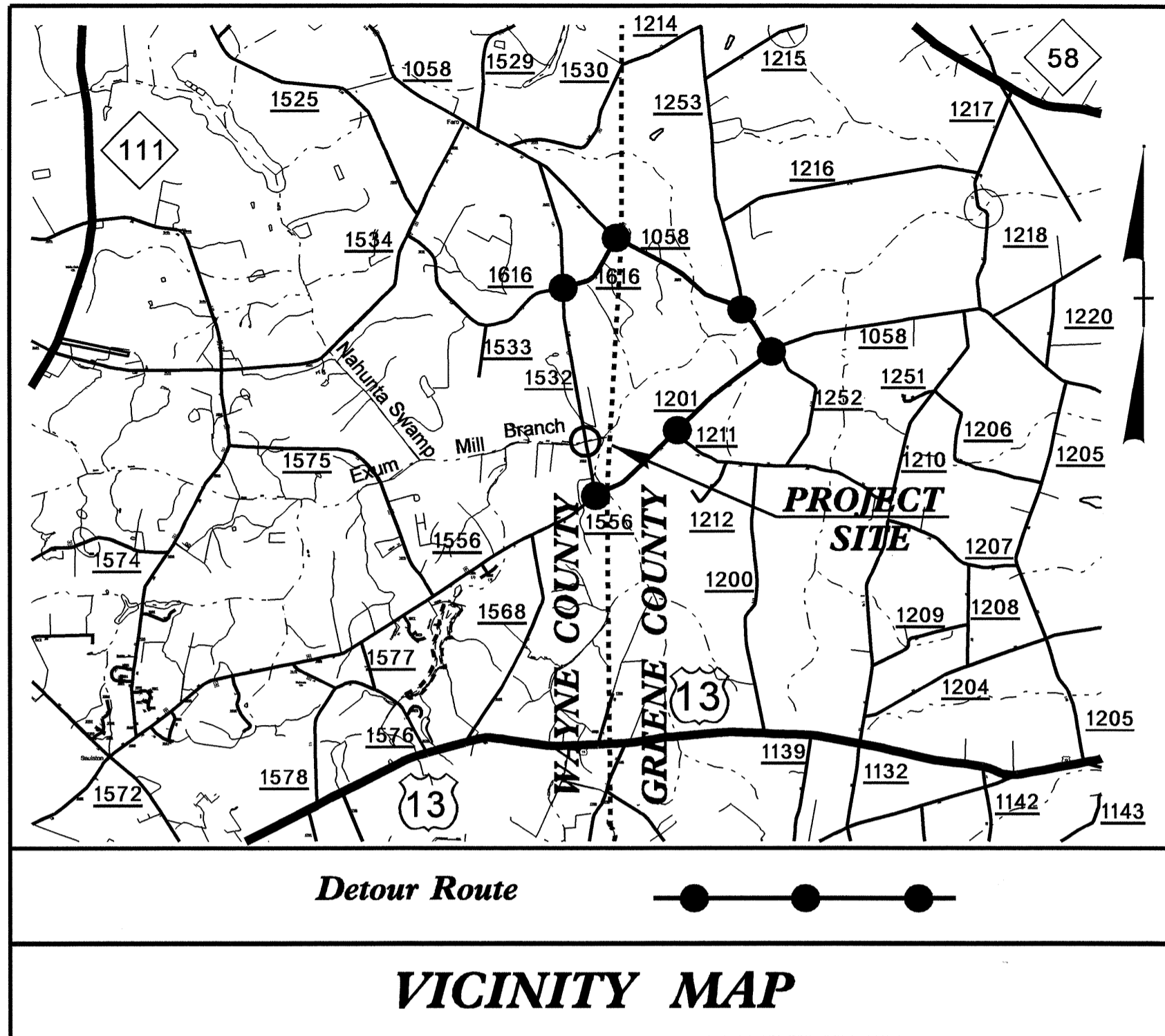


**CONTRACT: C202019 TIP PROJECT: B-4671**

**STRUCTURE**



NEAREST SHIPPING POINT : PIKEVILLE ON CSX RR APPROX  
11.5 MILES FROM PROJECT

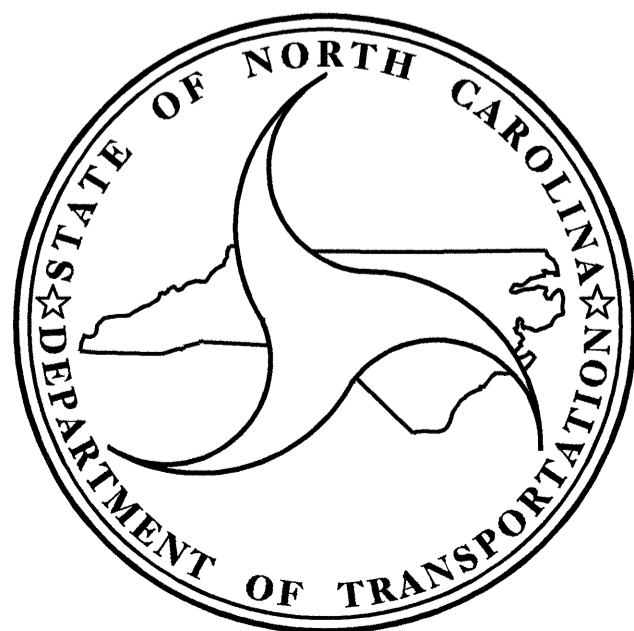
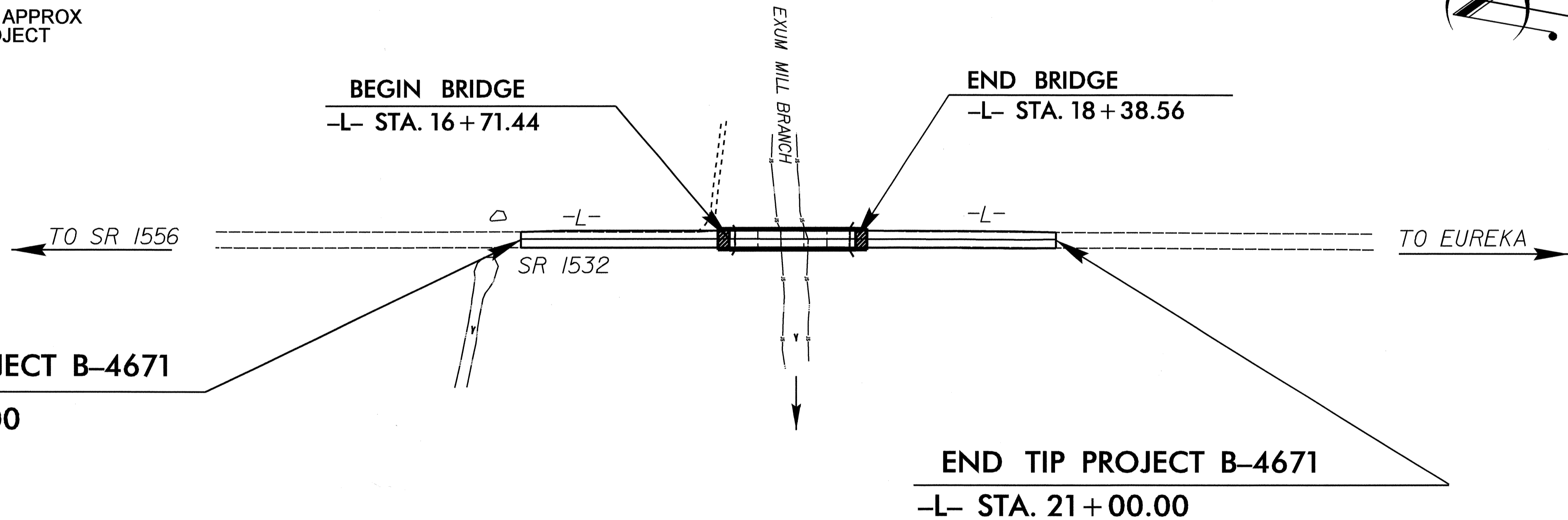
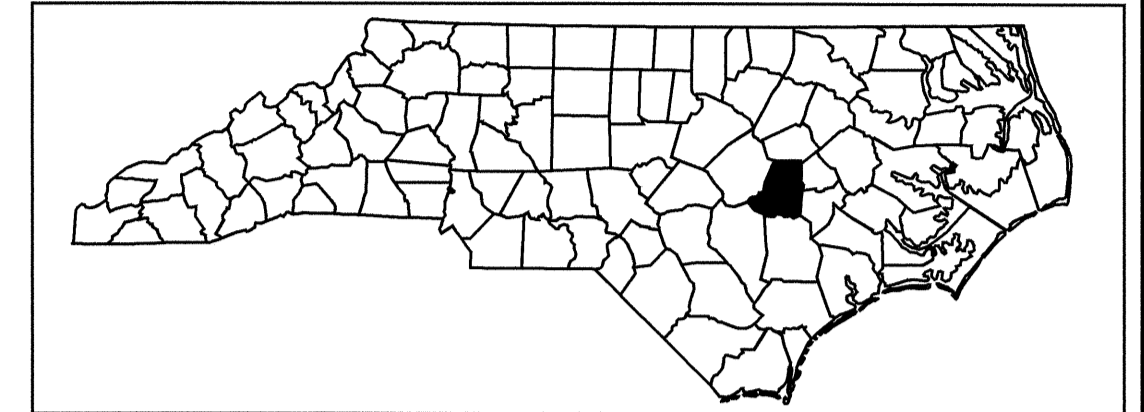
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**WAYNE COUNTY**

**LOCATION: BRIDGE 35 ON SR 1532 OVER  
NAHUNTA SWAMP**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING  
AND STRUCTURE**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	<b>B-4671</b>		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33826.1.1	BRZ-1532(3)	PE	
33826.2.1	BRZ-1532(3)	RW & UTIL	
33826.3.1	BRZ-1532(3)	CONST.	



**DESIGN DATA**

ADT 2008 =	250
ADT 2030 =	500
DHV =	60 %
D =	10 %
T =	3 % *
V =	55 MPH
* TTST 1%	DUAL 2%

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4671 =	0.101 MILES
LENGTH STRUCTURE TIP PROJECT B-4671 =	0.032 MILES
TOTAL LENGTH OF PROJECT B-4671 =	0.133 MILES

Prepared In the Office of:

**DIVISION OF HIGHWAYS**

2006 STANDARD SPECIFICATIONS

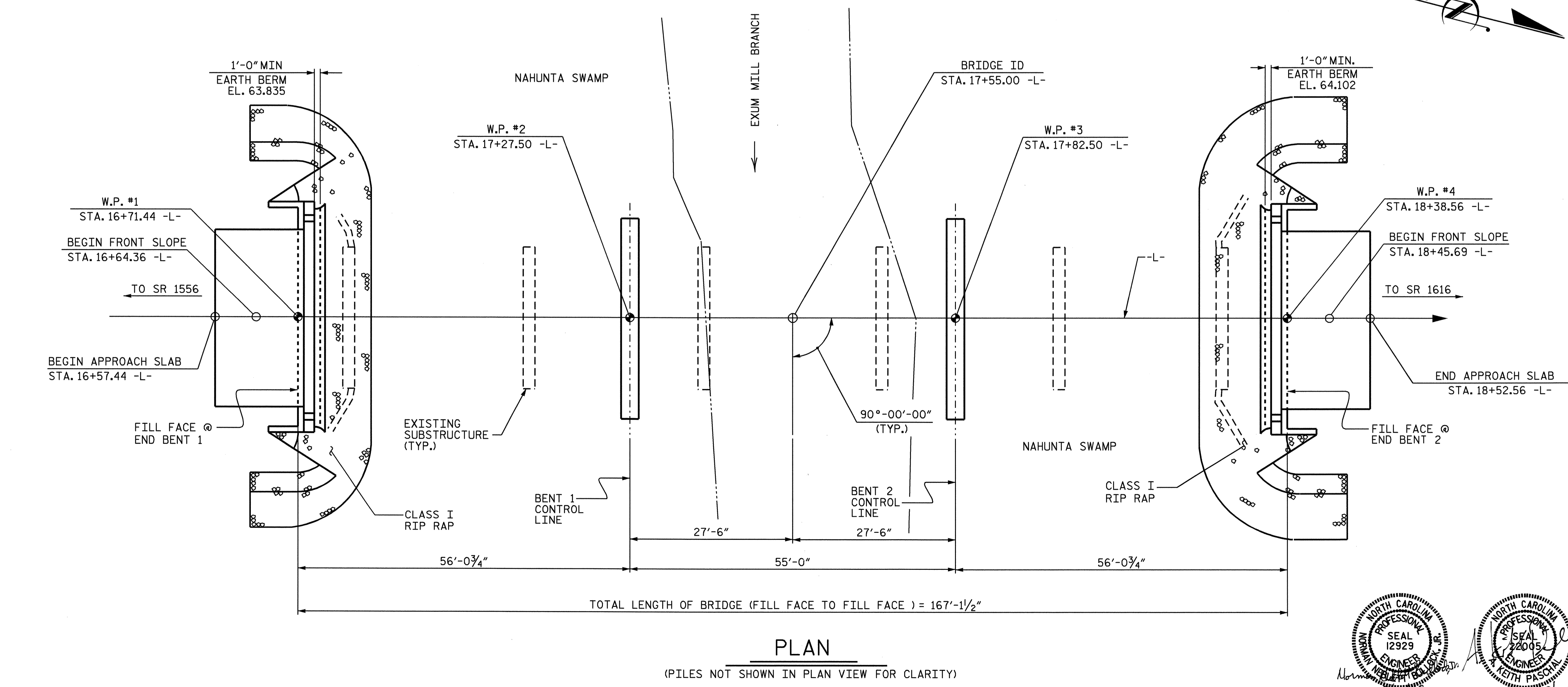
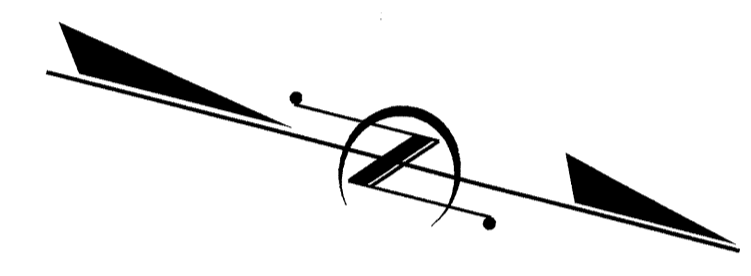
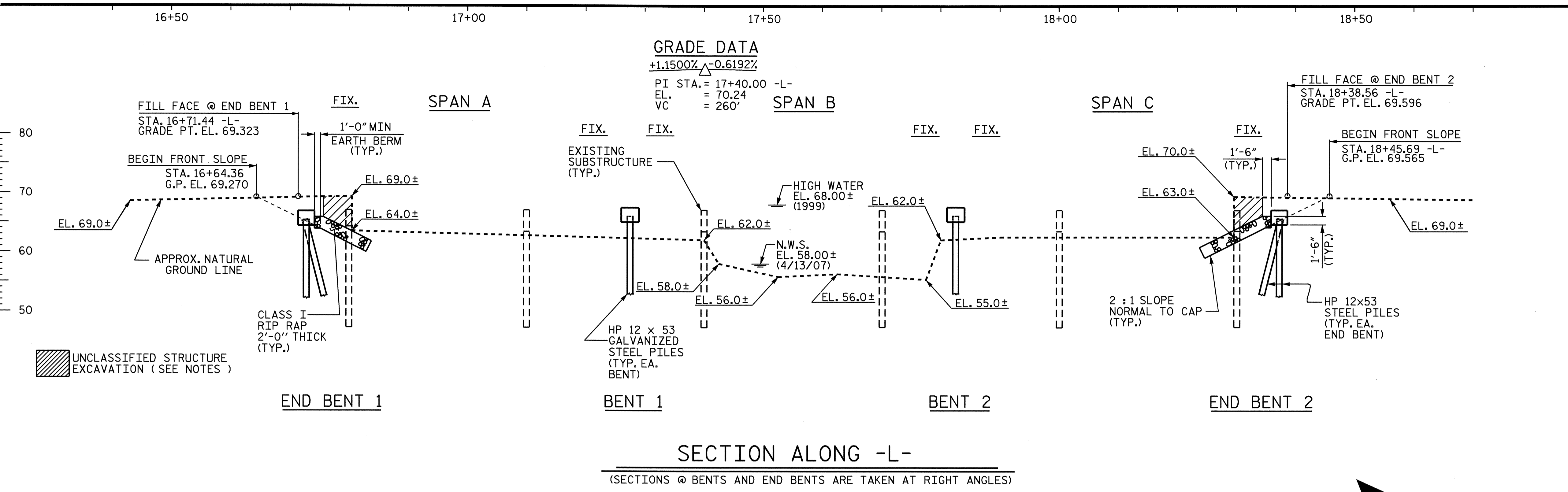
LETTING DATE :	<b>N.N. BULLOCK, P.E.</b> PROJECT ENGINEER
<b>OCTOBER 21, 2008</b>	<b>A.K. PASCHAL, P.E.</b> PROJECT DESIGN ENGINEER

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

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
DIVISION ADMINISTRATOR



PROJECT NO. B-4671  
 WAYNE COUNTY  
 STATION: 17+55.00-L-  
 SHEET 1 OF 3 REPLACES BRIDGE #35

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

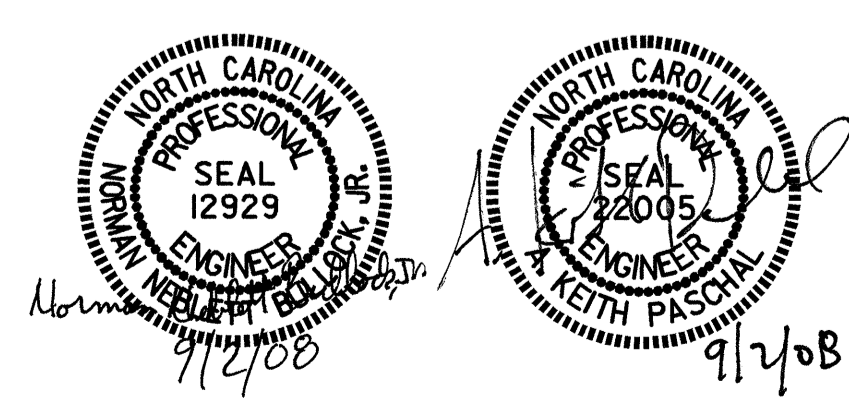
**GENERAL DRAWING**  
 BRIDGE ON SR 1532 OVER  
 NAHUNTA SWAMP BETWEEN  
 SR 1556 AND SR 1616

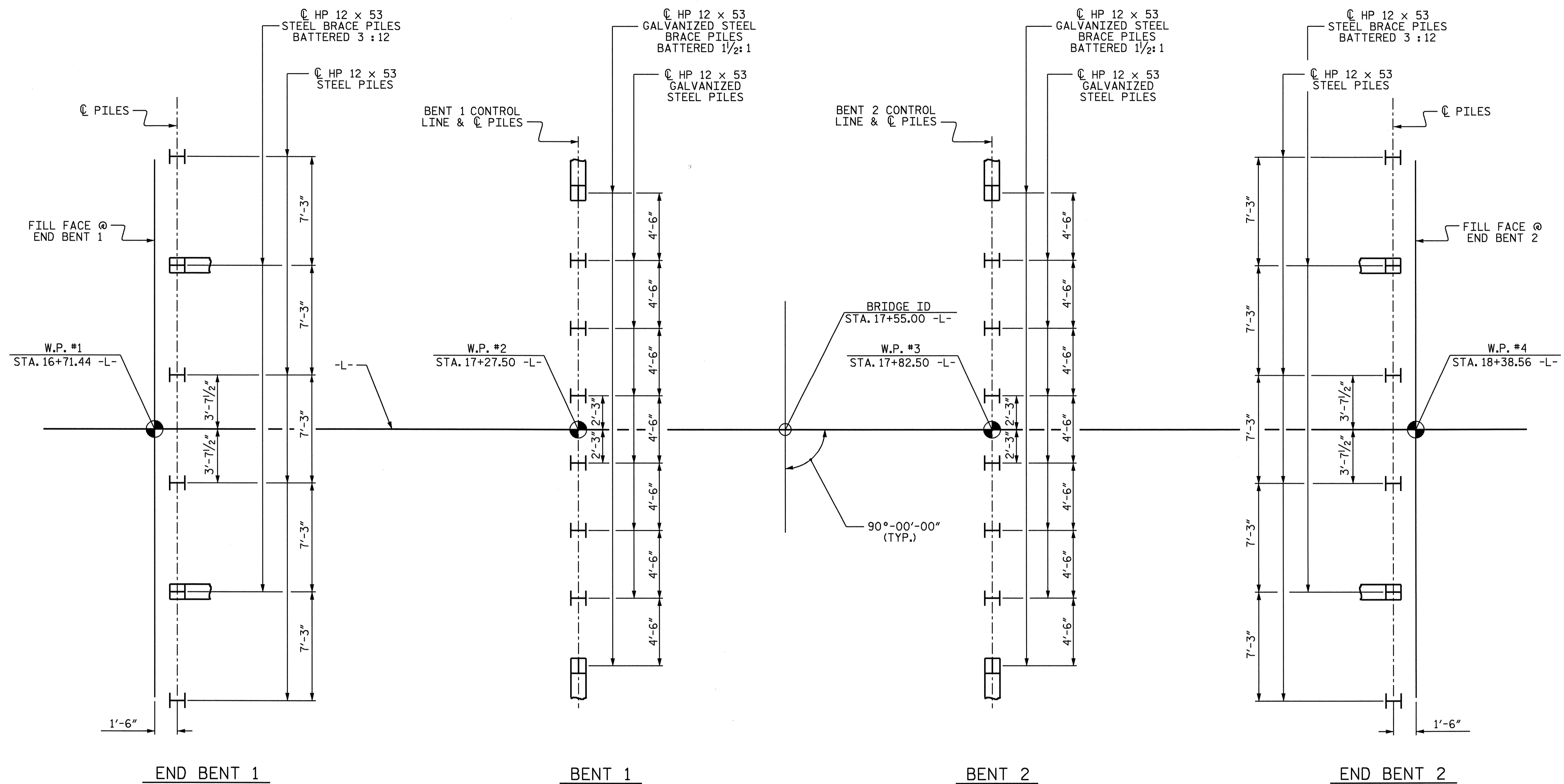
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 19

DRAWN BY: M. FOWLER DATE: 9-14-07  
 CHECKED BY: C.R. YARBROUGH DATE: 7-24-08

02-SEP-2008 10:48  
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 kpaschal





**FOUNDATION LAYOUT**

(DIMENSIONS LOCATING END BENT & BENT PILES ARE SHOWN TO CENTERLINE PILES )

**FOUNDATION NOTES :**

THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT 1, END BENT 2, AND BENTS 1 & 2 IS 60 TONS PER PILE.

DRIVE PILES AT END BENT 1 AND 2 TO A REQUIRED BEARING CAPACITY OF 120 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO.

DRIVE PILES AT BENT 1 AND 2 TO A REQUIRED BEARING CAPACITY OF 125 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.

PILE RESTRIKES FOR LRFD MAY BE REQUIRED, SEE PILE RESTRIKES FOR LRFD SPECIAL PROVISION.

INSTALL PILES AT BENT 1 TO A TIP ELEVATION NO HIGHER THAN 38 FT.

INSTALL PILES AT BENT 2 TO A TIP ELEVATION NO HIGHER THAN 32 FT.

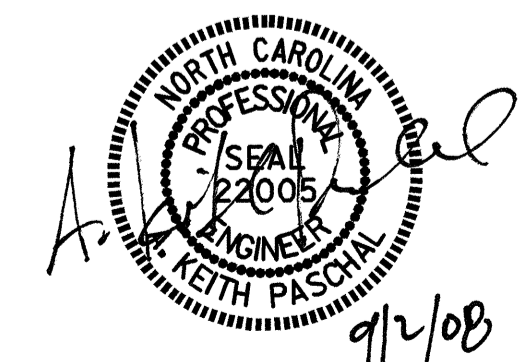
THE SCOUR CRITICAL ELEVATION FOR BENT 1 IS ELEVATION 57 FT. AND FOR BENT 2 IS 47 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

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

FOR GALVANIZED PILES, A MINIMUM OF 25'-0" OF THE TOP OF EACH PILE SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. B-4671  
WAYNE COUNTY  
 STATION: 17+55.00 -L-

SHEET 2 OF 3



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
<b>GENERAL DRAWING</b>					
BRIDGE ON SR 1532 OVER NAHUNTA SWAMP BETWEEN SR 1556 AND SR 1616					
SHEET NO. <b>S-2</b>					
TOTAL SHEETS <b>19</b>					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

DRAWN BY : J.D. HAWK DATE : 7/20/08  
 CHECKED BY : C.R. YARBROUGH DATE : 7/22/08

**NOTES:**

ASSUMED LIVE LOAD = HS20 OR ALTERNATE LOADING, EXCEPT THAT THE CORED SLABS 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 5 (2 @ 30'-6", 3 @ 30'-0") PRESTRESSED CONCRETE CHANNEL SPANS WITH A CLEAR ROADWAY WIDTH OF 24'-1" ON PRESTRESSED CONCRETE END BENT AND BENT CAPS ON TIMBER PILES AND LOCATED AT THE PROPOSED STRUCTURE 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 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.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 30 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.

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.

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

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

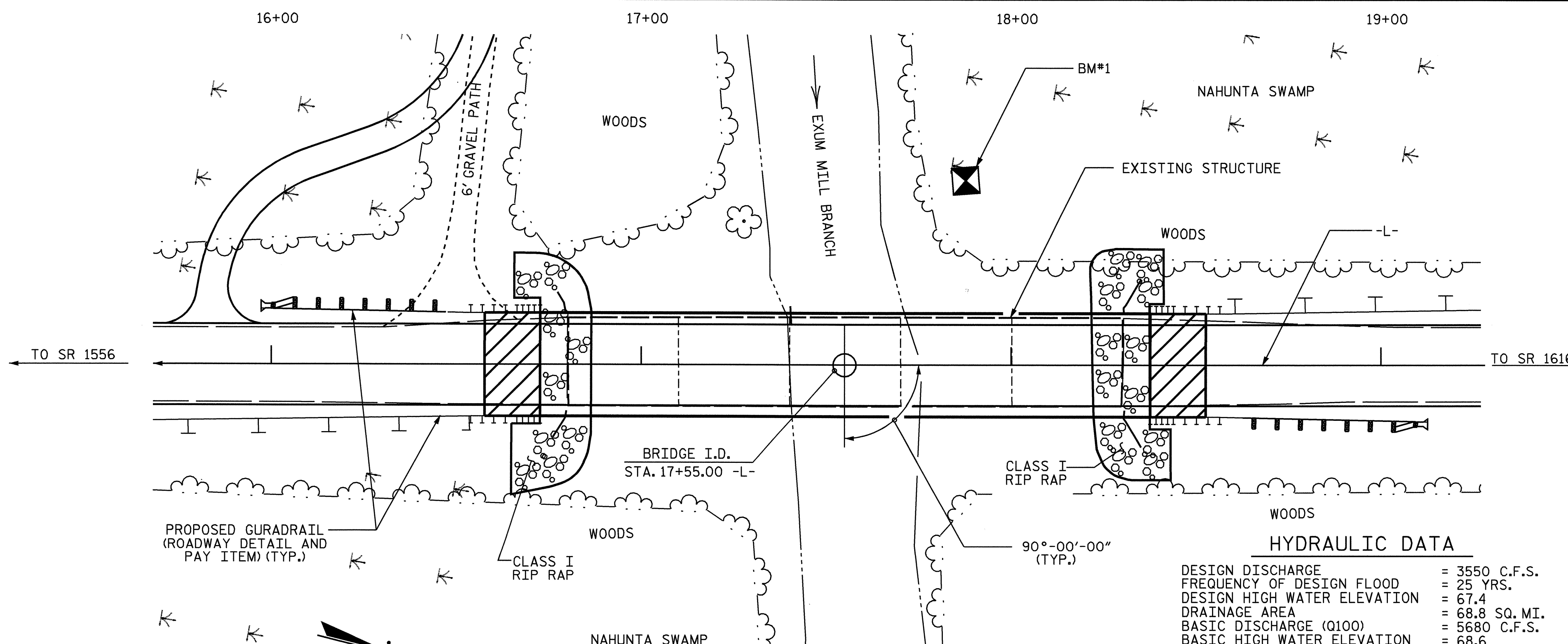
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL																		
	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	PDA ASSISTANCE	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 x 53 STEEL PILES		HP 12 x 53 GALVANIZED STEEL PILES		PILE REDRIVES	CONCRETE BARRIER RAIL	RIP RAP CLASS I	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" x 1'-9" PRESTRESSED CONCRETE CORED SLABS	
	LUMP SUM	EACH	EACH	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE						LUMP SUM							329.75			LUMP SUM	33	1810.88
END BENT 1					13.7		1995	6	270			4		93	103			
BENT 1					9.1		1831			8	440	4						
BENT 2					9.1		1831			8	440	4						
END BENT 2					13.7		1995	6	390			4		125	139			
TOTAL	LUMP SUM	1	1	LUMP SUM	45.2	LUMP SUM	7184	12	660	16	880	16	329.50	218	242	LUMP SUM	33	1810.88

B.M. #1 : RR SPIKE IN BASE OF 14" TWIN RIVERBIRCH 49.67' LT. OF STA. 17+87.67 -L- EL. 62.72'



**HYDRAULIC DATA**

DESIGN DISCHARGE = 3550 C.F.S.  
 FREQUENCY OF DESIGN FLOOD = 25 YRS.  
 DESIGN HIGH WATER ELEVATION = 67.4  
 DRAINAGE AREA = 68.8 SQ. MI.  
 BASIC DISCHARGE (Q100) = 5680 C.F.S.  
 BASIC HIGH WATER ELEVATION = 68.6

**OVERTOPPING DATA**

OVERTOPPING DISCHARGE = 3550 C.F.S.  
 FREQUENCY OF OVERTOPPING FLOOD = 25 YRS.  
 OVERTOPPING FLOOD ELEVATION = 66.8

**LOCATION SKETCH**

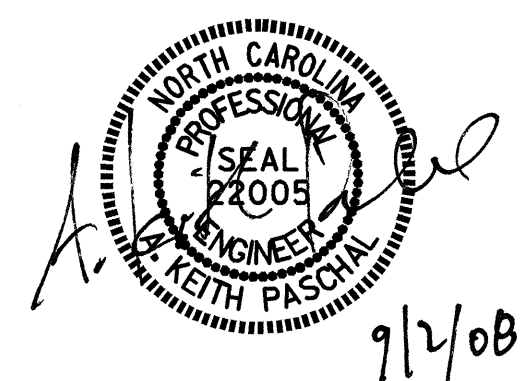
NOTE: FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

PROJECT NO. B-4671  
 WAYNE COUNTY  
 STATION: 17+55.00 -L-

SHEET 3 OF 3

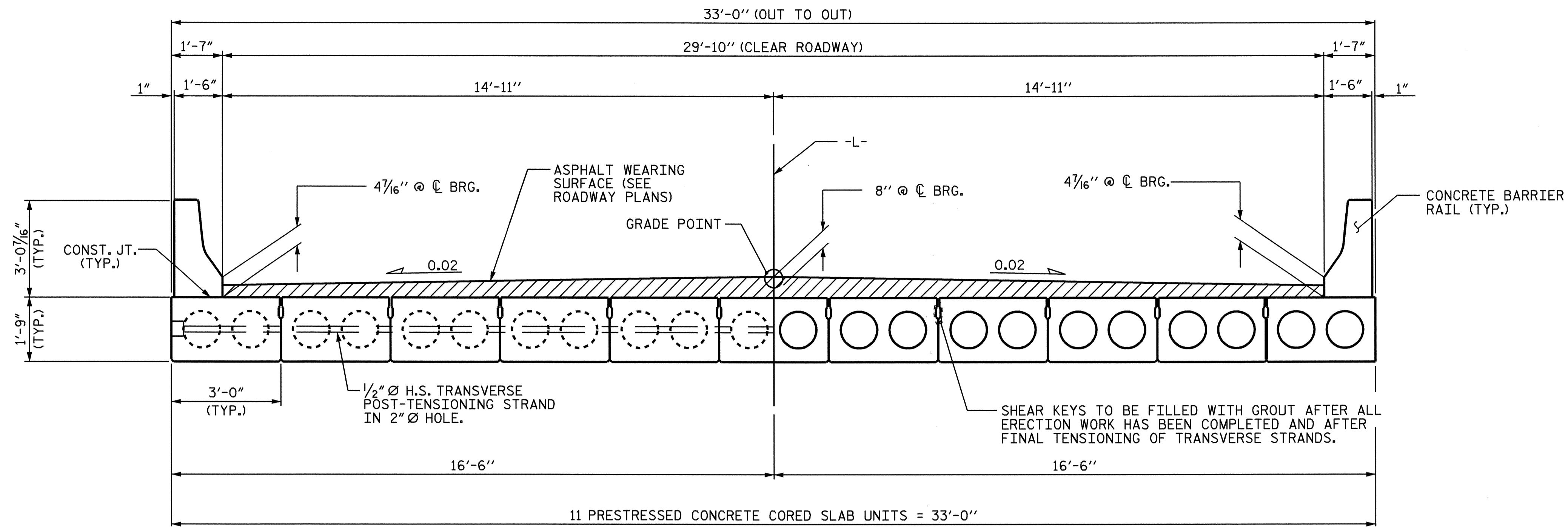
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL DRAWING  
 BRIDGE ON SR 1532 OVER  
 NAHUNTA SWAMP BETWEEN  
 SR 1556 AND SR 1616



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

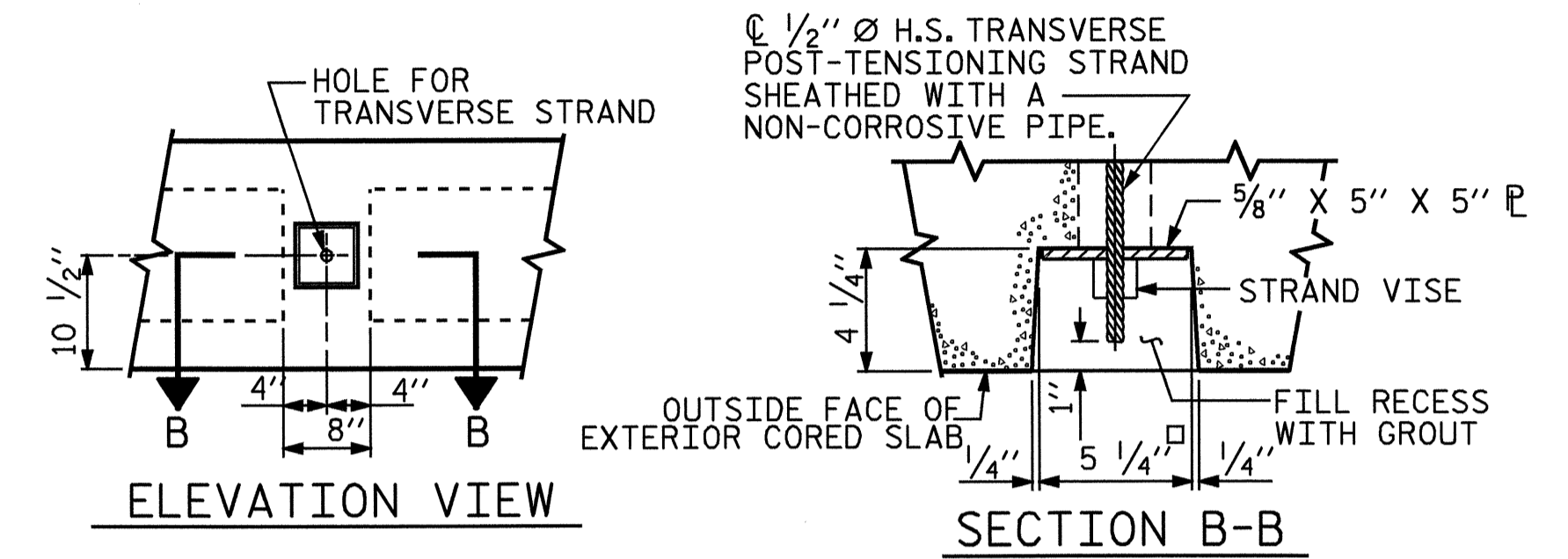
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 CHECKED BY : C.R. YARBROUGH DATE : 7-24-08



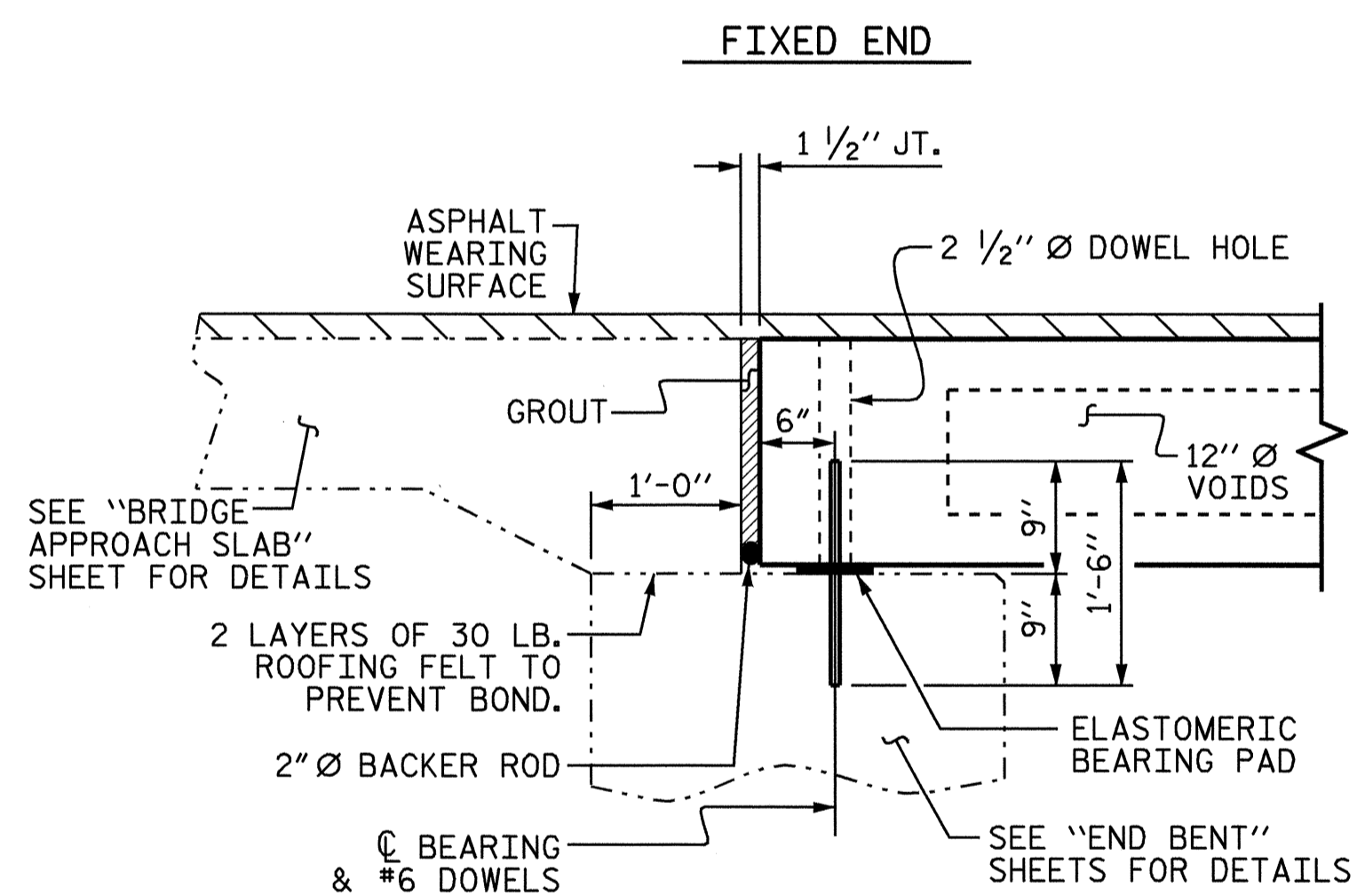
HALF SECTION @ DIAPHRAGMS

HALF SECTION @ VOIDS

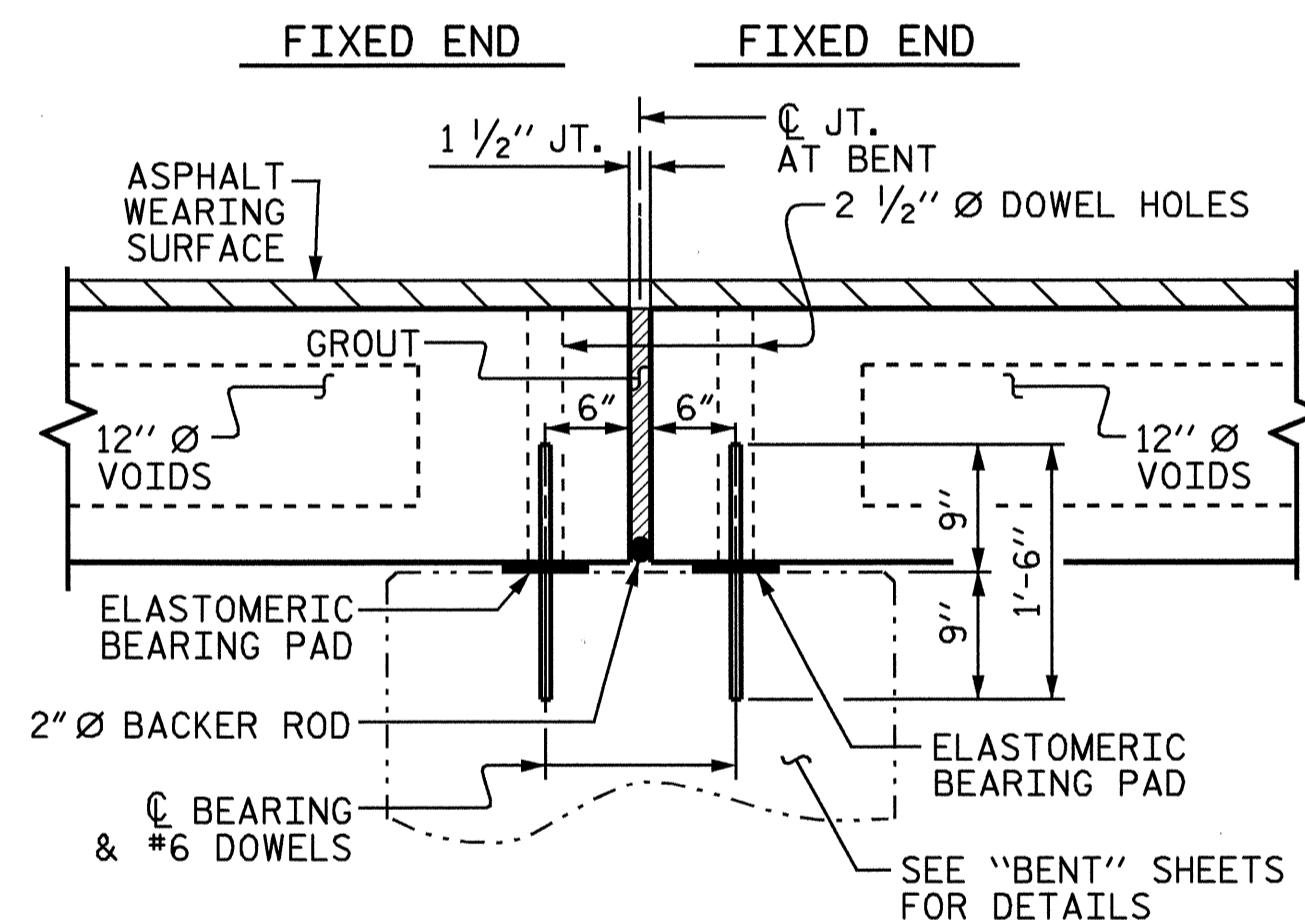
**TYPICAL SECTION**



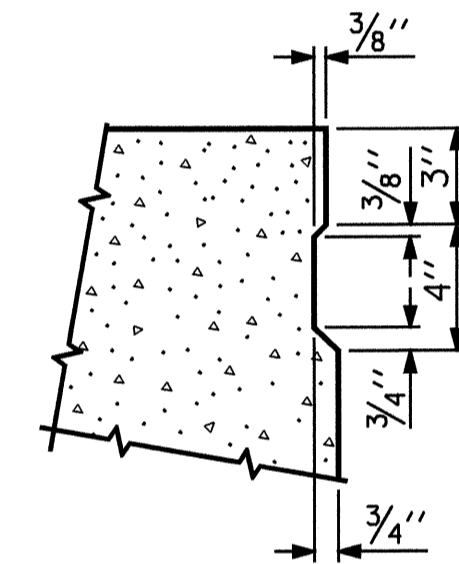
**GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS**



SECTION AT END BENT

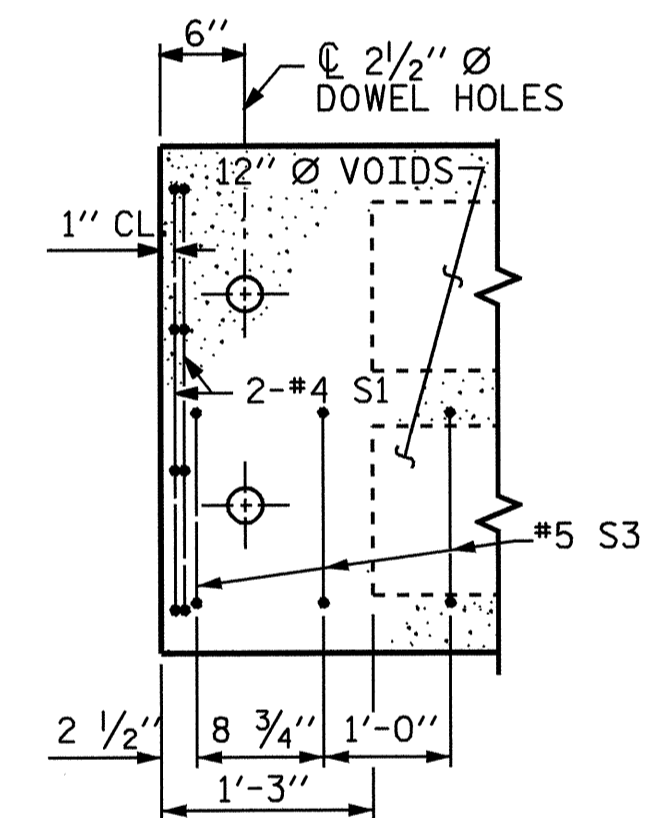


SECTION AT BENT



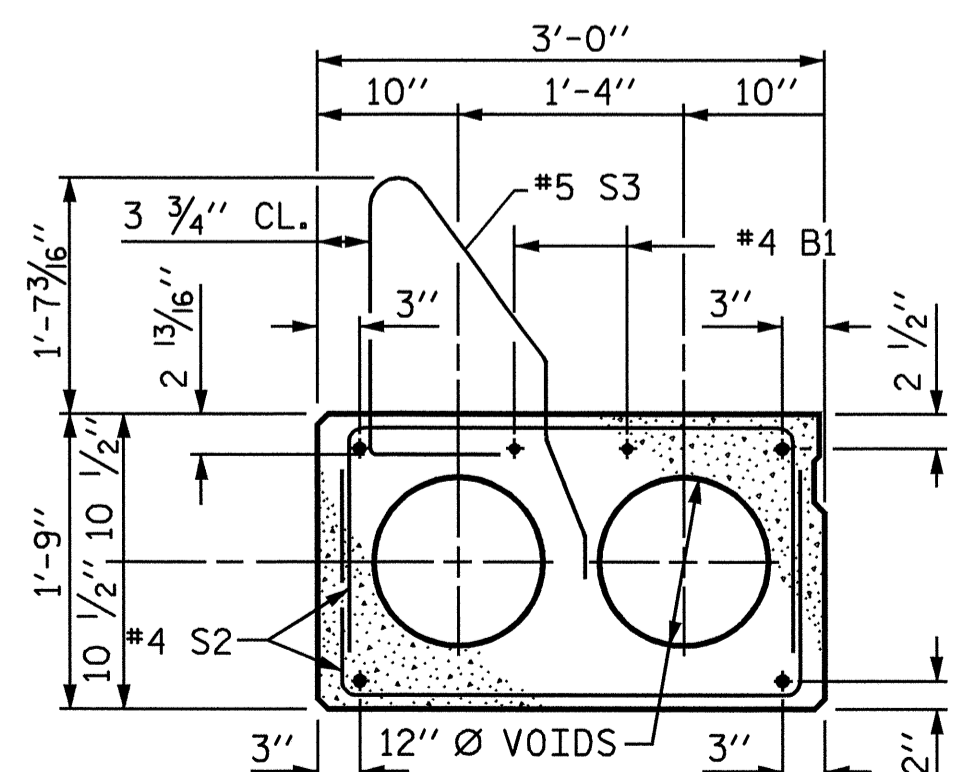
**SHEAR KEY DETAIL**

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



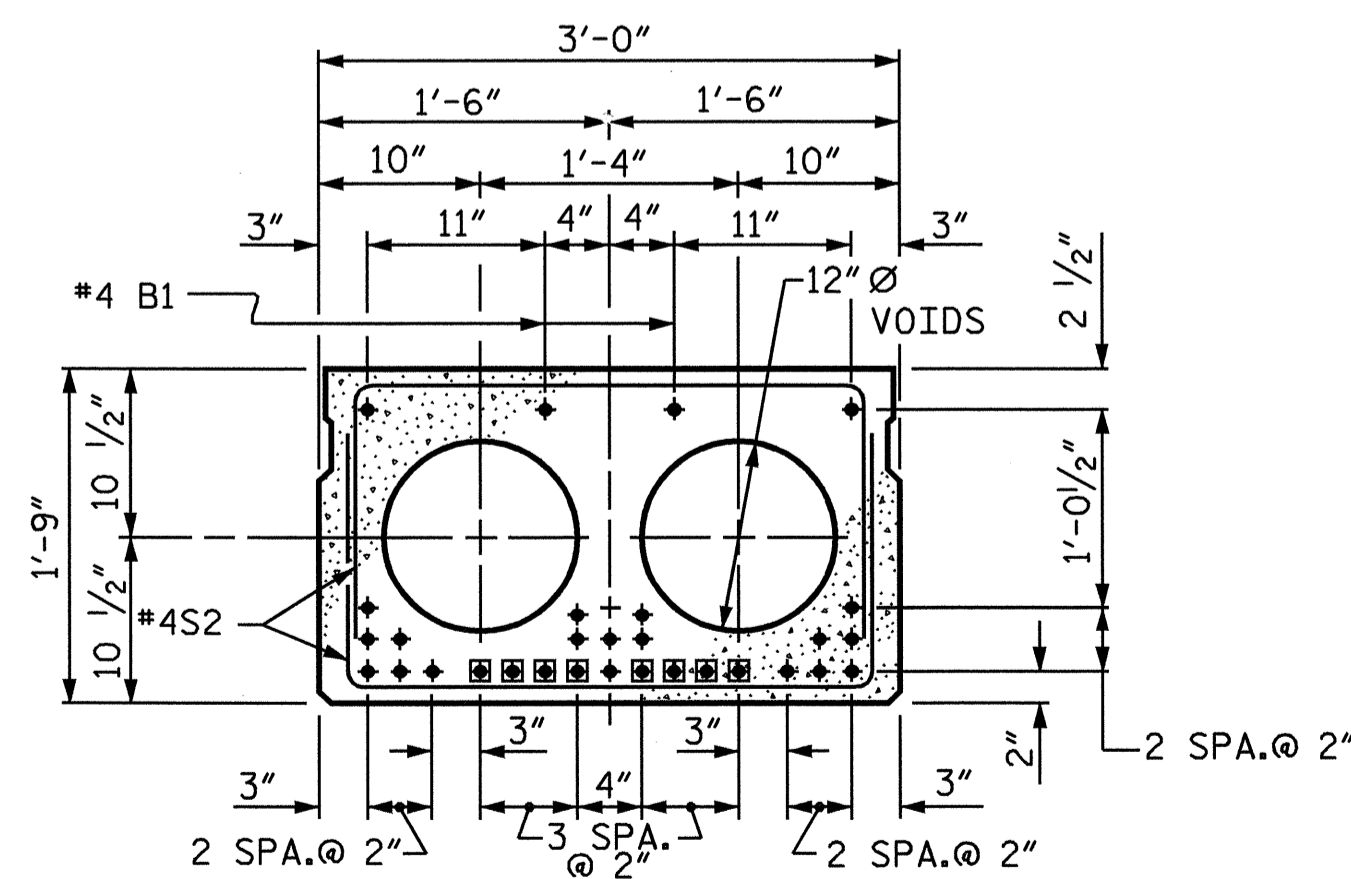
**PART PLAN-EXTERIOR SECTION**

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



**EXTERIOR SLAB SECTION**

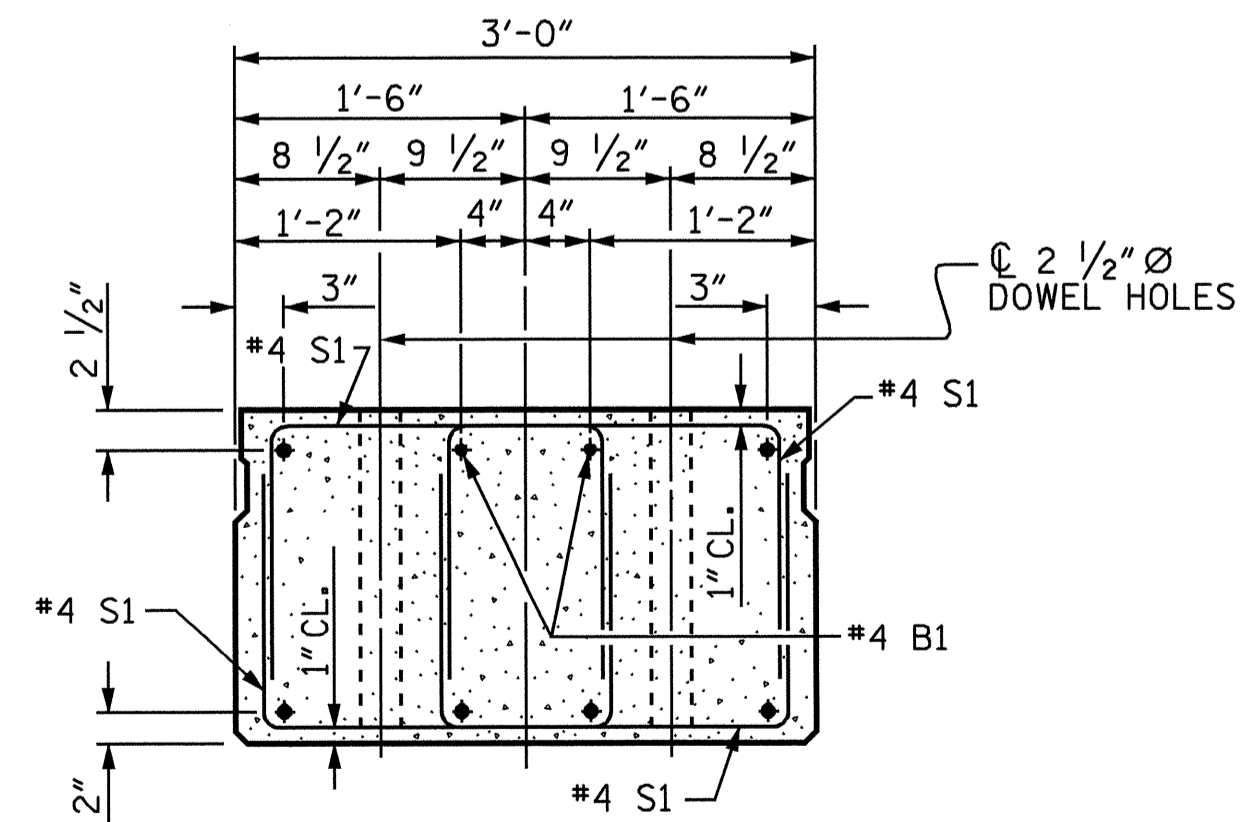
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



**INTERIOR SLAB SECTION**

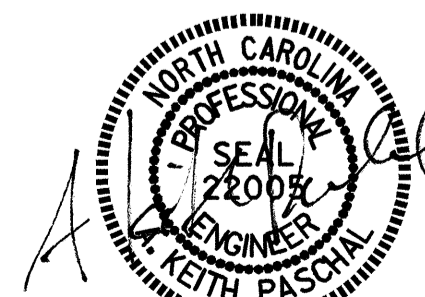
**1/2" Ø LOW RELAXATION STRAND LAYOUT**

■ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 5'-6" FROM THE END OF THE CORED SLAB UNIT. SEE STANDARD SPECIFICATION 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-4671**  
**WAYNE** COUNTY  
 STATION: **17+55.00 -L-**

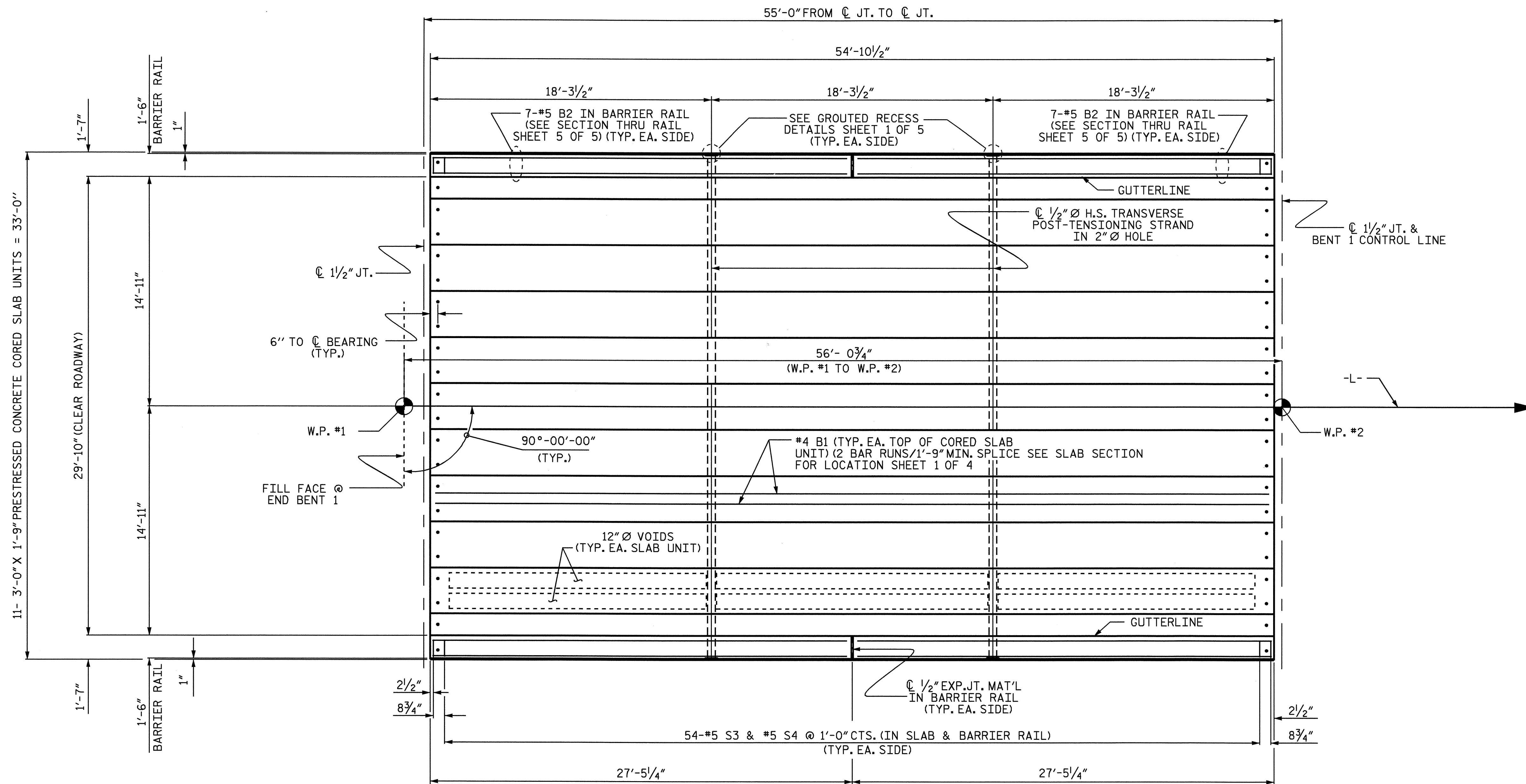
SHEET 1 OF 4

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			19	

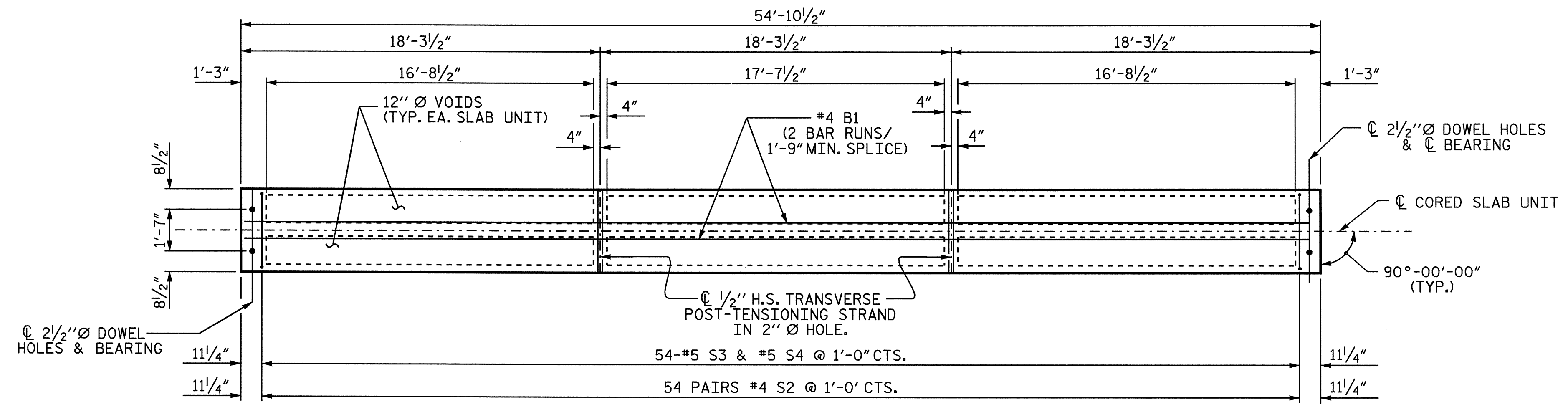
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 CHECKED BY: **C.R. YARBROUGH** DATE: **7/15/08**

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 jdhawk



**PLAN OF SPAN A**

(SPAN C SIMILAR)



**PLAN OF CORED SLAB UNIT**

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.  
FOR LOCATION OF ADDITIONAL REINFORCING STEEL AT END OF SLAB UNIT,  
SEE "PART-PLAN EXTERIOR SECTION" SHEET 1 OF 4.

PROJECT NO. B-4671  
WAYNE COUNTY  
STATION: 17+55.00 -L-

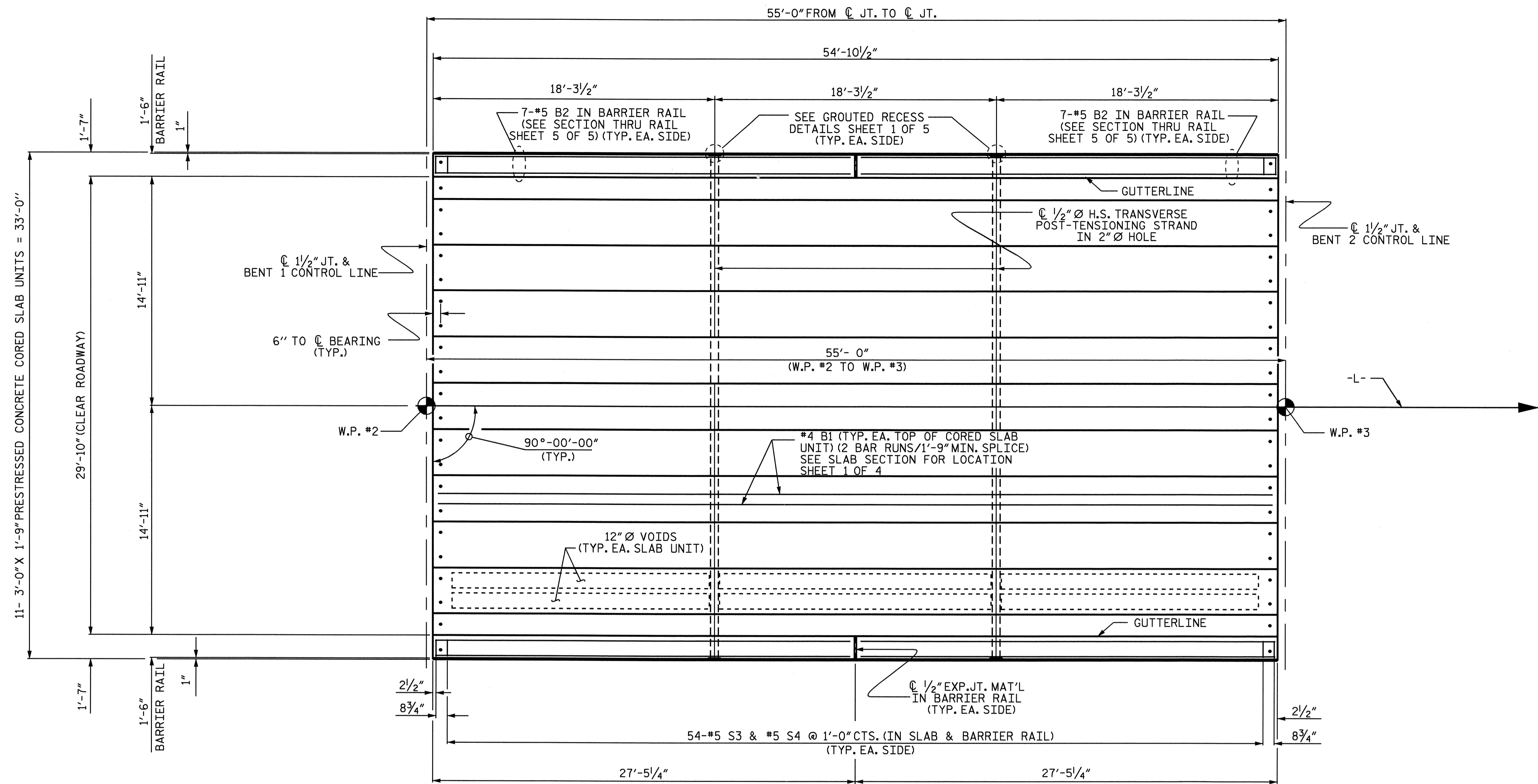
SHEET 2 OF 4

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

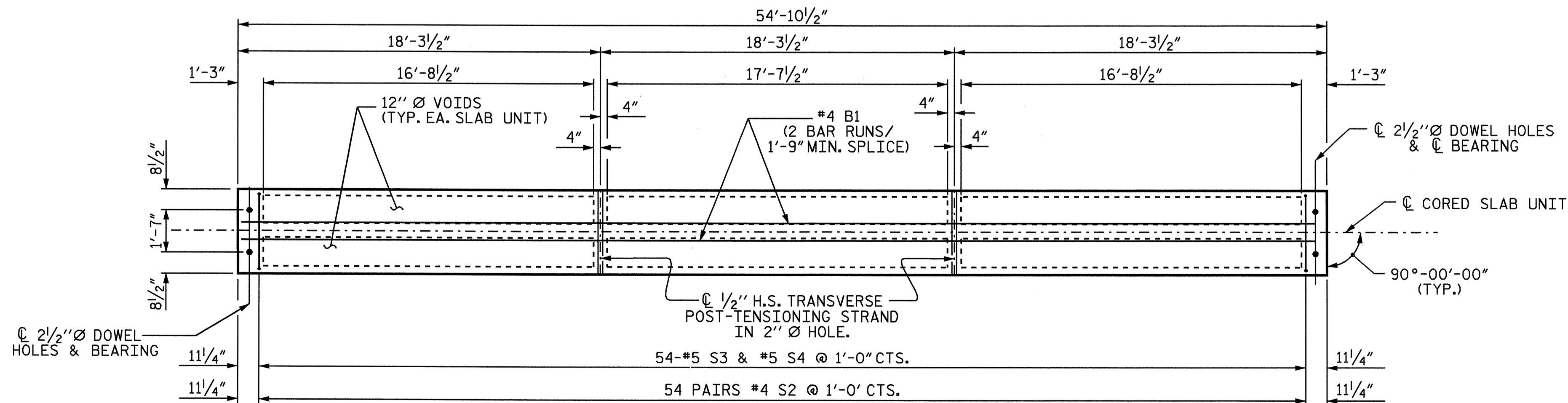


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NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			19

DRAWN BY: M.FOWLER DATE: 3/17/08  
CHECKED BY: C.R. YARBROUGH DATE: 7/15/08



PLAN OF SPAN B

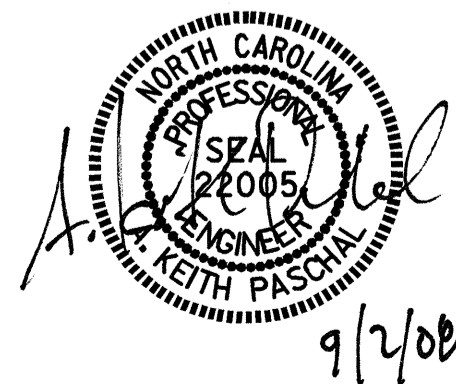


PLAN OF CORED SLAB UNIT

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.  
FOR LOCATION OF ADDITIONAL REINFORCING STEEL AT END OF SLAB UNIT,  
SEE "PART-PLAN EXTERIOR SECTION" SHEET 1 OF 4.

PROJECT NO. B-4671  
WAYNE COUNTY  
 STATION: 17+55.00 -L-  
 SHEET 3 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE PLAN OF SPAN B					
SHEET NO. S-6					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 19



DRAWN BY : M.FOWLER DATE : 3/17/08  
 CHECKED BY : C.R. YARBROUGH DATE : 7/15/08





NOTES

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

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

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

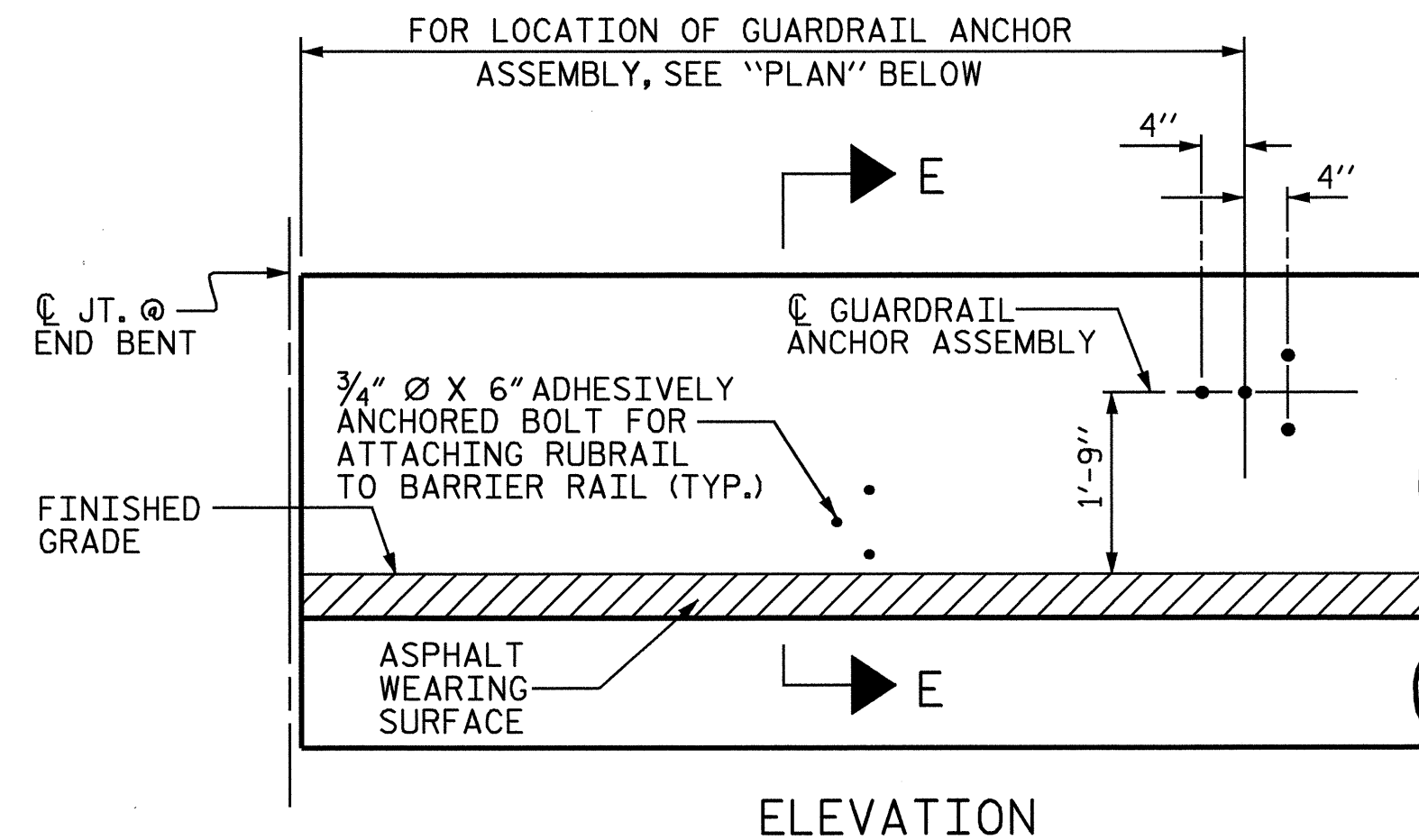
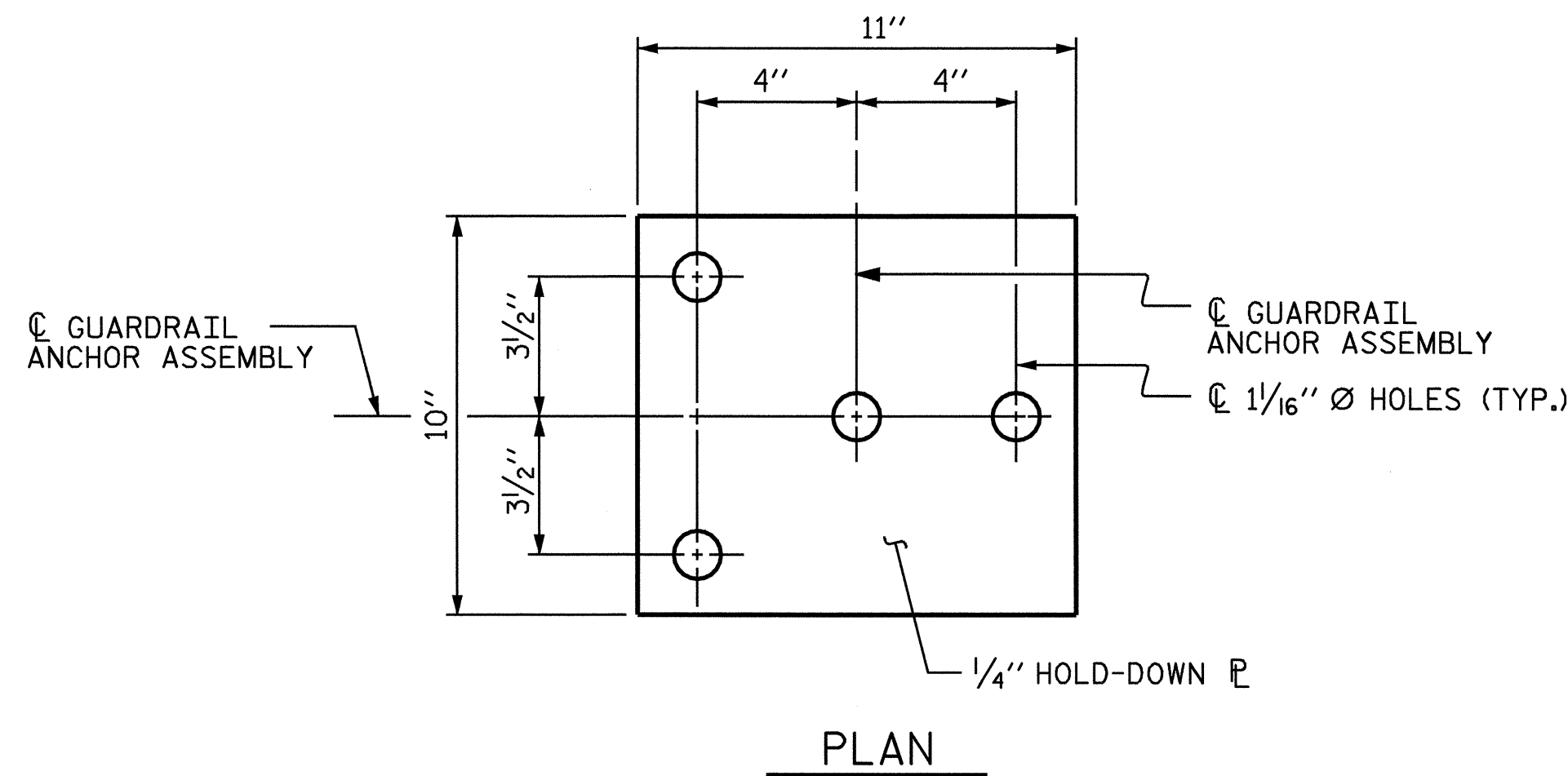
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

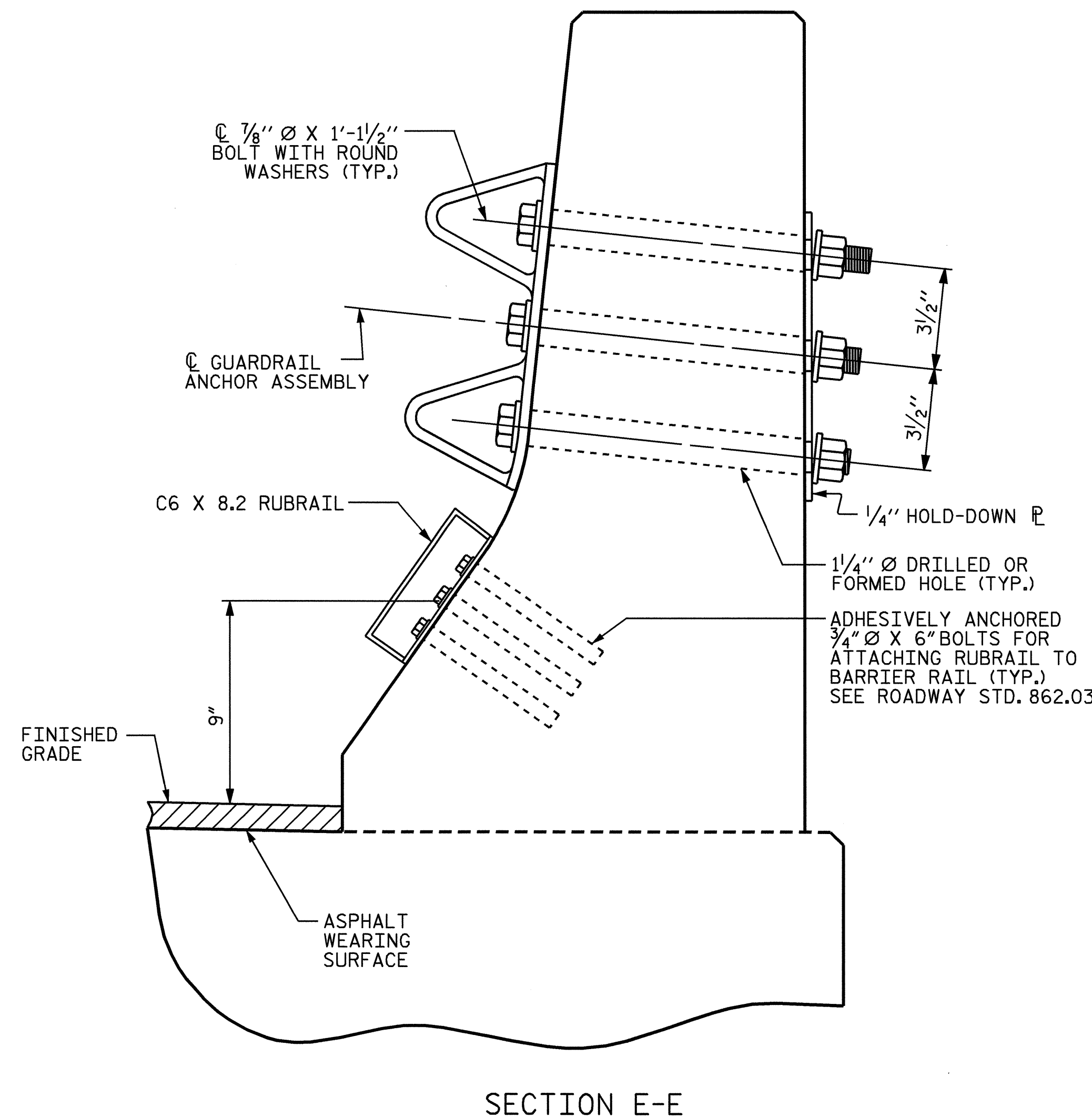
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

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

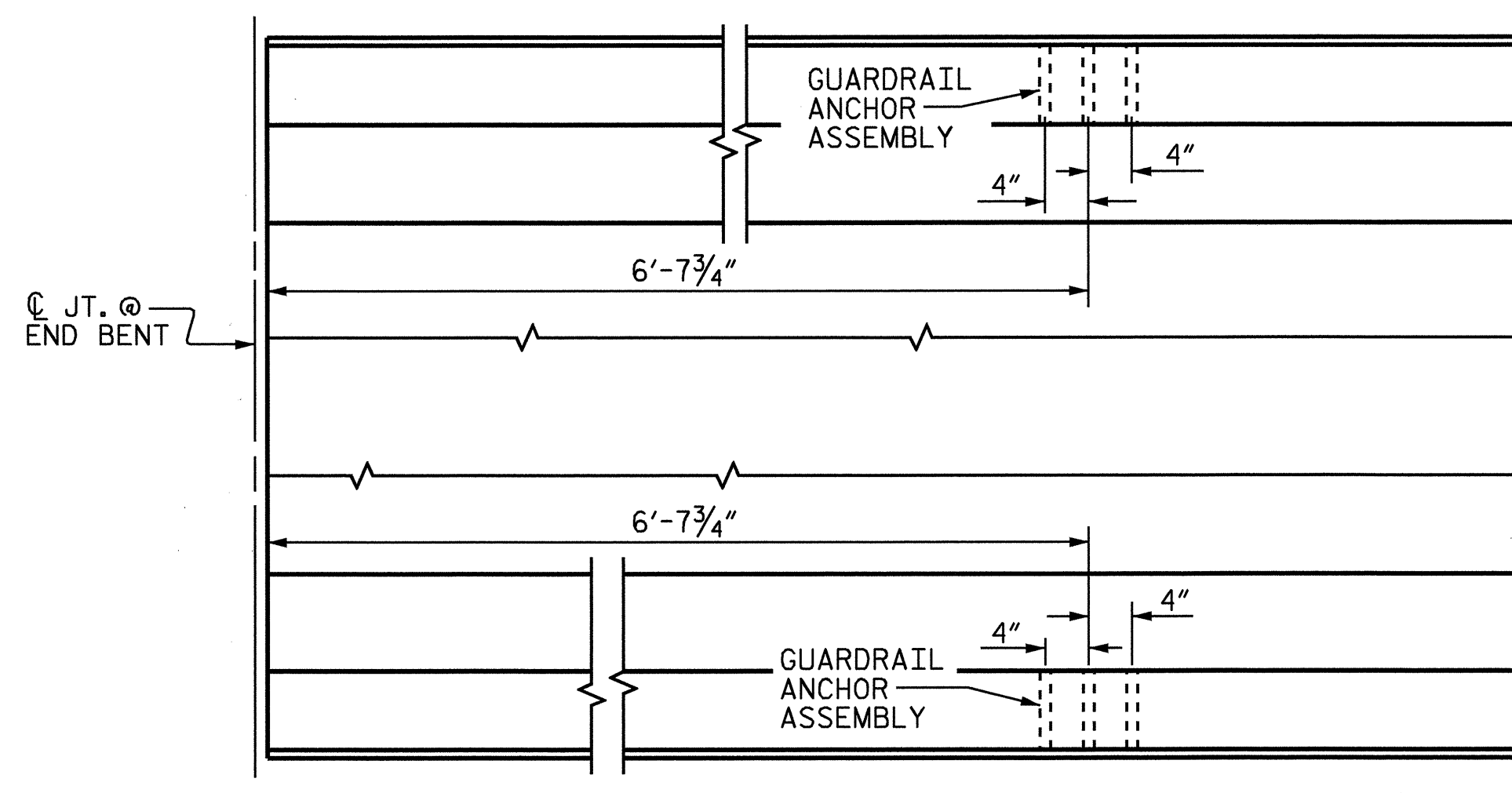
THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS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



ELEVATION  
FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03

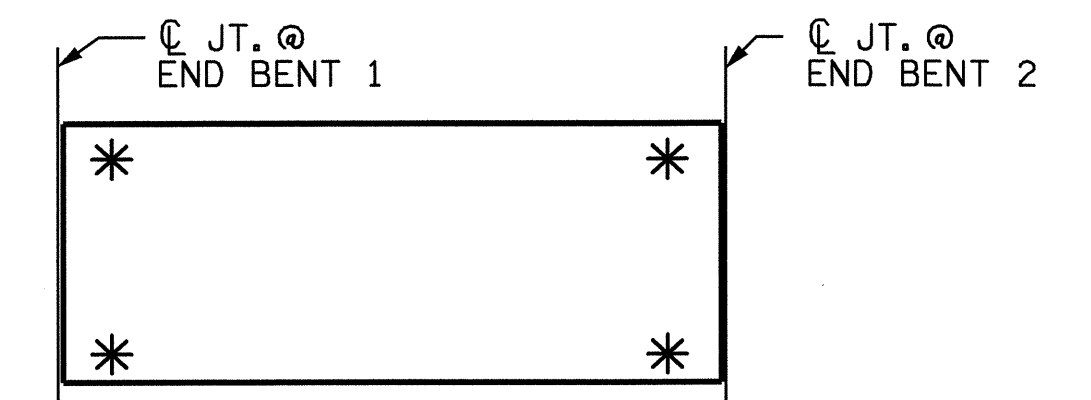


SECTION E-E  
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN  
LOCATION OF ANCHORS FOR GUARDRAIL

END BENT 1 SHOWN, END BENT 2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENTS

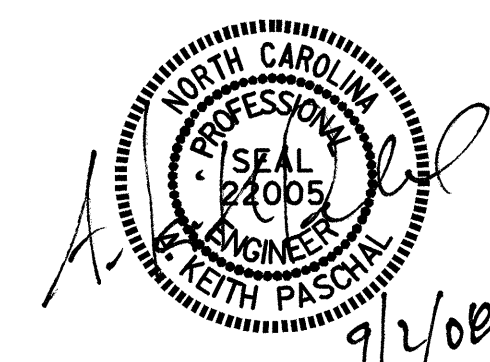
\* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4671  
WAYNE COUNTY  
STATION: 17+55.00 -L-

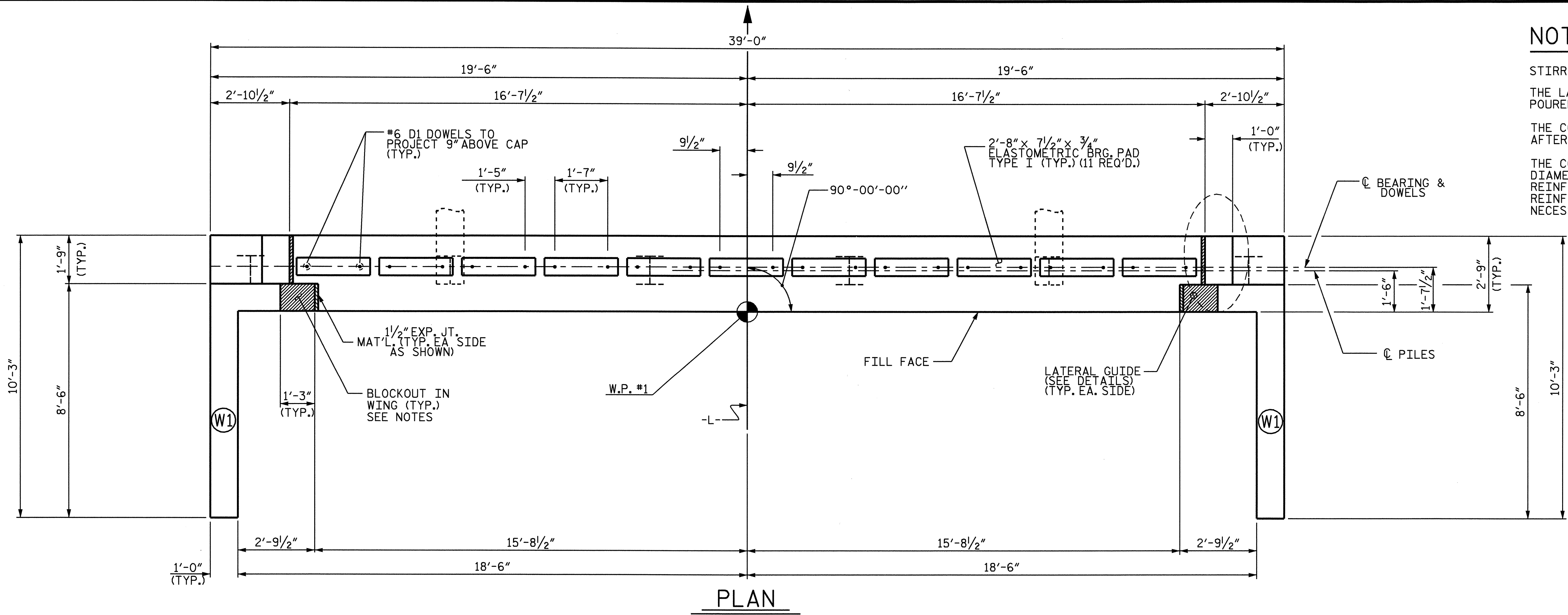
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

STANDARD  
GUARDRAIL ANCHORAGE  
FOR BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			19



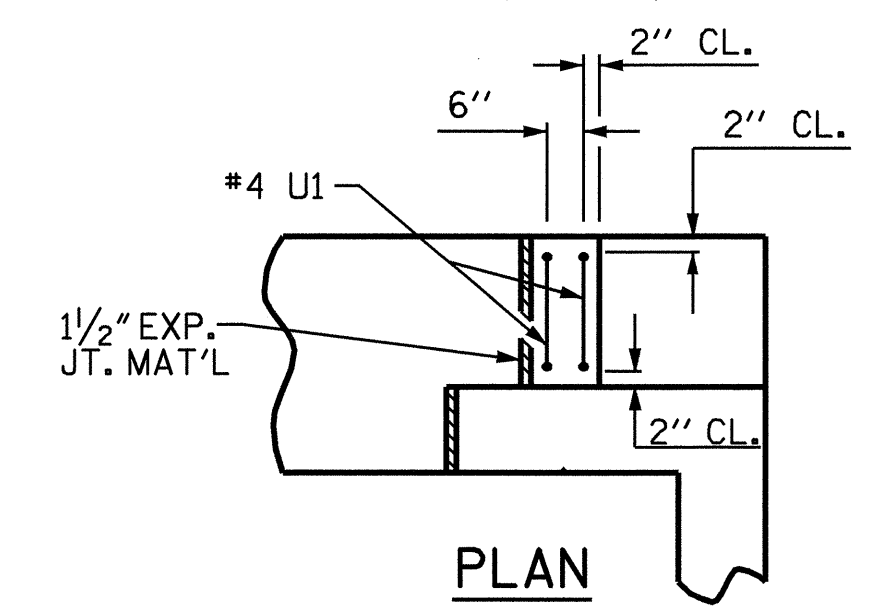
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CHECKED BY : C.R. YARBROUGH	DATE : 7/15/08
DRAWN BY : TLA 5/06	ADDED 5/1/06R KMM/GM
CHECKED BY : GM 5/06	



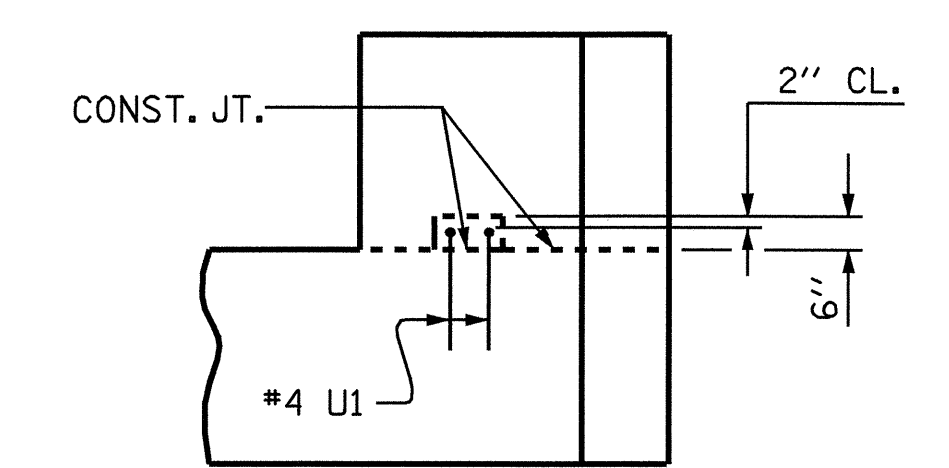
PLAN

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.  
 THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.  
 THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.  
 THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

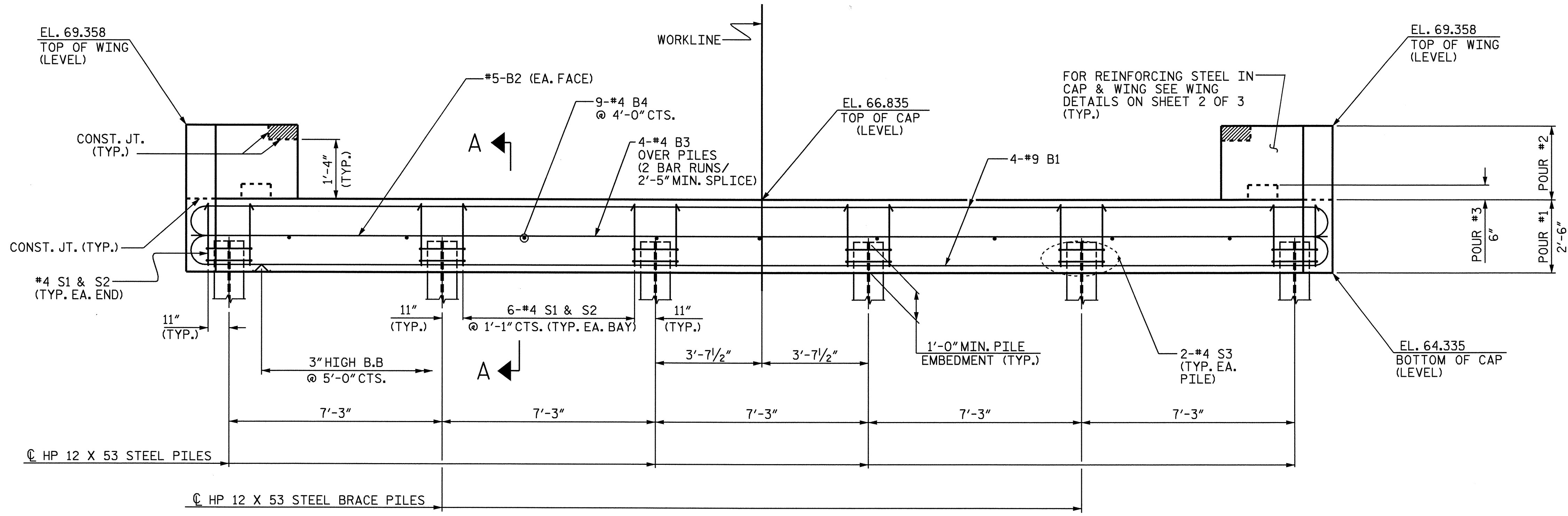


PLAN



ELEVATION

LATERAL GUIDE DETAILS  
 (EACH END SIMILAR)



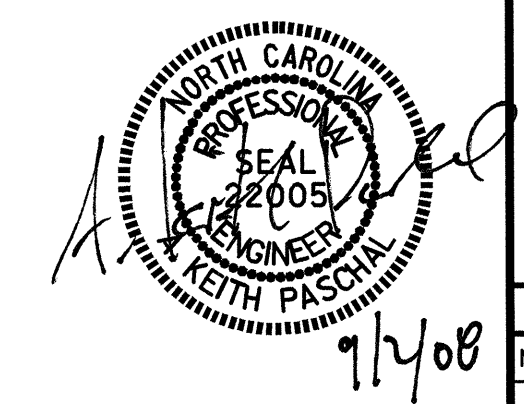
ELEVATION

PROJECT NO. B-4671  
 WAYNE COUNTY  
 STATION: 17+55.00 -L-

SHEET 1 OF 3

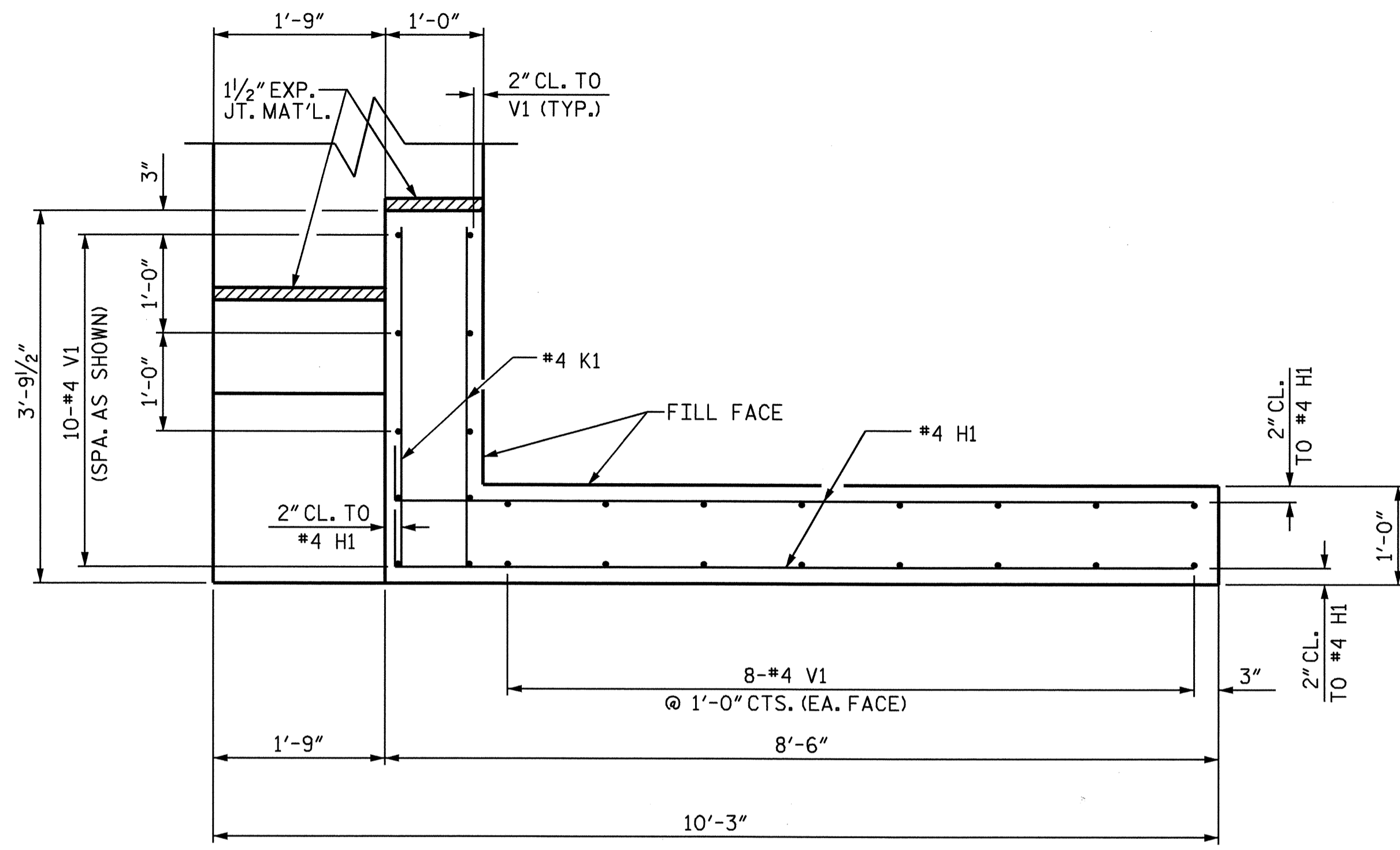
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 END BENT 1

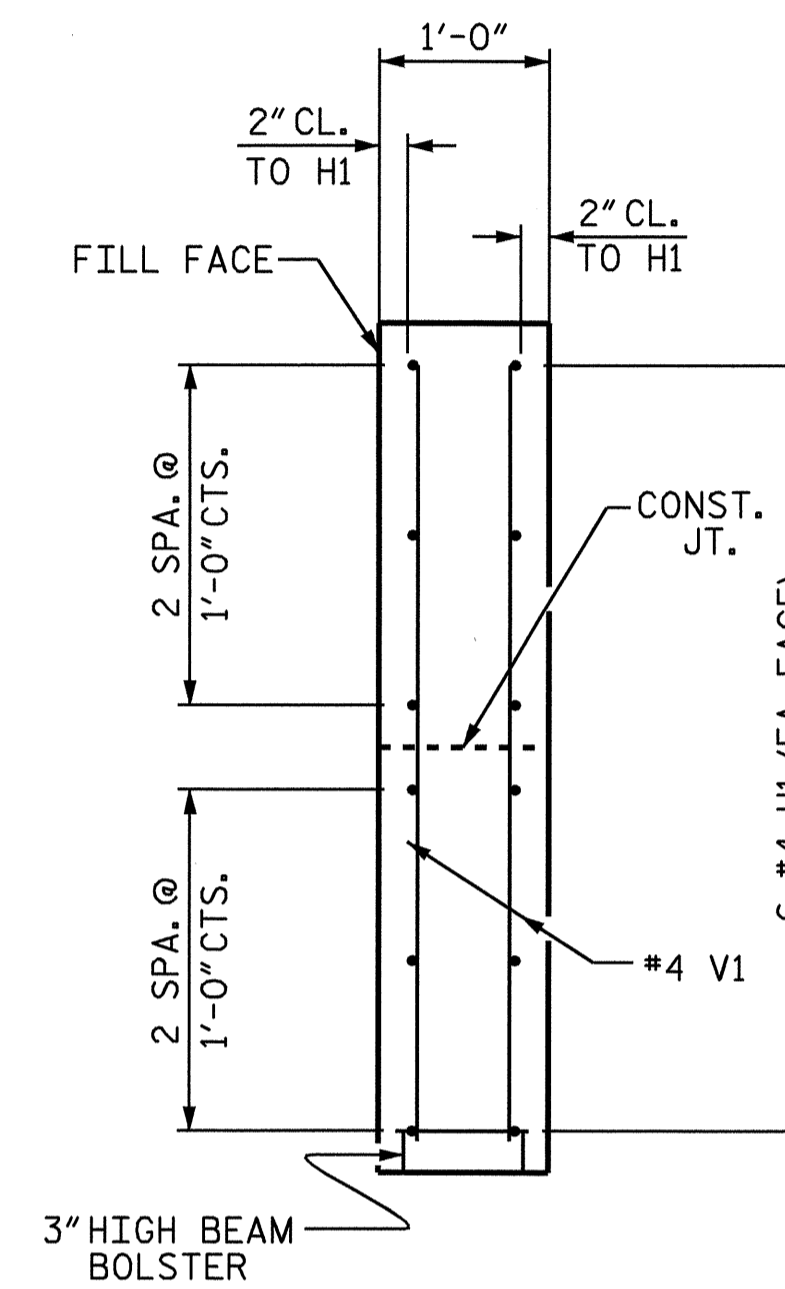


DRAWN BY: M.FOWLER DATE: 5/7/08  
 CHECKED BY: C.R. YARBROUGH DATE: 7/22/08

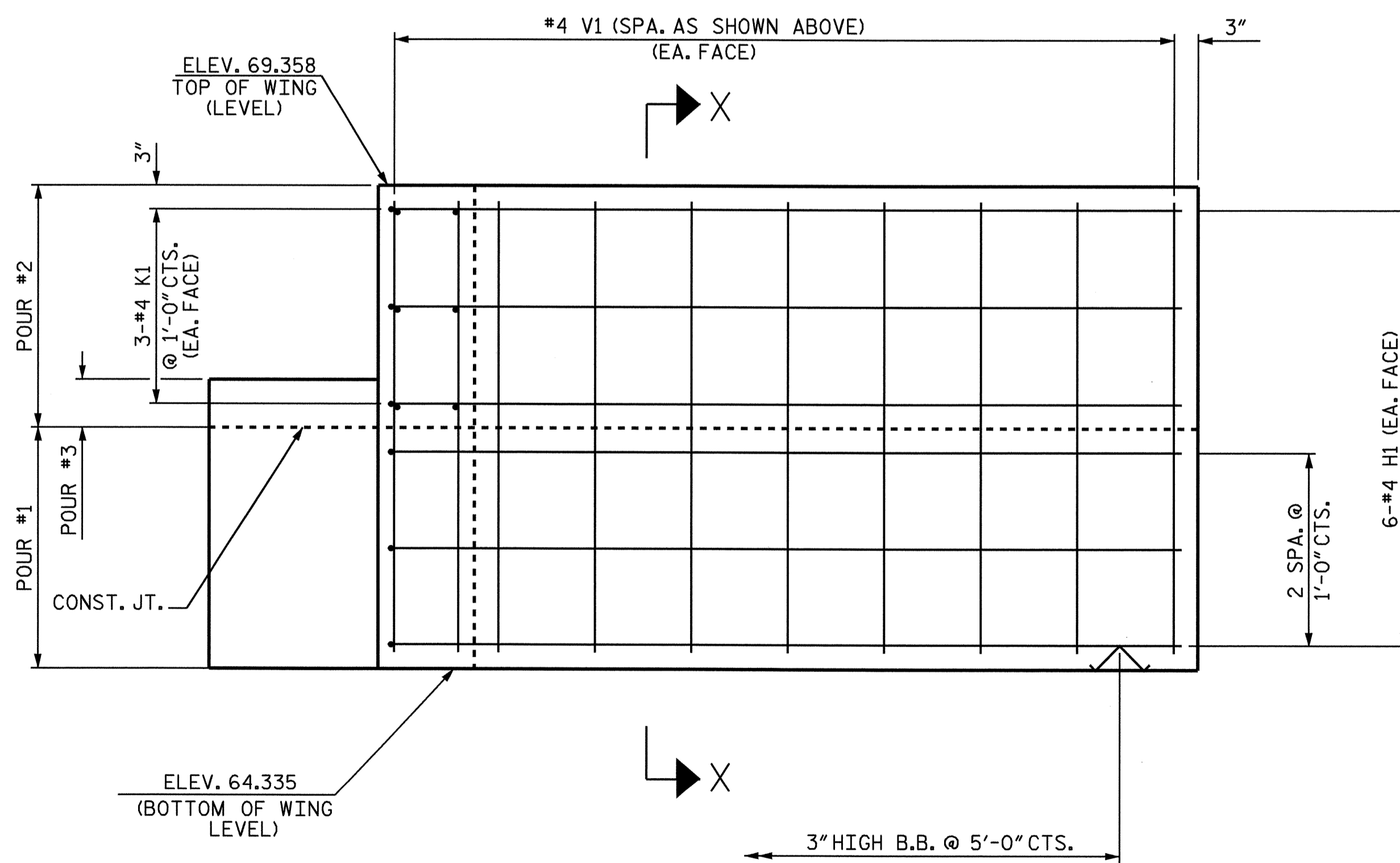
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			19



**PLAN OF WING (W1)**  
LEFT WING SHOWN RIGHT WING SIMILAR



**SECTION X-X**



**ELEVATION OF WING (W1)**  
LEFT WING SHOWN RIGHT WING SIMILAR

PROJECT NO. B-4671  
WAYNE COUNTY  
STATION: 17+55.00 -L-

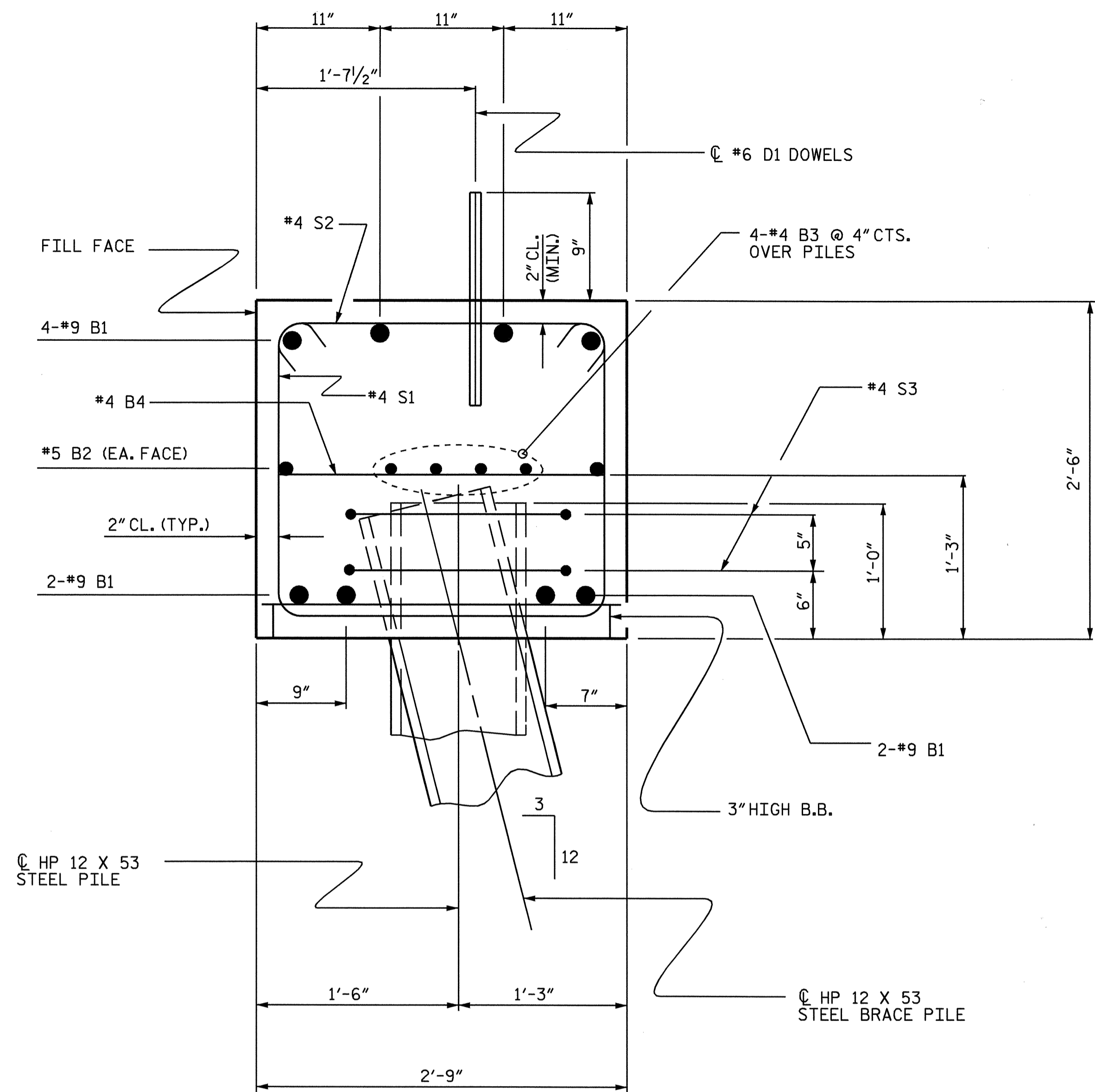
SHEET 2 OF 3

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

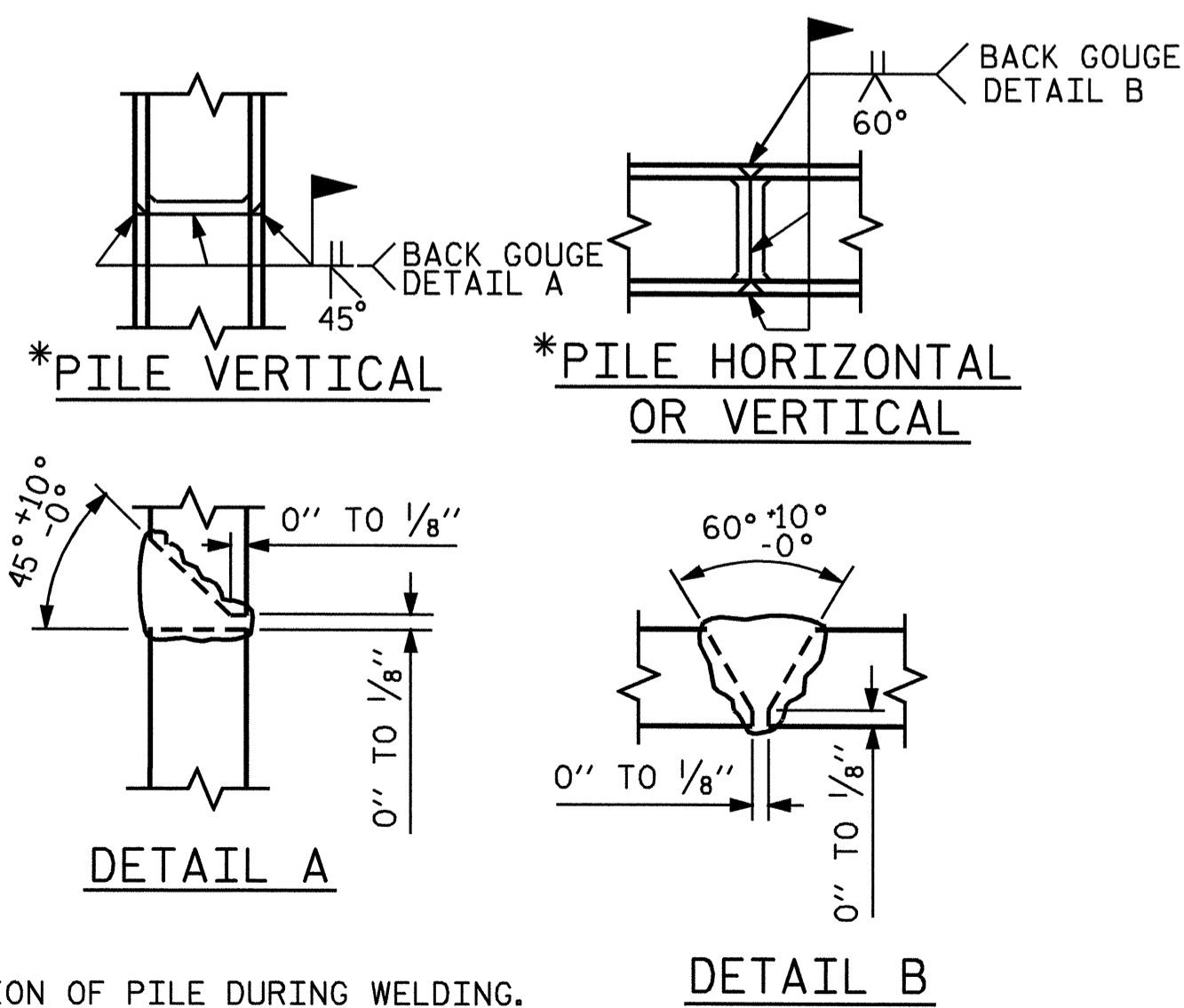


REVISIONS						SHEET NO.
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2			4			19

DRAWN BY : M.FOWLER DATE : 5/8/08  
CHECKED BY : C.R. YARBROUGH DATE : 7/22/08



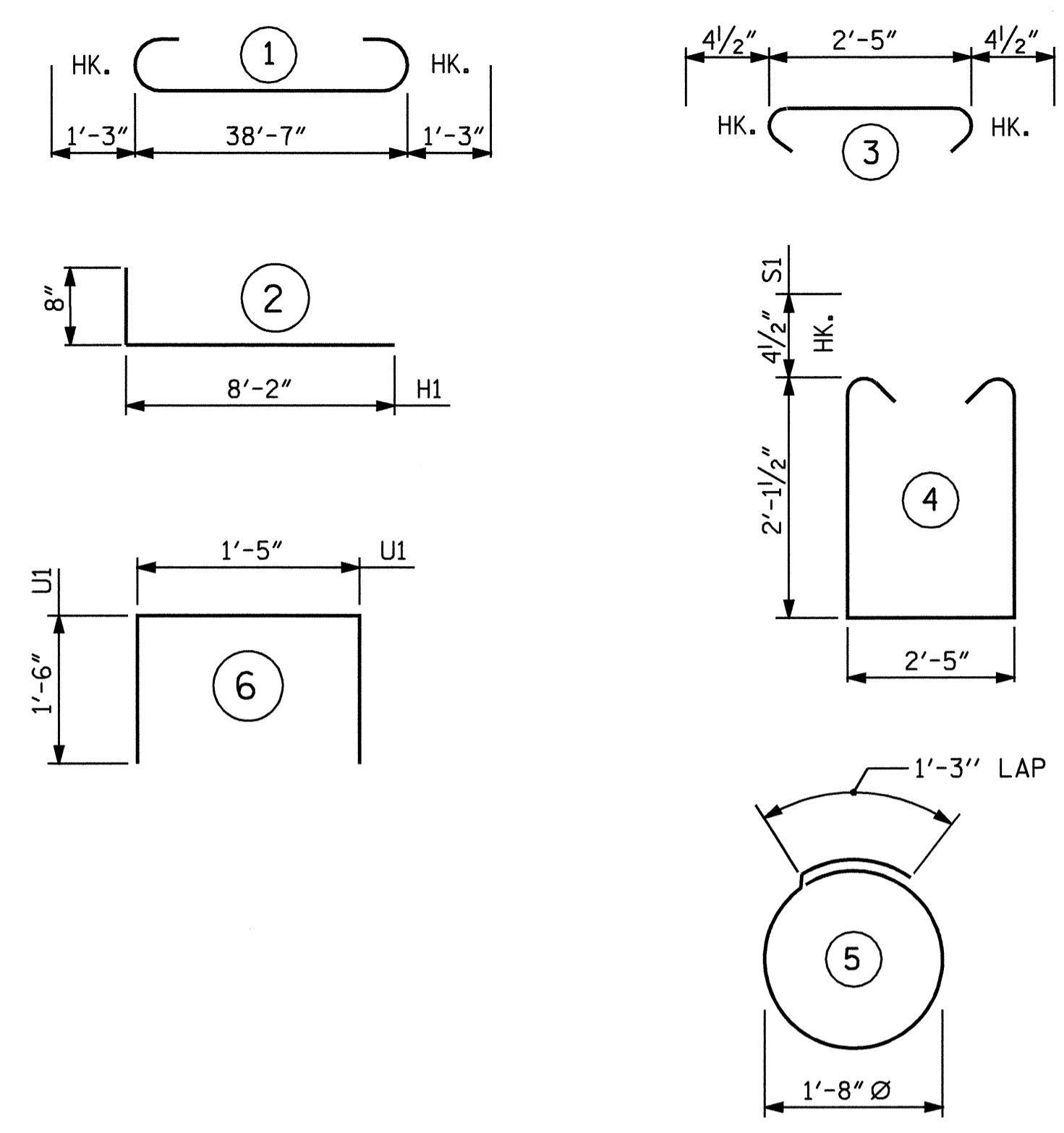
**SECTION A-A**



**PILE SPLICE DETAILS**

\*POSITION OF PILE DURING WELDING.

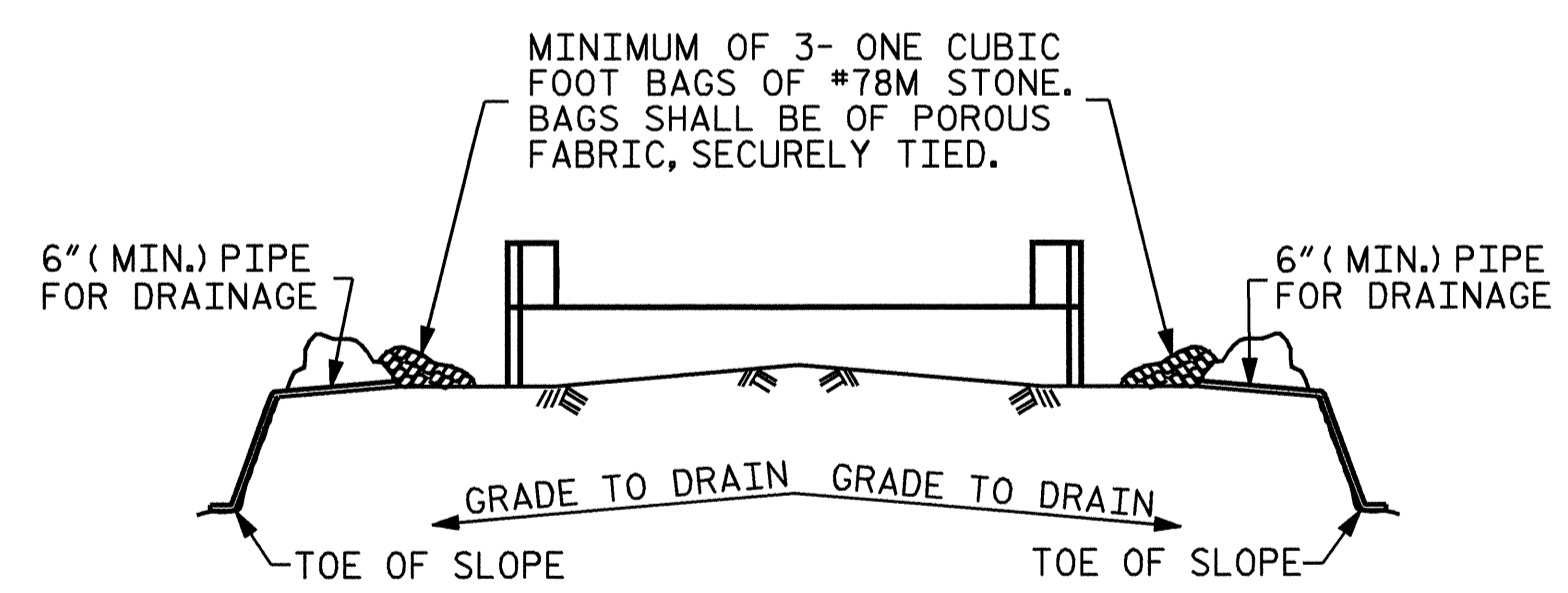
**BAR TYPES**



ALL BAR DIMENSIONS ARE OUT TO OUT.

**BILL OF MATERIAL**

END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-0"	1115
B2	2	#5	STR	38'-8"	81
B3	8	#4	STR	20'-7"	110
B4	9	#4	STR	2'-5"	15
D1	22	#6	STR	1'-6"	50
H1	24	#4	2	8'-10"	142
K1	12	#4	STR	3'-5"	27
S1	32	#4	4	7'-5"	159
S2	32	#4	3	3'-2"	68
S3	12	#4	5	6'-6"	52
U1	4	#4	6	4'-5"	12
V1	52	#4	STR	4'-8"	162
TOTAL REINFORCING STEEL					= 1995 LBS
CLASS A CONCRETE BREAKDOWN					
POUR 1	(CAP & LOWER PART OF WINGS)			11.3	C.Y.
POUR 2	(UPPER PART OF WINGS)			2.3	C.Y.
POUR 3	(LATERAL GUIDE)			0.1	C.Y.
TOTAL CLASS A CONCRETE				13.7	C.Y.
HP 12 X 53 STEEL PILES				270	
NO. 6				270	
PILE REDRIVES				NO. 4	



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

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

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

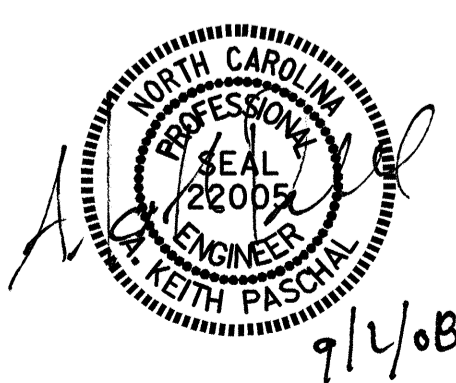
**TEMPORARY DRAINAGE AT END BENT**

PROJECT NO. **B-4671**  
**WAYNE COUNTY**  
 STATION: **17+55.00 -L-**

SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE  
 END BENT 1**



DRAWN BY: **M.FOWLER** DATE: **5/12/08**  
 CHECKED BY: **C.R. YARBROUGH** DATE: **7/22/08**

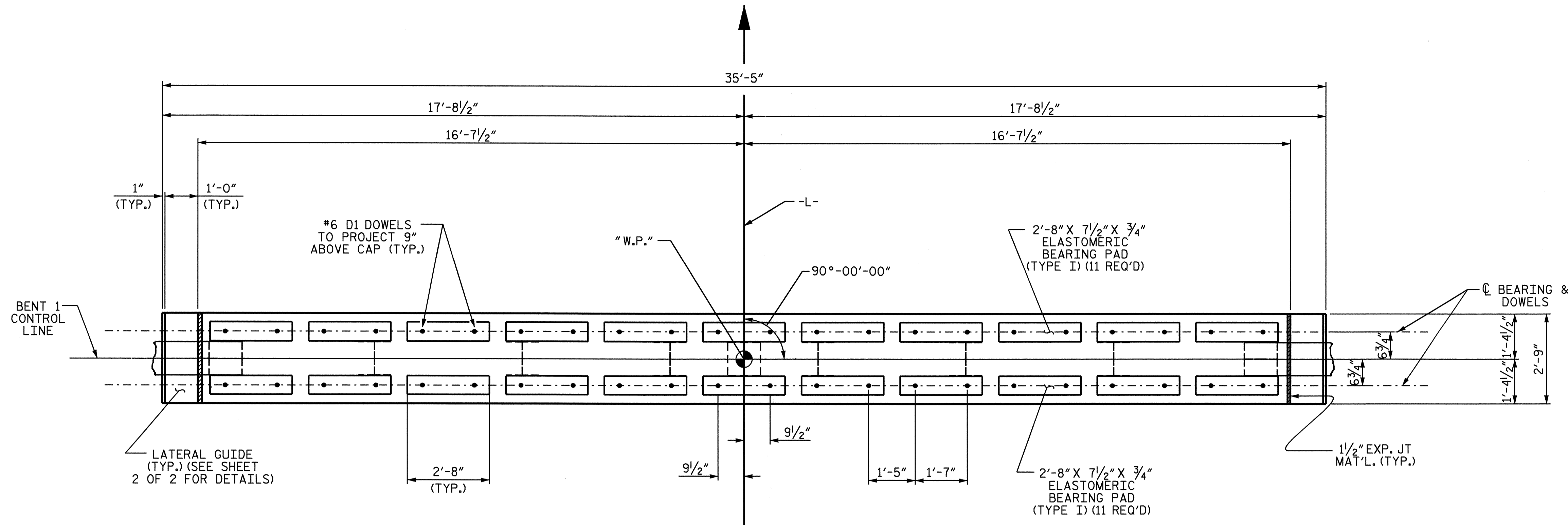
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			19

**NOTES**

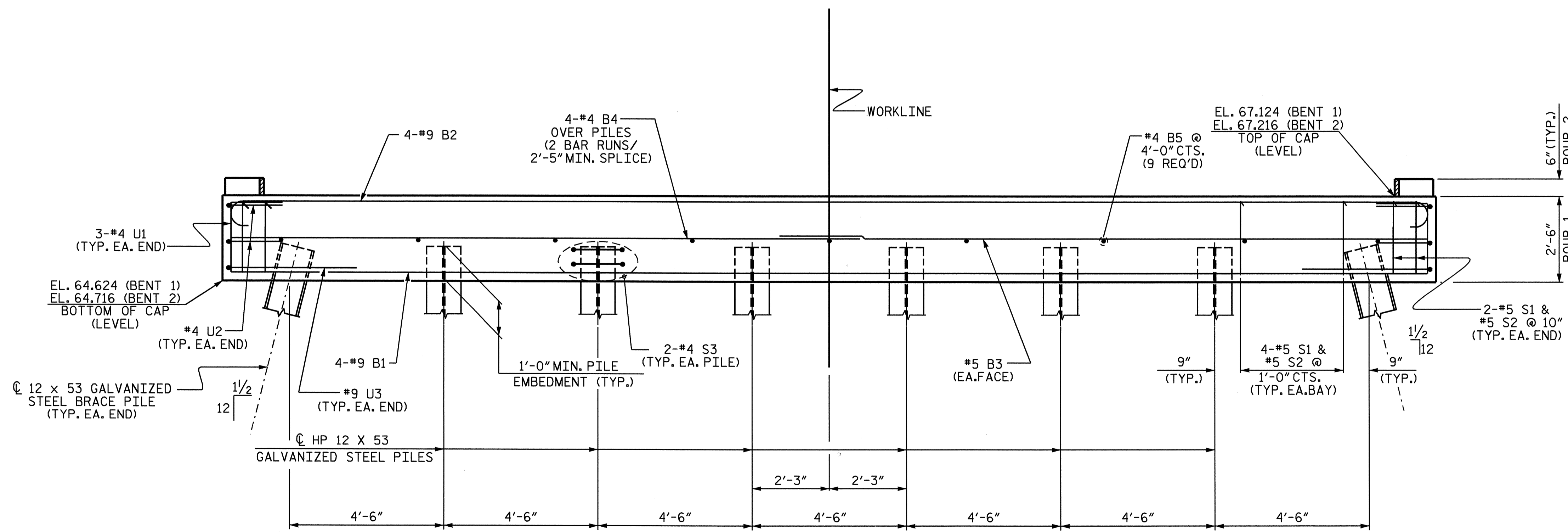
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

A MINIMUM OF 25'-0" OF THE TOP OF EACH PILE SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



**PLAN**



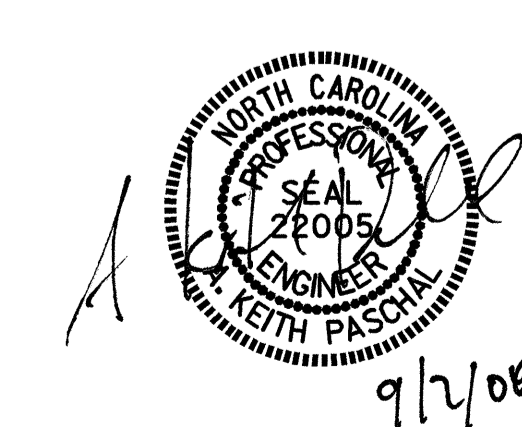
**ELEVATION**

PROJECT NO. B-4671  
WAYNE COUNTY  
 STATION: 17+55.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

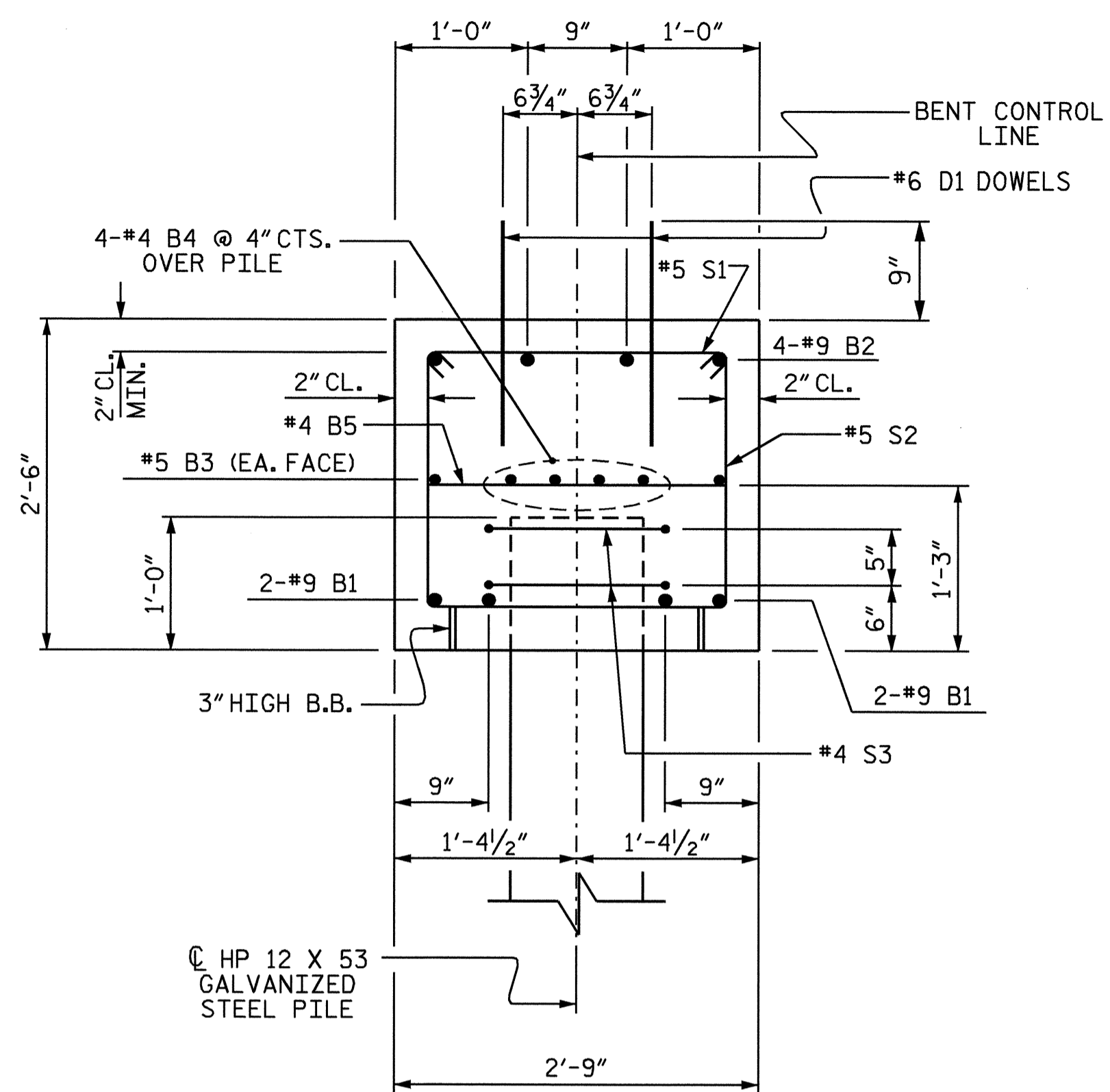
SUBSTRUCTURE  
 BENTS 1 & 2



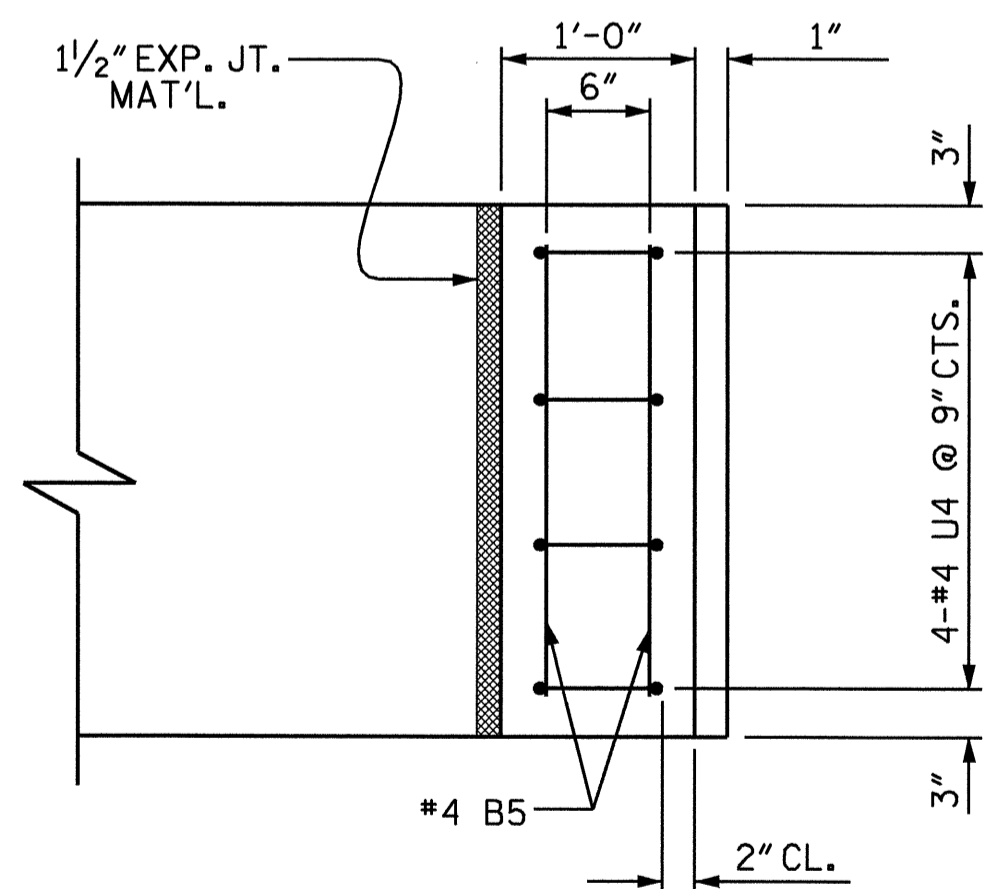
DRAWN BY : M.FOWLER DATE : 7/15/08  
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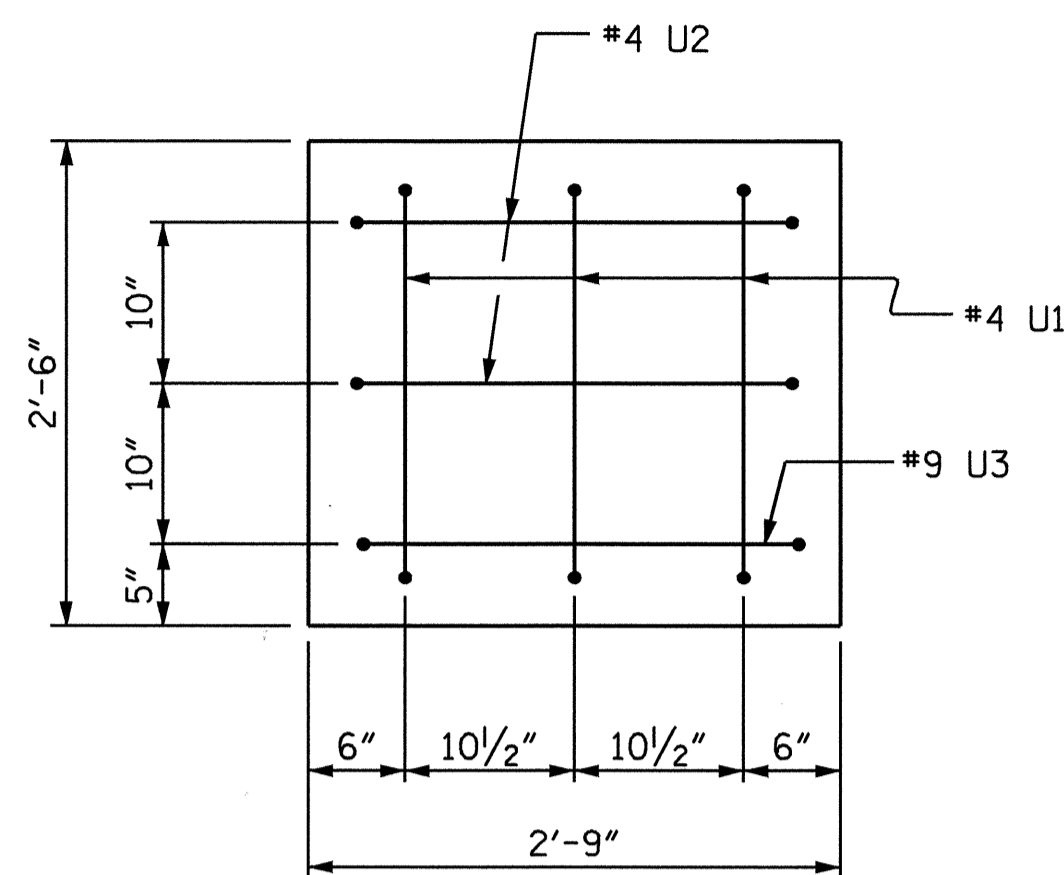
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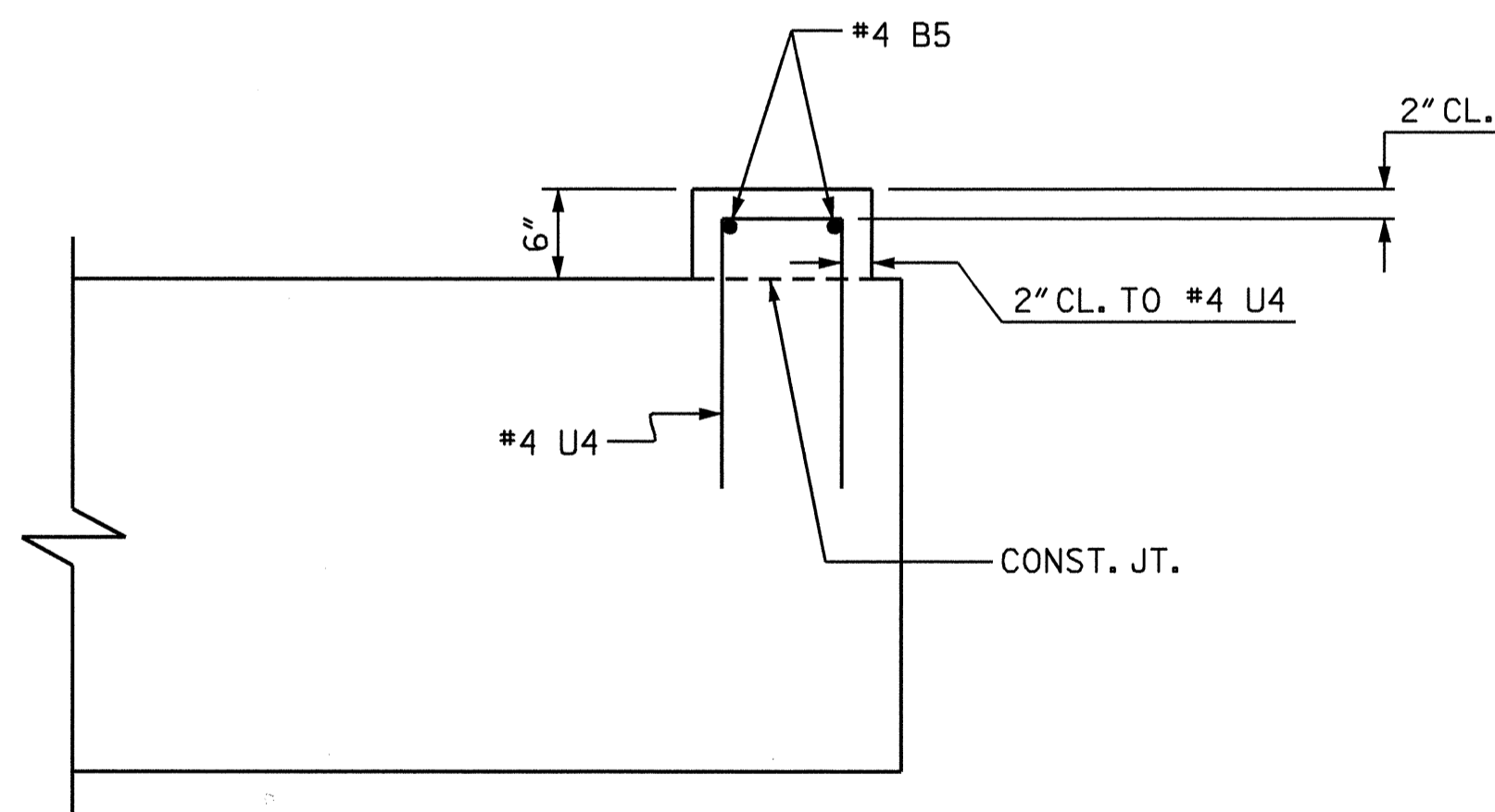
**SECTION A-A**



**PLAN**



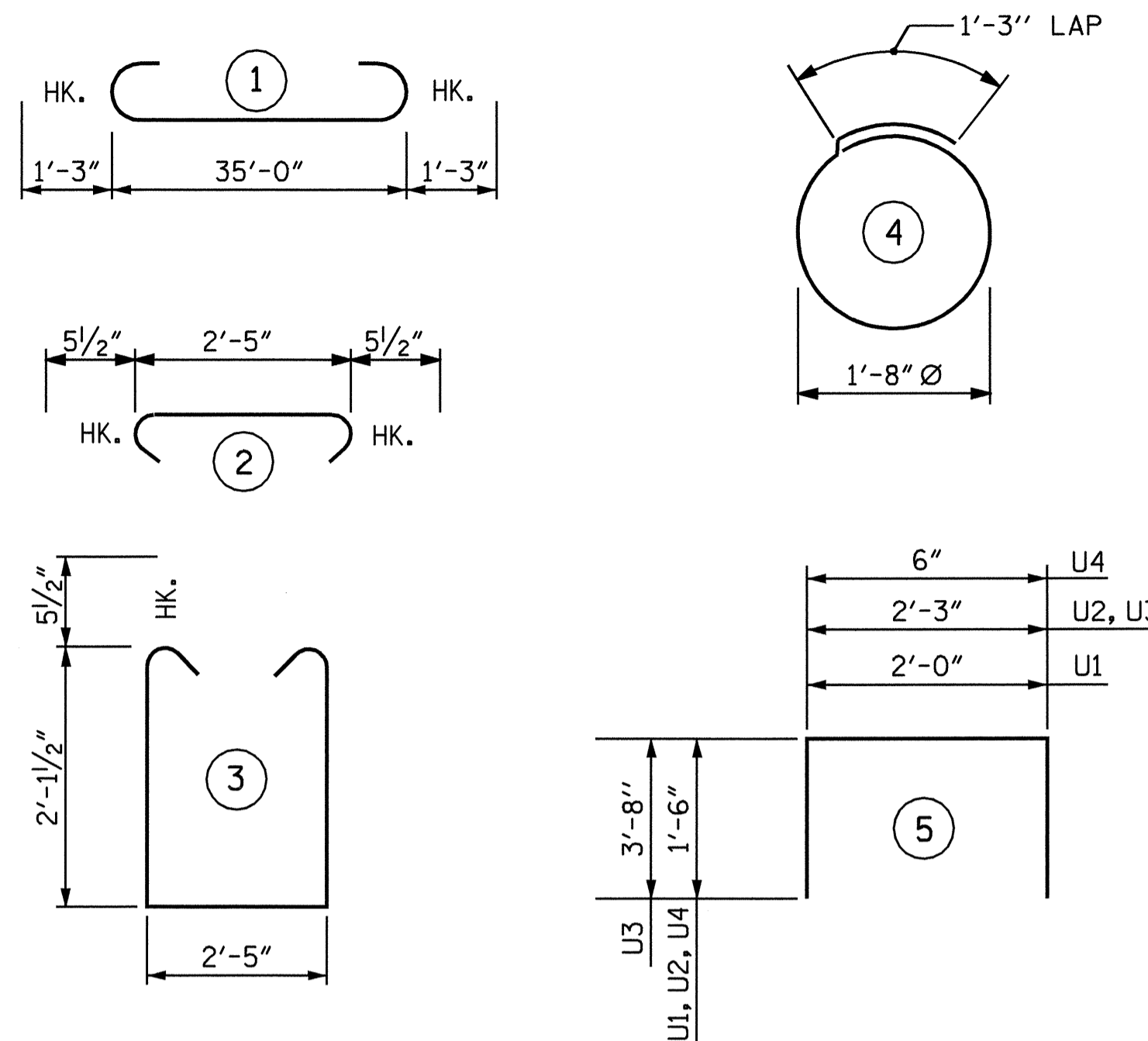
**END VIEW**  
(TYP. EA. END)



**ELEVATION**

**LATERAL GUIDE DETAIL**  
(EACH END SIMILAR)

**BAR TYPES**



ALL BAR DIMENSIONS ARE OUT TO OUT.

**BILL OF MATERIAL**  
FOR ONE BENT (2 REQ'D)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#9	STR	35'-1"	477
B2	4	#9	1	37'-6"	510
B3	2	#5	STR	35'-1"	73
B4	8	#4	STR	18'-9"	100
B5	13	#4	STR	2'-5"	21
D1	44	#6	STR	1'-6"	99
S1	32	#5	2	3'-4"	111
S2	32	#5	3	7'-7"	253
S3	16	#4	4	6'-6"	69
U1	6	#4	5	5'-0"	20
U2	4	#4	5	5'-3"	14
U3	2	#9	5	9'-7"	65
U4	8	#4	5	3'-6"	19

REINFORCING STEEL	1831 LBS.
CLASS A CONCRETE	
POUR 1 (CAP)	C.Y. 9.0
POUR 2 (LATERAL GUIDE)	C.Y. 0.1
TOTAL	C.Y. 9.1

HP 12 X 53 GALVANIZED STEEL PILES	
NO. 8	LIN. FT. 440
PILE REDRIVES	NO. 4

DRAWN BY : M. FOWLER DATE : 7/15/08  
CHECKED BY : C.R. YARBROUGH DATE : 7/28/08

19-AUG-2008 09:32  
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jdhawk

PROJECT NO. B-4671  
WAYNE COUNTY  
STATION: 17+55.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

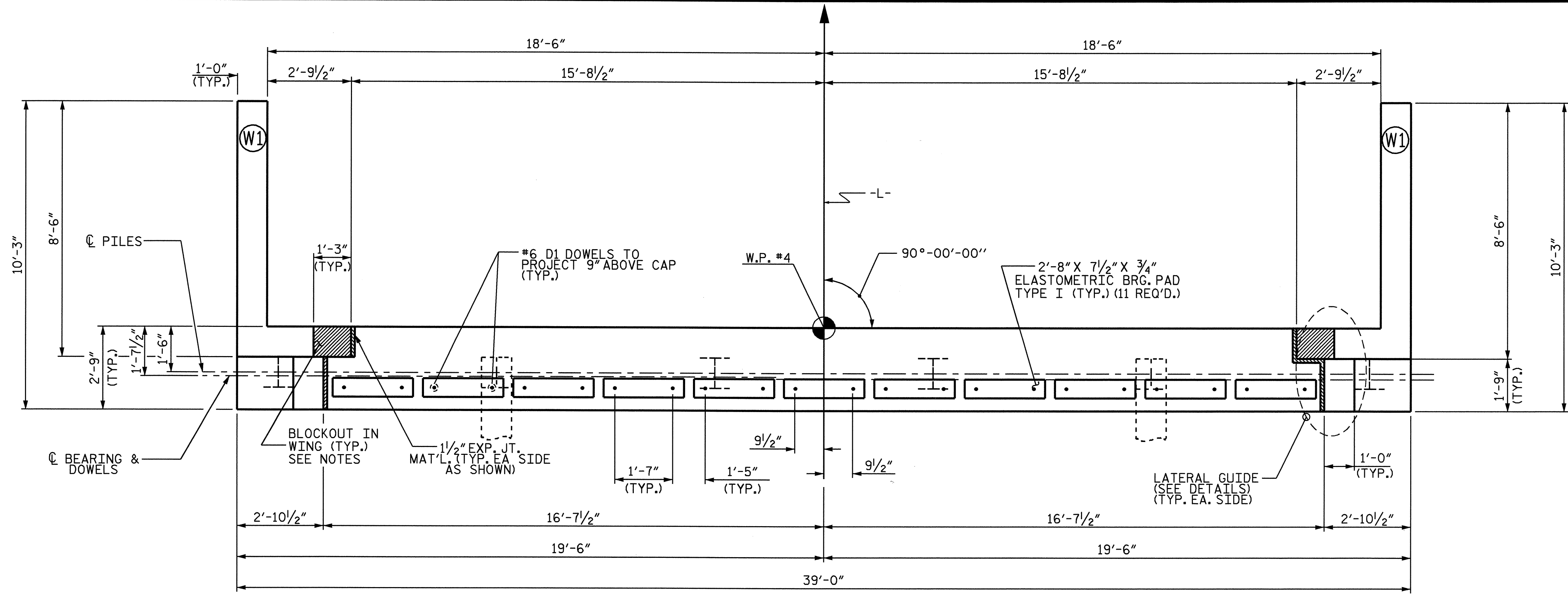
SUBSTRUCTURE  
BENTS 1 & 2



**REVISIONS**

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

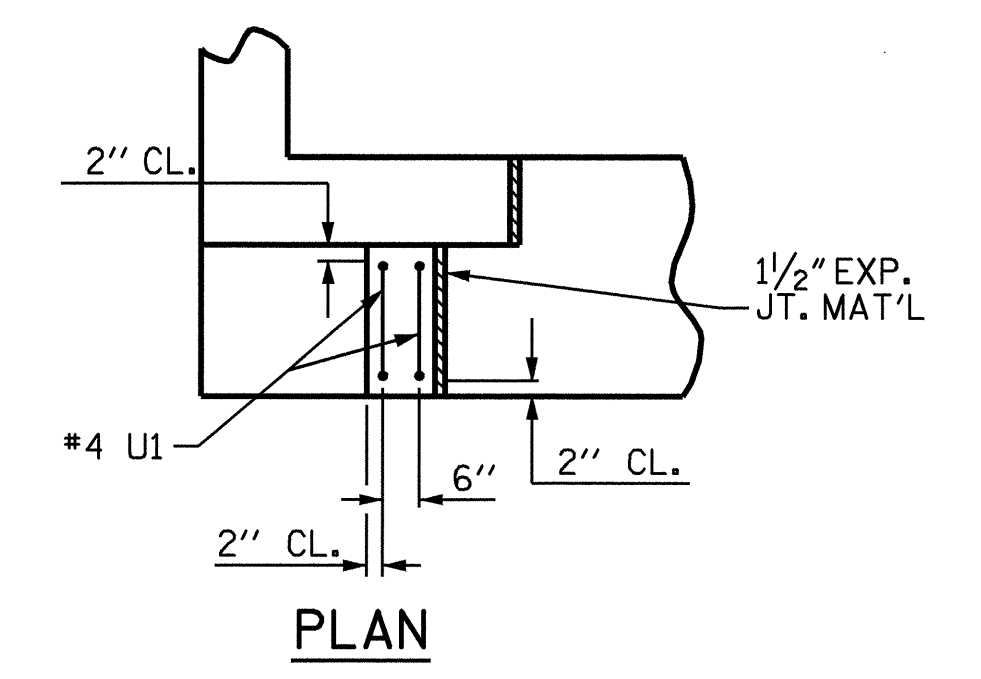
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**S-13**  
TOTAL SHEETS  
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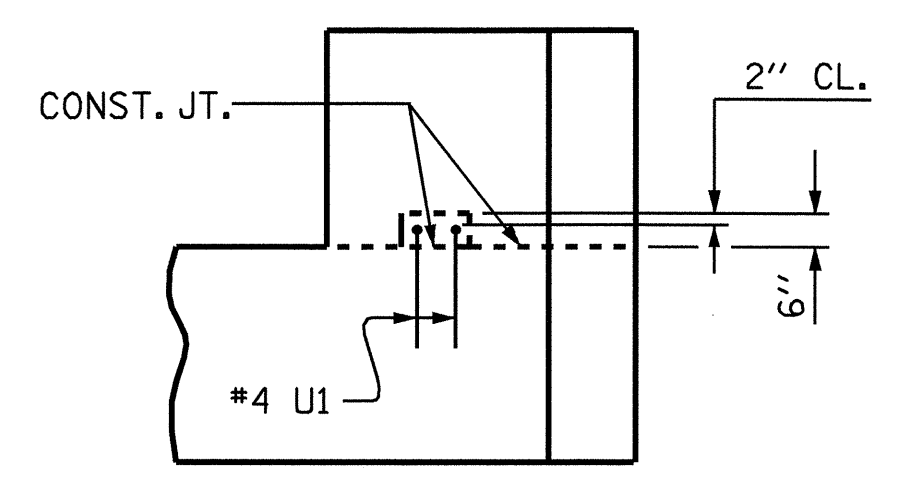
PLAN

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.  
 THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.  
 THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.  
 THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

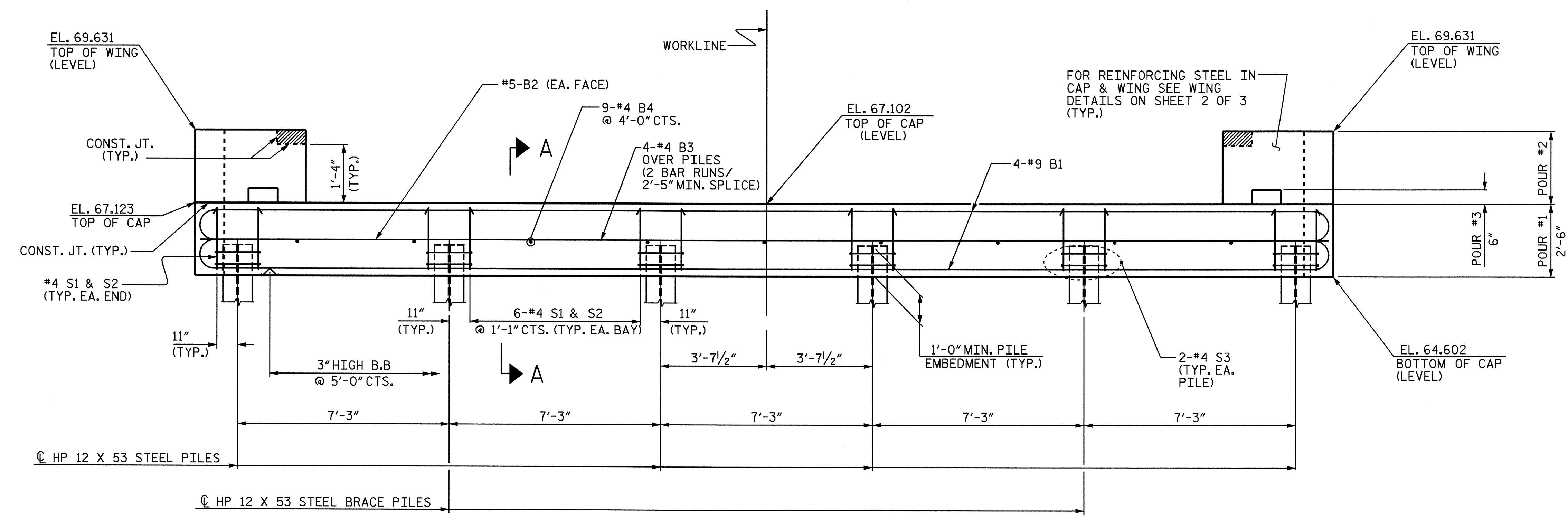


PLAN



ELEVATION

LATERAL GUIDE DETAILS  
(EACH END SIMILAR)

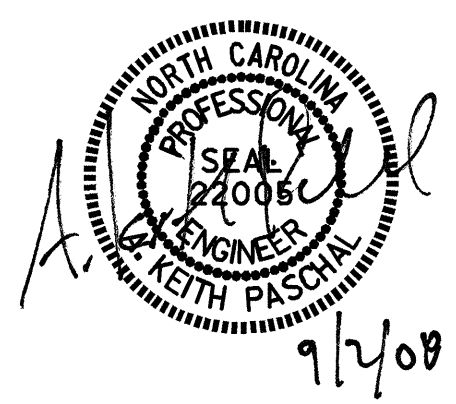


ELEVATION

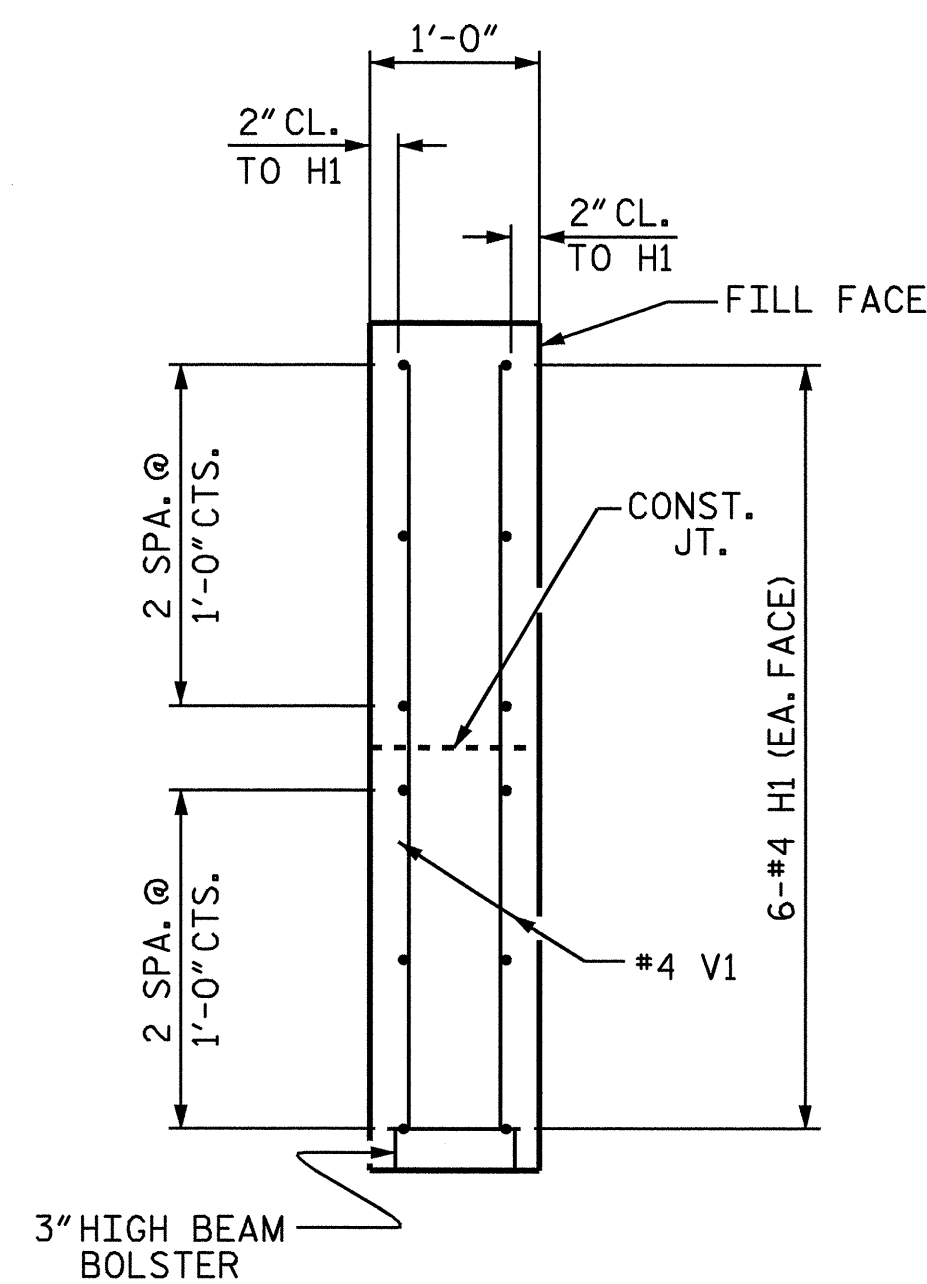
PROJECT NO. B-4671  
WAYNE COUNTY  
 STATION: 17+55.00 -L-

SHEET 1 OF 3

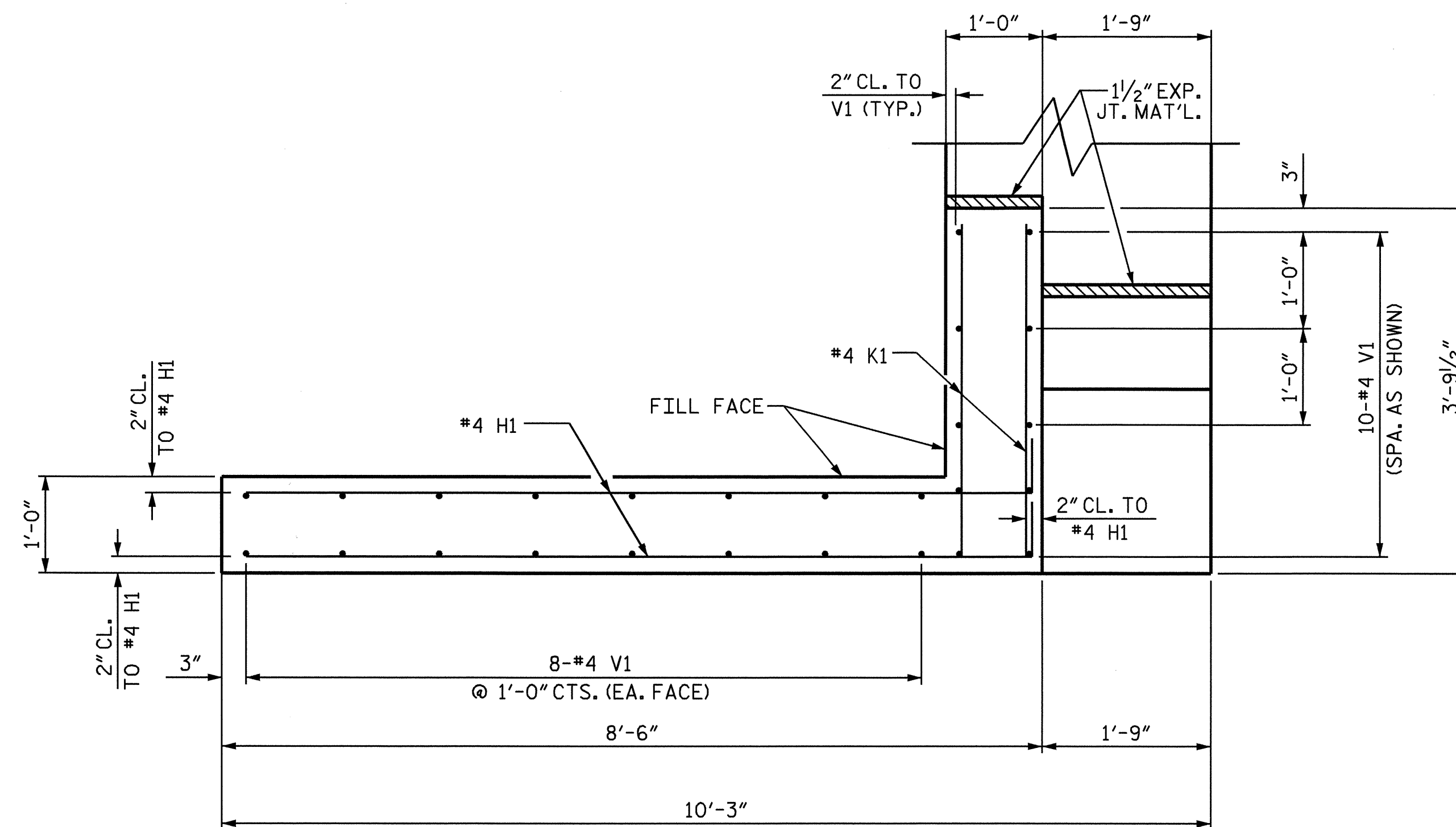
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH				SUBSTRUCTURE END BENT 2	
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SHEET NO.					S-14
TOTAL SHEETS					19



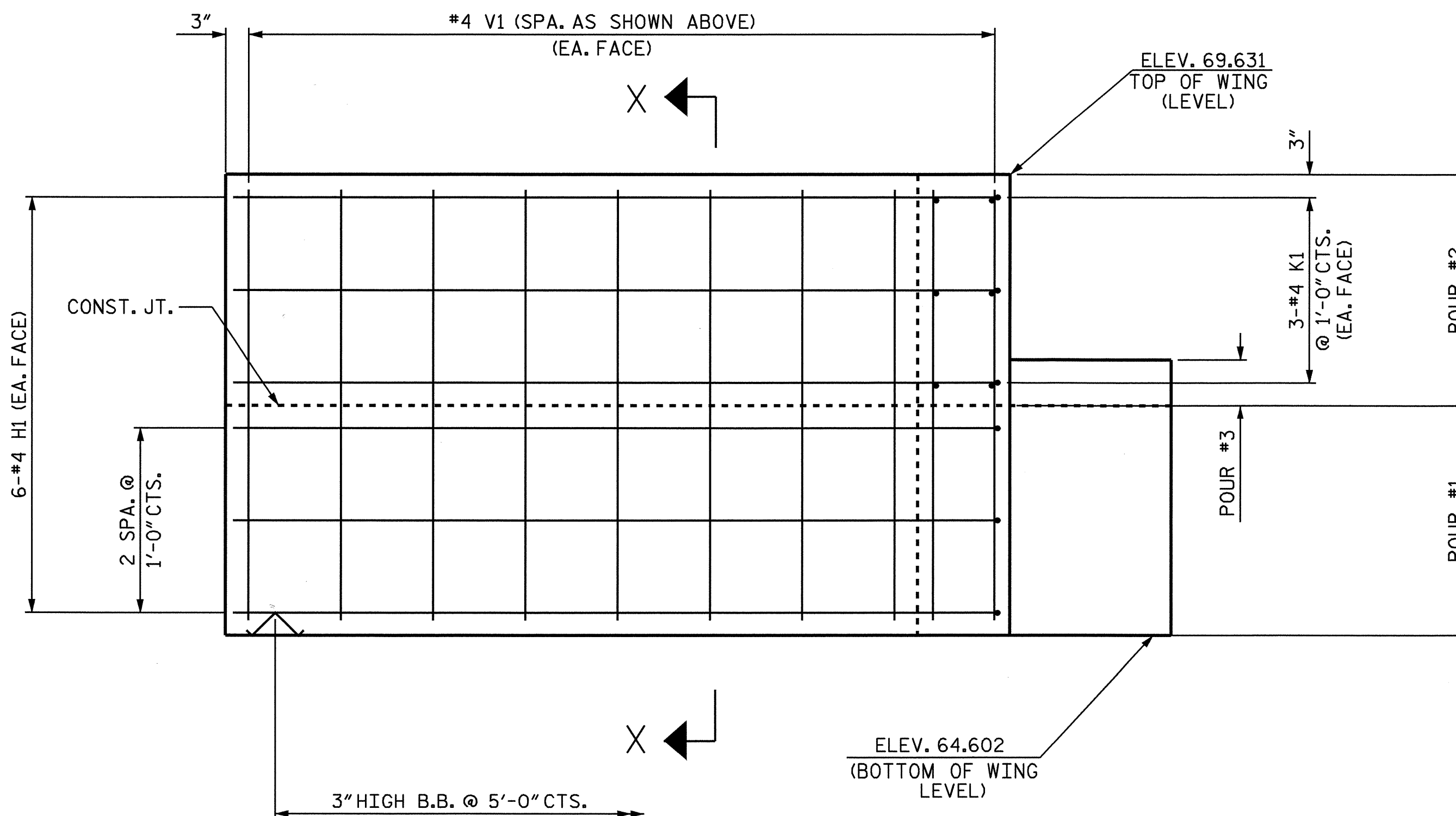
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 CHECKED BY: C.R. YARBROUGH DATE: 7/22/08



**SECTION X-X**



**PLAN OF WING (W1)**  
LEFT WING SHOWN RIGHT WING SIMILAR

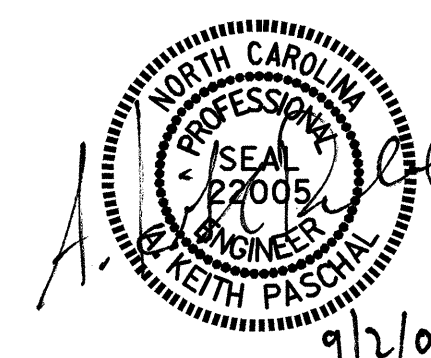


**ELEVATION OF WING (W1)**  
LEFT WING SHOWN RIGHT WING SIMILAR

PROJECT NO. B-4671  
WAYNE COUNTY  
 STATION: 17+55.00 -L-

SHEET 2 OF 3

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

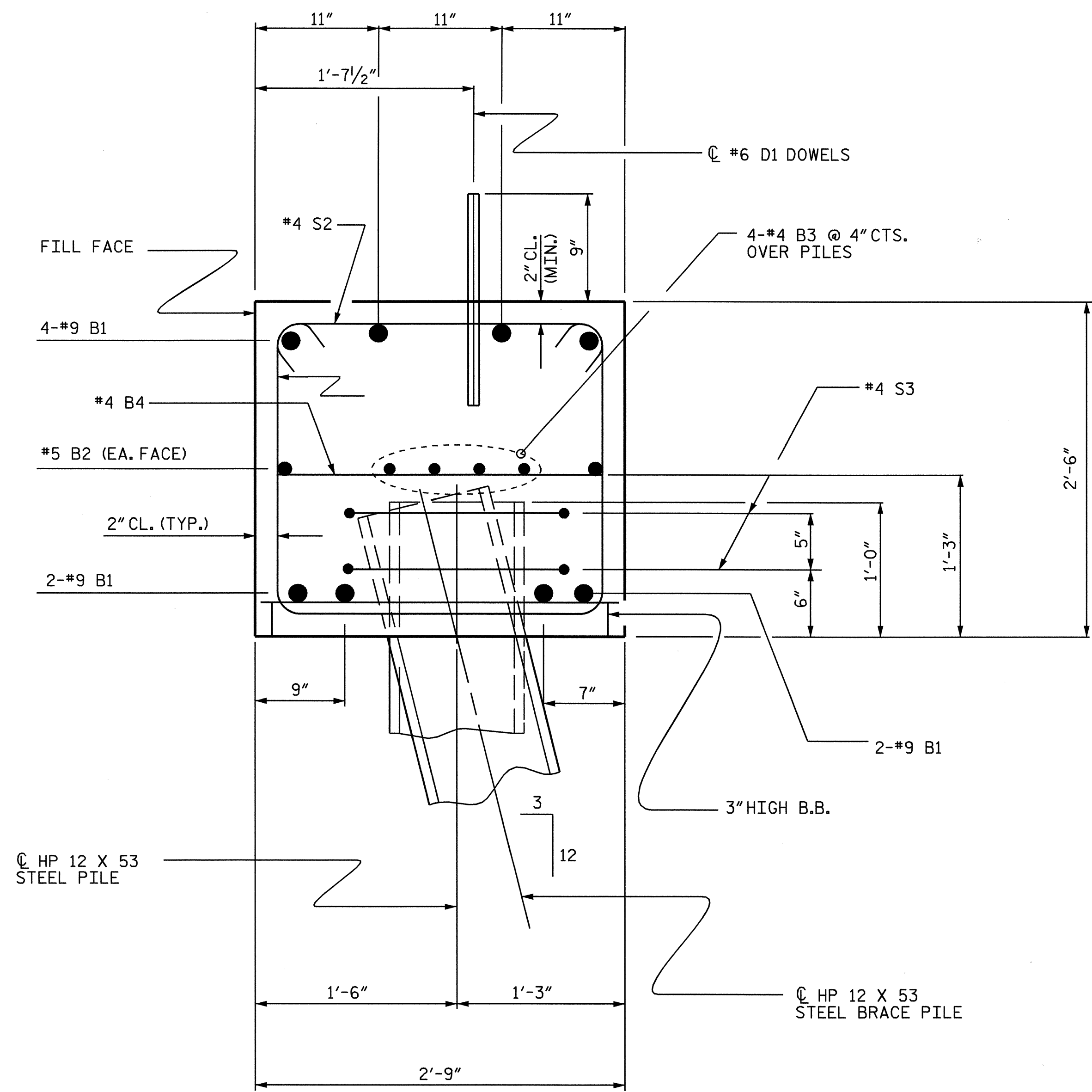


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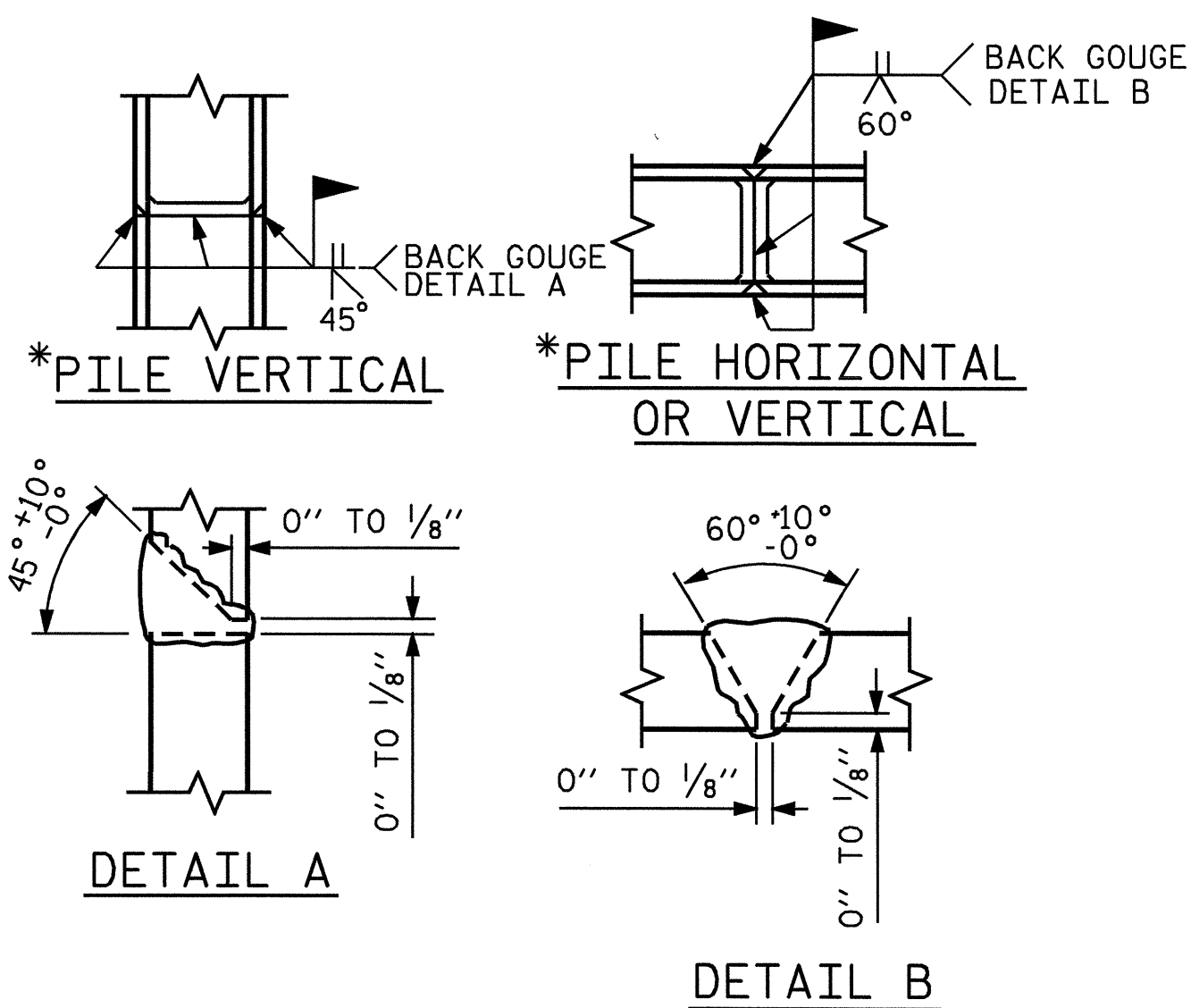
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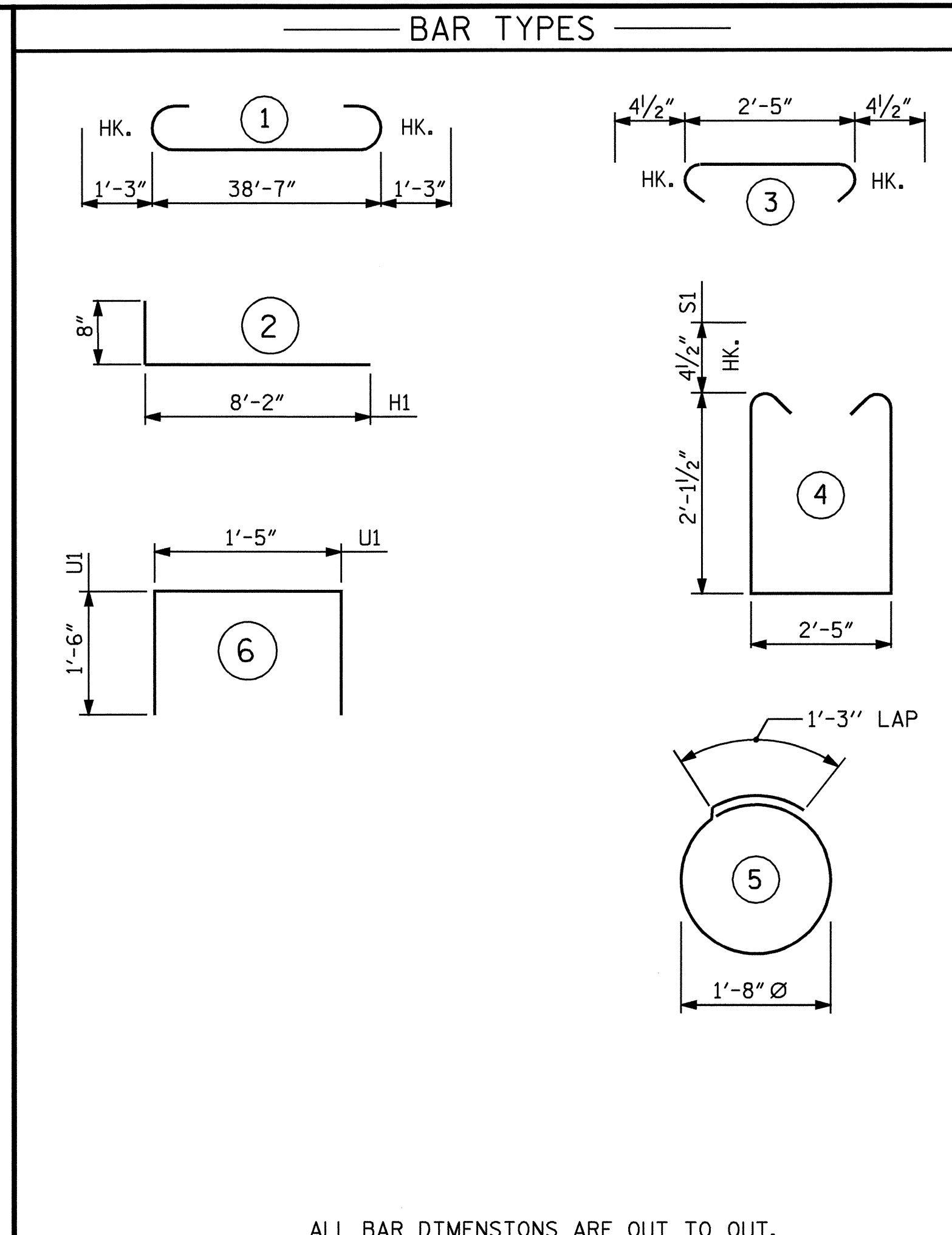




**SECTION A-A**

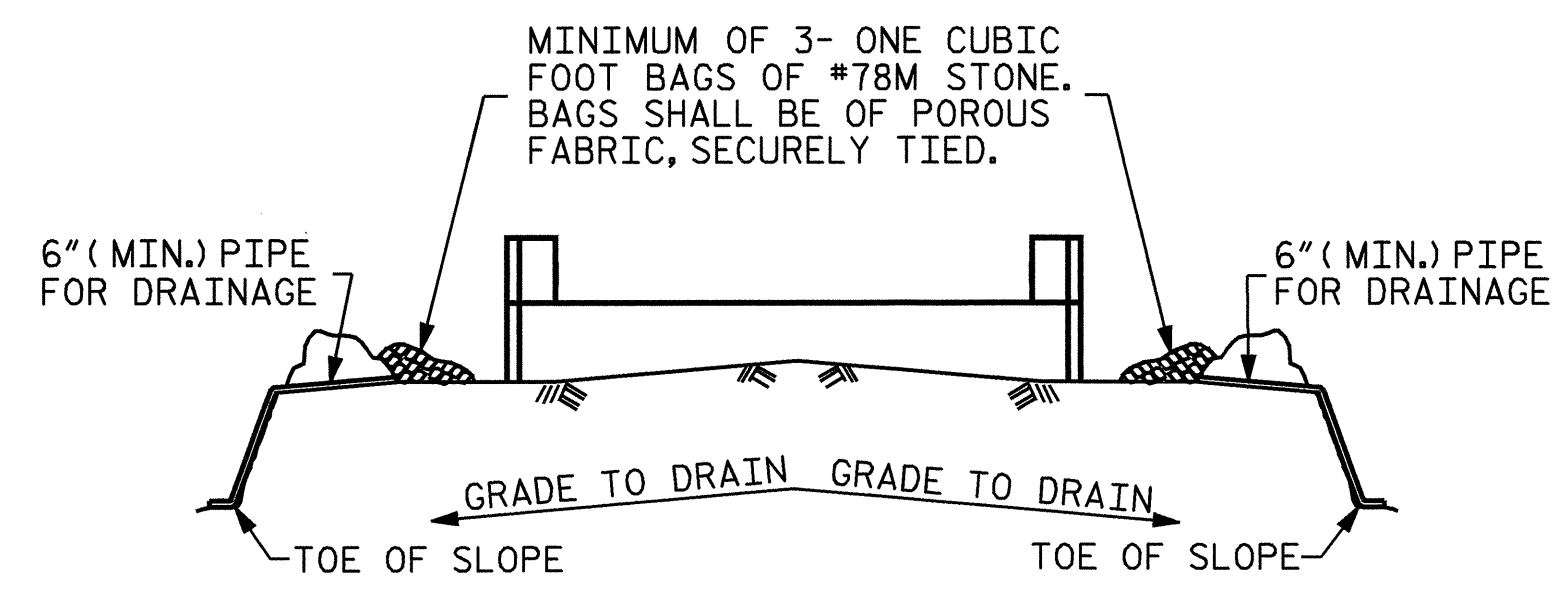


**PILE SPLICE DETAILS**



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-0"	1115
B2	2	#5	STR	38'-8"	81
B3	8	#4	STR	20'-7"	110
B4	9	#4	STR	2'-5"	15
D1	22	#6	STR	1'-6"	50
H1	24	#4	2	8'-10"	142
K1	12	#4	STR	3'-5"	27
S1	32	#4	4	7'-5"	159
S2	32	#4	3	3'-2"	68
S3	12	#4	5	6'-6"	52
U1	4	#4	6	4'-5"	12
V1	52	#4	STR	4'-8"	162
TOTAL REINFORCING STEEL					= 1995 LBS
CLASS A CONCRETE BREAKDOWN					
POUR 1 (CAP & LOWER PART OF WINGS)					11.3 C.Y.
POUR 2 (UPPER PART OF WINGS)					2.3 C.Y.
POUR 3 (LATERAL GUIDE)					0.1 C.Y.
TOTAL CLASS A CONCRETE					13.7 C.Y.
HP 12 X 53 STEEL PILES					
NO. 6					390
PILE REDRIVES					NO. 4



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

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

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

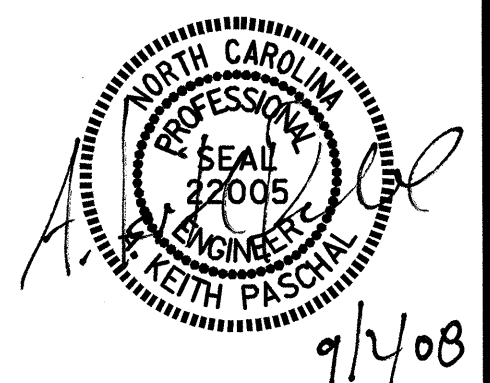
**TEMPORARY DRAINAGE AT END BENT**

PROJECT NO. B-4671  
 WAYNE COUNTY  
 STATION: 17+55.00 -L-

SHEET 3 OF 3

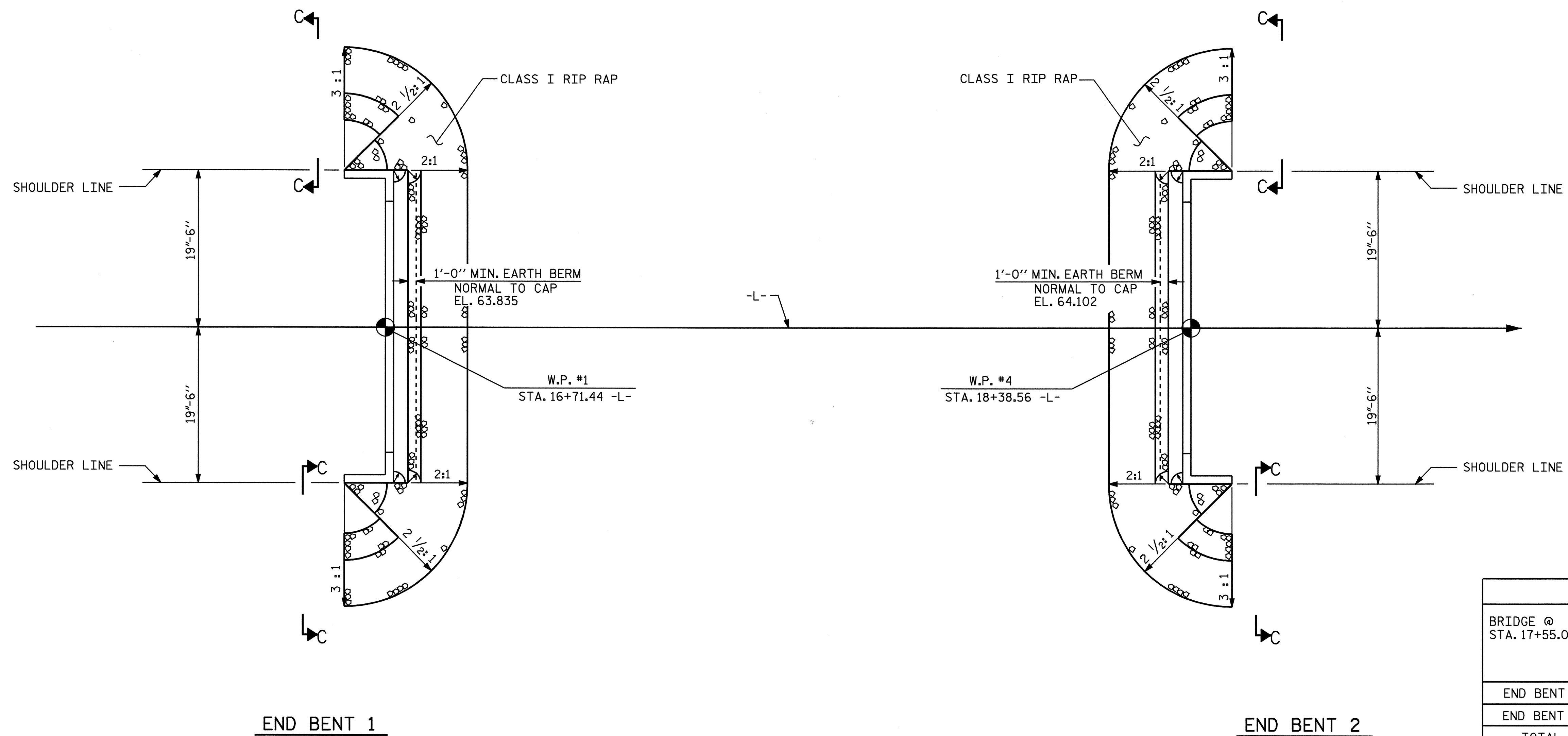
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 END BENT 2



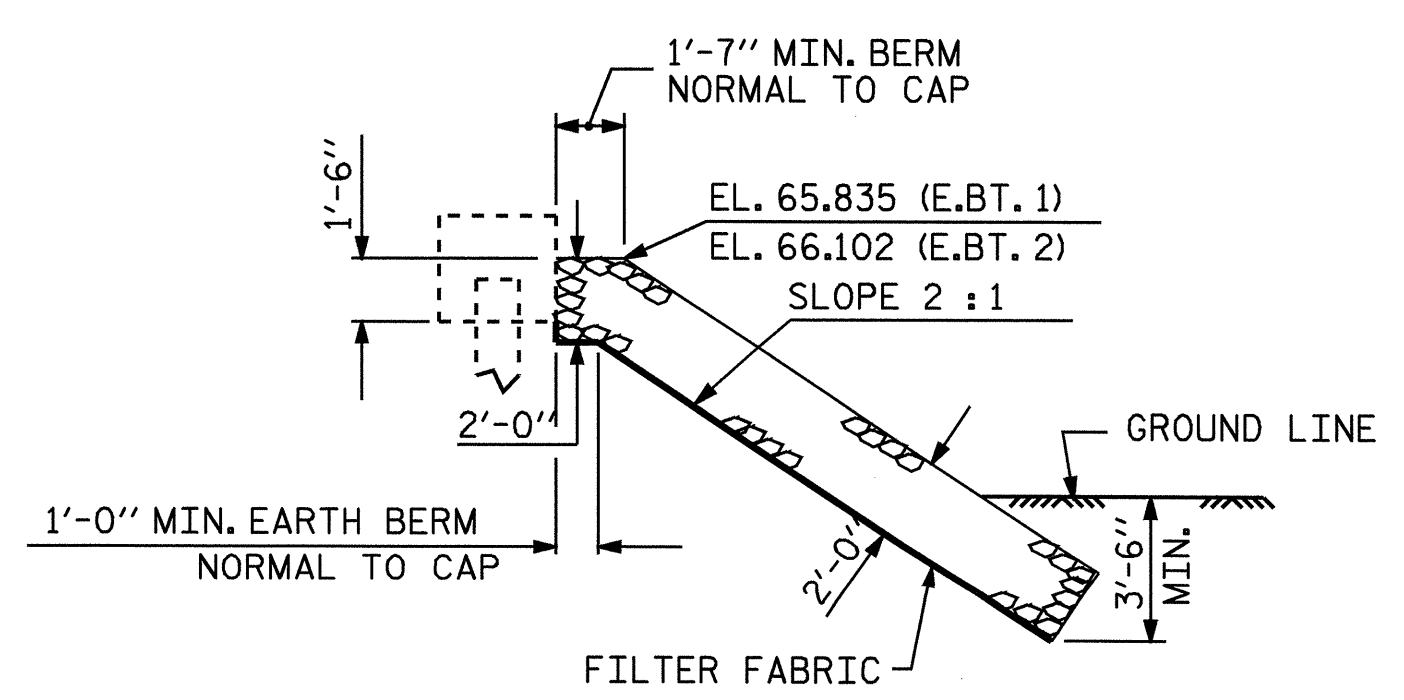
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1			3			TOTAL SHEETS
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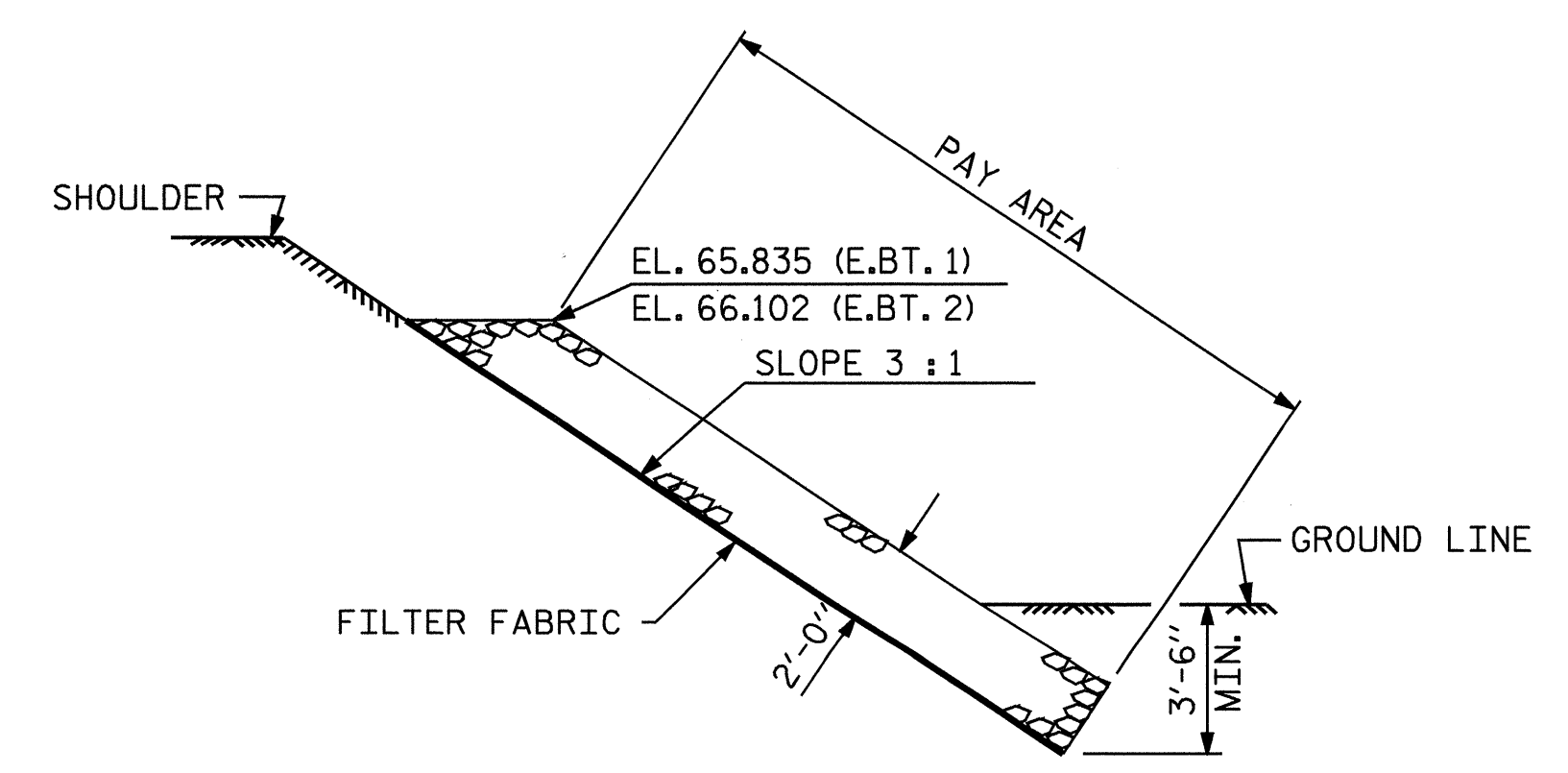


PLAN

ESTIMATED QUANTITIES		
BRIDGE @ STA. 17+55.00 -L-	RIP RAP CLASS I	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	93	103
END BENT 2	125	139
TOTAL	218	242

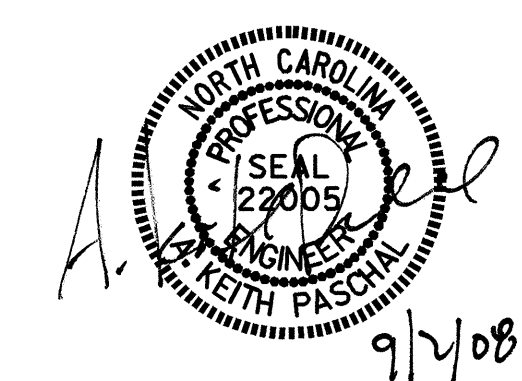


SECTION C-C  
BERM RIP RAPPED



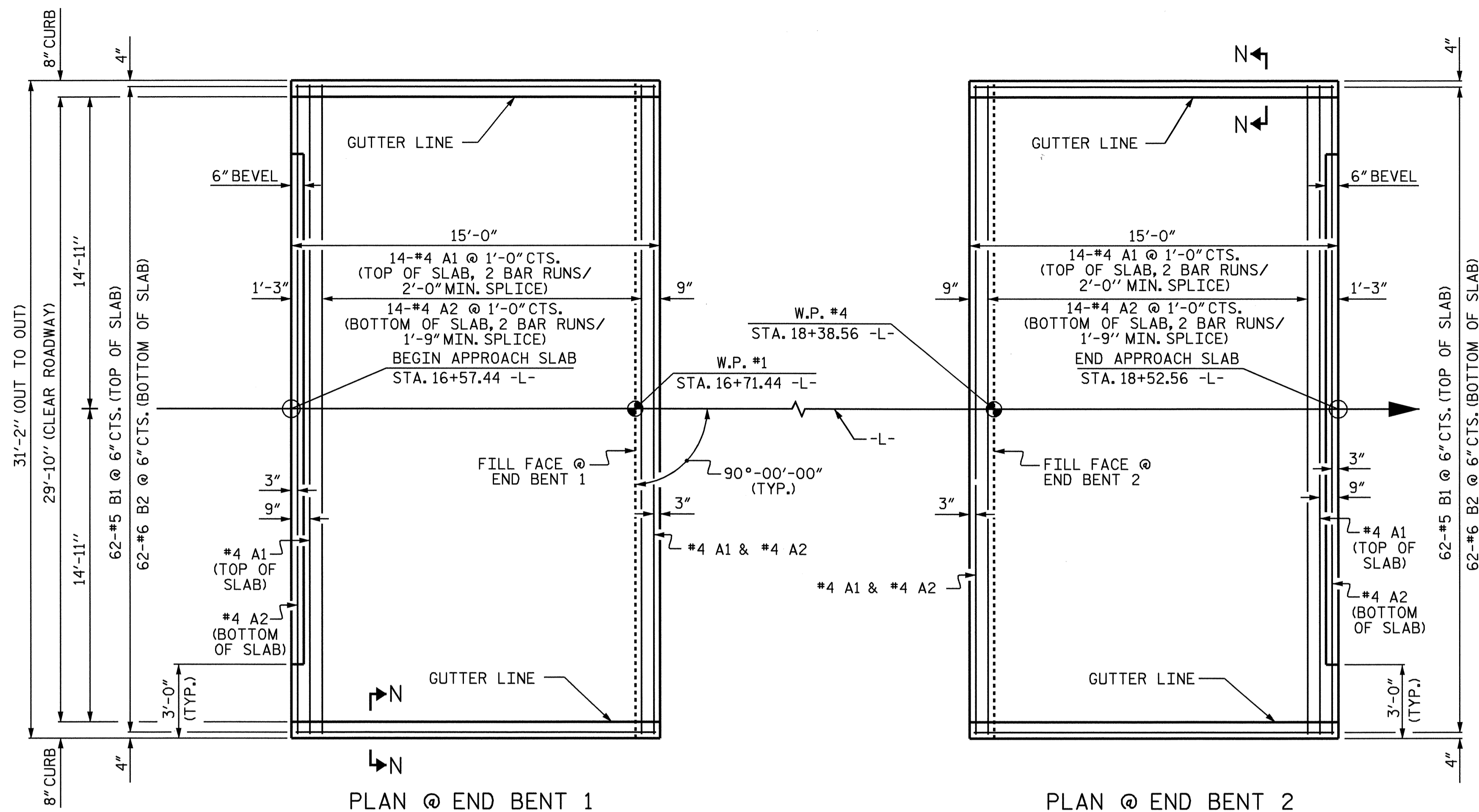
SECTION C-C

PROJECT NO. B-4671  
WAYNE COUNTY  
STATION: 17+55.00 -L-



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD RIP RAP DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-17
					TOTAL SHEETS 19

ASSEMBLED BY : MARVIN FOWLER DATE : 5/14/08  
CHECKED BY : C.R. YARBROUGH DATE : 5/14/08  
DRAWN BY : FCJ 2/88 REV. 8/16/99 RWW/LES  
CHECKED BY : ARB 8/88 REV. 10/17/00 RWW/LES  
REV. 5/1/06 TLA/GM



PLAN @ END BENT 1

PLAN @ END BENT 2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

NOTES

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

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

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

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

FOR 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.

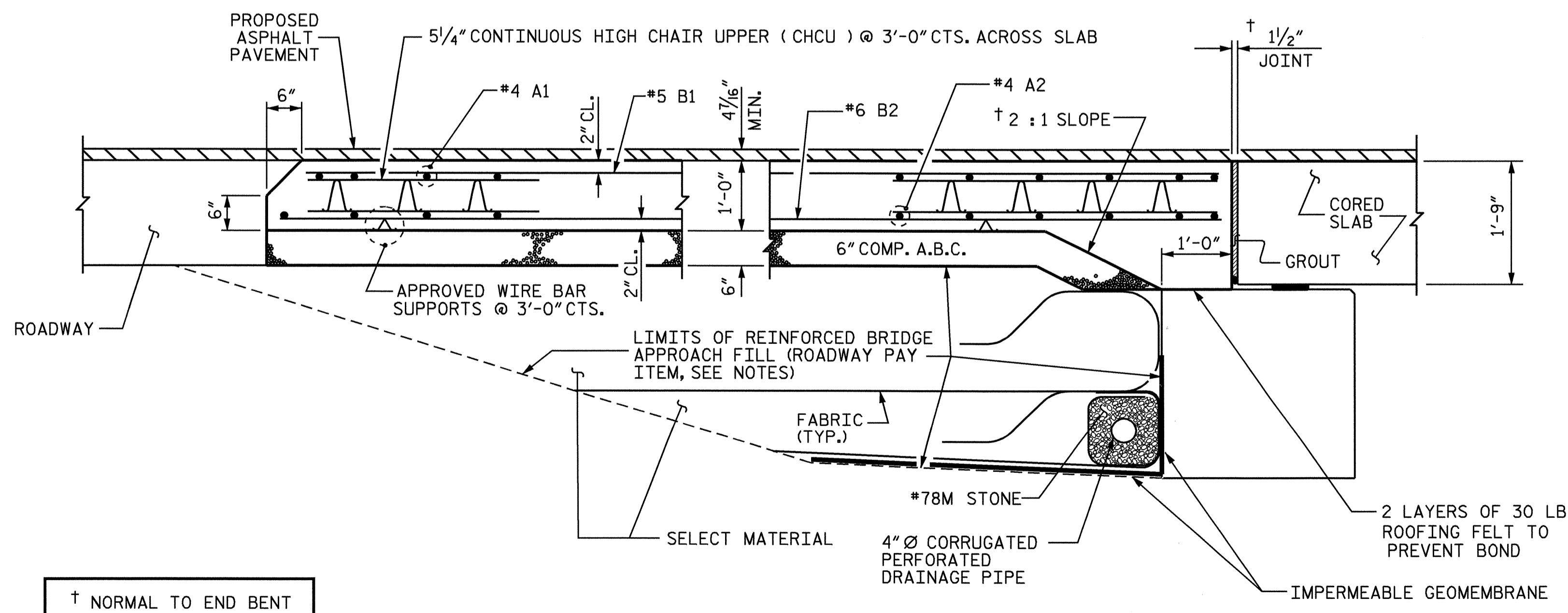
BILL OF MATERIAL

FOR ONE APPROACH SLAB (2 REQ'D)

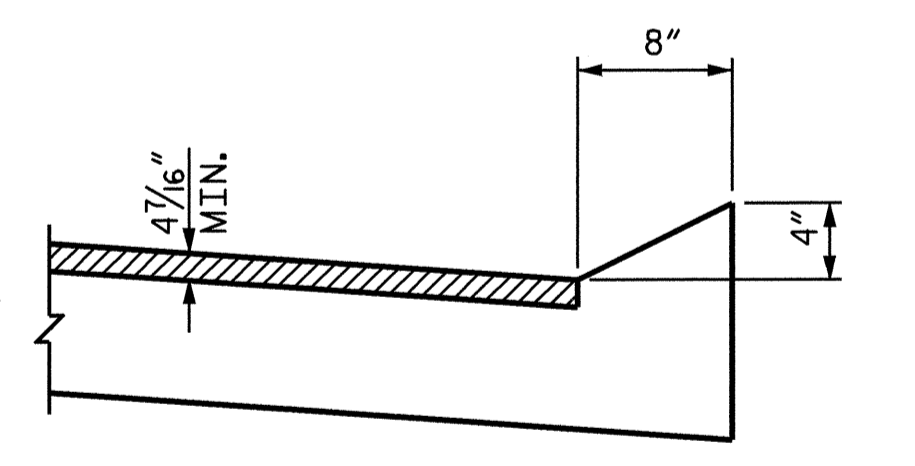
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	32	#4	STR	16'-5"	351
A2	32	#4	STR	16'-4"	349
*B1	62	#5	STR	14'-4"	927
B2	62	#6	STR	14'-8"	1366

REINFORCING STEEL	LBS.	1715
*EPOXY COATED REINFORCING STEEL	LBS.	1278

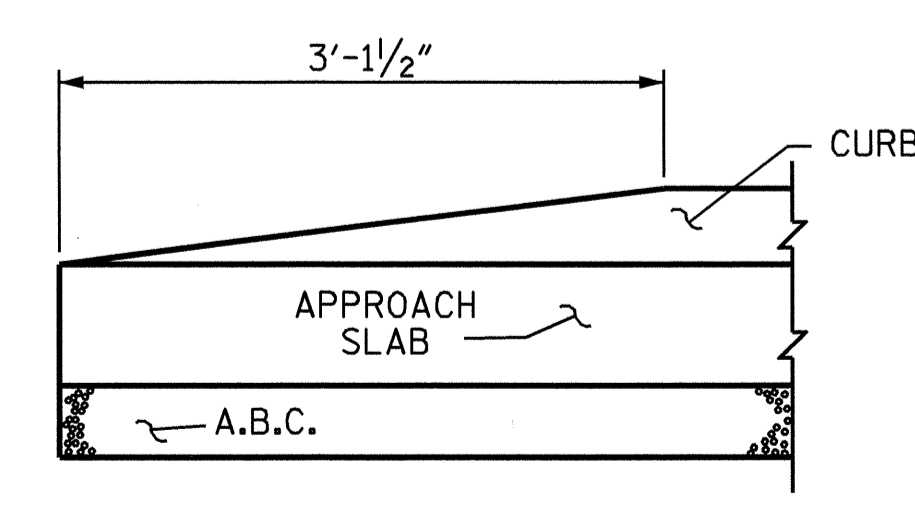
CLASS AA CONCRETE	C. Y.	19.0
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SECTION THRU SLAB



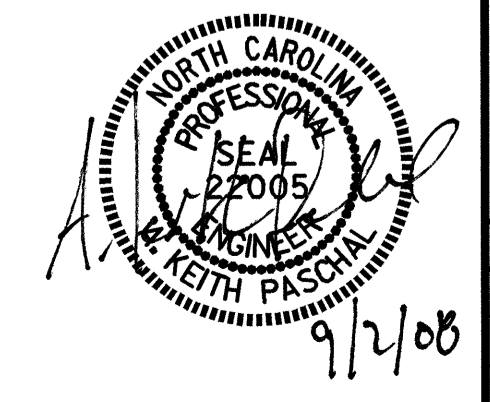
SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER (OMIT TAPER WHEN SHOULDER BERM GUTTER IS REQUIRED) CURB DETAILS

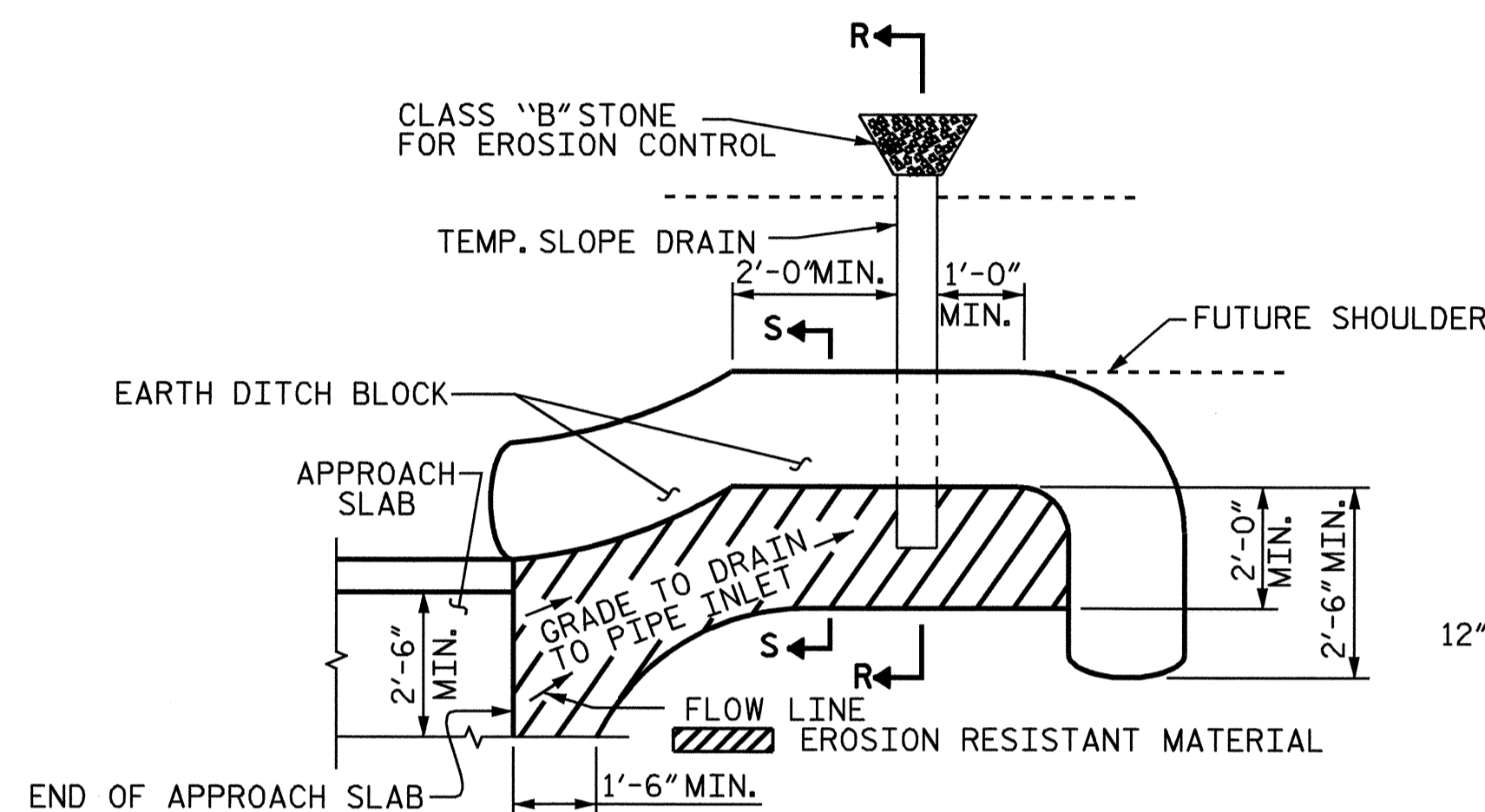
PROJECT NO. B-4671  
WAYNE COUNTY  
STATION: 17+55.00 -L-

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



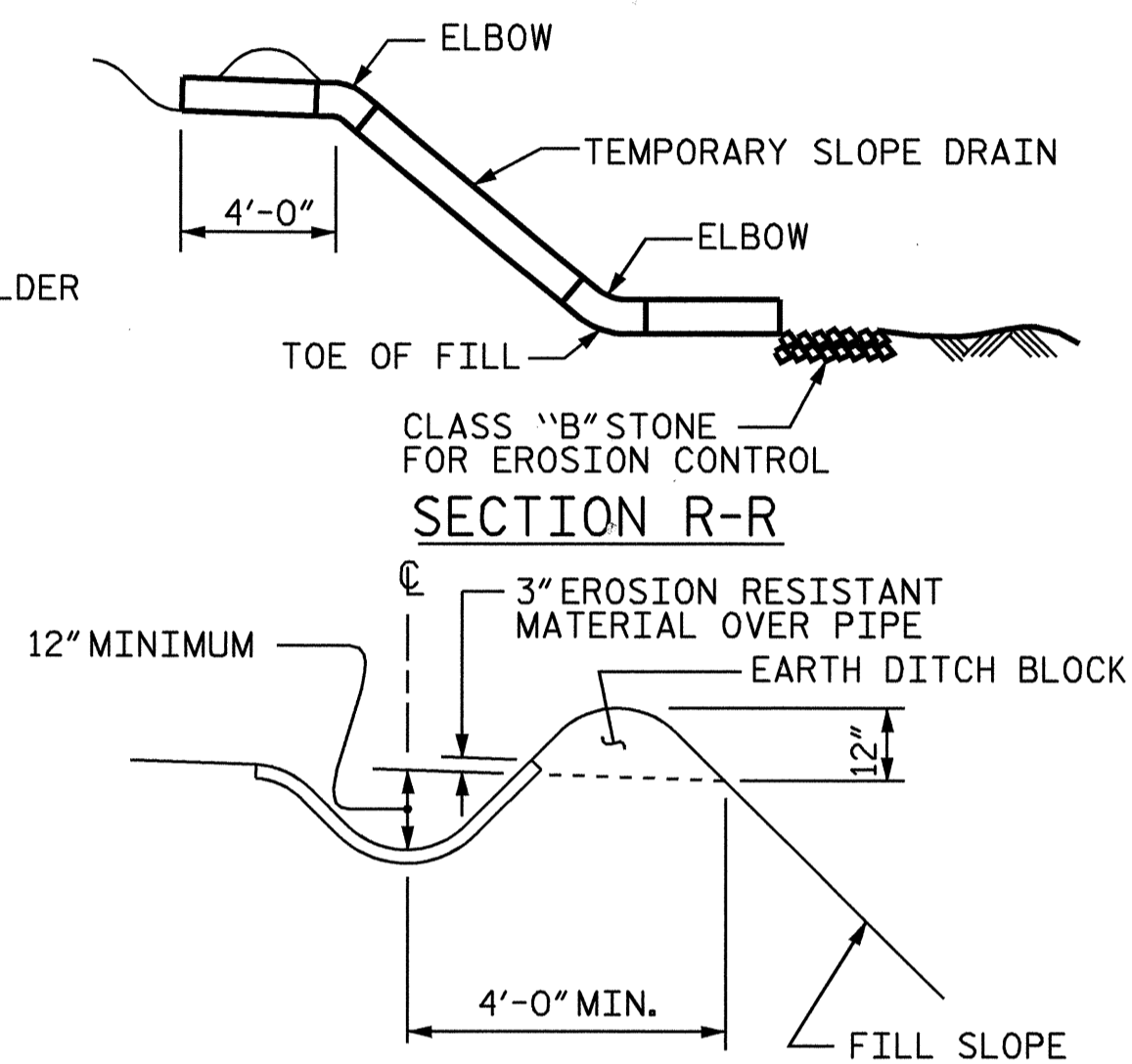
ASSEMBLED BY : M. FOWLER	DATE : 3/3/08
CHECKED BY : C.R. YARBROUGH	DATE : 7/15/08
DRAWN BY : FCJ 6/87	REV. 7/10/01 LES/RDR
CHECKED BY : EGA 6/87	REV. 5/1/03R RWW/JTE
	REV. 5/1/06R KMM/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			19

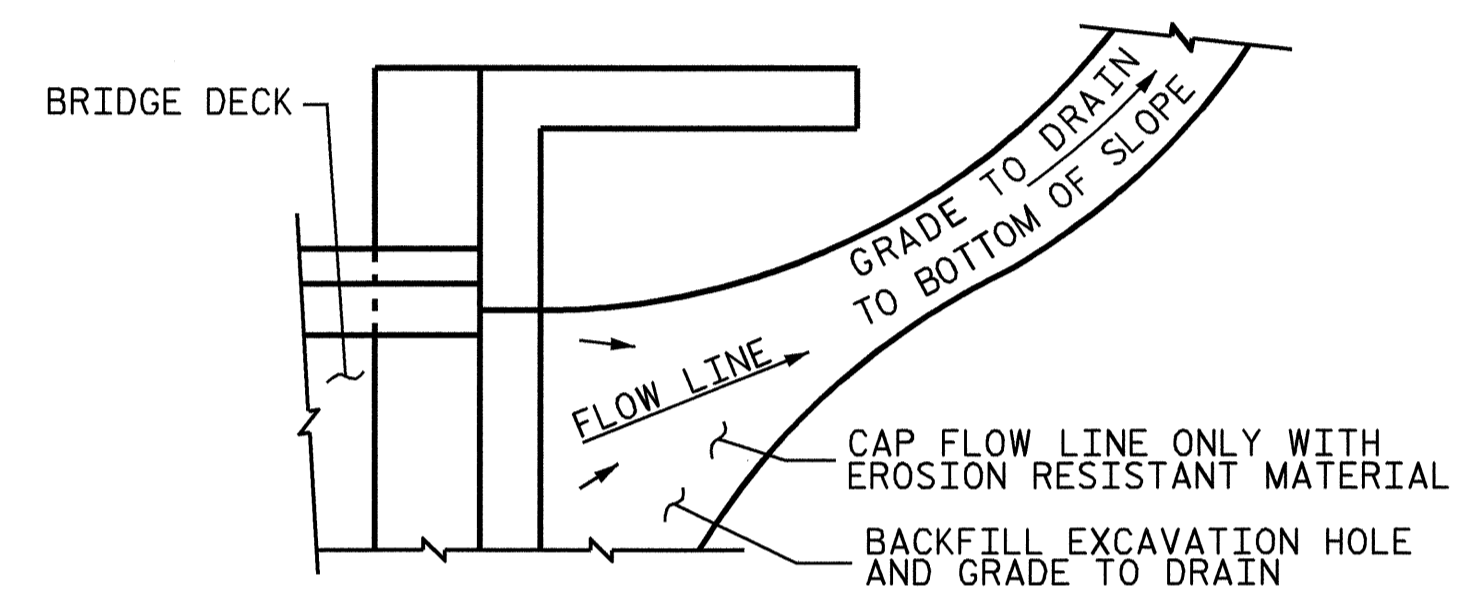


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

PLAN VIEW



SECTION S-S



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

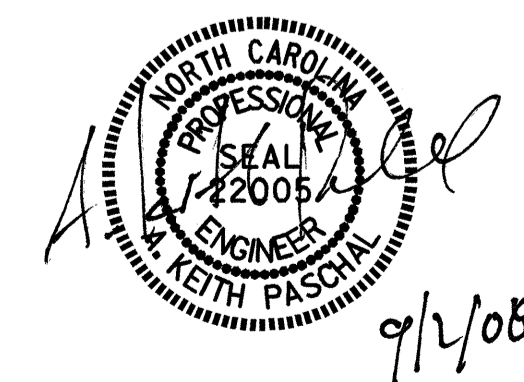
TEMPORARY DRAINAGE DETAIL

## TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

PROJECT NO. B-4671  
WAYNE COUNTY  
 STATION: 17+55.00 -L-

SHEET 2 OF 2



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

ASSEMBLED BY : M. FOWLER	DATE : 3/03/08
CHECKED BY : C.R. YARBROUGH	DATE : 7/15/08
DRAWN BY : FCJ 11/88	REV. 10/17/00 RWW/LES
CHECKED BY : ARB 11/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06R MAA/KMM

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

## 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