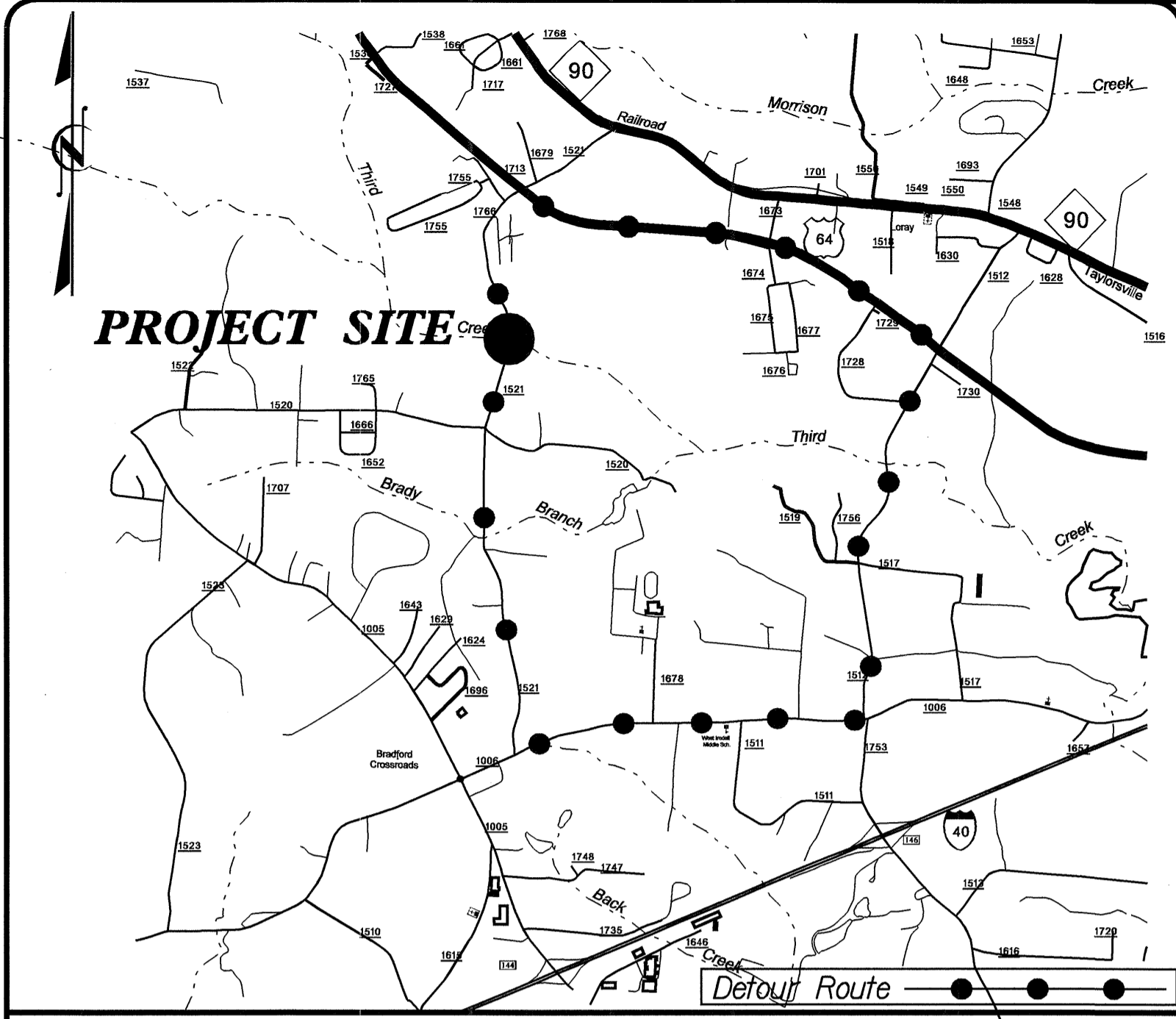


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4155		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33503.1.1	BRZ-1521(4)	PE	
33503.3.1	BRZ-1521(5)	CONSTR.	

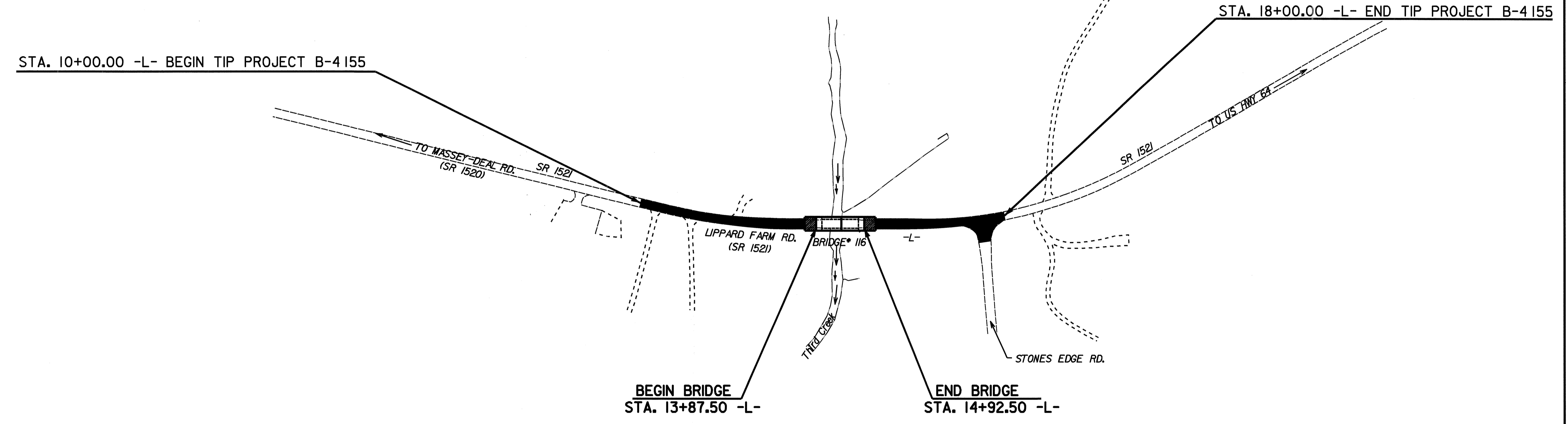
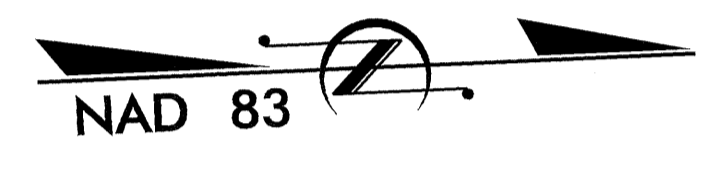
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

IREDELL COUNTY

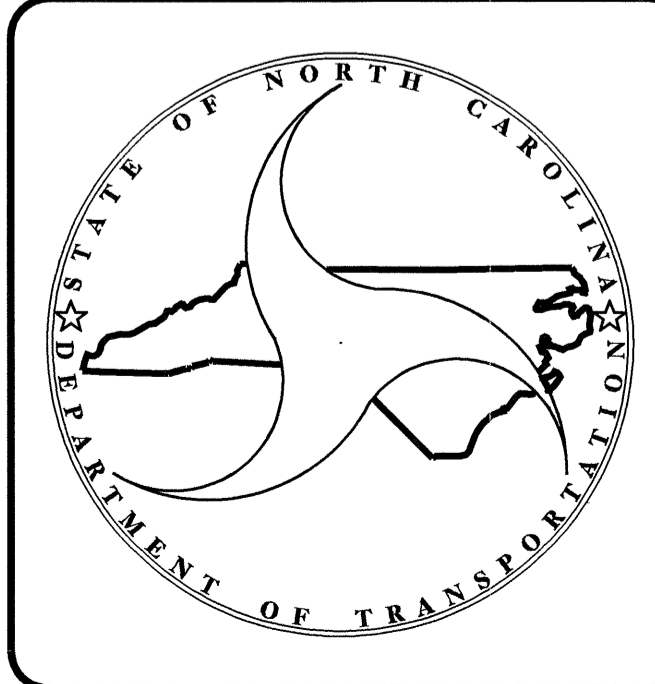
LOCATION: Bridge NO. 116 over Third Creek on SR 1521 (Lippard Farm Road)
TYPE OF WORK: GRADING, PAVING, DRAINAGE, & STRUCTURE



VICINITY MAP



STRUCTURE



DESIGN DATA

ADT 2006 = 1650
ADT 2026 = 2650
DHV = 12 %
D = 60 %
T = 5 % *
* (TTST 1% & DUAL 4%)
V = 50 MPH
RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4155 0.132 MI
LENGTH STRUCTURE TIP PROJECT B-4155 0.020 MI
TOTAL LENGTH TIP PROJECT B-4155 0.152 MI

Prepared in the Office of:
DIVISION OF HIGHWAYS
100 BIRCH RIDGE DR., RALEIGH, NC 27610
2006 STANDARD SPECIFICATIONS

LETTING DATE:
MAY 15, 2007

B. C. HUNT, P.E.
PROJECT ENGINEER

V. A. PATEL, P.E.
PROJECT DESIGN ENGINEER

STRUCTURE DESIGN UNIT

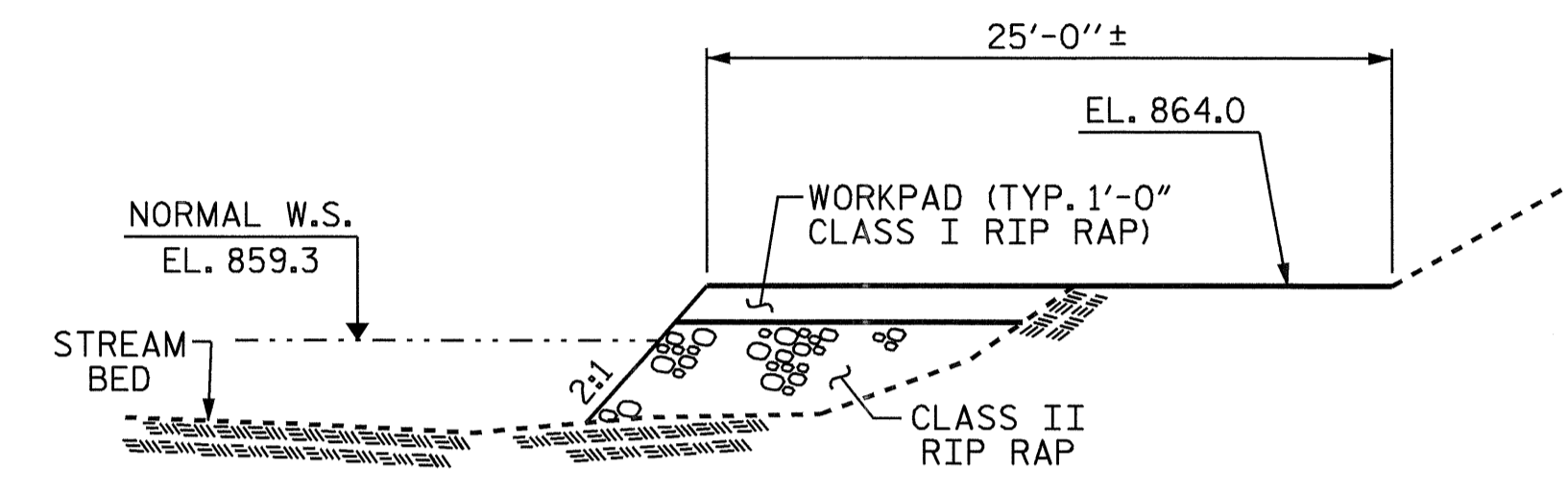
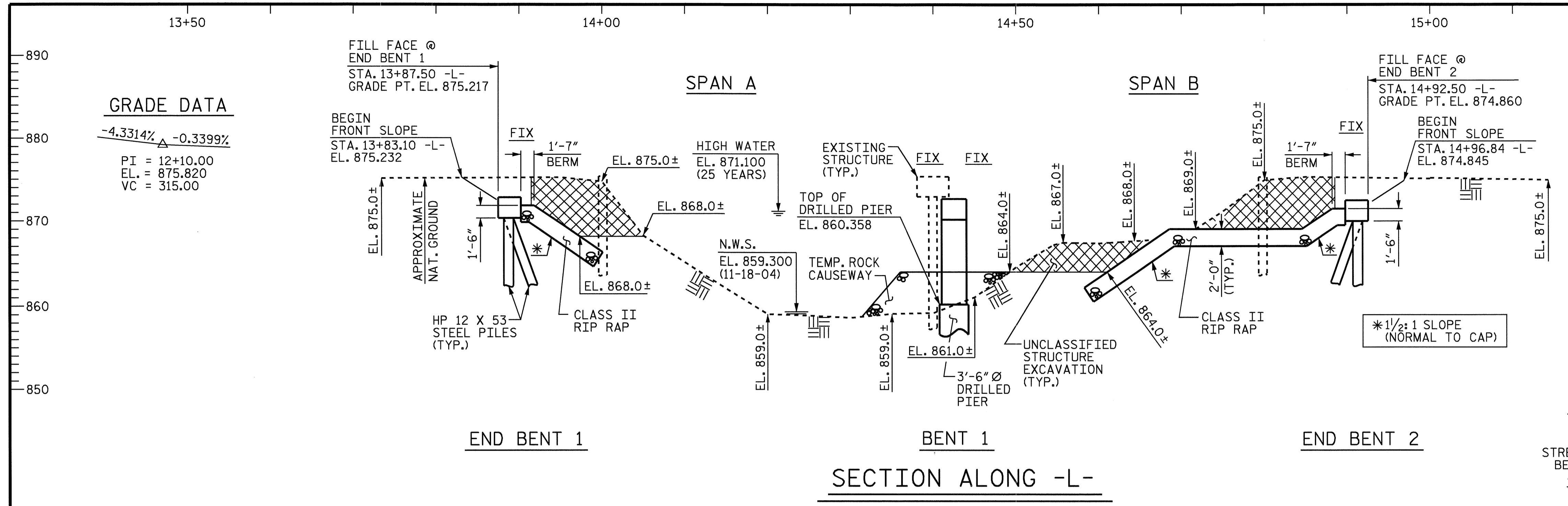
4.9.07

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

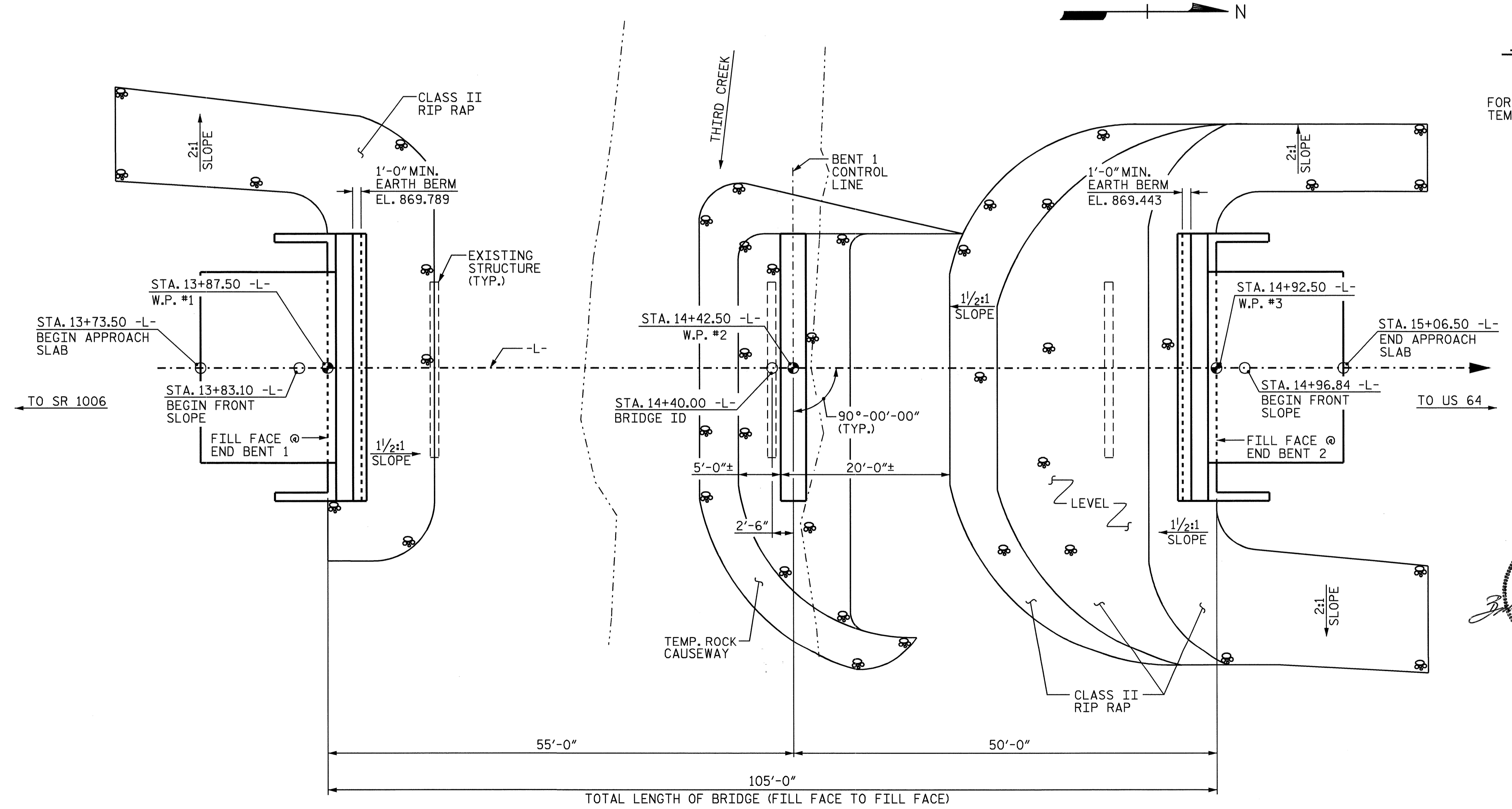
STATE DESIGN ENGINEER _____ P.E.
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED _____
DIVISION ADMINISTRATOR DATE

10/25/03
TIP PROJECT: B-4155
PROJECT: C201548

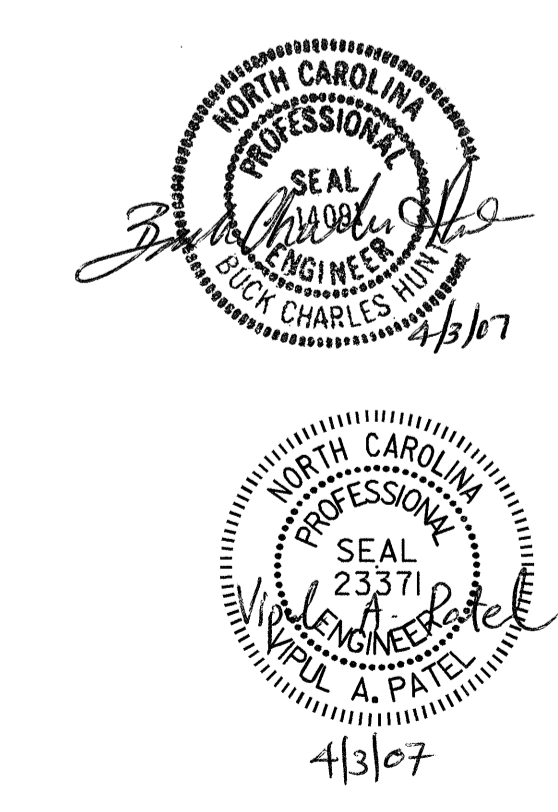


NOTE
 FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF TEMPORARY ACCESS, SEE SPECIAL PROVISIONS.



DRAWN BY : M.K. BEARD DATE : 5/10/06
 CHECKED BY : J.P. ADAMS DATE : 7/17/06

(PILES AND DRILLED PIERS NOT SHOWN IN PLAN VIEW FOR CLARITY)

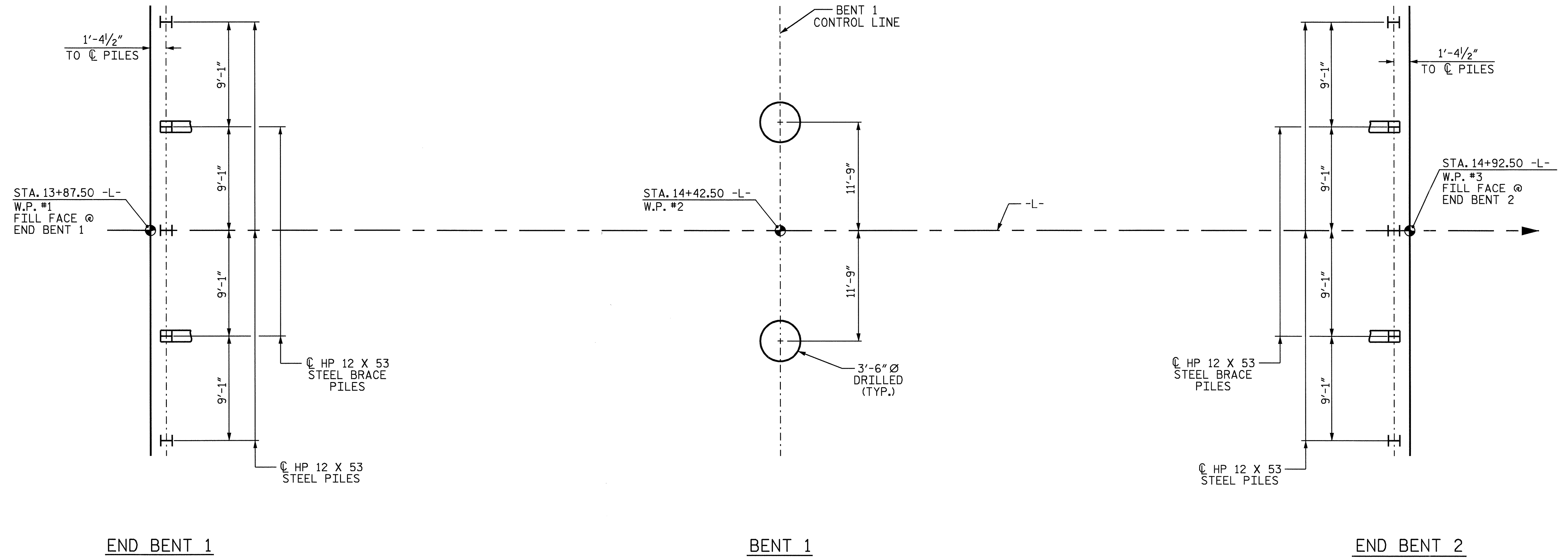


PROJECT NO. B-4155
 IREDELL COUNTY
 STATION: 14+40.00 -L-
 SHEET 1 OF 3 REPLACES BRIDGE No. 116

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER THIRD CREEK ON SR 1521 (LIPPARD FARM RD) BETWEEN US 64 & SR 1006

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



FOUNDATION LAYOUT

(DIMENSIONS LOCATING PILES ARE SHOWN TO THE CENTERLINE)
(BRACE PILES ARE BATTERED @ 3:12)

NOTES

THE DRILLED PIERS AT BENT 1 ARE DESIGNED FOR BOTH SKIN FRICTION AND END BEARING. CHECK FIELD CONDITIONS FOR THE REQUIRED END BEARING CAPACITY OF 20 TSF.

DRILLED PIERS AT BENT 1 ARE DESIGNED FOR AN APPLIED LOAD OF 250 TONS EACH AT THE TOP OF THE COLUMN.

PERMANENT STEEL CASING MAY BE REQUIRED FOR DRILLED PIER No. 1. IF REQUIRED, DO NOT EXTEND THE CASING BELOW ELEVATION 850.000 WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE ENGINEER WILL DETERMINE THE NEED FOR PERMANENT STEEL CASING. SEE DRILLED PIERS SPECIAL PROVISION.

DRILLED PIERS AT BENT 1 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 841.500 AND SATISFY THE REQUIRED END BEARING CAPACITY.

THE SCOUR CRITICAL ELEVATION FOR BENT 1 IS 847.000. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

FOR DRILLED PIERS, SEE DRILLED PIER SPECIAL PROVISION.

SPT TESTING IS REQUIRED TO DETERMINE THE END BEARING CAPACITY OF THE DRILLED PIERS AT BENT 1. SEE DRILLED PIERS SPECIAL PROVISION.

DO NOT USE SLURRY CONSTRUCTION FOR THIS PROJECT.

SID INSPECTIONS ARE REQUIRED TO INSPECT THE BOTTOM CLEANLINESS OF THE DRILLED PIERS AT BENT 1. SEE DRILLED PIERS SPECIAL PROVISION.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. SEE CROSSHOLE SONIC LOGGING SPECIAL PROVISION.

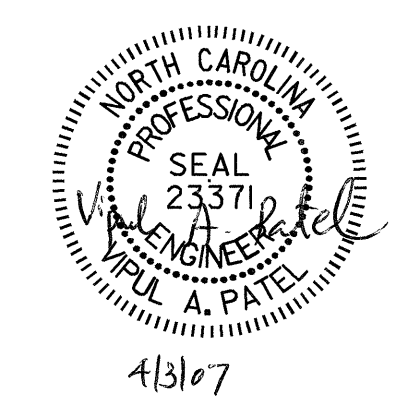
DRIVE PILES AT END BENT 1 AND END BENT 2 TO A REQUIRED BEARING CAPACITY OF 150 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF 2.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT 1 AND END BENT 2 IS 75 TONS PER PILE.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 30,000 TO 40,000 FT.-LBS. PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT 1 & END BENT 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM ARTICLE 450-5 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. B-4155
IREDELL COUNTY
STATION: 14+40.00 -L-

SHEET 2 OF 3

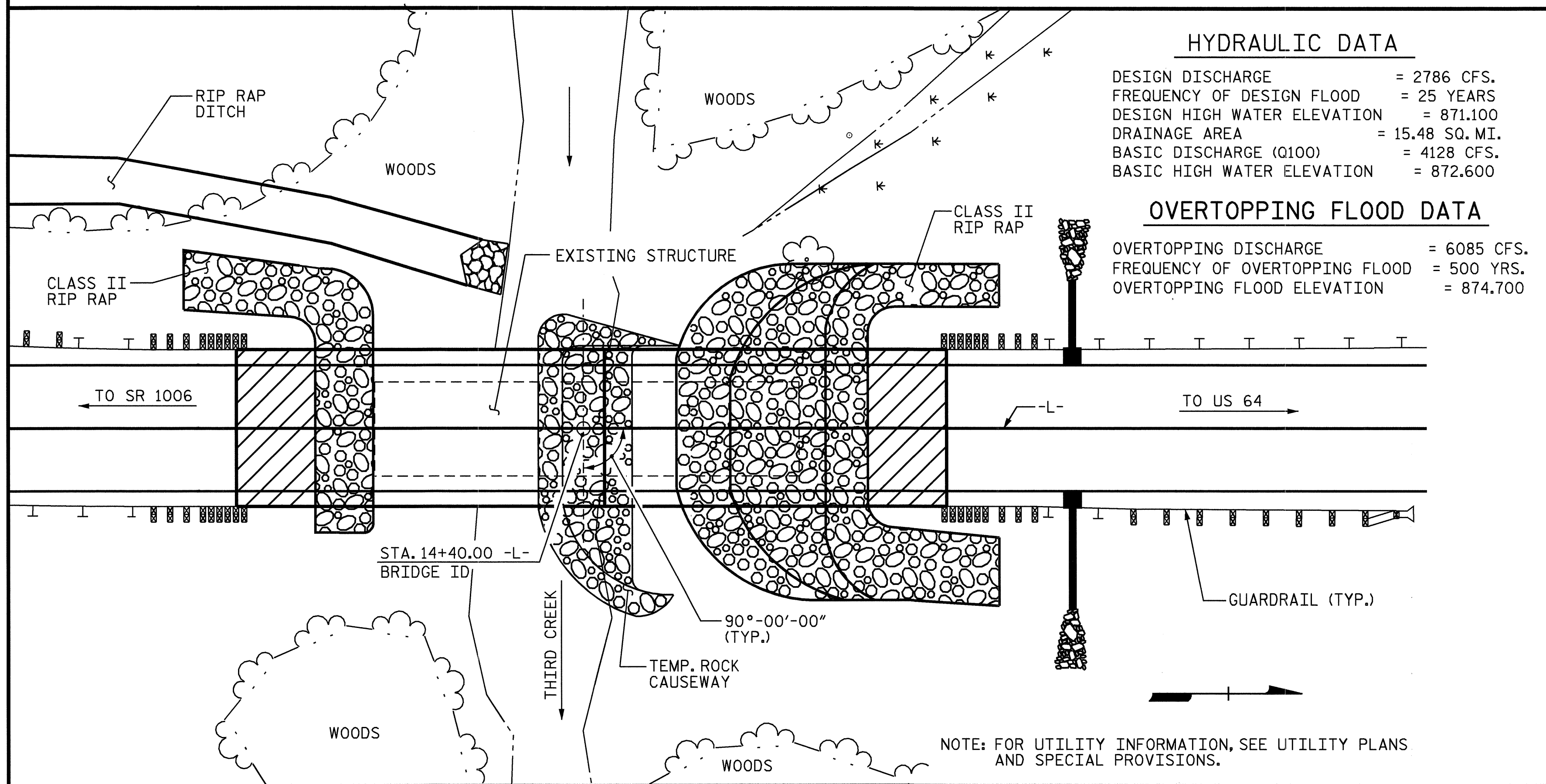


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOR BRIDGE OVER THIRD
CREEK ON SR 1521 (LIPPARD
FARM RD.) BETWEEN US 64
& SR 1006

DRAWN BY : M.K. BEARD DATE : 5/10/06
CHECKED BY : J.P. ADAMS DATE : 7/17/06

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

B.M. #1 : 8" SPIKE IN BASE OF PP, STA. 18+09.68 -L-, LEFT 598.22, EL. 866.950



LOCATION SKETCH

NOTES

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

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 2 SPANS @ 40'-3" WITH A CLEAR ROADWAY WIDTH OF 19'-2" AND HAVING A TIMBER DECK ON STEEL BEAMS SUPPORTED BY TIMBER CAPS AND PILES LOCATED AT THE PROPOSED STRUCTURE SITE SHALL BE REMOVED.

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 25 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.

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.

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 14+40.00 -L-."

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 14+40.00 -L-.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR CONSTRUCTION OF SUPERSTRUCTURE, SEE SPECIAL PROVISIONS.

FOR CONSTRUCTION OF SUBSTRUCTURE, SEE SPECIAL PROVISIONS.

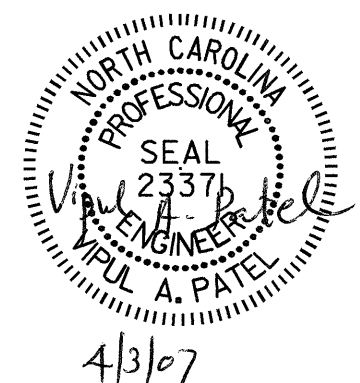
ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.

TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMPORARY ACCESS	REMOVAL OF EXISTING STRUCTURE	3'-6" DIA. DRILLED PIERS IN SOIL	3'-6" DIA. DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 3'-6" DIA. DRILLED PIER	SID INSPECTION	SPT TESTING	CROSSHOLE SONIC LOGGING	UNCLASSIFIED STRUCTURE EXCAVATION	BRIDGE APPROACH SLABS	HP 12 X 53 STEEL PILES	RIP RAP CLASS II (2'-0" THICK)	CONSTRUCTION OF SUBSTRUCTURE	CONSTRUCTION OF SUPERSTRUCTURE
	LUMP SUM	LUMP SUM	LIN.FT.	LIN.FT.	LIN.FT.	EACH	EACH	EACH	LUMP SUM	LUMP SUM	NO. / LIN.FT.	TONS	LUMP SUM	LUMP SUM
SUPERSTRUCTURE									LUMP SUM	LUMP SUM			LUMP SUM	LUMP SUM
END BENT 1											5 / 125	83		
BENT 1			24.8	13	20.7	2	2	1						
END BENT 2											5 / 125	260		
TOTAL	LUMP SUM	LUMP SUM	24.8	13	20.7	2	2	1	LUMP SUM	LUMP SUM	10 / 250	343	LUMP SUM	LUMP SUM

PROJECT NO. B-4155
IREDELL COUNTY
 STATION: 14+40.00 -L-

SHEET 3 OF 3

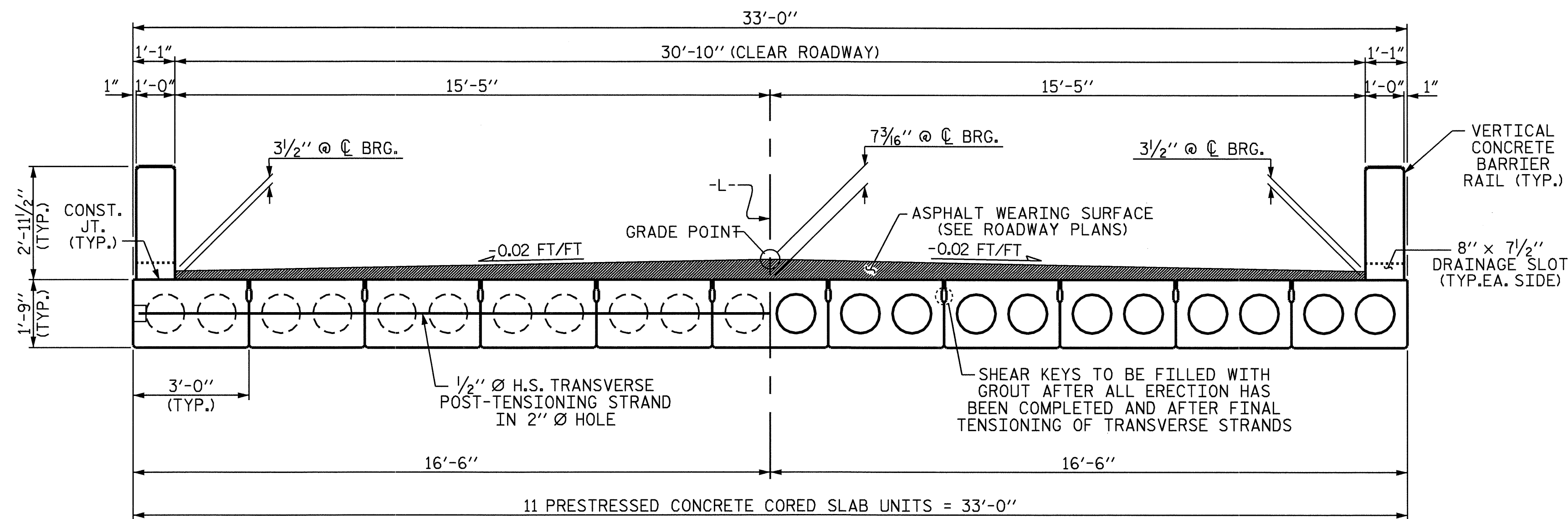


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER THIRD
 CREEK ON SR 1521 (LIPPARD
 FARM RD.) BETWEEN US 64
 & SR 1006

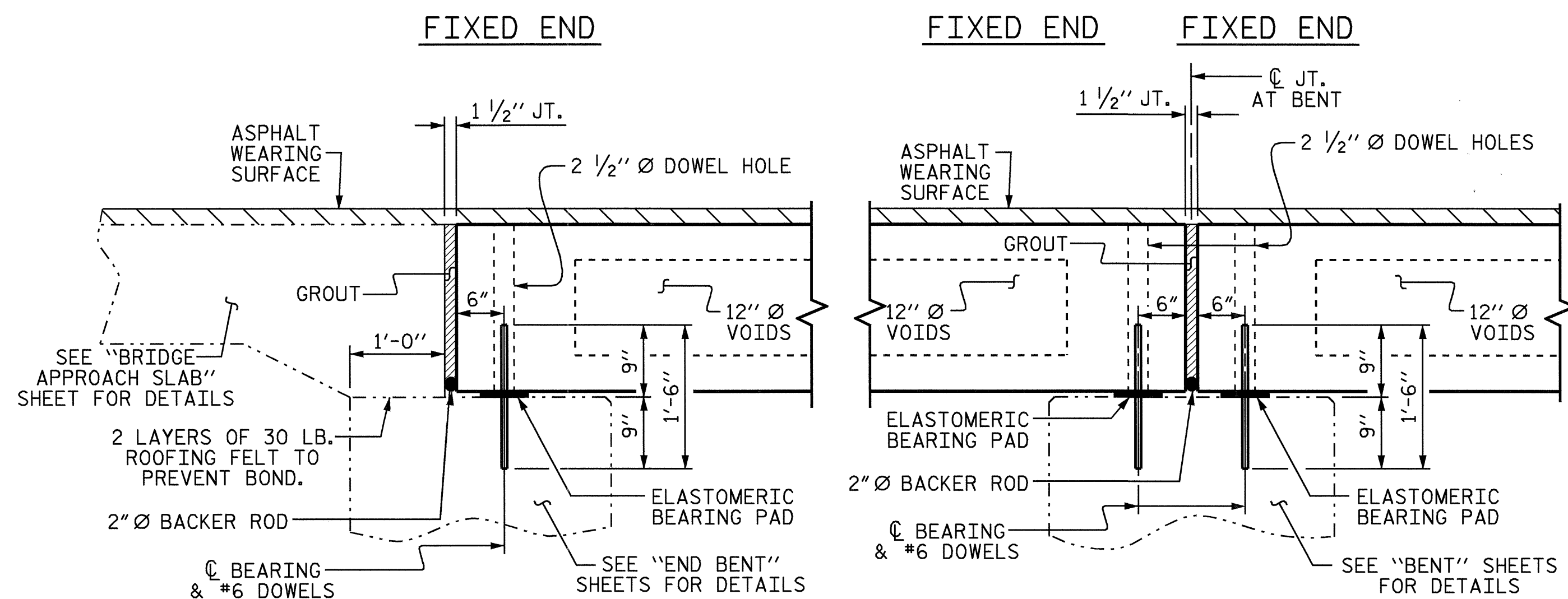
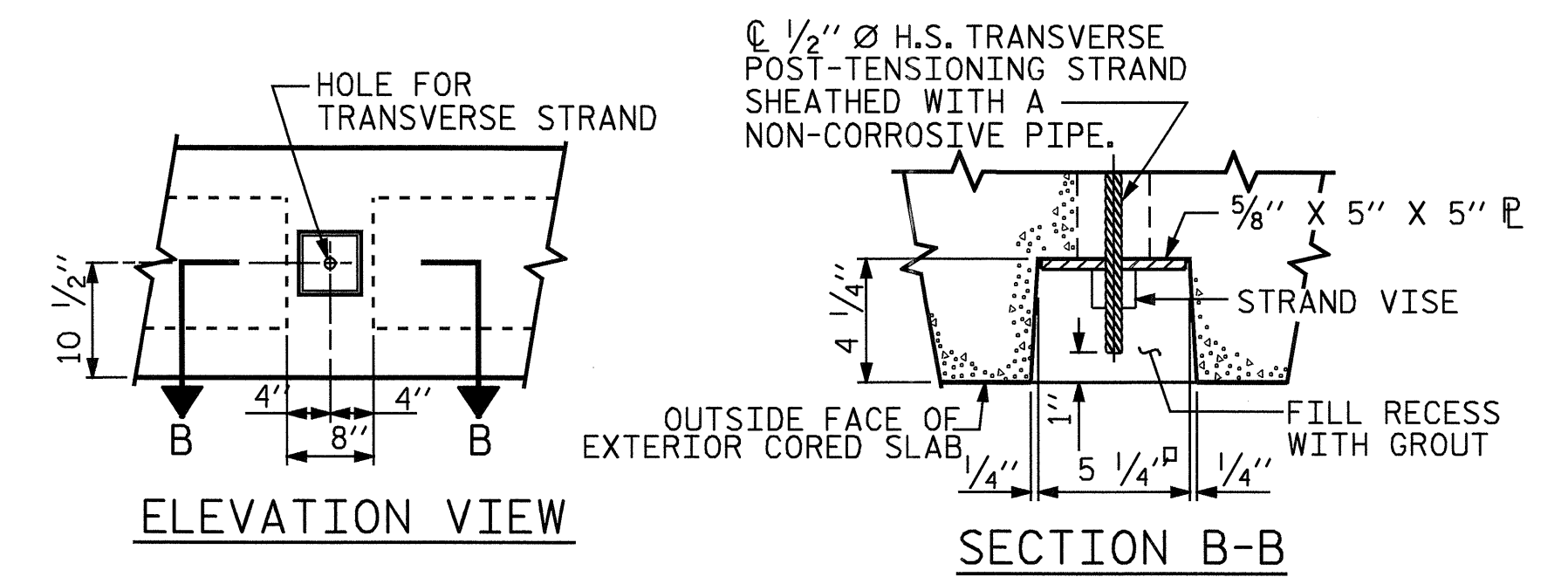
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			18

DRAWN BY : M.K. BEARD DATE : 5/10/06
 CHECKED BY : J.P. ADAMS DATE : 7/17/06



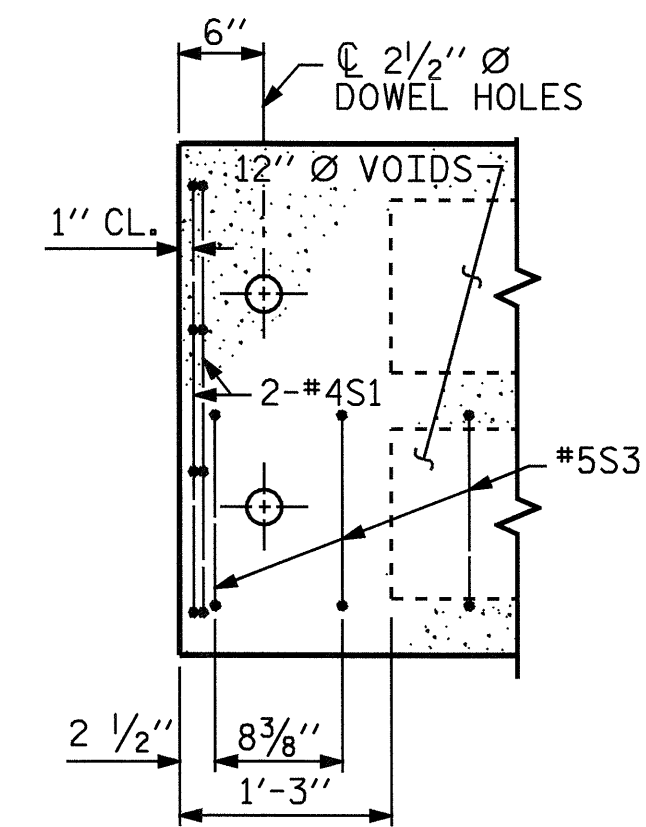
TYPICAL SECTION

GRouted RECESS AT END OF POST-TENSIONED STRAND CORED SLABS



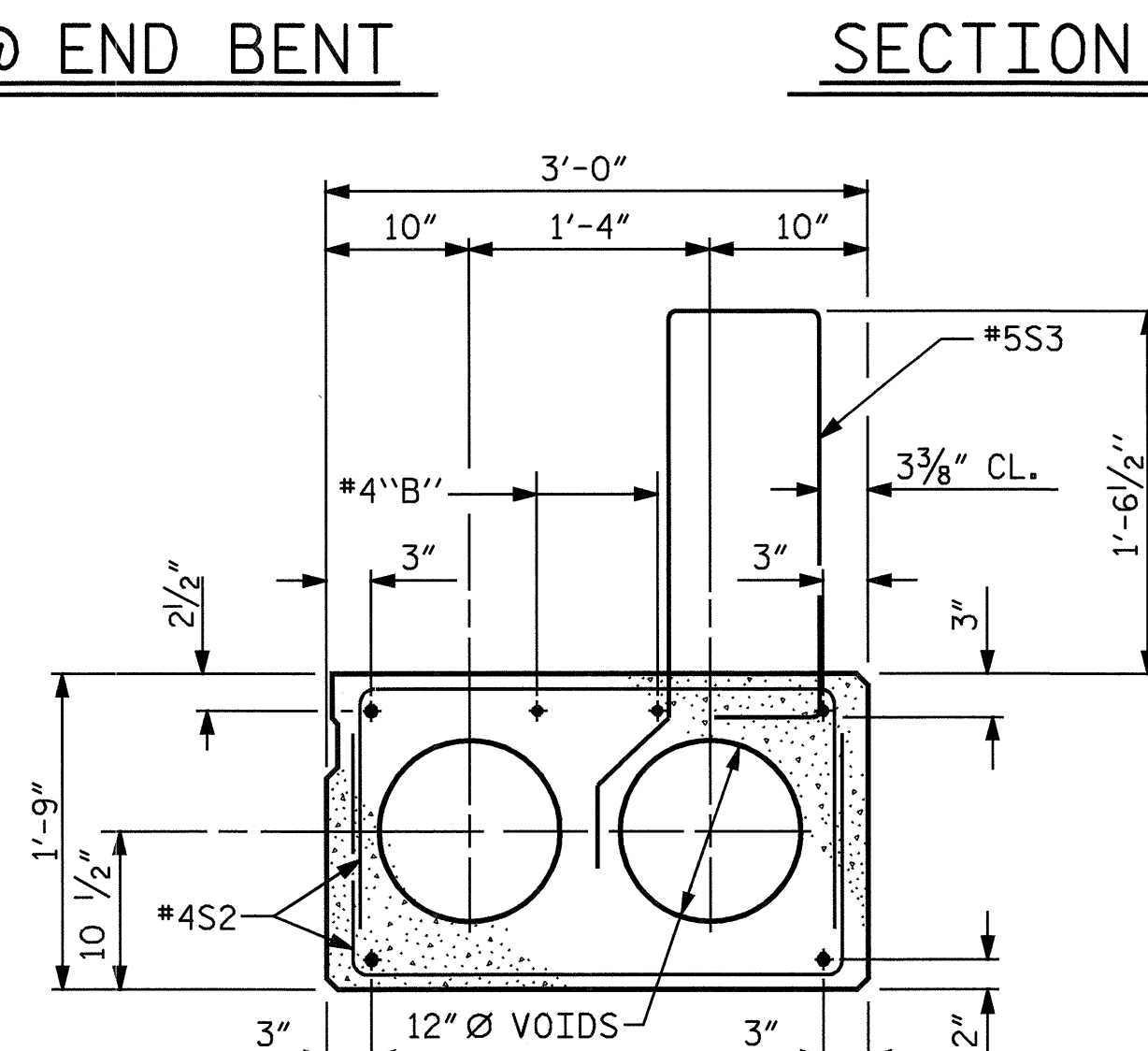
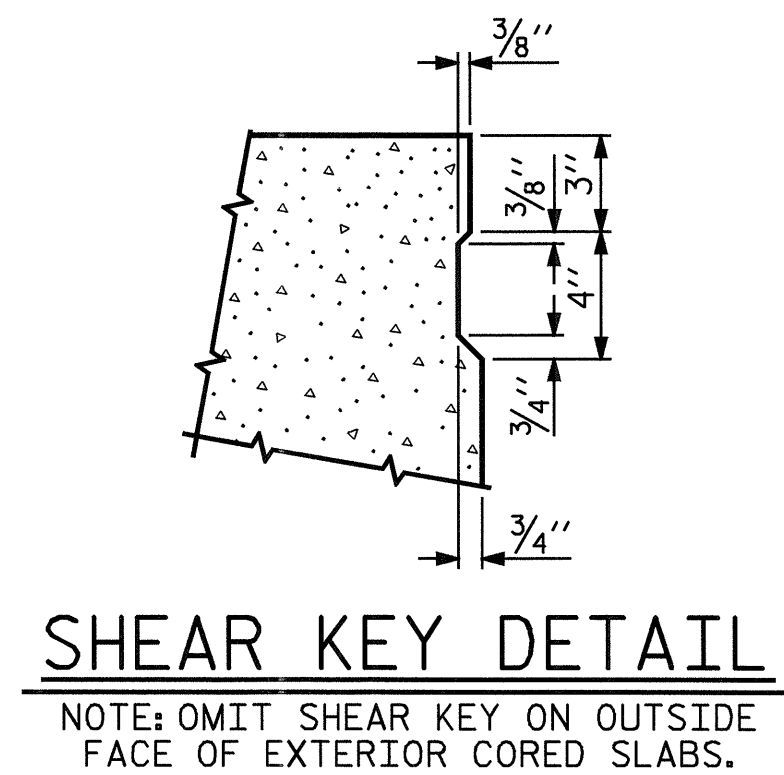
SECTION @ END BENT

SECTION @ BENT



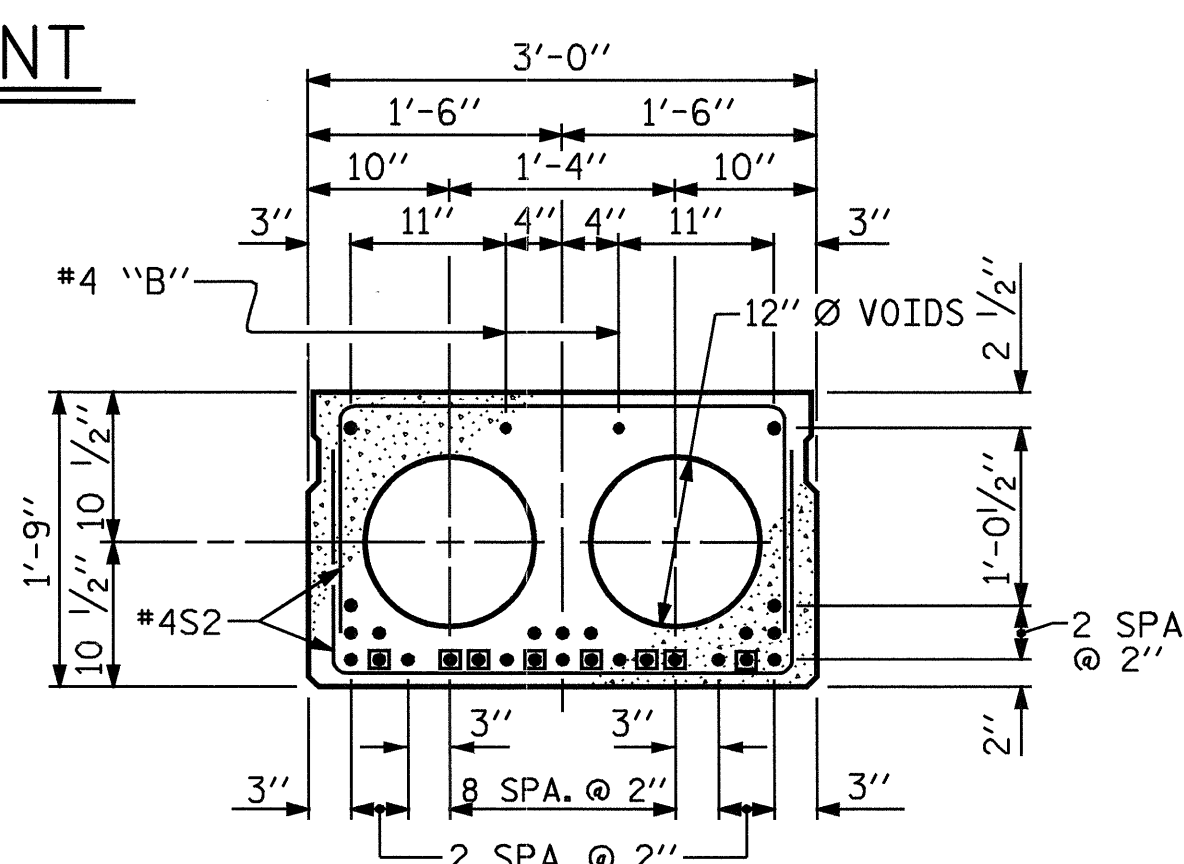
PART PLAN-EXTERIOR SECTION

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



EXTERIOR SLAB SECTION

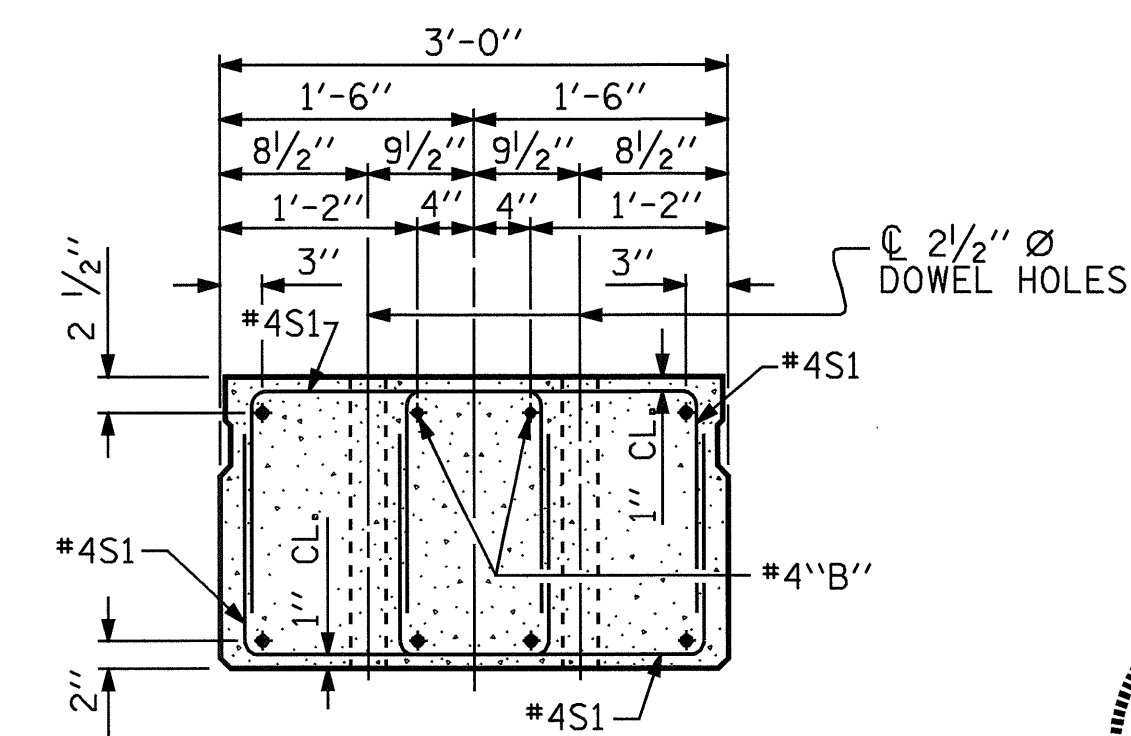
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



SPAN A & SPAN B INTERIOR SLAB SECTION

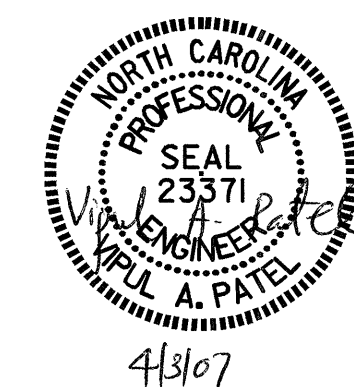
1/2" Ø LOW RELAXATION STRAND LAYOUT

BONDS SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 5'-9" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.



END ELEVATION

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

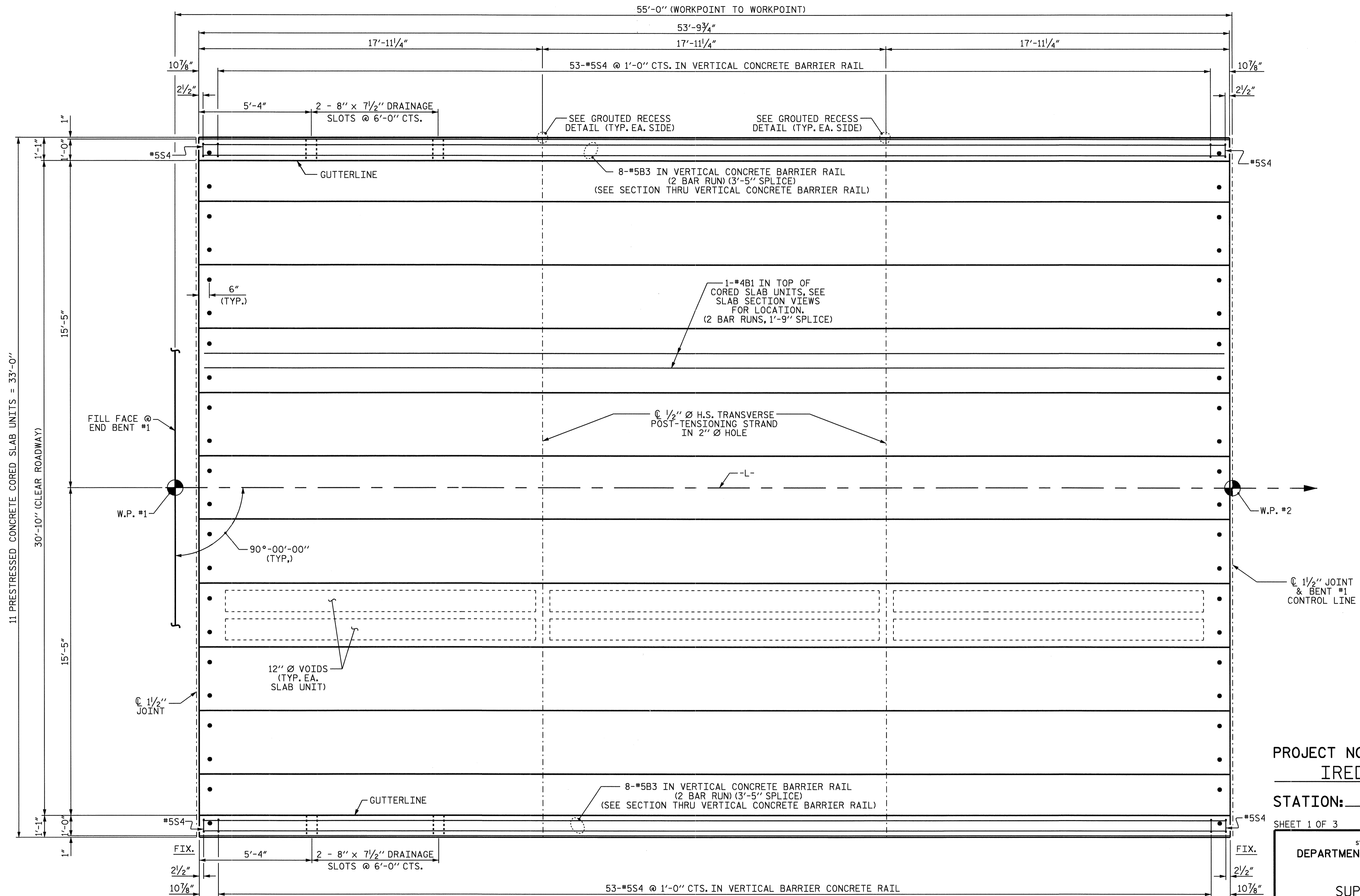


PROJECT NO. B-4155
IREDELL COUNTY
STATION: 14+40.00 -L-

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

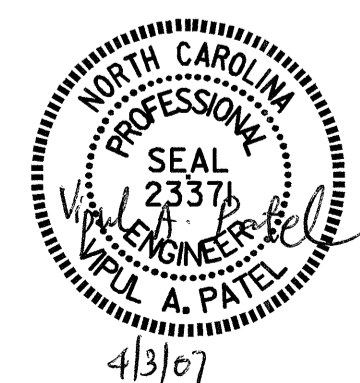
ASSEMBLED BY : J.P. ADAMS	DATE : 8/22/06
CHECKED BY : S.H. SOCKWELL	DATE : 8/25/06
DRAWN BY : WJH 4/89	REV. 10/17/00 RWW/LES
CHECKED BY : FCJ 5/89	REV. 7/10/01RR RWW/LES
	REV. 5/1/06 TLA/GM

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS 18
2			4			



PROJECT NO. B-4155
IREDELL COUNTY
 STATION: 14+40.00 -L-

SHEET 1 OF 3

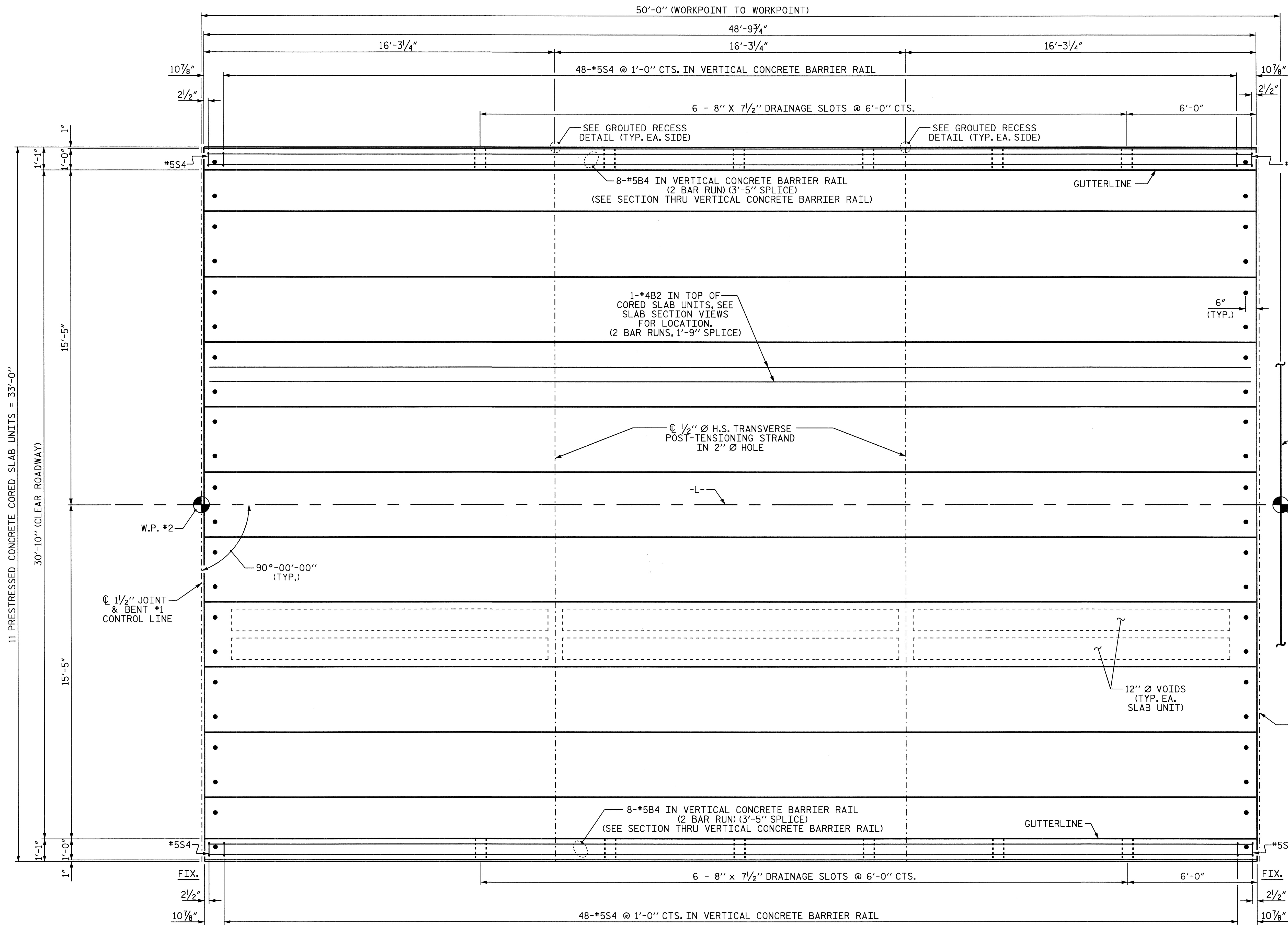


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE PLAN OF SPAN A					
REVISIONS			SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 18

PLAN OF SPAN A

DRAWN BY: J.P. ADAMS DATE: 8/22/06
 CHECKED BY: S.H. SOCKWELL DATE: 8/25/06

03-APR-2007 10:14
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 Klayne



PROJECT NO. B-4155
IREDELL COUNTY
 STATION: 14+40.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPAN B

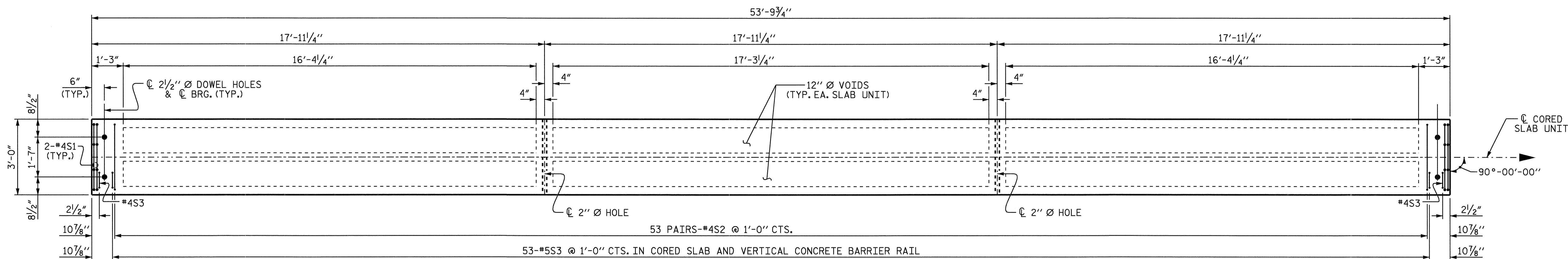


PLAN OF SPAN B

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 CHECKED BY: S.H. SOCKWELL DATE: 8/25/06

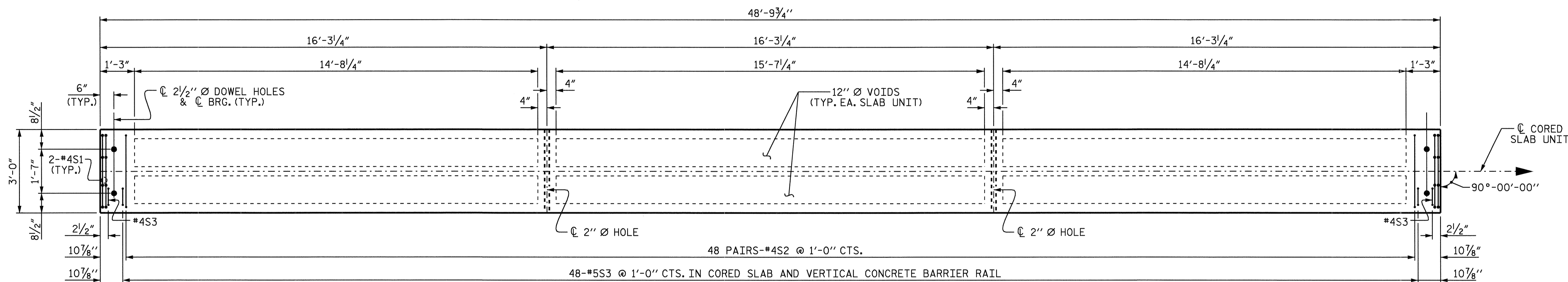
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-6
2			4			TOTAL SHEETS 18

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 Klayne



PLAN OF EXTERIOR CORED SLAB UNIT (SPAN A)

EXTERIOR CORED SLAB UNIT SHOWN, INTERIOR CORED SLAB UNIT SIMILAR EXCEPT OMIT #5S3 BARS



PLAN OF EXTERIOR CORED SLAB UNIT (SPAN B)

EXTERIOR CORED SLAB UNIT SHOWN, INTERIOR CORED SLAB UNIT SIMILAR EXCEPT OMIT #5S3 BARS

PROJECT NO. B-4155
IREDELL COUNTY
 STATION: 14+40.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF CORED
 SLAB UNITS



DRAWN BY: J.P. ADAMS DATE: 8/22/06
 CHECKED BY: S.H. SOCKWELL DATE: 8/25/06

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 Klayne

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			18

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.

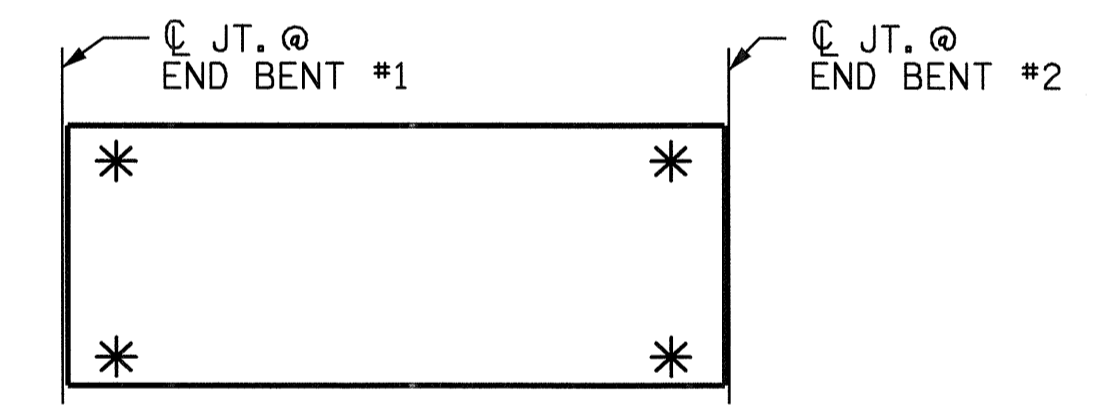
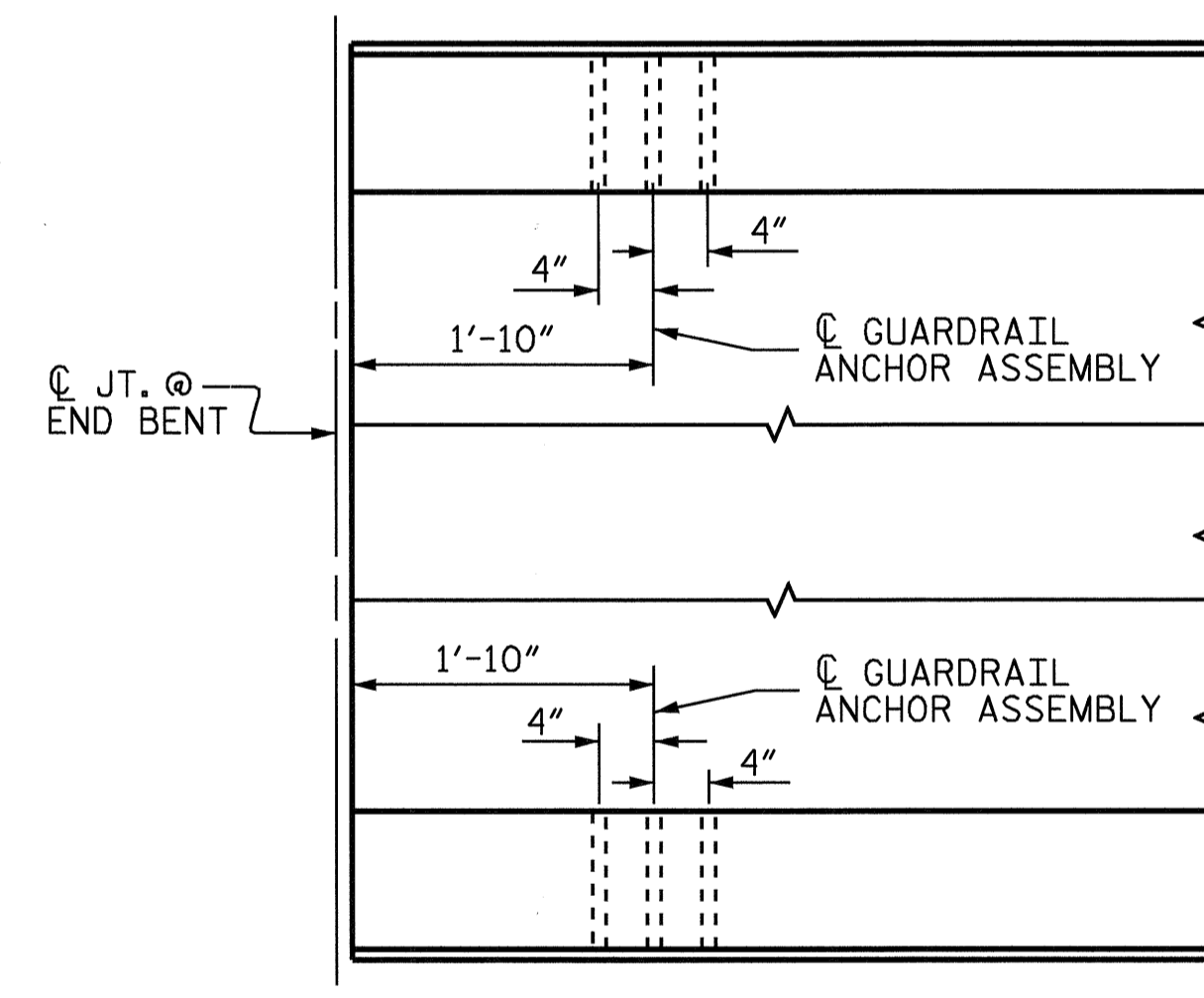
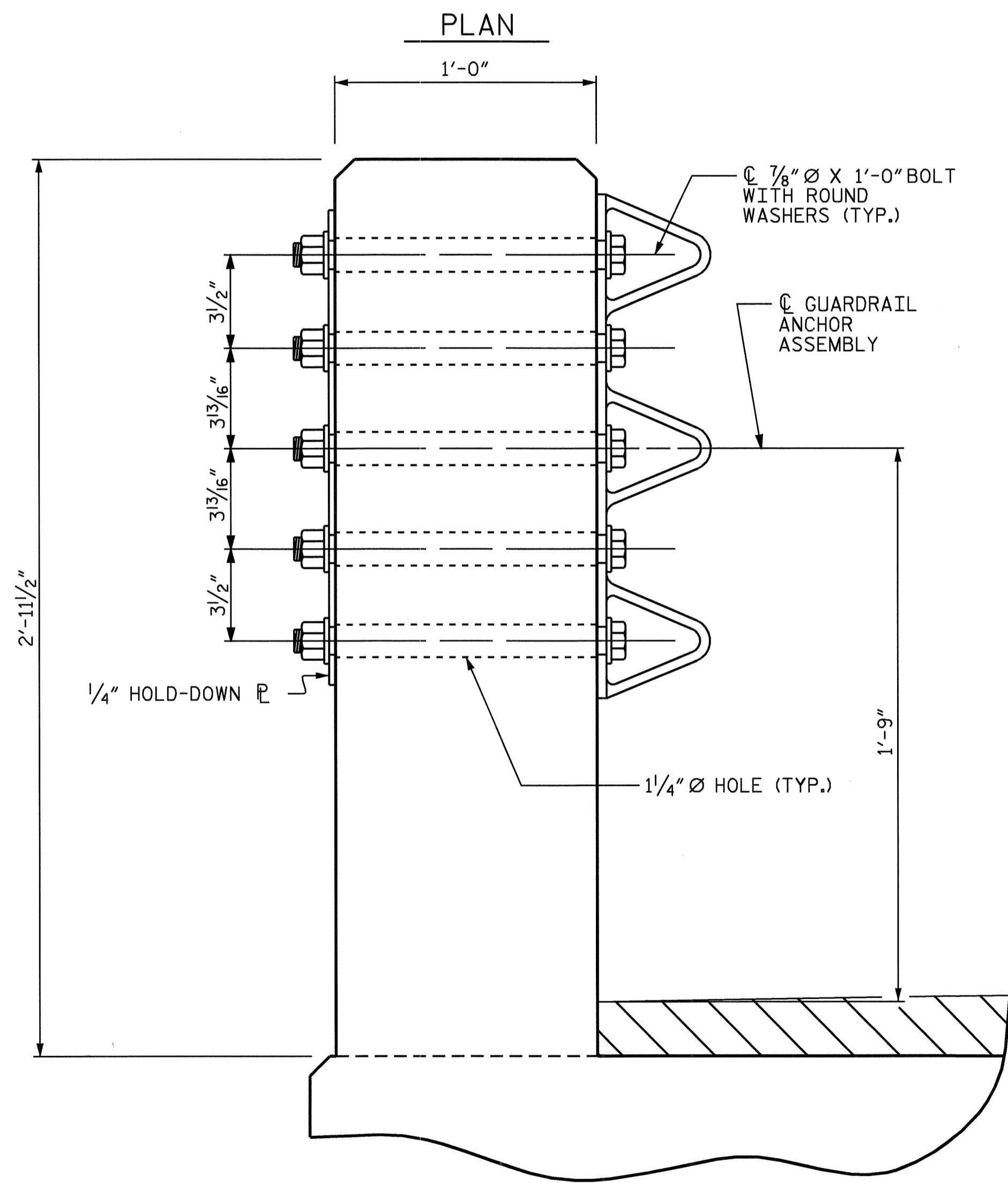
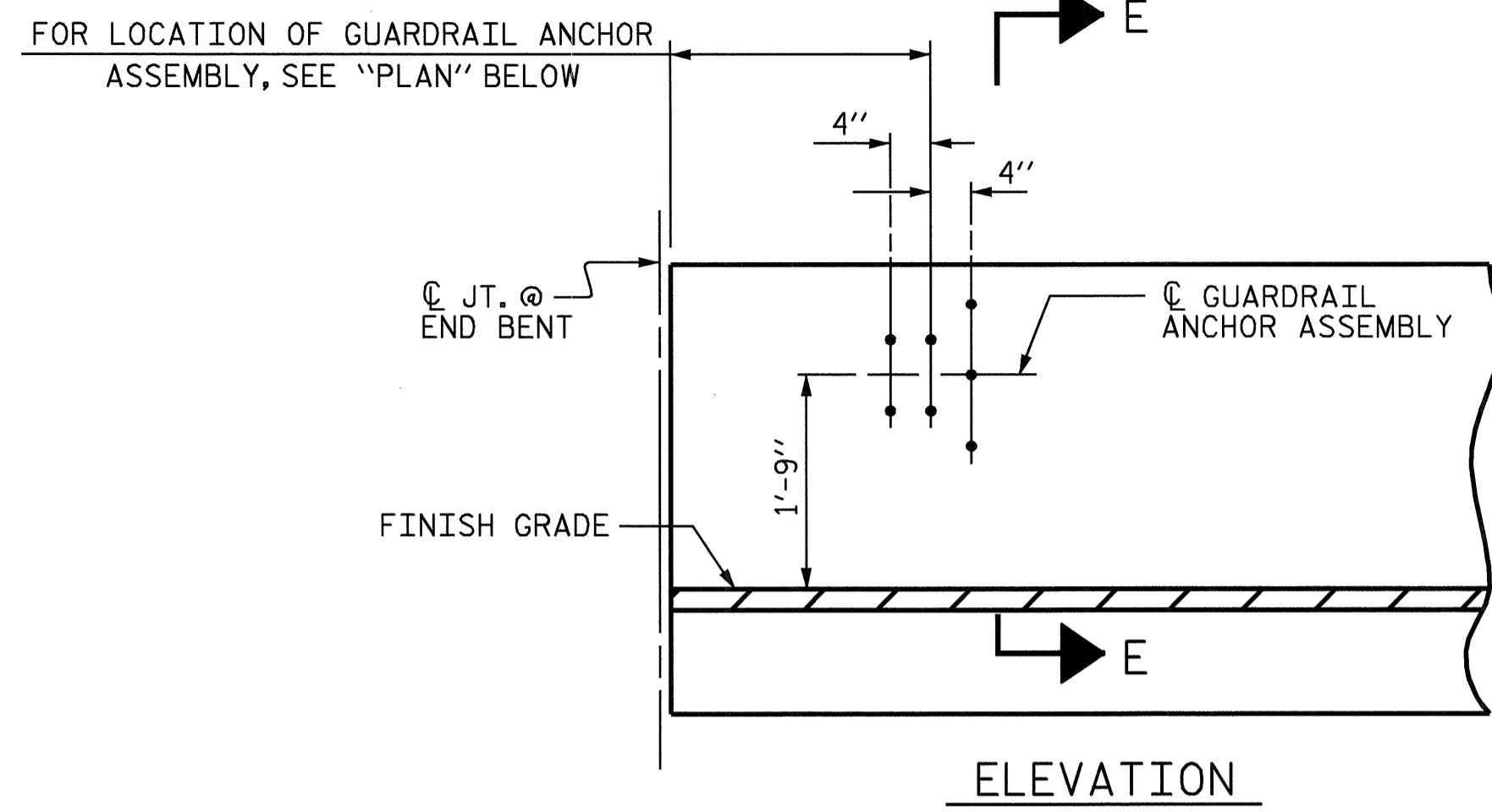
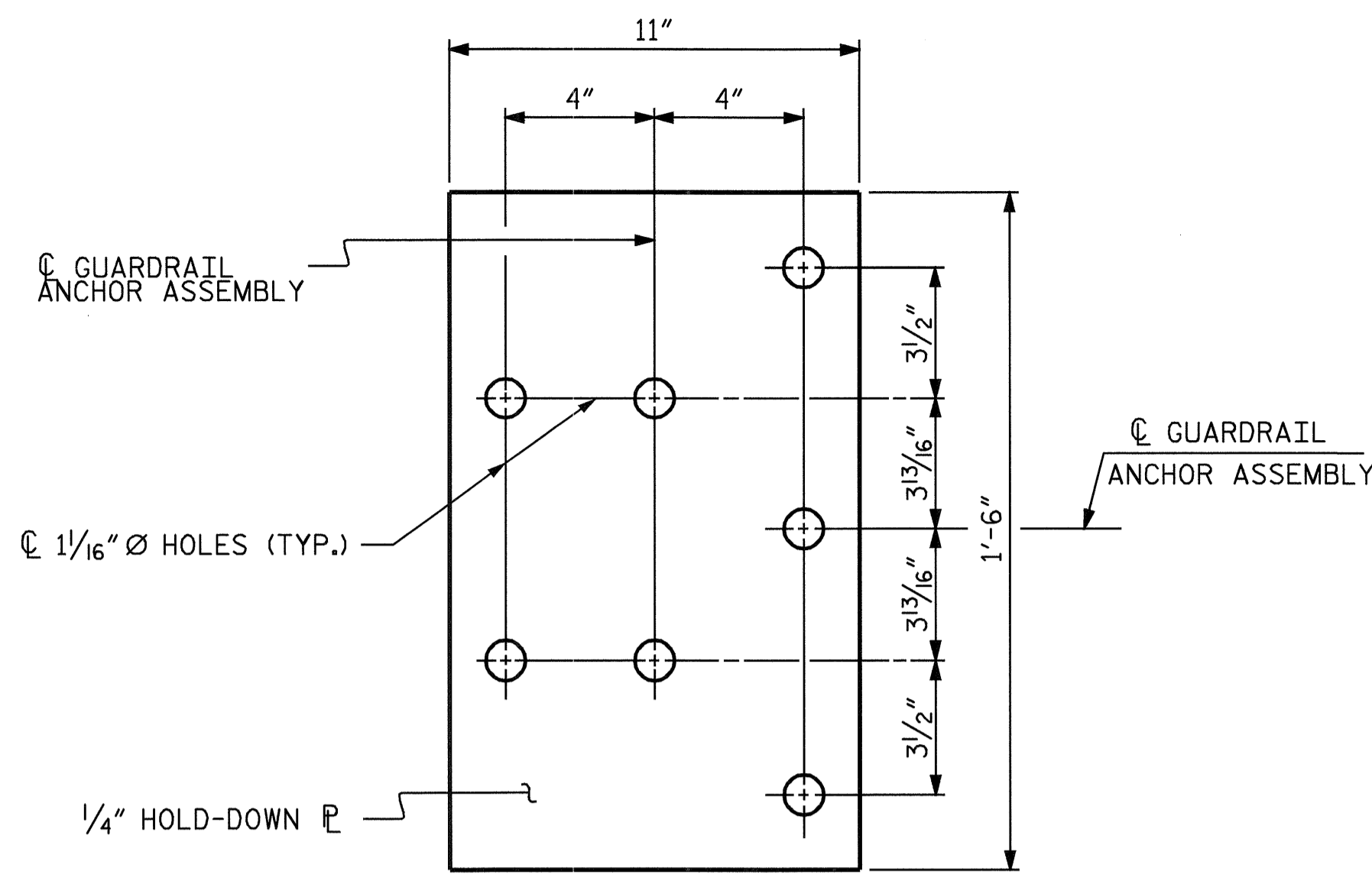
BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. 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 VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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

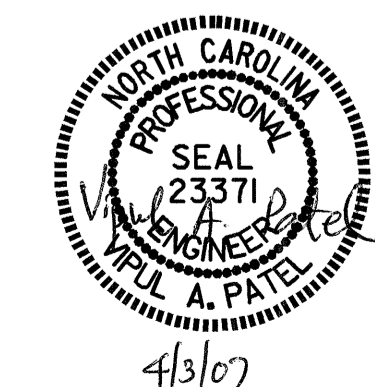


* DENOTES GUARDRAIL ANCHOR ASSEMBLY

LOCATION OF ANCHORS FOR GUARDRAIL

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

PROJECT NO. B-4155
 IREDELL COUNTY
 STATION: 14+40.00 -L-



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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-8
2			4			TOTAL SHEETS 18

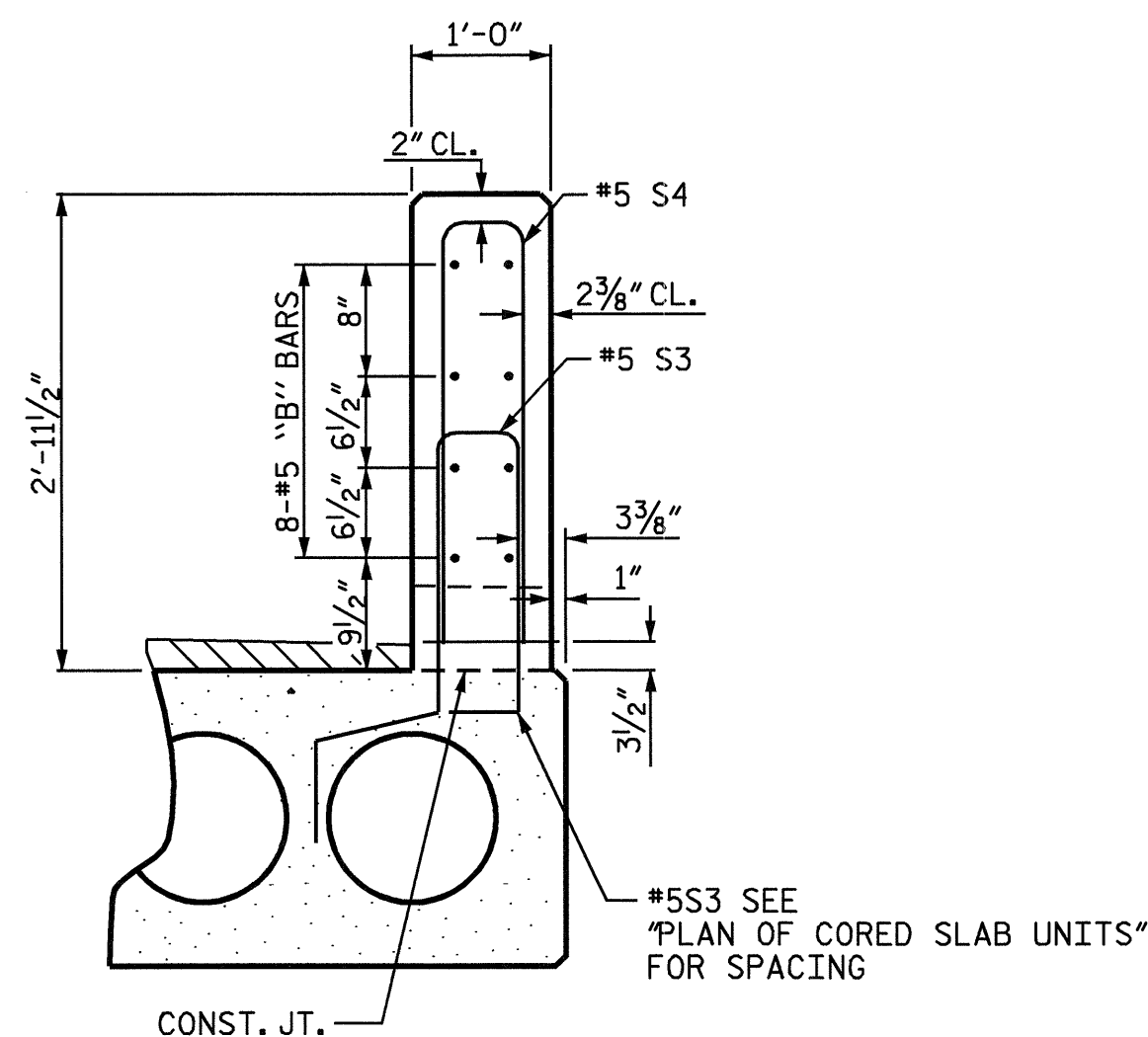
DRAWN BY : KEITH D. LAYNE DATE : 03/07
 CHECKED BY : V. A. PATEL DATE : 03/07

DEAD LOAD DEFLECTION AND CAMBER		
	SPAN A	SPAN B
	1/2" Ø L.R. STRAND	1/2" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2 13/16" ↑	2 5/8" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	7/16" ↓	5/16" ↓
FINAL CAMBER	2 3/8" ↑	2 5/16" ↑

** INCLUDES FUTURE WEARING SURFACE

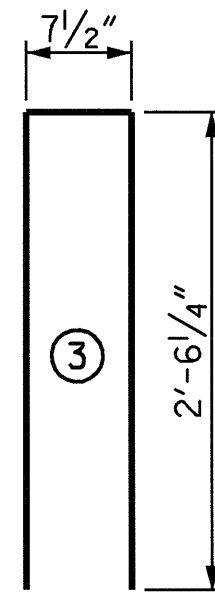
CORED SLABS REQUIRED			
SPAN A	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	53'-9 3/4"	107.63
INTERIOR C.S.	9	53'-9 3/4"	484.31
TOTAL	11	53'-9 3/4"	591.94
SPAN B	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	48'-9 3/4"	97.63
INTERIOR C.S.	9	48'-9 3/4"	439.31
TOTAL	11	48'-9 3/4"	536.94
TOTAL LENGTH (SPAN A & B)			1128.88

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



VERTICAL CONCRETE BARRIER RAIL SECTION

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

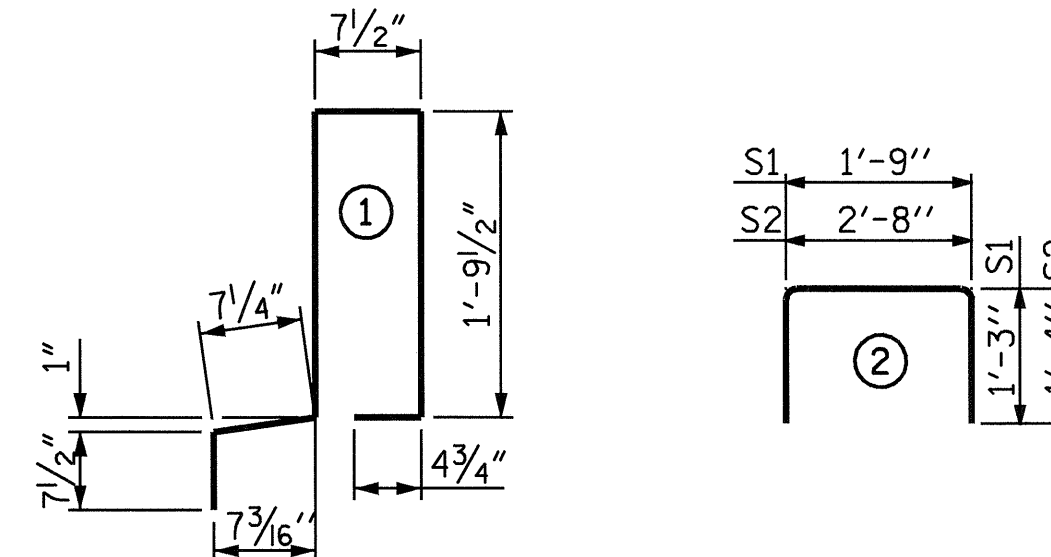
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B3	32	#5	STR	28'-6"	951
*B4	32	#5	STR	26'-0"	868
*S4	210	#5	STR	5'-8"	1,241

* EPOXY COATED REINFORCING STEEL 3,060 LBS.

CLASS AA CONCRETE 22.5 CU. YDS.

1'-0" x 2'-11 1/2" VERTICAL CONCRETE BARRIER RAIL 205.50 LIN. FT.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

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	27'-8"	74	27'-8"	74
S1	8	* 4	2	4'-3"	23	4'-3"	23
S2	106	* 4	2	5'-4"	378	5'-4"	378
* S3	55	* 5	1	5'-10"	335		

REINFORCING STEEL 475 LBS. 475 LBS.

* EPOXY COATED REINFORCING STEEL 335 LBS.

5,500 P.S.I. CONCRETE 7.6 CU. YDS. 7.6 CU. YDS.

1/2" Ø L.R. STRANDS No. 26 No. 26

SPAN B		EXTERIOR UNIT		INTERIOR UNIT			
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B2	4	* 4	STR	25'-2"	67	25'-2"	67
S1	8	* 4	2	4'-3"	23	4'-3"	23
S2	96	* 4	2	5'-4"	342	5'-4"	342
* S3	50	* 5	1	5'-10"	304		

REINFORCING STEEL 432 LBS. 432 LBS.

* EPOXY COATED REINFORCING STEEL 304 LBS.

5,500 P.S.I. CONCRETE 6.9 CU. YDS. 6.9 CU. YDS.

1/2" Ø L.R. STRANDS No. 26 No. 26

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 BID PRICE FOR CONSTRUCTION OF SUPERSTRUCTURE.

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

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

THE 2" Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, 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 4400 PSI.

ALL REINFORCING STEEL IN VERTICAL CONCRETE BARRIER RAIL SHALL BE EPOXY COATED.

REINFORCING STEEL IN THE VERTICAL CONCRETE BARRIER RAIL MAY BE SHIFTED OR FIELD CUT TO CLEAR THE 8" x 7 1/2" DRAINAGE SLOTS.

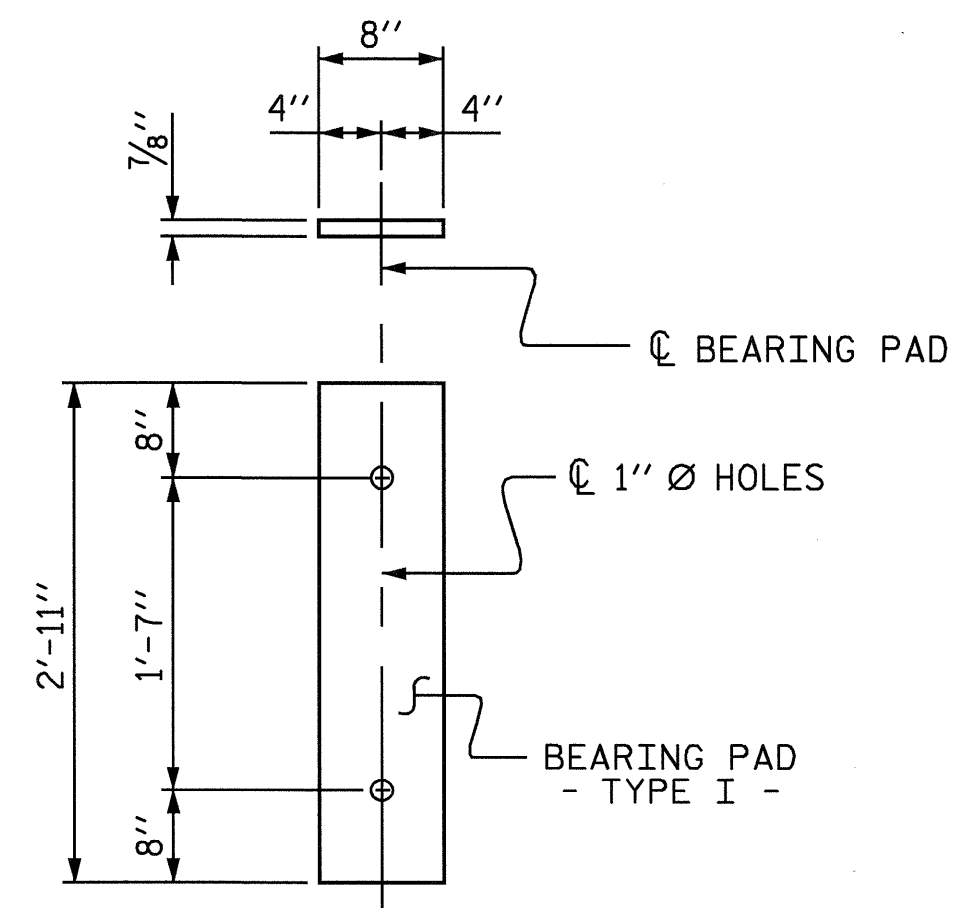
PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE VERTICAL CONCRETE BARRIER RAIL IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8FT. TO 10FT. BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.

COST OF 1'-0" x 2'-11 1/2" VERTICAL CONCRETE BARRIER RAIL SHALL BE INCLUDED IN THE PAY ITEM "CONSTRUCTION OF SUPERSTRUCTURE".



FIXED END (TYPE I - 44 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

PROJECT NO. B-4155
IREDELL COUNTY
STATION: 14+40.00 -L-



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-9
1			3			TOTAL SHEETS 18
2			4			

ASSEMBLED BY : J.P. ADAMS	DATE : 8/23/06
CHECKED BY : S.H. SOCKWELL	DATE : 8/25/06
DRAWN BY : WJH 4/89	REV. 7/10/01 RWW/LES
CHECKED BY : FCJ 5/89	REV. 5/7/03RRR RWW/JTE
	REV. 5/1/06 TLA/GM

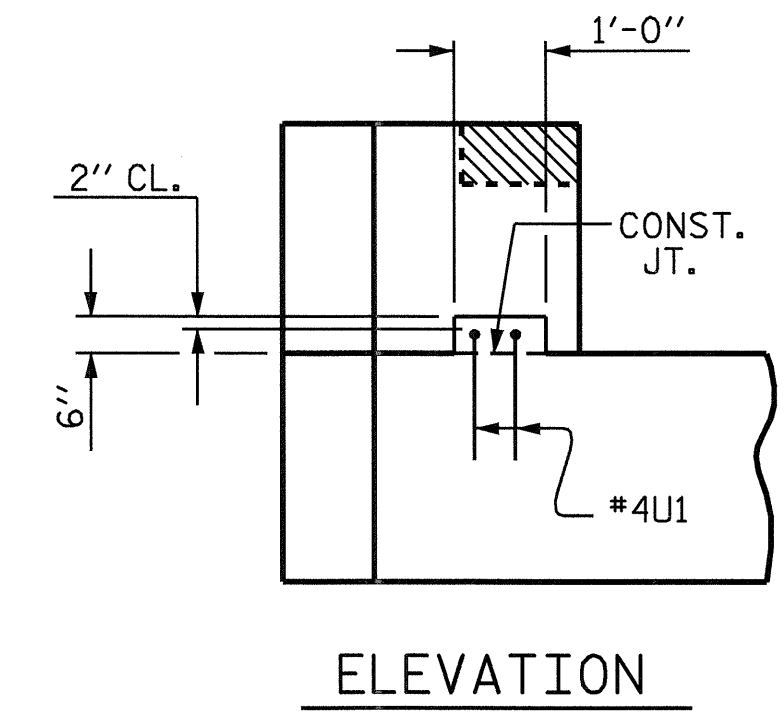
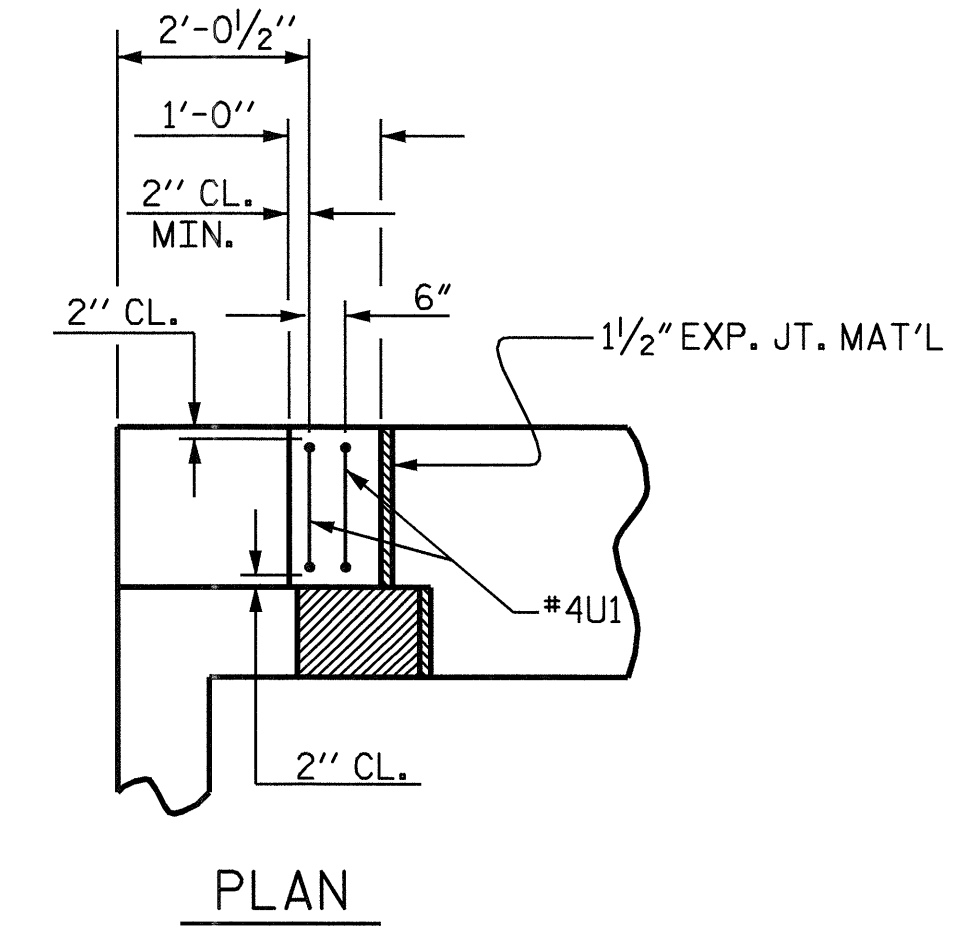
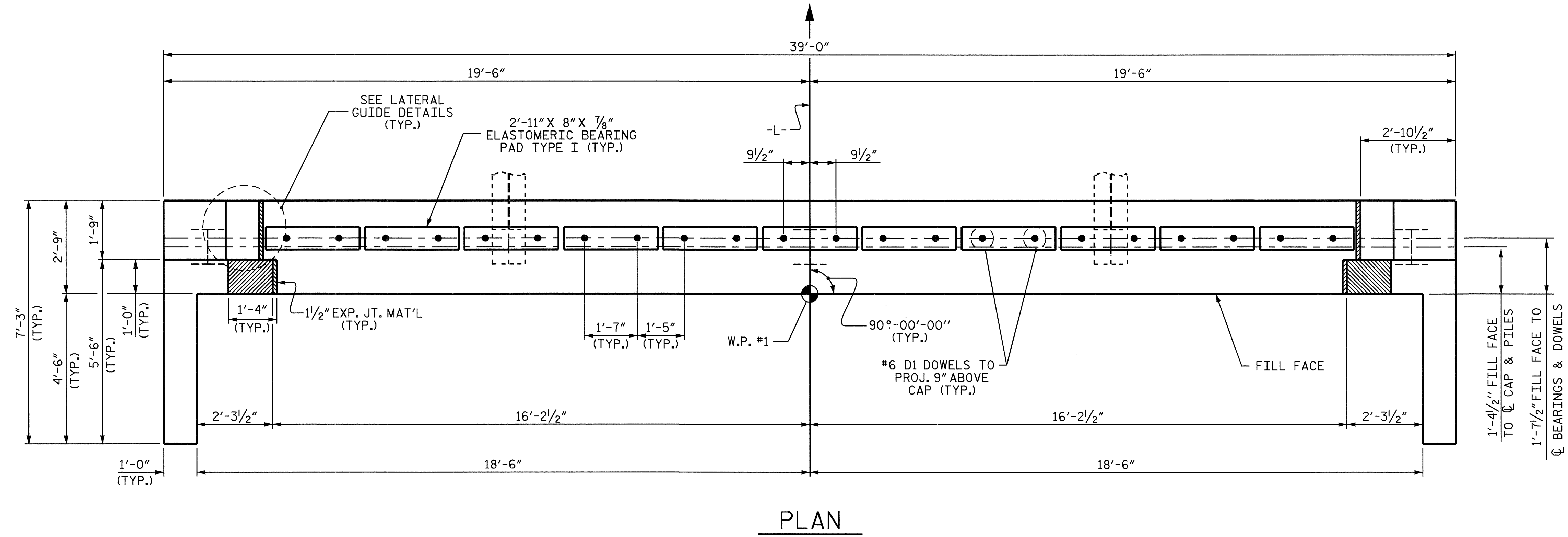
NOTES

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

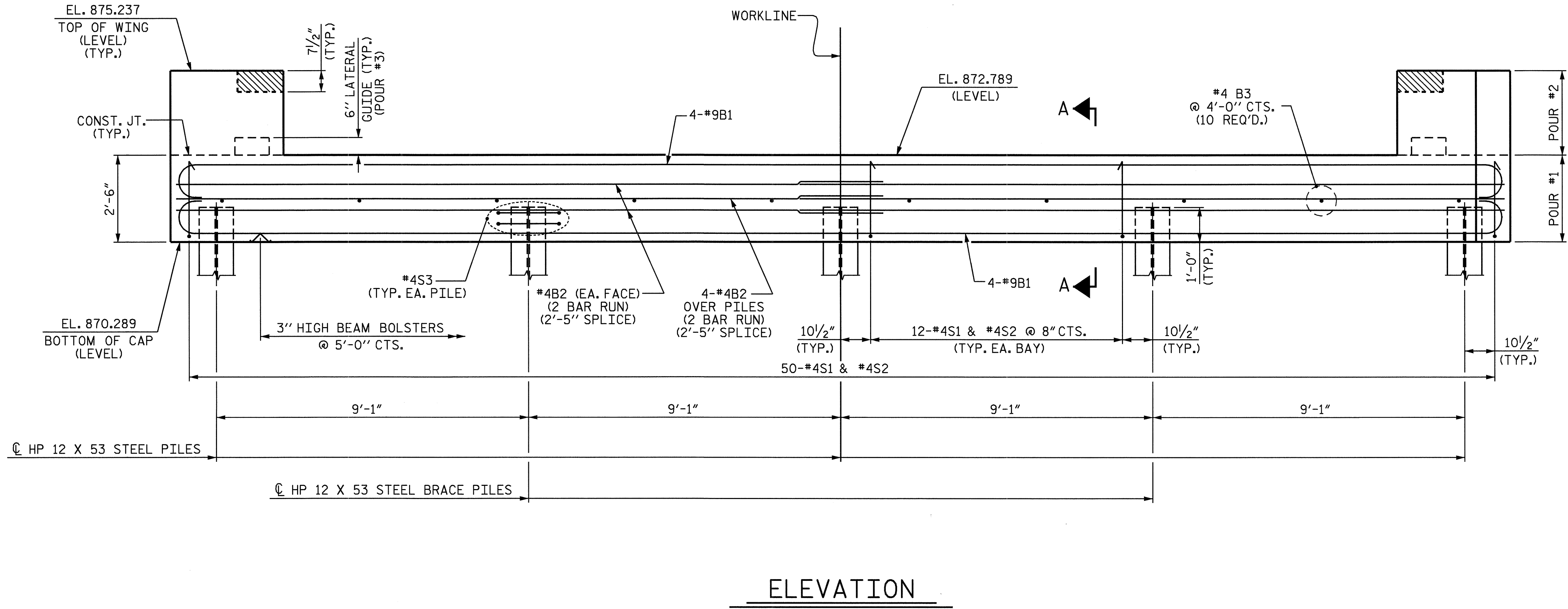
THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE PARAPET AND END POST ARE CAST IF SLIP FORMING IS USED.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" Ø 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.

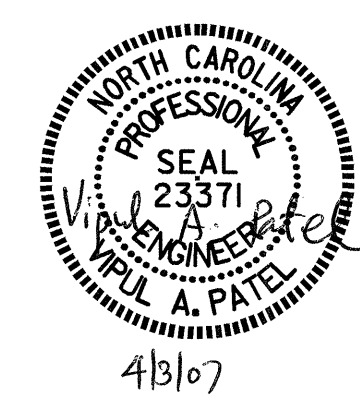


LATERAL GUIDE DETAILS
(EACH END SIMILAR)

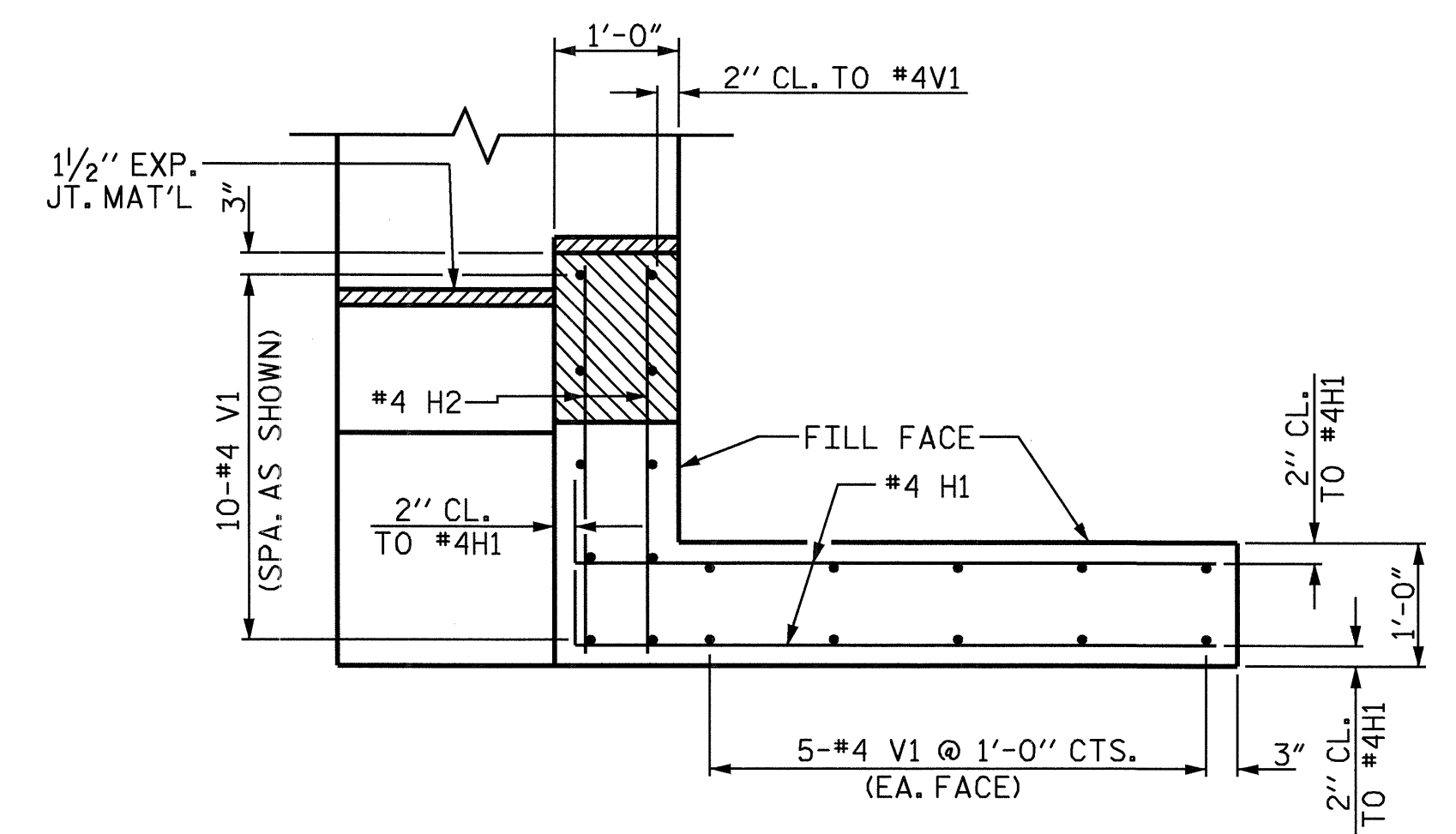


PROJECT NO. B-4155
IREDELL COUNTY
STATION: 14+40.00-L-
SHEET 1 OF 2

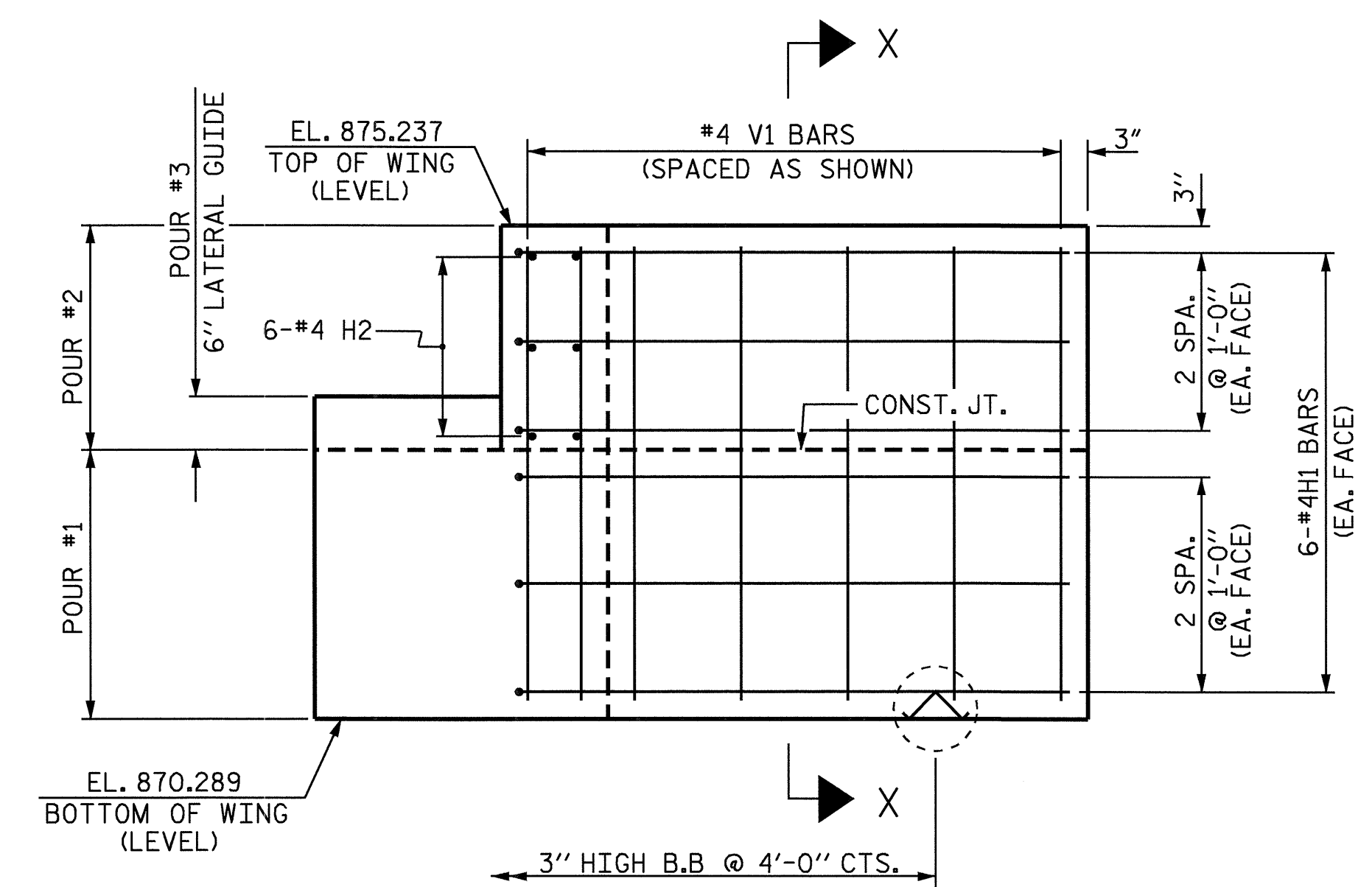
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-10
SUBSTRUCTURE END BENT #1						TOTAL SHEETS 18
REVISIONS						SHEET NO. S-10
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



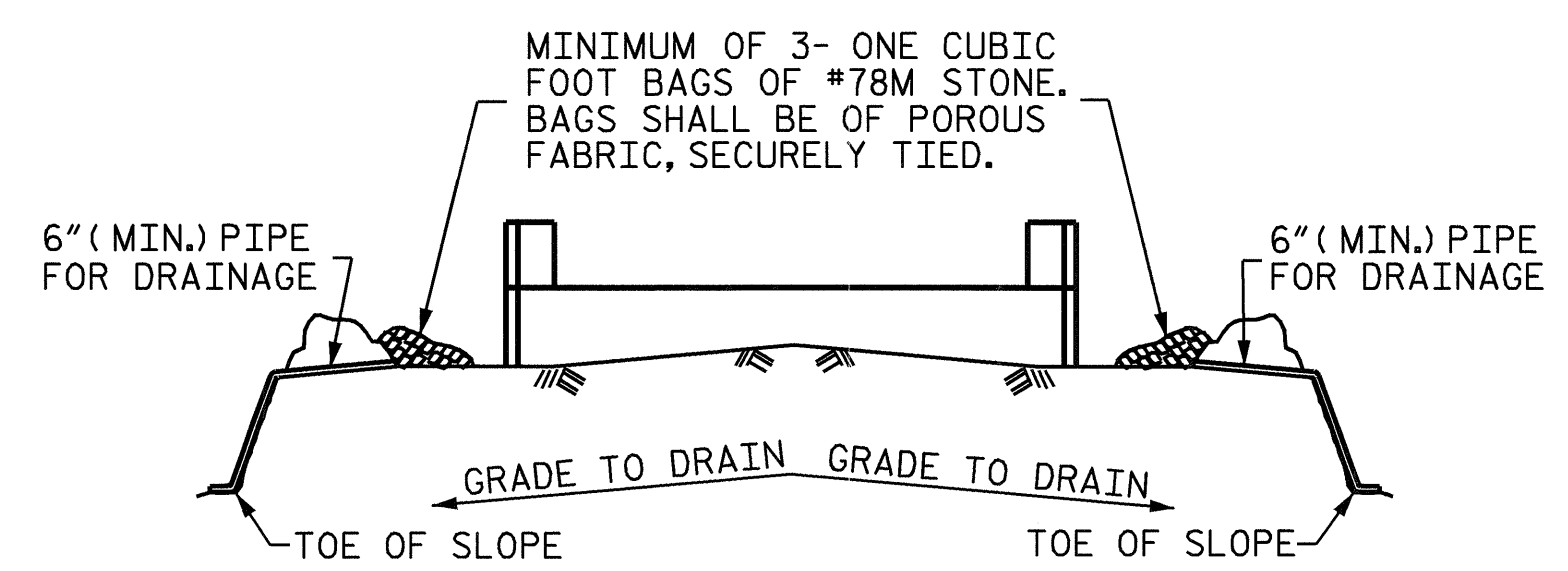
DRAWN BY: D.V. JOYNER DATE: 11-05
CHECKED BY: J.P. ADAMS DATE: 11-05



PLAN OF WING
LEFT WING SHOWN, RIGHT WING SIMILAR.



ELEVATION OF WING
LEFT WING SHOWN, RIGHT WING SIMILAR.



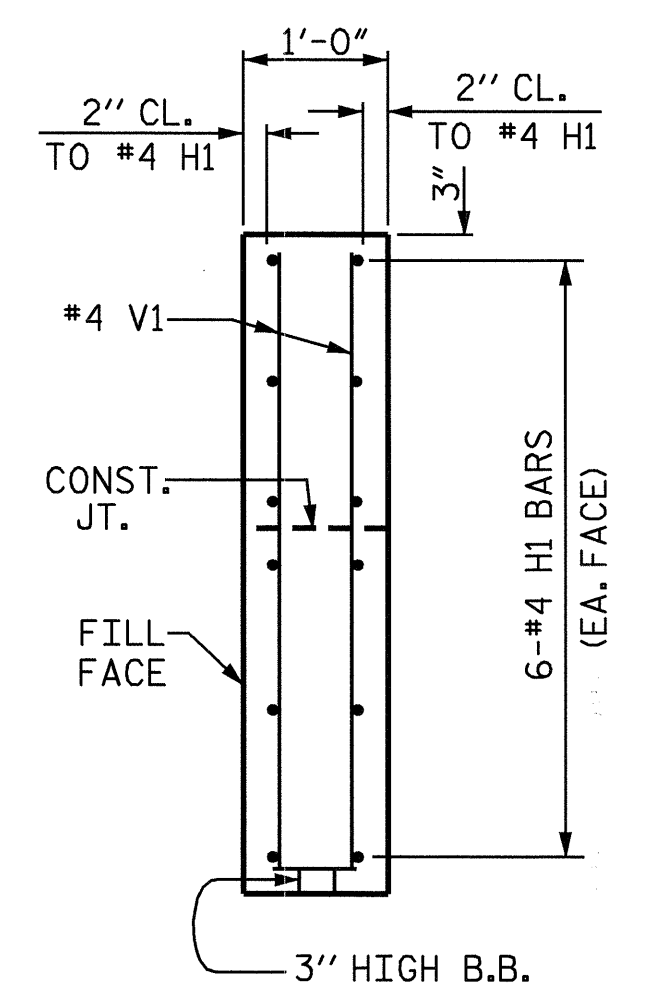
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

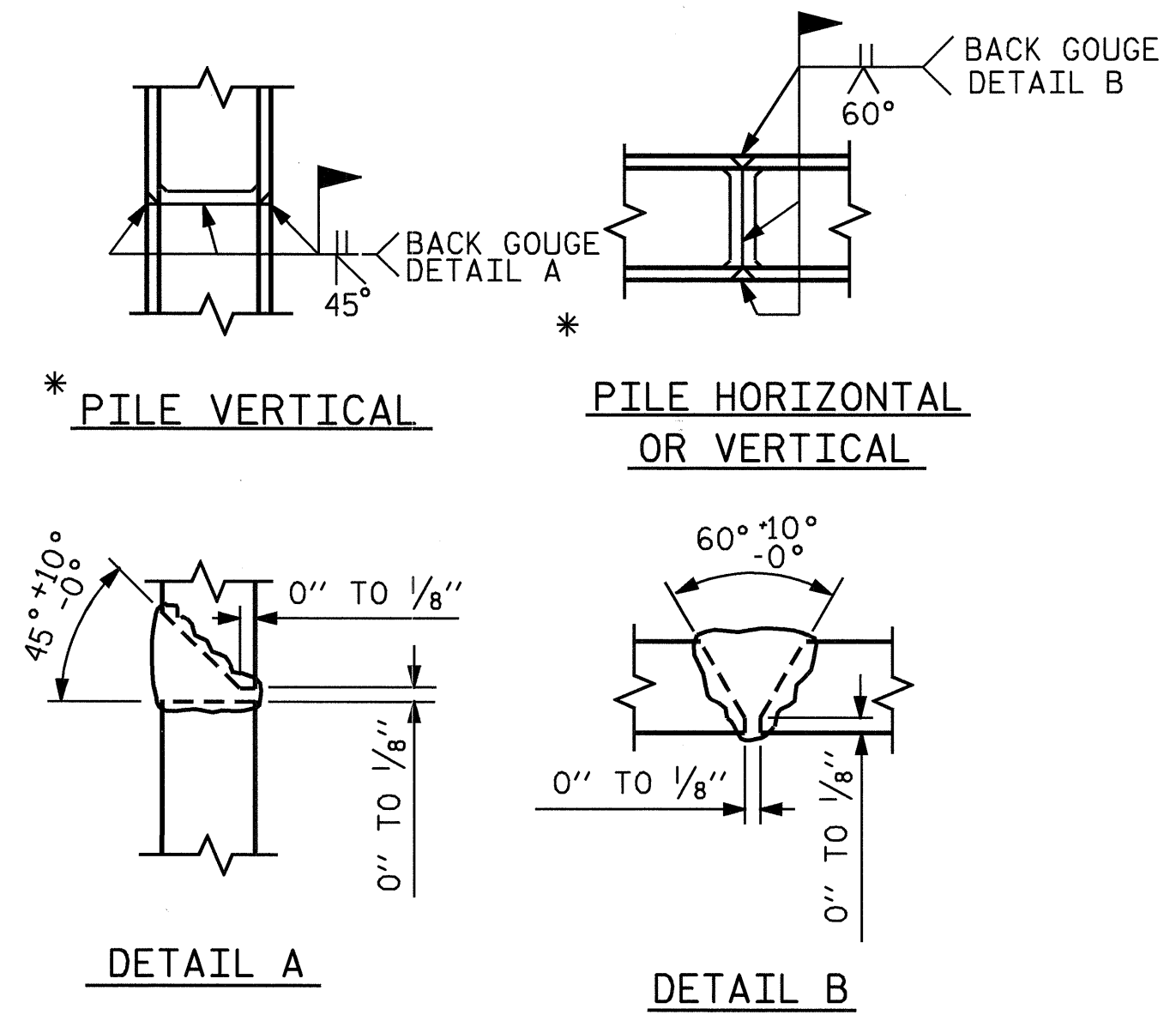
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

DRAWN BY: D.V. JOYNER DATE: 11-05
CHECKED BY: J.P. ADAMS DATE: 11-05

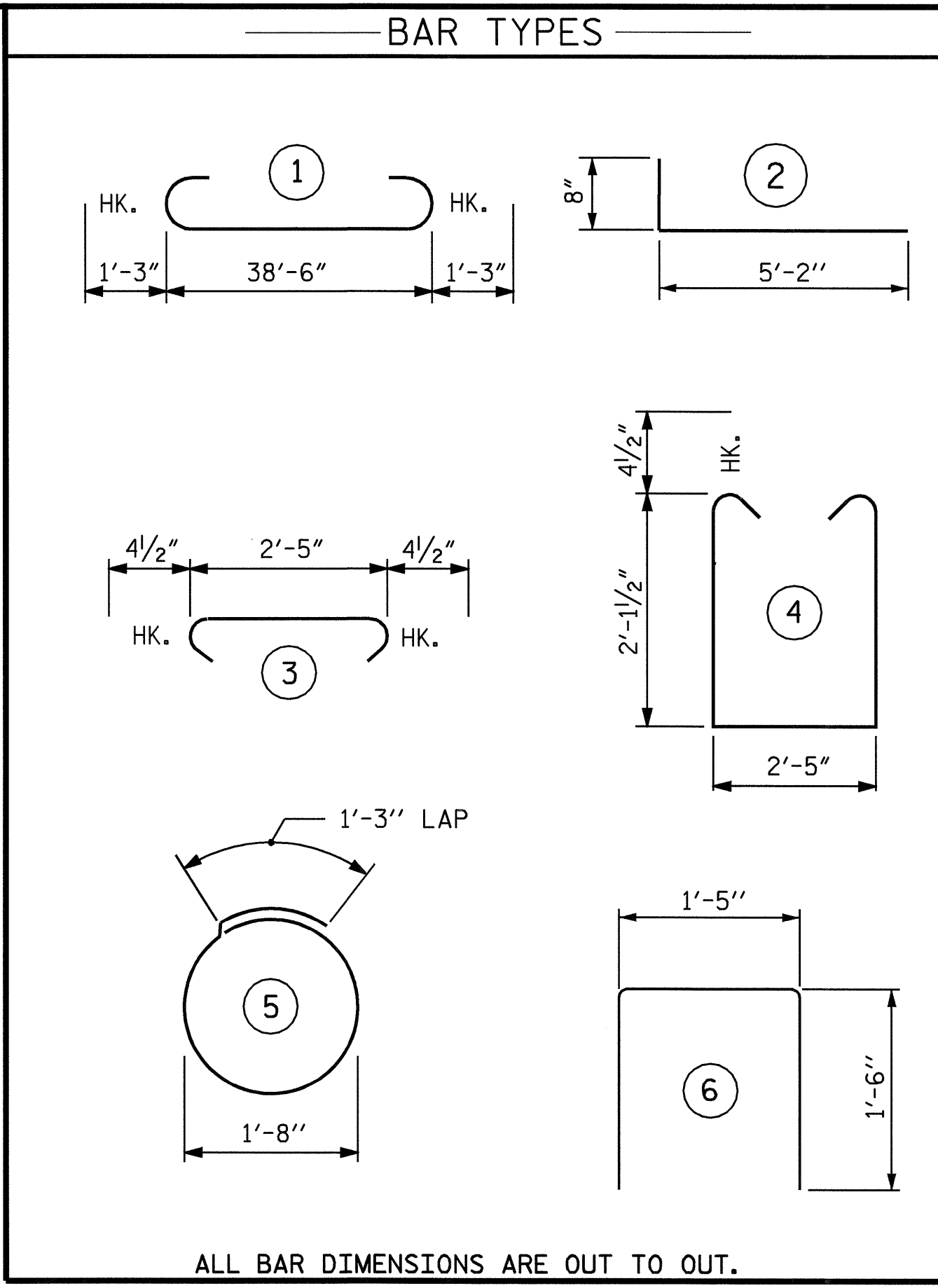


SECTION X-X



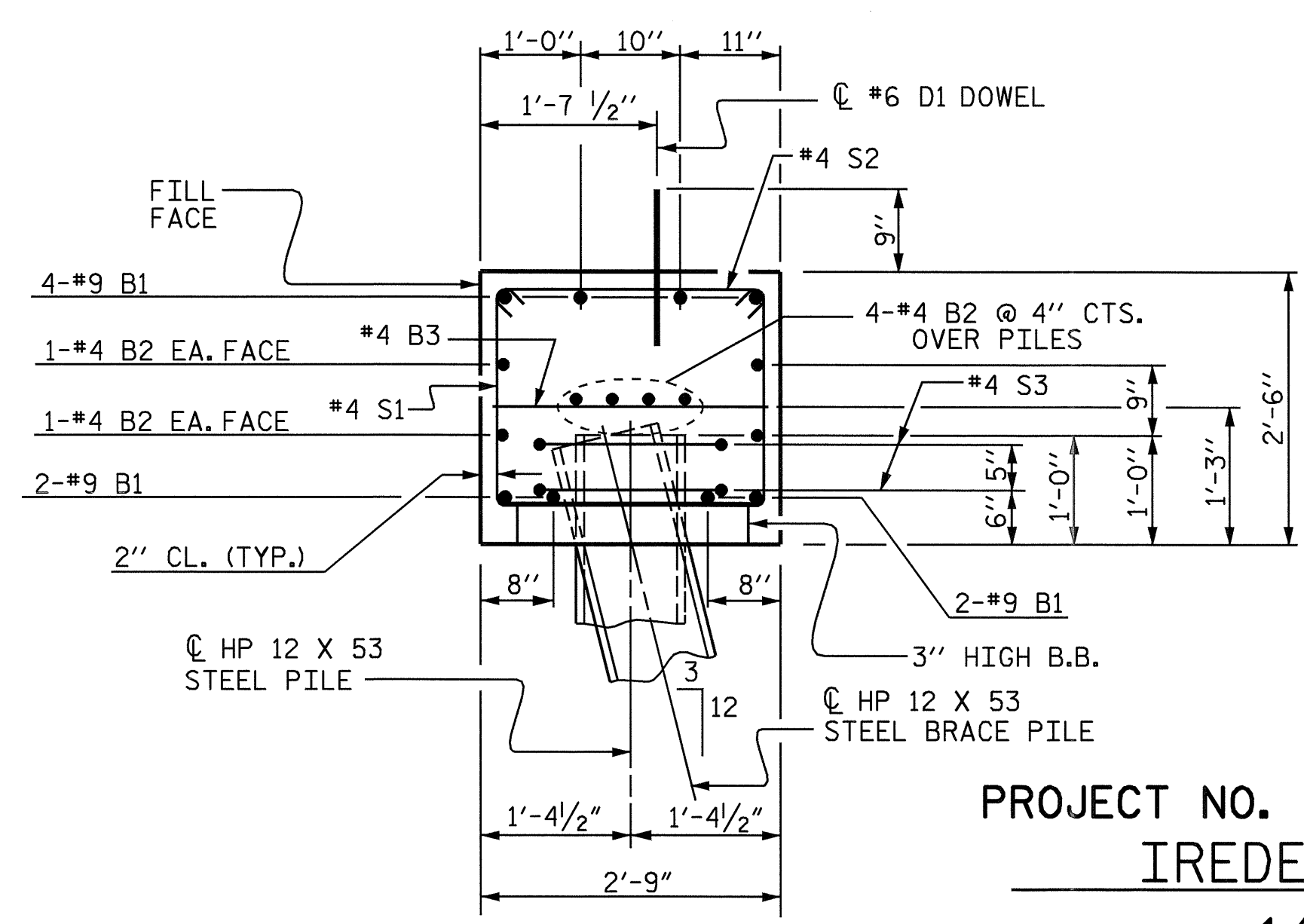
* POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	9		41'-0"	1115
B2	16	4	STR	20'-7"	220
B3	10	4	STR	2'-5"	16
D1	22	6	STR	1'-6"	50
H1	24	4	2	5'-10"	94
H2	12	4	STR	2'-11"	23
S1	50	4	4	7'-5"	248
S2	50	4	3	3'-2"	106
S3	10	4	5	6'-6"	43
U1	4	4	6	4'-5"	12
V1	40	4	STR	4'-7"	122
REINFORCING STEEL					2049 LBS
CLASS A CONCRETE BREAKDOWN:					
POUR #1 (CAP & LOWER WINGS)					10.8 C.Y.
POUR #2 (UPPER WINGS)					1.4 C.Y.
POUR #3 (LATERAL GUIDES)					0.1 C.Y.
TOTAL CLASS A CONCRETE					12.3 C.Y.
HP 12 X 53 STEEL PILES					
					NO. 5 125 LIN. FT.



SECTION A-A

PROJECT NO. B-4155
IREDELL COUNTY
STATION: 14+40.00-L-
SHEET 2 OF 2

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



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			18

NOTES

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

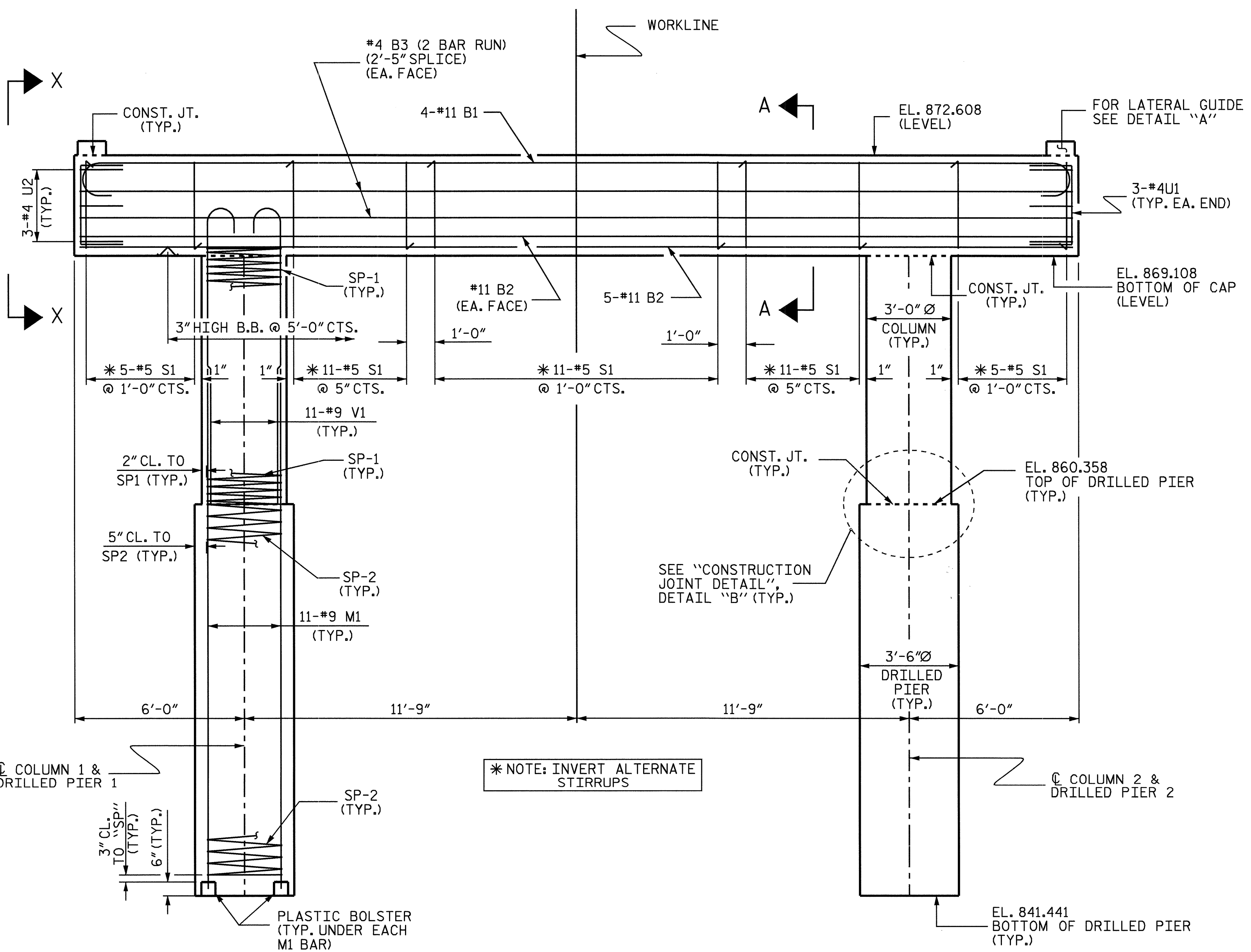
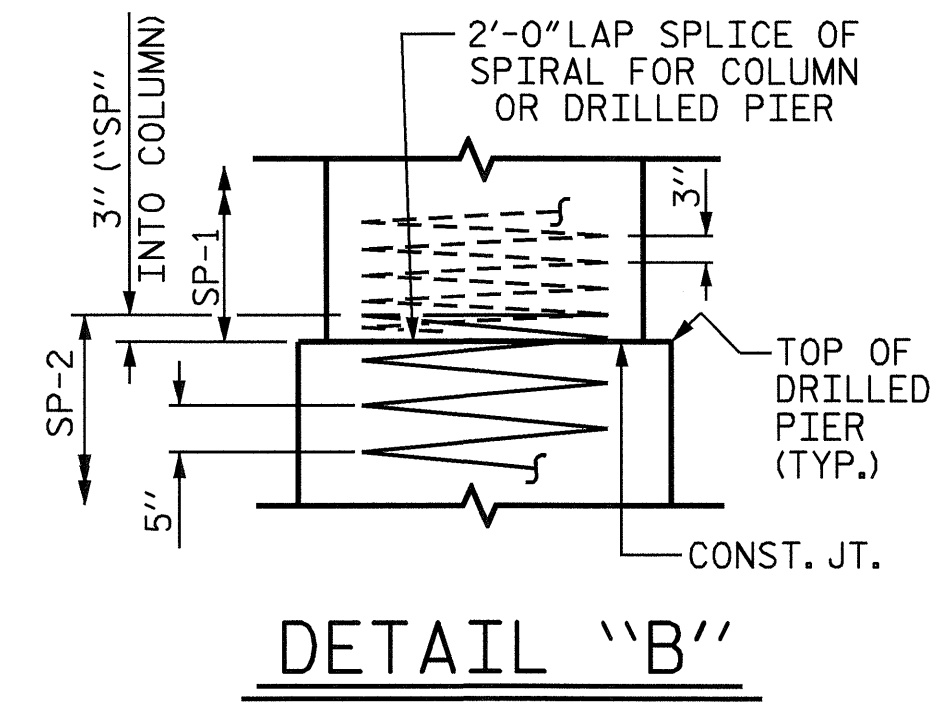
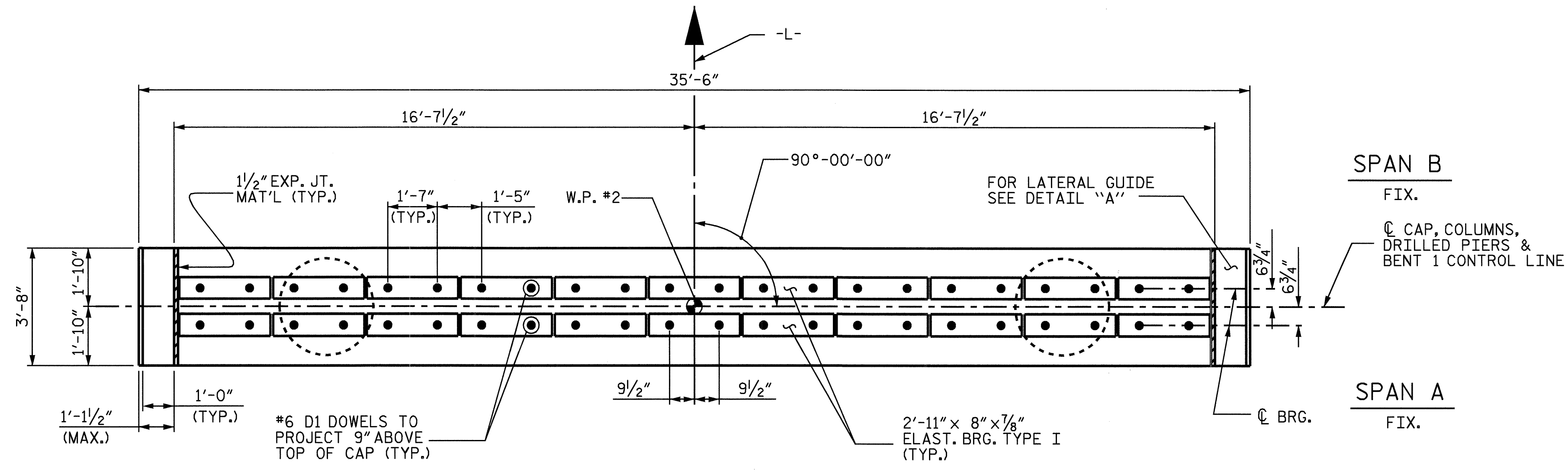
HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL".

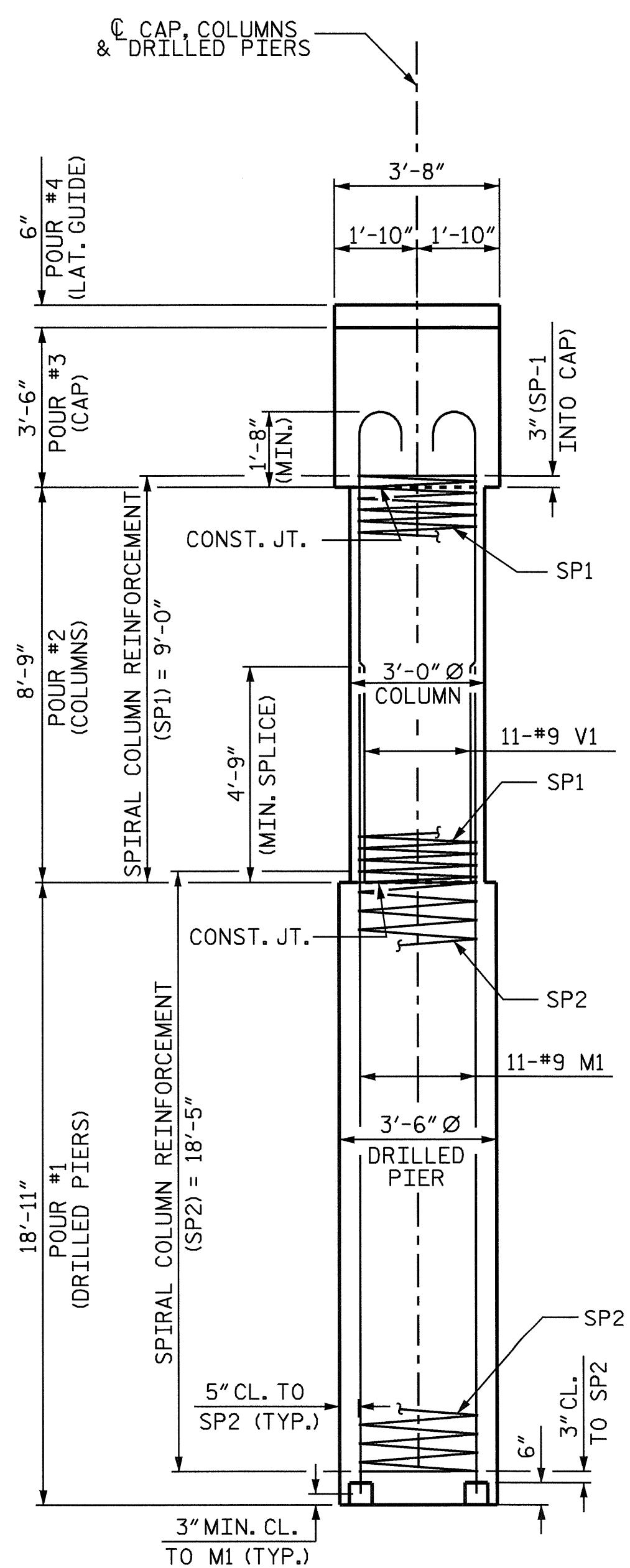
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.

FOR DRILLED PIERS SEE SPECIAL PROVISIONS.

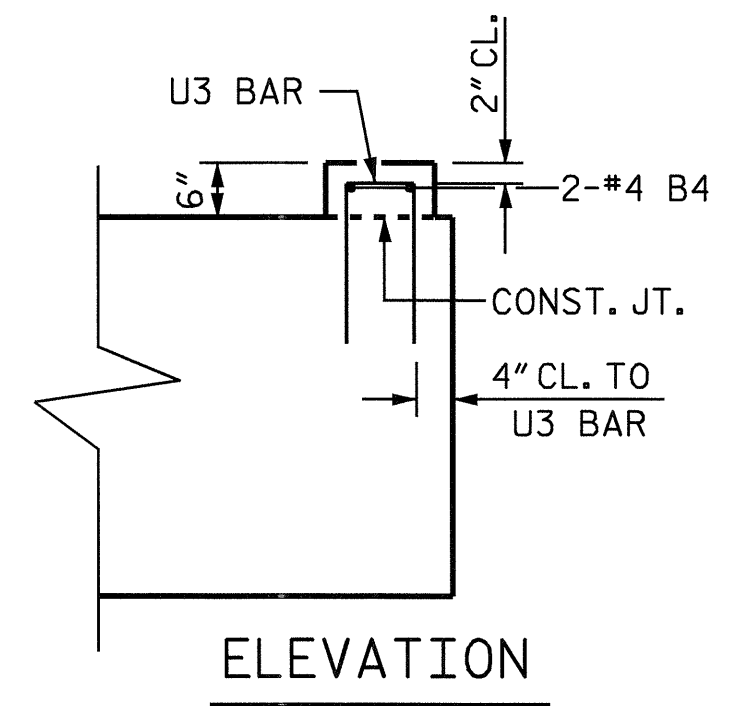
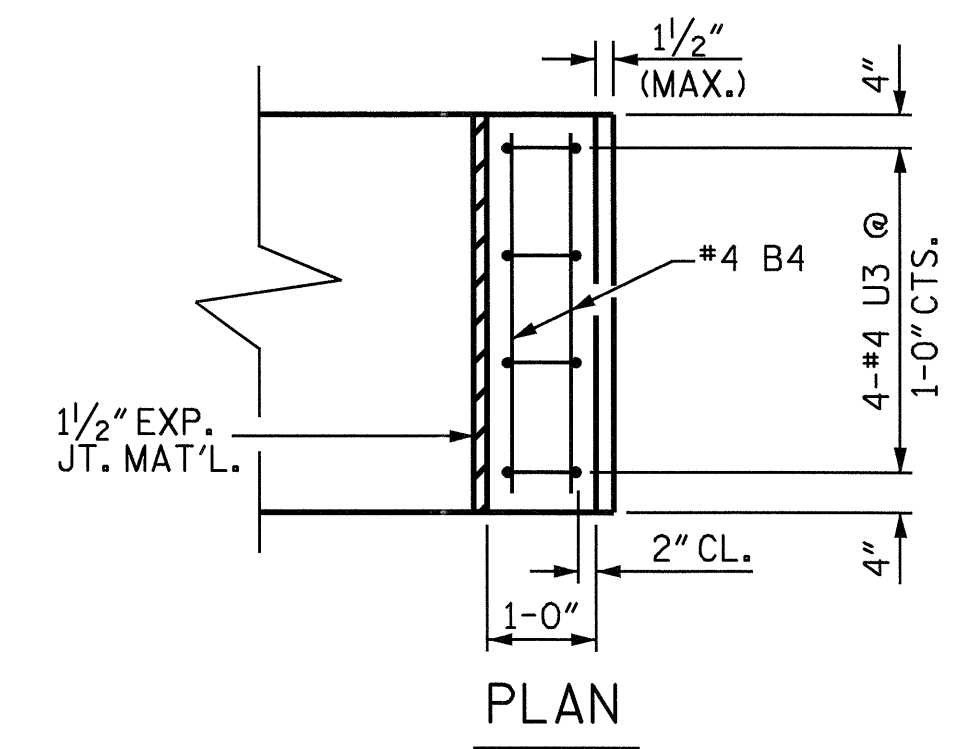
NO SEPARATE PAYMENT SHALL BE MADE FOR ANY ADDITIONAL STEEL REQUIRED IN CONSTRUCTION OF THE DRILLED PIER AS THIS IS CONSIDERED INCIDENTAL TO THE LINEAR FOOT PRICE FOR DRILLED PIER.



ELEVATION
REINFORCING STEEL IS IDENTICAL FOR EACH COLUMN AND DRILLED PIER



END ELEVATION

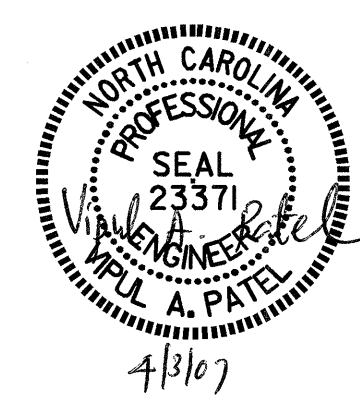


DETAIL "A"

PROJECT NO. B-4155
IREDELL COUNTY
STATION: 14+40.00 -L-

SHEET 1 OF 2

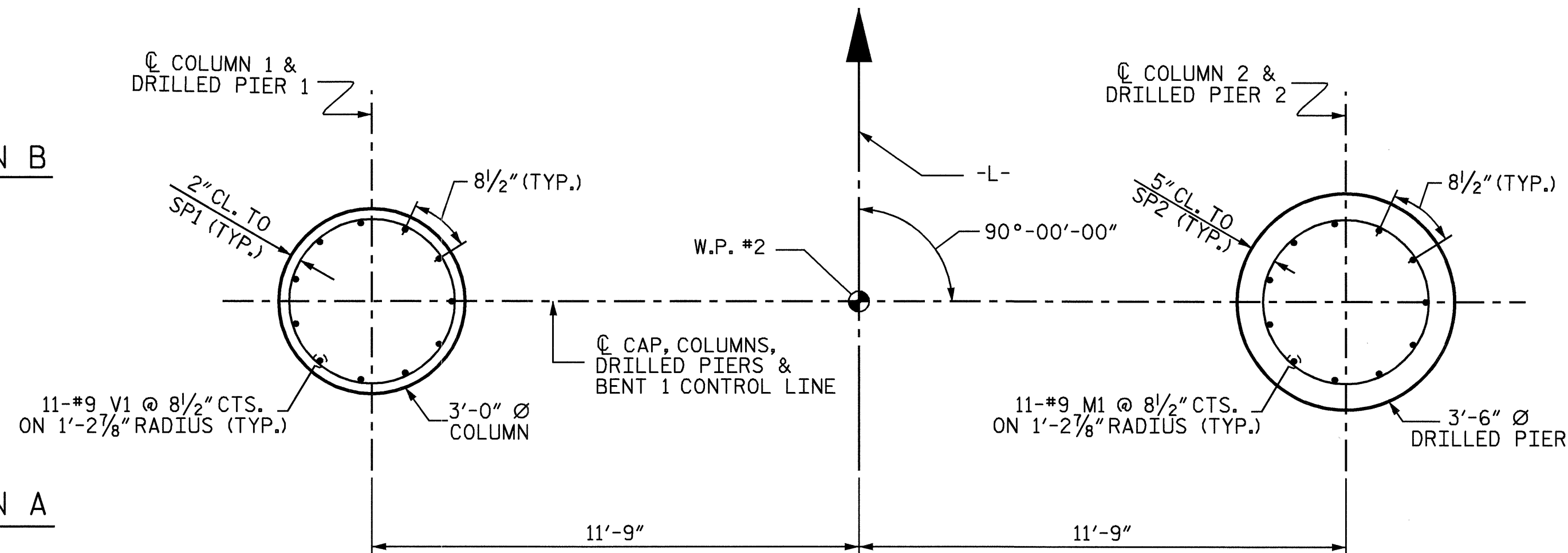
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT #1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-12 TOTAL SHEETS 18



DRAWN BY : S.F. DOMBROWSKI DATE : 6/06
CHECKED BY : S.H. SOCKWELL DATE : 7/6/06

SPAN B

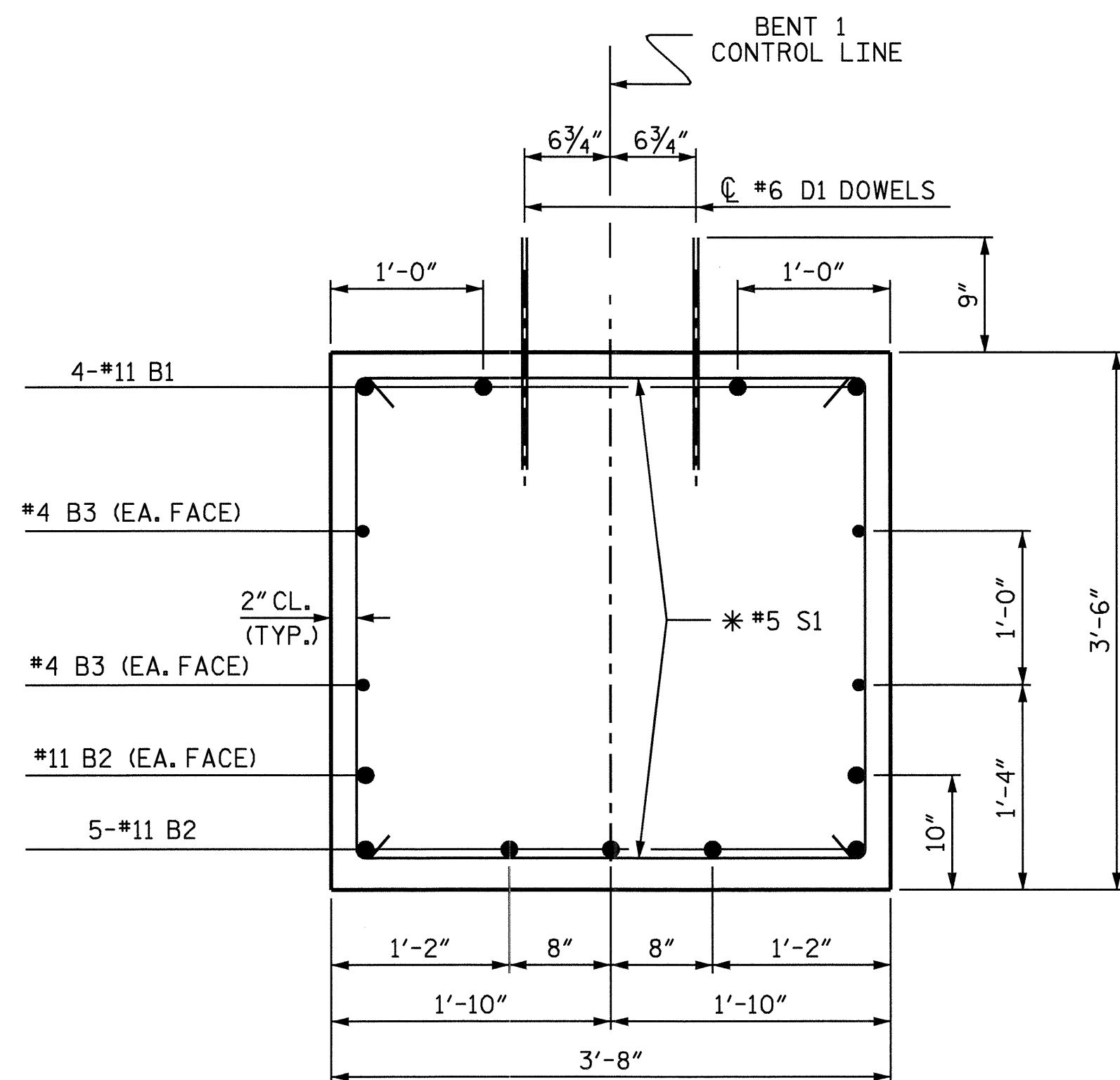
SPAN A



PARTIAL PLAN OF COLUMNS

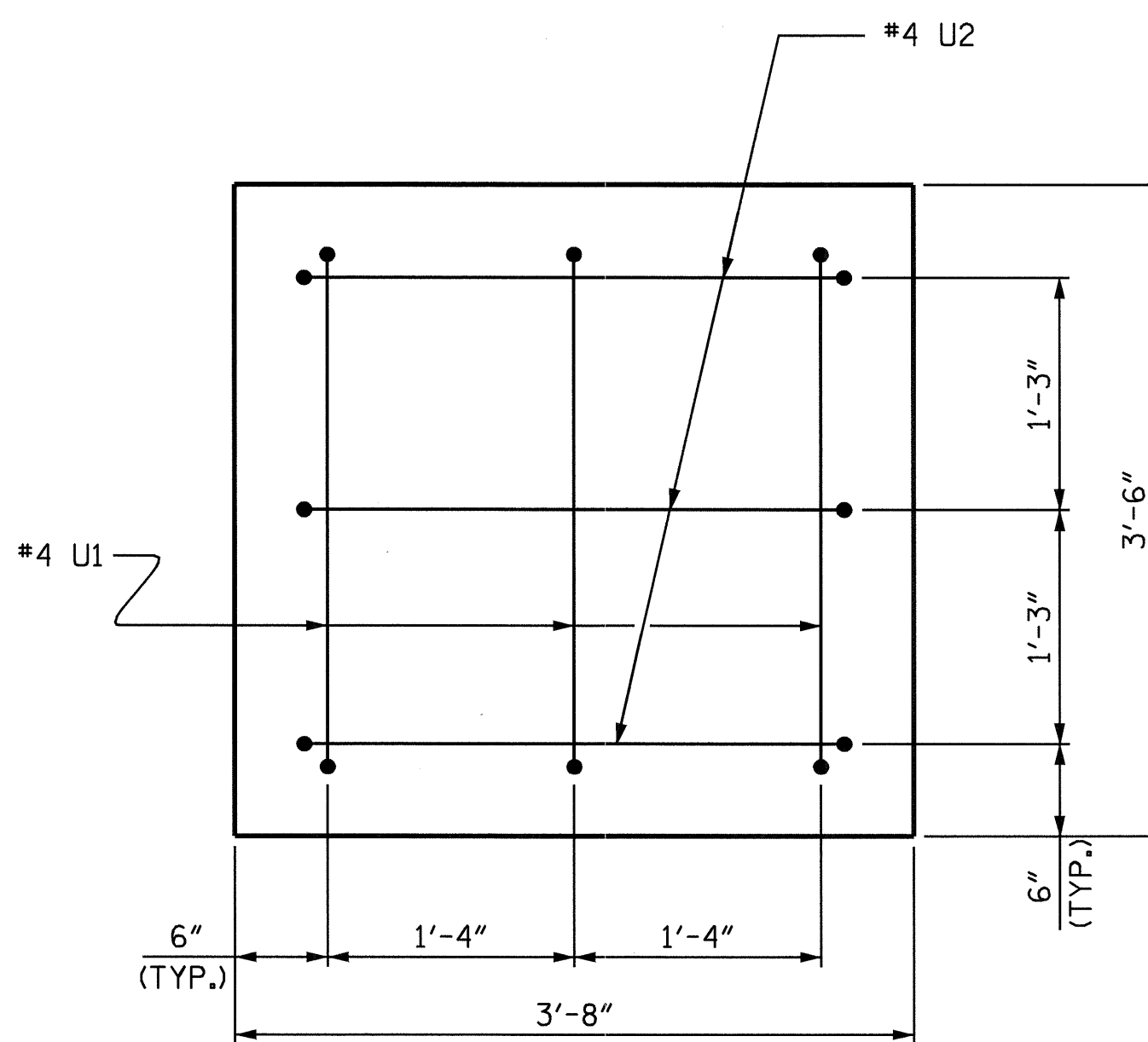
PARTIAL PLAN OF DRILLED PIERS

PLAN OF COLUMNS & DRILLED PIERS



SECTION A-A

* INVERT ALTERNATE STIRRUPS



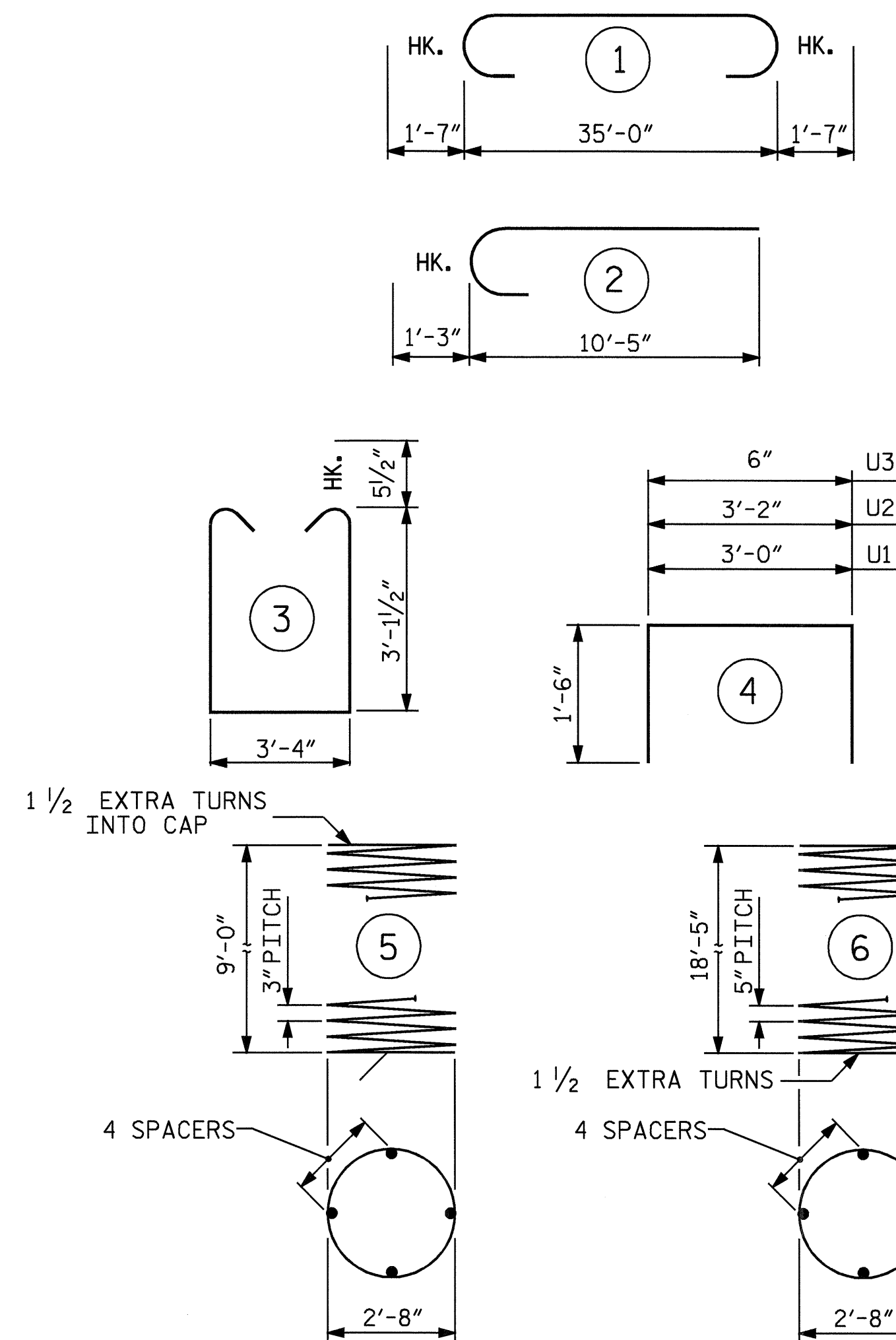
VIEW X-X

(TYP. BOTH ENDS)

2" MIN. CONCRETE COVER FROM END OF CAP REQUIRED FOR ALL #4 U1 AND #4 U2 BARS.

#4 U1 AND #4 U2 BARS MAY BE SHIFTED UP TO 2" TO CLEAR 'B' BARS.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

** THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR
 *** THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR

BILL OF MATERIAL BENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	11	1	38'-2"	811
B2	7	11	STR	35'-2"	1308
B3	8	4	STR	18'-10"	101
B4	4	4	STR	3'-4"	9
D1	44	6	STR	1'-6"	99
M1	22	9	STR	26'-5"	1976
S1	43	5	3	10'-6"	471
U1	6	4	4	6'-0"	24
U2	6	4	4	6'-2"	25
U3	8	4	4	3'-6"	19
V1	22	9	2	11'-8"	873

TOTAL REINFORCING STEEL LBS. 5716

SP1	2	***	5	309'-5"	413
SP2	2	***	6	376'-4"	785

TOTAL SPIRAL COLUMN REINFORCING STEEL LBS. 1198

CLASS A CONCRETE BREAKDOWN

POUR #2 (COLUMNS)	4.6 C.Y.
POUR #3 (BENT CAP)	16.9 C.Y.
POUR #4 (LAT. GUIDE)	0.1 C.Y.

TOTAL CLASS A CONCRETE 21.6 C.Y.

DRILLED PIER QUANTITIES

POUR #1 (DRILLED PIERS)	13.5 C.Y.
3'-6" DIA DRILLED PIERS IN SOIL	24.8 LIN. FT.
3'-6" DIA DRILLED PIERS NOT IN SOIL	13.0 LIN. FT.
PERMANENT STEEL CASING FOR 3'-6" DIA DRILLED PIER	20.7 LIN. FT.

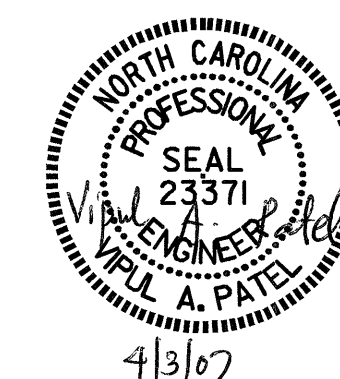
SID INSPECTION:	2 EACH
SPT TESTING:	2 EACH
CROSSHOLE SONIC LOGGING:	1 EACH
CSL TUBES:	172 LIN. FT.

PROJECT NO. B-4155
 IREDELL COUNTY
 STATION: 14+40.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT #1



DRAWN BY : S.F. DOMBROWSKI DATE : 6/06
 CHECKED BY : S.H. SOCKWELL DATE : 7/6/06

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			18

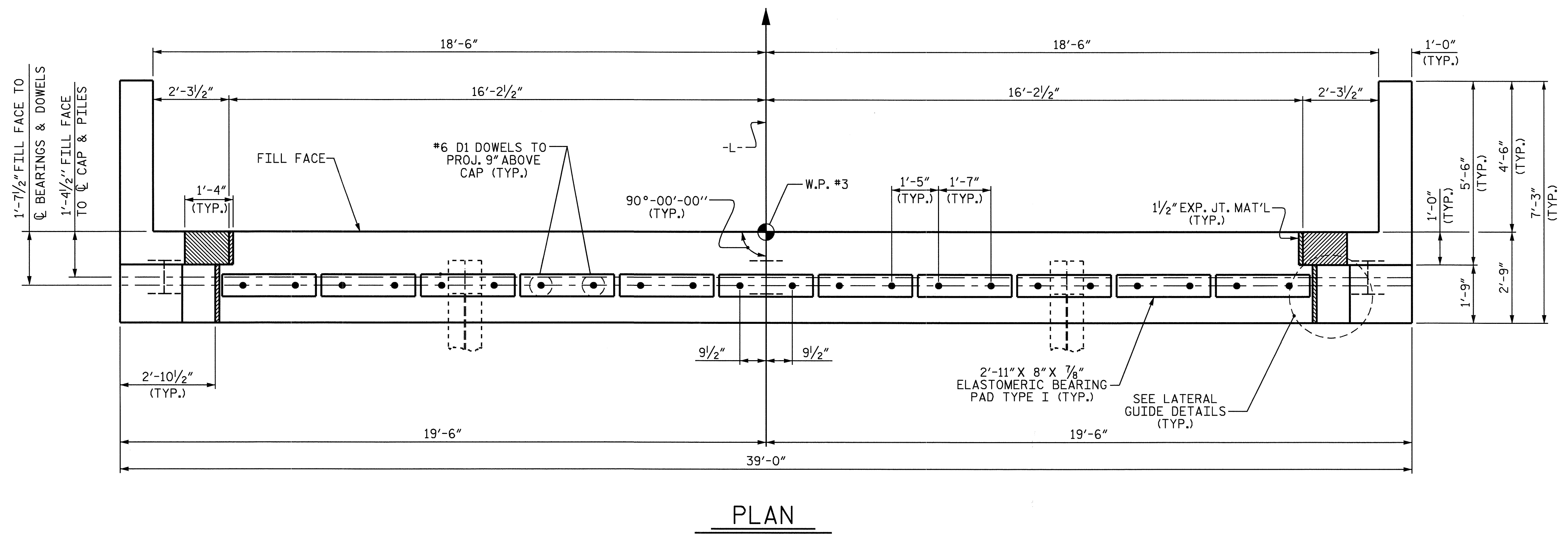
NOTES

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

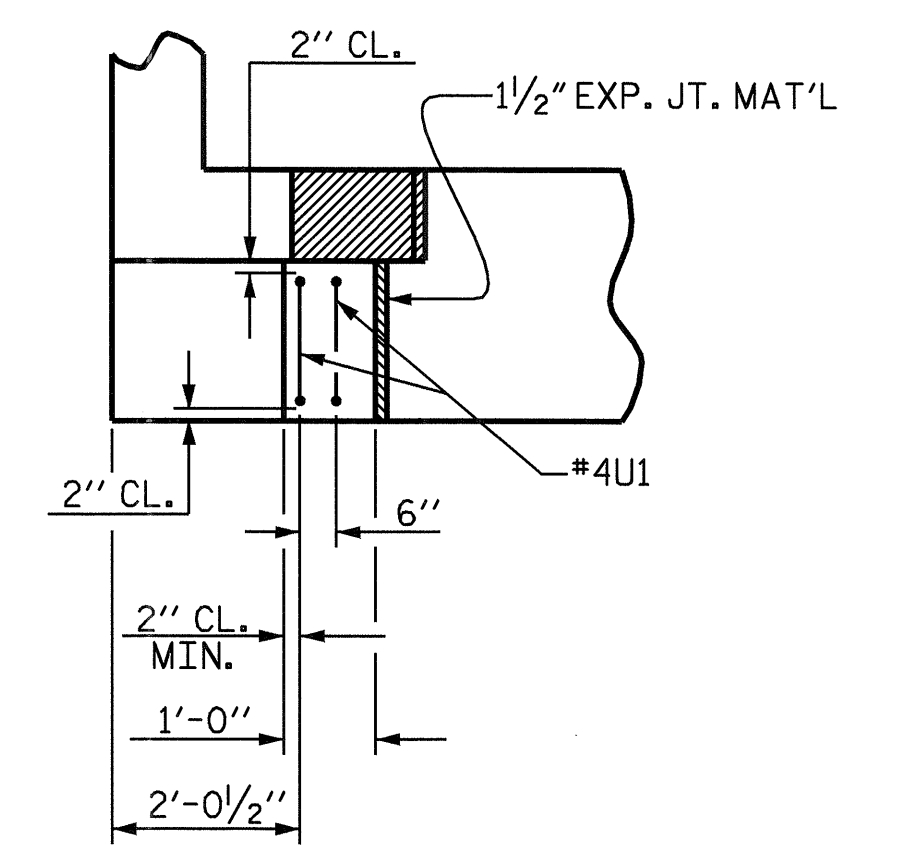
THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE PARAPET AND END POST ARE CAST IF SLIP FORMING IS USED.

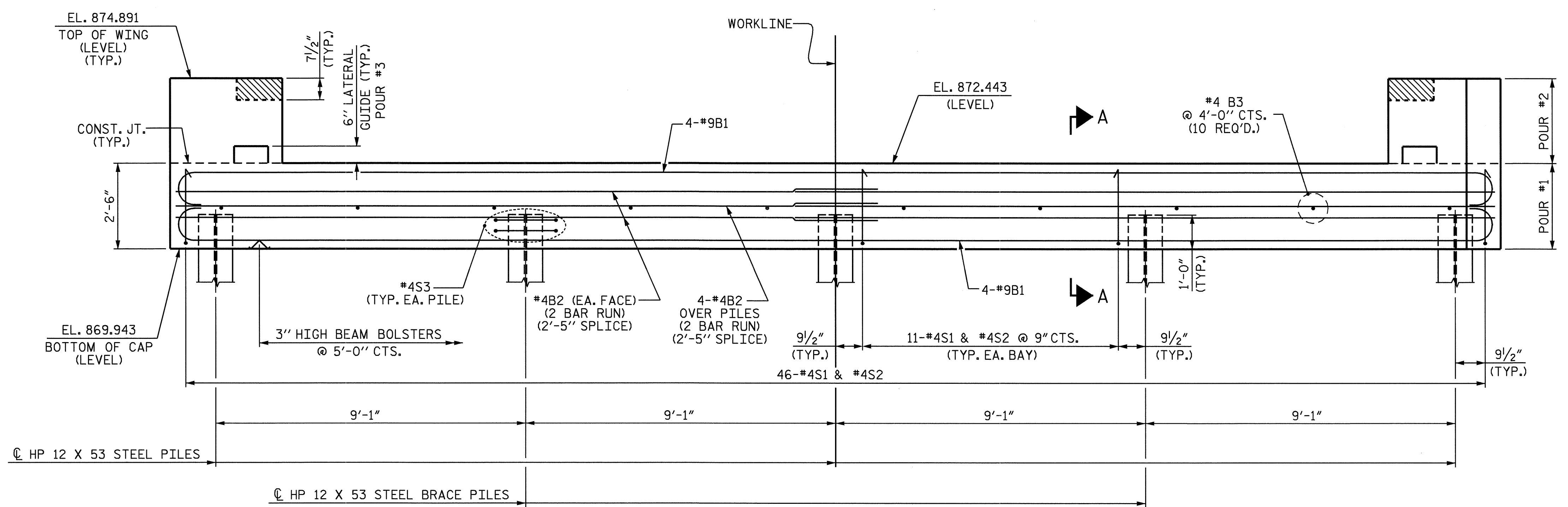
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" Ø DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



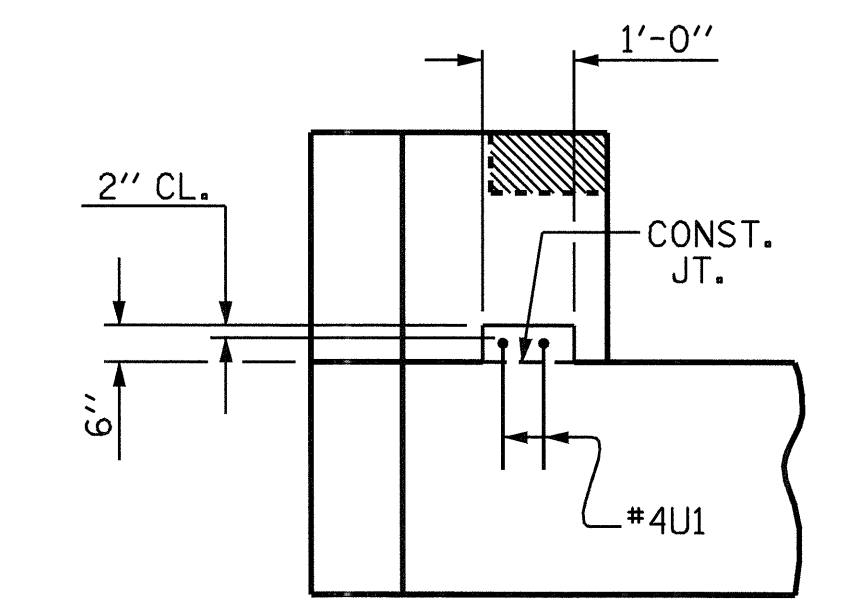
PLAN



PLAN



ELEVATION



ELEVATION

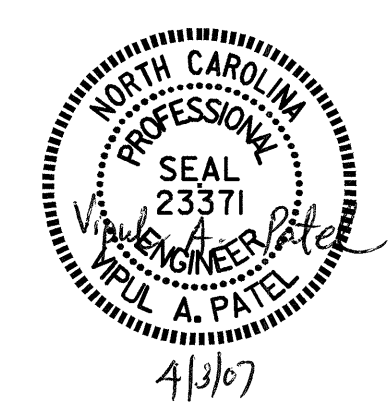
LATERAL GUIDE DETAILS

(EACH END SIMILAR)

PROJECT NO. B-4155
IREDELL COUNTY
 STATION: 14+40.00-L-

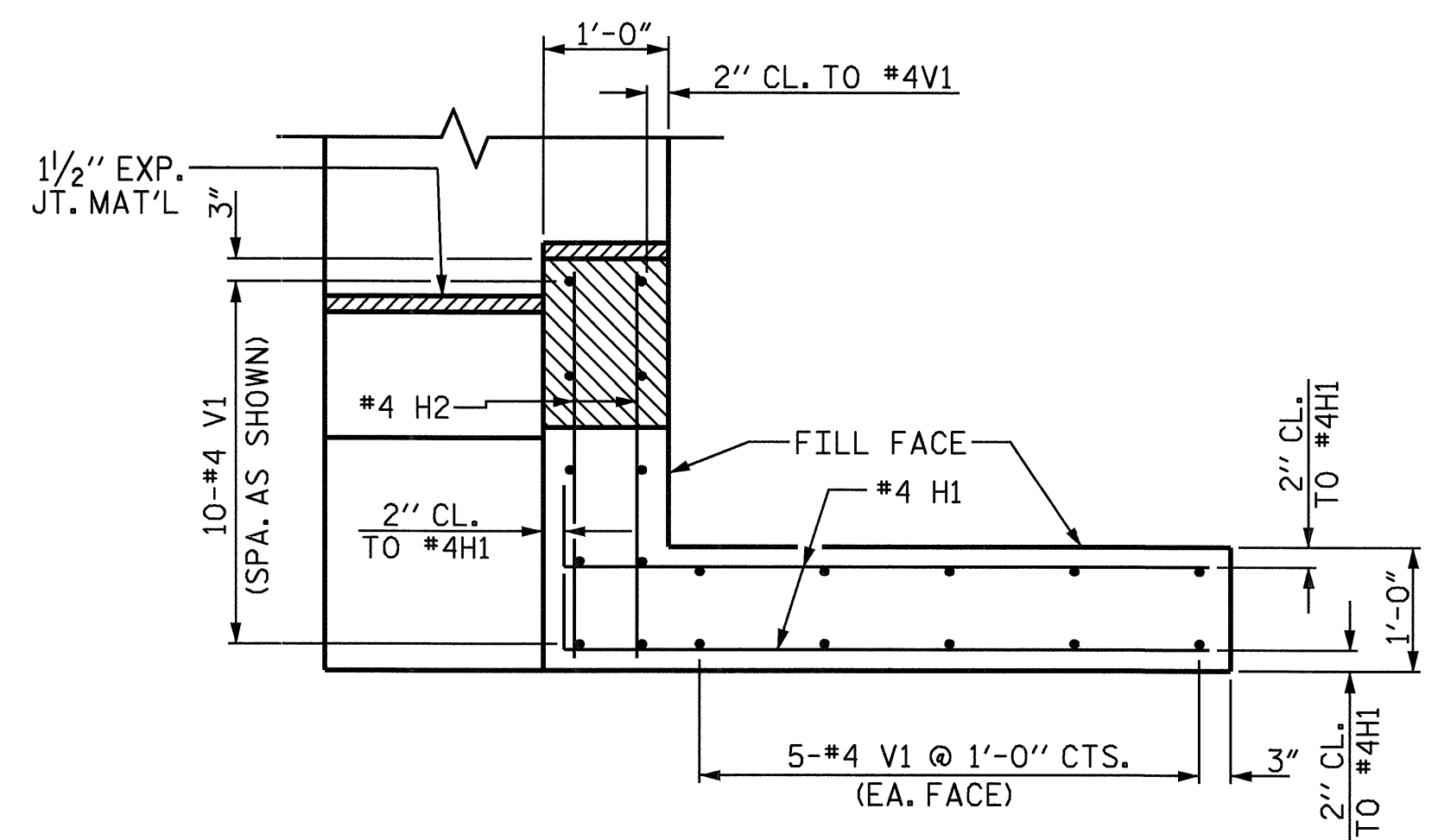
SHEET 1 OF 2

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

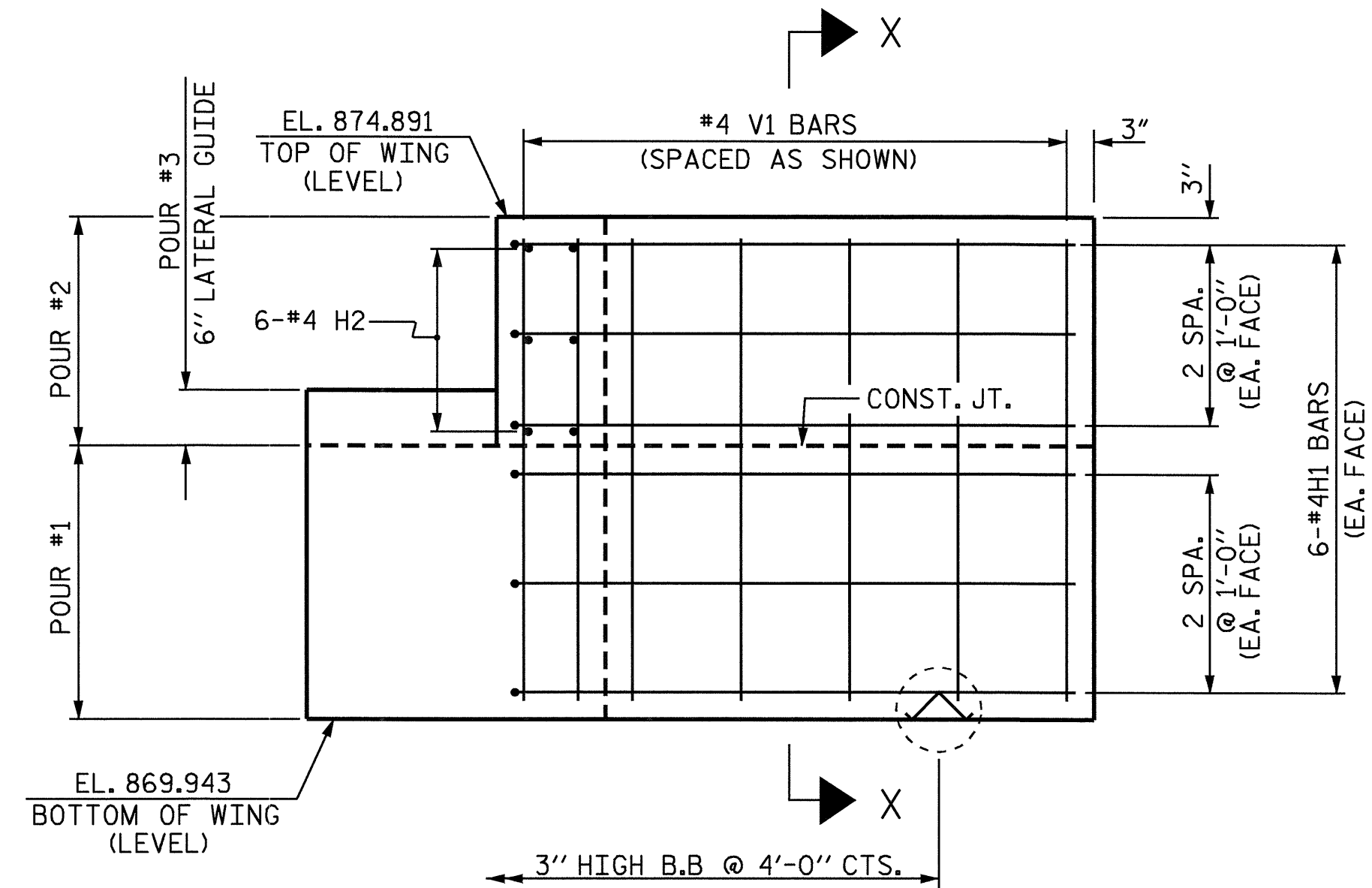


DRAWN BY: D.V. JOYNER DATE: 11-05
 CHECKED BY: J.P. ADAMS DATE: 11-05

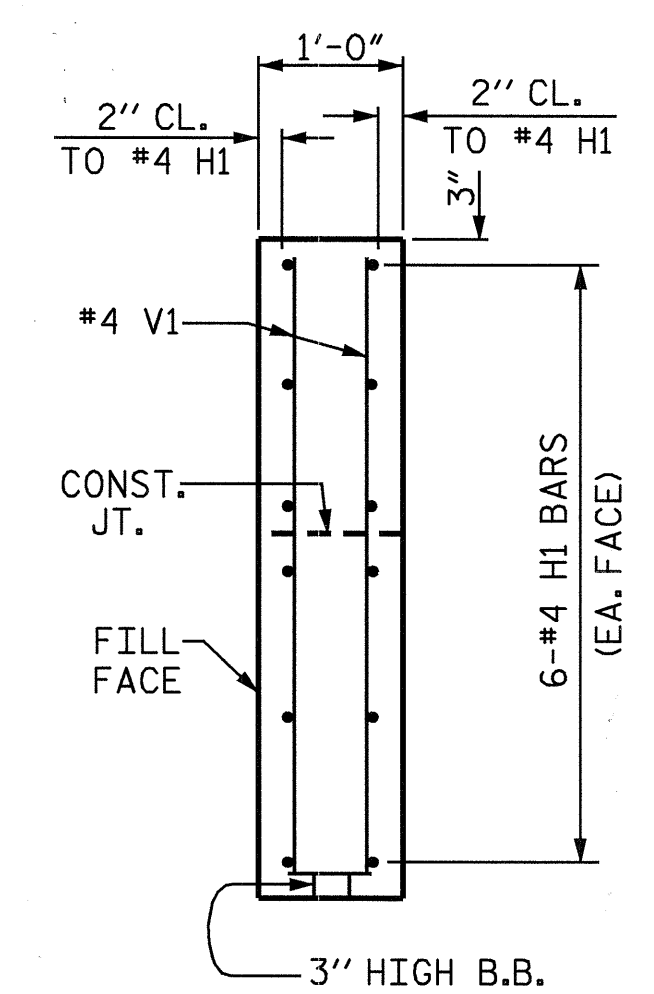
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			18



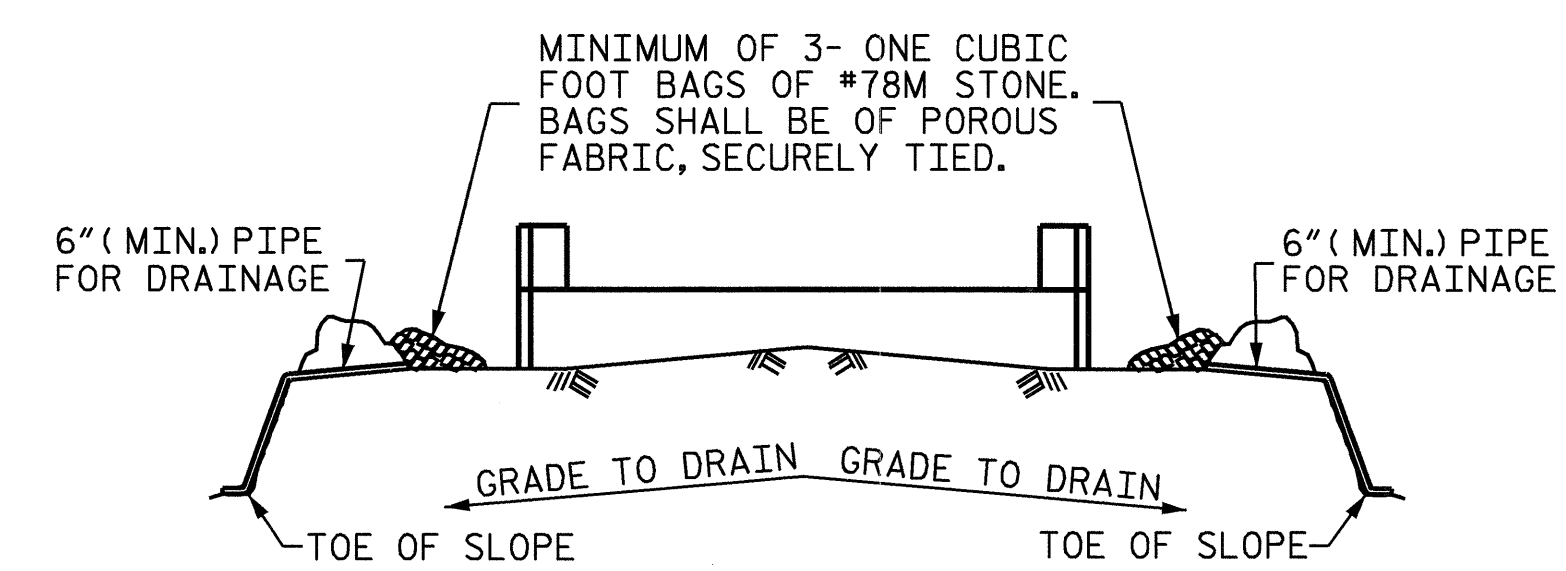
PLAN OF WING
LEFT WING SHOWN, RIGHT WING SIMILAR.



ELEVATION OF WING
LEFT WING SHOWN, RIGHT WING SIMILAR.



SECTION X-X



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

6" (MIN.) PIPE FOR DRAINAGE

6" (MIN.) PIPE FOR DRAINAGE

GRADE TO DRAIN GRADE TO DRAIN

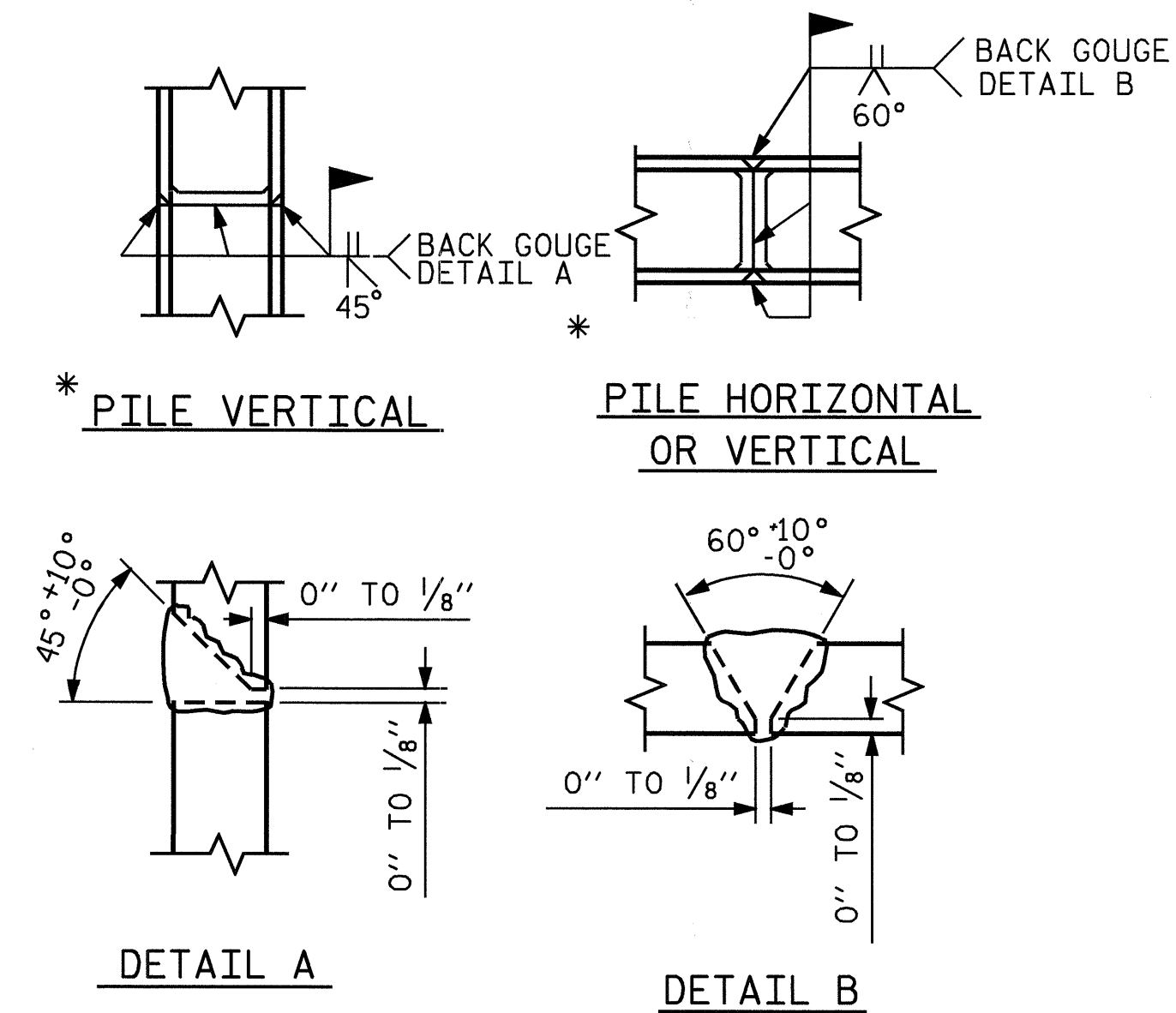
TOE OF SLOPE TOE OF SLOPE

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

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

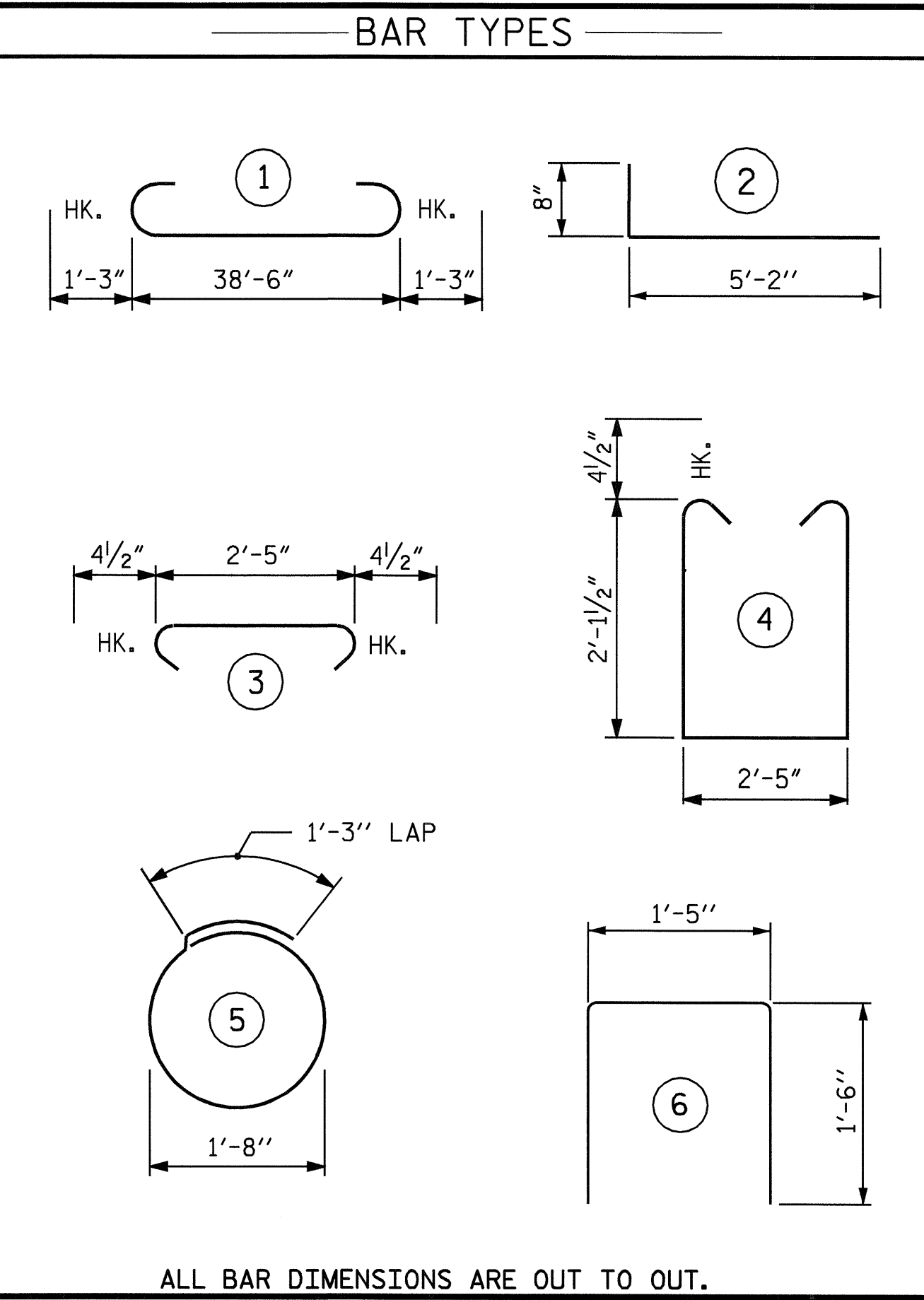
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



* POSITION OF PILE DURING WELDING.

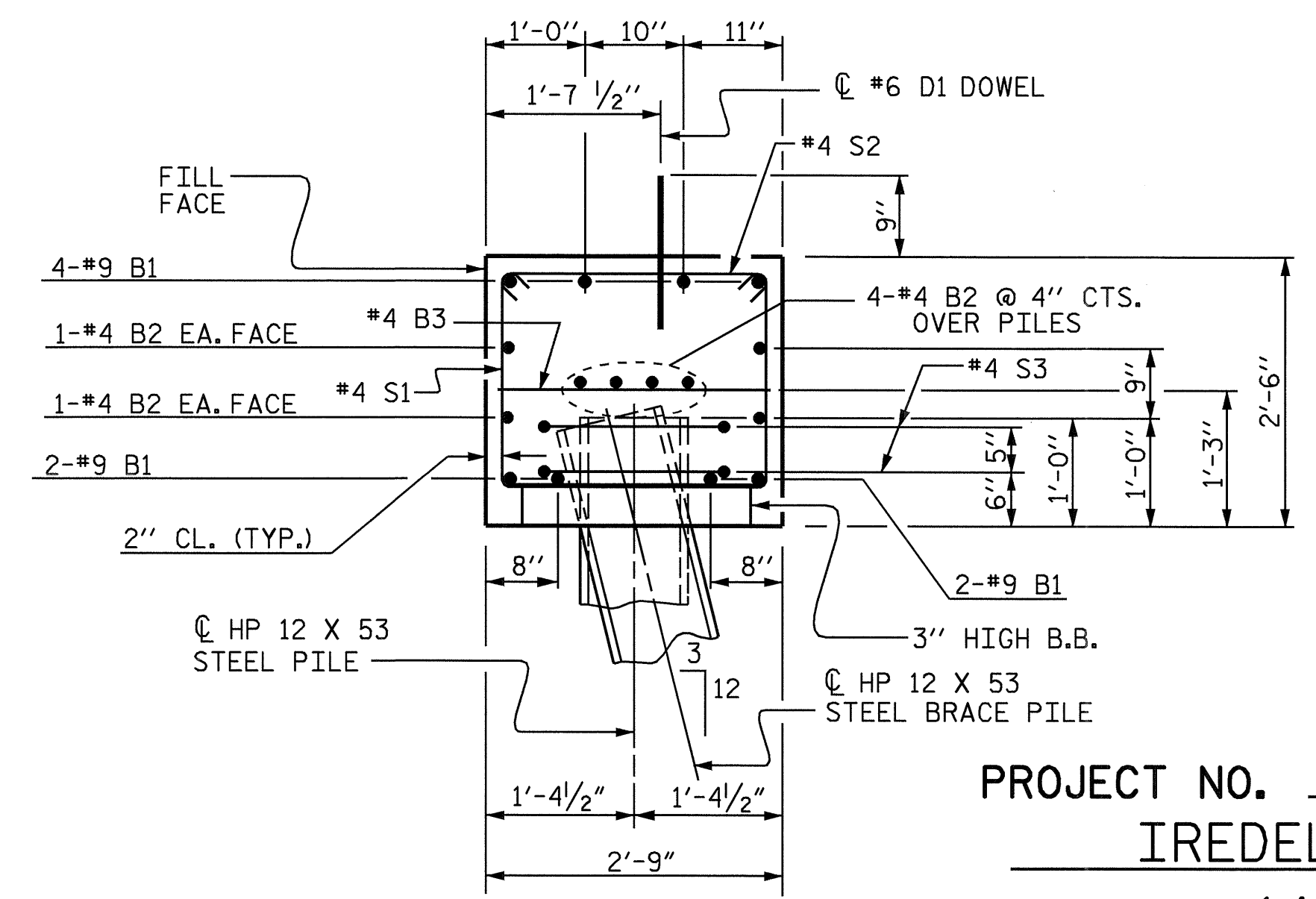
PILE SPLICE DETAILS



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	9	1	41'-0"	1115
B2	16	4	STR	20'-7"	220
B3	10	4	STR	2'-5"	16
D1	22	6	STR	1'-6"	50
H1	24	4	2	5'-10"	94
H2	12	4	STR	2'-11"	23
S1	46	4	4	7'-5"	228
S2	46	4	3	3'-2"	97
S3	10	4	5	6'-6"	43
U1	4	4	6	4'-5"	12
V1	40	4	STR	4'-7"	122
REINFORCING STEEL					2020 LBS
CLASS A CONCRETE BREAKDOWN:					
POUR #1 (CAP & LOWER WINGS)					10.8 C.Y.
POUR #2 (UPPER WINGS)					1.4 C.Y.
POUR #3 (LATERAL GUIDES)					0.1 C.Y.
TOTAL CLASS A CONCRETE					12.3 C.Y.
HP 12 X 53 STEEL PILES					NO. 5 125 LIN. FT.



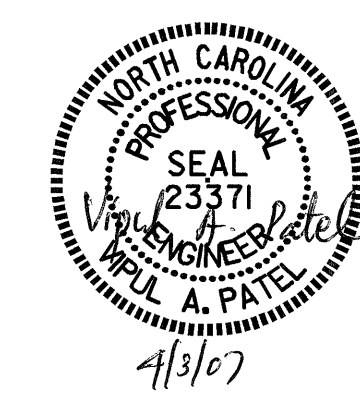
SECTION A-A

PROJECT NO. B-4155
IREDELL COUNTY
STATION: 14+40.00-L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE
END BENT #2**

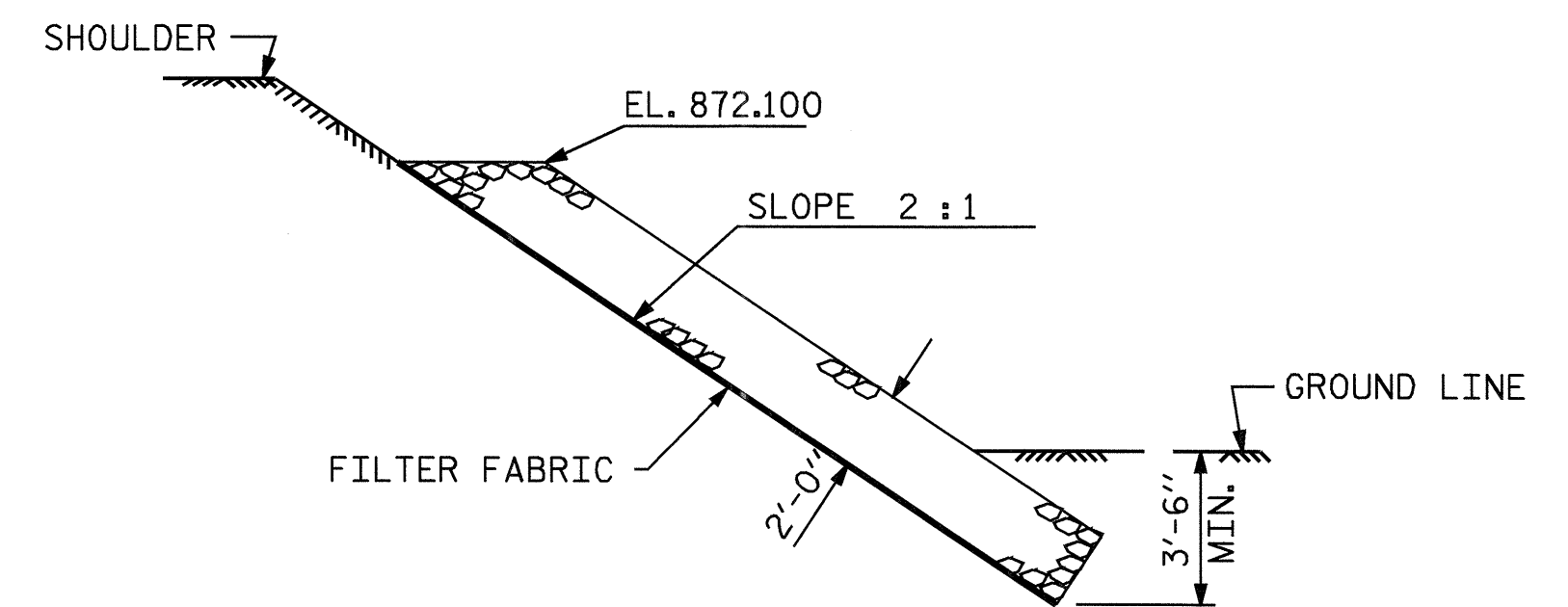
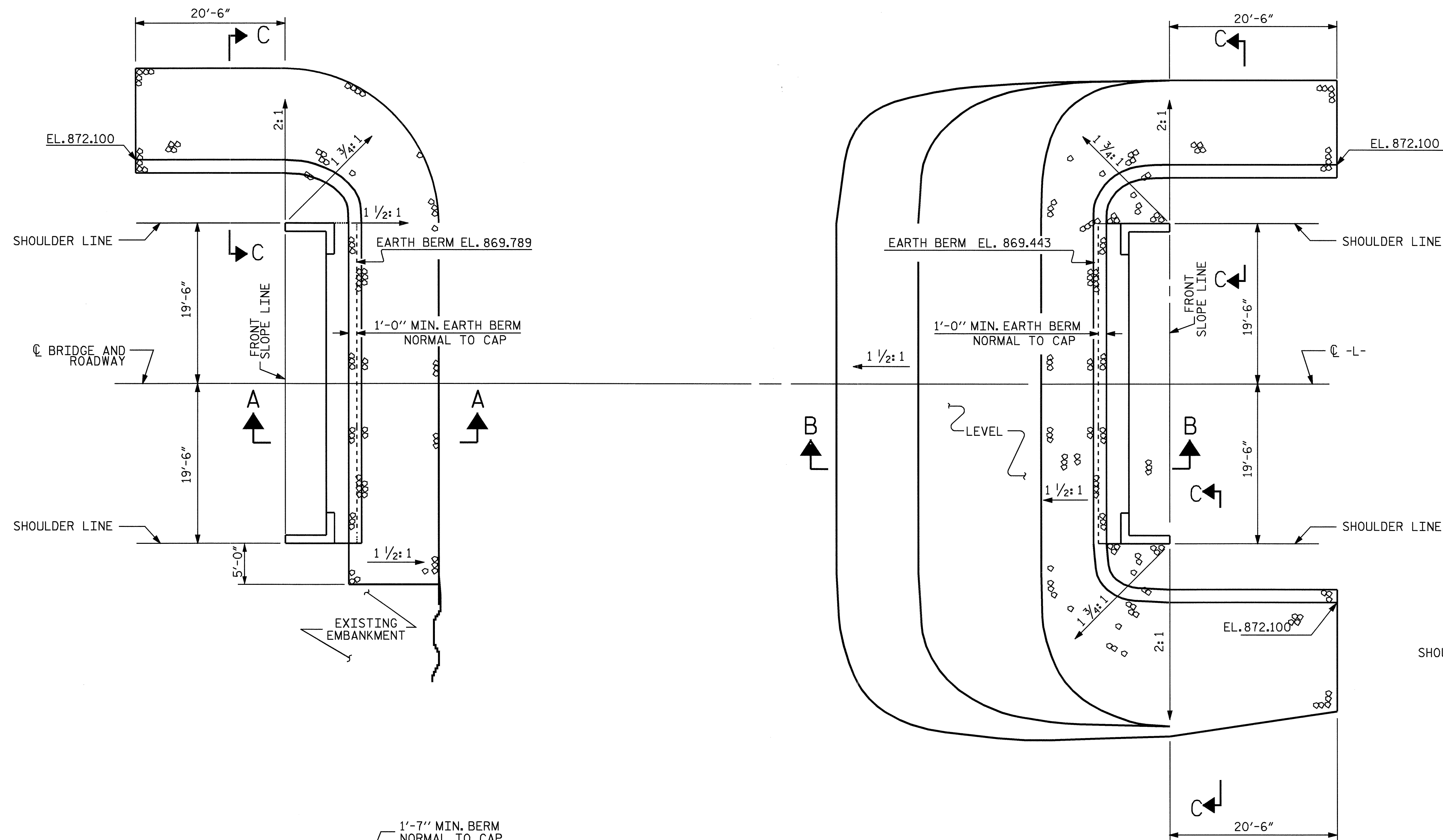


REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	DATE:	S-15
1			3		TOTAL SHEETS
2			4		18

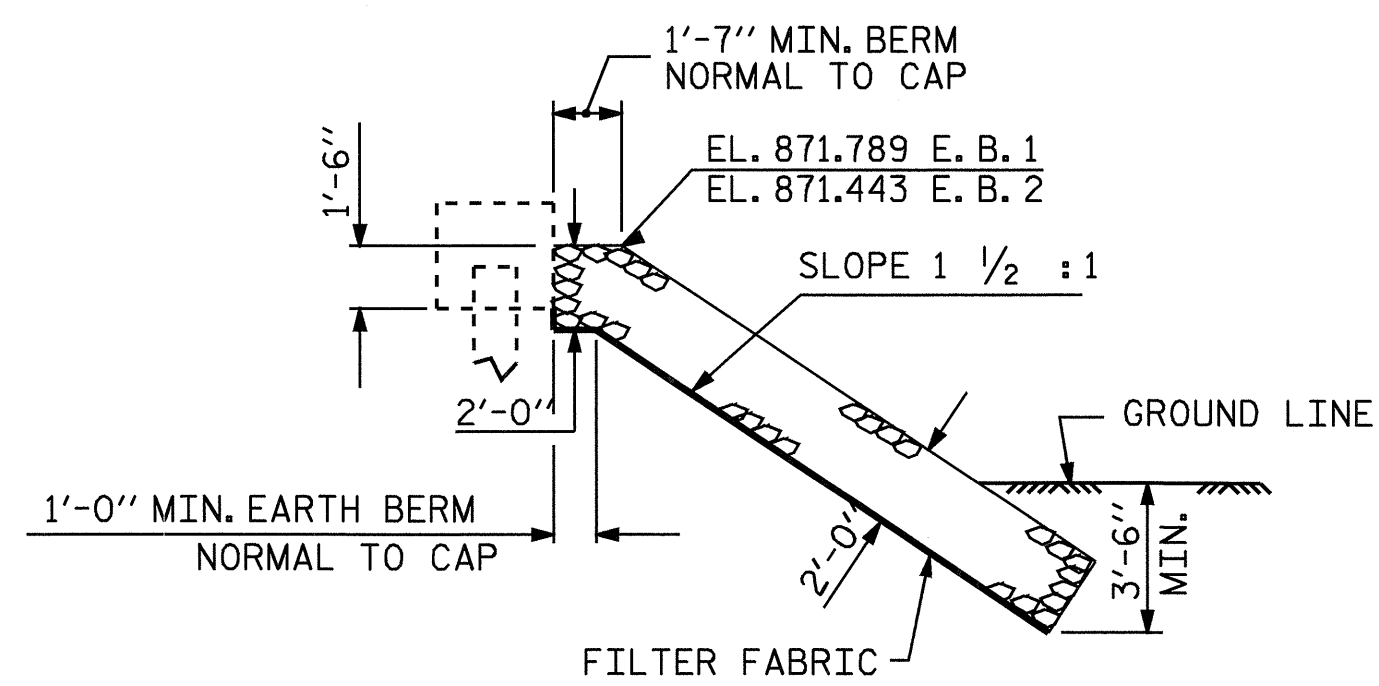
NOTES :

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

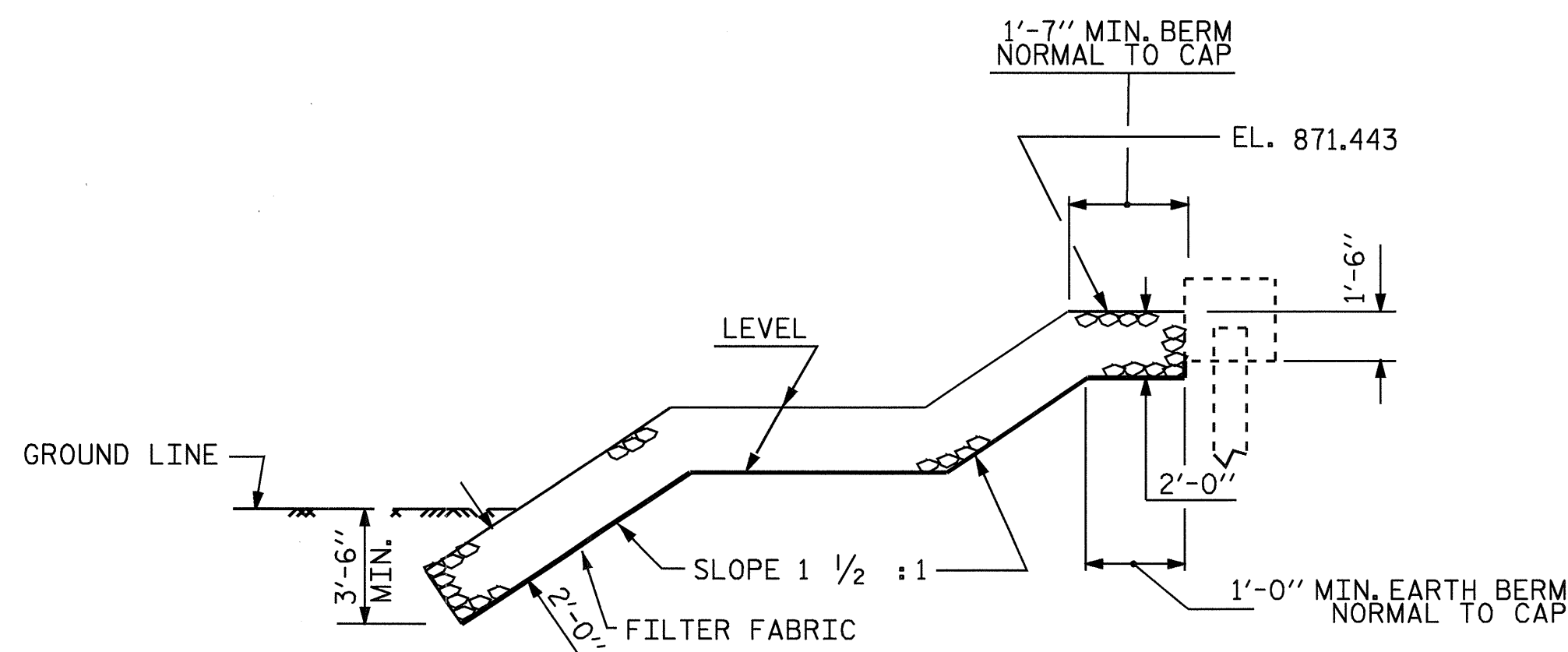
ESTIMATED QUANTITIES		
BRIDGE @ STA. 14+40.00 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	83	92
END BENT 2	260	288



SECTION C-C



**SECTION A-A
BERM RIP RAPPED**



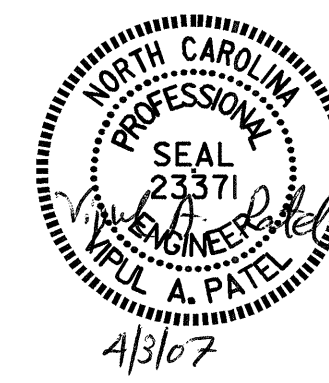
SECTION B-B

PROJECT NO. B-4155
IREDELL COUNTY
 STATION: 14+40.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

— RIP RAP DETAILS —

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS 18
2			4			



ASSEMBLED BY : G. A. THOMPSON DATE : 12/05
 CHECKED BY : V. A. PATEL DATE : 12/05
 DRAWN BY : FCJ 2/88
 CHECKED BY : ARB 8/88

REV. 7/17/98 REK/RWW
 REV. 8/16/99 RWW/LES
 REV. 10/17/00 RWW/LES

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 SEALED 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	32	#4	STR	17'-0"	363
A2	34	#4	STR	16'-10"	382
*B1	64	#5	STR	14'-2"	946
B2	64	#6	STR	14'-8"	1410

REINFORCING STEEL LBS. 1792

* EPOXY COATED REINFORCING STEEL LBS. 1309

CLASS AA CONCRETE C. Y. 19.6

APPROACH SLAB AT EB #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	32	#4	STR	17'-0"	363
A2	34	#4	STR	16'-10"	382
*B1	64	#5	STR	14'-2"	946
B2	64	#6	STR	14'-8"	1410

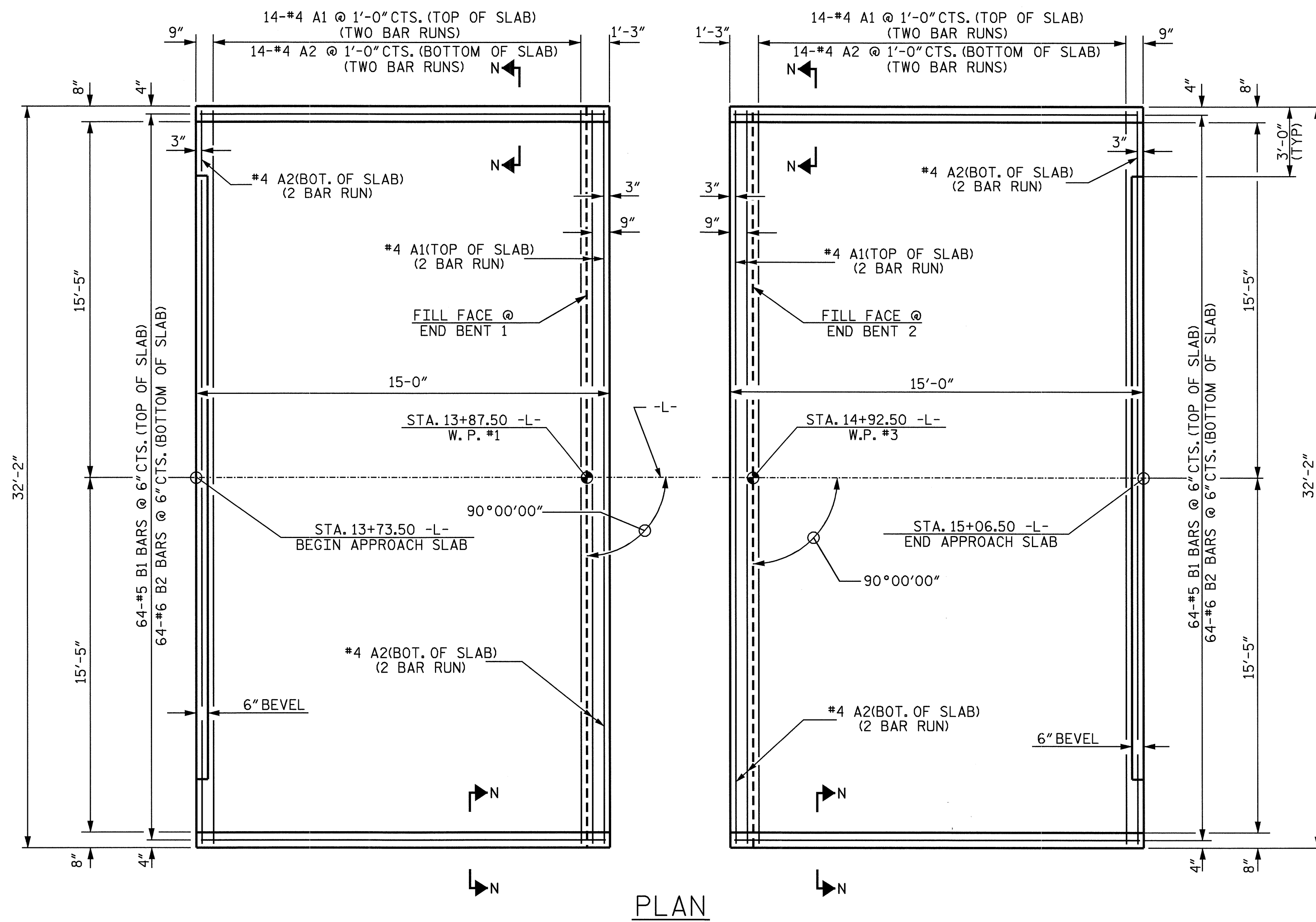
REINFORCING STEEL LBS. 1792

* EPOXY COATED REINFORCING STEEL LBS. 1309

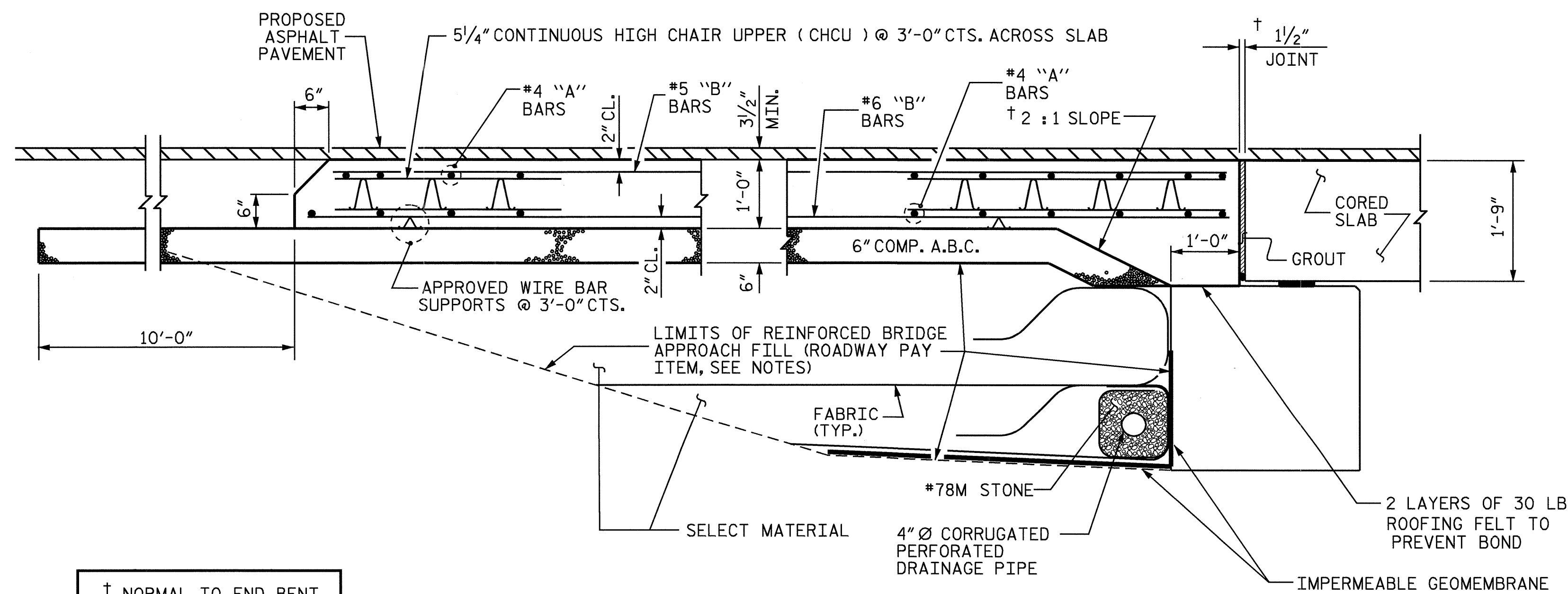
CLASS AA CONCRETE C. Y. 19.6

REINFORCING STEEL SPLICE LENGTHS

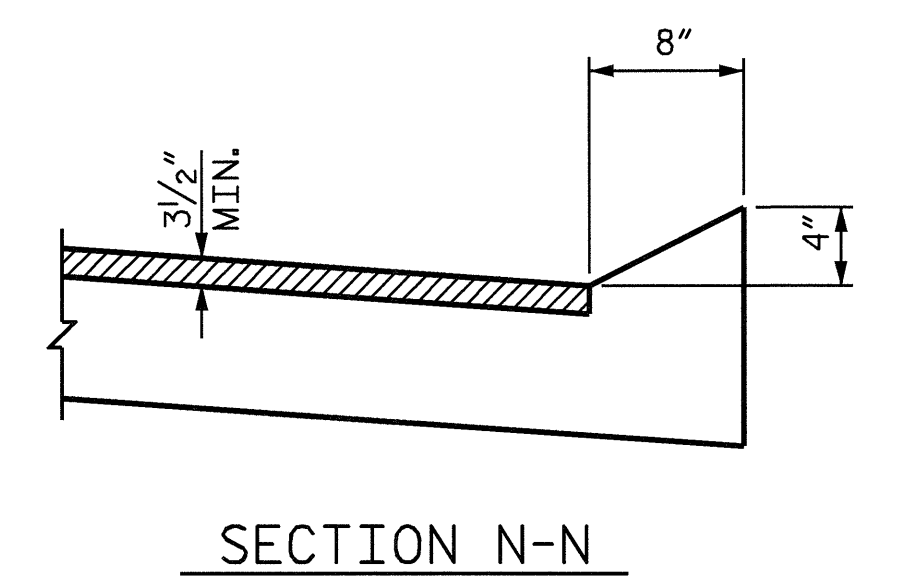
BAR SIZE	APPROACH SLABS	
	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"



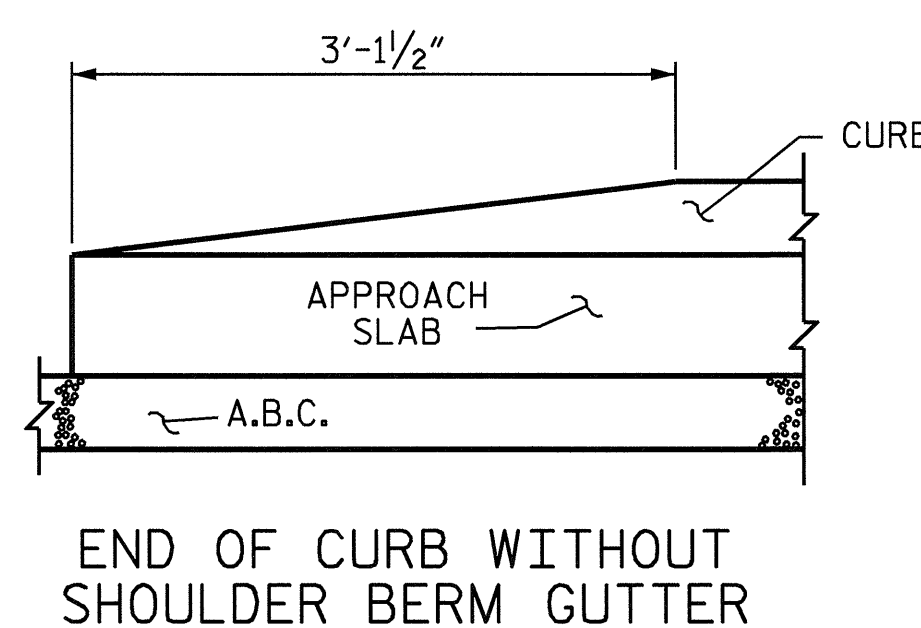
PLAN



SECTION THRU SLAB



SECTION N-N

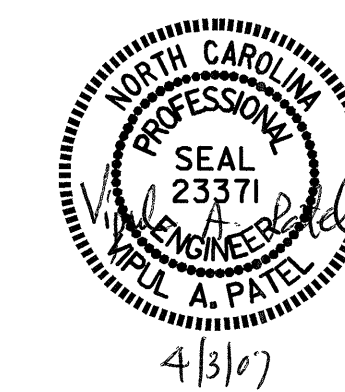


CURB DETAILS

PROJECT NO. B-4155
IREDELL COUNTY
 STATION: 14+40.00 -L-

SHEET 1 OF 2

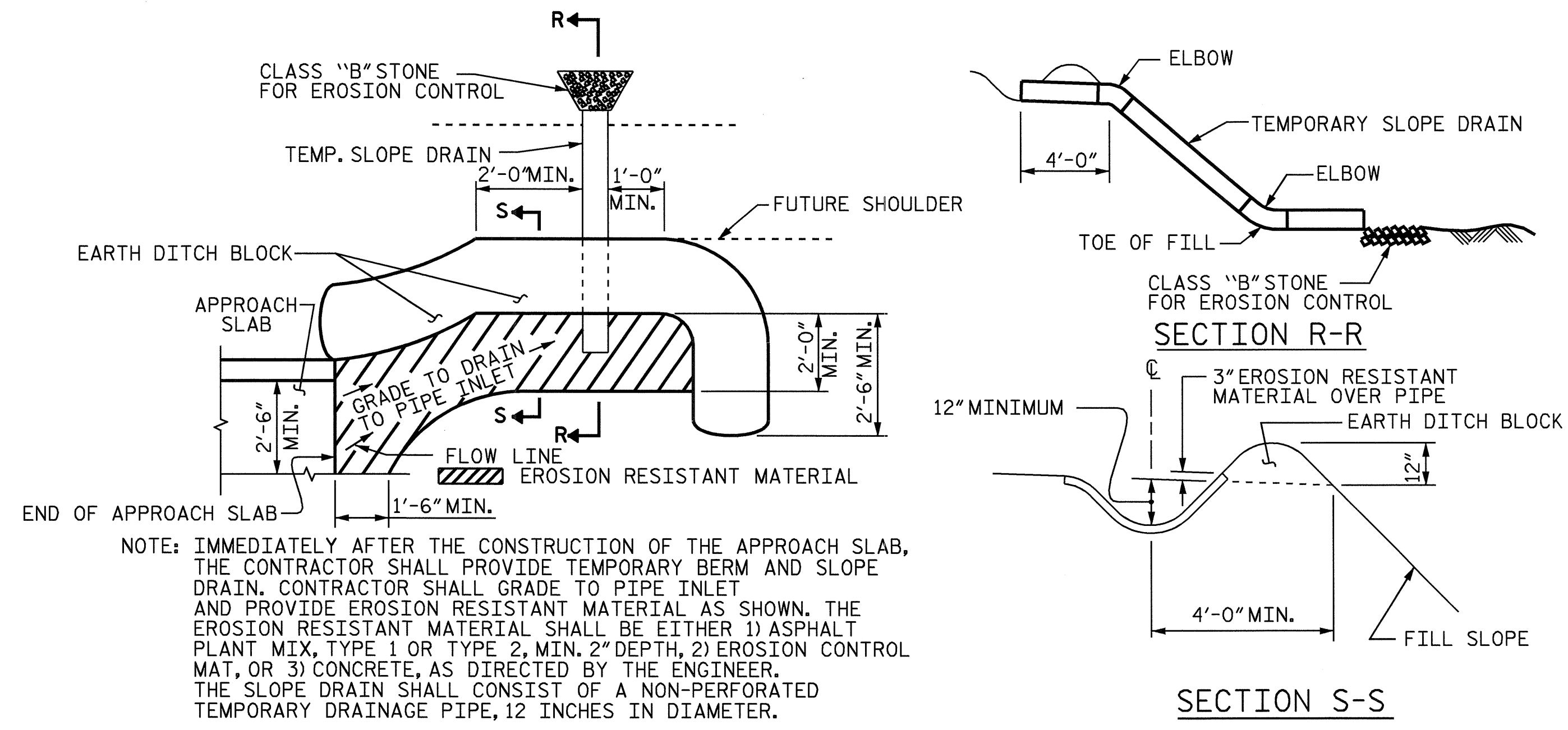
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 CORED SLAB



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS 18
2			4			

STD. NO. BAS7

ASSEMBLED BY : G. A. THOMPSON DATE : 8/06
 CHECKED BY : K. D. LAYNE DATE : 10/06
 DRAWN BY : FCJ 6/87 REV. 7/10/01 LES/RDR
 CHECKED BY : EGA 6/87 REV. 5/7/03R RWW/JTE
 REV. 5/1/06 REV. 5/1/06 TLA/GM

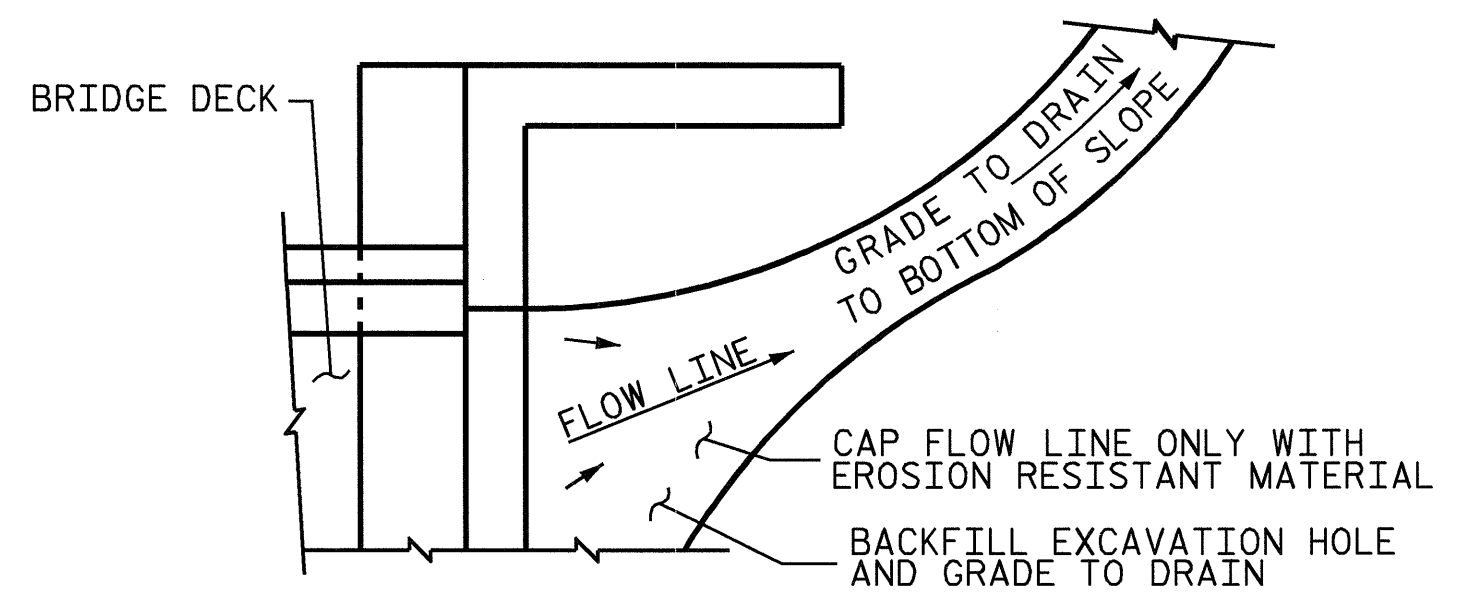


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

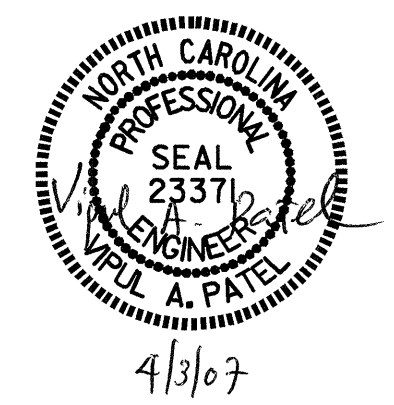


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

PROJECT NO. B-4155
IREDELL COUNTY
 STATION: 14+40.00 -L-

SHEET 2 OF 2



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

REVISIONS						1988
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-18
2			4			TOTAL SHEETS 18

ASSEMBLED BY : G. A. THOMPSON	DATE : 5/10/06
CHECKED BY : J. P. ADAMS	DATE : 7/17/06
DRAWN BY : FCJ 11/88	REV. 10/17/00 RWW/LES
CHECKED BY : ARB 11/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM

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