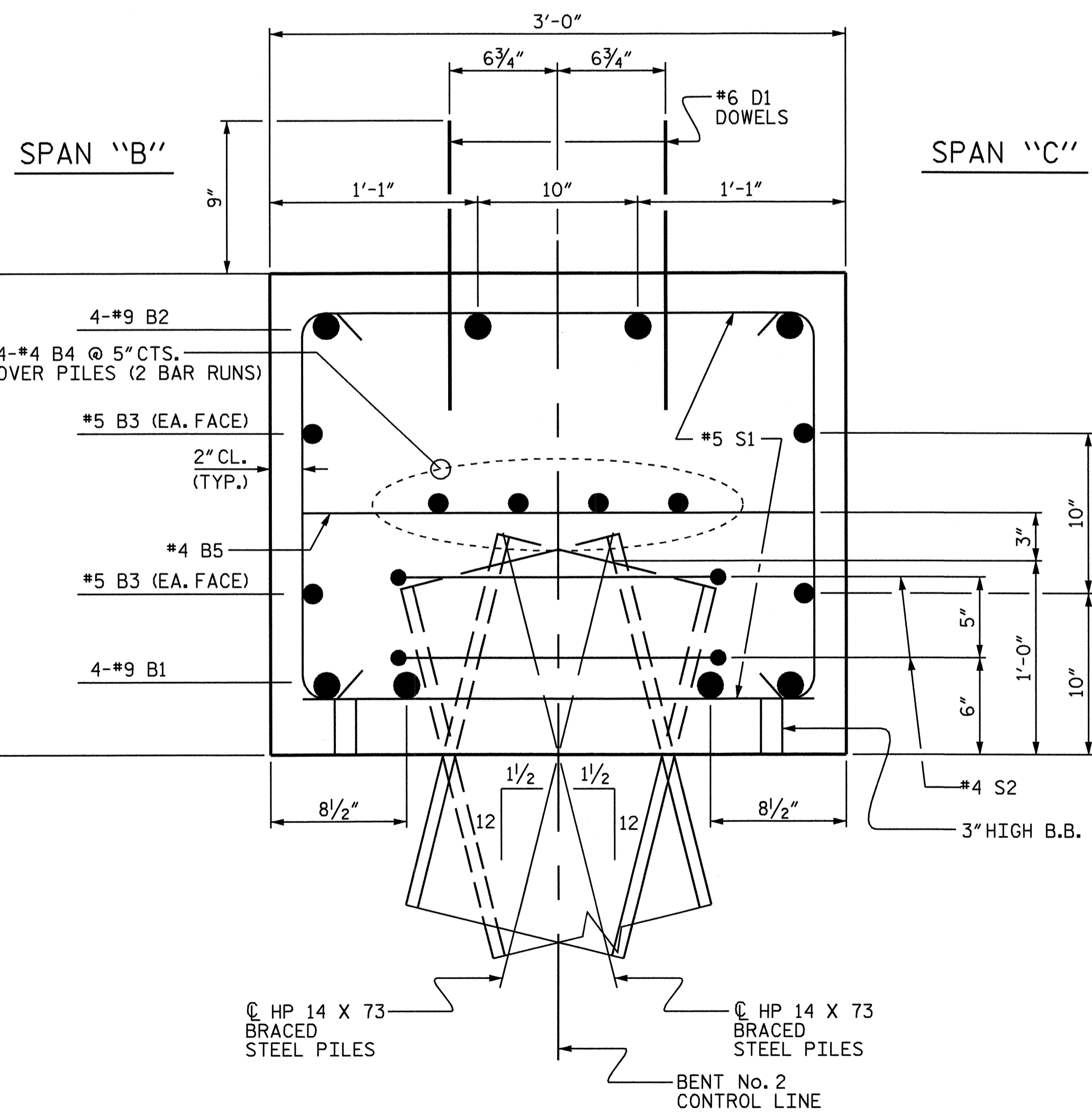
BENT No. 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#9	STR	35'-3"	479
B2	4	#9	1	37'-7"	511
B3	4	#5	STR	35'-3"	147
B4	8	#4	STR	18'-10"	101
B5	13	#4	STR	2'-8"	23
D1	44	#6	STR	1'-6"	99
S1	32	#5	2	7'-10"	261
S2	14	#4	3	7'-7"	71
U1	4	#4	4	5'-6"	15
U2	6	#4	4	5'-0"	20
U3	2	#9	4	9'-10"	67
U4	8	#4	4	3'-6"	19

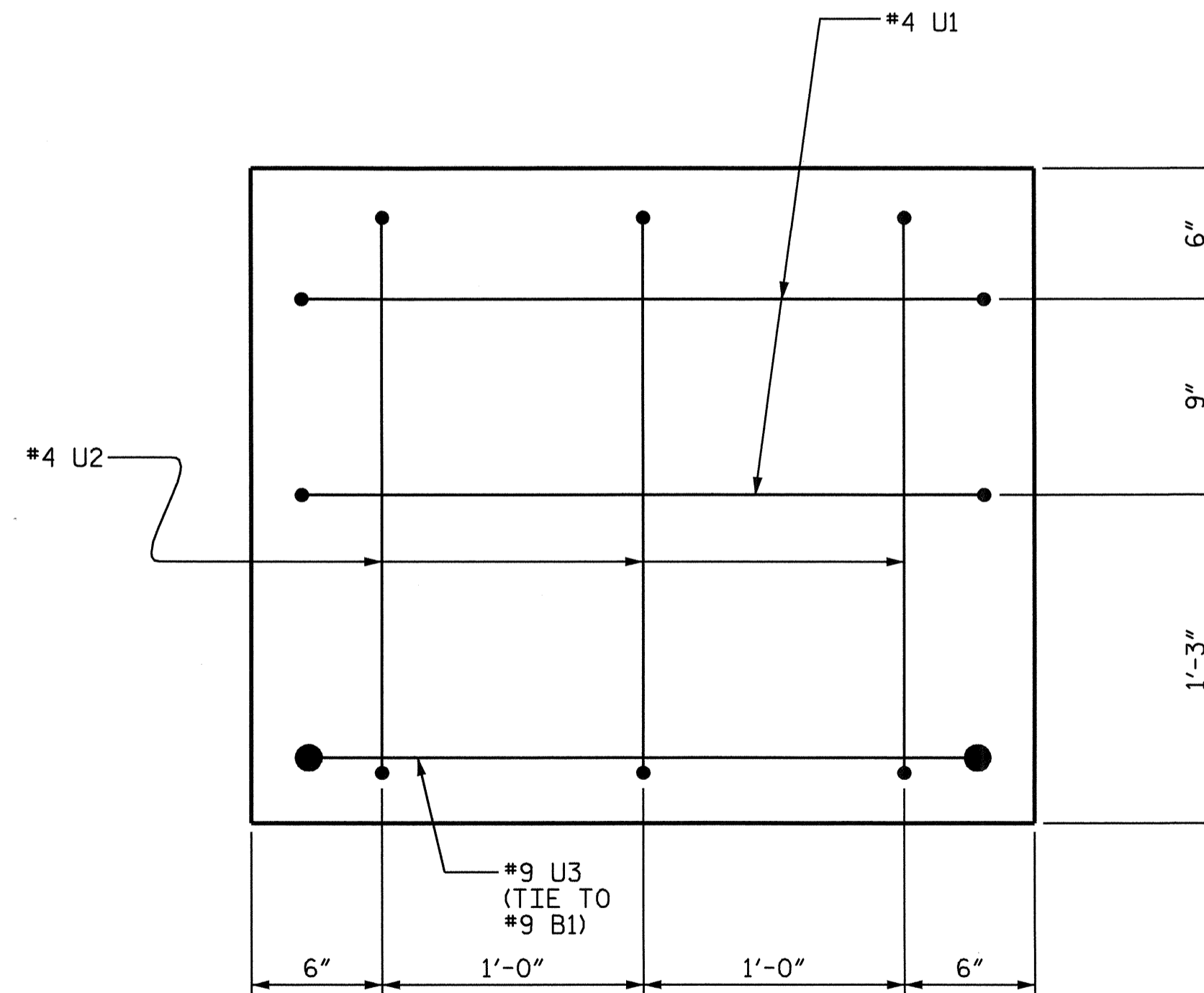
REINFORCING STEEL 1813 LBS

CLASS A CONCRETE BREAKDOWN
 POUR #1 (CAP) 9.9 C.Y.
 POUR #2 (LATERAL GUIDES) 0.1 C.Y.
 TOTAL CLASS A CONCRETE 10.0 C.Y.

HP 14 X 73 GALVANIZED STEEL PILES
 NO. 7 LIN. FT. 350.0



SECTION A-A



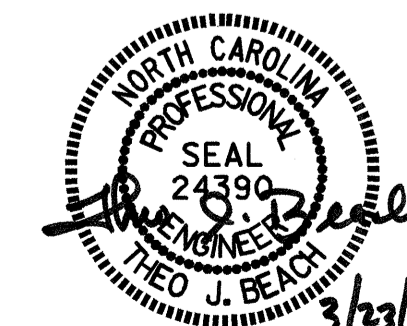
END OF CAP VIEW

PROJECT NO. B-4271
SAMPSON COUNTY
 STATION: 17+15.00 -L-

SHEET 2 OF 2

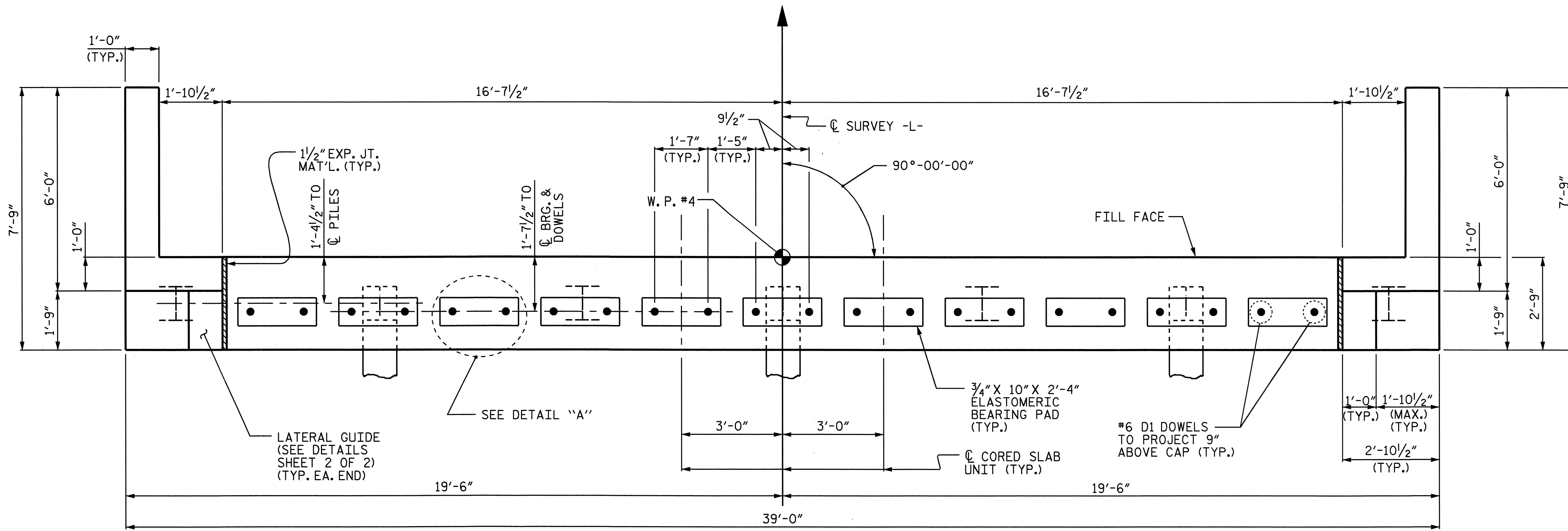
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT No. 2



DRAWN BY : A. K. PATEL DATE : 11/28/05
 CHECKED BY : S. B. WILLIAMS DATE : 11/30/05

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



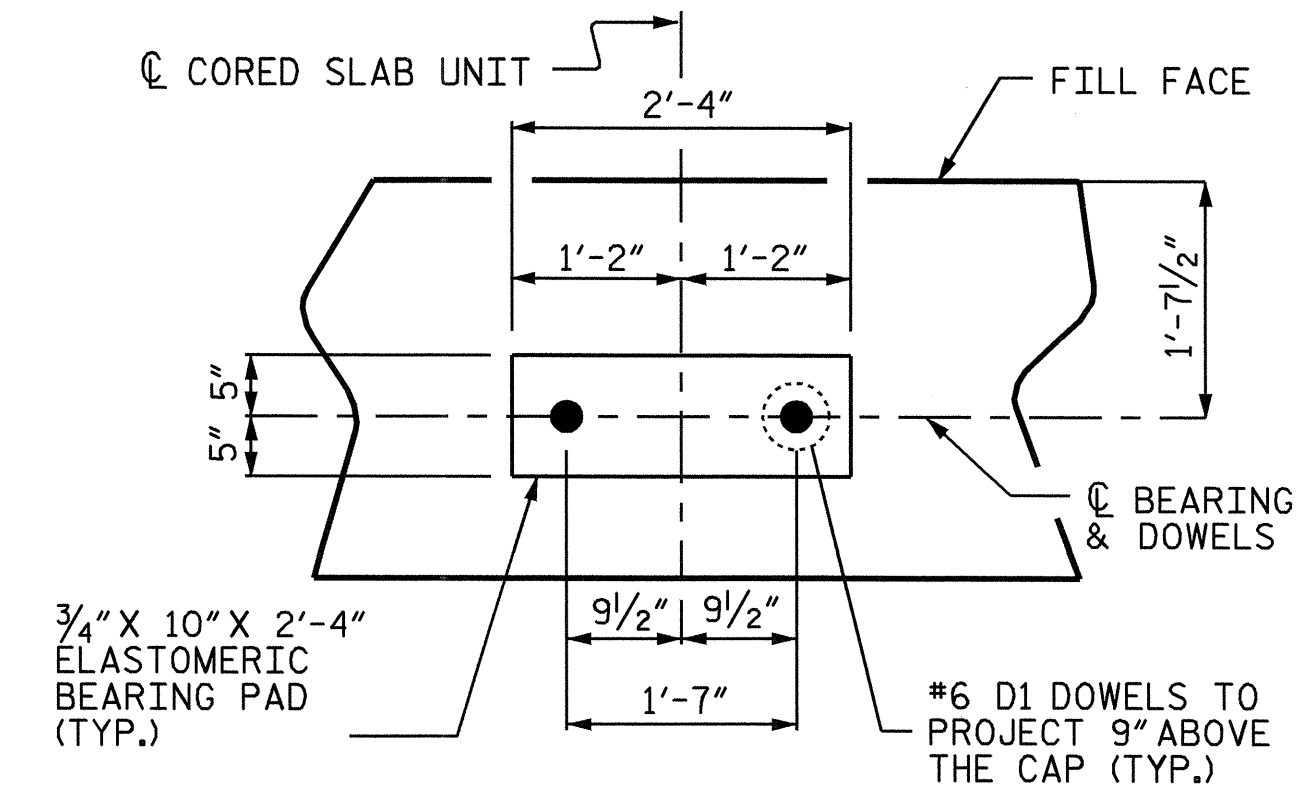
PLAN

NOTES:

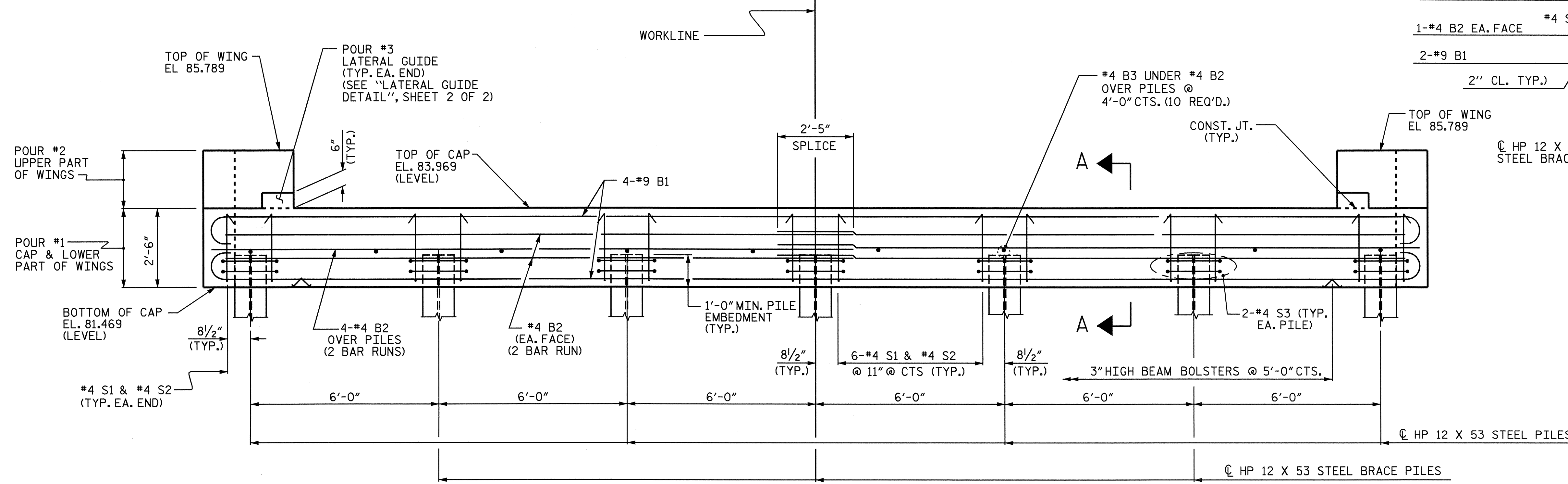
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

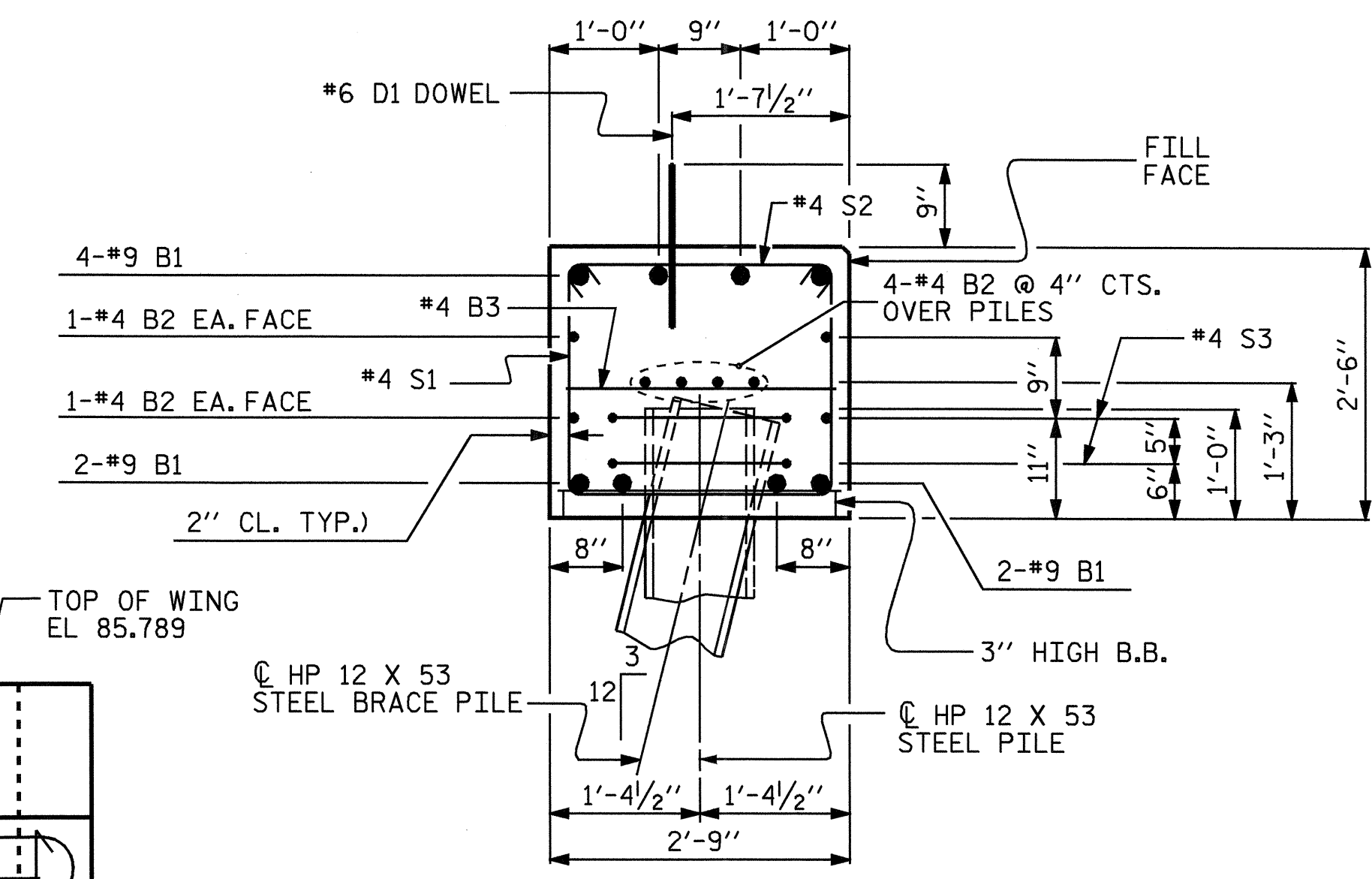
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



DETAIL "A"
(TYP. EA. BEARING)



ELEVATION



SECTION A-A

PROJECT NO. B-4271
SAMPSON COUNTY
 STATION: 17+15.00 -L-

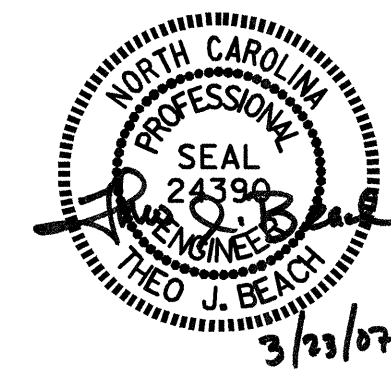
SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

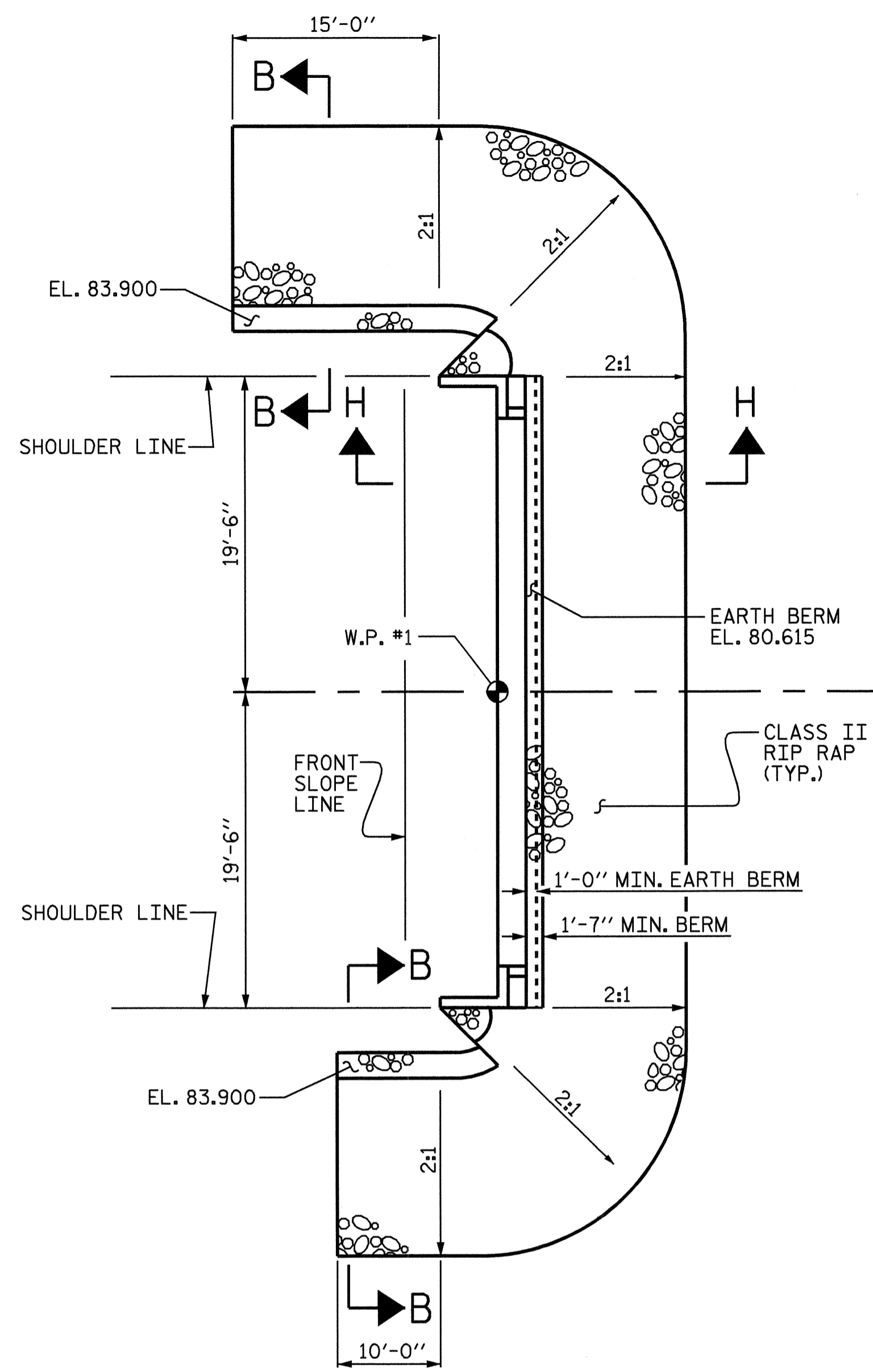
SUBSTRUCTURE
 END BENT No. 2

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

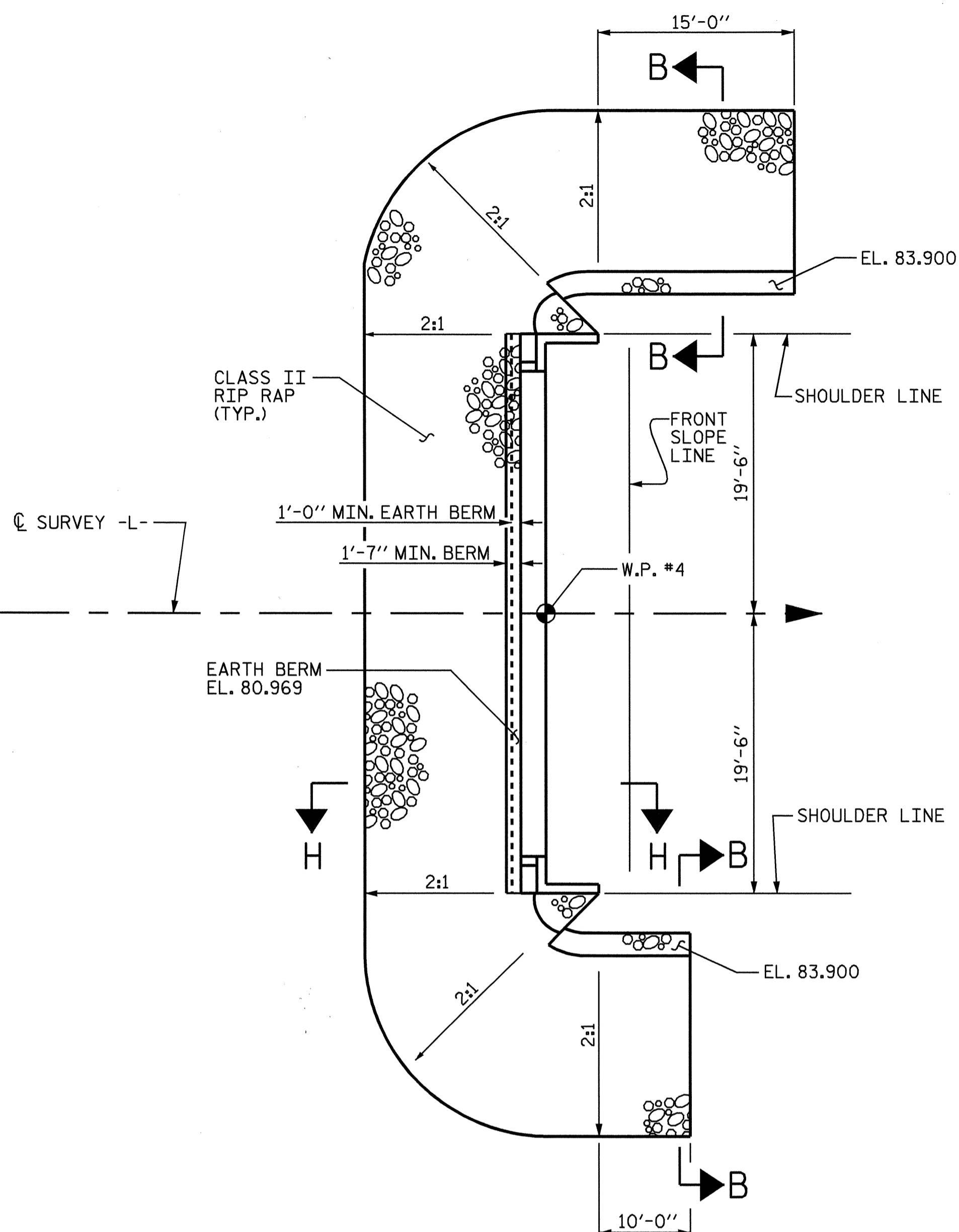
SHEET NO. S-16
 TOTAL SHEETS 20



DRAWN BY : P.E. LACKEY DATE : 6/05
 CHECKED BY : S.B. WILLIAMS DATE : 7/05



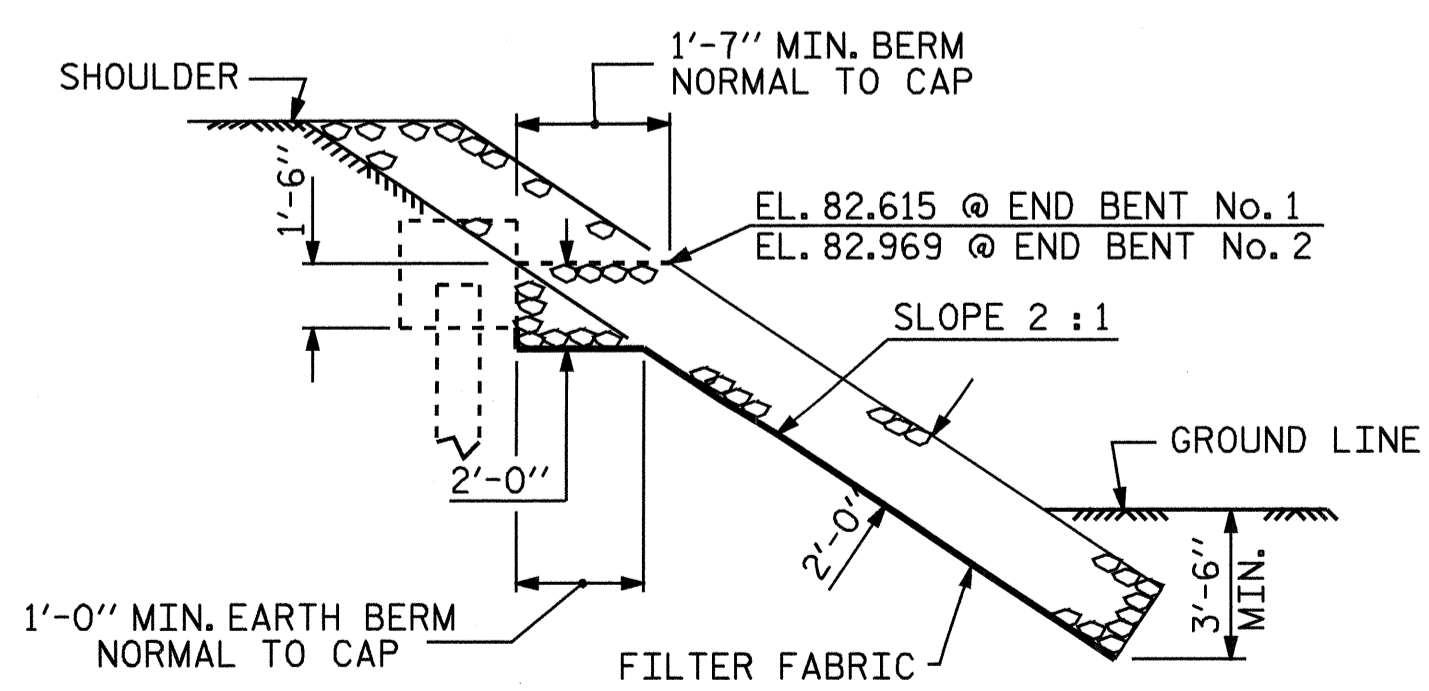
PLAN OF RIP RAP AT END BENT No. 1



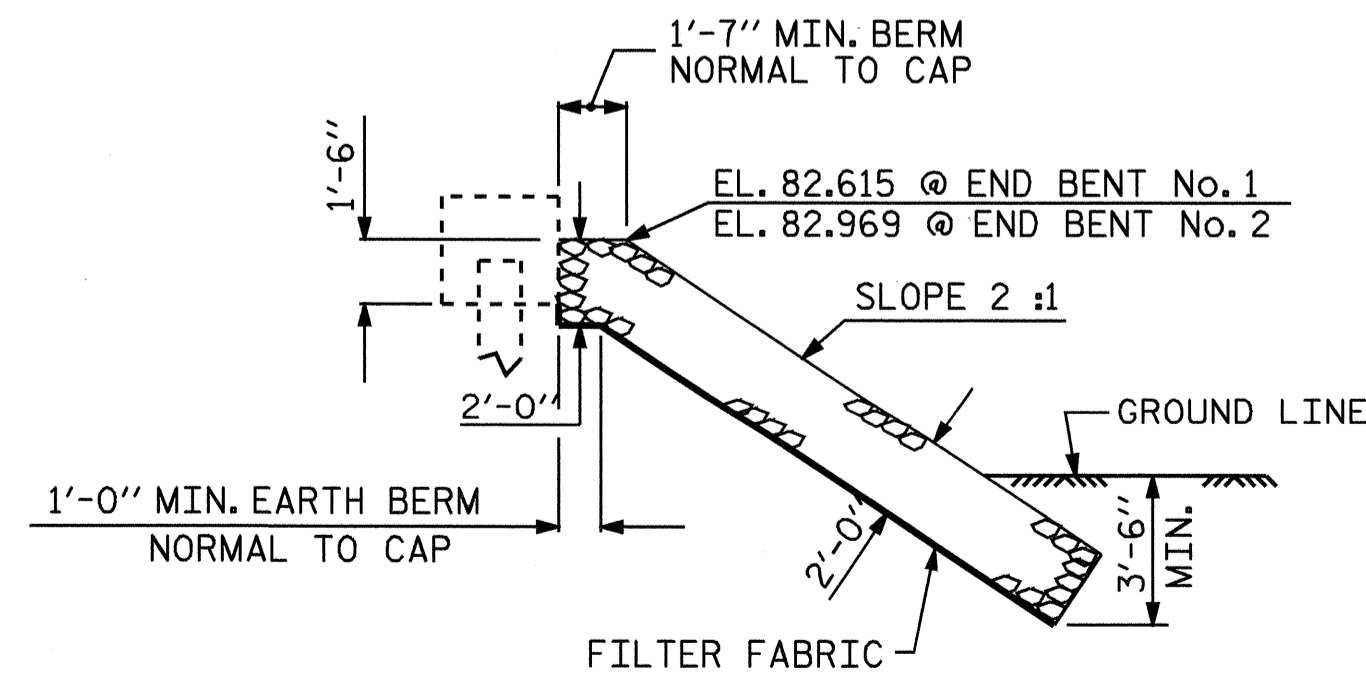
PLAN OF RIP RAP AT END BENT No. 2

NOTE:
THE COST OF THE FILTER FABRIC SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR RIP RAP CLASS II.

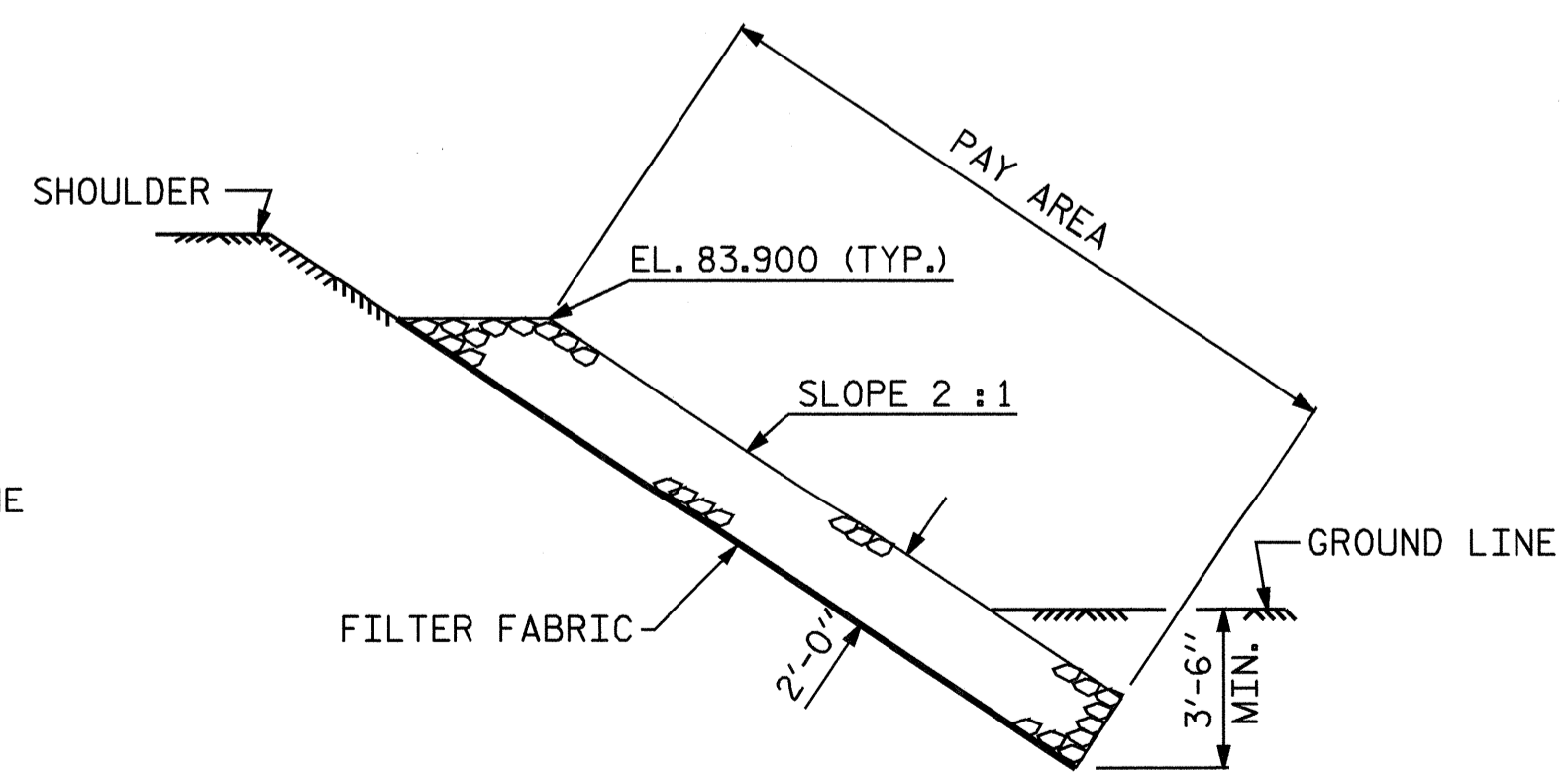
ESTIMATED QUANTITIES		
BRIDGE AT STA. 17+15.00 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT No. 1	90	100
END BENT No. 2	80	89



SECTION H-H



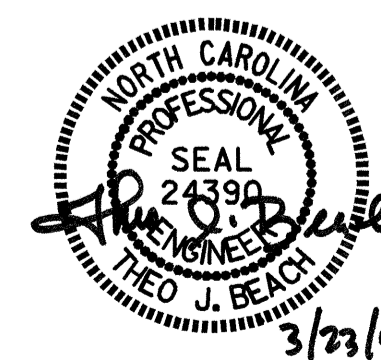
SECTION C-C
BERM RIP RAPPED



SECTION B-B

PROJECT NO. B-4271
SAMPSON COUNTY
STATION: 17+15.00 -L-

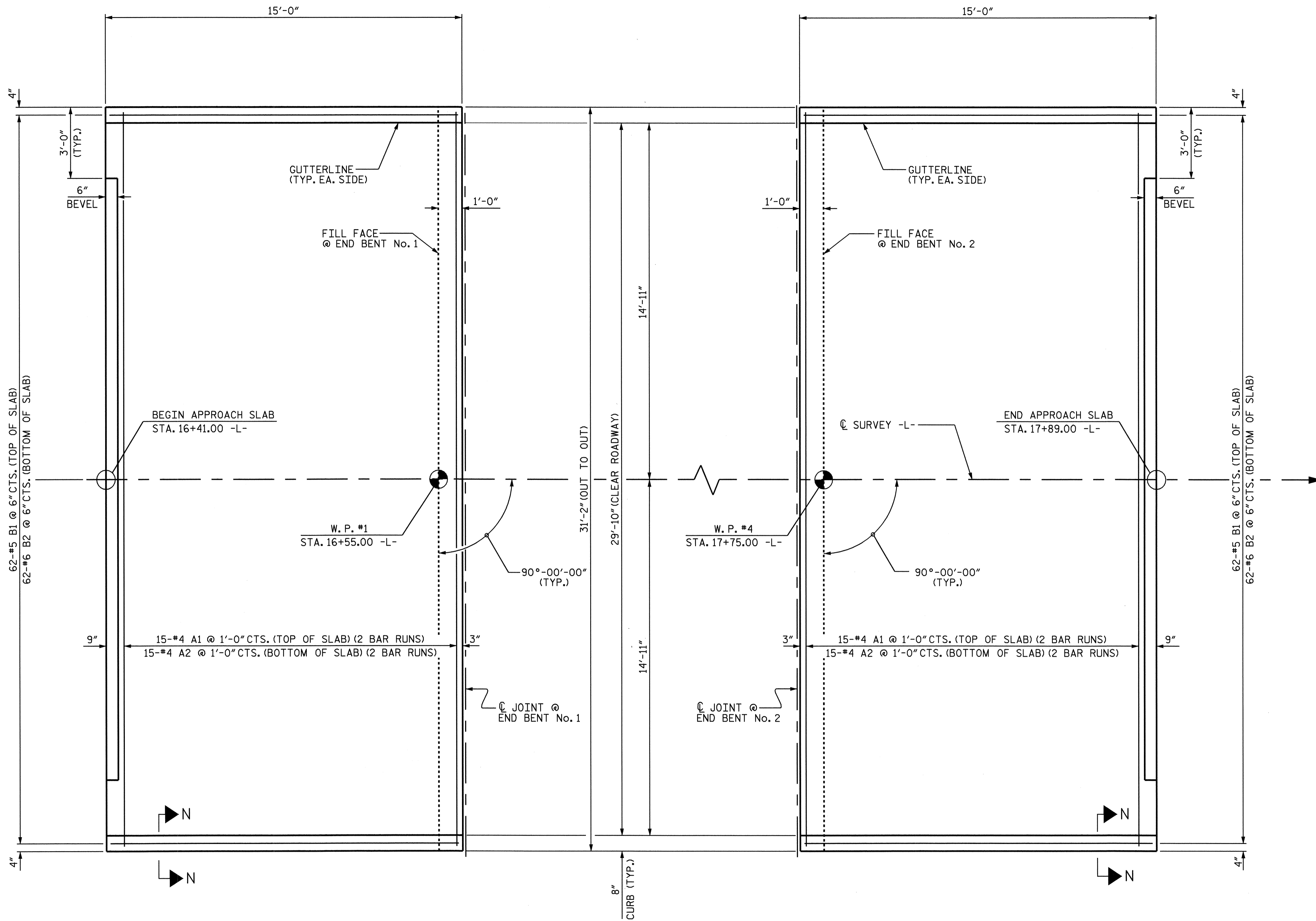
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD RIP RAP DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		



ASSEMBLED BY : A. K. PATEL DATE : 7/29/05
CHECKED BY : S. D. WILLIAMS DATE : 8/15/05

19-MAR-2007 11:00
R:\Structures\B-4271\AshvinPatel\B4271.sd.RR.01.dgn
sbwilliams

SHEET NO.
S-18
TOTAL SHEETS
20



END BENT No. 1

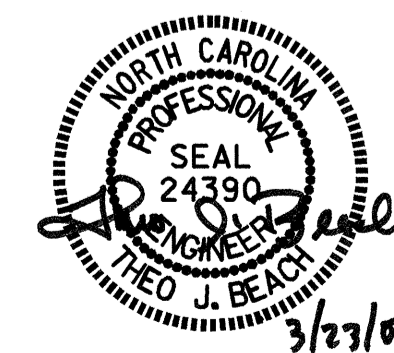
END BENT No. 2

PLAN OF APPROACH SLABS

PROJECT NO. B-4271
SAMPSON COUNTY
 STATION: 17+15.00 -L-

SHEET 1 OF 2

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



DRAWN BY : A. K. PATEL (MLB) DATE : 10/06
 CHECKED BY : S. B. WILLIAMS DATE : 10/06

19-MAR-2007 11:01
 R:\Structures\B-4271\AshvinPatel\B4271_SD_AS_01.dgn
 sbwilliams

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

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 EXTEND 10'-0" BEYOND THE END OF THE APPROACH SLAB AND 1'-0" OUTSIDE OF EACH EDGE OF 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.

FOR JOINT DETAILS, SEE "PRESTRESSED CONCRETE CORED SLAB UNIT" SHEETS.

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

APPROACH SLAB GROOVING IS NOT REQUIRED.

BILL OF MATERIAL

APPROACH SLAB AT EB #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	30	#4	STR	16'-5"	329
A2	30	#4	STR	16'-4"	327
*B1	62	#5	STR	14'-2"	916
B2	62	#6	STR	14'-8"	1366

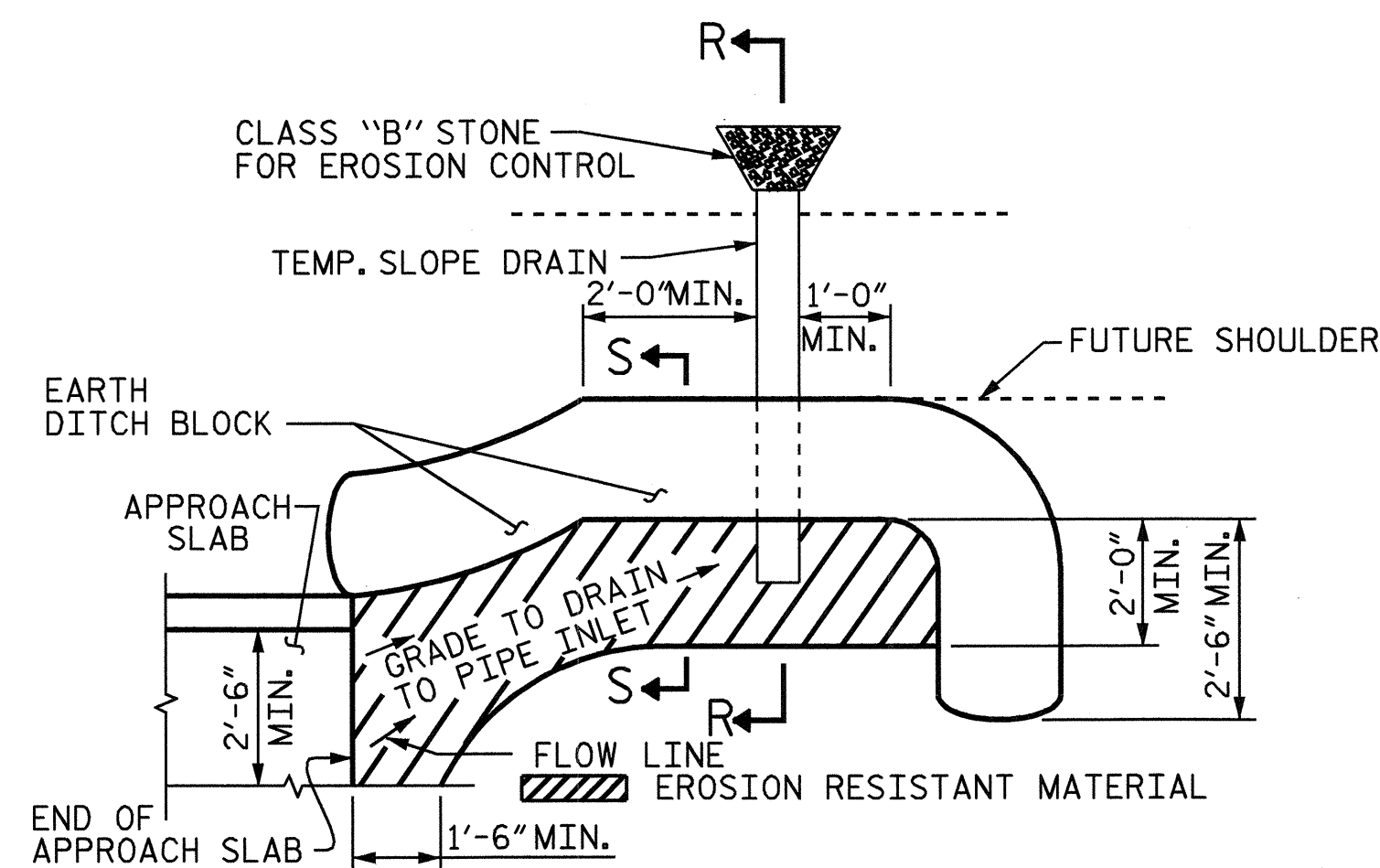
REINFORCING STEEL	LBS.	1693
*EPOXY COATED REINFORCING STEEL	LBS.	1245

CLASS AA CONCRETE	C. Y.	19.3
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APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	30	#4	STR	16'-5"	329
A2	30	#4	STR	16'-4"	327
*B1	62	#5	STR	14'-2"	916
B2	62	#6	STR	14'-8"	1366

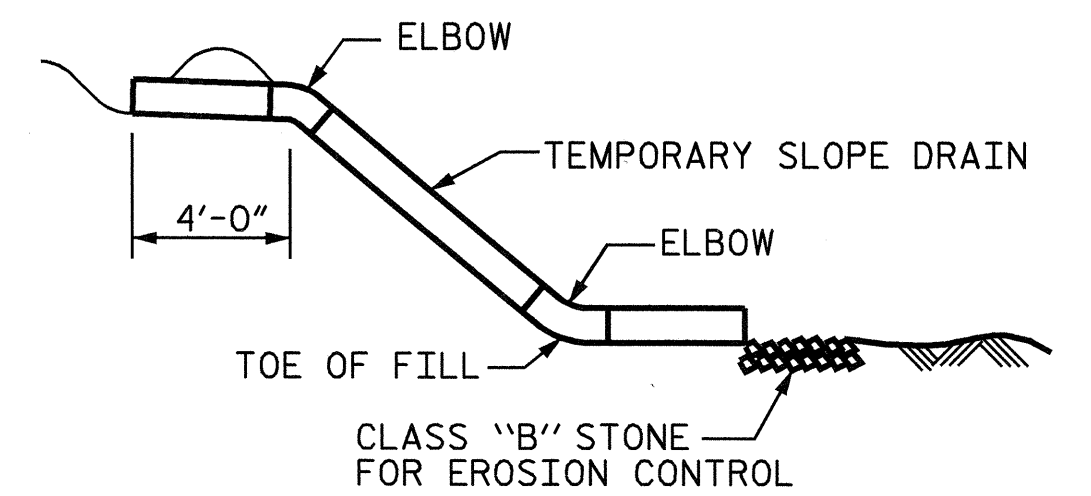
REINFORCING STEEL	LBS.	1693
*EPOXY COATED REINFORCING STEEL	LBS.	1245

CLASS AA CONCRETE	C. Y.	19.3
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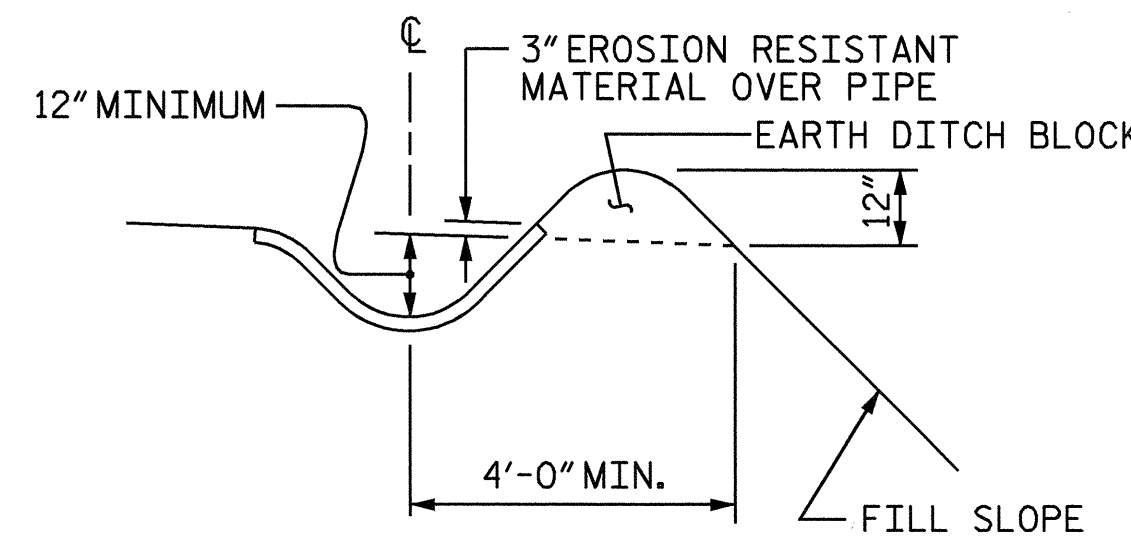


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

PLAN VIEW



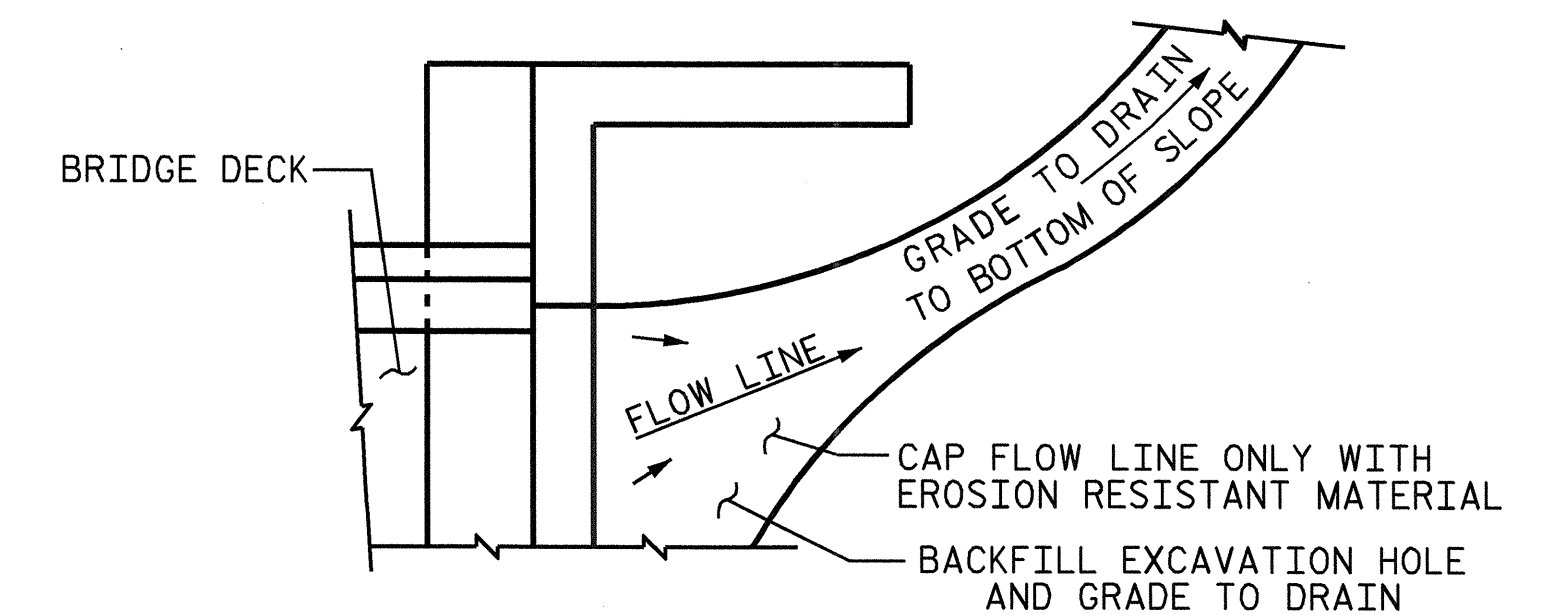
SECTION R-R



SECTION S-S

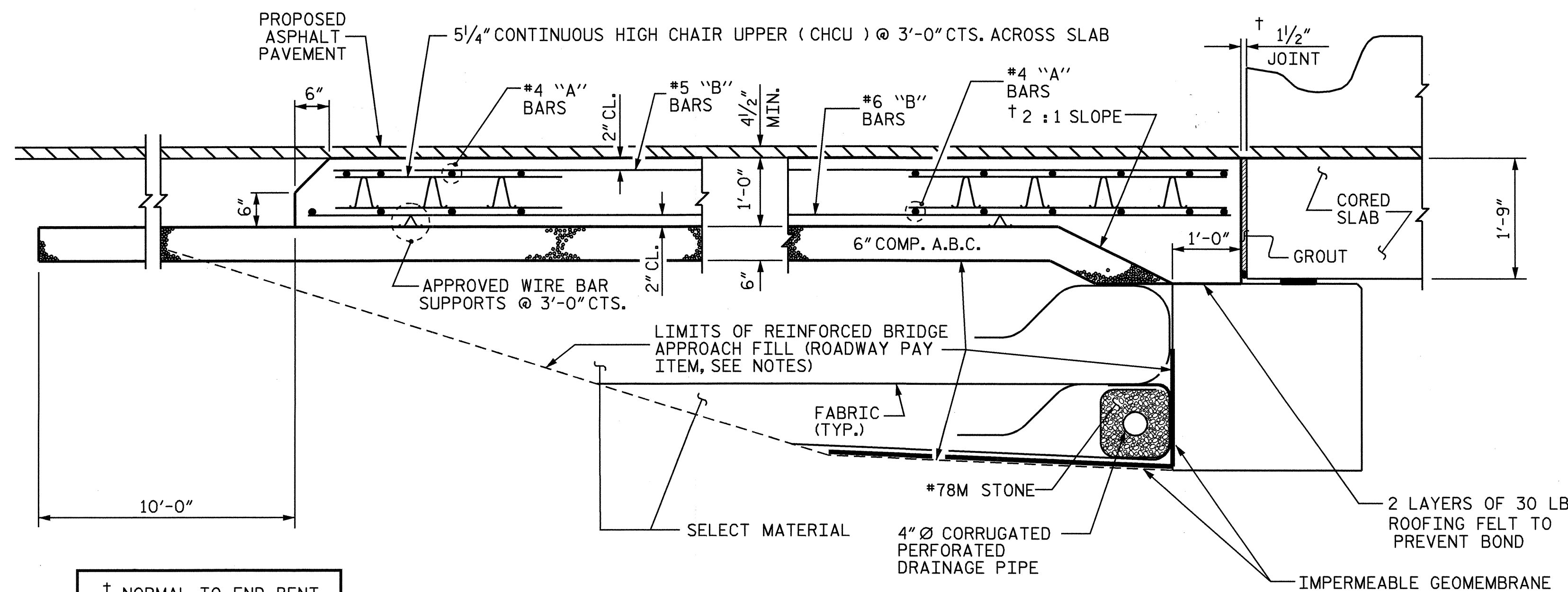
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

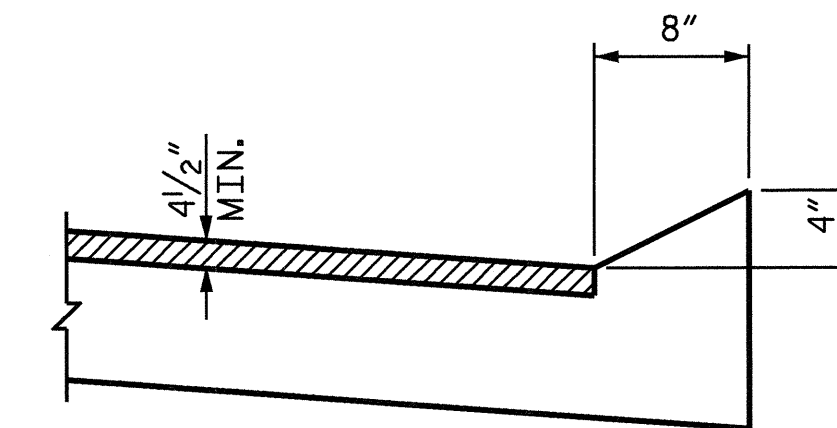


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

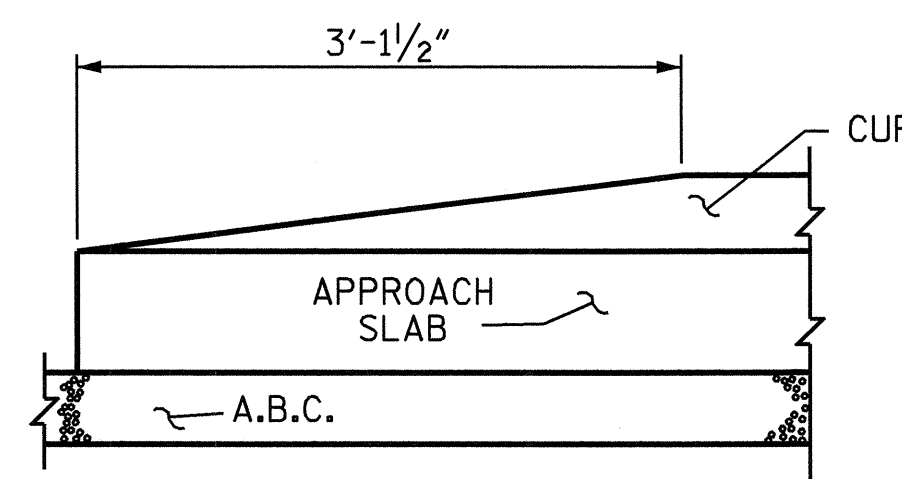
TEMPORARY DRAINAGE DETAIL



SECTION THRU SLAB



SECTION N-N



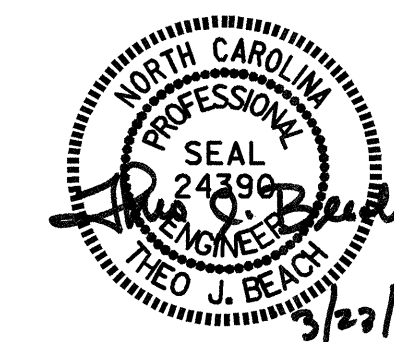
END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

PROJECT NO. B-4271
SAMPSON COUNTY
 STATION: 17+15.00 -L-

SHEET 2 OF 2

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



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

ASSEMBLED BY : A. K. PATEL (MLB) DATE : 10/06
 CHECKED BY : S. B. WILLIAMS DATE : 10/06
 DRAWN BY : LES 8/01 REV. 10/17/00 RWW/LES
 CHECKED BY : RDR 8/01 REV. 7/10/01 LES/RDR
 REV. 5/7/03R RWW/JTE

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 2002 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; CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP; AND CLASS S SHALL BE USED FOR UNDERWATER FOOTING SEALS.

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 WITH THE EXCEPTION OF #2 BARS WHICH MAY BE FABRICATED FROM COLD DRAWN STEEL WIRE. 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.

PLACEMENT OF BEAM OR GIRDER MEMBERS ON TRUCKS FOR HAULING SHALL BE DONE IN COMPLIANCE WITH LIMITS SHOWN ON SKETCHES PROVIDED TO THE MATERIALS AND TEST UNIT APPROVED BY THE STRUCTURE DESIGN UNIT DATED MAY 8, 1991. THESE SKETCHES PRIMARILY LIMIT THE UNSUPPORTED CANTILEVER LENGTH OF MEMBERS. WHEN THE CONTRACTOR WISHES TO PLACE MEMBERS ON TRUCKS NOT IN ACCORDANCE WITH THESE LIMITS, TO SHIP BY RAIL, TO ATTACH SHIPPING RESTRAINTS TO THE MEMBERS OR TO INVERT MEMBERS, HE SHALL SUBMIT A SKETCH FOR APPROVAL PRIOR TO SHIPPING. SEE ALSO ARTICLE 1072-11.

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