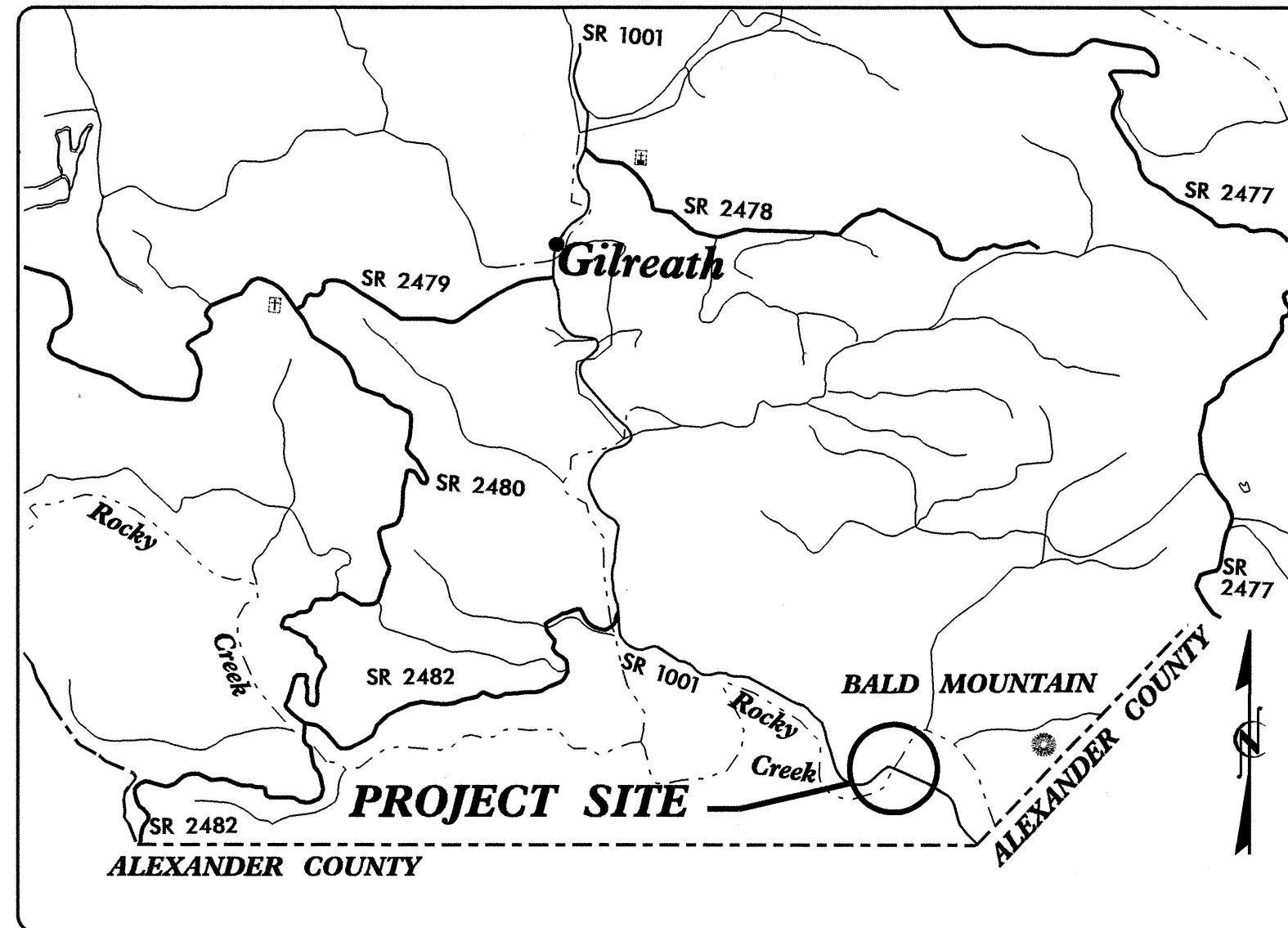


TIP PROJECT: B-4675

CONTRACT: C201817

STRUCTURE



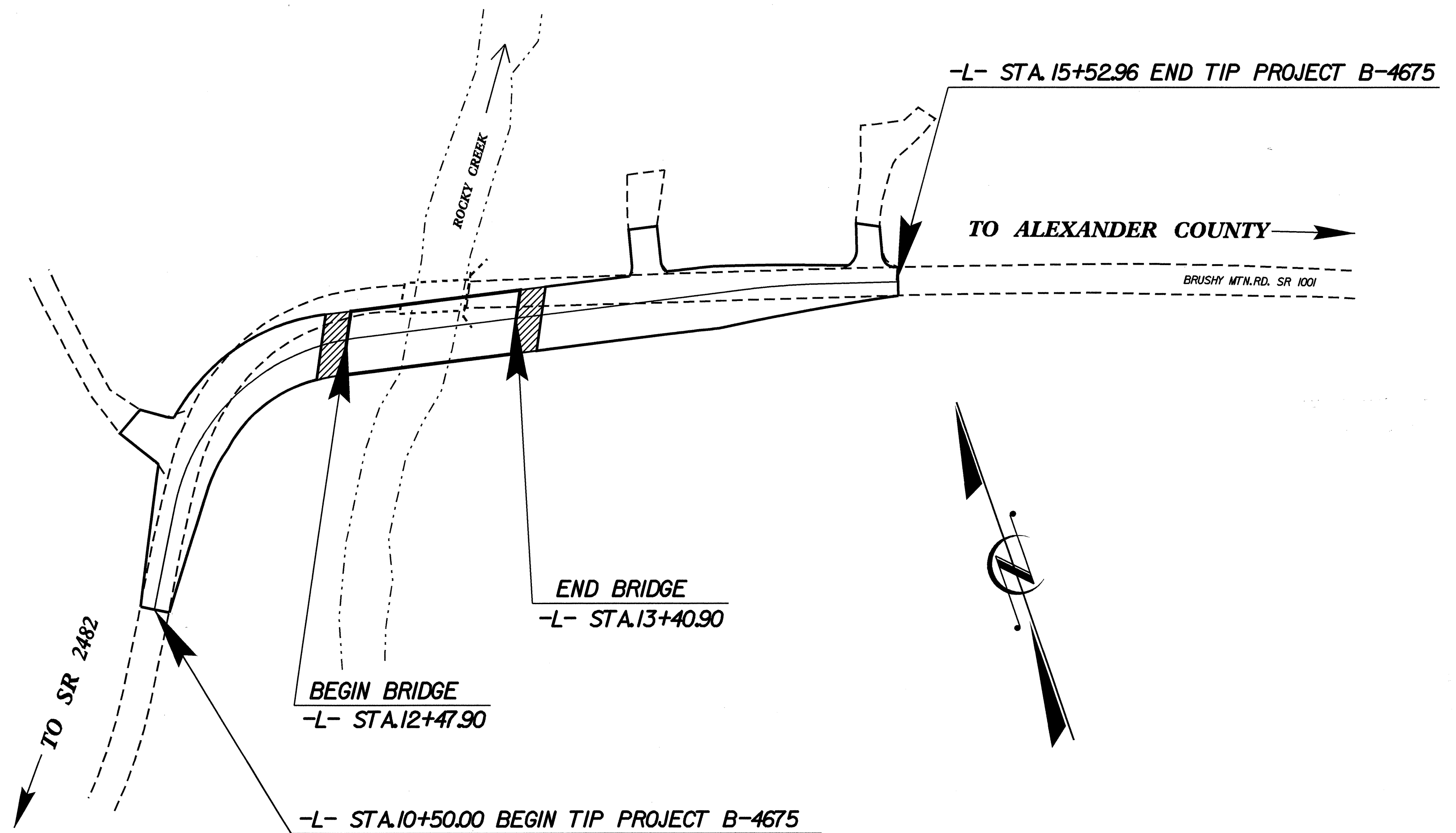
VICINITY MAP OF B-4675

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

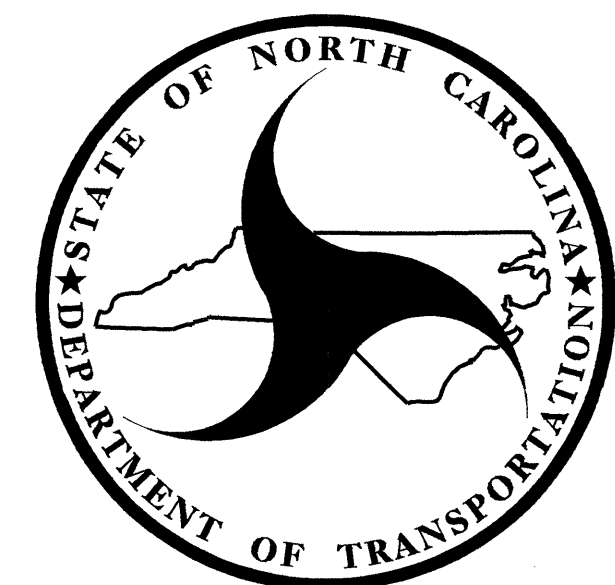
WILKES COUNTY

**LOCATION: BRIDGE NO. 34 OVER ROCKY CREEK AND APPROACHES
ON SR 1001 (BRUSHY MOUNTAIN RD)**

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



** DESIGN EXCEPTION REQUIRED TO REDUCE
DESIGN SPEED FROM 60 MPH TO LESS THAN 20



DESIGN DATA

ADT 2008 = 460
ADT 2030 = 800
DHV = 11%
D = 55%
T = 6%*
(*TTST 2% + DUAL 4%)
**v < 20 mph
FUNC CLASS = RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY T.I.P. PROJECT B-4675 = 0.077 MILES
LENGTH STRUCTURES T.I.P. PROJECT B-4675 = 0.018 MILES
TOTAL LENGTH OF T.I.P. PROJECT B-4675 = 0.095 MILES

2006 STANDARD SPECIFICATIONS

LETTING DATE:
APRIL 15, 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

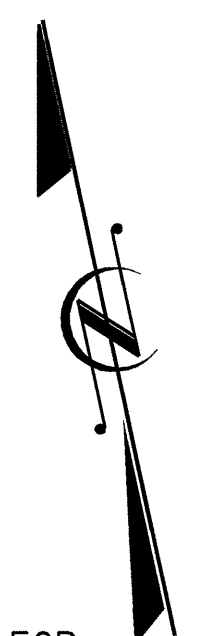
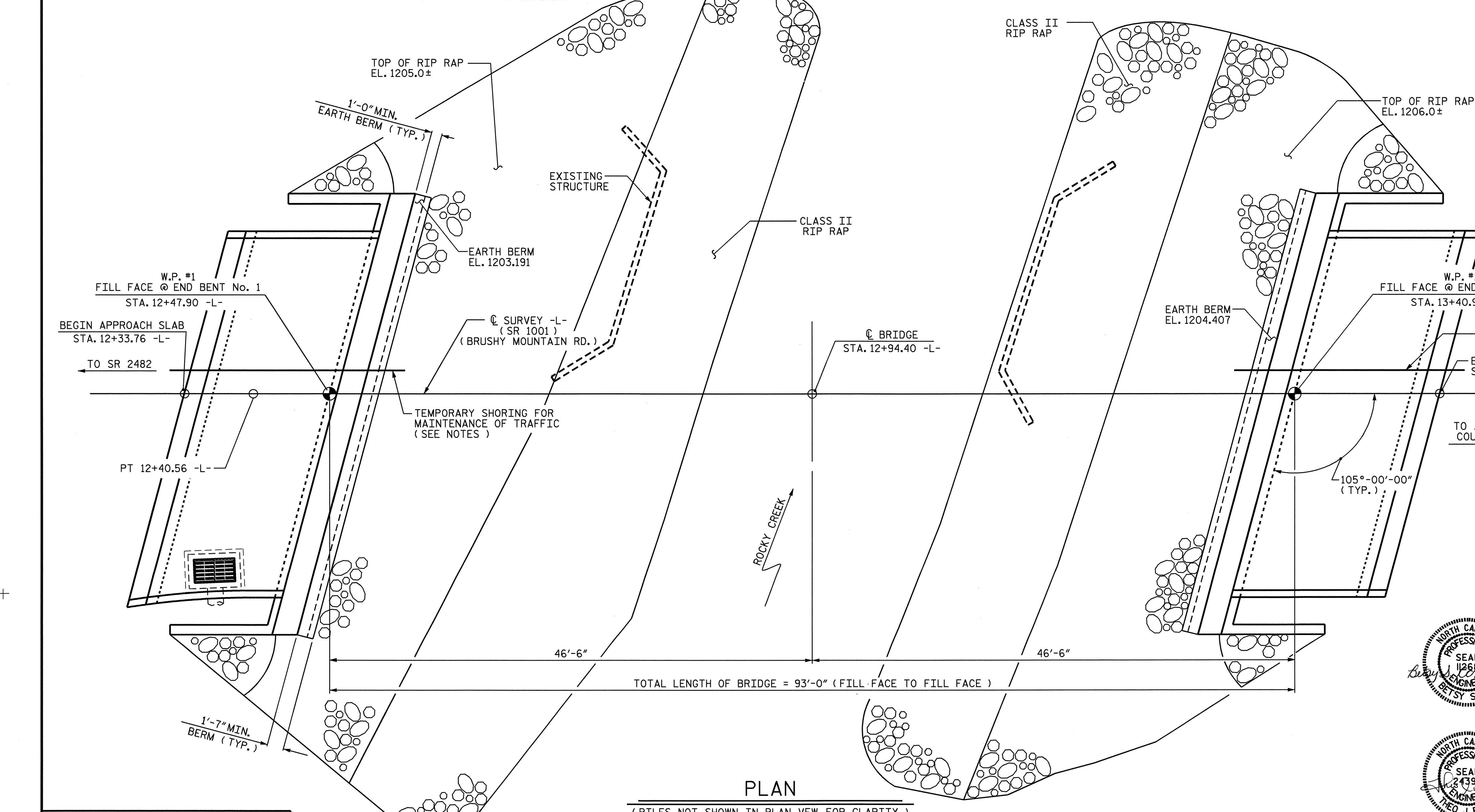
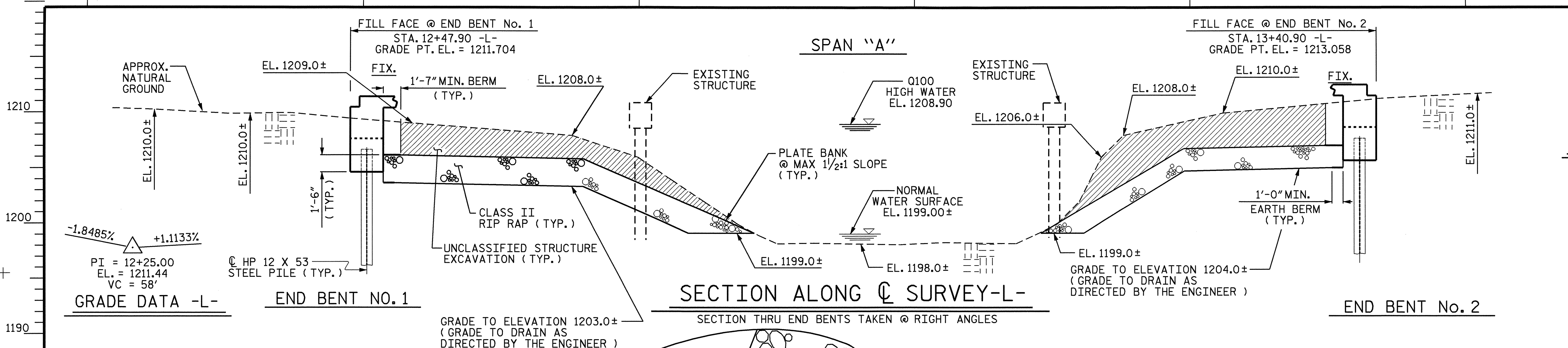
T.J. BEACH, P. E.
PROJECT DESIGN ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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

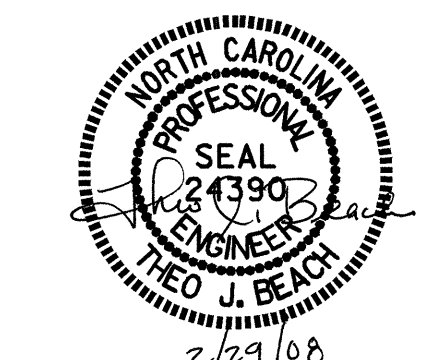
APPROVED FOR
DIVISION ADMINISTRATOR
DATE

STATE	STATE PROJECT REFERENCE NO.	
N.C.	B-4675	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
33830.1.1	BRZ-1001(28)	PE
33830.2.1	BRZ-1001(28)	R/W,UTIL
33830.3.1	BRZ-1001(28)	CONST



DRAWN BY : N. PIERCE DATE : 01-08
 CHECKED BY : T.J. BEACH DATE : 01-08

28-FEB-2008 13:59
 F:\structures\general drawing\b-4675.sd.gdn
 tbankovitch



PROJECT NO. B-4675
WILKES COUNTY
 STATION: 12+94.40 -L-

SHEET 1 OF 3 REPLACES BRIDGE #34

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE ON SR 1001
 OVER ROCKY CREEK
 BETWEEN SR 2482 & ALEXANDER
 COUNTY LINE

REVISIONS						SHEET NO. S-1
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			

NOTES:

DRIVE PILES AT END BENT No.1 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 IS 60 TONS PER PILE.

DRIVE PILES AT 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.2 IS 60 TONS PER PILE.

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

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

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

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.

AFTER SERVING AS A TEMPORARY STRUCTURE, THE EXISTING STRUCTURE CONSISTING OF 1 SPAN AT 36'-0", WITH A CLEAR ROADWAY WIDTH OF 16'-10" WITH TIMBER FLOOR WITH 1/2" ASPHALT WEARING SURFACE ON STEEL I-BEAMS AND SUBSTRUCTURE CONSISTING OF TIMBER CAP ON TIMBER POSTS AND SILLS AT END BENTS AND LOCATED AT THE SITE OF 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 PROVISIONS FOR REMOVAL OF EXISTING STRUCTURE.

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

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

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 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.

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.

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

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.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT BRIDGES IN THE VICINITY OF THIS PROJECT ARE POSTED BELOW THE LEGAL LOAD LIMIT, SEE STANDARD SPECIFICATION 105-15.

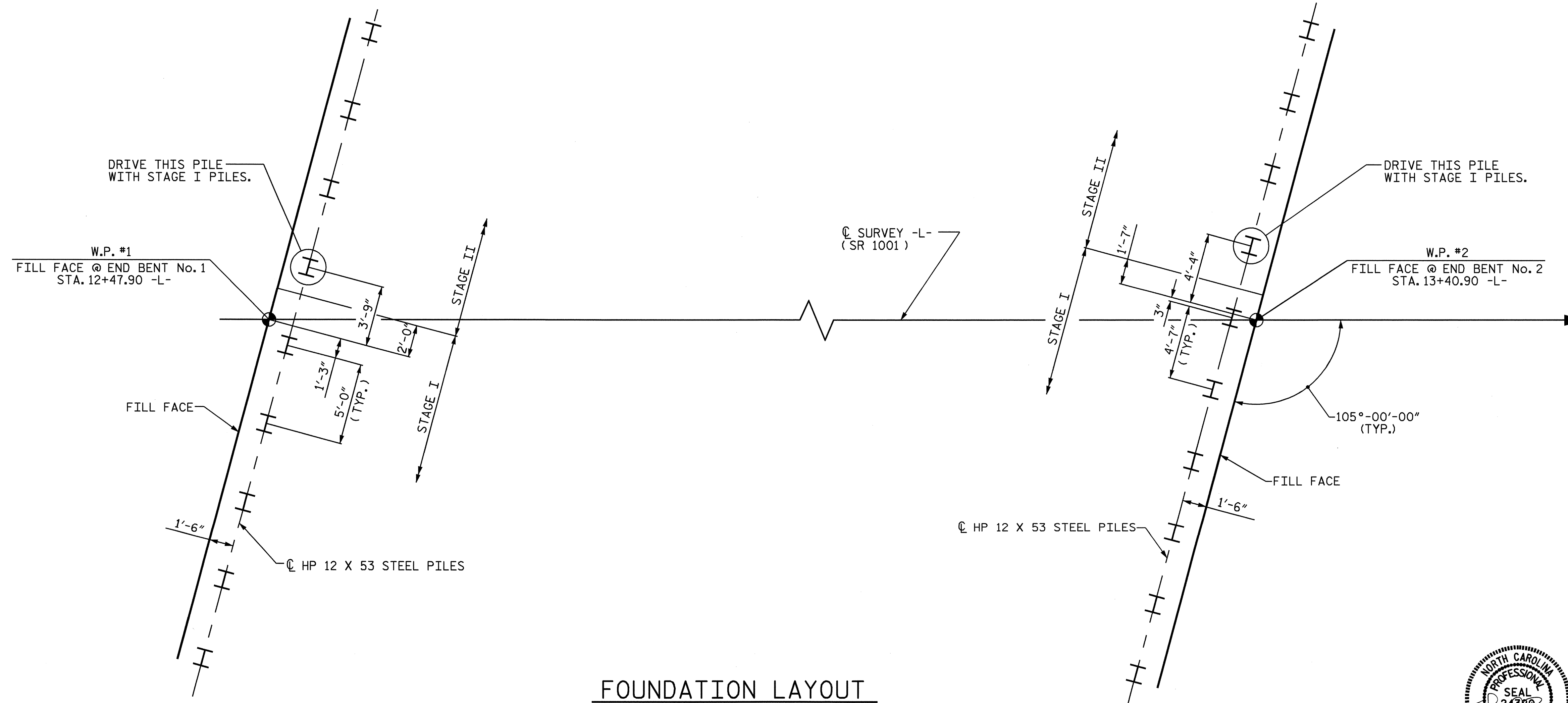
FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 24.0± FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION.

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

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 12+94.40 -L-."

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

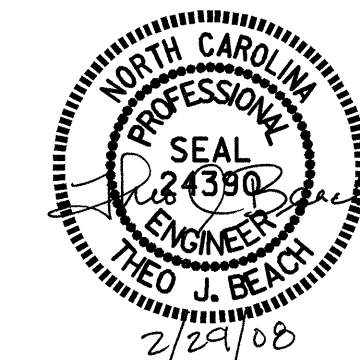


FOUNDATION LAYOUT

PROJECT NO. B-4675
WILKES COUNTY
 STATION: 12+94.40 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON SR 1001
 OVER ROCKY CREEK
 BETWEEN SR 2482 & ALEXANDER
 COUNTY LINE

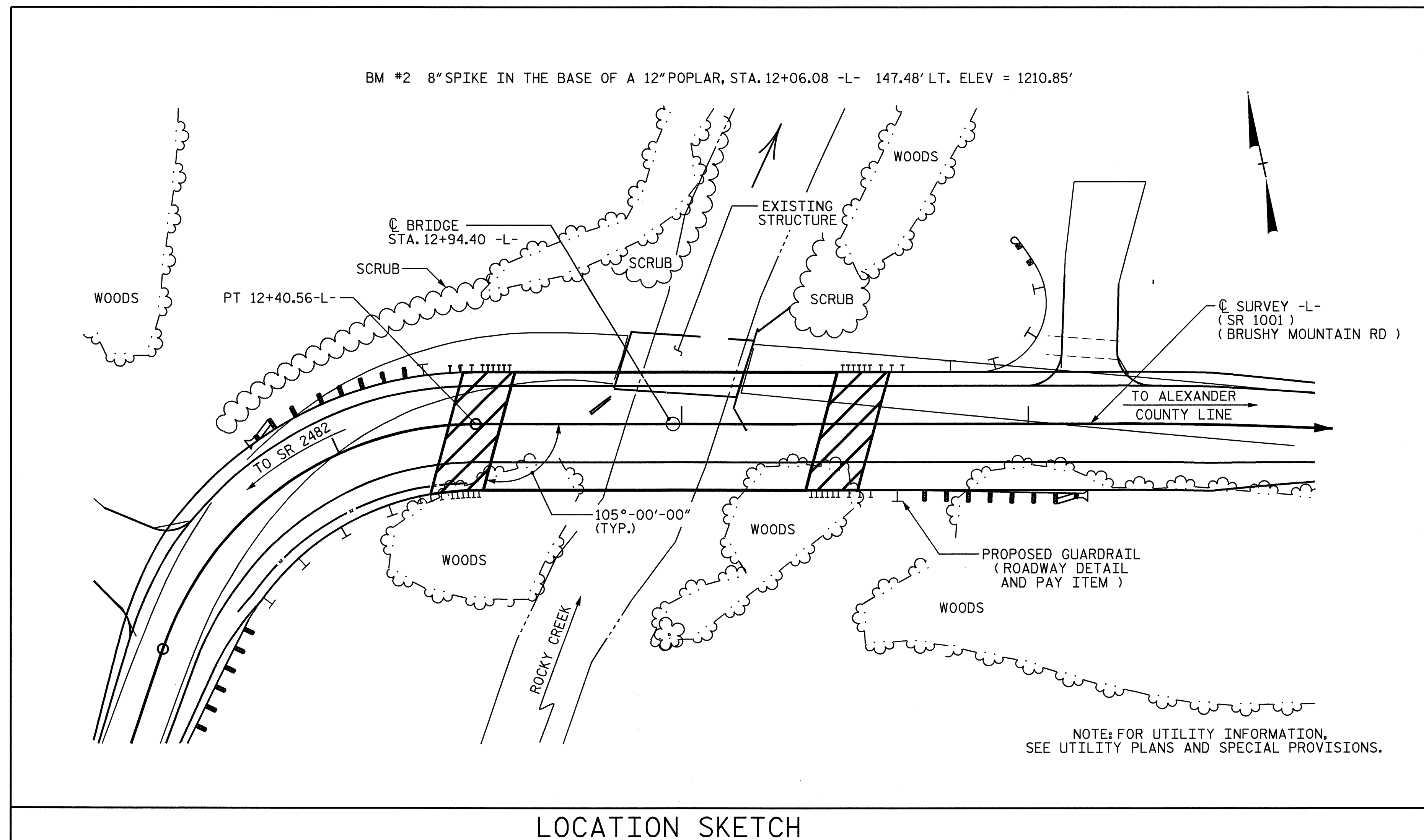


DRAWN BY : N. PIERCE DATE : 01-08
 CHECKED BY : T.J. BEACH DATE : 01-08

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			30

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		TWO BAR METAL RAIL	1'-2" X 2'-6" CONCRETE PARAPET	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.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM
SUPERSTRUCTURE			3,402	3,592				109,500			166.92	182.55			
END BENT No. 1					24.1		3,084		9	450			225	250	
END BENT No. 2					24.4		3,040		10	500			210	234	
TOTAL	LUMP SUM	LUMP SUM	3,402	3,592	48.5	LUMP SUM	6,124	109,500	19	950	166.92	182.55	435	484	LUMP SUM

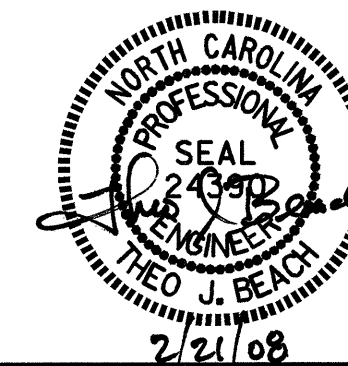


PROJECT NO. B-4675
WILKES COUNTY
STATION: 12+94.40 -L-

SHEET 3 OF 3

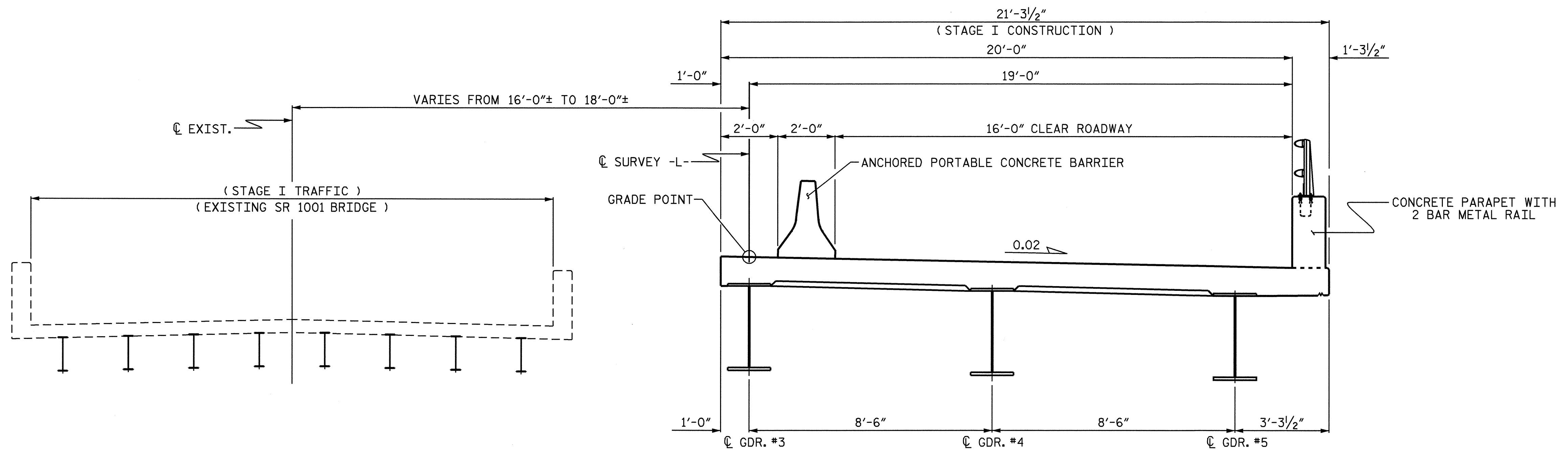
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON SR 1001
OVER ROCKY CREEK
BETWEEN SR 2482 & ALEXANDER
COUNTY LINE



DRAWN BY : N. PIERCE DATE : 01-08
CHECKED BY : T.J. BEACH DATE : 01-08

REVISIONS						SHEET NO. S-3
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			



STAGE I CONSTRUCTION

SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMITS OF THE ANCHORED PORTABLE CONCRETE BARRIER



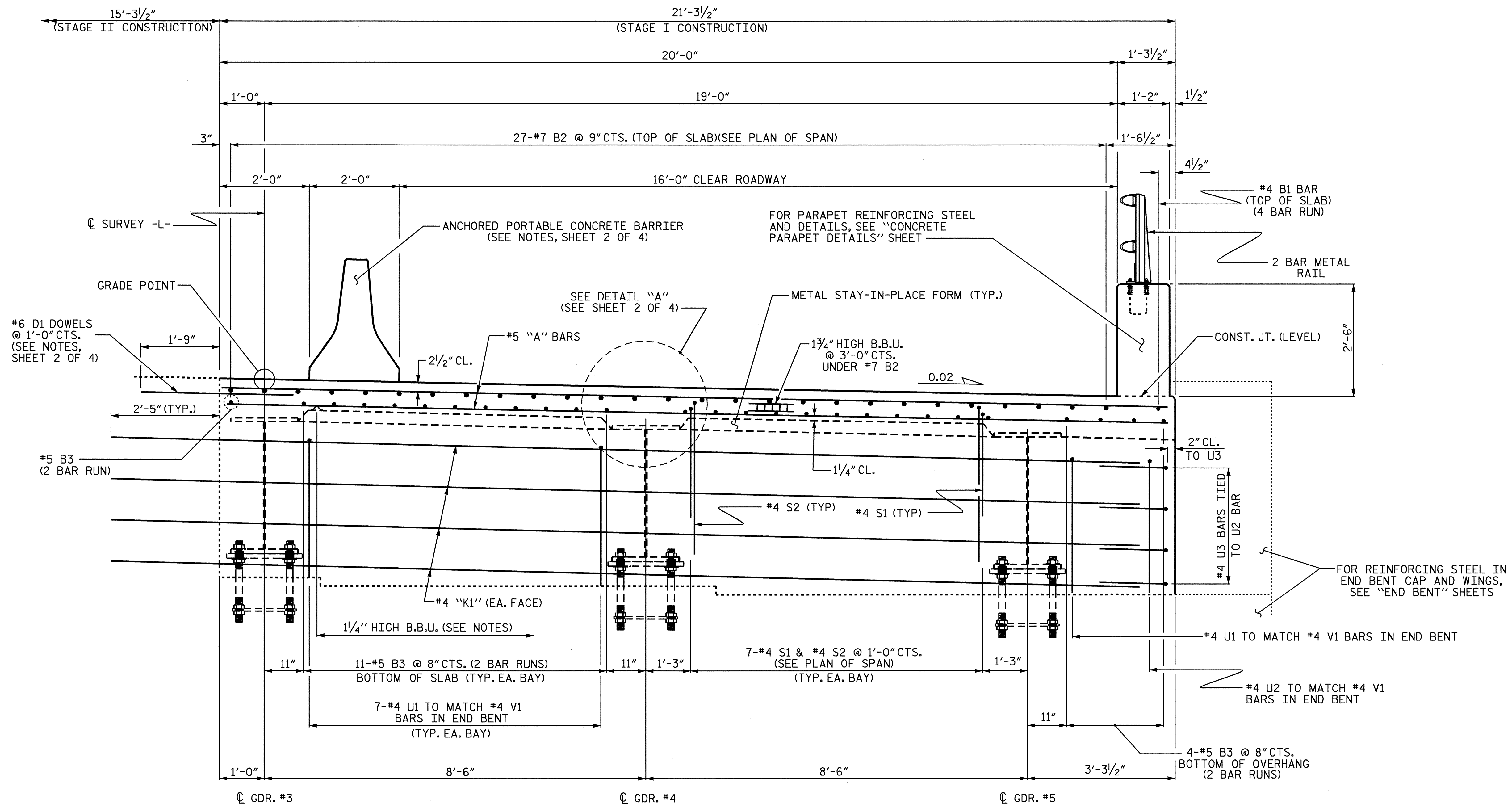
STAGE II CONSTRUCTION

PROJECT NO. B-4675
WILKES COUNTY
 STATION: 12+94.40 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
CONSTRUCTION SEQUENCE					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-4					TOTAL SHEETS 30



DRAWN BY : N. PIERCE DATE : 01-08
 CHECKED BY : T.J. BEACH DATE : 01-08

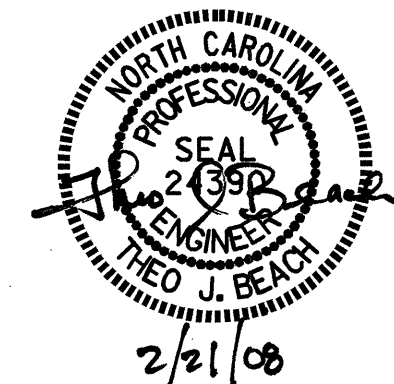


END ELEVATION (STAGE I CONSTRUCTION)
 (END BENT 1 SHOWN, END BENT 2 SIMILAR)
 (FOR SECTION THRU END BENT, SEE SHEET 3 OF 4)

PROJECT NO. B-4675
WILKES COUNTY
 STATION: 12+94.40 -L-

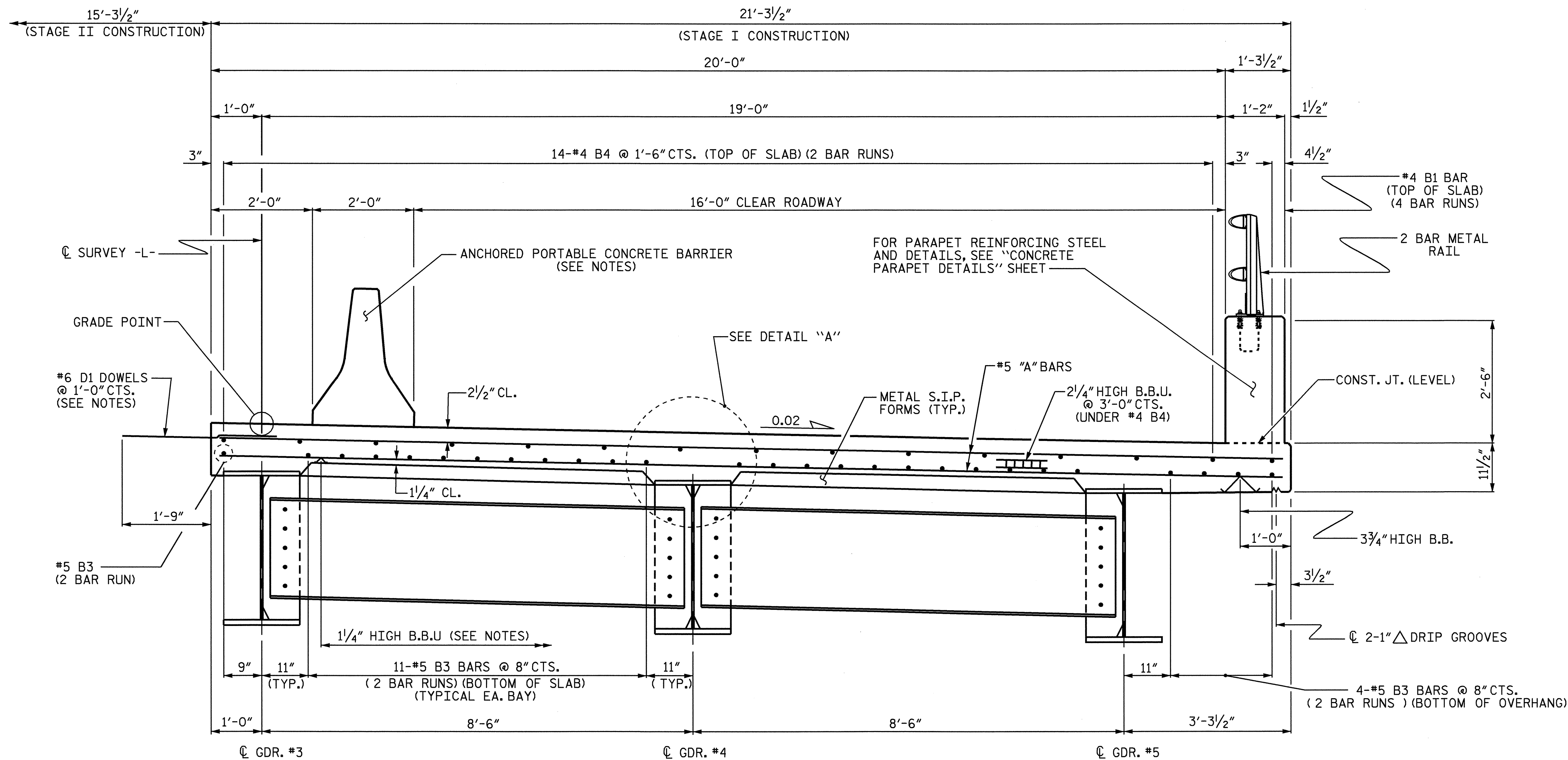
SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION
 STAGE I



DRAWN BY: S.B. WILLIAMS DATE: 10-31-07
 CHECKED BY: T.J. BEACH DATE: 12-07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTALS
2			4			30



TYPICAL SECTION (STAGE I CONSTRUCTION)
(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.

#6 D1 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP SLAB REINFORCING STEEL.

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.

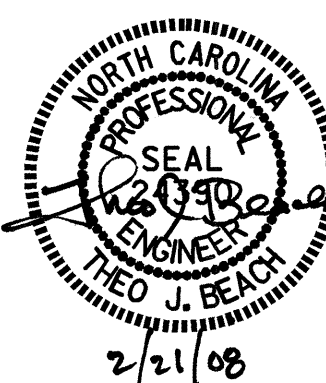
PREVIOUSLY CAST CONCRETE IN THE SPAN SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE SPAN.

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

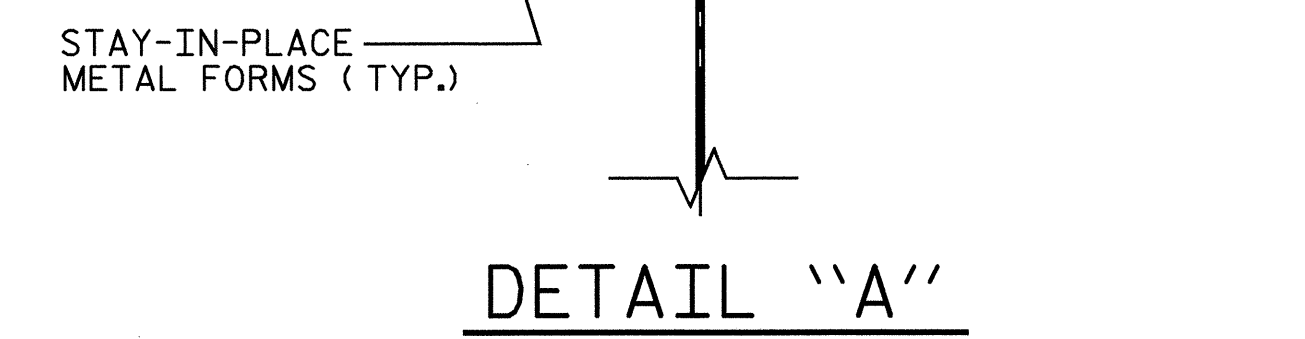
SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMITS OF THE ANCHORED PORTABLE CONCRETE BARRIER.

THE CONTRACTOR MAY, WHEN NECESSARY, PROPOSE A SCHEME FOR AVOIDING INTERFERENCE BETWEEN METAL STAY-IN-PLACE FORM SUPPORTS OR FORMS AND BEAM/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 PARAPETS SHALL BE EPOXY COATED.



2/21/08



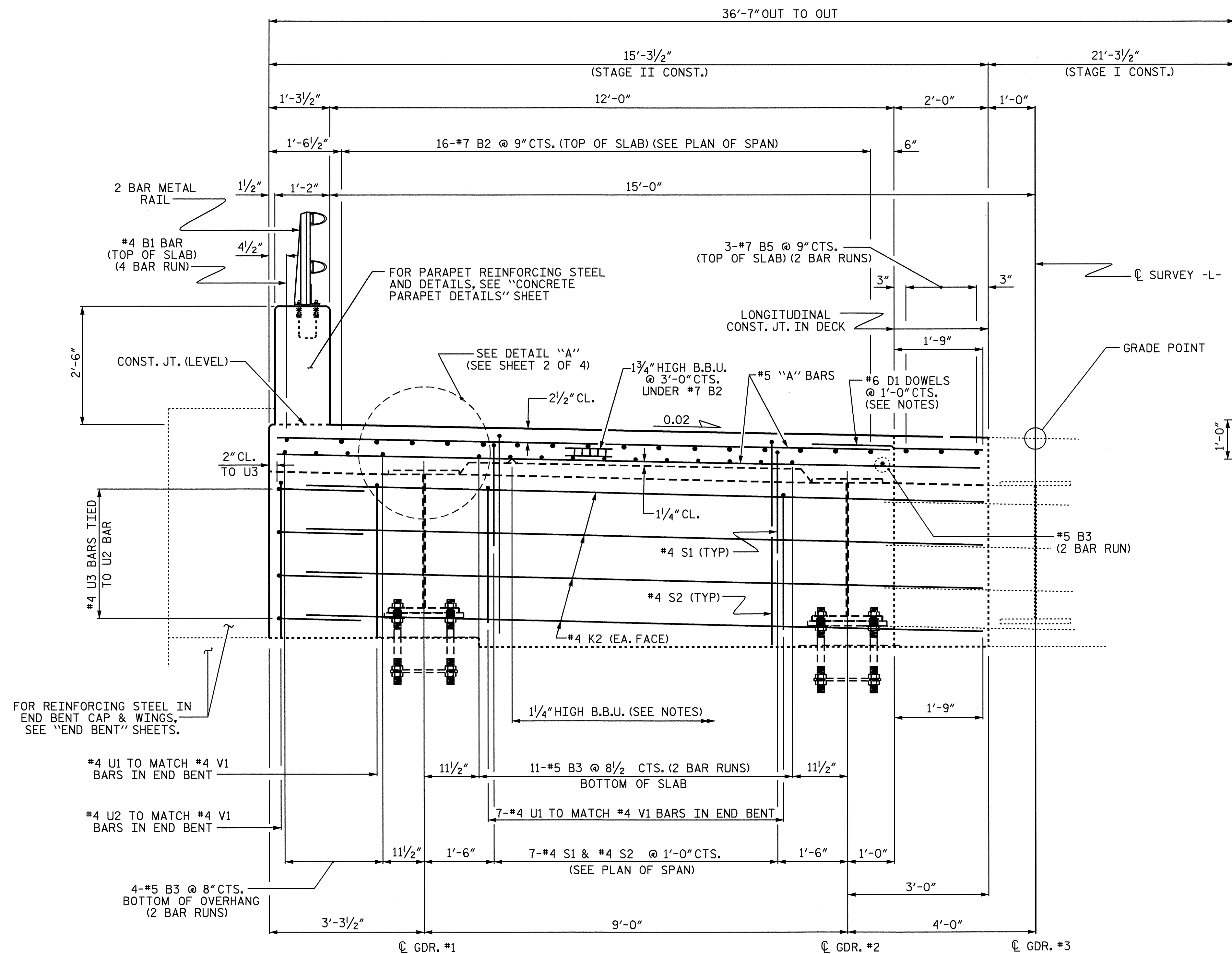
DETAIL "A"

PROJECT NO. B-4675
WILKES COUNTY
STATION: 12+94.40 -L-

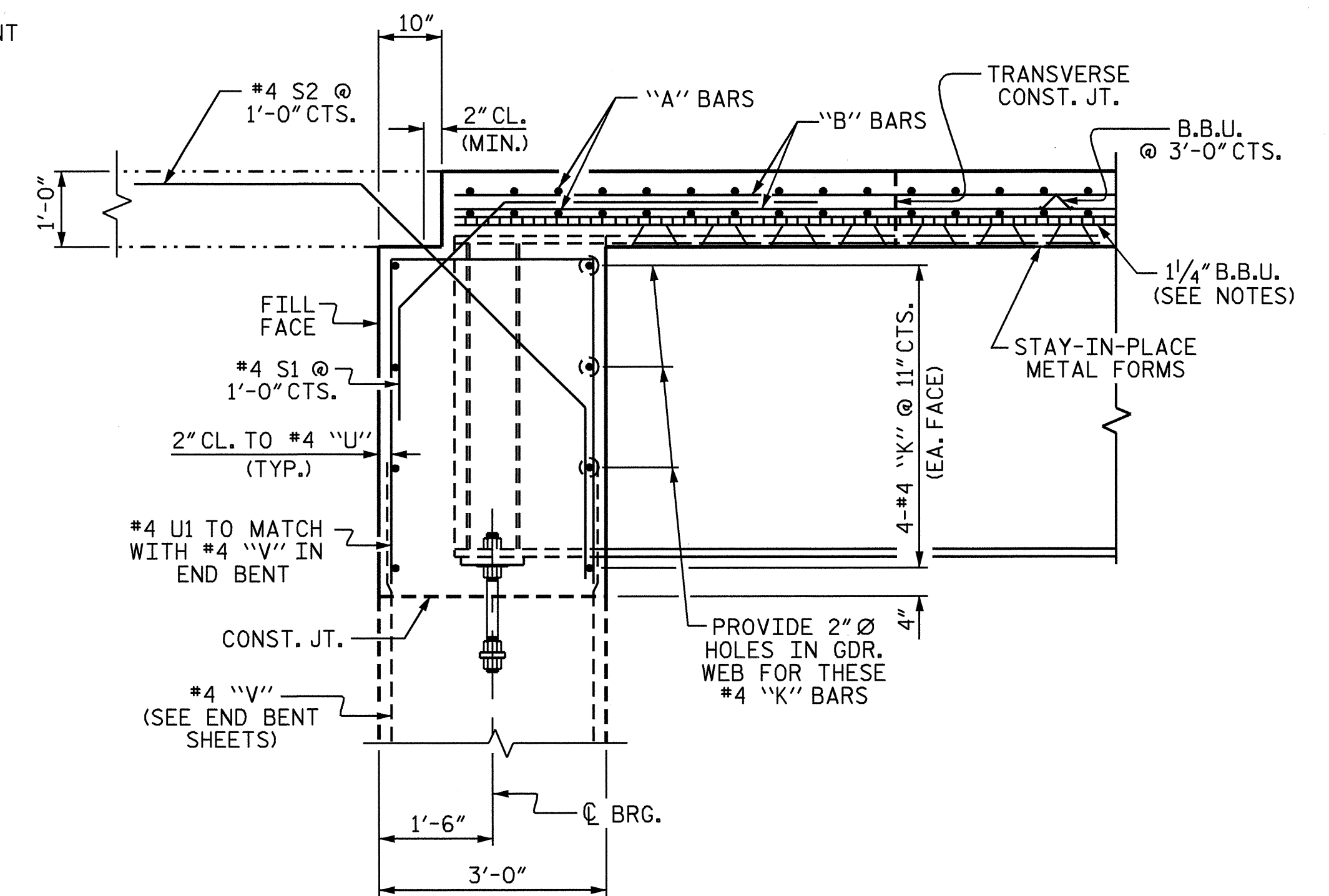
SHEET 2 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE TYPICAL SECTION STAGE I					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-6
TOTAL SHEETS					30

DRAWN BY : S.B. WILLIAMS DATE : 10-31-07
CHECKED BY : T.J. BEACH DATE : 12-07



END ELEVATION (STAGE II CONSTRUCTION)
(END BENT 1 SHOWN, END BENT 2 SIMILAR)

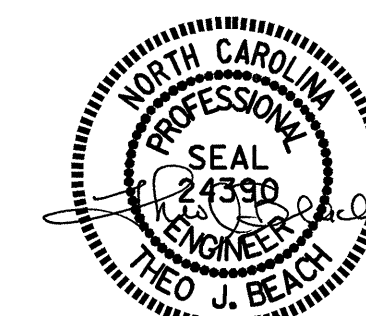


SECTION THRU END BENT
(TYPICAL EACH STAGE)

PROJECT NO. B-4675
WILKES COUNTY
 STATION: 12+94.40 -L-

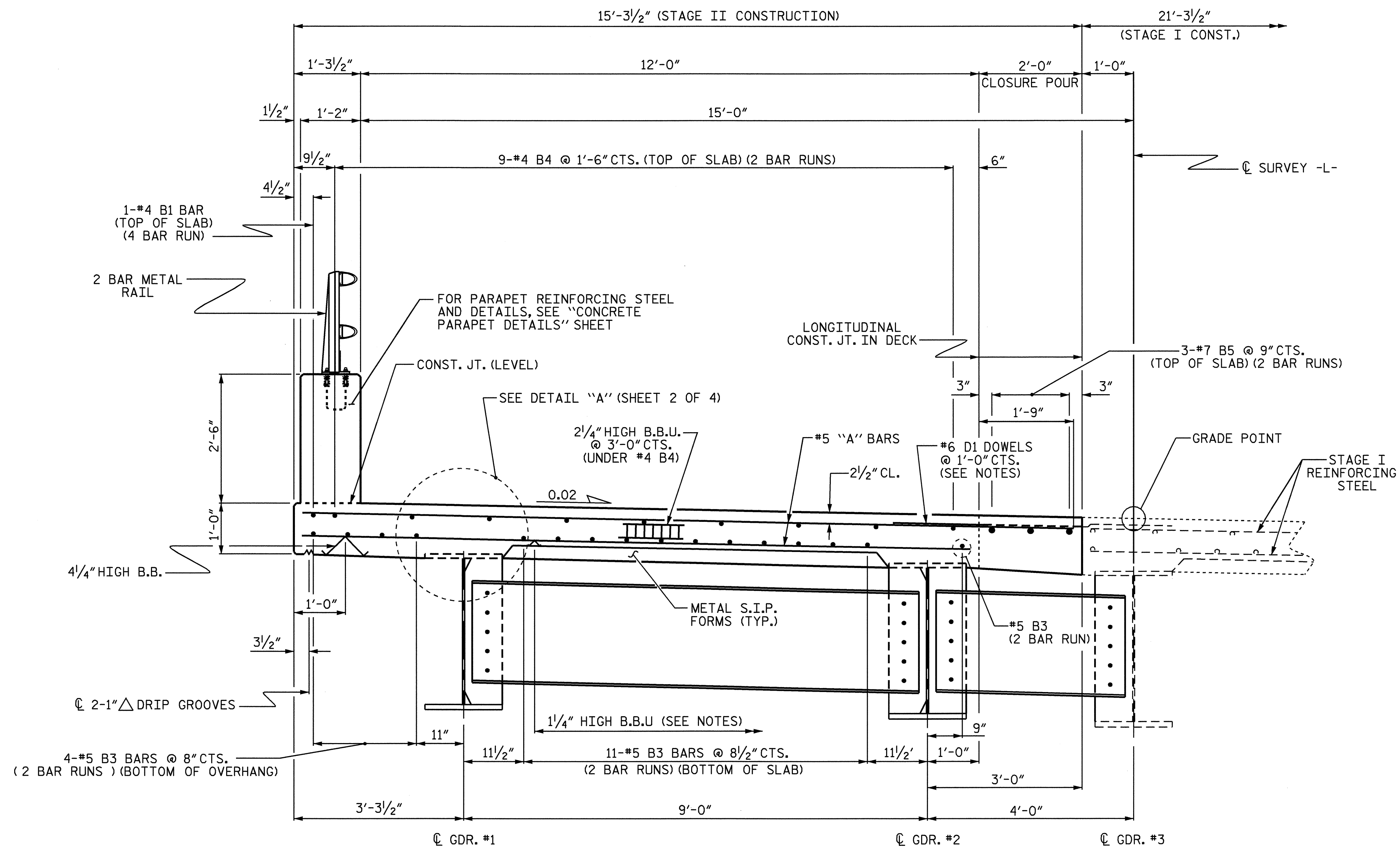
SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION
 STAGE II



DRAWN BY: S.B. WILLIAMS DATE: 11-17-07
 CHECKED BY: T.J. BEACH DATE: 12-07

REVISIONS						SHEET NO. S-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			



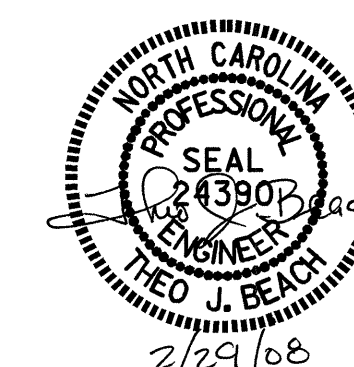
TYPICAL SECTION (STAGE II CONSTRUCTION)
 (SHOWING INTERMEDIATE DIAPHRAGMS)

PROJECT NO. B-4675
WILKES COUNTY
 STATION: 12+94.40 -L-

SHEET 4 OF 4

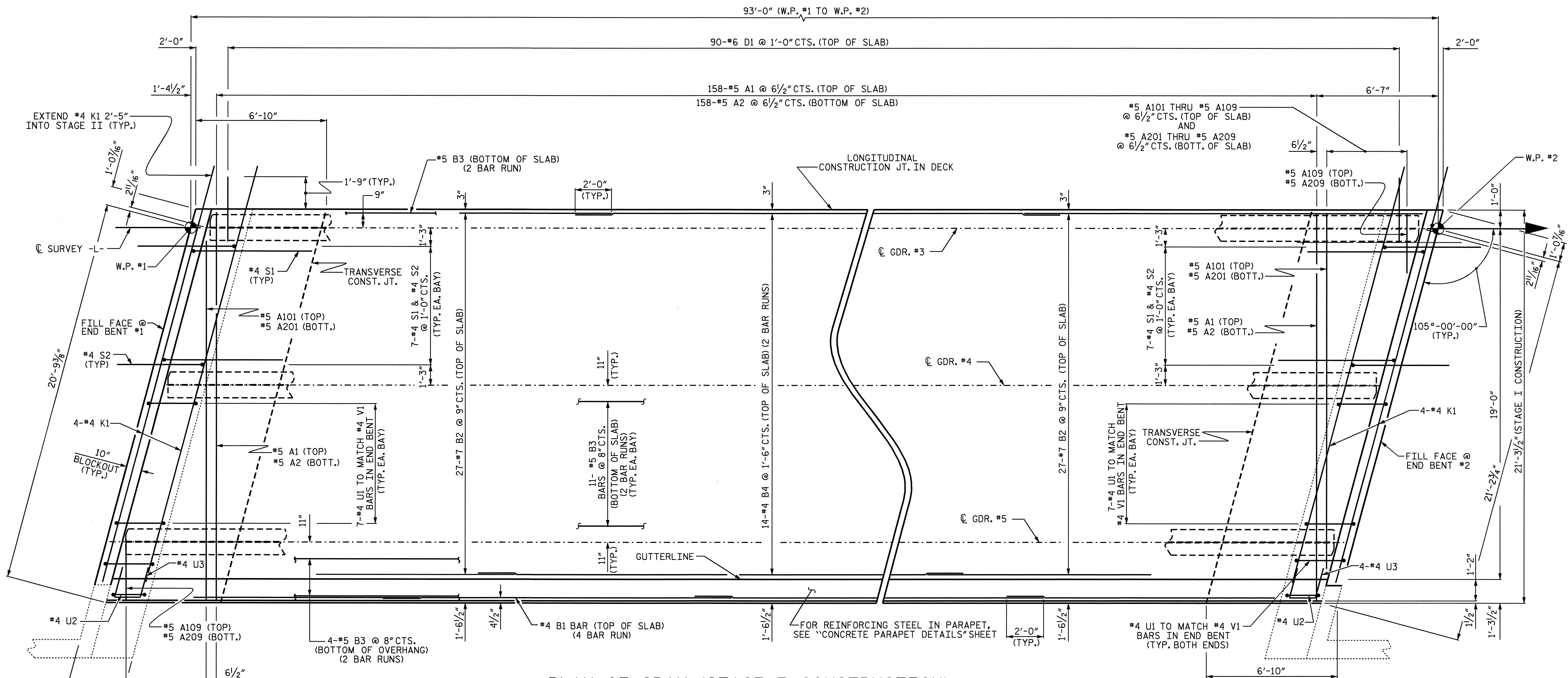
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 TYPICAL SECTION
 STAGE II



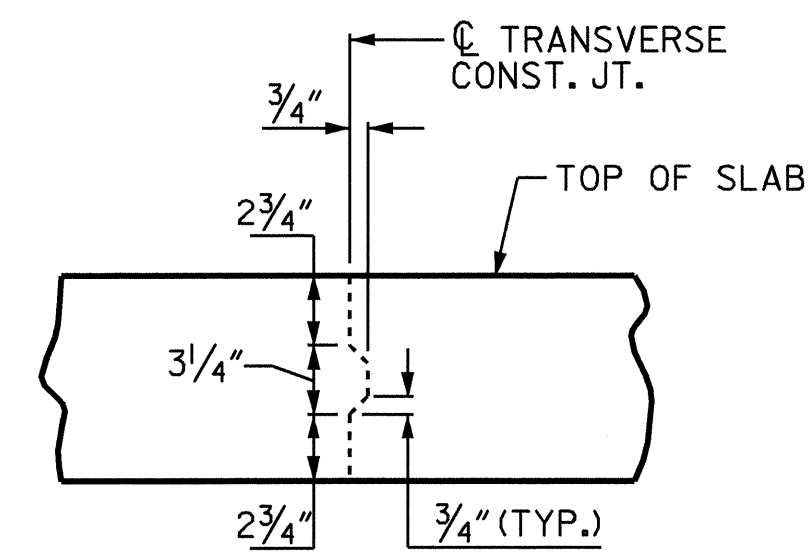
DRAWN BY: S.B. WILLIAMS DATE: 11-17-07
 CHECKED BY: T.J. BEACH DATE: 12-07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTALS
2			4			30



PLAN OF SPAN (STAGE I CONSTRUCTION)

THE #6 D1 BARS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP SLAB REINFORCING STEEL. THE #6 D1 BARS SHALL EXTEND 1'-9" INTO STAGE II CLOSURE POUR



TRANSVERSE CONSTRUCTION JOINT DETAIL

REINFORCING STEEL IN SLAB NOT SHOWN. LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THROUGH JOINT.

PROJECT NO. B-4675
WILKES COUNTY
 STATION: 12+94.40 -L-

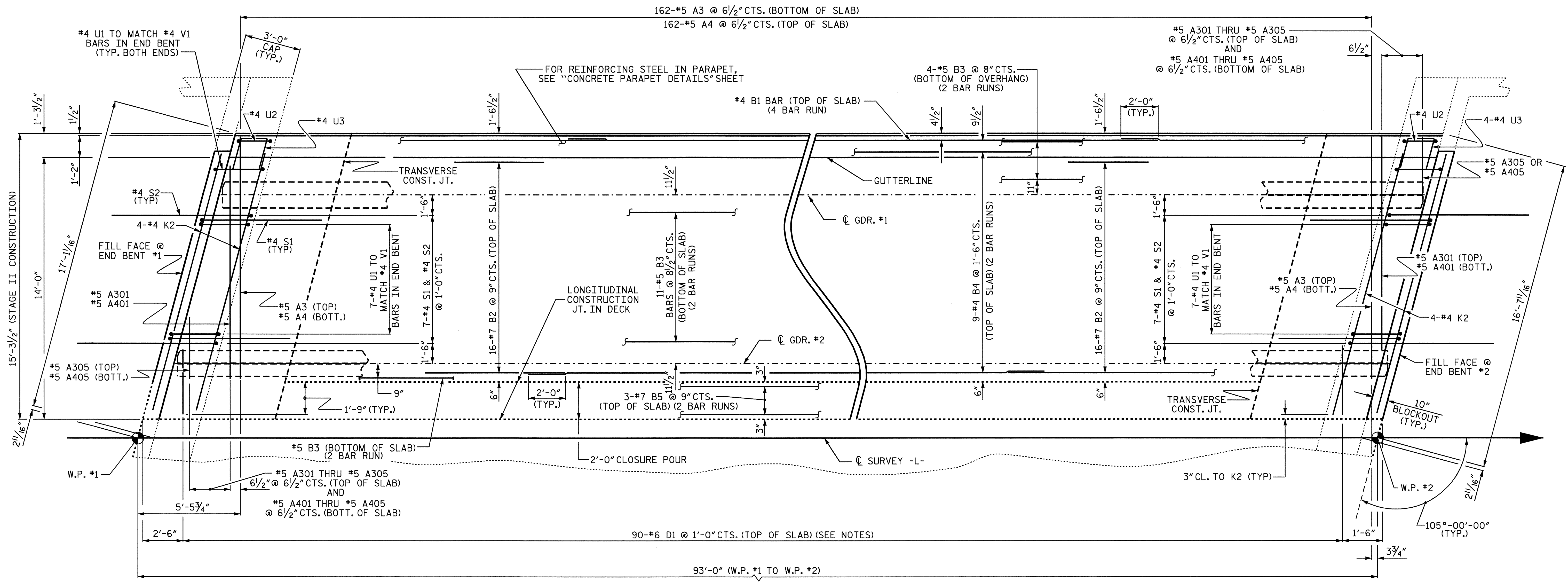
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPAN
 (STAGE I)



REVISIONS						SHEET NO. S-9
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			

DRAWN BY: S.B. WILLIAMS DATE: 11-26-07
 CHECKED BY: T. J. BEACH DATE: 12-07

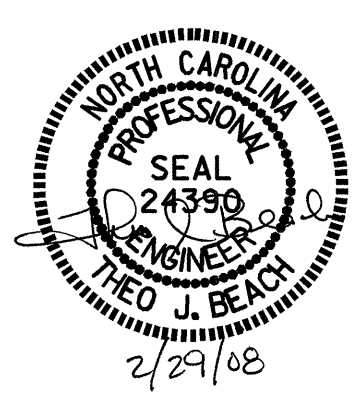


PLAN OF SPAN (STAGE II CONSTRUCTION)

THE #6 D1 BARS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP SLAB REINFORCING STEEL. THE #6 D1 BARS SHALL EXTEND 1'-9" INTO STAGE II CLOSURE POUR

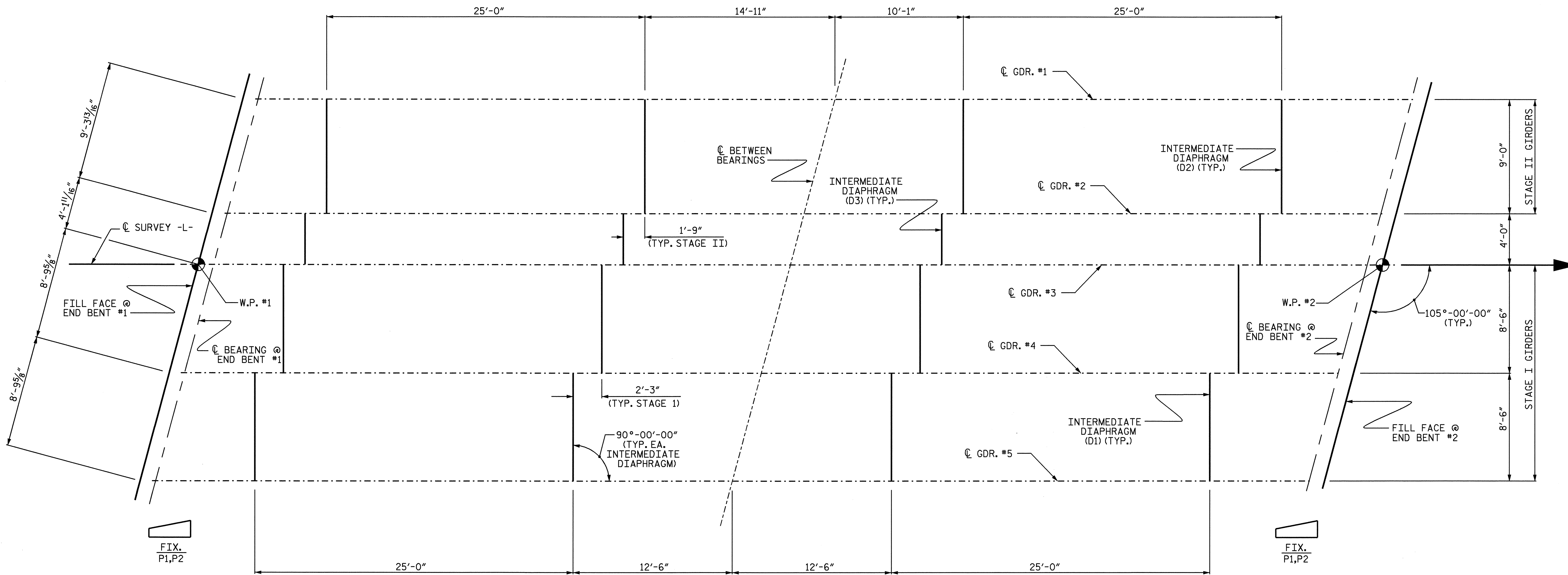
FOR "TRANSVERSE CONSTRUCTION JOINT DETAIL", SEE "PLAN OF SPAN STAGE I"

PROJECT NO. B-4675
 WILKES COUNTY
 STATION: 12+94.40 -L-



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE PLAN OF SPAN STAGE II					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-10
					TOTAL SHEETS 30

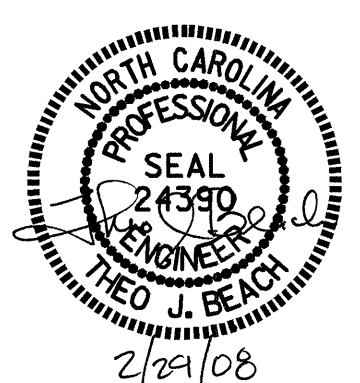
DRAWN BY : S.B. WILLIAMS DATE : 11-26-07
 CHECKED BY : T.J. BEACH DATE : 12-07



FRAMING PLAN

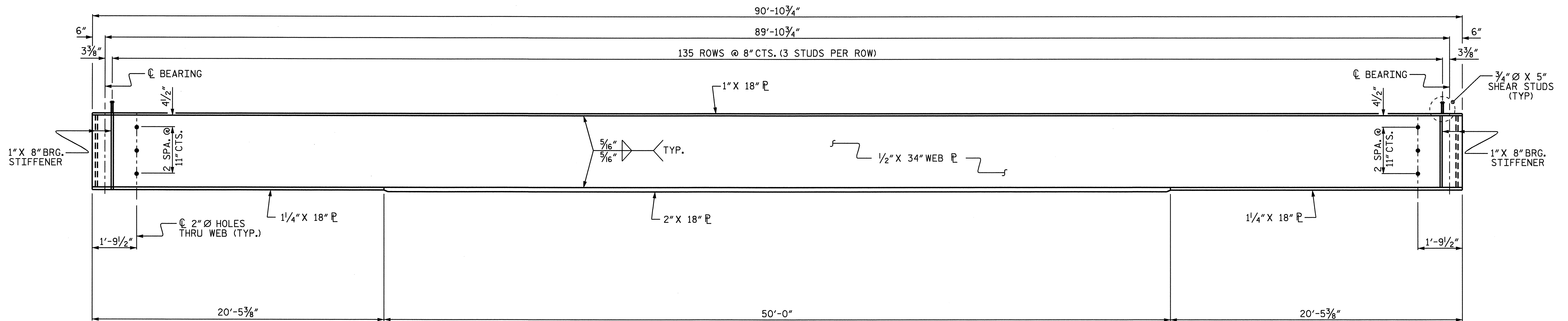
PROJECT NO. B-4675
WILKES COUNTY
 STATION: 12+94.40 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 FRAMING PLAN



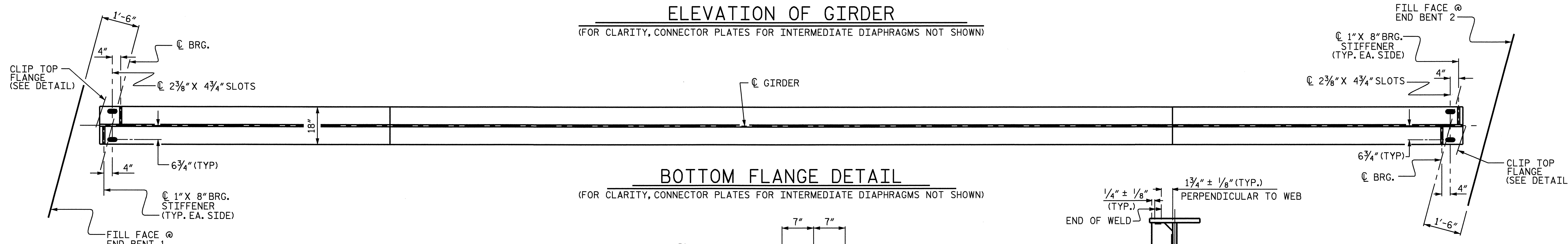
DRAWN BY: S.B. WILLIAMS DATE: 11-13-07
 CHECKED BY: T.J. BEACH DATE: 12-07

REVISIONS						SHEET NO. S-11
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			



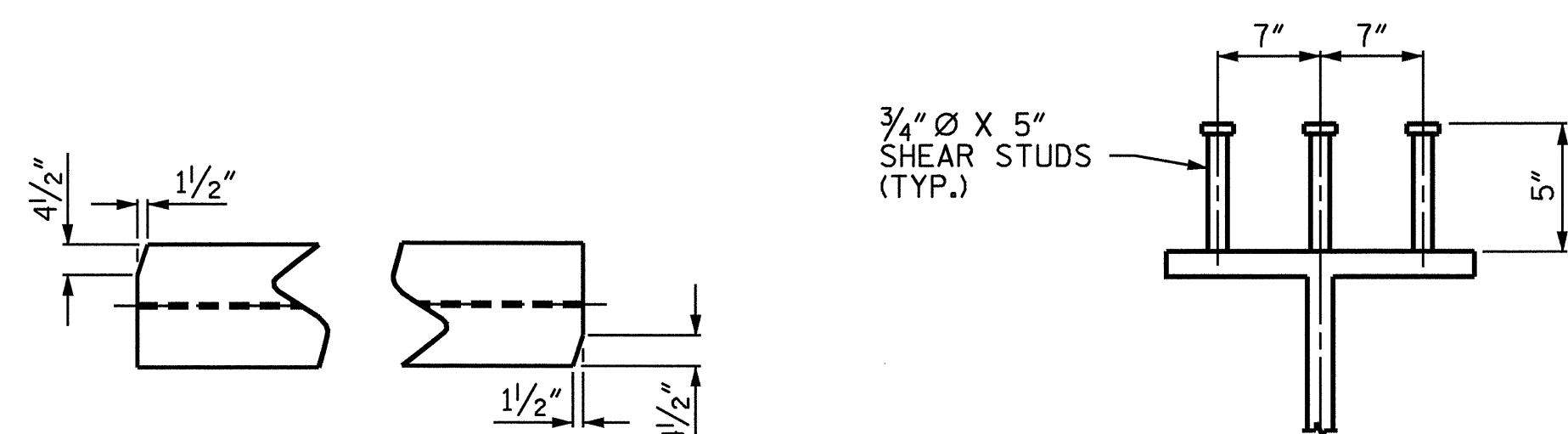
ELEVATION OF GIRDER

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



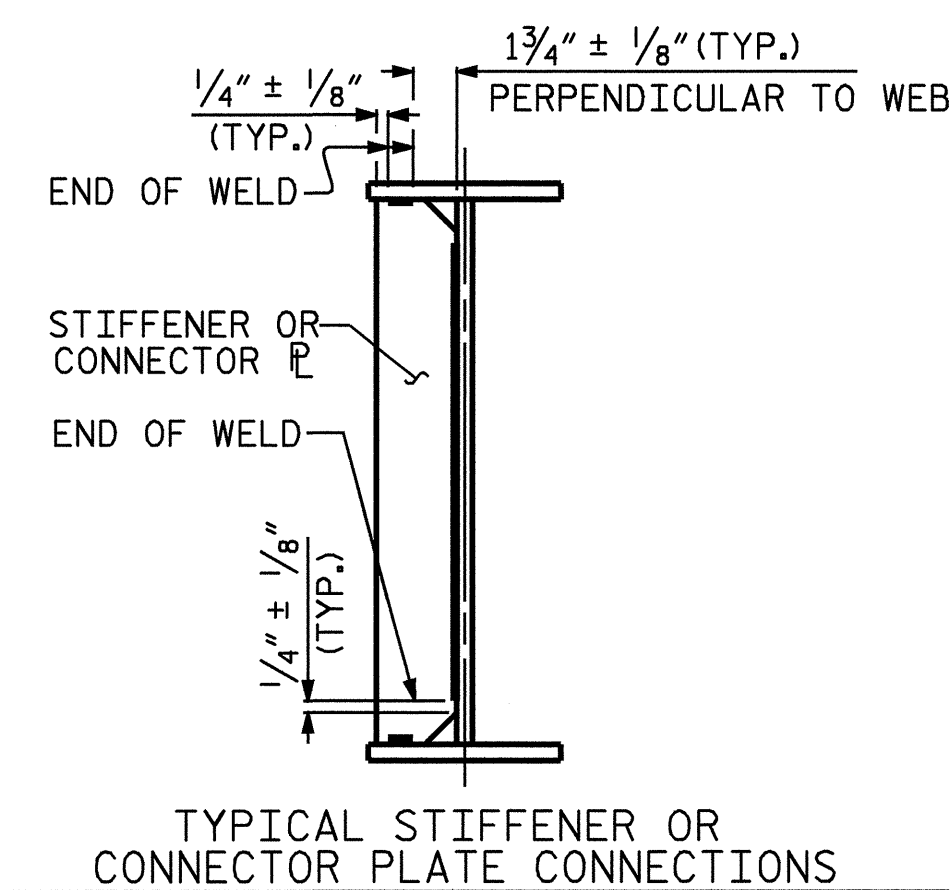
BOTTOM FLANGE DETAIL

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



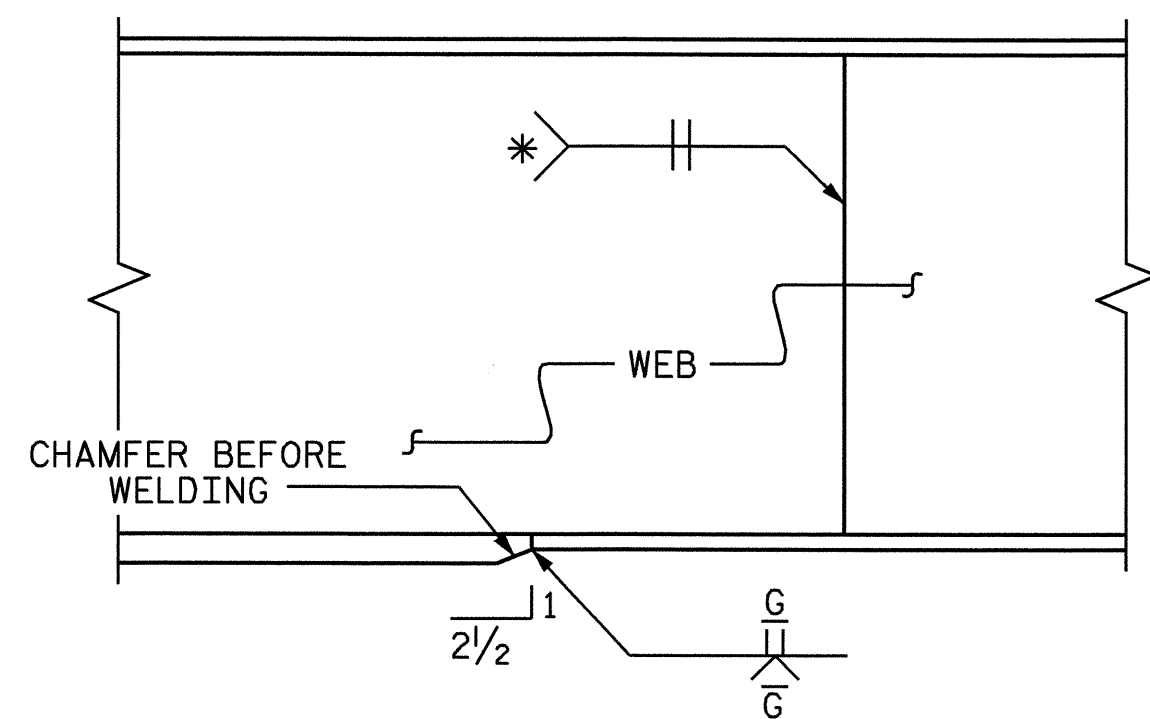
TOP FLANGE CLIP DETAIL

SHEAR STUD DETAIL



TYPICAL STIFFENER OR CONNECTOR PLATE CONNECTIONS

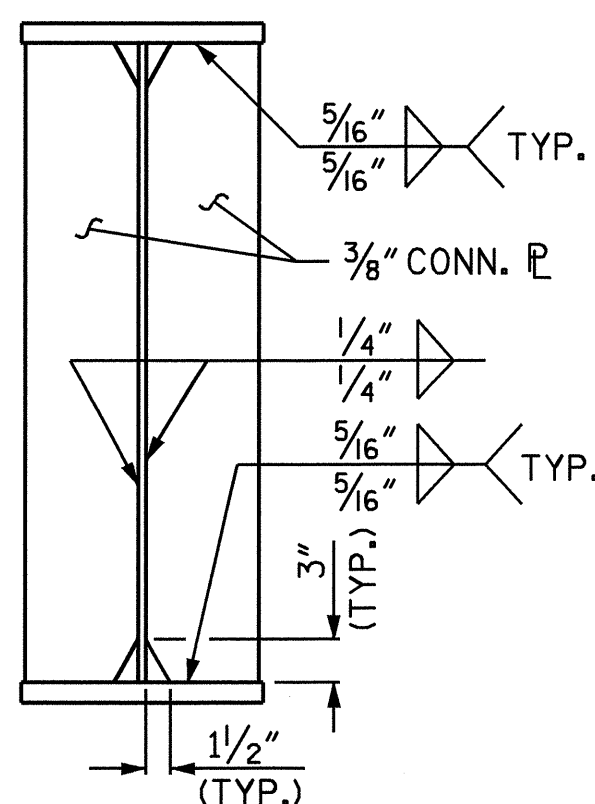
WELD TERMINATION DETAIL



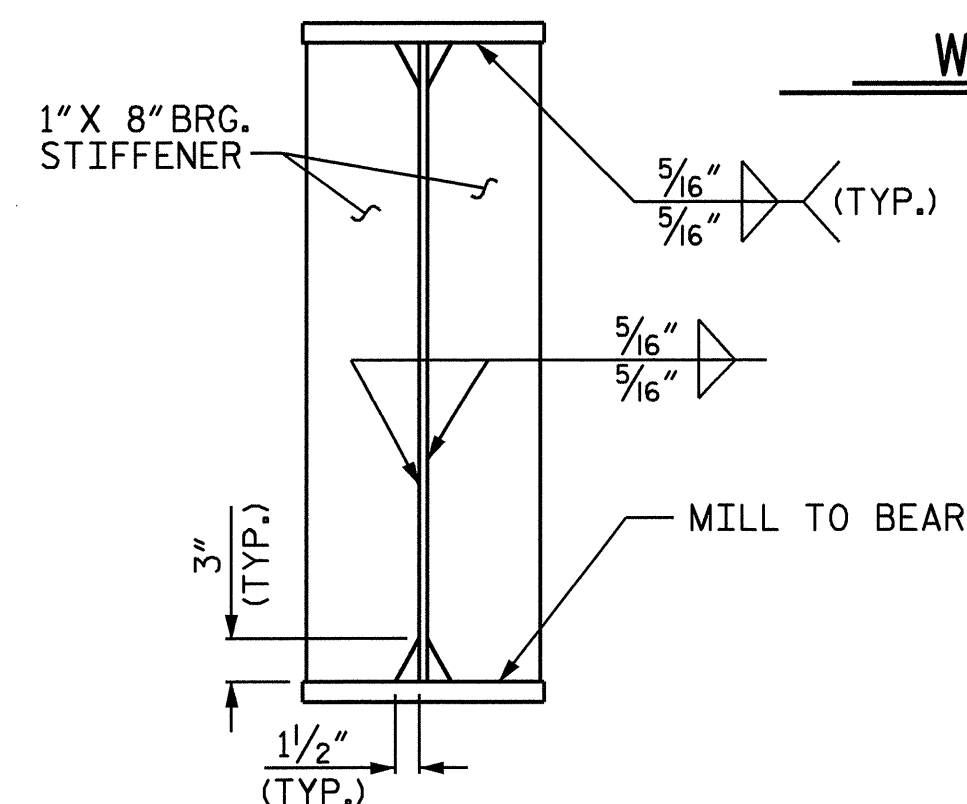
ELEVATION

TYPICAL FLANGE AND WEB BUTT JOINT

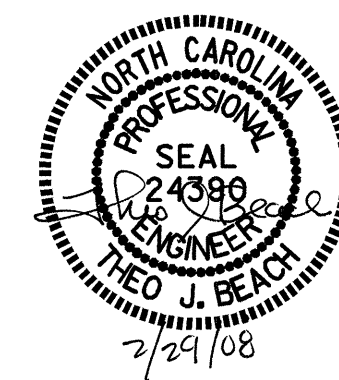
* GRIND SMOOTH AND FLUSH ON OUTSIDE OF EXTERIOR GIRDERS



CONNECTOR PLATE



BEARING STIFFENER



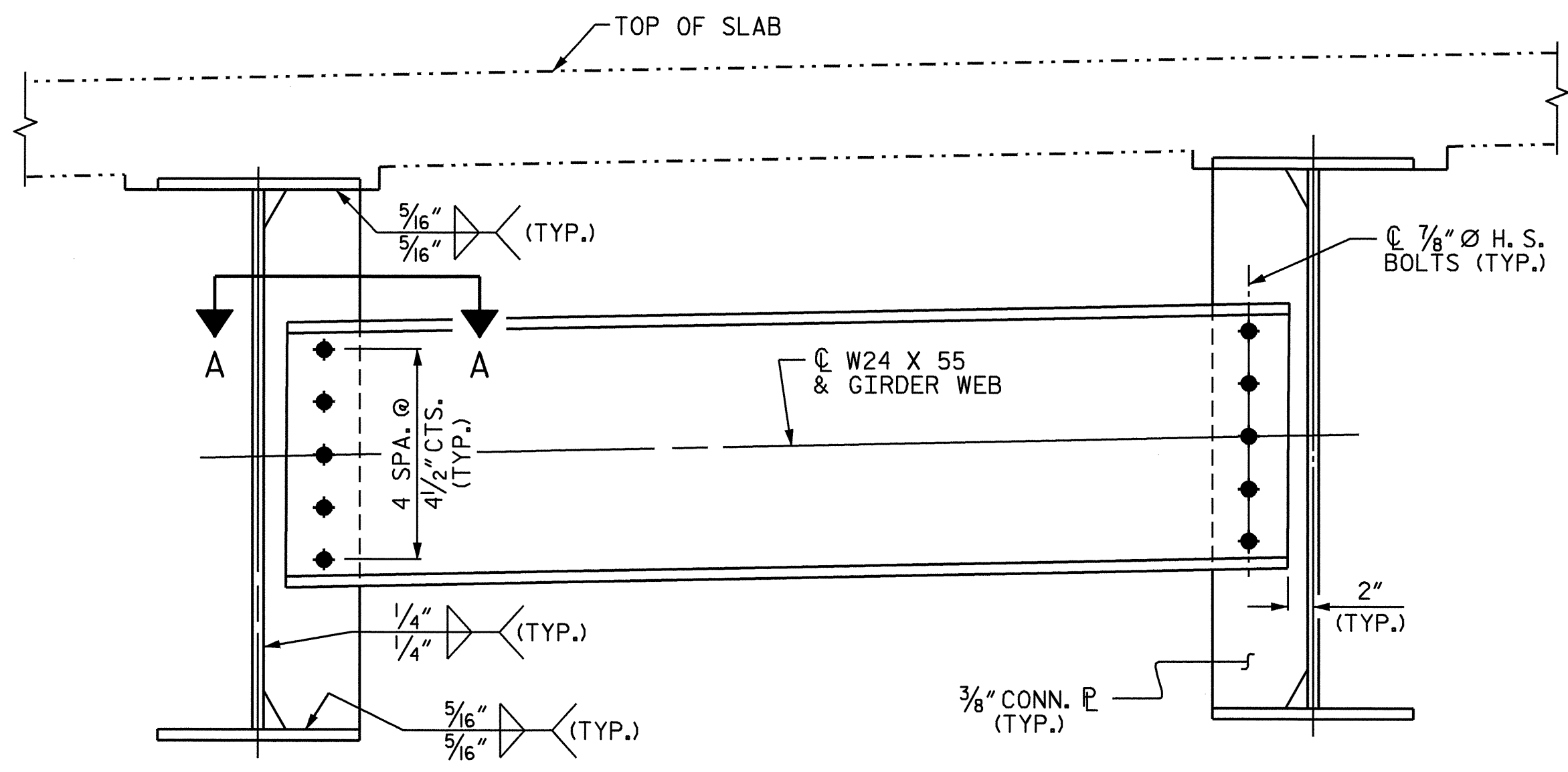
PROJECT NO. B-4675
WILKES COUNTY
 STATION: 12+94.40 -L-

SHEET 1 OF 2

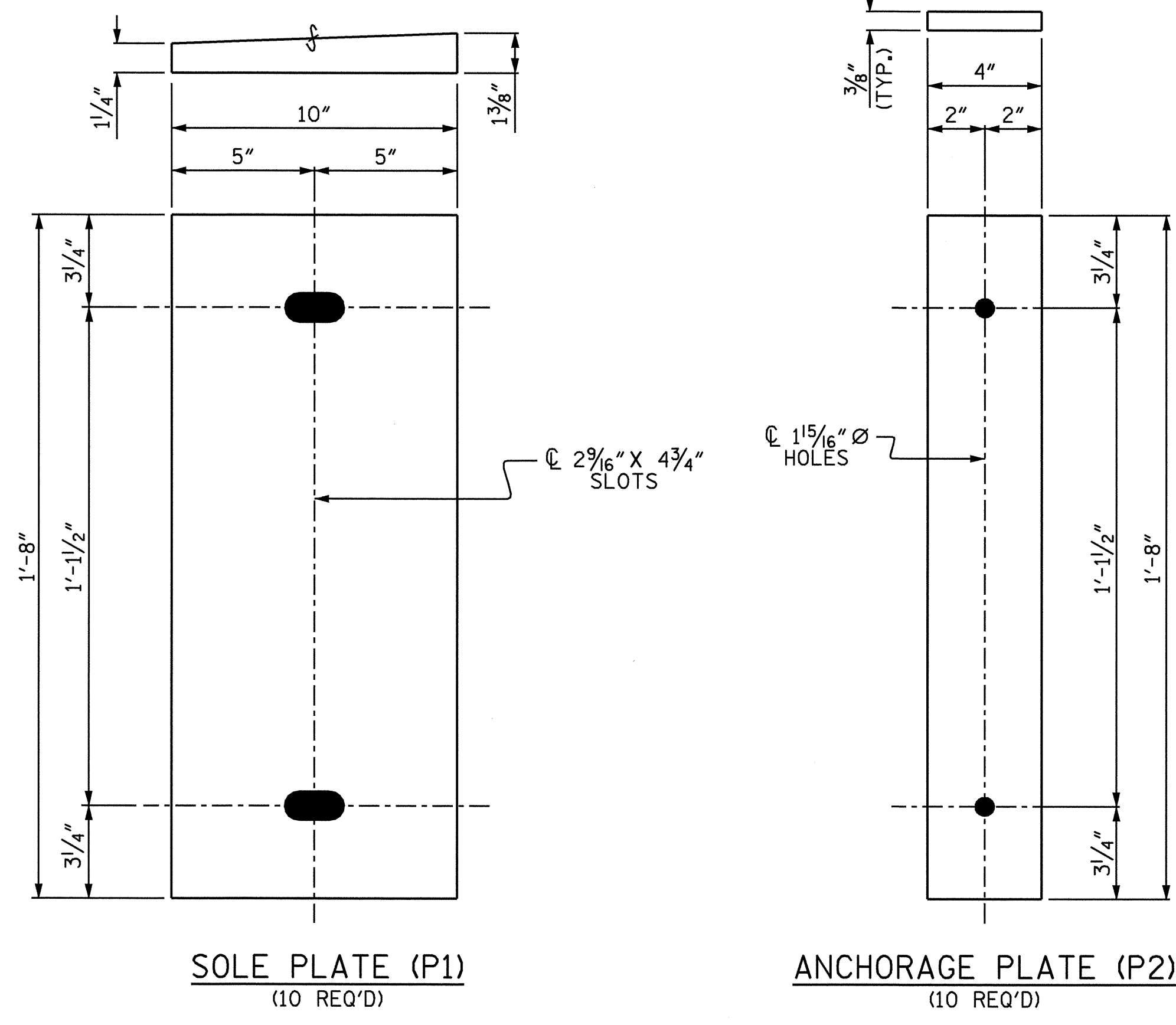
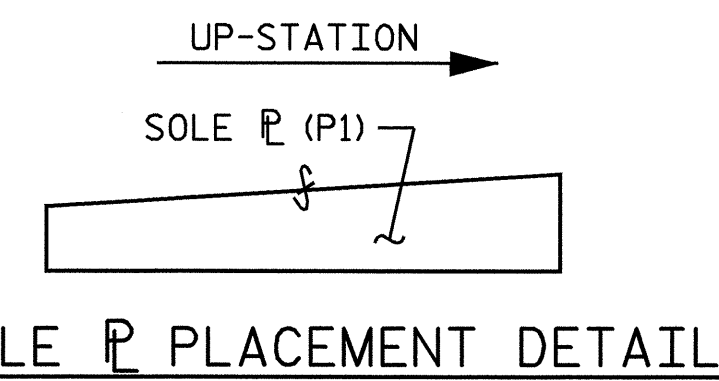
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12	
1			3			TOTAL SHEETS	
2			4			30	

DRAWN BY: S.B. WILLIAMS DATE: 11/7/07
 CHECKED BY: T.J. BEACH DATE: 12-07



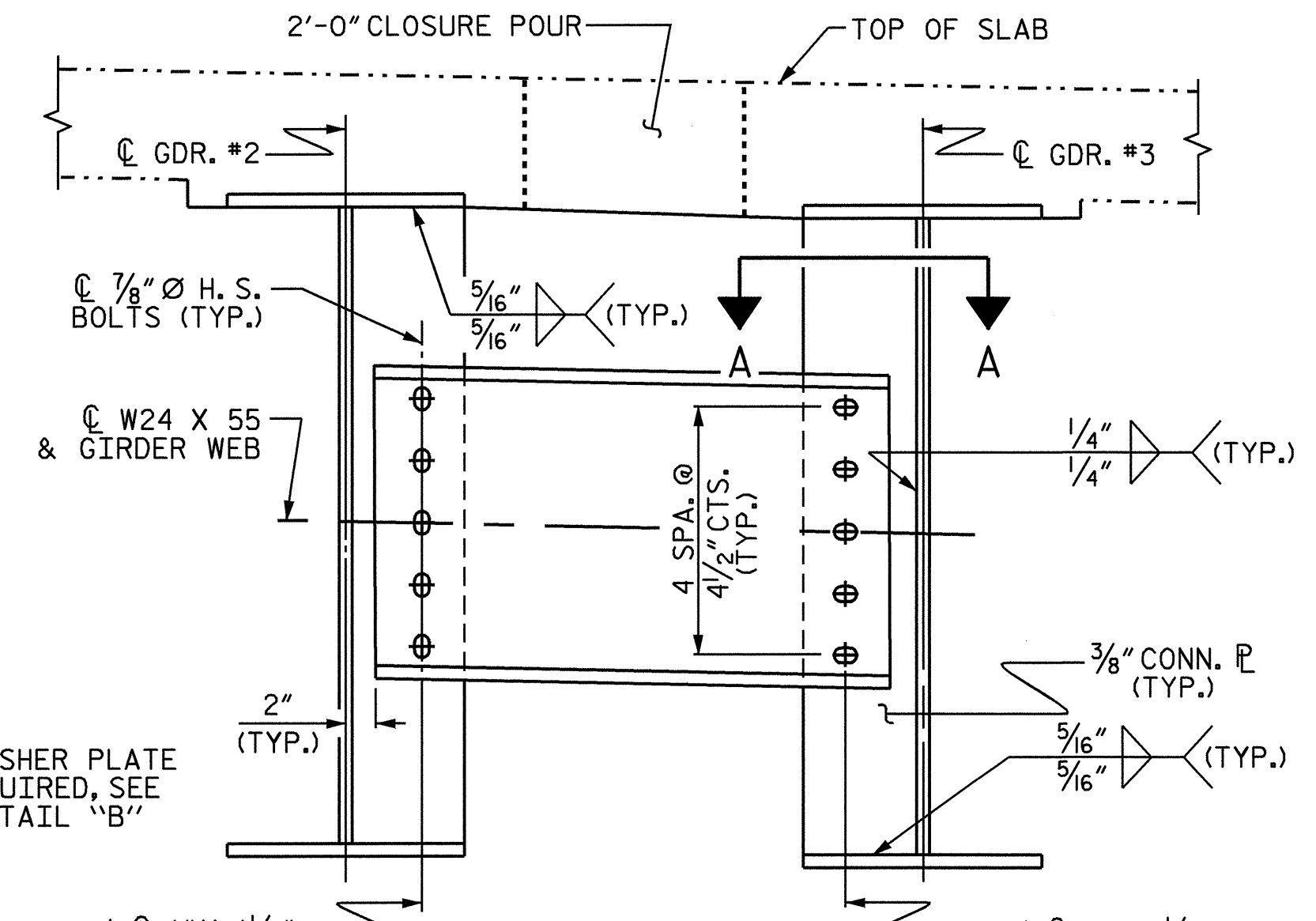
INTERMEDIATE DIAPHRAGM (D1) OR (D2)



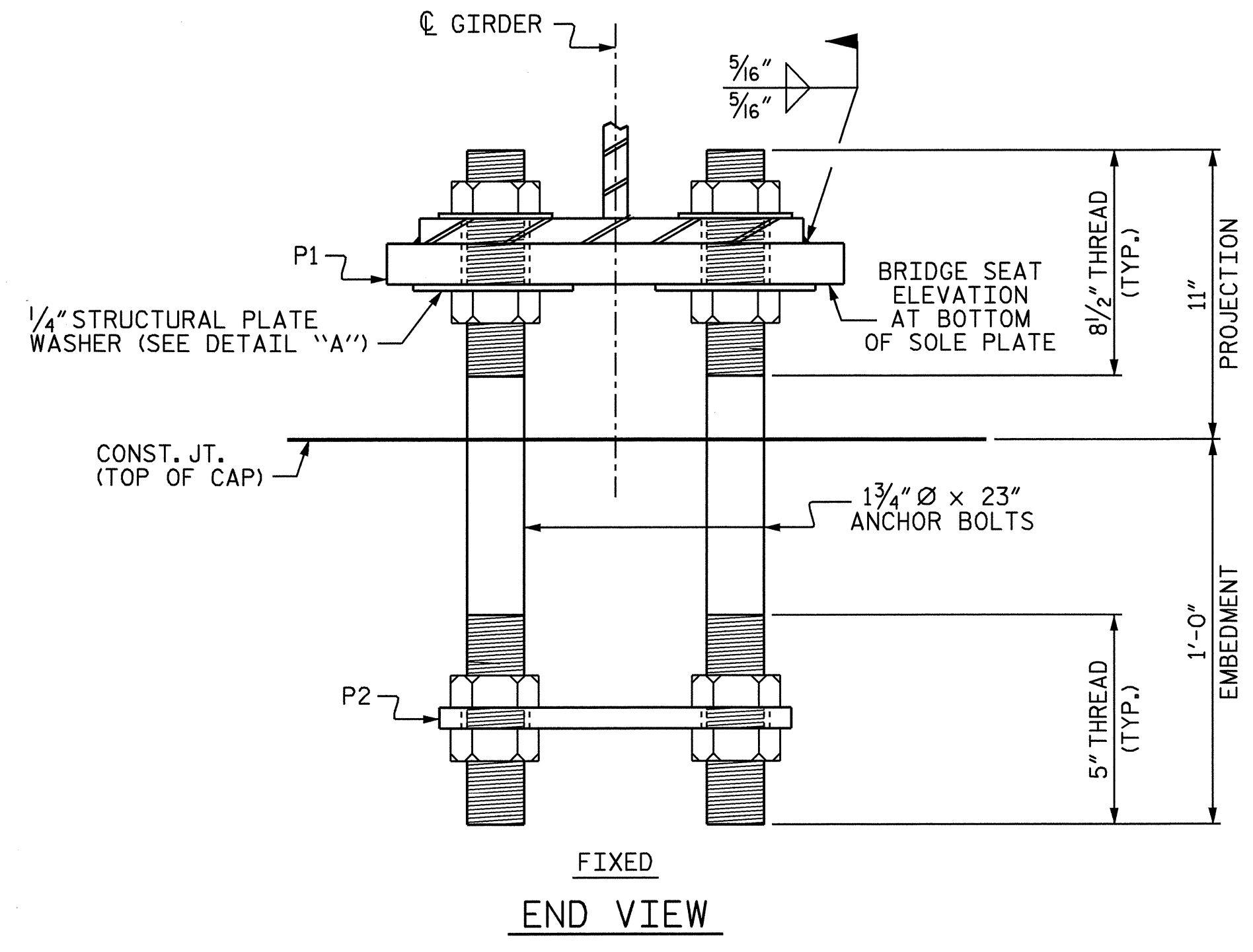
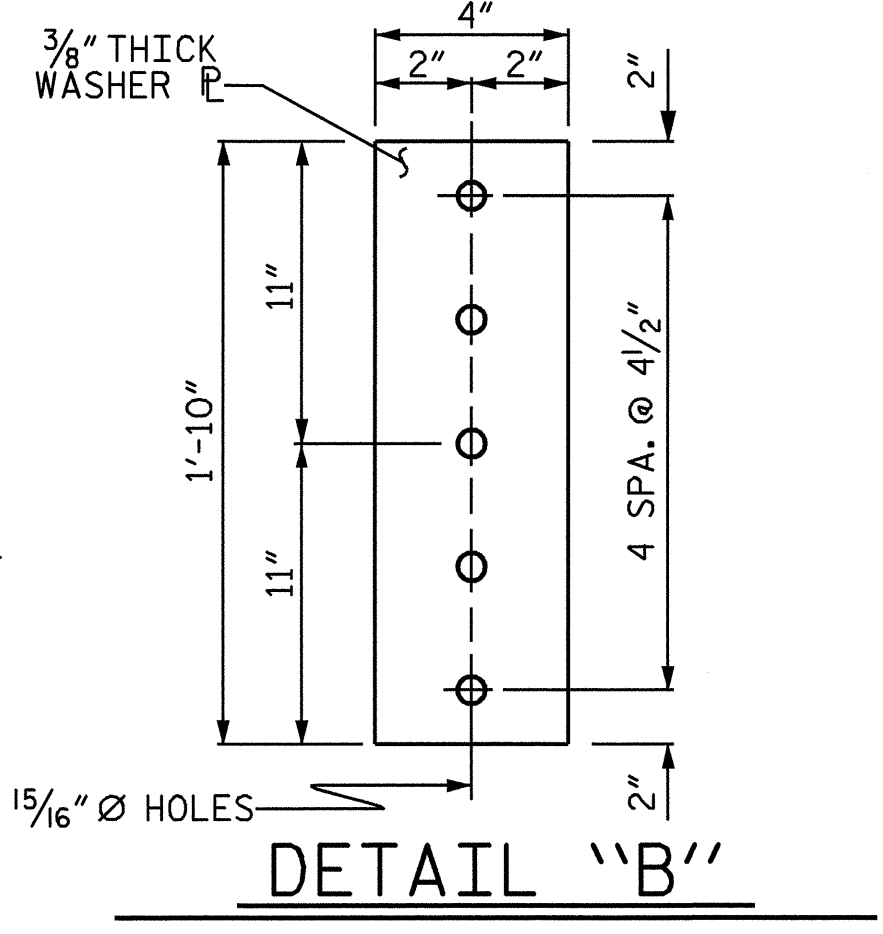
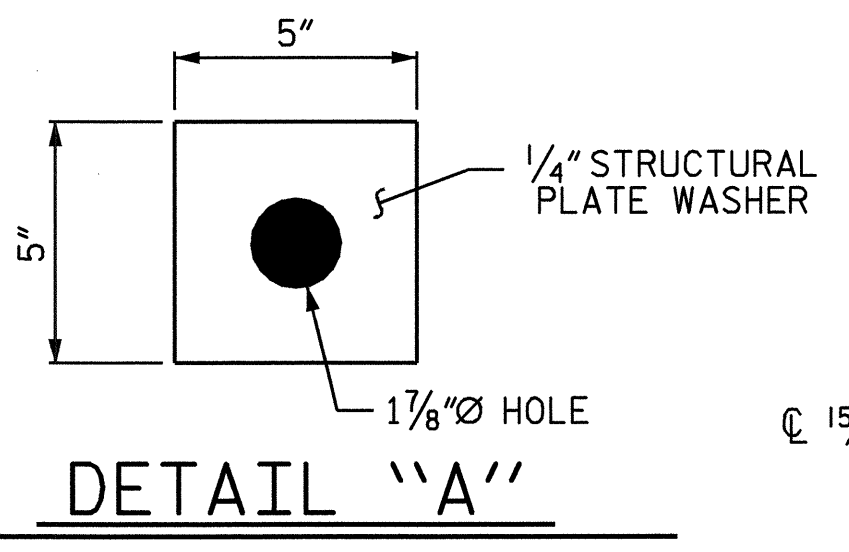
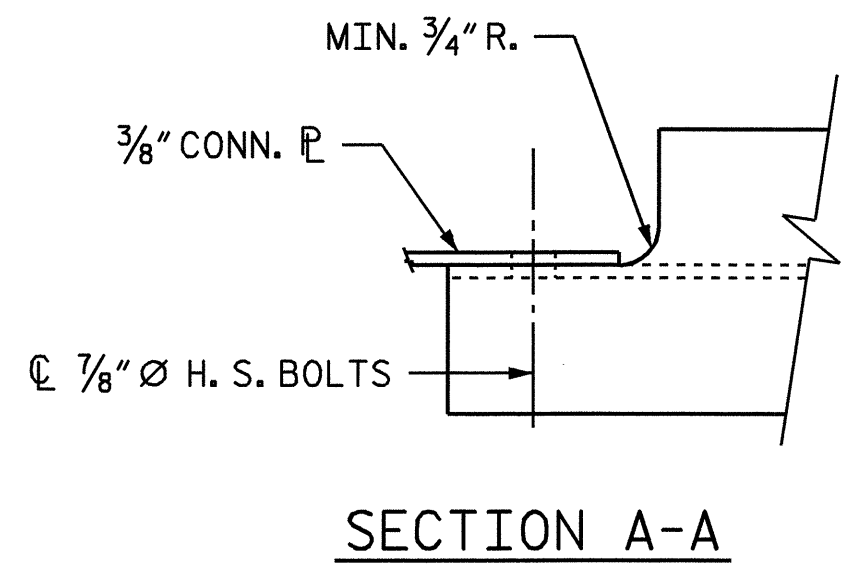
BEARING DETAILS

DRAWN BY: S.B. WILLIAMS DATE: 11/13/07
 CHECKED BY: T.J. BEACH DATE: 12/07

28-FEB-2008 15:13
 F:\structures\superstructure drawings\Integral superstructure\B-4675.sd.ss.dgn
 tbankovitch



INTERMEDIATE DIAPHRAGM (D3)



FIXED END VIEW

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 CHARPY 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 THE FINAL POUR IN EACH STAGE.

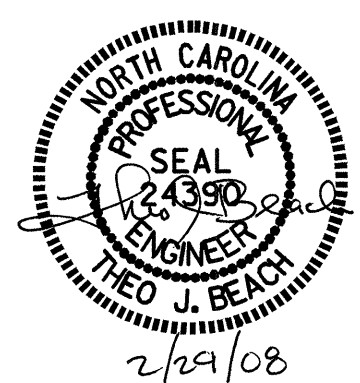
FOR INTERMEDIATE DIAPHRAGM D3 (CLOSURE POUR BAY) NUTS ON BOLTS FOR CONNECTING DIAPHRAGM TO CONNECTOR PLATE SHALL BE LEFT LOOSE FOR PURPOSE OF ADJUSTMENT UNTIL BOTH SIDES OF SLAB HAVE BEEN POURED. BOLTS TO BE TIGHTENED PRIOR TO POURING CLOSURE POUR.

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-4675
WILKES COUNTY
 STATION: 12+94.40 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-13
1			3			TOTAL SHEETS
2			4			30

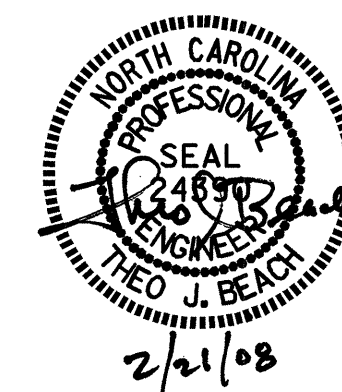
DEAD LOAD DEFLECTION TABLE FOR GIRDERS

TENTH POINTS	GIRDER 1											GIRDER 2										
	BRG.	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	BRG.	BRG.	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	BRG.
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.020	0.037	0.050	0.058	0.061	0.058	0.050	0.037	0.020	0	0	0.020	0.037	0.050	0.058	0.061	0.058	0.050	0.037	0.020	0
DEFLECTION DUE TO WEIGHT OF SLAB *	0	0.078	0.146	0.197	0.230	0.241	0.230	0.197	0.146	0.078	0	0	0.078	0.146	0.197	0.230	0.241	0.230	0.197	0.146	0.078	0
DEFLECTION DUE TO WEIGHT OF PARAPET	0	0.011	0.021	0.028	0.033	0.035	0.033	0.028	0.021	0.011	0	0	0.007	0.013	0.018	0.021	0.022	0.021	0.018	0.013	0.007	0
TOTAL DEAD LOAD DEFLECTION	0	0.109	0.204	0.275	0.321	0.337	0.321	0.275	0.204	0.109	0	0	0.105	0.196	0.265	0.309	0.324	0.309	0.265	0.196	0.105	0
VERTICAL CURVE ORDINATE	0	-0.036	-0.072	-0.108	-0.143	-0.179	-0.206	-0.202	-0.166	-0.099	0	0	-0.035	-0.066	-0.097	-0.129	-0.161	-0.189	-0.189	-0.158	-0.095	0
REQUIRED CAMBER	0	7/8"	1 3/16"	2"	2 1/8"	1 7/8"	1 3/8"	7/8"	7/16"	1/8"	0	0	1 3/16"	1 9/16"	2"	2 3/16"	1 15/16"	1 7/16"	1 5/16"	7/16"	1/8"	0

TENTH POINTS	GIRDER 3											GIRDER 4											GIRDER 5										
	BRG.	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	BRG.	BRG.	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	BRG.	BRG.	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	BRG.
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.020	0.037	0.050	0.058	0.061	0.058	0.050	0.037	0.020	0	0	0.020	0.037	0.050	0.058	0.061	0.058	0.050	0.037	0.020	0	0	0.020	0.037	0.050	0.058	0.061	0.058	0.050	0.037	0.020	0
DEFLECTION DUE TO WEIGHT OF SLAB *	0	0.076	0.143	0.194	0.226	0.237	0.226	0.194	0.143	0.076	0	0	0.076	0.143	0.194	0.226	0.237	0.226	0.194	0.143	0.076	0	0	0.076	0.143	0.194	0.226	0.237	0.226	0.194	0.143	0.076	0
DEFLECTION DUE TO WEIGHT OF PARAPET	0	0.005	0.009	0.012	0.014	0.015	0.014	0.012	0.009	0.005	0	0	0.005	0.009	0.011	0.013	0.014	0.013	0.011	0.009	0.005	0	0	0.009	0.018	0.024	0.028	0.029	0.028	0.024	0.018	0.009	0
TOTAL DEAD LOAD DEFLECTION	0	0.101	0.189	0.256	0.298	0.313	0.298	0.256	0.189	0.101	0	0	0.101	0.189	0.255	0.297	0.312	0.297	0.255	0.189	0.101	0	0	0.105	0.198	0.268	0.312	0.327	0.312	0.268	0.198	0.105	0
VERTICAL CURVE ORDINATE	0	-0.035	-0.065	-0.094	-0.124	-0.154	-0.181	-0.183	-0.154	-0.093	0	0	-0.038	-0.063	-0.089	-0.114	-0.140	-0.166	-0.171	-0.146	-0.089	0	0	-0.043	-0.064	-0.086	-0.107	-0.129	-0.150	-0.160	-0.138	-0.085	0
REQUIRED CAMBER	0	1 3/16"	1 1/2"	1 5/16"	2 1/16"	1 15/16"	1 3/8"	7/8"	7/16"	1/8"	0	0	3/4"	1 1/2"	2"	2 3/16"	2 1/16"	1 9/16"	1"	1/2"	1/8"	0	0	3/4"	1 5/8"	2 3/16"	2 7/16"	2 3/8"	1 15/16"	1 5/16"	3/4"	1/4"	0

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

PROJECT NO. B-4675
WILKES COUNTY
STATION: 12+94.40 -L-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
DEAD LOAD
DEFLECTIONS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS 30
2			4			

DRAWN BY : S.B. WILLIAMS DATE : 12/3/07
CHECKED BY : T.J. BEACH DATE : 12-07

NOTES

AT THE CONTRACTOR'S OPTION, METAL RAIL MAY BE EITHER ALUMINUM OR GALVANIZED STEEL IN ACCORDANCE WITH THE REQUIREMENTS OF THE GENERAL NOTES AND THE FOLLOWING SPECIFICATIONS FOR THE ALTERNATE MATERIALS; HOWEVER, THE CONTRACTOR WILL BE REQUIRED TO USE THE SAME RAIL MATERIAL ON ALL STRUCTURES ON THE PROJECT FOR WHICH METAL RAIL IS DESIGNATED.

ALUMINUM RAILS

MATERIAL FOR POSTS, BASES AND RAILS, EXPANSION BARS AND CLAMP BARS SHALL BE ASTM B-221 ALLOY 6061-T6. MATERIAL FOR RIVETS SHALL BE ASTM B316 ALLOY 6061-T6. RIVETS SHALL BE STANDARD BUTTON HEAD AND CONE POINT COLD DRIVEN AS PER DRAWING.

THE BASE OF RAIL POSTS, OR ANY OTHER ALUMINUM SURFACE IN CONTACT WITH CONCRETE SHALL BE THOROUGHLY COATED WITH AN ALUMINUM IMPREGNATED CAULKING COMPOUND OF APPROVED QUALITY.

MATERIAL FOR SHIMS TO BE ASTM B209 ALLOY 6061-T6.

GALVANIZED STEEL RAILS

MATERIAL AND GALVANIZING ARE TO CONFORM TO THE FOLLOWING SPECIFICATIONS:

POST, POST BASES, RAILS, EXPANSION BARS AND CLAMP BARS: AASHTO M270 GRADE 36 STRUCTURAL STEEL - GALVANIZED TO AASHTO M111.

RIVETS: RIVETS SHALL MEET THE REQUIREMENTS OF ASTM A502 FOR GRADE 1 RIVETS.

THE CUT ENDS OF GALVANIZED STEEL RAILING, AFTER GRINDING SMOOTH SHALL BE GIVEN TWO COATS OF ZINC RICH PAINT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION MIL-P-26915 USAF TYPE 1, OR OF FEDERAL SPECIFICATIONS TT-P-641.

SHIMS: SHIMS SHALL MEET THE REQUIREMENTS OF ASTM A570 FOR GRADE 33 OR A611 FOR GRADE C AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.

RAIL CAPS: RAIL CAPS SHALL MEET THE REQUIREMENTS OF ASTM A570 FOR GRADE 33 OR A611 FOR GRADE C AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.

GENERAL NOTES

RAILING SHALL BE CONTINUOUS FROM END POST TO END POST OF BRIDGE. EACH JOINT IN RAIL LENGTH SHALL BE SPLICED AS DETAILED. PANEL LENGTHS OF RAIL SHALL BE ATTACHED TO A MINIMUM OF THREE POSTS.

FOR END OF RAIL TO CLEAR FACE OF CONCRETE END POST DIMENSION, SEE STANDARD NO. BMR2.

CAP SCREWS SHALL BE ASTM F593 ALLOY 305 STAINLESS STEEL. WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

CERTIFIED MILL REPORTS ARE REQUIRED FOR RAILS AND POSTS. SHOP INSPECTION IS NOT REQUIRED.

METAL RAIL POSTS SHALL BE SET NORMAL TO CURB GRADE.

METHOD OF MEASUREMENT FOR METAL RAILS: FOR LENGTH OF METAL RAILS TO BE PAID FOR, SEE THE STANDARD SPECIFICATIONS.

CURVED RAIL USAGE: WHERE RAILS ARE TO BE USED ON BRIDGES ON HORIZONTAL AND/OR VERTICAL CURVATURE THE CONTRACTOR MAY, AT HIS OPTION, HAVE THE REQUIRED CURVATURE IN THE RAIL FORMED IN THE SHOP OR IN THE FIELD. IN EITHER EVENT, THE RAIL SHALL CONFORM WITHOUT BUCKLING OR KINKING TO THE REQUIRED CURVATURE IN A UNIFORM MANNER ACCEPTABLE TO THE ENGINEER.

TO INSURE FUTURE IDENTIFICATION OF THE FABRICATOR, A PERMANENT IDENTIFYING MARK SHALL BE PLACED ON EACH POST. THE METHOD OF MARKING AND LOCATION SHALL BE SUCH THAT IT DOES NOT DETRACT FROM THE APPEARANCE OF THE POST, BUT REMAINS VISIBLE AFTER RAIL PLACEMENT.

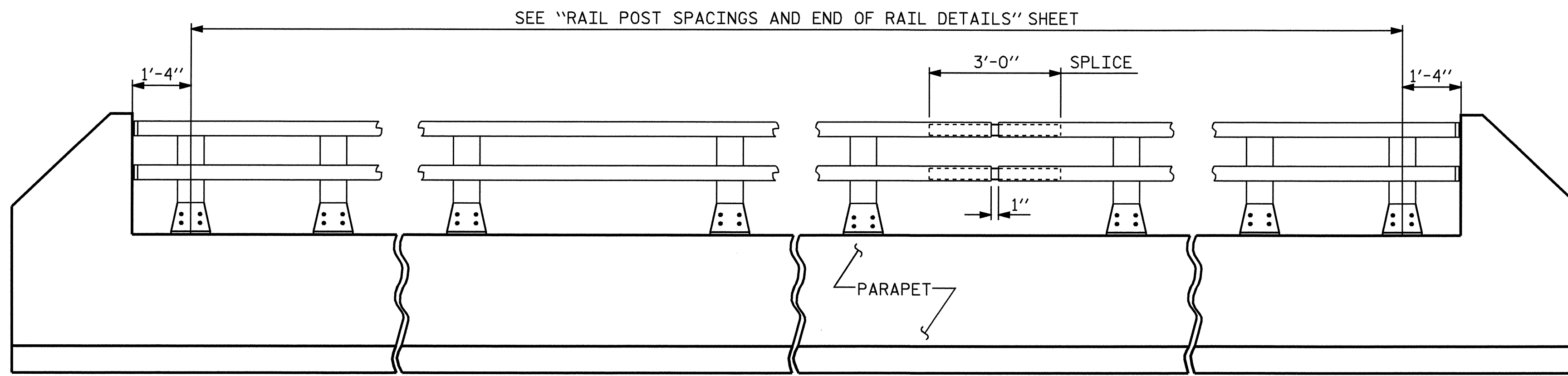
SHIMS SHALL BE USED AS NECESSARY FOR POST ALIGNMENT.

ALLOY 6351-T5 MAY BE SUBSTITUTED FOR ALLOY 6061-T6 WHERE APPLICABLE.

MINOR VARIATIONS IN DETAILS OF METAL RAIL WILL BE CONSIDERED. DETAILS OF SUCH VARIATIONS, IF DESIRED, SHALL BE SUBMITTED FOR APPROVAL.

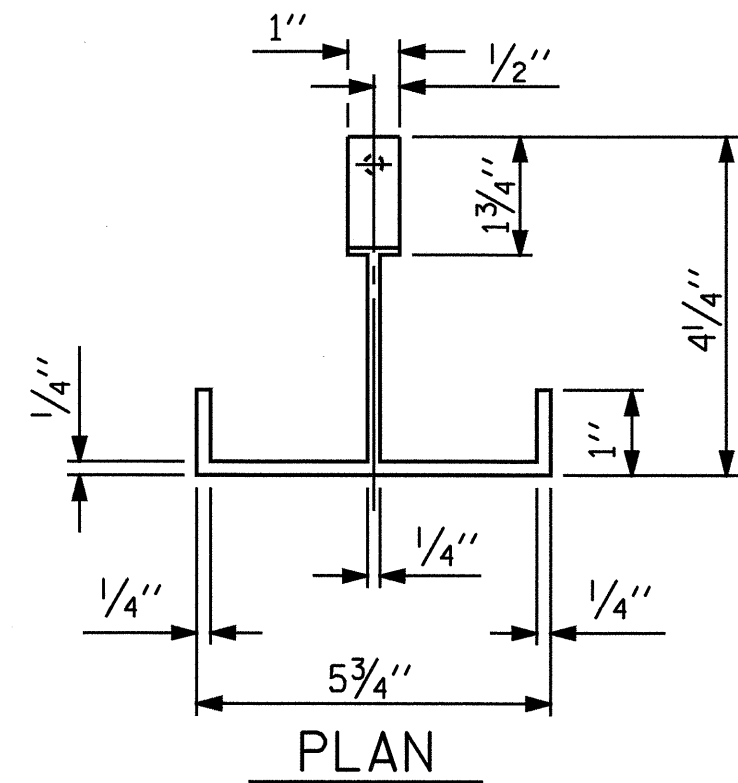
GROOVED CONTRACTION JOINTS 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF PARAPET IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FEET TO 10 FEET BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR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

PAY LENGTH = 166.92 LIN. FT.
(TOTAL FOR STAGE I AND STAGE II)

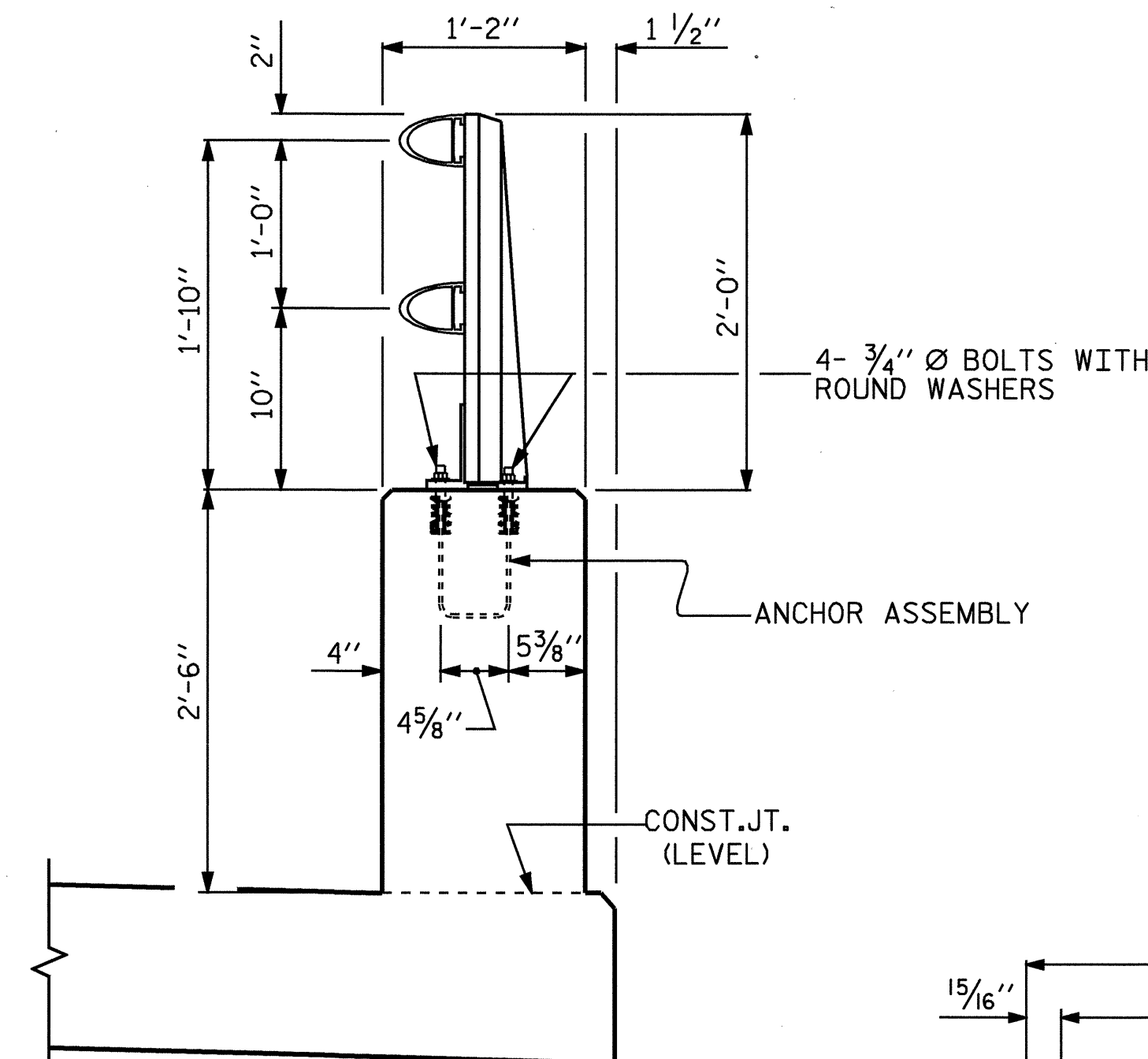


ELEVATION

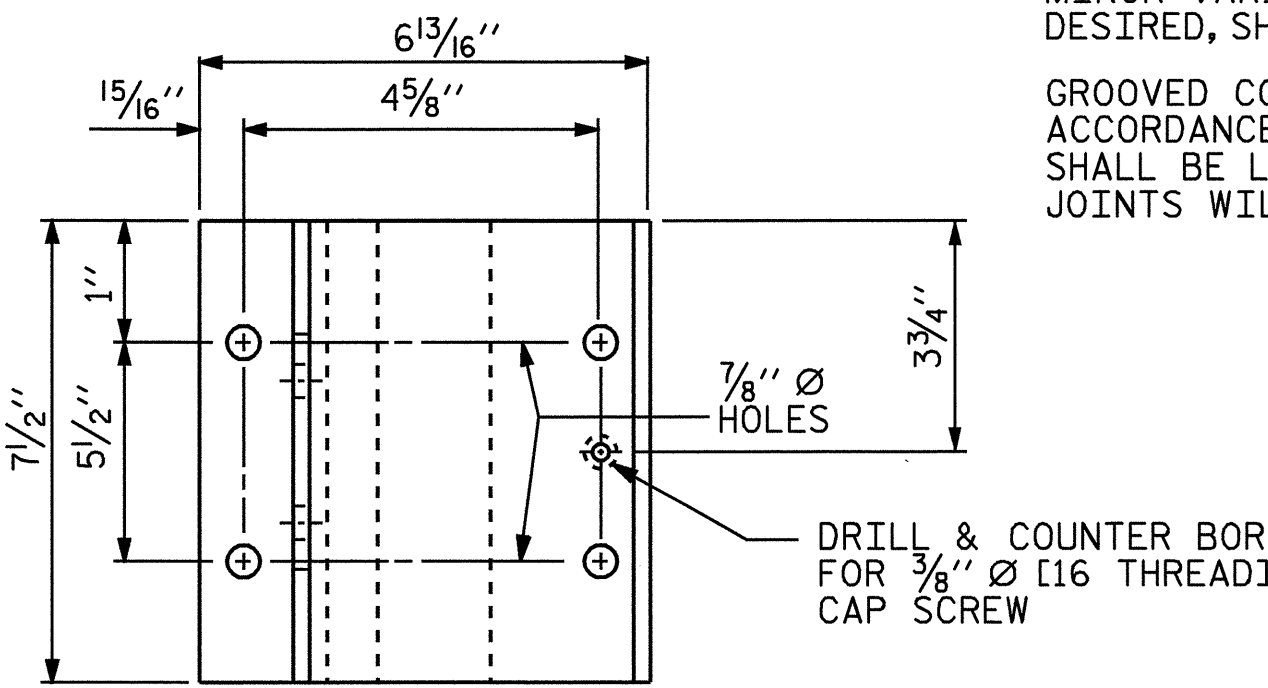
NOTE: FOR ATTACHMENT OF METAL RAIL TO END POST, SEE STANDARD NO. BMR2.



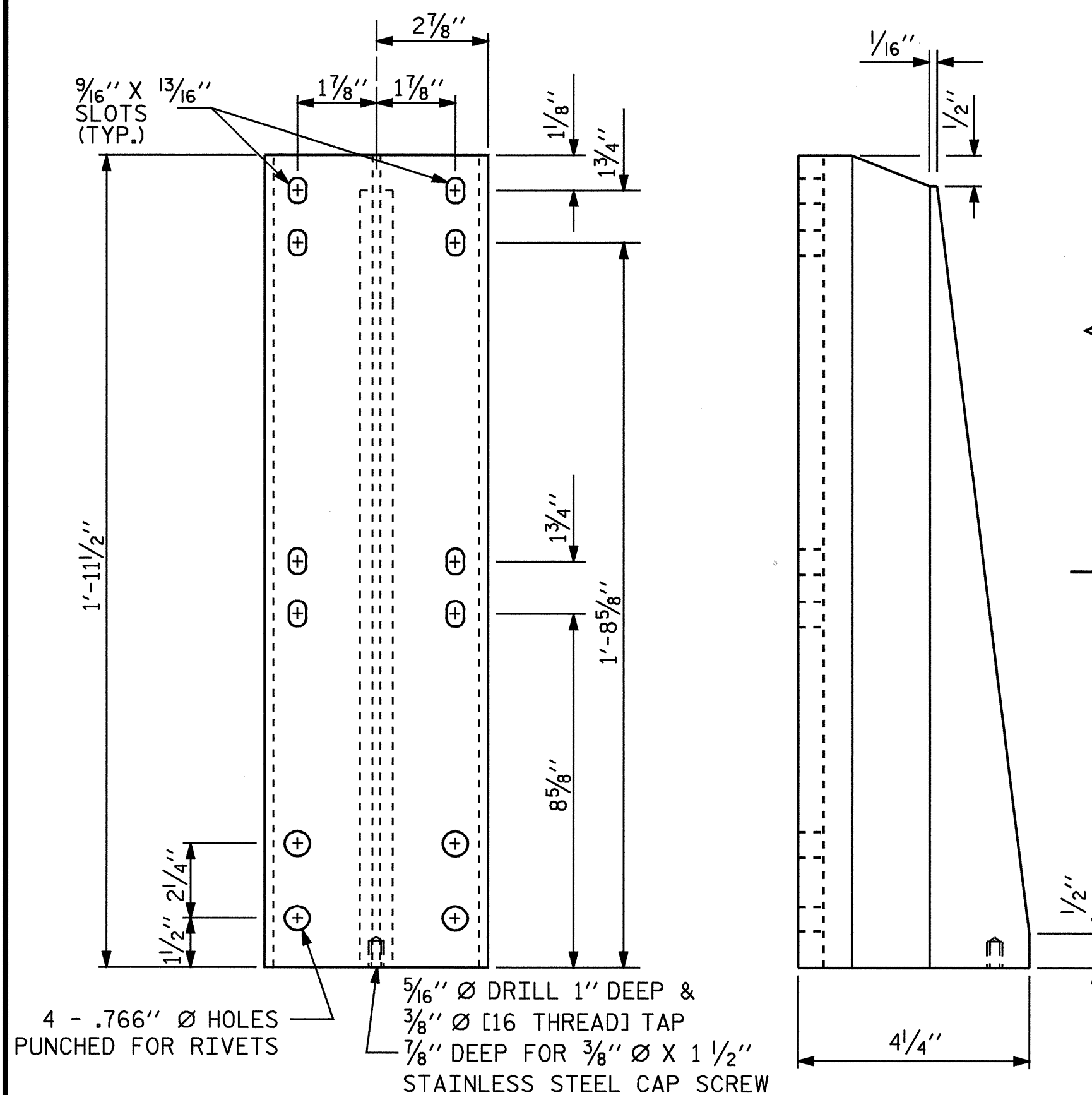
PLAN



SECTION THRU PARAPET AND RAIL



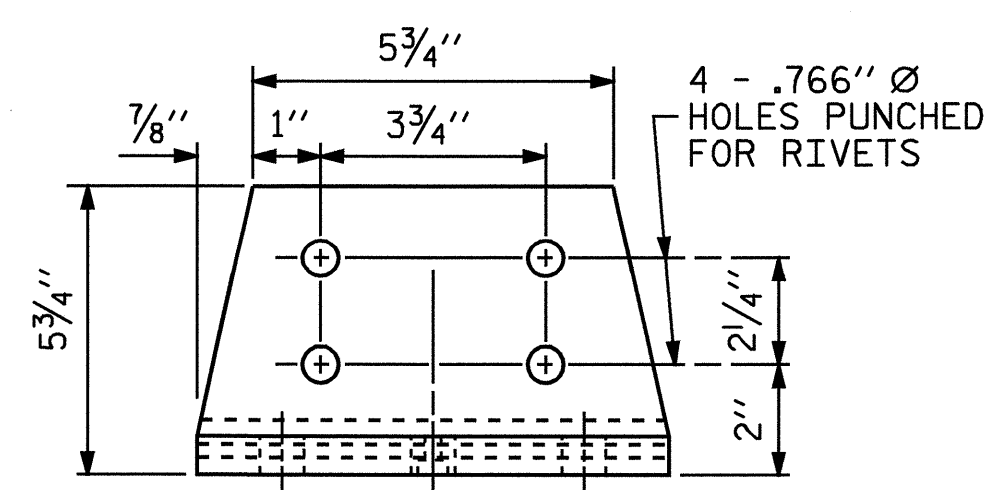
PLAN



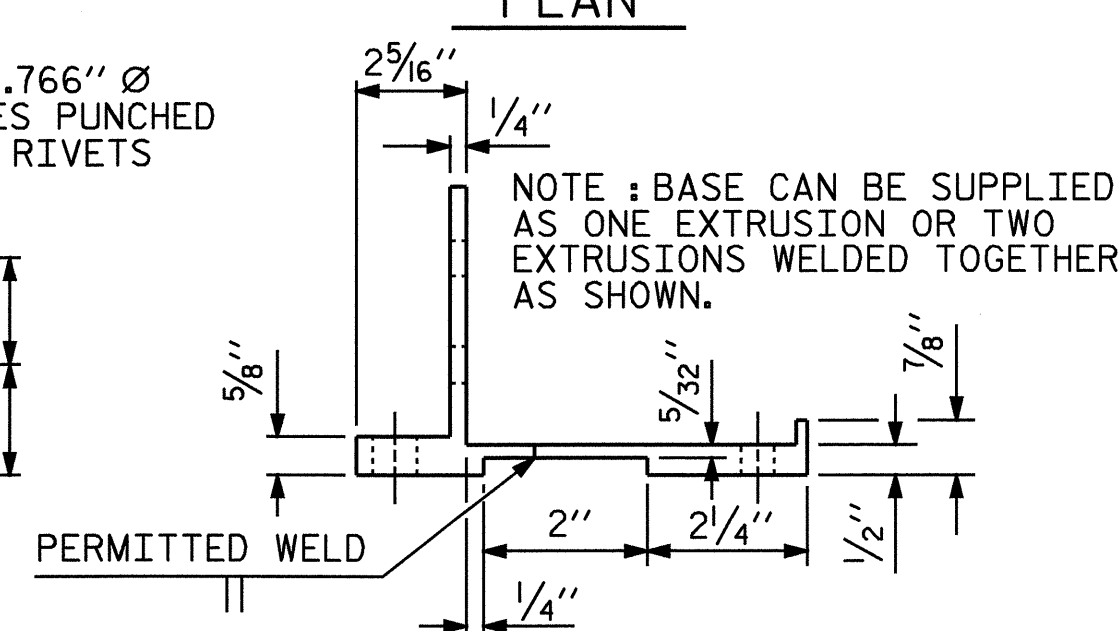
FRONT ELEVATION

SIDE ELEVATION

DETAILS OF POST

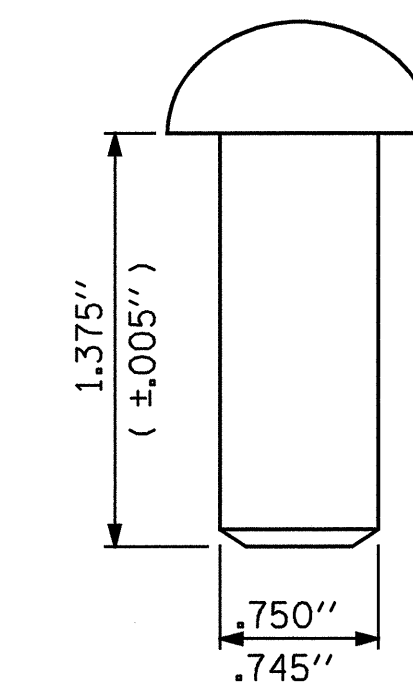


FRONT ELEVATION



SIDE ELEVATION

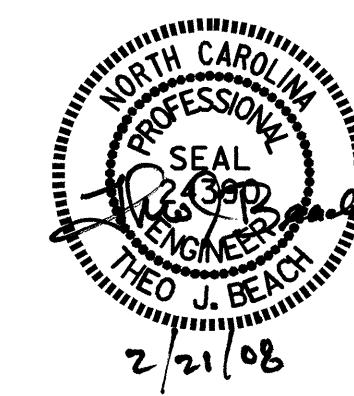
POST BASE DETAILS



RIVET DETAIL

ASSEMBLED BY: S.B. WILLIAMS DATE: 12/18/07
 CHECKED BY: T.J. BEACH DATE: 1-08
 DRAWN BY: EEM 6/94
 CHECKED BY: RGW 6/94

REV. 10/17/00 LES/RDR
 REV. 5/7/03R RWW/JTE
 REV. 5/1/06 TLA/GM



PROJECT NO. B-4675
 WILKES COUNTY
 STATION: 12+94.40 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD

2 BAR METAL RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			30

NOTES

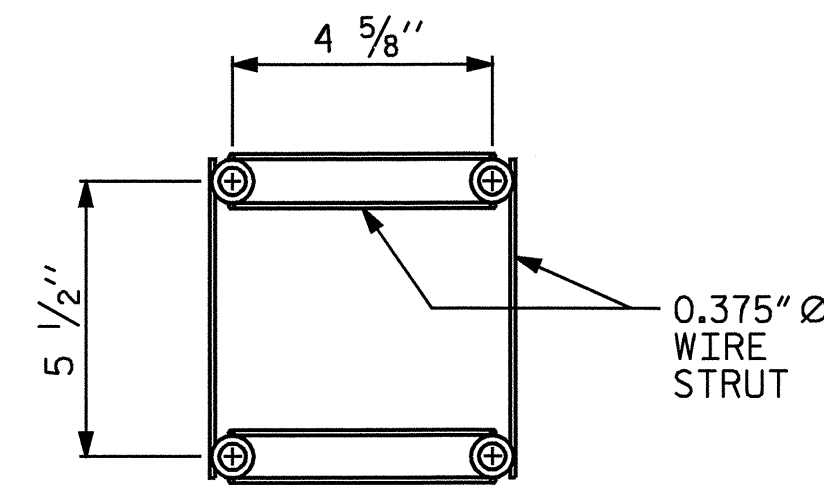
STRUCTURAL CONCRETE ANCHOR ASSEMBLY

THE STRUCTURAL CONCRETE ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS :

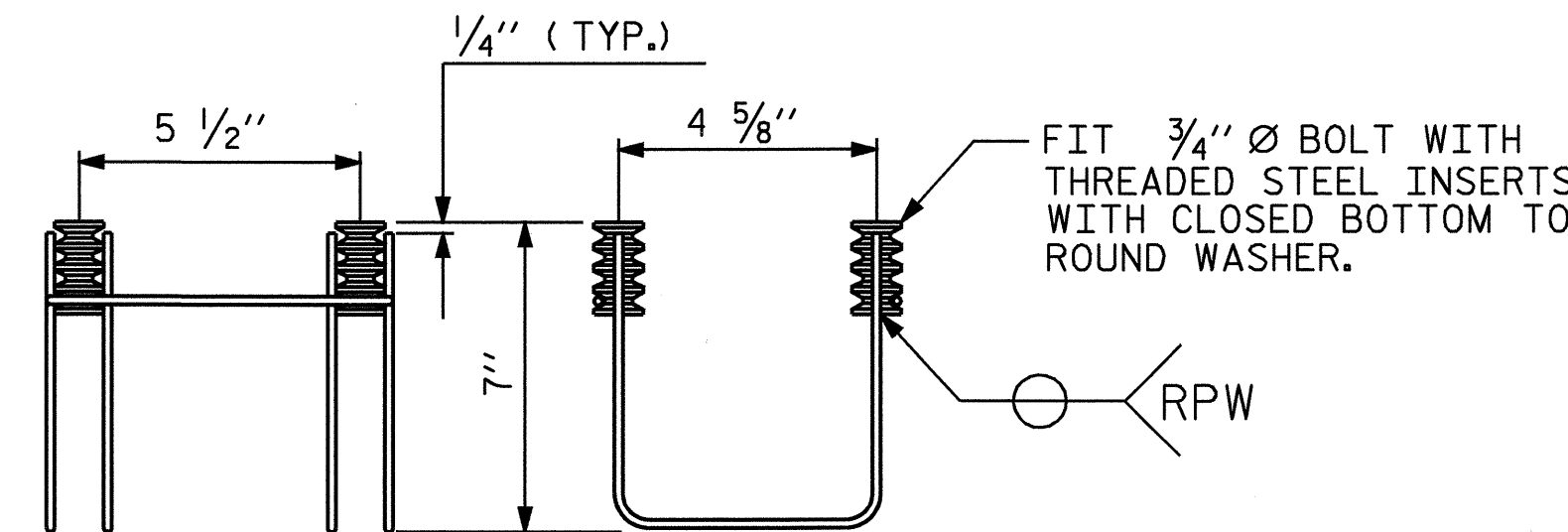
- A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2" FOR 3/4" FERRULES.
- B. 4 - 3/4" Ø X 2 1/2" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø X 2 1/2" GALVANIZED BOLTS 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.
- C. WIRE STRUT SHOWN IN THE CONCRETE ANCHOR ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 1/6" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.
- D. THE METAL RAIL ANCHOR ASSEMBLIES TO BE HOT DIPPED GALVANIZED TO CONFORM TO REQUIREMENTS OF AASHTO M111.
- E. THE COST OF THE METAL RAIL ANCHOR ASSEMBLY WITH BOLTS AND WASHERS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF METAL RAIL.
- F. BOLTS TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM A FINGER-TIGHT POSITION.

THE CONTRACTOR MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF THE METAL RAIL ANCHOR ASSEMBLY. 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.

WHEN ADHESIVELY ANCHORED ANCHOR BOLTS ARE USED, BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F593 ALLOY 304 STAINLESS STEEL WITH MINIMUM 75,000 PSI ULTIMATE STRENGTH. NUTS SHALL MEET THE REQUIREMENTS OF ASTM F594 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.



PLAN

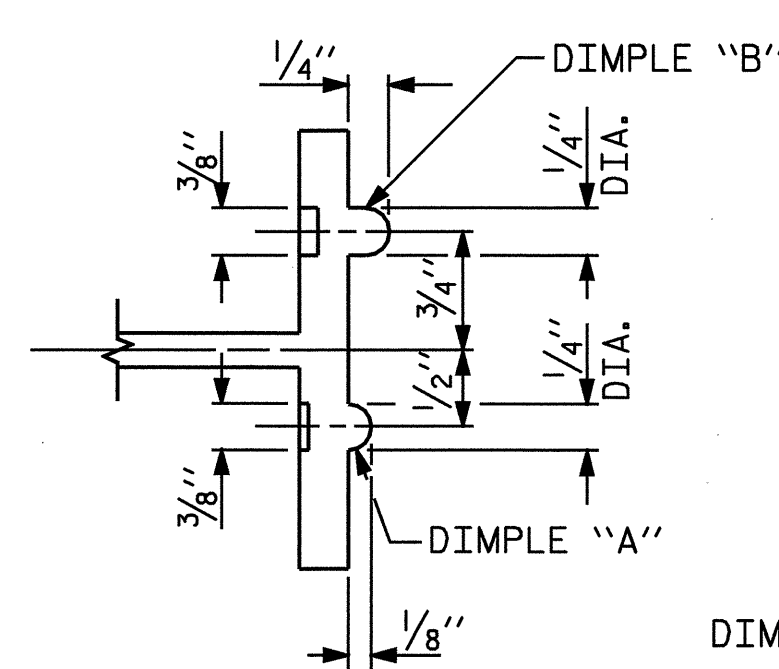


SIDE VIEW ELEVATION

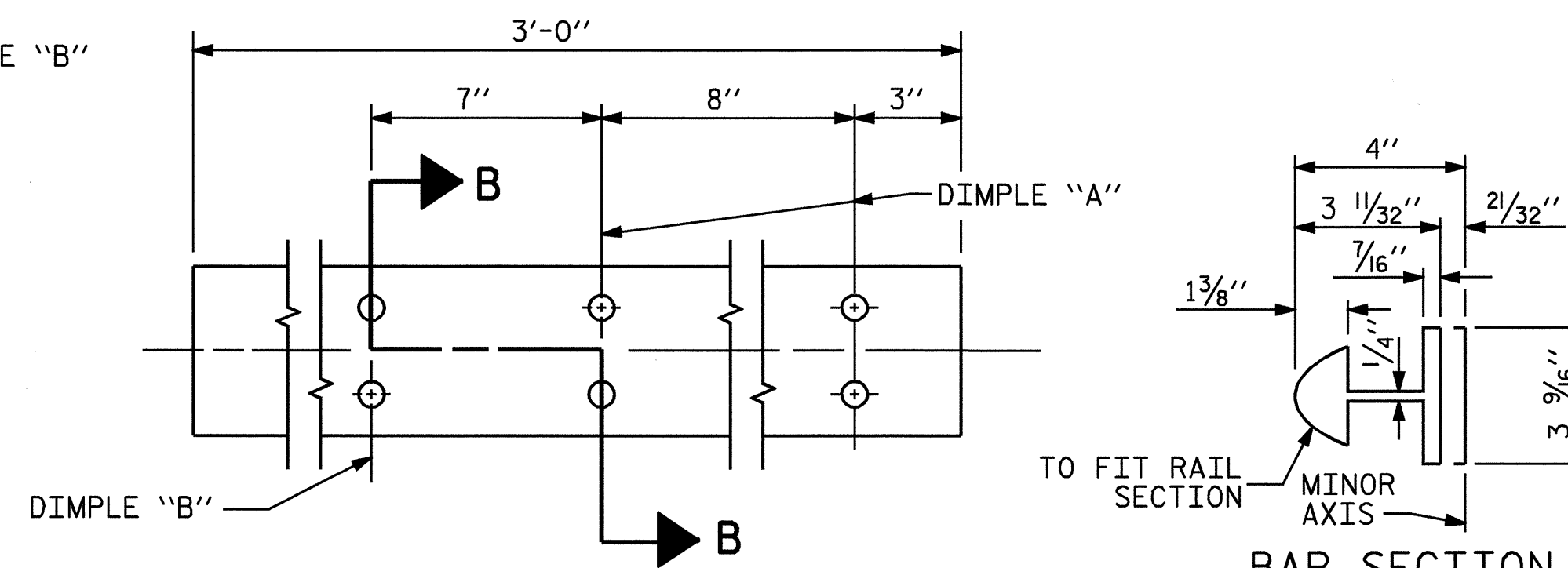
MINIMUM LENGTH OF THREADS IN INSERT (FERRULE) : 1 3/4"

4-BOLT METAL RAIL ANCHOR ASSEMBLY

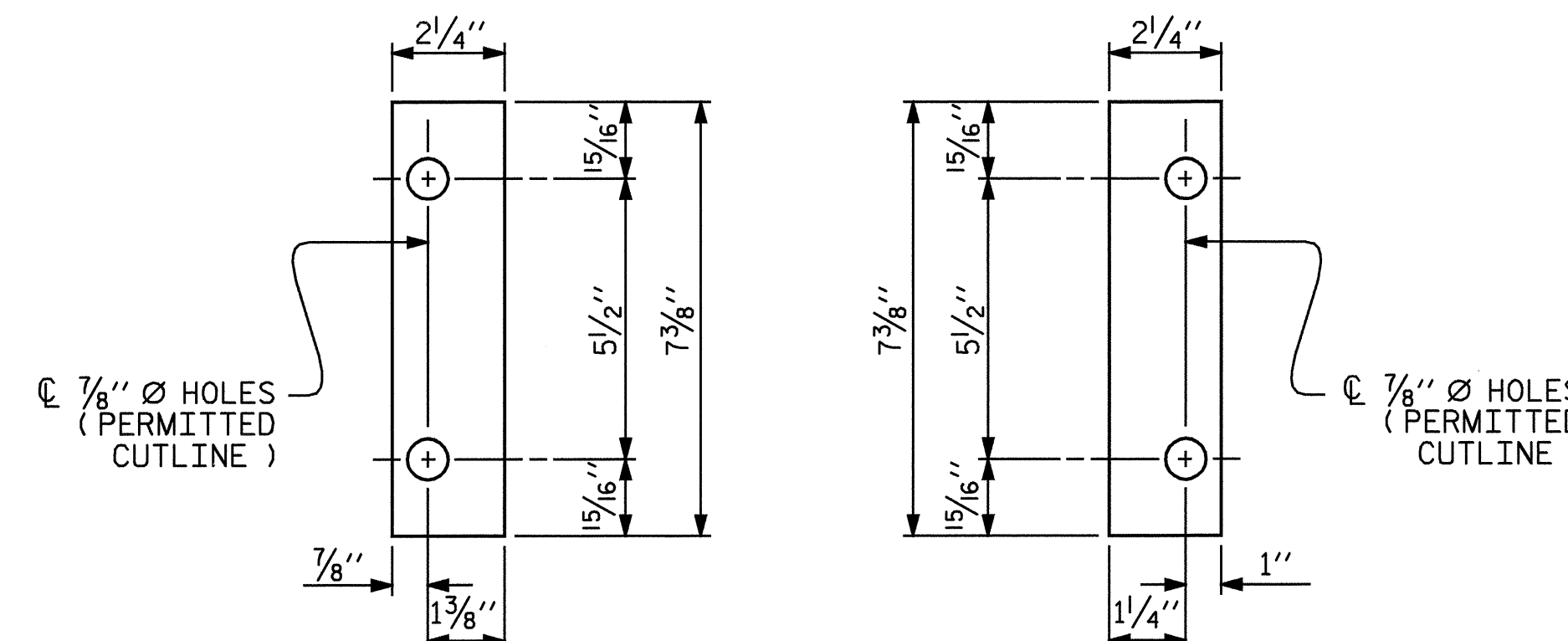
(30 ASSEMBLIES REQUIRED)



SECTION B-B



EXPANSION BAR DETAILS

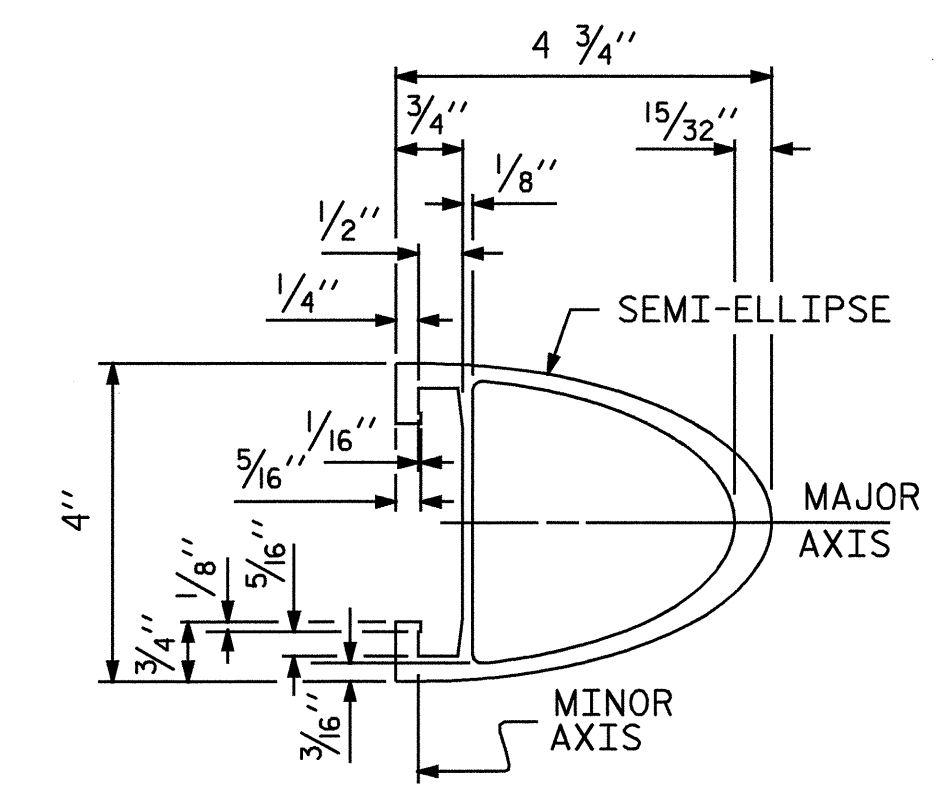


FRONT PLATE

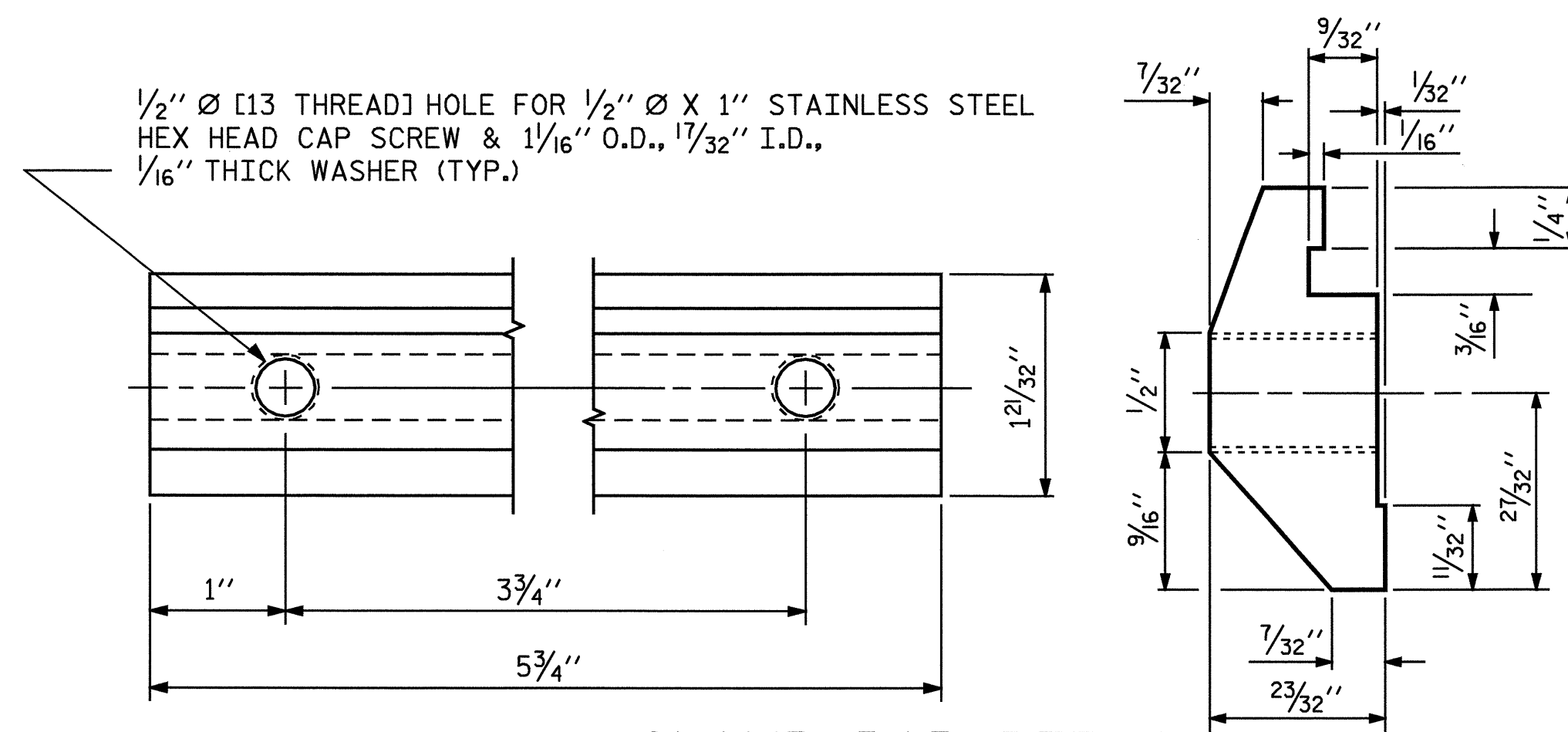
REAR PLATE

SHIM DETAILS

NOTE : SHIMS MAY BE CUT ALONG PERMITTED CUTLINE OR SLOTTED TO EDGE OF PLATE TO FACILITATE PLACEMENT.

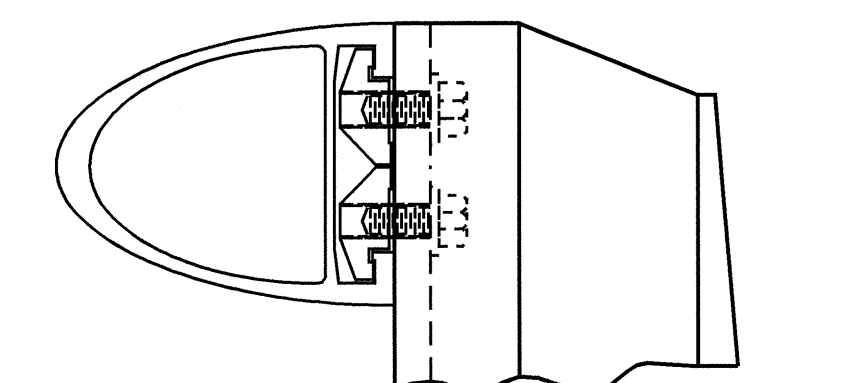


RAIL SECTION

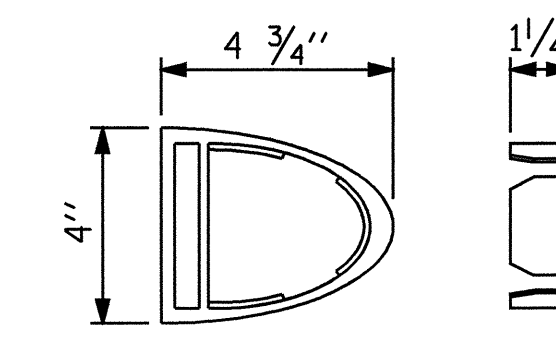


CLAMP BAR DETAIL

(4 REQUIRED PER POST)



CLAMP ASSEMBLY

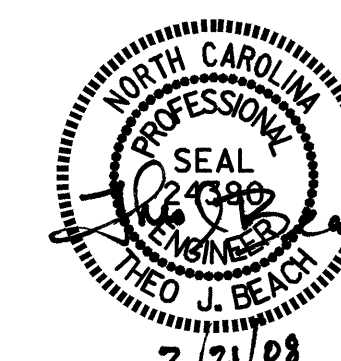


RAIL CAP

PROJECT NO. B-4675
WILKES COUNTY
 STATION: 12+94.40 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 2 BAR METAL RAIL



REVISIONS						SHEET NO. S-17
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			

ASSEMBLED BY : S.B. WILLIAMS	DATE : 12/18/07
CHECKED BY : T.J. BEACH	DATE : 1-08
DRAWN BY : EEM	6/94
CHECKED BY : RGW	6/94
REV. 2/6/97	EEM/RGW
REV. 8/16/99	MAB/LES
REV. 5/7/03	RWW/JTE

NOTES

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

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

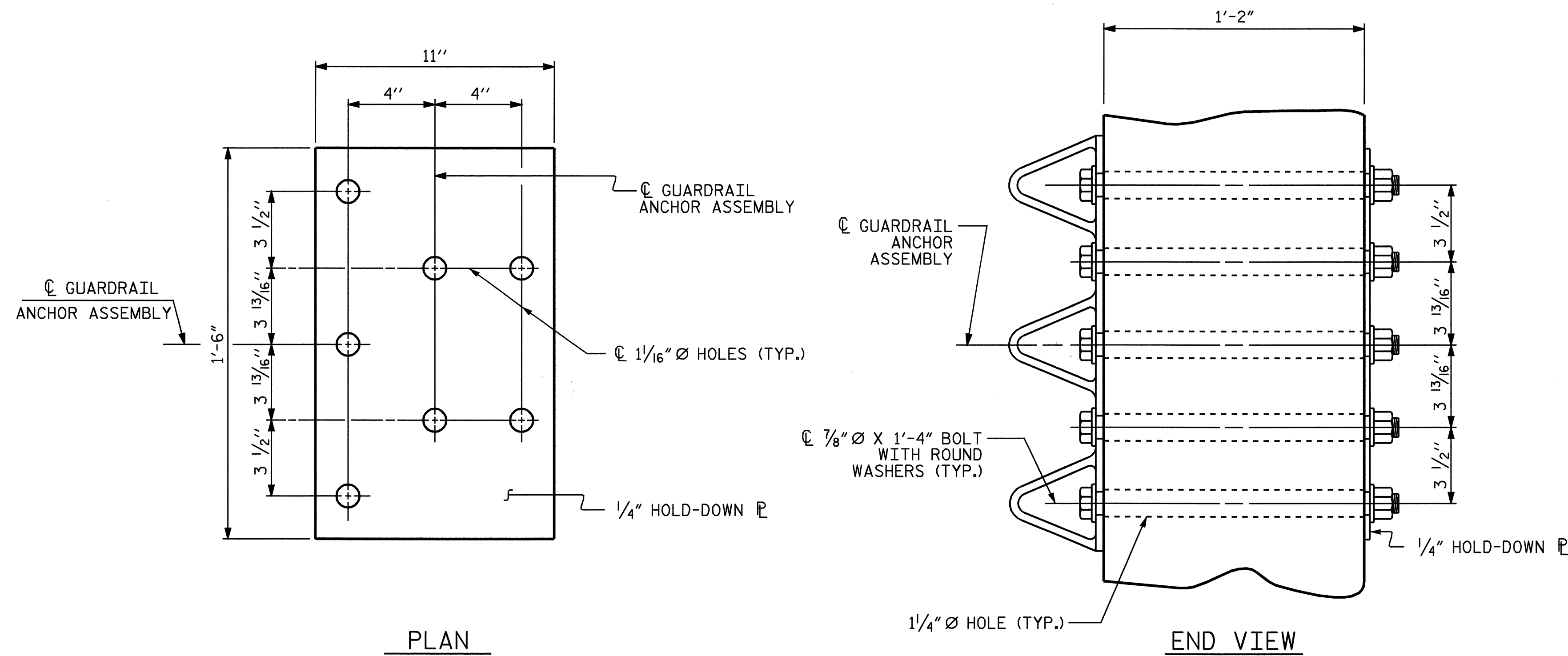
BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS.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

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

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

THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE END POST TO CLEAR ASSEMBLY BOLTS.

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

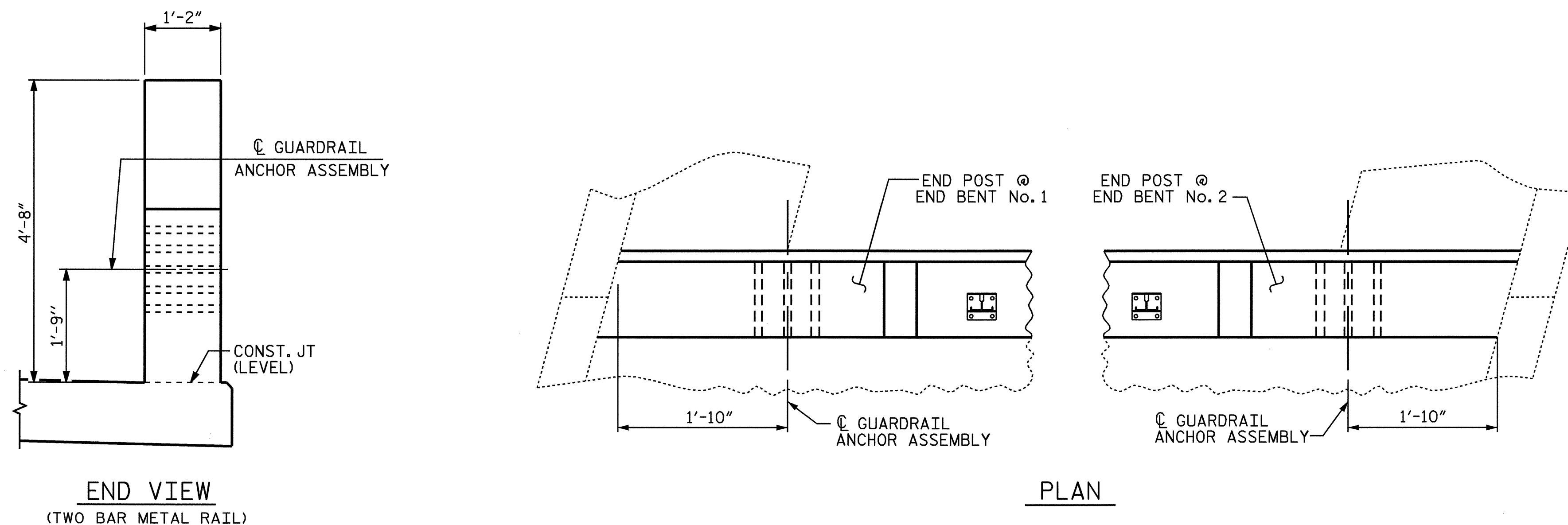


GUARDRAIL ANCHOR ASSEMBLY DETAILS



SKETCH SHOWING POINTS OF ATTACHMENT

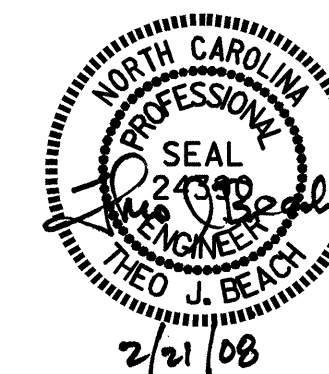
* LOCATION OF GUARDRAIL ATTACHMENT



LOCATION OF GUARDRAIL ANCHOR AT END POST

(TYPICAL BOTH STAGES)

PROJECT NO. B-4675
WILKES COUNTY
 STATION: 12+94.40 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 DETAILS
 FOR METAL RAILS

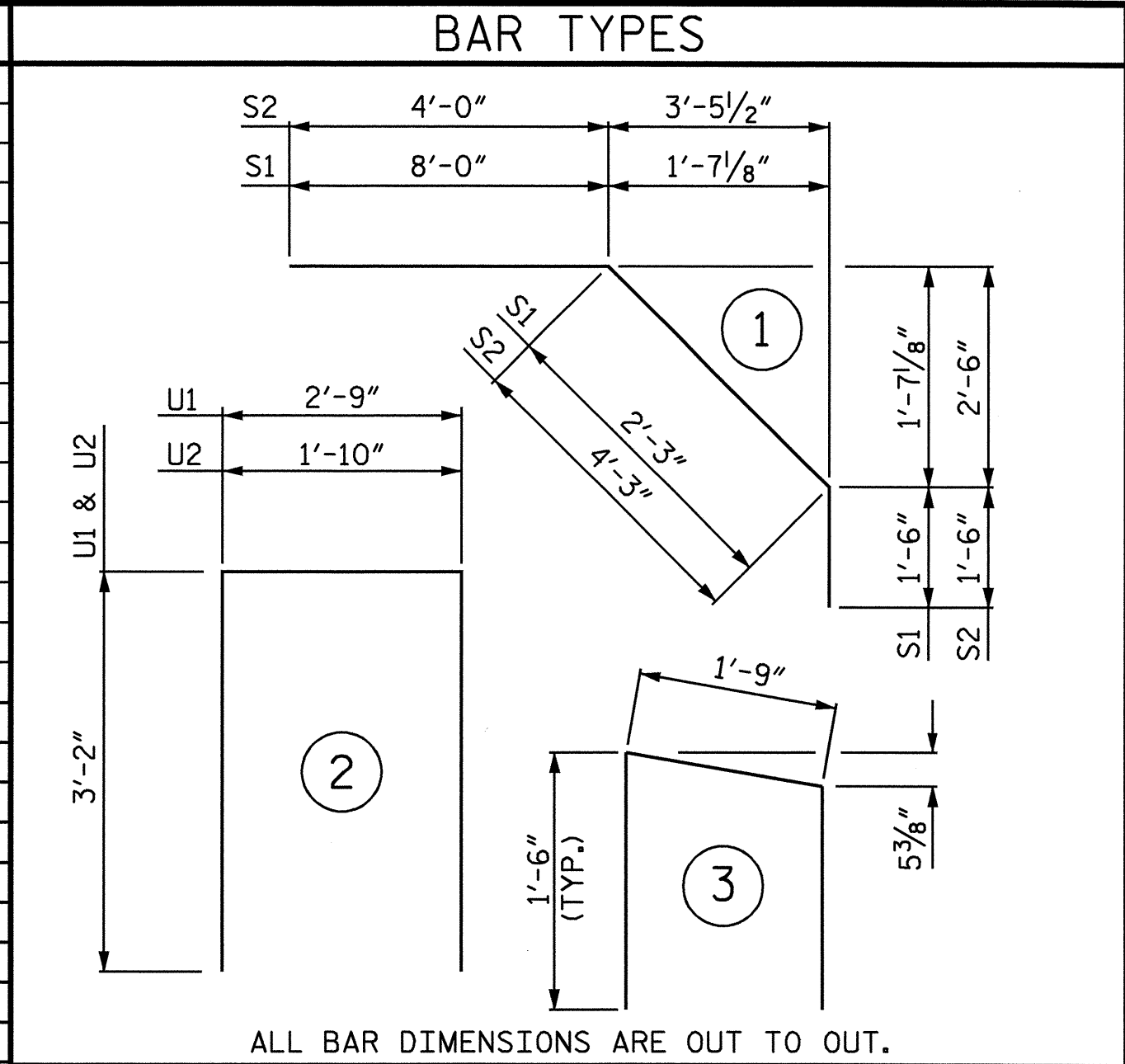
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			30

ASSEMBLED BY : S. B. WILLIAMS	DATE : 1-08
CHECKED BY : T. J. BEACH	DATE : 1-08
DRAWN BY : EEM 6/94	REV. 10/17/00 RWW/LES
CHECKED BY : RGW 6/94	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM

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"			

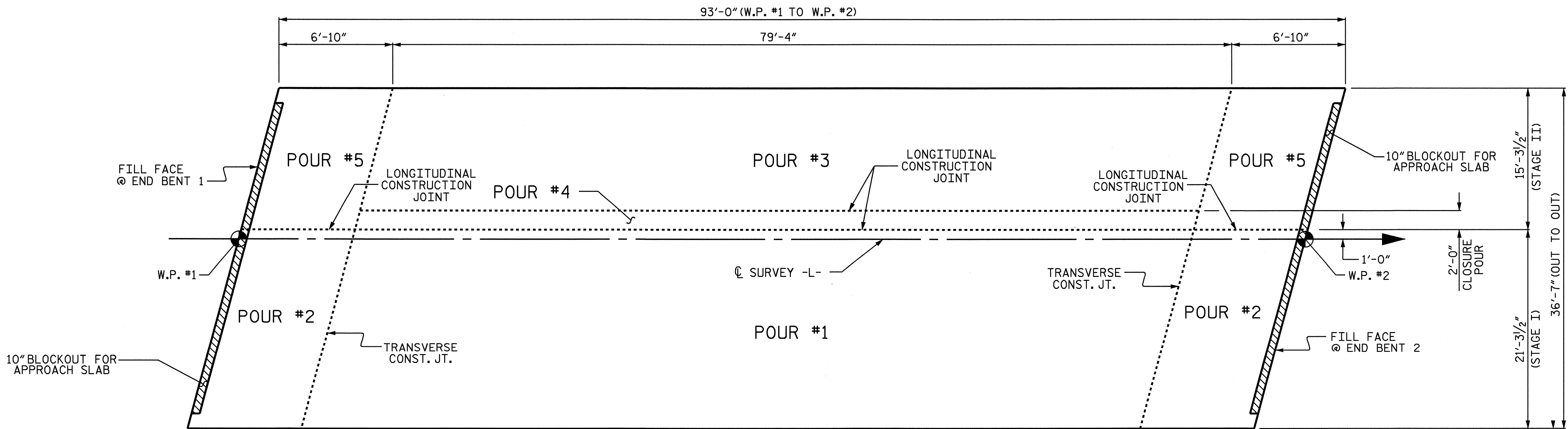
BILL OF MATERIAL-STAGE I						BILL OF MATERIAL-STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	158	#5	STR	20'-11"	3447	*A3	162	#5	STR	12'-11"	2182
A2	158	#5	STR	20'-11"	3447	A4	162	#5	STR	12'-11"	2182
*A101	2	#5	STR	19'-4"	40	*A301	2	#5	STR	11'-4"	24
*A102	2	#5	STR	17'-4"	36	*A302	2	#5	STR	9'-4"	19
*A103	2	#5	STR	15'-4"	32	*A303	2	#5	STR	7'-4"	15
*A104	2	#5	STR	13'-3"	28	*A304	2	#5	STR	5'-4"	11
*A105	2	#5	STR	11'-3"	23	*A305	2	#5	STR	3'-3"	7
*A106	2	#5	STR	9'-3"	19						
*A107	2	#5	STR	7'-3"	15	A401	2	#5	STR	11'-4"	24
*A108	2	#5	STR	5'-2"	11	A402	2	#5	STR	9'-4"	19
*A109	2	#5	STR	3'-2"	7	A403	2	#5	STR	7'-4"	15
						A404	2	#5	STR	5'-4"	11
A201	2	#5	STR	19'-4"	40	A405	2	#5	STR	3'-3"	7
A202	2	#5	STR	17'-4"	36						
A203	2	#5	STR	15'-4"	32	*B1	4	#4	STR	24'-3"	65
A204	2	#5	STR	13'-3"	28	*B2	32	#7	STR	18'-6"	1210
A205	2	#5	STR	11'-3"	23	B3	32	#5	STR	46'-7"	1555
A206	2	#5	STR	9'-3"	19	*B4	18	#4	STR	30'-0"	361
A207	2	#5	STR	7'-3"	15	*B5	6	#7	STR	48'-1"	590
A208	2	#5	STR	5'-2"	11						
A209	2	#5	STR	3'-2"	7	*D1	90	#6	STR	3'-6"	473
*B1	4	#4	STR	24'-3"	65	*K2	16	#4	STR	14'-10"	159
*B2	54	#7	STR	18'-6"	2042						
B3	54	#5	STR	46'-7"	2624	*S1	14	#4	1	11'-9"	110
*B4	28	#4	STR	30'-0"	561	*S2	14	#4	1	9'-9"	91
*D1	90	#6	STR	3'-6"	473	*U1	16	#4	2	9'-1"	97
						*U2	2	#4	2	8'-2"	11
*K1	16	#4	STR	23'-8"	253	*U3	8	#4	3	4'-9"	25
*S1	28	#4	1	11'-9"	220	REINFORCING STEEL				3,813	LBS.
*S2	28	#4	1	9'-9"	182	*EPOXY COATED REINFORCING STEEL				5450	LBS.
*U1	30	#4	2	9'-1"	182						
*U2	2	#4	2	8'-2"	11						
*U3	8	#4	3	4'-9"	25						
REINFORCING STEEL					6,282	LBS.					
*EPOXY COATED REINFORCING STEEL					7,672	LBS.					



ALL BAR DIMENSIONS ARE OUT TO OUT.

SUPERSTRUCTURE BILL OF MATERIAL			
	CLASS AA CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EPOXY COATED REINFORCING STEEL (LBS.)
STAGE I		6,282	7,672
POUR #1	52.5		
POUR #2	24.6		
STAGE II		3,813	5,450
POUR #3	33.4		
POUR #4	6.2		
POUR #5	17.9		
TOTALS **	134.6	10,095	13,122

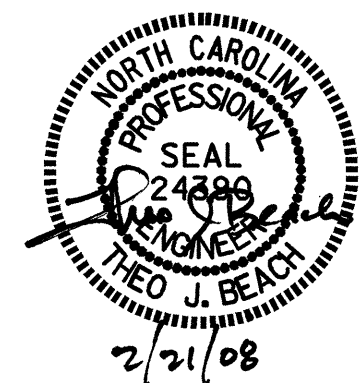
** QUANTITIES FOR CONCRETE PARAPET ARE NOT INCLUDED.



GROOVING BRIDGE FLOORS	
APPROACH SLABS	773 SQ.FT.
BRIDGE DECK	2,819 SQ.FT.
TOTAL	3,592 SQ.FT.

PROJECT NO. B-4675
WILKES COUNTY
 STATION: 12+94.40 -L-

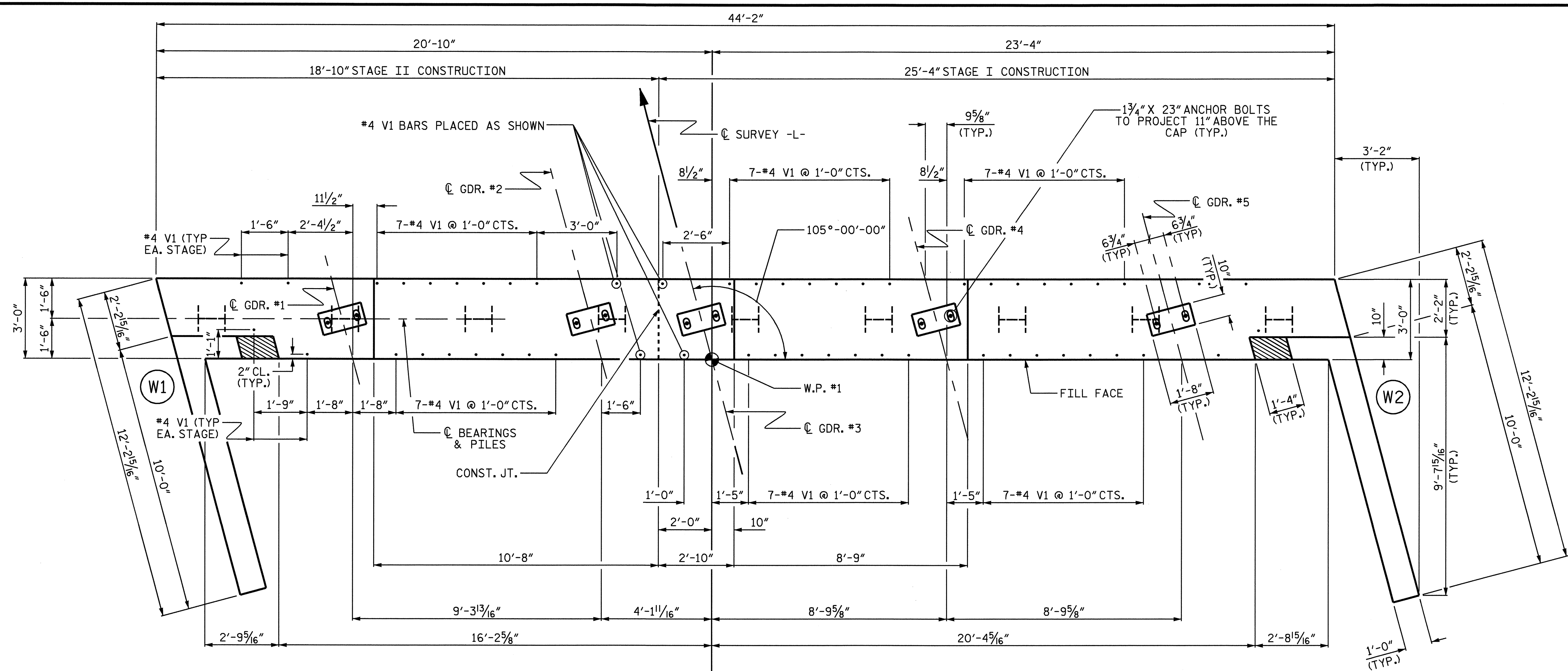
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 BILL OF MATERIAL



LAYOUT FOR COMPUTING AREA
 OF REINFORCED CONCRETE DECK SLAB
 AND POURING SEQUENCE
 (SQ. FT. = 3,402)

DRAWN BY: S.B. WILLIAMS DATE: 12/4/07
 CHECKED BY: T.J. BEACH DATE: 1-08

REVISIONS						SHEET NO. S-20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			30



NOTES:

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

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" 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 CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LENGTHS OF THE #9 "B" BARS AT THE STAGED CONSTRUCTION JOINT MAY NEED TO BE ADJUSTED DUE TO THE TYPE OF MECHANICAL BUTT SPLICE CHOSEN BY THE CONTRACTOR. NO ADDITIONAL PAYMENT WILL BE MADE FOR ANY ADJUSTMENTS REQUIRED.

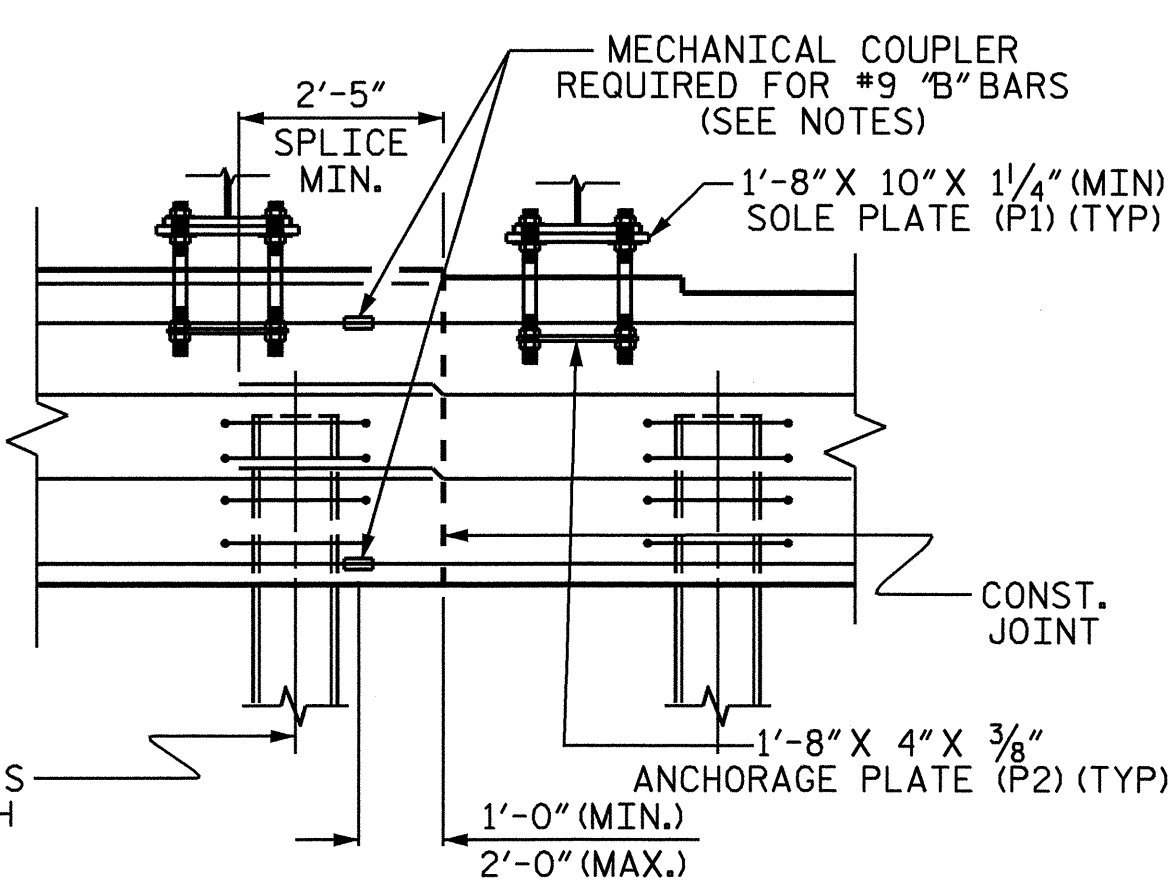
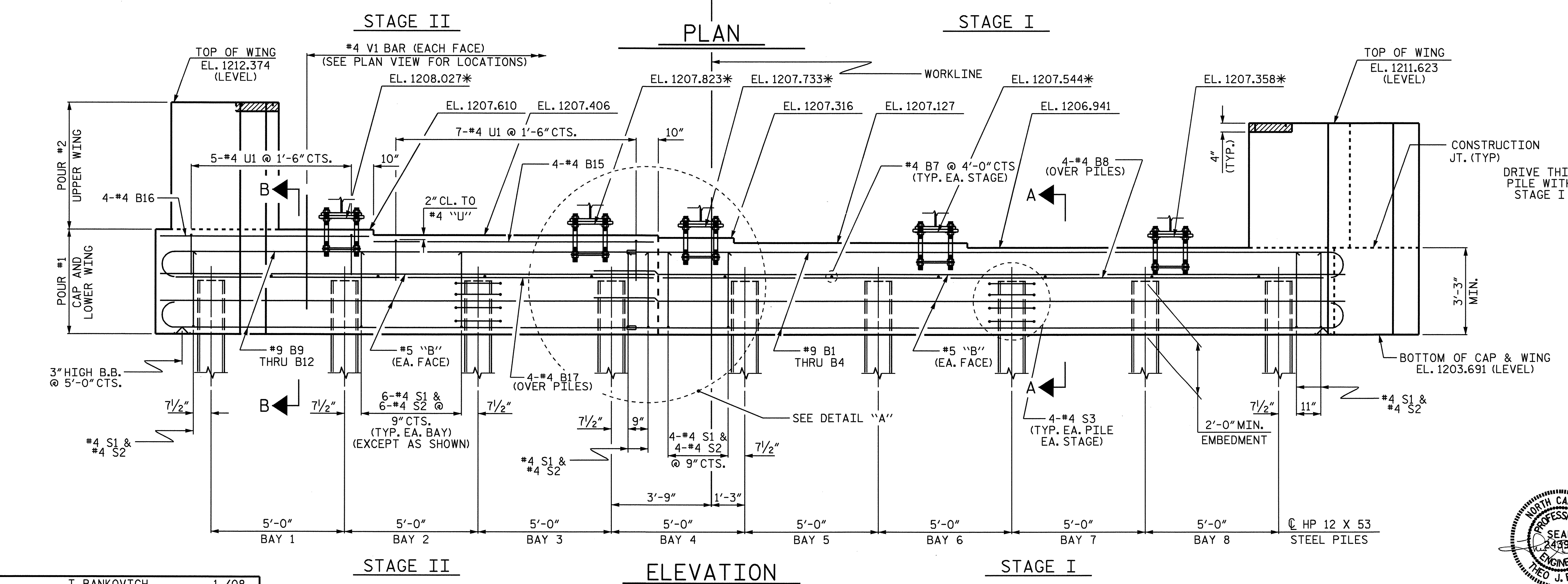
MECHANICAL COUPLERS SHALL BE USED TO JOIN THE #9 "B" BARS IN STAGE I WITH THE #9 "B" BARS IN STAGE II. THE LOCATION OF THE COUPLERS SHALL BE STAGGERED ON ALTERNATING BARS BY 1 FOOT AND THE BARS SHALL BE CUT ACCORDINGLY TO ALLOW A MINIMUM OF 1'-0" AND A MAXIMUM OF 2'-0" EXTENSION INTO STAGE II CONSTRUCTION.

FOR MECHANICAL COUPLERS, SEE MECHANICAL BUTT SPLICES FOR REINFORCING STEEL IN STANDARD SPECIFICATIONS.

THE #5 "B" BARS IN STAGE I SHALL EXTEND 2'-5" PAST THE CONSTRUCTION JOINT.

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

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

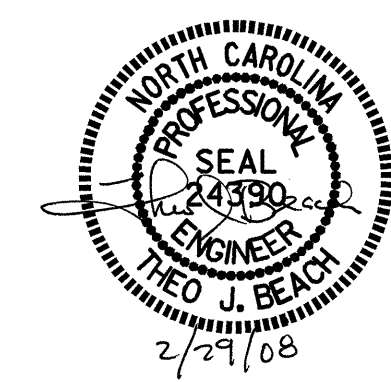


PROJECT NO. B-4675
WILKES COUNTY
 STATION: 12+94.40 -L-

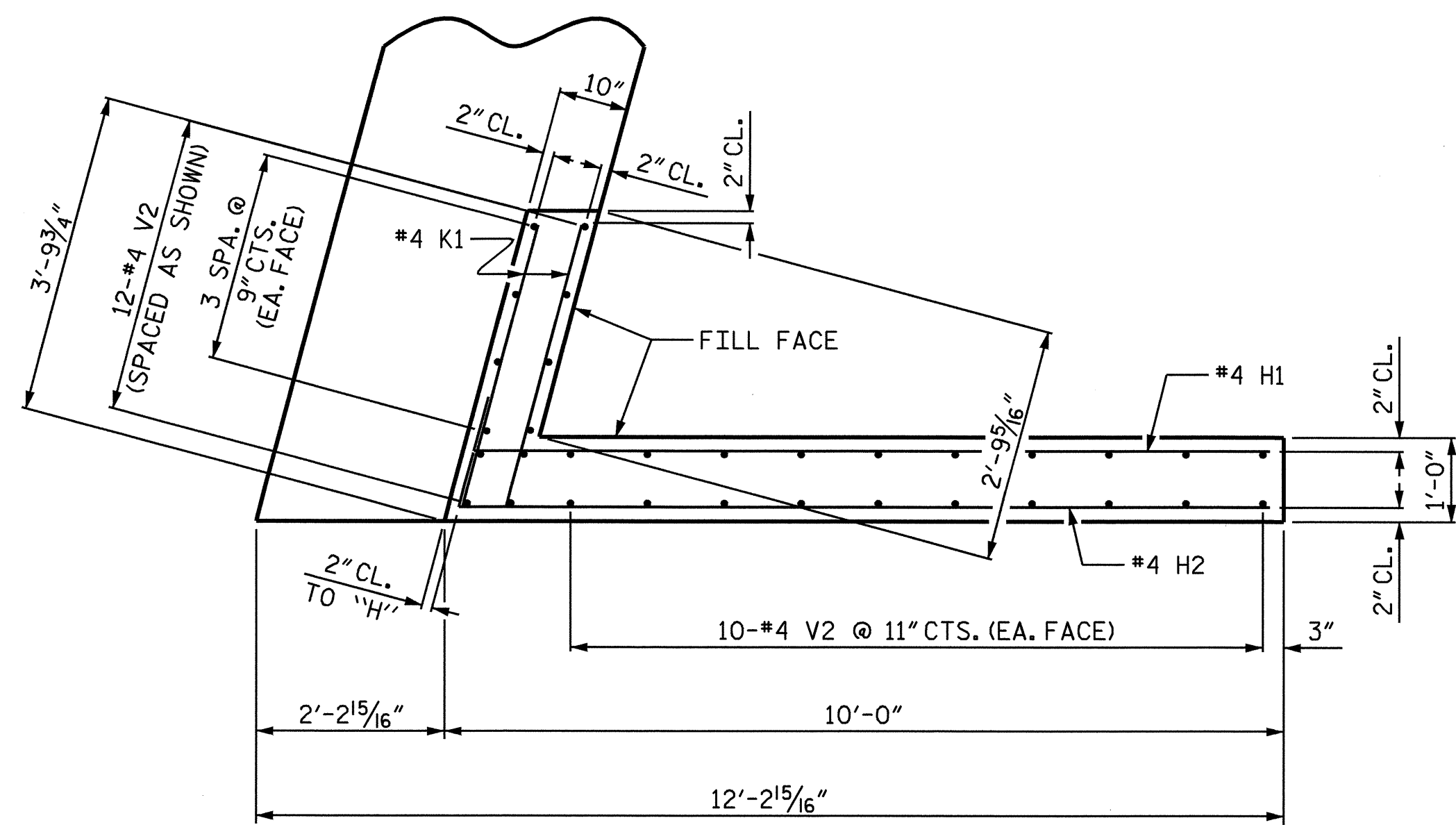
SHEET 1 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE					
END BENT No. 1 (STAGE I & STAGE II)					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

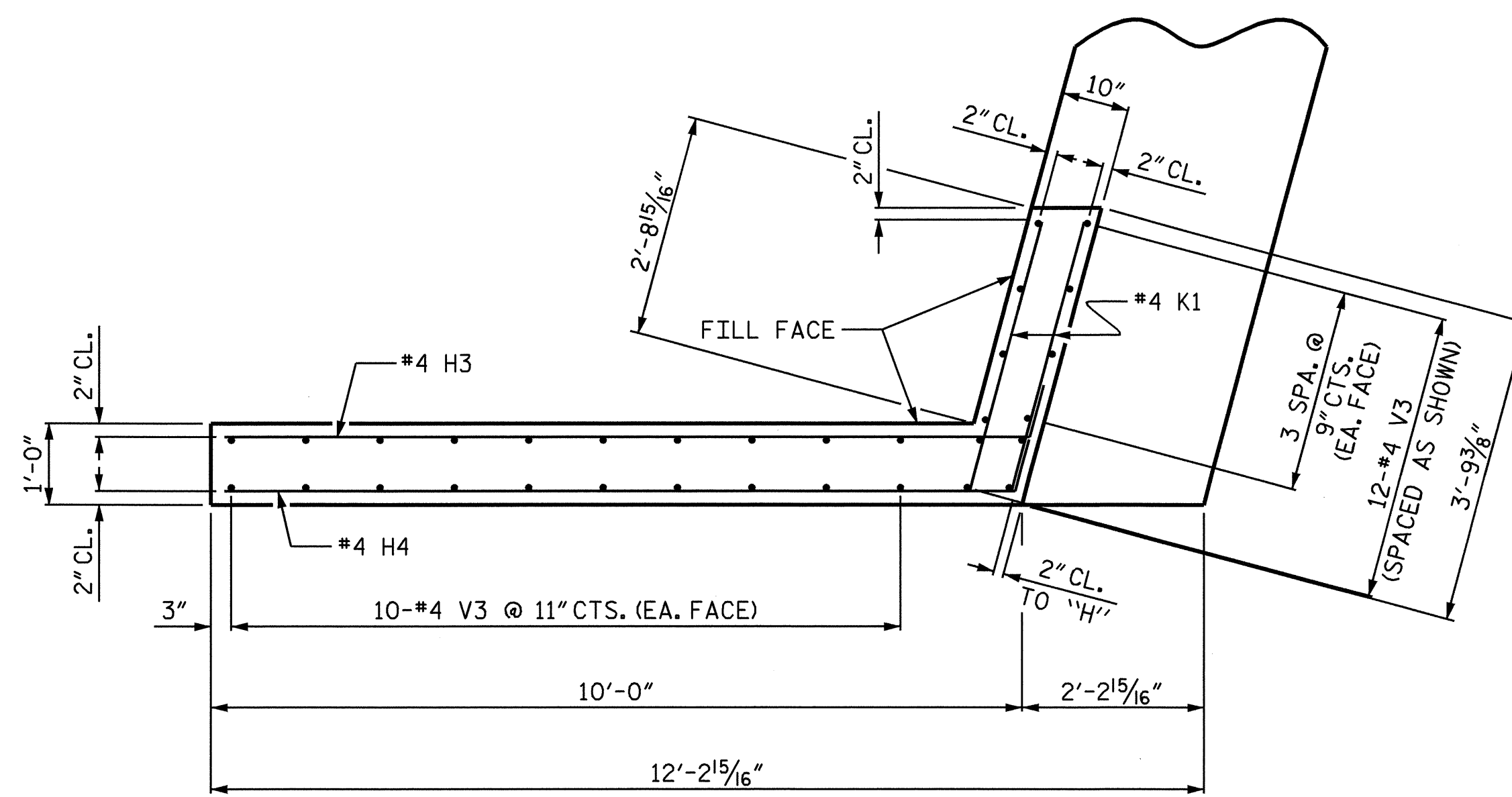
SHEET NO. S-21
 TOTAL SHEETS 30



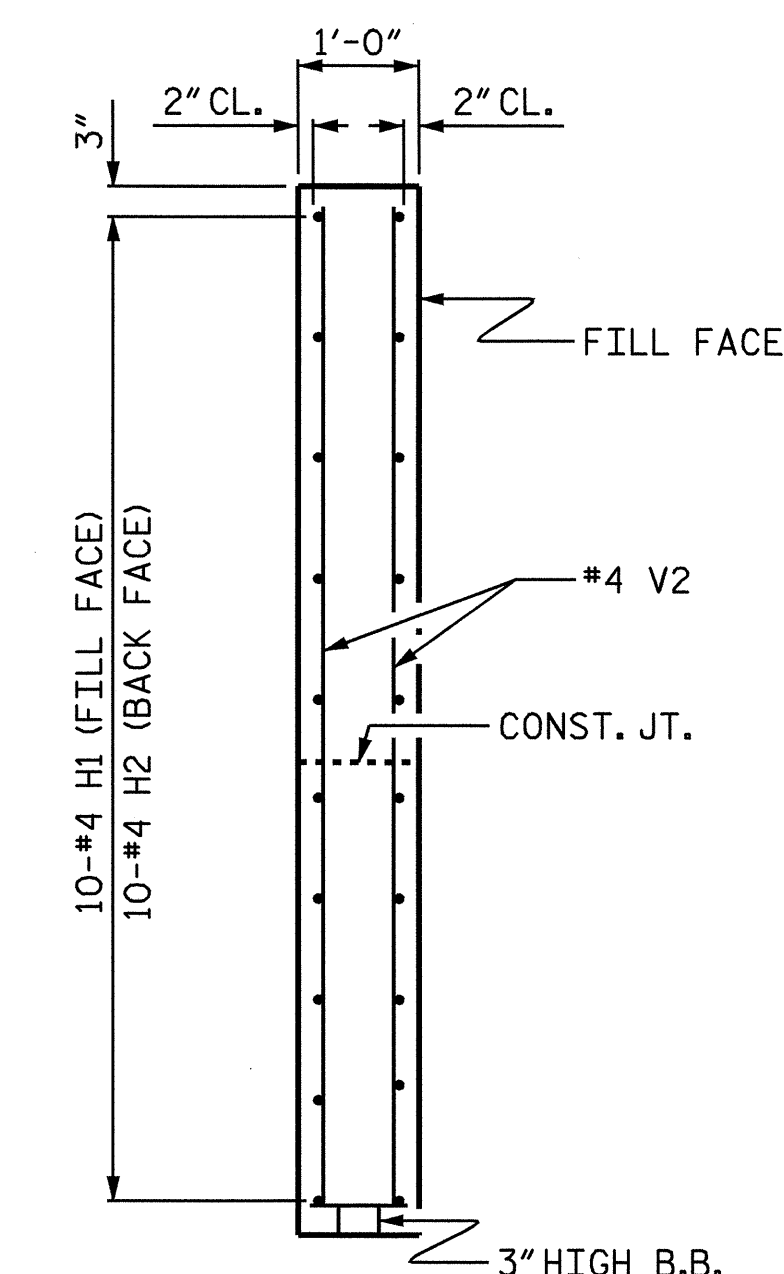
DRAWN BY: T. BANKOVICH DATE: 1/08
 CHECKED BY: T. J. BEACH DATE: 1/08



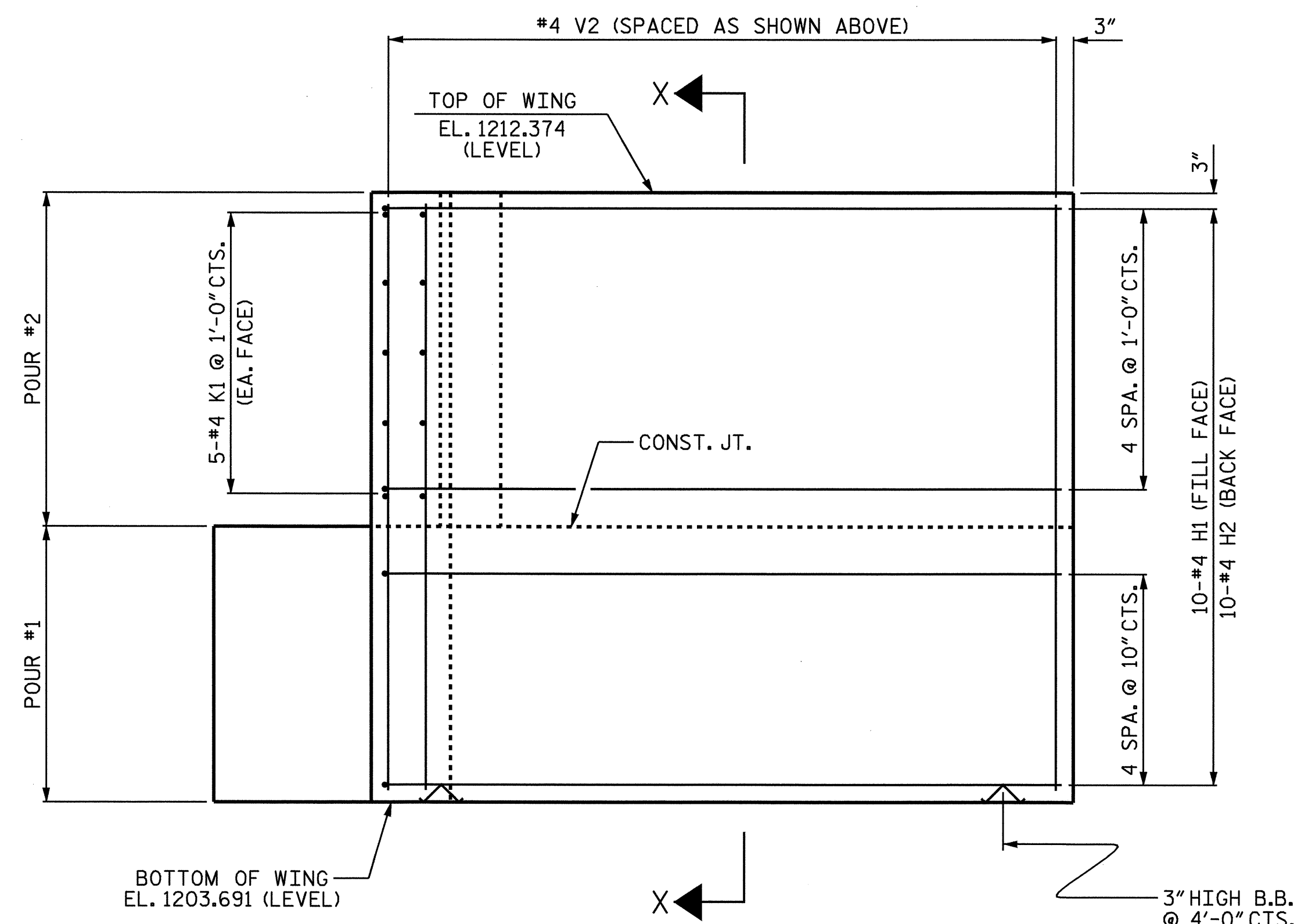
PLAN OF WING (W1)



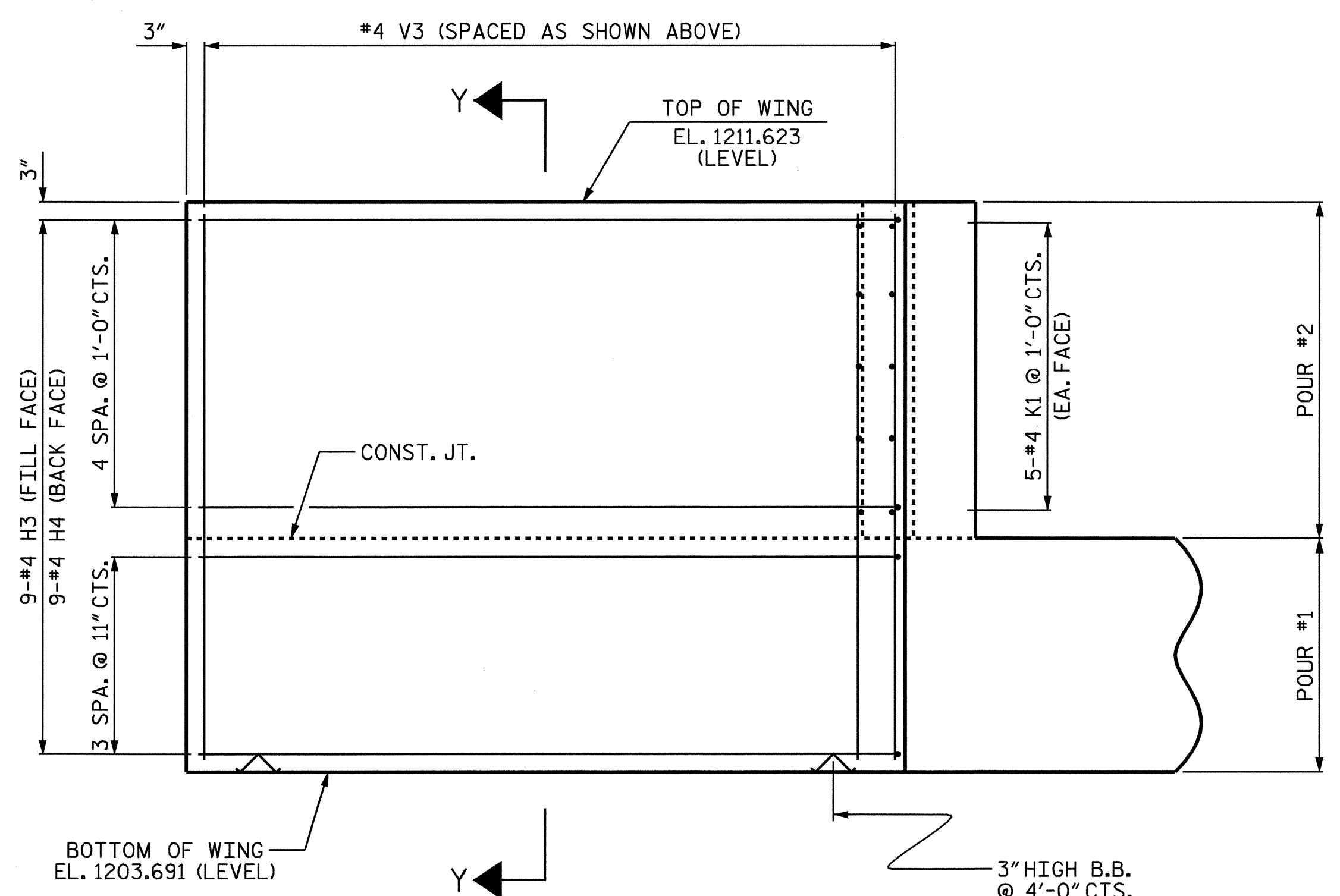
PLAN OF WING (W2)



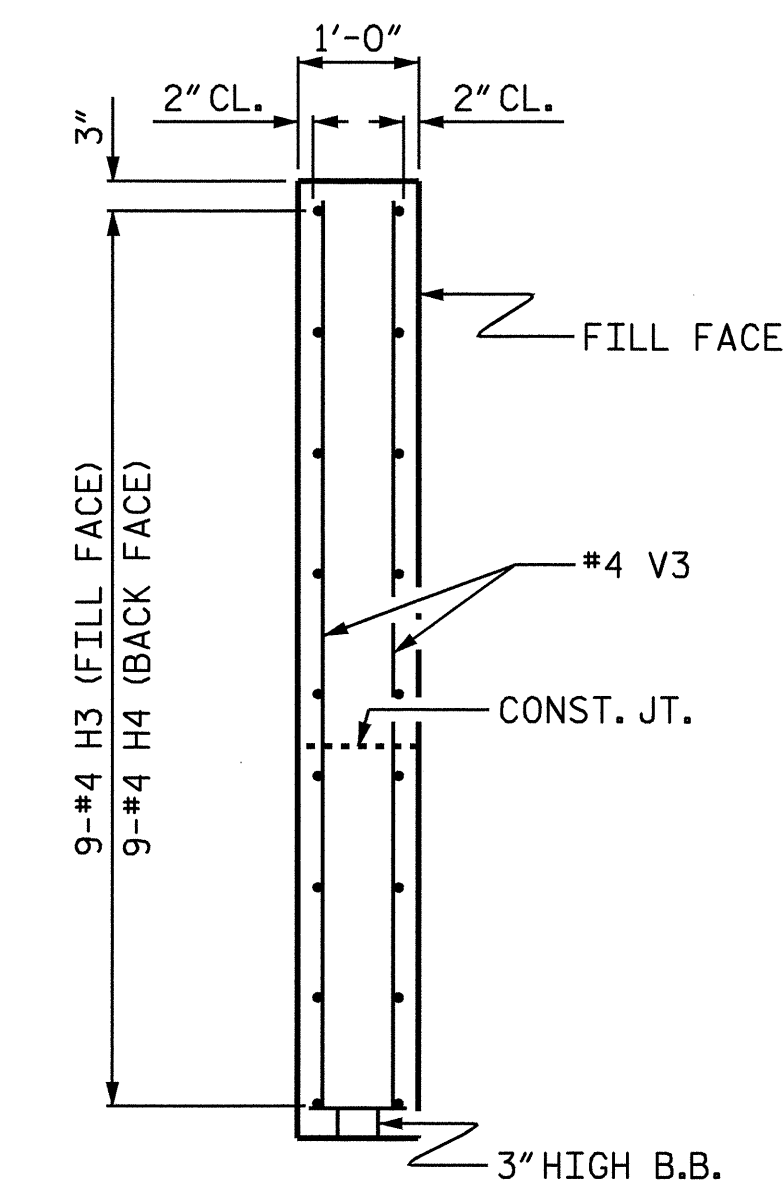
SECTION X-X



ELEVATION OF WING (W1)



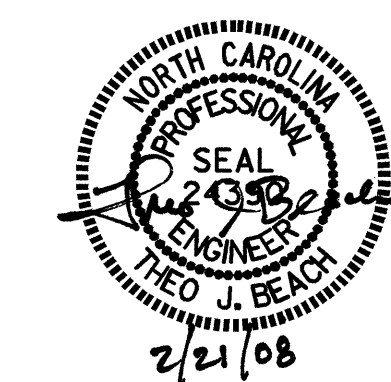
ELEVATION OF WING (W2)



SECTION Y-Y

PROJECT NO. B-4675
 WILKES COUNTY
 STATION: 12+94.40 -L-

SHEET 2 OF 3
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT No. 1
 (STAGE I & STAGE II)

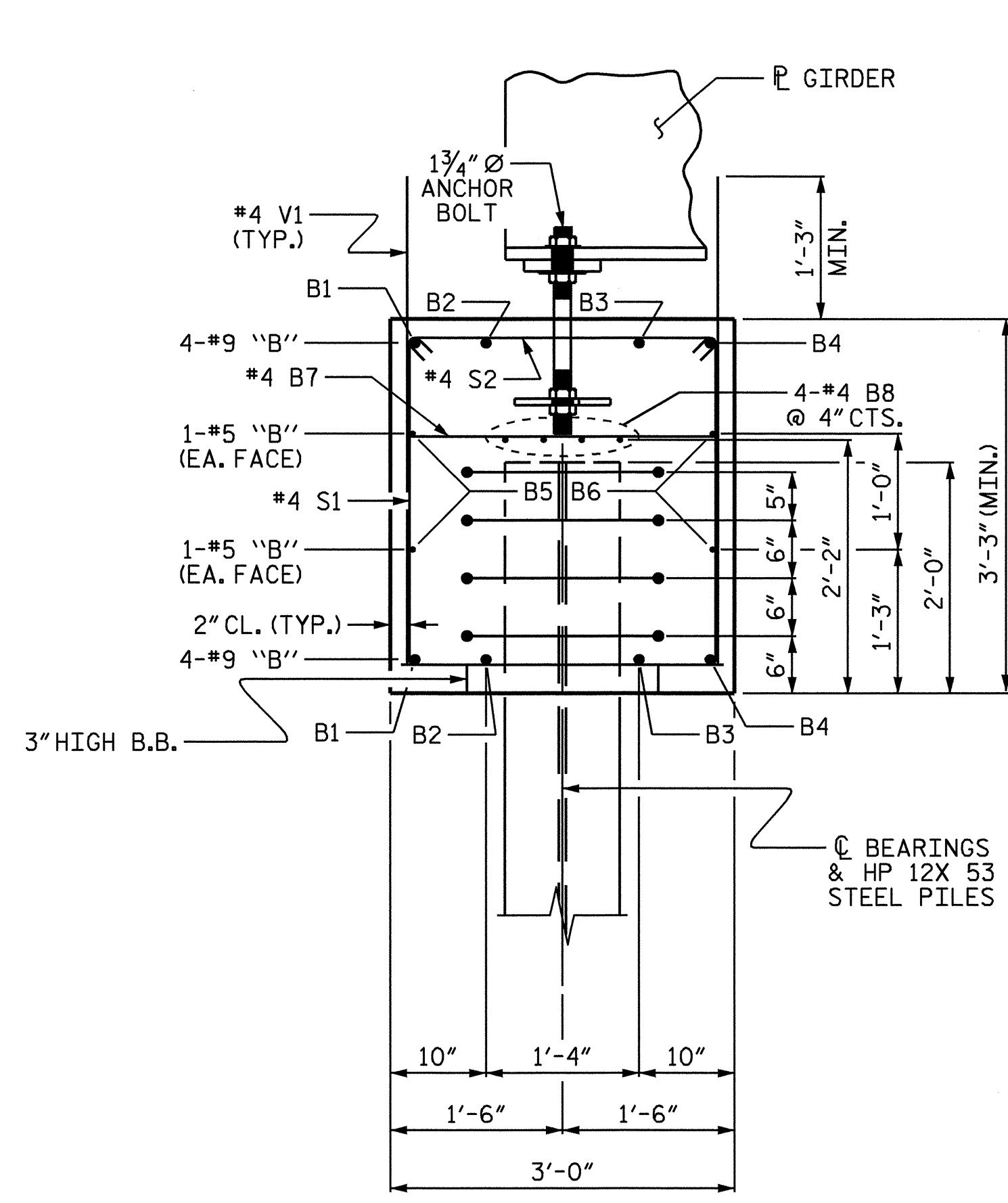


DRAWN BY: T. BANKOVICH DATE: 1/08
 CHECKED BY: T. J. BEACH DATE: 1/08

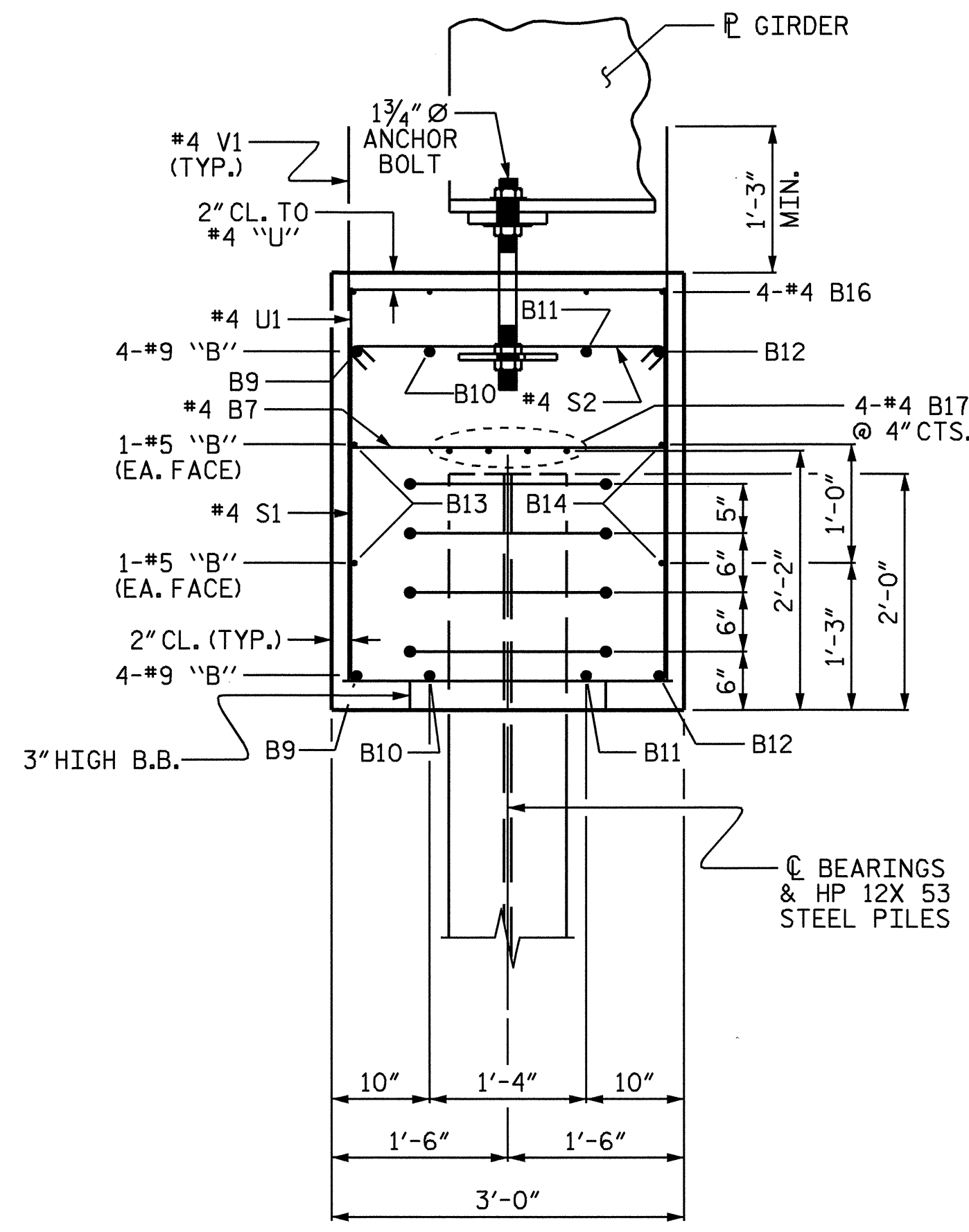
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 30

20-FEB-2008 12:57
 F:\structures\Substructure Drawings\b-4675.sd.e*1.dgn
 sbwilliams

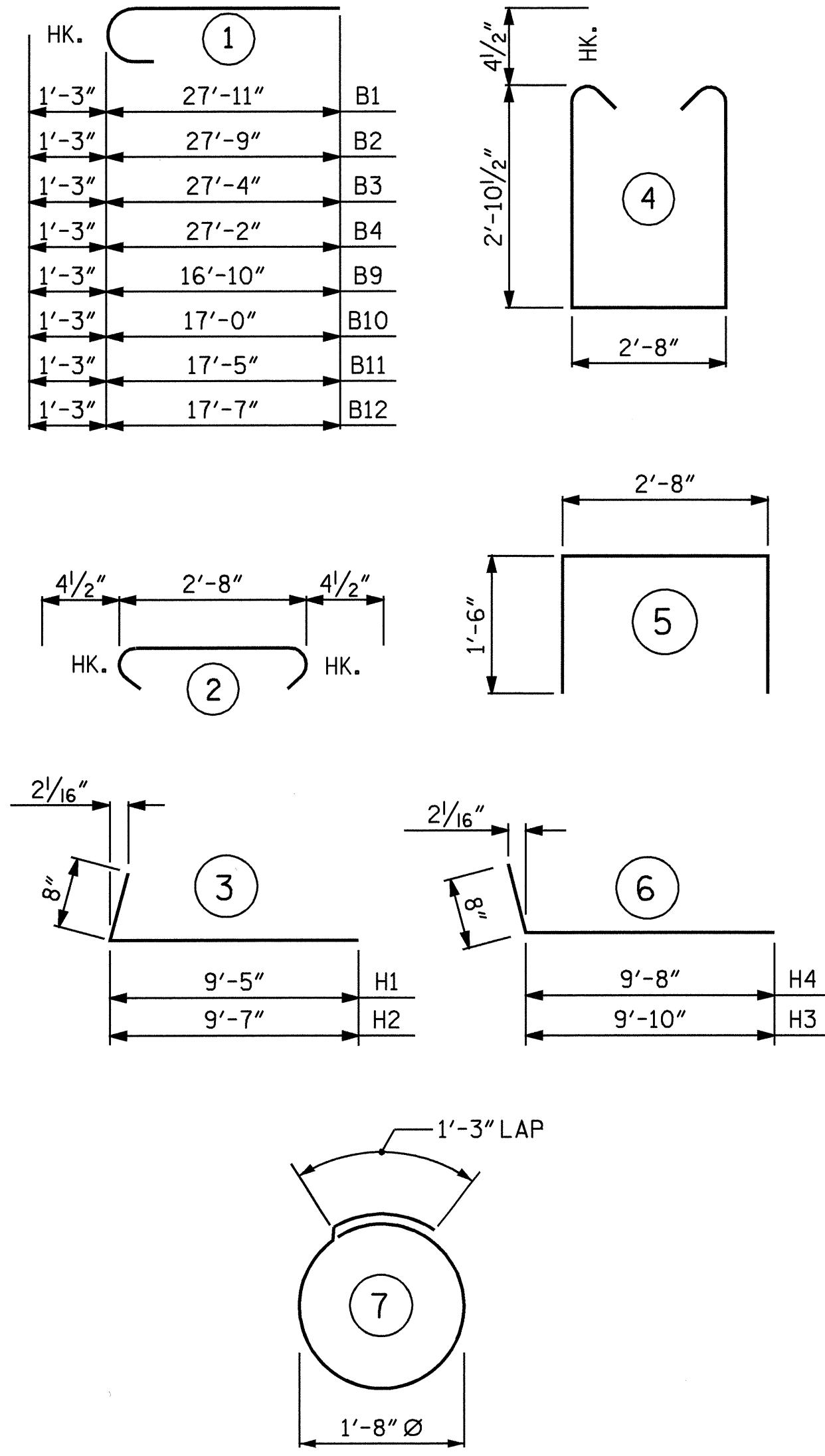


SECTION A-A
(STAGE I)



SECTION B-B
(STAGE II)

BAR TYPES



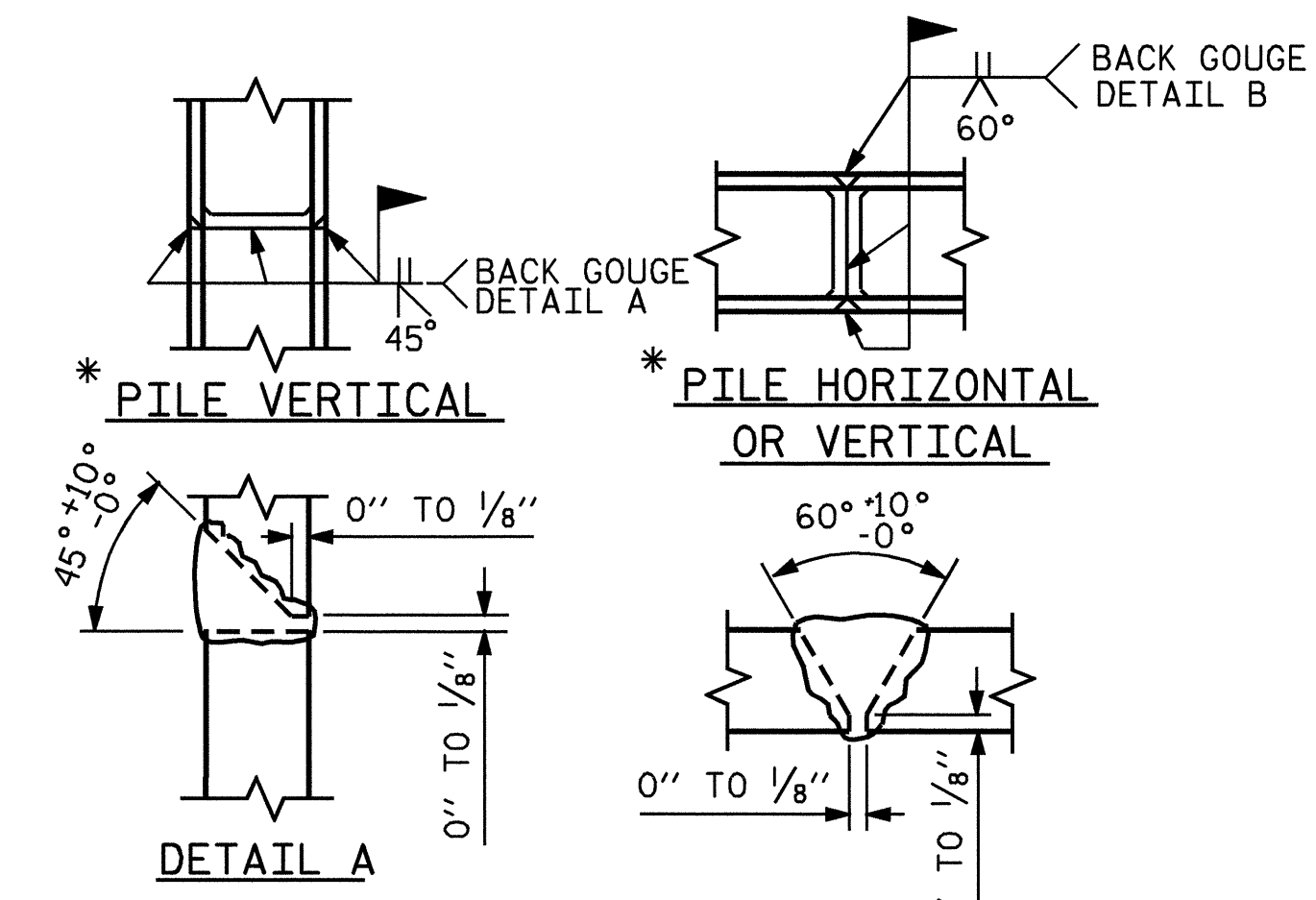
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

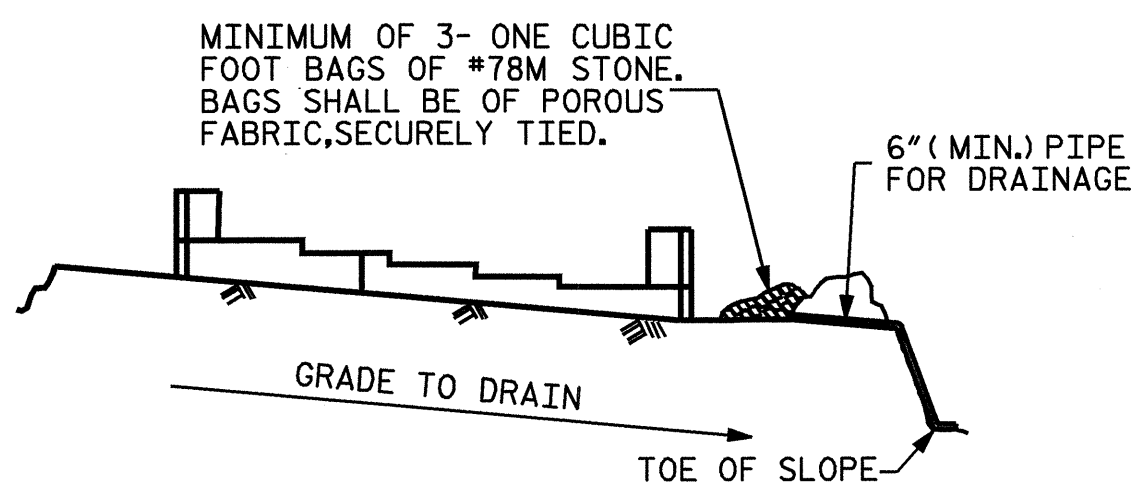
STAGE I					STAGE II						
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT		
B1	2	#9	1	29'-2"	198	B7	4	#4	STR	2'-8"	7
B2	2	#9	1	29'-0"	197	B9	2	#9	1	18'-1"	123
B3	2	#9	1	28'-7"	194	B10	2	#9	1	18'-3"	124
B4	2	#9	1	28'-5"	193	B11	2	#9	1	18'-8"	127
B5	2	#5	STR	28'-4"	59	B12	2	#9	1	18'-10"	128
B6	2	#5	STR	27'-8"	58	B13	2	#5	STR	17'-11"	37
B7	6	#4	STR	2'-8"	11	B14	2	#5	STR	18'-7"	39
B8	4	#4	STR	24'-9"	66	B15	4	#4	STR	10'-6"	28
						B16	4	#4	STR	7'-0"	19
						B17	4	#4	STR	17'-11"	48
H3	9	#4	6	10'-6"	63	H1	10	#4	3	10'-1"	67
H4	9	#4	6	10'-4"	62	H2	10	#4	3	10'-3"	68
K1	10	#4	STR	3'-5"	23						
S1	30	#4	4	9'-2"	184	K1	10	#4	STR	3'-5"	23
S2	30	#4	2	3'-5"	68						
S3	20	#4	7	6'-6"	87	S1	21	#4	4	9'-2"	129
						S2	21	#4	2	3'-5"	48
V1	34	#4	STR	4'-3"	97	S3	16	#4	7	6'-6"	69
V3	32	#4	STR	7'-6"	160						
						U1	12	#4	5	5'-8"	45
REINFORCING STEEL 1720 LBS.											
CLASS A CONCRETE											
POUR #1 (CAP & LOWER WING) 10.7 C.Y.											
POUR #2 (UPPER WING) 2.1 C.Y.											
TOTAL = 12.8 C.Y.											
CLASS A CONCRETE											
HP 12 X 53 STEEL PILES											
No. = 6 300 LIN. FT.											
REINFORCING STEEL 1364 LBS.											
TOTAL = 11.3 C.Y.											
CLASS A CONCRETE											
POUR #1 (CAP & LOWER WING) 9.1 C.Y.											
POUR #2 (UPPER WING) 2.2 C.Y.											
TOTAL = 11.3 C.Y.											
HP 12 X 53 STEEL PILES											
No. = 3 150 LIN. FT.											

TOTAL BILL OF MATERIAL

	REINFORCING STEEL (LBS.)	CLASS A CONCRETE (CU. YDS.)	HP 12 X 53 STEEL PILES (LIN. FT.)
STAGE I	1720	12.8	300
STAGE II	1364	11.3	150
TOTAL	3084	24.1	450



PILE SPLICE DETAIL



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

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

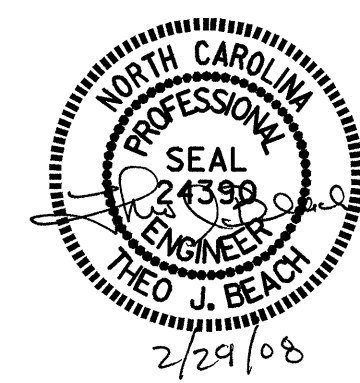
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

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

TEMPORARY DRAINAGE AT END BENT

PROJECT NO. B-4675
WILKES COUNTY
STATION: 12+94.40 -L-

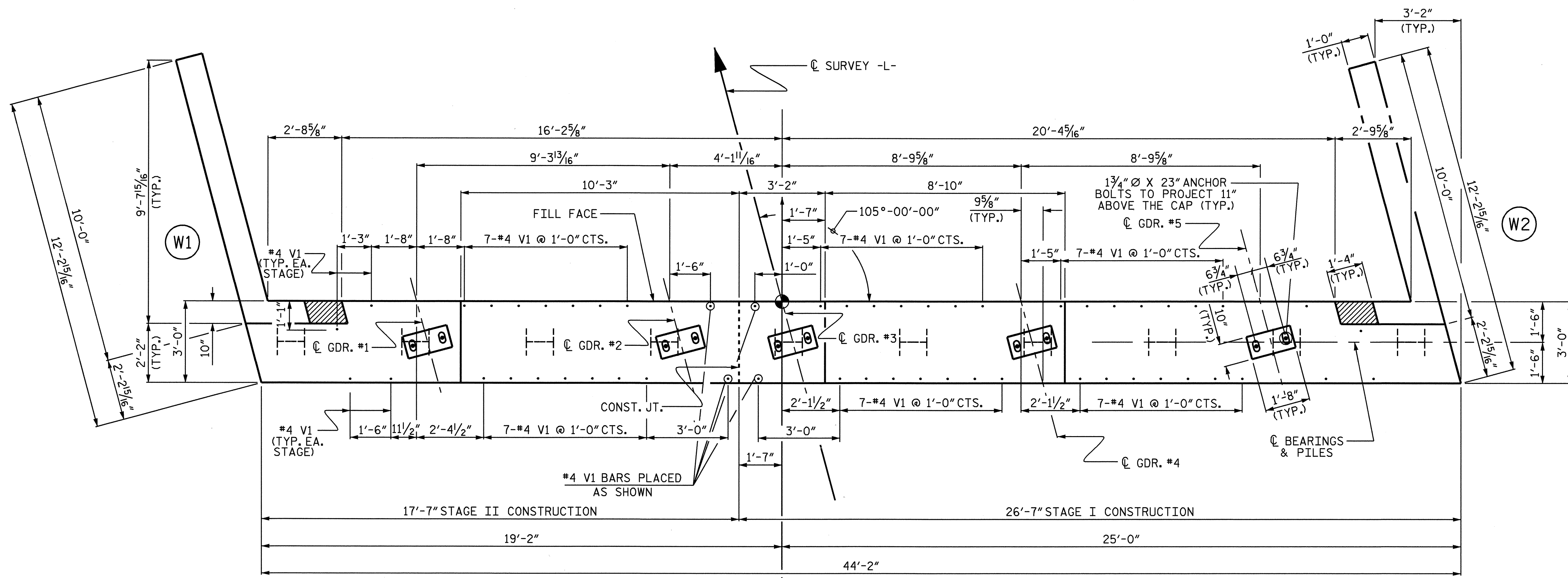
SHEET 3 OF 3
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT No. 1
(STAGE I & STAGE II)



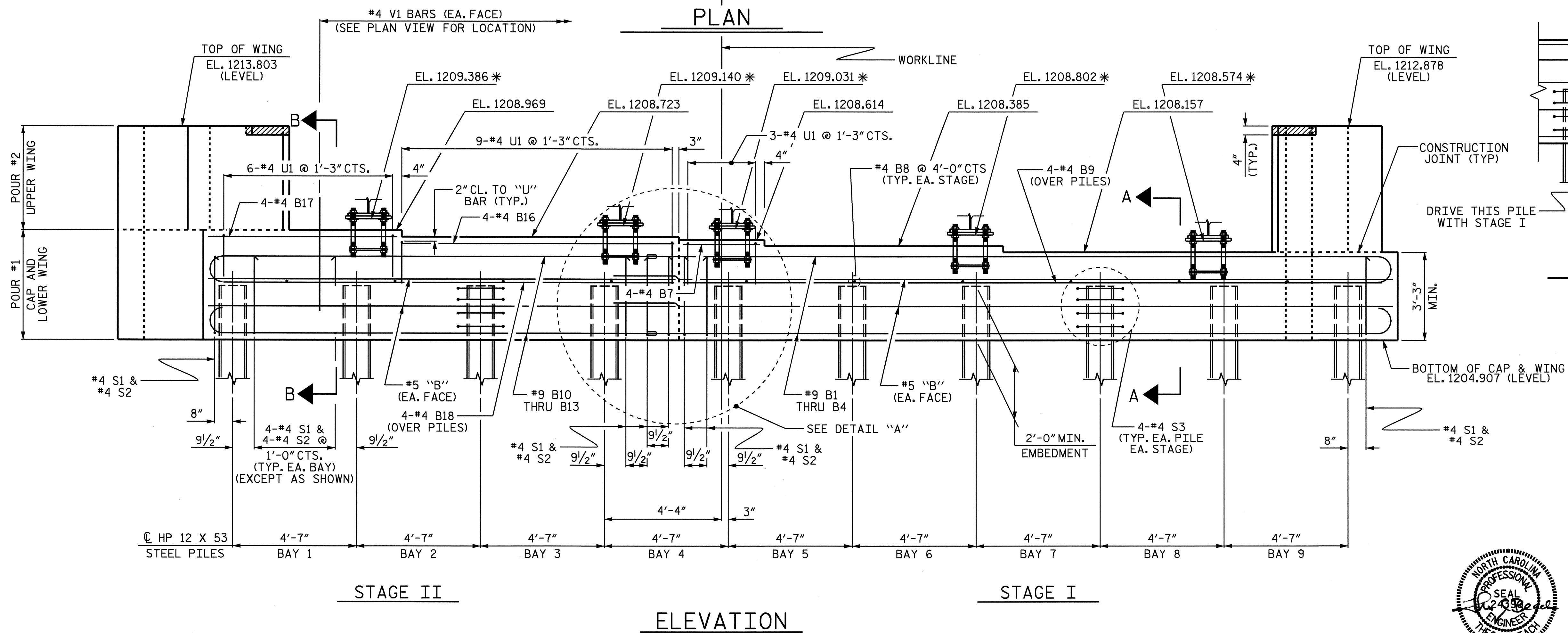
REVISIONS			SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS 30

DRAWN BY: T. BANKOVICH DATE: 1/08
CHECKED BY: T. J. BEACH DATE: 1/08



STAGE II PLAN STAGE I



STAGE II ELEVATION STAGE I

NOTES:

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

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" 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 CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LENGTHS OF THE #9 "B" BARS AT THE STAGED CONSTRUCTION JOINT MAY NEED TO BE ADJUSTED DUE TO THE TYPE OF MECHANICAL BUTT SPLICE CHOSEN BY THE CONTRACTOR. NO ADDITIONAL PAYMENT WILL BE MADE FOR ANY ADJUSTMENTS REQUIRED.

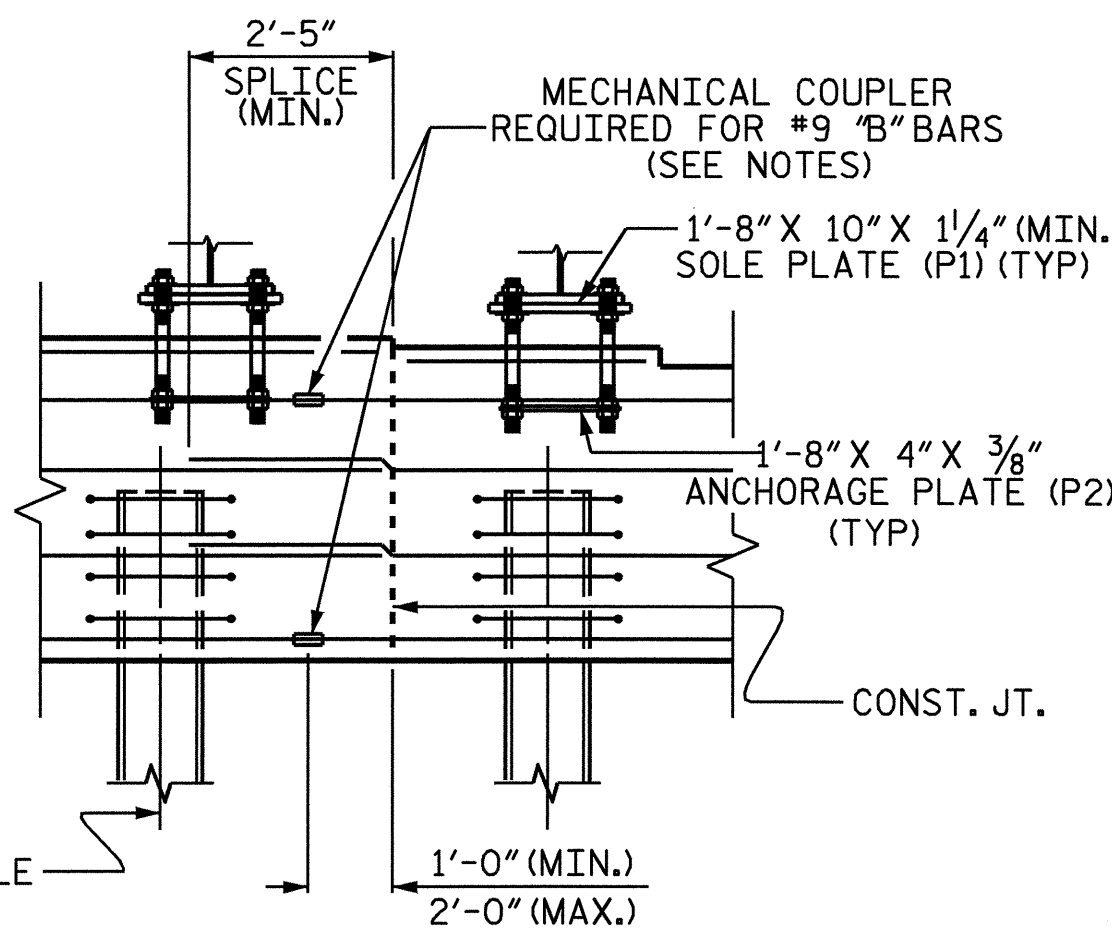
MECHANICAL COUPLERS SHALL BE USED TO JOIN THE #9 "B" BARS IN STAGE I WITH THE #9 "B" BARS IN STAGE II. THE LOCATION OF THE COUPLERS SHALL BE STAGGERED ON ALTERNATING BARS BY 1 FOOT AND THE BARS SHALL BE CUT ACCORDINGLY TO ALLOW A MINIMUM OF 1'-0" AND A MAXIMUM OF 2'-0" EXTENSION INTO STAGE II CONSTRUCTION.

FOR MECHANICAL COUPLERS, SEE MECHANICAL BUTT SPLICES FOR REINFORCING STEEL IN STANDARD SPECIFICATIONS.

THE #5 "B" BARS IN STAGE I SHALL EXTEND 2'-5" PAST THE CONSTRUCTION JOINT.

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

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



DETAIL "A"

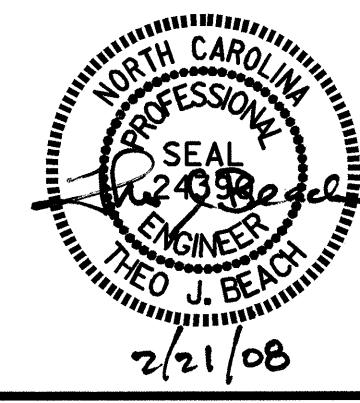
PROJECT NO. B-4675
 WILKES COUNTY
 STATION: 12+94.40 -L-

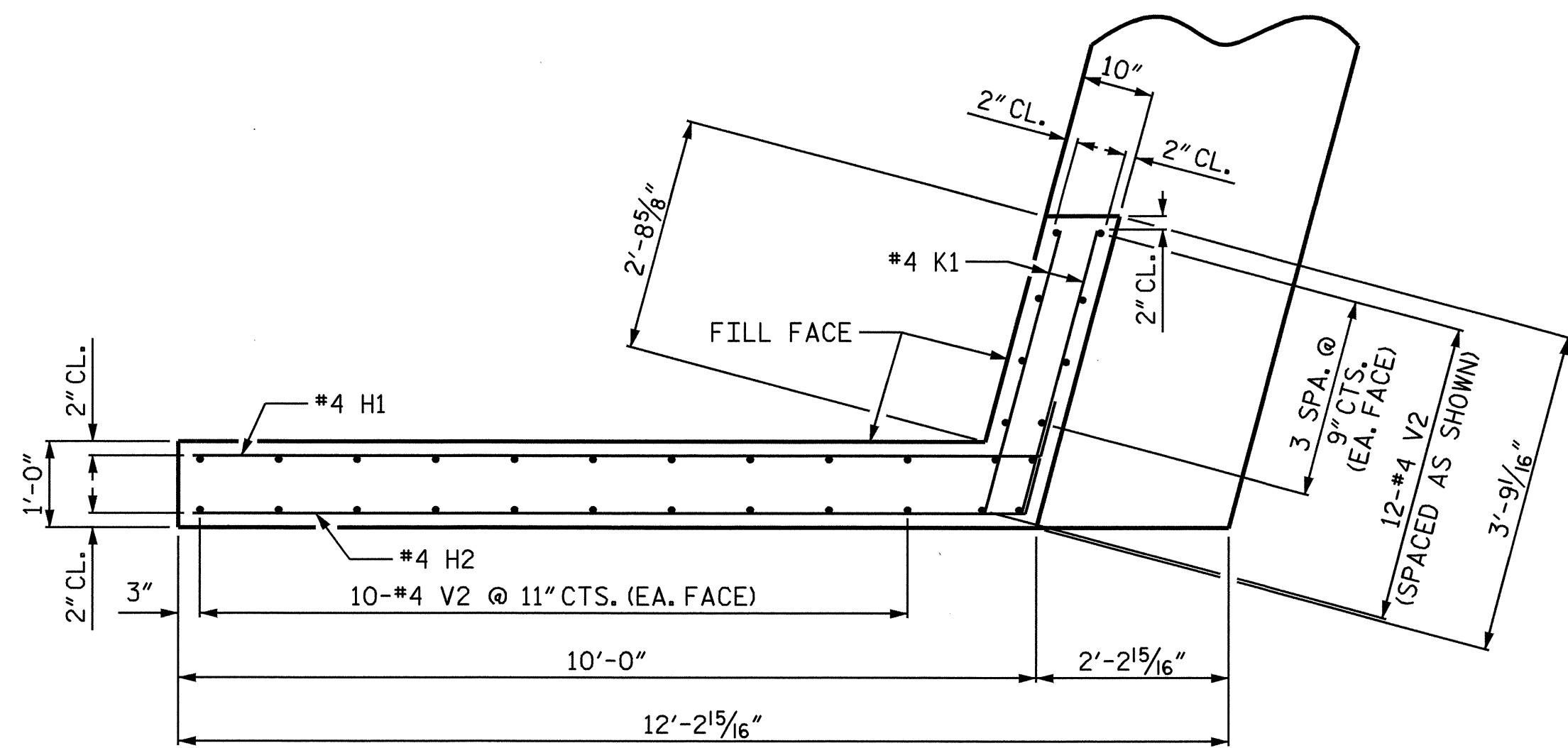
SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT No. 2
 (STAGE I & STAGE II)

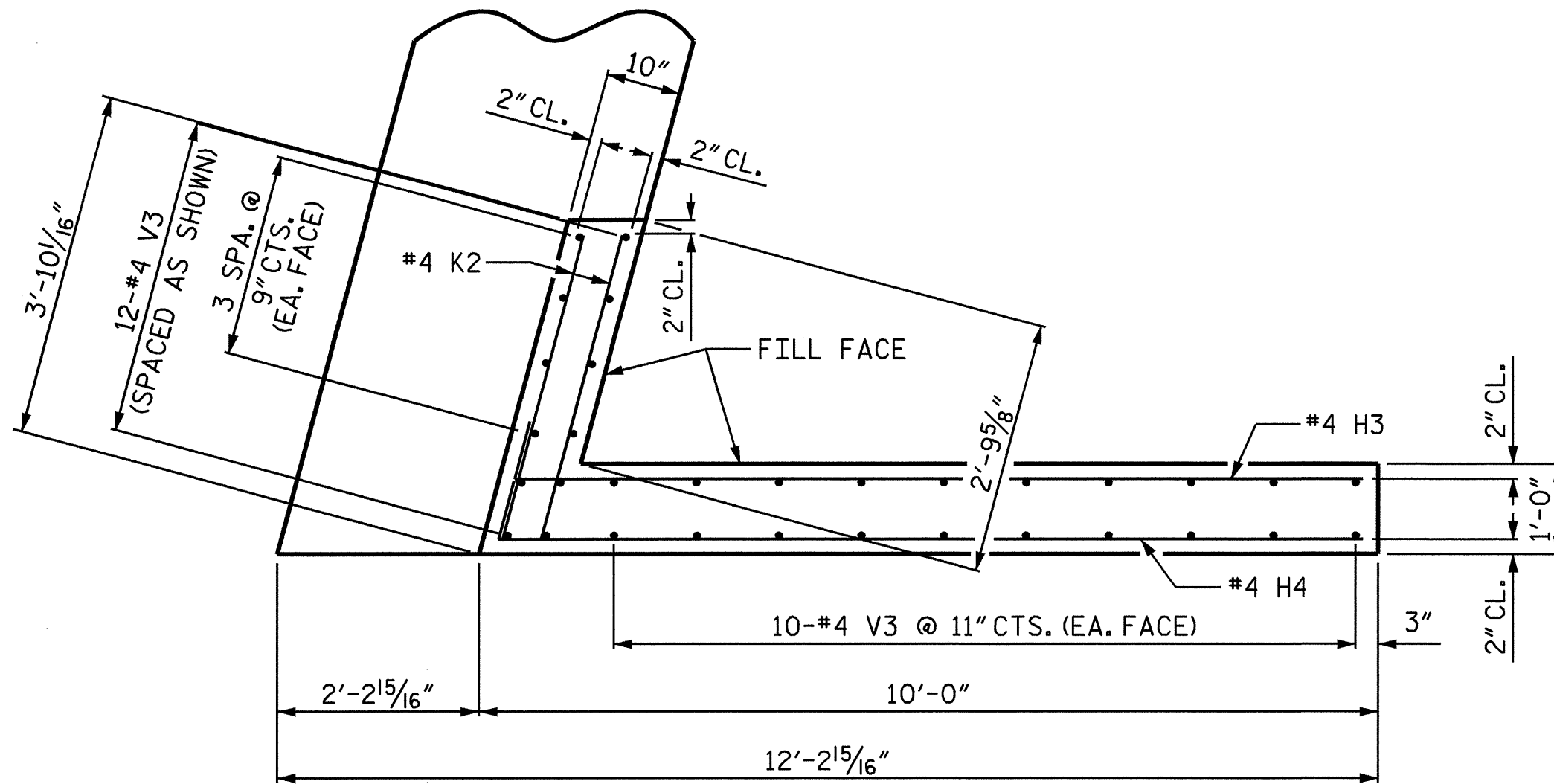
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24	
1			3			TOTAL SHEETS 30	
2			4				

DRAWN BY: T. BANKOVICH DATE: 1/08
 CHECKED BY: T. J. BEACH DATE: 1/08

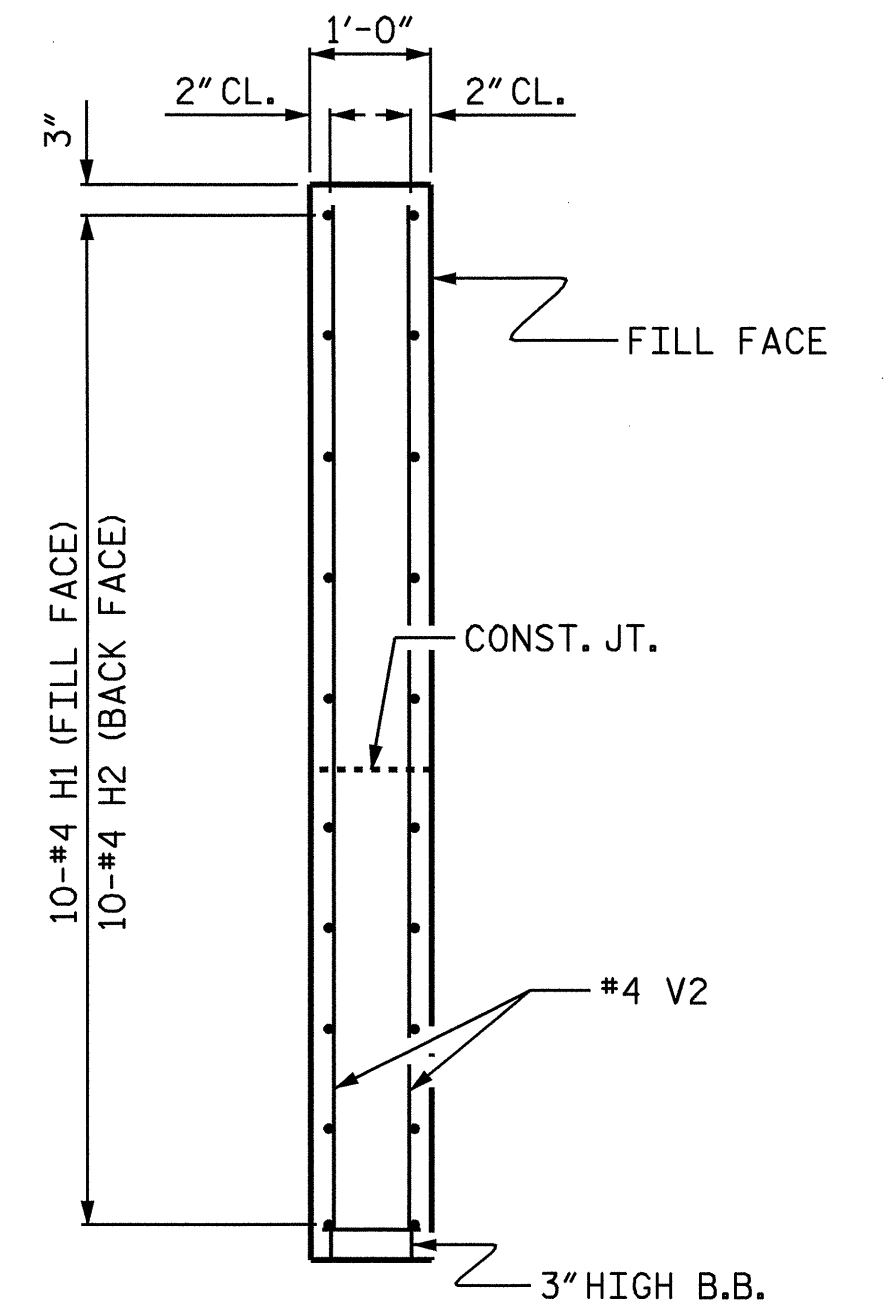




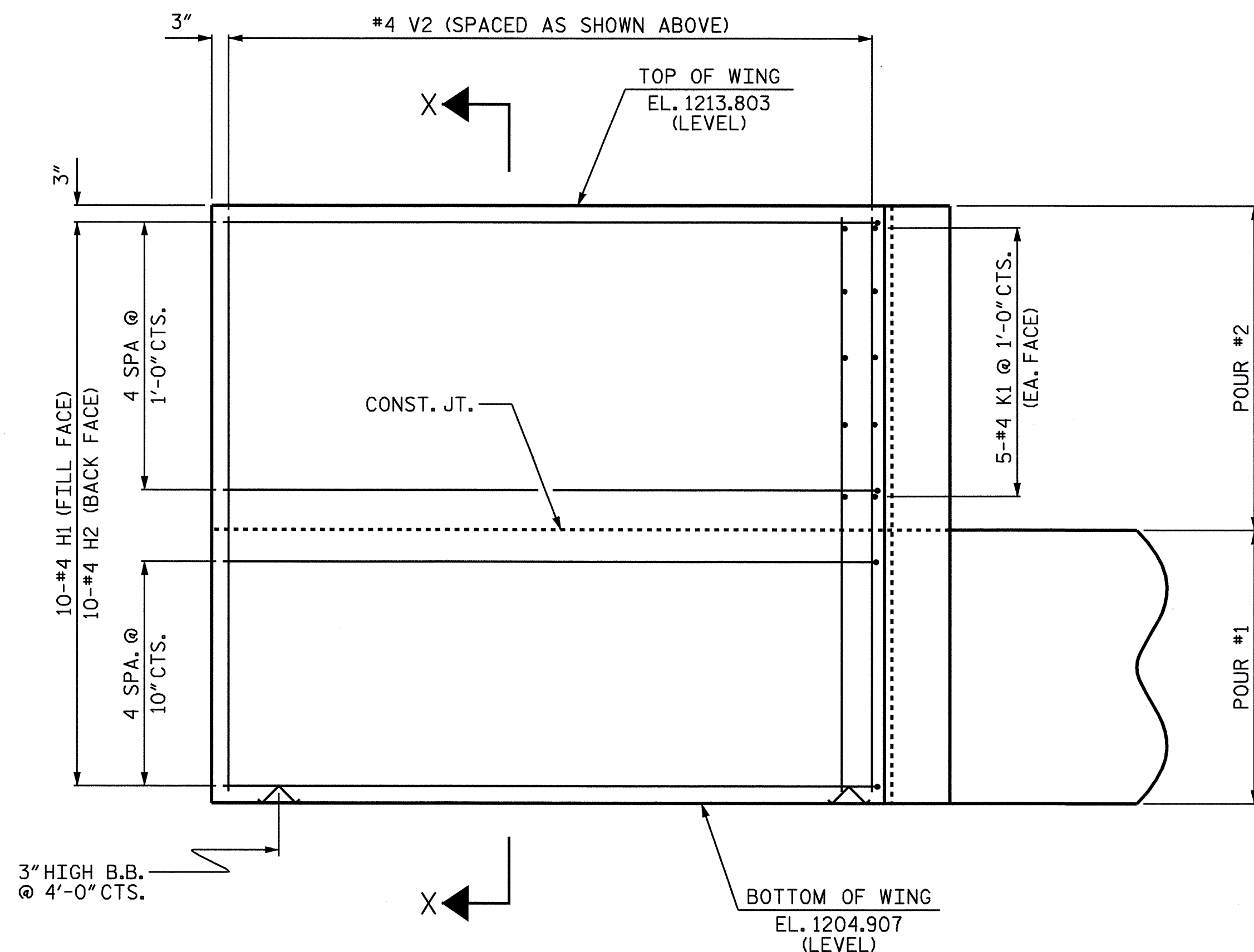
PLAN OF WING (W1)



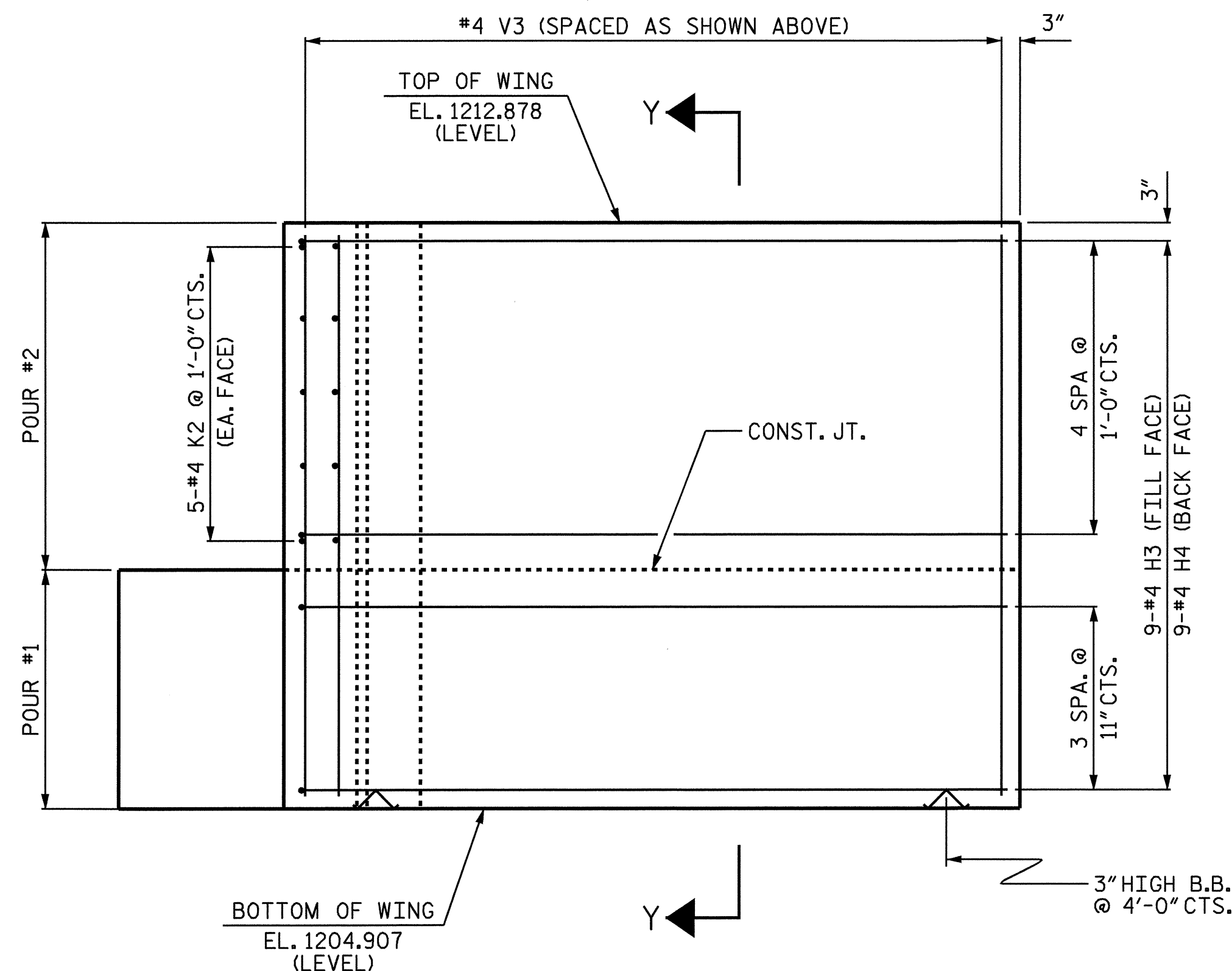
PLAN OF WING (W2)



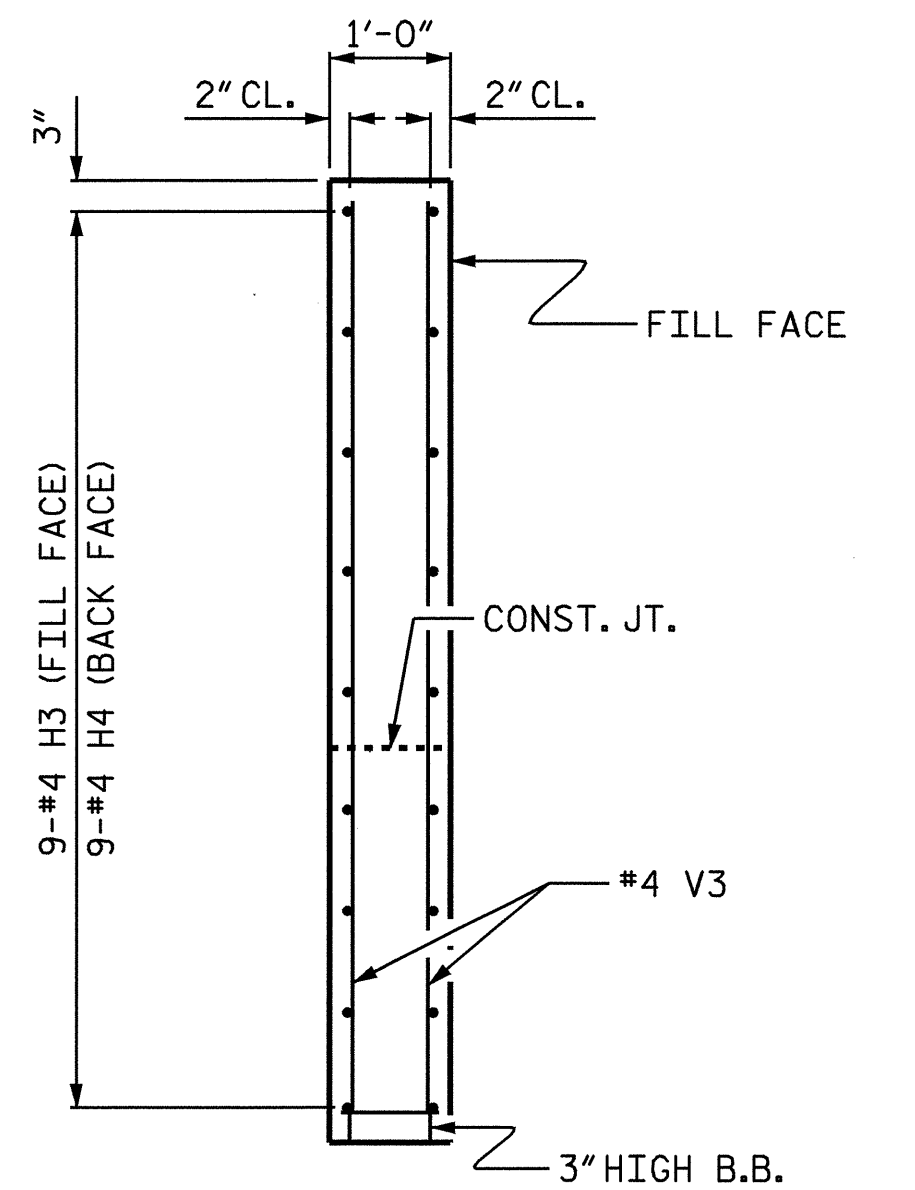
SECTION X-X



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION Y-Y

PROJECT NO. B-4675
 WILKES COUNTY
 STATION: 12+94.40 -L-

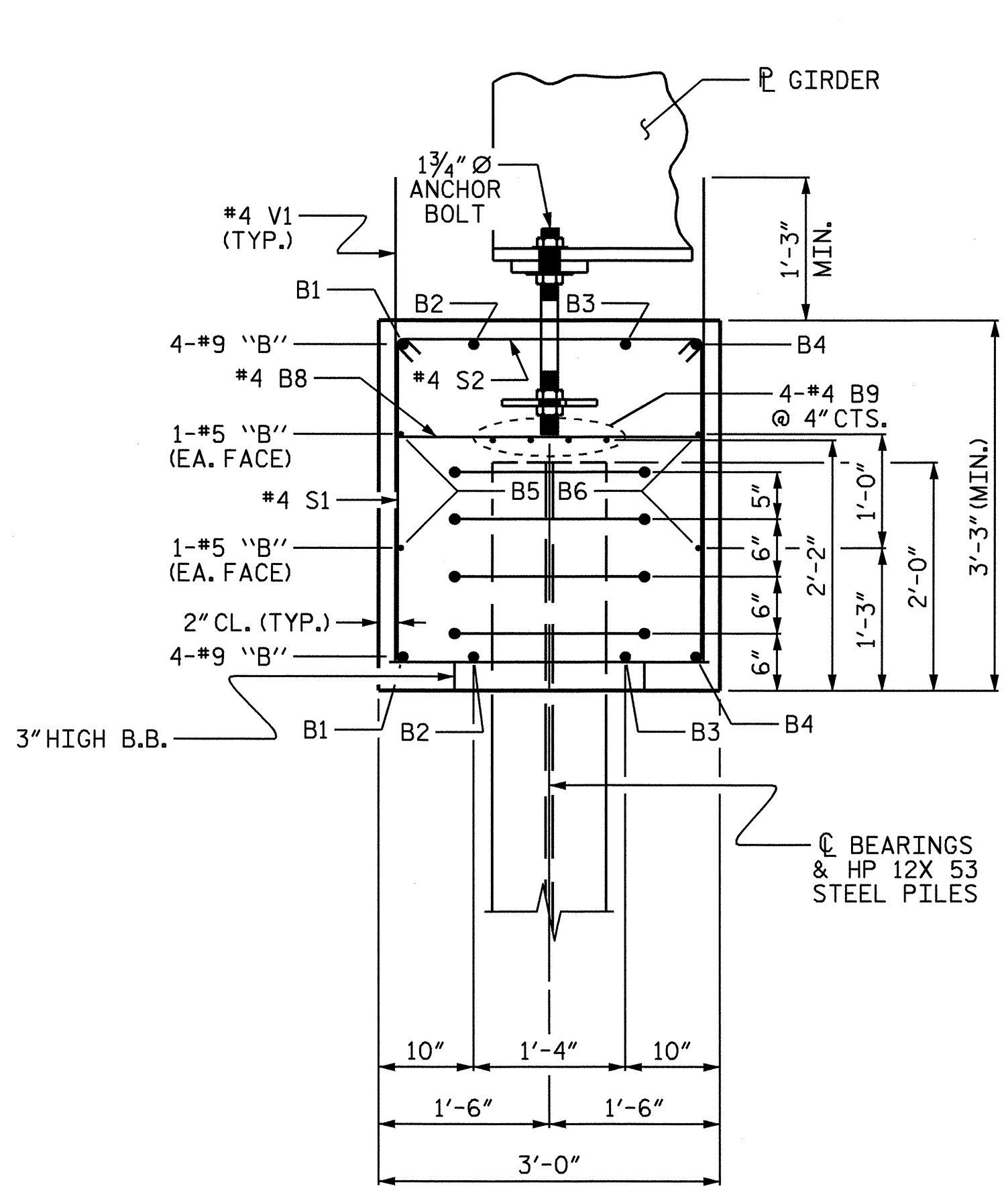
SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT No. 2
 (STAGE I & STAGE II)

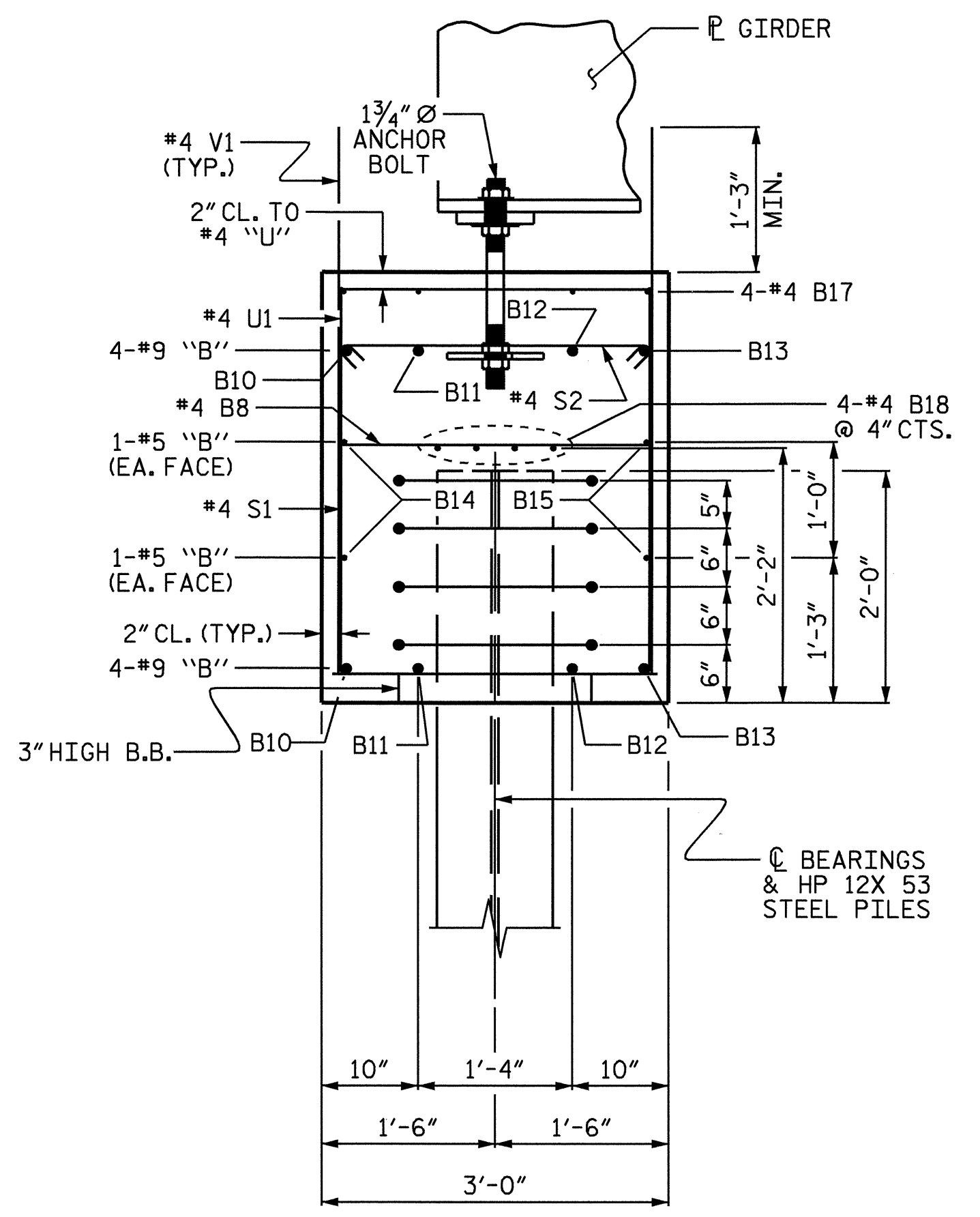
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			30



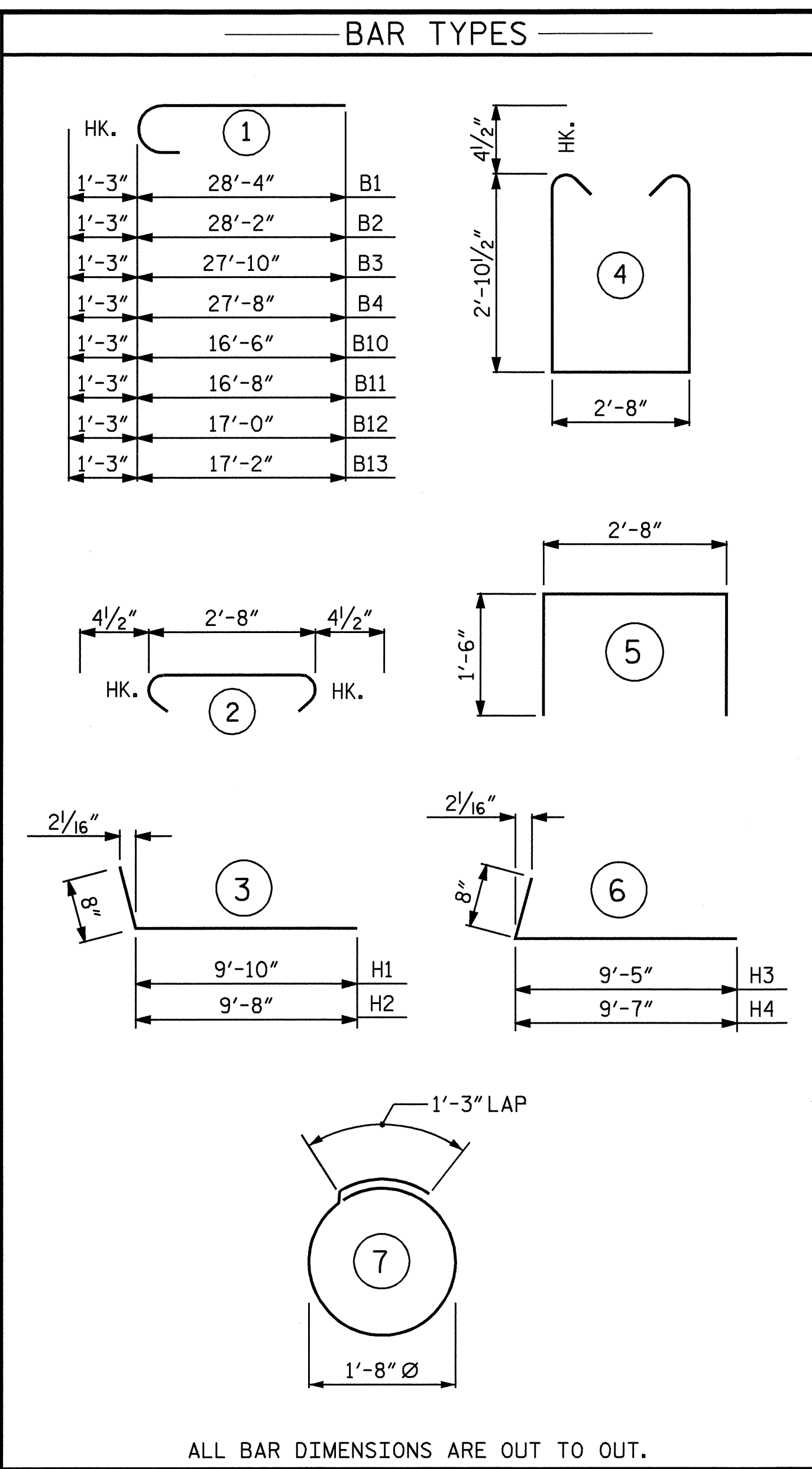
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 CHECKED BY: T. J. BEACH DATE: 1/08



SECTION A-A
(STAGE I)



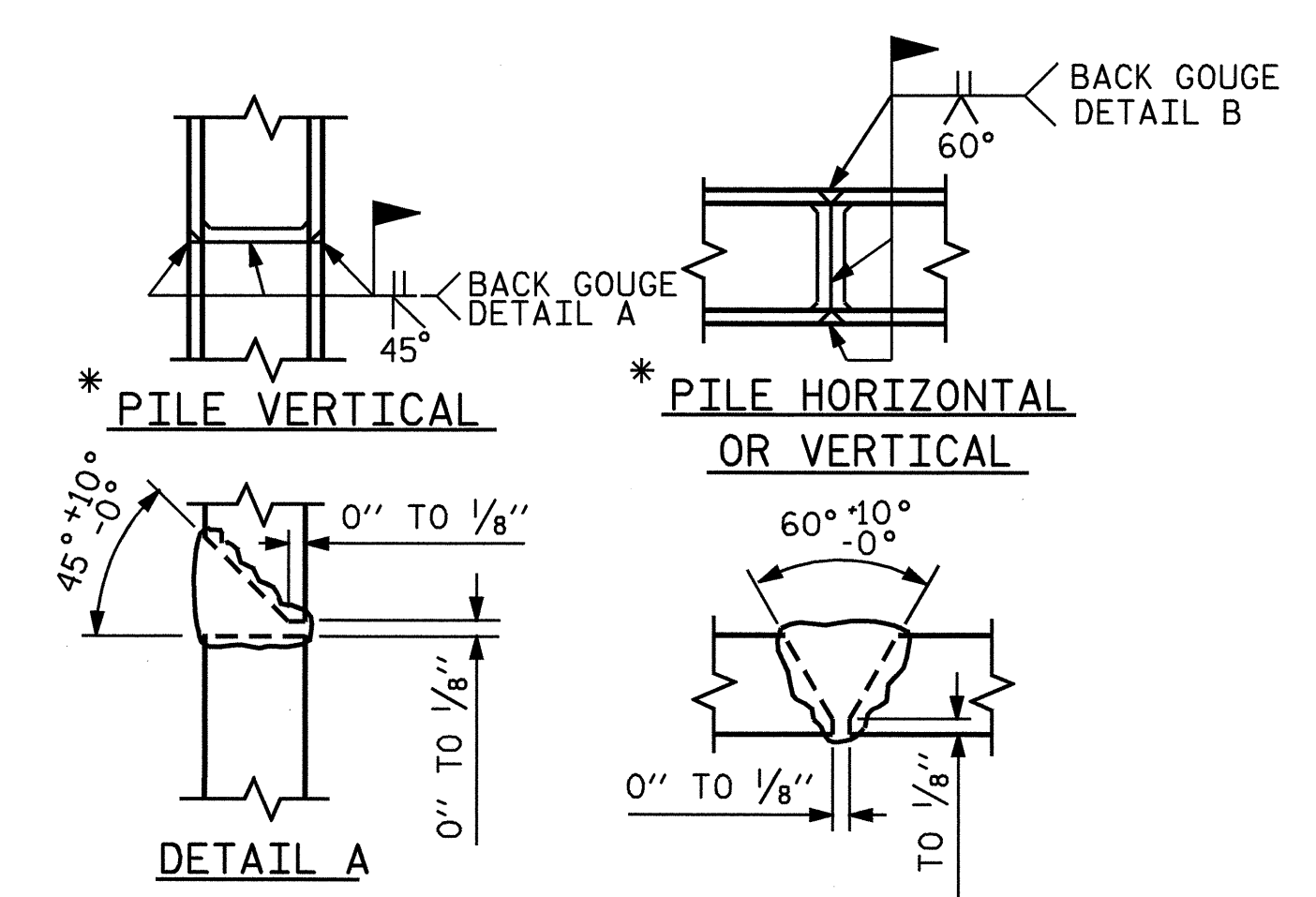
SECTION B-B
(STAGE II)



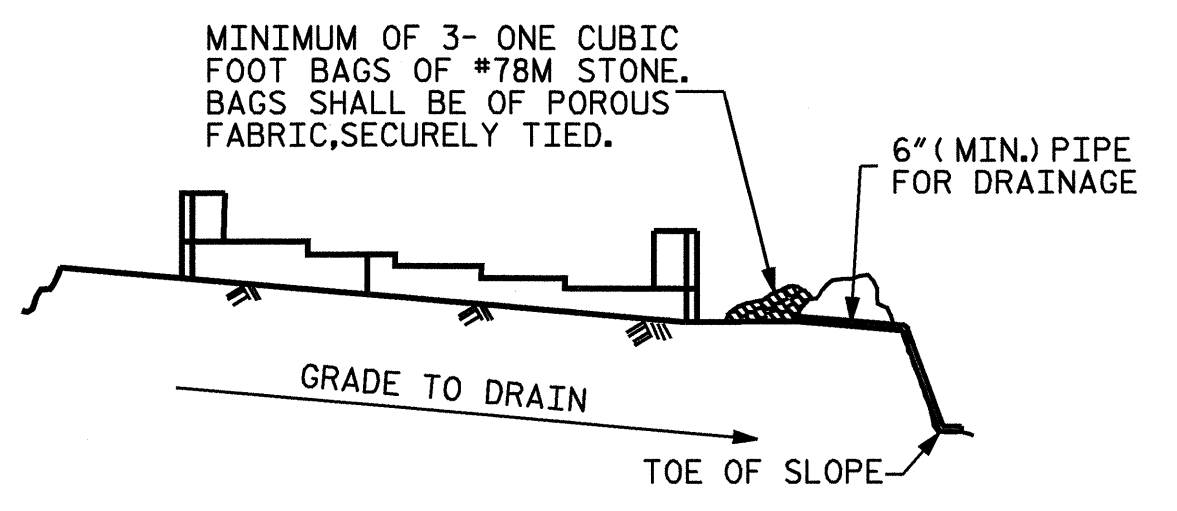
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL											
STAGE I						STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	2	#9	1	29'-7"	201	B8	4	#4	STR	2'-8"	7
B2	2	#9	1	29'-5"	200	B10	2	#9	1	17'-9"	121
B3	2	#9	1	29'-1"	198	B11	2	#9	1	17'-11"	122
B4	2	#9	1	28'-11"	197	B12	2	#9	1	18'-3"	124
B5	2	#5	STR	28'-9"	60	B13	2	#9	1	18'-5"	125
B6	2	#5	STR	28'-0"	58	B14	2	#5	STR	17'-5"	36
B7	4	#4	STR	2'-10"	8	B15	2	#5	STR	18'-2"	38
B8	6	#4	STR	2'-8"	11	B16	4	#4	STR	10'-1"	27
B9	4	#4	STR	25'-10"	69	B17	4	#4	STR	7'-0"	19
						B18	4	#4	STR	17'-4"	46
H3	9	#4	6	10'-1"	61						
H4	9	#4	6	10'-3"	62	H1	10	#4	3	10'-6"	70
						H2	10	#4	3	10'-4"	69
K2	10	#4	STR	3'-6"	23						
						K1	10	#4	STR	3'-5"	23
S1	23	#4	4	9'-2"	141						
S2	23	#4	2	3'-5"	52	S1	16	#4	4	9'-2"	98
S3	24	#4	7	6'-6"	104	S2	16	#4	2	3'-5"	37
						S3	16	#4	7	6'-6"	69
U1	3	#4	5	5'-8"	11						
						U1	15	#4	5	5'-8"	57
V1	34	#4	STR	4'-3"	97						
V3	32	#4	STR	7'-6"	160	V1	20	#4	STR	4'-3"	57
						V2	32	#4	STR	8'-6"	182
REINFORCING STEEL 1713 LBS.					REINFORCING STEEL 1327 LBS.						
CLASS A CONCRETE						REINFORCING STEEL 1327 LBS.					
POUR #1 (CAP & LOWER WING) 10.9 C.Y.						CLASS A CONCRETE					
POUR #2 (UPPER WING) 2.1 C.Y.						POUR #1 (CAP & LOWER WING) 9.2 C.Y.					
TOTAL = 13.0 C.Y.						POUR #2 (UPPER WING) 2.2 C.Y.					
TOTAL = 13.0 C.Y.						TOTAL = 11.4 C.Y.					
HP 12 X 53 STEEL PILES						HP 12 X 53 STEEL PILES					
No. = 7 350 LIN. FT.						No. = 3 150 LIN. FT.					

TOTAL BILL OF MATERIAL			
	REINFORCING STEEL (LBS.)	CLASS A CONCRETE (CU. YDS.)	HP 12 X 53 STEEL PILES (LIN. FT.)
STAGE I	1713	13.0	350
STAGE II	1327	11.4	150
TOTAL	3040	24.4	500



PILE SPLICE DETAIL



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

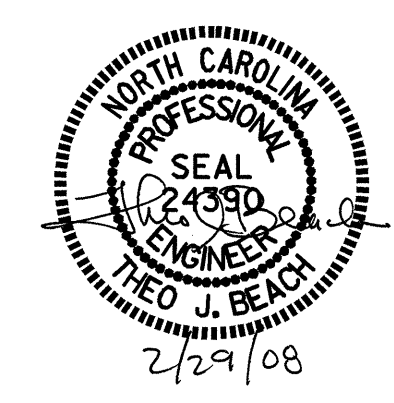
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

DRAWN BY: T. BANKOVICH DATE: 1/08
CHECKED BY: T. J. BEACH DATE: 1/08

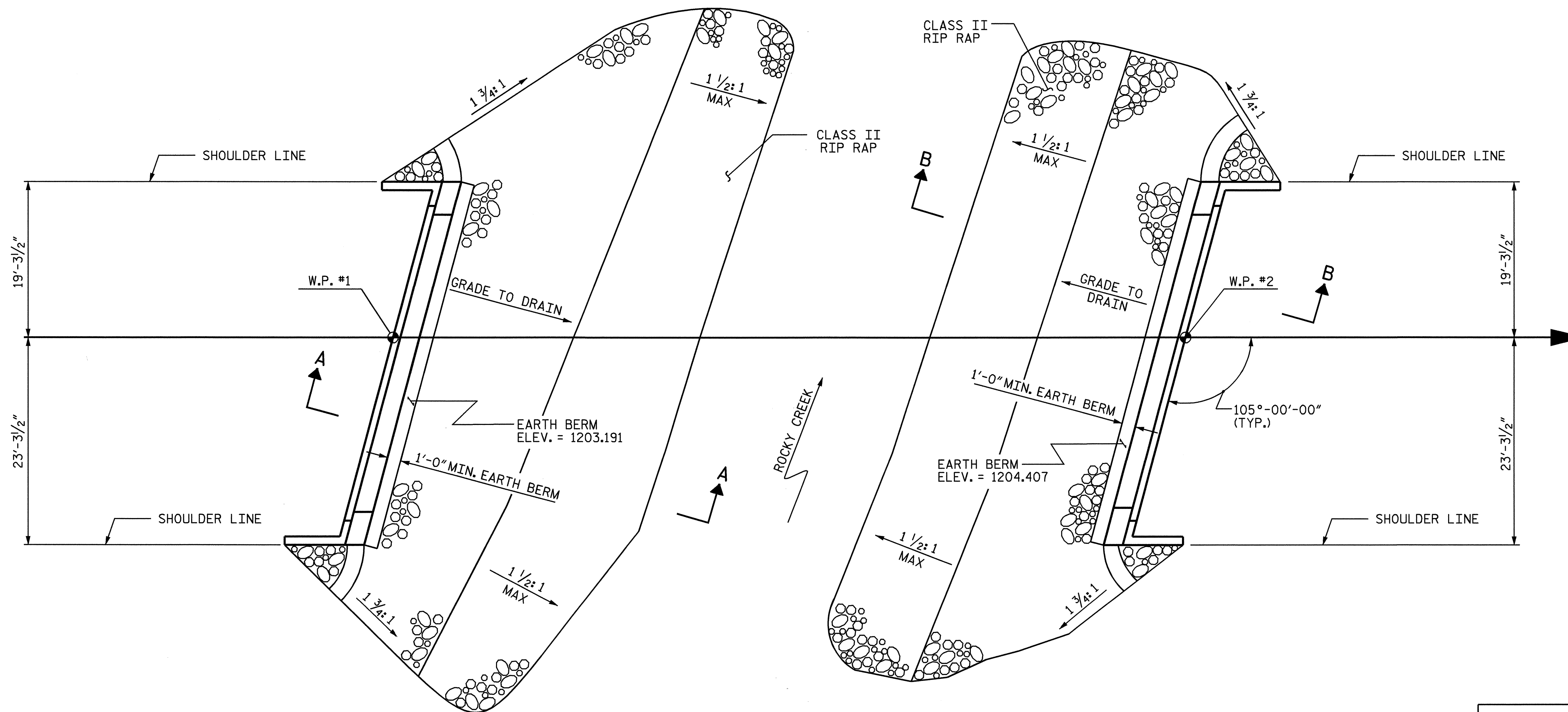


PROJECT NO. B-4675
WILKES COUNTY
STATION: 12+94.40 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE					
END BENT No. 2 (STAGE I & STAGE II)					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-26
TOTAL SHEETS 30

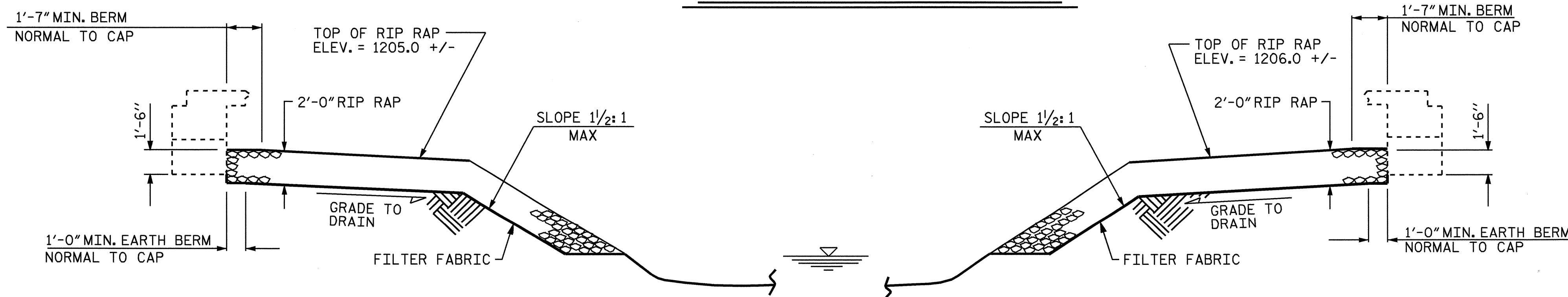


END BENT No. 1

END BENT No. 2

PLAN OF RIP RAP

ESTIMATED QUANTITIES		
BRIDGE @ STA. 12+94.40 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	225	250
END BENT 2	210	234



SECTION A-A

SECTION B-B

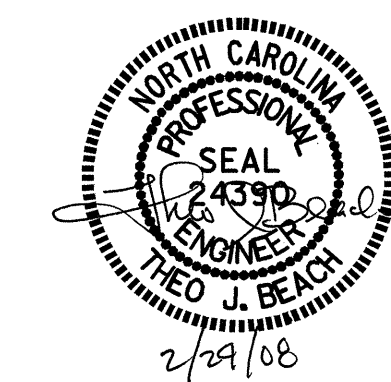
SECTION
BERM RIP RAPPED

PROJECT NO. B-4675
WILKES COUNTY
 STATION: 12+94.40 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 — RIP RAP DETAILS —

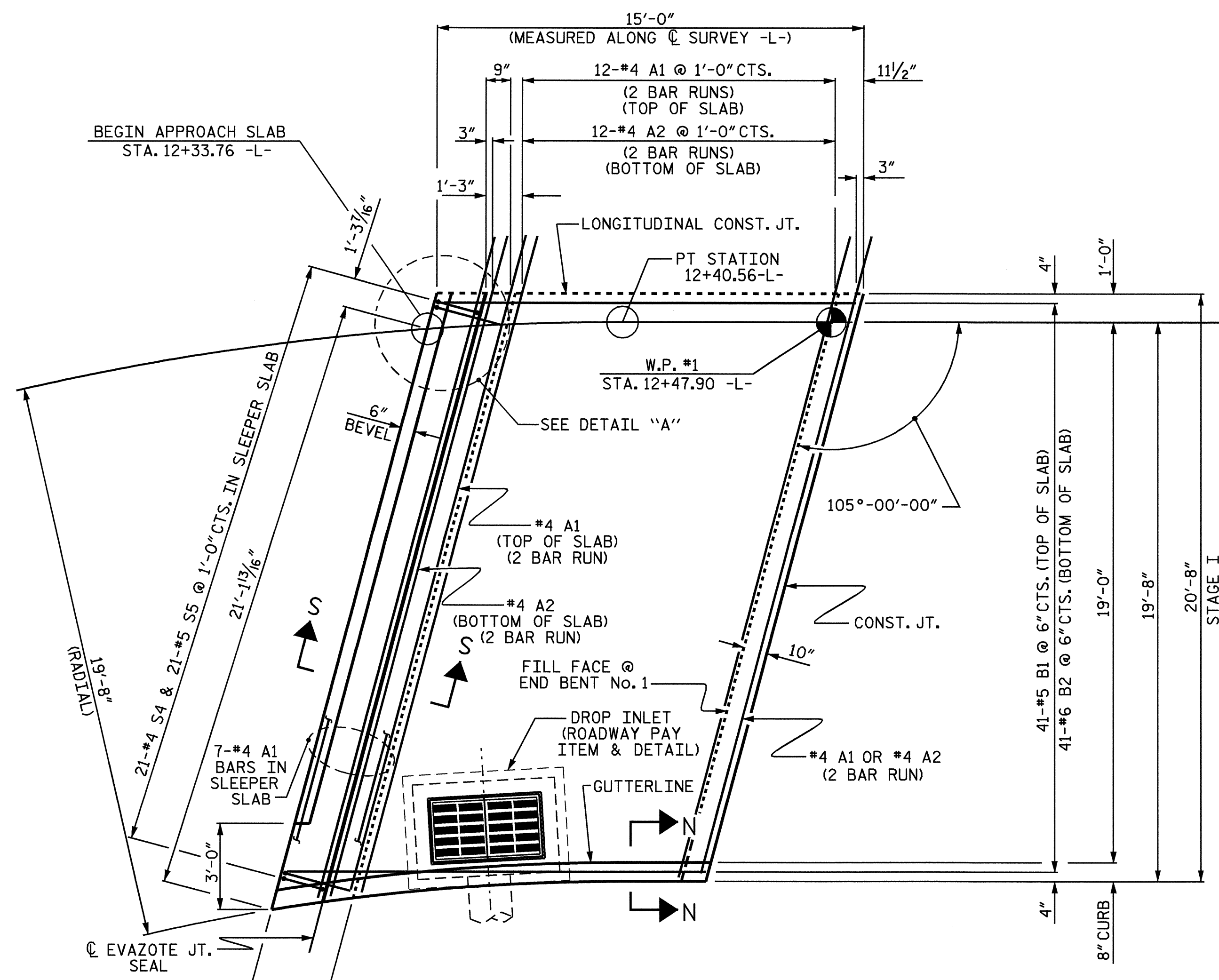
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			



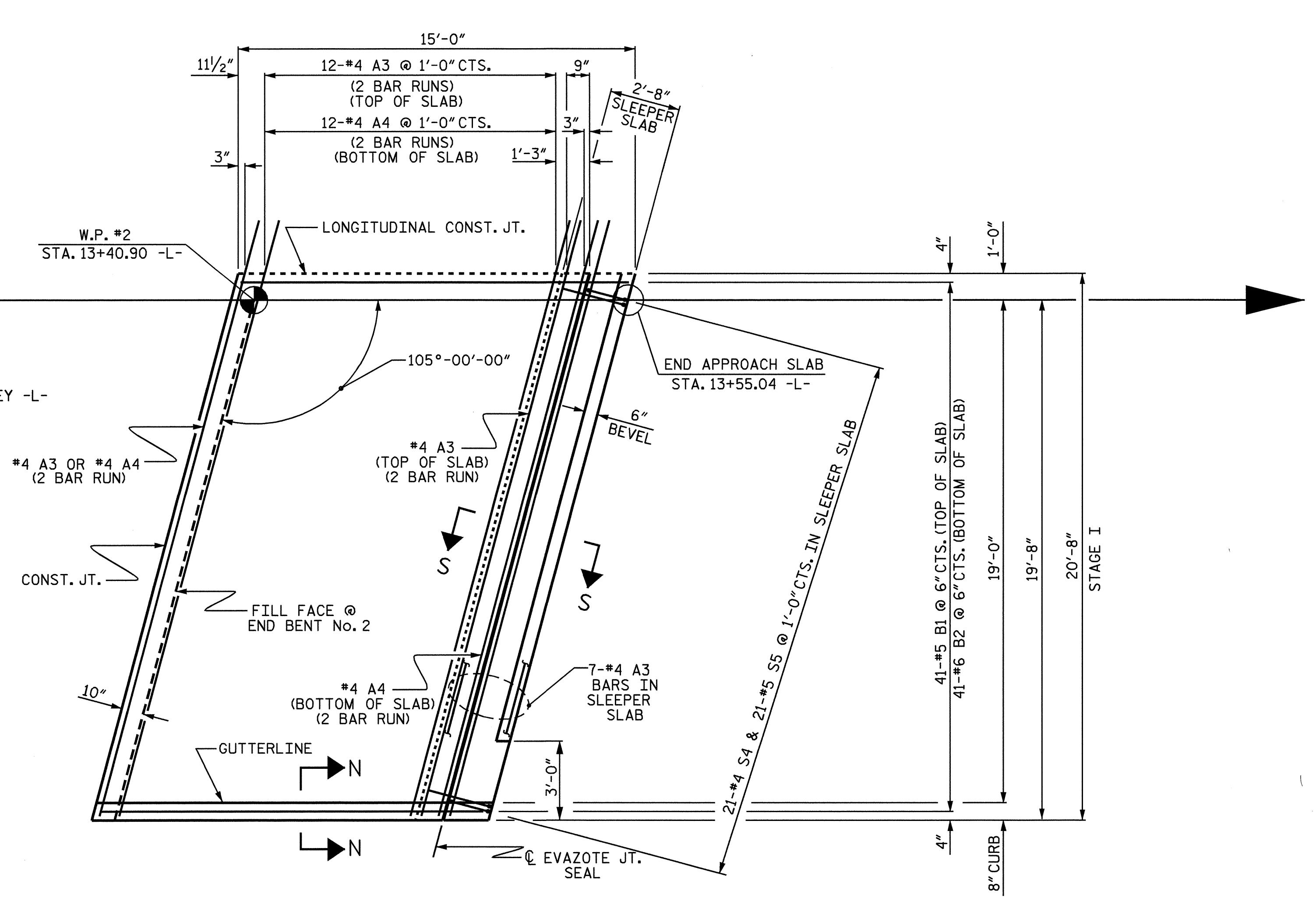
ASSEMBLED BY : M.L. BROWN DATE : 11/07
 CHECKED BY : T.J. BEACH DATE : 12/07
 DRAWN BY : REK 1/84
 CHECKED BY : RDU 1/84

REV. 8/16/99 RWW/LES
 REV. 10/17/00 RWW/LES
 REV. 5/1/06 TLA/GM

28-FEB-2008 16:30
 I:\structures\miscellaneous drawings\b-4675.sd.rr.dgn
 jbankovitch



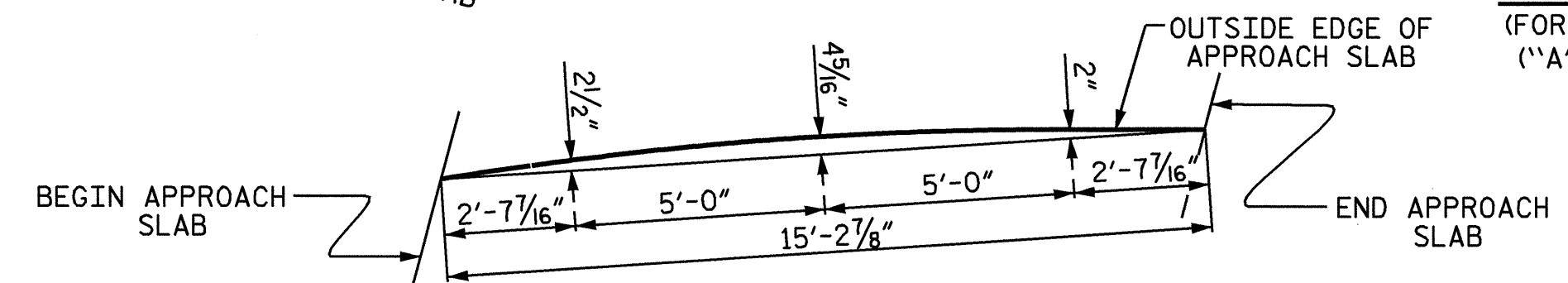
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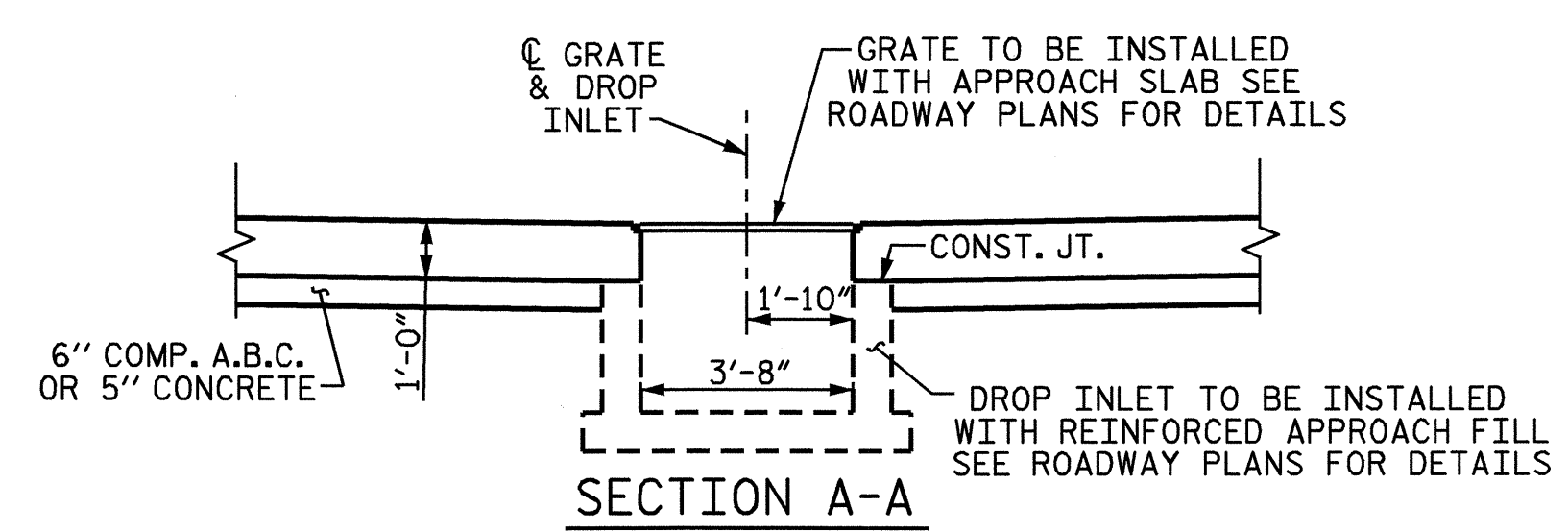
PLAN @ END BENT NO. 2

PLAN OF APPROACH SLABS-STAGE I

(FOR REINFORCING STEEL IN SLEEPER SLAB, SEE SECTION S-S SHEET 2 OF 3)
 ("A" BARS IN STAGE I SHALL EXTEND A MINIMUM OF 2'-0" INTO STAGE II)

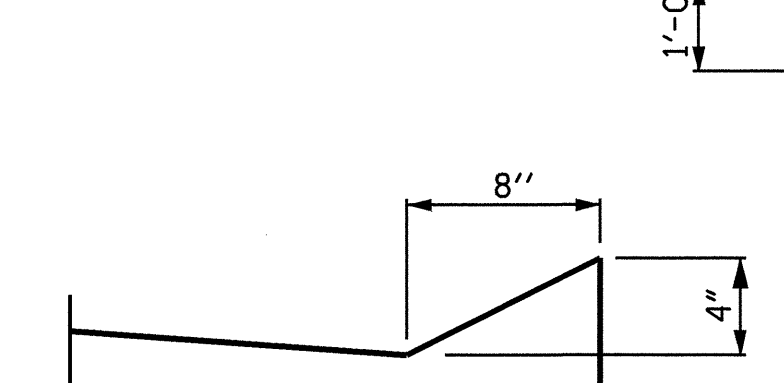


ARC OFFSET AT END BENT NO. 1
(RIGHT SIDE)

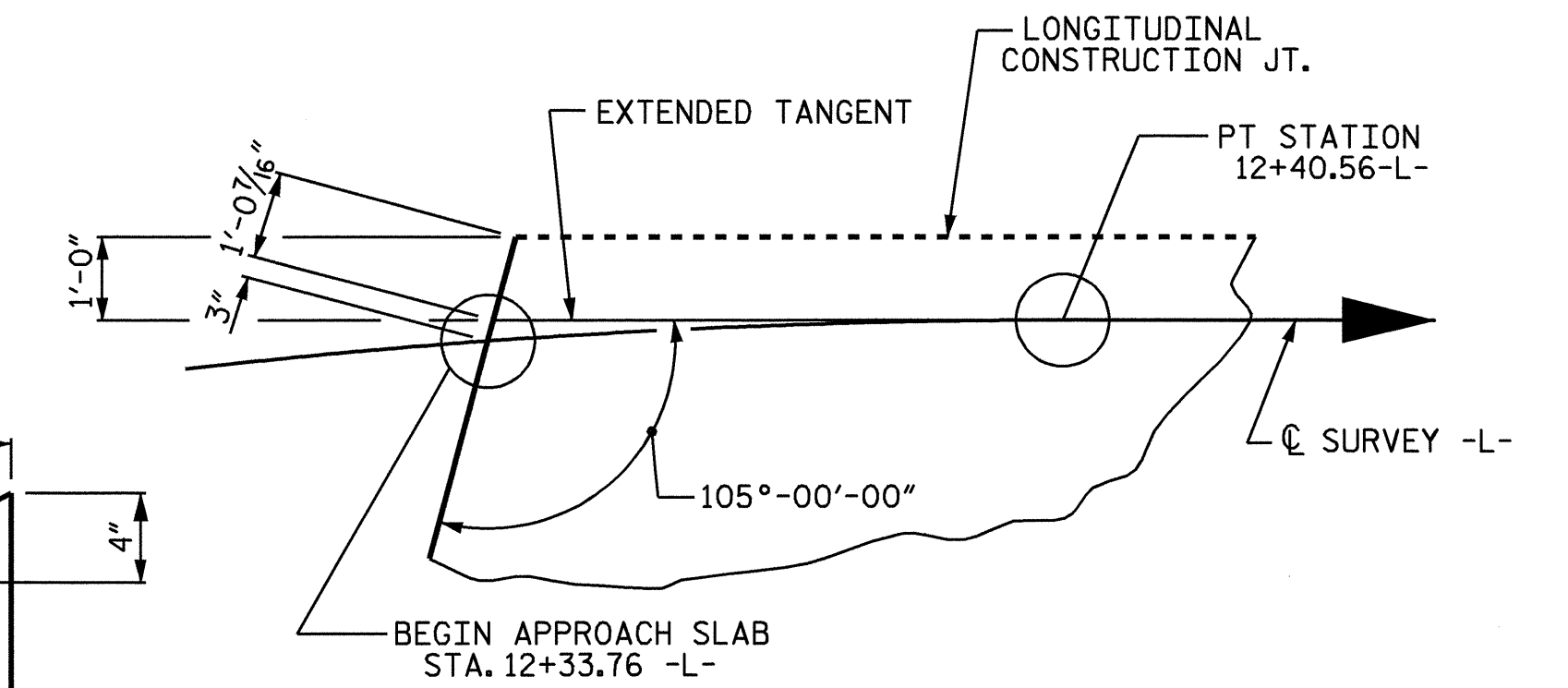


SECTION A-A

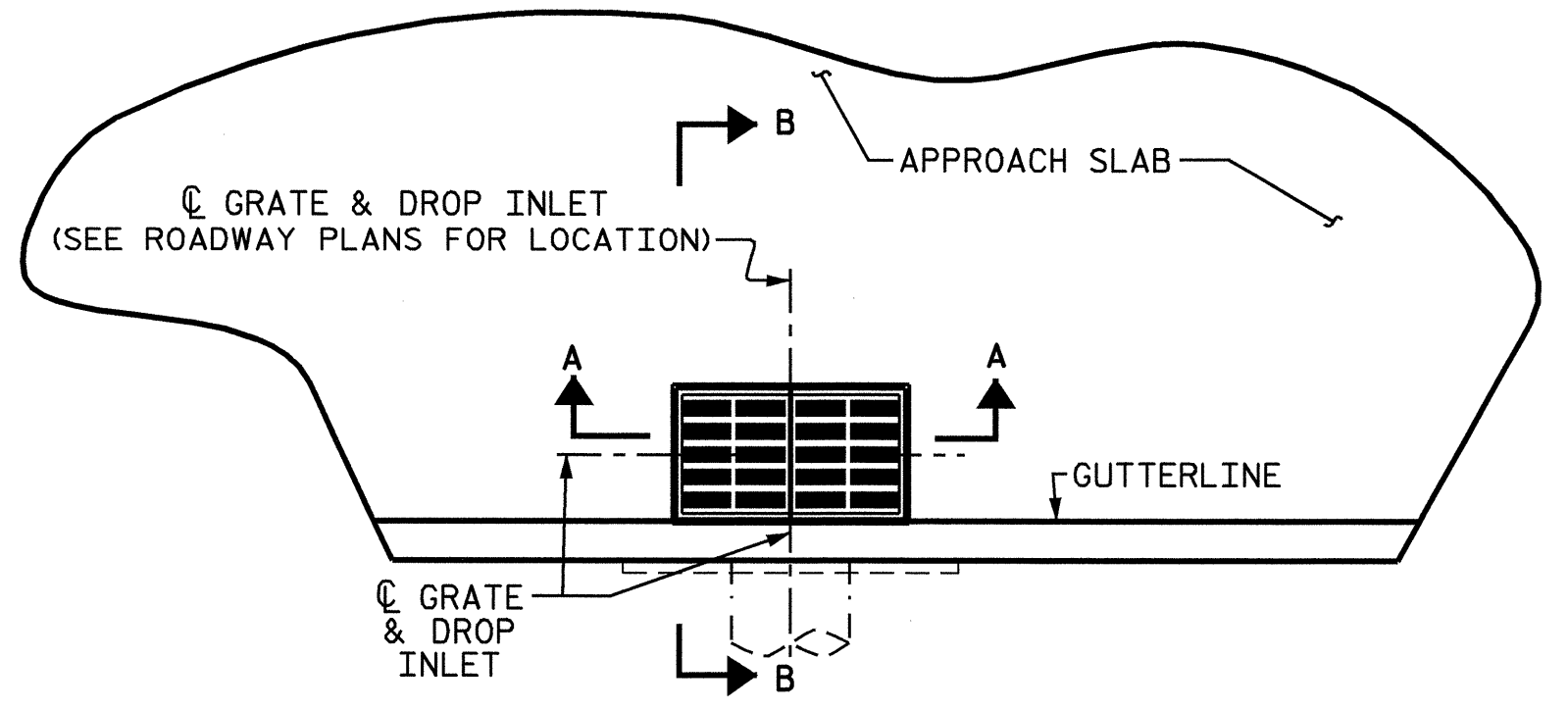
NOTE: REINFORCING STEEL SHALL BE FIELD CUT IN ORDER TO MAINTAIN A 2 INCH MINIMUM CLEARANCE TO THE DROP INLET. SEE ROADWAY PLANS FOR DROP INLET REINFORCING STEEL AND DETAILS.



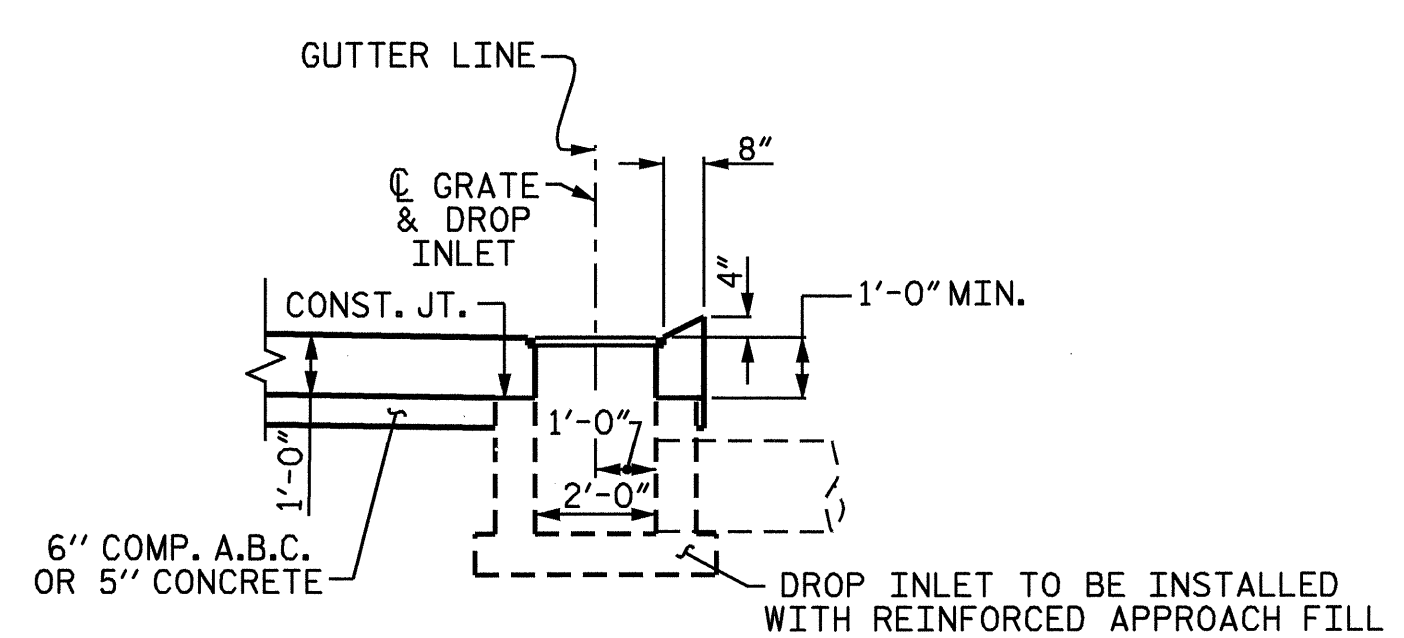
SECTION N-N



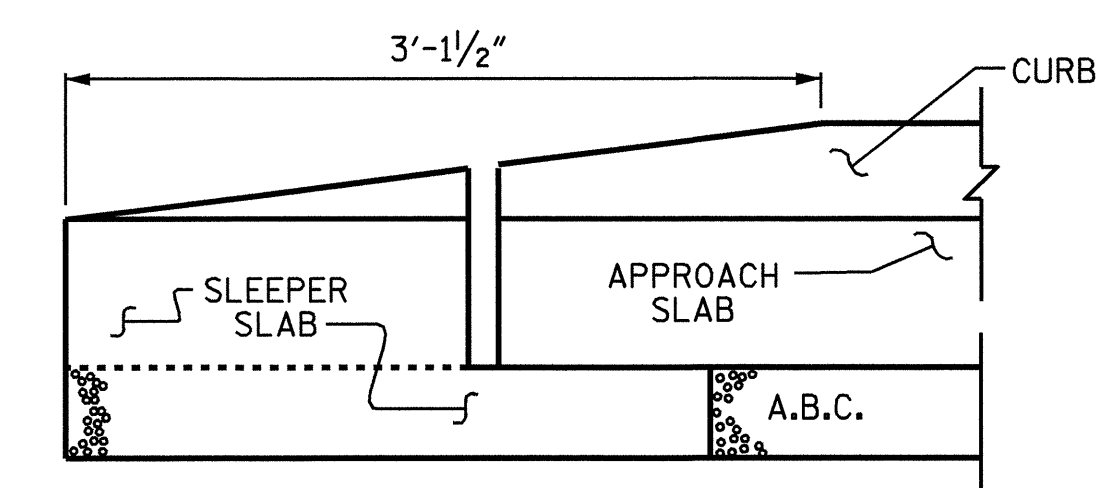
DETAIL "A"



TYPICAL PART PLAN

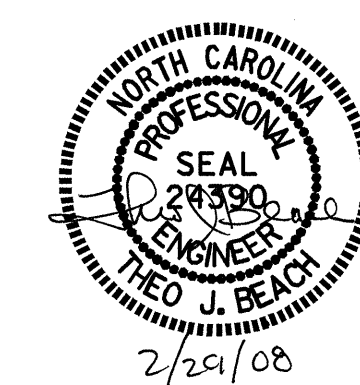


SECTION B-B



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS



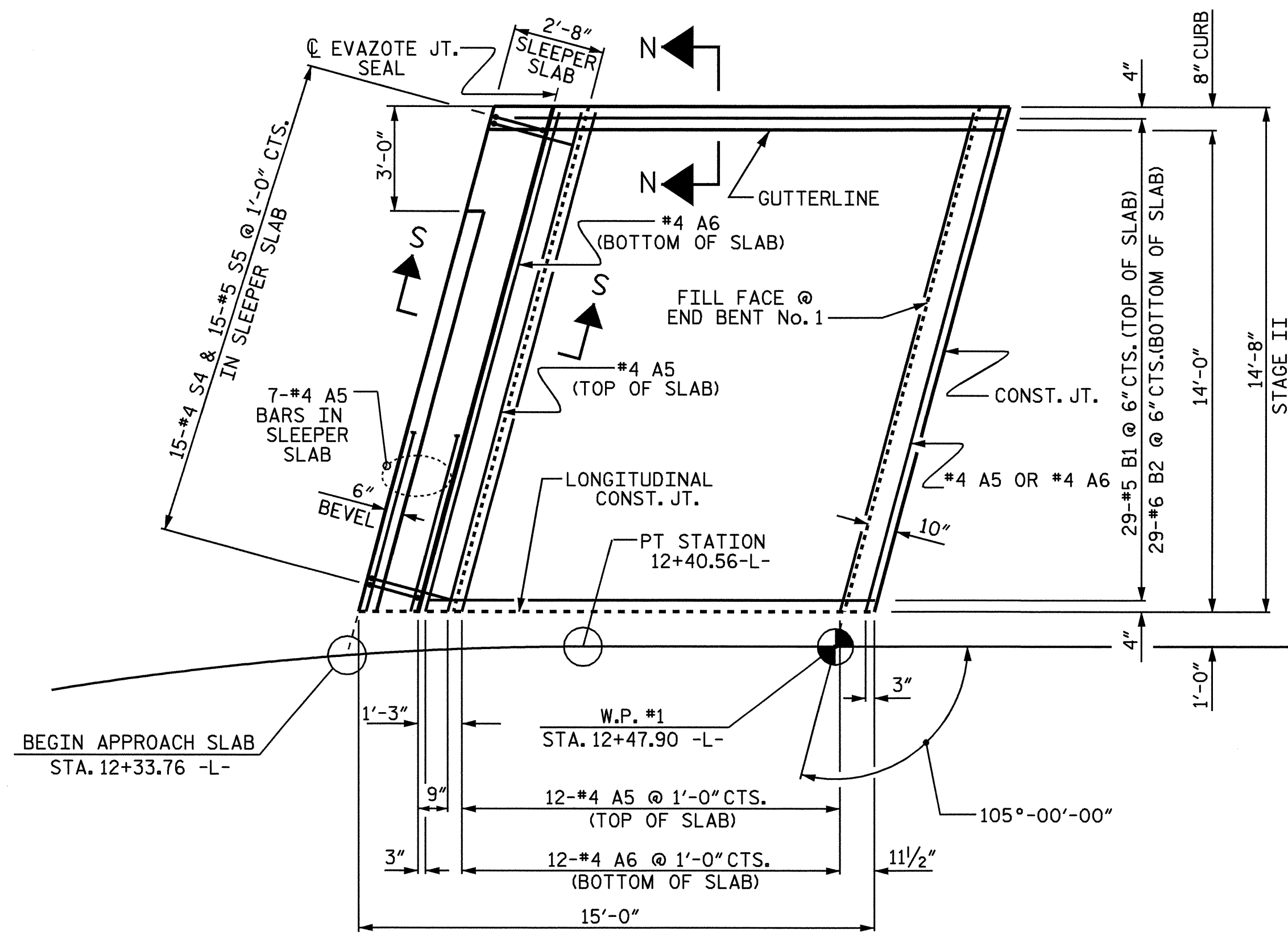
PROJECT NO. B-4675
 WILKES COUNTY
 STATION: 12+94.40 -L-

SHEET 1 OF 3

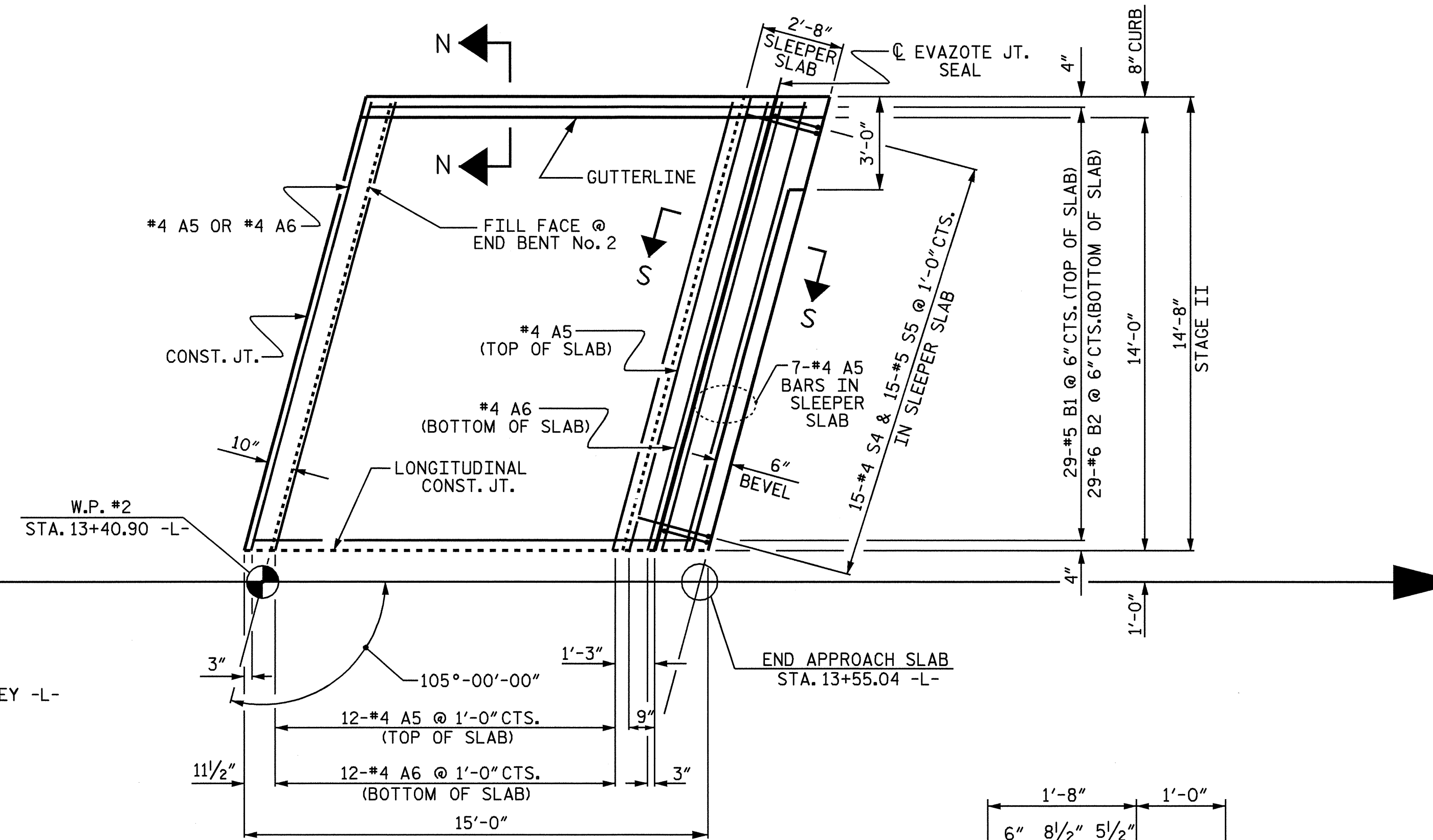
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BRIDGE APPROACH SLAB FOR INTEGRAL ABUTMENT					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-28
					TOTAL SHEETS 30

DRAWN BY: S.B. WILLIAMS DATE: 1-08
 CHECKED BY: T.J. BEACH DATE: 2-08

DRAINAGE STRUCTURE ON APPROACH SLAB

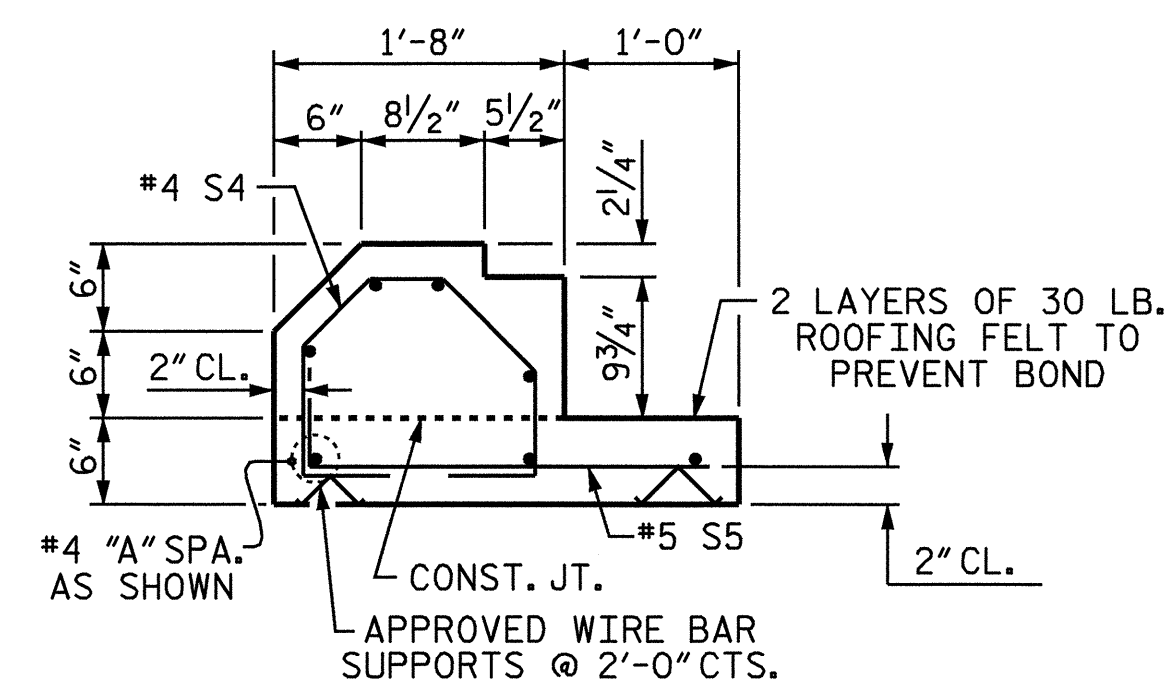


PLAN @ END BENT NO. 1

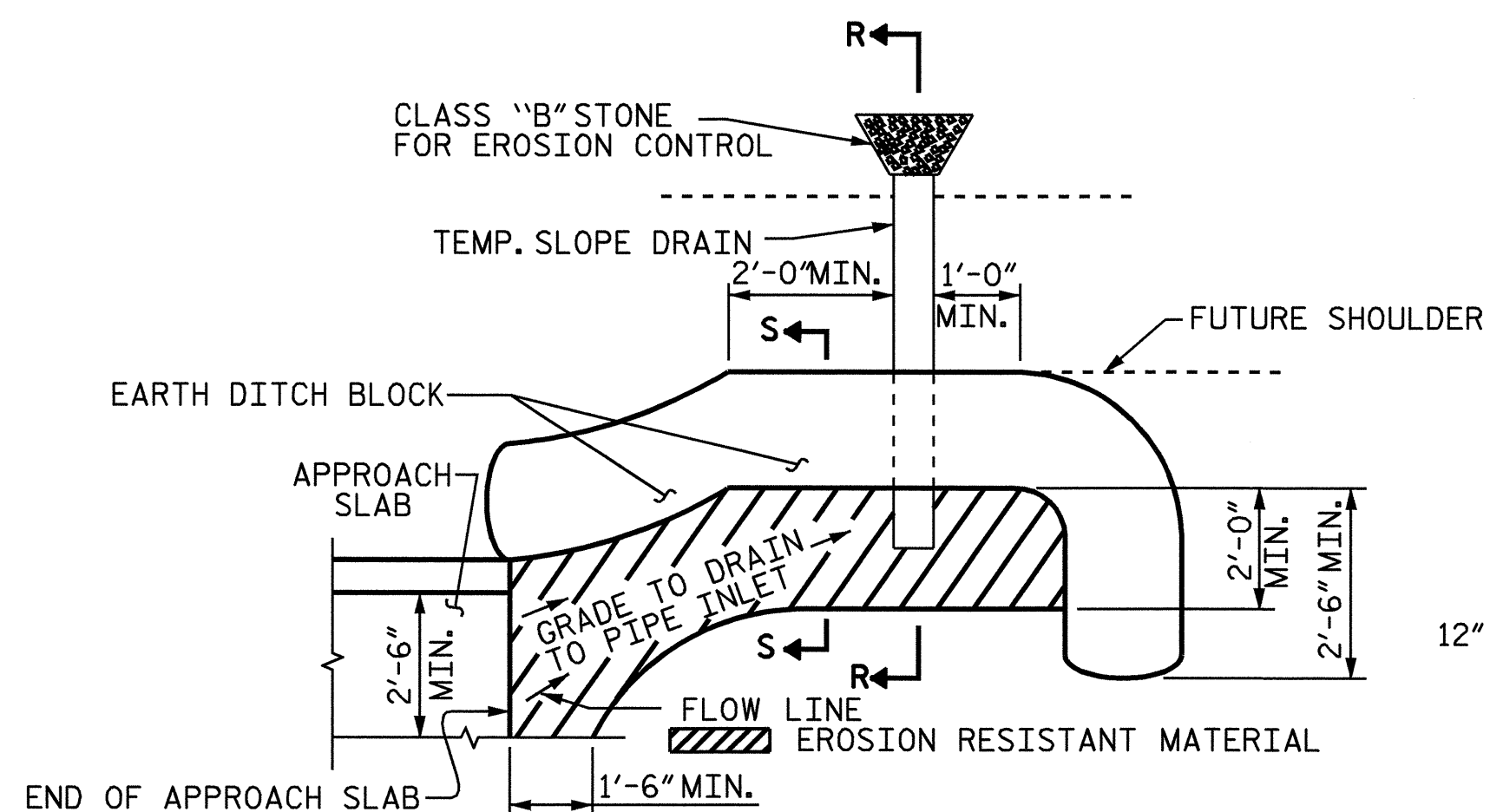


PLAN @ END BENT NO. 2

PLAN OF APPROACH SLABS-STAGE II
(FOR REINFORCING STEEL IN SLEEPER SLAB, SEE SECTION S-S)

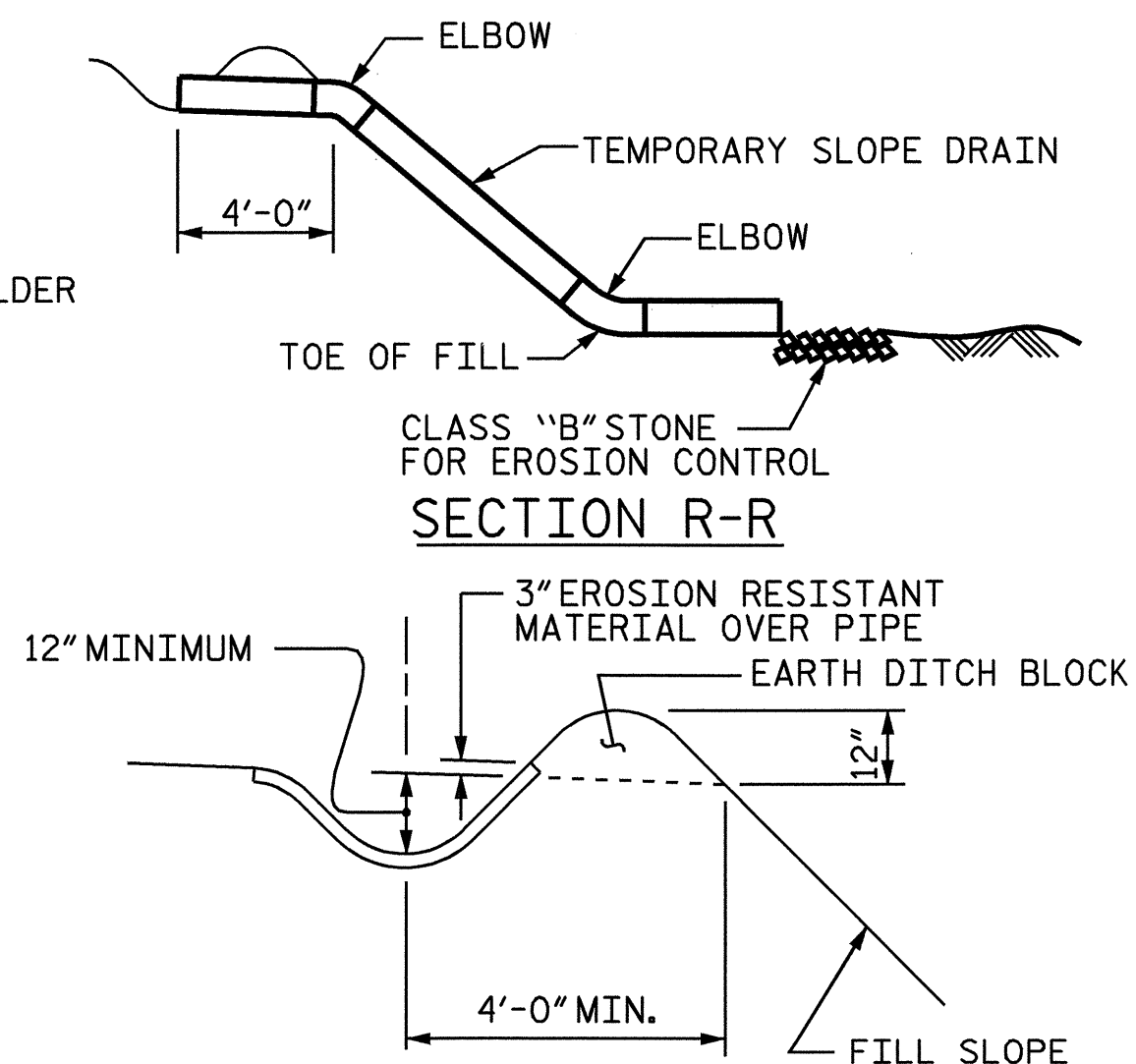


SECTION S-S
SHOWING SLEEPER SLAB
"A" BARS IN STAGE I SLEEPER SLAB SHALL
EXTEND A MINIMUM OF 2'-0" INTO STAGE II

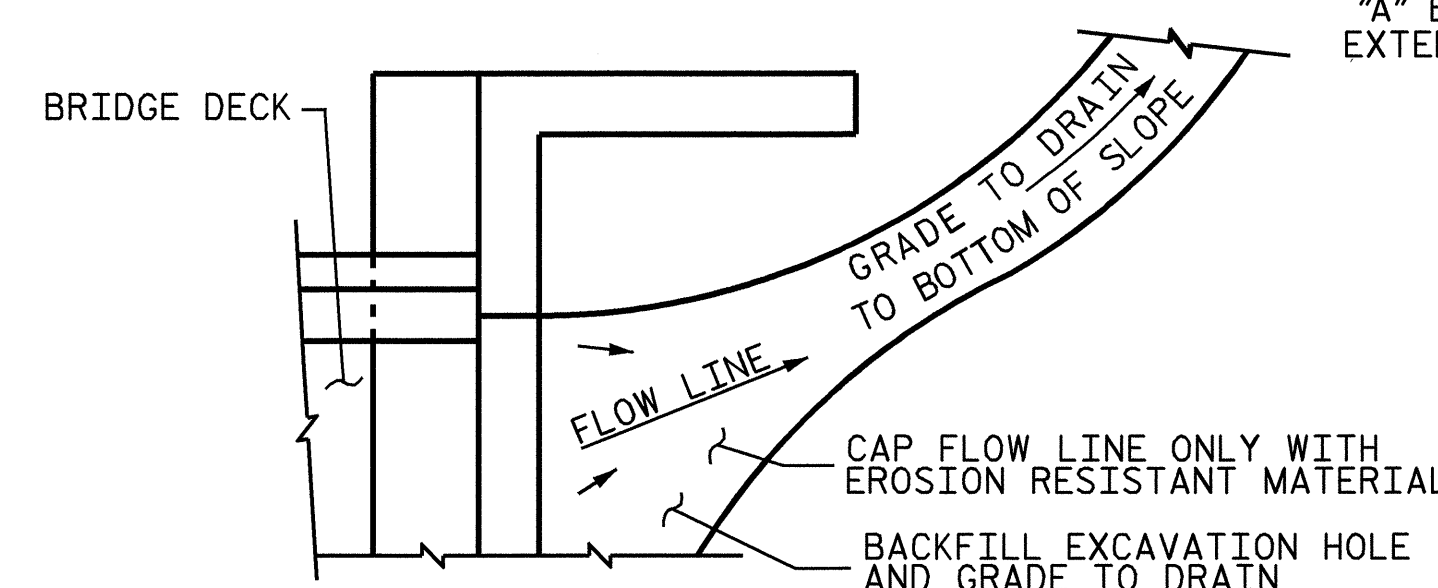


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

PLAN VIEW



SECTION S-S



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

TEMPORARY DRAINAGE DETAIL

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

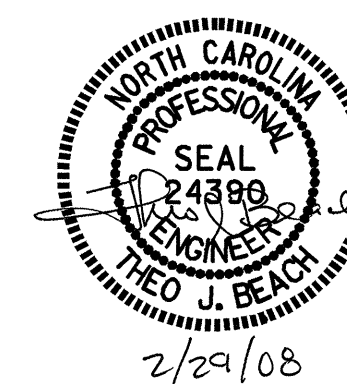
PROJECT NO. B-4675
WILKES COUNTY
STATION: 12+94.40 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB
FOR INTEGRAL ABUTMENT

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29	
1			3			TOTAL SHEETS	30
2			4				



DRAWN BY: S.B. WILLIAMS DATE: 1-08
CHECKED BY: T.J. BEACH DATE: 2-08

NOTES

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

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.

GROOVING IS NOT REQUIRED ON TOP SURFACE OF THE SLEEPER SLAB. INSTEAD, APPLY A BROOMED TEXTURE IN ACCORDANCE WITH ARTICLE 442-3 OF THE STANDARD SPECIFICATIONS.

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.

EVAZOTE JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE CURB.

ELASTOMERIC CONCRETE

END BENT NO.	ELASTOMERIC CONCRETE (CU. FT.)
1	
STAGE I	3.7
STAGE II	2.6
2	
STAGE I	3.7
STAGE II	2.6
TOTAL	12.6

★ BASED ON THE MINIMUM BLOCKOUT SHOWN.

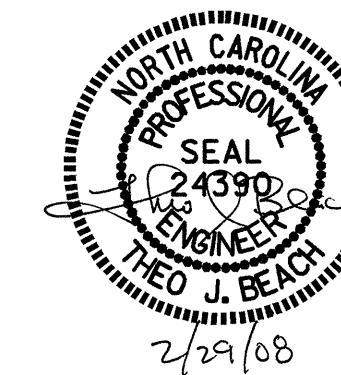
PROJECT NO. B-4675
WILKES COUNTY
 STATION: 12+94.40 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH SLAB
 FOR INTEGRAL ABUTMENT

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-30	
1			3			TOTAL SHEETS 30	
2			4				



BILL OF MATERIAL (STAGE I)

APPROACH SLAB AT END BENT No. 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	42	#4	STR	13'-2"	369
A2	28	#4	STR	13'-0"	243
* B1	41	#5	STR	12'-6"	535
B2	41	#6	STR	13'-0"	801
* S4	21	#4	1	3'-11"	55
S5	21	#5	2	2'-11"	64

REINFORCING STEEL	LBS.	1108
* EPOXY COATED REINFORCING STEEL	LBS.	959

CLASS AA CONCRETE

POUR #2 - SLAB & CURB	C. Y.	10.3
POUR #1 - SLEEPER SLAB	C. Y.	2.3
TOTAL	C. Y.	12.6

BILL OF MATERIAL (STAGE II)

APPROACH SLAB AT END BENT No. 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A5	21	#4	STR	14'-9"	207
A6	14	#4	STR	14'-9"	138
* B1	29	#5	STR	12'-6"	378
B2	29	#6	STR	13'-0"	566
* S4	15	#4	1	3'-11"	39
S5	15	#5	2	2'-11"	46

REINFORCING STEEL	LBS.	750
* EPOXY COATED REINFORCING STEEL	LBS.	624

CLASS AA CONCRETE

POUR #2 - SLAB & CURB	C. Y.	7.3
POUR #1 - SLEEPER SLAB	C. Y.	1.5
TOTAL	C. Y.	8.8

APPROACH SLAB AT END BENT No. 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A3	42	#4	STR	12'-8"	354
A4	28	#4	STR	12'-6"	234
* B1	41	#5	STR	12'-6"	535
B2	41	#6	STR	13'-0"	801
* S4	21	#4	1	3'-11"	55
S5	21	#5	2	2'-11"	64

REINFORCING STEEL	LBS.	1099
* EPOXY COATED REINFORCING STEEL	LBS.	944

CLASS AA CONCRETE

POUR #2 - SLAB & CURB	C. Y.	10.2
POUR #1 - SLEEPER SLAB	C. Y.	2.3
TOTAL	C. Y.	12.5

APPROACH SLAB AT END BENT No. 2

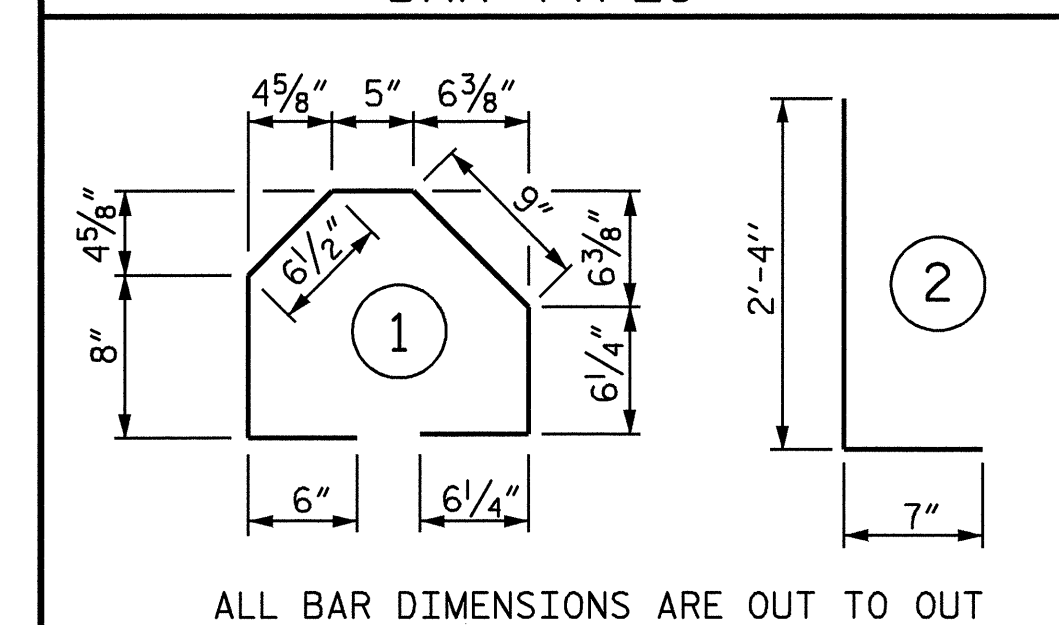
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A5	21	#4	STR	14'-9"	207
A6	14	#4	STR	14'-9"	138
* B1	29	#5	STR	12'-6"	378
B2	29	#6	STR	13'-0"	566
* S4	15	#4	1	3'-11"	39
S5	15	#5	2	2'-11"	46

REINFORCING STEEL	LBS.	750
* EPOXY COATED REINFORCING STEEL	LBS.	624

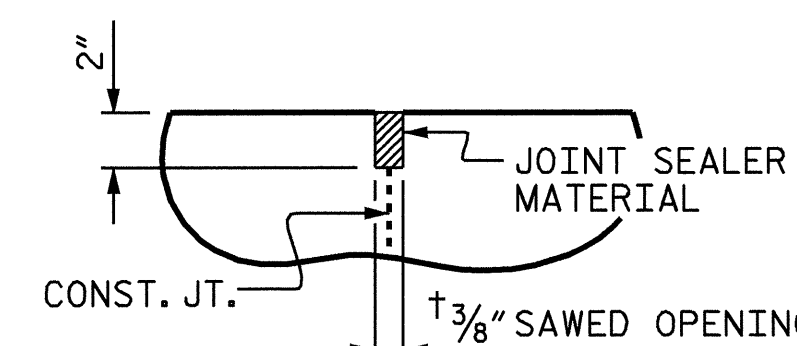
CLASS AA CONCRETE

POUR #2 - SLAB & CURB	C. Y.	7.3
POUR #1 - SLEEPER SLAB	C. Y.	1.5
TOTAL	C. Y.	8.8

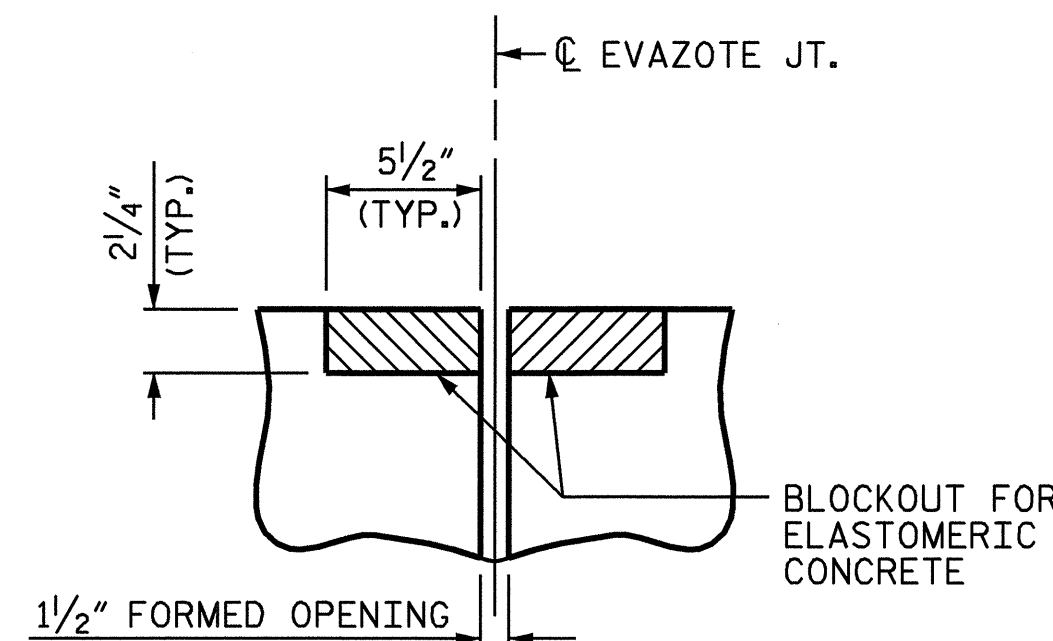
BAR TYPES



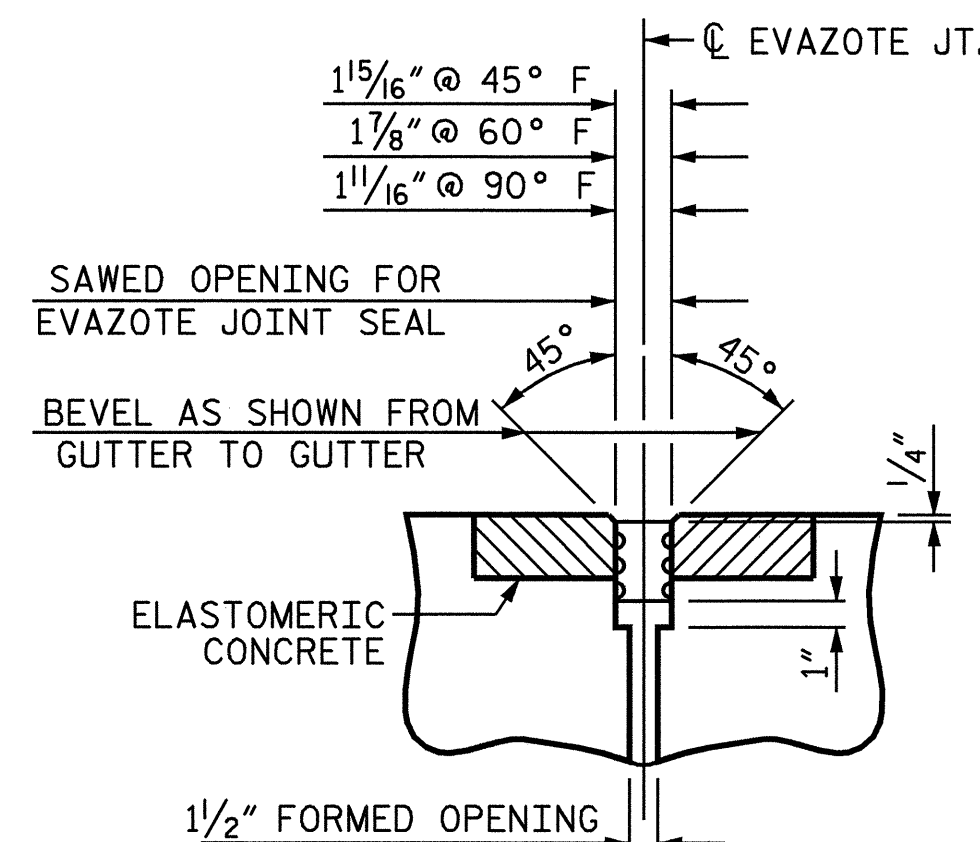
ALL BAR DIMENSIONS ARE OUT TO OUT



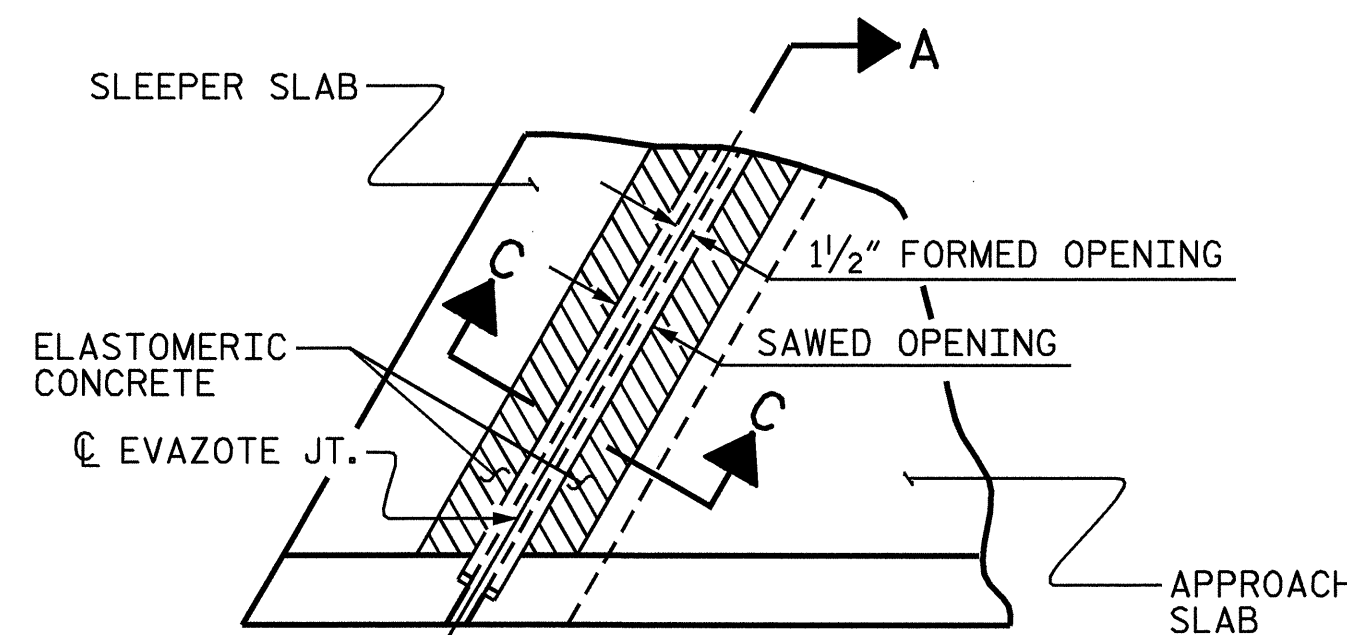
DETAIL "B"



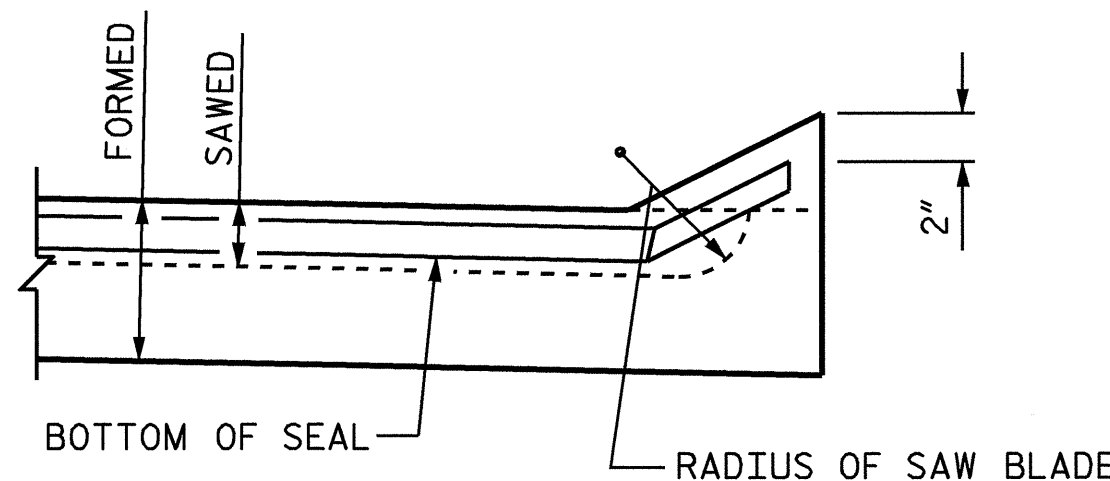
SECTION C-C
EVAZOTE JOINT SEAL (PRE-SAWED ELASTOMERIC CONCRETE DIMENSIONS)



SECTION C-C
EVAZOTE JOINT SEAL

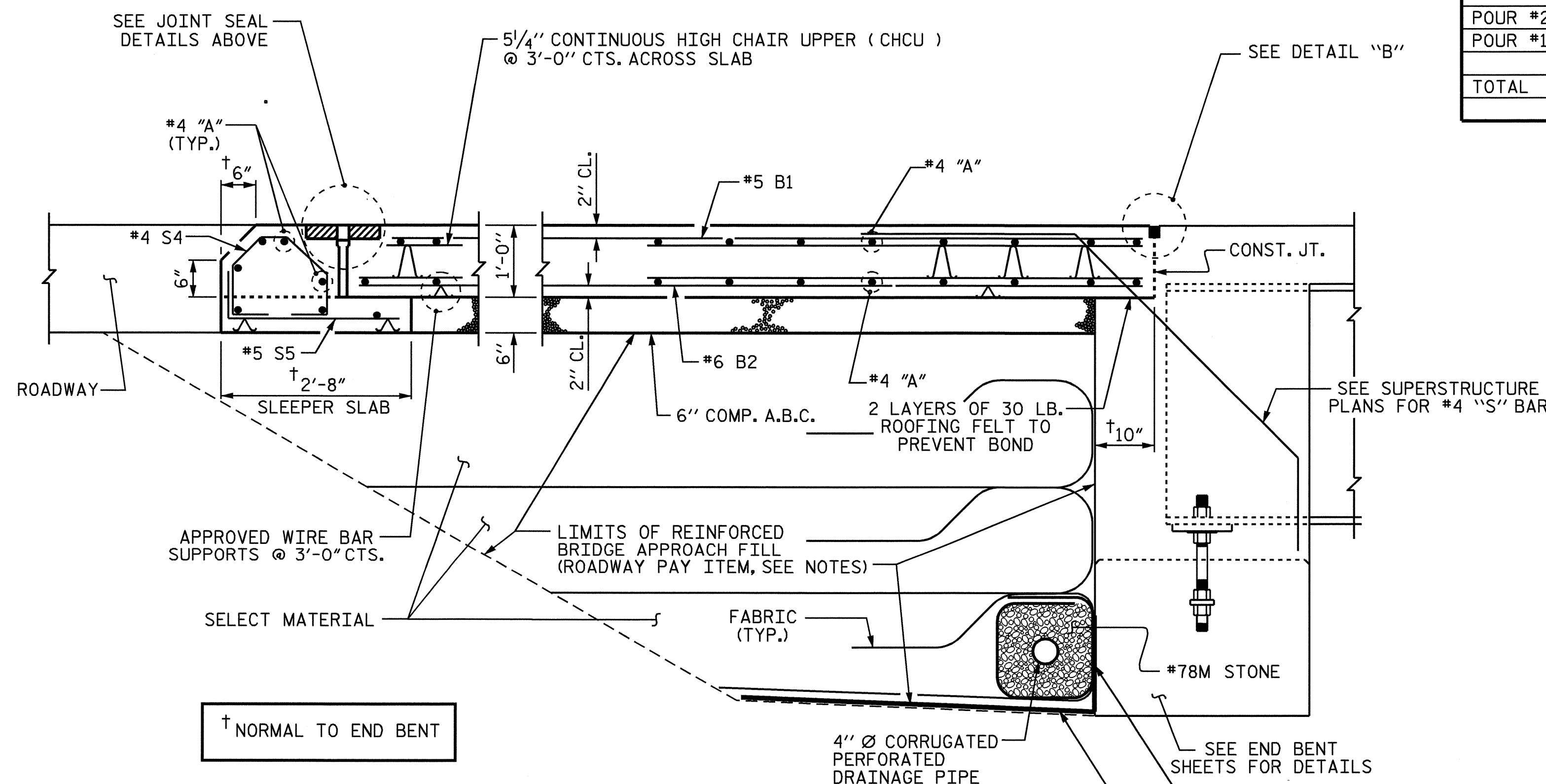


PLAN



SECTION A-A

JOINT SEAL DETAILS @ SLEEPER SLAB



SECTION THRU SLAB

ASSEMBLED BY: S.B. WILLIAMS	DATE: 1-08
CHECKED BY: T.J. BEACH	DATE: 2-08
DRAWN BY: TLA	10/05
CHECKED BY: GM	5/06
ADDED	5/1/06R KMM/GM

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2002 STANDARD SPECIFICATIONS "FOR ROADS AND STRUCTURES" OF THE N.C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

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

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

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

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED WITH THE EXCEPTION OF #2 BARS WHICH MAY BE FABRICATED FROM COLD DRAWN STEEL WIRE. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

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

STRUCTURAL STEEL:

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

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

PLACEMENT OF BEAM OR GIRDER MEMBERS ON TRUCKS FOR HAULING SHALL BE DONE IN COMPLIANCE WITH LIMITS SHOWN ON SKETCHES PROVIDED TO THE MATERIALS AND TEST UNIT APPROVED BY THE STRUCTURE DESIGN UNIT DATED MAY 8, 1991. THESE SKETCHES PRIMARILY LIMIT THE UNSUPPORTED CANTILEVER LENGTH OF MEMBERS. WHEN THE CONTRACTOR WISHES TO PLACE MEMBERS ON TRUCKS NOT IN ACCORDANCE WITH THESE LIMITS, TO SHIP BY RAIL, TO ATTACH SHIPPING RESTRAINTS TO THE MEMBERS OR TO INVERT MEMBERS, HE SHALL SUBMIT A SKETCH FOR APPROVAL PRIOR TO SHIPPING. SEE ALSO ARTICLE 1072-11.

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

HANDRAILS AND POSTS:

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

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