

CONTRACT: C203409 TIP NO: B-4554

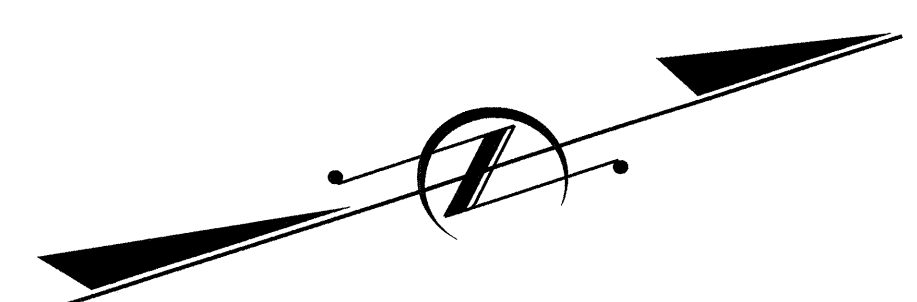
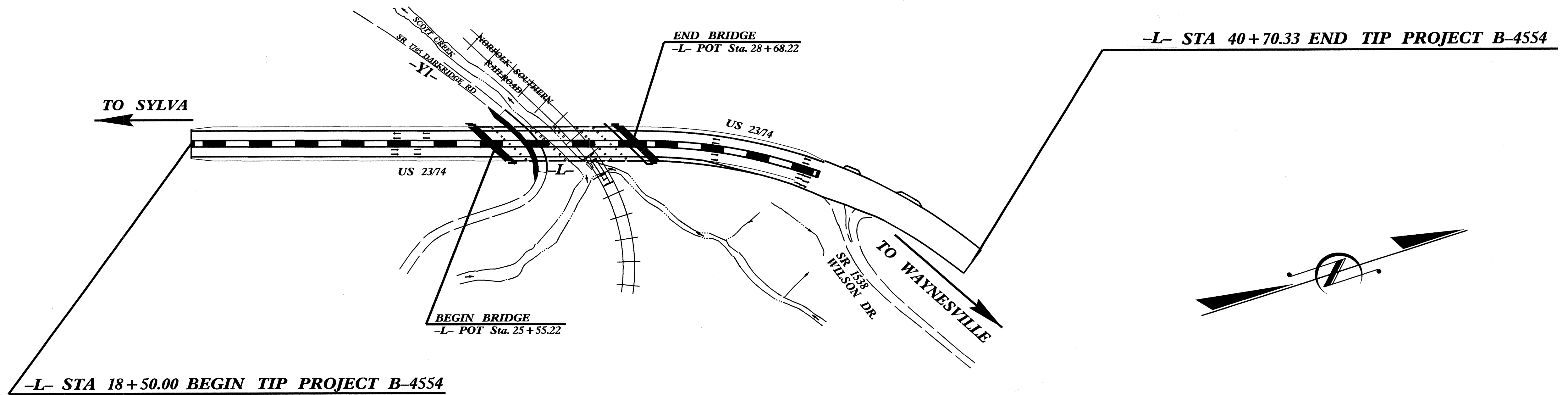
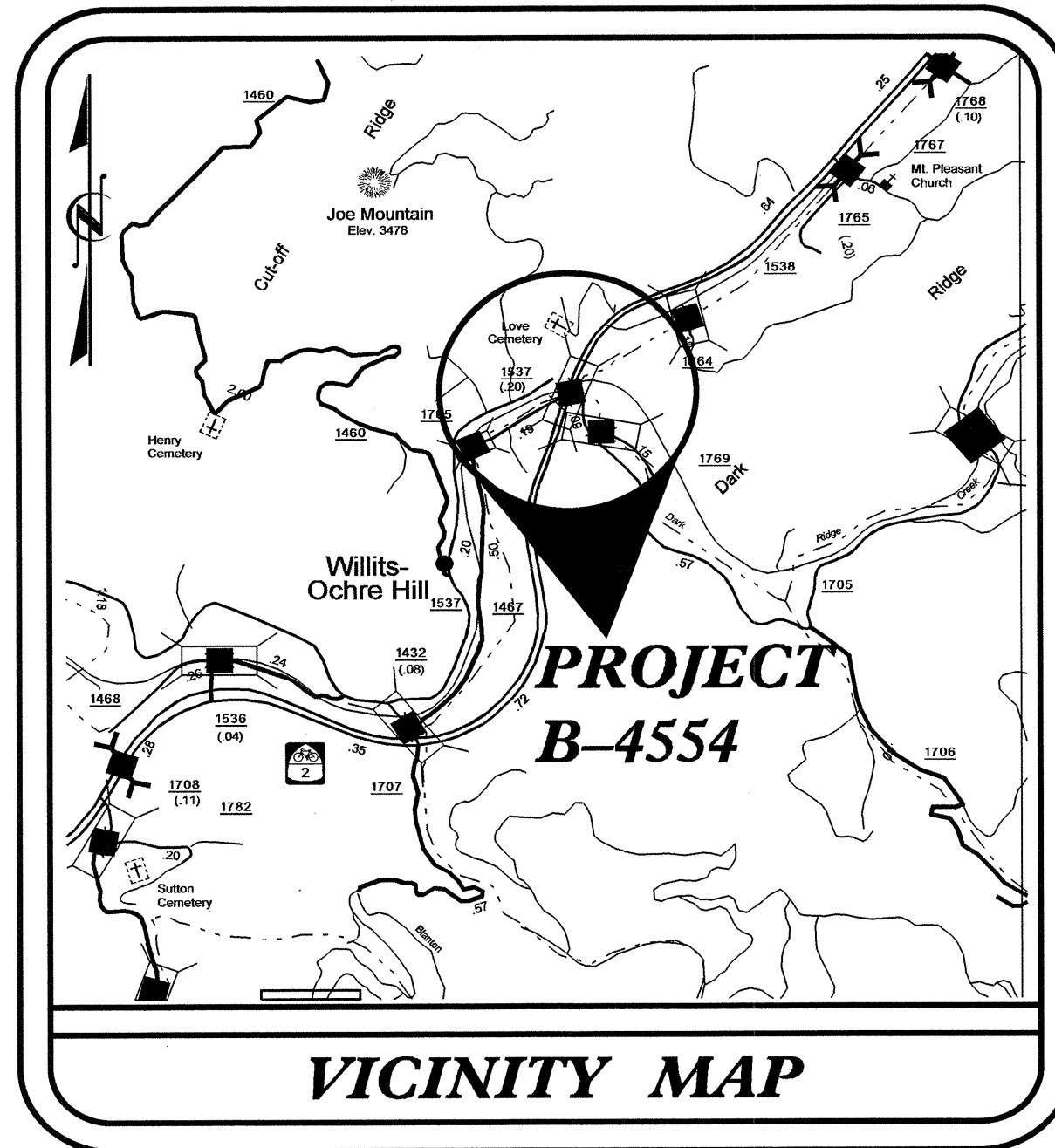
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JACKSON COUNTY

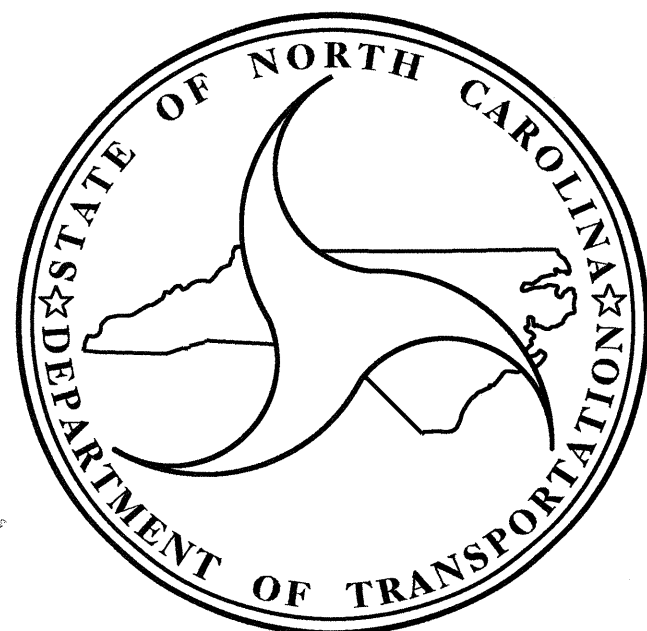
**LOCATION: BRIDGE NO. 145 ON US 23-74 OVER SR 1705,
SOUTHERN RAILROAD AND SCOTT CREEK**

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4554		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38408.1.1	BRZ-1705(1)	P.E.	
38408.2.1	BRZ-1705(1)	ROW/UTIL	
38408.3.FS1	BRZ-1705(1)	CONST.	



STRUCTURE



DESIGN DATA

ADT 2012 = 27,912
 ADT 2030 = 40,800
 DHV = 12 %
 D = 55 %
 T = 8 % *
 V = 60 MPH
 * TTST = 4 DUAL 4
 FUNC. CLASS. = MAJOR ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4554 = 0.362 MILE
 LENGTH STRUCTURE TIP PROJECT B-4554 = 0.059 MILE
 TOTAL LENGTH TIP PROJECT B-4554 = 0.421 MILE

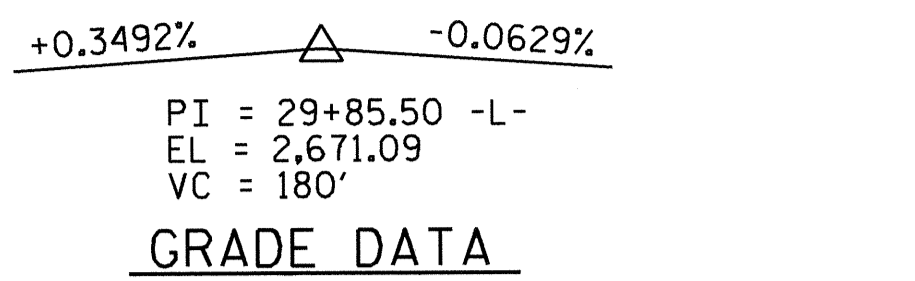
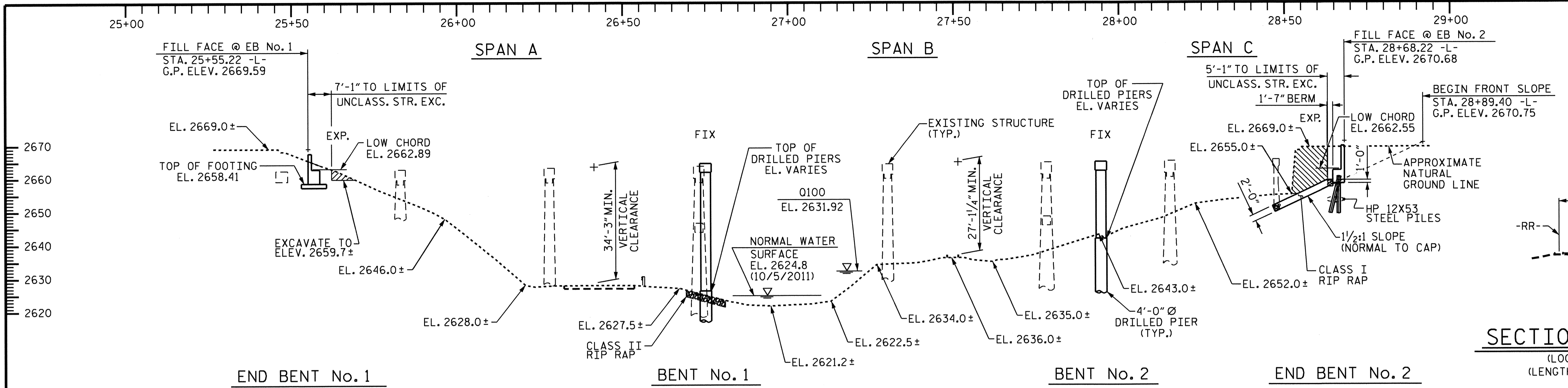
Prepared In the Office of:
DIVISION OF HIGHWAYS
 STRUCTURES MANAGEMENT UNIT
 1000 BIRCH RIDGE DR.
 RALEIGH, N.C. 27610

2012 STANDARD SPECIFICATIONS

LETTING DATE : JULY 15, 2014

Q.H. NGUYEN, P.E.
 PROJECT ENGINEER

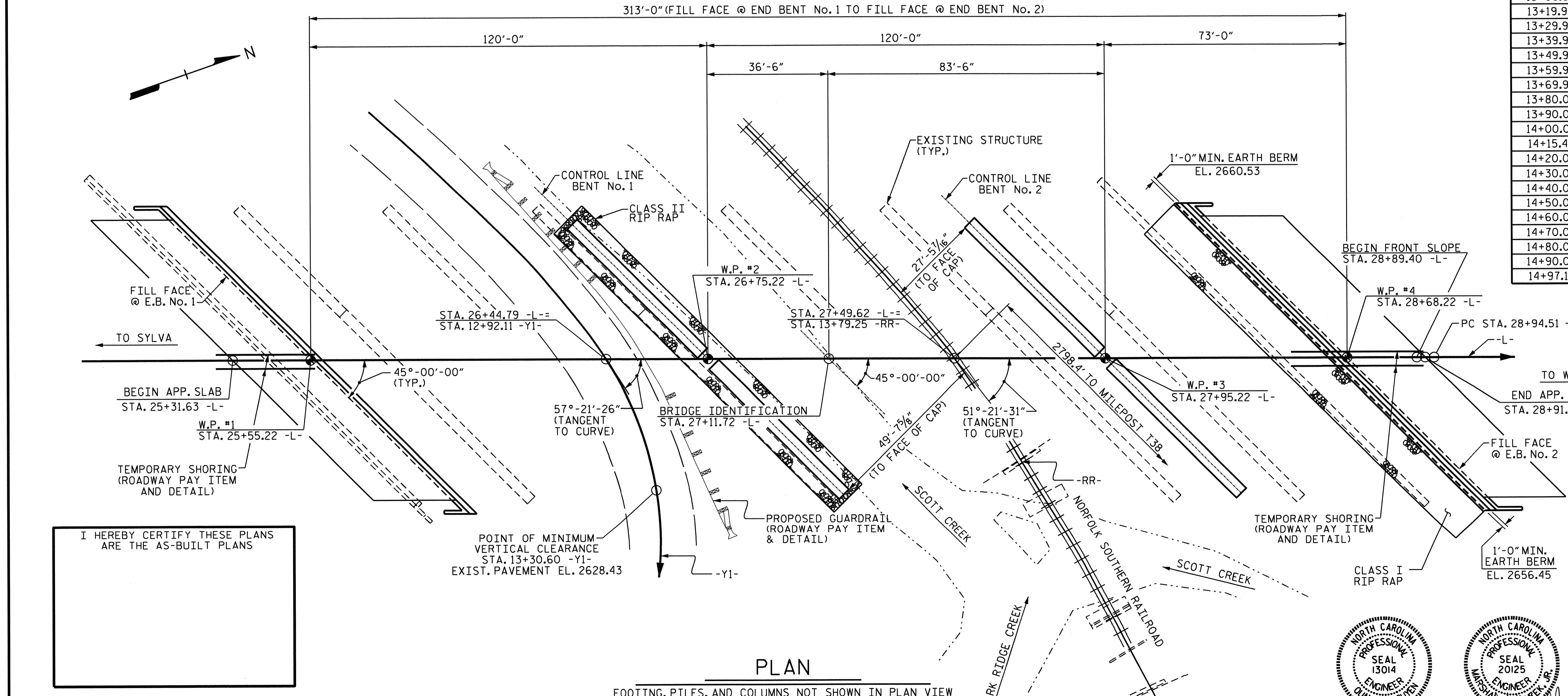
MARC G. CHEEK, P.E.
 PROJECT DESIGN ENGINEER



SECTION NORMAL TO RAILROAD
(LOOKING DOWNSTATION ALONG RAILROAD)
(LENGTH INCREASED DUE TO UPLIFT IN SPAN C)

TOP OF RAIL ELEVATIONS
(LOOKING UPSTATION ALONG RAILROAD)

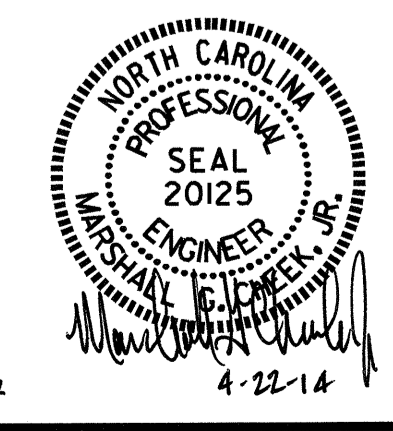
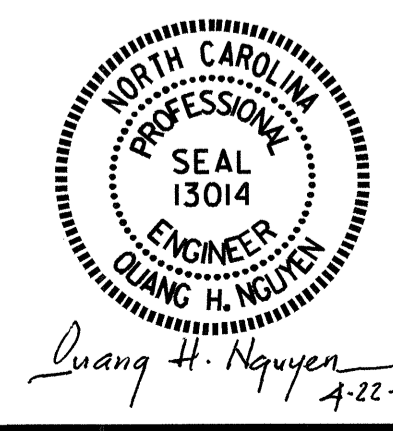
LEFT RAIL		RIGHT RAIL	
STATION	ELEVATION	STATION	ELEVATION
12+99.95	2635.73	13+00.07	2635.63
13+09.95	2635.80	13+10.06	2635.70
13+19.96	2635.87	13+20.05	2635.78
13+29.96	2635.95	13+30.05	2635.84
13+39.93	2635.98	13+40.02	2635.89
13+49.94	2636.04	13+50.05	2635.96
13+59.95	2636.05	13+60.03	2636.00
13+69.96	2636.08	13+69.98	2636.02
13+80.03	2636.09	13+79.98	2636.02
13+90.03	2636.09	13+89.98	2636.00
14+00.03	2636.09	13+99.97	2635.97
14+15.48	2636.07	14+15.42	2635.93
14+20.00	2636.06	14+20.00	2635.92
14+30.00	2636.03	14+30.00	2635.90
14+40.00	2636.01	14+40.00	2635.88
14+50.00	2635.99	14+50.00	2635.85
14+60.00	2635.97	14+60.00	2635.83
14+70.00	2635.94	14+70.00	2635.81
14+80.00	2635.92	14+80.00	2635.79
14+90.00	2635.90	14+90.00	2635.77
14+97.14	2635.88	14+97.22	2635.75



I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

DRAWN BY : D. HODGE/WJH DATE : 12/13
 CHECKED BY : B.N. GRADY DATE : 02/14
 DESIGN ENGINEER OF RECORD: W.J. HARRIS DATE : 03/14

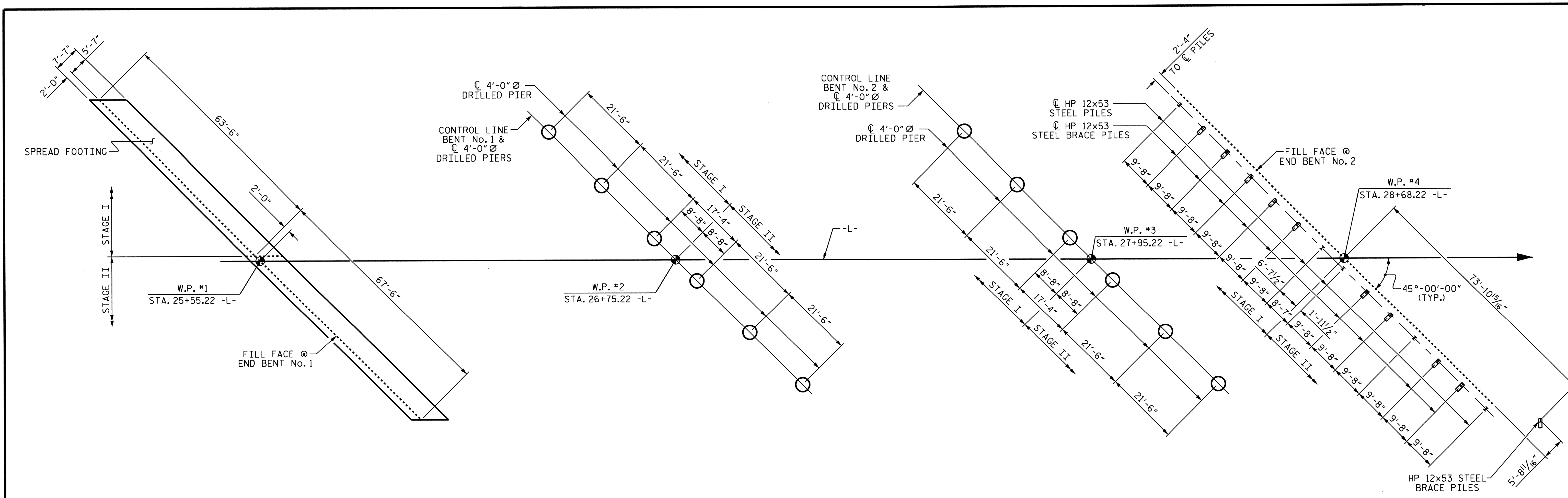
22-APR-2014 08:20
 R:\Structures\Final Plans\B4554.SD..GD.dgn
 dahodge



PROJECT NO. **B-4554**
JACKSON COUNTY
 STATION: **27+11.72 -L-**
 MILEPOST T38.53
 SHEET 1 OF 3 REPLACES BRIDGE No. 145

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE OVER SCOTT CREEK, NORFOLK SOUTHERN R.R., AND SR 1705 ON US 23/74 BETWEEN SYLVA AND WAYNESVILLE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTALS
2			4			62



END BENT No. 1

BENT No. 1

BENT No. 2

END BENT No. 2

FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO THE CENTERLINE OF PILES.
ALL BRACE PILES ARE BATTERED 3:12.

FOUNDATION NOTES

THE SPREAD FOOTINGS AT END BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 20 TSF. CHECK FIELD CONDITIONS FOR THE REQUIRED RESISTANCE OF 60 TSF JUST BEFORE PLACING CONCRETE.

KEY IN FOOTING AT END BENT NO.1 AT LEAST 12" INTO ROCK WITH MINIMUM THICKNESS AS SHOWN ON THE PLANS.

FOR BLASTING ADJACENT TO HIGHWAY STRUCTURES, SEE ARTICLE 410-9 OF THE STANDARD SPECIFICATIONS.

FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

DRILLED PIERS AT BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 660 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 30 TSF.

PERMANENT STEEL CASINGS MAY BE REQUIRED FOR DRILLED PIERS AT BENT NO.1. IF REQUIRED, DO NOT EXTEND PERMANENT CASINGS BELOW ELEVATION 2620 (LT), 2610 (RT) WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE ENGINEER WILL DETERMINE THE NEED FOR PERMANENT CASINGS.

INSTALL DRILLED PIERS AT BENT NO.1 TO A TIP ELEVATION NO HIGHER THAN 2610 (LT); 2609 (CT); 2601 (RT), SATISFY THE REQUIRED TIP RESISTANCE AND HAVE A PENETRATION OF AT LEAST 9 FT INTO ROCK AS DEFINED BY ARTICLE 411-1 OF THE STANDARD SPECIFICATIONS.

THE SCOUR CRITICAL ELEVATION FOR BENT NO.1 IS ELEVATION 2610. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

DRILLED PIERS AT BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 480 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 30 TSF.

INSTALL DRILLED PIERS AT BENT NO.2 TO A TIP ELEVATION NO HIGHER THAN 2626 (LT); 2610 (CT); 2609 (RT), SATISFY THE REQUIRED TIP RESISTANCE AND HAVE A PENETRATION OF AT LEAST 9 FT INTO ROCK AS DEFINED BY ARTICLE 411-1 OF THE STANDARD SPECIFICATIONS.

THE SCOUR CRITICAL ELEVATION FOR BENT NO.2 IS ELEVATION 2632. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

SID INSPECTIONS MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTIONS. FOR SID INSPECTIONS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

SPT MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SPT. FOR SPT TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. FOR CSL TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 105 TONS PER PILE.

DRIVE PILES AT END BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 175 TONS PER PILE.

STEEL H-PILE POINTS ARE REQUIRED FOR STEEL H-PILES AT END BENT NO.2. FOR STEEL PILE POINTS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

TESTING PILES WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING MAY BE REQUIRED AT END BENT NO.2. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

DRAWN BY : B.N. GRADY
CHECKED BY : M.A. LEBLANC
DESIGN ENGINEER OF RECORD : W.J. HARRIS

DATE : 1/13/14
DATE : 1/30/14
DATE : 4/14

22-APR-2014 08:20
R:\Structures\Final Plans\B4554.SD_GD.dgn
djhodge



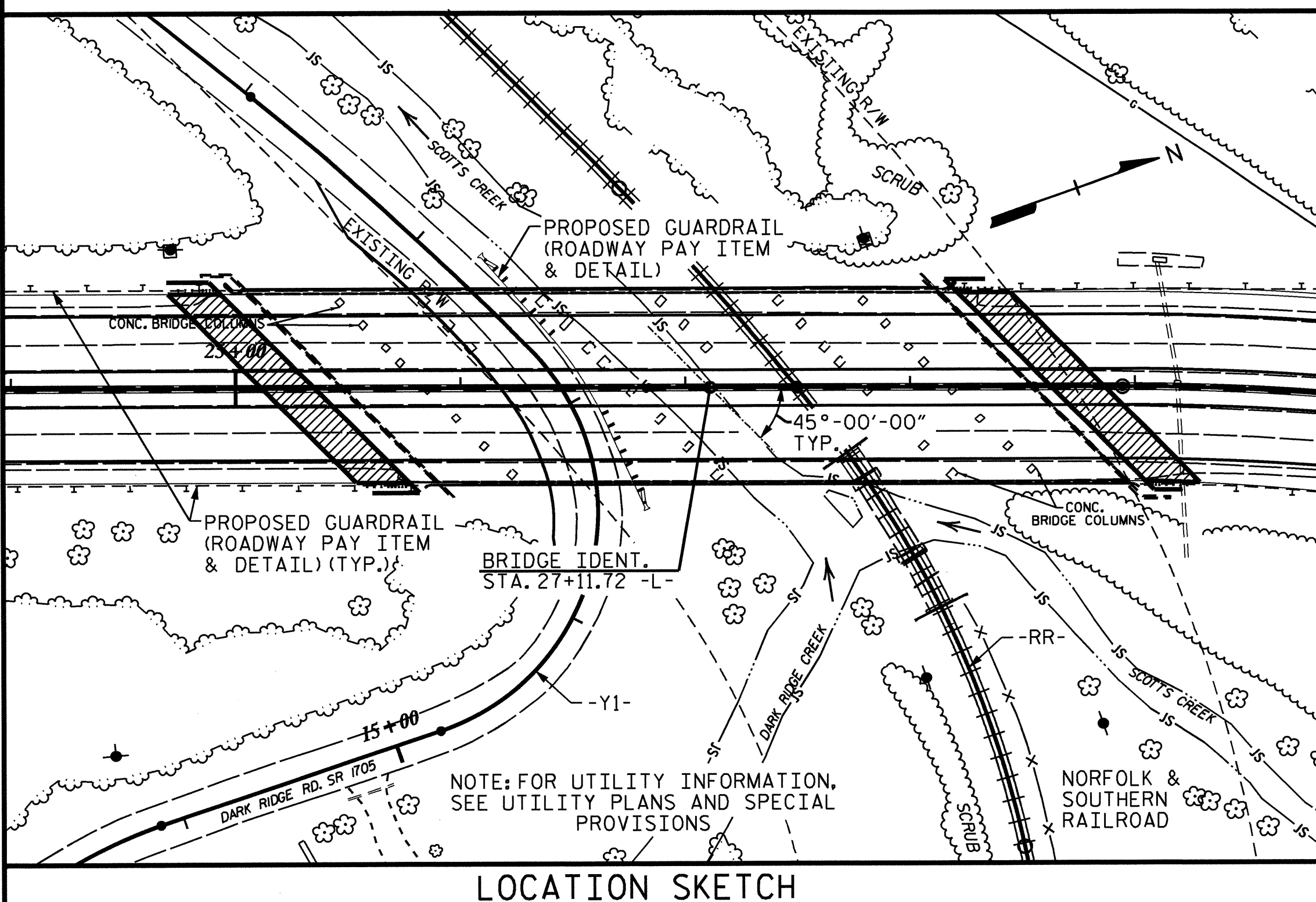
PROJECT NO. B-4554
JACKSON COUNTY
STATION: 27+11.72 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOR BRIDGE OVER SCOTT CREEK, NORFOLK SOUTHERN R.R., AND SR 1705 ON US 23/74 BETWEEN SYLVA AND WAYNESVILLE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-2
2			4			62

BENCHMARK No. 2: -BL- STA. 14+96.29, 3.93' RIGHT, ELEV. 2668.61



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE	= 2,230 CFS
FREQUENCY OF DESIGN FLOOD	= 50 YRS.
DESIGN HIGH WATER ELEVATION	= 2631.4
DRAINAGE AREA	= 20.90 SQ. MI.
BASE DISCHARGE (0100)	= 2,610 CFS
BASE HIGH WATER ELEVATION	= 2631.92

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 6,800+ CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YRS.
OVERTOPPING FLOOD ELEVATION	= 2636.3

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
 THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
 THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
 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.
 FOR PLACING LOAD ON STRUCTURE MEMBERS, SEE SPECIAL PROVISIONS.

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 SPICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

THE ELEVATIONS AND CLEARANCES SHOWN ON THE PLANS AT THE POINT OF MINIMUM VERTICAL CLEARANCES ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE ELEVATION ON THE EXISTING PAVEMENT AND CHECK THE CLEARANCE. REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM VERTICAL CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.

FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.
 REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
 NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.
 ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W AND PAINTED IN ACCORDANCE WITH SYSTEM 4 OF ARTICLE 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

THE RAILROAD TRACK TOP OF RAIL ELEVATIONS ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE TOP OF RAIL ELEVATIONS AND REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.

THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FT. BELOW THE GROUND LINE.

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.

STEEL SHEET PILING REQUIRED FOR SHORING SHALL BE HOT ROLLED.

TEMPORARY SHORING WILL BE REQUIRED IN THE AREAS INDICATED IN THE PLAN VIEW.

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

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA (SEE SHEET 1 OF 3) SHALL BE EXCAVATED FOR A DISTANCE OF 47 FT EACH SIDE OF CENTERLINE ROADWAY AT END BENT NO. 1 AND 60 FT EACH SIDE OF CENTERLINE ROADWAY AT END BENT NO. 2 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.

AFTER SERVING AS A TEMPORARY STRUCTURE, THE EXISTING STRUCTURE CONSISTING OF 7 SPANS (2 @ 37'-6", 3 @ 52'-6", 2 @ 37'-6") WITH A REINFORCED CONCRETE DECK ON I-BEAMS AND STEEL PLATE GIRDERS, A CLEAR ROADWAY WIDTH OF 81.8', SUPPORTED BY REINFORCED CONCRETE ABUTMENTS, POST AND BEAM BENTS, AND A HELPER BENT @ SPAN 2, AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT. FOR "REMOVAL OF EXISTING STRUCTURE", SEE SPECIAL PROVISIONS.

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.

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 AS DETAILED ON CONSTRUCTION SEQUENCE SHEET AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

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

FOR MINIMIZING RAILROAD FLAGGING SERVICE, SEE STANDARD SPECIFICATIONS.

TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE, & REMOVAL OF TEMPORARY ACCESS	REMOVAL OF EXISTING STRUCTURE	FOUNDATION EXCAVATION	4'-0" Ø DRILLED PIERS IN SOIL	4'-0" Ø DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 4'-0" Ø DRILLED PIERS	PDA TESTING	SID INSPECTIONS	SPT TESTING	CSL TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS
	LUMP SUM	LUMP SUM	CU. YDS.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM
SUPERSTRUCTURE												26,842	26,982		LUMP SUM
END BENT No. 1			456								LUMP SUM			189.3	
BENT No. 1				85.25	30.00	64.95								151.4	
BENT No. 2				124.16	30.00									123.5	
END BENT No. 2											LUMP SUM			116.7	
TOTAL	LUMP SUM	LUMP SUM	456	209.41	60.00	64.95	1	6	6	1	LUMP SUM	26,842	26,982	580.9	LUMP SUM

	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	STRUCTURAL STEEL	HP 12X53 STEEL PILES	STEEL PILE POINTS	TWO BAR METAL RAIL	CONCRETE MEDIAN BARRIER	1'-2" X 2'-6" CONCRETE PARAPET	RIP RAP CLASS I	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	DISC BEARINGS	ELASTOMERIC BEARINGS	EXPANSION JOINT SEALS
	LBS.	LBS.	APPROX. LBS.	NO.	LIN. FT.	EACH	LIN. FT.	LIN. FT.	TONS	TONS	SO. YDS.	LUMP SUM	LUMP SUM	LUMP SUM
SUPERSTRUCTURE			982,000				602.38	360.17	637.68			LUMP SUM	LUMP SUM	LUMP SUM
END BENT No. 1	19,765													
BENT No. 1	34,854	8,123								140	155			
BENT No. 2	32,755	6,752												
END BENT No. 2	13,294			15	455	15			190		211			
TOTAL	100,668	14,875	982,000	15	455	15	602.38	360.17	637.68	190	140	366	LUMP SUM	LUMP SUM

PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 FOR BRIDGE OVER SCOTT CREEK, NORFOLK SOUTHERN R.R., AND SR 1705 ON US 23/74 BETWEEN SYLVA AND WAYNESVILLE



DRAWN BY : B.N. GRADY DATE : 1/13/14
 CHECKED BY : M.G. CHEEK DATE : 3/14
 DESIGN ENGINEER OF RECORD : W.J. HARRIS DATE : 4/14

25-APR-2014 10:30
 W:\Structures\Final Plans\B4554_S0.G0.dgn
 bngrady

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			62

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE II	1.00	1.00

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR STEEL GIRDERS																							
LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE II LIMIT STATE					COMMENT NUMBER		
						MOMENT					SHEAR					MOMENT							
						LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.07	--	1.75	0.786	1.28	A	E	116.70	0.631	1.07	B	I	120.00	1.30	0.786	1.41	A	E	116.70	
	HL-93 (OPERATING)	N/A		1.38	--	1.35	0.786	1.66	A	E	116.70	0.631	1.38	B	I	120.00	1.00	0.786	1.84	A	E	116.70	
	HS-20 (INVENTORY)	36.00	②	1.54	55.5	1.75	0.786	2.74	A	E	46.68	0.631	1.54	B	I	120.00	1.30	0.786	2.69	A	E	46.68	
	HS-20 (OPERATING)	36.00		2.00	72	1.35	0.786	3.56	A	E	46.68	0.631	2.00	B	I	120.00	1.00	0.786	3.50	A	E	46.68	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		4.91	66.2	1.40	0.786	8.21	A	E	46.68	0.631	4.91	B	I	120.00	1.30	0.786	6.45	A	E	46.68
		SNGARBS2	20.000		3.38	67.6	1.40	0.786	5.88	A	E	46.68	0.631	3.38	B	I	120.00	1.30	0.786	4.62	A	E	46.68
		SNAGRIS2	22.000		3.10	68.2	1.40	0.786	5.48	A	E	46.68	0.631	3.10	B	I	120.00	1.30	0.786	4.30	A	E	46.68
		SNCOTTS3	27.250		2.44	66.4	1.40	0.786	4.10	A	E	46.68	0.631	2.44	B	I	120.00	1.30	0.786	3.22	A	E	46.68
		SNAGGRS4	34.925		1.95	68.1	1.40	0.786	3.34	A	E	46.68	0.631	1.95	B	I	120.00	1.30	0.786	2.62	A	E	46.68
		SNS5A	35.550		1.93	68.6	1.40	0.786	3.29	A	E	46.68	0.631	1.93	B	I	116.70	1.30	0.786	2.58	A	E	46.68
		SNS6A	39.950		1.74	69.5	1.40	0.786	2.98	A	E	46.68	0.631	1.74	B	I	120.00	1.30	0.786	2.34	A	E	46.68
	SNS7B	42.000		1.68	70.5	1.40	0.786	2.84	A	E	46.68	0.631	1.68	B	I	120.00	1.30	0.786	2.23	A	E	46.68	
	TRUCK TRACTOR SEMI-TRAILER (TST)	TNAGRIT3	33.000		2.09	68.9	1.40	0.786	3.64	A	E	46.68	0.631	2.09	B	I	120.00	1.30	0.786	2.86	A	E	46.68
		TNT4A	33.075		2.07	68.4	1.40	0.786	3.61	A	E	46.68	0.631	2.07	B	I	120.00	1.30	0.786	2.84	A	E	46.68
		TNT6A	41.600		1.79	74.4	1.40	0.786	2.94	A	E	46.68	0.631	1.79	B	I	120.00	1.30	0.786	2.31	A	E	46.68
		TNT7A	42.000		1.77	74.3	1.40	0.786	2.93	A	E	46.68	0.631	1.77	B	I	120.00	1.30	0.786	2.30	A	E	46.68
		TNT7B	42.000		1.67	70.1	1.40	0.786	2.96	A	E	46.68	0.631	1.67	B	I	120.00	1.30	0.786	2.33	A	E	46.68
		TNAGRIT4	43.000		1.62	69.6	1.40	0.786	2.87	A	E	46.68	0.631	1.62	B	I	120.00	1.30	0.786	2.25	A	E	46.68
TNAGT5A		45.000		1.57	70.6	1.40	0.786	2.74	A	E	46.68	0.631	1.57	A	I	120.00	1.30	0.786	2.15	A	E	46.68	
TNAGT5B	45.000		③	1.54	69.3	1.40	0.786	2.70	A	E	46.68	0.631	1.54	B	I	120.00	1.30	0.786	2.12	A	E	46.68	
FATIGUE	HL-93 (INVENTORY)	$\gamma_{LL}=0.75$																					

NOTES:
 MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE II LIMIT STATES.
 ALLOWABLE STRESS FOR SERVICE II LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:
 1.
 2.
 3.
 4.

CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93) **

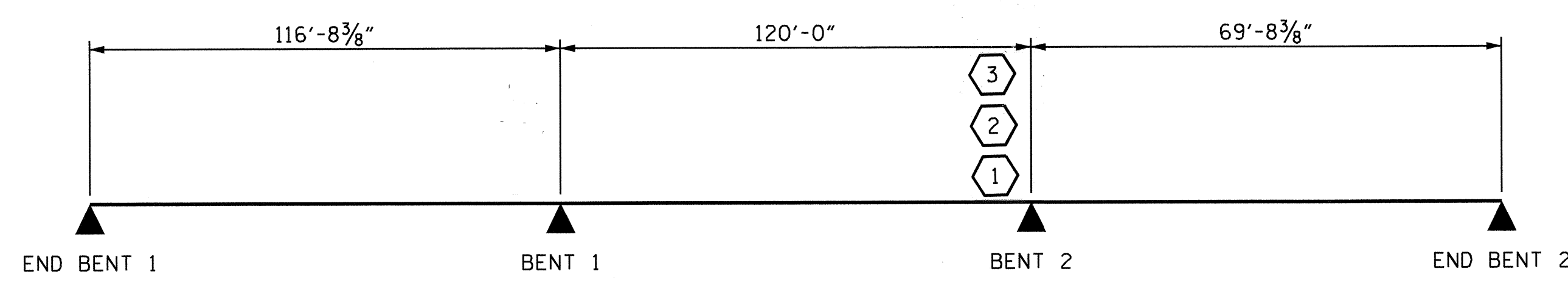
② DESIGN LOAD RATING (HS-20) **

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
 EL - EXTERIOR LEFT GIRDER
 ER - EXTERIOR RIGHT GIRDER



LRFR SUMMARY

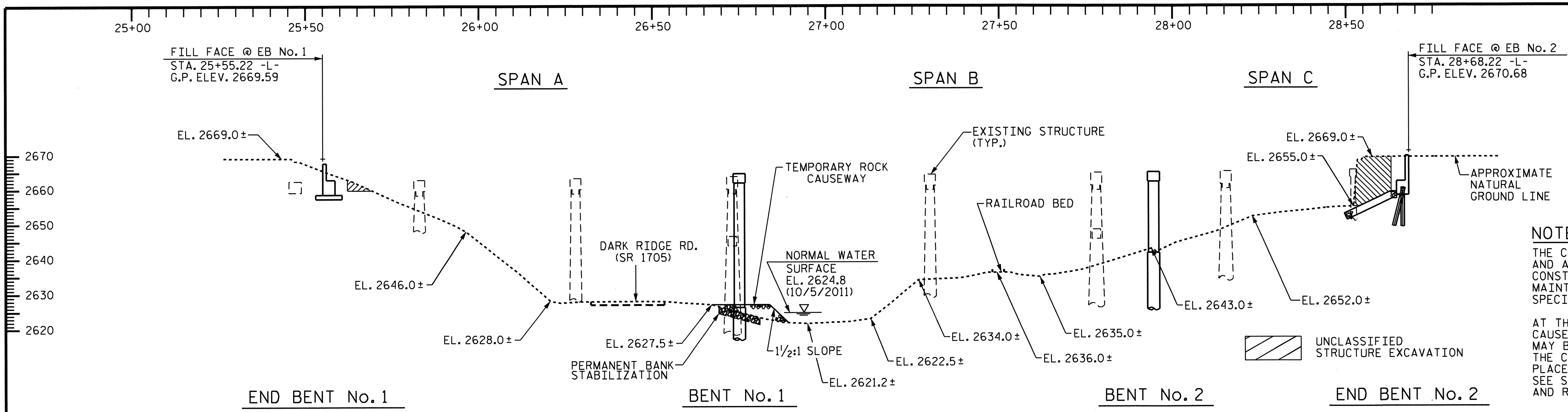
PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 LRFR SUMMARY FOR
 STEEL GIRDERS
 (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-4
1			3			TOTAL SHEETS
2			4			62

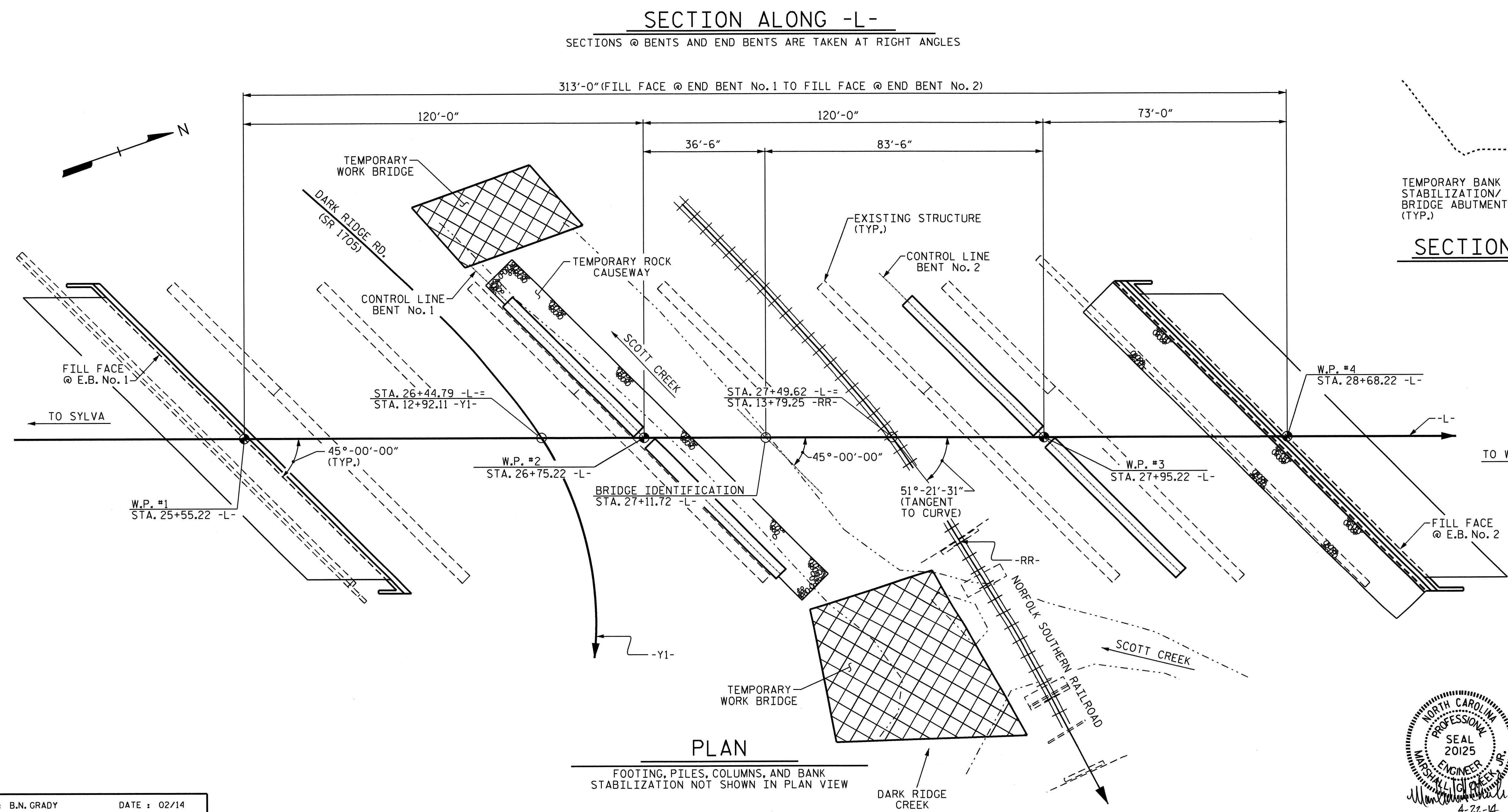
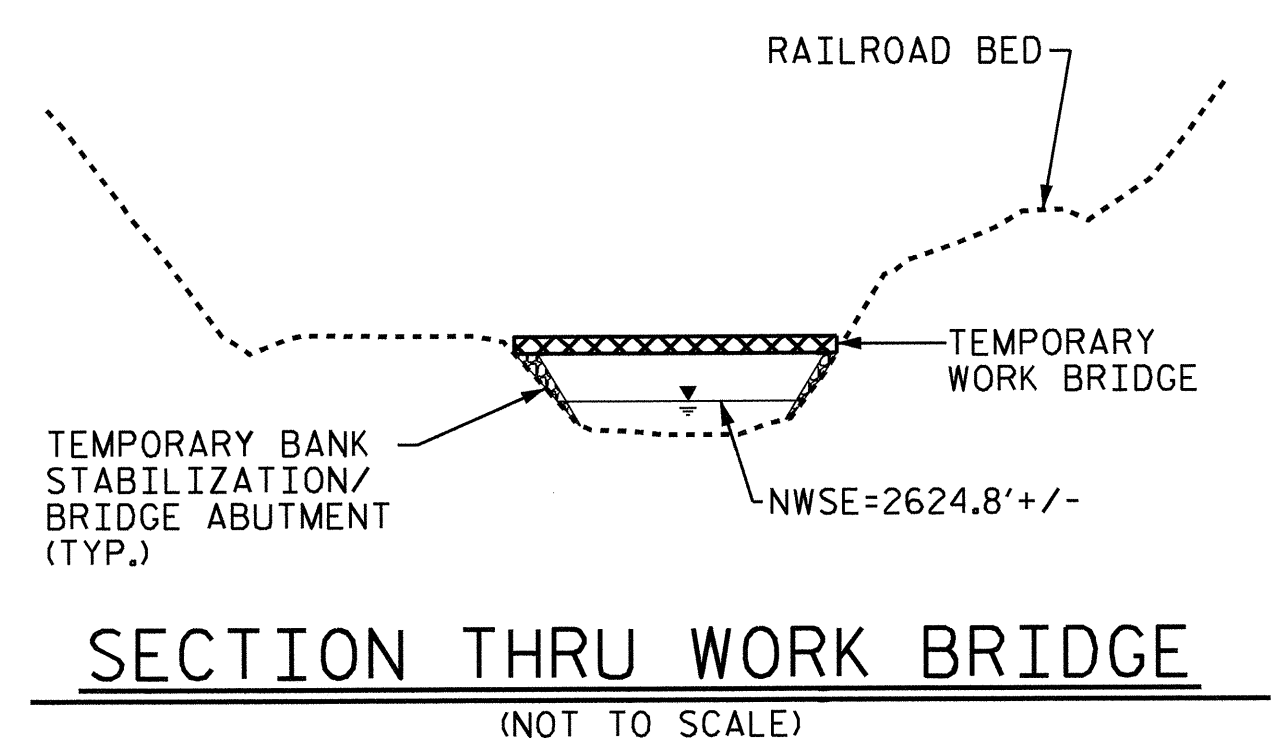
ASSEMBLED BY : W.J. HARRIS DATE : 3/14
 CHECKED BY : M.A. LEBLANC DATE : 3/14
 DRAWN BY : MAA 1/08 REV. 11/12/08RR MAA/GM
 CHECKED BY : GM/DI 2/08 REV. 10/11 MAA/GM



NOTES

THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY ACCESS FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS, SEE SPECIAL PROVISIONS.

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS PERMANENT BANK STABILIZATION AND THE CLASS I RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION AT END BENT No. 2. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 27+11.72 -L-.



PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

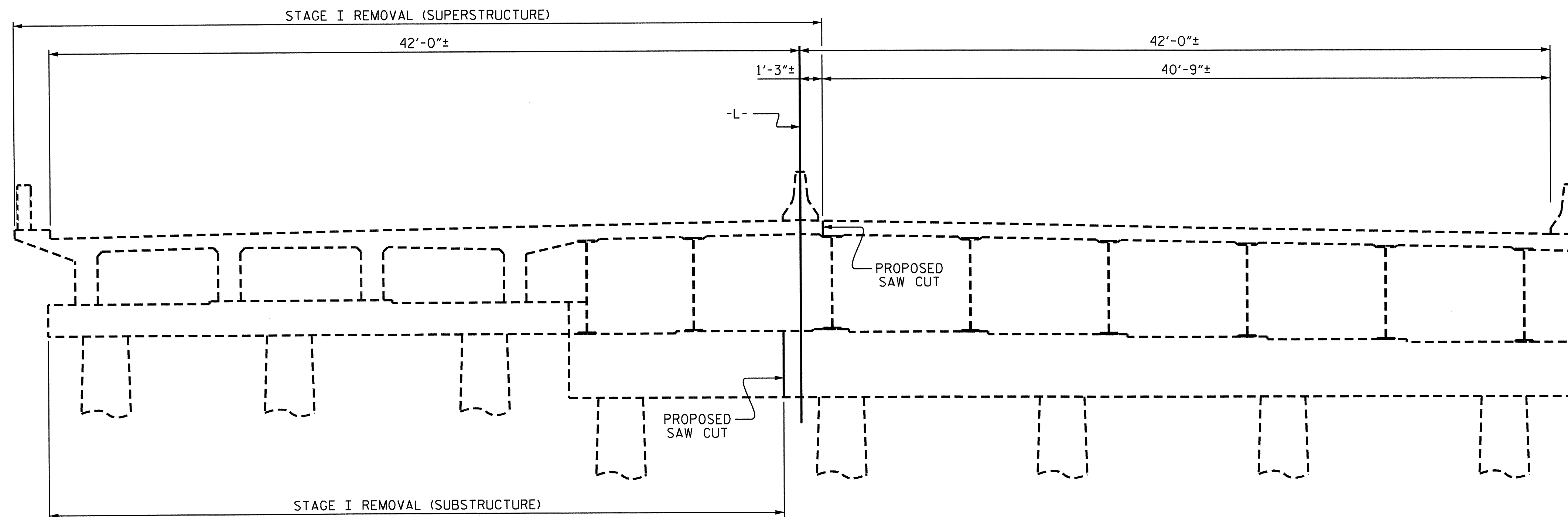
TEMPORARY ACCESS

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			5
2			4			62

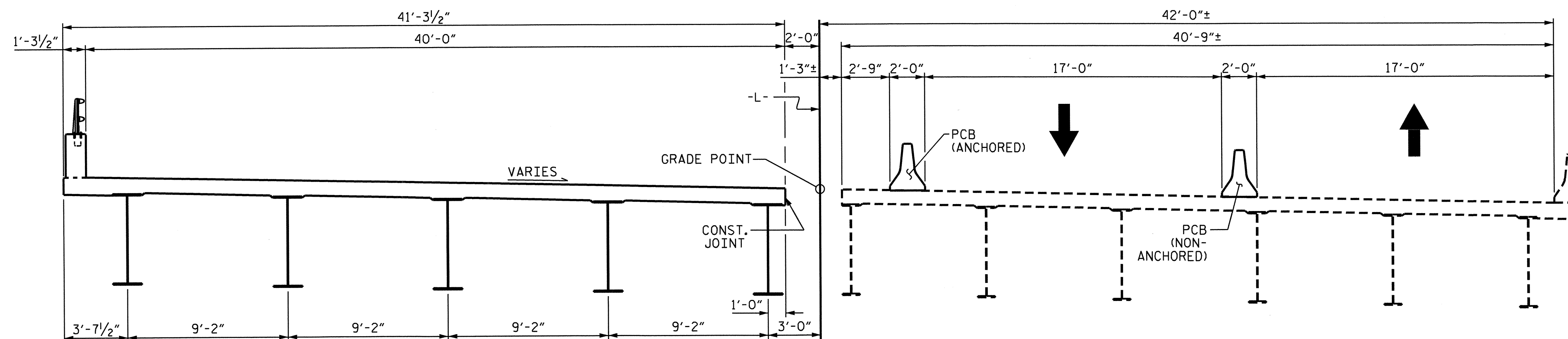
DRAWN BY : B.N. GRADY DATE : 02/14
 CHECKED BY : W.J. HARRIS DATE : 03/14

22-APR-2014 08:18
 R:\Structures\Final Plans\B4554.SD.GD.dgn
 dchadge





EXISTING BRIDGE



STAGE I CONSTRUCTION

EXISTING BRIDGE
STAGE I TRAFFIC

NOTES

FOR TRAFFIC PHASING, SEE TRAFFIC CONTROL PLANS.

THE UNANCHORED PORTABLE CONCRETE BARRIER AND THE ANCHORED PORTABLE CONCRETE BARRIER ARE TRAFFIC CONTROL PAY ITEMS.

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

THE EXISTING STRUCTURE SHALL BE REMOVED IN ACCORDANCE WITH THESE PLANS, THE STANDARD SPECIFICATIONS, AND AS DIRECTED BY THE ENGINEER:

1. PARTIAL REMOVAL OF THE EXISTING SUPERSTRUCTURE SHALL BE DONE AS INDICATED BY THE CONSTRUCTION SEQUENCE SKETCH.
2. THE EXISTING SUBSTRUCTURE SHALL BE PARTIALLY REMOVED TO THE LIMITS SHOWN ON THE PLANS AS NECESSARY TO FACILITATE STAGE I CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.
3. THE REMAINING EXISTING STRUCTURE SHALL BE REMOVED AFTER COMPLETION OF STAGE I OF THE PROPOSED STRUCTURE AND IMPLEMENTATION OF STAGE II TRAFFIC.

CARE SHALL BE TAKEN DURING THE PARTIAL REMOVAL TO AVOID DAMAGING THE REMAINING EXISTING STRUCTURE SERVING AS A TEMPORARY STRUCTURE. DAMAGE TO THE REMAINING STRUCTURE SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE DEPARTMENT. THE METHOD OF REPAIR SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.

ALL WORK, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED FOR THE PARTIAL REMOVAL AND DISPOSAL OF EXISTING RAIL AND DECK AS SHOWN DURING STAGE I CONSTRUCTION SHALL BE INCLUDED IN THE UNIT CONTRACT BID FOR "REMOVAL OF EXISTING STRUCTURE".

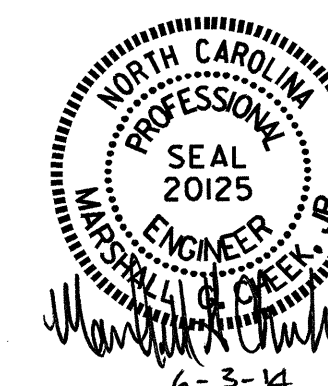
PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 1 OF 2

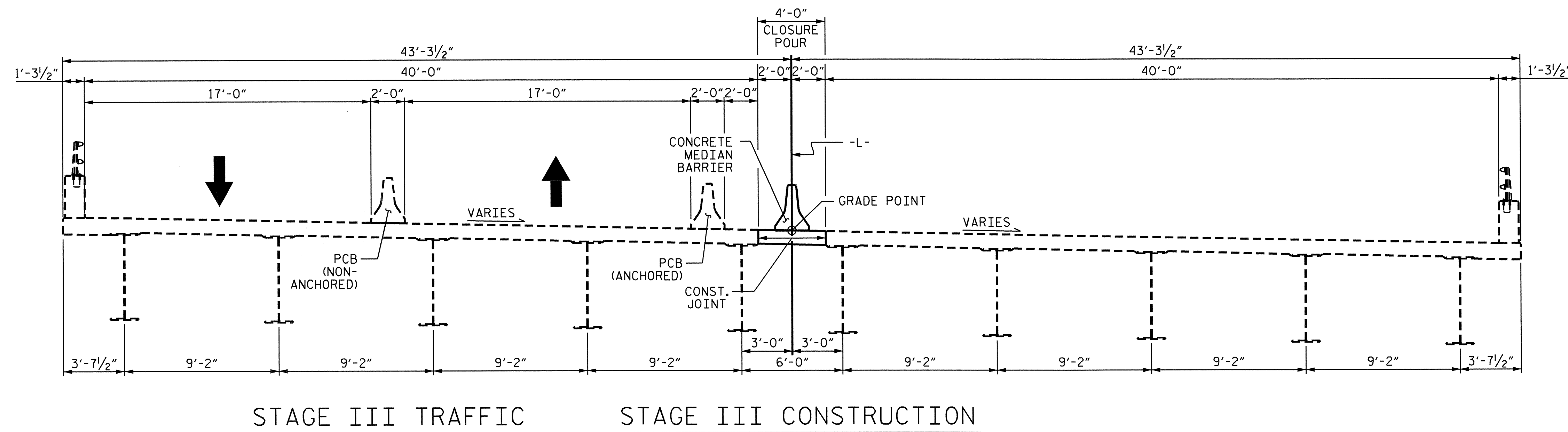
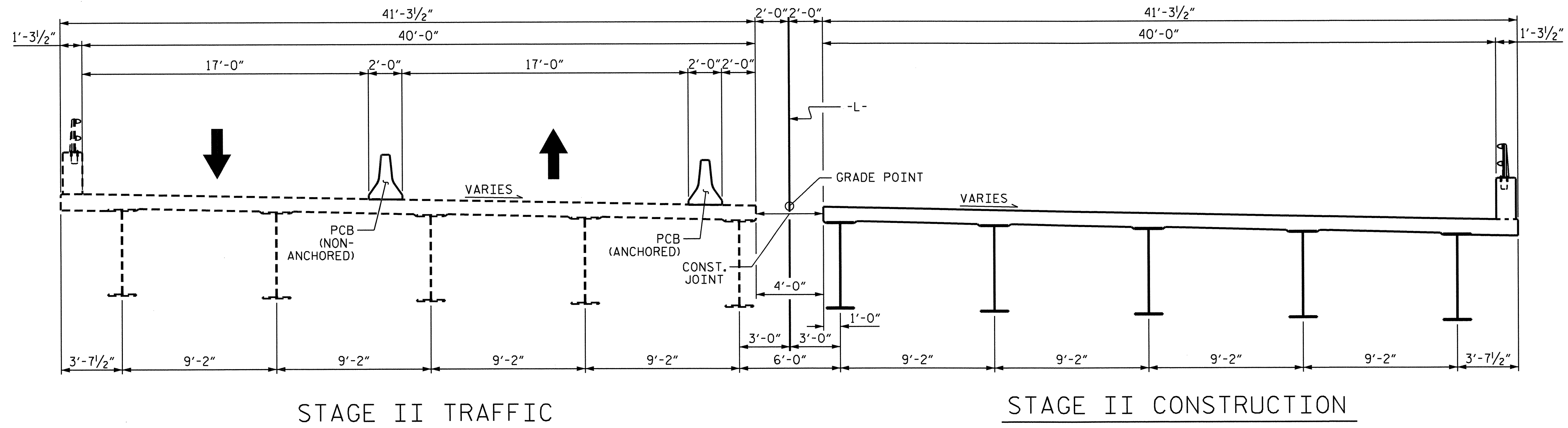
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONSTRUCTION
SEQUENCE

DRAWN BY : M.A. LEBLANC DATE : 2/14
 CHECKED BY : W.J. HARRIS DATE : 3/14



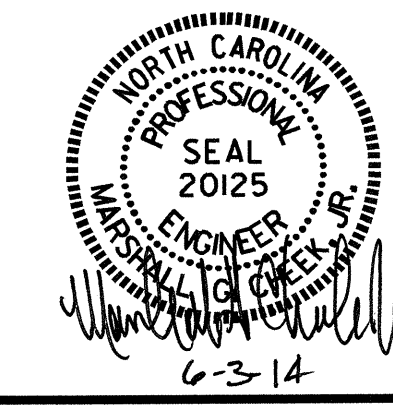
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-6
2			4			61



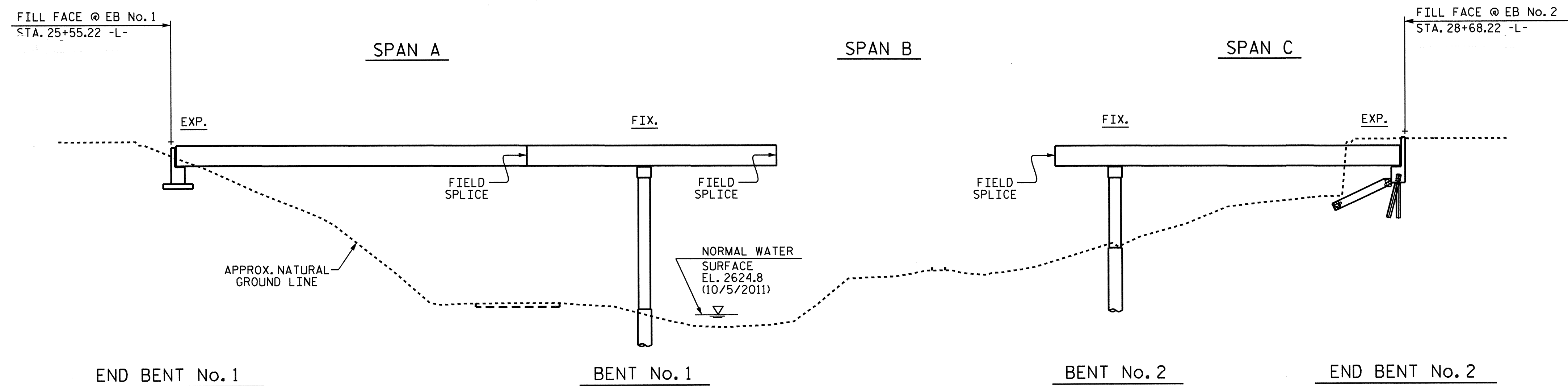
PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 2 OF 2

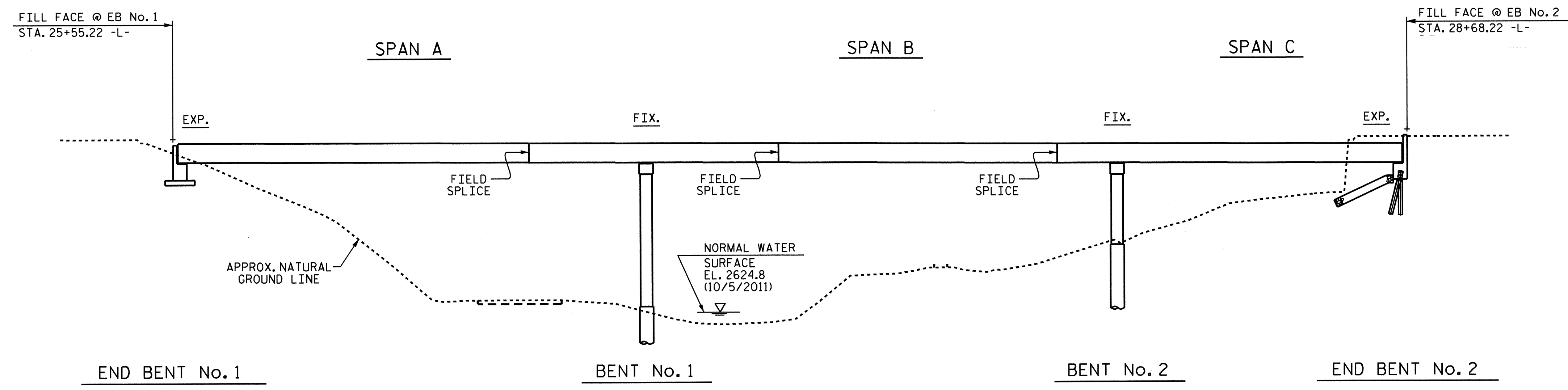
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
CONSTRUCTION SEQUENCE					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 61



DRAWN BY : M.A. LEBLANC DATE : 2/14
 CHECKED BY : W.J. HARRIS DATE : 3/14



PHASE I GIRDER ERECTION



PHASE II GIRDER ERECTION

NOTES

DURING THE GIRDER ERECTION PROCEDURE, THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY LATERAL BRACING AND OTHER MEANS OF SUPPORT AS REQUIRED, TO ENSURE STABILITY OF THE GIRDERS, AND TO ENSURE PLUMBNESS OF THE GIRDERS IN THE FINAL CONDITION.

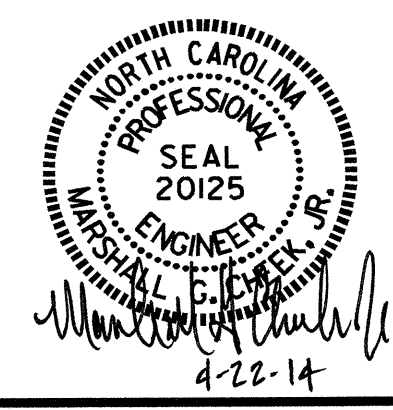
THE CONTRACTOR MAY SUBMIT AN ALTERNATE ERECTION METHOD TO THE ENGINEER FOR REVIEW AND APPROVAL.

THE STRUCTURAL STEEL SHALL BE SUPPORTED DURING ERECTION IN ITS CAMBERED POSITION.

THE FIRST TWO GIRDERS SHALL BE ERECTED SIMULTANEOUSLY WITH ALL DIAPHRAGMS BETWEEN THE GIRDERS IN PLACE AND THE BOLTS TIGHTENED PRIOR TO RELEASING THE GIRDERS. CONNECT ADDITIONAL GIRDERS ADJACENT TO THE PREVIOUSLY ERECTED GIRDERS AND TIGHTEN ALL BOLTS PRIOR TO RELEASING ADDITIONAL GIRDERS.

AFTER ERECTING THE END SPANS, THE DROP-IN SECTIONS SHALL BE INSTALLED INDIVIDUALLY.

PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**GIRDER ERECTION
 DETAILS**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-7
2			4			62

DRAWN BY : B.N. GRADY
 CHECKED BY : W.J. HARRIS
 DESIGN ENGINEER OF RECORD: W.J. HARRIS

DATE : 3/14
 DATE : 3/14
 DATE : 3/14

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" BARS HEIGHT TO SUPPORT THE BOTTOM MAT OF "A" BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.

CONCRETE PARAPET AND MEDIAN BARRIER IN CONTINUOUS UNIT 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.

DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM SLAB REINFORCING STEEL.

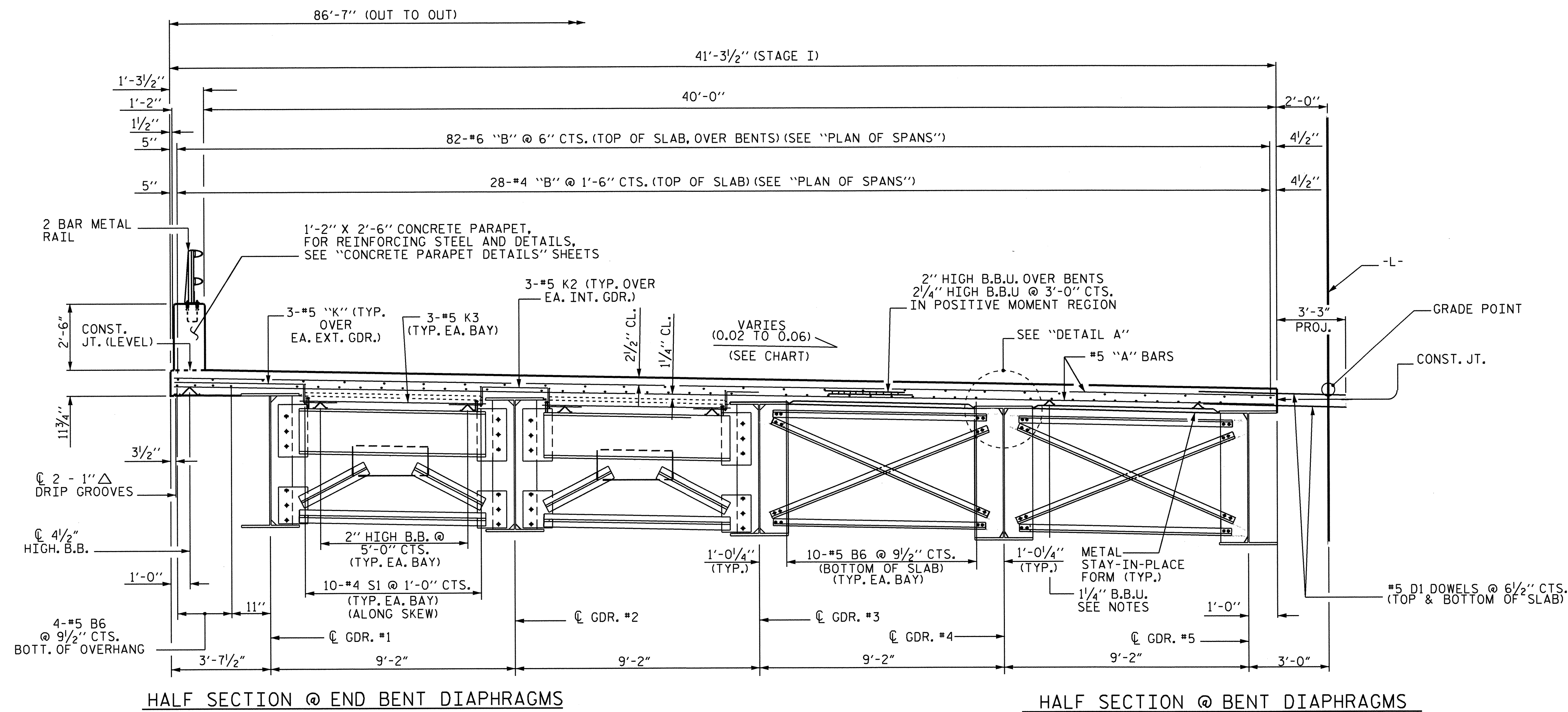
METAL STAY-IN-PLACE FORMS SHALL NOT BE WELDED TO GIRDER FLANGES IN THE ZONES REQUIRING CHARPY V-NOTCH TEST. SEE STRUCTURAL STEEL DETAIL SHEETS.

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

STRUCTURAL STEEL ERECTION IN A CONTINUOUS UNIT SHALL BE COMPLETE BEFORE FALSEWORK OR FORMS ARE PLACED ON THE UNIT.

THE CONTRACTOR SHALL ADJUST THE GIRDER BUILDUPS AS NECESSARY TO INCORPORATE A MAXIMUM PERMISSIBLE VARIATION IN DISC BEARING DEPTH OF 1/2". SEE SPECIAL PROVISION FOR DISC BEARINGS.

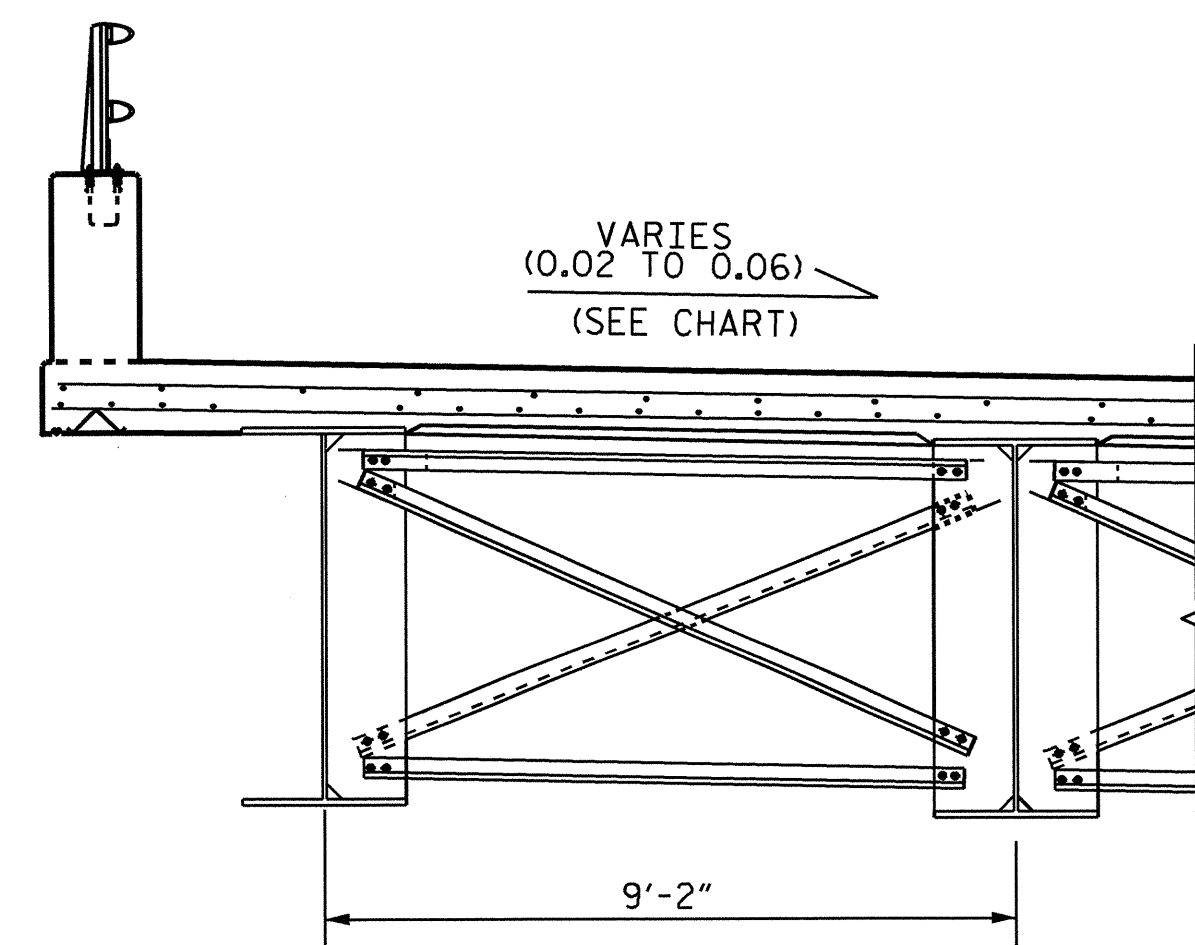
PVC DECK DRAINS SHALL BE PAINTED WITH TWO COATS OF BROWN PRIMER MEETING THE REQUIREMENTS OF ARTICLE 1080-11 OF THE STANDARD SPECIFICATIONS. EACH COAT SHALL BE 2 DRY MILS THICK. DECK DRAINS SHALL BE ROUGHENED PRIOR TO PAINTING. NO SEPARATE PAYMENT SHALL BE MADE FOR PAINTING PVC DECK DRAINS AS THIS IS CONSIDERED INCIDENTAL TO THE PAY ITEM FOR REINFORCED CONCRETE DECK SLAB.



HALF SECTION @ END BENT DIAPHRAGMS

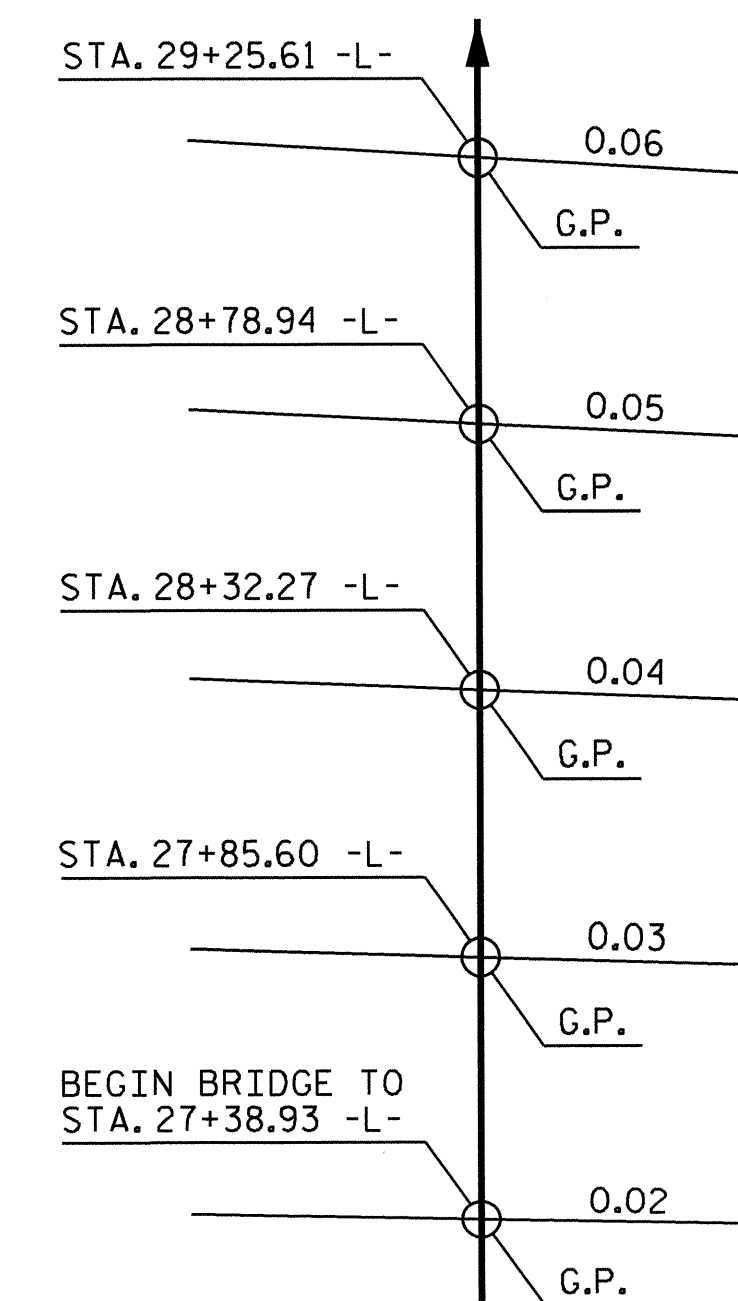
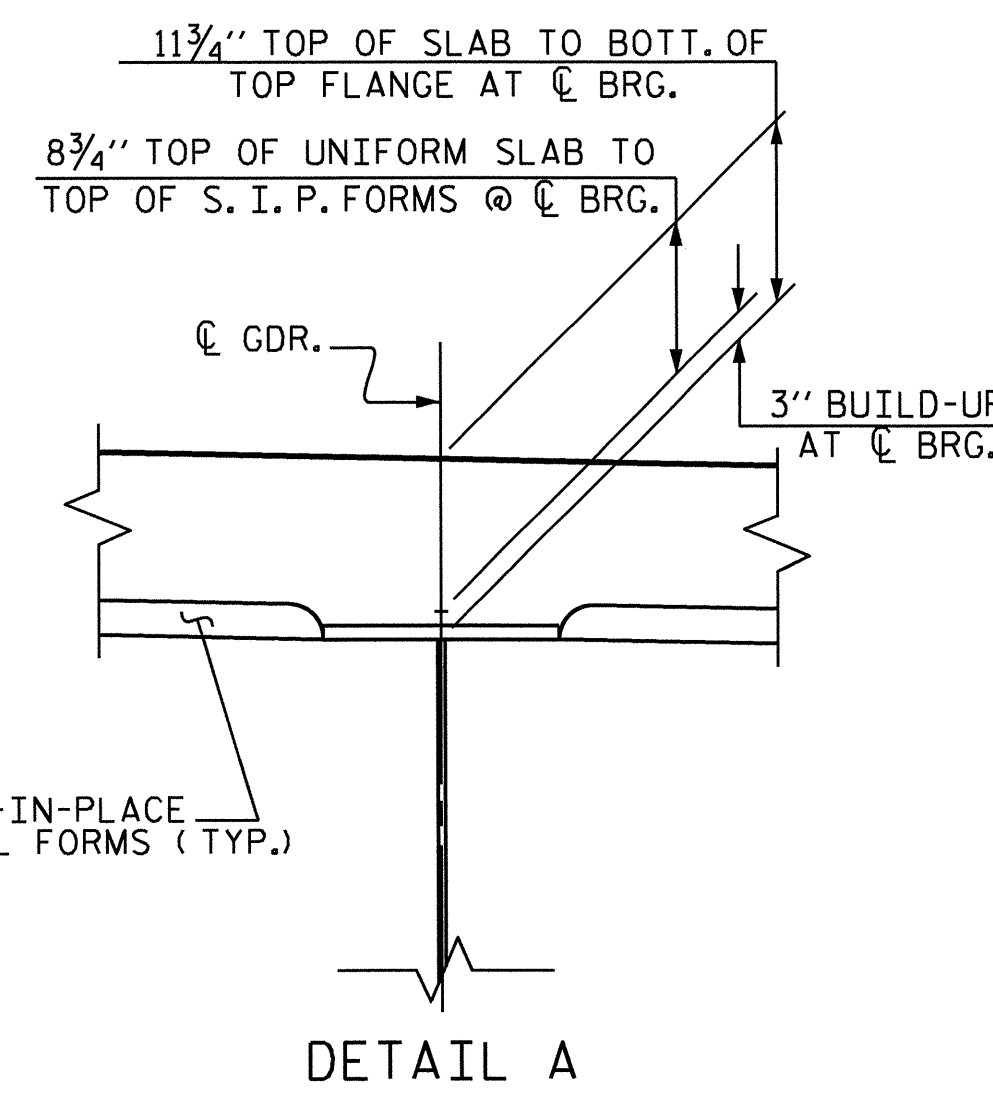
HALF SECTION @ BENT DIAPHRAGMS

TYPICAL SECTION - STAGE I

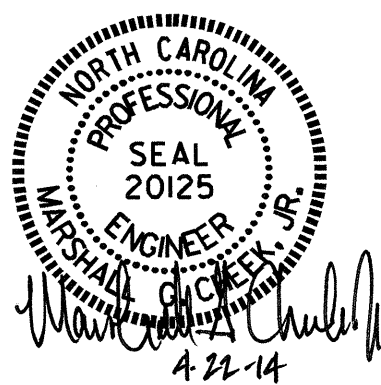


PARTIAL TYPICAL SECTION - STAGE I

SHOWING INTERMEDIATE DIAPHRAGMS



VARIABLE SUPERELEVATION



PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 1 OF 3

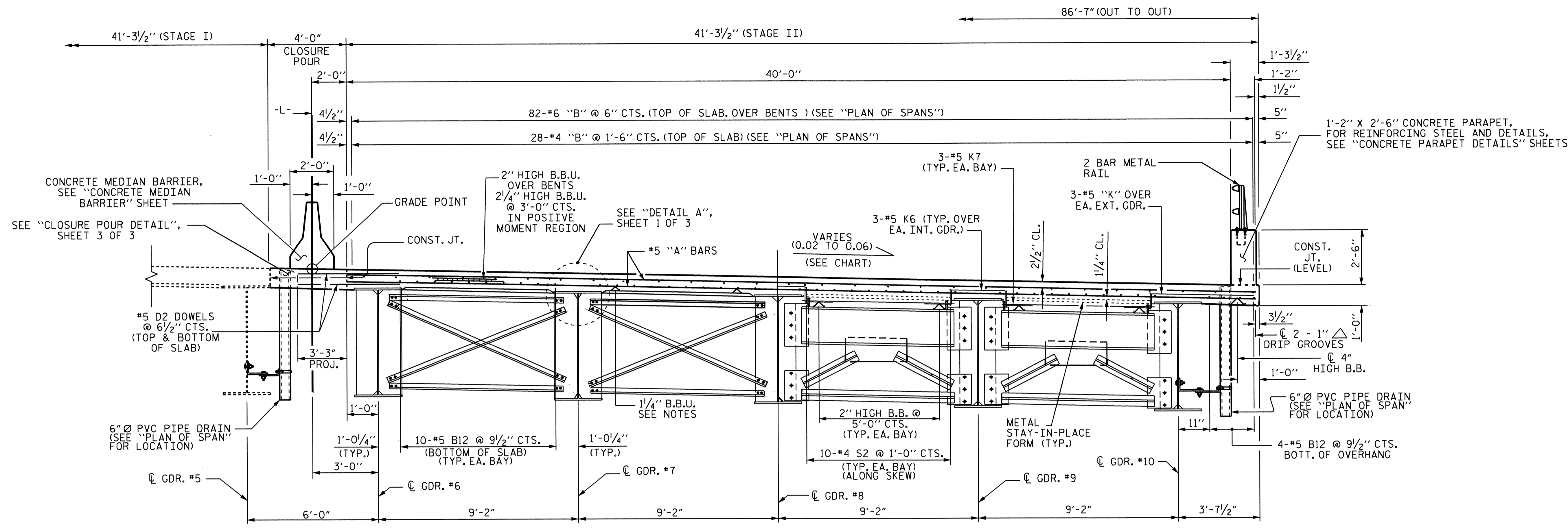
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE TYPICAL SECTION STAGE I

DRAWN BY: M. POOLE DATE: 10/12
 CHECKED BY: D. HODGE DATE: 3/14
 DESIGN ENGINEER OF RECORD: W.J. HARRIS DATE: 4/14

22-APR-2014 10:27
 Z:\Structures\Final Plans\B4554.SD.LS.dgn
 wjharris

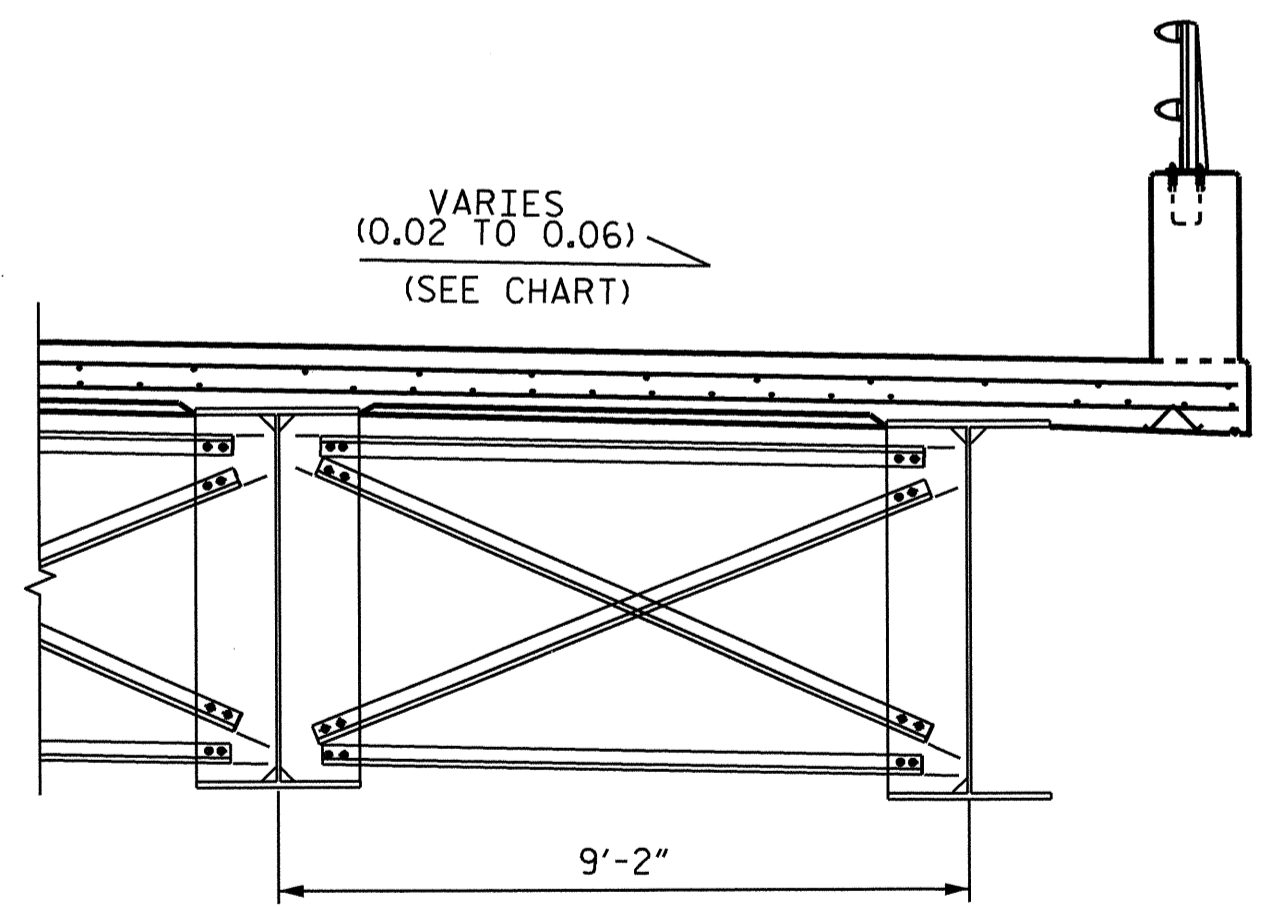
REVISIONS						SHEET NO. S-8
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 62
2			4			



HALF SECTION @ BENT DIAPHRAGMS

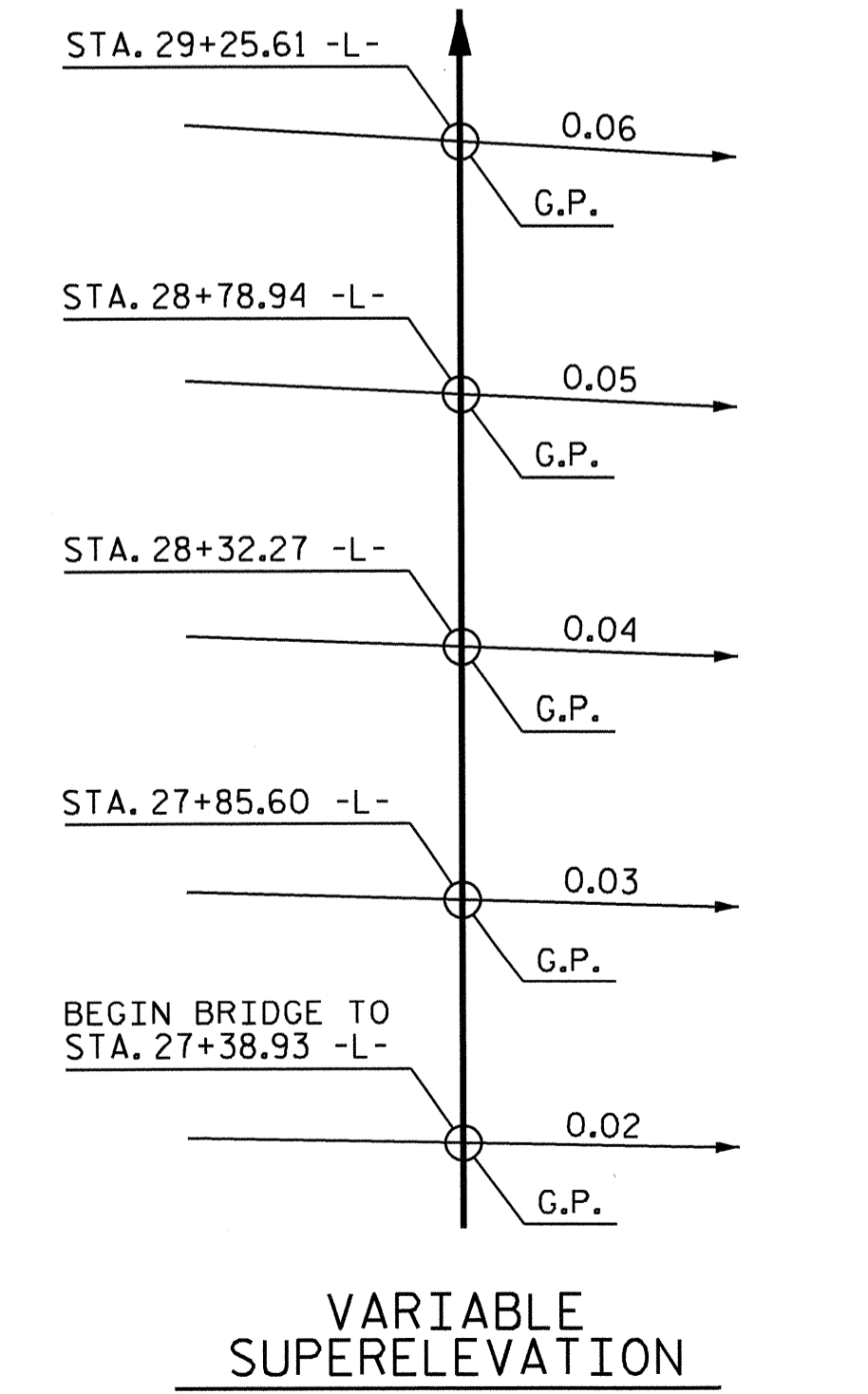
HALF SECTION @ END BENT DIAPHRAGMS

TYPICAL SECTION - STAGE II



PARTIAL TYPICAL SECTION - STAGE II

SHOWING INTERMEDIATE DIAPHRAGMS



VARIABLE SUPERELEVATION

PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

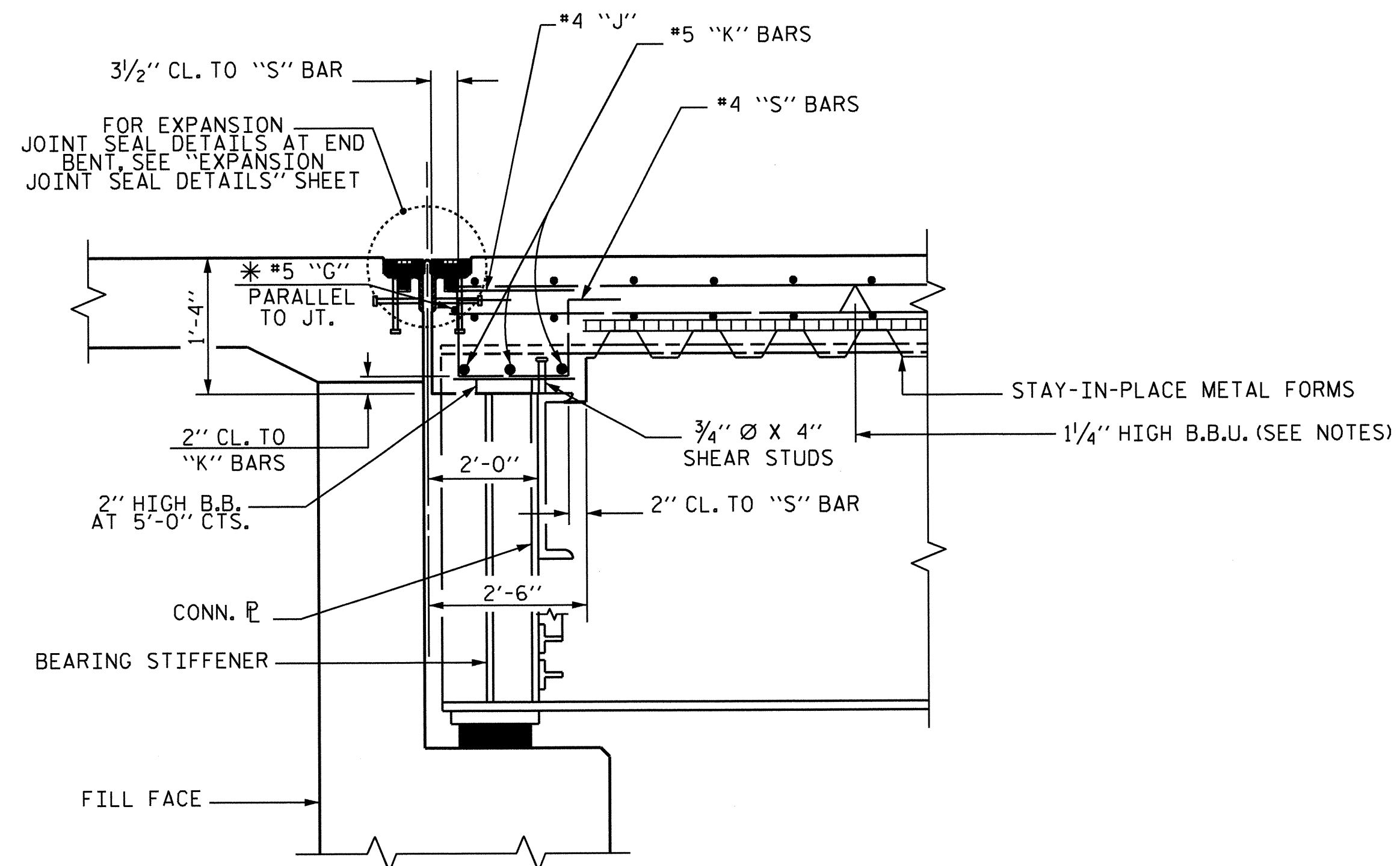
SUPERSTRUCTURE
 TYPICAL SECTION
 STAGE II



DRAWN BY : M. POOLE DATE : 10/12
 CHECKED BY : D. HODGE DATE : 3/14
 DESIGN ENGINEER OF RECORD : W. J. HARRIS DATE : 4/14

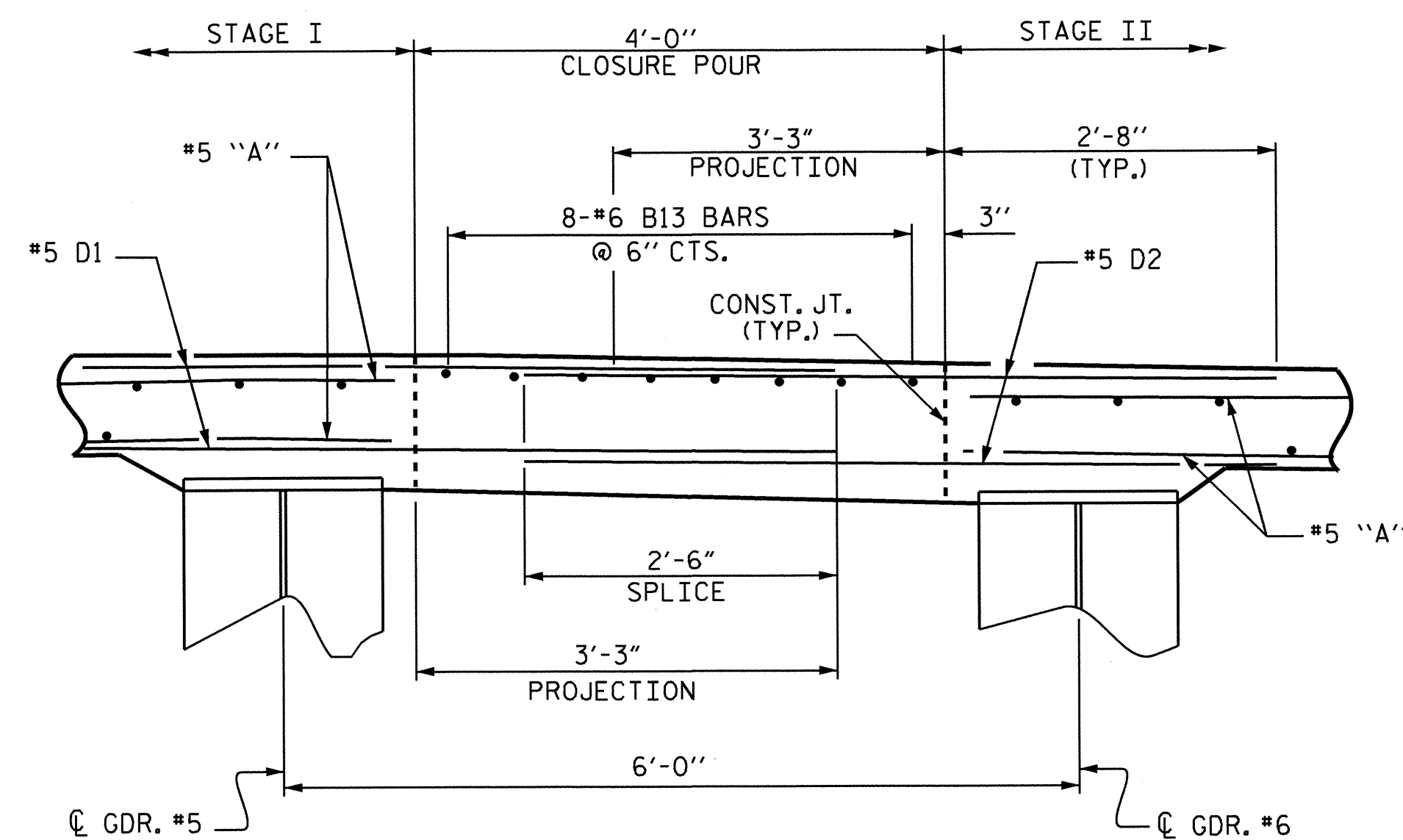
REVISIONS						SHEET NO. S-9
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 62
2			4			

22-APR-2014 10:27
 Z:\Structures\Final Plans\B4554.SD.TS.dgn
 wjharris

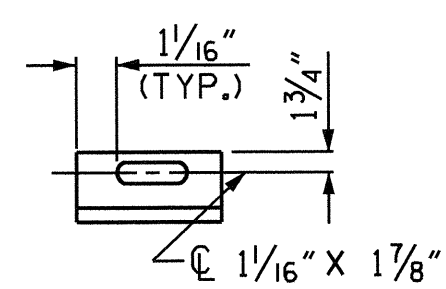


END OF GIRDER DETAIL AT END BENT

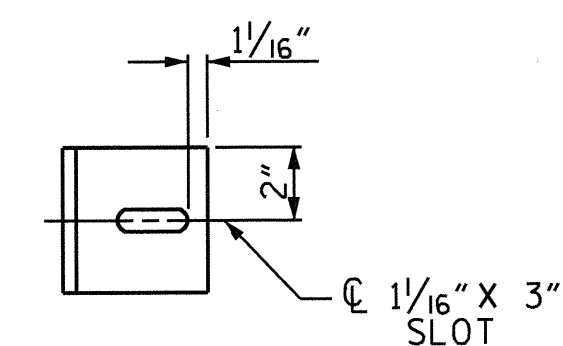
*#5G BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL & STIRRUPS.



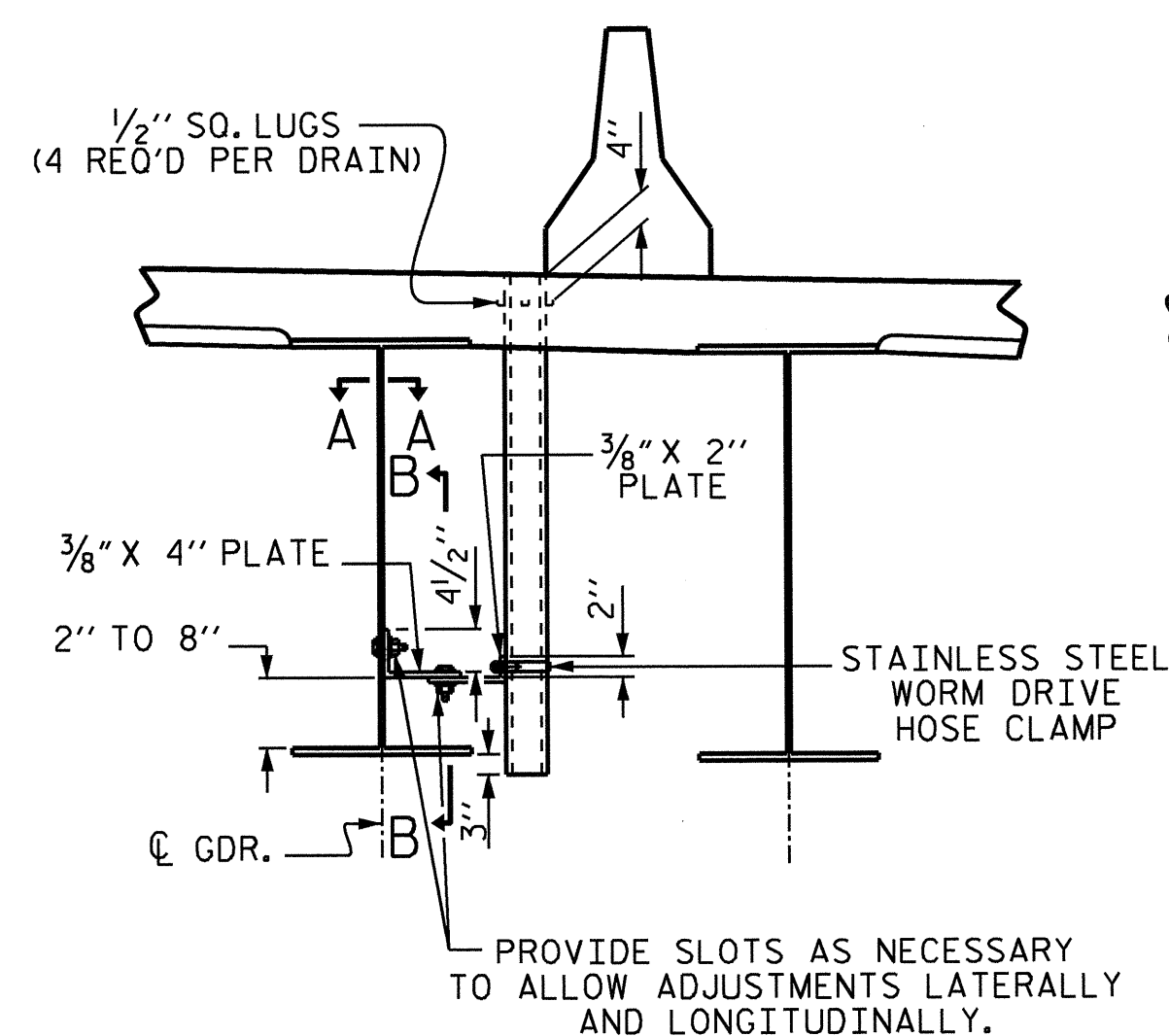
CLOSURE POUR DETAILS



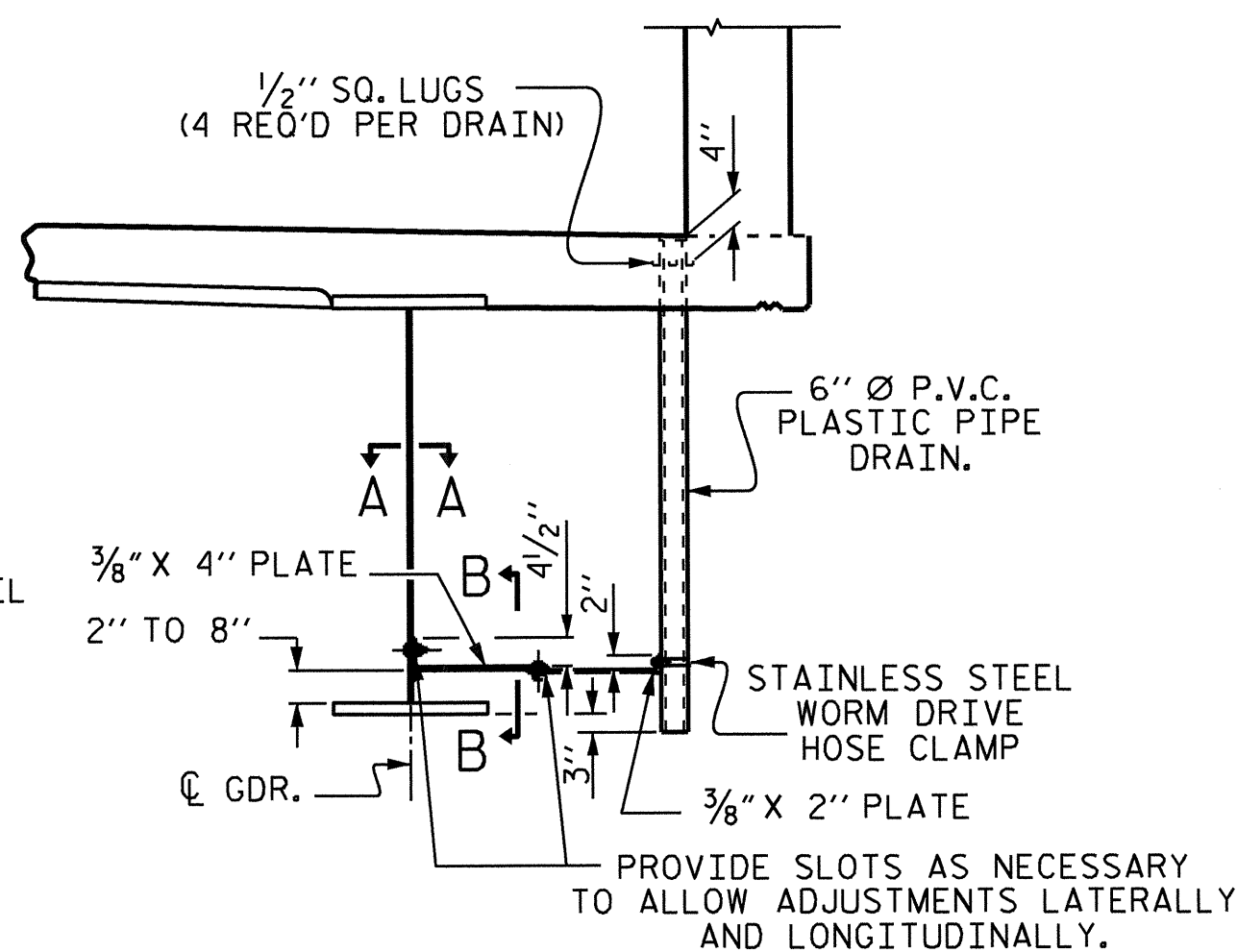
SECTION B-B



SECTION A-A



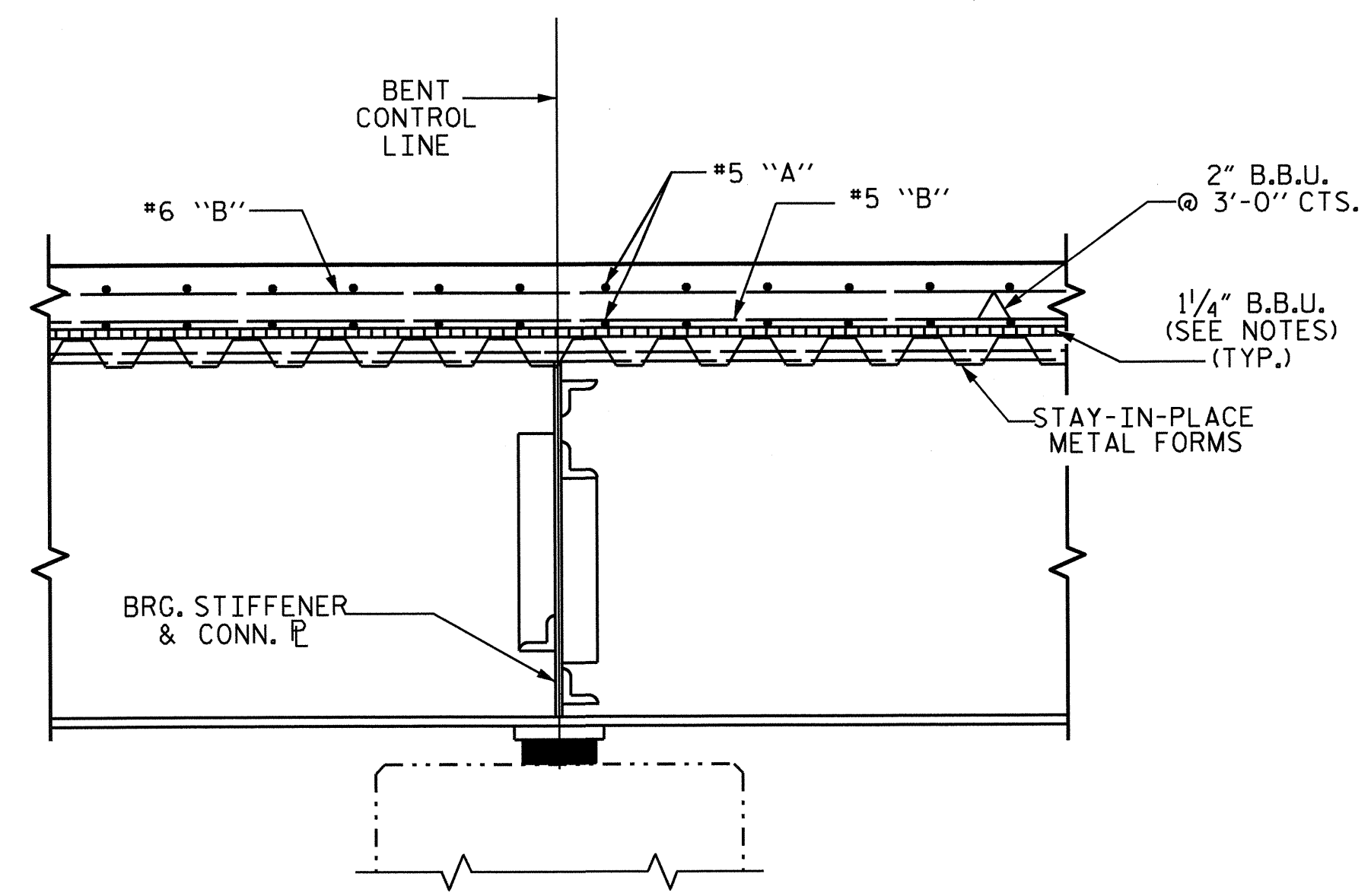
DRAIN AT MEDIAN BARRIER



DRAIN AT PARAPET

DRAIN CONNECTOR DETAIL

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



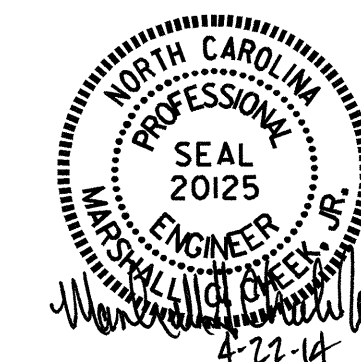
SECTION THRU BENT

PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 3 OF 3

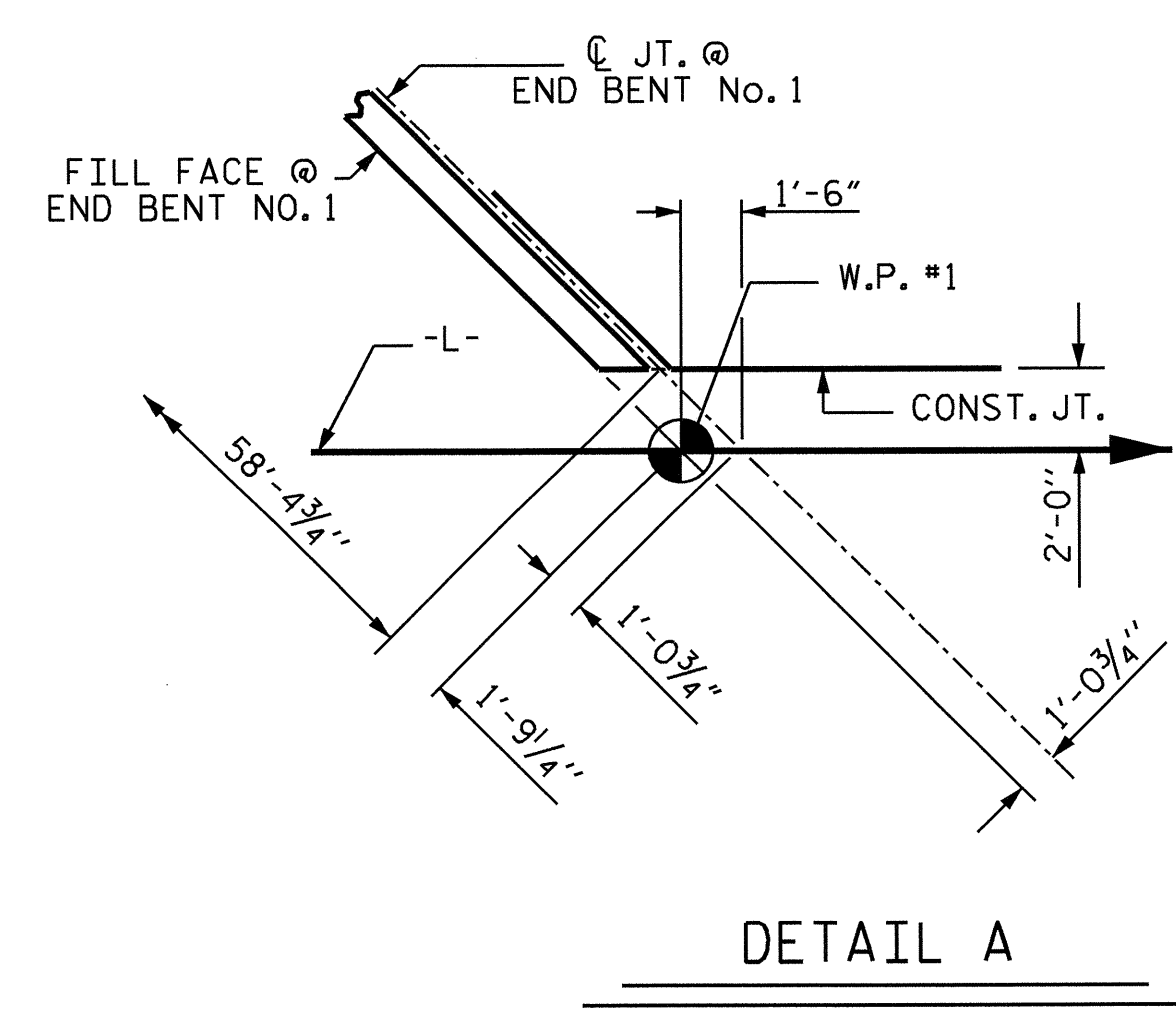
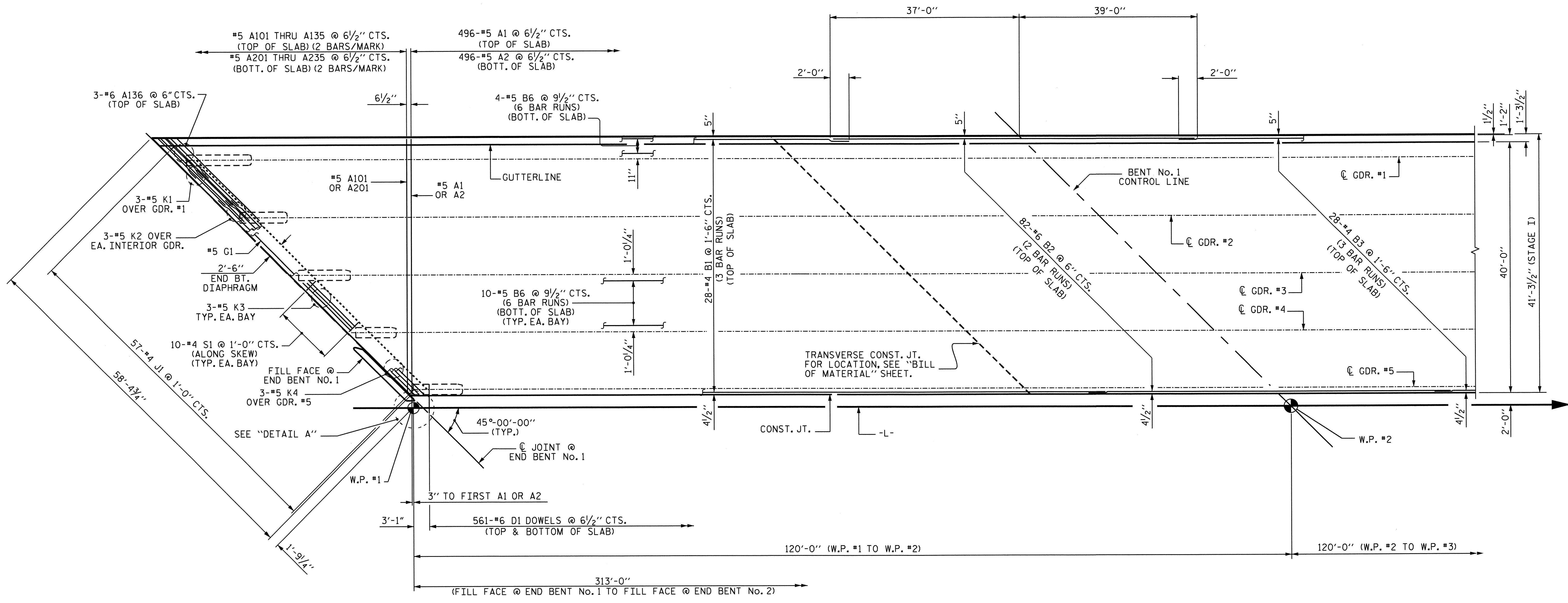
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 TYPICAL SECTION



DRAWN BY : M. POOLE DATE : 10/12
 CHECKED BY : D. HODGE DATE : 3/14
 DESIGN ENGINEER OF RECORD : W.J. HARRIS DATE : 4/14

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-10
2			4			62



PLAN OF SPAN A - STAGE I
 FOR CONCRETE PARAPET REINFORCING STEEL AND DETAILS, SEE "1'-2" X 2'-6" CONCRETE PARAPET" SHEETS.

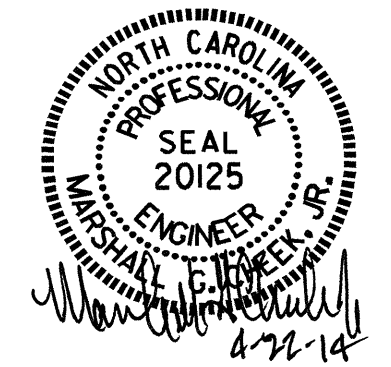
PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

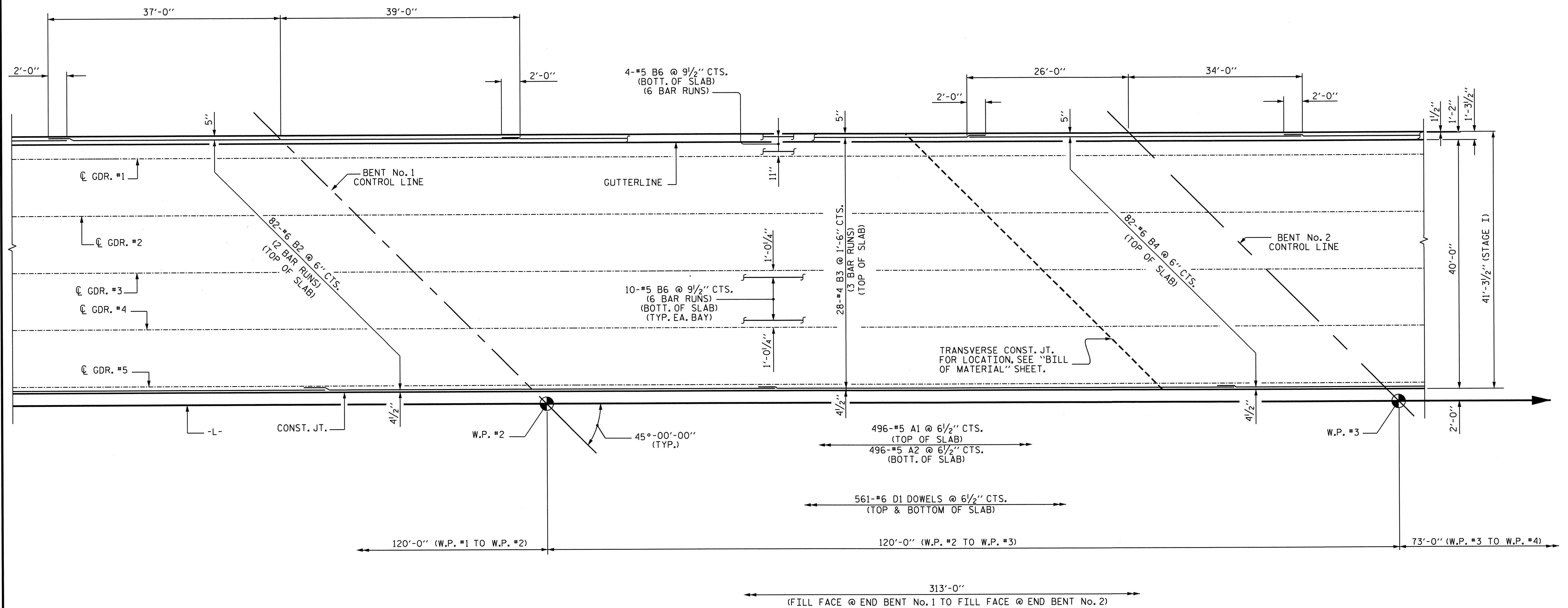
SUPERSTRUCTURE
PLAN OF SPAN A
STAGE I

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			62



DRAWN BY : M. POOLE DATE : 06/13
 CHECKED BY : D. HODGE DATE : 3/14
 DESIGN ENGINEER OF RECORD : W.J. HARRIS DATE : 04/14

22-APR-2014 10:25
 Z:\Structures\Final Plans\B4554.SD.S.dgn
 wjharris



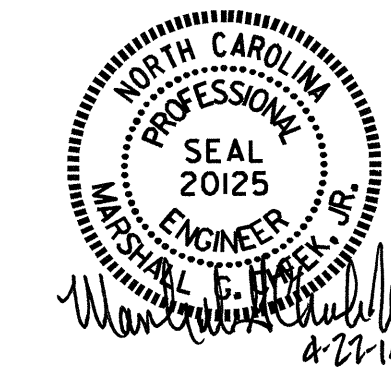
PLAN OF SPAN B - STAGE I
 FOR CONCRETE PARAPET, REINFORCING STEEL, AND DETAILS.
 SEE "1'-2" X 2'-6" CONCRETE PARAPET" SHEETS.

PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 2 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

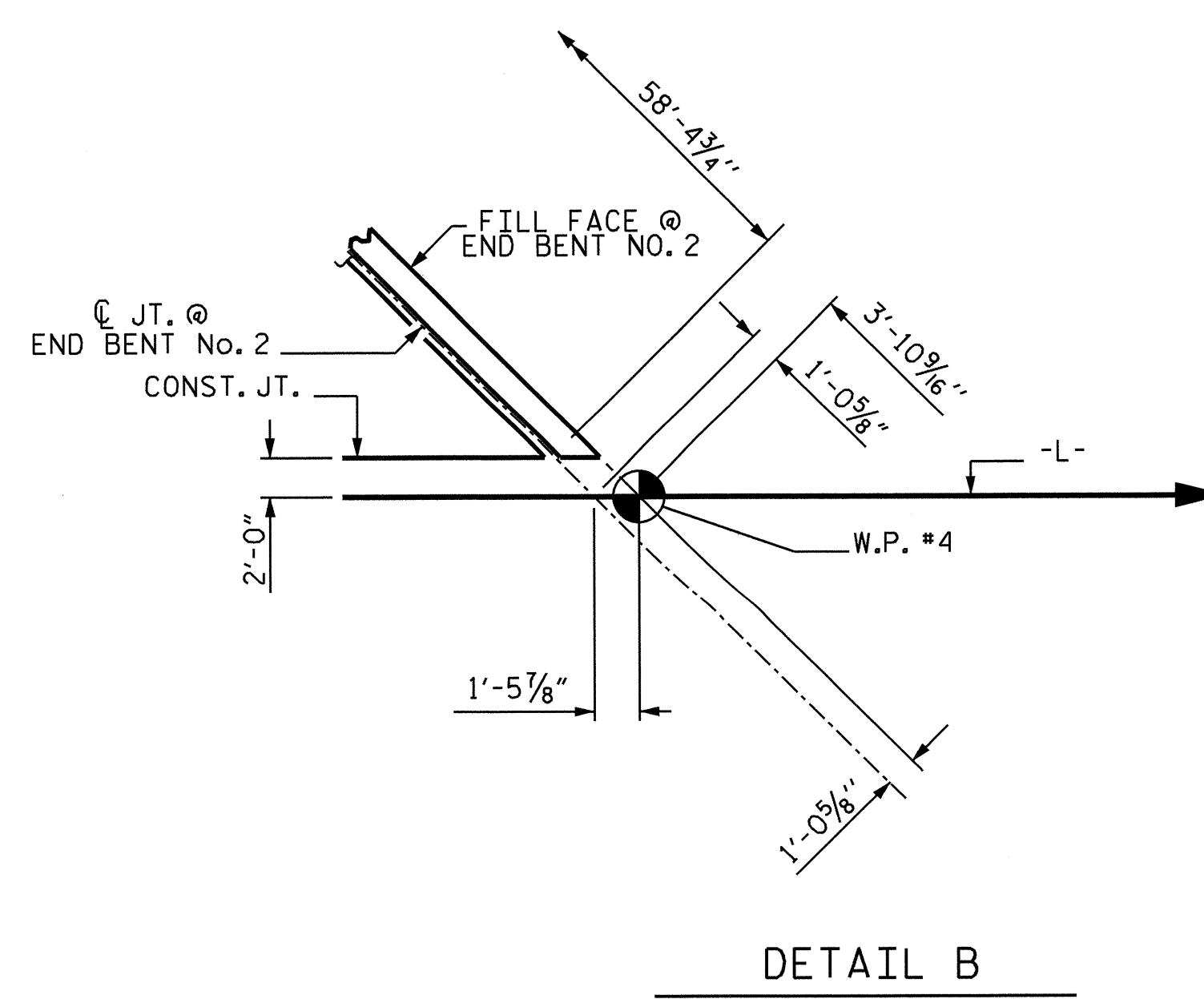
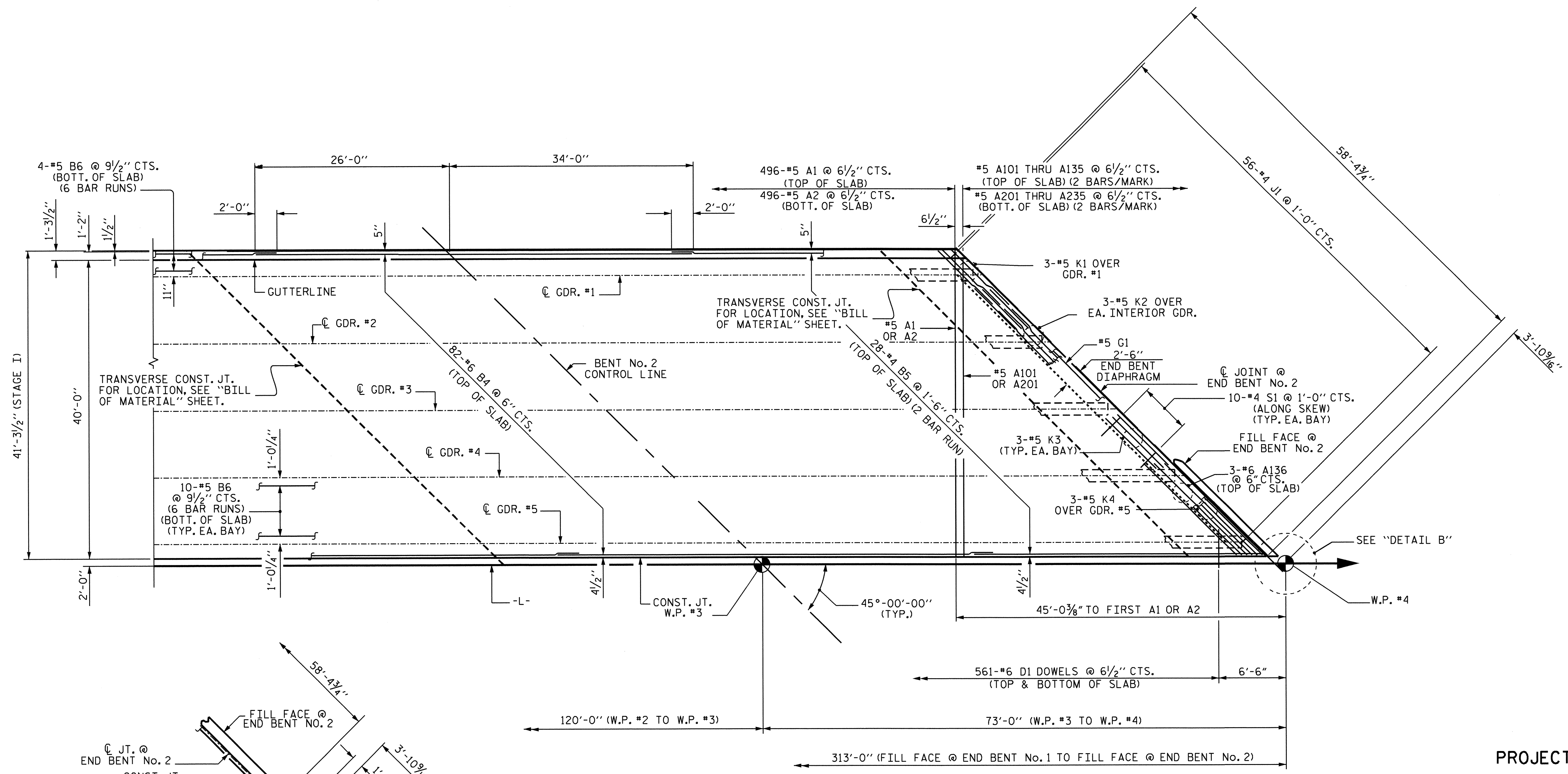
SUPERSTRUCTURE
 PLAN OF SPAN B
 STAGE I



DRAWN BY: M. POOLE DATE: 06/13
 CHECKED BY: D. HODGE DATE: 3/14
 DESIGN ENGINEER OF RECORD: W.J. HARRIS DATE: 04/14

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			5-12
2			4			62

22-APR-2014 10:25
 Z:\Structures\Final Plans\B4554.SD.S.dgn
 wjharris



PLAN OF SPAN C - STAGE I
 FOR CONCRETE PARAPET REINFORCING STEEL AND DETAILS.
 SEE "1'-2" X 2'-6" CONCRETE PARAPET" SHEETS.

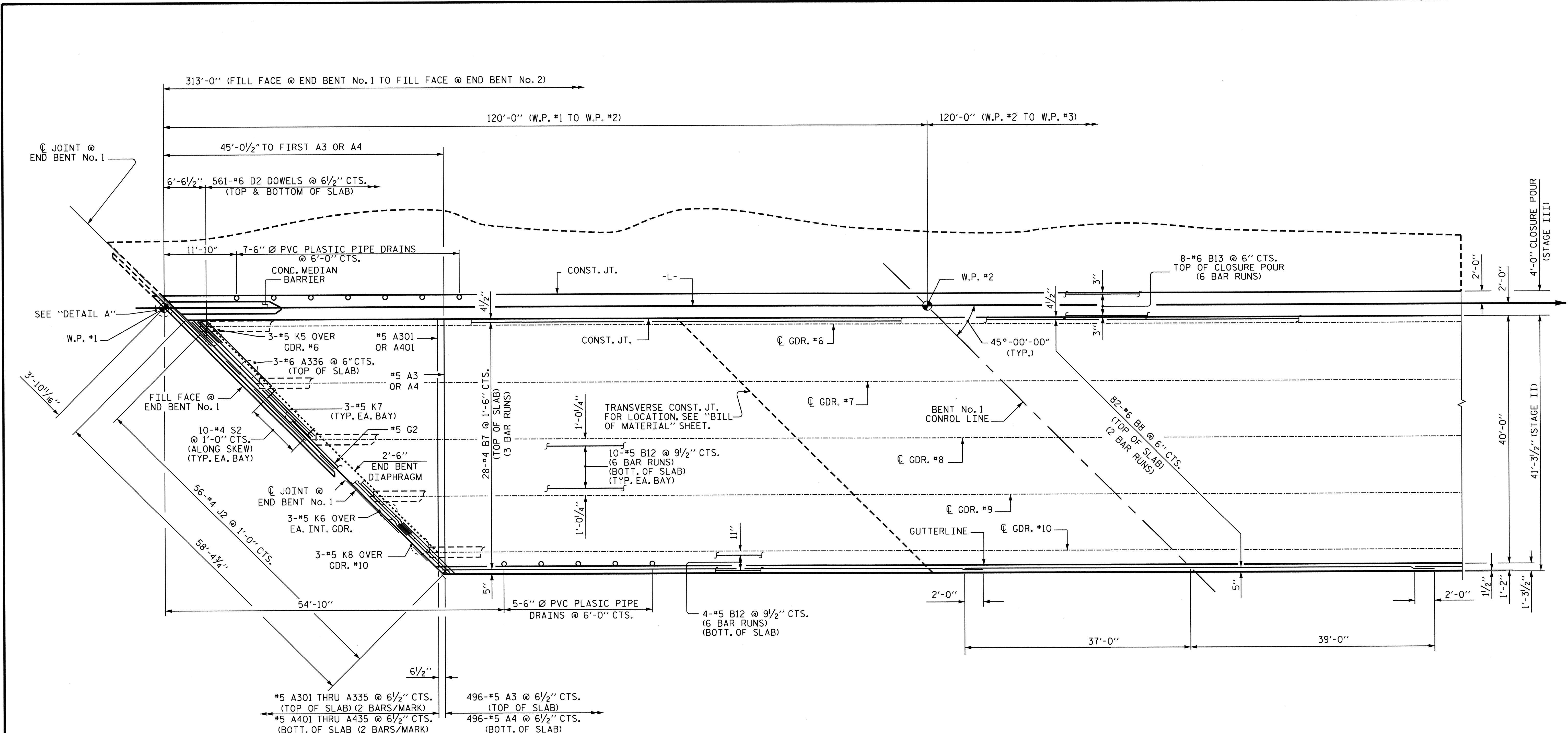
PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 3 OF 6
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN C
 STAGE I



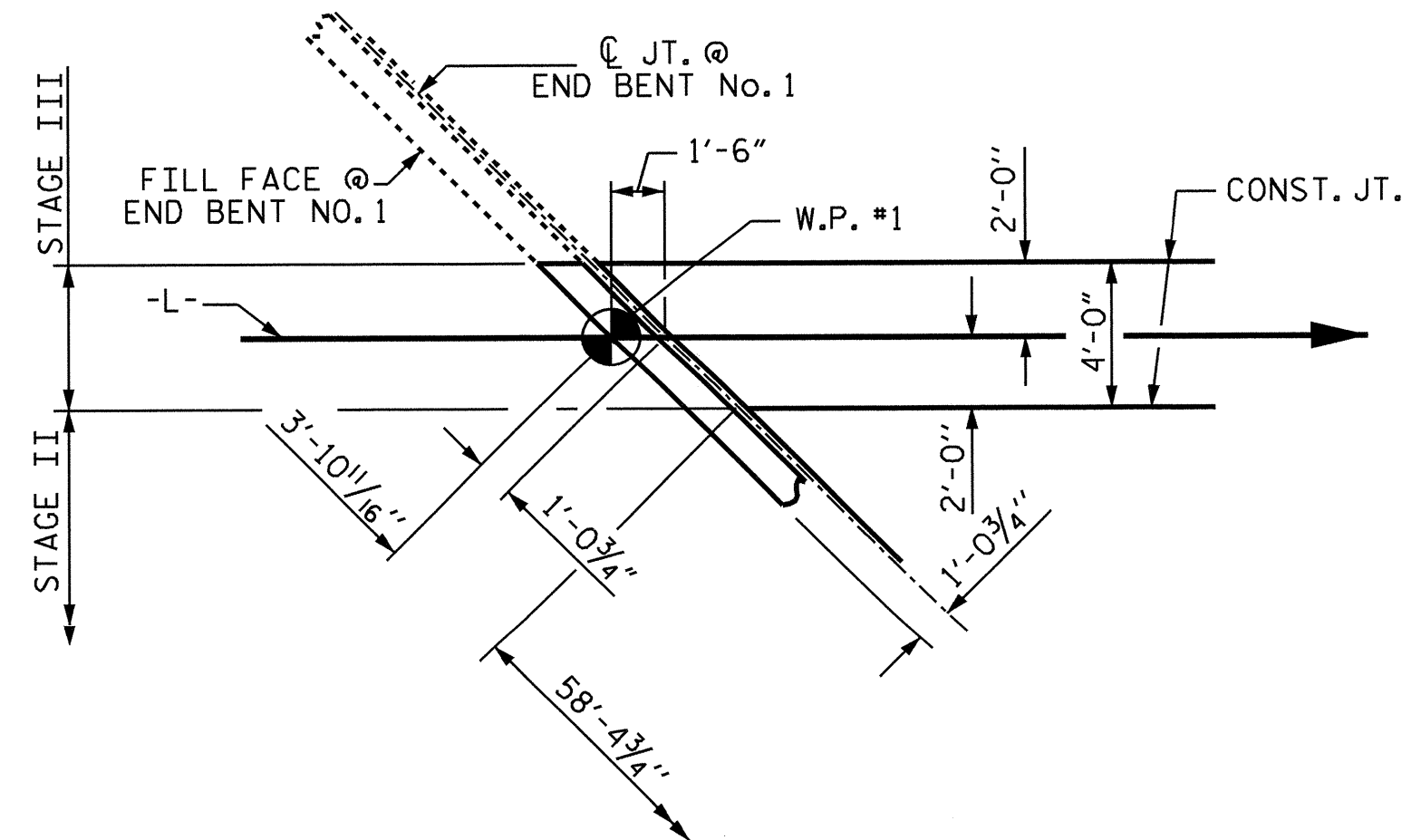
DRAWN BY: M. POOLE DATE: 06/13
 CHECKED BY: D. HODGE DATE: 3/14
 DESIGN ENGINEER OF RECORD: W.J. HARRIS DATE: 04/14

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			62



PLAN OF SPAN A - STAGE II

FOR CONCRETE PARAPET REINFORCING STEEL AND DETAILS, SEE "1'-2" X 2'-6" CONCRETE PARAPET" SHEETS.
 FOR CONCRETE MEDIAN BARRIER REINFORCING STEEL AND DETAILS, SEE "CONCRETE MEDIAN BARRIER" SHEET.



DETAIL A

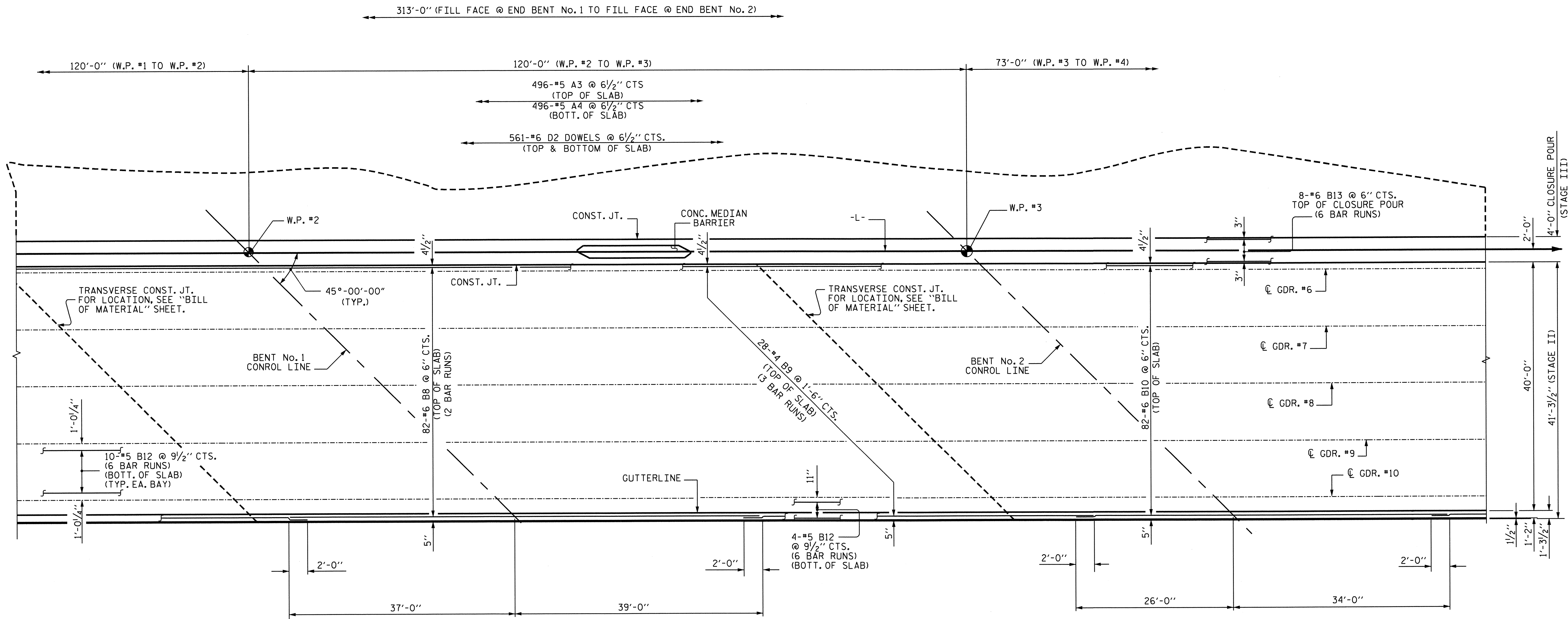
PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 4 OF 6
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN A
 STAGE II



DRAWN BY: M. POOLE DATE: 06/13
 CHECKED BY: D. HODGE DATE: 3/14
 DESIGN ENGINEER OF RECORD: W. J. HARRIS DATE: 04/14

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			62



PLAN OF SPAN B - STAGE II

FOR CONCRETE PARAPET REINFORCING STEEL AND DETAILS, SEE "1'-2" X 2'-6" CONCRETE PARAPET" SHEETS.
FOR CONCRETE MEDIAN BARRIER REINFORCING STEEL AND DETAILS, SEE "CONCRETE MEDIAN BARRIER" SHEET.

PROJECT NO. B-4554
JACKSON COUNTY
STATION: 27+11.72 -L-

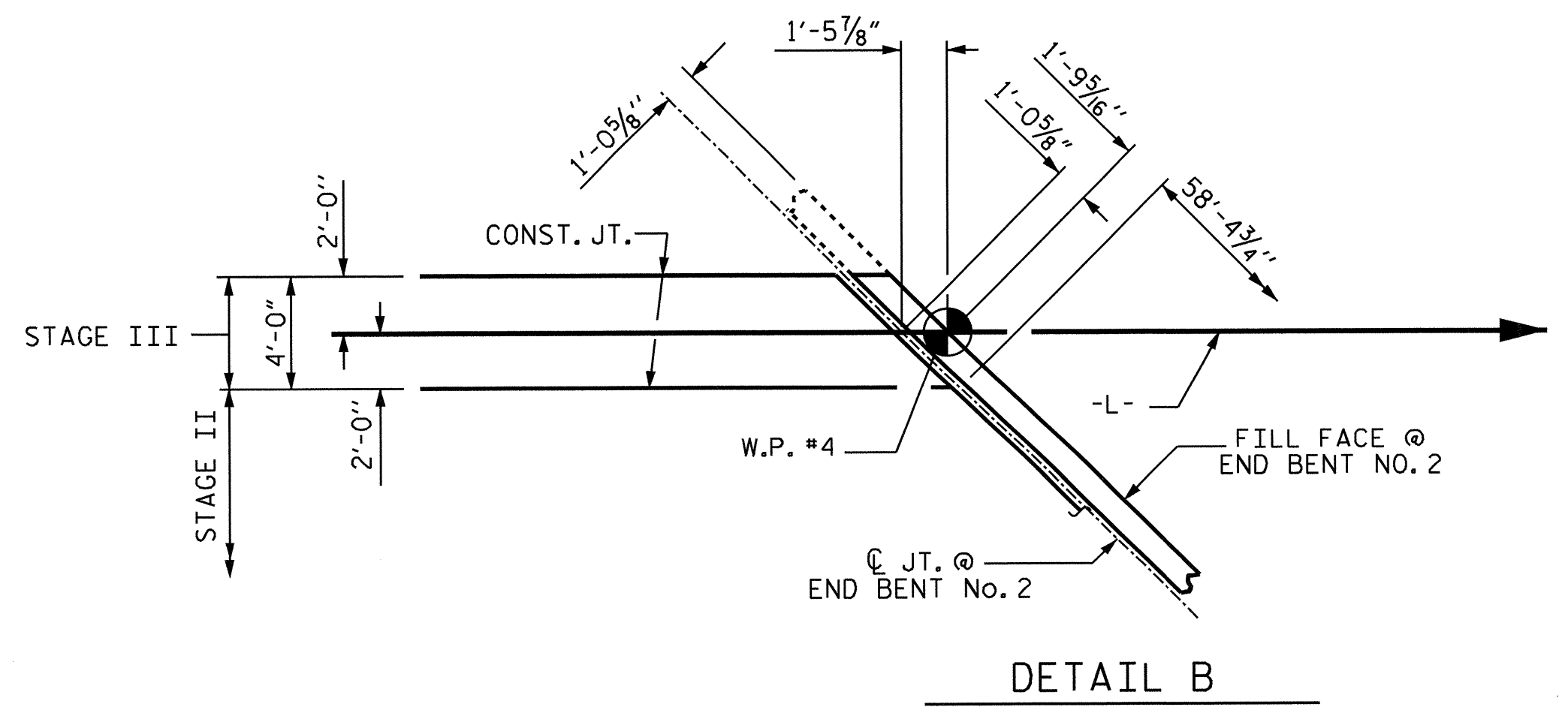
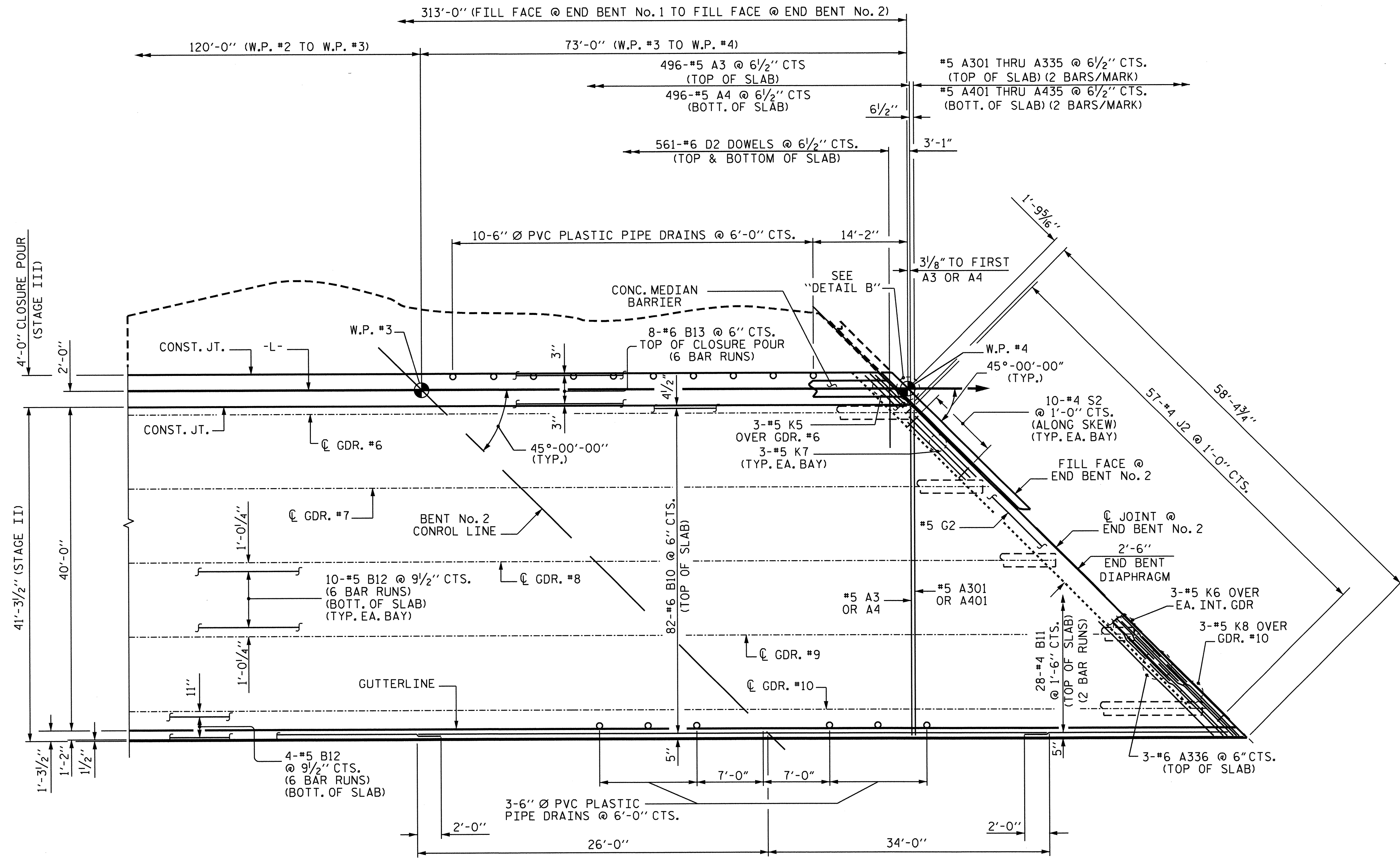
SHEET 5 OF 6



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE PLAN OF SPAN B STAGE II					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-15
					TOTAL SHEETS 62

DRAWN BY : M. POOLE DATE : 06/13
CHECKED BY : D. HODGE DATE : 3/14
DESIGN ENGINEER OF RECORD: W.J. HARRIS DATE : 04/14

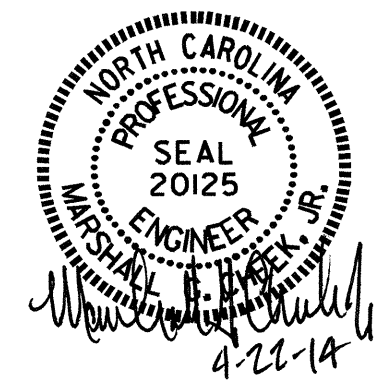
22-APR-2014 10:26
Z:\Structures\Final Plans\B4554.SD.S.dgn
wjharris



PLAN OF SPAN C - STAGE II
 FOR CONCRETE PARAPET REINFORCING STEEL AND DETAILS,
 SEE "1'-2" X 2'-6" CONCRETE PARAPET" SHEETS.
 FOR CONCRETE MEDIAN BARRIER REINFORCING STEEL AND DETAILS,
 SEE "CONCRETE MEDIAN BARRIER" SHEET.

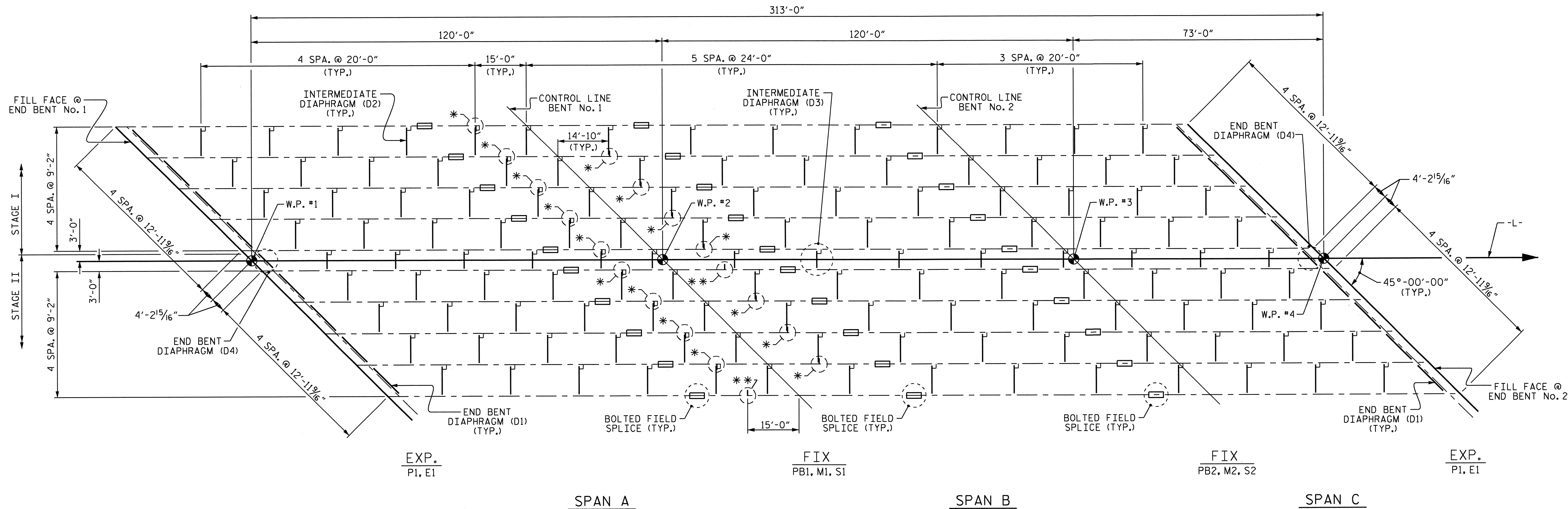
PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-
 SHEET 6 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN C
 STAGE II



DRAWN BY: M. POOLE DATE: 06/13
 CHECKED BY: D. HODGE DATE: 3/14
 DESIGN ENGINEER OF RECORD: W.J. HARRIS DATE: 04/14

REVISIONS						SHEET NO. S-16 TOTAL SHEETS 62
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



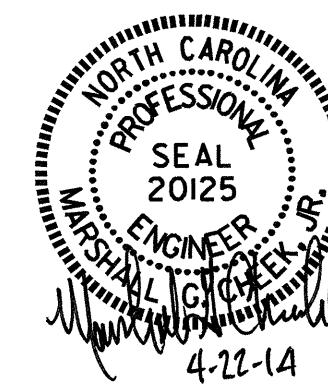
FRAMING PLAN

- * 1/2" X 5" TRANSVERSE STIFFENER (TO BE USED AS CONNECTOR PLATE AT THIS LOCATION)
- ** 1/2" X 5" TRANSVERSE STIFFENER

PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 FRAMING PLAN**



DRAWN BY : B.N. GRADY DATE : 01/31/14
 CHECKED BY : W.J. HARRIS DATE : 02/04/14
 DESIGN ENGINEER OF RECORD : W.J. HARRIS DATE : 04/14

22-APR-2014 11:07
 R:\Structures\Final Plans\B4554.SD.FP.dgn
 dahodge

REVISIONS						SHEET NO. S-17 TOTAL SHEETS 62
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

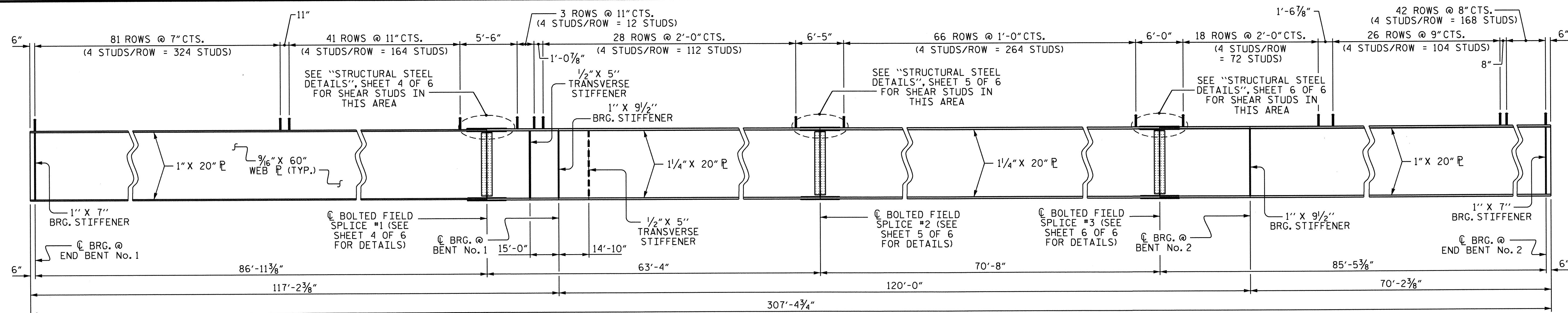
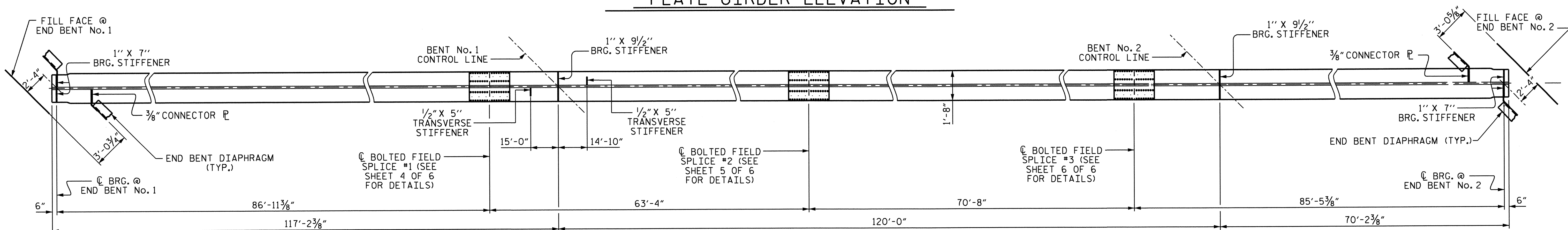
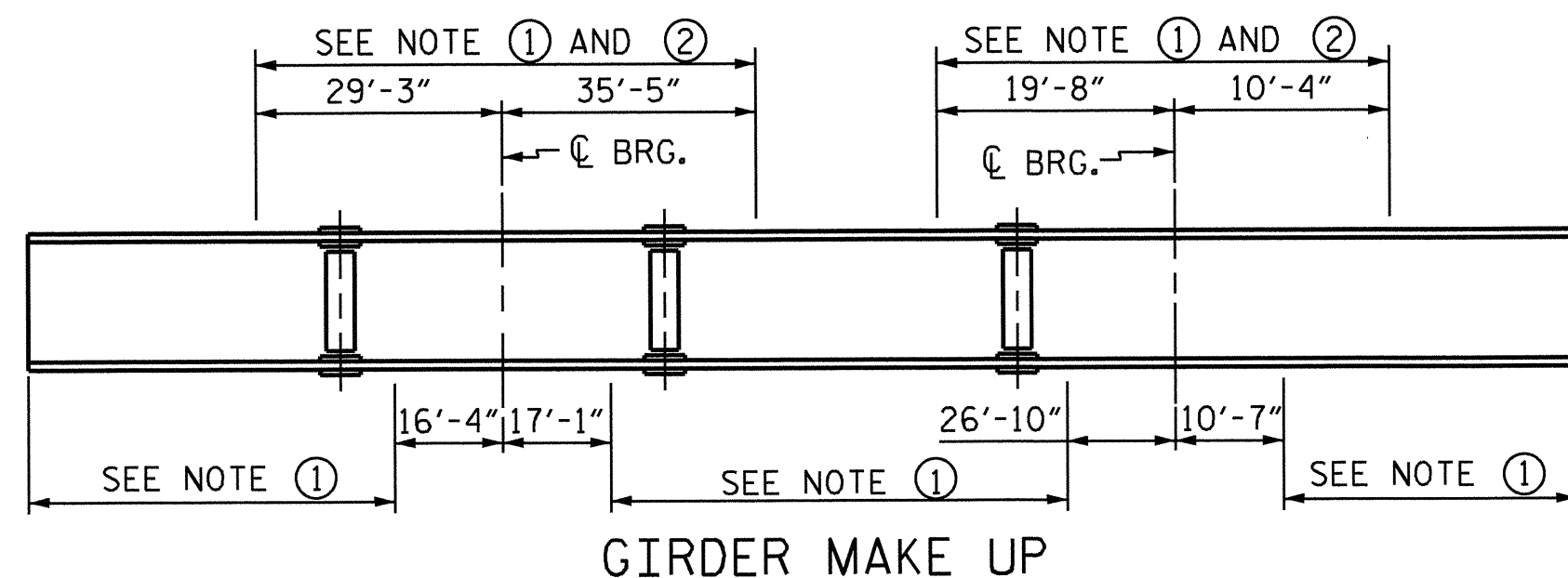


PLATE GIRDER ELEVATION



PLAN OF BOTTOM FLANGE

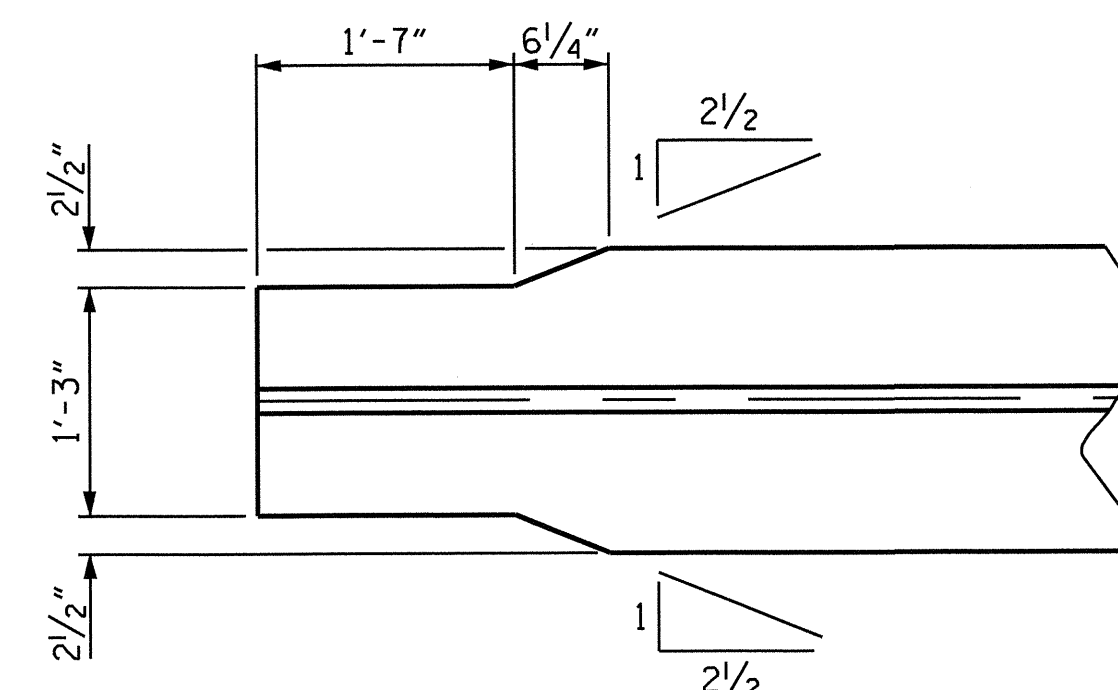
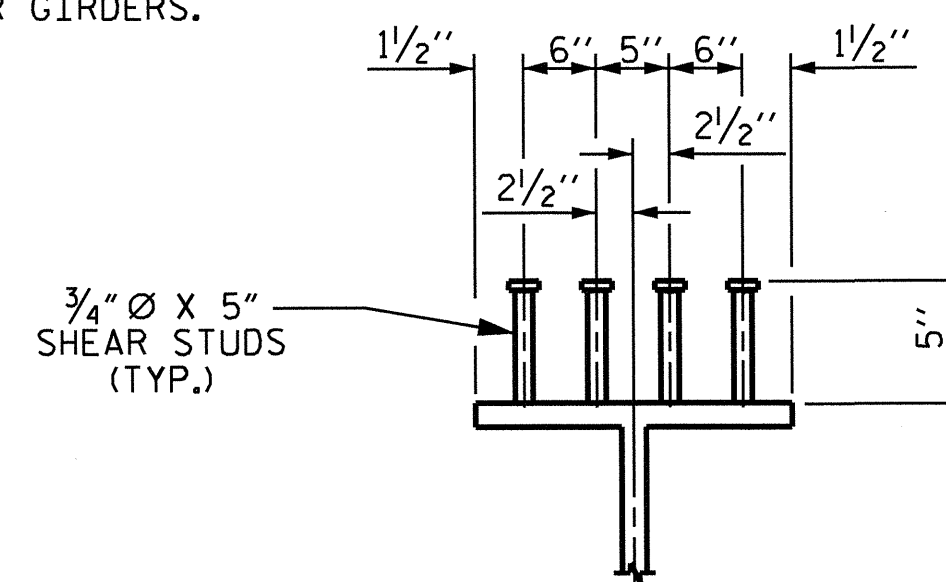
OMIT CONNECTOR PLATES ON OUTSIDE OF EXTERIOR GIRDERS.
INTERMEDIATE DIAPHRAGMS NOT SHOWN.



NOTE ①: CHARPY V-NOTCH TESTS ARE REQUIRED FOR ALL TOP OR BOTTOM FLANGE PLATES WHICH FALL WITHIN THESE LIMITS, ALL WEB PLATES, AND ALL SPLICE PLATES. IF A PERMITTED SHOP FLANGE SPLICE IS NOT USED, CHARPY V-NOTCH TESTS WILL BE REQUIRED FOR THE ENTIRE FLANGE PLATE. FOR CHARPY V-NOTCH TESTS, SEE ARTICLE 1072-7 OF THE STANDARD SPECIFICATIONS.

NOTE ②: NO WELDING OF FORMS OR FALSEWORK TO THE TOP FLANGE WILL BE PERMITTED IN THIS REGION

CHARPY V-NOTCH TESTS FOR CONTINUOUS PLATE GIRDERS



NOTES

TRANSVERSE STIFFENERS ARE TO BE PLACED ON ALTERNATING SIDES OF INTERIOR GIRDERS ONLY.

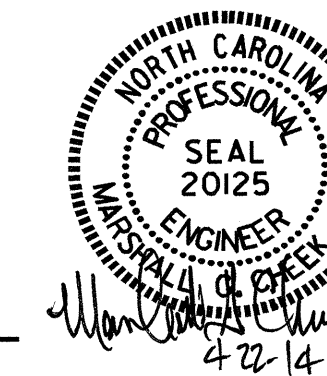
TRANSVERSE STIFFENERS ARE ONLY TO BE PLACED ON THE INSIDE OF EXTERIOR GIRDERS. (SEE FRAMING PLAN FOR LOCATION)

FOR LOCATION OF TRANSVERSE STIFFENERS, SEE "FRAMING PLAN" SHEET.

PROJECT NO. B-4554
JACKSON COUNTY
STATION: 27+11.72 -L-

SHEET 1 OF 6

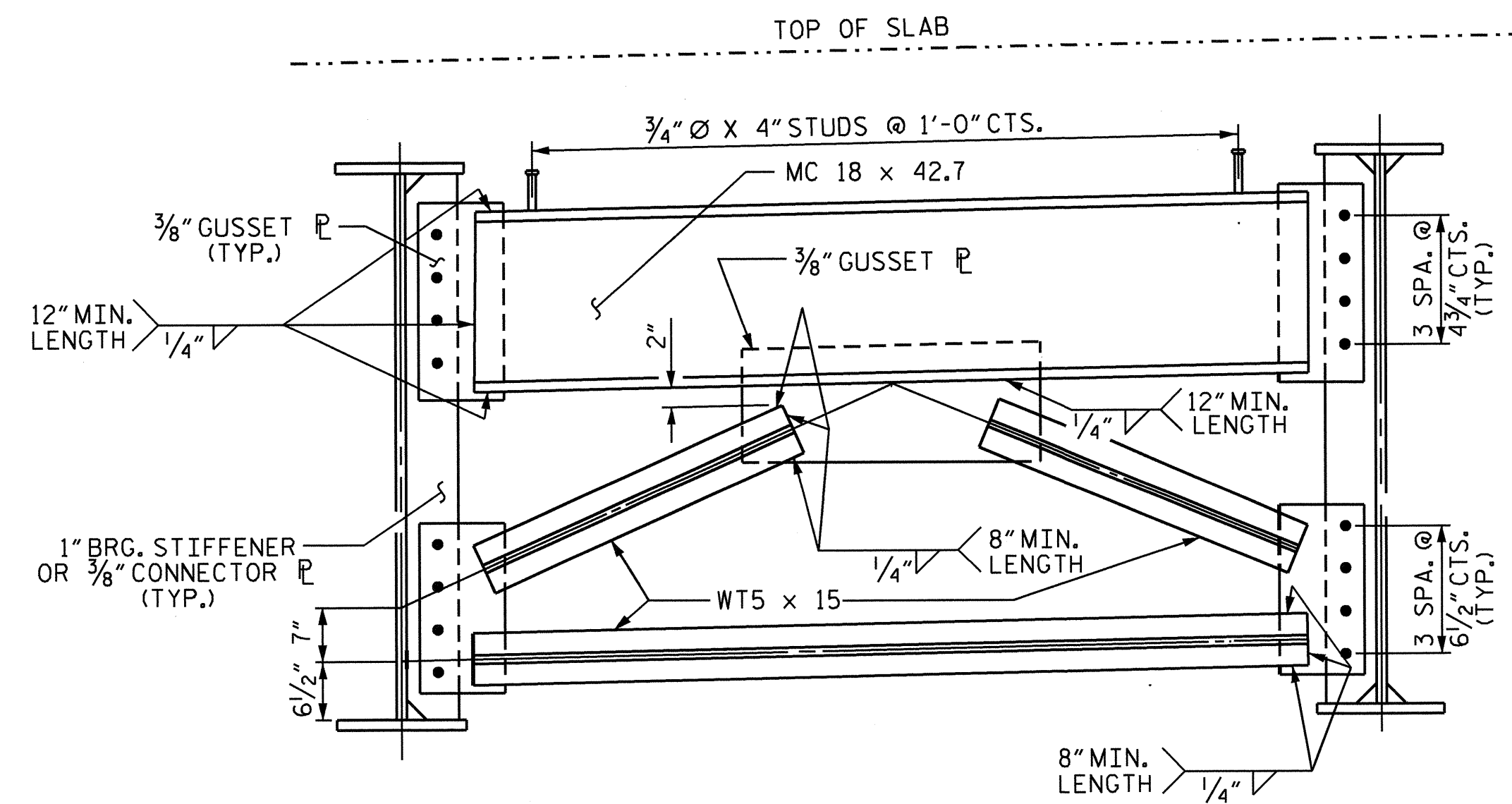
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
STRUCTURAL STEEL
DETAILS



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

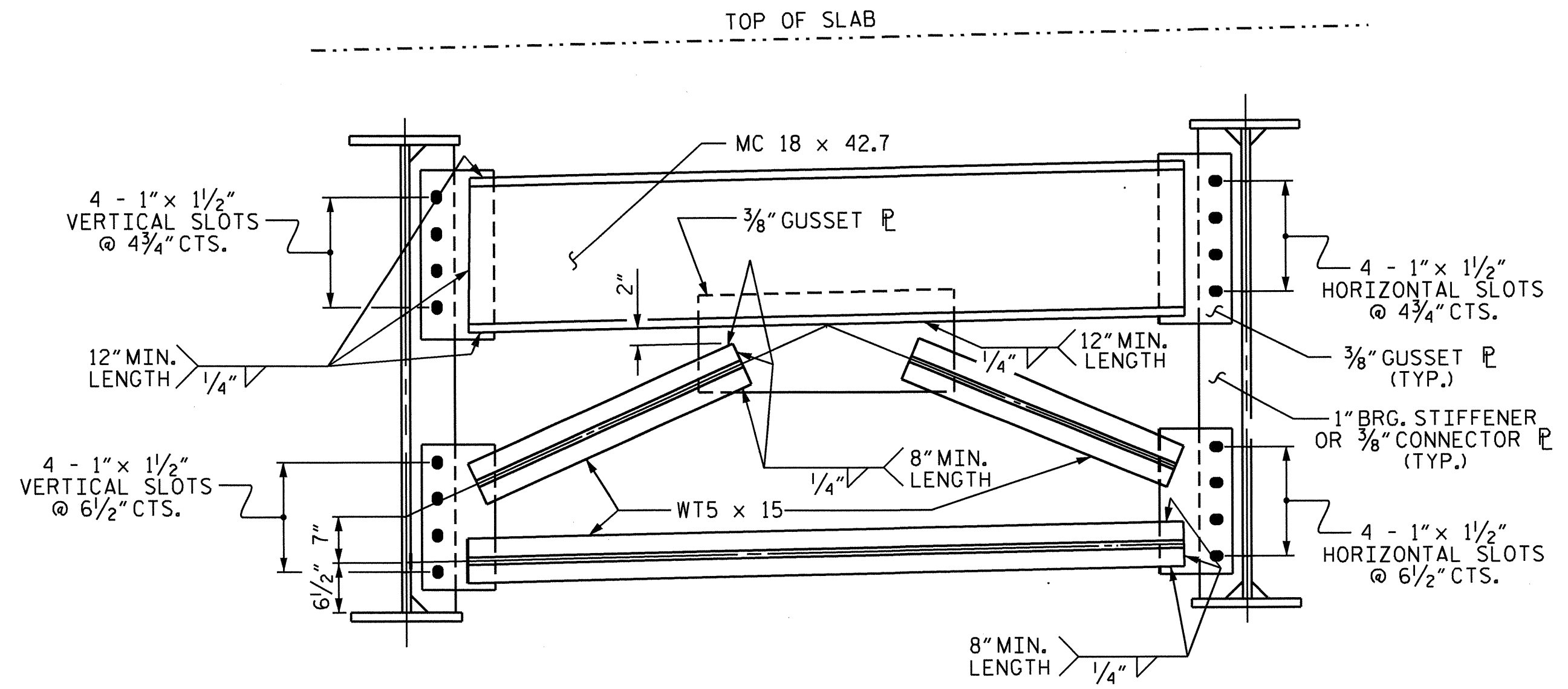
SHEET NO. S-18
TOTAL SHEETS 62

DRAWN BY : M. POOLE DATE : 01-14
CHECKED BY : D. HODGE DATE : 03-14
DESIGN ENGINEER OF RECORD : W. J. HARRIS DATE : 04-14



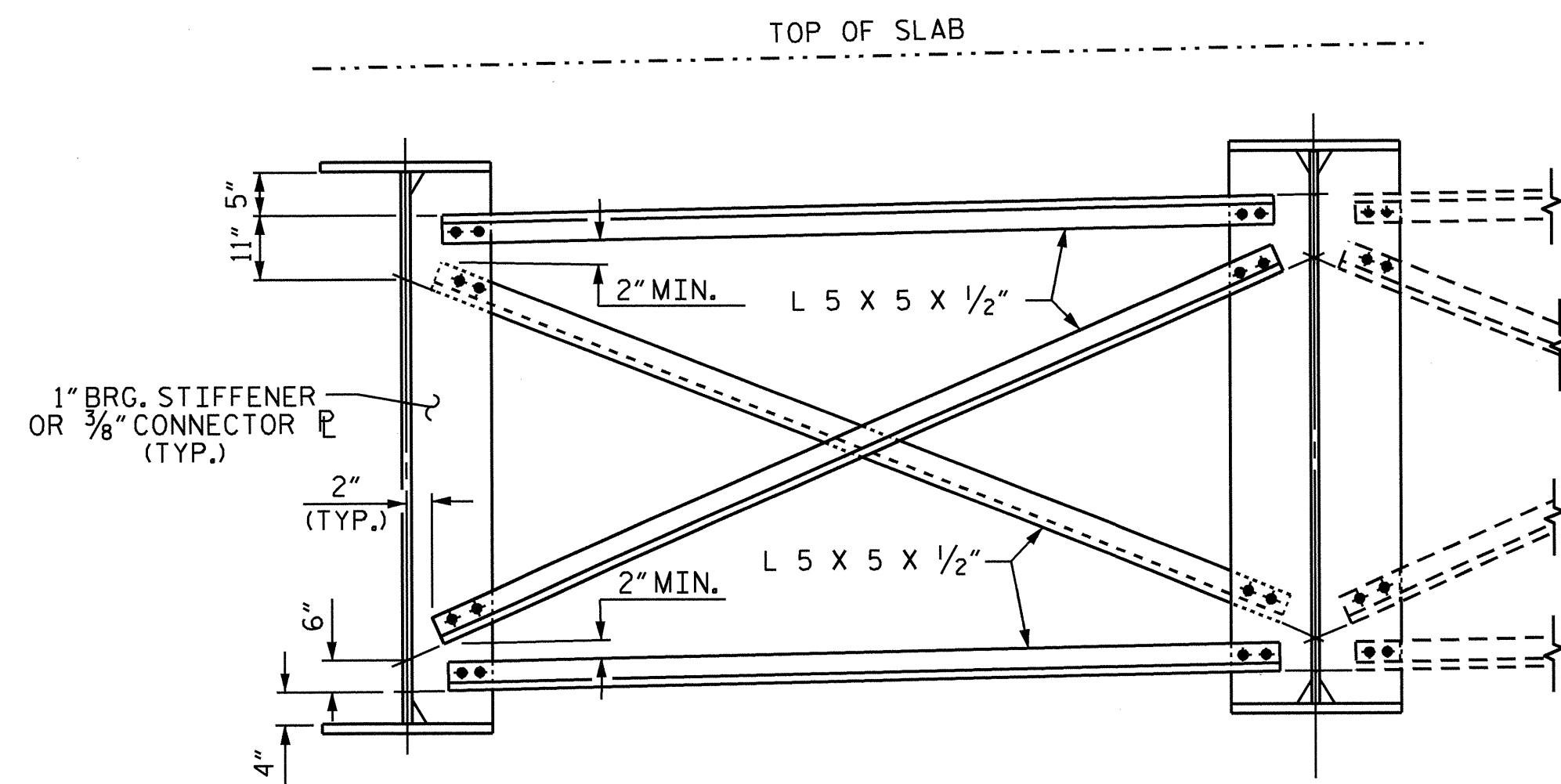
TYPICAL END BENT DIAPHRAGM (D1)

FOR WELD SIZE, SEE CONNECTOR PLATE DETAIL OR BEARING STIFFENER @ END BENT DETAIL, SHEET 3 OF 6.



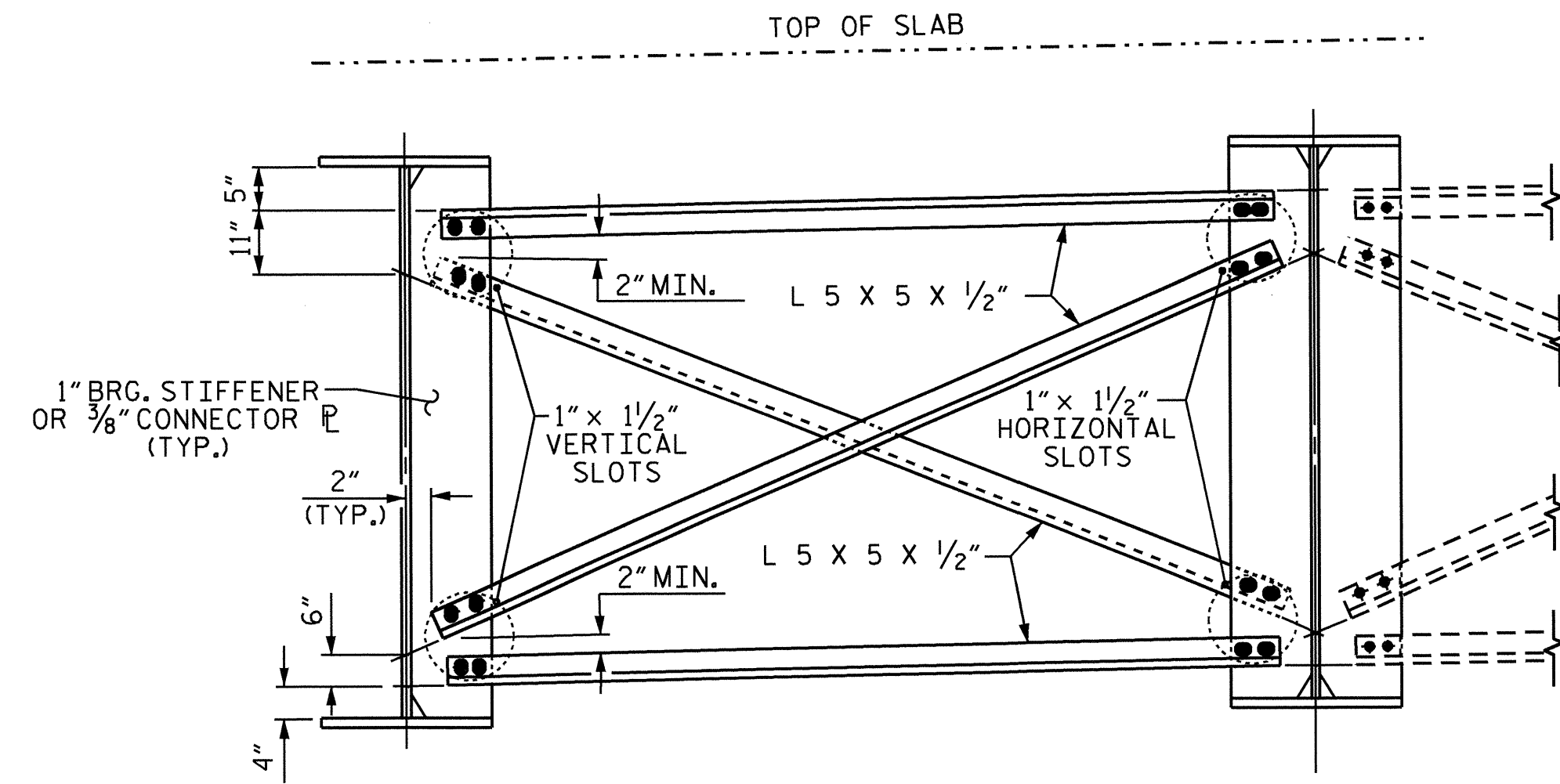
TYPICAL END BENT DIAPHRAGM (D4)

FOR WELD SIZE, SEE CONNECTOR PLATE DETAIL OR BEARING STIFFENER @ END BENT DETAIL, SHEET 3 OF 6.



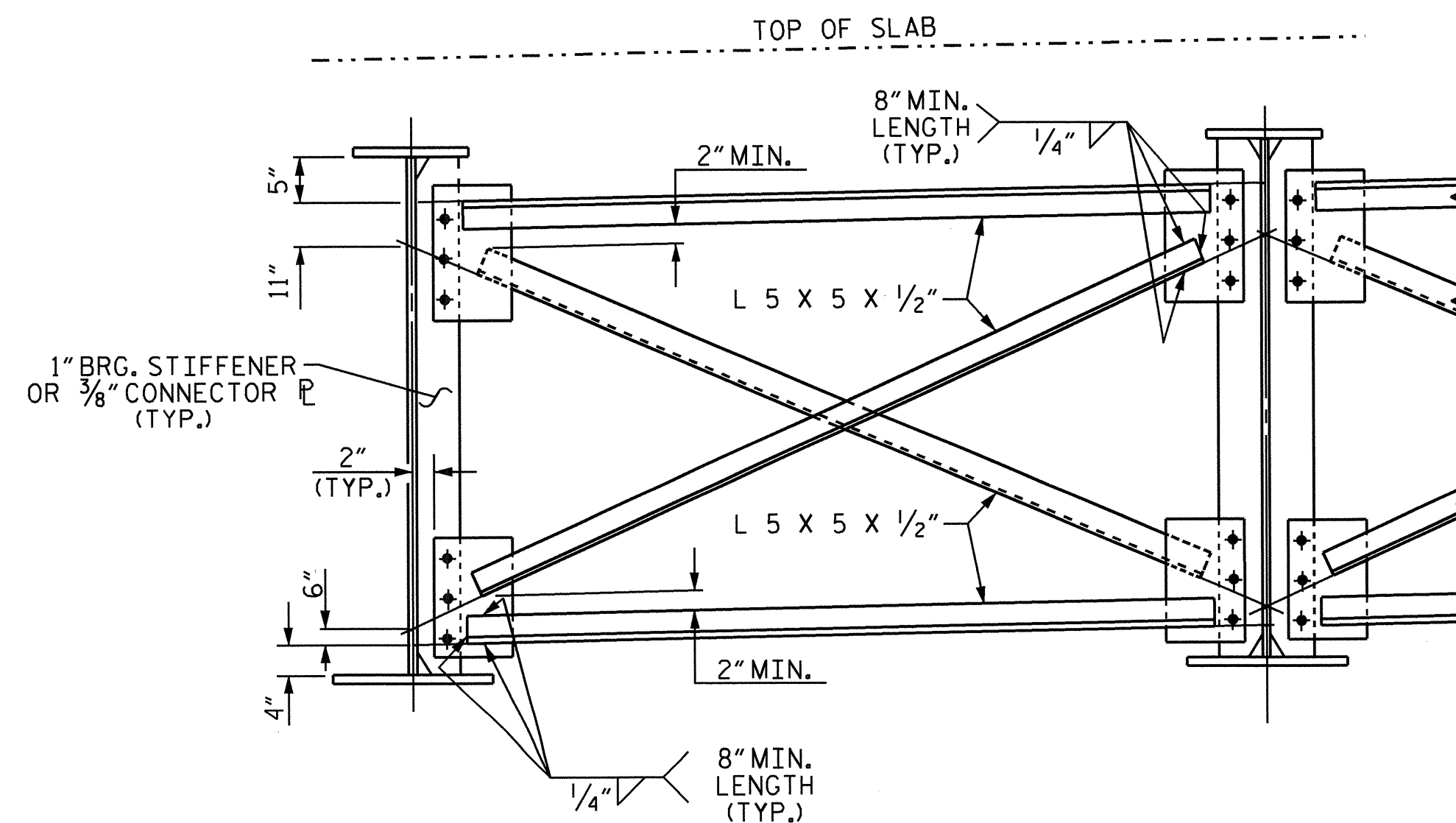
TYPICAL INTERMEDIATE DIAPHRAGM (D2)

FOR WELD SIZE, SEE CONNECTOR PLATE DETAIL OR BEARING STIFFENER @ BENT DETAIL, SHEET 3 OF 6.



TYPICAL INTERMEDIATE DIAPHRAGM (D3)

FOR WELD SIZE, SEE CONNECTOR PLATE DETAIL OR BEARING STIFFENER @ BENT DETAIL, SHEET 3 OF 6.



OPTIONAL INTERMEDIATE DIAPHRAGM

DRAWN BY : B.N. GRADY DATE : 2/14
 CHECKED BY : D. HODGE DATE : 3/14
 DESIGN ENGINEER OF RECORD : W.J. HARRIS DATE : 4/14

22-APR-2014 14:11
 R:\Structures\Final Plans\B4554.LD.SS.dgn
 dahodge

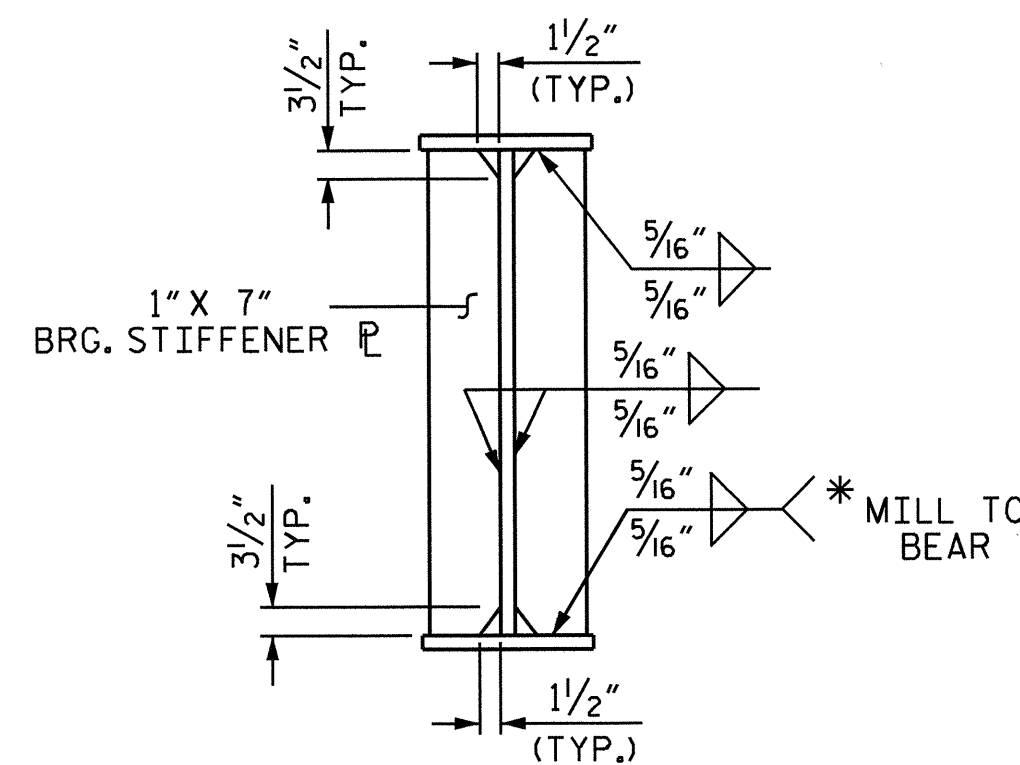
PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 2 OF 6

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

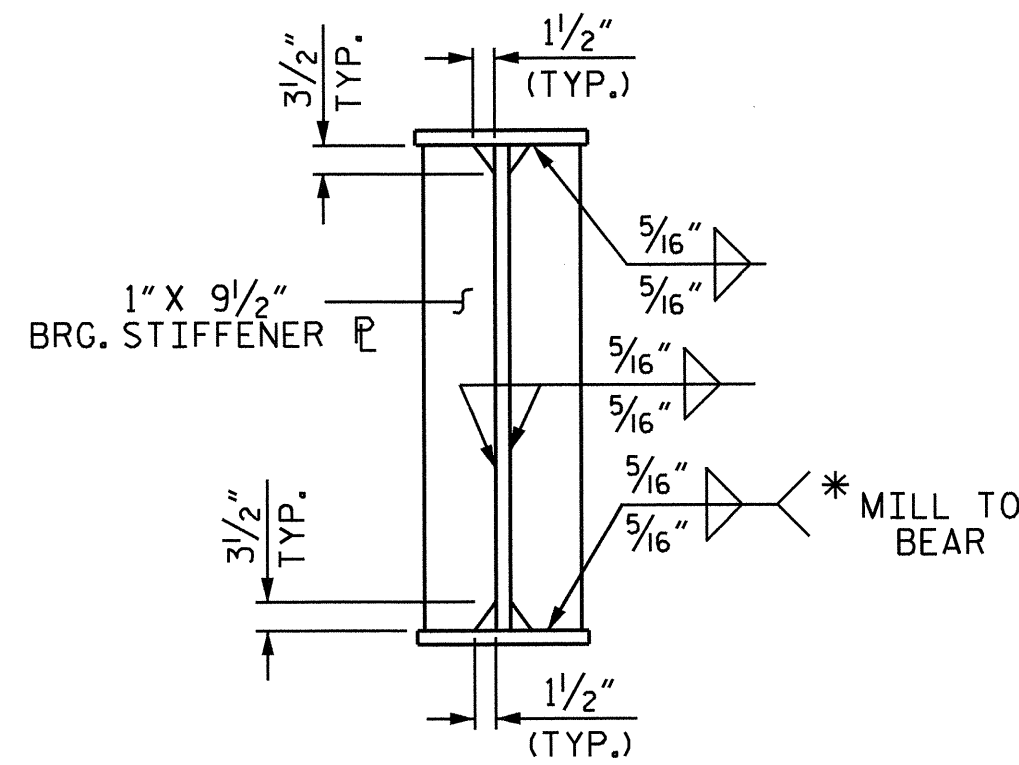


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			62



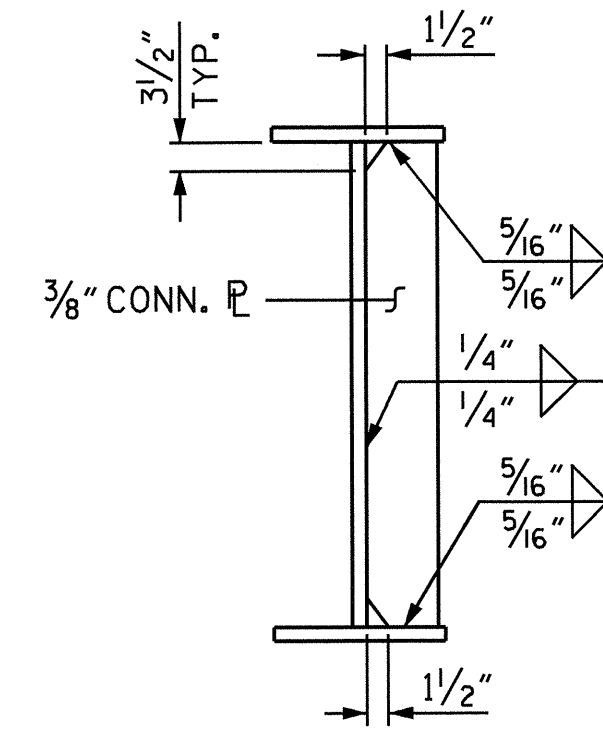
BEARING STIFFENER @ END BENTS

* WELD ONLY WHEN USED AS CONNECTOR PLATE

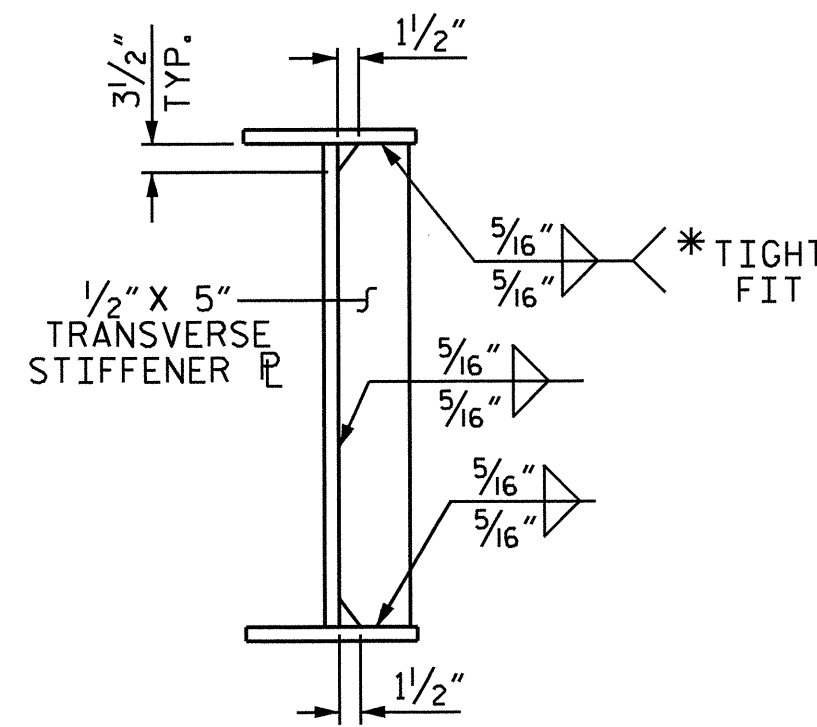


BEARING STIFFENER @ BENTS

* WELD ONLY WHEN USED AS CONNECTOR PLATE

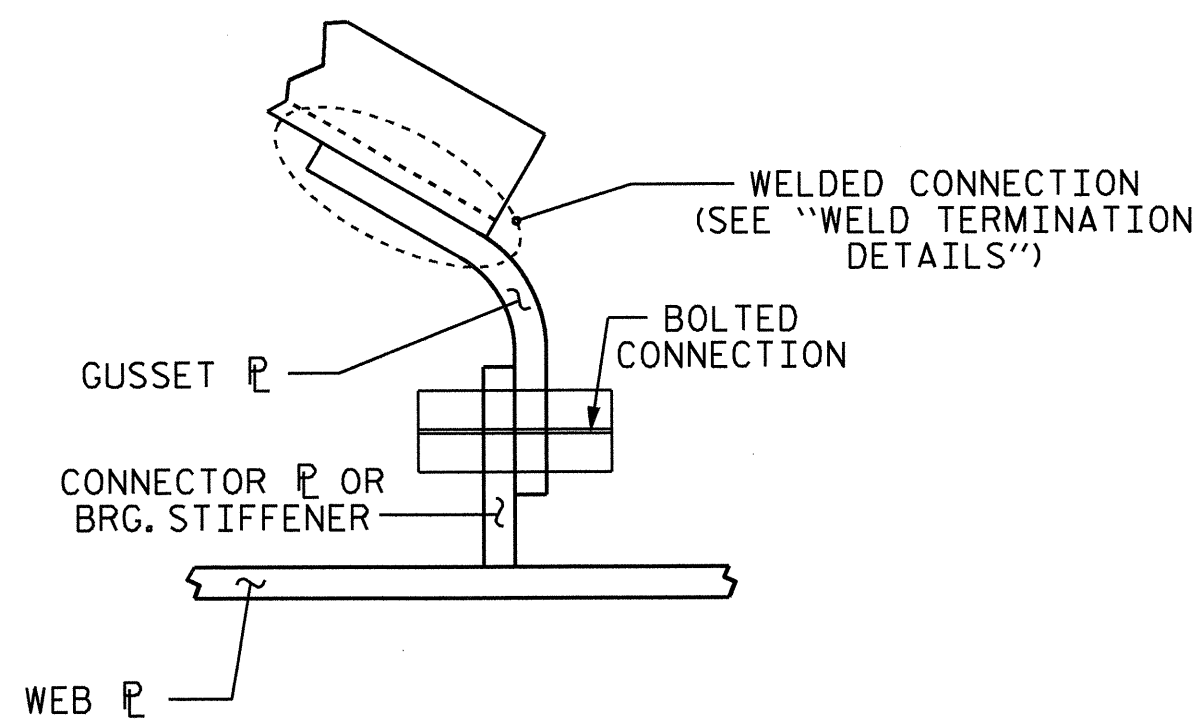


CONNECTOR PLATE

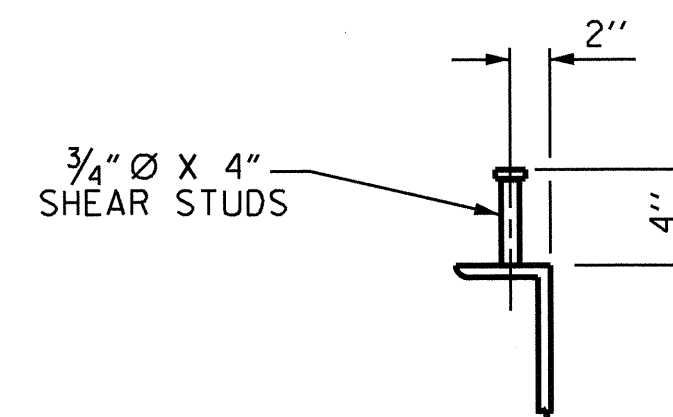


TRANSVERSE STIFFENER

* WELD ONLY WHEN USED AS CONNECTOR PLATE

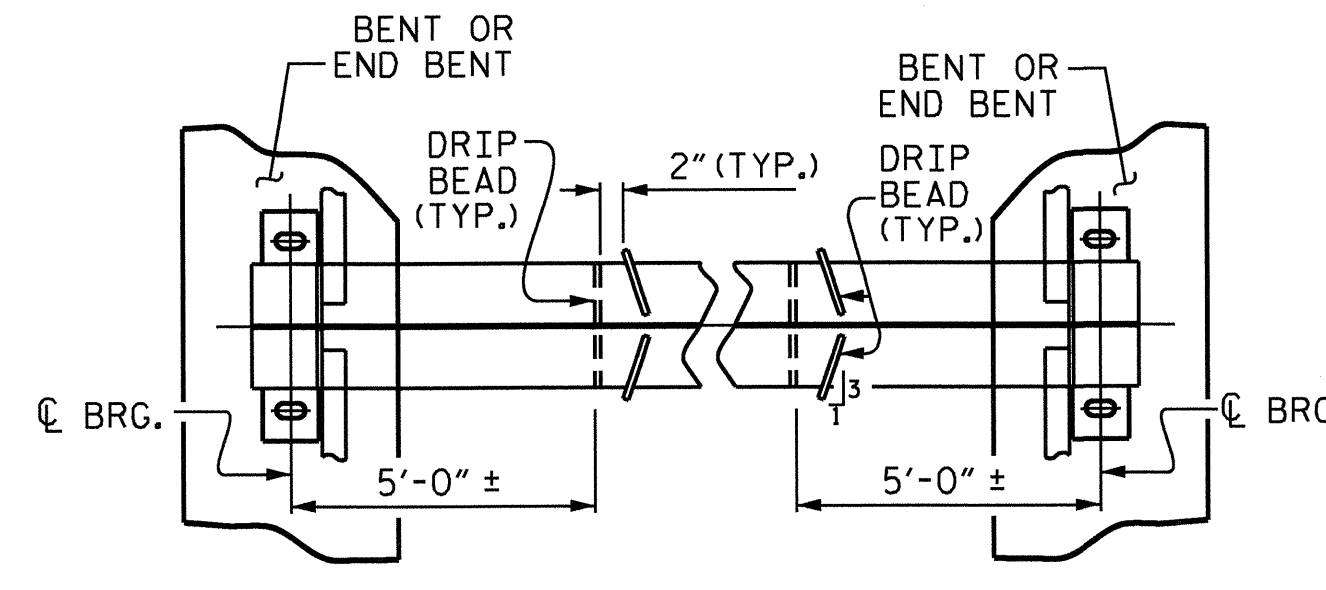


STIFFENER/CONNECTOR WELD DETAILS

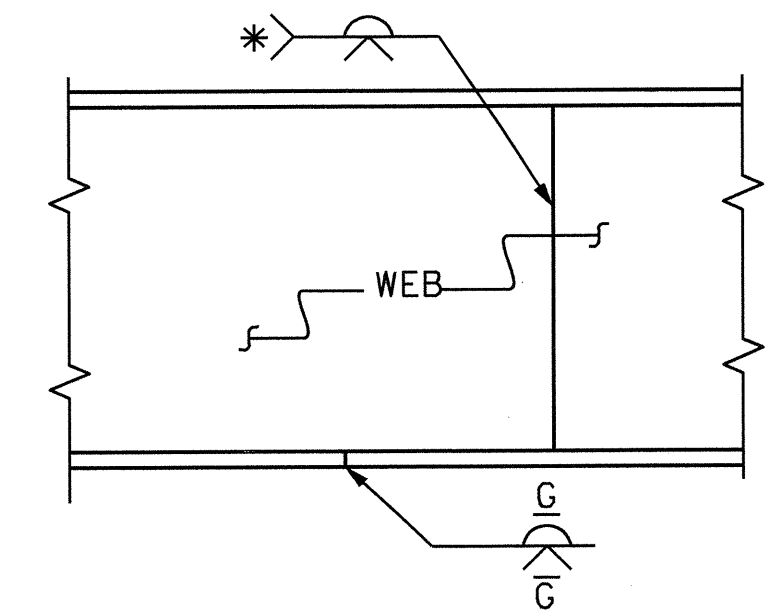


SHEAR STUD DETAILS

(TYP. EA. END BENT DIAPHRAGM D1)



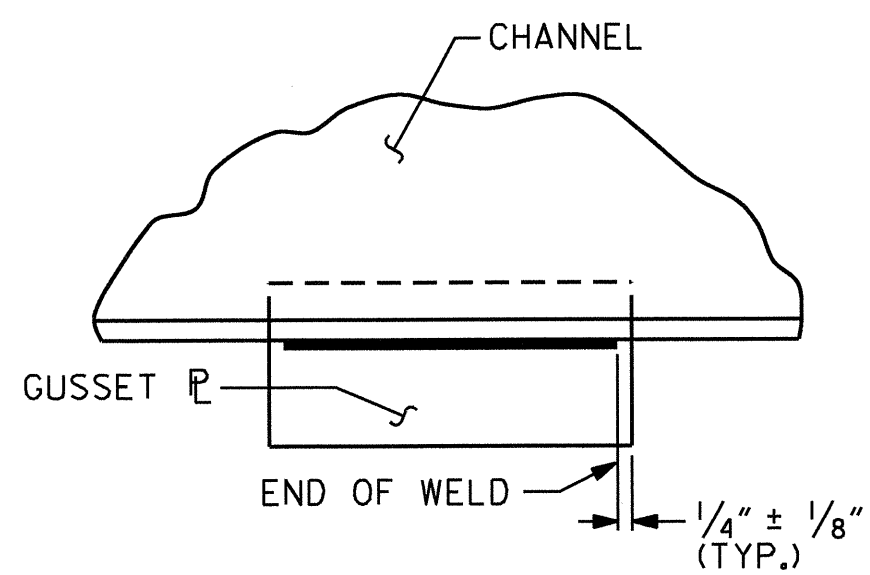
PART PLAN - BOTTOM FLANGE



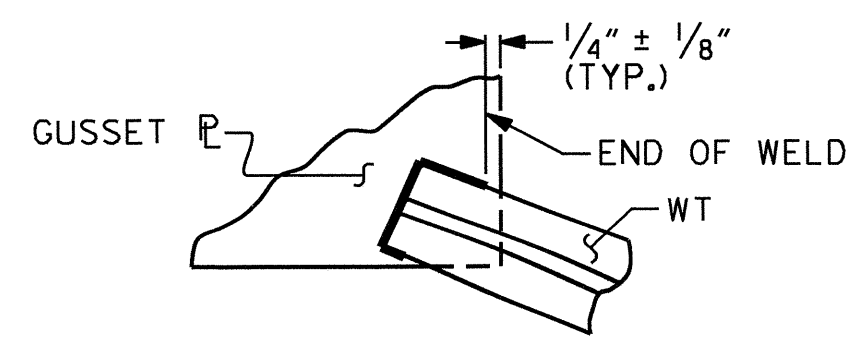
ELEVATION

TYPICAL FLANGE AND WEB BUTT JOINT

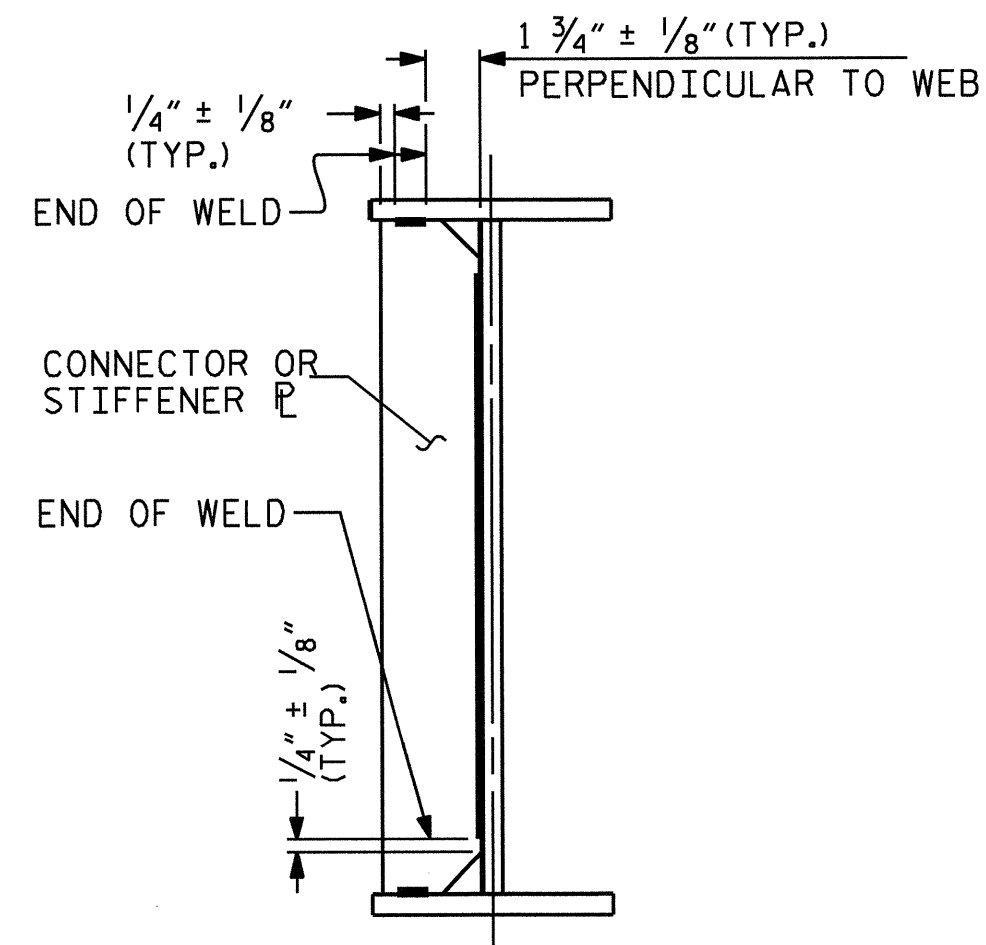
* GRIND SMOOTH AND FLUSH ON OUTER FACE OF EXTERIOR GIRDERS



TYPICAL GUSSET PLATE CONNECTION

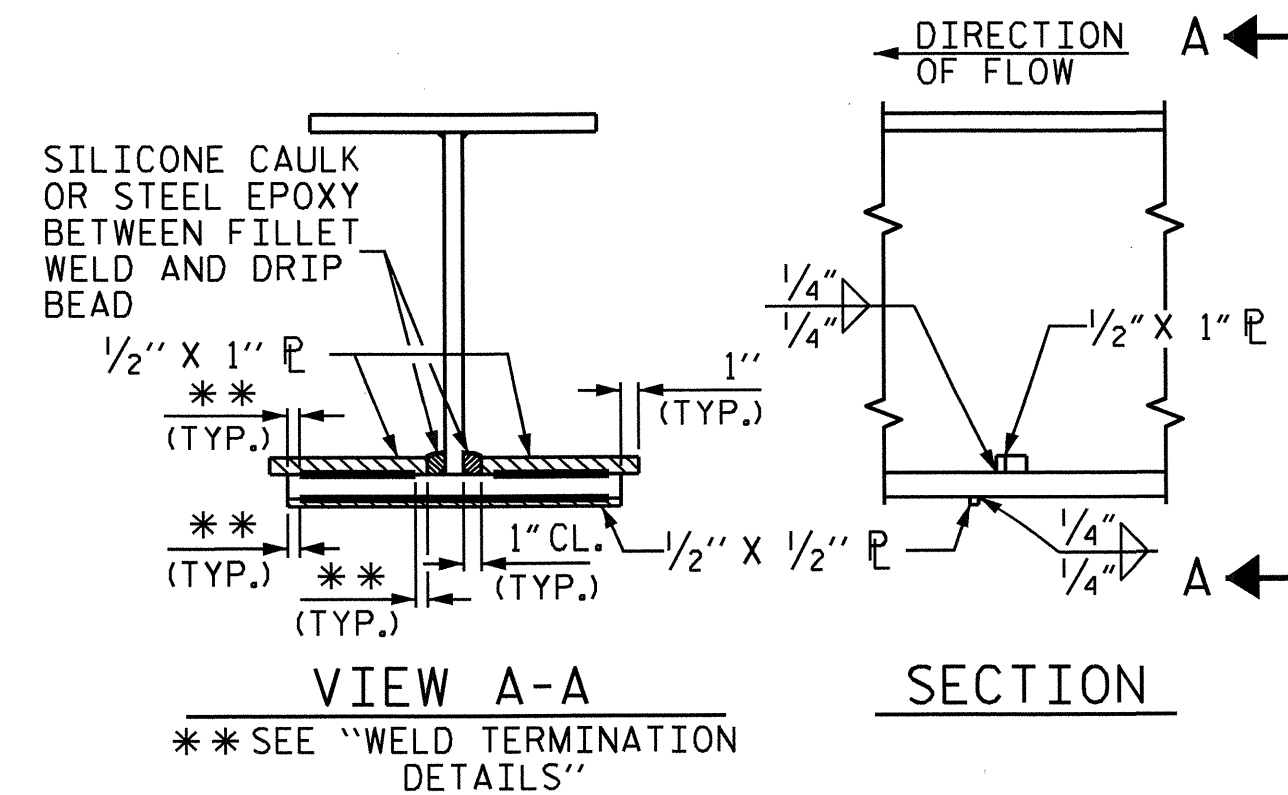


TYPICAL \"TEE\" TO GUSSET PLATE CONNECTION



TYPICAL STIFFENER OR CONNECTOR PLATE CONNECTIONS

WELD TERMINATION DETAILS



DRIP BEAD DETAILS

NOTES:

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W AND PAINTED IN ACCORDANCE WITH SYSTEM 4 OF ARTICLE 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

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

PERMITTED FLANGE AND WEB SHOP SPLICES SHALL NOT BE LOCATED WITHIN 15 FEET OF MAXIMUM DEAD LOAD DEFLECTION (NOR WITHIN 15 FEET OF INTERMEDIATE BEARINGS OF CONTINUOUS UNITS). KEEP 2 FEET MINIMUM BETWEEN WEB AND FLANGE SHOP SPLICES. KEEP 6\"/>

STUDS ON GIRDERS MAY BE SHIFTED UP TO 1\"/>

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

FABRICATORS SHALL DETAIL DIAPHRAGM MEMBERS AND CONNECTIONS FOR STEEL DEAD LOAD FIT UP.

ALL FIELD CONNECTIONS TO BE 7/8\"/>

TENSION ON THE ASTM A325 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.

END OF GIRDERS SHALL BE PLUMB.

BEARING STIFFENER MAY REQUIRE COPING IF WIDER THAN BOTTOM FLANGE.

STRUCTURAL STEEL ERECTION IN A CONTINUOUS UNIT SHALL BE COMPLETE BEFORE FALSEWORK OR FORMS ARE PLACED ON THE UNIT.

NUTS ON BOLTS FOR CONNECTING DIAPHRAGM D3 OR D4 TO CONNECTOR PLATES SHALL BE LEFT LOOSE FOR PURPOSE OF ADJUSTMENT UNTIL BOTH STAGES HAVE BEEN POURED.

AT THE CONTRACTOR'S OPTION, THE DIAPHRAGM WITH THE WELDED GUSSET PLATES MAY BE USED IN LIEU OF THE DIAPHRAGM WITH BOLTED ANGLES AT NO ADDITIONAL COST TO THE DEPARTMENT.

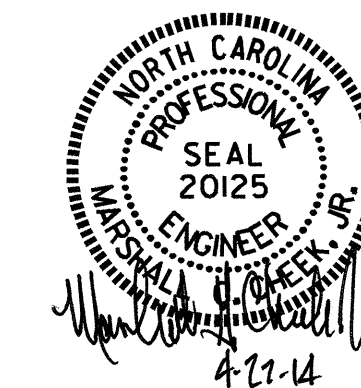
PROJECT NO. B-4554

JACKSON COUNTY

STATION: 27+11.72 -L-

SHEET 3 OF 6

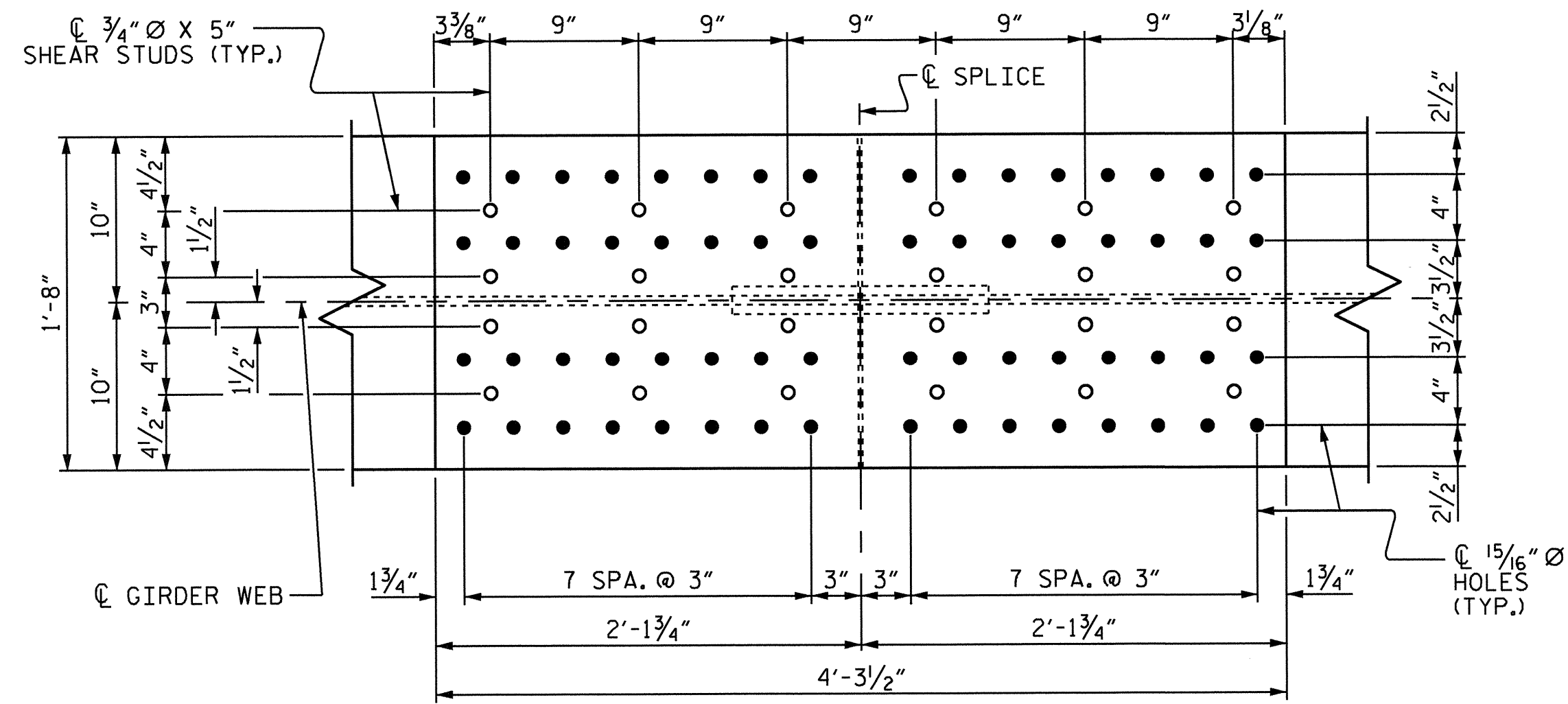
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
STRUCTURAL STEEL
DETAILS



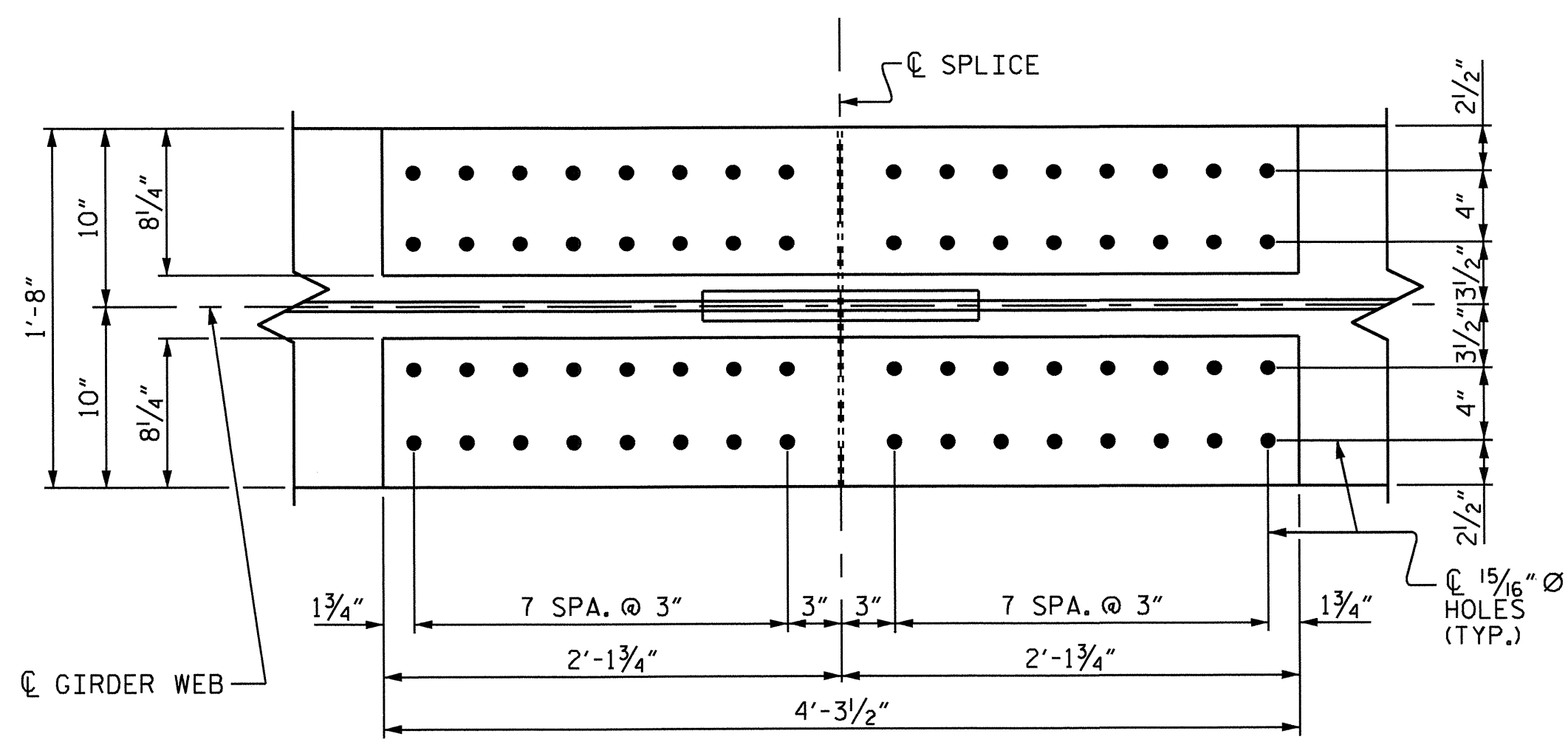
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-20
2			4			62

DRAWN BY : B.N. GRADY DATE : 2/14
CHECKED BY : D. HODGE DATE : 3/14
DESIGN ENGINEER OF RECORD : W.J. HARRIS DATE : 4/14

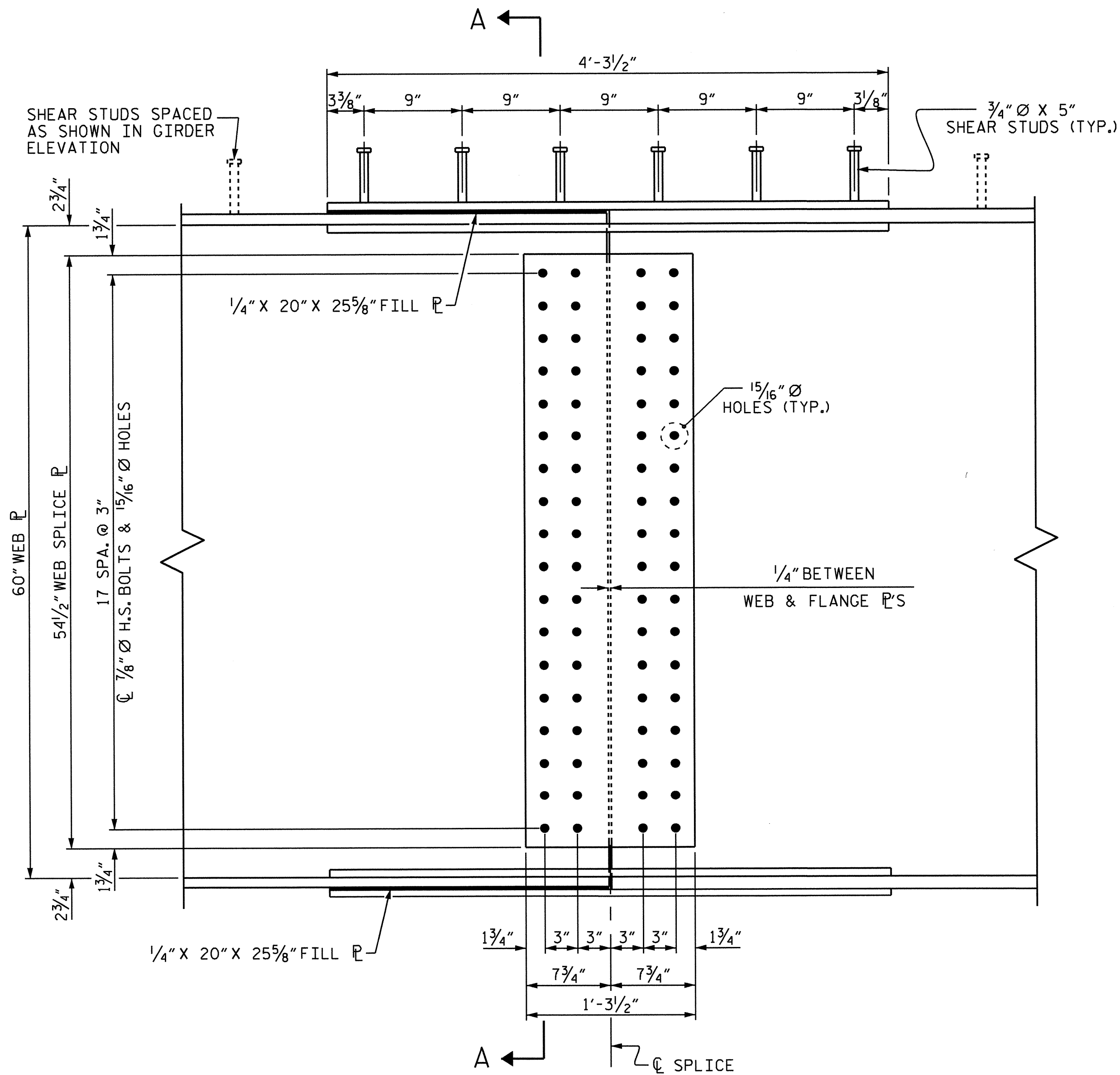
22-APR-2014 11:08
R:\Structures\Final Plans\B4554.SD.SS.dgn
dahodge



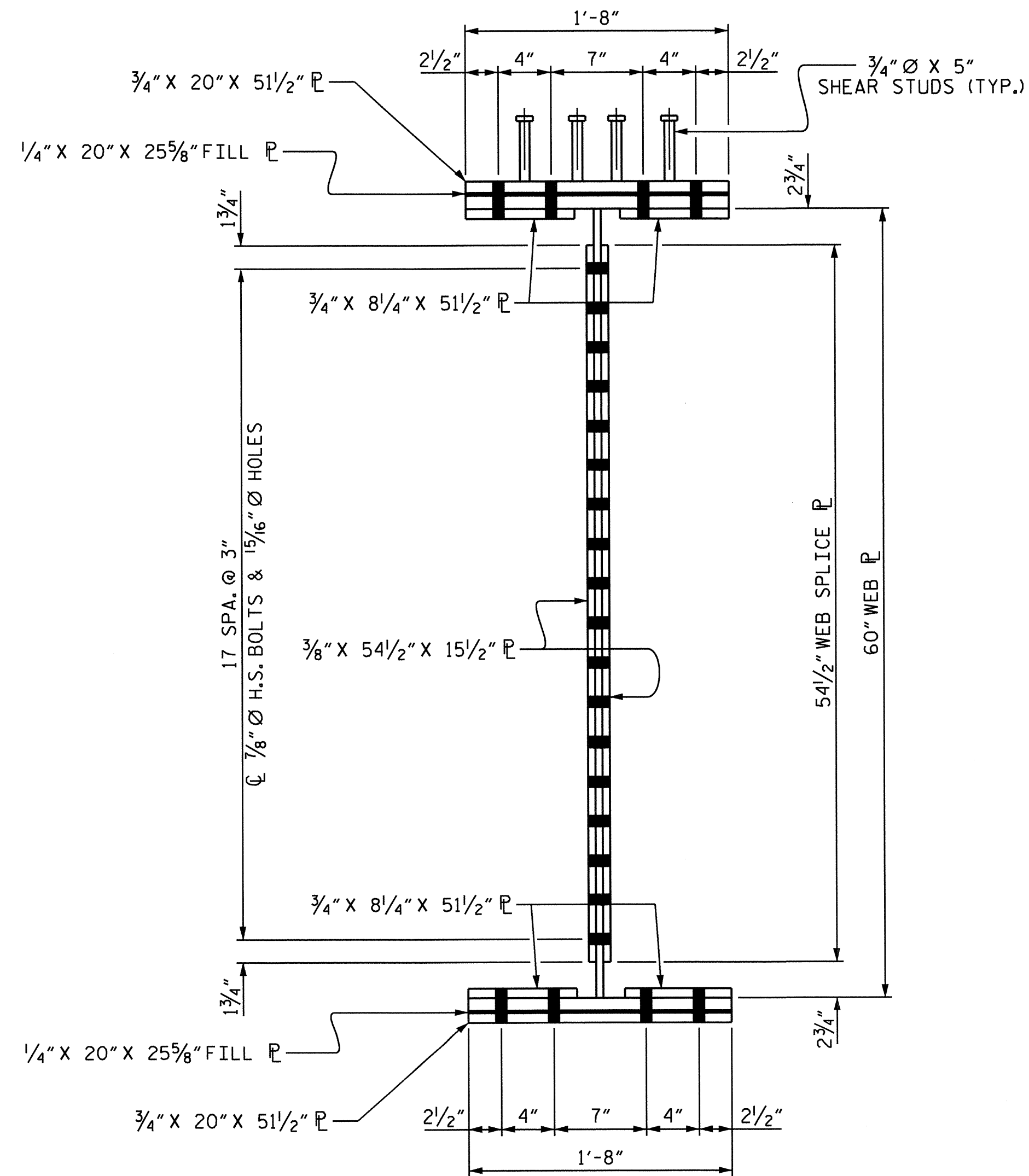
PLAN (TOP OF TOP FLANGE)



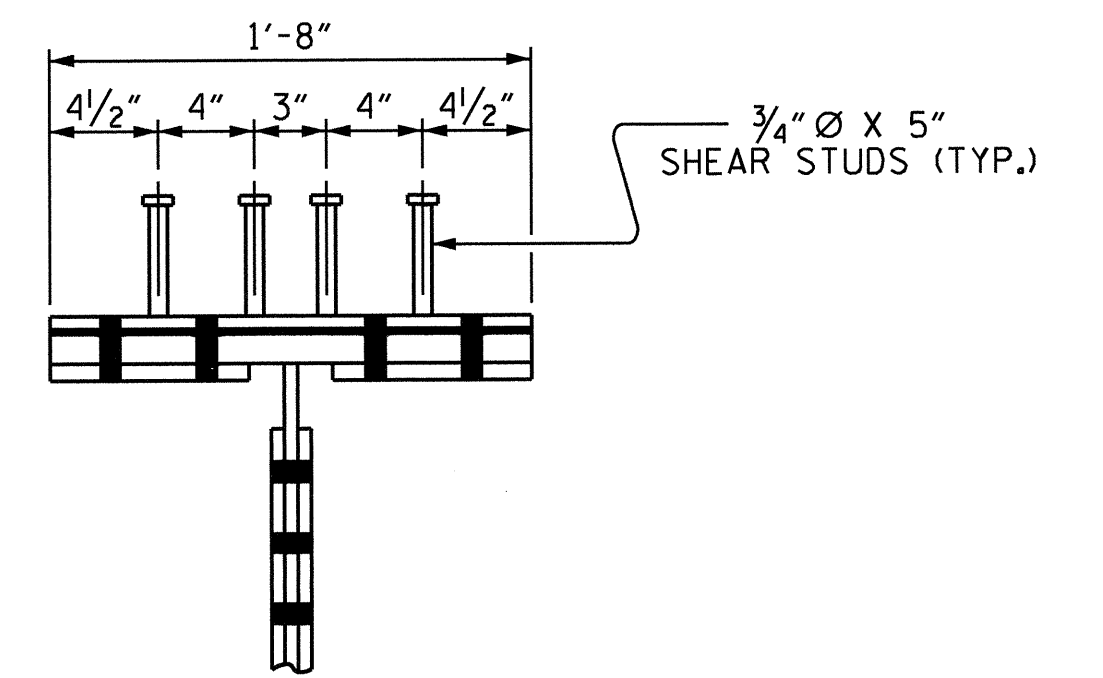
PLAN (TOP OF BOTTOM FLANGE)



ELEVATION



SECTION A-A



SHEAR STUD DETAIL FOR TOP FLANGE SPLICE PLATE

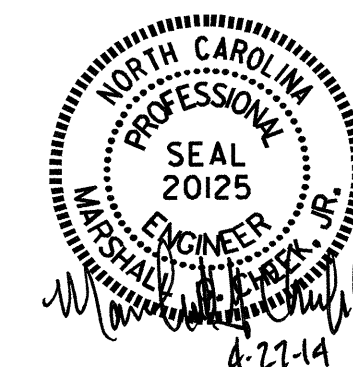
SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY.

PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS

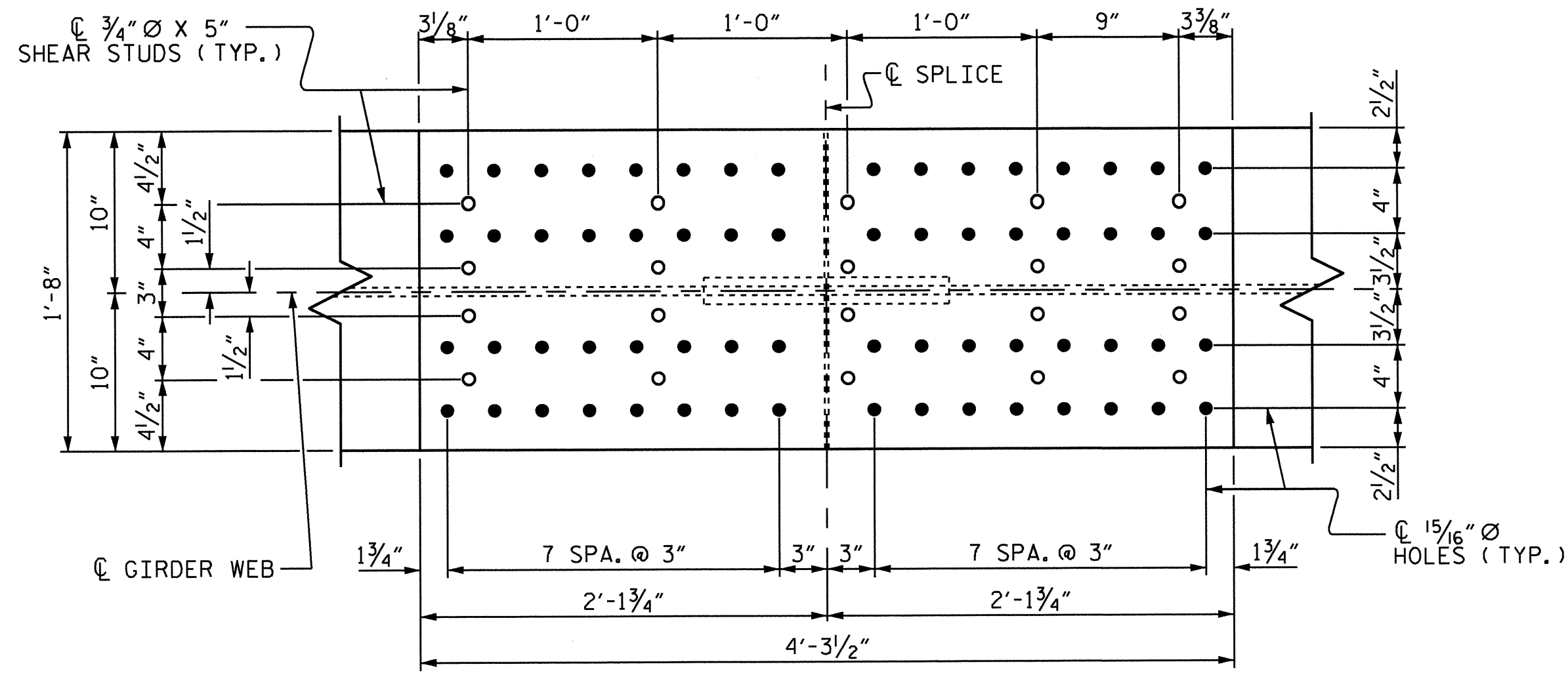


DRAWN BY : B.N. GRADY
 CHECKED BY : D. HODGE
 DESIGN ENGINEER OF RECORD : W.J. HARRIS

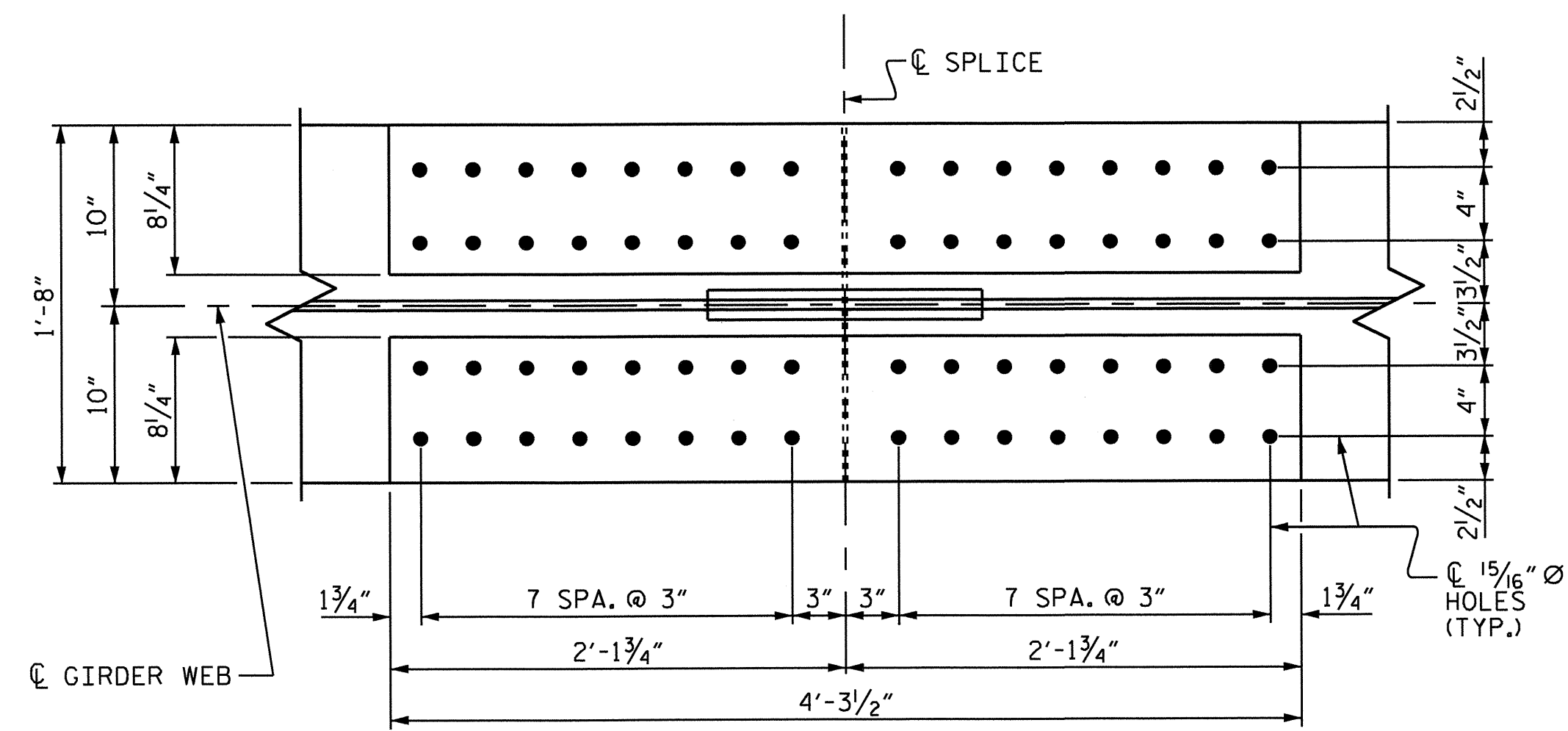
DATE : 2/14
 DATE : 3/14
 DATE : 4/14

BOLTED FIELD SPLICE #1 DETAILS

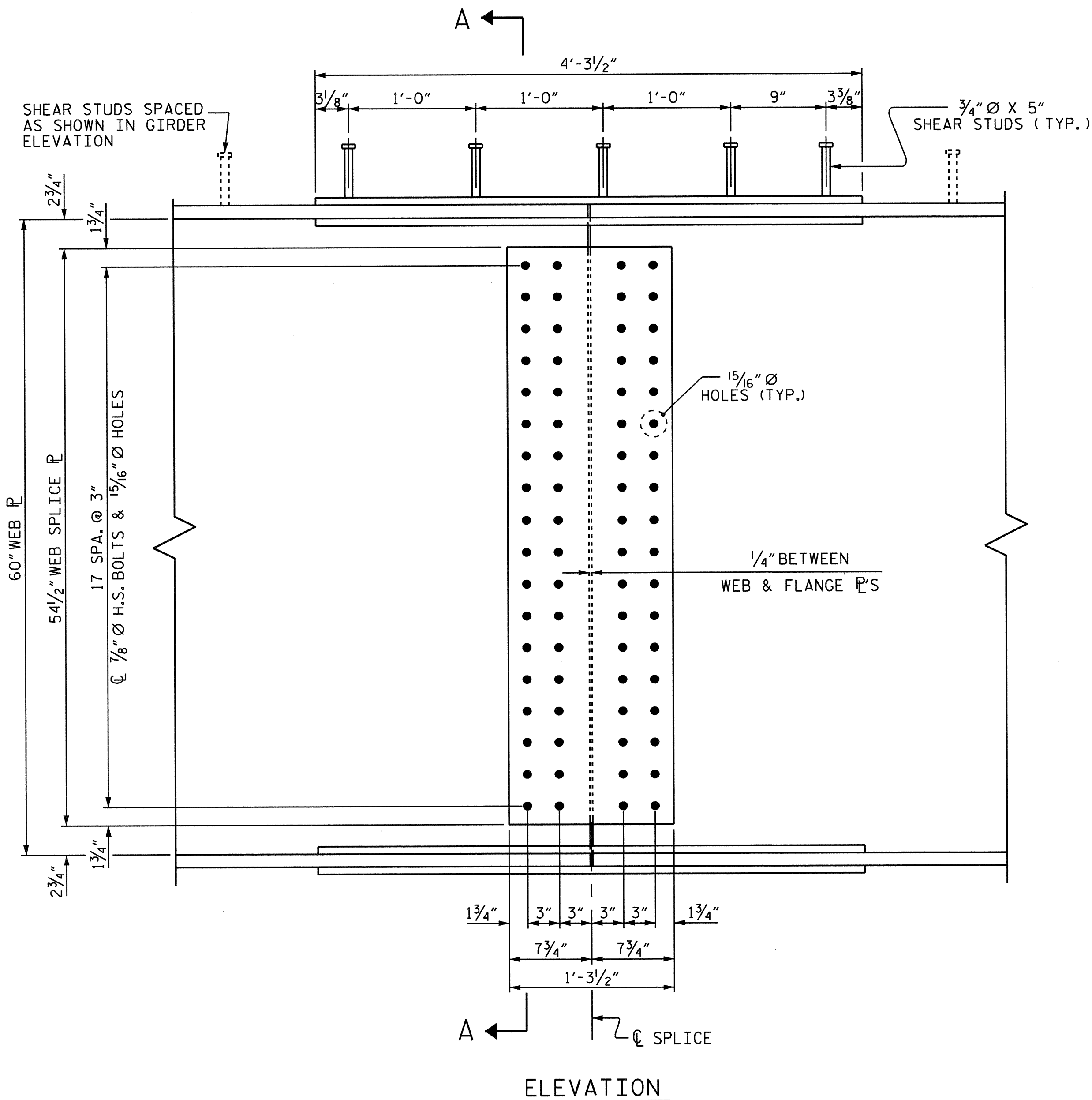
REVISIONS						SHEET NO. S-21 TOTAL SHEETS 62
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



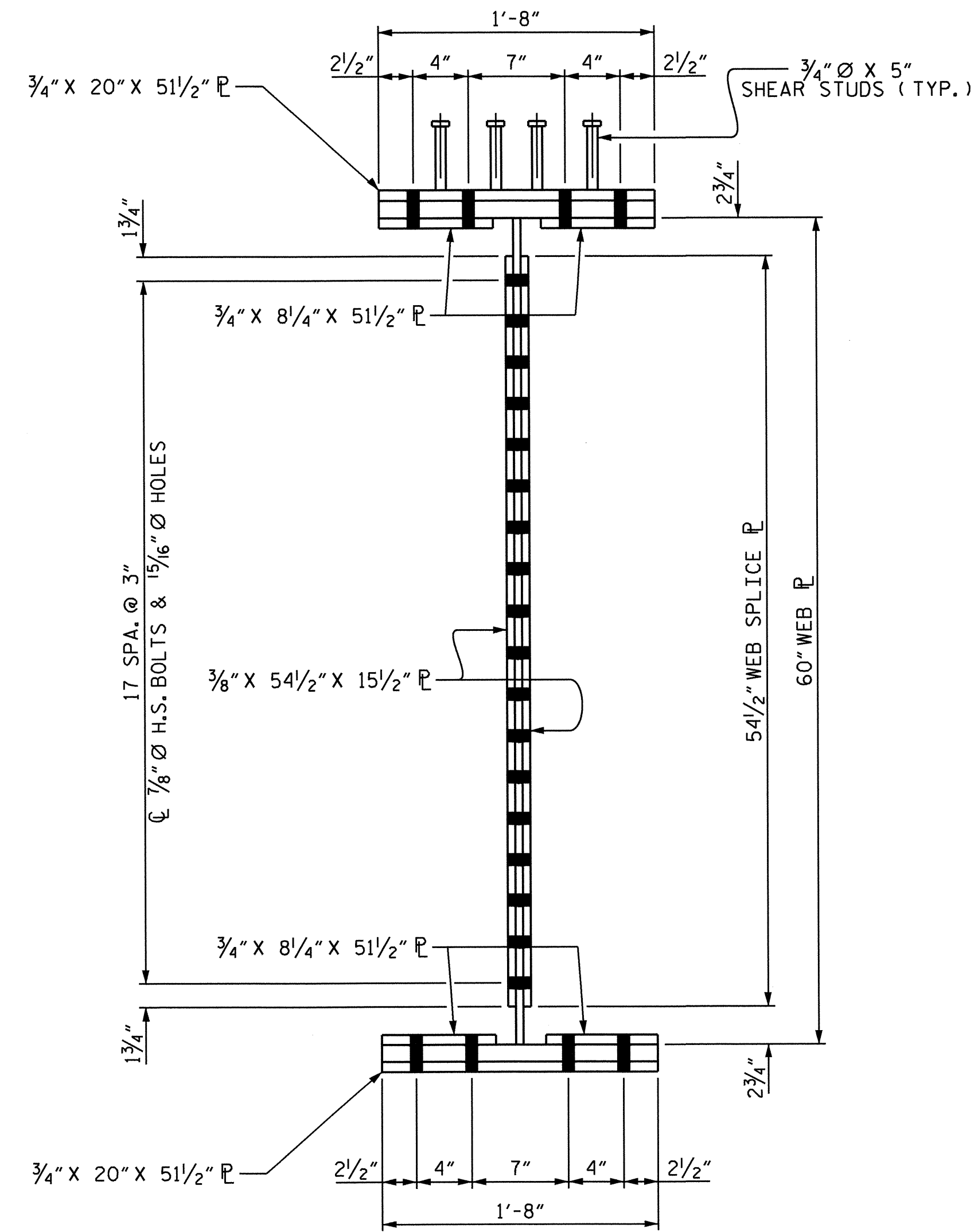
PLAN (TOP OF TOP FLANGE)



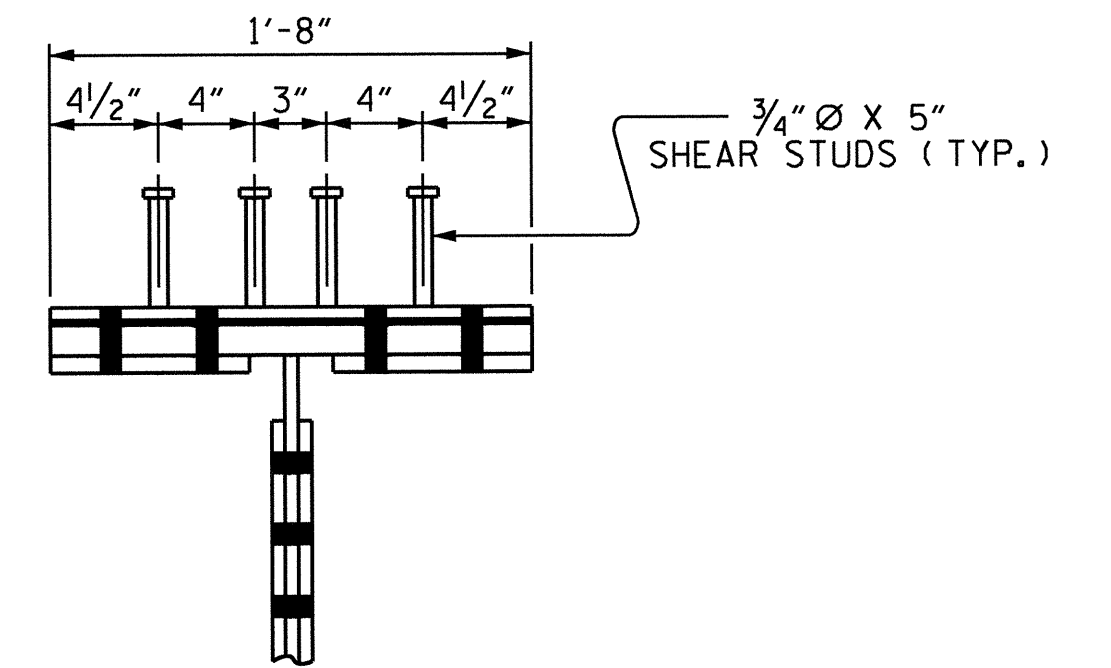
PLAN (TOP OF BOTTOM FLANGE)



ELEVATION



SECTION A-A



SHEAR STUD DETAIL FOR TOP FLANGE SPLICE PLATE

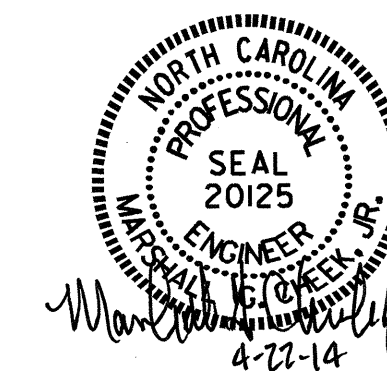
SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY.

BOLTED FIELD SPLICE #2 DETAILS

PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

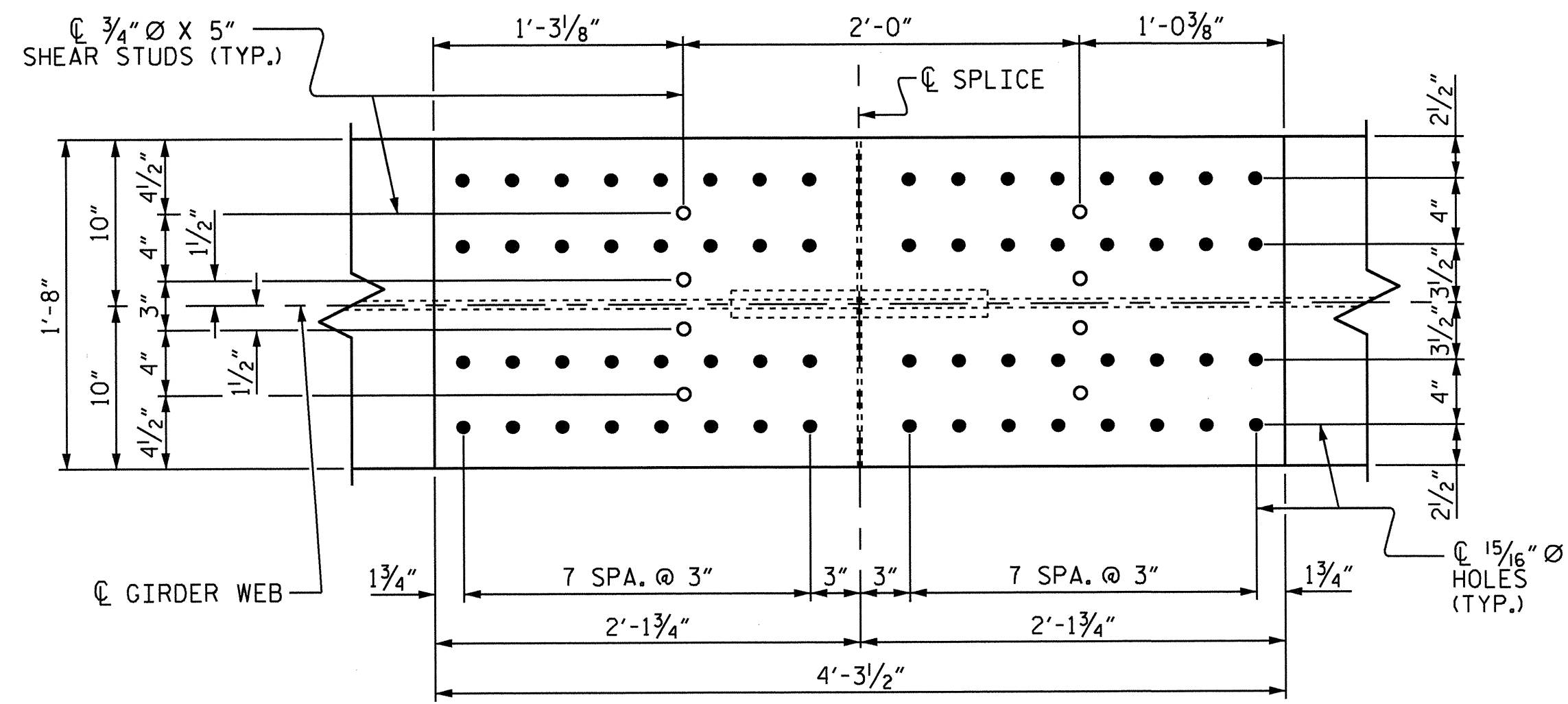
SHEET 5 OF 6

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

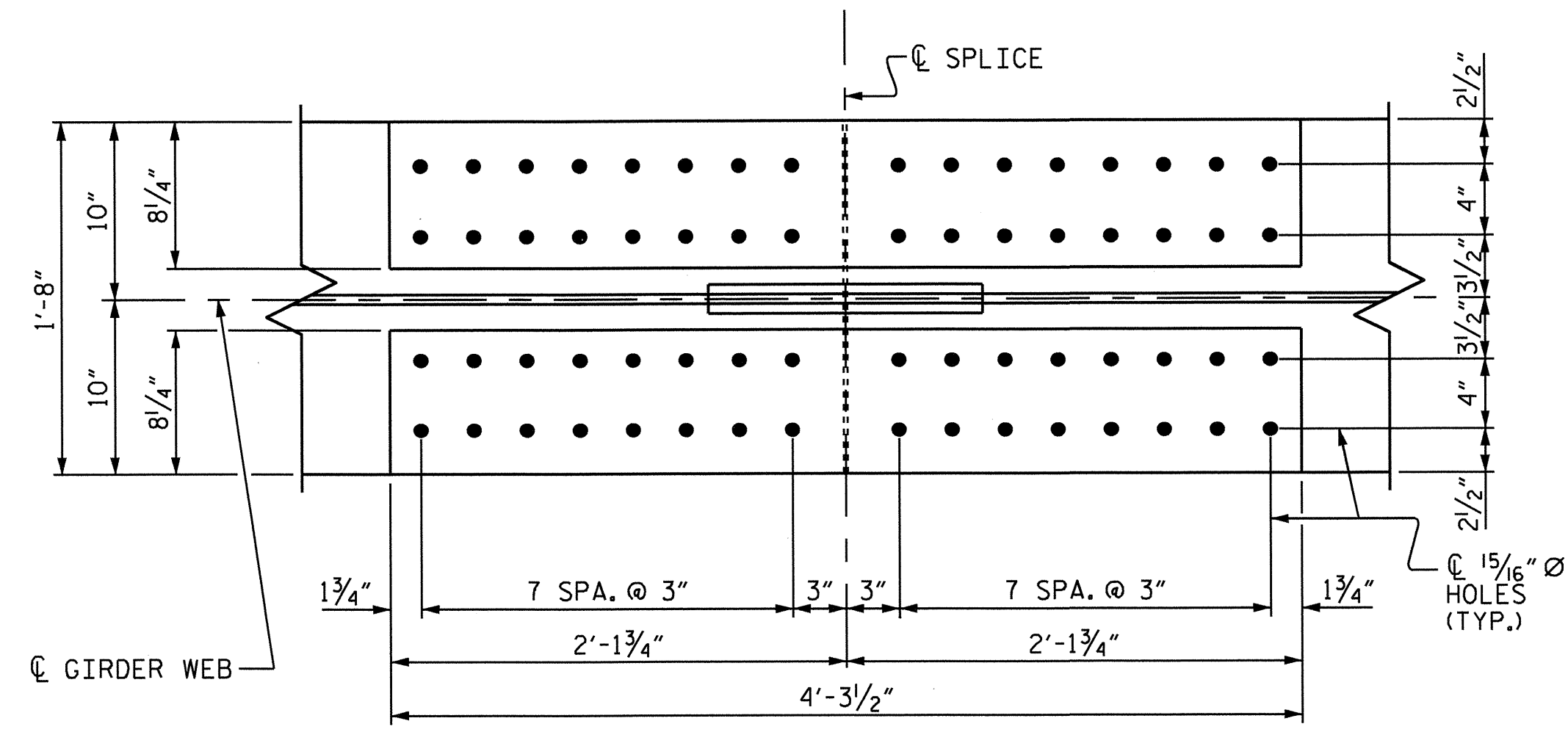


DRAWN BY : B.N. GRADY
 CHECKED BY : D. HODGE
 DESIGN ENGINEER OF RECORD : W.J. HARRIS
 DATE : 2/14
 DATE : 3/14
 DATE : 4/14

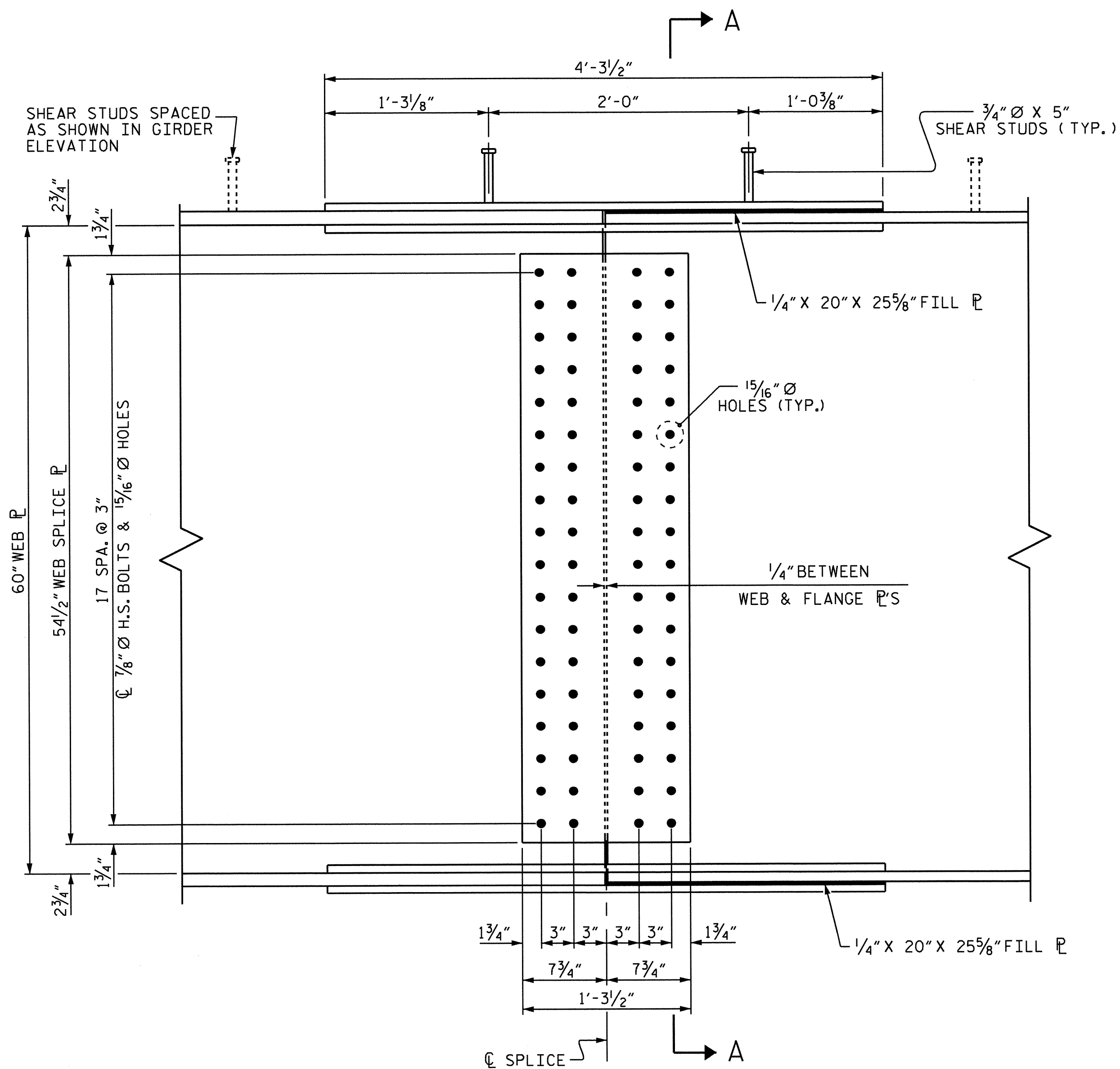
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS 62
2			4			



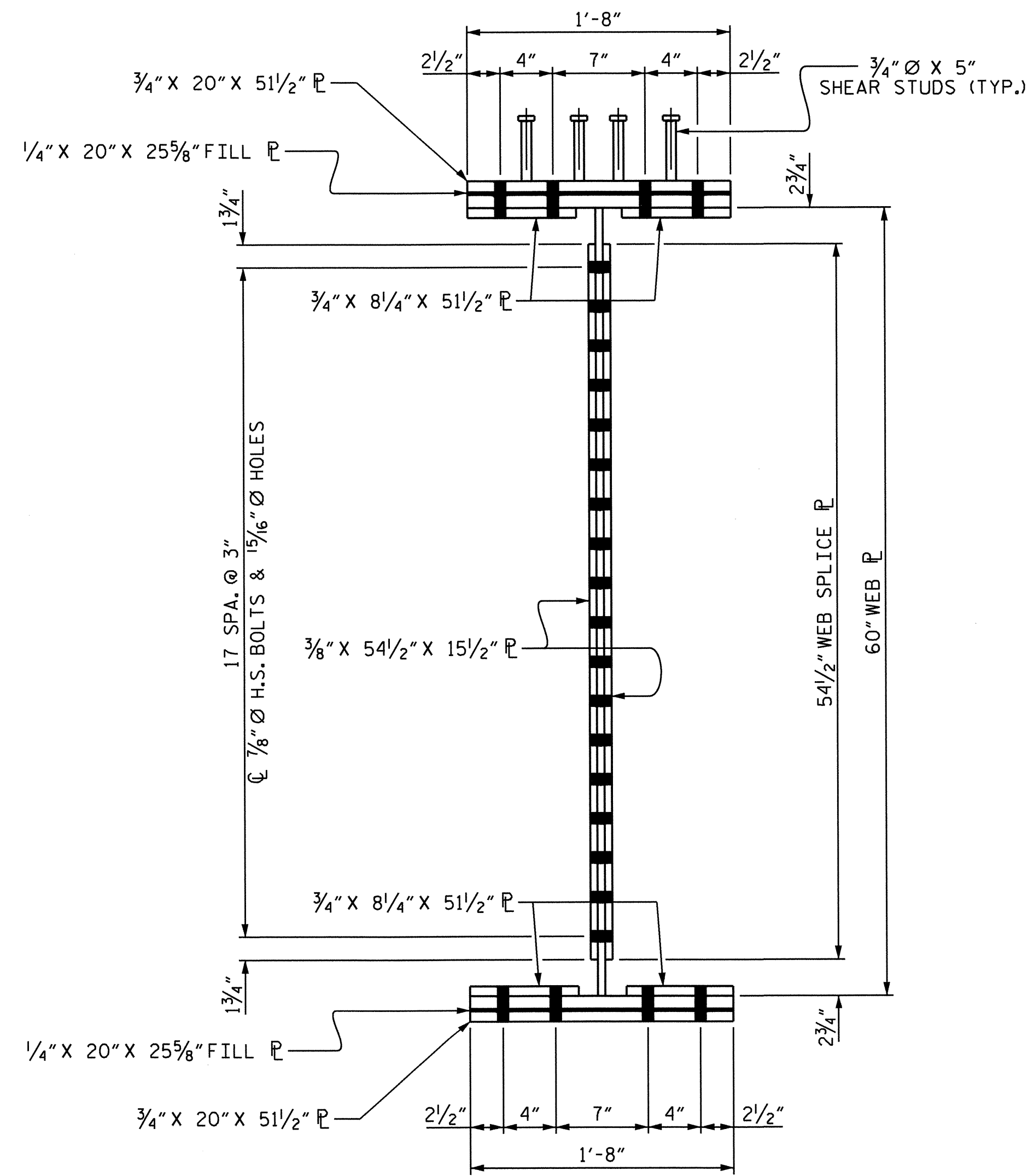
PLAN (TOP OF TOP FLANGE)



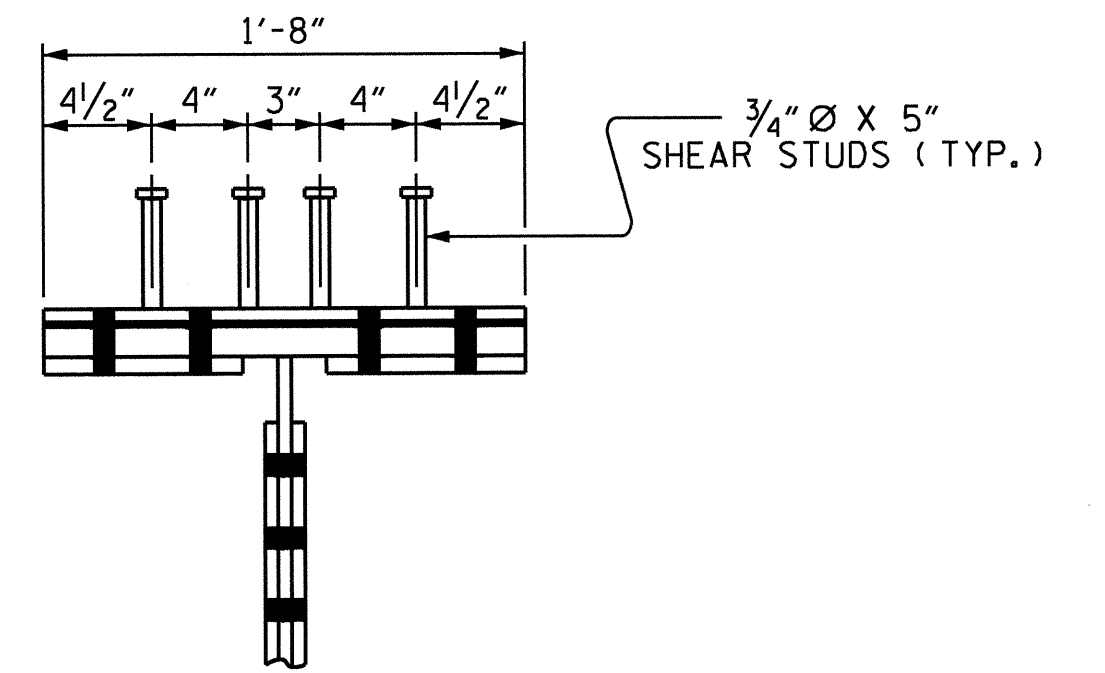
PLAN (TOP OF BOTTOM FLANGE)



ELEVATION



SECTION A-A



SHEAR STUD DETAIL FOR TOP FLANGE SPLICE PLATE

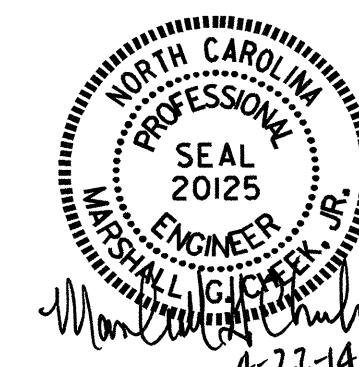
SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY.

PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS



DRAWN BY : B.N. GRADY
 CHECKED BY : D. HODGE
 DESIGN ENGINEER OF RECORD: W.J. HARRIS
 DATE : 2/14
 DATE : 3/14
 DATE : 4/14

22-APR-2014 14:14
 R:\Structures\Final Plans\B4554.LD..SS.dgn
 dahodge

BOLTED FIELD SPLICE #3 DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS 62
2			4			

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #1																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.006	0.012	0.018	0.023	0.027	0.030	0.032	0.033	0.033	0.032	0.030	0.027	0.024	0.020	0.016	0.012	0.008	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.025	0.049	0.071	0.090	0.106	0.119	0.128	0.132	0.133	0.129	0.122	0.112	0.099	0.083	0.067	0.050	0.034	0.019	0.008	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.003	0.005	0.008	0.010	0.012	0.013	0.015	0.015	0.015	0.015	0.014	0.013	0.012	0.010	0.008	0.006	0.004	0.002	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.034	0.066	0.097	0.123	0.145	0.162	0.175	0.180	0.181	0.176	0.166	0.152	0.135	0.113	0.091	0.068	0.046	0.026	0.010	0.000
REQUIRED CAMBER	0	3/16"	1/4"	1/8"	1/2"	3/4"	1 1/16"	2 1/16"	2 3/16"	2 3/8"	2"	1 13/16"	1 5/8"	1 3/8"	1 1/16"	1 3/16"	9/16"	5/16"	1/8"	0	

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #2																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.006	0.012	0.018	0.023	0.027	0.030	0.032	0.033	0.033	0.032	0.030	0.027	0.024	0.020	0.016	0.012	0.008	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.025	0.049	0.071	0.090	0.106	0.119	0.128	0.132	0.133	0.129	0.122	0.112	0.099	0.083	0.067	0.050	0.034	0.019	0.008	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.002	0.004	0.006	0.008	0.009	0.010	0.011	0.011	0.011	0.011	0.011	0.010	0.009	0.007	0.006	0.005	0.003	0.002	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.033	0.065	0.095	0.121	0.142	0.159	0.171	0.176	0.177	0.172	0.163	0.149	0.132	0.110	0.089	0.067	0.045	0.025	0.011	0.000
REQUIRED CAMBER	0	3/8"	3/4"	1 1/8"	1 1/16"	1 5/16"	2 1/16"	2 1/8"	2 1/16"	2 1/16"	1 15/16"	1 13/16"	1 9/16"	1 5/16"	1 1/16"	1 3/16"	9/16"	5/16"	1/8"	0	

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #3																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.006	0.012	0.018	0.023	0.027	0.030	0.032	0.033	0.033	0.032	0.030	0.027	0.024	0.020	0.016	0.012	0.008	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.025	0.049	0.071	0.090	0.106	0.119	0.128	0.132	0.133	0.129	0.122	0.112	0.099	0.083	0.067	0.050	0.034	0.019	0.008	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.003	0.005	0.008	0.010	0.012	0.013	0.015	0.015	0.015	0.015	0.014	0.013	0.012	0.010	0.008	0.006	0.004	0.002	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.032	0.064	0.093	0.118	0.139	0.156	0.168	0.173	0.174	0.169	0.159	0.146	0.129	0.108	0.087	0.065	0.044	0.024	0.010	0.000
REQUIRED CAMBER	0	3/8"	3/4"	1 1/8"	1 1/16"	1 5/16"	2"	2 1/16"	2 1/16"	2"	1 15/16"	1 3/4"	1 9/16"	1 5/16"	1 1/16"	3/4"	1/2"	5/16"	1/8"	0	

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #4																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.006	0.012	0.018	0.023	0.027	0.030	0.032	0.033	0.033	0.032	0.030	0.027	0.024	0.020	0.016	0.012	0.008	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.025	0.049	0.071	0.090	0.106	0.119	0.128	0.132	0.133	0.129	0.122	0.112	0.099	0.083	0.067	0.050	0.034	0.019	0.008	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.001	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.032	0.062	0.091	0.115	0.135	0.152	0.163	0.168	0.169	0.164	0.155	0.142	0.125	0.105	0.085	0.063	0.043	0.024	0.010	0.000
REQUIRED CAMBER	0	3/8"	3/4"	1 1/16"	1 3/8"	1 5/8"	1 13/16"	1 5/16"	2"	2"	1 15/16"	1 7/8"	1 11/16"	1 1/2"	1 1/4"	1"	3/4"	1/2"	5/16"	1/8"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #5																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.006	0.012	0.018	0.023	0.027	0.030	0.032	0.033	0.033	0.032	0.030	0.027	0.024	0.020	0.016	0.012	0.008	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.025	0.049	0.071	0.090	0.106	0.119	0.128	0.132	0.133	0.129	0.122	0.112	0.099	0.083	0.067	0.050	0.034	0.019	0.008	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.002	0.004	0.006	0.008	0.010	0.011	0.012	0.012	0.012	0.012	0.012	0.011	0.010	0.008	0.007	0.005	0.003	0.002	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.033	0.065	0.095	0.121	0.143	0.160	0.172	0.177	0.178	0.173	0.164	0.150	0.133	0.111	0.090	0.067	0.045	0.025	0.011	0.000
REQUIRED CAMBER	0	3/8"	3/4"	1 1/8"	1 1/16"	1 5/16"	2 1/16"	2 1/8"	2 1/8"	2 1/16"	1 15/16"	1 13/16"	1 9/16"	1 5/16"	1 1/16"	1 3/16"	9/16"	5/16"	1/8"	0	

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



PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 DEAD LOAD
 DEFLECTION TABLES
 SPAN A

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24	
1			3			TOTAL SHEETS 62	
2			4				

DRAWN BY: M. POOLE DATE: 2/14
 CHECKED BY: M.A. LEBLANC DATE: 3/14

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #6																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.006	0.012	0.018	0.023	0.027	0.030	0.032	0.033	0.033	0.032	0.030	0.027	0.024	0.020	0.016	0.012	0.008	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.025	0.049	0.071	0.090	0.106	0.119	0.128	0.132	0.133	0.129	0.122	0.112	0.099	0.083	0.067	0.050	0.034	0.019	0.008	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.002	0.004	0.006	0.008	0.010	0.011	0.012	0.012	0.012	0.012	0.012	0.011	0.010	0.008	0.007	0.005	0.003	0.002	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.033	0.065	0.095	0.121	0.143	0.160	0.172	0.177	0.178	0.173	0.164	0.150	0.133	0.111	0.090	0.067	0.045	0.025	0.011	0.000
REQUIRED CAMBER	0	3/8"	3/4"	1/8"	1 1/16"	1 1/16"	1 5/16"	2 1/16"	2 1/8"	2 1/8"	2 1/16"	1 5/16"	1 3/16"	1 9/16"	1 5/16"	1 1/16"	1 3/16"	9/16"	5/16"	1/8"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #7																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.006	0.012	0.018	0.023	0.027	0.030	0.032	0.033	0.033	0.032	0.030	0.027	0.024	0.020	0.016	0.012	0.008	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.025	0.049	0.071	0.090	0.106	0.119	0.128	0.132	0.133	0.129	0.122	0.112	0.099	0.083	0.067	0.050	0.034	0.019	0.008	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.032	0.062	0.091	0.115	0.135	0.152	0.163	0.168	0.169	0.164	0.155	0.142	0.125	0.105	0.085	0.063	0.043	0.024	0.010	0.000
REQUIRED CAMBER	0	3/8"	3/4"	1/16"	1 3/8"	1 5/8"	1 13/16"	1 5/16"	2"	2"	1 5/16"	1 7/8"	1 11/16"	1 1/2"	1 1/4"	1"	3/4"	1/2"	5/16"	1/8"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #8																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.006	0.012	0.018	0.023	0.027	0.030	0.032	0.033	0.033	0.032	0.030	0.027	0.024	0.020	0.016	0.012	0.008	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.025	0.049	0.071	0.090	0.106	0.119	0.128	0.132	0.133	0.129	0.122	0.112	0.099	0.083	0.067	0.050	0.034	0.019	0.008	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.001	0.003	0.004	0.005	0.006	0.007	0.008	0.008	0.008	0.008	0.007	0.007	0.006	0.005	0.004	0.003	0.002	0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.032	0.064	0.093	0.118	0.139	0.156	0.168	0.173	0.174	0.169	0.159	0.146	0.129	0.108	0.087	0.065	0.044	0.024	0.010	0.000
REQUIRED CAMBER	0	3/8"	3/4"	1/8"	1 1/16"	1 1/16"	1 7/8"	2"	2 1/16"	2 1/16"	2"	1 5/16"	1 3/4"	1 9/16"	1 5/16"	1 1/16"	3/4"	1/2"	5/16"	1/8"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #9																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.006	0.012	0.018	0.023	0.027	0.030	0.032	0.033	0.033	0.032	0.030	0.027	0.024	0.020	0.016	0.012	0.008	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.025	0.049	0.071	0.090	0.106	0.119	0.128	0.132	0.133	0.129	0.122	0.112	0.099	0.083	0.067	0.050	0.034	0.019	0.008	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.002	0.004	0.006	0.008	0.009	0.010	0.011	0.011	0.011	0.011	0.011	0.010	0.009	0.007	0.006	0.005	0.003	0.002	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.033	0.065	0.095	0.121	0.142	0.159	0.171	0.176	0.177	0.172	0.163	0.149	0.132	0.110	0.089	0.067	0.045	0.025	0.011	0.000
REQUIRED CAMBER	0	3/8"	3/4"	1/8"	1 1/16"	1 5/16"	2 1/16"	2 1/8"	2 1/8"	2 1/16"	1 5/16"	1 3/16"	1 9/16"	1 5/16"	1 1/16"	1 3/16"	9/16"	5/16"	1/8"	0	

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #10																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.006	0.012	0.018	0.023	0.027	0.030	0.032	0.033	0.033	0.032	0.030	0.027	0.024	0.020	0.016	0.012	0.008	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.025	0.049	0.071	0.090	0.106	0.119	0.128	0.132	0.133	0.129	0.122	0.112	0.099	0.083	0.067	0.050	0.034	0.019	0.008	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.003	0.005	0.008	0.010	0.012	0.013	0.015	0.015	0.015	0.015	0.014	0.013	0.012	0.010	0.008	0.006	0.004	0.002	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.034	0.066	0.097	0.123	0.145	0.162	0.175	0.180	0.181	0.176	0.166	0.152	0.135	0.113	0.091	0.068	0.046	0.025	0.011	0.000
REQUIRED CAMBER	0	7/16"	1 3/16"	1 1/8"	1 1/2"	1 3/4"	1 5/16"	2 1/16"	2 3/16"	2 3/16"	2 1/8"	2"	1 13/16"	1 5/8"	1 3/8"	1 1/16"	1 3/16"	9/16"	5/16"	1/8"	0

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



PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 2 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-25	
SUPERSTRUCTURE DEAD LOAD DEFLECTION TABLES SPAN A							
REVISIONS						TOTAL SHEETS 62	
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				
2			4				

DRAWN BY: M. POOLE DATE: 2/14
 CHECKED BY: M.A. LEBLANC DATE: 3/14

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #1																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	0.001	0.002	0.005	0.007	0.010	0.012	0.014	0.016	0.016	0.017	0.016	0.015	0.014	0.012	0.009	0.007	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.003	-0.001	0.005	0.012	0.020	0.029	0.037	0.044	0.049	0.052	0.053	0.052	0.049	0.044	0.038	0.030	0.021	0.013	0.005	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.001	0.003	0.004	0.005	0.006	0.007	0.008	0.008	0.008	0.008	0.007	0.007	0.006	0.005	0.003	0.002	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	0.000	0.008	0.020	0.031	0.044	0.055	0.065	0.073	0.076	0.078	0.076	0.071	0.065	0.056	0.044	0.031	0.019	0.008	0.000
ORDINATE DUE TO SUPERELEVATION	0.000	-0.007	-0.014	-0.021	-0.028	-0.035	-0.042	-0.049	-0.056	-0.063	-0.070	-0.077	-0.084	-0.091	-0.098	-0.105	-0.112	-0.100	-0.089	-0.044	0.000
REQUIRED CAMBER	0	-1/8"	-1/8"	-1/8"	-1/8"	-1/16"	0	1/16"	1/8"	1/8"	1/16"	0	-1/16"	-1/4"	-3/8"	-5/8"	-13/16"	-13/16"	-13/16"	-7/16"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #2																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	0.001	0.002	0.005	0.007	0.010	0.012	0.014	0.016	0.016	0.017	0.016	0.015	0.014	0.012	0.009	0.007	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.003	-0.001	0.005	0.012	0.020	0.029	0.037	0.044	0.049	0.052	0.053	0.052	0.049	0.044	0.038	0.030	0.021	0.013	0.005	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.001	0.002	0.003	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	0.000	0.008	0.019	0.030	0.043	0.054	0.063	0.071	0.074	0.076	0.074	0.070	0.063	0.054	0.042	0.030	0.019	0.008	0.000
ORDINATE DUE TO SUPERELEVATION	0.000	-0.008	-0.017	-0.025	-0.034	-0.042	-0.051	-0.059	-0.067	-0.076	-0.084	-0.093	-0.101	-0.109	-0.118	-0.121	-0.125	-0.093	-0.062	-0.031	0.000
REQUIRED CAMBER	0	-1/8"	-3/16"	-3/16"	-3/16"	-1/8"	-1/8"	-1/16"	-1/16"	-1/16"	-1/8"	-3/16"	-5/16"	-7/16"	-11/16"	-13/16"	-1"	-3/4"	-1/2"	-5/16"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #3																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	0.001	0.002	0.005	0.007	0.010	0.012	0.014	0.016	0.016	0.017	0.016	0.015	0.014	0.012	0.009	0.007	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.003	-0.001	0.005	0.012	0.020	0.029	0.037	0.044	0.049	0.052	0.053	0.052	0.049	0.044	0.038	0.030	0.021	0.013	0.005	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.001	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	0.000	0.008	0.018	0.029	0.042	0.052	0.062	0.069	0.072	0.074	0.072	0.068	0.061	0.053	0.041	0.030	0.018	0.007	0.000
ORDINATE DUE TO SUPERELEVATION	0.000	-0.008	-0.016	-0.024	-0.032	-0.040	-0.048	-0.056	-0.064	-0.072	-0.080	-0.088	-0.096	-0.104	-0.112	-0.095	-0.079	-0.059	-0.039	-0.020	0.000
REQUIRED CAMBER	0	-1/8"	-3/16"	-3/16"	-3/16"	-1/8"	-1/16"	-1/16"	-1/16"	-1/16"	-1/16"	-3/16"	-1/4"	-7/16"	-5/8"	-1/2"	-7/16"	-3/8"	-1/4"	-1/8"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #4																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	0.001	0.002	0.005	0.007	0.010	0.012	0.014	0.016	0.016	0.017	0.016	0.015	0.014	0.012	0.009	0.007	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.003	-0.001	0.005	0.012	0.020	0.029	0.037	0.044	0.049	0.052	0.053	0.052	0.049	0.044	0.038	0.030	0.021	0.013	0.005	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.000	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	0.000	0.007	0.018	0.028	0.040	0.050	0.059	0.067	0.070	0.072	0.070	0.066	0.059	0.051	0.040	0.029	0.017	0.007	0.000
ORDINATE DUE TO SUPERELEVATION	0.000	-0.006	-0.012	-0.017	-0.023	-0.029	-0.035	-0.040	-0.046	-0.052	-0.058	-0.064	-0.069	-0.065	-0.060	-0.050	-0.040	-0.030	-0.020	-0.010	0.000
REQUIRED CAMBER	0	-1/8"	-1/8"	-1/8"	-1/16"	0	1/16"	1/8"	1/8"	3/16"	1/8"	1/8"	0	0	0	0	0	0	-1/16"	-1/16"	0

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

DRAWN BY: M. POOLE DATE: 2/14
CHECKED BY: M.A. LEBLANC DATE: 3/14

22-APR-2014 09:15
R:\Structures\Final Plans\B4554.SD.DLD1tbl.dgn
dahodge

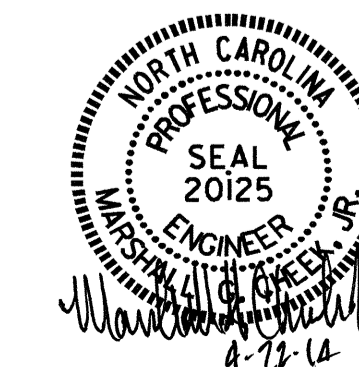
PROJECT NO. B-4554
JACKSON COUNTY
STATION: 27+11.72 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
DEAD LOAD
DEFLECTION TABLES
SPAN B

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-26
1			3			TOTAL SHEETS
2			4			62



DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
TWENTIETH POINTS	SPAN B - GIRDER #5																					
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0	
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	0.001	0.002	0.005	0.007	0.010	0.012	0.014	0.016	0.016	0.017	0.016	0.015	0.014	0.012	0.009	0.007	0.004	0.002	0.000	
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.003	-0.001	0.005	0.012	0.020	0.029	0.037	0.044	0.049	0.052	0.053	0.052	0.049	0.044	0.038	0.030	0.021	0.013	0.005	0.000	
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.006	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.001	0.000	
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	0.000	0.008	0.019	0.030	0.043	0.054	0.064	0.071	0.075	0.077	0.074	0.070	0.063	0.055	0.043	0.031	0.019	0.008	0.000	
ORDINATE DUE TO SUPERELEVATION	0.000	-0.002	-0.003	-0.005	-0.007	-0.009	-0.010	-0.012	-0.014	-0.015	-0.017	-0.017	-0.017	-0.015	-0.013	-0.011	-0.009	-0.006	-0.004	-0.002	0.000	
REQUIRED CAMBER	0	-1/16"	-1/16"	1/16"	1/8"	1/4"	3/8"	1/2"	5/8"	11/16"	11/16"	11/16"	11/16"	11/16"	11/16"	5/8"	1/2"	7/16"	5/16"	3/16"	1/16"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #6																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	0.001	0.002	0.005	0.007	0.010	0.012	0.014	0.016	0.016	0.017	0.016	0.015	0.014	0.012	0.009	0.007	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.003	-0.001	0.005	0.012	0.020	0.029	0.037	0.044	0.049	0.052	0.053	0.052	0.049	0.044	0.038	0.030	0.021	0.013	0.005	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.006	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	0.000	0.008	0.019	0.030	0.043	0.054	0.064	0.071	0.075	0.077	0.074	0.070	0.063	0.055	0.043	0.031	0.019	0.008	0.000
ORDINATE DUE TO SUPERELEVATION	0.000	0.002	0.004	0.006	0.008	0.010	0.011	0.013	0.015	0.017	0.019	0.017	0.016	0.014	0.012	0.010	0.008	0.006	0.004	0.002	0.000
REQUIRED CAMBER	0	0	1/16"	3/16"	5/16"	1/2"	5/8"	13/16"	15/16"	11/16"	11/8"	11/8"	11/16"	1"	7/8"	3/4"	5/8"	7/16"	1/4"	1/8"	0

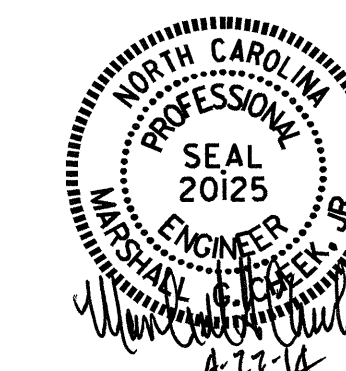
DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #7																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	0.001	0.002	0.005	0.007	0.010	0.012	0.014	0.016	0.016	0.017	0.016	0.015	0.014	0.012	0.009	0.007	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.003	-0.001	0.005	0.012	0.020	0.029	0.037	0.044	0.049	0.052	0.053	0.052	0.049	0.044	0.038	0.030	0.021	0.013	0.005	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.000	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	0.000	0.007	0.018	0.028	0.040	0.050	0.059	0.067	0.070	0.072	0.070	0.066	0.059	0.051	0.040	0.029	0.017	0.007	0.000
ORDINATE DUE TO SUPERELEVATION	0.000	0.009	0.018	0.027	0.036	0.045	0.054	0.063	0.072	0.070	0.068	0.061	0.054	0.047	0.041	0.034	0.027	0.020	0.014	0.007	0.000
REQUIRED CAMBER	0	1/16"	3/16"	7/16"	5/8"	7/8"	11/8"	13/8"	19/16"	15/8"	15/8"	19/16"	11/2"	13/8"	13/16"	1"	13/16"	9/16"	3/8"	3/16"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #8																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	0.001	0.002	0.005	0.007	0.010	0.012	0.014	0.016	0.016	0.017	0.016	0.015	0.014	0.012	0.009	0.007	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.003	-0.001	0.005	0.012	0.020	0.029	0.037	0.044	0.049	0.052	0.053	0.052	0.049	0.044	0.038	0.030	0.021	0.013	0.005	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.001	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	0.000	0.008	0.018	0.029	0.042	0.052	0.062	0.069	0.072	0.074	0.072	0.068	0.061	0.053	0.041	0.030	0.018	0.007	0.000
ORDINATE DUE TO SUPERELEVATION	0.000	0.018	0.036	0.054	0.072	0.090	0.108	0.112	0.117	0.107	0.097	0.088	0.078	0.068	0.058	0.049	0.039	0.029	0.019	0.010	0.000
REQUIRED CAMBER	0	3/16"	7/16"	3/4"	11/16"	17/16"	13/16"	15/16"	21/8"	21/8"	21/16"	15/16"	13/16"	15/8"	17/16"	13/16"	15/16"	11/16"	7/16"	3/16"	0

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

PROJECT NO. B-4554
JACKSON COUNTY
STATION: 27+11.72 -L-

SHEET 4 OF 6



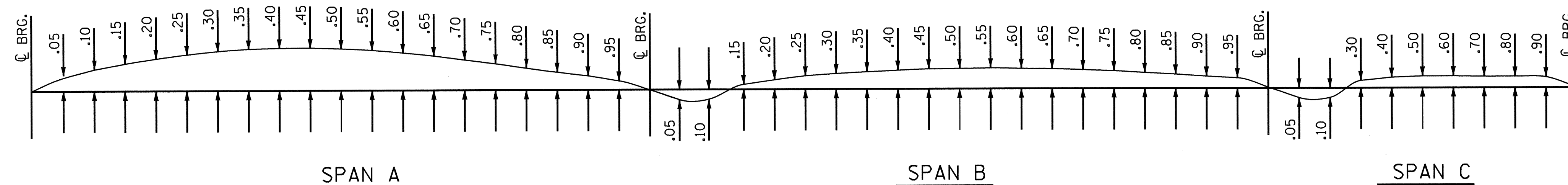
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-27	
SUPERSTRUCTURE DEAD LOAD DEFLECTION TABLES SPAN B						TOTAL SHEETS 62	
REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				
2			4				

DRAWN BY: M POOLE DATE: 2/14
CHECKED BY: M.A. LEBLANC DATE: 3/14

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #9																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	0.001	0.002	0.005	0.007	0.010	0.012	0.014	0.016	0.016	0.017	0.016	0.015	0.014	0.012	0.009	0.007	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.003	-0.001	0.005	0.012	0.020	0.029	0.037	0.044	0.049	0.052	0.053	0.052	0.049	0.044	0.038	0.030	0.021	0.013	0.005	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.001	0.002	0.003	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	0.000	0.008	0.019	0.030	0.043	0.054	0.063	0.071	0.074	0.076	0.074	0.070	0.063	0.054	0.042	0.030	0.019	0.008	0.000
ORDINATE DUE TO SUPERELEVATION	0.000	0.029	0.057	0.086	0.115	0.133	0.152	0.141	0.130	0.119	0.109	0.098	0.087	0.076	0.065	0.054	0.043	0.033	0.022	0.011	0.000
REQUIRED CAMBER	0	5/16"	1 1/16"	1 1/8"	1 5/8"	1 15/16"	2 5/16"	2 5/16"	2 5/16"	2 1/4"	2 3/16"	2 1/16"	1 15/16"	1 3/4"	1 5/16"	1 1/16"	3/4"	1/2"	3/16"	0	

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #10																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	0.001	0.002	0.005	0.007	0.010	0.012	0.014	0.016	0.016	0.017	0.016	0.015	0.014	0.012	0.009	0.007	0.004	0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.003	-0.001	0.005	0.012	0.020	0.029	0.037	0.044	0.049	0.052	0.053	0.052	0.049	0.044	0.038	0.030	0.021	0.013	0.005	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.001	0.003	0.004	0.005	0.006	0.007	0.008	0.008	0.008	0.008	0.007	0.007	0.006	0.005	0.003	0.002	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	0.000	0.008	0.020	0.031	0.044	0.055	0.065	0.073	0.076	0.078	0.076	0.071	0.065	0.056	0.044	0.031	0.019	0.008	0.000
ORDINATE DUE TO SUPERELEVATION	0.000	0.041	0.083	0.123	0.163	0.152	0.142	0.132	0.122	0.112	0.102	0.091	0.081	0.071	0.061	0.051	0.041	0.030	0.020	0.010	0.000
REQUIRED CAMBER	0	7/16"	1"	1 1/16"	2 3/16"	2 3/16"	2 1/4"	2 1/4"	2 1/4"	2 3/16"	2 1/8"	2"	1 7/8"	1 1/16"	1 1/2"	1 1/4"	1"	3/4"	7/16"	3/16"	0

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



SCHMATIC CAMBER ORDINATES
SLOPE FOR THE ZERO CAMBER BASE LINE VARIES.

PROJECT NO. B-4554
JACKSON COUNTY
STATION: 27+11.72 -L-

SHEET 5 OF 6



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
DEAD LOAD
DEFLECTION TABLES
SPAN B

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-28	
1			3			TOTAL SHEETS 62	
2			4				

DRAWN BY: M. POOLE DATE: 2/14
CHECKED BY: M.A. LEBLANC DATE: 3/14

DEAD LOAD DEFLECTION TABLE FOR GIRDERS												
TENTH POINTS	SPAN C - GIRDER #1 & #10											
	0	.10	.20	.30	.40	.50	.60	.70	.80	.90	0	
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.001	0.000	0.000	0.001	0.001	0.002	0.001	0.001	0.000	
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.002	-0.001	0.002	0.005	0.007	0.009	0.008	0.007	0.004	0.000	
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.000	0.000	
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	-0.002	0.002	0.006	0.009	0.011	0.011	0.009	0.005	0.000	
REQUIRED CAMBER	0	- 1/16"	0	0	1/16"	1/8"	1/8"	1/8"	1/8"	1/16"	0	

DEAD LOAD DEFLECTION TABLE FOR GIRDERS												
TENTH POINTS	SPAN C - GIRDER #2 & #9											
	0	.10	.20	.30	.40	.50	.60	.70	.80	.90	0	
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.001	0.000	0.000	0.001	0.001	0.002	0.001	0.001	0.000	
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.002	-0.001	0.002	0.005	0.007	0.009	0.008	0.007	0.004	0.000	
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.000	0.000	
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	-0.002	0.002	0.005	0.009	0.011	0.011	0.009	0.005	0.000	
REQUIRED CAMBER	0	- 1/16"	0	0	1/16"	1/8"	1/8"	1/8"	1/8"	1/16"	0	

DEAD LOAD DEFLECTION TABLE FOR GIRDERS												
TENTH POINTS	SPAN C - GIRDER #3 & #8											
	0	.10	.20	.30	.40	.50	.60	.70	.80	.90	0	
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.001	0.000	0.000	0.001	0.001	0.002	0.001	0.001	0.000	
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.002	-0.001	0.002	0.005	0.007	0.009	0.008	0.007	0.004	0.000	
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000	
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	-0.002	0.002	0.005	0.008	0.011	0.011	0.008	0.005	0.000	
REQUIRED CAMBER	0	- 1/16"	0	0	1/16"	1/8"	1/8"	1/8"	1/8"	1/16"	0	

DEAD LOAD DEFLECTION TABLE FOR GIRDERS												
TENTH POINTS	SPAN C - GIRDER #4 & #7											
	0	.10	.20	.30	.40	.50	.60	.70	.80	.90	0	
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.001	0.000	0.000	0.001	0.001	0.002	0.001	0.001	0.000	
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.002	-0.001	0.002	0.005	0.007	0.009	0.008	0.007	0.004	0.000	
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	-0.002	0.002	0.005	0.008	0.010	0.010	0.008	0.005	0.000	
REQUIRED CAMBER	0	- 1/16"	0	0	1/16"	1/8"	1/8"	1/8"	1/8"	1/16"	0	

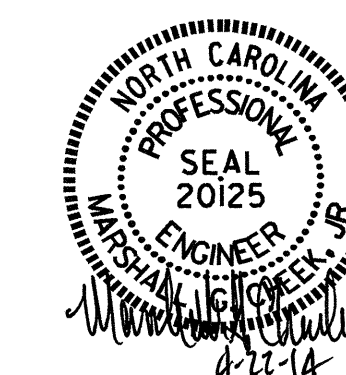
DEAD LOAD DEFLECTION TABLE FOR GIRDERS												
TENTH POINTS	SPAN C - GIRDER #5 & #6											
	0	.10	.20	.30	.40	.50	.60	.70	.80	.90	0	
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.001	0.000	0.000	0.001	0.001	0.002	0.001	0.001	0.000	
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.002	-0.001	0.002	0.005	0.007	0.009	0.008	0.007	0.004	0.000	
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	-0.002	0.002	0.005	0.009	0.011	0.011	0.009	0.005	0.000	
REQUIRED CAMBER	0	- 1/16"	0	0	1/16"	1/8"	1/8"	1/8"	1/8"	1/16"	0	

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. B-4554
JACKSON COUNTY
STATION: 27+11.72 -L-

SHEET 6 OF 6

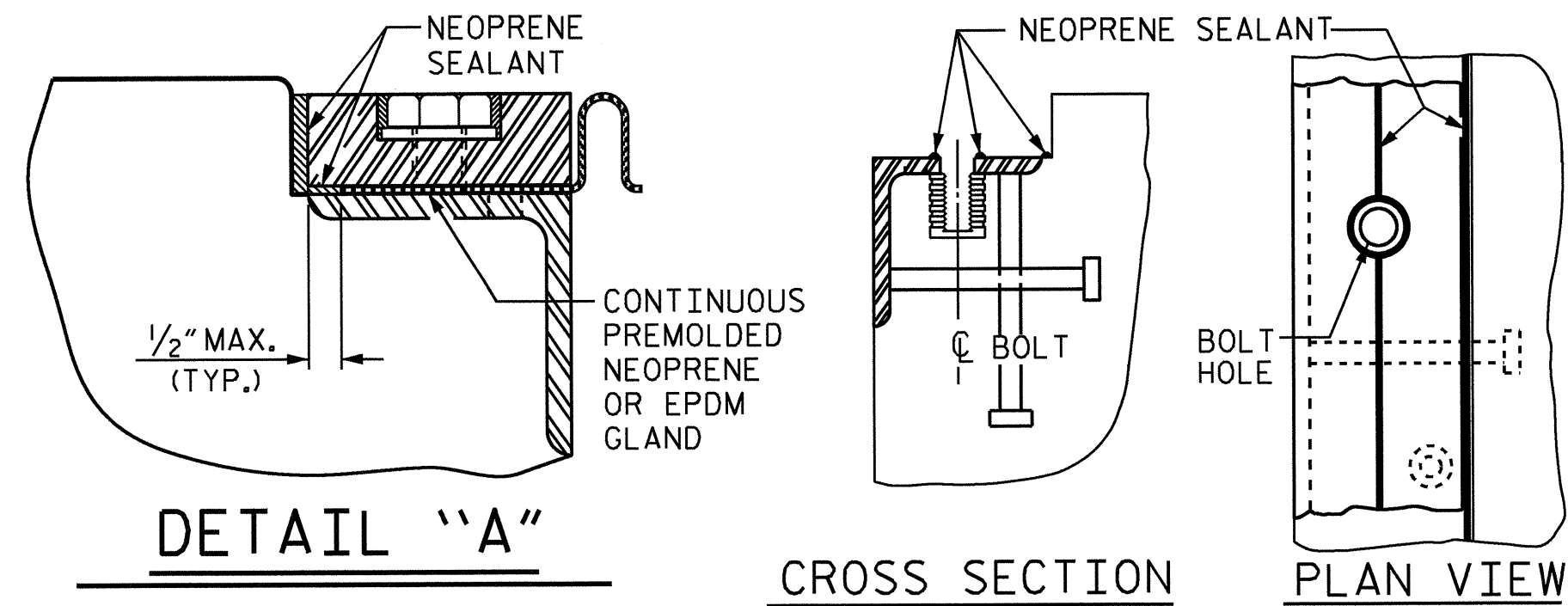


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

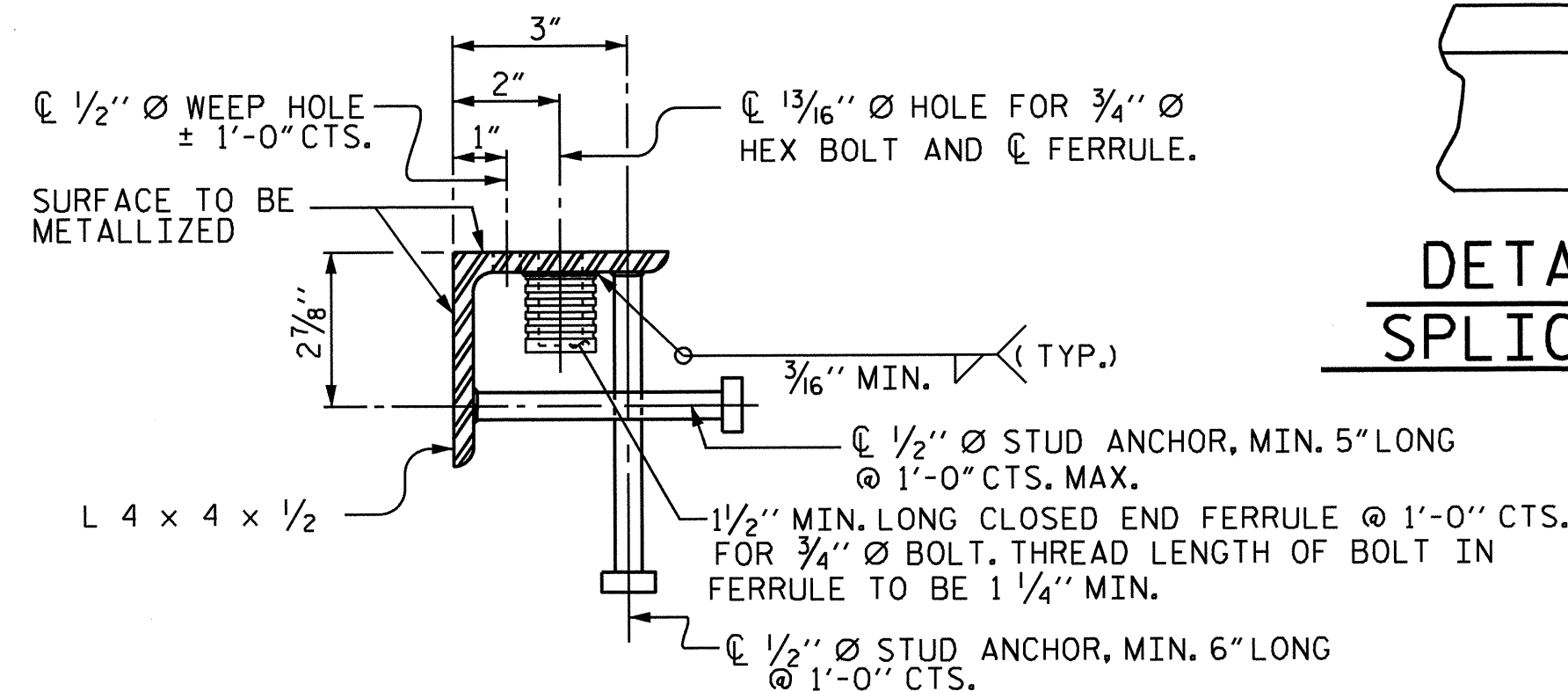
SUPERSTRUCTURE
DEAD LOAD
DEFLECTION TABLES
SPAN C

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS
2			4			62

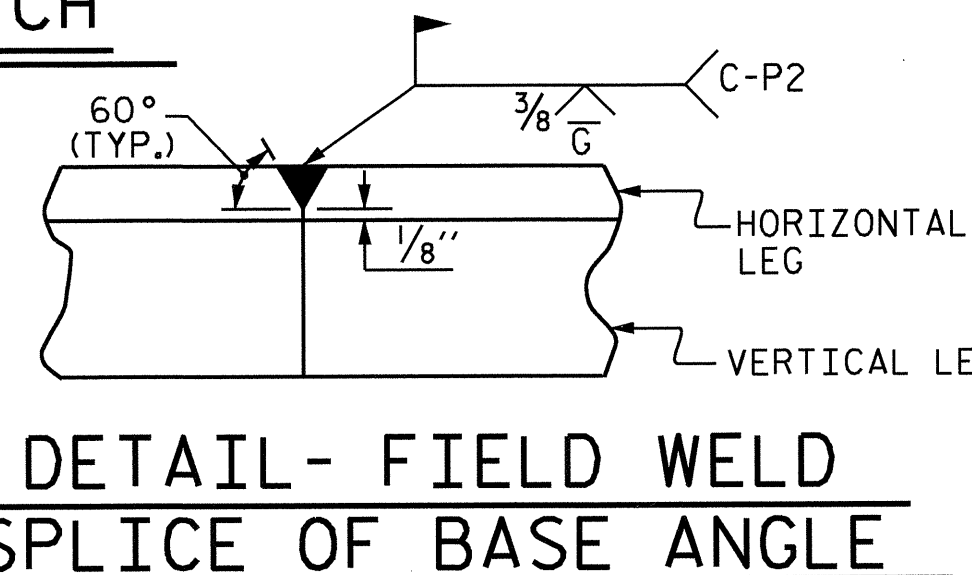
DRAWN BY : M. POOLE DATE : 2/14
CHECKED BY : M.A. LEBLANC DATE : 3/14



CROSS SECTION
PLAN VIEW
INSTALLATION SKETCH



TYPICAL SECTION OF BASE ANGLE ASSEMBLY



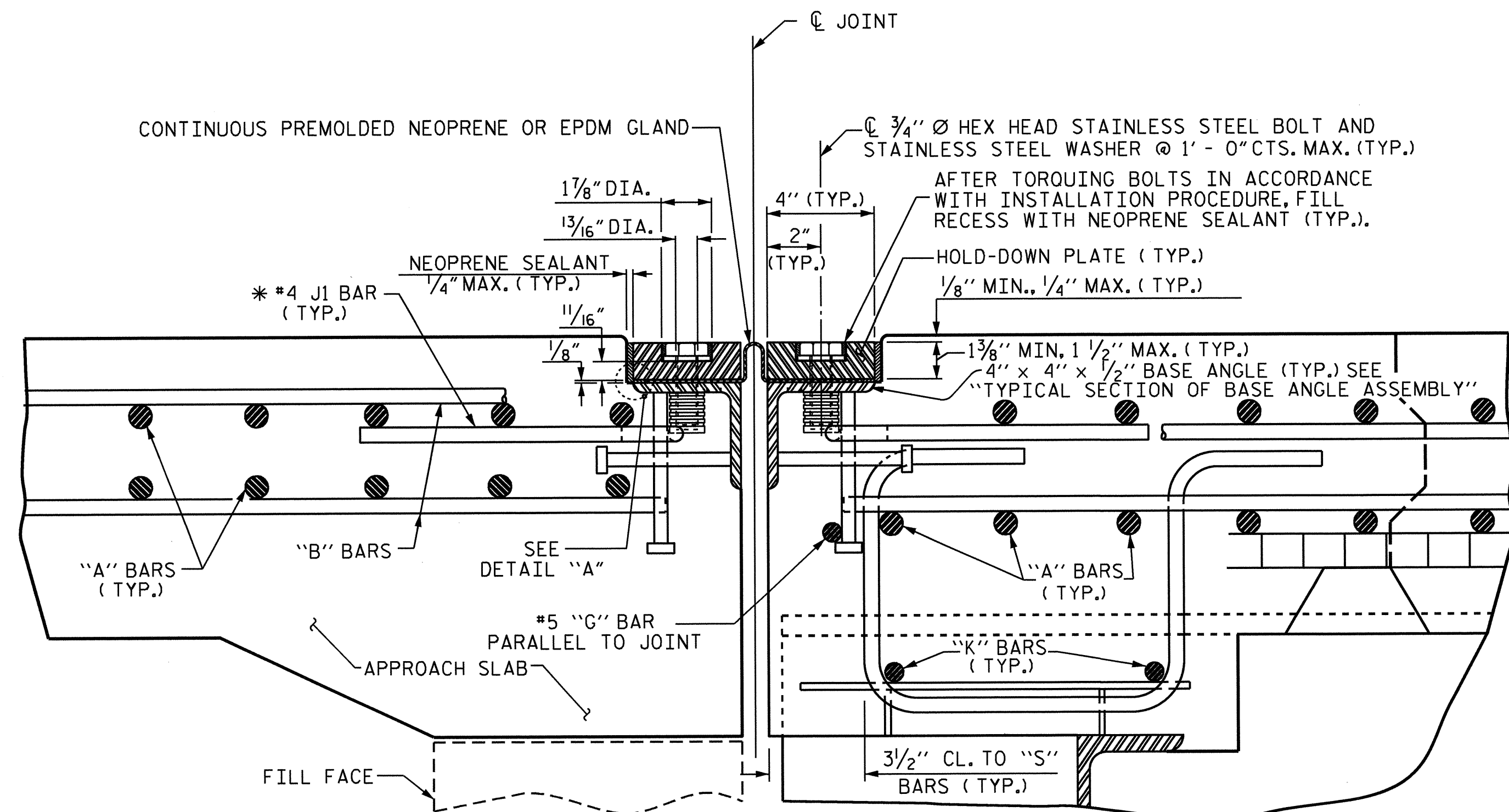
DETAIL - FIELD WELD
SPLICE OF BASE ANGLE

INSTALLATION PROCEDURE

1. A TEMPLATE OR OTHER SUITABLE DEVICE SHALL BE USED TO FORM THE TOP OF THE EXPANSION JOINT SEAL BLOCKOUT TO THE PROPER DEPTH AND WIDTH. THE TEMPLATE SHALL BE 4/8" TO 4/4" WIDE AND OF SUCH THICKNESS AS TO PROVIDE FOR CORRECT FINAL ELEVATION OF TOP OF HOLD-DOWN PLATES. THE TEMPLATE SHALL BE ATTACHED TO THE BASE ANGLE ASSEMBLY WITH THE 3/4" Ø HEX HEAD BOLTS PROVIDED FOR THE HOLD-DOWN PLATES. A 1" Ø HOLE SHALL BE PROVIDED IN THE TEMPLATE CENTERED OVER EACH WEEP HOLE IN THE 4" X 4" X 1/2" BASE ANGLE. OTHER METHODS OF INSURING DRAINAGE THROUGH WEEP HOLES MAY BE EMPLOYED SUBJECT TO ENGINEER'S APPROVAL.
2. AFTER THE CONCRETE HAS BEEN CAST ON BOTH SIDES OF THE JOINT, REMOVE THE TEMPLATE. THOROUGHLY CLEAN THE BOLT HOLES AND THE ANGLE PLATE. REMOVE ANY EXCESS CONCRETE THAT COMES OUT OF THE WEEP HOLES. ANY DAMAGED STEEL SHALL BE COATED WITH A MINIMUM THICKNESS OF 4 DRY MILS OF ZINC-RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
3. LAY THE GLAND ON THE BASE ANGLE AND FIELD MARK THE GLAND FOR THE BOLT HOLES. HOLES IN THE GLAND SHALL BE PUNCHED 1/8" IN DIAMETER WITH A HAND PUNCH.
4. IN ORDER TO CHECK FOR PROPER ALIGNMENT, PLACE THE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. DO NOT APPLY NEOPRENE SEALANT. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE BUT DO NOT TIGHTEN. THE ENGINEER SHALL INSPECT THE JOINT SEAL DEVICE FOR PROPER ALIGNMENT.
5. AFTER INSPECTION, REMOVE THE HOLD-DOWN PLATES AND GLAND. APPLY NEOPRENE SEALANT TO THE BASE ANGLE IN ACCORDANCE WITH THE "INSTALLATION SKETCH". PLACE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE ASSEMBLY AND TORQUE THE BOLTS TO 88 FT-LBS WITH A TORQUE WRENCH. CHECK THE TORQUE AFTER THREE (3) HOURS AND, IF NECESSARY, RETIGHTEN TO 88 FT-LBS. A FINAL CHECK SHALL BE MADE AT SEVEN (7) DAYS. TORQUE SHALL NOT BE LESS THAN 80 FT-LBS AFTER SEVEN (7) DAYS.
6. AFTER PROPER TORQUING, CLEAN THE BOLT HOLE RECESSES AND THE RECESS BETWEEN THE JOINT SEAL DEVICE AND CONCRETE. COMPLETELY FILL THESE RECESSES WITH NEOPRENE SEALANT.

GENERAL NOTES

1. FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.
2. ALL PLATES AND ANGLES SHALL CONFORM TO AASHTO M270 GRADE 36 STEEL OR APPROVED EQUAL. ALL HOLD-DOWN BOLTS SHALL CONFORM TO ASTM F593 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL CONFORM TO ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL. ALL STUD ANCHORS SHALL CONFORM TO AASHTO M169, GRADES 1010 THRU 1020 OR APPROVED EQUAL. ALL CONCRETE INSERTS SHALL BE CLOSED END AND SHALL CONFORM TO AASHTO M169, GRADE 12L14. TENSILE CAPACITY SHALL BE 3000 LBS. MIN.
3. A PREMOLDED CORRUGATED OR NON-CORRUGATED GLAND SHALL BE USED FOR JOINTS SKEWED BETWEEN 50° THRU 130°. FOR JOINTS SKEWED LESS THAN 50° OR MORE THAN 130°, ONLY A CORRUGATED GLAND SHALL BE USED.
4. CLOSED END FERRULES AND STUD ANCHORS SHALL BE SHOP WELDED AND ALL HOLES SHALL BE SHOP DRILLED AS SHOWN ON PLANS. STUD ANCHORS SHALL BE ELECTRIC ARC END WELDED WITH COMPLETE FUSION.
5. SURFACES COMING IN CONTACT WITH NEOPRENE SHALL BE GROUND SMOOTH PRIOR TO METALLIZING.
6. UPON COMPLETION OF SHOP FABRICATION, THE HOLD DOWN PLATE AND BASE ANGLE ASSEMBLY, AS SHOWN IN THE "TYPICAL SECTION OF BASE ANGLE ASSEMBLY", SHALL BE METALLIZED. SEE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).
7. BASE ANGLE ASSEMBLY SHALL BE CONTINUOUS FOR THE LENGTH OF THE JOINT. AT CROWN BREAKS, THE ENDS OF THE BASE ANGLE ASSEMBLY SHALL BE CUT PARALLEL TO THE BRIDGE CENTERLINE FOR SKEWS LESS THAN 80° AND GREATER THAN 100°. FINISHED WELD SHALL BE GROUND SMOOTH AND COATED WITH A MINIMUM THICKNESS OF 4 DRY MILS OF ZINC-RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
8. FIELD SPLICES OF HOLD-DOWN PLATES SHALL BE KEPT TO A MINIMUM. CONTRACTOR SHALL FURNISH DETAILED PLANS SHOWING PROPOSED SPLICE LOCATIONS FOR APPROVAL. HOLD-DOWN PLATES SHALL NOT EXCEED 20' LENGTHS UNLESS APPROVED BY THE ENGINEER.
9. NO ALTERNATE JOINT DETAILS SHALL BE PERMITTED IN LIEU OF THOSE SHOWN ON THESE PLANS.
10. THE CONTRACTOR MAY, AT HIS OPTION, USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF CONCRETE INSERTS FOR COVER PLATES. THE YIELD LOAD OF THE 3/4" Ø BOLT IS 10 KIPS. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.



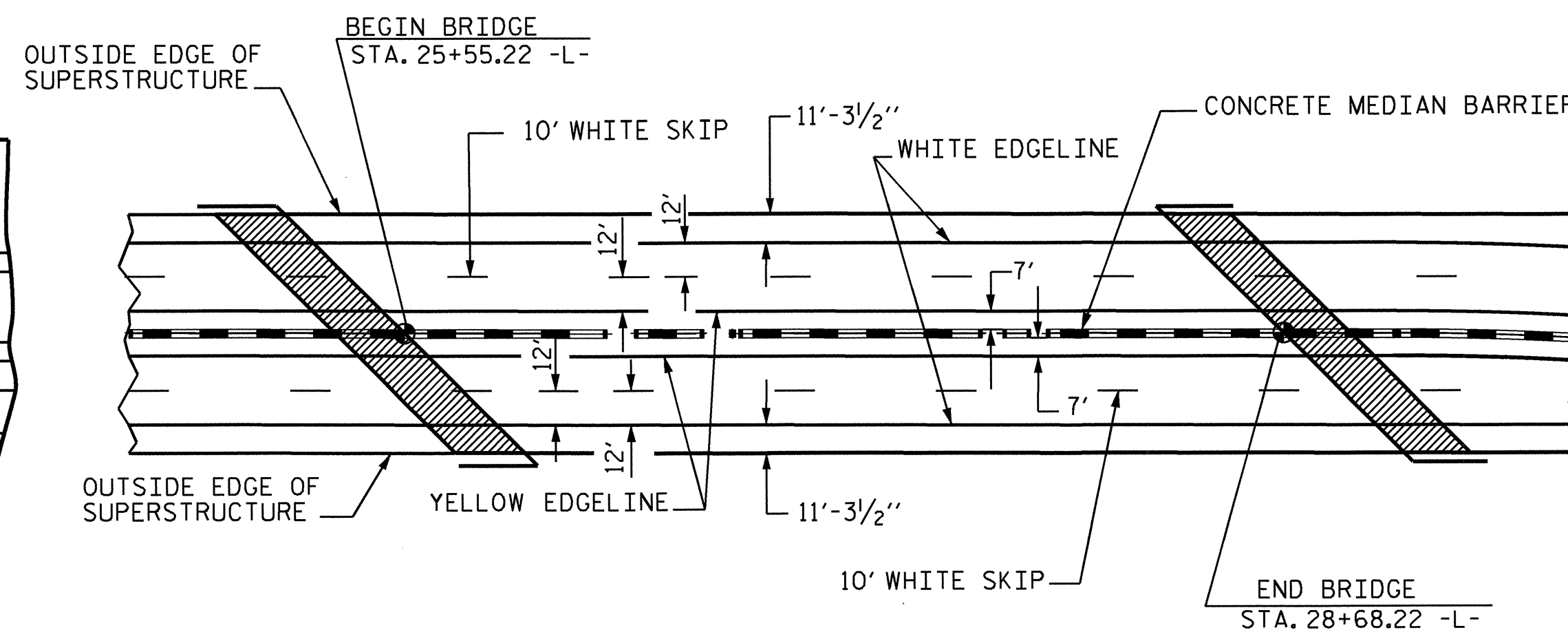
EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT -- STEEL SUPERSTRUCTURE

* THE QUANTITY OF #4 J1 BARS ON THE BILL OF MATERIAL IS BASED ON 1'-0" CENTERS. J1 BARS SHALL BE PLACED AT EACH VERTICAL STUD ANCHOR BOLT. IN THE EVENT THAT THE NUMBER OF VERTICAL STUD ANCHORS EXCEEDS THE NUMBER OF J1 BARS SPECIFIED, ADDITIONAL J1 BARS WILL NOT BE REQUIRED.

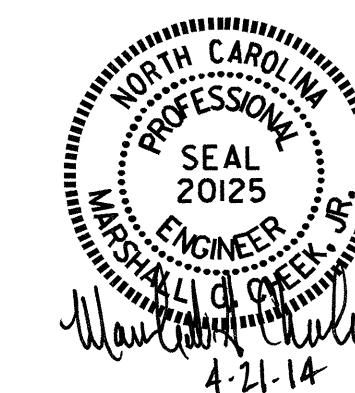
ASSEMBLED BY : M. POOLE DATE : 06/13
 CHECKED BY : D. A. HODGE DATE : 01/14
 DRAWN BY : REK 9/87 REV. 5/7/03R RWN/JTE
 CHECKED BY : CRK 10/87 REV. 5/1/06R TLA/GM
 REV. 10/1/11 MAA/GM

05-MAR-2014 08:09
 R:\Structures\Plans\mpoole\B4554.SD.JS.dgn
 mpoole



PAVEMENT MARKING ALIGNMENT

MOVEMENT AND SETTING AT JOINT					
END BENT NO.	SKEW ANGLE	TOTAL MOVEMENT (ALONG CL. RDWY)	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
1	45°-00'-00"	1 1/4"	1 1/6"	1 1/6"	1 3/6"
2	45°-00'-00"	3/4"	1 5/6"	1 1/4"	1 1/8"

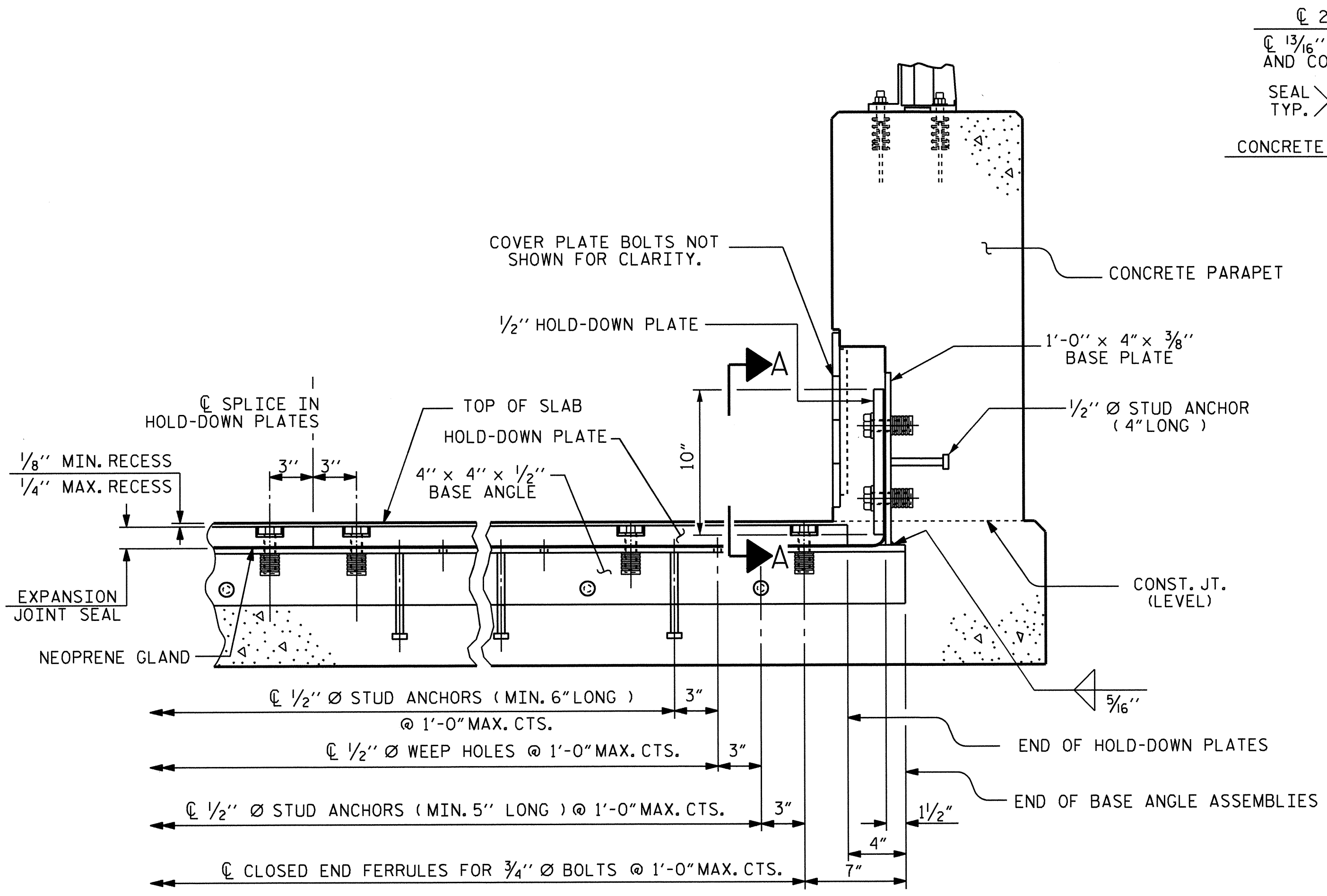


PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72 -L-
 SHEET 1 OF 3

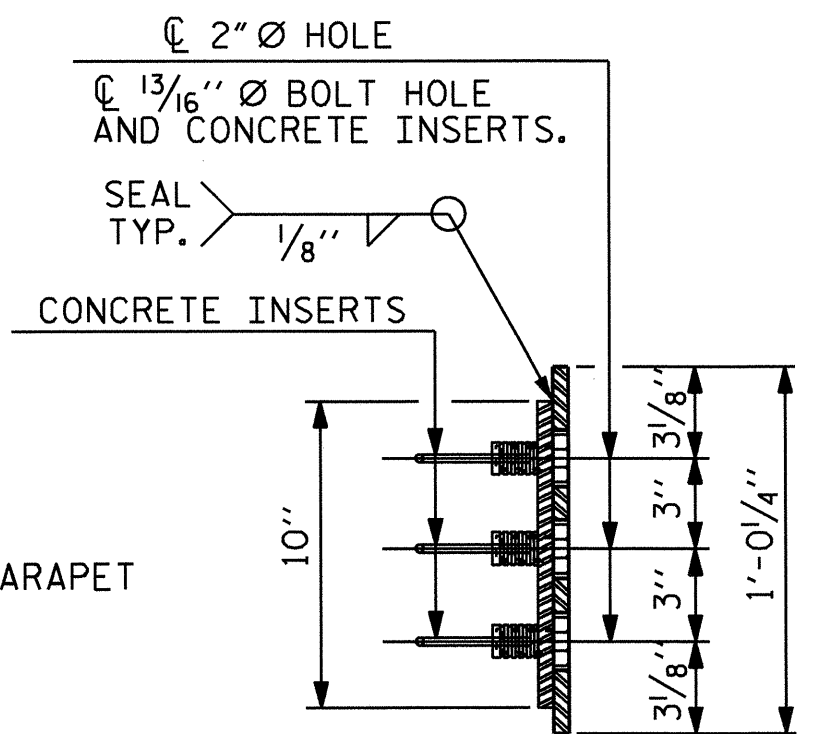
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 EXPANSION JOINT
 SEAL DETAILS

REVISIONS						SHEET NO. S-30	TOTAL SHEETS 62
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				
2			4				

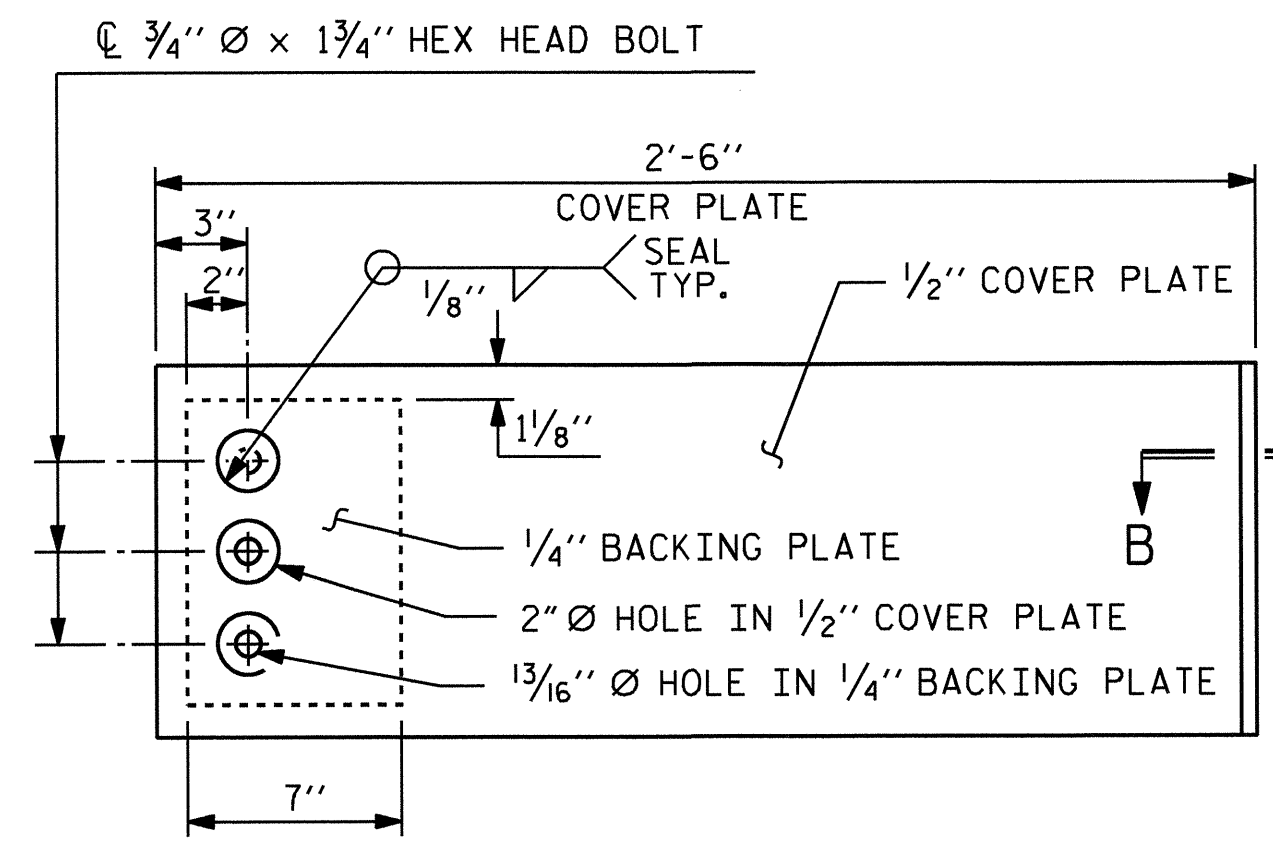
STD. NO. EJS1



SECTION THRU PARAPET NORMAL TO JOINT

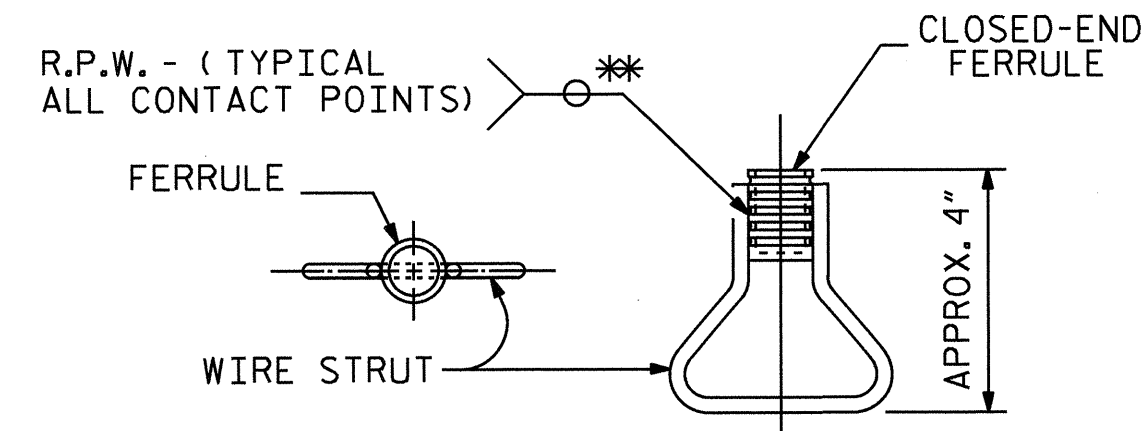


END VIEW



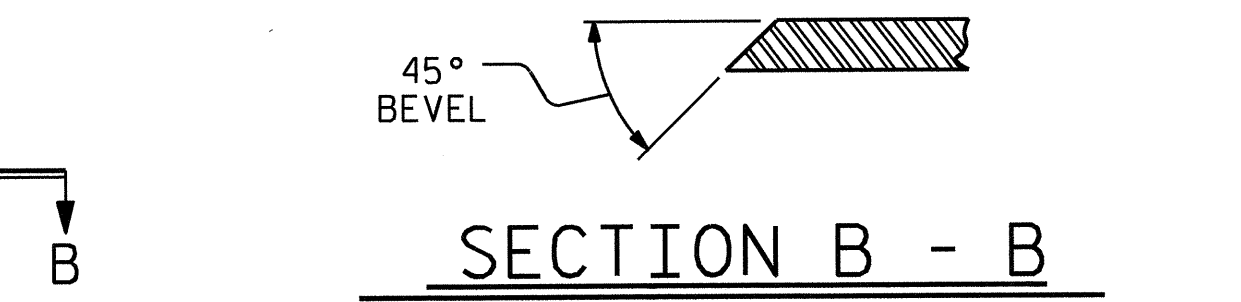
ELEVATION VIEW

COVER PLATE DETAILS - TYPE II-

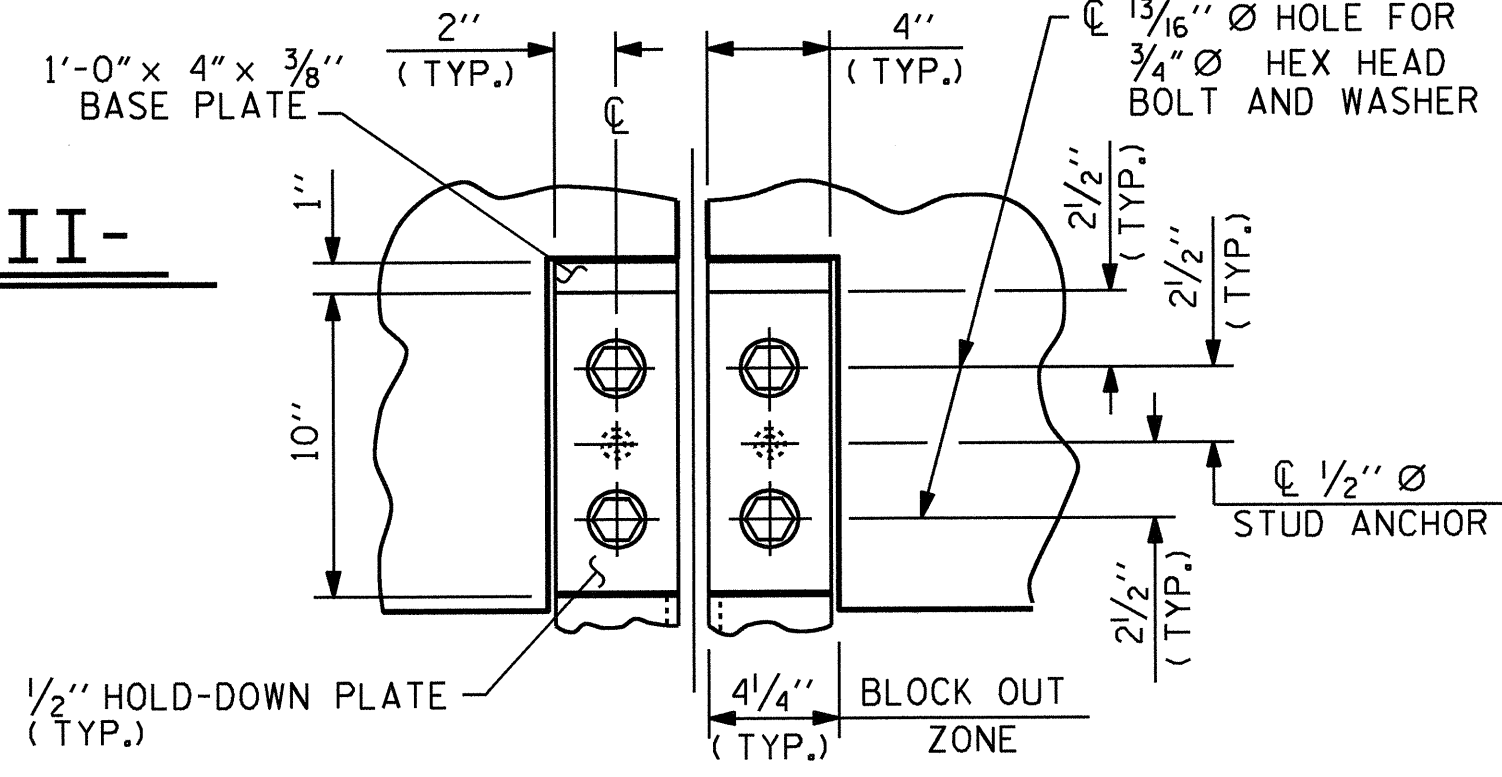


CONCRETE INSERT

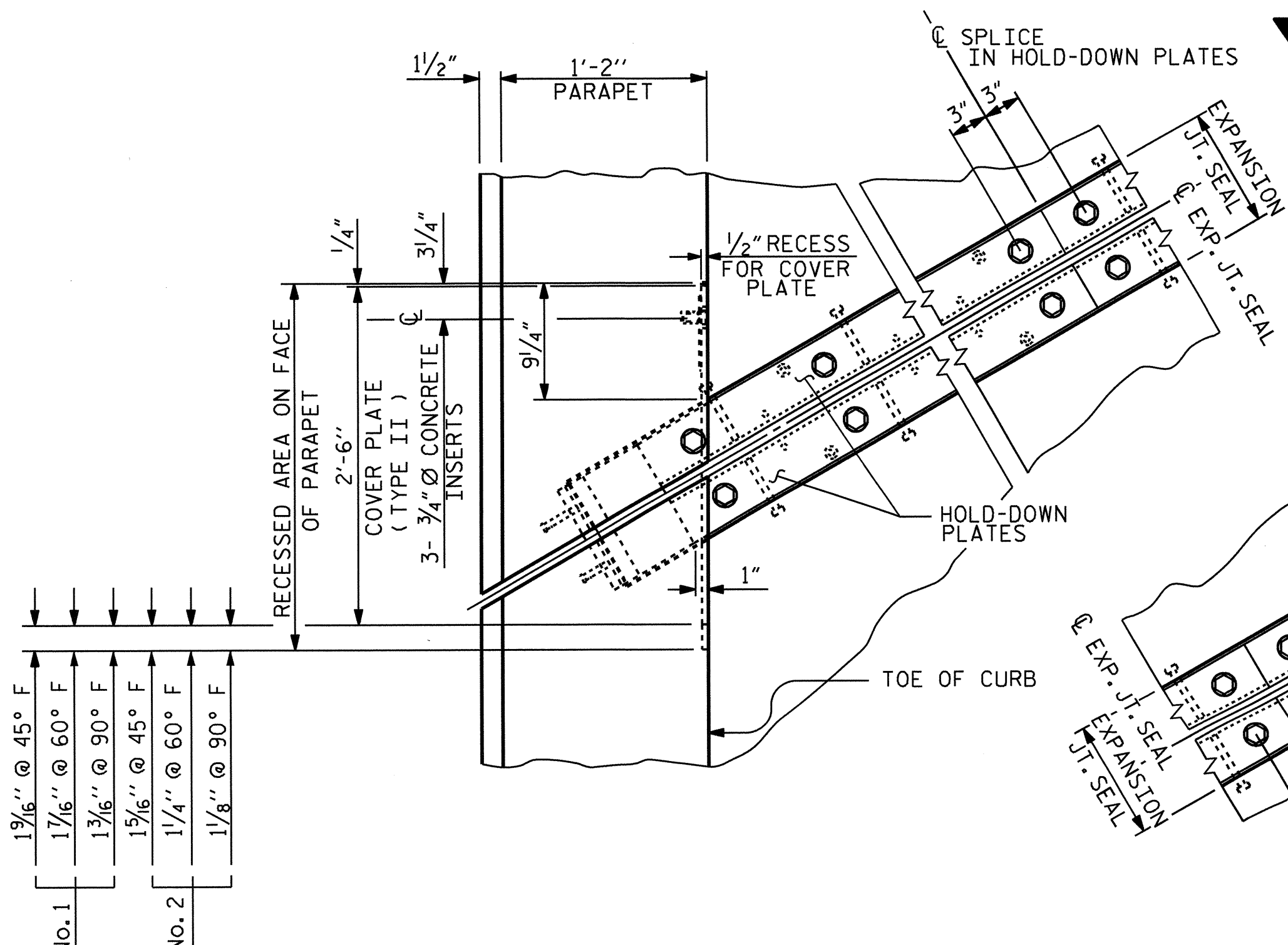
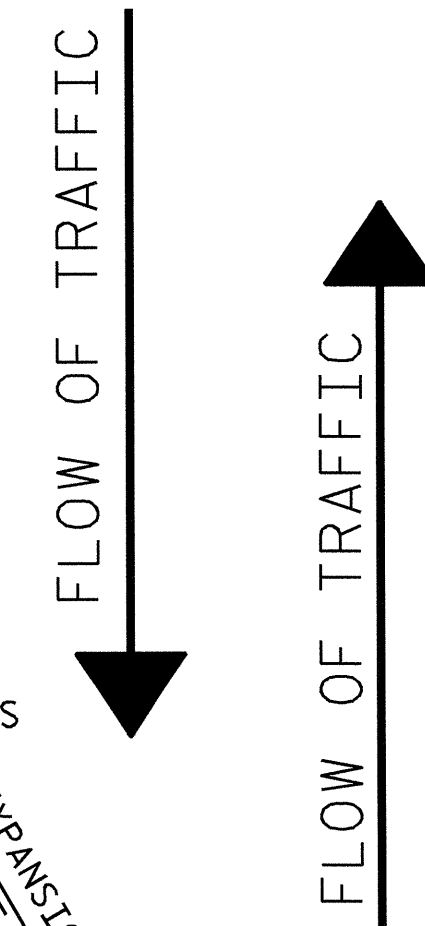
* EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.



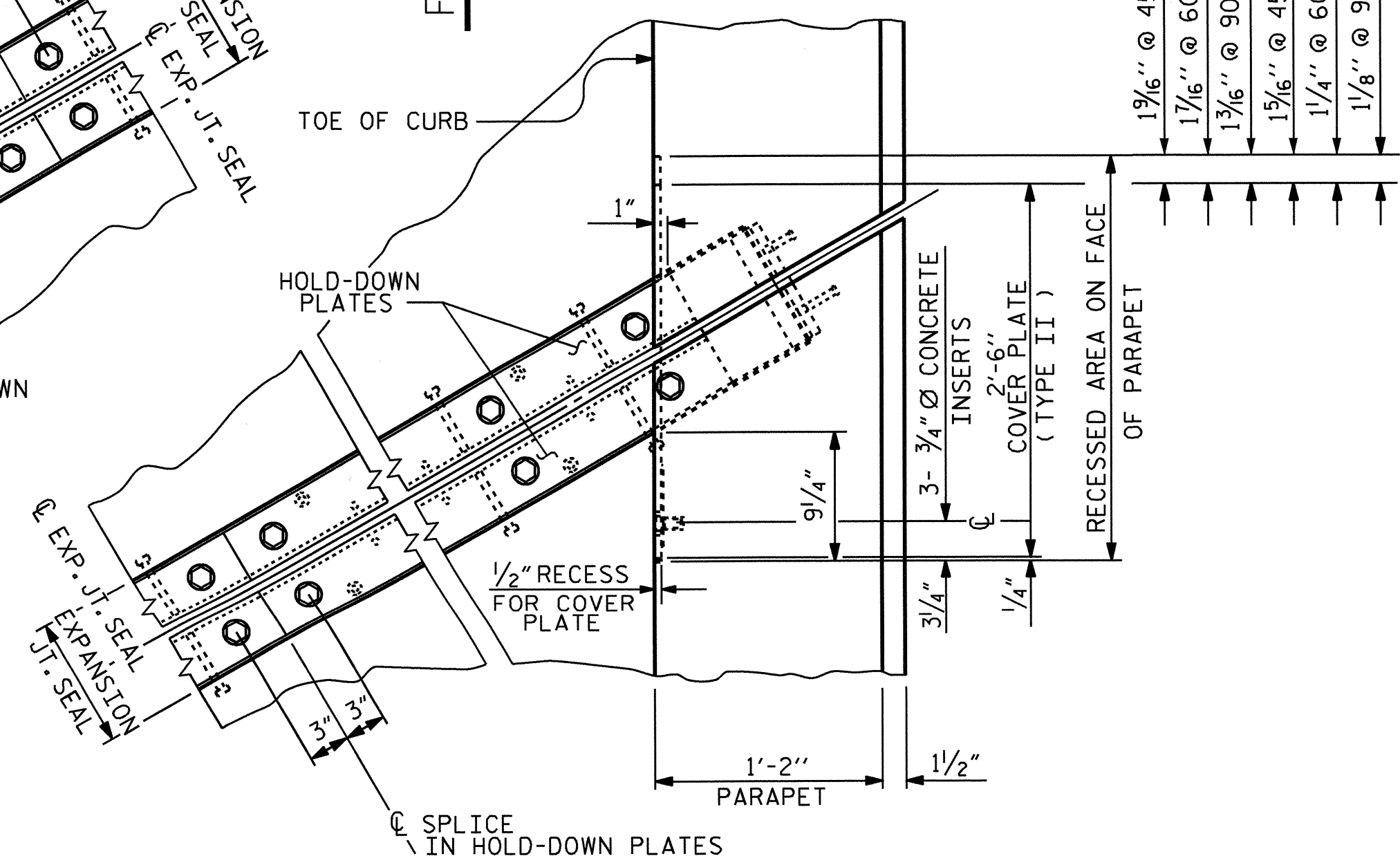
SECTION B - B



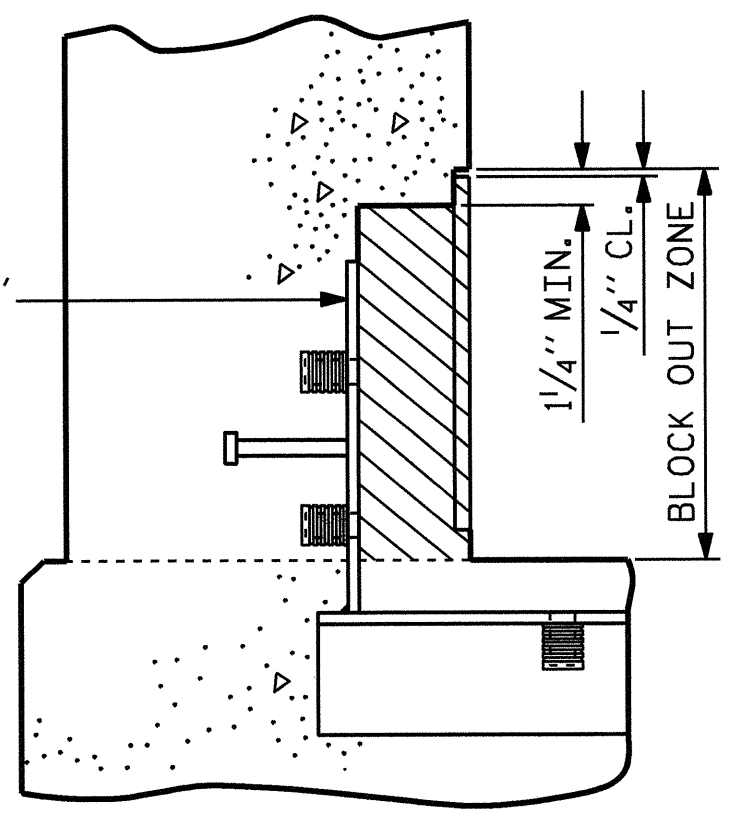
SECTION A - A



PLAN OF EXPANSION JOINT SEAL LEFT SIDE PARAPET



PLAN OF EXPANSION JOINT SEAL RIGHT SIDE PARAPET



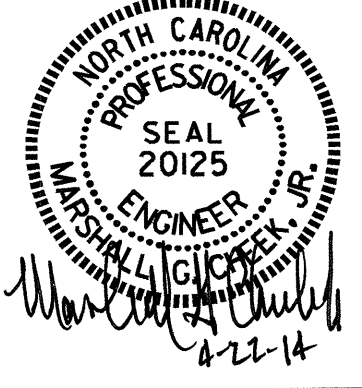
BLOCK OUT DETAIL

SEE "SECTION A - A" FOR OTHER DETAILS.

PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72 -L-

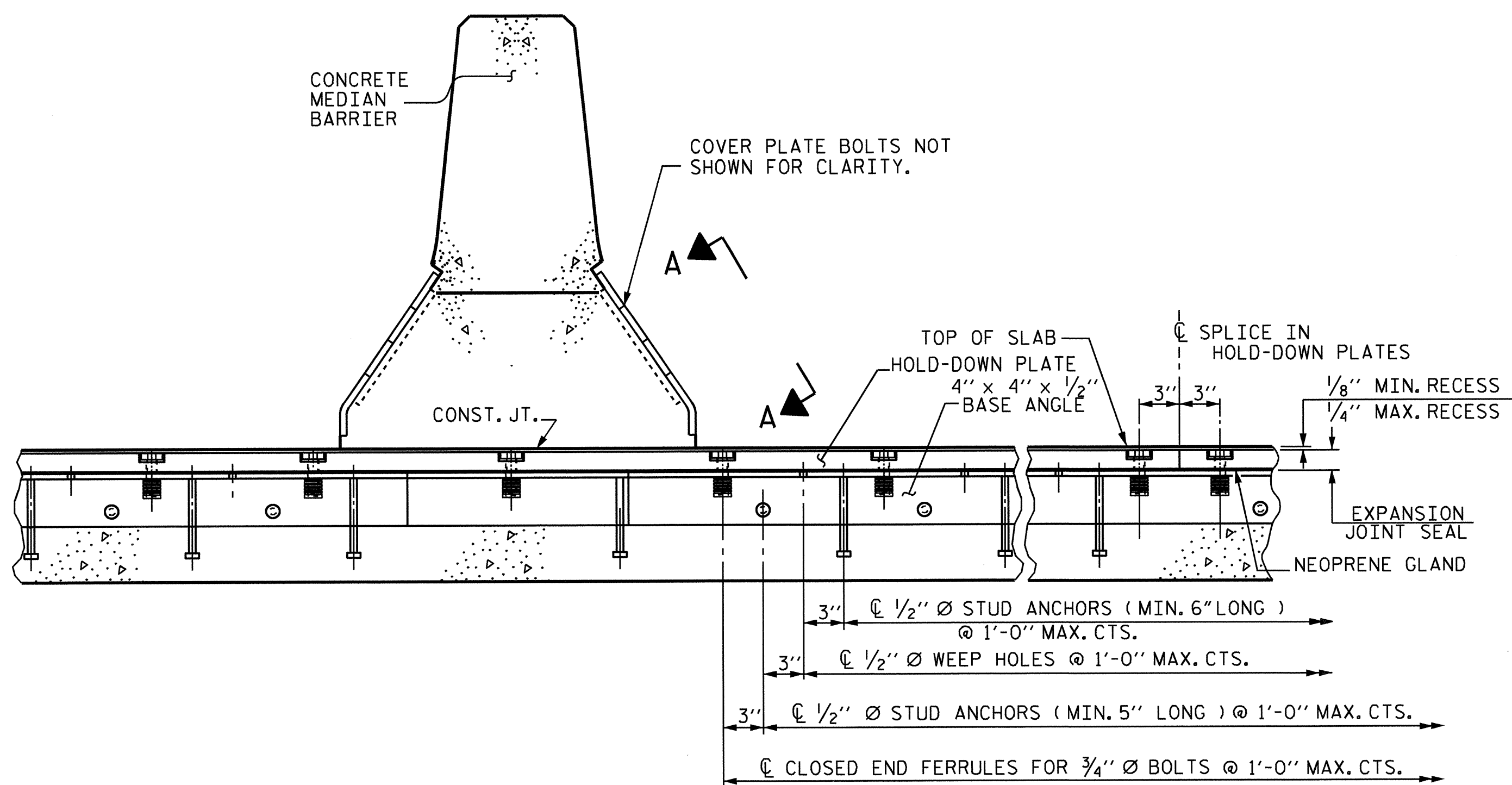
SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 EXPANSION JOINT
 SEAL DETAILS FOR
 CONCRETE PARAPET

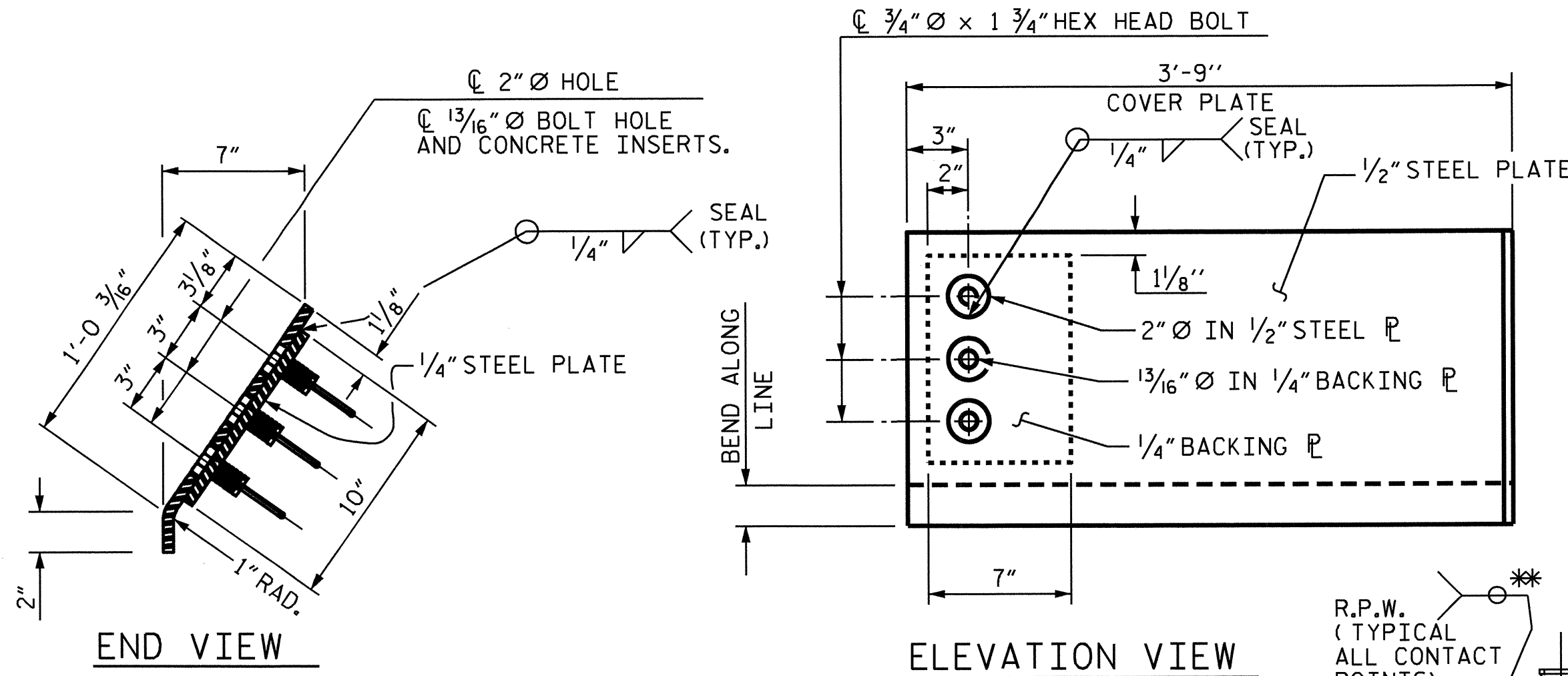


REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-31	
1			3			TOTAL SHEETS 62	
2			4				

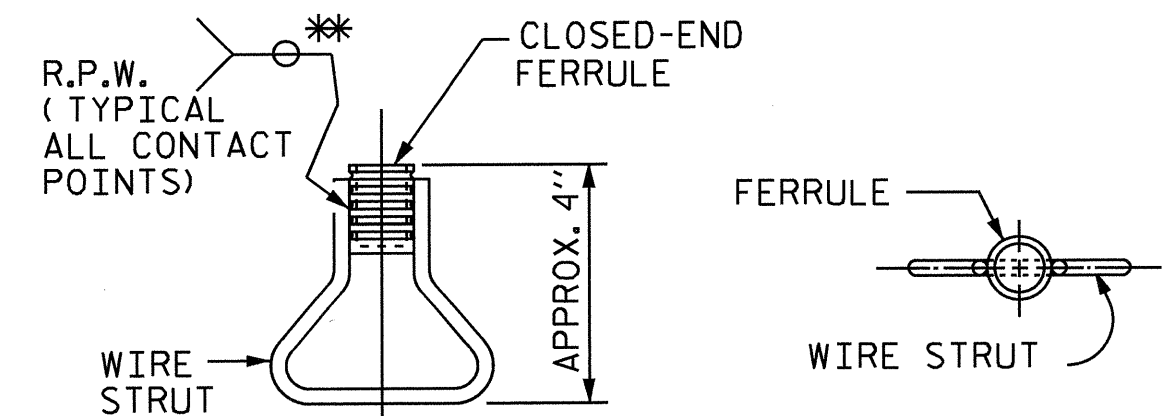
DRAWN BY: M. POOLE DATE: 01/14
 CHECKED BY: D. A. HODGE DATE: 01/14



SECTION THRU CONCRETE MEDIAN BARRIER NORMAL TO JOINT

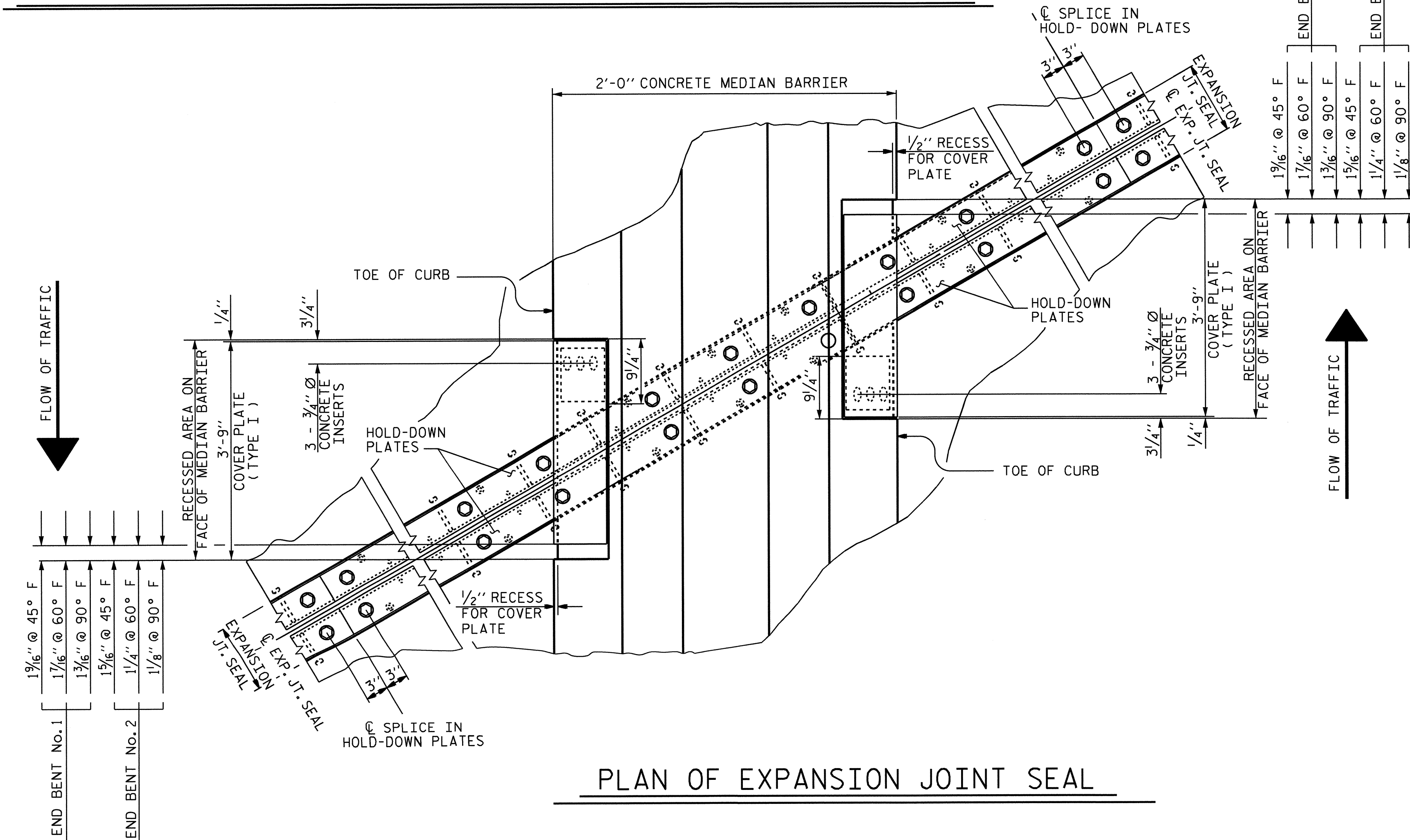


MEDIAN BARRIER COVER PLATE DETAIL

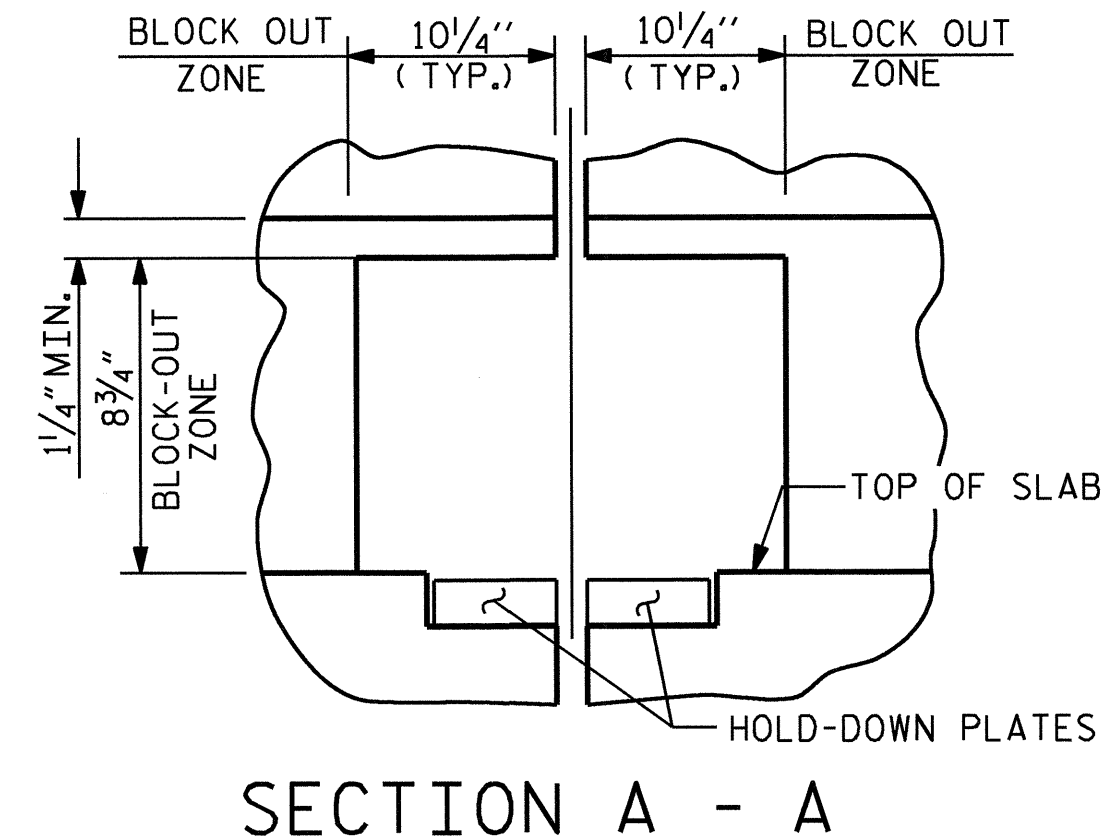


CONCRETE INSERT

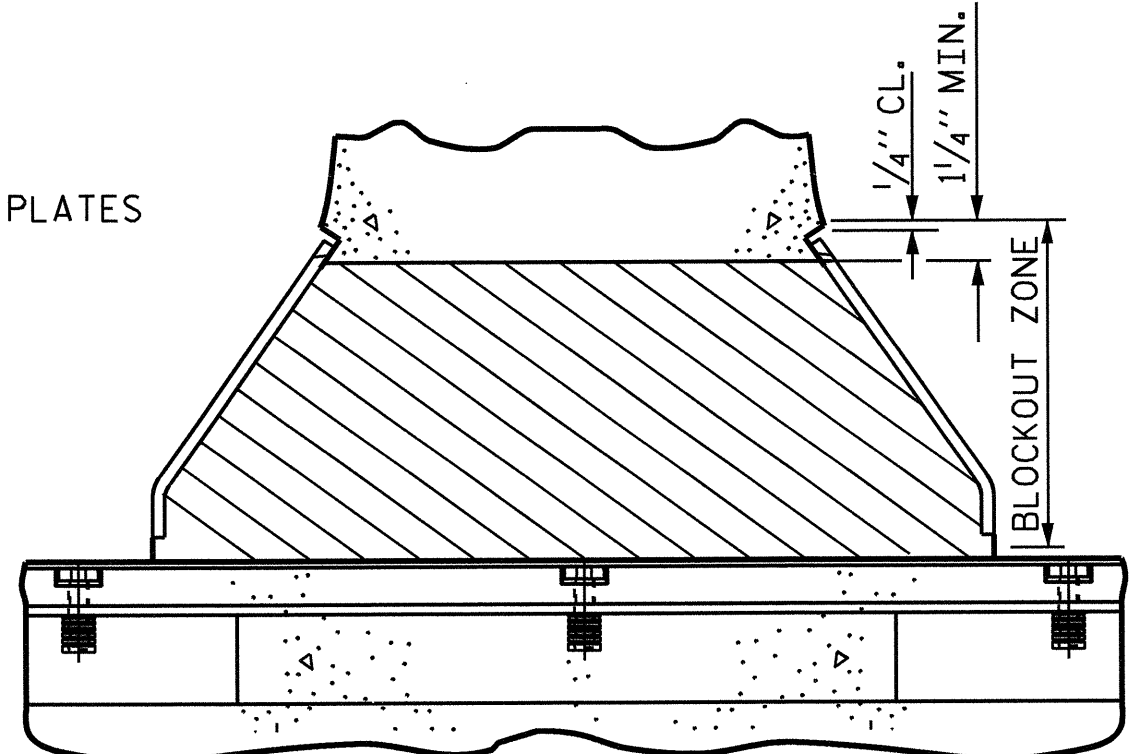
** EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.



PLAN OF EXPANSION JOINT SEAL



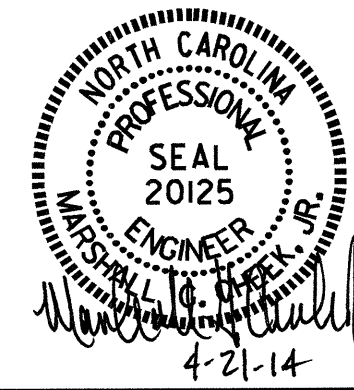
SECTION A - A



BLOCK OUT DETAIL
SEE "SECTION A - A" FOR OTHER DETAILS.

DRAWN BY: M. POOLE DATE: 01/14
CHECKED BY: D. A. HODGE DATE: 01/14

05-MAR-2014 13:58
R:\Structures\Plans\mpoole\B4554_SD_JS.dgn
bngrdy



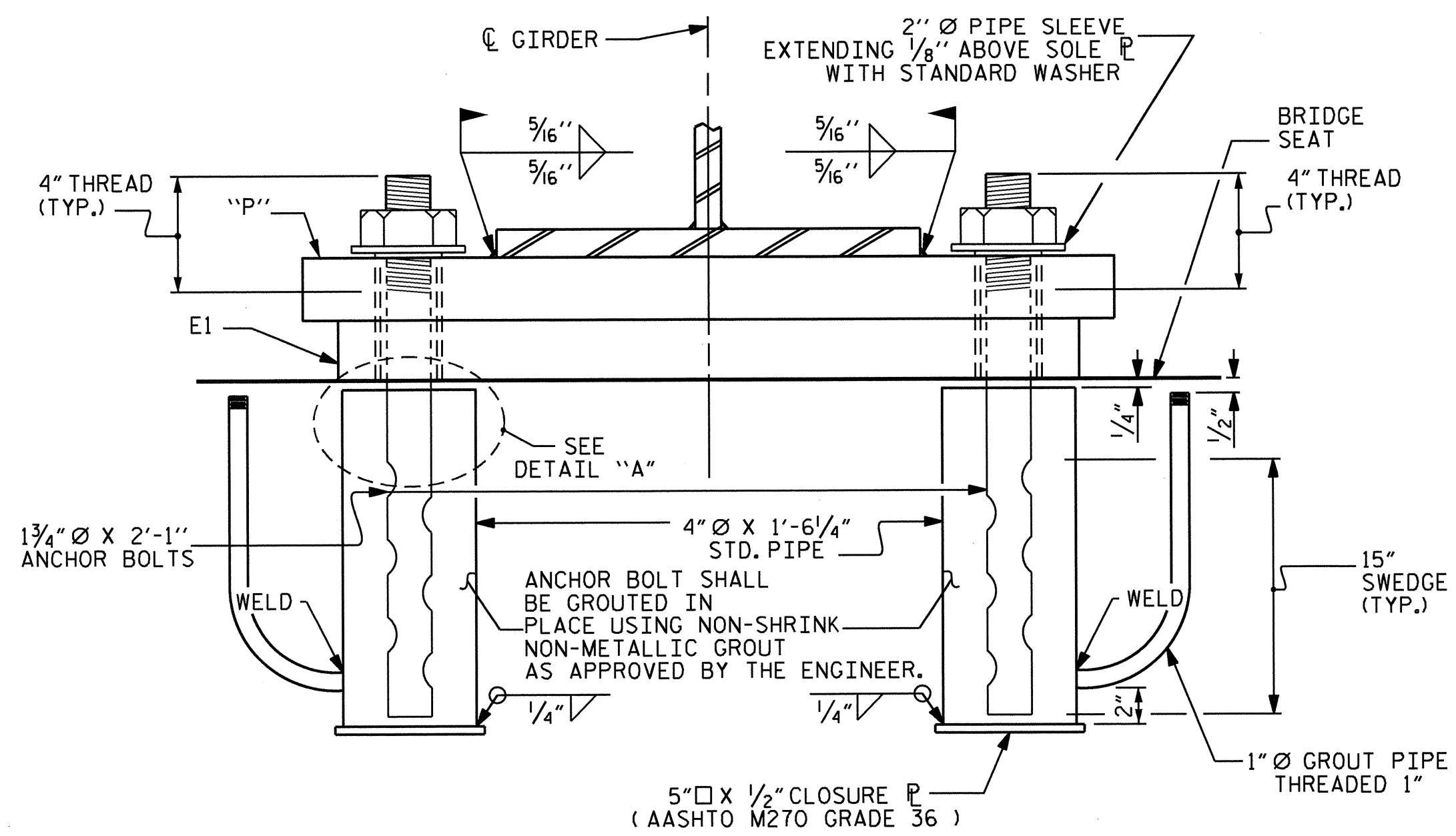
PROJECT NO. B-4554
JACKSON COUNTY
STATION: 27+11.72 -L-

SHEET 3 OF 3

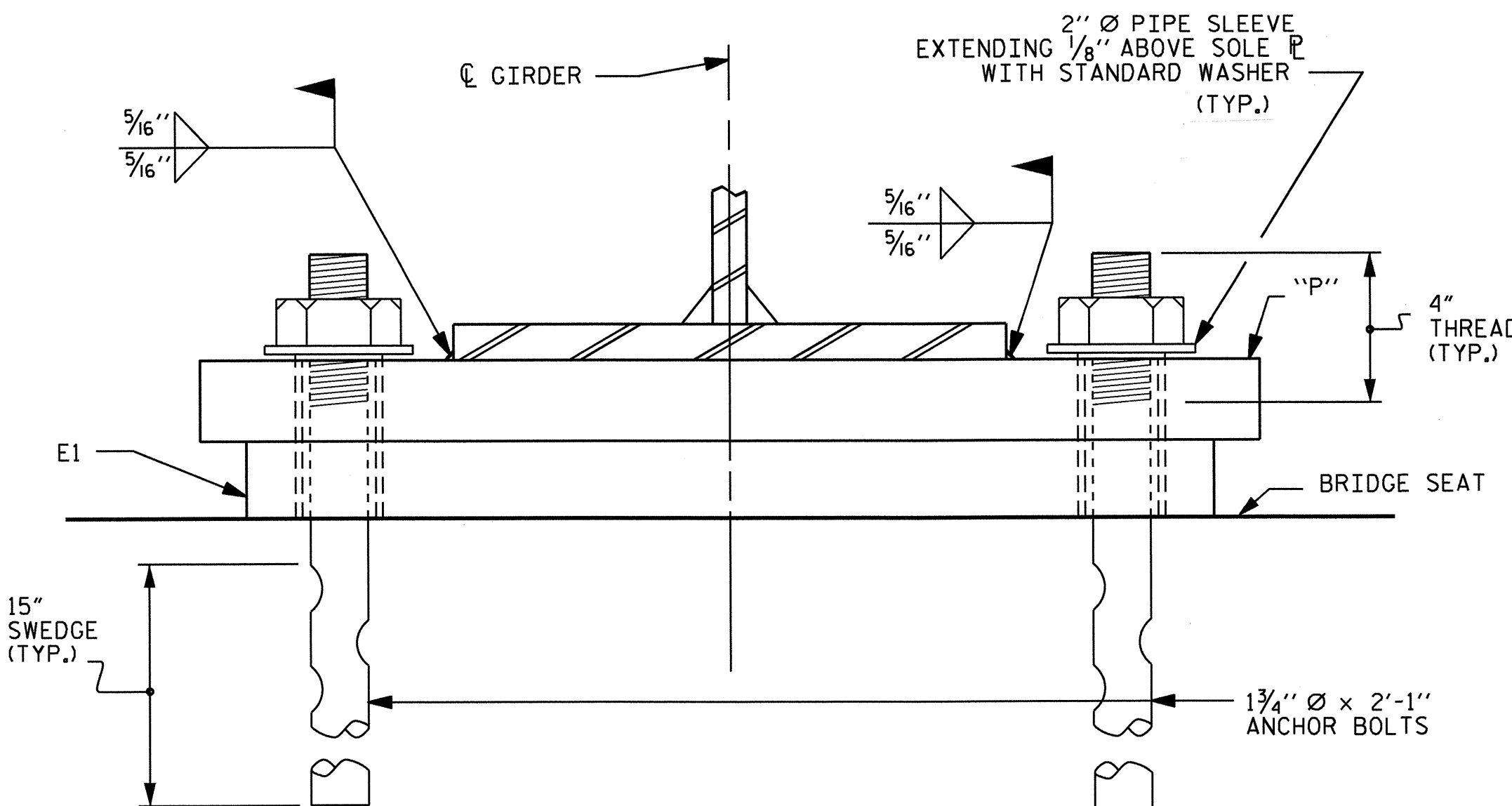
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXPANSION JOINT
SEAL DETAILS FOR
CONCRETE
MEDIAN BARRIER

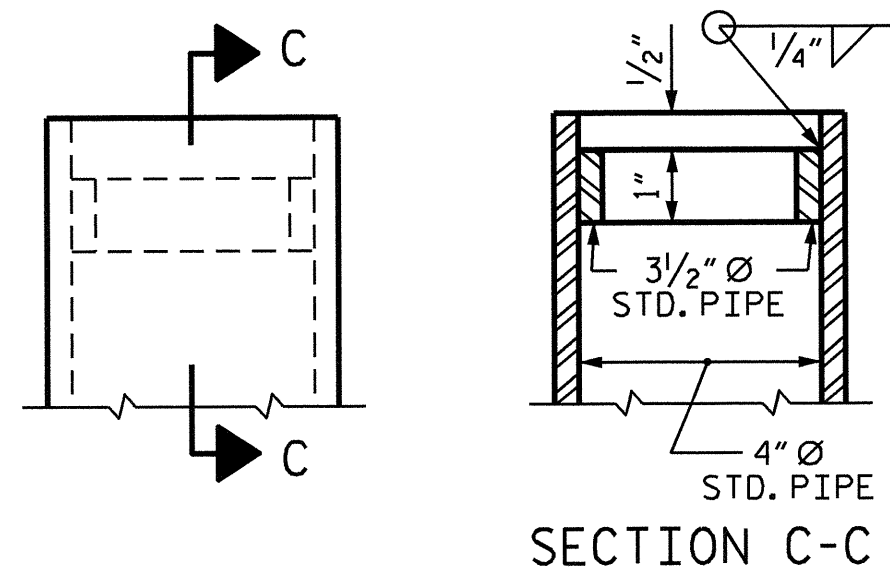
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-32	
1			3			TOTAL	62
2			4			SHEETS	62



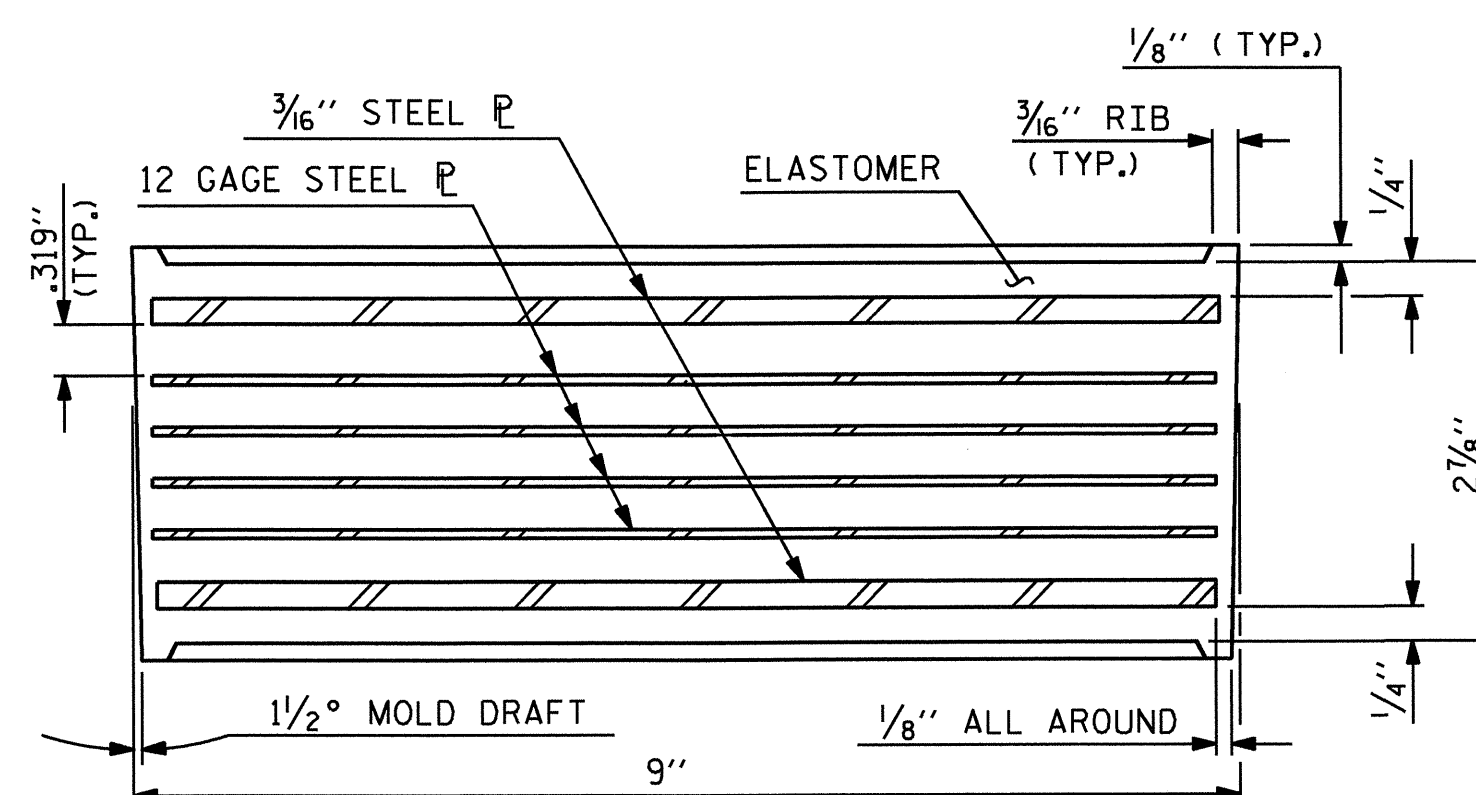
END VIEW @ END BENT No. 1



END VIEW @ END BENT No. 2

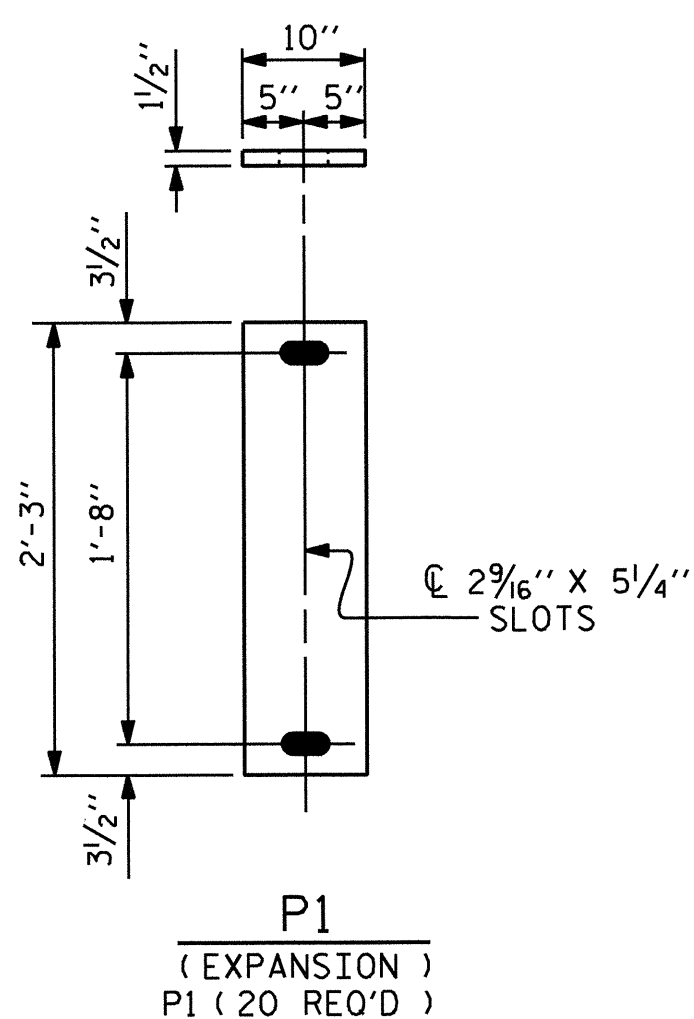


DETAIL "A"



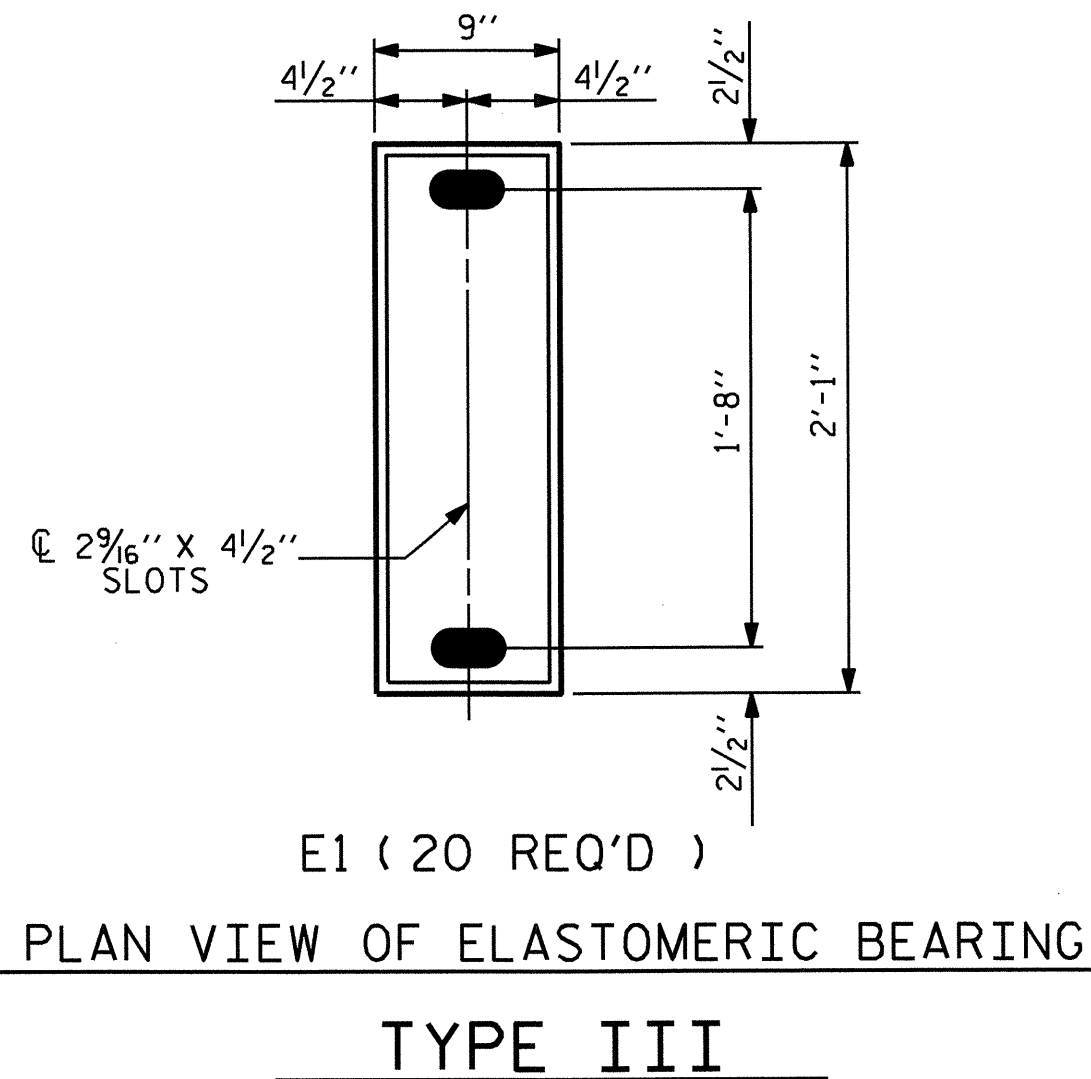
TYPICAL SECTION OF ELASTOMERIC BEARING

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE III	255 k



SOLE PLATE DETAILS

FOR LOCATION OF SOLE PLATES, SEE "FRAMING PLAN" SHEET.



PLAN VIEW OF ELASTOMERIC BEARING

TYPE III

NOTES

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

THE 2" Ø PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.

THE PAYMENT FOR THE PIPE SLEEVES SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

FOR AASHTO M270 GRADE 50W STRUCTURAL STEEL, SOLE 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.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. 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 THE 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. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

AT END BENT No. 1 THE CONTRACTOR'S ATTENTION IS CALLED TO THE FOLLOWING PROCEDURE, WHICH MAY BE REQUIRED BY THE ENGINEER, TO RESET ELASTOMERIC BEARINGS DUE TO GIRDER TRANSLATION AND END ROTATION:

1. ONCE THE DECK HAS CURED, THE GIRDERS SHALL BE JACKED AND THE ELASTOMERIC BEARING SLOTS CENTERED AS NEARLY AS PRACTICAL ABOUT THE BEARING STIFFENER. THIS OPERATION SHALL BE PERFORMED AT APPROXIMATELY 60° F.

2. AFTER CENTERING THE ELASTOMERIC BEARING SLOTS AND ANCHOR BOLTS, THE ANCHOR BOLTS SHALL BE GROUDED. THE CONTRACTOR MAY PROPOSE ALTERNATE METHODS, PROVIDED DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

AT END BENT No. 2 THE CONTRACTOR'S ATTENTION IS CALLED TO THE FOLLOWING PROCEDURE, WHICH MAY BE REQUIRED BY THE ENGINEER, TO RESET ELASTOMERIC BEARINGS DUE TO GIRDER TRANSLATION AND END ROTATION:

1. ONCE THE DECK HAS CURED, THE GIRDERS SHALL BE JACKED AND THE ELASTOMERIC BEARING SLOTS CENTERED AS NEARLY AS PRACTICAL ABOUT THE BEARING STIFFENER. THIS OPERATION SHALL BE PERFORMED AT APPROXIMATELY 60° F.

THE CONTRACTOR MAY PROPOSE ALTERNATE METHODS, PROVIDED DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 ELASTOMERIC BEARING
 DETAILS



ASSEMBLED BY : M. POOLE	DATE : 1/13
CHECKED BY : D. A. HODGE	DATE : 1/14
DRAWN BY : JMB 11/87	REV. 5/1/06 TLA/GM
CHECKED BY : ARB 11/87	REV. 10/1/11 MAA/GM
	REV. 6/13 AAC/MAA

REVISIONS						SHEET NO. S-33
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 62
2			4			

NOTES

FOR DISC BEARINGS, SEE SPECIAL PROVISIONS.

ALL BEARING PLATES SHALL BE AASHTO M270 GRADE 50W.

AT ALL POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS SHALL BE FINGER-TIGHTENED PLUS AN ADDITIONAL 1/4 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

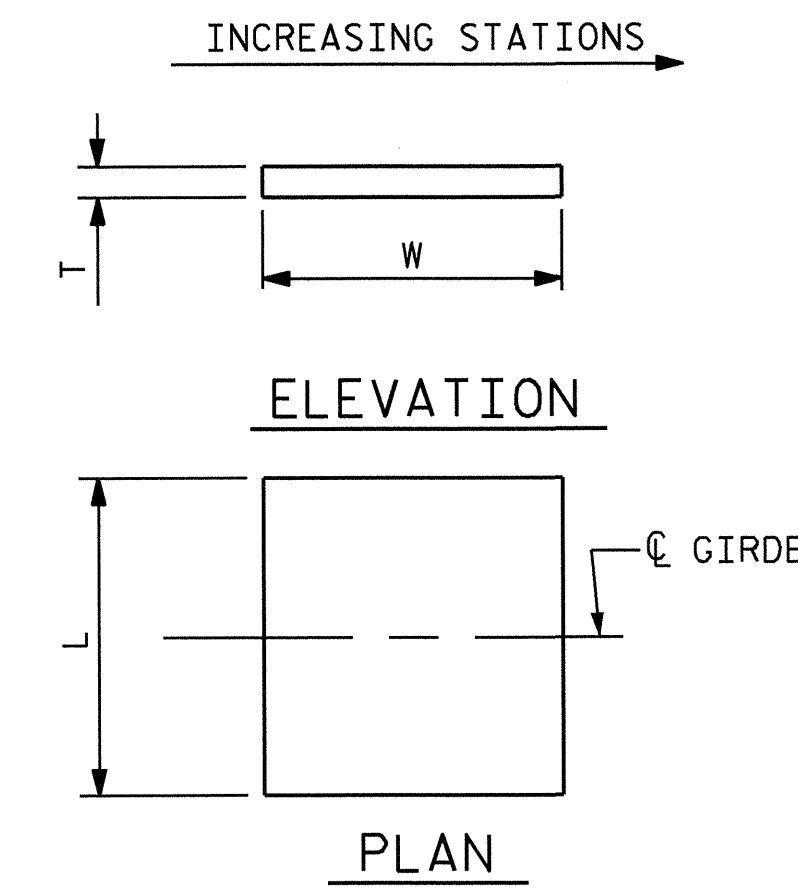
WHEN WELDING THE SOLE PLATE TO THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE BEARING DOES NOT EXCEED 250°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE TFE OR ELASTOMER.

SOLE PLATES SHOULD BE WELDED TO GIRDER FLANGES BEFORE FALSEWORK IS PLACED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

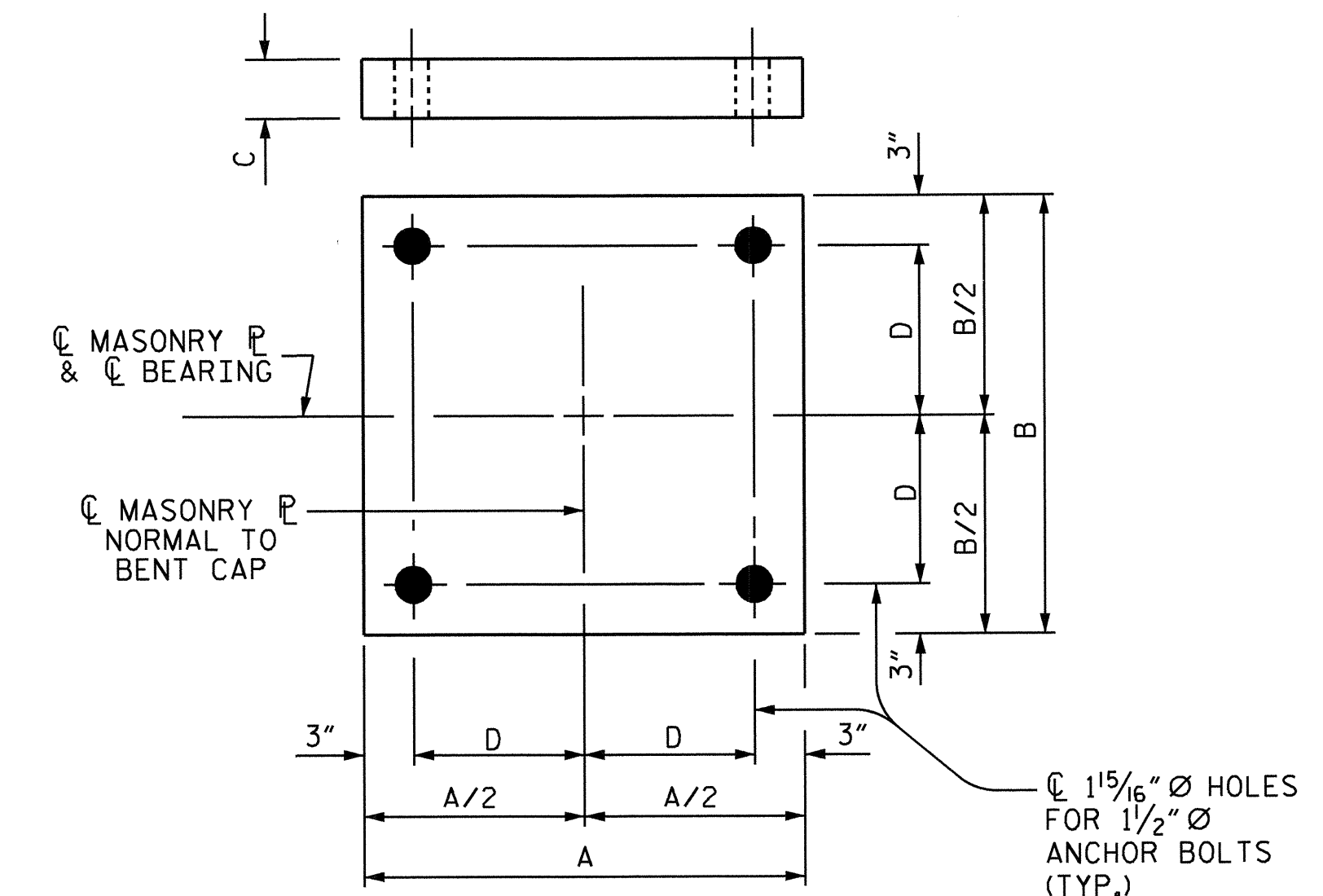
FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

THE MINIMUM ROTATIONAL CAPACITY FOR ALL BEARINGS SHALL BE 0.02 RADIAN.

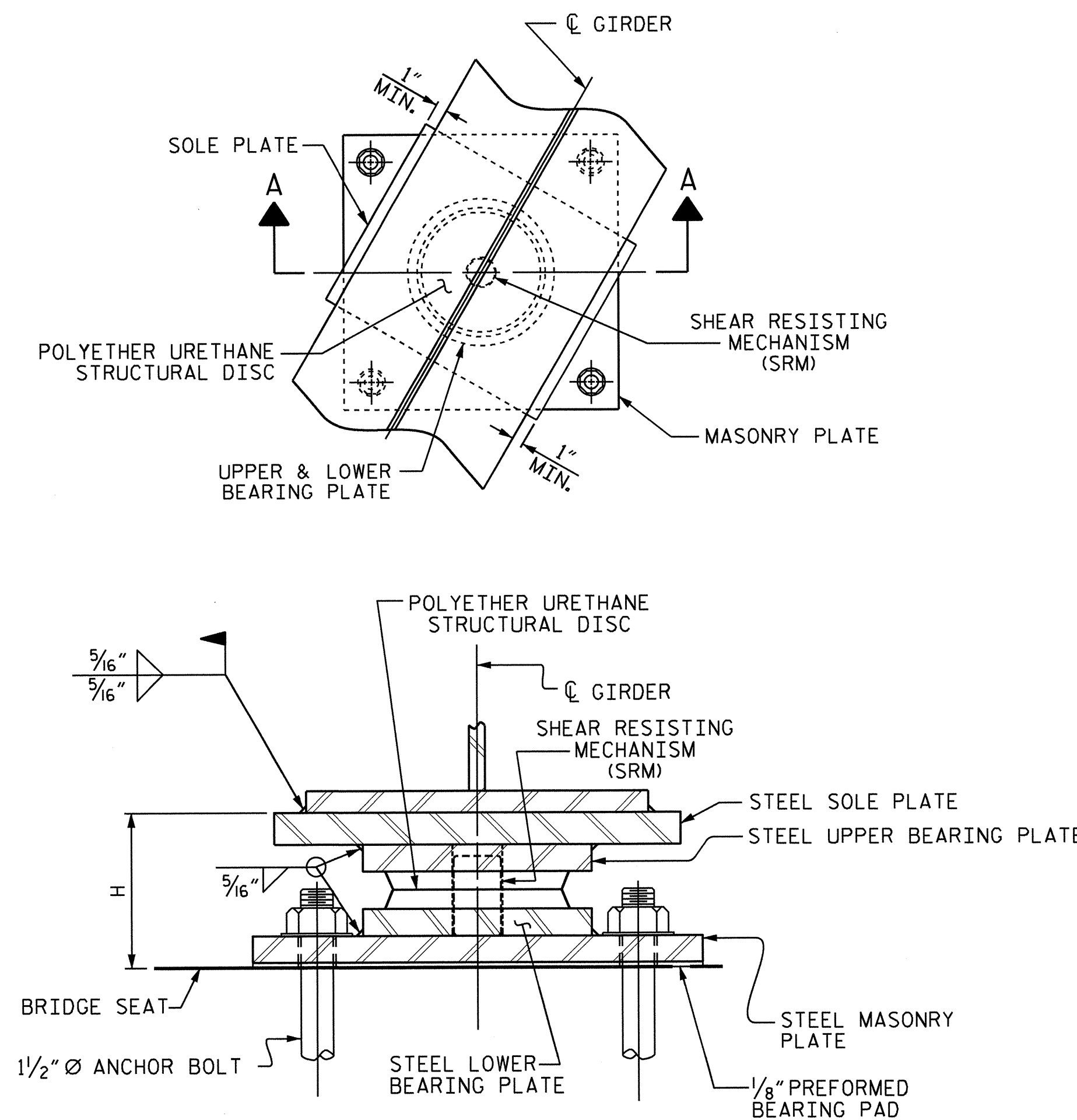


NOTE:
DIMENSIONS "W" AND "T" SHALL BE DETERMINED BY THE BEARING MANUFACTURER.

SOLE PLATE DETAILS



MASONRY PLATE DETAILS

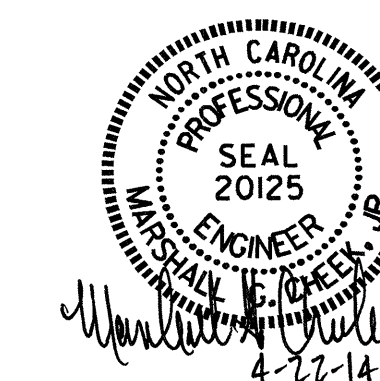


PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

DIMENSION TABLE

LOADS AND MOVEMENT

DESIGNATIONS	BEARINGS	MASONRY PLATE	LOCATION	NUMBER OF BEARINGS	BEARING					SOLE PLATE		UNFACTORED VERTICAL LOAD (KIPS)			FACTORED HORIZONTAL LOAD (KIPS)	ONE-WAY MOVEMENT (IN.)
					H (IN.)	A (IN.)	B (IN.)	C (IN.)	D (IN.)	TOP SLOPE (%)	L (IN.)	DEAD	DW	LIVE		
PB1	M1	BENT 1	10	5 1/2	22 1/2	22 1/2	3/4	8 1/4	0	22	235	35	210	95	0	
PB2	M2	BENT 2	10	5 3/8	21	21	3/4	7 1/2	0	22	170	30	170	75	0	

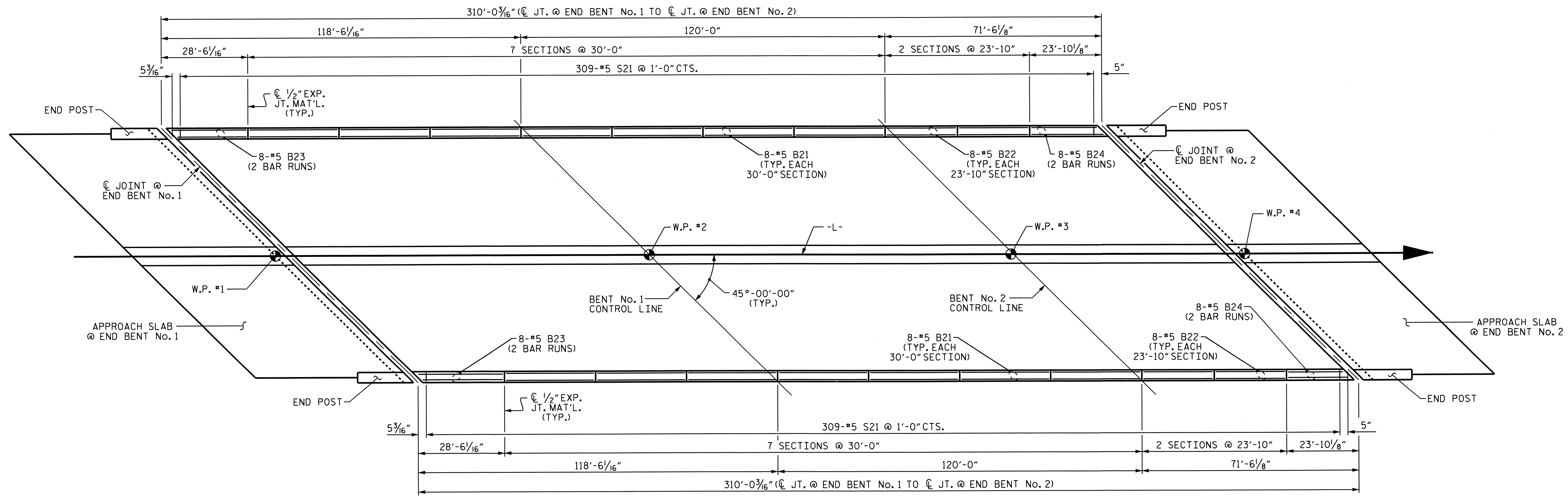


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

DISC BEARING DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			5-34
2			4			62

ASSEMBLED BY : M. POOLE DATE : 2/14
 CHECKED BY : D. A. HODGE DATE : 2/14
 DRAWN BY : TMG 08/13 REV.
 CHECKED BY : EKP 10/13 REV.



PLAN OF PARAPET

NOTES

ALL REINFORCING STEEL IN THE PARAPET SHALL BE EPOXY COATED.

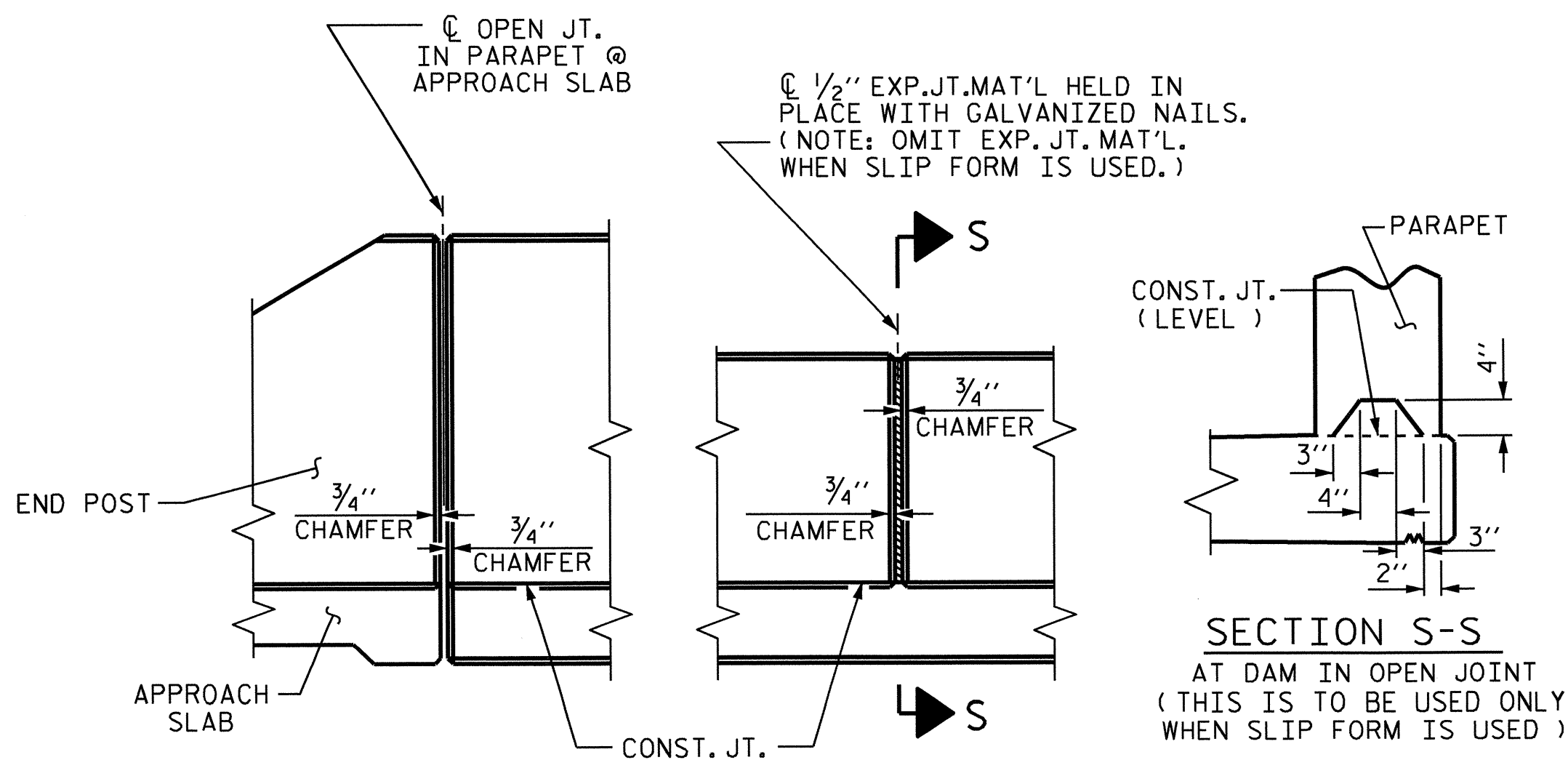
THE PARAPET SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.

GROOVED CONTRACTION JOINTS 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE CONCRETE 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.

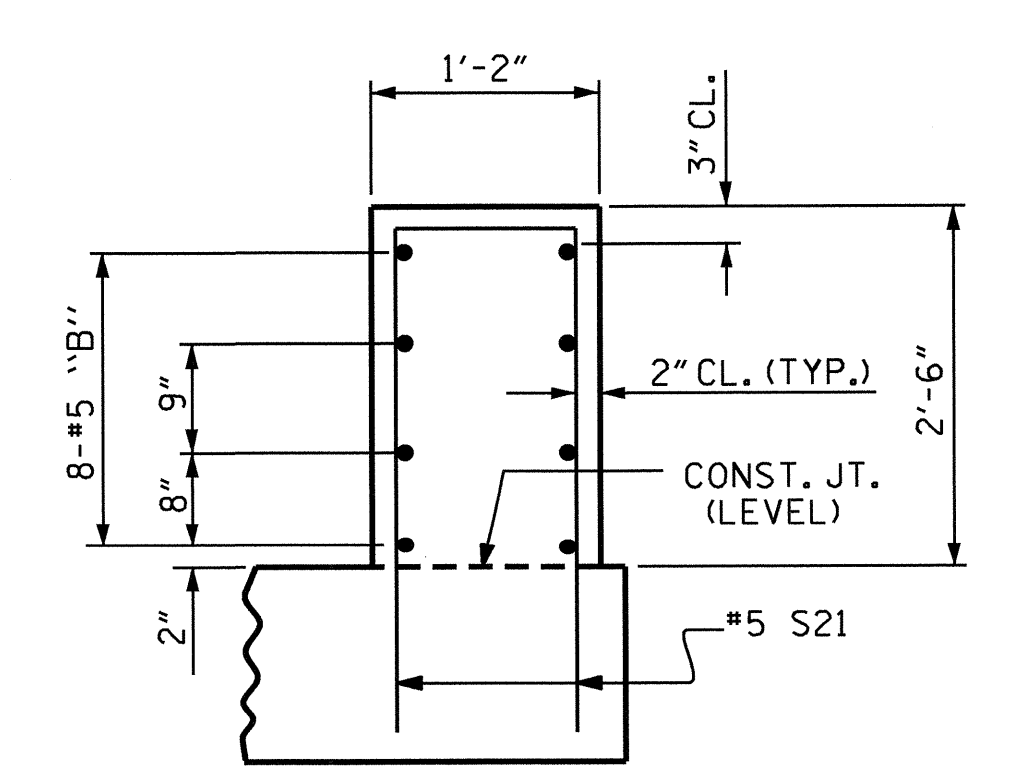
FOR DETAILS OF CONCRETE INSERT IN END BLOCK, SEE SHEET 3 OF 5.

FOR DETAILS OF GUARDRAIL ANCHOR ASSEMBLY, SEE "GUARDRAIL ANCHORAGE DETAILS" SHEET.

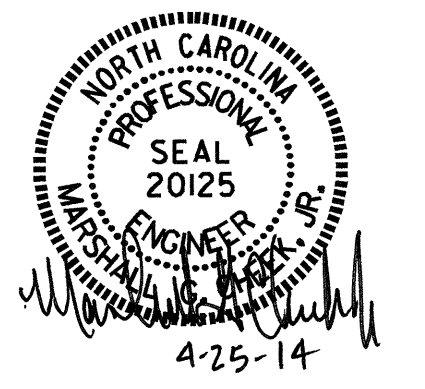
THE #5 "S" BARS MAY BE SHIFTED SLIGHTLY IN ORDER TO MAINTAIN A 2" MINIMUM CLEARANCE TO THE 1/2" EXPANSION JOINT MATERIAL.



ELEVATION AT EXPANSION JOINTS



SECTION THRU PARAPET

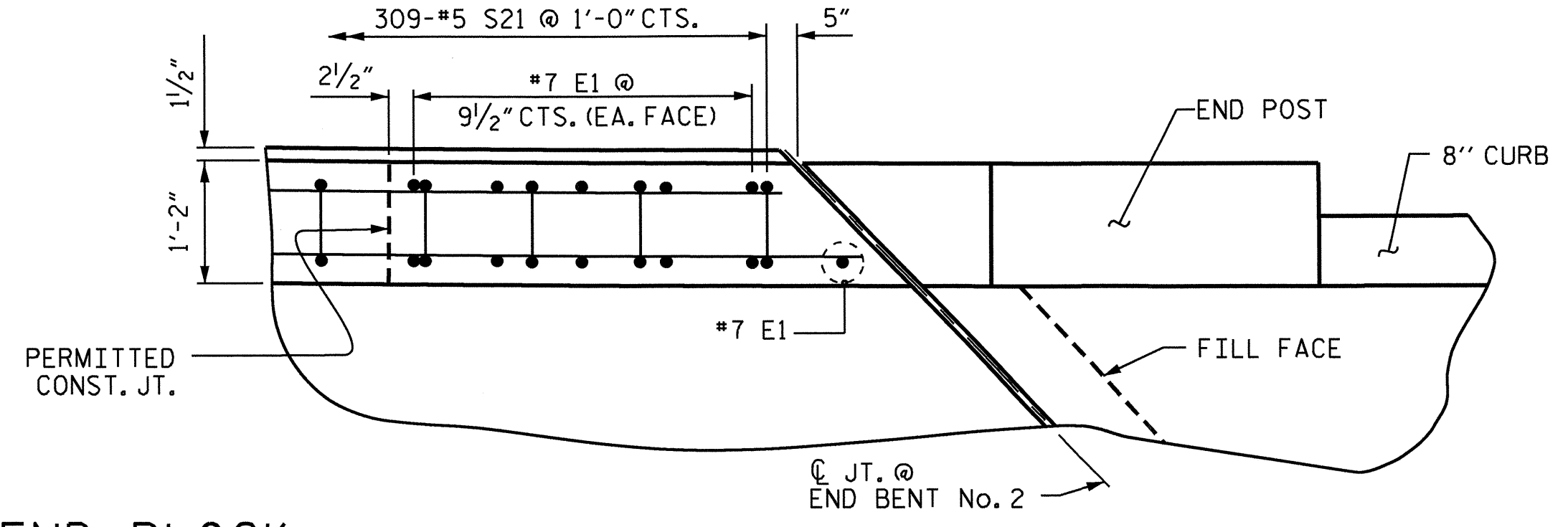
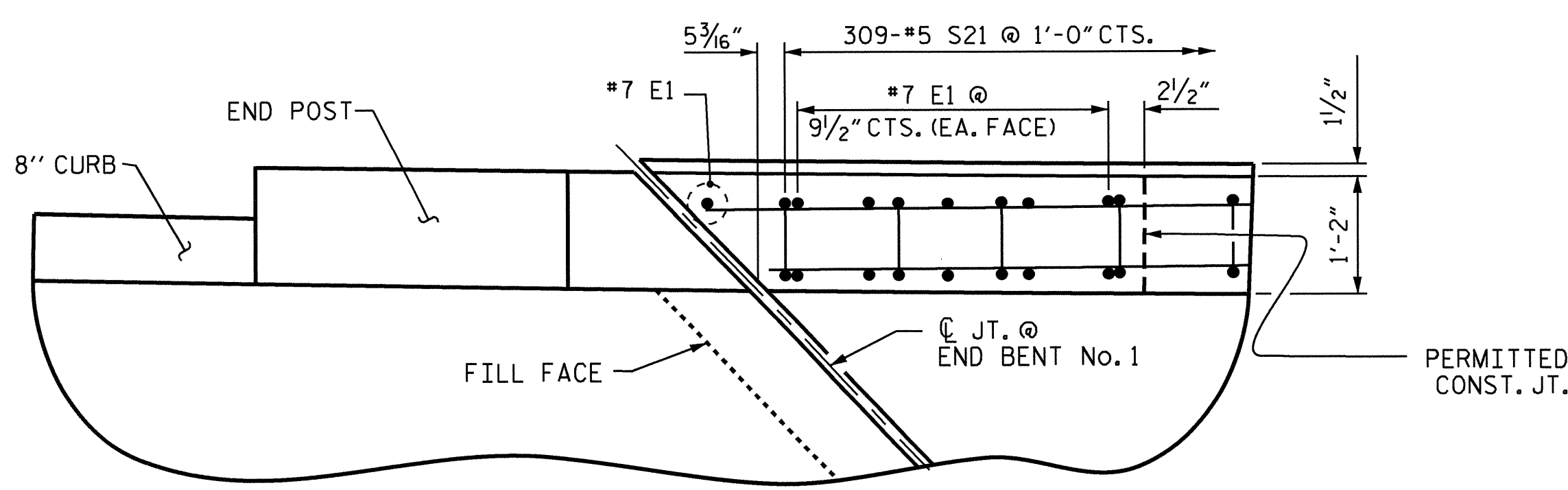


PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

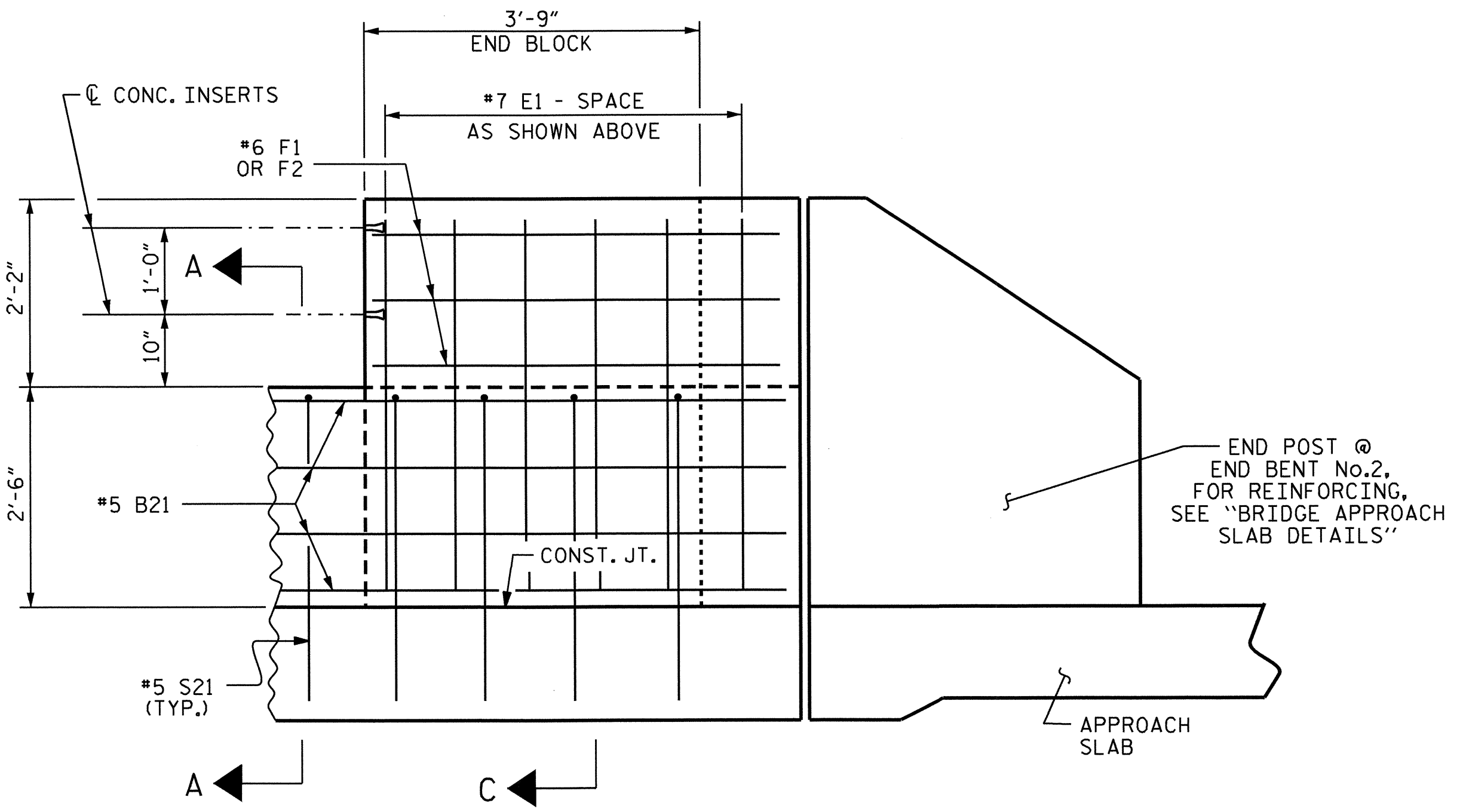
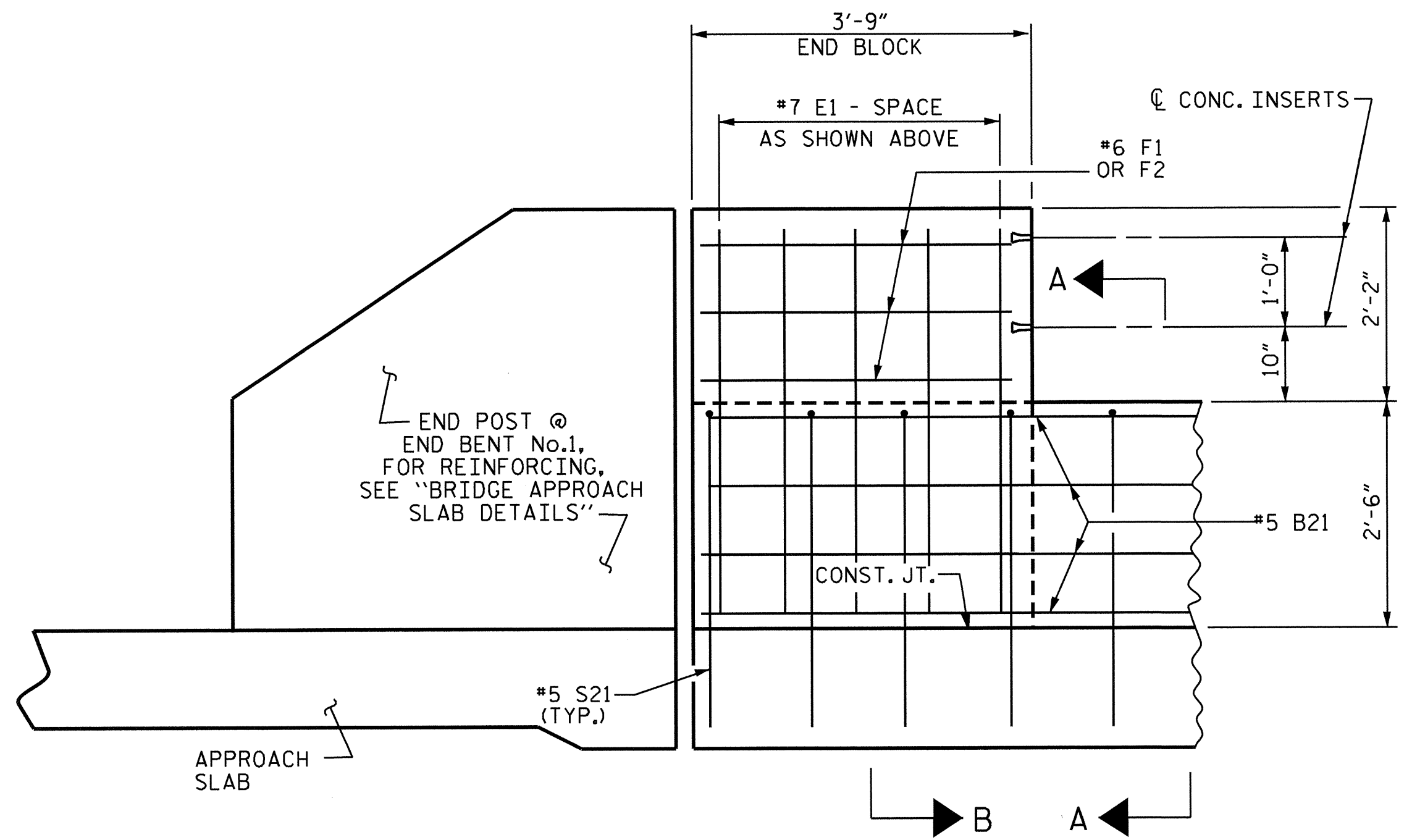
SHEET 1 OF 5

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
SUPERSTRUCTURE 1'-2" X 2'-6" CONCRETE PARAPET						S-35
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	62
1			3			
2			4			

DRAWN BY : M. POOLE DATE : 01/14
 CHECKED BY : D.A. HODGE DATE : 01/14
 DESIGN ENGINEER OF RECORD : W.J. HARRIS DATE : 04/14

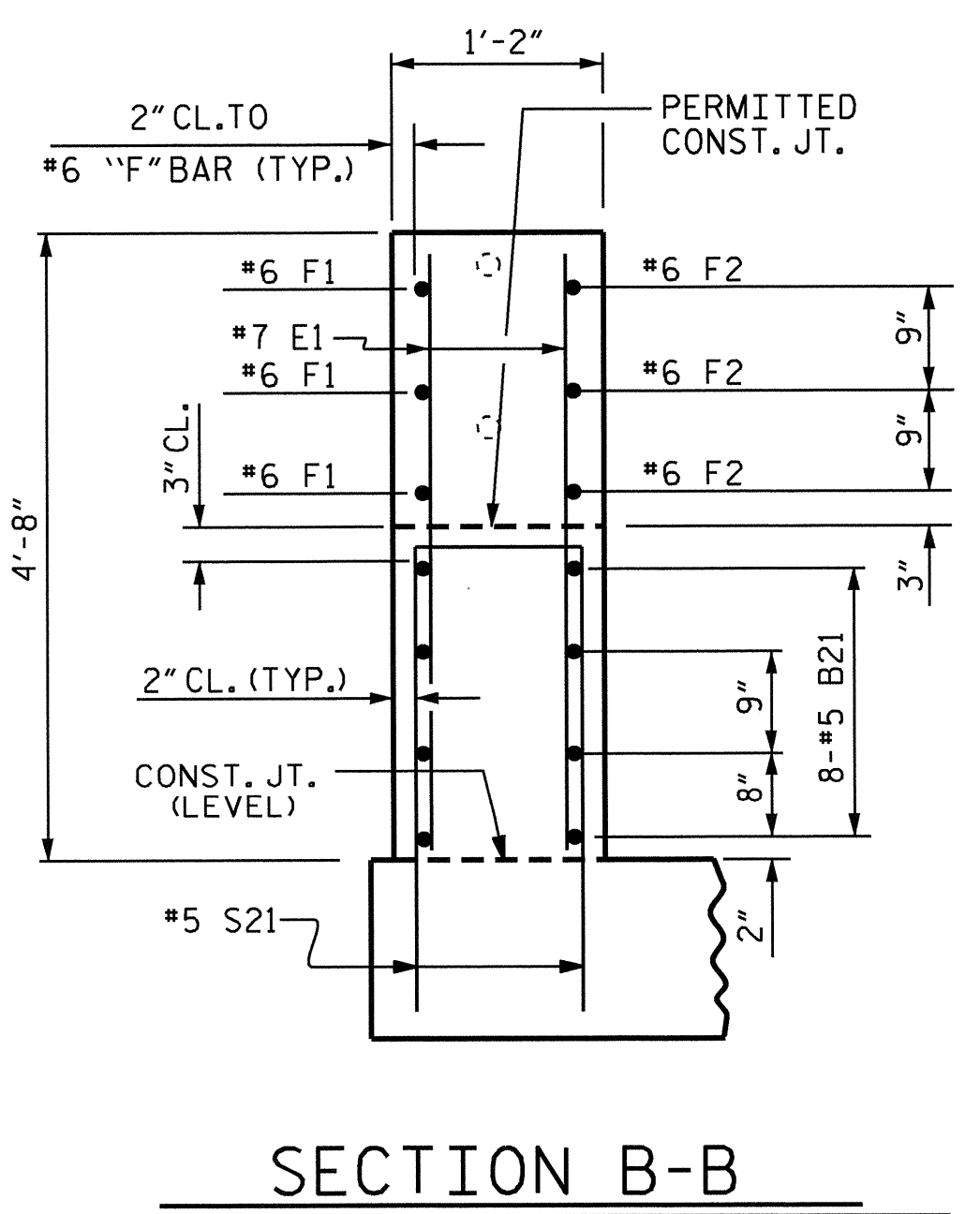


PLAN OF PARAPET & END BLOCK
(LEFT PARAPET SHOWN, RIGHT PARAPET SIMILAR)

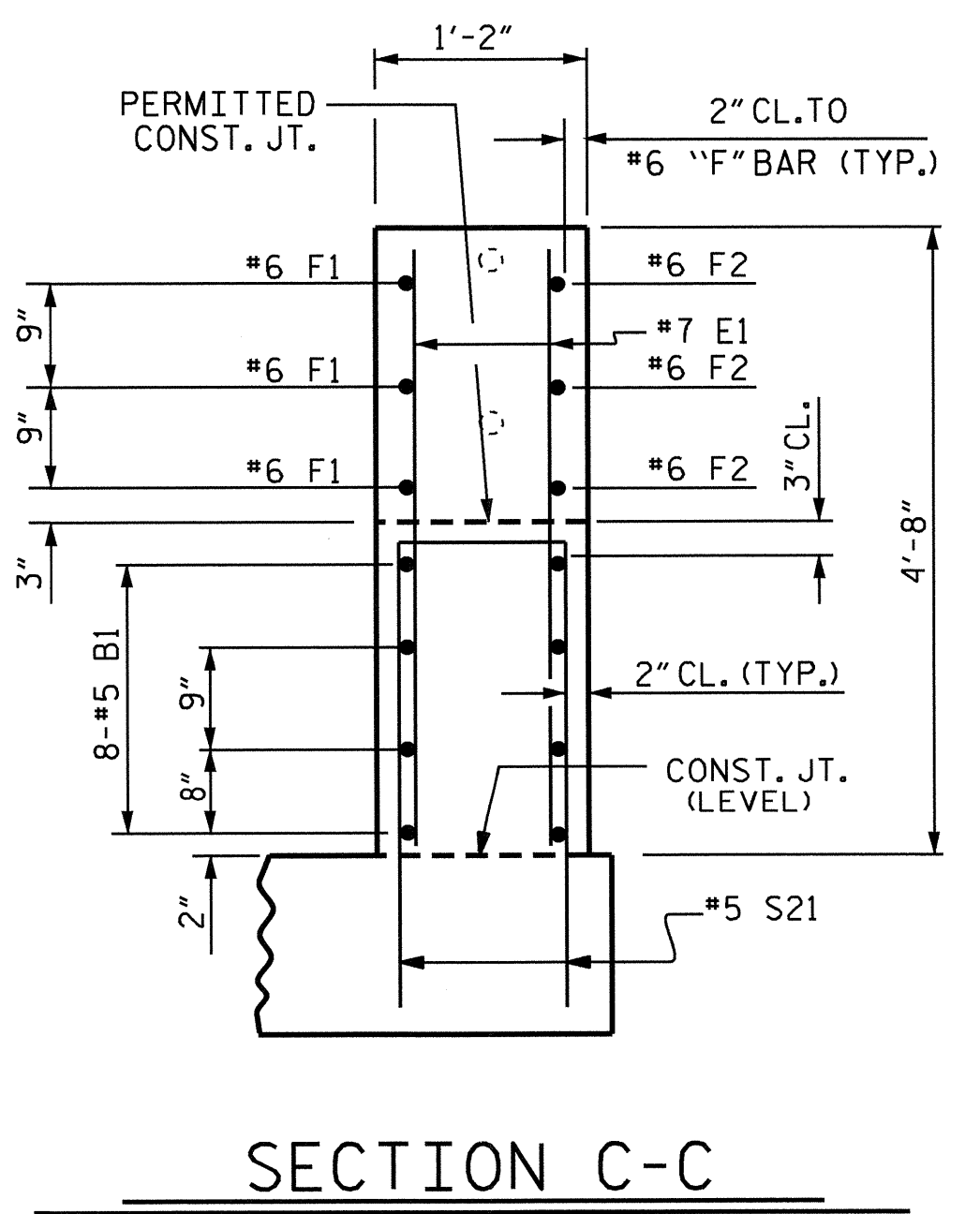


ELEVATION

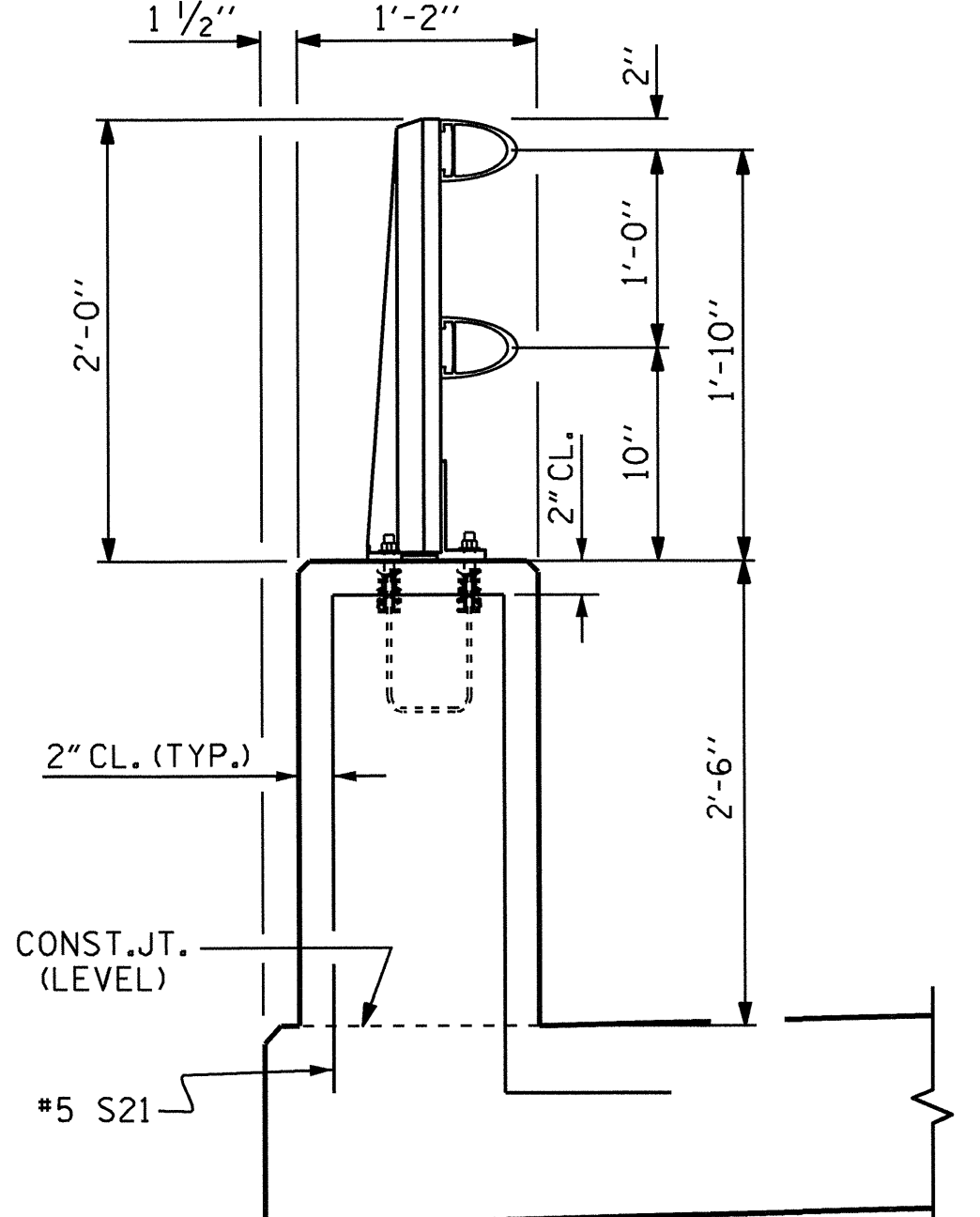
ELEVATION



SECTION B-B



SECTION C-C



SECTION A-A

BILL OF MATERIAL

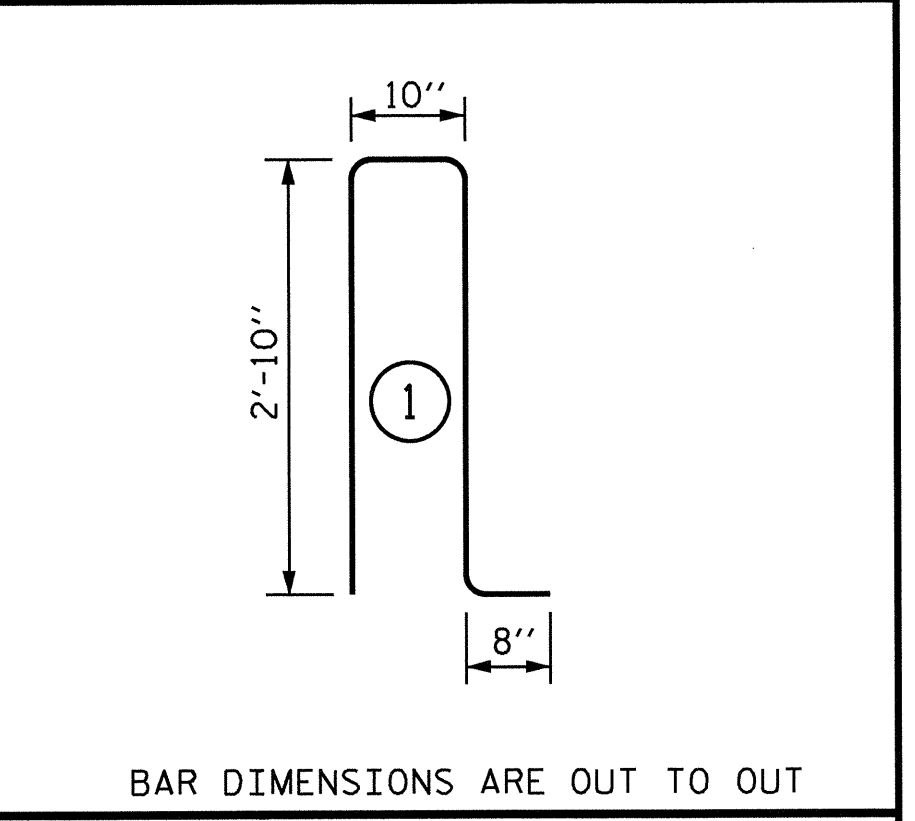
FOR 1'-2" X 2'-6" CONCRETE PARAPET					
BAR	No.	SIZE	TYPE	LENGTH	WEIGHT
* B21	112	#5	STR.	29'-7"	3456
* B22	32	#5	STR.	23'-5"	782
* B23	32	#5	STR.	16'-2"	540
* B24	32	#5	STR.	13'-11"	464
* E1	44	#7	STR.	4'-3"	382
* F1	12	#6	STR.	4'-7"	83
* F2	12	#6	STR.	3'-5"	62
* S21	618	#5	1	7'-2"	4619
* EPOXY COATED REINFORCING STEEL					
10,388 LBS.					

CLASS AA CONCRETE 68.6 C.Y.

1'-2" X 2'-6" CONCRETE PARAPET 637.68 LIN. FT.

* THESE BARS ARE EPOXY COATED

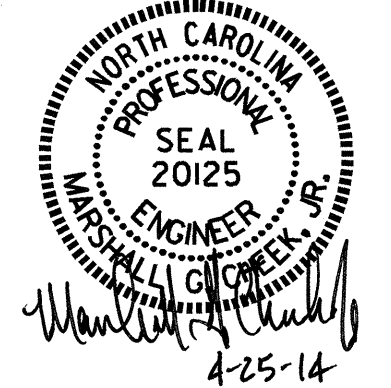
BAR TYPE



PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

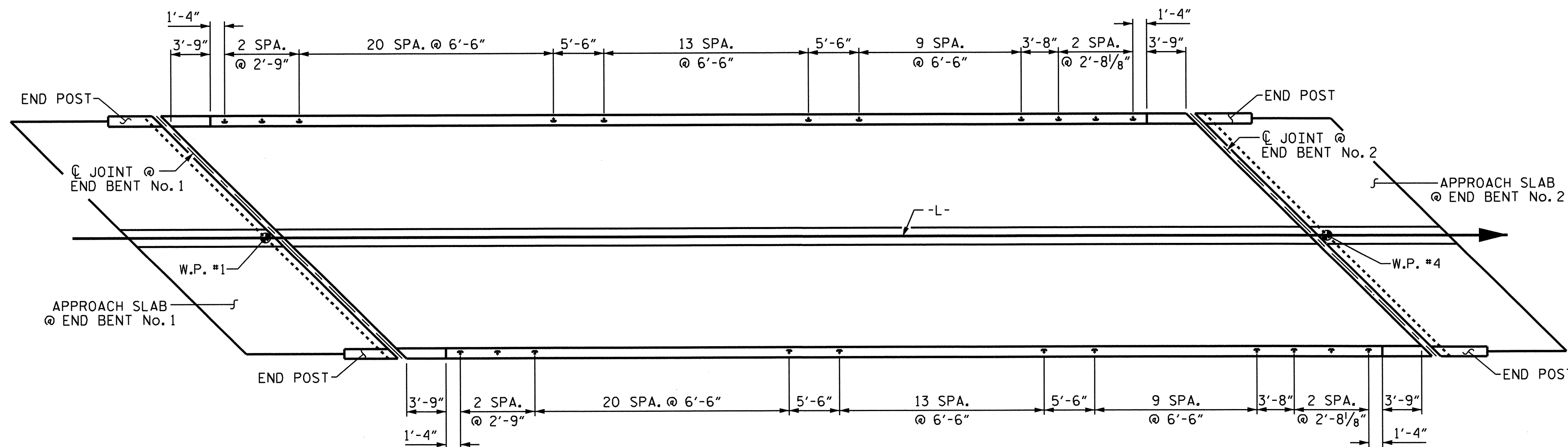
SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 1'-2" X 2'-6"
 CONCRETE PARAPET
 DETAILS

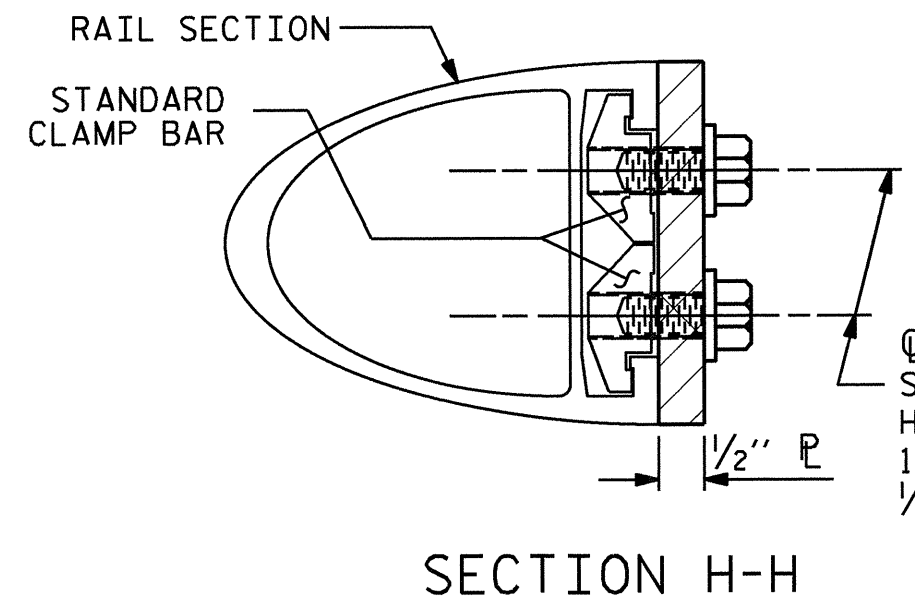
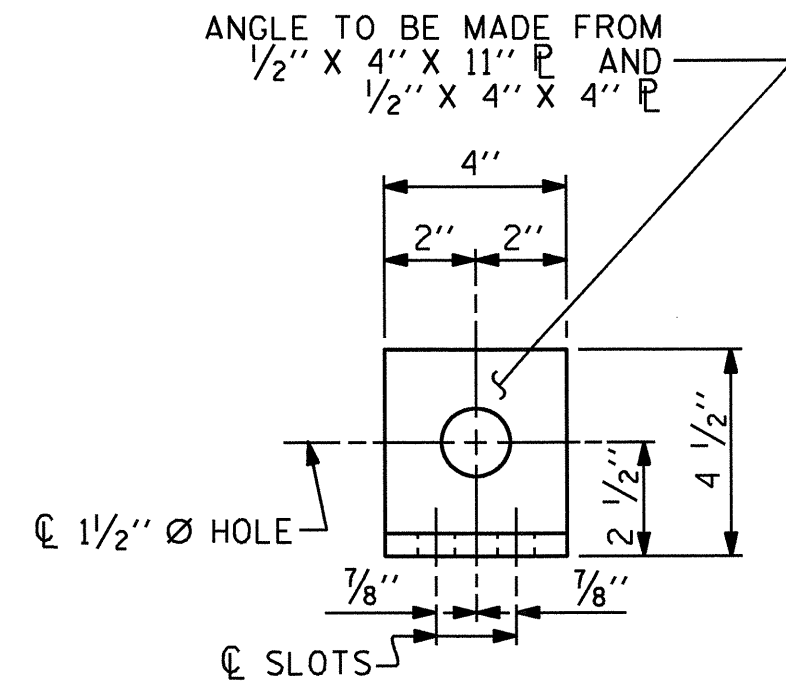
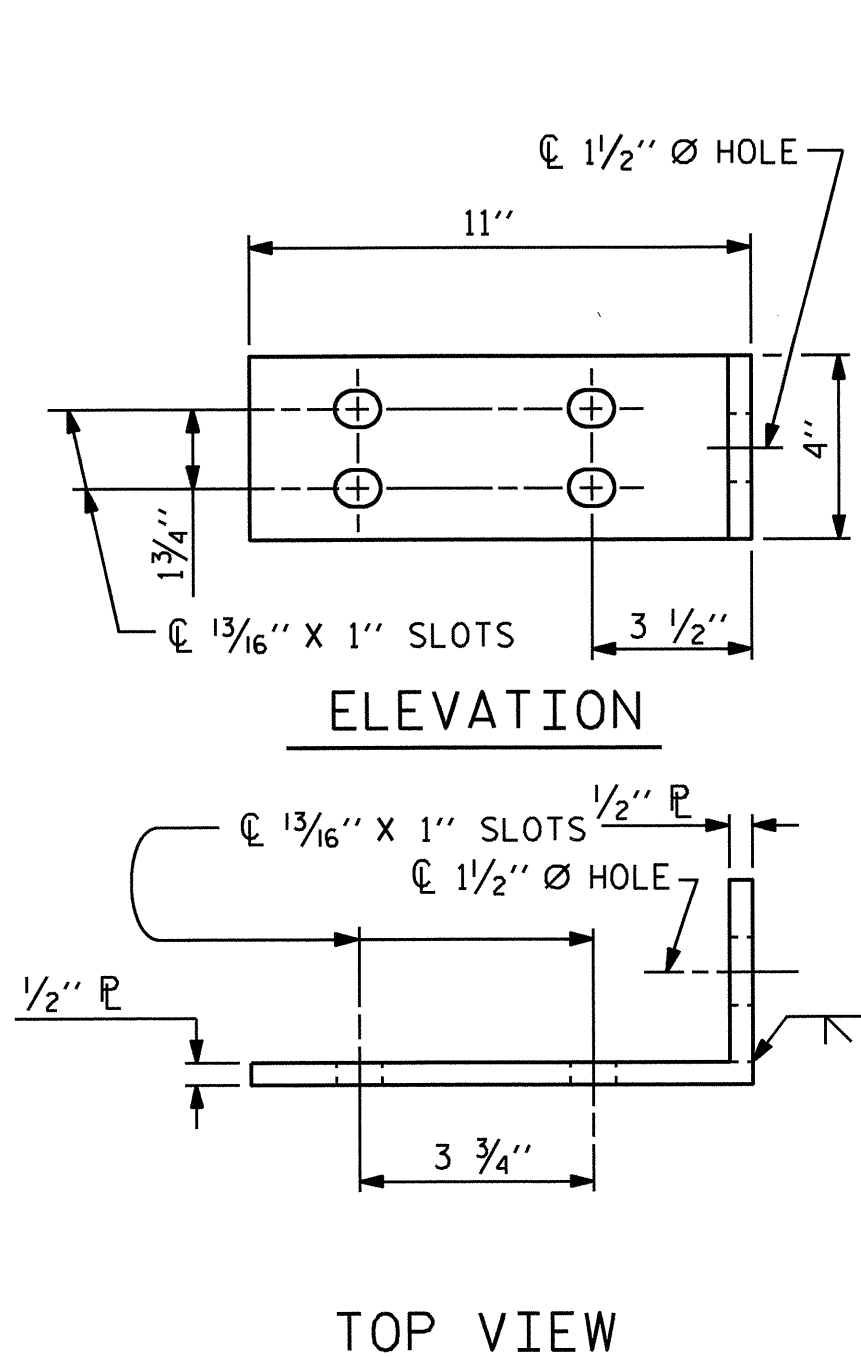


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-36
1			3			TOTAL SHEETS
2			4			62

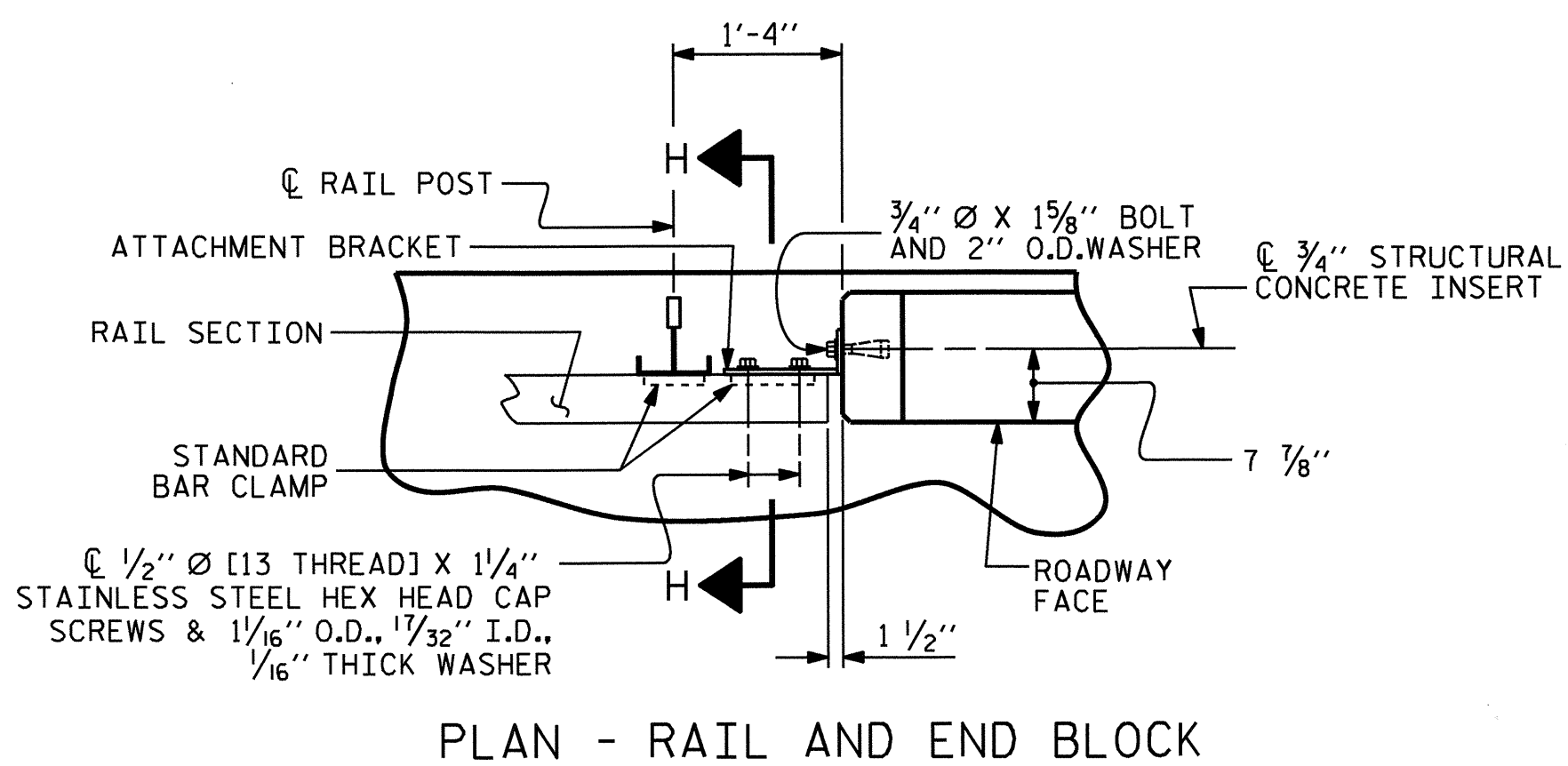
DRAWN BY : M. POOLE DATE : 12/13
 CHECKED BY : D.A. HODGE DATE : 01/14
 DESIGN ENGINEER OF RECORD : W.J. HARRIS DATE : 04/14



PLAN OF RAIL POST SPACINGS



DETAILS FOR ATTACHING METAL RAIL TO END BLOCK



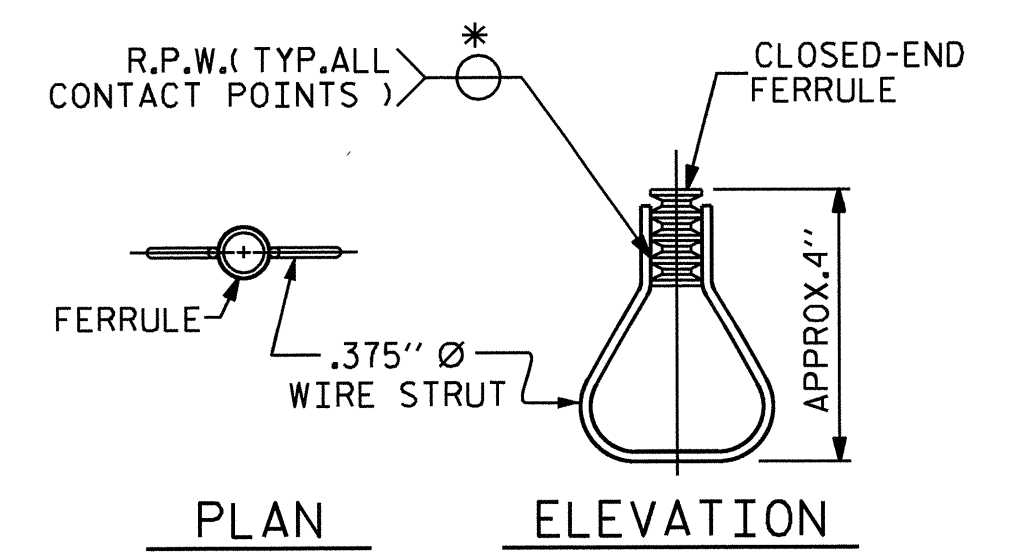
NOTES

- STRUCTURAL CONCRETE INSERT
- THE STRUCTURAL CONCRETE INSERT 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 1 1/2".
 - B. 1 - 3/4" Ø X 1 5/8" BOLT WITH WASHER, BOLT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLT AND WASHER SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLT AND WASHER MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø X 1 5/8" GALVANIZED BOLT AND WASHER. 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 INSERT ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 1/8" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.

NOTES

- METAL RAIL TO END BLOCK CONNECTION
- THE METAL RAIL TO END BLOCK CONNECTION SHALL CONSIST OF THE FOLLOWING COMPONENTS:
- A. 1/2" PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 AND SHALL BE GALVANIZED AFTER FABRICATION.
 - B. 3/4" STRUCTURAL CONCRETE INSERT SHALL HAVE A WORKING LOAD SHEAR CAPACITY OF 4800 LBS. THE FERRULES SHALL ENGAGE A 3/4" Ø X 1 5/8" BOLT WITH 2" O.D. WASHER IN PLACE. THE 3/4" Ø X 1 5/8" BOLT SHALL HAVE N.C. THREADS.
 - C. CAP SCREWS FOR RAIL ATTACHMENT TO ANGLE SHALL CONFORM TO THE REQUIREMENTS OF ASTM F593 ALLOY 305 STAINLESS STEEL. CAP SCREWS TO BE CENTERED IN SLOTS AT 60° F.
 - D. STANDARD CLAMP BARS (SEE SHEET 5 OF 5).
 - E. 1/2" Ø PIPE SLEEVES (IF REQUIRED) TO BE GALVANIZED.
- THE COST OF THE STANDARD CLAMP BARS AND CAP SCREWS USED IN THE METAL RAIL TO END BLOCK CONNECTION SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR LINEAR FEET OF 2 BAR METAL RAILS.
- THE 3/4" STRUCTURAL CONCRETE INSERT WITH BOLT SHALL BE ASSEMBLED IN THE SHOP.
- THE COST OF THE 3/4" STRUCTURAL CONCRETE INSERT ASSEMBLY, AND THE 1/2" PLATES COMPLETE IN PLACE SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

THE CONTRACTOR, AT HIS OPTION, MAY USE AN ADHESIVE BONDING SYSTEM IN LIEU OF THE STRUCTURAL CONCRETE INSERT EMBEDDED IN THE END BLOCK. IF THE ADHESIVE BONDING SYSTEM IS USED, THE 3/4" Ø X 1 5/8" BOLT WITH WASHER SHALL BE REPLACED WITH A 3/4" Ø X 6 1/2" BOLT AND 2" O.D. WASHER. ALL SPECIFICATIONS THAT APPLY TO THE 3/4" Ø X 1 5/8" BOLT SHALL APPLY TO THE 3/4" Ø X 6 1/2" BOLT. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.



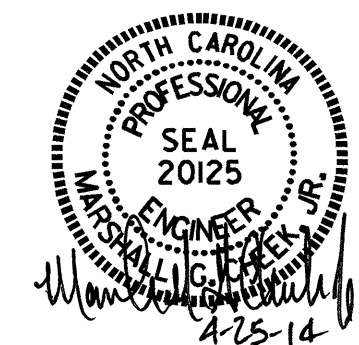
STRUCTURAL CONCRETE INSERT

* EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.

PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 RAIL POST SPACINGS
 AND
 END OF RAIL DETAILS
 FOR TWO BAR METAL RAILS



ASSEMBLED BY : B.N. GRADY	DATE : 01/14
CHECKED BY : D.A. HODGE	DATE : 01/14
DRAWN BY : FCJ 1/88	REV. 5/7/03 RWW/JTE
CHECKED BY : CRK 3/89	REV. 5/1/06 TLA/GM
	REV. 10/1/11 MAA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-37
1			3			TOTAL SHEETS
2			4			62

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.

UNLESS OTHERWISE REQUIRED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR HAS THE OPTION TO USE AN ALTERNATE TO THE 2 BAR METAL RAIL. THE ALTERNATE RAIL SHALL MEET THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND MUST BE LISTED ON THE DEPARTMENT'S APPROVED PRODUCTS LIST (APL) UNDER "2 BAR METAL RAIL ALTERNATE". ADJUSTMENTS TO THE CONCRETE PARAPET WILL NOT BE ALLOWED.

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 ML-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 BLOCK TO END BLOCK 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 BLOCK DIMENSION, SEE SHEET 3 OF 5.

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.

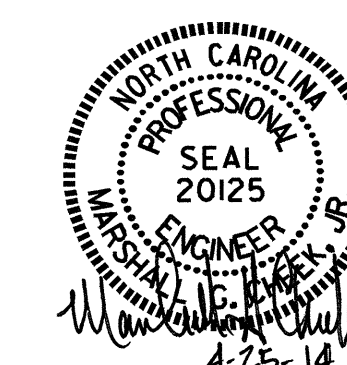
GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE PARAPET AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN PARAPET EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF PARAPET SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

PAY LENGTH = 602.38 LIN. FT.

PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

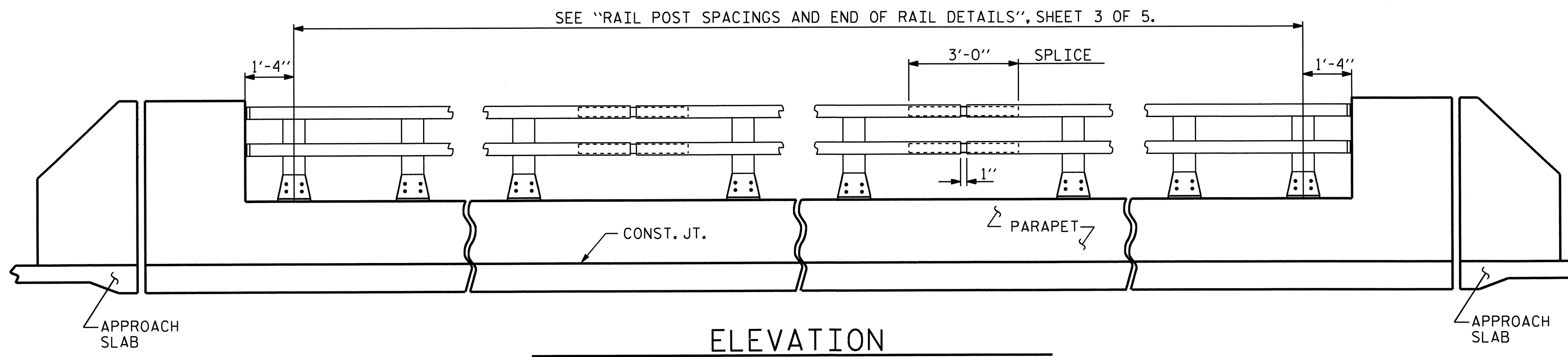
SHEET 4 OF 5

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

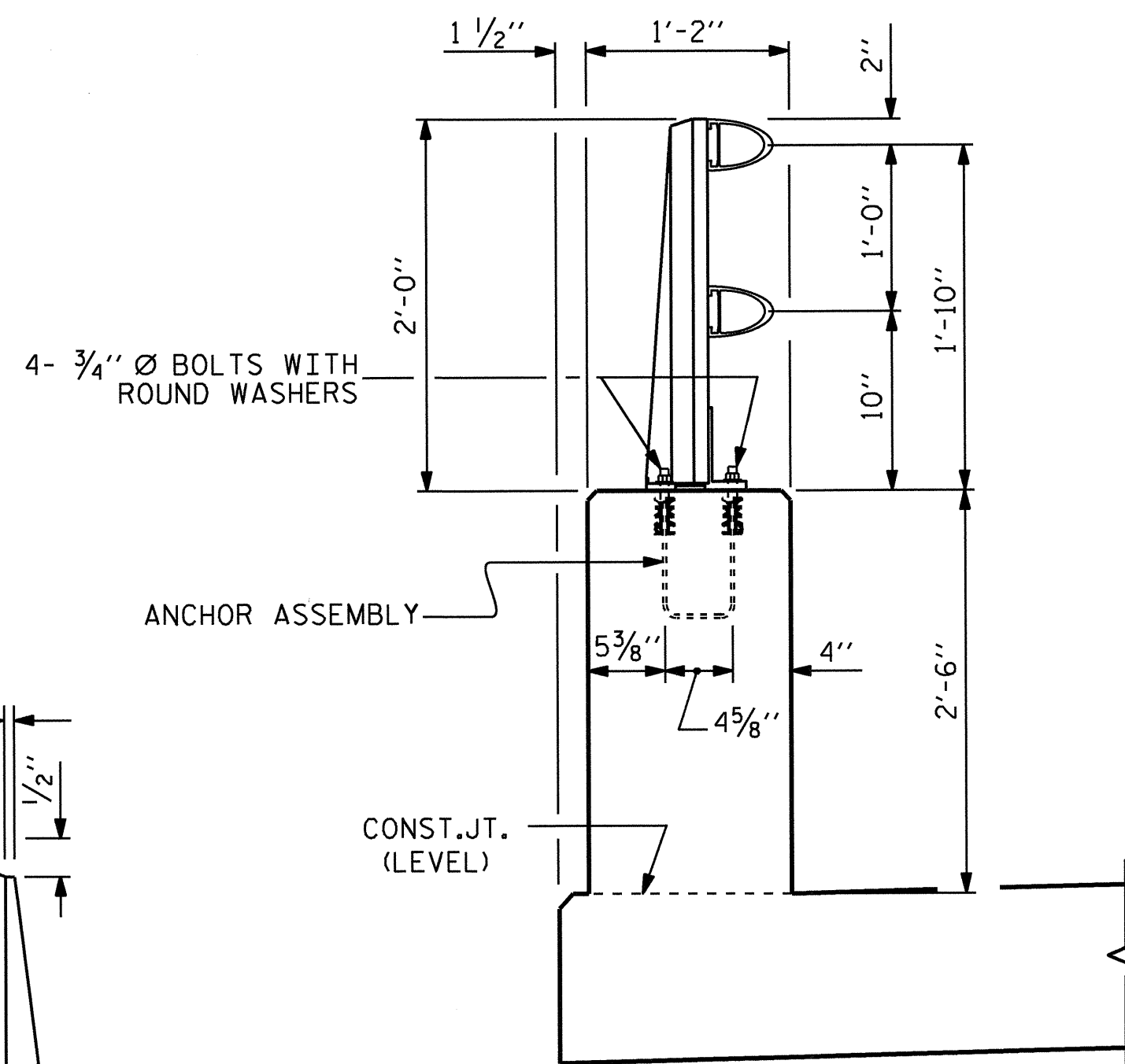
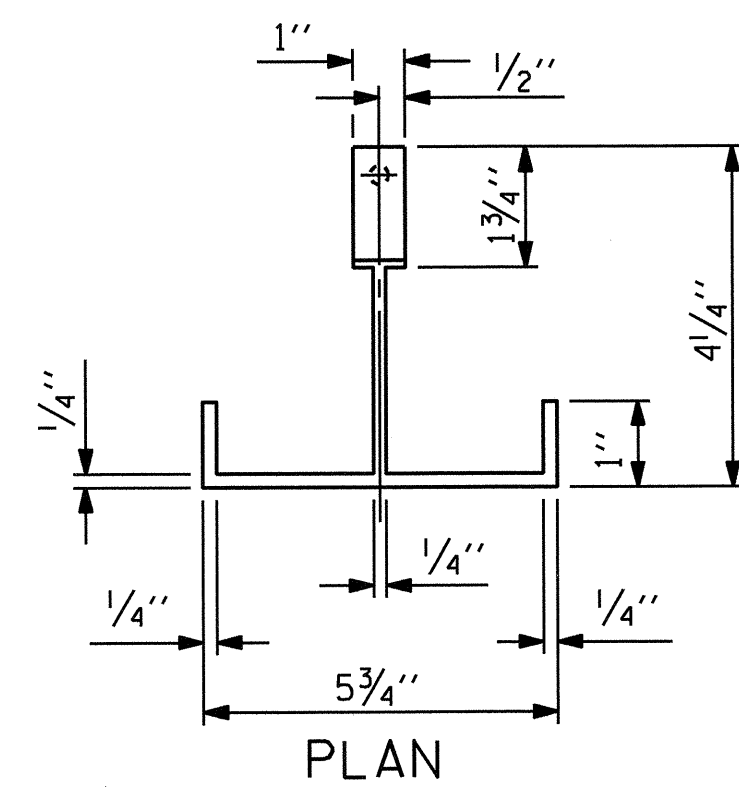


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-38
1			3			TOTAL SHEETS
2			4			62

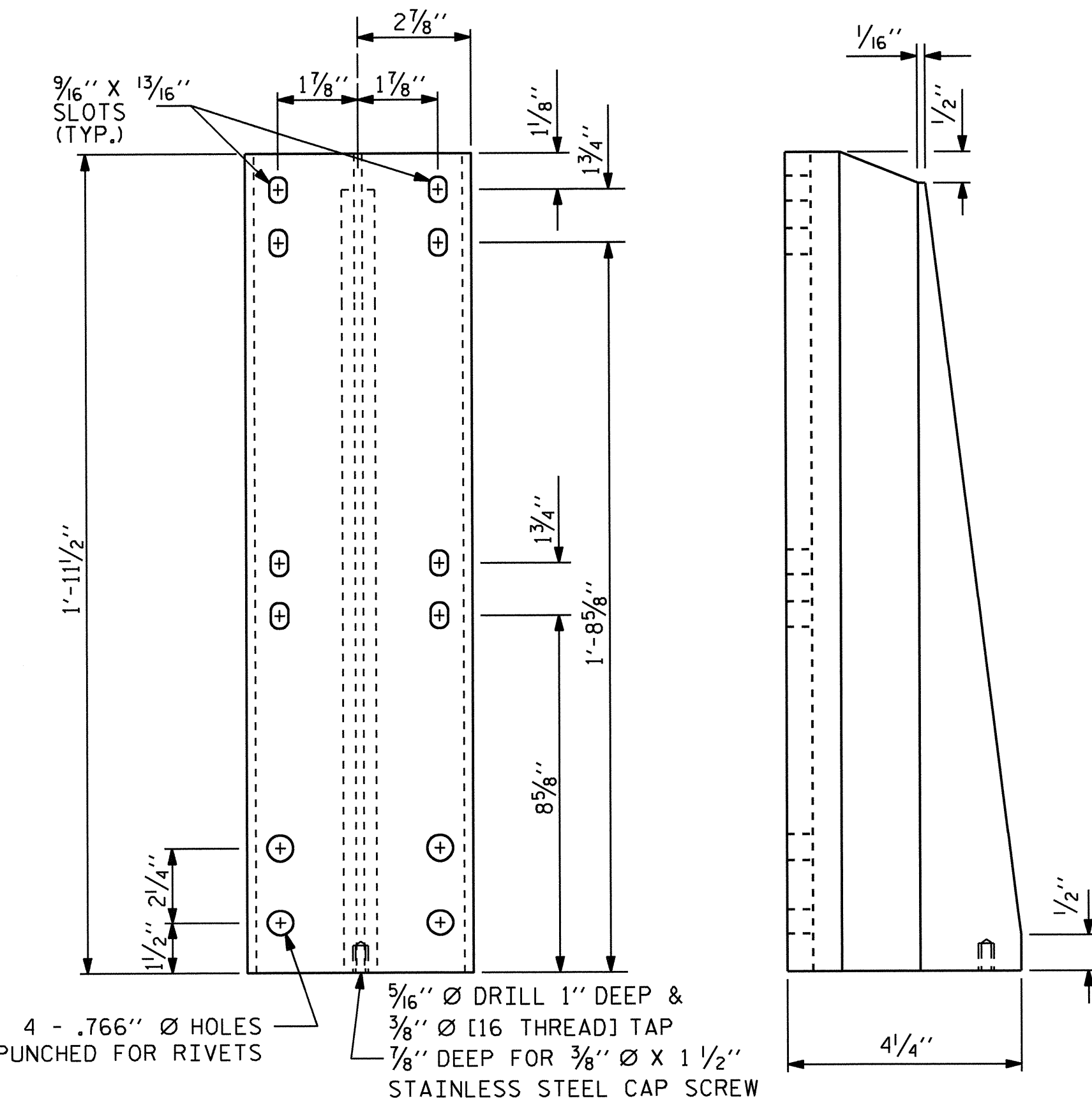
STD. NO. BMR3



NOTE: FOR ATTACHMENT OF METAL RAIL TO END BLOCK, SEE SHEET 3 OF 5.

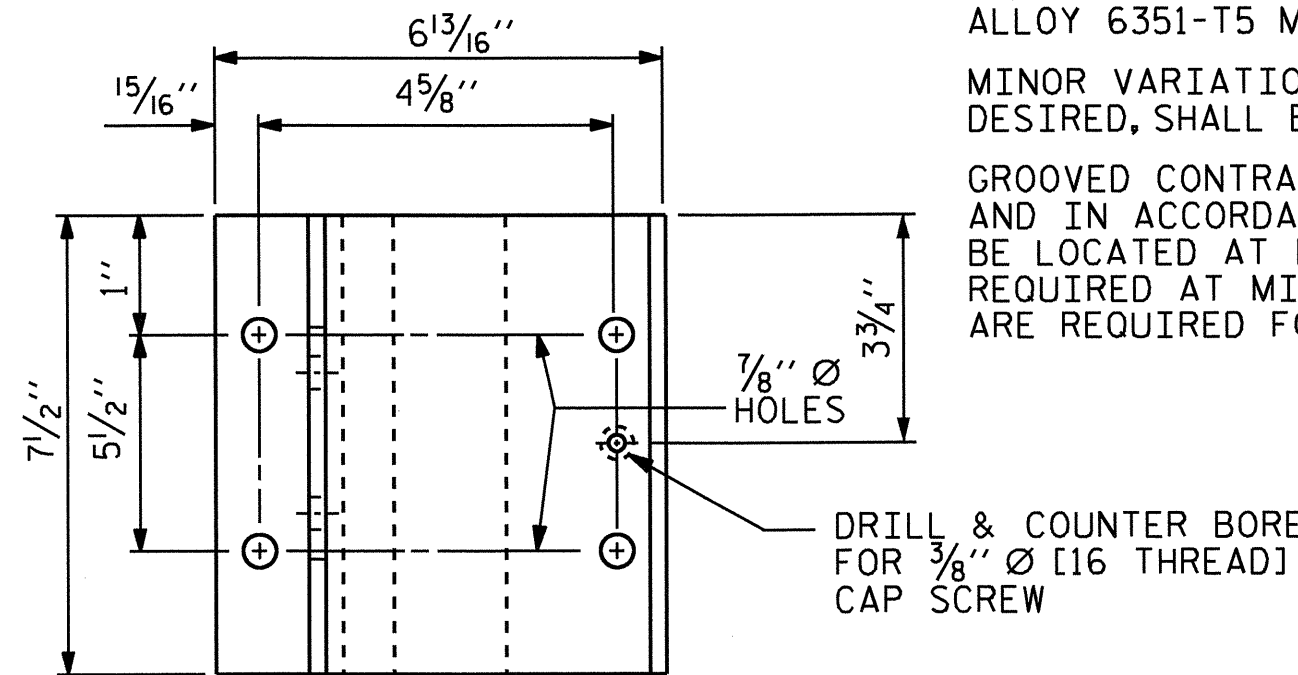


SECTION THRU PARAPET AND RAIL

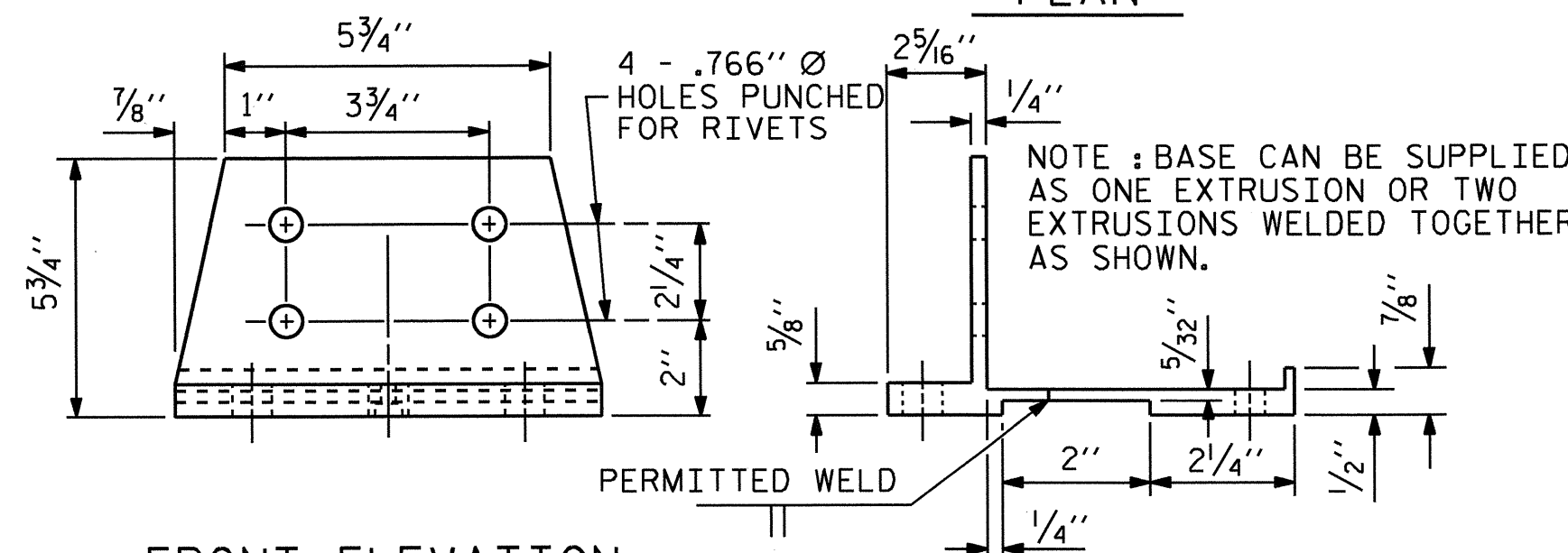


FRONT ELEVATION SIDE ELEVATION
 DETAILS OF POST

4 - .766" Ø HOLES PUNCHED FOR RIVETS
 5/16" Ø DRILL 1" DEEP & 3/8" Ø [16 THREAD] TAP
 1/8" DEEP FOR 3/8" Ø X 1 1/2" STAINLESS STEEL CAP SCREW

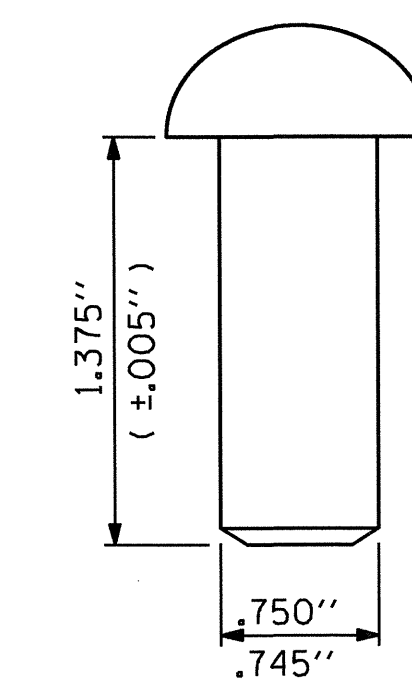


PLAN



FRONT ELEVATION SIDE ELEVATION
 POST BASE DETAILS

NOTE: BASE CAN BE SUPPLIED AS ONE EXTRUSION OR TWO EXTRUSIONS WELDED TOGETHER AS SHOWN.



RIVET DETAIL

ASSEMBLED BY: M. POOLE	DATE: 12/13
CHECKED BY: D.A. HODGE	DATE: 01/14
DRAWN BY: EEM 6/94	REV. 5/7/03R RWW/JTE
CHECKED BY: RGW 6/94	REV. 5/1/06 TLA/GM
	REV. 10/1/11 MAA/GM

NOTES

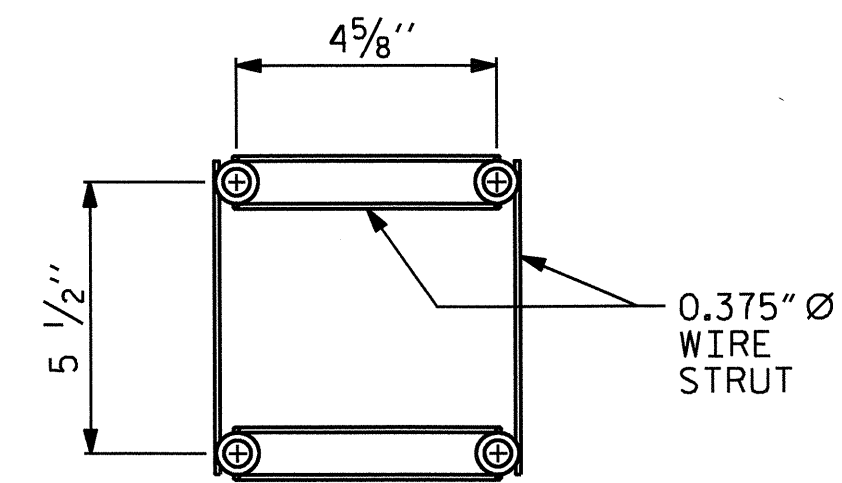
STRUCTURAL CONCRETE ANCHOR ASSEMBLY

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

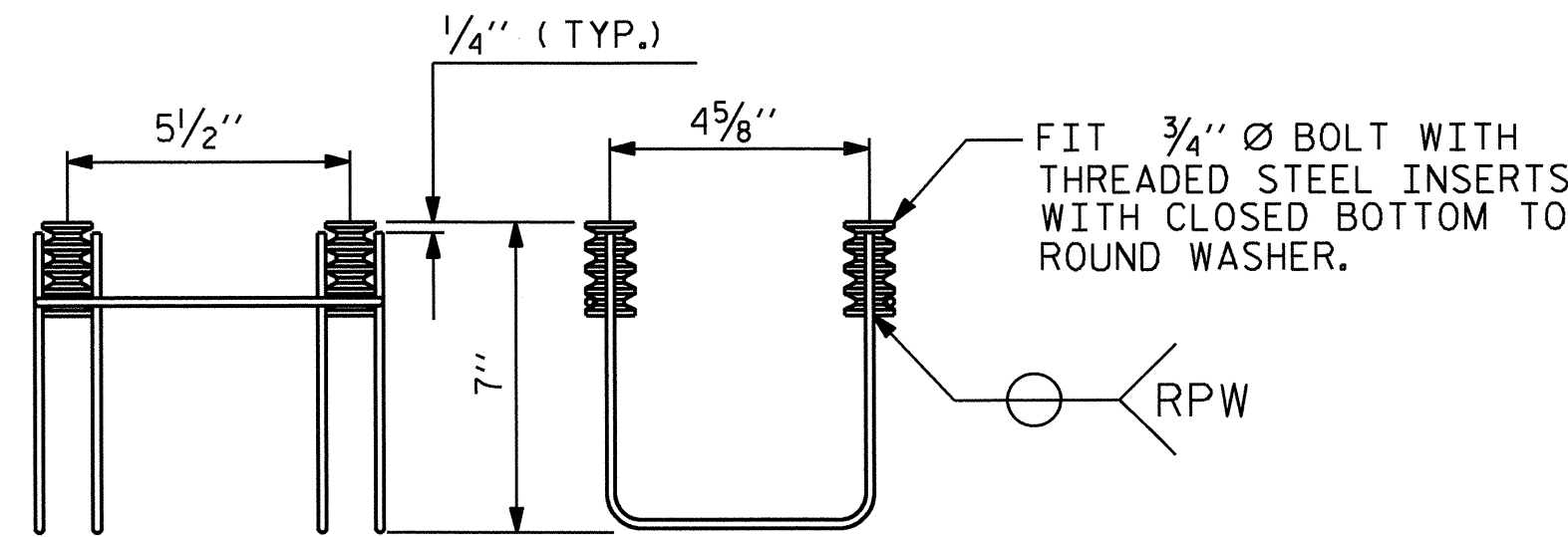
- A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2" FOR 3/4" FERRULES.
- B. 4 - 3/4" Ø X 2 1/2" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT 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 7/16" 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 2 BAR 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 10 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE THE STANDARD SPECIFICATIONS.

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

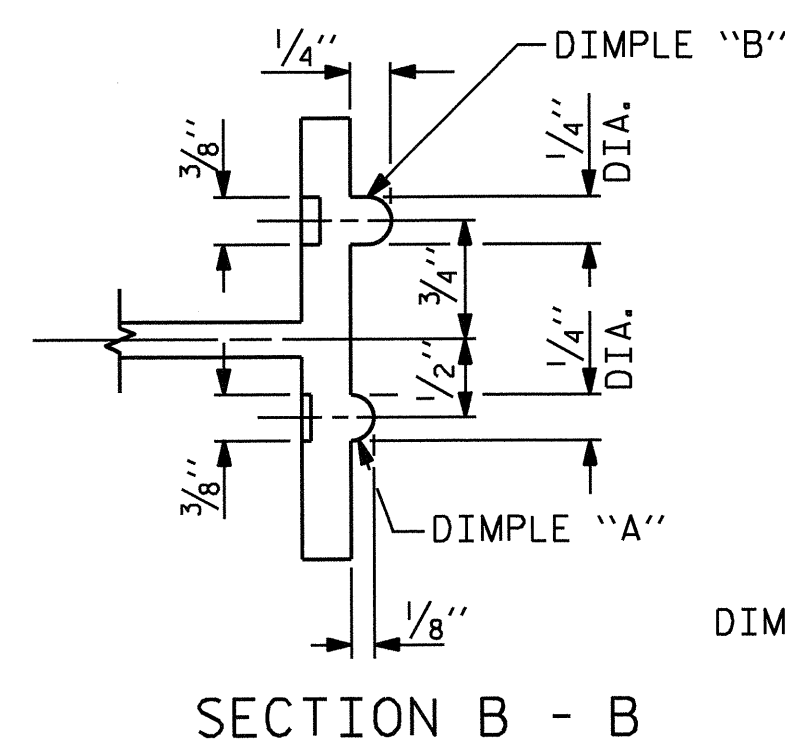


SIDE VIEW

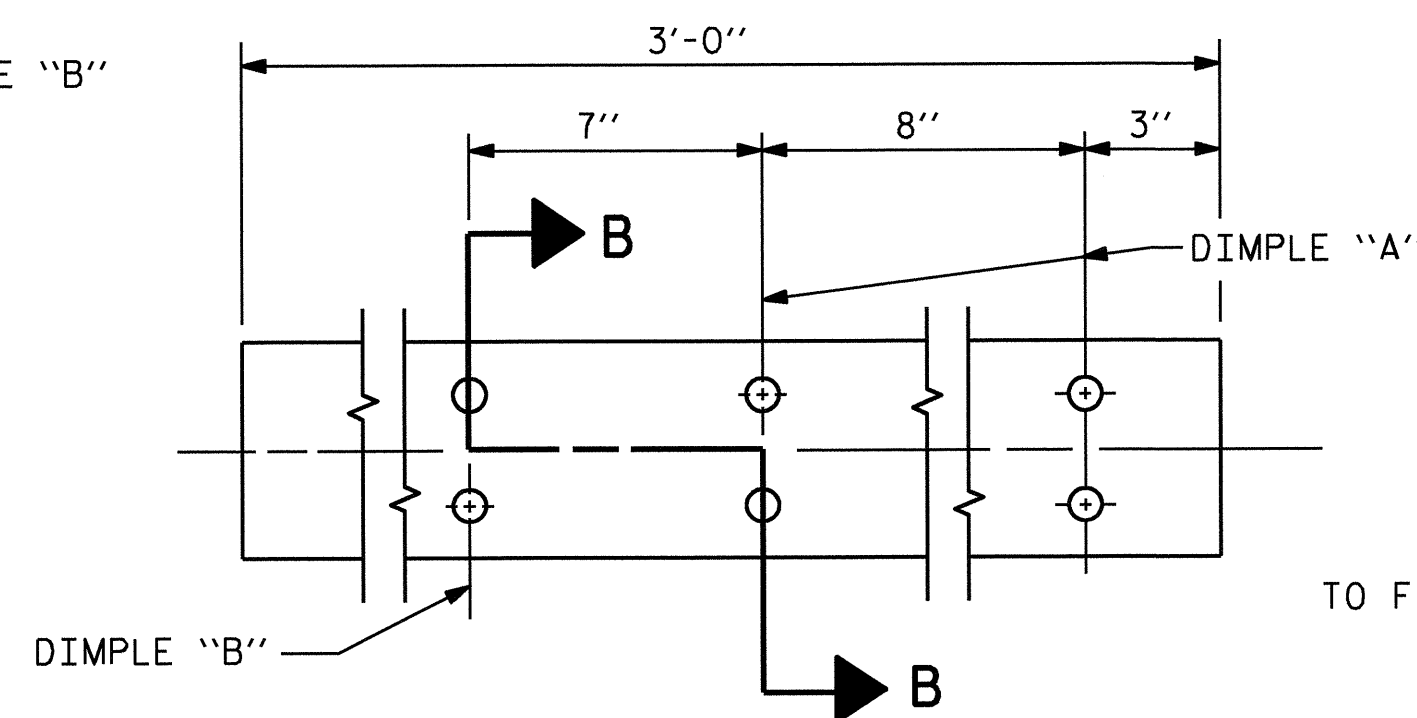
ELEVATION

4-BOLT METAL RAIL ANCHOR ASSEMBLY

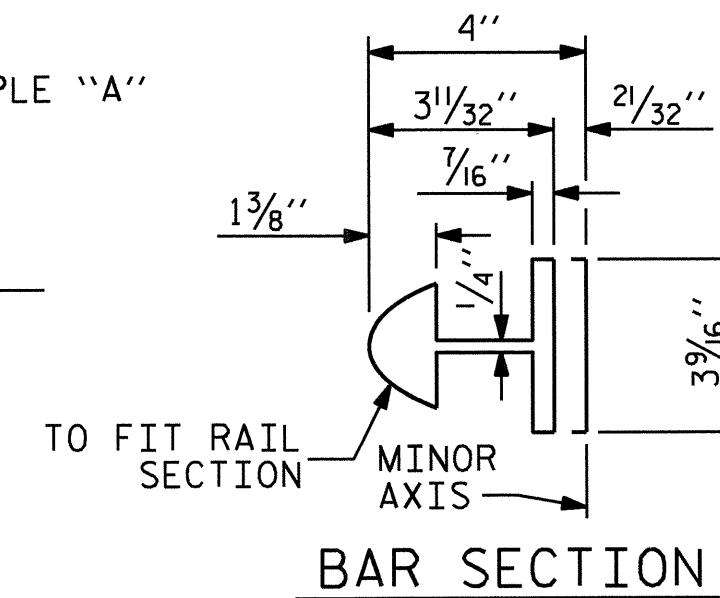
(100 ASSEMBLIES REQUIRED)



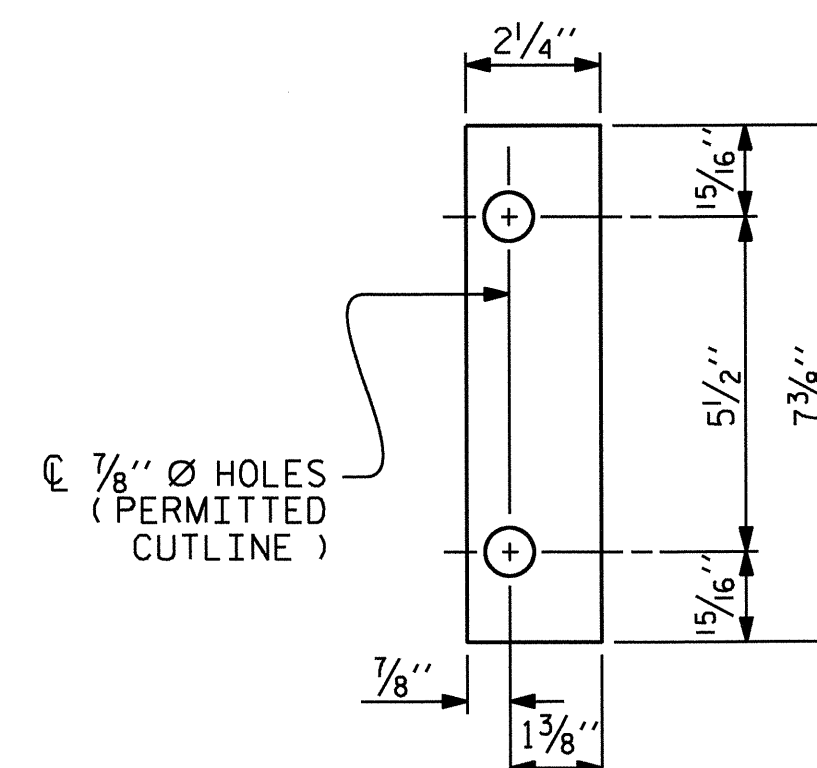
SECTION B - B



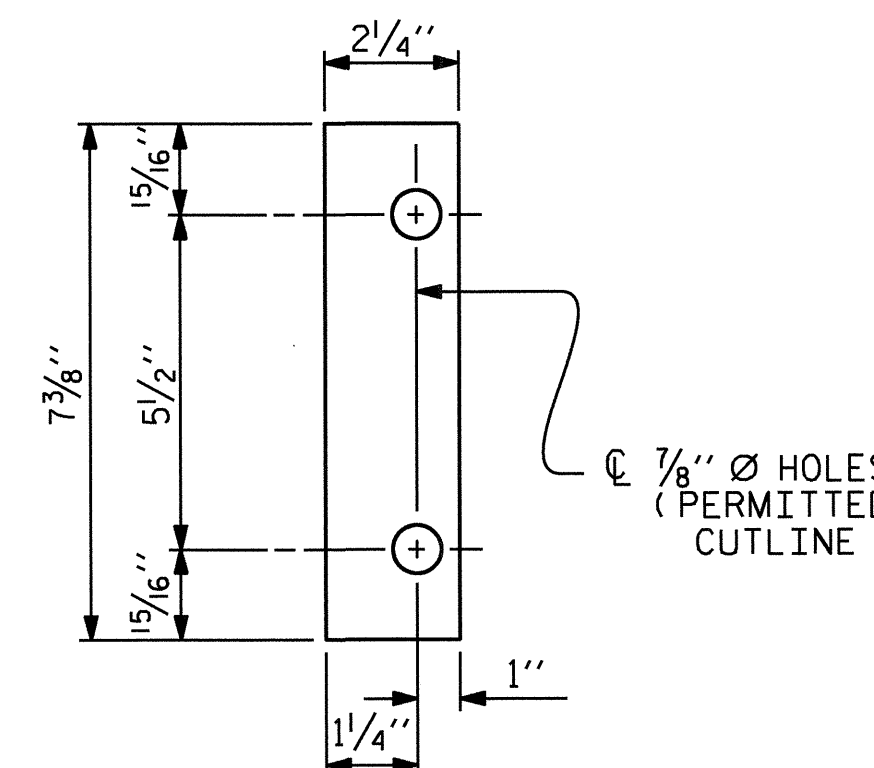
EXPANSION BAR DETAILS



BAR SECTION



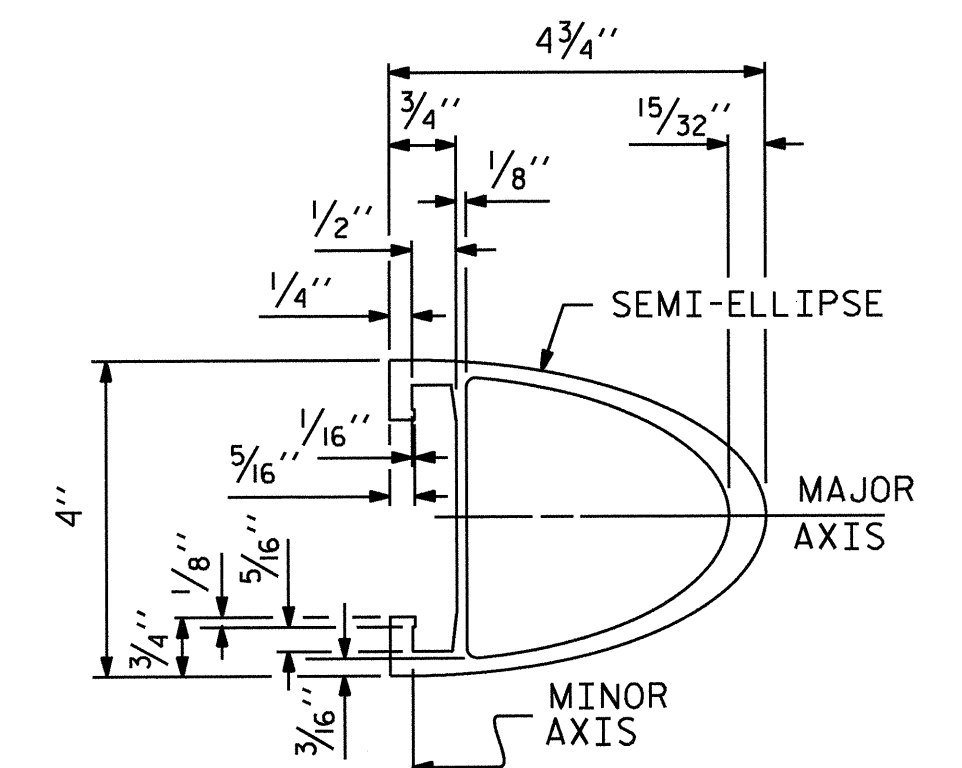
FRONT PLATE



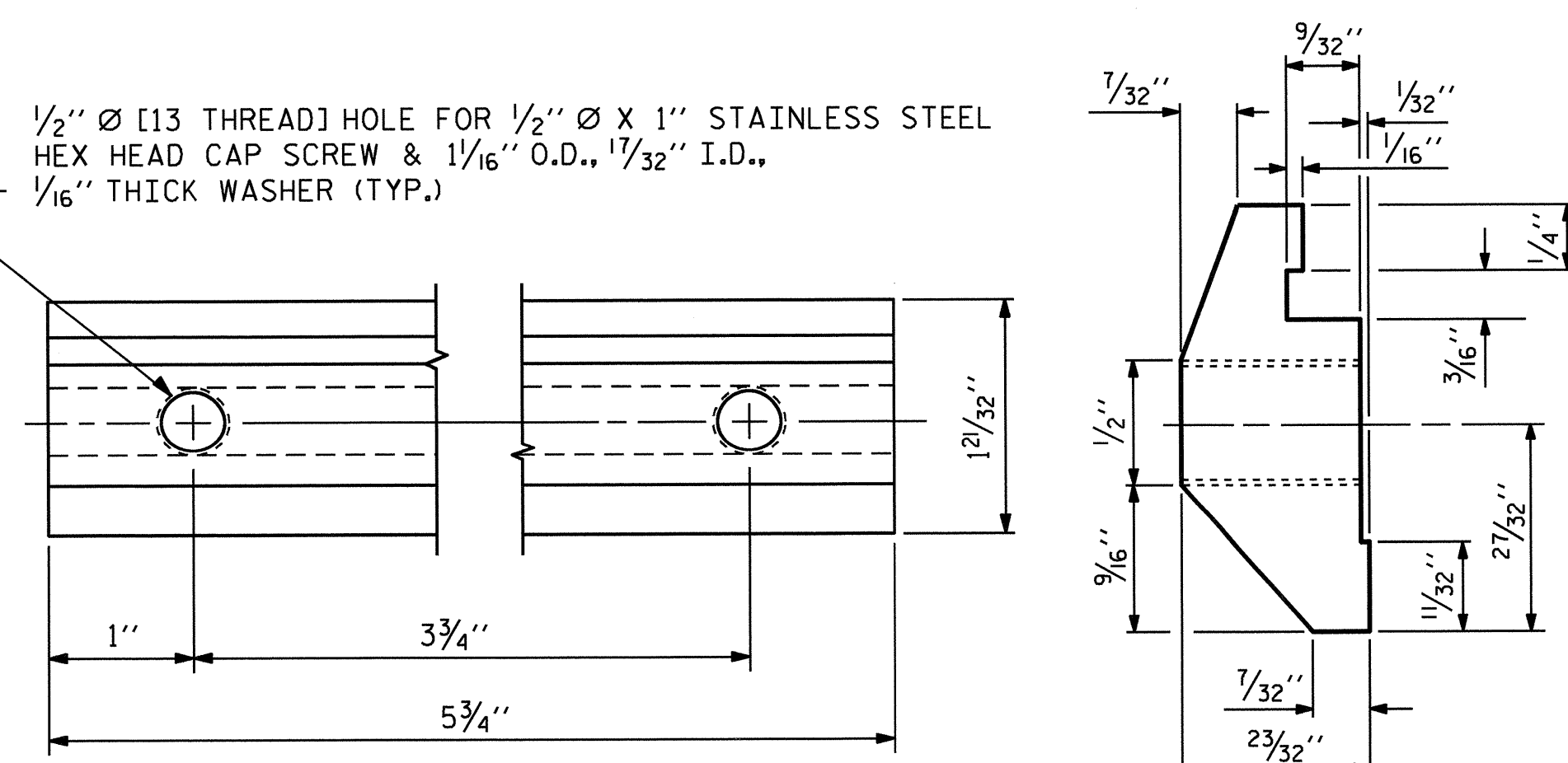
REAR PLATE

SHIM DETAILS

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

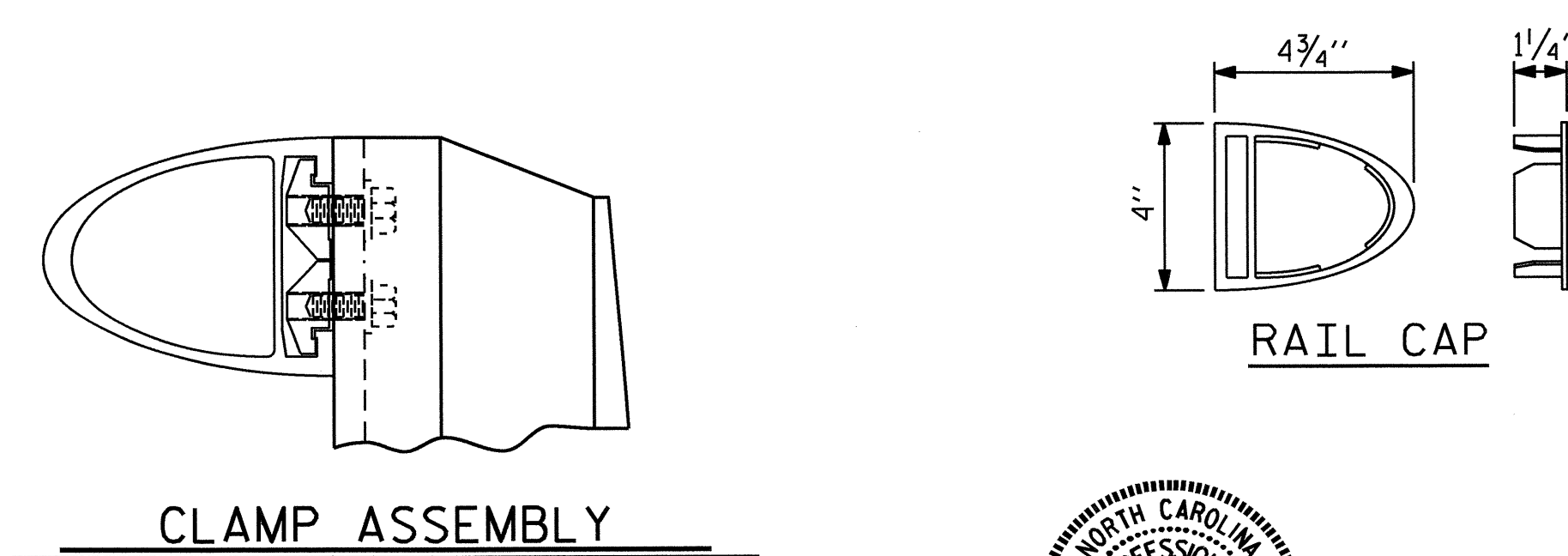


RAIL SECTION

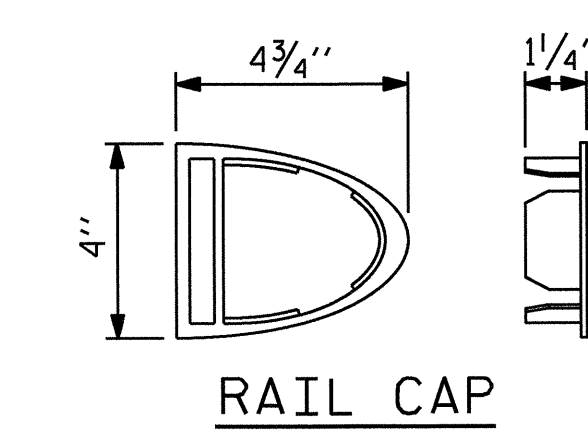


CLAMP BAR DETAIL

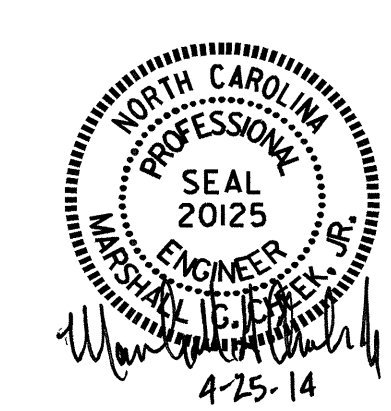
(4 REQUIRED PER POST)



CLAMP ASSEMBLY



RAIL CAP



PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
STANDARD					
2 BAR METAL RAIL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-39
TOTAL SHEETS					62

ASSEMBLED BY : M. POOLE	DATE : 12/13
CHECKED BY : D.A. HODGE	DATE : 01/14
DRAWN BY : EEM 6/94	REV. 8/16/99 MAB/LES
CHECKED BY : RGW 6/94	REV. 5/1/06R KMM/GM
	REV. 10/1/11 MAA/GM

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.

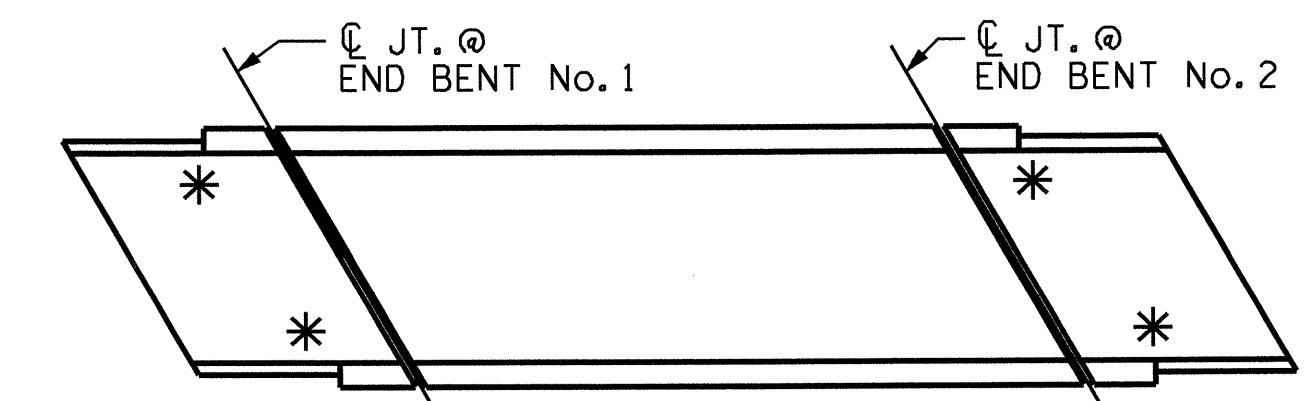
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF THE PARAPET. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

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

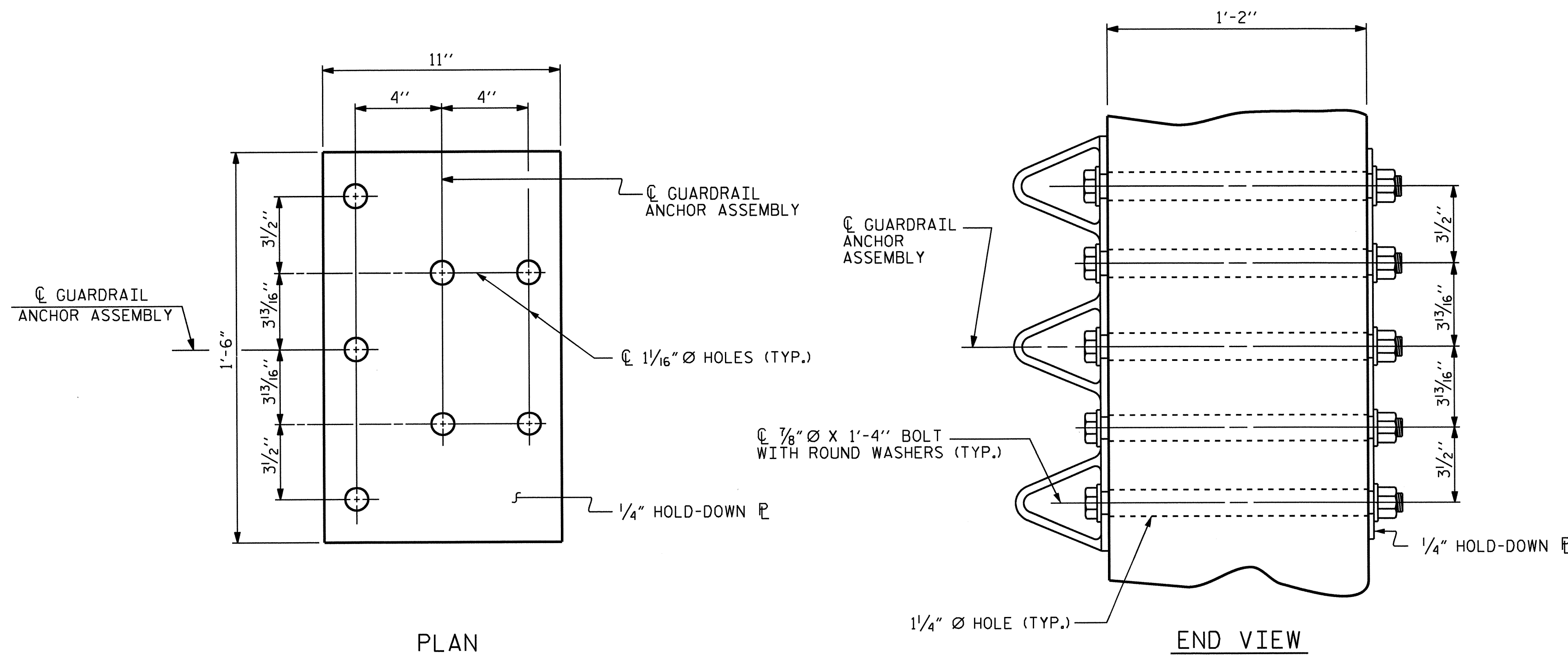
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE END POST TO CLEAR ASSEMBLY BOLTS.

THE 1/4" 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.



SKETCH SHOWING POINTS OF ATTACHMENTS

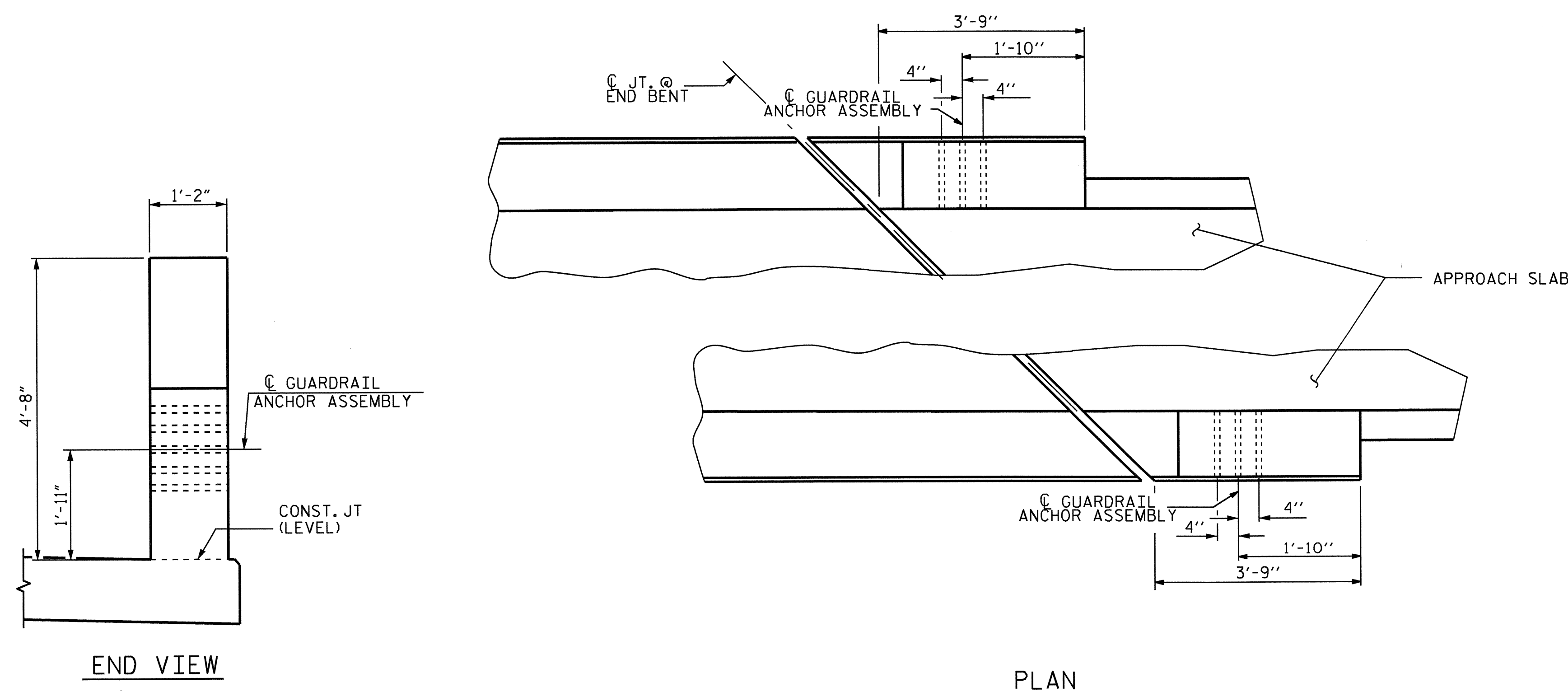
* DENOTES GUARDRAIL ANCHOR ASSEMBLY



PLAN

END VIEW

GUARDRAIL ANCHOR ASSEMBLY DETAILS



END VIEW

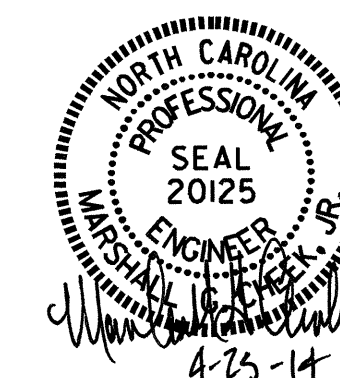
PLAN

LOCATION OF GUARDRAIL ANCHOR AT END POST

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

PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

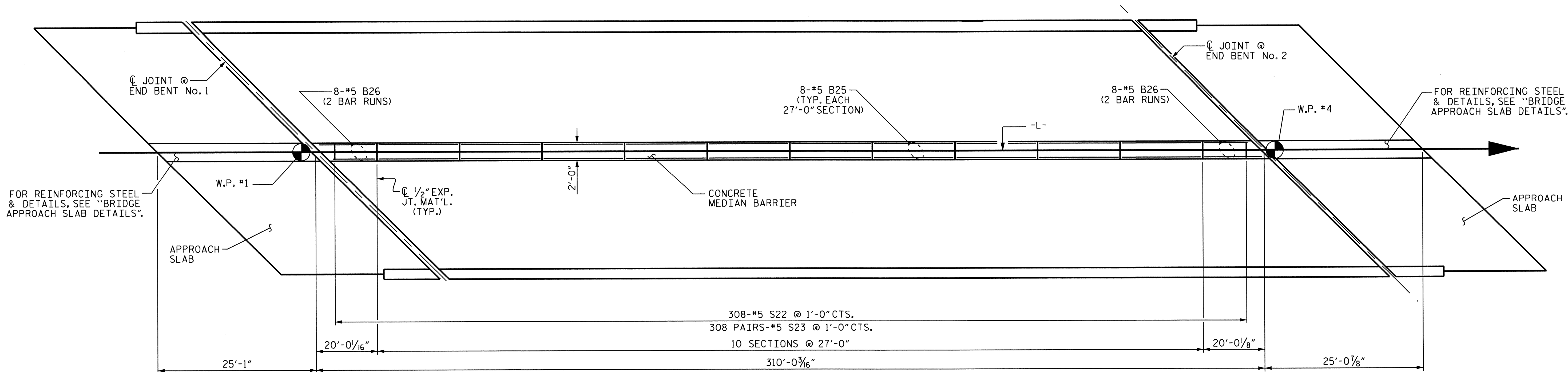
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 DETAILS



ASSEMBLED BY : M. POOLE	DATE : 12/13
CHECKED BY : D.A. HODGE	DATE : 01/14
DRAWN BY : MAA 5/10	ADDED 5/6/10
CHECKED BY : GM 5/10	REV. 10/1/11
	REV. 12/5/11
	MAA/GM
	MAA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-40
2			4			TOTAL SHEETS 62

STD. NO. GRA3



PLAN OF CONCRETE MEDIAN BARRIER

BILL OF MATERIAL						BAR TYPES	
CONCRETE MEDIAN BARRIER							
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT		
* B25	80	#5	STR	26'-7"	2218		
* B26	32	#5	STR	11'-11"	398		
* S22	616	#5	4	1'-10"	1178		
* S23	308	#5	3	5'-6"	1767		
* EPOXY COATED REINFORCING STEEL					5,561 LBS.		
CLASS AA CONCRETE					31.4 CU. YDS.		
CONCRETE MEDIAN BARRIER					360.17 LIN. FT.		

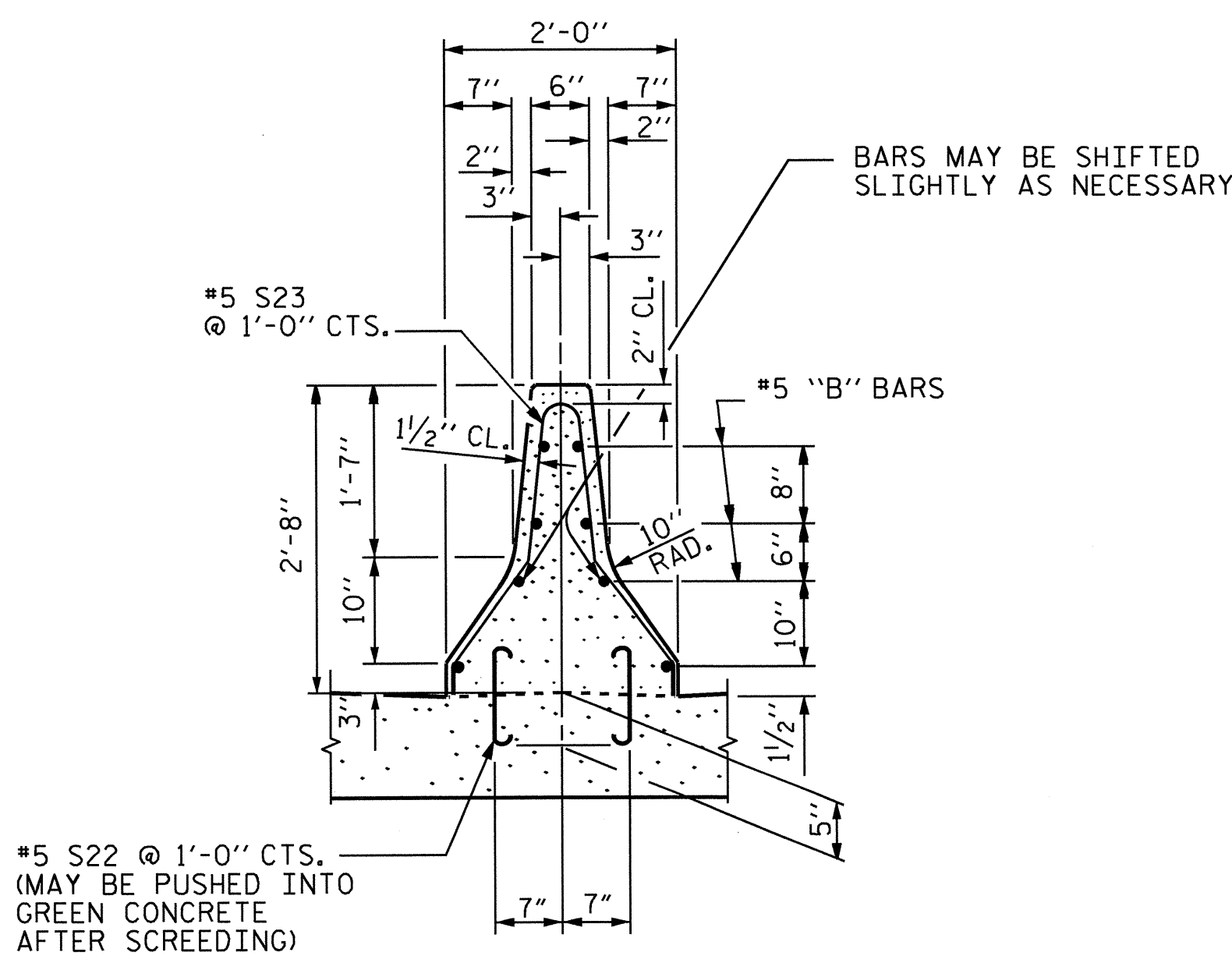
NOTES

ALL REINFORCING STEEL IN CONCRETE MEDIAN BARRIER SHALL BE EPOXY COATED.

THE CONCRETE MEDIAN BARRIER SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.

GROOVED CONTRACTION JOINTS 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF CONCRETE MEDIAN BARRIER 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.

THE 1/2" EXPANSION JOINT MAY BE SHIFTED SLIGHTLY IN ORDER TO MAINTAIN A 2" MINIMUM CLEARANCE TO THE #5 "S" BARS.



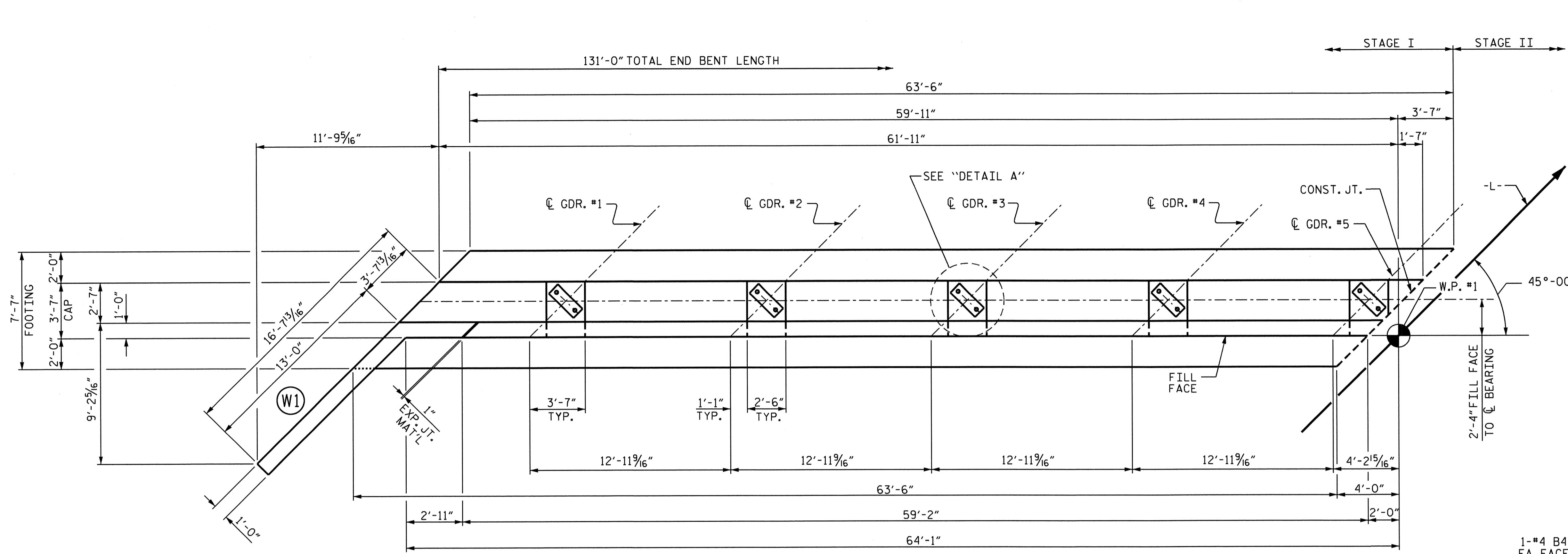
SECTION THRU CONCRETE MEDIAN BARRIER
CONCRETE MEDIAN BARRIER

PROJECT NO. B-4554
JACKSON COUNTY
STATION: 27+11.72 -L-

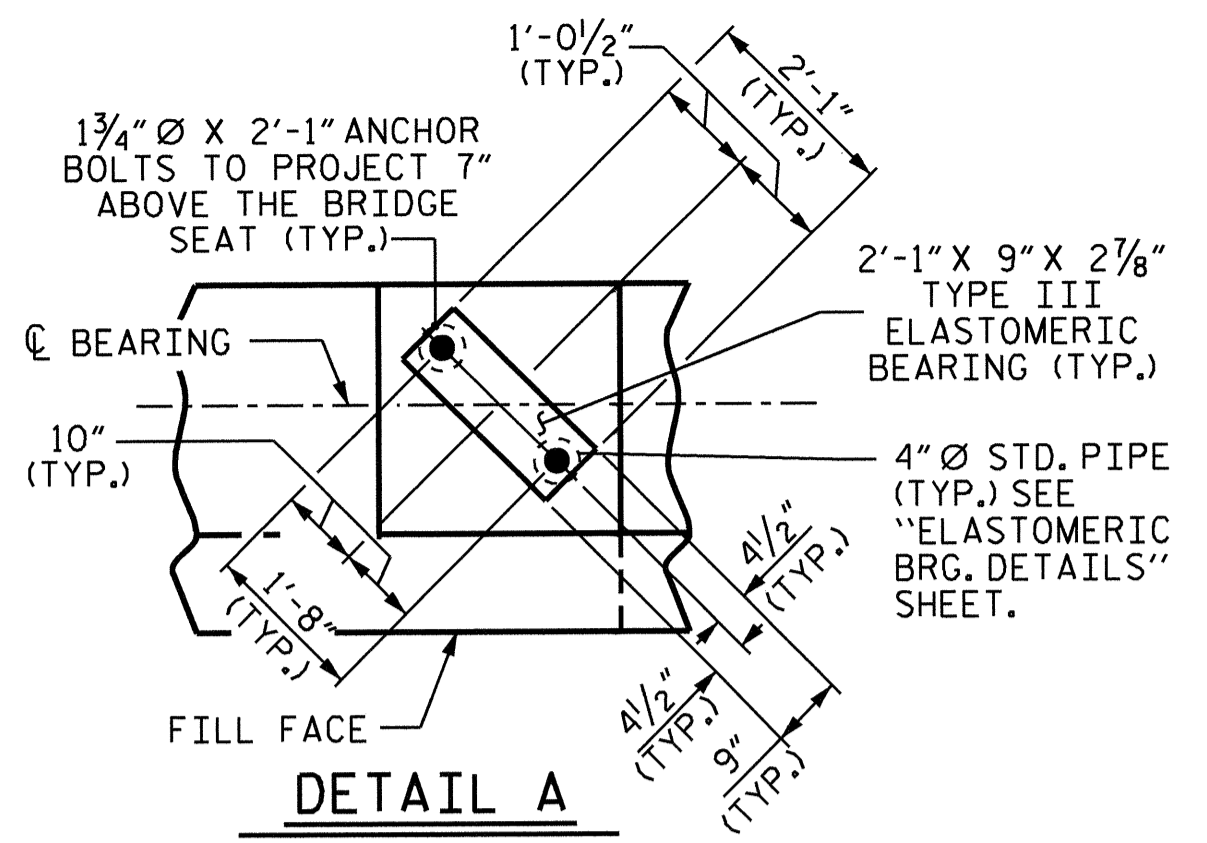
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.	
SUPERSTRUCTURE CONCRETE MEDIAN BARRIER						S-41	
REVISIONS						TOTAL SHEETS	
NO.	BY:	DATE:	NO.	BY:	DATE:	62	
1			3				
2			4				



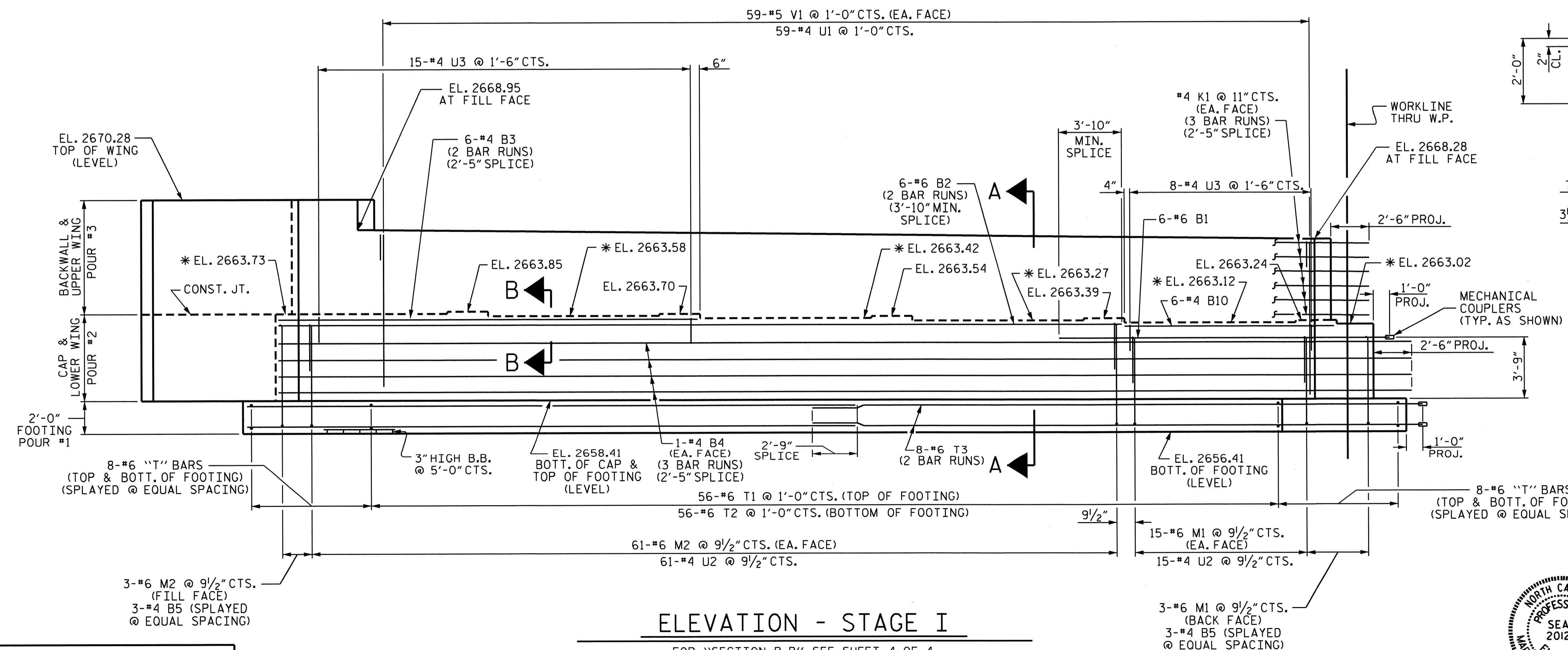
DRAWN BY : M. POOLE DATE : 01/14
CHECKED BY : D.A. HODGE DATE : 01/14
DESIGN ENGINEER OF RECORD: W.J. HARRIS DATE : 04/14



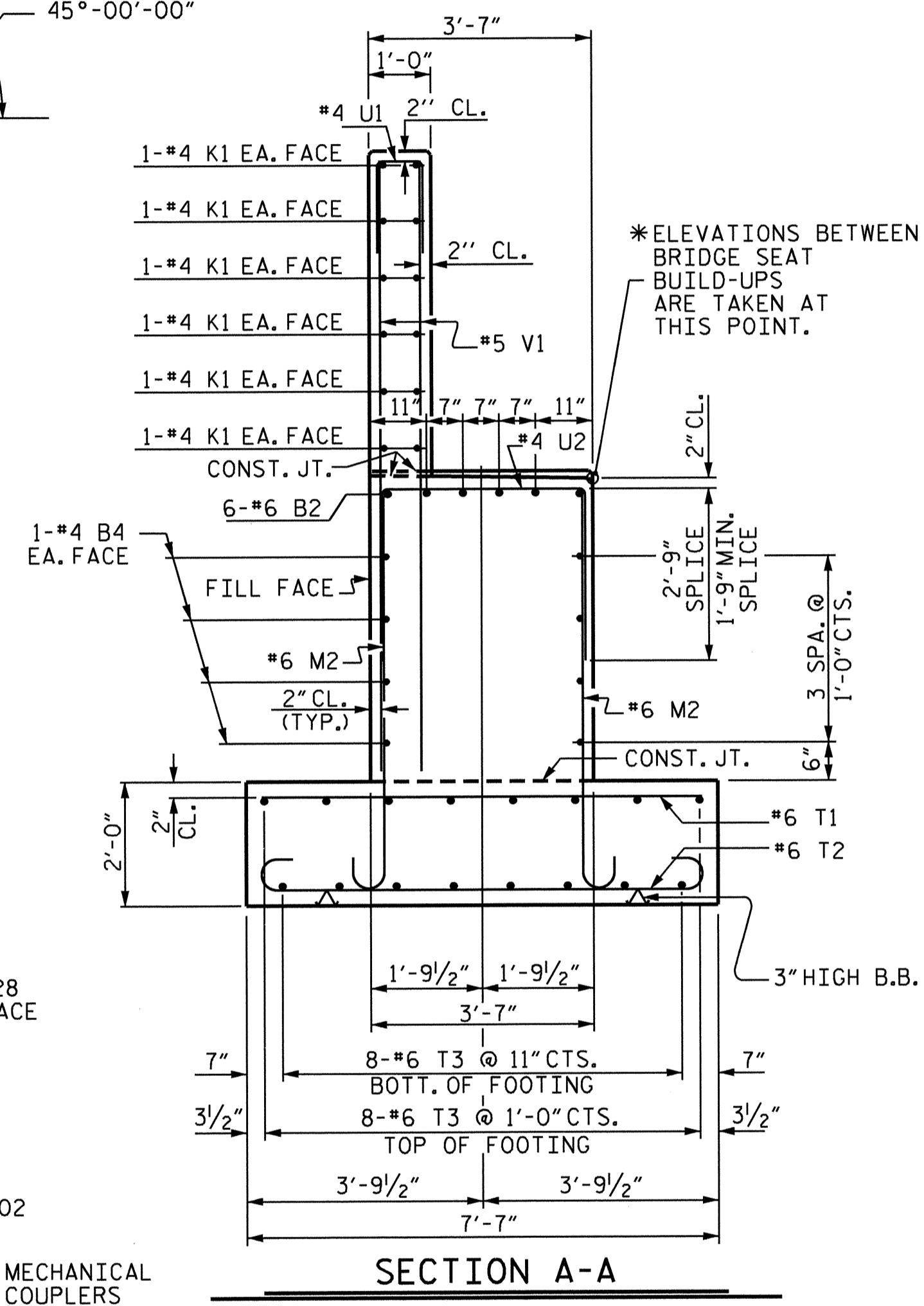
PLAN - STAGE I



DETAIL A



ELEVATION - STAGE I



SECTION A-A

PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72 -L-

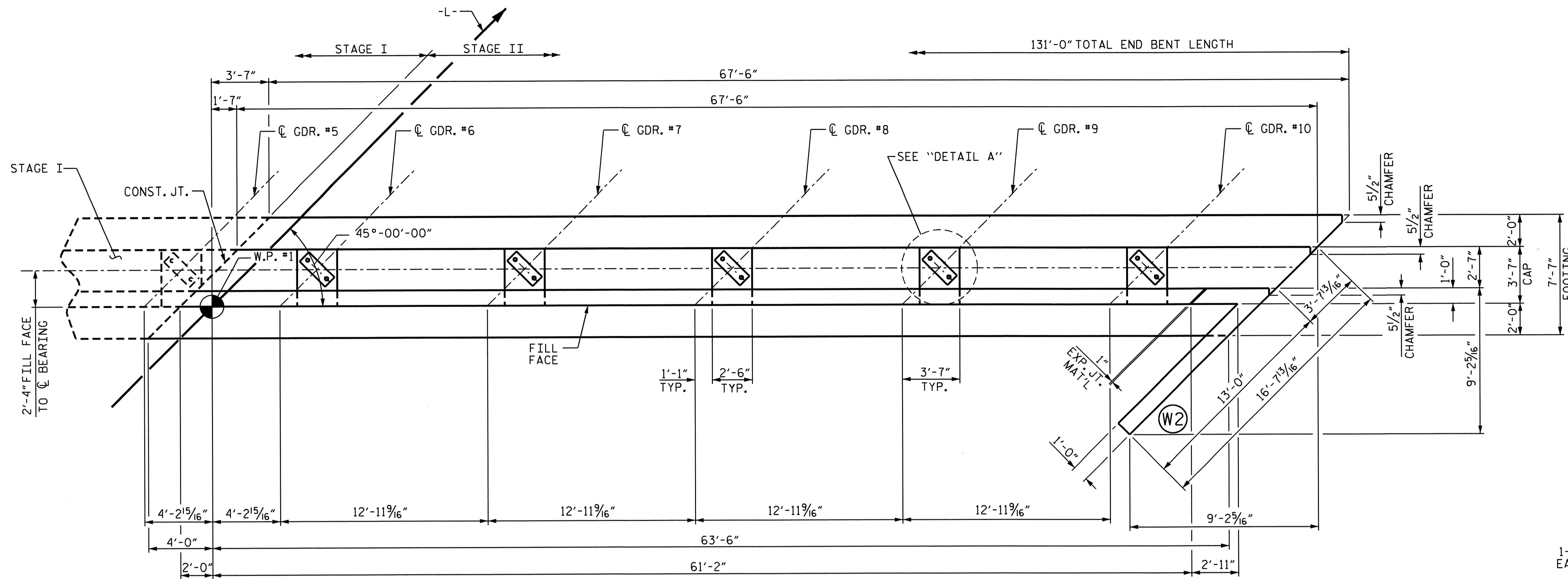
SHEET 1 OF 4
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT No. 1
 (STAGE I)

DRAWN BY: D. HODGE DATE: 1/14
 CHECKED BY: H.T. BARBOUR DATE: 2/14
 DESIGN ENGINEER OF RECORD: M.A. LEBLANC DATE: 3/14

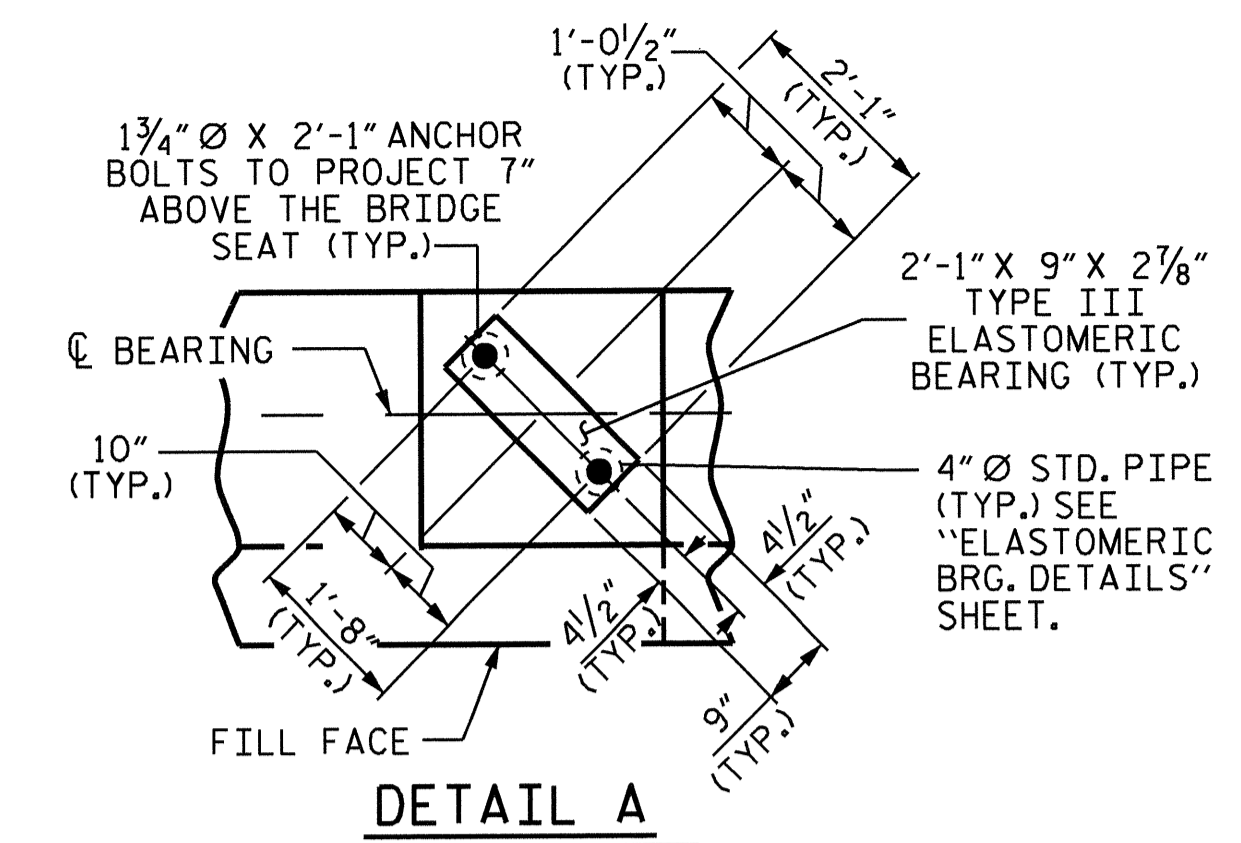
FOR "SECTION B-B", SEE SHEET 4 OF 4.
 FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEAT BUILDUPS, SEE "SECTION A-A".
 FOR ADDITIONAL SPLAYED REINFORCING IN CAP AND FOOTING, SEE SHEET 4 OF 4.



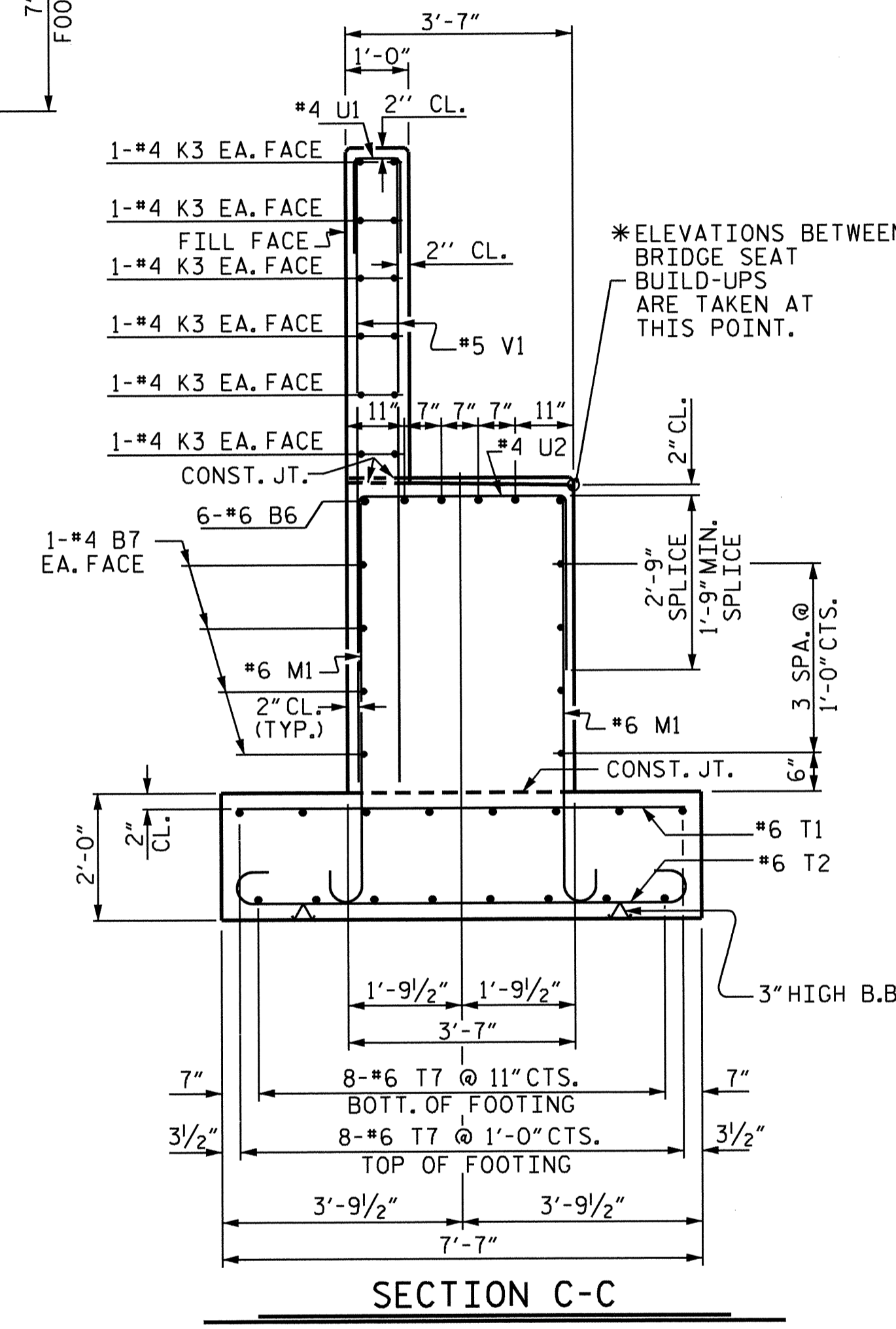
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-43 TOTAL SHEETS 62
2			4			



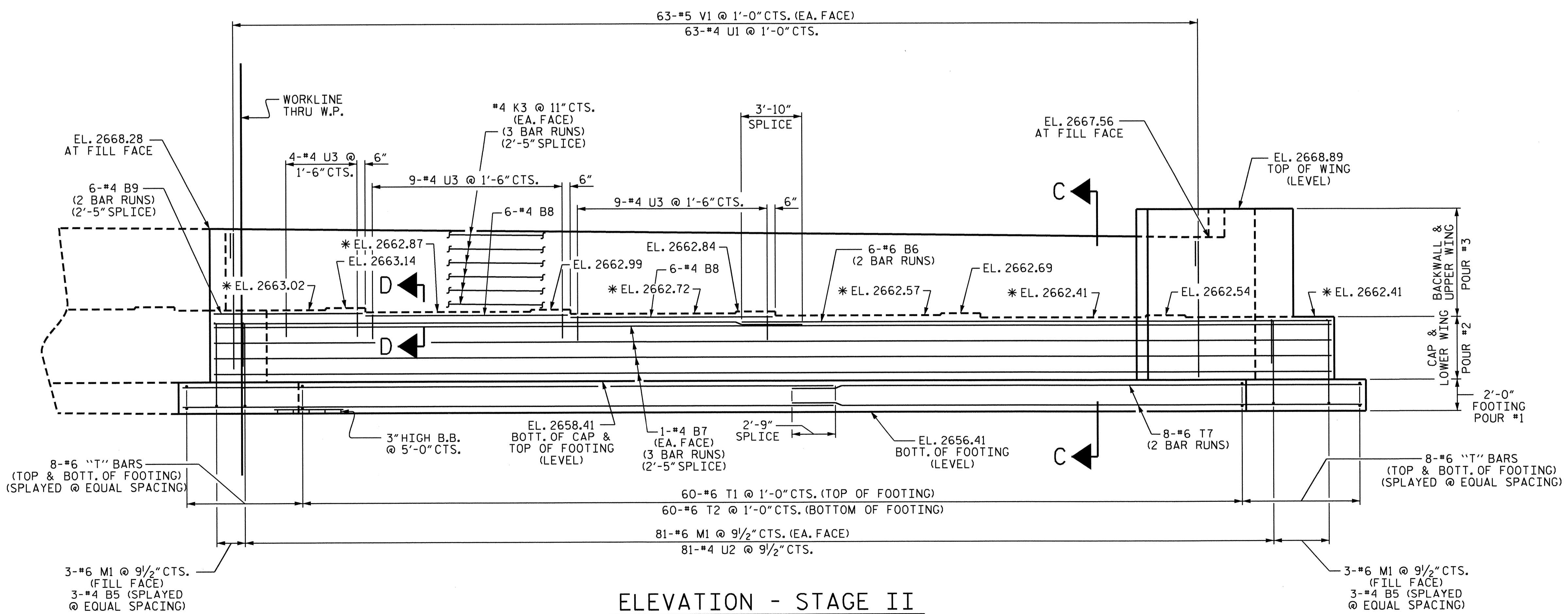
PLAN - STAGE II



DETAIL A



SECTION C-C



ELEVATION - STAGE II

PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72 -L-
 SHEET 2 OF 4

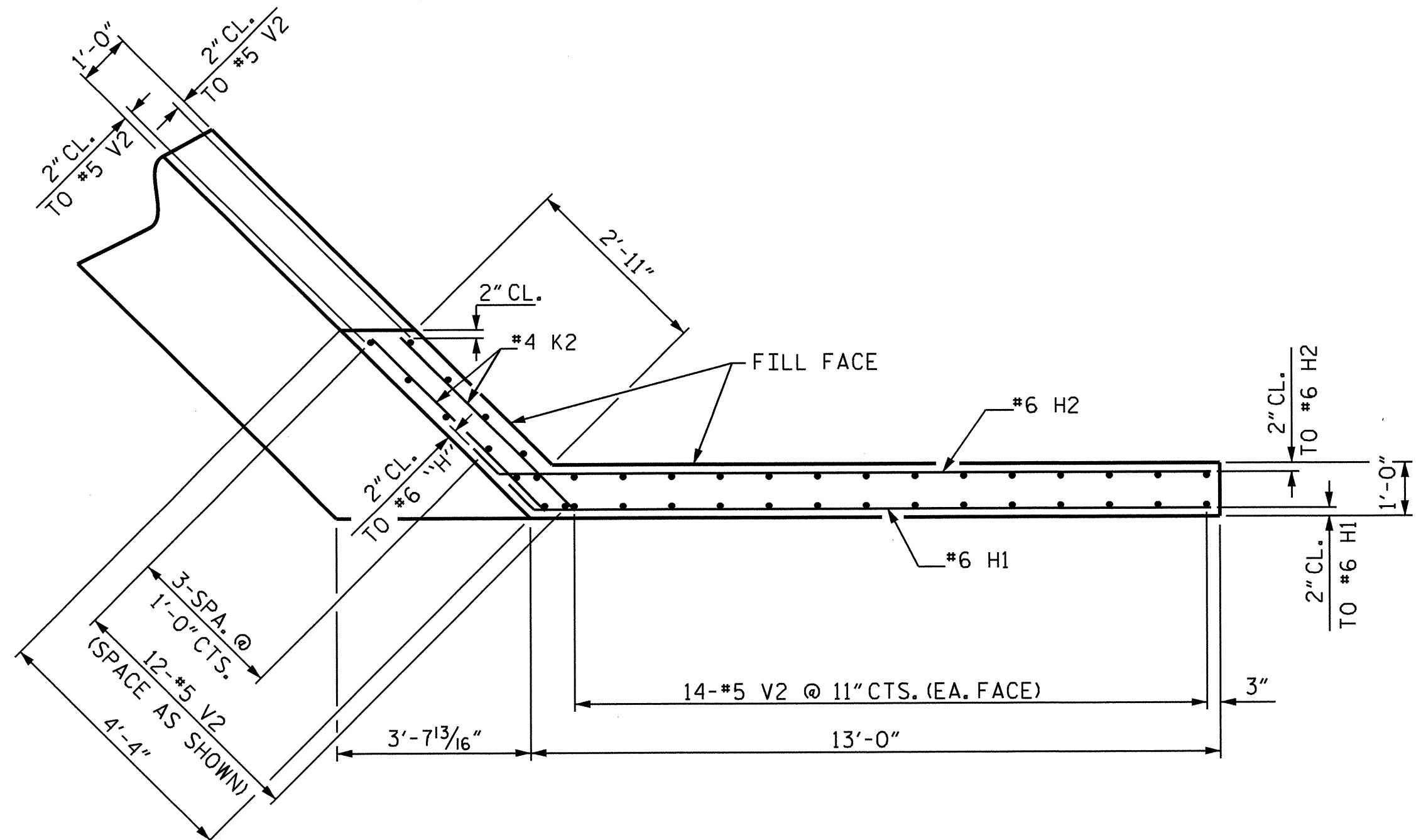
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT No. 1
 (STAGE II)



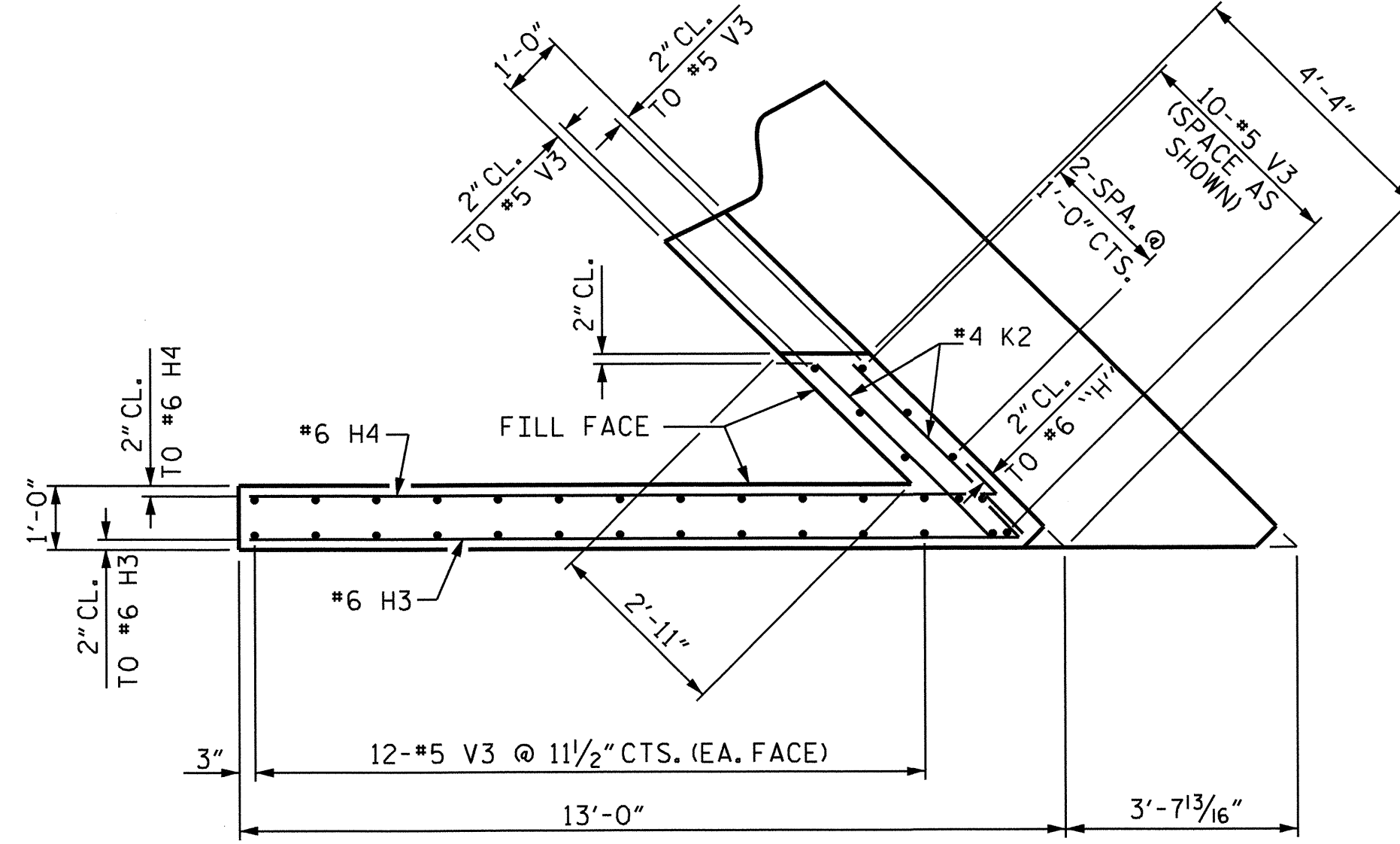
DRAWN BY: D. HODGE DATE: 1/14
 CHECKED BY: H.I. BARBOUR DATE: 2/14
 DESIGN ENGINEER OF RECORD: M.A. LEBLANC DATE: 3/14

FOR "SECTION D-D", SEE SHEET 4 OF 4.
 FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEAT BUILDUPS, SEE "SECTION A-A".
 FOR ADDITIONAL SPLAYED REINFORCING IN CAP AND FOOTING, SEE SHEET 4 OF 4.

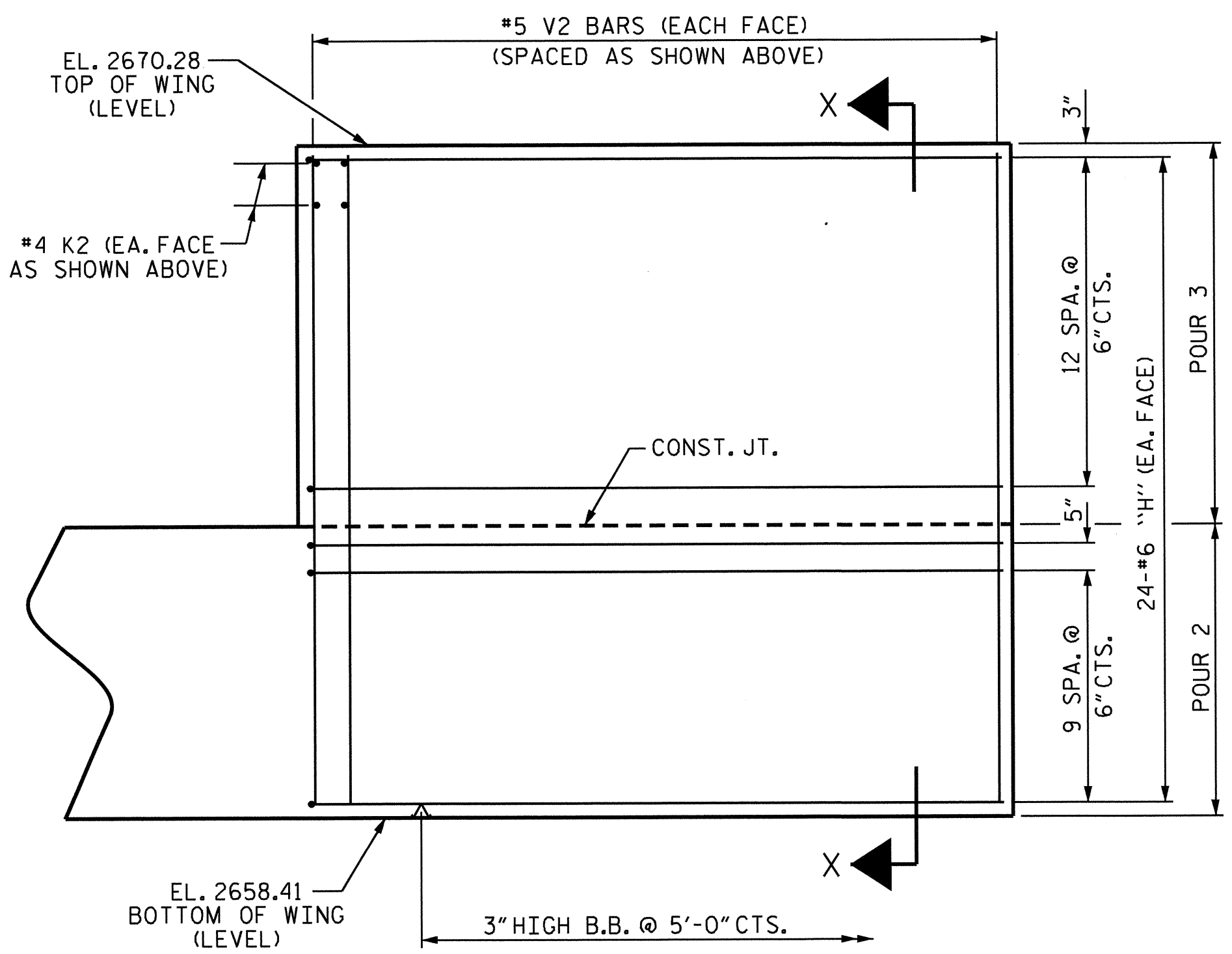
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-44	
1			3			TOTAL SHEETS	62
2			4				



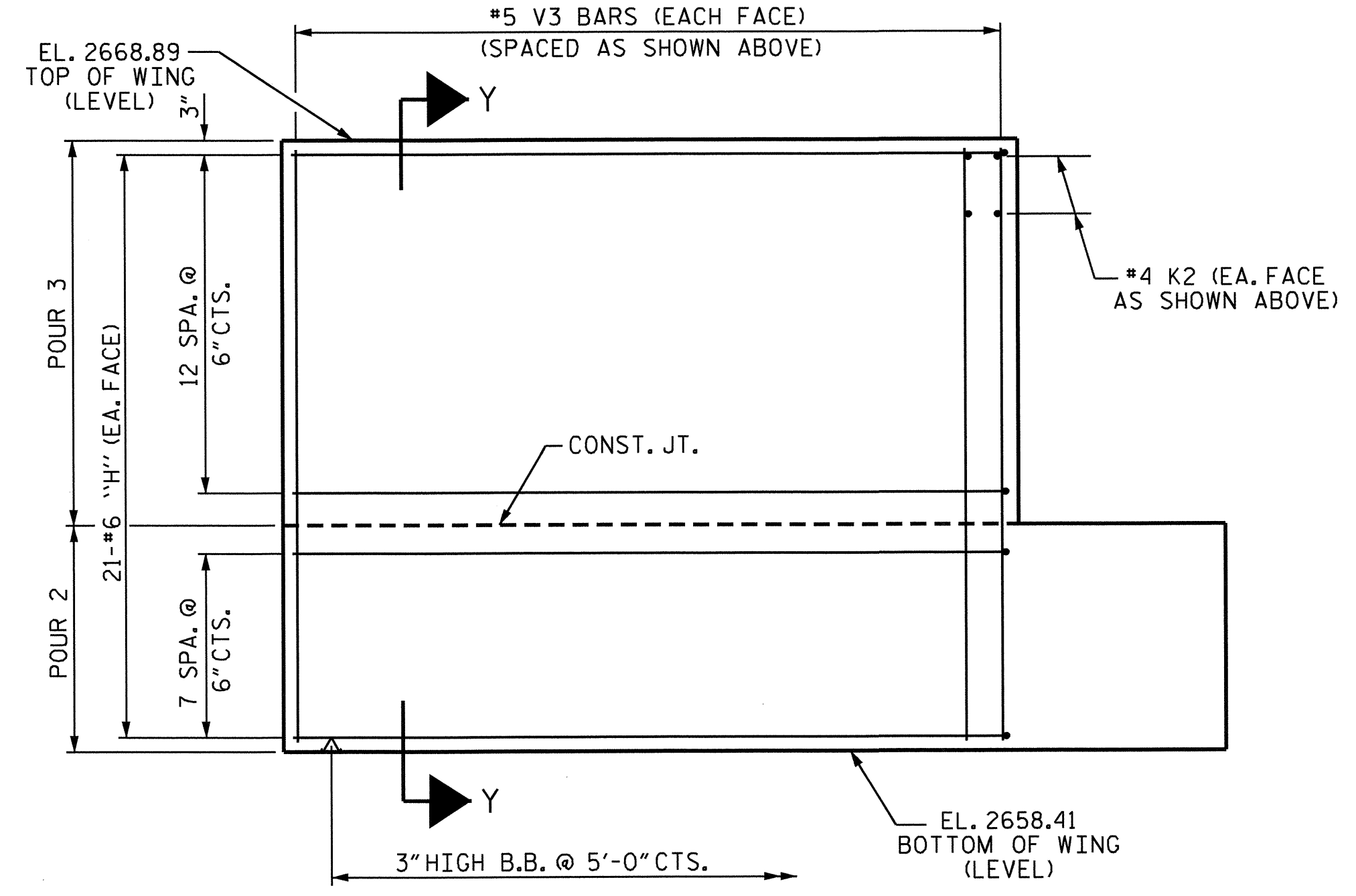
PLAN OF LEFT WING - (W1)
(STAGE I)



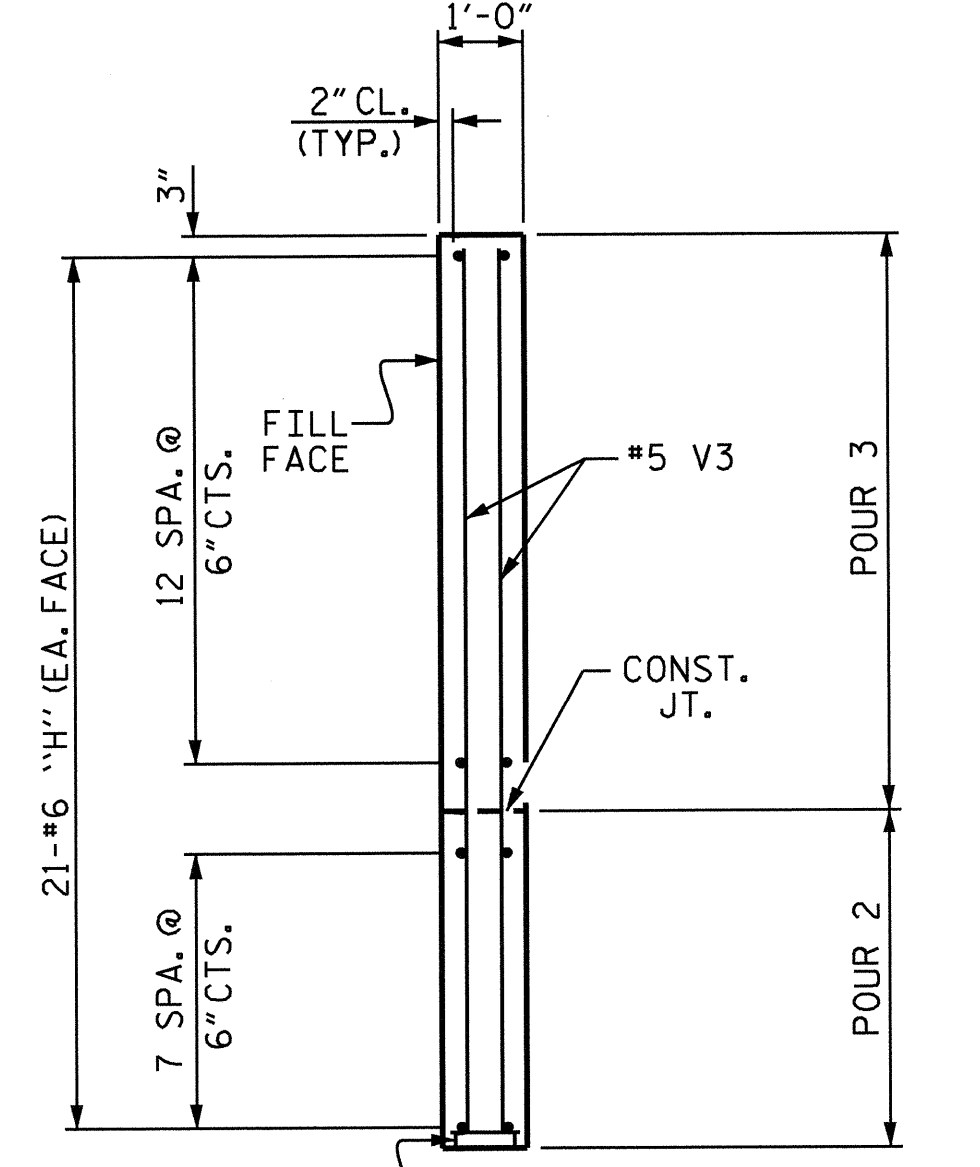
PLAN OF RIGHT WING - (W2)
(STAGE II)



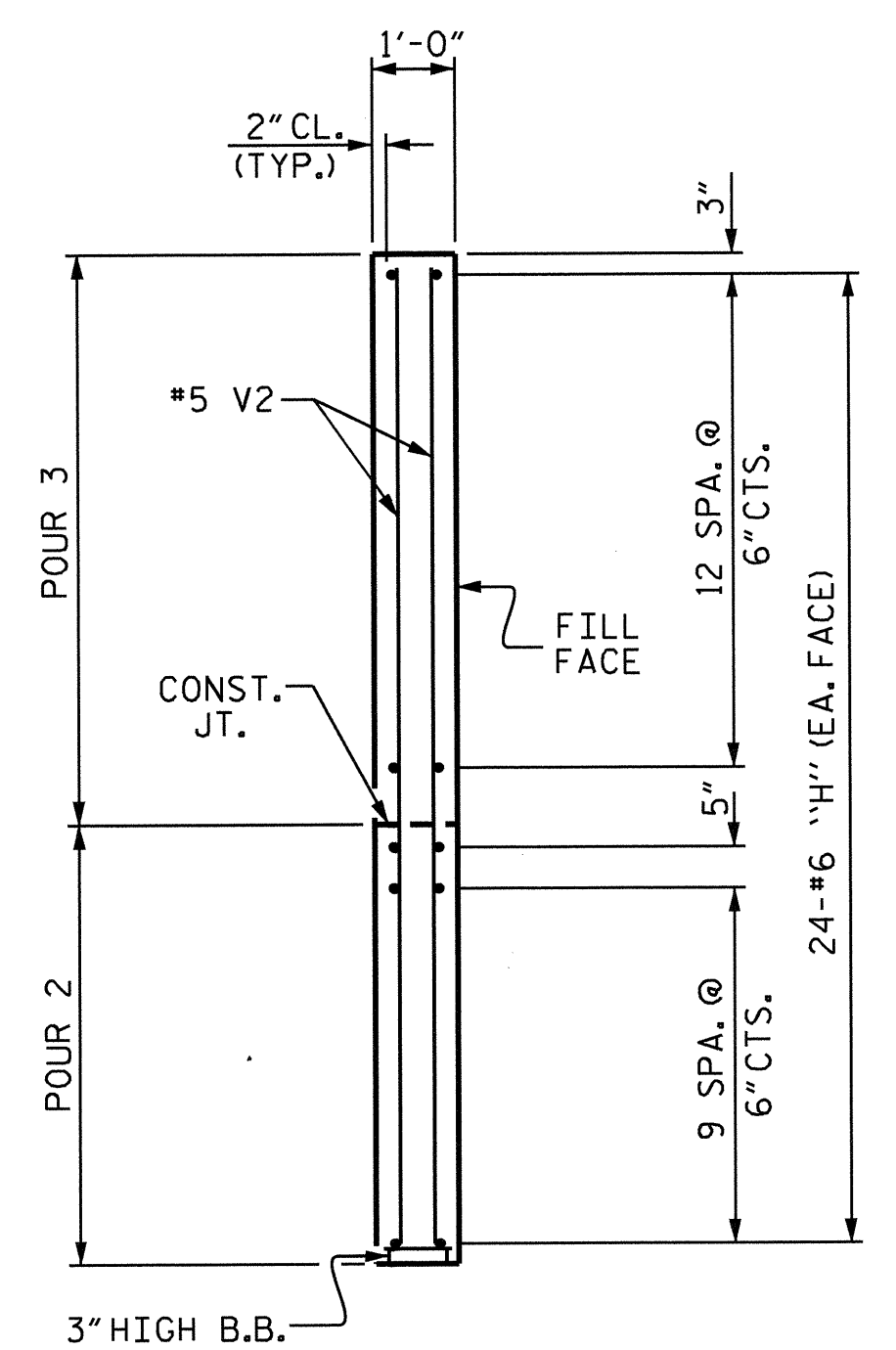
ELEVATION OF LEFT WING - (W1)
(STAGE I)



ELEVATION OF RIGHT WING - (W2)
(STAGE II)



SECTION Y-Y



SECTION X-X

PROJECT NO. B-4554
JACKSON COUNTY
STATION: 27+11.72 -L-

SHEET 3 OF 4
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

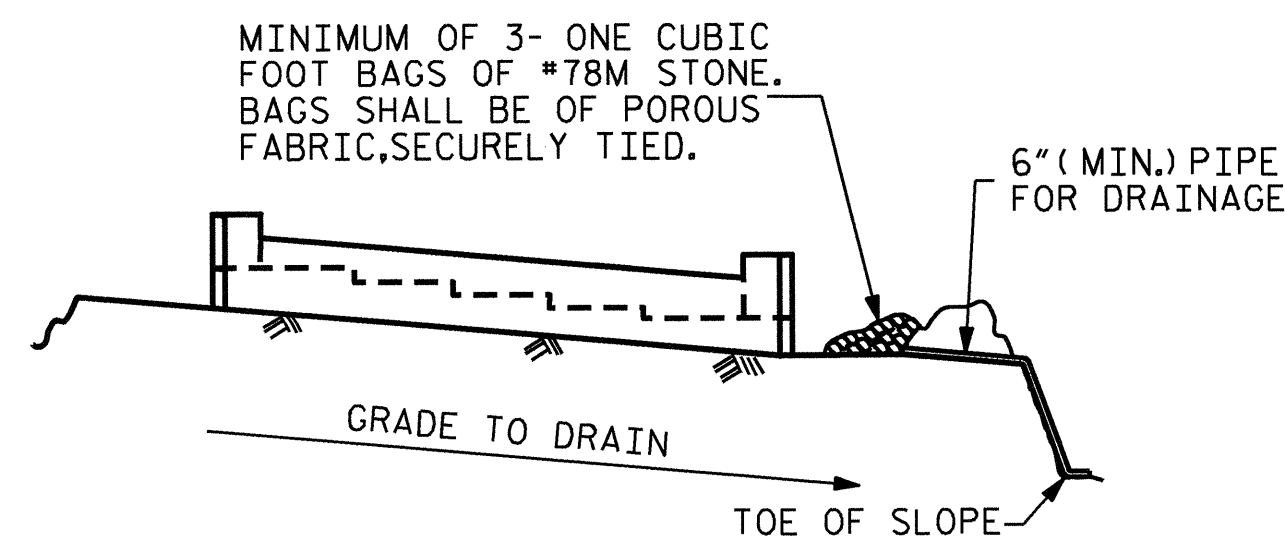
SUBSTRUCTURE
END BENT No. 1

DRAWN BY: D. HODGE DATE: 1/14
CHECKED BY: H.T. BARBOUR DATE: 2/14
DESIGN ENGINEER OF RECORD: M.A. LEBLANC DATE: 3/14

11-MAR-2014 09:27
R:\Structures\Final Plans\B4554.LD.EB*1.dgn
dahodge



REVISIONS						SHEET NO. S-45 TOTAL SHEETS 62
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

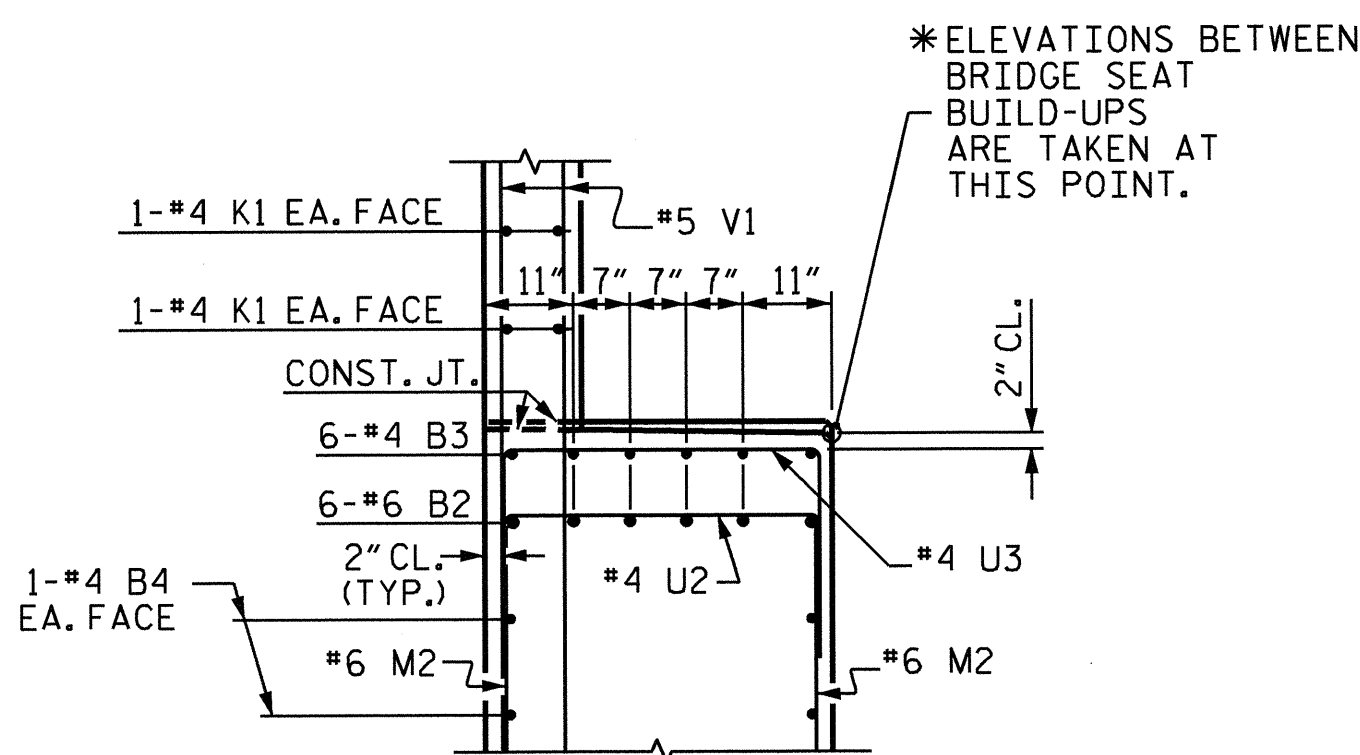


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

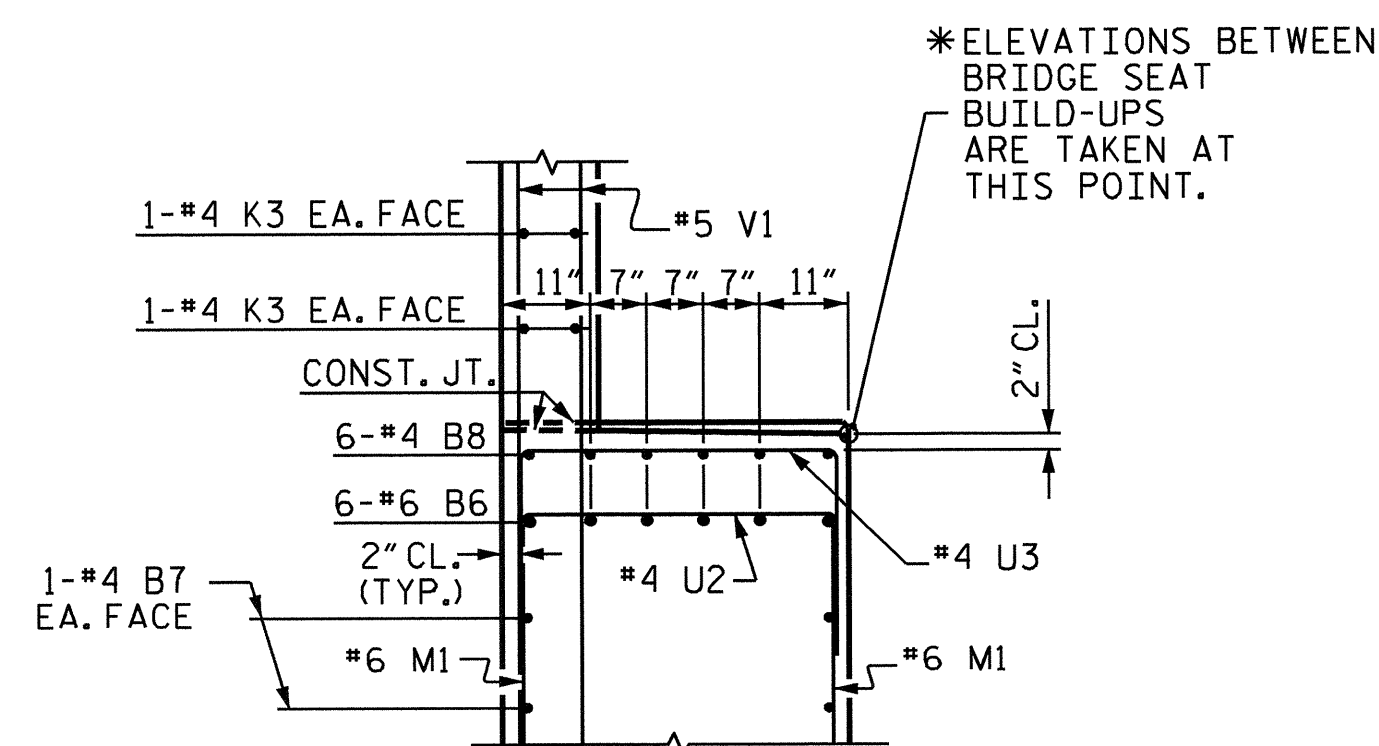
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

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

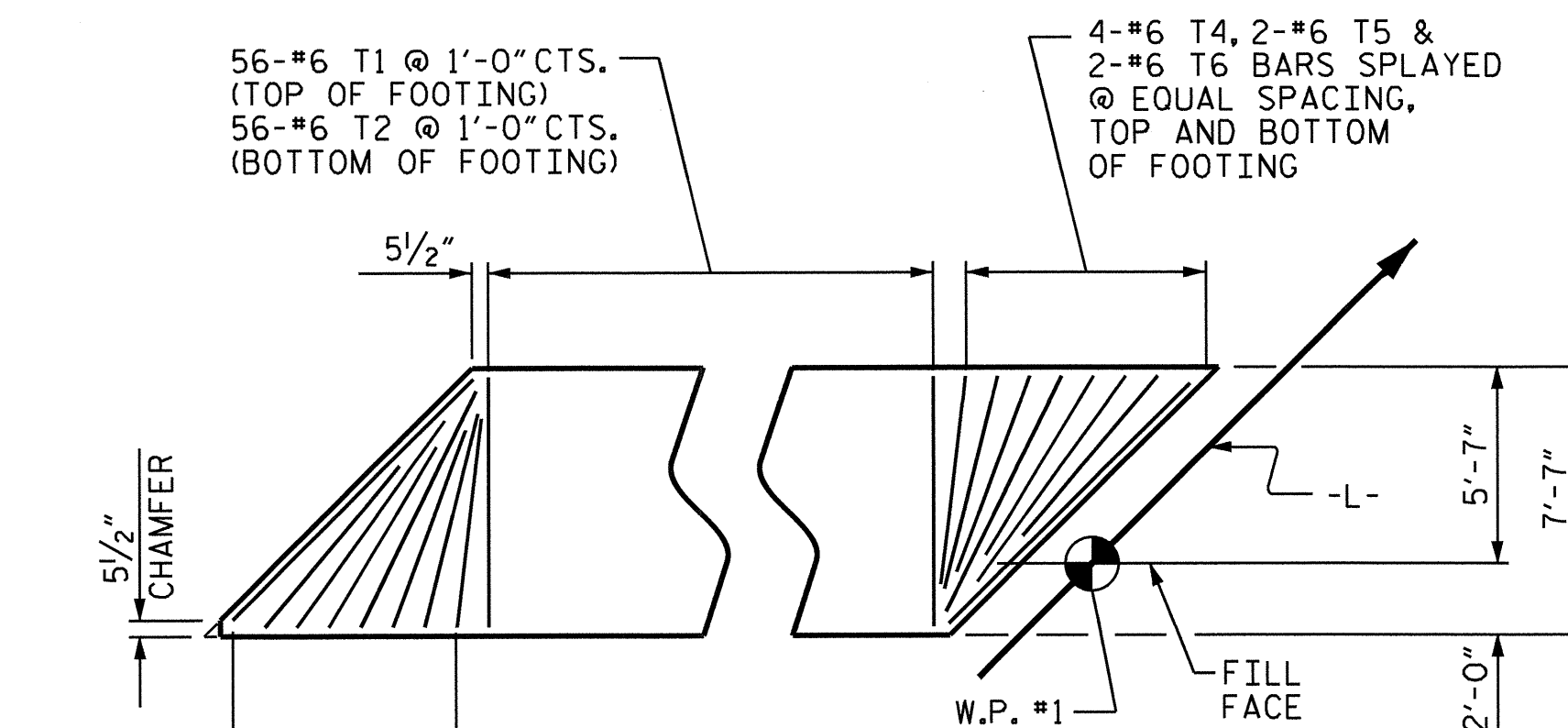
TEMPORARY DRAINAGE AT END BENT



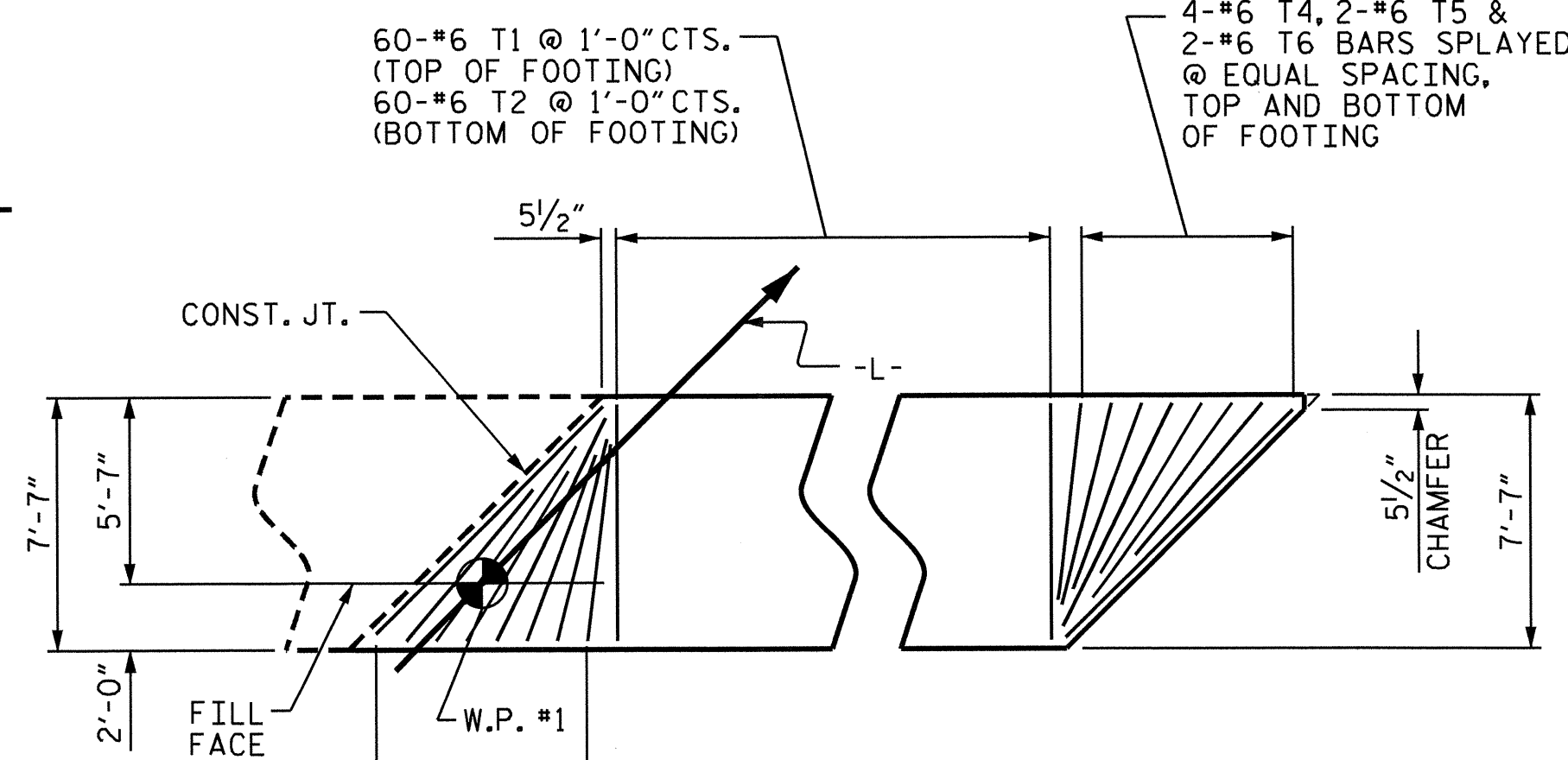
SECTION B-B



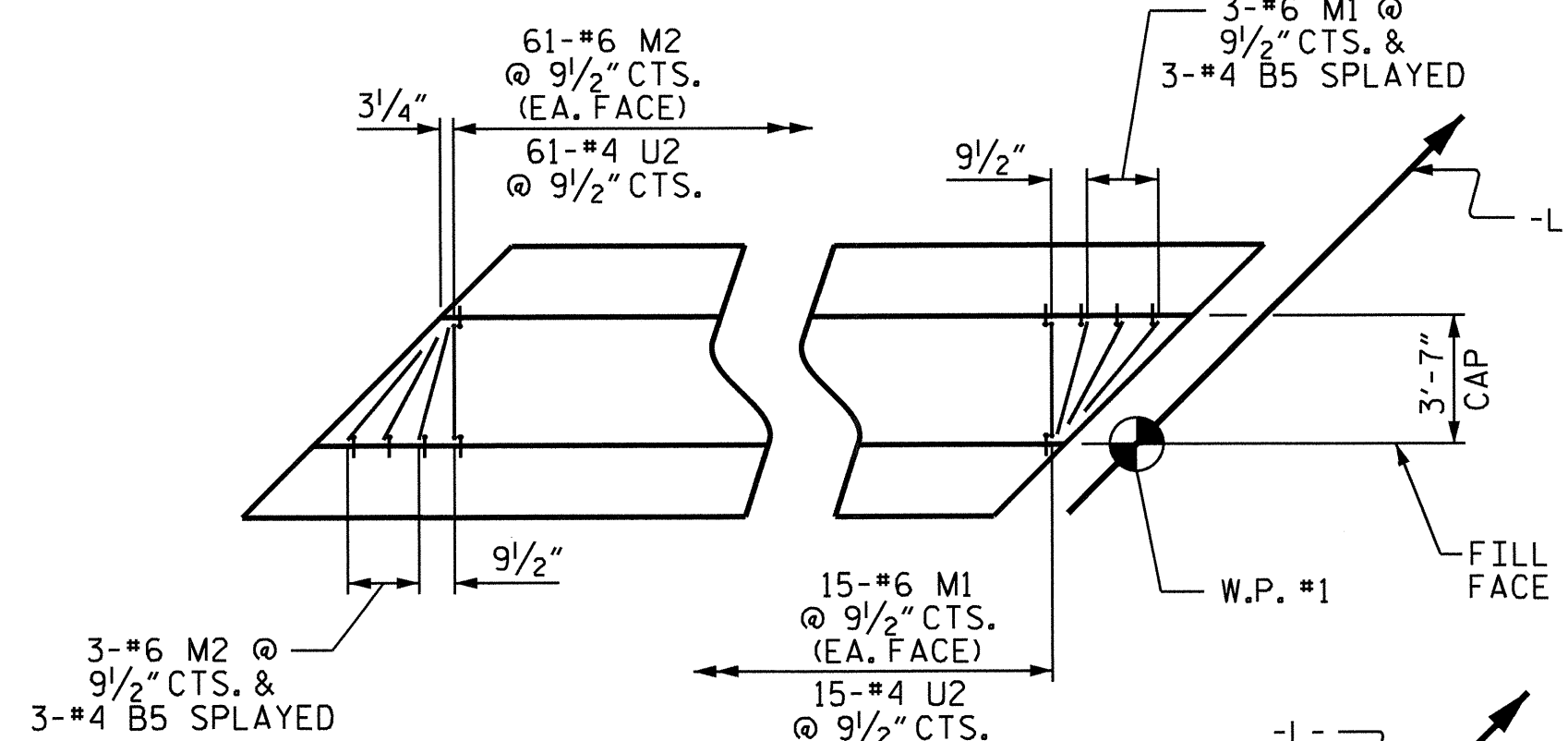
SECTION D-D



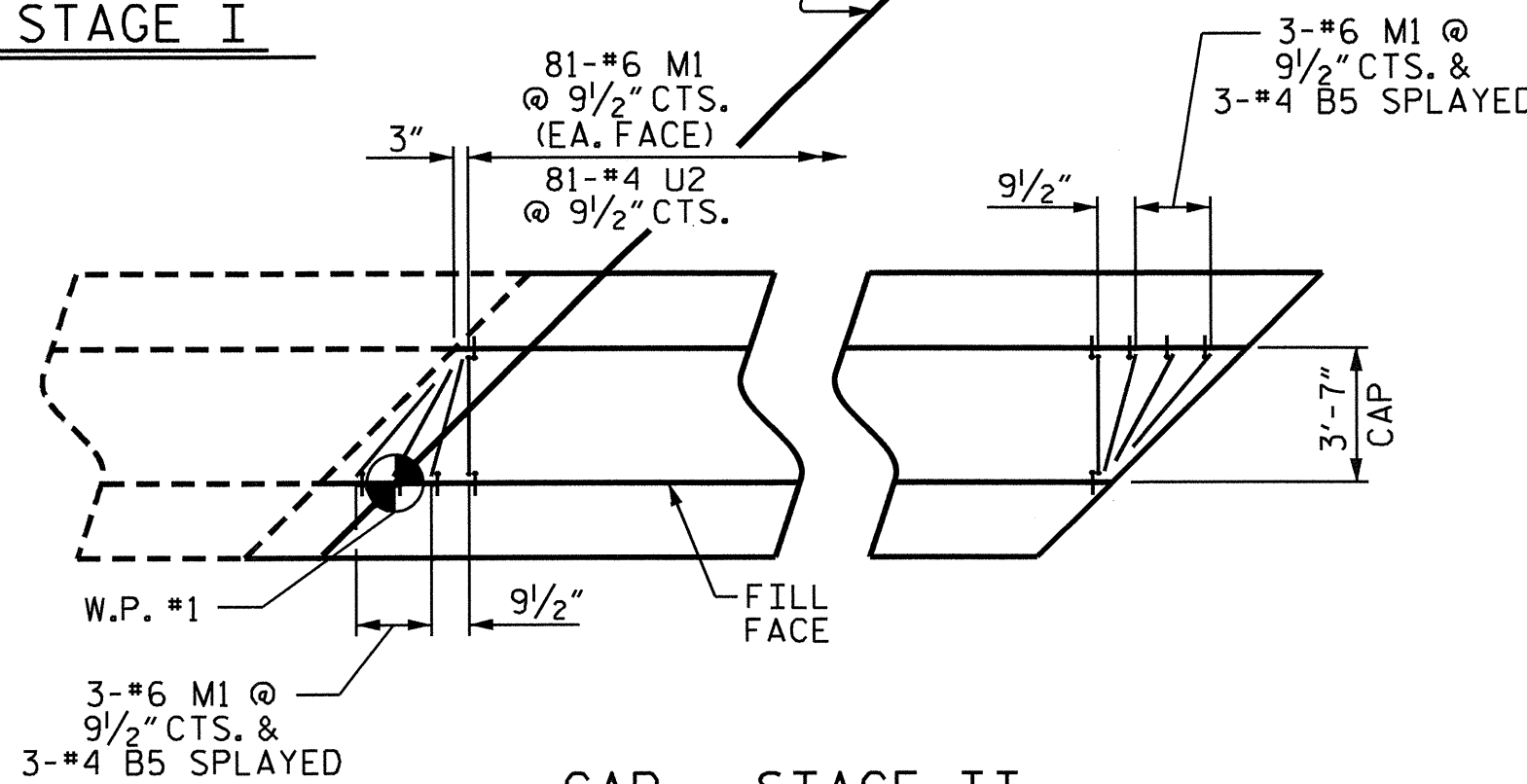
FOOTING - STAGE I



FOOTING - STAGE II

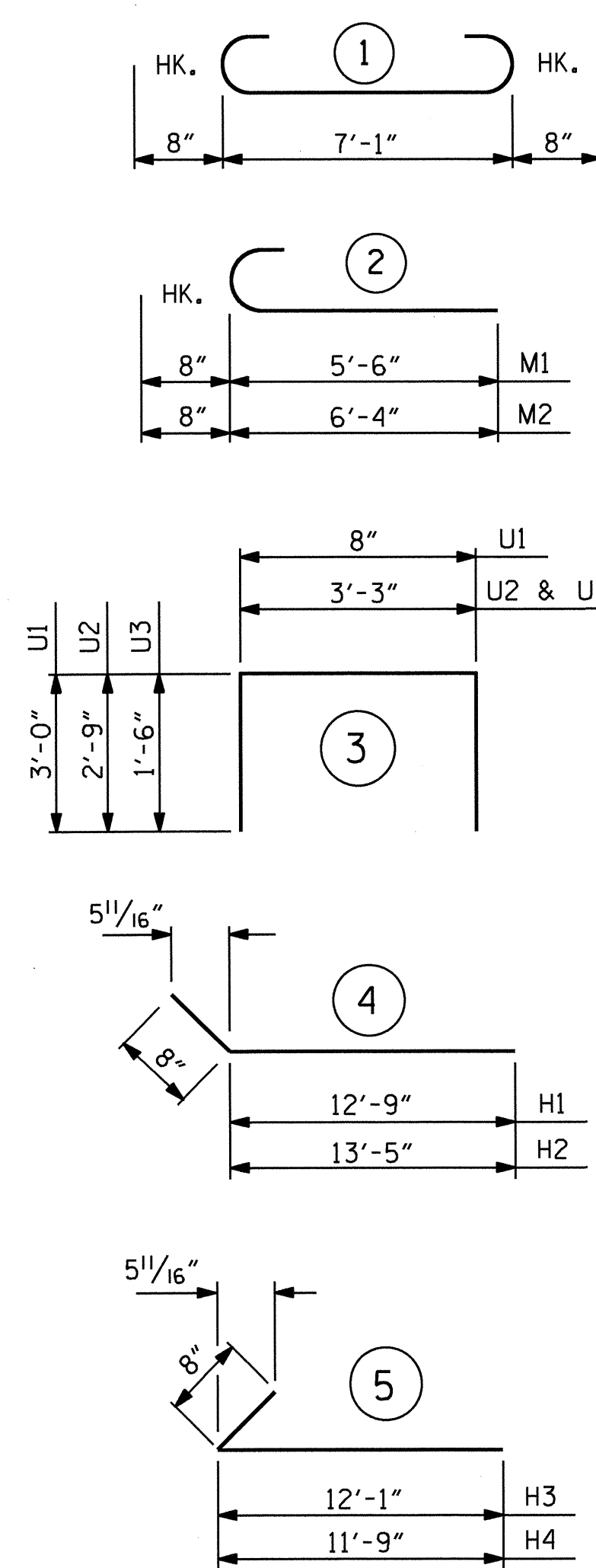


CAP - STAGE I



CAP - STAGE II

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT No. 1

STAGE I					STAGE II				
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	STR	20'-1"	181	B5	6	STR	3'-4"	13
B2	12	STR	27'-7"	497	B6	12	STR	35'-1"	632
B3	12	STR	13'-5"	108	B7	24	STR	24'-0"	385
B4	24	STR	23'-7"	378	B8	12	STR	12'-10"	103
B5	6	STR	3'-4"	13	B9	12	STR	5'-10"	47
B10	6	STR	12'-10"	51					
					H3	21	STR	12'-9"	402
H1	24	STR	13'-5"	484	H4	21	STR	12'-5"	392
H2	24	STR	14'-1"	508					
					K1	4	STR	3'-9"	10
K1	36	STR	23'-7"	567	K3	36	STR	24'-0"	577
K2	4	STR	3'-9"	10					
					M1	168	STR	6'-2"	1556
M1	33	STR	6'-2"	306					
M2	125	STR	7'-0"	1314	T1	60	STR	7'-1"	638
					T2	60	STR	8'-5"	759
T1	56	STR	7'-1"	596	T4	16	STR	4'-3"	102
T2	56	STR	8'-5"	708	T5	8	STR	6'-3"	75
T3	32	STR	33'-7"	1614	T6	8	STR	7'-9"	93
T4	16	STR	4'-3"	102	T7	32	STR	34'-7"	1662
T5	8	STR	6'-3"	75					
T6	8	STR	7'-9"	93	U1	63	STR	6'-8"	281
					U2	81	STR	8'-9"	473
U1	59	STR	6'-8"	263	U3	22	STR	6'-3"	92
U2	76	STR	8'-9"	444					
U3	23	STR	6'-3"	96	V1	126	STR	8'-9"	1150
					V3	34	STR	10'-1"	358
V1	118	STR	8'-9"	1077					
V2	40	STR	11'-6"	480					

REINFORCING STEEL LBS. 9,965 REINFORCING STEEL LBS. 9,800

CLASS A CONCRETE BREAKDOWN

ITEM	QUANTITY	ITEM	QUANTITY
POUR #1 FOOTING	35.7 C.Y.	POUR #1 FOOTING	37.9 C.Y.
POUR #2 CAP & LOWER PART OF WINGS	44.7 C.Y.	POUR #2 CAP & LOWER PART OF WINGS	39.9 C.Y.
POUR #3 BACKWALL & UPPER PART OF WINGS	15.3 C.Y.	POUR #3 BACKWALL & UPPER PART OF WINGS	15.8 C.Y.
TOTAL CLASS A CONCRETE	95.7 C.Y.	TOTAL CLASS A CONCRETE	93.6 C.Y.
FOUNDATION EXCAVATION	221 C.Y.	FOUNDATION EXCAVATION	235 C.Y.

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR PIPE INSERT DETAILS, SEE ELASTOMERIC BEARINGS SHEET.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

EPOXY COAT THE END BENT CAP AFTER ADJUSTMENTS ARE MADE TO BEARINGS AND ANCHOR BOLTS ARE GROUTED.

INSTALL THE 4" DIA. 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.

TOTAL QUANTITIES

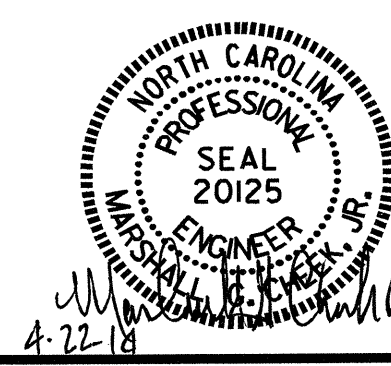
REINFORCING STEEL	19,765 LBS.
CLASS A CONCRETE	189.3 C.Y.
FOUNDATION EXCAVATION	456 C.Y.

PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 1



DRAWN BY: D. HODGE DATE: 2/14
 CHECKED BY: H.T. BARBOUR DATE: 2/14
 DESIGN ENGINEER OF RECORD: M.A. LEBLANC DATE: 3/14

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			62
2			4			

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

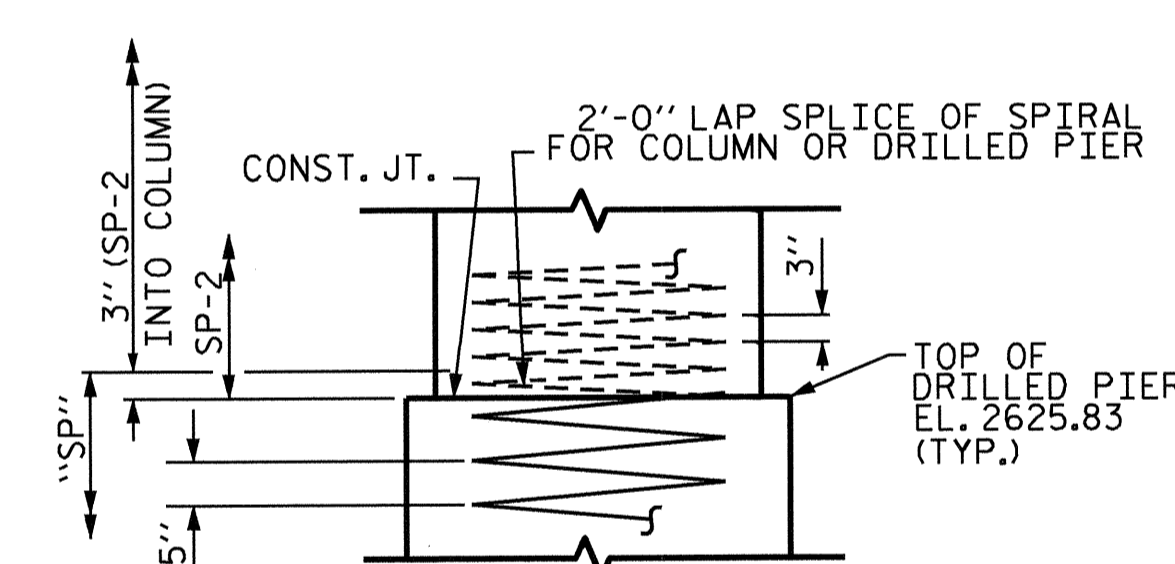
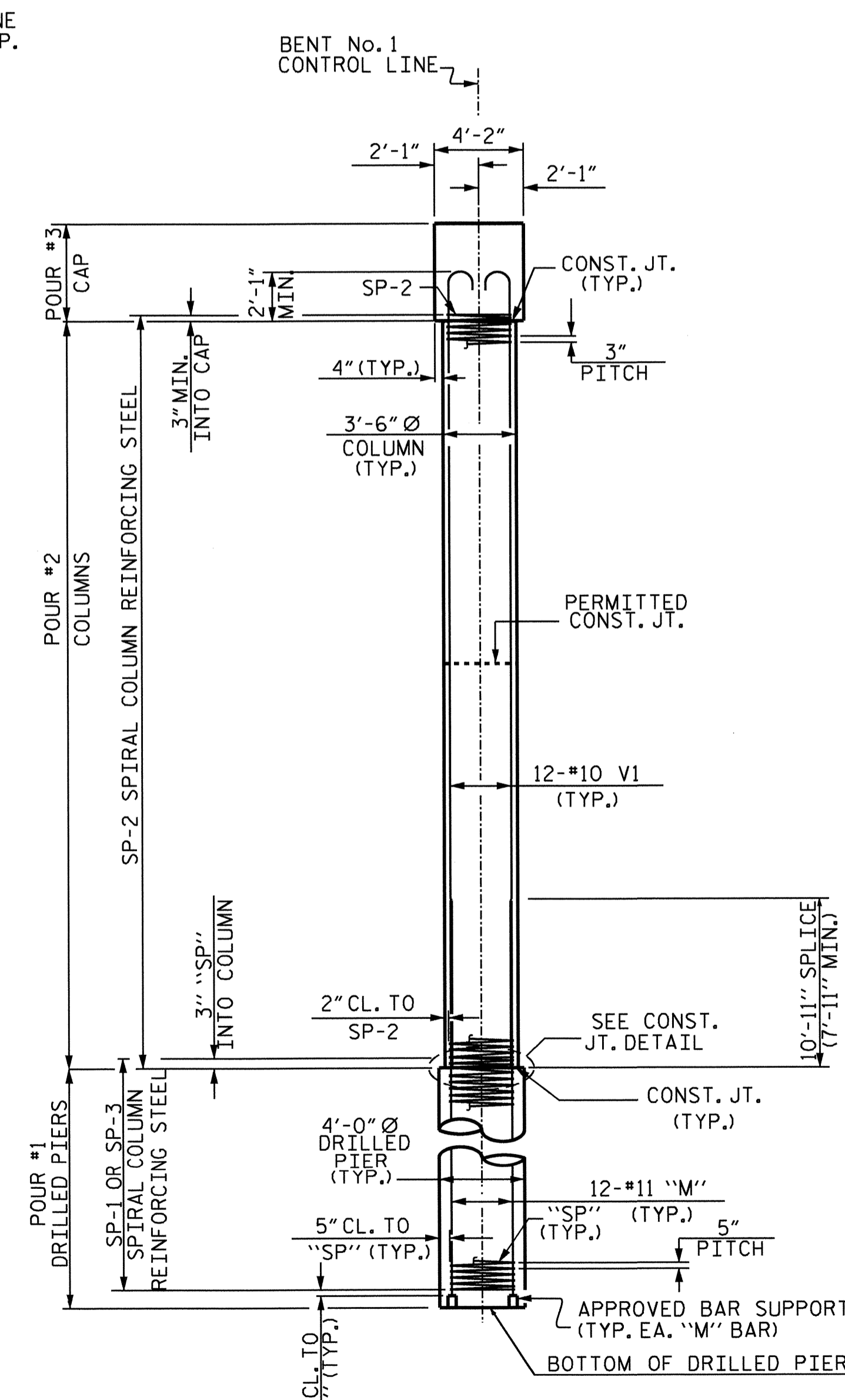
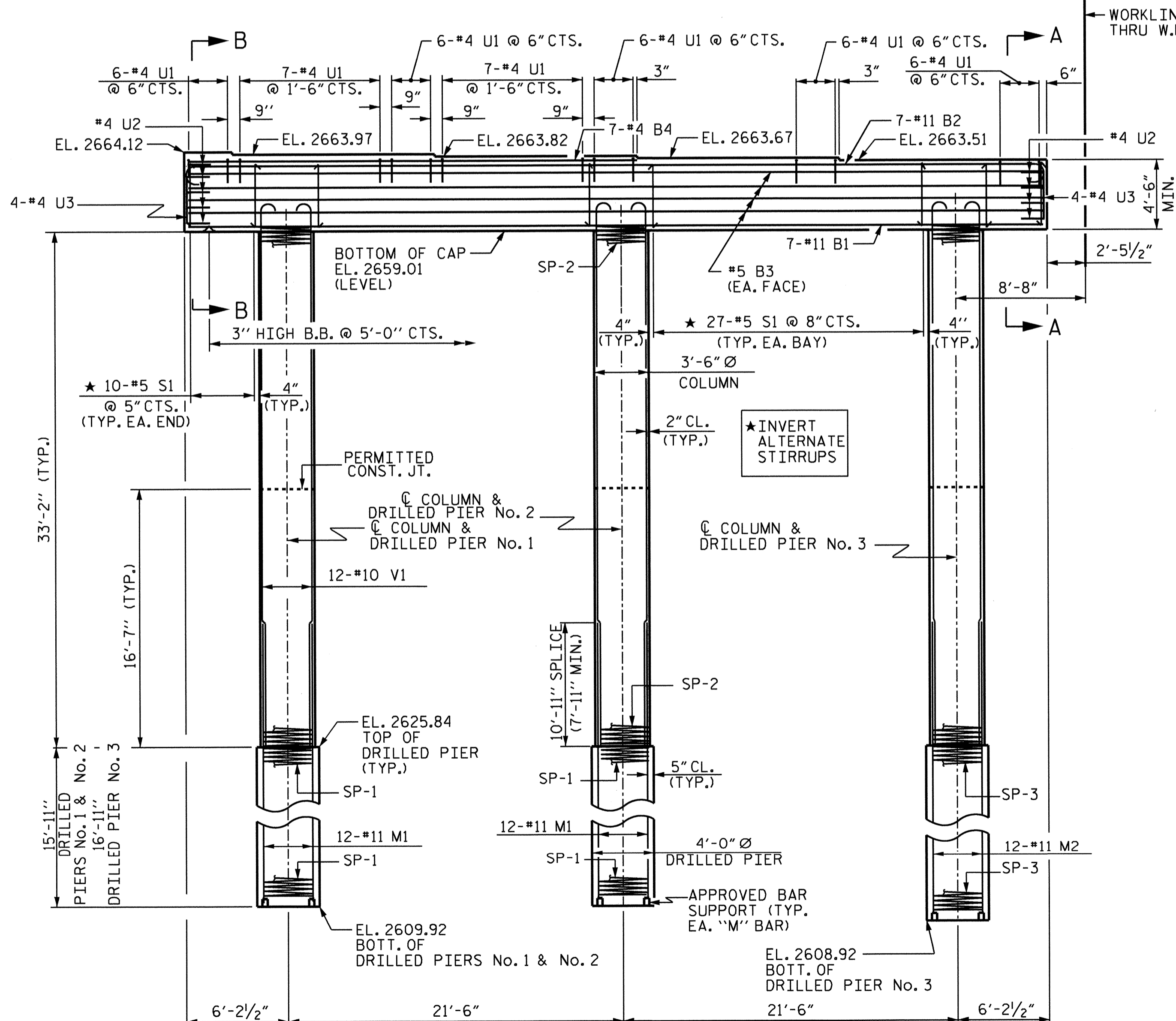
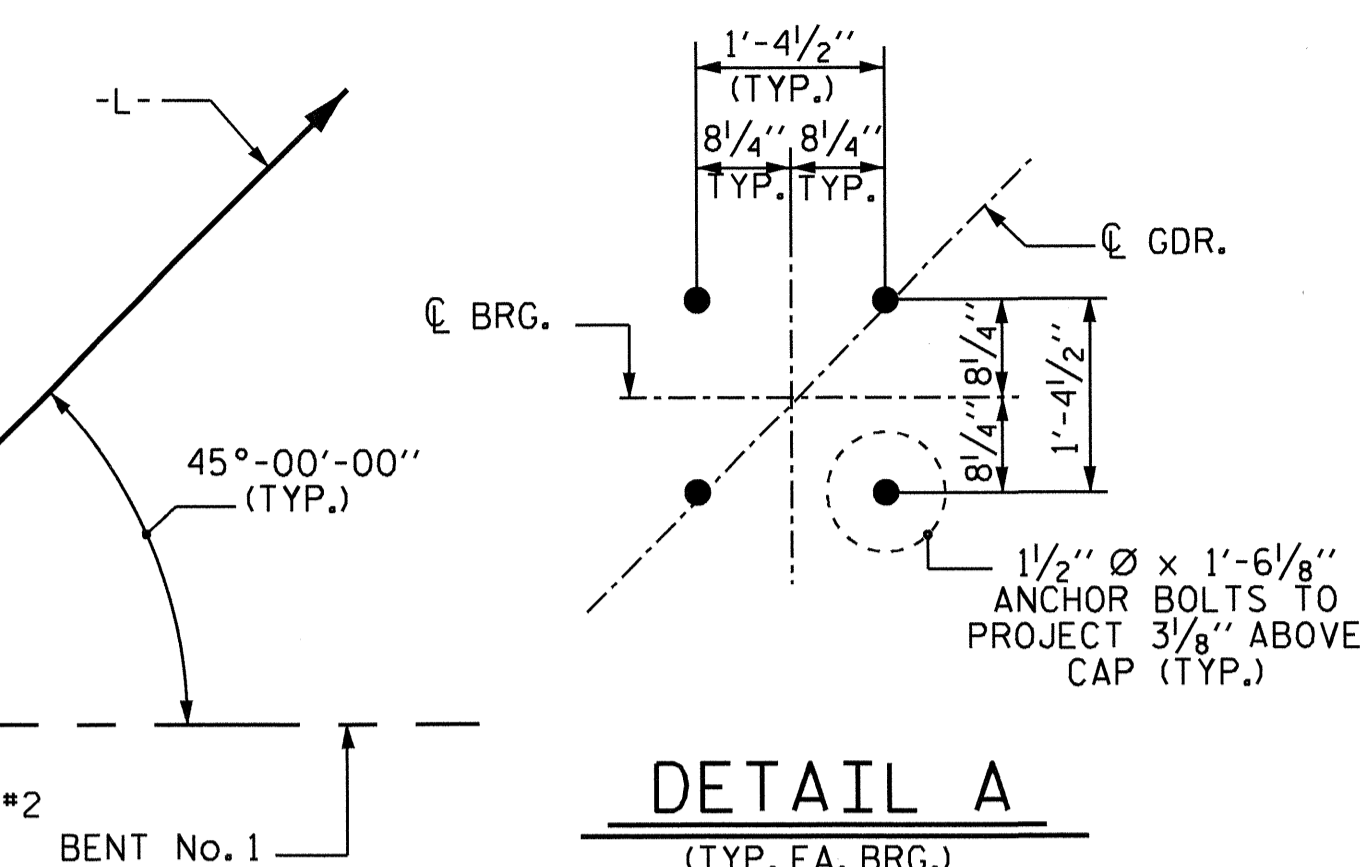
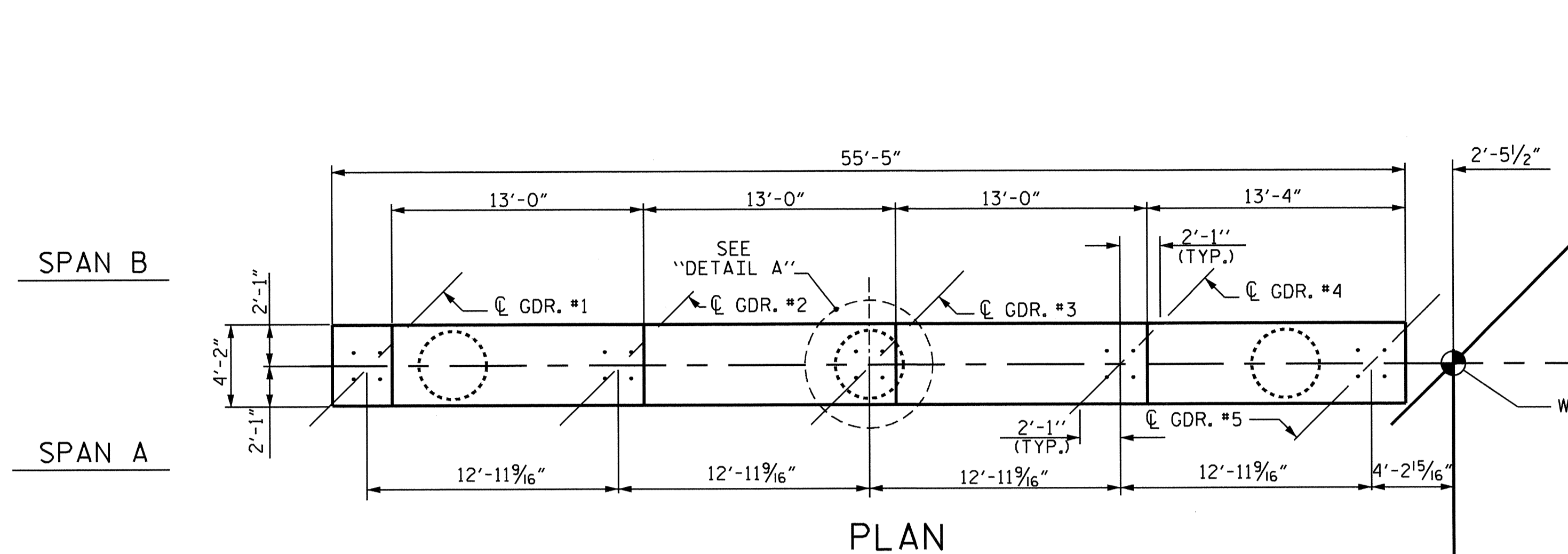
HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

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

THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND LINE ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FT. BELOW THE GROUND LINE.

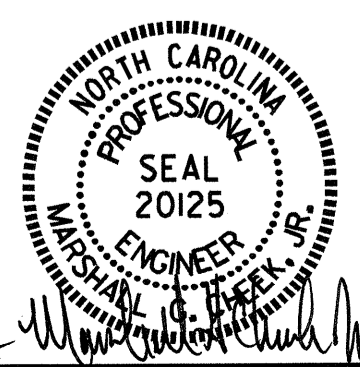
SPLICING OF THE LONGITUDINAL BARS IN THE DRILLED PIER WILL NOT BE PERMITTED.

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



DRAWN BY: M. POOLE DATE: 12/13
CHECKED BY: B. N. GRADY DATE: 02/14
DESIGN ENGINEER OF RECORD: M.A. LEBLANC DATE: 03/14

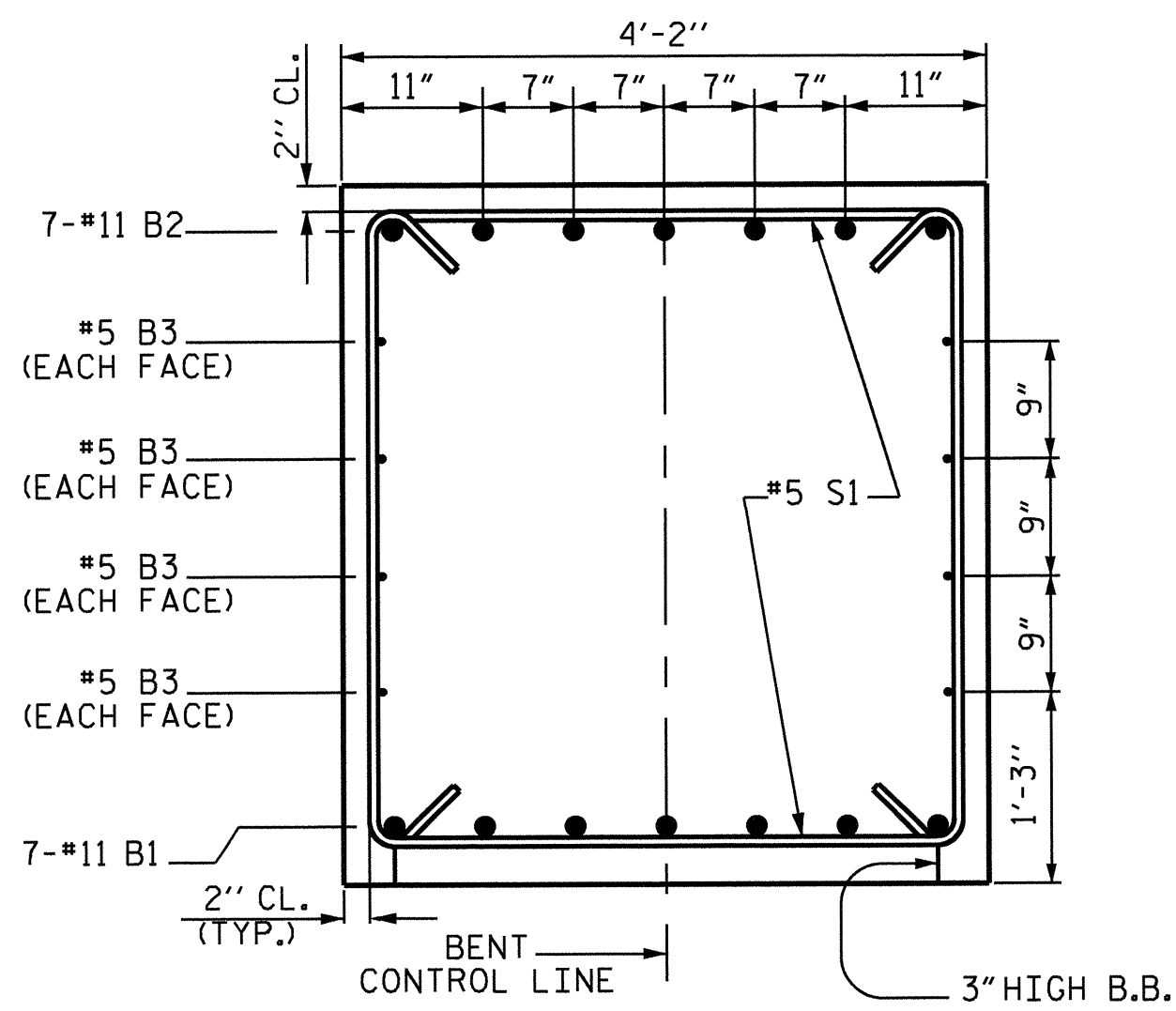
DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN AND DRILLED PIER EXCEPT AS NOTED.



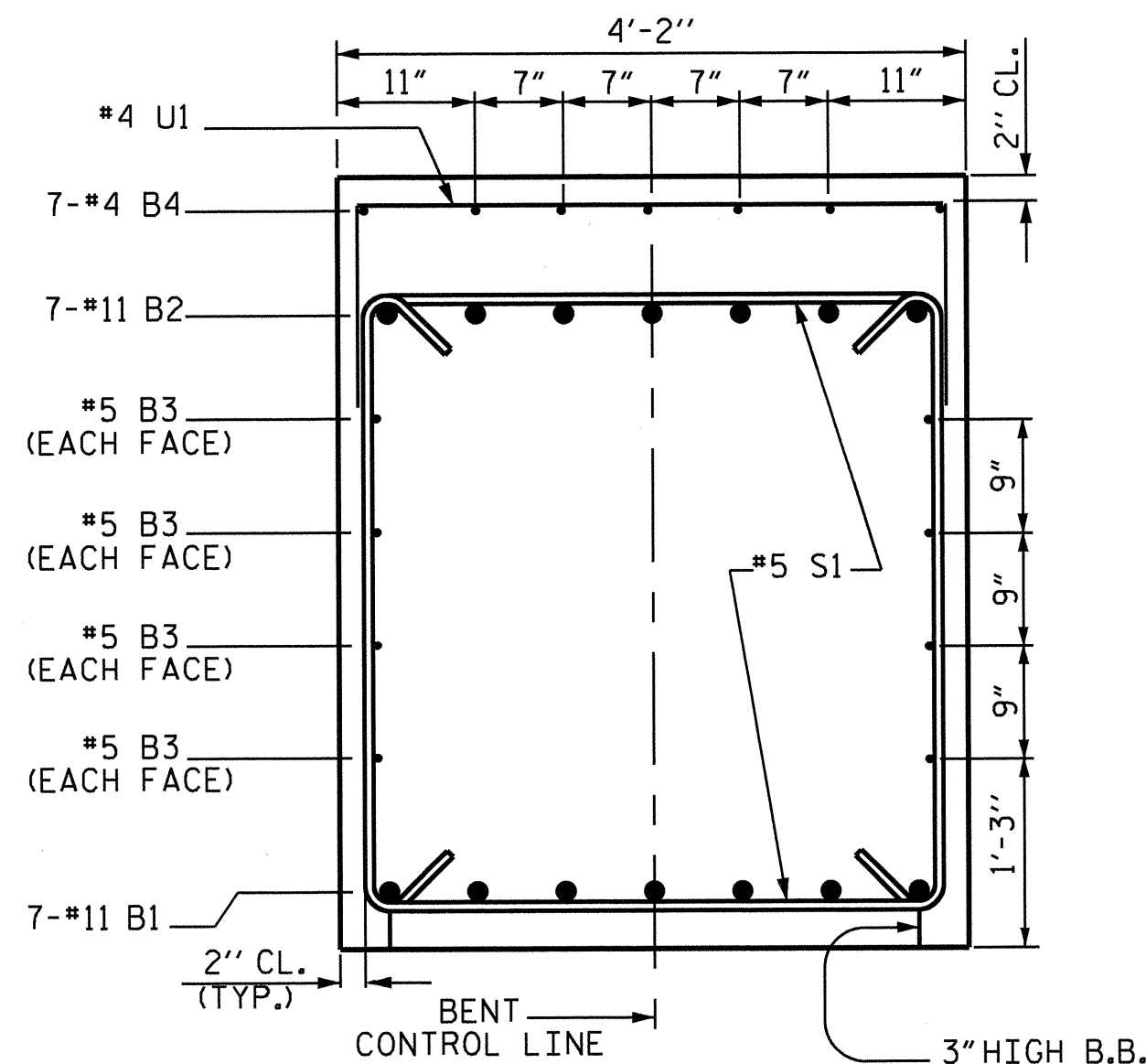
PROJECT NO. B-4554
JACKSON COUNTY
STATION: 27+11.72 -L-

SHEET 1 OF 2

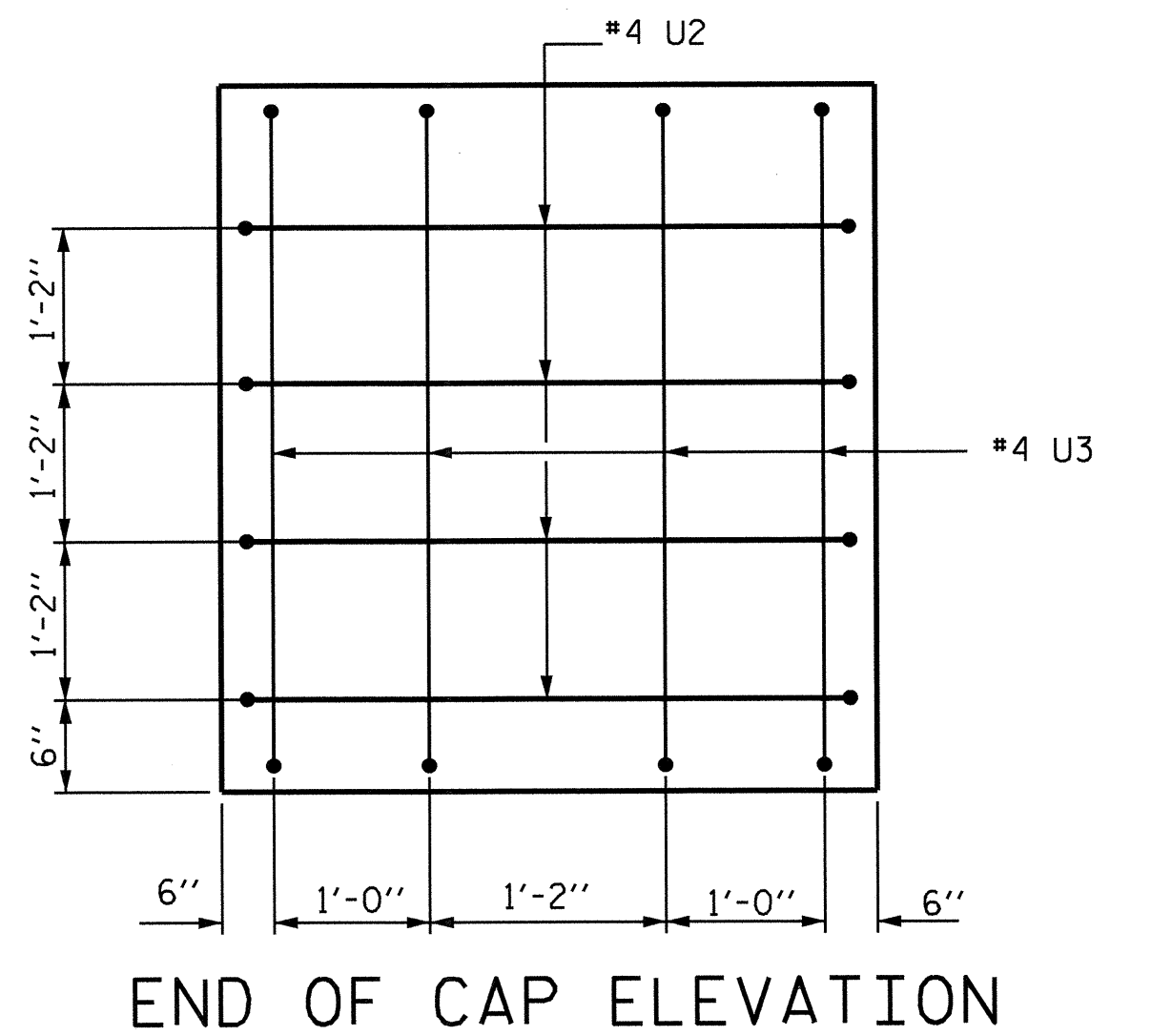
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-47
1			3			TOTAL SHEETS 62
2			4			



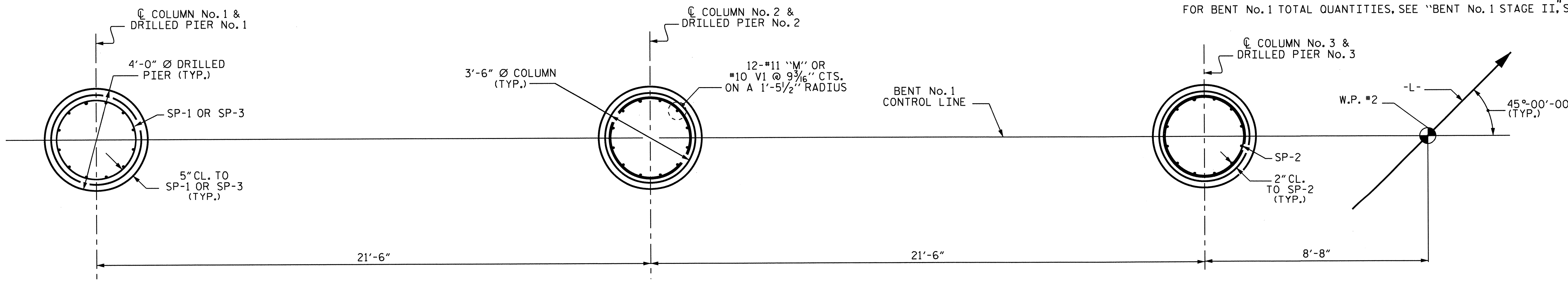
SECTION A-A



SECTION B-B

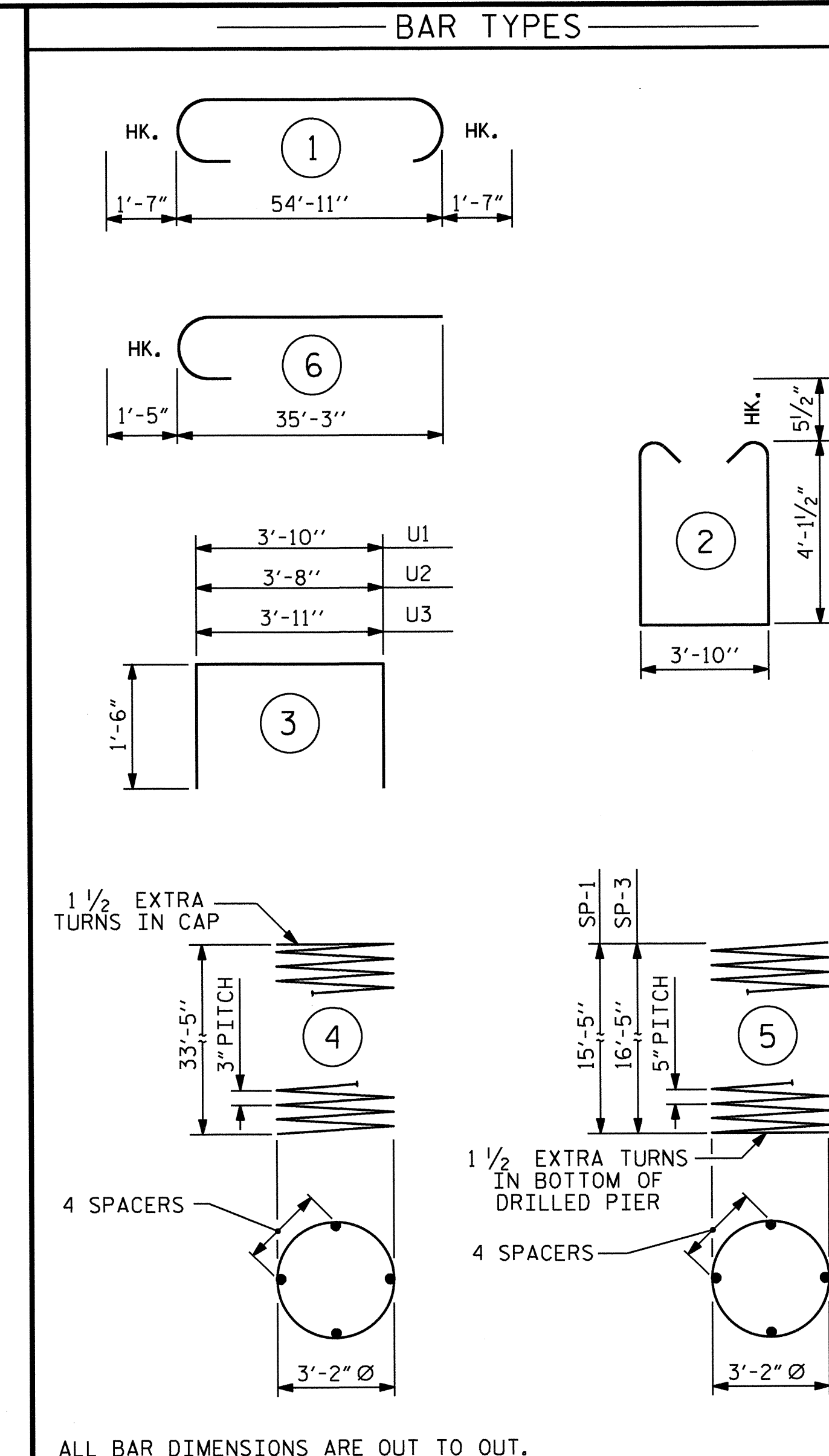


END OF CAP ELEVATION



PLAN OF DRILLED PIERS & COLUMNS

(REINFORCING STEEL IS TYPICAL FOR EACH COLUMN & DRILLED PIER)



ALL BAR DIMENSIONS ARE OUT TO OUT.
 ** THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.
 *** THE SP-1 & SP-3 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.
 ▲ NO SEPARATE PAYMENT WILL BE MADE FOR CSL TUBES. CSL TUBES WILL BE INCLUDED IN THE UNIT BID PRICE FOR DRILLED PIERS.
 FOR BENT No.1 TOTAL QUANTITIES, SEE "BENT No.1 STAGE II," SHEET 2 OF 2.

BILL OF MATERIAL					
BENT No.1 - STAGE I					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	7	#11	STR	55'-1"	2049
B2	7	#11	1	58'-1"	2160
B3	8	#5	STR	55'-1"	460
B4	7	#4	STR	28'-9"	134
M1	24	#11	STR	26'-7"	3390
M2	12	#11	STR	27'-7"	1759
S1	74	#5	2	13'-0"	1003
U1	44	#4	3	6'-10"	201
U2	9	#4	3	6'-8"	40
U3	8	#4	3	6'-11"	37
V1	36	#10	6	36'-8"	5680
REINFORCING STEEL					= 16913 LBS.

BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
SP-1	2	***	5	379'-7"	792
SP-2	3	**	4	1328'-3"	2662
SP-3	1	***	5	401'-7"	419

SPIRAL COLUMN REINF. STEEL		= 3873 LBS.
CLASS A CONCRETE BREAKDOWN		
POUR #2 (COLUMNS)		35.5 C.Y.
POUR #3 (CAP)		40.6 C.Y.
TOTAL		76.1 C.Y.

DRILLED PIER QUANTITIES	
DRILLED PIER CONCRETE BREAKDOWN	
POUR #1 (DRILLED PIERS)	22.7 C.Y.
4'-0" Ø DRILLED PIERS NOT IN SOIL	15.00 LIN. FT.
4'-0" Ø DRILLED PIERS IN SOIL	33.75 LIN. FT.
PERMANENT STEEL CASING FOR 4'-0" Ø DRILLED PIERS	17.52 LIN. FT.
▲ CSL TUBES	213.00 LIN. FT.

DRAWN BY : M. POOLE DATE : 12/13
 CHECKED BY : B.N. GRADY DATE : 2/14
 DESIGN ENGINEER OF RECORD: M.A. LEBLANC DATE : 3/14



PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72 -L-
 SHEET 2 OF 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-48
1			3			TOTAL SHEETS 62
2			4			

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

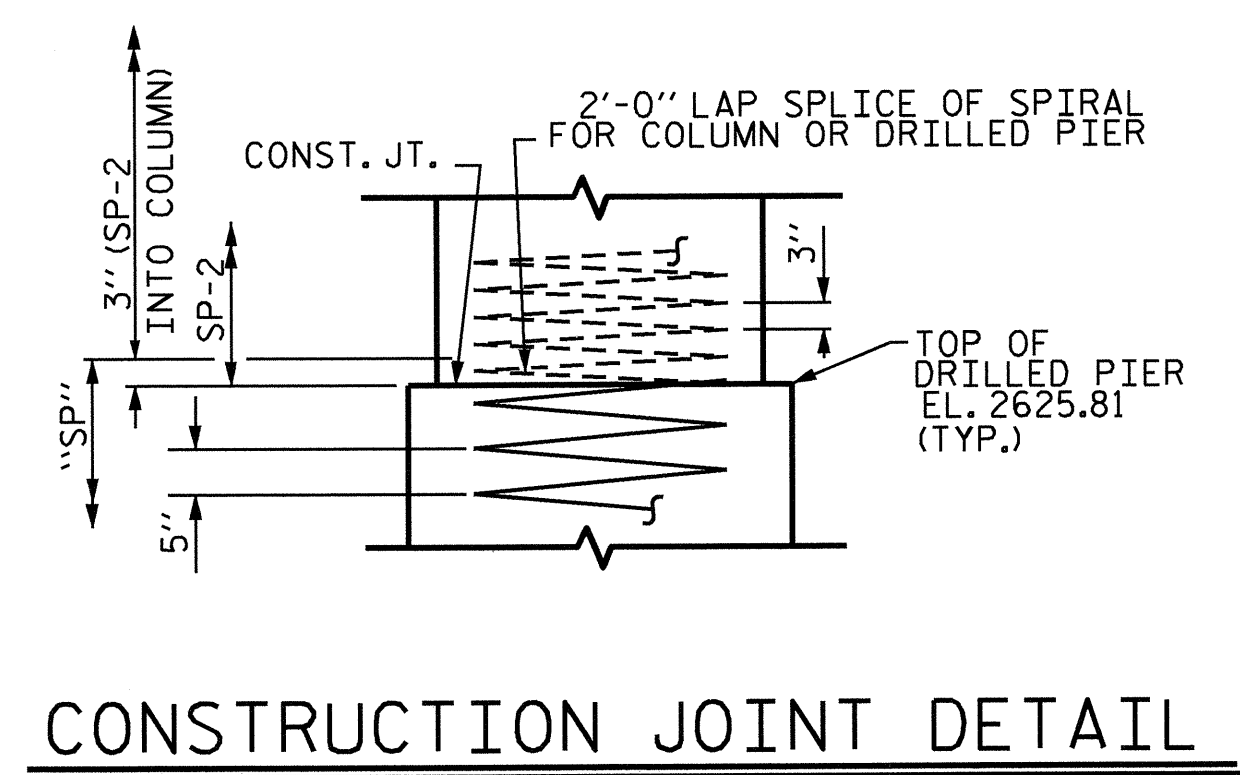
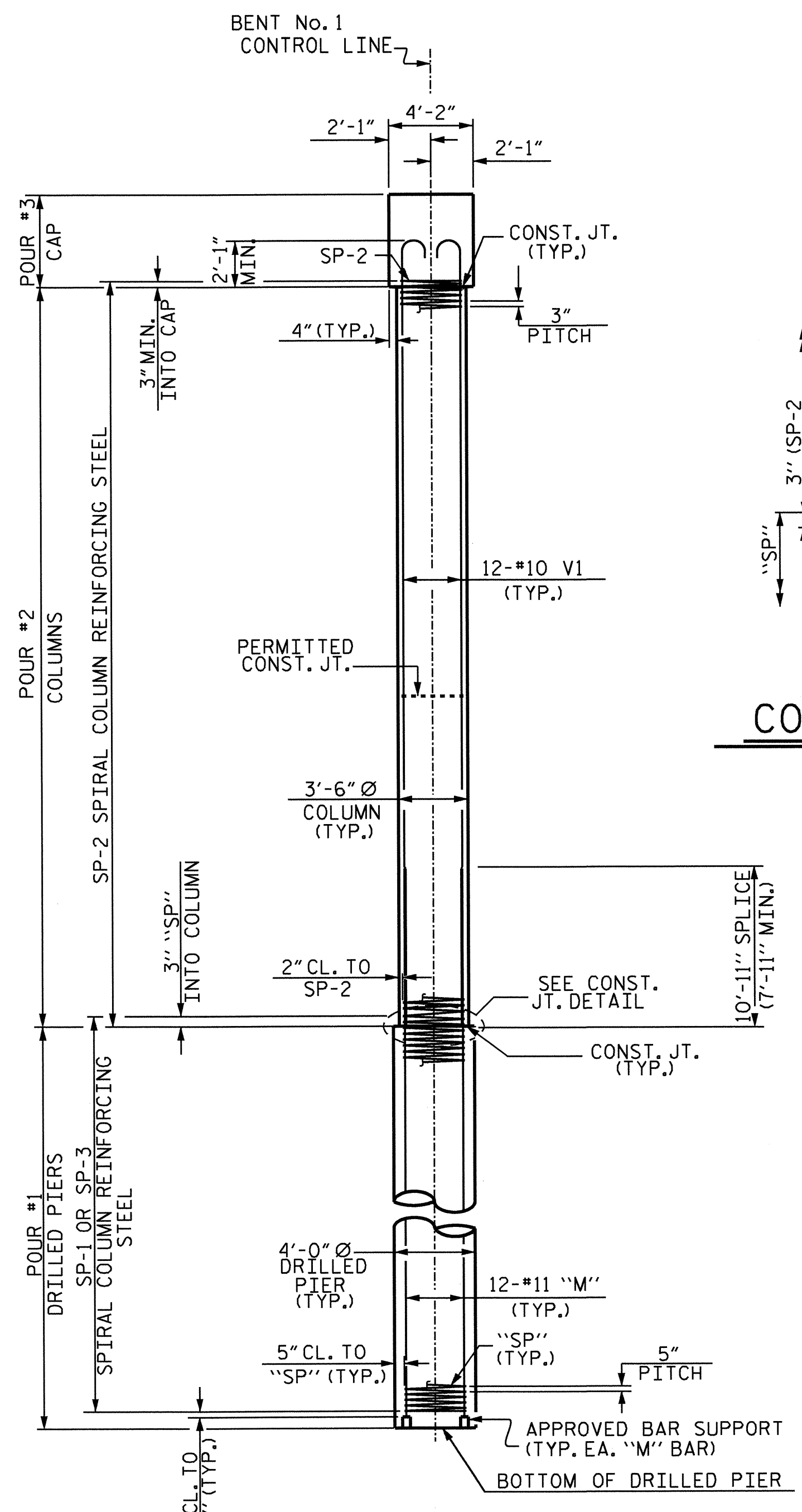
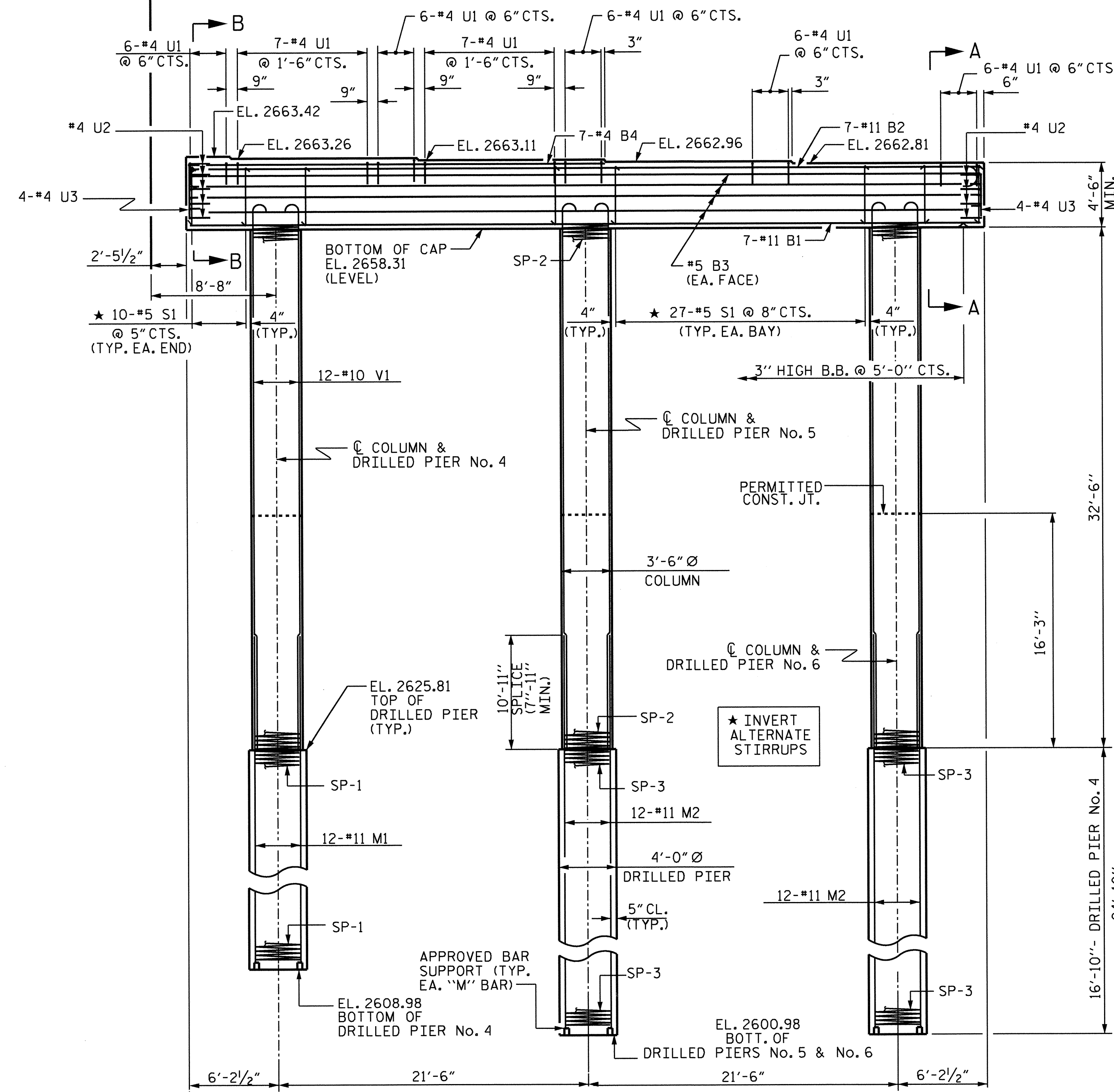
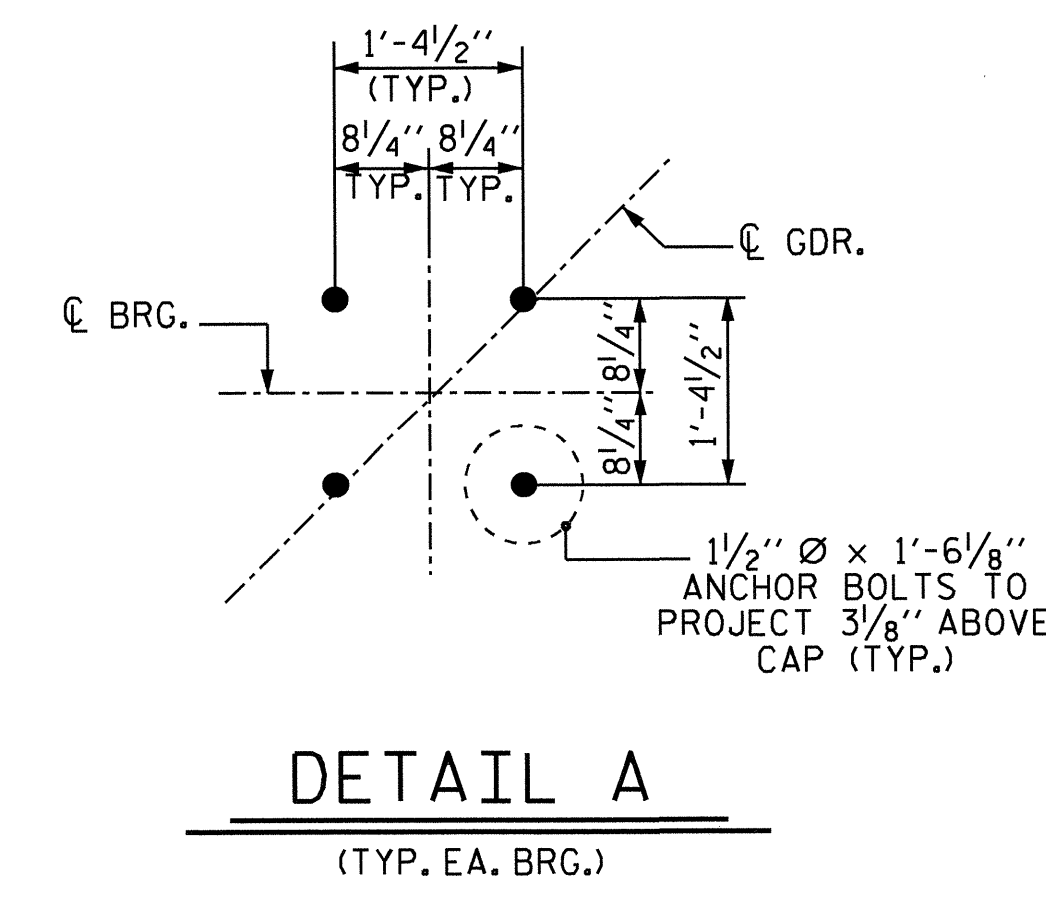
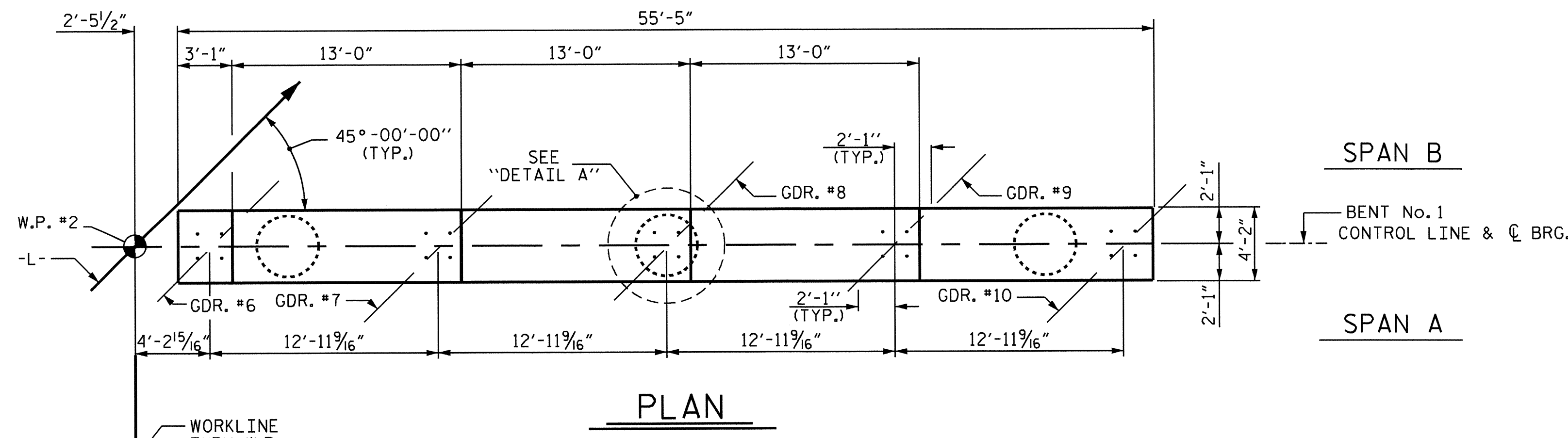
HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

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

THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND LINE ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FT. BELOW THE GROUND LINE.

SPLICING OF THE LONGITUDINAL BARS IN THE DRILLED PIER WILL NOT BE PERMITTED.

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



PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

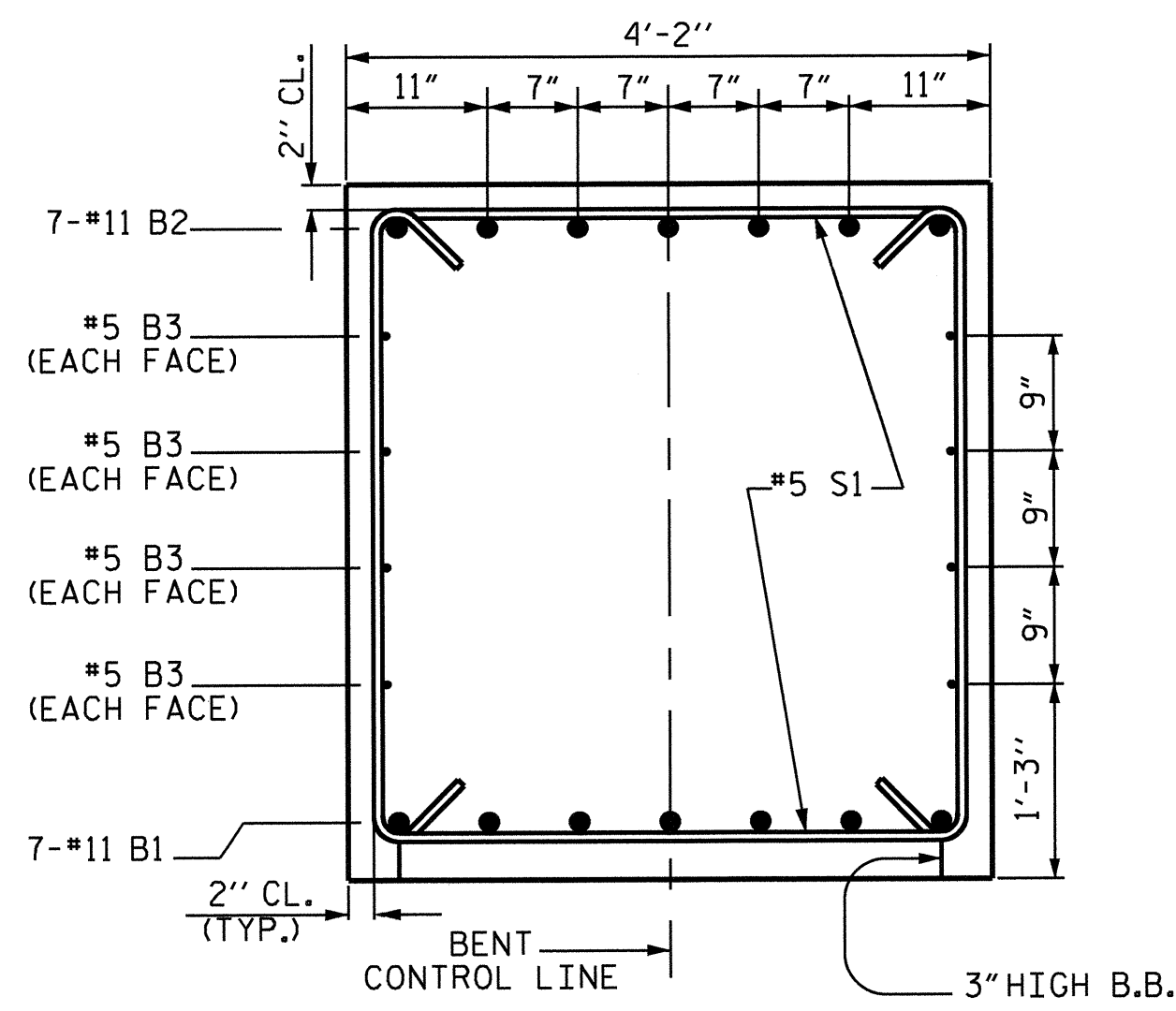
**SUBSTRUCTURE
 BENT No. 1
 STAGE II**



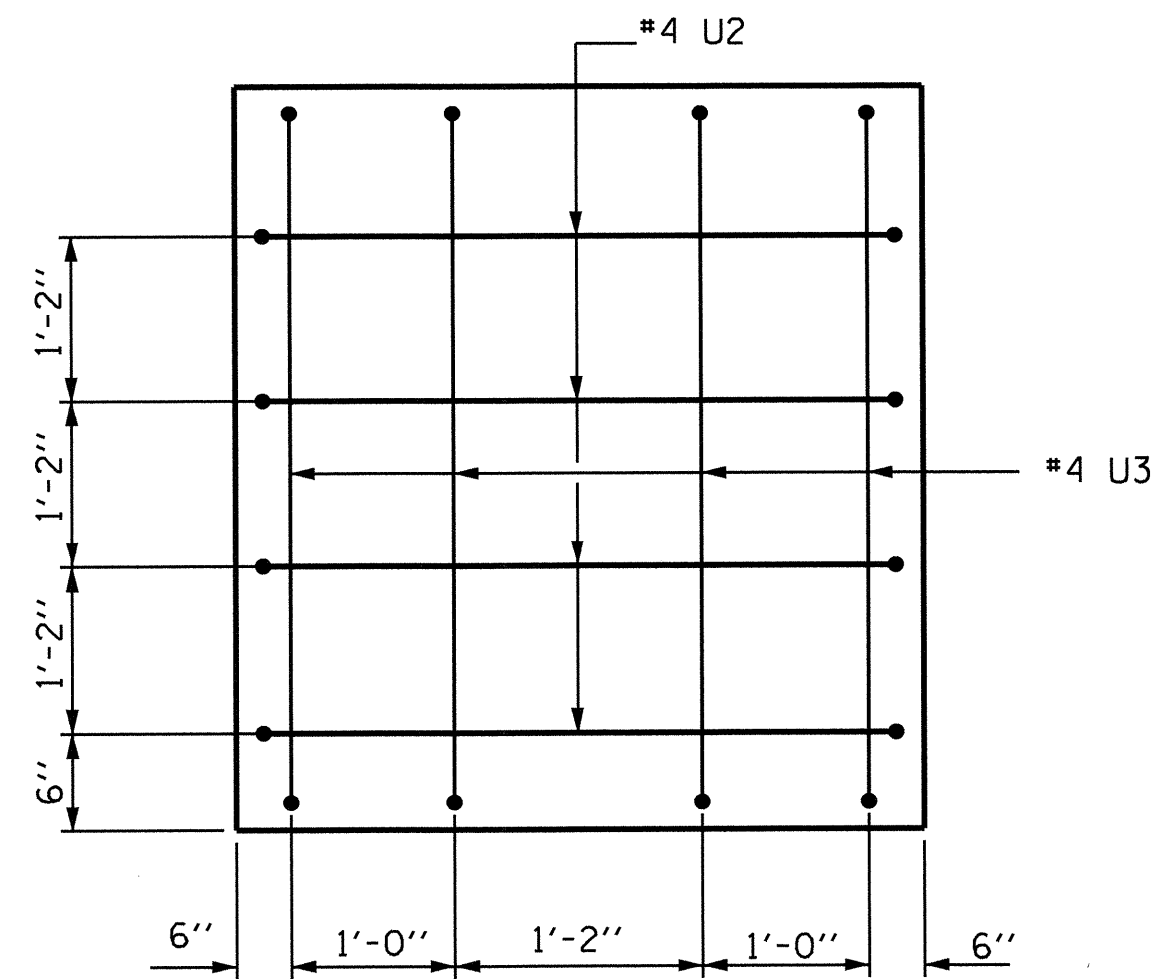
DRAWN BY: M. POOLE DATE: 12/13
 CHECKED BY: B. N. GRADY DATE: 02/14
 DESIGN ENGINEER OF RECORD: M.A. LEBLANC DATE: 03/14

DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN AND DRILLED PIER EXCEPT AS NOTED.

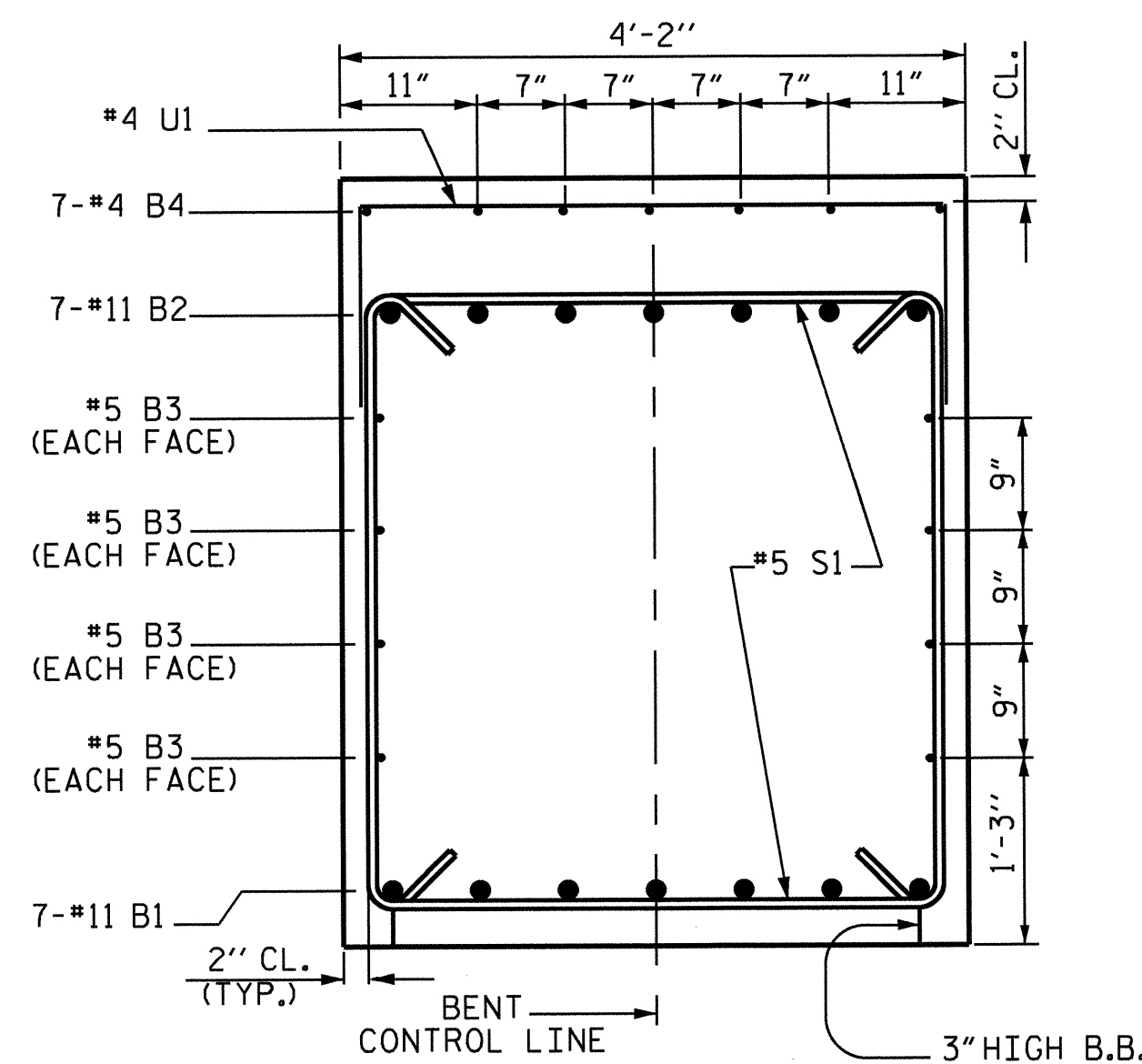
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-49
1			3			TOTAL SHEETS
2			4			62



SECTION A-A

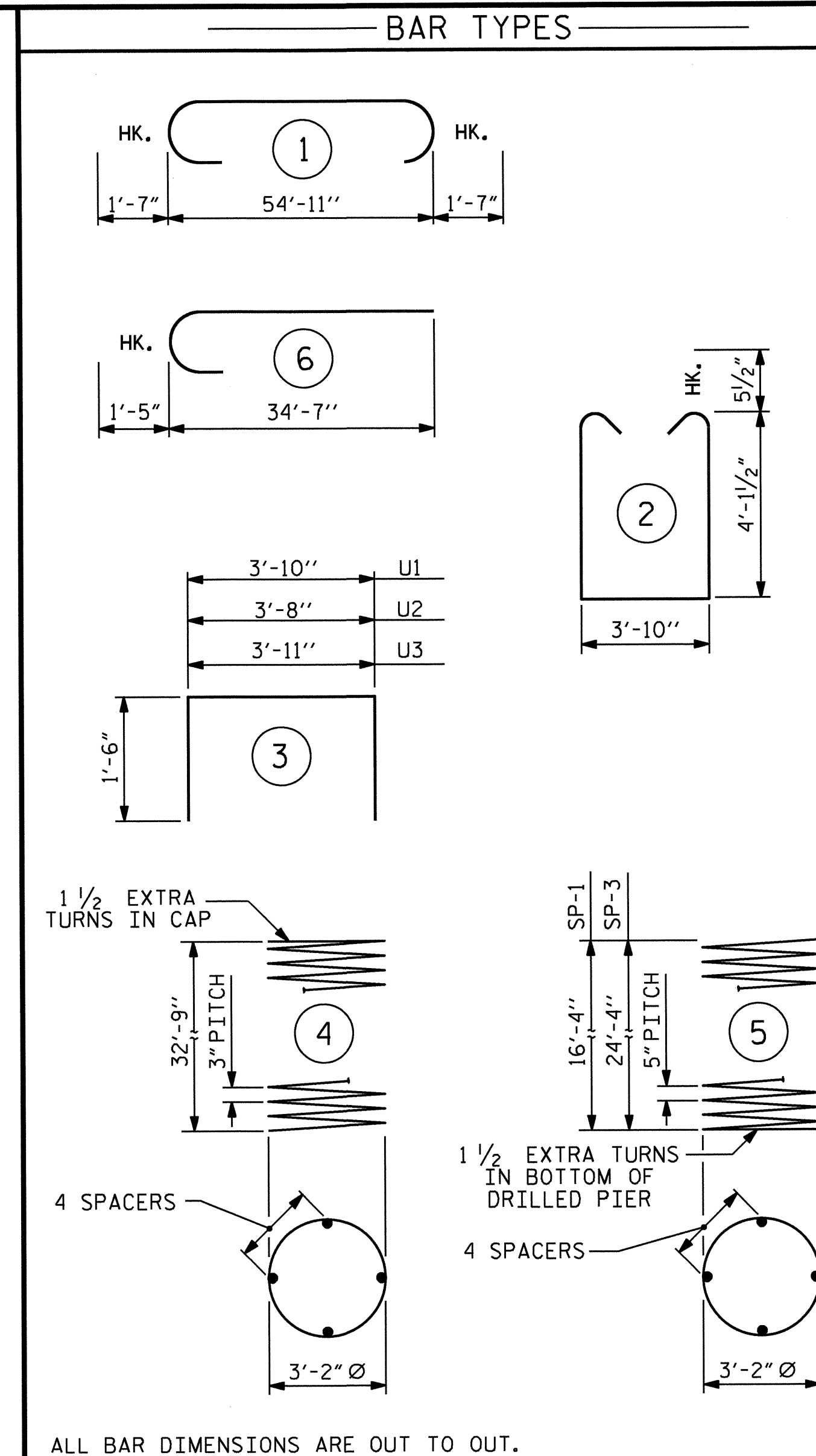


END OF CAP ELEVATION



SECTION B-B

TOTAL QUANTITIES	
REINFORCING STEEL	34854 LBS.
SPIRAL COLUMN REINFORCING STEEL	8123 LBS.
CLASS A CONCRETE	151.4 C.Y.
DRILLED PIER CONCRETE	53.6 C.Y.
4'-0" Ø DRILLED PIERS NOT IN SOIL	30.00 LIN. FT.
4'-0" Ø DRILLED PIERS IN SOIL	85.25 LIN. FT.
PERMANENT STEEL CASING FOR 4'-0" Ø DRILLED PIERS	64.95 LIN. FT.
CSL TUBES	497.00 LIN. FT.



ALL BAR DIMENSIONS ARE OUT TO OUT.

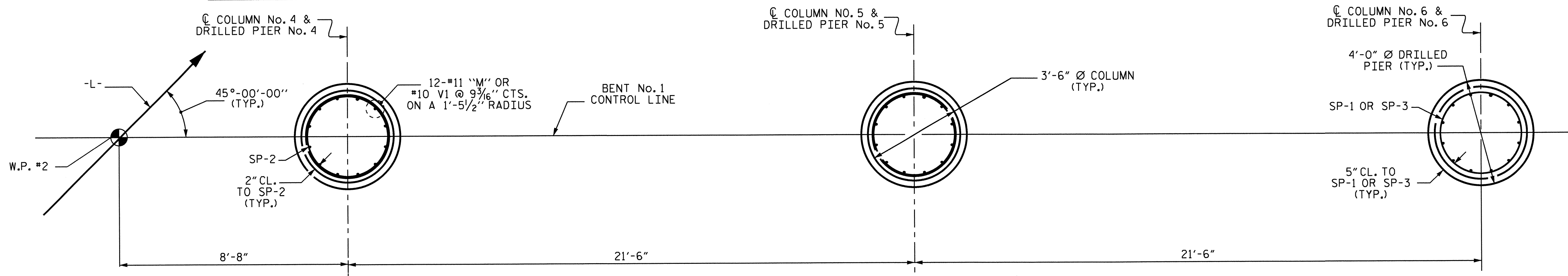
** THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.
 *** THE SP-1 & SP-3 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.
 ▲ NO SEPARATE PAYMENT WILL BE MADE FOR CSL TUBES. CSL TUBES WILL BE INCLUDED IN THE UNIT BID PRICE FOR DRILLED PIERS.

BILL OF MATERIAL					
BENT No. 1 - STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	7	#11	STR	55'-1"	2049
B2	7	#11	1	58'-1"	2160
B3	8	#5	STR	55'-1"	460
B4	7	#4	STR	28'-9"	134
M1	12	#11	STR	27'-6"	1753
M2	24	#11	STR	35'-6"	4527
S1	74	#5	2	13'-0"	1003
U1	44	#4	3	6'-10"	201
U2	9	#4	3	6'-8"	40
U3	8	#4	3	6'-11"	37
V1	36	#10	6	36'-0"	5577
REINFORCING STEEL					= 17941 LBS.

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
SP-1	1	***	5	399'-2"	416
SP-2	3	**	4	1301'-3"	2608
SP-3	2	***	5	587'-8"	1226

SPIRAL COLUMN REINF. STEEL = 4250 LBS.				
CLASS A CONCRETE BREAKDOWN				
POUR #2 (COLUMNS)	34.7 C.Y.			
POUR #3 (CAP)	40.6 C.Y.			
TOTAL	75.3 C.Y.			

DRILLED PIER QUANTITIES	
DRILLED PIER CONCRETE BREAKDOWN	
POUR #1 (DRILLED PIERS)	30.9 C.Y.
4'-0" Ø DRILLED PIERS NOT IN SOIL	15.00 LIN. FT.
4'-0" Ø DRILLED PIERS IN SOIL	51.50 LIN. FT.
PERMANENT STEEL CASING FOR 4'-0" Ø DRILLED PIERS	47.43 LIN. FT.
▲ CSL TUBES	284.00 LIN. FT.



PLAN OF DRILLED PIERS & COLUMNS

(REINFORCING STEEL IS TYPICAL FOR EACH COLUMN & DRILLED PIER)

DRAWN BY : M. POOLE DATE : 12/13
 CHECKED BY : B.N. GRADY DATE : 2/14
 DESIGN ENGINEER OF RECORD : M.A. LEBLANC DATE : 3/14



PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT No. 1 STAGE II					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-50
					TOTAL SHEETS 62

NOTES

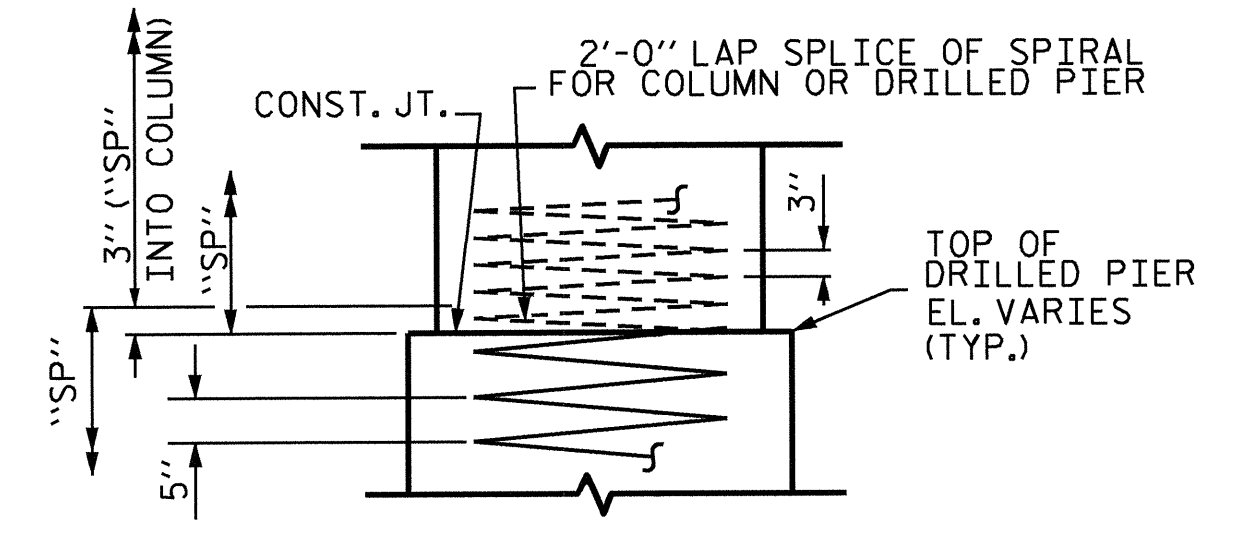
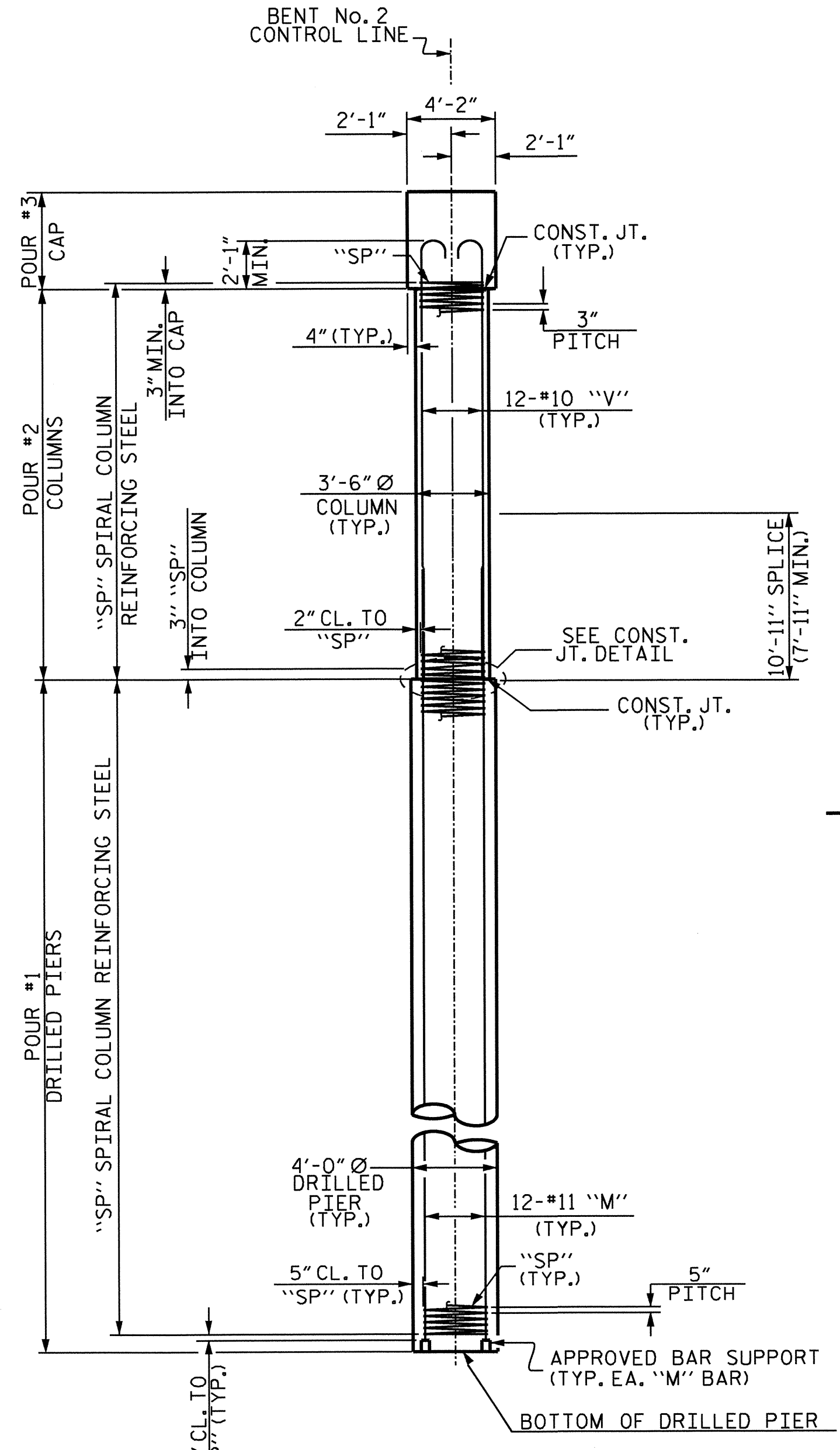
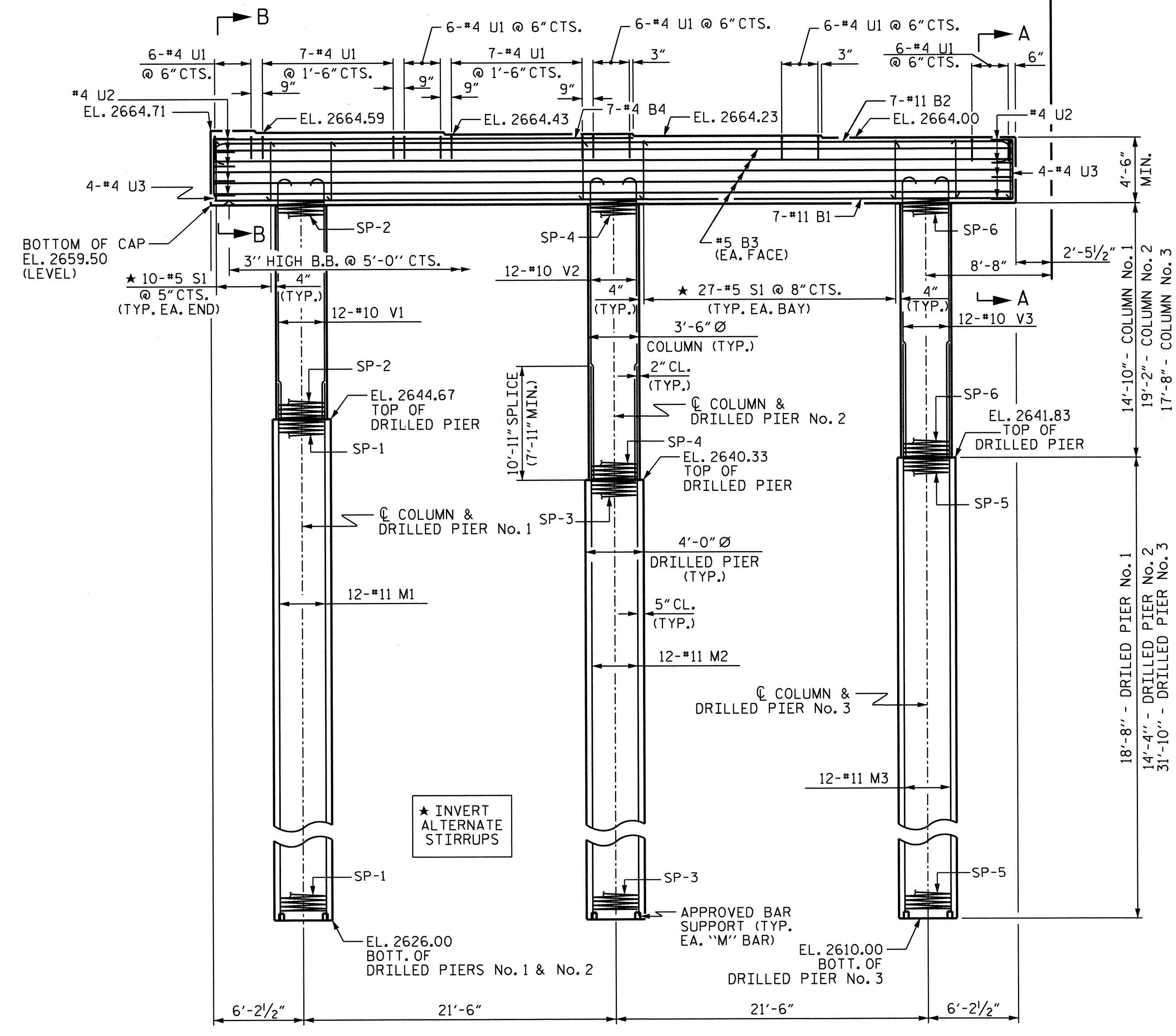
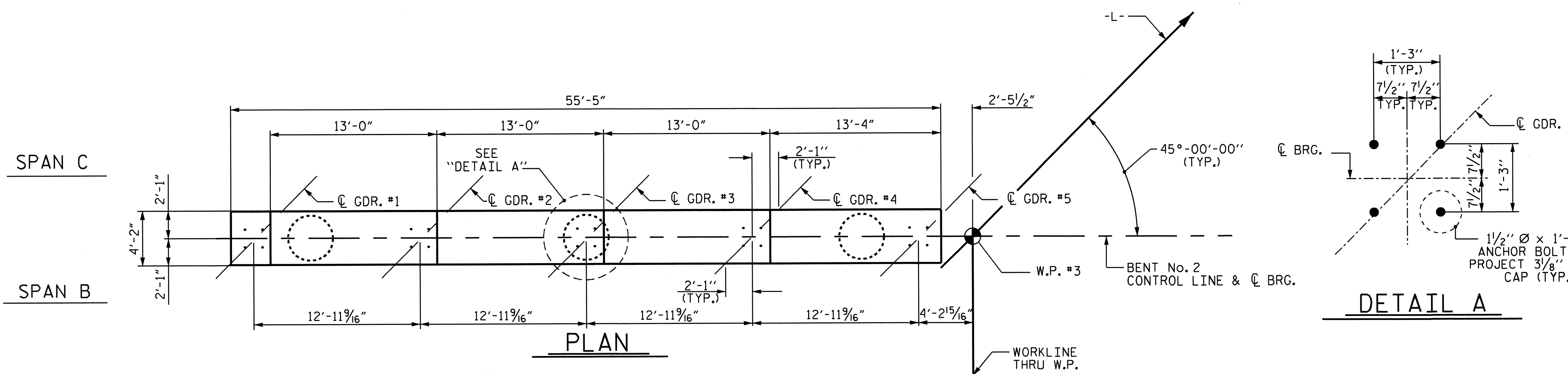
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

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

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

THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND LINE ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FT. BELOW THE GROUND LINE.

SPLICING OF THE LONGITUDINAL BARS IN THE DRILLED PIER WILL NOT BE PERMITTED.

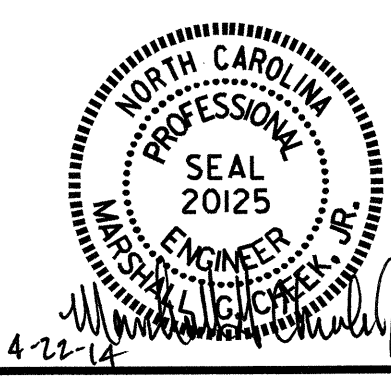


PROJECT NO. B-4554
JACKSON COUNTY
STATION: 27+11.72 -L-

SHEET 1 OF 2

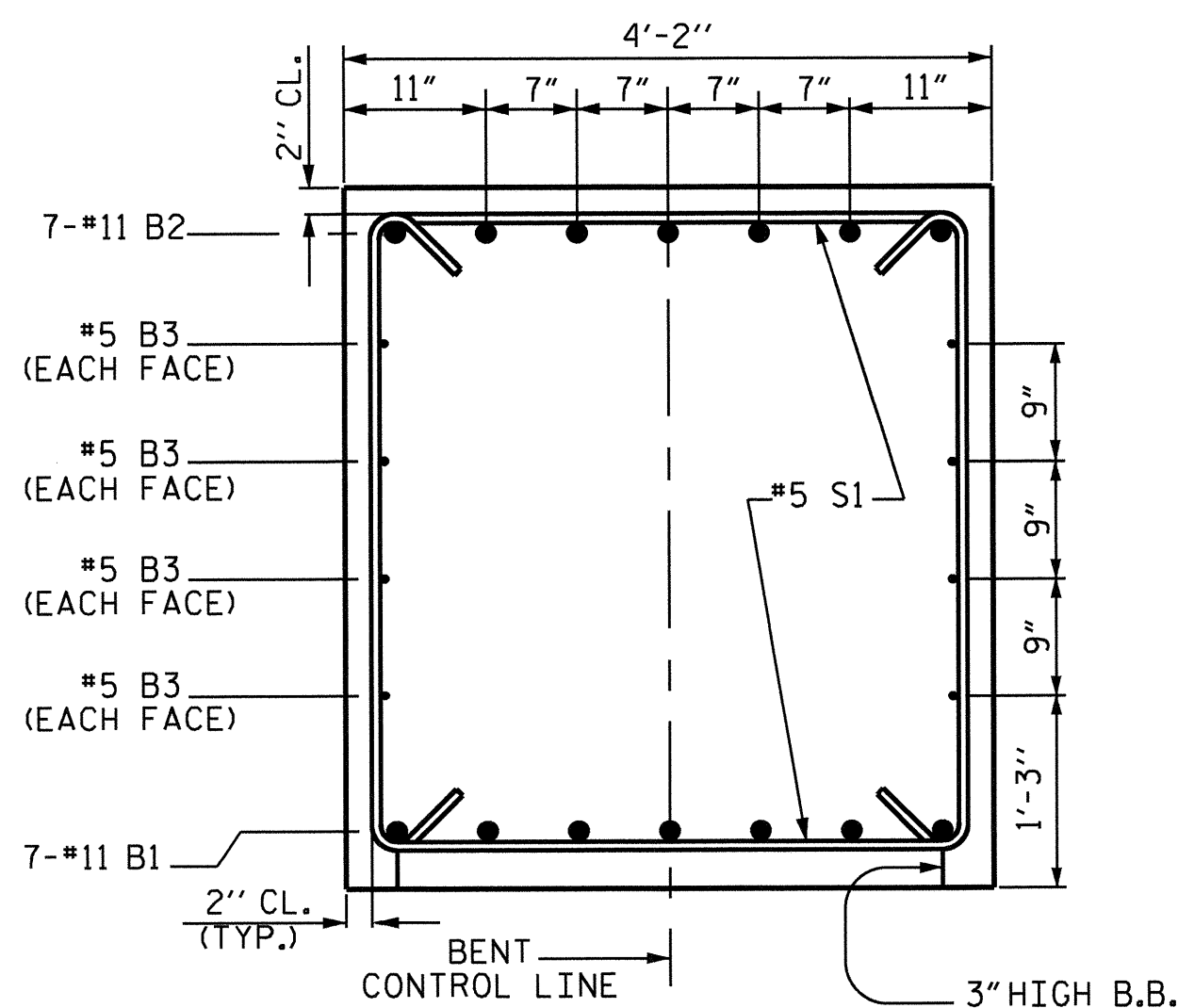
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE
BENT No. 2
STAGE I**

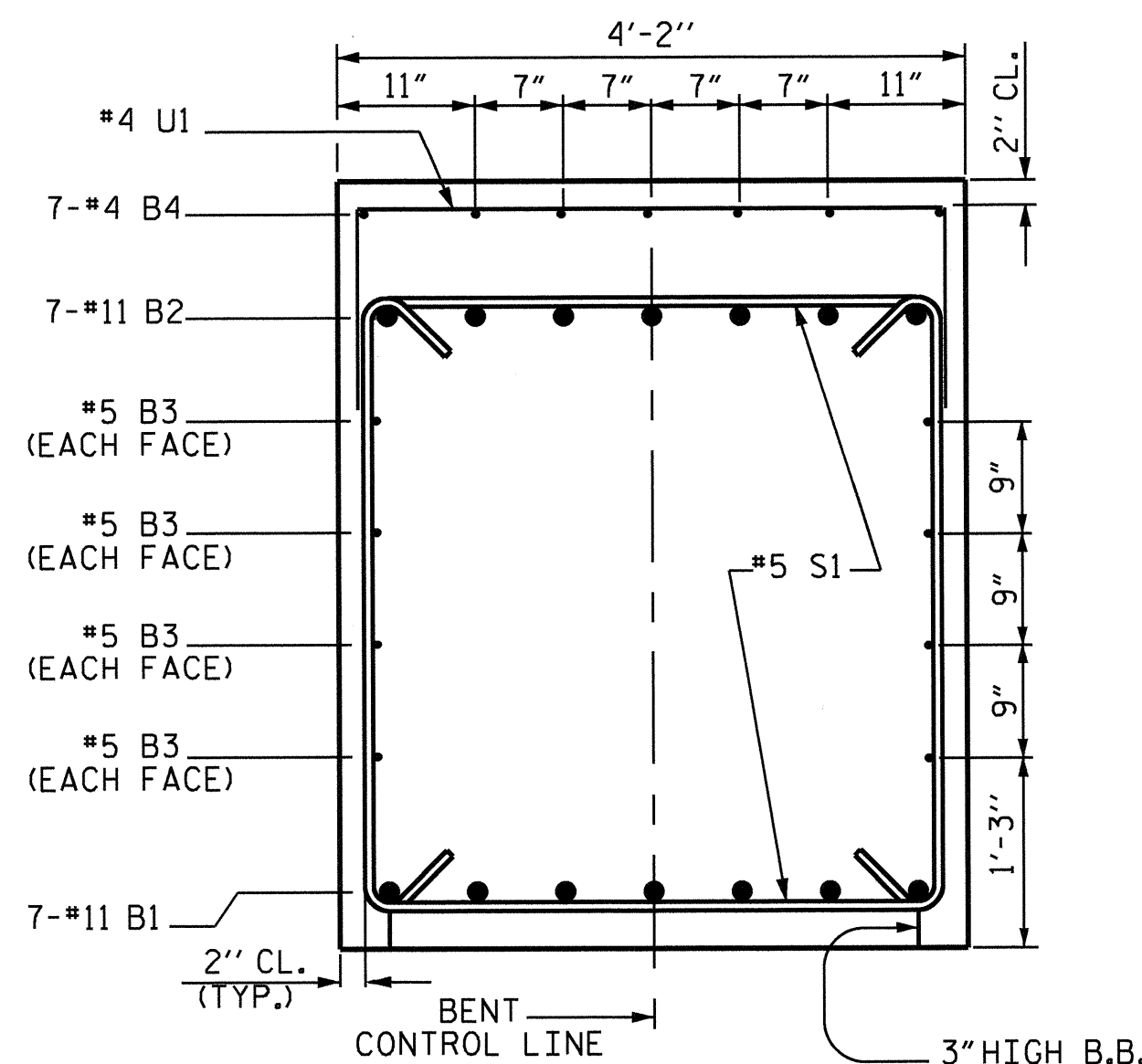


DRAWN BY: M. POOLE DATE: 12/13
CHECKED BY: B. N. GRADY DATE: 02/14
DESIGN ENGINEER OF RECORD: M.A. LEBLANC DATE: 03/14

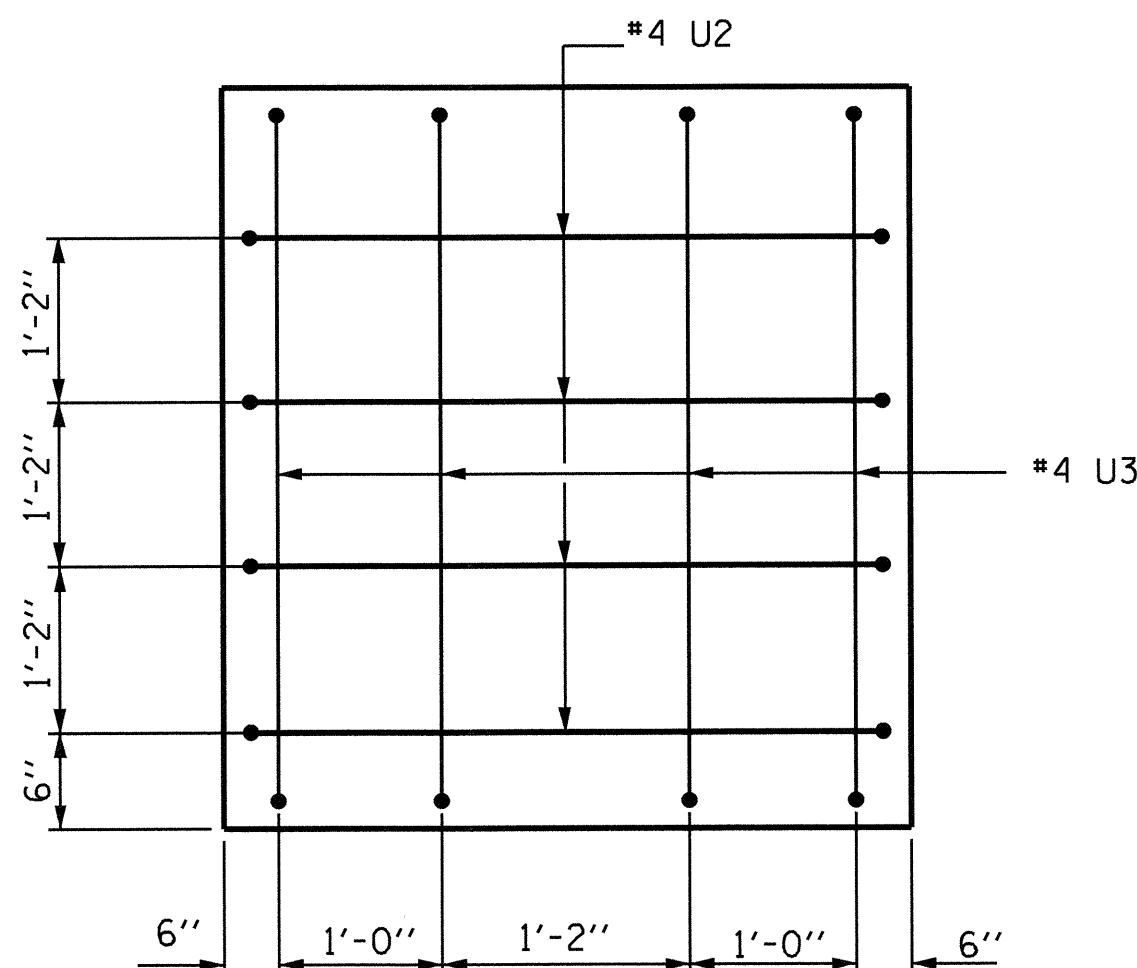
REVISIONS						SHEET NO. S-51 TOTAL SHEETS 62
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



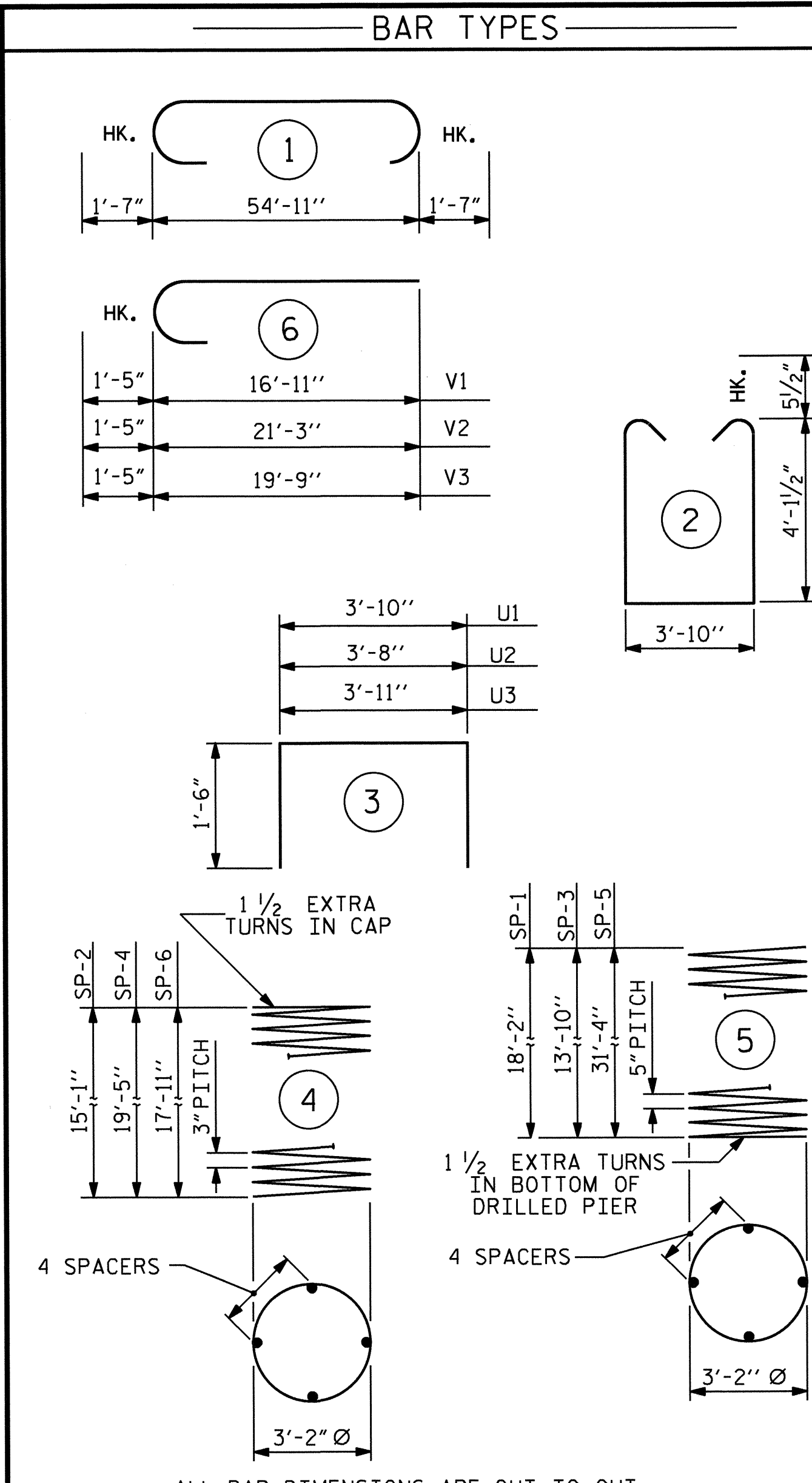
SECTION A-A



SECTION B-B



END OF CAP ELEVATION

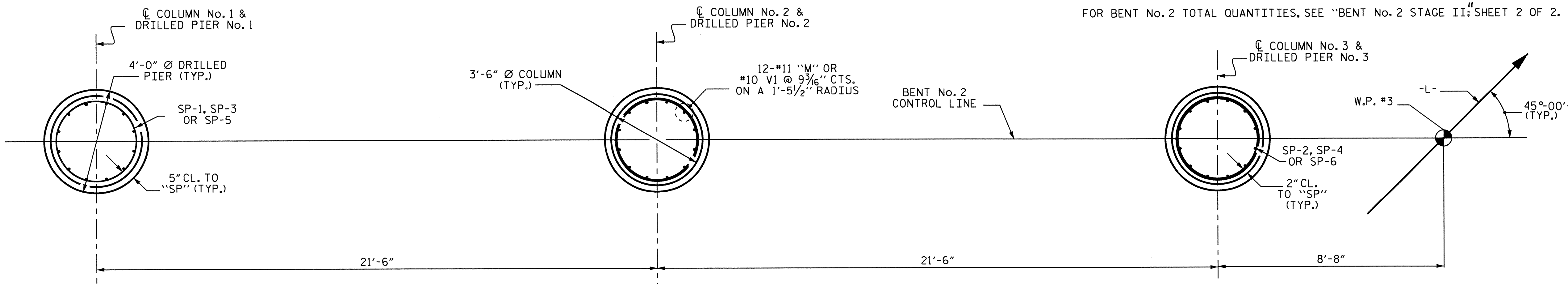


ALL BAR DIMENSIONS ARE OUT TO OUT.

** THE SP-2, SP-4 & SP-6 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.
 *** THE SP-1, SP-3 & SP-5 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.

▲ NO SEPARATE PAYMENT WILL BE MADE FOR CSL TUBES. CSL TUBES WILL BE INCLUDED IN THE UNIT BID PRICE FOR DRILLED PIERS.

FOR BENT No. 2 TOTAL QUANTITIES, SEE "BENT No. 2 STAGE II," SHEET 2 OF 2.



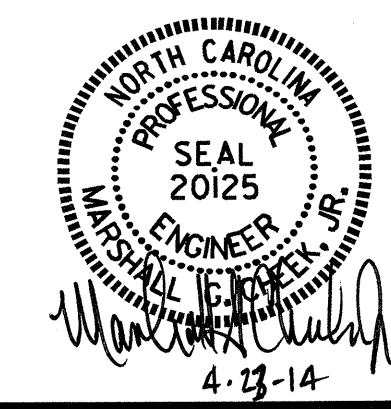
PLAN OF DRILLED PIERS & COLUMNS

(REINFORCING STEEL IS TYPICAL FOR EACH COLUMN & DRILLED PIER)

BILL OF MATERIAL						
BENT No. 2 - STAGE I						
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	7	#11	STR	55'-1"	2049	
B2	7	#11	1	58'-1"	2160	
B3	8	#5	STR	55'-1"	460	
B4	7	#4	STR	28'-9"	134	
M1	12	#11	STR	29'-4"	1870	
M2	12	#11	STR	25'-0"	1594	
M3	12	#11	STR	42'-6"	2710	
S1	74	#5	2	13'-0"	1003	
U1	44	#4	3	6'-10"	201	
U2	9	#4	3	6'-8"	40	
U3	8	#4	3	6'-11"	37	
V1	12	#10	6	18'-4"	947	
V2	12	#10	6	22'-8"	1170	
V3	12	#10	6	21'-2"	1093	
REINFORCING STEEL =					15468 LBS.	
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT	
SP-1	1	**	**	5	443'-2"	462
SP-2	1	**	**	4	608'-11"	407
SP-3	1	**	**	5	340'-4"	355
SP-4	1	**	**	4	778'-4"	520
SP-5	1	**	**	5	751'-8"	784
SP-6	1	**	**	4	719'-5"	481
SPIRAL COLUMN REINF. STEEL =					3009 LBS.	
CLASS A CONCRETE BREAKDOWN						
POUR #2 (COLUMNS)					18.4 C.Y.	
POUR #3 (CAP)					41.3 C.Y.	
TOTAL					59.7 C.Y.	
DRILLED PIER QUANTITIES						
DRILLED PIER CONCRETE BREAKDOWN						
POUR #1 (DRILLED PIERS)					30.2 C.Y.	
4'-0" Ø DRILLED PIERS NOT IN SOIL					15.00 LIN. FT.	
4'-0" Ø DRILLED PIERS IN SOIL					49.83 LIN. FT.	
▲ CSL TUBES					277.33 LIN. FT.	

DRAWN BY: M. POOLE DATE: 12/13
 CHECKED BY: B.N. GRADY DATE: 2/14
 DESIGN ENGINEER OF RECORD: M.A. LEBLANC DATE: 3/14

23-APR-2014 07:26
 R:\Structures\Final Plans\B4554.SD.B1.dgn
 dahodge



PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72 -L-
 SHEET 2 OF 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-52
1			3			TOTAL SHEETS 62
2			4			

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

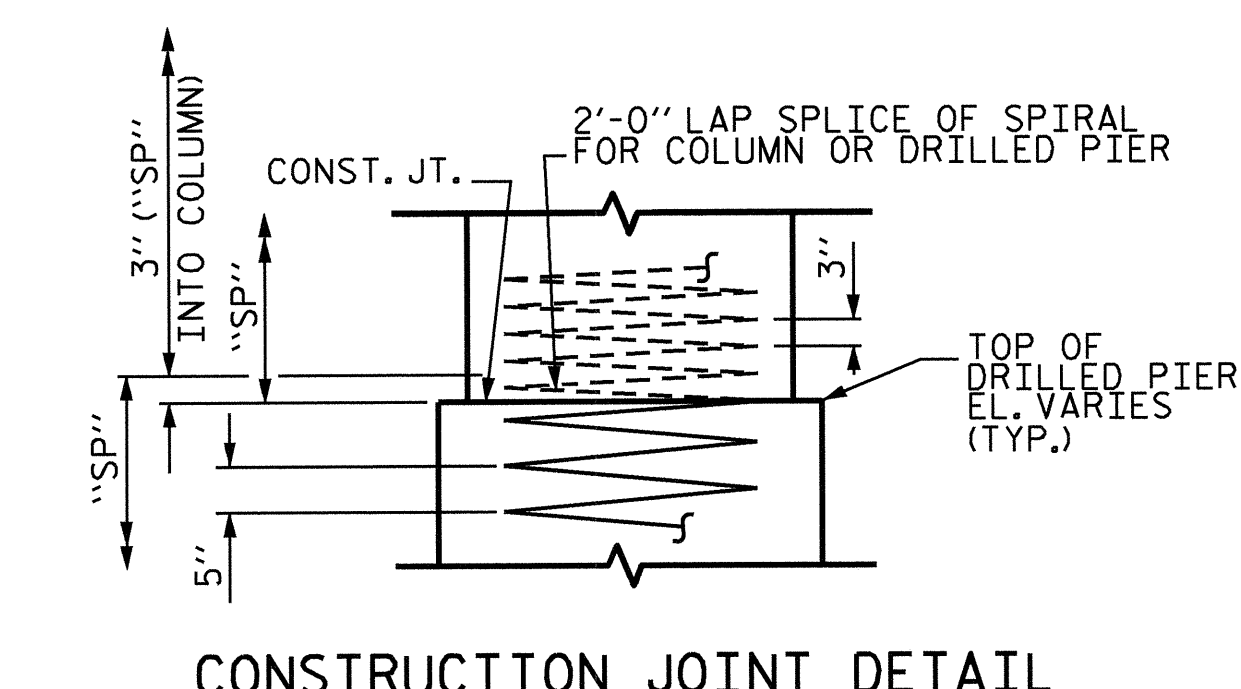
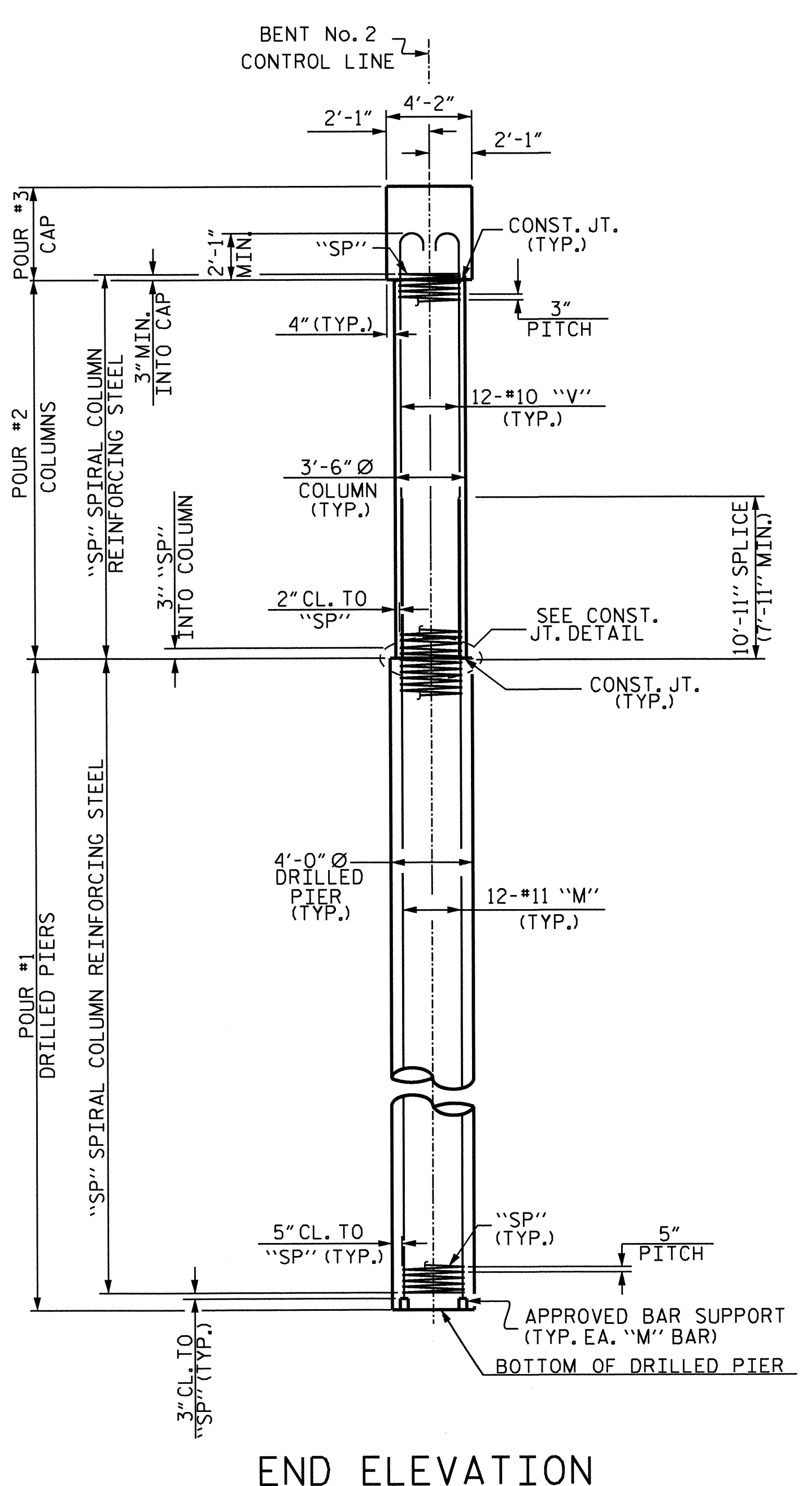
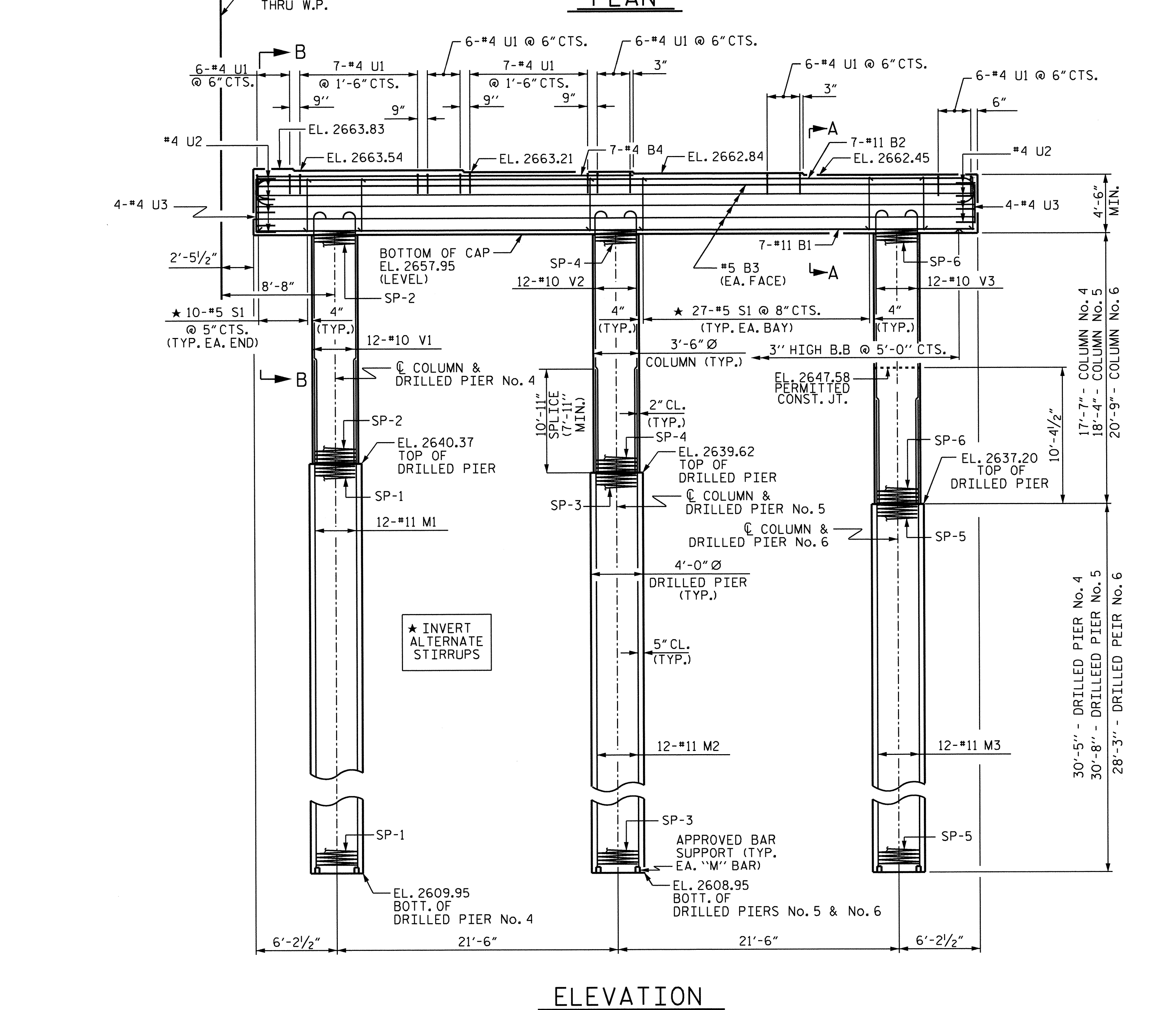
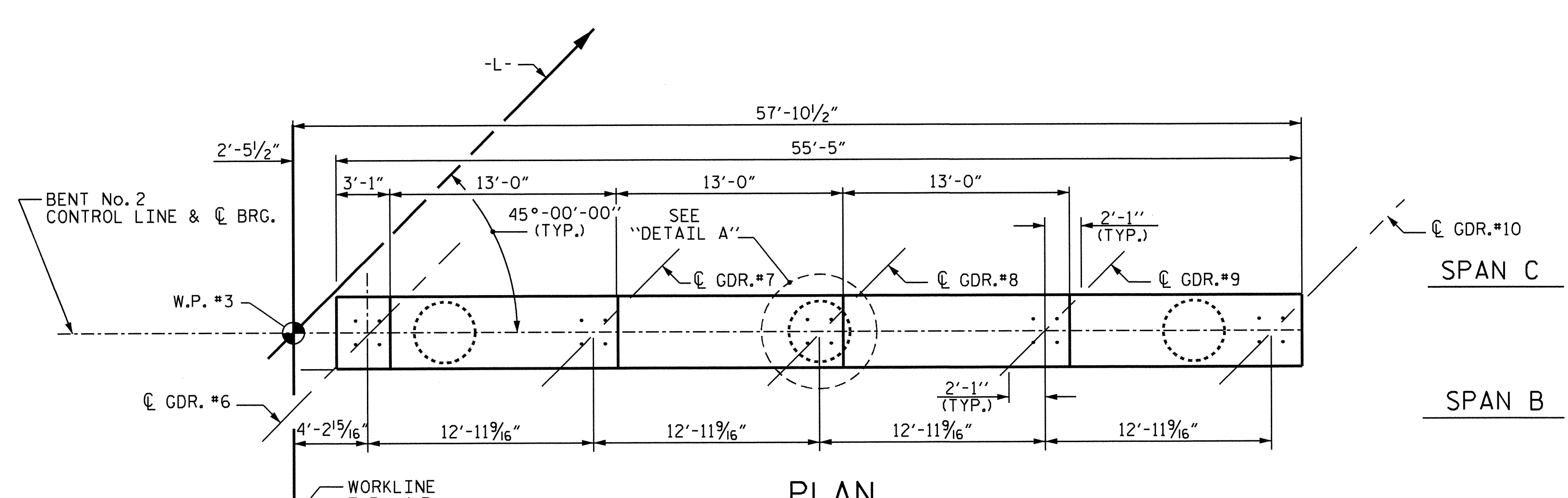
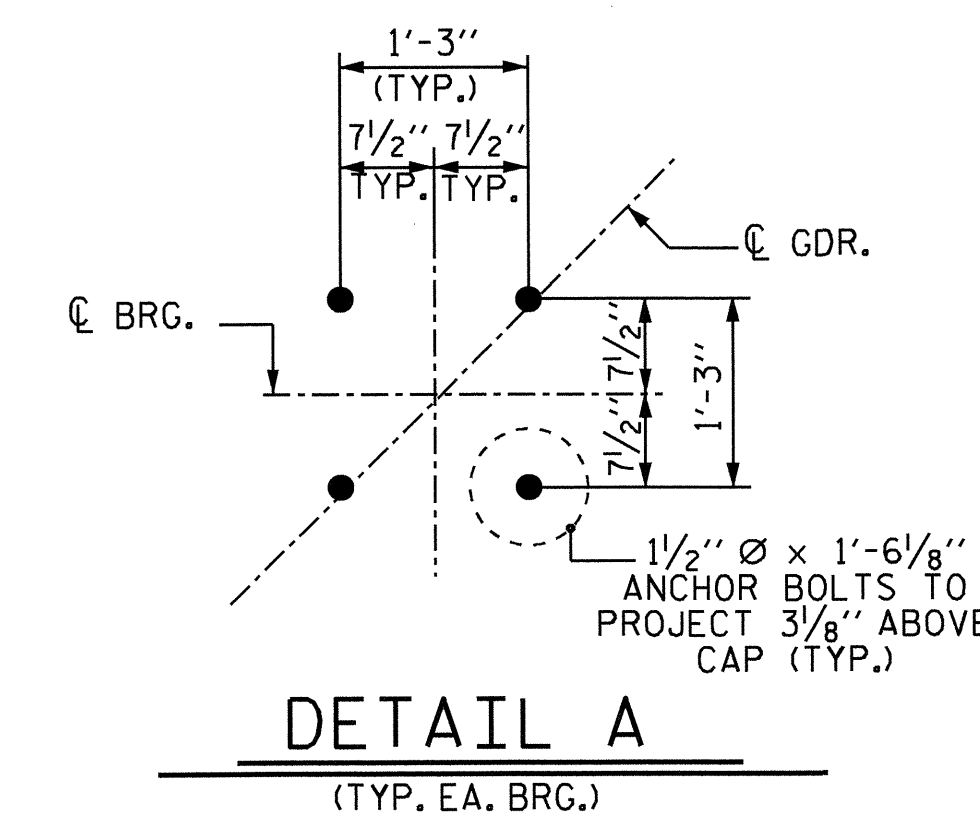
HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

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

THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND LINE ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FT. BELOW THE GROUND LINE.

SPLICING OF THE LONGITUDINAL BARS IN THE DRILLED PIER WILL NOT BE PERMITTED.

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



PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 1 OF 2



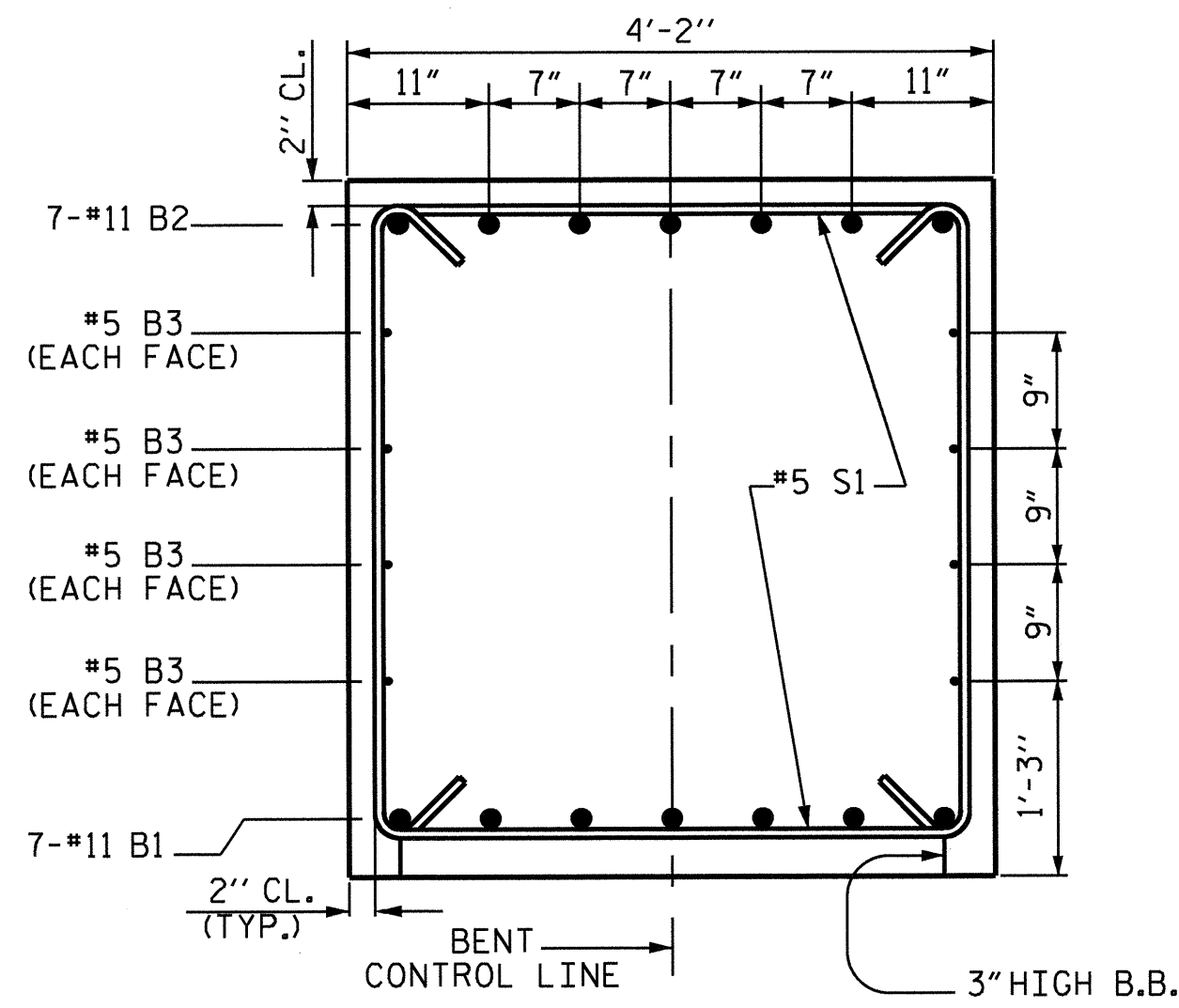
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENT No. 2
 STAGE II**

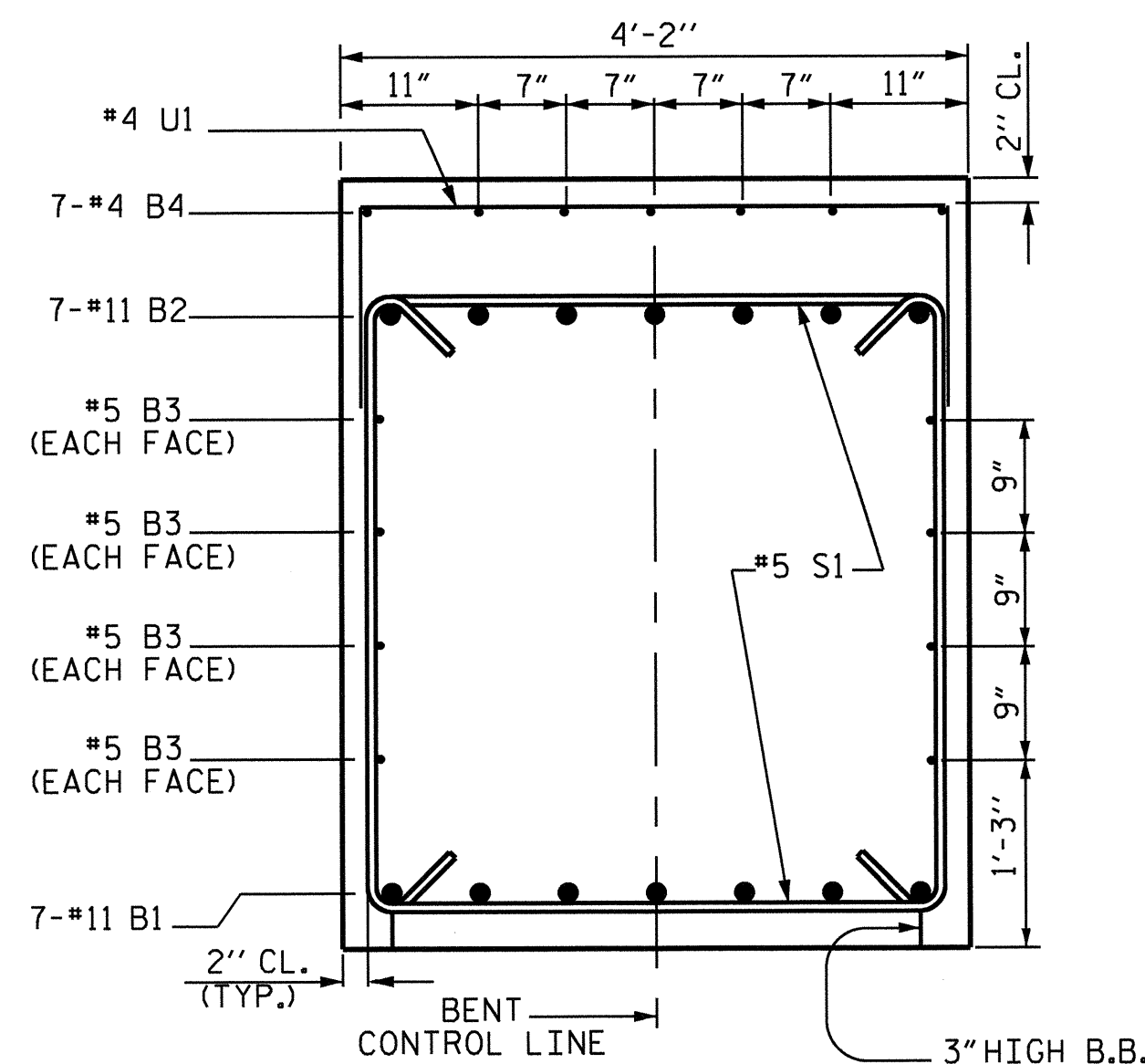
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-53
1			3			TOTAL SHEETS
2			4			62

DRAWN BY : M. POOLE DATE : 12/13
 CHECKED BY : B.N. GRADY DATE : 2/14
 DESIGN ENGINEER OF RECORD : M.A. LEBLANC DATE : 03/14

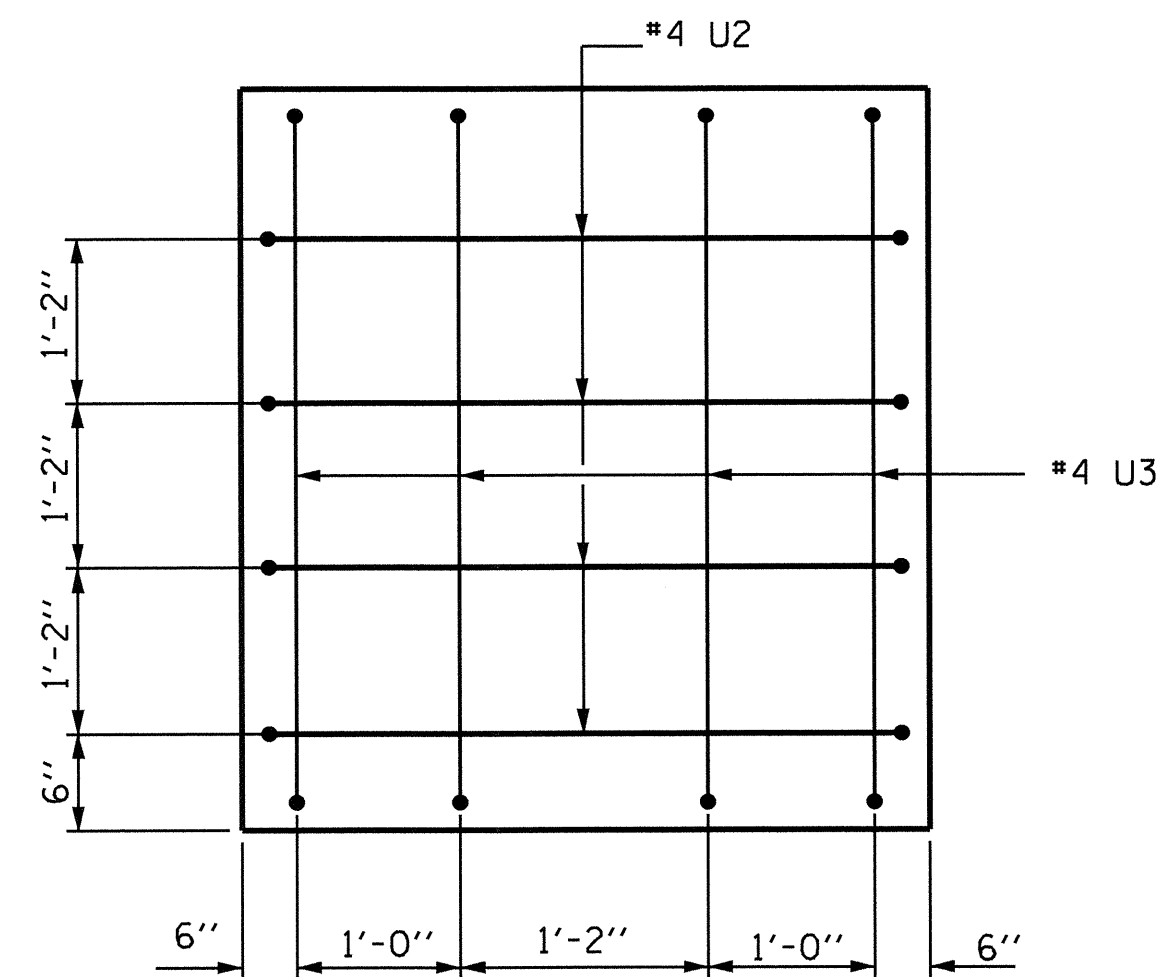
23-APR-2014 07:54
 R:\Structures\Final Plans\B4554.SD.B1.dgn
 dahodge



SECTION A-A

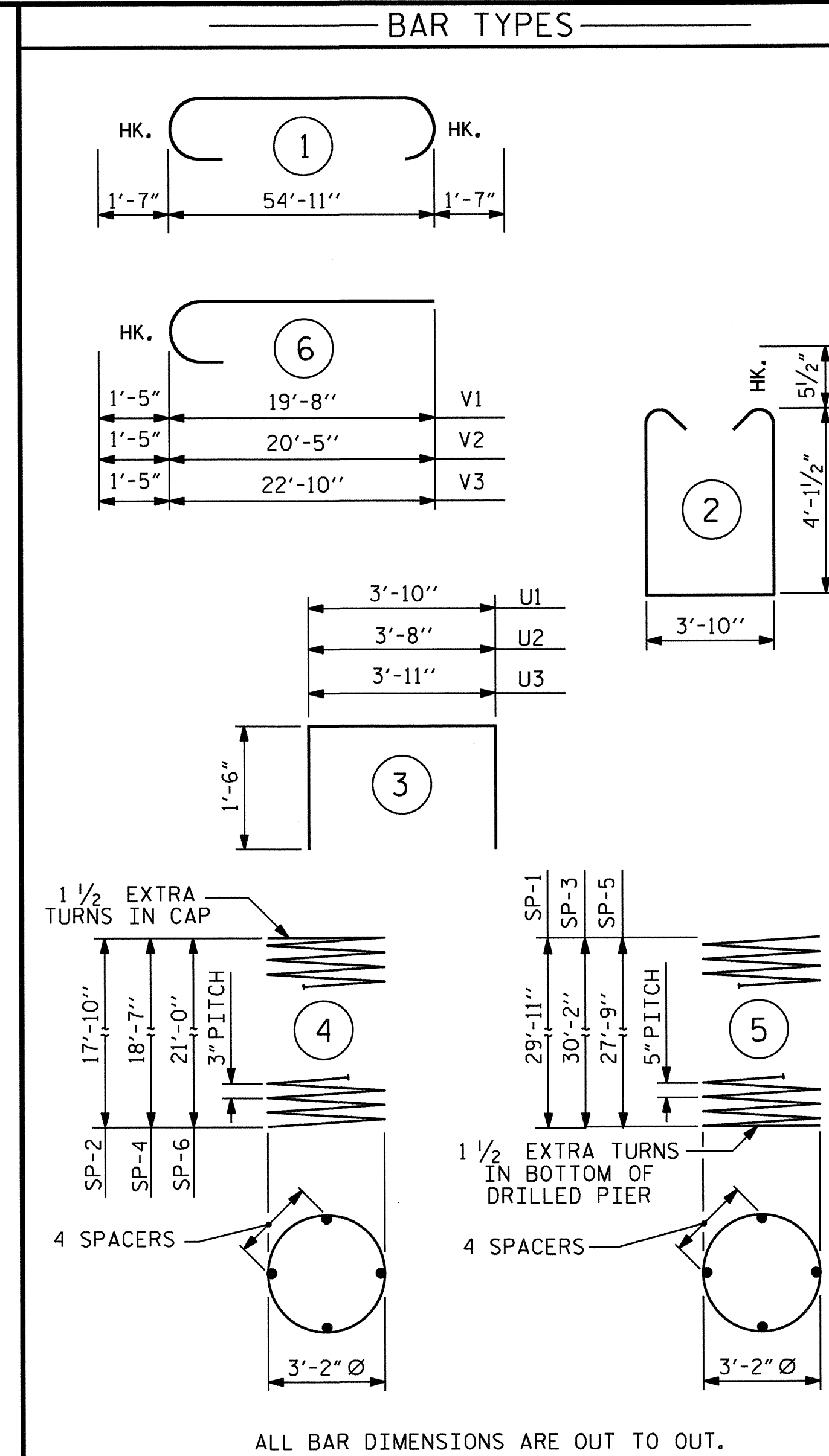


SECTION B-B



END OF CAP ELEVATION

TOTAL QUANTITIES	
REINFORCING STEEL	32755 LBS.
SPIRAL COLUMN REINFORCING STEEL	6752 LBS.
CLASS A CONCRETE	123.5 C.Y.
DRILLED PIER CONCRETE	71.8 C.Y.
4'-0" Ø DRILLED PIERS NOT IN SOIL	30.00 LIN. FT.
4'-0" Ø DRILLED PIERS IN SOIL	124.16 LIN. FT.
CSL TUBES	652.66 LIN. FT.



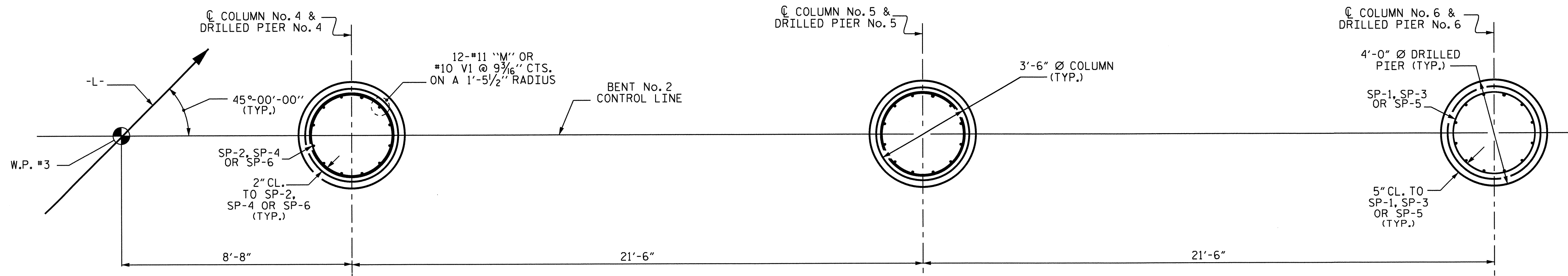
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
BENT No. 2 - STAGE II					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	7	#11	STR	55'-1"	2049
B2	7	#11	1	58'-1"	2160
B3	8	#5	STR	55'-1"	460
B4	7	#4	STR	28'-9"	134
M1	12	#11	STR	41'-1"	2619
M2	12	#11	STR	41'-4"	2635
M3	12	#11	STR	38'-11"	2481
S1	74	#5	2	13'-0"	1003
U1	44	#4	3	6'-10"	201
U2	9	#4	3	6'-8"	40
U3	8	#4	3	7'-0"	37
V1	12	#10	6	21'-1"	1089
V2	12	#10	6	21'-10"	1127
V3	12	#10	6	24'-3"	1252
REINFORCING STEEL					= 17287 LBS.
SP-1	1	***	5	719'-10"	751
SP-2	1	**	4	716'-11"	479
SP-3	1	***	5	724'-9"	756
SP-4	1	**	4	746'-5"	499
SP-5	1	***	5	668'-5"	697
SP-6	1	**	4	839'-8"	561
SPIRAL COLUMN REINF. STEEL					= 3743 LBS.

CLASS A CONCRETE BREAKDOWN	
POUR #2 (COLUMNS)	20.2 C.Y.
POUR #3 (CAP)	43.6 C.Y.
TOTAL	63.8 C.Y.

DRILLED PIER QUANTITIES	
DRILLED PIER CONCRETE BREAKDOWN	
POUR #1 (DRILLED PIERS)	41.6 C.Y.
4'-0" Ø DRILLED PIERS NOT IN SOIL	15.00 LIN. FT.
4'-0" Ø DRILLED PIERS IN SOIL	74.33 LIN. FT.
▲ CSL TUBES	375.33 LIN. FT.

** THE SP-2, SP-4 & SP-6 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.
 *** THE SP-1, SP-3 & SP-5 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.
 NO SEPARATE PAYMENT WILL BE MADE FOR CSL TUBES. CSL TUBES WILL BE INCLUDED IN THE UNIT BID PRICE FOR DRILLED PIERS.



PLAN OF DRILLED PIERS & COLUMNS

(REINFORCING STEEL IS TYPICAL FOR EACH COLUMN & DRILLED PIER)

DRAWN BY : M. POOLE DATE : 12/13
 CHECKED BY : B.N. GRADY DATE : 2/14
 DESIGN ENGINEER OF RECORD : M.A. LEBLANC DATE : 3/14

22-APR-2014 08:10
 W:\Structures\Final Plans\B4554.SD.B1.dgn
 bngardy



PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT No. 2
 STAGE II

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-54
1			3			TOTAL SHEETS 62
2			4			

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

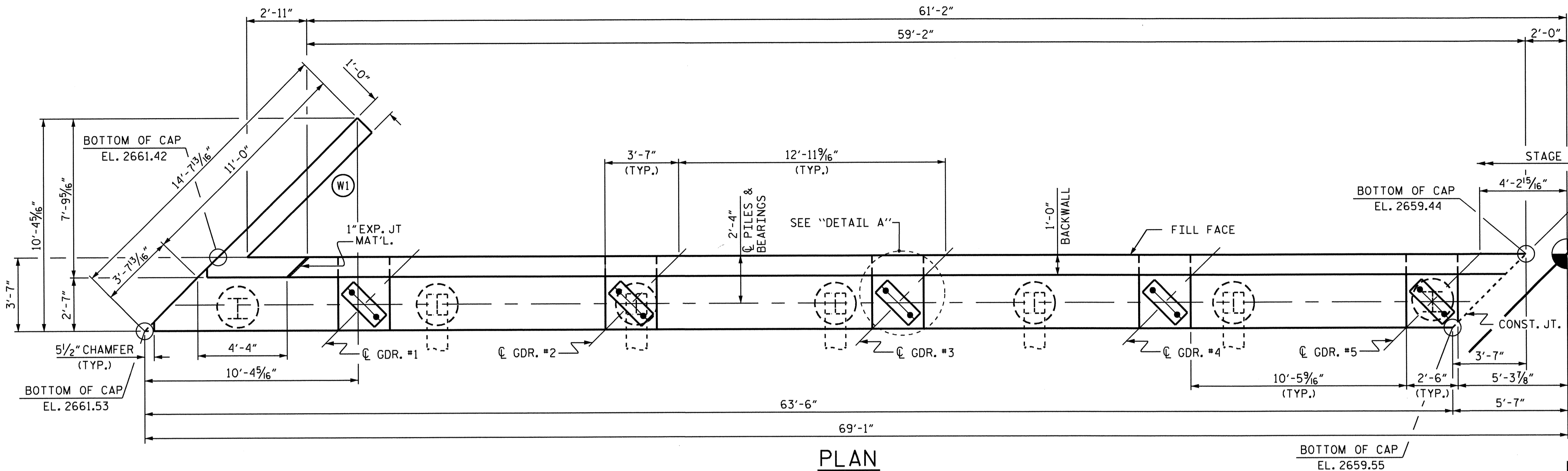
BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

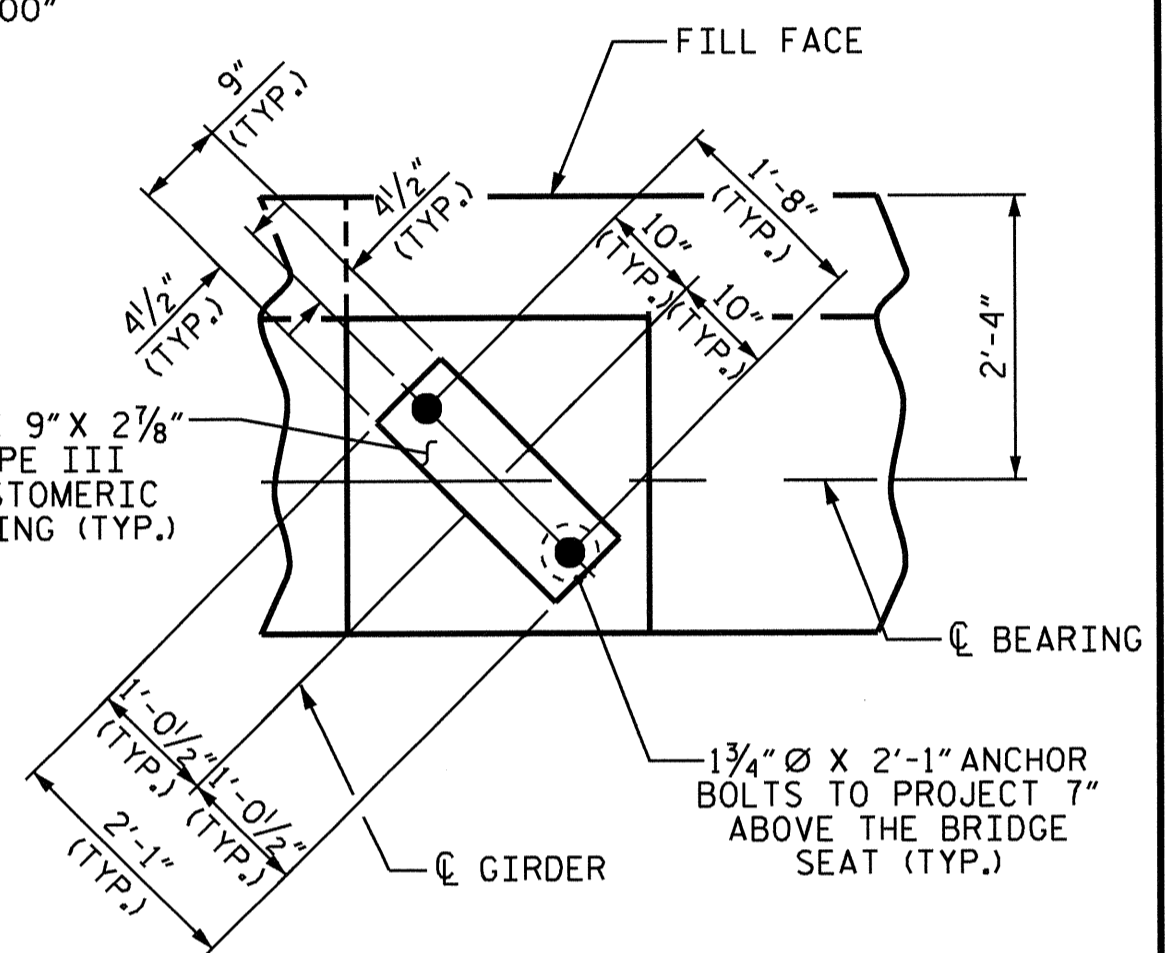
INSTALL THE 4" DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

EPOXY COAT THE END BENT CAP AFTER ADJUSTMENTS ARE MADE TO BEARINGS.

THE TOP SURFACE AREAS OF THE END BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

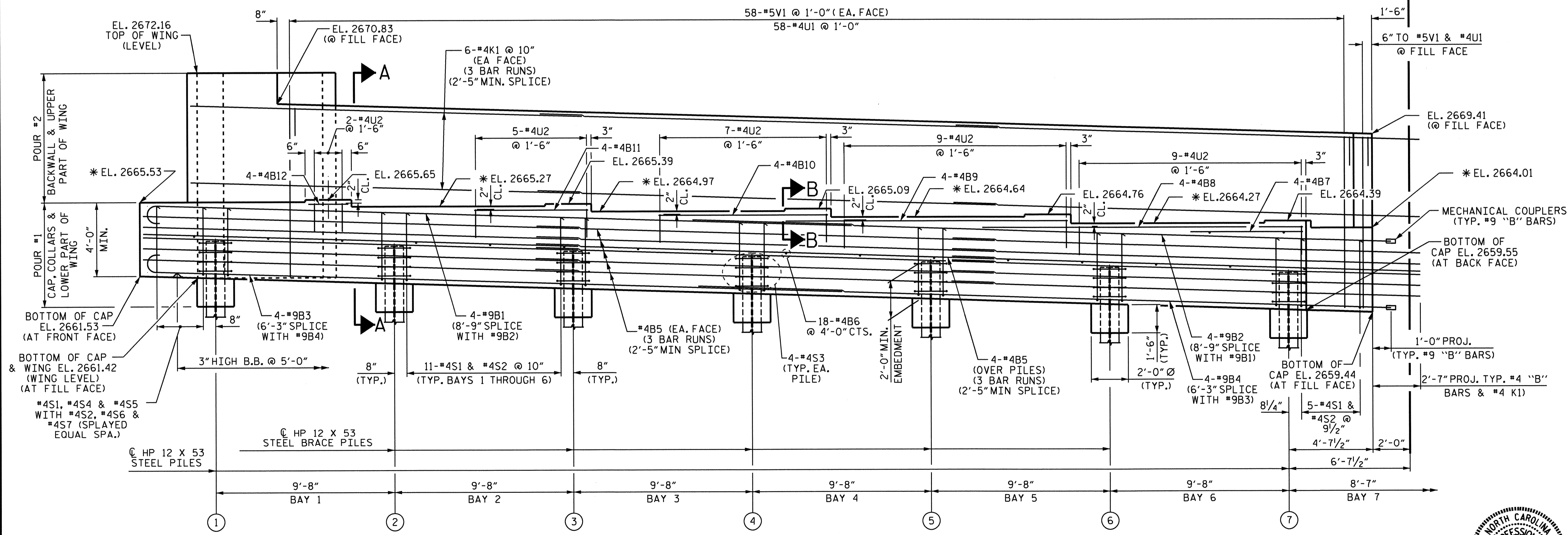


PLAN



DETAIL A

TOP OF PILE ELEVATIONS	
PILE	ELEVATION
①	2663.41
②	2663.11
③	2662.80
④	2662.50
⑤	2662.20
⑥	2661.90
⑦	2661.60



ELEVATION

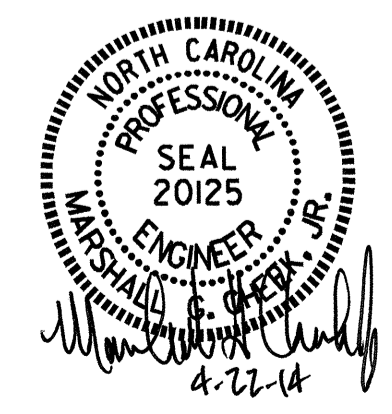
FOR SECTION A-A AND B-B SEE SHEET 4 OF 4
 * FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEATS BUILD-UPS, SEE SECTION A-A

PROJECT NO. B-4554
JACKSON COUNTY
 STATION: 27+11.72-L-

SHEET 1 OF 4

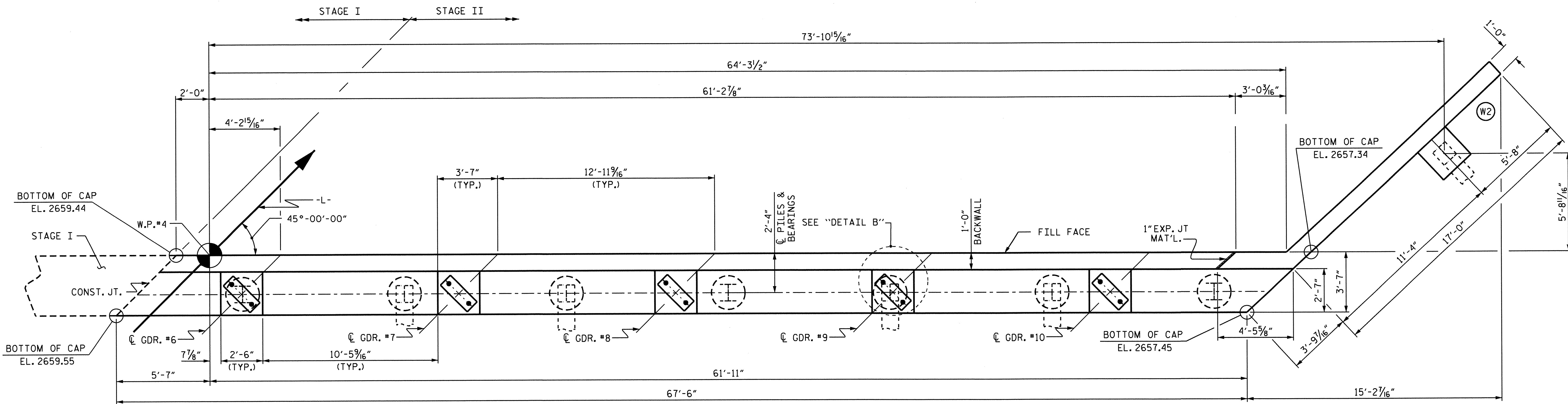
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 2
 STAGE I



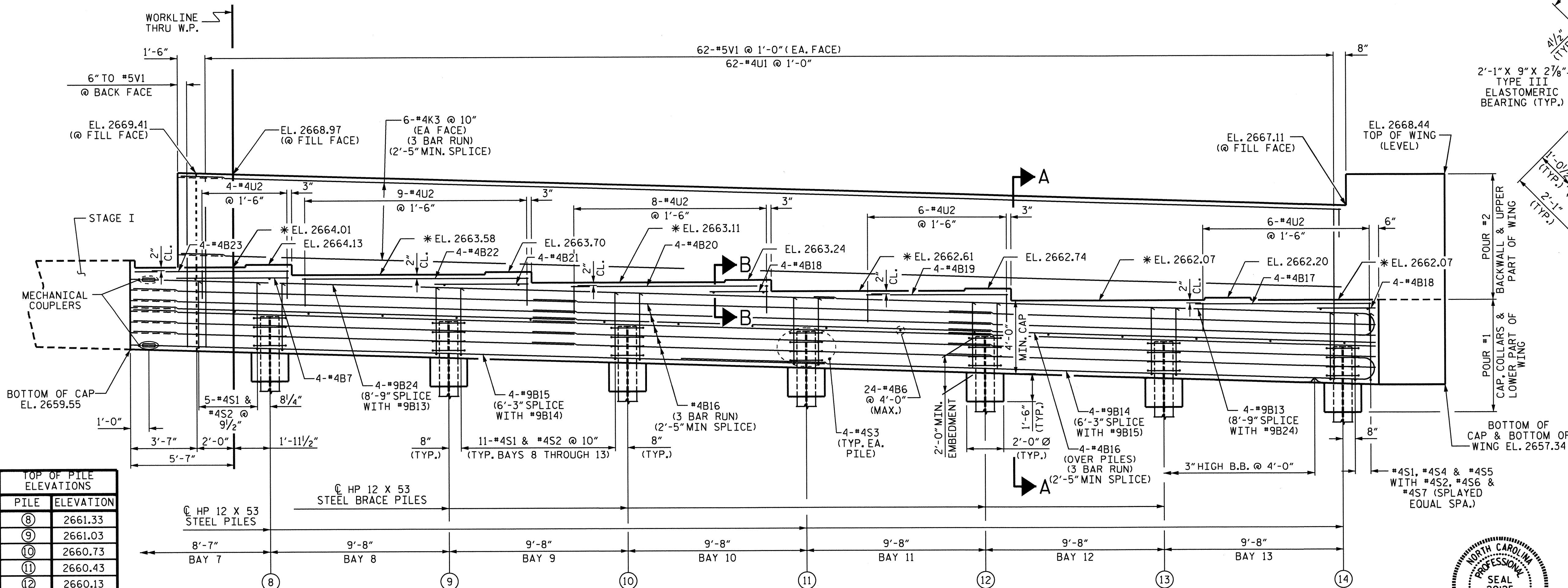
DRAWN BY: H. T. BARBOUR DATE: 1-21-14
 CHECKED BY: D. HODGE DATE: 2-14
 DESIGN ENGINEER OF RECORD: M.A. LEBLANC DATE: 3/14

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-55	
1			3			TOTAL SHEETS	62
2			4				



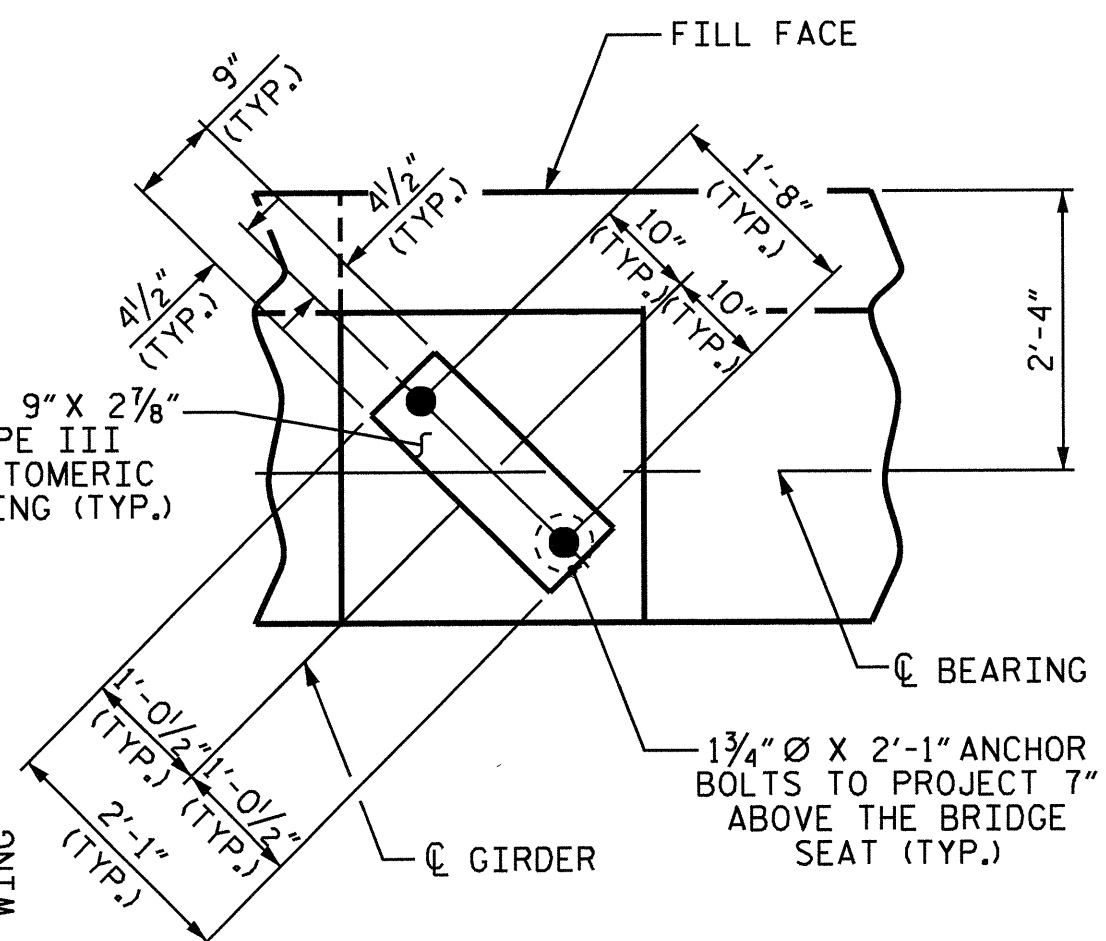
PLAN

DIMENSIONS TO WING BRACE PILE ARE SHOWN AT THE BOTTOM OF THE WING



ELEVATION

(WING NOT SHOWN FOR CLARITY)
 FOR SECTION A-A AND B-B SEE SHEET 4 OF 4
 * FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEATS BUILD-UPS, SEE SECTION A-A



DETAIL B

TOP OF PILE ELEVATIONS	
PILE	ELEVATION
⑧	2661.33
⑨	2661.03
⑩	2660.73
⑪	2660.43
⑫	2660.13
⑬	2659.83
⑭	2659.53

DRAWN BY : H.T. BARBOUR DATE : 1-23-14
 CHECKED BY : D. HODGE DATE : 2-14
 DESIGN ENGINEER OF RECORD : M.A. LEBLANC DATE : 3/14

22-APR-2014 14:46
 R:\Structures\Final Plans\B4554_SD_EB*2.dgn
 dhodge

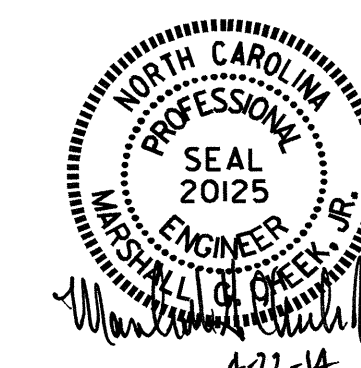
PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72-L-

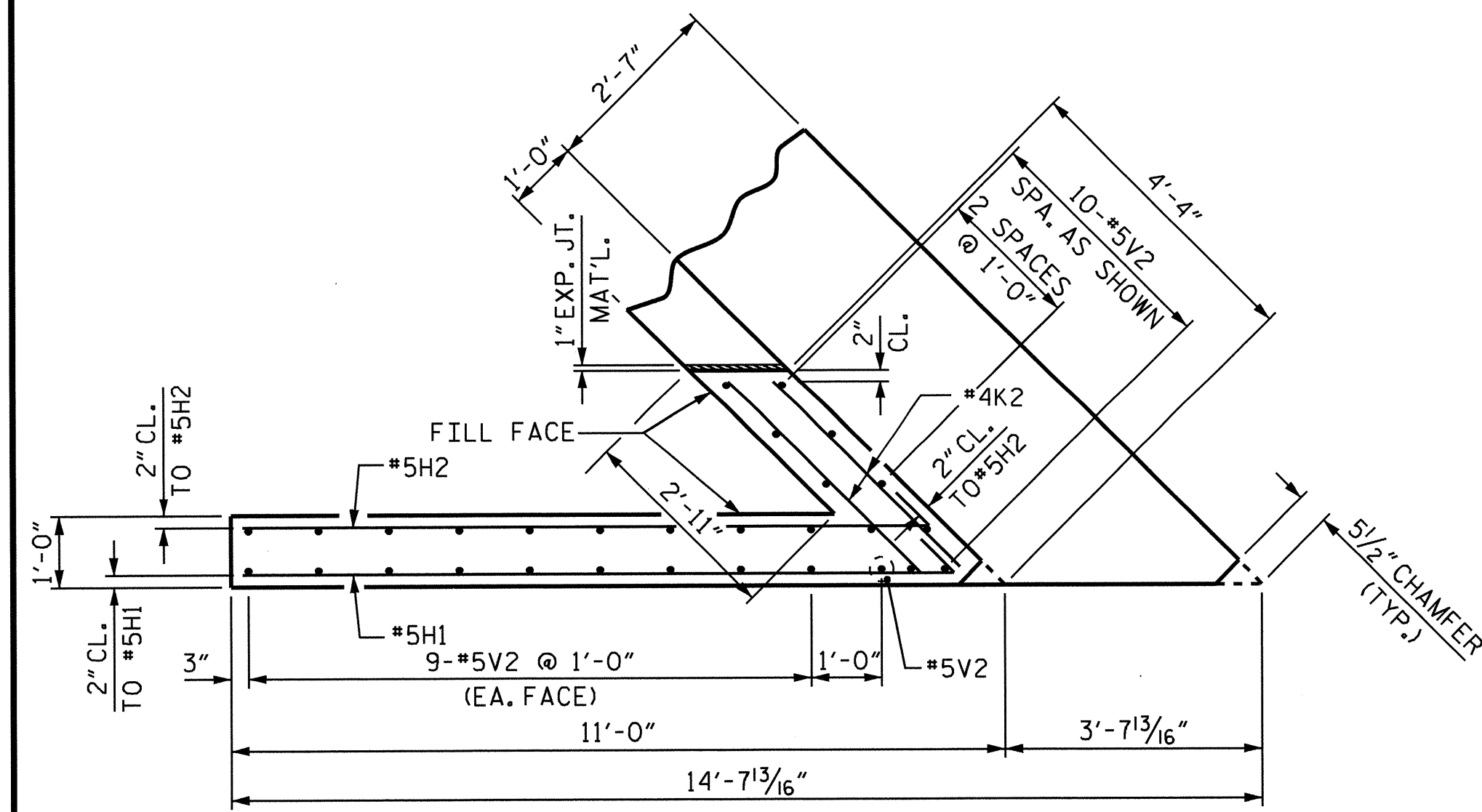
SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

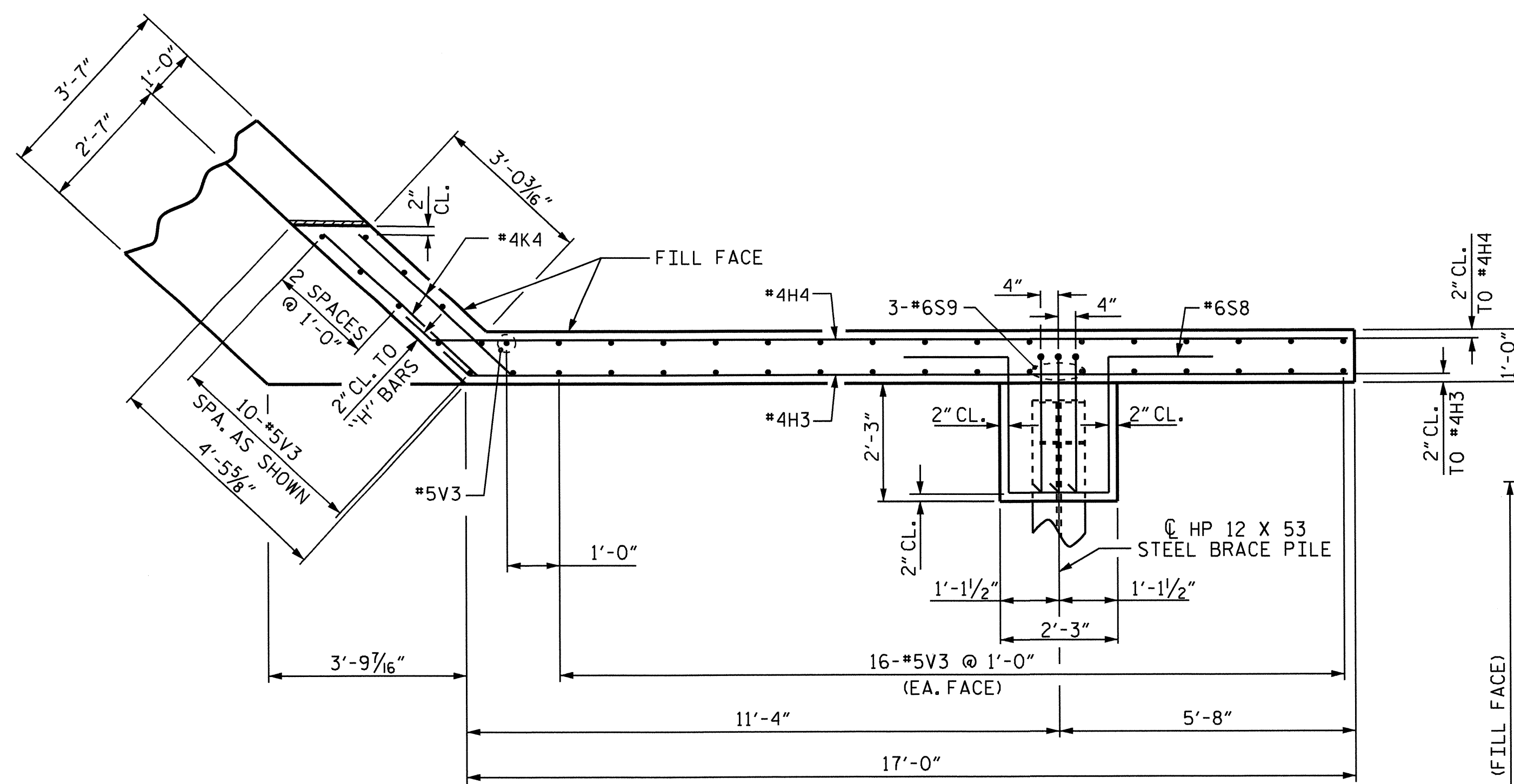
SUBSTRUCTURE
 END BENT No. 2
 STAGE II

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-56
1			3			TOTAL SHEETS 62
2			4			

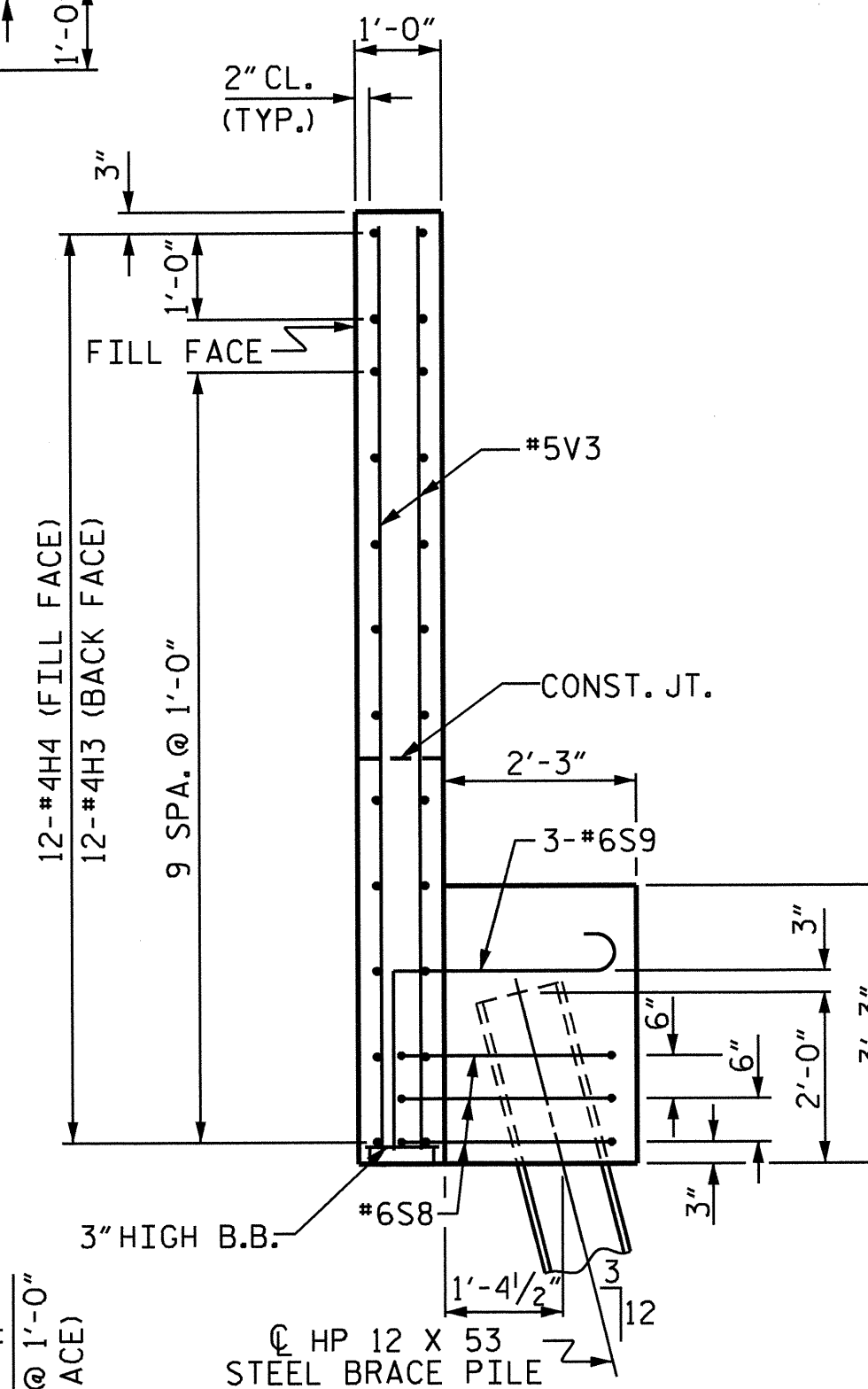




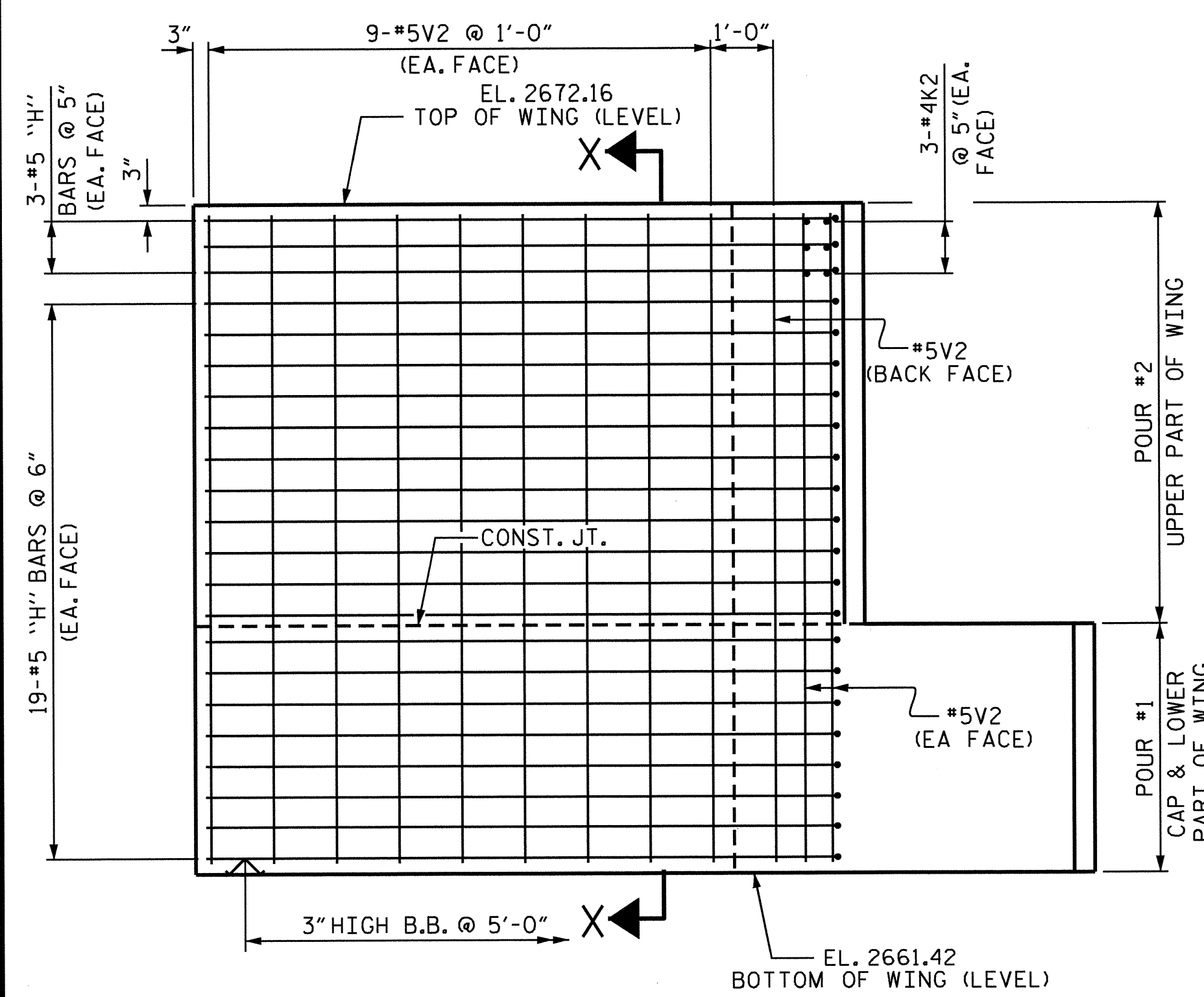
PLAN OF LEFT WING (W1)



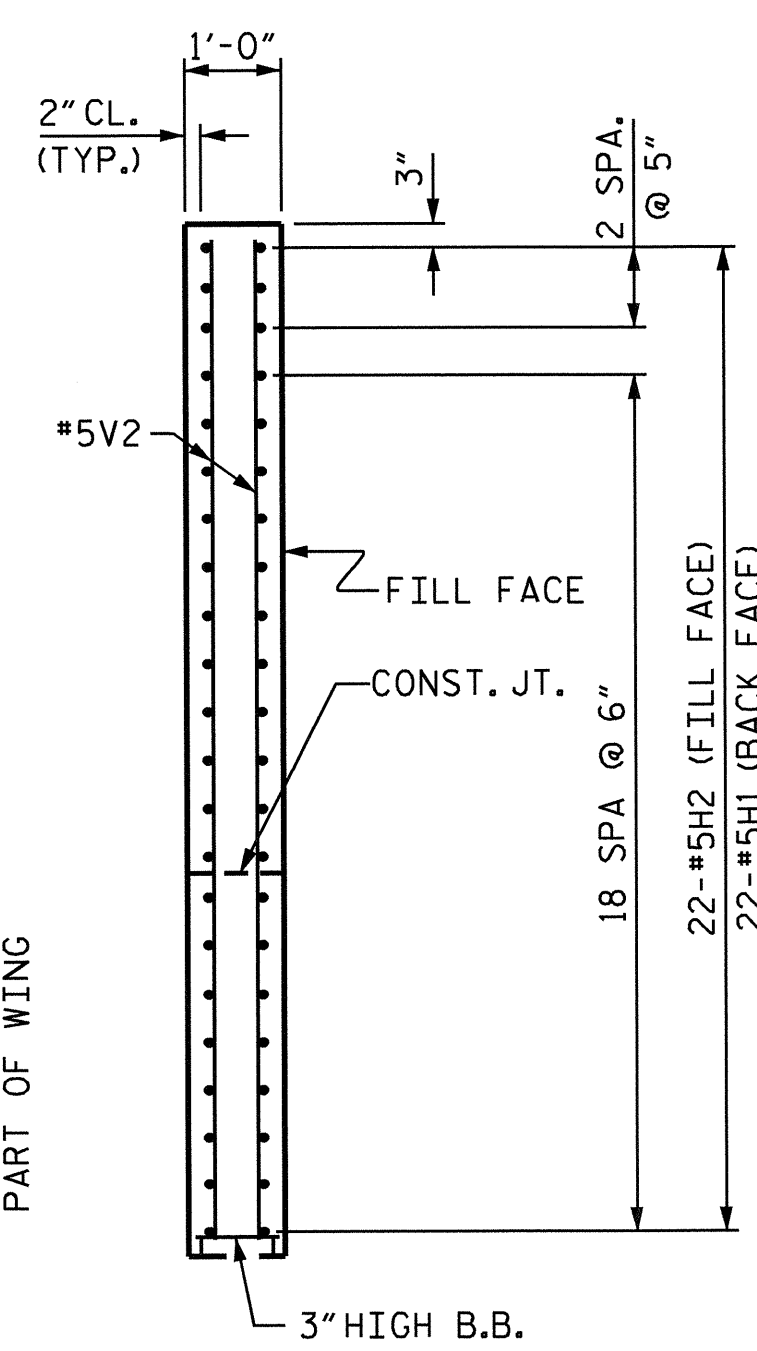
PLAN OF RIGHT WING (W2)



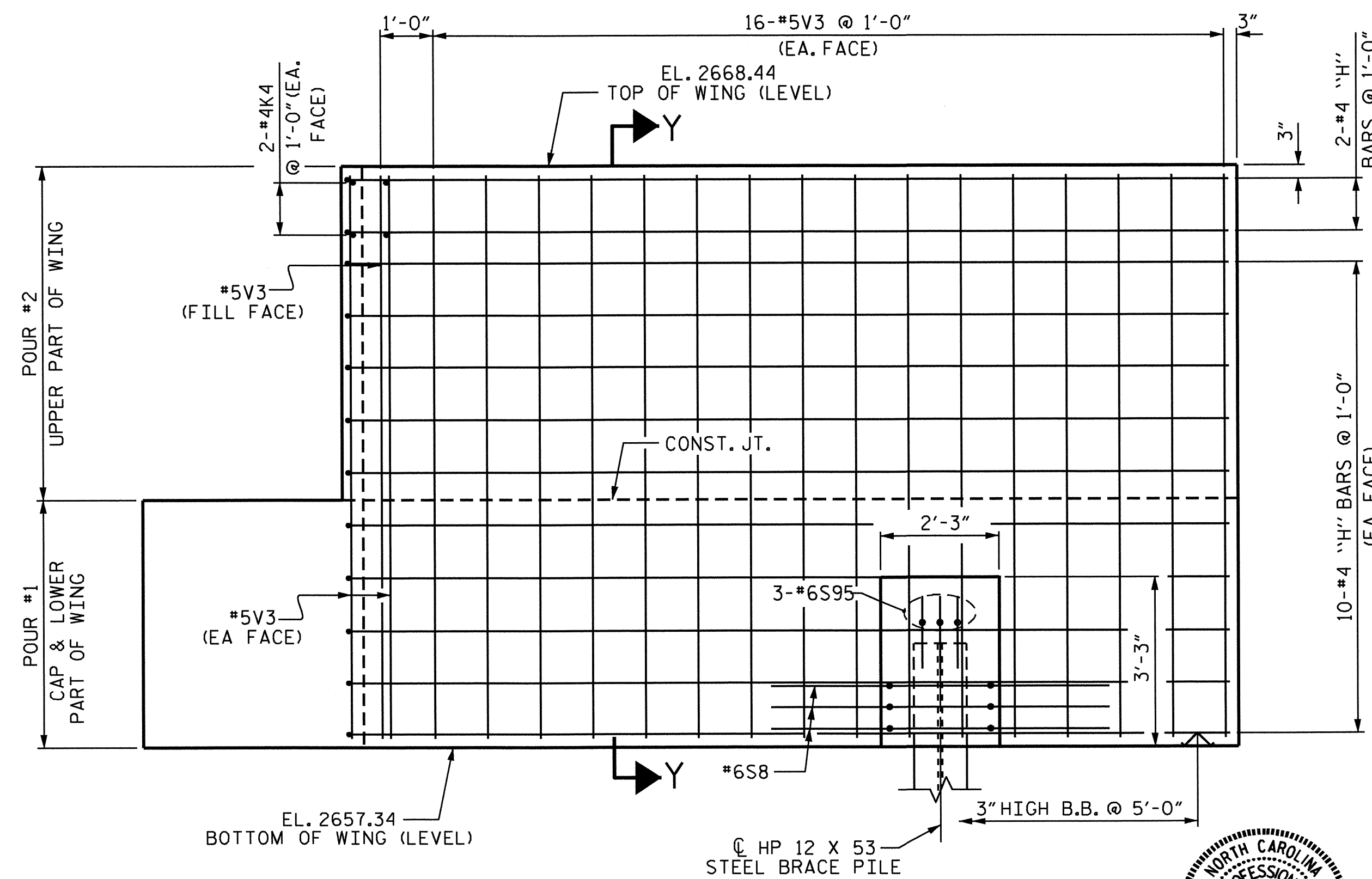
SECTION Y-Y



ELEVATION OF LEFT WING (W1)



SECTION X-X



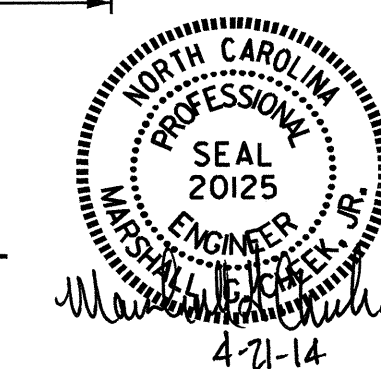
ELEVATION OF RIGHT WING (W2)

PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72-L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

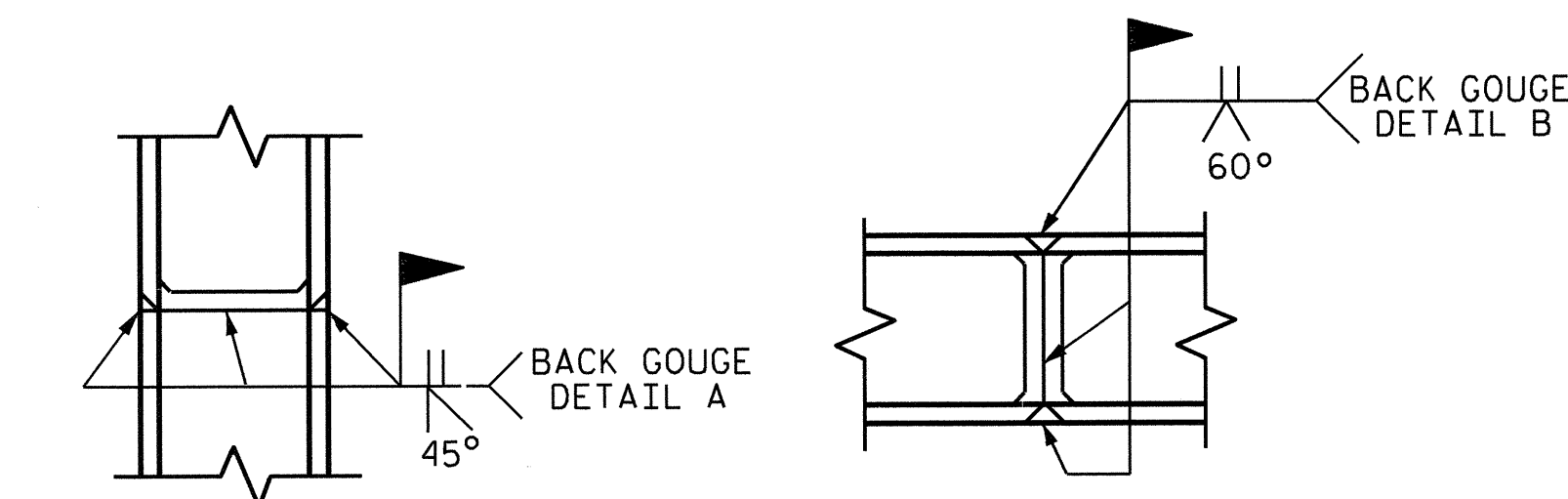
SUBSTRUCTURE
 END BENT No. 2



DRAWN BY: H. T. BARBOUR DATE: 1-29-14
 CHECKED BY: D. HODGE DATE: 2-14
 DESIGN ENGINEER OF RECORD: M.A. LEBLANC DATE: 3/14

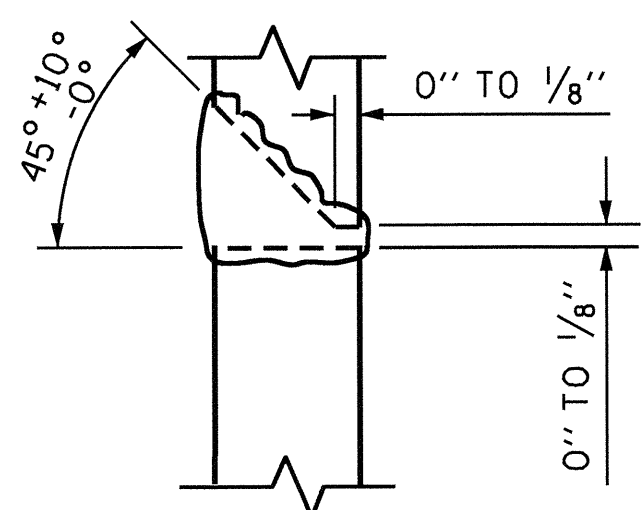
11-MAR-2014 12:07
 R:\Structures\Final Plans\B4554.SD_EB*2.dgn
 dahodge

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-57	
1			3			TOTAL SHEETS	
2			4			62	

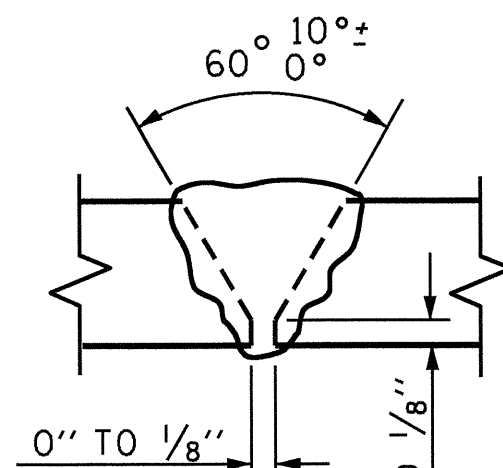


** PILE VERTICAL

** PILE HORIZONTAL OR VERTICAL



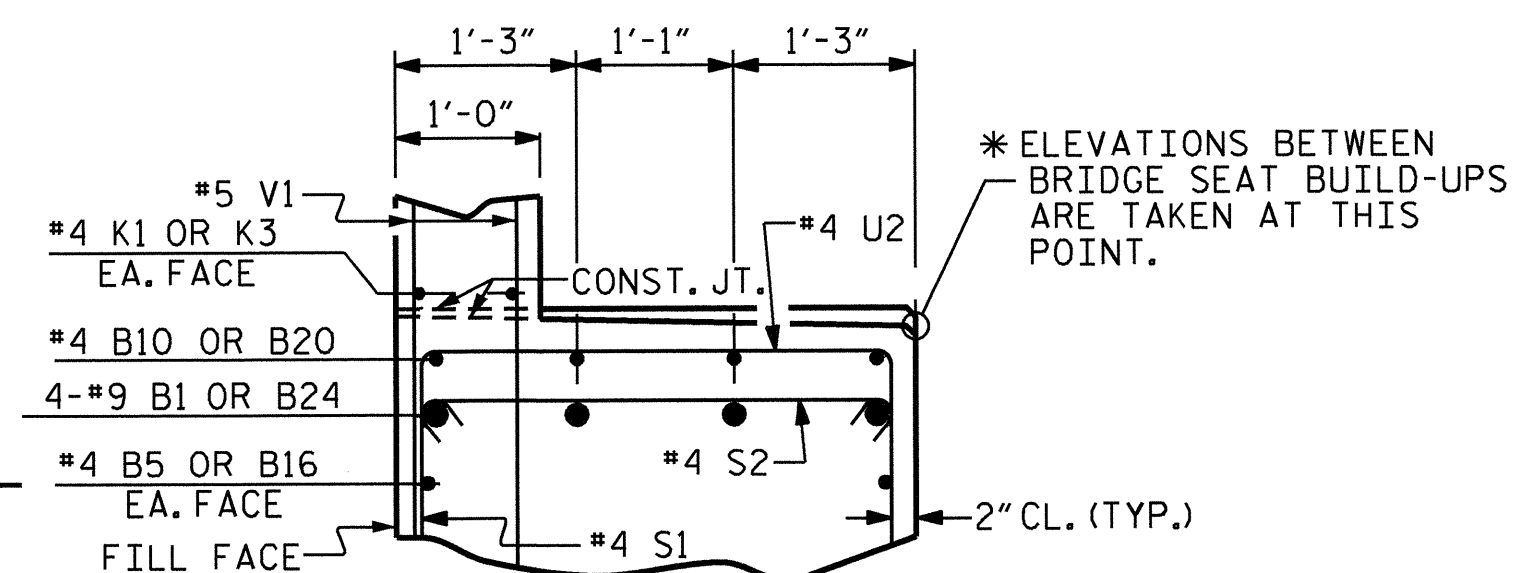
DETAIL A



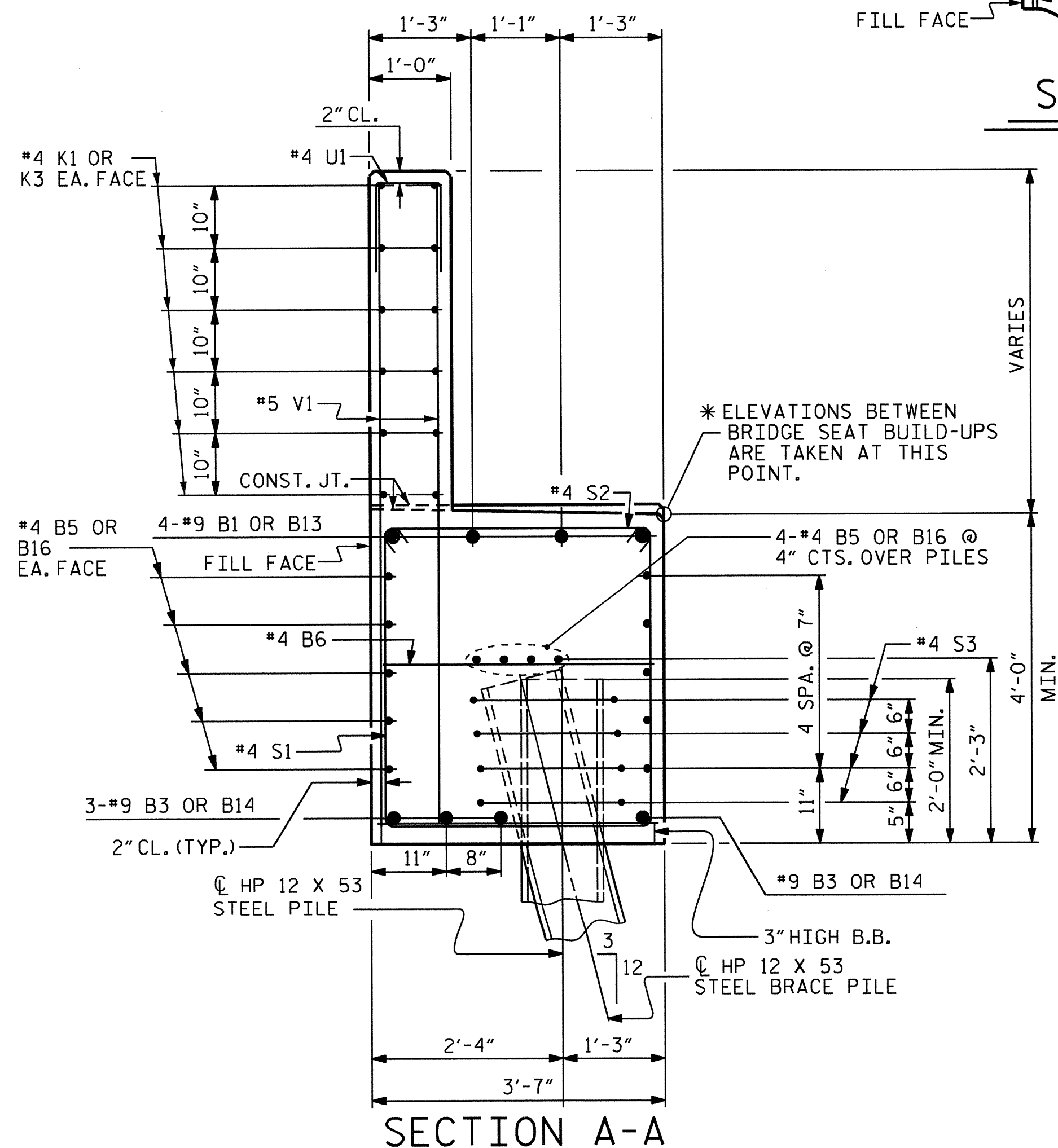
DETAIL B

** POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

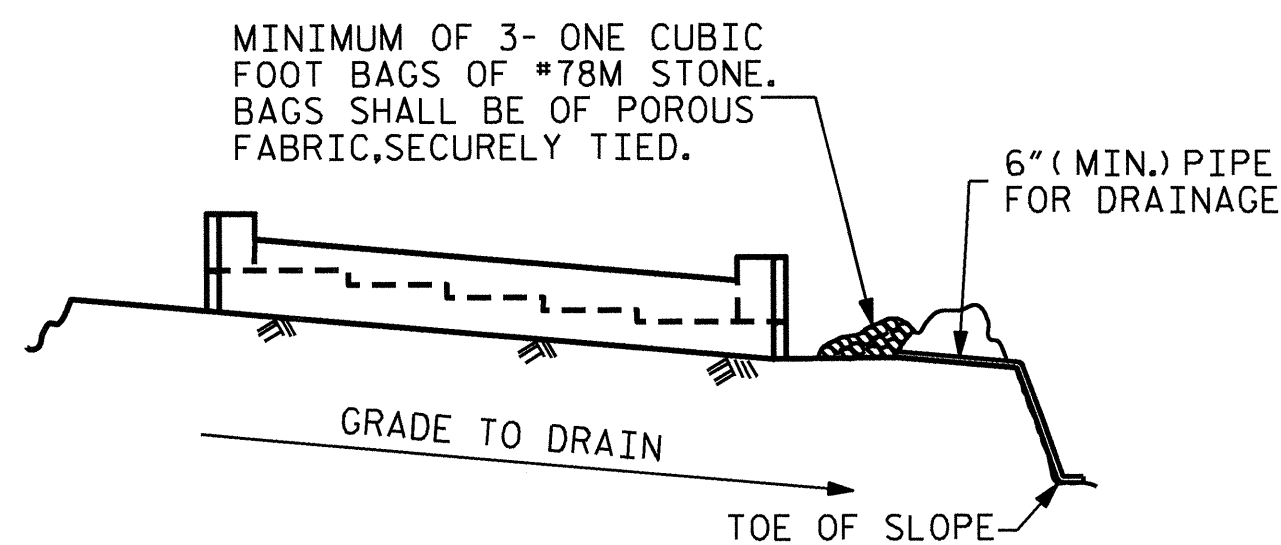


SECTION B-B



SECTION A-A

CONCRETE COLLAR NOT SHOWN FOR CLARITY



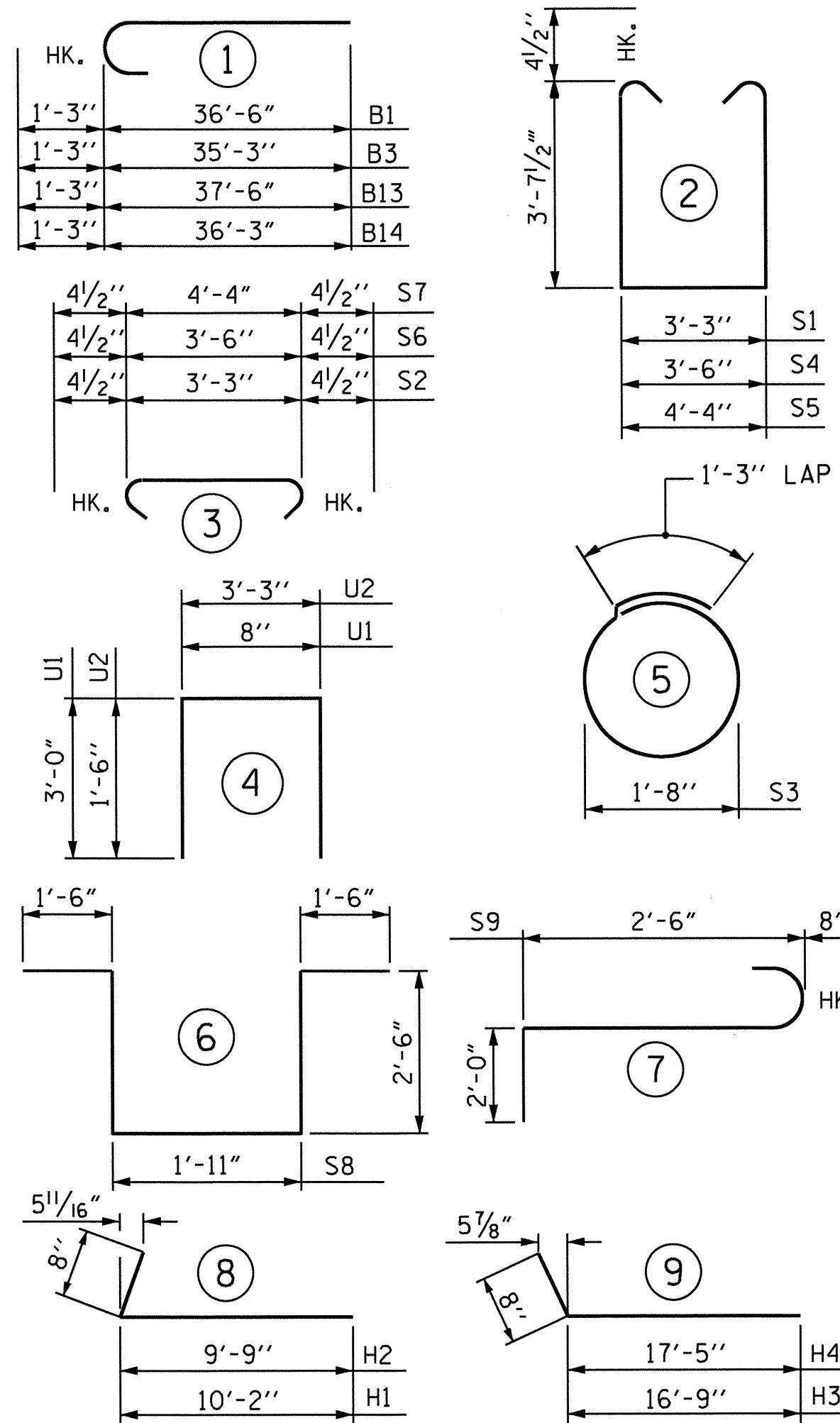
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

TEMPORARY DRAINAGE AT END BENT

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT No. 2

STAGE I					STAGE II						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#9	1	37'-9"	513	B6	24	#4	STR	3'-3"	52
B2	4	#9	STR	36'-6"	496	B7	4	#4	STR	6'-1"	16
B3	4	#9	1	36'-6"	496	B13	4	#9	1	38'-9"	527
B4	4	#9	STR	35'-3"	479	B14	4	#9	1	37'-6"	510
B5	42	#4	STR	23'-10"	669	B15	4	#9	STR	36'-3"	493
B6	18	#4	STR	3'-3"	39	B16	42	#4	STR	24'-1"	676
B7	4	#4	STR	6'-1"	16	B17	4	#4	STR	9'-9"	26
B8	4	#4	STR	17'-4"	46	B18	8	#4	STR	3'-2"	17
B9	4	#4	STR	15'-3"	41	B19	4	#4	STR	7'-8"	20
B10	4	#4	STR	9'-2"	24	B20	4	#4	STR	10'-8"	29
B11	4	#4	STR	6'-2"	16	B21	4	#4	STR	5'-1"	14
B12	4	#4	STR	2'-2"	6	B22	4	#4	STR	12'-3"	33
						B23	4	#4	STR	5'-0"	13
						B24	4	#9	STR	37'-6"	510
H1	22	#4	8	10'-10"	159						
H2	22	#4	8	10'-5"	153	H3	12	#4	9	17'-5"	140
K1	36	#4	STR	23'-10"	573	H4	12	#4	9	18'-1"	145
K2	6	#4	STR	3'-8"	15						
						K3	36	#4	STR	24'-1"	579
S1	72	#4	2	11'-3"	541	K4	4	#4	STR	4'-0"	11
S2	72	#4	3	4'-0"	192						
S3	28	#4	5	6'-6"	122	S1	72	#4	2	11'-3"	541
S4	1	#4	2	11'-6"	8	S2	72	#4	3	4'-0"	192
S5	1	#4	2	12'-4"	8	S3	28	#4	5	6'-6"	122
S6	1	#4	3	4'-3"	3	S4	1	#4	2	11'-6"	8
S7	1	#4	3	5'-1"	3	S5	1	#4	2	12'-4"	8
						S6	1	#4	3	4'-3"	3
U1	59	#4	4	6'-8"	263	S7	1	#4	3	5'-1"	3
U2	32	#4	4	6'-3"	134	S8	3	#6	6	9'-11"	45
						S9	3	#6	7	5'-2"	23
V1	117	#5	STR	9'-2"	1119						
V2	29	#5	STR	10'-4"	313						
REINFORCING STEEL					6,447 LBS.	U1	62	#4	4	6'-8"	276
CLASS A CONCRETE BREAKDOWN						U2	33	#4	4	6'-3"	138
POUR #1 (CAP, COLLARS & LOWER WING)					39.9 C.Y.	REINFORCING STEEL 6,847 LBS.					
POUR #2 (BACKWALL & UPPER WING)					14.7 C.Y.	CLASS A CONCRETE BREAKDOWN					
TOTAL					54.6 C.Y.	POUR #1 (CAP, LOWER WING & COLLARS) 44.5 C.Y.					
HP 12 x 53 STEEL PILES						POUR #2 (BACKWALL & UPPER WING) 17.6 C.Y.					
NO. 7					155 LIN FT.	TOTAL 62.1 C.Y.					
STEEL PILE POINTS					7 EACH	HP 12 x 53 STEEL PILES					
						NO. 8 300 LIN FT.					
						STEEL PILE POINTS 8 EACH					

TOTAL QUANTITIES

REINFORCING STEEL	13,294 LBS.
CLASS A CONCRETE	116.7 C.Y.
HP 12 X 53 STEEL PILES No. 15	455 LIN. FT.
STEEL PILE POINTS	15 EACH

PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72-L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

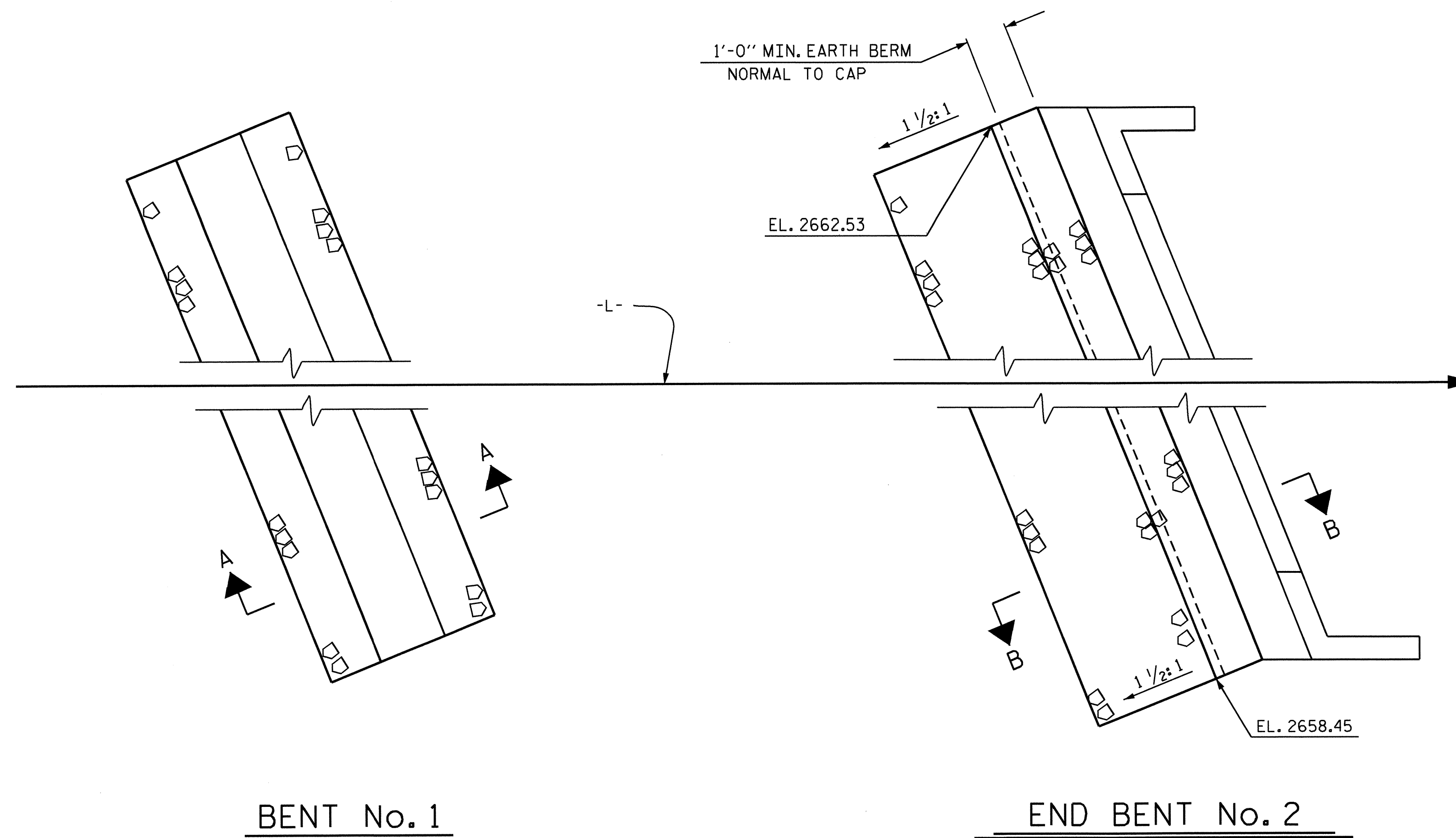
SUBSTRUCTURE
 END BENT No. 2



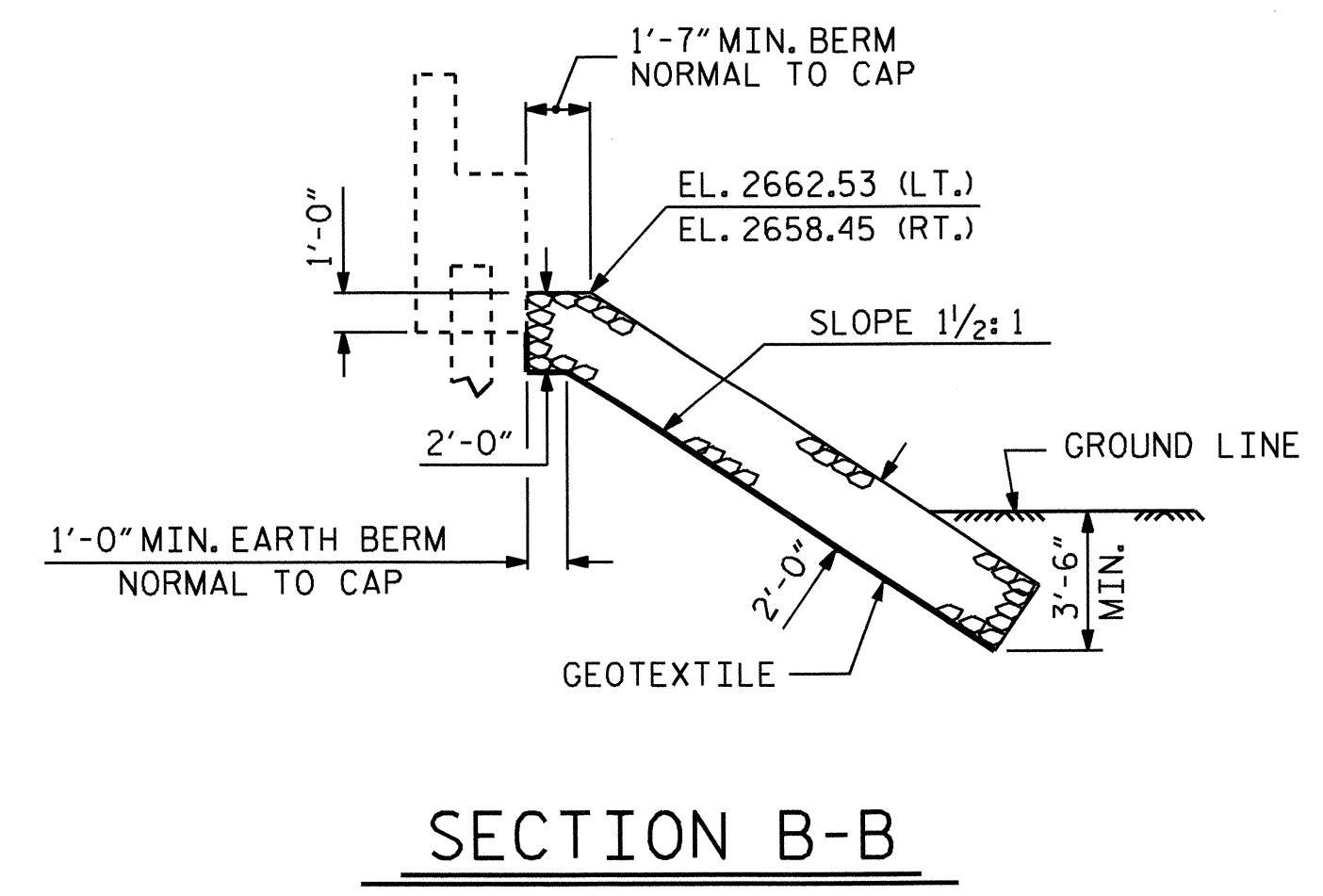
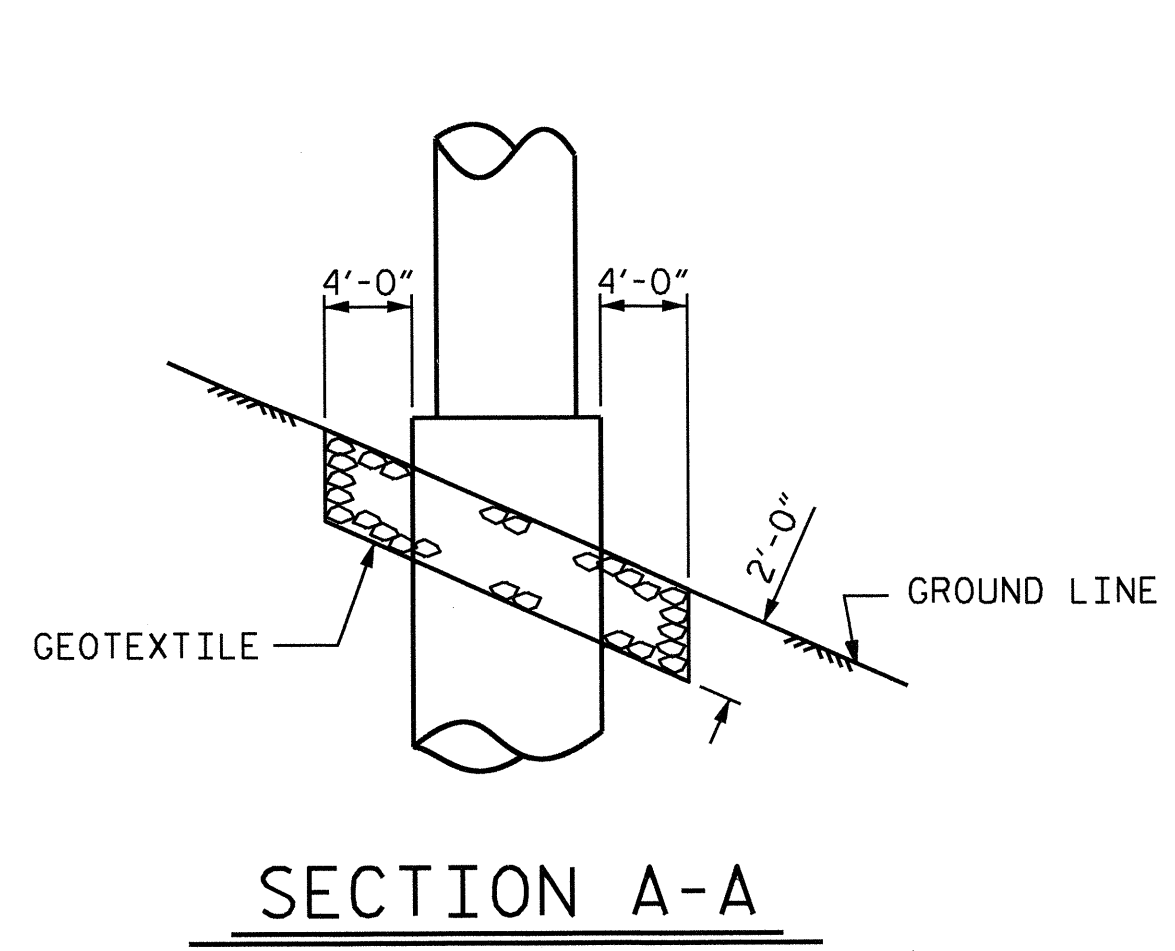
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			5-58
2			4			62

DRAWN BY: H. I. BARBOUR DATE: 1-27-14
 CHECKED BY: D. HODGE DATE: 2-14
 DESIGN ENGINEER OF RECORD: M.A. LEBLANC DATE: 3/14

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.



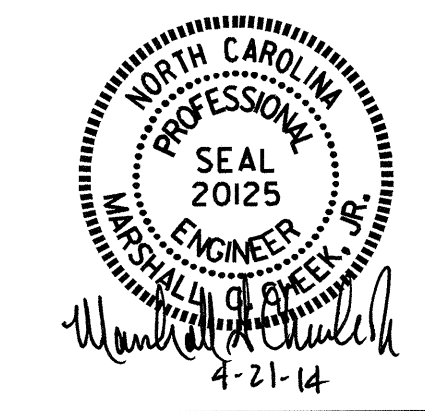
ESTIMATED QUANTITIES			
BRIDGE @ STA. 27+11.72 -L-	RIP RAP CLASS II (2'-0" THICK)	RIP RAP CLASS I	GEOTEXTILE FOR DRAINAGE
	TONS	TONS	SQUARE YARDS
BENT No. 1	140	-	155
END BENT No. 2	-	190	211



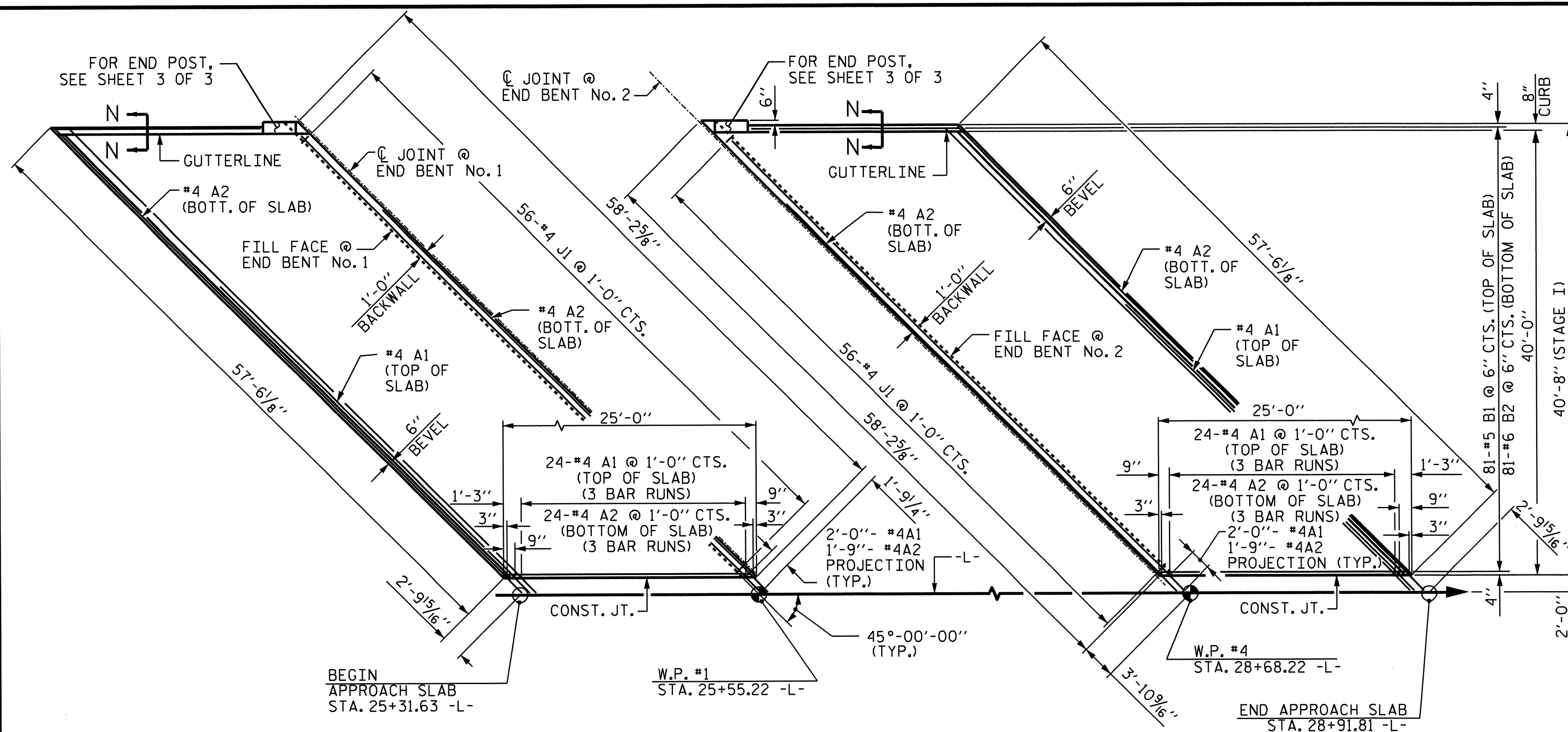
PROJECT NO. B-4554
JACKSON COUNTY
STATION: 27+11.72 -L-

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-59
2			4			62



ASSEMBLED BY : B.N. GRADY DATE : 2/14
CHECKED BY : V. NGUYEN DATE : 2/14
DRAWN BY : REK 1/84 REV. 5/1/06R TLA/GM
CHECKED BY : RDU 1/84 REV. 10/1/11 MAA/GM
REV. 12/21/11 MAA/GM



PLAN @ END BENT No. 1

PLAN @ END BENT No. 2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS EXCEPT AS SHOWN

NOTES

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

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 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.

PAYMENT FOR THE END POSTS ON THE APPROACH SLABS SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF "1'-2" X 2'-6" CONCRETE PARAPET".

FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.

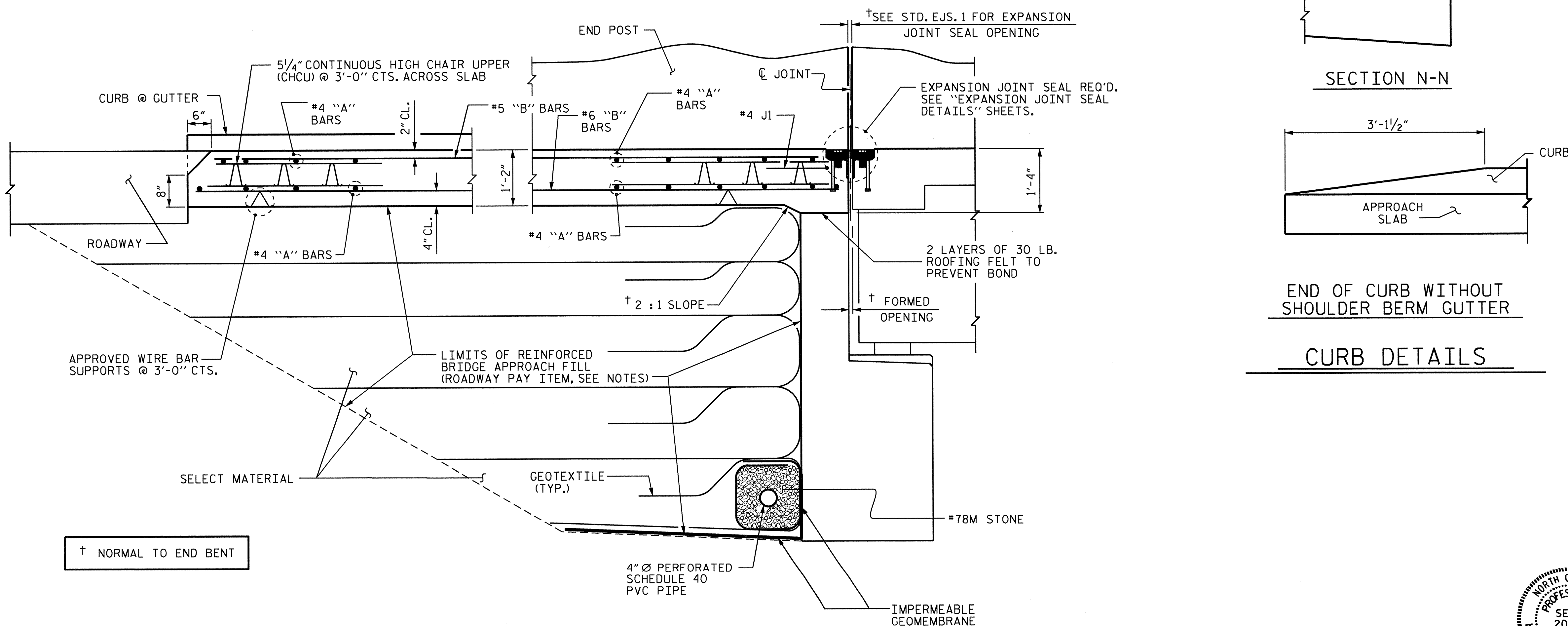
PAYMENT FOR THE CONCRETE MEDIAN BARRIER ON THE APPROACH SLABS SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF "CONCRETE MEDIAN BARRIER".

ALL REINFORCING STEEL IN CONCRETE MEDIAN BARRIER SHALL BE EPOXY COATED.

THE CONCRETE MEDIAN BARRIER SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.

GROOVED CONTRACTION JOINTS 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF CONCRETE MEDIAN BARRIER 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.

THE 1/2" EXPANSION JOINT IN THE CONCRETE MEDIAN BARRIER MAY BE SHIFTED SLIGHTLY IN ORDER TO MAINTAIN A 2" MINIMUM CLEARANCE TO THE #5 "S" BARS.



SECTION THRU SLAB

SECTION N-N

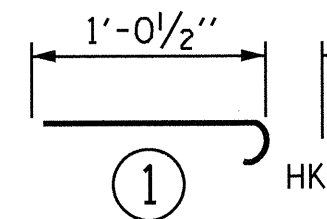
END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

BILL OF MATERIAL-STAGE I						
APPROACH SLAB AT EB No. 1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	75	#4	STR	21'-4"	1069	
A2	78	#4	STR	21'-2"	1103	
*B1	81	#5	STR	23'-4"	1971	
B2	81	#6	STR	24'-6"	2981	
*J1	56	#4	1	1'-5"	53	
REINFORCING STEEL					LBS.	4084
*EPOXY COATED REINFORCING STEEL					LBS.	3093
CLASS AA CONCRETE **					C. Y.	44.2
APPROACH SLAB AT EB No. 2						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	75	#4	STR	21'-4"	1069	
A2	78	#4	STR	21'-2"	1103	
*B1	81	#5	STR	23'-4"	1971	
B2	81	#6	STR	24'-8"	2981	
*J1	56	#4	1	1'-5"	53	
REINFORCING STEEL					LBS.	4084
*EPOXY COATED REINFORCING STEEL					LBS.	3093
CLASS AA CONCRETE **					C. Y.	44.2

** QUANTITIES FOR END POSTS ARE NOT INCLUDED, SEE SHEET 3 OF 3.

BAR TYPE



SPLICE LENGTHS

BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"

PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 1 OF 3

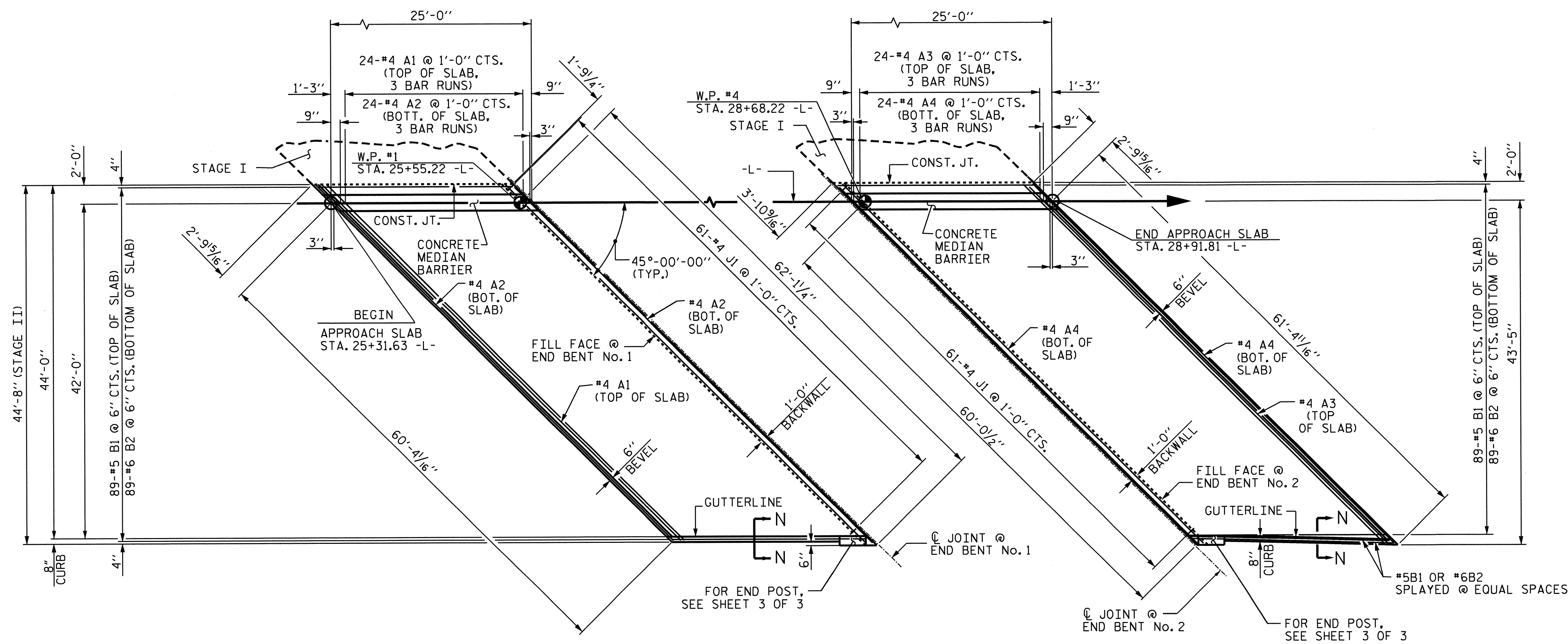
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH SLAB
 FOR FLEXIBLE PAVEMENT
 STAGE I



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

S-60
 TOTAL SHEETS 62



PLAN @ END BENT No. 1

PLAN @ END BENT No. 2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS EXCEPT AS SHOWN

BILL OF MATERIAL-STAGE II

APPROACH SLAB AT EB No. 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	75	#4	STR	22'-4"	1119
A2	78	#4	STR	22'-2"	1155
*B1	89	#5	STR	23'-4"	2166
B2	89	#6	STR	24'-6"	3275
*J1	61	#4	1	1'-5"	58

REINFORCING STEEL	LBS.	4430
* EPOXY COATED REINFORCING STEEL	LBS.	3343
CLASS AA CONCRETE **	C. Y.	48.6

APPROACH SLAB AT EB No. 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A3	75	#4	STR	22'-7"	1131
A4	78	#4	STR	22'-5"	1168
*B1	91	#5	STR	23'-4"	2215
B2	91	#6	STR	24'-6"	3349
*J1	61	#4	1	1'-5"	58

REINFORCING STEEL	LBS.	4517
* EPOXY COATED REINFORCING STEEL	LBS.	3404
CLASS AA CONCRETE **	C. Y.	49.2

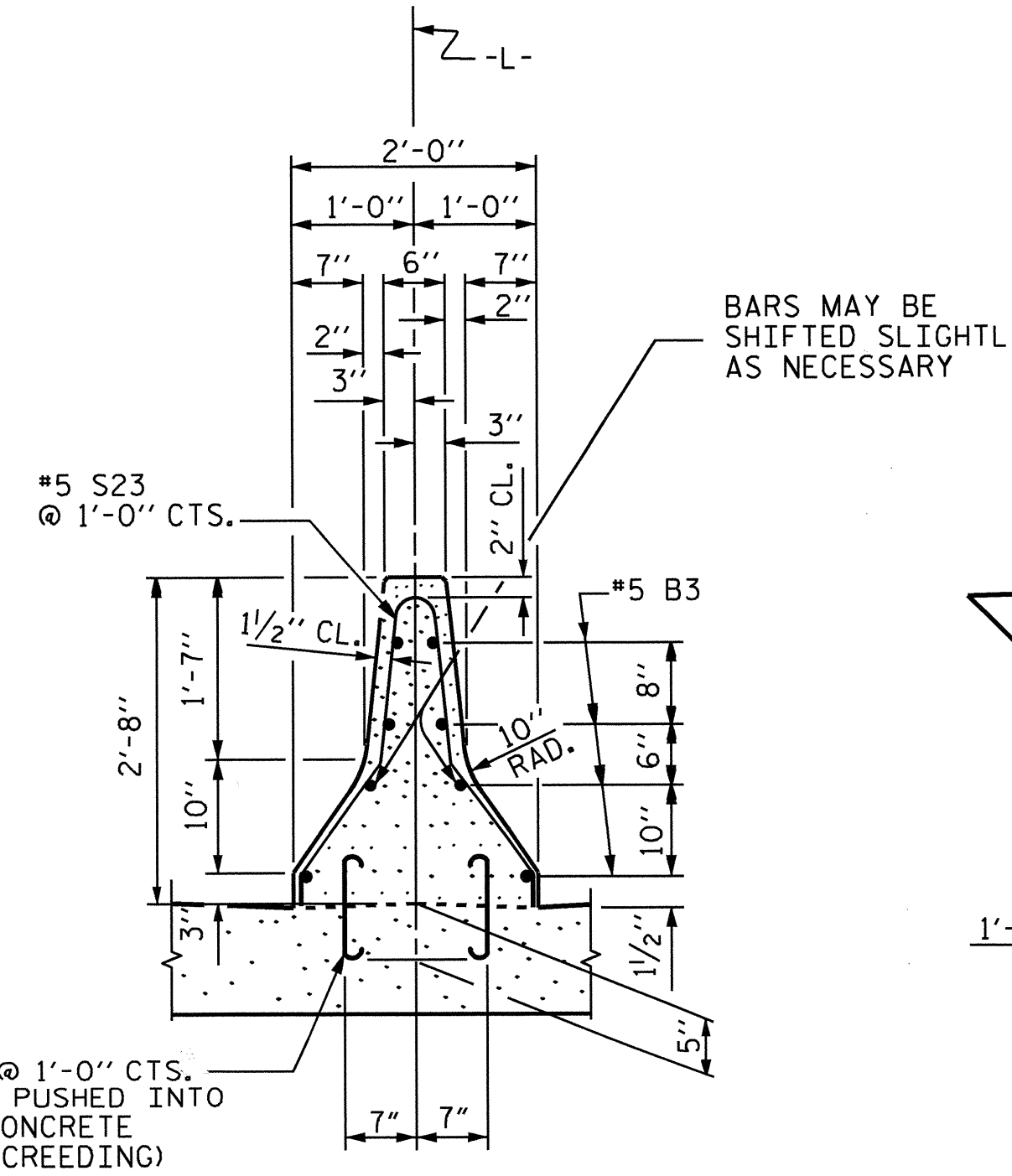
BILL OF MATERIAL

2'-0" CONCRETE MEDIAN BARRIER

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B3	16	#5	STR	24'-6"	409
*S22	92	#5	3	1'-10"	176
*S23	46	#5	2	5'-6"	264

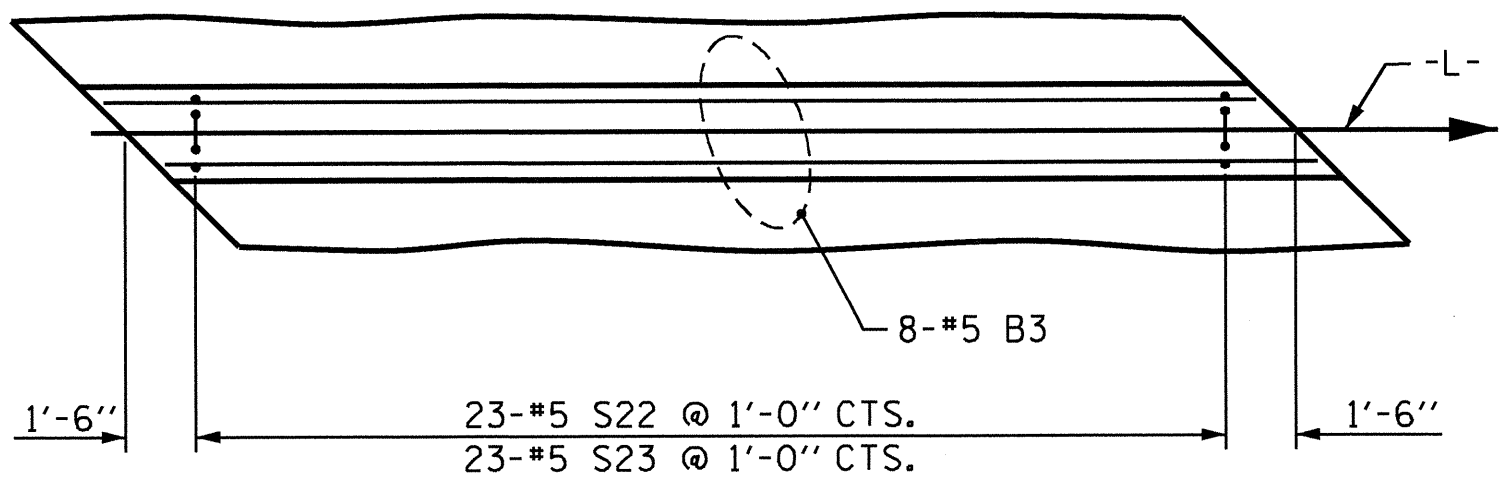
* EPOXY COATED REINFORCING STEEL	849	LBS.
CLASS AA CONCRETE	5.1	CU. YDS.

** QUANTITIES FOR END POSTS ARE NOT INCLUDED, SEE SHEET 3 OF 3.



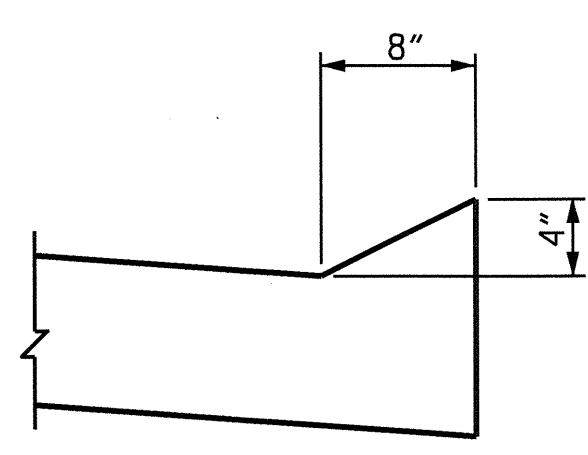
SECTION THRU 2'-0" MEDIAN BARRIER

CONCRETE MEDIAN BARRIER

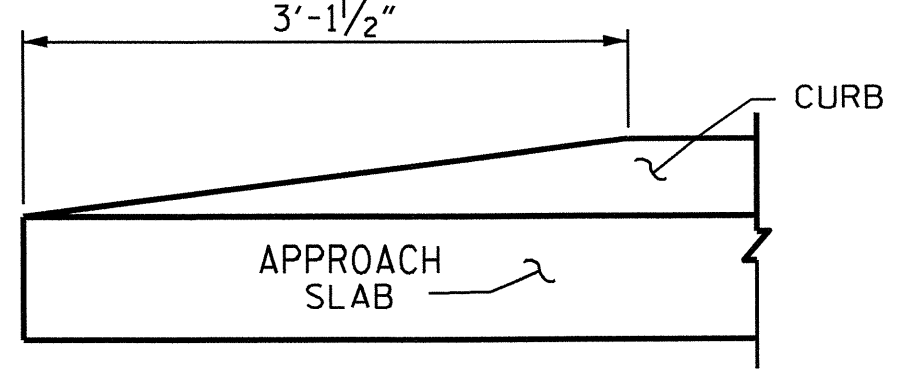


PLAN OF CONCRETE MEDIAN BARRIER

FOR SECTION THRU SLAB SEE SHEET 1 OF 3.

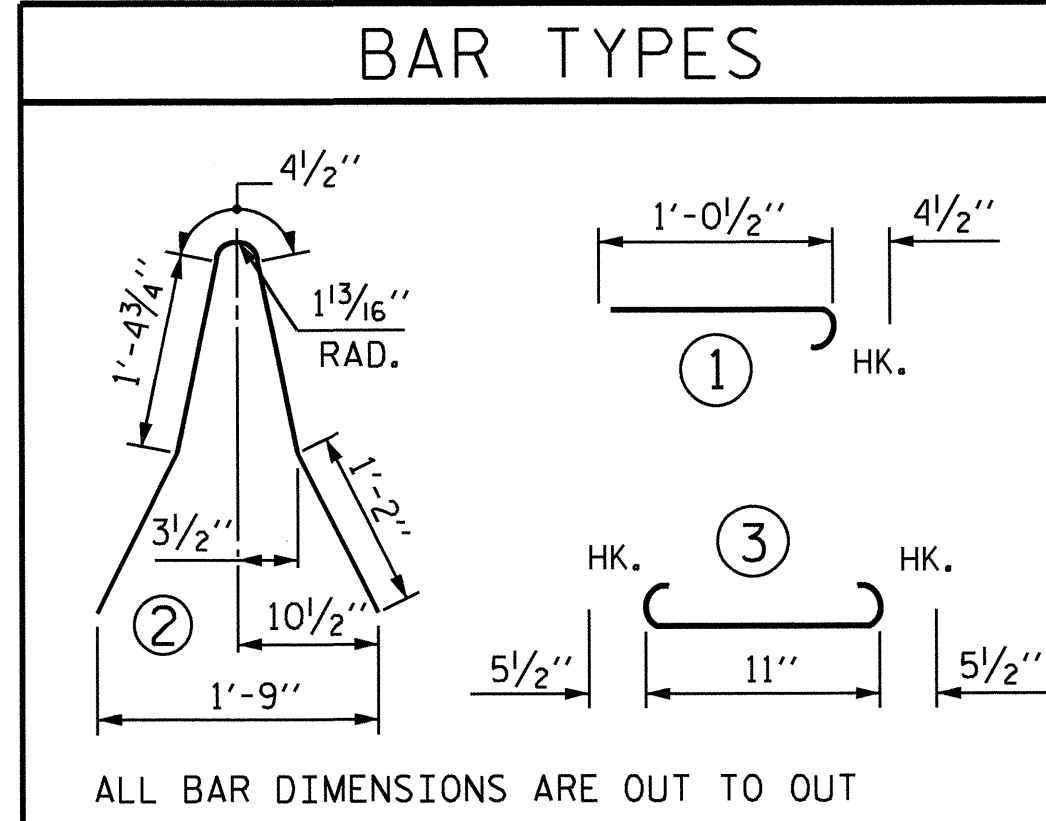


SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS



SPLICE LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"

PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH SLAB
 FOR FLEXIBLE PAVEMENT
 STAGE II



REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-61	
1			3			TOTAL SHEETS 62	
2			4				

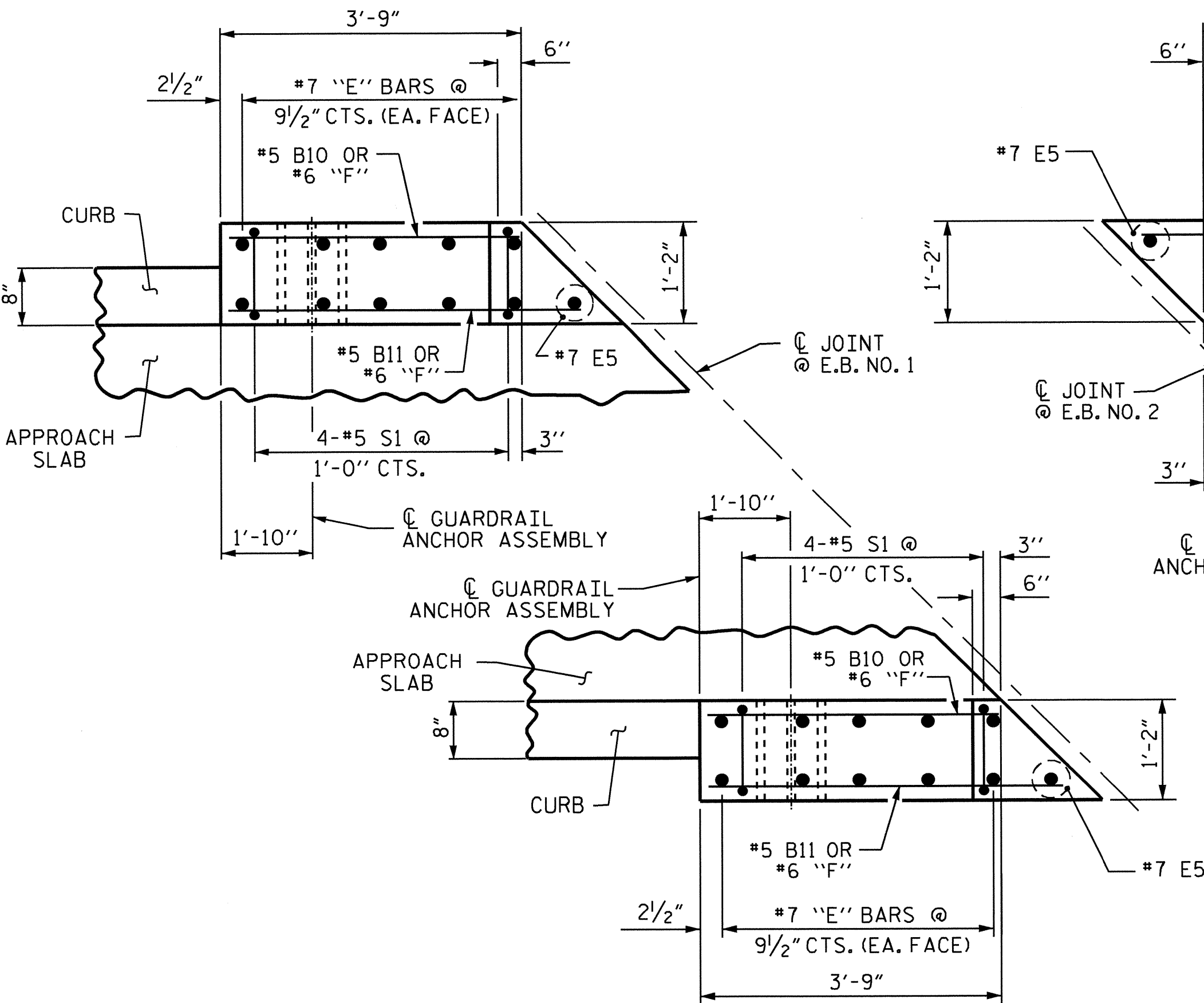
DRAWN BY: M. POOLE/VXN DATE: 1-13-14
 CHECKED BY: B.N. GRADY DATE: 2-14

NOTES

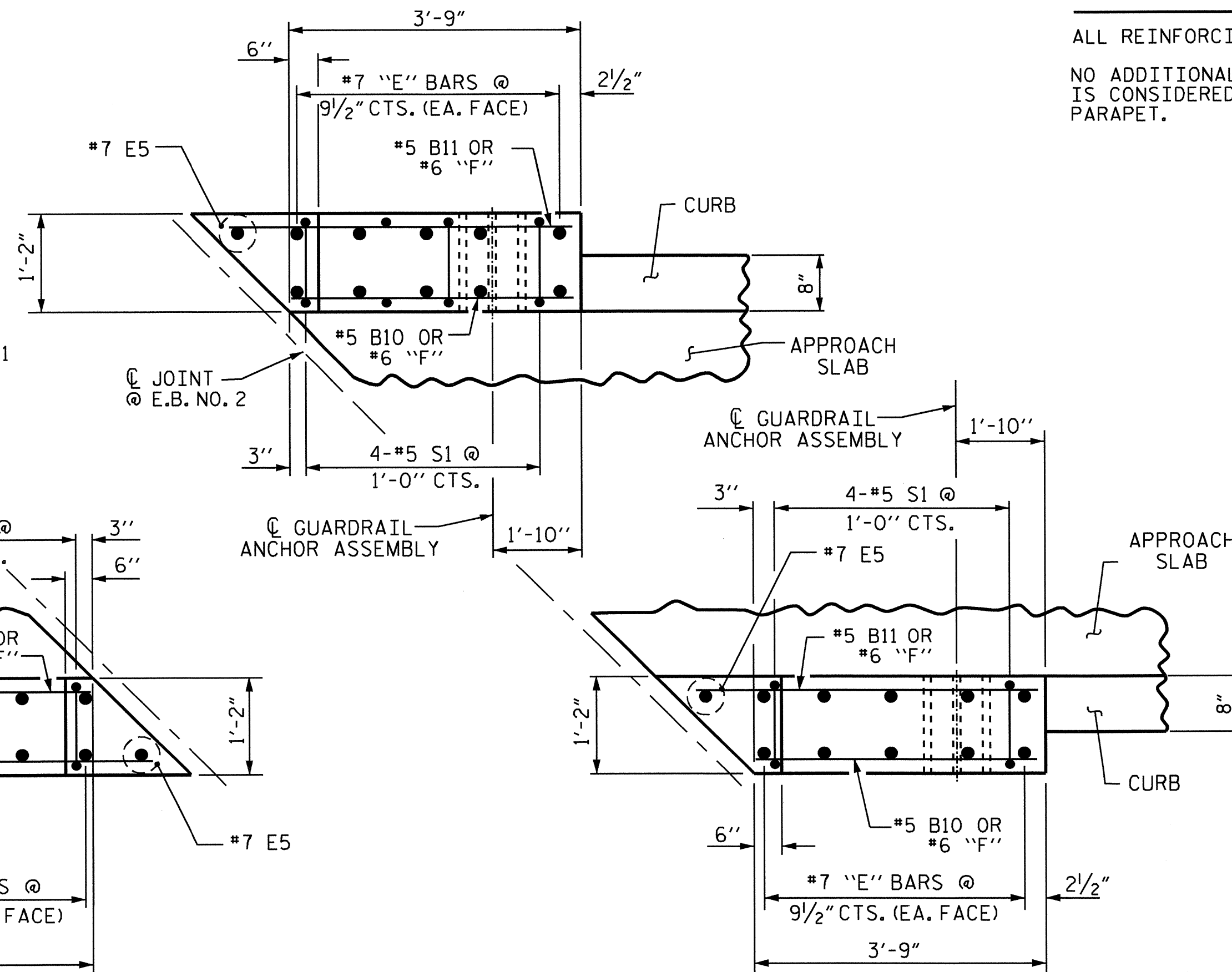
ALL REINFORCING STEEL IN END POSTS SHALL BE EPOXY COATED.
 NO ADDITIONAL PAYMENT SHALL BE MADE FOR THE CONCRETE END POSTS AS THIS IS CONSIDERED INCIDENTAL TO THE CONSTRUCTION OF THE 1'-2" X 2'-6" CONCRETE PARAPET.

BILL OF MATERIAL					
4 END POSTS					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B10	16	#5	STR	3'-5"	57
* B11	16	#5	STR	4'-7"	76
* E1	8	#7	STR	2'-6"	41
* E2	8	#7	STR	3'-0"	49
* E3	8	#7	STR	3'-6"	57
* E4	8	#7	STR	4'-0"	65
* E5	12	#7	STR	4'-4"	106
* F1	4	#6	STR	1'-10"	11
* F2	4	#6	STR	3'-0"	18
* F3	8	#6	STR	3'-3"	39
* F4	4	#6	STR	2'-10"	17
* F5	4	#6	STR	3'-10"	23
* S1	16	#5	4	7'- 2"	120
* EPOXY COATED REINFORCING STEEL					679 LBS.
CLASS AA CONCRETE					2.6 CU.YD.

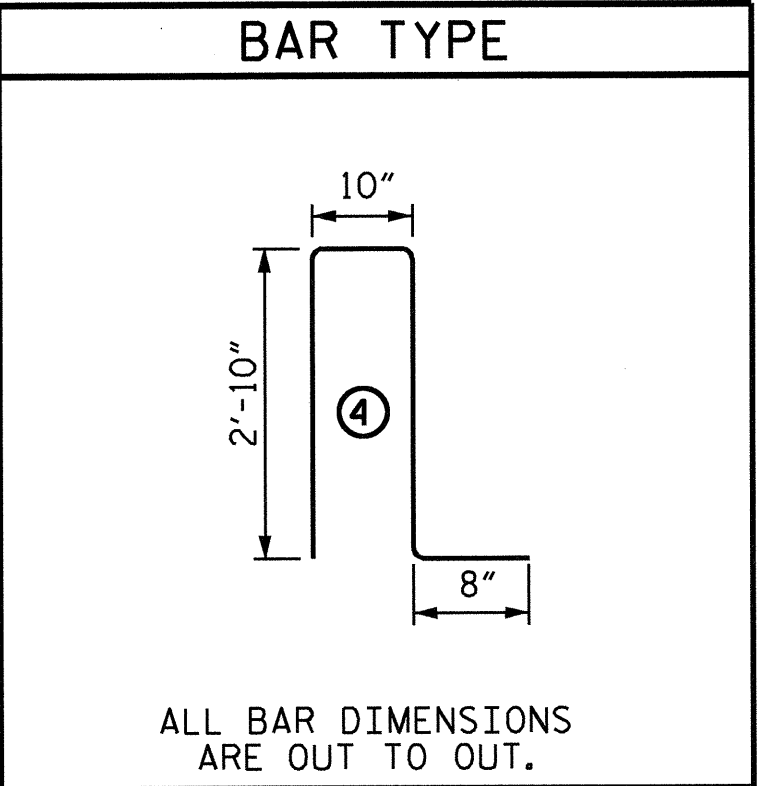
* THESE BARS ARE EPOXY COATED



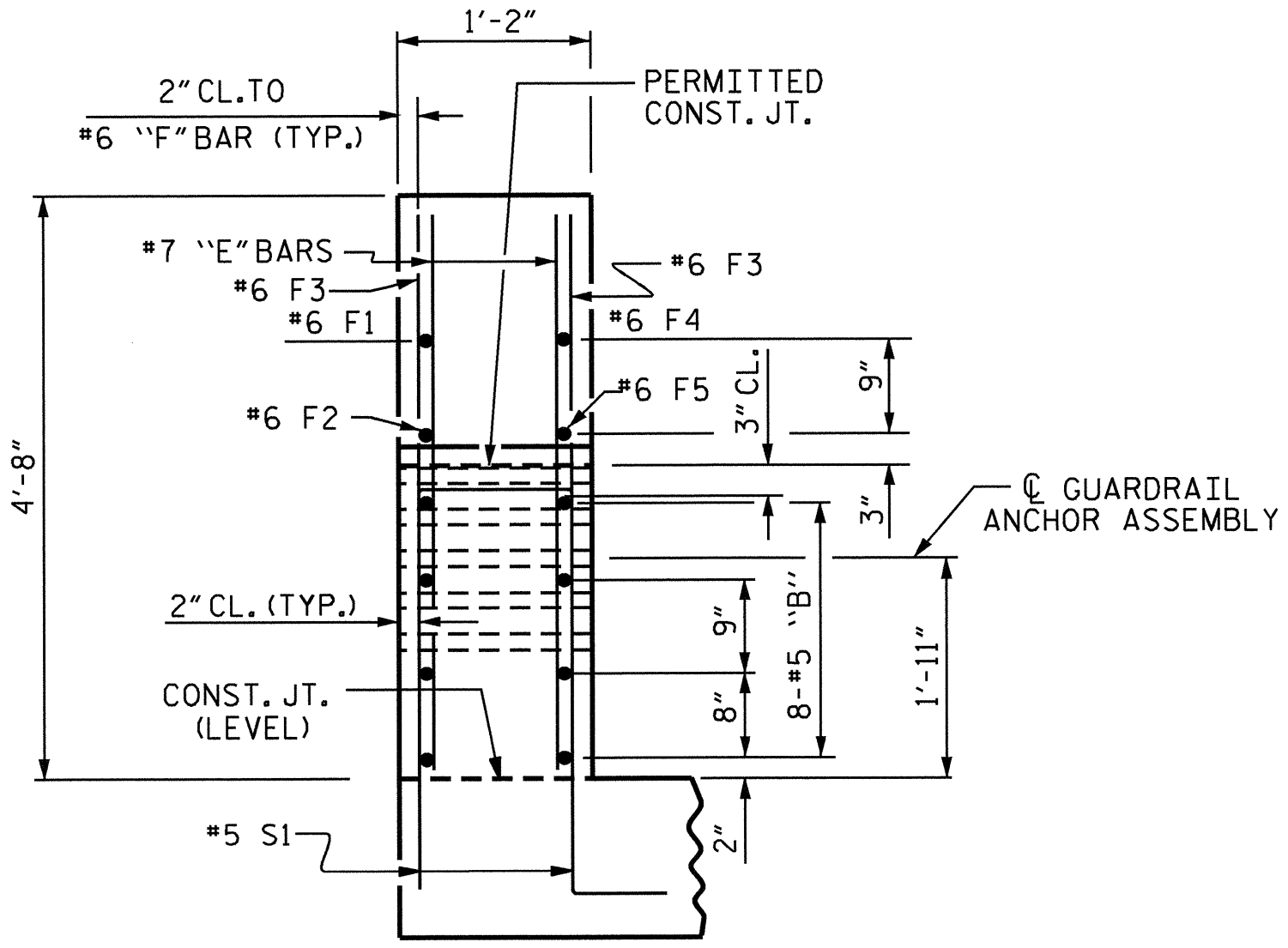
PLAN OF END POST @ E.B. No. 1



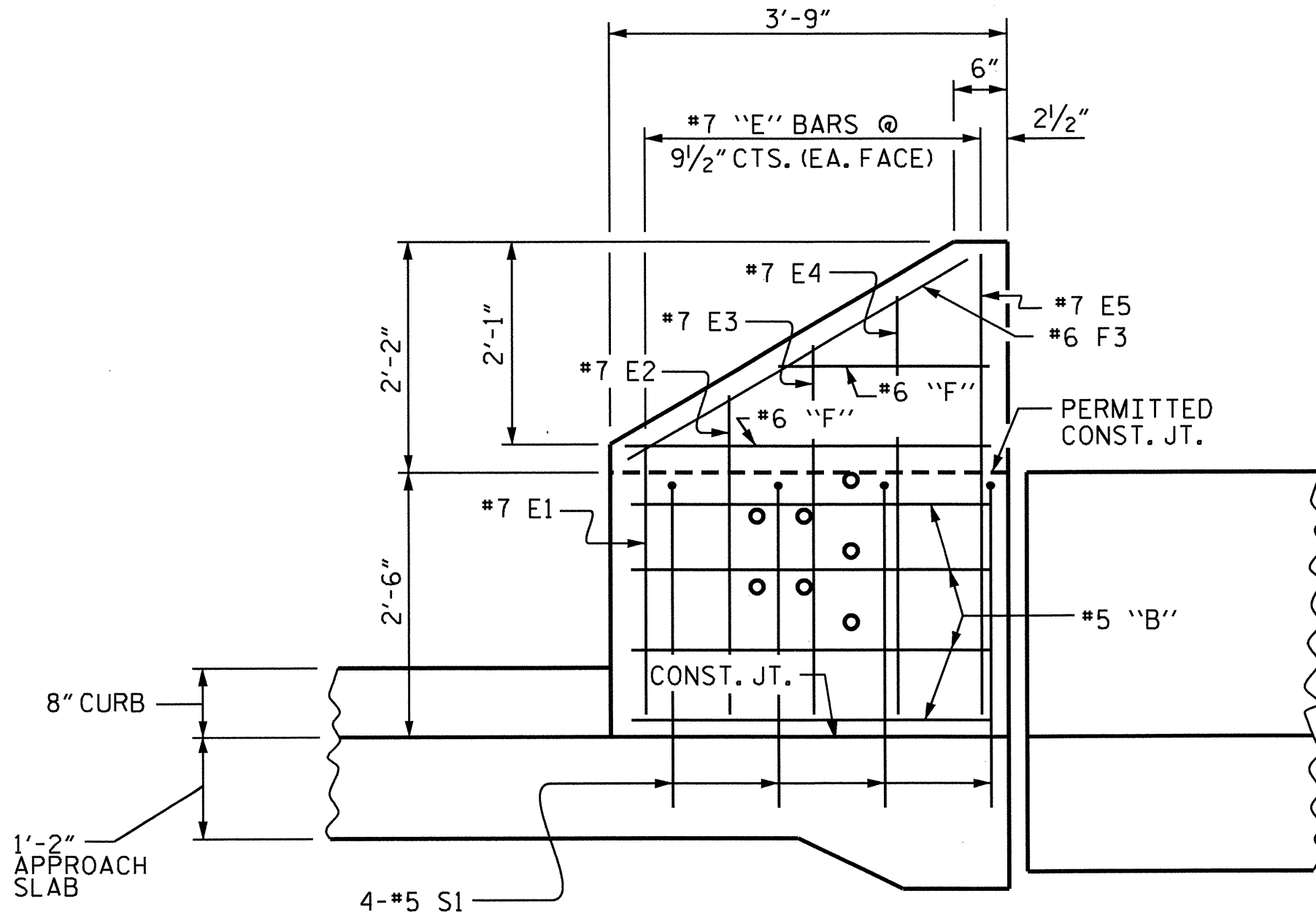
PLAN OF END POST @ E.B. No. 2



ALL BAR DIMENSIONS ARE OUT TO OUT.



END VIEW



ELEVATION

PARAPET AND END POST FOR TWO BAR RAIL

FOR GUARDRAIL ANCHORAGE, SEE "GUARDRAIL ANCHORAGE" SHEET

DRAWN BY: V.X. NGUYEN DATE: 1-10-14
 CHECKED BY: B.N. GRADY DATE: 2-14
 DESIGN ENGINEER OF RECORD: DATE:

11-MAR-2014 12:40
 R:\Structures\Plans\nguyen\B-4554_SD_AS.dgn
 vnguyen



PROJECT NO. B-4554
 JACKSON COUNTY
 STATION: 27+11.72 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH
 SLAB DETAILS
 CONCRETE END POSTS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-62
1			3			TOTAL SHEETS
2			4			62

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 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.
 ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.
 IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.
 DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.
 WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".
 EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.
 WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.
 METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990