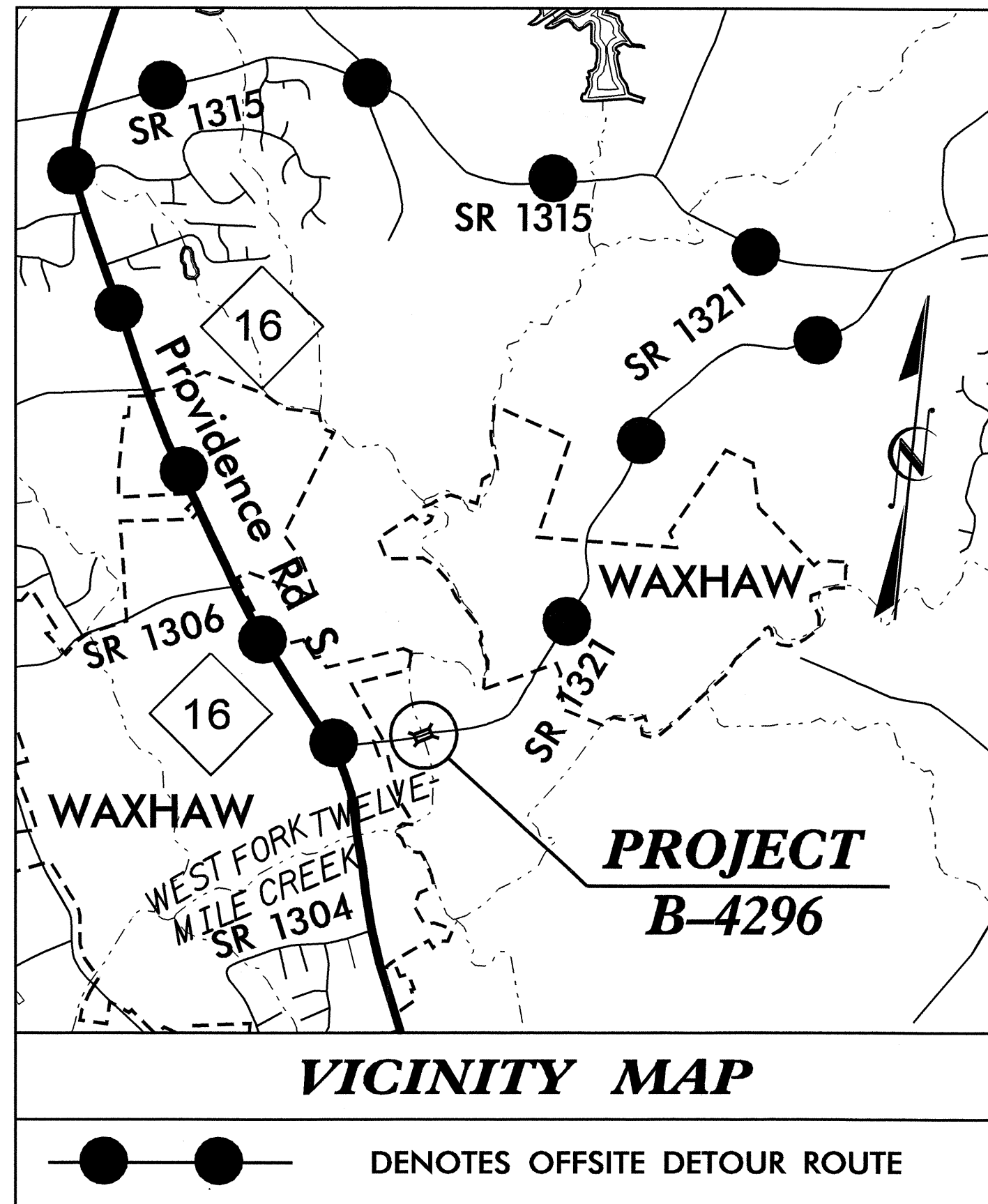


TIP PROJECT: B-4296

CONTRACT: C202032

STRUCTURE



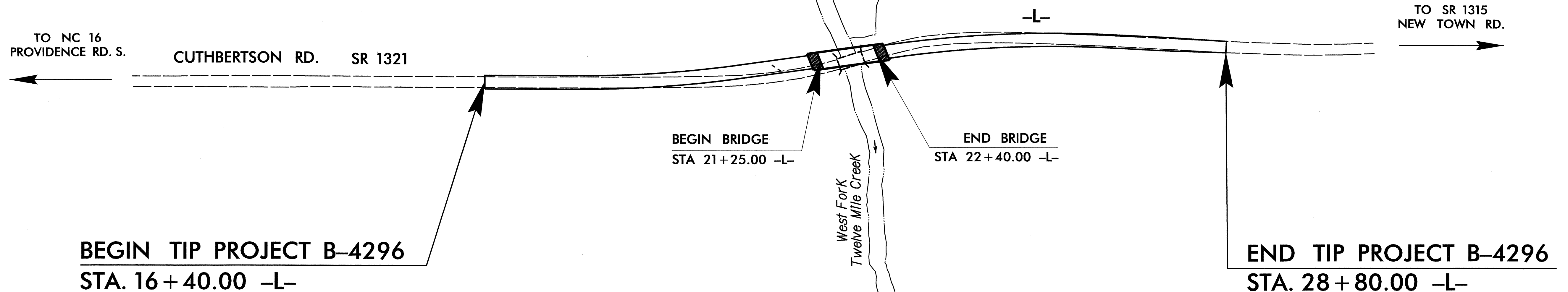
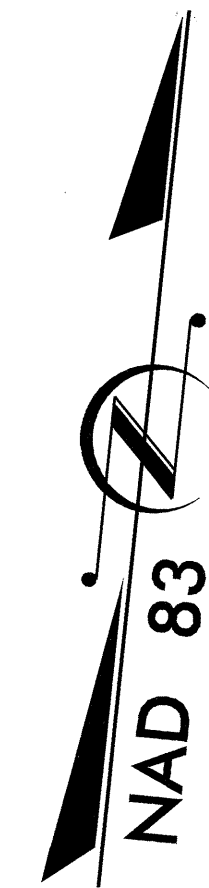
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UNION COUNTY

LOCATION: BRIDGE No. 223 OVER WEST FORK TWELVE MILE CREEK AND APPROACHES ON SR 1321 (CUTHBERTSON ROAD)

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

STATE	STATE PROJECT REFERENCE NO.	
N.C.	B-4296	
WBS PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
33634.1.1	BRZ-1321(3)	P.E.
33634.2.1	BRZ-1321(3)	R/W & UTIL
33634.3.1	BRZ-1321(3)	CONSTR.



DESIGN DATA

ADT 2008 = 935
 ADT 2025 = 1600
 DHV = 10 %
 D = 60 %
 T = 5 % *
 V = 45 MPH
 * TTST 1% + DUAL 4%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4296 = 0.213 MI
 LENGTH STRUCTURE TIP PROJECT B-4296 = 0.022 MI
 TOTAL LENGTH TIP PROJECT B-4296 = 0.235 MI

2006 STANDARDS SPECIFICATION

LETTING DATE:
 DECEMBER 16, 2008

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

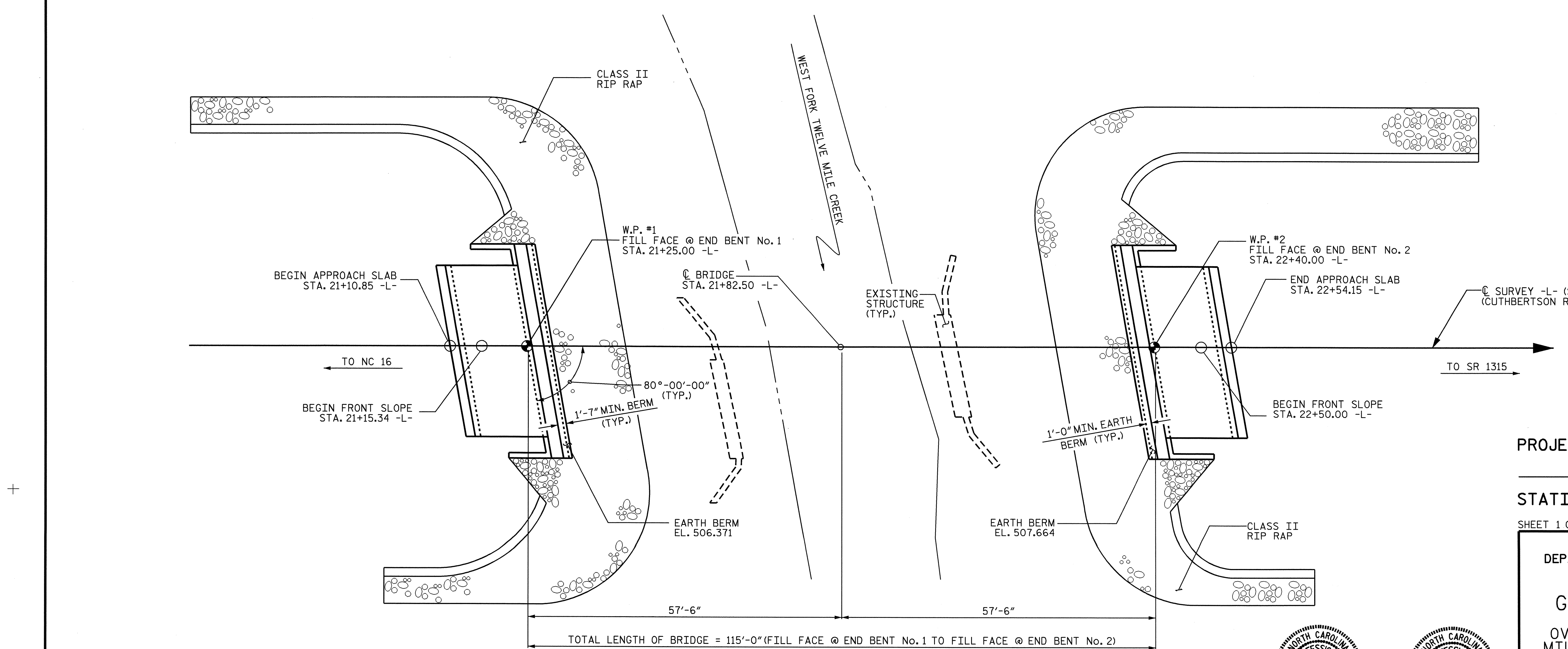
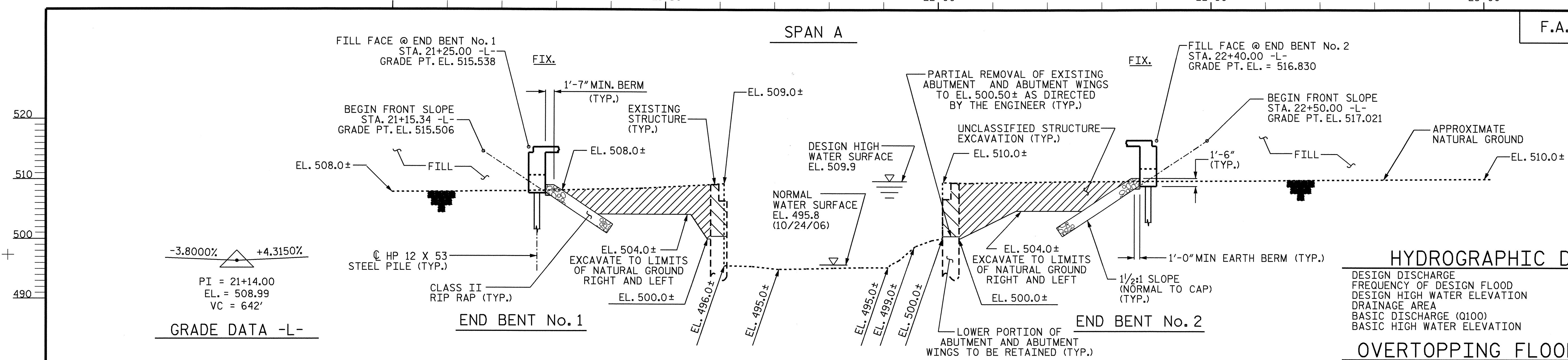
B.S. COX, P.E.
 PROJECT ENGINEER

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

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

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

APPROVED FOR
 DIVISION ADMINISTRATOR DATE



PROJECT NO. B-4296
UNION COUNTY
STATION: 21+82.50 -L-
SHEET 1 OF 3 REPLACES BRIDGE No. 223

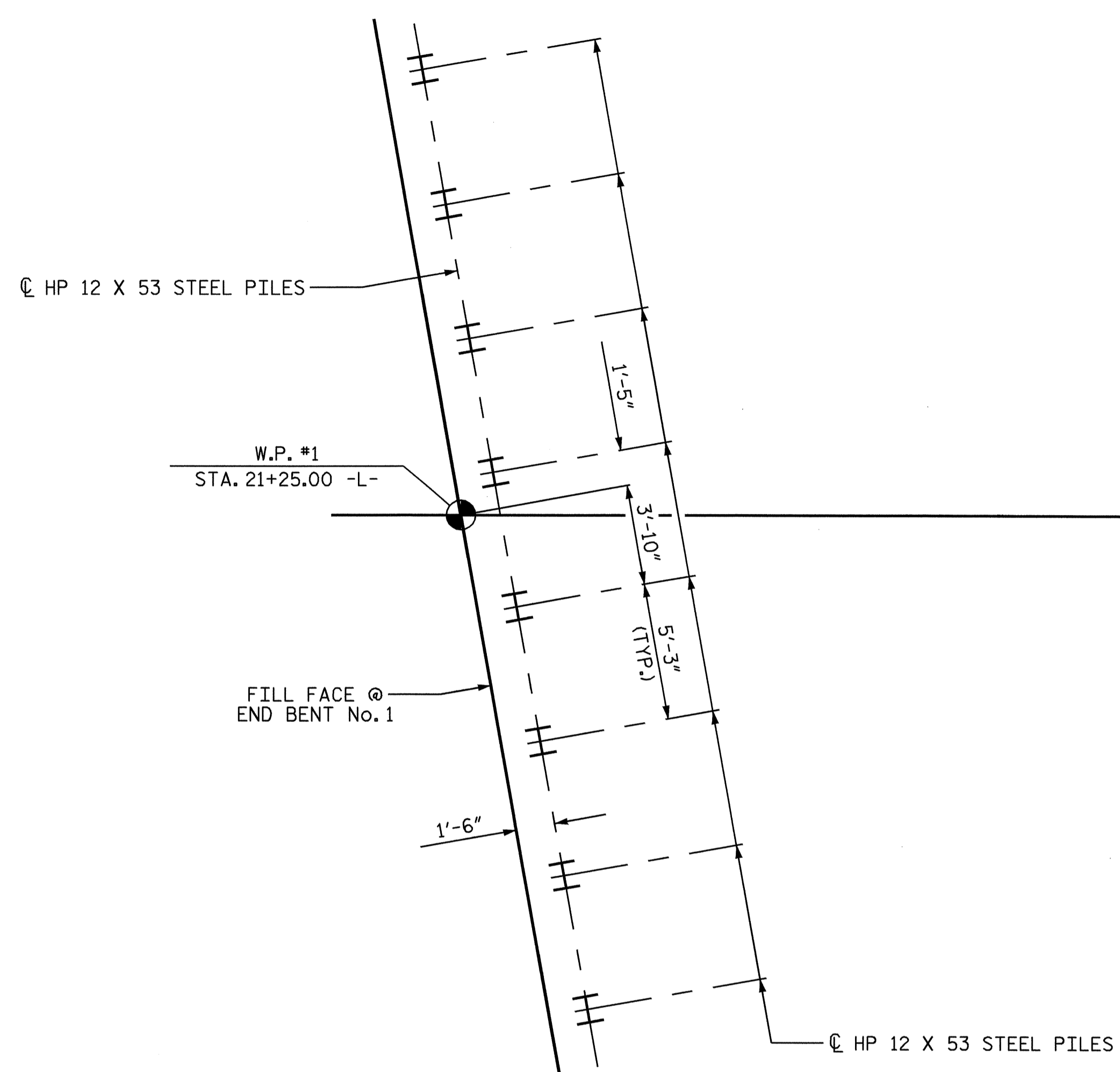
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE ON SR 1321
OVER WEST FORK TWELVE
MILE CREEK BETWEEN NC 16
AND SR 1315

NORTH CAROLINA PROFESSIONAL SEAL
11268
2008-10-17-08
THEO J. BEACH
10/17/08

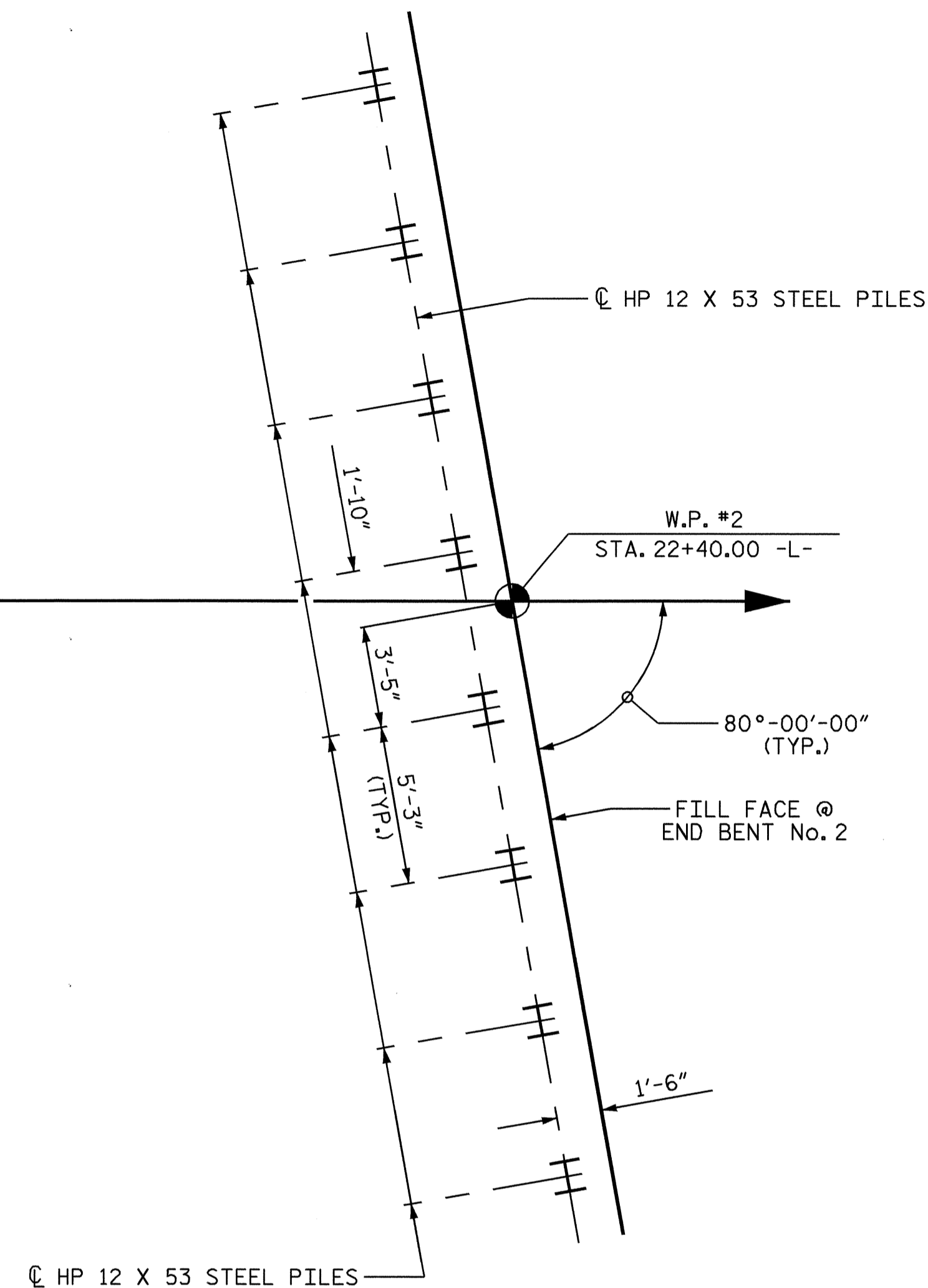
DRAWN BY : T. BANKOVICH DATE : 9-2008
CHECKED BY : T. J. BEACH DATE : 9-2008

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			24



END BENT No. 1

☉ SURVEY -L-
(SR 1321)
(CUTHBERTSON RD)



END BENT No. 2

FOUNDATION LAYOUT

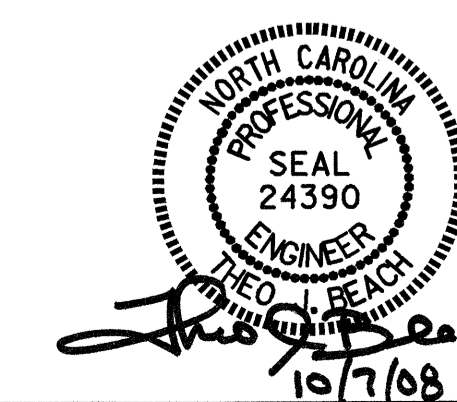
(DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILES CENTERLINE AT THE BOTTOM OF CAP)

PROJECT NO. B-4296
UNION COUNTY
 STATION: 21+82.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE ON SR 1321
 OVER WEST FORK TWELVE
 MILE CREEK BETWEEN NC 16
 AND SR 1315

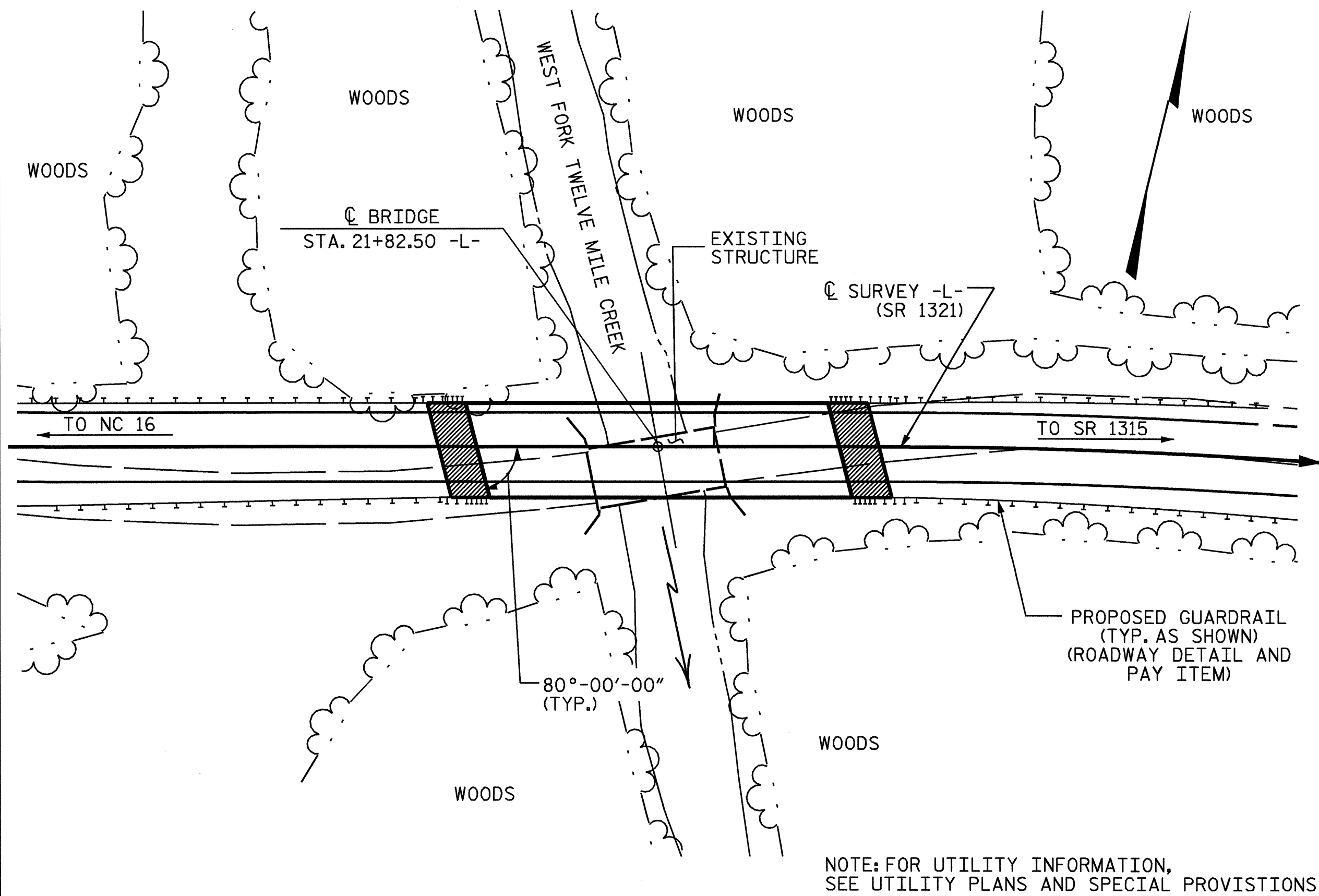


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 CHECKED BY : T. J. BEACH DATE : 9-2008

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 tbeach

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			24

BM #2: RR SPIKE IN THE BASE OF 36" OAK, STA. 21+57 -L- 89' RT. EL. = 506.18



LOCATION SKETCH

ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING, EXCEPT THAT THE STEEL PLATE GIRDERS HAVE BEEN DESIGNED FOR HS 25.

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

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.

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

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W.

REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

THE EXISTING STRUCTURE CONSISTING OF 1 SPAN OF 41'-0" WITH A CLEAR ROADWAY WIDTH OF 19.2 FEET AND TIMBER DECK WITH ASPHALT WEARING SURFACE ON STEEL I-BEAMS AND CHANNELS AND WITH SUBSTRUCTURE CONSISTING OF CONCRETE ABUTMENTS AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT. SEE SPECIAL PROVISION FOR REMOVAL OF EXISTING STRUCTURE TO THE LIMITS SHOWN IN SECTION VIEW AND AS DIRECTED BY THE ENGINEER.

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 20 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

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

THE EXISTING PAVEMENT WITHIN THE AREA OF THE END BENT PILES SHALL BE REMOVED AND THE ROADBED SCARIFIED TO A MINIMUM DEPTH OF 2'-0".

NOTES:

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

THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE COST OF THE REINFORCED CONCRETE DECK SLAB.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 21+82.50 -L-."

FOR SHIPPING STEEL STRUCTURAL MEMBERS, SEE SPECIAL PROVISIONS.

FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.

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.

DRIVE PILES AT END BENT No. 1 AND END BENT No. 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.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT No. 1 AND END BENT No. 2 IS 60 TONS PER PILE.

FOR ADHESIVELY ANCHORED ANCHORED BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.

NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	STRUCTURAL STEEL	HP 12 X 53 STEEL PILES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	EVAZOTE JOINT SEALS	
	LUMP SUM	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	APPROX. LBS.	No.	LIN. FT.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM
SUPERSTRUCTURE			3824	3728				125,600			226.6			
END BENT No. 1					23.6		3301		8	160		240	267	
END BENT No. 2					23.3		3243		8	160		265	295	
TOTAL	LUMP SUM	LUMP SUM	3824	3728	46.9	LUMP SUM	6544	125,600	16	320	226.6	505	562	LUMP SUM

PROJECT NO. B-4296

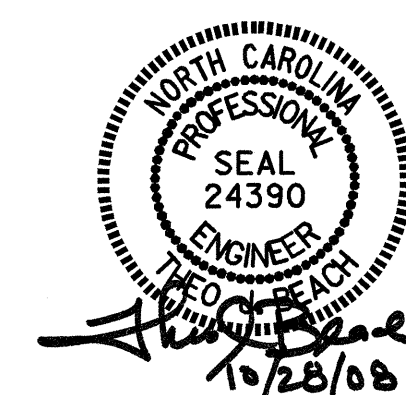
UNION COUNTY

STATION: 21+82.50 -L-

SHEET 3 OF 3

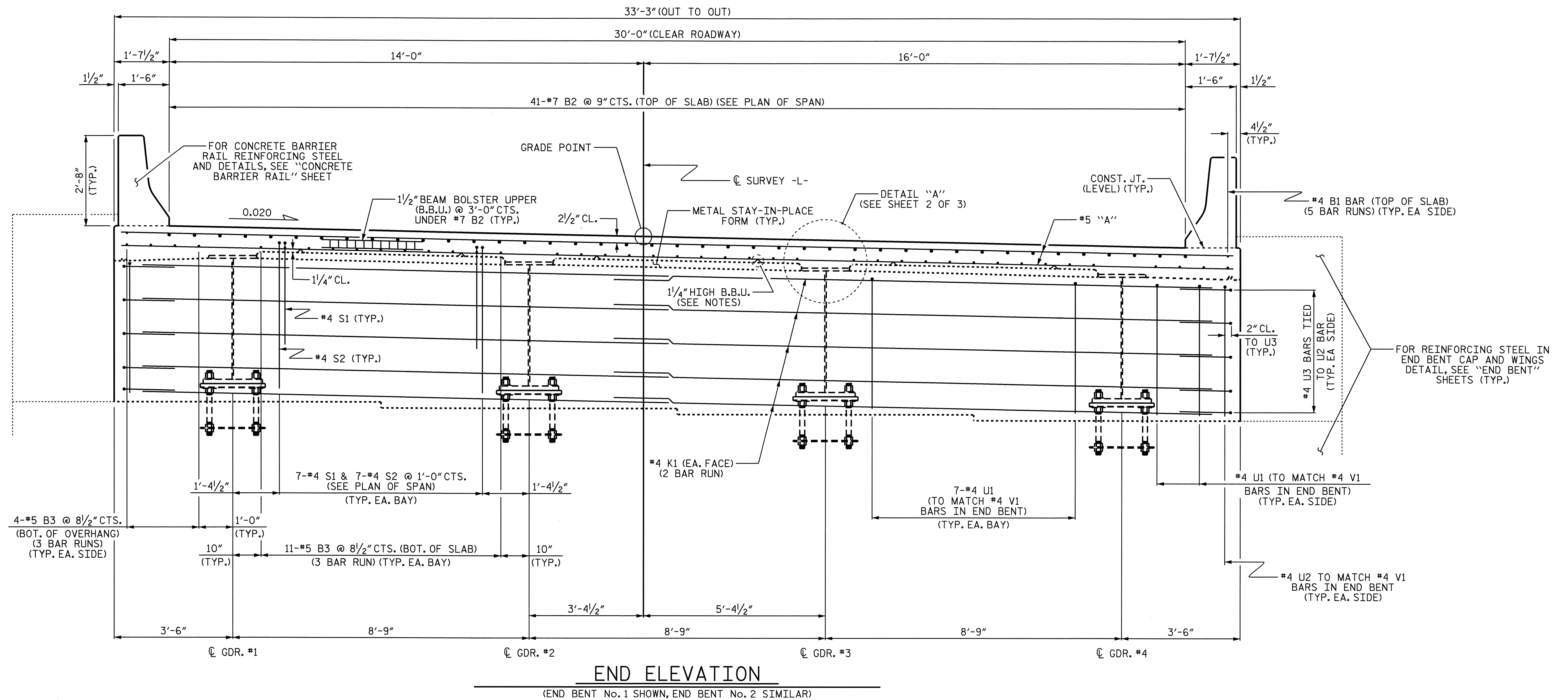
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE ON SR 1321
OVER WEST FORK TWELVE
MILE CREEK BETWEEN NC 16
AND SR 1315

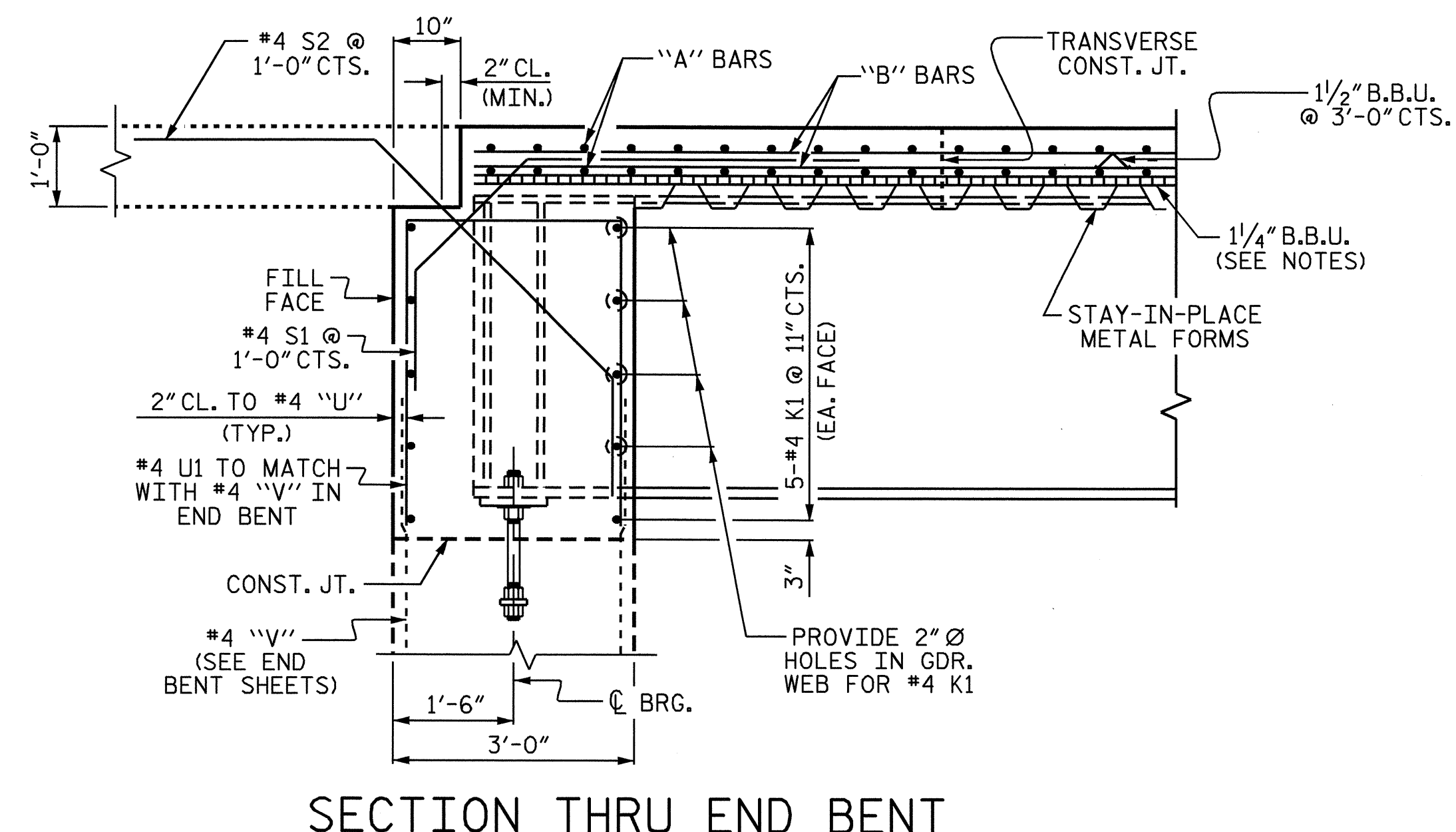


DRAWN BY : T. BANKOVICH DATE : 9-2008
CHECKED BY : T.J. BEACH DATE : 9-2008

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			24

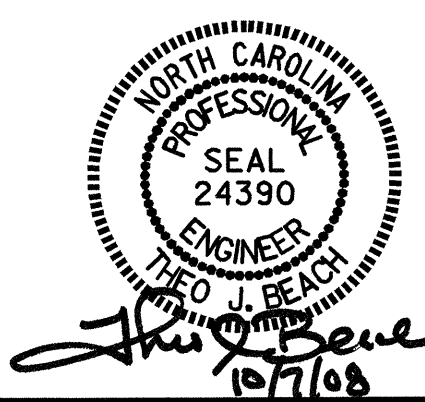


NOTE:
 6" Ø PVC PLASTIC DECK DRAINS ARE REQUIRED,
 FOR LOCATIONS AND DETAILS SEE SHEET 3 OF 3.

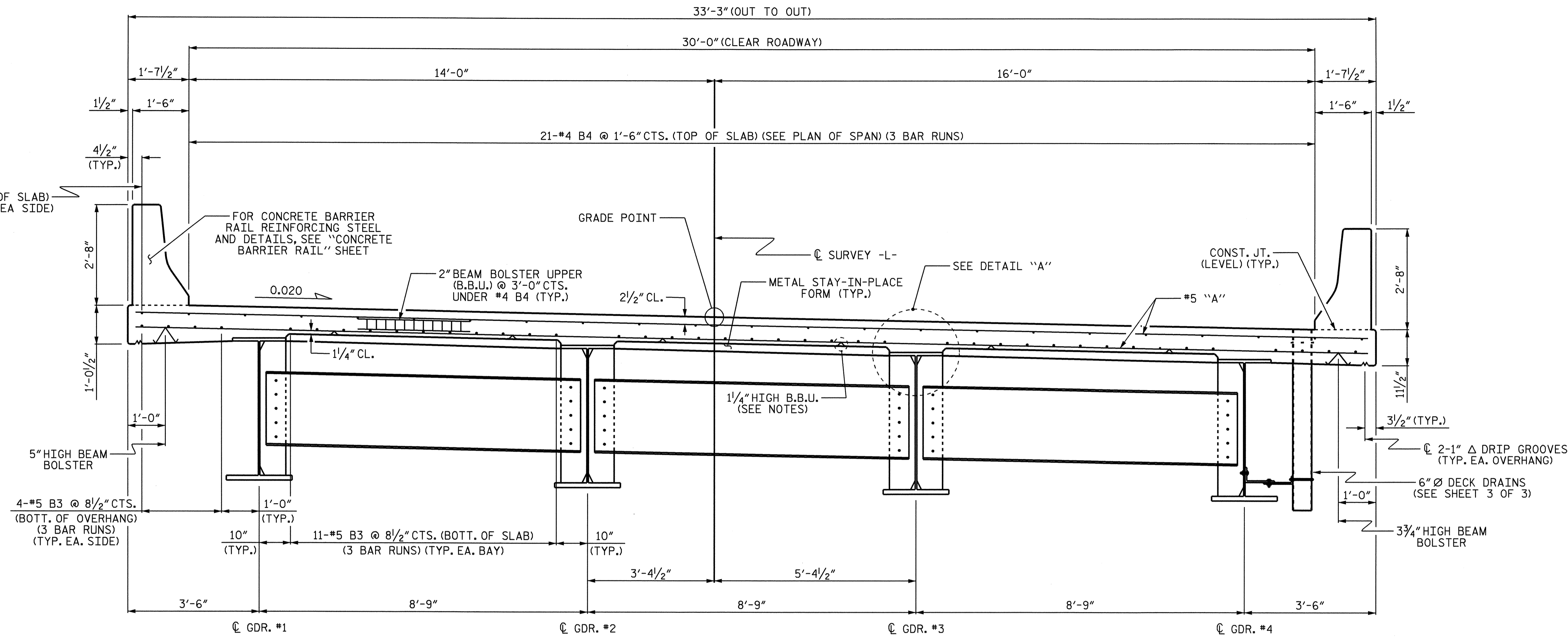


PROJECT NO. B-4296
UNION COUNTY
 STATION: 21+82.50 -L-
 SHEET 1 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE TYPICAL SECTION					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-4					TOTAL SHEETS 24



DRAWN BY: T. BANKOVICH DATE: 11-2007
 CHECKED BY: S.B. WILLIAMS DATE: 3-2008



TYPICAL SECTION

(SHOWING INTERMEDIATE DIAPHRAGMS)

NOTES

PROVIDE 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF "A" BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF "A" BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.

METAL STAY-IN-PLACE FORMS SHALL NOT BE WELDED TO GIRDER FLANGES IN THE ZONES REQUIRING CHARPY V-NOTCH TEST. SEE STRUCTURAL STEEL DETAIL SHEETS.

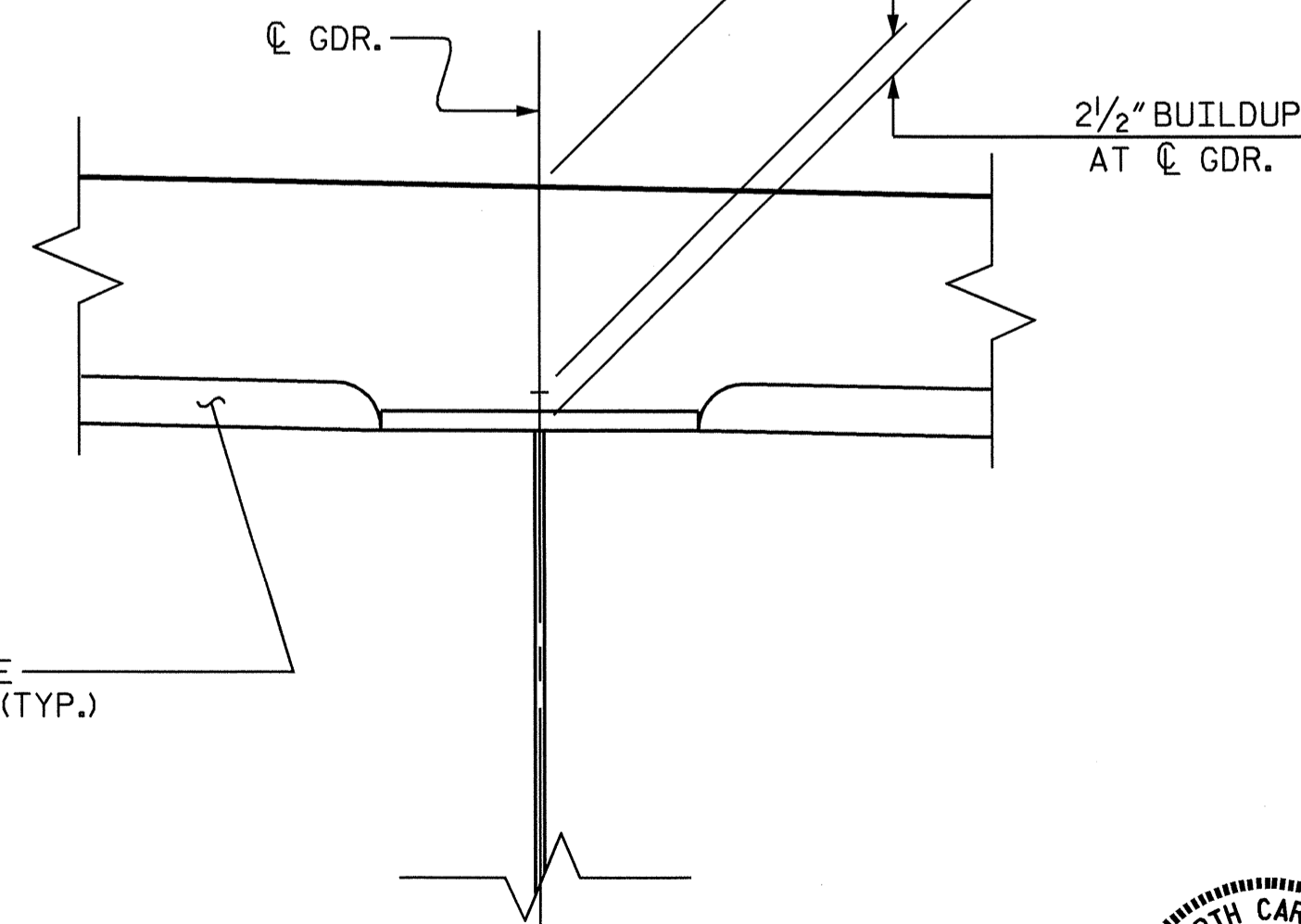
PREVIOUSLY CAST CONCRETE IN THE SPAN SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE SPAN.

BARRIER RAIL SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

THE CONTRACTOR MAY, WHEN NECESSARY, PROPOSE A SCHEME FOR AVOIDING INTERFERENCE BETWEEN METAL STAY-IN-PLACE FORM SUPPORTS OR FORMS AND GIRDER STIFFENERS OR CONNECTOR PLATES. THE PROPOSAL SHALL BE INDICATED, AS APPROPRIATE, ON EITHER THE STEEL WORKING DRAWINGS OR THE METAL STAY-IN-PLACE FORM WORKING DRAWINGS

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

11" TOP OF SLAB TO BOTTOM OF TOP FLANGE AT CL GDR.
8 1/2" TOP OF SLAB TO TOP OF S. I. P. FORMS @ CL GDR.

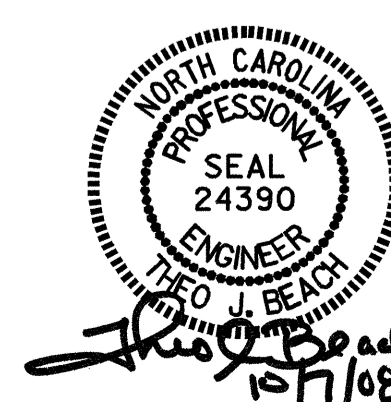


DETAIL "A"

PROJECT NO. B-4296
UNION COUNTY
STATION: 21+82.50 -L-

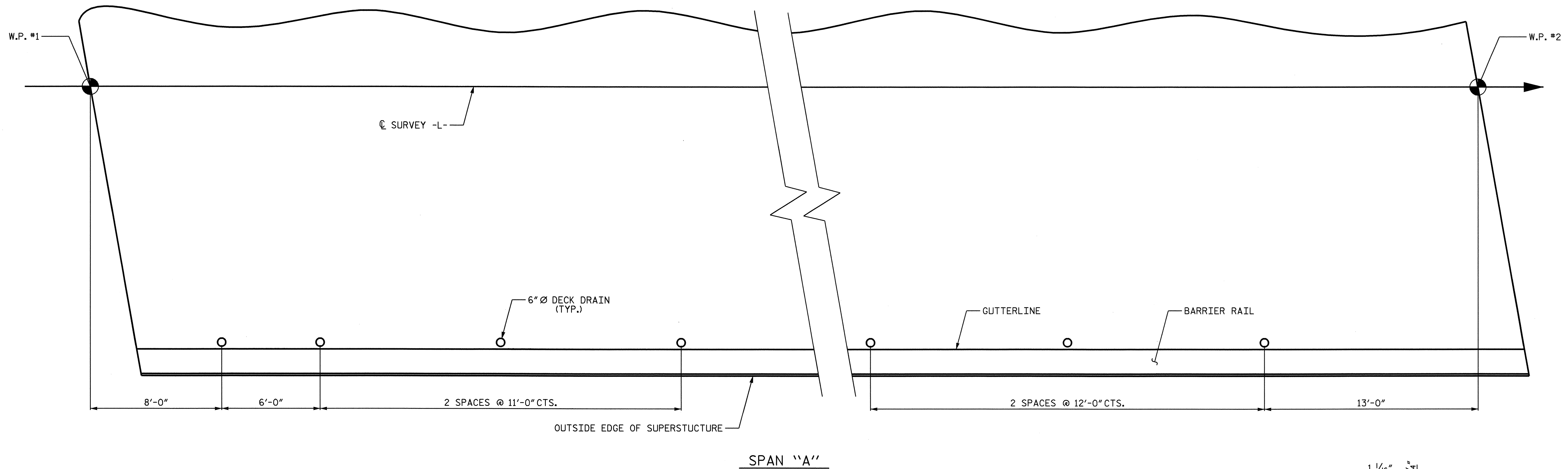
SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
TYPICAL SECTION

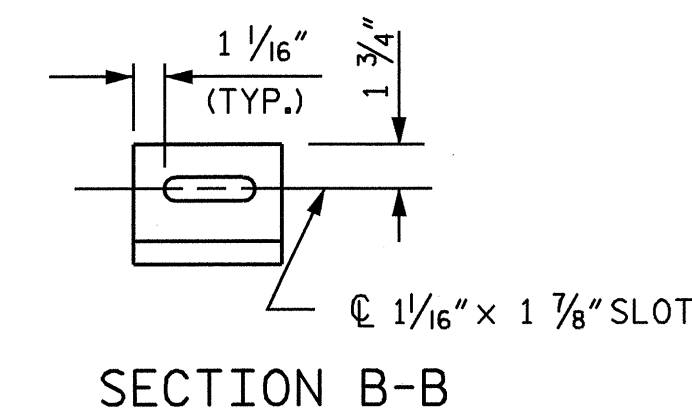
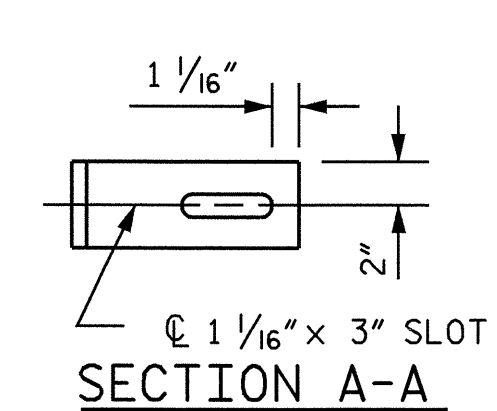


DRAWN BY : T. BANKOVICH DATE : 11-2007
CHECKED BY : S.B. WILLIAMS DATE : 3-2008

REVISIONS						SHEET NO. S-5
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 24
2			4			



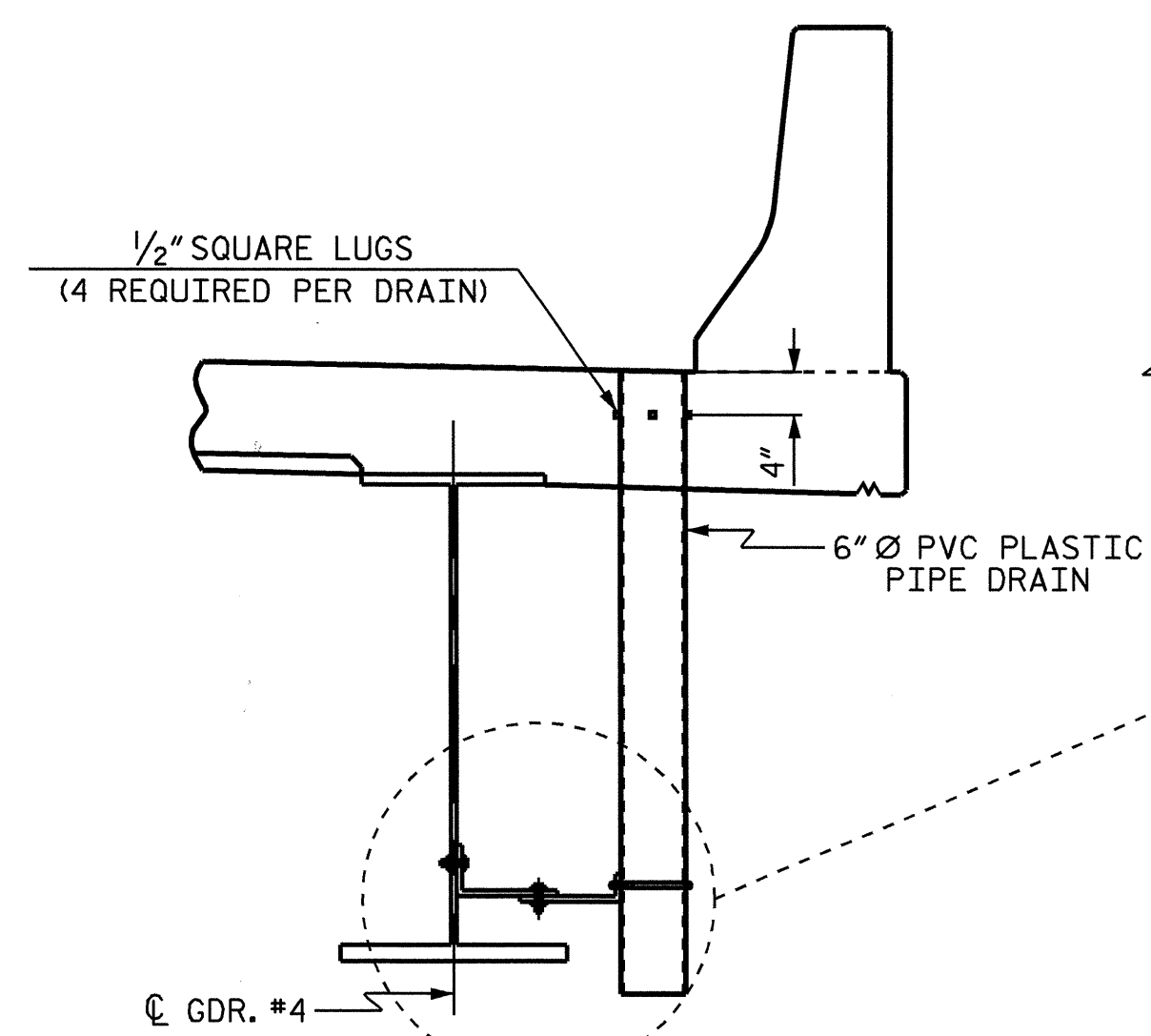
PIPE DRAIN LOCATIONS DETAIL



DRAIN NOTES:

- COUPLING IN DRAIN PIPE WILL BE PERMITTED AS APPROVED BY THE ENGINEER.
- TOP OF FLOOR DRAIN TO BE SET $\frac{3}{8}$ " BELOW SURFACE OF SLAB.
- 4 $\frac{1}{2}$ " SQUARE LUGS TO BE GLUED TO THE PVC PLASTIC PIPE AT EQUAL SPACES AROUND THE PIPE DRAIN APPROXIMATELY 4" FROM THE TOP OF THE PIPE.
- BOLT SIZE TO BE SAME AS DIAPHRAM CONNECTIONS. STAINLESS STEEL WORM DRIVE HOSE CLAMP SHALL BE COMMERCIAL QUALITY.
- THE 6" \varnothing PVC PLASTIC PIPE AND FITTINGS SHALL BE SCHEDULE 40 AND CONFORM TO ASTM D1785.

PROVIDE SLOTS AS NECESSARY TO ALLOW ADJUSTMENTS Laterally AND LONGITUDINALLY

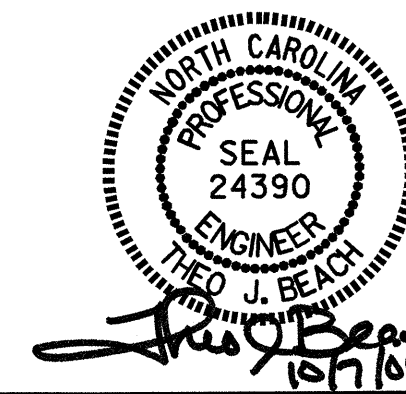


DRAIN CONNECTOR DETAIL

PROJECT NO. B-4296
UNION COUNTY
 STATION: 21+82.50 -L-

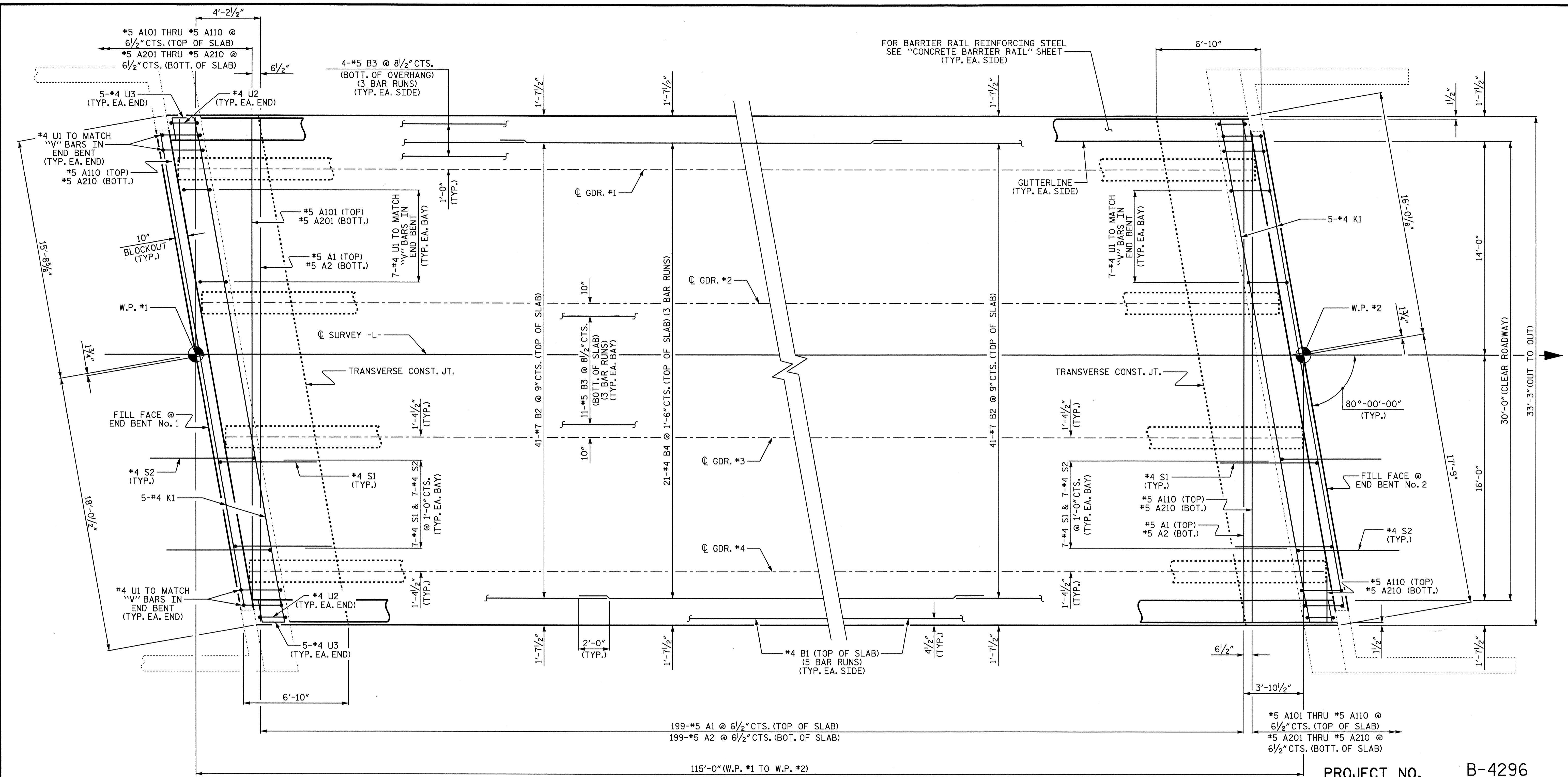
SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION



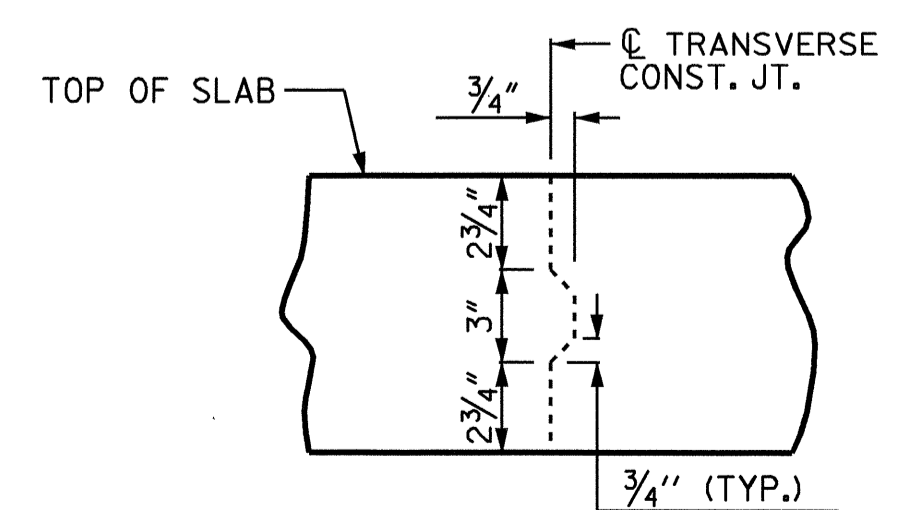
DRAWN BY : T. BANKOVICH DATE : 8-2008
 CHECKED BY : S.B. WILLIAMS DATE : 8-2008

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6	
1			3			TOTAL SHEETS 24	
2			4				



PLAN OF SPAN

6" Ø PVC PIPE DECK DRAINS ARE REQUIRED AT RIGHT GUTTERLINE BUT ARE NOT SHOWN. FOR LOCATION AND DETAILS OF DECK DRAINS SEE "TYPICAL SECTION", SHEET 3 OF 3.

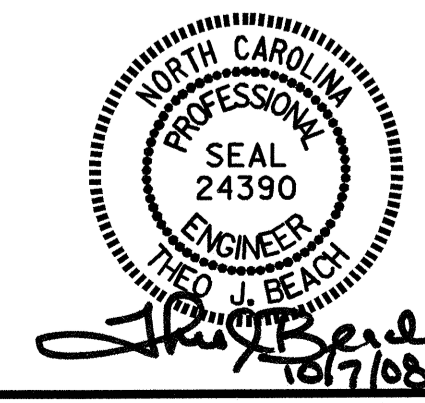


TRANSVERSE CONSTRUCTION JOINT DETAIL

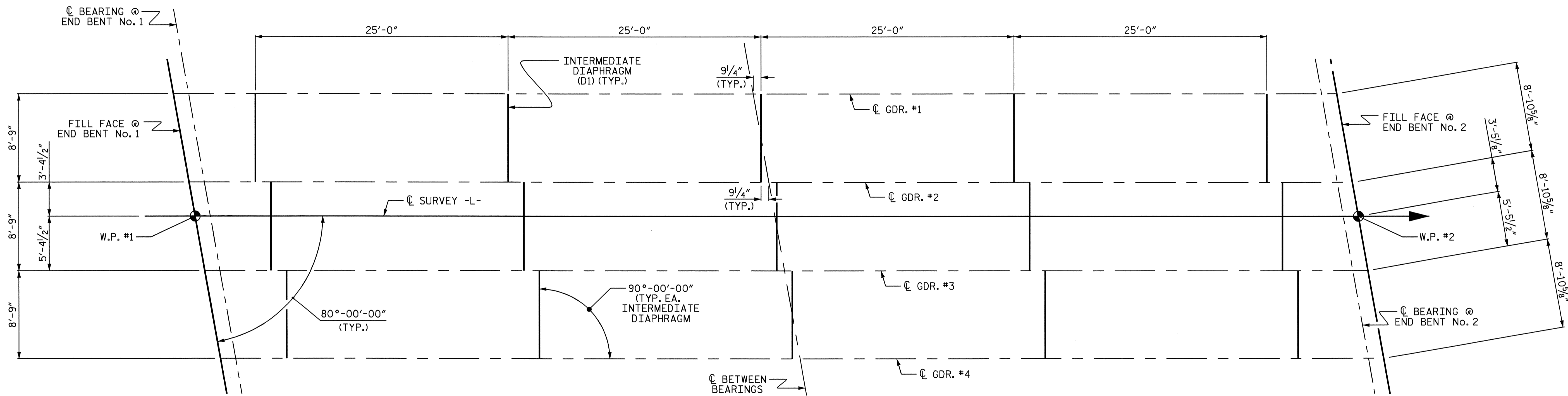
NOTE: REINFORCING STEEL IN SLAB NOT SHOWN. LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THRU JOINT.


PROJECT NO. B-4296
 UNION COUNTY
 STATION: 21+82.50 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE PLAN OF SPAN					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-7					TOTAL SHEETS 24

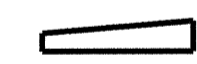


DRAWN BY: T. BANKOVICH DATE: 11-2007
 CHECKED BY: S.B. WILLIAMS DATE: 3-2008




FIXED
 P1, P2

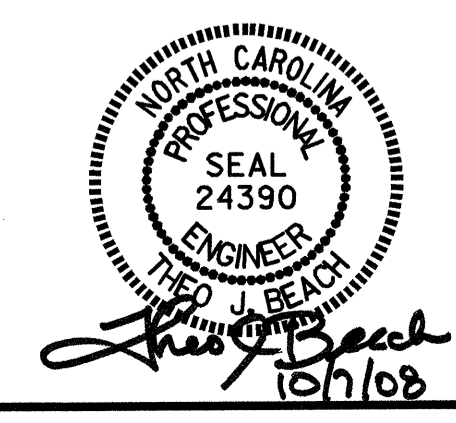
FRAMING PLAN


FIXED
 P1, P2

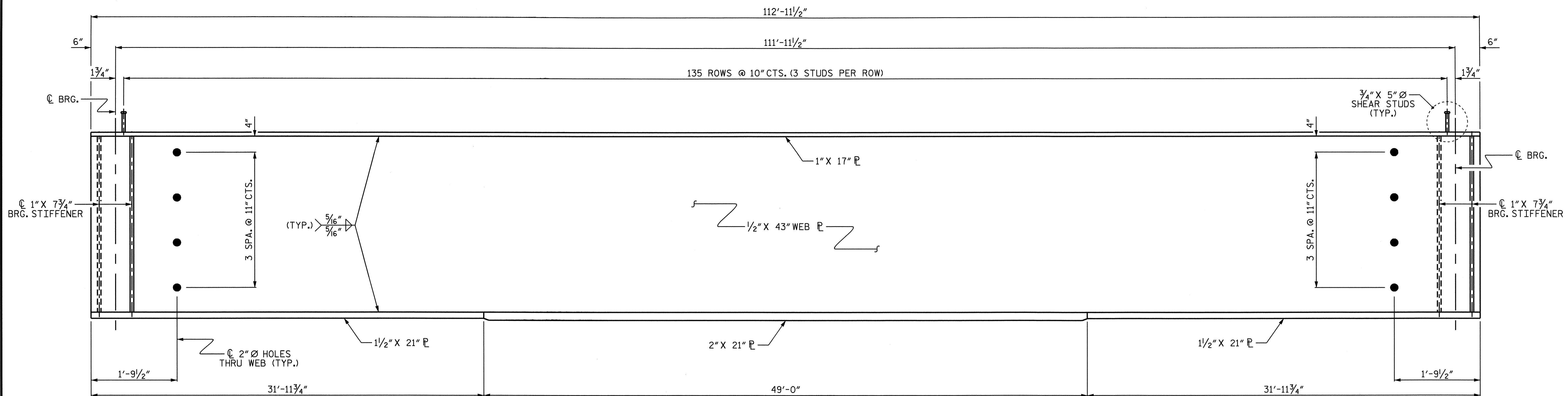
PROJECT NO. B-4296
UNION COUNTY
 STATION: 21+82.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 FRAMING PLAN

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			24

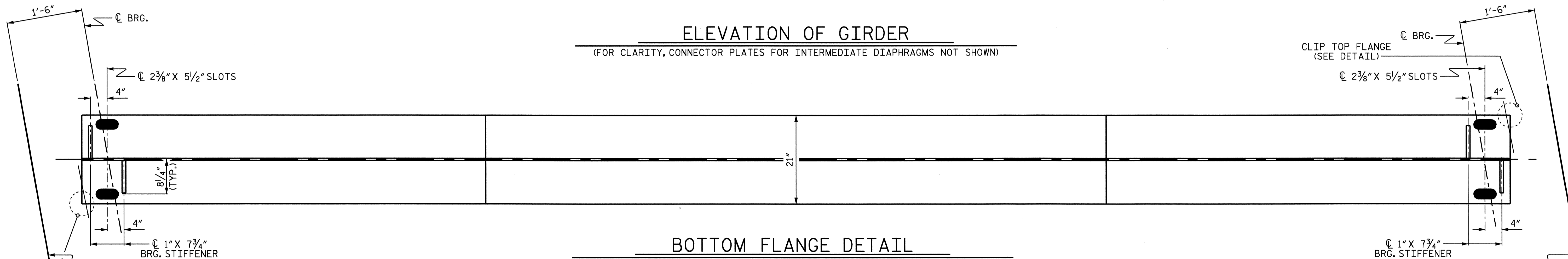


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 CHECKED BY : S.B. WILLIAMS DATE : 3-2008



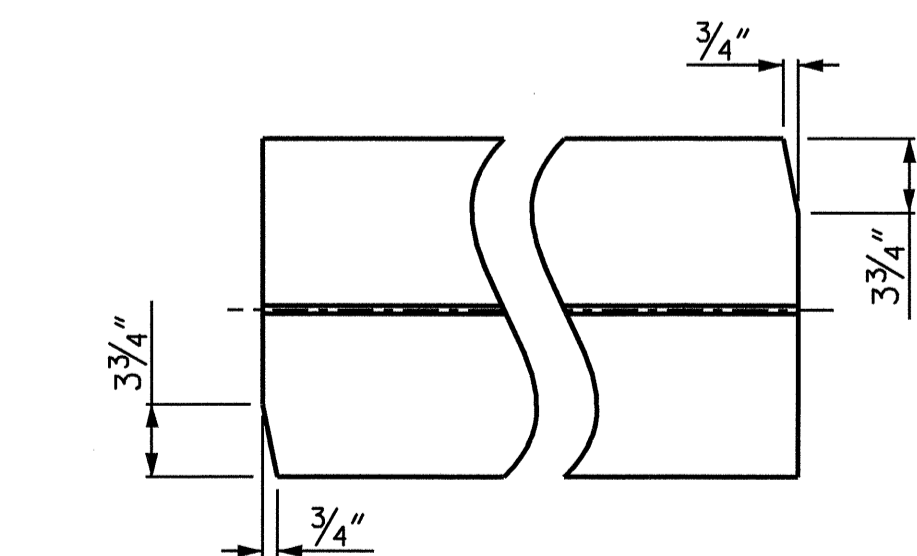
ELEVATION OF GIRDER

(FOR CLARITY, CONNECTOR PLATES FOR INTERMEDIATE DIAPHRAGMS NOT SHOWN)

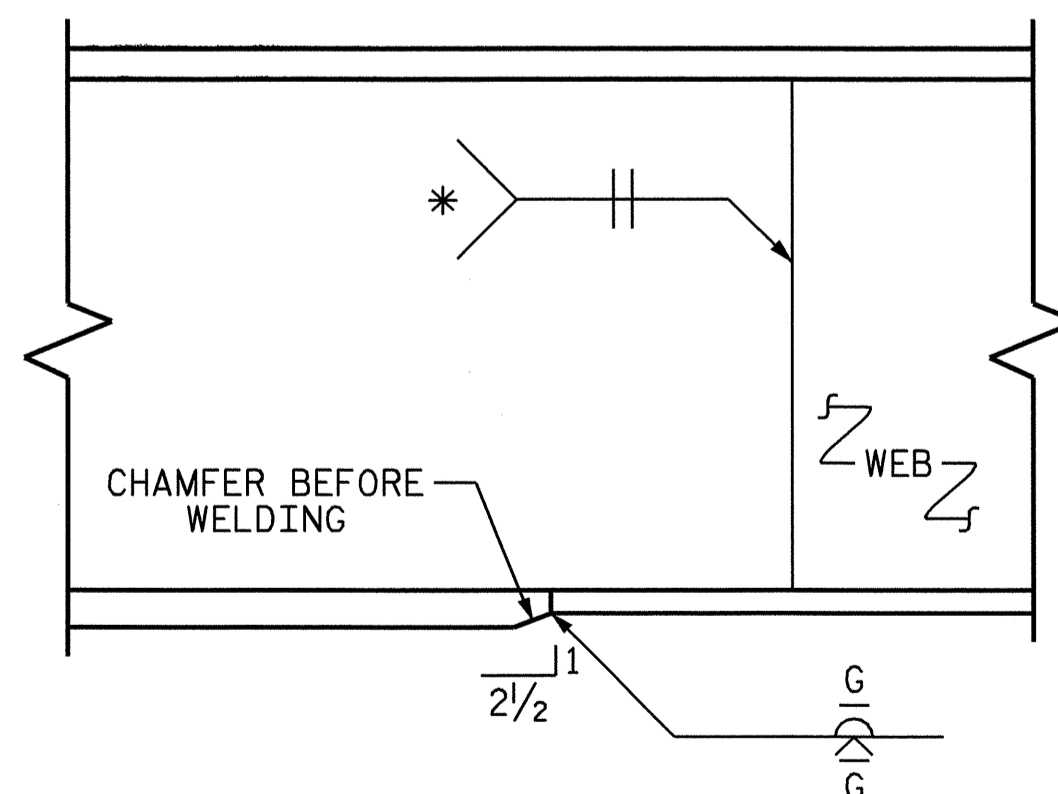


BOTTOM FLANGE DETAIL

(FOR CLARITY, CONNECTOR PLATES FOR INTERMEDIATE DIAPHRAGMS NOT SHOWN)



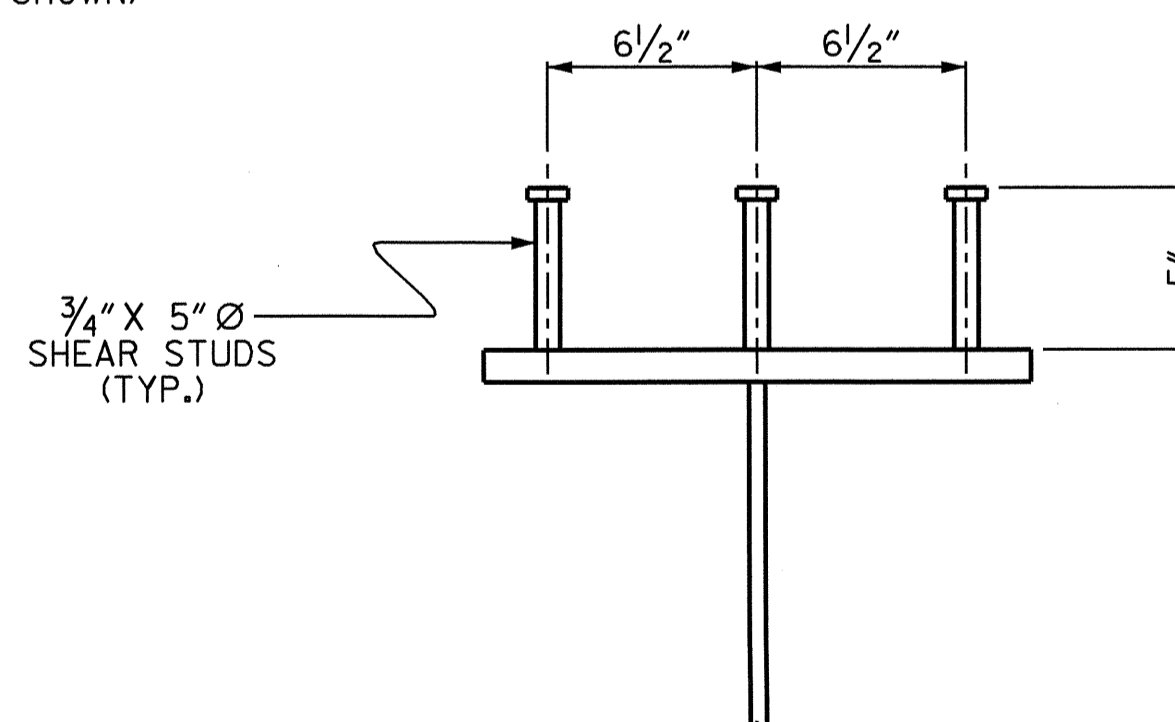
TOP FLANGE CLIP DETAIL



ELEVATION

TYPICAL FLANGE AND WEB BUTT JOINT

* GRIND SMOOTH AND FLUSH ON OUTSIDE OF EXTERIOR GIRDERS



SHEAR STUD DETAILS

PROJECT NO. B-4296
 UNION COUNTY
 STATION: 21+82.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE

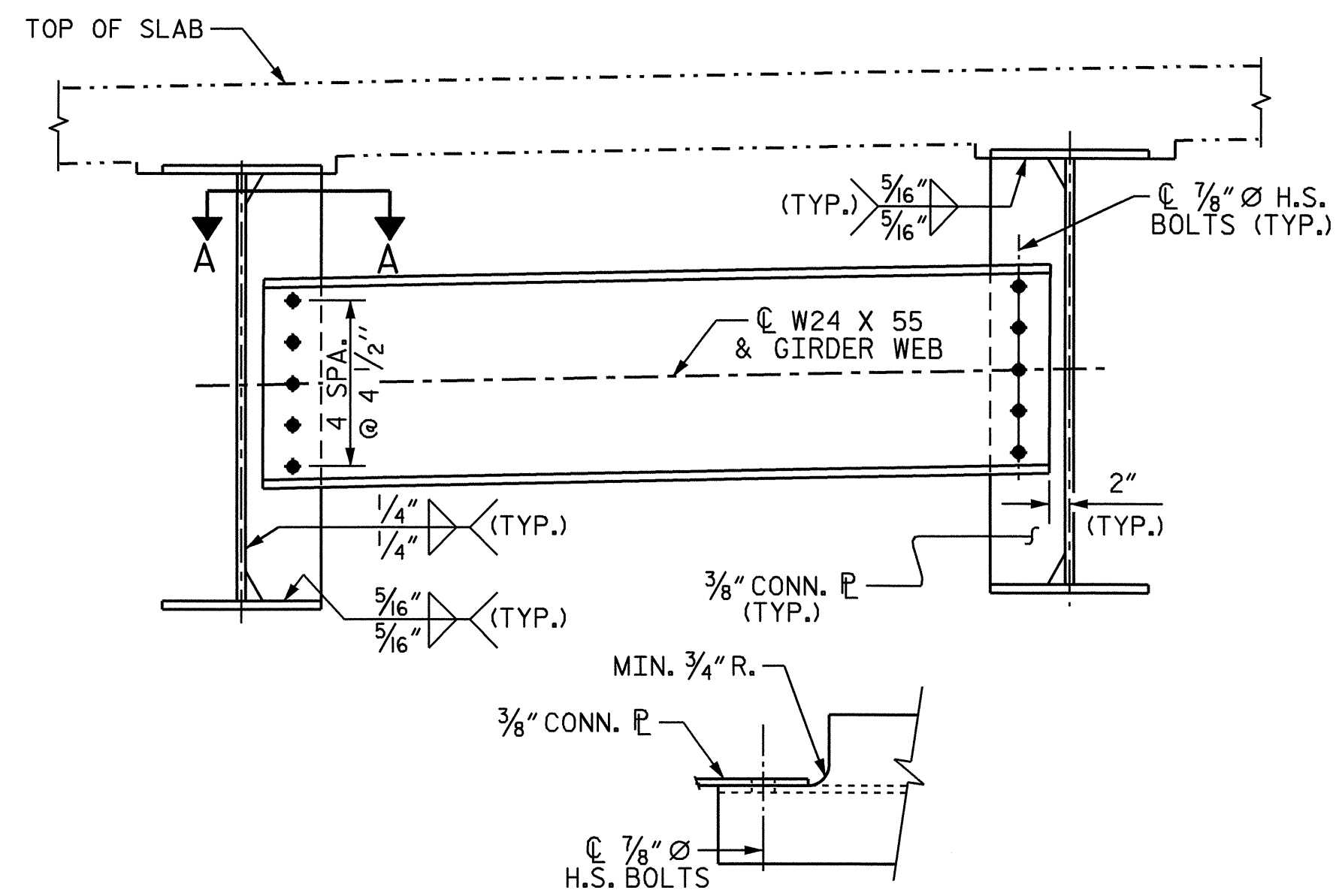
STRUCTURAL STEEL
 DETAILS

DRAWN BY: T. BANKOVICH DATE: 12-2007
 CHECKED BY: S.B. WILLIAMS DATE: 3-2008

07-OCT-2008 13:26
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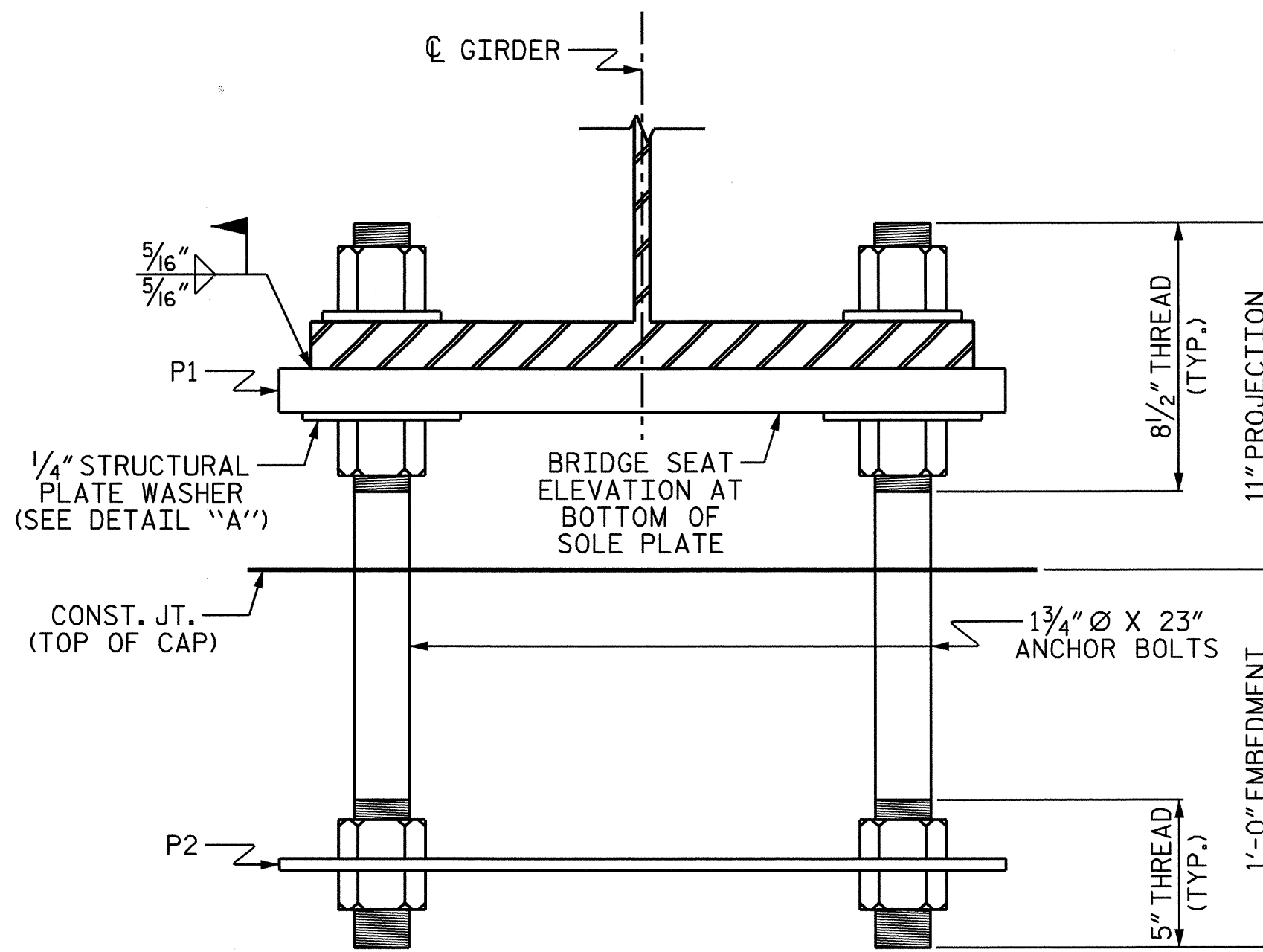
NORTH CAROLINA
 PROFESSIONAL
 SEAL
 24390
 ENGINEER
 THOMAS J. BEACH
 10/1/08

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			24

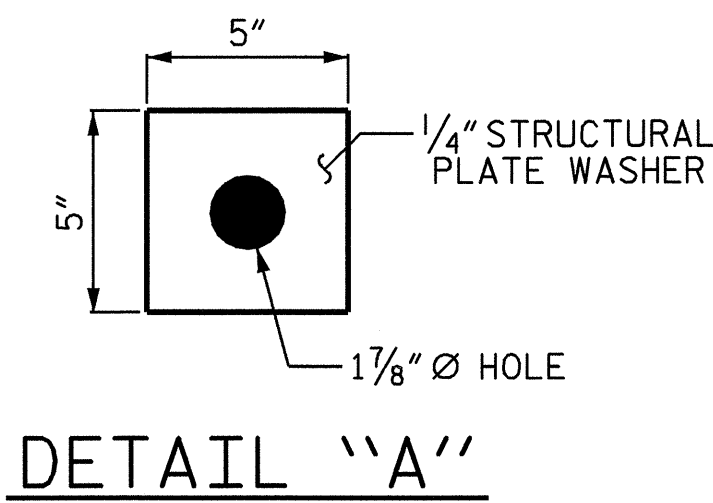


SECTION A-A

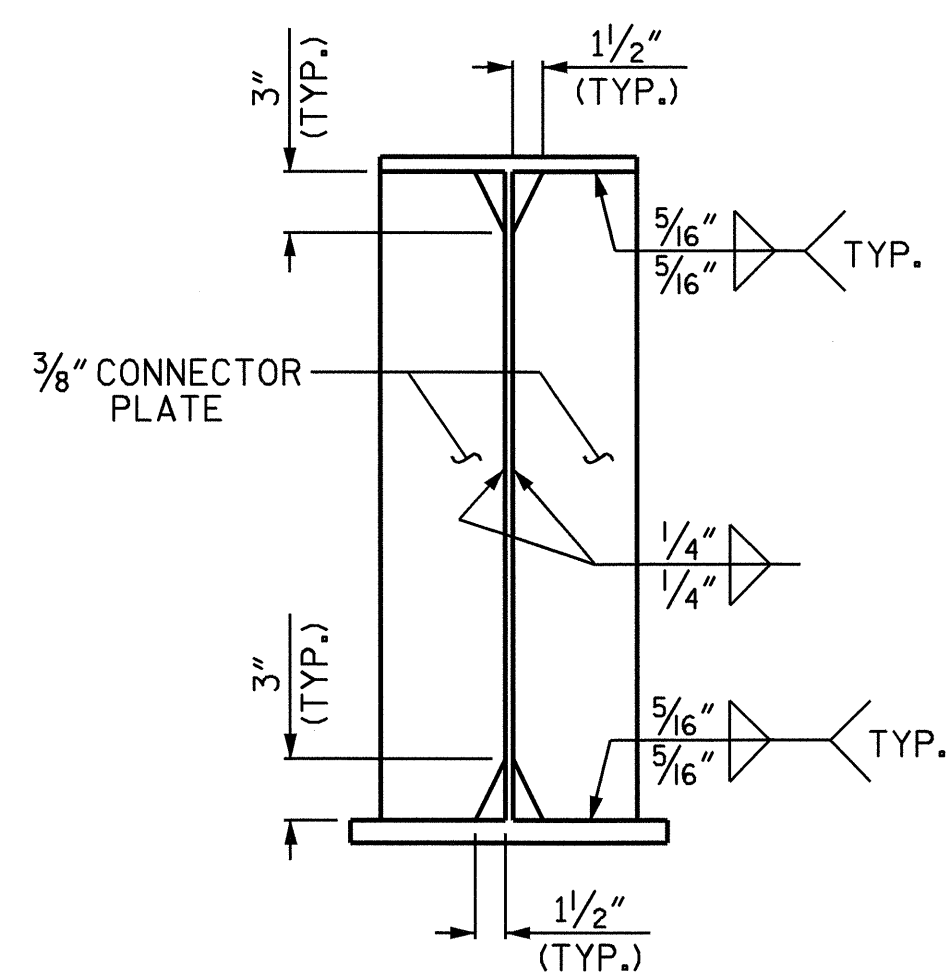
INTERMEDIATE DIAPHRAGM (D1)



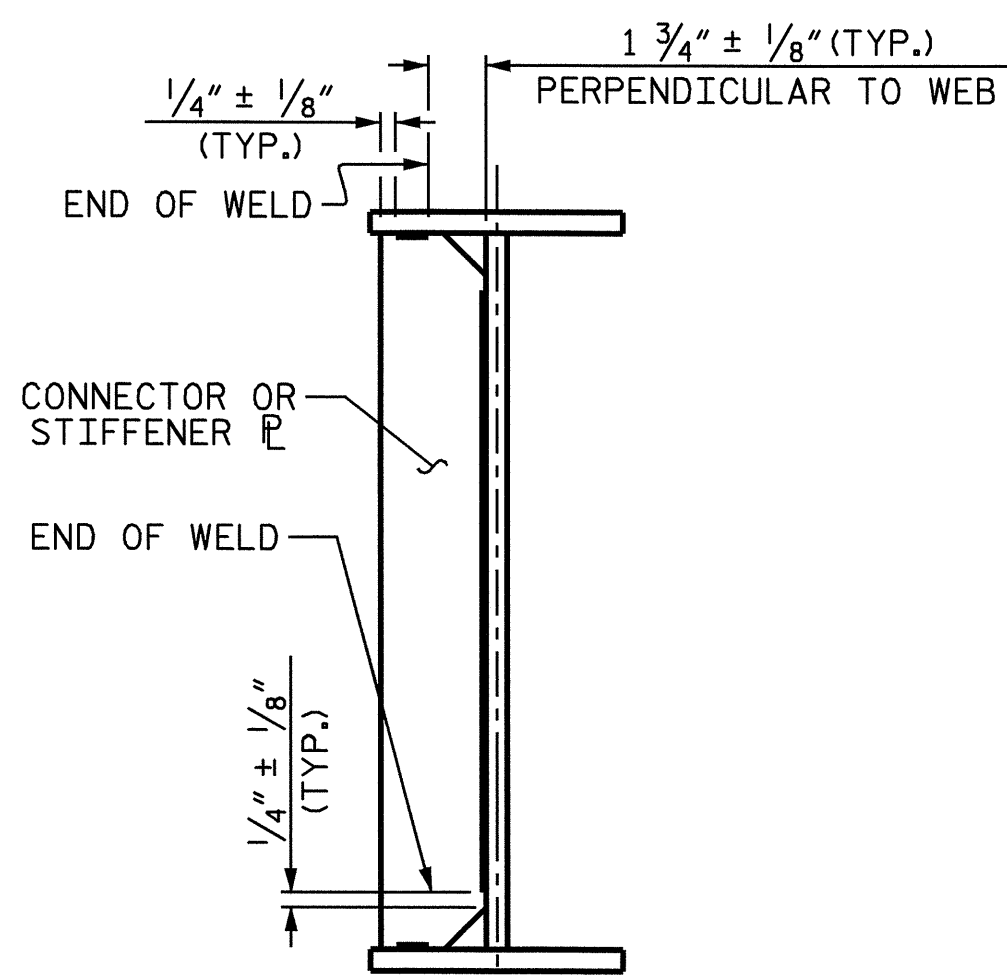
FIXED
END VIEW



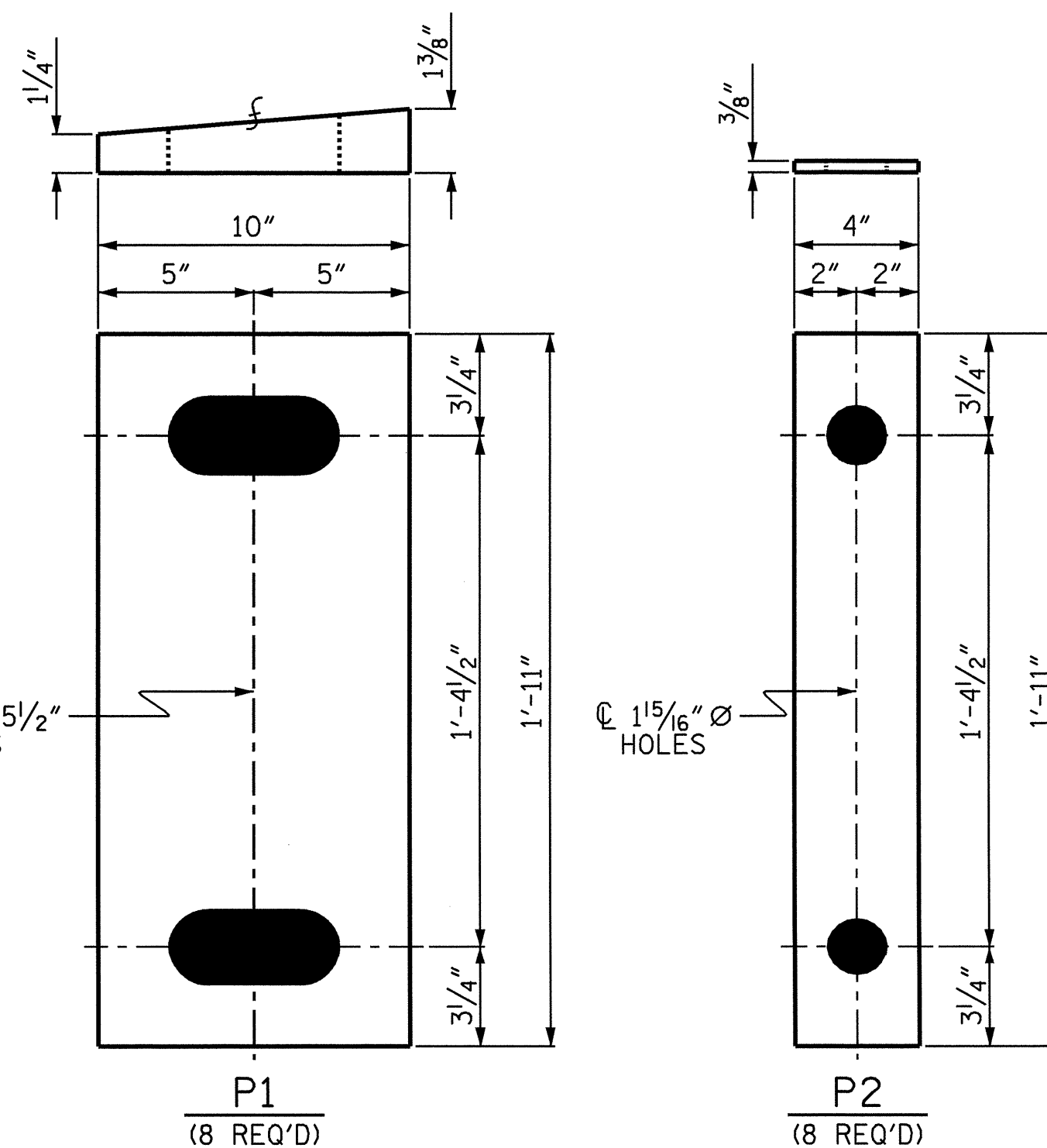
DETAIL "A"



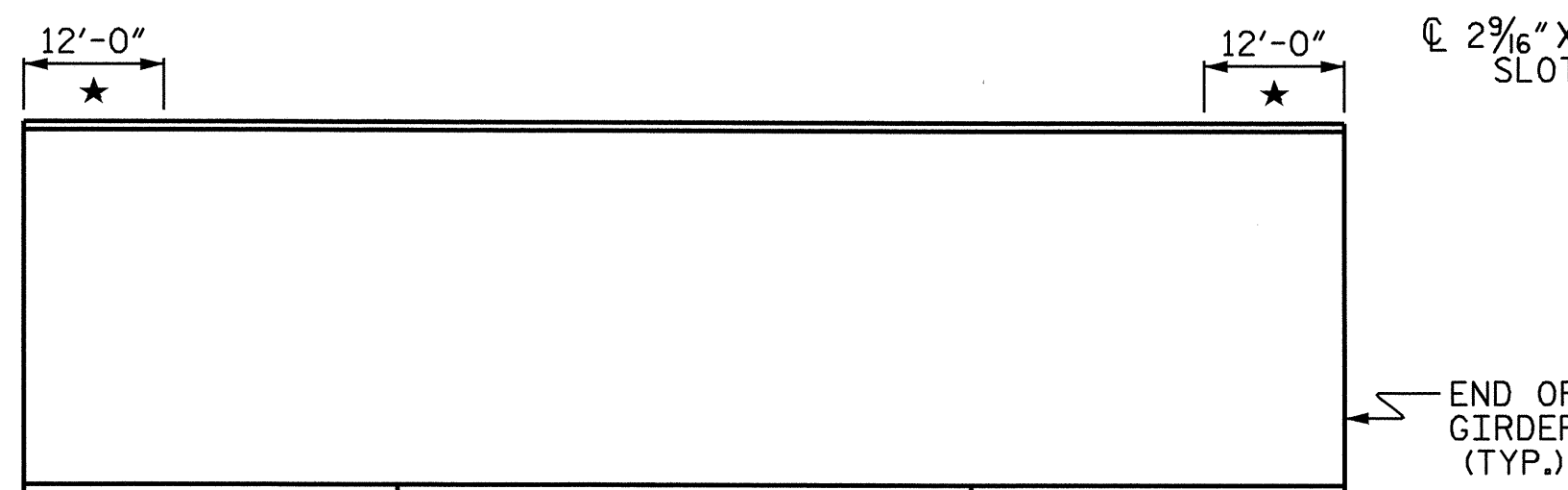
CONNECTOR PLATE



WELD TERMINATION DETAIL

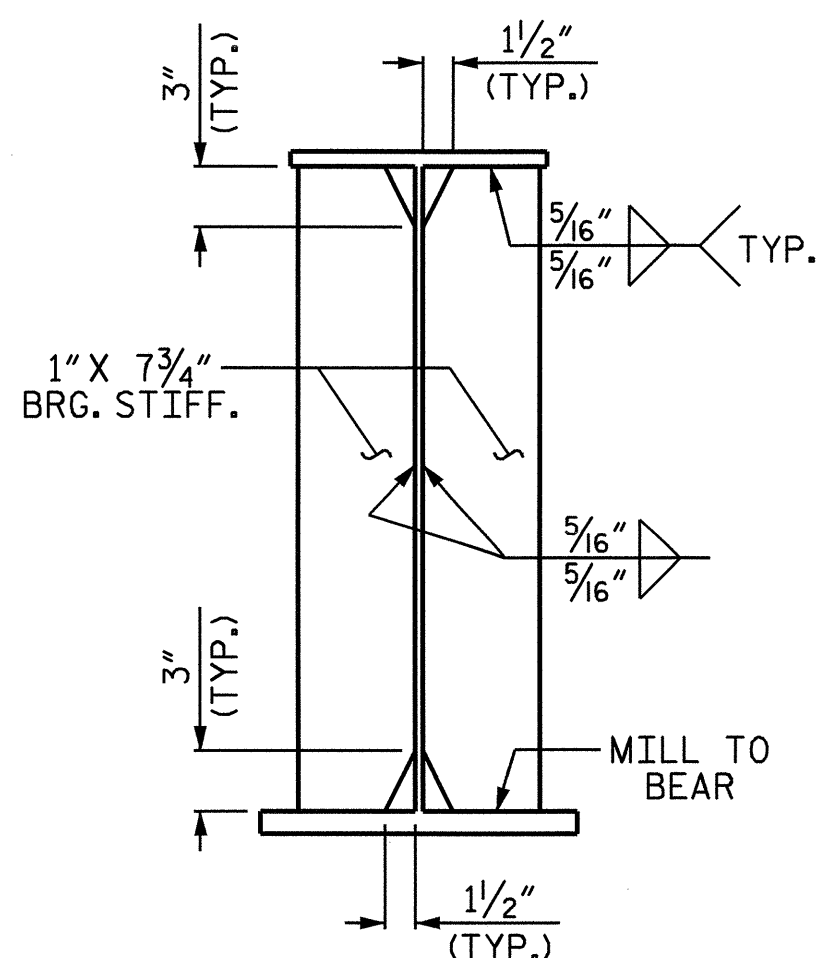


BEARING DETAILS



★ NO WELDING OF S.I.P. FORMS OR FALSEWORK TO THE TOP FLANGE WILL BE PERMITTED IN THIS REGION.

TOP FLANGE DETAILS



BEARING STIFFENER

NOTES:

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W UNLESS OTHERWISE NOTED ON THE PLANS.

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.

ALL FIELD CONNECTIONS TO BE 7/8" Ø HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED. FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.

BEARING STIFFENERS ARE TO BE PLACED NORMAL TO THE WEB OF THE GIRDER AND SHALL BE PLUMB.

A CHARTY V-NOTCH TEST IS REQUIRED FOR WEB PLATES, TOP AND BOTTOM FLANGE PLATES, BOTTOM FLANGE SPLICE PLATES AND WEB SPLICE PLATES (IF USED) FOR ALL GIRDERS AND IN ACCORDANCE WITH ARTICLE 1072-9 OF THE STANDARD SPECIFICATIONS.

SHOP SPLICES ARE PERMITTED TO LIMIT THE MAXIMUM REQUIRED FLANGE PIECE LENGTHS TO 60 FEET AND WEB PIECE LENGTHS TO 45 FEET. PERMITTED FLANGE AND WEB SHOP SPLICES SHALL NOT BE LOCATED WITHIN 15 FEET OF MAXIMUM DEAD LOAD DEFLECTION. KEEP 2 FEET MINIMUM BETWEEN WEB AND FLANGE SHOP SPLICES. KEEP 6" MINIMUM BETWEEN CONNECTOR PLATE OR TRANSVERSE STIFFENER WELDS AND WEB OR FLANGE SHOP SPLICES.

STUDS ON GIRDERS MAY BE SHIFTED UP TO 1" IF NECESSARY TO CLEAR FLANGE SPLICE WELD.

TENSION ON THE AASHTO M164 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-08 OF THE STANDARD SPECIFICATIONS.

END OF GIRDERS SHALL BE PLUMB.

SOLE PLATE AND ANCHOR PLATE SHALL BE AASHTO M270 GRADE 50W AND SHALL NOT BE GALVANIZED. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

STRUCTURAL PLATE WASHER AND WASHER PLATE SHALL BE AASHTO M270 GRADE 50W AND SHALL NOT BE GALVANIZED.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. STANDARD WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

WHEN FIELD WELDING SOLE PLATE TO THE GIRDER FLANGE, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300° F.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

AT BOTH END BENTS, TOP NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AFTER SETTING THE GIRDERS, AND SUBSEQUENTLY FULLY TIGHTENED JUST PRIOR TO POUR #2. SEE BILL OF MATERIAL SHEET FOR POURS.

END OF GIRDERS SHALL NOT BE PAINTED.

BEARING ASSEMBLY WILL BE INSTALLED DURING THE CONSTRUCTION OF THE END BENT. SEE "END BENT SHEETS" FOR DETAILS.

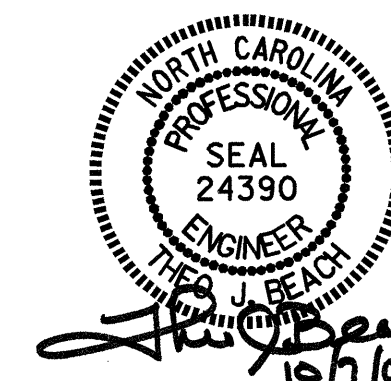
PROJECT NO. B-4296
UNION COUNTY
 STATION: 21+82.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE

STRUCTURAL STEEL
 DETAIL



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			24

DRAWN BY: T. BANKOVICH DATE: 3-2008
 CHECKED BY: S.B. WILLIAMS DATE: 3-2008

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPAN A																					
GIRDER 1 & 4																					
TWENTIETH POINTS	BRG.	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	BRG.
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.016	0.032	0.047	0.061	0.073	0.083	0.091	0.097	0.100	0.102	0.100	0.097	0.091	0.083	0.073	0.061	0.047	0.032	0.016	0
DEFLECTION DUE TO WEIGHT OF SLAB *	0	0.054	0.117	0.176	0.230	0.277	0.316	0.347	0.370	0.384	0.389	0.384	0.370	0.347	0.316	0.277	0.230	0.176	0.117	0.054	0
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0	0.006	0.012	0.018	0.023	0.028	0.032	0.035	0.037	0.038	0.039	0.038	0.037	0.035	0.032	0.028	0.023	0.018	0.012	0.006	0
TOTAL DEAD LOAD DEFLECTION	0	0.076	0.161	0.241	0.314	0.378	0.431	0.473	0.504	0.522	0.530	0.522	0.504	0.473	0.431	0.378	0.314	0.241	0.161	0.076	0
VERTICAL CURVE ORDINATE	0	-0.038	-0.071	-0.101	-0.127	-0.149	-0.166	-0.180	-0.190	-0.196	-0.198	-0.196	-0.190	-0.180	-0.166	-0.149	-0.127	-0.101	-0.071	-0.038	0
REQUIRED CAMBER	0	7/16"	1 1/16"	1 1/2"	2 1/4"	2 3/4"	3 1/8"	3 1/2"	3 3/4"	3 5/8"	4"	3 5/8"	3 3/4"	3 1/2"	3 1/8"	2 3/4"	2 1/4"	1 1/2"	1 1/8"	7/16"	0
GIRDER 2 & 3																					
TWENTIETH POINTS	BRG.	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	BRG.
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.016	0.032	0.047	0.061	0.073	0.083	0.091	0.097	0.100	0.102	0.100	0.097	0.091	0.083	0.073	0.061	0.047	0.032	0.016	0
DEFLECTION DUE TO WEIGHT OF SLAB *	0	0.054	0.118	0.177	0.232	0.279	0.319	0.350	0.373	0.387	0.392	0.387	0.373	0.350	0.319	0.279	0.232	0.177	0.118	0.054	0
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0	0.006	0.012	0.018	0.023	0.027	0.031	0.034	0.036	0.037	0.038	0.037	0.036	0.034	0.031	0.027	0.023	0.018	0.012	0.006	0
TOTAL DEAD LOAD DEFLECTION	0	0.076	0.162	0.242	0.316	0.379	0.433	0.475	0.506	0.524	0.532	0.524	0.506	0.475	0.433	0.379	0.316	0.242	0.162	0.076	0
VERTICAL CURVE ORDINATE	0	-0.038	-0.071	-0.101	-0.127	-0.149	-0.166	-0.180	-0.190	-0.196	-0.198	-0.196	-0.190	-0.180	-0.166	-0.149	-0.127	-0.101	-0.071	-0.038	0
REQUIRED CAMBER	0	7/16"	1 1/16"	1 1/2"	2 1/4"	2 3/4"	3 1/8"	3 1/2"	3 3/8"	3 5/8"	4"	3 5/8"	3 3/8"	3 1/2"	3 1/8"	2 3/4"	2 1/4"	1 1/2"	1 1/8"	7/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
 ALL VALUES ARE SHOWN IN FEET (DECIMAL FEET), EXCEPT "REQUIRED CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

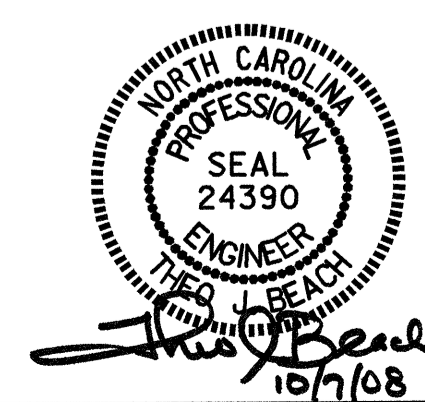
PROJECT NO. B-4296
 UNION COUNTY
 STATION: 21+82.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE

DEAD LOAD DEFLECTIONS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			24



DRAWN BY : T. BANKOVICH DATE : 12-2007
 CHECKED BY : S.B. WILLIAMS DATE : 3-2008

NOTES

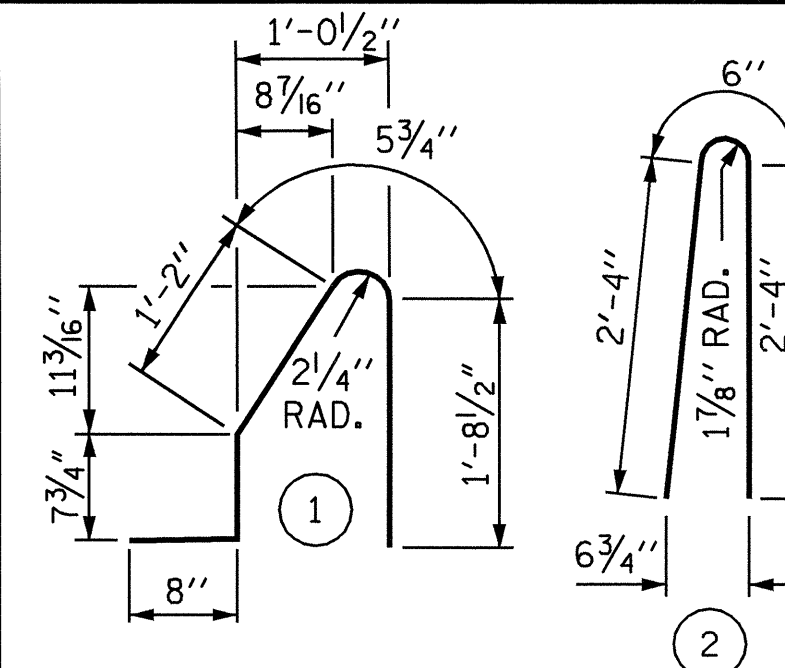
THE BARRIER RAIL IN EACH SPAN SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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. THE 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.

THE #5 "S" BARS MAY BE SHIFTED AS NECESSARY IN ORDER TO MAINTAIN A 2" MINIMUM CLEARANCE TO THE 1/2" EXPANSION JOINT MATERIAL IN BARRIER RAIL.

BAR TYPES



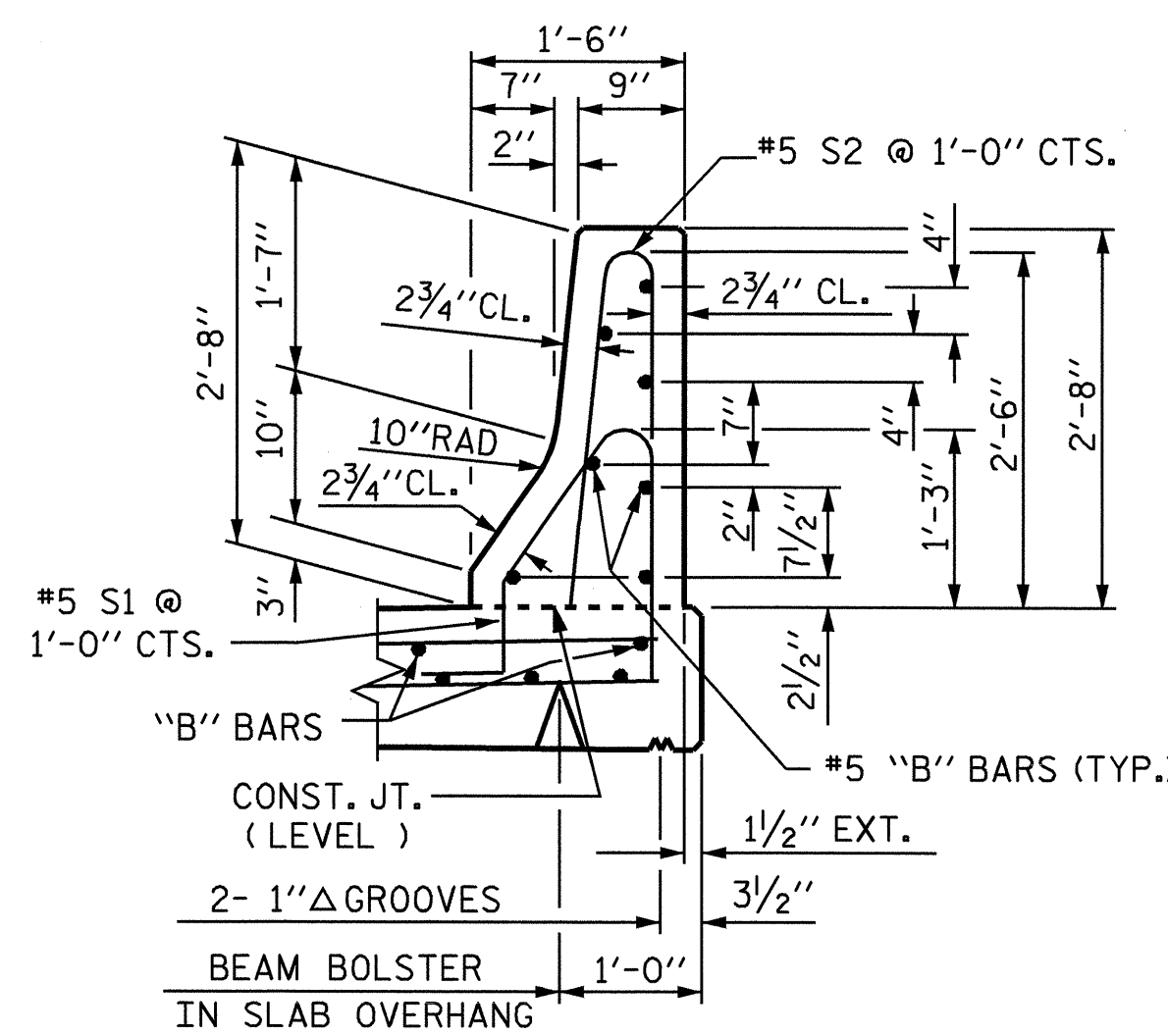
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

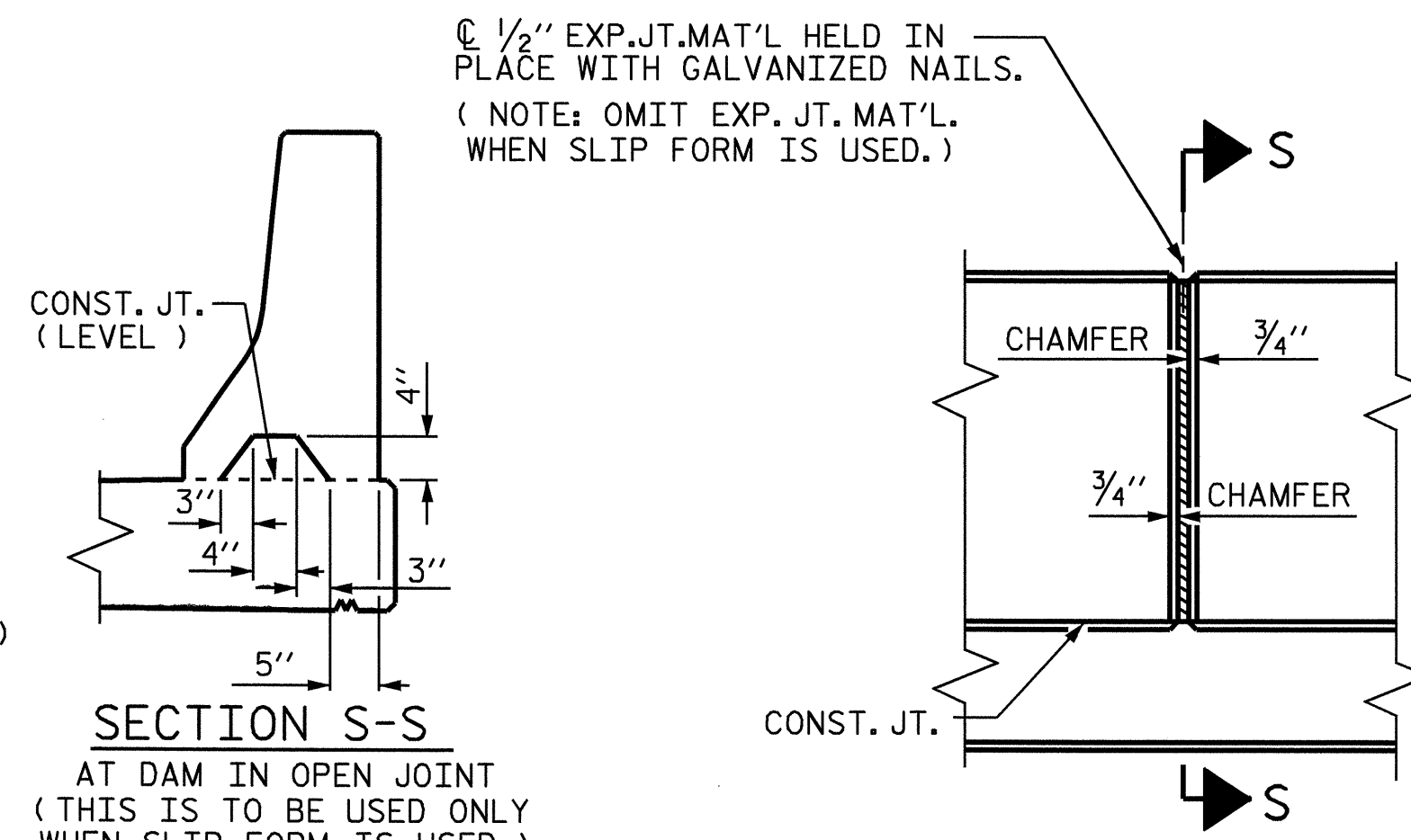
FOR CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	56	#5	STR	27'-10"	1626
* S1	228	#5	1	4'-8"	1110
* S2	228	#5	2	5'-2"	1229

* EPOXY COATED REINFORCING STEEL 3965 LBS.
 CLASS AA CONCRETE 23.0 CU. YDS.
 CONCRETE BARRIER RAIL 226.6 LIN. FT.

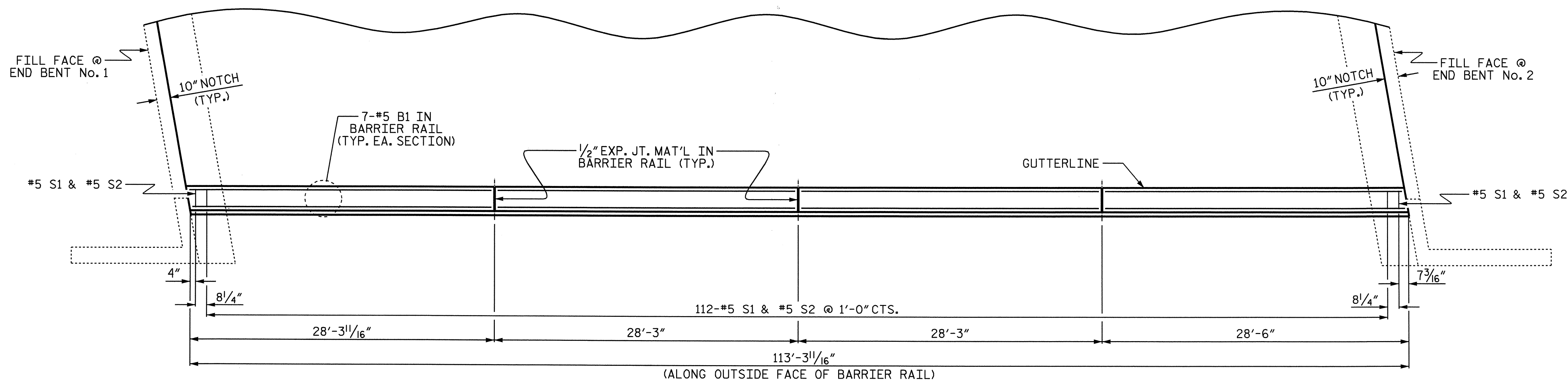


SECTION THRU RAIL



ELEVATION AT EXPANSION JOINTS

BARRIER RAIL DETAILS

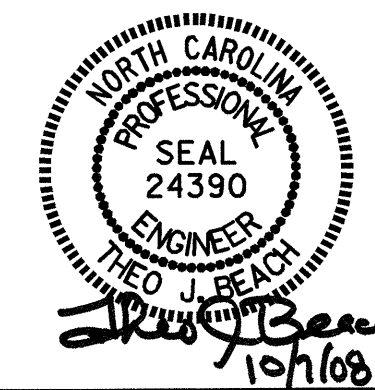


PLAN OF BARRIER RAIL

RIGHT SIDE SHOWN, LEFT SIDE SIMILAR

PROJECT NO. B-4296
 UNION COUNTY
 STATION: 21+82.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 CONCRETE BARRIER RAIL



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			24

DRAWN BY: T. BANKOVICH DATE: 3-2008
 CHECKED BY: S.B. WILLIAMS DATE: 3-2008

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.)

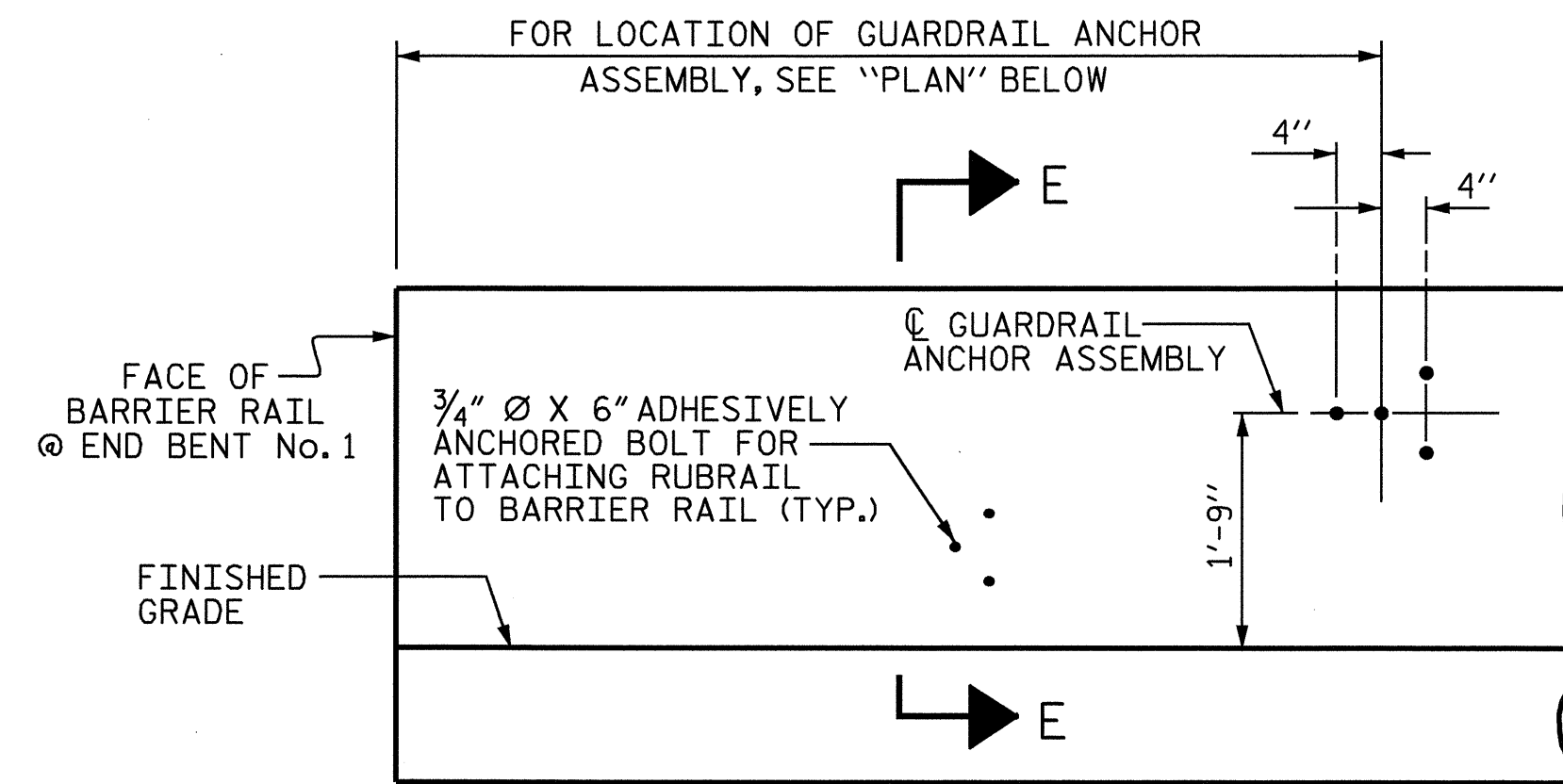
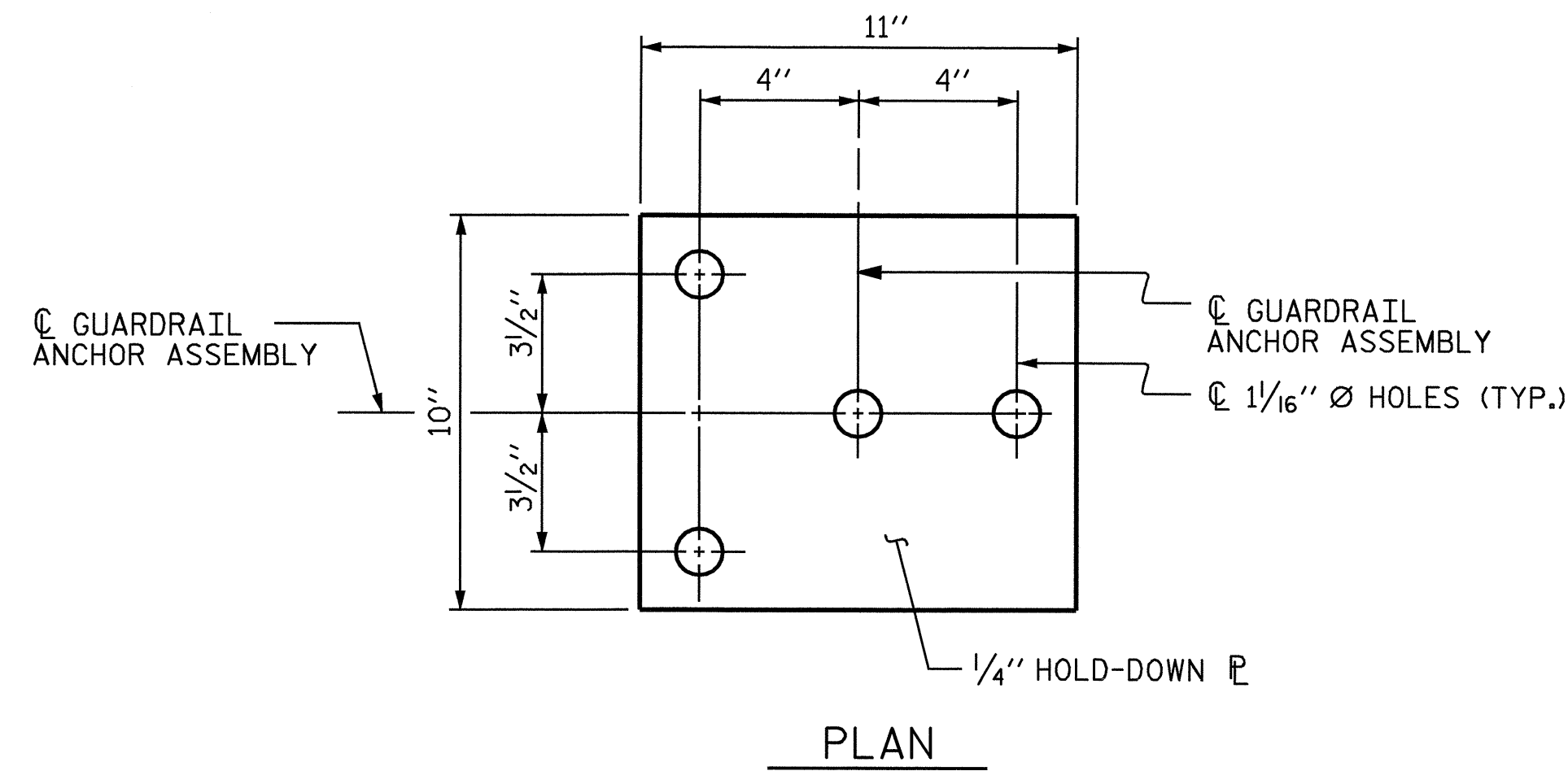
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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.

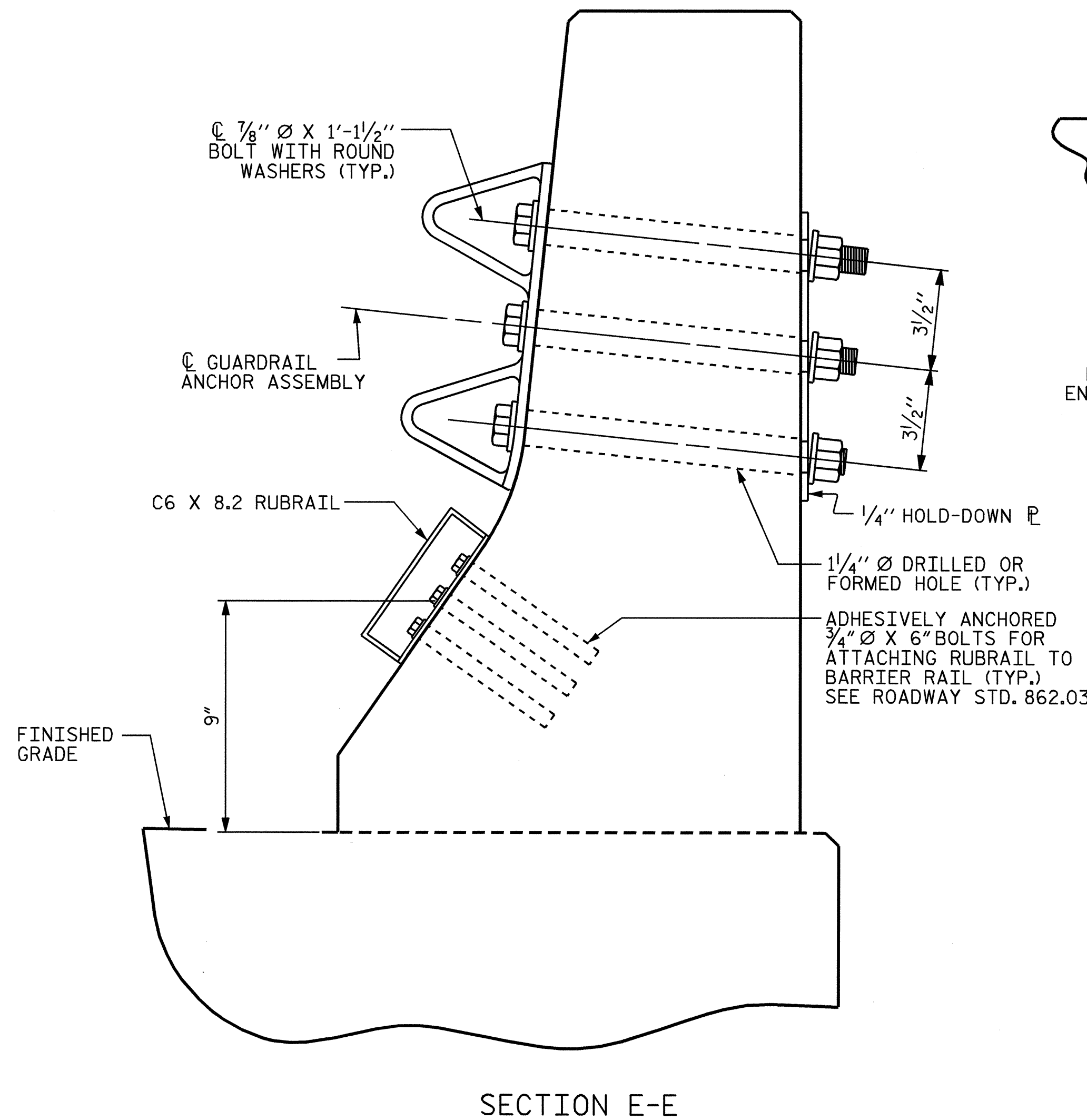
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

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.



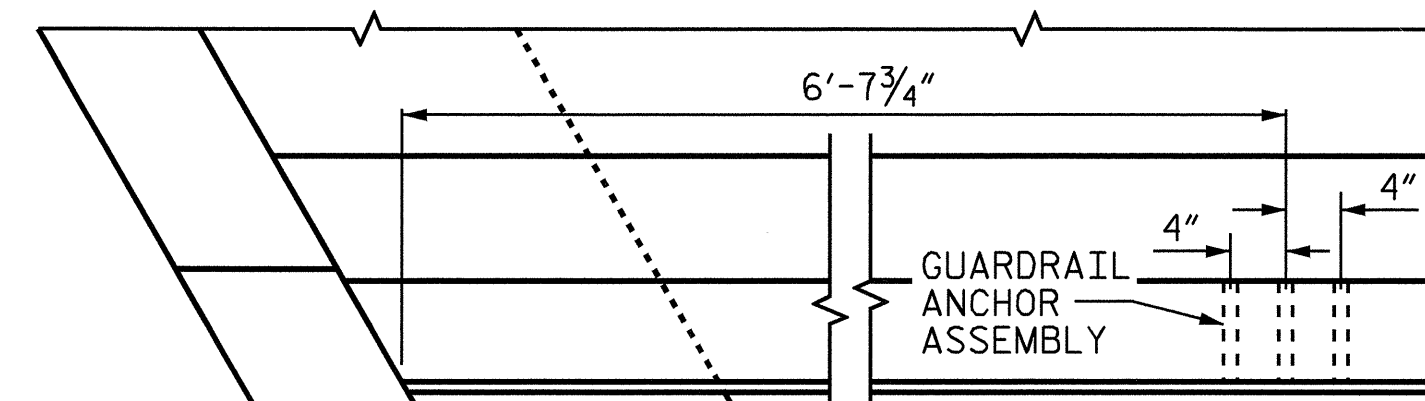
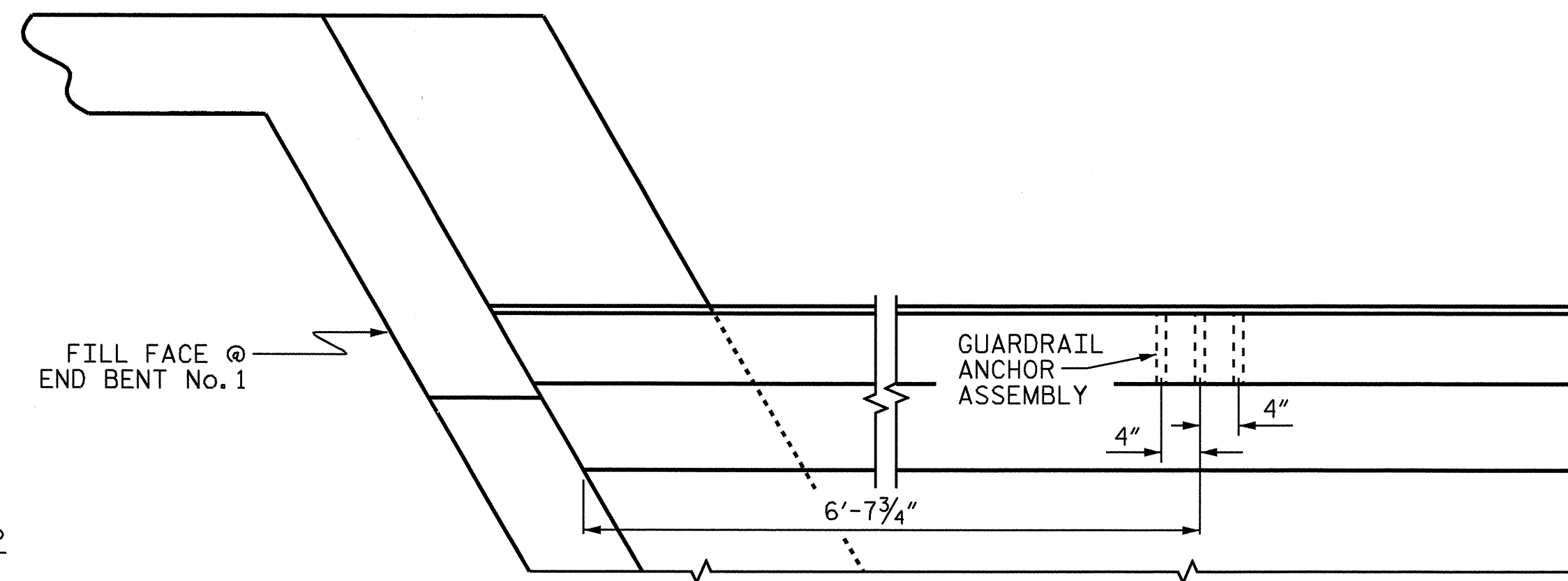
ELEVATION

FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03



SECTION E-E

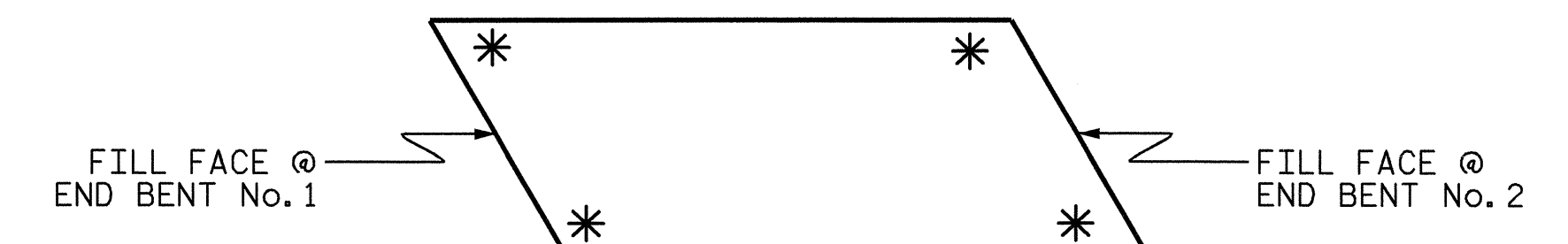
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR.

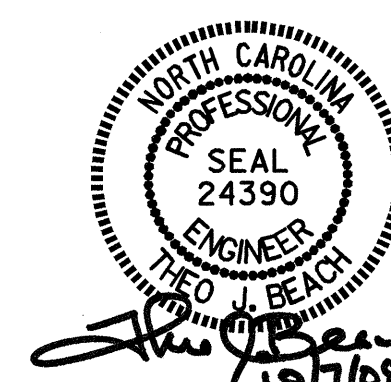


SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4296
UNION COUNTY
 STATION: 21+82.50 -L-

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



ASSEMBLED BY : T. BANKOVICH	DATE : 3-2008
CHECKED BY : S.B. WILLIAMS	DATE : 3-2008
DRAWN BY : TLA 5/06	ADDED 5/1/06R KMM/GM
CHECKED BY : GM 5/06	

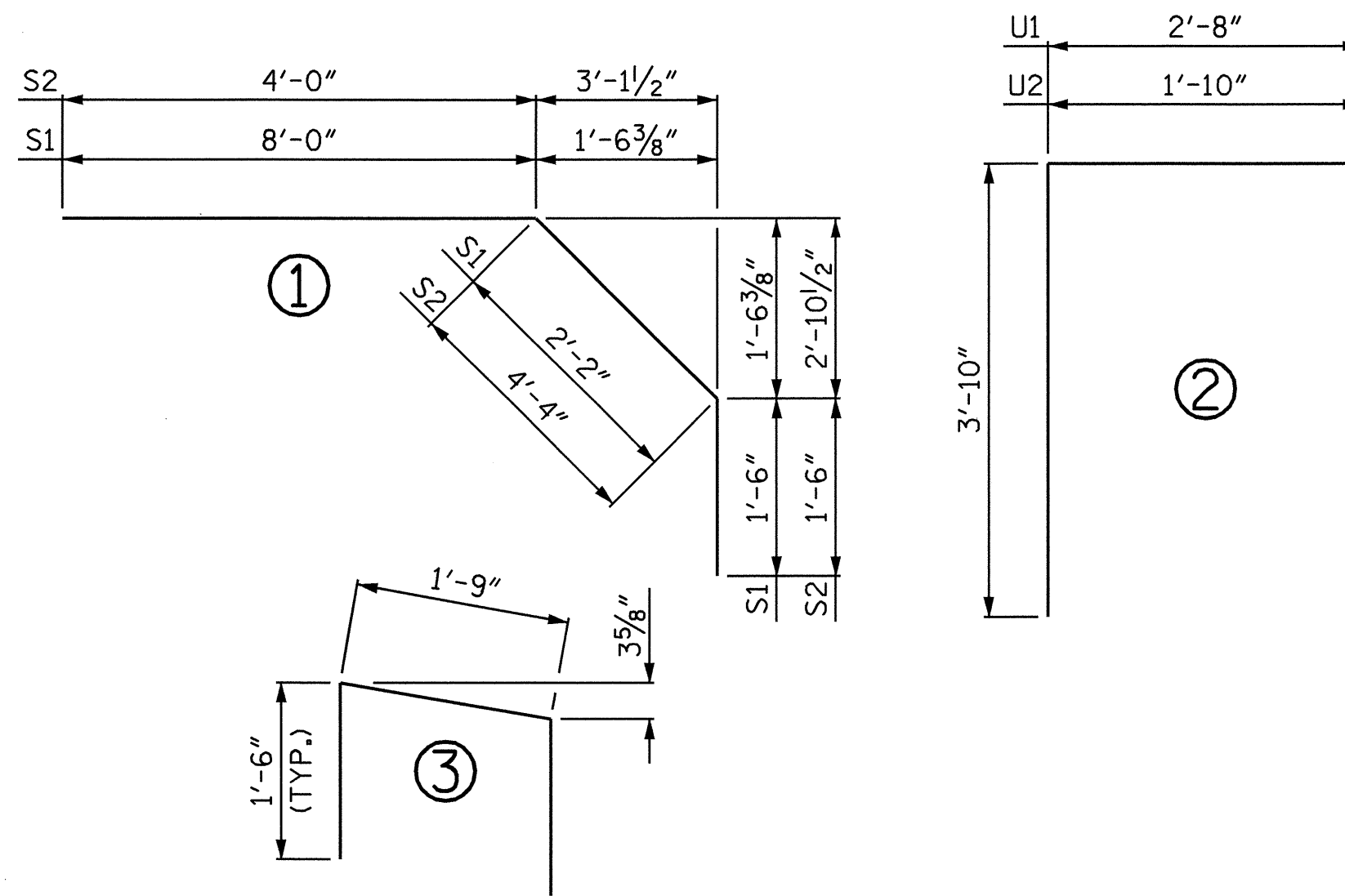
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 tbeach

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			24

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	2'-0"	1'-9"	2'-0"	1'-9"	2'-9"
#5	2'-6"	2'-2"	2'-6"	2'-2"	3'-5"
#6	3'-0"	2'-7"	3'-10"	2'-7"	4'-4"
#7	5'-3"	3'-6"			
#8	6'-10"	4'-7"			

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	199	#5	STR	32'-11"	6832	* B1	10	#4	STR	24'-2"	161
A2	199	#5	STR	32'-11"	6832	* B2	82	#7	STR	23'-0"	3855
*A101	2	#5	STR	30'-6"	64	* B3	123	#5	STR	39'-2"	5025
*A102	2	#5	STR	27'-5"	57	* B4	63	#4	STR	25'-0"	1052
*A103	2	#5	STR	24'-4"	51						
*A104	2	#5	STR	21'-3"	44	* K1	40	#4	STR	16'-9"	448
*A105	2	#5	STR	18'-2"	38						
*A106	2	#5	STR	15'-1"	31	* S1	42	#4	1	11'-8"	327
*A107	2	#5	STR	12'-0"	25	* S2	42	#4	1	9'-10"	276
*A108	2	#5	STR	8'-11"	19						
*A109	2	#5	STR	5'-11"	12	* U1	50	#4	2	10'-4"	345
*A110	2	#5	STR	2'-10"	6	* U2	4	#4	2	9'-6"	25
A201	2	#5	STR	30'-6"	64	* U3	20	#4	3	4'-9"	63
A202	2	#5	STR	27'-5"	57						
A203	2	#5	STR	24'-4"	51	REINFORCING STEEL					12,204 LBS.
A204	2	#5	STR	21'-3"	44	*EPOXY COATED					
A205	2	#5	STR	18'-2"	38	REINFORCING STEEL					13,731 LBS.
A206	2	#5	STR	15'-1"	31						
A207	2	#5	STR	12'-0"	25						
A208	2	#5	STR	8'-11"	19						
A209	2	#5	STR	5'-11"	12						
A210	2	#5	STR	2'-10"	6						

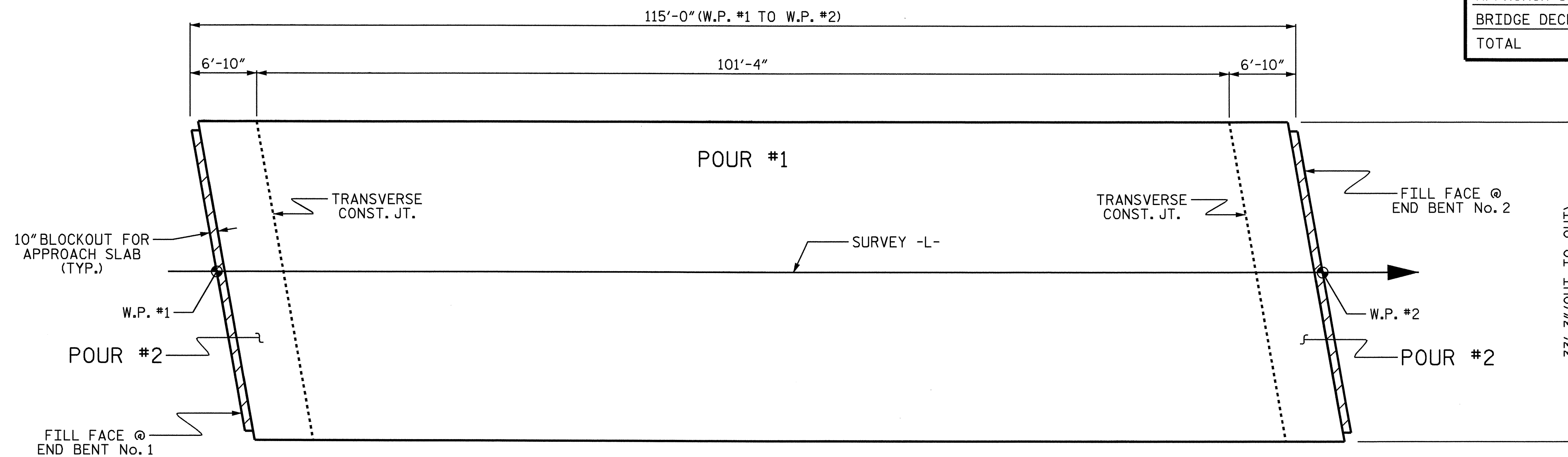
SUPERSTRUCTURE BILL OF MATERIAL

	CLASS AA CONCRETE	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
	(CU. YDS.)	(LBS.)	(LBS.)
POUR #1	103.9		
POUR #2	43.8		
TOTAL **	147.7	12,204 LBS.	13,731 LBS.

** QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED

GROOVING BRIDGE FLOOR

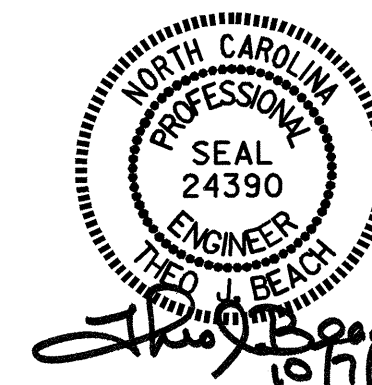
APPROACH SLABS	678 SQ. FT.
BRIDGE DECK	3050 SQ. FT.
TOTAL	3728 SQ. FT.



LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB & POUR SEQUENCE (SQ. FT. = 3824)

PROJECT NO. B-4296
UNION COUNTY
 STATION: 21+82.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 BILL OF MATERIAL



DRAWN BY: T. BANKOVICH DATE: 12-2007
 CHECKED BY: S.B. WILLIAMS DATE: 3-2008

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			24

NOTES:

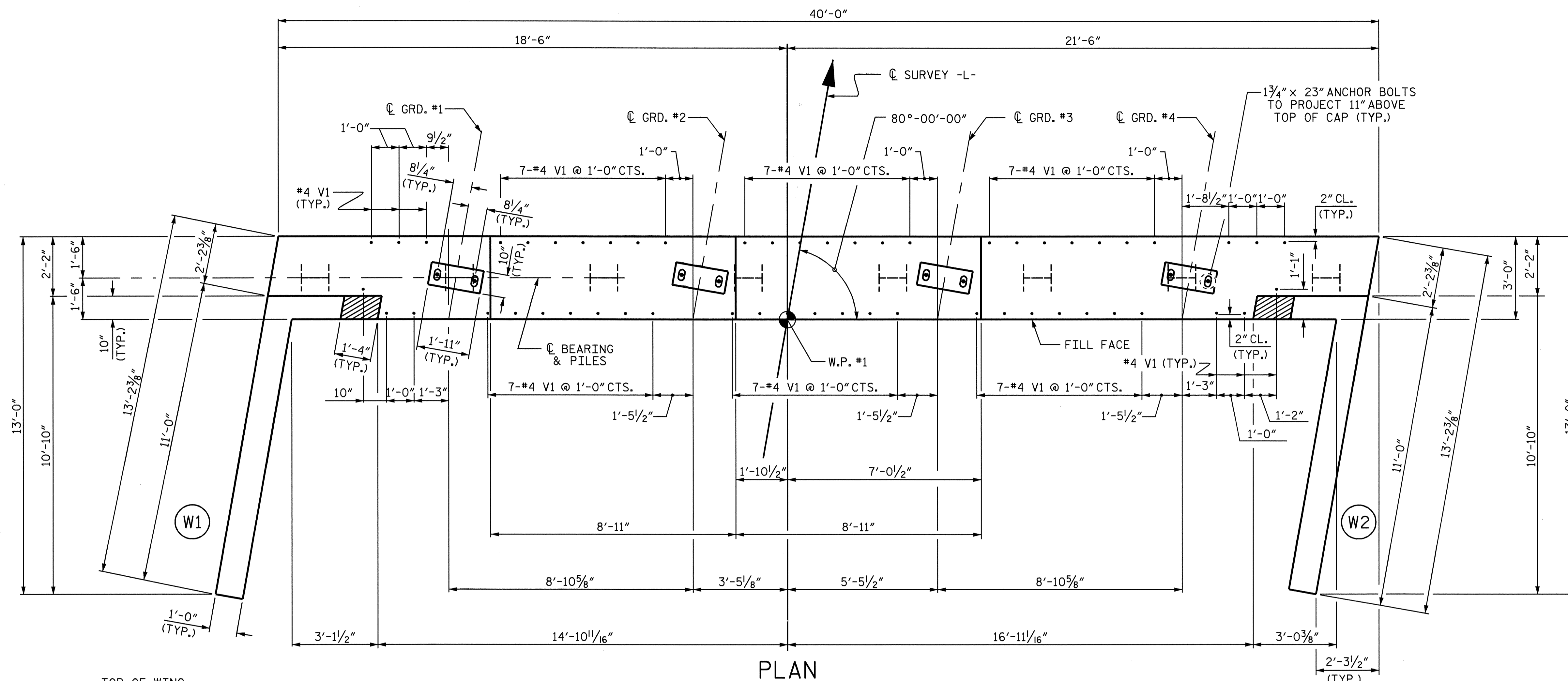
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

FOR SECTION A-A, AND PARTIAL SECTION B-B, SEE SHEET 3 OF 3.

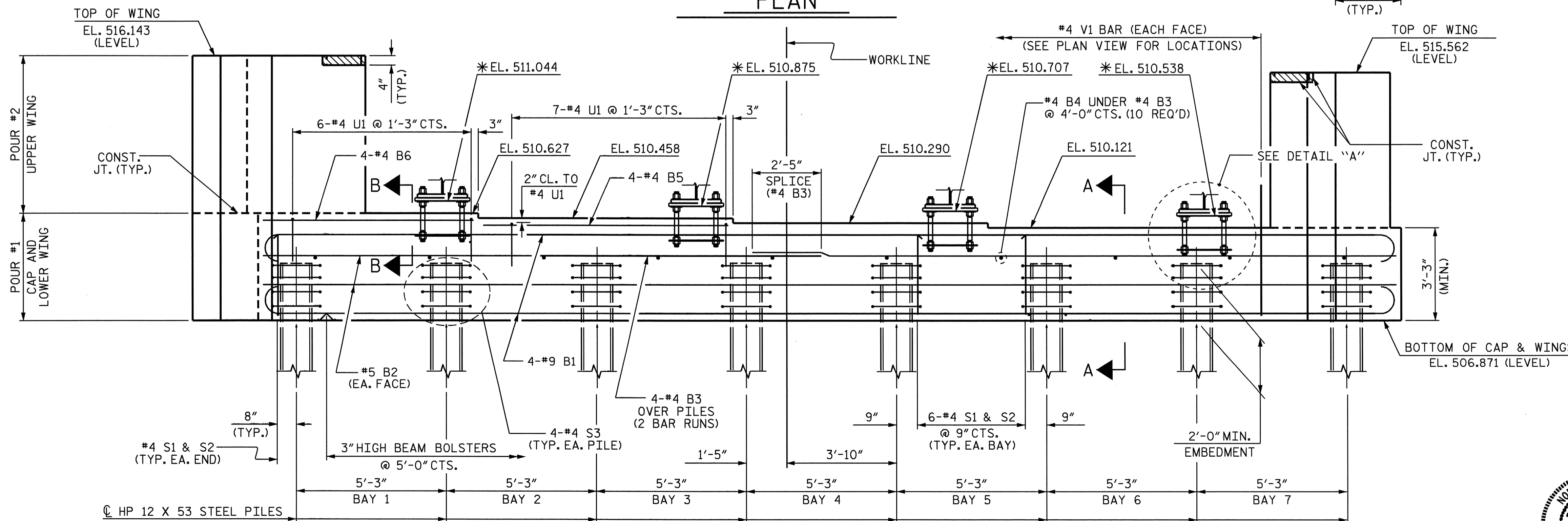
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

*#4 V1 BARS MAY BE SHIFTED SLIGHTLY TO AVOID STIRRUPS IN CAP.

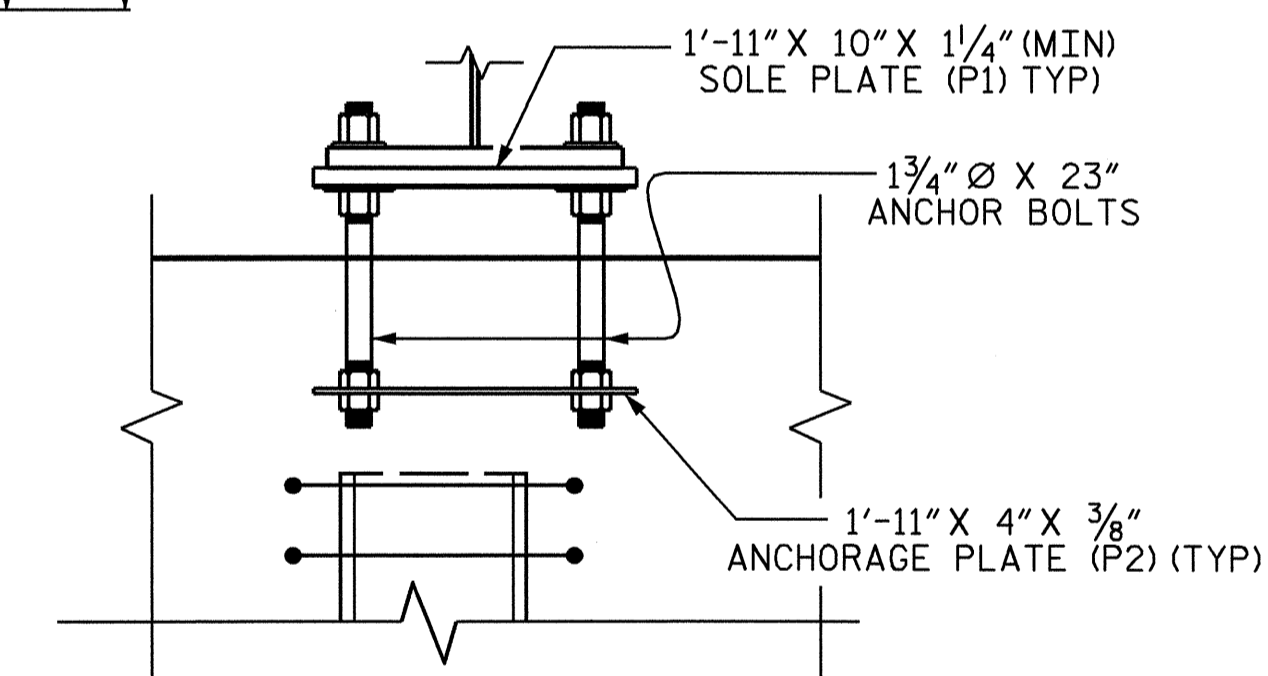
*ELEVATIONS TAKEN AT BOTTOM OF SOLE PLATE AT THE CL BEARING.



PLAN



ELEVATION



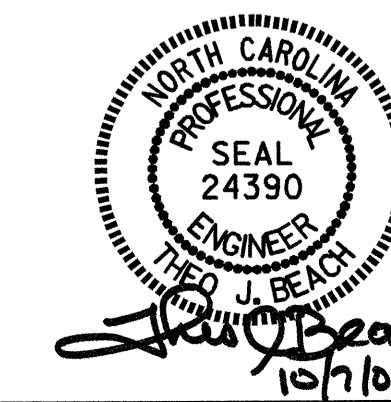
DETAIL "A"

PROJECT NO. B-4296
 UNION COUNTY
 STATION: 21+82.50 -L-

SHEET 1 OF 3

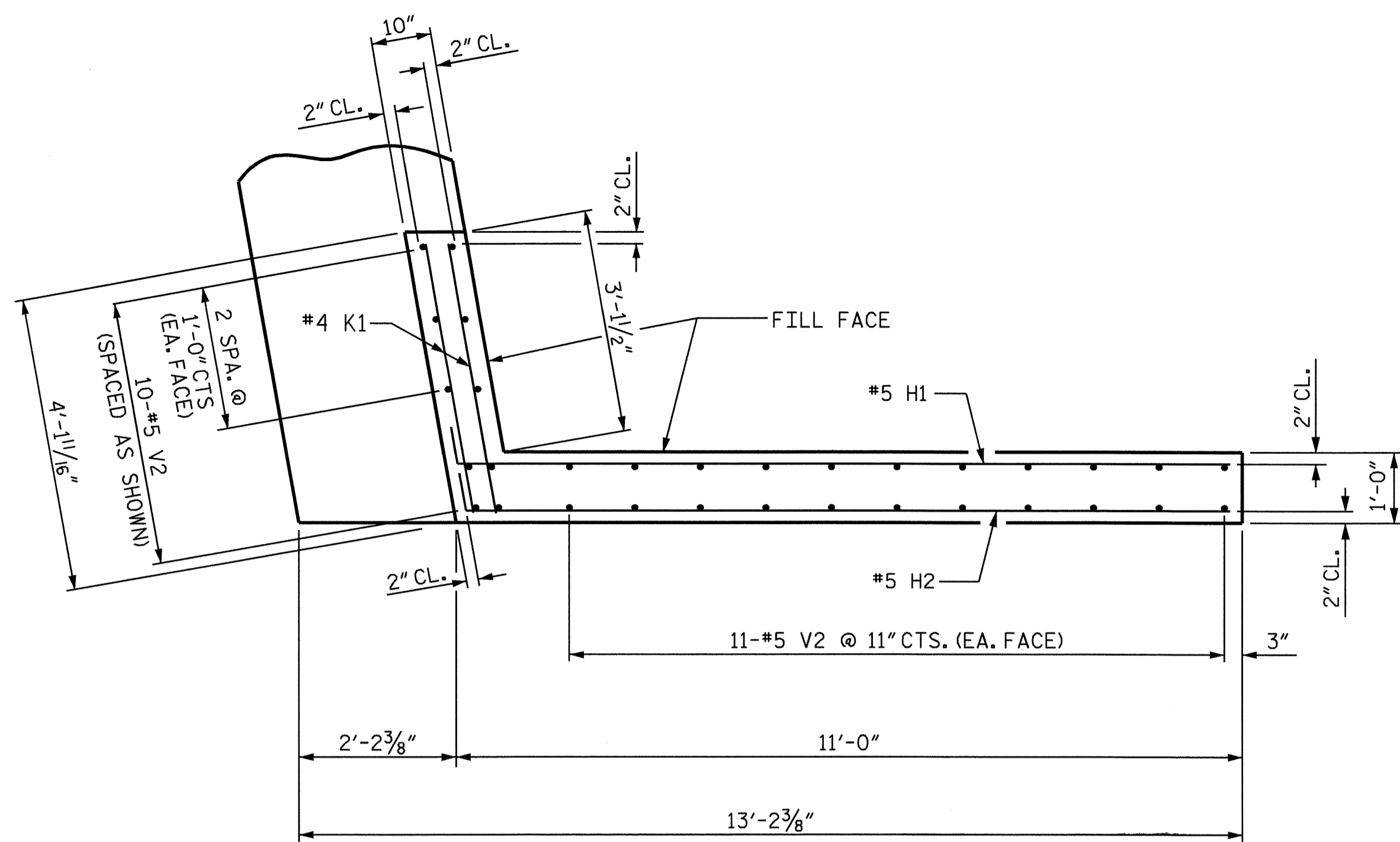
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 1

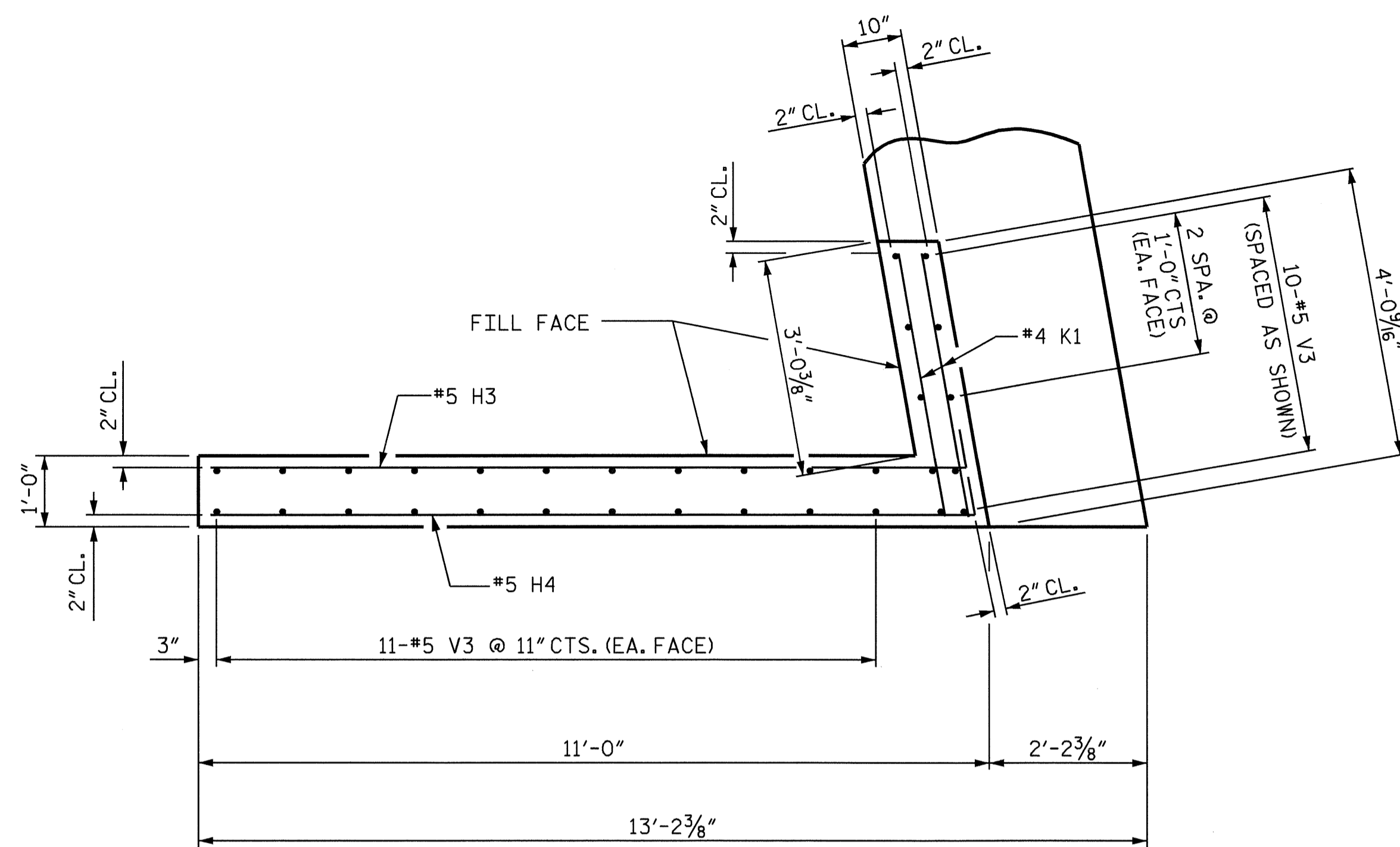


REVISIONS						SHEET NO. S-15
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 24
2			4			

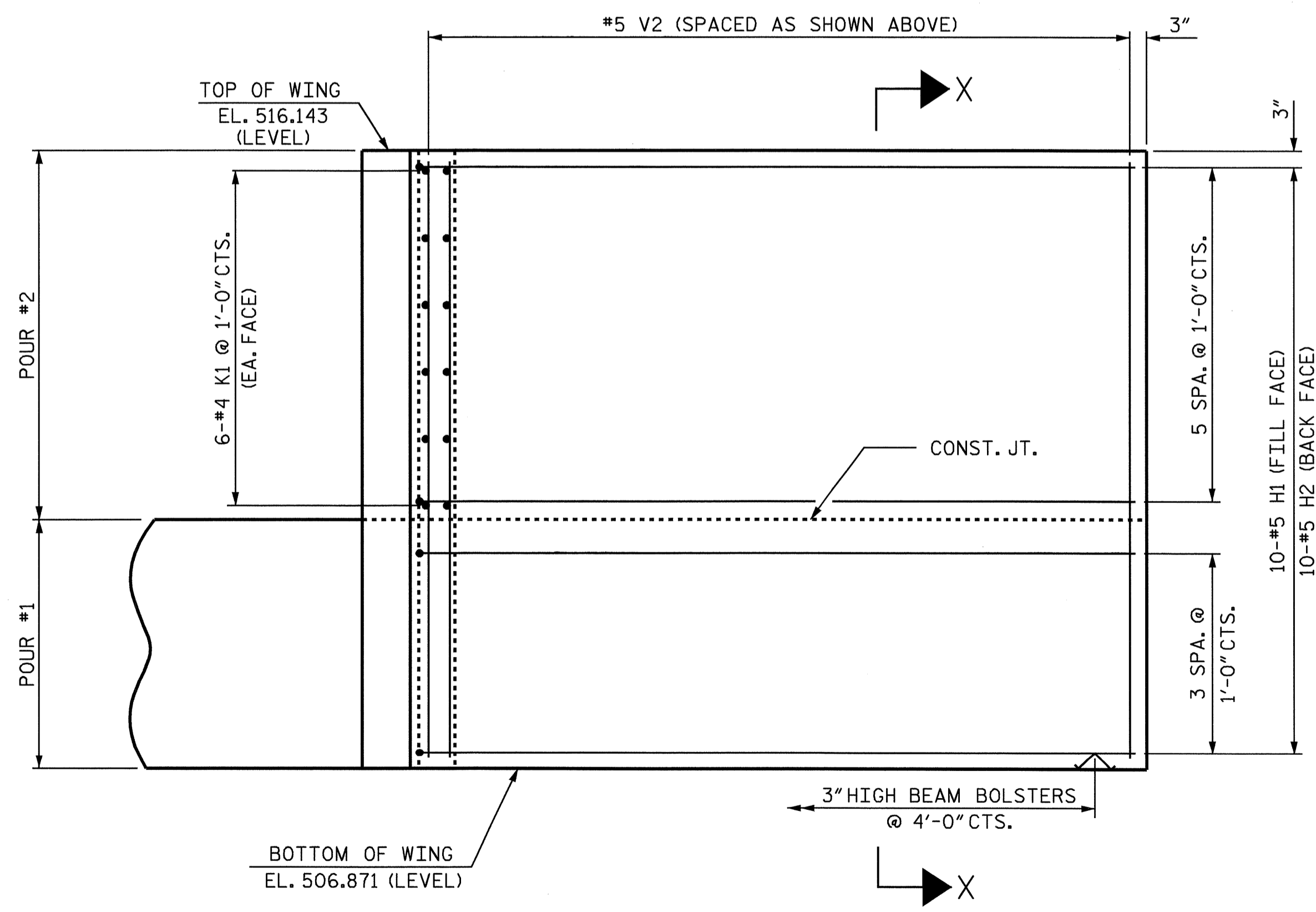
DRAWN BY: M.L. BROWN DATE: 06-2008
 CHECKED BY: N. PIERCE DATE: 07-2008



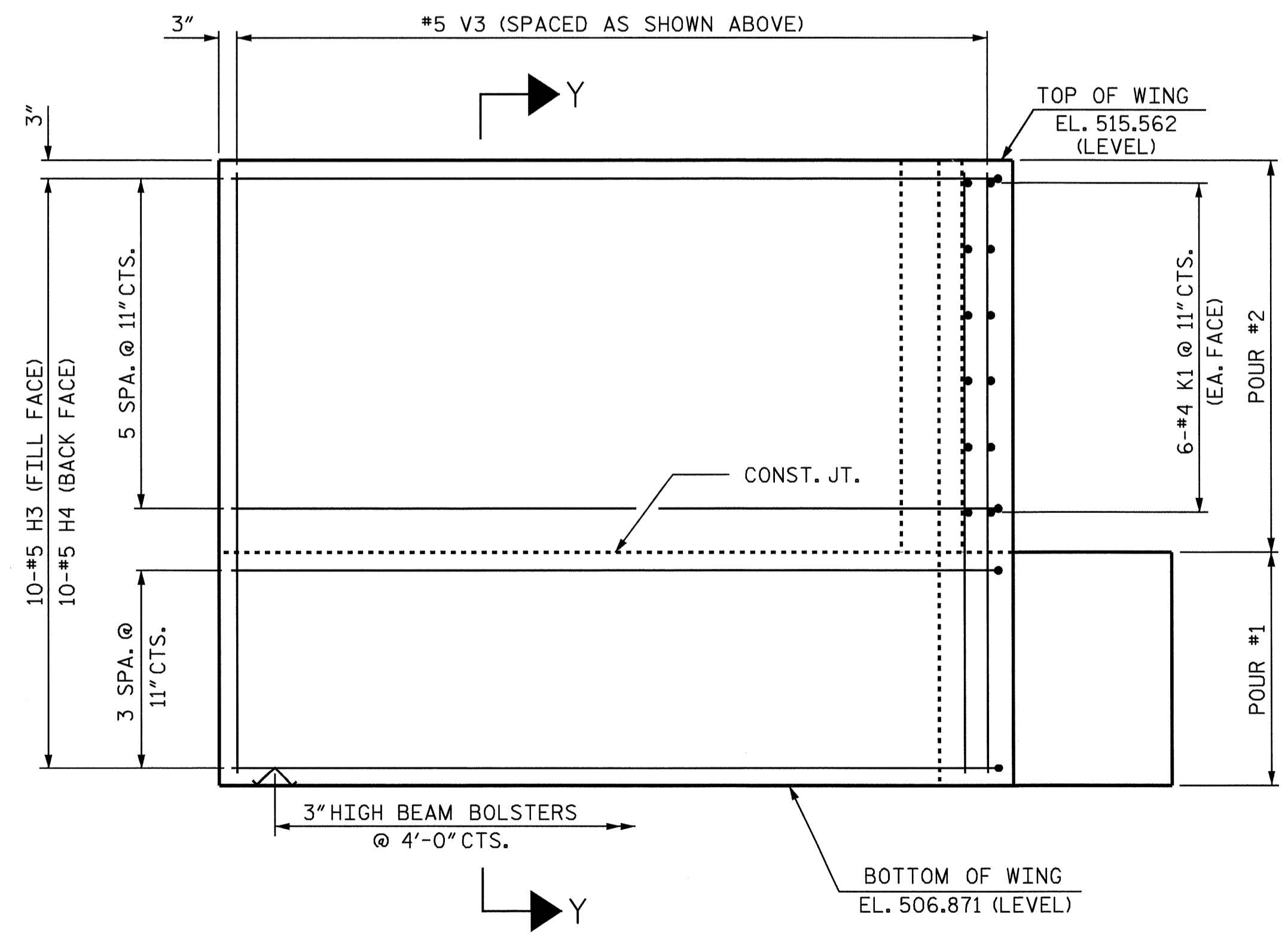
PLAN OF WING (W1)



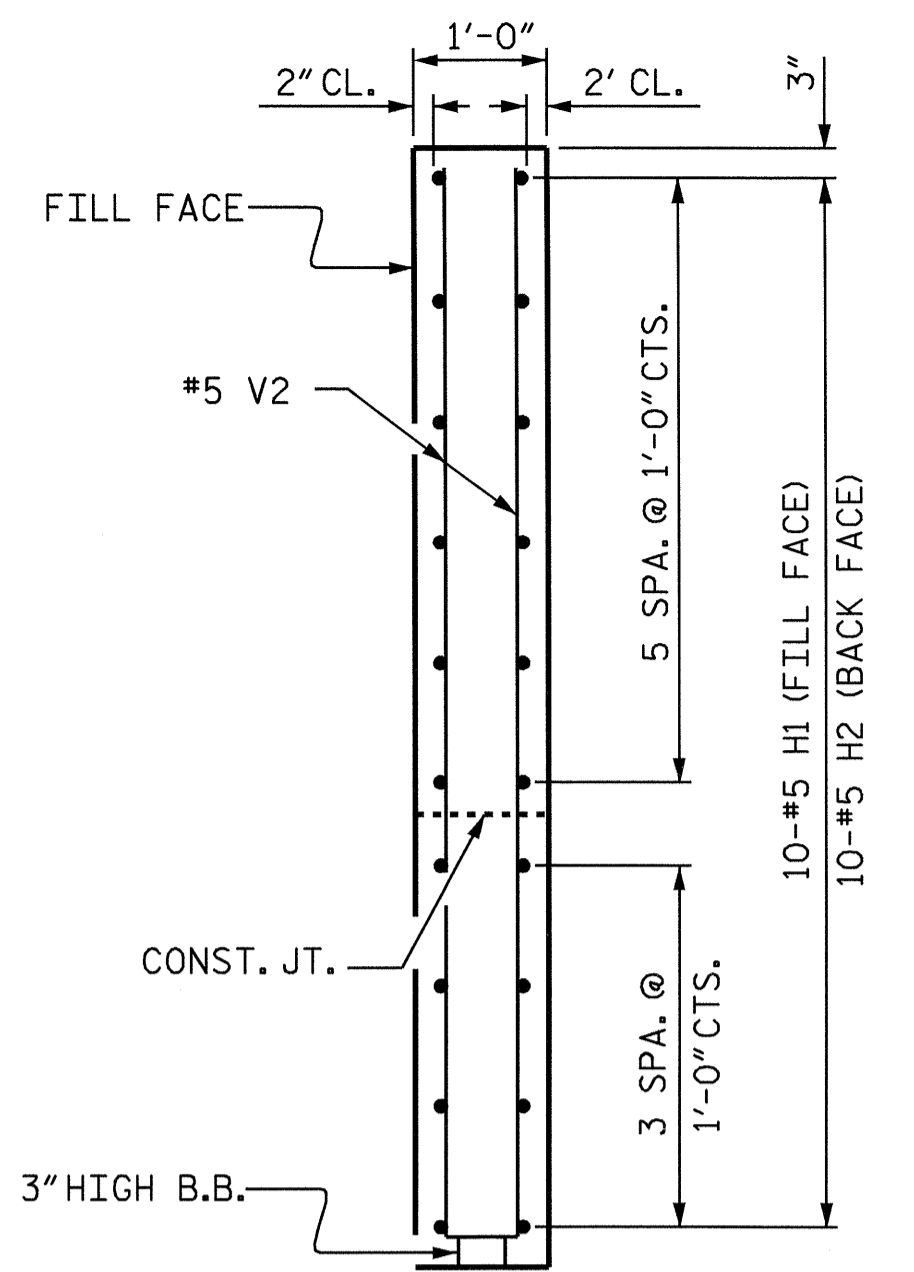
PLAN OF WING (W2)



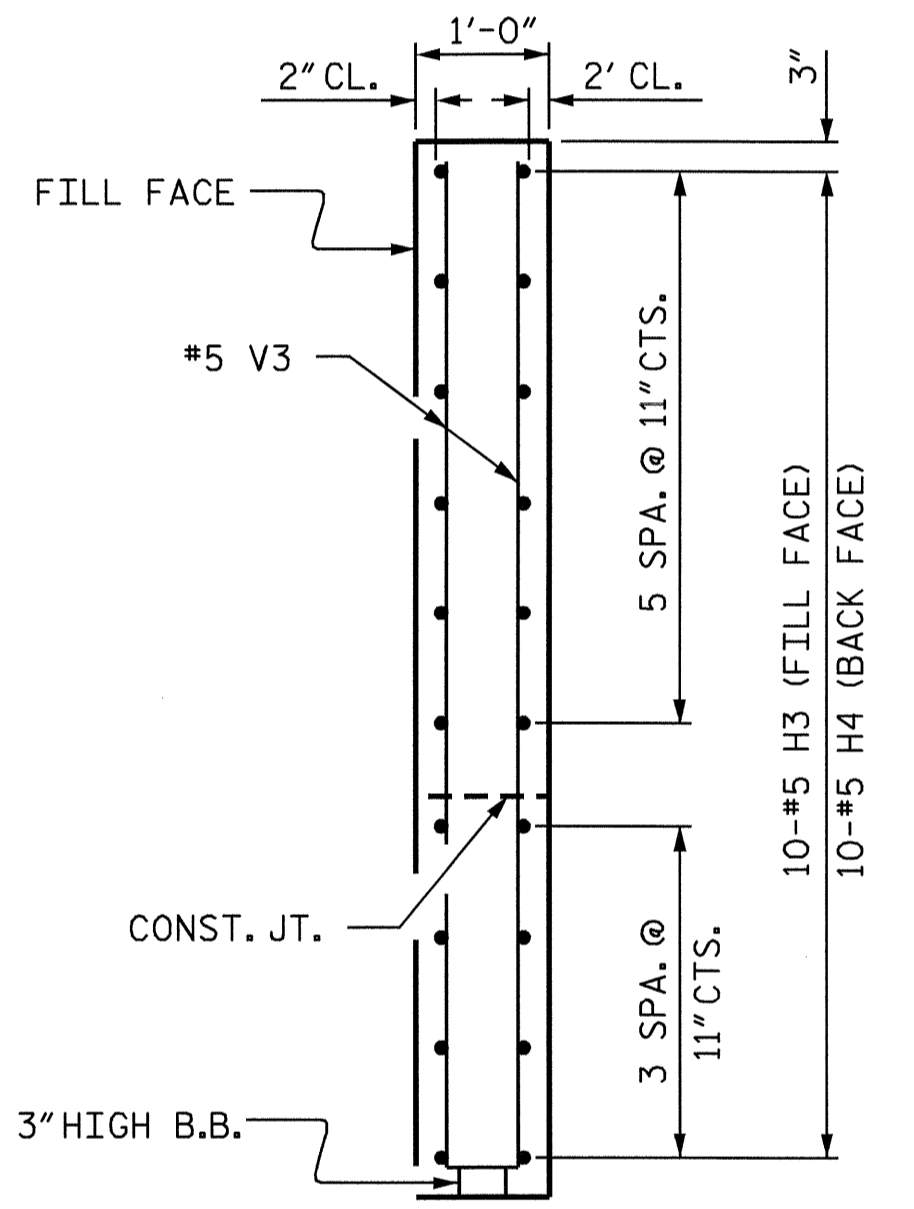
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X



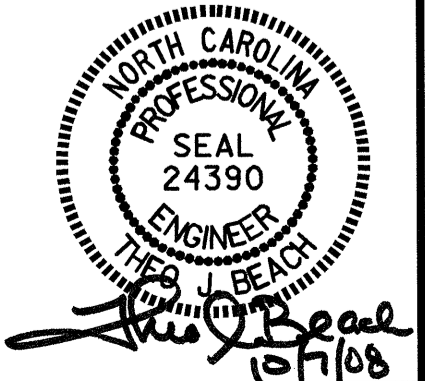
SECTION Y-Y

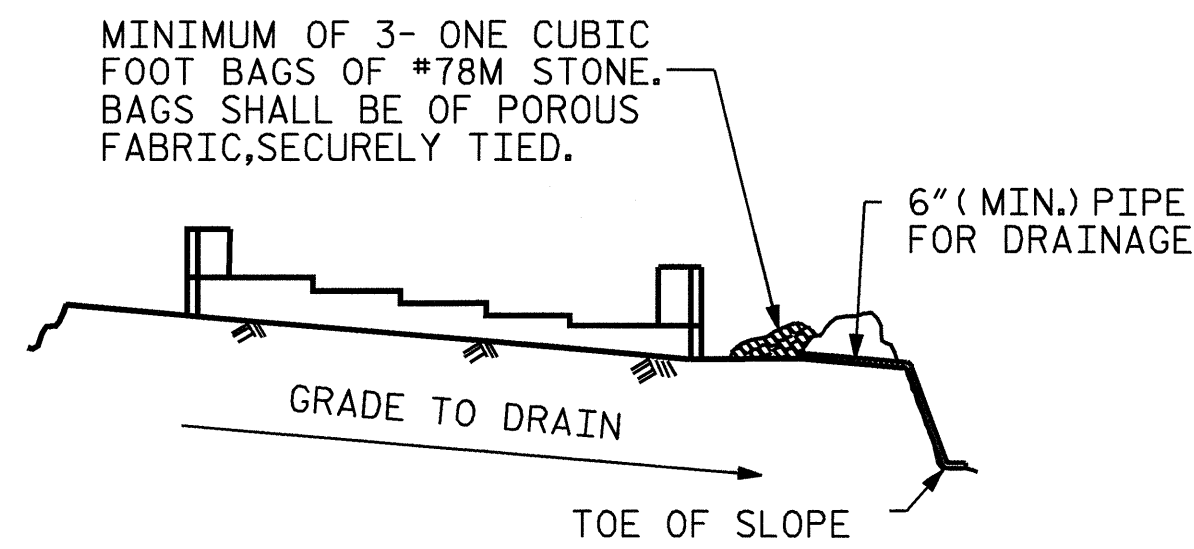
PROJECT NO. B-4296
 UNION COUNTY
 STATION: 21+82.50 -L-
 SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-16
SUBSTRUCTURE END BENT No. 1						
REVISIONS						TOTAL SHEETS 24
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

DRAWN BY: M. L. BROWN DATE: 6-2008
 CHECKED BY: N. PIERCE DATE: 7-2008

07-OCT-2008 13:28
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 tbeach



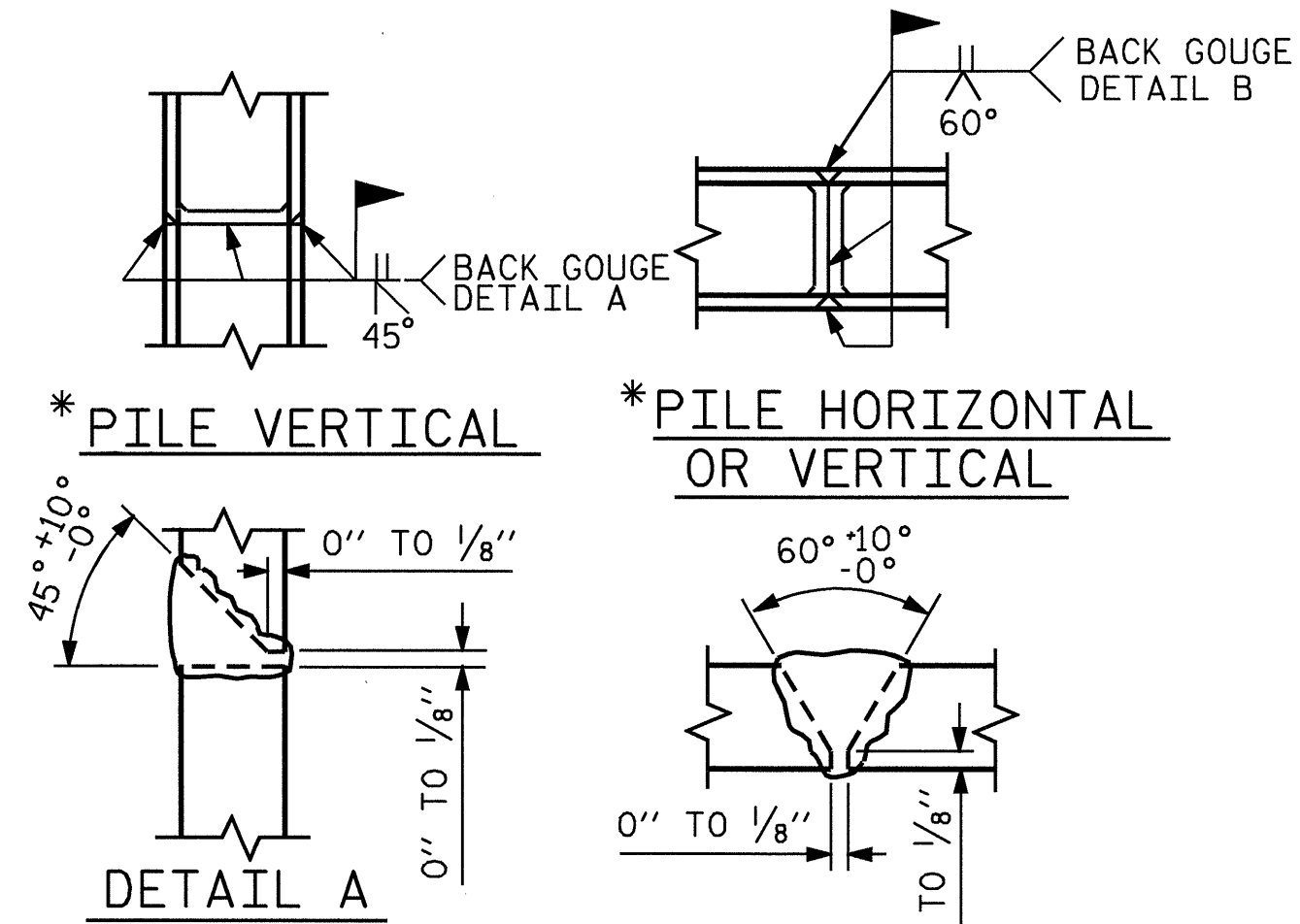


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

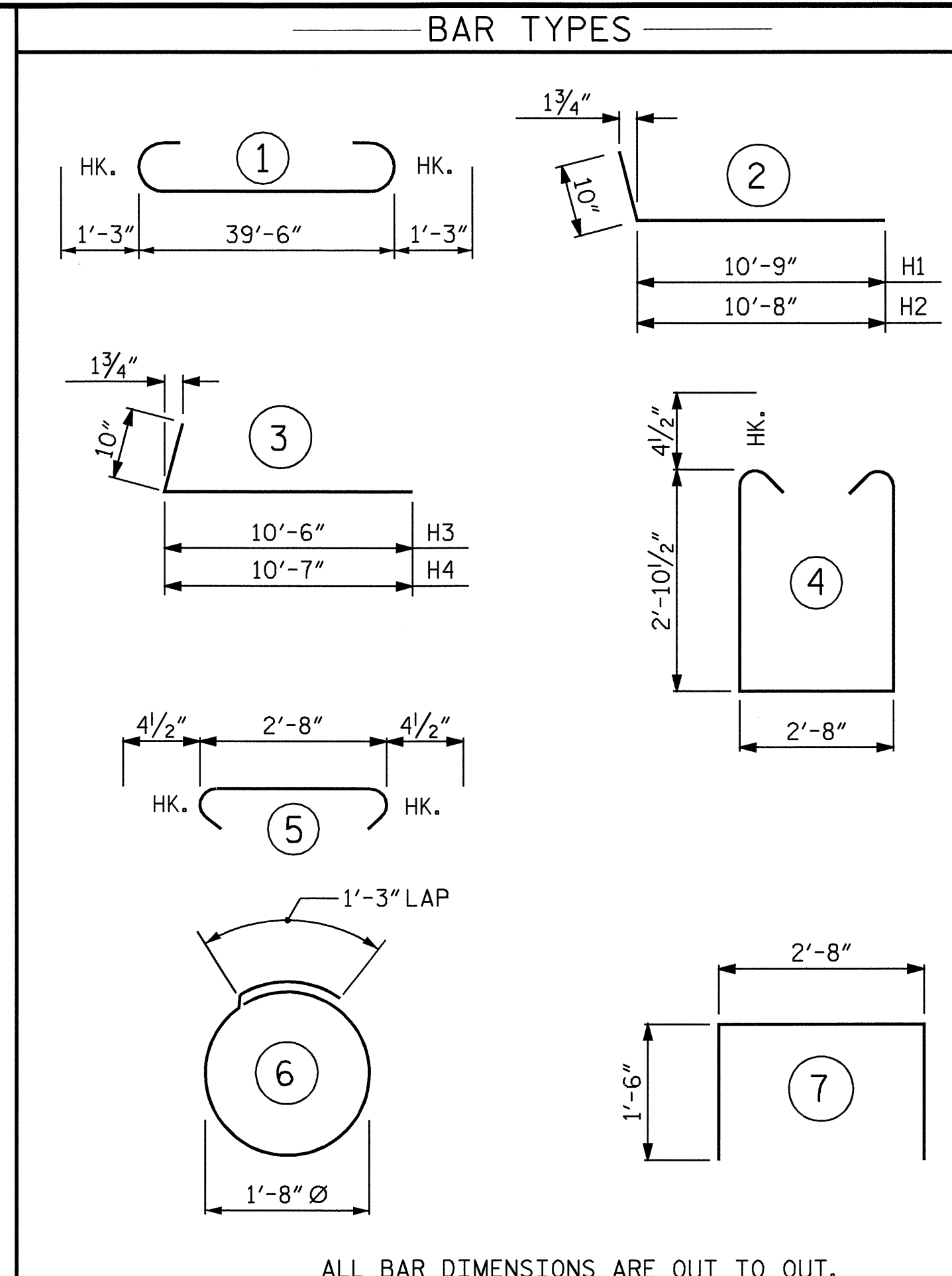
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

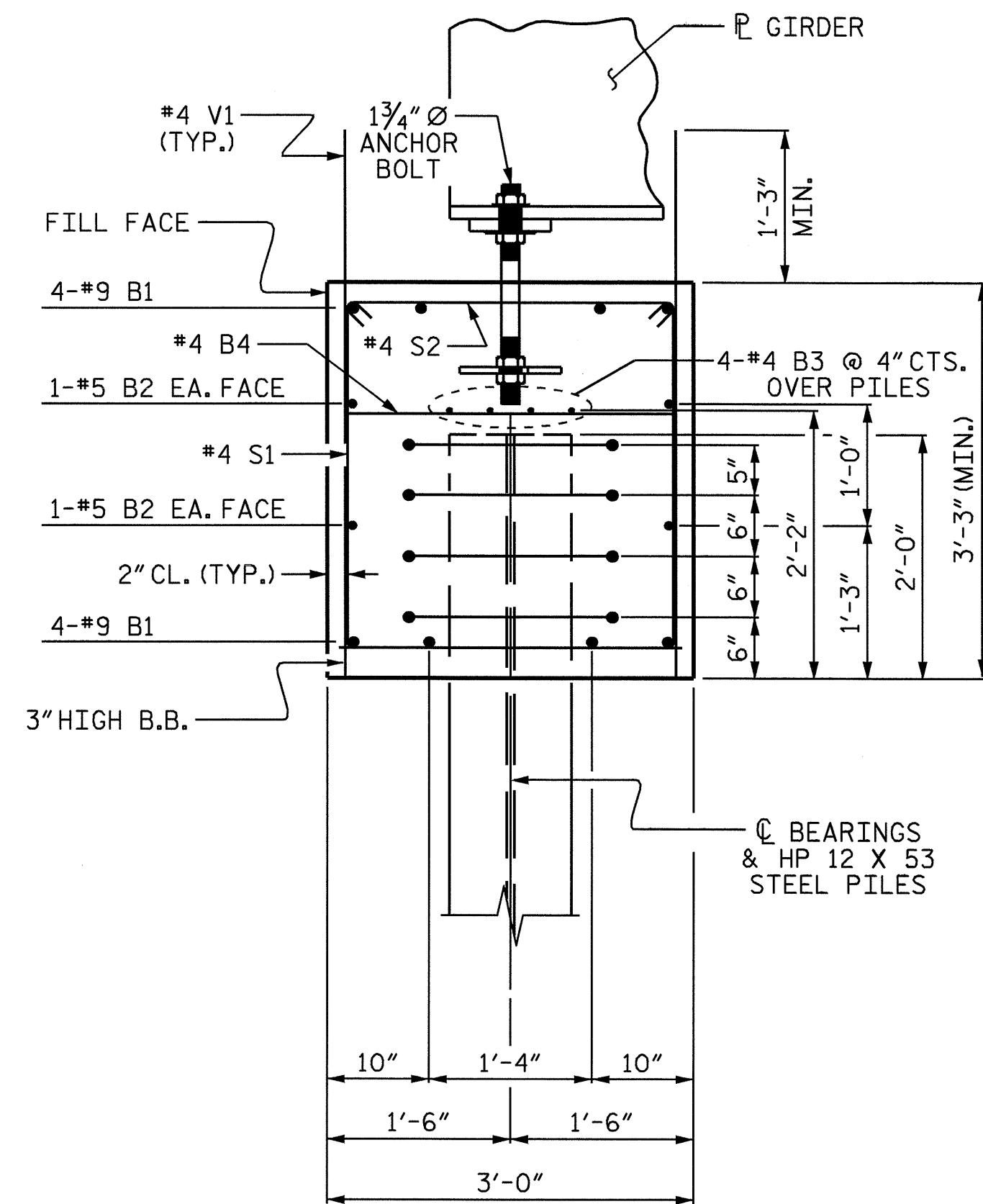


* POSITION OF PILE DURING WELDING.
PILE SPLICE DETAIL

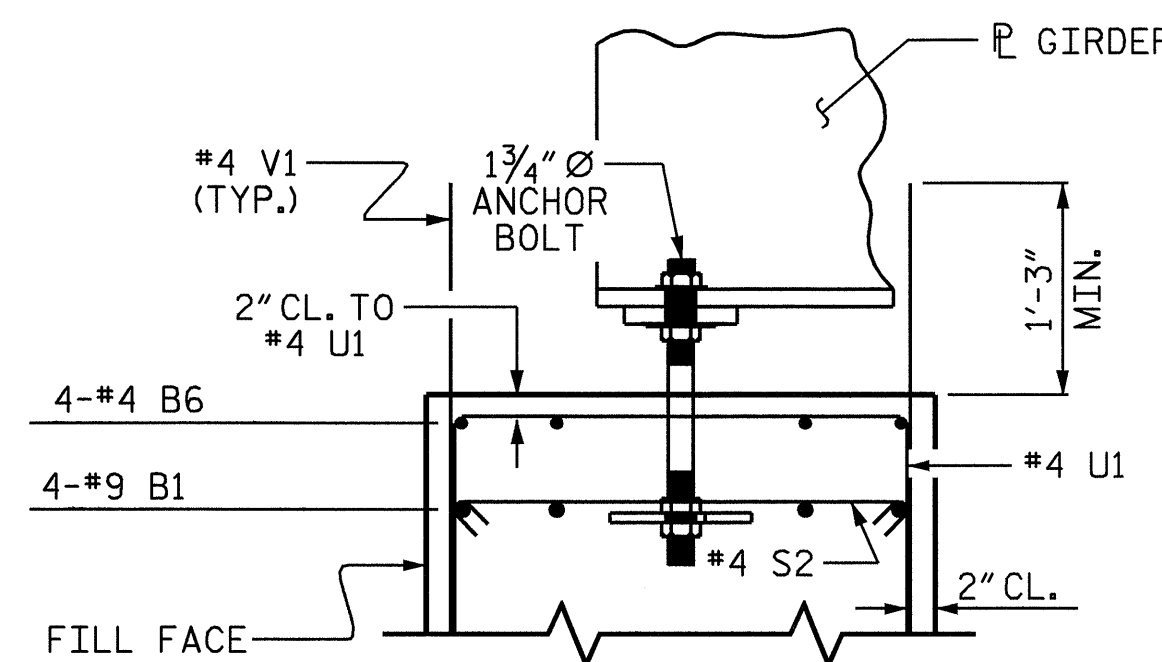


ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT No. 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	42'-0"	1142
B2	4	#5	STR	39'-8"	165
B3	8	#4	STR	21'-1"	113
B4	10	#4	STR	2'-8"	18
B5	4	#4	STR	8'-7"	23
B6	4	#4	STR	7'-5"	20
H1	10	#5	2	11'-7"	121
H2	10	#5	2	11'-6"	120
H3	10	#5	3	11'-4"	118
H4	10	#5	3	11'-5"	119
K1	24	#4	STR	3'-8"	59
S1	44	#4	4	9'-2"	269
S2	44	#4	5	3'-5"	100
S3	32	#4	6	6'-6"	139
U1	13	#4	7	5'-8"	49
V1	54	#4	STR	4'-3"	153
V2	32	#5	STR	8'-10"	295
V3	32	#5	STR	8'-4"	278
REINFORCING STEEL				3301 LBS.	
CLASS A CONCRETE BREAKDOWN					
POUR #1 CAP & LOWER PART OF WINGS				18.1 C.Y.	
POUR #2 UPPER PART OF WINGS				5.5 C.Y.	
TOTAL CLASS A CONCRETE				23.6 C.Y.	
HP 12 X 53 STEEL PILES				NO: 8 LIN. FT. = 160	



SECTION A-A

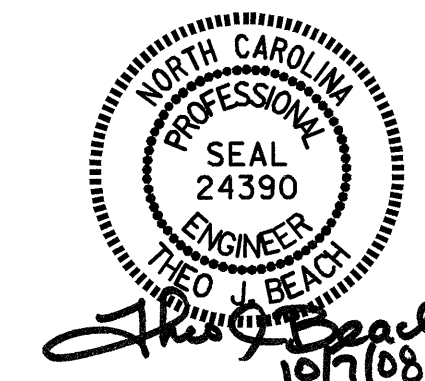


PARTIAL SECTION B-B

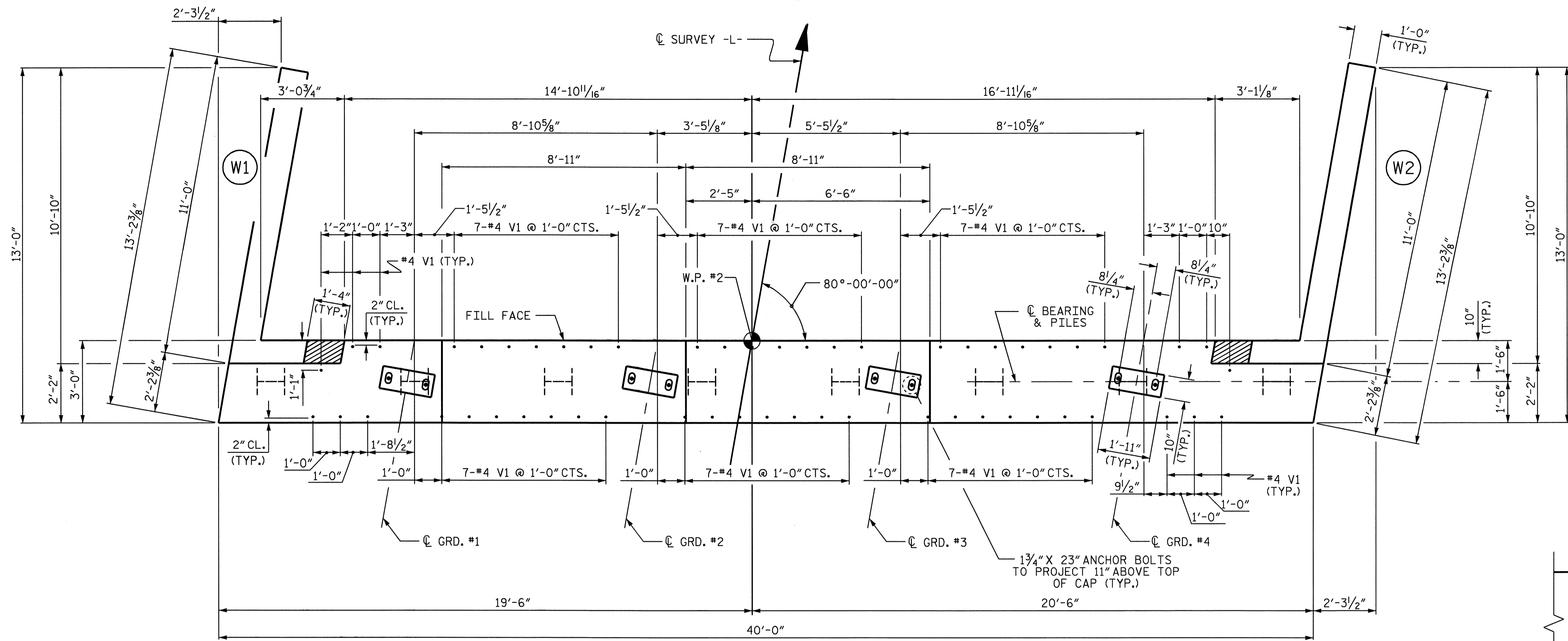
PROJECT NO. B-4296
 UNION COUNTY
 STATION: 21+82.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT No. 1					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-17
					TOTAL SHEETS 24

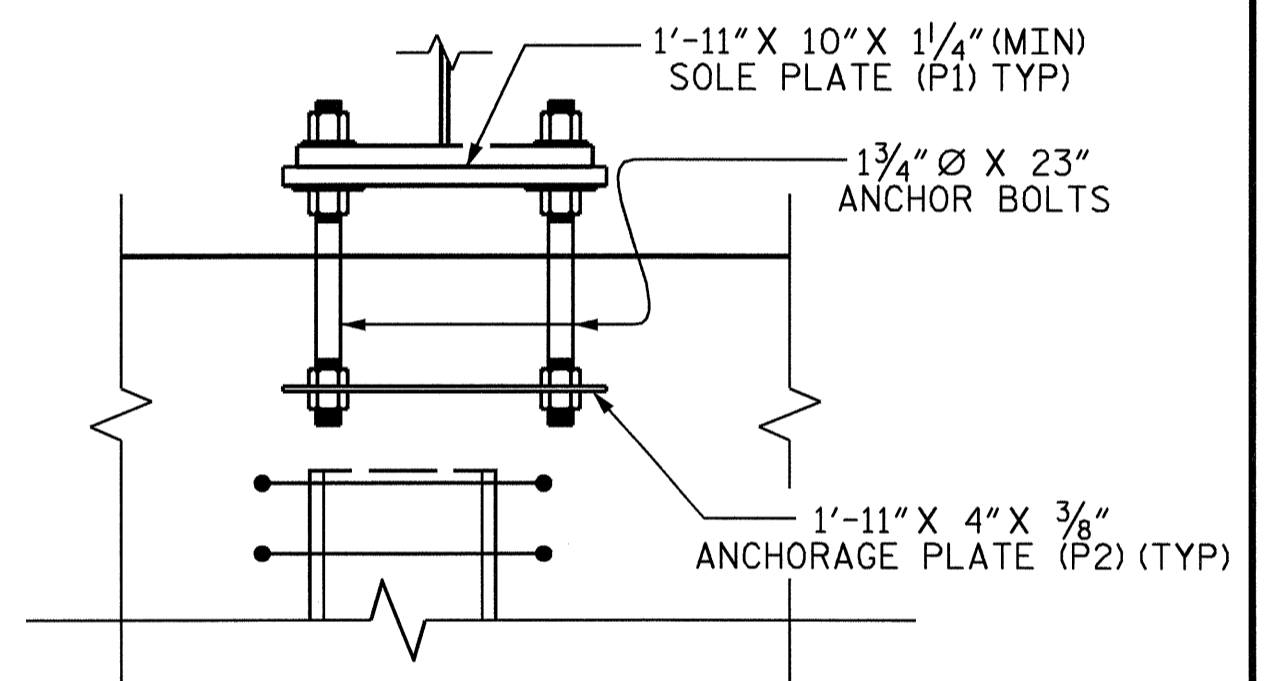


DRAWN BY: M.L. BROWN DATE: 6-2008
 CHECKED BY: N. PIERCE DATE: 7-2008

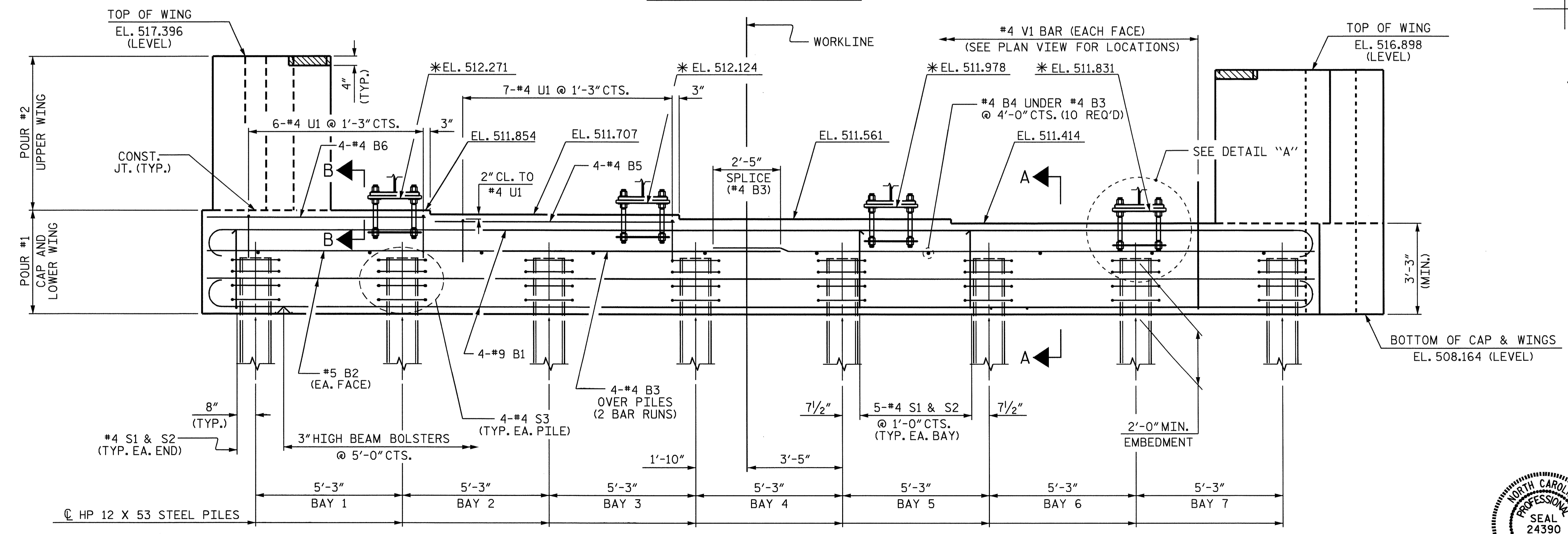


PLAN

NOTES:
 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.
 FOR SECTION A-A AND PARTIAL SECTION B-B, SEE SHEET 3 OF 3.
 THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.
 #4 V1 BARS MAY BE SHIFTED SLIGHTLY TO AVOID STIRRUPS IN CAP.
 *ELEVATIONS TAKEN AT BOTTOM OF SOLE PLATE AT THE C BEARING.



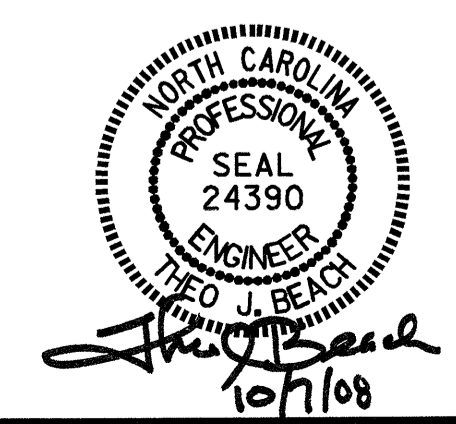
DETAIL "A"



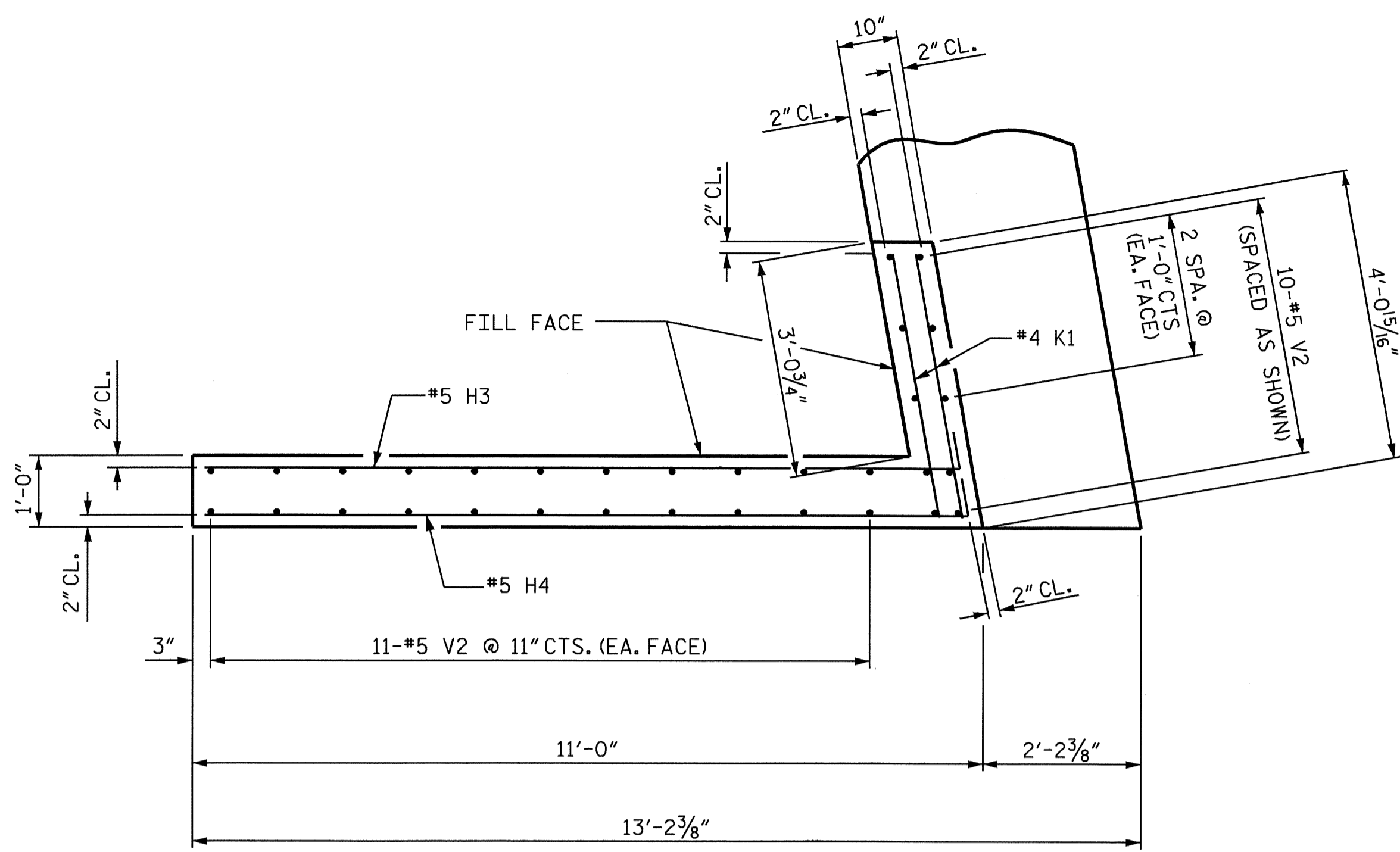
ELEVATION

PROJECT NO. B-4296
 UNION COUNTY
 STATION: 21+82.50 -L-
 SHEET 1 OF 3

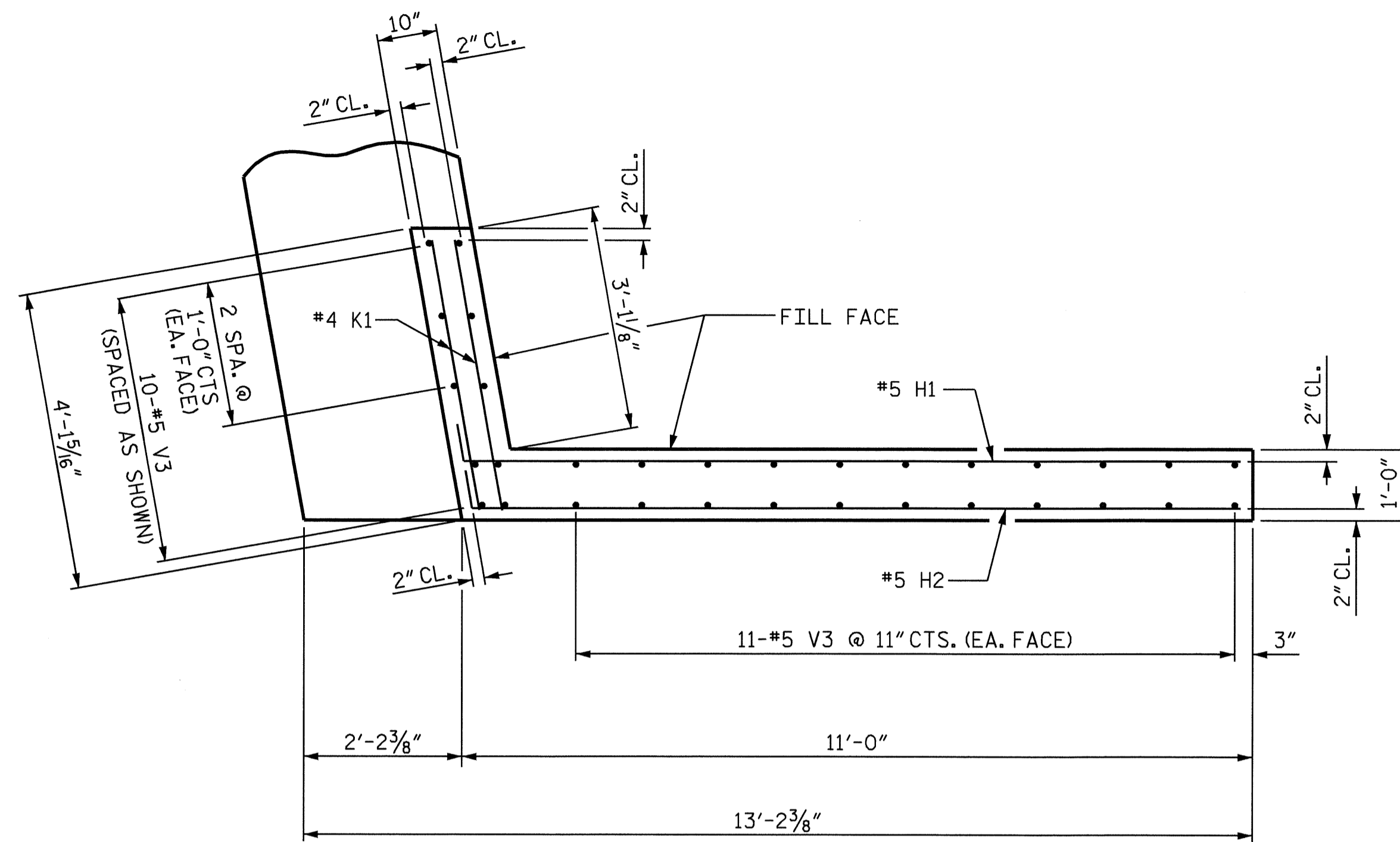
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-18	
SUBSTRUCTURE END BENT No. 2						TOTAL SHEETS 24	
REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				
2			4				



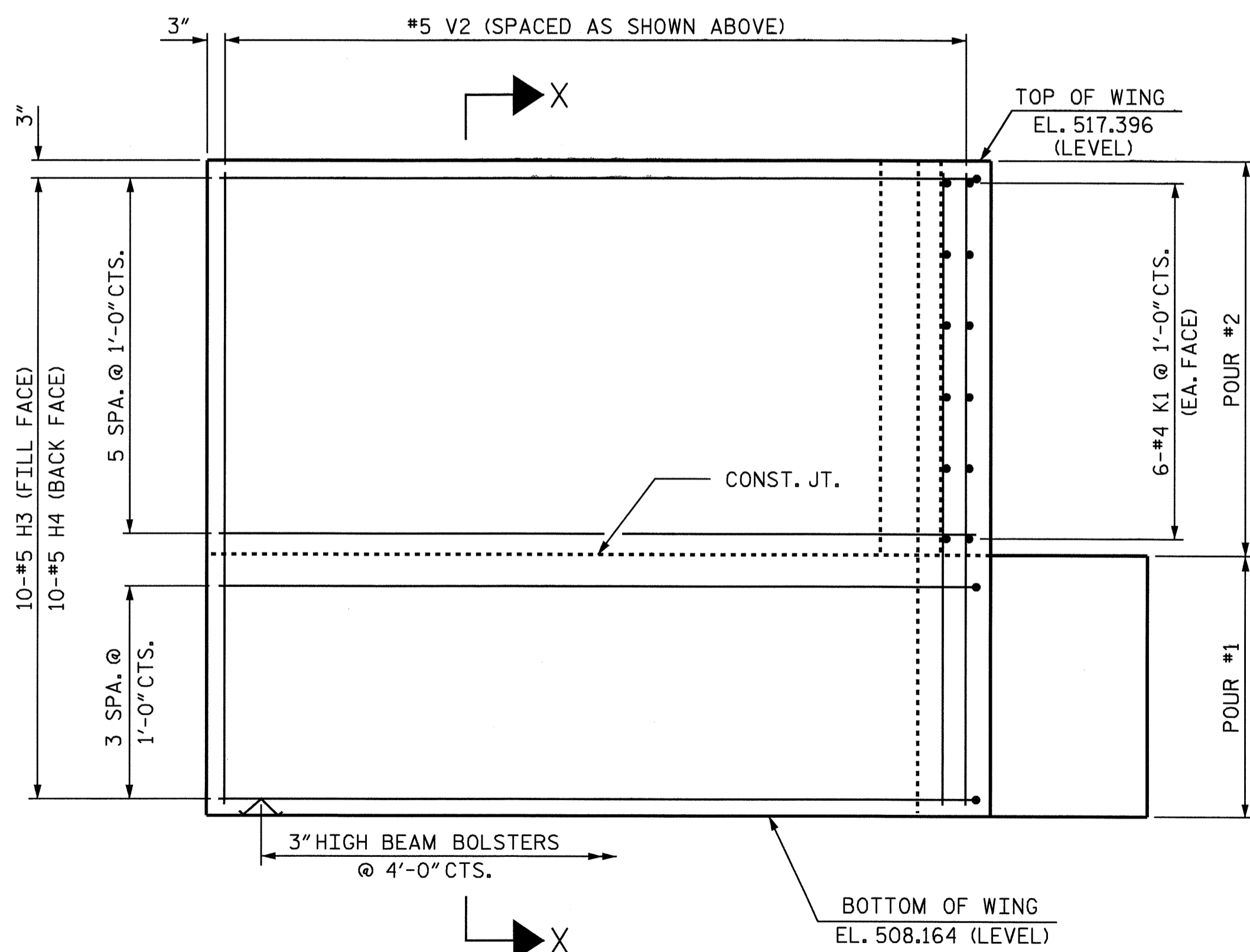
DRAWN BY: M.L. BROWN DATE: 06-2008
 CHECKED BY: N. PIERCE DATE: 07-2008



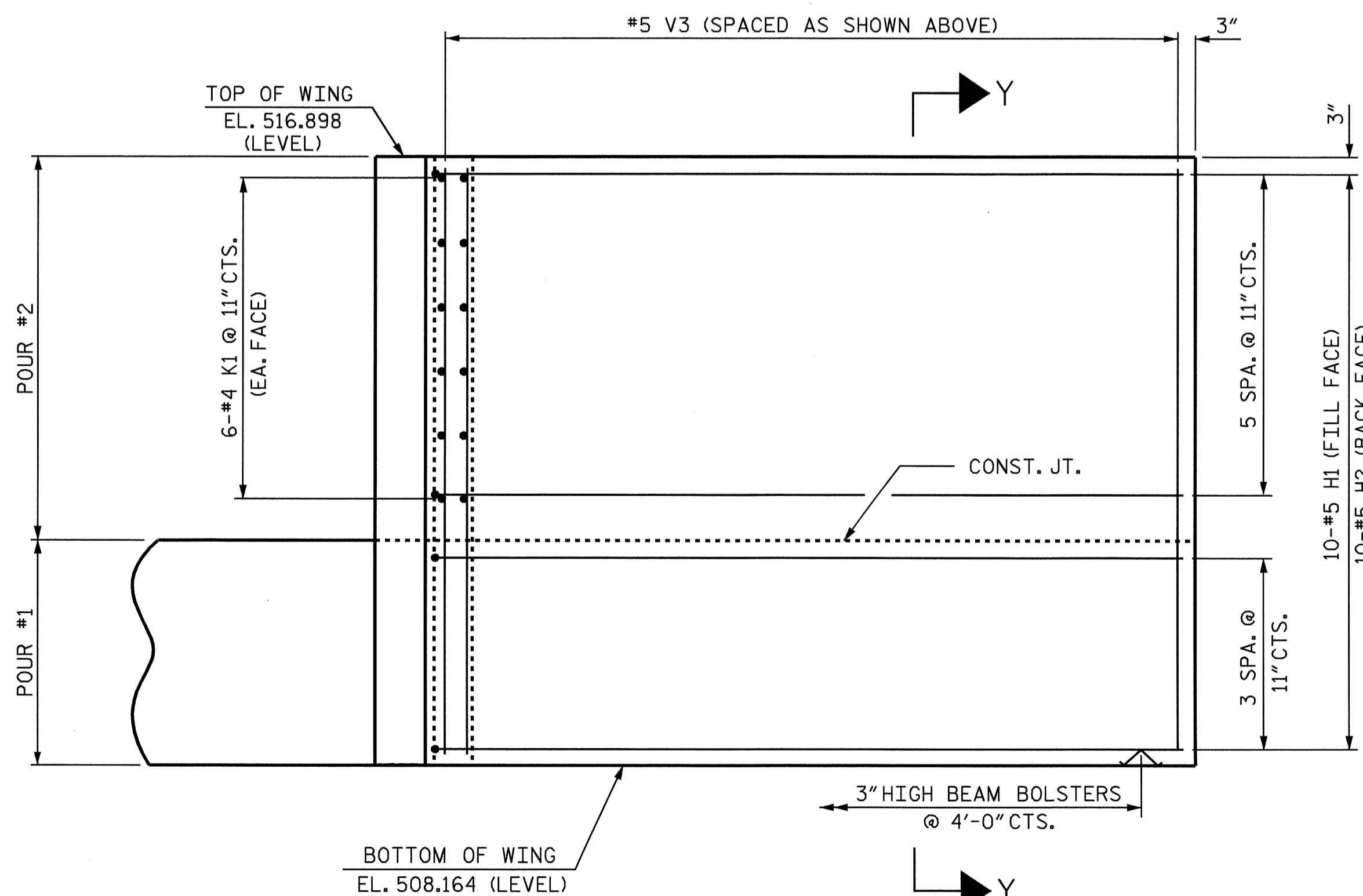
PLAN OF WING (W1)



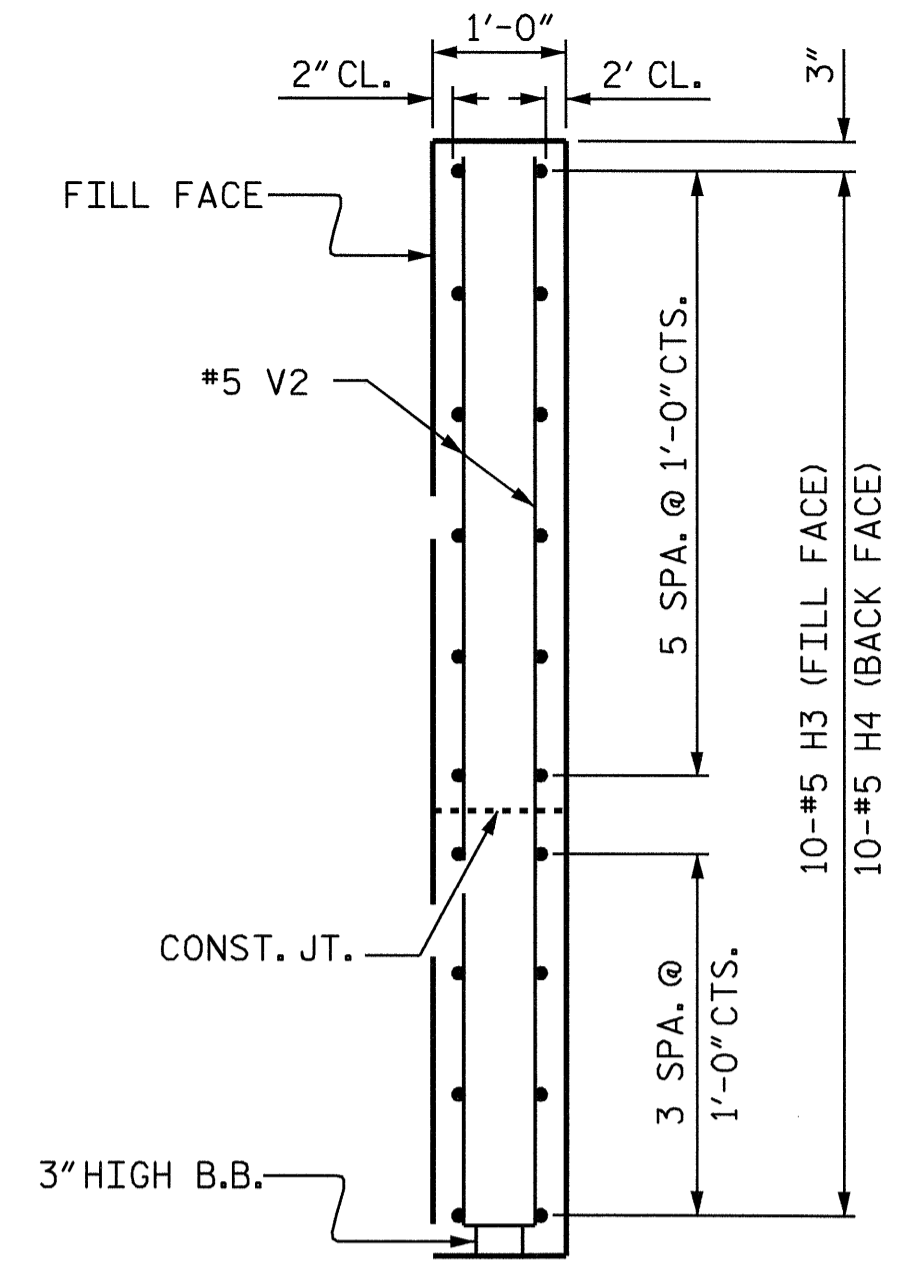
PLAN OF WING (W2)



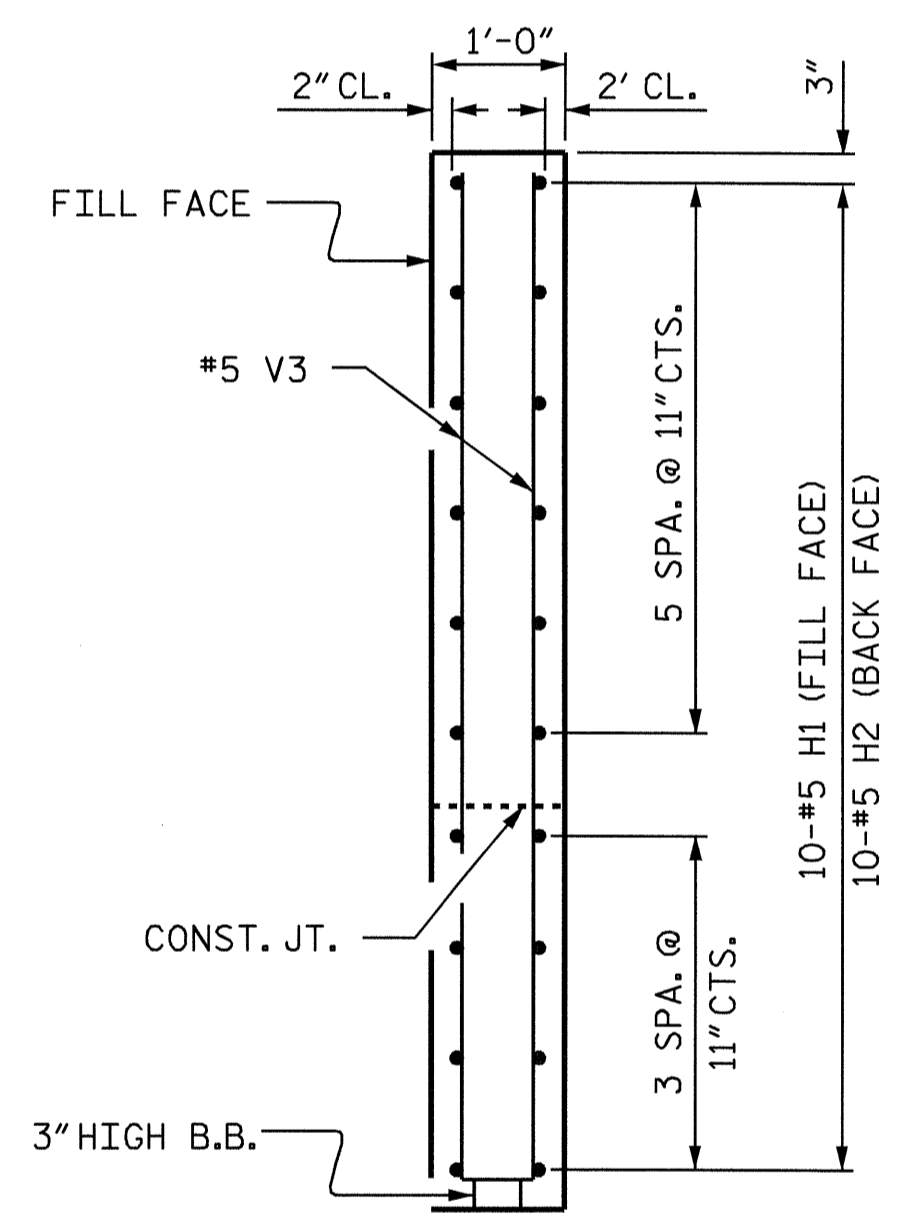
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



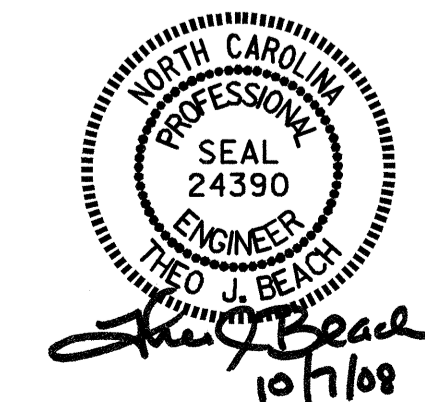
SECTION X-X



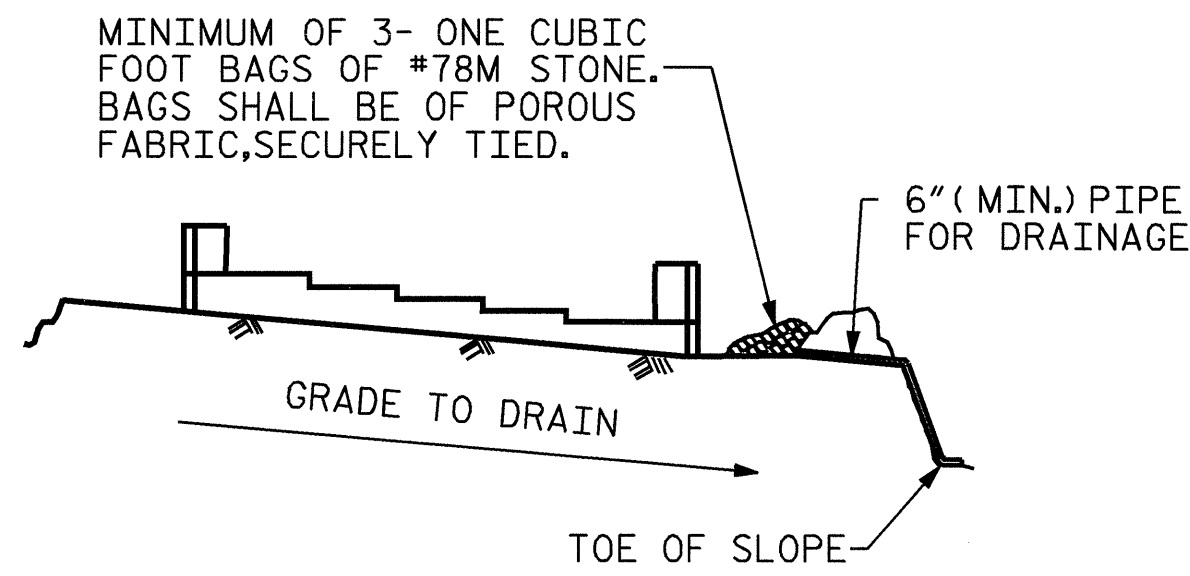
SECTION Y-Y

PROJECT NO. B-4296
UNION COUNTY
 STATION: 21+82.50 -L-
 SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH				SHEET NO. S-19	
SUBSTRUCTURE				TOTAL SHEETS 24	
END BENT No. 2					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		



DRAWN BY: M. L. BROWN DATE: 6-2008
 CHECKED BY: N. PIERCE DATE: 7-2008

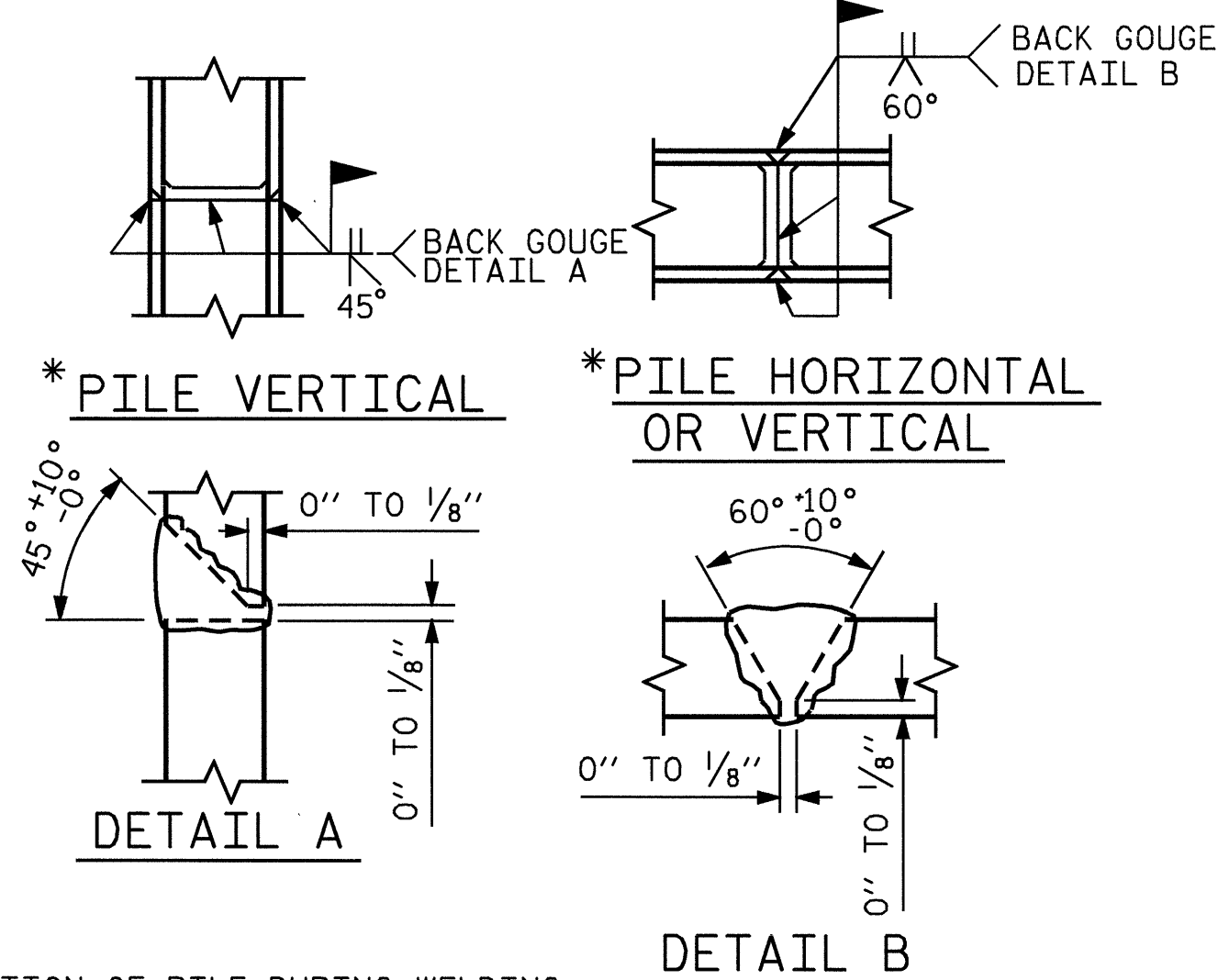


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

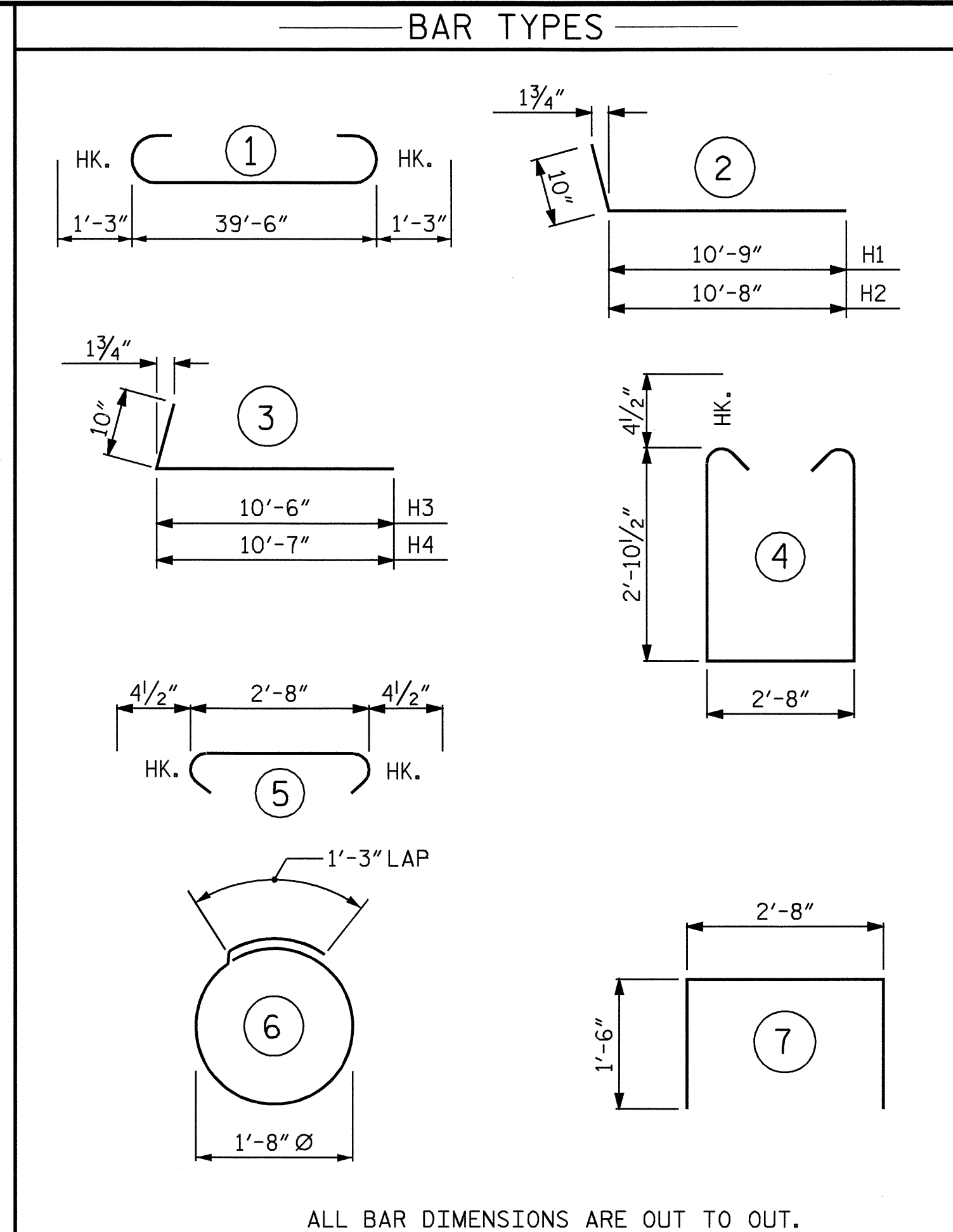
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



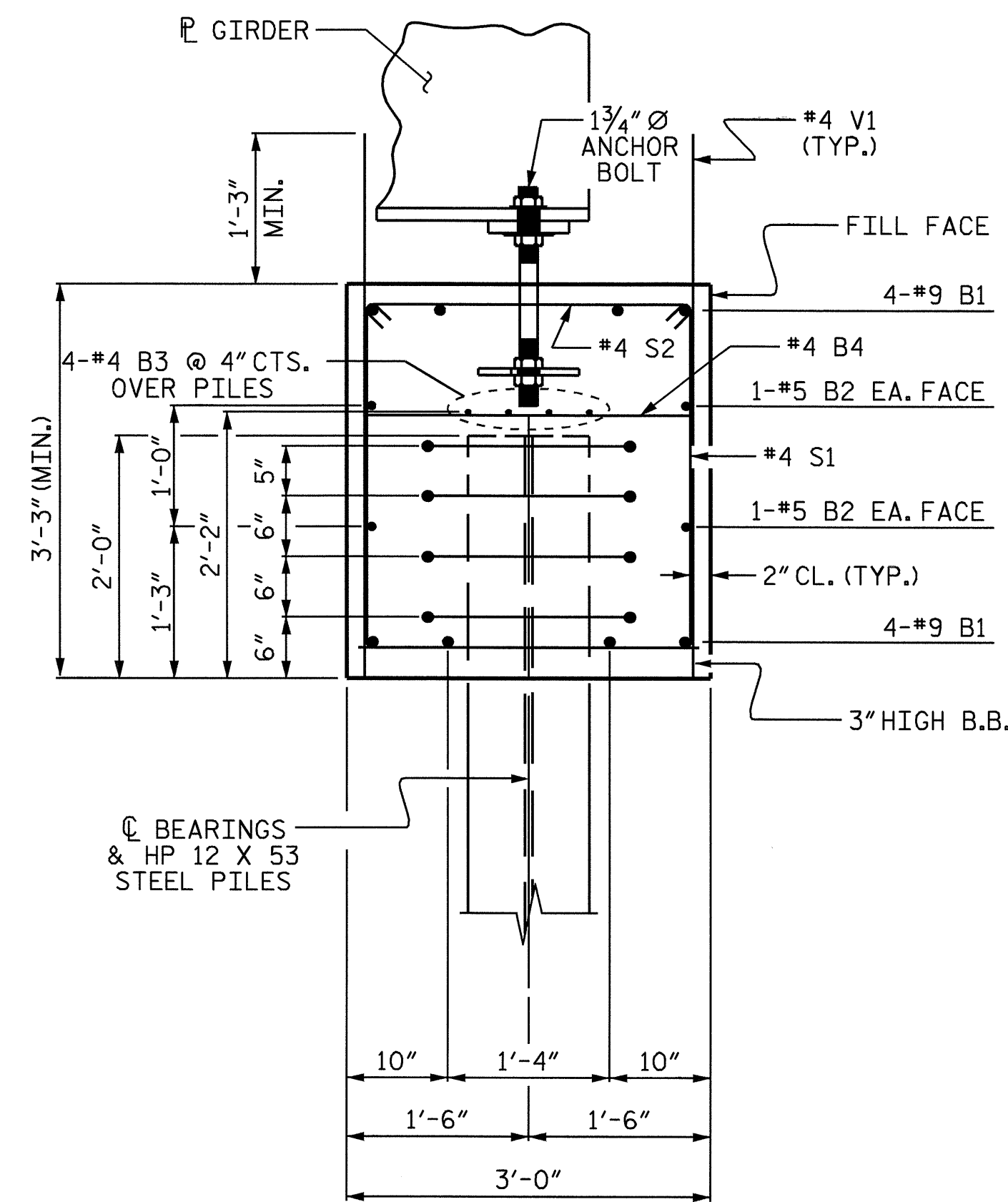
* POSITION OF PILE DURING WELDING.

PILE SPLICE DETAIL

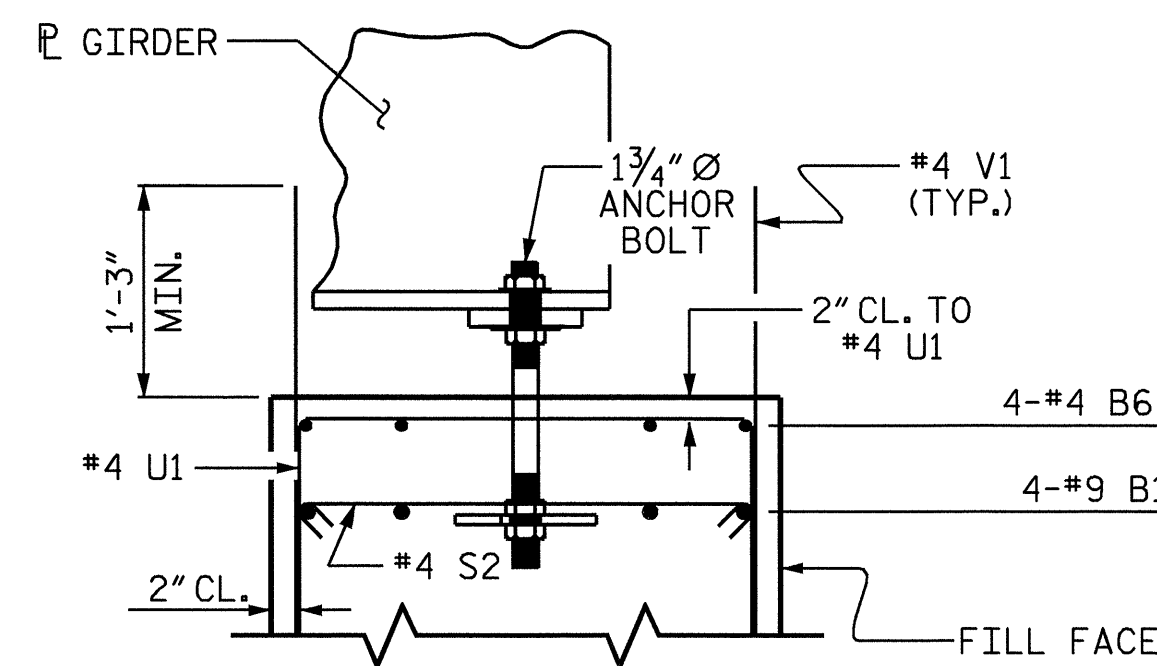


ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT No. 2					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		42'-0"	1142
B2	4	#5	STR	39'-8"	165
B3	8	#4	STR	21'-1"	113
B4	10	#4	STR	2'-8"	18
B5	4	#4	STR	8'-7"	23
B6	4	#4	STR	7'-5"	20
H1	10	#5		11'-7"	121
H2	10	#5		11'-6"	120
H3	10	#5		11'-4"	118
H4	10	#5		11'-5"	119
K1	24	#4	STR	3'-8"	59
S1	37	#4		9'-2"	227
S2	37	#4		3'-5"	84
S3	32	#4		6'-6"	139
U1	13	#4		5'-8"	49
V1	54	#4	STR	4'-3"	153
V2	32	#5	STR	8'-10"	295
V3	32	#5	STR	8'-4"	278
REINFORCING STEEL				3243 LBS.	
CLASS A CONCRETE BREAKDOWN					
POUR #1 CAP & LOWER PART OF WINGS				17.8 C.Y.	
POUR #2 UPPER PART OF WINGS				5.5 C.Y.	
TOTAL CLASS A CONCRETE				23.3 C.Y.	
HP 12 X 53 STEEL PILES				NO: 8 LIN. FT. = 160	



SECTION A-A



PARTIAL SECTION B-B

PROJECT NO. B-4296
 UNION COUNTY
 STATION: 21+82.50 -L-
 SHEET 3 OF 3

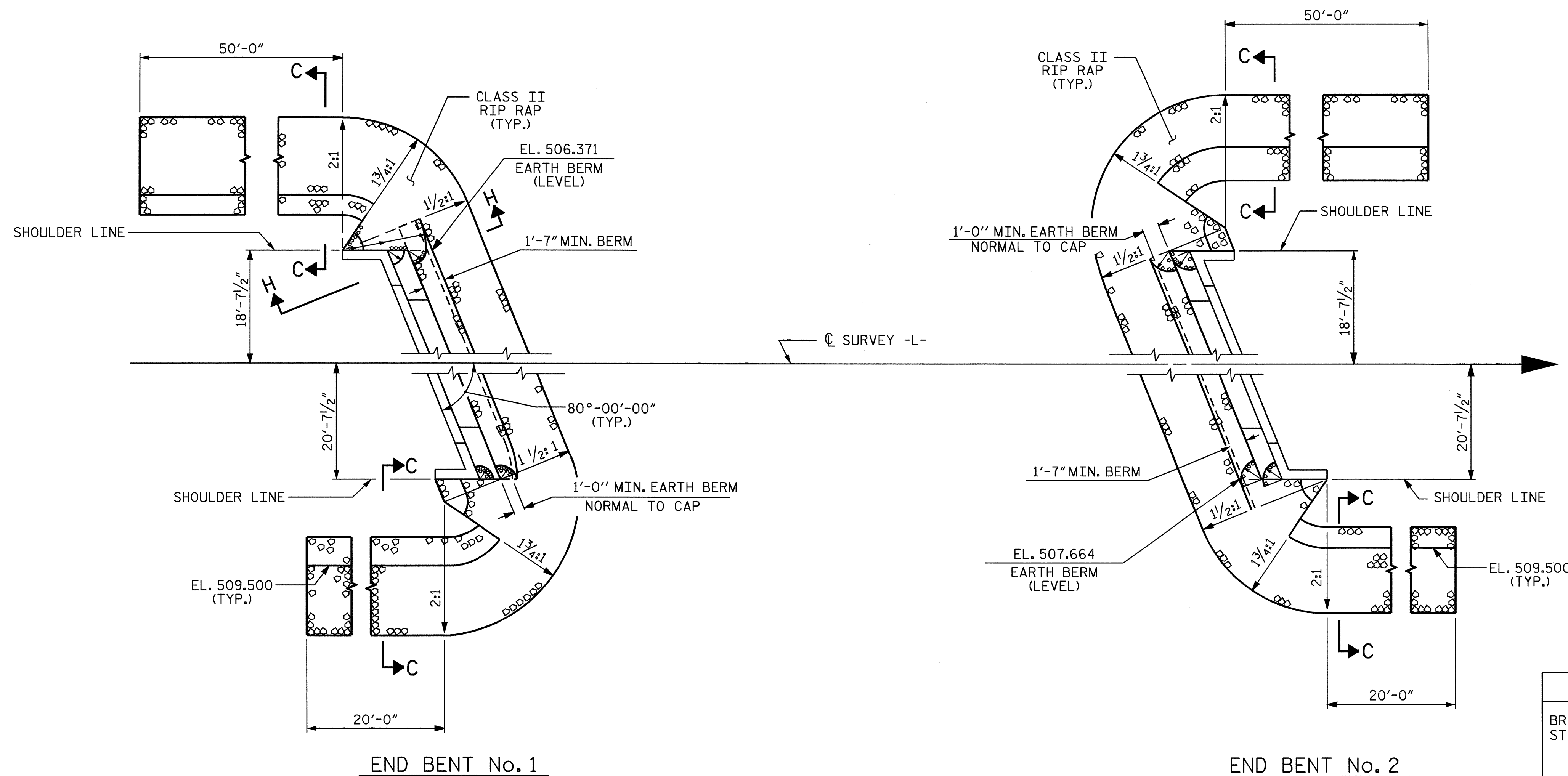
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT No. 2



DRAWN BY: M.L. BROWN DATE: 6-2008
 CHECKED BY: N. PIERCE DATE: 7-2008

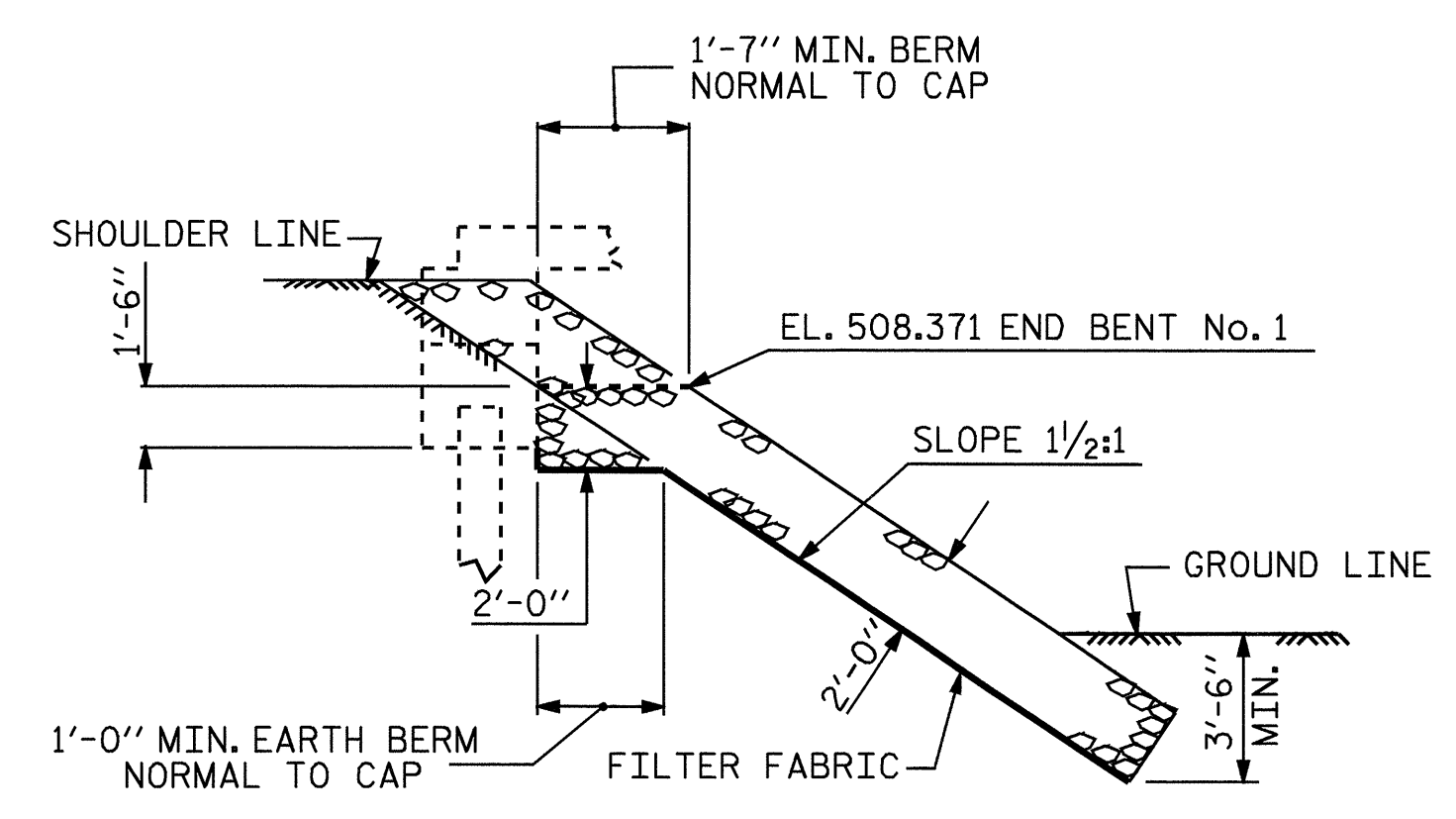
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 24

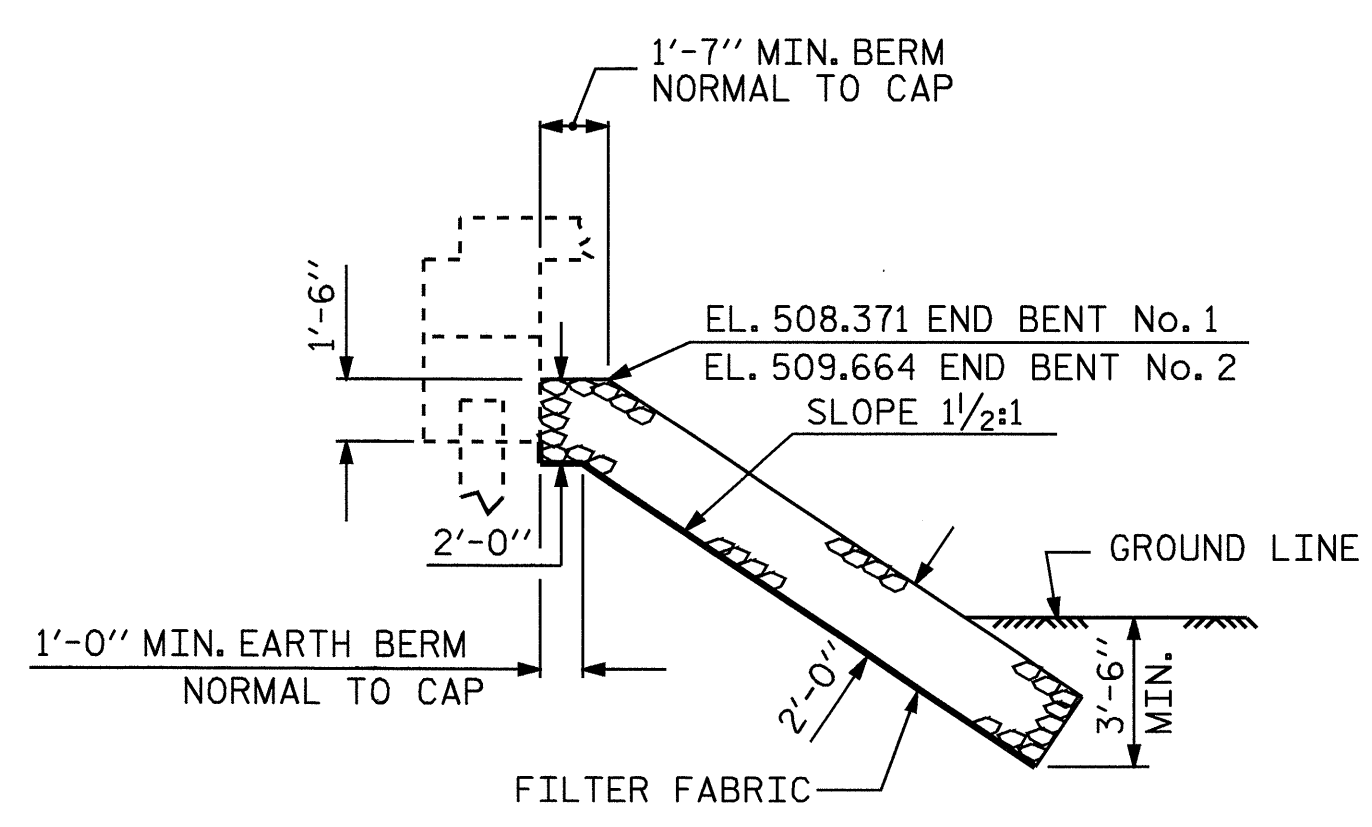


PLAN OF RIP RAP

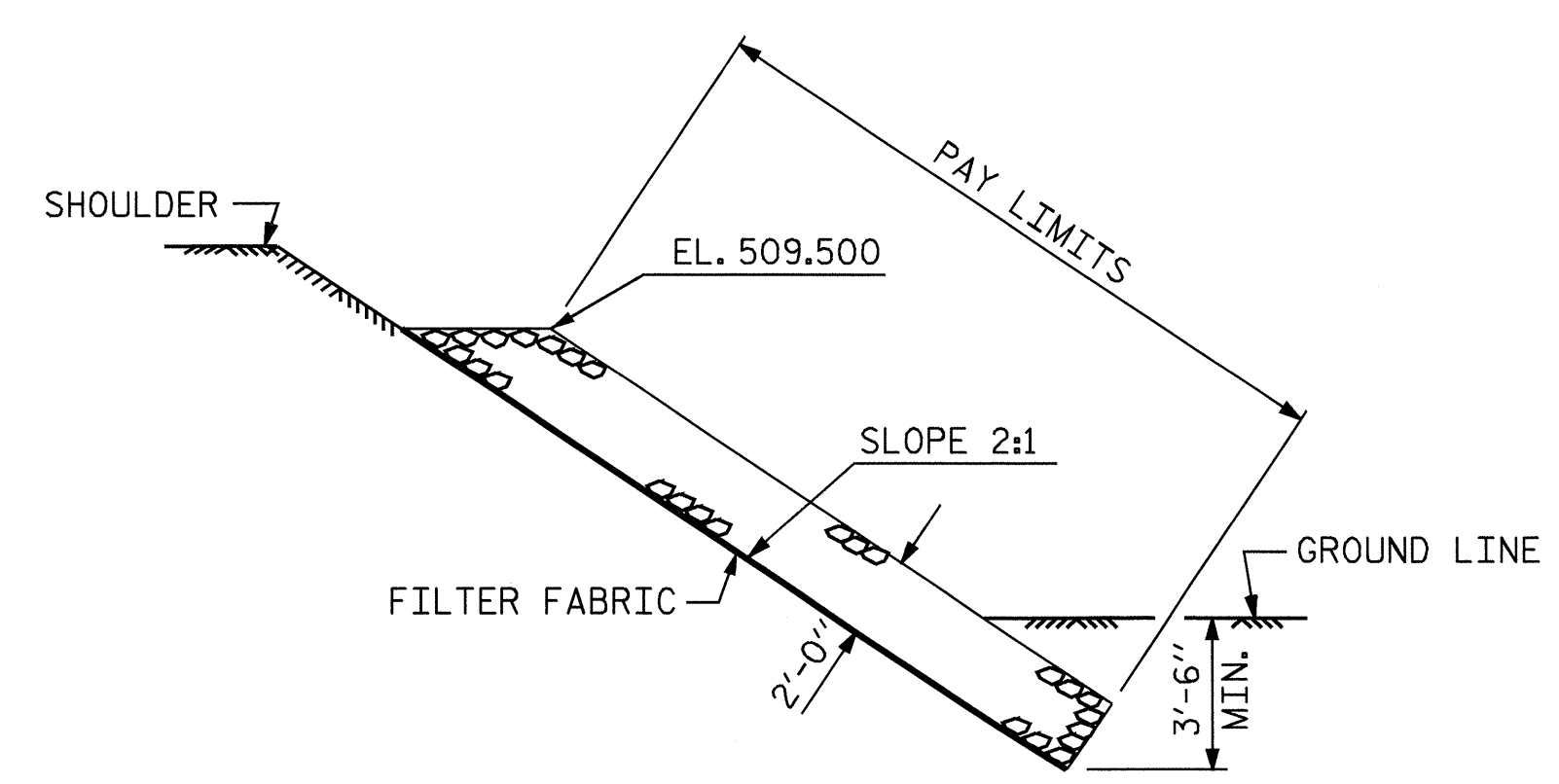
ESTIMATED QUANTITIES		
BRIDGE @ STA. 21+82.50 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	240	267
END BENT 2	265	295



SECTION H-H



SECTION C-C
BERM RIP RAPPED

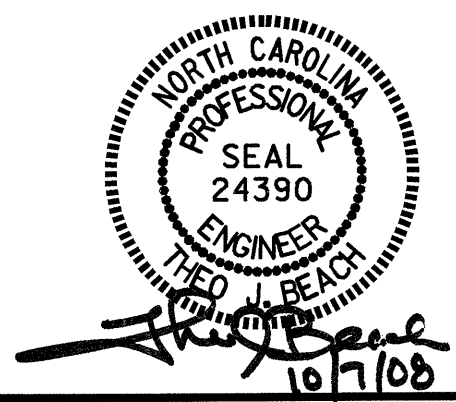


SECTION C-C

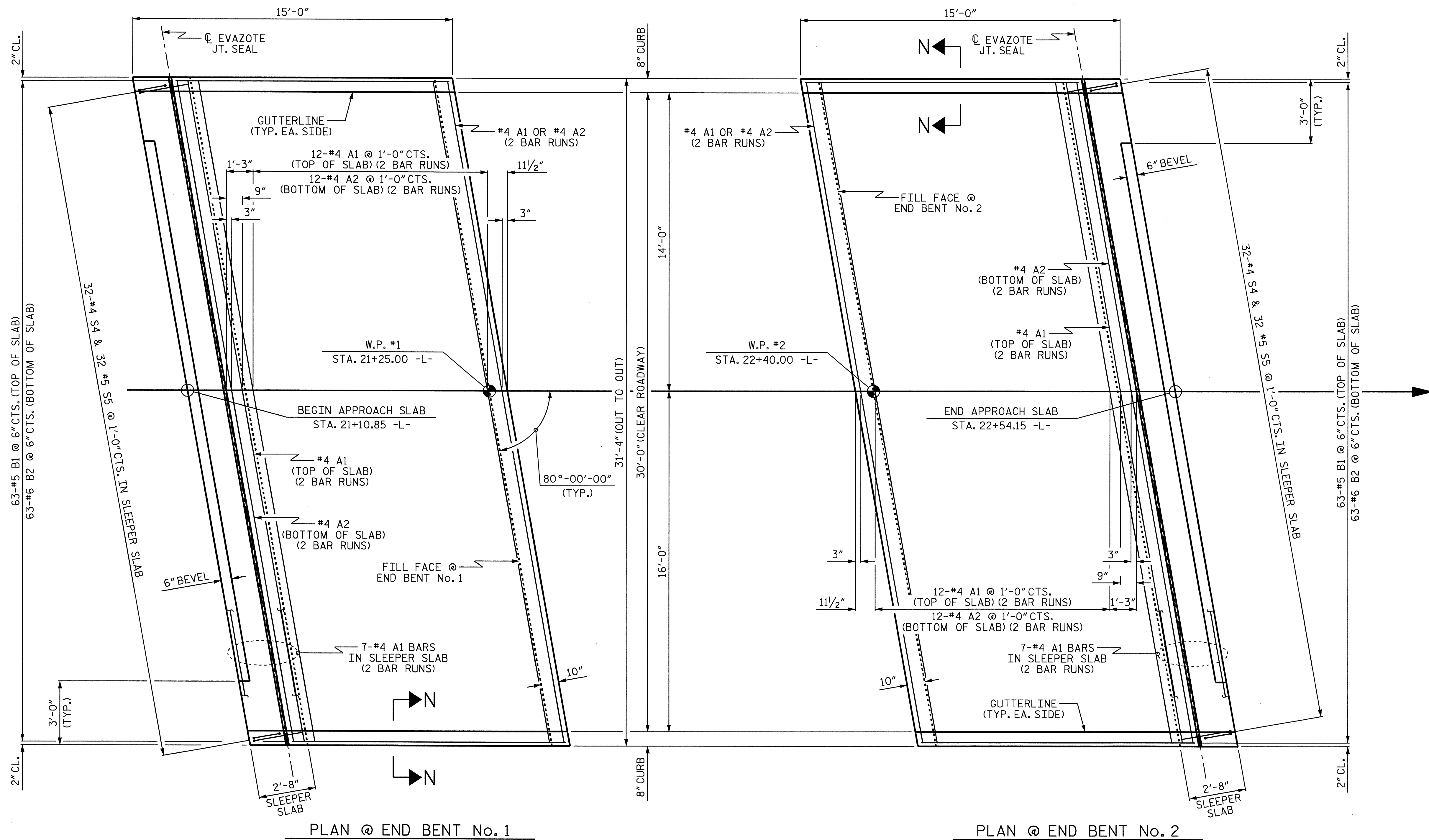
PROJECT NO. B-4296
UNION COUNTY
 STATION: 21+82.50 -L-

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

REVISIONS						SHEET NO. S-21
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 24
2			4			



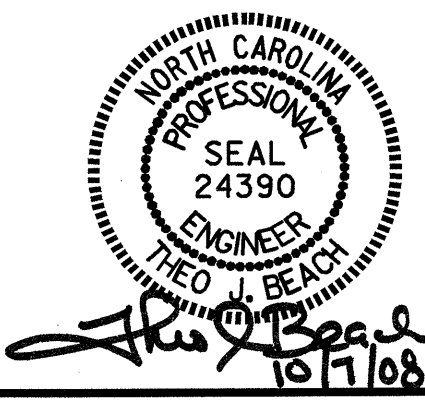
ASSEMBLED BY : W.G. PRICE, II DATE : 8-11-08
 CHECKED BY : M.L. BROWN DATE : 8-08
 DRAWN BY : REK 1/84 REV. 8/16/99 RWW/LES
 CHECKED BY : RDU 1/84 REV. 10/17/00 RWW/LES
 REV. 5/1/06 TLA/GM



PLAN OF APPROACH SLAB

PROJECT NO. B-4296
UNION COUNTY
 STATION: 21+82.50 -L-

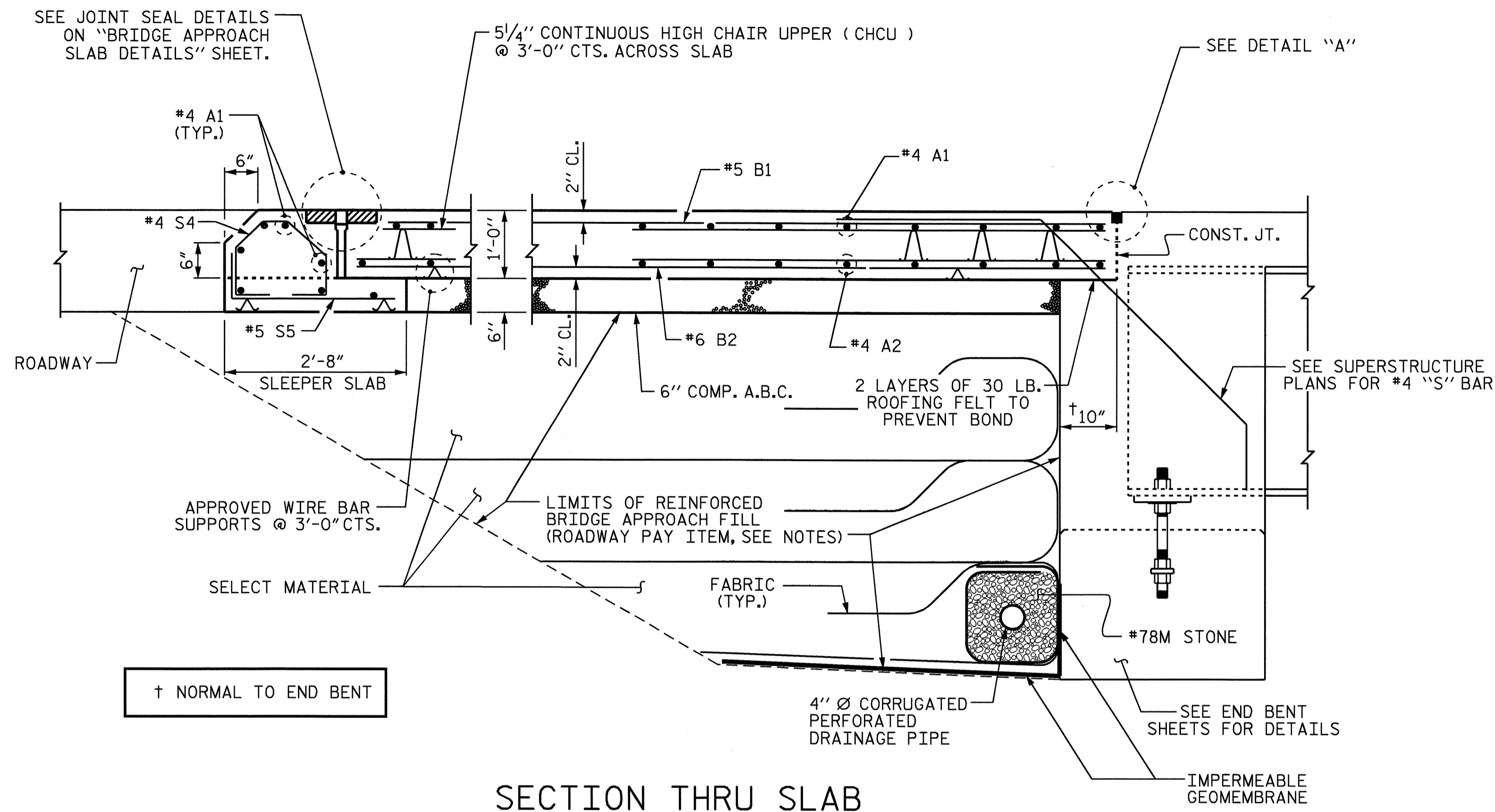
SHEET 1 OF 3
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 BRIDGE APPROACH
 SLAB FOR
 INTEGRAL ABUTMENT



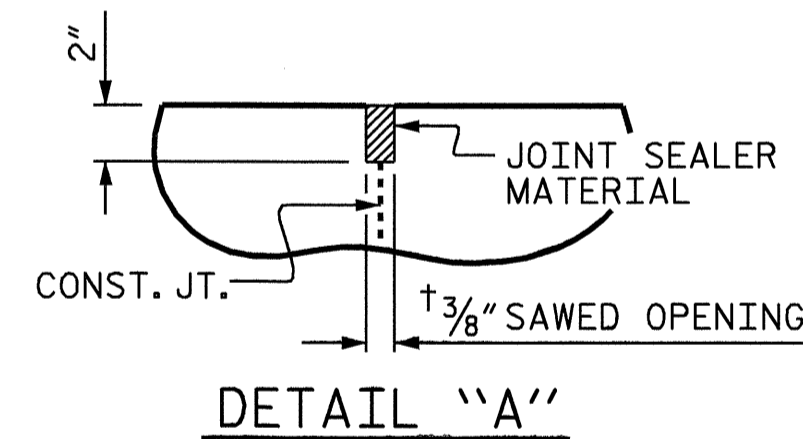
DRAWN BY: T. BANKOVICH DATE: 8-2007
 CHECKED BY: M.L. BROWN DATE: 8-2007

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			24

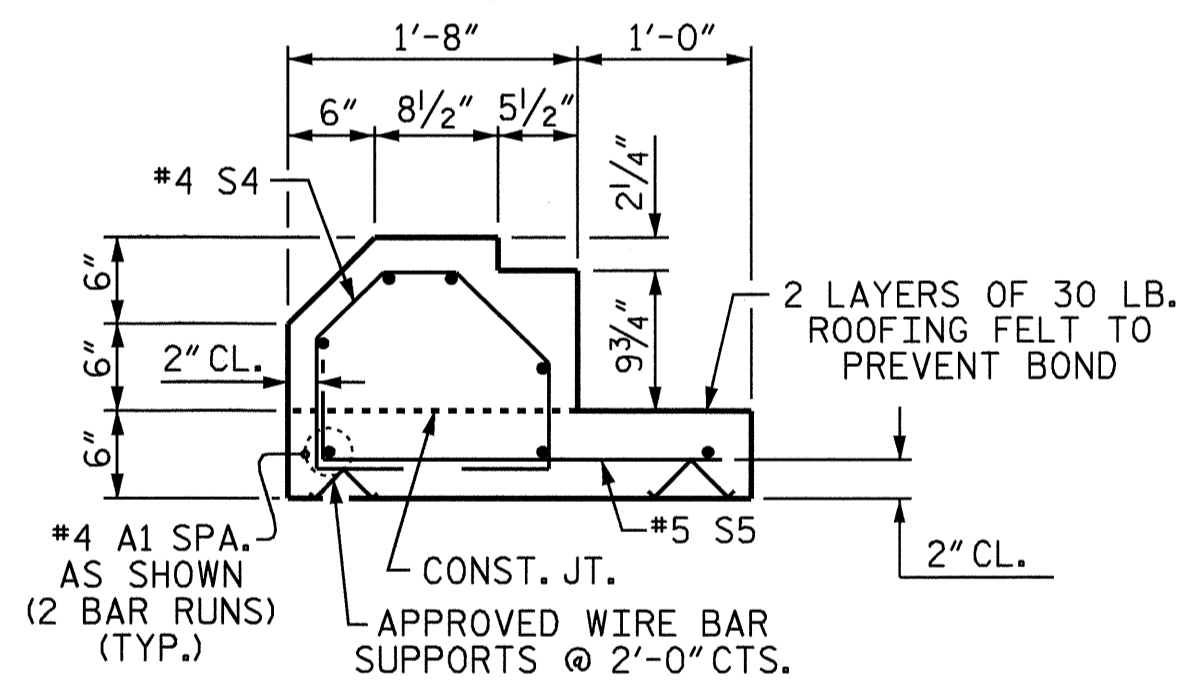
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 tbeach



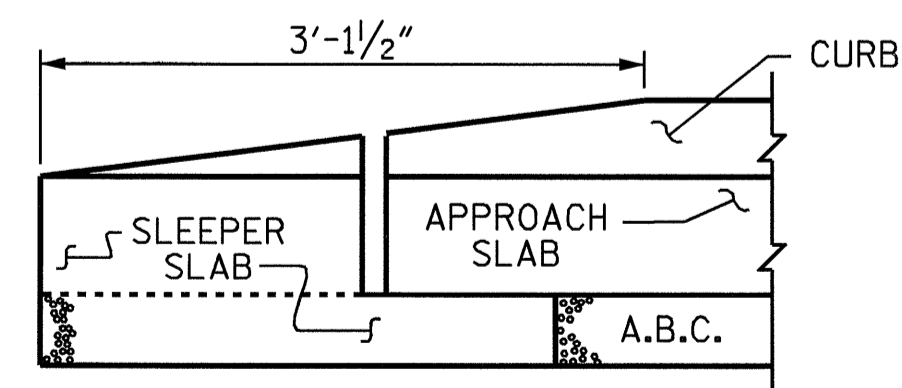
SECTION THRU SLAB



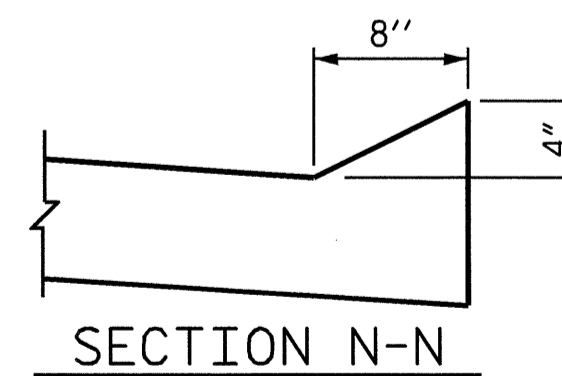
DETAIL 'A'



SECTION S-S
SHOWING SLEEPER SLAB



END OF CURB WITHOUT SHOULDER BERM GUTTER



SECTION N-N

NOTES

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.

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 SLEEPER 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 SLEEPER 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 SLEEPER 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.

THE VERTICAL JOINT ON THE RIGHT AND LEFT SIDE OF THE APPROACH SLAB AT THE ENDS OF THE EVAZOTE JOINT SHALL BE FILLED WITH SILICONE OR OTHER APPROVED MATERIAL IN ORDER TO PREVENT BACKFILL FROM ENTERING THE JOINT OPENING.

THE JOINT OPENING AT THE APPROACH SLAB/DECK INTERFACE SHALL BE SAWED NO MORE THAN 12 HOURS AFTER THE APPROACH SLAB IS CAST. THE JOINT SHALL BE CLEANED OF ALL DEBRIS BEFORE THE SEALANT IS APPLIED. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE SL LOW MODULUS SILICONE SEALANT.

WITH EVAZOTE JOINT SEAL

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.

BILL OF MATERIAL

FOR ONE APPROACH SLAB (2 REQ'D)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	42	#4	STR	16'-9"	470
A2	28	#4	STR	16'-7"	310
* B1	63	#5	STR	12'-5"	816
B2	63	#6	STR	12'-10"	1214
* S4	32	#4	1	3'-11"	84
S5	32	#5	2	2'-11"	97

REINFORCING STEEL 1621 LBS.

* EPOXY COATED REINFORCING STEEL 1370 LBS.

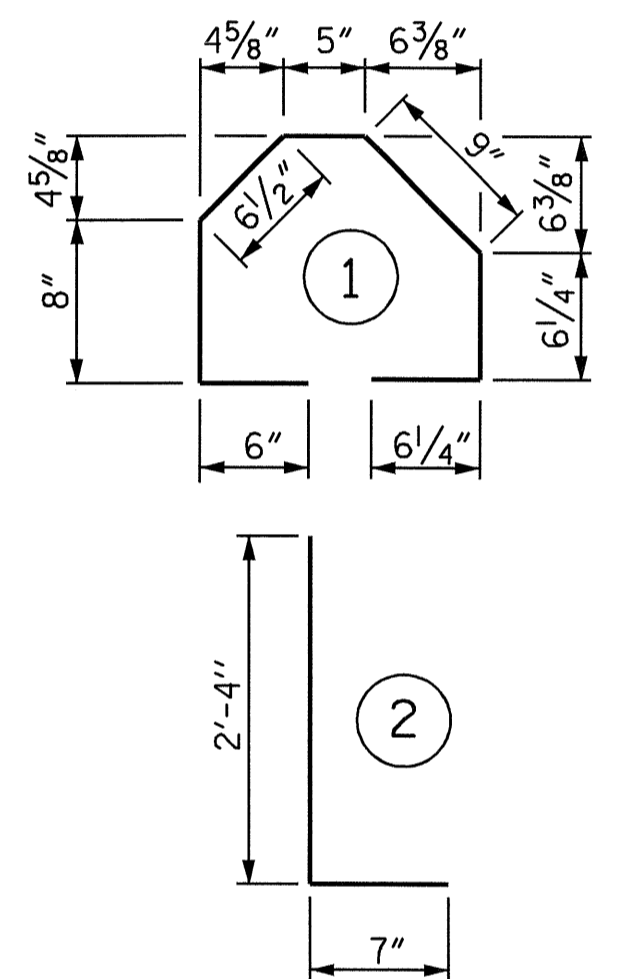
CLASS AA CONCRETE

POUR #1 - SLEEPER SLAB 3.3 C.Y.

POUR #2 - SLAB & CURB 15.4 C.Y.

TOTAL 18.7 C.Y.

BAR TYPES

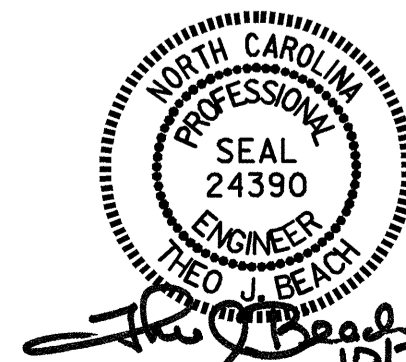


ALL BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. B-4296
UNION COUNTY
STATION: 21+82.50 -L-

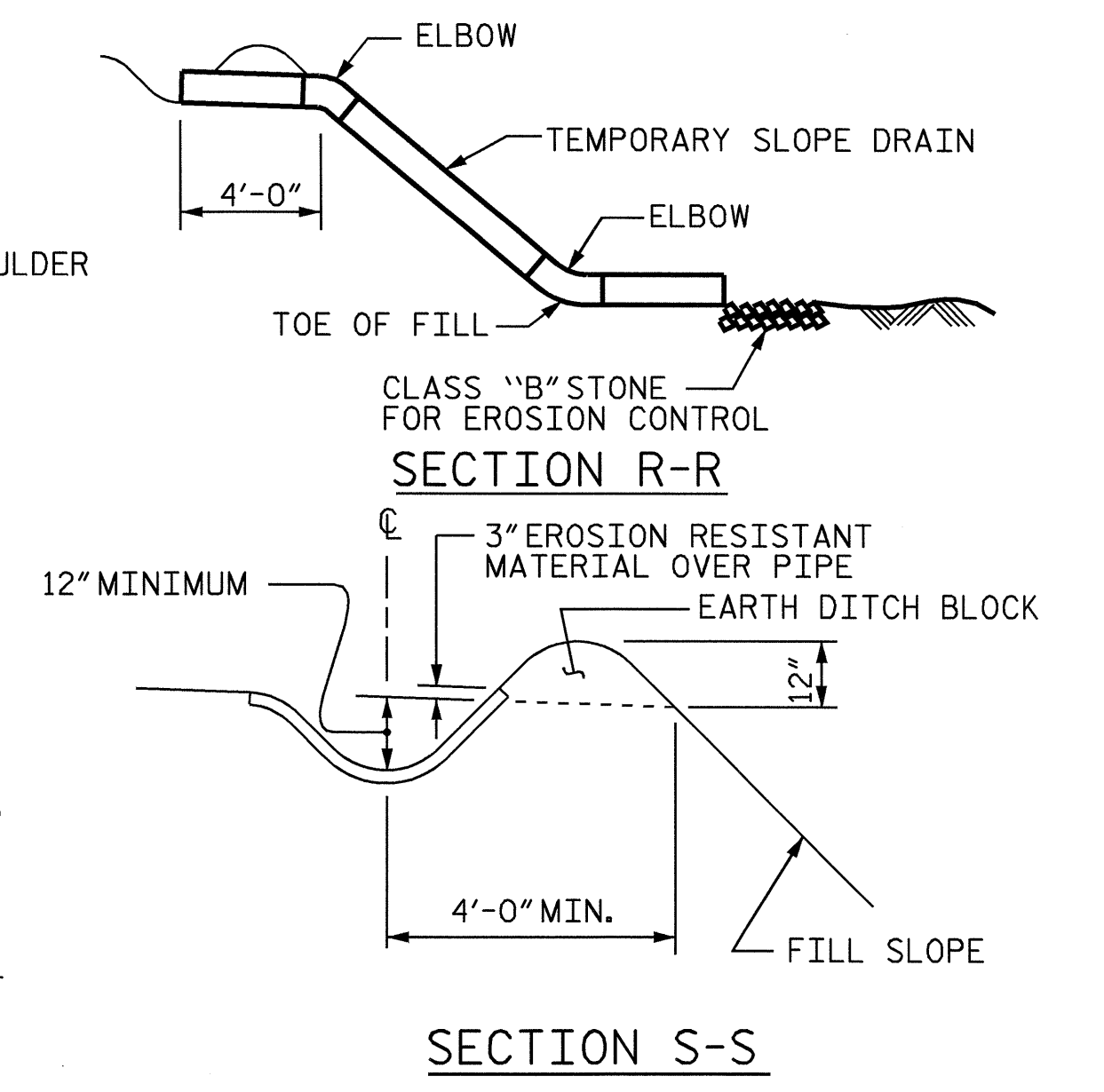
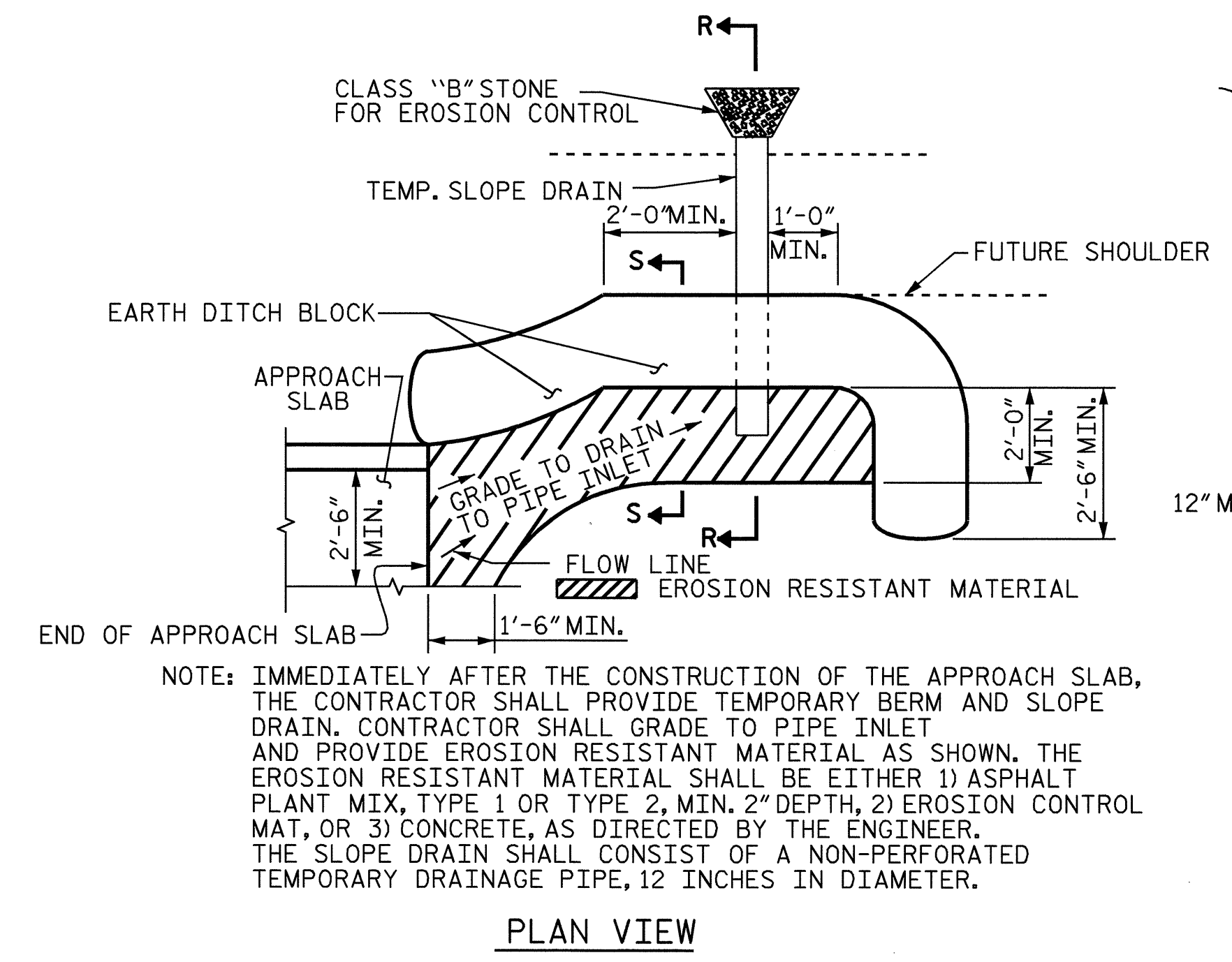
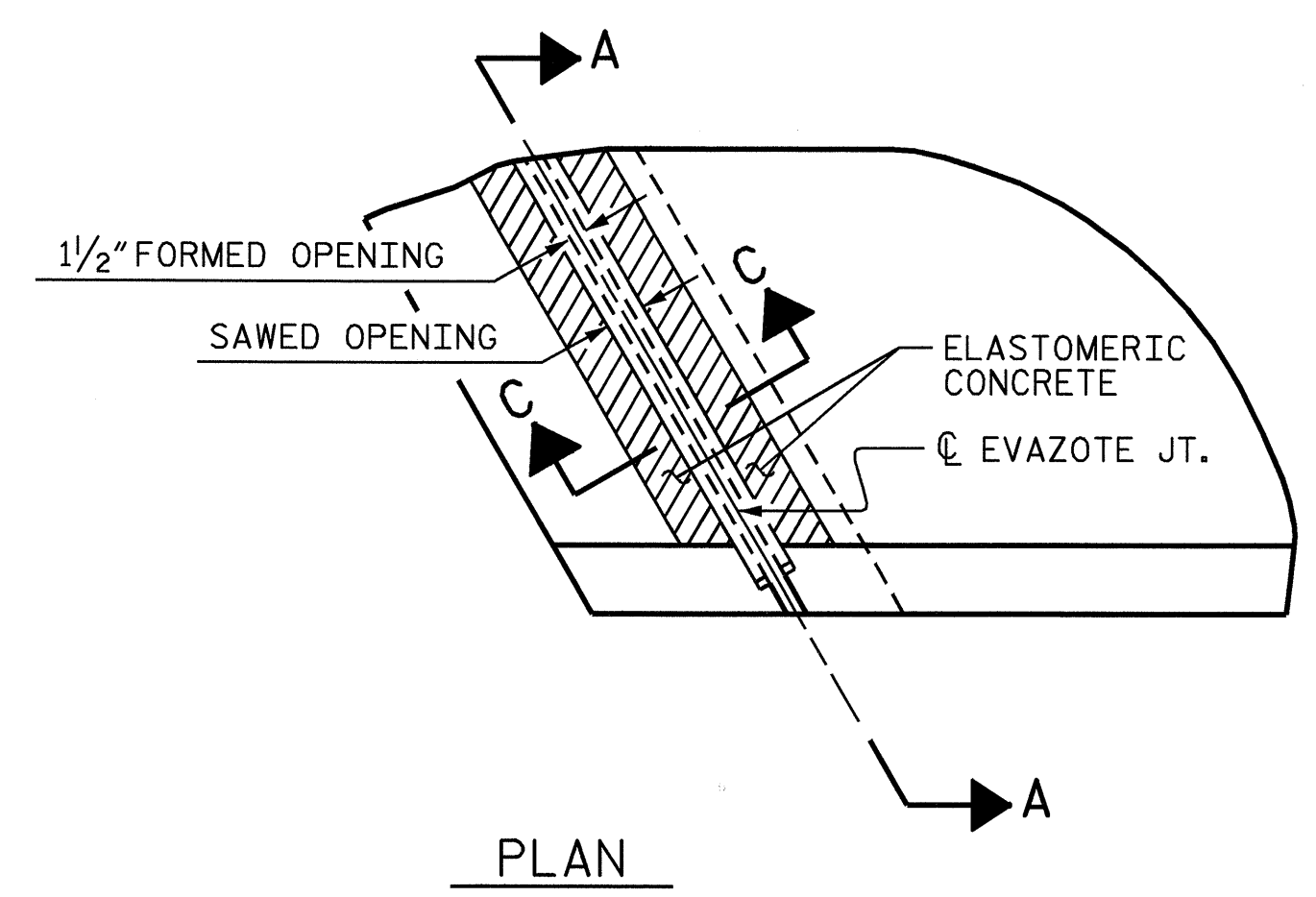
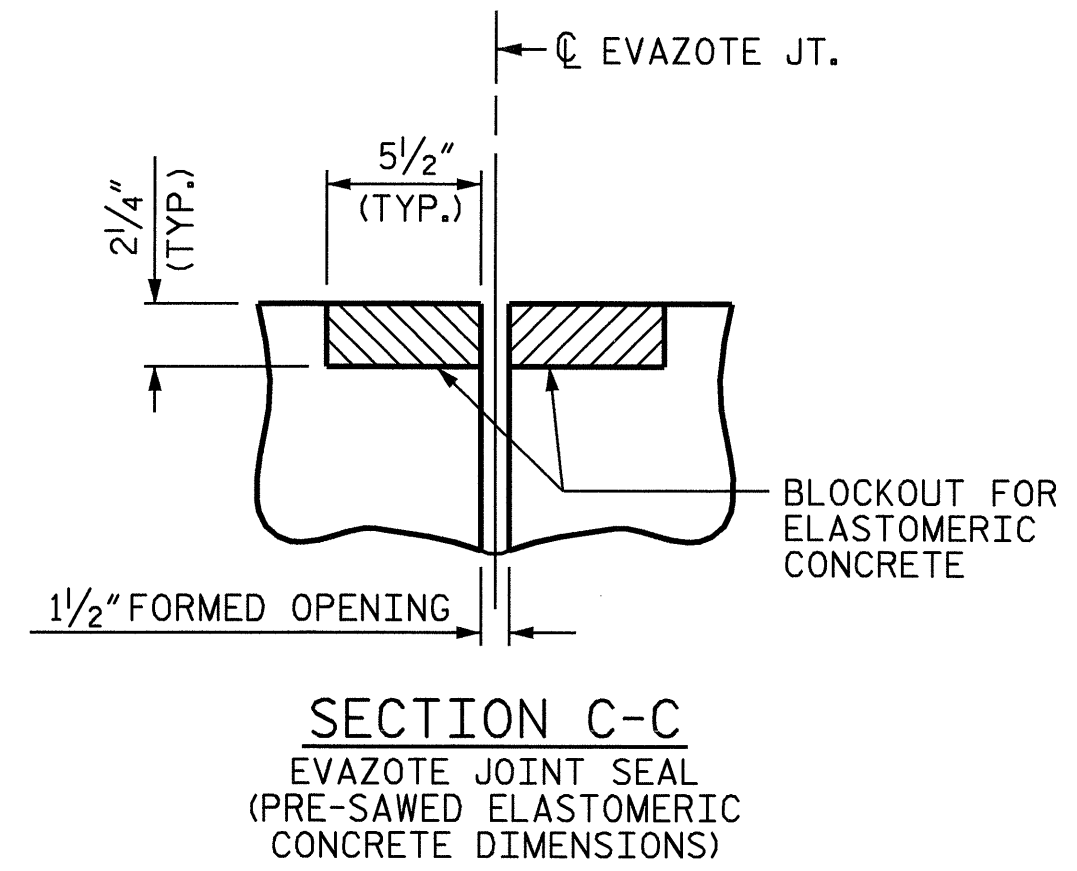
SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH SLAB
FOR INTEGRAL ABUTMENT

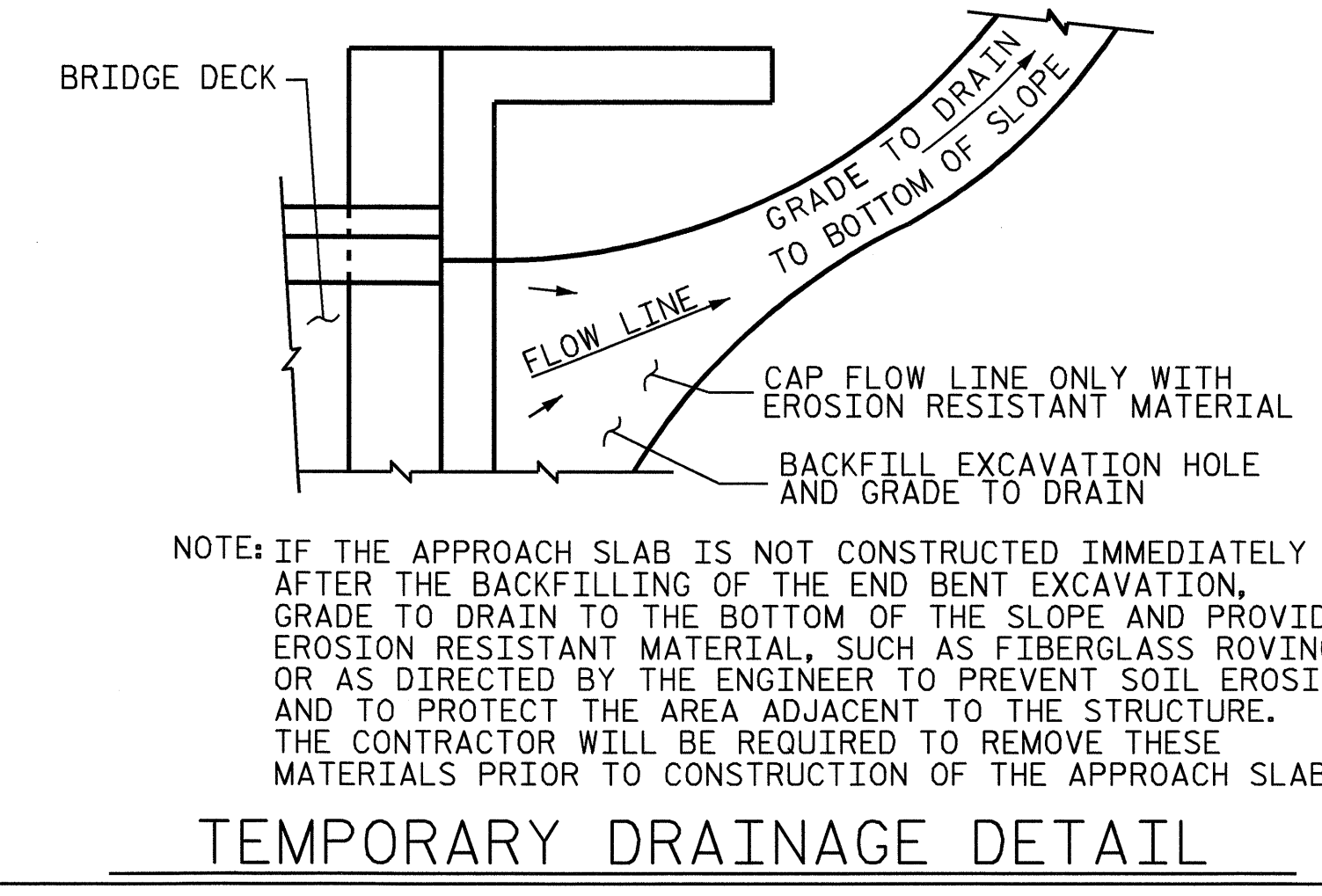
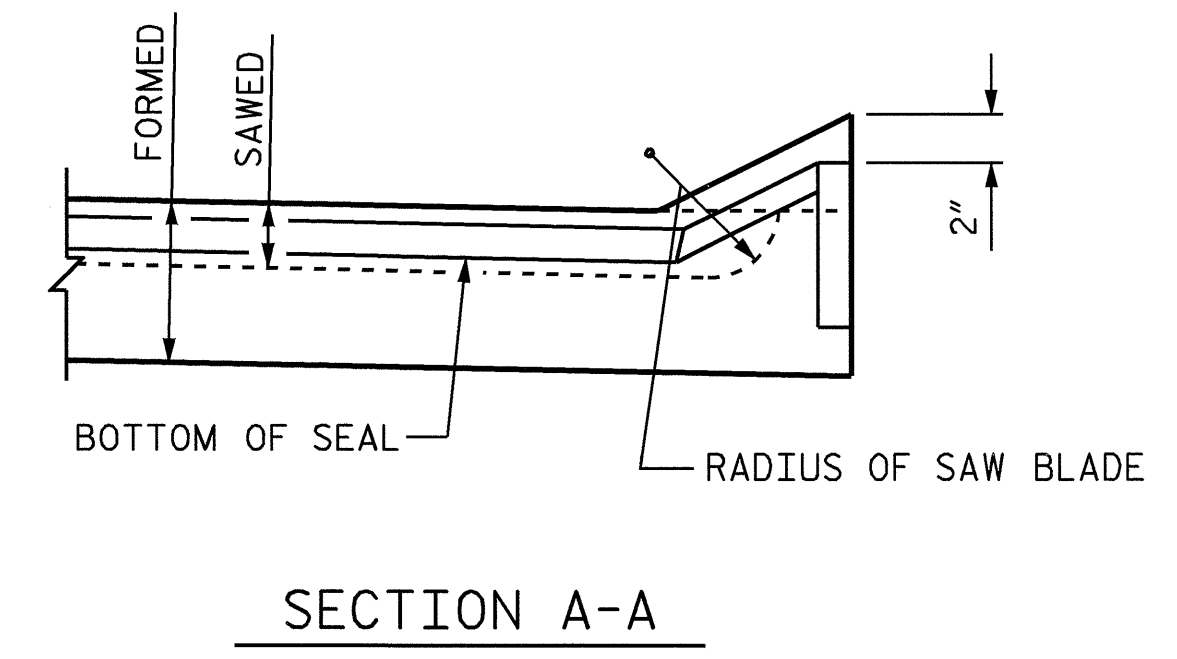
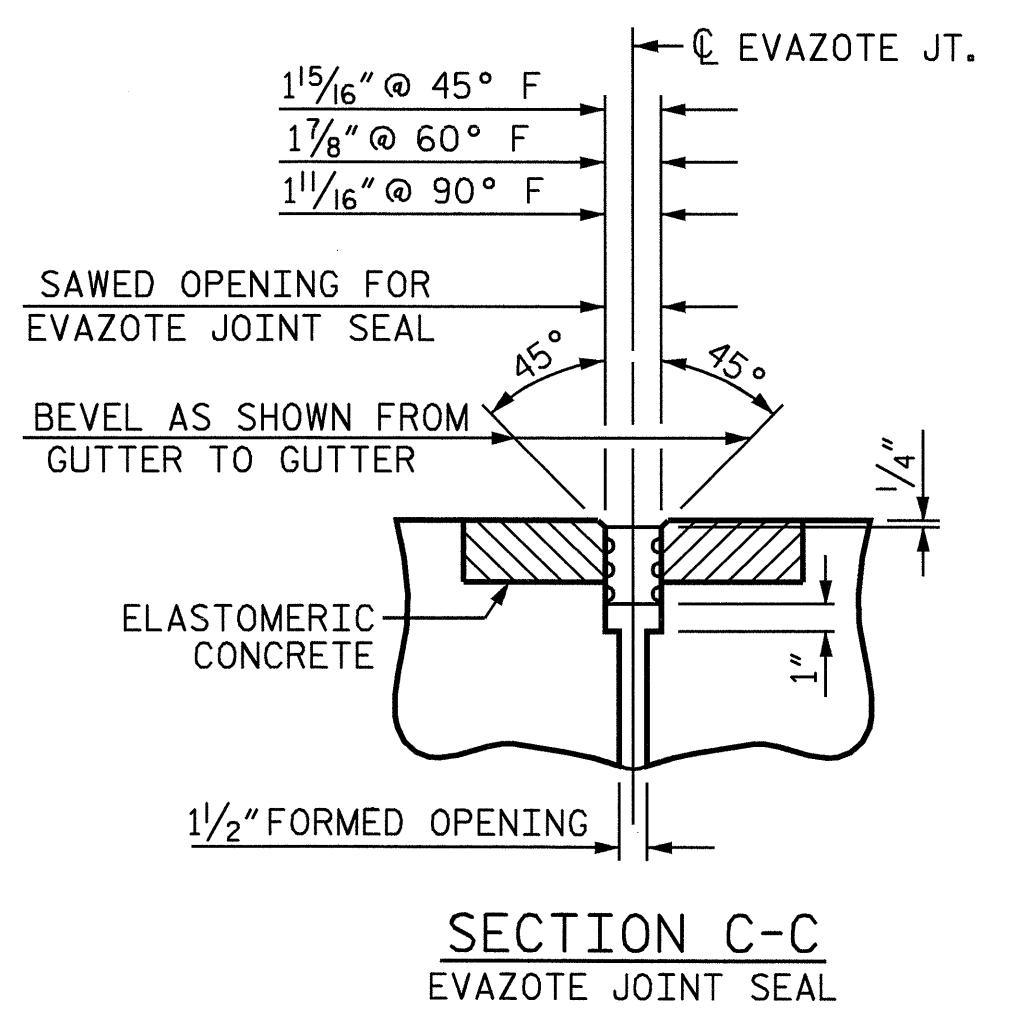


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS 24
2			4			

ASSEMBLED BY : T. BANKOVICH	DATE : 8/07
CHECKED BY : M.L. BROWN	DATE : 8/07
DRAWN BY : TLA 10/05	ADDED 5/1/06
CHECKED BY : GM 5/06	



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

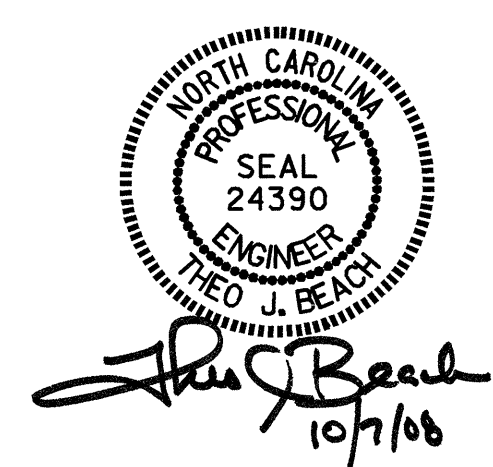


ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	5.2
2	5.2
TOTAL	10.4

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

JOINT SEAL DETAILS @ SLEEPER SLAB

ASSEMBLED BY : T. BANKOVICH	DATE : 8/07
CHECKED BY : M.L. BROWN	DATE : 8/07
DRAWN BY : FCJ 11/88	REV. 10/17/00 RWW/LES
CHECKED BY : ARB 11/88	REV. 5/17/03 RWW/JTE
	REV. 5/1/06 TLA/GM



PROJECT NO. B-4296
UNION COUNTY
 STATION: 21+82.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						1988
STANDARD BRIDGE APPROACH SLAB DETAILS						SHEET NO. S-24
REVISIONS						TOTAL SHEETS 24
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

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