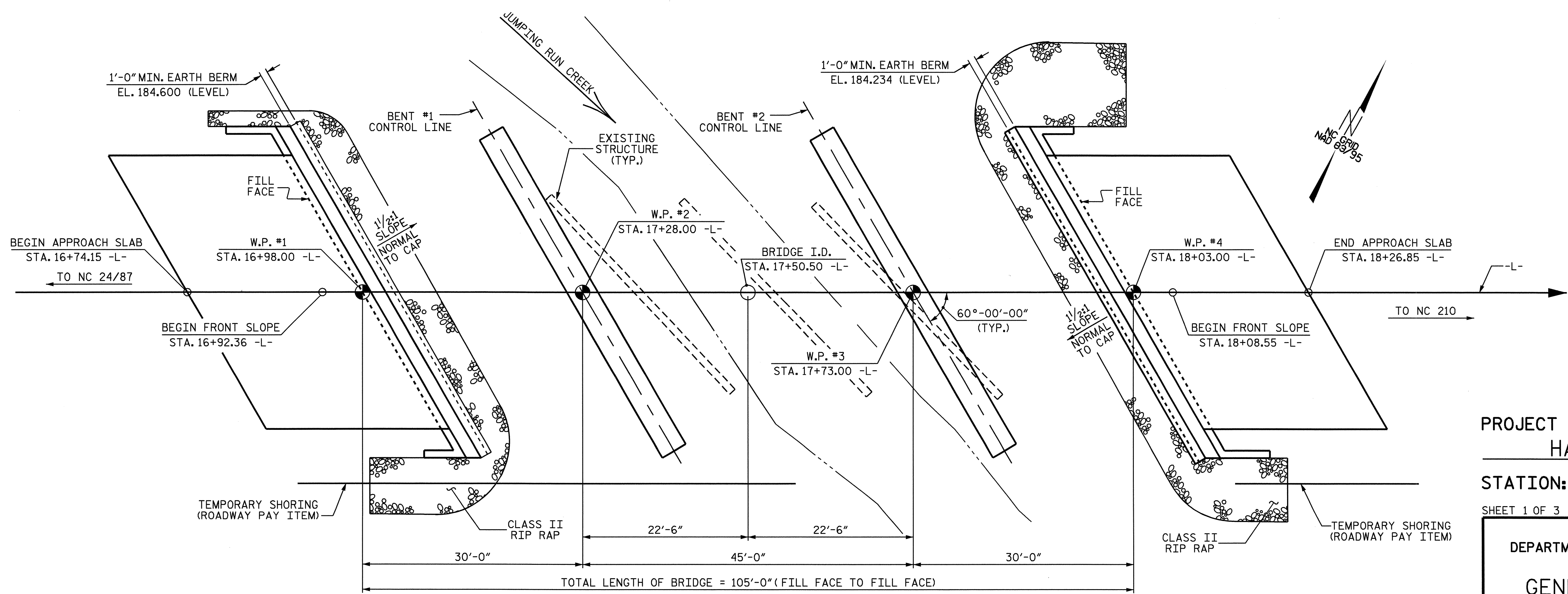
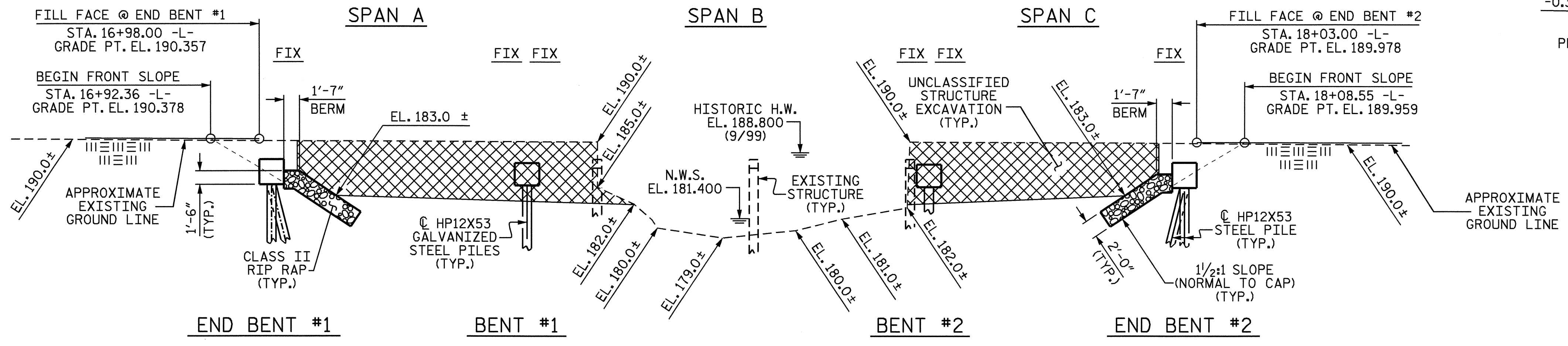


GRADE DATA
 -0.8500% Δ -0.3608%

GRADE DATA
 -0.3608% Δ -0.5361%

PI= 16+50.00 -L-
 EL.= 190.530
 VC= 90'

PI= 18+50.00 -L-
 EL.= 189.810
 VC= 70'



PROJECT NO. B-3655
HARNETT COUNTY
 STATION: 17+50.50 -L-
 SHEET 1 OF 3 REPLACES BRIDGE #59

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER JUMPING
 RUN CREEK ON SR 1117
 (NURSERY RD) BETWEEN
 NC 24/87 AND NC 210

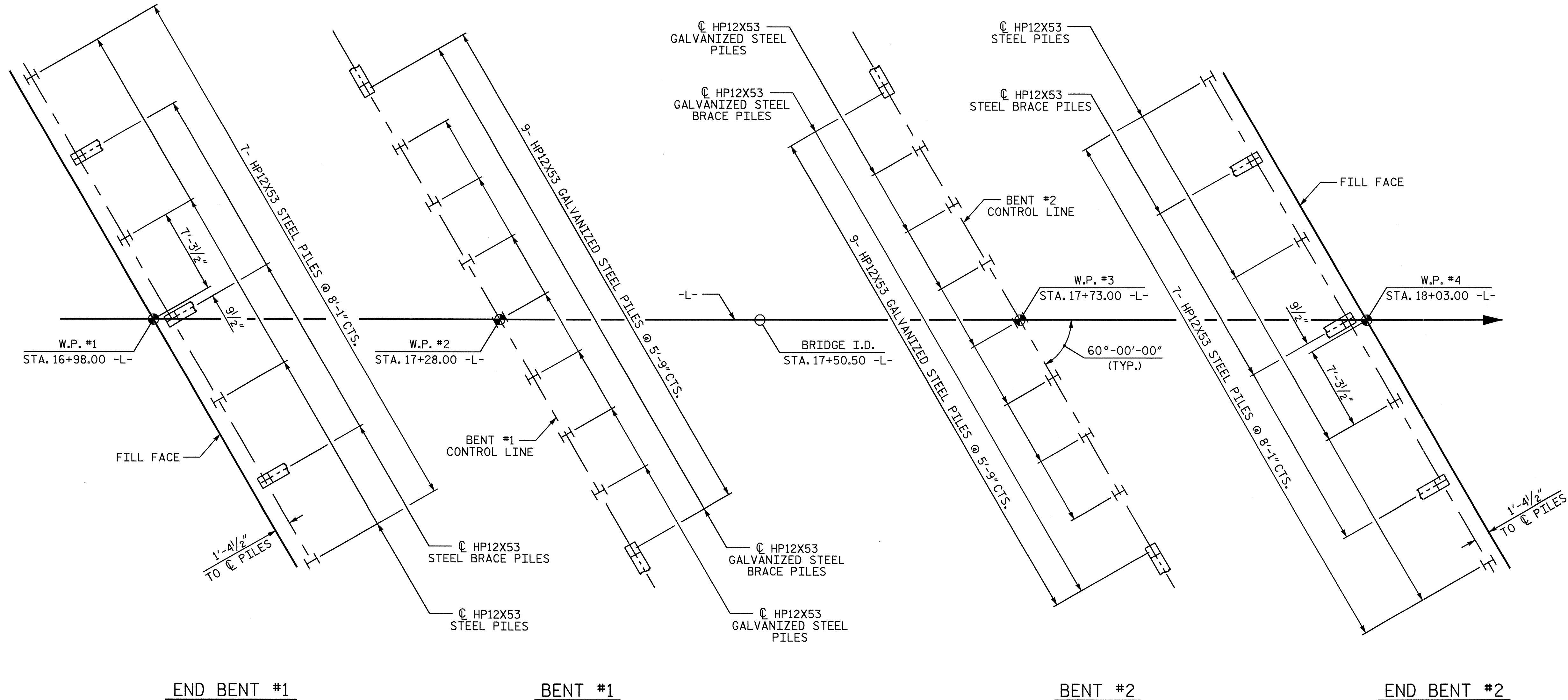
REVISIONS						SHEET NO. S-1
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			

[Professional Engineer Seal]
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL
 23371
 WUL A. PATEL
 12/11/08

[Professional Engineer Seal]
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL
 23371
 WUL A. PATEL
 12/14/08

DRAWN BY : S. DOMBROWSKI DATE : 06/08
 CHECKED BY : T.R. PETERSON DATE : 06/08

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FOUNDATION LAYOUT

END BENT BRACE PILES ARE BATTERED 3:12 WHERE SHOWN.
 BENT BRACE PILES ARE BATTERED AT 1/2:12 WHERE SHOWN.
 DIMENSIONS LOCATING PILES ARE SHOWN TO THE CENTERLINE OF PILES.

NOTES

DRIVE PILES AT END BENT #1 AND END BENT #2 TO A REQUIRED BEARING CAPACITY OF 100 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT #1 AND END BENT #2 IS 50 TONS PER PILE.

DRIVE PILES AT BENT #1 AND BENT #2 TO A REQUIRED BEARING CAPACITY OF 115 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO PLUS ANY ADDITIONAL CAPACITY TO ACCOUNT FOR DOWN DRAG OR NEGATIVE SKIN FRICTION AND SCOUR.

DRIVE PILES AT BENT #1 AND BENT #2 TO A TIP ELEVATION NO HIGHER THAN 165.000.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT BENT #1 AND BENT #2 IS 50 TONS PER PILE.

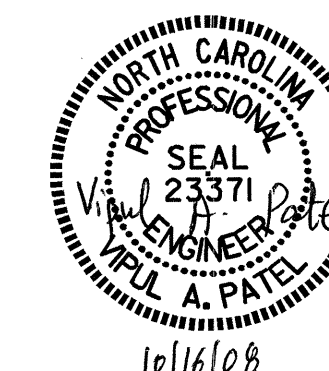
THE SCOUR CRITICAL ELEVATION FOR BENT #1 AND BENT #2 IS ELEVATION 177.000. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

PROJECT NO. B-3655
HARNETT COUNTY
 STATION: 17+50.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER JUMPING
 RUN CREEK ON SR 1117
 (NURSERY RD) BETWEEN
 NC 24/87 AND NC 210

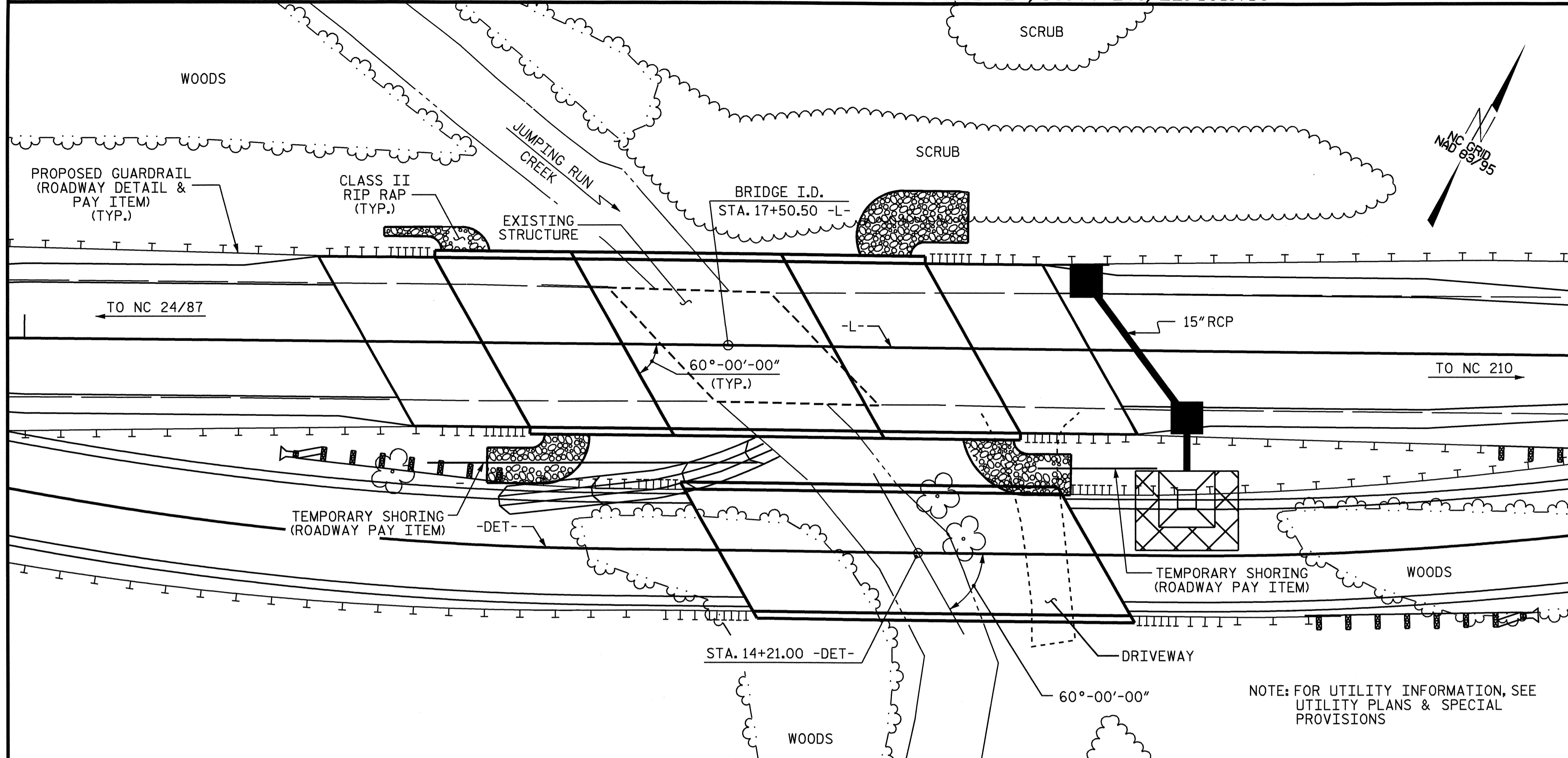


DRAWN BY: S. DOMBROWSKI DATE: 06/08
 CHECKED BY: T.R. PETERSON DATE: 06/08

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

B.M. #81: 24" IRON PIN AND ALUMINUM CAP @ STA. 14+03.81 -L-, 55.44' LT., EL. 191.710



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE = 700 C.F.S.
 FREQUENCY OF DESIGN FLOOD = 25 YR.
 DESIGN HIGH WATER ELEVATION = 187.300
 DRAINAGE AREA = 17.3 SQ.MI.
 BASIC DISCHARGE (Q100) = 1000 C.F.S.
 BASIC HIGH WATER ELEVATION = 188.200

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 1608 C.F.S.
 FREQUENCY OF OVERTOPPING FLOOD = 500+ YR.
 OVERTOPPING FLOOD ELEVATION = 188.800

TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMPORARY STRUCTURE	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	CONCRETE WEARING SURFACE	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP12X53 STEEL PILES		HP12X53 GALVANIZED STEEL PILES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS		
									NO.	LIN. FT.							NO.	LIN. FT.	NO.
	LUMP SUM	LUMP SUM	CU. YDS.	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.											
SUPERSTRUCTURE				3,631	4,859		LUMP SUM					204.80							
END BENT #1			480			17.8		2,700	7	140			132	150					
BENT #1						14.0		2,441			9	225							
BENT #2						14.0		2,441			9	225							
END BENT #2			390			17.9		2,702	7	140			141	160					
TOTAL	LUMP SUM	LUMP SUM	870	3,631	4,859	63.7	LUMP SUM	10,284	14	280	18	450	204.80	273	310	LUMP SUM	LUMP SUM	39	1327.49

DRAWN BY: S. DOMBROWSKI DATE: 06/08
 CHECKED BY: T.R. PETERSON DATE: 06/08

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NOTES

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

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

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

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

THE EXISTING STRUCTURE CONSISTING OF 2 SPANS @ 17'-6" AND CLEAR ROADWAY WIDTH OF 24'-0" AND HAVING A REINFORCED CONCRETE DECK ON 19 LINES 6X12 TIMBER JOISTS @ 1'-4" CENTERS SUPPORTED BY TIMBER PILES AND LOCATED AT THE PROPOSED STRUCTURE SITE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

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

THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY STRUCTURE AT STA. 17+50.50 -L- FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET 1 OF 3 SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD 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.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

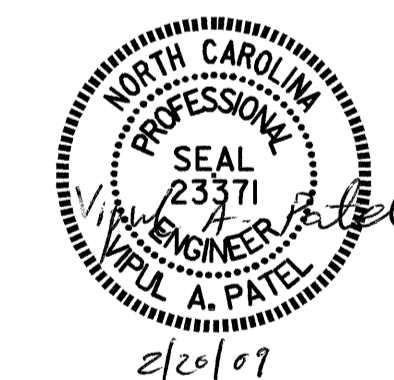
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR TEMPORARY SHORING PAY ITEM, SEE ROADWAY PLANS.



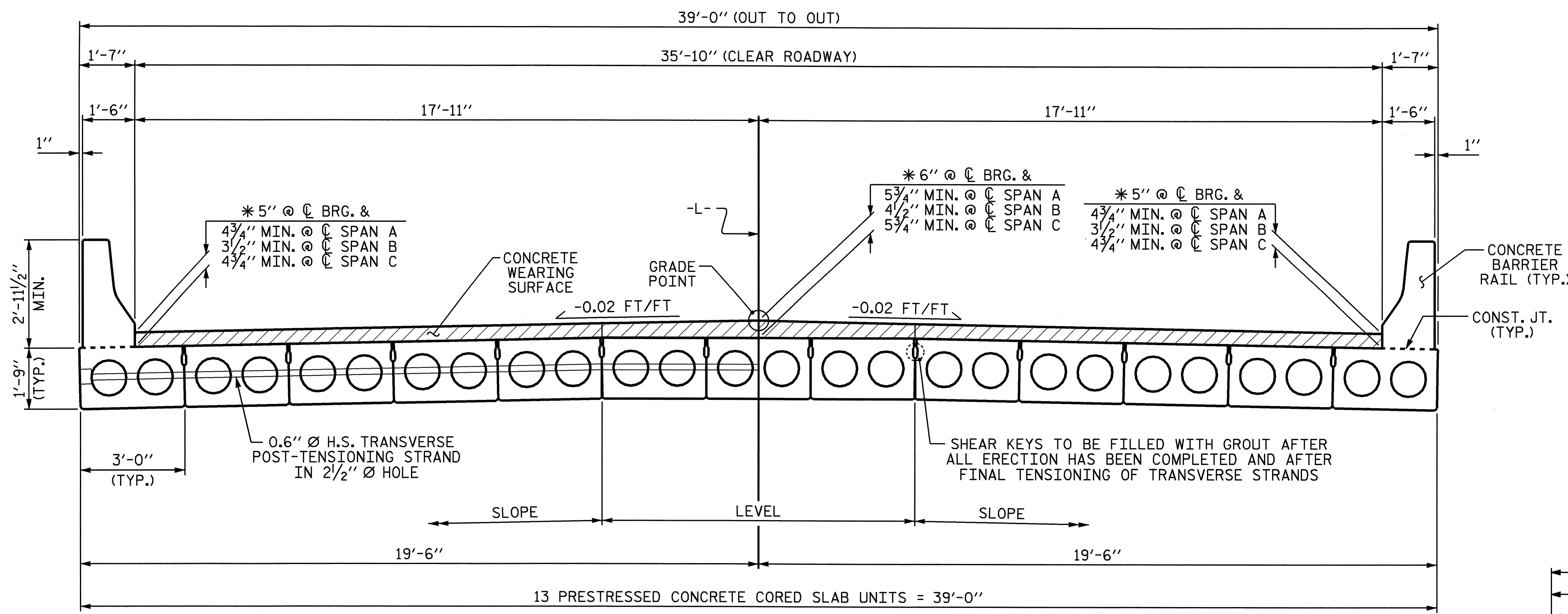
PROJECT NO. B-3655
HARNETT COUNTY
 STATION: 17+50.50 -L-

SHEET 3 OF 3

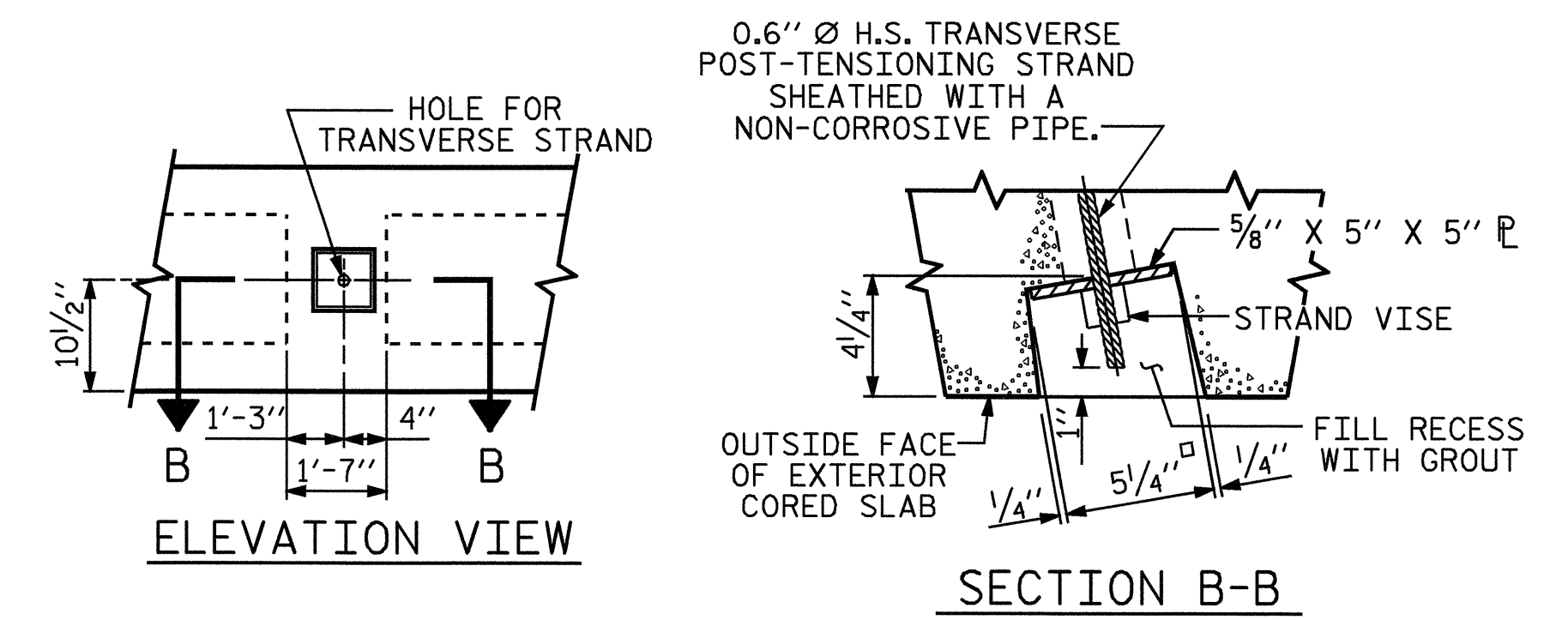
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER JUMPING
 RUN CREEK ON SR 1117
 (NURSERY RD) BETWEEN
 NC 24/87 AND NC 210

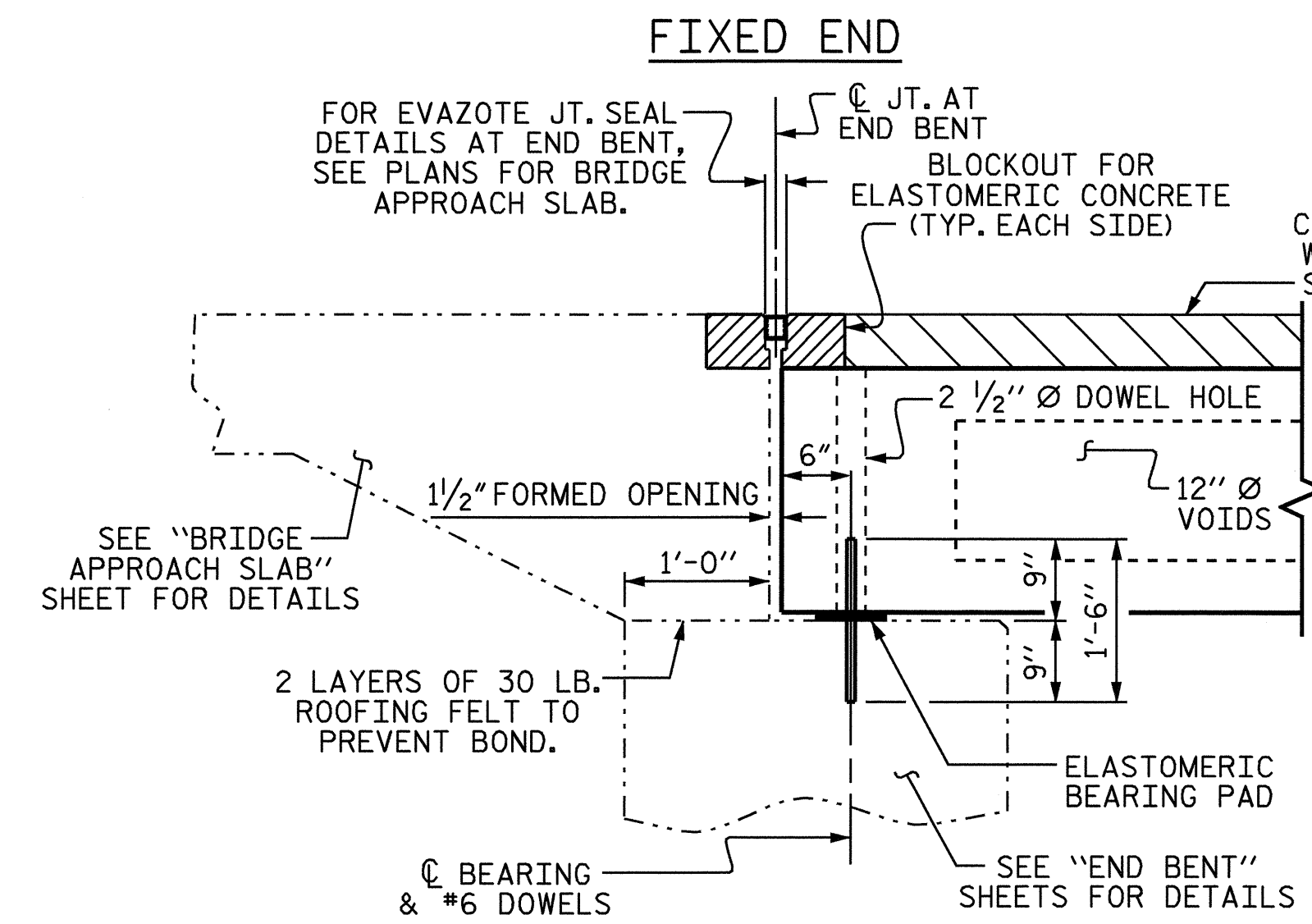
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2			4			22



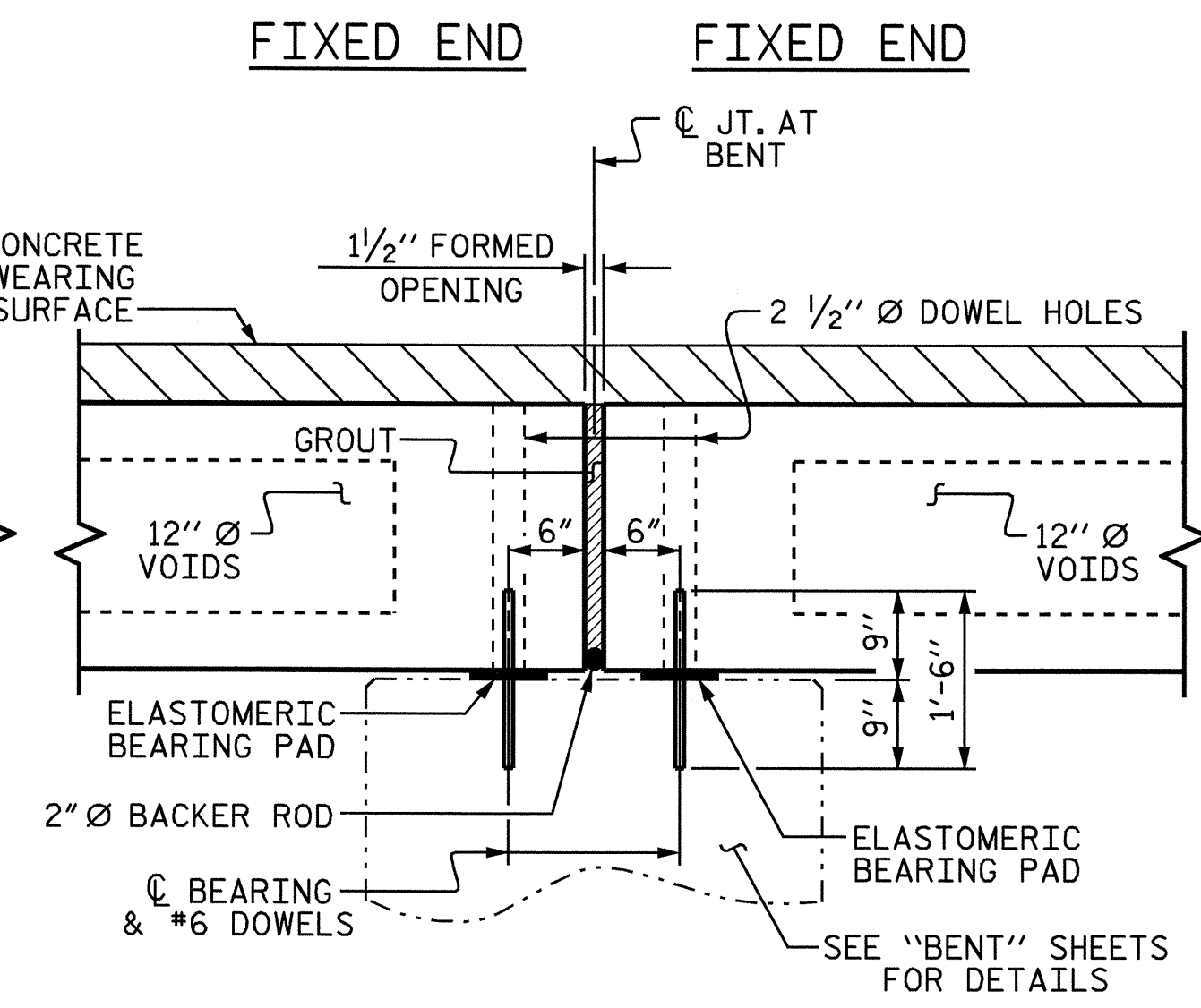
TYPICAL SECTION
 *BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS



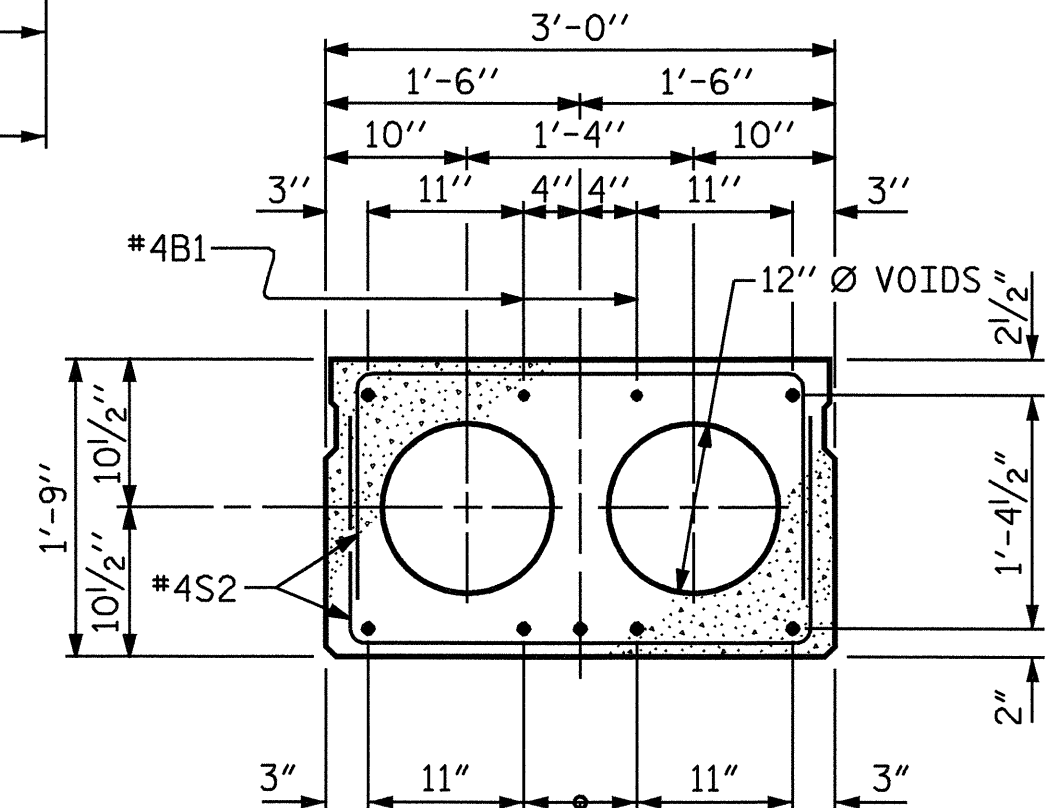
GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS



SECTION AT END BENT

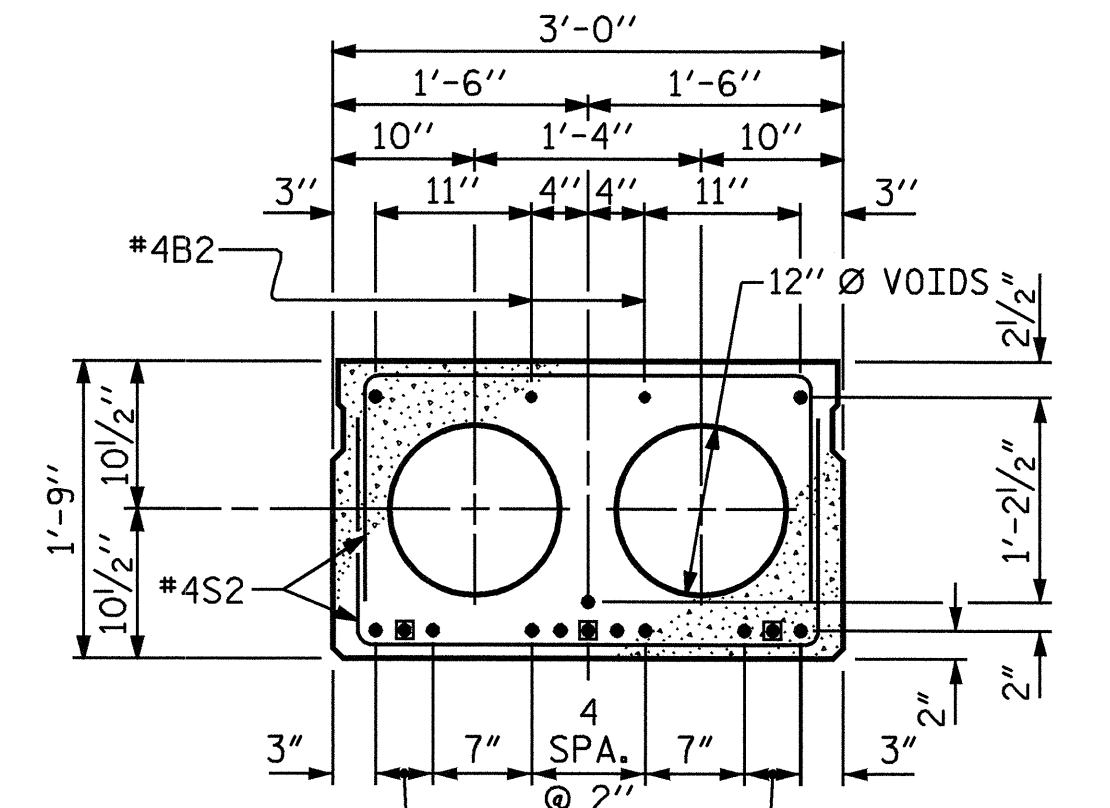


SECTION AT BENT



SPAN A & C INTERIOR SLAB SECTION (7 STRANDS)

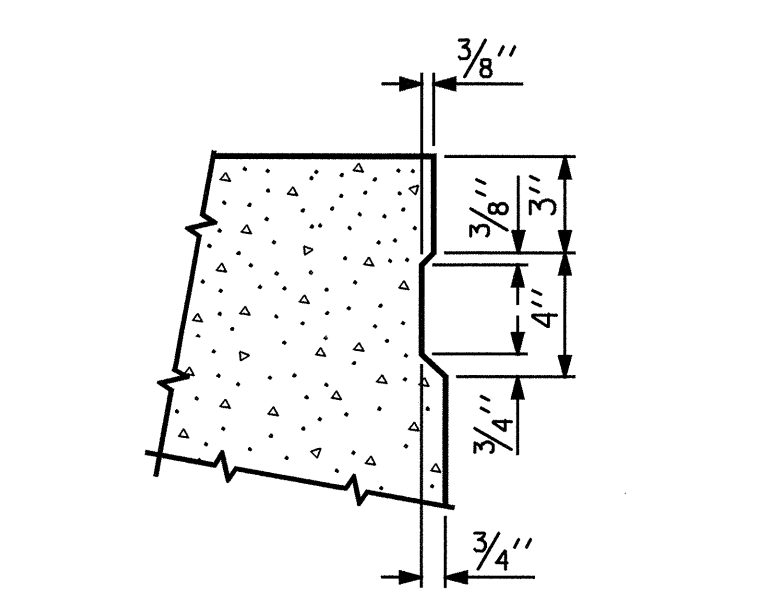
0.6" Ø LOW RELAXATION STRAND LAYOUT



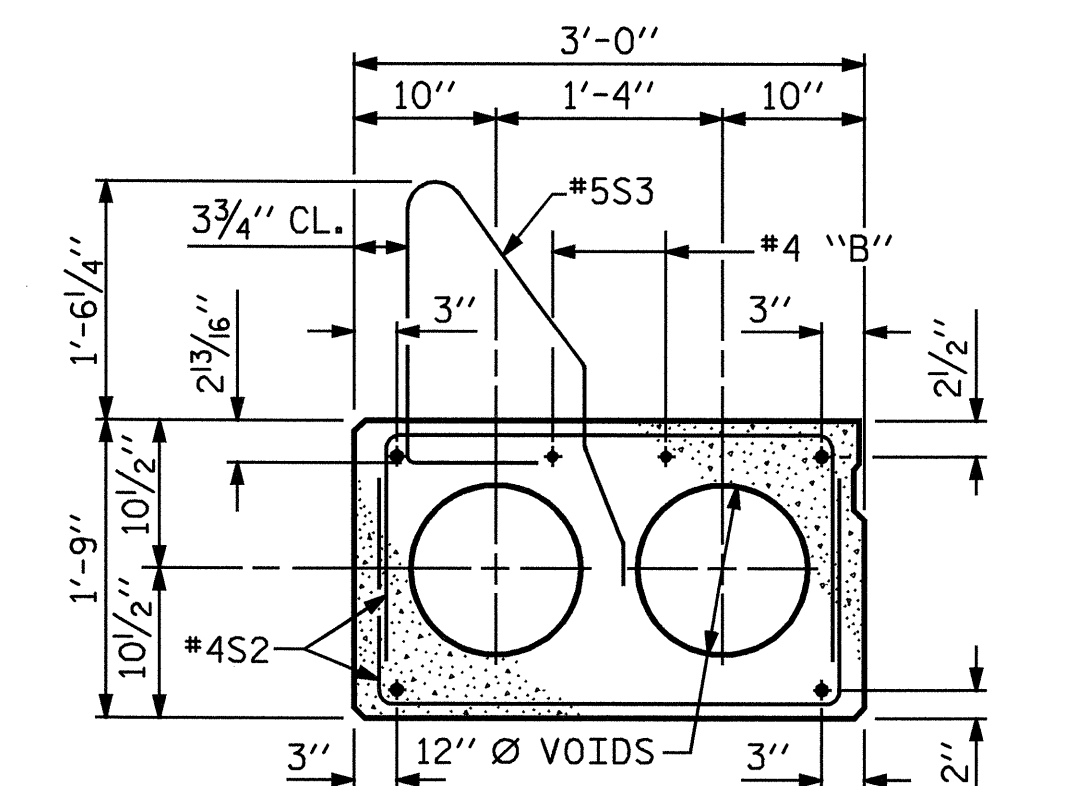
SPAN B INTERIOR SLAB SECTION (14 STRANDS)

0.6" Ø LOW RELAXATION STRAND LAYOUT

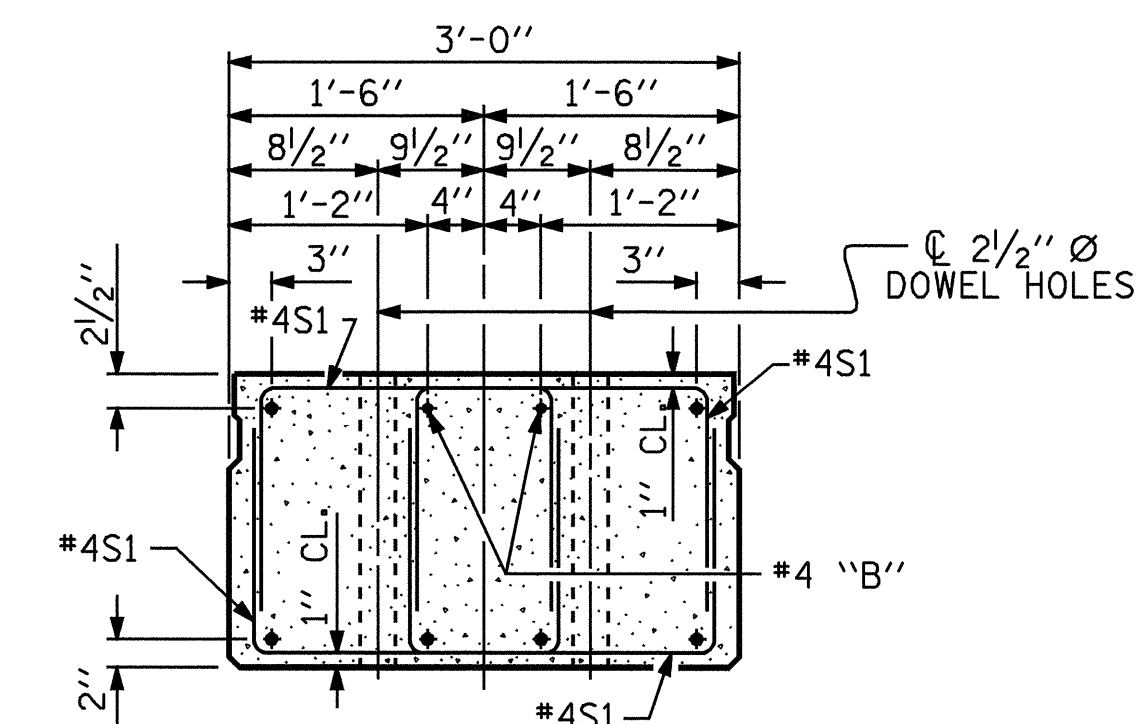
● BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 4'-0" FROM END OF CORED SLAB UNIT, SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.



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



EXTERIOR SLAB SECTION
 FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION



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.

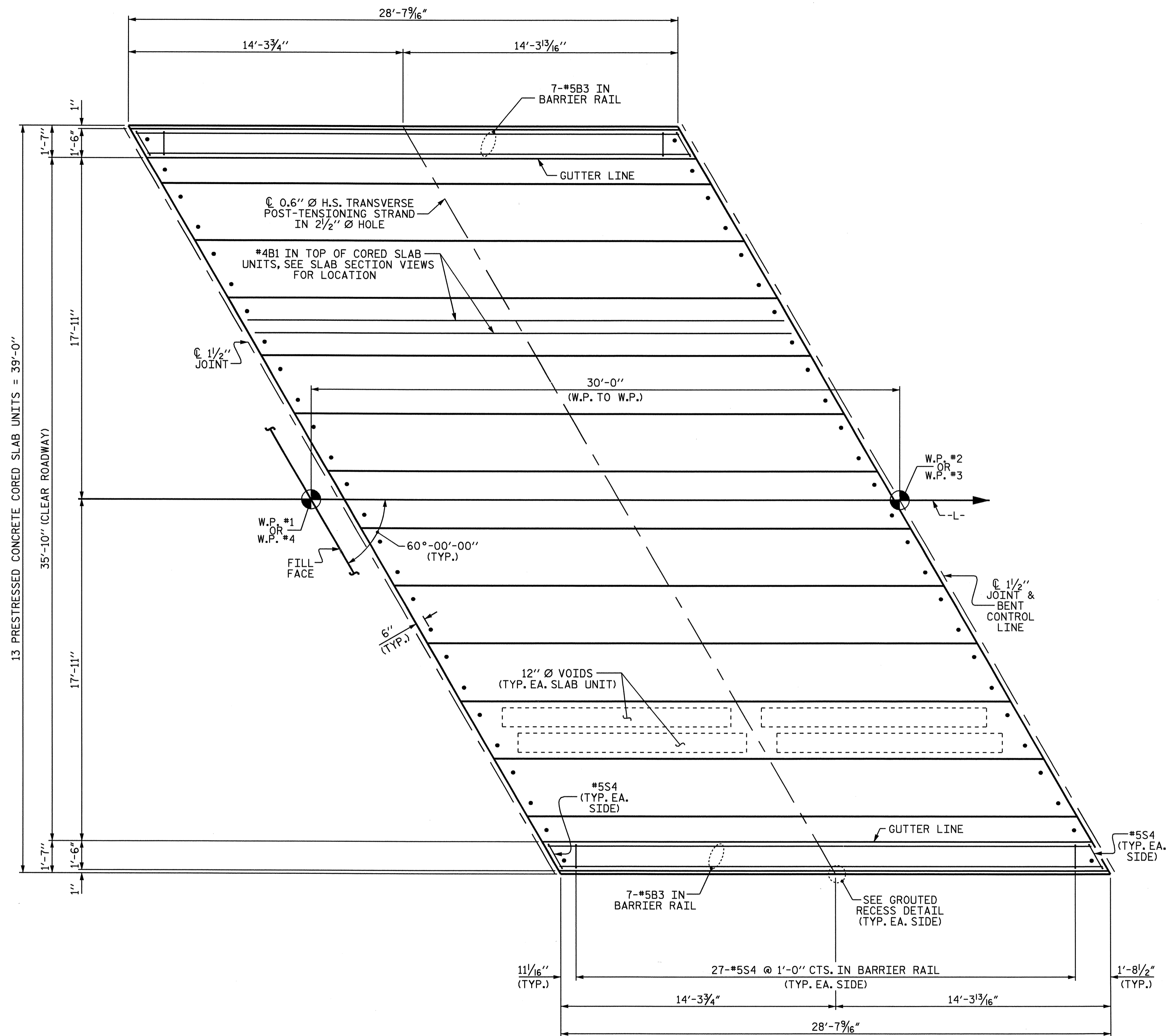
PROJECT NO. B-3655
 HARNETT COUNTY
 STATION: 17+50.50 -L-



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 : 4/16/07
CHECKED BY : K.D. LAYNE	DATE : 7/13/07
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

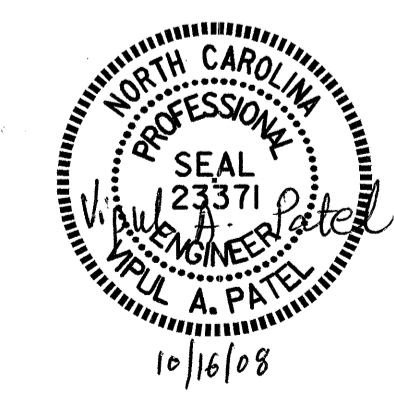
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			22



SPAN A OR SPAN C
SPAN A SHOWN, SPAN C SIMILAR BY ROTATION

PROJECT NO. B-3655
HARNETT COUNTY
 STATION: 17+50.50 -L-

SHEET 1 OF 3

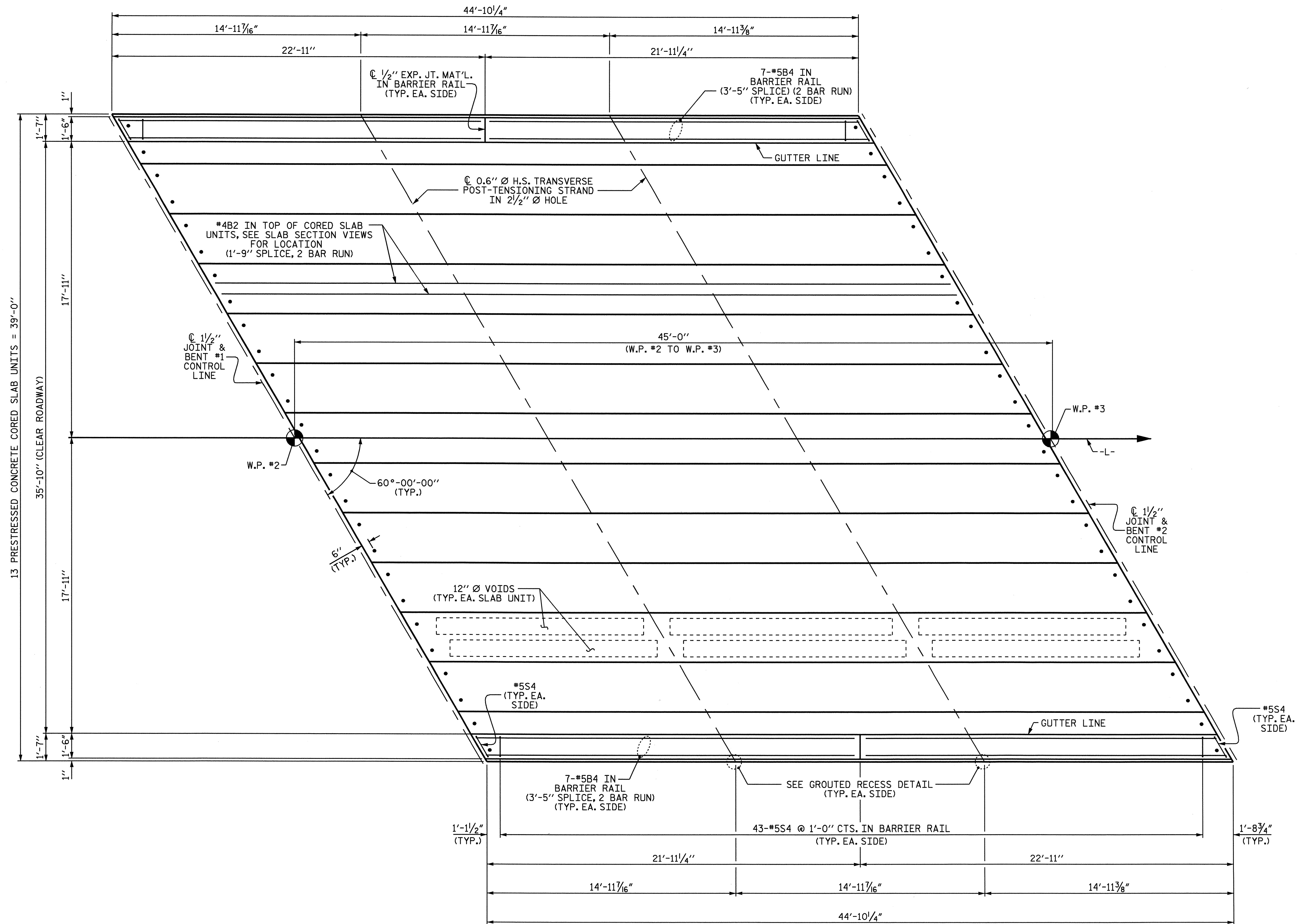


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
PLAN OF SPAN A
OR SPAN C

DRAWN BY : J.P. ADAMS DATE : 4/20/07
 CHECKED BY : K.D. LAYNE DATE : 7/13/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
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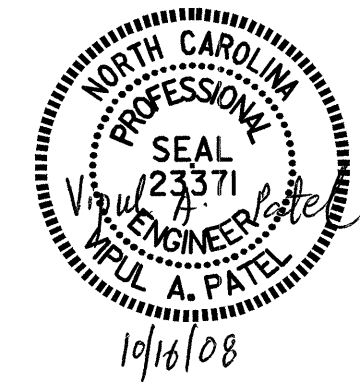
SPAN B

PROJECT NO. B-3655
HARNETT COUNTY
 STATION: 17+50.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

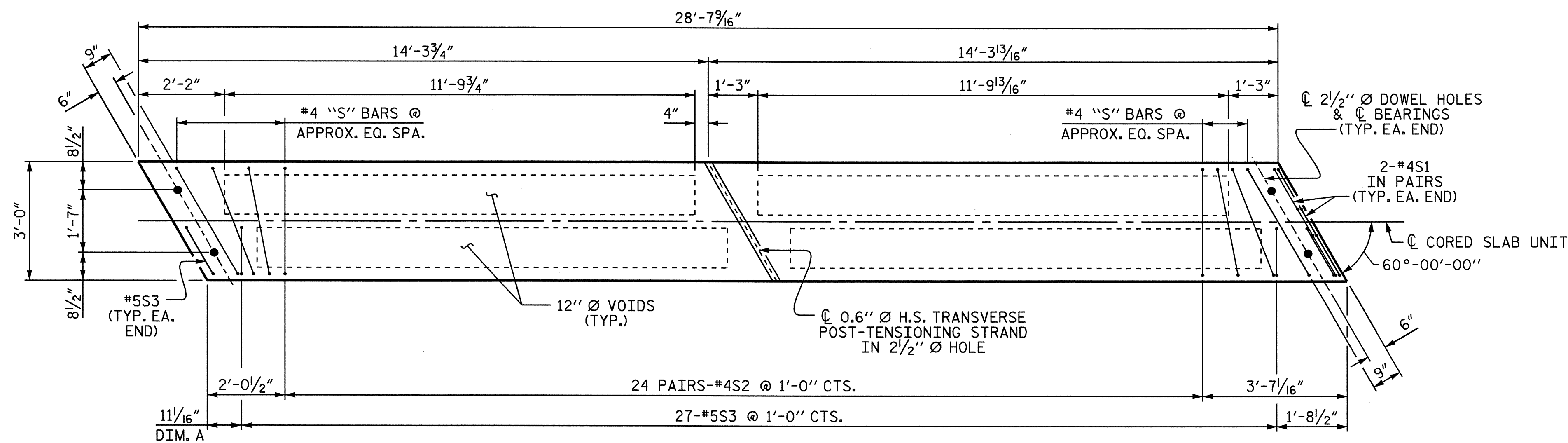
SUPERSTRUCTURE
 PLAN OF SPAN B



DRAWN BY : J.P. ADAMS DATE : 4/20/07
 CHECKED BY : K.D. LAYNE DATE : 7/13/07

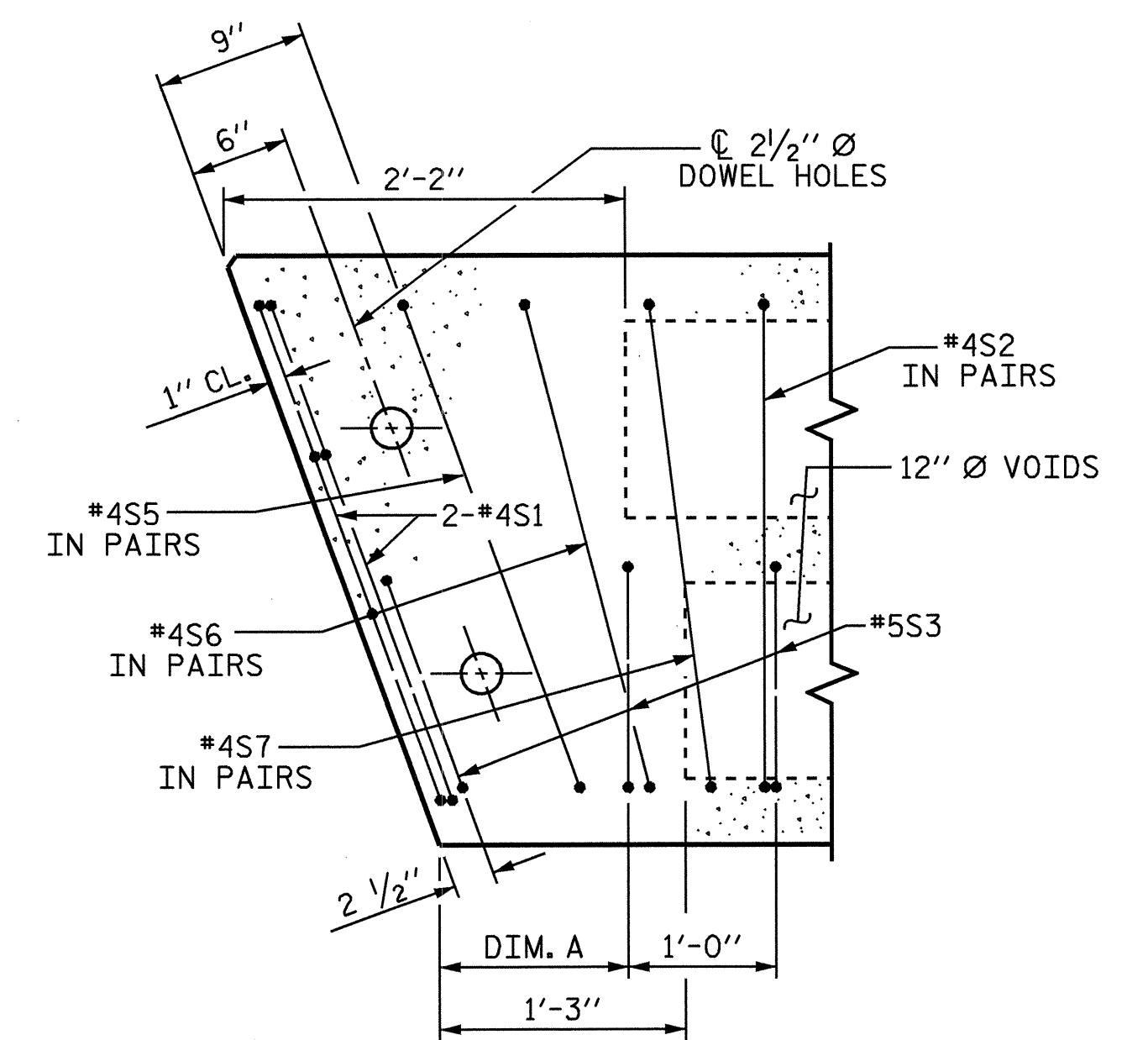
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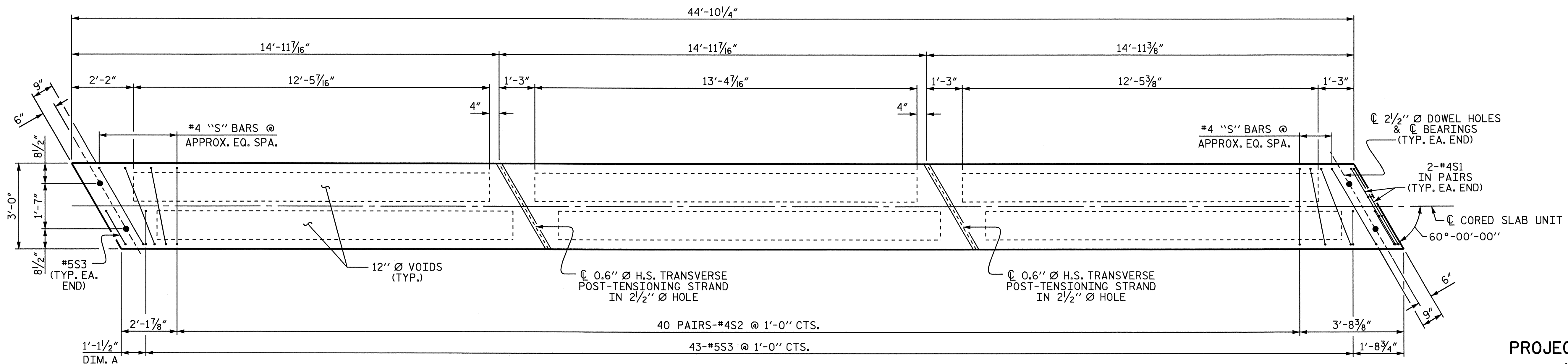
PLAN OF EXTERIOR CORED SLAB UNIT - SPANS A & C

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



PART PLAN OF SLAB - EXTERIOR SECTION

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



PLAN OF EXTERIOR CORED SLAB UNIT - SPAN B

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

PROJECT NO. B-3655
HARNETT COUNTY
 STATION: 17+50.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE

PLAN OF
 CORED SLAB UNIT
 (SPANS A, B & C)



DRAWN BY: J.P. ADAMS DATE: 4/30/07
 CHECKED BY: K.D. LAYNE DATE: 7/13/07

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			22

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.)

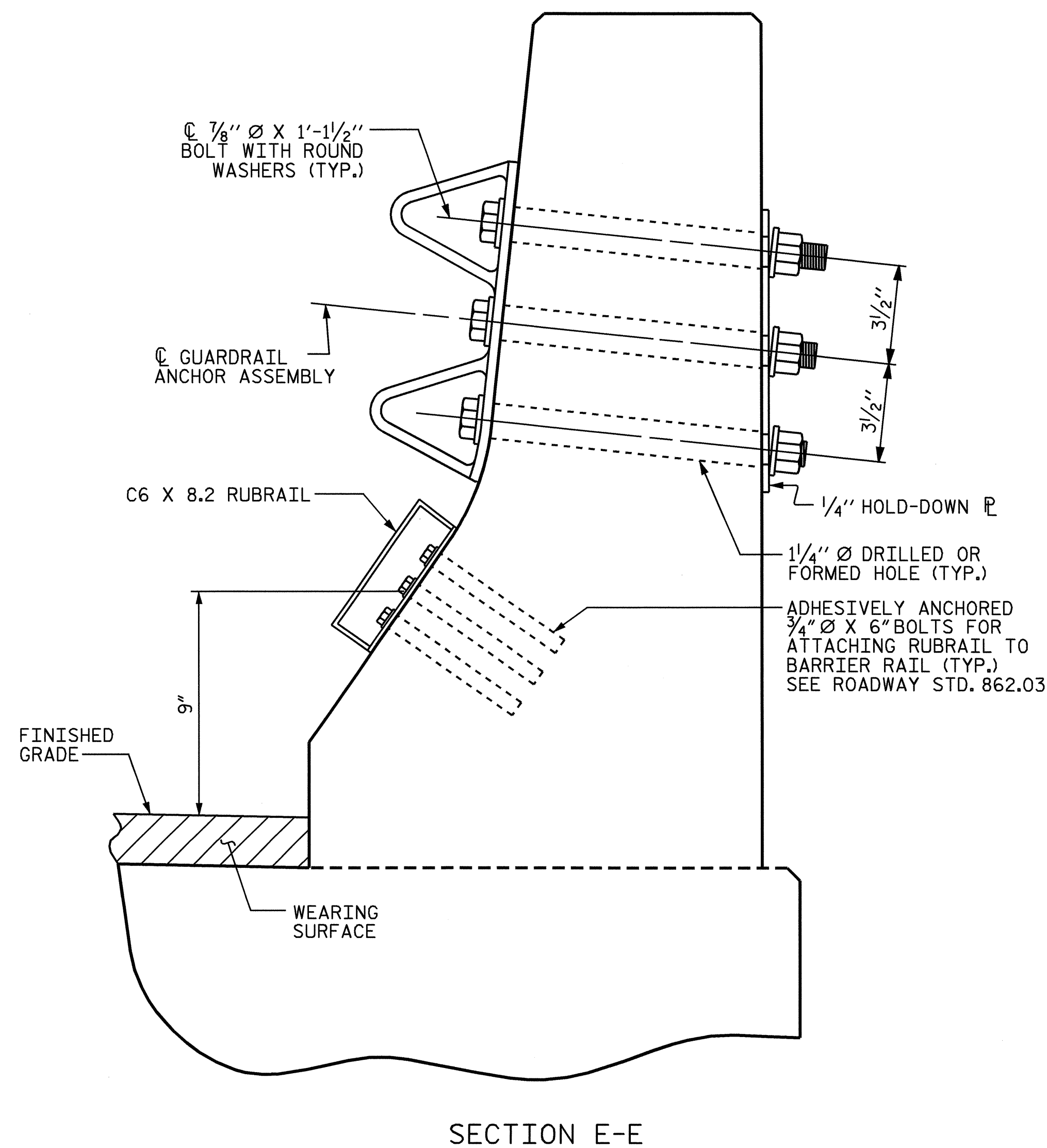
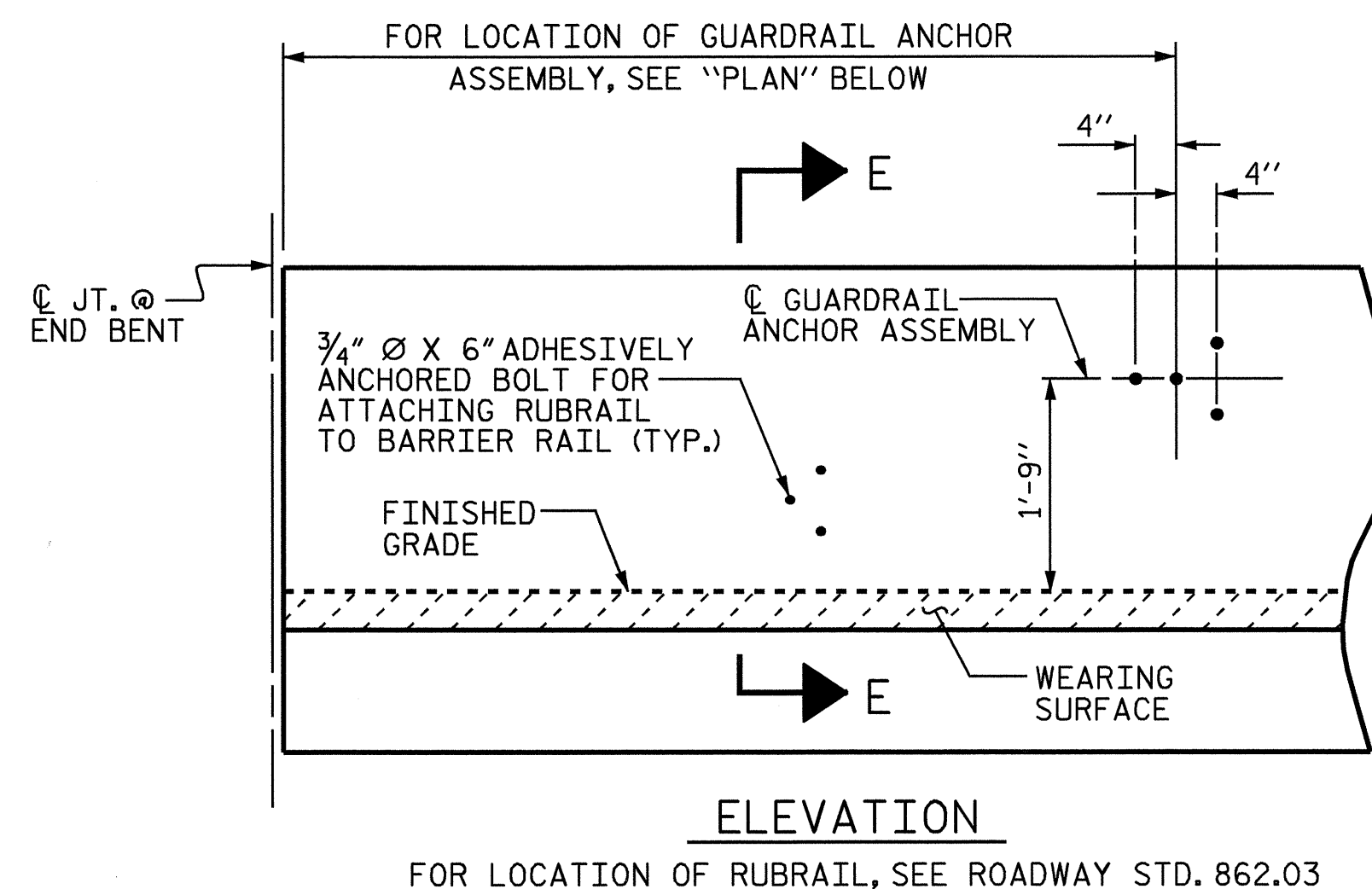
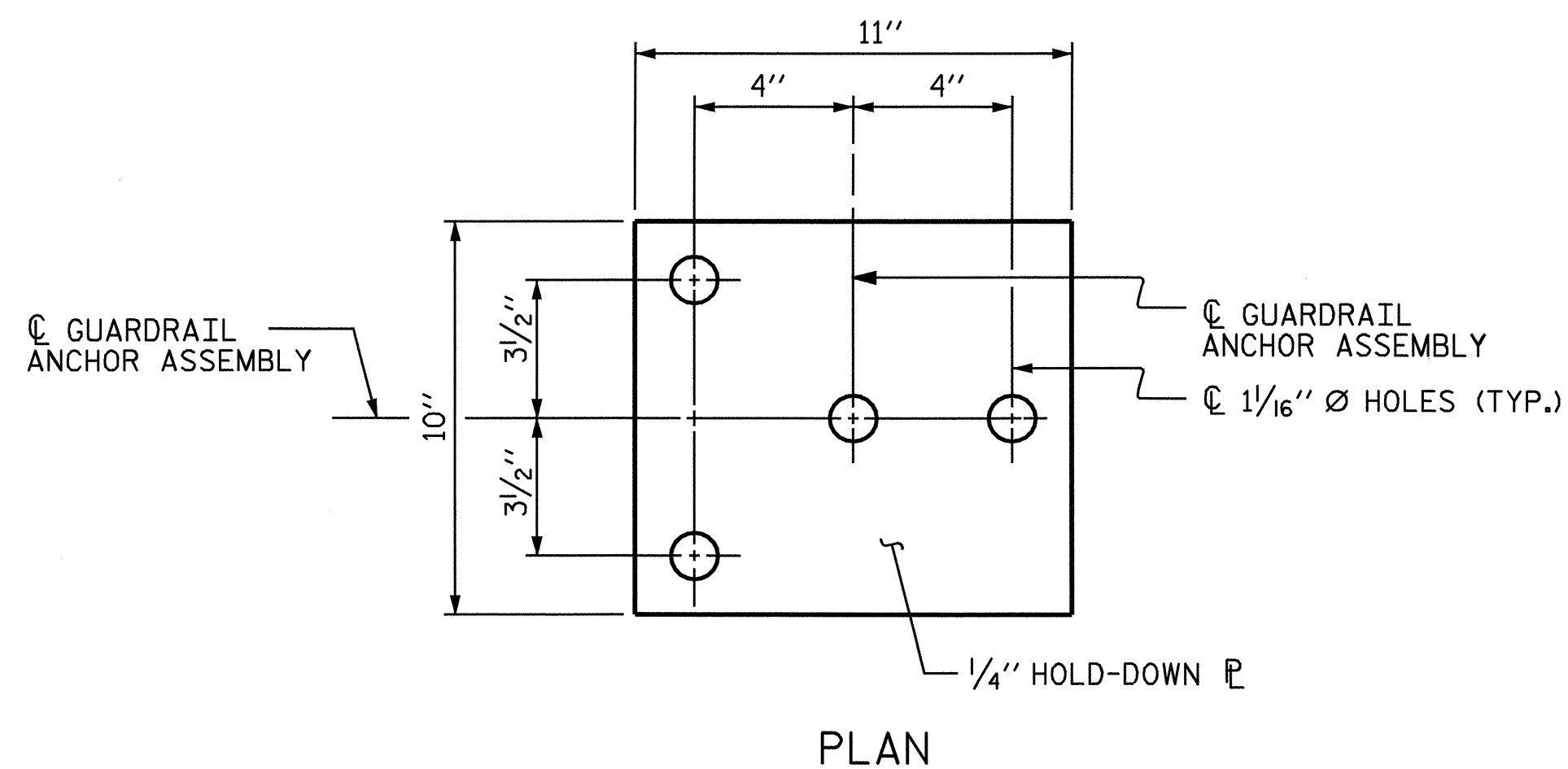
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

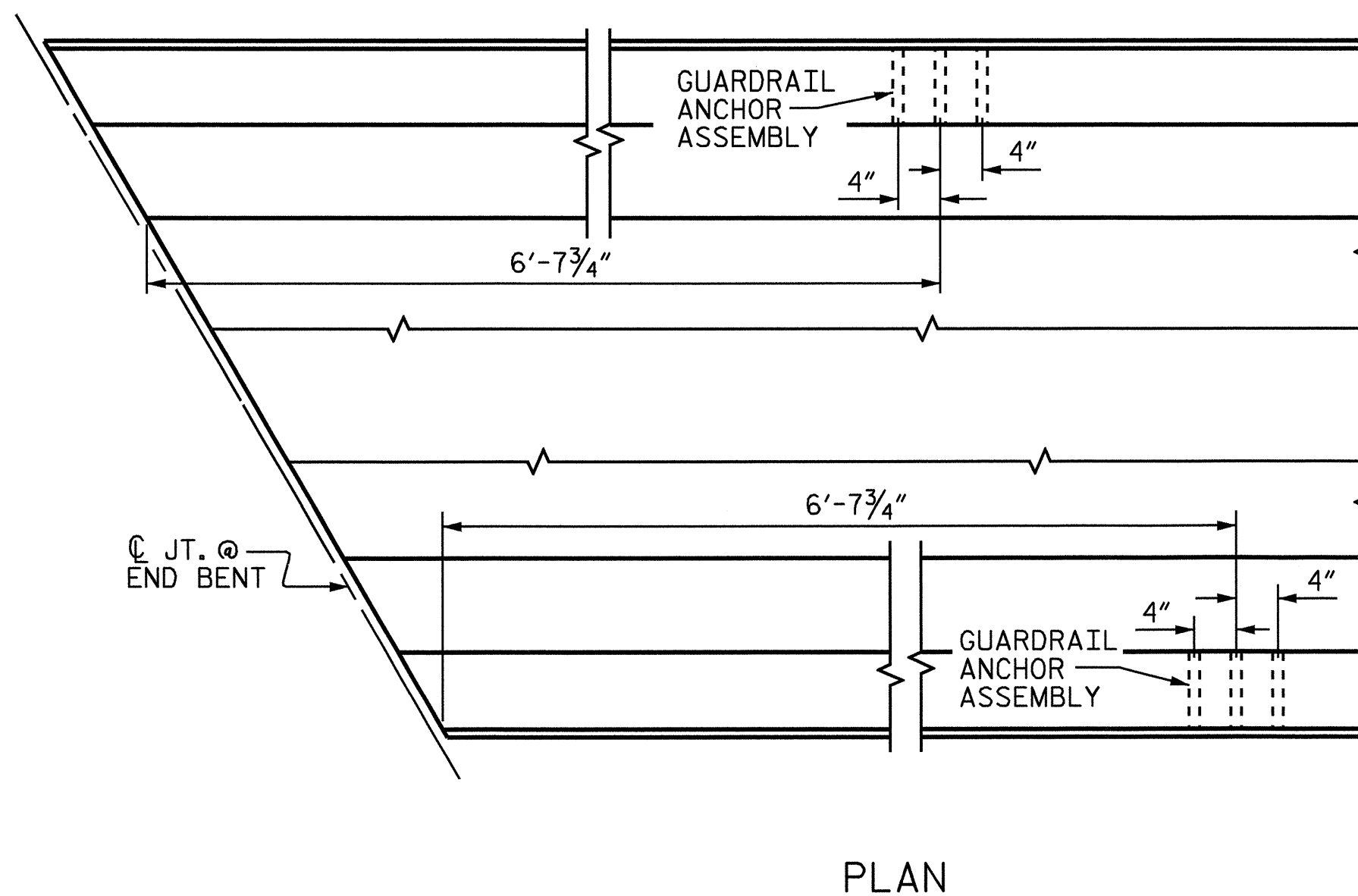
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

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.

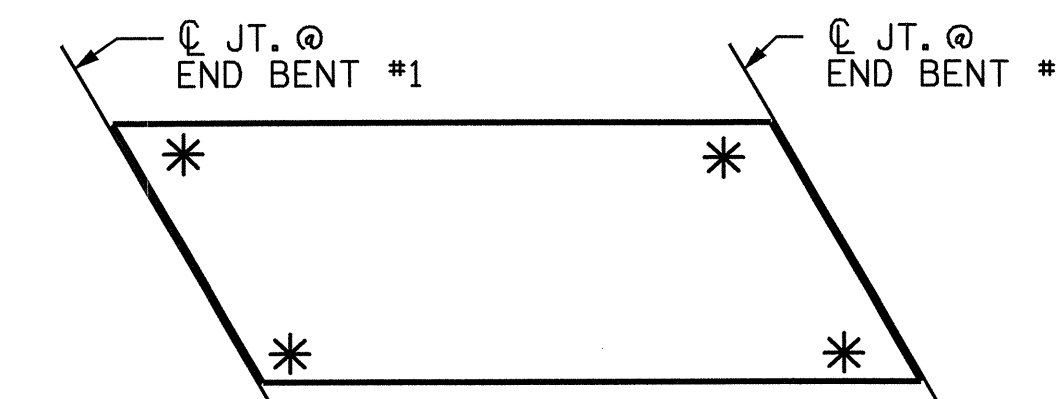


GUARDRAIL ANCHOR ASSEMBLY DETAILS

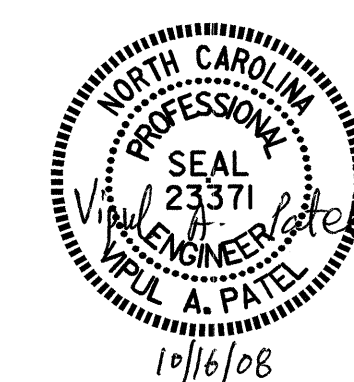


LOCATION OF ANCHORS FOR GUARDRAIL

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



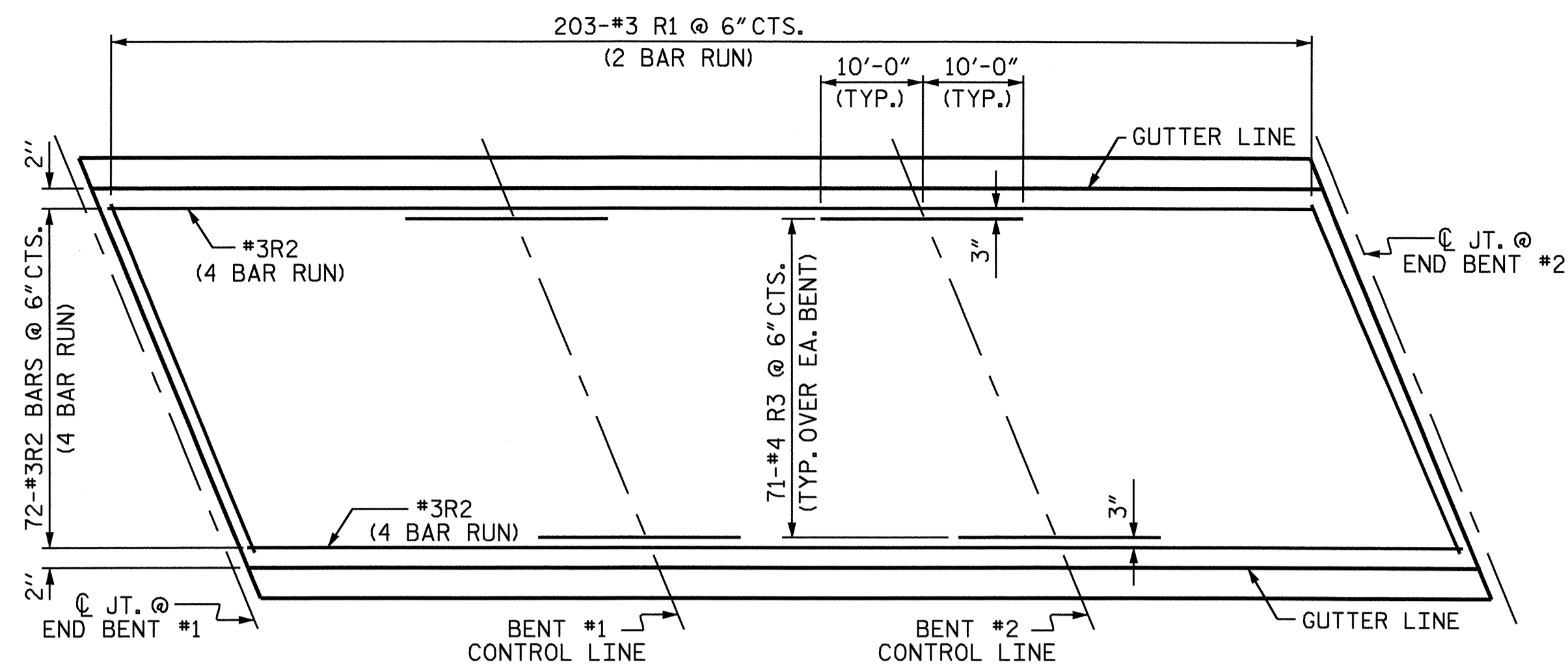
PROJECT NO. B-3655
 HARNETT COUNTY
 STATION: 17+50.50 -L-



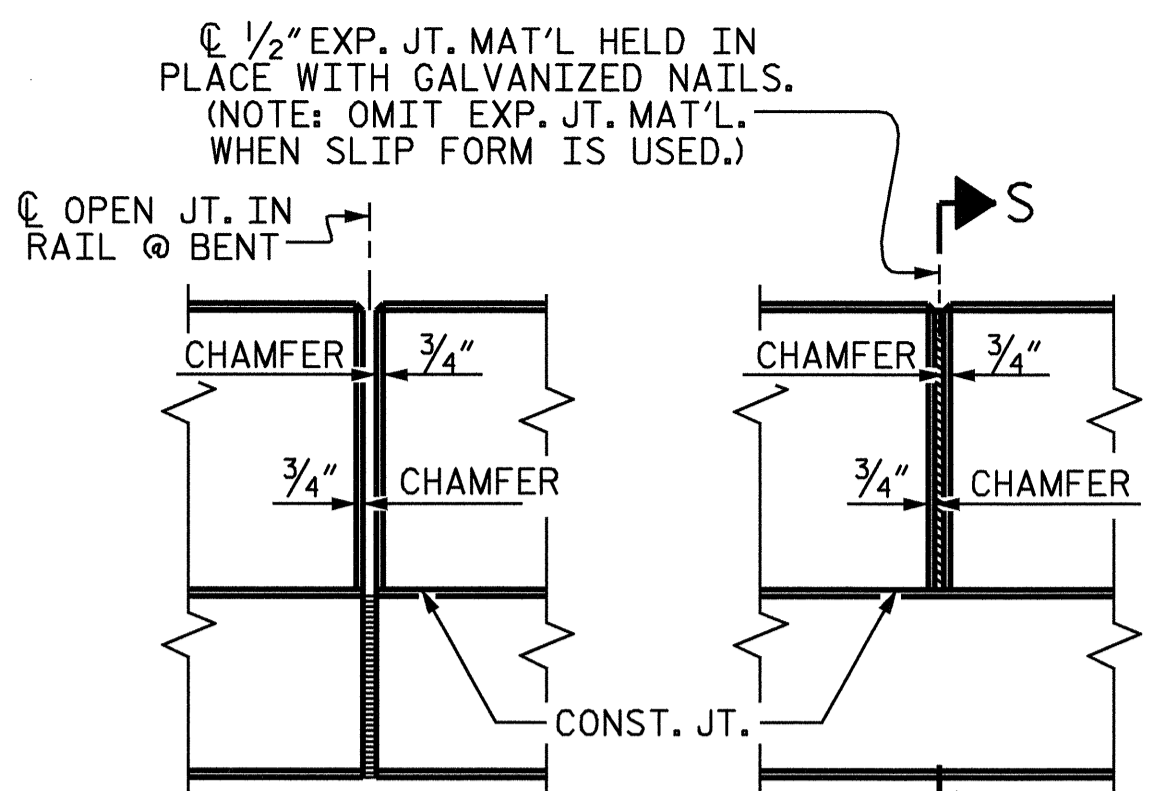
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 FOR BARRIER RAIL

ASSEMBLED BY : J.P. ADAMS	DATE : 5/3/07
CHECKED BY : K.D. LAYNE	DATE : 7/13/07
DRAWN BY : TLA 5/06	ADDED 5/1/06R KMM/GM
CHECKED BY : GM 5/06	

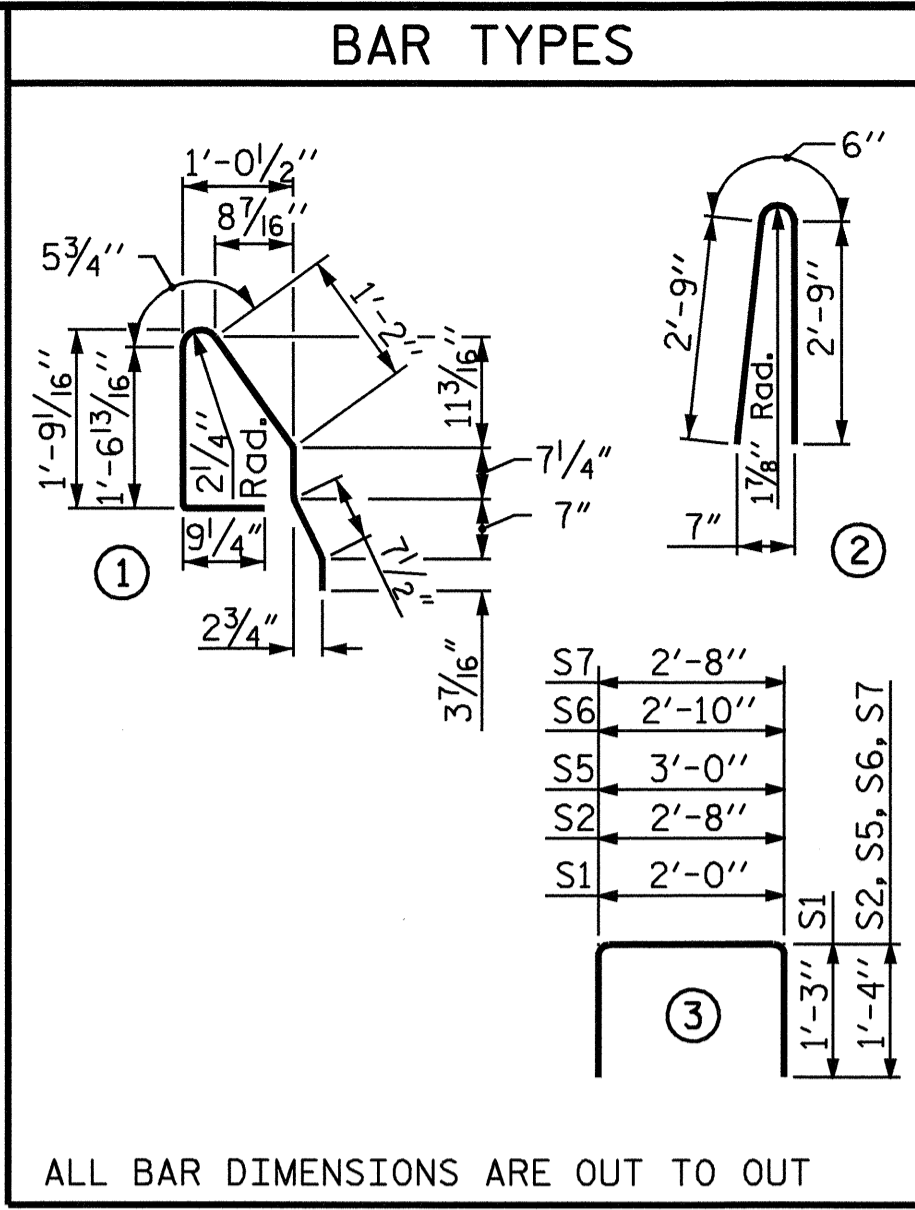
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2			4			TOTAL SHEETS 22



PLAN SHOWING CONCRETE WEARING SURFACE REINFORCING STEEL

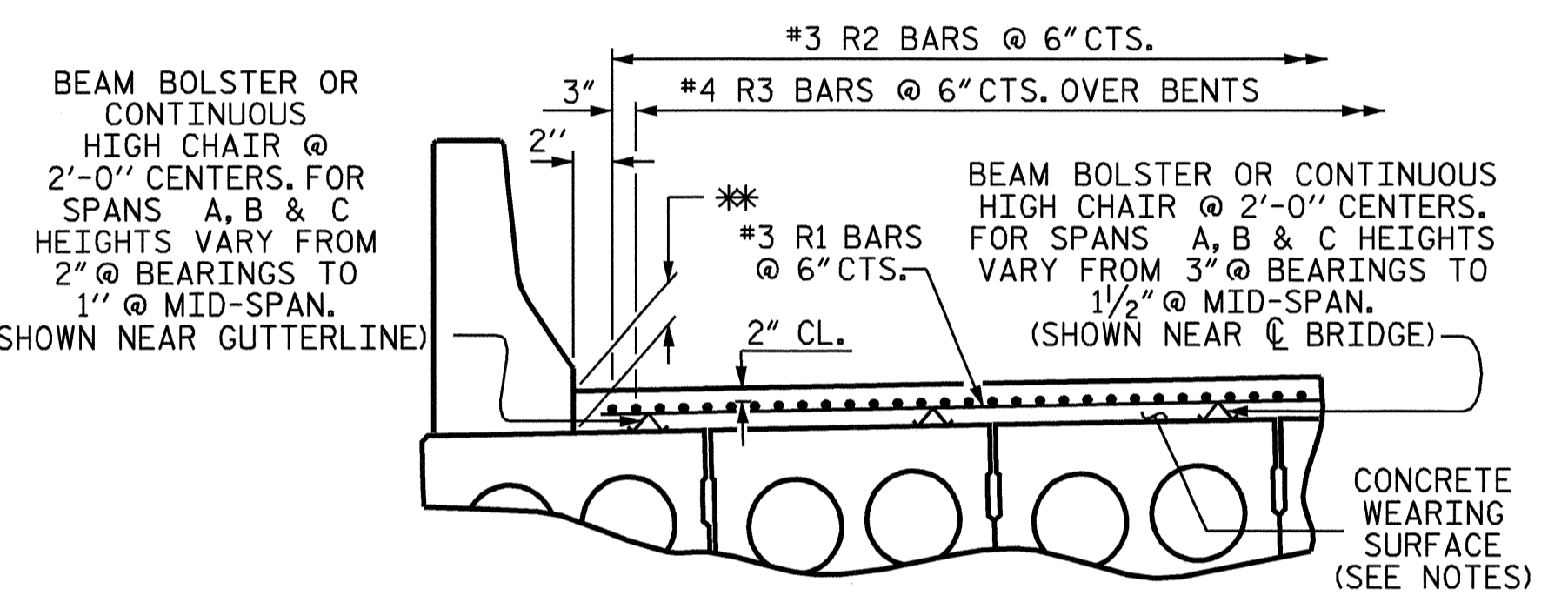


ELEVATION AT EXPANSION JOINTS

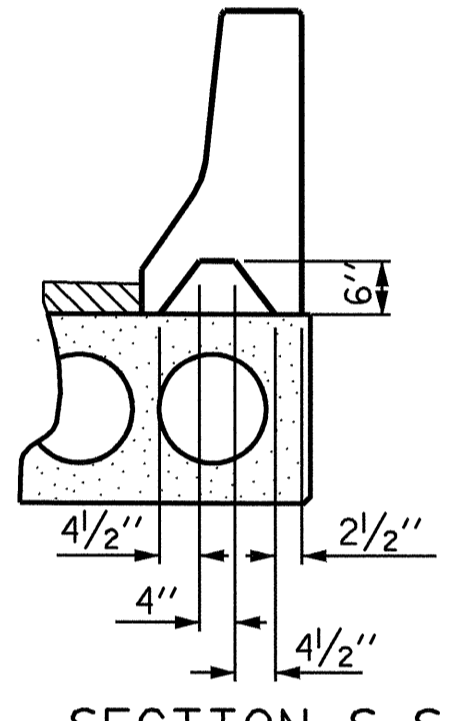


NOTES

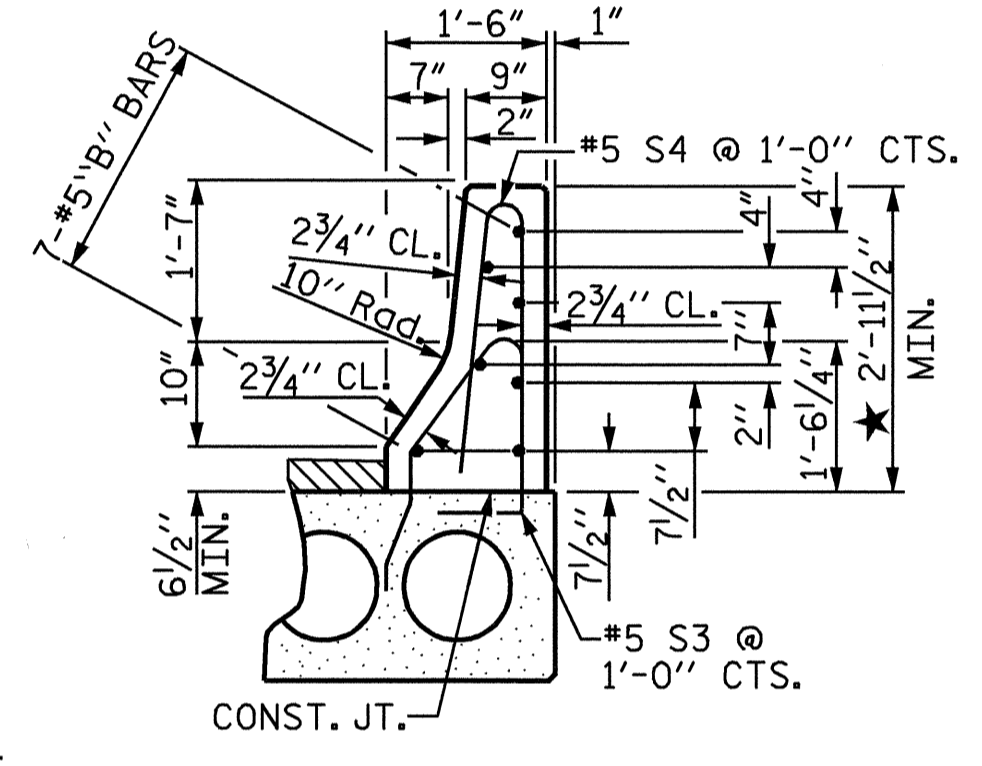
ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.
RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUDED AFTER THE TENSIONING OF THE STRANDS.
THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT.
THE 2" Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER, SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.
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 TOP SURFACE OF THE CORED SLAB UNITS SHALL HAVE A 3/8" RAKED FINISH.
THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 PSI.
ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.
PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.
APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.
VERTICAL GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A VERTICAL CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.
FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
PLACEMENT OF THE CONCRETE WEARING SURFACE SHALL OCCUR AFTER CASTING THE CONCRETE RAIL. THE COST OF THE #3 & #4 BARS CAST WITH THE CONCRETE WEARING SURFACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE WEARING SURFACE. FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.
TRANSVERSE POST TENSIONING OF THE CORED SLAB SECTIONS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, EXCEPT THAT THE 0.6" Ø STRANDS SHALL BE TENSIONED TO 43,950 POUNDS.
* THE MINIMUM HEIGHT OF THE BARRIER RAIL IS SHOWN. THE HEIGHT OF THE BARRIER RAIL VARIES WHILE THE TOP OF THE RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE.



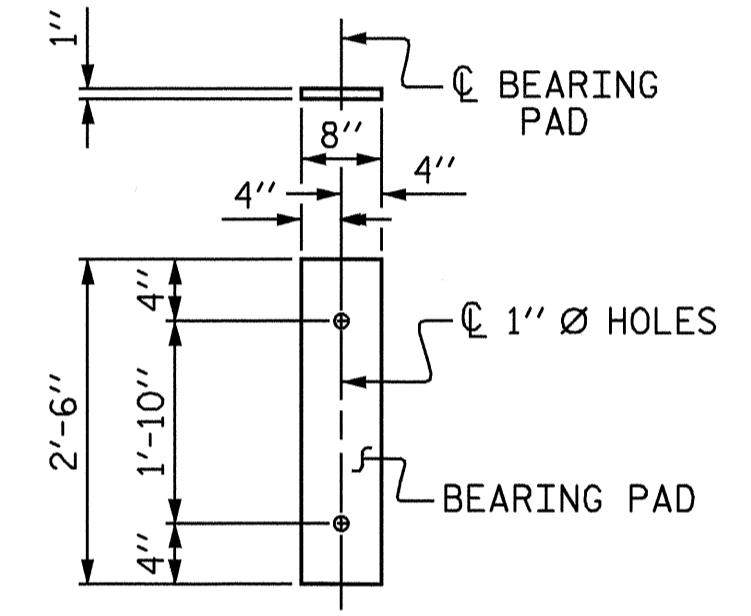
REINFORCING FOR CONCRETE WEARING SURFACE



SECTION S-S



SECTION THRU RAIL



FIXED END

BARRIER RAIL DETAILS

ELASTOMERIC BEARING DETAILS

SPLICE LENGTH CHART

BAR SIZE	EPOXY COATED
#3	1'-3"

GROOVING BRIDGE FLOORS

APPROACH SLABS	1544.0 SQ.FT.
BRIDGE DECK	3315.0 SQ.FT.
TOTAL	4859.0 SQ.FT.

BILL OF MATERIAL FOR CONCRETE BARRIER RAIL

BAR	BARS PER SPAN			TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	SPAN A	SPAN B	SPAN C					
* B3	14	-	14	28	#5	STR	28'-3"	825
* B4	-	56	-	56	#5	STR	13'-1"	764
* S4	58	90	58	206	#5	2	6'-0"	1289
* EPOXY COATED REINFORCING STEEL								2878 LBS.
CLASS AA CONCRETE								25.2 CU.YDS.
TOTAL LIN. FT. OF CONCRETE BARRIER RAIL								204.80 LIN. FT.

DEAD LOAD DEFLECTION AND CAMBER

	SPAN A	SPAN B	SPAN C
	0.6" Ø L.R. STRAND	0.6" Ø L.R. STRAND	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	3/16" ↑	1/2" ↑	3/16" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD ***	0 ↓	1/8" ↓	0 ↓
FINAL CAMBER	3/16" ↑	1 3/8" ↑	3/16" ↑

*** DOES NOT INCLUDE DEFLECTION DUE TO BARRIER RAIL & FUTURE WEARING SURFACE

BILL OF MATERIAL FOR CONCRETE WEARING SURFACE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*R1	406	#3	STR	21'-2"	3231
*R2	288	#3	STR	26'-5"	2861
*R3	142	#4	STR	20'-0"	1897
* EPOXY COATED REINFORCING STEEL					LBS. 7989
CONCRETE WEARING SURFACE					SQ. FT. 3631

GRADE 270 STRANDS

AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

CORED SLABS REQUIRED

SPAN A		SPAN B		SPAN C	
NUMBER	LENGTH	NUMBER	LENGTH	NUMBER	LENGTH
EXTERIOR C.S.	2 28'-7 3/16"	2 44'-10 1/4"	2 44'-10 1/4"	2 28'-7 3/16"	2 28'-7 3/16"
INTERIOR C.S.	11 28'-7 3/16"	11 44'-10 1/4"	11 44'-10 1/4"	11 28'-7 3/16"	11 28'-7 3/16"
TOTAL	13 372.19	13 583.11	13 372.19	13 372.19	13 372.19
EXTERIOR C.S.	2 28'-7 3/16"	2 44'-10 1/4"	2 44'-10 1/4"	2 28'-7 3/16"	2 28'-7 3/16"
INTERIOR C.S.	11 28'-7 3/16"	11 44'-10 1/4"	11 44'-10 1/4"	11 28'-7 3/16"	11 28'-7 3/16"
TOTAL	13 372.19	13 583.11	13 372.19	13 372.19	13 372.19
TOTAL LENGTH (SPAN A, B & C) 1327.49					

BILL OF MATERIAL FOR ONE CORED SLAB UNIT

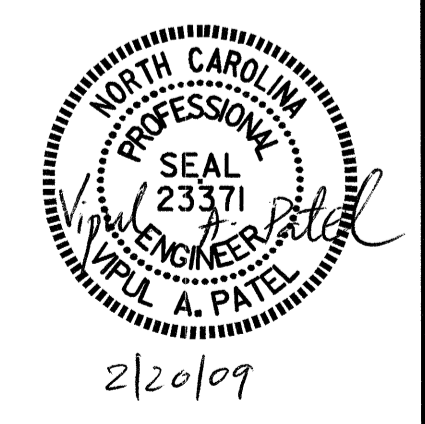
SPAN A & SPAN C		EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
B1	2	#4	STR	28'-3"	38
S1	8	#4	3	4'-6"	24
S2	48	#4	3	5'-4"	171
* S3	29	#5	1	5'-6"	166
S5	4	#4	3	5'-8"	15
S6	4	#4	3	5'-6"	15
S7	4	#4	3	5'-4"	14
REINFORCING STEEL 277 LBS.					
* EPOXY COATED REINFORCING STEEL 166 LBS.					
5000 P.S.I. CONCRETE 4.2 CU. YDS.					
0.6" Ø L.R. STRANDS No. 7					

BILL OF MATERIAL FOR ONE CORED SLAB UNIT

SPAN B		EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
B2	4	#4	STR	23'-2"	62
S1	8	#4	3	4'-6"	24
S2	80	#4	3	5'-4"	285
* S3	45	#5	1	5'-6"	258
S5	4	#4	3	5'-8"	15
S6	4	#4	3	5'-6"	15
S7	4	#4	3	5'-4"	14
REINFORCING STEEL 415 LBS.					
* EPOXY COATED REINFORCING STEEL 258 LBS.					
5000 P.S.I. CONCRETE 6.5 CU. YDS.					
0.6" Ø L.R. STRANDS No. 14					

ASSEMBLED BY : J.P. ADAMS DATE : 4/16/07
CHECKED BY : K.D. LAYNE DATE : 7/13/07
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

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PROJECT NO. B-3655
HARNETT COUNTY
STATION: 17+50.50 -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:
1			3		
2			4		

TOTAL SHEETS 22

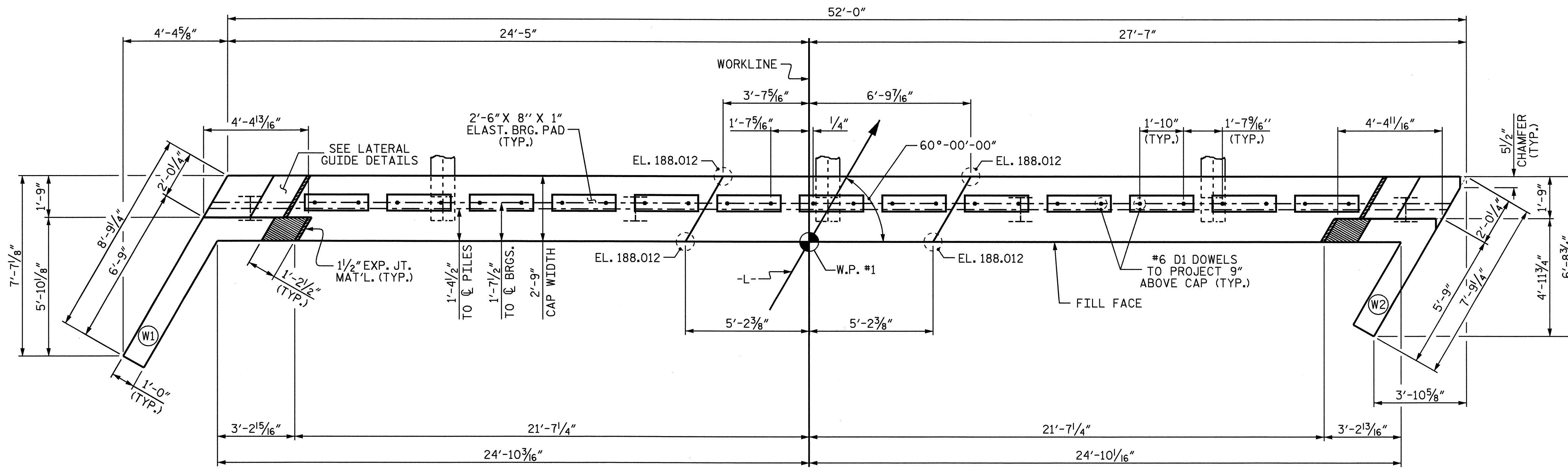
NOTES

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

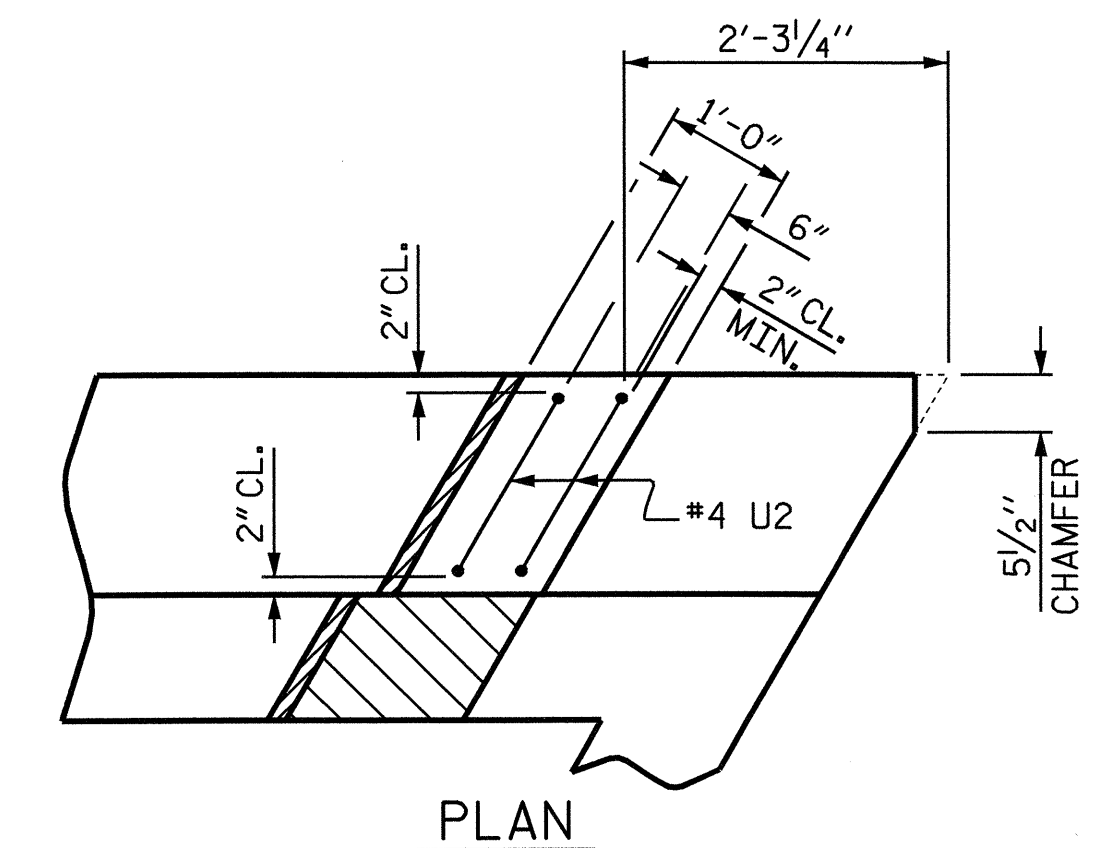
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

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.

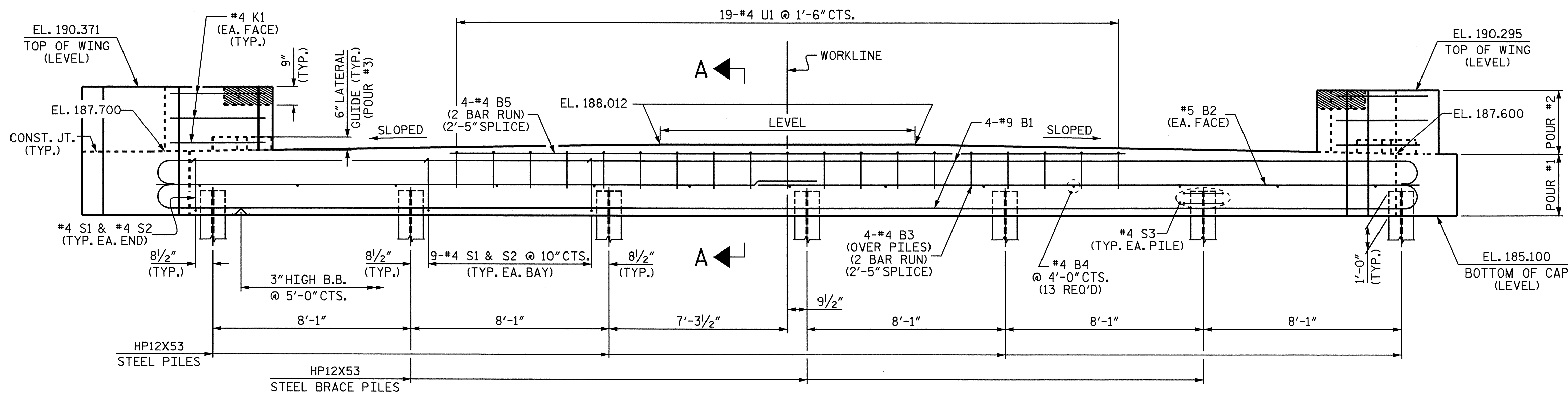
THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.



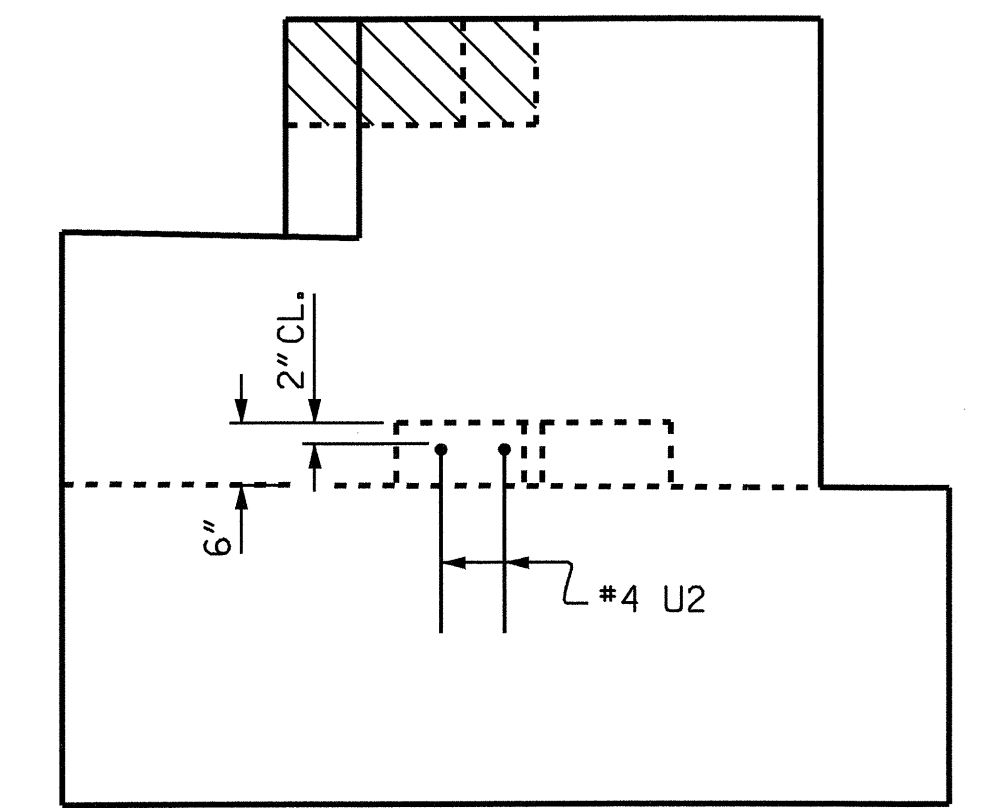
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PLAN



ELEVATION



ELEVATION

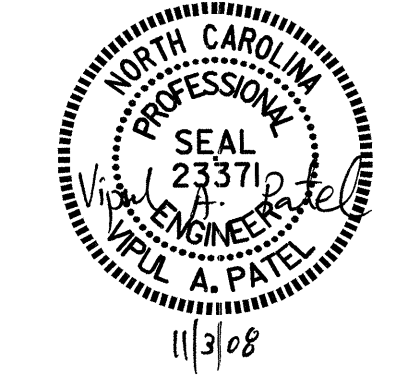
LATERAL GUIDE DETAILS
(SIMILAR EACH END)

PROJECT NO. B-3655
HARNETT COUNTY
 STATION: 17+50.50 -L-

SHEET 1 OF 3

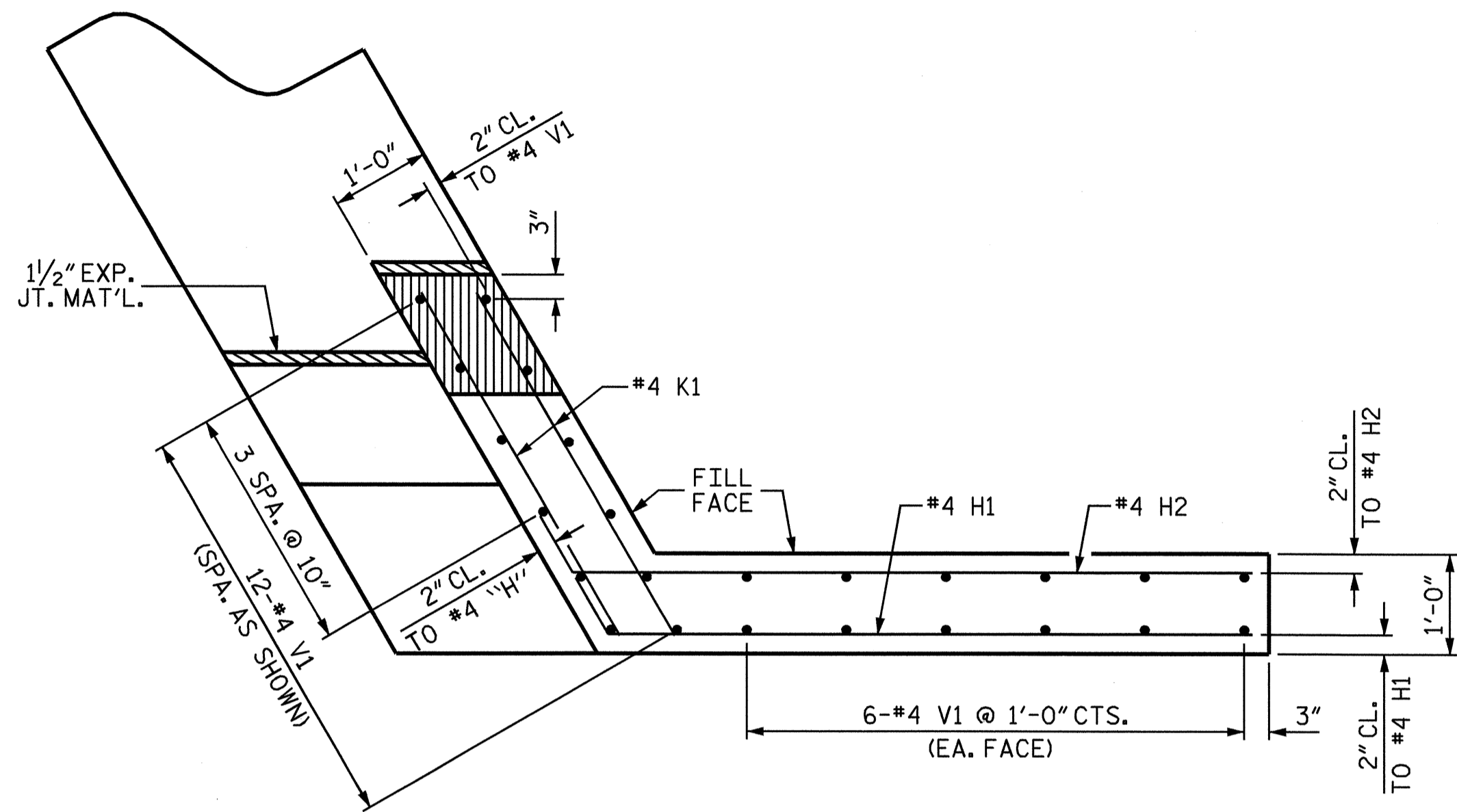
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT #1**

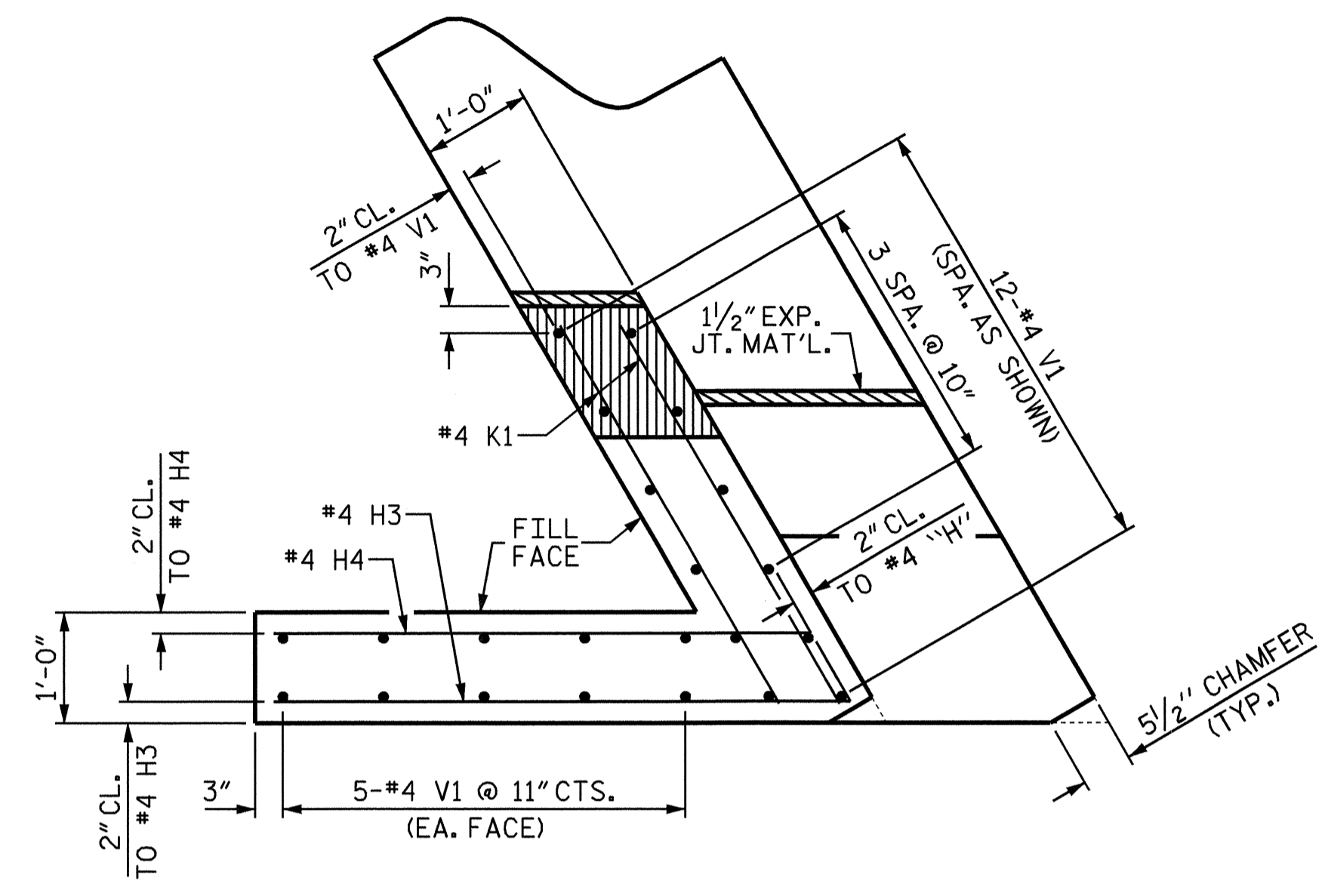


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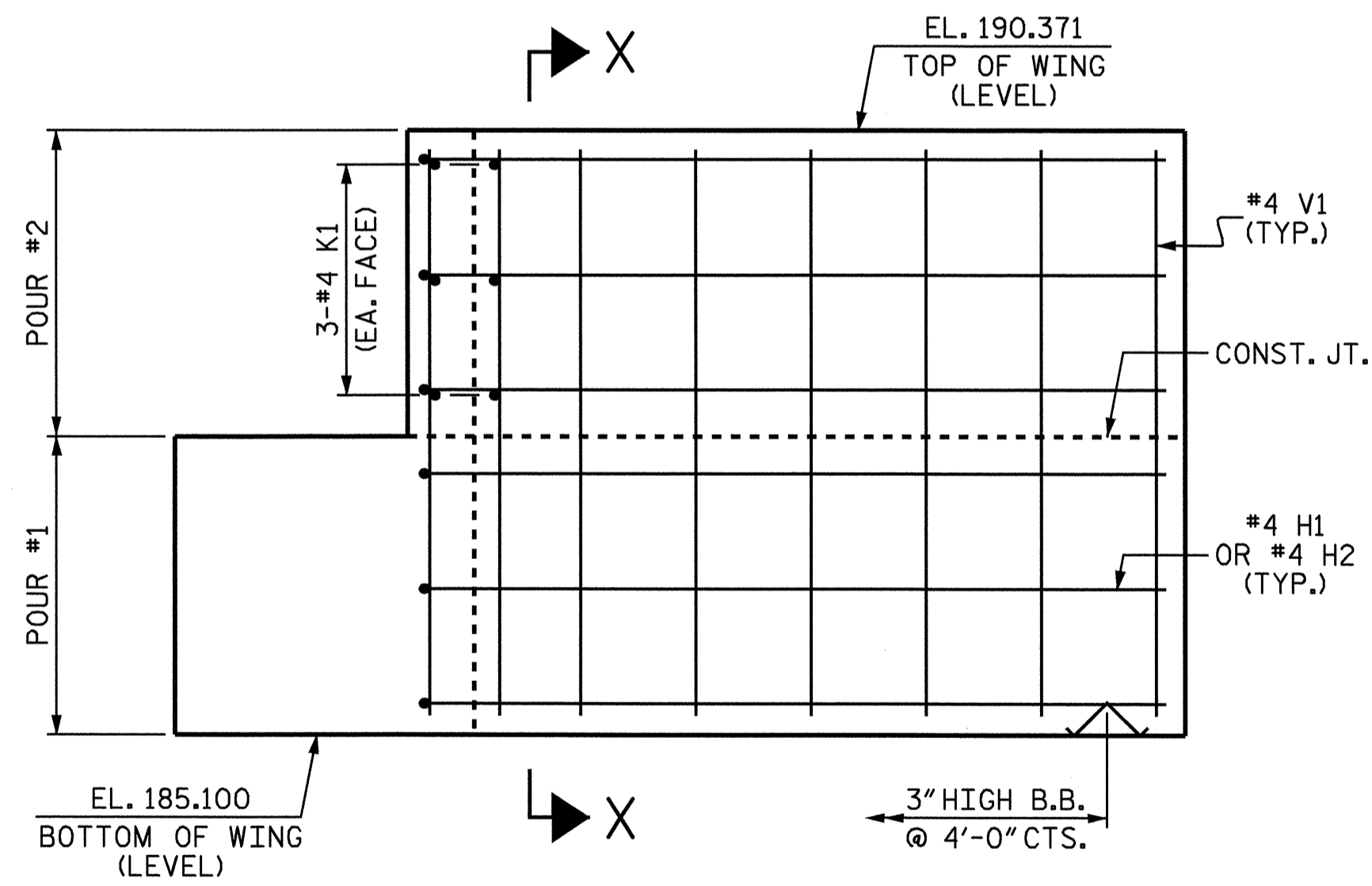
DRAWN BY : S. DOMBROWSKI DATE : 03/08
 CHECKED BY : J.P. ADAMS DATE : 3/13/08



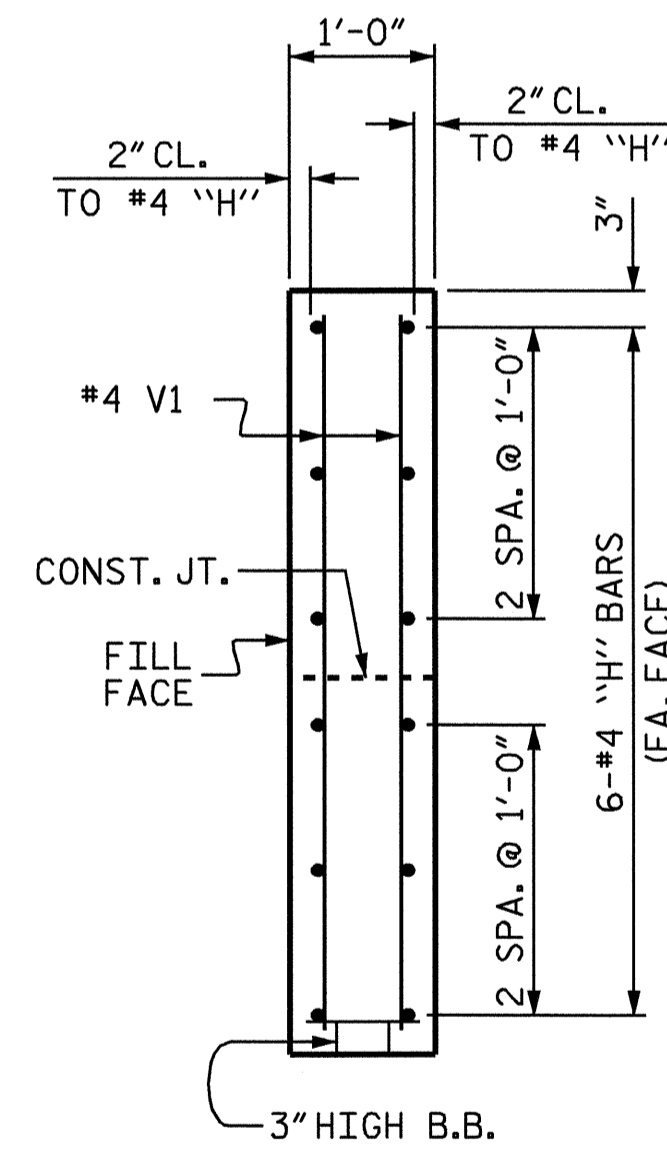
PLAN OF WING - W1



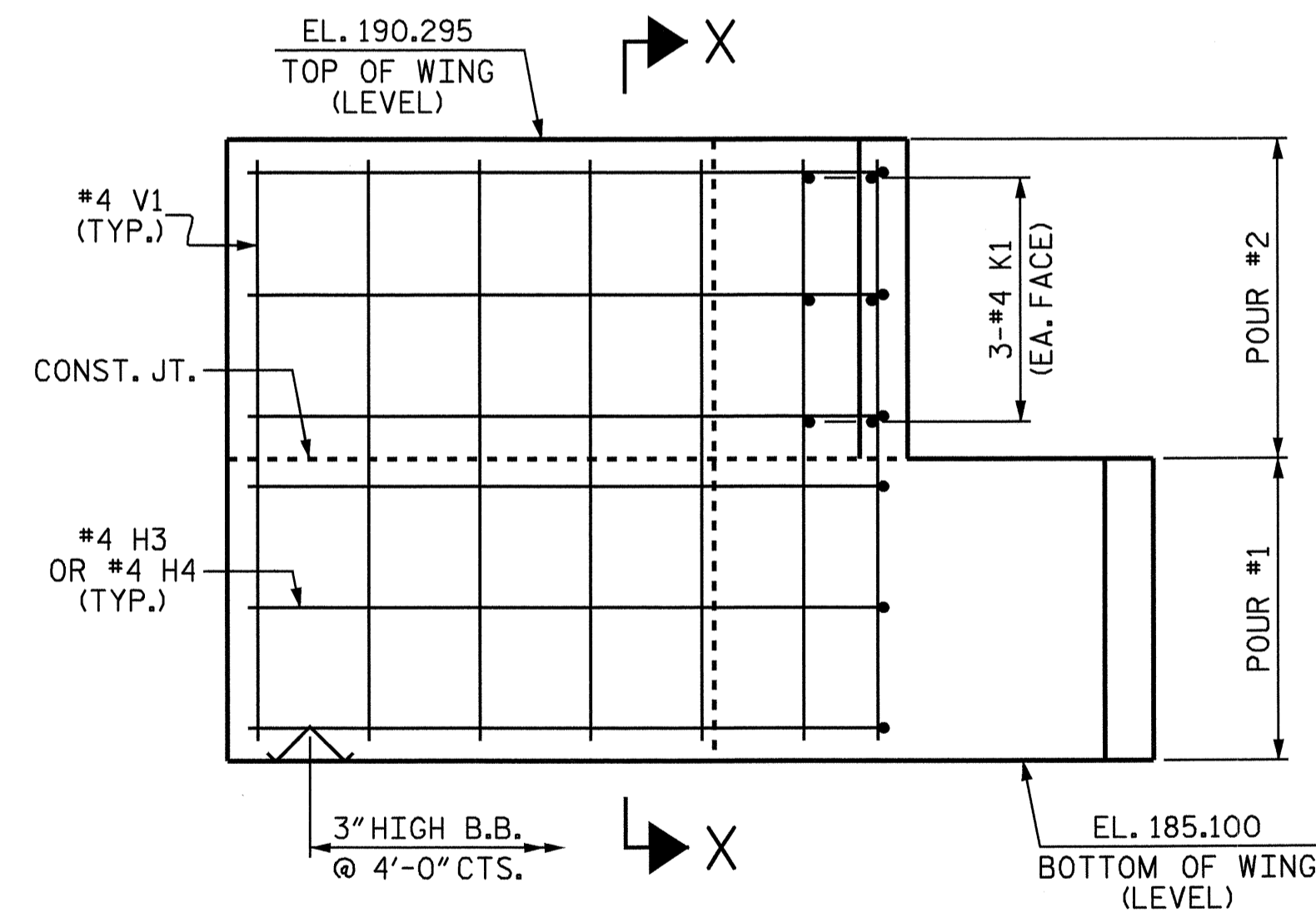
PLAN OF WING - W2



ELEVATION OF WING - W1



SECTION X-X



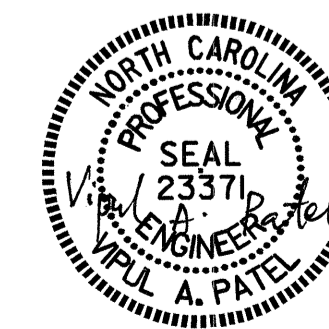
ELEVATION OF WING - W2

PROJECT NO. B-3655
HARNETT COUNTY
 STATION: 17+50.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

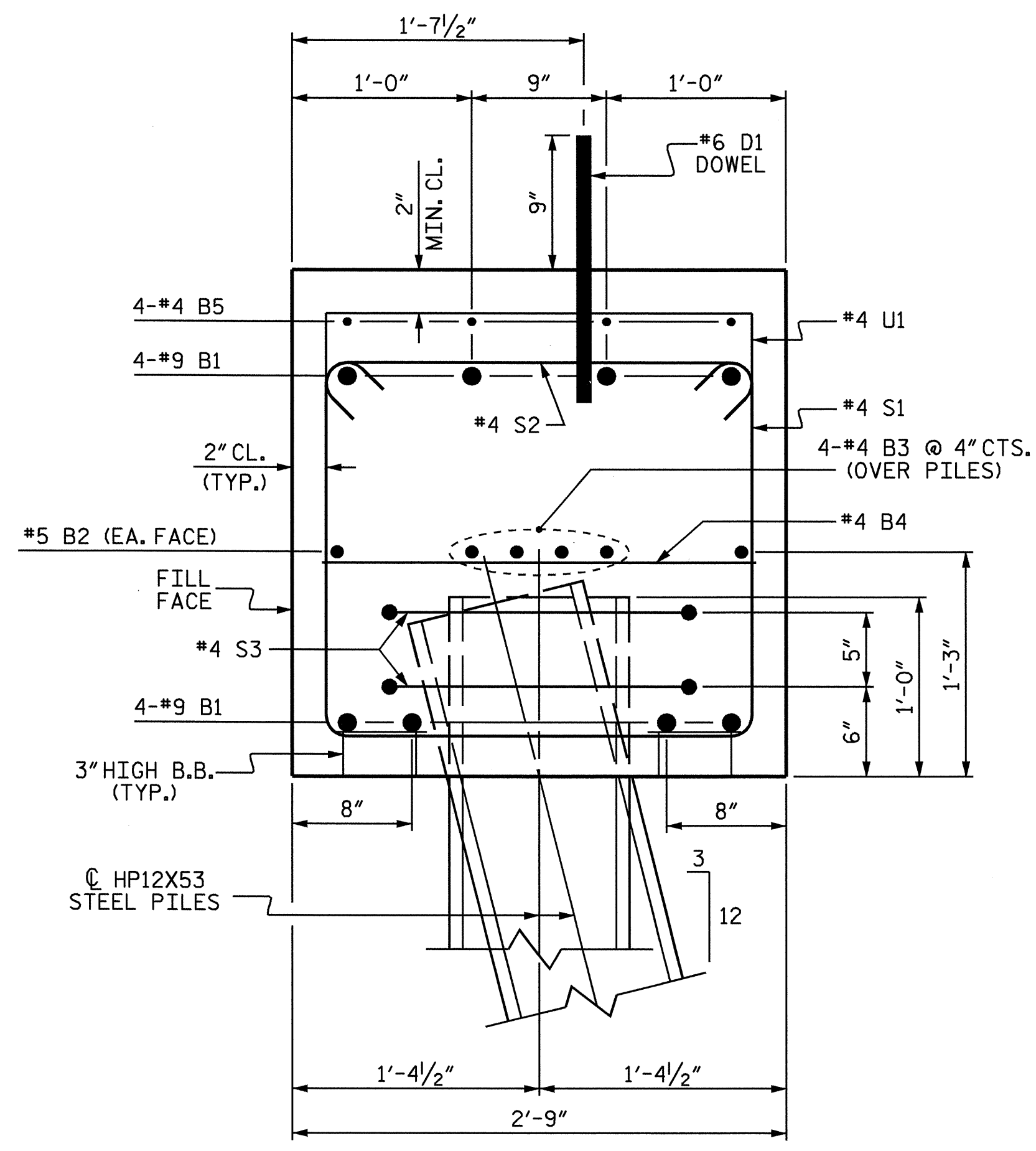
SUBSTRUCTURE
 END BENT #1



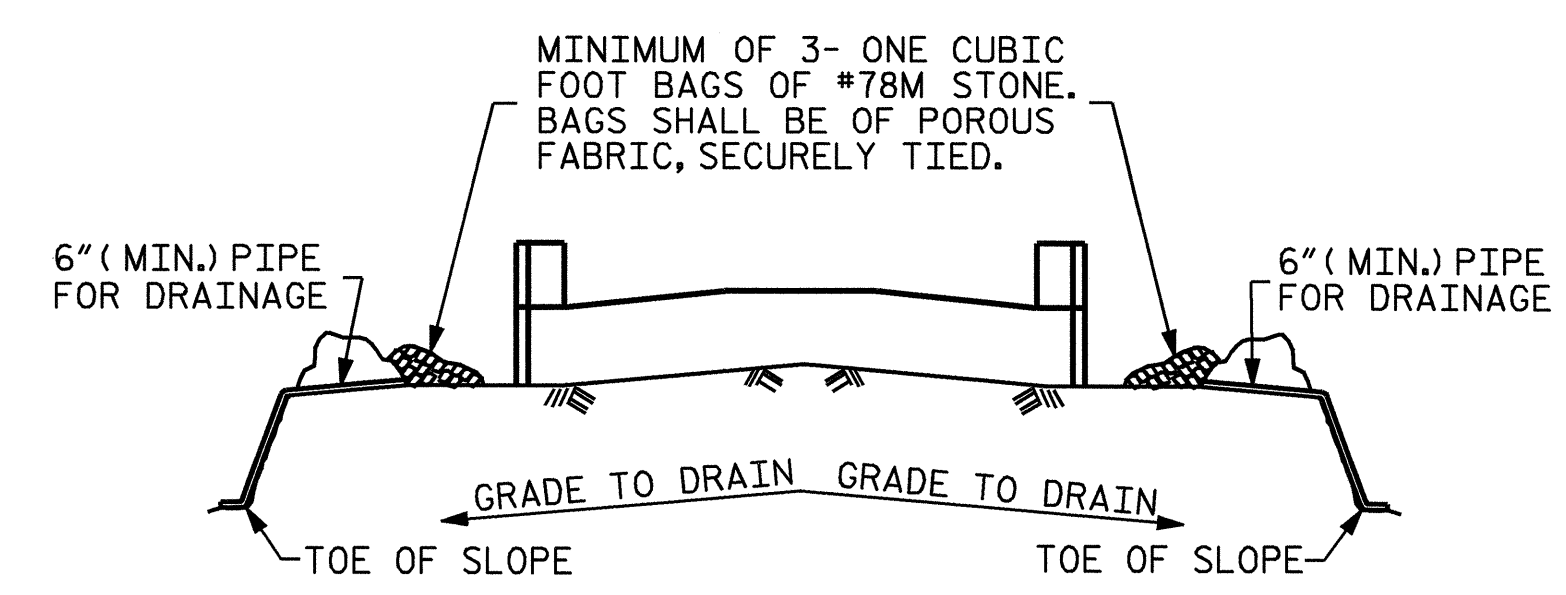
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 Jpadams

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			22



SECTION A-A



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

6\" (MIN.) PIPE FOR DRAINAGE

GRADE TO DRAIN

TOE OF SLOPE

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

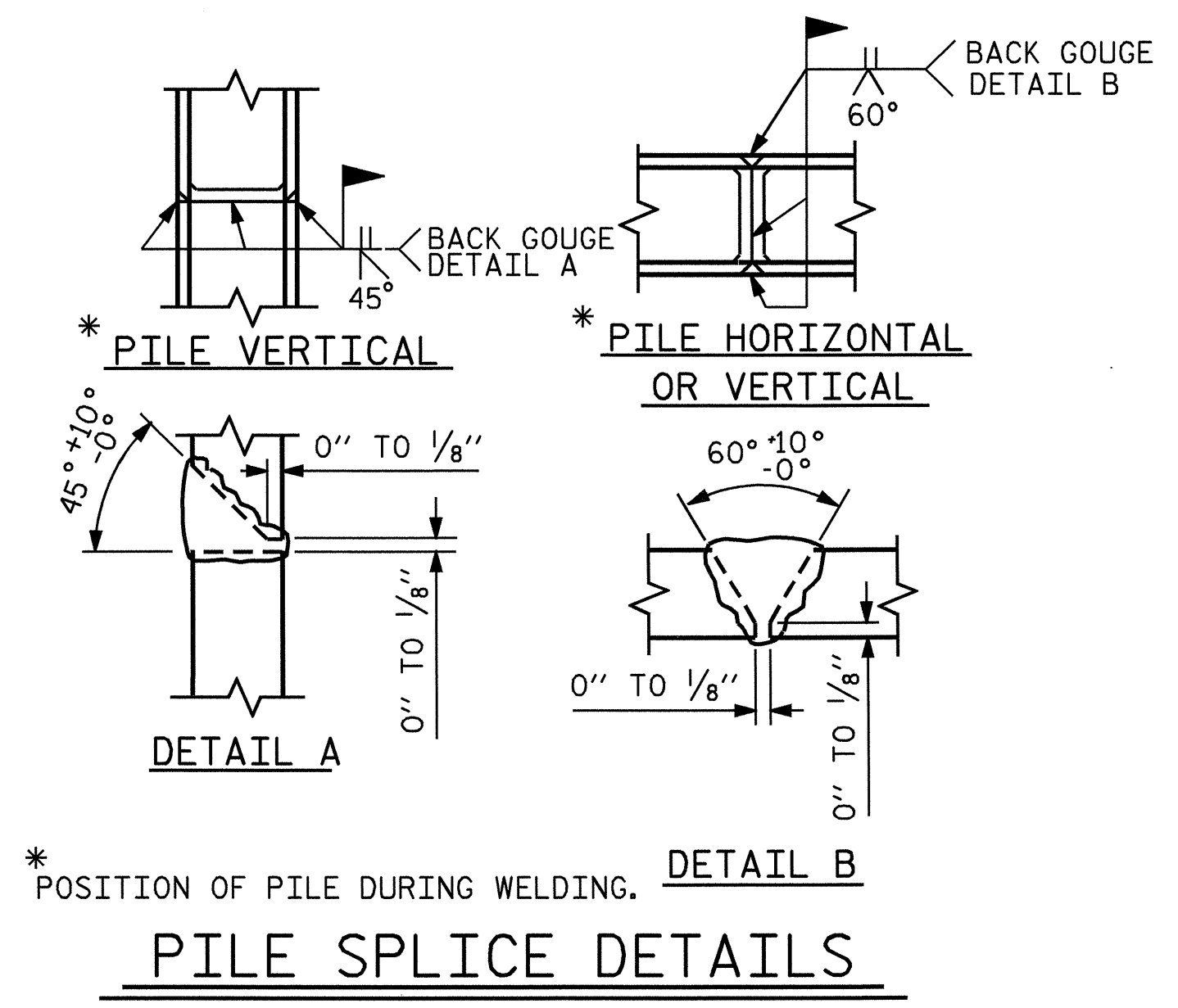
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

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

TEMPORARY DRAINAGE AT END BENT

BAR TYPES						BILL OF MATERIAL							
						END BENT #1							
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT								
B1	8	#9		54'-0"	1469								
B2	2	#5	STR.	51'-8"	108								
B3	8	#4	STR.	27'-1"	145								
B4	13	#4	STR.	2'-5"	21								
B5	4	#4	STR.	27'-7"	74								
D1	26	#6	STR.	1'-6"	59								
H1	6	#4	2	7'-1"	28								
H2	6	#4	2	7'-6"	30								
H3	6	#4	3	5'-11"	24								
H4	6	#4	3	5'-7"	22								
K1	12	#4	STR.	4'-0"	32								
S1	56	#4	4	7'-5"	277								
S2	56	#4	5	3'-2"	118								
S3	14	#4	6	6'-6"	61								
U1	19	#4	7	5'-5"	69								
U2	4	#4	7	4'-7"	12								
V1	46	#4	STR.	4'-11"	151								
REINFORCING STEEL					Lbs.	2700							
CLASS "A" CONCRETE													
POUR #1 CAP & LOWER WINGS						CU.YDS.	15.8						
POUR #2 UPPER WINGS						CU.YDS.	1.9						
POUR #3 LATERAL GUIDES						CU.YDS.	0.1						
TOTAL						CU.YDS.	17.8						
HP12x53 STEEL PILES						No.	7						
						LIN. FT.	140.0						

ALL BAR DIMENSIONS ARE OUT TO OUT.



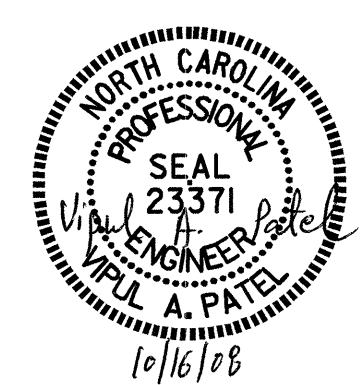
PILE SPLICE DETAILS

PROJECT NO. B-3655
HARNETT COUNTY
 STATION: 17+50.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #1



DRAWN BY: S. DOMBROWSKI DATE: 03/08
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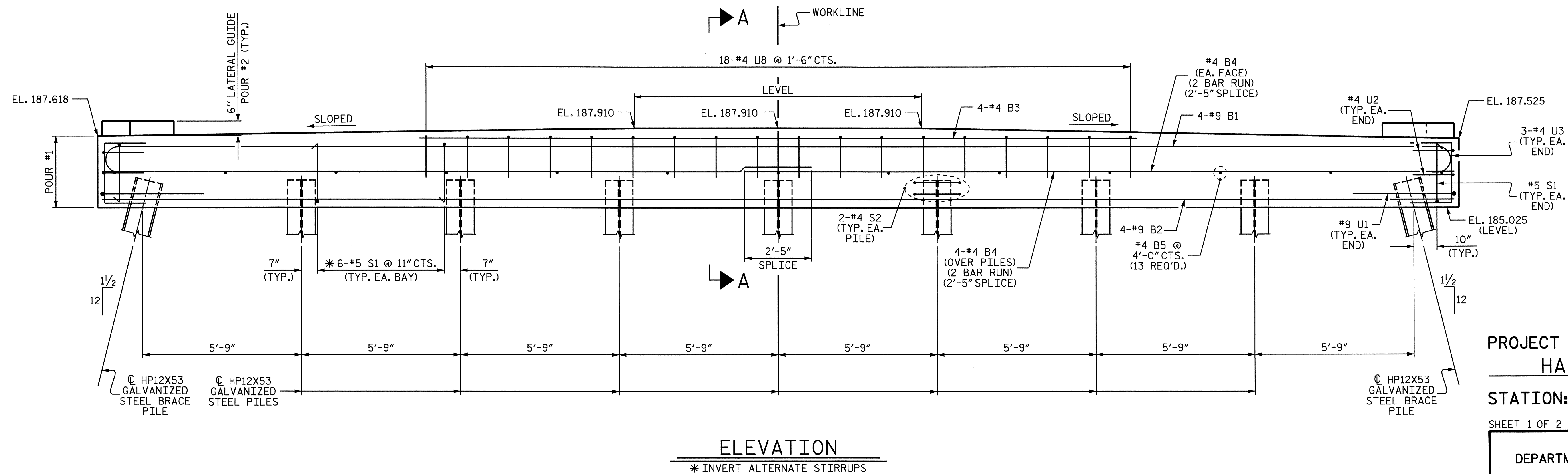
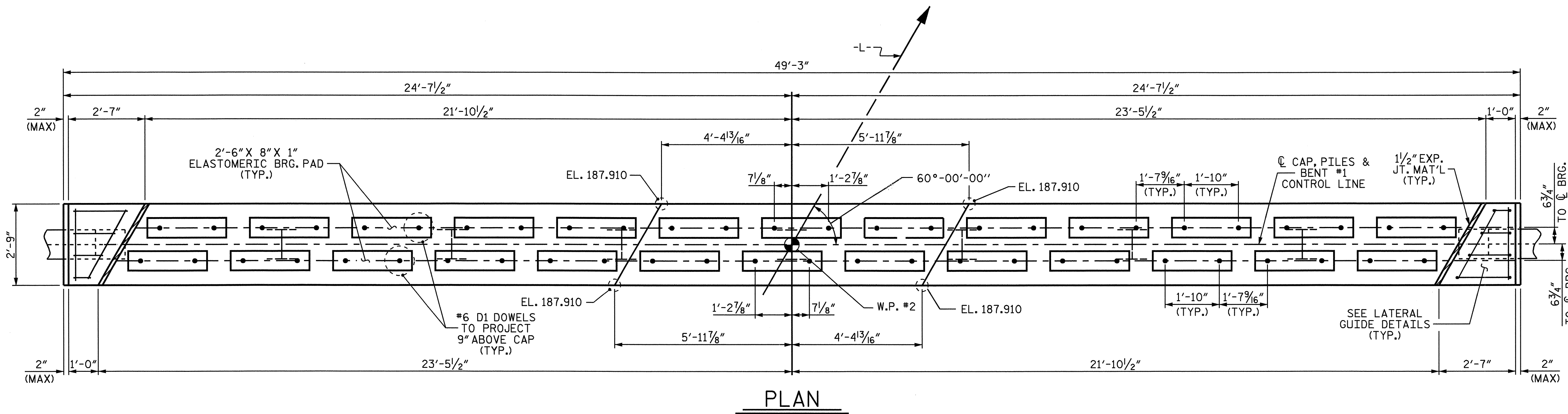
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2			4			TOTAL SHEETS 22

NOTES

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

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

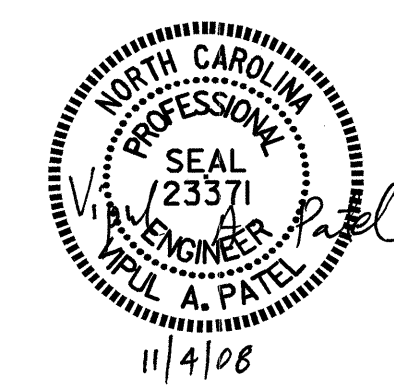
THE STEEL PILES SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



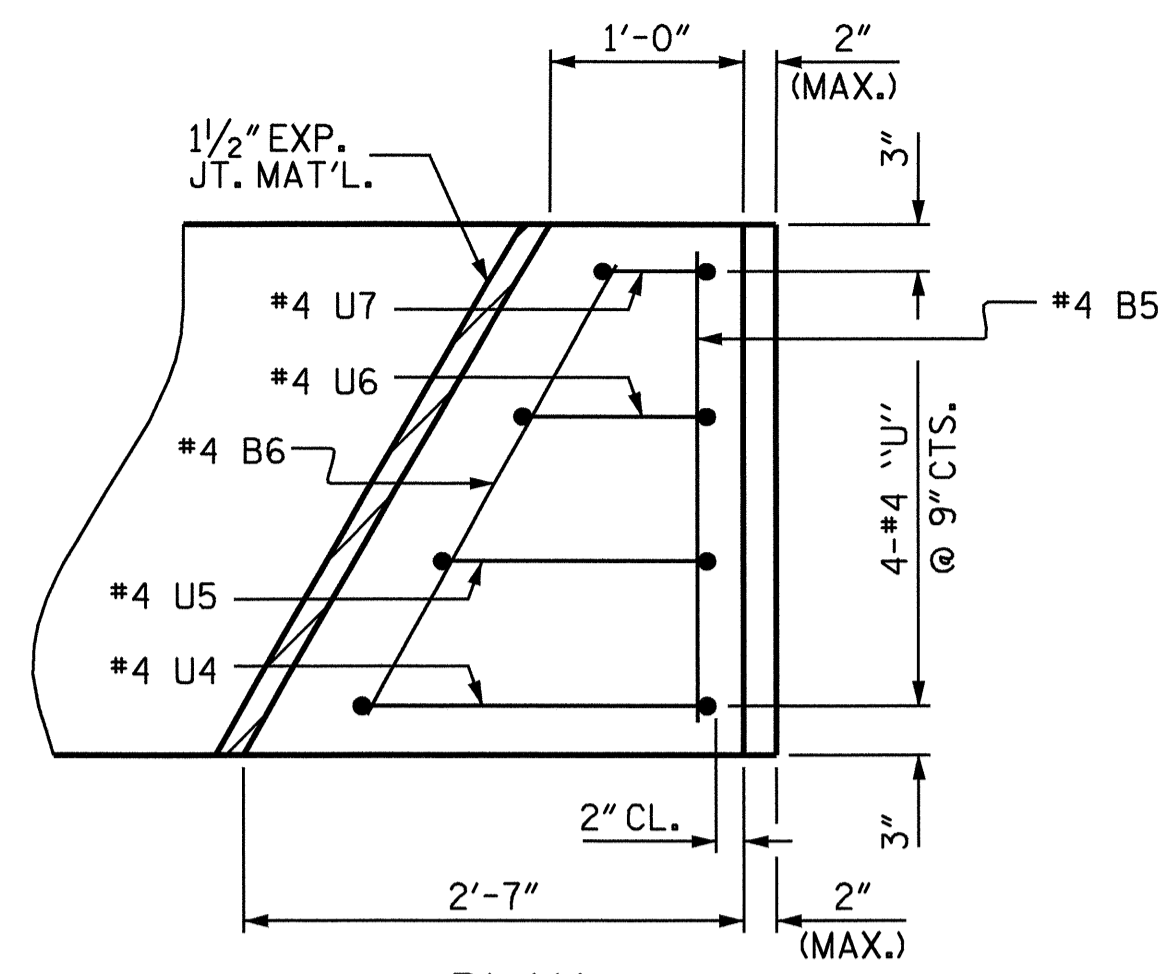
PROJECT NO. B-3655
HARNETT COUNTY
 STATION: 17+50.50 -L-

SHEET 1 OF 2

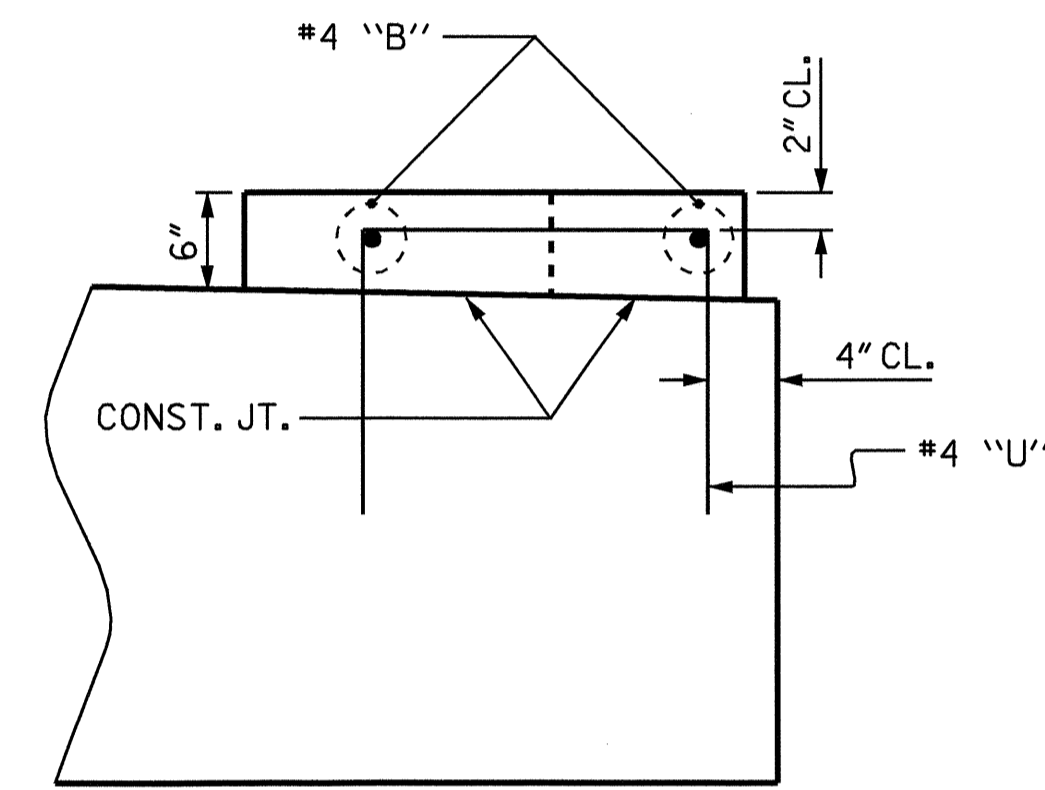
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DEPARTMENT OF TRANSPORTATION						
RALEIGH						
SUBSTRUCTURE						
BENT #1						
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
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TOTAL SHEETS					22	



DRAWN BY: S. DOMBROWSKI DATE: 12/07
 CHECKED BY: H. LOCKLEAR DATE: 1/08

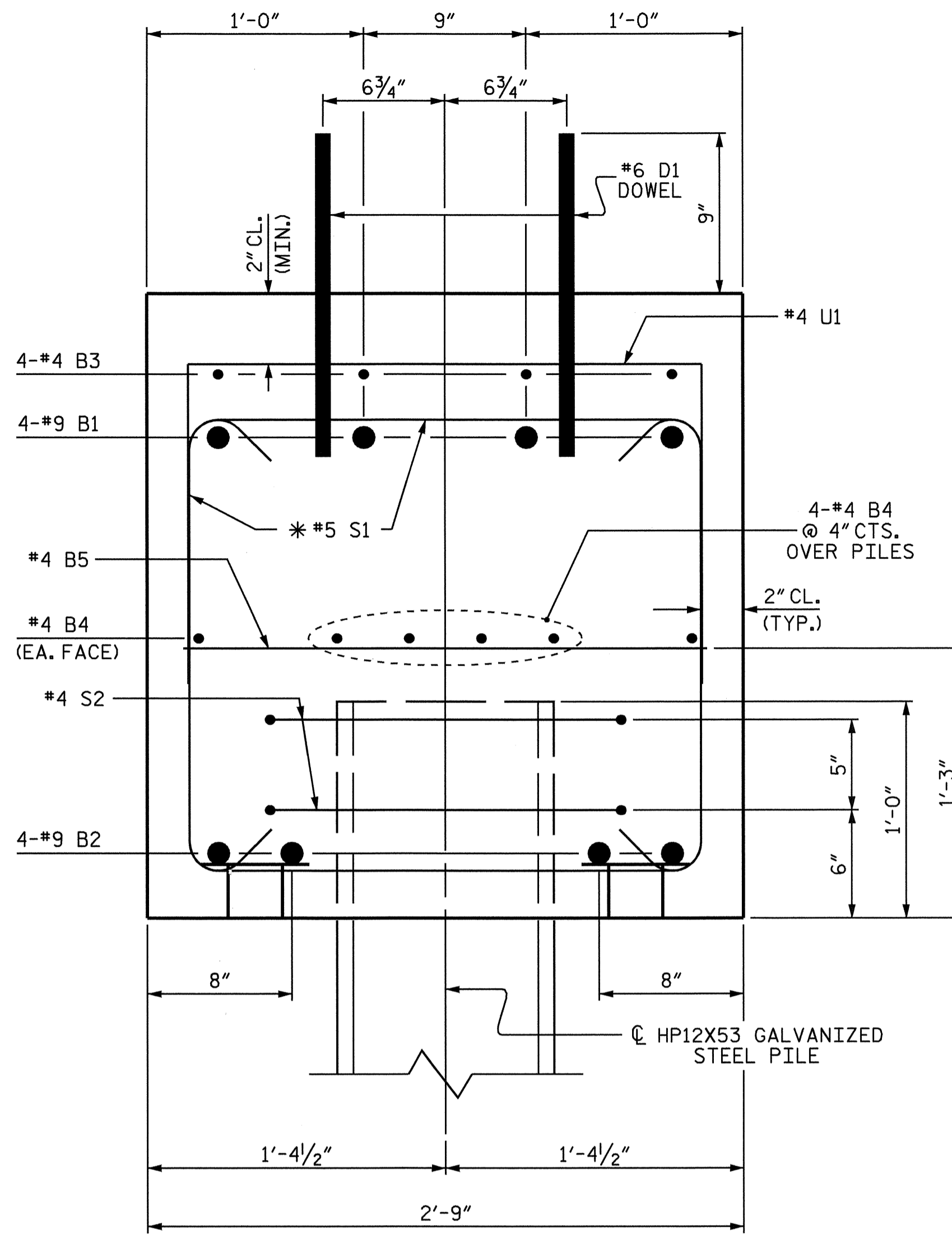


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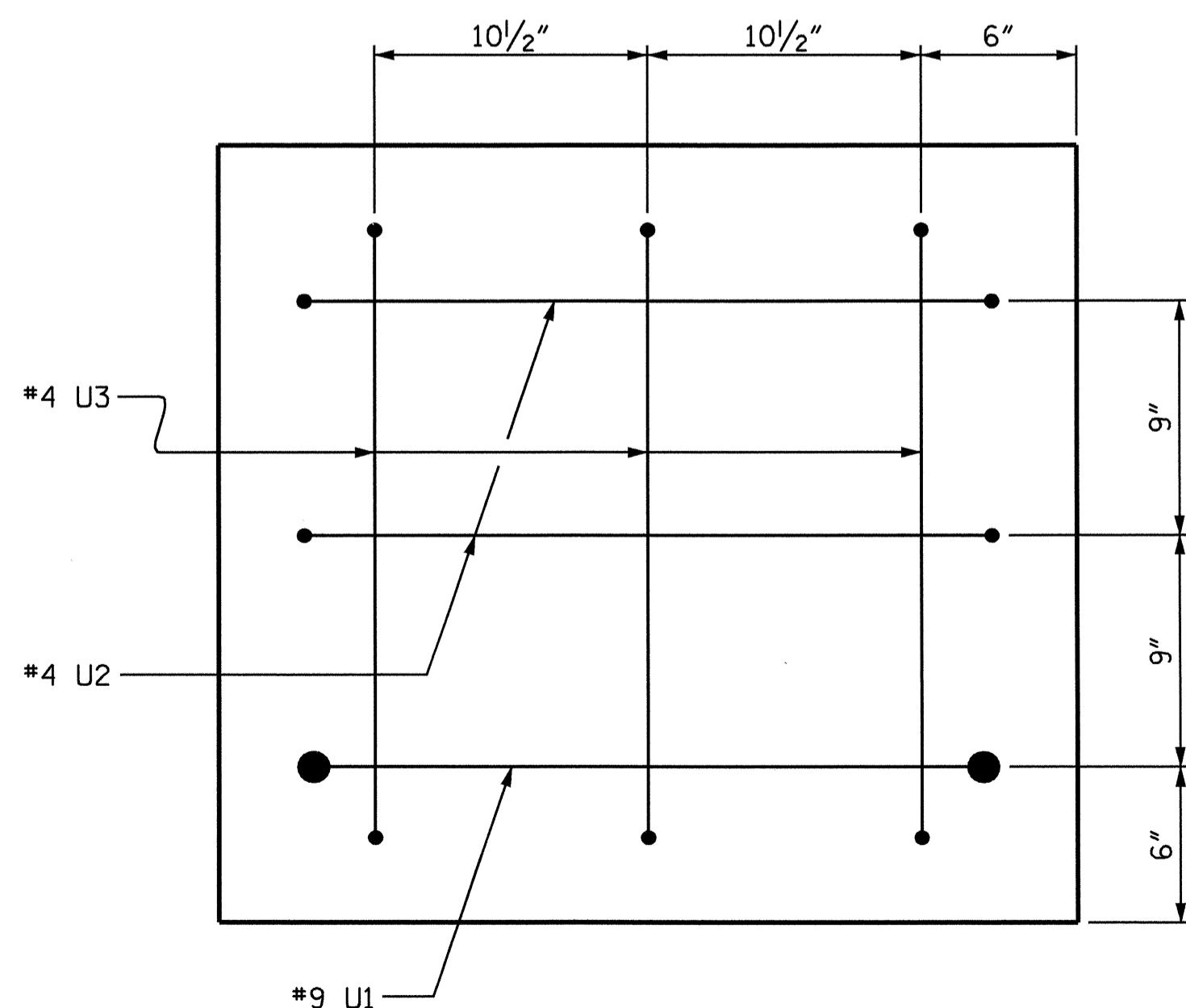
ELEVATION

LATERAL GUIDE DETAILS
(EACH END SIMILAR)



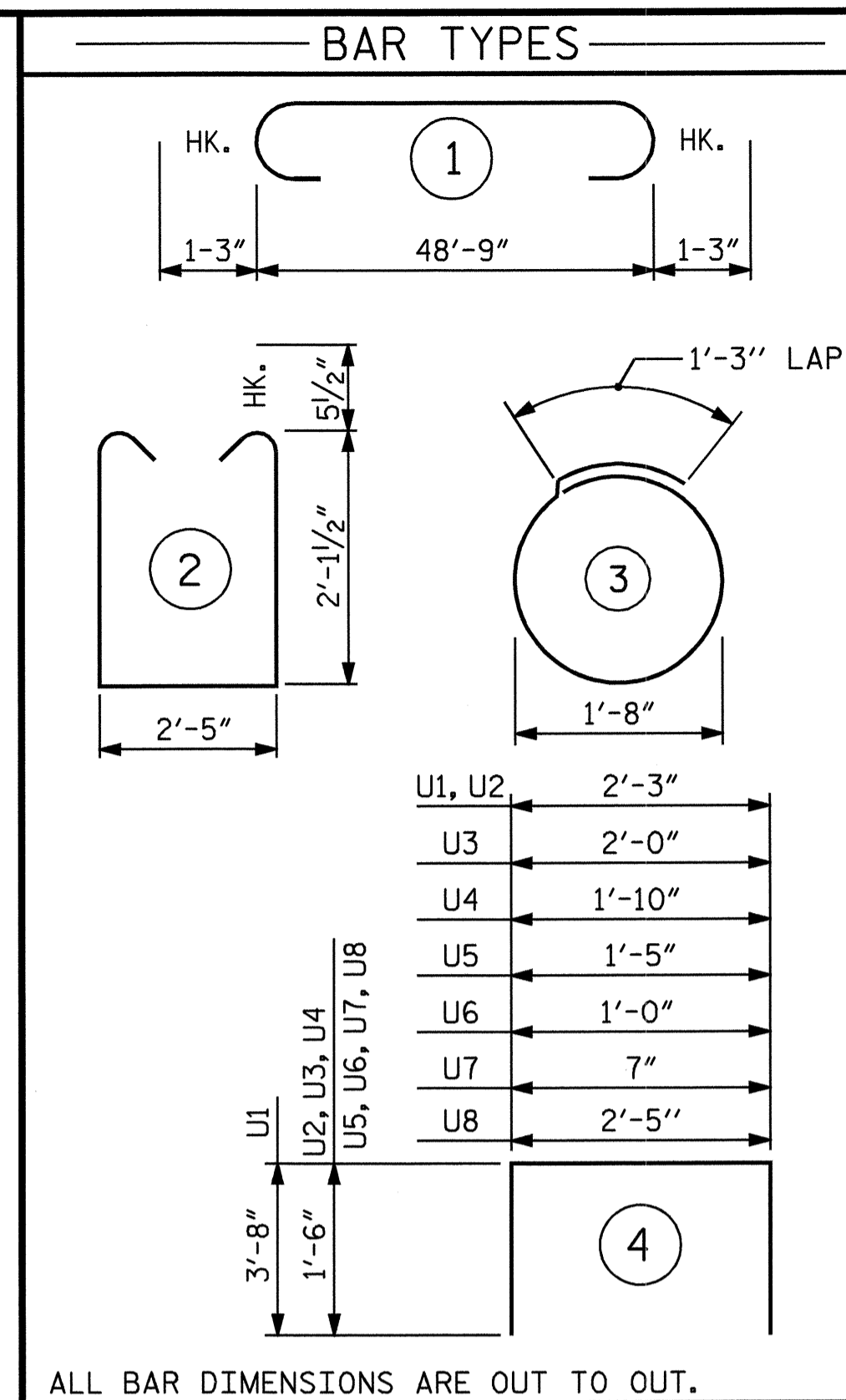
SECTION A-A

* INVERT ALTERNATE STIRRUPS



END VIEW

(TYP. EA. END)



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#9		51'-3"	697
B2	4	#9	STR	48'-11"	665
B3	4	#4	STR	26'-0"	69
B4	12	#4	STR	25'-8"	206
B5	15	#4	STR	2'-5"	24
B6	2	#4	STR	2'-9"	4
D1	52	#6	STR	1'-6"	117
S1	50	#5		7'-7"	395
S2	18	#4		6'-6"	78
U1	2	#9	4	9'-7"	65
U2	4	#4	4	5'-3"	14
U3	6	#4	4	5'-0"	20
U4	2	#4	4	4'-10"	6
U5	2	#4	4	4'-5"	6
U6	2	#4	4	4'-0"	5
U7	2	#4	4	3'-7"	5
U8	18	#4	4	5'-5"	65

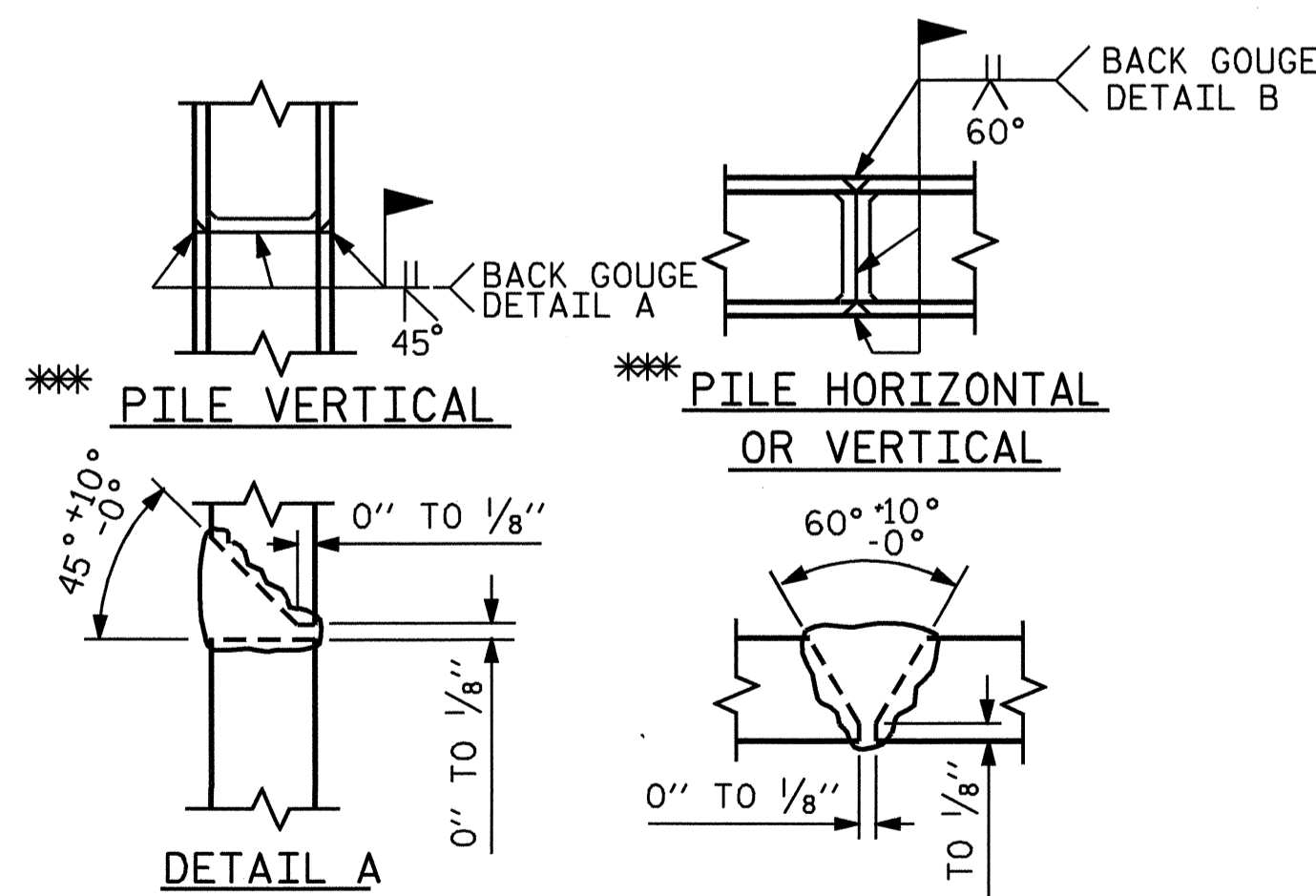
TOTAL REINFORCING STEEL LBS. 2441

CLASS A CONCRETE BREAKDOWN

POUR #1 (CAP) 13.8 C.Y.
POUR #2 (LAT. GUIDES) 0.2 C.Y.

TOTAL CLASS A CONCRETE 14.0 C.Y.

HP12X53 GALVANIZED STEEL PILES
NO. 9 225 LIN. FT.



*** POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

DRAWN BY : S. DOMBROWSKI DATE : 12/07
CHECKED BY : H. LOCKLEAR DATE : 1/08

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jpadams

PROJECT NO. B-3655
HARNETT COUNTY
STATION: 17+50.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #1



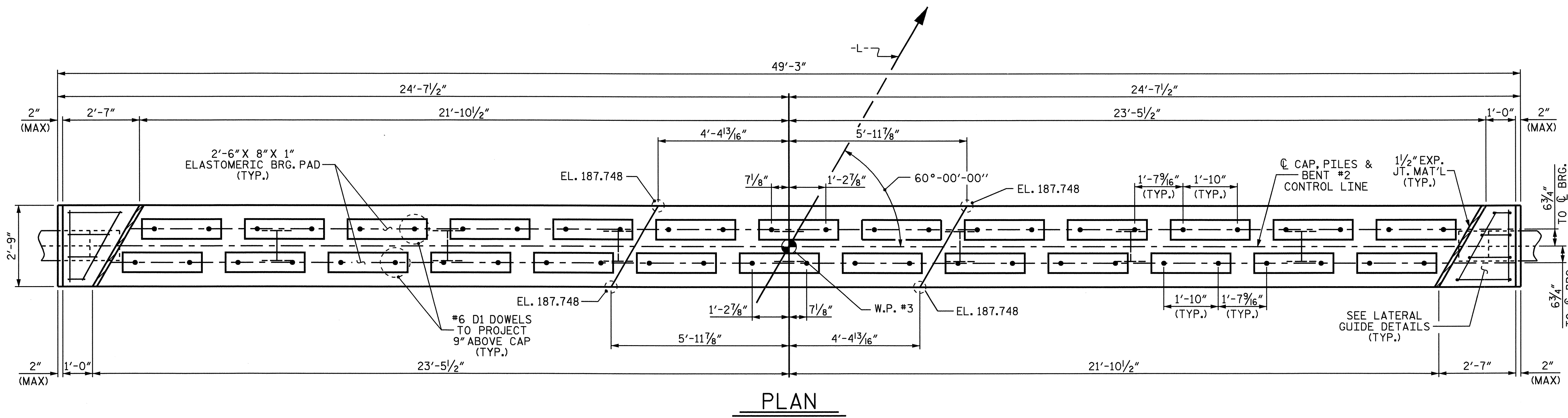
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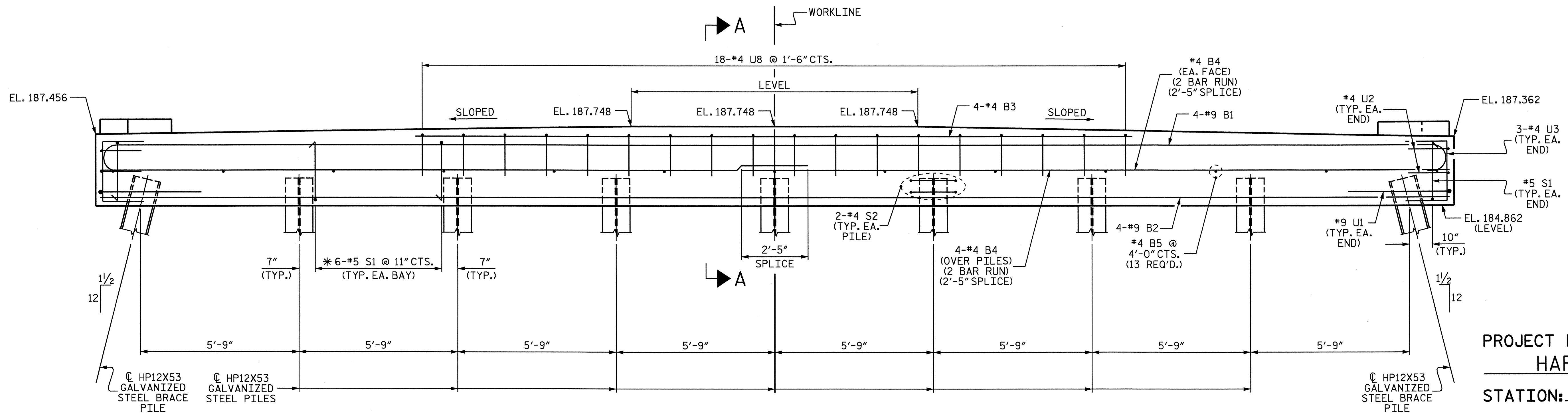
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

THE STEEL PILES SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



PLAN



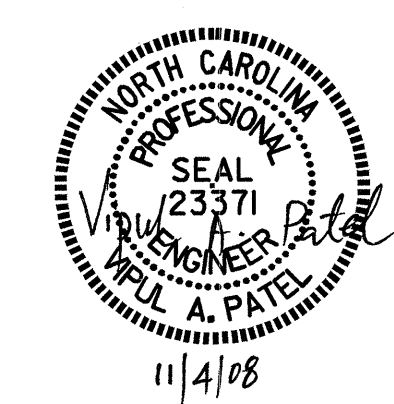
ELEVATION

* INVERT ALTERNATE STIRRUPS

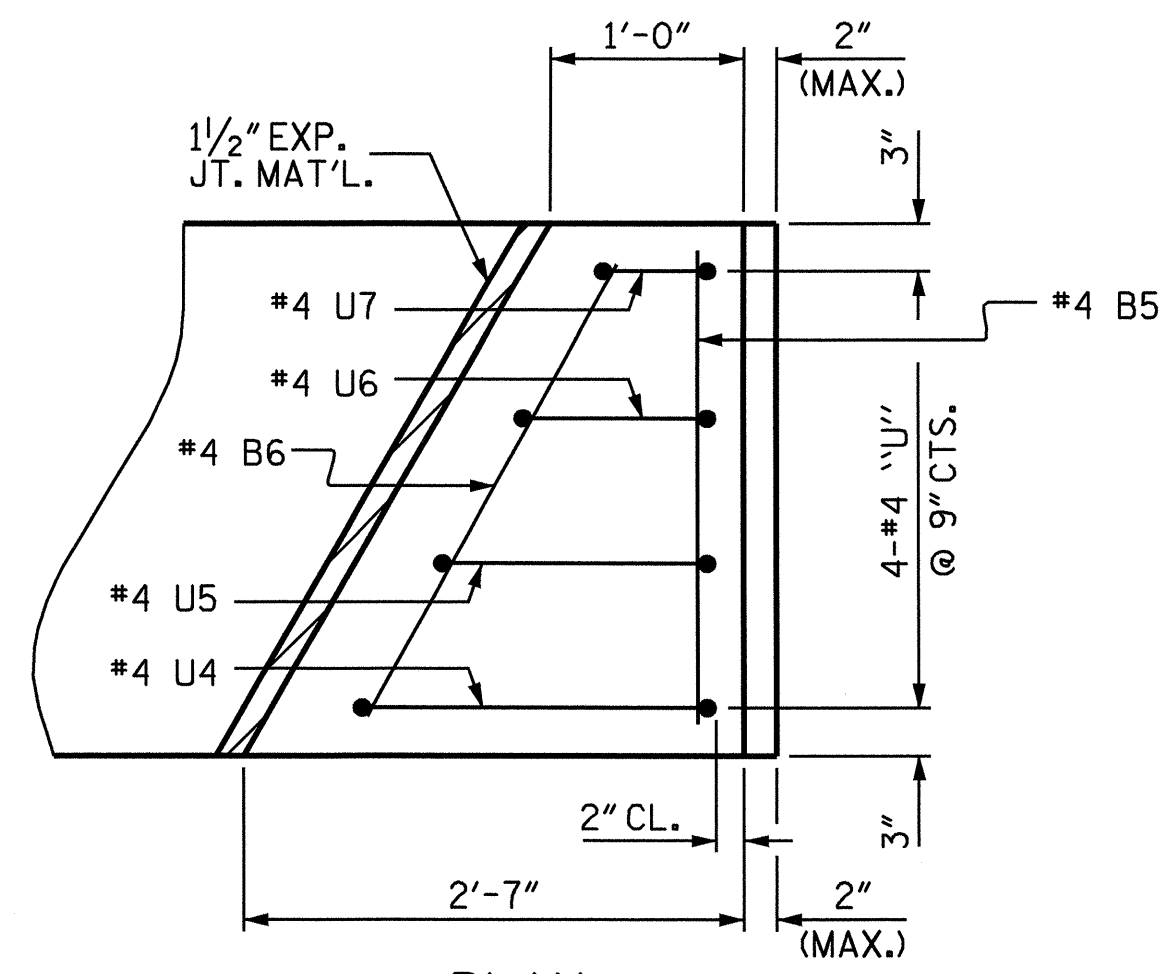
PROJECT NO. B-3655
HARNETT COUNTY
 STATION: 17+50.50 -L-

SHEET 1 OF 2

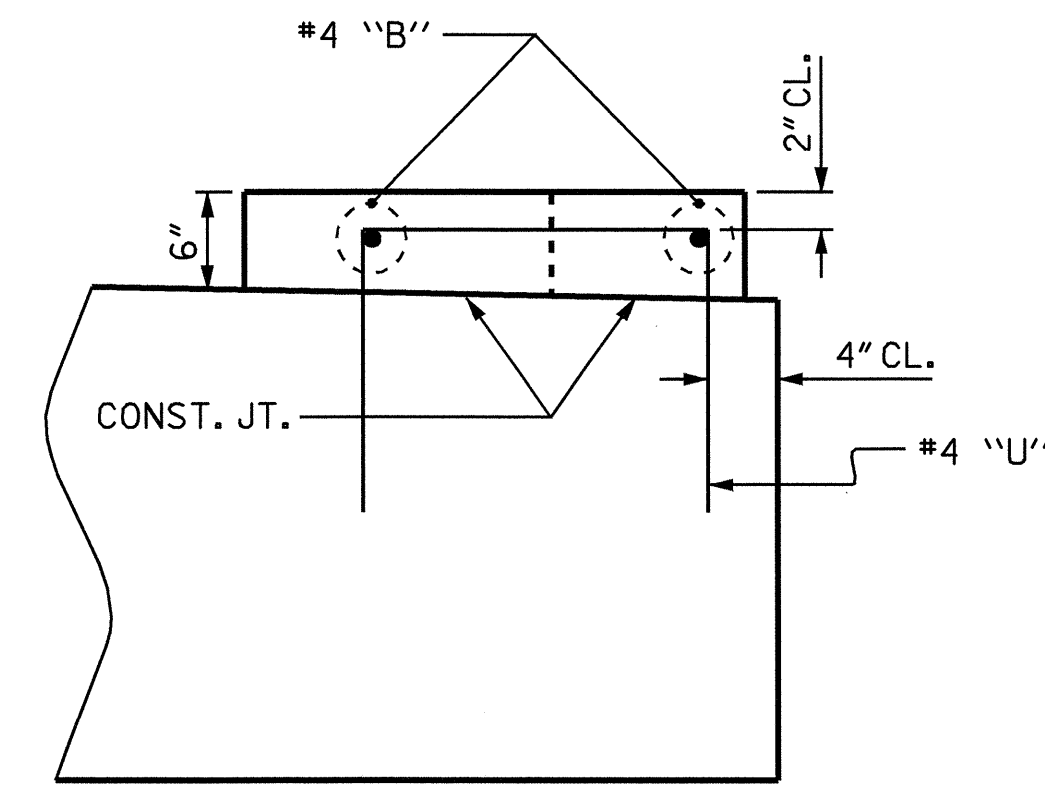
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT #2					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-15 TOTAL SHEETS 22



DRAWN BY : S. DOMBROWSKI DATE : 12/07
 CHECKED BY : H. LOCKLEAR DATE : 1/08



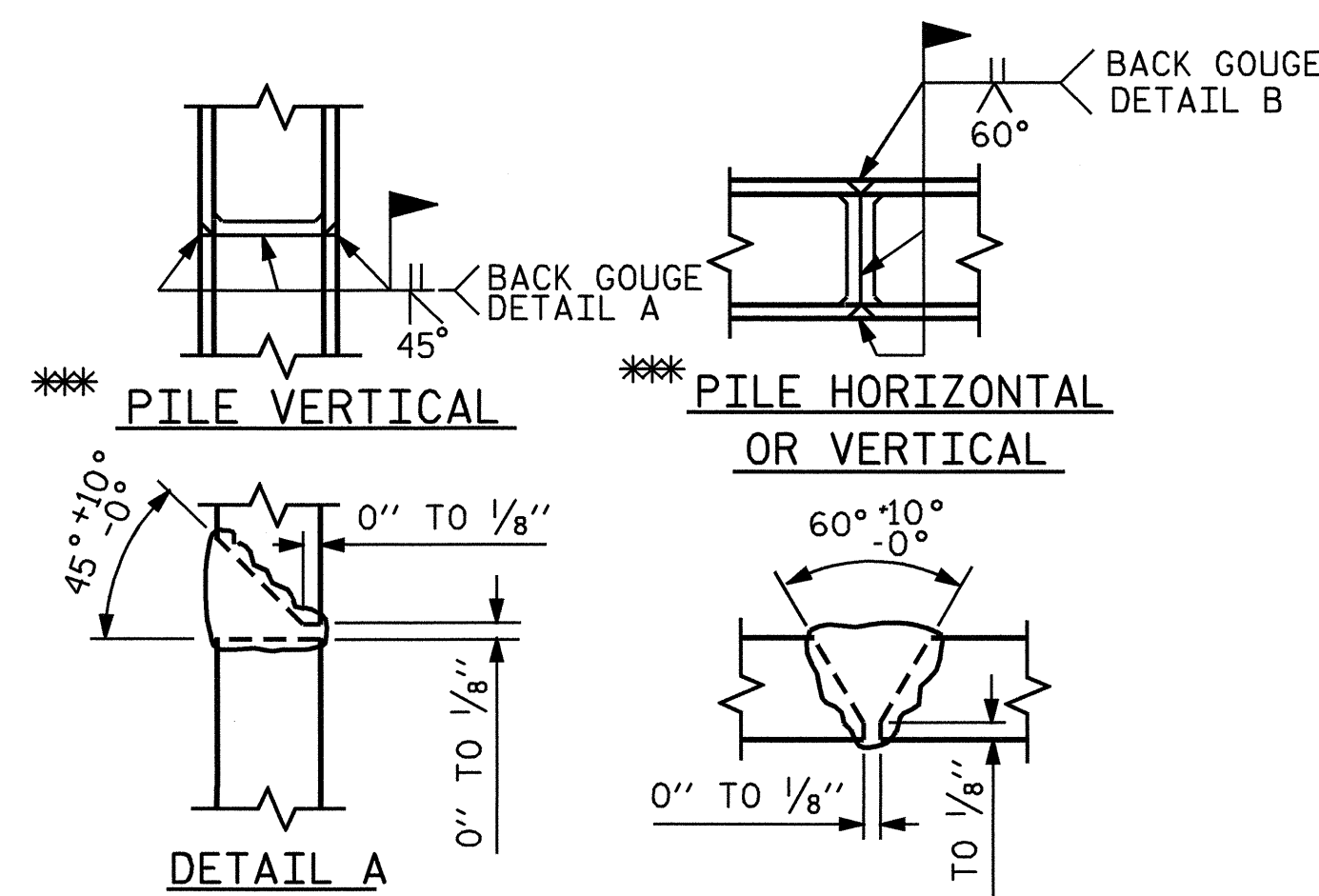
PLAN



ELEVATION

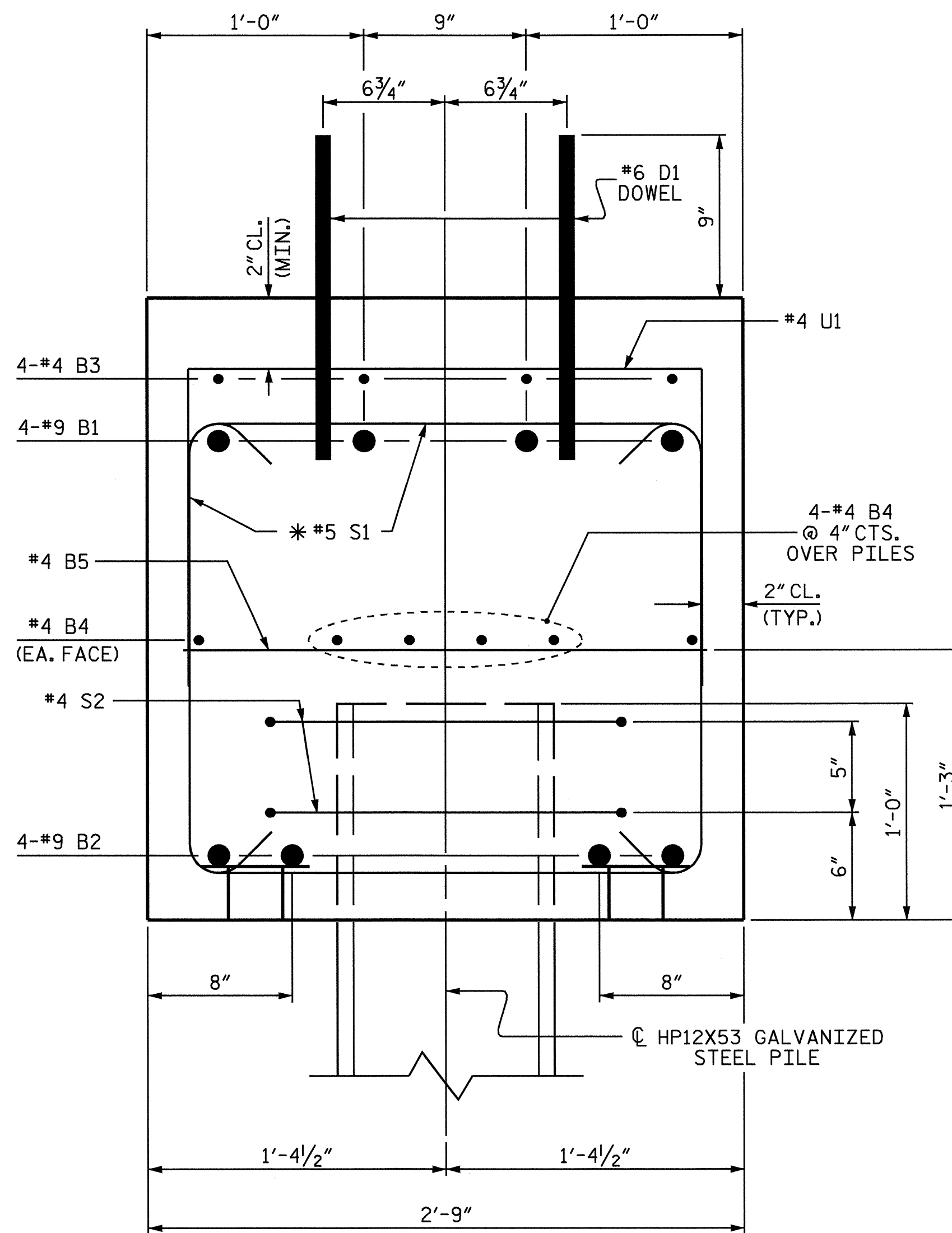
LATERAL GUIDE DETAILS

(EACH END SIMILAR)



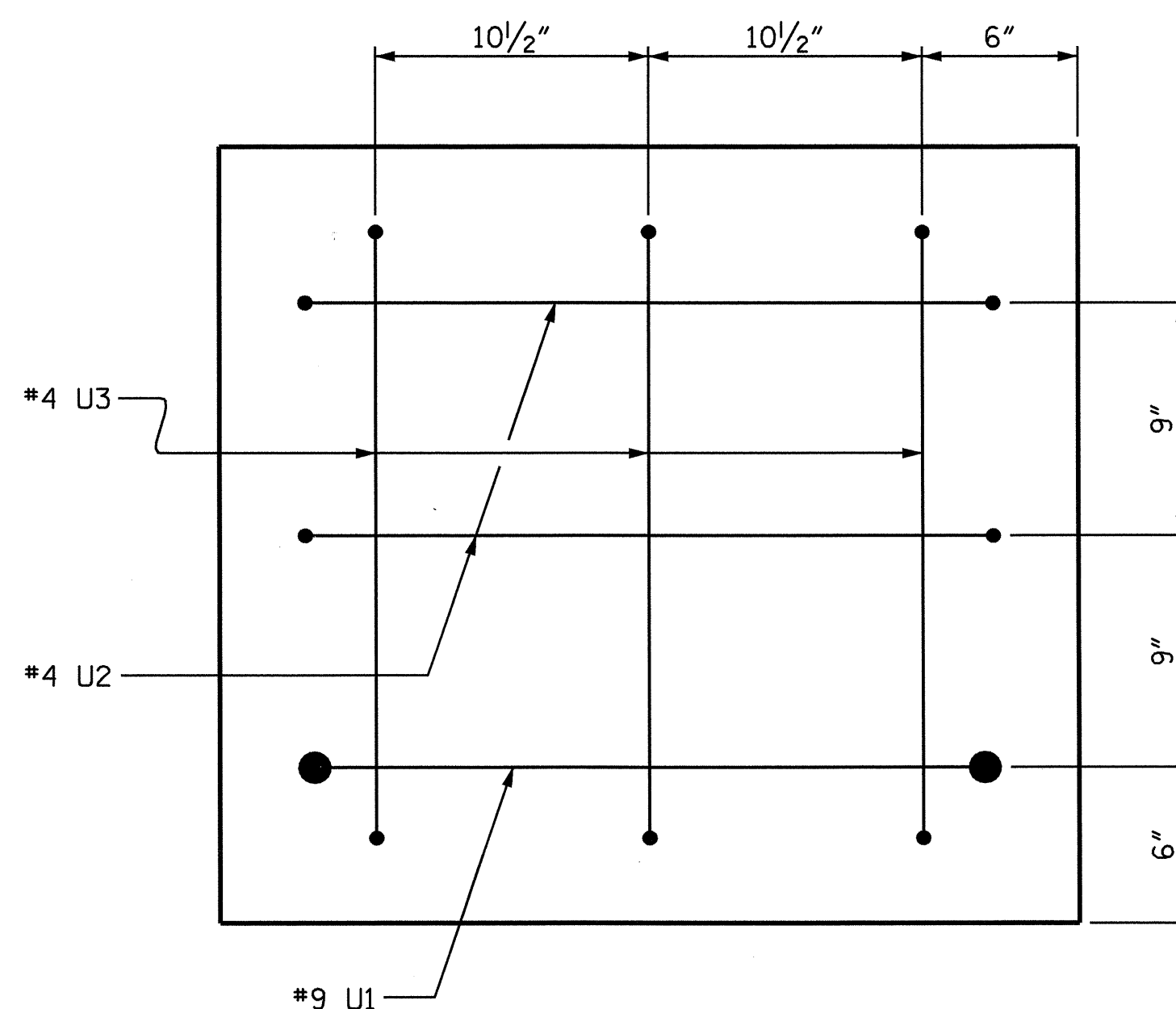
*** POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



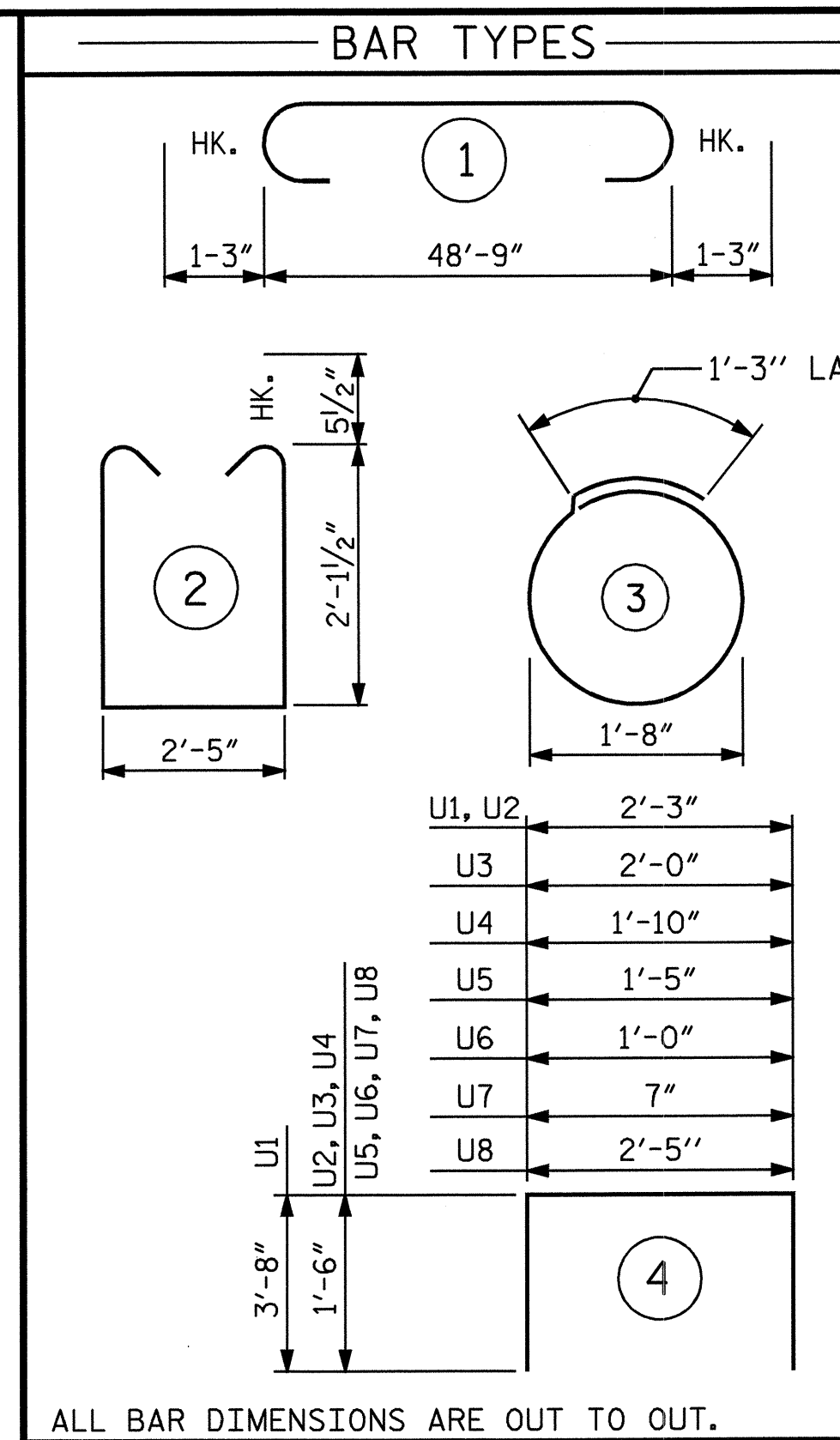
SECTION A-A

* INVERT ALTERNATE STIRRUPS



END VIEW

(TYP. EA. END)



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#9		51'-3"	697
B2	4	#9	STR	48'-11"	665
B3	4	#4	STR	26'-0"	69
B4	12	#4	STR	25'-8"	206
B5	15	#4	STR	2'-5"	24
B6	2	#4	STR	2'-9"	4
D1	52	#6	STR	1'-6"	117
S1	50	#5	2	7'-7"	395
S2	18	#4	3	6'-6"	78
U1	2	#9	4	9'-7"	65
U2	4	#4	4	5'-3"	14
U3	6	#4	4	5'-0"	20
U4	2	#4	4	4'-10"	6
U5	2	#4	4	4'-5"	6
U6	2	#4	4	4'-0"	5
U7	2	#4	4	3'-7"	5
U8	18	#4	4	5'-5"	65

TOTAL REINFORCING STEEL LBS. 2441

CLASS A CONCRETE BREAKDOWN

POUR #1 (CAP) 13.8 C.Y.
POUR #2 (LAT. GUIDES) 0.2 C.Y.

TOTAL CLASS A CONCRETE 14.0 C.Y.

HP12X53 GALVANIZED STEEL PILES
NO. 9 225 LIN. FT.

PROJECT NO. B-3655
HARNETT COUNTY
STATION: 17+50.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #2



REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-16
2			4			TOTAL SHEETS 22

DRAWN BY: S. DOMBROWSKI DATE: 12/07
CHECKED BY: H. LOCKLEAR DATE: 1/08

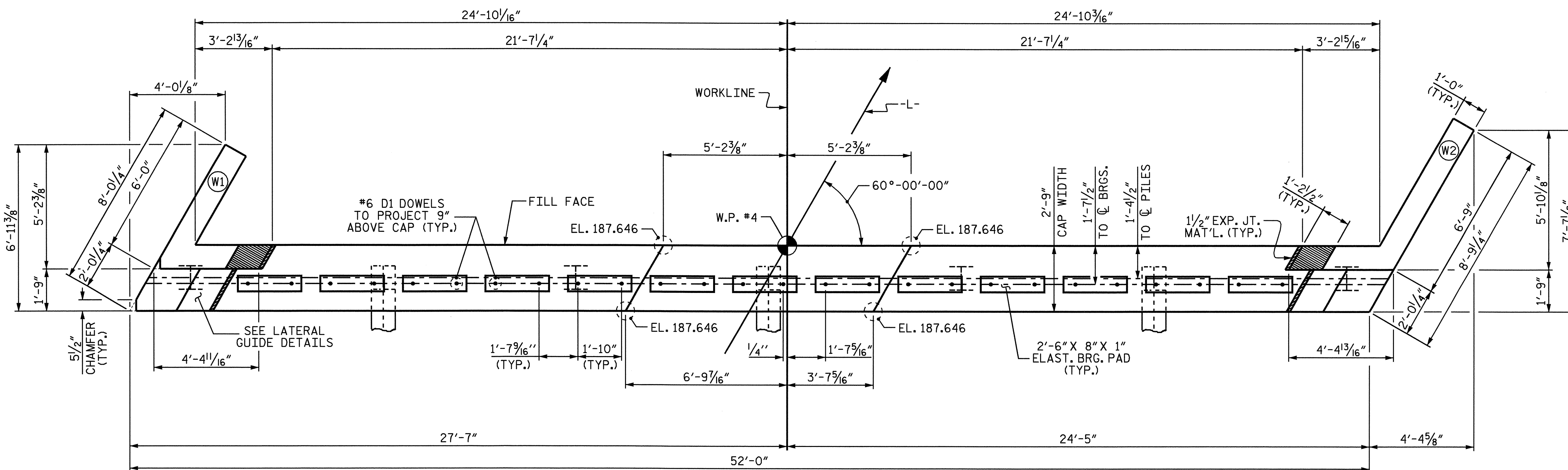
NOTES

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

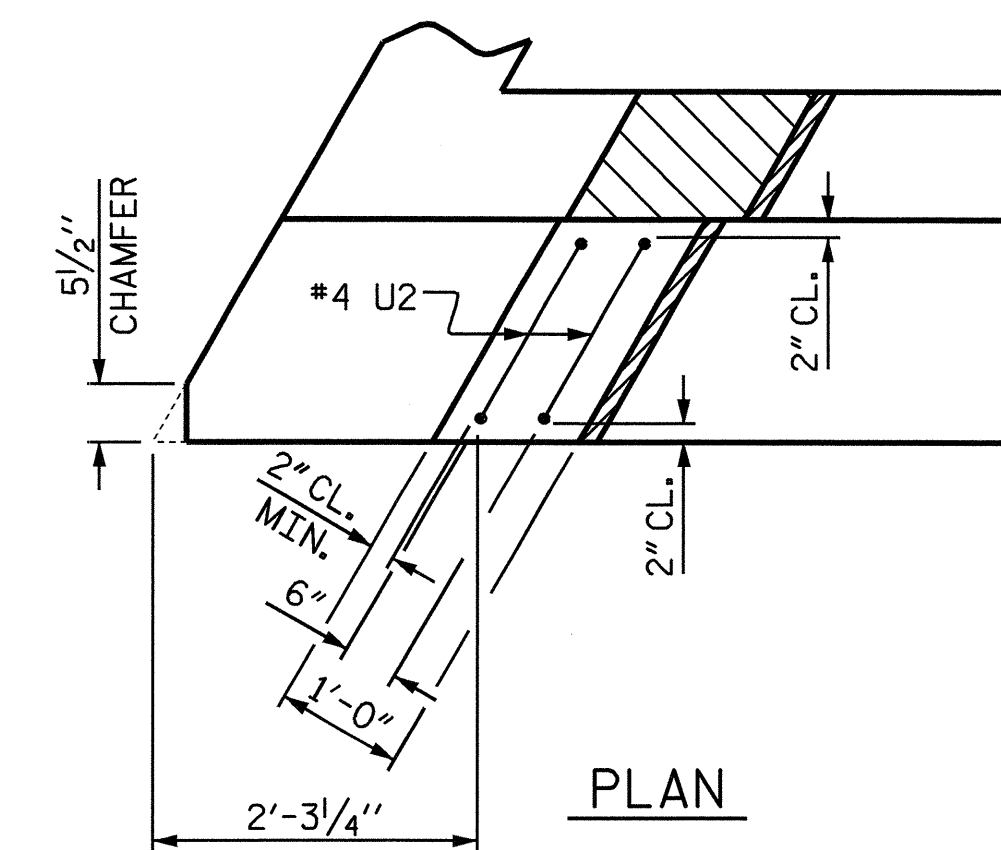
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

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.

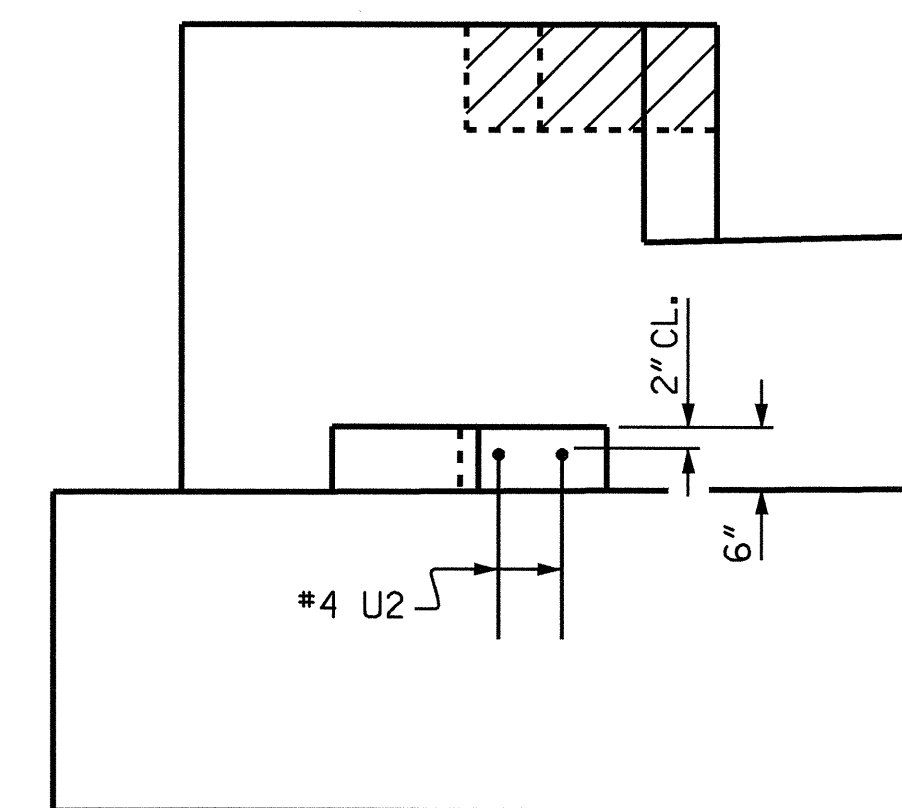
THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.



PLAN



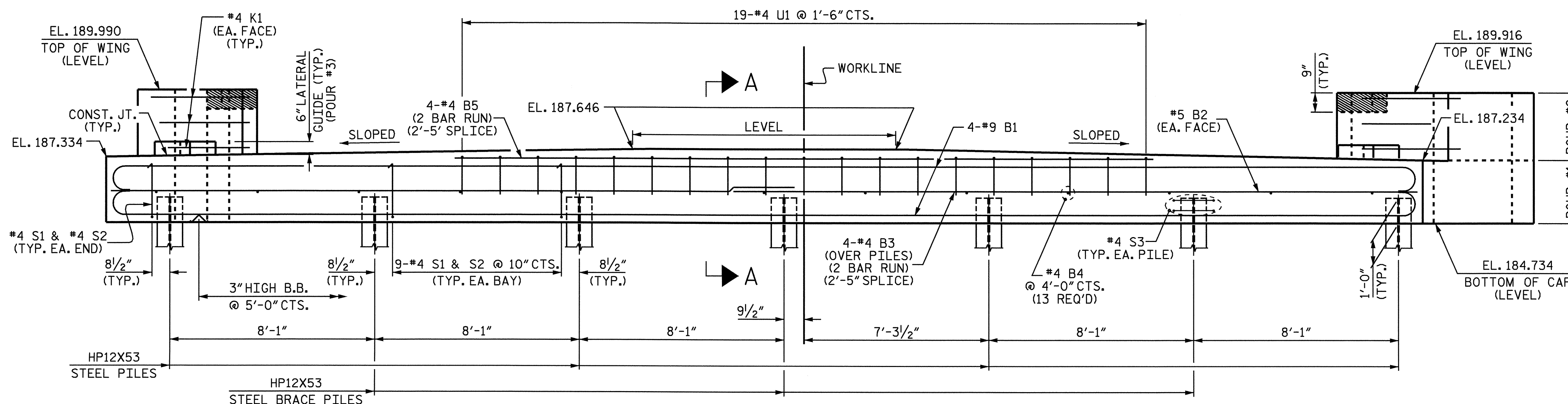
PLAN



ELEVATION

LATERAL GUIDE DETAILS

(SIMILAR EACH END)



ELEVATION

PROJECT NO. B-3655
 HARNETT COUNTY
 STATION: 17+50.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #2

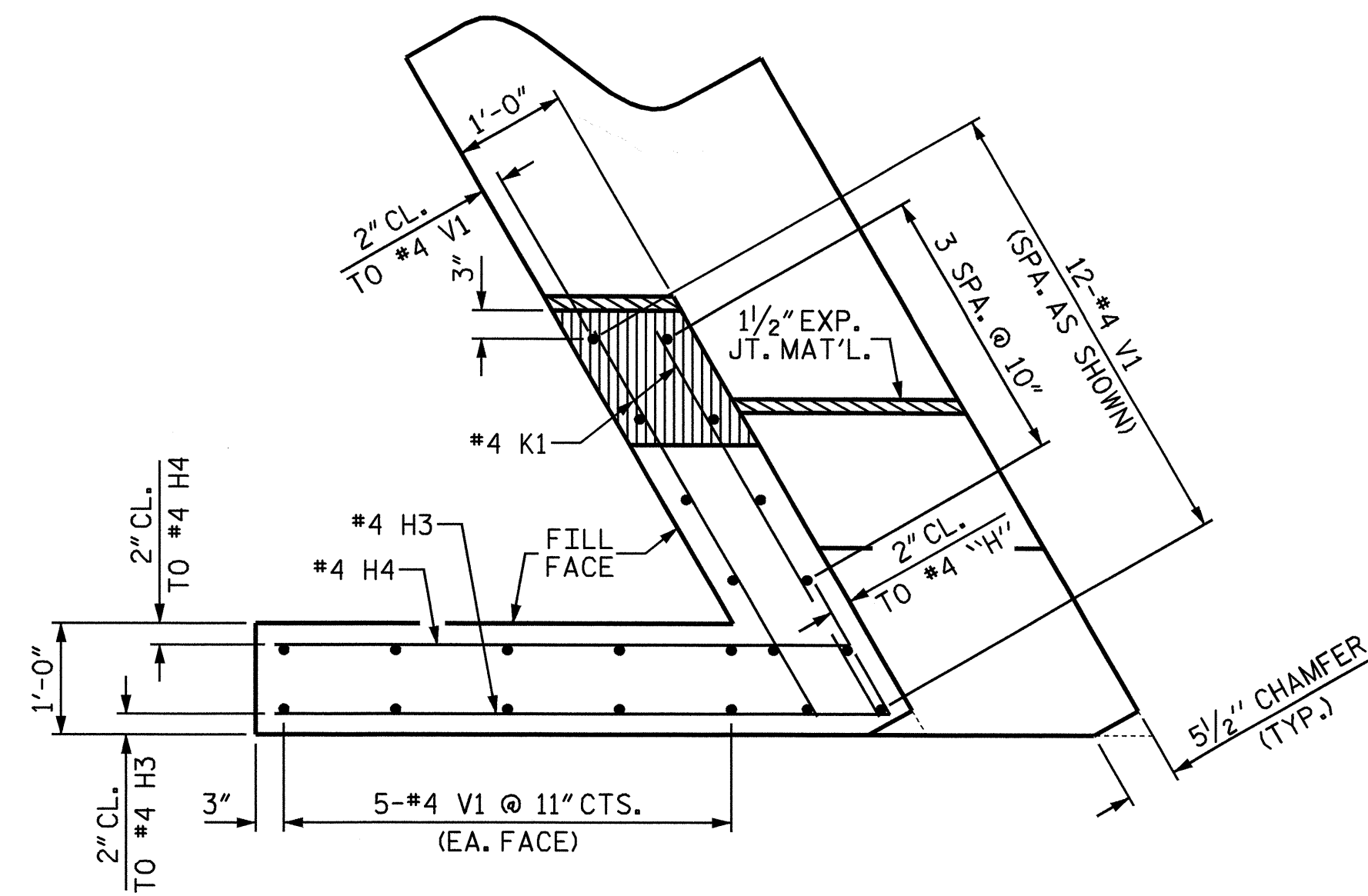


2/20/09

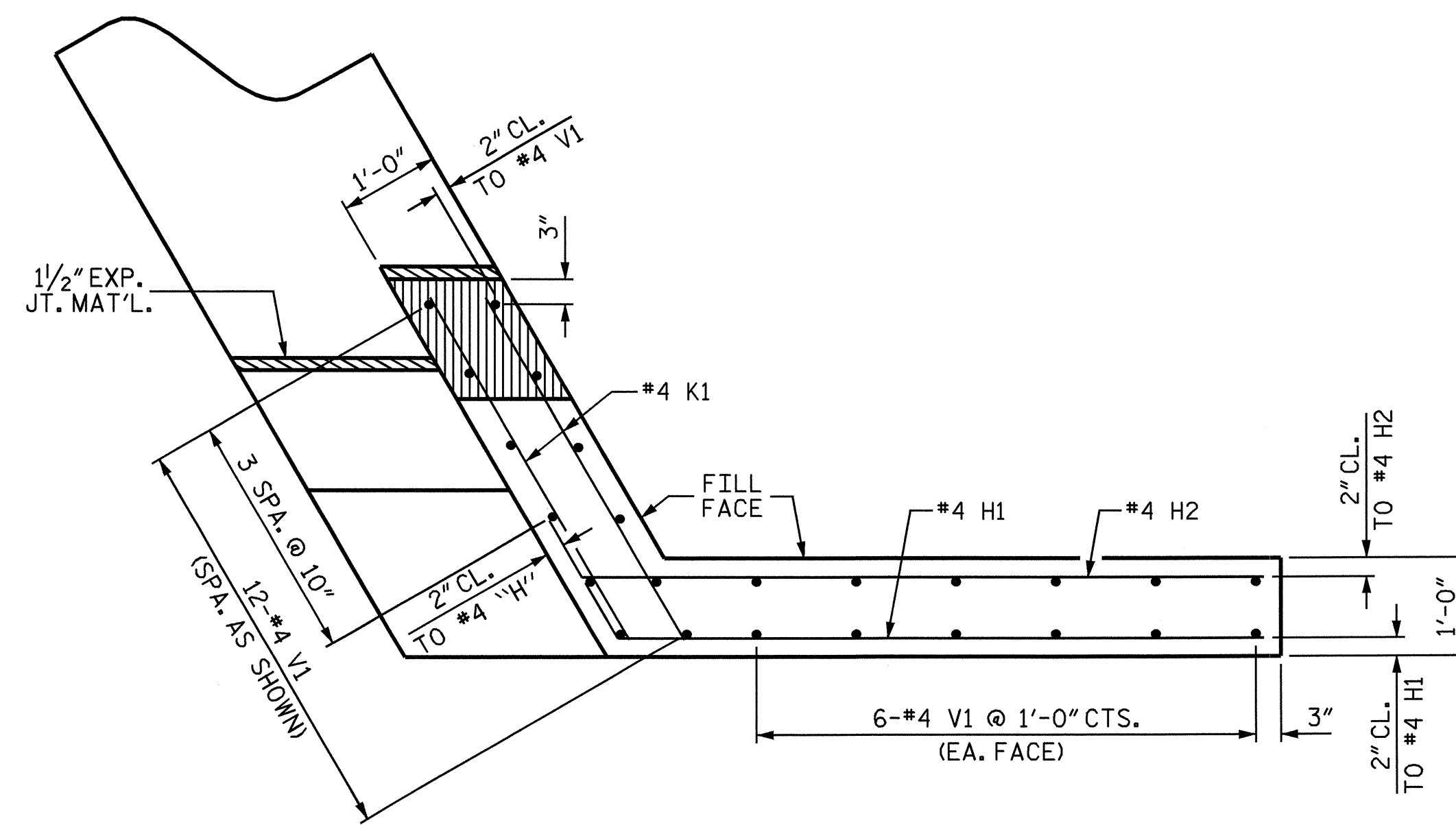
DRAWN BY : S. DOMBROWSKI DATE : 03/08
 CHECKED BY : J.P. ADAMS DATE : 3/13/08

20-FEB-2009 08:49
 EA:\STRUCT\2\Plans\B-3655.ed.EB.dgn
 klayne

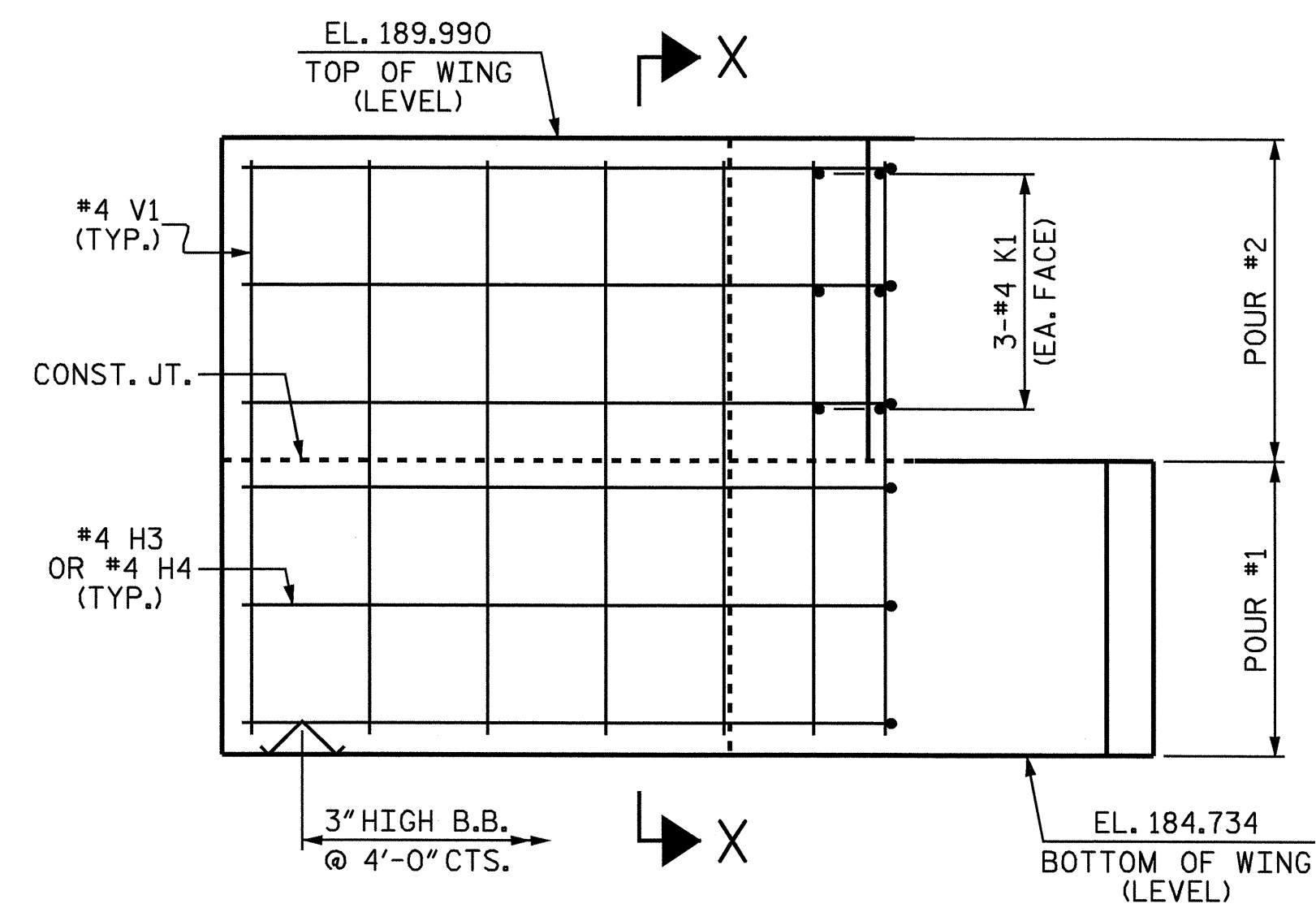
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17	
1			3			TOTAL SHEETS	
2			4			22	



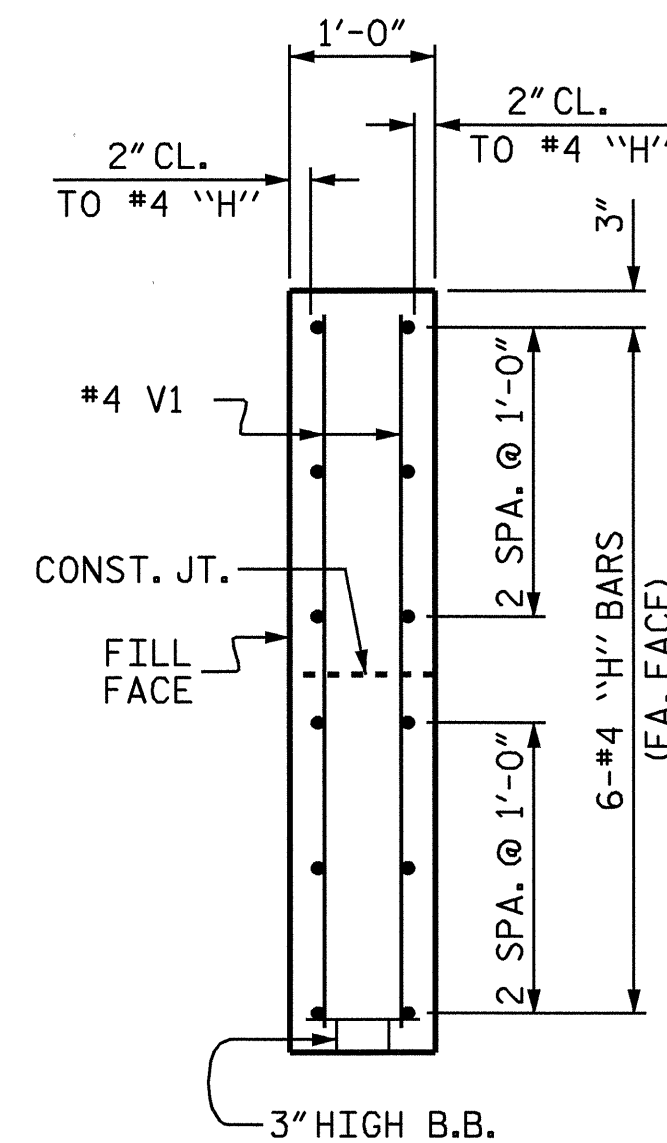
PLAN OF WING - W1



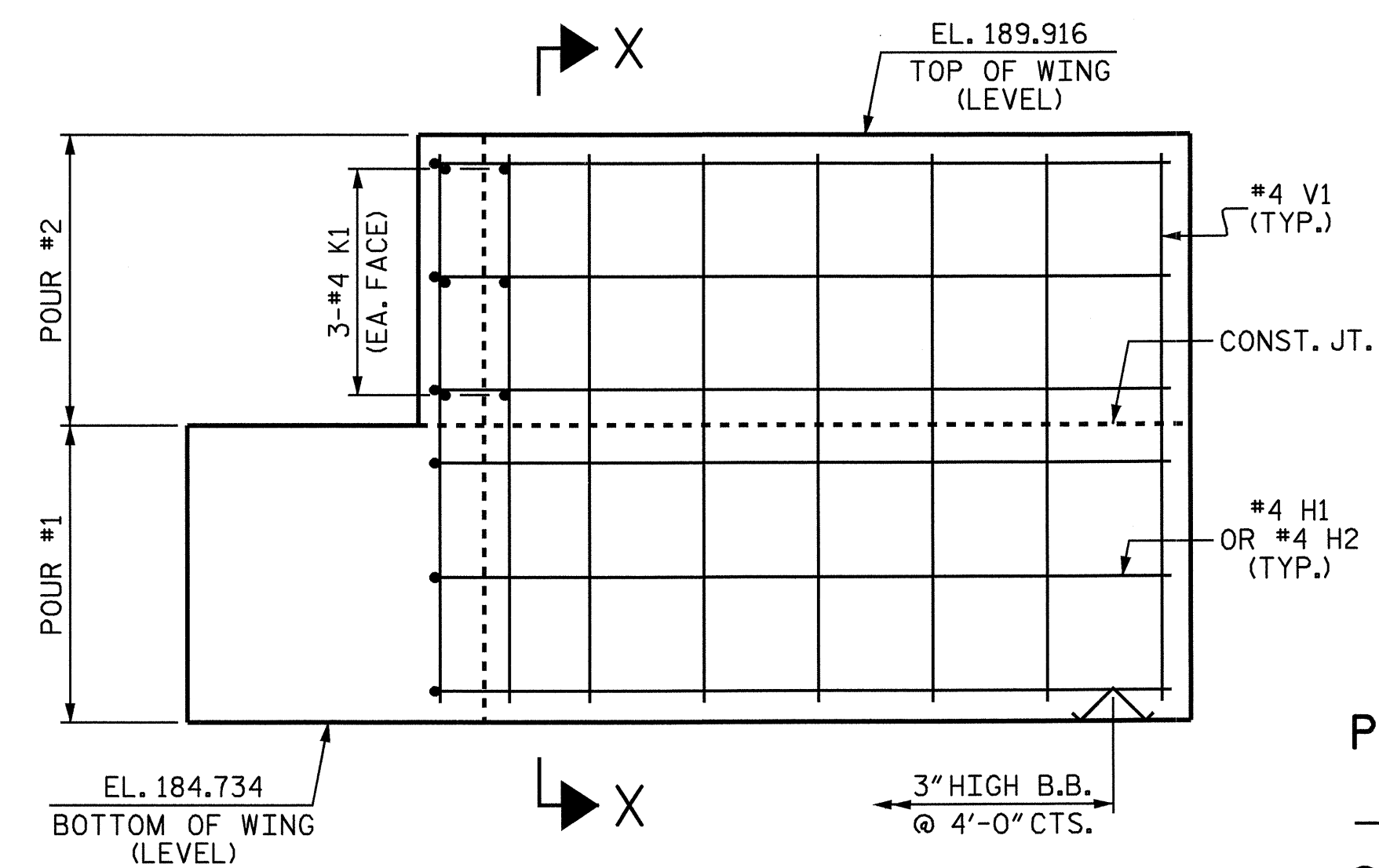
PLAN OF WING - W2



ELEVATION OF WING - W1



SECTION X-X



ELEVATION OF WING - W2

PROJECT NO. B-3655
 HARNETT COUNTY
 STATION: 17+50.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #2

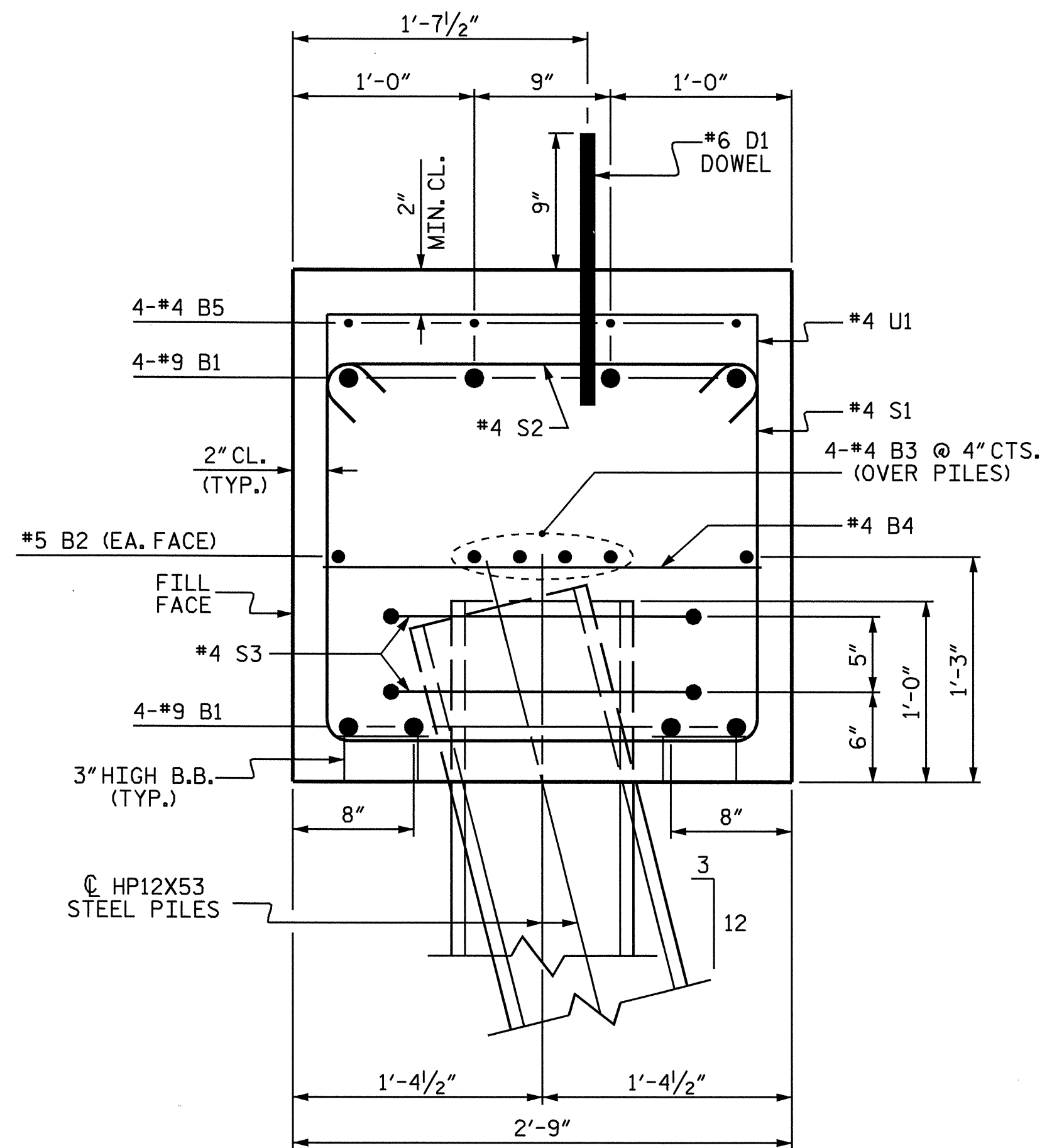


11/3/08

DRAWN BY: S. DOMBROWSKI DATE: 03/08
 CHECKED BY: J.P. ADAMS DATE: 3/13/08

03-NOV-2008 11:36
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 jpadams

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

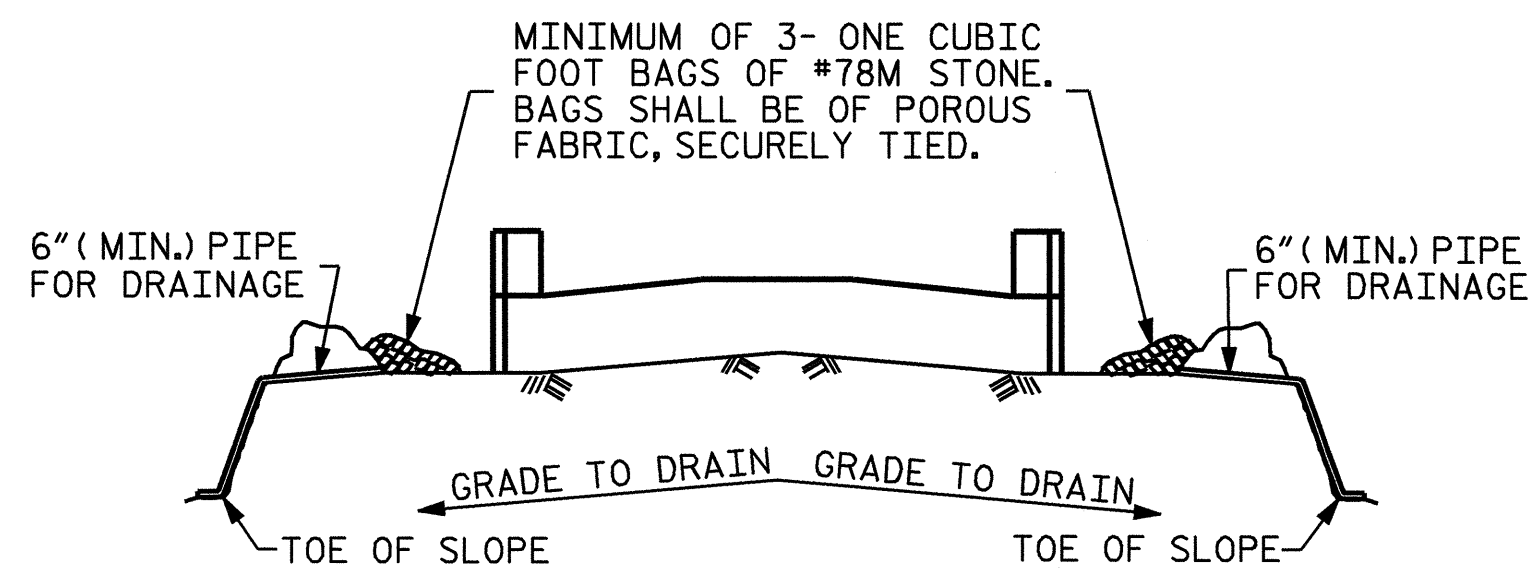


SECTION A-A

BAR TYPES					
①	HK.	1'-3"	51'-6"	1'-3"	HK.
②	4"	6'-5"	6'-10"	H1	H2
③	4"	5'-6"	5'-2"	H3	H4
④	4 1/2"	2'-1 1/2"	2'-5"	U1	U2
⑤	4 1/2"	2'-5"	4 1/2"	HK.	HK.
⑥	1'-3" LAP	1'-8"			
⑦	1'-6"				

BILL OF MATERIAL					
END BENT #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	54'-0"	1469
B2	2	#5	STR.	51'-8"	108
B3	8	#4	STR.	27'-1"	145
B4	13	#4	STR.	2'-5"	21
B5	4	#4	STR.	27'-7"	74
D1	26	#6	STR.	1'-6"	59
H1	6	#4	2	7'-1"	28
H2	6	#4	2	7'-6"	30
H3	6	#4	3	6'-2"	25
H4	6	#4	3	5'-10"	23
K1	12	#4	STR.	4'-0"	32
S1	56	#4	4	7'-5"	277
S2	56	#4	5	3'-2"	118
S3	14	#4	6	6'-6"	61
U1	19	#4	7	5'-5"	69
U2	4	#4	7	4'-7"	12
V1	46	#4	STR.	4'-11"	151
REINFORCING STEEL					Lbs. 2702
CLASS "A" CONCRETE					
POUR #1 CAP & LOWER WINGS					
					CU.YDS. 15.9
POUR #2 UPPER WINGS					
					CU.YDS. 1.9
POUR #3 LATERAL GUIDES					
					CU.YDS. 0.1
TOTAL					
					CU.YDS. 17.9
HP12x53 STEEL PILES					
No. 7					LIN. FT. 140.0

ALL BAR DIMENSIONS ARE OUT TO OUT.

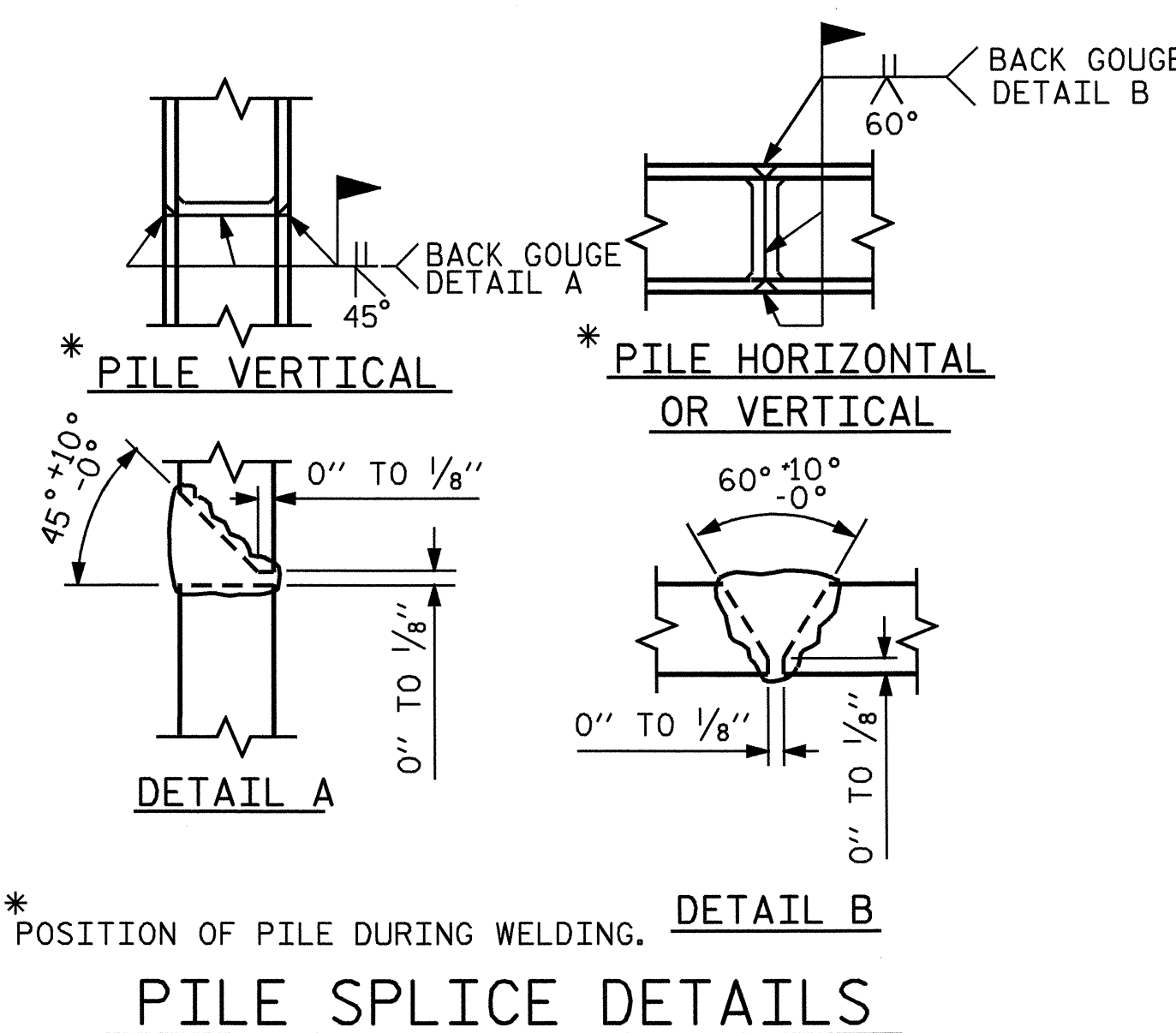


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

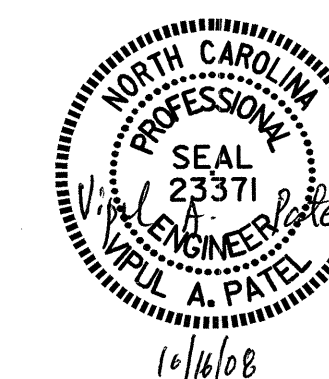
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



* POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

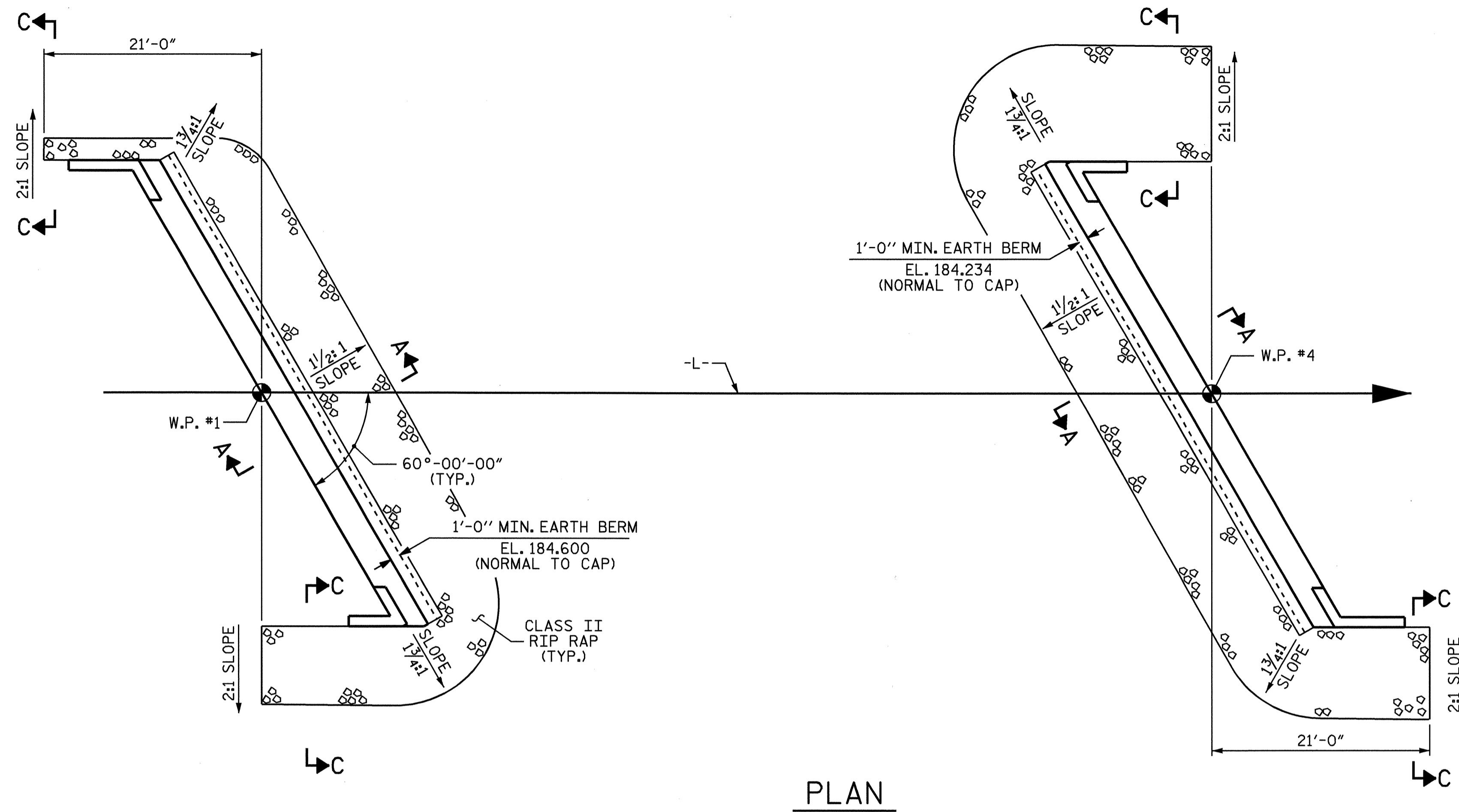


PROJECT NO. B-3655
HARNETT COUNTY
 STATION: 17+50.50 -L-

SHEET 3 OF 3

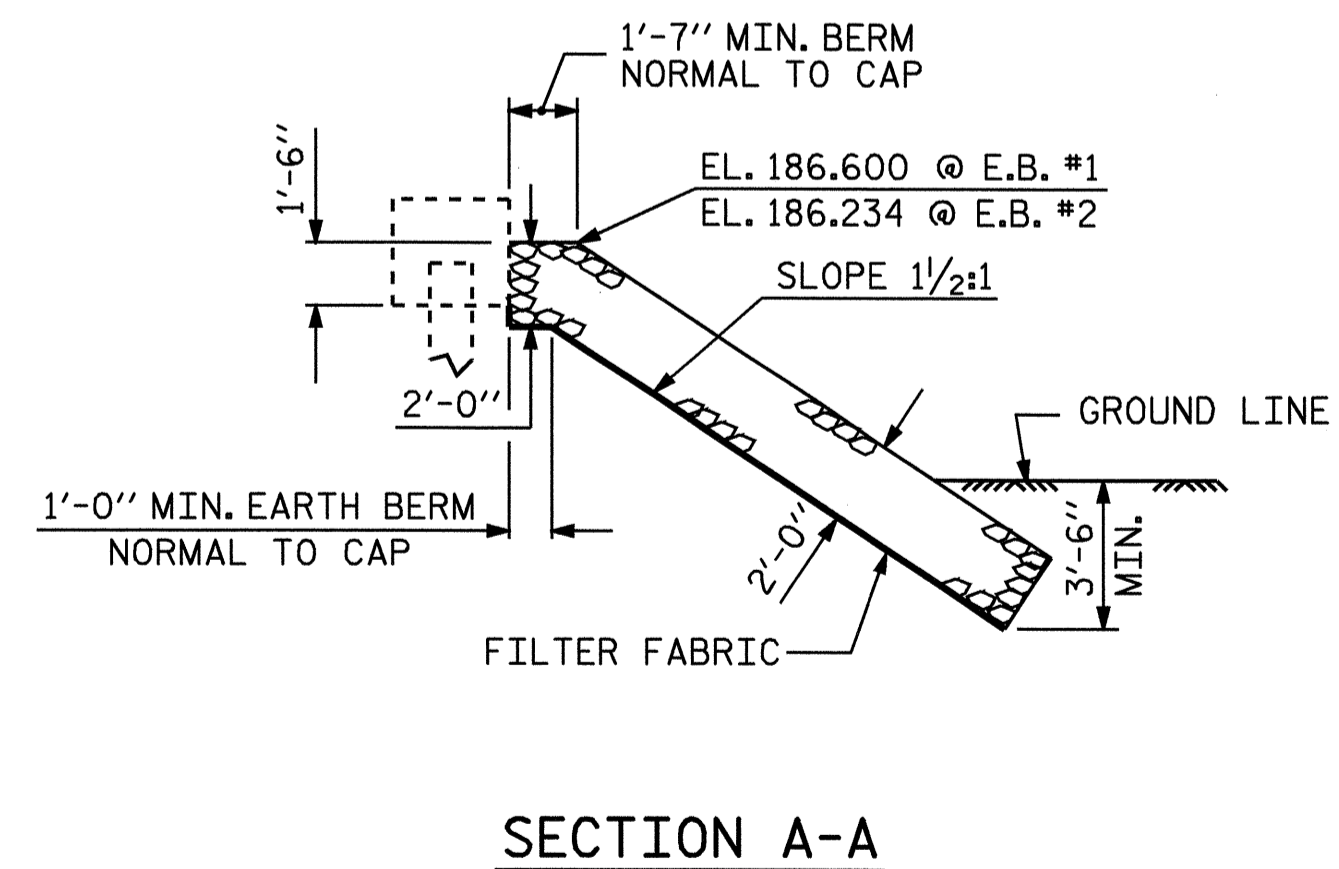
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT #2					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					22

DRAWN BY : S. DOMBROWSKI DATE : 03/08
 CHECKED BY : J.P. ADAMS DATE : 3/13/08

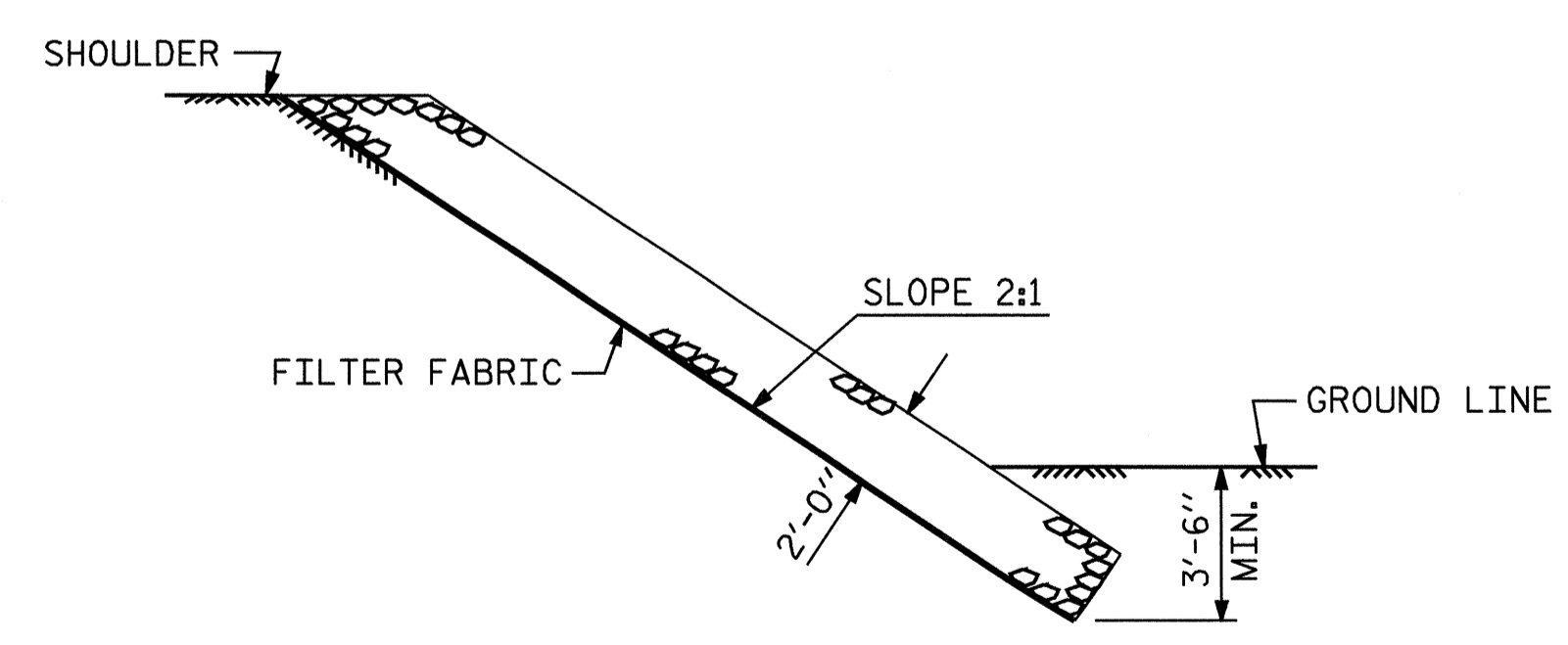


PLAN

ESTIMATED QUANTITIES		
BRIDGE @ STA. 17+50.50 -L-	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT #1	132	150
END BENT #2	141	160

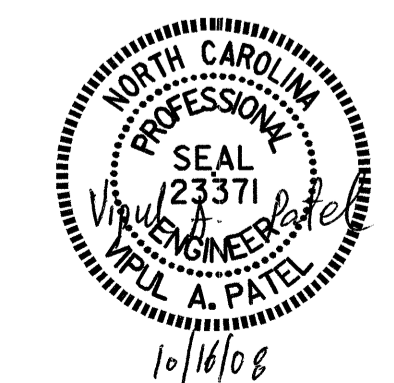


SECTION A-A



SECTION C-C

PROJECT NO. B-3655
HARNETT COUNTY
 STATION: 17+50.50 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

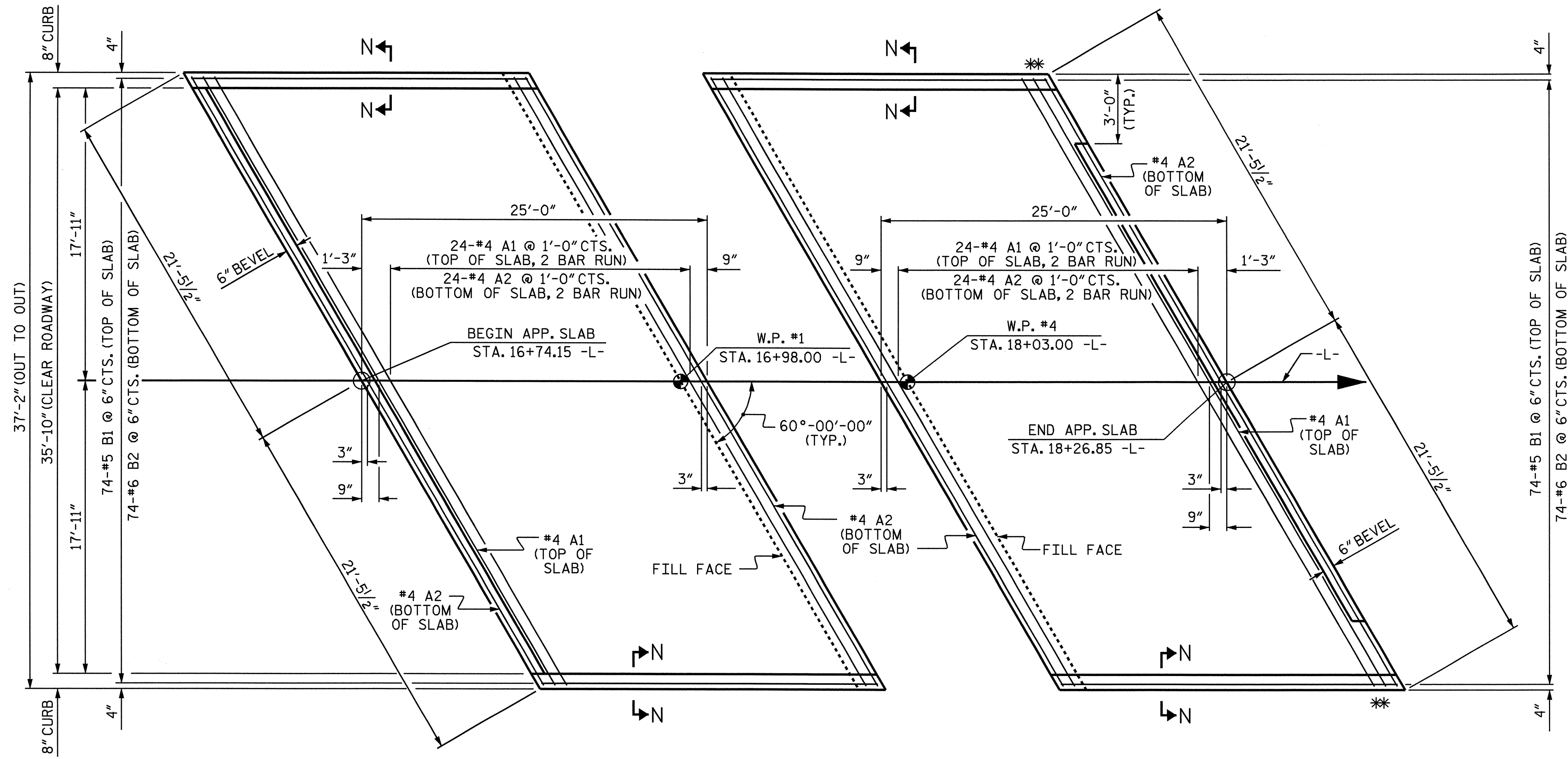
—RIP RAP DETAILS—

REVISIONS						SHEET NO. S-20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			

ASSEMBLED BY : S. DOMBROWSKI DATE : 06/04/08
 CHECKED BY : M.K. BEARD DATE : 06/09/08
 DRAWN BY : REK 1/84 REV. 8/16/99 RWW/LES
 CHECKED BY : RDU 1/84 REV. 10/17/00 RWW/LES
 REV. 5/1/06 TLA/GM

BILL OF MATERIAL					
ONE APPROACH SLAB (2 REQ'D.)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	50	#4	STR	22'-4"	746
A2	52	#4	STR	22'-2"	770
*B1	74	#5	STR	23'-6"	1814
B2	74	#6	STR	24'-7"	2732
REINFORCING STEEL				LBS.	3502
* EPOXY COATED REINFORCING STEEL				LBS.	2560
CLASS AA CONCRETE				C. Y.	38.6

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



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.

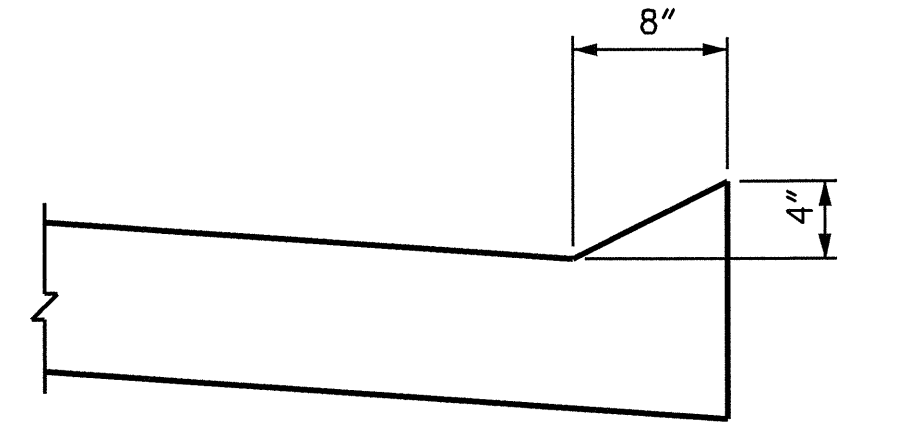
THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER 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 EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

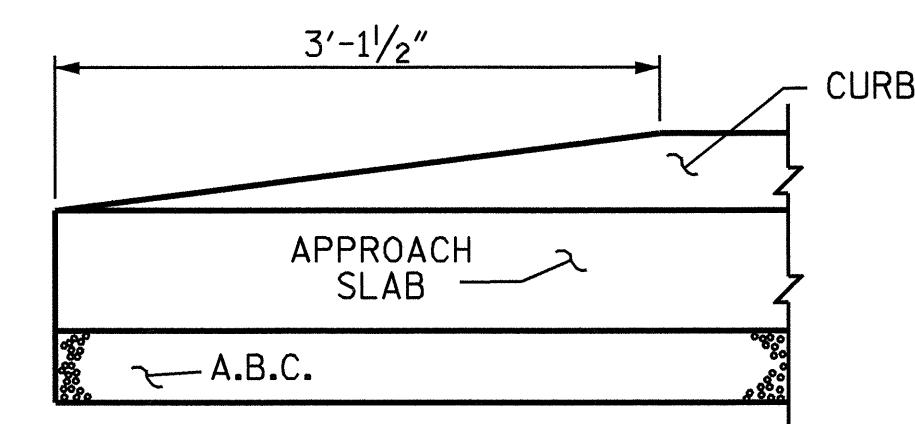
THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE EVAZOTE JOINT SEAL SHALL BE 2 1/2".

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

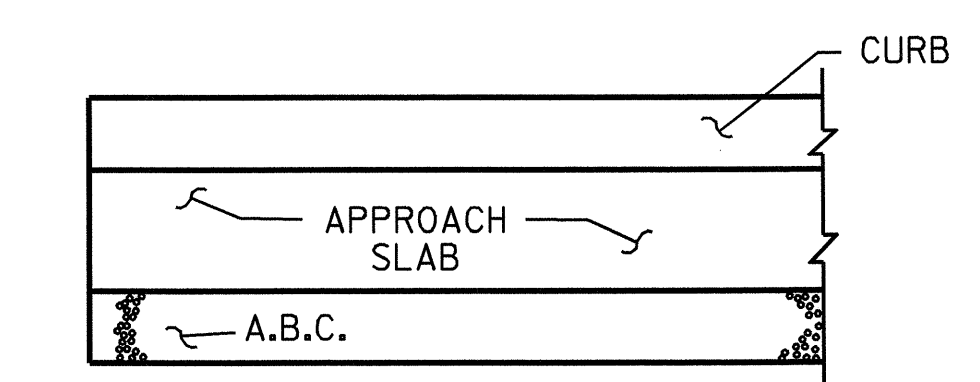
APPROACH SLABS SHALL BE POURED AFTER CONCRETE WEARING SURFACE IS POURED.



SECTION N-N

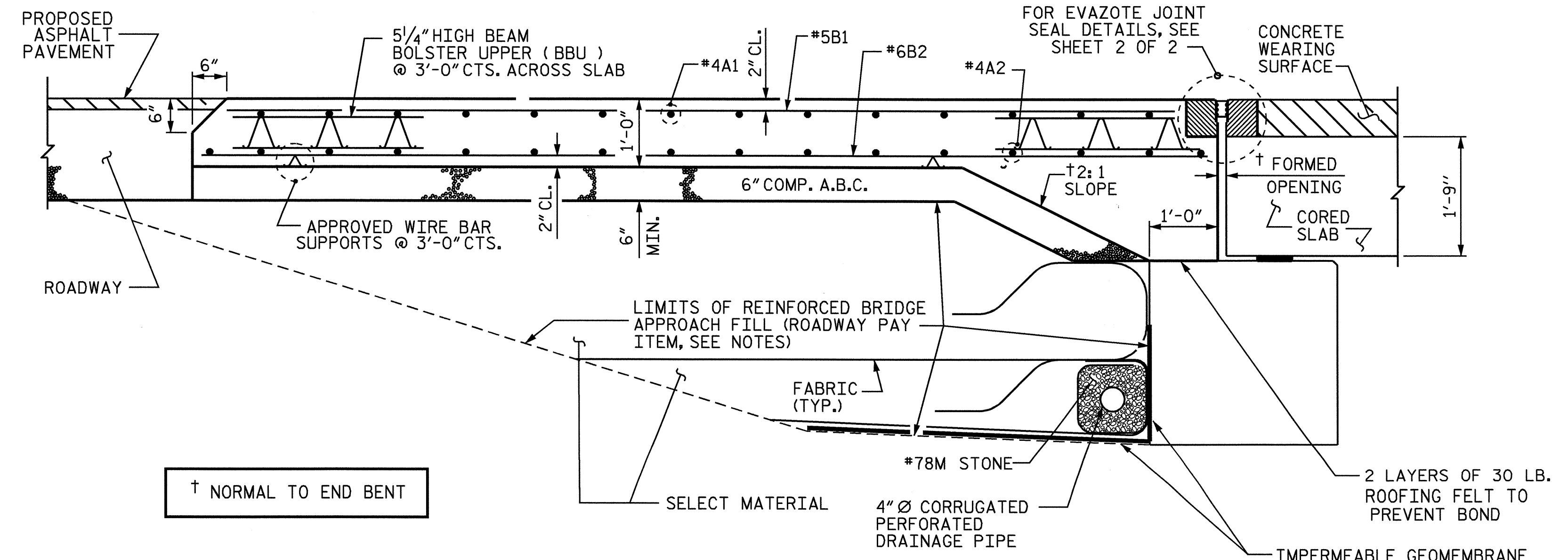


END OF CURB WITHOUT SHOULDER BERM GUTTER



* END OF CURB WITH SHOULDER BERM GUTTER

CURB DETAILS



SECTION THRU SLAB

ASSEMBLED BY : R. G. EMERSON	DATE : 01/08
CHECKED BY : K. D. LAYNE	DATE : 2/12/08
DRAWN BY : FCJ 6/87	REV. 7/10/01 LES/RDR
CHECKED BY : EGA 6/87	REV. 5/7/03R RWW/JTE
	REV. 5/1/06R KMM/GM

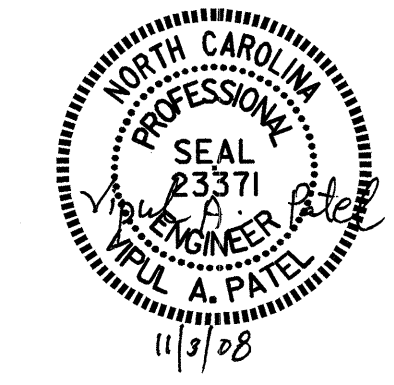
PROJECT NO. B-3655
HARNETT COUNTY
STATION: 17+50.50 -L-

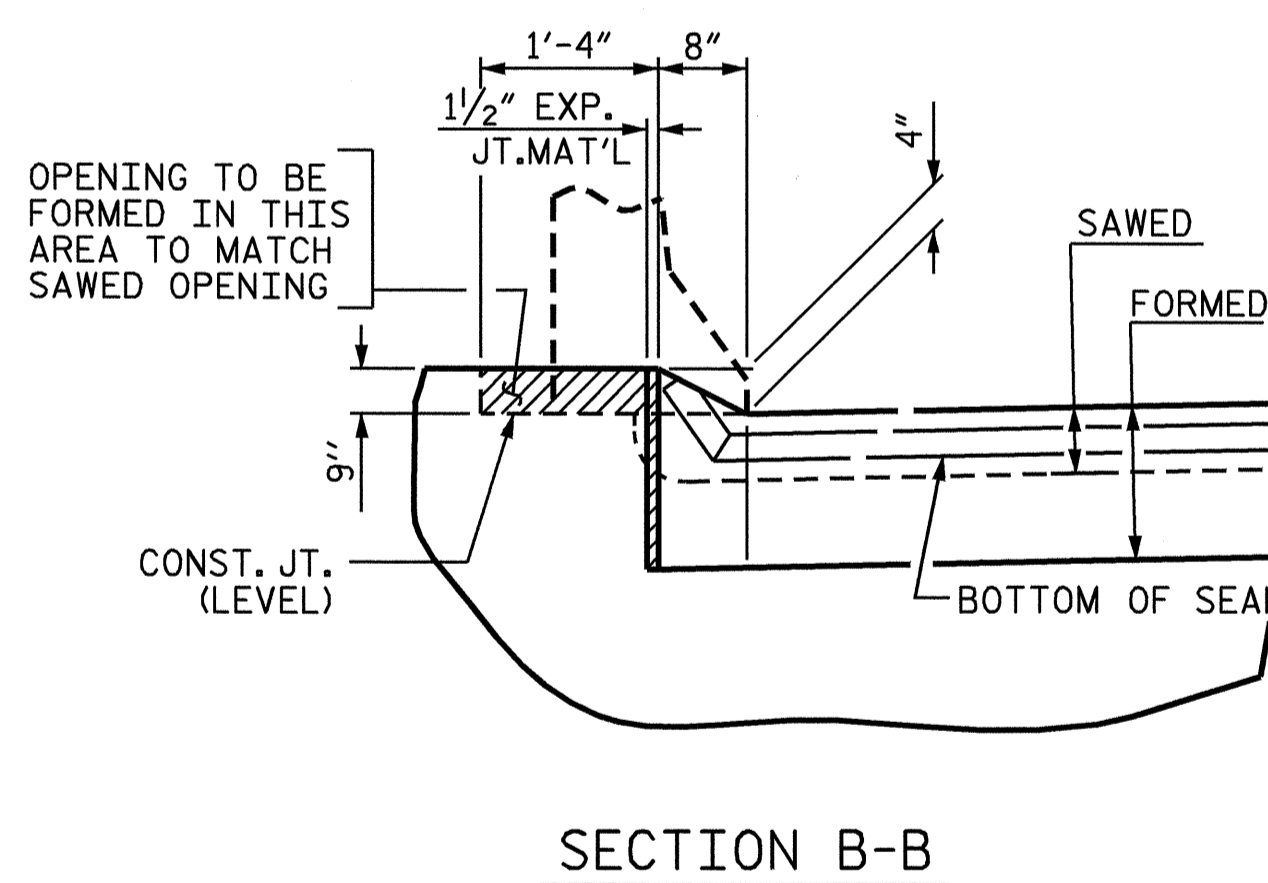
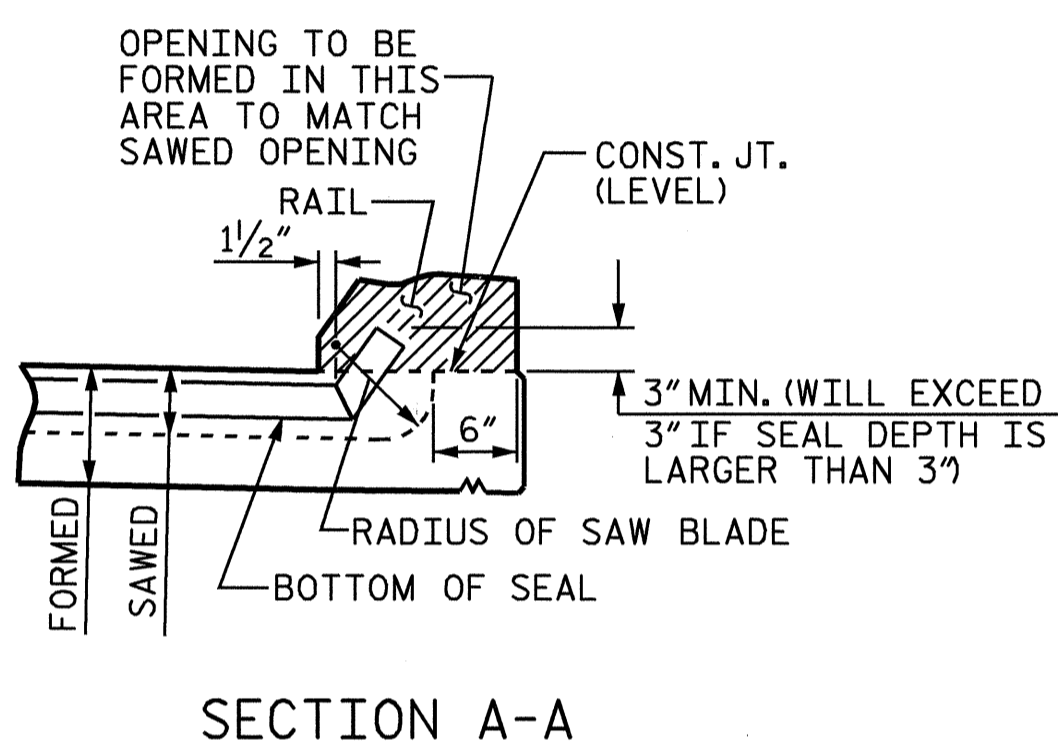
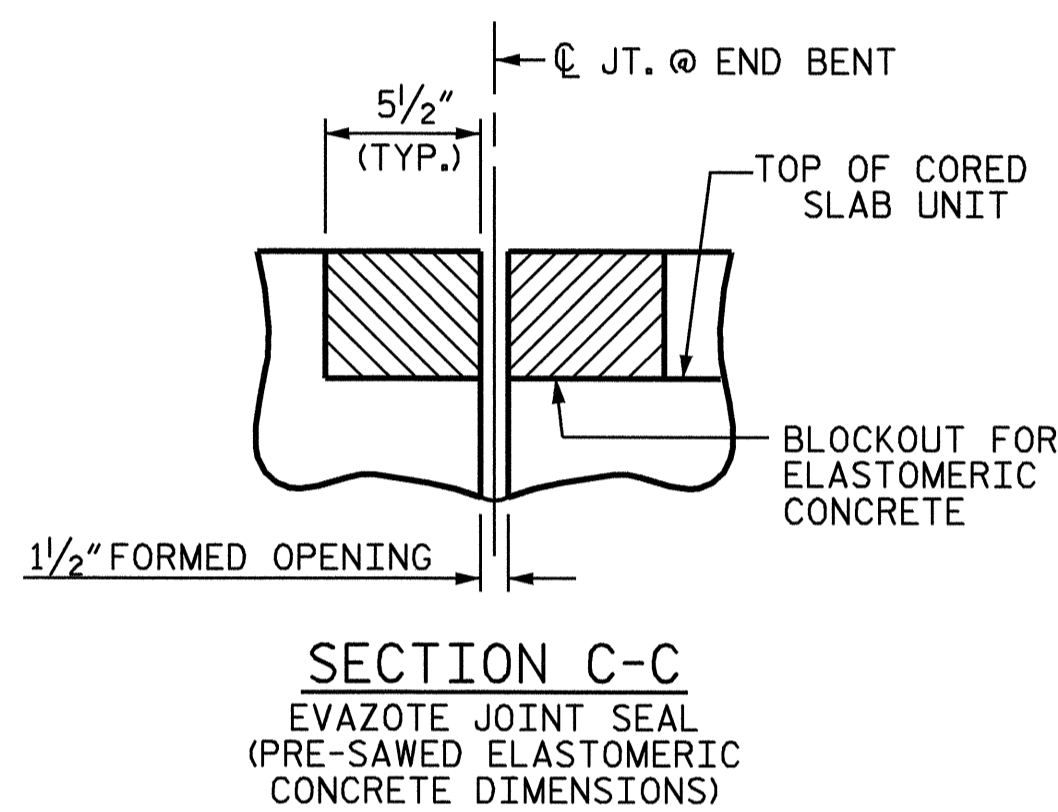
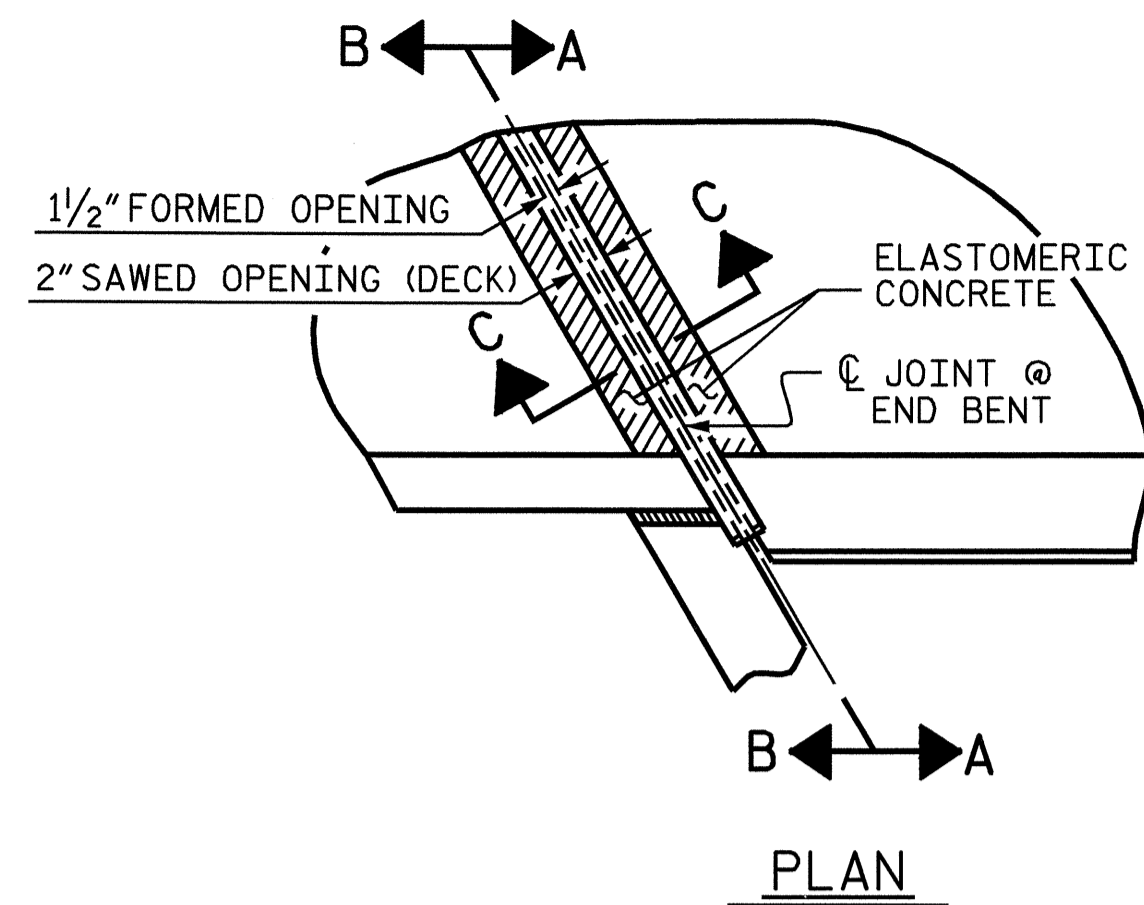
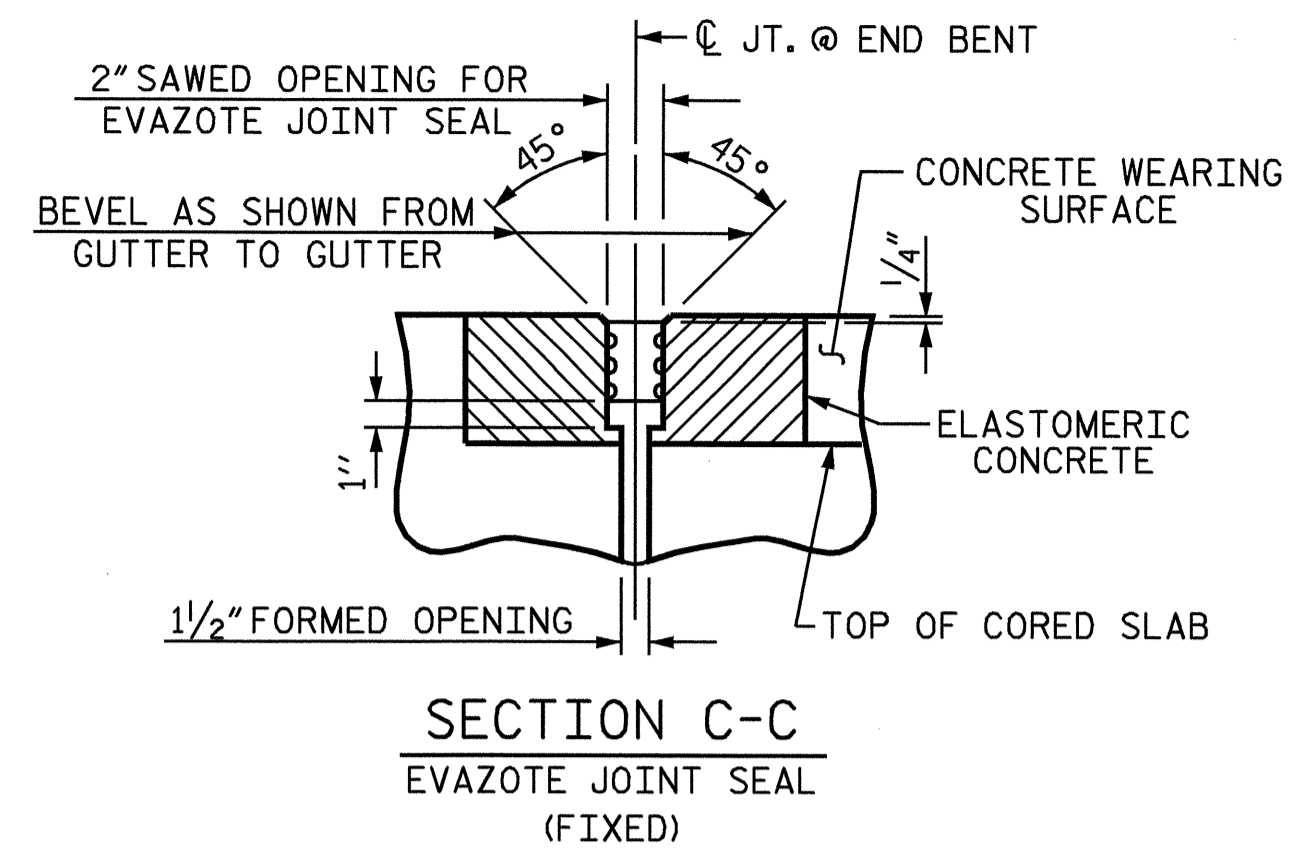
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS 22
2			4			

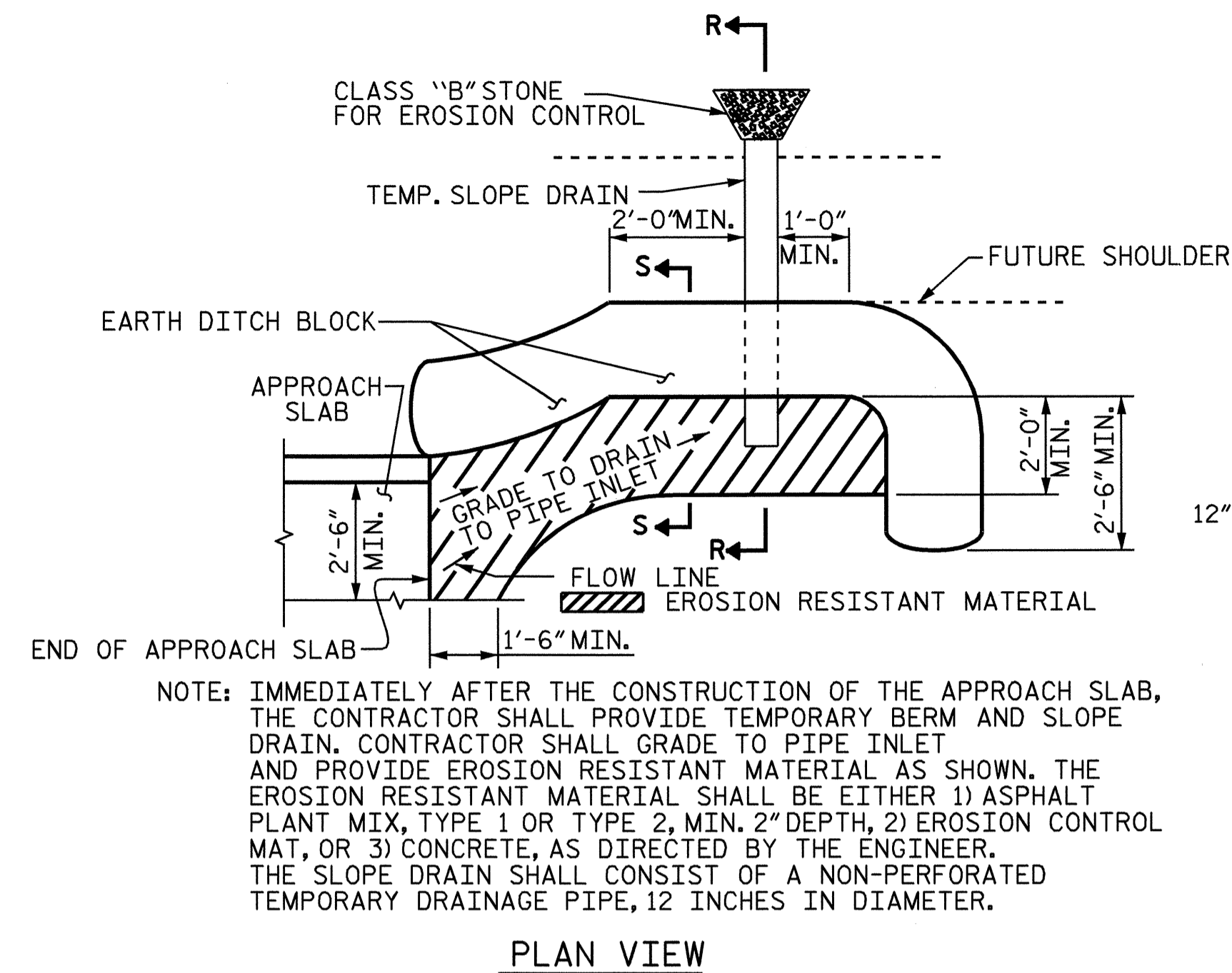




ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE (CU. FT.)
1	17.4
2	17.4
TOTAL	34.8

JOINT SEAL DETAILS @ END BENT

EVAZOTE JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.
THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE BARRIER RAIL.

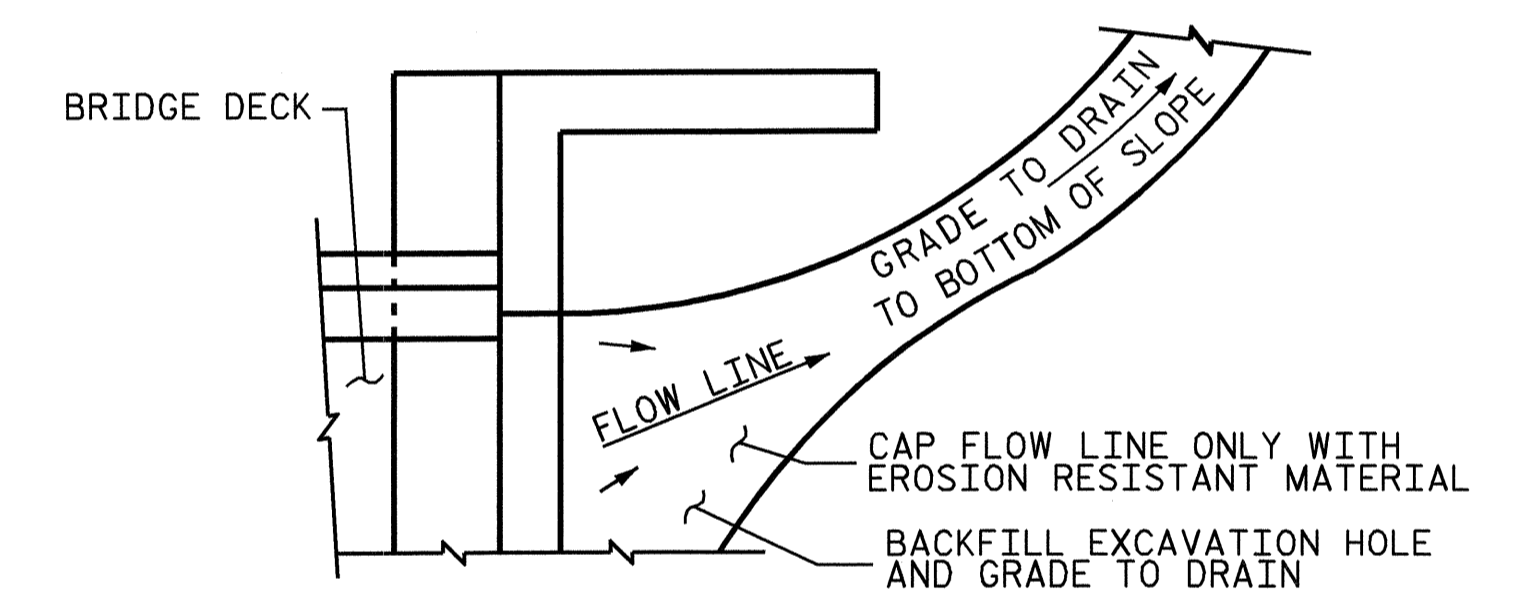
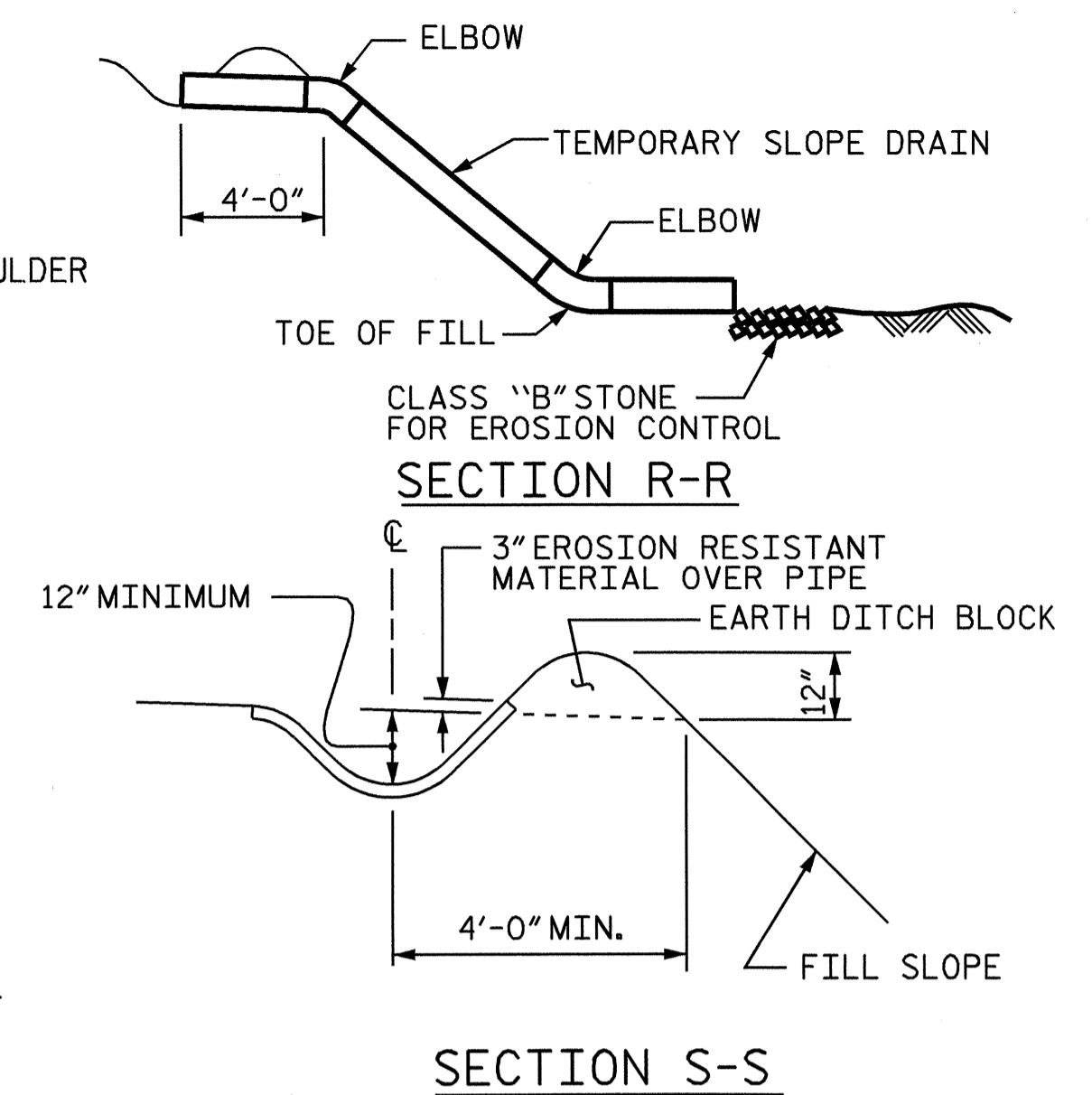


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

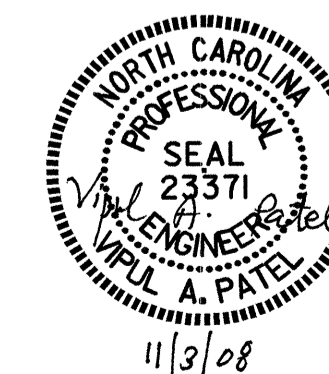
TEMPORARY DRAINAGE DETAIL

PROJECT NO. B-3655
HARNETT COUNTY
STATION: 17+50.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
BRIDGE APPROACH
SLAB DETAILS



11/3/08

ASSEMBLED BY : R. G. EMERSON DATE : 07/07
CHECKED BY : K. D. LAYNE DATE : 08/07
DRAWN BY : FCJ 11/88 REV. 10/17/00 RWW/LES
CHECKED BY : ARB 11/88 REV. 5/1/03 RWW/JTE
REV. 5/1/06 TLA/GM

03-NOV-2008 11:36
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jpadams

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

STD. NO. BAS10

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION		
GRADE 60	--	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	-----	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN	-----	375 LBS. PER SQ. IN.
OF TIMBER	-----	
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT.
		(MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2006 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE. ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

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

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

HANDRAILS AND POSTS:

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

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

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