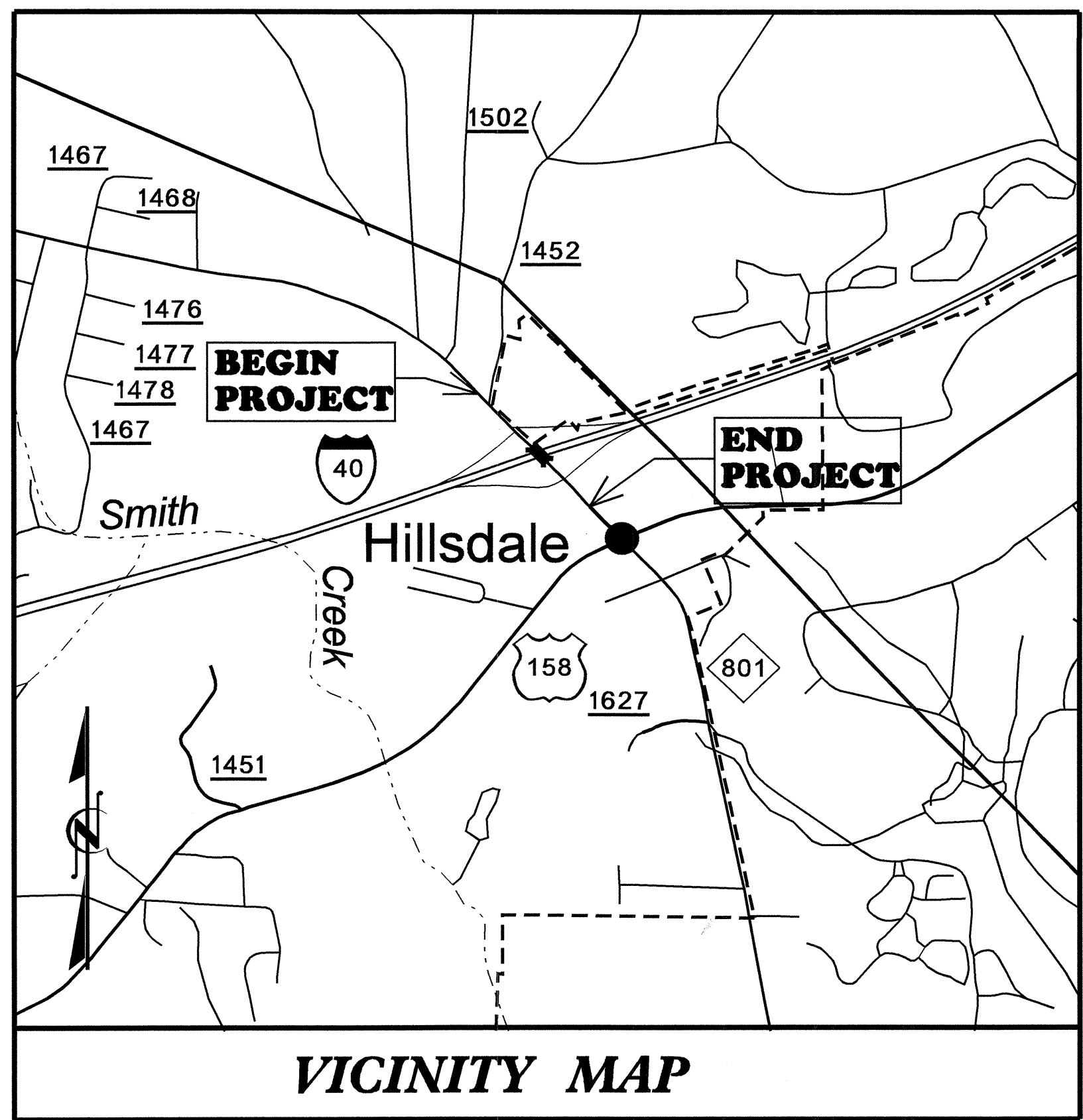


CONTRACT: C201303A TIP PROJECT: B-3637

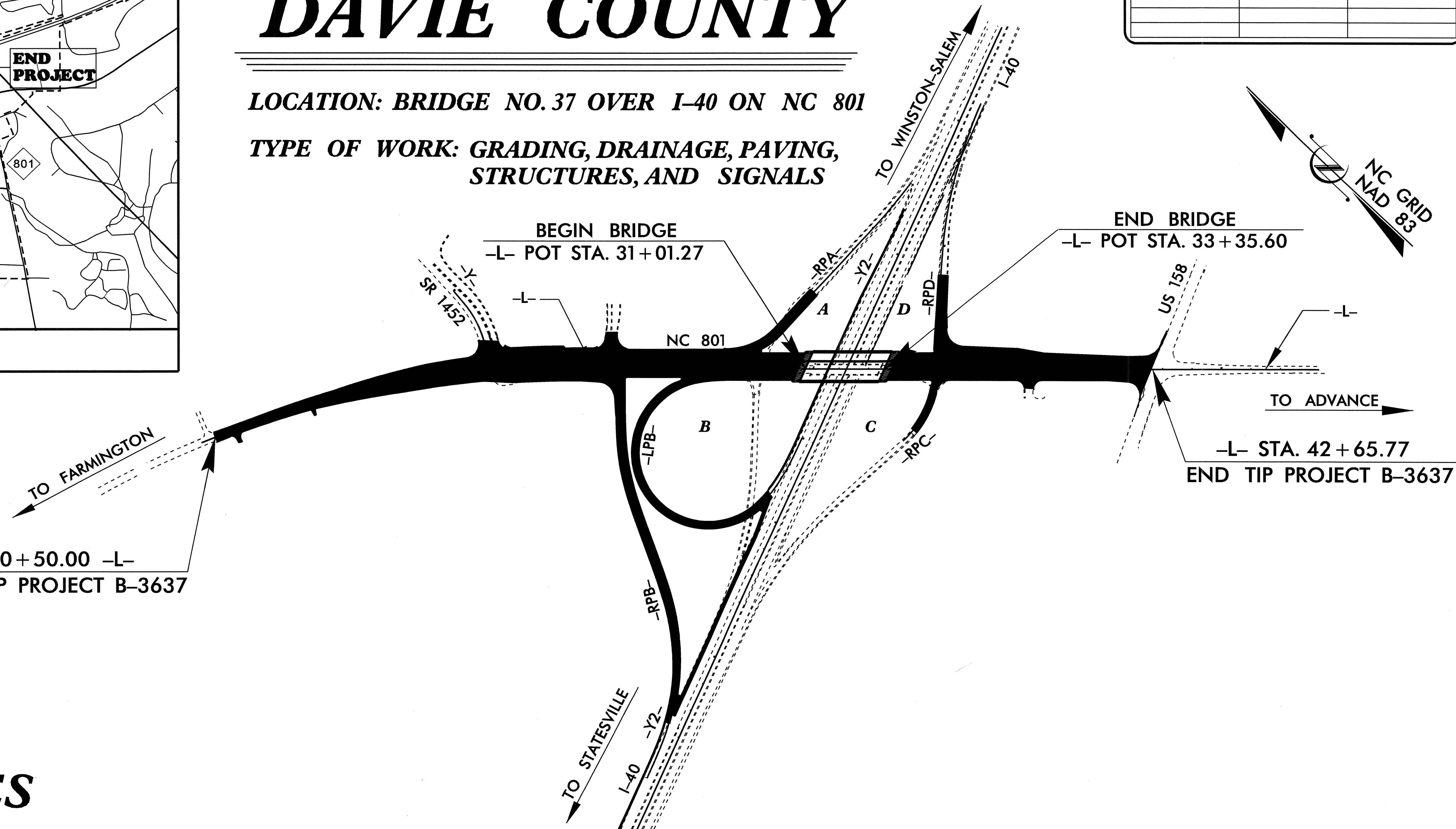
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3637		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33185.1.1	BRSTP-801(2)	PE	
33185.2.2	BRSTP-801(2)	R/W, UTILITIES	
33185.3.GVI	BRIMF-801(9)	CONST.	



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DAVIE COUNTY

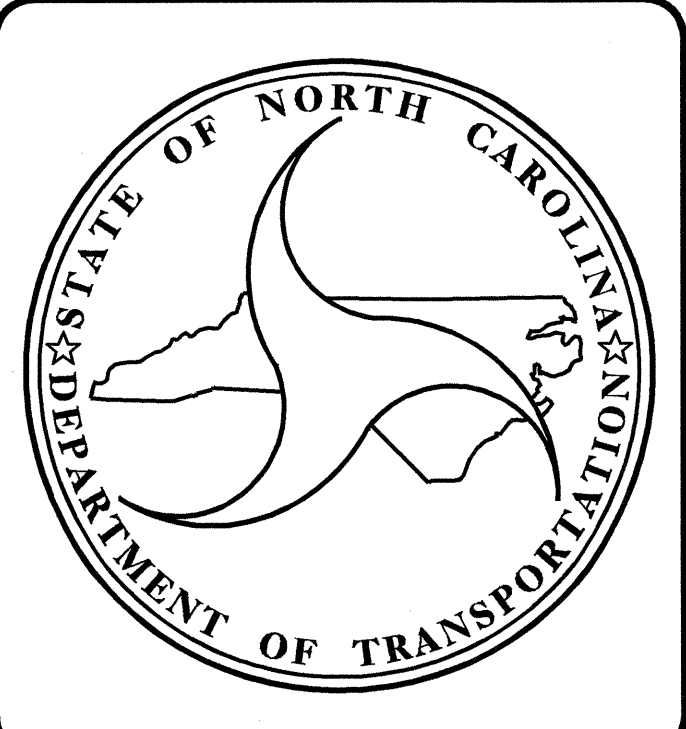
LOCATION: BRIDGE NO. 37 OVER I-40 ON NC 801
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES, AND SIGNALS



STA. 10+50.00 -L-
BEGIN TIP PROJECT B-3637

-L- STA. 42+65.77
END TIP PROJECT B-3637

STRUCTURES



DESIGN DATA

ADT 2007 =	21,208
ADT 2027 =	30,592
DHV =	11 %
D =	65 %
T =	5 % *
V =	40 MPH

*(TTST 1% + DUAL 4%)

PROJECT LENGTH

LENGTH ROADWAY OF TIP PROJECT B-3637	=0.565 MI
LENGTH STRUCTURE OF TIP PROJECT B-3637	=0.044 MI
TOTAL LENGTH OF TIP PROJECT B-3637	= 0.609 MI

Prepared in the Office of:

DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS

LETTING DATE :
SEPTEMBER 18, 2007

B. C. HUNT, P. E.
PROJECT ENGINEER

T. G. PAYNE, P. E.
PROJECT DESIGN ENGINEER

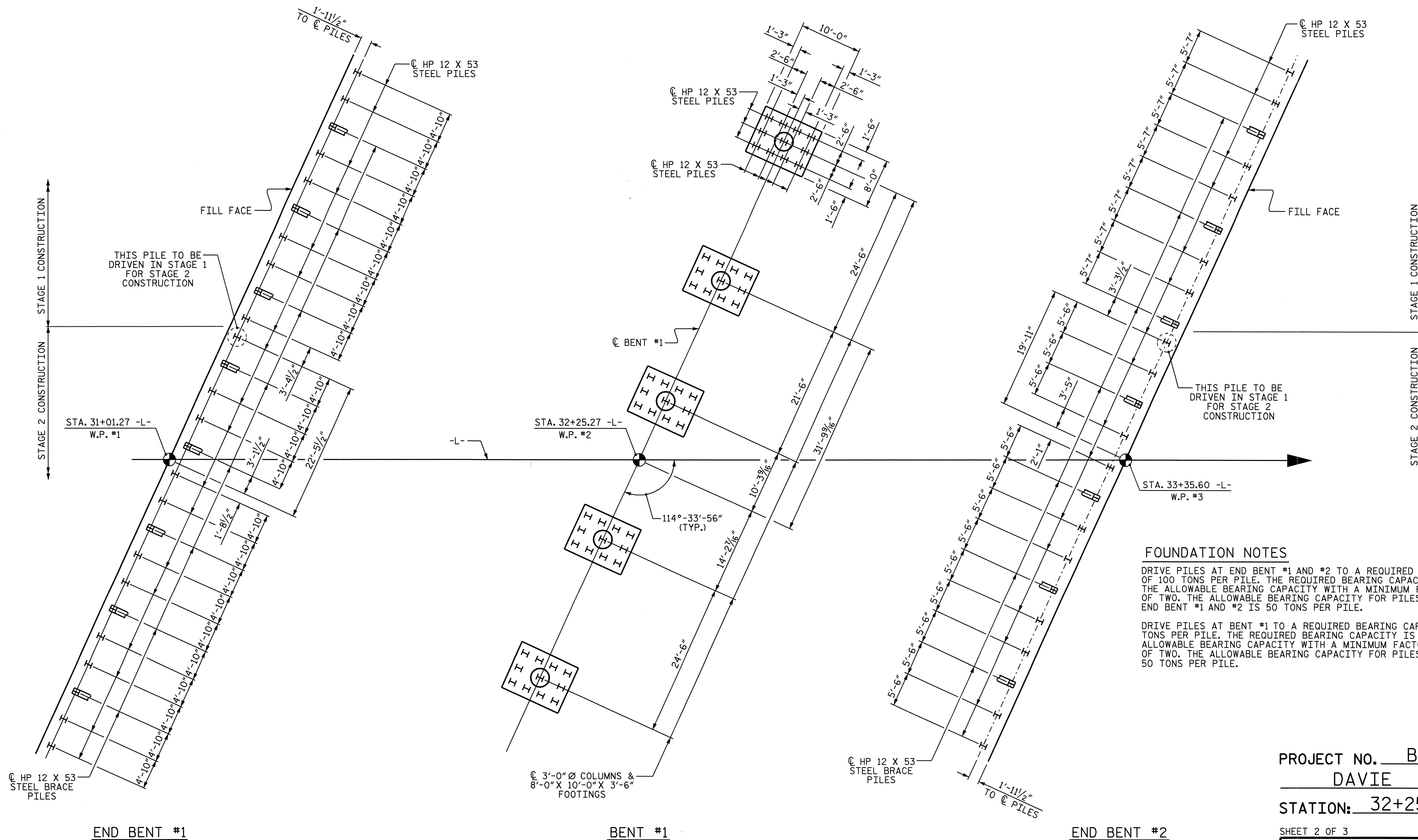
STRUCTURE DESIGN UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER _____ P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED _____
DIVISION ADMINISTRATOR DATE _____



FOUNDATION NOTES

DRIVE PILES AT END BENT #1 AND #2 TO A REQUIRED BEARING CAPACITY OF 100 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO. THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT #1 AND #2 IS 50 TONS PER PILE.

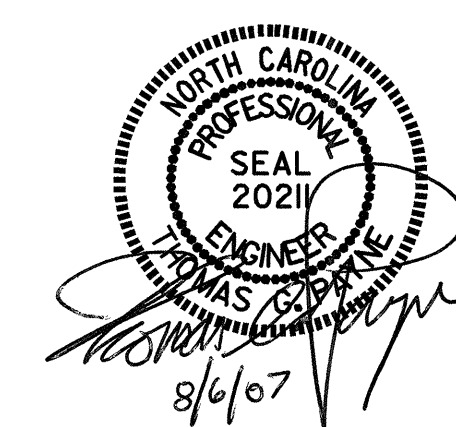
DRIVE PILES AT BENT #1 TO A REQUIRED BEARING CAPACITY OF 100 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO. THE ALLOWABLE BEARING CAPACITY FOR PILES AT BENT #1 IS 50 TONS PER PILE.

PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE ON NC 801
 OVER I-40 BETWEEN
 SR 1452 AND US 158



FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE.

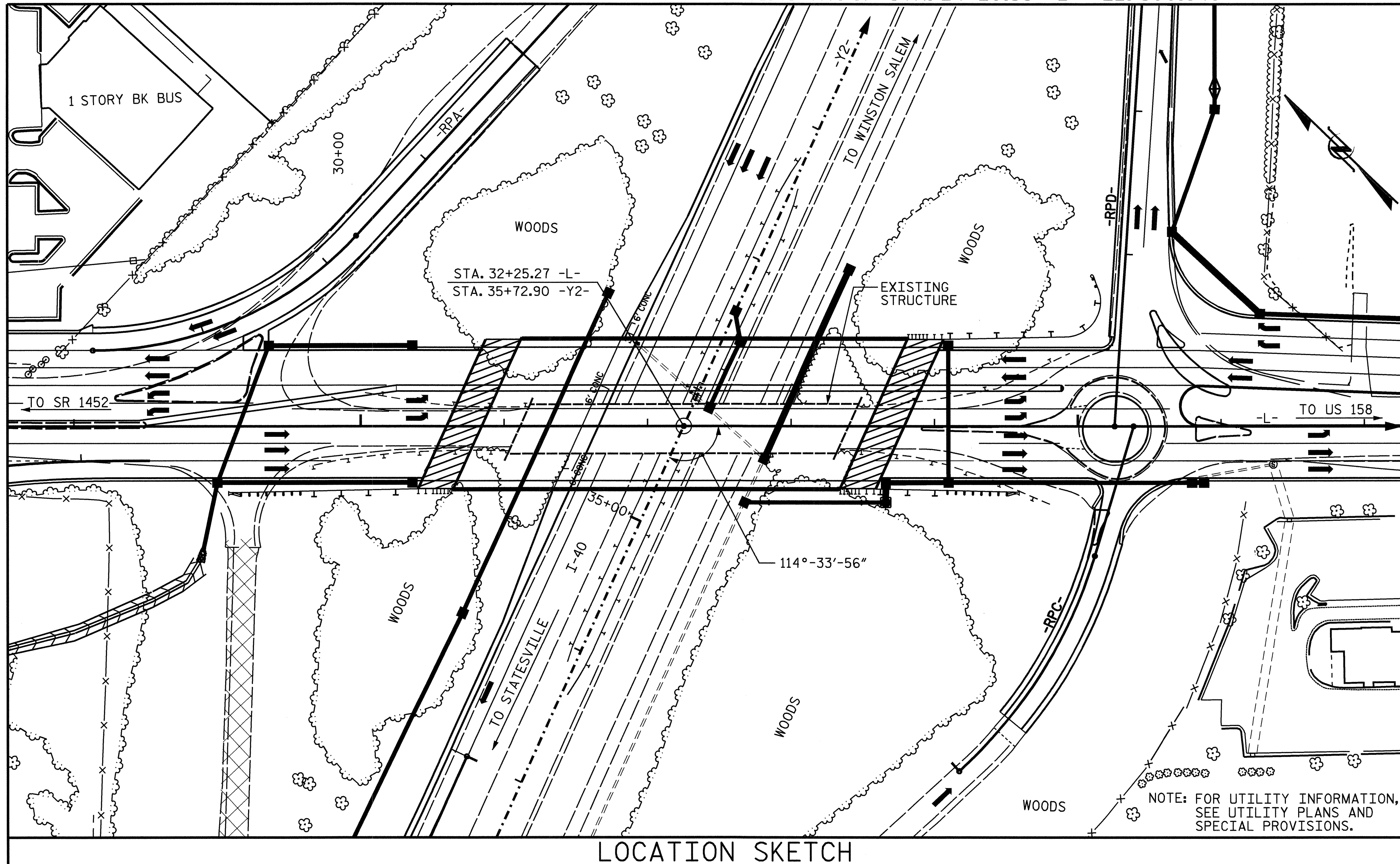
HP 12 X 53 STEEL PILES AT END BENTS ARE BATTERED 3 TO 12.

FOOTING DIMENSIONS ARE TYPICAL AT BENT #1.

DRAWN BY: M.K. BEARD DATE: 06/07
 CHECKED BY: T.G. PAYNE DATE: 06/13/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS 41
2			4			

BM. #2 RAILROAD SPIKE IN BASE OF 24" OAK 61.43' RT. OF STA. 24+20.39 -L- EL. 800.940



LOCATION SKETCH

NOTES :

- ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING, EXCEPT THAT THE GIRDERS HAVE BEEN DESIGNED FOR HS 25.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
- THIS BRIDGE HAS BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.
- REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
- THE EXISTING STRUCTURE CONSISTS OF 4 SPANS (1 @ 55'-6", 2 @ 60'-0", AND 1 @ 55'-6") OF A REINFORCED CONCRETE DECK ON 4 LINES OF STEEL I-BEAMS WITH A CLEAR ROADWAY WIDTH OF 28'-0". IT IS FOUNDED ON REINFORCED CONCRETE CAPS ON PRECAST PRESTRESSED CONCRETE PILES. THE EXISTING STRUCTURE LOCATED AT THE PROPOSED SITE 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 STRUCTURE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.
- FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.
- THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 70 FT. LEFT AND 53 FT. RIGHT, EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR UNCLASSIFIED STRUCTURE EXCAVATION.
- THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
- THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC PERFORMANCE CATEGORY A.
- THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLE OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.
- NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMITS OF THE PORTABLE CONCRETE BARRIER.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- 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.
- INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE PRICE BID FOR "REMOVAL OF EXISTING STRUCTURE."
- 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.

TOTAL BILL OF MATERIAL

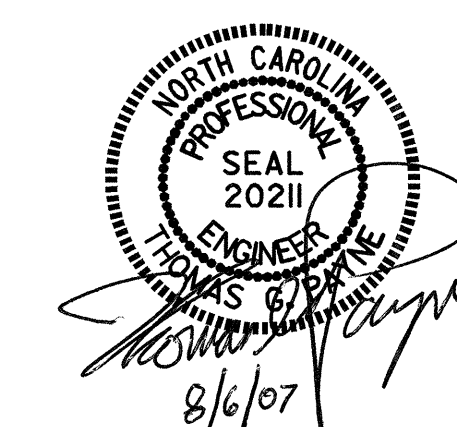
	REMOVAL OF EXISTING STRUCTURE	FOUNDATION EXCAVATION	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	STRUCTURAL STEEL (APPROX.)	HP12x53 STEEL PILES	THREE BAR METAL RAIL	4" SLOPE PROTECTION	POT BEARINGS	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS	
	LUMP SUM	LUMP SUM	CU. YDS.	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	LBS.	LBS.	EA.	LIN. FT.	LIN. FT.	SQ. YDS.	LUMP SUM	LUMP SUM	LUMP SUM
SUPERSTRUCTURE				24,500	24,719		LUMP SUM			1,046,847		447.88		LUMP SUM	LUMP SUM	LUMP SUM	
END BENT NO.1			1,252			75.7		10,501			26	2,340	593				
BENT NO.1		LUMP SUM				181.4		25,455	1,833		55	4,400					
END BENT NO.2			278			76.6		10,508			23	2,300	588				
TOTAL	LUMP SUM	LUMP SUM	1,530	24,500	24,719	333.7	LUMP SUM	46,464	1,833	1,046,847	104	9,040	447.88	1,181	LUMP SUM	LUMP SUM	LUMP SUM

PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

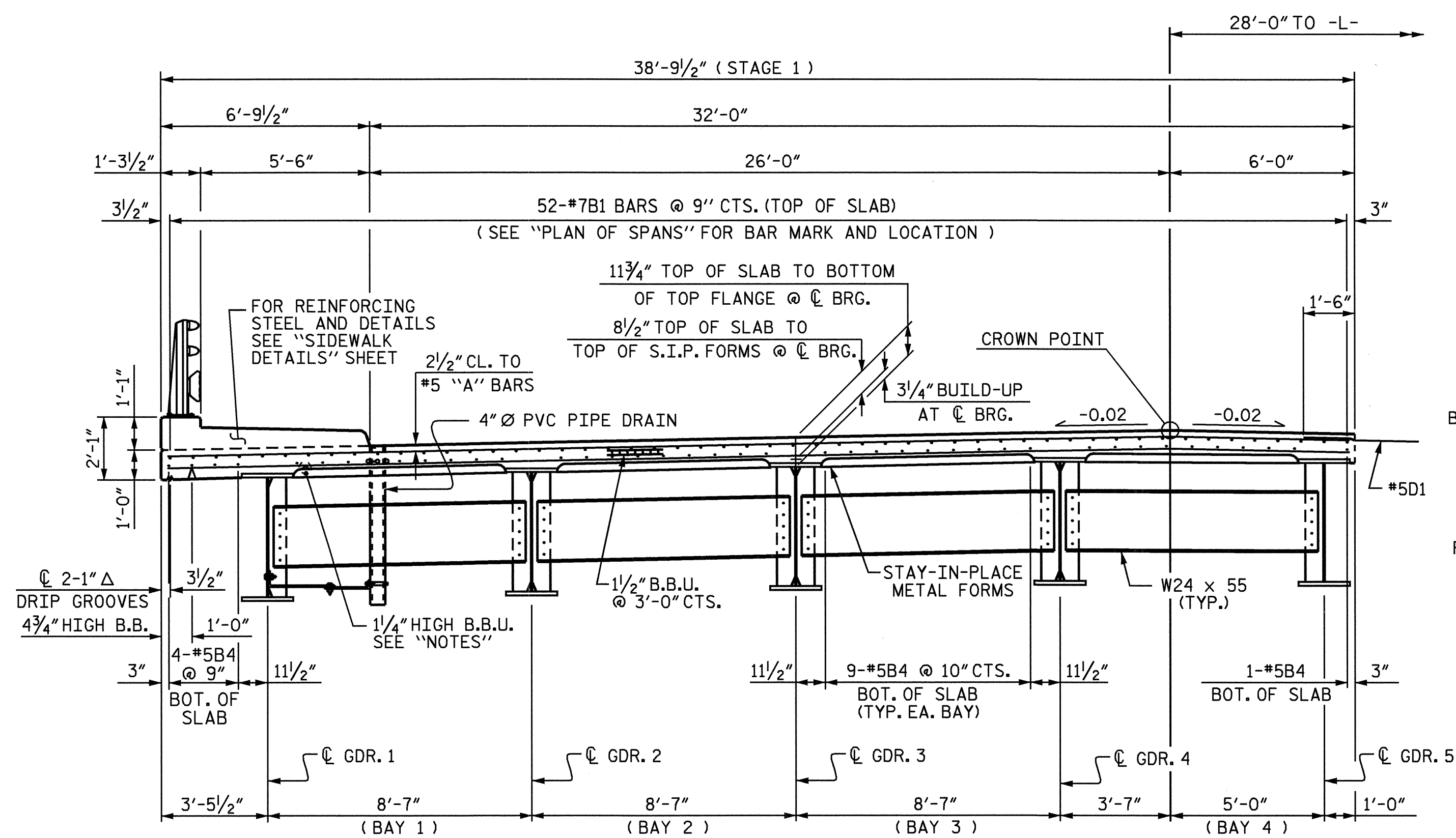
GENERAL DRAWING
 FOR BRIDGE ON NC 801
 OVER I-40 BETWEEN
 SR 1452 AND US 158



DRAWN BY : M.K. BEARD DATE : 06/07
 CHECKED BY : T.G. PAYNE DATE : 06/13/07

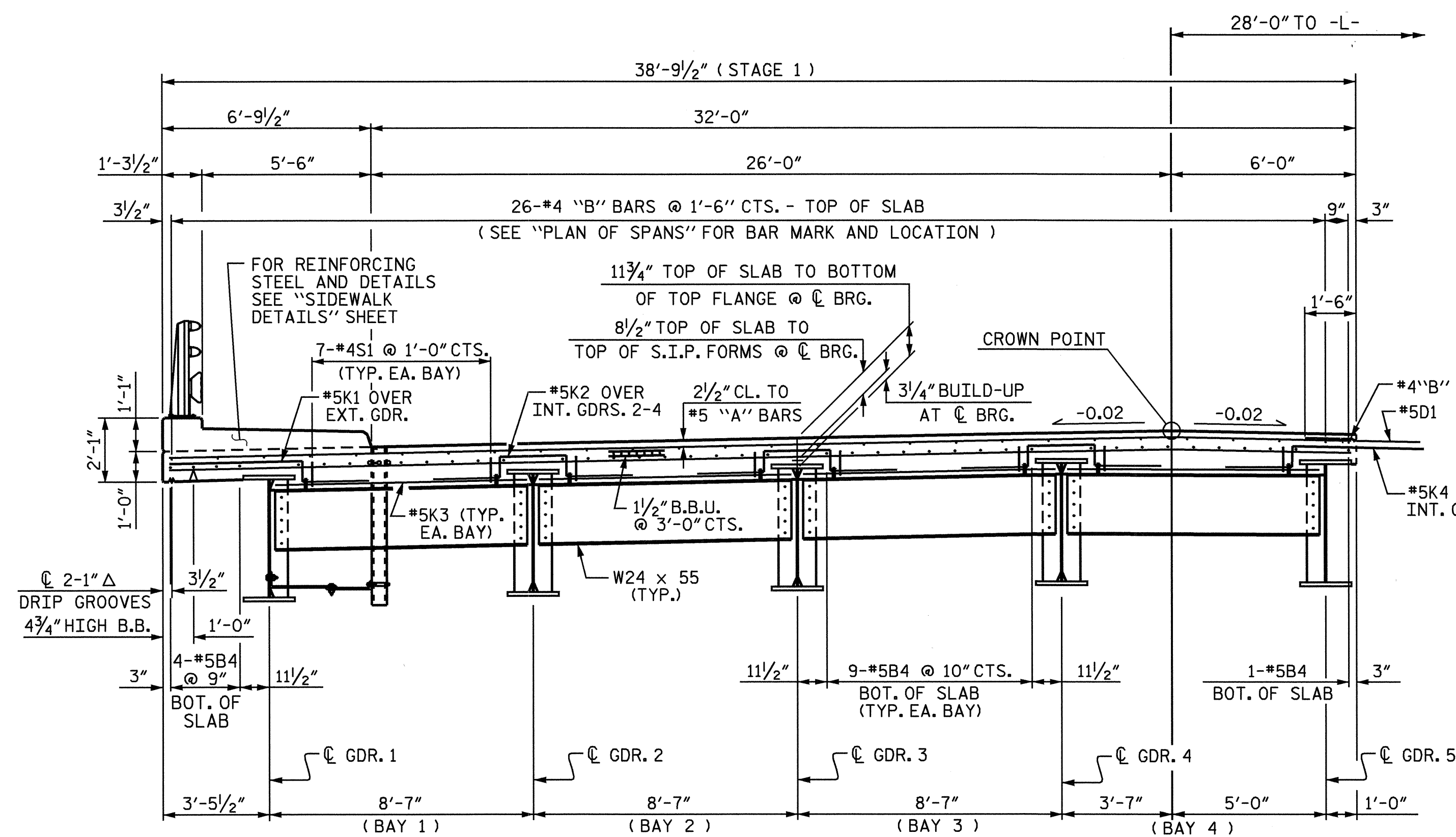
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REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	41
1			3			41
2			4			41



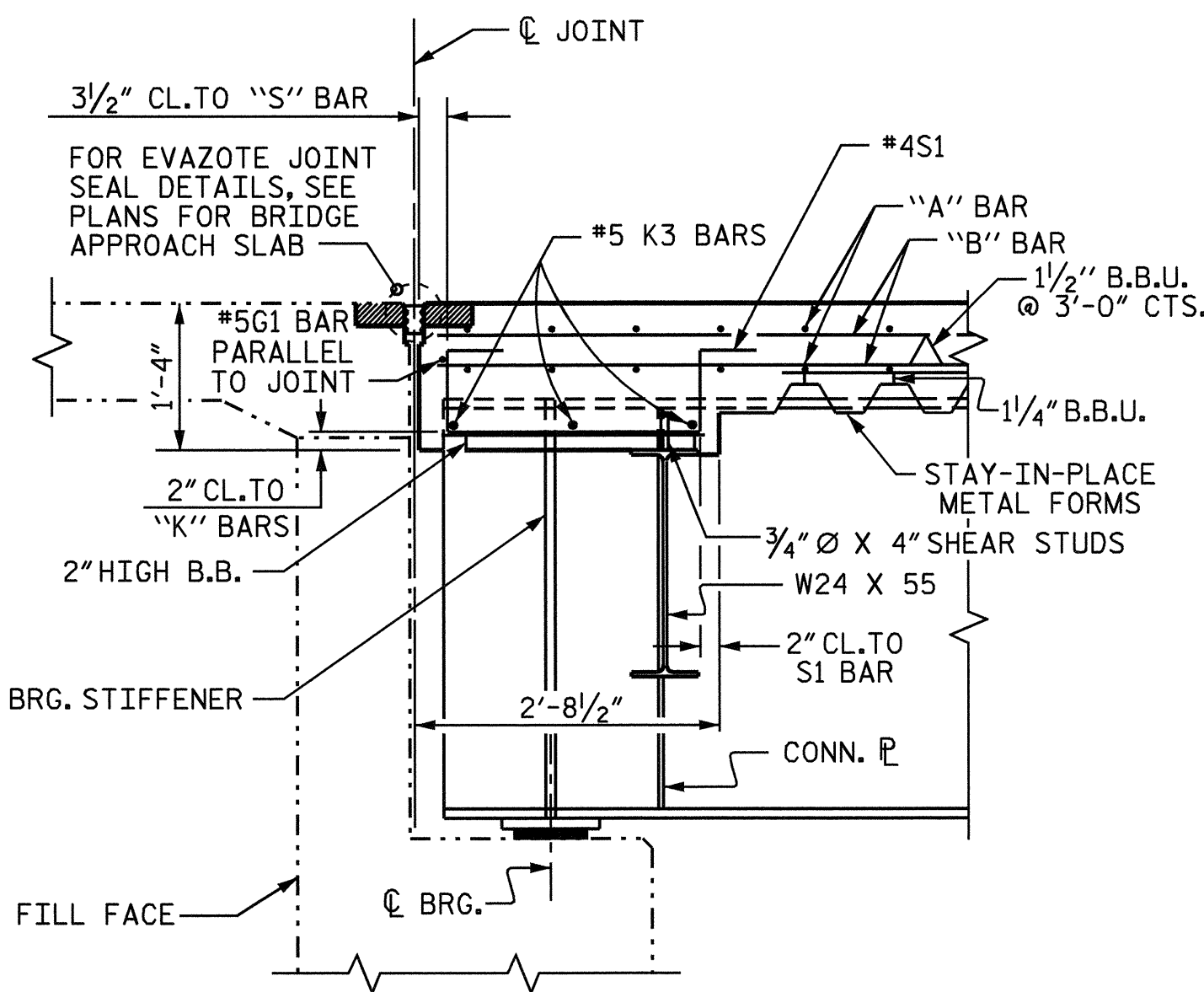
TYPICAL SECTION @ BENT DIAPHRAGMS

(TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS SIMILAR EXCEPT FOR "B" BAR LAYOUT. SEE PLAN OF SPANS FOR "B" BAR LAYOUT)
 FOR BENT DIAPHRAGM LOCATIONS AND TYPES, SEE "FRAMING PLAN" SHEETS.
 FOR DIAPHRAGM DETAILS, SEE "STRUCTURAL STEEL DETAIL" SHEETS.

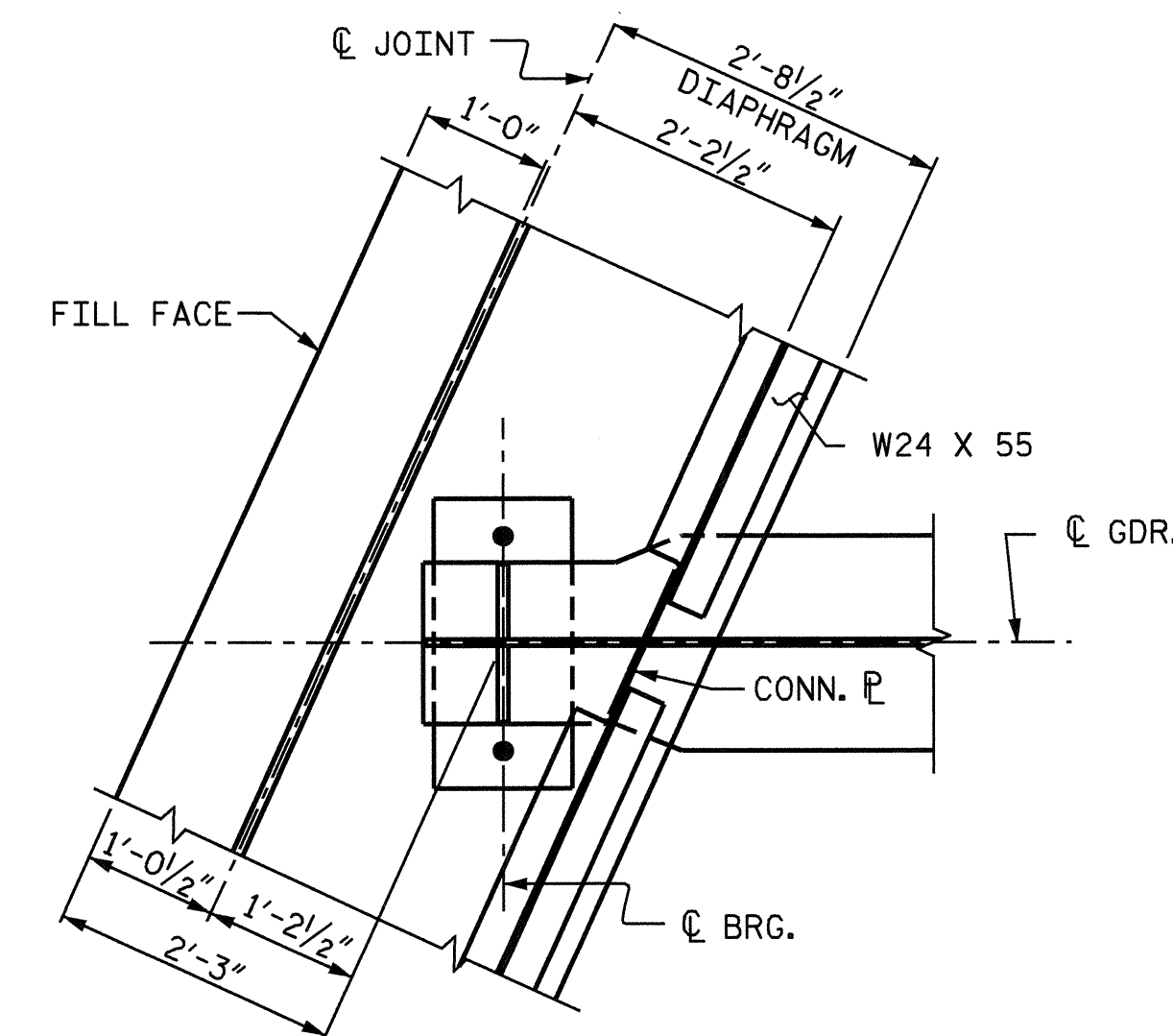


TYPICAL SECTION @ END BENT DIAPHRAGMS

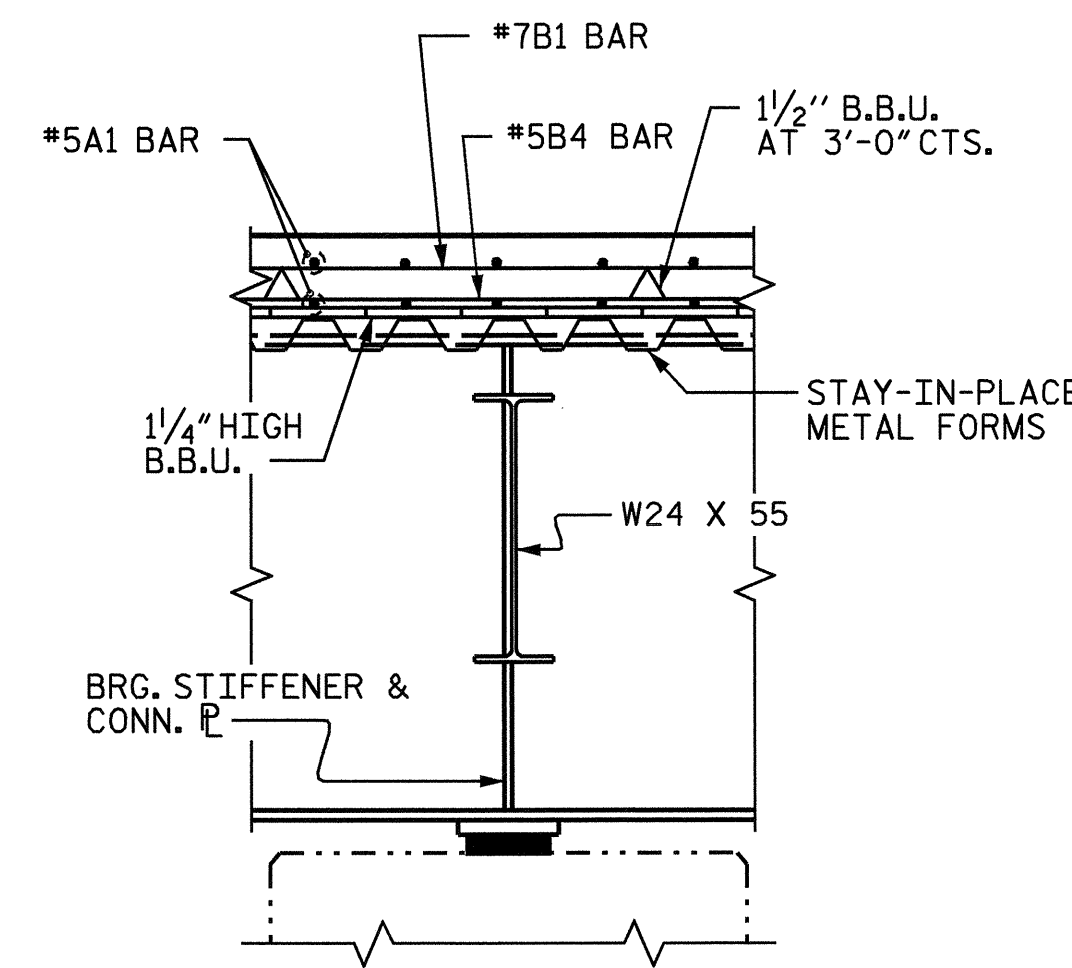
FOR END BENT DIAPHRAGM LOCATIONS AND TYPES, SEE "FRAMING PLAN" SHEETS.
 FOR DIAPHRAGM DETAILS, SEE "STRUCTURAL STEEL DETAIL" SHEETS.



SECTION AT END BENT



END BENT DIAPHRAGM



SECTION AT BENT

NOTES :

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

THE JOINT IN THE DECK SHALL BE SAWED PRIOR TO THE CASTING OF THE SIDEWALK.

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

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

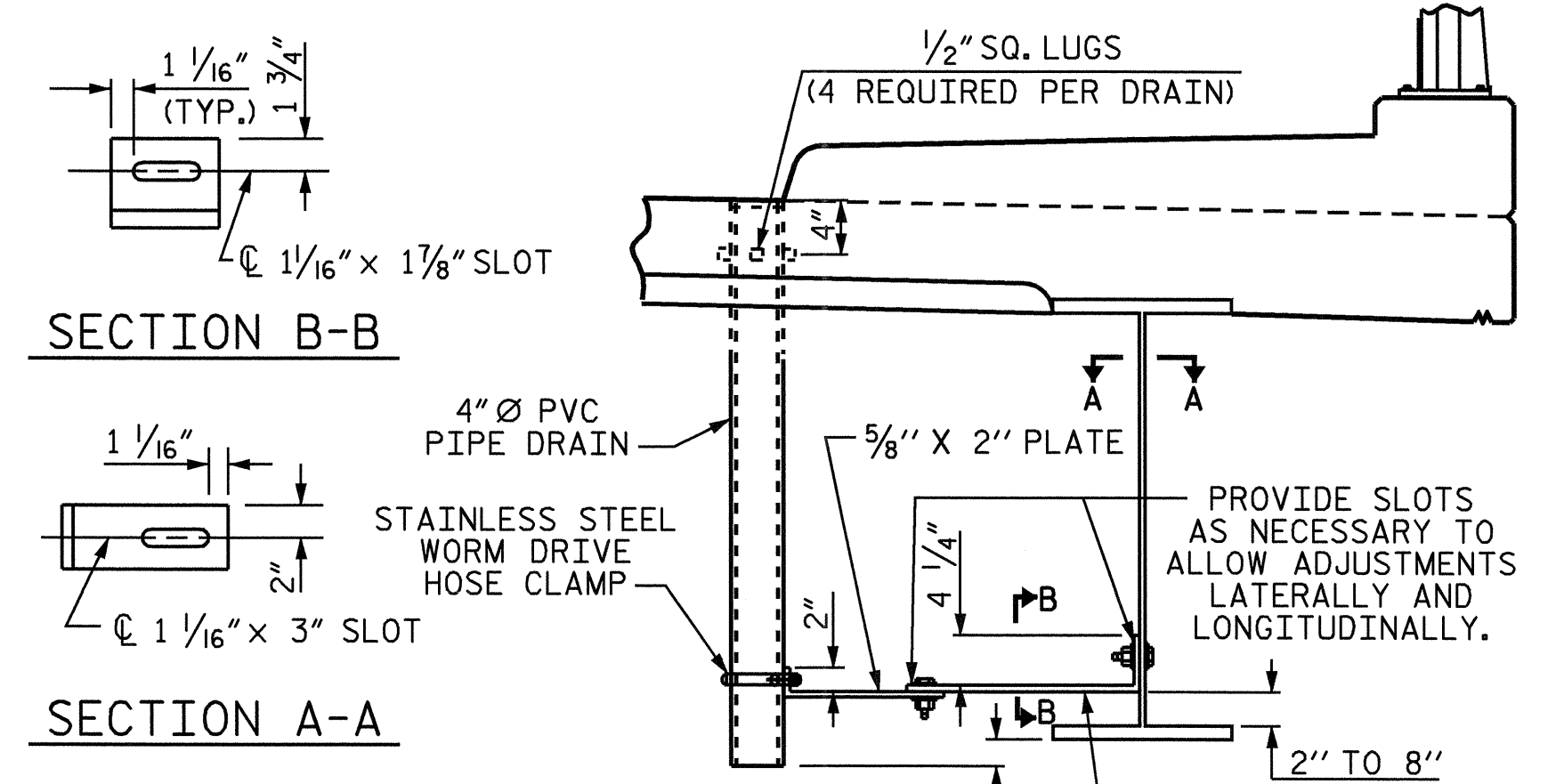
PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

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

#5 "G" BARS MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL.

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

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



DRAIN CONNECTOR DETAIL

32 REQUIRED

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 PLASTIC PIPE AT EQUAL SPACES AROUND THE PIPE DRAIN APPROXIMATELY 4" FROM THE TOP OF THE PIPE.

BOLT SIZE TO BE SAME AS DIAPHRAGM AND CROSSFRAME CONNECTIONS. STAINLESS STEEL WORM DRIVE HOSE CLAMP SHALL BE COMMERCIAL QUALITY.

PVC DECK DRAINS SHALL BE PAINTED WITH TWO COATS OF BROWN PRIMER MEETING THE REQUIREMENTS OF ARTICLE 1080-12 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.

THE 4" Ø PVC PLASTIC PIPE AND FITTINGS SHALL BE SCHEDULE 40 AND CONFORM TO ASTM D1785.

PROJECT NO. B-3637

DAVIE COUNTY

STATION: 32+25.27 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

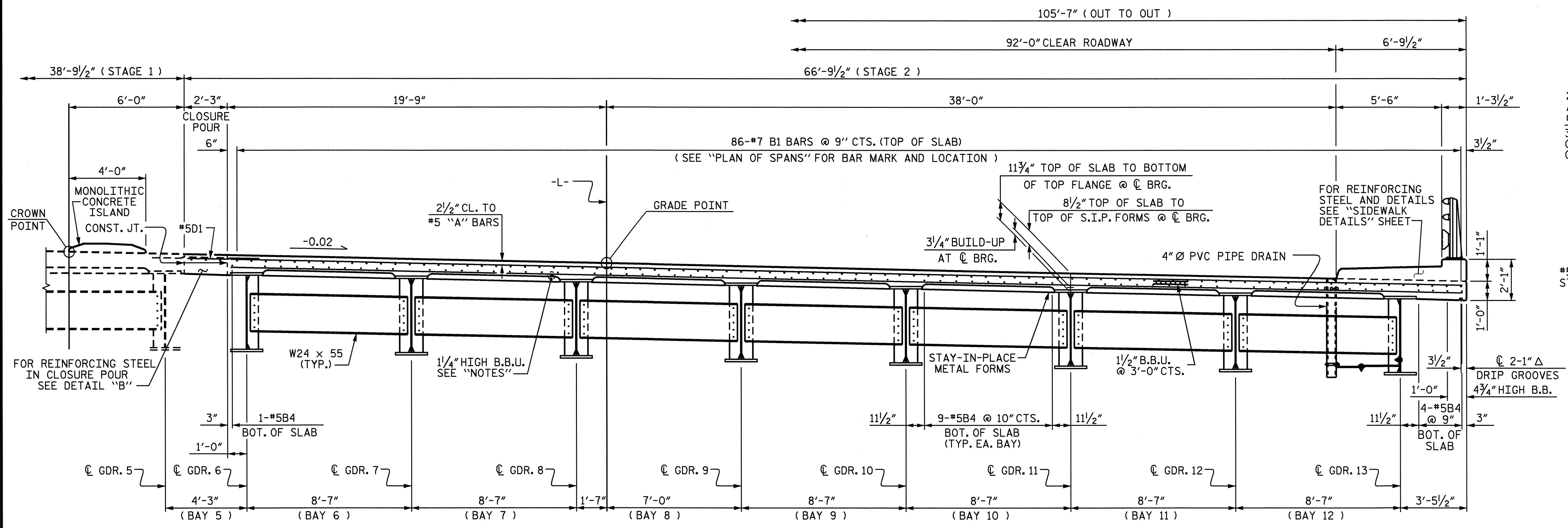
SUPERSTRUCTURE
 TYPICAL SECTION



DRAWN BY : K. D. LAYNE DATE : 2-01-07
 CHECKED BY : S. DOMBROWSKI DATE : 5/22/07

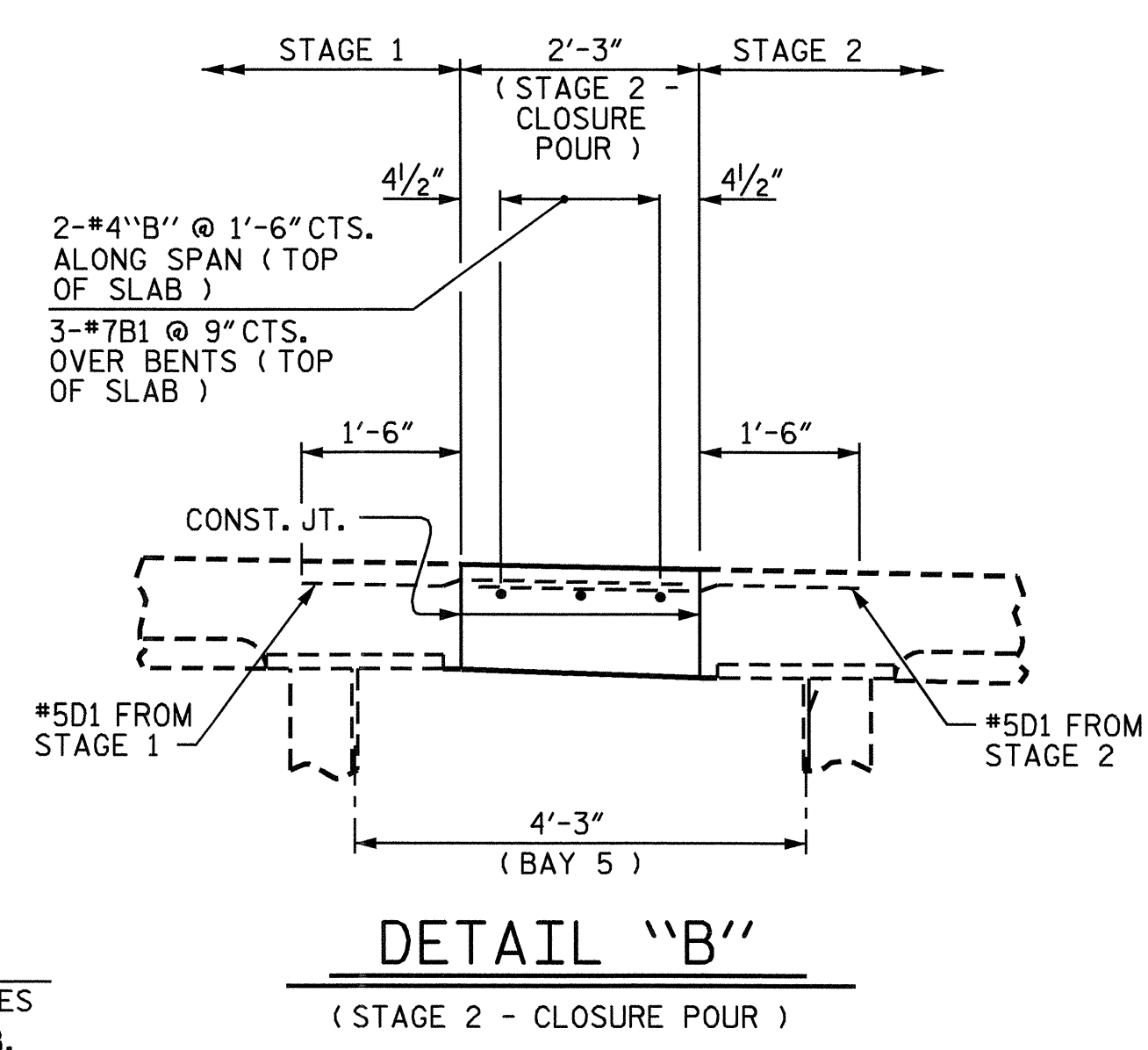
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS 41
2			4			



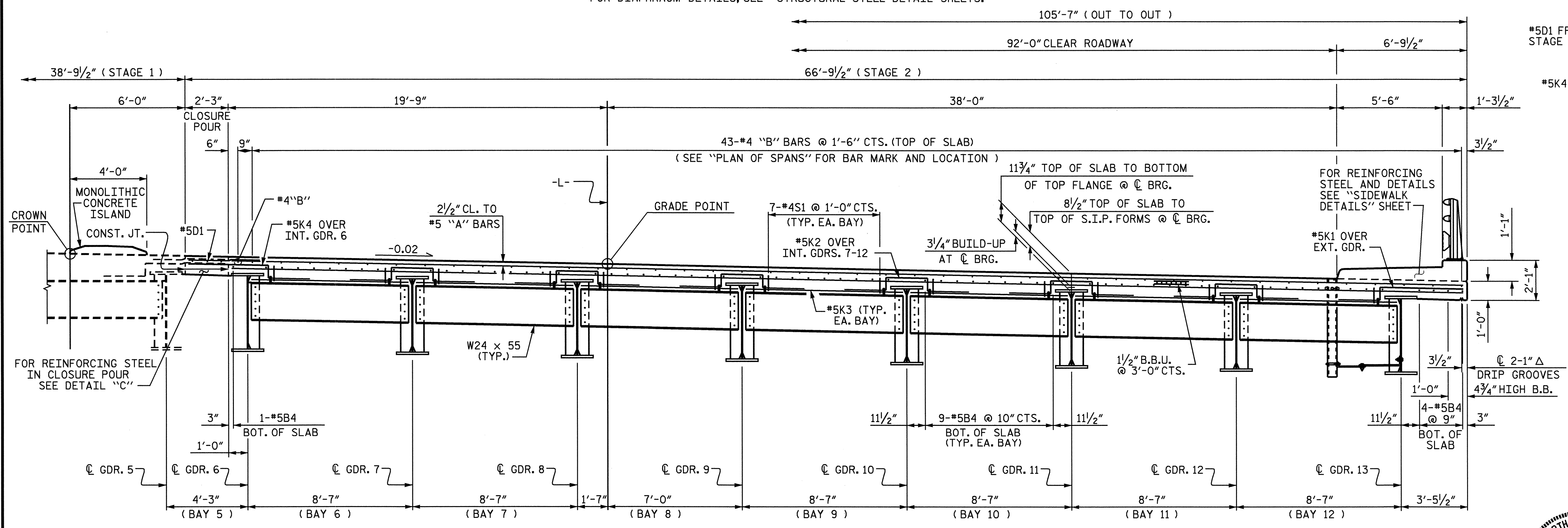
TYPICAL SECTION @ BENT DIAPHRAGMS

(TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS SIMILAR EXCEPT FOR "B" BAR LAYOUT. SEE PLAN OF SPANS FOR "B" BAR LAYOUT)
 FOR BENT DIAPHRAGM LOCATIONS AND TYPES, SEE "FRAMING PLAN" SHEETS.
 FOR DIAPHRAGM DETAILS, SEE "STRUCTURAL STEEL DETAIL" SHEETS.



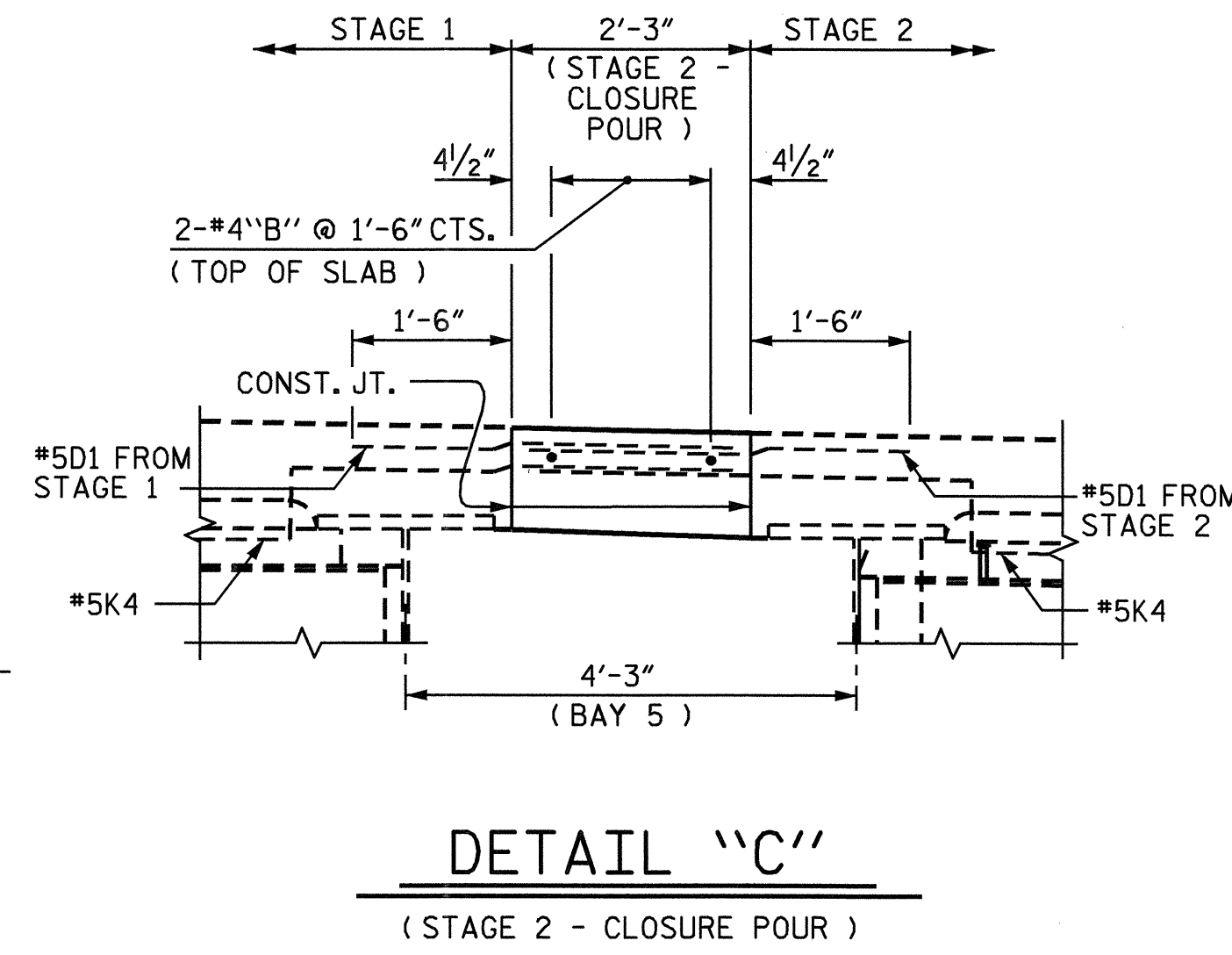
DETAIL "B"

(STAGE 2 - CLOSURE POUR)



TYPICAL SECTION @ END BENT DIAPHRAGMS

FOR END BENT DIAPHRAGM LOCATIONS AND TYPES, SEE "FRAMING PLAN" SHEETS.
 FOR DIAPHRAGM DETAILS, SEE "STRUCTURAL STEEL DETAIL" SHEETS.



DETAIL "C"

(STAGE 2 - CLOSURE POUR)

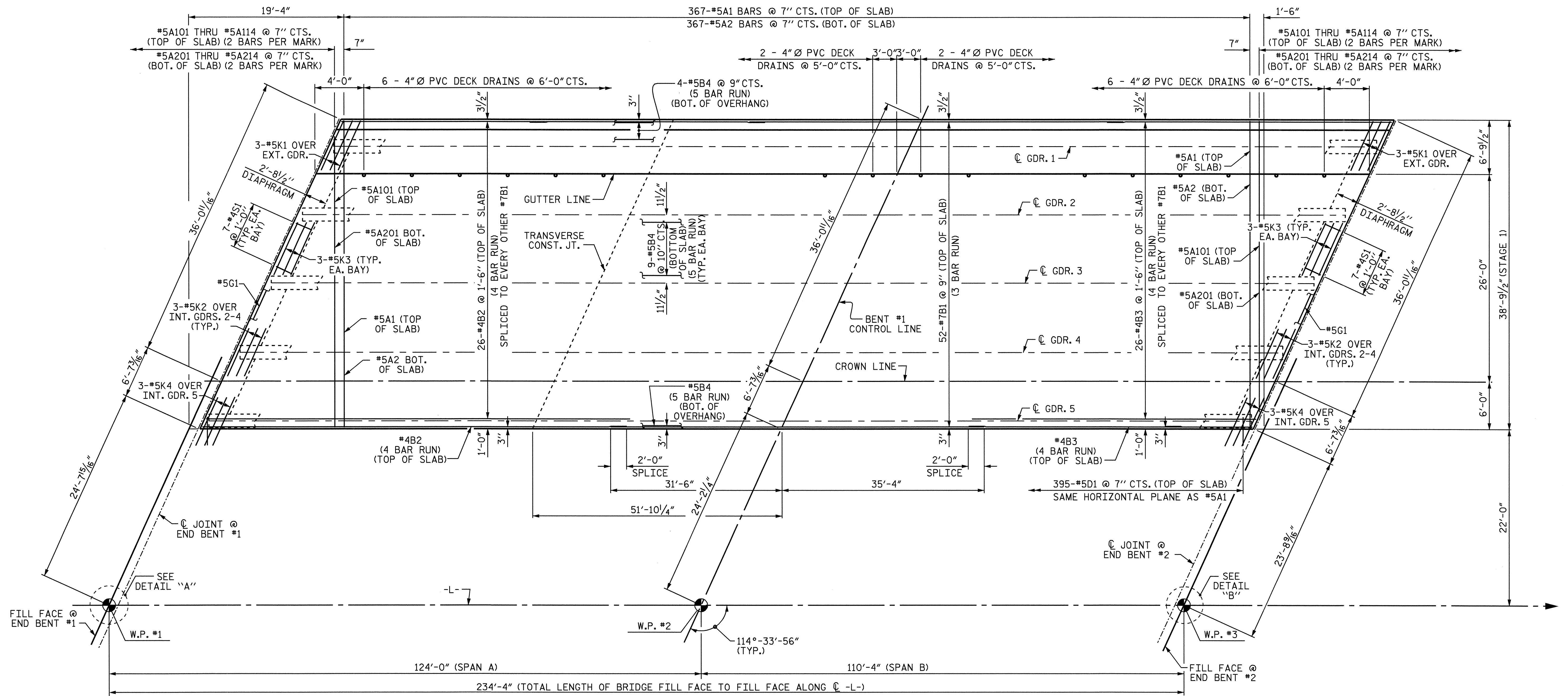
PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE TYPICAL SECTION					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
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DRAWN BY: K. D. LAYNE DATE: 2-01-07
 CHECKED BY: S. DOMBROWSKI DATE: 5/22/07





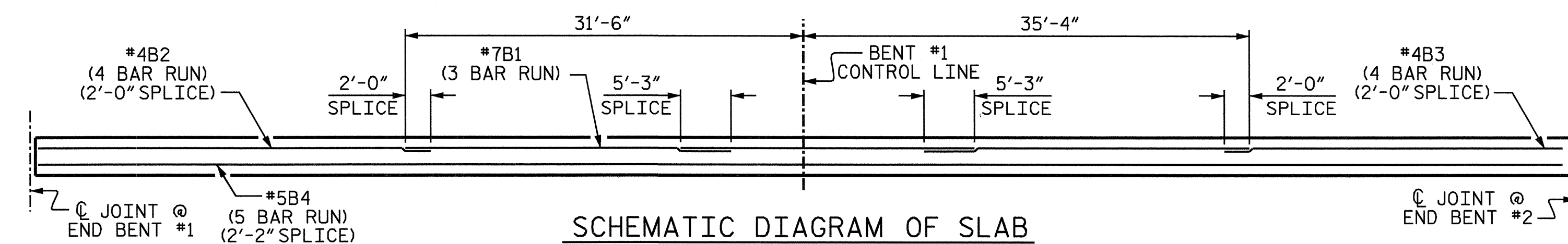
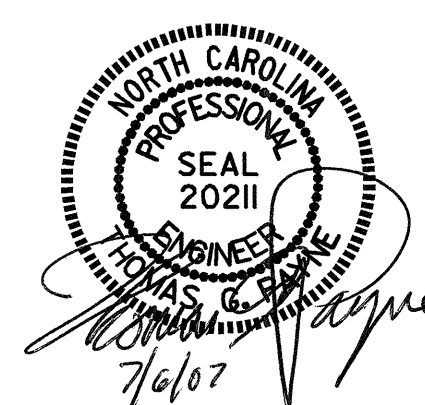
PLAN OF SPANS A & B - STAGE 1

FOR REINFORCING STEEL AND DETAILS IN SIDEWALK & MONOLITHIC CONCRETE ISLAND, SEE "SIDEWALK & MONOLITHIC CONCRETE ISLAND" SHEET.

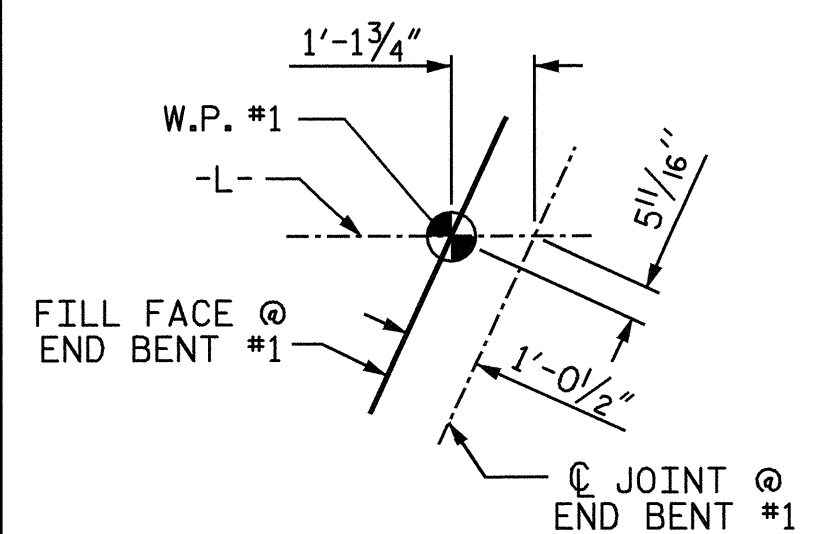
PROJECT NO. B-3637
 DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 1 OF 3

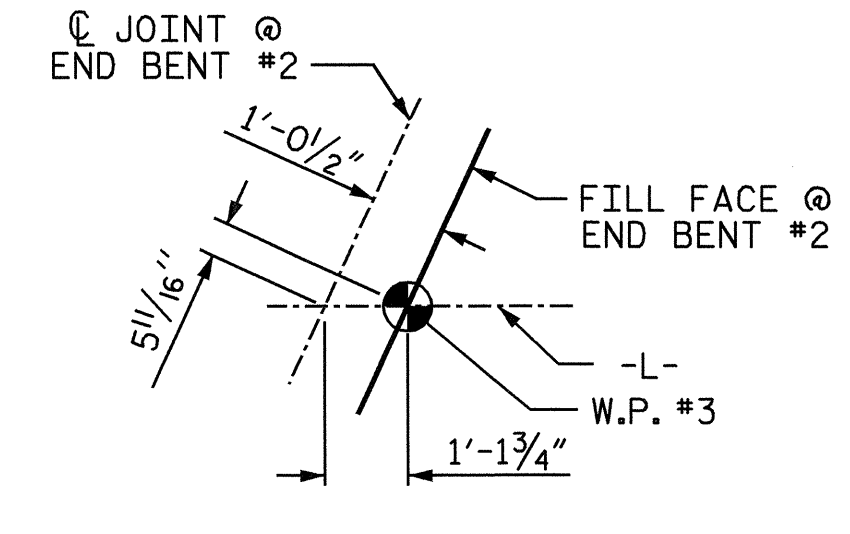
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPANS
 (STAGE 1)



SCHEMATIC DIAGRAM OF SLAB



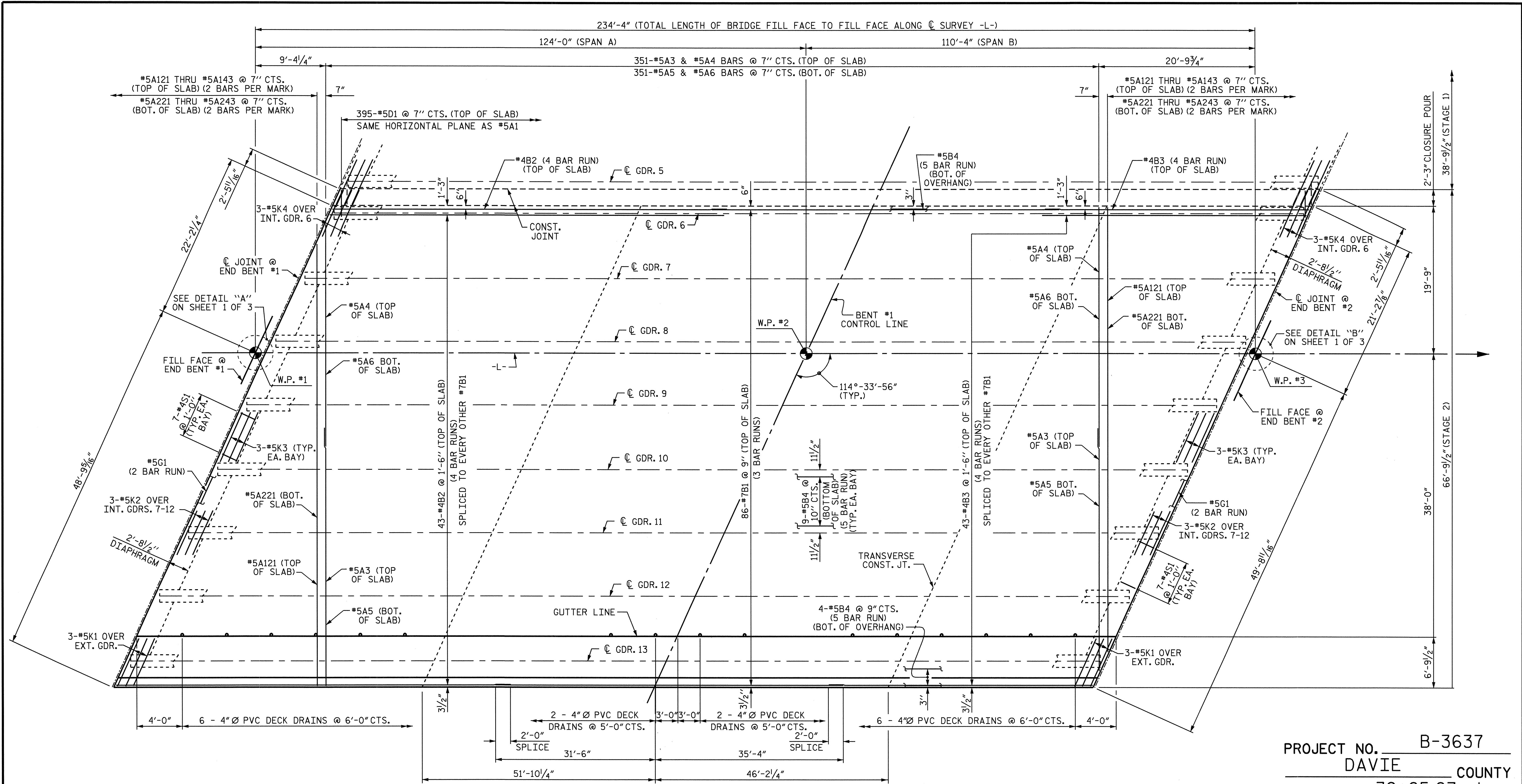
DETAIL "A"



DETAIL "B"

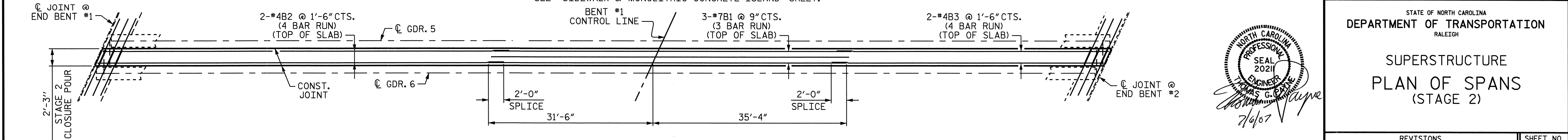
DRAWN BY: K. D. LAYNE DATE: 02/07
 CHECKED BY: S. DOMBROWSKI DATE: 5/22/07

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7	
1			3			TOTAL SHEETS	
2			4			41	



PLAN OF SPANS A & B - STAGE 2

FOR REINFORCING STEEL AND DETAILS IN SIDEWALK & MONOLITHIC CONCRETE ISLAND, SEE "SIDEWALK & MONOLITHIC CONCRETE ISLAND" SHEET.



PLAN OF SPANS A & B - CLOSURE POUR

PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

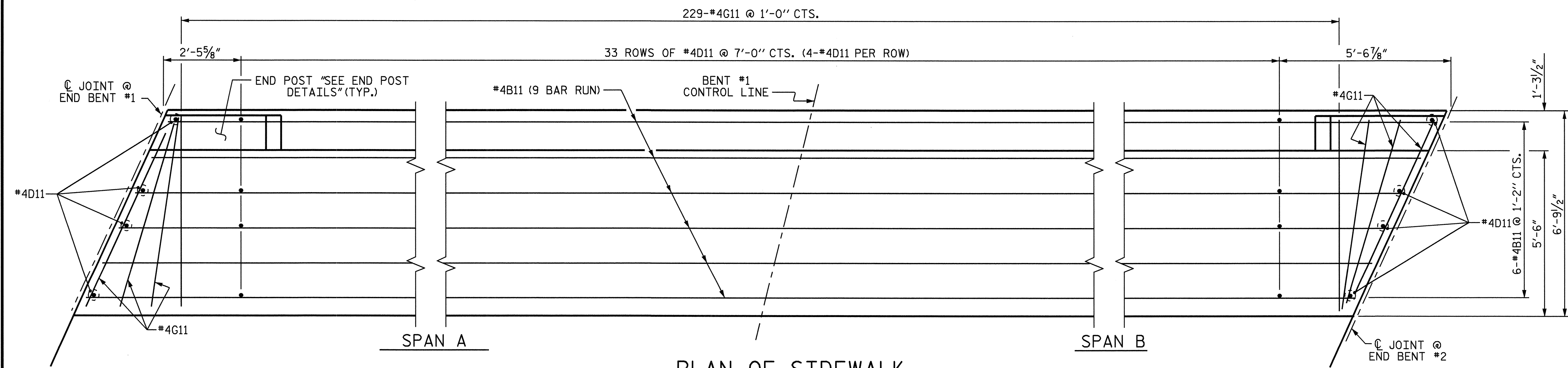
SUPERSTRUCTURE
 PLAN OF SPANS
 (STAGE 2)



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 CHECKED BY: S. DOMBROWSKI DATE: 5/22/07

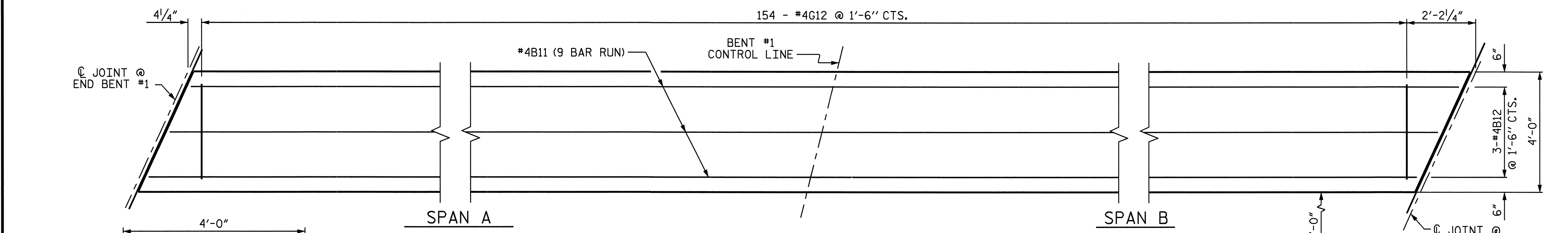
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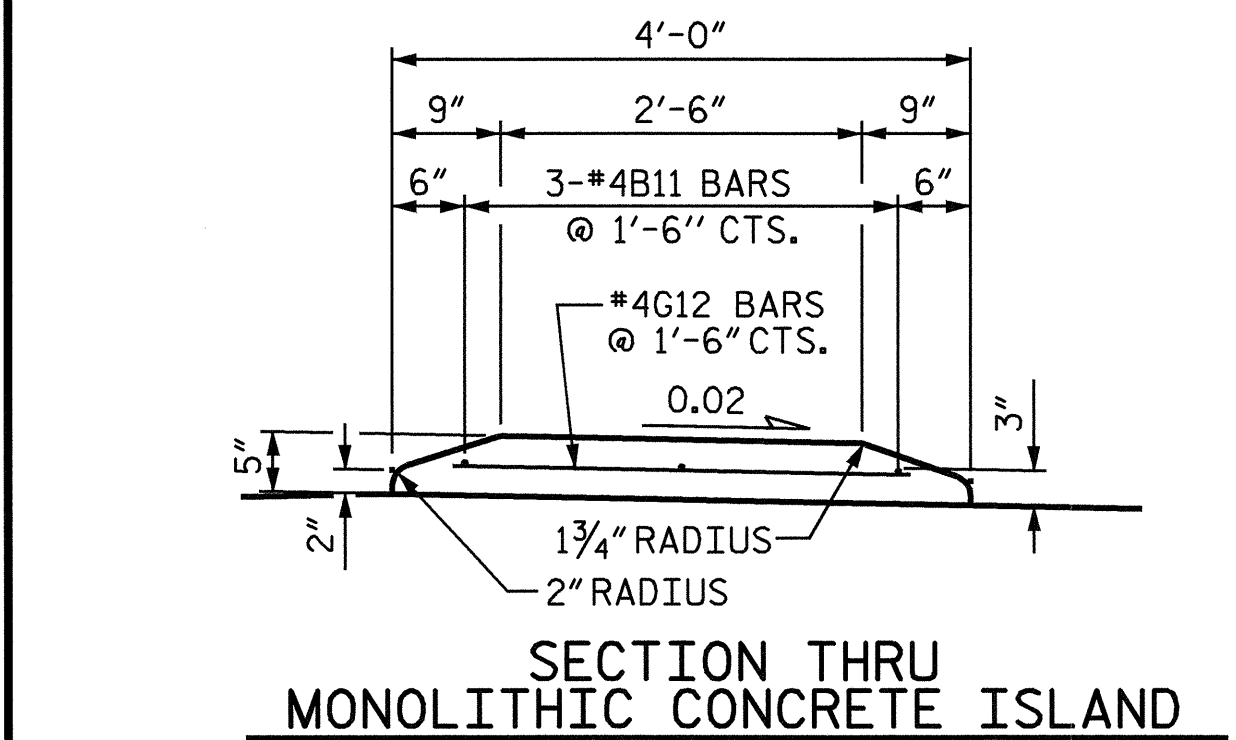


PLAN OF SIDEWALK

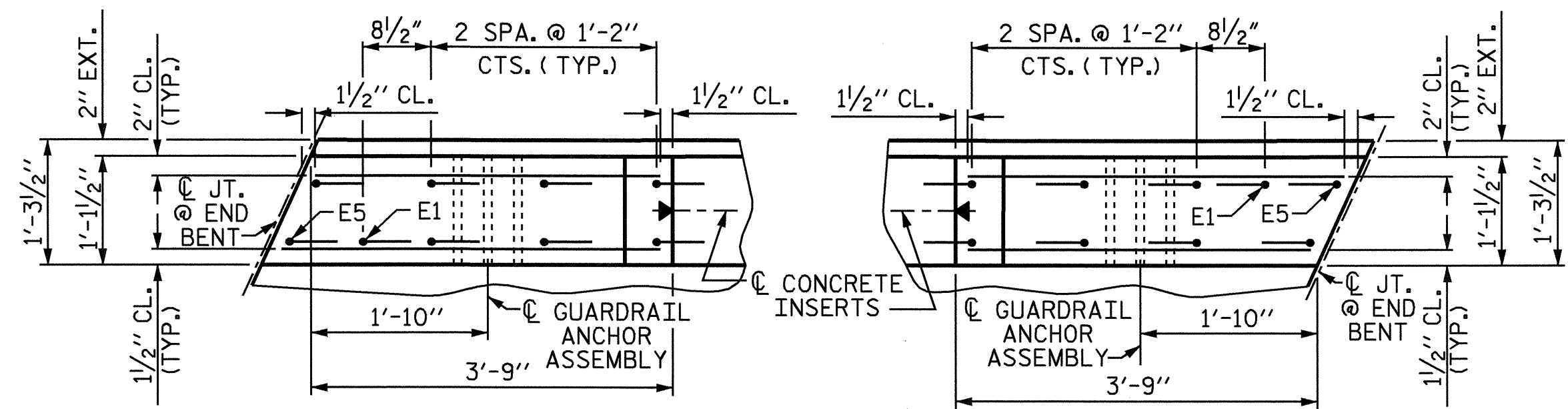
LEFT SIDE SHOWN, RIGHT SIDE SIMILAR



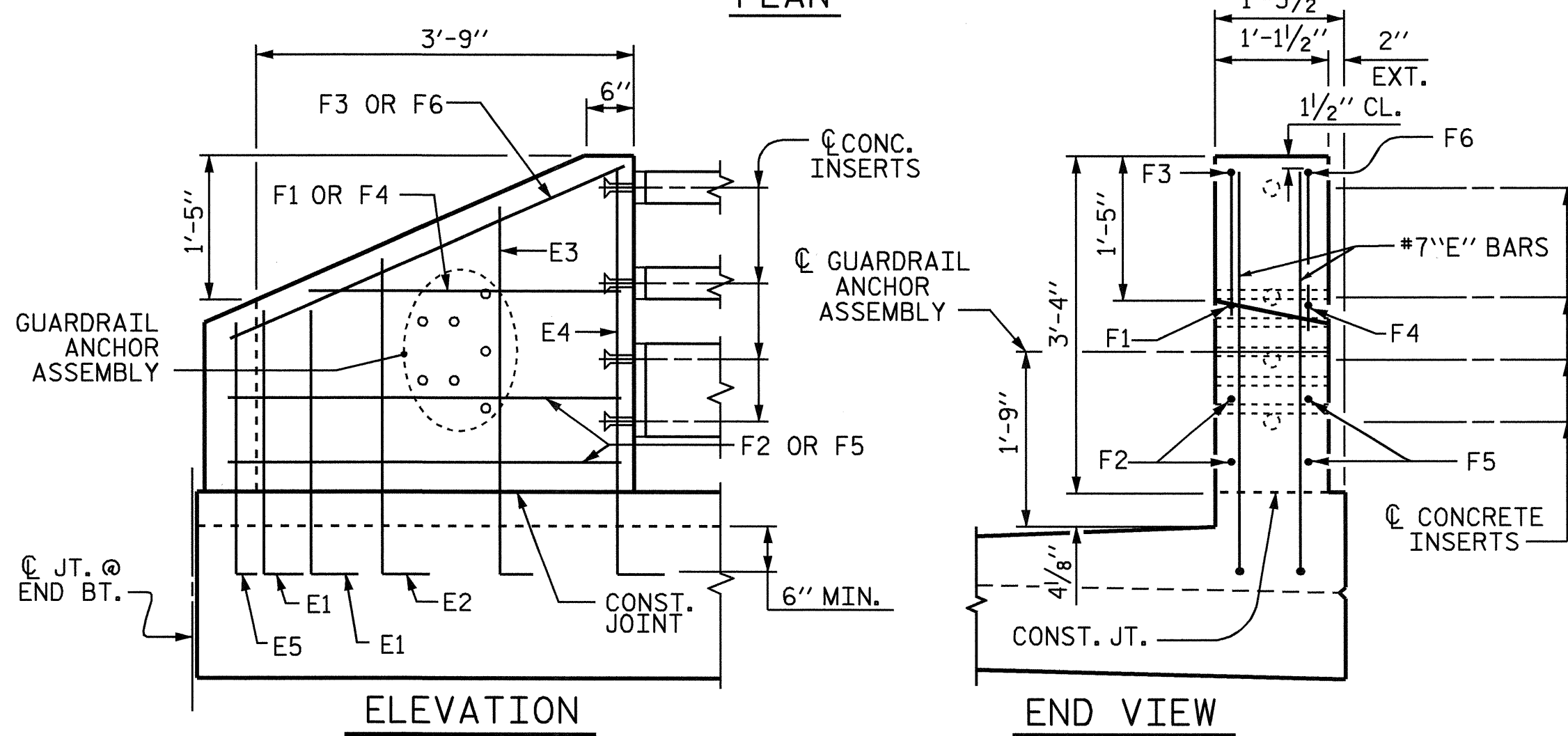
PLAN OF MONOLITHIC CONCRETE ISLAND



SECTION THRU MONOLITHIC CONCRETE ISLAND



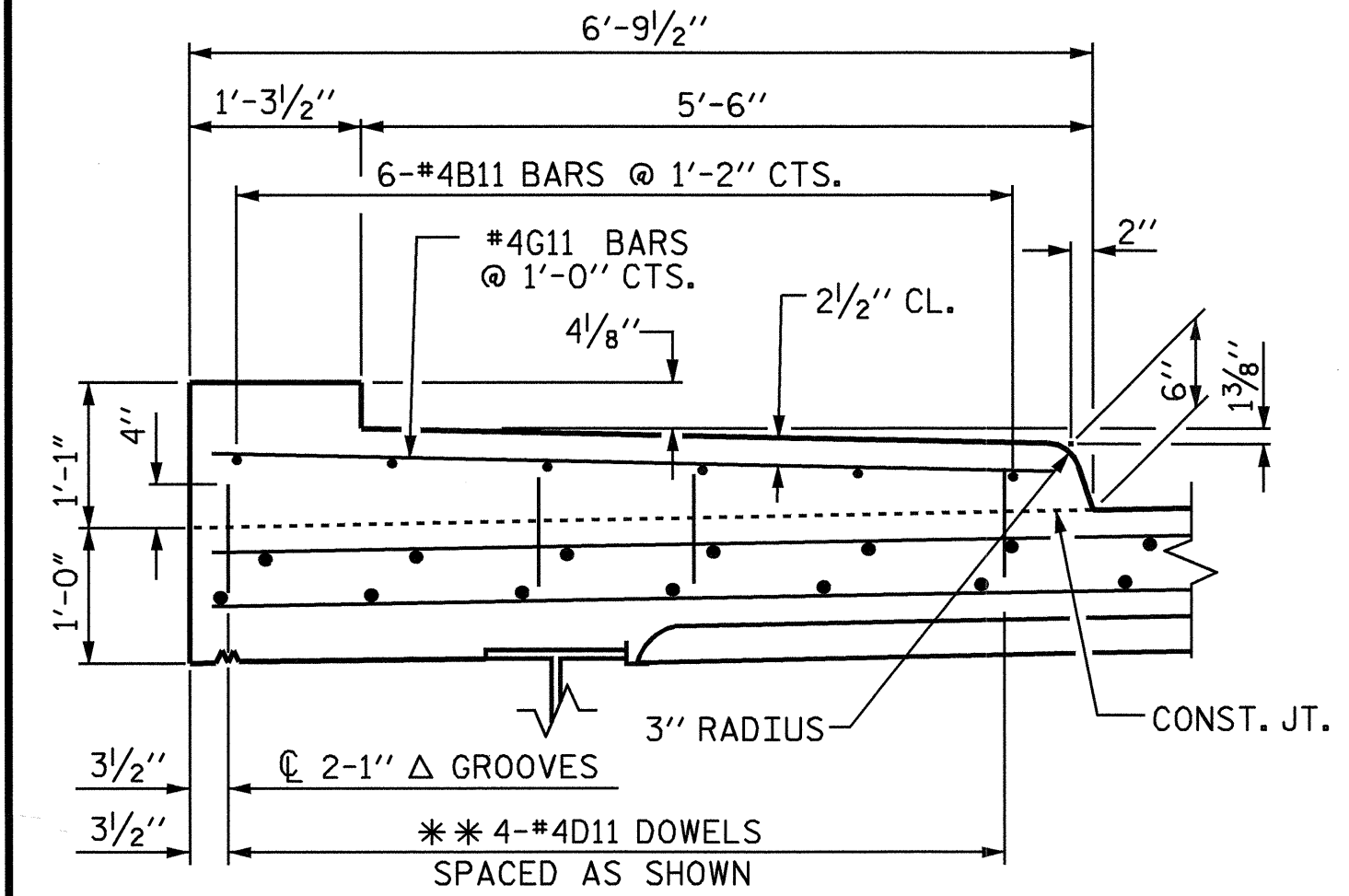
PLAN



ELEVATION

END VIEW

END POST DETAILS



SECTION THRU SIDEWALK

** DOWELS MAY BE PUSHED INTO GREEN CONCRETE AFTER SPAN HAS BEEN SCREEDED OFF.

NOTES

THE #4D11 & #4G11 BARS MAY BE SHIFTED SLIGHTLY IN ORDER TO MAINTAIN A 2" CLEARANCE TO THE 1" EXPANSION JOINT MATERIAL IN SIDEWALK.

THE SIDEWALK IN A CONTINUOUS UNIT SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT UNIT HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE SIDEWALK AND MEDIAN ISLAND 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.

PAYMENT FOR SIDEWALK, MONOLITHIC CONCRETE ISLAND, AND END POSTS SHALL BE INCLUDED IN UNIT PRICE FOR "REINFORCED CONCRETE DECK SLAB".

BILL OF MATERIALS

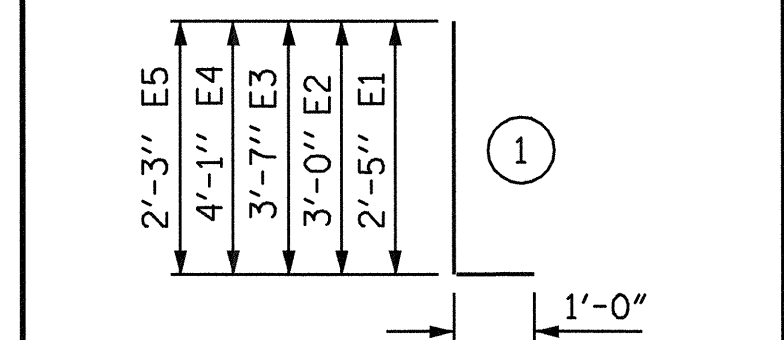
SIDEWALK (STAGE 1)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B11	54	#4	STR	27'-7"	995
*D11	140	#4	STR	0'-10"	78
*G11	235	#4	STR	6'-4"	994
* EPOXY COATED REINF. STEEL = 2,067 LBS					
CLASS AA CONCRETE = 41.2 C.Y.					

SIDEWALK (STAGE 2)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B11	54	#4	STR	27'-7"	995
*D11	140	#4	STR	0'-10"	78
*G11	235	#4	STR	6'-4"	994
* EPOXY COATED REINF. STEEL = 2,067 LBS					
CLASS AA CONCRETE = 41.2 C.Y.					

BILL OF MATERIALS

MONOLITHIC CONCRETE ISLAND (STAGE 2)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B11	27	#4	STR	27'-7"	497
*G12	154	#4	STR	3'-2"	326
* EPOXY COATED REINF. STEEL = 823 LBS					
CLASS AA CONCRETE = 12.7 C.Y.					

BAR TYPE



BILL FOR 2 END POSTS (4 REQUIRED)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
E1	4	#7	1	3'-5"	28
E2	4	#7	1	4'-0"	33
E3	4	#7	1	4'-7"	37
E4	4	#7	1	5'-1"	42
E5	2	#7	1	3'-3"	13
F1	2	#6	STR	3'-1"	9
F2	4	#6	STR	3'-6"	21
F3	2	#6	STR	4'-3"	13
F4	2	#6	STR	3'-1"	9
F5	4	#6	STR	3'-10"	23
F6	2	#6	STR	3'-9"	11
EPOXY COATED REINFORCING STEEL 239 LBS.					
CLASS AA CONCRETE 1.3 CU. YDS.					

PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 3 OF 3

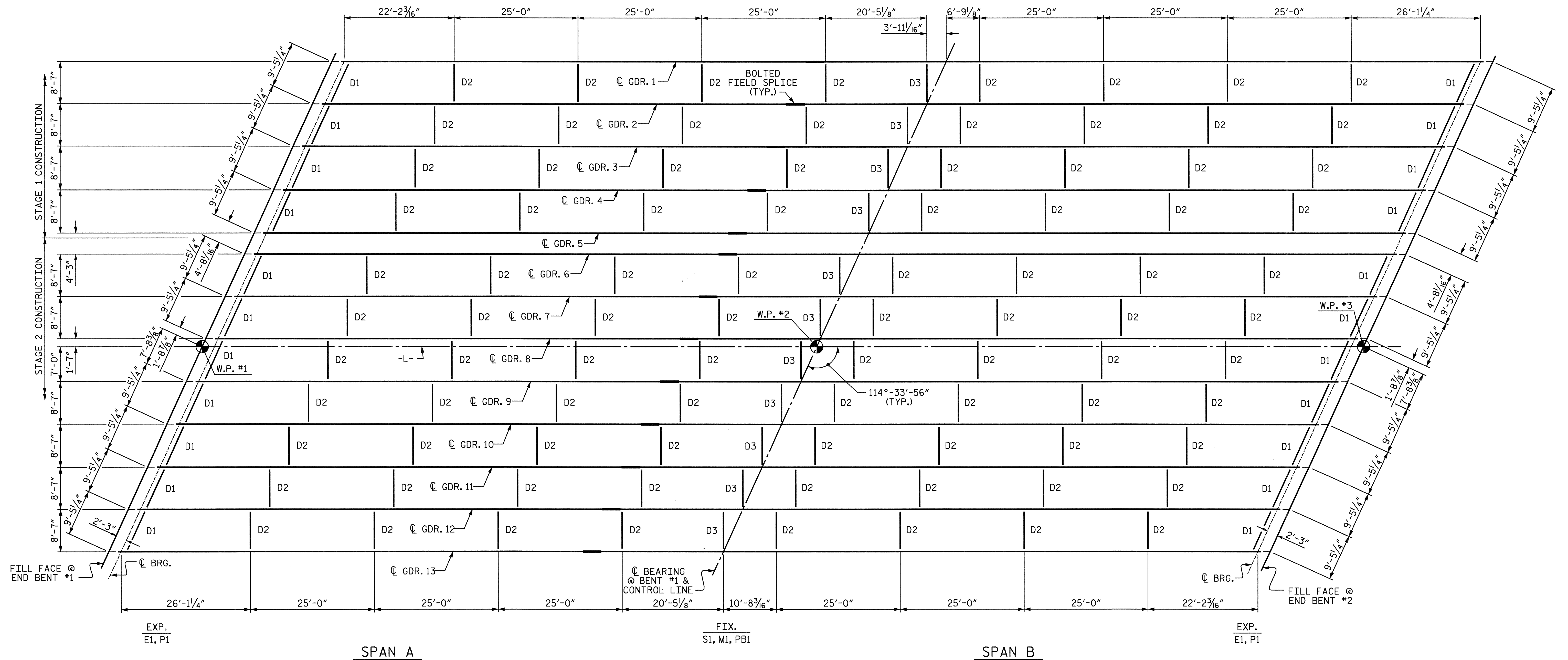
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 SIDEWALK
 AND MONOLITHIC
 CONCRETE ISLAND



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

SHEET NO.
S-9
 TOTAL SHEETS
41

DRAWN BY: K. D. LAYNE DATE: 02/07
 CHECKED BY: S. DOMBROWSKI DATE: 5/22/07



FRAMING PLAN

PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

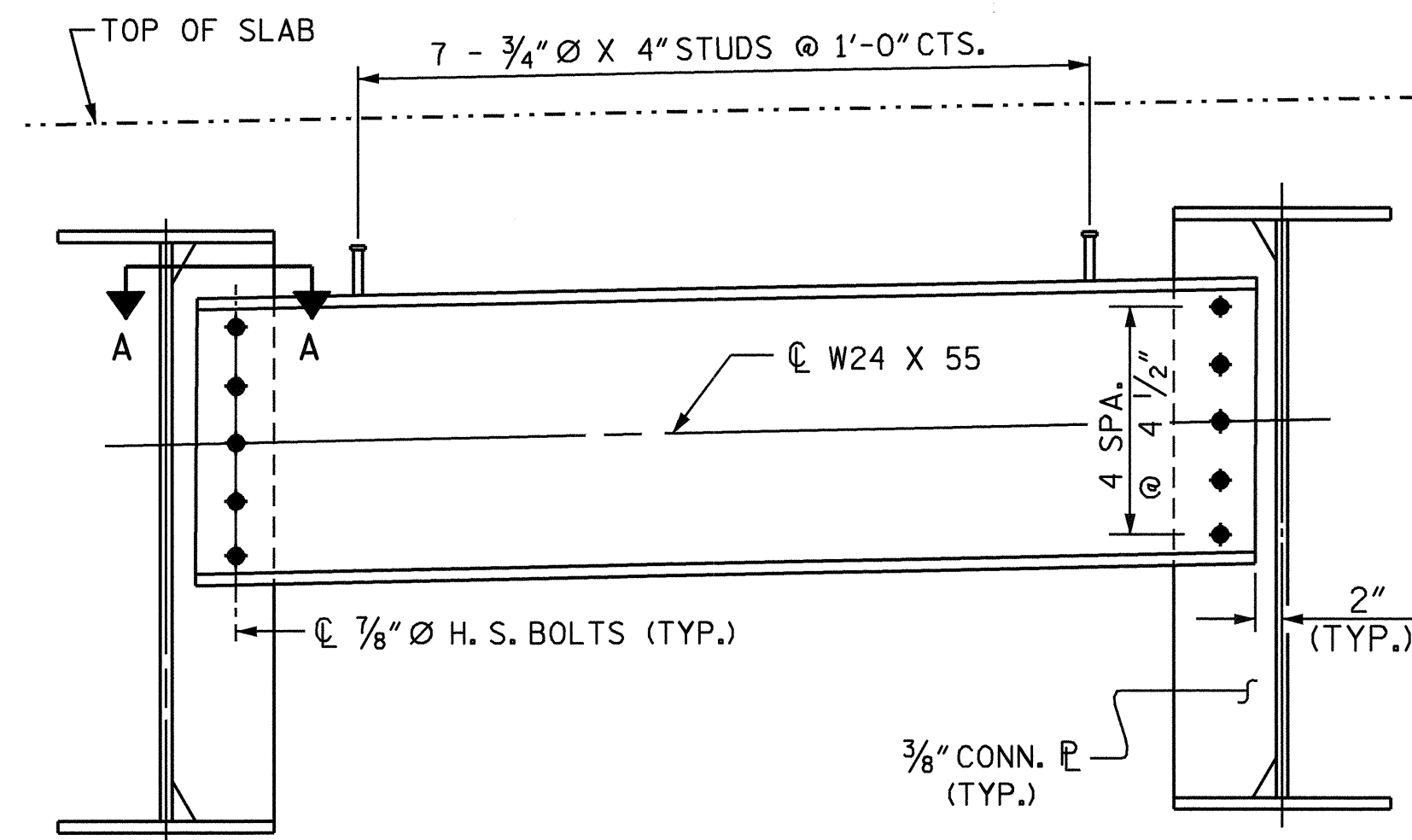
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 FRAMING PLAN**

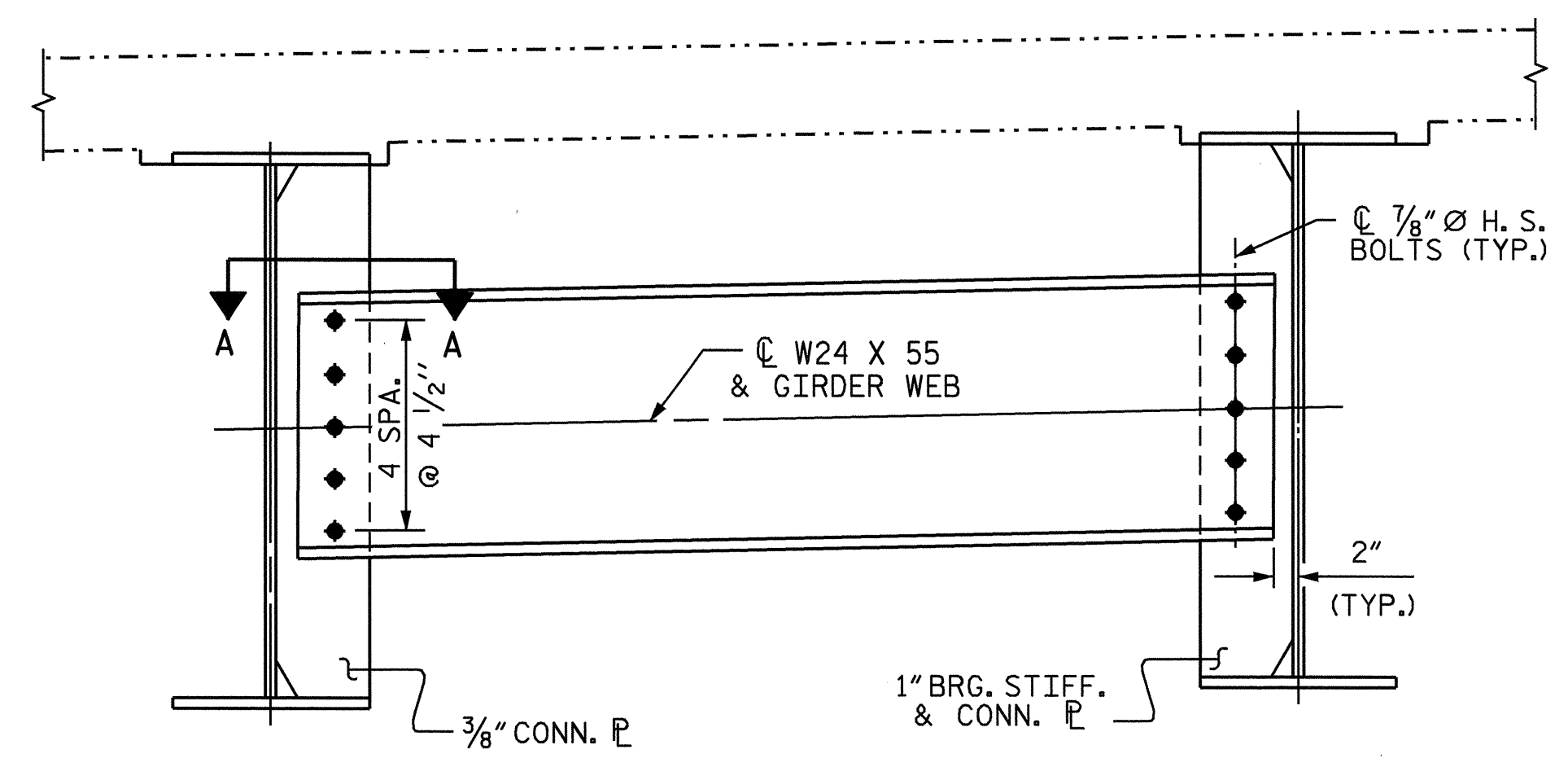
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			41



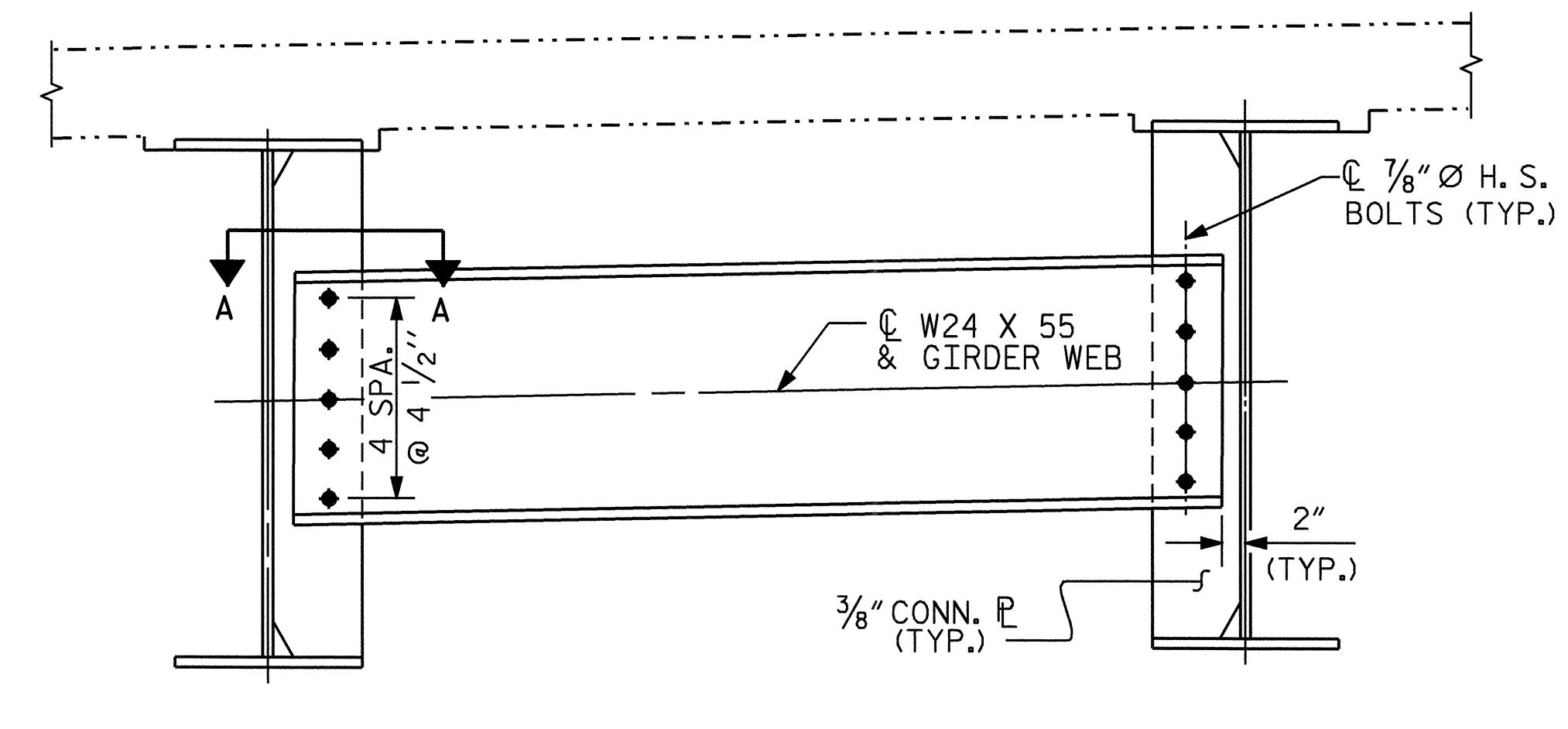
DRAWN BY : K. D. LAYNE DATE : 02/07
 CHECKED BY : S. DOMBROWSKI DATE : 5/22/07



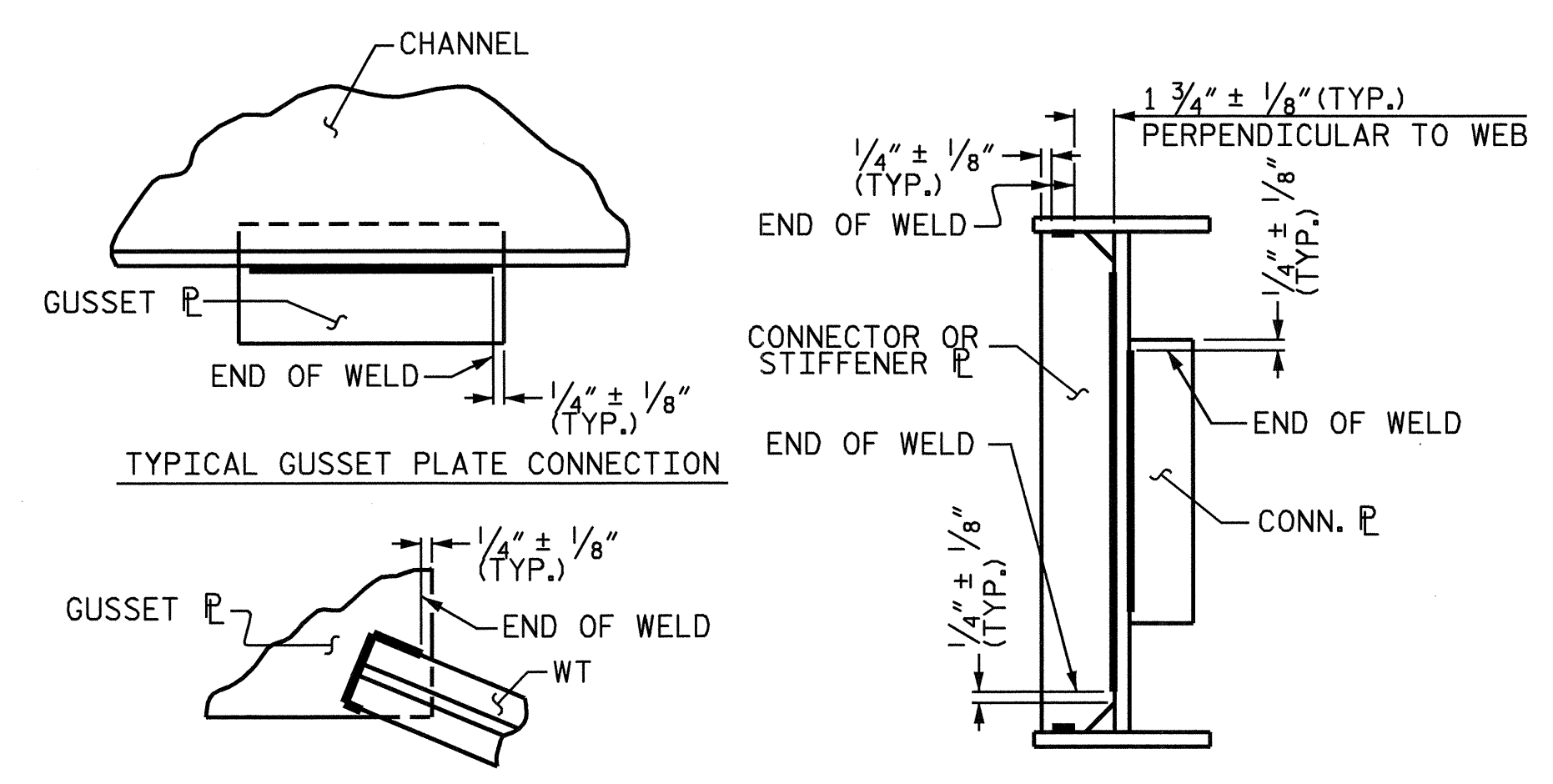
END BENT DIAPHRAGM (D1)



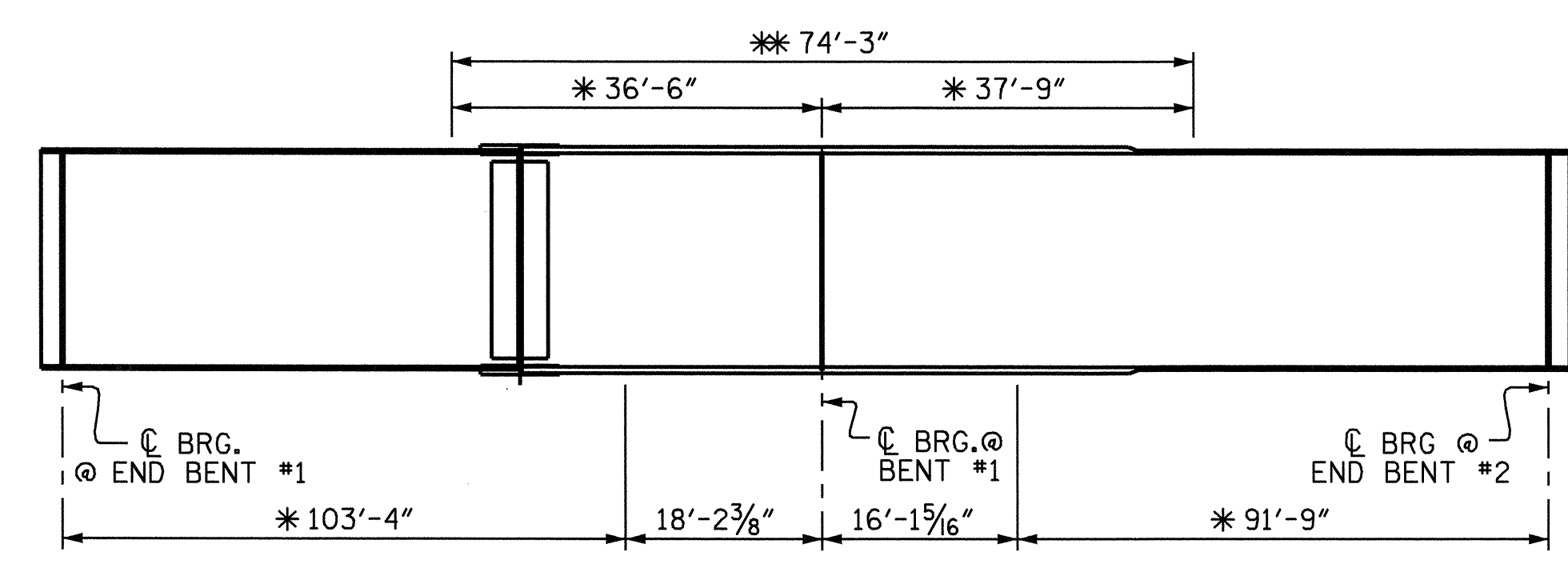
BENT DIAPHRAGM (D3)



INTERMEDIATE DIAPHRAGM (D2)



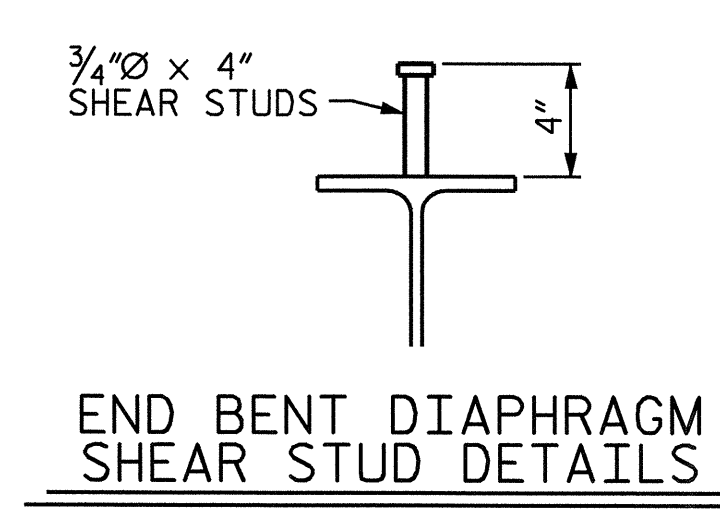
WELD TERMINATION DETAILS



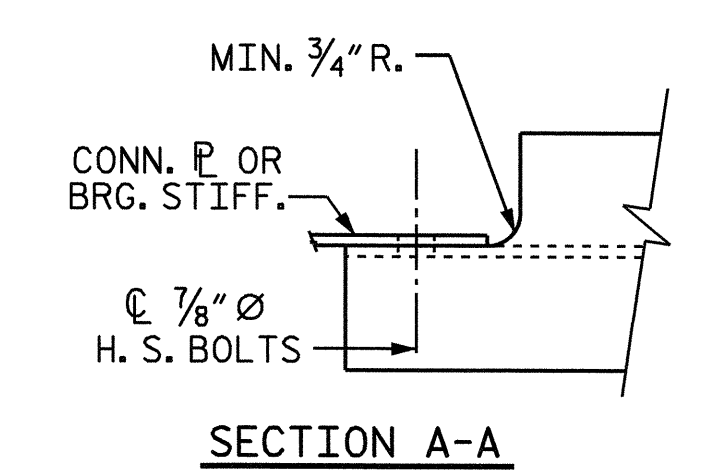
CHARPY V-NOTCH TEST FOR GIRDERS

*CHARPY V-NOTCH TESTS WILL BE REQUIRED FOR ALL TOP OR BOTTOM FLANGE PLATES WHICH FALLS WITHIN THESE LIMITS, INCLUDING 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 TOP FLANGE PLATE. FOR CHARPY V-NOTCH TESTS, SEE ARTICLE 1072-9 OF THE STANDARD SPECIFICATIONS.

**NO WELDING OF FORMS OR FALSEWORK TO THE TOP FLANGE WILL BE PERMITTED IN THIS REGION.



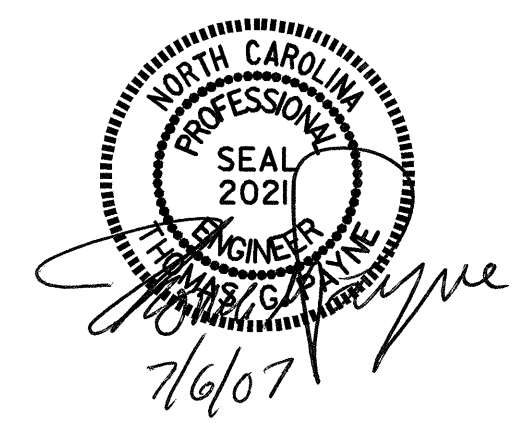
END BENT DIAPHRAGM SHEAR STUD DETAILS



SECTION A-A

DRAWN BY : K. D. LAYNE DATE : 02/07
 CHECKED BY : S. DOMBROWSKI DATE : 5/22/07

06-JUL-2007 06:32
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PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE STRUCTURAL STEEL DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-12
TOTAL SHEETS					41

NOTES

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W AND PAINTED IN ACCORDANCE WITH SYSTEM 4 OF ARTICLE 442-7 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

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

ALL FIELD CONNECTIONS TO BE 7/8" DIA. HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.

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

SHOP SPLICES ARE PERMITTED TO LIMIT THE MAXIMUM REQUIRED FLANGE PIECE LENGTHS TO 60 FEET AND WEB PIECE LENGTHS TO 45 FEET. PERMITTED FLANGE AND WEB SHOP SPLICES SHALL NOT BE LOCATED WITHIN 15 FEET OF MAXIMUM DEAD LOAD DEFLECTION (NOR WITHIN 15 FEET OF INTERMEDIATE BEARINGS OF CONTINUOUS UNITS). KEEP 2 FEET MINIMUM BETWEEN WEB AND FLANGE SHOP SPLICES. KEEP 6" MINIMUM BETWEEN CONNECTOR PLATE OR TRANSVERSE STIFFENER WELDS AND WEB OR FLANGE SHOP SPLICES.

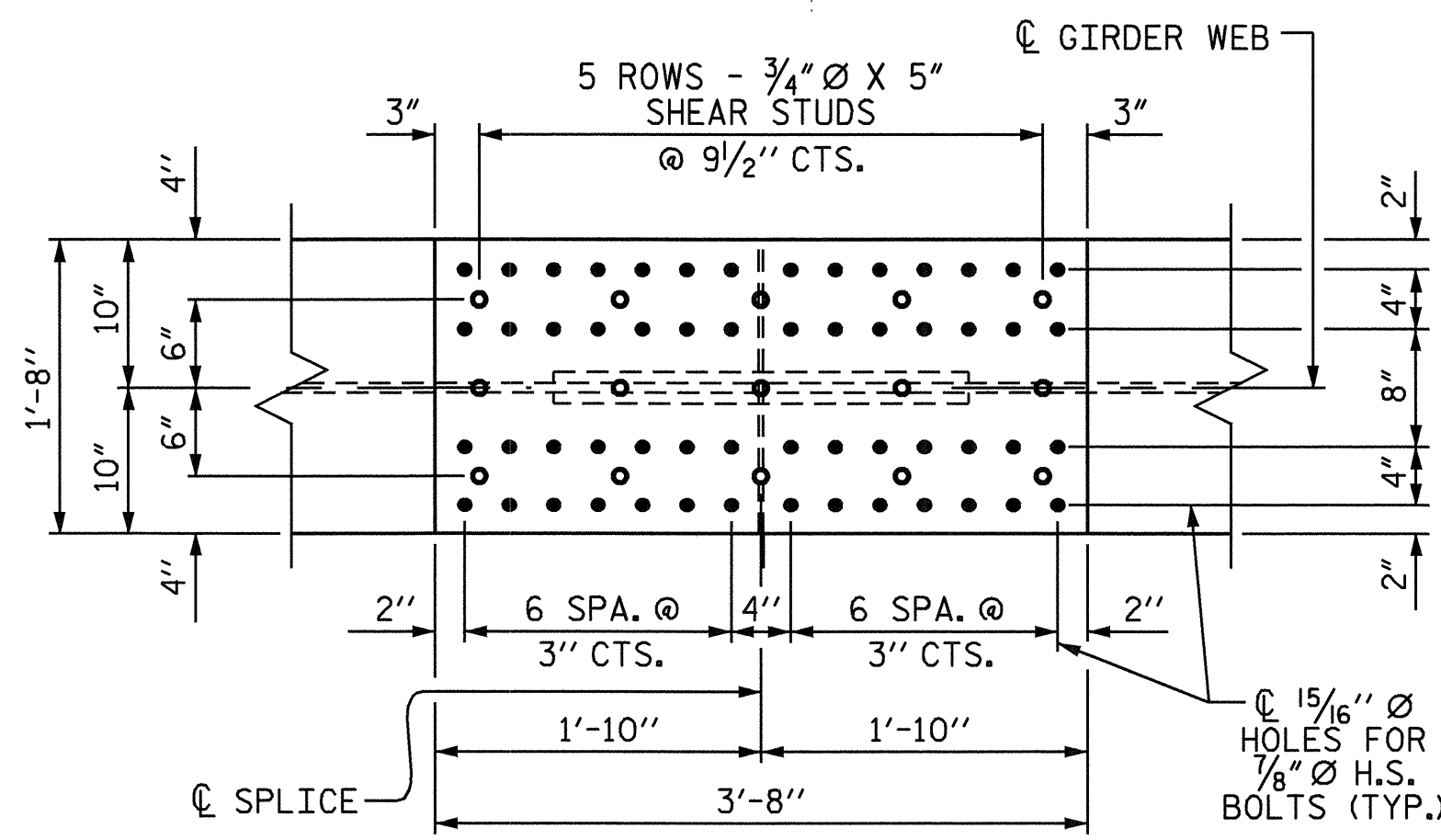
STUDS ON GIRDERS MAY BE SHIFTED UP TO 1" IF NECESSARY TO CLEAR FLANGE SPLICE WELD.

END OF GIRDERS SHALL BE PLUMB.

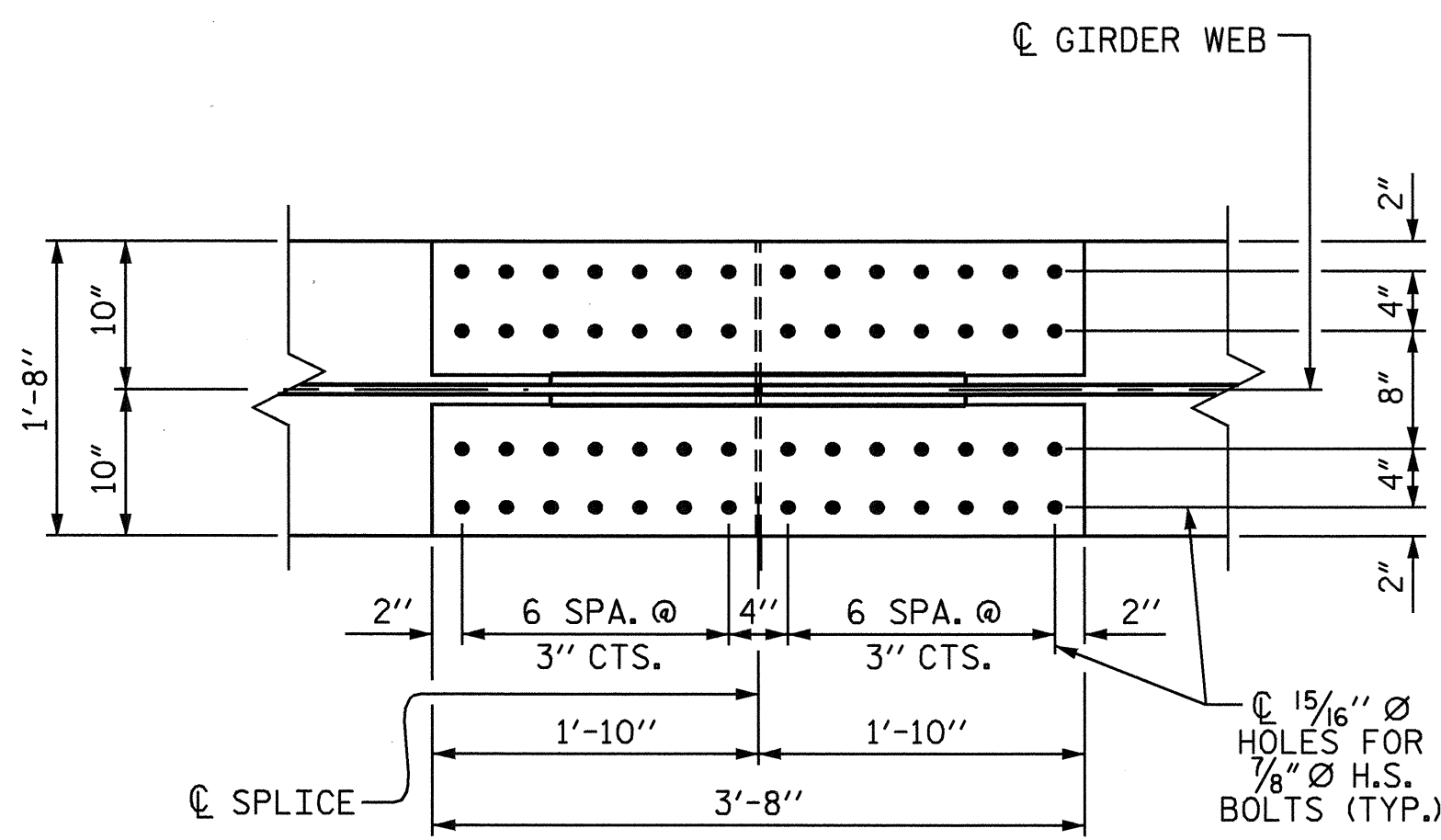
FOR SHIPPING STRUCTURAL STEEL MEMBERS, SEE SPECIAL PROVISIONS.

FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.

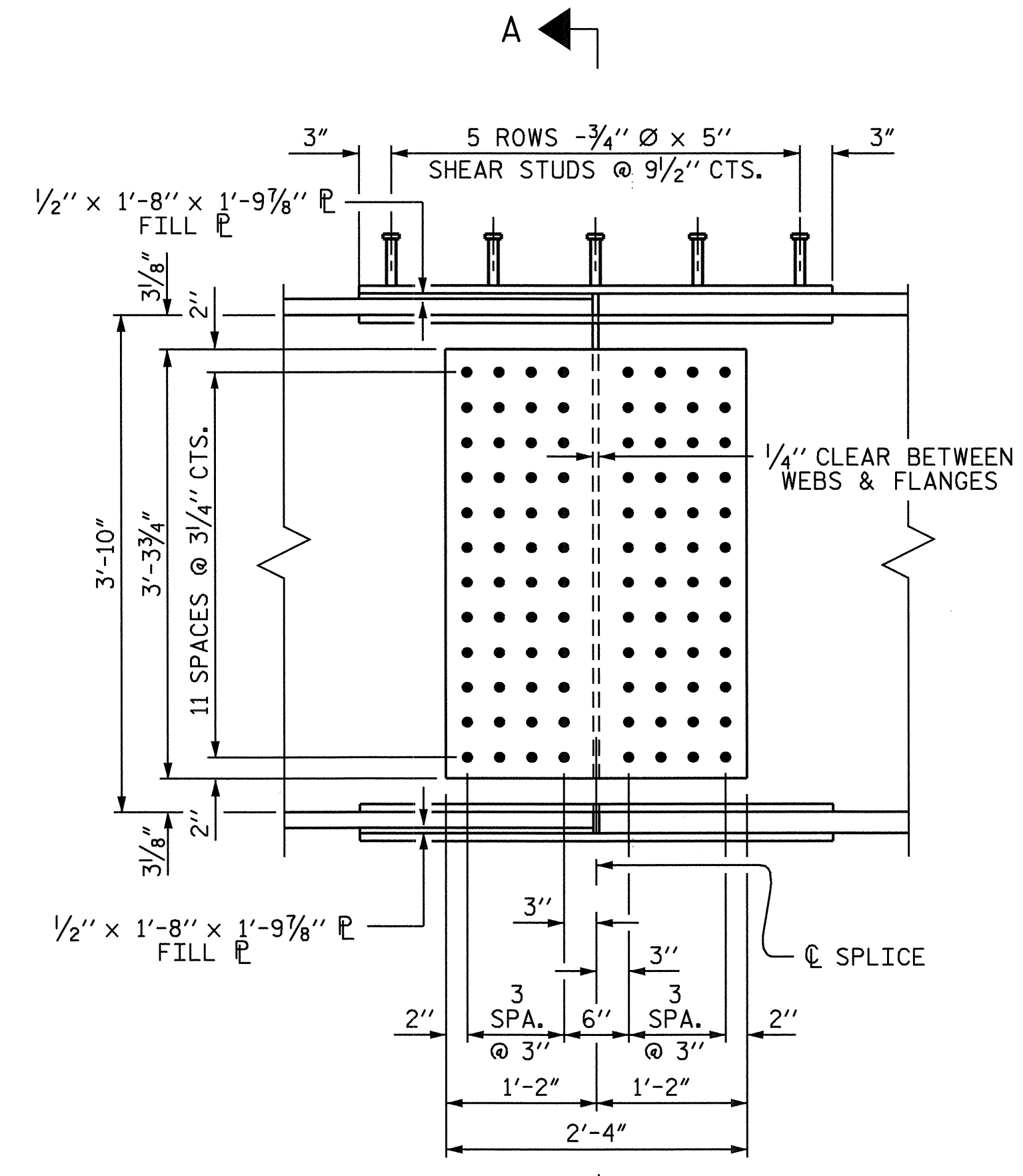
TENSION ON THE AASHTO M164 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.



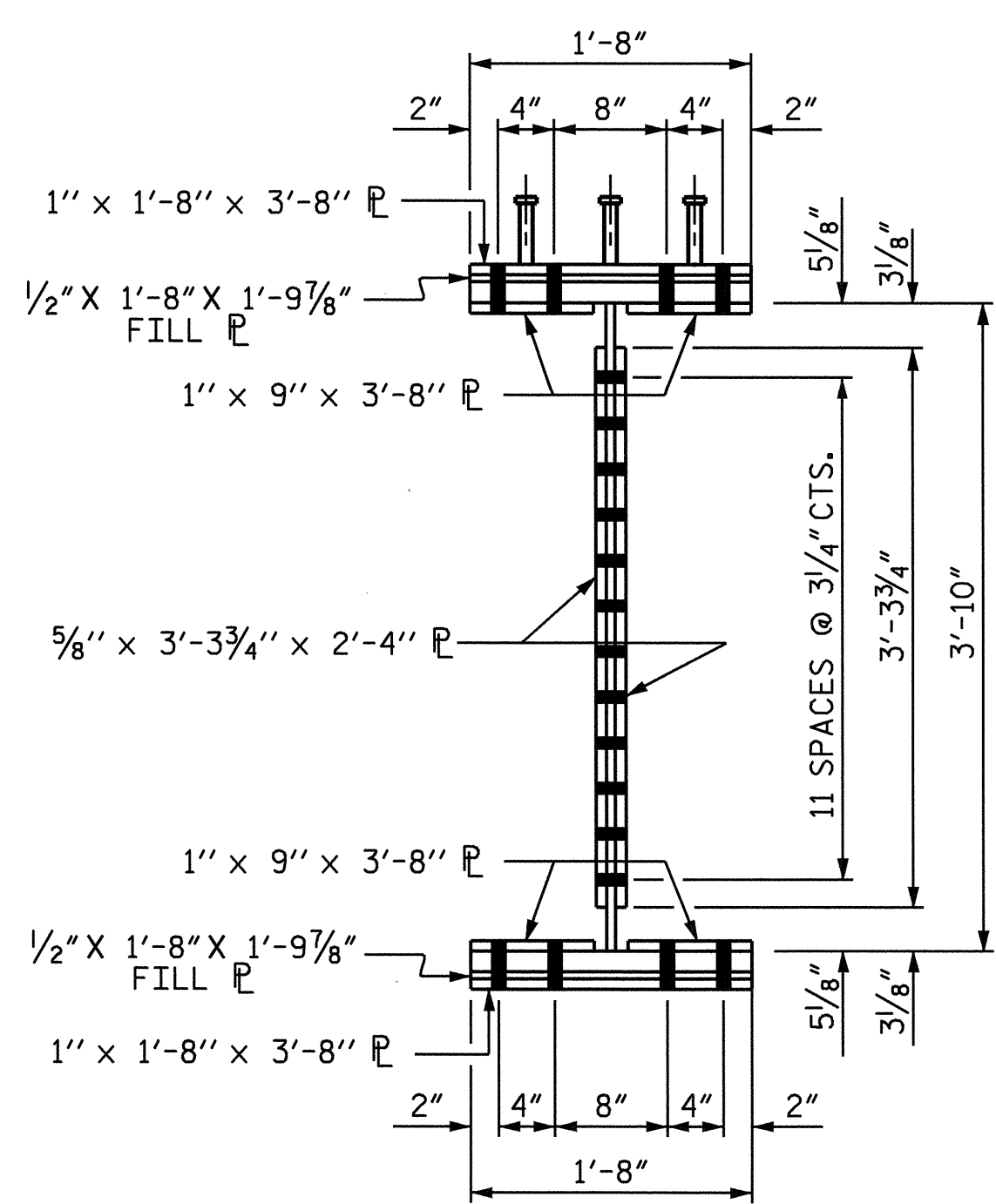
PLAN (TOP OF TOP FLANGE)



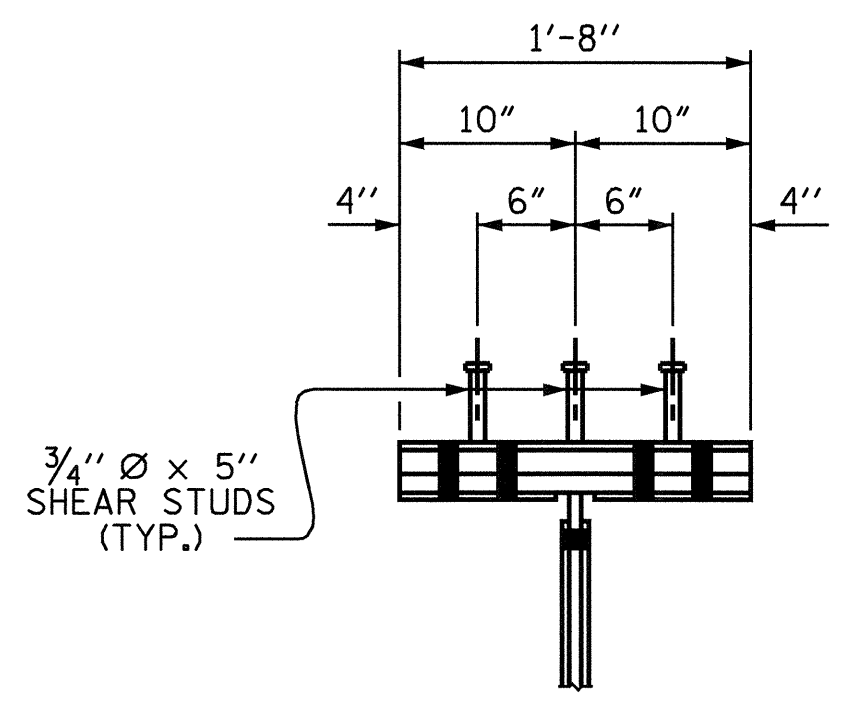
PLAN (TOP OF BOTTOM FLANGE)



ELEVATION



SECTION A-A



SHEAR STUD DETAIL FOR TOP FLANGE SPLICE PLATE

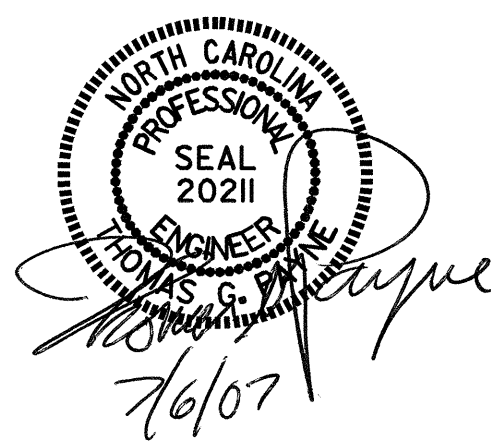
BOLTED FIELD SPLICE DETAILS

PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS



DRAWN BY: K. D. LAYNE DATE: 02/07
 CHECKED BY: S. DOMBROWSKI DATE: 5/22/07

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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13	
1			3			TOTAL SHEETS	
2			4			41	

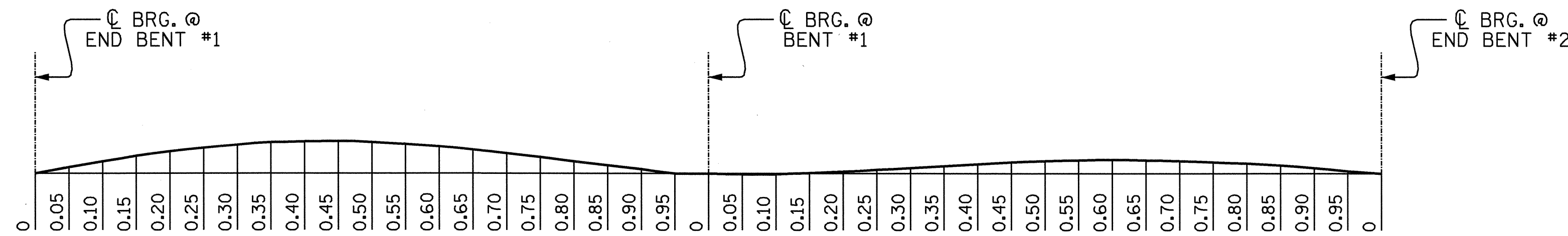
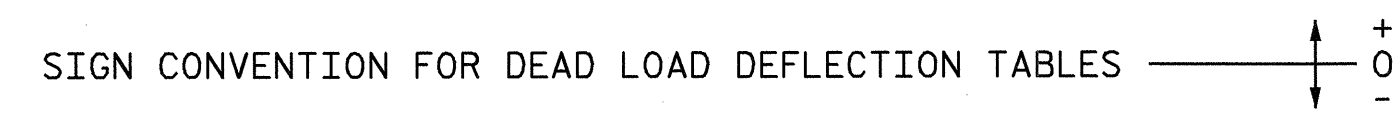
DEAD LOAD DEFLECTION TABLE FOR GIRDERS

TWENTIETH POINTS	SPAN A GIRDERS #1 THRU #4 & #7 THRU #13																				SPAN B GIRDERS #1 THRU #4 & #7 THRU #13																					
	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0	
	DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.011	-0.022	-0.031	-0.040	-0.047	-0.053	-0.056	-0.058	-0.059	-0.057	-0.054	-0.049	-0.043	-0.036	-0.029	-0.022	-0.015	-0.008	-0.003	0.000	0.001	0.001	-0.001	-0.003	-0.006	-0.009	-0.013	-0.016	-0.019	-0.021	-0.023	-0.024	-0.023	-0.022	-0.020	-0.017	-0.014	-0.010	-0.005	0.000
* DEFLECTION DUE TO WEIGHT OF SLAB	0.000	-0.032	-0.063	-0.092	-0.117	-0.138	-0.154	-0.165	-0.171	-0.171	-0.166	-0.157	-0.143	-0.126	-0.106	-0.085	-0.063	-0.043	-0.024	-0.010	0.000	0.003	0.002	-0.003	-0.010	-0.019	-0.030	-0.040	-0.050	-0.059	-0.065	-0.070	-0.072	-0.071	-0.068	-0.062	-0.053	-0.042	-0.029	-0.015	0.000	
DEFLECTION DUE TO WEIGHT OF SIDEWALK	0.000	-0.007	-0.014	-0.021	-0.026	-0.031	-0.035	-0.037	-0.039	-0.039	-0.038	-0.036	-0.033	-0.029	-0.024	-0.019	-0.014	-0.010	-0.006	-0.002	0.000	0.001	0.000	-0.001	-0.003	-0.005	-0.007	-0.010	-0.012	-0.014	-0.015	-0.016	-0.017	-0.016	-0.016	-0.014	-0.012	-0.010	-0.007	-0.003	0.000	
TOTAL DEAD LOAD DEFLECTION	0.000	-0.050	-0.099	-0.143	-0.183	-0.216	-0.241	-0.258	-0.268	-0.268	-0.261	-0.246	-0.225	-0.198	-0.167	-0.133	-0.099	-0.067	-0.038	-0.015	0.000	0.005	0.003	-0.004	-0.016	-0.030	-0.046	-0.062	-0.078	-0.091	-0.102	-0.109	-0.112	-0.111	-0.106	-0.096	-0.083	-0.065	-0.045	-0.023	0.000	
VERTICAL CURVE ORDINATE																																										
ORDINATE DUE TO SUPERELEVATION																																										
REQUIRED CAMBER	0	5/8	1 1/8	1 3/8	1 1/2	1 5/8	1 3/4	1 1/2	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	0	-1/16	-1/16	1/16	3/16	3/8	9/16	3/4	15/16	1 1/8	1 1/4	15/16	1 3/8	1 1/2	1 1/4	1 1/8	1	13/16	9/8	1/4	0		

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

TWENTIETH POINTS	SPAN A GIRDERS #5 & #6															SPAN B GIRDERS #5 & #6																										
	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	0	
	DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.011	-0.022	-0.031	-0.040	-0.047	-0.053	-0.056	-0.058	-0.059	-0.057	-0.054	-0.049	-0.043	-0.036	-0.029	-0.022	-0.015	-0.008	-0.003	0.000	0.001	0.001	-0.001	-0.003	-0.006	-0.009	-0.013	-0.016	-0.019	-0.021	-0.023	-0.024	-0.023	-0.022	-0.020	-0.017	-0.014	-0.010	-0.005	0.000
* DEFLECTION DUE TO WEIGHT OF SLAB	0.000	-0.021	-0.042	-0.060	-0.077	-0.091	-0.101	-0.109	-0.112	-0.113	-0.110	-0.103	-0.094	-0.083	-0.070	-0.056	-0.042	-0.028	-0.016	-0.006	0.000	0.002	0.001	-0.002	-0.007	-0.013	-0.020	-0.026	-0.033	-0.039	-0.043	-0.046	-0.047	-0.047	-0.045	-0.041	-0.035	-0.028	-0.019	-0.010	0.000	
DEFLECTION DUE TO WEIGHT OF SIDEWALK	0.000	-0.003	-0.005	-0.007	-0.009	-0.011	-0.012	-0.013	-0.014	-0.014	-0.014	-0.013	-0.012	-0.010	-0.009	-0.007	-0.005	-0.004	-0.002	-0.001	0.000	0.000	0.000	0.000	-0.001	-0.002	-0.003	-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	-0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.035	-0.068	-0.099	-0.126	-0.149	-0.166	-0.178	-0.185	-0.185	-0.180	-0.170	-0.155	-0.136	-0.115	-0.092	-0.068	-0.046	-0.026	-0.010	0.000	0.003	0.002	-0.003	-0.010	-0.020	-0.032	-0.043	-0.053	-0.063	-0.070	-0.075	-0.077	-0.076	-0.073	-0.066	-0.057	-0.045	-0.031	-0.016	0.000	
VERTICAL CURVE ORDINATE																																										
ORDINATE DUE TO SUPERELEVATION																																										
REQUIRED CAMBER	0	7/16	1 1/8	1 3/8	1 1/2	1 5/8	1 3/4	1 1/2	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	0	-1/16	0	1/16	1/8	1/4	3/8	1/2	5/8	3/4	13/16	7/8	15/16	1 1/8	1 1/4	1 1/2	1 3/4	1 1/2	1 1/8	1 1/4	0		

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



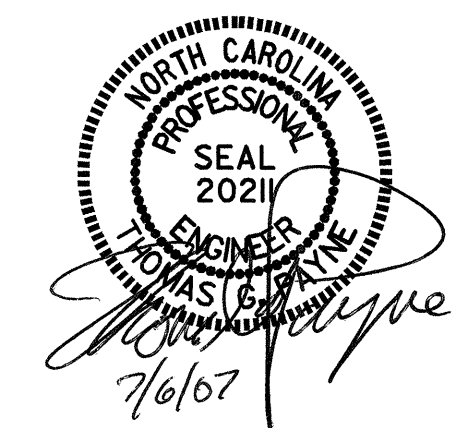
SCHEMATIC CAMBER ORDINATES

PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 DEAD LOAD DEFLECTIONS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			41



DRAWN BY: KEITH D. LAYNE DATE: 6-08-07
 CHECKED BY: S. DOMBROWSKI DATE: 6/11/07

NOTES

AT POINTS OF SUPPORT AT END BENTS, 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.

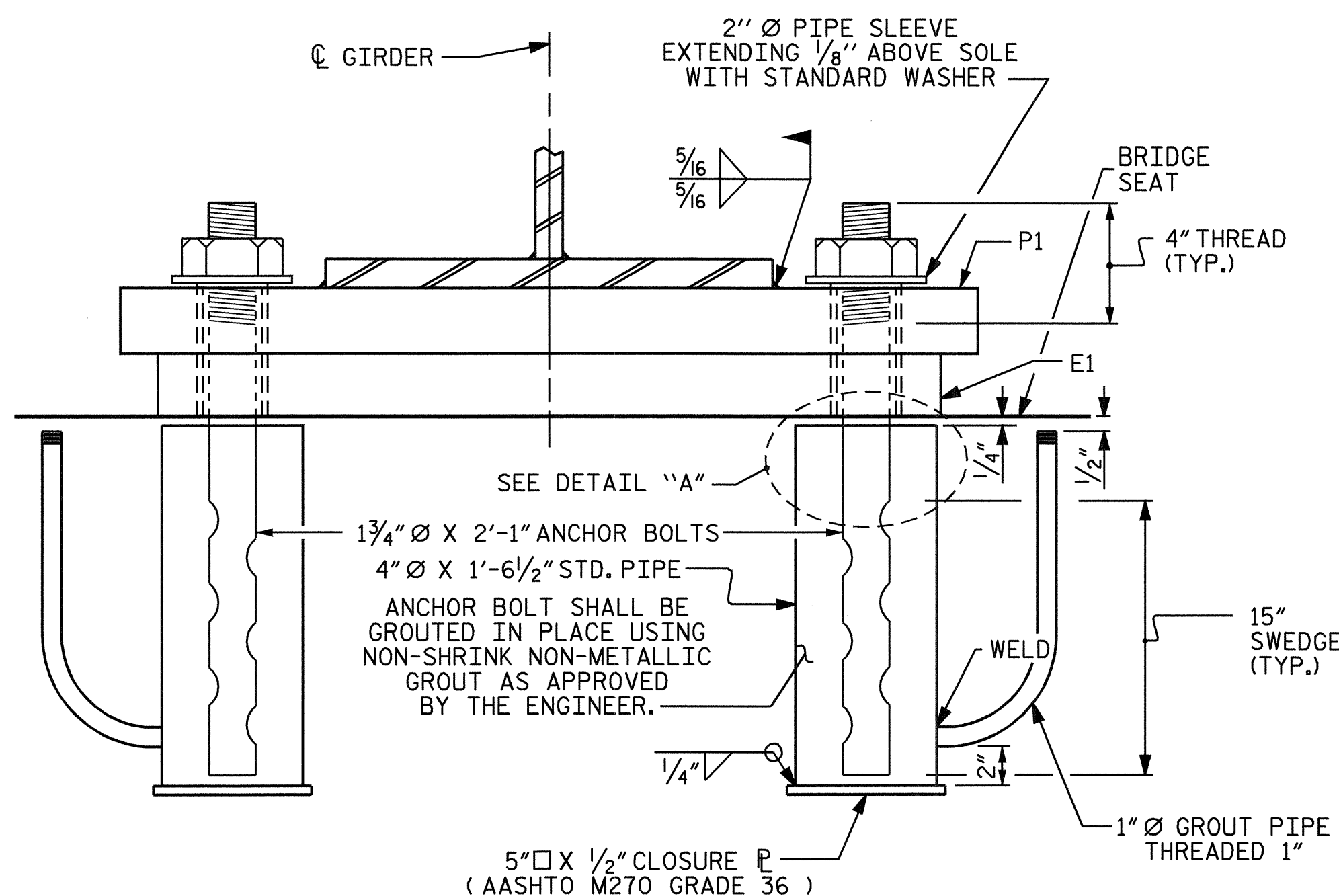
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE CLOSURE PLATE, GROUT PIPE AND STANDARD PIPE FOR THE EXPANSION ASSEMBLY NEED NOT BE GALVANIZED.

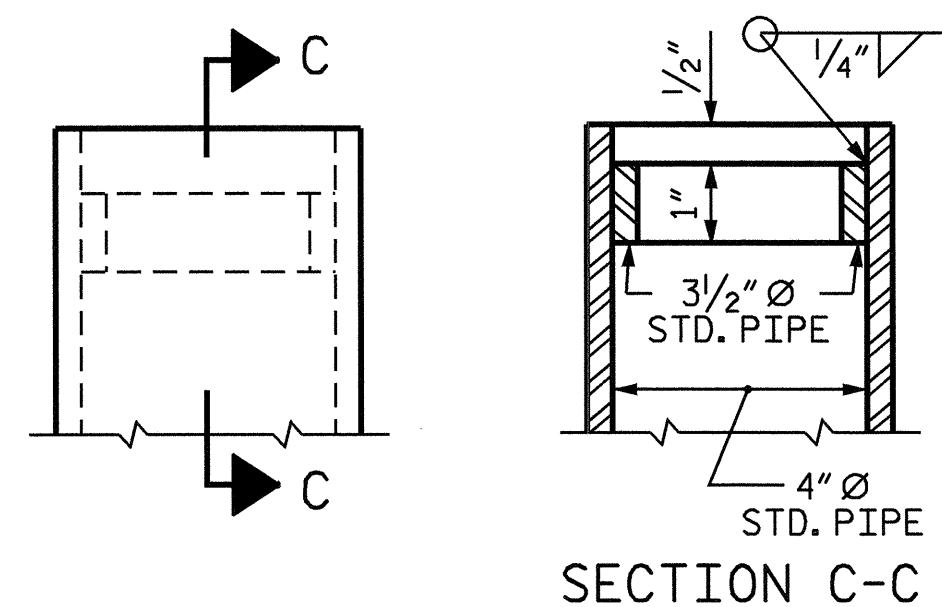
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FOLLOWING PROCEDURES TO ACCOMMODATE GIRDER TRANSLATION AND END ROTATION:

1. ONCE THE DECK HAS CURED, THE GIRDERS SHALL BE JACKED AND THE ANCHOR BOLTS, SOLE PLATE, AND ELASTOMERIC BEARING SLOTS SHALL BE CENTERED AS NEARLY AS PRACTICAL ABOUT THE BEARING STIFFENER. THIS OPERATION SHALL BE PERFORMED AT APPROXIMATELY 60° F.
2. AFTER CENTERING THE SLOTS AND ANCHOR BOLTS, THE SOLE PLATES SHALL BE FIELD WELDED TO THE GIRDER FLANGES AND ANCHOR BOLTS GROUTED.

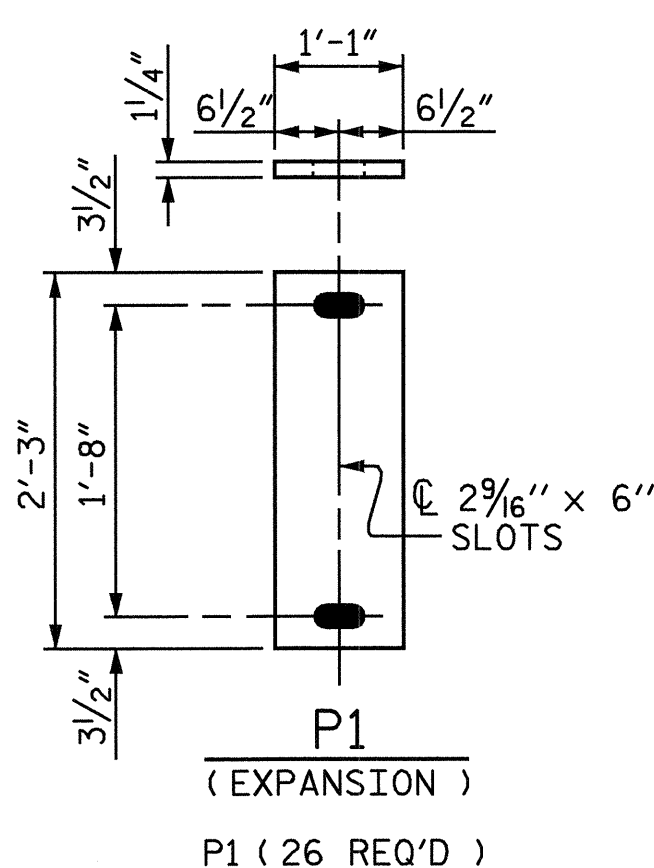
THE CONTRACTOR MAY PROPOSE ALTERNATE METHODS, PROVIDED DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.



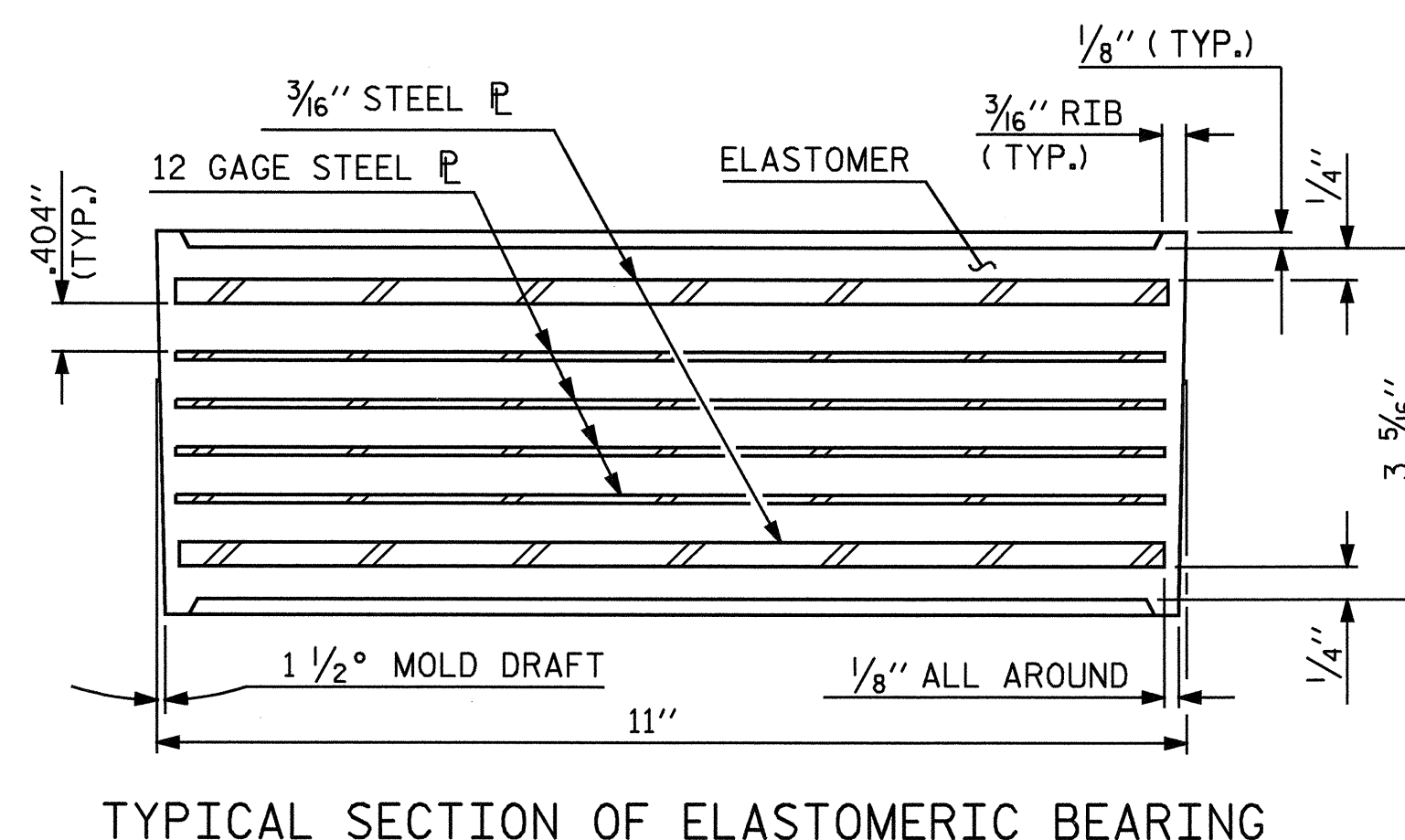
END VIEW
EXPANSION



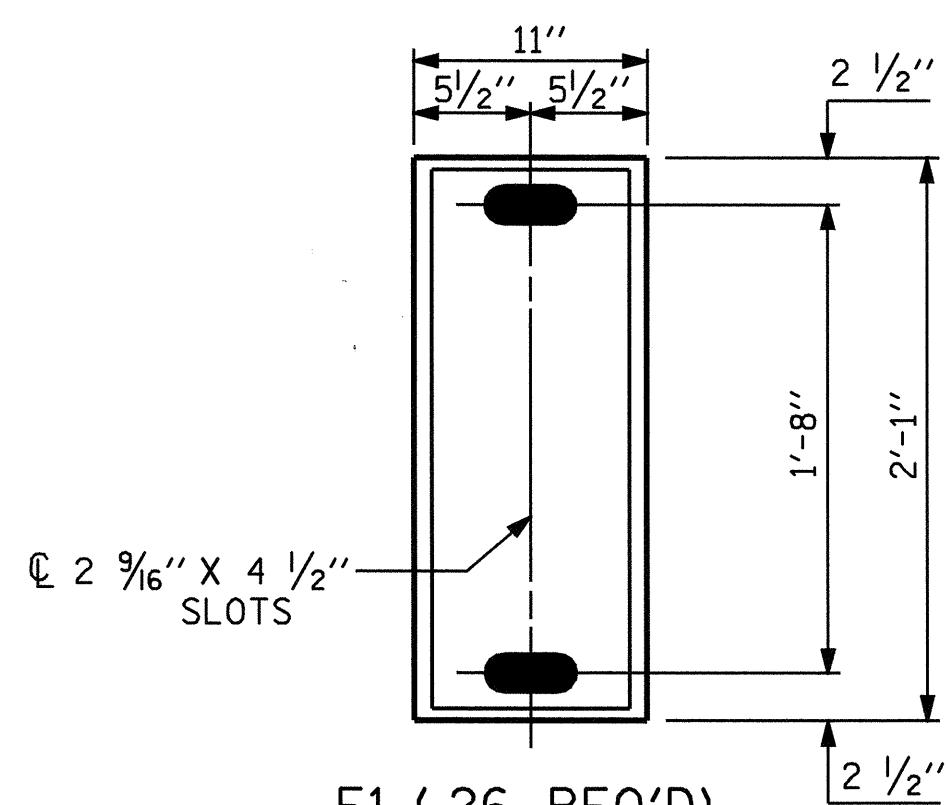
DETAIL "A"



SOLE PLATE DETAILS



TYPICAL SECTION OF ELASTOMERIC BEARING



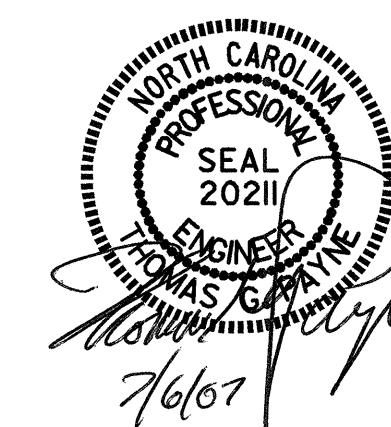
PLAN VIEW OF ELASTOMERIC BEARING

TYPE IV

-LOAD RATINGS-	
	MAX.D.L.+ L.L.
TYPE IV	184 K

PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 ELASTOMERIC BEARING
 DETAILS
 (STEEL SUPERSTRUCTURE)



ASSEMBLED BY : K. D. LAYNE DATE : 02/07
 CHECKED BY : S. DOMBROWSKI DATE : 5/22/07
 DRAWN BY : EEM 10/95 REV. 10/17/00 RWW/LES
 CHECKED BY : PEK 10/95 REV. 7/10/01 LES/RDR
 REV. 5/1/06 TLA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			41

NOTES

FOR POT BEARINGS, SEE SPECIAL PROVISIONS.

AT ALL POINTS OF SUPPORT AT BENT #1, NUTS FOR ANCHOR BOLTS SHALL BE TIGHTENED FINGER TIGHT AND GIVEN 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.

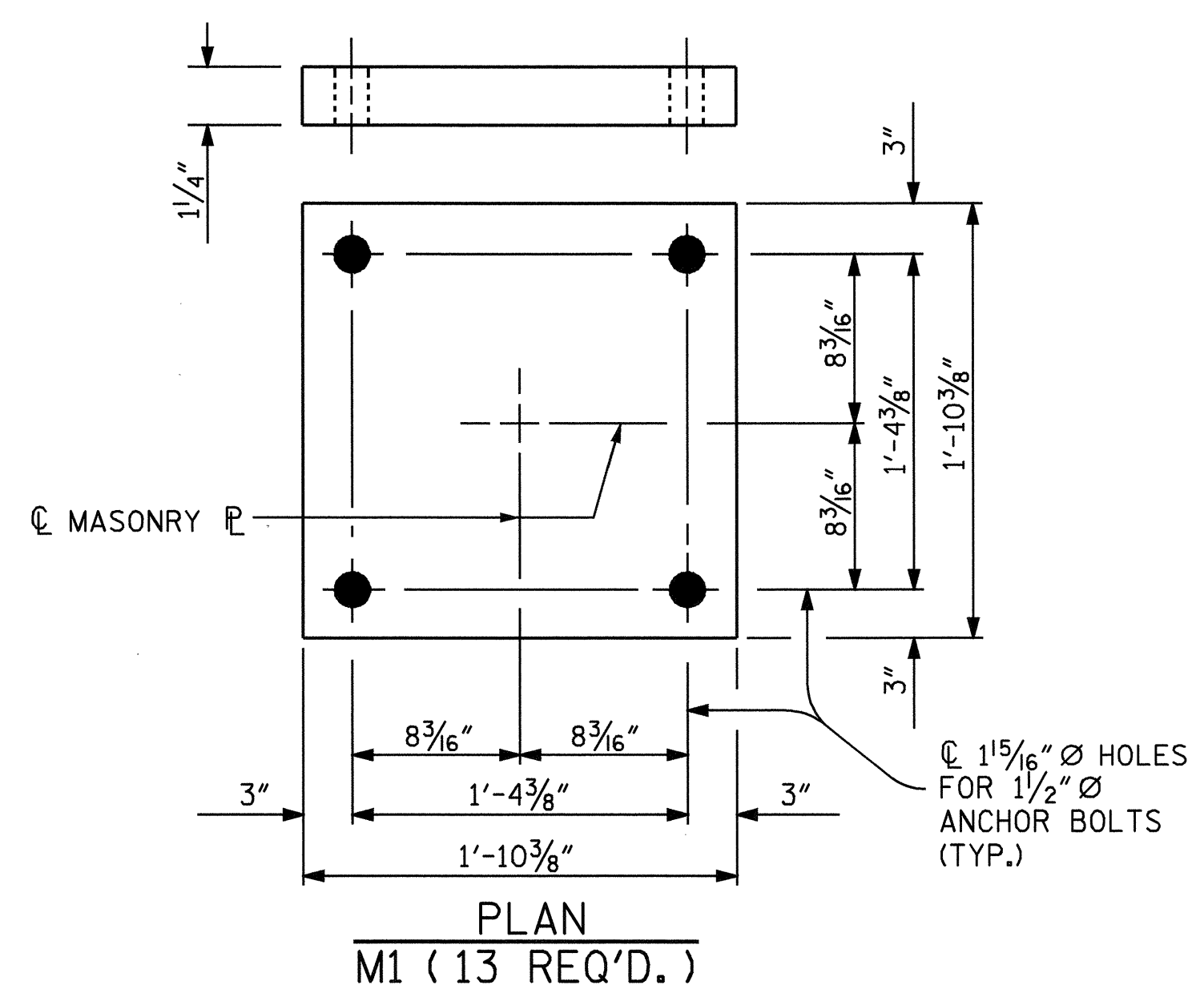
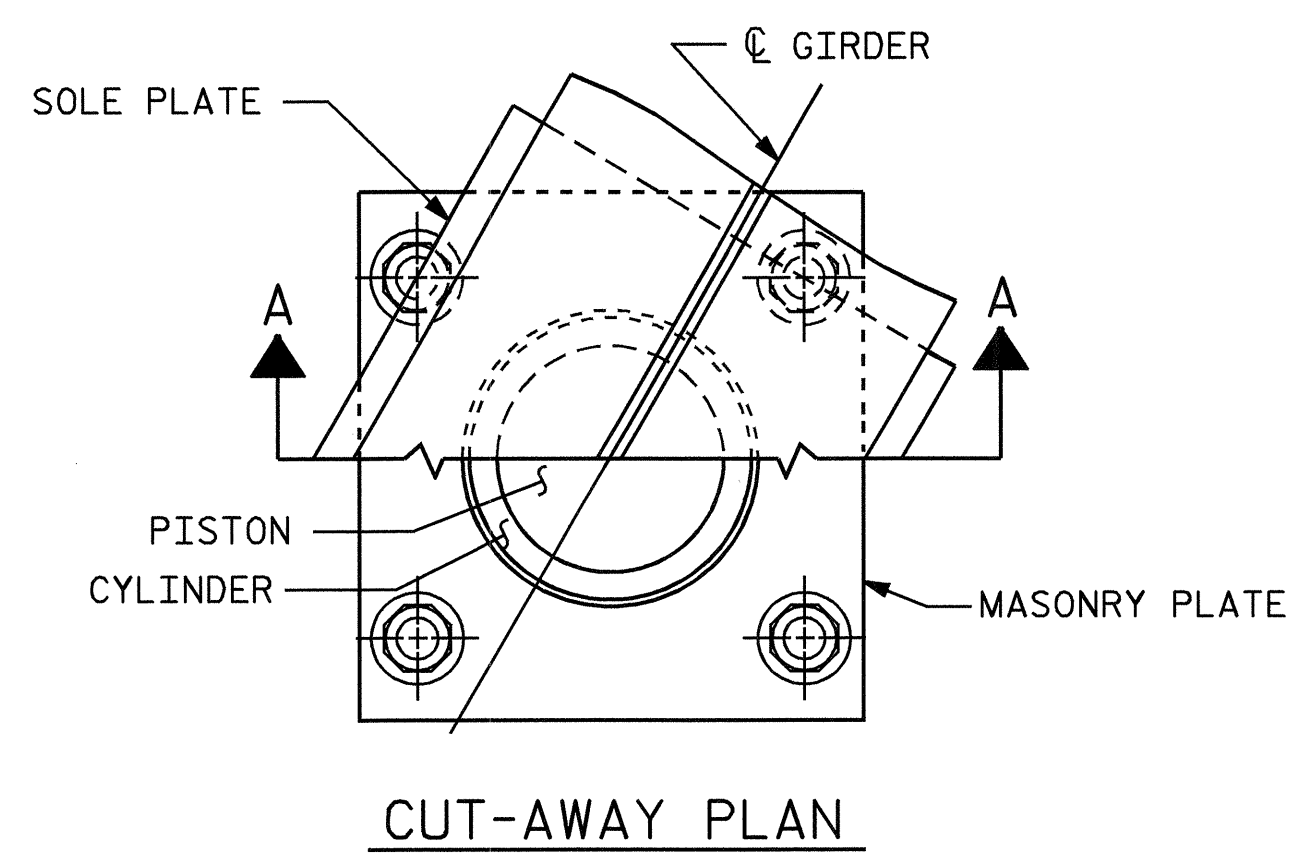
SOLE PLATES SHOULD BE WELDED TO BEAM FLANGES AND ANCHOR BOLTS SHOULD BE GROUTED BEFORE FALSEWORK IS PLACED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

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

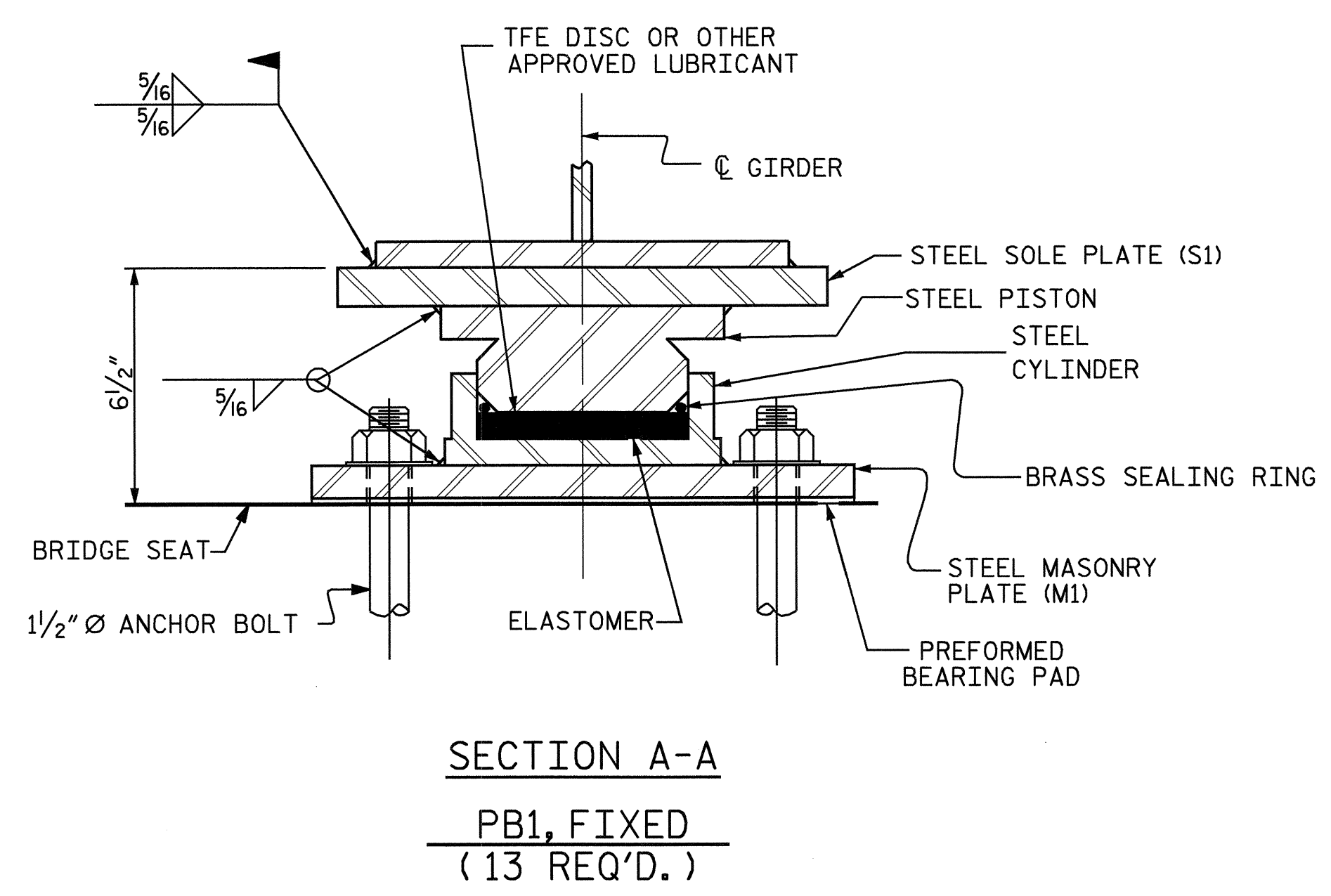
THE CONTRACTOR MAY SUBSTITUTE DISC BEARINGS FOR THE POT BEARINGS SHOWN. FOR OPTIONAL DISC BEARINGS, SEE SPECIAL PROVISIONS.

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

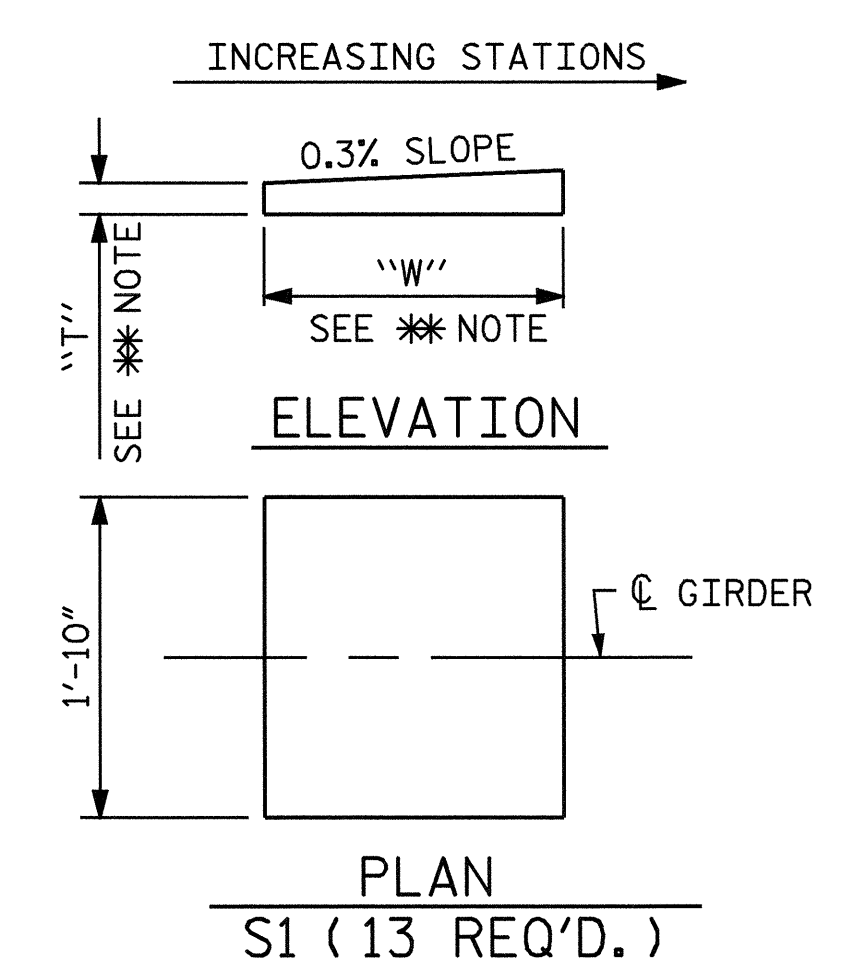


MASONRY PLATE DETAILS

TABLE FOR LOADS AND MOVEMENTS						
BEARING	LOCATION	VERTICAL LOAD (KIPS)			LATERAL LOAD (KIPS)	TOTAL MOVEMENT (INCHES)
		DEAD	LIVE	TOTAL		
PB1 (FIXED)	BENT #1	293	122	415	58.6	0



POT BEARING DETAILS



** NOTE: DIMENSIONS "W" AND "T" ARE TO BE DETERMINED BY THE MANUFACTURER.

SOLE PLATE DETAILS

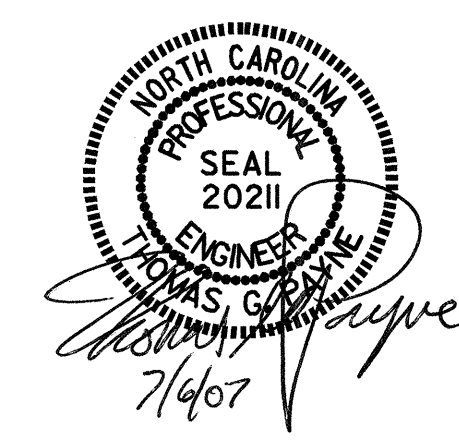
PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 POT BEARING
 DETAILS

REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	41
1			3			
2			4			

SHEET NO. S-16



ASSEMBLED BY : K. D. LAYNE	DATE : 02/07
CHECKED BY : S. DOMDROWSKI	DATE : 5/22/07
DRAWN BY : RWW 8/99	REV. 7/10/01 LES/RDR
CHECKED BY : LES 8/99	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM

NOTES

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

ALUMINUM RAILS

MATERIAL FOR POSTS, BASES AND RAILS, EXPANSION BARS AND CLAMP BARS SHALL BE ASTM B221 ALLOY 6061-T6. MATERIAL FOR RIVETS SHALL BE ASTM B316 ALLOY 6061-T6. RIVETS SHALL BE STANDARD BUTTON HEAD AND CONE POINT COLD DRIVEN AS PER DRAWING. THE BASE OF RAIL POSTS, OR ANY OTHER ALUMINUM SURFACE IN CONTACT WITH CONCRETE SHALL BE THOROUGHLY COATED WITH AN ALUMINUM IMPREGNATED CAULKING COMPOUND OF APPROVED QUALITY. MATERIAL FOR SHIMS TO BE ASTM B209 ALLOY 6061-T6.

GALVANIZED STEEL RAILS

MATERIAL AND GALVANIZING ARE TO CONFORM TO THE FOLLOWING SPECIFICATIONS: POST, POST BASES, RAILS, EXPANSION BARS AND CLAMP BARS : AASHTO M270 GRADE 36 STRUCTURAL STEEL - GALVANIZED TO AASHTO M111. RIVETS: RIVETS SHALL MEET THE REQUIREMENTS OF ASTM A502 FOR GRADE 1 RIVETS. THE CUT ENDS OF GALVANIZED STEEL RAILING, AFTER GRINDING SMOOTH SHALL BE GIVEN TWO COATS OF ZINC RICH PAINT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION MIL-P-26915 USAF TYPE 1, OR OF FEDERAL SPECIFICATIONS TT-P-641.

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

GENERAL NOTES

RAILING SHALL BE CONTINUOUS FROM END POST TO END POST OF BRIDGE, EACH JOINT IN RAIL LENGTH SHALL BE SPLICED AS DETAILED. PANEL LENGTHS OF RAIL SHALL BE ATTACHED TO A MINIMUM OF THREE POSTS. PLACE ONE JOINT SPLICE JUST BEYOND THE 3RD RAIL POST FROM EACH END, TYPICALLY 14' FROM THE END. PLACE OTHER JOINTS AS NEEDED.

FOR END OF RAIL TO CLEAR FACE OF CONCRETE END POST DIMENSION, SEE STANDARD NO. BMR7. CAP SCREWS SHALL BE ASTM F593 ALLOY 305 STAINLESS STEEL. WASHERS FOR RAIL ATTACHMENT 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 REMAIN 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.

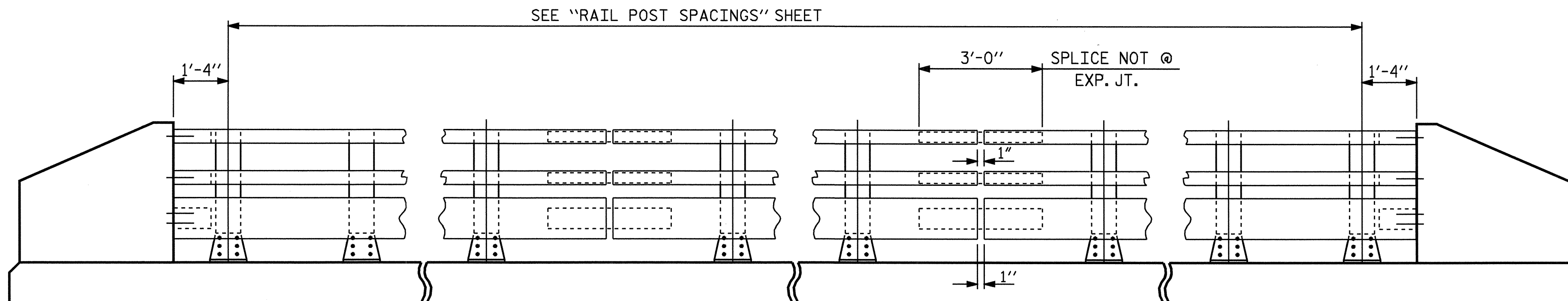
PAY LENGTH = 447.88 LIN.FT.



PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

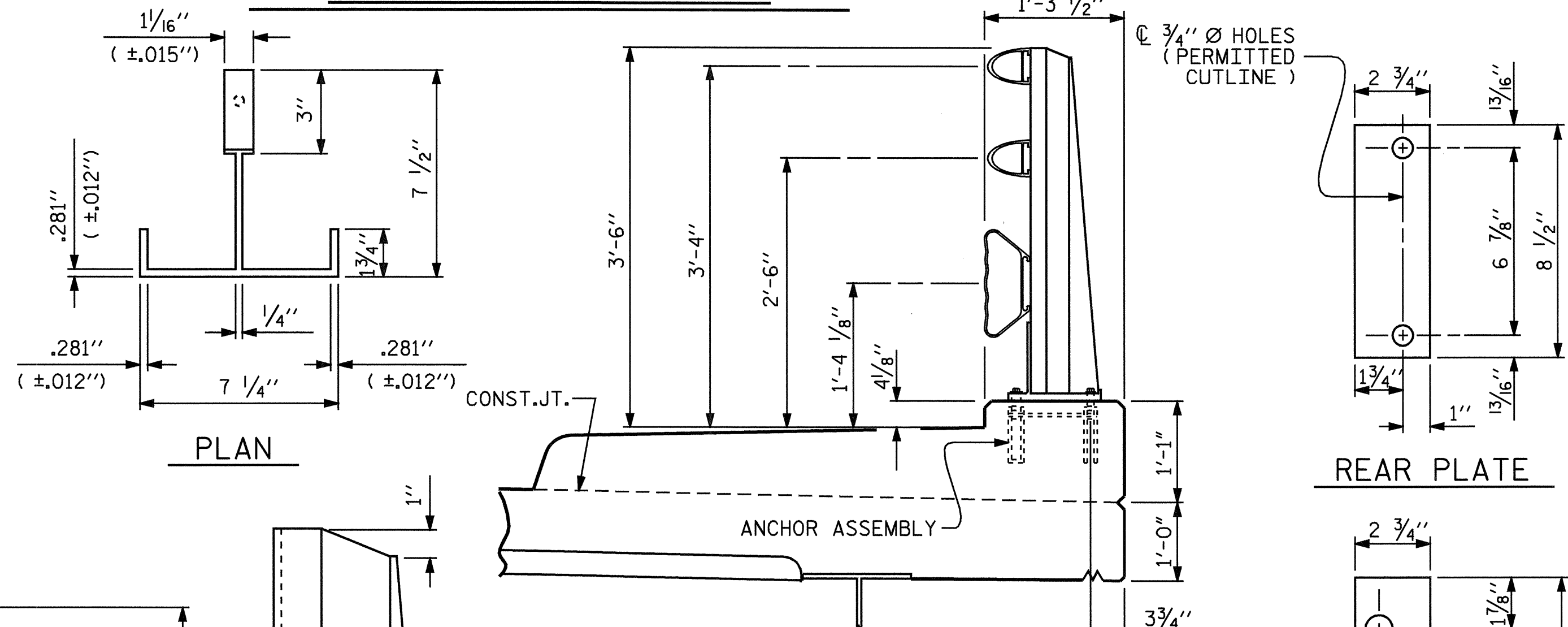
SHEET 1 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD					
3 BAR METAL RAIL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-17
					TOTAL SHEETS 41

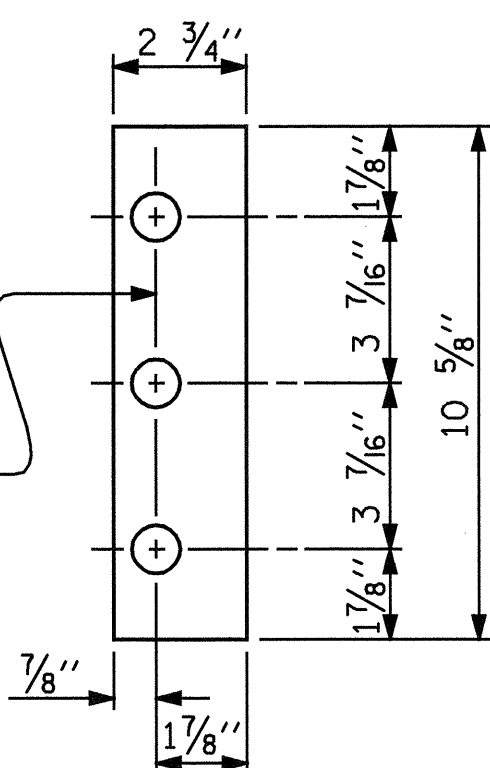


NOTE:
 FOR ATTACHMENT OF METAL RAIL TO END POST, SEE STANDARD NO. BMR7.

ELEVATION



REAR PLATE

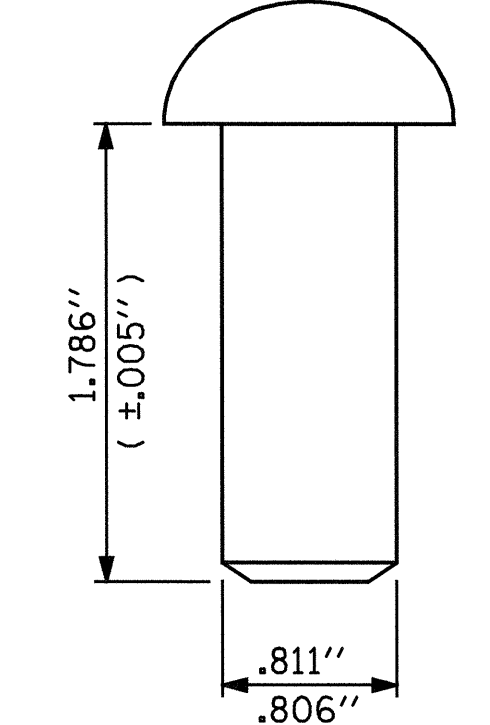


FRONT PLATE SHIM DETAILS

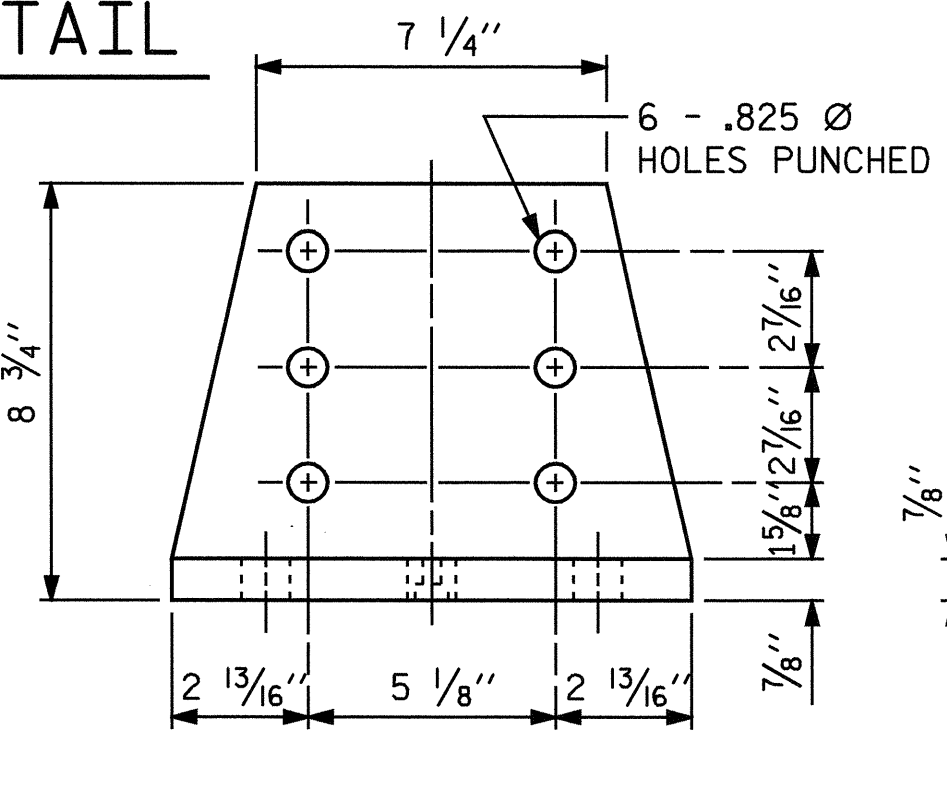
NOTE:
 SHIMS MAY BE CUT ALONG PERMITTED CUTLINE OR SLOTTED TO EDGE OF PLATE TO FACILITATE PLACEMENT.

SECTION THRU RAIL

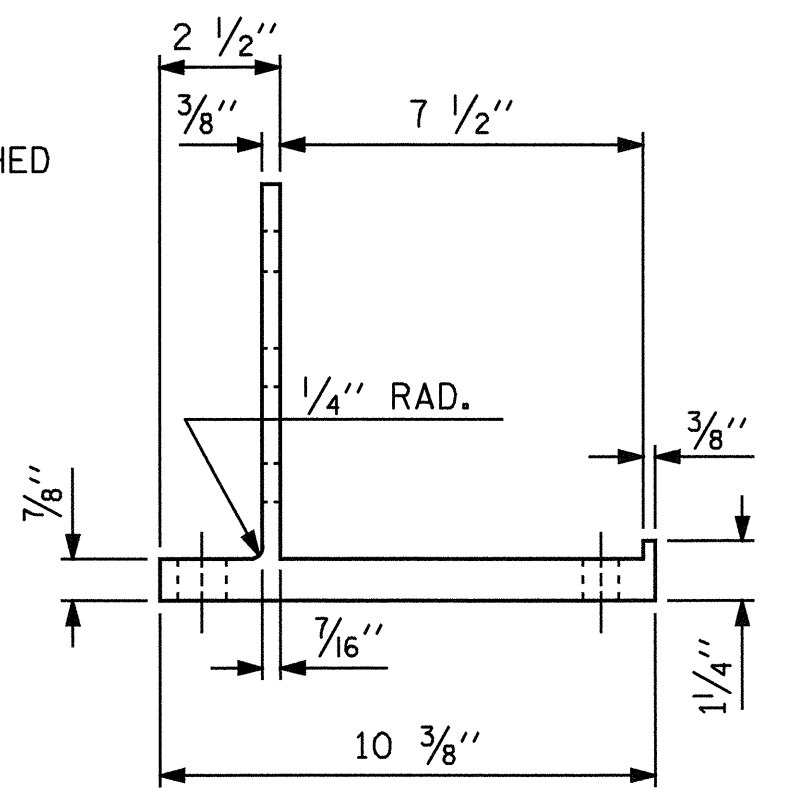
FOR ANCHOR ASSEMBLY, SEE "3 BAR METAL RAIL" STD.No.BMR6



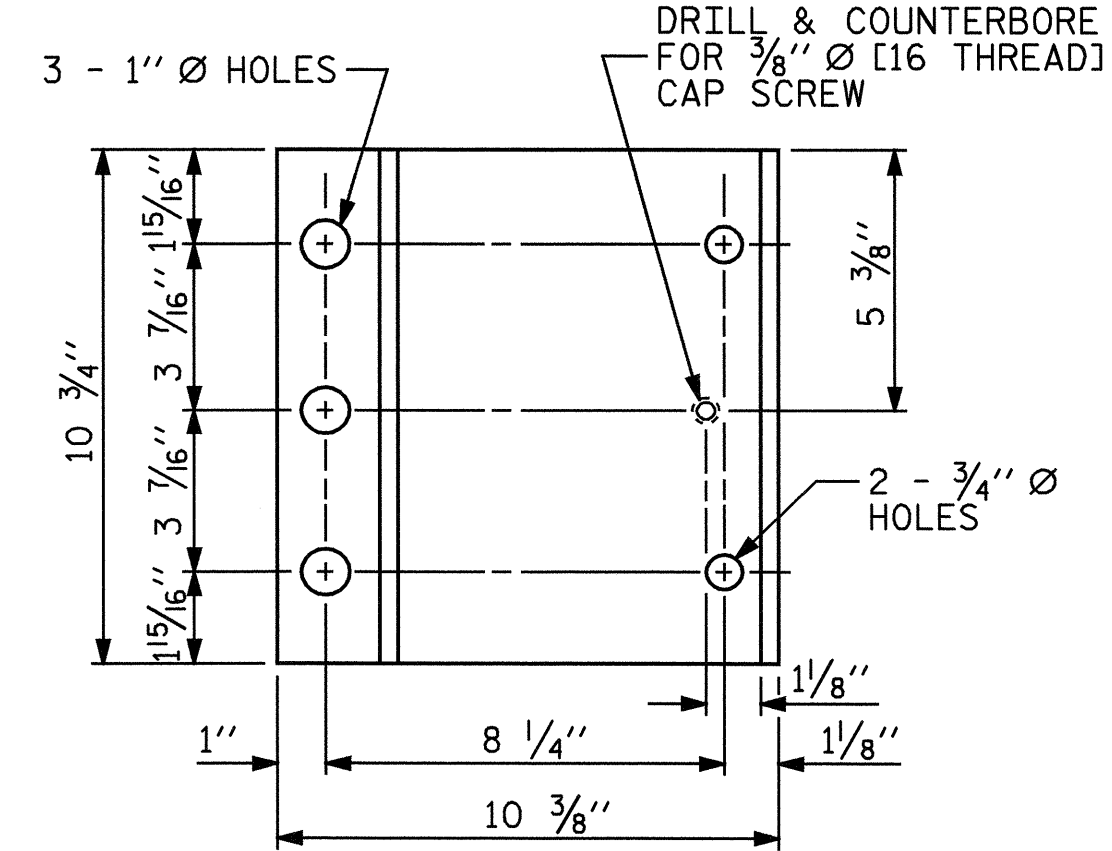
RIVET DETAIL



FRONT ELEVATION

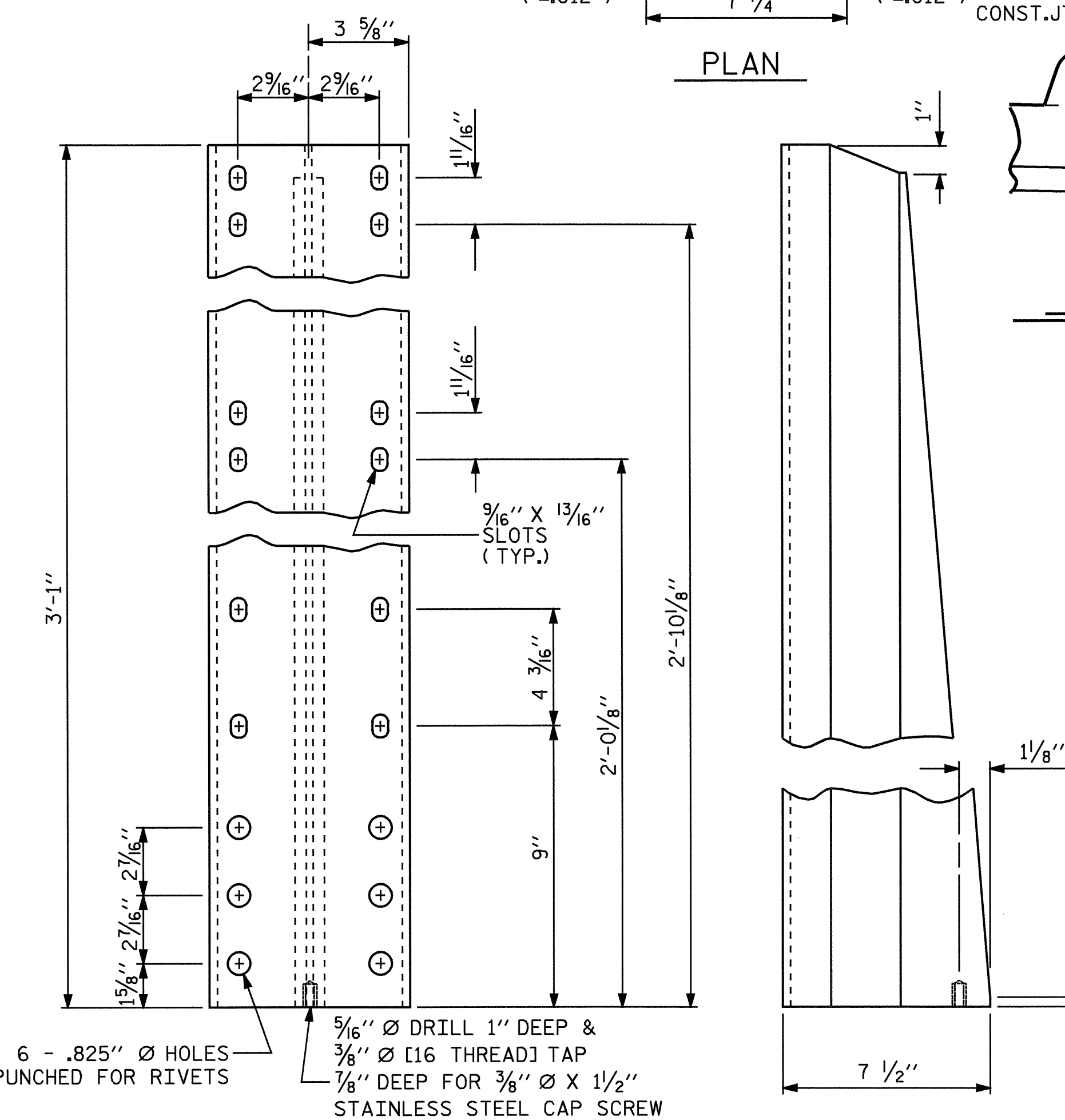


SIDE ELEVATION



PLAN

POST BASE DETAILS



FRONT ELEVATION

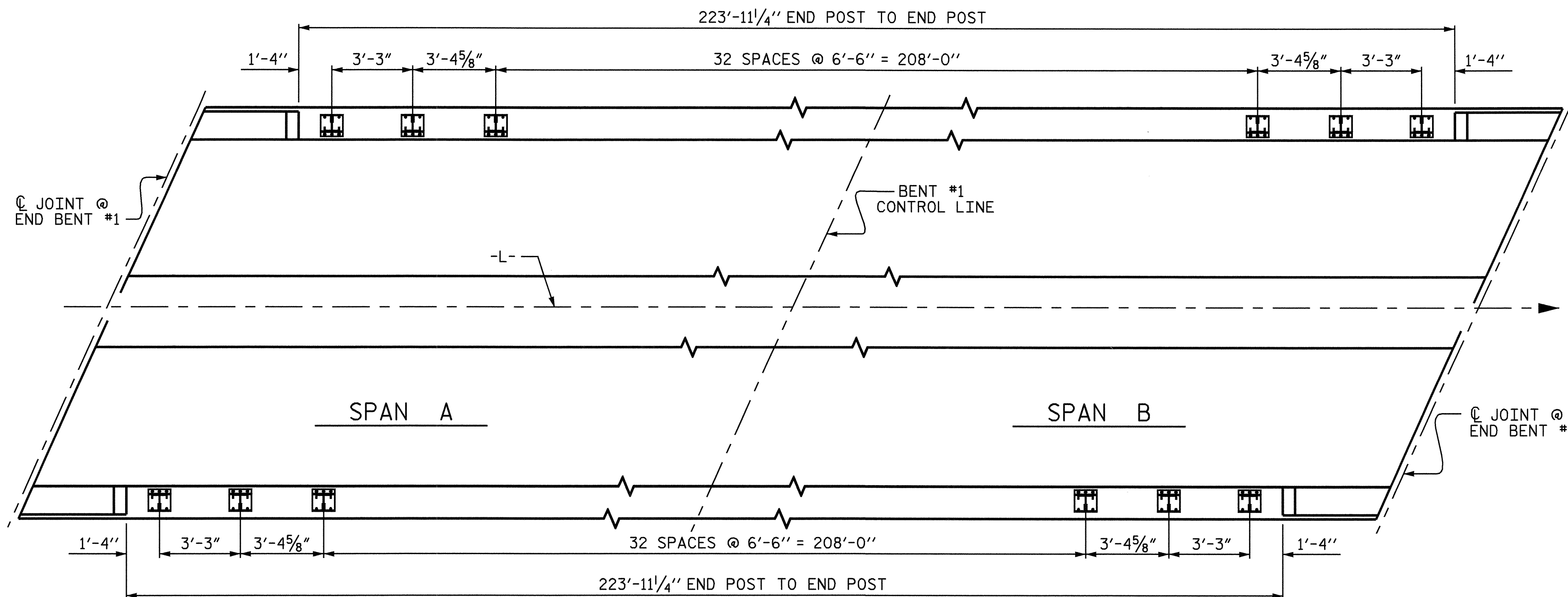
SIDE ELEVATION

DETAILS OF POST

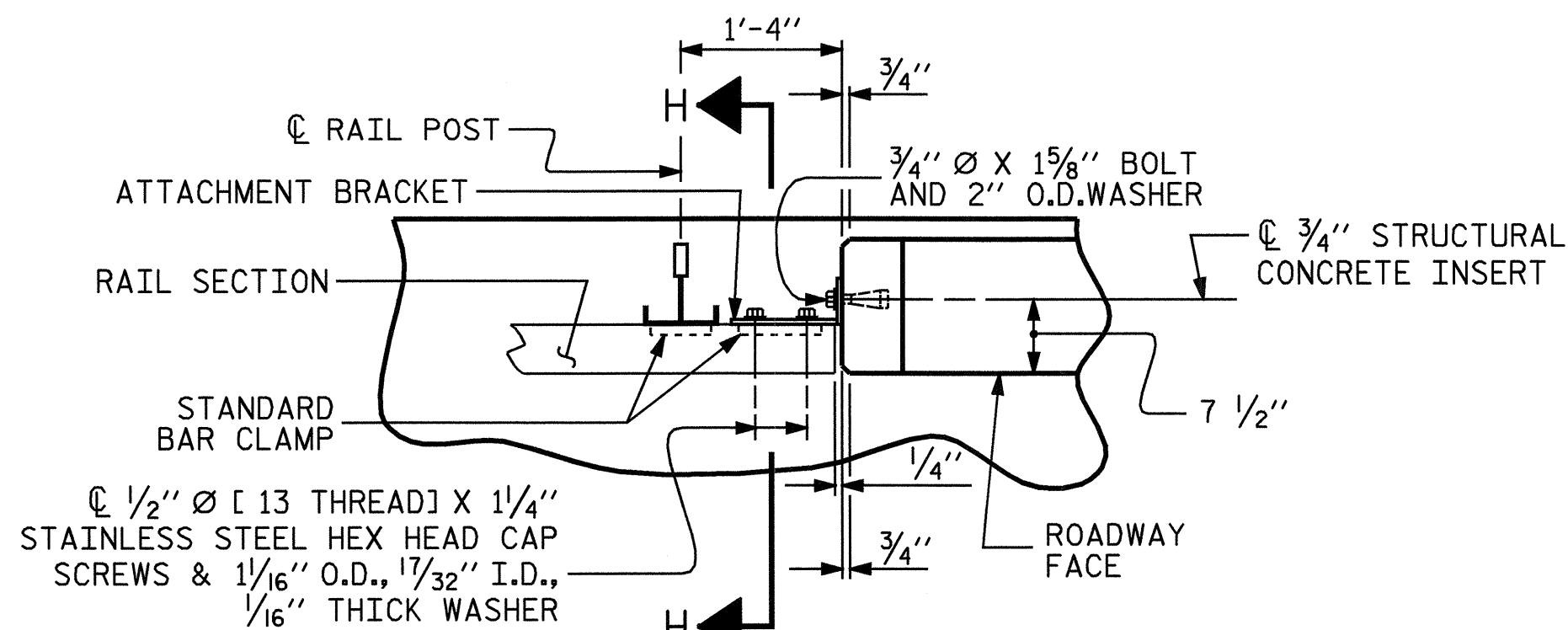
ASSEMBLED BY : K. D. LAYNE	DATE : 02/07
CHECKED BY : S. DOMBROWSKI	DATE : 5/22/07
DRAWN BY : JMB 1/88	REV. 10/17/00 RWW/LES
CHECKED BY : GGH 1/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM

06-JUL-2007 06:31
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 Klayne

STD. NO. BMR5

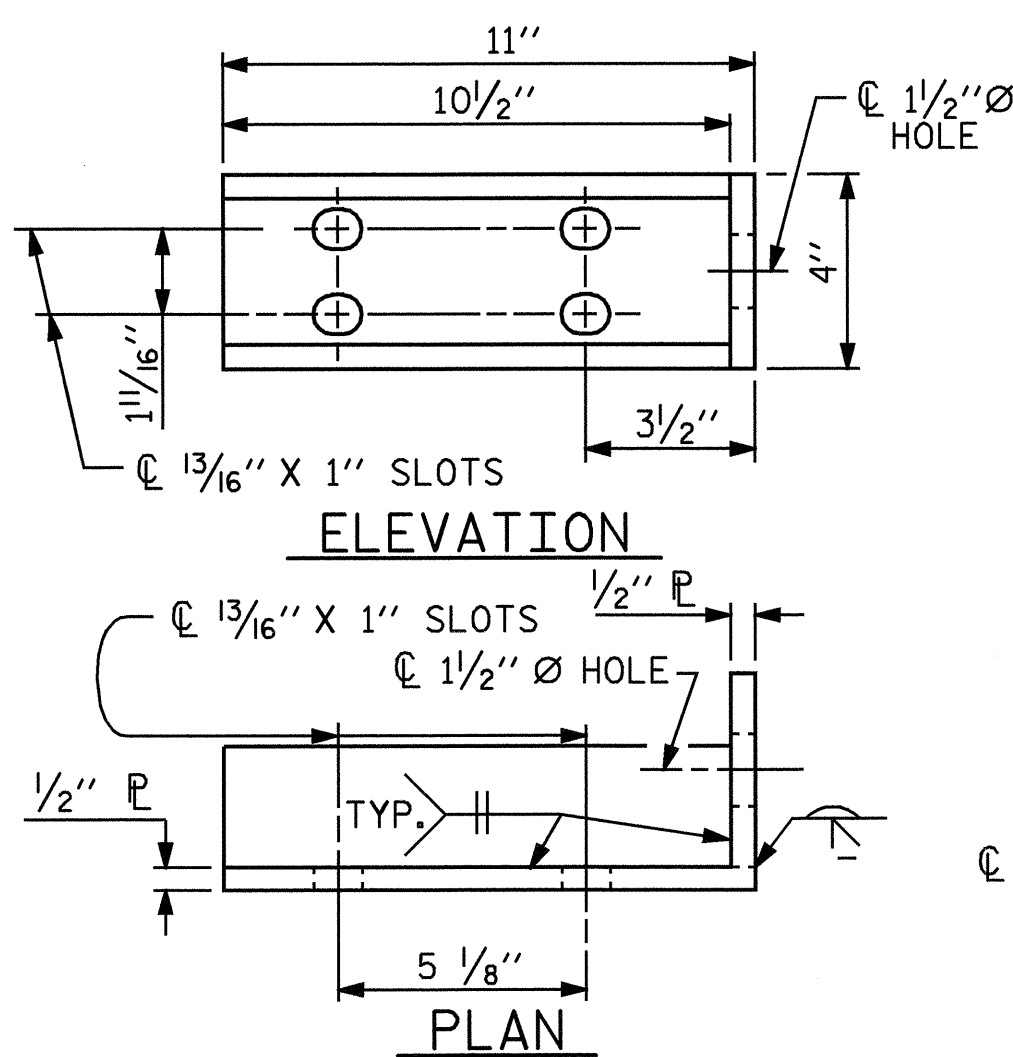


PLAN OF RAIL POST SPACING



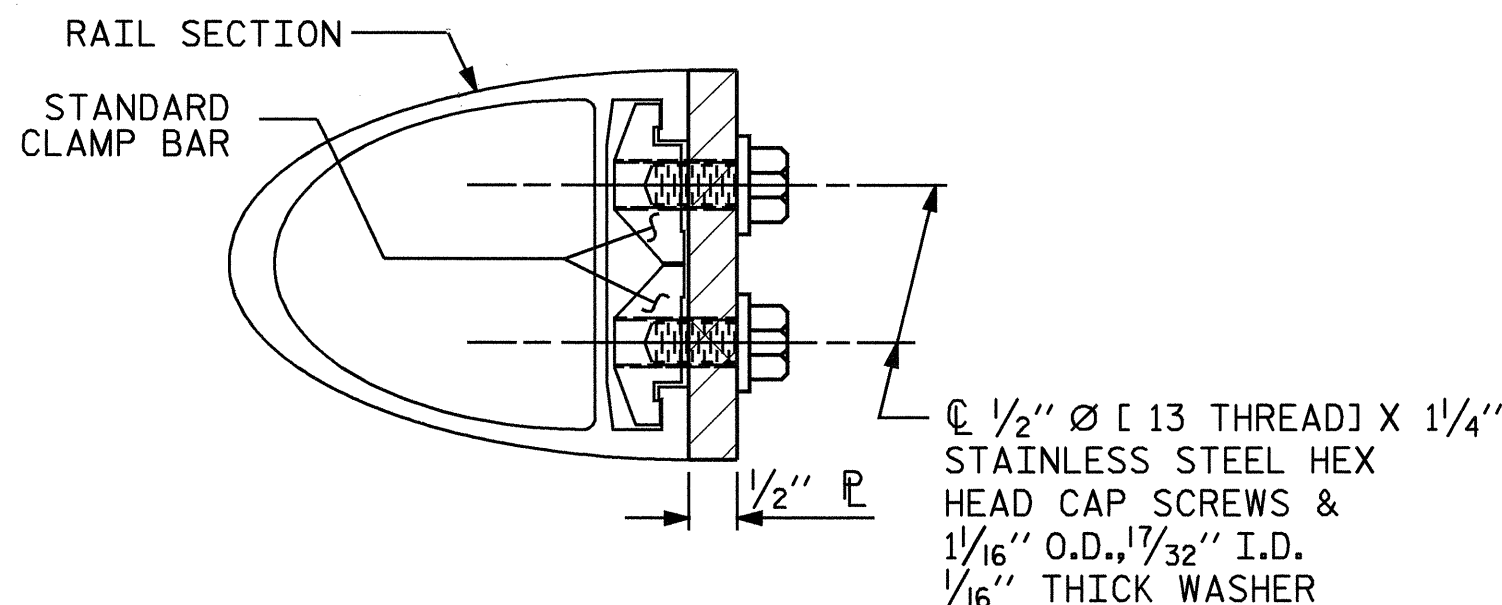
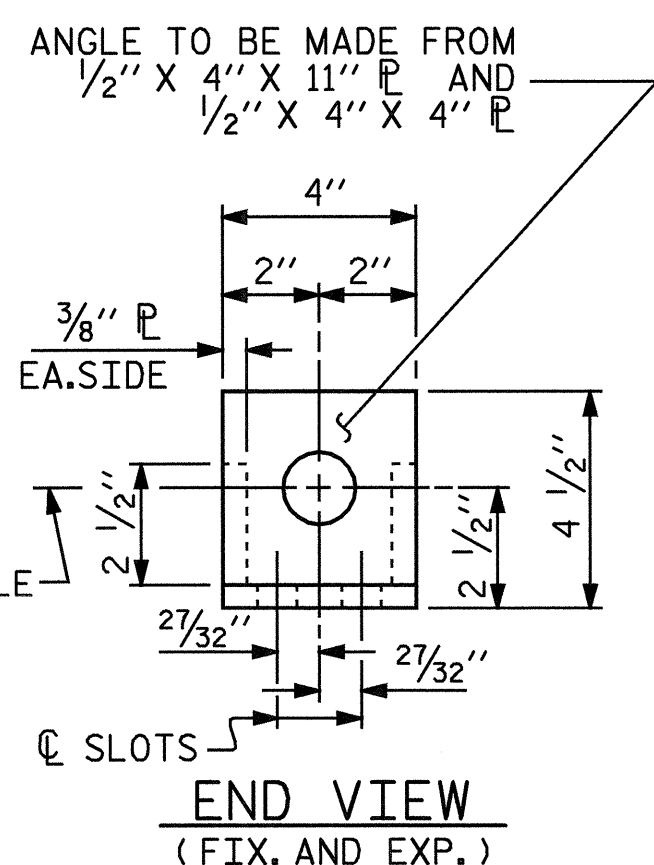
PLAN OF RAIL AND END POST

(STIFFENER ON 1/2" R NOT SHOWN FOR CLARITY)



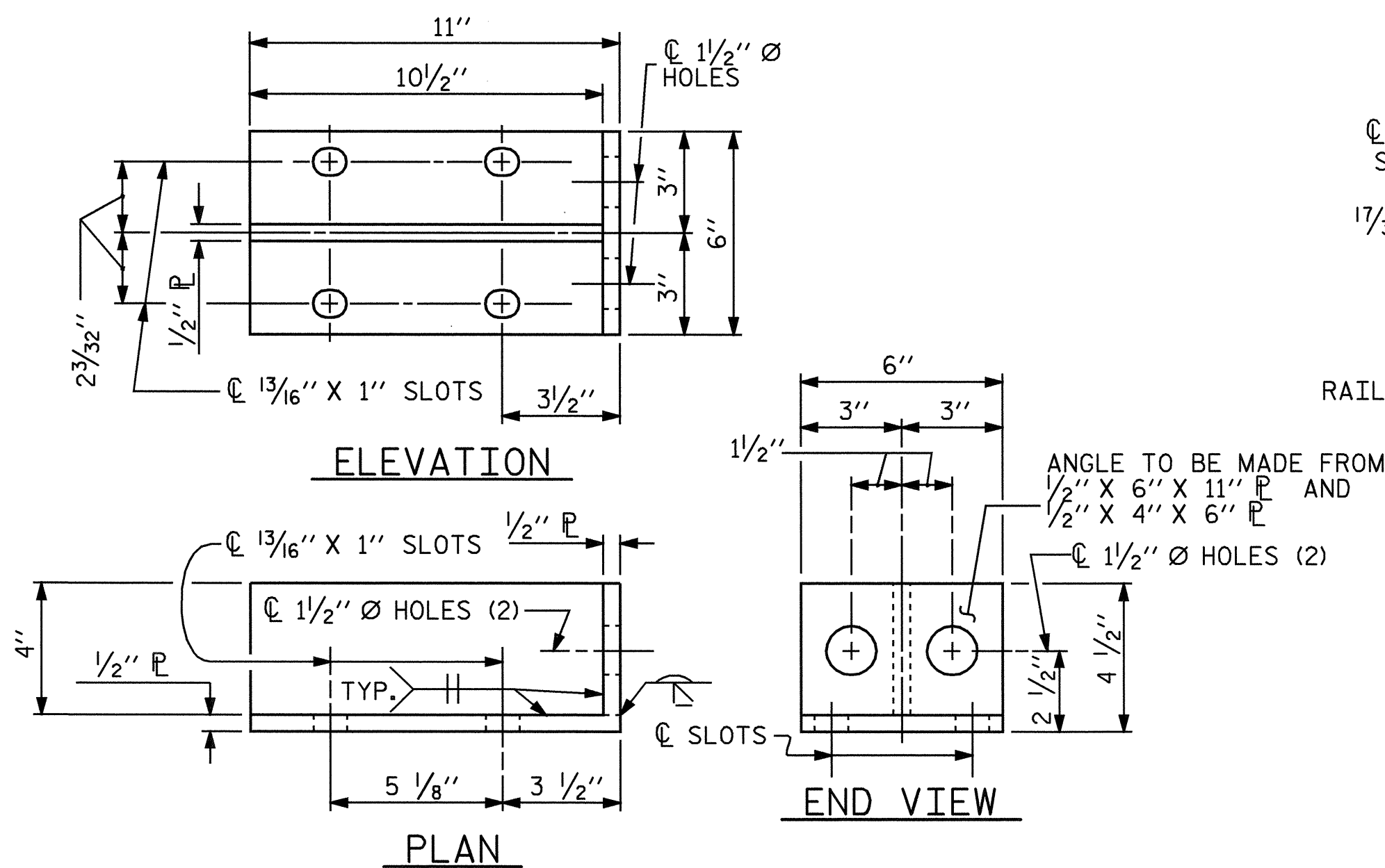
DETAILS FOR ATTACHMENT BRACKET

(TOP & MIDDLE RAIL ONLY)



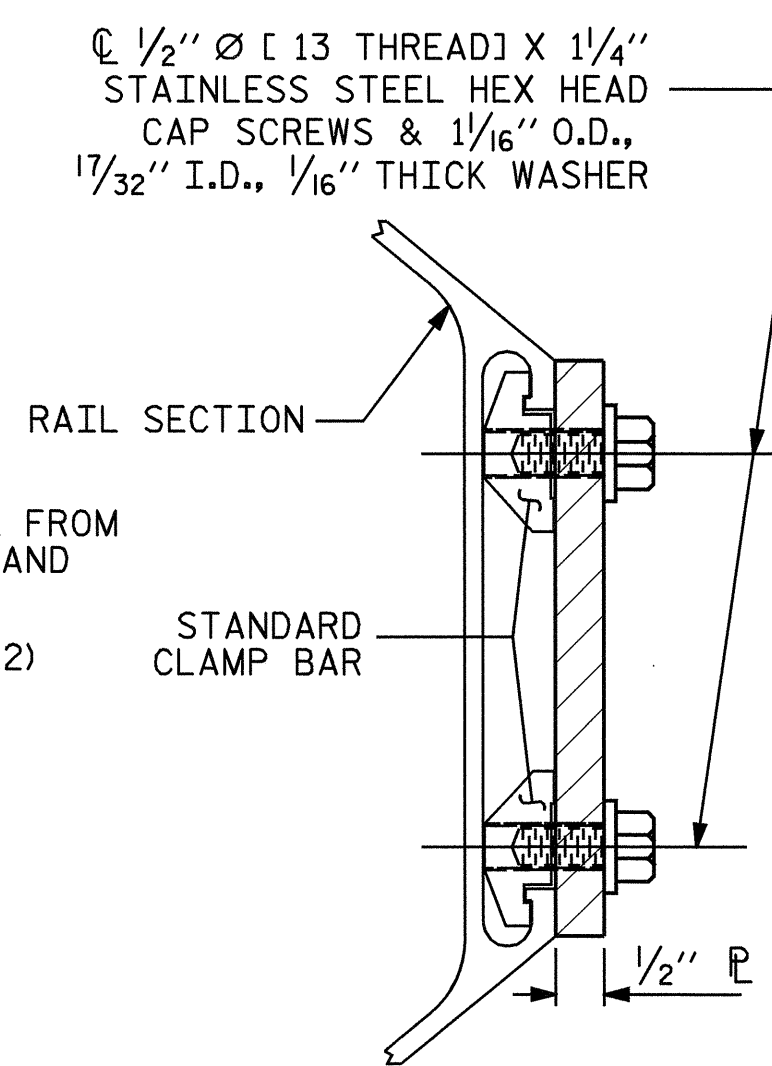
SECTION H-H

(FOR TOP & MIDDLE RAIL)



DETAILS FOR ATTACHMENT BRACKET

(BOTTOM RAIL ONLY)



SECTION H-H

(FOR BOTTOM RAIL)

NOTES

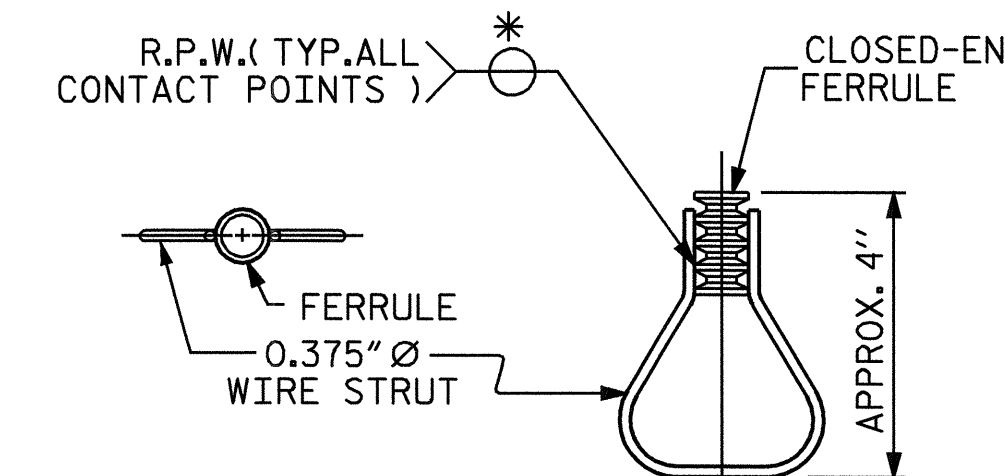
METAL RAIL TO END POST CONNECTION

- THE METAL RAIL TO END POST CONNECTION SHALL CONSIST OF THE FOLLOWING COMPONENTS:
- 1/2" PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 AND SHALL BE GALVANIZED AFTER FABRICATION.
 - 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.
 - 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. WASHERS FOR RAIL ATTACHMENT SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.
 - STANDARD CLAMP BARS (STD. No. BMR6) (SEE SHEET 2 OF 4).
- THE COST OF THE STANDARD CLAMP BARS AND CAP SCREWS USED IN THE METAL RAIL TO END POST CONNECTION SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR LINEAR FEET OF 3 BAR METAL RAIL.
- 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 POST. 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.

NOTES

STRUCTURAL CONCRETE INSERT

- THE STRUCTURAL CONCRETE INSERT ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:
- 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".
 - 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.
 - 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 1/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.



PLAN ELEVATION

STRUCTURAL CONCRETE INSERT

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

PROJECT NO. B-3637
 DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD

3 BAR METAL RAIL



ASSEMBLED BY : K. D. LAYNE	DATE : 02/07
CHECKED BY : S. DOMBROWSKI	DATE : 5/22/07
DRAWN BY : JMB 1/88	REV. 7/10/01 RWW/LES
CHECKED BY : GGH 1/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM

06-JUL-2007 06:31
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 klayne

REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	41
1			3			
2			4			

STD. NO. BMR7

NOTES

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

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

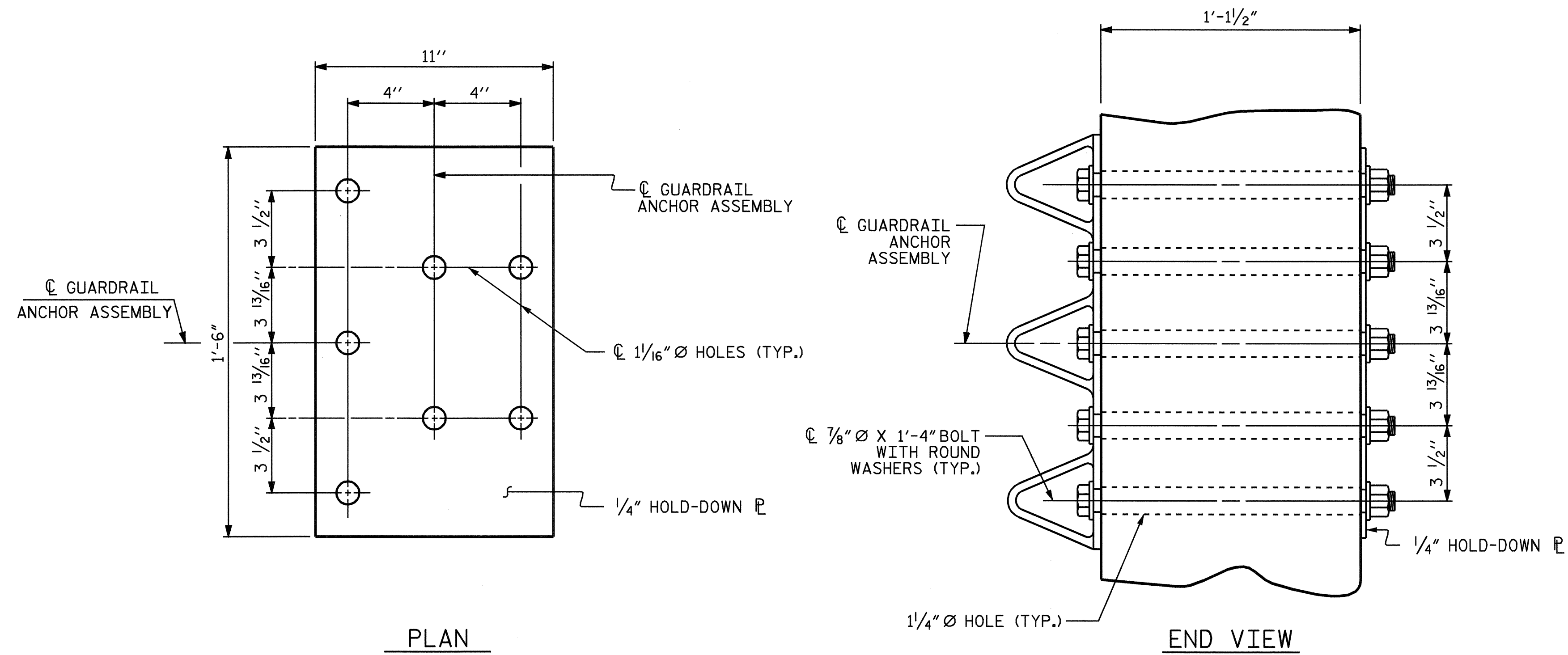
BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS.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

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

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

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

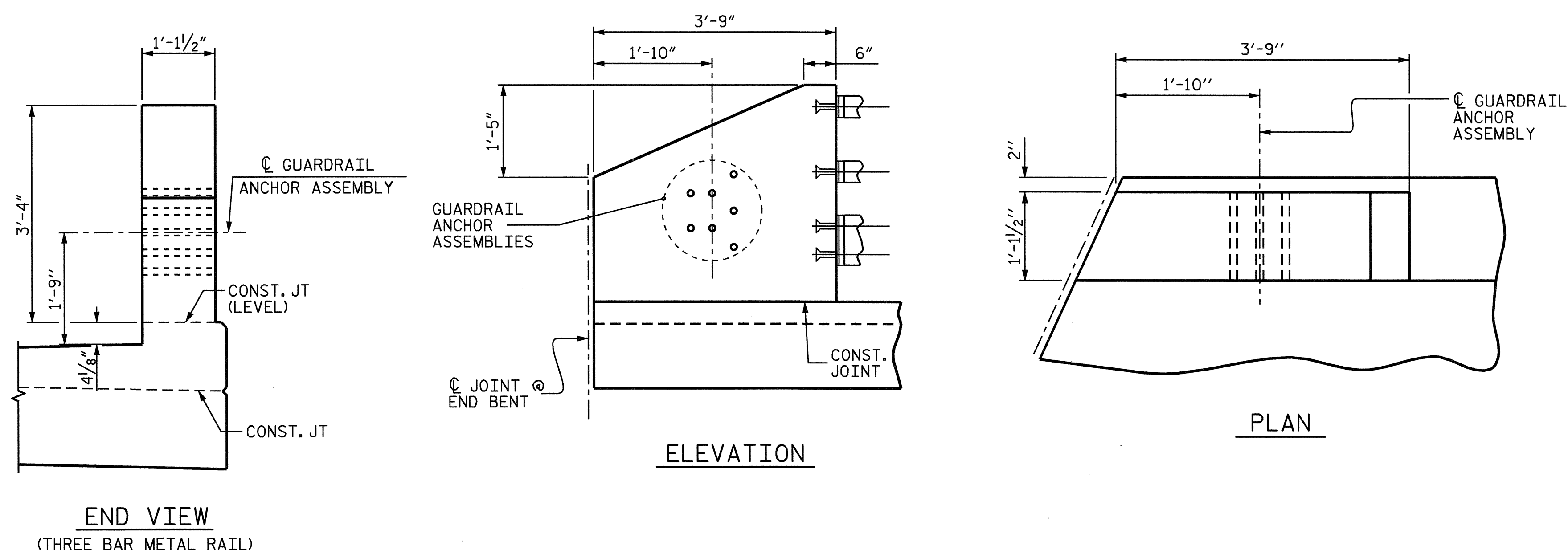
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



PLAN

END VIEW

GUARDRAIL ANCHOR ASSEMBLY DETAILS

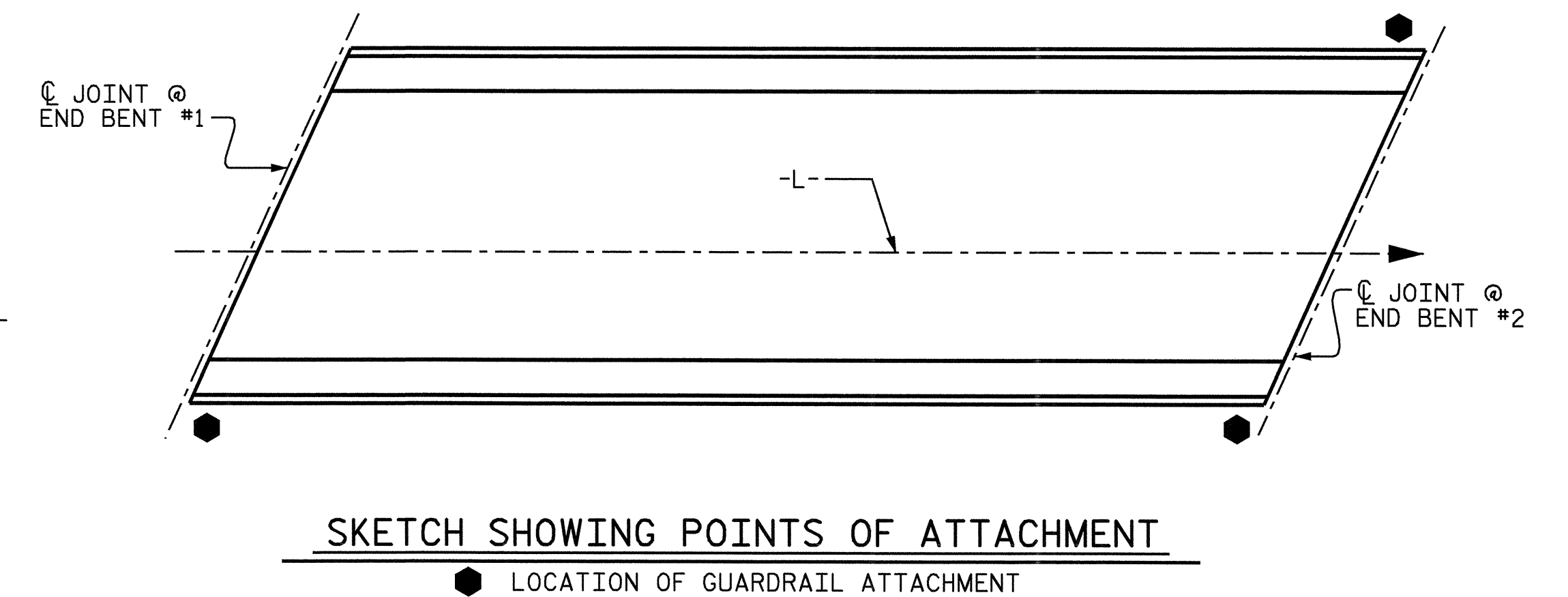


END VIEW
(THREE BAR METAL RAIL)

ELEVATION

PLAN

LOCATION OF GUARDRAIL ANCHOR AT END POST



SKETCH SHOWING POINTS OF ATTACHMENT

● LOCATION OF GUARDRAIL ATTACHMENT

PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 4 OF 4



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

ASSEMBLED BY : K. D. LAYNE	DATE : 02/07
CHECKED BY : S. DOMBROWSKI	DATE : 5/22/07
DRAWN BY : EEM 6/94	REV. 10/17/00 RWW/LJS
CHECKED BY : RGW 6/94	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM

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 klayne

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTALS
2			4			41

STD. NO. BMR8

NOTES

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

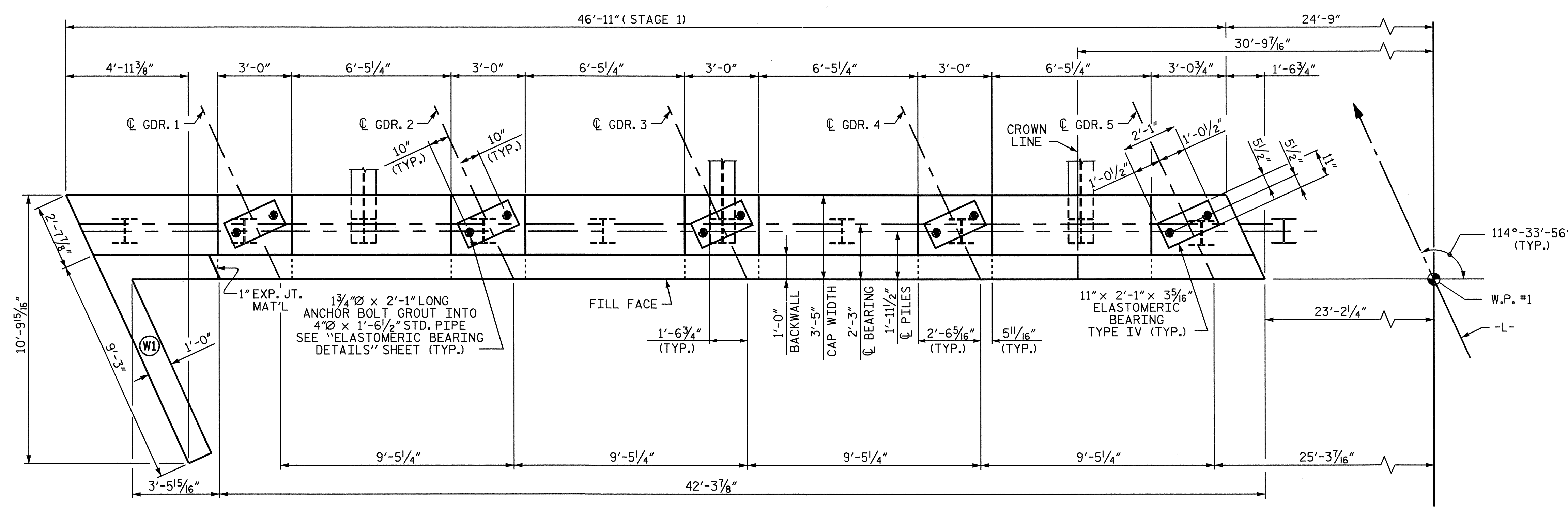
EPOXY COAT THE END BENT CAP AFTER ADJUSTMENTS ARE MADE TO BEARINGS AND ANCHOR BOLTS ARE GROUTED.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

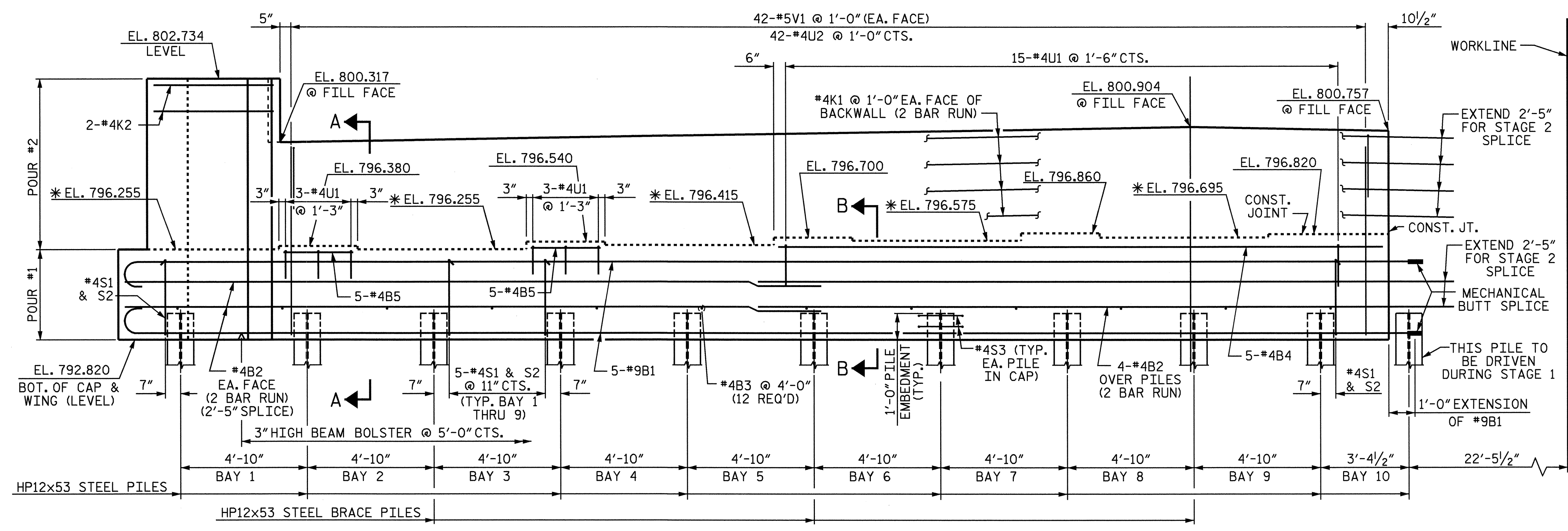
THE TOP SURFACE AREAS OF THE END BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

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

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



PLAN

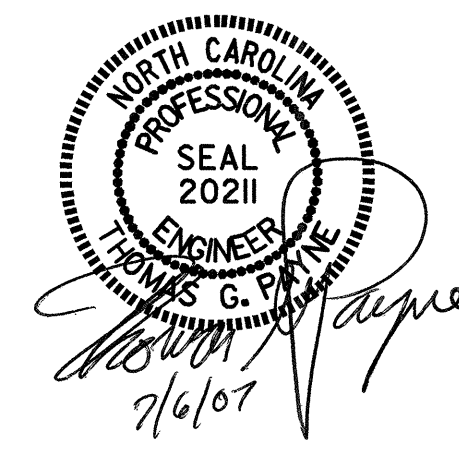


ELEVATION

* SEE SHEET 4 OF 5 FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEAT BUILD-UPS.

PROJECT NO. B-3637
 DAVIE COUNTY
 STATION 32+25.27 -L-

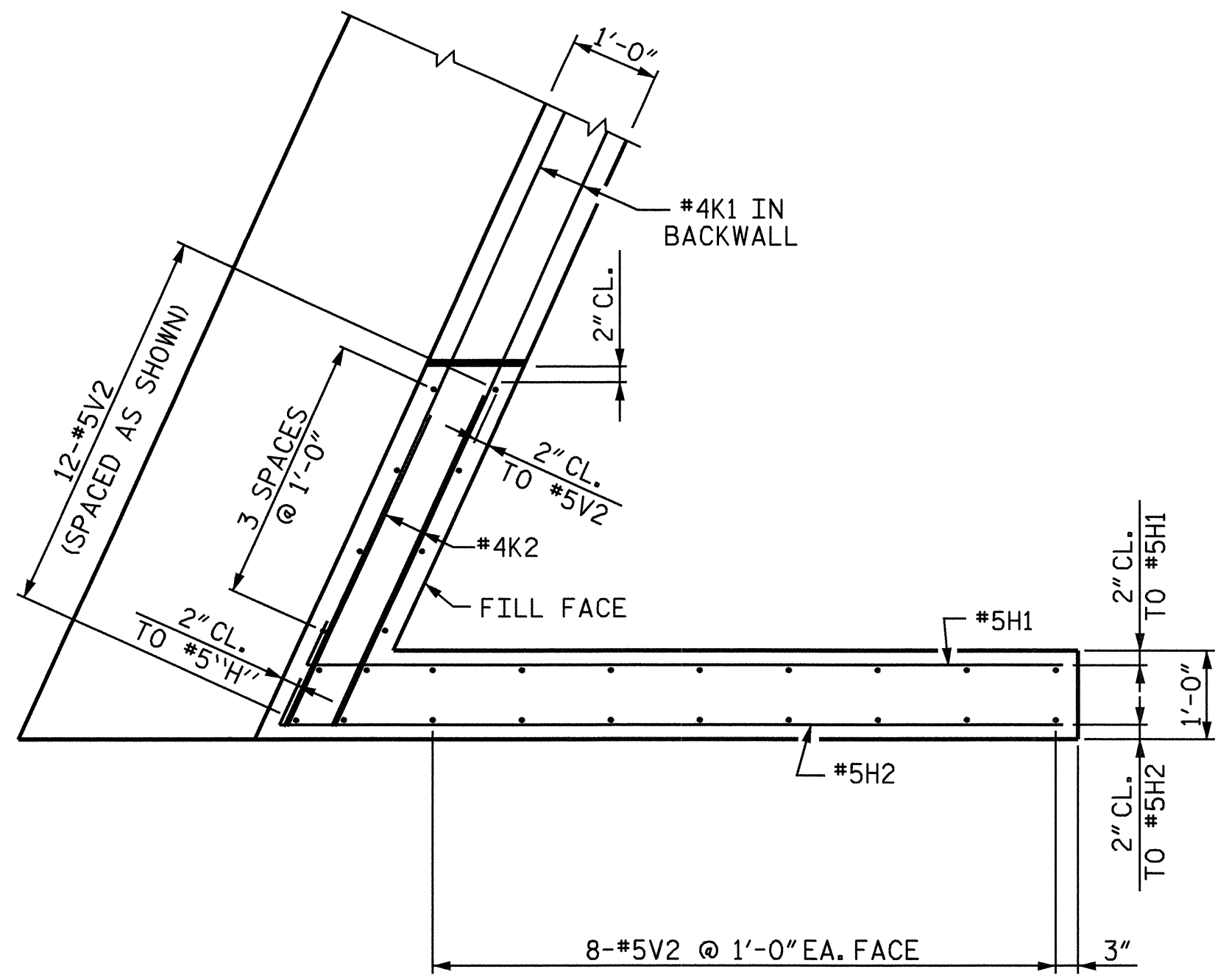
SHEET 1 OF 5



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT #1
 (STAGE 1)

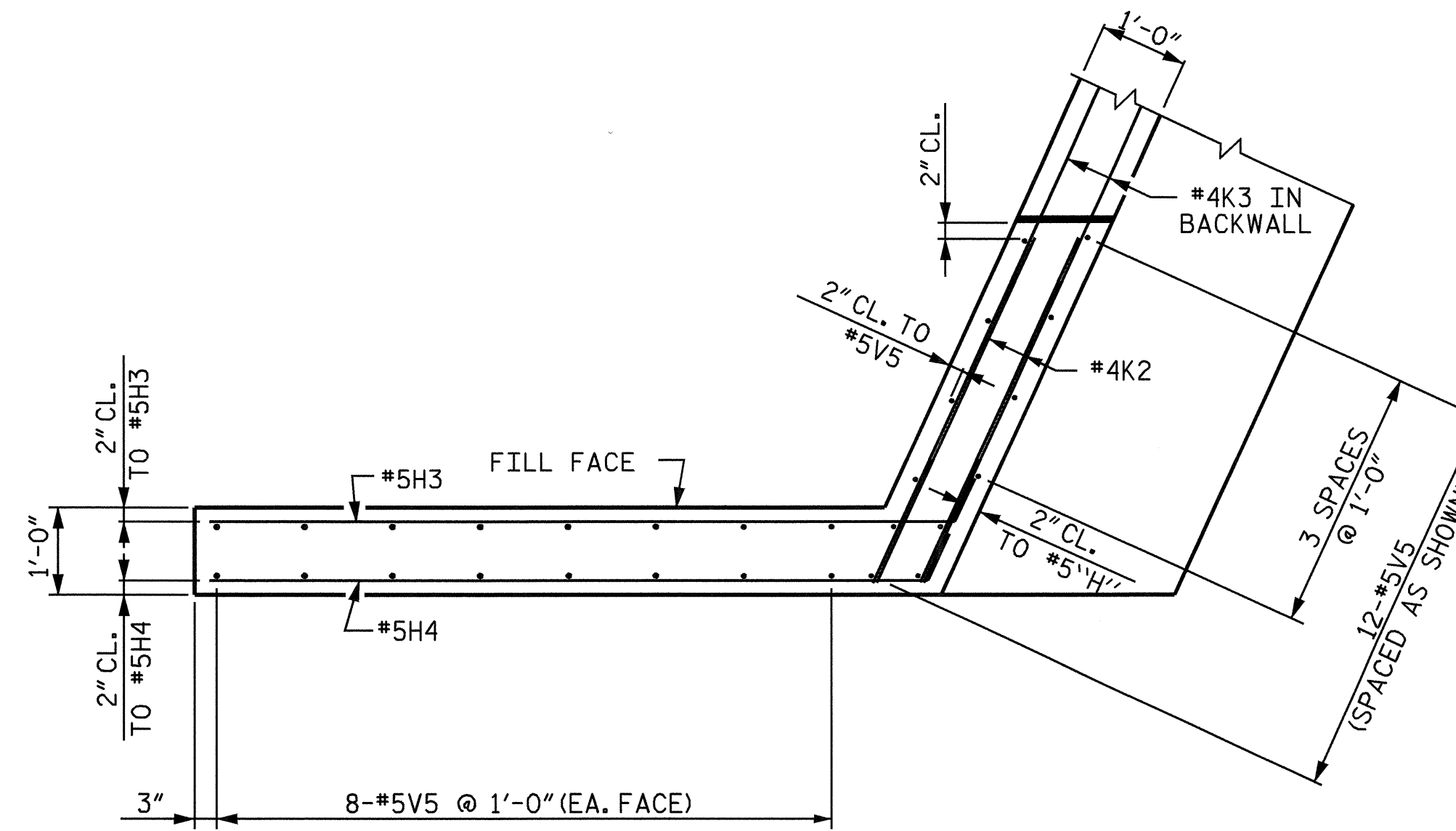
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22	
1			3			TOTAL SHEETS	41
2			4				

DRAWN BY: Keith D. Layne DATE: 05/07
 CHECKED BY: M. K. BEARD DATE: 05/07



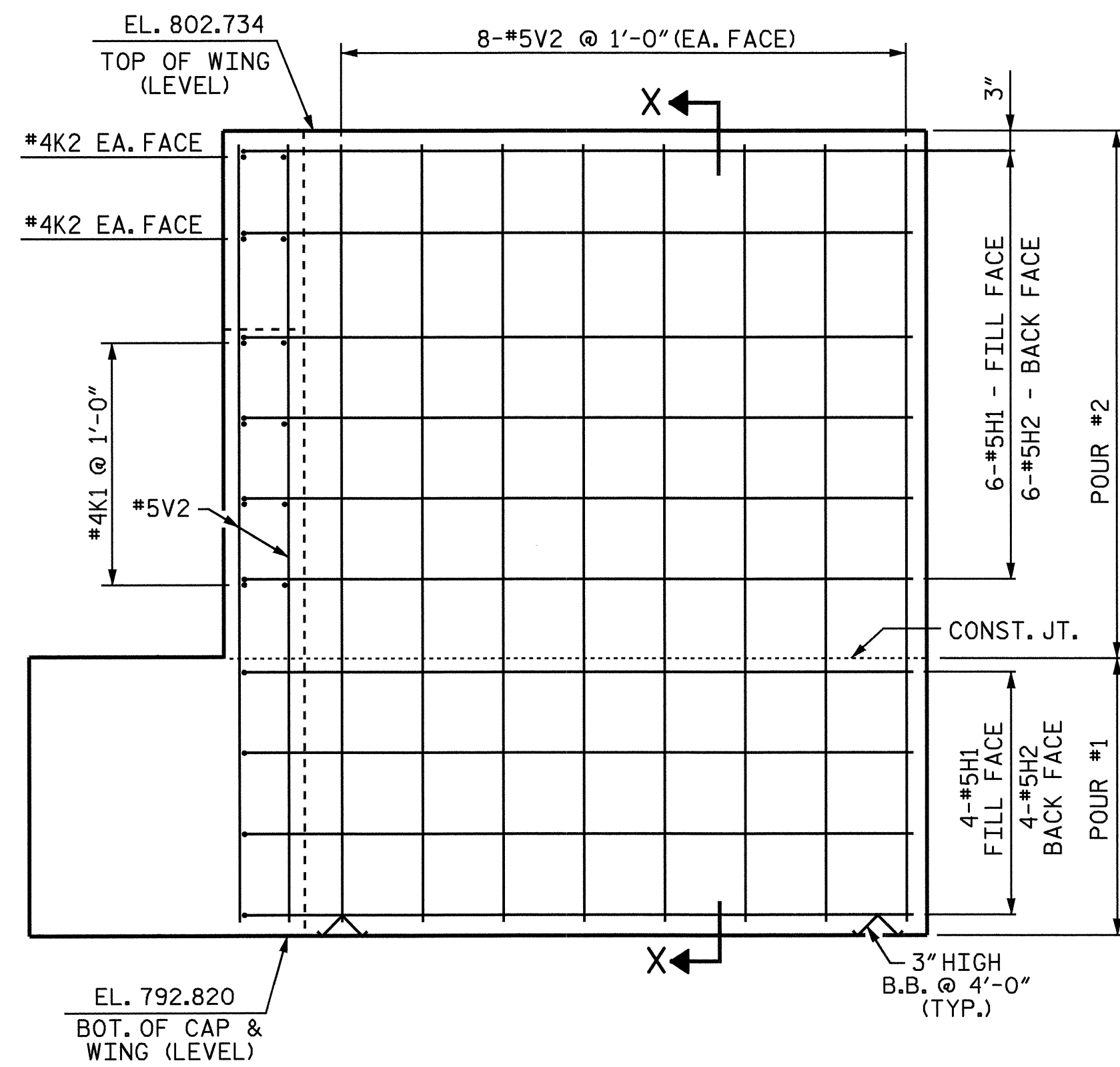
PLAN OF LEFT WING - (W1)

STAGE 1



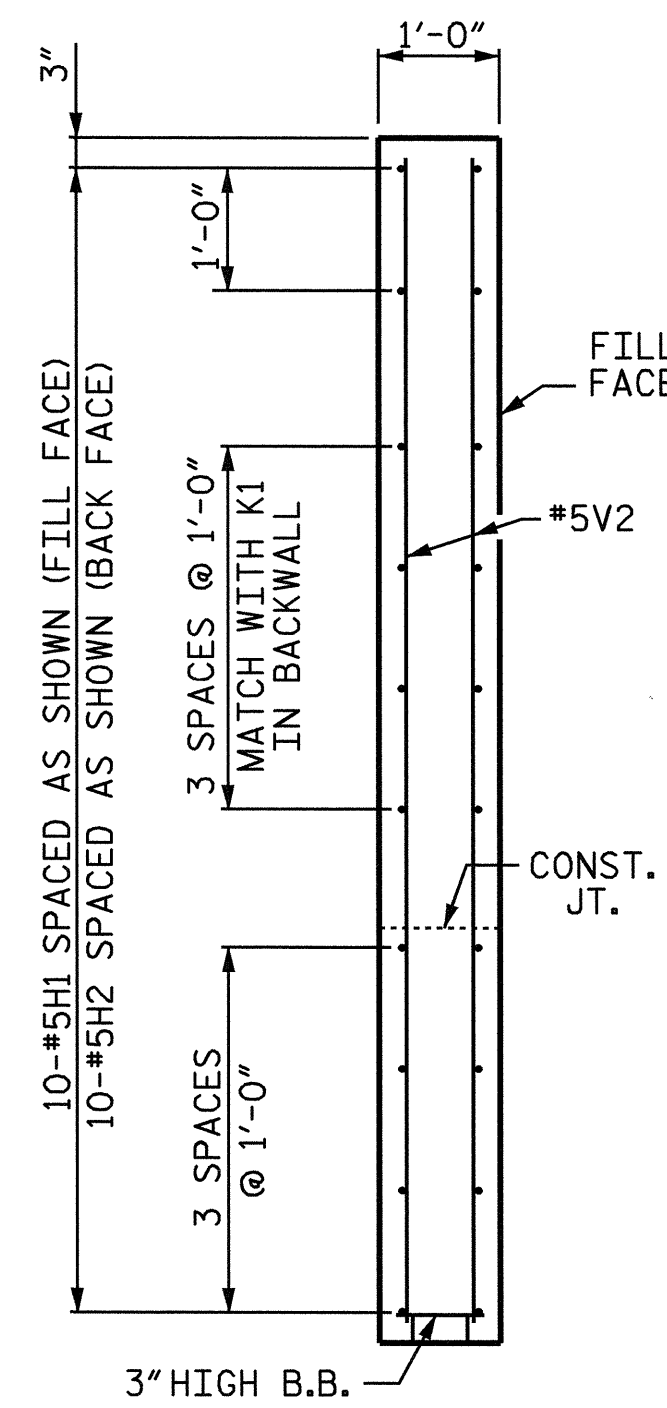
PLAN OF RIGHT WING - (W2)

STAGE 2

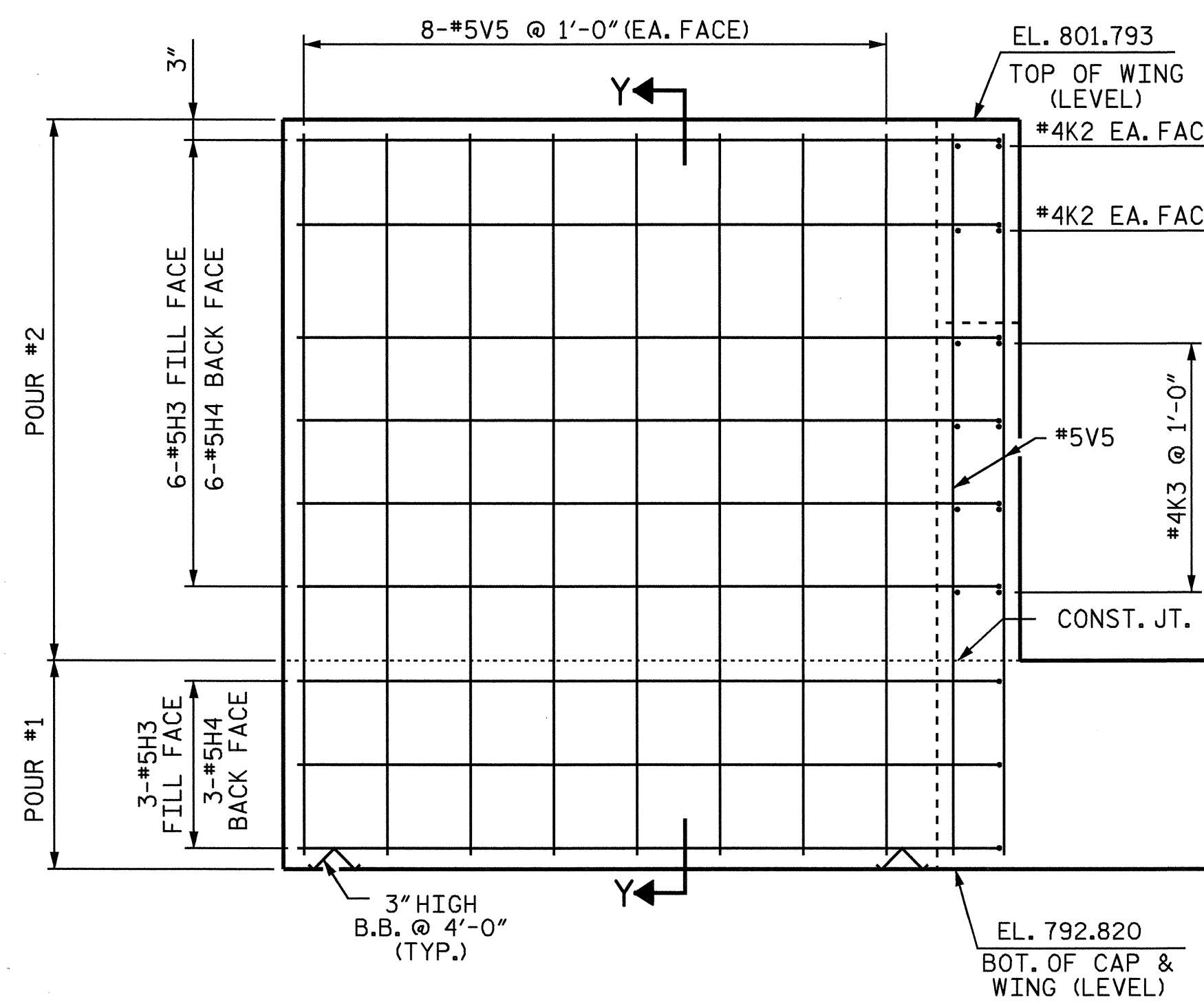


ELEVATION OF LEFT WING - (W1)

STAGE 1

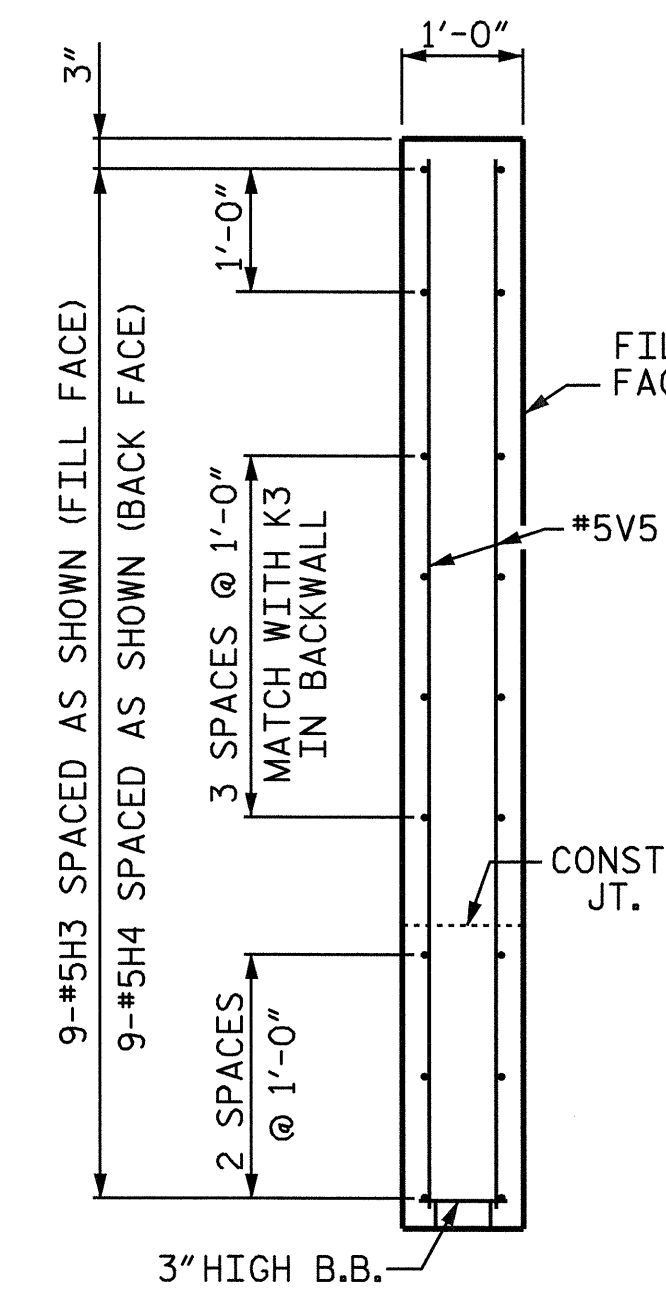


SECTION X-X



ELEVATION OF RIGHT WING - (W2)

STAGE 2



SECTION Y-Y

PROJECT NO. B-3637
 DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #1

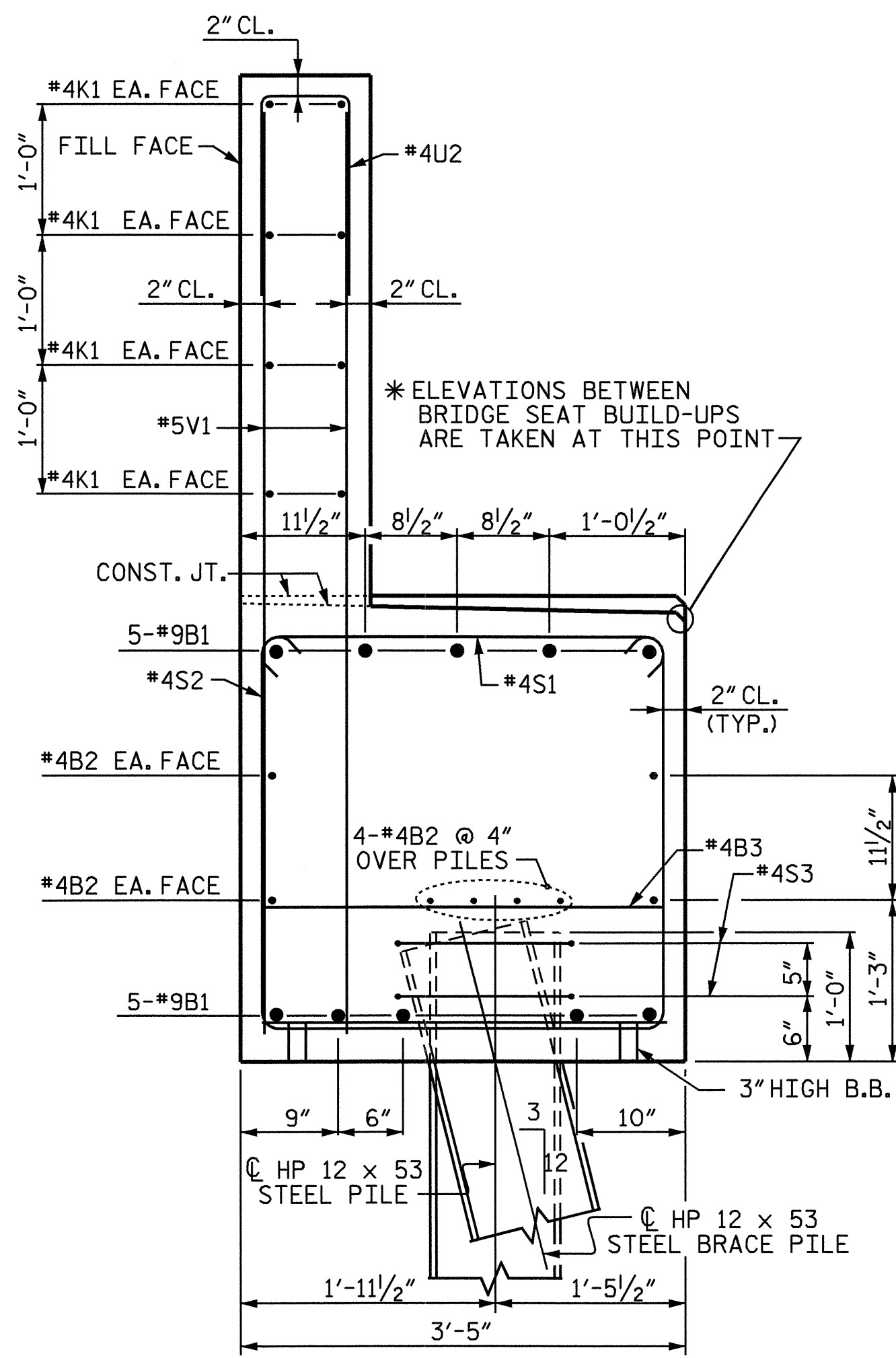
(STAGE 1 & 2)

DRAWN BY: KEITH D. LAYNE DATE: 05/07
 CHECKED BY: M. K. BEARD DATE: 05/07

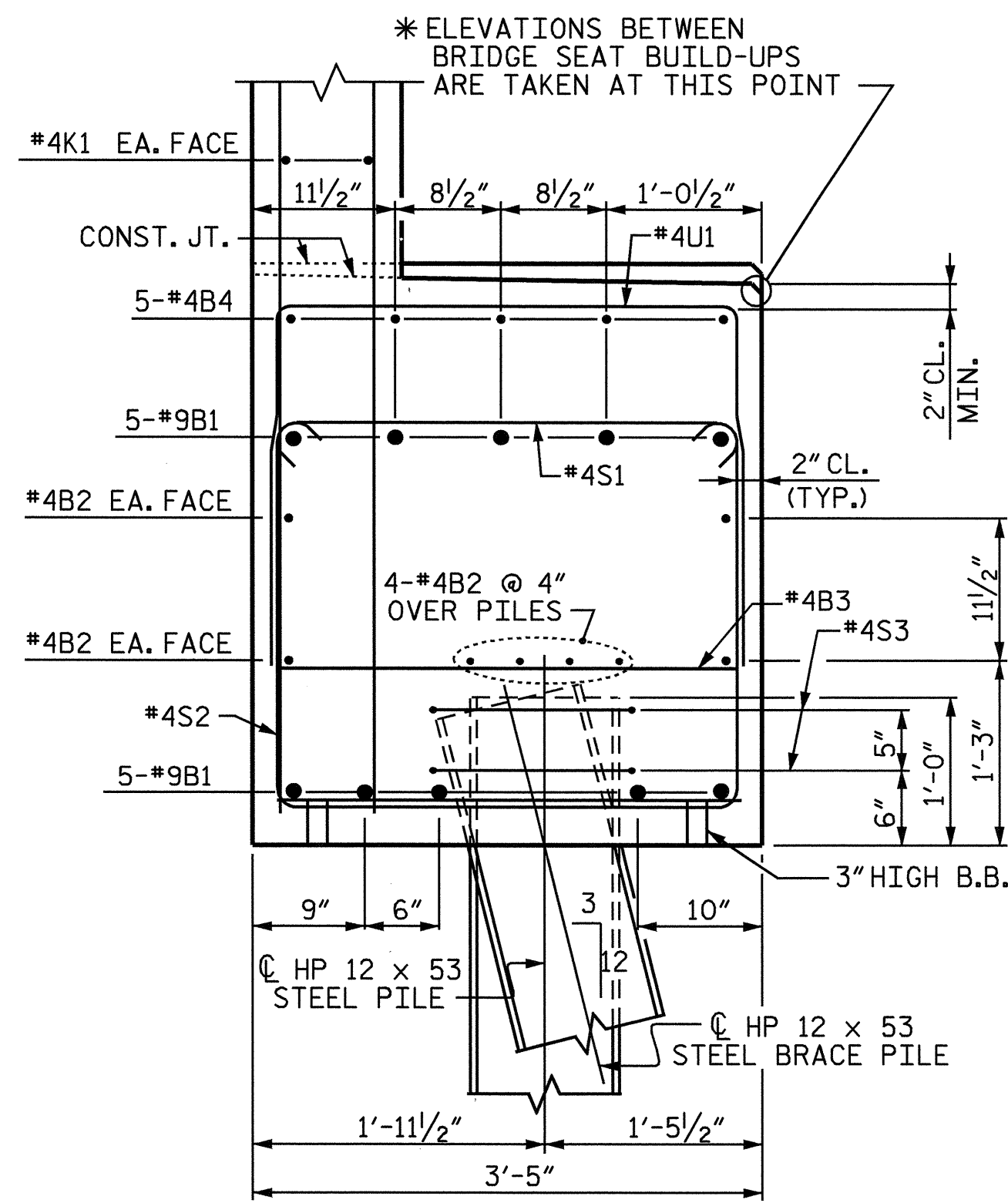
06-JUL-2007 06:31
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 Klayne



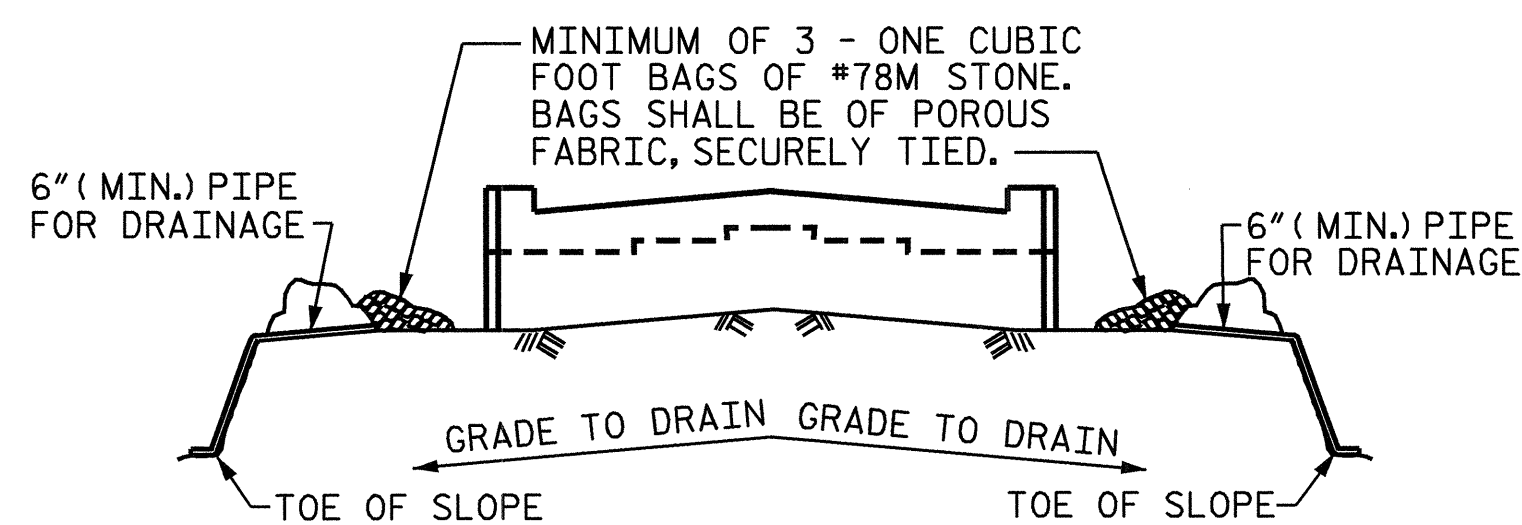
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24	
1			3			TOTAL SHEETS	
2			4			41	



SECTION A-A



PARTIAL SECTION B-B

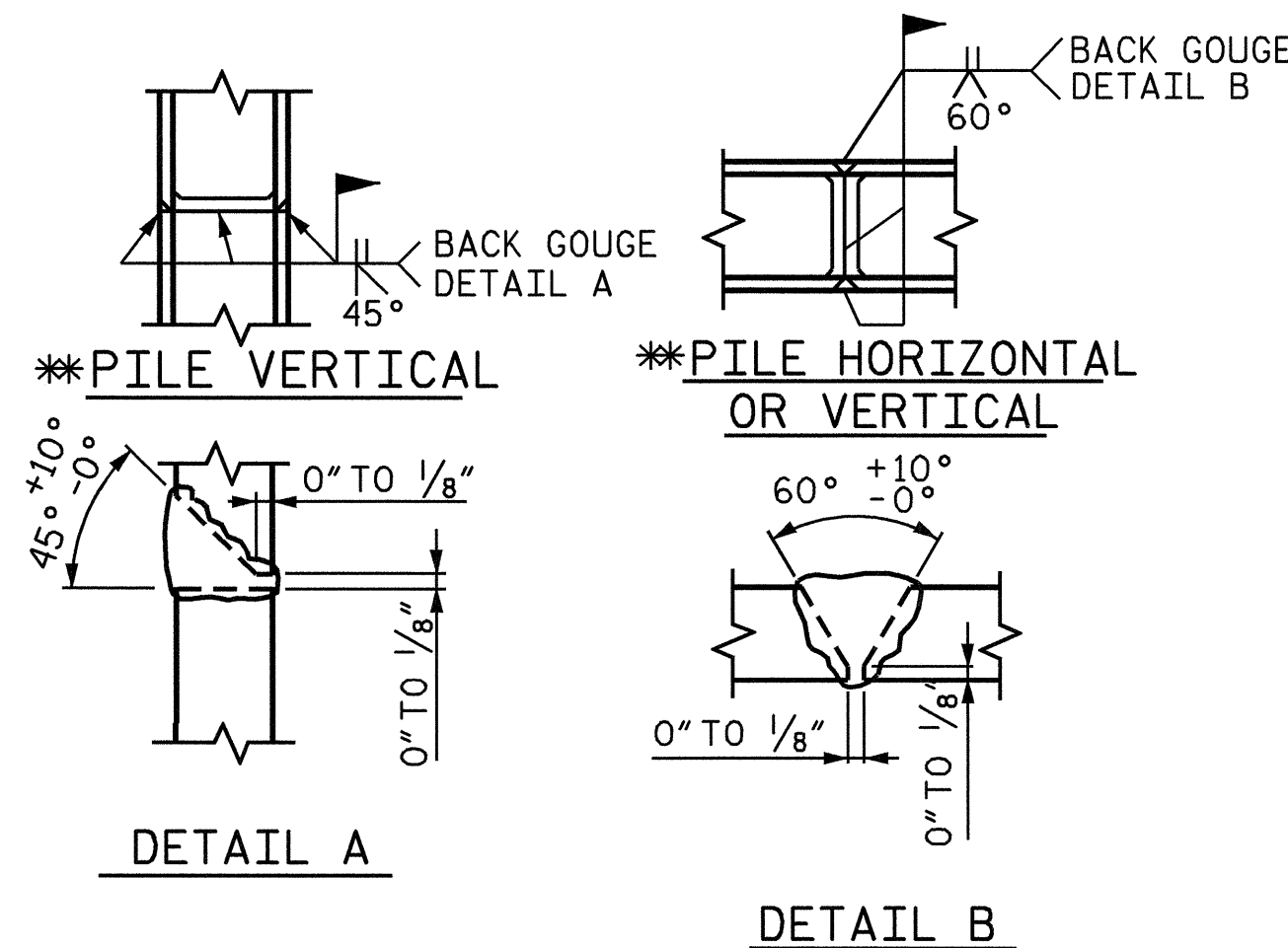


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

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TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS

*POSITION OF PILE DURING WELDING.

BAR TYPES					BILL OF MATERIAL					
STAGE 1										
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT						
B1	10	9	1	48'-11"	1,663					
B2	16	4	STR.	25'-10"	276					
B3	12	4	STR.	3'- 1"	25					
B4	5	4	STR.	21'- 7"	72					
B5	10	4	STR.	2'- 8"	18					
H1	10	5	2	9'- 1"	95					
H2	10	5	2	9'- 5"	98					
K1	16	4	STR.	25'-10"	276					
K2	4	4	STR.	4'- 2"	11					
S1	47	4	3	3'-10"	120					
S2	47	4	4	9'- 6"	298					
S3	20	4	5	6'- 6"	87					
U1	21	4	6	6'- 1"	85					
U2	42	4	6	3'- 8"	103					
V1	84	5	STR.	7'- 1"	621					
V2	28	5	STR.	9'- 5"	275					
REINFORCING STEEL					Lbs.	4,123				
CLASS A CONCRETE										
POUR #1					Cu. yds.	23.0				
POUR #2					Cu. yds.	9.2				
TOTAL					Cu. yds.	32.2				
HP12x53 STEEL PILES										
No. 11					LIN. FT.	990				

ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

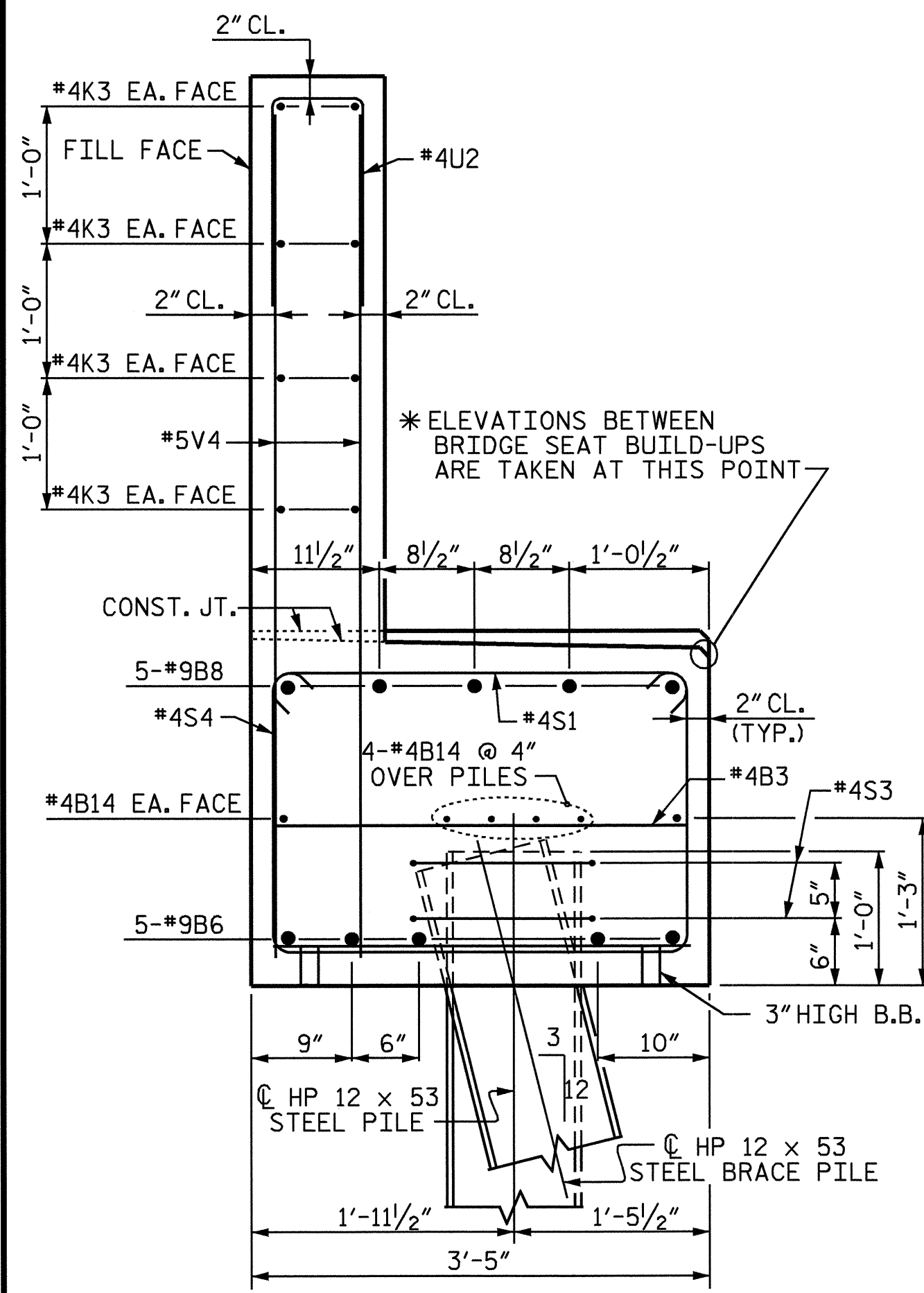
SUBSTRUCTURE
 END BENT #1

(STAGE 1)

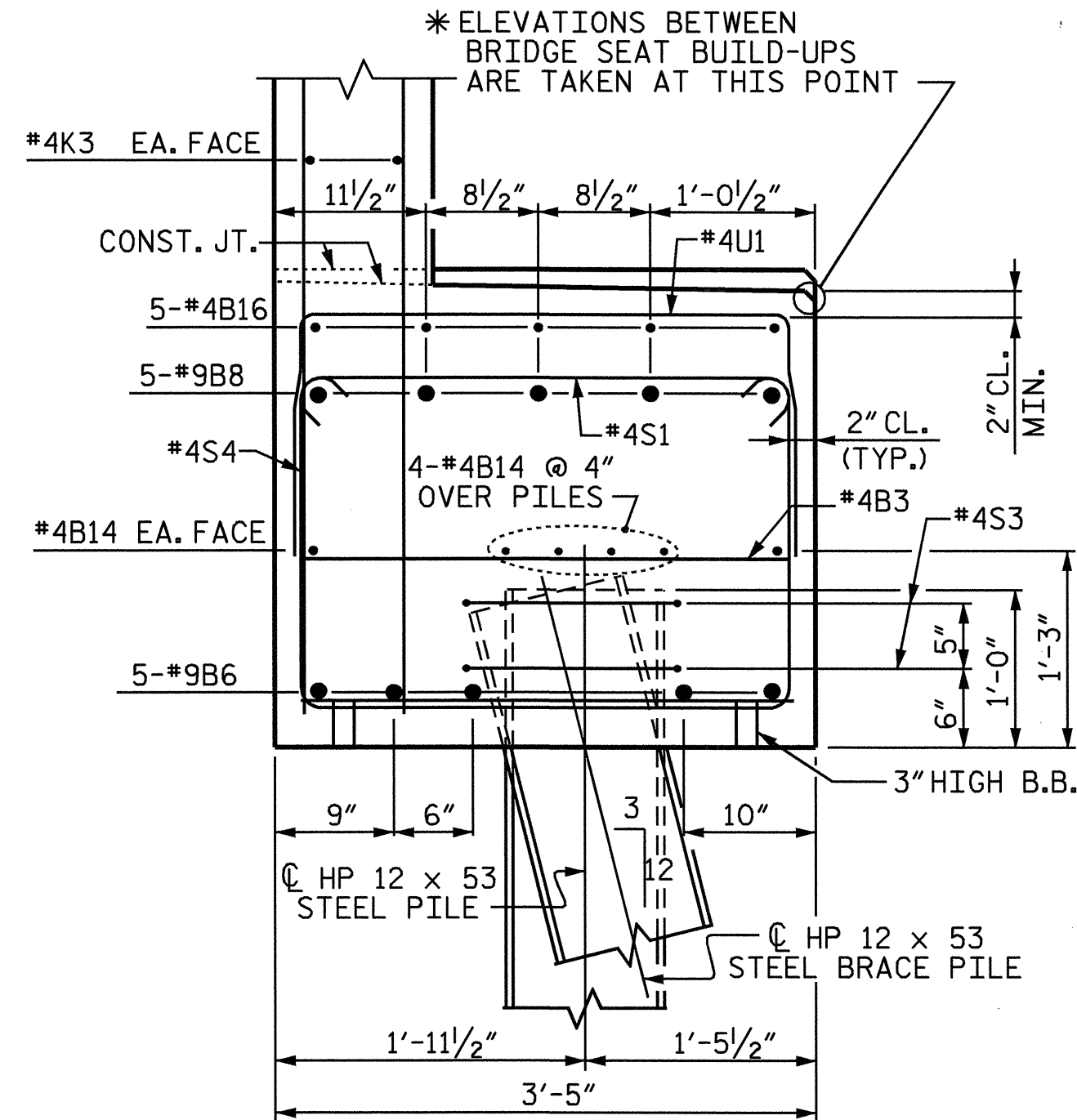
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			41



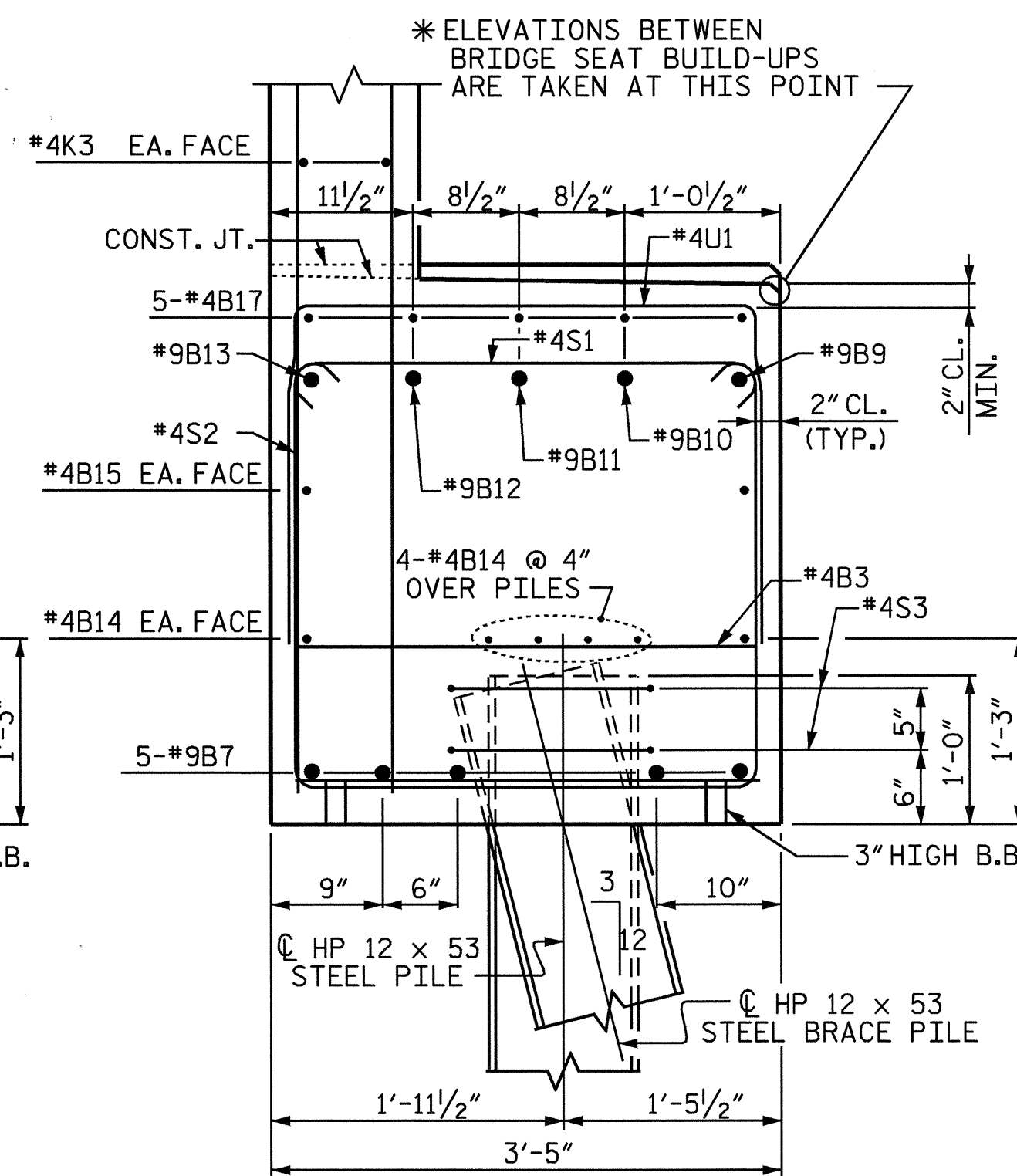
DRAWN BY: KEITH D. LAYNE DATE: 05/07
 CHECKED BY: M. K. BEARD DATE: 05/07



SECTION C-C



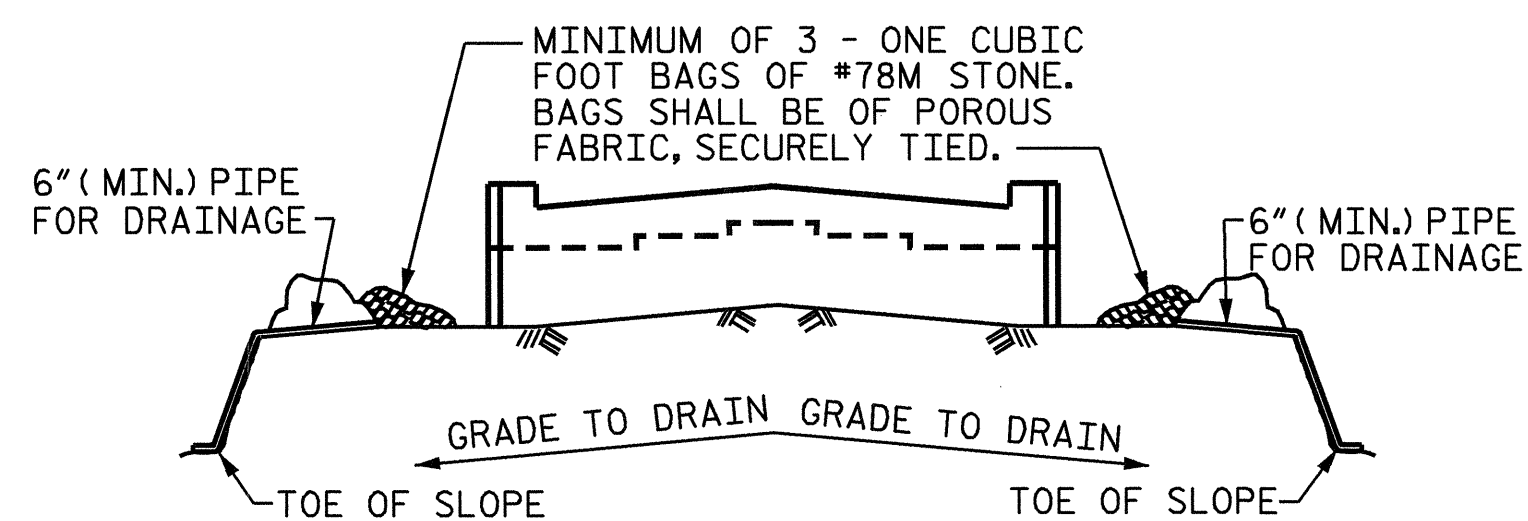
PARTIAL SECTION D-D



PARTIAL SECTION E-E

BAR TYPES		BILL OF MATERIAL				
		STAGE 2				
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT		
B3	19	4	STR.	3'- 1"	39	
B5	10	4	STR.	2'- 8"	18	
B6	5	9	1	41'- 8"	708	
B7	5	9	STR.	40'- 5"	687	
B8	5	9	1	54'- 5"	925	
B9	1	9	STR.	31'- 7"	107	
B10	1	9	STR.	31'- 3"	106	
B11	1	9	STR.	30'-11"	105	
B12	1	9	STR.	30'- 7"	104	
B13	1	9	STR.	30'- 3"	103	
B14	18	4	STR.	26'-10"	323	
B15	2	4	STR.	26'- 6"	35	
B16	5	4	STR.	21'- 4"	71	
B17	5	4	STR.	12'- 4"	41	
H3	9	5	2	9'- 1"	85	
H4	9	5	2	8'- 9"	82	
K2	4	4	STR.	4'- 2"	11	
K3	24	4	STR.	26'-10"	430	
S1	90	4	3	3'-10"	230	
S2	44	4	4	9'- 6"	279	
S3	32	4	5	6'- 6"	139	
S4	46	4	4	8'- 1"	248	
U1	28	4	6	6'- 1"	114	
U2	71	4	6	3'- 8"	174	
V3	72	5	STR.	6'-10"	513	
V4	70	5	STR.	6'- 2"	450	
V5	28	5	STR.	8'- 7"	251	
REINFORCING STEEL				Lbs.	6,378	
CLASS A CONCRETE						
POUR #1				Cu. yds.	30.2	
POUR #2				Cu. yds.	13.3	
TOTAL				Cu. yds.	43.5	
HP12x53 STEEL PILES						
No. 15				LIN. FT.	1,350	

ALL BAR DIMENSIONS ARE OUT TO OUT.

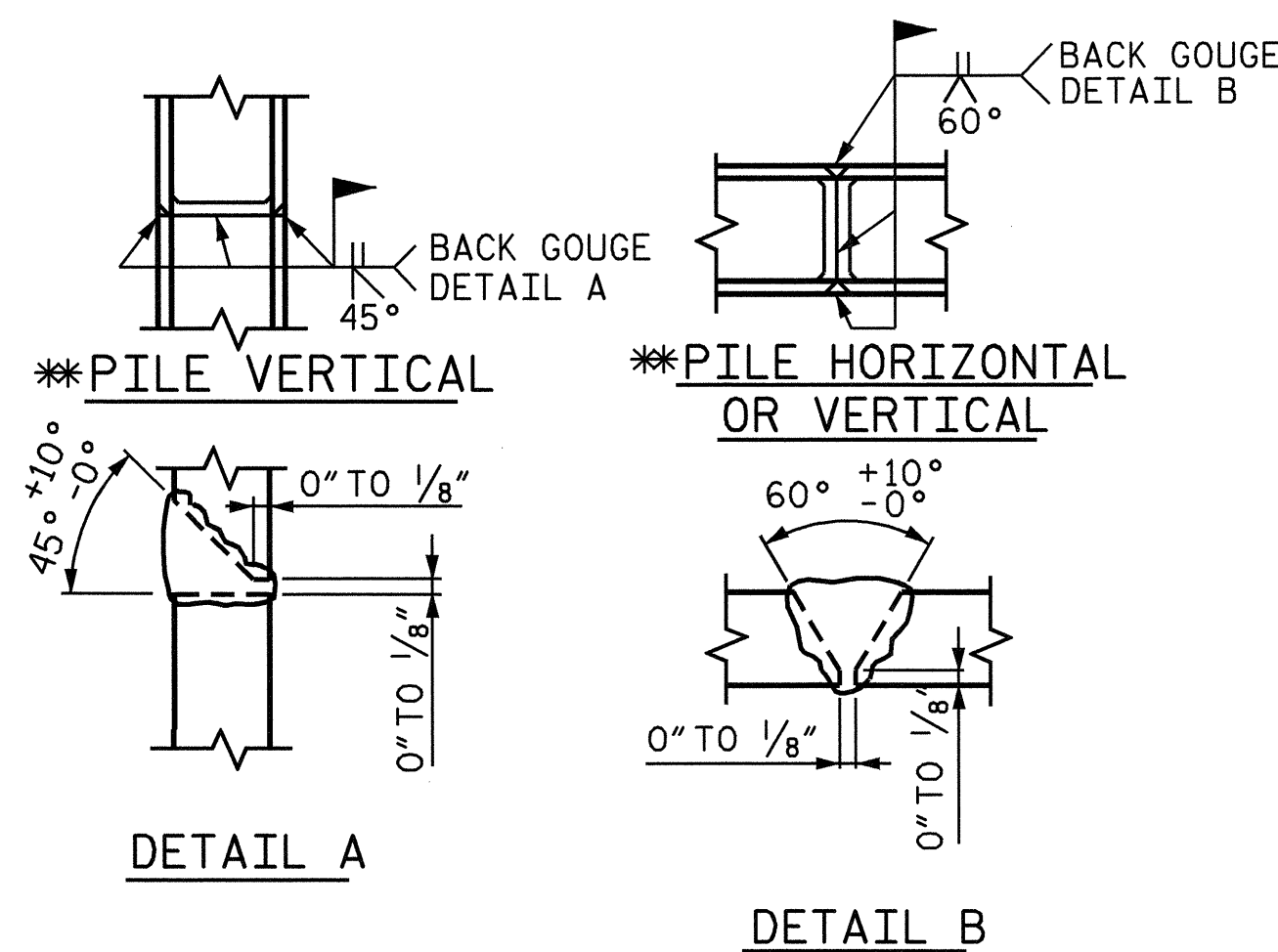


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS

*POSITION OF PILE DURING WELDING.

TOTAL QUANTITIES STAGE 1 & 2				
	REINFORCING STEEL	CLASS A CONCRETE	HP 12x53 STEEL PILES	
	LBS.	C.Y.	NO.	LIN. FT.
STAGE 1	4,123	32.2	11	990
STAGE 2	6,378	43.5	15	1,350
TOTAL	10,501	75.7	26	2,340

PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

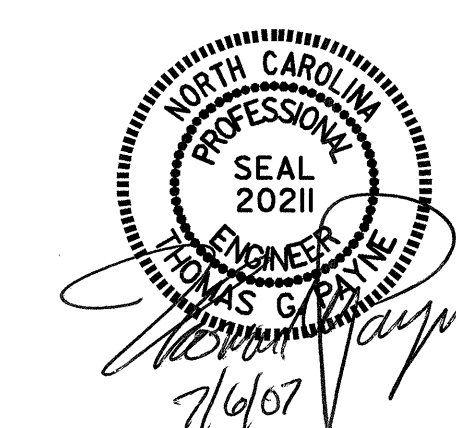
SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

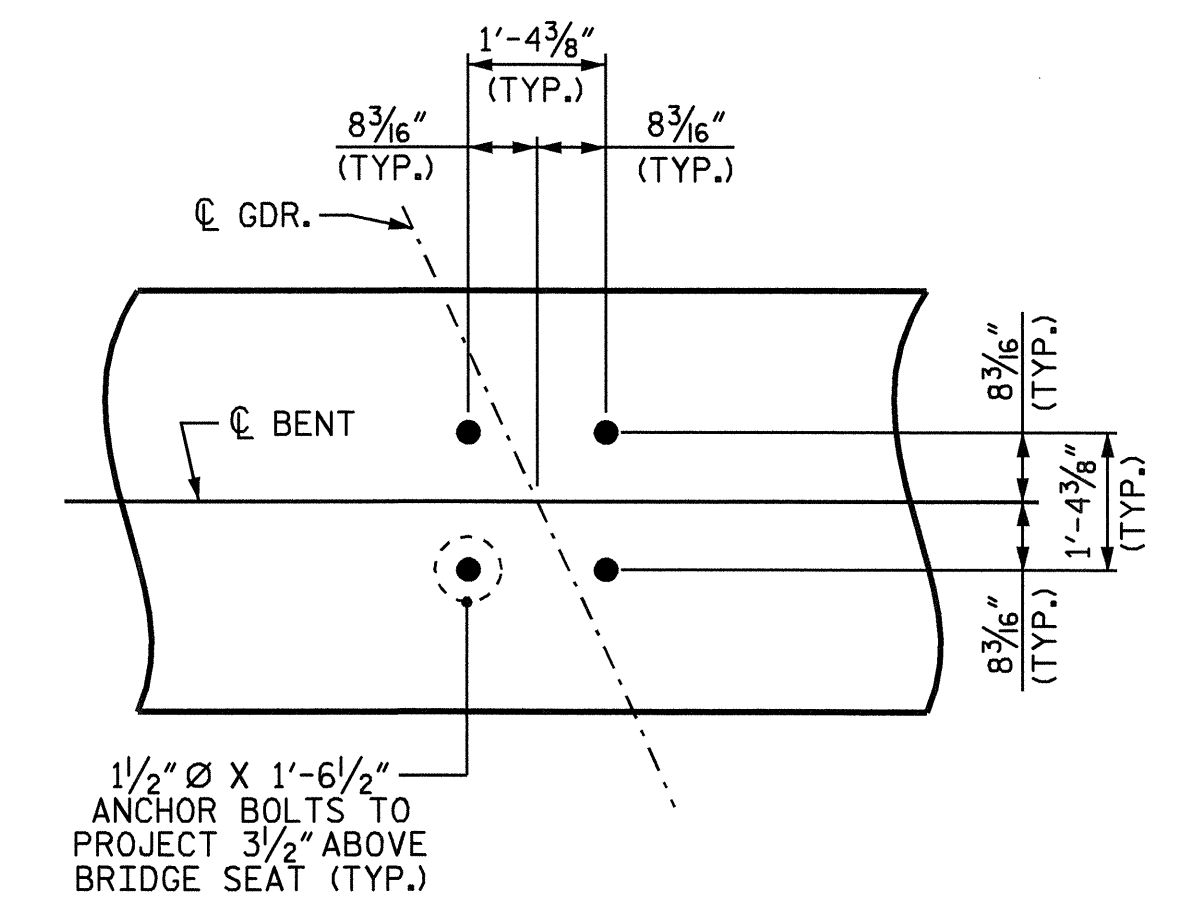
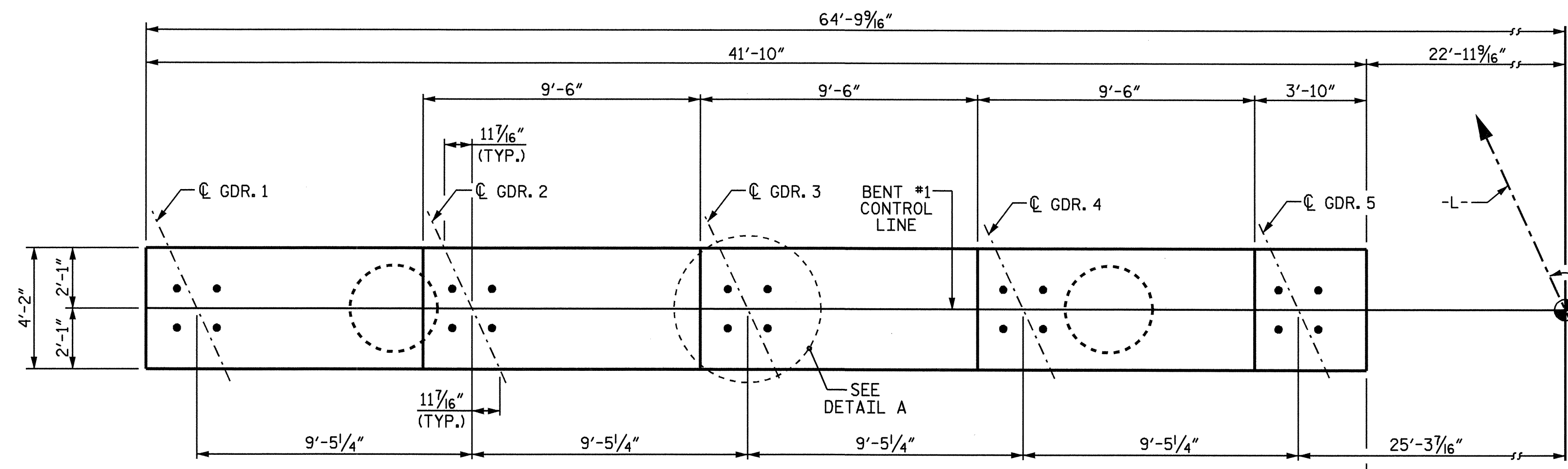
SUBSTRUCTURE
 END BENT #1

(STAGE 2)

REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	41
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2			4			

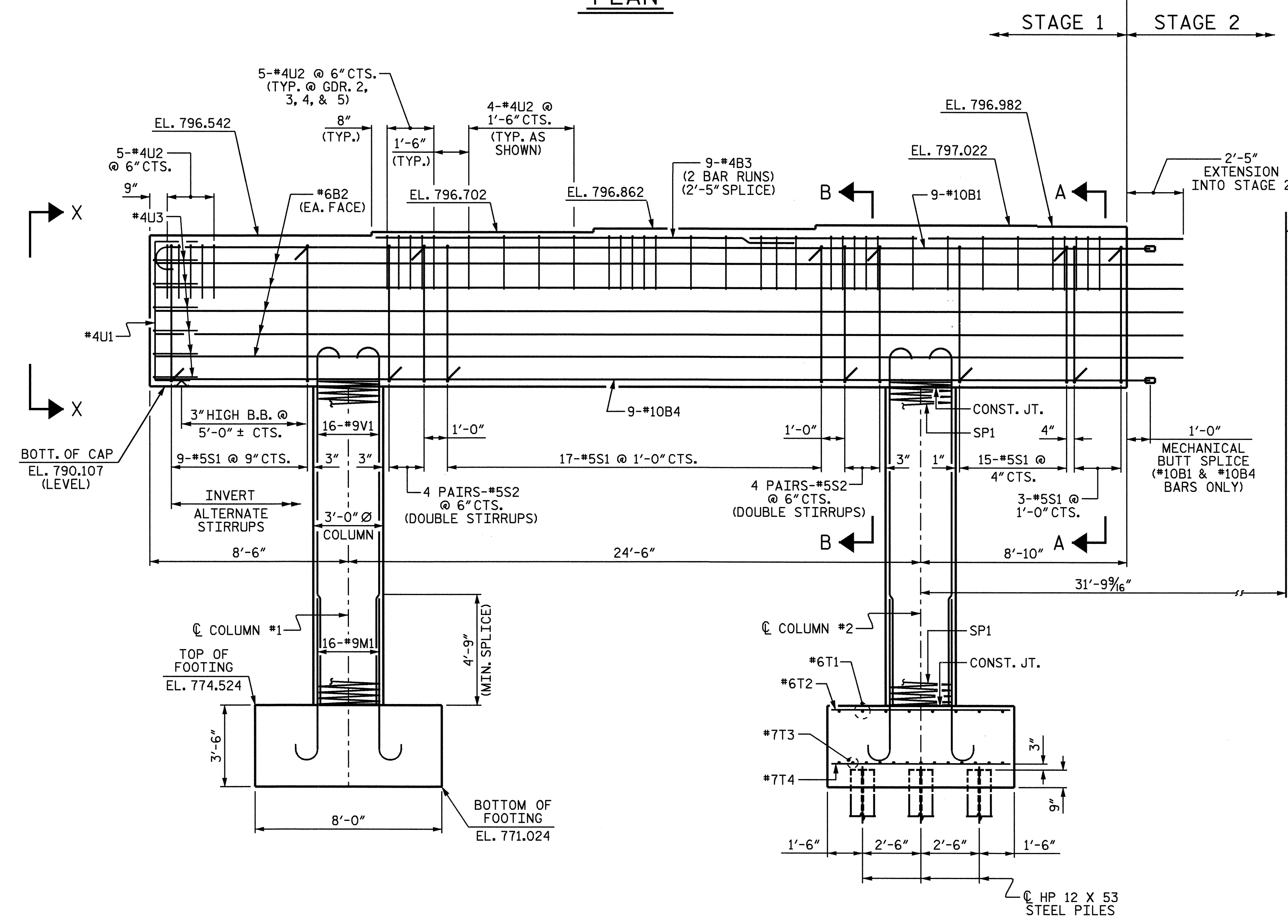


DRAWN BY: KEITH D. LAYNE DATE: 05/07
 CHECKED BY: M. K. BEARD DATE: 05/07



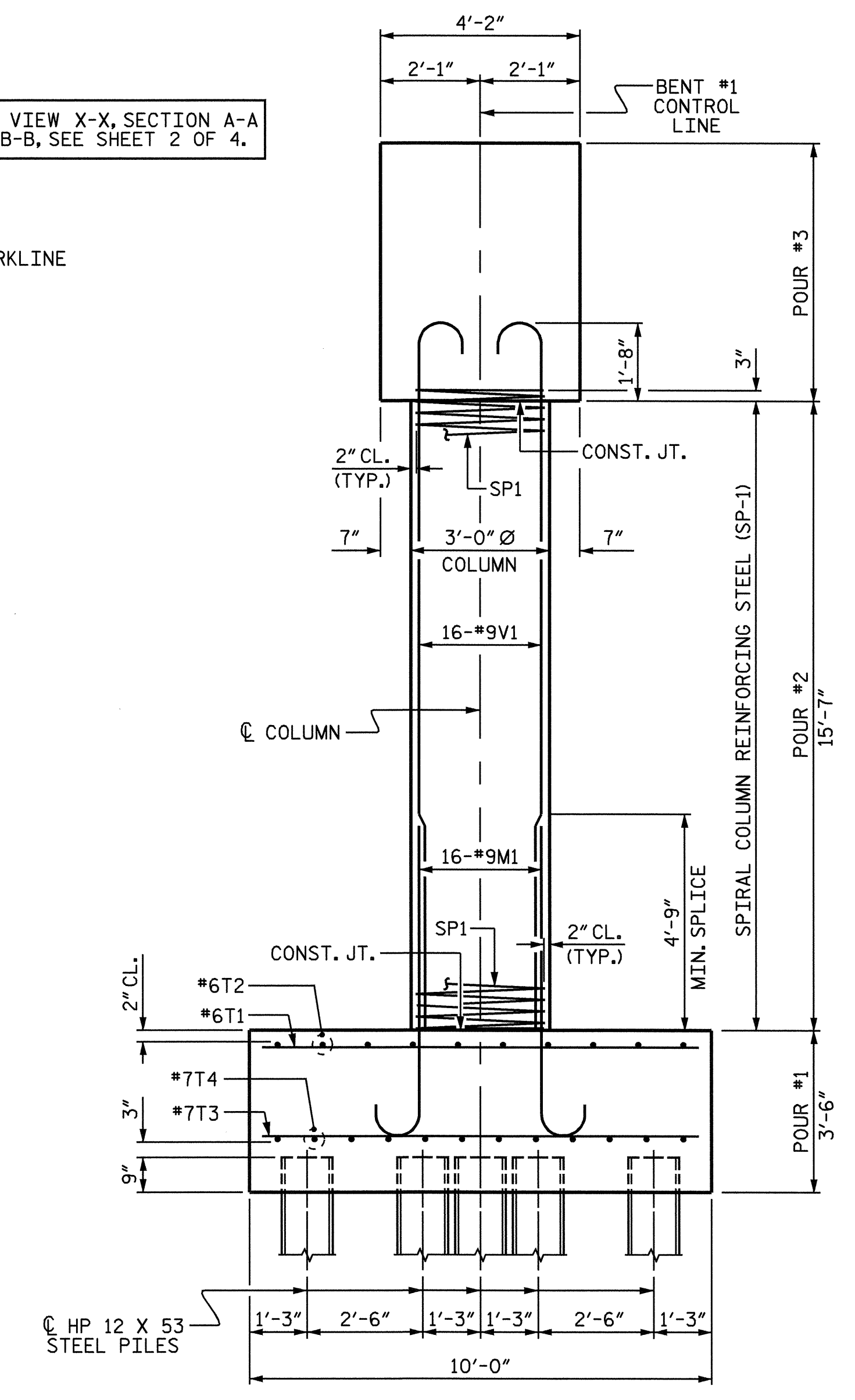
PLAN

DETAIL A



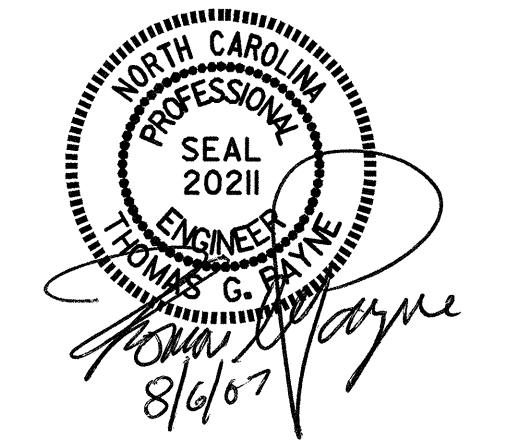
ELEVATION

REINFORCING STEEL, DIMENSIONS AND DETAILS ARE TYPICAL FOR EACH COLUMN AND FOOTING UNLESS OTHERWISE NOTED.



END VIEW

REINFORCING STEEL, DIMENSIONS AND DETAILS ARE TYPICAL FOR EACH COLUMN AND FOOTING UNLESS OTHERWISE NOTED.



PROJECT NO. B-3637
 DAVIE COUNTY
 STATION: 32+25.27 -L-

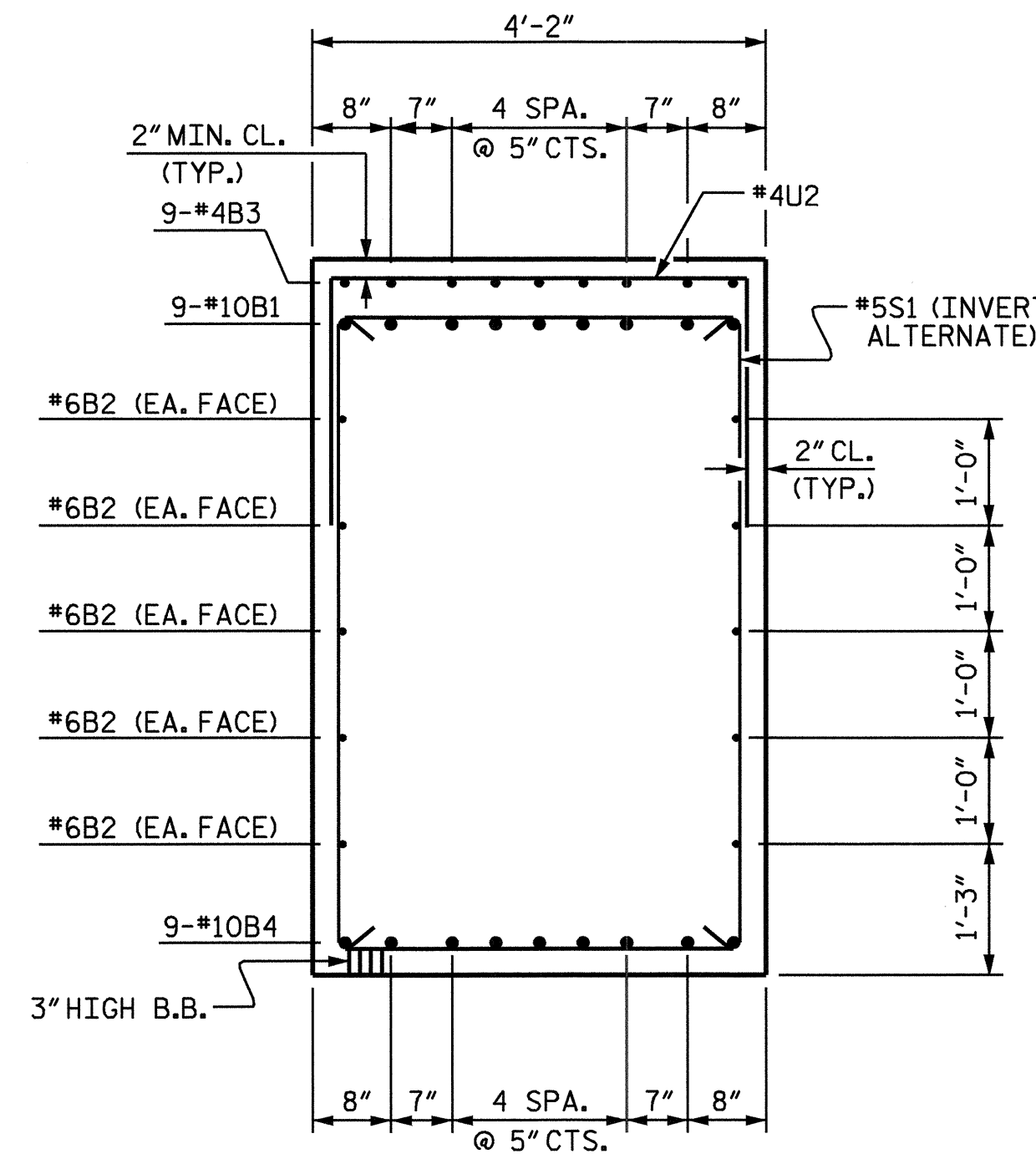
SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT #1
 (STAGE 1)

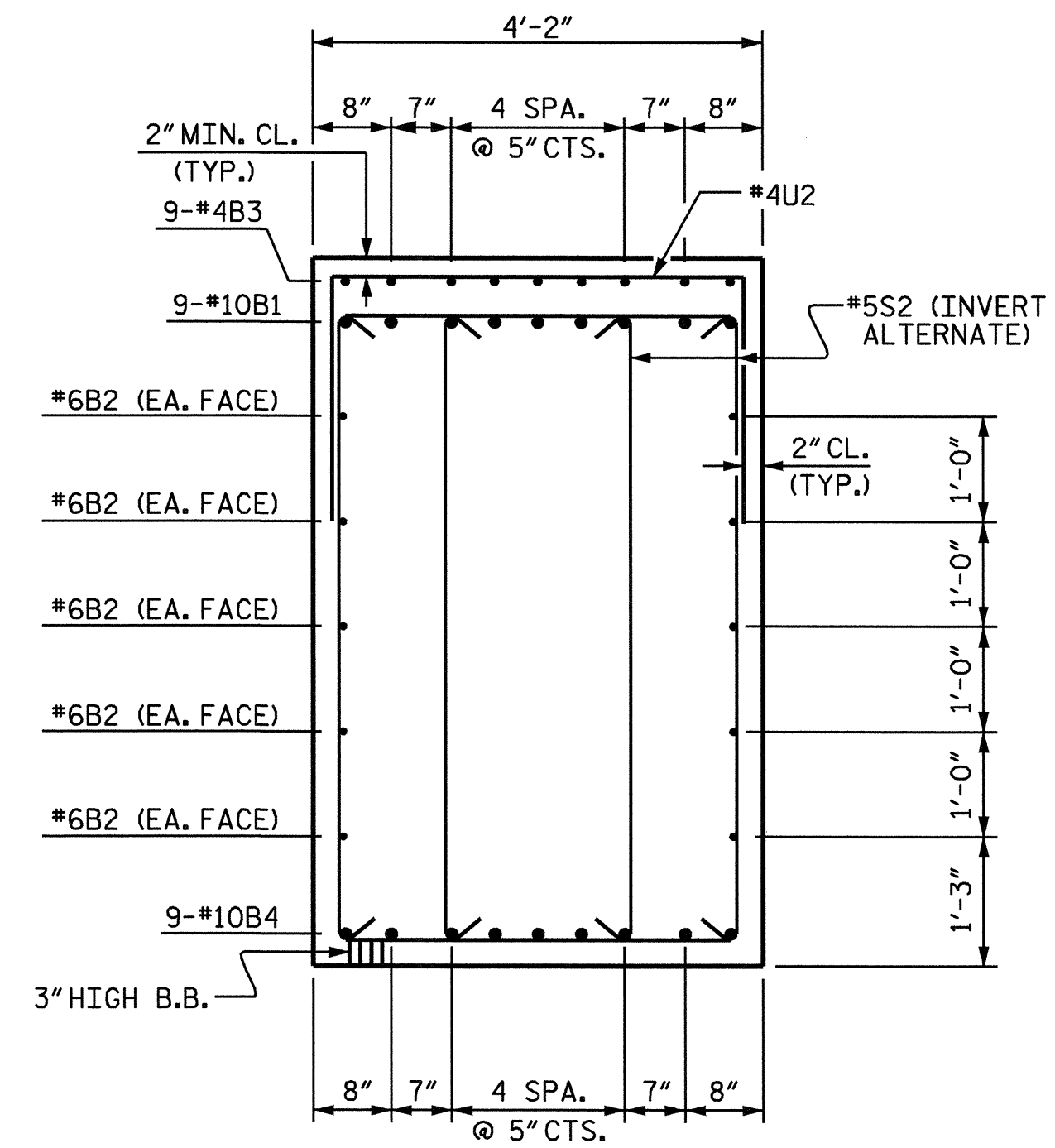
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 41

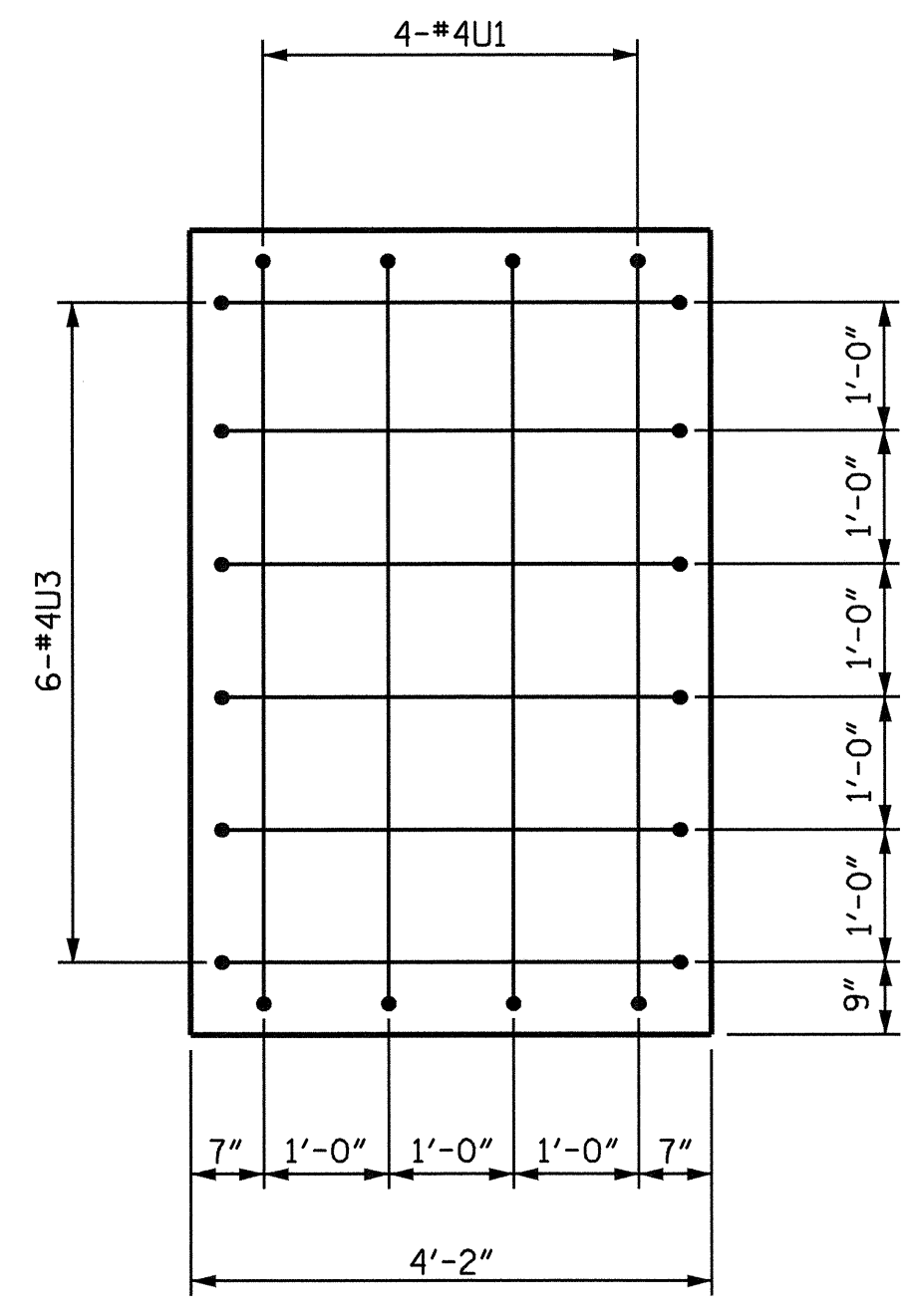
DRAWN BY: M.K. BEARD DATE: 5/07
 CHECKED BY: R.G. EMERSON DATE: 05/07



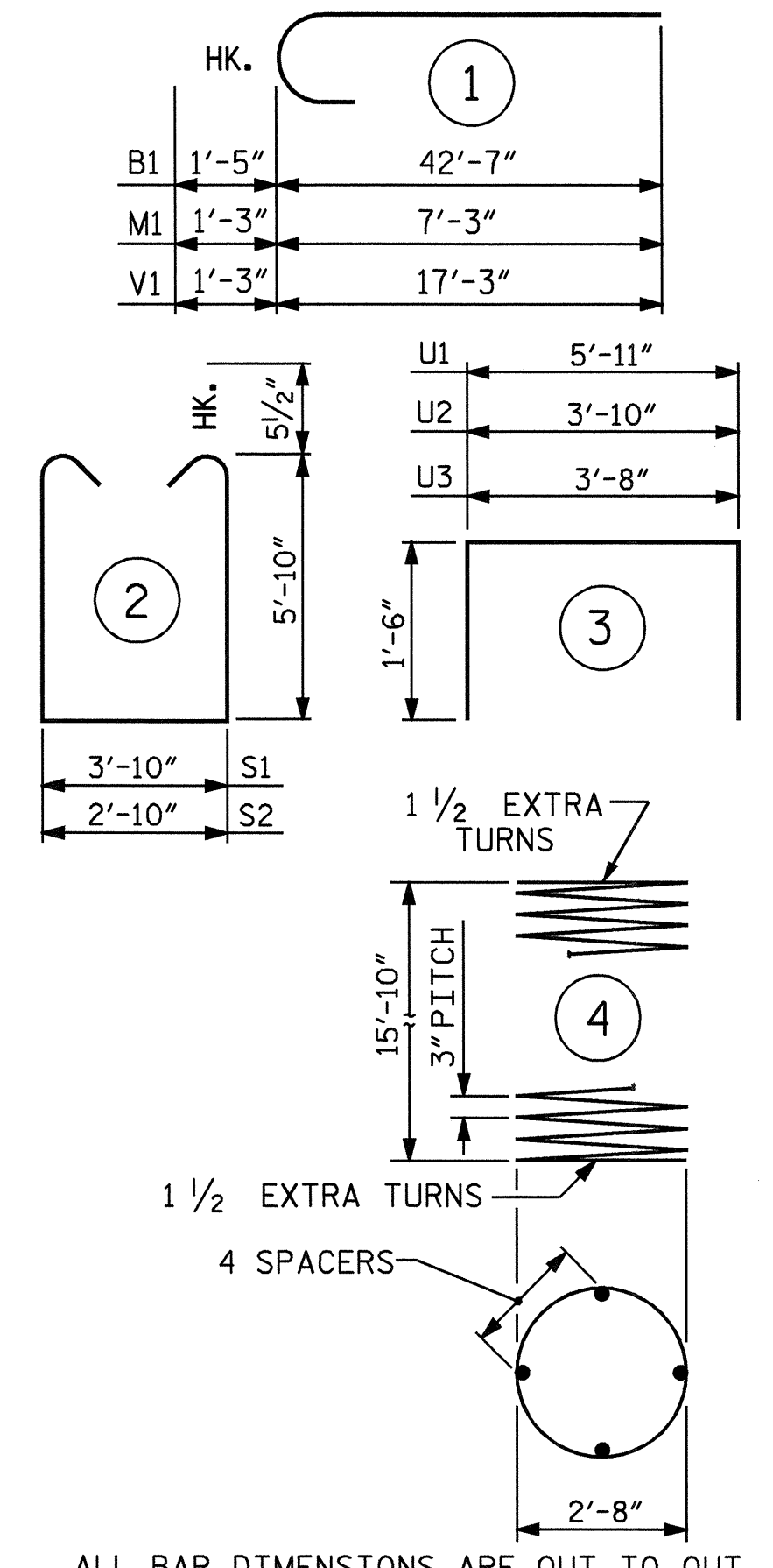
SECTION A-A



SECTION B-B



VIEW X-X



ALL BAR DIMENSIONS ARE OUT TO OUT.

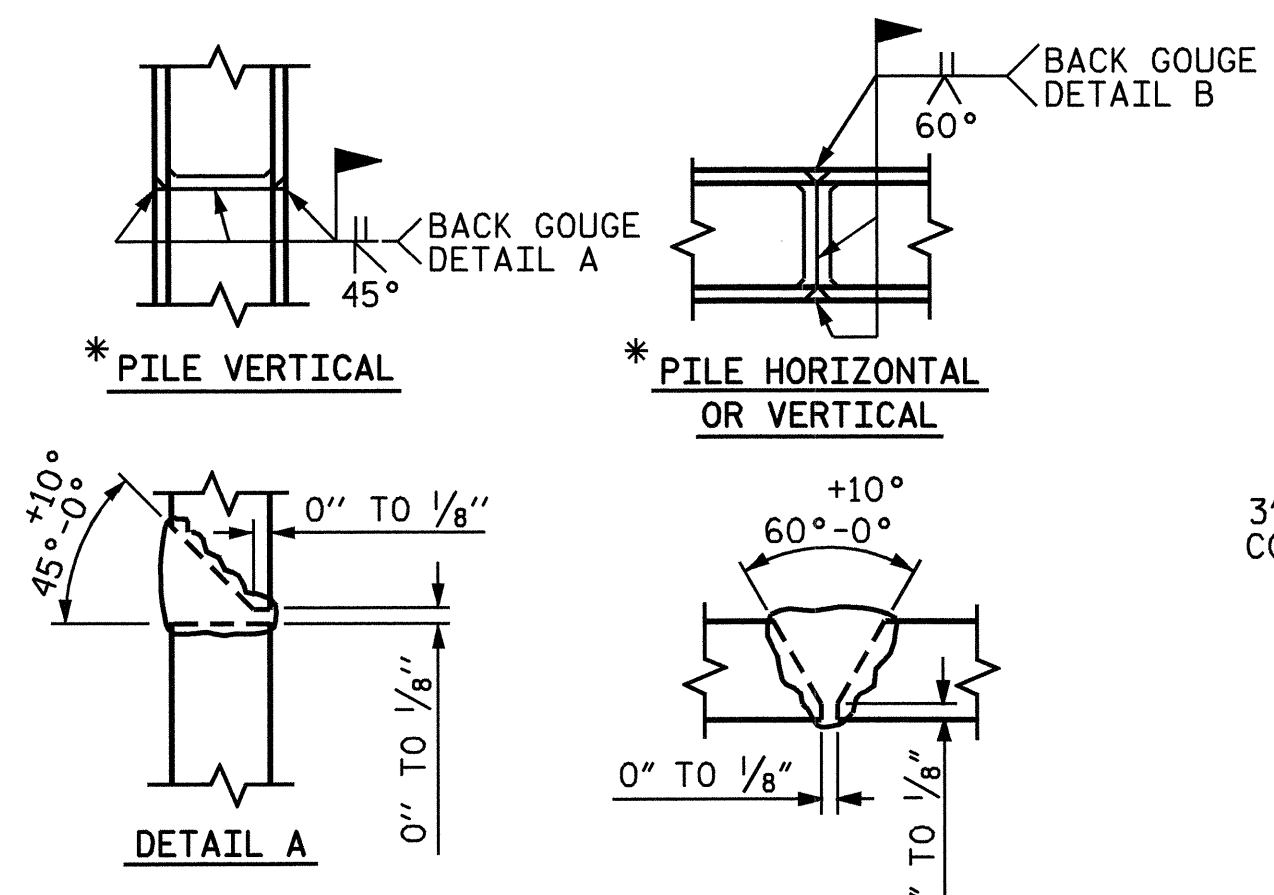
BILL OF MATERIAL

BENT #1 - STAGE 1					
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	9	#10	1	44'-0"	1704
B2	10	#6	STR	44'-1"	662
B3	18	#4	STR	18'-6"	222
B4	9	#10	STR	42'-8"	1652
M1	32	#9	1	8'-6"	925
S1	44	#5	2	16'-5"	753
S2	16	#5	2	15'-5"	257
T1	16	#6	STR	9'-6"	228
T2	20	#6	STR	7'-6"	225
T3	26	#7	STR	9'-6"	505
T4	24	#7	STR	7'-6"	368
U1	4	#4	3	8'-11"	24
U2	37	#4	3	6'-10"	169
U3	6	#4	3	6'-8"	27
V1	32	#9	1	18'-6"	2013
REINFORCING STEEL					9734 LBS.
SP1	2	**	4	548'-8"	733
SPIRAL COLUMN REINFORCING STEEL (SP1)					= 733 LBS
CLASS A CONCRETE BREAKDOWN:					
POUR #1 (FOOTINGS)				20.7	C.Y.
POUR #2 (COLUMNS)				8.2	C.Y.
POUR #3 (CAP)				43.2	C.Y.
TOTAL CLASS A CONCRETE				72.1	C.Y.
HP 12 X 53 STEEL PILES					
No. 22					LIN. FT. 1760
FOUNDATION EXCAVATION					LUMP SUM

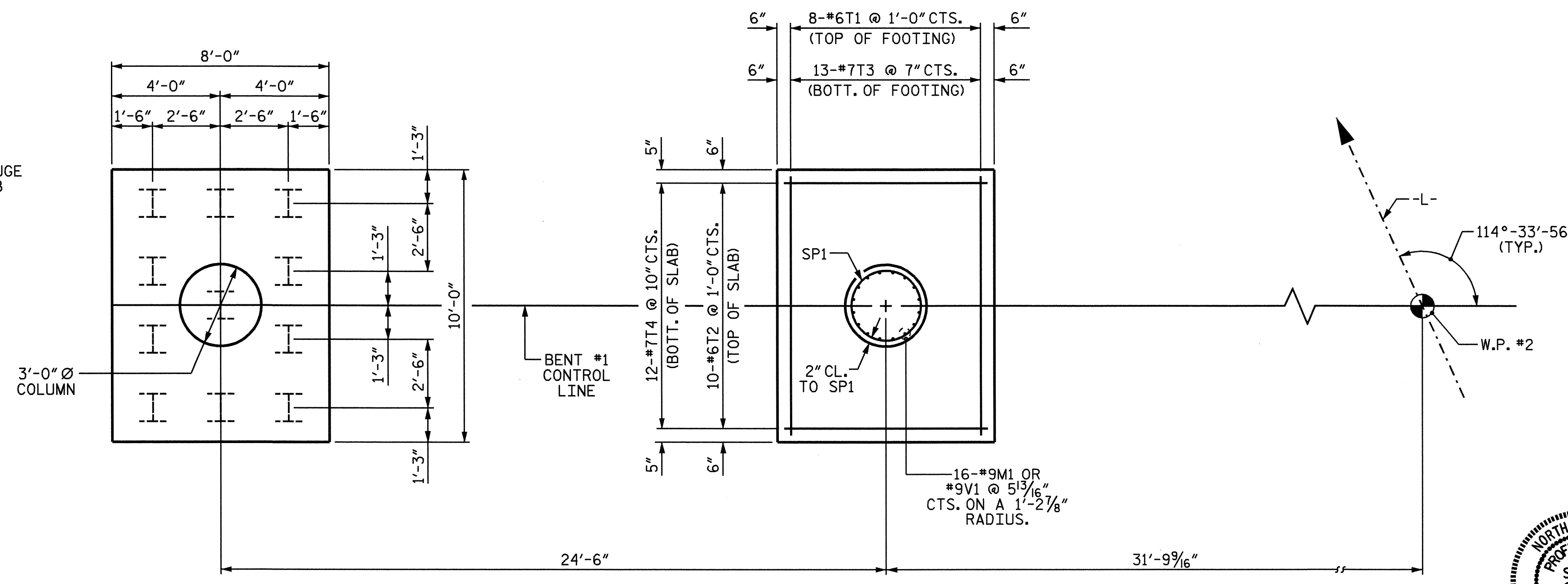
NOTES:

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.

** THE SP1 SPIRAL REINFORCING STEEL SHALL BE W-20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.



PILE SPLICE DETAILS



PLAN OF FOOTINGS & COLUMNS

REINFORCING STEEL, DIMENSIONS AND DETAILS ARE TYPICAL FOR EACH COLUMN AND FOOTING UNLESS OTHERWISE NOTED.

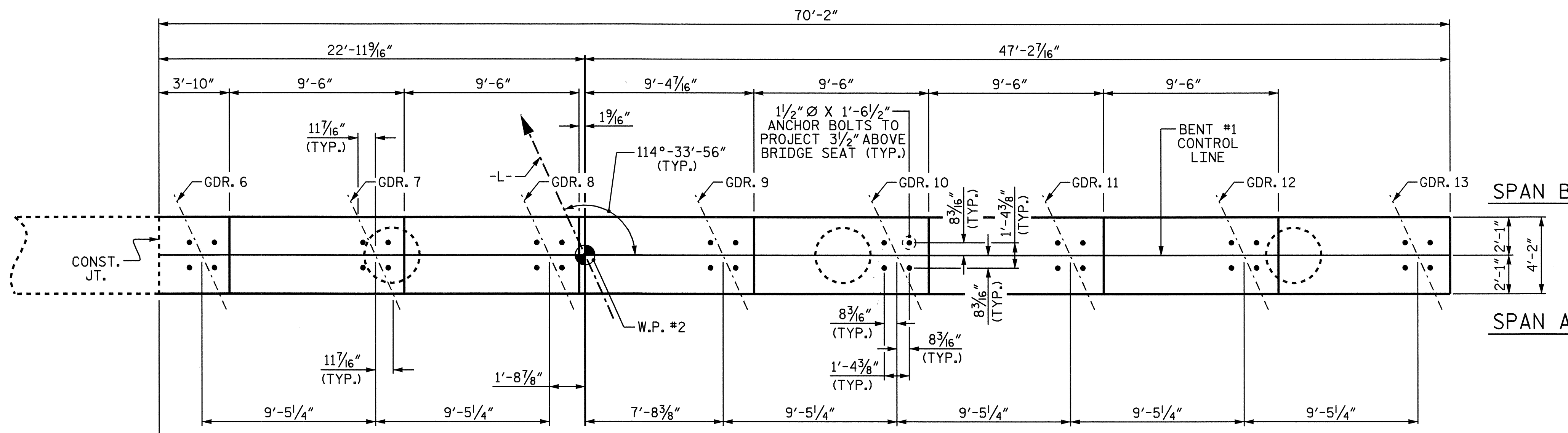
PROJECT NO. B-3637
DAVIE COUNTY
STATION: 32+25.27 -L-

SHEET 2 OF 4
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
BENT #1
(STAGE 1)

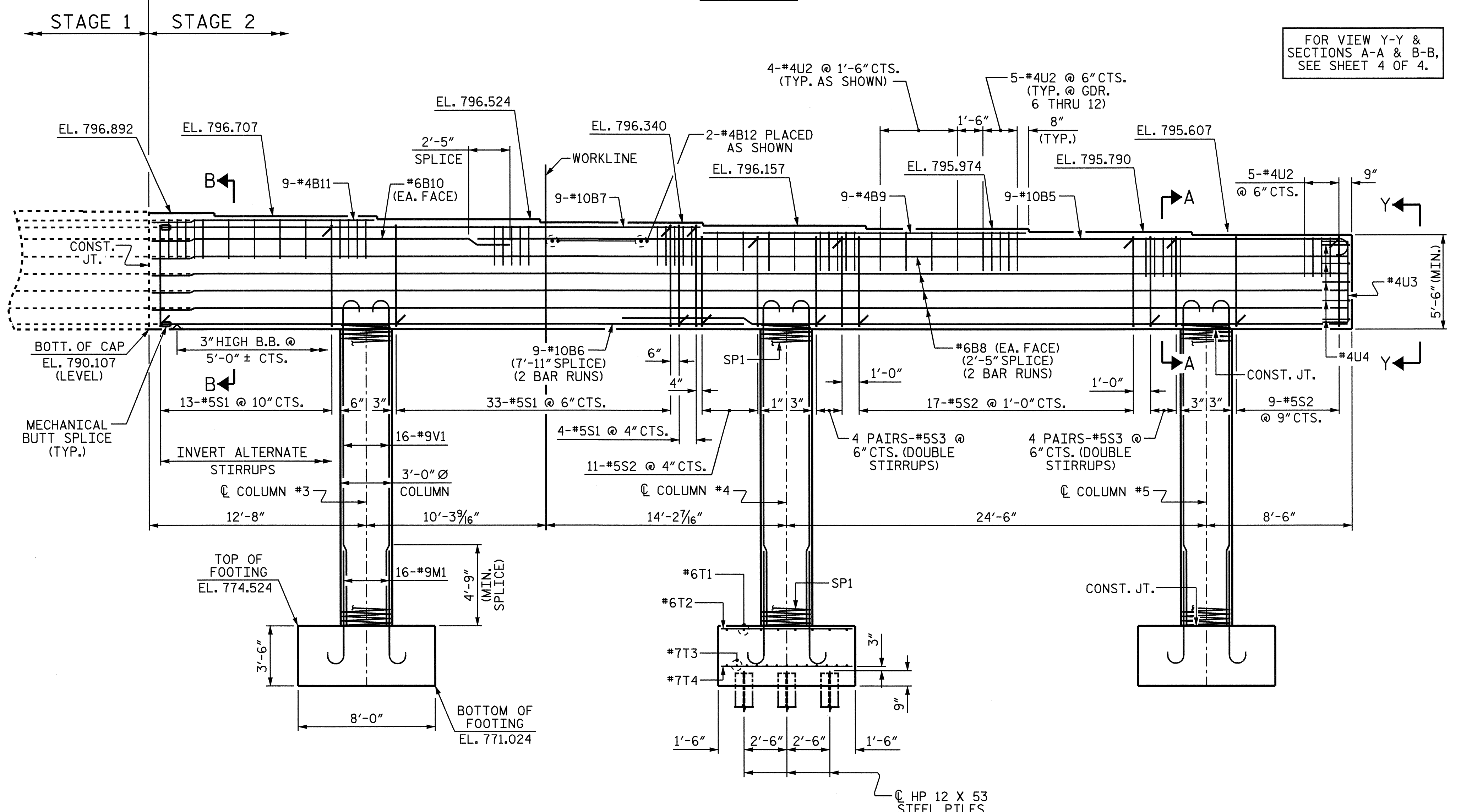


DRAWN BY: M.K. BEARD DATE: 5/07
CHECKED BY: R.G. EMERSON DATE: 05/07

REVISIONS						SHEET NO. S-28
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 41
2			4			

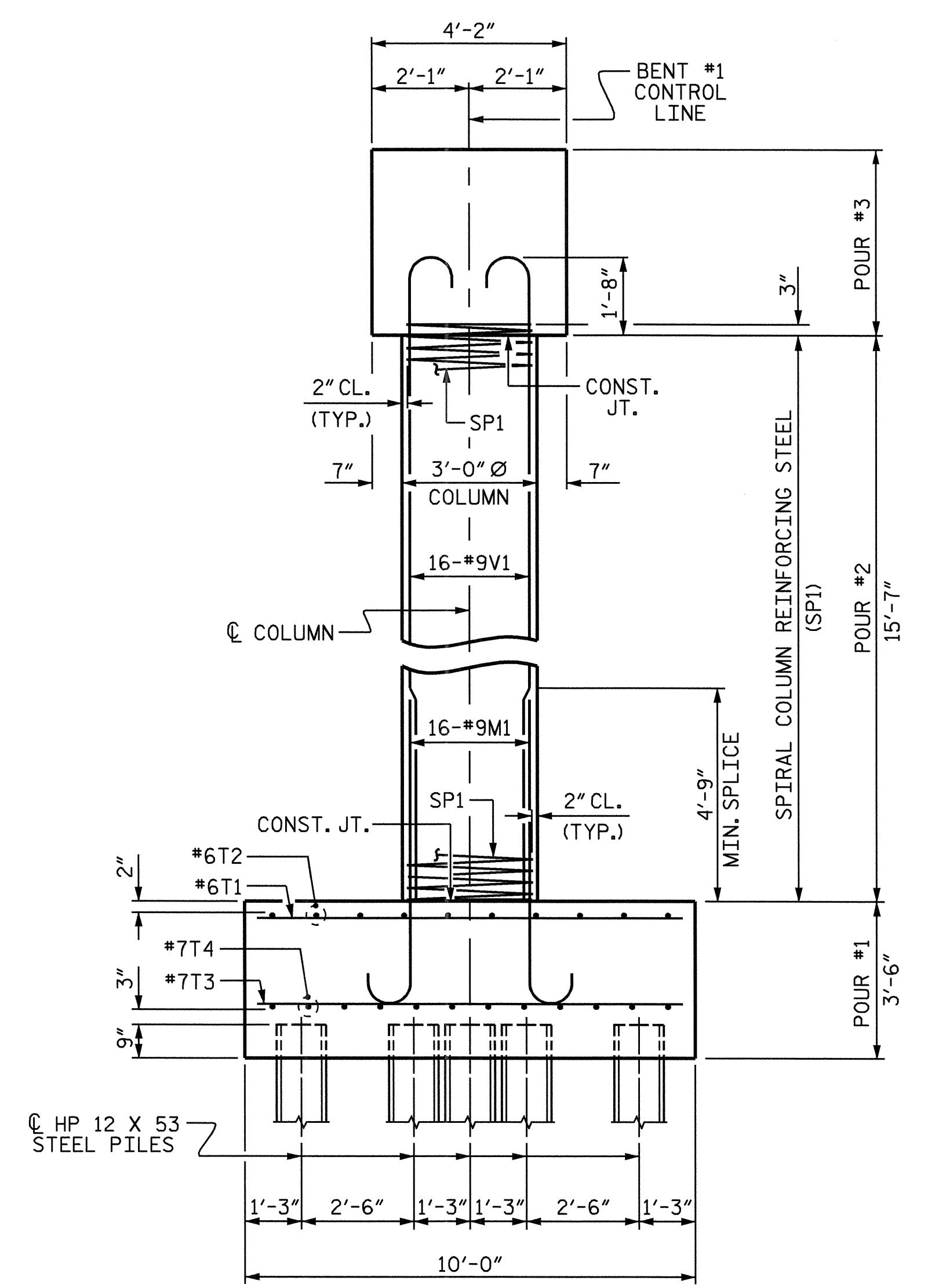


PLAN



ELEVATION

REINFORCING STEEL, DIMENSIONS AND DETAILS ARE TYPICAL FOR EACH COLUMN AND FOOTING UNLESS OTHERWISE NOTED.



END VIEW

REINFORCING STEEL, DIMENSIONS AND DETAILS ARE TYPICAL FOR EACH COLUMN AND FOOTING UNLESS OTHERWISE NOTED.

PROJECT NO. B-3637
 DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 3 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT #1
 (STAGE 2)

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

DRAWN BY: M.K. BEARD DATE: 5/07
 CHECKED BY: R.G. EMERSON DATE: 05/07

03-AUG-2007 11:17
 R:\Structures\B3637\plans\B-3637_sd_B*.dgn
 kbeard

BILL OF MATERIAL

BENT #1 - STAGE 2

BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B5	9	#10		52'-3"	2023
B6	18	#10	STR	38'-11"	3014
B7	9	#10	STR	31'-2"	1207
B8	16	#6	STR	36'-3"	871
B9	9	#4	STR	18'-10"	113
B10	2	#6	STR	21'-8"	65
B11	9	#4	STR	13'-2"	79
B12	2	#4	STR	3'-10"	5
M1	48	#9		8'-6"	1387
S1	50	#5		16'-5"	856
S2	37	#5		15'-0"	579
S3	16	#5		14'-0"	234
T1	24	#6	STR	9'-6"	342
T2	30	#6	STR	7'-6"	338
T3	39	#7	STR	9'-6"	757
T4	36	#7	STR	7'-6"	552
U2	52	#4		6'-10"	237
U3	4	#4		8'-0"	21
U4	5	#4		6'-8"	22
V1	48	#9		18'-6"	3019

REINFORCING STEEL 15721 LBS.

SP1 3 ** 4 548'-8" 1100

SPIRAL COLUMN REINFORCING STEEL (SP1) = 1100 LBS

CLASS A CONCRETE BREAKDOWN:

POUR #1 (FOOTINGS) 31.1 C.Y.
 POUR #2 (COLUMNS) 12.2 C.Y.
 POUR #3 (CAP) 66.0 C.Y.

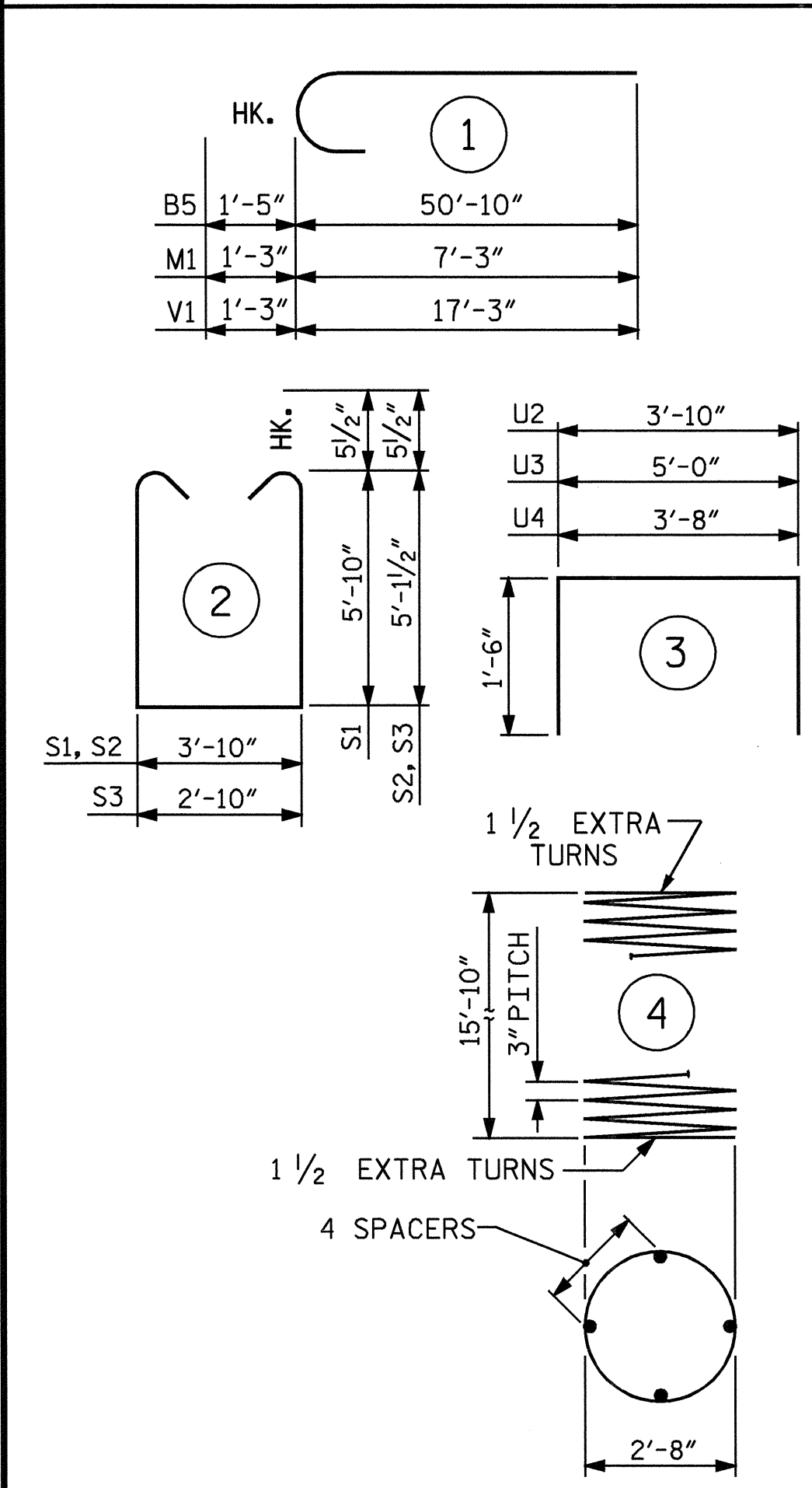
TOTAL CLASS A CONCRETE 109.3 C.Y.

HP 12 X 53 STEEL PILES
 No. 33 LIN. FT. 2640

FOUNDATION EXCAVATION LUMP SUM

** THE SP1 SPIRAL REINFORCING STEEL SHALL BE W-20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.

BAR TYPES

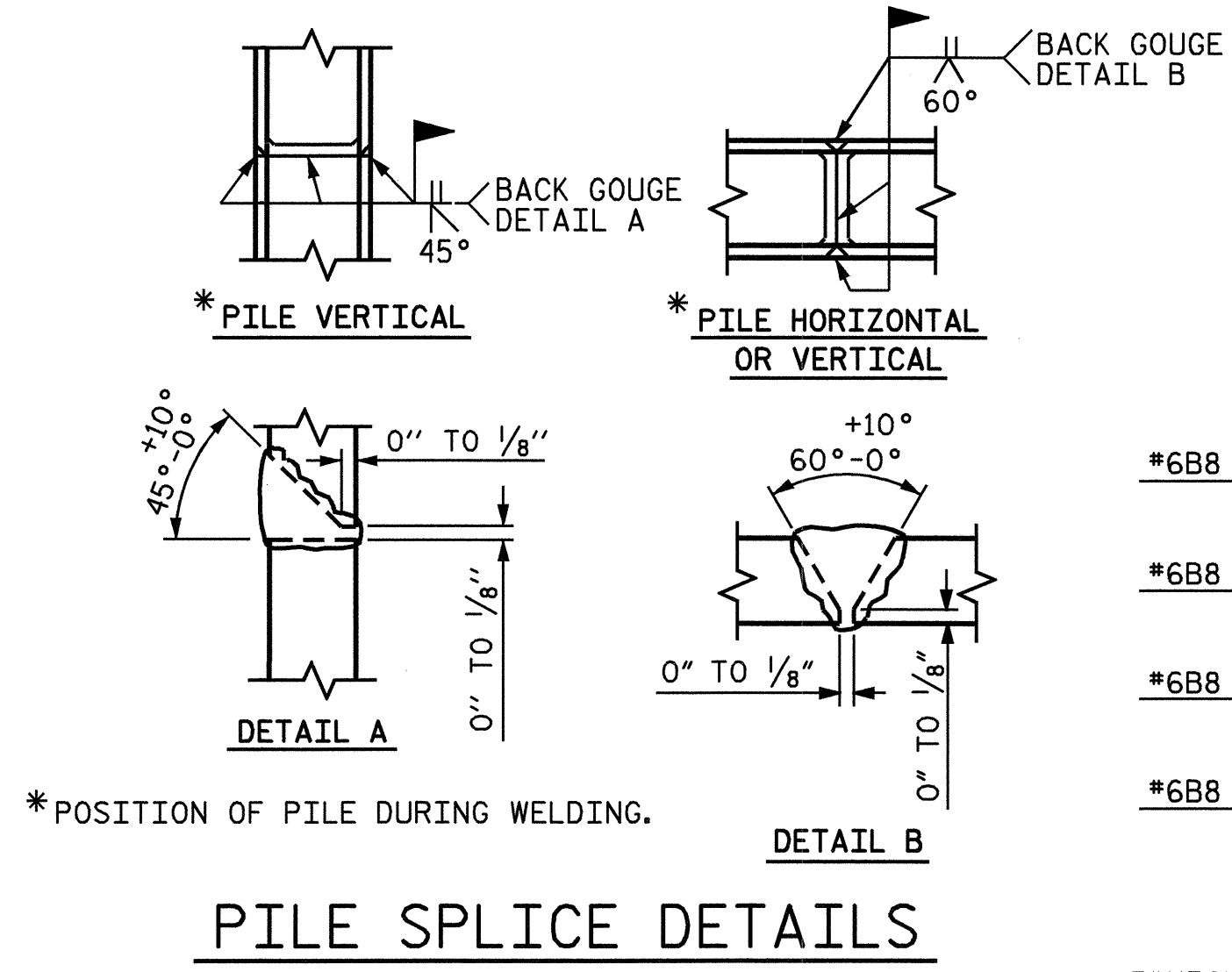


ALL BAR DIMENSIONS ARE OUT TO OUT.

NOTES:

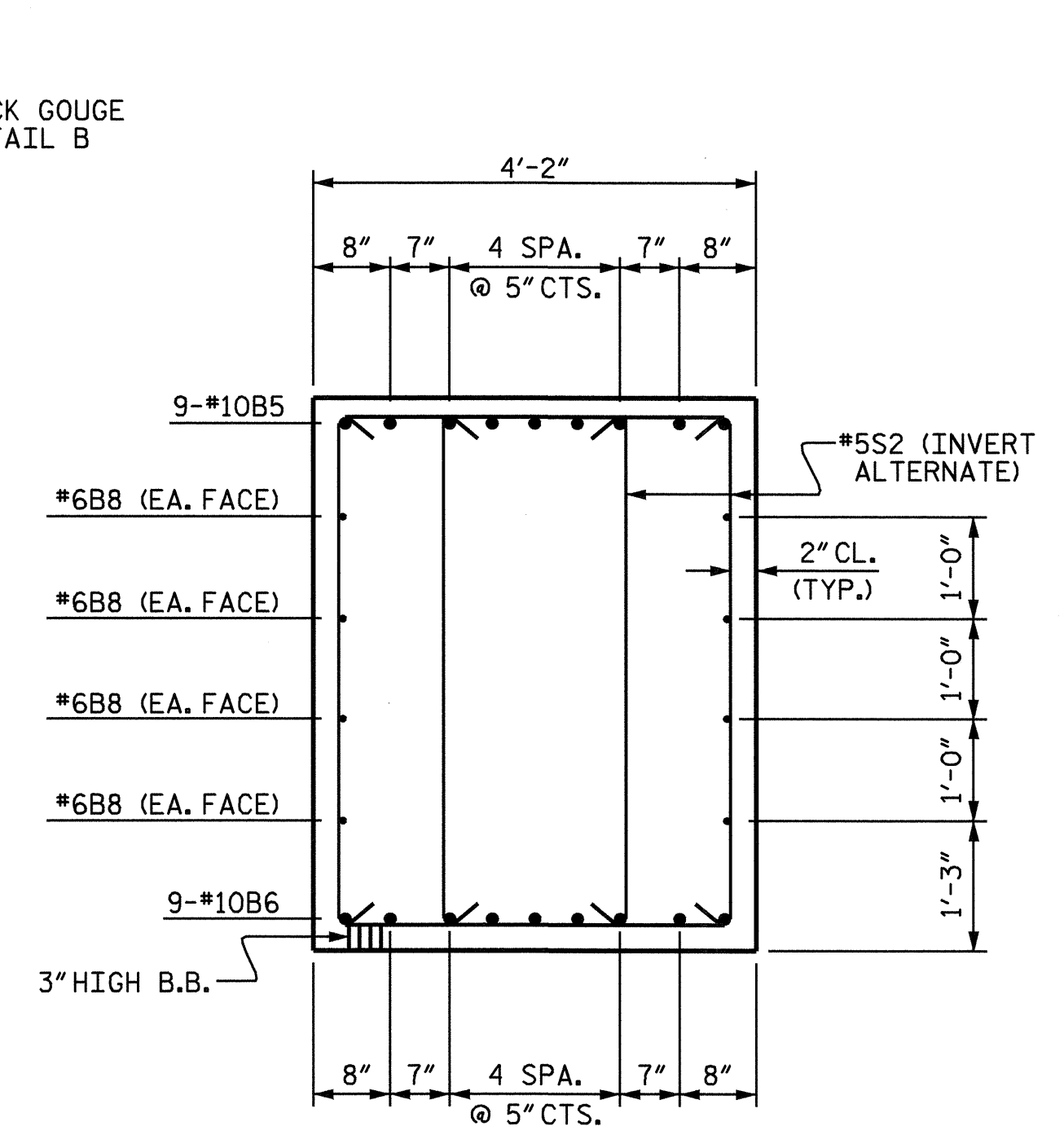
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

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

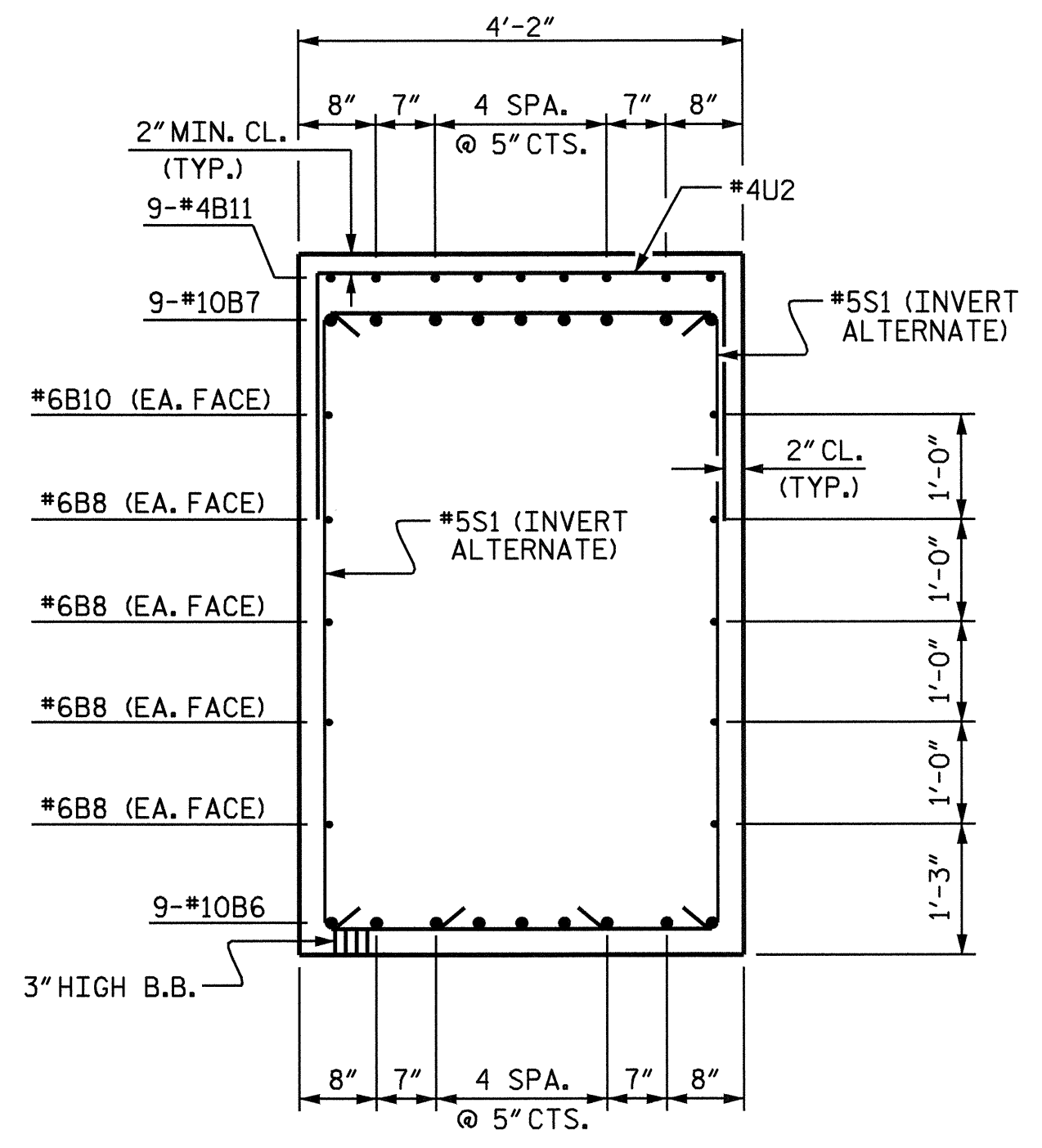


* POSITION OF PILE DURING WELDING.

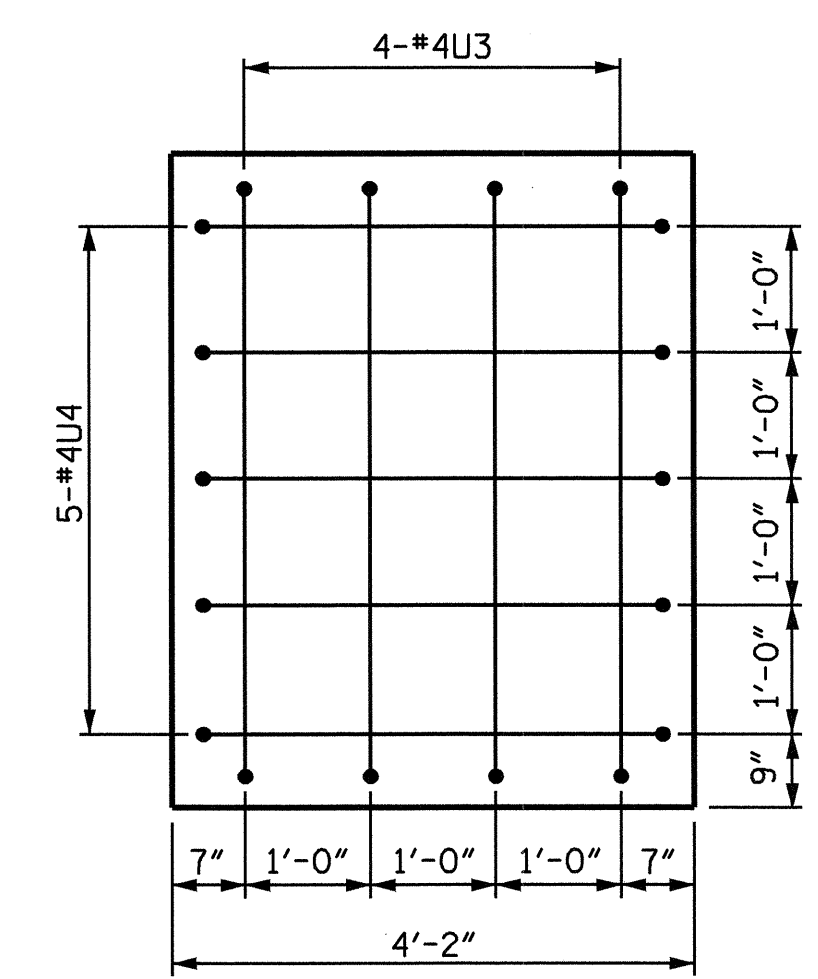
PILE SPLICE DETAILS



SECTION A-A

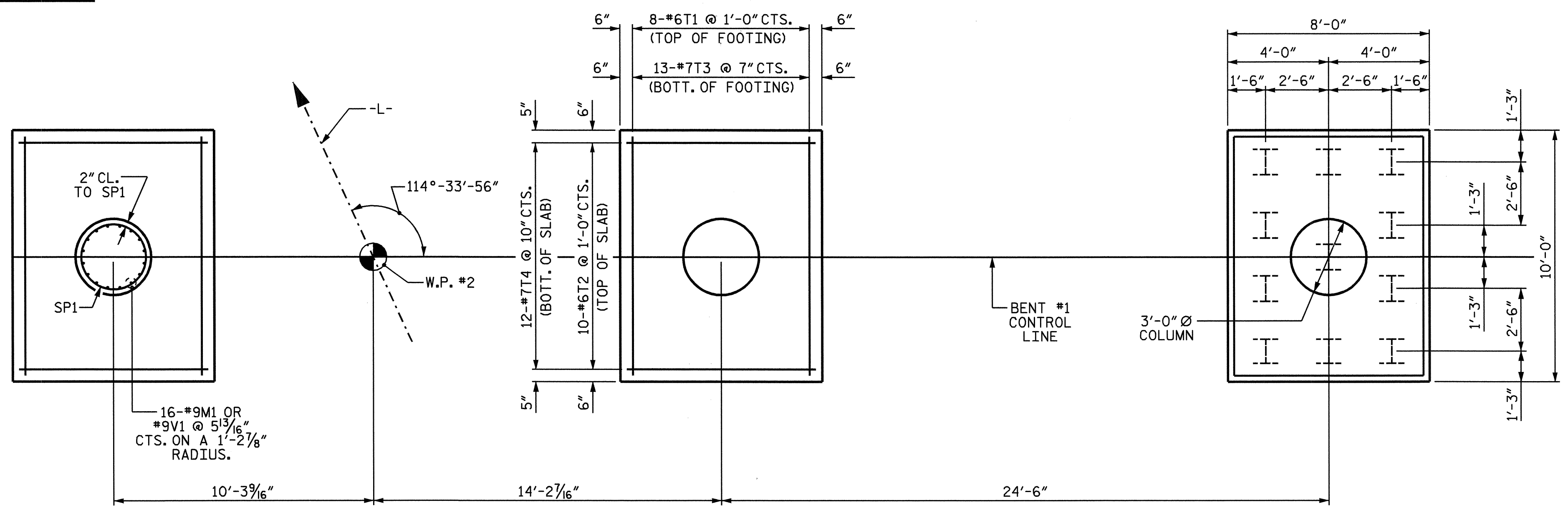


SECTION B-B



VIEW Y-Y

TOTAL BILL OF MATERIAL FOR STAGE 1 & 2						
	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	CLASS A CONCRETE	HP 12 X 53 STEEL PILES	FOUNDATION EXCAVATION	
	LBS.	LBS.	C.Y.	No.	LIN. FT.	LUMP SUM
STAGE 1	9734	733	72.1	22	1760	LUMP SUM
STAGE 2	15721	1100	109.3	33	2640	LUMP SUM
TOTAL	25455	1833	181.4	55	4400	LUMP SUM



PLAN OF FOOTINGS & COLUMNS

REINFORCING STEEL, DIMENSIONS AND DETAILS ARE TYPICAL FOR EACH COLUMN AND FOOTING UNLESS OTHERWISE NOTED.

PROJECT NO. B-3637

DAVIE COUNTY

STATION: 32+25.27 -L-

SHEET 4 OF 4



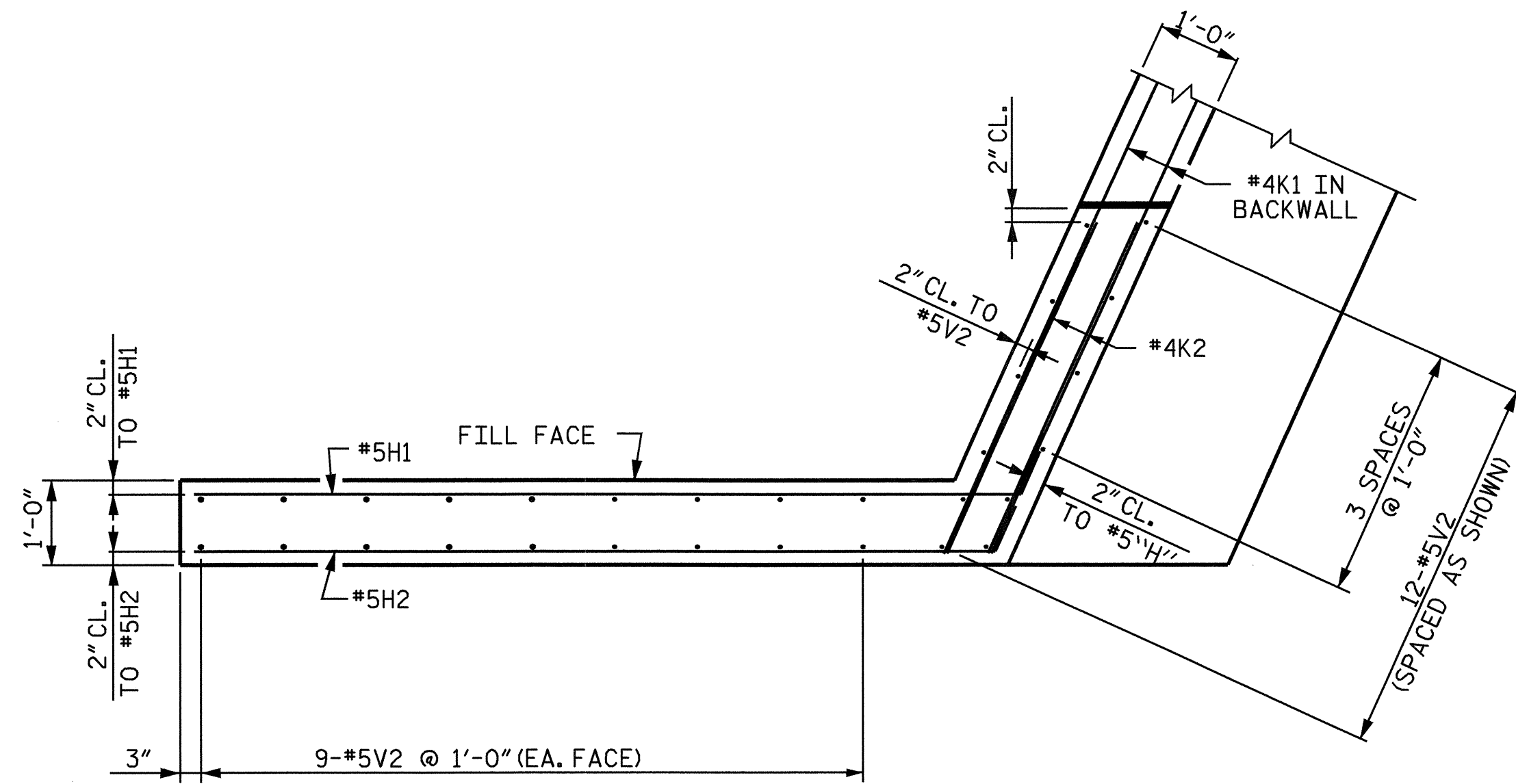
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE

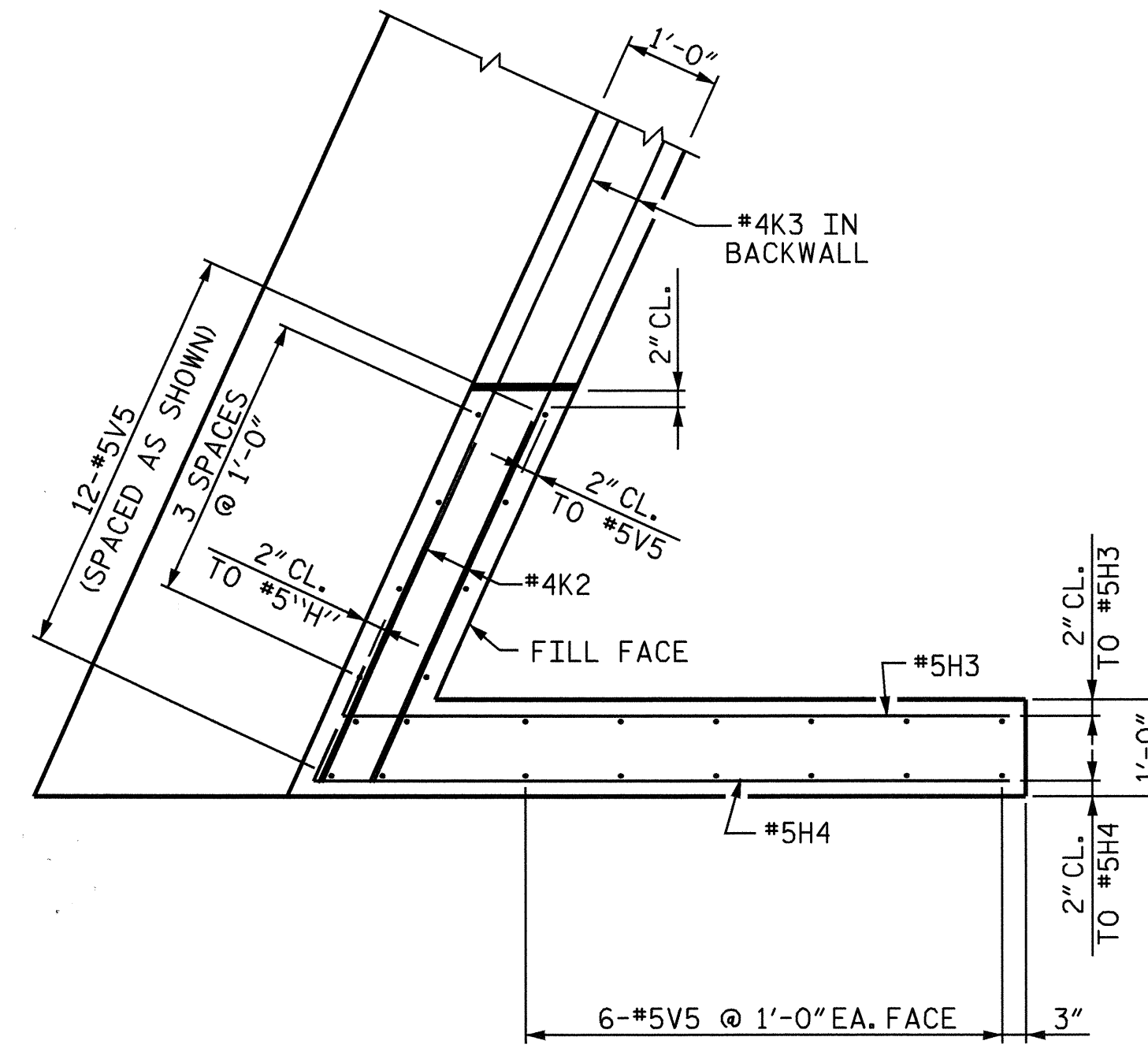
BENT #1
 (STAGE 2)

REVISIONS						SHEET NO. S-30
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 41
2			4			

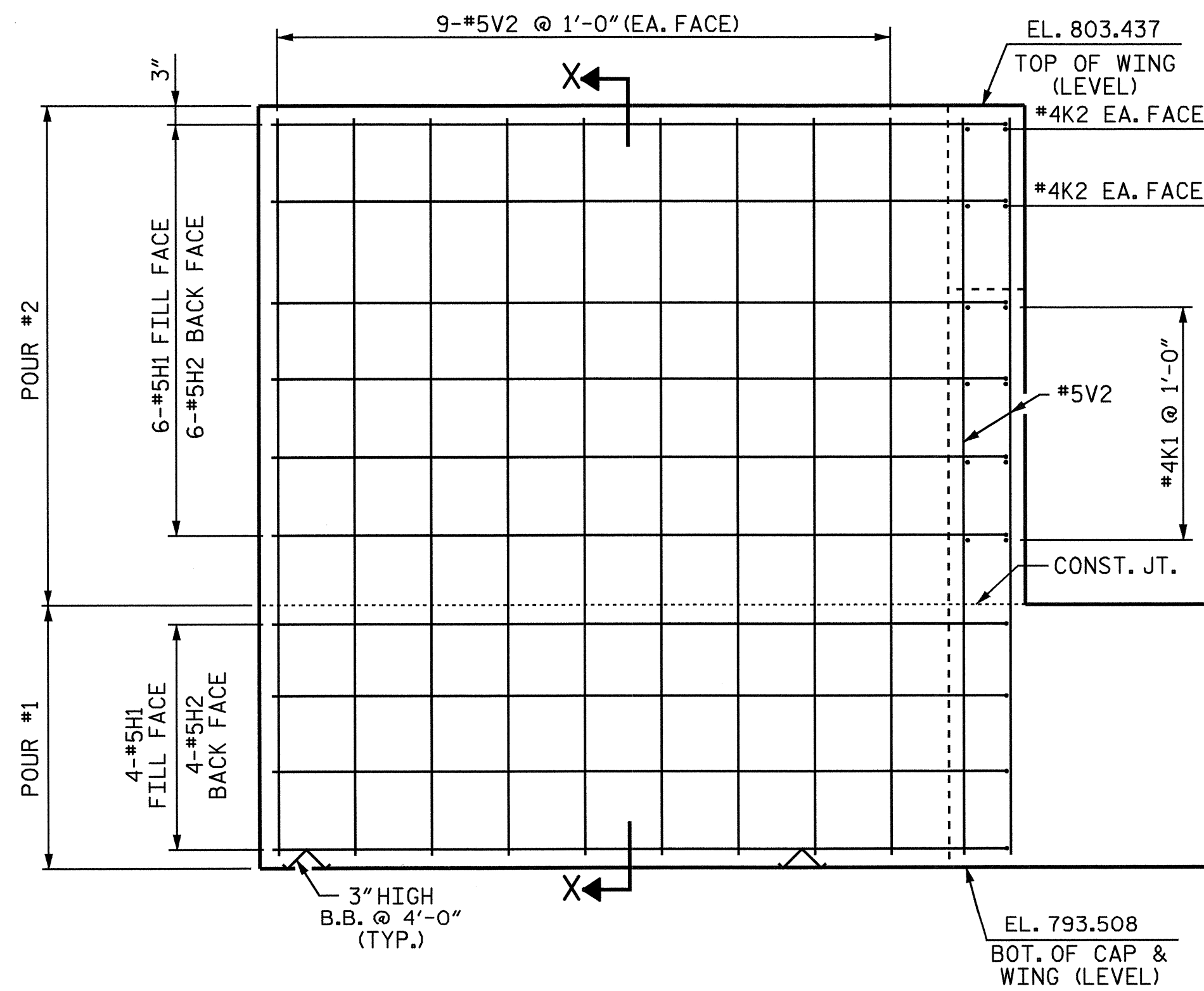
DRAWN BY: M.K. BEARD DATE: 5/07
 CHECKED BY: R.G. EMERSON DATE: 05/07



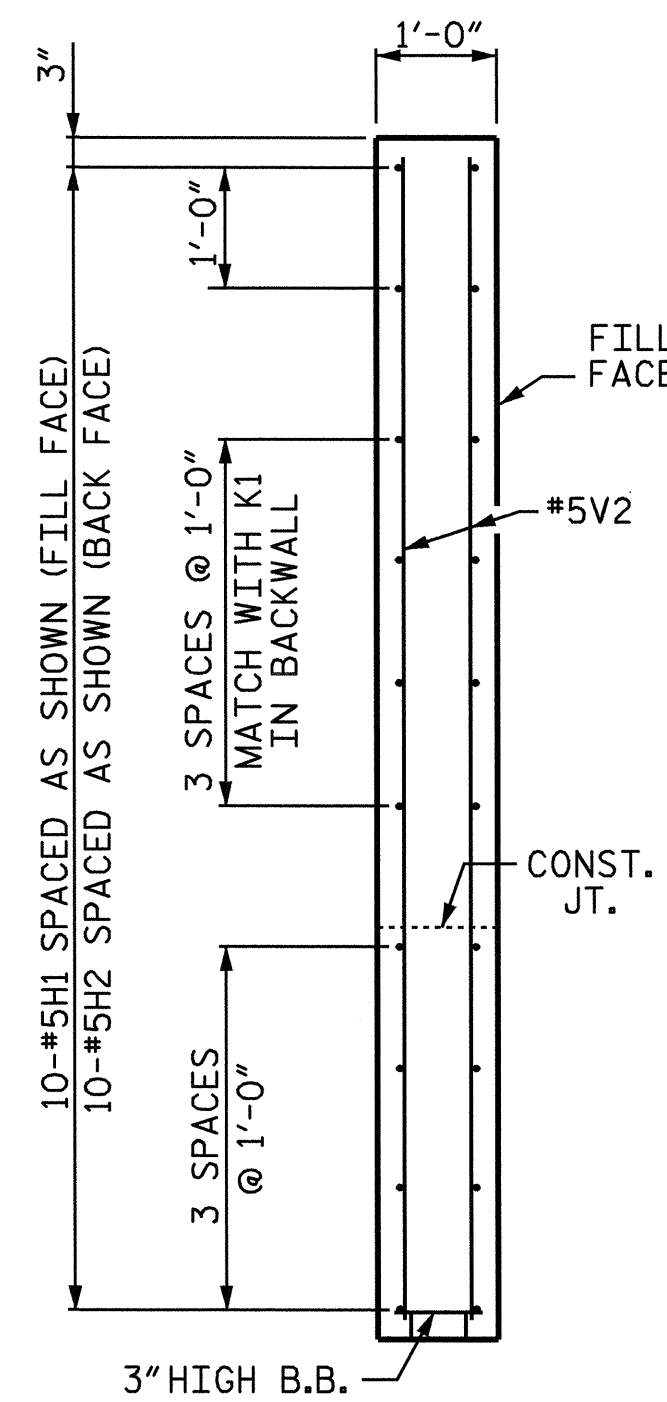
PLAN OF LEFT WING - (W1)
STAGE 1



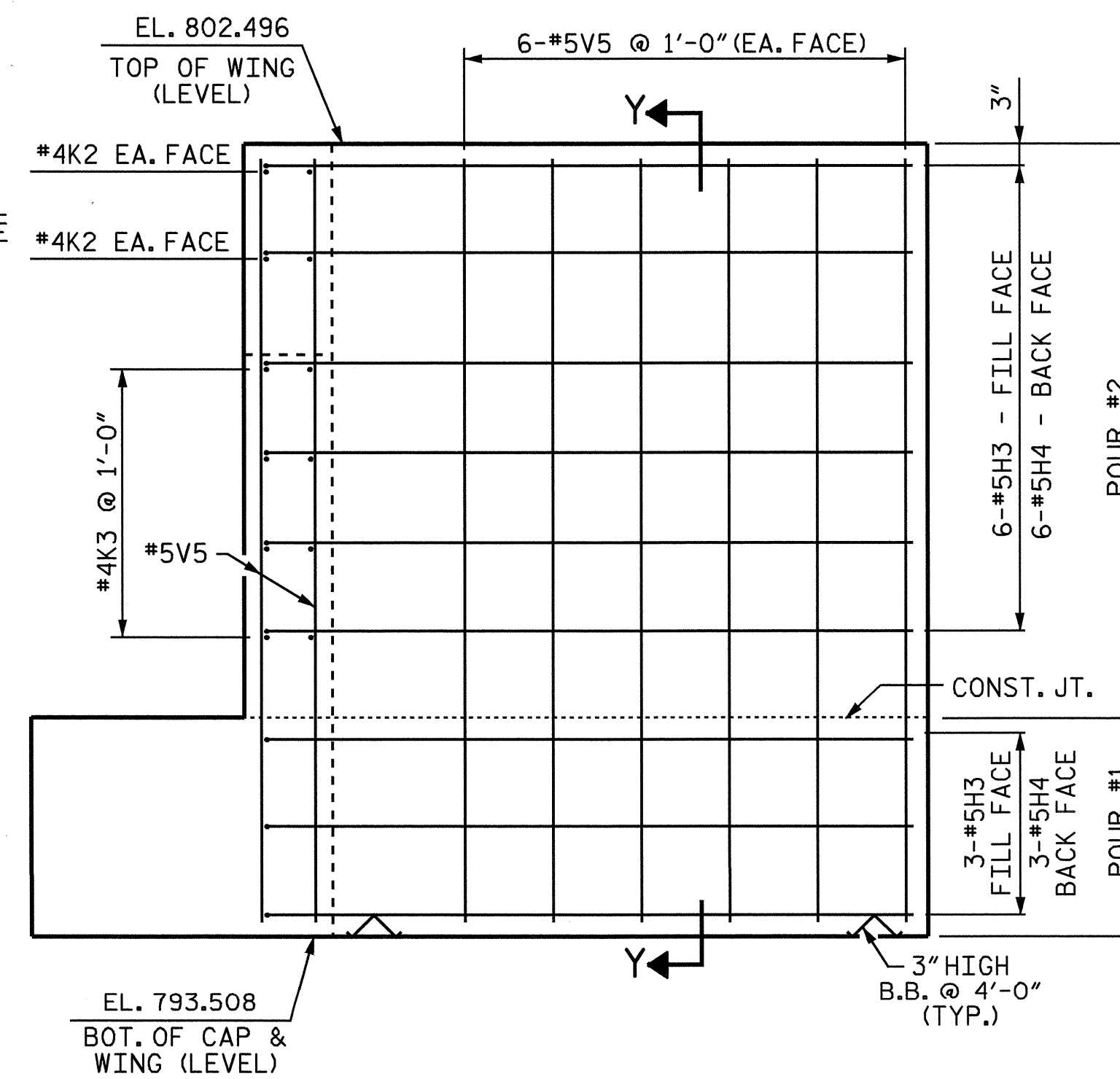
PLAN OF RIGHT WING - (W2)
STAGE 2



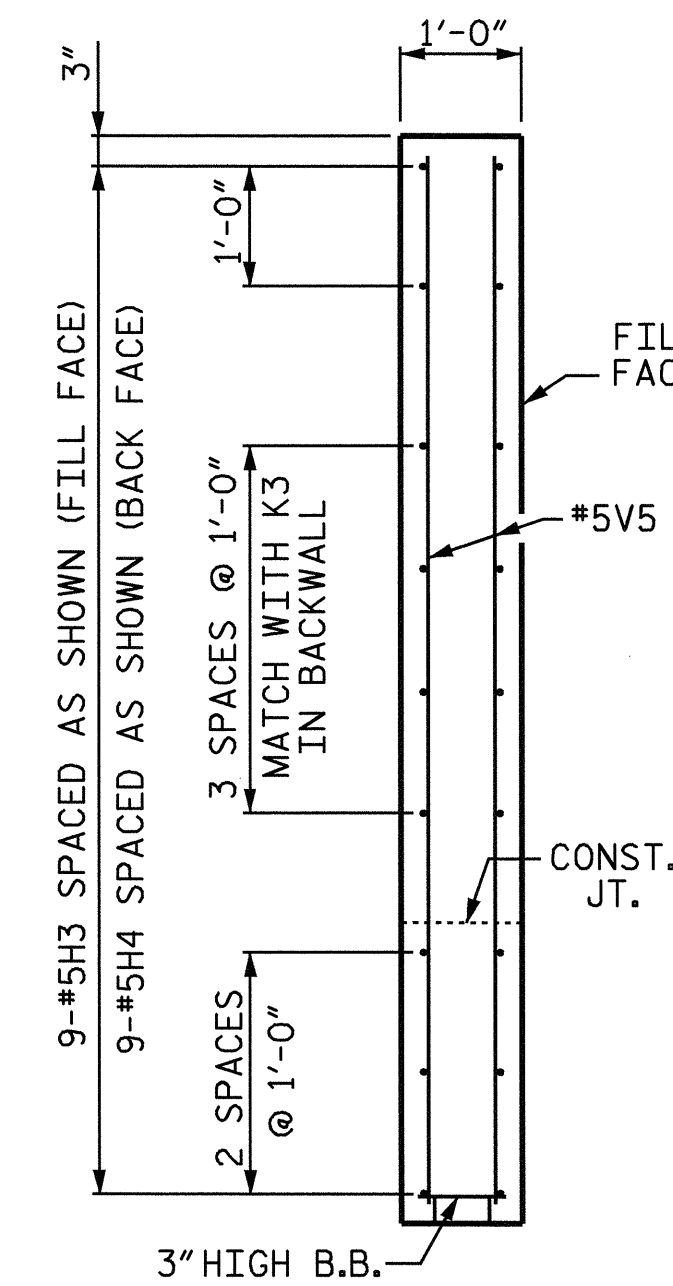
ELEVATION OF LEFT WING - (W1)
STAGE 1



SECTION X-X



ELEVATION OF RIGHT WING - (W2)
STAGE 2



SECTION Y-Y

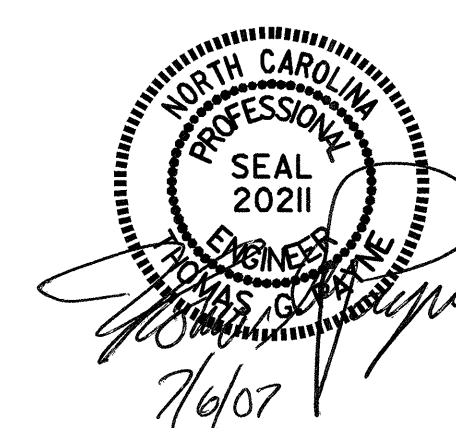
PROJECT NO. B-3637
DAVIE COUNTY
STATION: 32+25.27 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT #2

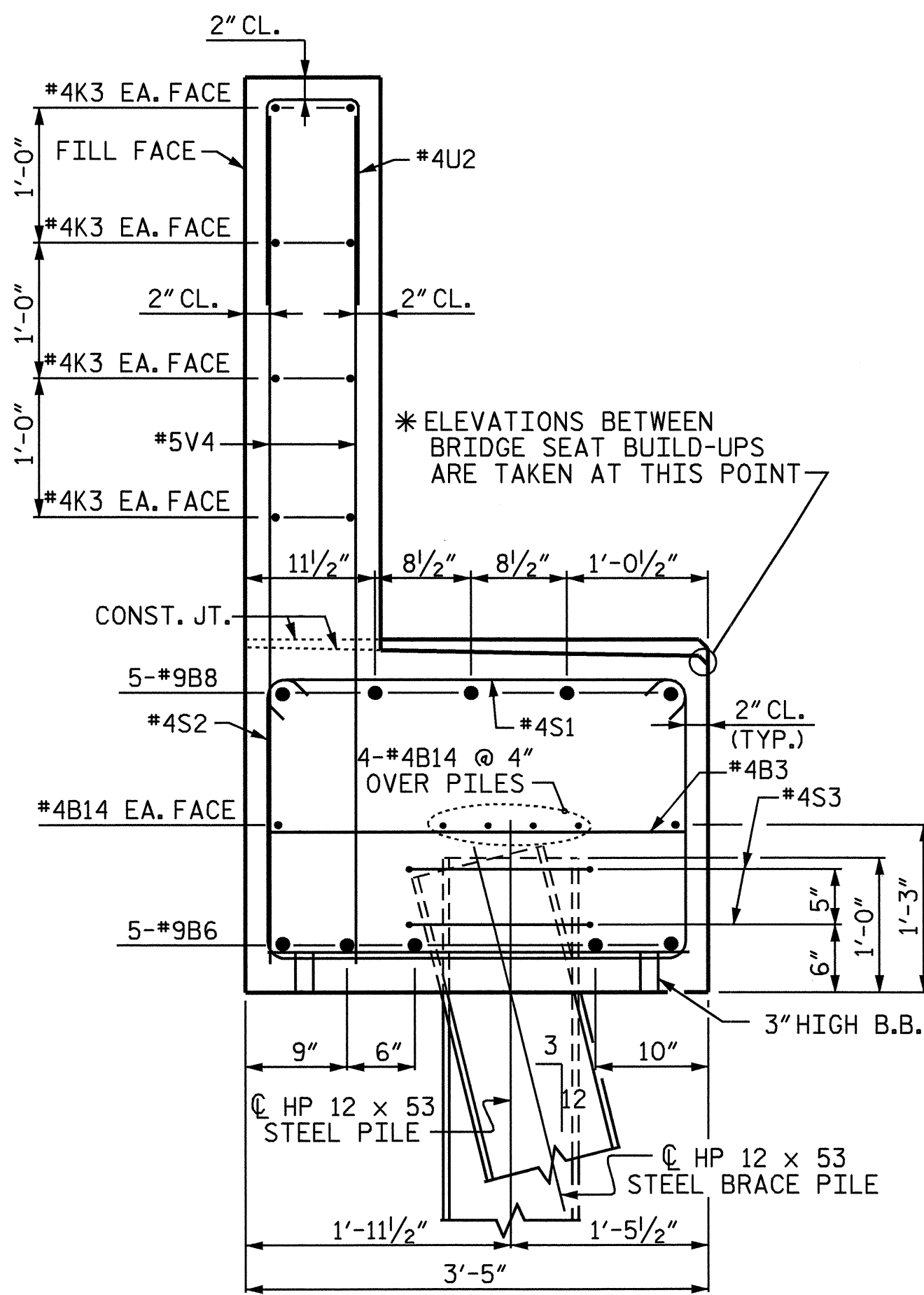
(STAGE 1 & 2)



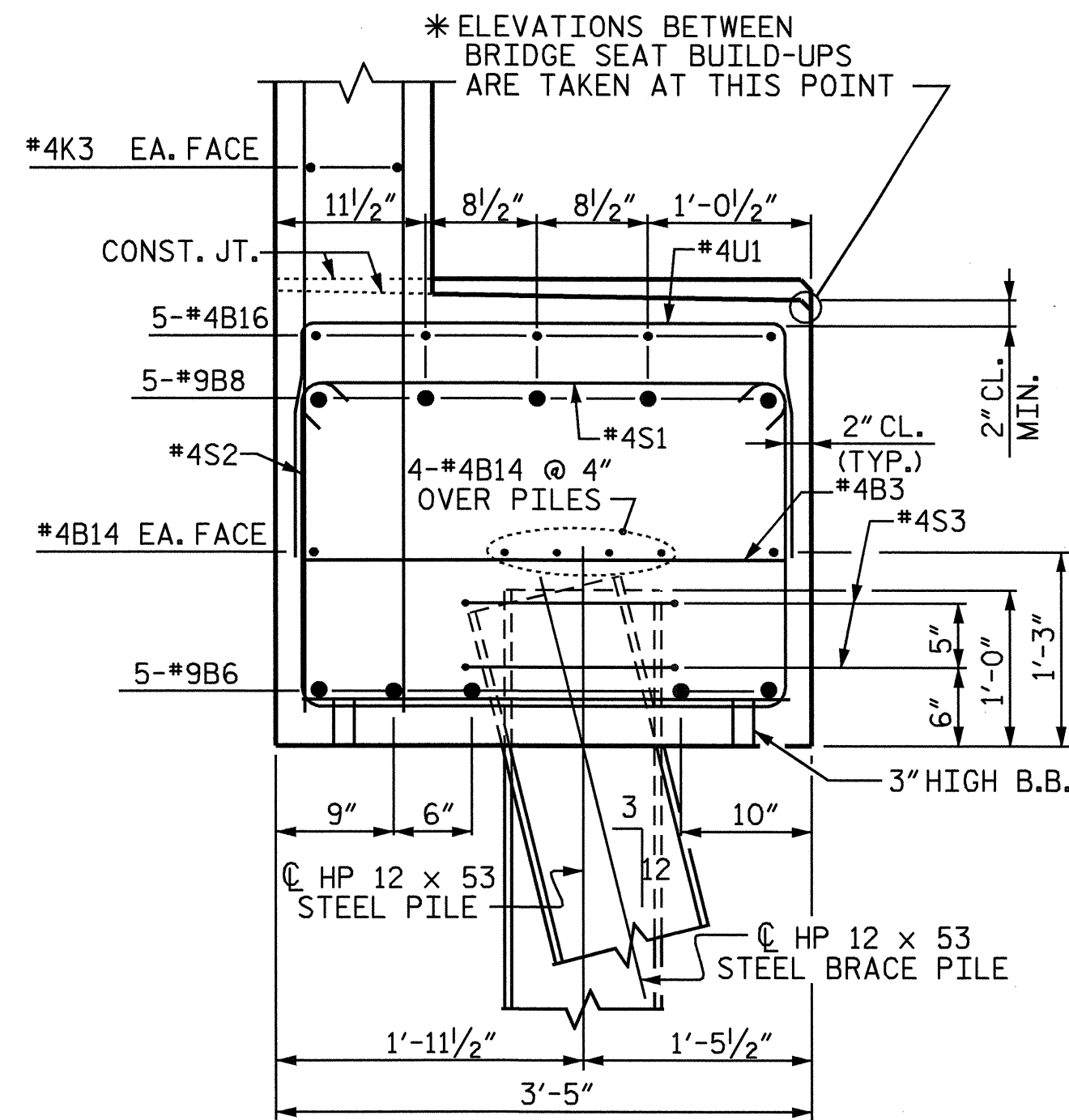
DRAWN BY: KEITH D. LAYNE DATE: 05/07
CHECKED BY: M. K. BEARD DATE: 05/07

06-JUL-2007 06:31
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klayne

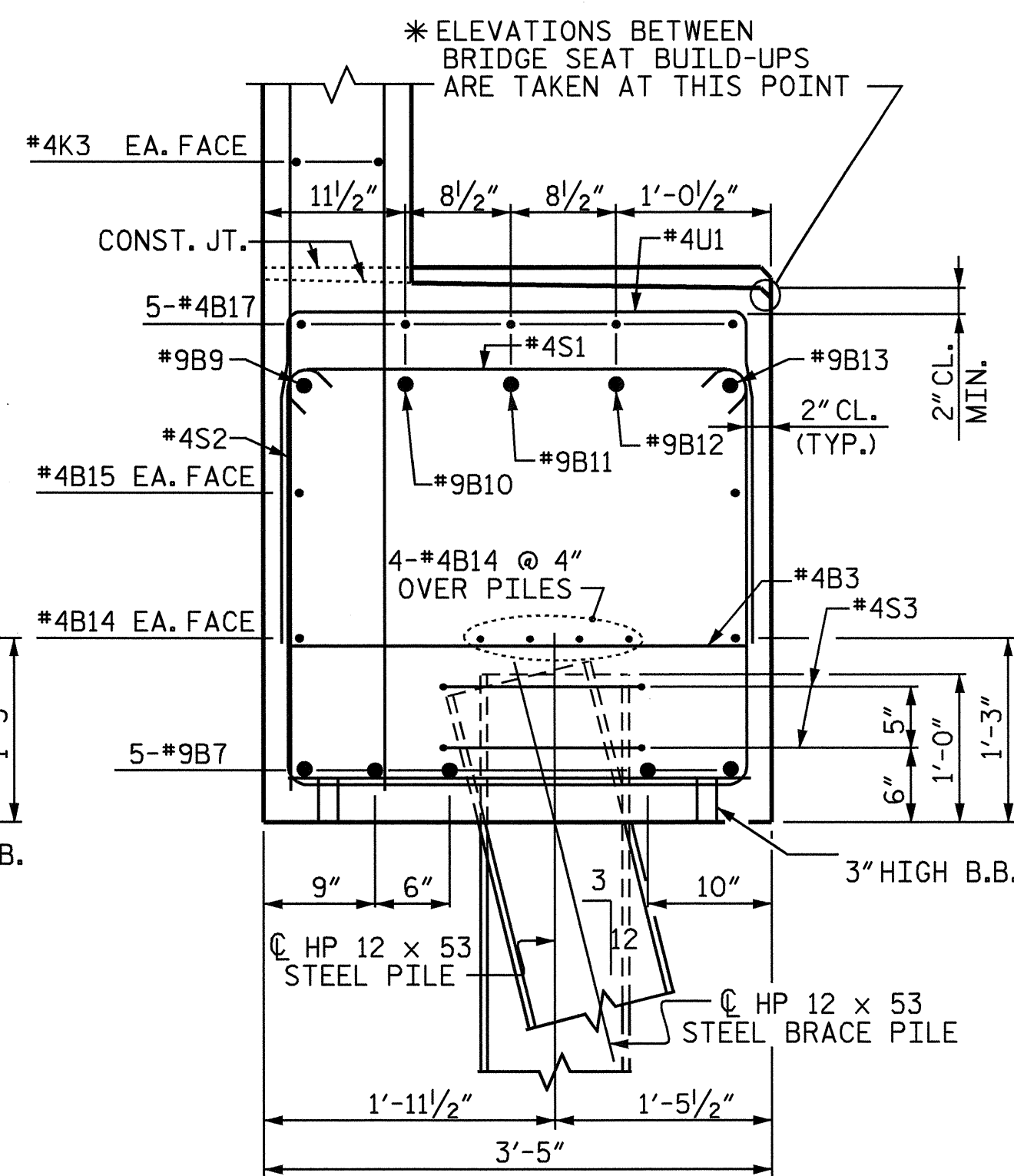
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-33	
1			3			TOTAL SHEETS	
2			4			41	



SECTION C-C



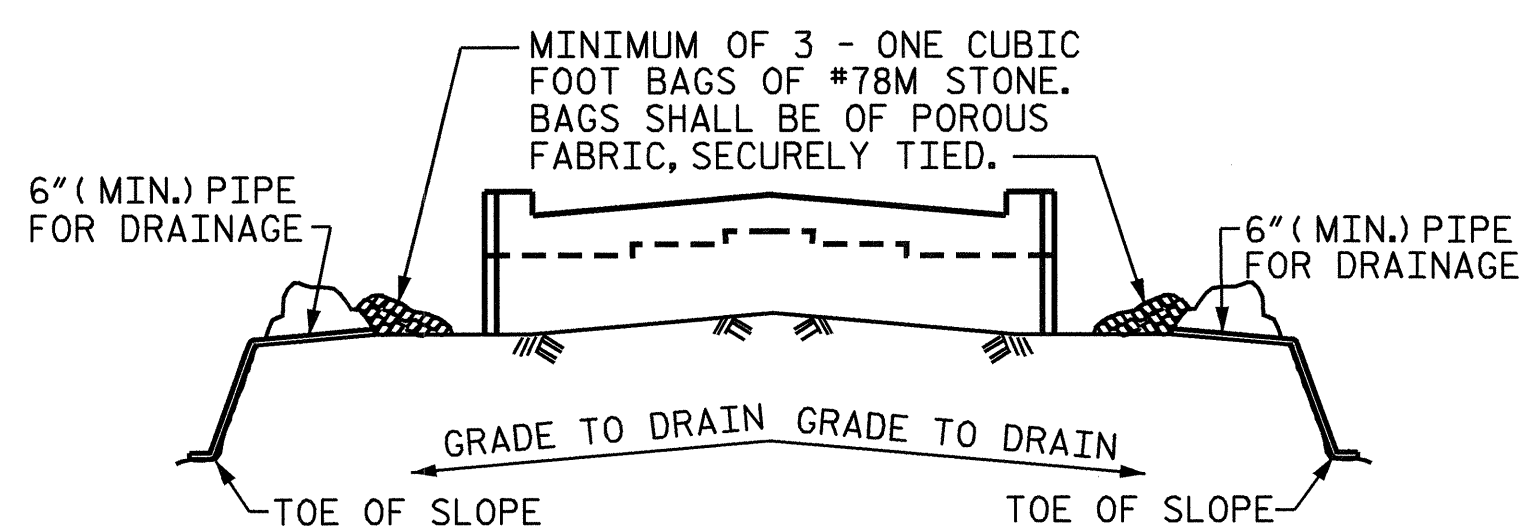
PARTIAL SECTION D-D



PARTIAL SECTION E-E

BAR TYPES		BILL OF MATERIAL				
		STAGE 2				
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT		
B3	19	4	STR.	3'-1"	39	
B5	10	4	STR.	2'-8"	18	
B6	5	9	1	41'-6"	706	
B7	5	9	STR.	40'-3"	684	
B8	5	9	1	53'-10"	915	
B9	1	9	STR.	31'-8"	108	
B10	1	9	STR.	31'-4"	107	
B11	1	9	STR.	31'-0"	105	
B12	1	9	STR.	30'-8"	104	
B13	1	9	STR.	30'-4"	103	
B14	18	4	STR.	26'-8"	321	
B15	2	4	STR.	24'-10"	33	
B16	5	4	STR.	21'-4"	71	
B17	5	4	STR.	12'-4"	41	
H3	9	5	2	7'-7"	71	
H4	9	5	2	7'-11"	74	
K2	4	4	STR.	3'-1"	8	
K3	24	4	STR.	26'-8"	428	
S1	89	4	3	3'-10"	228	
S2	35	4	4	9'-6"	222	
S3	28	4	5	6'-6"	122	
S4	54	4	4	8'-1"	292	
U1	28	4	6	6'-1"	114	
U2	70	4	6	3'-8"	171	
V3	70	5	STR.	6'-10"	499	
V4	70	5	STR.	6'-2"	450	
V5	24	5	STR.	8'-6"	213	
REINFORCING STEEL				Lbs.	6,247	
CLASS A CONCRETE						
POUR #1				Cu. yds.	30.2	
POUR #2				Cu. yds.	13.2	
TOTAL				Cu. yds.	43.4	
HP12x53 STEEL PILES						
No. 13				LIN. FT.	1,300	

ALL BAR DIMENSIONS ARE OUT TO OUT.

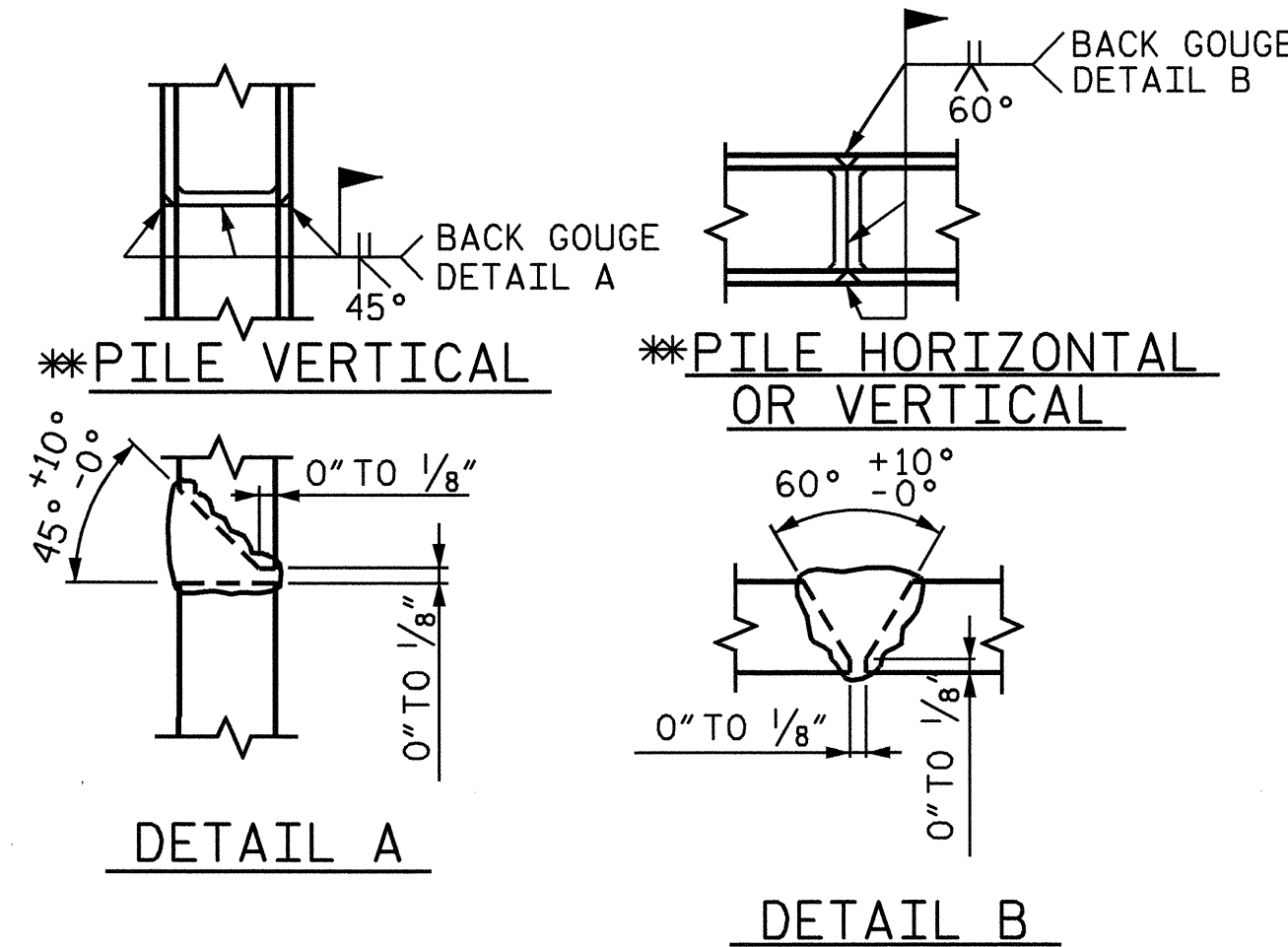


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS

**POSITION OF PILE DURING WELDING.

TOTAL QUANTITIES STAGE 1 & 2			
	REINFORCING STEEL	CLASS A CONCRETE	HP 12x53 STEEL PILES
	LBS.	C.Y.	NO. LIN. FT.
STAGE 1	4,261	33.2	10 1,000
STAGE 2	6,247	43.4	13 1,300
TOTAL	10,508	76.6	23 2,300

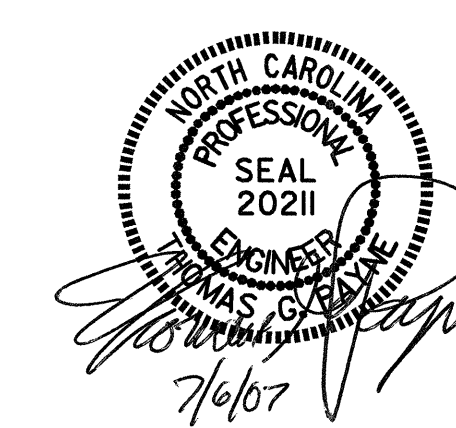
PROJECT NO. B-3637
 DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #2

(STAGE 2)



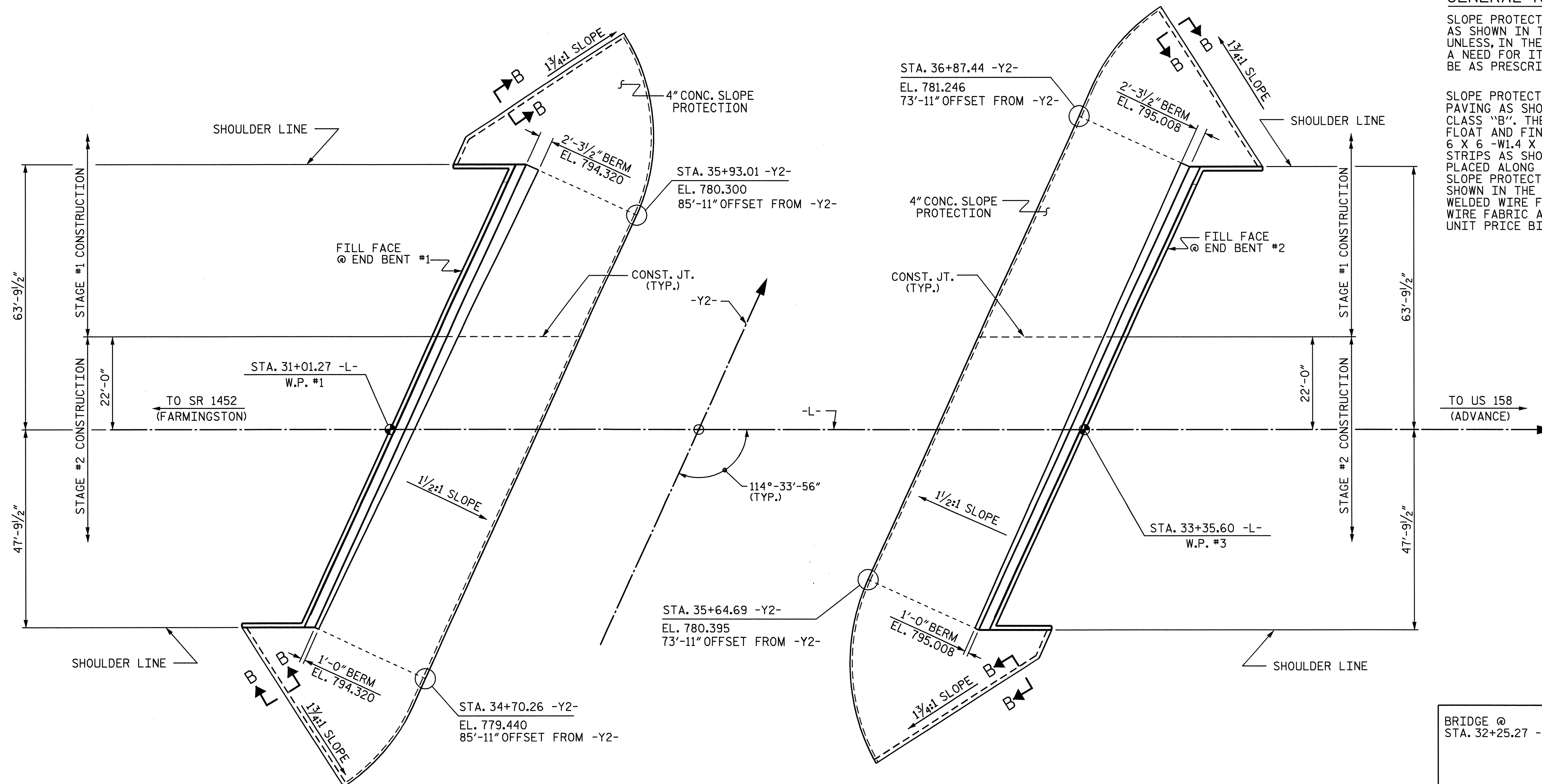
DRAWN BY: KEITH D. LAYNE DATE: 05/07
 CHECKED BY: M. K. BEARD DATE: 05/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-35
1			3			TOTAL SHEETS
2			4			41

GENERAL NOTES

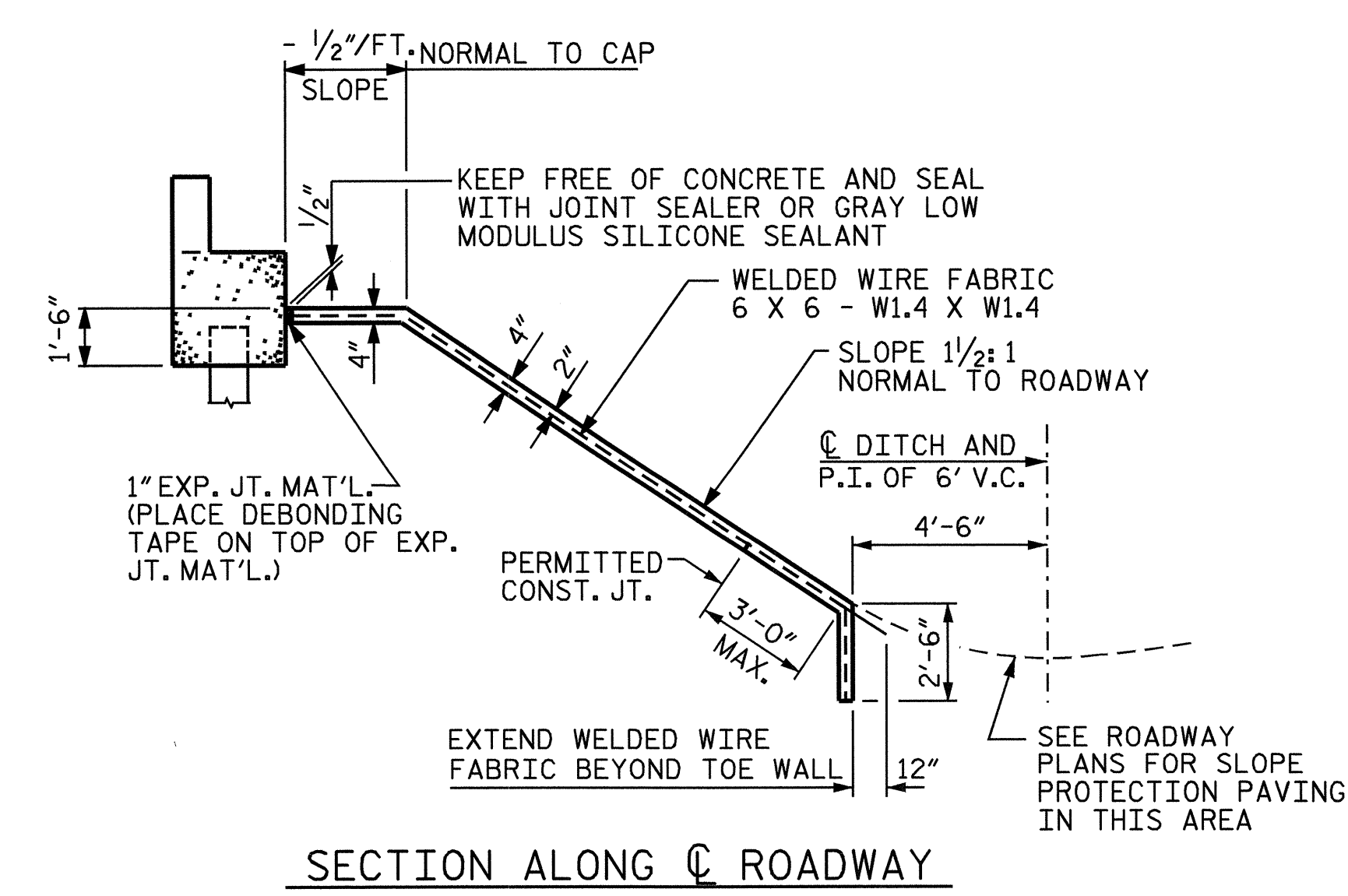
SLOPE PROTECTION SHALL BE PLACED UNDER THE ENDS OF THE BRIDGE AS SHOWN IN THE DETAILS. STRAIGHT EDGING WILL NOT BE REQUIRED UNLESS, IN THE OPINION OF THE ENGINEER, VISUAL INSPECTION INDICATES A NEED FOR IT. METHOD OF MEASUREMENT AND BASIS OF PAYMENT SHALL BE AS PRESCRIBED IN SECTION 462 OF THE STANDARD SPECIFICATIONS.

SLOPE PROTECTION SHALL CONSIST OF 4" POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS "B". THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 -W1.4 X W1.4, 60" WIDE. SLOPE PROTECTION SHALL BE POURED IN 5' STRIPS AS SHOWN IN THE "POURING DETAIL" WITH 2'-0" LONG #4 BARS PLACED ALONG THE SLOPE BETWEEN STRIPS AT 1'-6" MAXIMUM SPACING. SLOPE PROTECTION MAY BE POURED IN ALTERNATE 4' AND 5' STRIPS AS SHOWN IN THE "OPTIONAL POURING DETAIL" WITH ADJACENT RUNS OF WELDED WIRE FABRIC LAPPING AT LEAST 6". THE COST OF THE WELDED WIRE FABRIC AND #4 BARS, IF USED, SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR SLOPE PROTECTION.

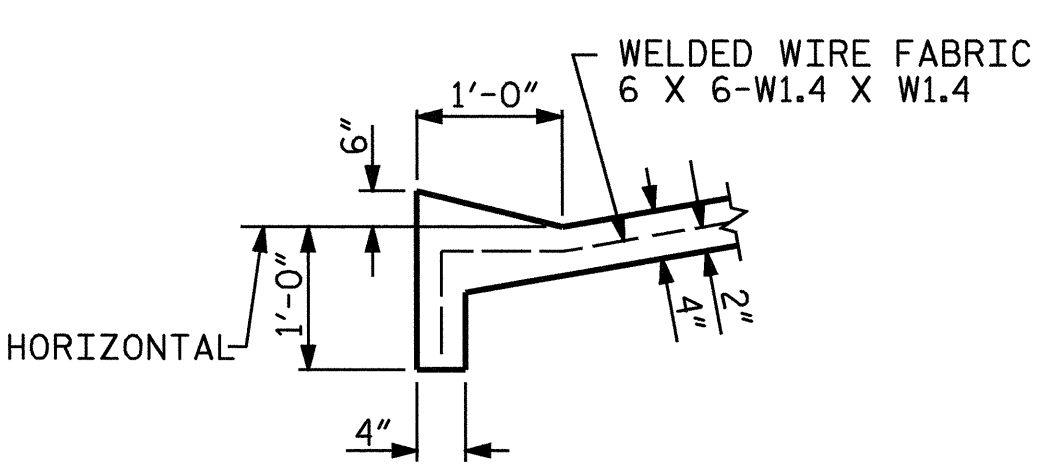


PLAN OF SLOPE PROTECTION

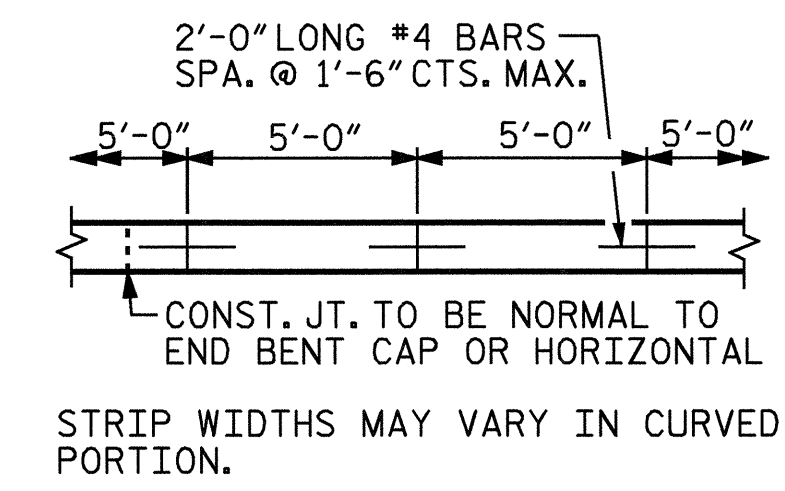
BRIDGE @ STA. 32+25.27 -L-	4 INCH SLOPE PROTECTION			WELDED WIRE FABRIC 60 INCHES WIDE		
	SQUARE YARDS			APPROX. L.F.		
	STAGE 1	STAGE 2	TOTAL	STAGE 1	STAGE 2	TOTAL
END BENT #1	227	366	593	454	732	1186
END BENT #2	265	323	588	530	646	1176
TOTAL			1181			2362



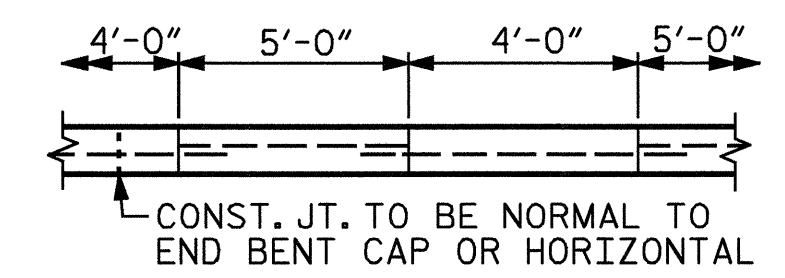
SECTION ALONG ROADWAY



SECTION B-B



POURING DETAIL



OPTIONAL POURING DETAIL

PROJECT NO. B-3637
 DAVIE COUNTY
 STATION: 32+25.27 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

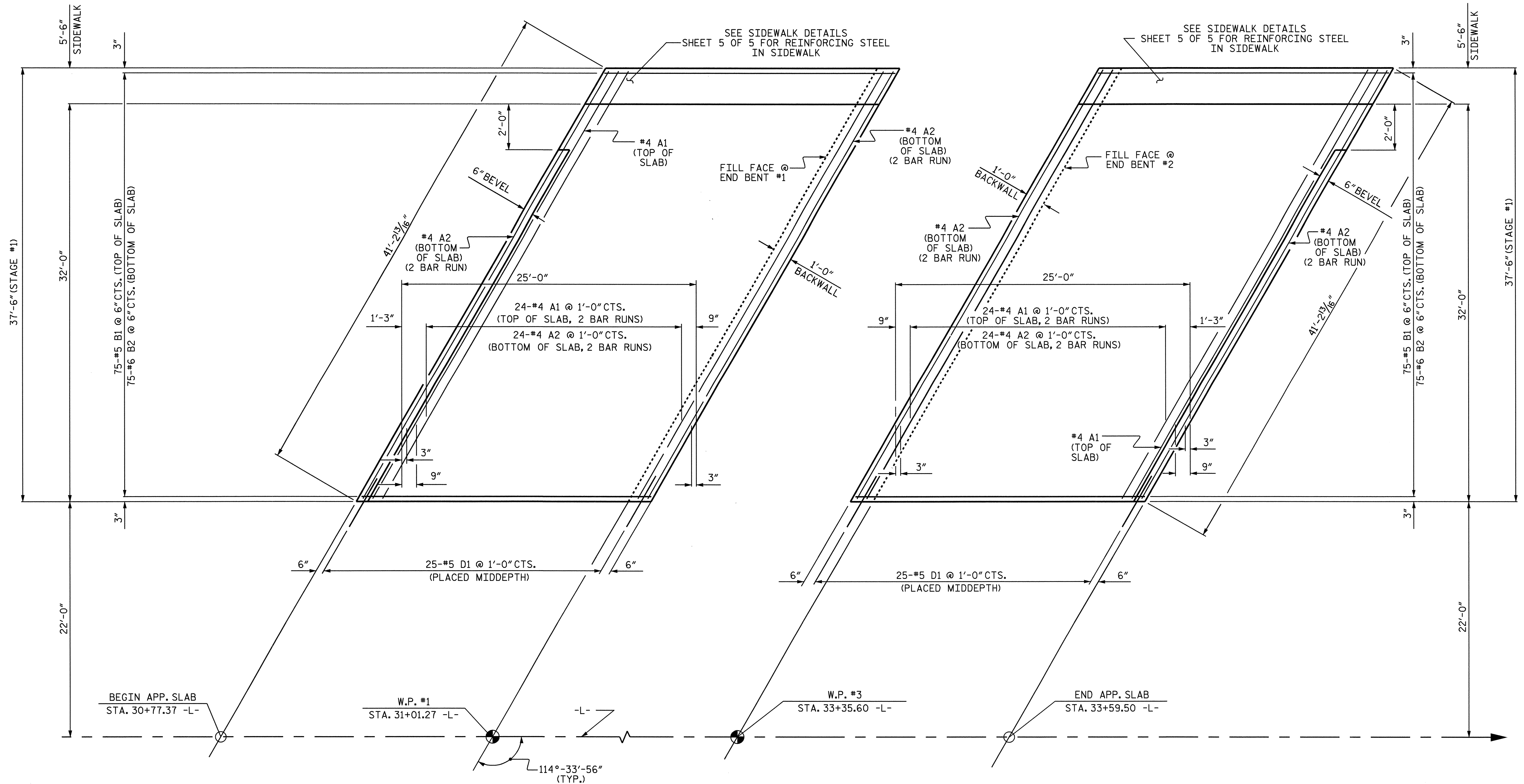
SLOPE PROTECTION DETAILS

REVISIONS

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

SHEET NO. S-36
 TOTAL SHEETS 41

DRAWN BY: R. G. EMERSON /AC DATE: 03/07
 CHECKED BY: K. D. LAYNE DATE: 04/07



PLAN @ END BENT #1
STAGE #1

PLAN @ END BENT #2
STAGE #1

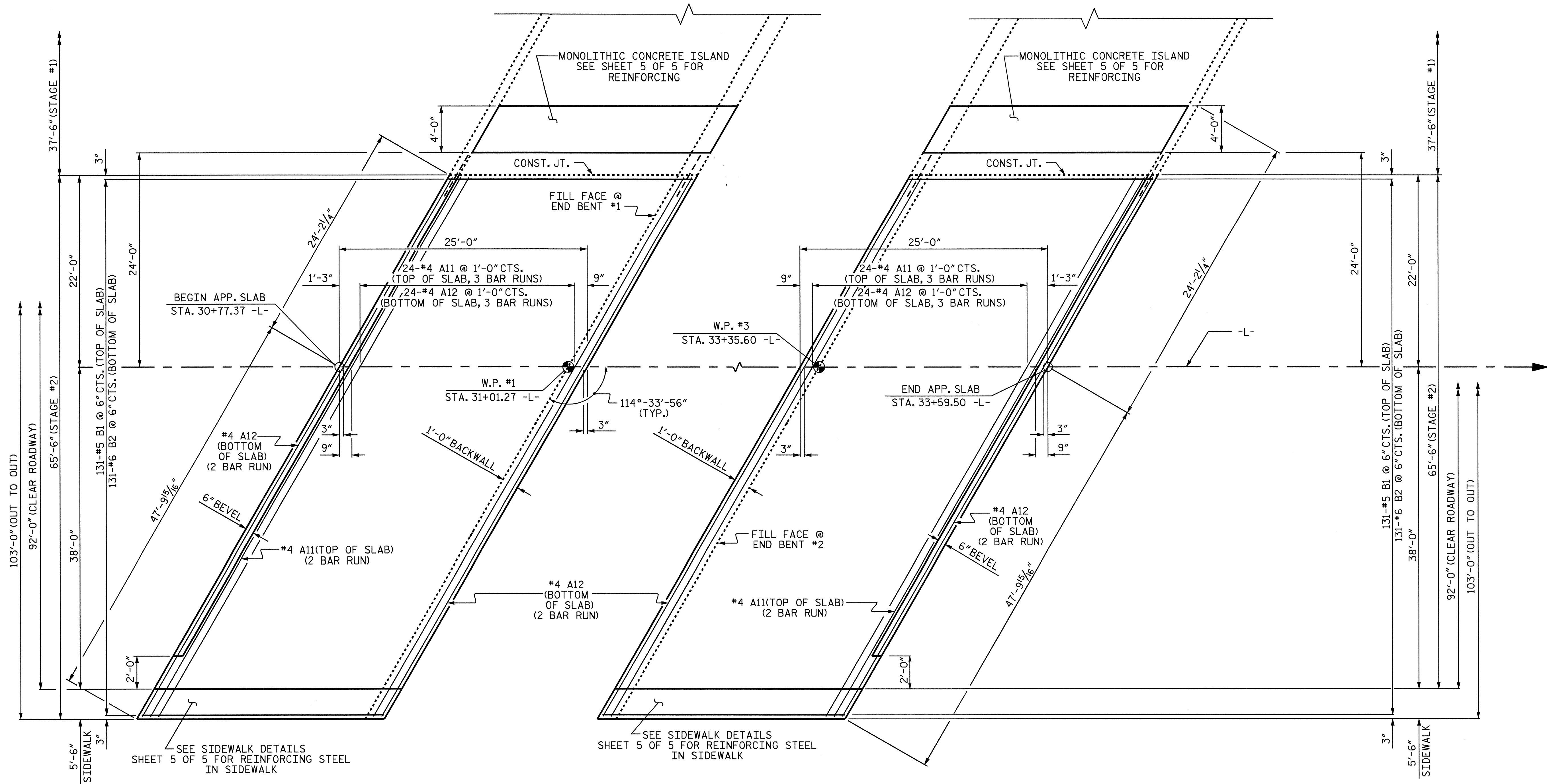
PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 1 OF 5
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 BRIDGE APPROACH
 SLAB FOR FLEXIBLE
 PAVEMENT
 STAGE #1



DRAWN BY : R. G. EMERSON DATE : 02/07
 CHECKED BY : K. D. LAYNE DATE : 03/07

REVISIONS						SHEET NO.	
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2			4			41	



PLAN @ END BENT #1
STAGE #2

PLAN @ END BENT #2
STAGE #2

PROJECT NO. B-3637
DAVIE COUNTY
 STATION: 32+25.27 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH
 SLAB FOR FLEXIBLE
 PAVEMENT
 STAGE #2



REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-38	
1			3			TOTAL SHEETS	
2			4			41	

DRAWN BY: R. G. EMERSON DATE: 02/07
 CHECKED BY: K. D. LAYNE DATE: 03/07

06-JUL-2007 06:30
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NOTES

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

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

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

THE 6" COMP. A.B.C. SHALL EXTEND 10'-0" BEYOND THE END OF THE APPROACH SLAB AND 1'-0" OUTSIDE OF EACH EDGE OF SLAB.

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL EXTEND 1'-0" BEYOND THE END OF THE APPROACH SLAB AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL EXTEND 1'-0" BEYOND THE END OF THE APPROACH SLAB AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE SIDEWALK.

PAYMENT FOR APPROACH SLAB GROOVING IS INCLUDED IN THE "GROOVING BRIDGE FLOORS" PAY ITEM.

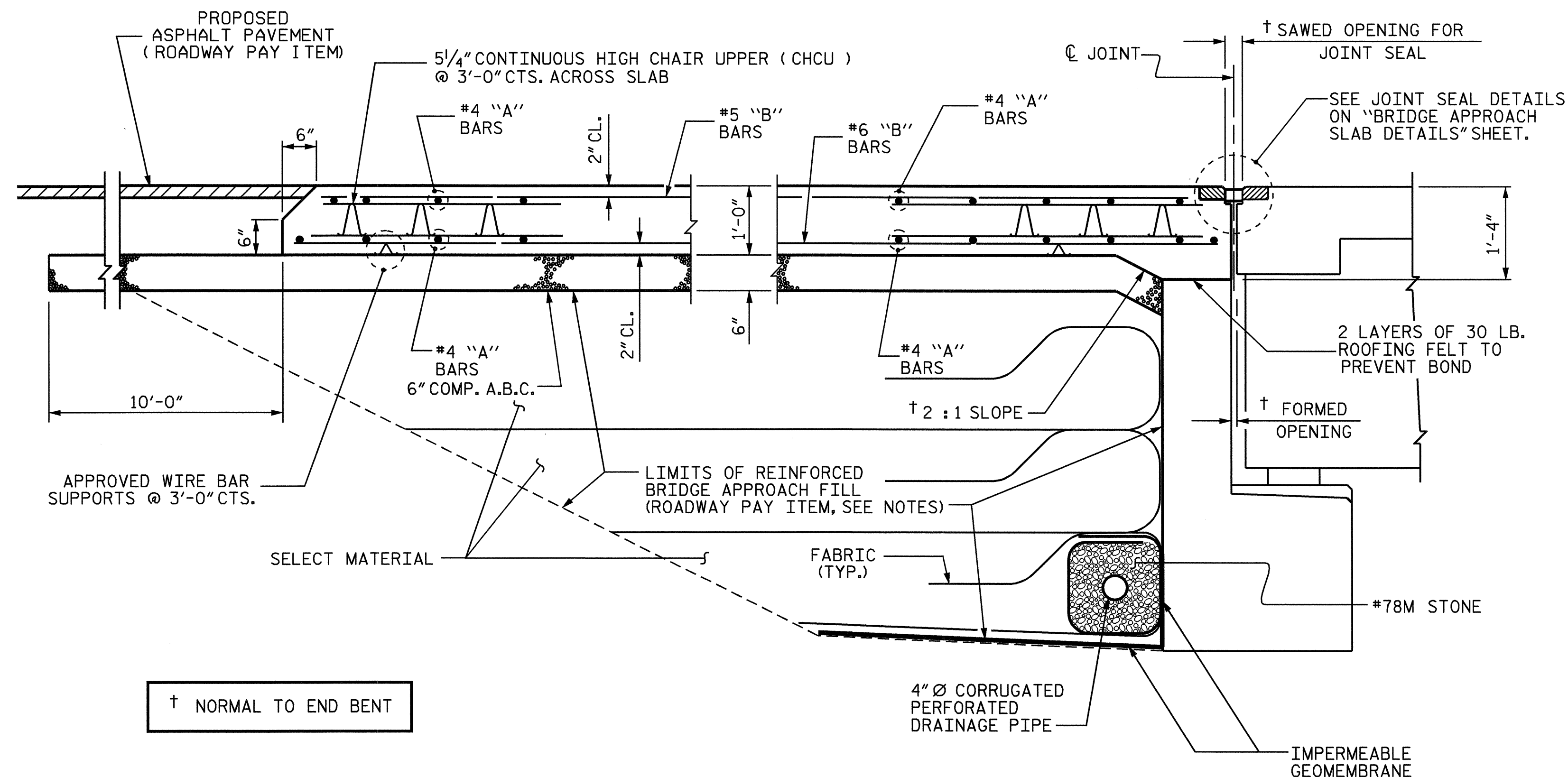
WITH EVAZOTE JOINT SEAL

FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

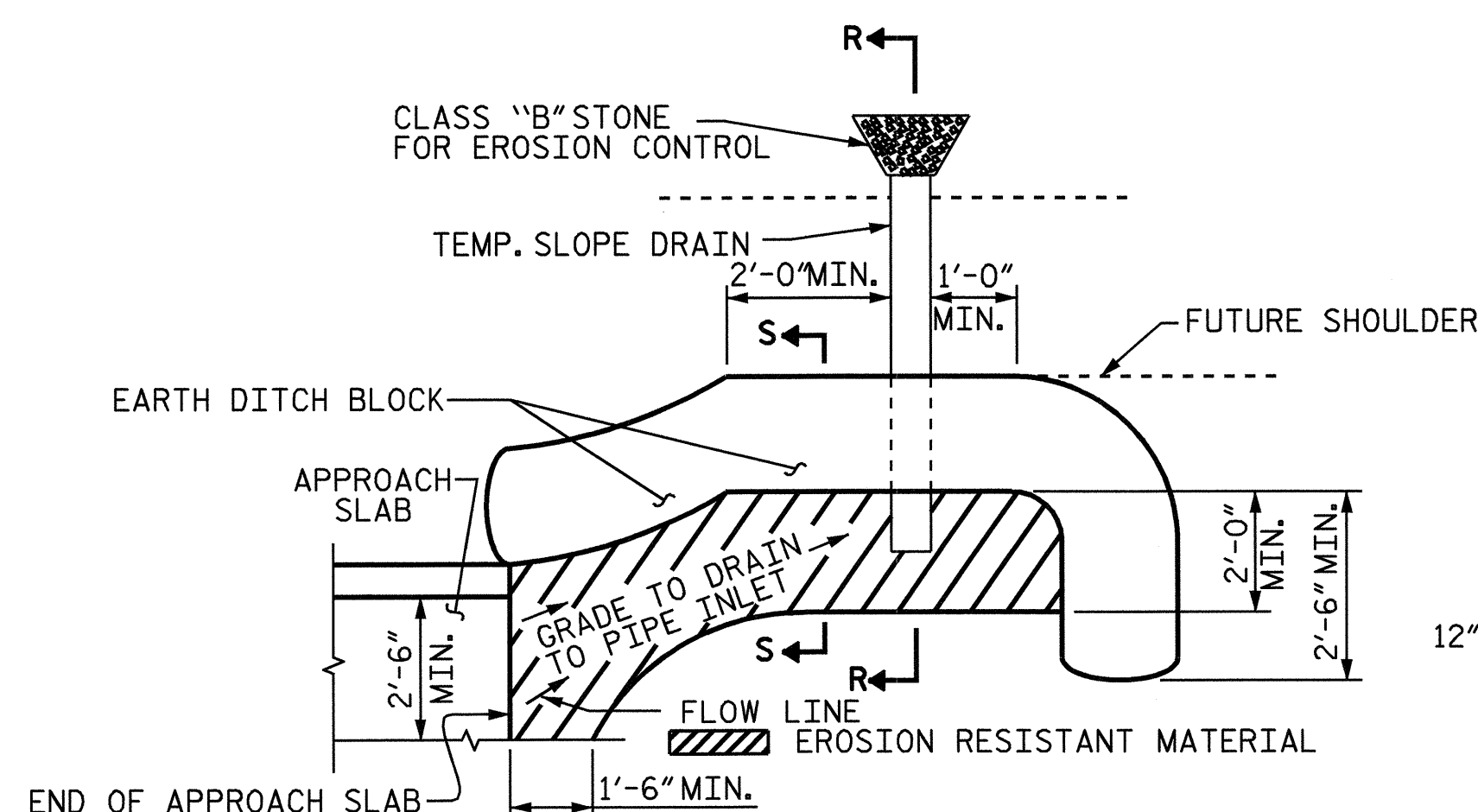
THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE EVAZOTE JOINT SEAL SHALL BE 2 1/2".

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

PAYMENT FOR THE ELASTOMERIC CONCRETE SHALL BE INCLUDED IN THE LUMP SUM PAY ITEM "EVAZOTE JOINT SEALS".

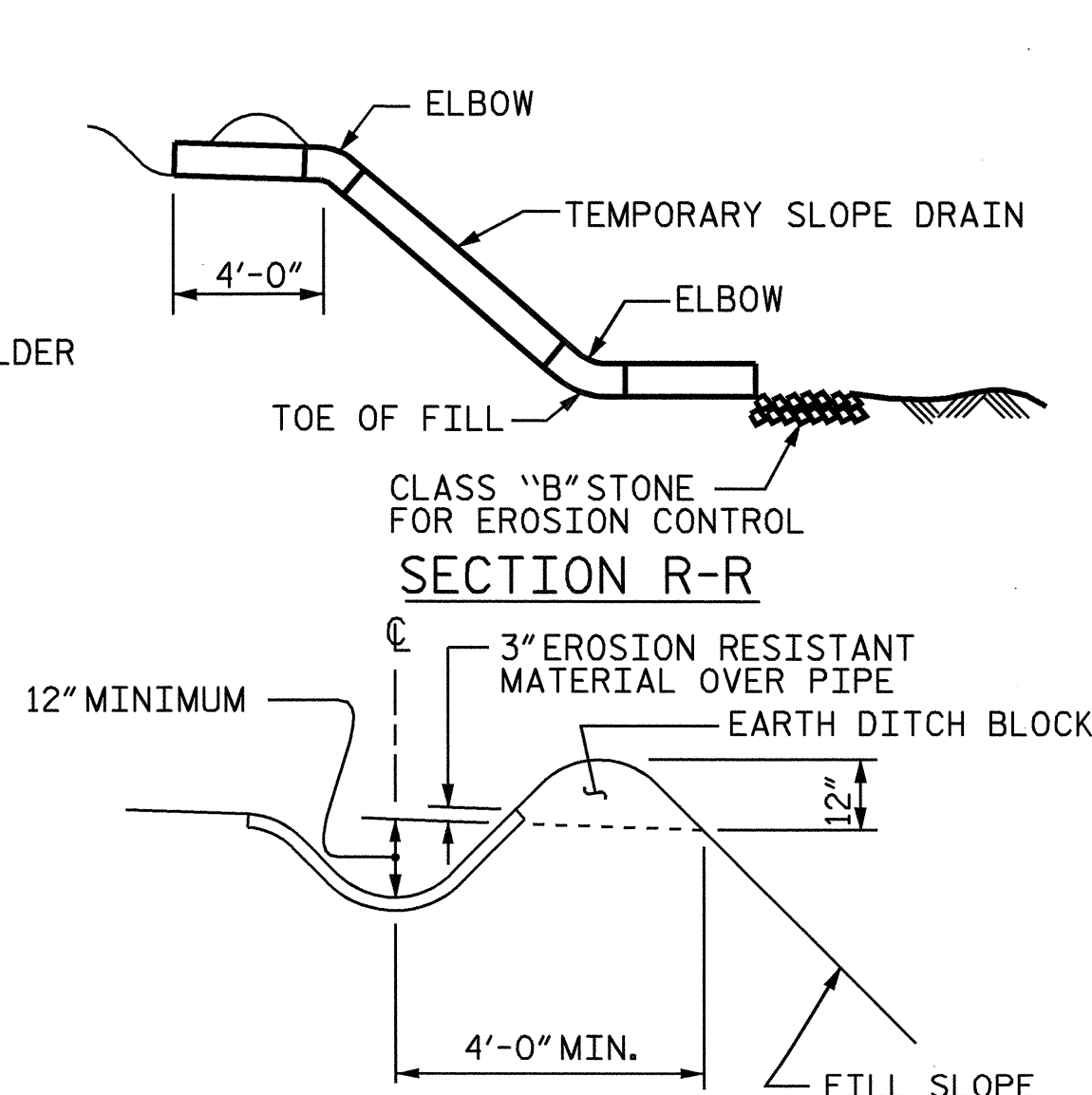


SECTION THRU SLAB

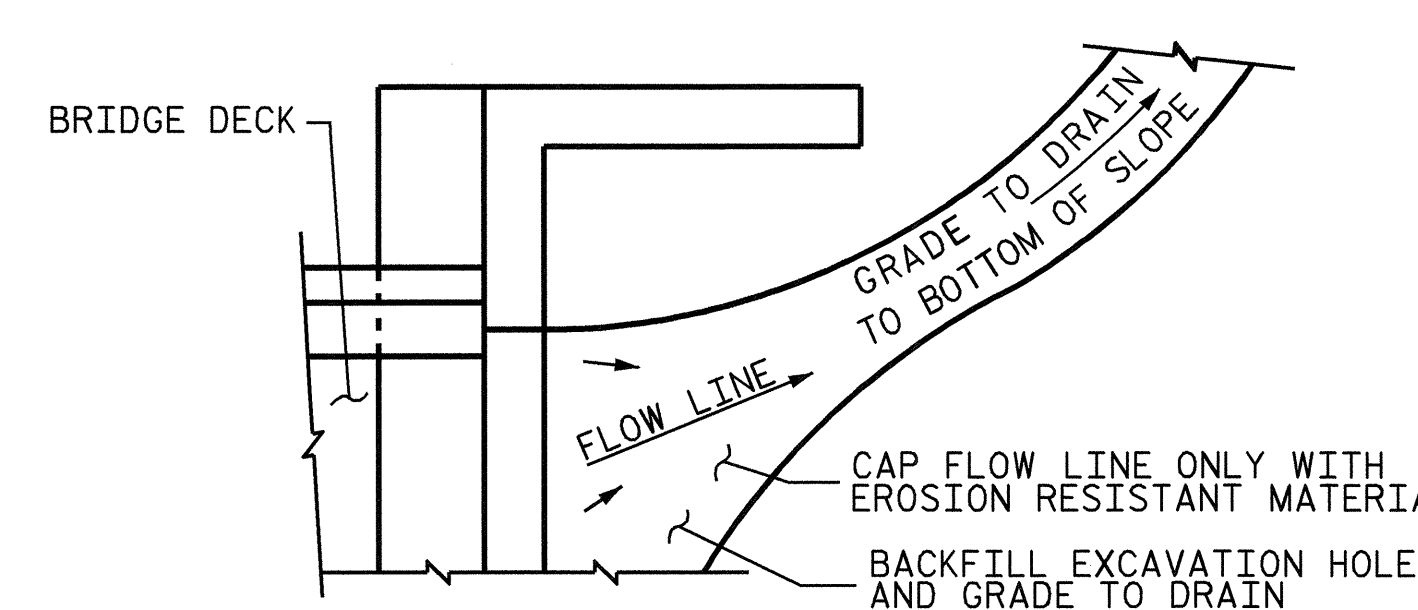


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

PLAN VIEW



SECTION S-S



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

TEMPORARY DRAINAGE DETAIL

TEMPORARY BERM AND SLOPE DRAIN DETAILS

DRAWN BY : R. G. EMERSON DATE : 02/07
CHECKED BY : K. D. LAYNE DATE : 03/07

06-JUL-2007 06:30
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PROJECT NO. B-3637
DAVIE COUNTY
STATION: 32+25.27 -L-

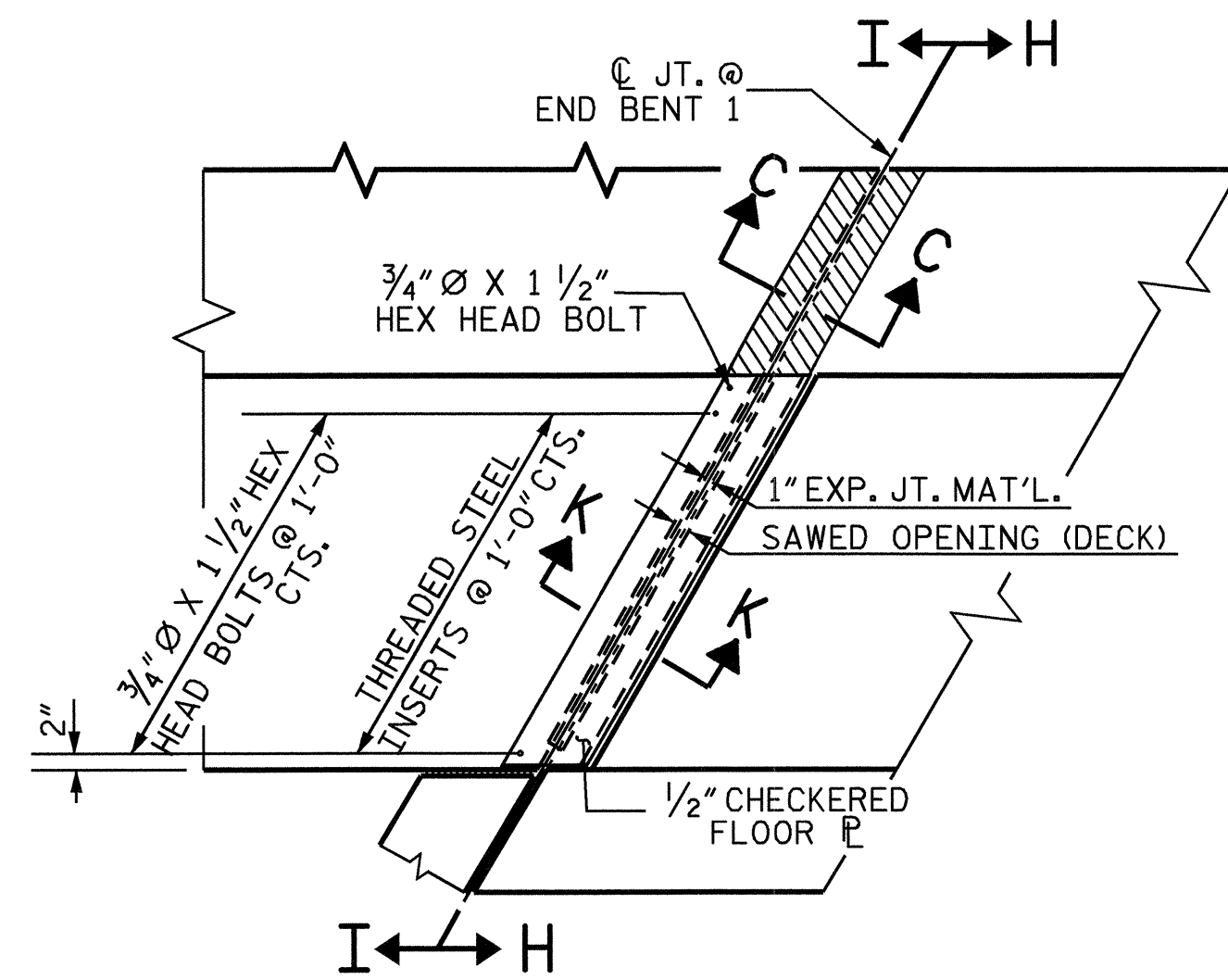
SHEET 3 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**BRIDGE APPROACH
SLAB FOR FLEXIBLE
PAVEMENT**

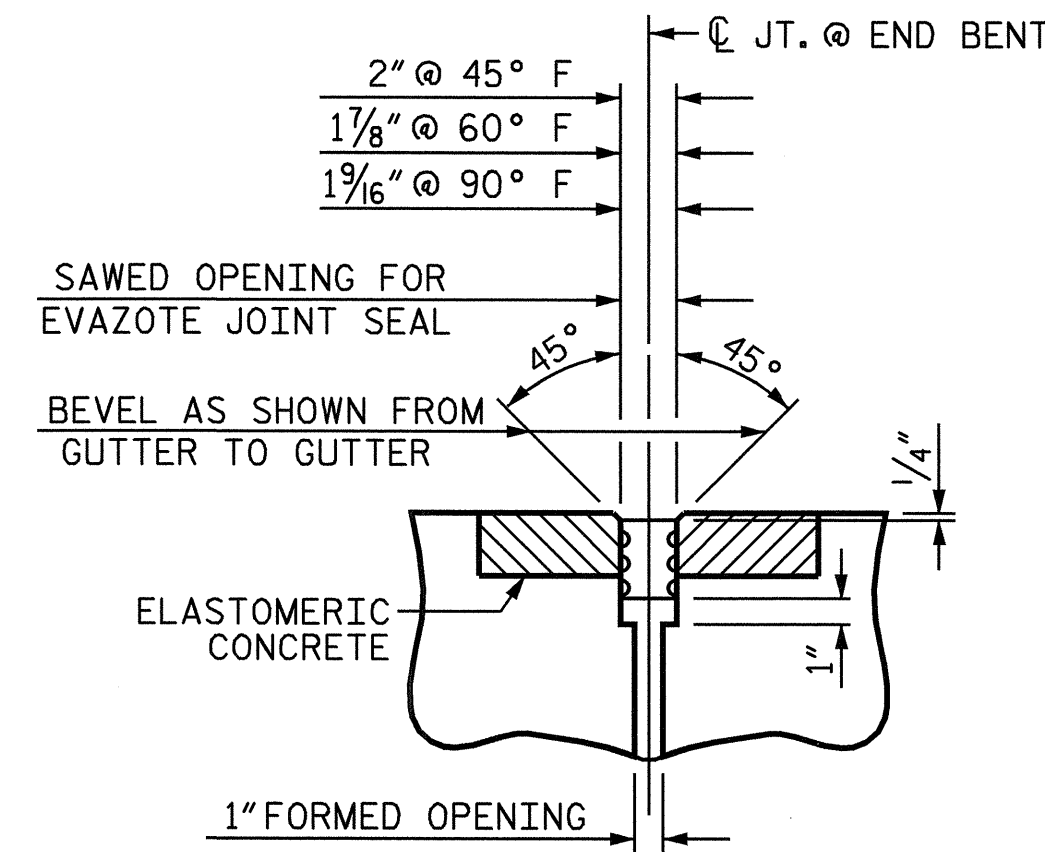


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1			3			TOTAL SHEETS
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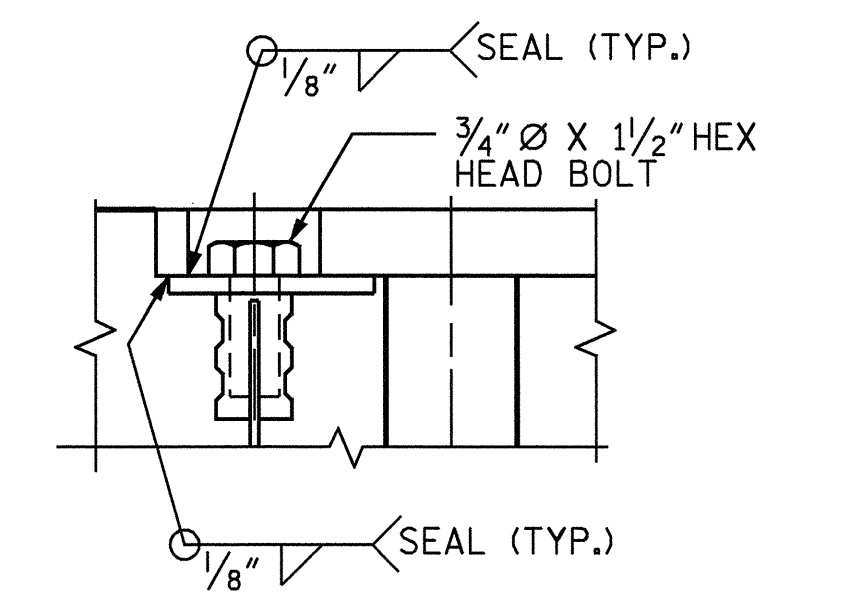


PLAN VIEW OF EVAZOTE

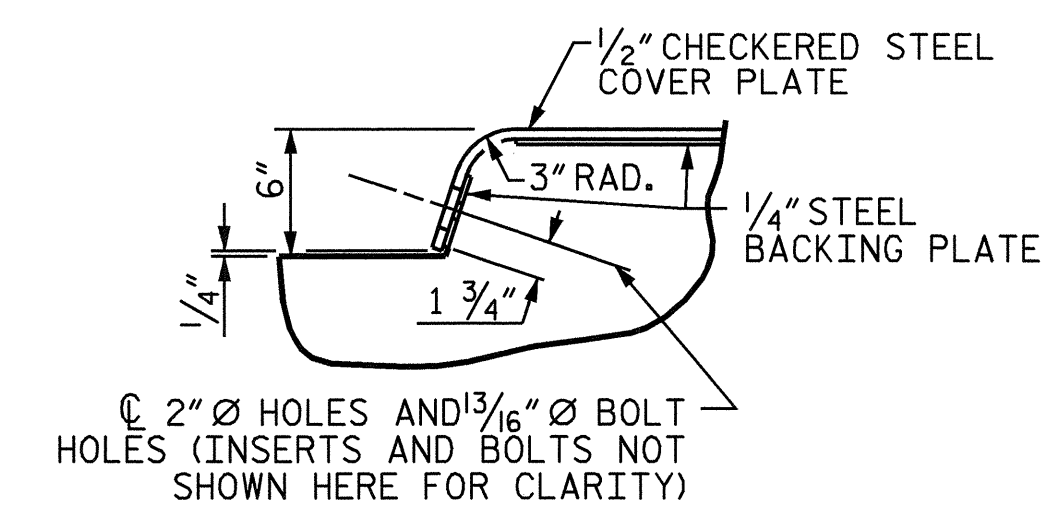
JOINT SEAL @ END BENT FOR SIDEWALK



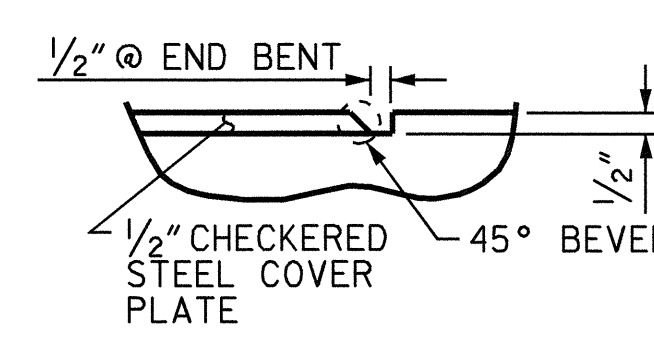
SECTION C-C
EVAZOTE JOINT SEAL
(EXPANSION)



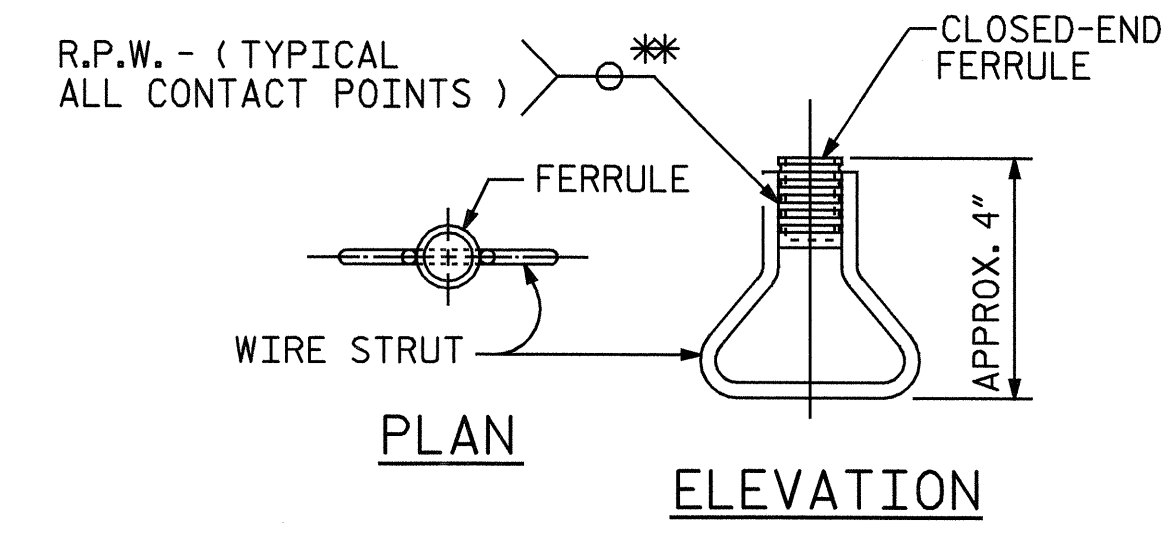
DETAIL "A"



DETAIL "B"



DETAIL "C"



CONCRETE INSERT

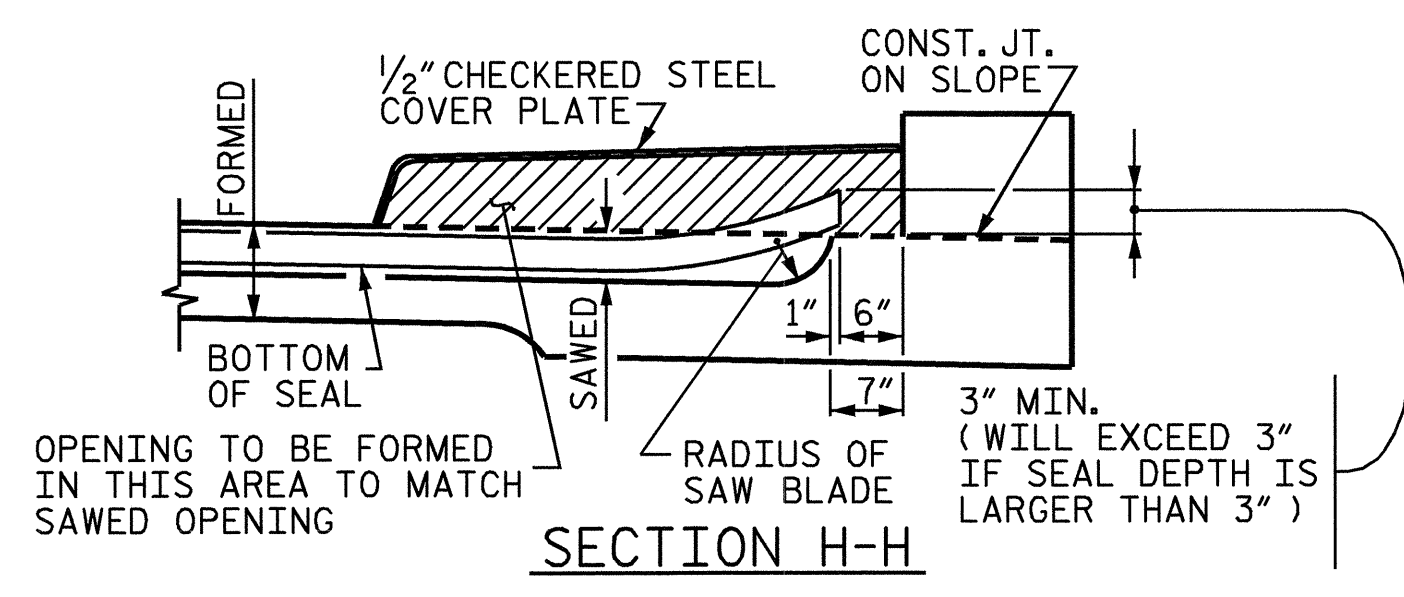
** EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.

NOTES

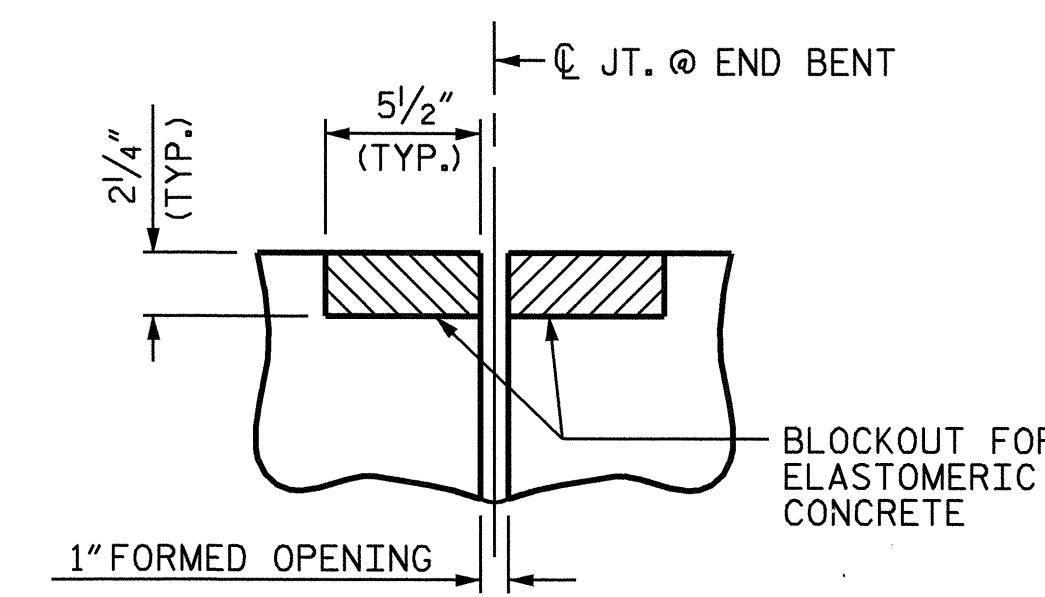
THE STEEL PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 OR APPROVED EQUAL. AFTER FABRICATION, THE PLATES SHALL BE COMMERCIALY BLAST CLEANED AND COATED WITH A MINIMUM THICKNESS OF 4 MILS (DRY) OF ZINC-RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. AT THE CONTRACTOR'S OPTION, THESE SURFACES MAY BE METALLIZED TO A MINIMUM THICKNESS OF 6 MILS. SEE SPECIAL PROVISIONS FOR THERMAL SPRAYED COATINGS (METALLIZATION).

THE 3/4" Ø HEX HEAD BOLTS SHALL CONFORM TO ASTM F593 ALLOY 304 STAINLESS STEEL.

NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE COVER PLATES. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR EVAZOTE JOINT SEALS.



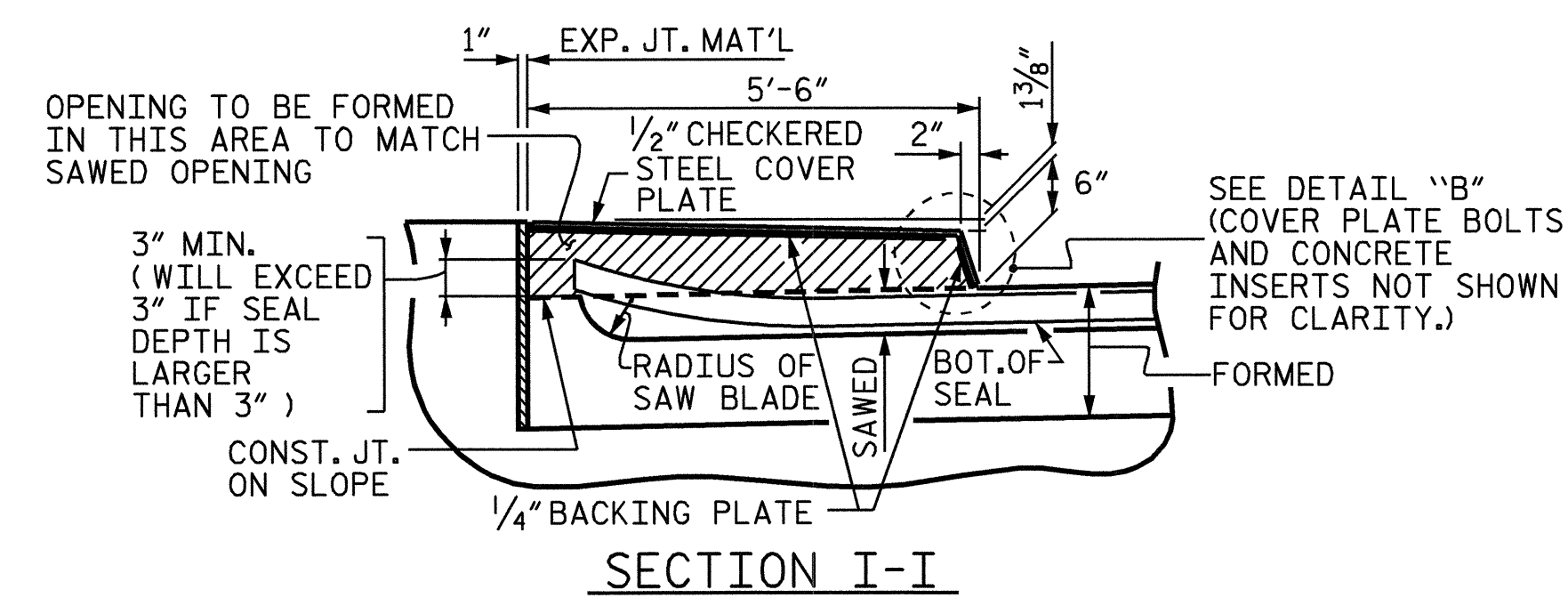
SECTION H-H



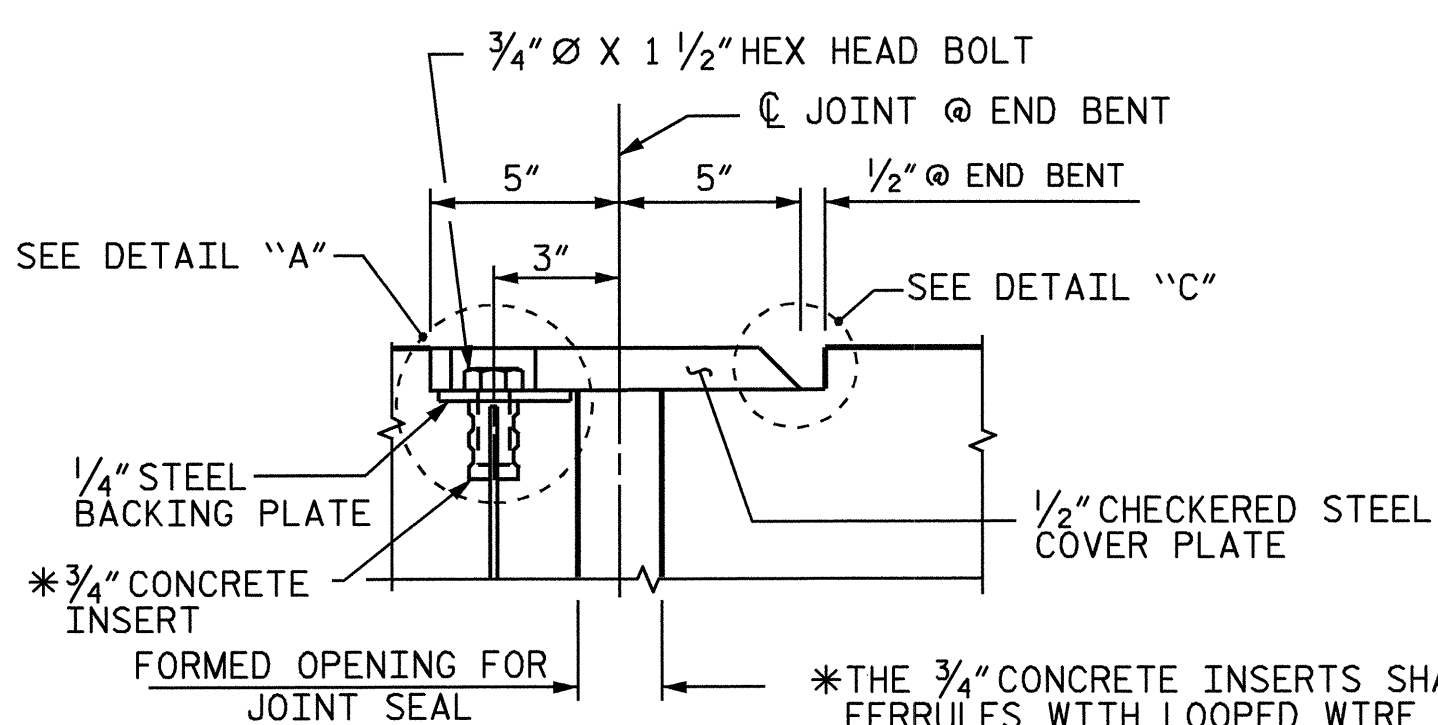
SECTION C-C
EVAZOTE JOINT SEAL
(PRE-SAWED ELASTOMERIC
CONCRETE DIMENSIONS)

JOINT SEAL DETAILS @ END BENT

(FOR SIDEWALK)

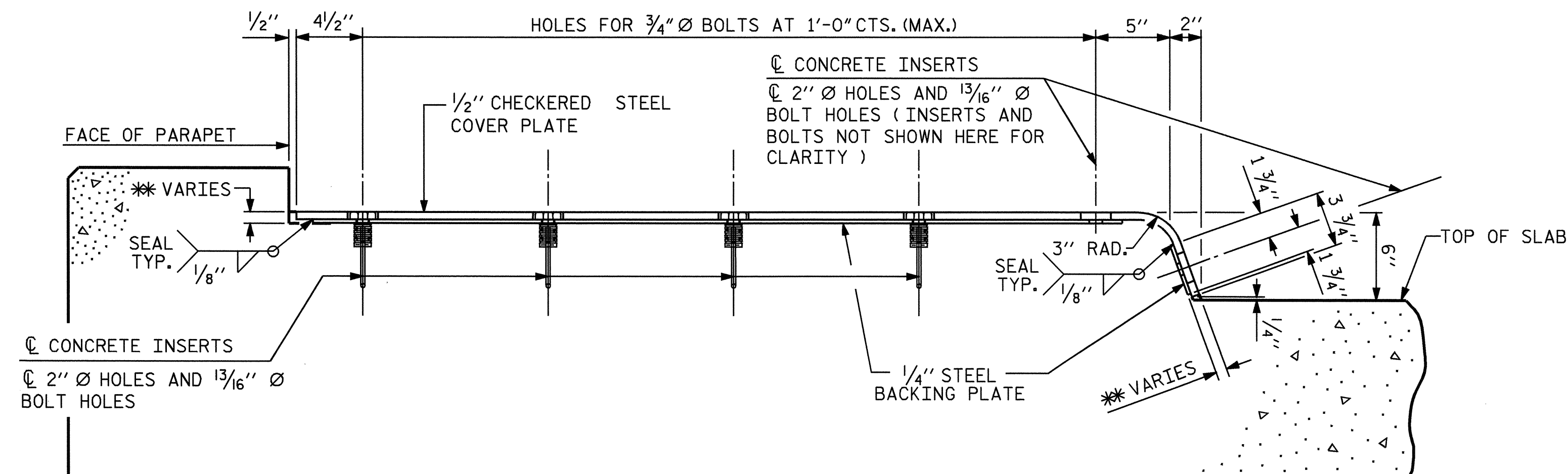


SECTION I-I



SECTION K-K

* THE 3/4" CONCRETE INSERTS SHALL BE CLOSED-END FERRULES WITH LOOPED WIRE STRUTS ATTACHED TO THEM. THE INSERTS SHALL CONFORM TO AASHTO M169, GRADE 12L14 AND SHALL HAVE A TENSILE WORKING LOAD CAPACITY OF 3000 LBS.



END VIEW
(NORMAL TO SIDEWALK)

** CONCRETE RECESS DIMENSIONS:
1 3/16" FOR THE SIDE OF THE JOINT HAVING THE 1/2" COVER PLATE WITH A 1/4" BACKING PLATE.
3/16" FOR THE SIDE OF THE JOINT HAVING ONLY THE 1/2" COVER PLATE.

COVER PLATE DETAILS

PROJECT NO. B-3637
DAVIE COUNTY
STATION: 32+25.27 -L-

SHEET 4 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH
SLAB DETAILS

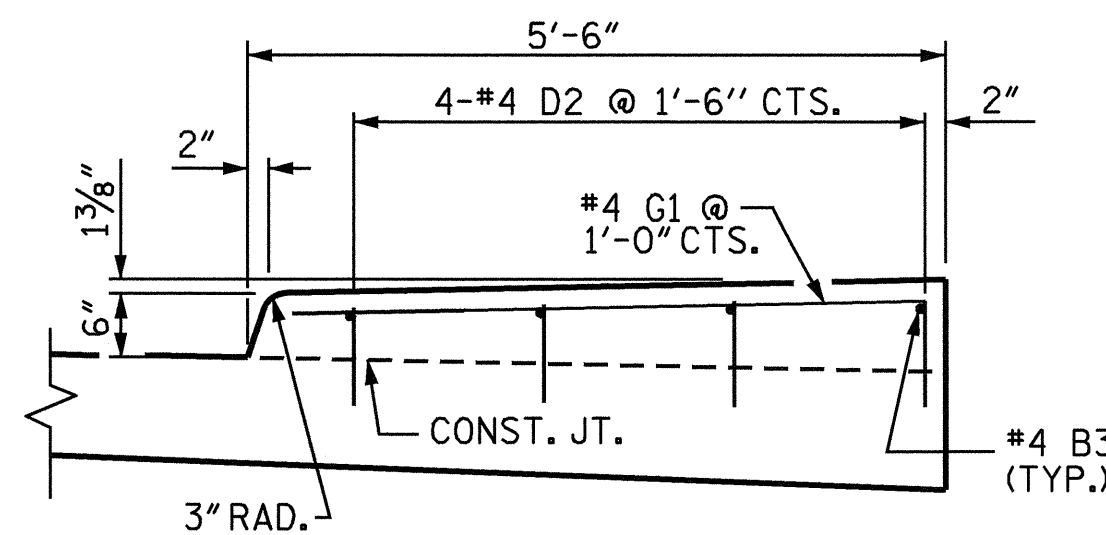
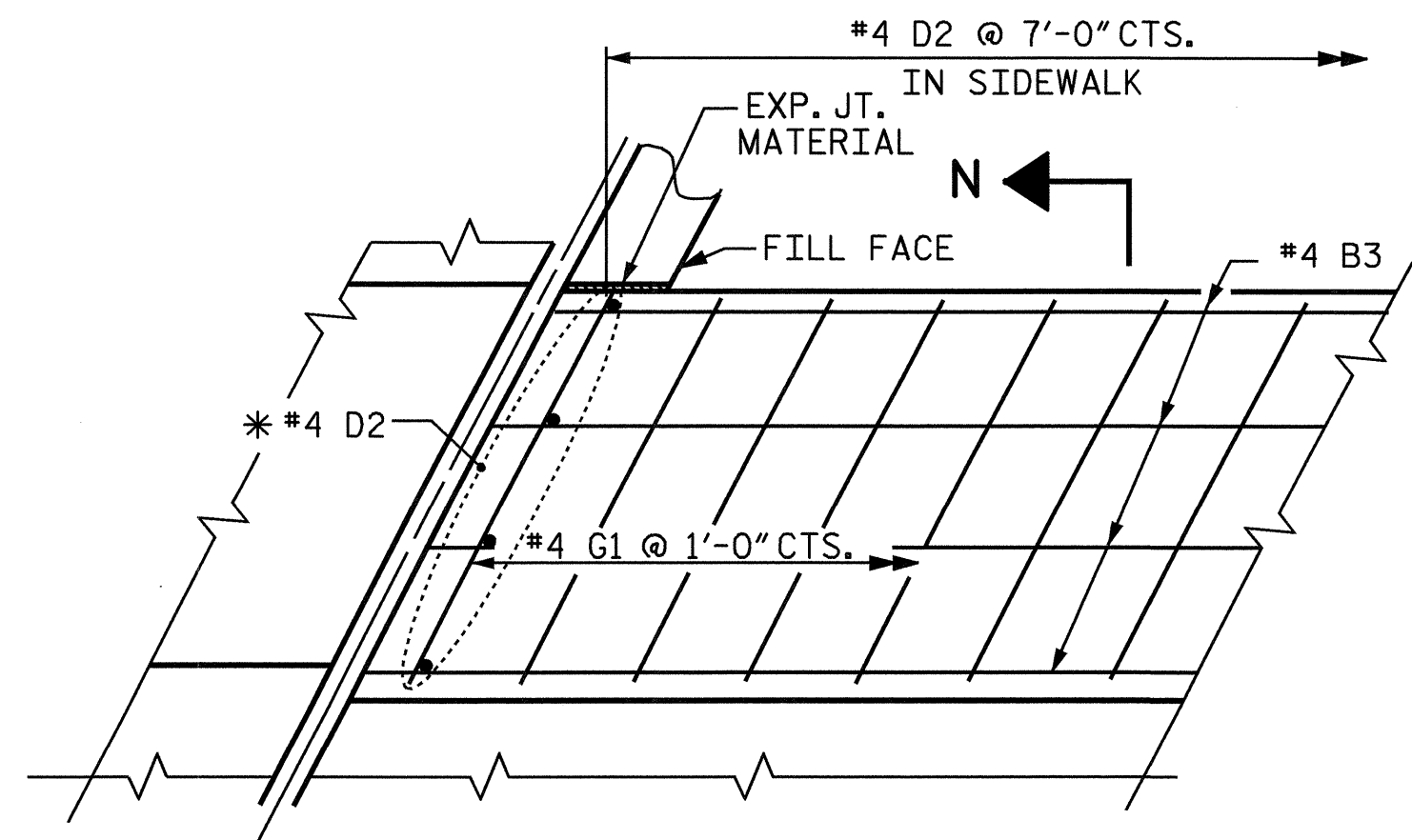
REVISIONS						1988	
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.	
1			3			S-40	
2			4			TOTAL SHEETS	
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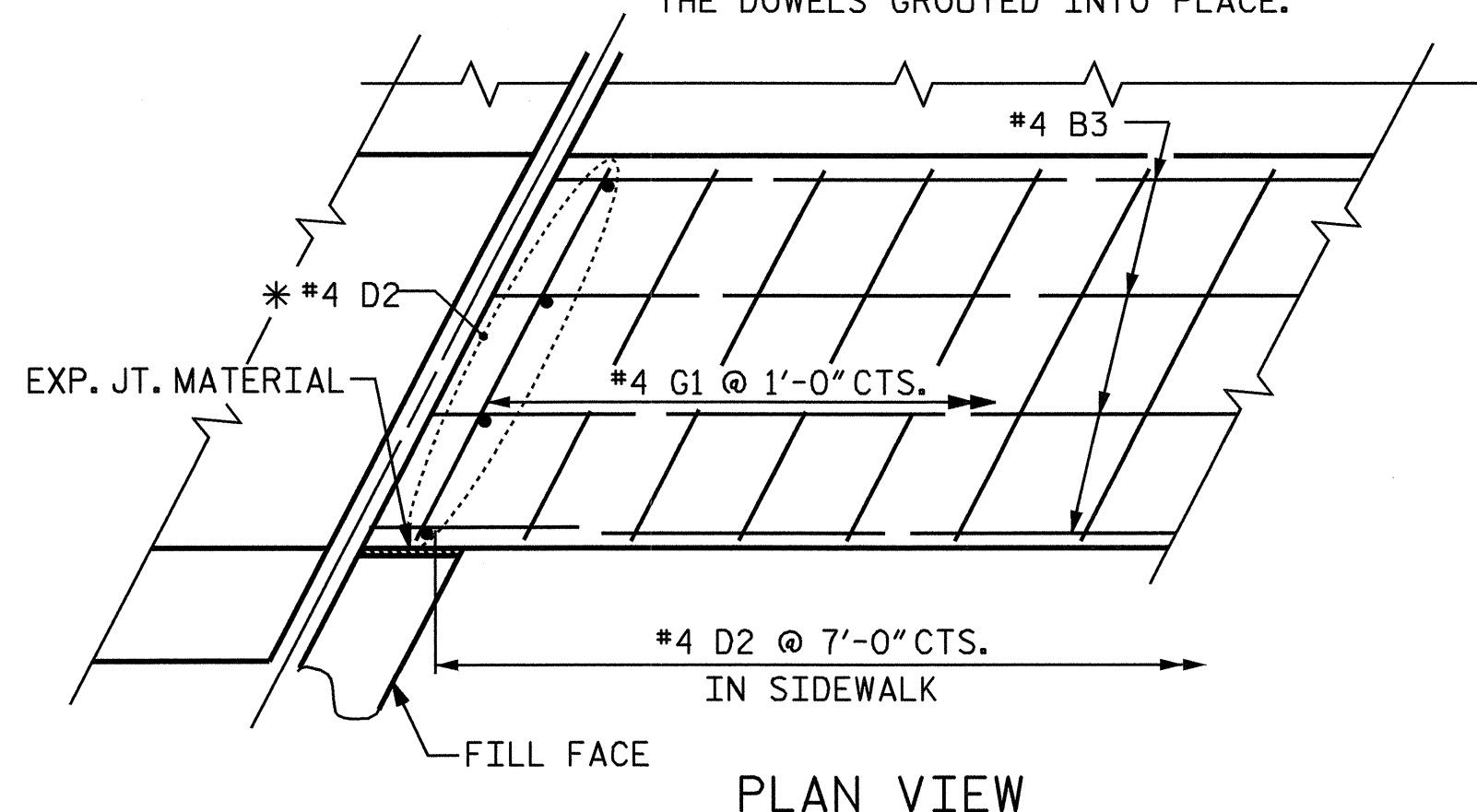
DRAWN BY: R.G. EMERSON
CHECKED BY: K.D. LAYNE
DATE: 02/07
DATE: 02/07

BILL OF MATERIAL

STAGE #1						STAGE #1					
APPROACH SLAB AT EB #1						APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	50	#4	STR	21'-6"	718	*A1	50	#4	STR	21'-6"	718
A2	52	#4	STR	21'-4"	741	A2	52	#4	STR	21'-4"	741
*B1	75	#5	STR	23'-7"	1845	*B1	75	#5	STR	23'-7"	1845
B2	75	#6	STR	24'-8"	2779	B2	75	#6	STR	24'-8"	2779
*B3	4	#4	STR	24'-6"	65	*B3	4	#4	STR	24'-6"	65
*D1	25	#5	STR	3'-0"	78	*D1	25	#5	STR	3'-0"	78
*D2	16	#4	STR	1'-0"	11	*D2	16	#4	STR	1'-0"	11
*G1	25	#4	STR	5'-6"	92	*G1	25	#4	STR	5'-6"	92
REINFORCING STEEL LBS. 3,520						REINFORCING STEEL LBS. 3,520					
*EPOXY COATED REINFORCING STEEL LBS. 2,809						*EPOXY COATED REINFORCING STEEL LBS. 2,809					
CLASS AA CONCRETE BREAKDOWN STAGE #1 - END BENT #1						CLASS AA CONCRETE BREAKDOWN STAGE #1 - END BENT #2					
POUR #1 - SLAB C. Y. 35.2						POUR #1 - SLAB C. Y. 35.2					
POUR #2 - SIDEWALK C. Y. 3.1						POUR #2 - SIDEWALK C. Y. 3.1					
CLASS AA CONCRETE C. Y. 38.3						CLASS AA CONCRETE C. Y. 38.3					
STAGE #1 TOTAL						STAGE #1 TOTAL					
REINFORCING STEEL 7040 LBS.						REINFORCING STEEL 7040 LBS.					
*EPOXY COATED 5618 LBS.						*EPOXY COATED 5618 LBS.					
CLASS AA CONCRETE 76.6 C. Y.						CLASS AA CONCRETE 76.6 C. Y.					
STAGE #2						STAGE #2					
APPROACH SLAB AT EB #1						APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A11	75	#4	STR	25'-3"	1265	*A11	75	#4	STR	25'-3"	1265
A12	78	#4	STR	25'-1"	1307	A12	78	#4	STR	25'-1"	1307
*B1	131	#5	STR	23'-7"	3222	*B1	131	#5	STR	23'-7"	3222
B2	131	#6	STR	24'-8"	4854	B2	131	#6	STR	24'-8"	4854
*B3	4	#4	STR	24'-6"	65	*B3	4	#4	STR	24'-6"	65
*B4	3	#4	STR	24'-1"	48	*B4	3	#4	STR	24'-1"	48
*D2	16	#4	STR	1'-0"	11	*D2	16	#4	STR	1'-0"	11
*G1	25	#4	STR	5'-6"	92	*G1	25	#4	STR	5'-6"	92
*G2	17	#4	STR	3'-2"	36	*G2	17	#4	STR	3'-2"	36
REINFORCING STEEL LBS. 6,161						REINFORCING STEEL LBS. 6,161					
*EPOXY COATED REINFORCING STEEL LBS. 4,739						*EPOXY COATED REINFORCING STEEL LBS. 4,739					
CLASS AA CONCRETE BREAKDOWN STAGE #2 - END BENT #1						CLASS AA CONCRETE BREAKDOWN STAGE #2 - END BENT #2					
POUR #1 - SLAB C. Y. 61.2						POUR #1 - SLAB C. Y. 61.2					
POUR #2 - SIDEWALK & ISLAND C. Y. 5.2						POUR #2 - SIDEWALK & ISLAND C. Y. 5.2					
CLASS AA CONCRETE C. Y. 66.4						CLASS AA CONCRETE C. Y. 66.4					
STAGE #2 TOTAL						STAGE #2 TOTAL					
REINFORCING STEEL 12,322 LBS.						REINFORCING STEEL 12,322 LBS.					
*EPOXY COATED 9478 LBS.						*EPOXY COATED 9478 LBS.					
CLASS AA CONCRETE 132.8 C. Y.						CLASS AA CONCRETE 132.8 C. Y.					



SECTION N-N
SIDEWALK DETAILS



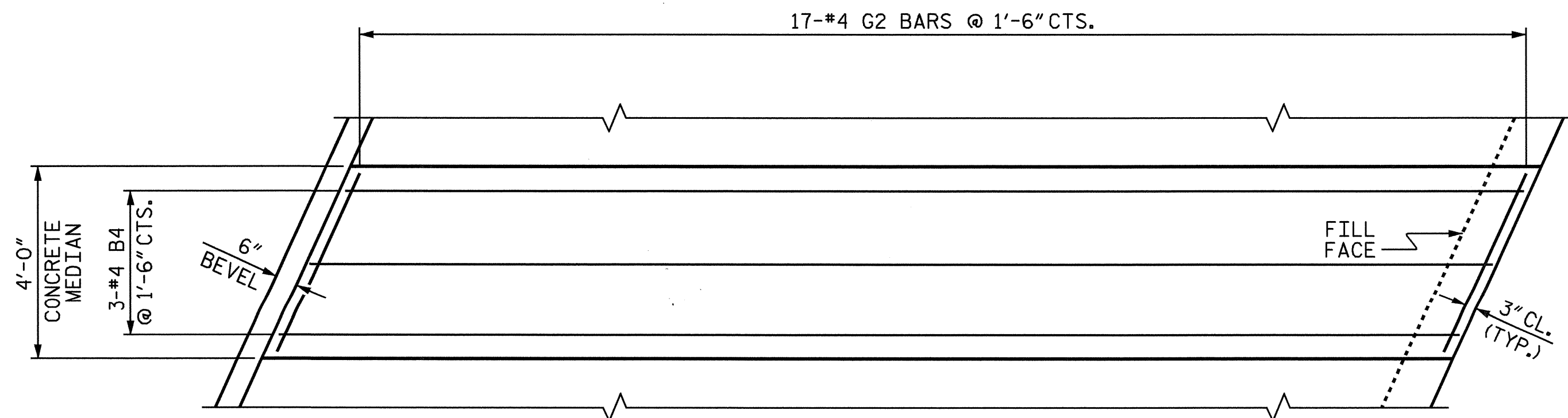
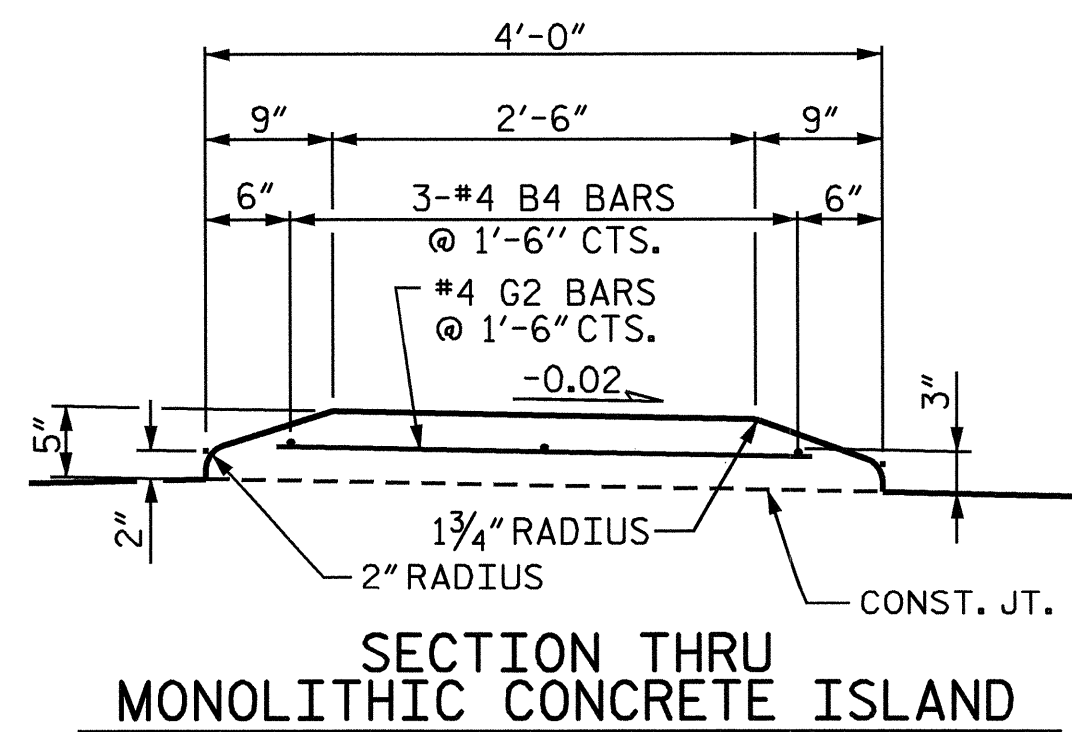
DETAILS OF SIDEWALK ON APPROACH SLAB

END APPROACH SLAB AS SHOWN, BEGIN APPROACH SLAB SIMILAR

ELASTOMERIC CONCRETE			
END BENT NO.	STAGE #1 (CU. FT.)	STAGE #2 (CU. FT.)	TOTAL ELASTOMERIC CONCRETE * (CU. FT.)
1	7.1	12.4	19.5
2	7.1	12.4	19.5
TOTAL	14.2	24.8	39.0

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

SPlice CHART	
#4 A1	2'-0"
#4 A2	1'-9"
#4 A11	2'-0"
#4 A12	1'-9"



PLAN VIEW OF MONOLITHIC CONCRETE ISLAND

DRAWN BY : R. G. EMERSON DATE : 02/07
CHECKED BY : K. D. LAYNE DATE : 02/07

07-AUG-2007 12:14
R:\Structures\B3637\plans\B3637.ed.AS.dgn
tpayne



PROJECT NO. B-3637
DAVIE COUNTY
STATION: 32+25.27 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

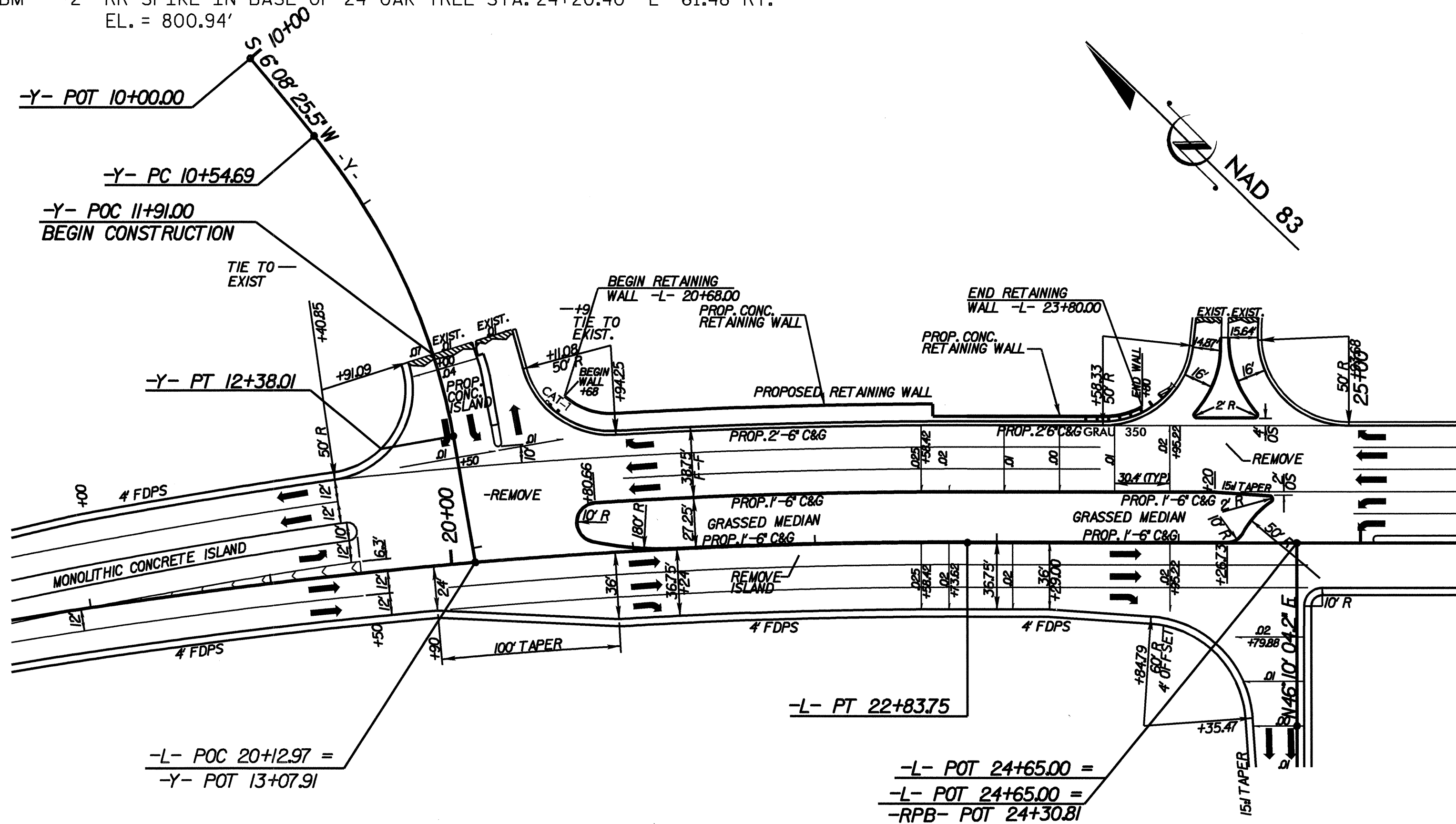
BILL OF MATERIAL

BRIDGE APPROACH
SLAB FOR FLEXIBLE
PAVEMENT

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-41	
1			3			TOTAL SHEETS	41
2			4				

NCB06

BM - #2 RR SPIKE IN BASE OF 24" OAK TREE STA. 24+20.40 -L- 61.48' RT.
EL. = 800.94'

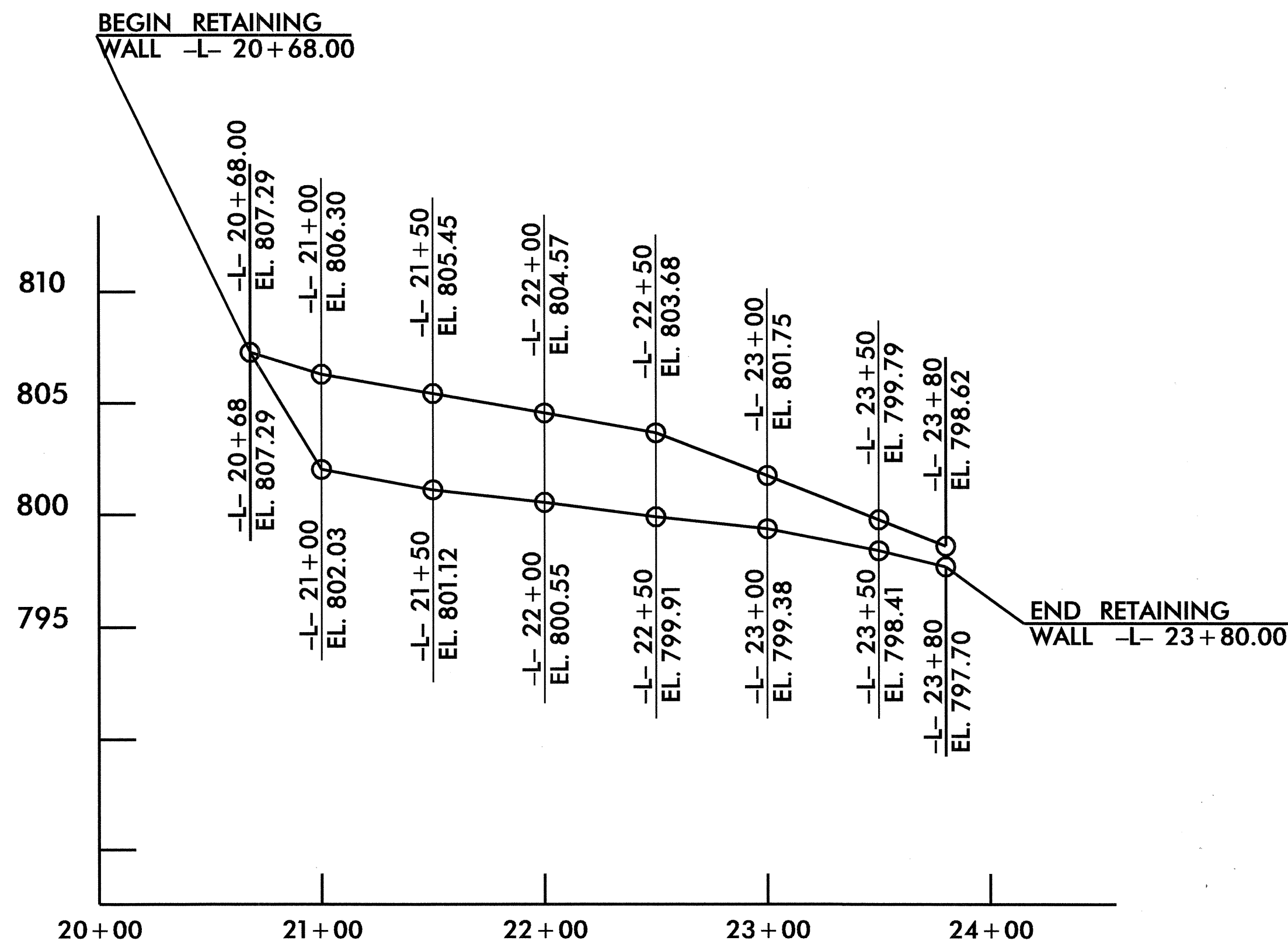


LOCATION SKETCH

GRAVITY RETAINING WALL ELEVATIONS

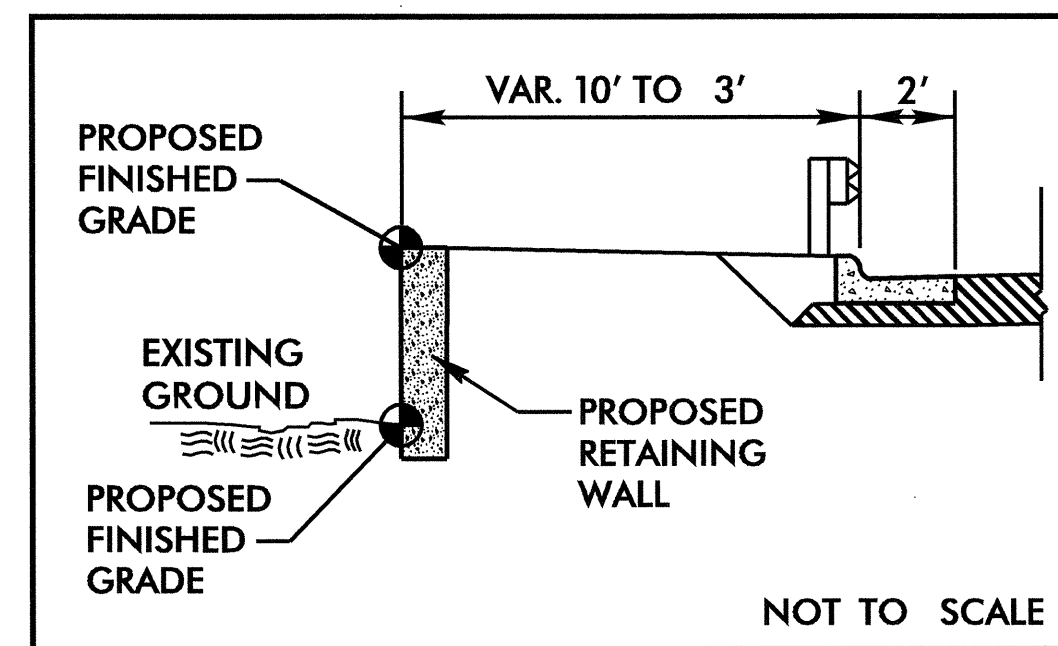
-L- STA	* OFFSET FROM CL (LEFT)	ELEV @ TOP OF WALL	PROPOSED FINISHED GRADE
20+68.00	87.316	807.29	807.29
21+00.00	76.000	806.30	802.03
21+50.00	76.000	805.45	801.12
22+00.00	76.000	804.57	800.55
22+50.00	76.000	803.68	799.91
23+00.00	69.000	801.75	799.38
23+50.00	69.000	799.79	798.41
23+80.00	74.564	798.62	797.70

* OFFSET (FEET) IS FROM CENTERLINE OF -L- TO PROPOSED FACE OF RETAINING WALL



GRAVITY RETAINING WALL

STA. 20+68.00 -L- TO STA. 23+80.00 -L-



TOTAL STRUCTURE QUANTITIES

GRAVITY RETAINING WALLS 969 SQ. FT.

NOTES

- NO BRICK VENEER WILL BE ALLOWED.
- NO FENCE WILL BE REQUIRED

PROJECT NO.: B-3637
DAVIE COUNTY
STATION: 20+68.00 -L- TO 23+80.00 -L-
SHEET 1 OF 2

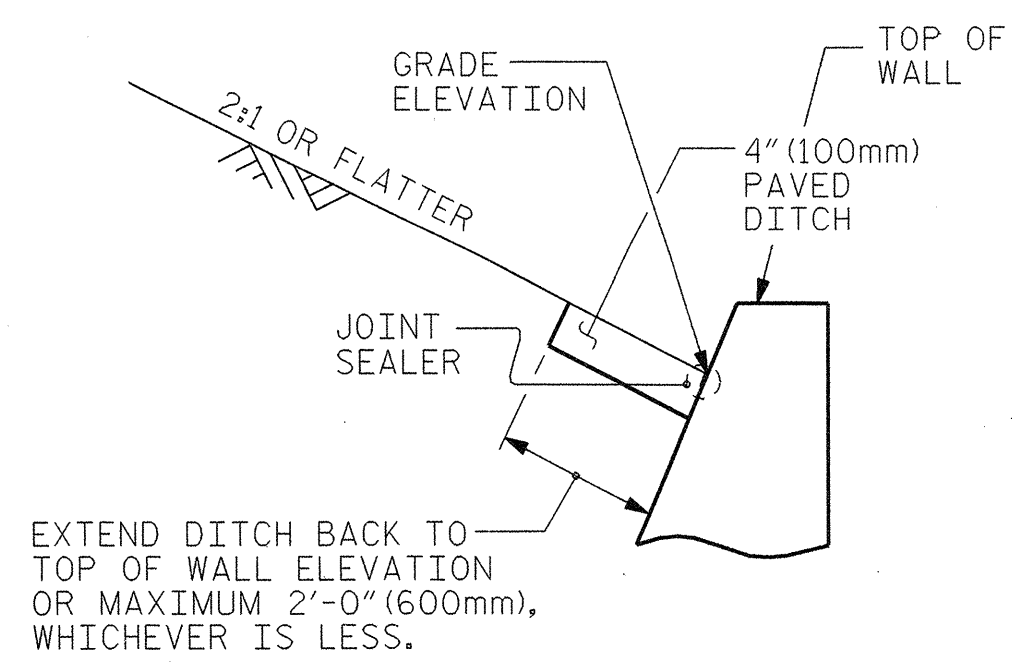
GEOTECHNICAL ENGINEERING UNIT
 EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GRAVITY RETAINING WALL

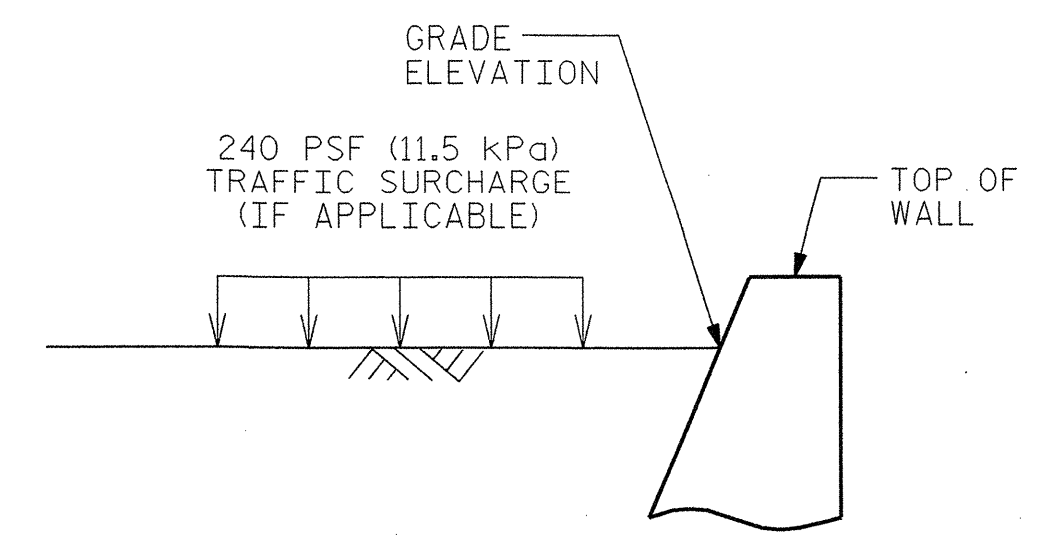
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	W-1 TOTAL SHEETS
1			3			2
2			4			

PREPARED BY: E.J.S. DATE: 06/19/07
REVIEWED BY: S.C.C. DATE: 06/19/07

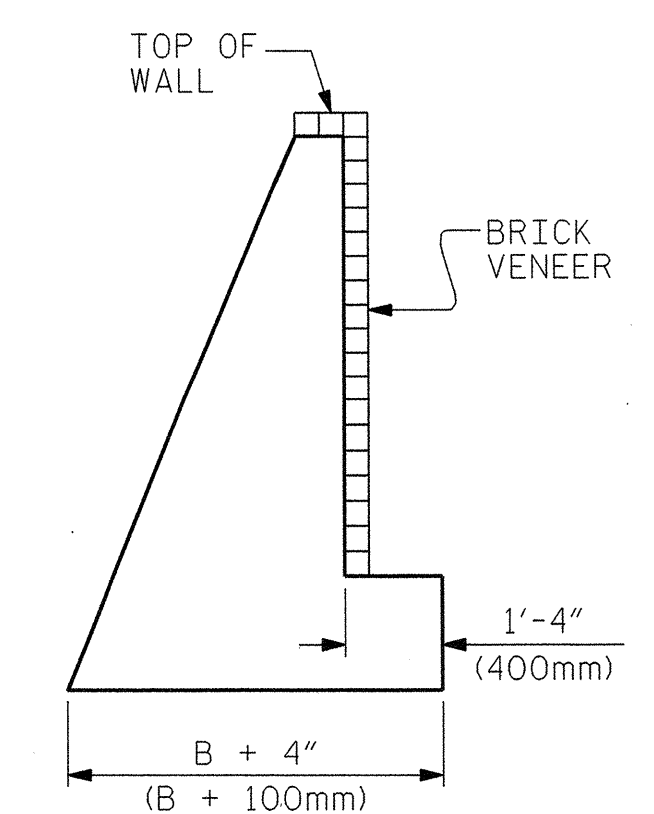




SLOPE CONDITION



NO SLOPE CONDITION



BRICK VENEER DETAIL

(WHEN APPLICABLE)

NOTES

FOR GRAVITY RETAINING WALLS, SEE SECTION 453 OF THE STANDARD SPECIFICATIONS.

THE STANDARD GRAVITY RETAINING WALL IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
 TOTAL UNIT WEIGHT = 120 PCF (18.8 kN/m³)
 COHESION = 0 PSF (0 kPa)
 FRICTION ANGLE = 35 DEGREES
 (GROUNDWATER WITHIN 5'-0" (1.5m) OF BOTTOM OF FOOTING)
 FRICTION ANGLE = 30 DEGREES
 (GROUNDWATER MORE THAN 5'-0" (1.5m) BELOW BOTTOM OF FOOTING)

DO NOT USE A STANDARD GRAVITY RETAINING WALL IF THE ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE THE BOTTOM OF FOOTING.

DO NOT USE A STANDARD GRAVITY RETAINING WALL WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS PRESENT BELOW THE WALL.

DO NOT PLACE CONCRETE UNTIL OBTAINING APPROVAL OF THE EXCAVATION DEPTH AND CHECKING FOUNDATION MATERIAL FOR IN-SITU ASSUMED SOIL PARAMETERS.

USE CLASS "A" CONCRETE AND PROVIDE CLASS I SURFACE FINISH FOR ALL EXPOSED SURFACES.

PROVIDE 3" (75mm) DIAMETER WEEP HOLES ON 10'-0" (3m) CENTERS ALONG WALL. SLOPE WEEP HOLES ON A 1" (25mm) PER FOOT (300mm) SLOPE THROUGH THE WALL SO THAT WATER DRAINS OUT OF THE FRONT OF THE WALL.

CONSTRUCT A HORIZONTAL DRAIN IN SUBDRAIN FINE AGGREGATE AT LEAST 1'-0" (300mm) TALL AND 1'-0" (300mm) WIDE TO CONNECT ALL STONE DRAINS.

PROVIDE GROOVED CONTRACTION JOINTS EVERY 10'-0" (3m) AND EXPANSION JOINTS EVERY 30'-0" (9m) ALONG THE WALL.

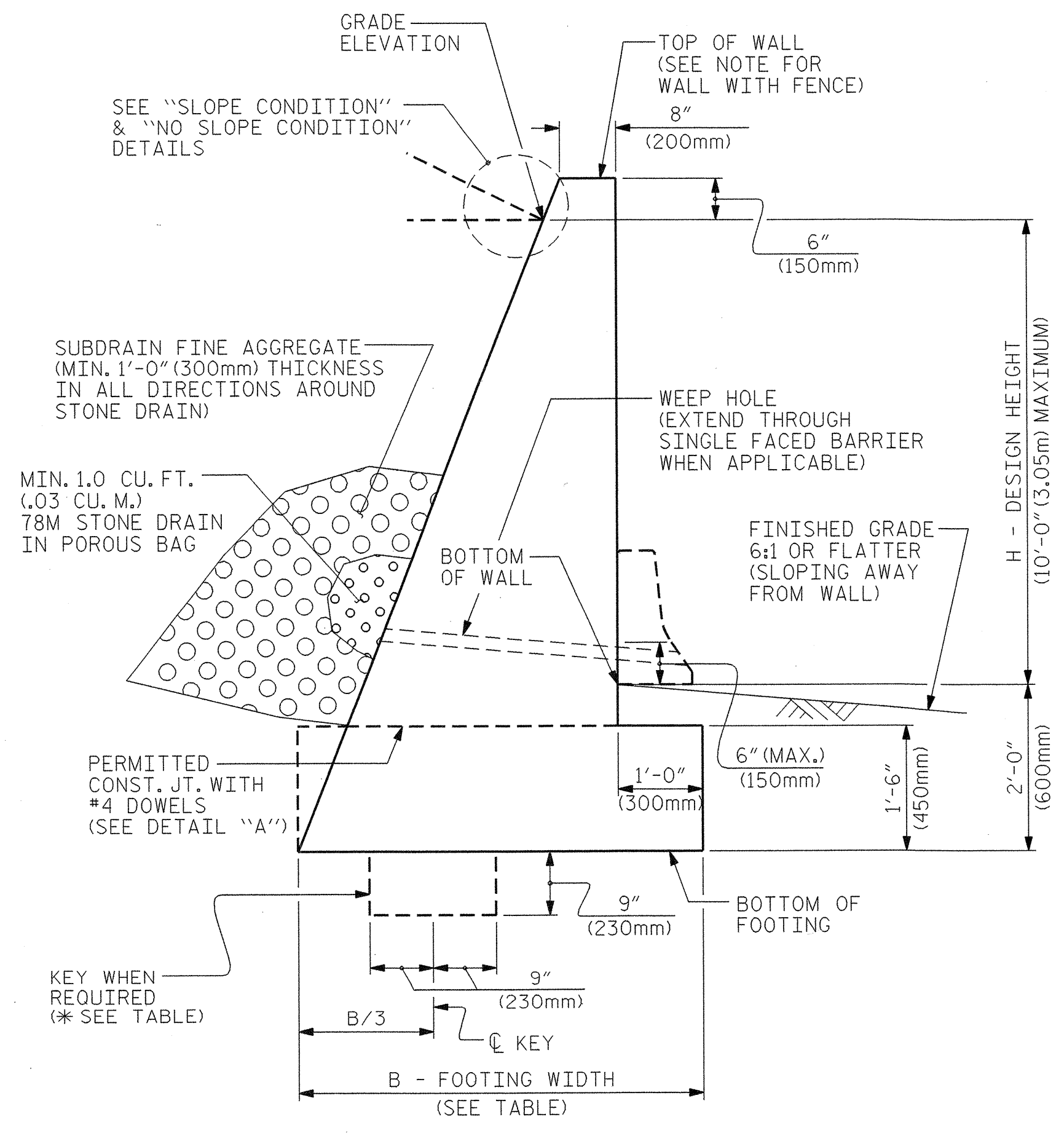
FOR WALL WITH BRICK VENEER, SUBMIT BRICK SAMPLES TO THE ENGINEER FOR APPROVAL BEFORE BEGINNING CONSTRUCTION. ANCHOR BRICK VENEER TO CONCRETE RETAINING WALL WITH BRICK TO CONCRETE TYPE ANCHORS ACCORDING TO MANUFACTURER'S SPECIFICATIONS WITH A MINIMUM VERTICAL SPACING OF 1'-4" (400mm) AND A MINIMUM HORIZONTAL SPACING OF 2'-8" (800mm) WITH EACH ROW STAGGERED 1'-4" (400mm) FROM THE ROW OF ANCHORS ABOVE AND BELOW.

DO NOT BACKFILL BEHIND WALL UNTIL CONCRETE DEVELOPS A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI (20.7 MPa). COMPACT BACKFILL IN ACCORDANCE WITH SUBARTICLE 235-4(C) OF THE STANDARD SPECIFICATIONS. PLACE BACKFILL WITHIN 3'-0" (1m) OF THE BACK OF THE WALL WITH HAND OPERATED EQUIPMENT. DO NOT OPERATE HEAVY EARTH MOVING EQUIPMENT WITHIN 10'-0" (3m) OF THE BACK OF WALL.

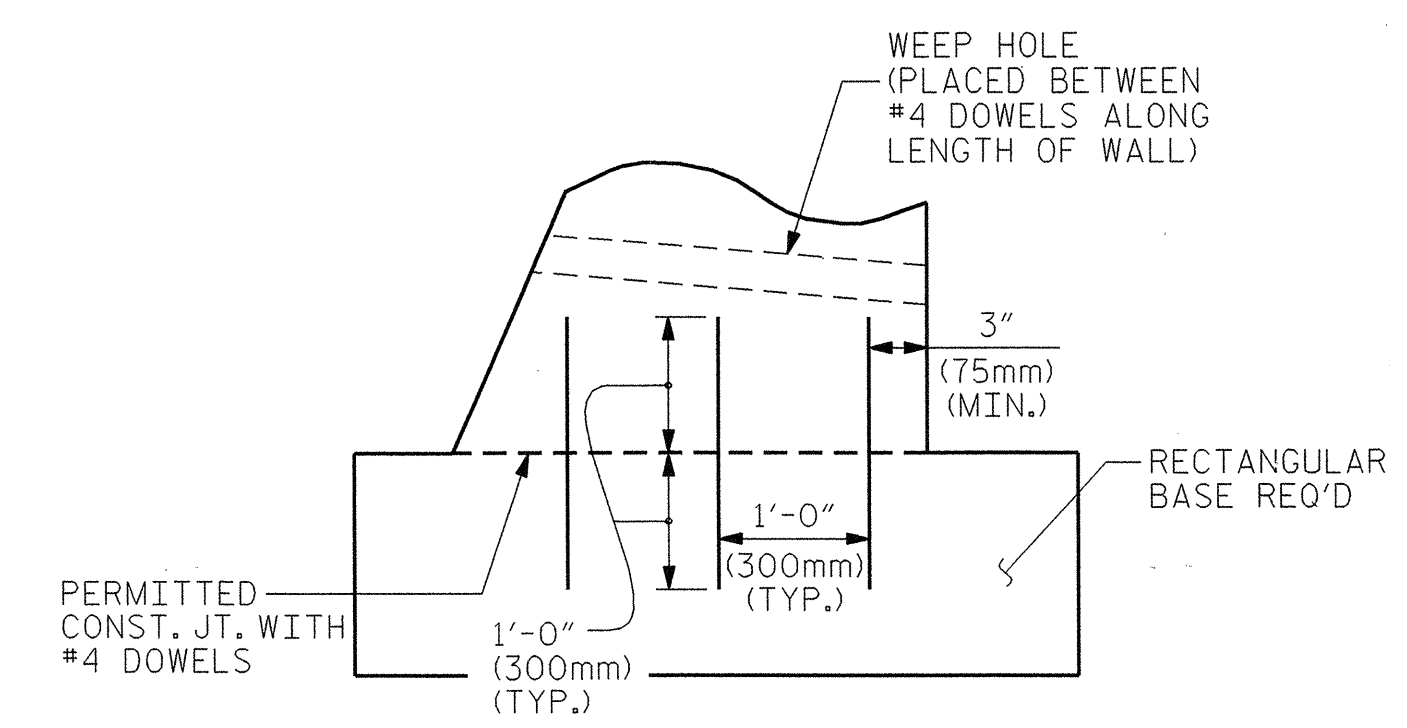
WHEN A CONSTRUCTION JOINT IS LOCATED AT THE BASE OF THE WALL, IN SECTION, PROVIDE A MINIMUM OF 3-#4 DOWELS AT AN EQUAL SPACING. SPACE ALL DOWELS AT 1'-6" (460mm) CENTERS ALONG THE LENGTH OF THE WALL.

SEE PREVIOUS SHEET(S) FOR PLAN AND PROFILE VIEW (WALL ENVELOPE) AND PROPOSED ELEVATIONS FOR GRAVITY RETAINING WALL(S).

FOR WALL WITH FENCE, USE SLEEVES IN ACCORDANCE WITH SECTION 866 OF THE STANDARD SPECIFICATIONS FOR FENCE POSTS, OR SUBMIT FENCE POST ANCHOR PLATE DETAILS.



TYPICAL SECTION




DETAIL "A"

	H + 2 (ft)	< 6	6 - 9	> 9 - 12
	H + 0.6 (m)	< 1.83	1.83 - 2.74	> 2.74 - 3.65
NO SLOPE CONDITION WITHOUT TRAFFIC SURCHARGE		.60	.60	.60
NO SLOPE CONDITION WITH TRAFFIC SURCHARGE		.80	.75 *	.70 *
SLOPE CONDITION		.66	.70 *	.75 *

B/(H + 2) RATIO

* KEY IS REQUIRED FOR SLOPE CONDITION OR NO SLOPE CONDITION WITH TRAFFIC SURCHARGE WHEN H + 2ft (H + 0.6m) IS 6'-0" (1.83m) OR GREATER.

PROJECT NO.: B-3637
DAVIE COUNTY
STATION: 20+68.00 -L- TO 23+80.00 -L-
 SHEET 2 OF 2


GEOTECHNICAL ENGINEERING UNIT
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD DRAWING NO. 453.01
STANDARD GRAVITY RETAINING WALL
 SHEET NO. W-2
 TOTAL SHEETS 2
 DATE: 7-18-06

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

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

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

HANDRAILS AND POSTS:

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

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINISHES AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

STD. NO. SN