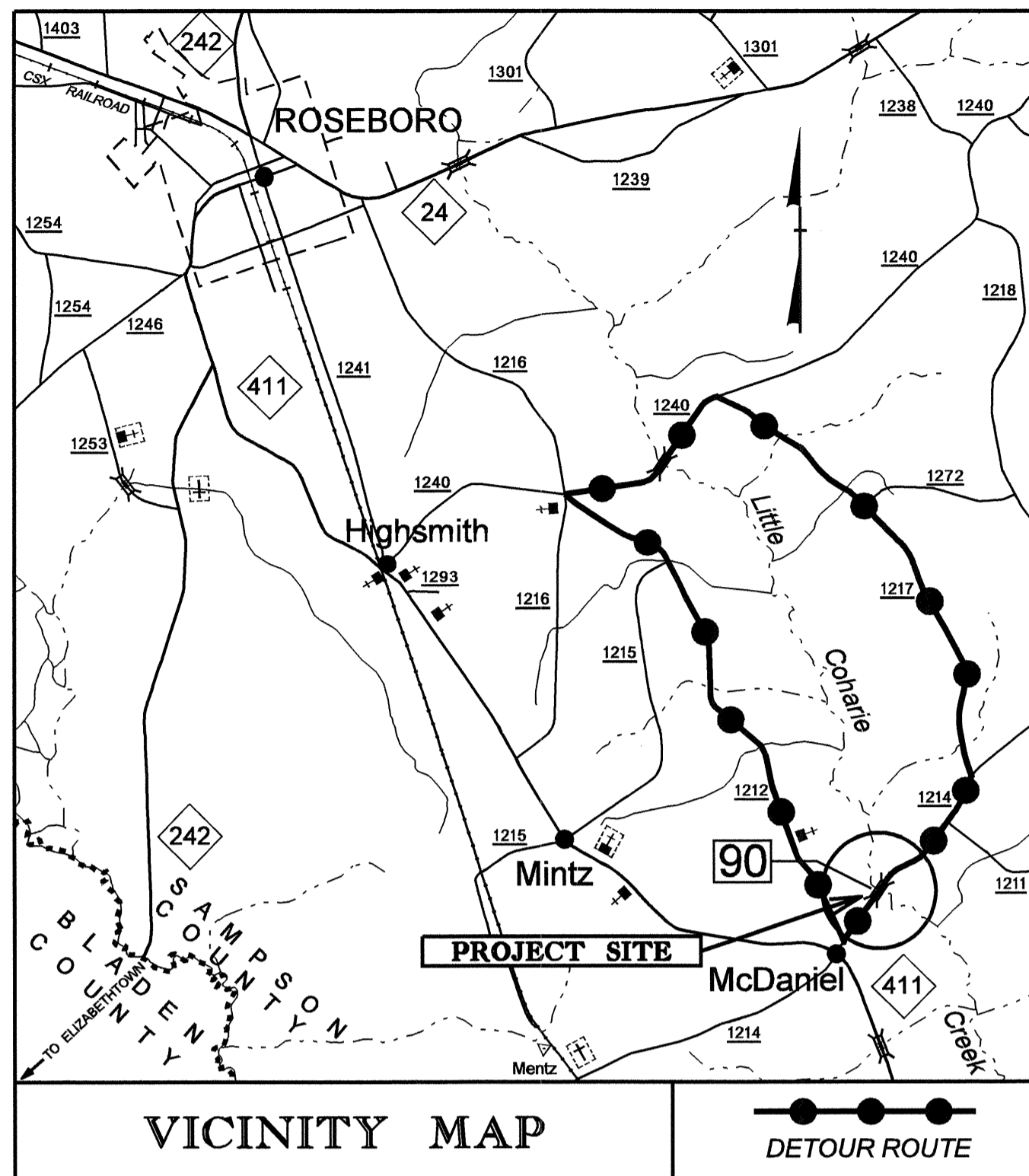


TIP PROJECT: B-4269

CONTRACT: C201640

STRUCTURE

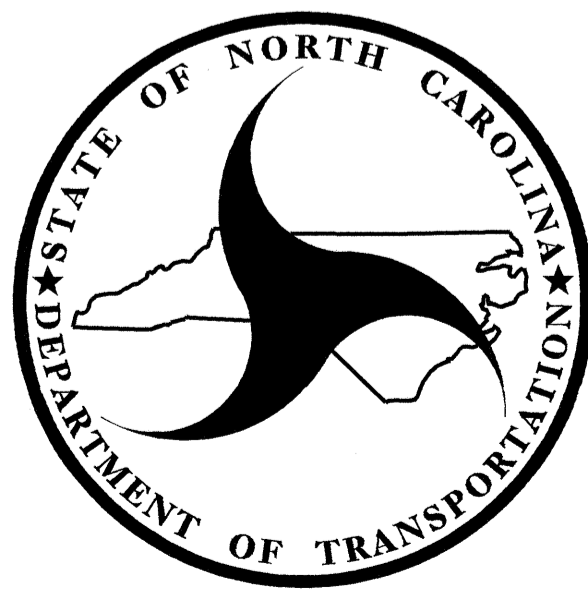
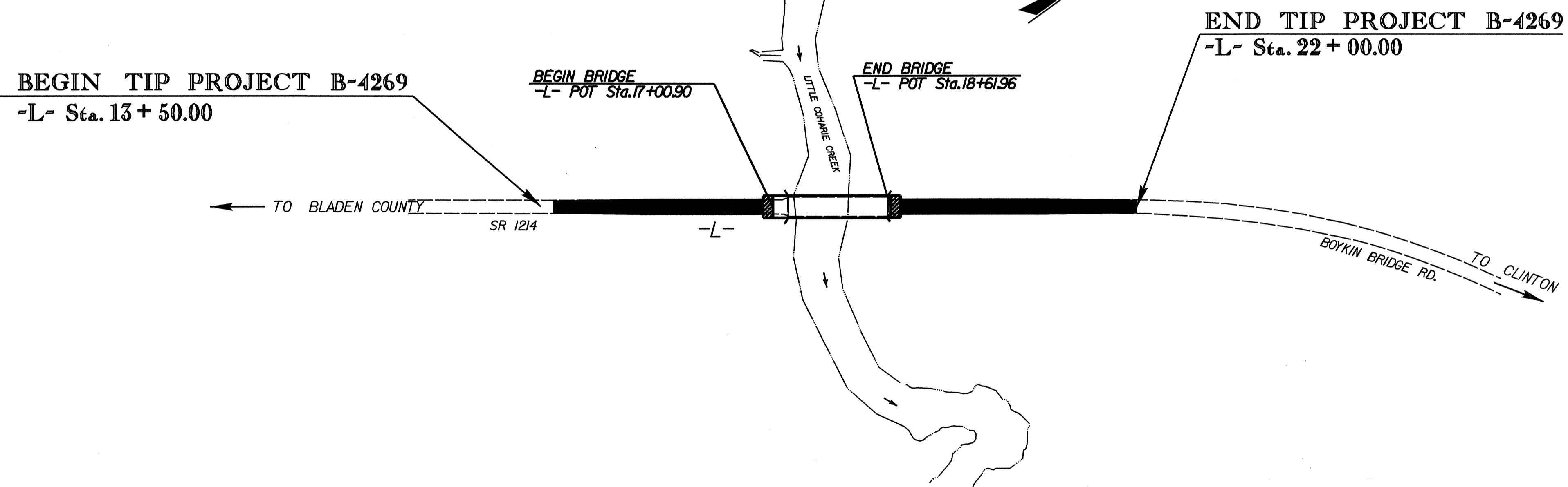


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SAMPSON COUNTY

LOCATION: BRIDGE NO. 90 ON SR 1214 OVER LITTLE COHARIE CREEK

TYPE OF WORK: GRADING, PAVING, STRUCTURES AND DRAINAGE

STATE	STATE PROJECT REFERENCE NO.	
N.C.	B-4269	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
33610.1.1	BRZ-1214(4)	PE
33610.2.1	BRZ-1214(4)	R/W & UTIL.
33610.3.1	BRZ-1214(4)	CONSTRUCTION



DESIGN DATA	
ADT 2007 =	1626
ADT 2025 =	2800
DHV =	60 %
D =	10 %
T =	6 % *
V =	60 MPH
* TTST 2%	DUAL 4%

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT B-4269	= 0.130 MILES
LENGTH STRUCTURE TIP PROJECT B-4269	= 0.031 MILES
TOTAL LENGTH OF TIP PROJECT B-4269	= 0.161 MILES
2006 STANDARDS SPECIFICATION	
LETTING DATE: MAY 15, 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

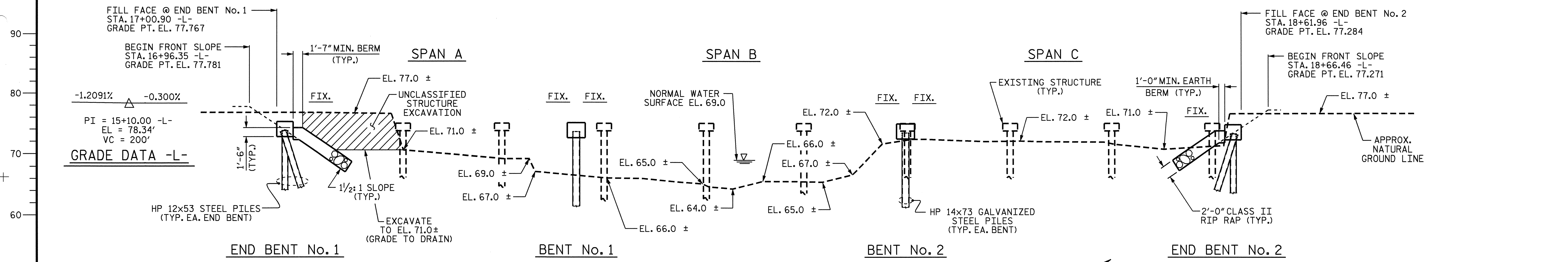
GREGORY R. PERETTI
 3.30.07

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

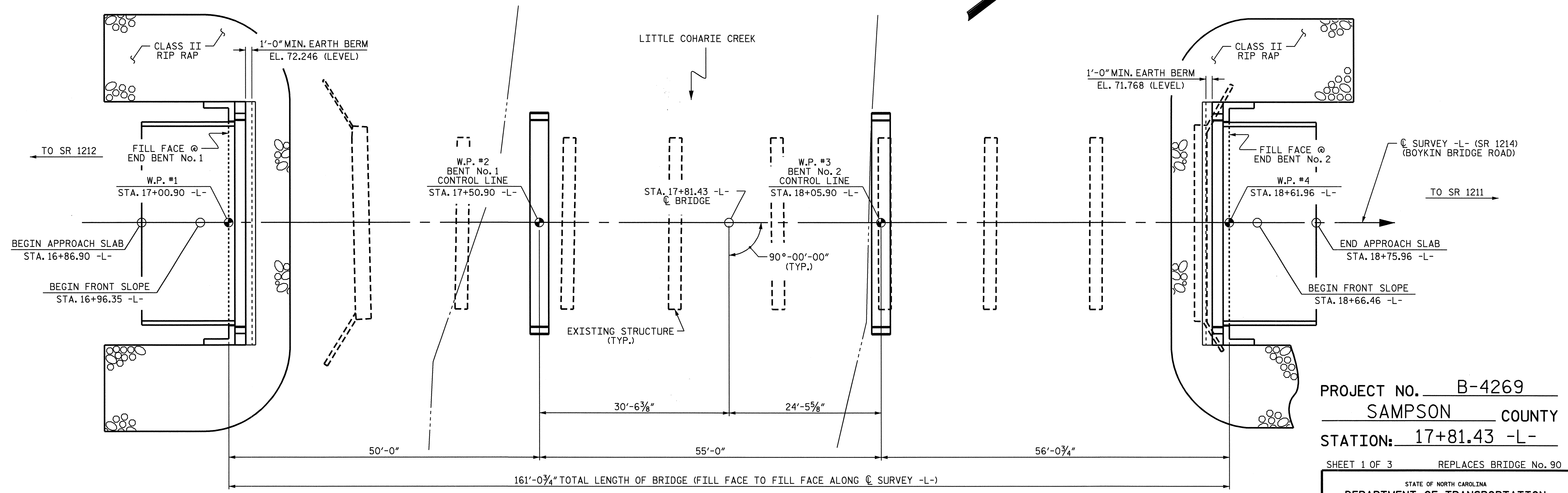
P.E.
STATE HIGHWAY ENGINEER - DESIGN

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED FOR
DIVISION ADMINISTRATOR
DATE



SECTION ALONG C SURVEY -L-

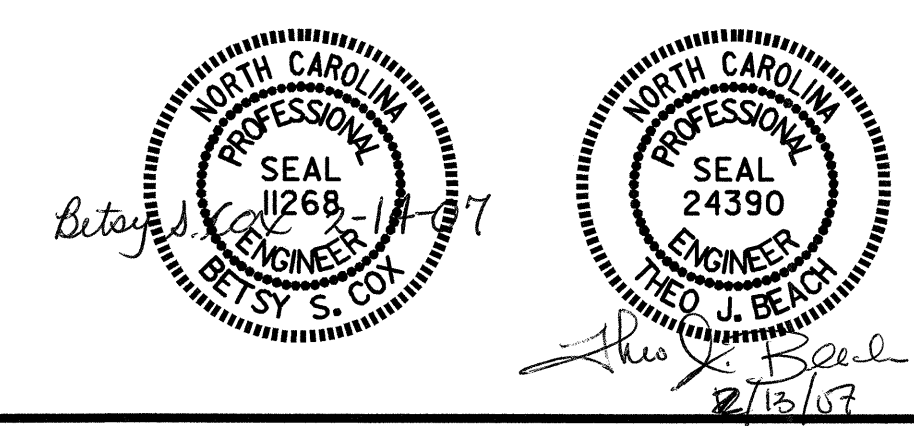


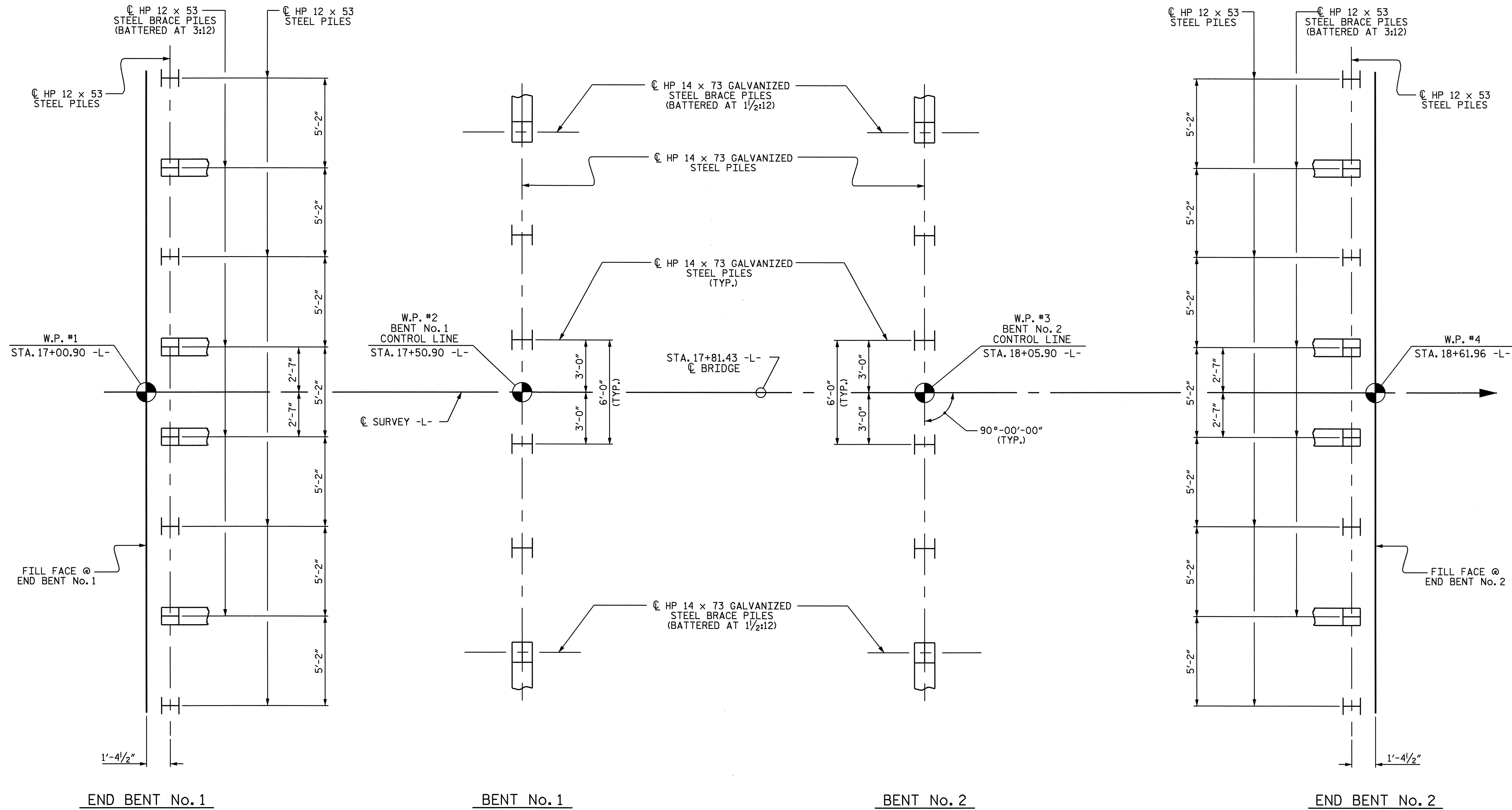
PROJECT NO. B-4269
SAMPSON COUNTY
 STATION: 17+81.43 -L-
 SHEET 1 OF 3 REPLACES BRIDGE No. 90

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE OVER LITTLE
 COHARIE CREEK ON SR 1214
 (BOYKIN BRIDGE ROAD)
 BETWEEN SR 1212 AND SR 1211

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

DRAWN BY : B.N. GRADY DATE : 9/06
 CHECKED BY : T.J. BEACH DATE : 9/06





FOUNDATION LAYOUT
 DIMENSIONS LOCATING PILES ARE TO THE CENTERLINE AT BOTTOM OF CAP

PROJECT NO. B-4269
SAMPSON COUNTY
 STATION: 17+81.43 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER LITTLE
 COHARIE CREEK ON SR 1214
 (BOYKIN BRIDGE ROAD)
 BETWEEN SR 1212 AND SR 1211

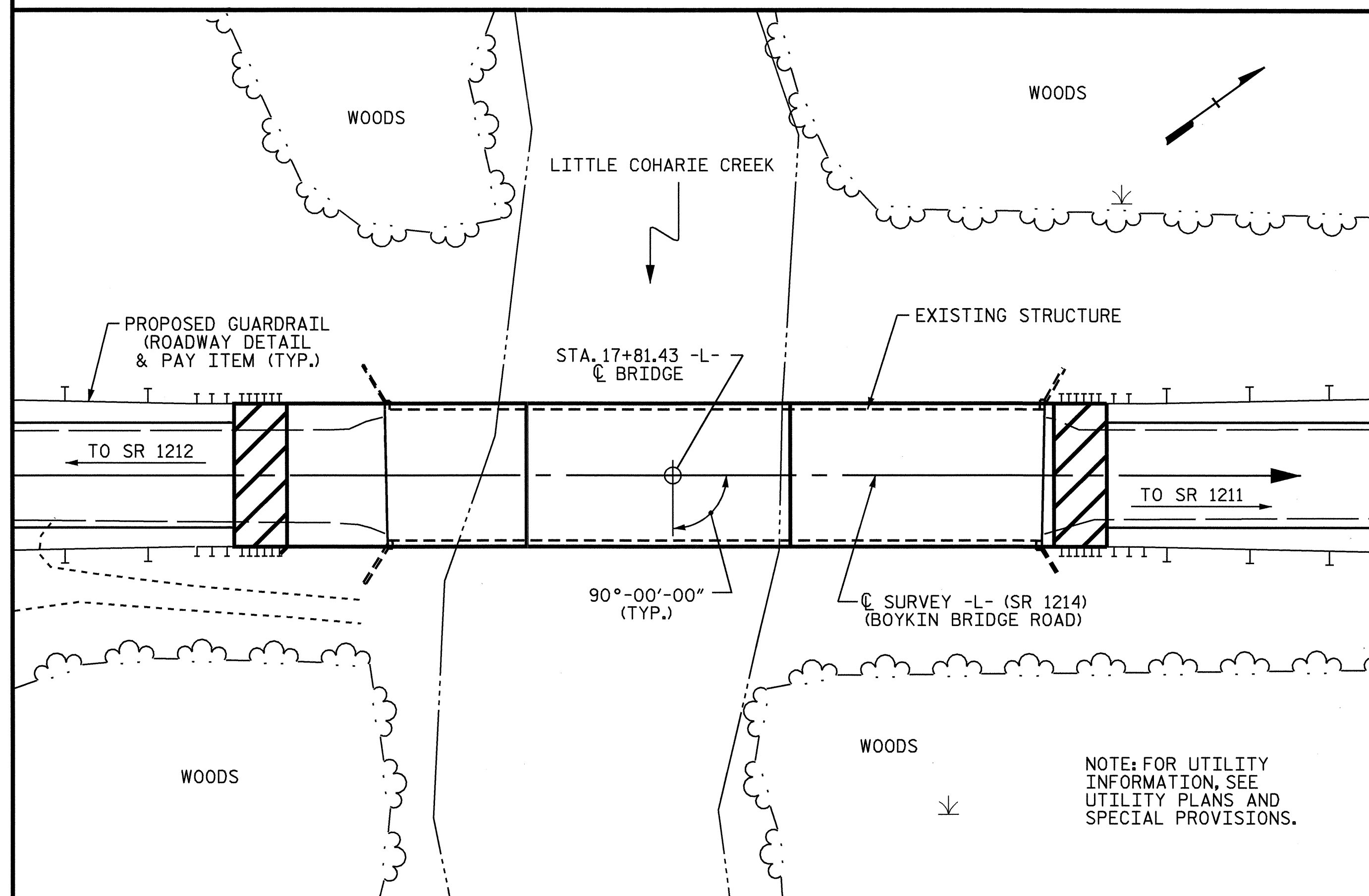


DRAWN BY : B.N. GRADY DATE : 9/06
 CHECKED BY : T.J. BEACH DATE : 9/06

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

03-APR-2007 11:50
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B.M. #2: RR SPIKE IN 22" TWIN CYPRESS STA. 18+06.63 -L- 76.26' RT.; EL. 73.05'



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE = 5000 CFS
 FREQUENCY OF DESIGN FLOOD = 25 YEARS
 DESIGN HIGH WATER ELEVATION = 76.48
 DRAINAGE AREA = 135 SQ. MI.
 BASIC DISCHARGE (Q100) = 7350 CFS
 BASIC HIGH WATER ELEVATION = 77.12

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 7400 CFS
 FREQUENCY OF OVERTOPPING FLOOD = 100 YRS ±
 OVERTOPPING FLOOD ELEVATION = 77.18

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	BRIDGE APPROACH SLABS	HP 12 X 53 STEEL PILES		HP 14 X 73 GALVANIZED STEEL PILES		RIP RAP CLASS II (2'-0" THICK)	CONSTRUCTION OF SUPERSTRUCTURE	CONSTRUCTION OF SUBSTRUCTURE
				NO.	LIN.FT.	NO.	LIN.FT.			
SUPERSTRUCTURE			LUMP SUM							
END BENT NO. 1				8	360			139		
BENT NO. 1						6	300			
BENT NO. 2						6	300			
END BENT NO. 2				8	360			128		
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	16	720	12	600	267	LUMP SUM	LUMP SUM

NOTES

ASSUMED LIVE LOAD = HS20 OR ALTERNATE LOADING, EXCEPT THAT CORED SLAB UNITS HAVE BEEN DESIGNED FOR HS25.

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 8 SPANS OF LENGTHS 17'-4", 17'-0", 17'-4", 16'-8", 17'-2", 16'-11", 17'-2", AND 17'-5", A CLEAR ROADWAY WIDTH OF 24'-0", AND REINFORCED CONCRETE FLOOR ON TIMBER JOISTS, ON TIMBER CAPS WITH TIMBER PILES AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

EXISTING PILES REMAINING FROM A PREVIOUS BRIDGE SHALL ALSO BE REMOVED AS DIRECTED BY THE ENGINEER. THE COST FOR REMOVING THESE PILES SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE "REMOVAL OF EXISTING STRUCTURE."

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

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

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

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

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.

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

FOR VERTICAL CONCRETE BARRIER RAIL, SEE SPECIAL PROVISIONS.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT PROGRESS ENERGY LINES LOCATED TO THE NORTH OF THE PROPOSED BRIDGE WILL REMAIN IN PLACE DURING CONSTRUCTION OF THIS PROJECT. TAKE ALL PRECAUTIONS NECESSARY TO AVOID CONTACT WITH THESE LINES. SEE UTILITY PLANS AND SPECIAL PROVISIONS.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

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

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT SPAN B CORED SLAB UNITS MAY BE SET FROM SPAN A. CONTRACTOR SHALL SUBMIT PROPOSED PLANS AND OBTAIN APPROVAL PRIOR TO PLACING MATERIAL AND EQUIPMENT ON SPAN A IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. SPAN C CORED SLAB UNITS MUST BE SET FROM END BENT NO. 2 EMBANKMENT. EQUIPMENT (CRANE) WILL NOT BE ALLOWED ON SPANS B OR C.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR CONSTRUCTION OF SUPERSTRUCTURE, SEE SPECIAL PROVISIONS.

FOR CONSTRUCTION OF SUBSTRUCTURE, 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.

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

DRIVE PILES AT BENT NO. 1 AND BENT NO. 2 TO A REQUIRED BEARING CAPACITY OF 170 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.

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

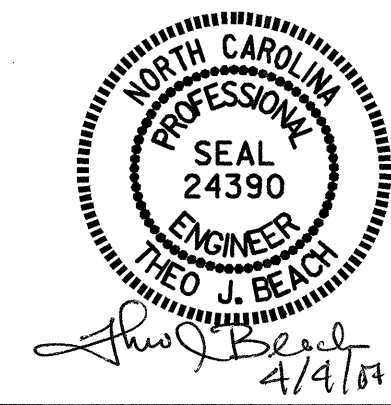
DRIVE PILES AT BENT NO. 1 AND BENT NO. 2 TO A TIP ELEVATION NO HIGHER THAN 40.0 FEET.

THE SCOUR CRITICAL ELEVATION FOR BENT NO. 1 AND BENT NO. 2 IS ELEVATION 50.0 FEET. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

PROJECT NO. B-4269
SAMPSON COUNTY
 STATION: 17+81.43 -L-

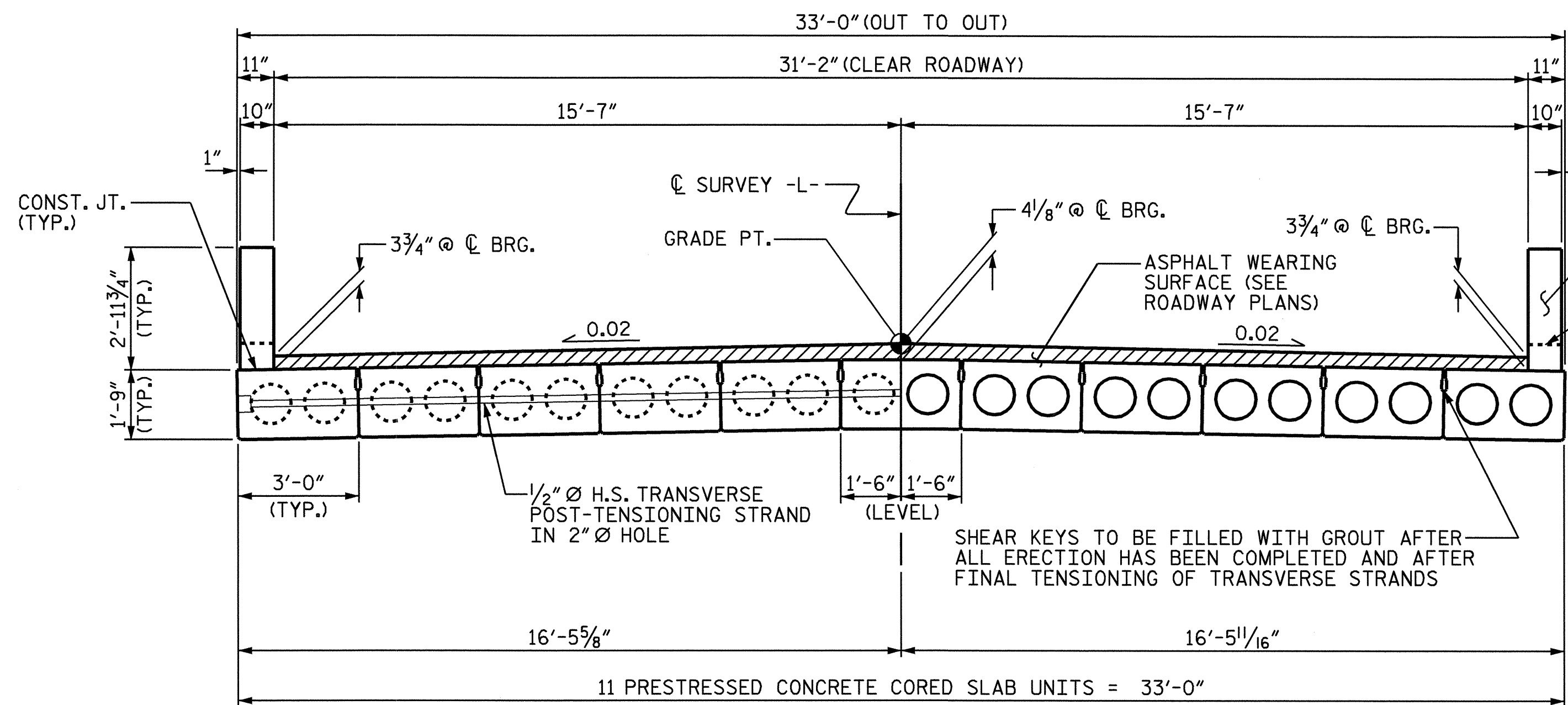
SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE OVER LITTLE
 COHARIE CREEK ON SR 1214
 (BOYKIN BRIDGE ROAD)
 BETWEEN SR 1212 AND SR 1211



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

DRAWN BY: B.N. GRADY DATE: 9/06
 CHECKED BY: T.J. BEACH DATE: 9/06

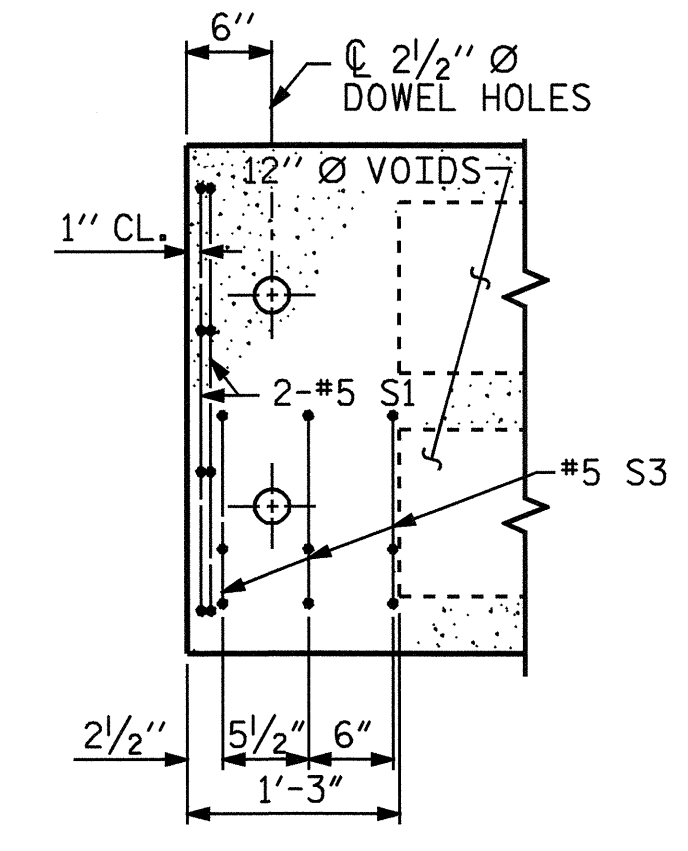


HALF-SECTION AT INTERMEDIATE DIAPHRAGMS

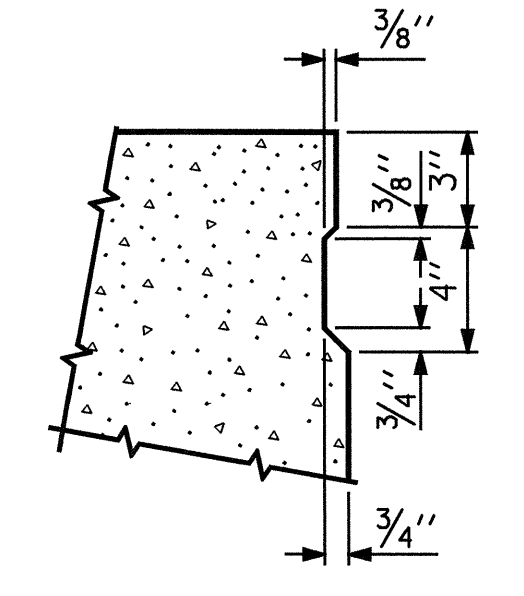
HALF-SECTION AT VOIDS

TYPICAL SECTION

VERTICAL CONCRETE BARRIER RAIL (FOR DETAILS, SEE SHEET 8 OF 8 (TYP.))
 8" WIDE X 7" HIGH SLOTS IN BARRIER RAIL FOR DECK DRAINAGE (SPAN C - TYP. BOTH SIDES) (SEE SHEET 4 OF 8 FOR LOCATION)



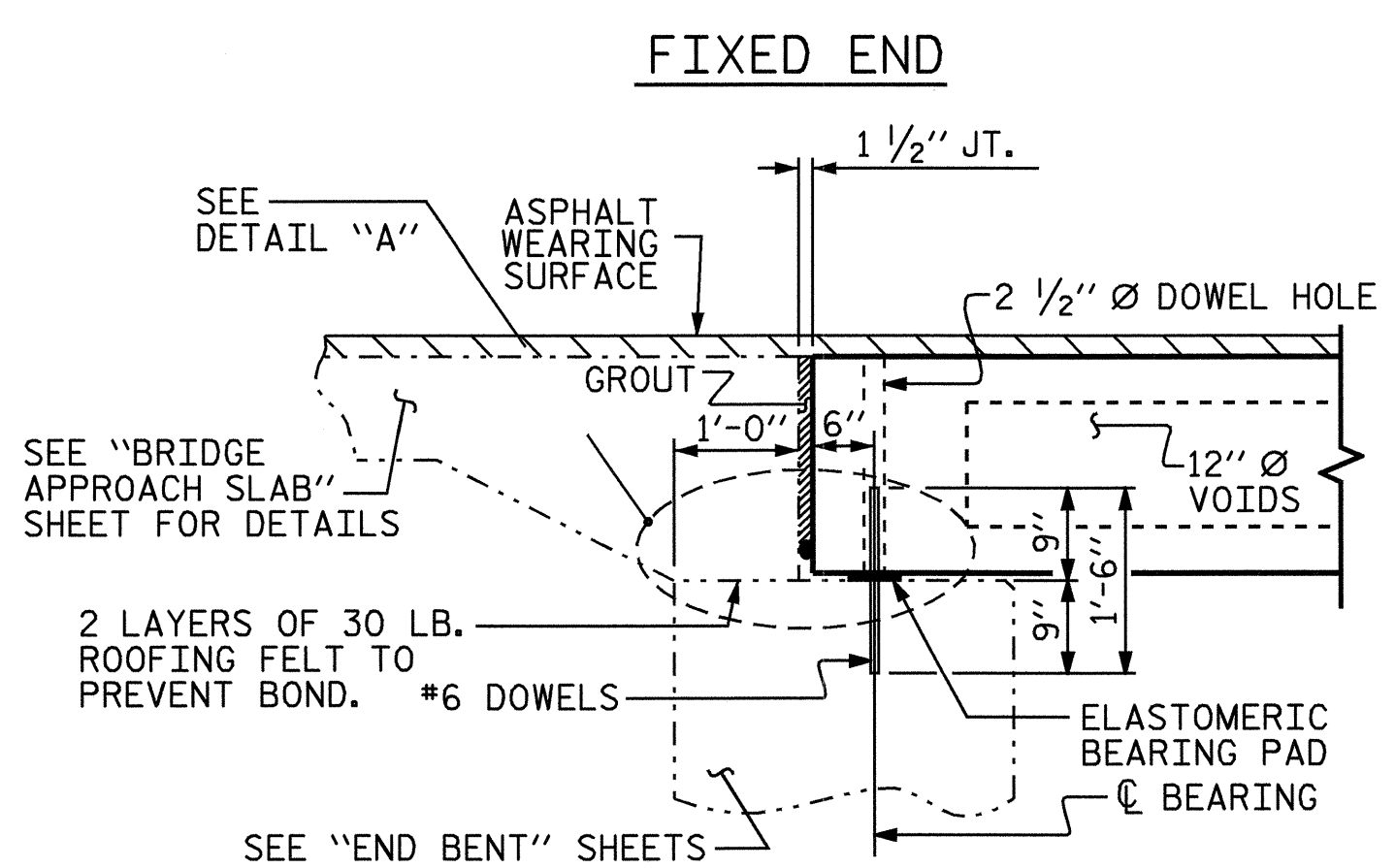
PART PLAN-EXTERIOR SECTION



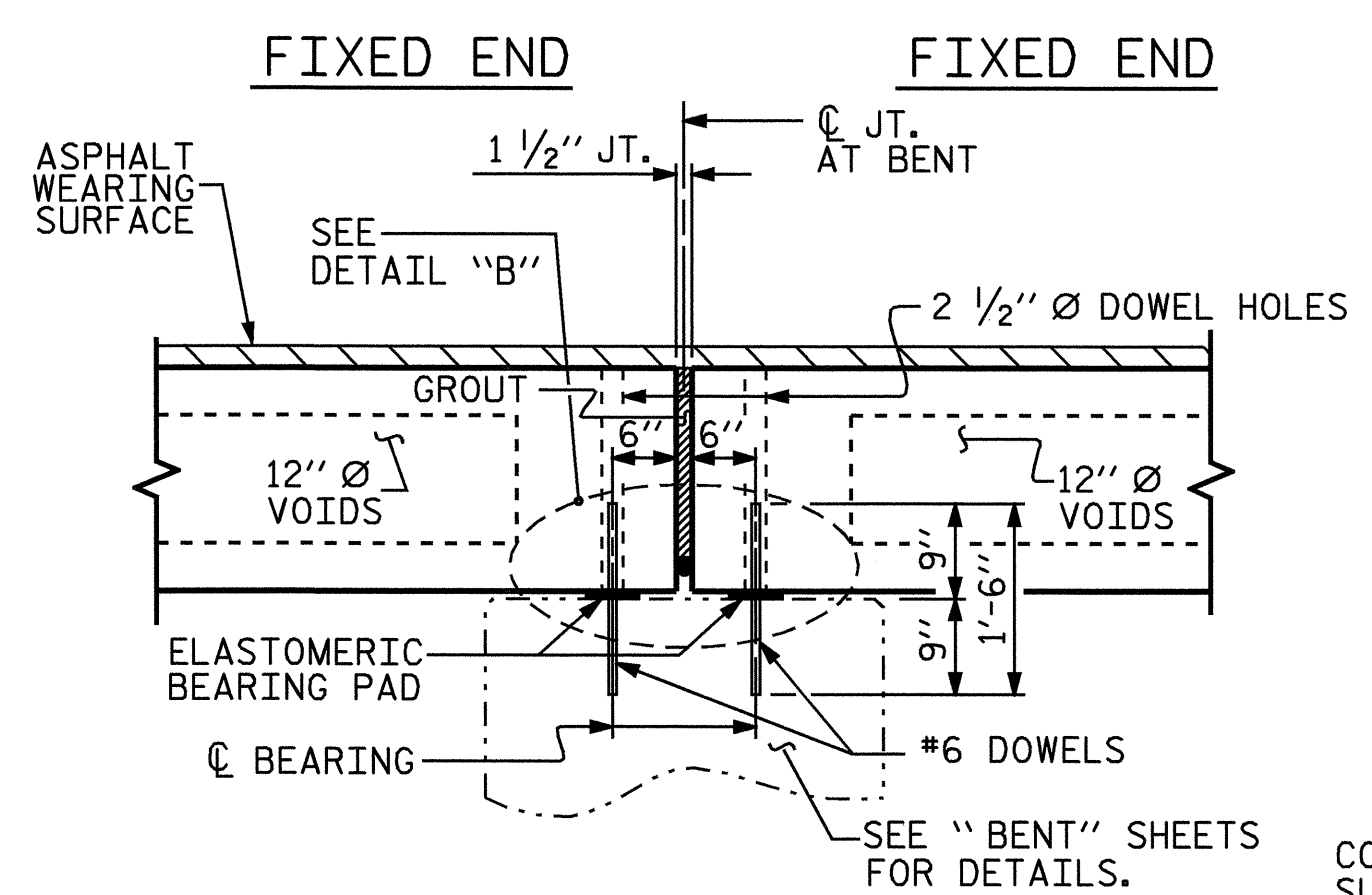
SHEAR KEY DETAIL

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

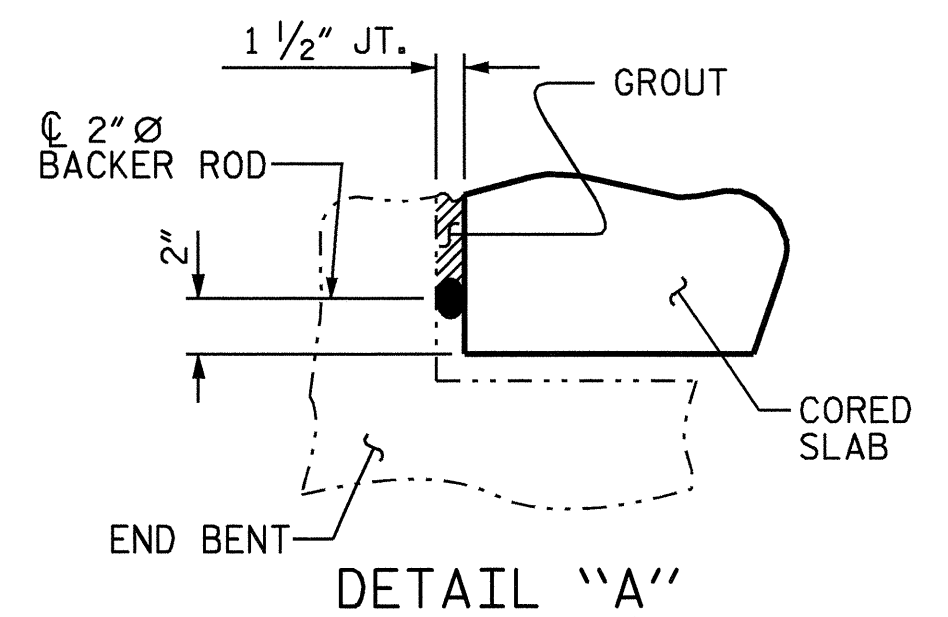
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.



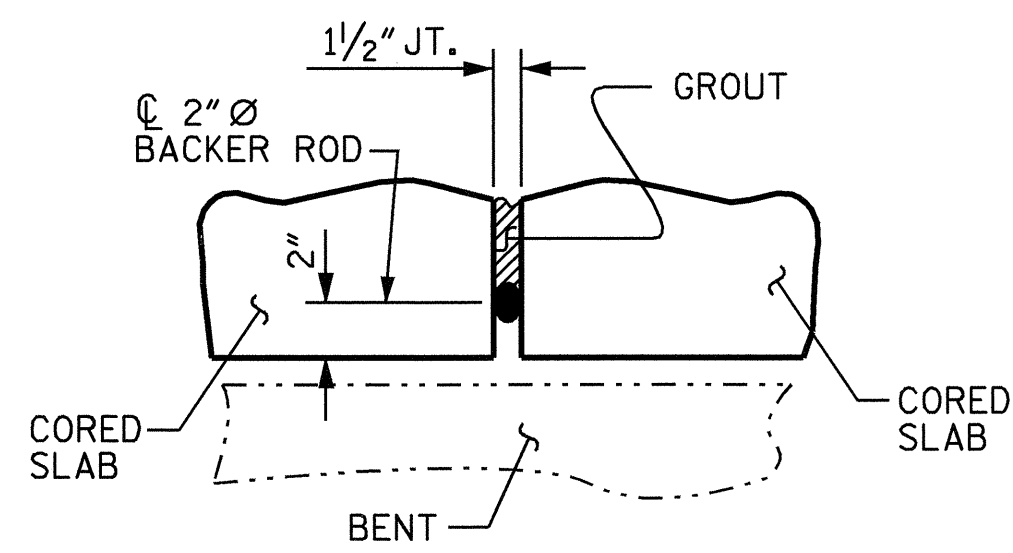
SECTION AT END BENT



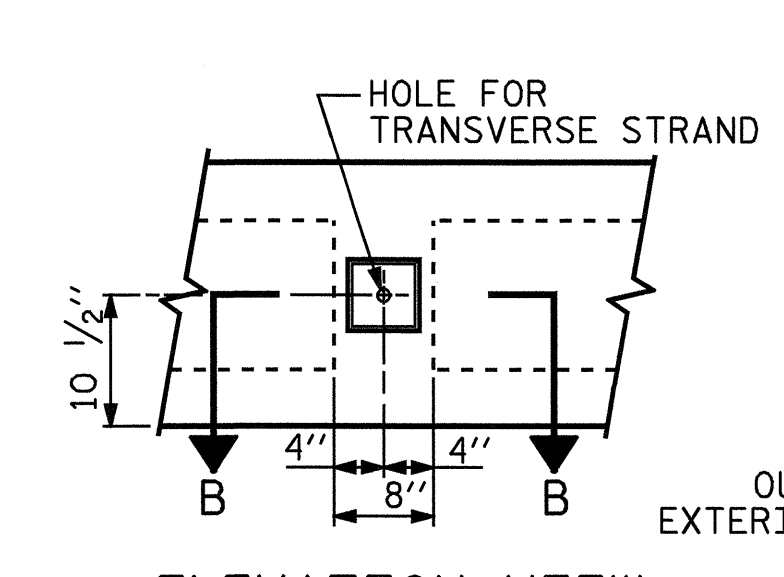
SECTION AT BENT



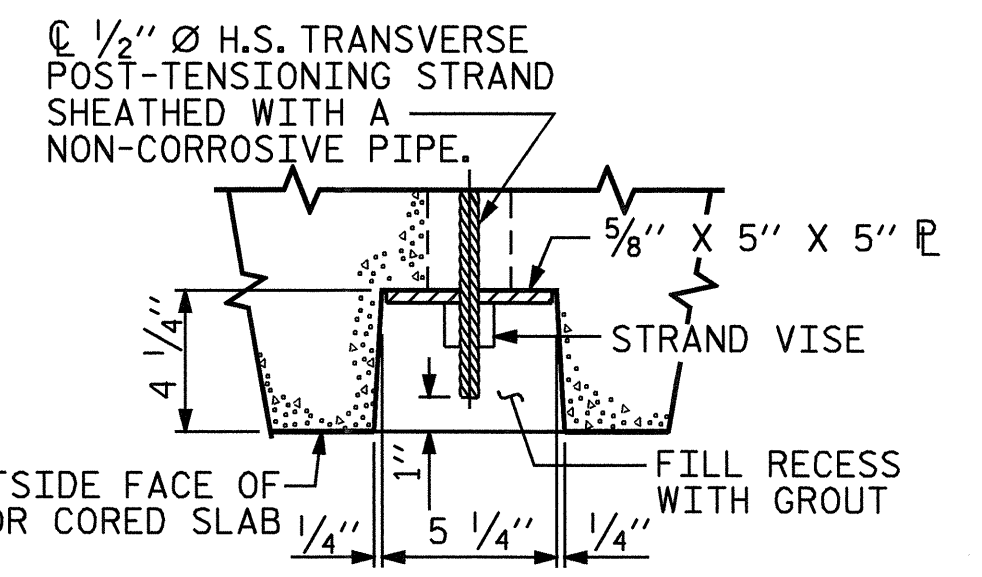
DETAIL "A"



DETAIL "B"

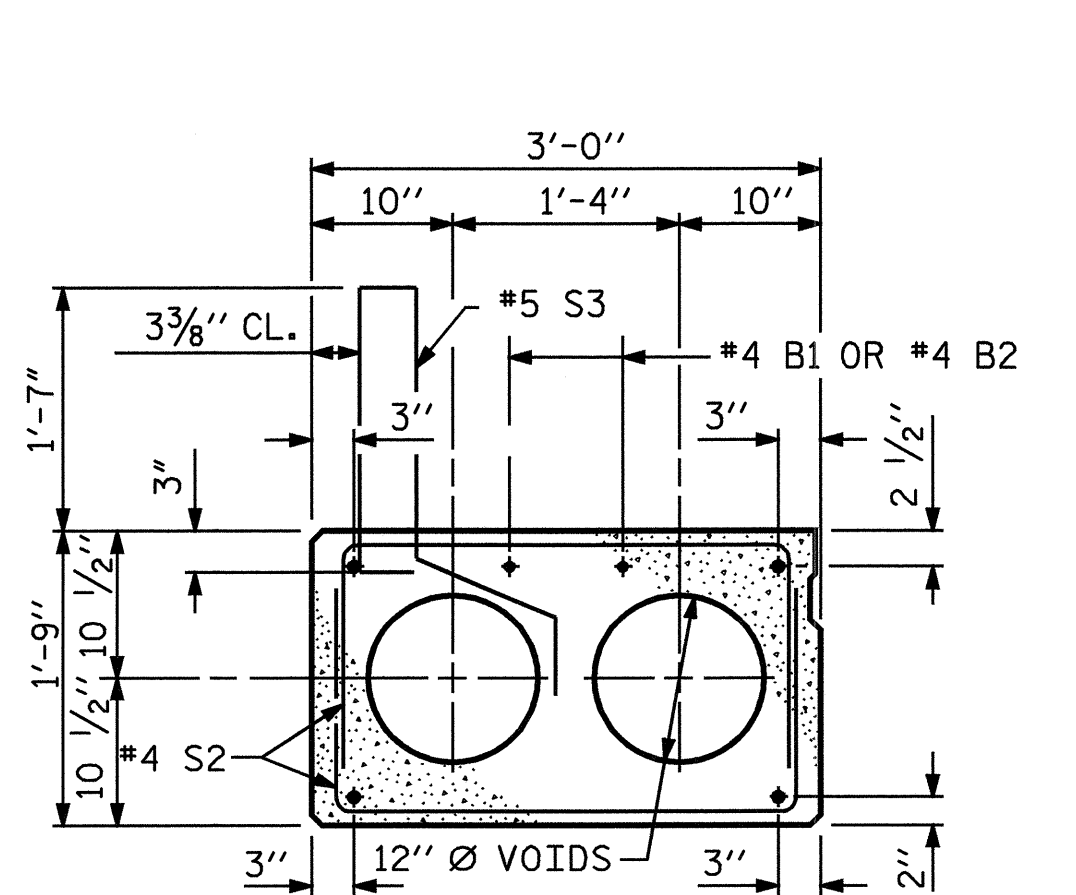


ELEVATION VIEW



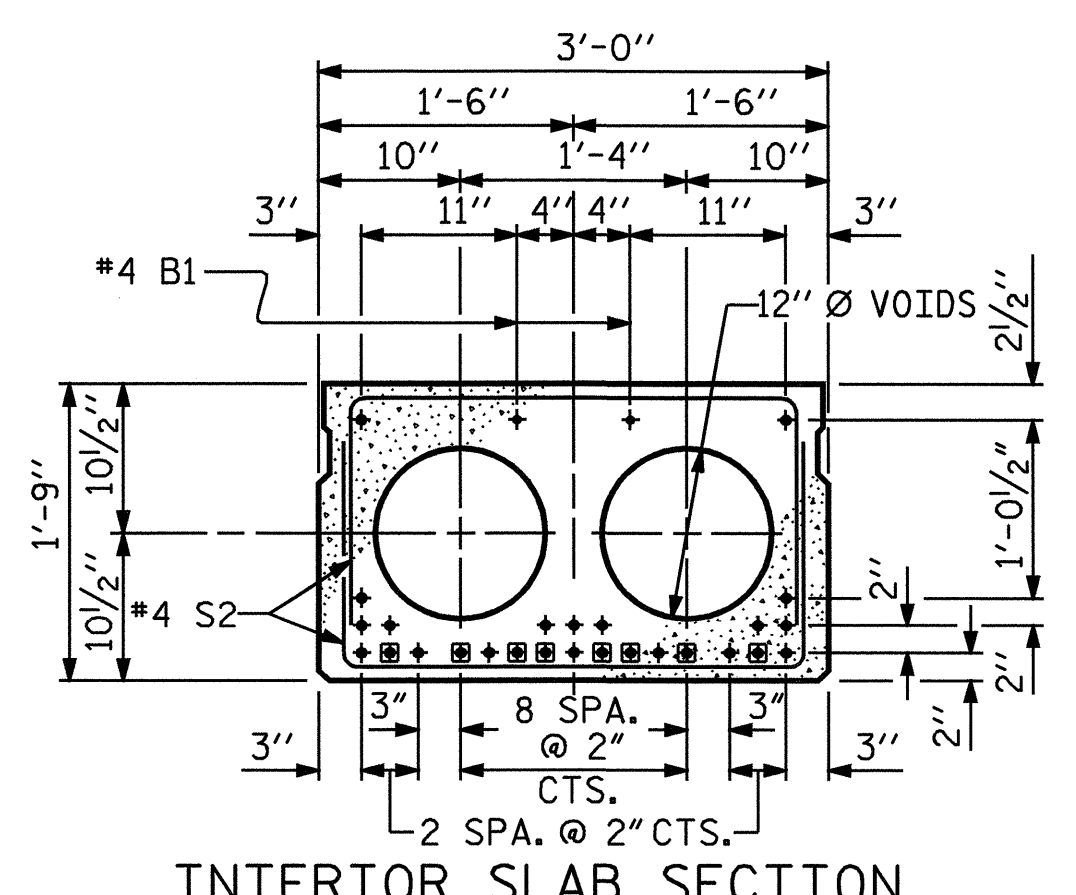
SECTION B-B

GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS



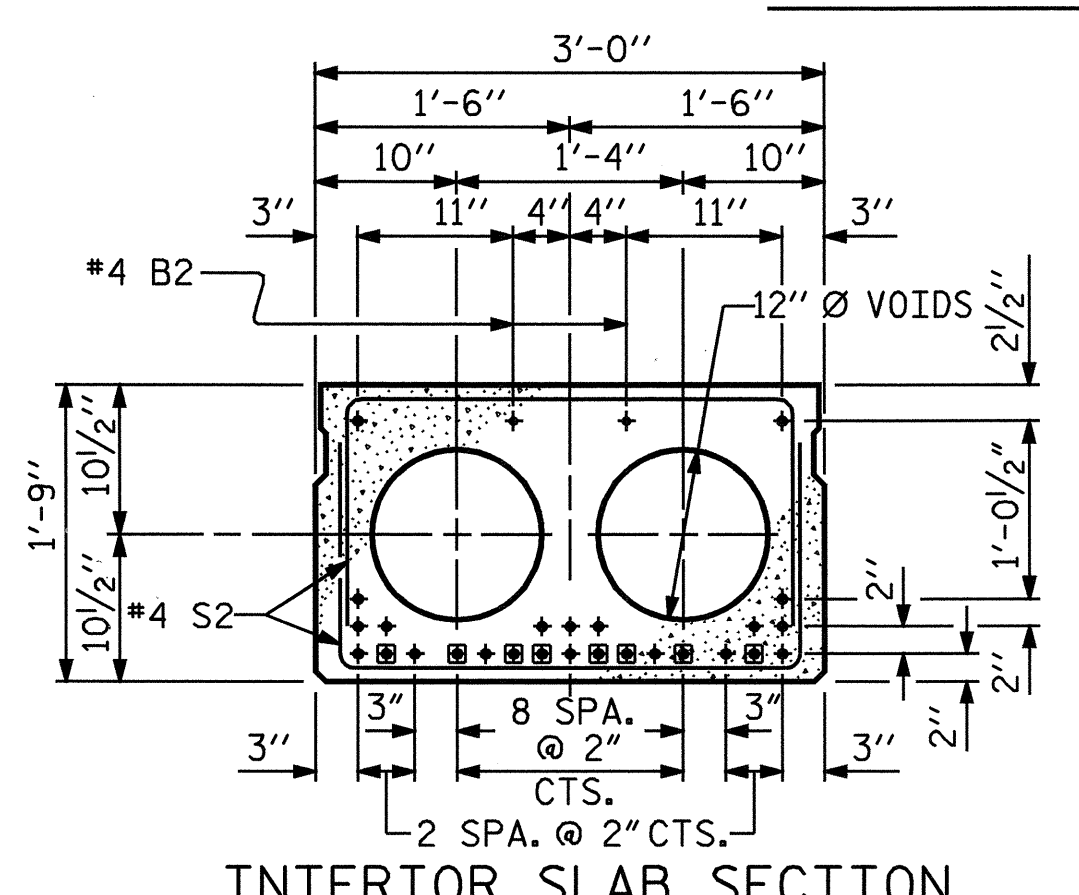
EXTERIOR SLAB SECTION

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



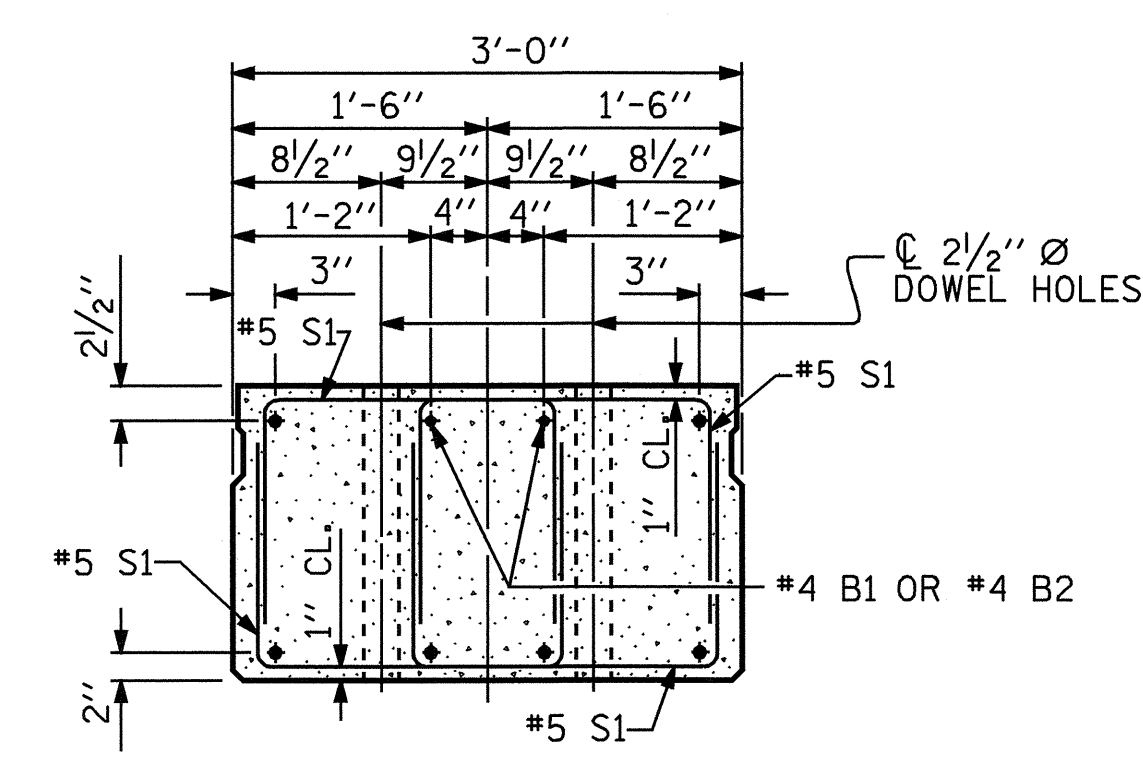
INTERIOR SLAB SECTION
 1/2" Ø LOW RELAXATION STRAND LAYOUT

SPAN "A" (26 STRANDS)
 BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 5'-5" FROM THE END OF CORED SLAB UNIT, SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.



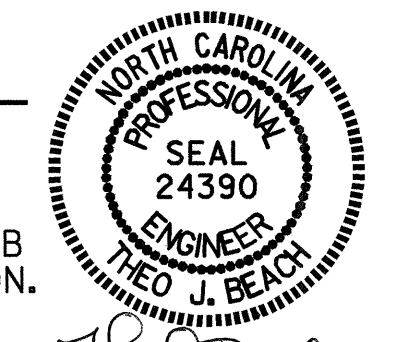
INTERIOR SLAB SECTION
 1/2" Ø LOW RELAXATION STRAND LAYOUT

TYPICAL SPANS "B" & "C" (26 STRANDS)
 BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 5'-5" FROM THE END OF CORED SLAB UNIT, SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.



END ELEVATION

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

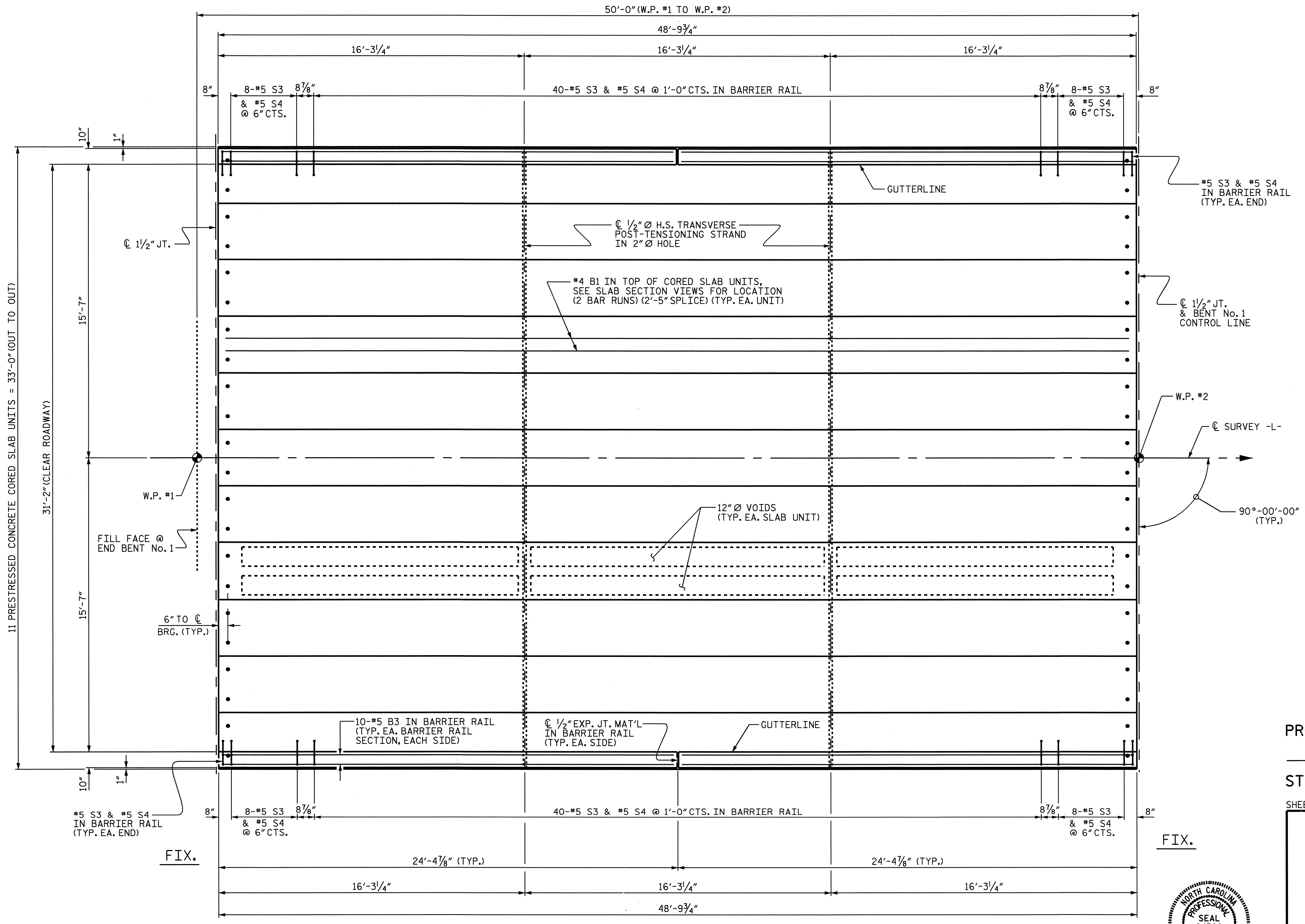


PROJECT NO. B-4269
 SAMPSON COUNTY
 STATION: 17+81.43 -L-
 SHEET 1 OF 8

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

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

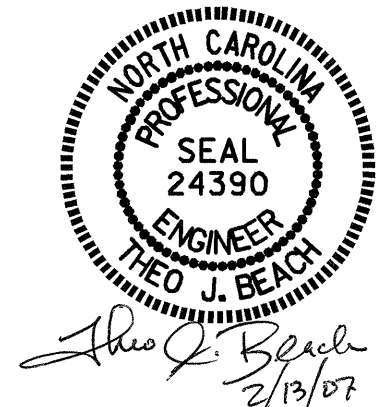
ASSEMBLED BY: A. K. PATEL DATE: 02/06
 CHECKED BY: S. B. WILLIAMS DATE: 03/06



SPAN "A"

PROJECT NO. B-4269
SAMPSON COUNTY
 STATION: 17+81.43 -L-
 SHEET 2 OF 8

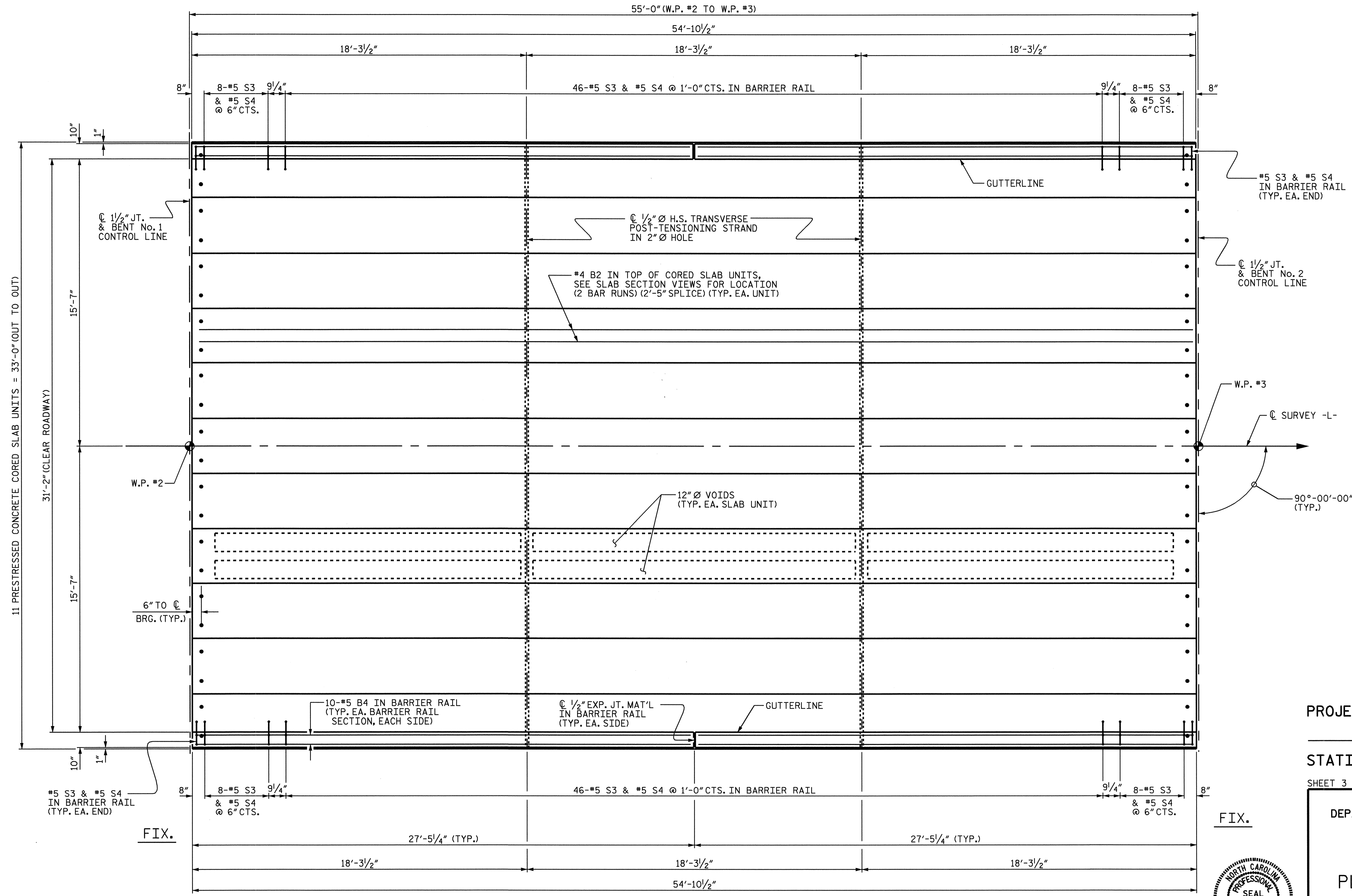
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN "A"



DRAWN BY: A. K. PATEL DATE: 02/06
 CHECKED BY: S. B. WILLIAMS DATE: 03/06

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

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 tbeach



SPAN "B"

PROJECT NO. B-4269
 SAMPSON COUNTY
 STATION: 17+81.43 -L-
 SHEET 3 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPAN "B"

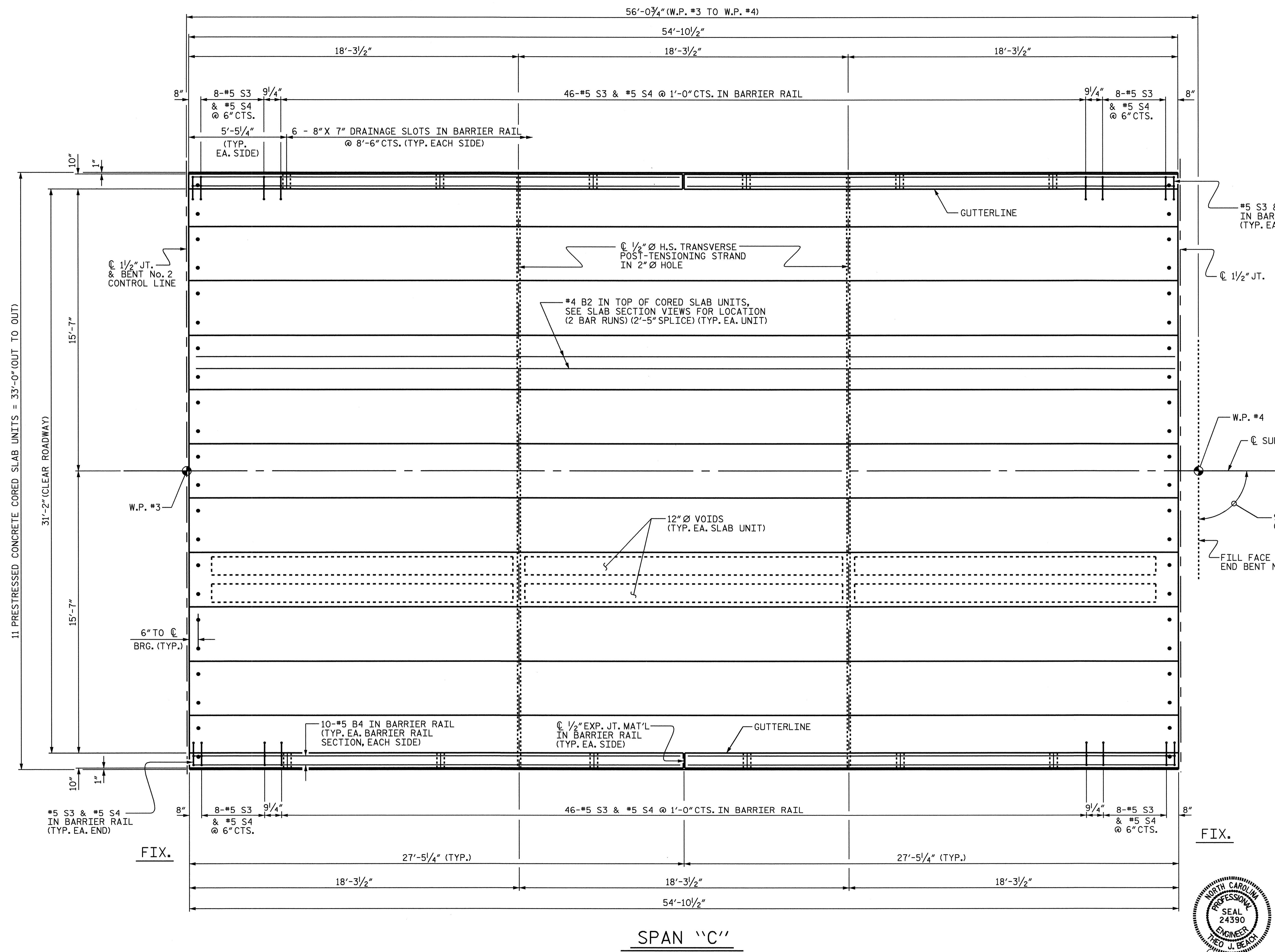


DRAWN BY: A. K. PATEL DATE: 02/06
 CHECKED BY: S. B. WILLIAMS DATE: 03/06

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

S-6
 TOTAL SHEETS 20

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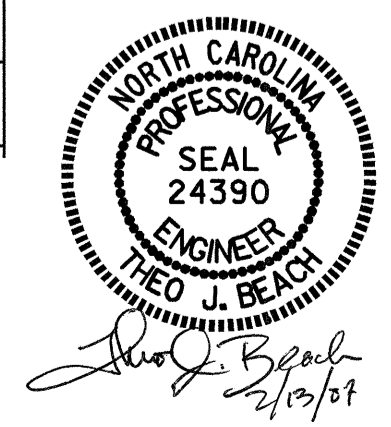


PROJECT NO. B-4269
SAMPSON COUNTY
 STATION: 17+81.43 -L-
 SHEET 4 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

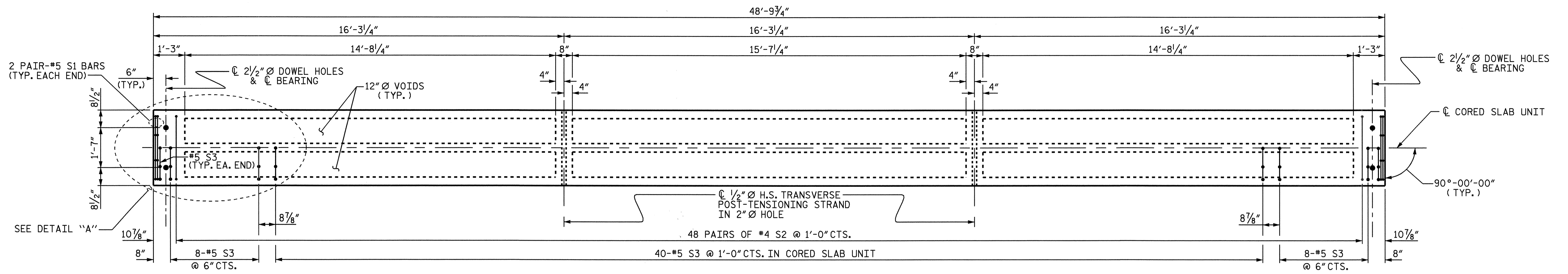
SUPERSTRUCTURE
 PLAN OF SPAN "C"

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



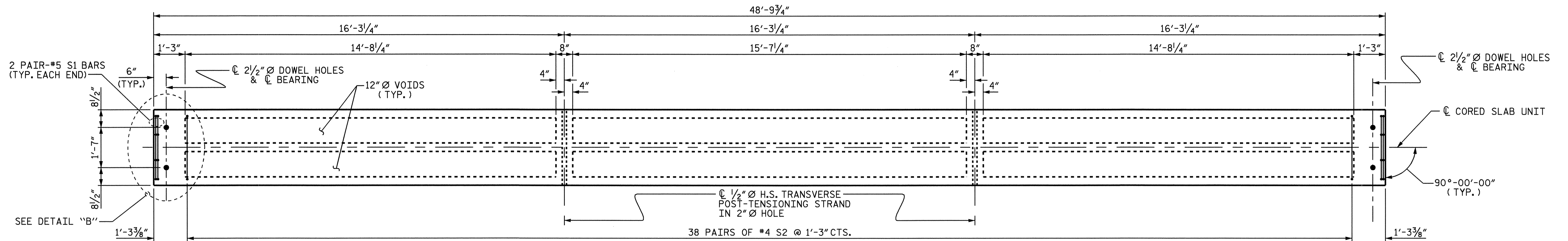
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 CHECKED BY: S. B. WILLIAMS DATE: 03/06

13-FEB-2007 15:22
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 tbeach



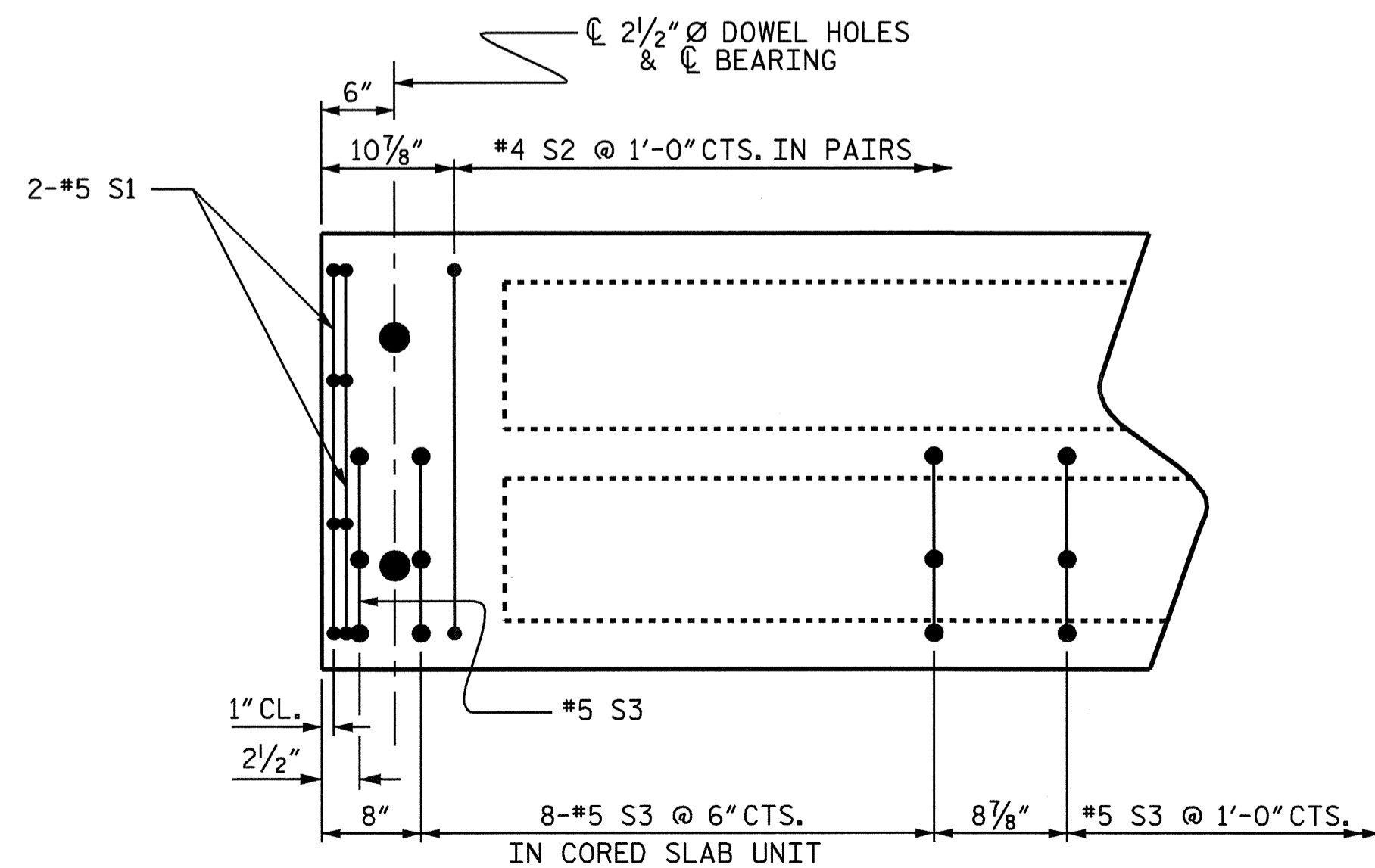
PLAN OF EXTERIOR CORED SLAB UNIT

(SPAN "A")

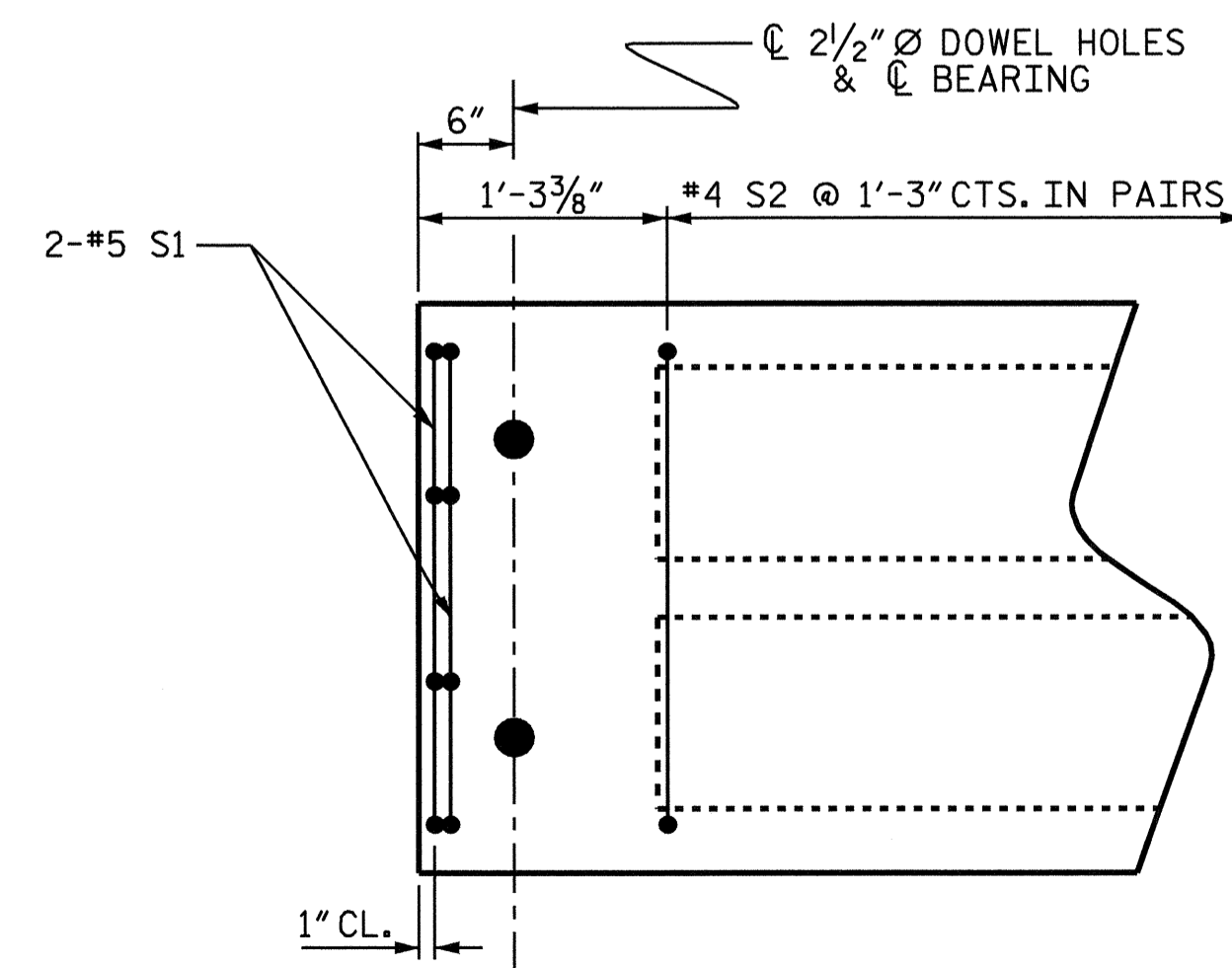


PLAN OF INTERIOR CORED SLAB UNIT

(SPAN "A")



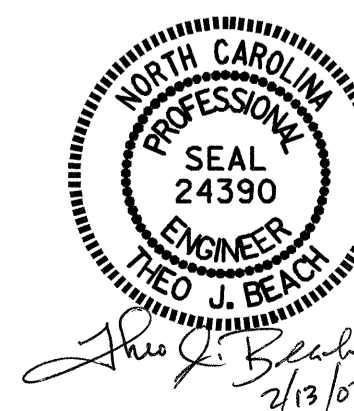
DETAIL "A"
(TYP. EACH END)



DETAIL "B"
(TYP. EACH END)

DRAWN BY : A. K. PATEL DATE : 02/06
CHECKED BY : S. B. WILLIAMS DATE : 03/06

13-FEB-2007 15:22
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tbeach

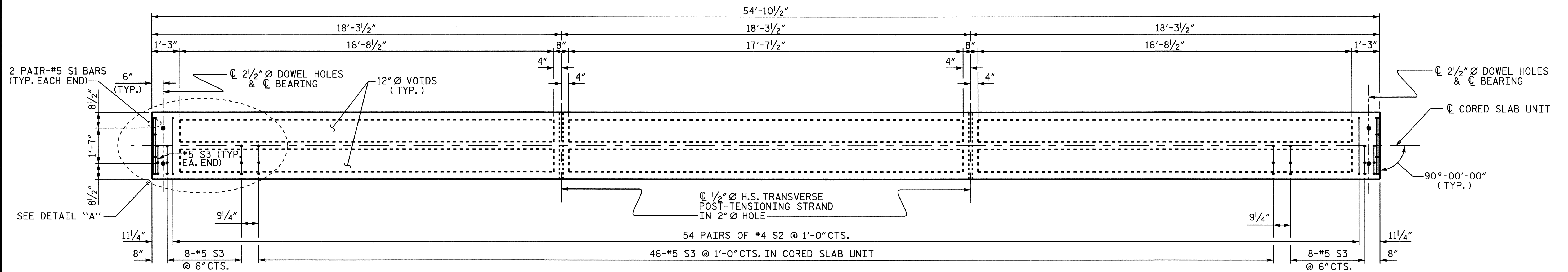


PROJECT NO. B-4269
SAMPSON COUNTY
STATION: 17+81.43 -L-

SHEET 5 OF 8

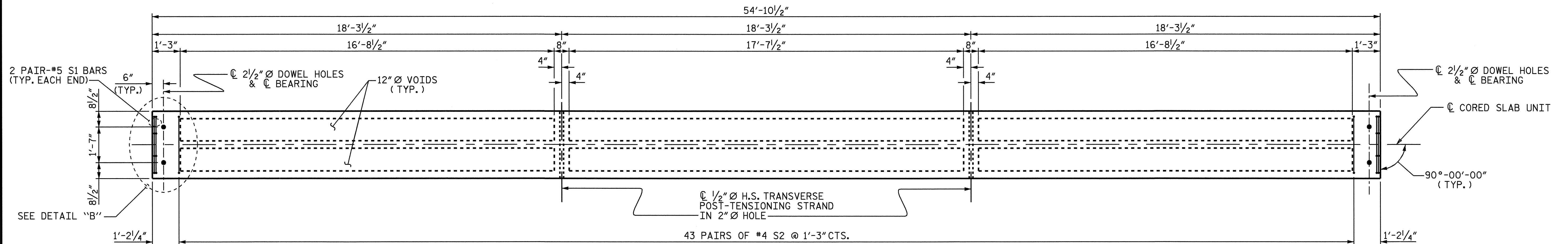
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
DETAILS
SPAN "A"

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



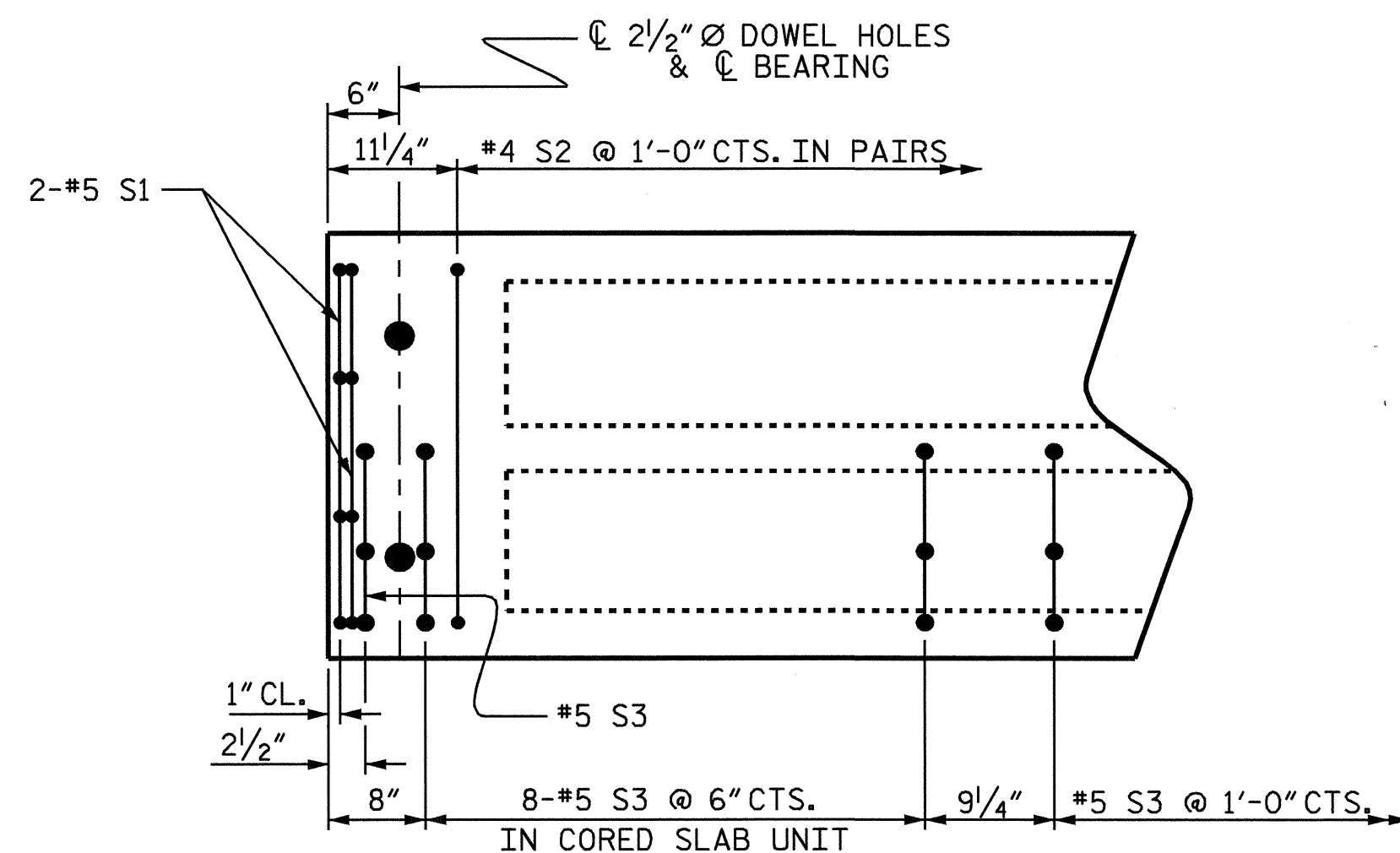
PLAN OF EXTERIOR CORED SLAB UNIT

(SPAN "B" AND "C")

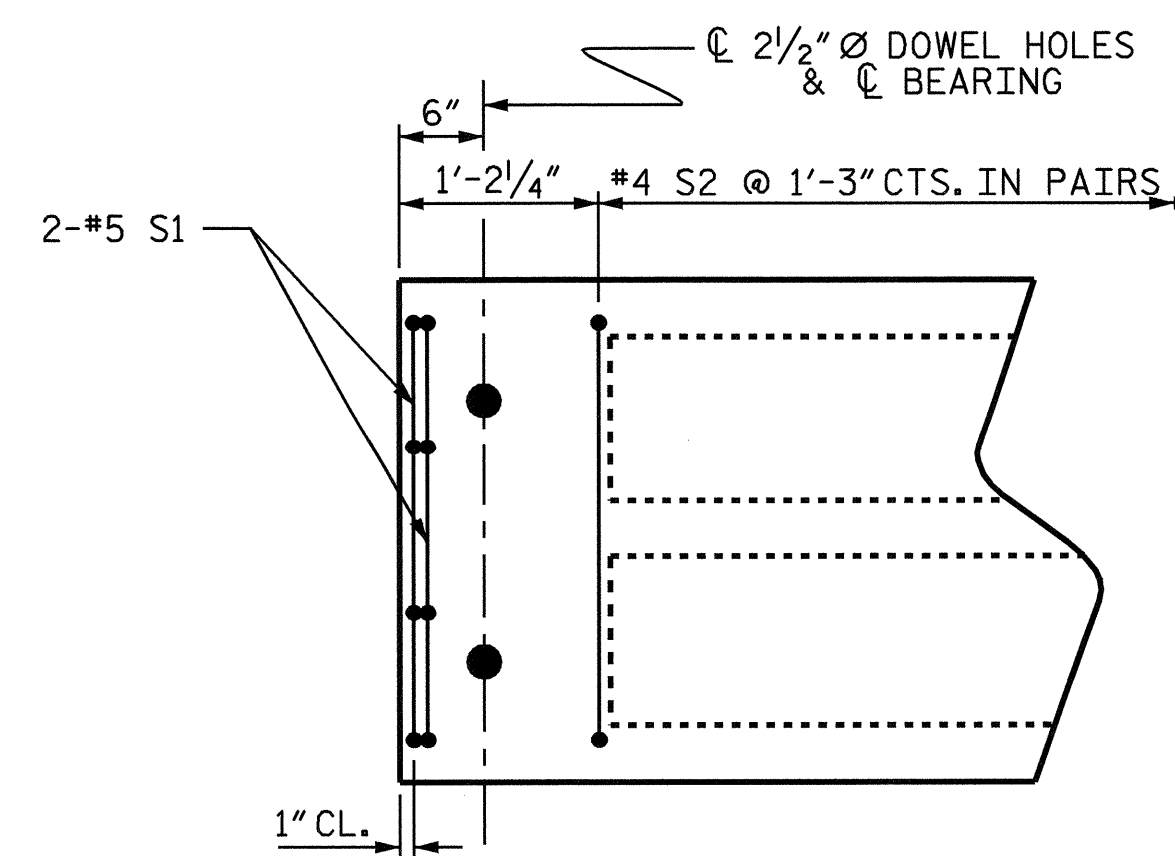


PLAN OF INTERIOR CORED SLAB UNIT

(SPAN "B" AND "C")



DETAIL "A"
(TYP. EACH END)



DETAIL "B"
(TYP. EACH END)

PROJECT NO. B-4269
SAMPSON COUNTY
 STATION: 17+81.43 -L-

SHEET 6 OF 8



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

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

DRAWN BY: A. K. PATEL DATE: 02/06
 CHECKED BY: S. B. WILLIAMS DATE: 03/06

NOTES

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

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

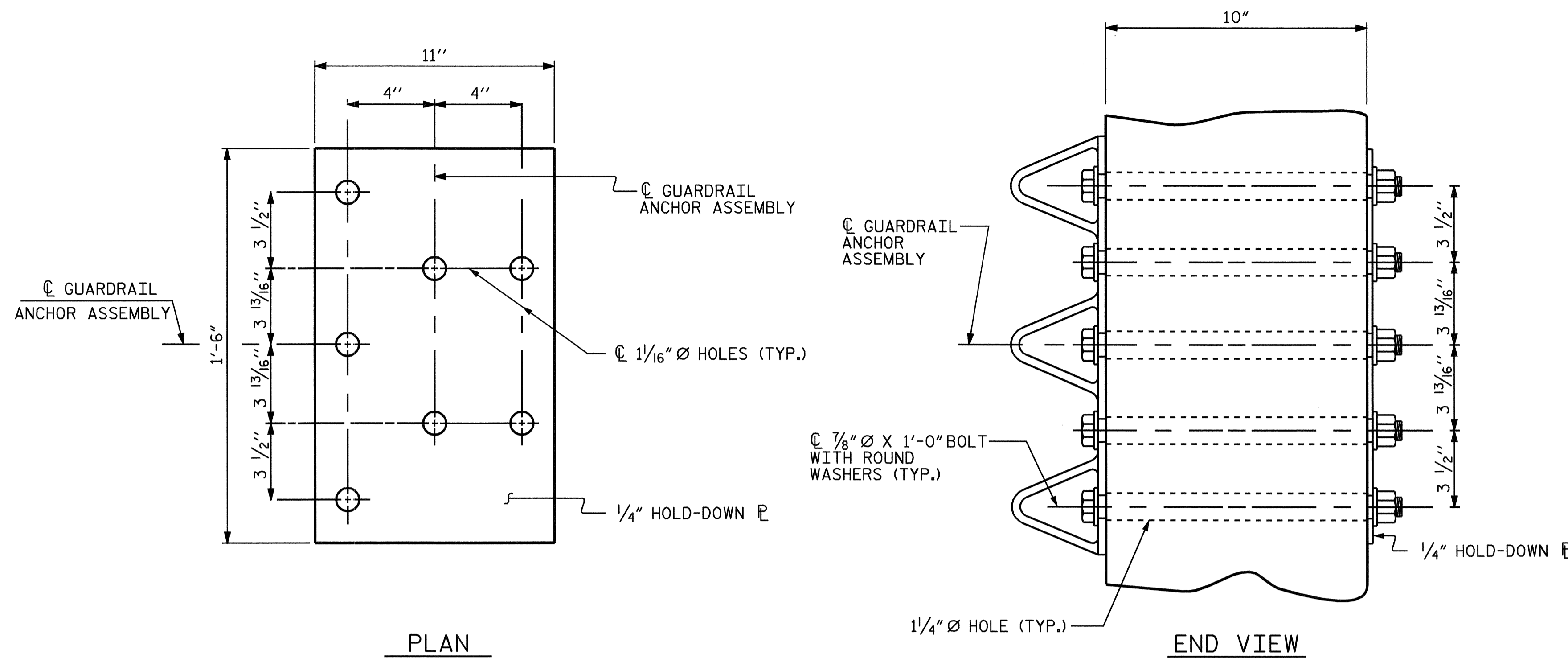
BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS.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

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

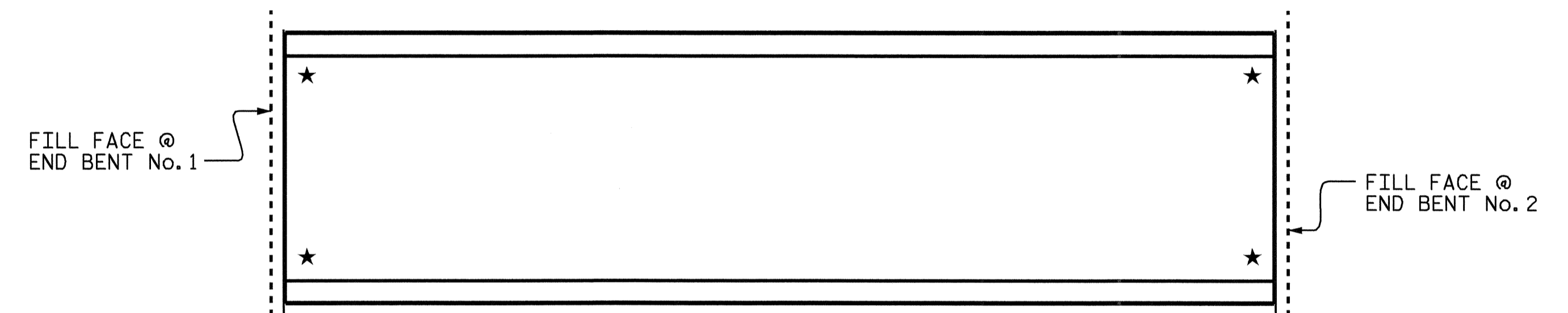
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS, NUTS AND WASHERS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

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

THE 1 1/4" Ø HOLES SHALL BE FORMED. DRILLING WILL NOT BE PERMITTED.

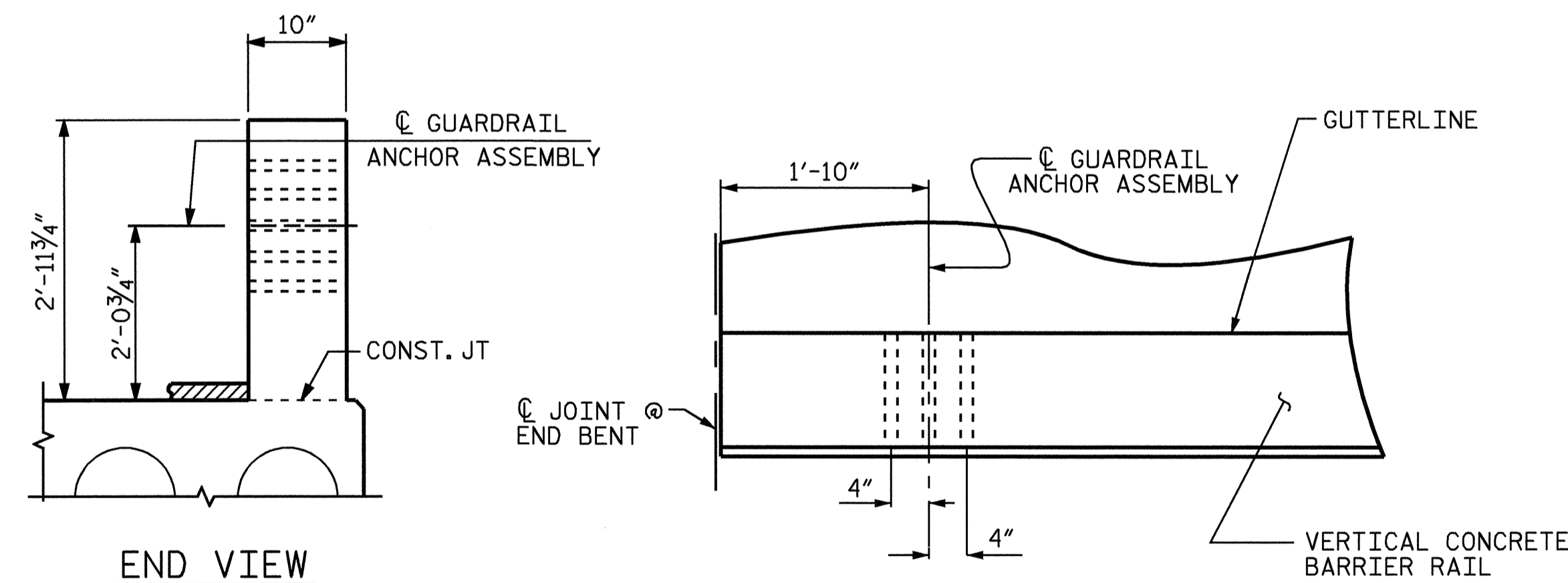


GUARDRAIL ANCHOR ASSEMBLY DETAILS



SKETCH SHOWING POINTS OF ATTACHMENT

★ LOCATION OF GUARDRAIL ATTACHMENT

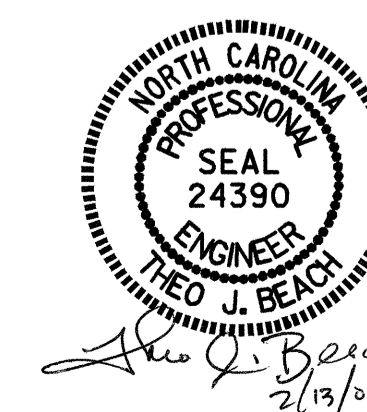


LOCATION OF GUARDRAIL ANCHOR

PROJECT NO. B-4269
SAMPSON COUNTY
 STATION: 17+81.43 -L-

SHEET 7 OF 8

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD GUARDRAIL ANCHORAGE DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-10					TOTAL SHEETS 20



ASSEMBLED BY : A. K. PATEL	DATE : 02/06
CHECKED BY : S. B. WILLIAMS	DATE : 03/06
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

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 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 5200 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.

FOR DETAILS OF GUARDRAIL ANCHOR ASSEMBLIES, SEE "GUARDRAIL ANCHORAGE DETAILS" SHEET 7 OF 8.

THE REINFORCING STEEL MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR THE ANCHOR ASSEMBLY.

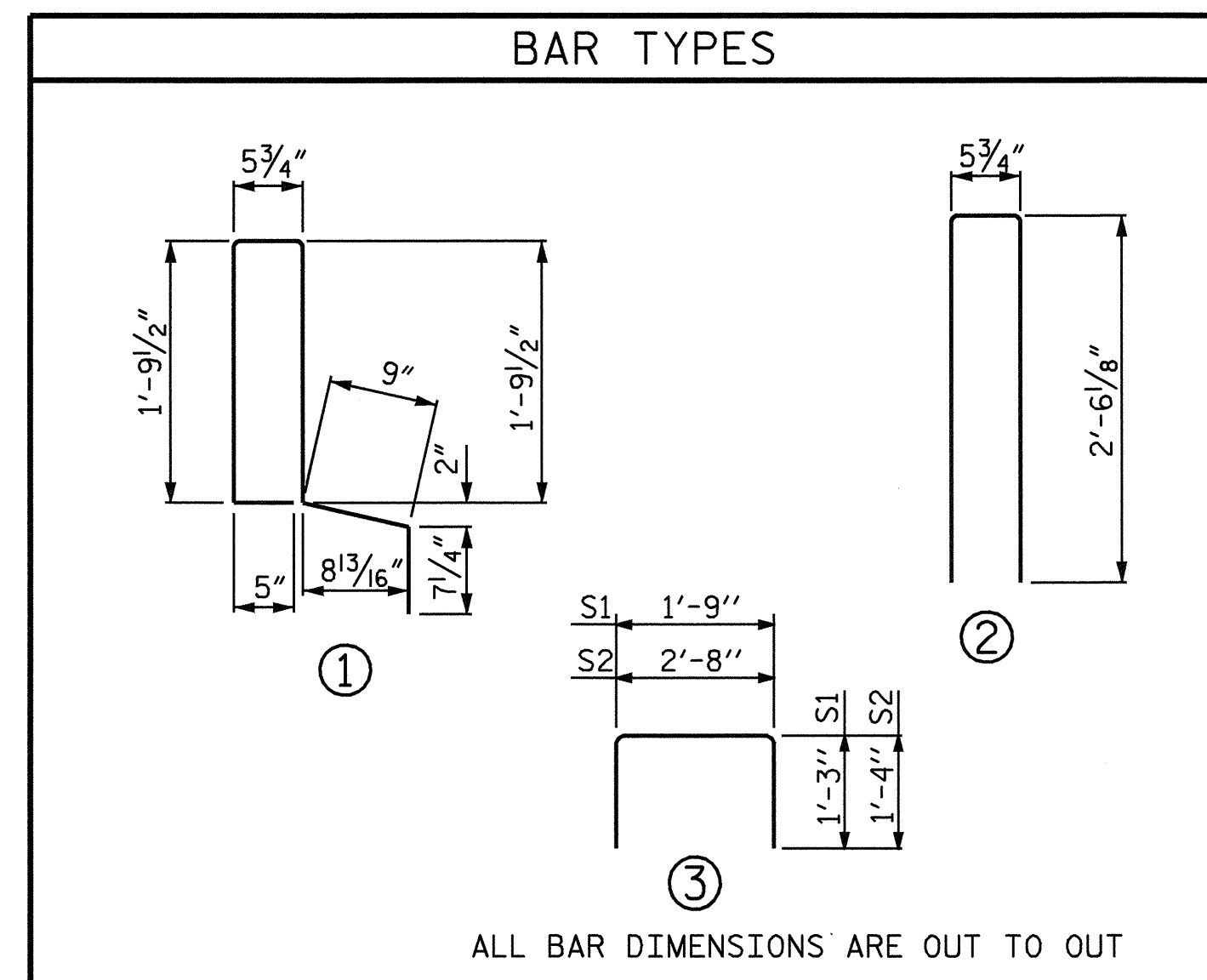
CORED SLABS REQUIRED			
SPAN "A"	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	48'-9 3/4"	97'-7 1/2"
INTERIOR C.S.	9	48'-9 3/4"	439'-3 3/4"
SPAN "B" & "C"	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	4	54'-10 1/2"	219'-6"
INTERIOR C.S.	18	54'-10 1/2"	987'-9"
TOTAL	33		1744'-2 1/4"

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL								
BAR	BARS PER SPAN			TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	SPAN "A"	SPAN "B"	SPAN "C"					
*B3	40			40	#5	STR	24'-0"	1001
*B4		40	40	80	#5	STR	27'-1"	2260
*S4	116	128	128	372	#5	2	5'-6"	2134
* EPOXY COATED REINFORCING STEEL							5,395 LBS.	
CLASS AA CONCRETE							29.5 CU. YDS.	
TOTAL LIN. FT. OF VERTICAL CONCRETE BARRIER RAIL							317.13	

GRADE 270 STRANDS	
	1/2" Ø L.R.
AREA (SQUARE INCHES)	0.153
ULTIMATE STRENGTH (LBS. PER STRAND)	41,300
APPLIED PRESTRESS (LBS. PER STRAND)	30,980

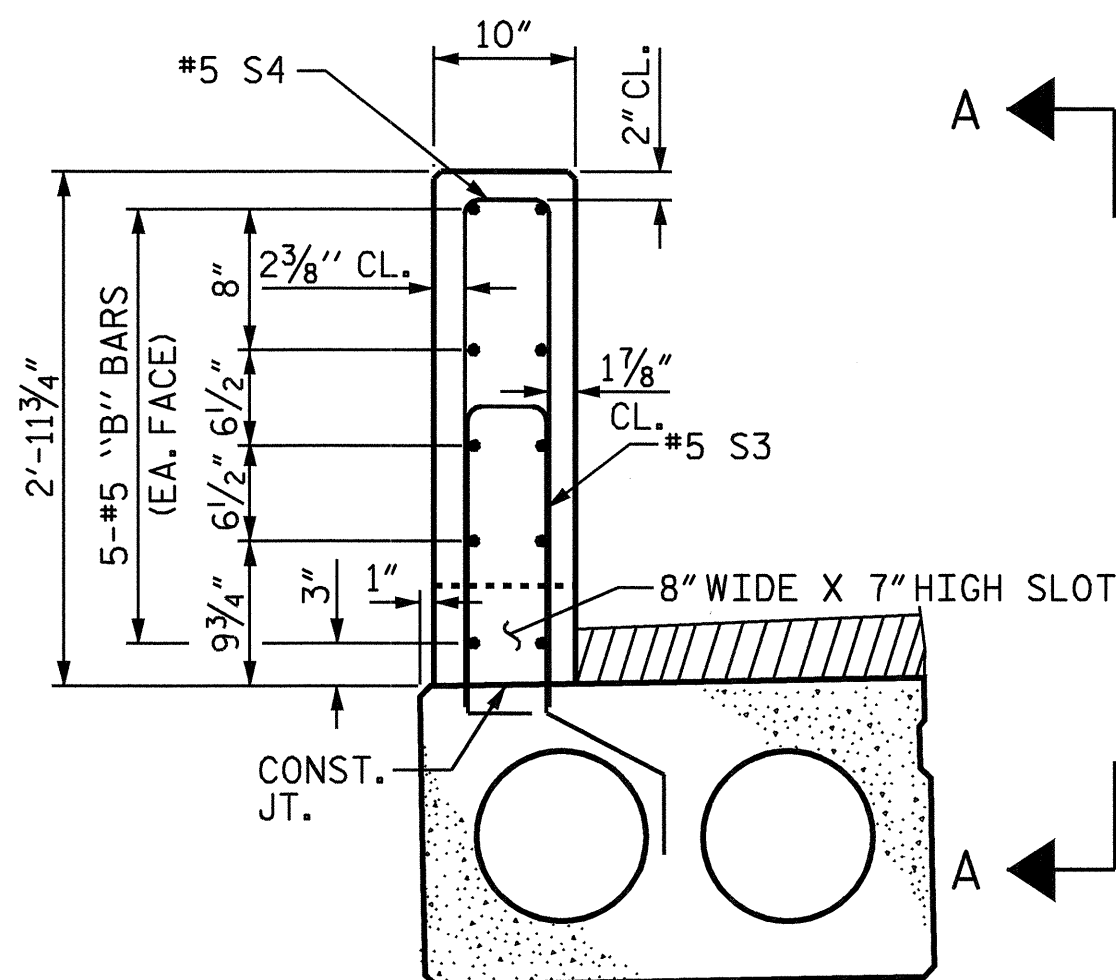
DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" X 1'-9"
SPAN "A"	1/2" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2 3/16" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	1/4" ↓
FINAL CAMBER	2 3/16" ↑
SPAN "B" OR "C"	1/2" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2 5/8" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	3/8" ↓
FINAL CAMBER	2 1/4" ↑

** INCLUDES FUTURE WEARING SURFACE

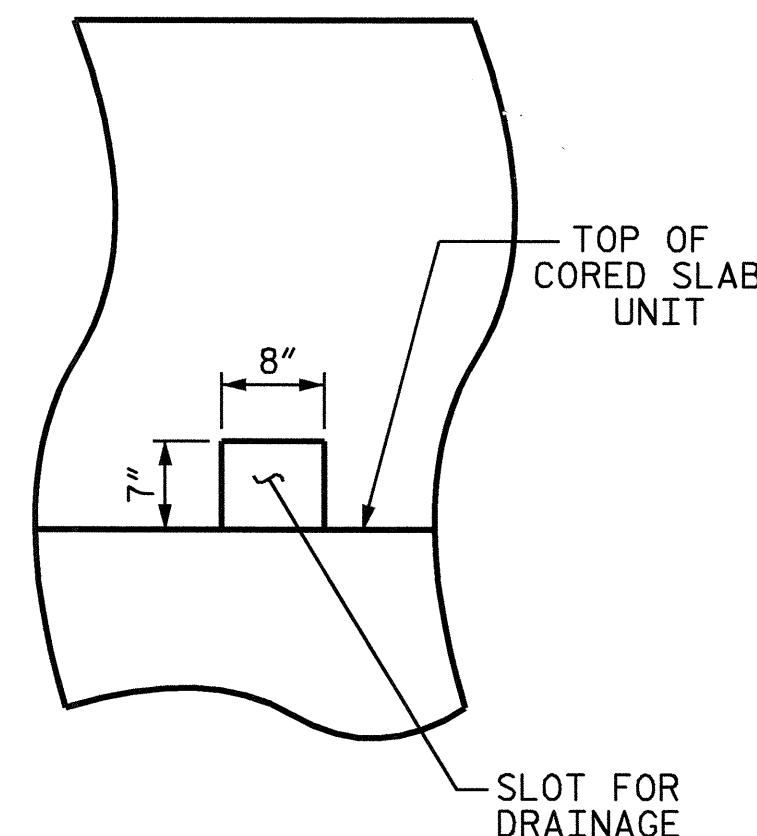


BILL OF MATERIAL FOR ONE CORED SLAB SECTION							
SPAN "A"				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B1	4	#4	STR	25'-6"	68	25'-6"	68
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	96	#4	3	5'-4"	342		
S2	76	#4	3			5'-4"	271
*S3	58	#5	1	5'-10"	353		
REINFORCING STEEL				445 LBS.		374 LBS.	
* EPOXY COATED REINFORCING STEEL				353 LBS.			
6,500 P.S.I. CONCRETE				6.9 CU. YDS.		6.9 CU. YDS.	
1/2" Ø L.R. STRANDS				No.	26		26

BILL OF MATERIAL FOR ONE CORED SLAB SECTION							
SPAN "B" OR "C"				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B2	4	#4	STR	28'-6"	76	28'-6"	76
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	108	#4	3	5'-4"	385		
S2	86	#4	3			5'-4"	306
*S3	64	#5	1	5'-10"	389		
REINFORCING STEEL				496 LBS.		417 LBS.	
* EPOXY COATED REINFORCING STEEL				389 LBS.			
6,500 P.S.I. CONCRETE				7.7 CU. YDS.		7.7 CU. YDS.	
1/2" Ø L.R. STRANDS				No.	26		26

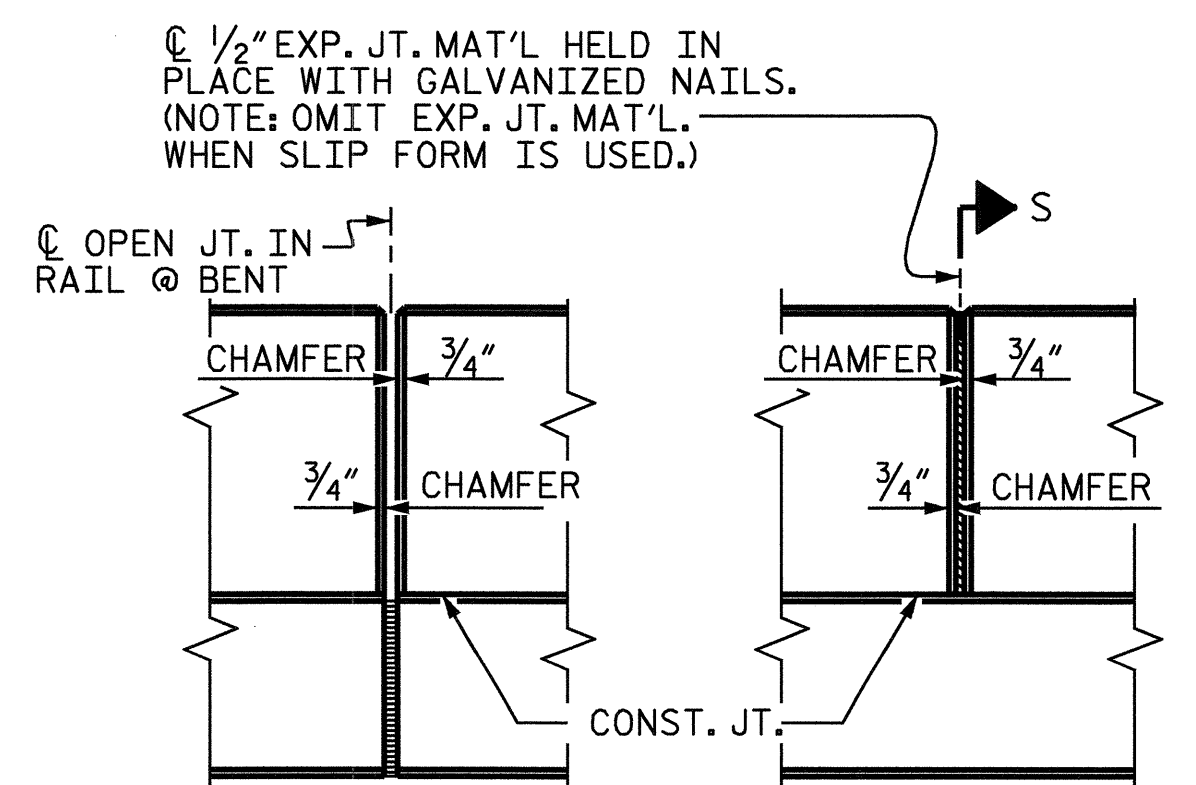


SECTION THRU BARRIER RAIL

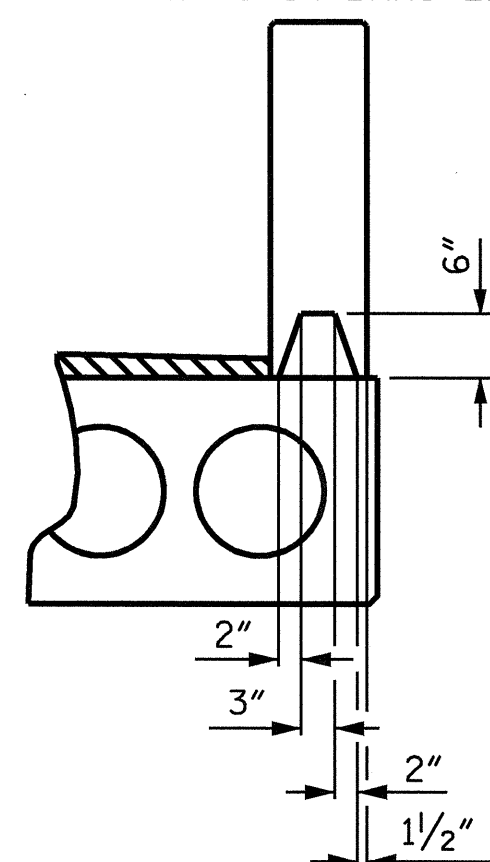


VIEW A-A
SEE "PLAN OF SPAN C" FOR SLOT LOCATIONS

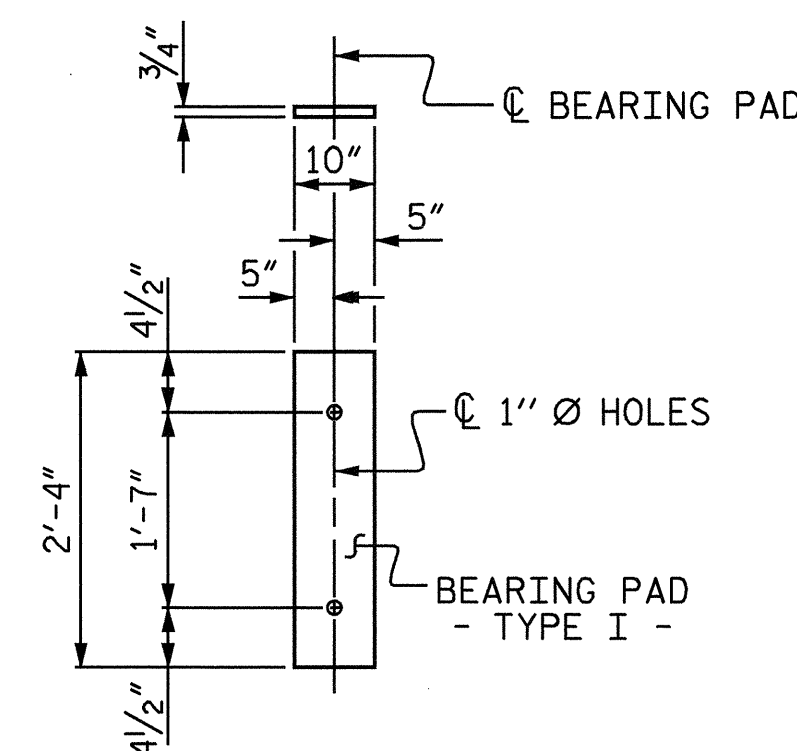
(SLOT LOCATION MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CENTER SLOTS BETWEEN #5 S3 & #5 S4 BARS IN RAIL)



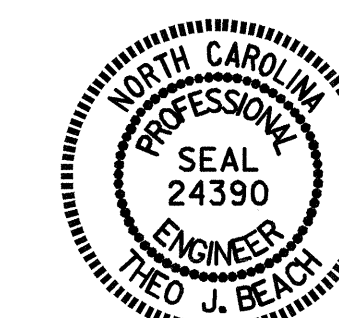
ELEVATION AT EXPANSION JOINTS



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



FIXED END (TYPE I - 66 REQ'D)
ELASTOMERIC BEARING DETAILS



PROJECT NO. B-4269
SAMPSON COUNTY
STATION: 17+81.43 -L-

SHEET 8 OF 8

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 20

DRAWN BY : A. K. PATEL DATE : 02/06
CHECKED BY : S. B. WILLIAMS DATE : 03/06

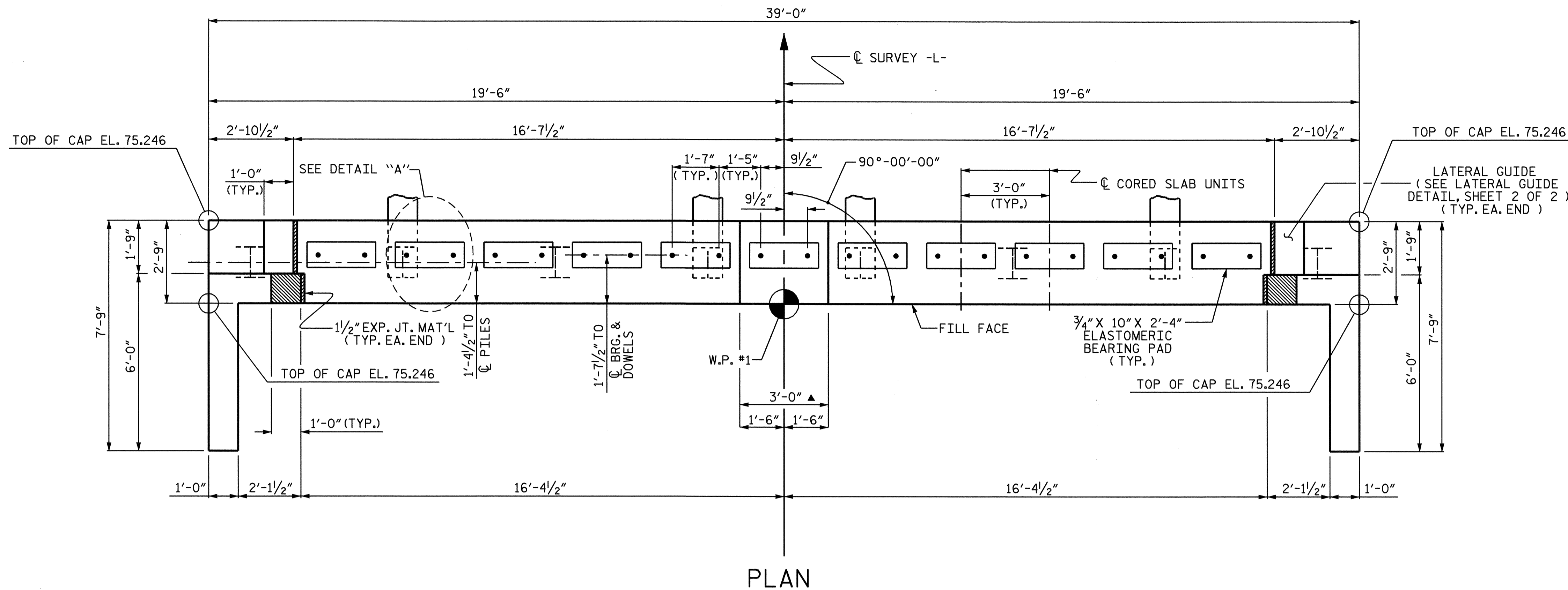
NOTES:

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 CORED SLAB UNITS ARE IN PLACE.

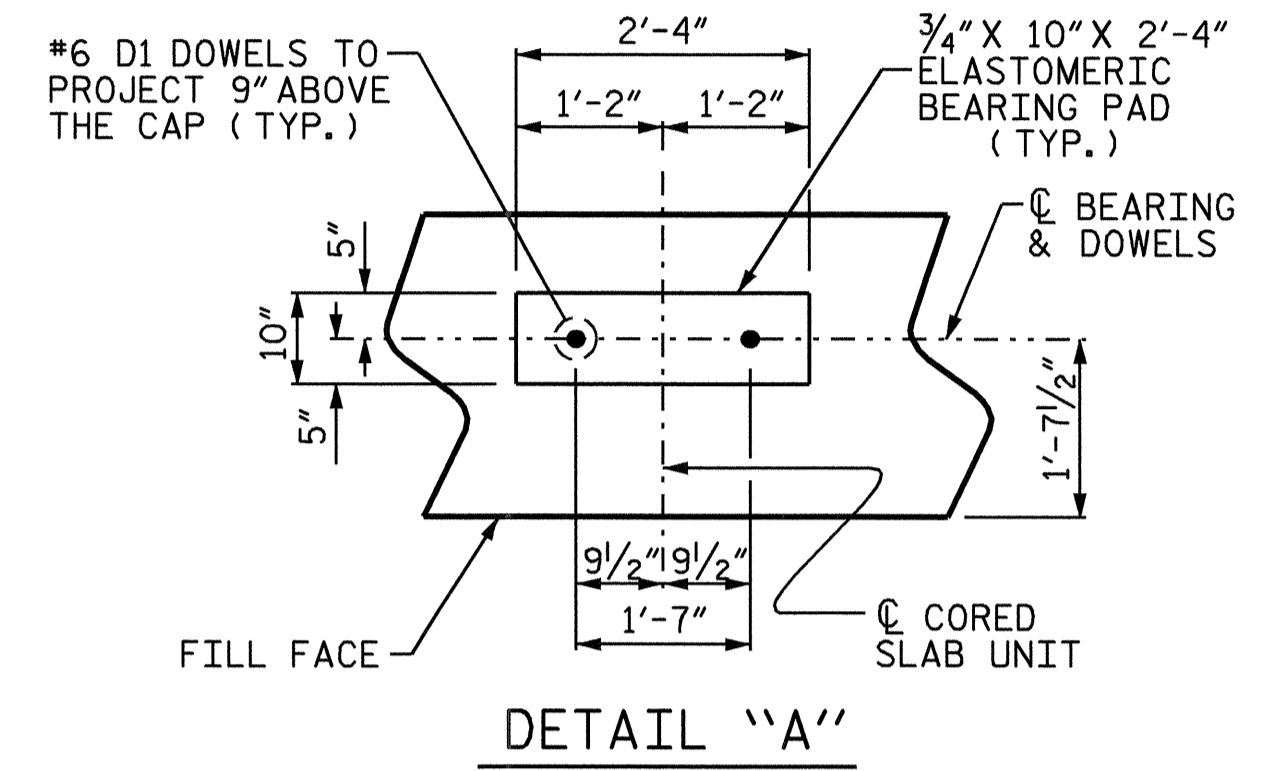
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

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

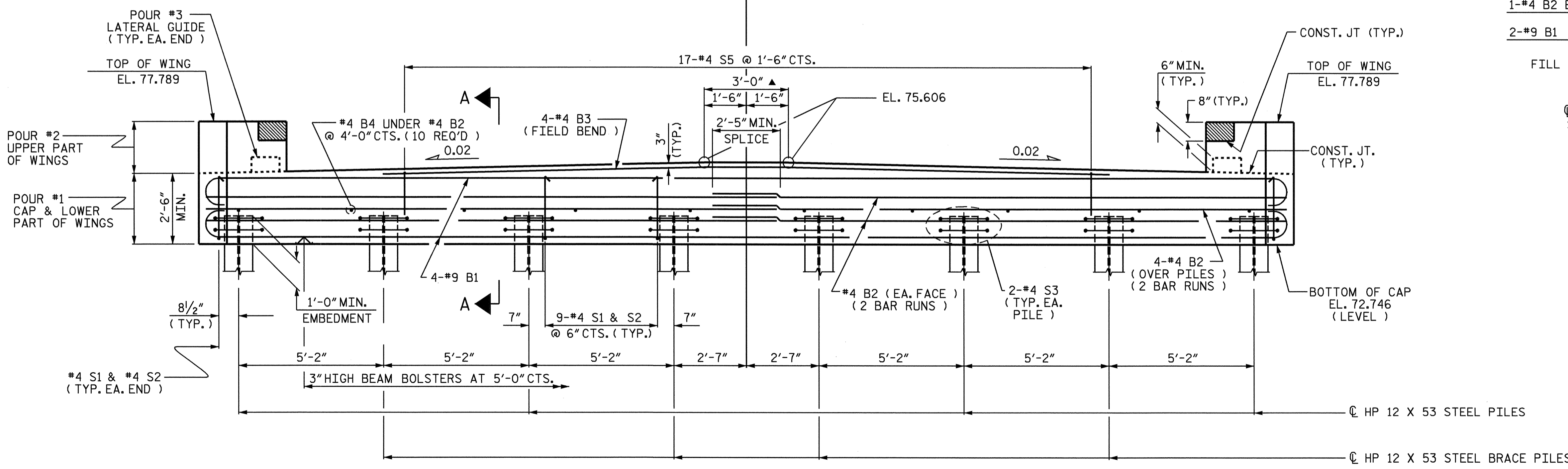


PLAN

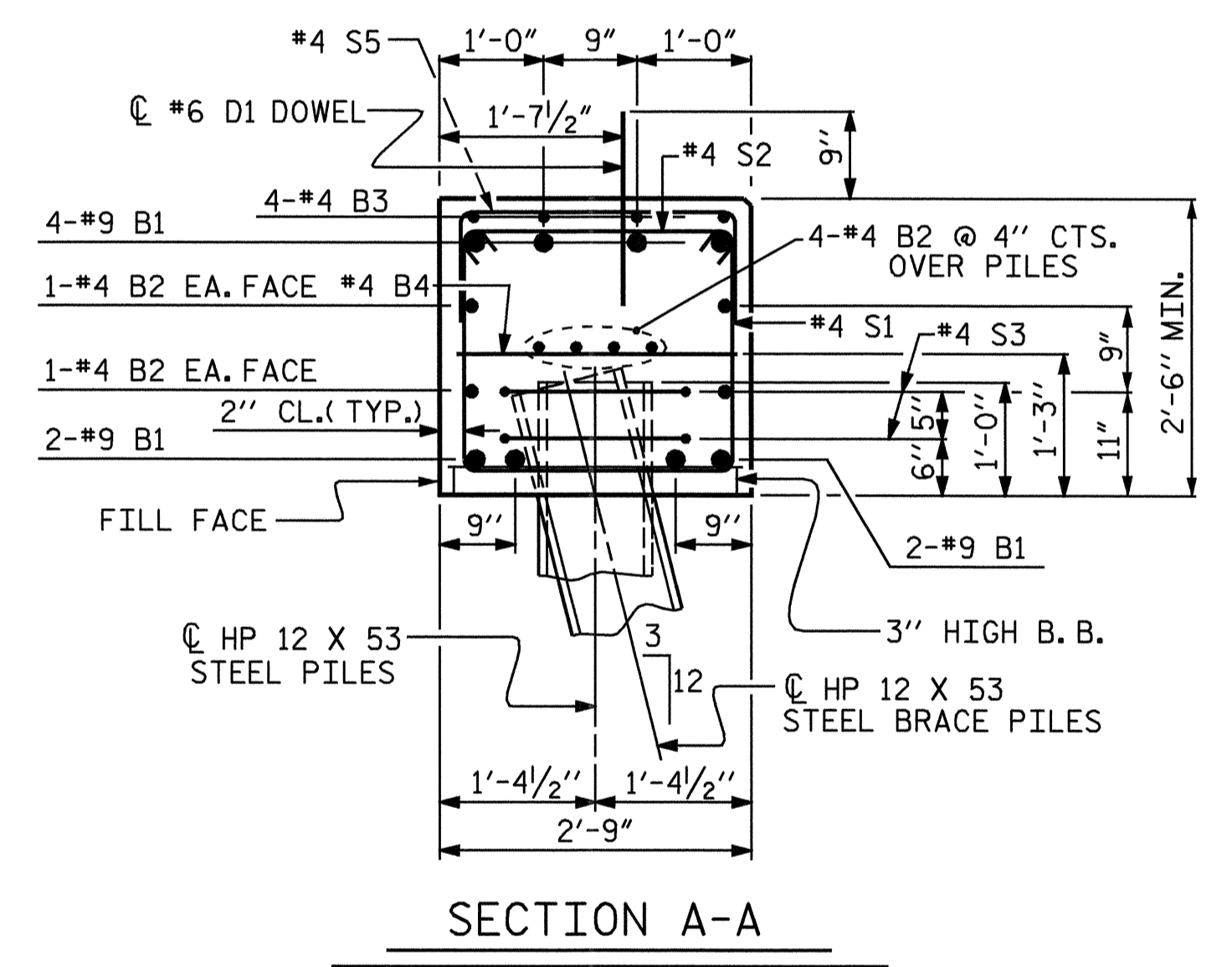
▲ THIS AREA IS LEVEL



DETAIL "A"



ELEVATION

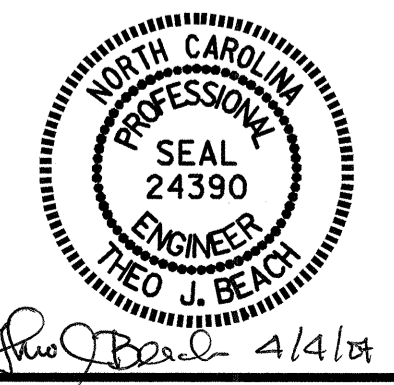


SECTION A-A

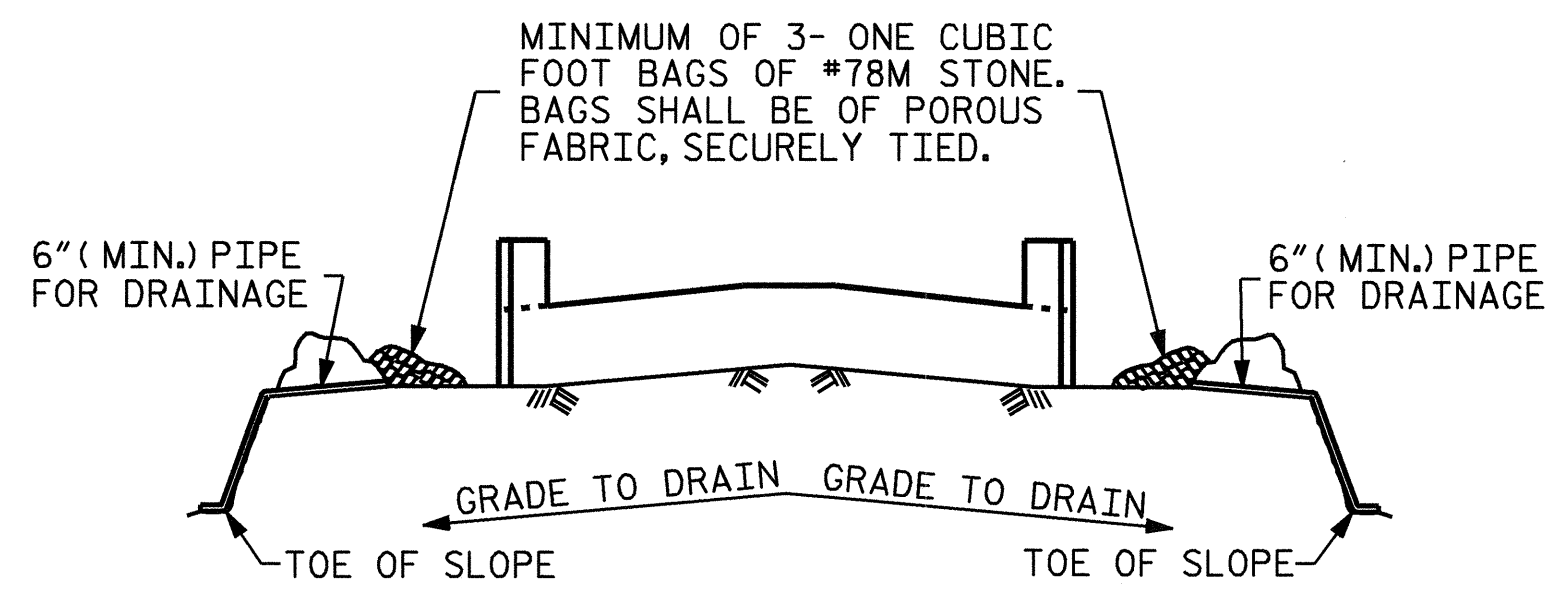
PROJECT NO. B-4269
SAMPSON COUNTY
 STATION: 17+81.43 -L-

SHEET 1 OF 2

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



DRAWN BY: N. PIERCE DATE: 03/06
 CHECKED BY: A.K. PATEL DATE: 03/06

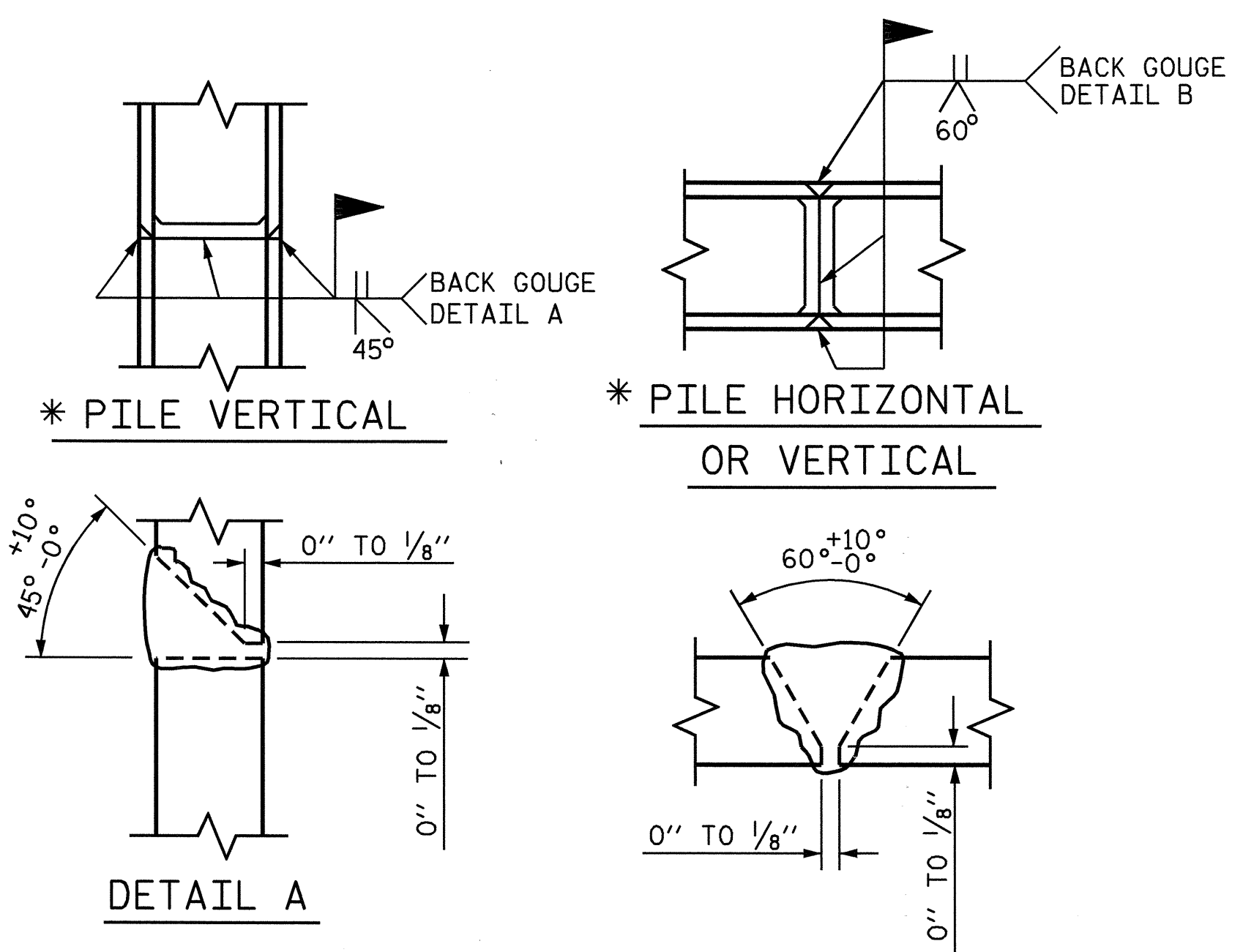


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

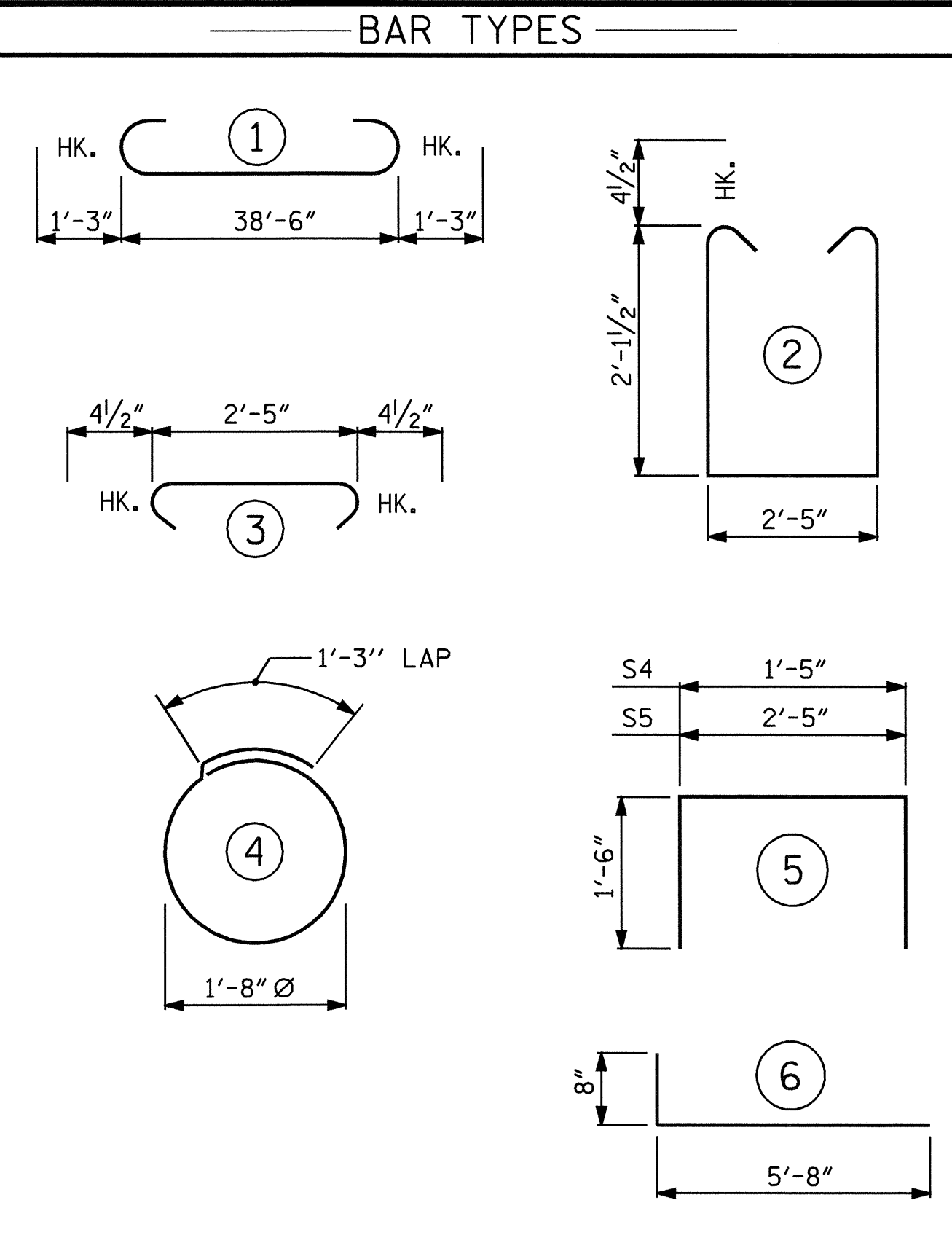
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

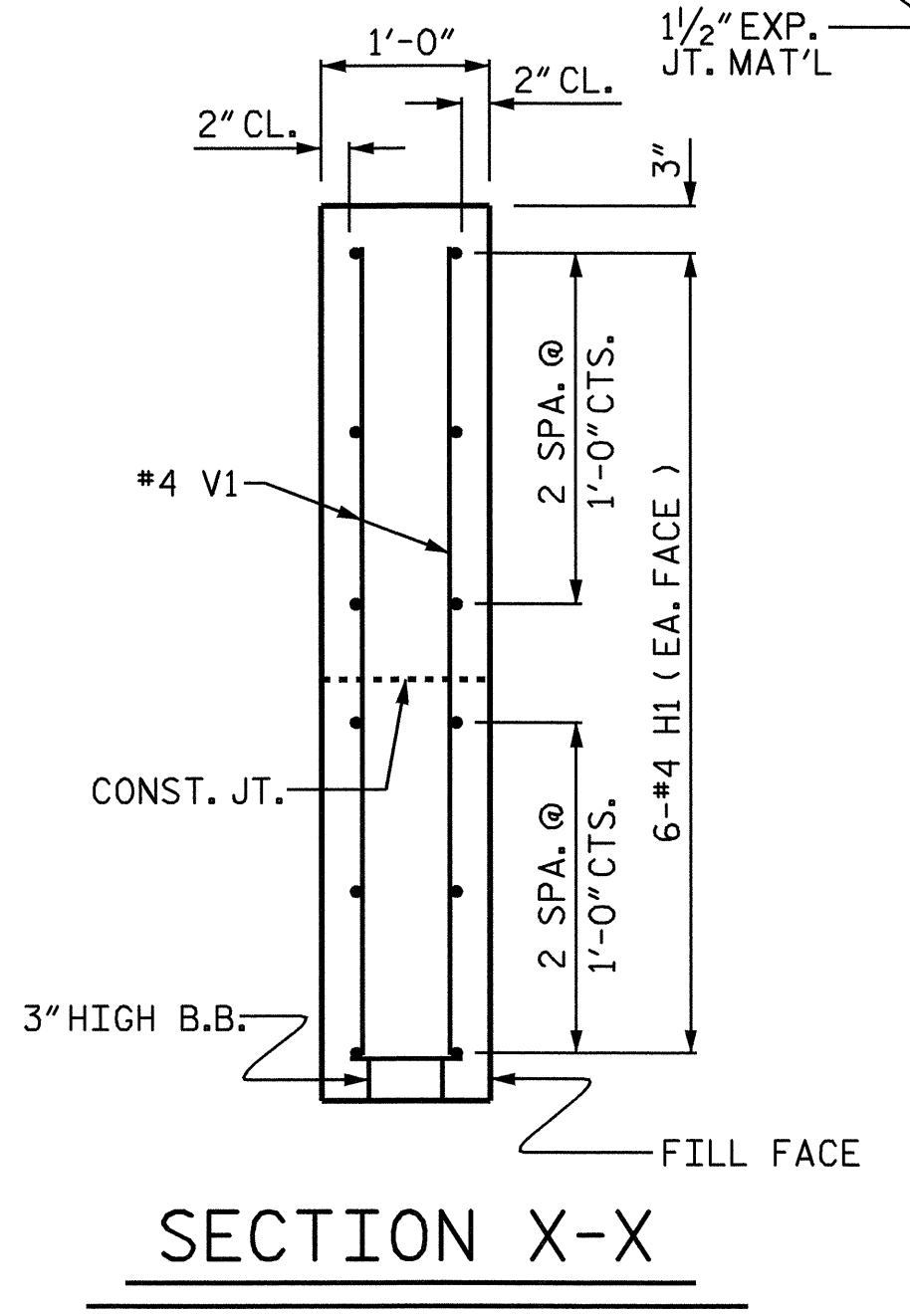
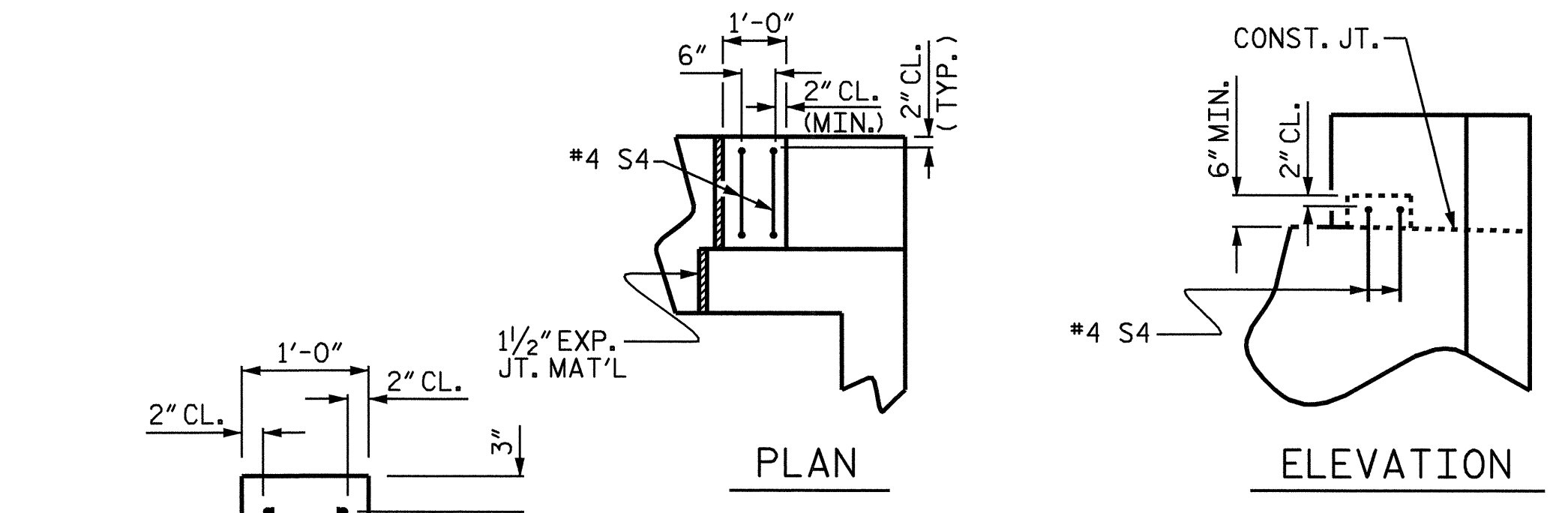
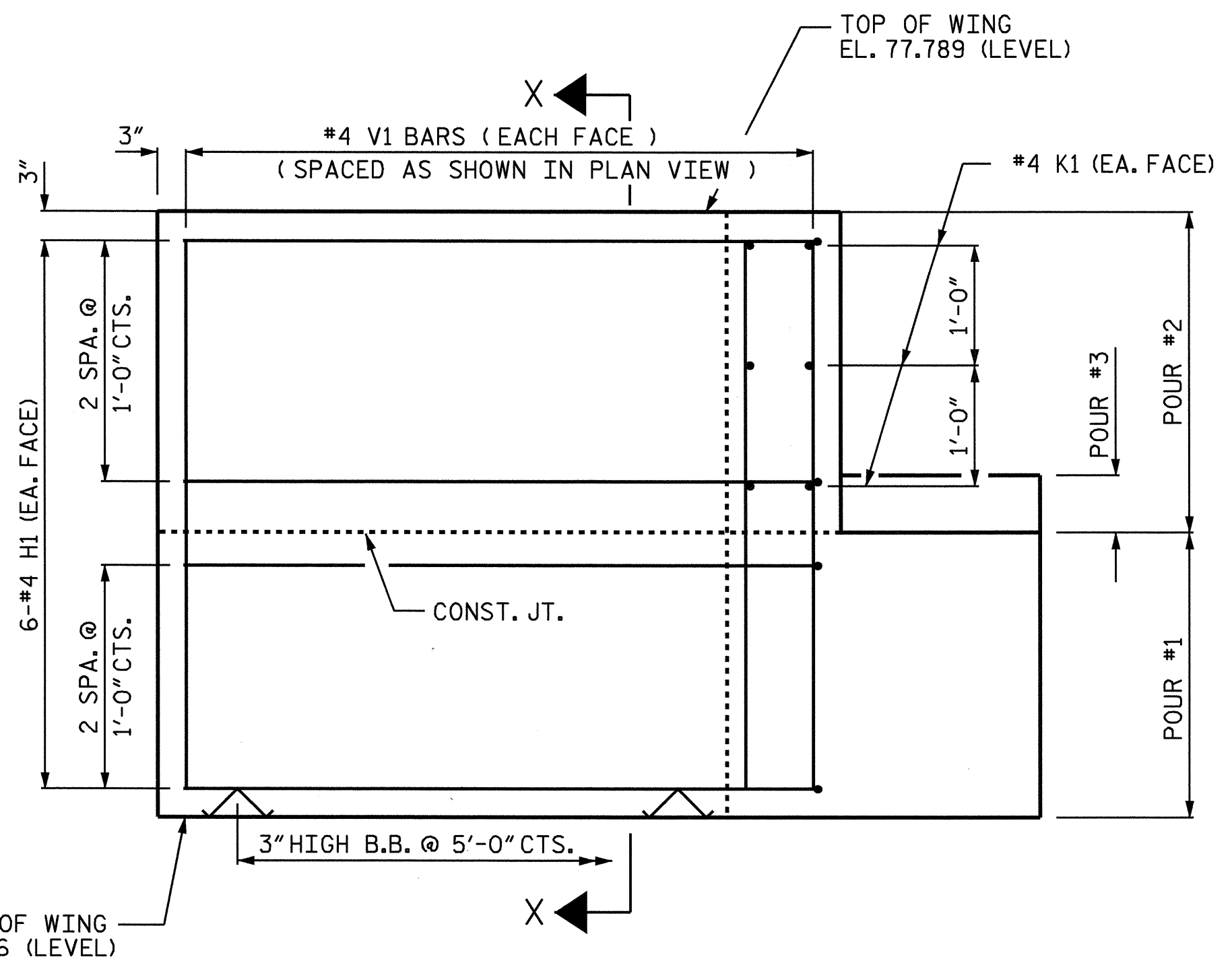
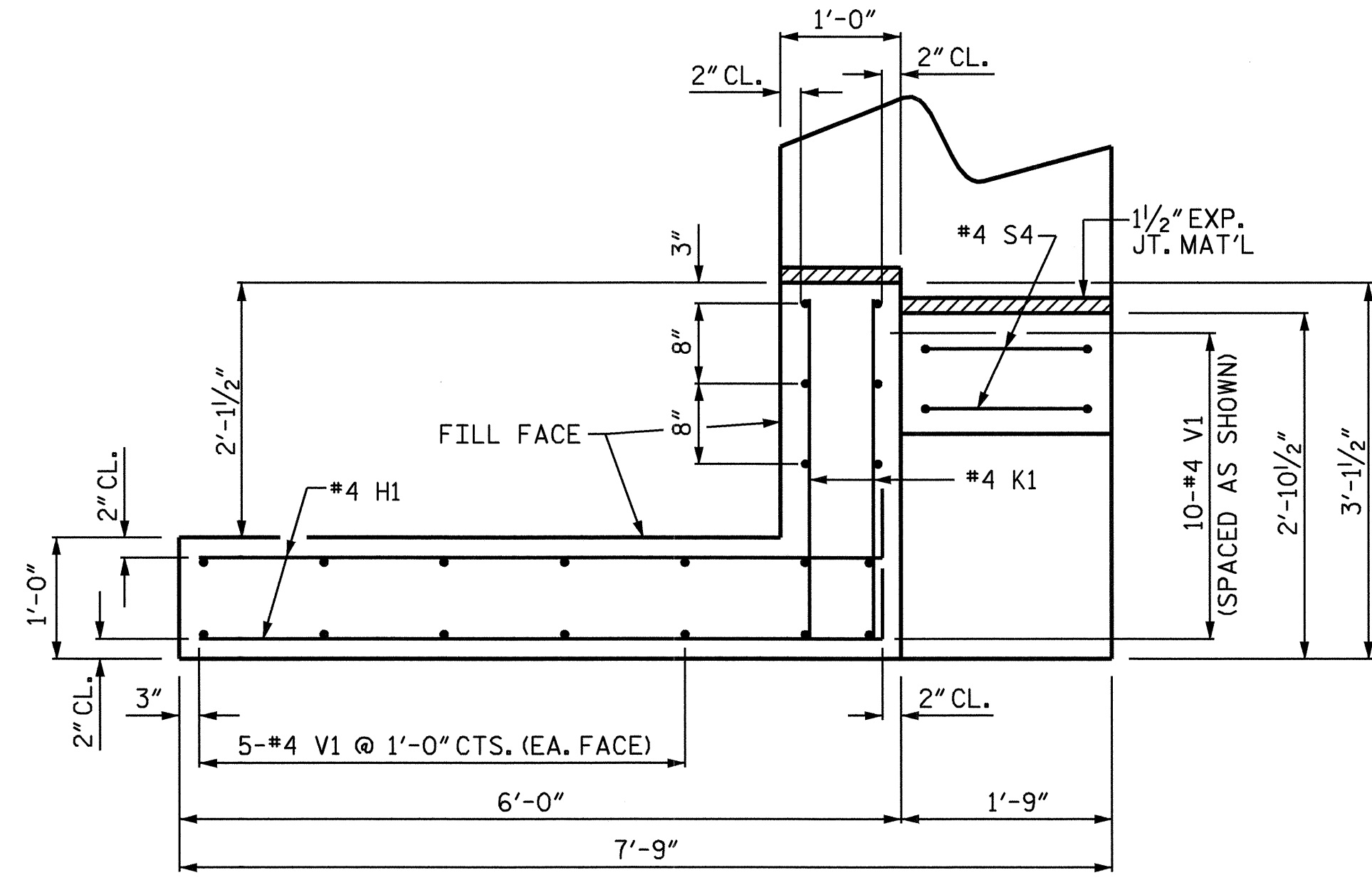


*POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



BILL OF MATERIAL					
END BENT No. 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	9	1	41'-0"	1115
B2	16	4	STR	20'-7"	220
B3	4	4	STR	26'-0"	69
B4	10	4	STR	2'-5"	16
D1	22	6	STR	1'-6"	50
H1	24	4	6	6'-4"	102
K1	12	4	STR	2'-9"	22
S1	65	4	2	7'-5"	322
S2	65	4	3	3'-2"	137
S3	16	4	4	6'-6"	69
S4	4	4	5	4'-5"	12
S5	17	4	5	5'-5"	62
V1	40	4	STR	4'-8"	125
REINFORCING STEEL					2123 LBS.
CLASS A CONCRETE BREAKDOWN					
POUR #1	CAP & LOWER PART OF WINGS		11.6 C.Y.		
POUR #2	UPPER PART OF WINGS		1.3 C.Y.		
POUR #3	LATERAL GUIDES		0.1 C.Y.		
TOTAL CLASS A CONCRETE					13.0 C.Y.
HP 12 X 53 STEEL PILES					
No. = 8 LIN. FT. = 360					

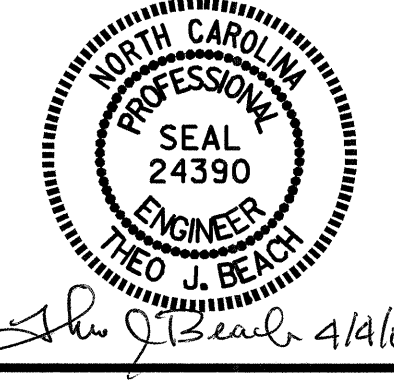


PROJECT NO. B-4269
SAMPSON COUNTY
 STATION: 17+81.43 -L-

SHEET 2 OF 2

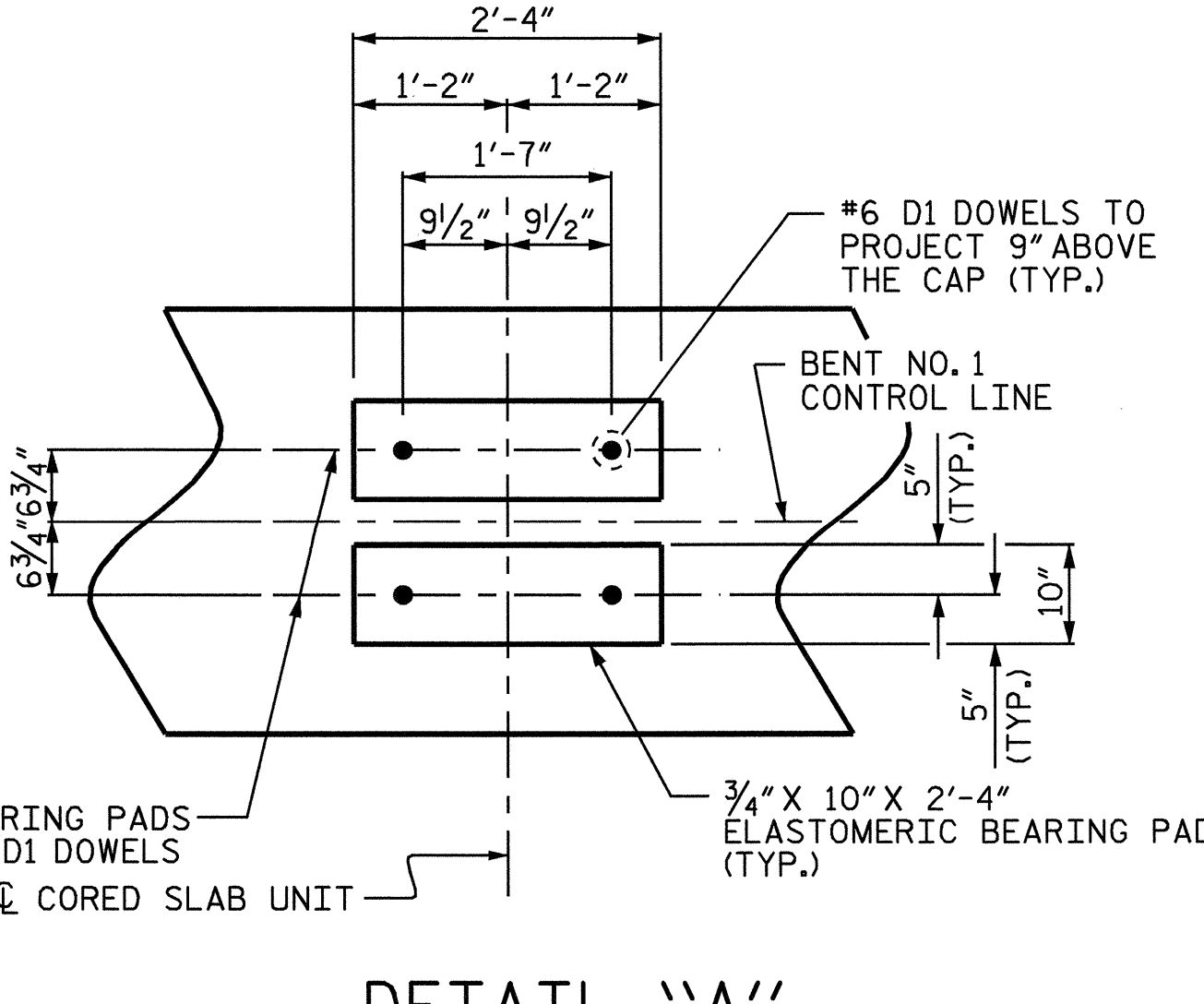
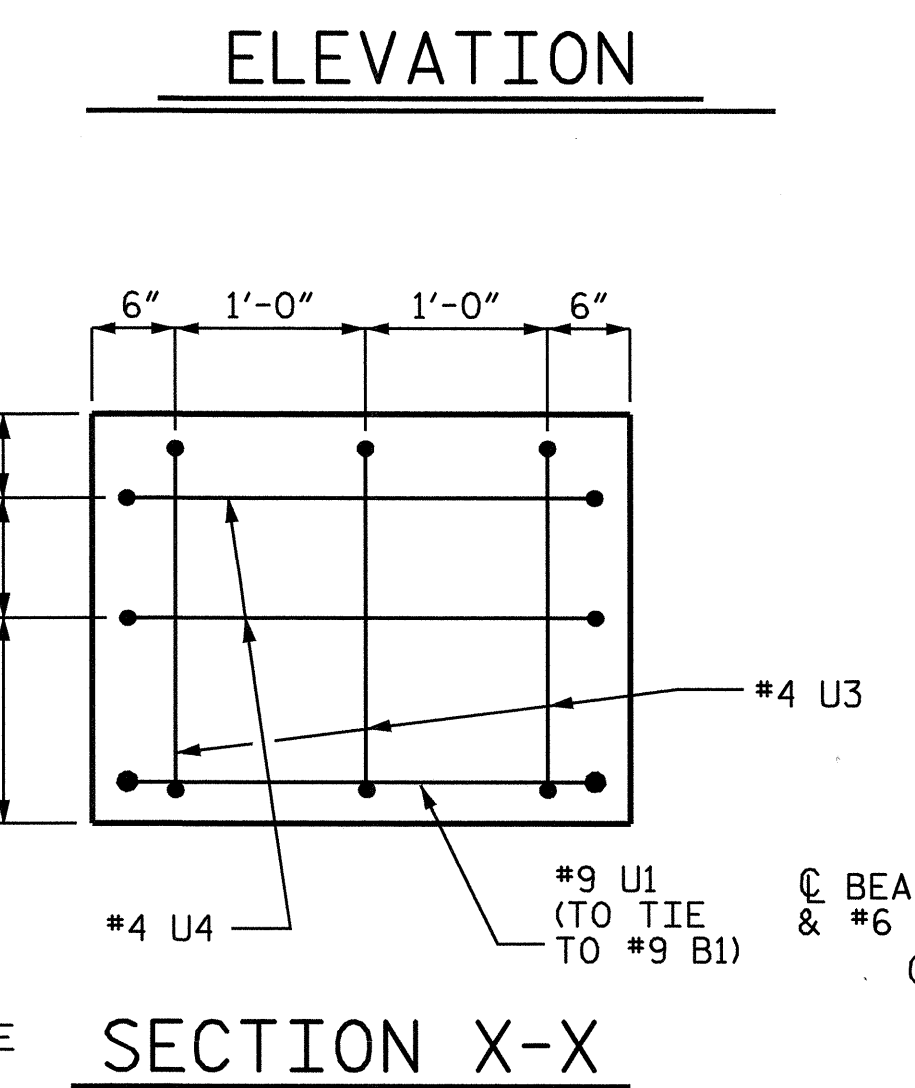
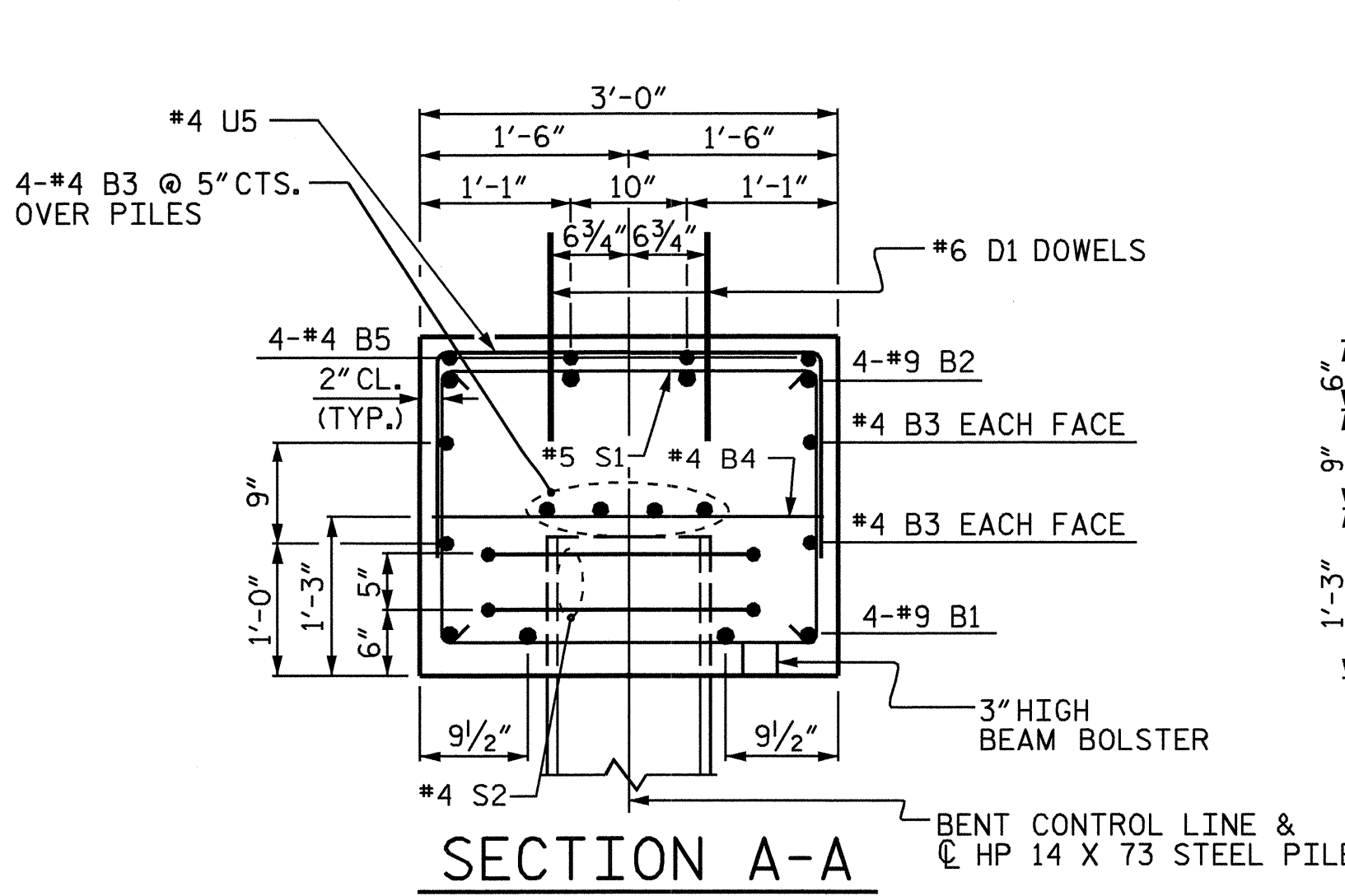
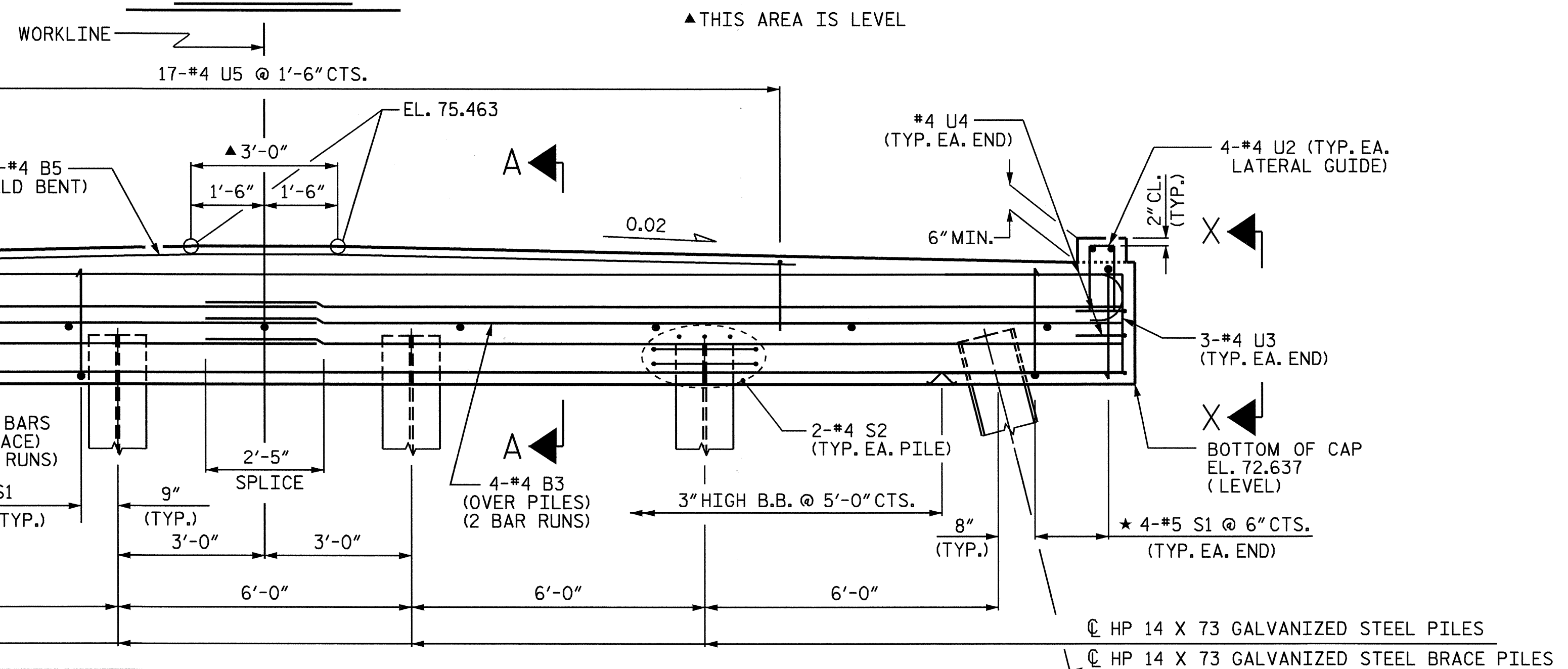
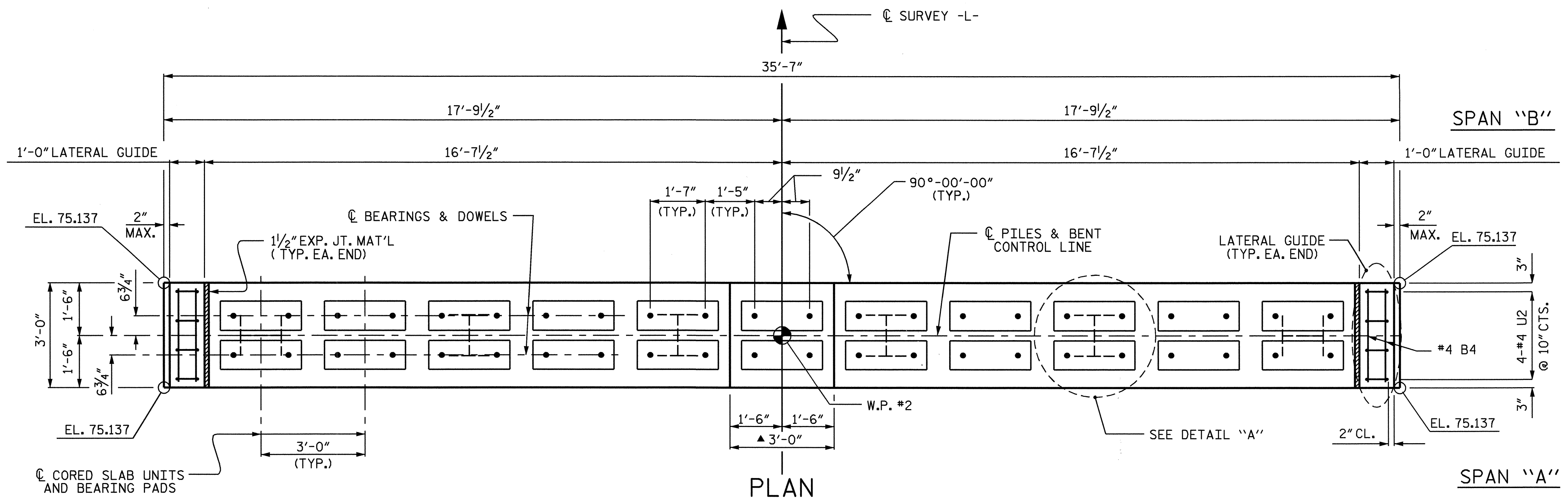
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 1



DRAWN BY : N. PIERCE DATE : 03/06
 CHECKED BY : A.K. PATEL DATE : 03/06

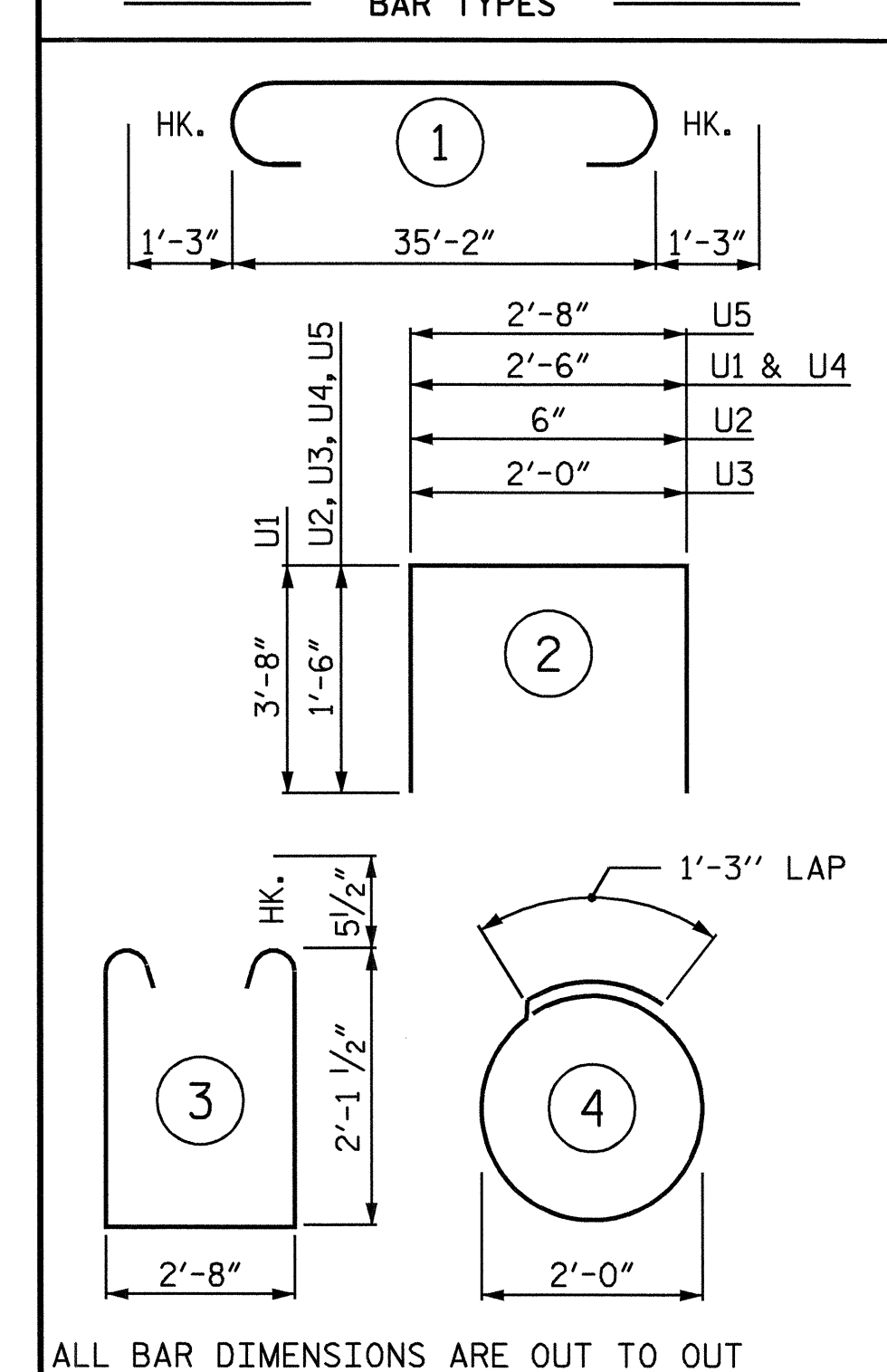
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			20



BILL OF MATERIAL

BENT NO. 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	9	STR	35'-3"	479
B2	4	9		37'-8"	512
B3	16	4	STR	18'-10"	201
B4	13	4	STR	2'-8"	23
B5	4	4	STR	26'-0"	69
D1	44	6	STR	1'-6"	99
S1	43	5	3	7'-10"	351
S2	12	4	4	7'-7"	61
U1	2	9	2	9'-10"	67
U2	8	4	2	3'-6"	19
U3	6	4	2	5'-0"	20
U4	4	4	2	5'-6"	15
U5	17	4	2	5'-8"	64

REINFORCING STEEL 1980 LBS.
 CLASS A CONCRETE BREAKDOWN
 POUR #1 (CAP) 10.6 C.Y.
 POUR #2 (LATERAL GUIDES) 0.1 C.Y.
 TOTAL CLASS A CONCRETE 10.7 C.Y.
 HP 14 x 73 GALVANIZED STEEL PILES
 NO. 6 LIN. FT. 300



NOTES
 STIRRUPS AND "U" BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
 *INVERT ALTERNATE STIRRUPS AS SHOWN.
 THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.
 FOR PILE SPLICE DETAILS, SEE "PILE SPLICE DETAILS" SHEET 2 OF 2 END BENT No. 1.

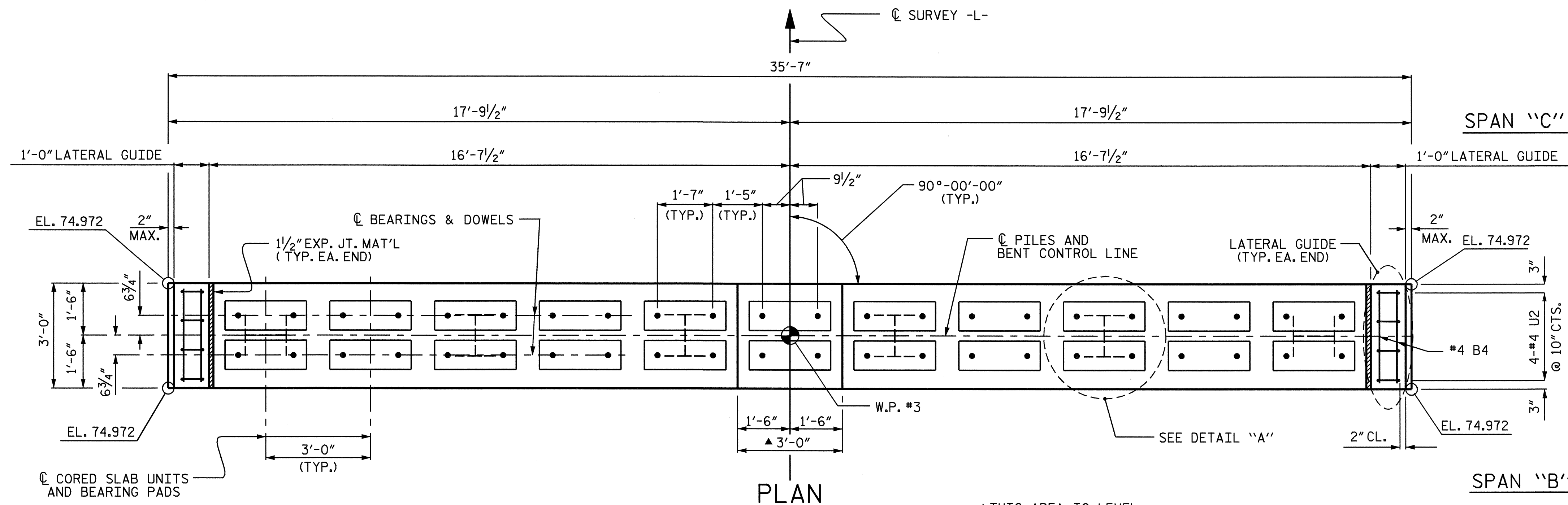
PROJECT NO. B-4269
SAMPSON COUNTY
 STATION: 17+81.43 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT No. 1

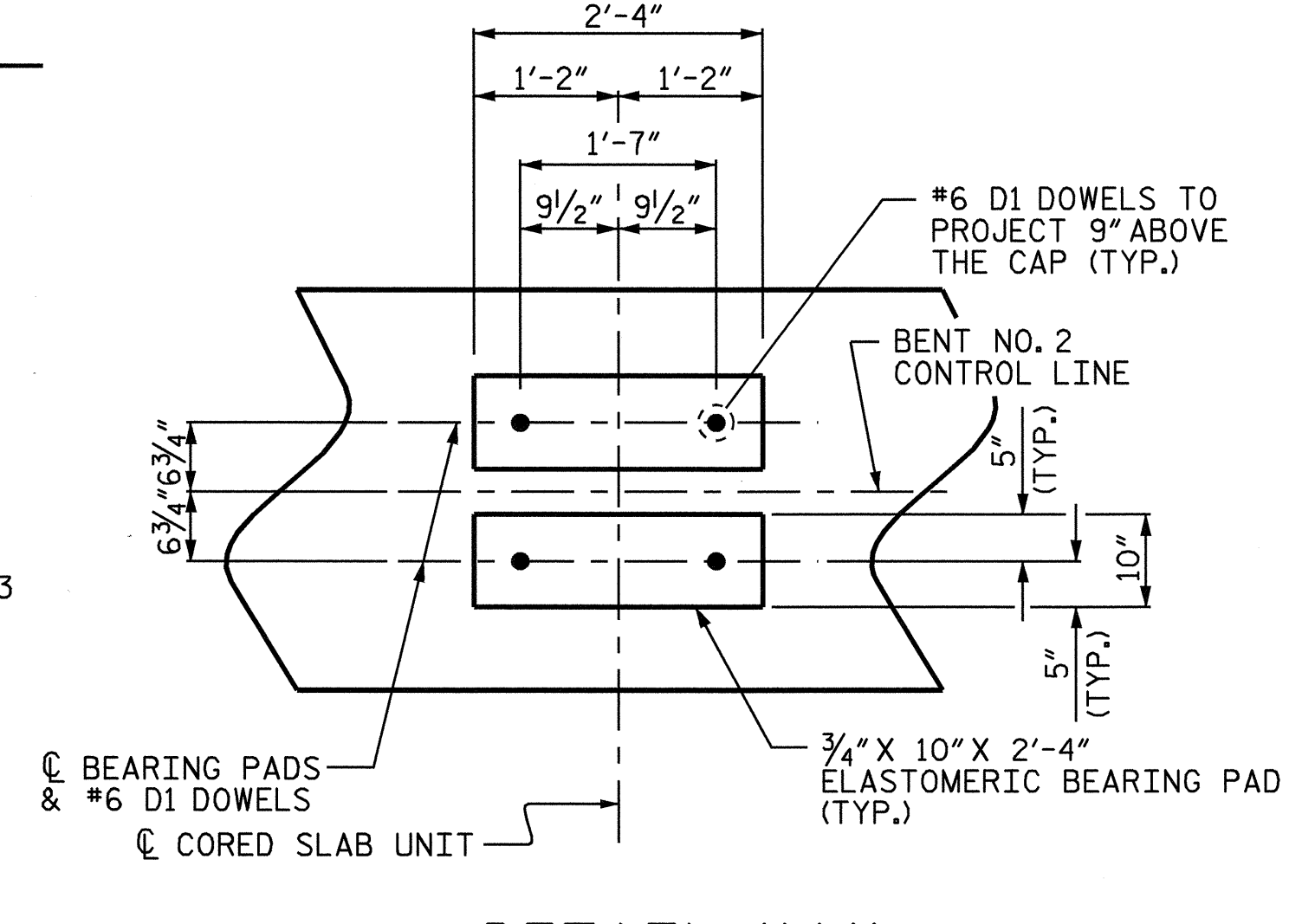
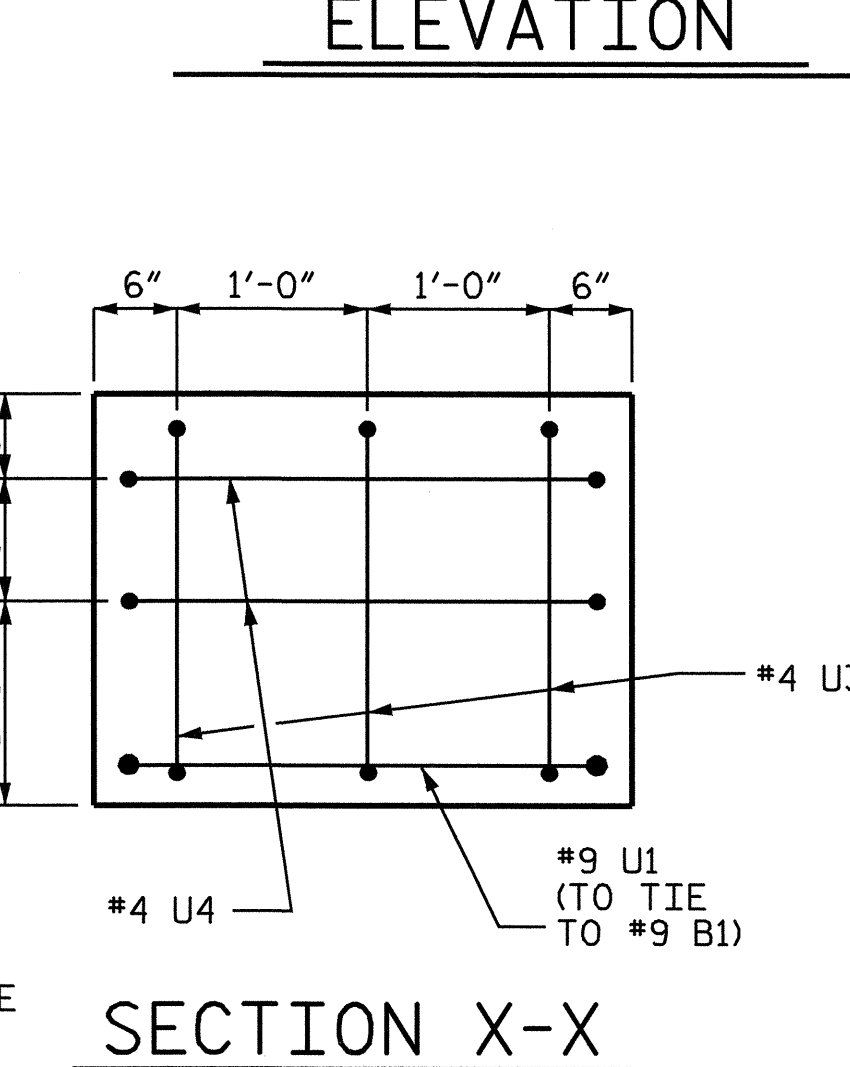
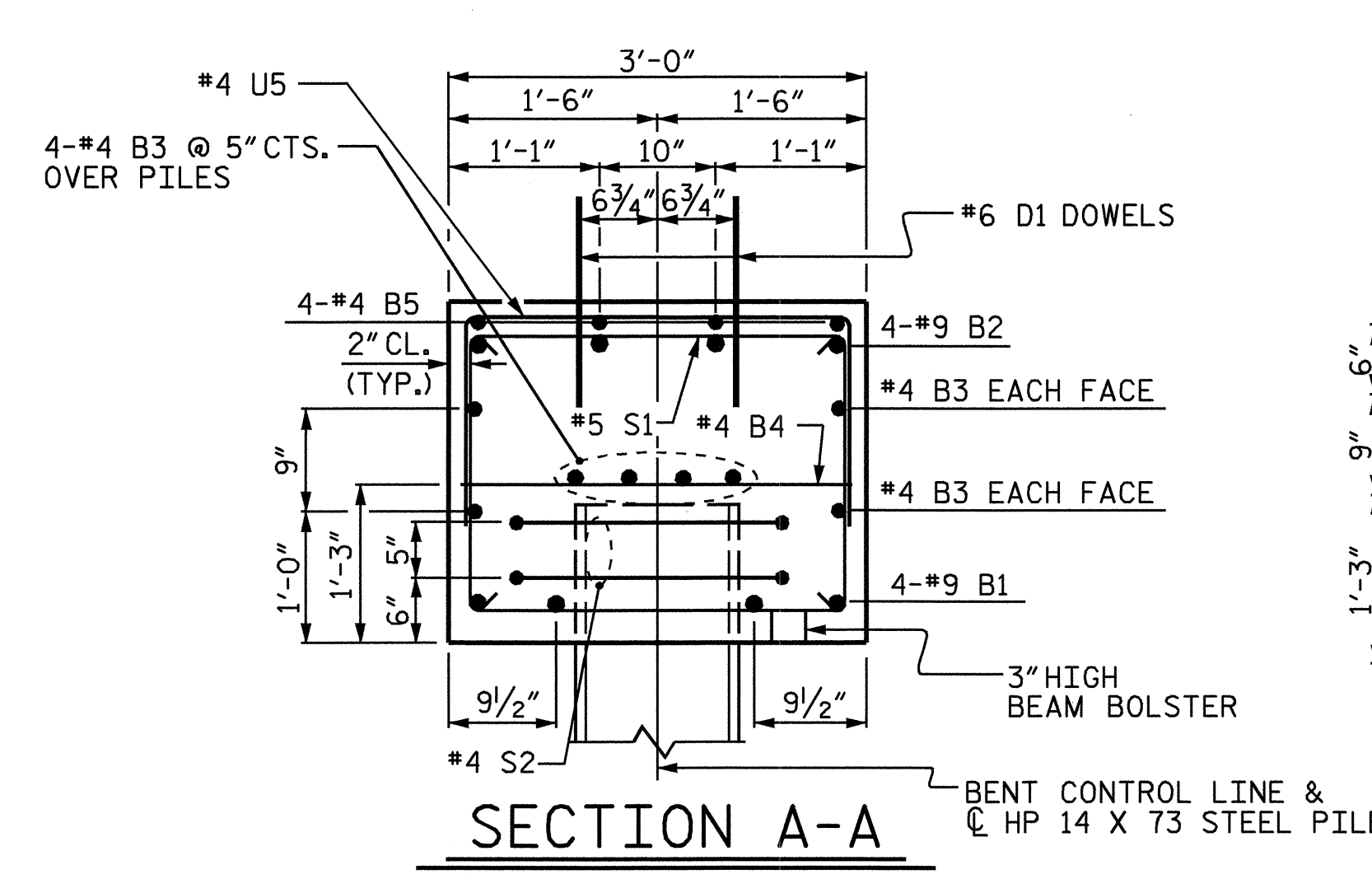
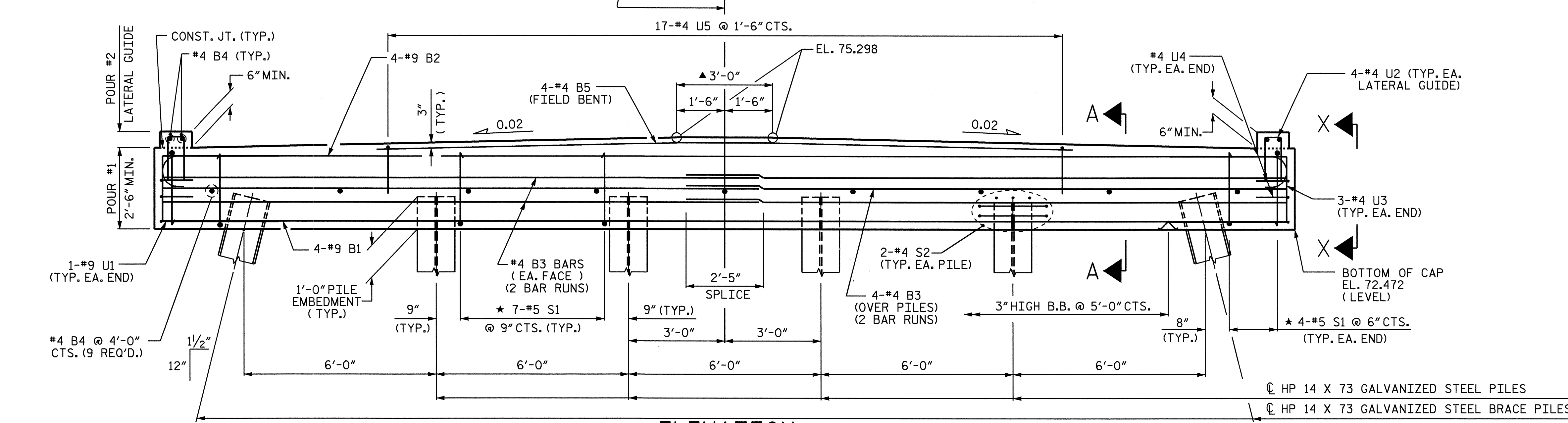


DRAWN BY: P.E. LACKEY DATE: 04/06
 CHECKED BY: S.B. WILLIAMS DATE: 05/06

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



WORKLINE ▲ THIS AREA IS LEVEL



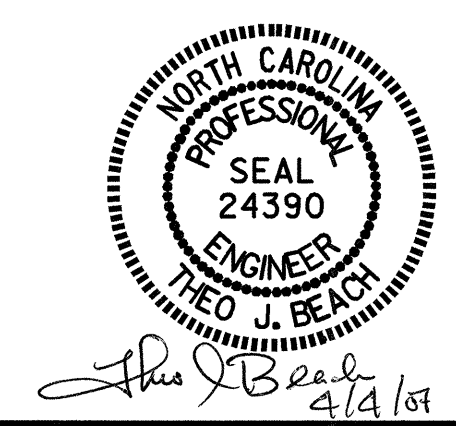
NOTES

STIRRUPS AND "U" BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

*INVERT ALTERNATE STIRRUPS AS SHOWN.

THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

FOR PILE SPLICE DETAILS, SEE "PILE SPLICE DETAILS" SHEET 2 OF 2 END BENT No. 1.



DRAWN BY: P.E. LACKEY DATE: 04/06
 CHECKED BY: S.B. WILLIAMS DATE: 05/06

03-APR-2007 11:52
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 npl/cce

BILL OF MATERIAL

BENT NO. 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	9	STR	35'-3"	479
B2	4	9	1	37'-8"	512
B3	16	4	STR	18'-10"	201
B4	13	4	STR	2'-8"	23
B5	4	4	STR	26'-0"	69
D1	44	6	STR	1'-6"	99
S1	43	5	3	7'-10"	351
S2	12	4	4	7'-7"	61
U1	2	9	2	9'-10"	67
U2	8	4	2	3'-6"	19
U3	6	4	2	5'-0"	20
U4	4	4	2	5'-6"	15
U5	17	4	2	5'-8"	64

REINFORCING STEEL 1980 LBS.

CLASS A CONCRETE BREAKDOWN

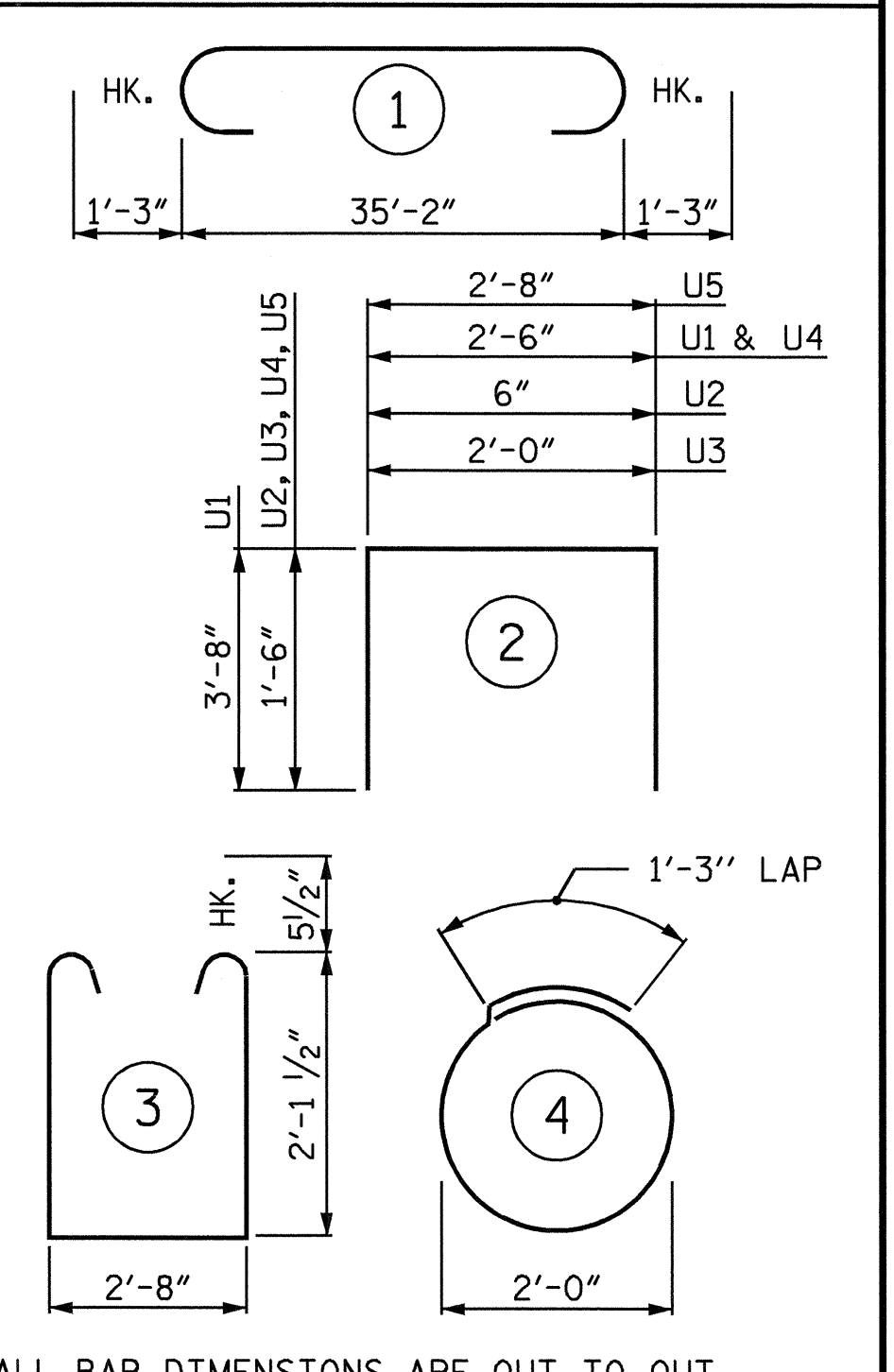
POUR #1 (CAP) 10.6 C.Y.

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

TOTAL CLASS A CONCRETE 10.7 C.Y.

HP 14 x 73 GALVANIZED STEEL PILES
 NO. 6 LIN. FT. 300

BAR TYPES



PROJECT NO. **B-4269**

SAMPSON COUNTY

STATION: **17+81.43 -L-**

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT No. 2

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

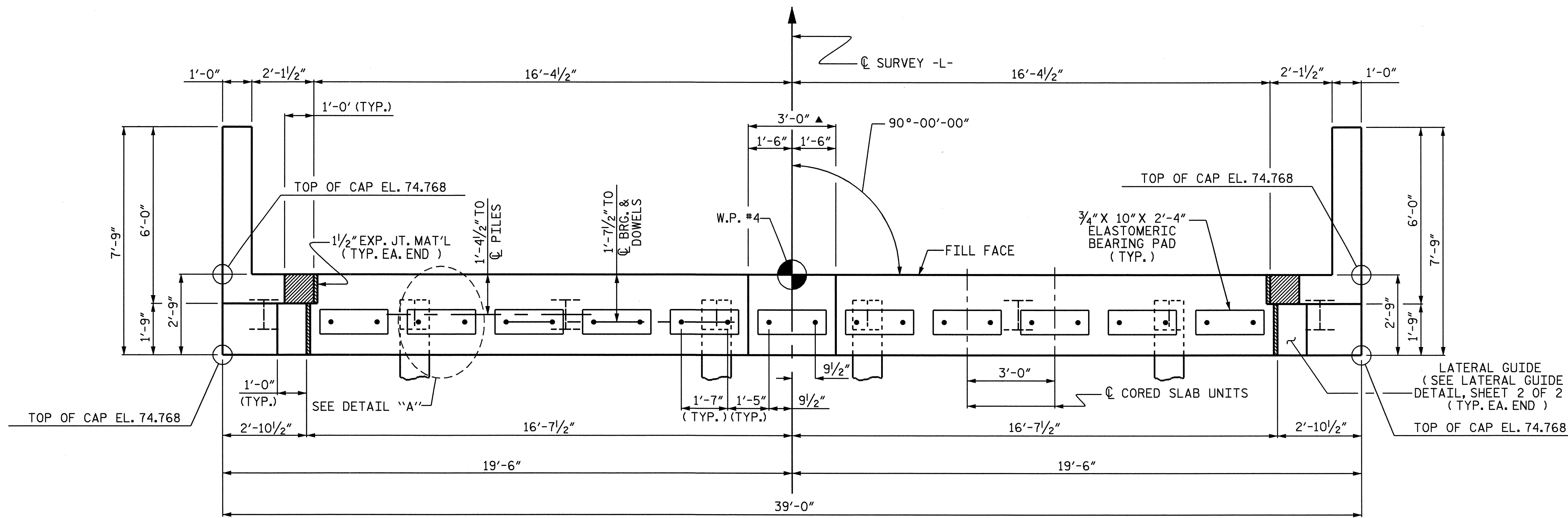
NOTES:

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 CORED SLAB UNITS ARE IN PLACE.

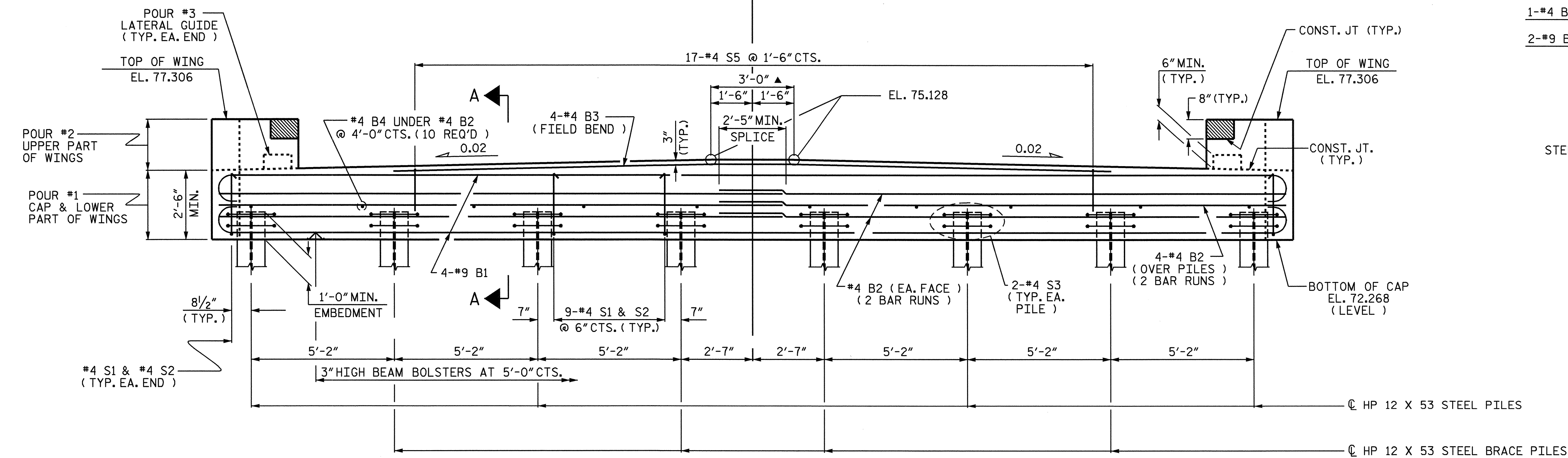
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

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

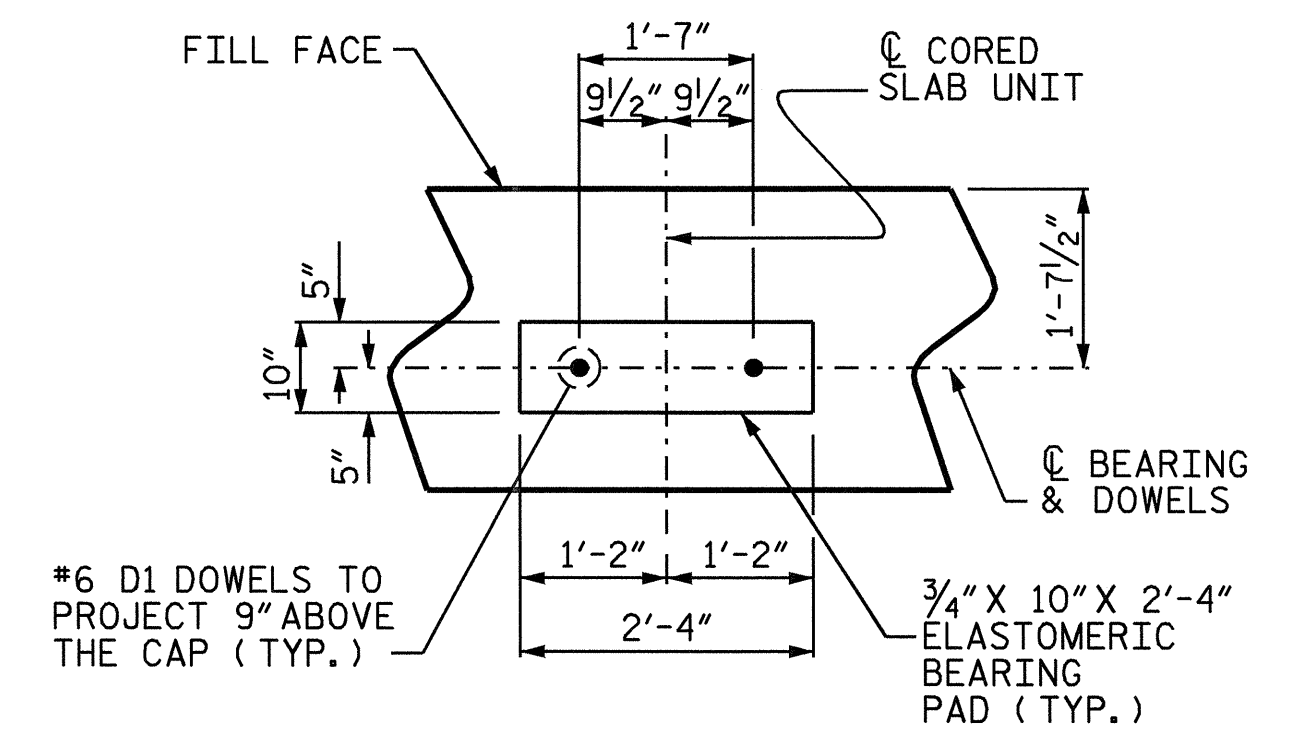


PLAN

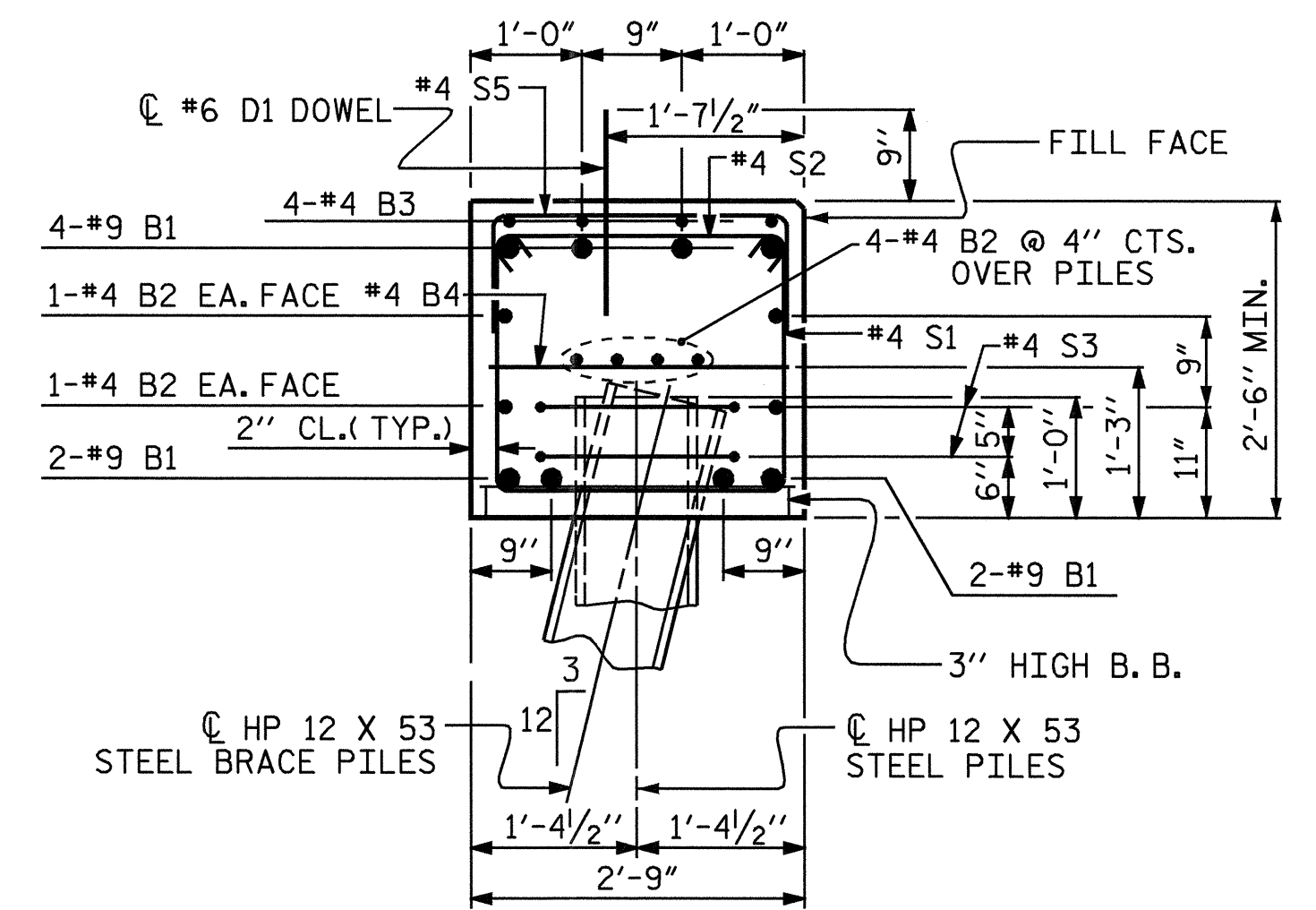
▲ THIS AREA IS LEVEL



ELEVATION



DETAIL "A"



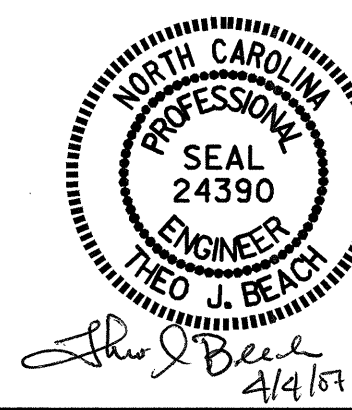
SECTION A-A

PROJECT NO. B-4269
SAMPSON COUNTY
 STATION: 17+81.43 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

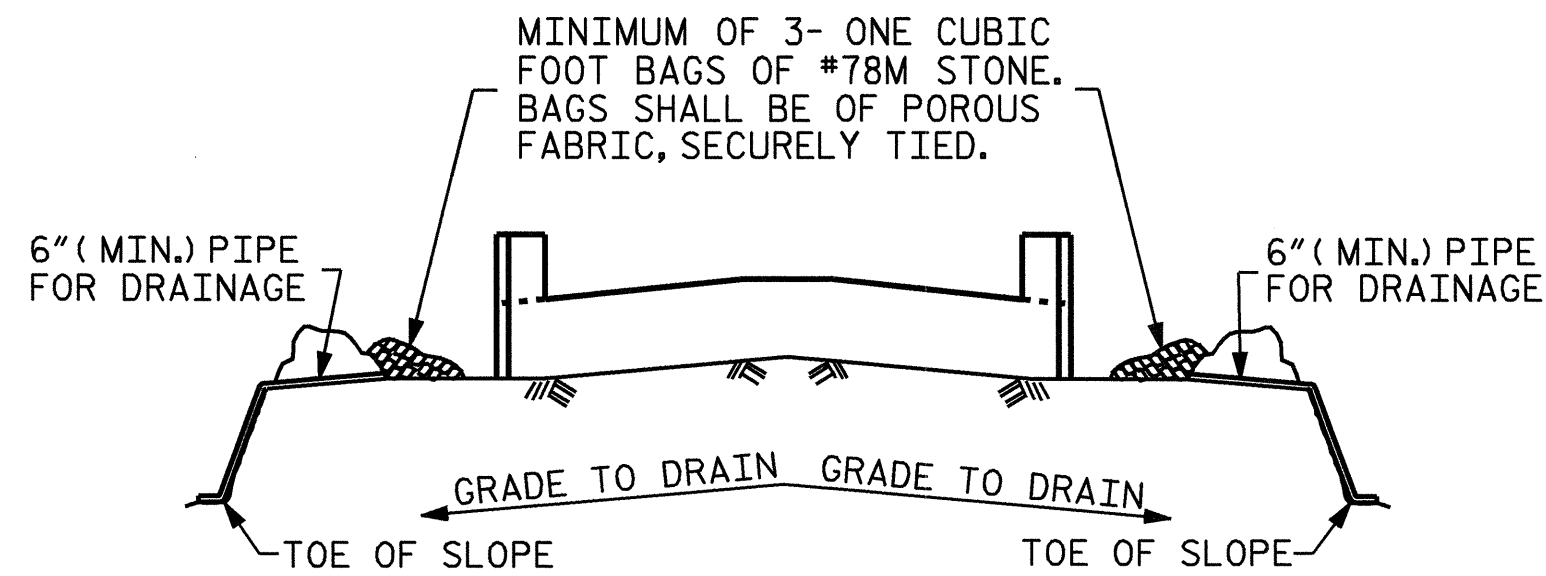
SUBSTRUCTURE
 END BENT No. 2



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

DRAWN BY: N. PIERCE DATE: 03/06
 CHECKED BY: A.K. PATEL DATE: 03/06

03-APR-2007 11:52
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 nptce

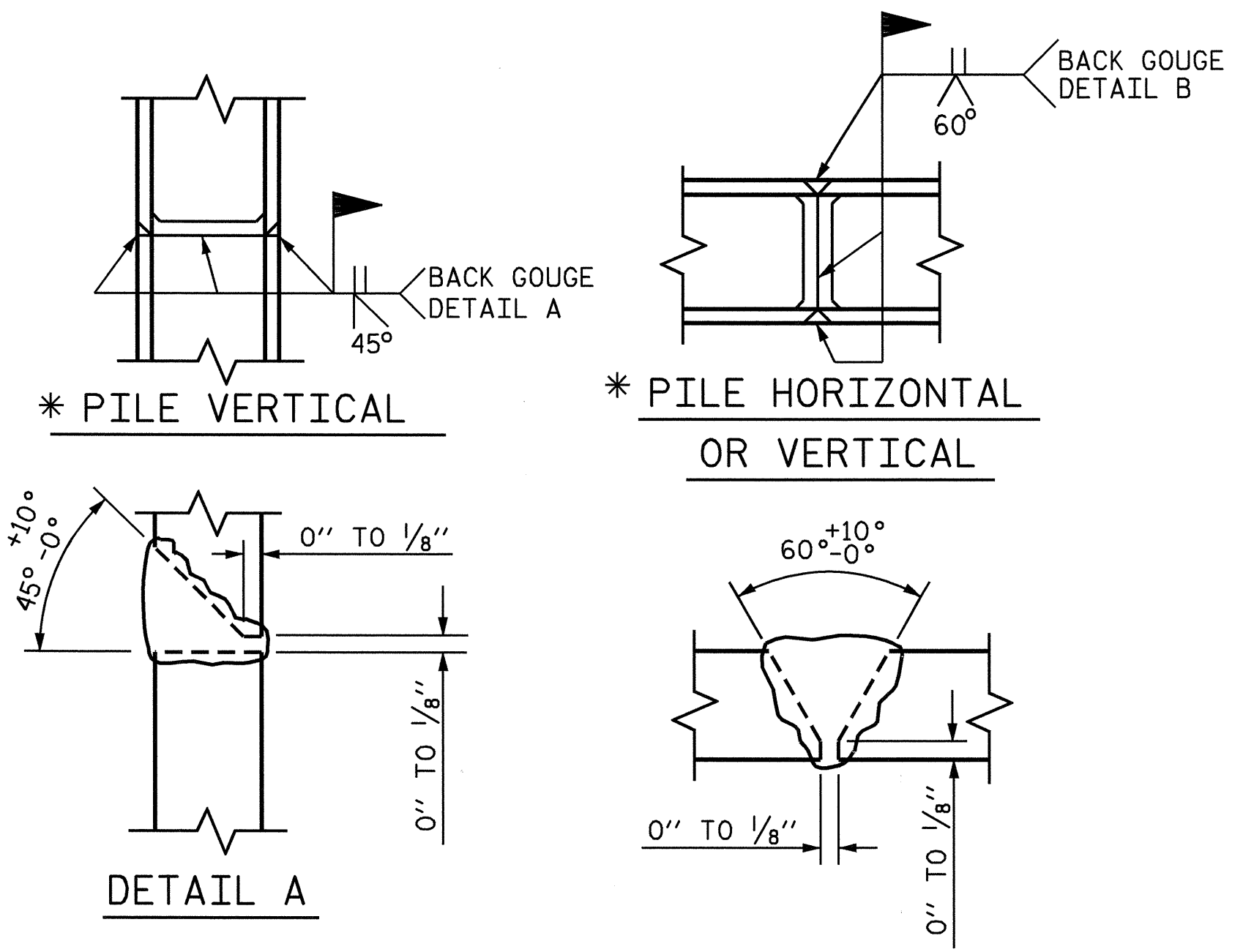


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

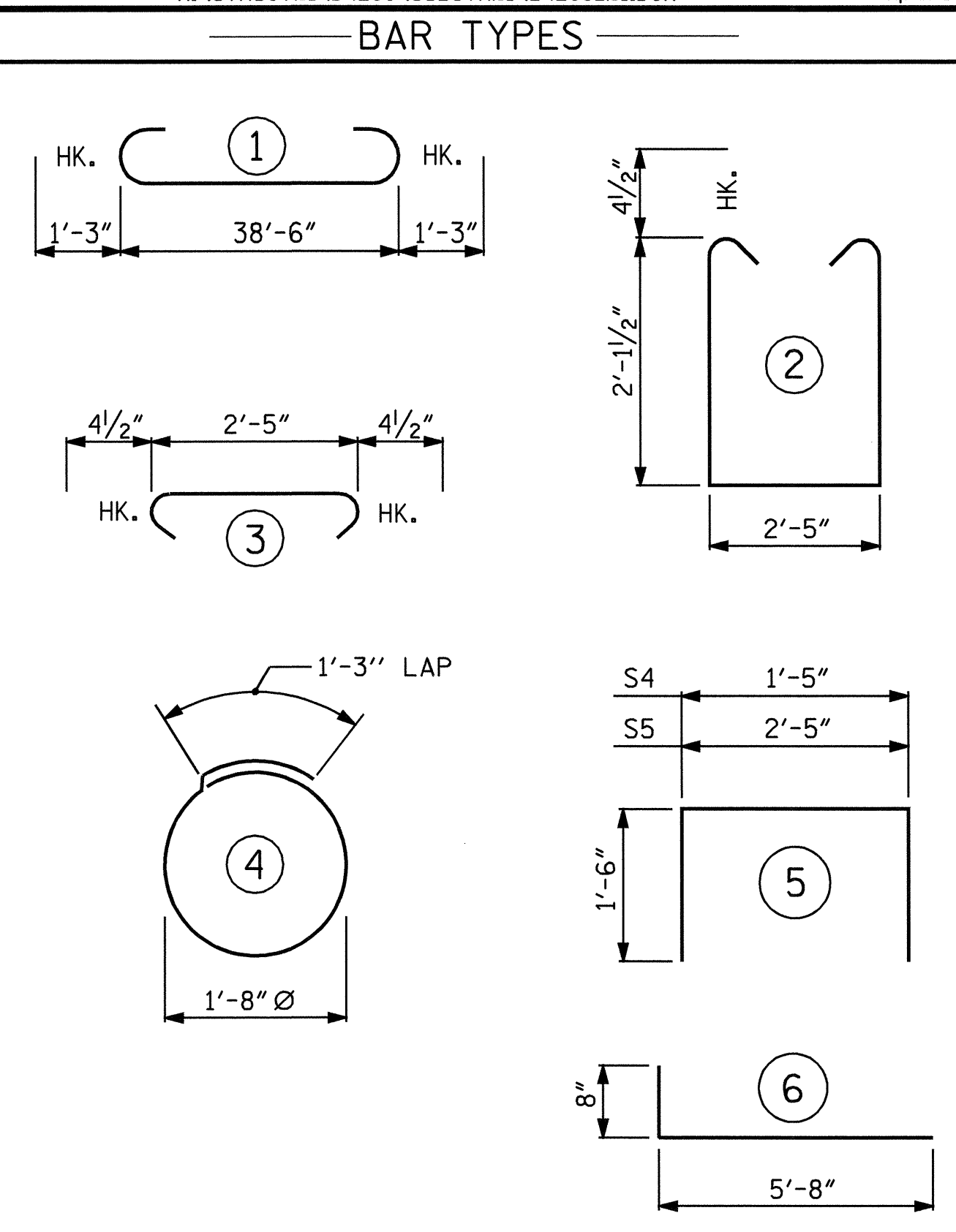
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



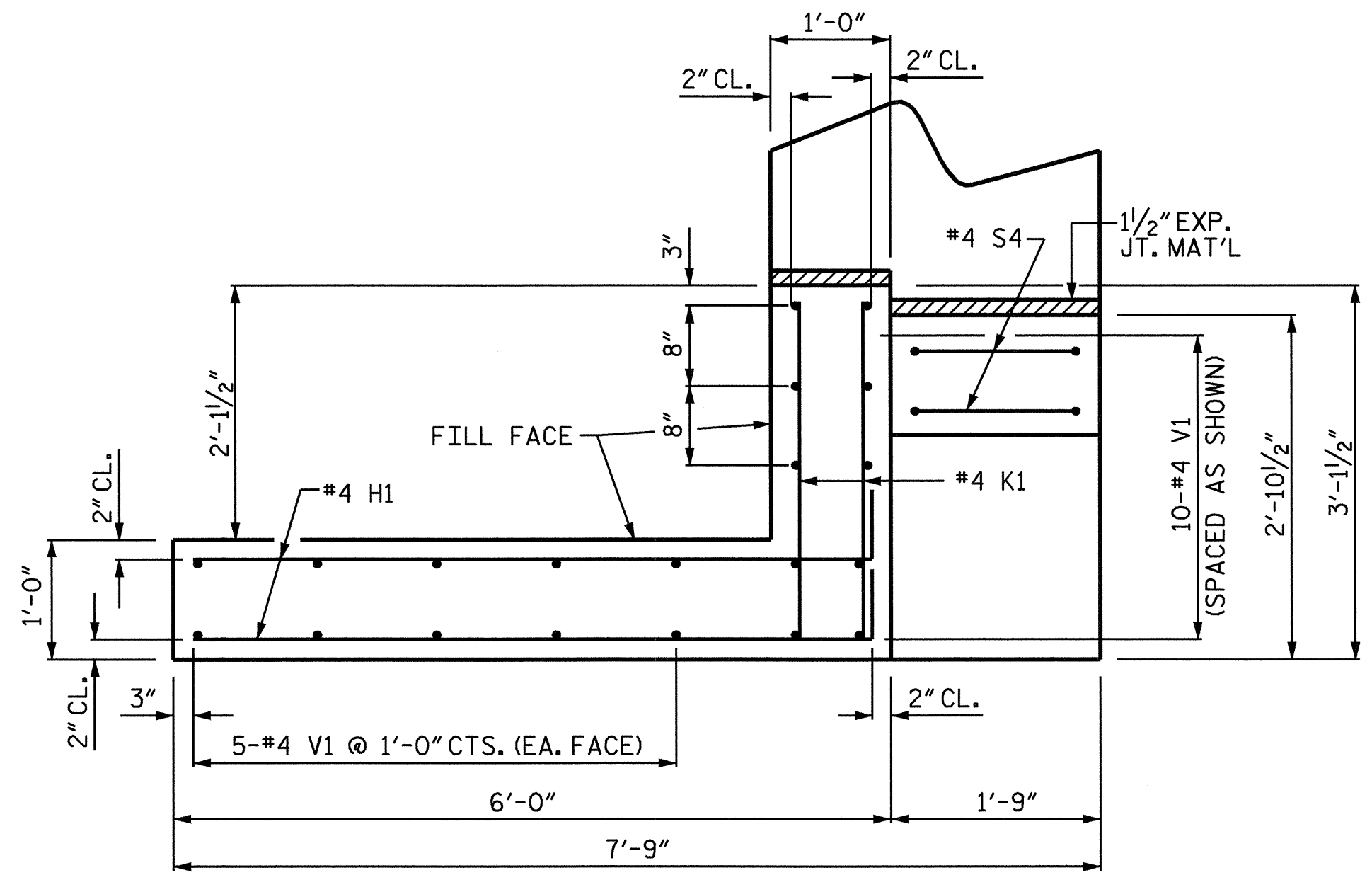
*POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



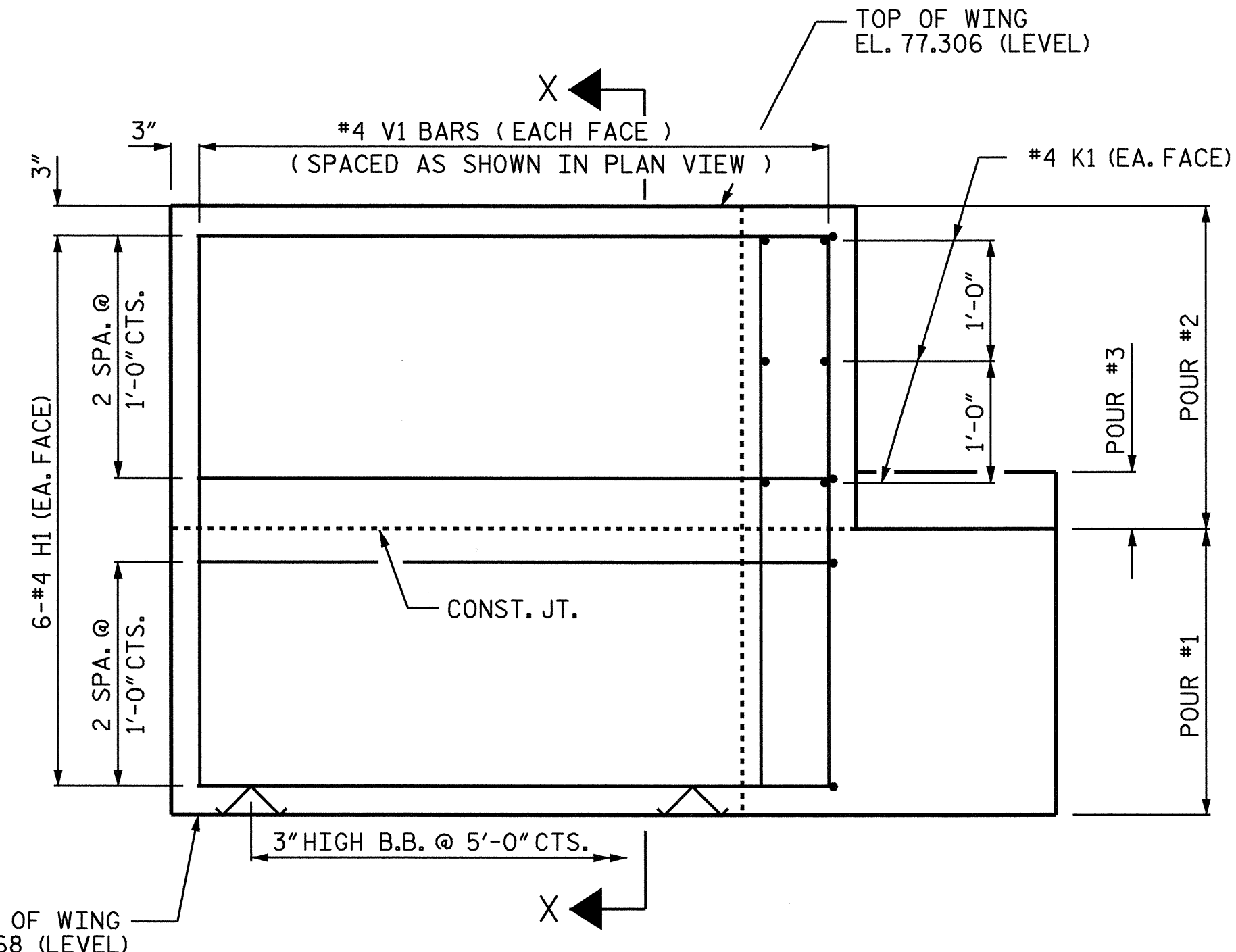
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT No. 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	9		41'-0"	1115
B2	16	4	STR	20'-7"	220
B3	4	4	STR	26'-0"	69
B4	10	4	STR	2'-5"	16
D1	22	6	STR	1'-6"	50
H1	24	4	6	6'-4"	102
K1	12	4	STR	2'-9"	22
S1	65	4	2	7'-5"	322
S2	65	4	3	3'-2"	137
S3	16	4	4	6'-6"	69
S4	4	4	5	4'-5"	12
S5	17	4	5	5'-5"	62
V1	40	4	STR	4'-8"	125
REINFORCING STEEL					2123 LBS.
CLASS A CONCRETE BREAKDOWN					
POUR #1	CAP & LOWER PART OF WINGS				11.6 C.Y.
POUR #2	UPPER PART OF WINGS				1.3 C.Y.
POUR #3	LATERAL GUIDES				0.1 C.Y.
TOTAL CLASS A CONCRETE					13.0 C.Y.
HP 12 X 53 STEEL PILES					
No. = 8 LIN. FT. = 360					



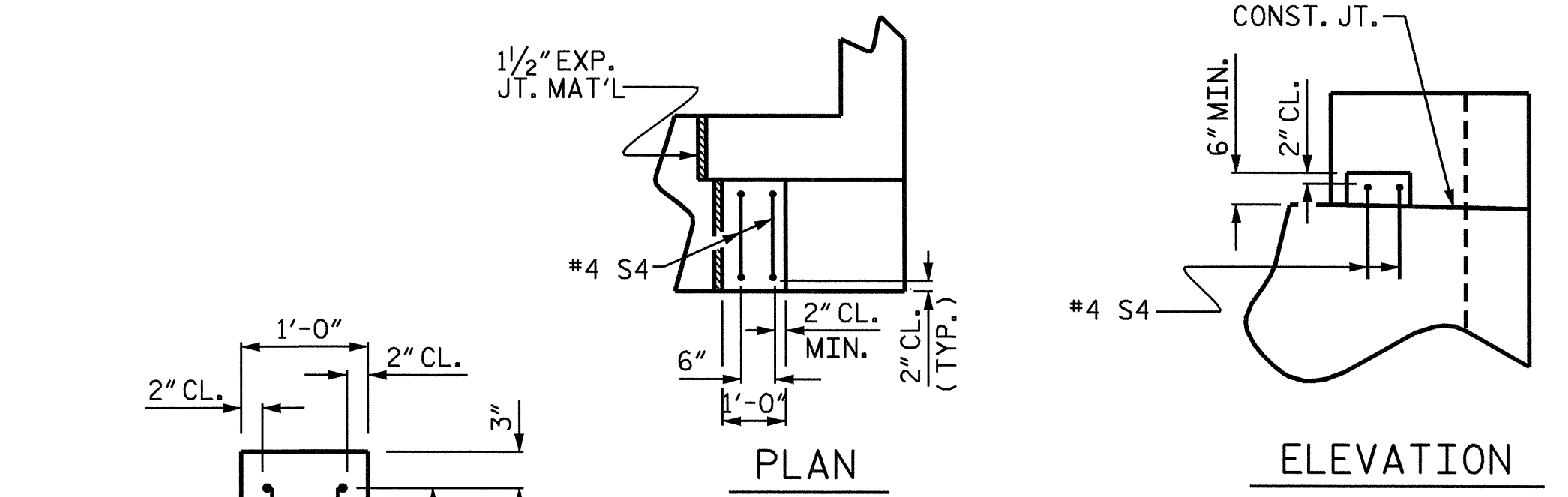
PLAN OF WING

(LEFT WING SHOWN, RIGHT WING SIMILAR)



ELEVATION OF WING

(LEFT WING SHOWN, RIGHT WING SIMILAR)



LATERAL GUIDE DETAIL

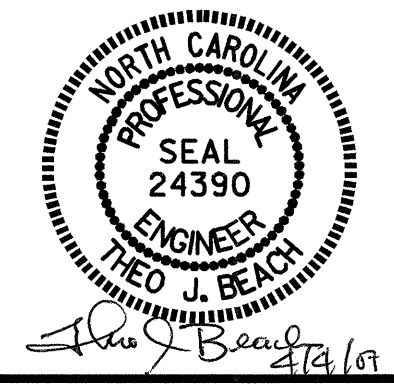
(RIGHT LATERAL GUIDE SHOWN, LEFT GUIDE SIMILAR)

PROJECT NO. B-4269
SAMPSON COUNTY
 STATION: 17+81.43 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 2

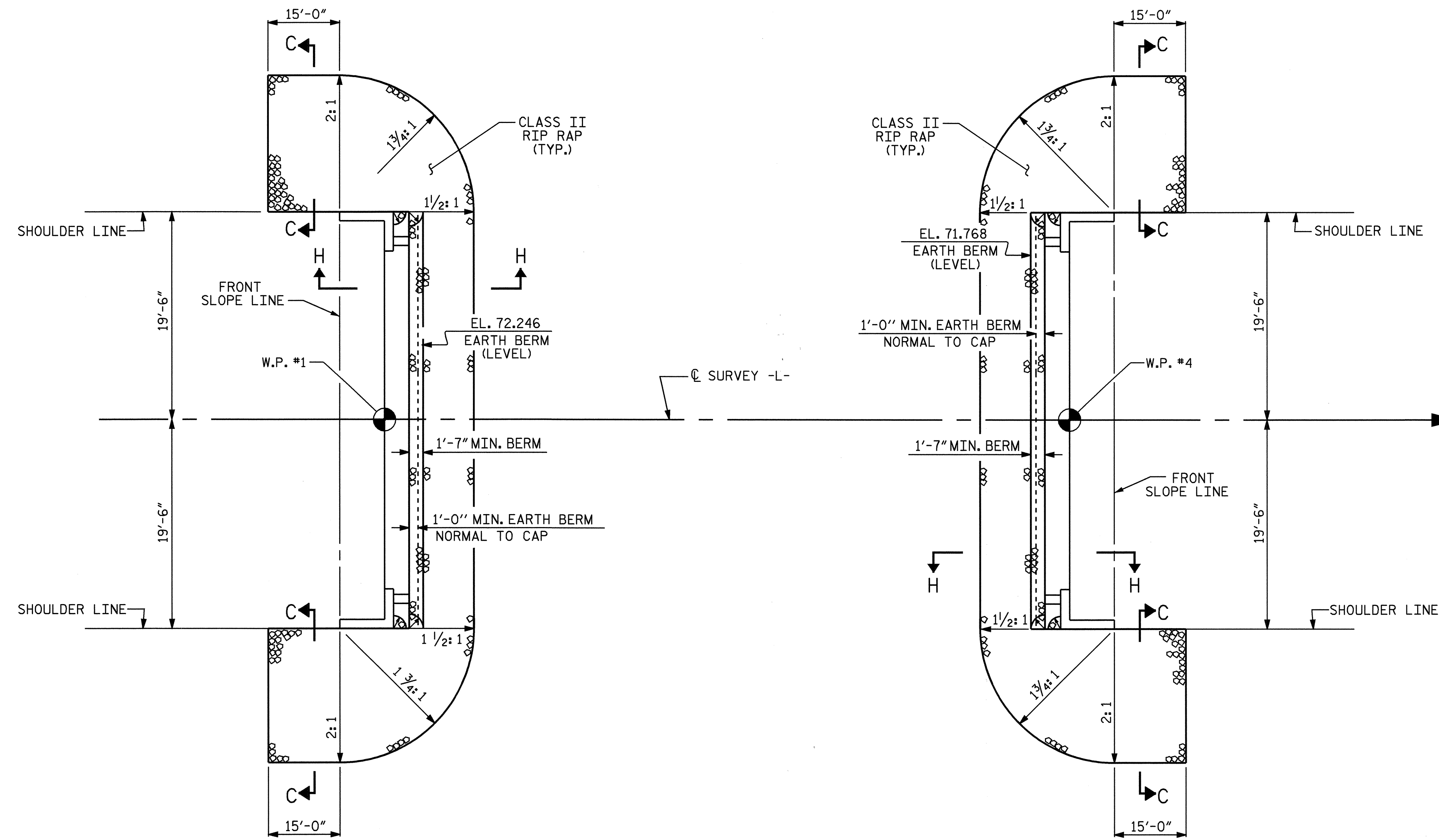


DRAWN BY: N. PIERCE DATE: 03/06
 CHECKED BY: A.K. PATEL DATE: 03/06

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

NOTES :

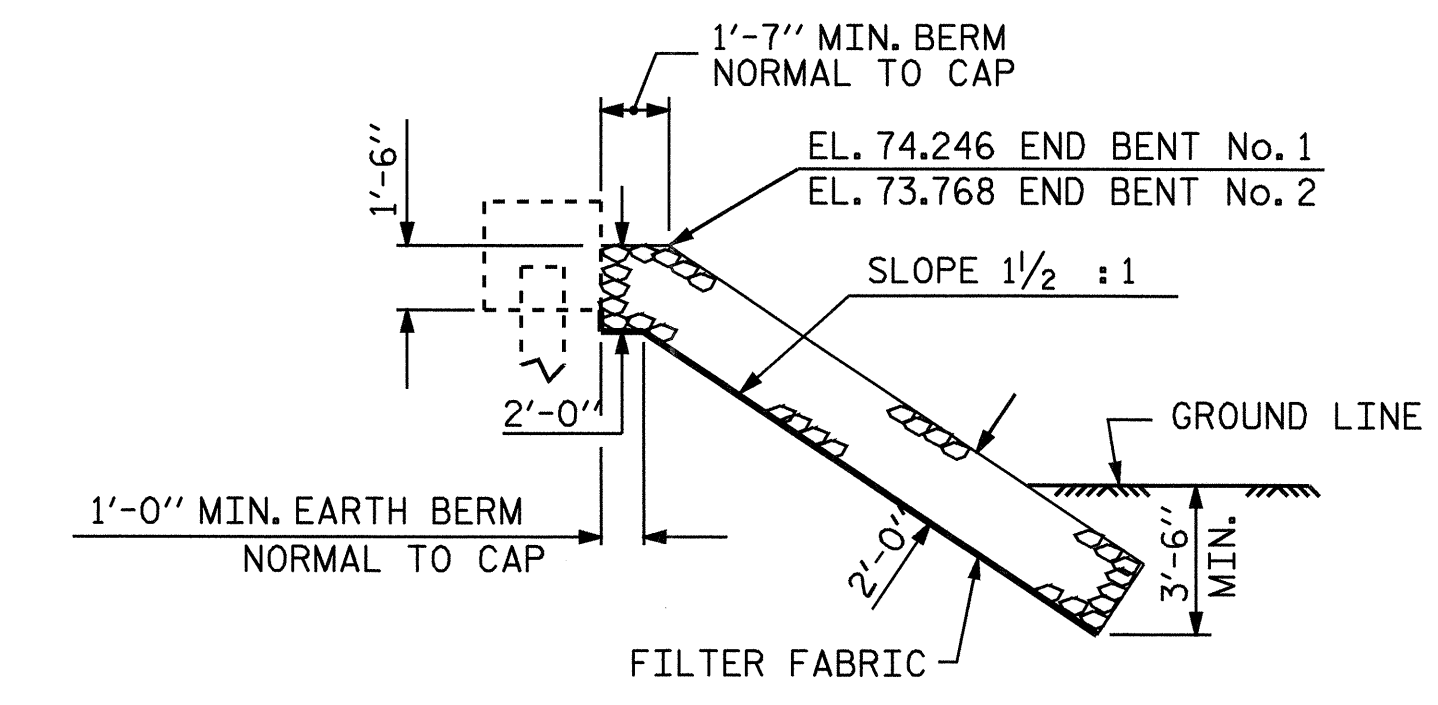
THE COST OF THE FILTER FABRIC SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR RIP RAP CLASS II



END BENT No. 1

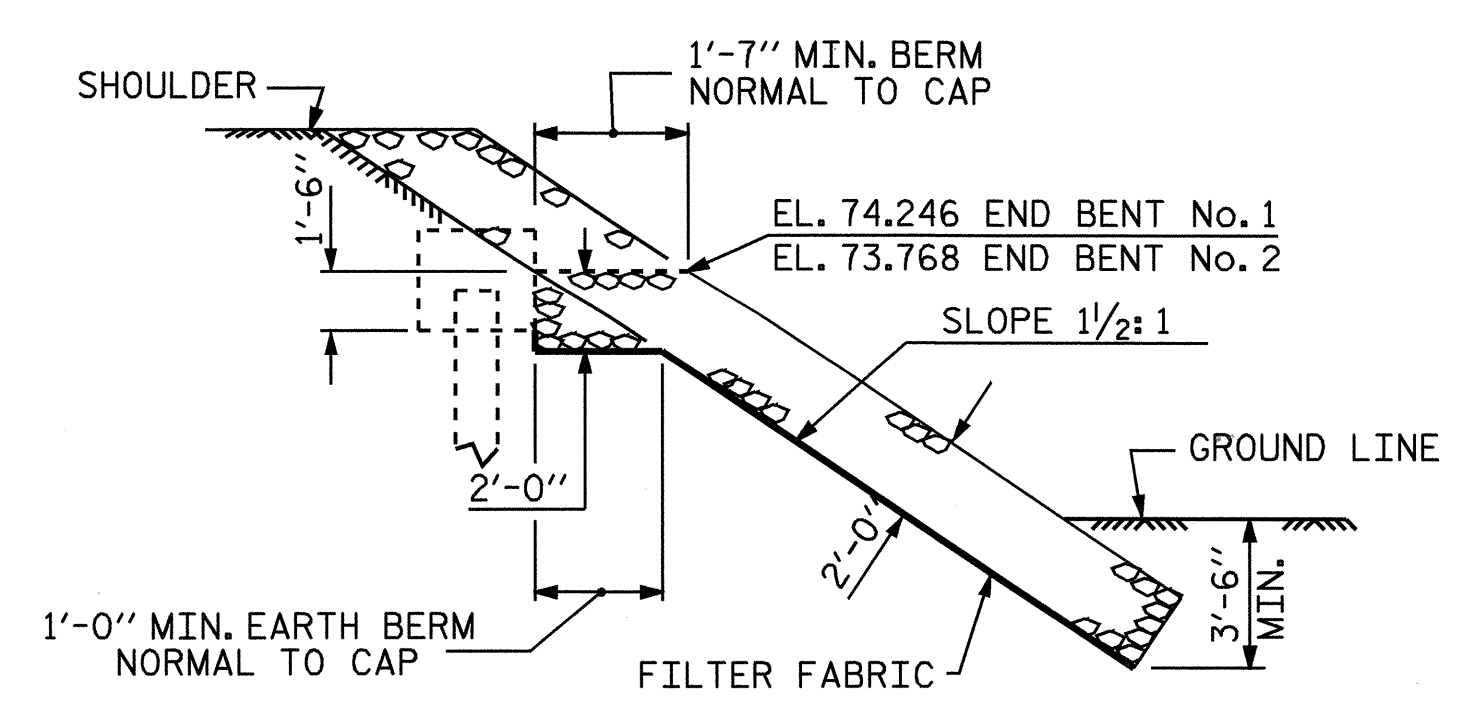
END BENT No. 2

PLAN

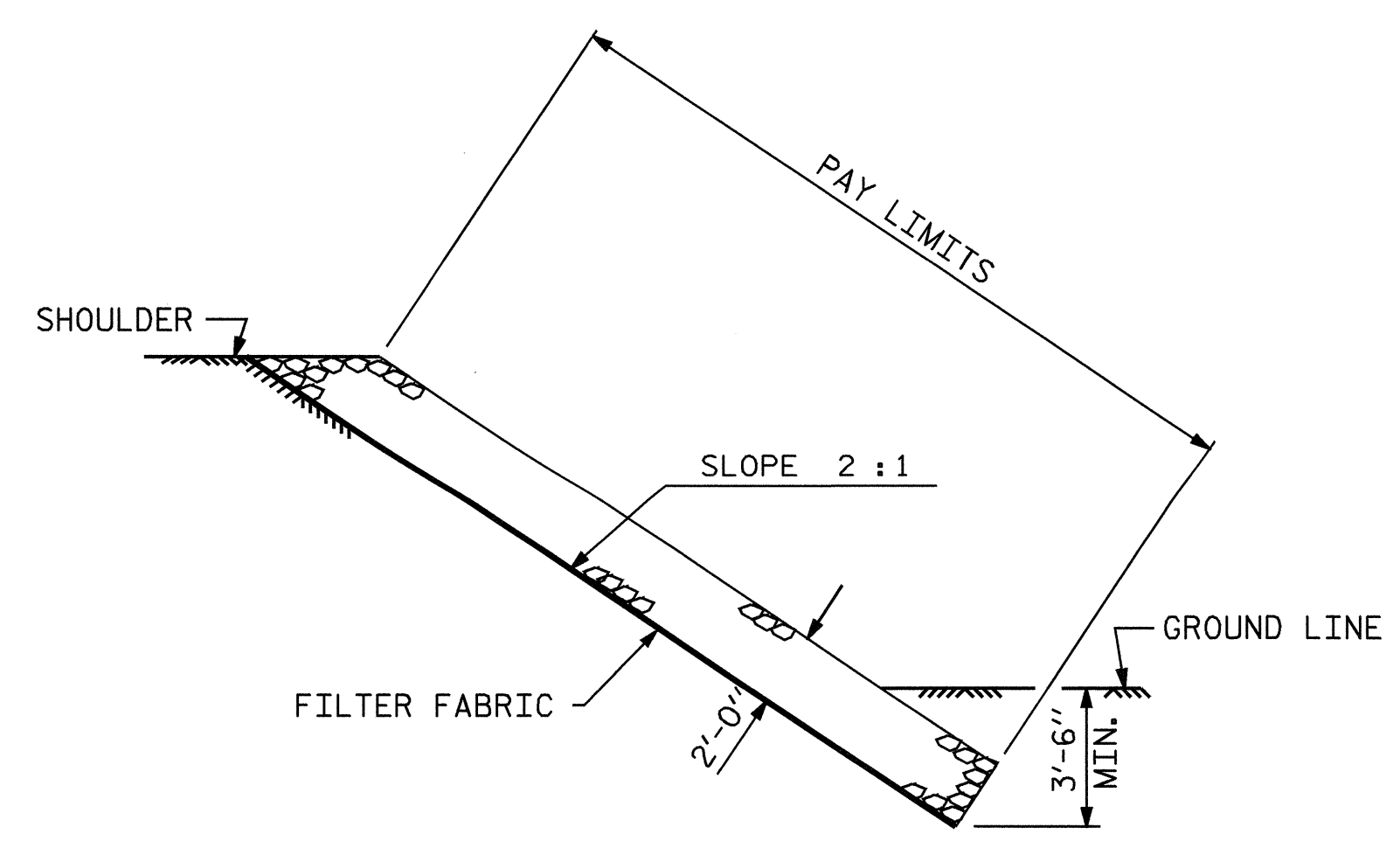


SECTION C-C
BERM RIP RAPPED

ESTIMATED QUANTITIES		
BRIDGE @ STA. 17+81.43 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	139	155
END BENT 2	128	142



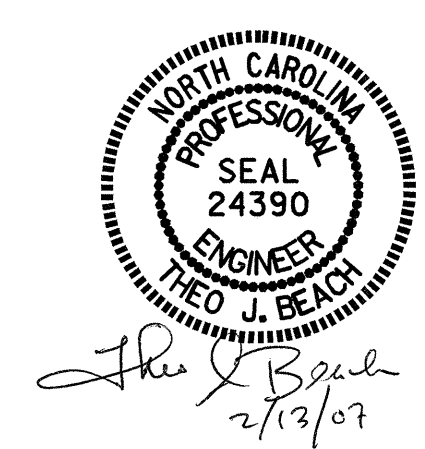
SECTION H-H



SECTION C-C

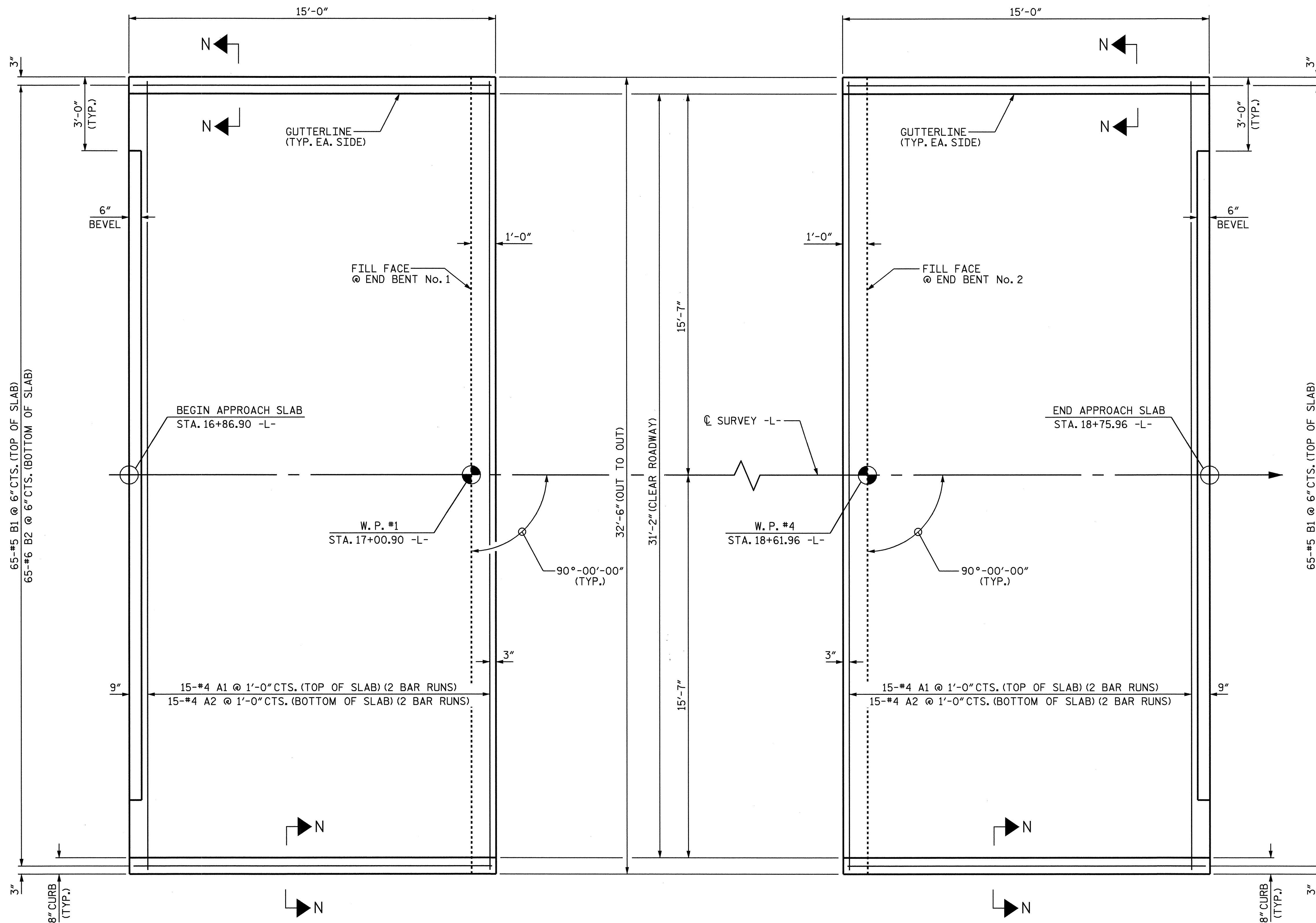
PROJECT NO. B-4269
SAMPSON COUNTY
 STATION: 17+81.43 -L-

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



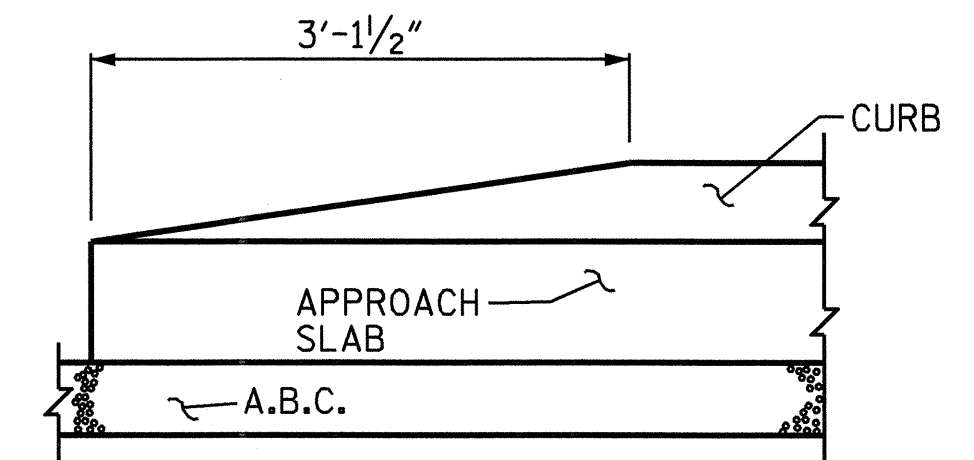
REVISIONS						SHEET NO. S-18
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			

ASSEMBLED BY : S.B. WILLIAMS	DATE : 3/06
CHECKED BY : A.K. PATEL	DATE : 3/06
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

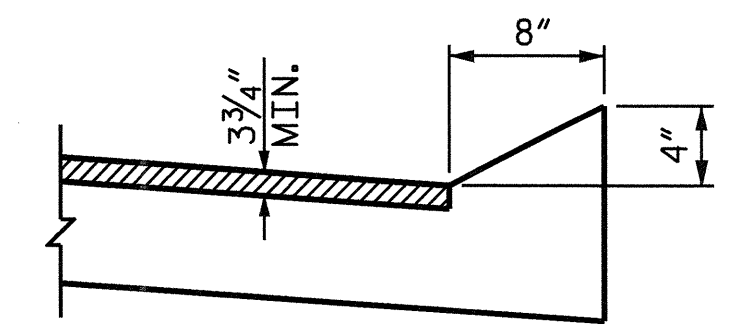


PLAN AT END BENT No. 1

PLAN AT END BENT No. 2



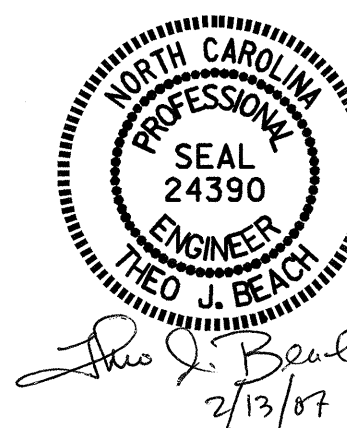
END OF CURB WITHOUT SHOULDER BERM GUTTER



SECTION N-N
CURB DETAILS

PROJECT NO. B-4269
SAMPSON COUNTY
 STATION: 17+81.43 -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-19	
1			3			TOTAL SHEETS 20	
2			4				

DRAWN BY : S. B. WILLIAMS DATE : 3/06
 CHECKED BY : A. K. PATEL DATE : 3/06

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.

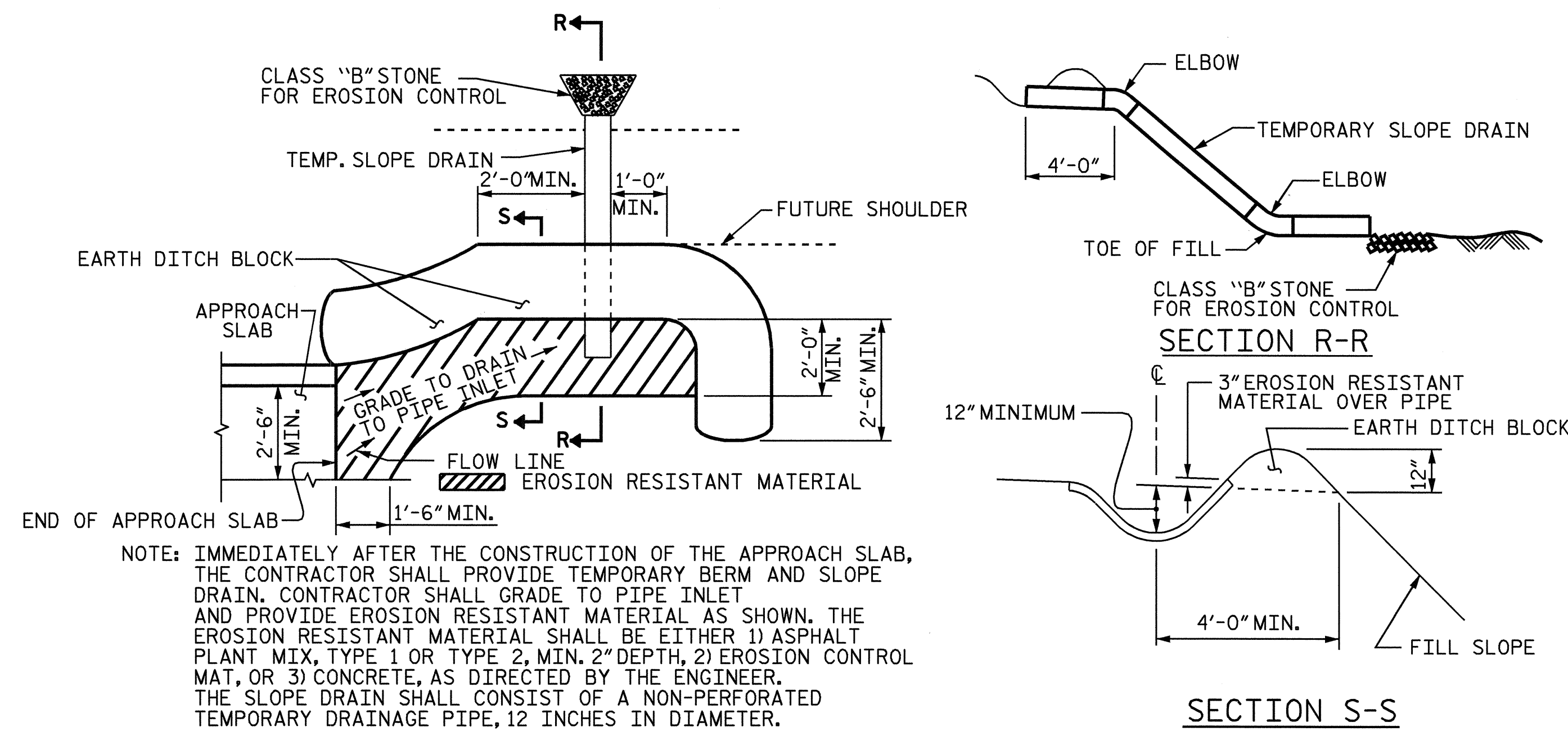
FOR JOINT DETAILS, SEE "PRESTRESSED CONCRETE CORED SLAB UNIT" SHEETS.

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.

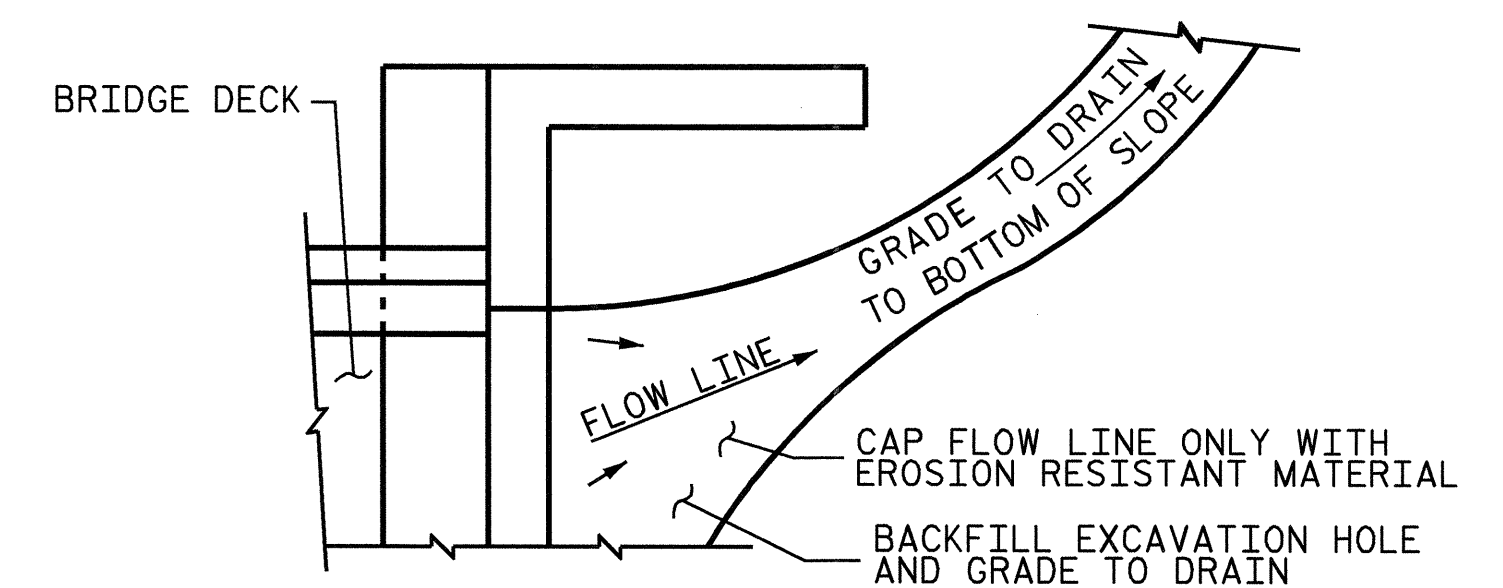
BILL OF MATERIAL

APPROACH SLAB AT EB #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	30	#4	STR	17'-1"	342
A2	30	#4	STR	17'-0"	341
*B1	65	#5	STR	14'-2"	960
B2	65	#6	STR	14'-8"	1432
REINFORCING STEEL				LBS.	1773
*EPOXY COATED REINFORCING STEEL				LBS.	1302
CLASS AA CONCRETE				C. Y.	20.1
APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	30	#4	STR	17'-1"	342
A2	30	#4	STR	17'-0"	341
*B1	65	#5	STR	14'-2"	960
B2	65	#6	STR	14'-8"	1432
REINFORCING STEEL				LBS.	1773
*EPOXY COATED REINFORCING STEEL				LBS.	1302
CLASS AA CONCRETE				C. Y.	20.1



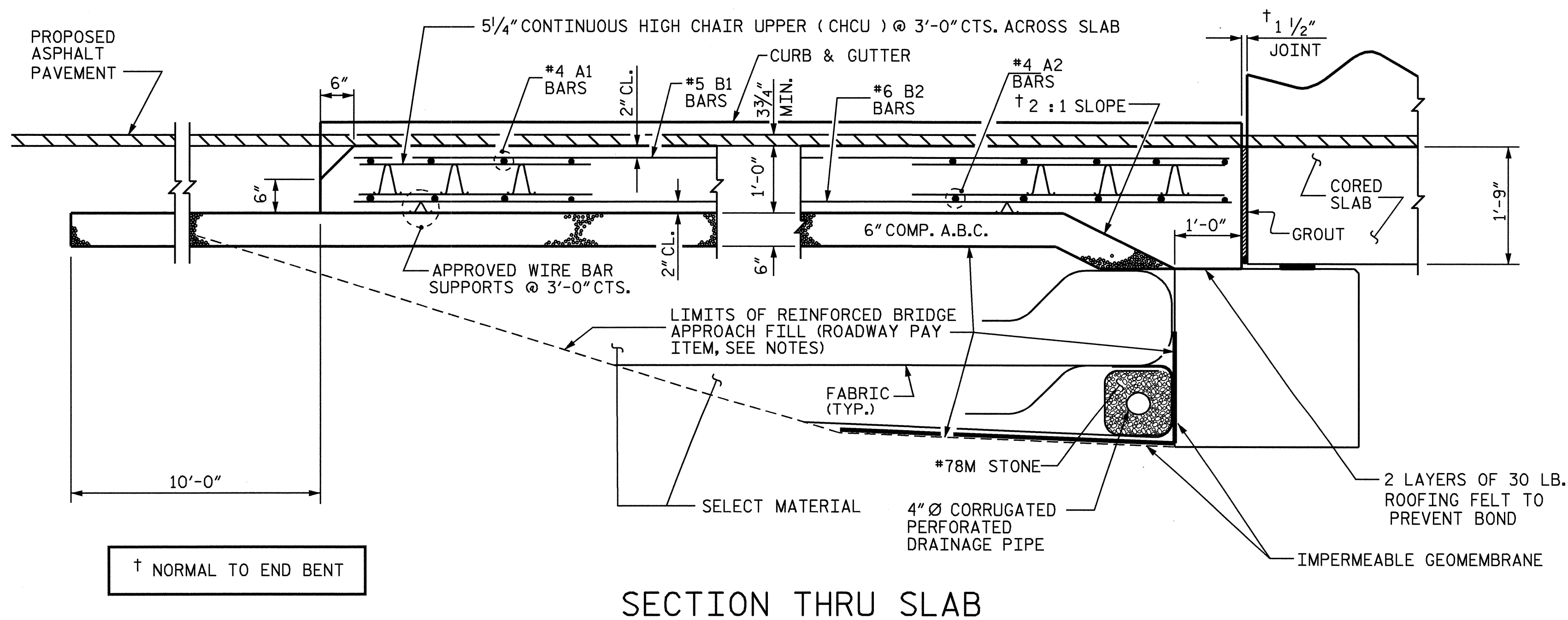
NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

TEMPORARY BERM AND SLOPE DRAIN DETAILS
(TO BE USED WHEN SHOULDER BERM GUTTER IS USED)



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



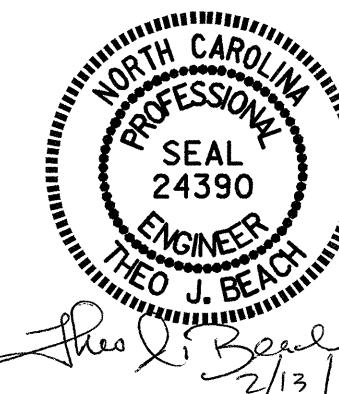
SECTION THRU SLAB

PROJECT NO. B-4269
SAMPSON COUNTY
 STATION: 17+81.43 -L-

SHEET 2 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-20	
1			3			TOTAL SHEETS	
2			4			20	

ASSEMBLED BY: S. B. WILLIAMS	DATE: 3/06
CHECKED BY: A. K. PATEL	DATE: 3/06
DRAWN BY: FCJ	6/87
CHECKED BY: EGA	6/87
REV. 10/17/00	RWW/LES
REV. 7/10/01	LES/ROR
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.

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