

**CONTRACT: C201495 TIP PROJECT: B-3684**

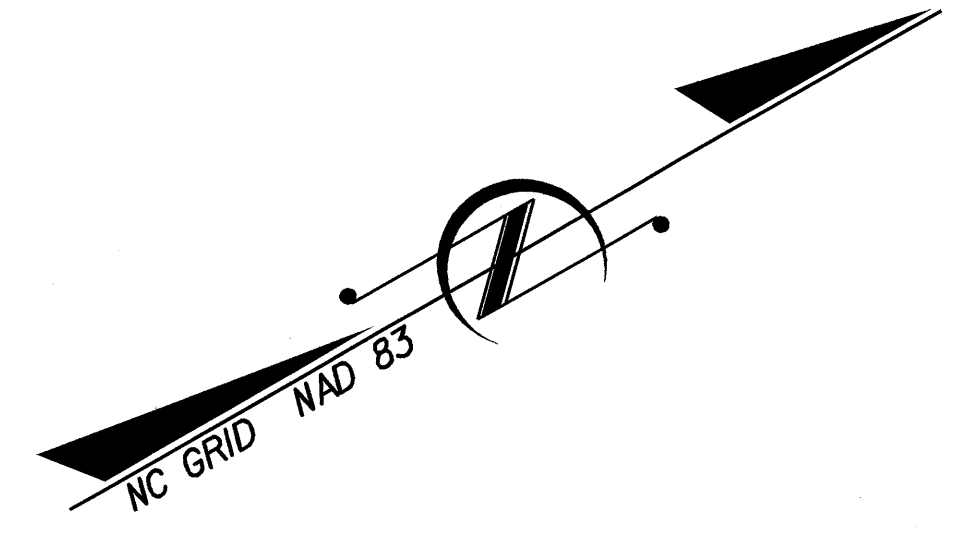
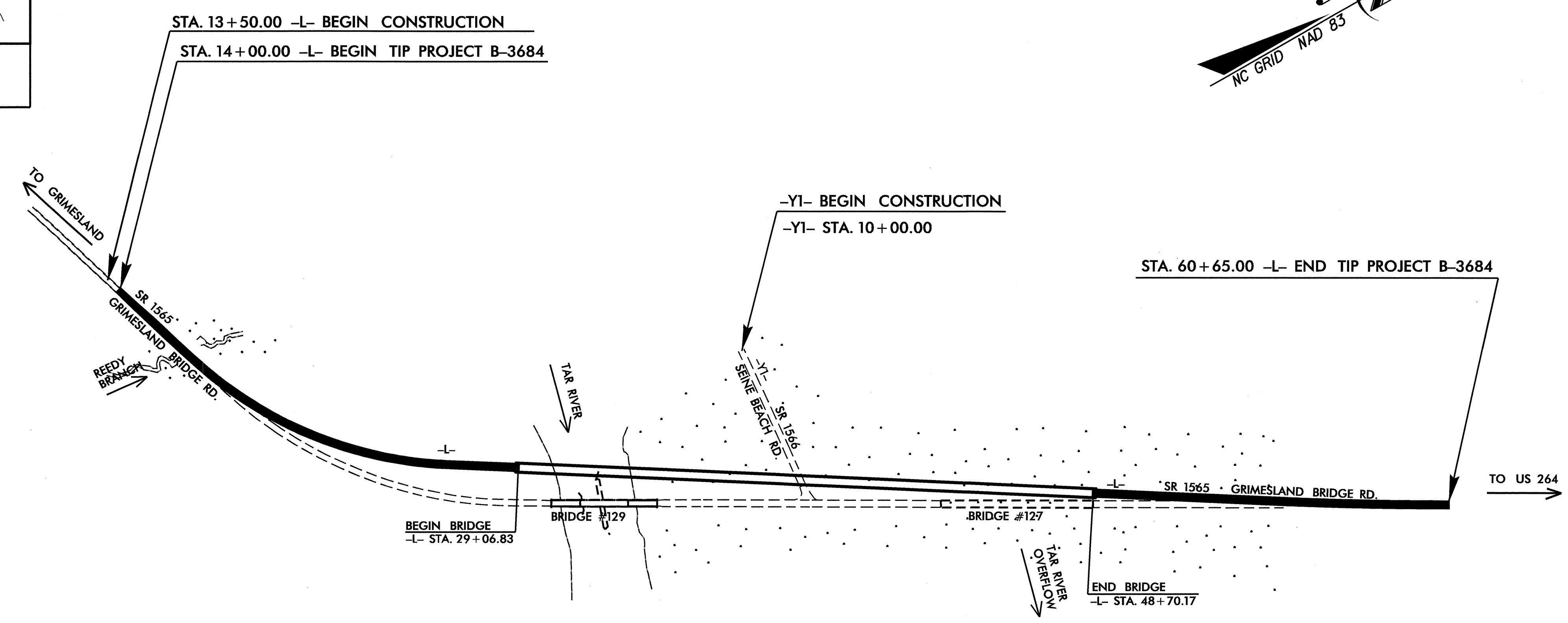
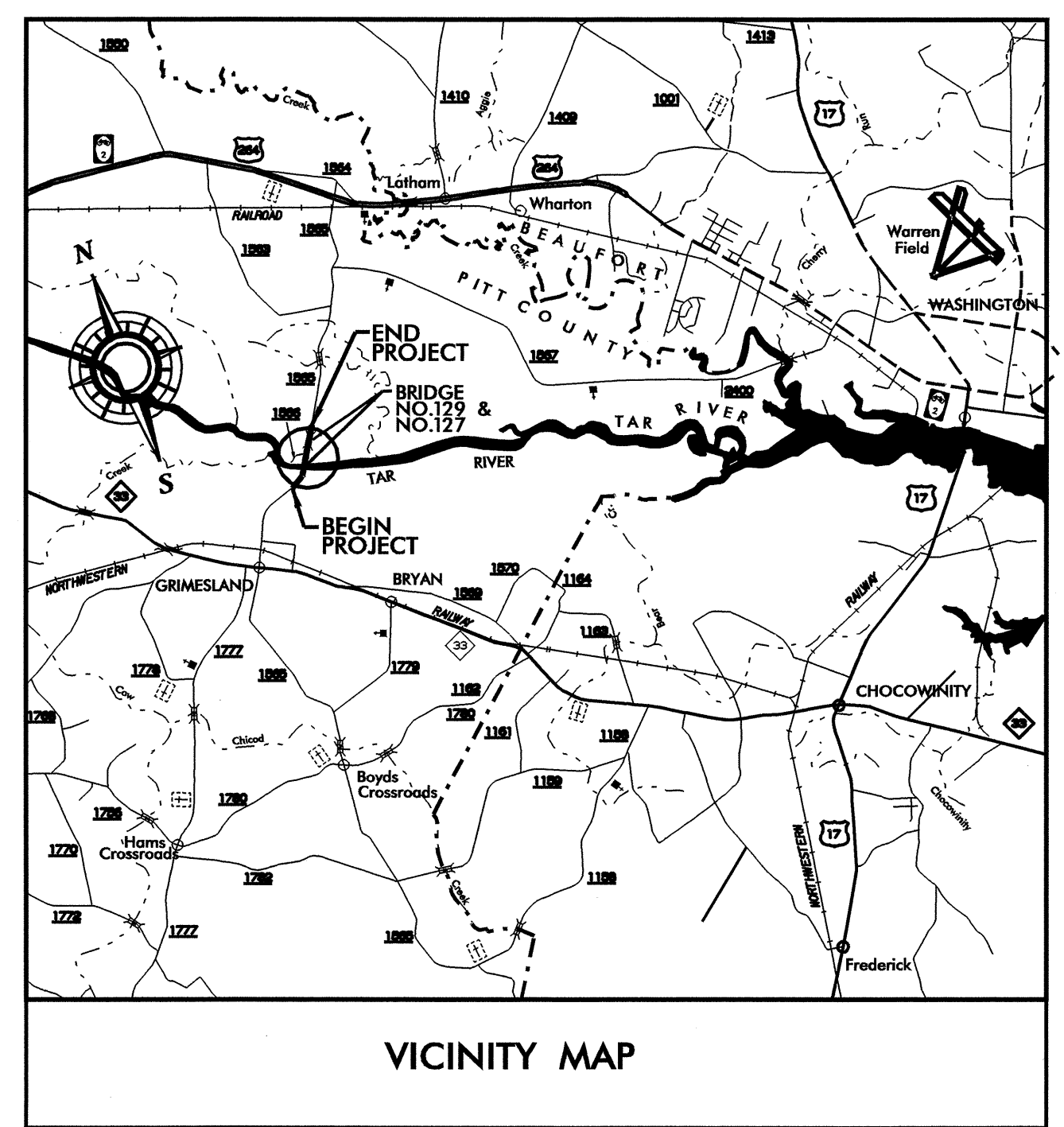
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**PITT COUNTY**

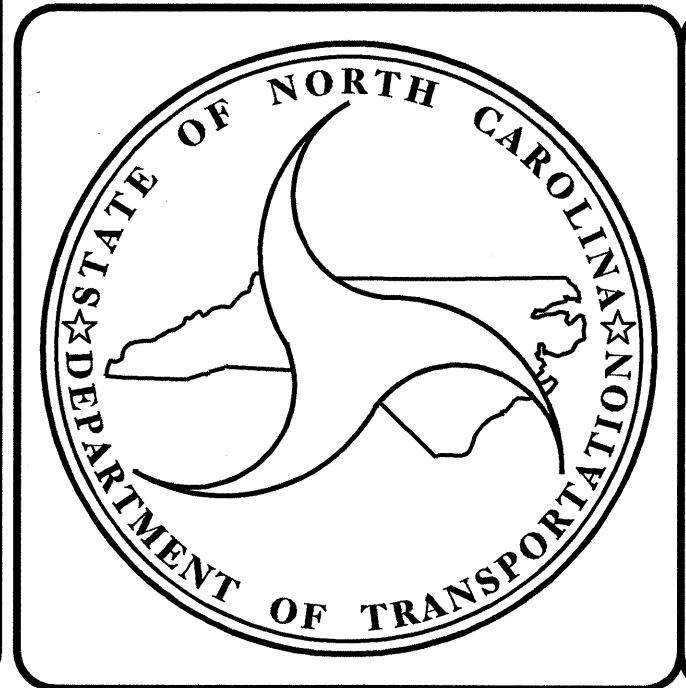
**LOCATION: BRIDGE NO.129 AND NO.127 OVER  
TAR RIVER ON SR 1565**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3684		
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33225.1.1	BRSTP-1565(4)	P.E.	
33225.2.2	BRSTP-1565(4)	ROW & UTL.	
33225.3.1	BRSTP-1565(7)	CONST.	



**STRUCTURE**



**DESIGN DATA**

ADT 2008 =	5,000
ADT 2028 =	7,100
DHV =	13 %
D =	55 %
T =	3 % *
V =	60 MPH
* TTST 1 %	DUAL 2 %
FUNC CLASS =	RURAL COLLECTOR

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-3684	=	0.512 mi.
LENGTH STRUCTURE TIP PROJECT B-3684	=	0.372 mi.
TOTAL LENGTH TIP PROJECT B-3684	=	0.884 mi.

Prepared in the Office of:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr.  
Raleigh, NC 27610

2006 STANDARD SPECIFICATIONS

**LETTING DATE:**  
**February 17, 2009**

**OMAR R. AZIZI, P.E.**  
PROJECT ENGINEER

**EMILY E. MURRAY, P.E.**  
PROJECT DESIGN ENGINEER

**STRUCTURE DESIGN**

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

P.E.

**STATE DESIGN ENGINEER**

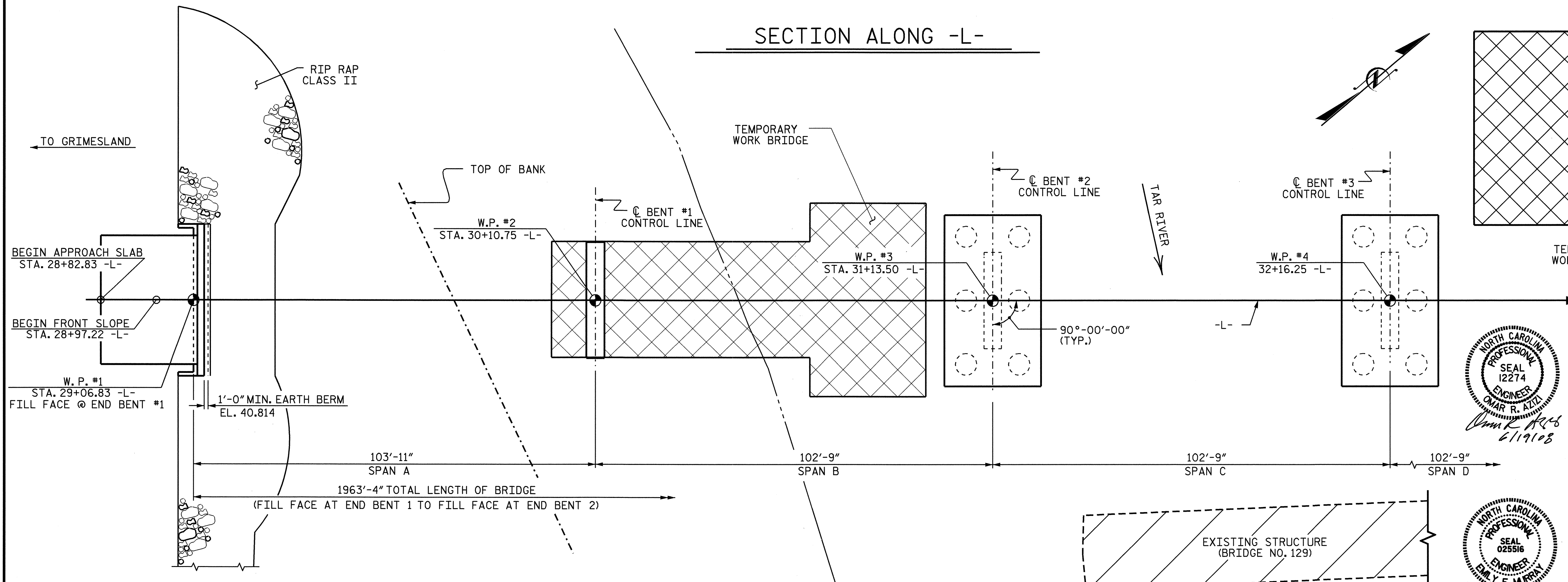
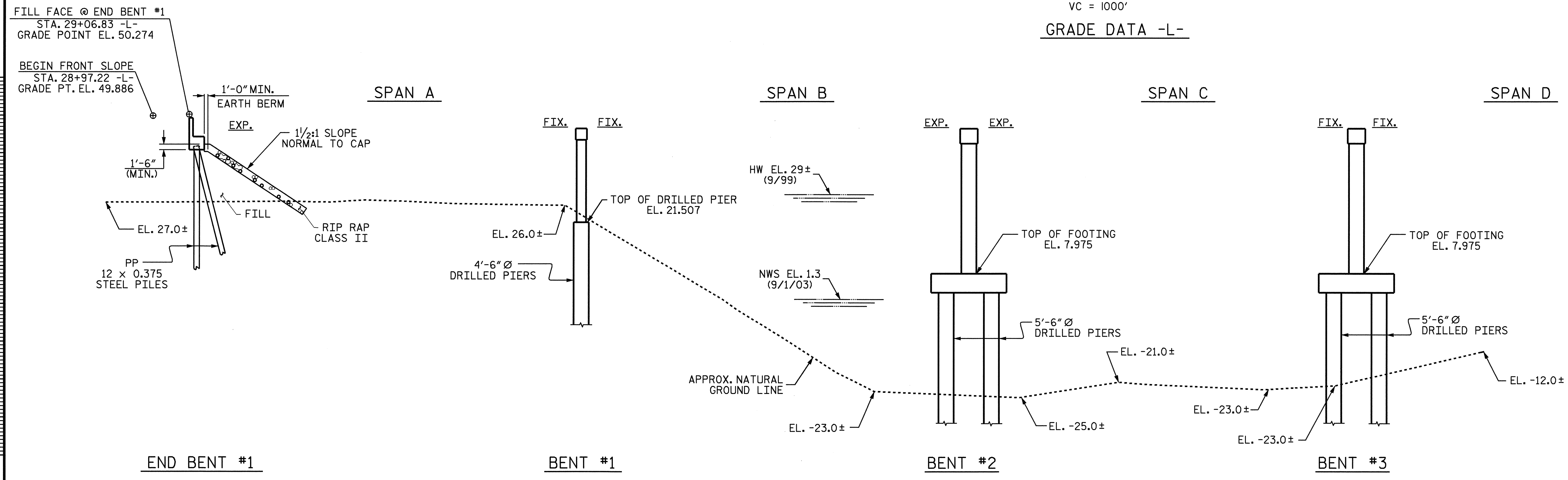
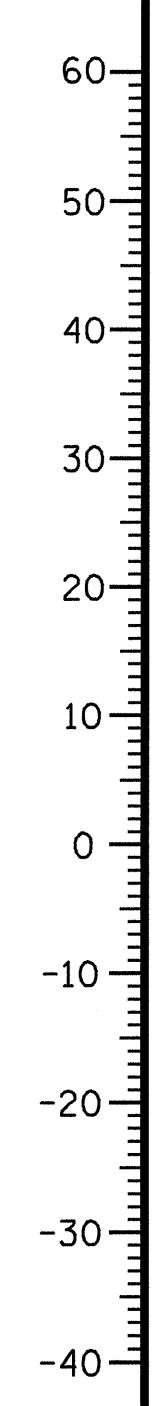
**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION**

APPROVED  
DIVISION ADMINISTRATOR

DATE

06-MAY-2008 16:45  
 \$\$\$\$\$\$DGN\$\$\$\$\$\$  
 Taverette

(+) 3.5667% (-) 2.9733%  
 PI = 31+50.00 -L-  
 EL. = 60.90'  
 VC = 1000'  
**GRADE DATA -L-**



PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-  
 BRIDGE NO. 127  
 SHEET 1 OF 9 REPLACES BRIDGE NO. 127 & 129

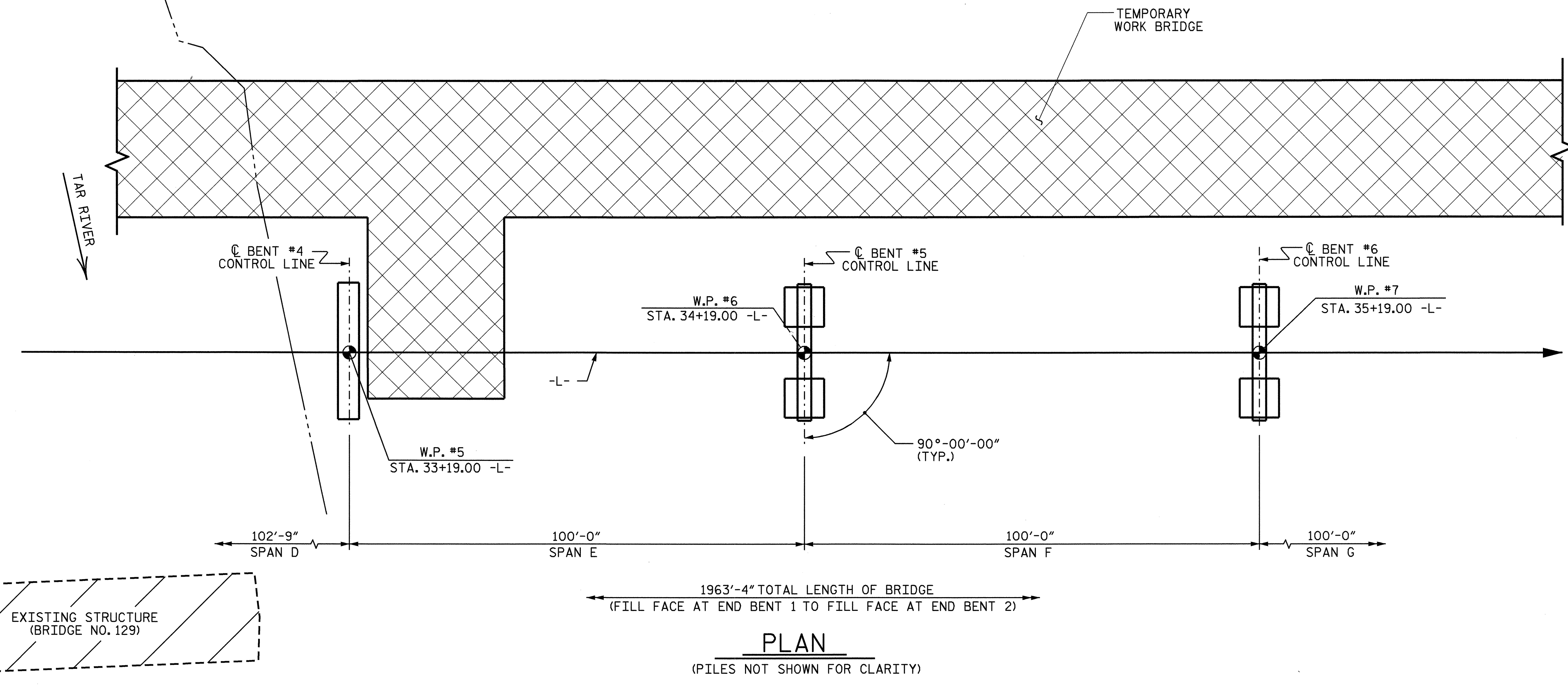
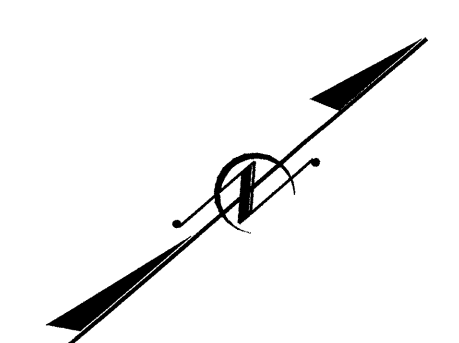
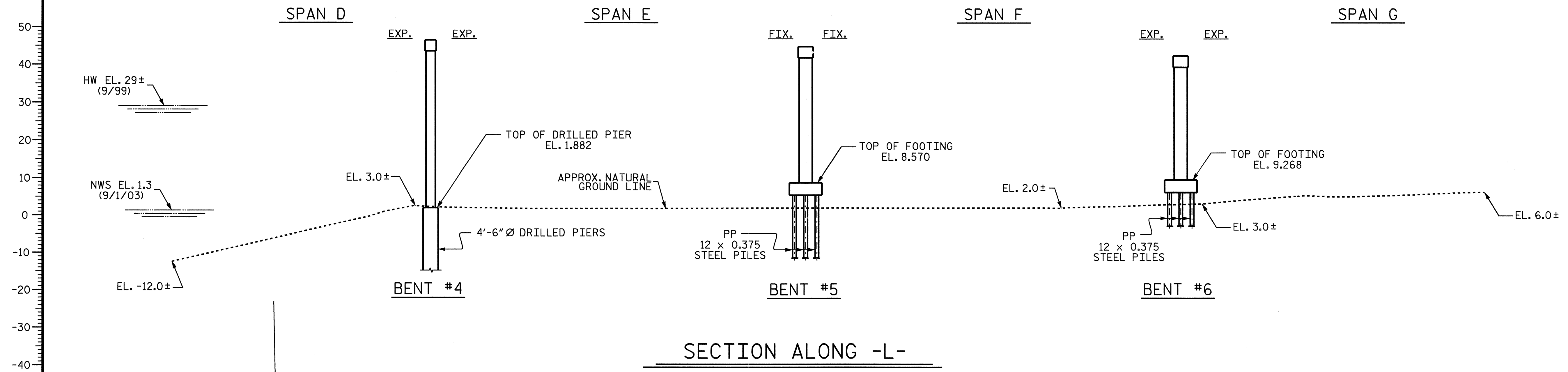
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**

FOR BRIDGE ON  
 SR 1565 (GRIMESLAND BRIDGE RD.) OVER  
 TAR RIVER AND TAR RIVER OVERFLOW  
 BETWEEN GRIMESLAND AND US 264

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1	
1			3			TOTAL SHEETS	
2			4			66	

DRAWN BY: B.N. BARODAWALA DATE: 4-8-08  
 CHECKED BY: PEGGY ADKINS DATE: 4-08



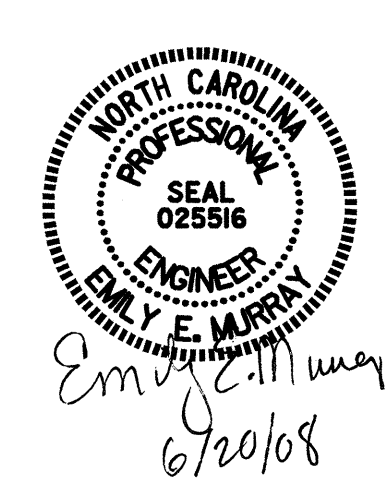
PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 2 OF 9

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**

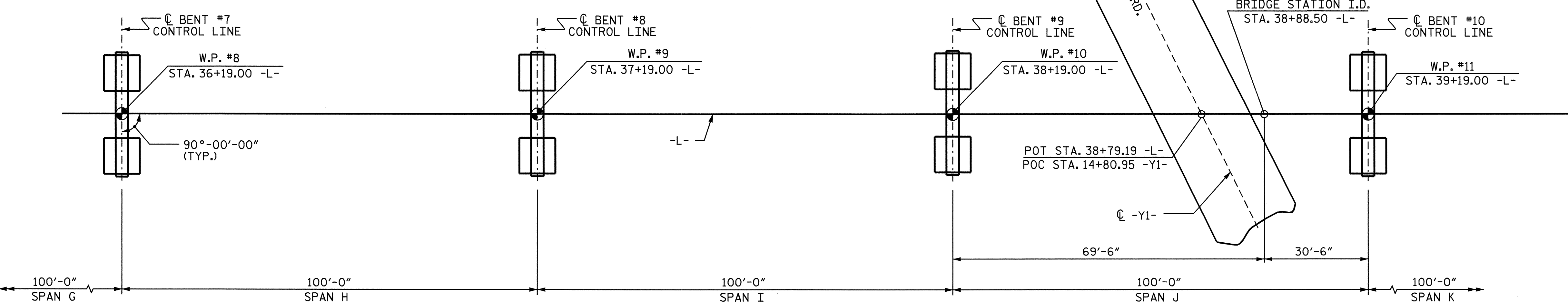
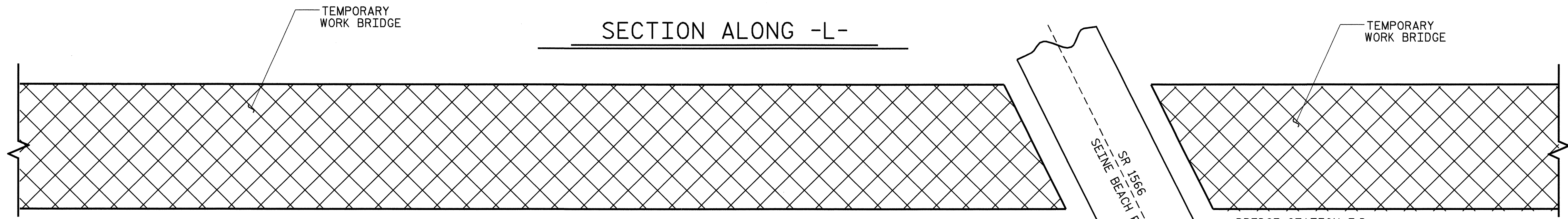
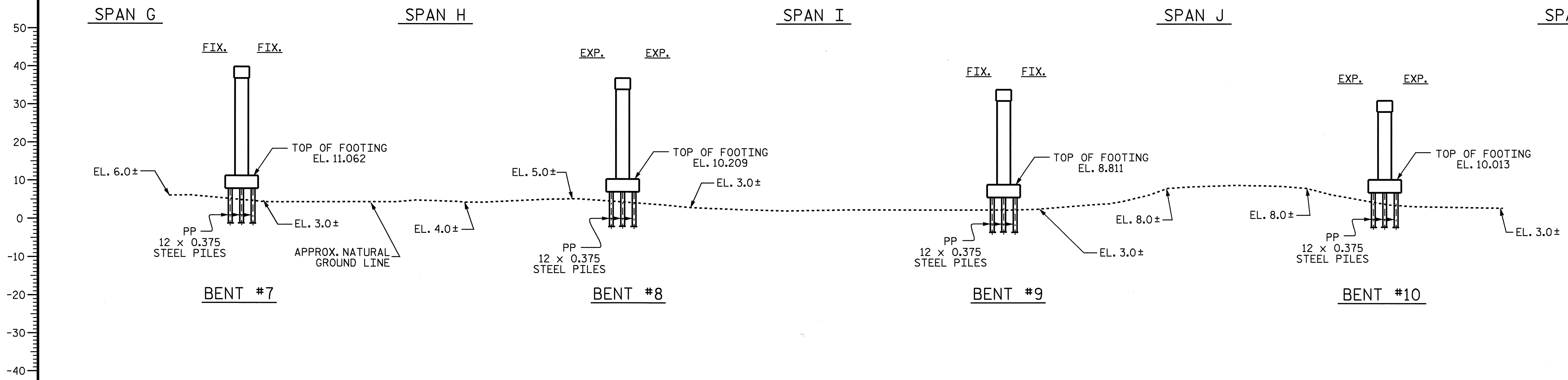
FOR BRIDGE ON  
 SR 1565 (GRIMESLAND BRIDGE RD.) OVER  
 TAR RIVER AND TAR RIVER OVERFLOW  
 BETWEEN GRIMESLAND AND US 264



DRAWN BY : B.N.BARODAWALA DATE : 4-8-08  
 CHECKED BY : PEGGY ADKINS DATE : 4-08

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			66





1963'-4" TOTAL LENGTH OF BRIDGE  
 (FILL FACE AT END BENT 1 TO FILL FACE AT END BENT 2)  
**PLAN**  
 (PILES NOT SHOWN FOR CLARITY)

PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 3 OF 9  
 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR BRIDGE ON  
 SR 1566 (GRIMESLAND BRIDGE RD.) OVER  
 TAR RIVER AND TAR RIVER OVERFLOW  
 BETWEEN GRIMESLAND AND US 264

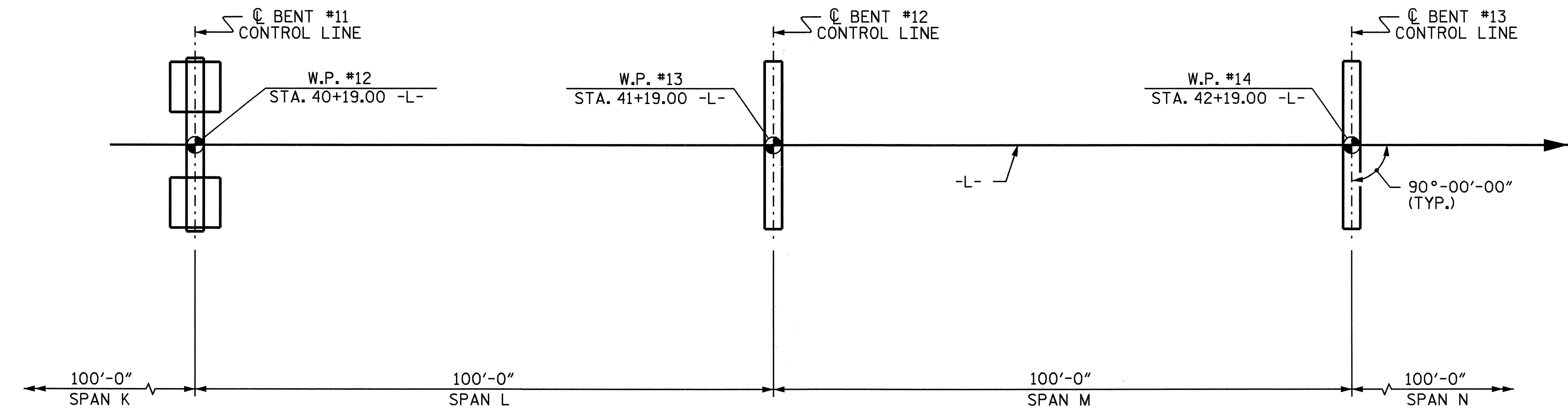
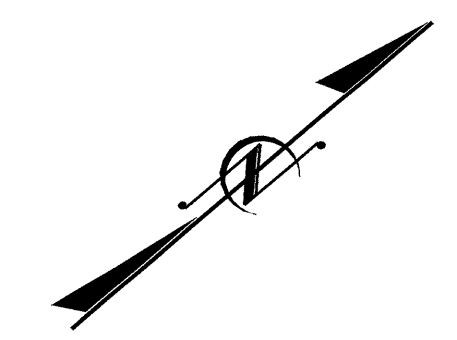
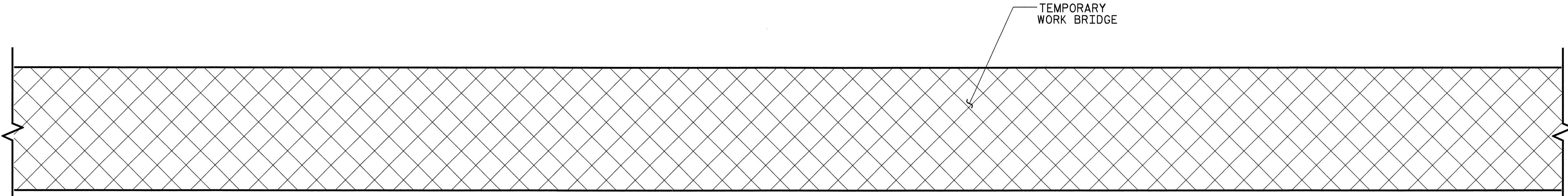
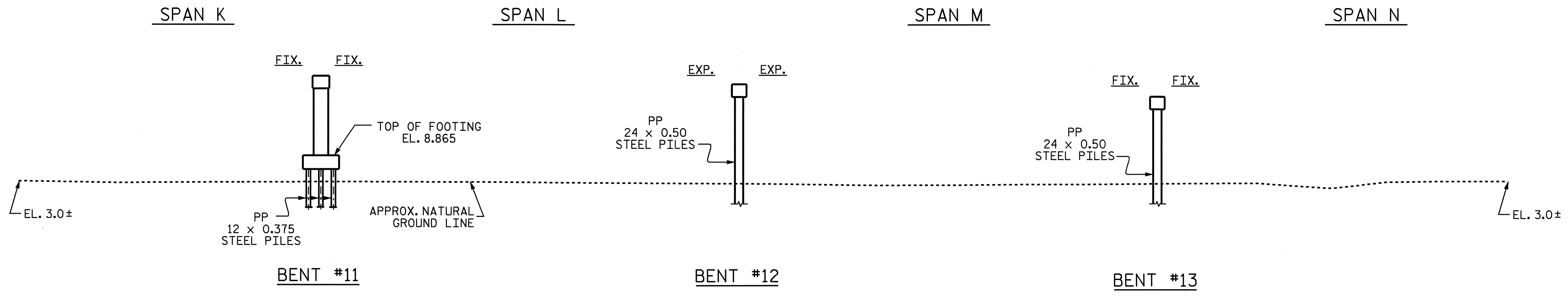


DRAWN BY : B.N.BARODAWALA DATE : 4-8-08  
 CHECKED BY : PEGGY ADKINS DATE : 4-08

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			66



50  
40  
30  
20  
10  
0  
-10  
-20  
-30  
-40



PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 4 OF 9

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL DRAWING

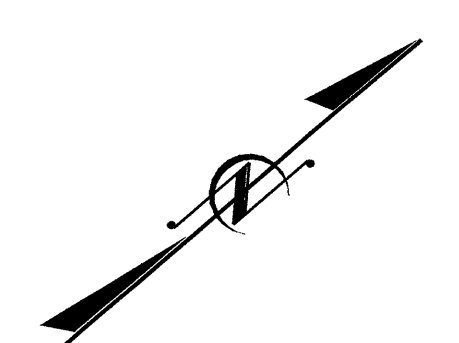
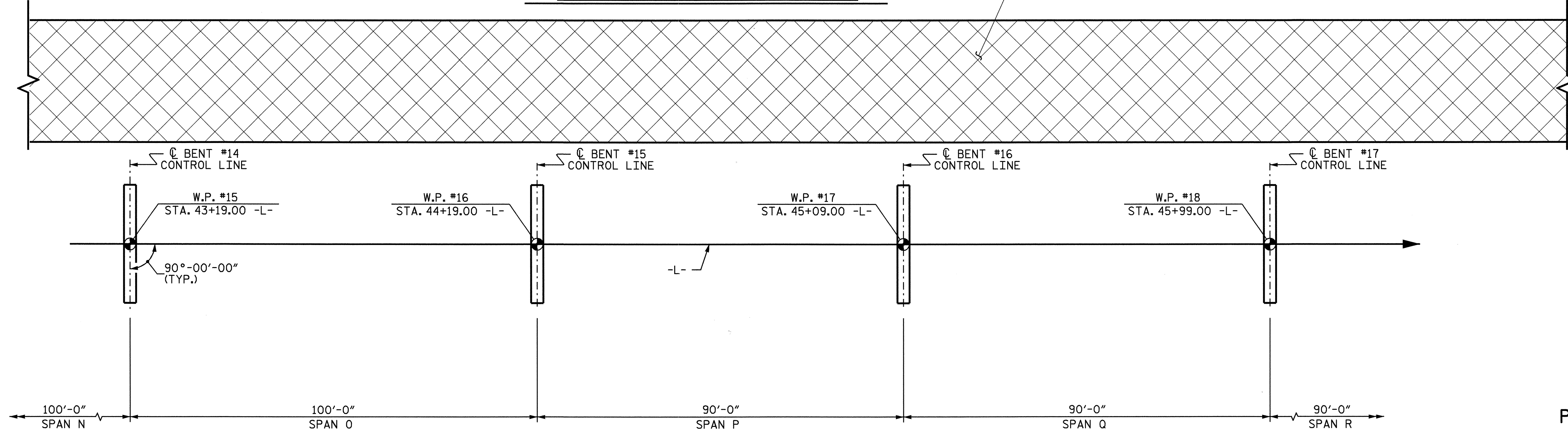
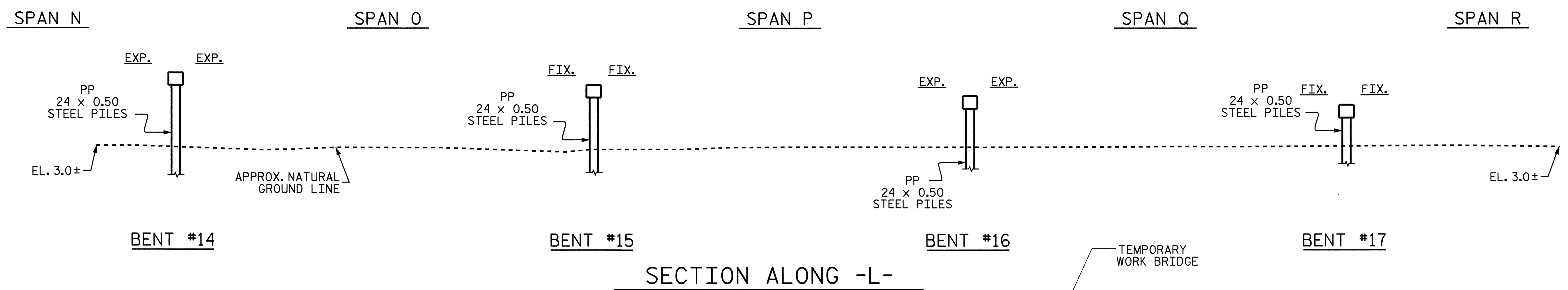
FOR BRIDGE ON  
 SR 1565 (GRIMESLAND BRIDGE RD.) OVER  
 TAR RIVER AND TAR RIVER OVERFLOW  
 BETWEEN GRIMESLAND AND US 264



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			66

DRAWN BY : B.N.BARODAWALA DATE : 4-8-08  
 CHECKED BY : PEGGY ADKINS DATE : 4-08

50  
40  
30  
20  
10  
0  
-10  
-20  
-30  
-40



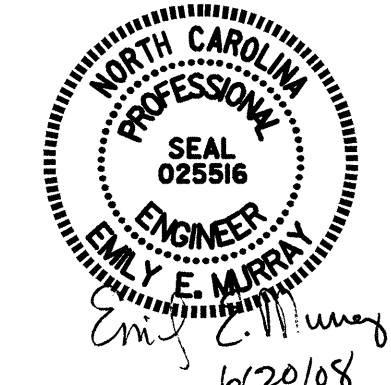
PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 5 OF 9

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**

FOR BRIDGE ON  
 SR 1565 (GRIMESLAND BRIDGE RD.) OVER  
 TAR RIVER AND TAR RIVER OVERFLOW  
 BETWEEN GRIMESLAND AND US 264



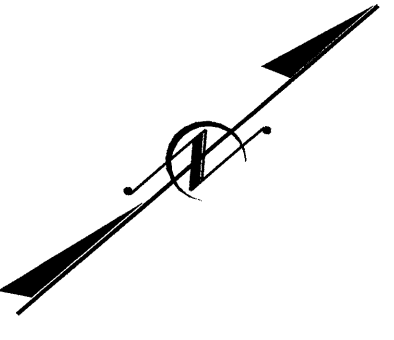
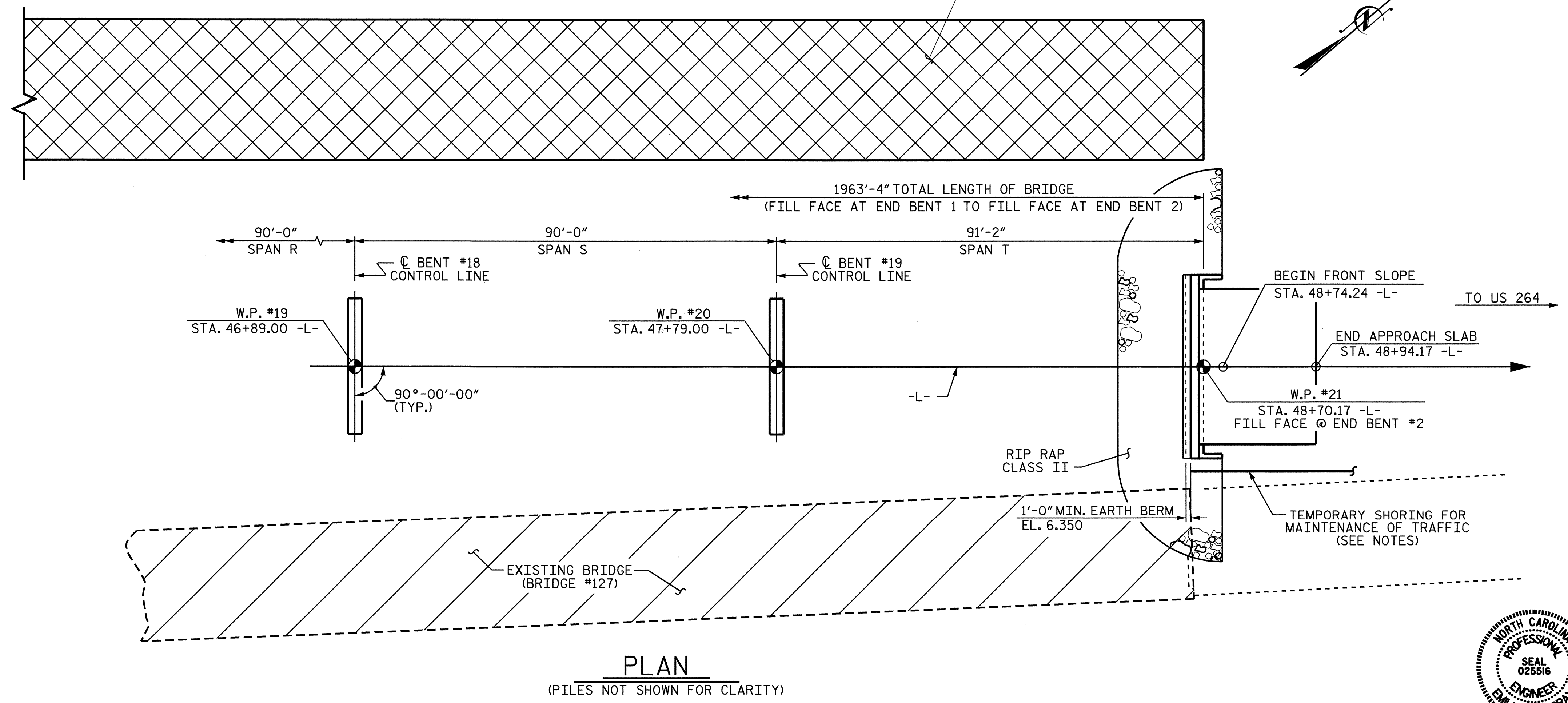
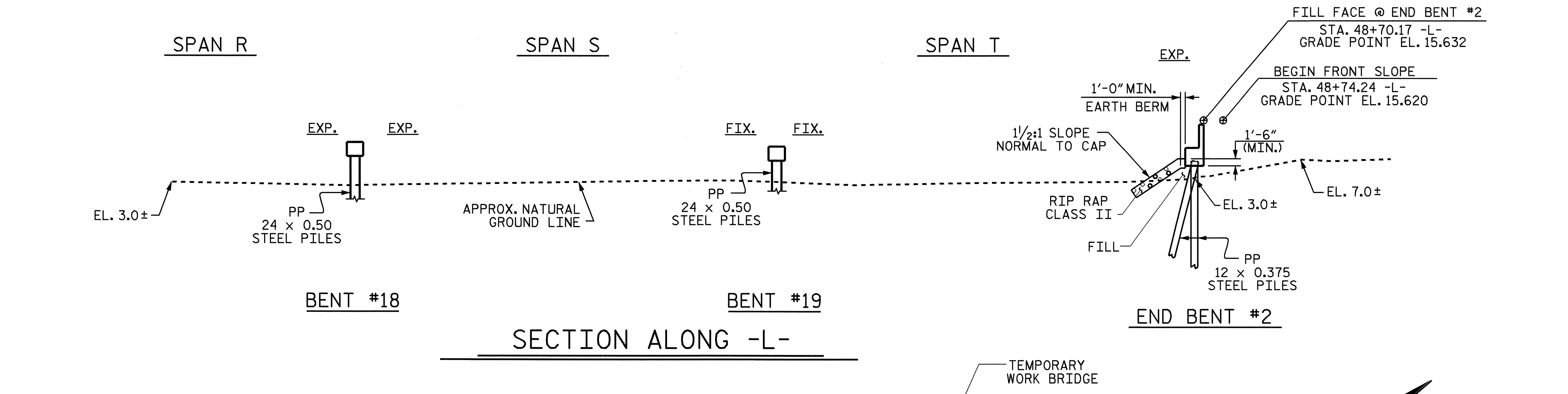
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			66

DRAWN BY : B.N.BARODAWALA DATE : 4-8-08  
 CHECKED BY : PEGGY ADKINS DATE : 4-08

46+50 47+00 47+50 48+00 48+50 49+00

(-) 2.9733% (-) 0.3033%  
 PI = 46+50.00 -L-  
 EL. = 16.30  
 VC = 370'  
 GRADE DATA -L-

50  
40  
30  
20  
10  
0  
-10  
-20  
-30  
-40



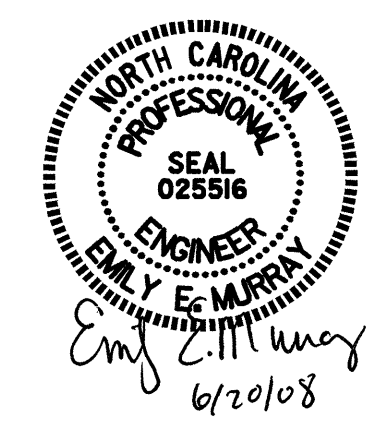
PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 6 OF 9

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL DRAWING

FOR BRIDGE ON  
 SR 1565 (GRIMESLAND BRIDGE RD.) OVER  
 TAR RIVER AND TAR RIVER OVERFLOW  
 BETWEEN GRIMESLAND AND US 264

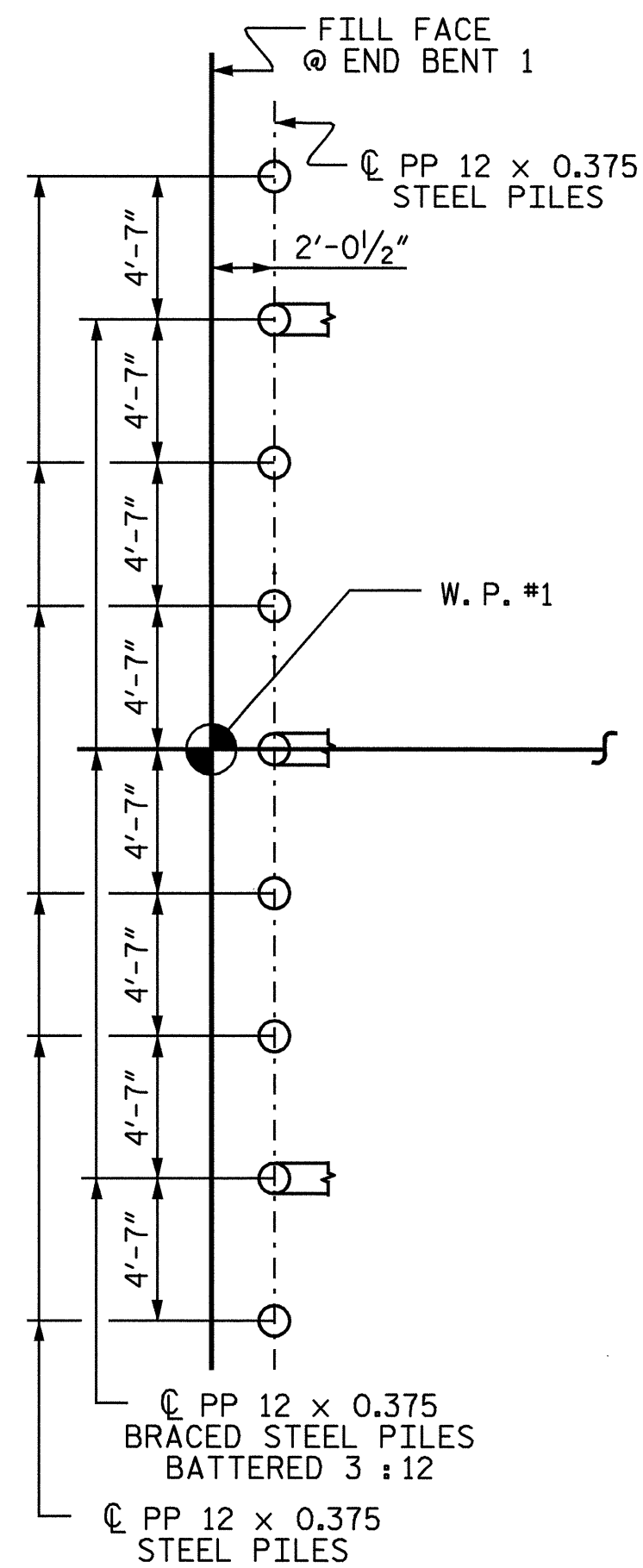


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 CHECKED BY : PEGGY ADKINS DATE : 4-08

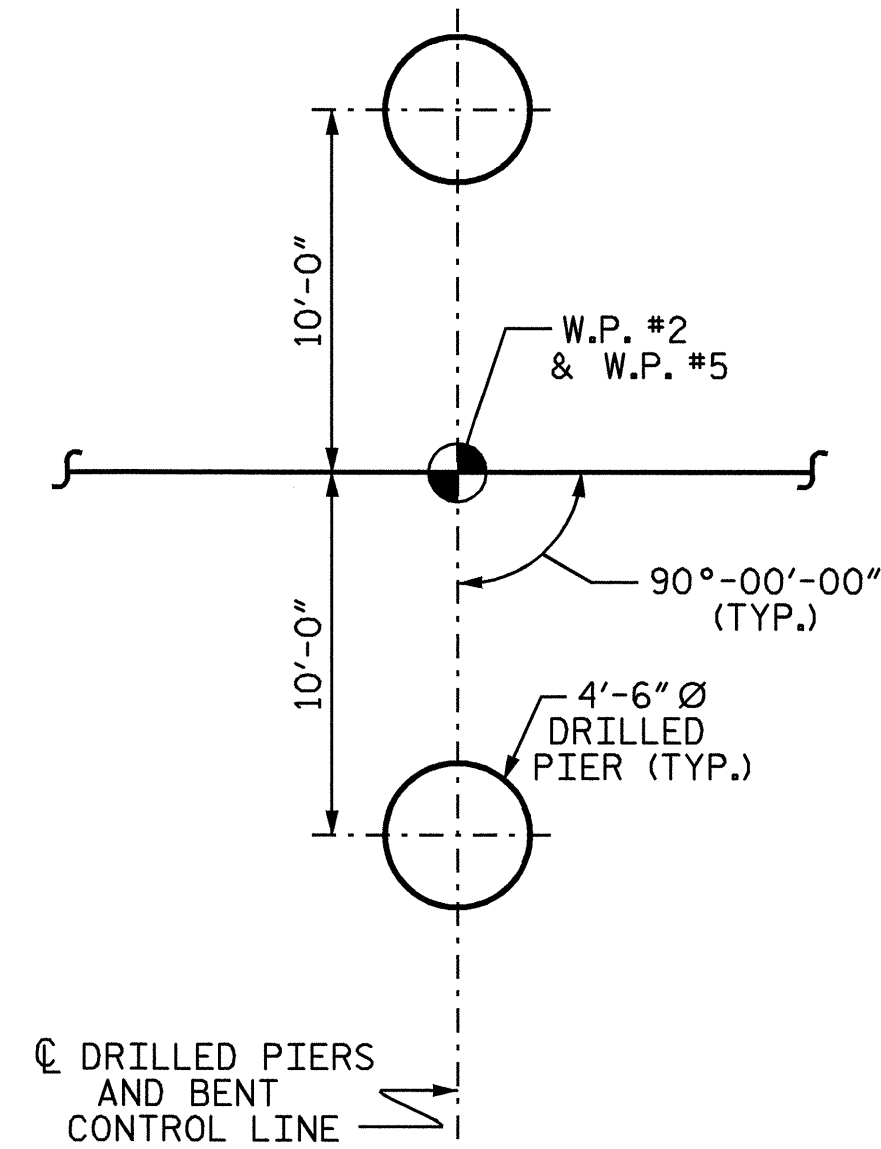
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			66

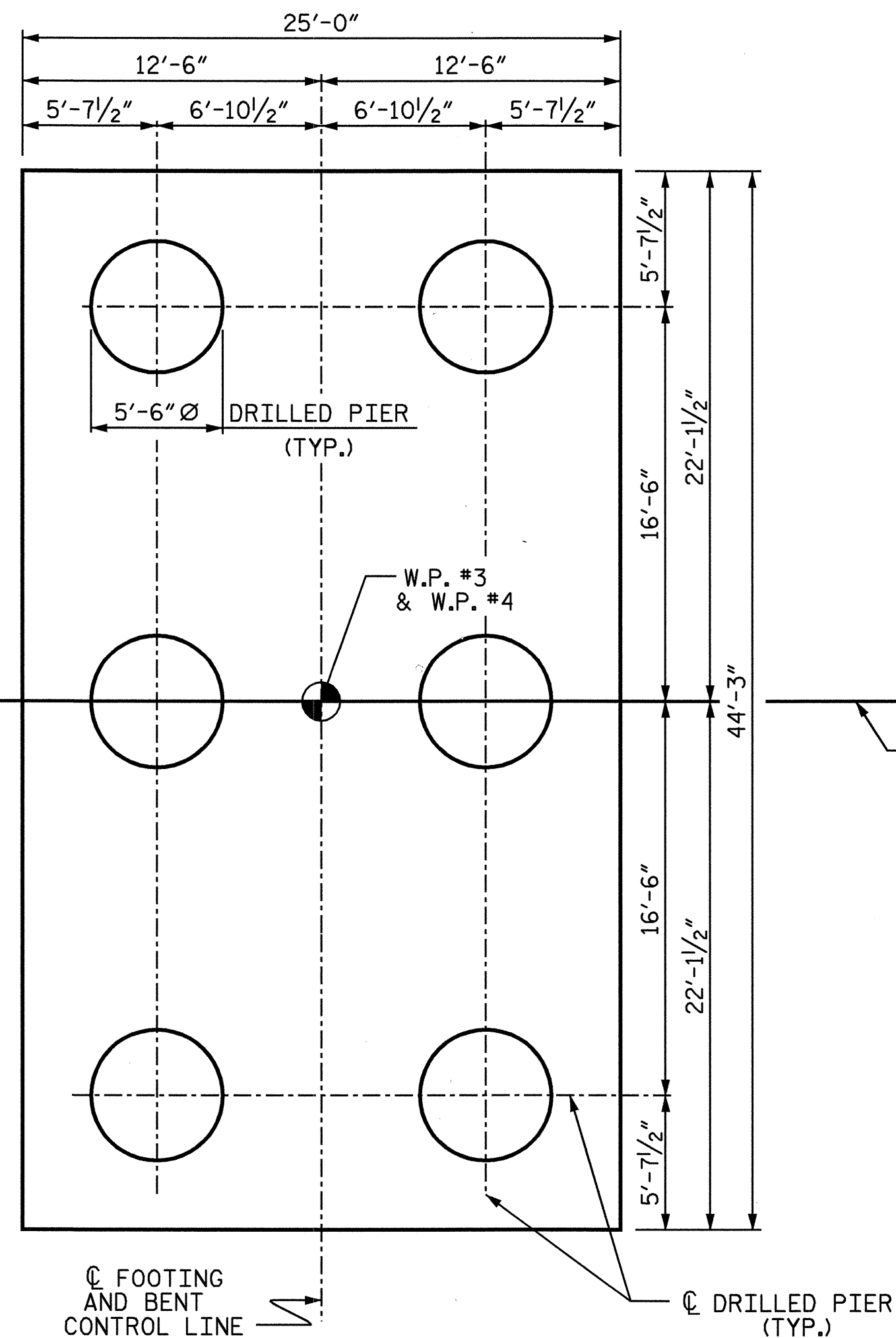




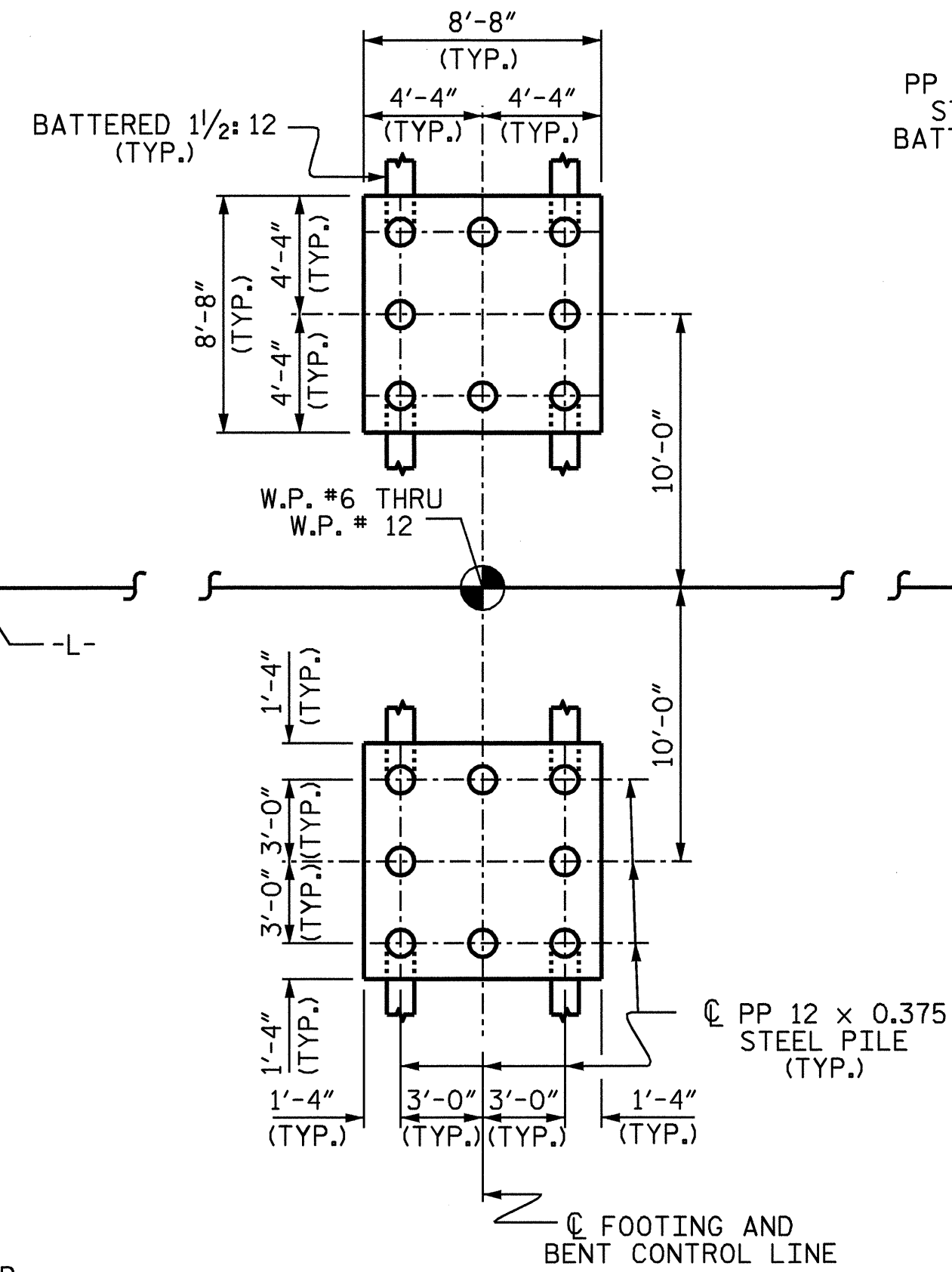
END BENT 1



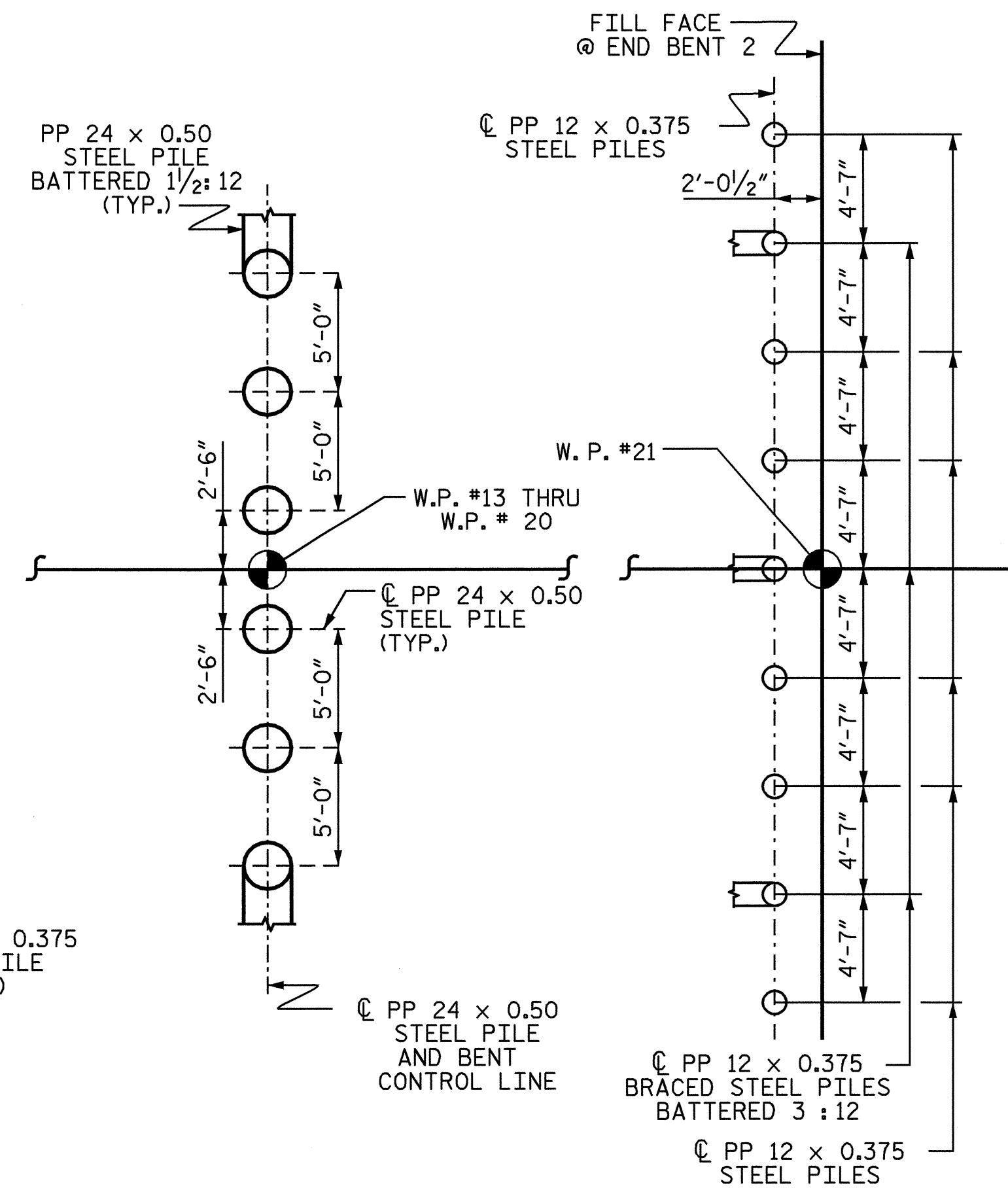
BENT 1 AND 4



BENT 2 AND 3



BENT 5 THRU 11



BENT 12 THRU 19

END BENT 2

**FOUNDATION LAYOUT**  
DIMENSIONS LOCATING PILES ARE SHOWN TO PILE CENTERLINE AT BOTTOM OF CAP OR FOOTING.

W.P. NO.	STATION NO.	W.P. NO.	STATION NO.
1	29+06.83-L-	11	39+19.00-L-
2	30+10.75-L-	12	40.19.00-L-
3	31+13.50-L-	13	41+19.00-L-
4	32+16.25-L-	14	42+19.00-L-
5	33+19.00-L-	15	43+19.00-L-
6	34+19.00-L-	16	44+19.00-L-
7	35+19.00-L-	17	45+09.00-L-
8	36+19.00-L-	18	45+99.00-L-
9	37+19.00-L-	19	46+89.00-L-
10	38+19.00-L-	20	47+79.00-L-
		21	48+70.17-L-

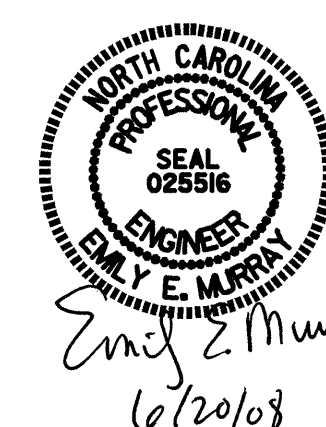
PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-

SHEET 7 OF 9

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**GENERAL DRAWING**

FOR BRIDGE ON  
SR 1565 (GRIMESLAND BRIDGE RD.) OVER  
TAR RIVER AND TAR RIVER OVERFLOW  
BETWEEN GRIMESLAND AND US 264



DRAWN BY: B.N.BARODAWALA DATE: 4/14/08  
CHECKED BY: PEGGY ADKINS DATE: 4-08

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			66

**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.

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

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

THIS BRIDGE HAS BEEN DESIGN IN ACCORDANCE WITH AASHTO'S "GUIDE SPECIFICATION AND COMMENTARY FOR VESSEL COLLISION DESIGN OF HIGHWAY BRIDGES" USING CRITICAL IMPORTANCE CLASSIFICATION, METHOD I CRITERIA.

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

THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS FOR BENTS #1 & #4 IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FT. BELOW THE GROUND LINE.

AFTER SERVING AS TEMPORARY STRUCTURE, BRIDGE NO. 129, 359'-0" LONG, CONSISTING OF 7 SPANS (1 @ 32'-10", 1 @ 32'-6", 1 @ 33'-4", 1 @ 161'-5", 1 @ 33'-4", 1 @ 32'-6" AND 1 @ 32'-10") WITH A CLEAR ROADWAY WIDTH OF 20.1 FEET WITH A REINFORCED CONCRETE FLOOR ON STEEL I-BEAMS AND A MAIN SPAN CONSISTING OF A STEEL DECK ON A SWING THRU-TRUSS ON A TIMBER ABUTMENT AND LOCATED DOWNSTREAM FROM PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

AFTER SERVING AS TEMPORARY STRUCTURE, BRIDGE NO. 127, 512'-0" LONG, CONSISTING OF 30 SPANS (1 @ 17'-9", 28 @ 17'-9" AND 1 @ 17'-9") WITH CLEAR ROADWAY WIDTH OF 20.1 FEET WITH A REINFORCED CONCRETE FLOOR ON TIMBER JOISTS WITH TIMBER CAPS ON TIMBER PILES AND LOCATED DOWNSTREAM FROM PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

THE SUBSTRUCTURES OF THE EXISTING BRIDGES INDICATED ON THE PLANS ARE 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 BRIDGES SUBSTRUCTURES SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

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

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

FOR SECURING OF VESSELS, SEE SPECIAL PROVISIONS.

FOR MAINTENANCE OF WATER TRAFFIC, SEE SPECIAL PROVISIONS.

FOR WORK IN, OR ADJACENT TO NAVIGABLE WATERS, SEE SPECIAL PROVISIONS.

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

FOR NAVIGATIONAL CLEARANCE VERIFICATION AND WATERWAYS INSPECTION, 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.

FOR VERTICAL CLEARANCE GAGES, SEE SPECIAL PROVISIONS.

FOR BRIDGE DECK RIDEABILITY AND GROOVING, SEE SPECIAL PROVISIONS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURES AT STATION 38+88.50 -L-."

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR MASS CONCRETE AT BENT #2 AND BENT #3, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

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 WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY ACCESS AT STA. 38+88.50-L- FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STA. 38+88.50-L-.

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

FOR STRUCTURE DRAINAGE SYSTEM, SEE SPECIAL PROVISIONS.

FOR DRILLED PIERS, SEE DRILLED PIERS SPECIAL PROVISION.

DRILLED PIERS AT BENT #1 AND BENT #4 ARE DESIGNED FOR AN APPLIED LOAD OF 350 TONS EACH AT THE TOP OF THE COLUMN.

DRILLED PIERS AT BENT #1 AND BENT #4 ARE DESIGNED FOR BOTH SKIN FRICTION AND END BEARING. CHECK FIELD CONDITIONS FOR THE REQUIRED CAPACITY OF 5 TONS/FT. SQ.

DRILLED PIER AT BENT #2 AND BENT #3 ARE DESIGNED FOR AN APPLIED LOAD OF 440 TONS EACH AT THE TOP OF THE COLUMN.

DRILLED PIERS AT BENT #2 AND BENT #3 ARE DESIGNED FOR BOTH SKIN FRICTION AND END BEARING. CHECK FIELD CONDITIONS FOR THE REQUIRED END BEARING CAPACITY OF 30 TONS/FT.SQ.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT #2 AND BENT #3. DO NOT EXTEND THE CASING BELOW ELEVATION -40 FEET WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

INSTALL PERMANENT STEEL CASING AT BENT #2 AND BENT #3 BY VIBRATING, SCREWING, OR DRIVING THE CASING BEFORE EXCAVATION OR DISTURBING ANY MATERIAL BELOW ELEVATION -25 FEET.

PERMANENT STEEL CASING MAY BE REQUIRED FOR DRILLED PIERS AT BENT #4. IF REQUIRED, DO NOT EXTEND THE CASING BELOW ELEVATION -3 FEET WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE ENGINEER WILL DETERMINE THE NEED FOR PERMANENT STEEL CASING.

INSTALL DRILLED PIERS AT BENT #1 THAT EXTEND TO AN ELEVATION NO HIGHER THAN -84 FEET.

INSTALL DRILLED PIERS AT BENT #2 AND BENT #3 THAT EXTEND TO AN ELEVATION NO HIGHER THAN -110 FEET AND SATISFY THE REQUIRED END BEARING CAPACITY.

INSTALL DRILLED PIERS AT BENT #4 THAT EXTEND TO AN ELEVATION NO HIGHER THAN -92 FEET.

SLURRY CONSTRUCTION IS REQUIRED FOR DRILLED PIERS AT BENT #1, BENT #2, BENT #3 AND BENT #4.

SPT TESTING IS REQUIRED FOR THE DRILLED PIERS AT BENT #2 AND BENT #3.

SID INSPECTIONS ARE REQUIRED FOR DRILLED PIERS AT BENT #2 AND BENT #3.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. SEE CROSSHOLE SONIC LOGGING SPECIAL PROVISION.

DRIVE PILES AT END BENT #1 AND END BENT #2 TO A REQUIRED BEARING CAPACITY OF 130 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO.

DRIVE PILES AT BENT #5 THROUGH 11 TO A REQUIRED BEARING CAPACITY OF 130 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO PLUS ANY ADDITIONAL CAPACITY TO ACCOUNT FOR DOWNDRAW OR NEGATIVE SKIN FRICTION AND SCOUR.

THE ALLOWABLE BEARING CAPACITY OF THE PILES AT END BENT #1 AND END BENT #2 IS 60 TONS PER PILE.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT BENT #5 THRU BENT #11 IS 62 TONS PER PILE.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT BENTS #12 THRU BENT #19 IS 165 TONS PER PILE.

PIPE PILE PLATES ARE REQUIRED FOR PIPE PILES AT END BENT #1 AND END BENT #2 AND BENT #5 THRU BENT #11. USE PIPE PILE PLATES WITH A DIAMETER EQUAL TO THE PIPE PILE DIAMETER.

DRIVE PILES AT BENT #12 THROUGH BENT #19 TO A REQUIRED BEARING CAPACITY OF 335 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO PLUS ANY ADDITIONAL CAPACITY TO ACCOUNT FOR DOWNDRAW OR NEGATIVE SKIN FRICTION AND SCOUR.

INSTALL PILES AT BENT #12 TO A MINIMUM TIP ELEVATION NO HIGHER THAN -26 FEET.

INSTALL PILES AT BENT #13 THROUGH BENT #19 TO A MINIMUM TIP ELEVATION NO HIGHER THAN -25 FEET.

PIPE PILE PLATES MAY BE REQUIRED FOR THE PIPE PILES AT BENT #12 THROUGH BENT #19. THE ENGINEER WILL DETERMINE THE NEED FOR PIPE PILE PLATES AFTER DRIVING TEST PILES OR A FEW INITIAL PRODUCTION PILES. USE PIPE PILE PLATES WITH A DIAMETER EQUAL TO THE PIPE PILE DIAMETER.

THE SCOUR CRITICAL ELEVATION FOR BENT #1 IS ELEVATION 3 FEET. THE SCOUR CRITICAL ELEVATION FOR BENT #2 AND BENT #3 IS ELEVATION -27 FEET. THE SCOUR CRITICAL ELEVATION FOR BENT #4 THROUGH BENT #19 IS ELEVATION -5 FEET. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

OBSERVE A 3 MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT TO WITHIN 2 FEET OF FINISHED GRADE BEFORE BEGINNING END BENT CONSTRUCTION AT END BENT #1.

TESTING THE FIRST PRODUCTION 24" PIPE PILE WITH THE PILE DRIVING ANALYZER DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED. SEE PILE DRIVING ANALYZER SPECIAL PROVISION.

TESTING THE FIRST PRODUCTION 12" PIPE PILE, NOT INCLUDING PILES AT END BENTS, WITH THE PILE DRIVING ANALYZER DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED. SEE PILE DRIVING ANALYZER SPECIAL PROVISION.

PILE RESTRIKES FOR LRFD ARE REQUIRED FOR THE PILES DRIVEN WITH THE PILE DRIVING ANALYZER. SEE PILE RESTRIKES FOR LRFD SPECIAL PROVISION.

FOR SOLAR ARRAY PLATFORM, SEE SPECIAL PROVISIONS.

FOR REMOVAL OF EXISTING STRUCTURES, SEE SPECIAL PROVISIONS.

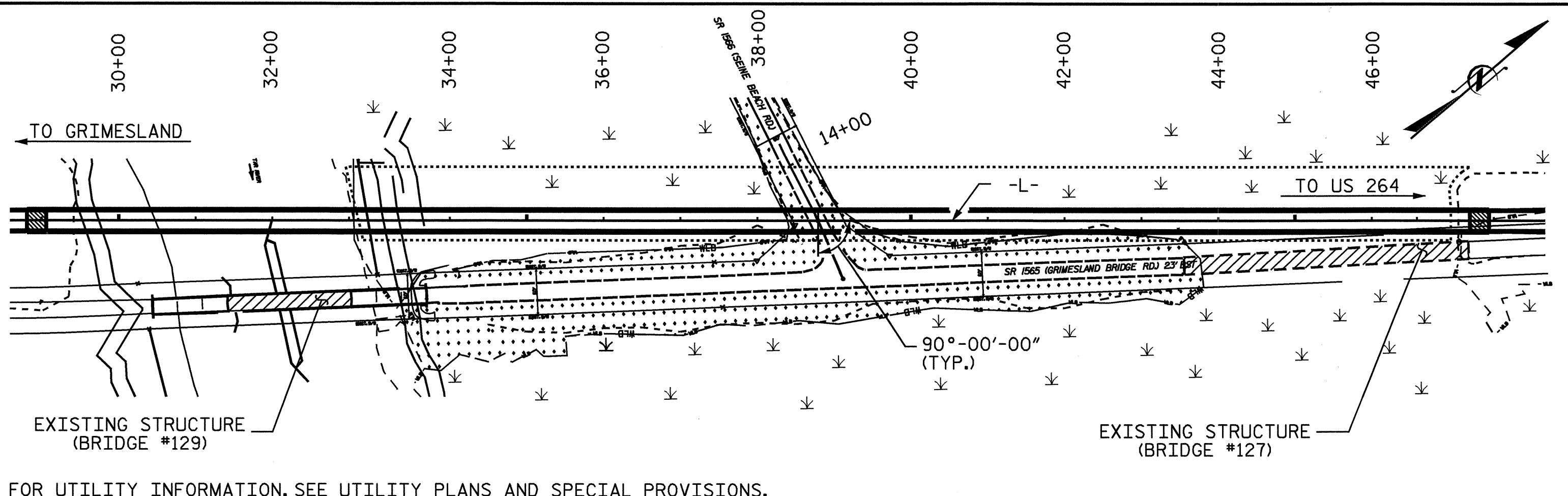
FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR NAVIGATIONAL LIGHTING SYSTEM, SEE SPECIAL PROVISIONS.

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

BM: NCDOT MONUMENT "B3016-1" BL STA. 21+37.43 131.96' RT. ELEV. 18.69 DATUM: NGVD 29



FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

**LOCATION SKETCH**

**HYDRAULIC DATA**

DESIGN DISCHARGE = 39,000 cfs  
 FREQUENCY OF DESIGN FLOOD = 25 yr  
 DESIGN HIGH WATER ELEVATION = 11.6  
 DRAINAGE AREA = 2858 sq. mi.  
 BASIC DISCHARGE (Q100) = 55,000 cfs  
 BASIC HIGH WATER ELEVATION = 13.8

**\* OVERTOPPING FLOOD DATA**

OVERTOPPING DISCHARGE = 31,000 cfs  
 FREQUENCY OF OVERTOPPING FLOOD = 10 yr  
 OVERTOPPING FLOOD ELEVATION = 8.3

\* OVERTOPPING OCCURS APPROXIMATELY 2500' NORTH OF BRIDGE END

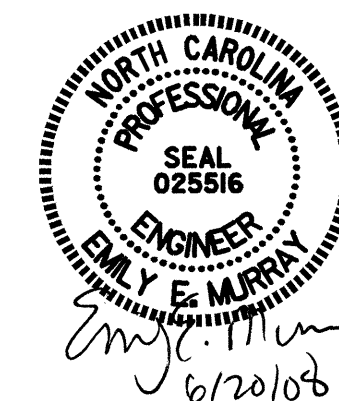
PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 8 OF 9

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**

FOR BRIDGE ON  
 SR 1565 (GRIMESLAND BRIDGE RD.) OVER  
 TAR RIVER AND TAR RIVER OVERFLOW  
 BETWEEN GRIMESLAND AND US 264



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			66

DRAWN BY : B.N.BARODAWALA DATE : 4-8-08  
 CHECKED BY : PEGGY ADKINS DATE : 4-08



**TOTAL BILL OF MATERIAL**

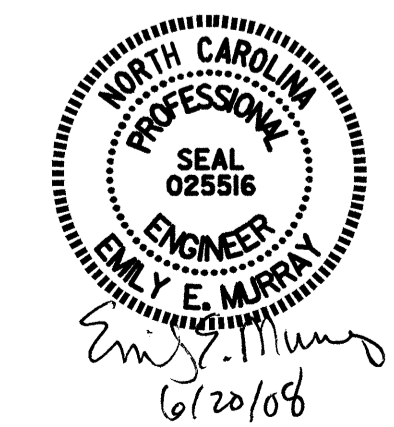
	CONSTRUCTION, MAINTENANCE, & REMOVAL OF TEMP ACCESS	REMOVAL OF EXISTING STRUCTURES	4'-6" DIA. DRILLED PIERS	5'-6" DIA. DRILLED PIERS	PERMANENT STEEL CASING FOR 4'-6" DIA. DRILLED PIER	PERMANENT STEEL CASING FOR 5'-6" DIA. DRILLED PIER	PDA TESTING	PDA ASSISTANCE	SID INSPECTION	SPT TESTING	CROSSHOLE SONIC LOGGING	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS AA CONCRETE	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	54 INCH PRESTRESSED CONCRETE GIRDERS	PP 12 x 0.375 STEEL PILES	PP 12 x 0.375 GALVANIZED STEEL PILES	PP 24 x 0.50 GALVANIZED STEEL PILES	PIPE PILE PLATES				
	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	SQ. FT.	SQ. FT.	CU. YDS.	CU. YDS.	LUMP SUM	LBS.	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	NO.	LIN. FT.	EACH		
SUPERSTRUCTURE												65,212	53,997						80	7,797.33							
END BENT 1																	28.1	4055		9	405				9		
BENT 1			212.0								1						39.7	43,018	7,308								
BENT 2				681.0		258.6			6	6	1			204.9	85.5		245,235	27,899									
BENT 3				681.0		258.6			6	6	1			204.9	86.4		245,277	27,912									
BENT 4			189.0		10.0						1						58.6	43,358	7,885								
BENT 5																	39.0	9,105	1,754			16	640	16			
BENT 6																	38.1	8,847	1,623			16	640	16			
BENT 7																	36.5	8,408	1,399			16	560	16			
BENT 8																	35.8	8,193	1,290			16	560	16			
BENT 9																	35.2	8,029	1,207			16	720	16			
BENT 10																	33.7	7,599	988			16	720	16			
BENT 11																	33.1	7,410	892			16	720	16			
BENT 12																	11.2	1,931					6	420	6		
BENT 13																	11.2	1,931					6	390	6		
BENT 14																	11.2	1,931					6	360	6		
BENT 15																	11.2	1,931					6	360	6		
BENT 16																	11.2	1,931					6	330	6		
BENT 17																	11.2	1,931					6	330	6		
BENT 18																	11.2	1,931					6	330	6		
BENT 19																	11.2	1,931					6	300	6		
END BENT 2																	28.1	4028		9	270				9		
TOTAL	LUMP SUM	LUMP SUM	401.0	1,362.0	10.0	517.2	3	3	12	12	4	65,212	53,997	409.8	667.4	LUMP SUM	658,010	80,157	80	7,797.33	18	675	112	4,560	48	2,820	178

**TOTAL BILL OF MATERIAL**

	PILE REDRIVES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS	STRUCTURE DRAINAGE SYSTEM	SOLAR ARRAY SUPPORT PLATFORM
	EACH	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM
SUPERSTRUCTURE		3922.50						
END BENT 1	6		830	922				
BENT 1								
BENT 2								
BENT 3								
BENT 4								
BENT 5	7							
BENT 6	7							
BENT 7	7							
BENT 8	7							
BENT 9	7							
BENT 10	7							
BENT 11	7							
BENT 12	3							
BENT 13	3							
BENT 14	3							
BENT 15	3							
BENT 16	3							
BENT 17	3							
BENT 18	3							
BENT 19	3							
END BENT 2	6		206	229				
TOTAL	85	3,922.50	1,036	1,151	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM

PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-

SHEET 9 OF 9



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**GENERAL DRAWING**

FOR BRIDGE ON  
SR 1565 (GRIMESLAND BRIDGE RD.) OVER  
TAR RIVER AND TAR RIVER OVERFLOW  
BETWEEN GRIMESLAND AND US 264

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			66

DRAWN BY : B.N.BARODAWALA DATE : 4-8-08  
CHECKED BY : E. E. MURRAY DATE : 5-6-08



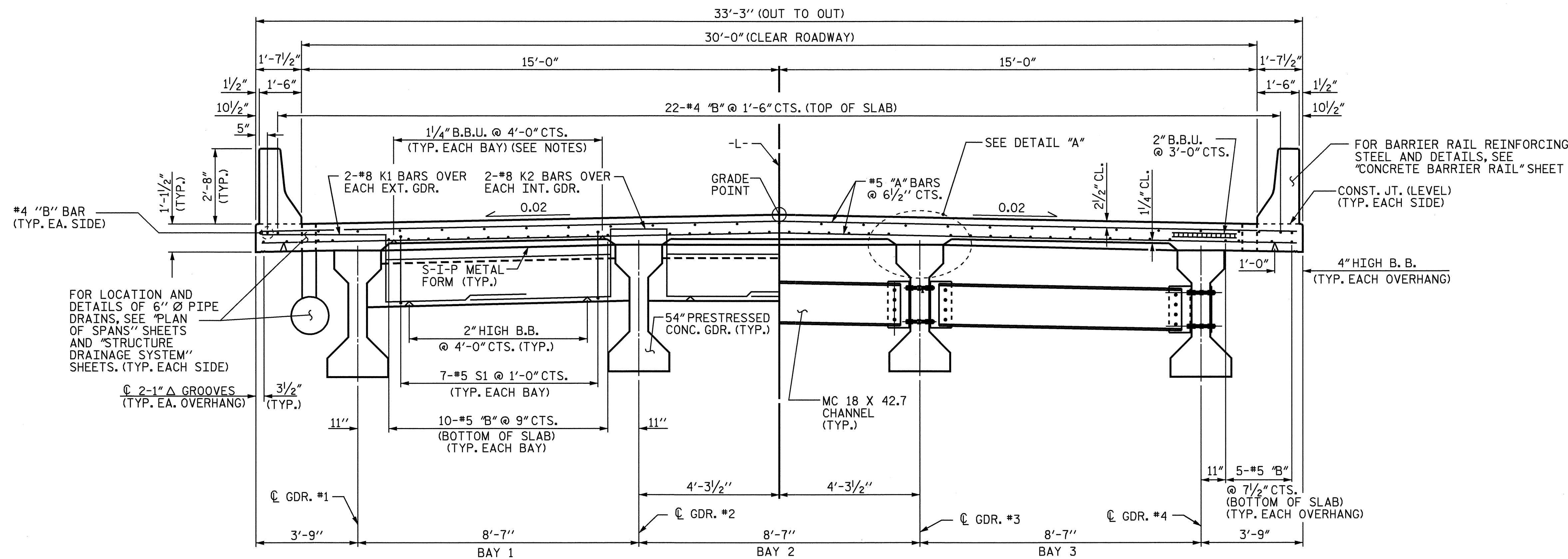
**NOTES**

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.

LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS AND PIPE DRAINS IN DECK.

PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

CONCRETE IN BENT DIAPHRAGMS AT BENTS 2,4,6,8,10,12,14,16 AND 18 MAY BE CLASS A IN LIEU OF CLASS AA. PAYMENT SHALL BE MADE UNDER THE UNIT CONTRACT PRICE FOR REINFORCED CONCRETE DECK SLAB.

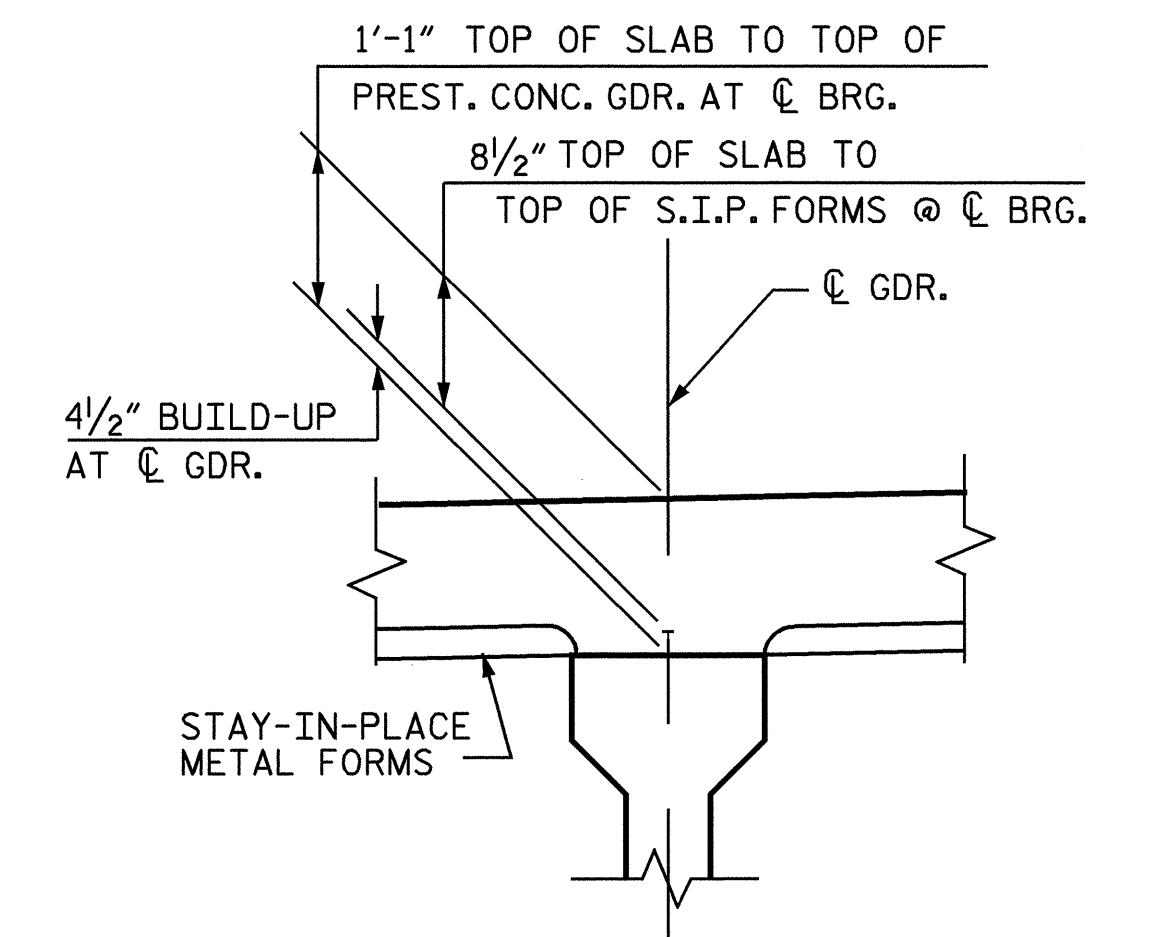


**TYPICAL HALF SECTION**

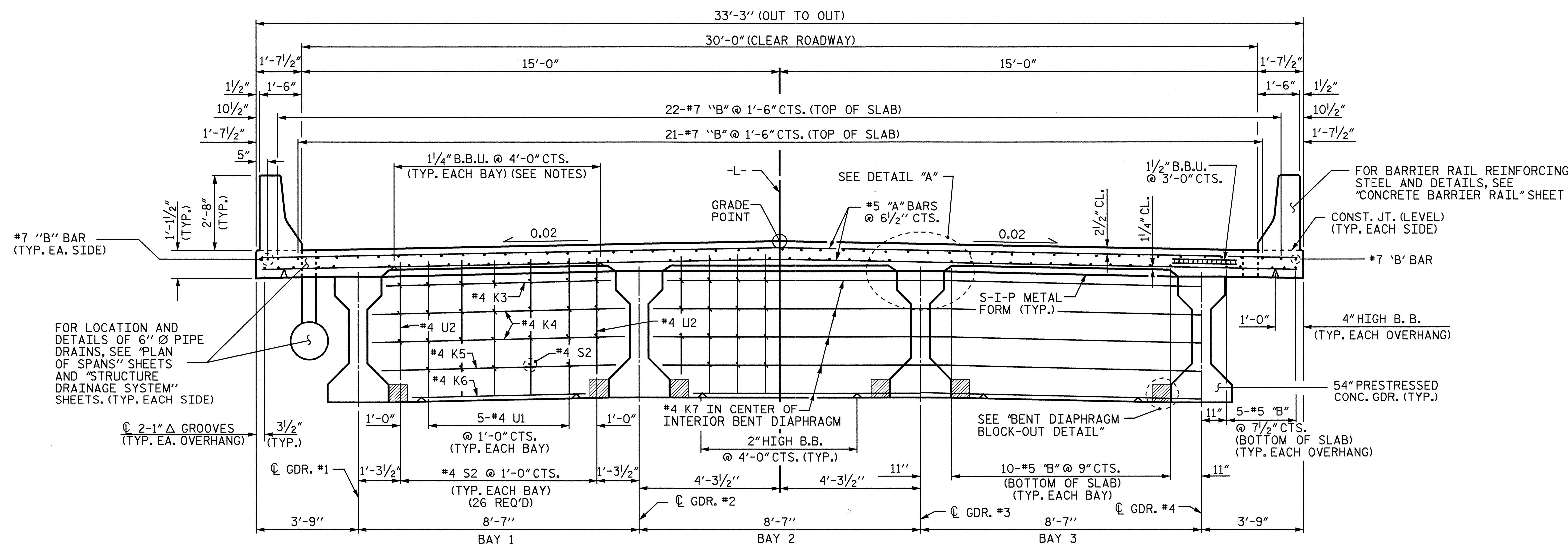
SHOWING END BENT DIAPHRAGMS AND BENT DIAPHRAGMS @ BENTS 2, 4, 6, 8, 10, 12, 14, 16 & 18

**TYPICAL HALF SECTION**

SHOWING INTERMEDIATE STEEL DIAPHRAGMS (FOR CHANNEL DETAILS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET.)



**DETAIL "A"**



**TYPICAL SECTION**

SHOWING BENT DIAPHRAGMS @ BENTS 1, 3, 5, 7, 9, 11, 13, 15, 17 & 19

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PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

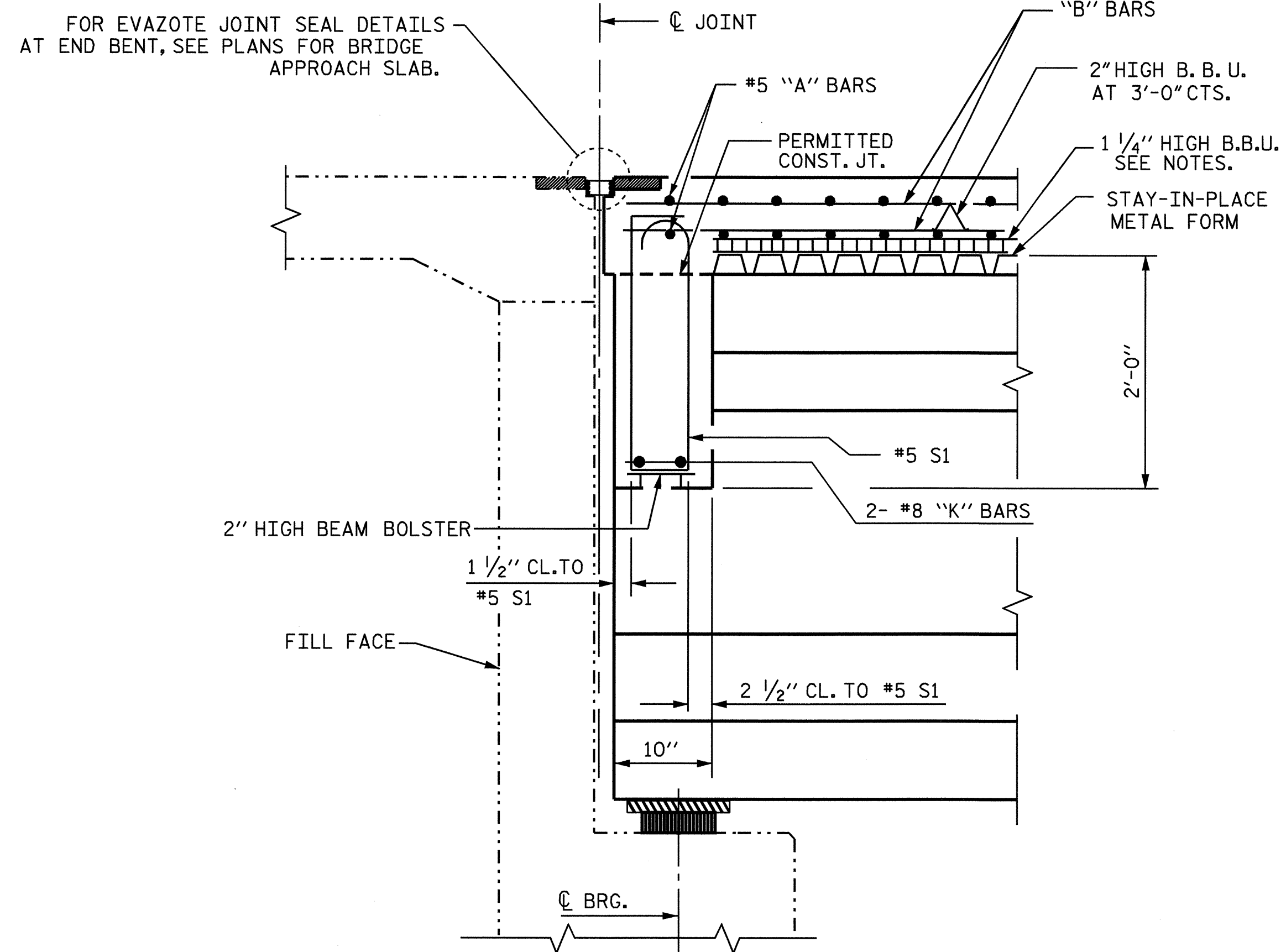
SUPERSTRUCTURE  
 TYPICAL SECTION



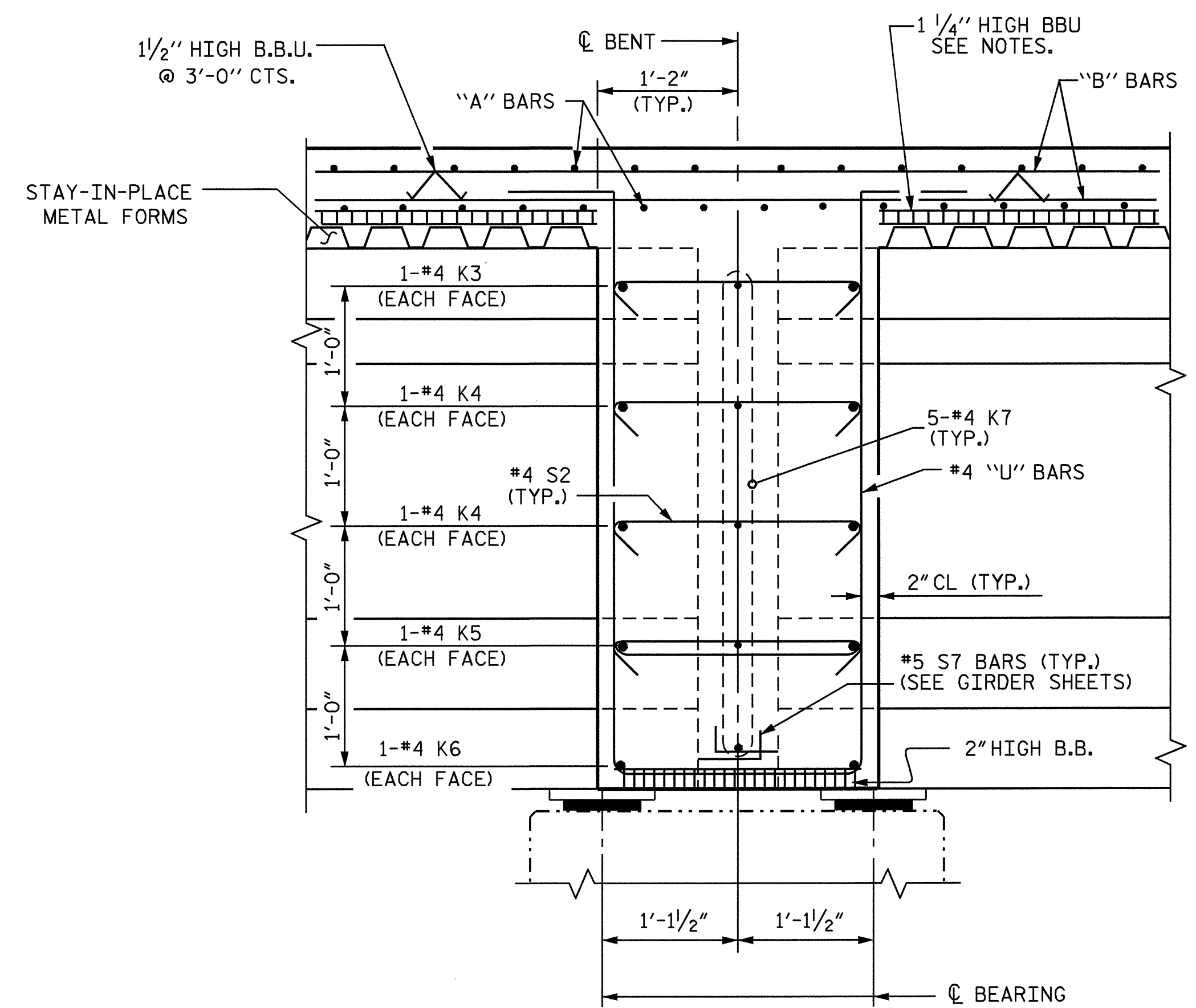
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 CHECKED BY: PEGGY ADKINS DATE: 3/2008

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2			4			67

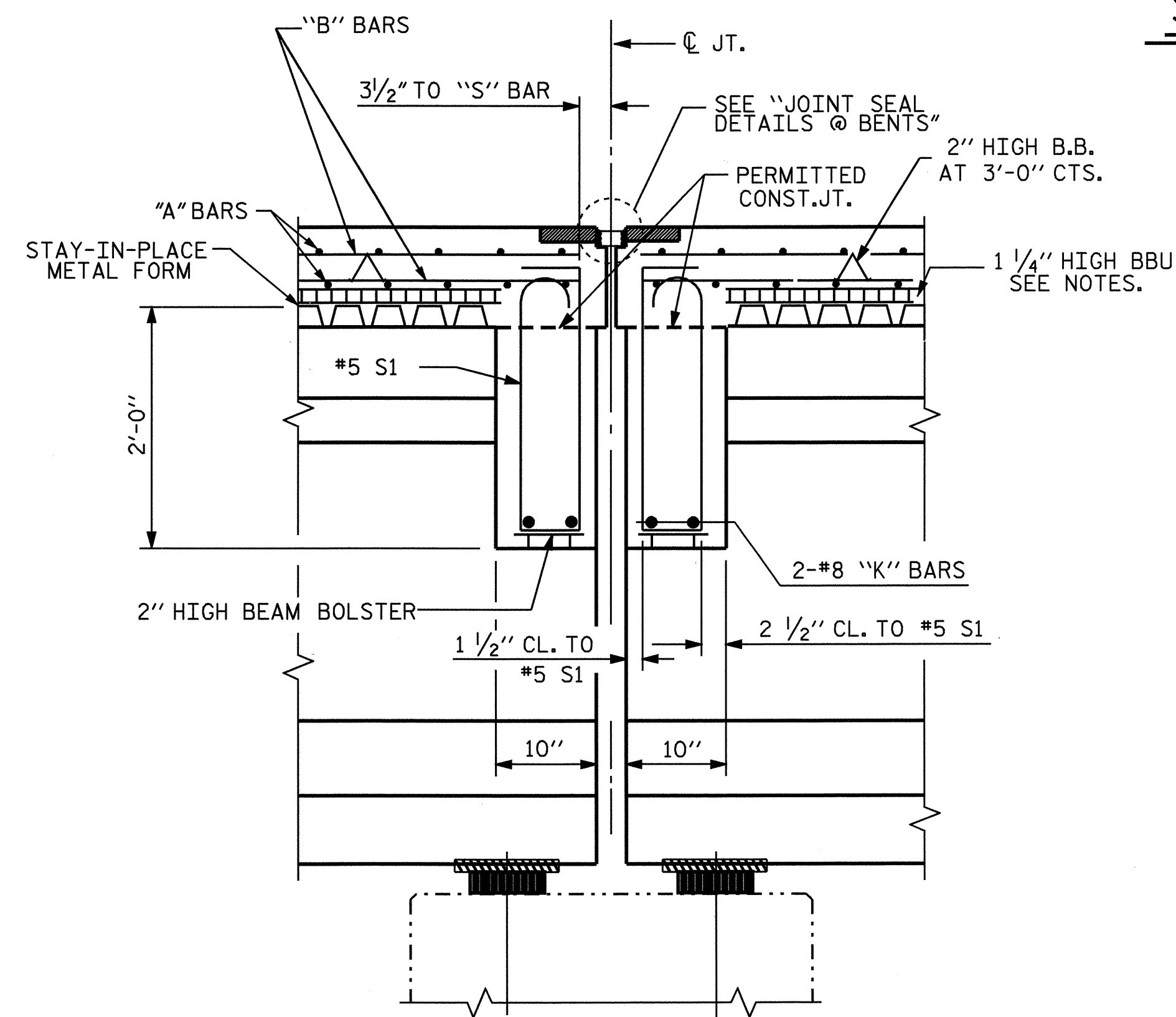


**SECTION THRU END BENT DIAPHRAGM**



**SECTION THRU BENT DIAPHRAGMS**

@ BENTS 1, 3, 5, 7, 9, 11, 13, 15, 17 & 19



**SECTION THRU BENT DIAPHRAGMS**

@ BENTS 2, 4, 6, 8, 10, 12, 14, 16 & 18

PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 2 OF 3

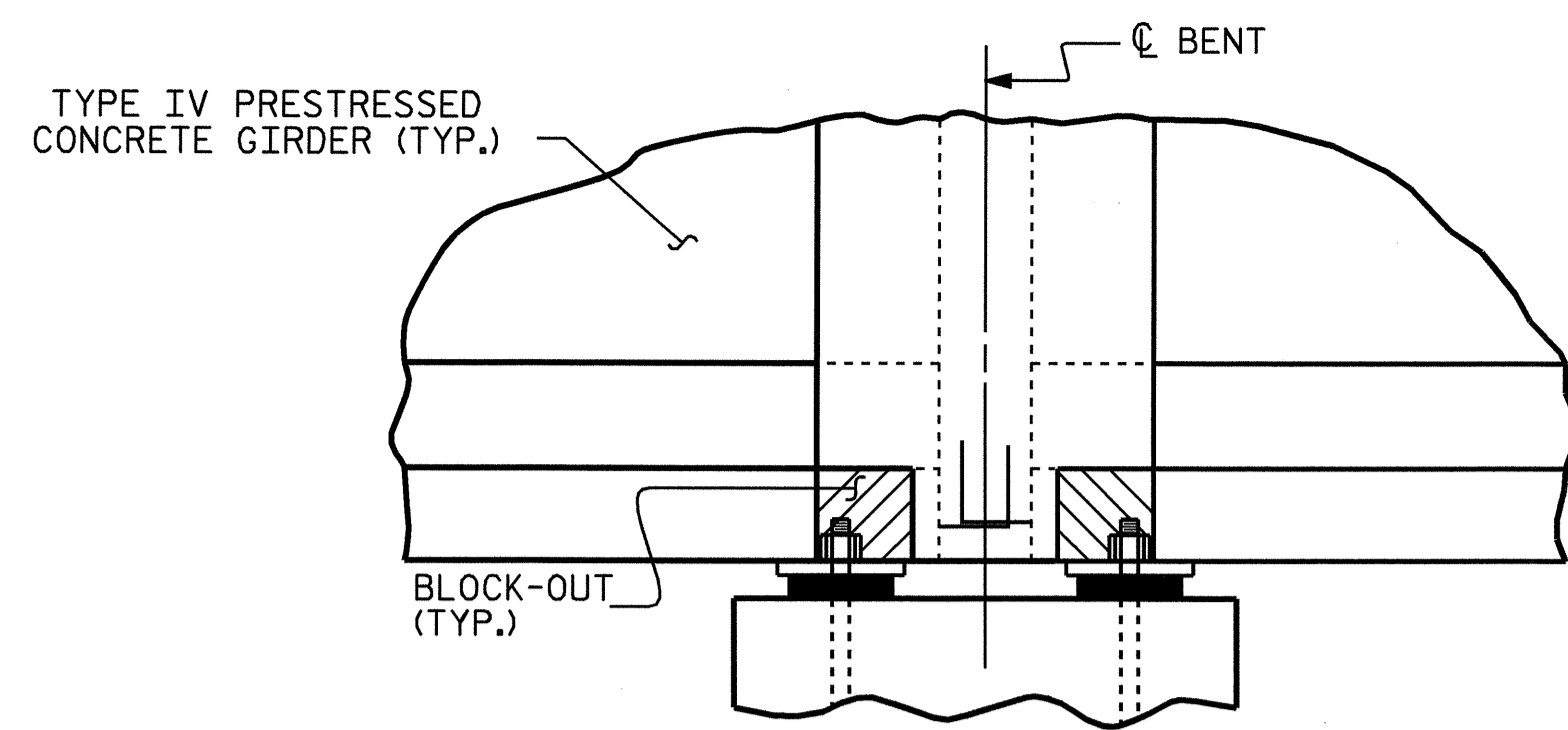
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUPERSTRUCTURE  
 TYPICAL SECTION  
 DETAILS

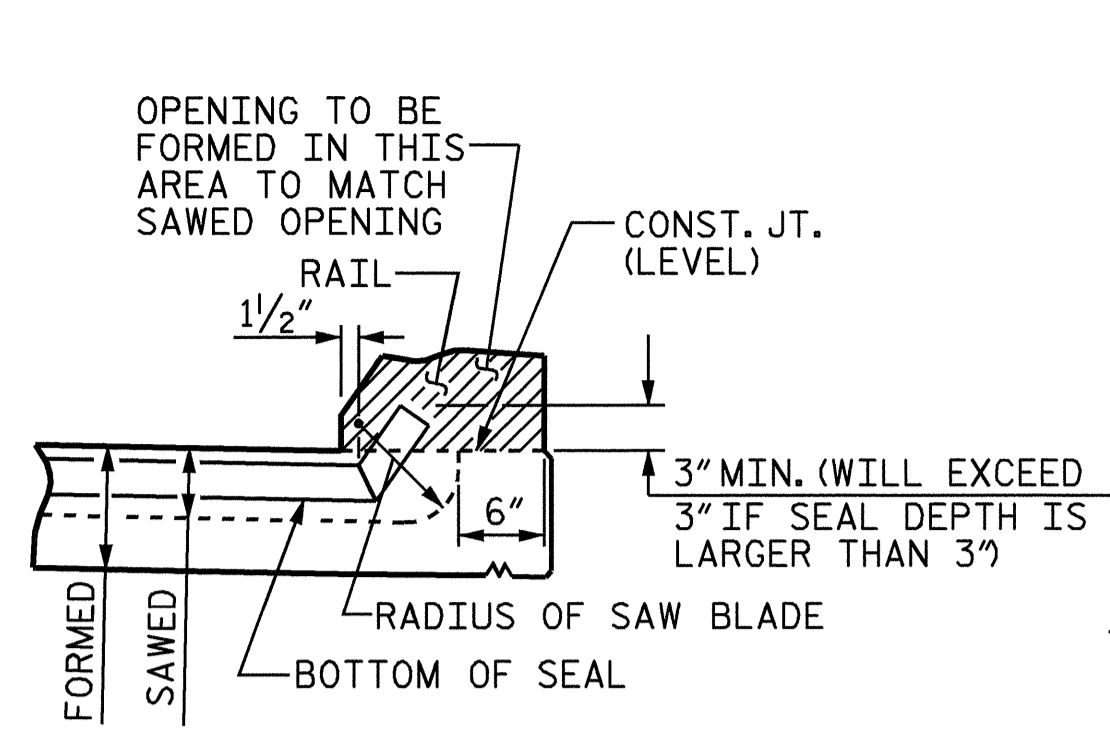


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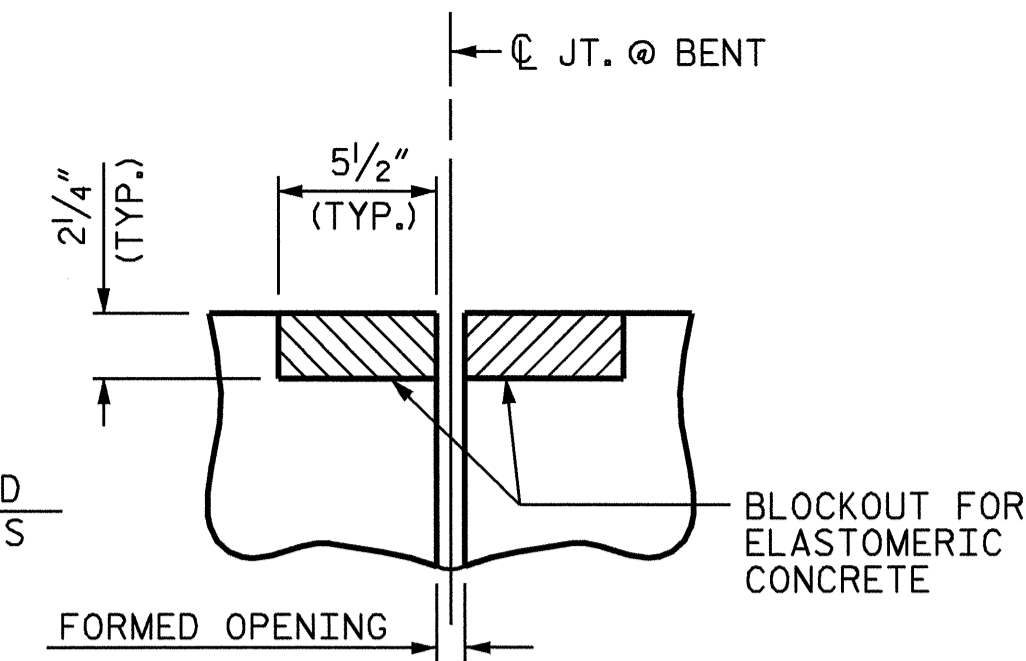
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1			3			TOTAL SHEETS
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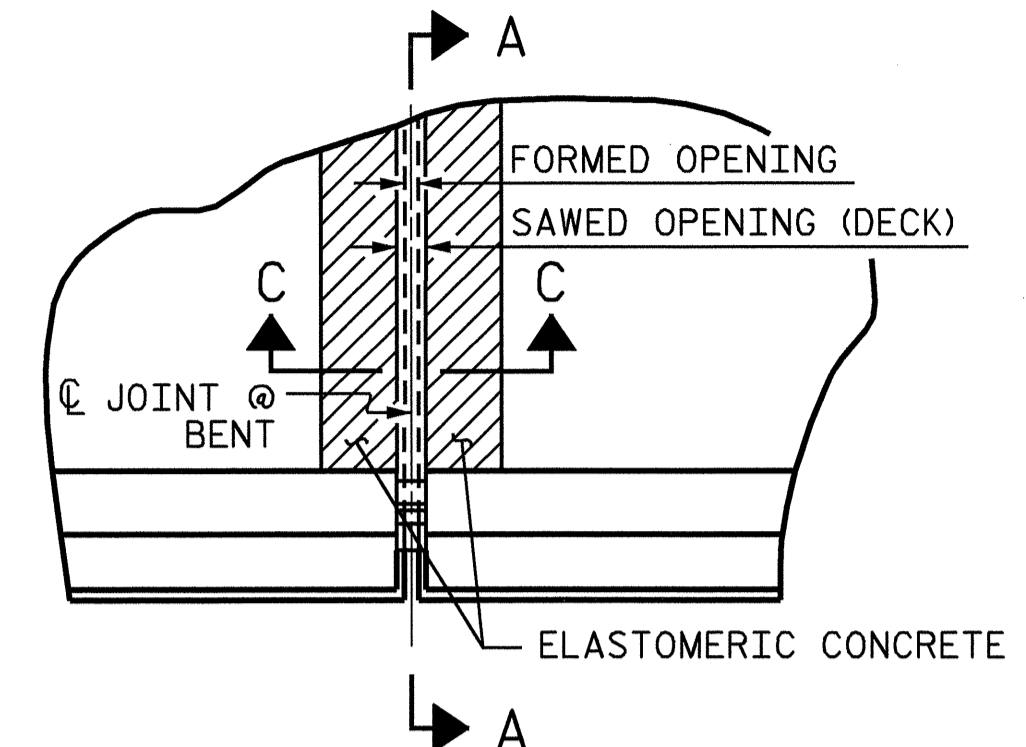
SECTION A-A



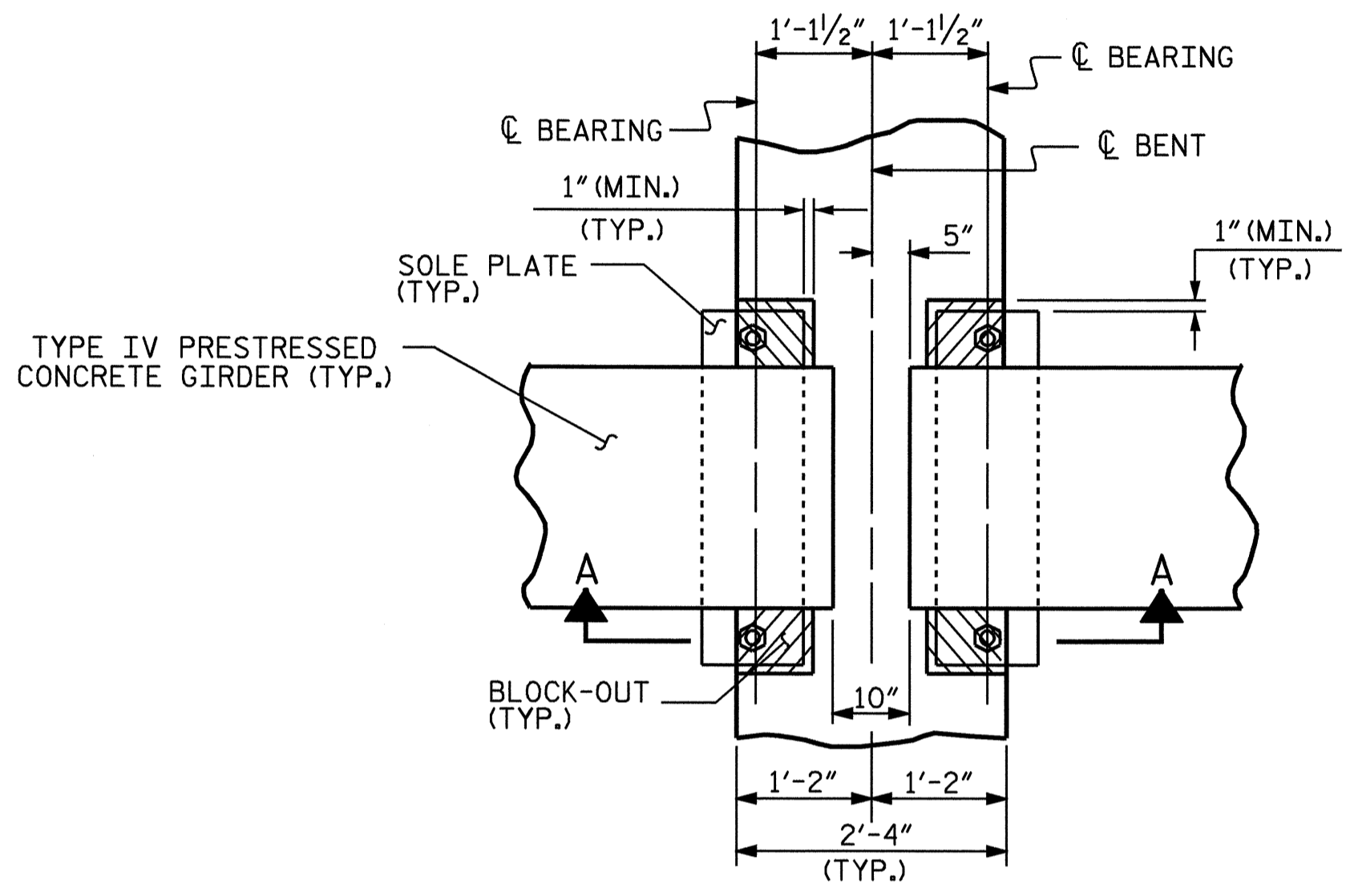
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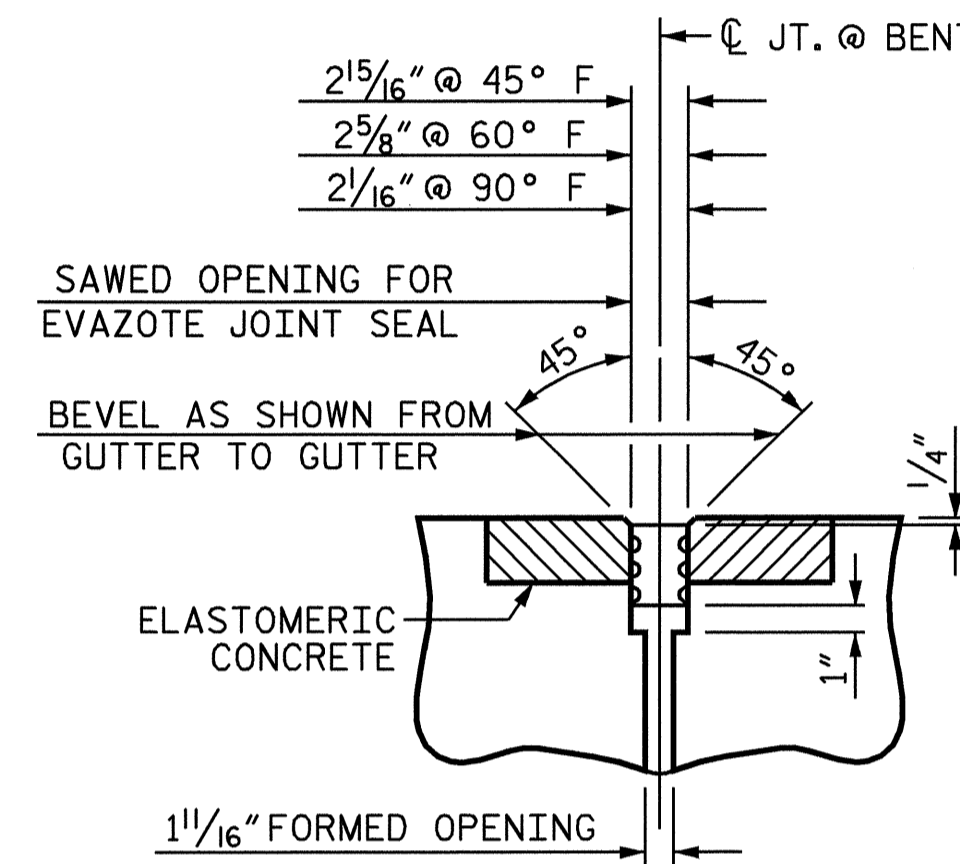
SECTION C-C  
 EVAZOTE JOINT SEAL  
 (PRE-SAWED ELASTOMERIC  
 CONCRETE DIMENSIONS)



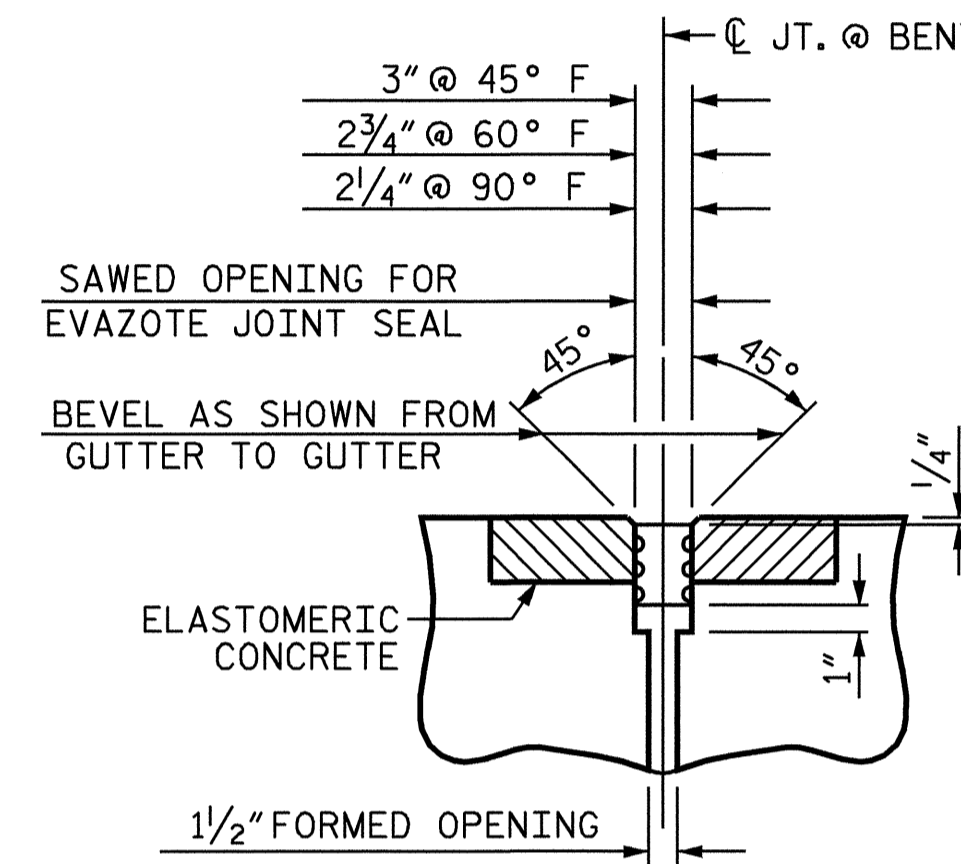
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SECTION C-C  
 EVAZOTE JOINT SEAL  
 @ BENTS 2, 4, 6, 8, 10, 12 & 14



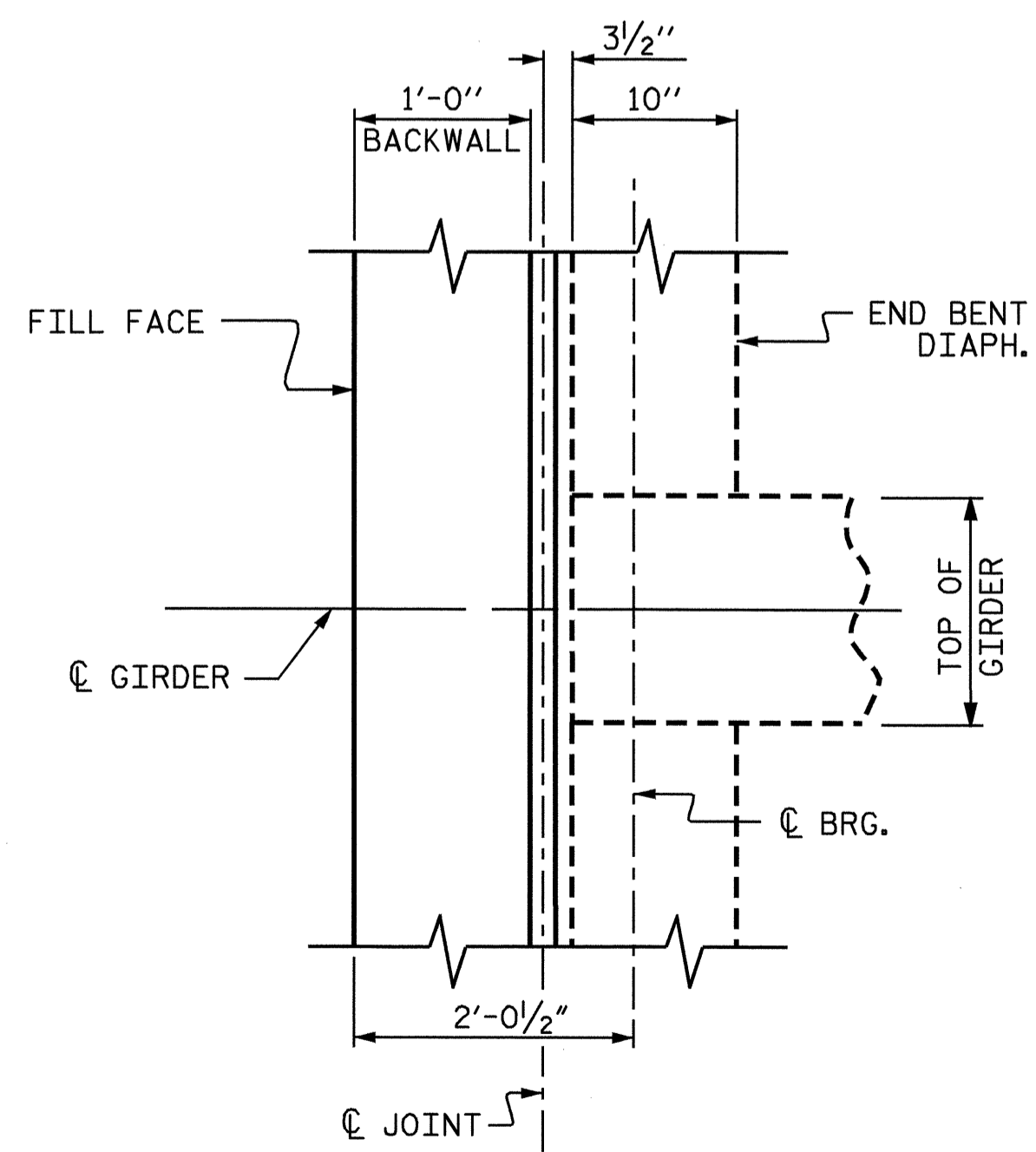
SECTION C-C  
 EVAZOTE JOINT SEAL  
 @ BENTS 16 & 18

ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
2, 4, 6, 8, 10, 12, 14, 16 & 18	5.2 (EA. BENT)
TOTAL	46.8

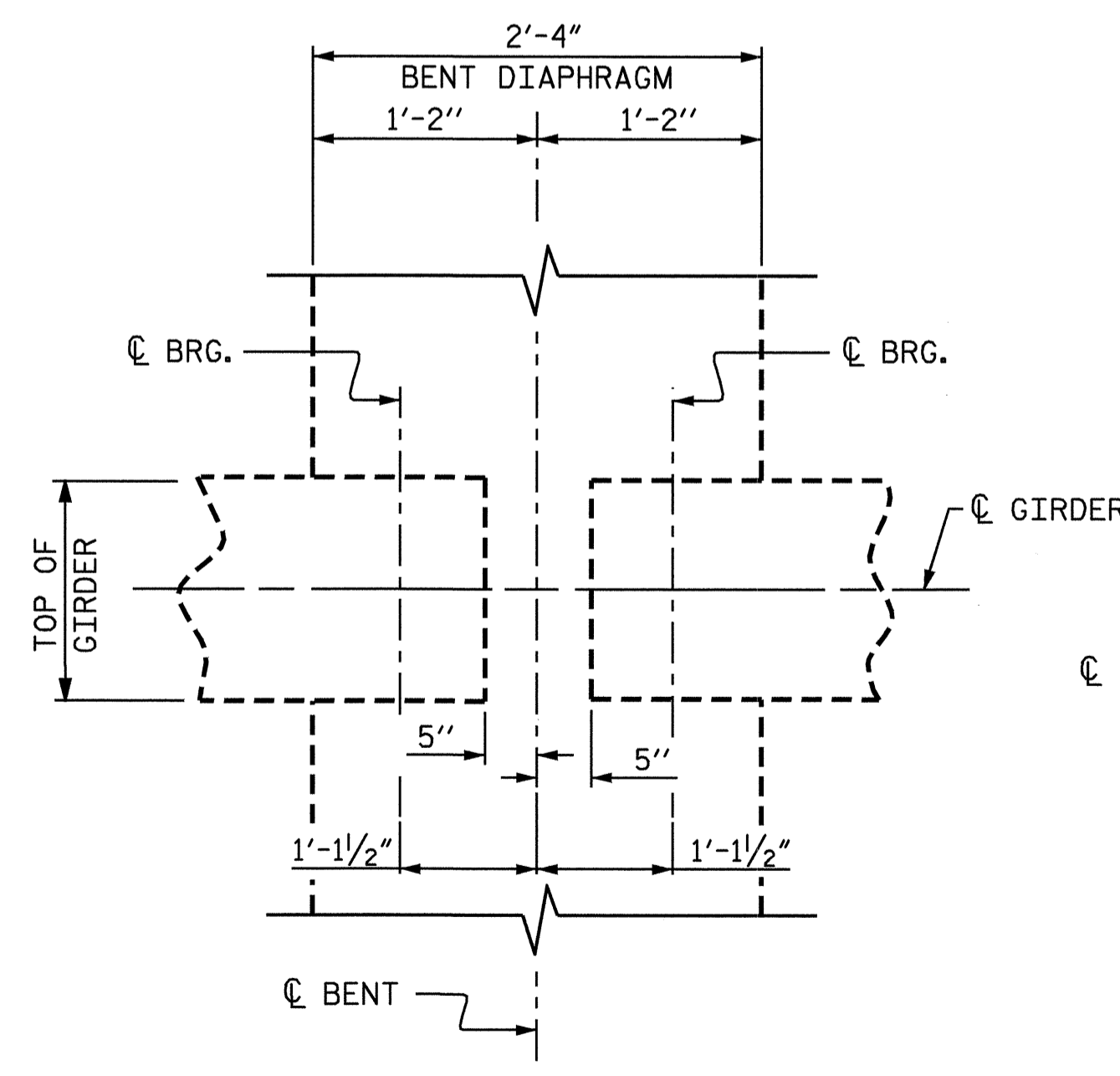
\* BASED ON THE MINIMUM BLOCKOUT SHOWN.

**BENT DIAPHRAGM BLOCKOUT DETAIL**

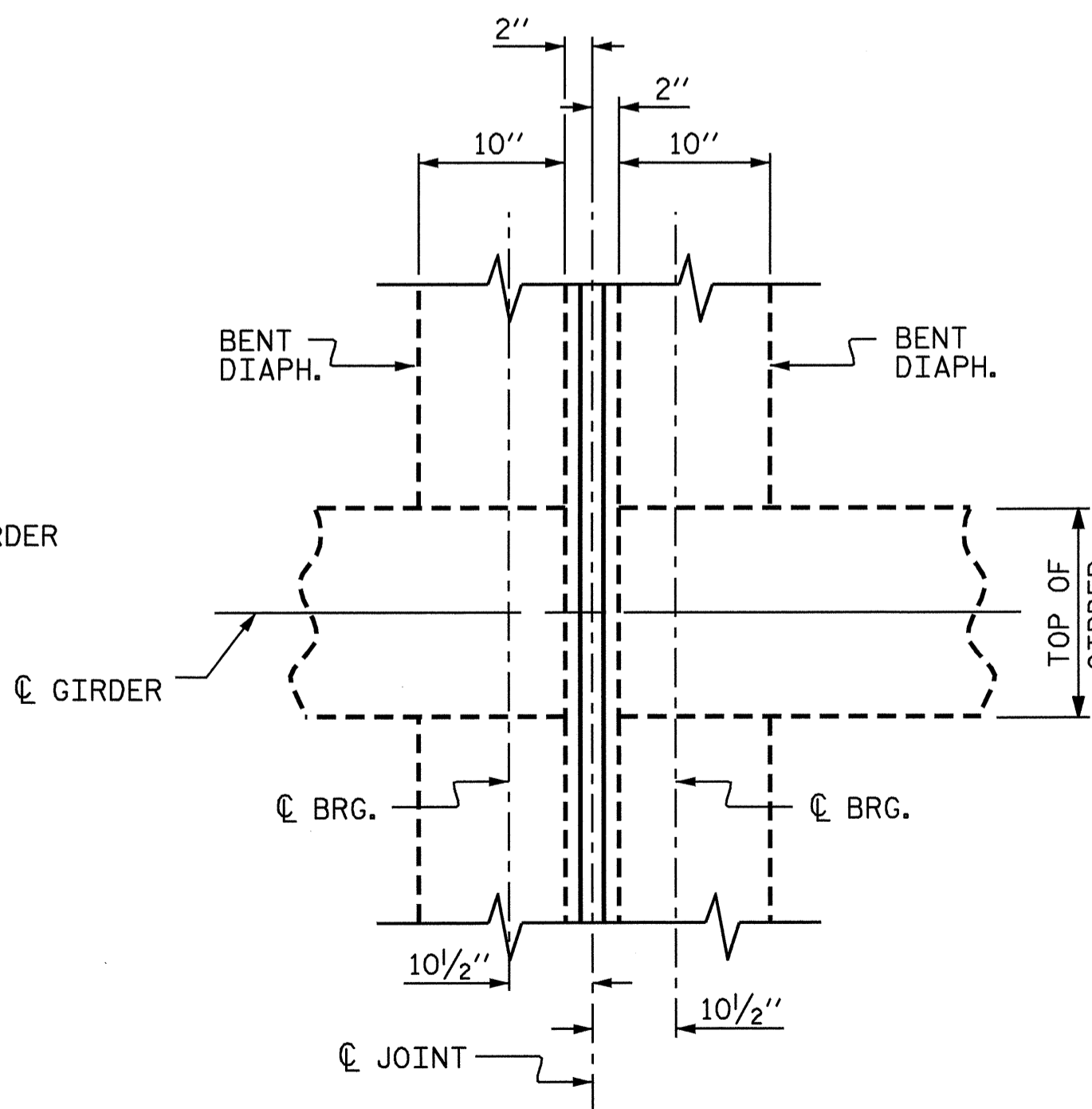
**JOINT SEAL DETAILS**  
 @ BENTS 2, 4, 6, 8, 10, 12, 14, 16 & 18



END BENT DIAPHRAGM  
 (TYP. EACH END BENT)



BENT DIAPHRAGMS  
 @ BENTS 1, 3, 5, 7, 9, 11, 13, 15, 17 & 19



BENT DIAPHRAGMS  
 @ BENTS 2, 4, 6, 8, 10, 12, 14, 16 & 18

**PLAN**

PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 3 OF 3

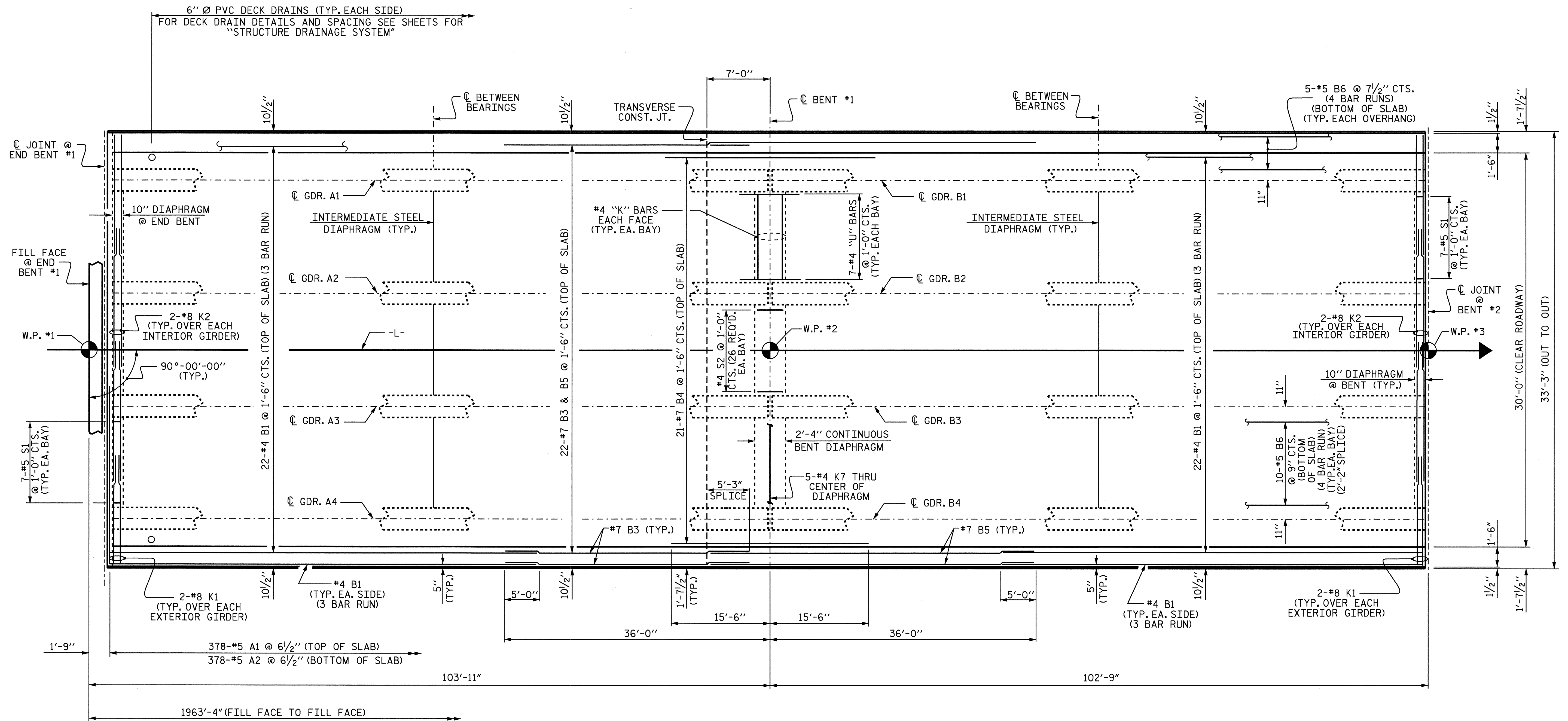
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUPERSTRUCTURE  
 TYPICAL SECTION  
 DETAILS



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

TOTAL SHEETS 67





PLAN OF SPAN A

PLAN OF SPAN B

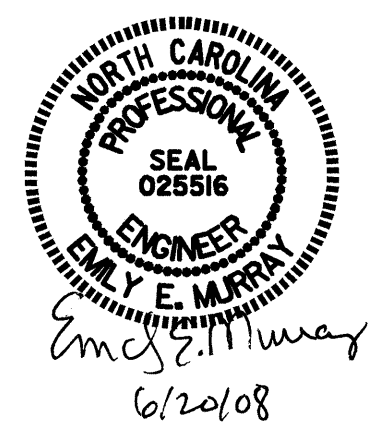
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 PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 1 OF 6

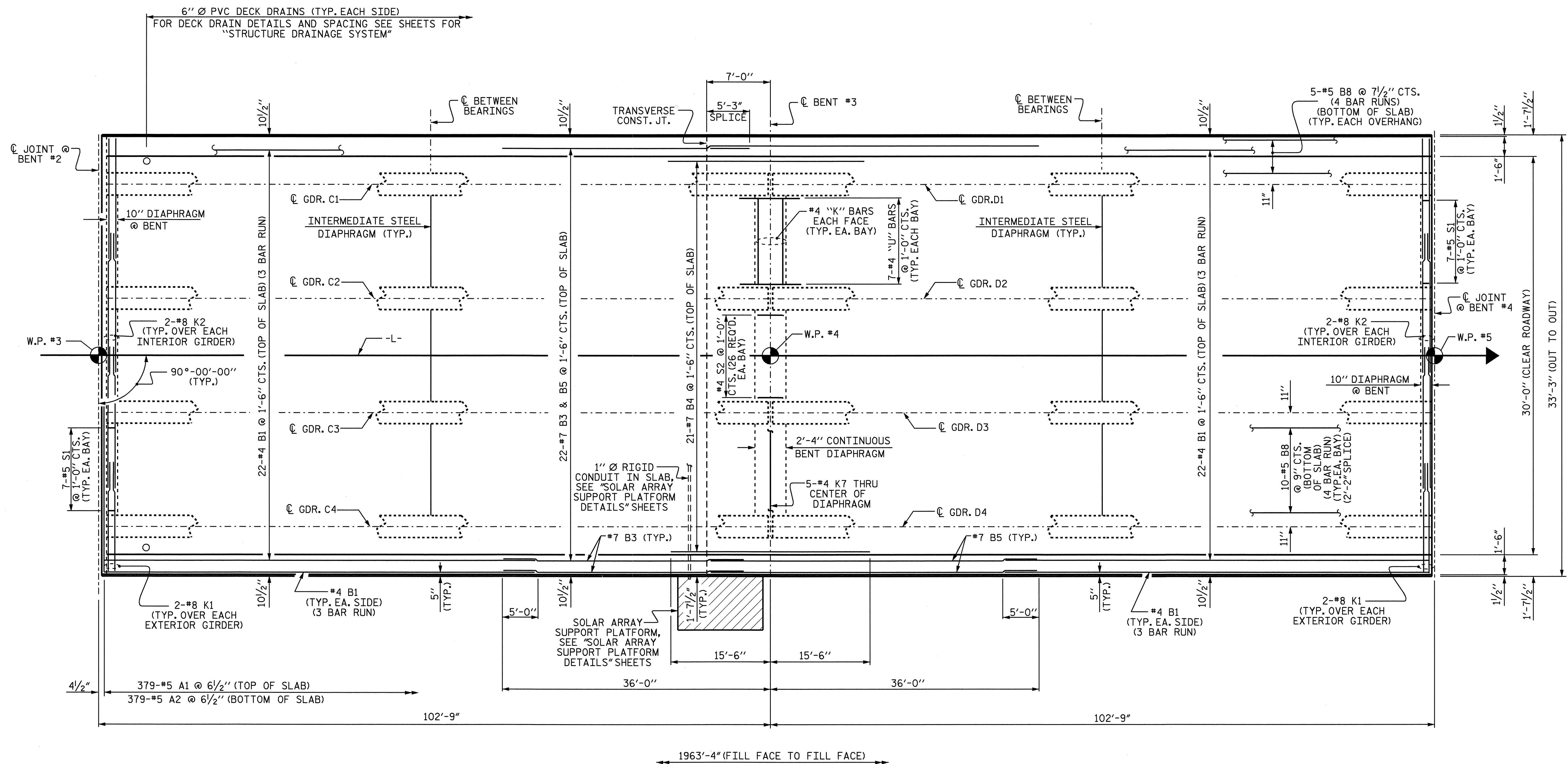
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS  
 A-B

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13	
1			3			TOTAL SHEETS 67	
2			4				



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PLAN OF SPAN C

PLAN OF SPAN D

PROJECT NO. B-3684  
 PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 2 OF 6

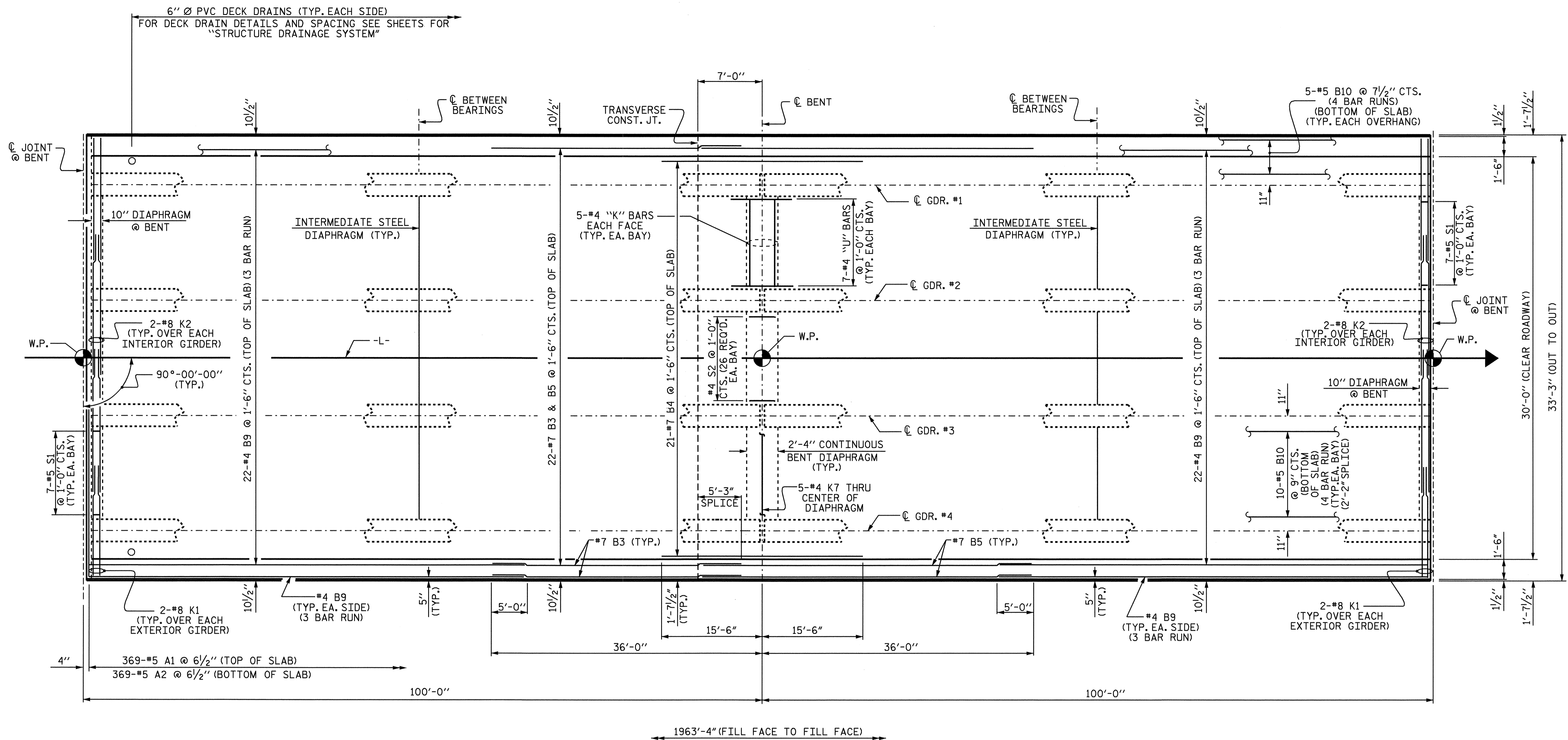
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS  
 C-D

REVISIONS						SHEET NO. S-14
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 67
2			4			



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 CHECKED BY: PEGGY ADKINS DATE: 3/2008



PLAN OF SPANS E, G, I, K OR M

PLAN OF SPANS F, H, J, L, OR N

PROJECT NO. B-3684  
 PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS  
 E & F, G & H,  
 I & J, K & L,  
 OR M & N

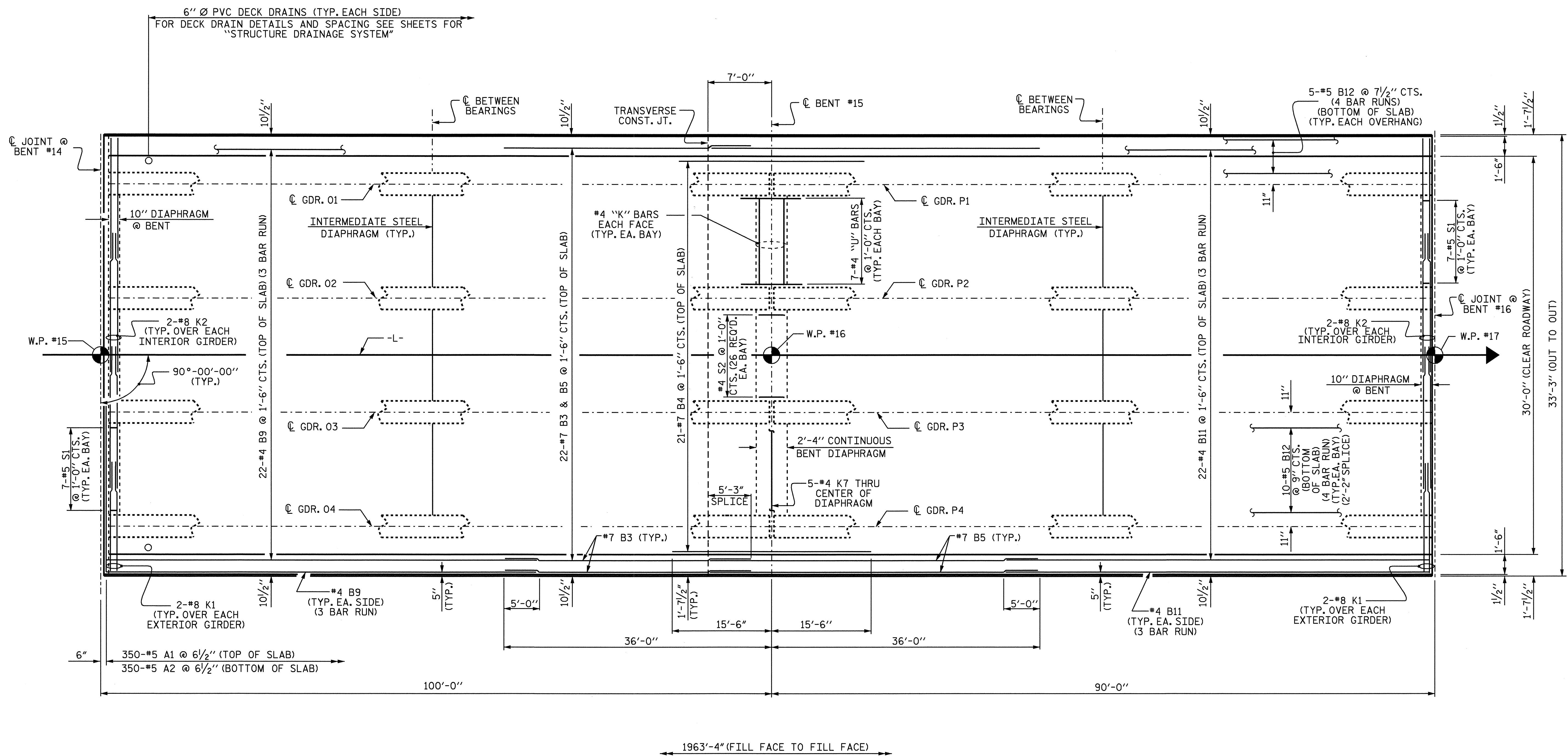
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2			4			67	



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PLAN OF SPAN O

PLAN OF SPAN P

PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

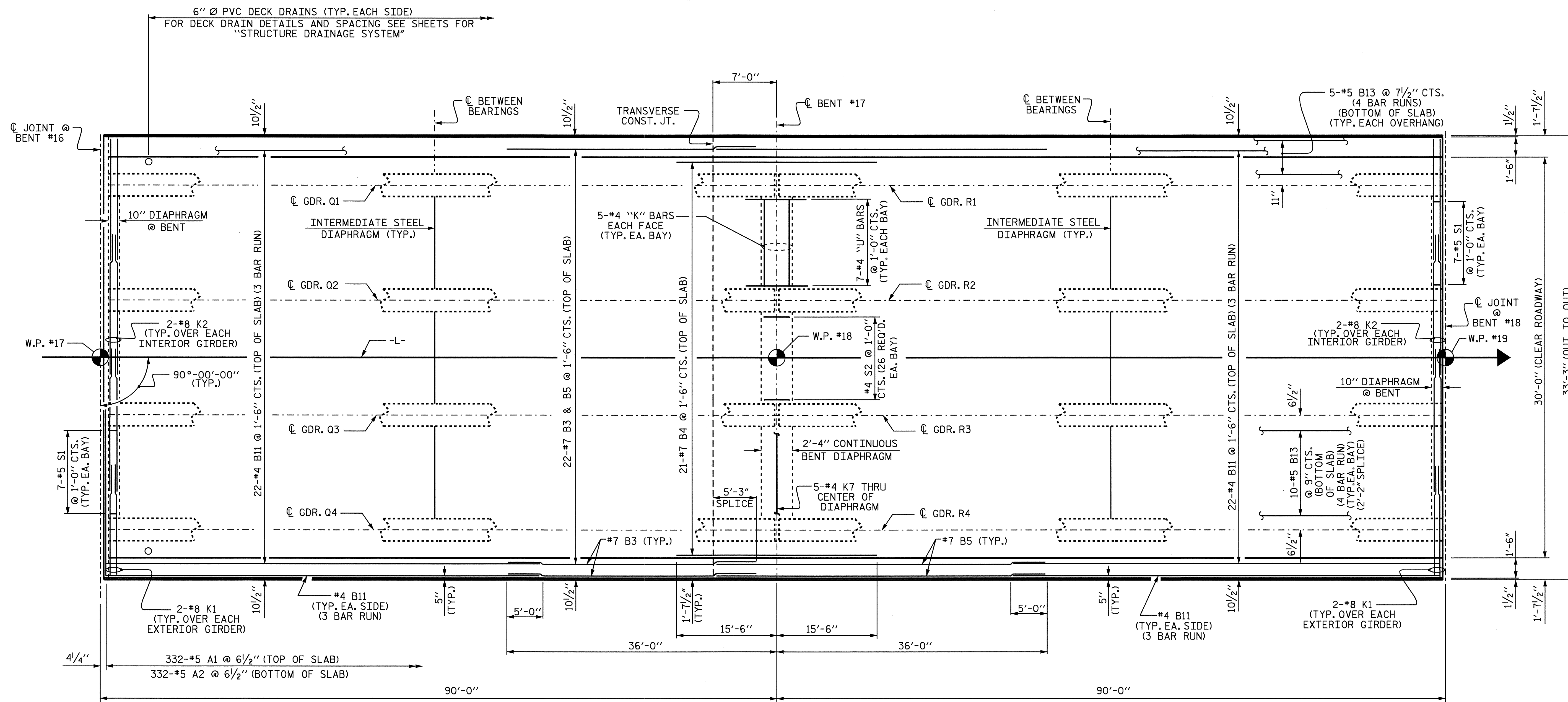
PLAN OF SPANS  
O-P



DRAWN BY: J.B. WILSON DATE: 2/2008  
CHECKED BY: PEGGY ADKINS DATE: 3/2008

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16	
1			3			TOTAL SHEETS	
2			4			67	

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padkins



PLAN OF SPAN Q

PLAN OF SPAN R

PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 5 OF 6

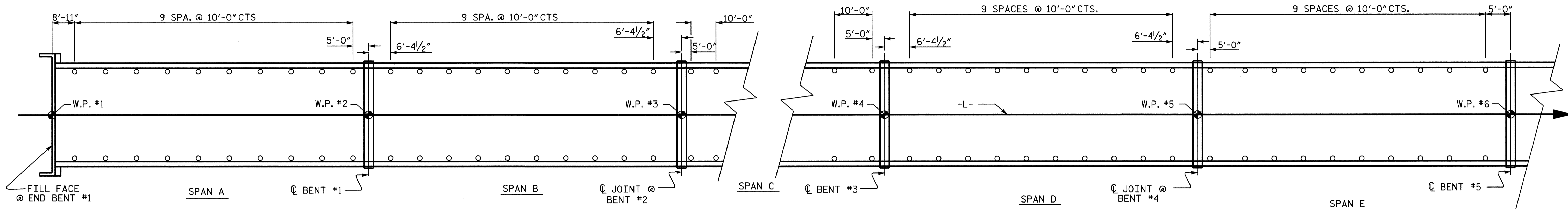
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN OF SPANS Q-R					
REVISIONS					SHEET NO. S-17
NO.	BY:	DATE:	NO.	DATE:	
1			3		TOTAL SHEETS 67
2			4		



DRAWN BY: J.B. WILSON DATE: 2/2008  
 CHECKED BY: PEGGY ADKINS DATE: 3/2008

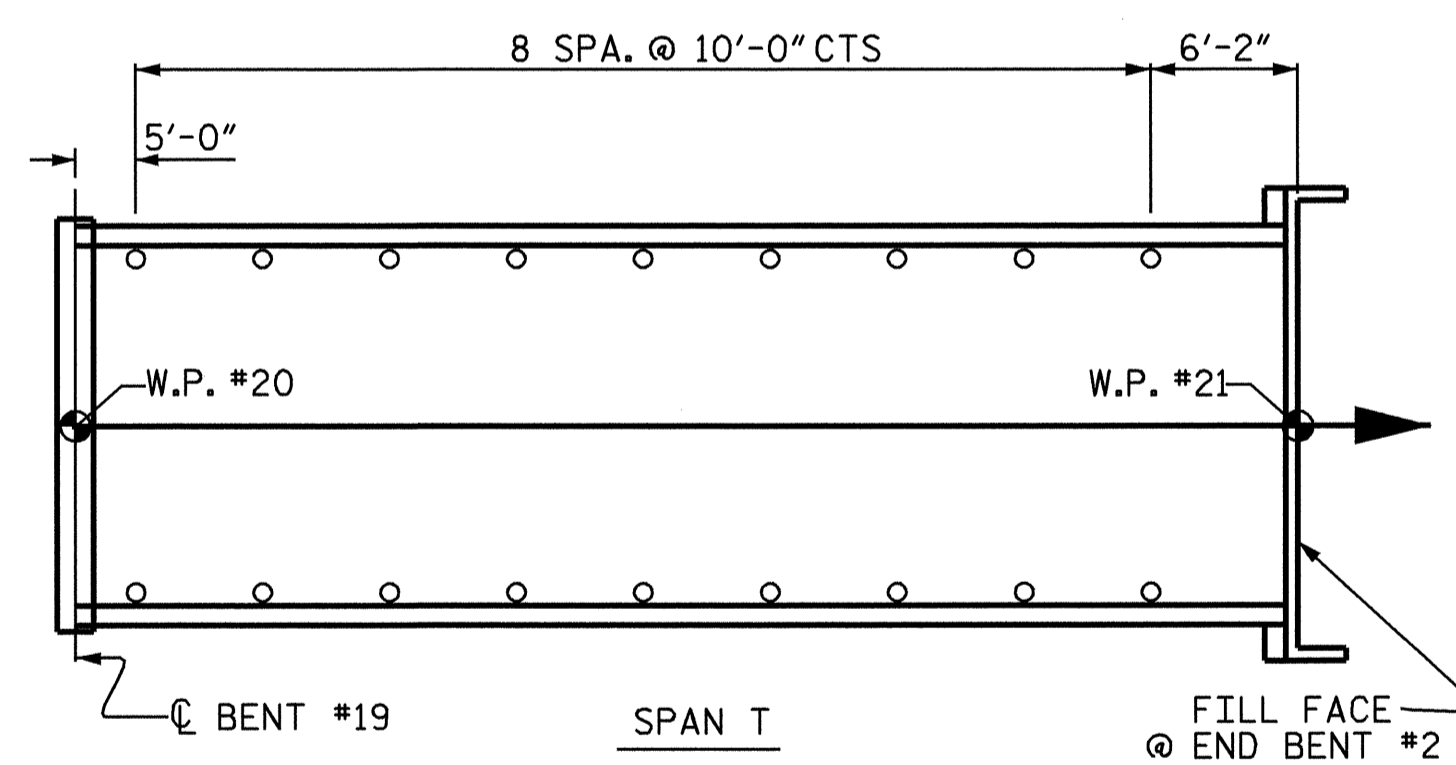
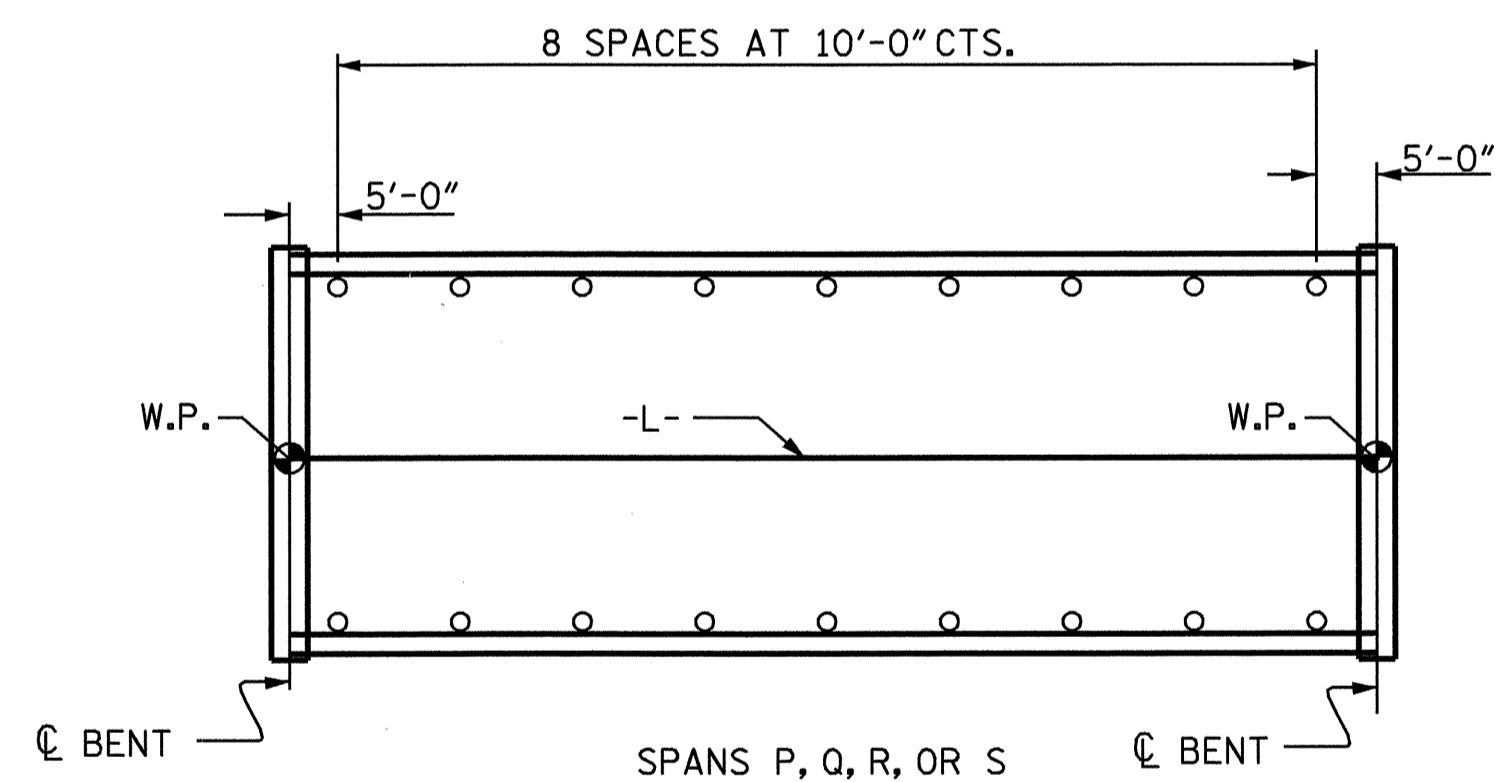
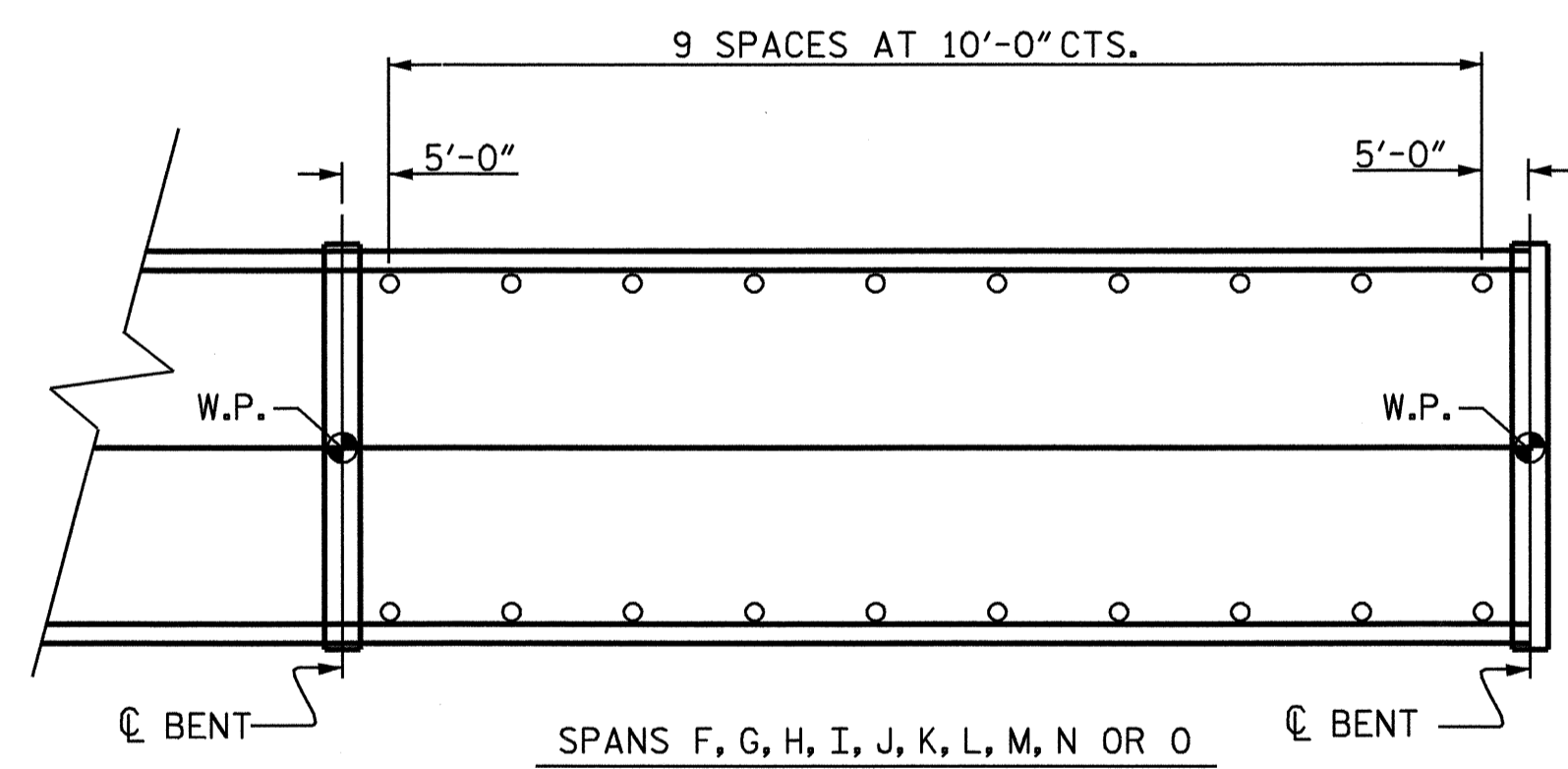






**CLOSED DRAINAGE SYSTEM LAYOUT**

(88 DRAINS REQ'D. SEE DRAINAGE DETAILS SHEET 2 OF 2)

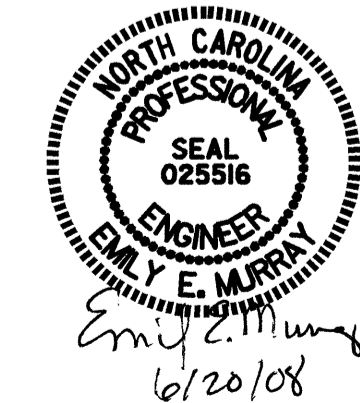


**OPEN DECK DRAIN LAYOUT**

(290 DRAINS REQ'D. -- NOT CONNECTED TO DRAINAGE SYSTEM)

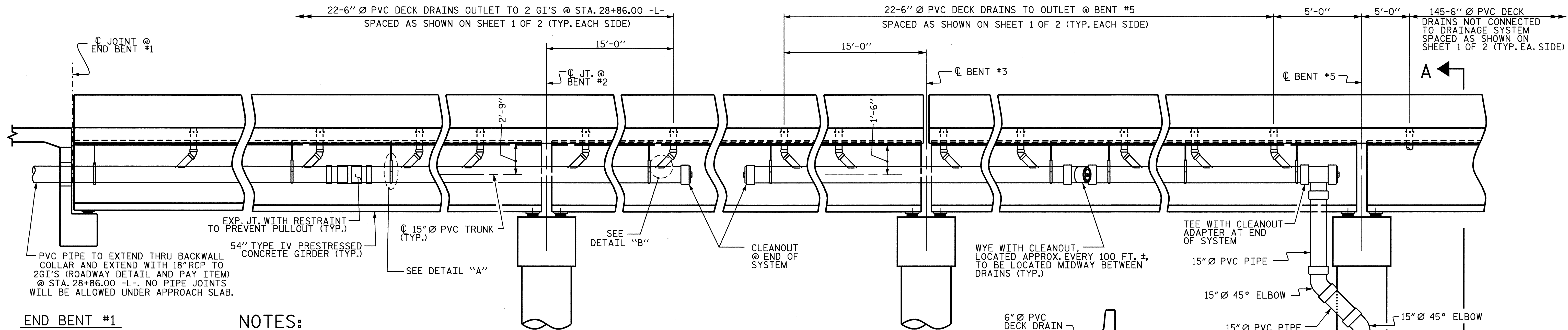
PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-19
<b>STRUCTURE DRAINAGE SYSTEM</b>						TOTAL SHEETS 67
REVISIONS						SHEET NO. S-19 TOTAL SHEETS 67
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

DRAWN BY : J.W. WILSON DATE : 2/2008  
 CHECKED BY : PEGGY ADKINS DATE : 3/2008

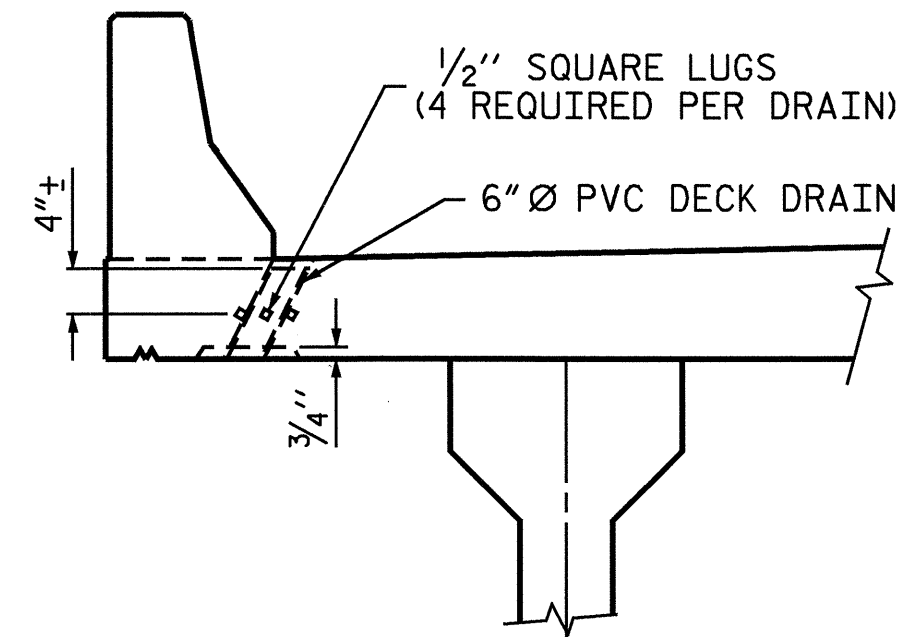


**END BENT #1**

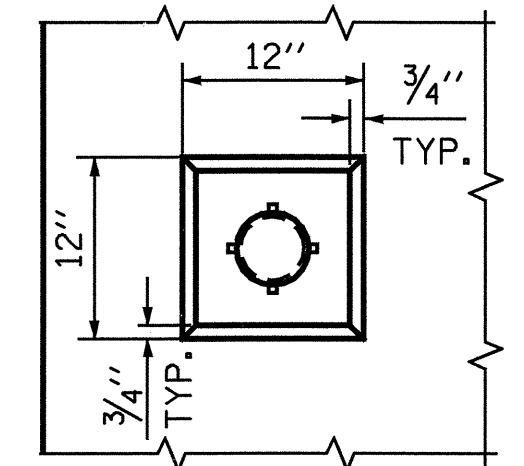
**NOTES:**

- THE CONTRACTOR SHALL SUBMIT FOR ACCEPTANCE, PRIOR TO PURCHASE, A PLAN FOR THE PVC DRAINAGE SYSTEM, INCLUDING ATTACHMENTS TO THE BRIDGE SUPERSTRUCTURE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL ALIGNMENT OF THE PVC DRAINAGE SYSTEM USING NECESSARY FITTINGS, ELBOWS, TEES, AND WYES TO PROVIDE A CONTINUOUS DRAINAGE SYSTEM.
- DRAINAGE SYSTEM WILL BE PAID FOR UNDER THE PAY ITEM "STRUCTURE DRAINAGE SYSTEM". FOR "STRUCTURE DRAINAGE SYSTEM", SEE SPECIAL PROVISIONS.
- THE CONTRACTOR SHALL DETERMINE THE QUANTITY OF FITTINGS, PIPE LENGTHS, GUIDES, AND ATTACHMENTS REQUIRED TO CARRY THE WATER FROM THE DECK DRAINS TO THE OUTLETS.
- BOLTS, NUTS, AND WASHERS SHALL BE HIGH STRENGTH AND GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- CONCRETE INSERTS SHALL BE OF AN APPROVED GALVANIZED TYPE HAVING A MINIMUM WORKING LOAD TENSION CAPACITY OF 4.2 KIPS.
- IN LIEU OF CASTING INSERTS INTO THE DECK, RODS MAY BE ADHESIVELY ANCHORED TO THE DECK. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.
- PIPE AND FITTINGS SHALL BE PVC, SDR 35, ASTM D 3034.
- FITTING JOINTS SHALL BE SOLVENT CEMENT TYPE.
- PIPE JOINTS SHALL BE ELASTOMERIC TYPE.
- A 6'-0" X 6'-0" PAD OF CLASS I RIP RAP WITH FILTER FABRIC SHALL BE LOCATED UNDER THE STRUCTURE DRAINAGE SYSTEM OUTLETS AT BENT #5. THE COST OF THESE RIP RAP PADS AND THEIR PLACEMENT SHALL BE PAID FOR IN THE "STRUCTURE DRAINAGE SYSTEM" PAY ITEM.
- DRAINAGE SYSTEM SHALL BE PLACED TO PROVIDE A MINIMUM SLOPE OF -5% TOWARDS OUTLET.

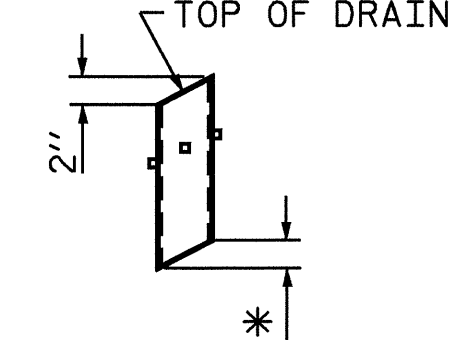
**ELEVATION OF DRAINAGE SYSTEM**



**ELEVATION**



**PLAN OF RECESS**

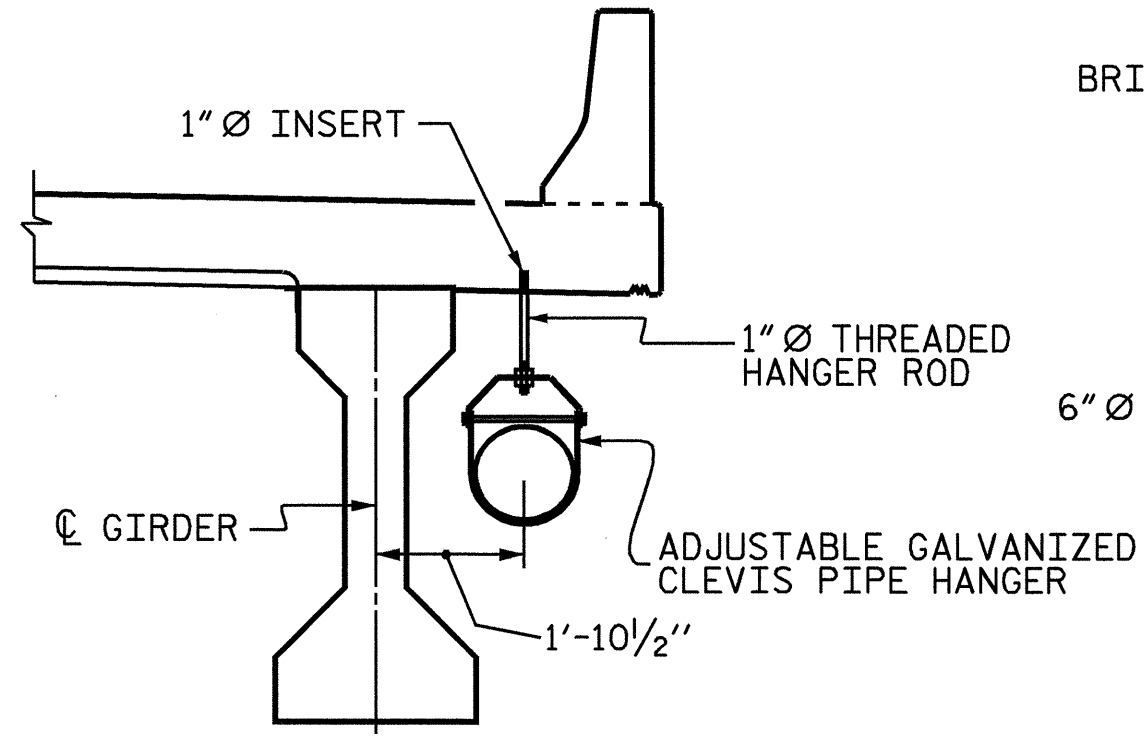


\* TO BE SET TO MATCH SLOPE OF BOTTOM OF OVERHANG

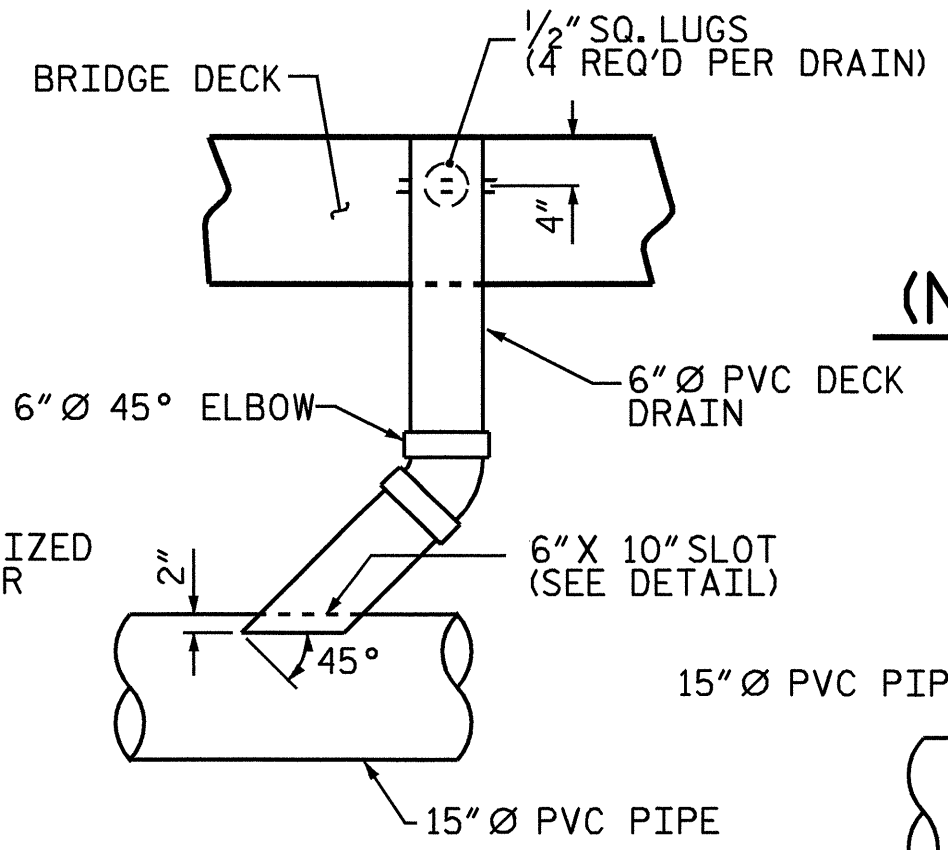
**PIPE DETAIL**  
(290 DRAINS REQ'D.)

**DRAIN DETAILS**  
(NOT CONNECTED TO DRAINAGE SYSTEM)

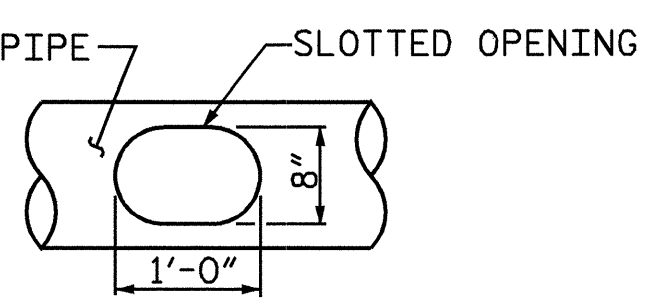
TOP OF FLOOR DRAINS TO BE SET 3/8" BELOW SURFACE OF SLAB.  
4 - 1/2" SQUARE LUGS TO BE GLUED TO THE P.V.C. PLASTIC PIPE AT EQUAL SPACES AROUND THE PIPE DRAIN APPROXIMATELY 4" FROM THE TOP OF THE PIPE.



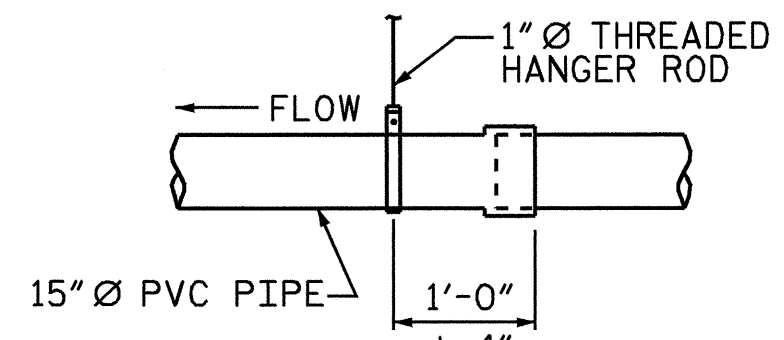
**TYPICAL DRAINAGE SYSTEM HANGER**



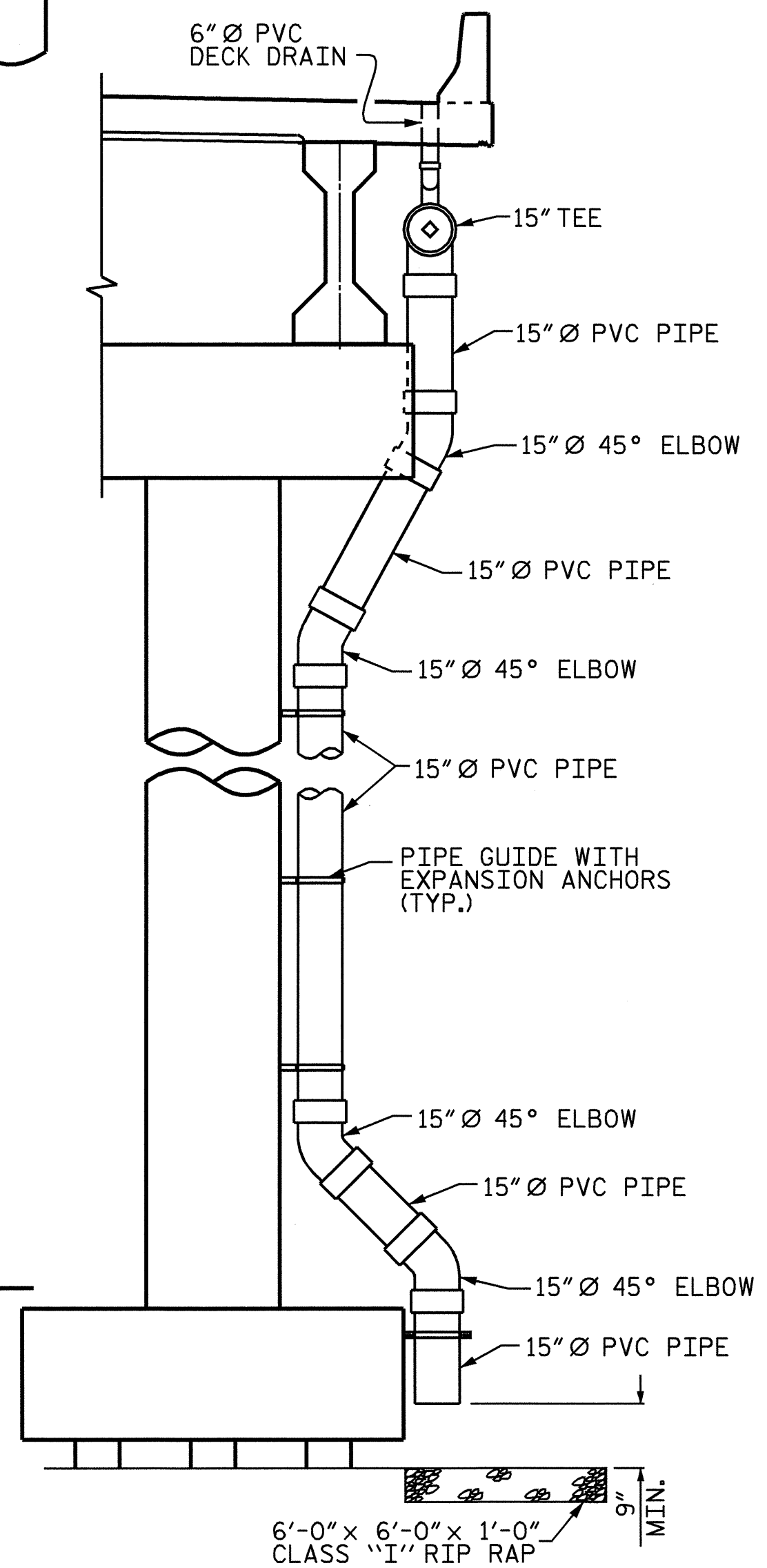
**DETAIL "B"**



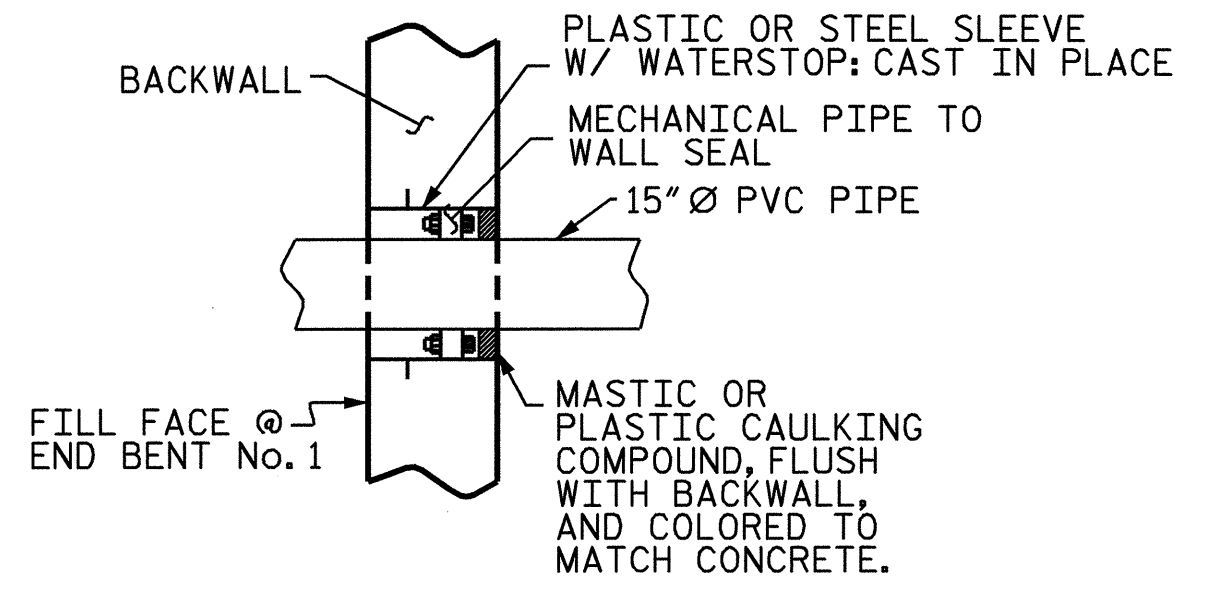
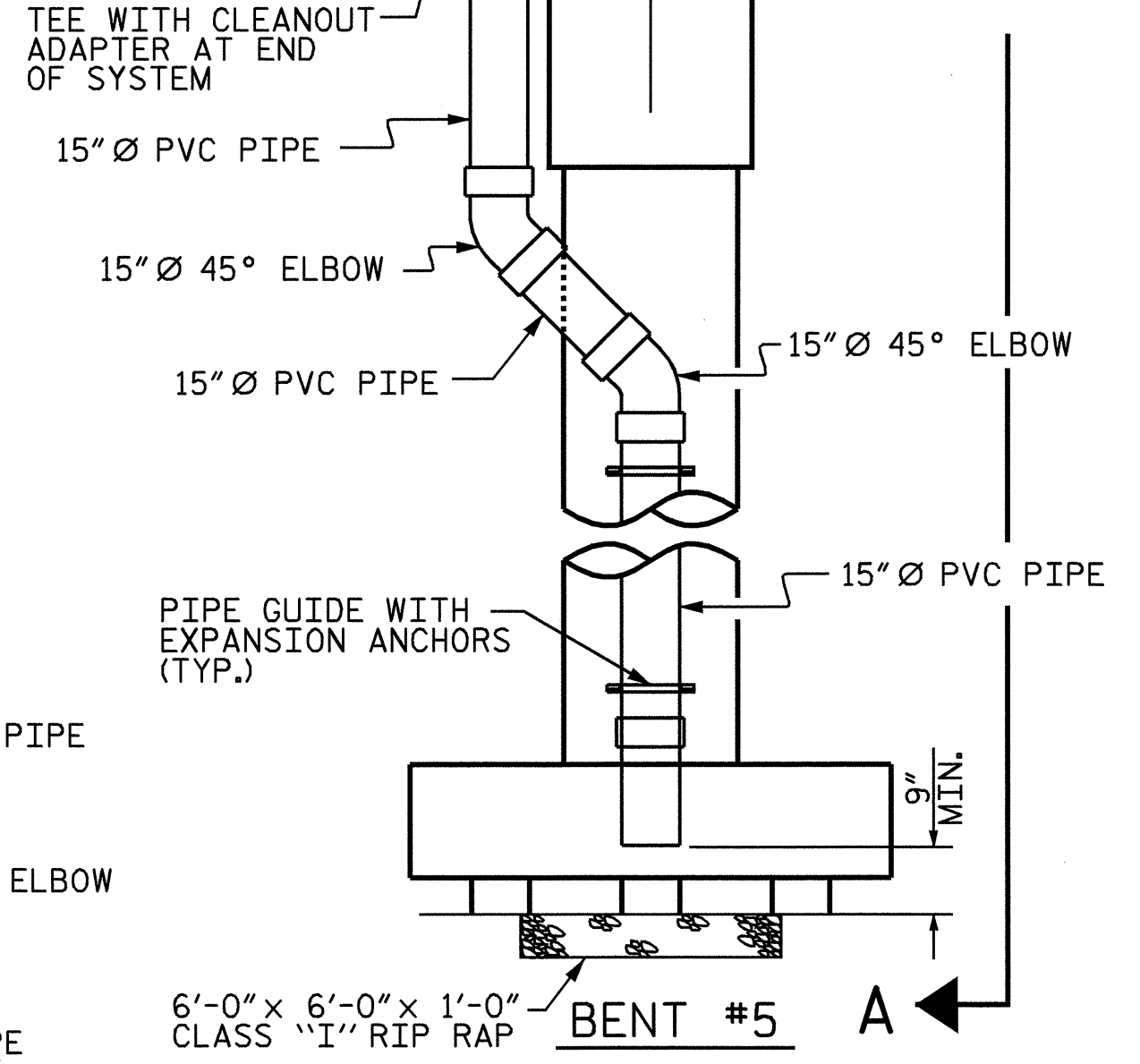
**SLOT DETAIL**



**DETAIL "A"**



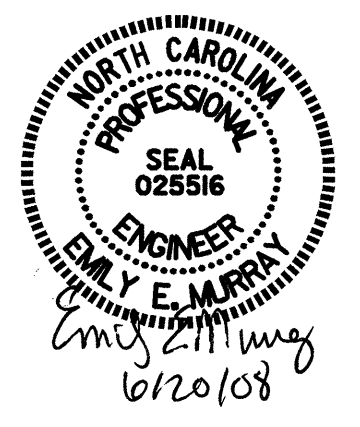
**ELEVATION A-A**



**DETAIL OF PIPE THRU BACKWALL**

PROJECT NO. **B-3684**  
PITT COUNTY  
STATION: **38+88.50 -L-**

SHEET 2 OF 2



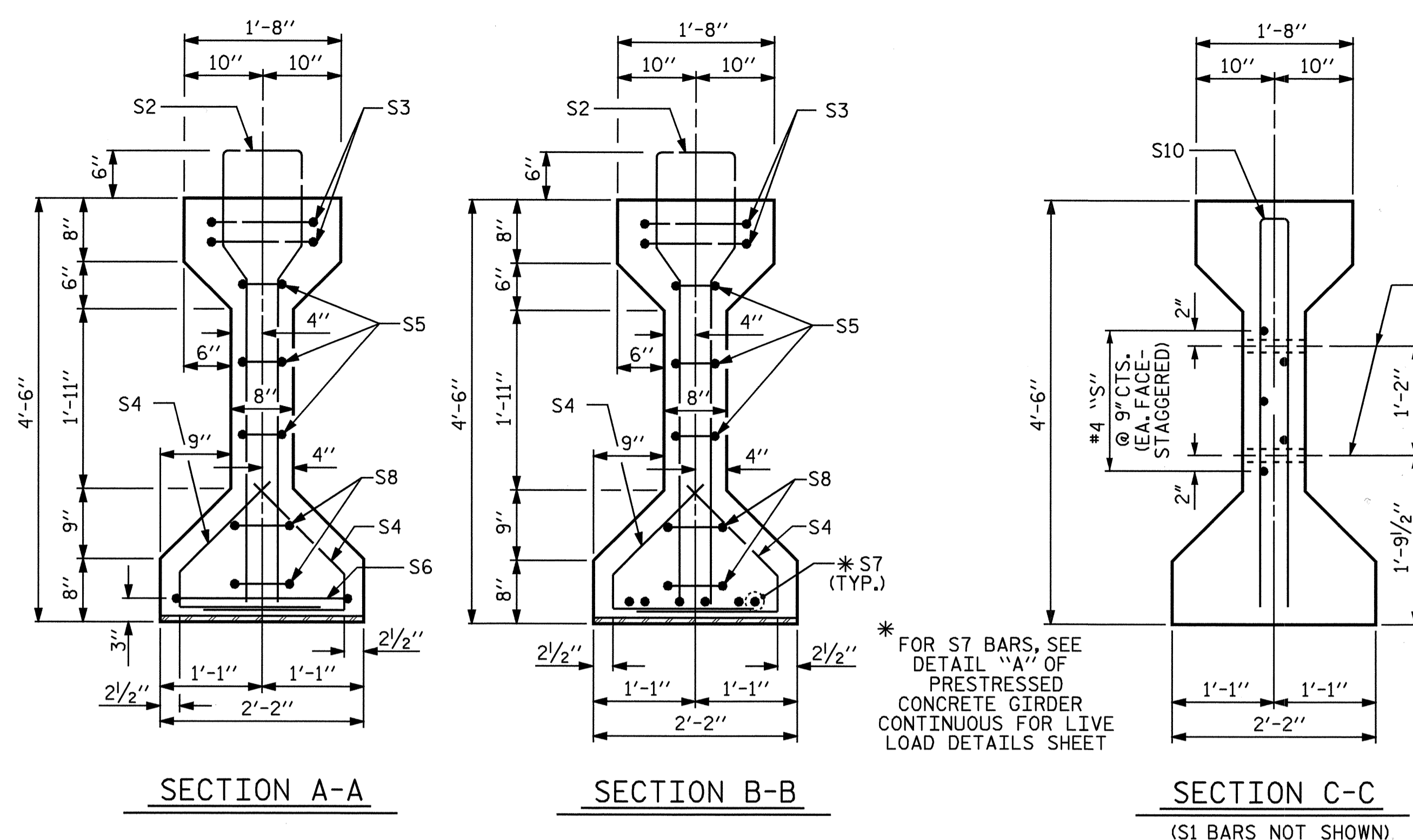
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**STRUCTURE DRAINAGE SYSTEM DETAILS**

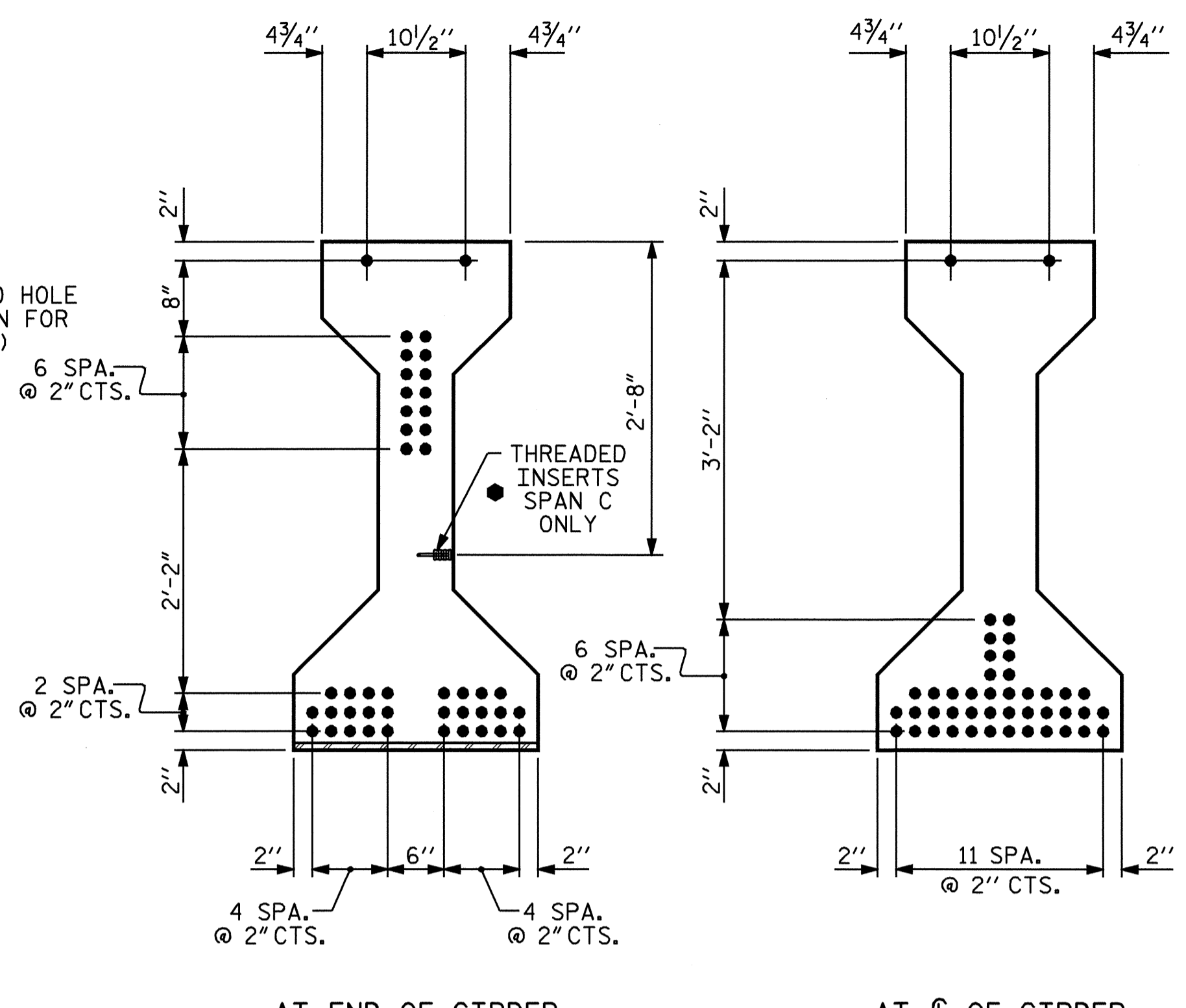
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20	
1			3			TOTAL SHEETS	
2			4			67	

DRAWN BY: J.B. WILSON DATE: 2/2008  
CHECKED BY: PEGGY ADKINS DATE: 3/2008





1/2" Ø FORMED HOLE  
(SEE ELEVATION FOR LOCATION)



AT END OF GIRDER AT C OF GIRDER  
0.6" Ø LOW RELAXATION STRAND LAYOUT

0.6" Ø L. R. GRADE 270 STRANDS

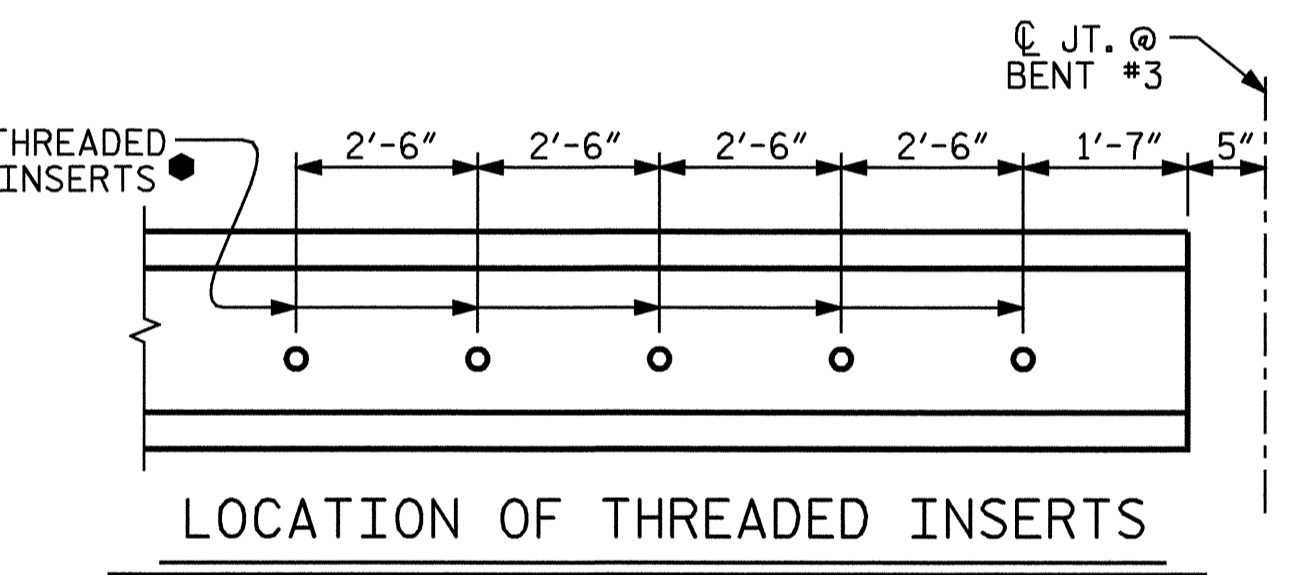
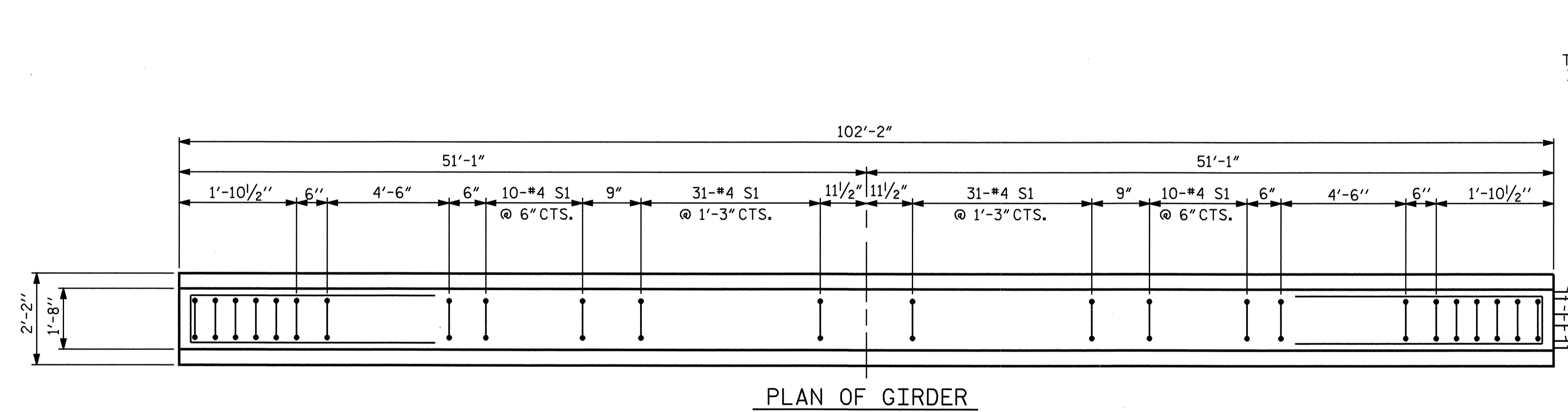
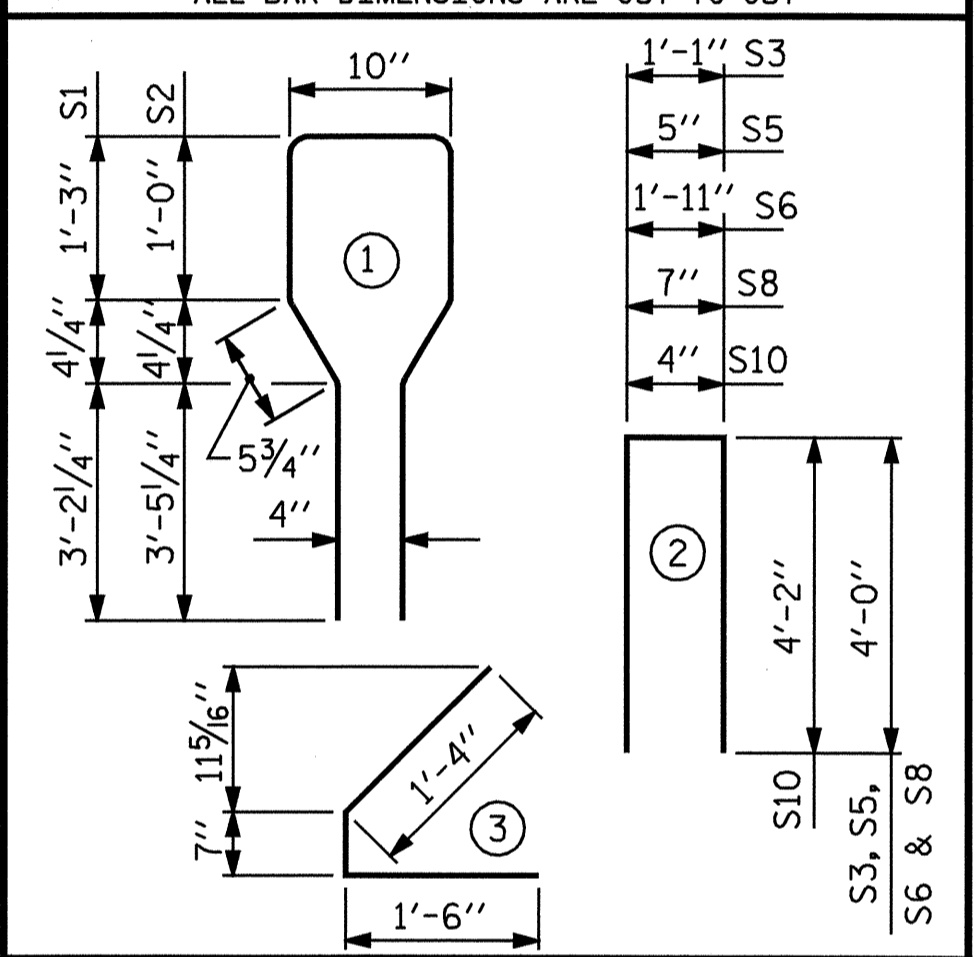
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	102	#4	1	10'-8"	727
S2	12	#6	1	10'-8"	192
S3	4	#4	2	9'-1"	24
S4	64	#4	3	3'-5"	146
S5	6	#4	2	8'-5"	34
S6	1	#4	2	9'-11"	7
*S7	6	#5	STR	3'-8"	23
S8	4	#4	2	8'-7"	23
S9	1	#3	STR	1'-10"	1
S10	2	#5	2	8'-8"	18
S11	5	#4	STR	7'-0"	23

\* NOTE: S7 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES  
ALL BAR DIMENSIONS ARE OUT-TO-OUT



LOCATION OF THREADED INSERTS  
SPAN C, GIRDER 4 ONLY

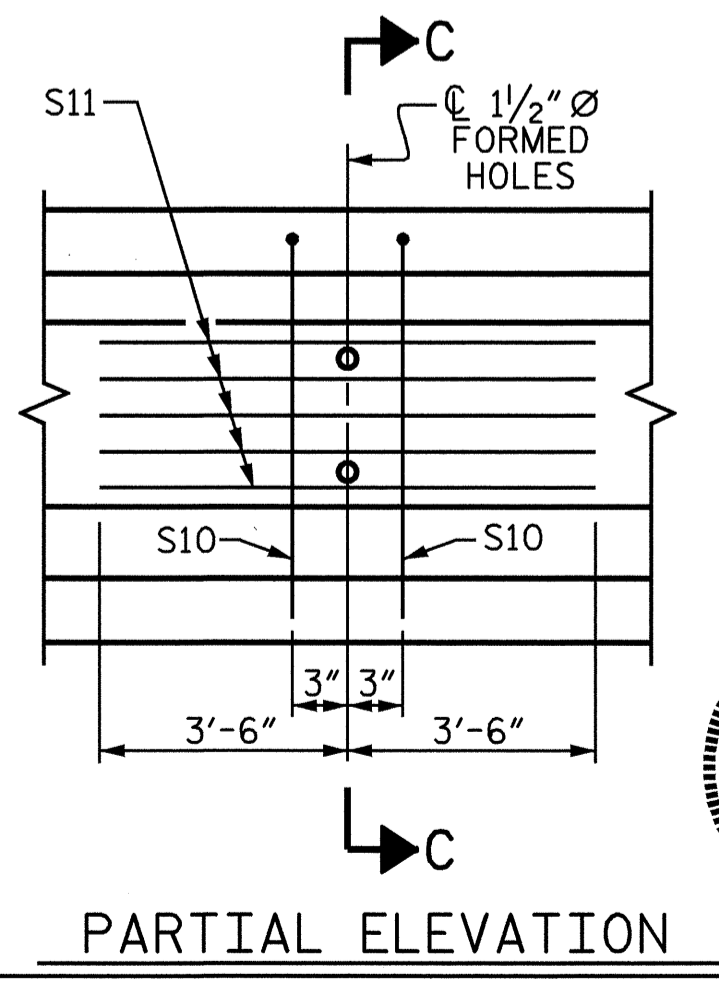
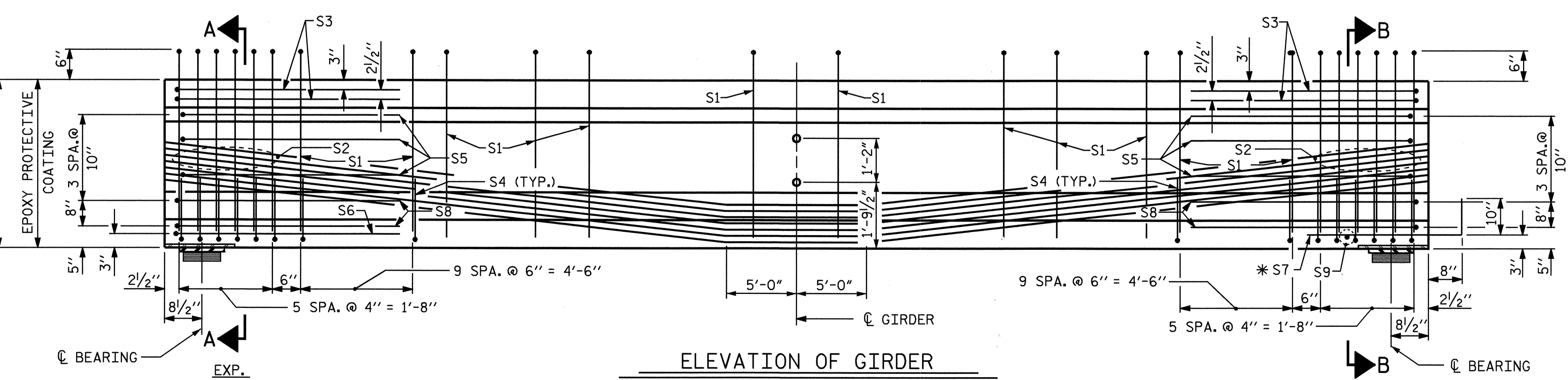
● FOR DETAILS, SEE SHEET 5 OF 5.

QUANTITIES FOR ONE GIRDER

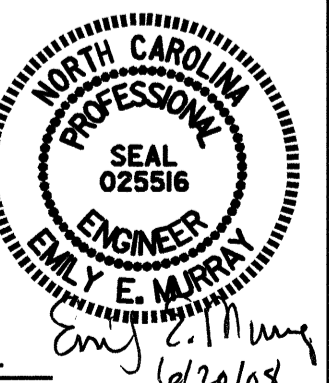
REINFORCING STEEL	8300 PSI CONCRETE	0.6" Ø L.R. STRANDS
LB.	C.Y.	No.
1218	20.7	44

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
16	102'-2"	1634'-8"



SHOWING INTERMEDIATE DIAPHRAGM  
REINFORCING STEEL FOR GIRDER Nos. 1 THRU 4



PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-

SHEET 1 OF 5  
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
AASHTO TYPE IV  
PRESTRESSED CONCRETE GIRDER  
CONTINUOUS FOR LIVE LOAD  
SPANS A THRU D

ASSEMBLED BY: J.B. WILSON DATE: 02/2008  
CHECKED BY: PEGGY ADKINS DATE: 03/2008  
DRAWN BY: ELR 8/91 REV. 7/17/98 RWW/LES  
CHECKED BY: GRP 8/91 REV. 10/17/00R RWW/LES  
REV. 5/1/06 TLA/GM

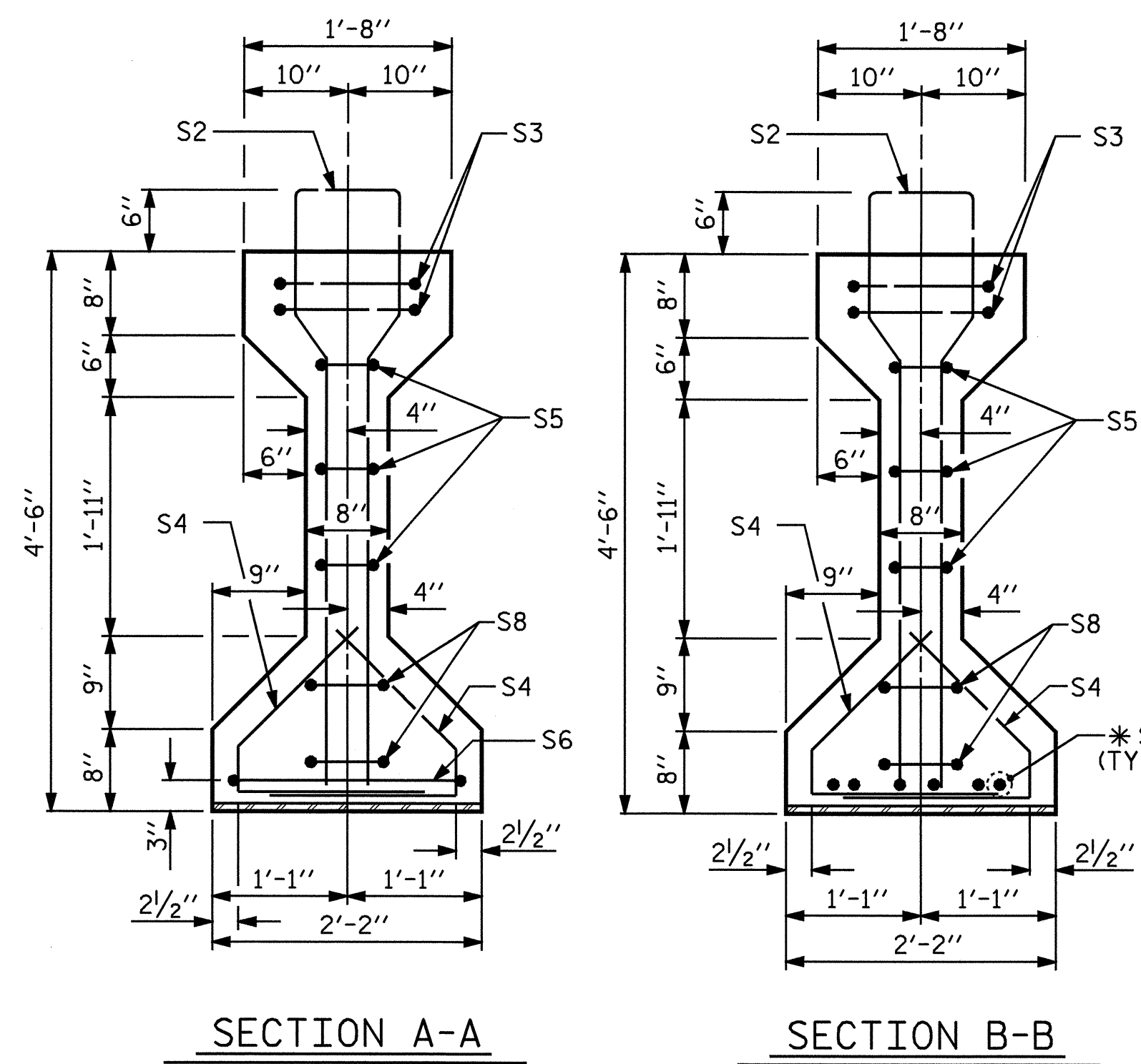
SEE "SOLE PLATE DETAILS" SHEET FOR GIRDER ORIENTATION  
(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)

REVISIONS

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

SHEET NO. S-21  
TOTAL SHEETS 67

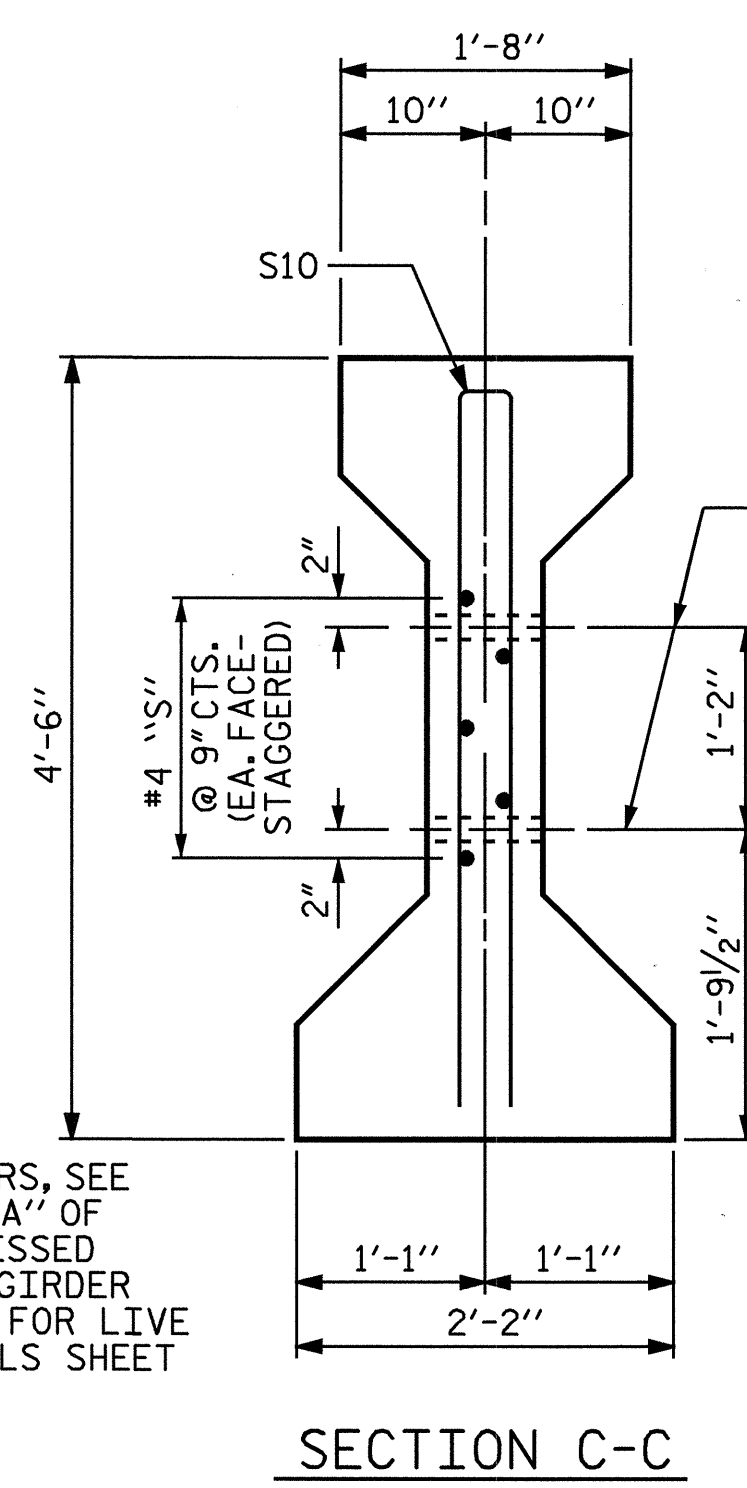




SECTION A-A

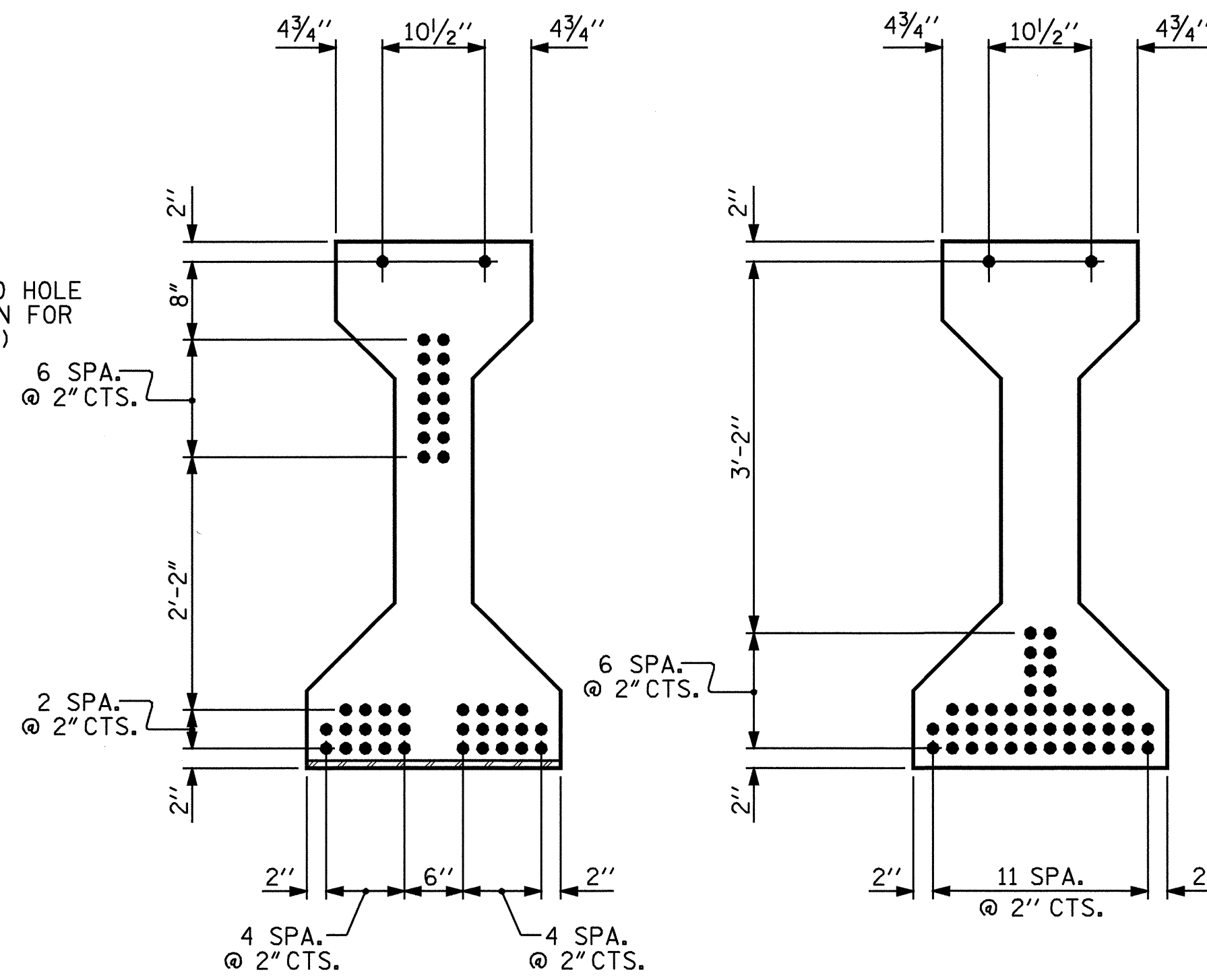
SECTION B-B

\* FOR S7 BARS, SEE  
DETAIL "A" OF  
PRESTRESSED  
CONCRETE GIRDER  
CONTINUOUS FOR LIVE  
LOAD DETAILS SHEET



SECTION C-C

(S1 BARS NOT SHOWN)



AT END OF GIRDER

AT C OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT

0.6" Ø L. R. GRADE 270 STRANDS

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

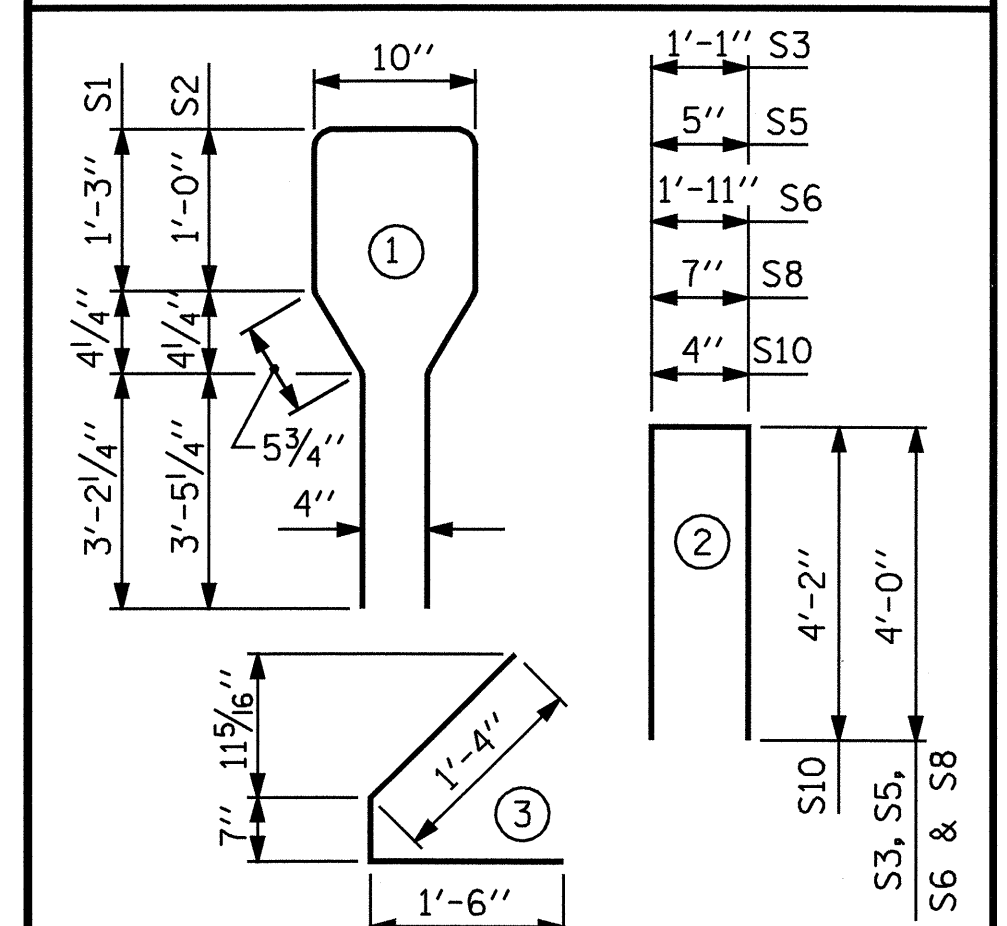
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	90	#4	1	10'-8"	641
S2	12	#6	1	10'-8"	192
S3	4	#4	2	9'-1"	24
S4	64	#4	3	3'-5"	146
S5	6	#4	2	8'-5"	34
S6	1	#4	2	9'-11"	7
*S7	6	#5	STR	3'-8"	23
S8	4	#4	2	8'-7"	23
S9	1	#3	STR	1'-10"	1
S10	2	#5	2	8'-8"	18
S11	5	#4	STR	7'-0"	23

\* NOTE: S7 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT

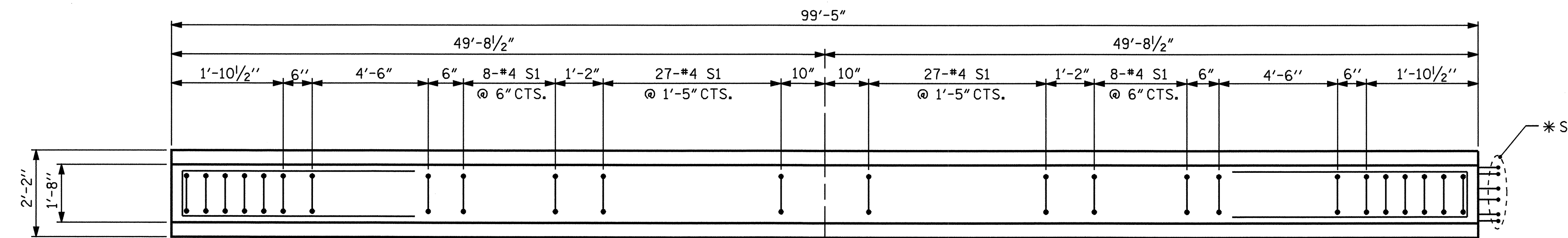


QUANTITIES FOR ONE GIRDER

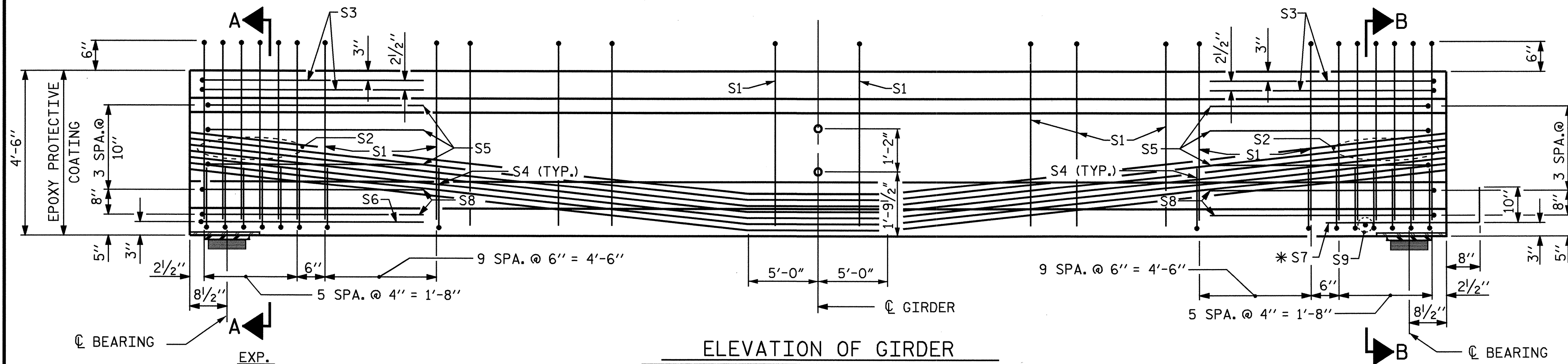
	REINFORCING STEEL	8000 PSI CONCRETE	0.6" Ø L.R. STRANDS
	LB.	C.Y.	No.
	1132	20.2	44

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
44	99'-5"	4374'-4"

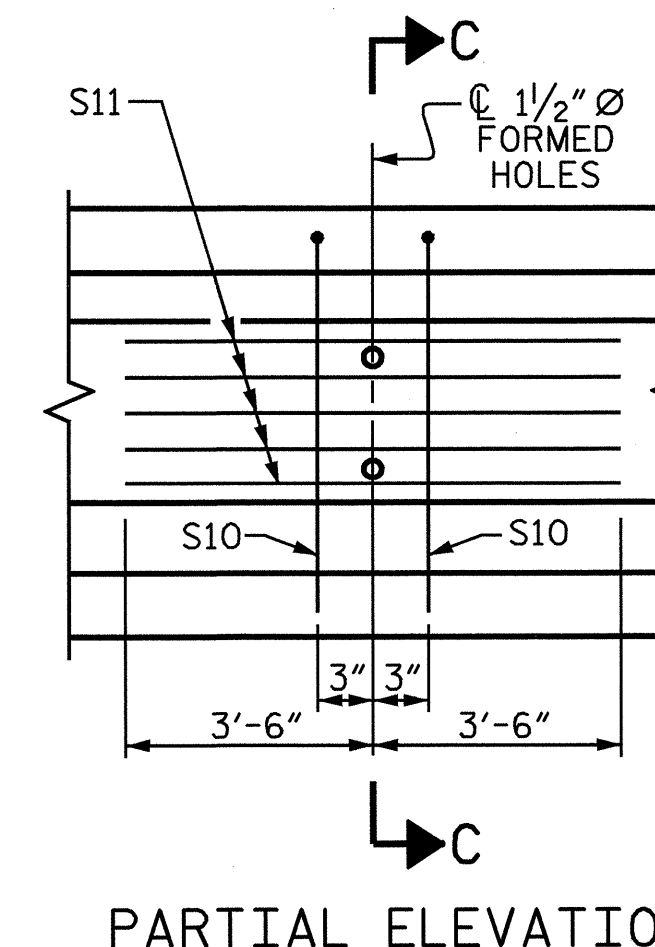


PLAN OF GIRDER



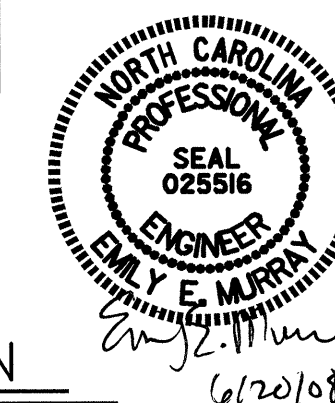
ELEVATION OF GIRDER

SEE "SOLE PLATE DETAILS" SHEET FOR GIRDER ORIENTATION  
(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM  
REINFORCING STEEL FOR GIRDER Nos. 1 THRU 4



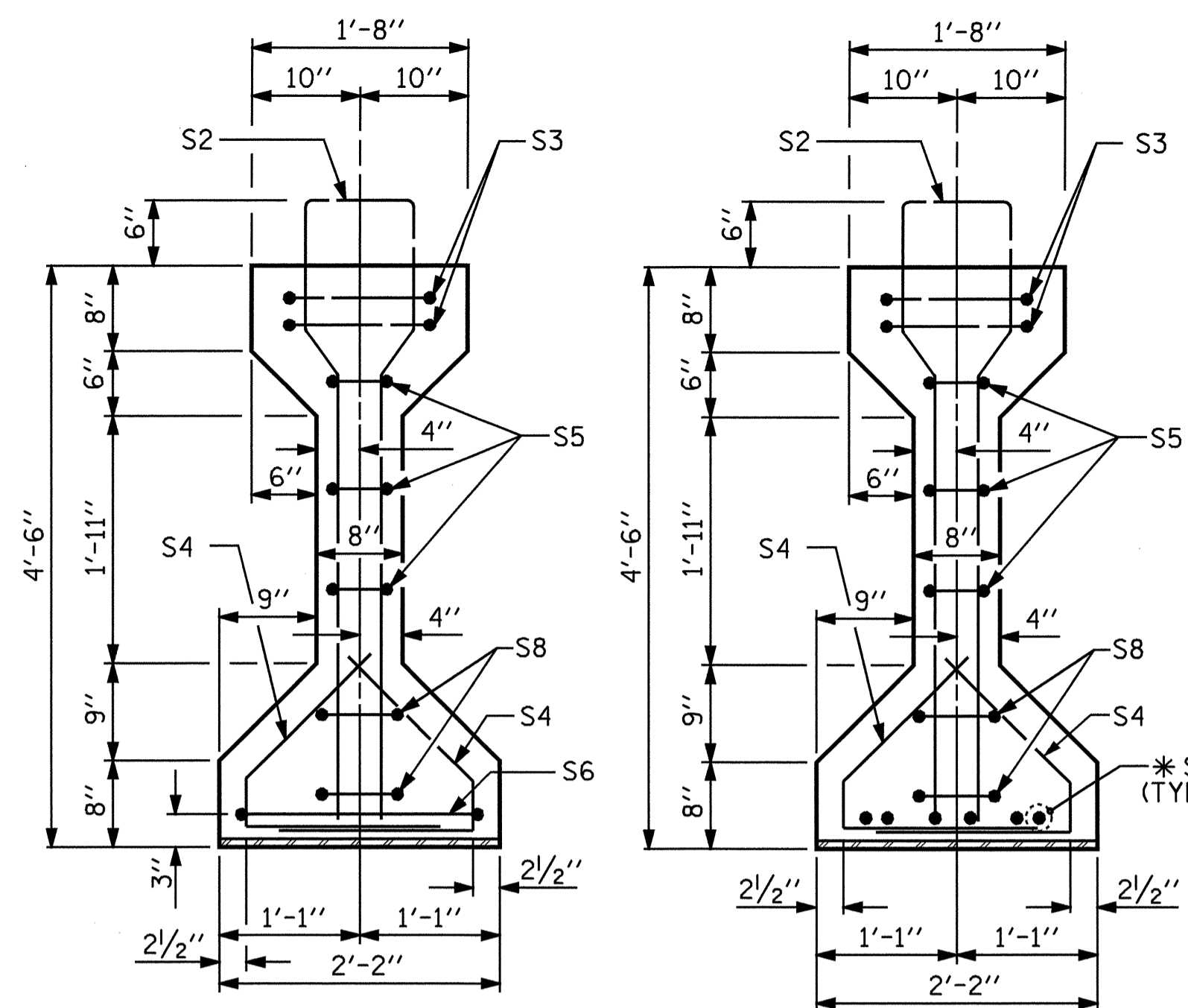
PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
AASHTO TYPE IV  
PRESTRESSED CONCRETE GIRDER  
CONTINUOUS FOR LIVE LOAD  
SPANS E THRU O

ASSEMBLED BY : J.B. WILSON	DATE : 02/2008
CHECKED BY : PEGGY ADKINS	DATE : 03/2008
DRAWN BY : ELR 8/91	REV. 7/17/98 RWW/LES
CHECKED BY : GRP 8/91	REV. 10/17/00R RWW/LES
	REV. 5/1/06 TLA/GM

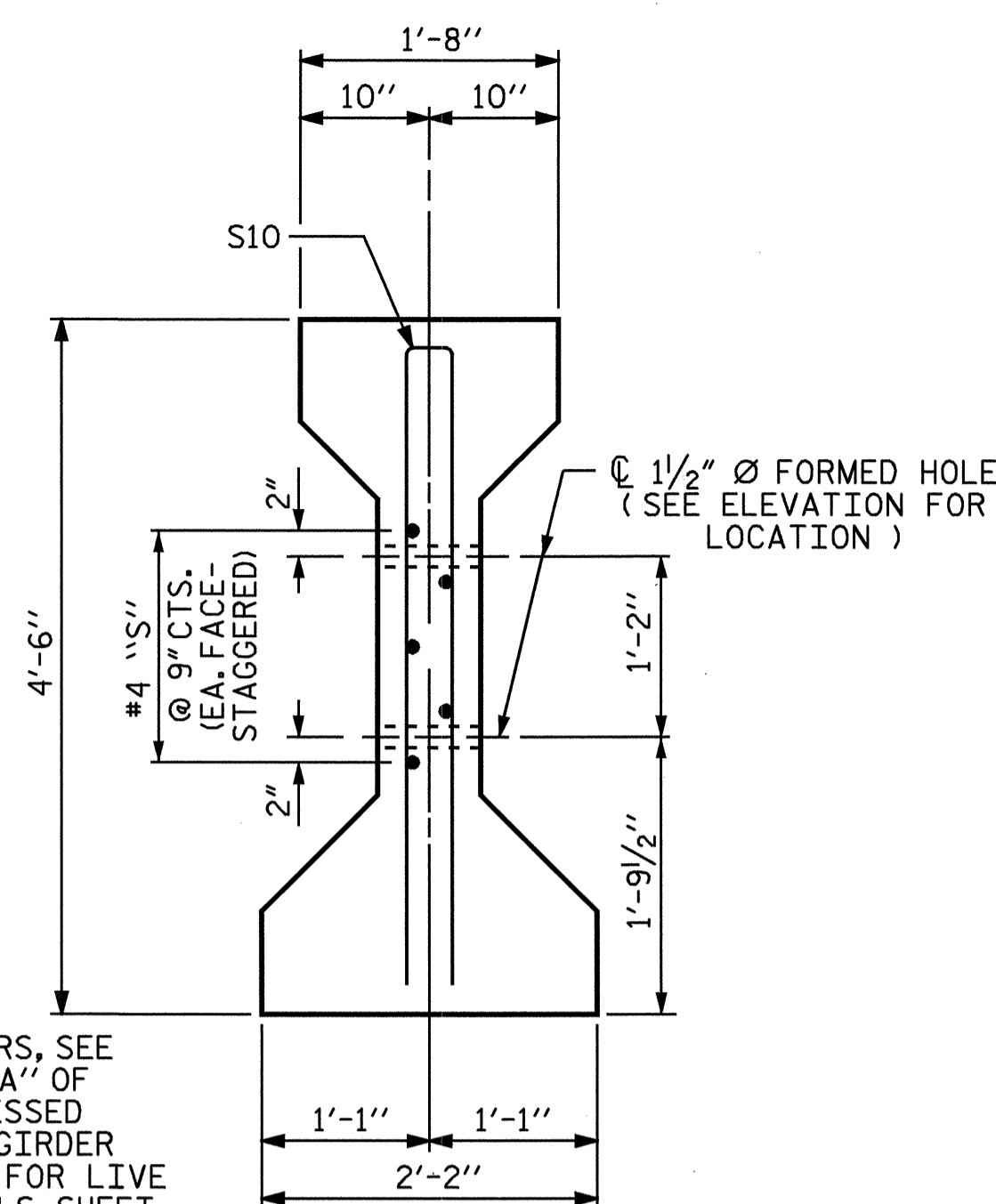
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			67



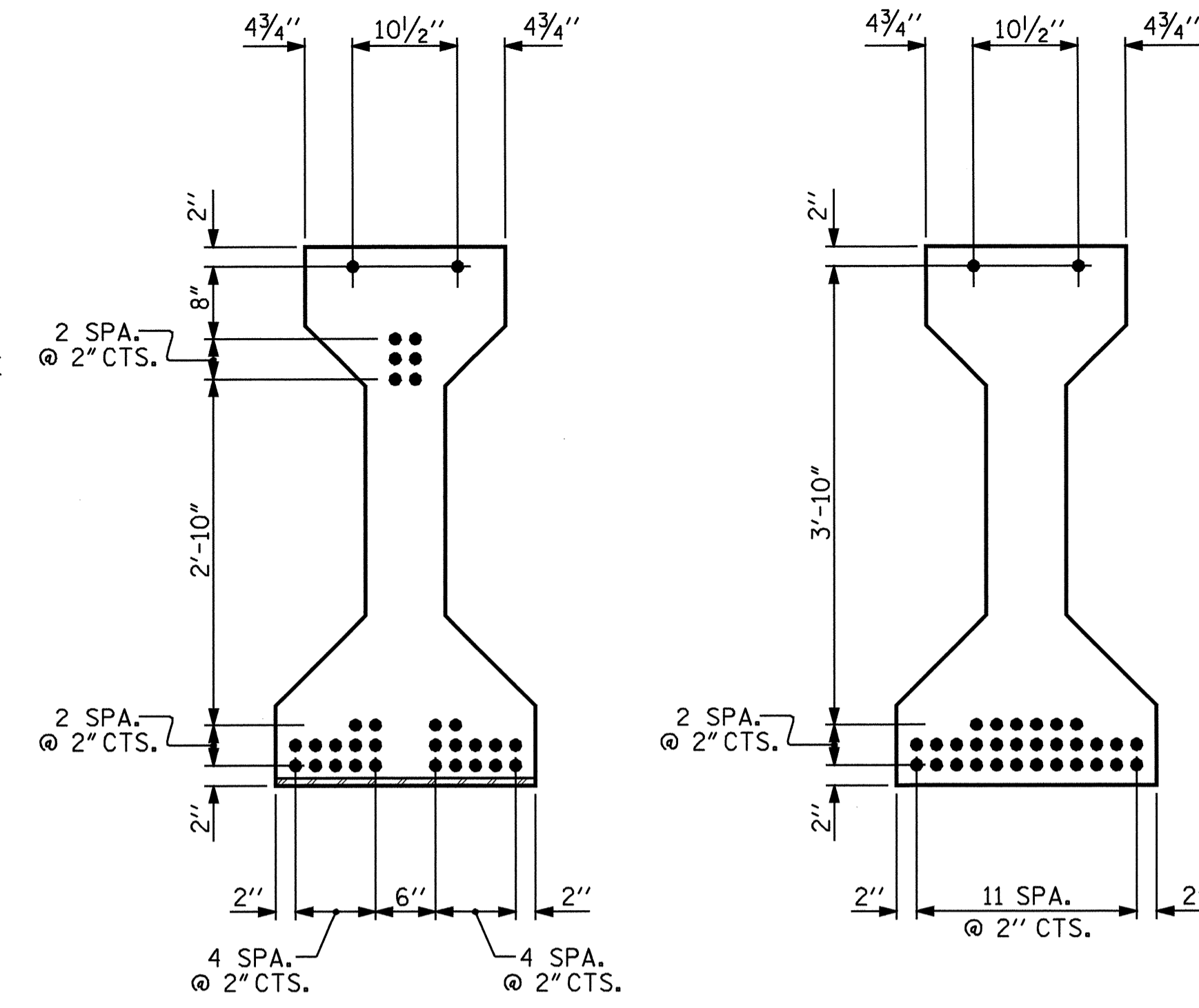
SECTION A-A

SECTION B-B

\* FOR S7 BARS, SEE  
DETAIL "A" OF  
PRESTRESSED  
CONCRETE GIRDER  
CONTINUOUS FOR LIVE  
LOAD DETAILS SHEET



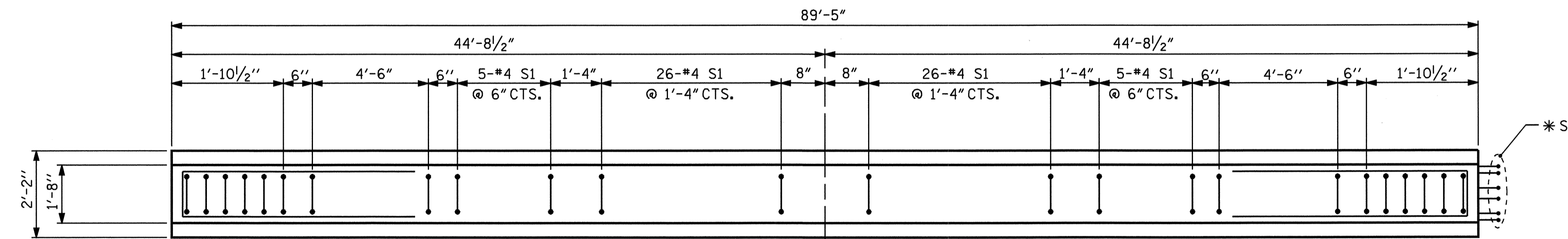
SECTION C-C  
(S1 BARS NOT SHOWN)



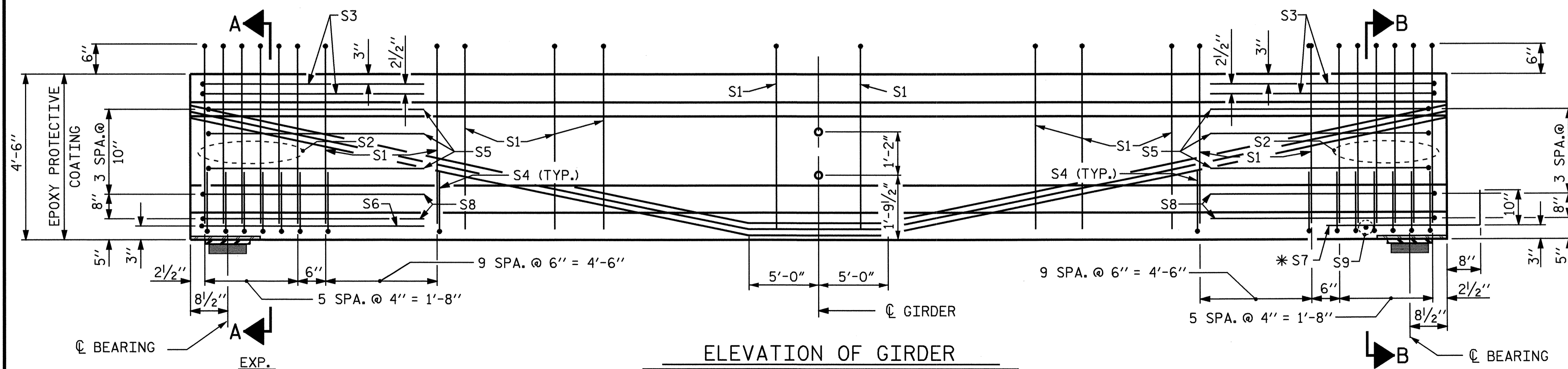
AT END OF GIRDER

AT C OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT

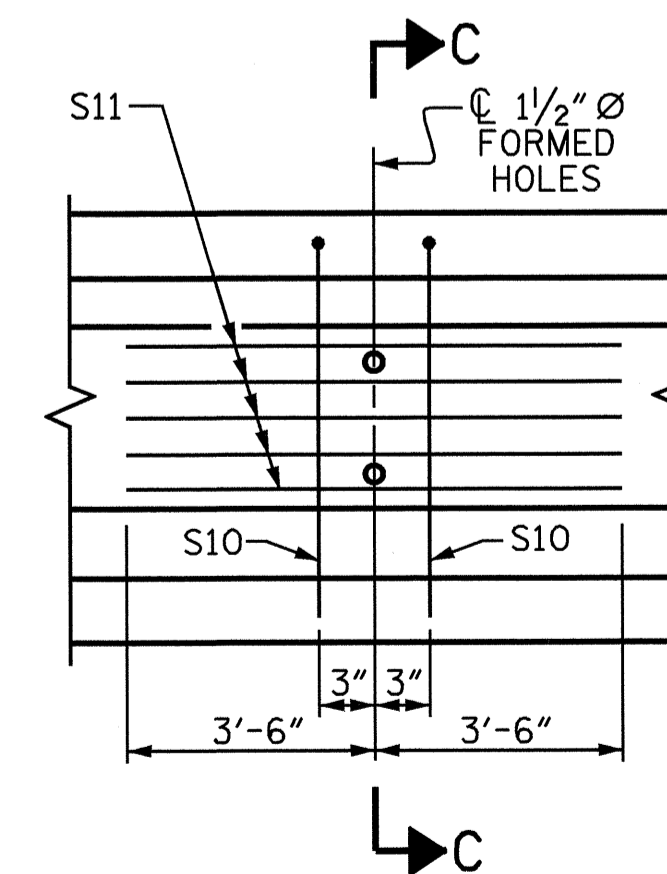


PLAN OF GIRDER



ELEVATION OF GIRDER

SEE "SOLE PLATE DETAILS" SHEET FOR GIRDER ORIENTATION  
(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM  
REINFORCING STEEL FOR GIRDER Nos. 1 THRU 4

ASSEMBLED BY : J.B. WILSON	DATE : 02/2008
CHECKED BY : PEGGY ADKINS	DATE : 03/2008
DRAWN BY : ELR 8/91	REV. 7/17/98 RWW/LES
CHECKED BY : GRP 8/91	REV. 10/17/00R RWW/LES
	REV. 5/1/06 TLA/GM

06-MAY-2008 14:29  
g:\projects\5-b3684\structures\b3684\final plans\b3684.sd.s\*.dgn  
taverette

0.6" Ø L. R. GRADE 270 STRANDS

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

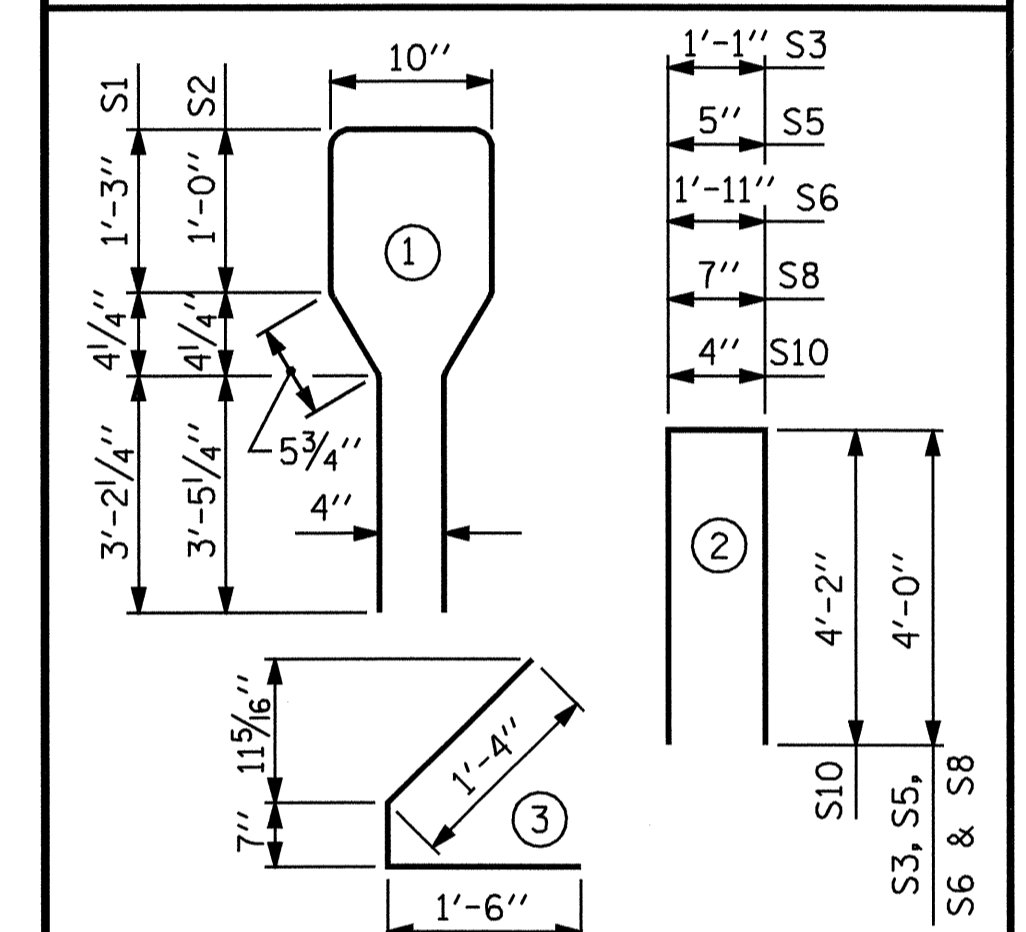
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	82	#4	1	10'-8"	584
S2	12	#6	1	10'-8"	192
S3	4	#4	2	9'-1"	24
S4	64	#4	3	3'-5"	146
S5	6	#4	2	8'-5"	34
S6	1	#4	2	9'-11"	7
*S7	6	#5	STR	3'-8"	23
S8	4	#4	2	8'-7"	23
S9	1	#3	STR	1'-10"	1
S10	2	#5	2	8'-8"	18
S11	5	#4	STR	7'-0"	23

\* NOTE: S7 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	6500 PSI CONCRETE C.Y.	0.6" Ø L.R. STRANDS No.
	1075	18.1	32

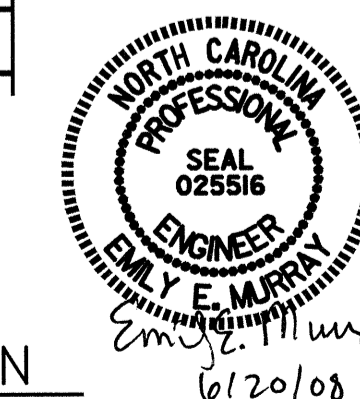
GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
20	89'-5"	1788'-4"

PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
AASHTO TYPE IV  
PRESTRESSED CONCRETE GIRDER  
CONTINUOUS FOR LIVE LOAD  
SPANS P THRU T



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS 67
2			4			

STD. NO. PCG6



**STRUCTURAL STEEL NOTES**

ALL INTERMEDIATE DIAPHRAGM STEEL, CONNECTOR PLATES AND PLATE WASHERS SHALL BE AASHTO M270 GRADE 50 OR APPROVED EQUAL.

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

TENSION ON THE AASHTO M164 BOLTS THROUGH THE GIRDER WEB SHALL BE SNUG TIGHTENED FOLLOWED BY AN ADDITIONAL 1/4 TURN.

THE CHANNELS, ANGLES, WASHERS, PLATE WASHERS, AND DIRECT TENSION INDICATORS SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

FOR METALLIZATION, APPLY AN 8 MIL THICK 99.99 PERCENT ZINC (W-Zn-1) THERMAL SPRAYED COATING WITH A 0.5 MIL THICK SEAL COAT TO ALL STEEL DIAPHRAGM SURFACES IN ACCORDANCE WITH THE THERMAL SPRAYED COATINGS SPECIAL PROVISIONS AND SECTION 442 OF THE STANDARD SPECIFICATIONS.

GALVANIZE THE HIGH STRENGTH BOLTS, NUTS, AND WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.

USE A MINIMUM 7/16" THICK PLATE WASHER WITH STANDARD HOLES UNDER EACH BOLT HEAD AND NUT. THE PLATE WASHERS SHALL HAVE SUFFICIENT SIZE TO COVER THE HOLES AFTER INSTALLATION. DIRECT TENSION INDICATORS ARE TO BE USED IN CONJUNCTION WITH THE PLATE WASHERS.

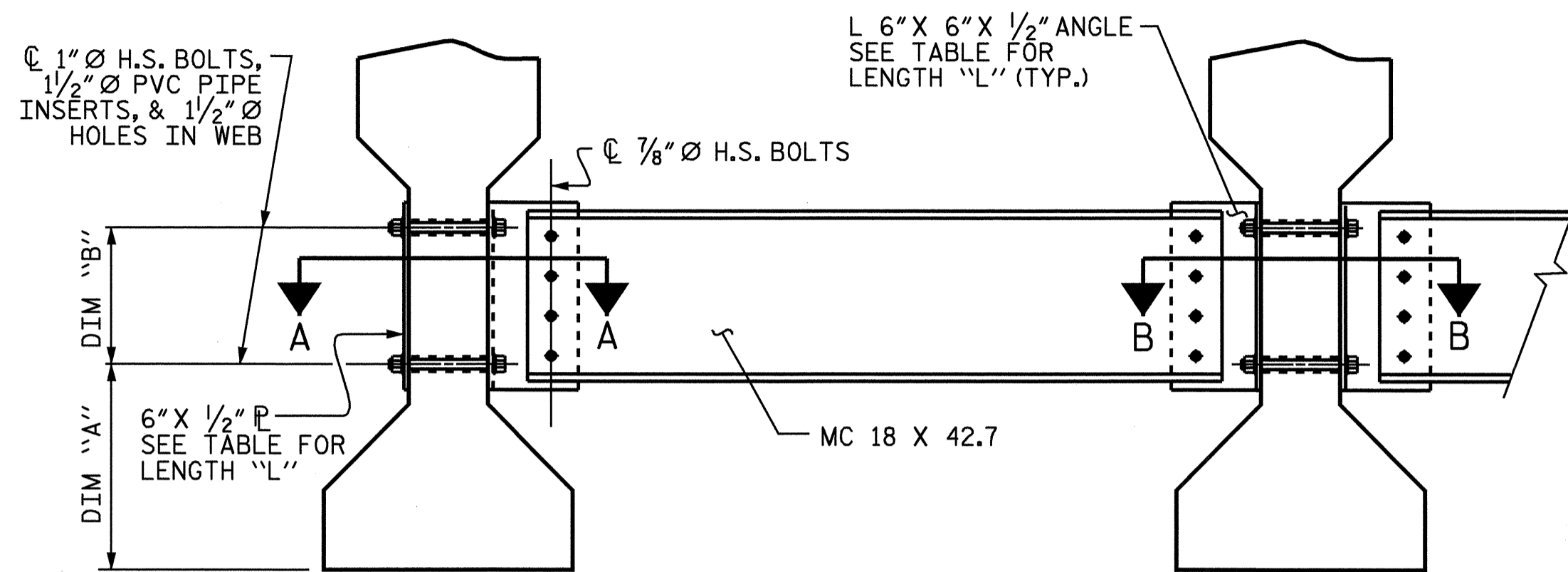
PROVIDE SUFFICIENT LENGTH OF ALL BOLTS TO ACCOMMODATE WASHERS, DIRECT TENSION INDICATORS, THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST 1/4" PROJECTION BEYOND THE NUT.

INTERMEDIATE DIAPHRAGM ASSEMBLY SHALL COMPLY WITH SECTION 1072 OF THE STANDARD SPECIFICATIONS.

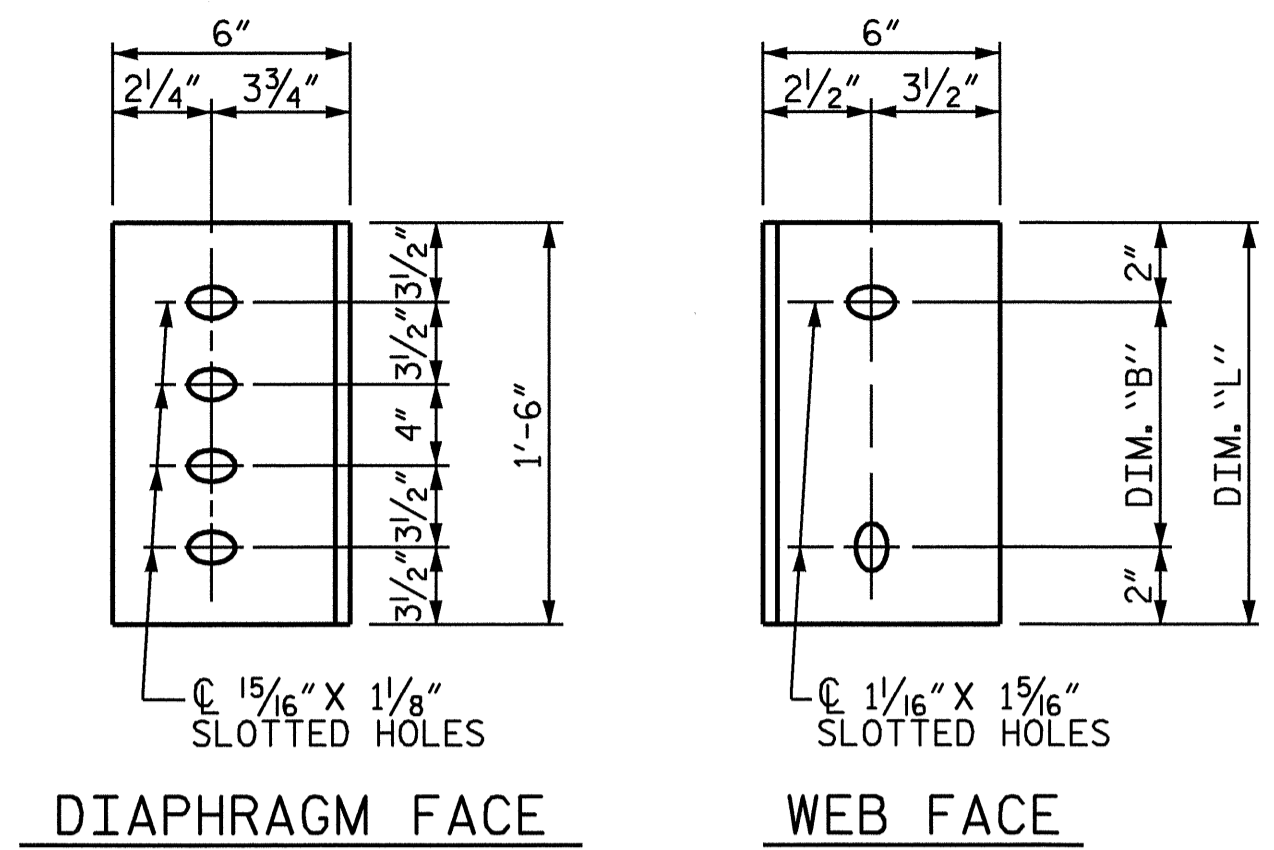
CONTRACTOR SHALL SUBMIT TWO SETS OF WORKING DRAWINGS FOR THE INTERMEDIATE DIAPHRAGM ASSEMBLY FOR REVIEW, COMMENTS AND ACCEPTANCE. AFTER REVIEW, COMMENTS, AND ACCEPTANCE, SUBMIT SEVEN SETS FOR DISTRIBUTION.

IN THE EXTERIOR BAYS, TEMPORARY STRUTS SHALL BE PLACED BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE STEEL DIAPHRAGMS. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED. ALL AASHTO M164 H.S. BOLTS SHALL BE FULLY TIGHTENED AFTER THE STRUTS HAVE BEEN REMOVED.

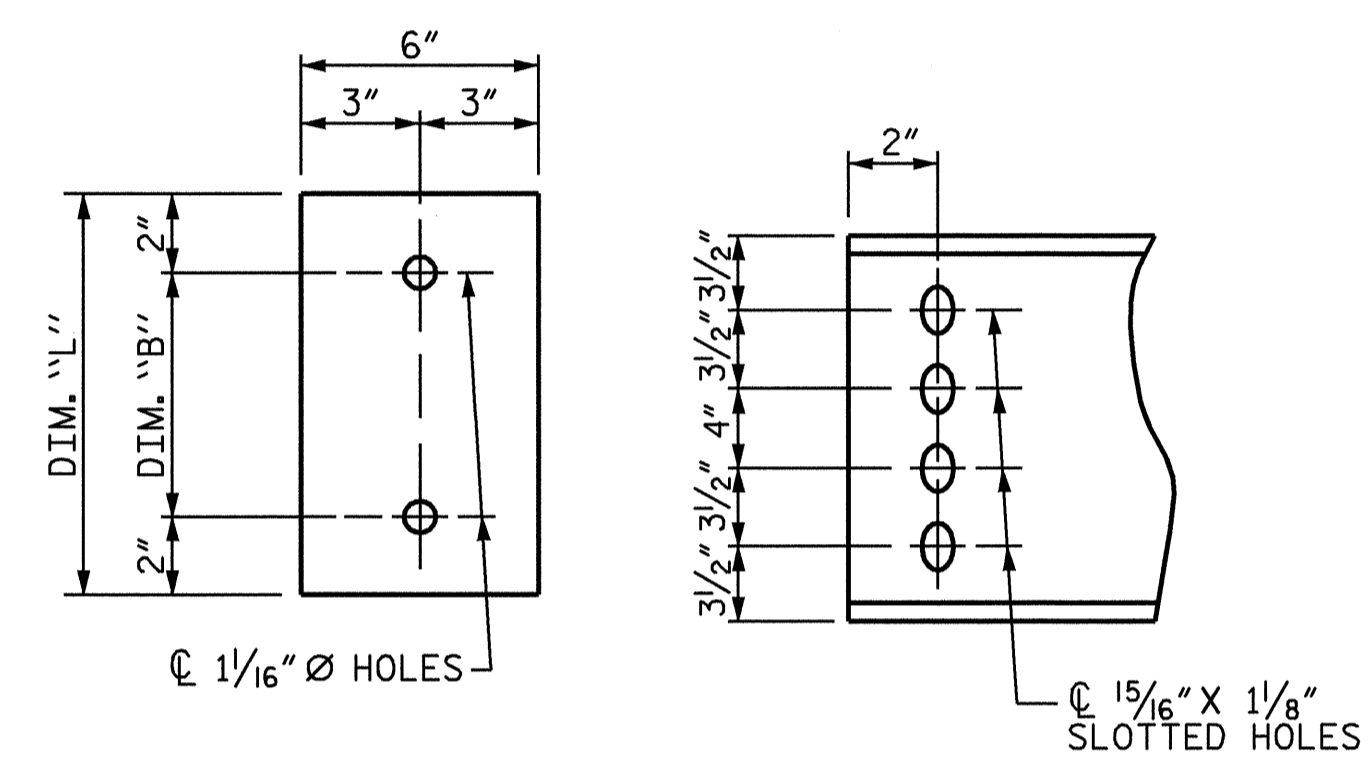
THE COST OF THE STEEL DIAPHRAGMS AND ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS.



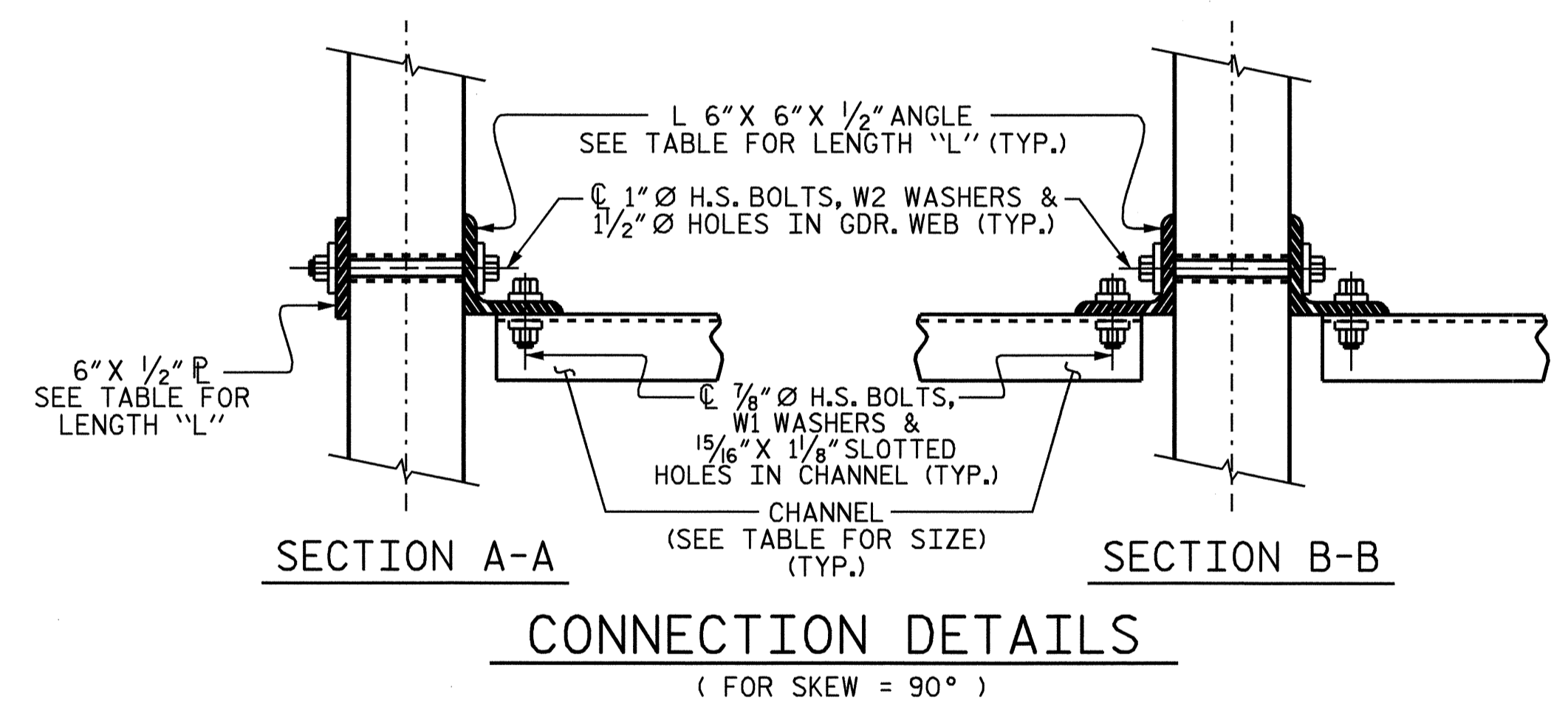
**EXTERIOR GIRDER INTERIOR GIRDER**  
**PART SECTION AT INTERMEDIATE DIAPHRAGM**



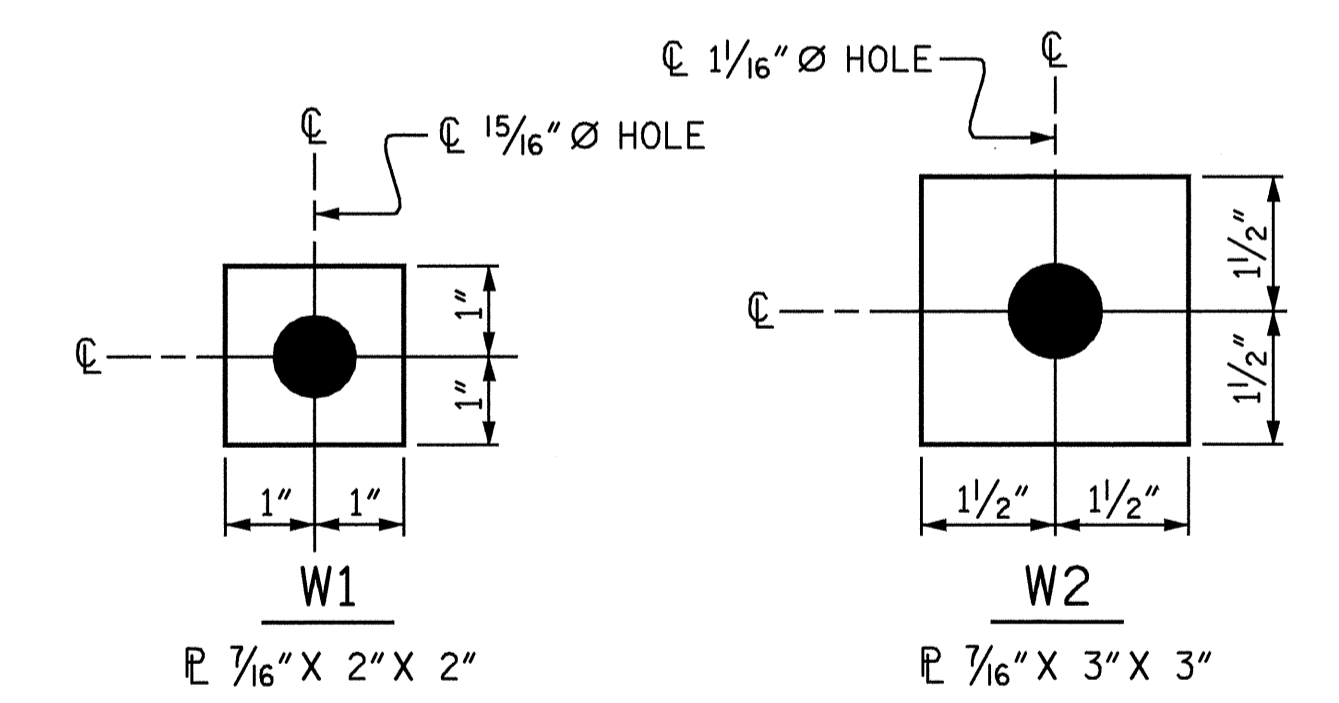
**CONNECTOR PLATE DETAILS**



**PLATE DETAILS CHANNEL END**



**CONNECTION DETAILS**  
(FOR SKEW = 90°)



USE WITH 7/8" Ø HVY. HEX NUTS & DIRECT TENSION INDICATOR WASHERS AT DIAPHRAGM CHANNEL TO CONNECTOR PLATE CONNECTIONS

USE WITH 1" Ø HVY. HEX NUTS AT CONNECTOR PLATE TO GIRDER CONNECTIONS

**WASHER DETAILS**

**TABLE**

GIRDER TYPE	CHANNEL SIZE	DIM "A"	DIM "B"	DIM "L"
IV	MC 18 x 42.7	1'-9 1/2"	1'-2"	1'-6"

PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-

SHEET 4 OF 5



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
INTERMEDIATE  
STEEL DIAPHRAGMS  
FOR TYPE IV  
PRESTRESSED CONCRETE  
GIRDERS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			67

ASSEMBLED BY : J.B. WILSON	DATE : 2/2008
CHECKED BY : PEGGY ADKINS	DATE : 3/2008
DRAWN BY : TLA 6/05	ADDED 10/21/05
CHECKED BY : VC 6/05	REV. 5/1/06R KMM/GM



# NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL SHALL BE GRADE 60.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES INDICATED IN ELEVATION VIEW.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. BEVEL EDGES OF PLATE "B-1" TO GIVE CLOSE FIT BUT NOT TIGHT FIT TO STEEL CASTING FORM.

ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THROUGH 1020 OR APPROVED EQUAL, AND SHALL MEET THE TYPE "B" REQUIREMENTS OF SUBSECTION 7.3 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

AT ENDS OF GIRDERS TO BE EMBEDDED IN CONCRETE DIAPHRAGMS OR END WALLS, PRESTRESSING STRANDS MAY EXTEND A MAXIMUM OF 2" BEYOND THE GIRDER ENDS. OTHERWISE, PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 7000 PSI FOR SPANS "A" THRU "D", 6700 PSI FOR SPANS "E" THRU "O", AND 5000 PSI FOR SPANS "P" THRU "T".

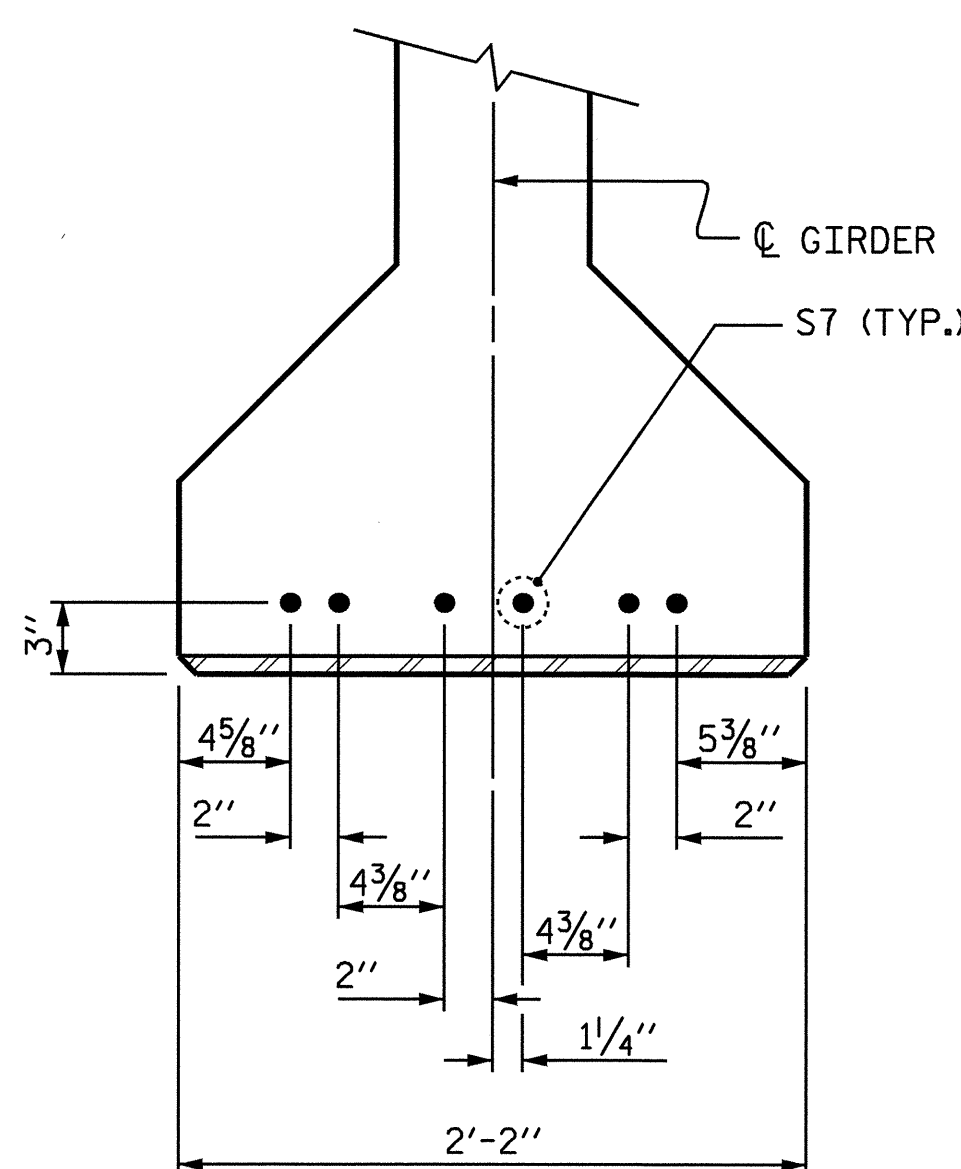
DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

THE TOP SURFACE OF THE GIRDER, EXCLUDING THE OUTSIDE 4", SHALL BE RAKED TO A DEPTH OF 1/4".

WHEN DRAPED STRANDS ARE DETAILED, THE LONGITUDINAL LOCATION OF THE HOLD DOWN DEVICES SHALL BE WITHIN 6" OF THE LOCATION SHOWN AND THE CENTER OF GRAVITY OF THE GROUP OF DRAPED STRANDS SHALL BE LOCATED WITHIN 1/2" OF THE THEORETICAL LOCATION SHOWN.

FOR CRACK REPAIR OF PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.

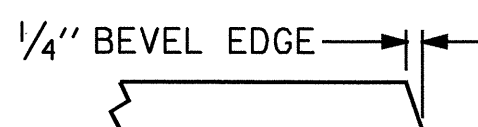
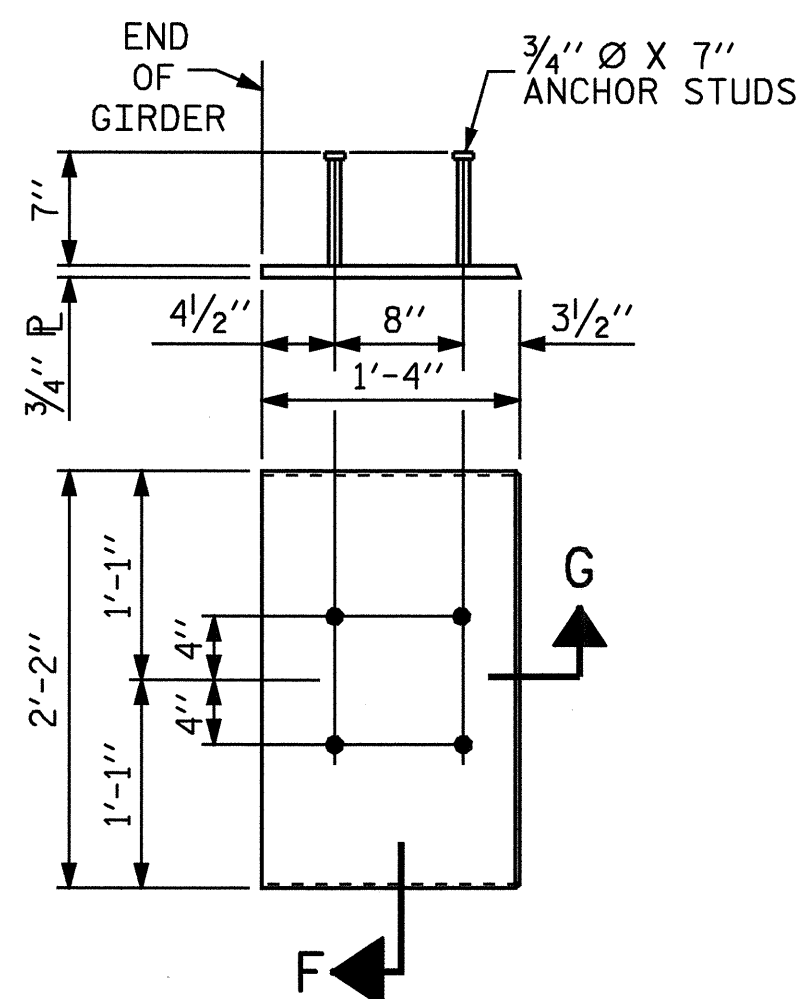
THE UPLIFT FORCE DUE TO DRAPED STRANDS IS 33.3 KIPS FOR GIRDERS IN SPANS A THRU D, 34.3 KIPS FOR GIRDERS IN SPANS E THRU O, AND 21.0 KIPS FOR GIRDERS IN SPANS P THRU T.



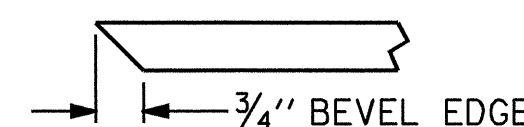
DETAIL "A"

## EMBEDDED PLATE "B-1" DETAILS FOR AASHTO TYPE IV GIRDER

(2 REQ'D PER GIRDER)



SECTION "G"



SECTION "F"

(SEE NOTES)

### NOTES

FOR STRUCTURAL CONCRETE INSERT FOR SOLAR ARRAY PLATFORM

THE STRUCTURAL CONCRETE INSERT ASSEMBLY FOR SOLAR ARRAY PLATFORM SHALL CONSIST OF THE FOLLOWING :

- 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".
- 1-7/8" Ø x 1 5/8" OR 1-1" Ø x 2 1/4" BOLT WITH WASHER. BOLT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325. BOLT AND WASHER SHALL BE GALVANIZED.
- 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 7/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE HIGH STRENGTH BOLTS AND FERRULES HAVE MATCHING THREAD TYPES AND PROVIDE A PROPER FIT UP.

DEAD LOAD DEFLECTION TABLE FOR SPANS A THRU D												
0.6" Ø LOW RELAXATION ALL GIRDERS												
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	
CAMBER (GIRDER ALONE IN PLACE)	↑	0	0.133	0.252	0.346	0.405	0.425	0.405	0.346	0.252	0.133	0
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓	0	0.058	0.111	0.151	0.177	0.186	0.177	0.151	0.111	0.058	0
FINAL CAMBER	↑	0	7/8"	1 1/16"	2 5/16"	2 3/4"	2 7/8"	2 3/4"	2 5/16"	1 1/16"	7/8"	0

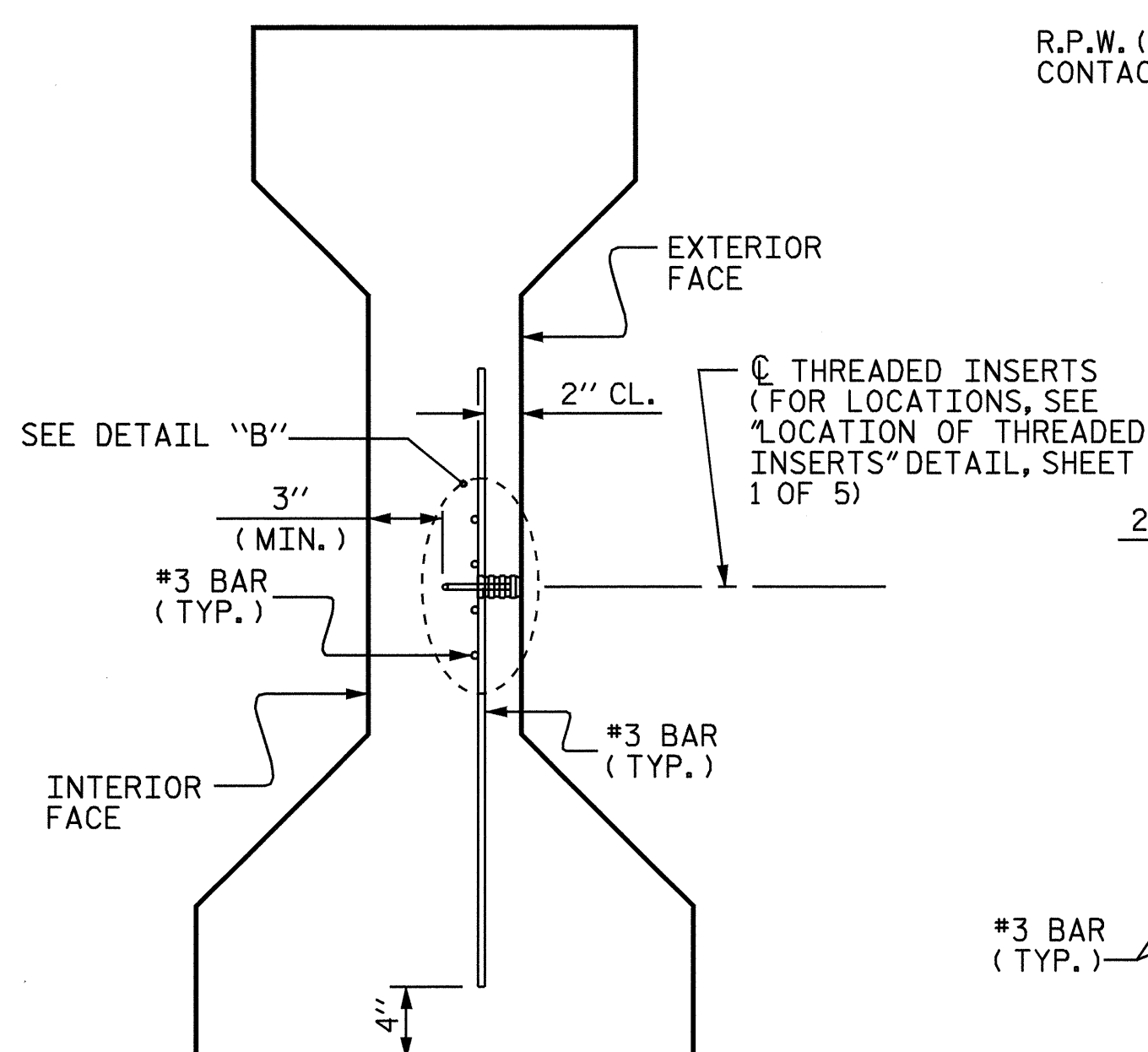
\* INCLUDES FUTURE WEARING SURFACE  
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR SPANS E-O												
0.6" Ø LOW RELAXATION ALL GIRDERS												
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	
CAMBER (GIRDER ALONE IN PLACE)	↑	0	0.134	0.253	0.346	0.405	0.425	0.405	0.346	0.253	0.134	0
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓	0	0.052	0.098	0.134	0.157	0.165	0.157	0.134	0.098	0.052	0
FINAL CAMBER	↑	0	1"	1 7/8"	2 3/16"	3"	3 1/8"	3"	2 9/16"	1 7/8"	1"	0

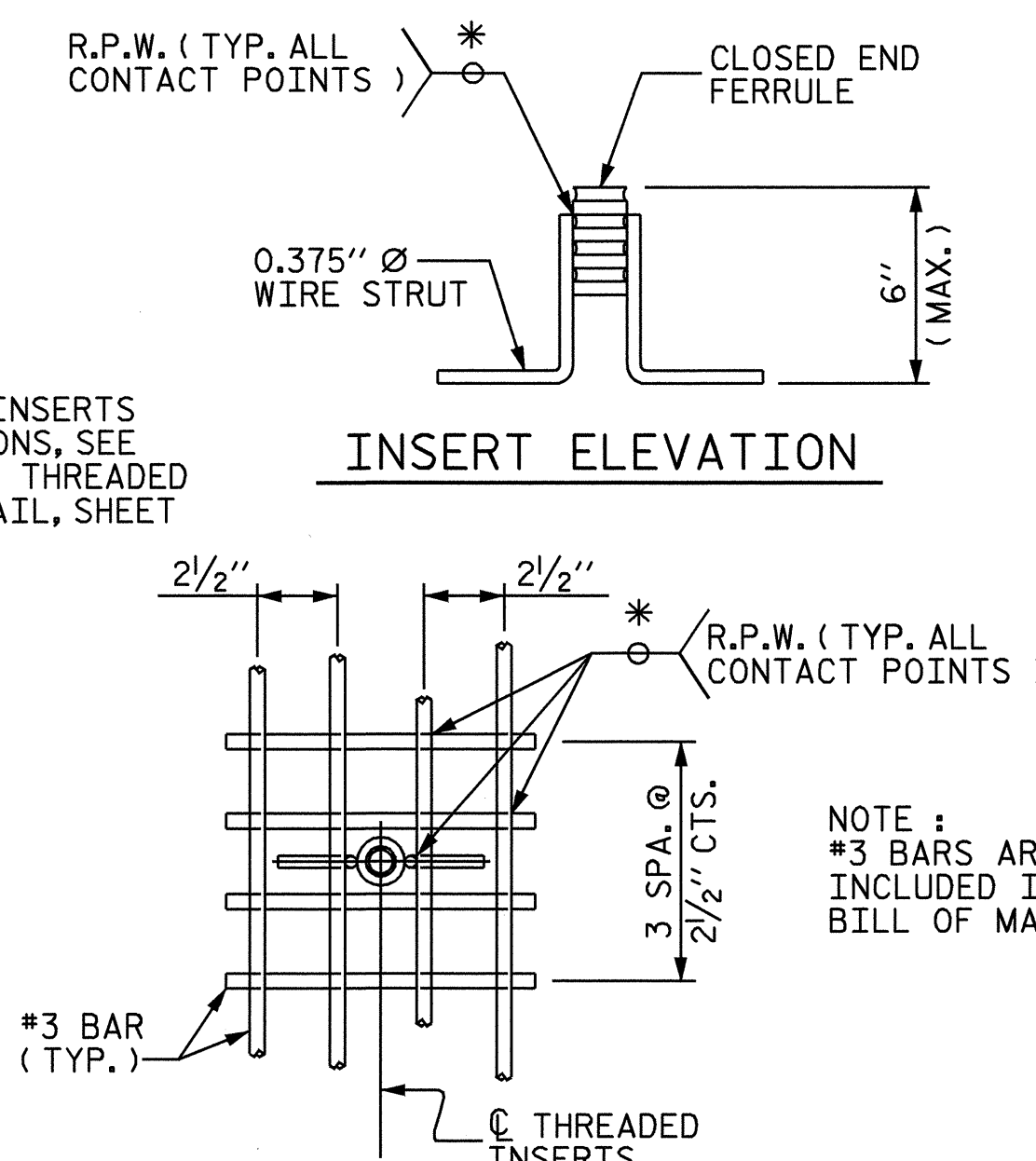
\* INCLUDES FUTURE WEARING SURFACE  
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR SPANS P-T												
0.6" Ø LOW RELAXATION ALL GIRDERS												
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	
CAMBER (GIRDER ALONE IN PLACE)	↑	0	0.101	0.191	0.262	0.306	0.322	0.306	0.262	0.191	0.101	0
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓	0	0.037	0.070	0.095	0.112	0.117	0.112	0.095	0.070	0.037	0
FINAL CAMBER	↑	0	3/4"	1 1/16"	2"	2 5/16"	2 1/16"	2 5/16"	2"	1 7/16"	3/4"	0

\* INCLUDES FUTURE WEARING SURFACE  
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).



EXTERIOR GIRDER ONLY



DETAIL "B"

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

## THREADED INSERT DETAILS

ASSEMBLED BY : J.B. WILSON DATE : 2/2008  
CHECKED BY : PEGGY ADKINS DATE : 3/2008  
DRAWN BY : ELR 11/91 REV. 10/17/00 RWW/LES  
CHECKED BY : GRP 11/91 REV. 7/10/01RR LES/RDR  
REV. 5/1/06 TLA/GM



PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
PRESTRESSED CONCRETE GIRDER  
CONTINUOUS FOR LIVE LOAD  
DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			307/RS
2			4			67

STD. NO. PCG11

**NOTES**

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

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

STEEL SOLE PLATES, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

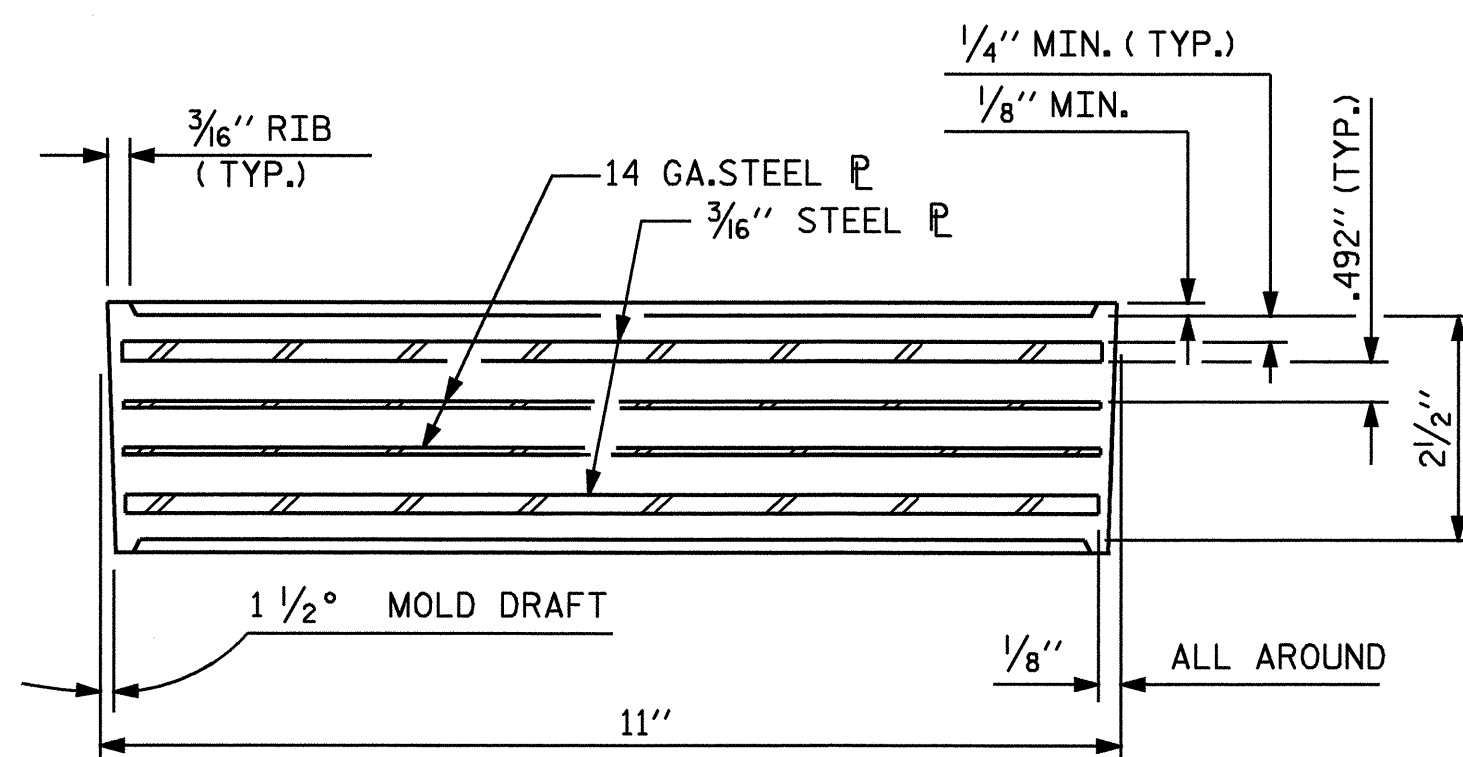
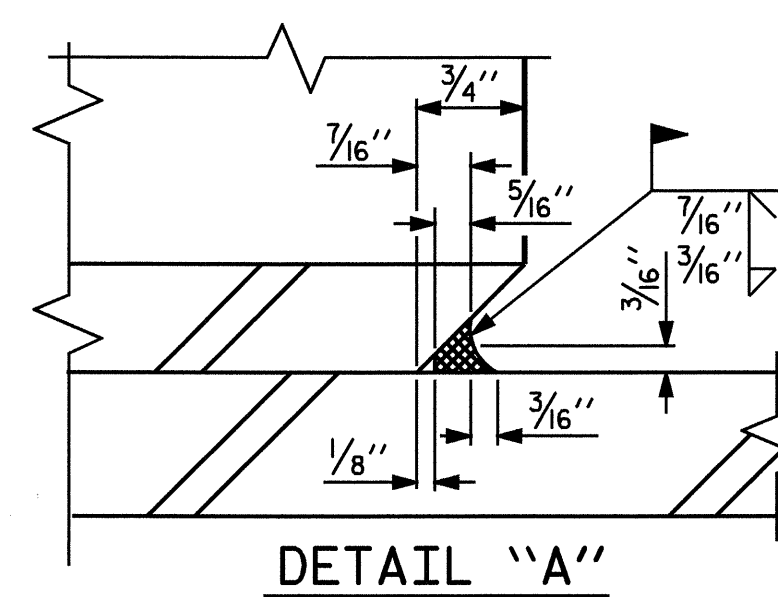
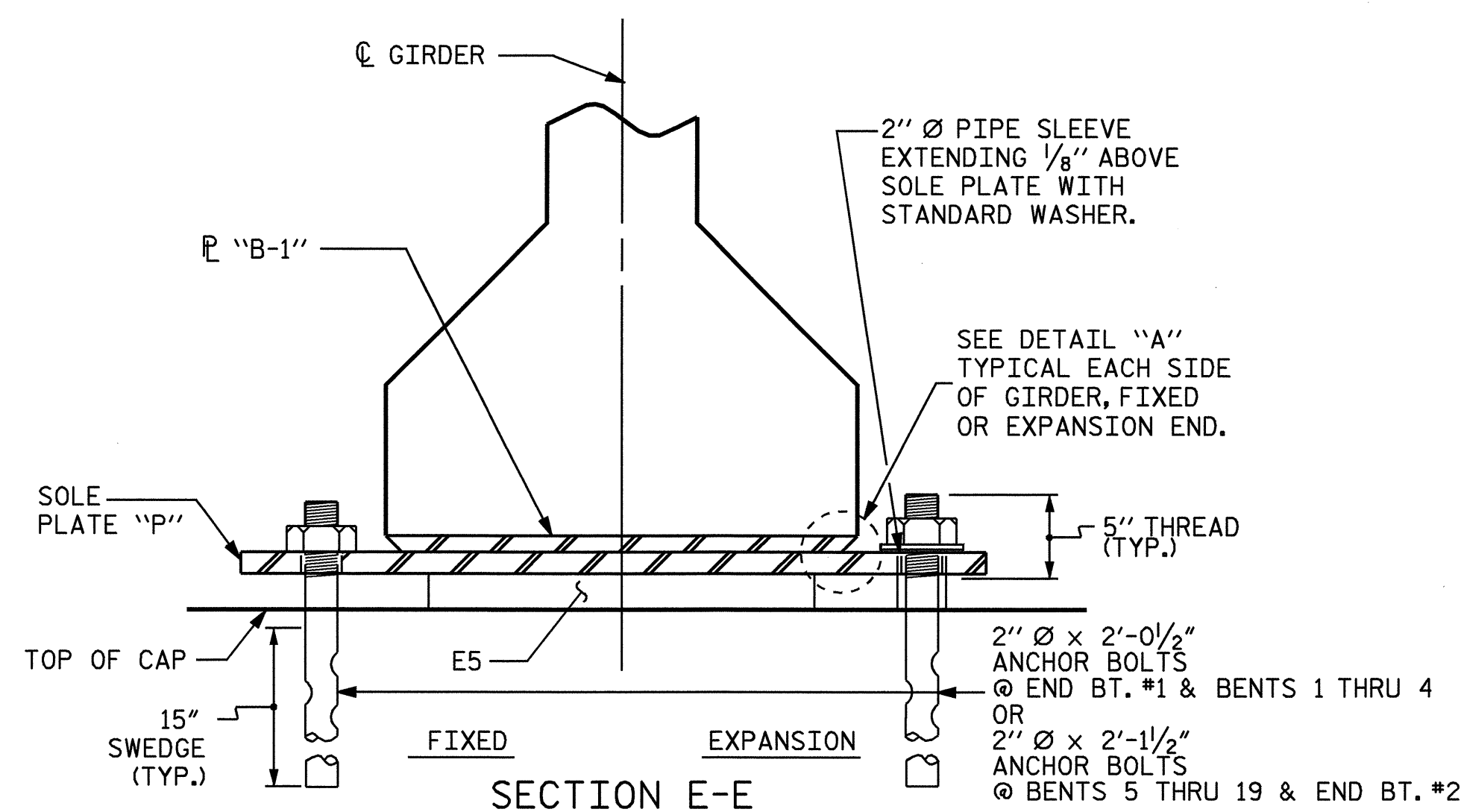
PRIOR TO WELDING, GRIND THE GALVANIZED SURFACE OF THE PORTION OF THE EMBEDDED PLATE AND SOLE PLATE THAT ARE TO BE WELDED. AFTER WELDING, DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

WHEN WELDING THE SOLE PLATE TO THE EMBEDDED PLATE IN THE GIRDER, 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.

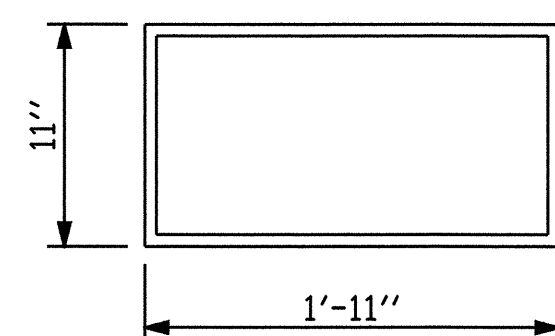
SOLE PLATE "P", BOLTS, NUTS, WASHERS, AND PIPE SLEEVE SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.

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. NO SHOP DRAWINGS ARE REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.



TYPICAL SECTION OF ELASTOMERIC BEARINGS

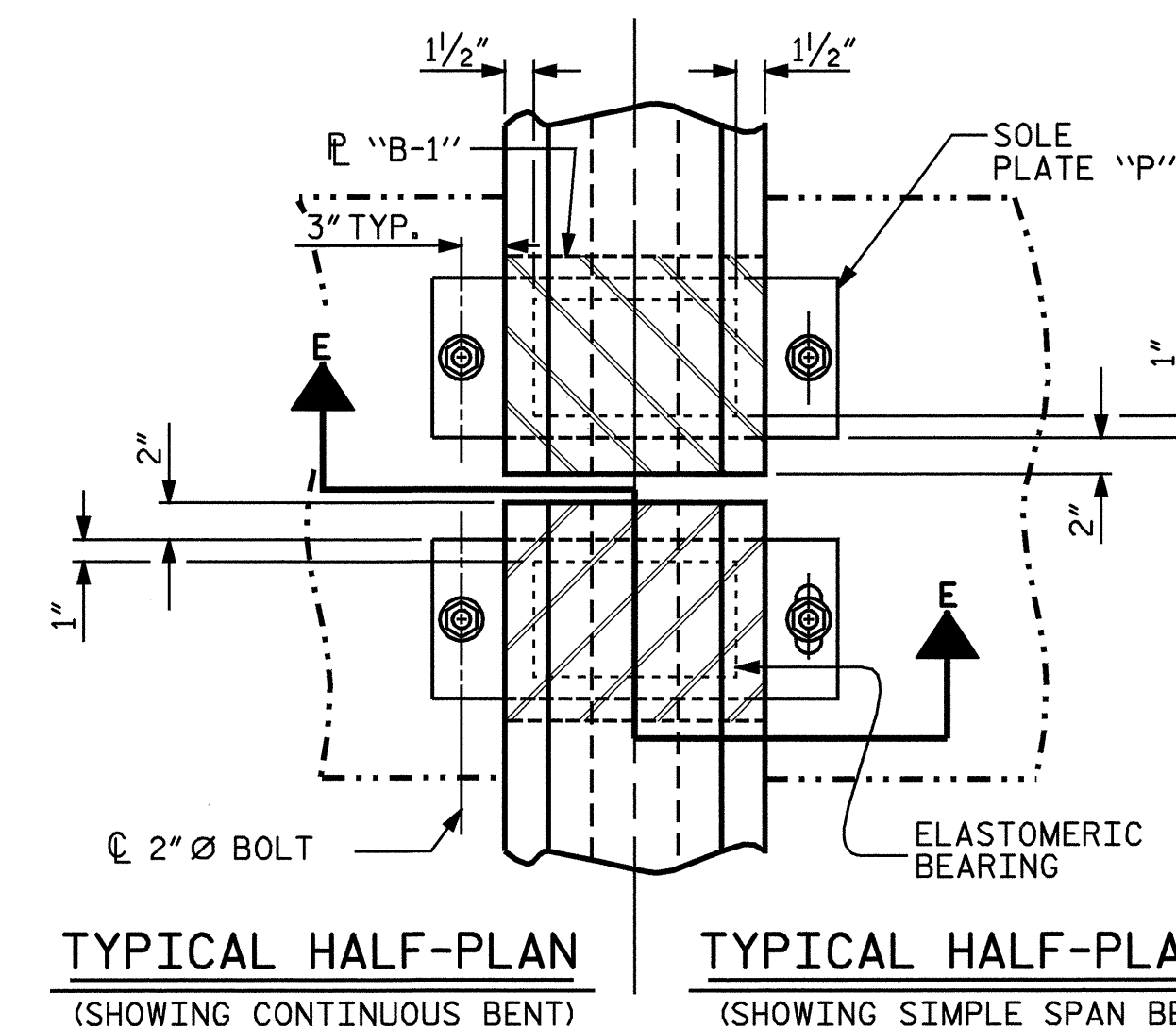


E5 (160 REQ'D)

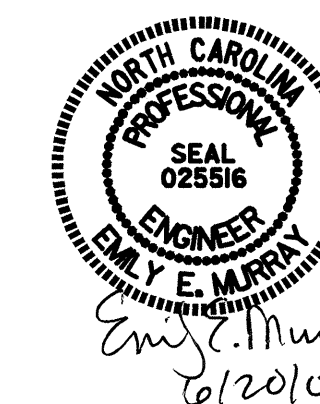
PLAN VIEW OF ELASTOMERIC BEARING

TYPE VI

LOAD RATINGS	
	MAX.D.L.+ L.L.
TYPE VI	211 K

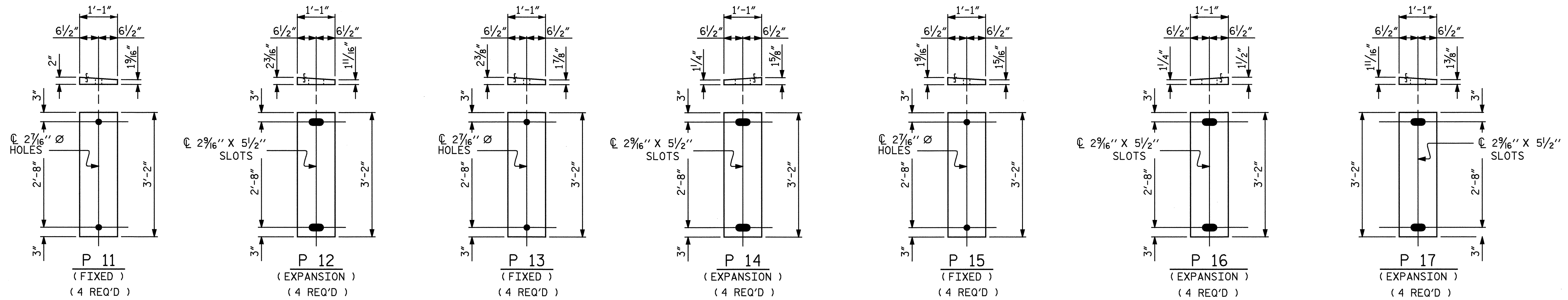
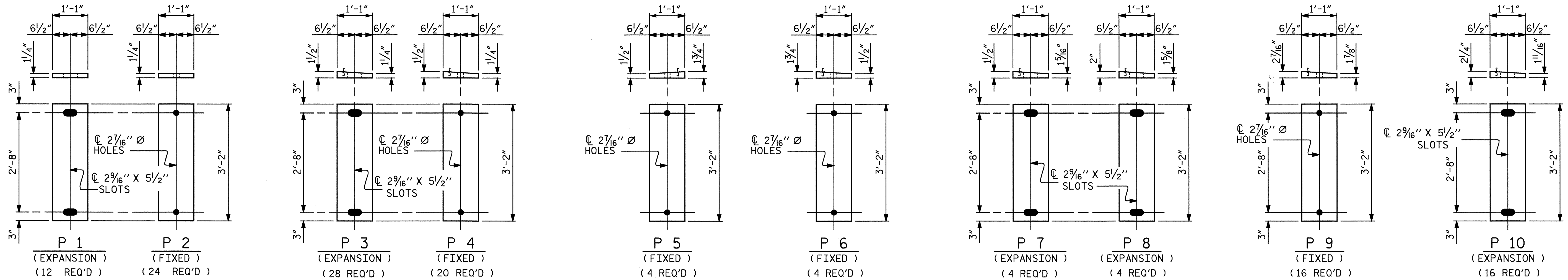


PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-



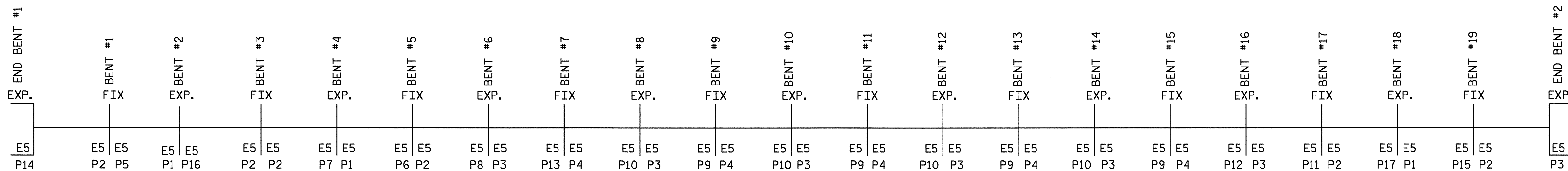
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
STANDARD ELASTOMERIC BEARING DETAILS						S-26
PRESTRESSED CONCRETE GIRDER SUPERSTRUCTURE						TOTAL SHEETS
REVISIONS						67
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

ASSEMBLED BY :	J.B. WILSON	DATE :	2/2008
CHECKED BY :	PEGGY ADKINS	DATE :	3/2008
DRAWN BY :	EEM 2/97	REV. 8/16/99	RWW/LES
CHECKED BY :	VAP 2/97	REV. 10/17/00	RWW/LES
		REV. 5/1/06	TLA/GM



**SOLE PLATE DETAILS ("P") & ORIENTATION**

NOTE: SOLE PLATES P3 & P16 ARE SIMILAR EXCEPT FOR ORIENTATION.  
SOLE PLATES P5 & P6 ARE SIMILAR EXCEPT FOR ORIENTATION.

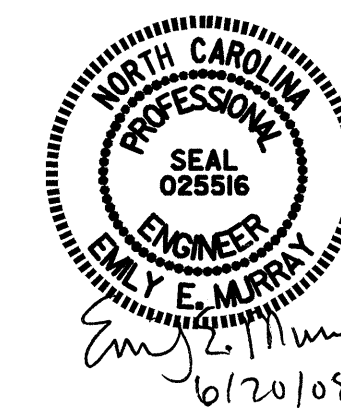


**SOLE PLATE LOCATION SKETCH**

PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**SOLE PLATE DETAILS**

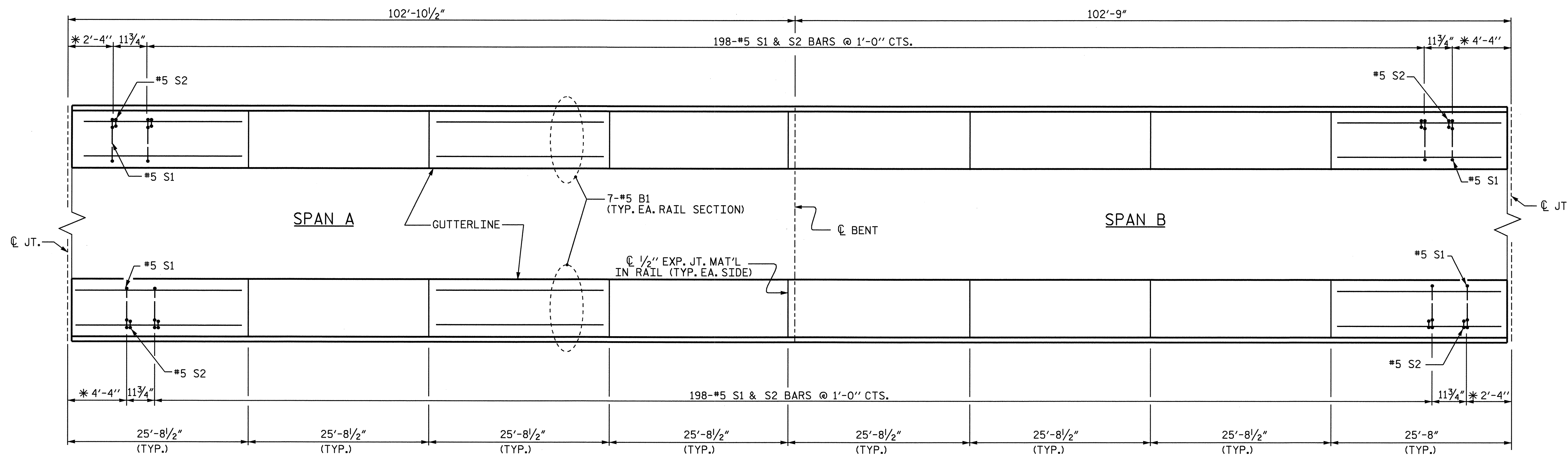


DRAWN BY: J.B. WILSON DATE: 2/2008  
CHECKED BY: PEGGY ADKINS DATE: 3/2008

06-MAY-2008 14:30  
g:\tpp\projects-b\3684\structures\3684\final plans\3684\_sd.s\*.dgn  
tower.stb

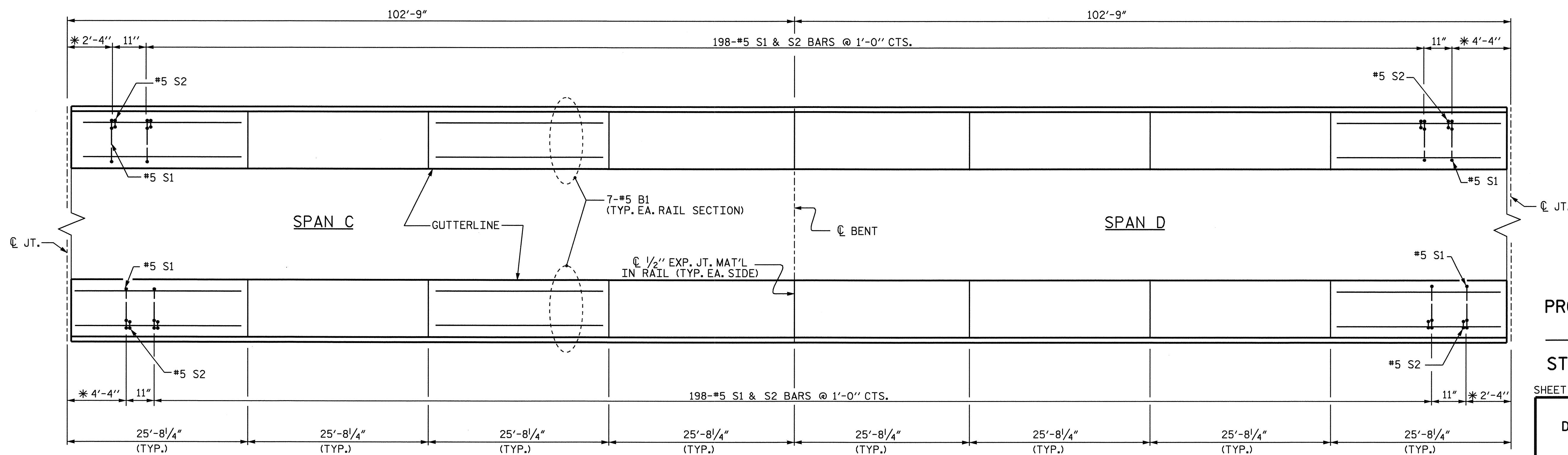
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-27
1			3			TOTAL SHEETS
2			4			67





**PLAN OF BARRIER RAIL**  
(SPANS A & B)

\* FOR ADDITIONAL REINFORCING STEEL IN THESE AREAS, SEE "END OF RAIL DETAILS," SHEET 4 OF 4.



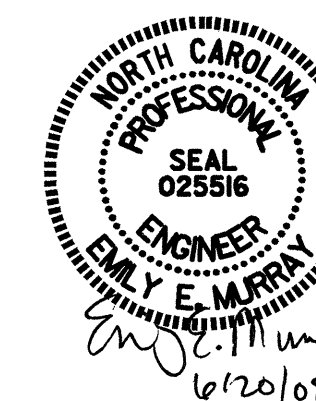
**PLAN OF BARRIER RAIL**  
(SPANS C & D)

PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-

SHEET 1 OF 4

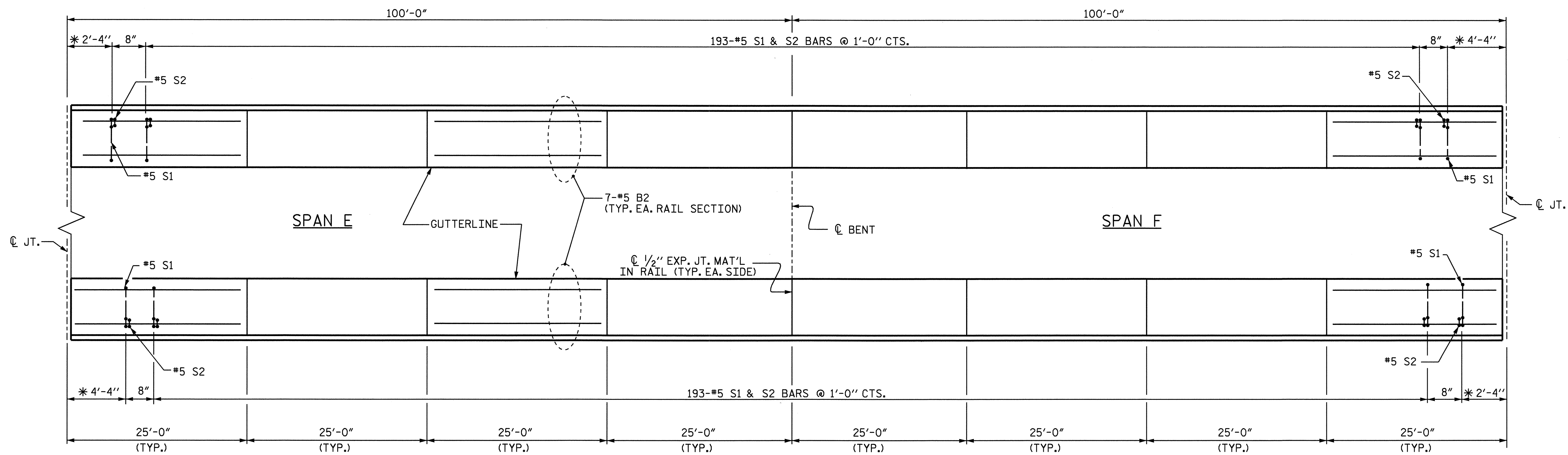
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUPERSTRUCTURE  
BARRIER RAIL  
SPANS A THRU D



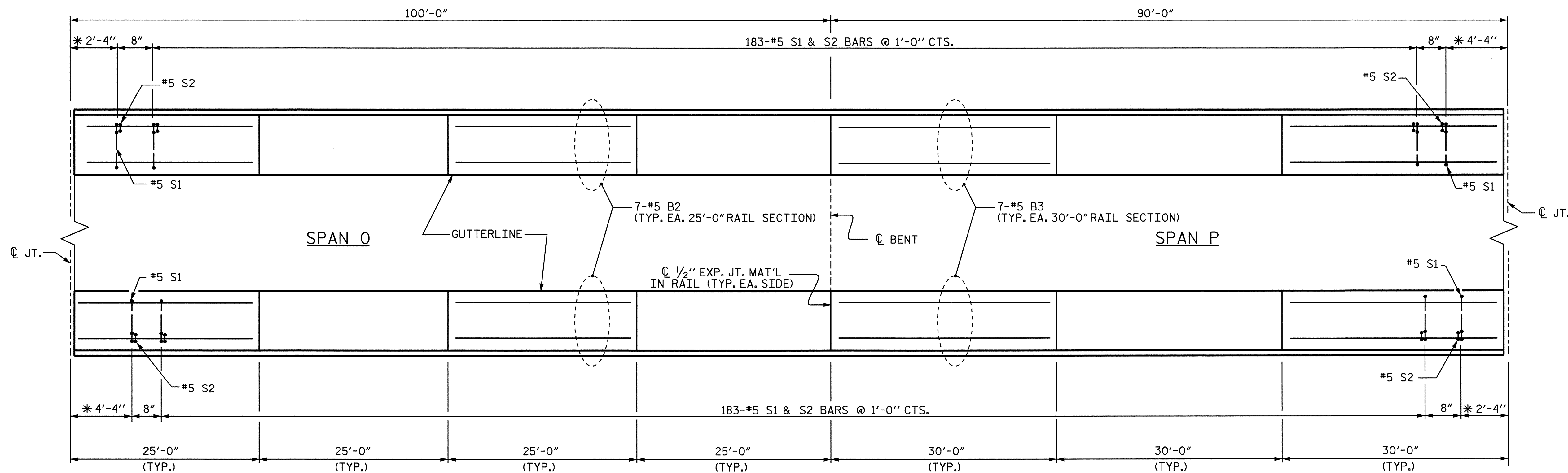
ASSEMBLED BY : J.B. WILSON DATE : 2/2008  
CHECKED BY : PEGGY ADKINS DATE : 3/2008  
DRAWN BY : REK 9/87 REV. 6/16/95 EEM/RGW  
CHECKED BY : CRK 10/87 REV. 7/17/98 RWW/LES  
REV. 10/17/00 RWW/LES

REVISIONS						SHEET NO. S-28
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 67
2			4			



**PLAN OF BARRIER RAIL**  
 (SPANS E & F SHOWN)  
 (SPANS G & H, I & J, K & L AND M & N SIMILAR)

\* FOR ADDITIONAL REINFORCING STEEL IN THESE AREAS, SEE "END OF RAIL DETAILS," SHEET 4 OF 4.



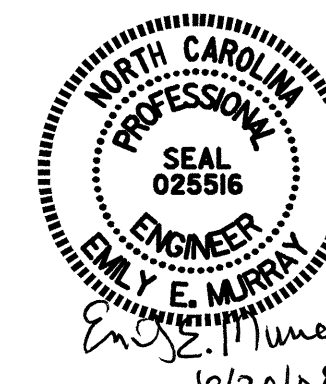
**PLAN OF BARRIER RAIL**  
 (SPANS O & P)

PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 2 OF 4

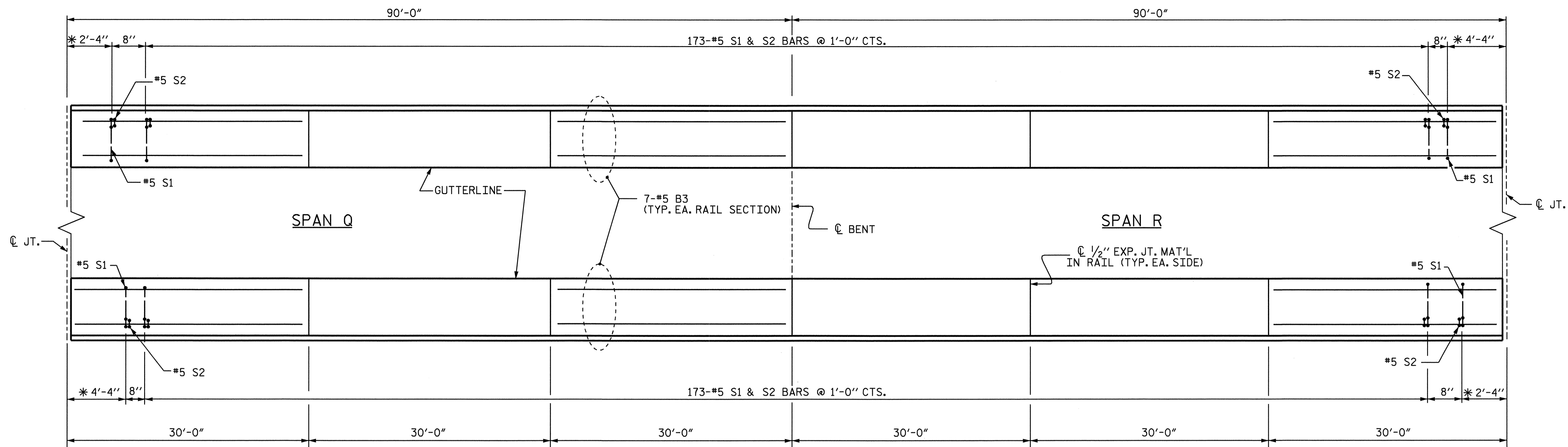
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUPERSTRUCTURE  
 BARRIER RAIL  
 SPANS E THRU P



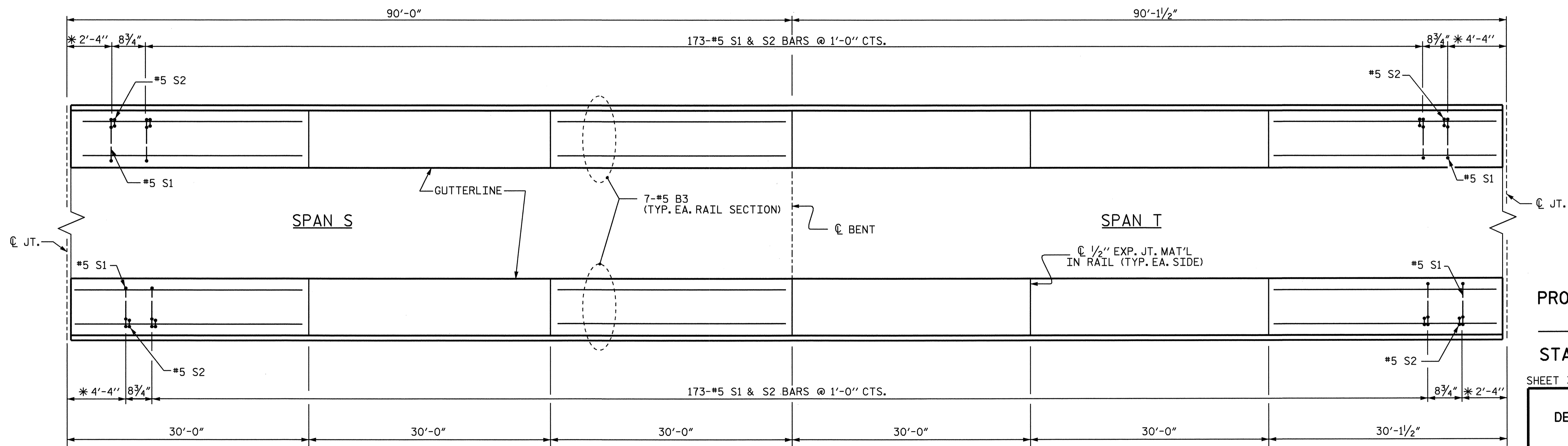
ASSEMBLED BY : J.B. WILSON	DATE : 2/2008
CHECKED BY : PEGGY ADKINS	DATE : 03/2008
DRAWN BY : REK 9/87	REV. 6/16/95 EEM/RGW
CHECKED BY : CRK 10/87	REV. 7/17/98 RWW/LES
	REV. 10/17/00 RWW/LES

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS 67
2			4			



PLAN OF BARRIER RAIL  
(SPANS Q & R)

\*FOR ADDITIONAL REINFORCING STEEL IN THESE AREAS, SEE "END OF RAIL DETAILS," SHEET 4 OF 4.



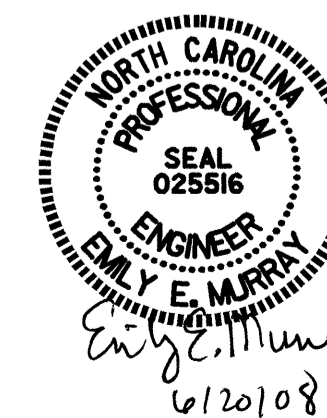
PLAN OF BARRIER RAIL  
(SPANS S & T)

PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUPERSTRUCTURE  
BARRIER RAIL  
SPANS Q THRU T



ASSEMBLED BY : J.B. WILSON DATE : 2/2008  
CHECKED BY : PEGGY ADKINS DATE : 3/2008  
DRAWN BY : REK 9/87 REV. 6/16/95 EEM/RGW  
CHECKED BY : CRK 10/87 REV. 7/17/98 RWW/LES  
REV. 10/17/00 RWW/LES

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-30
1			3			TOTAL SHEETS 67
2			4			



NOTES

THE BARRIER RAIL IN EACH 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.

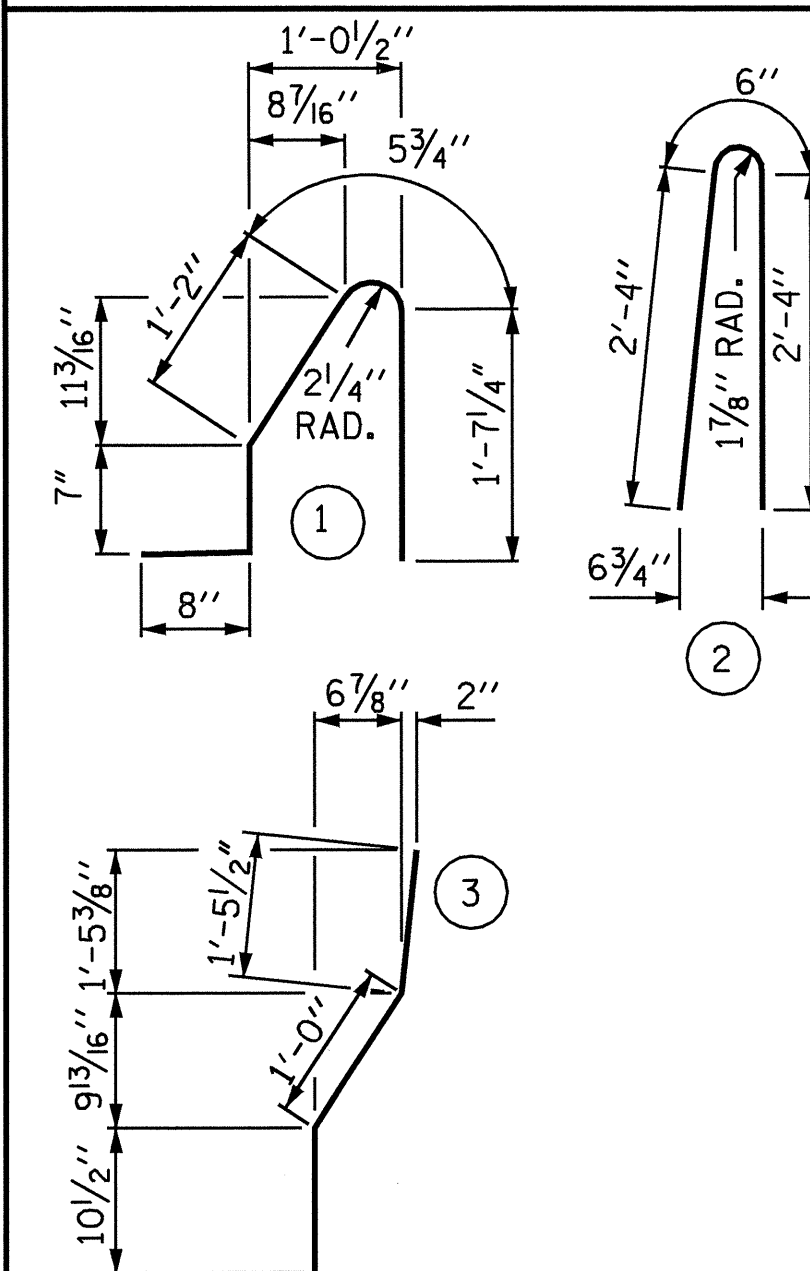
WHEN EVAZOTE JOINT SEAL IS REQUIRED, THE JOINT IN THE DECK SHALL BE SAWED PRIOR TO THE CASTING OF BARRIER RAIL.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

THE #5 S3 AND #5 S4 BARS SHALL BE INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM, AFTER SAWING THE JOINT. THE YIELD LOAD FOR THE #5 S3 AND #5 S4 BARS IS 18.6 KIPS. FIELD TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

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

BAR TYPES

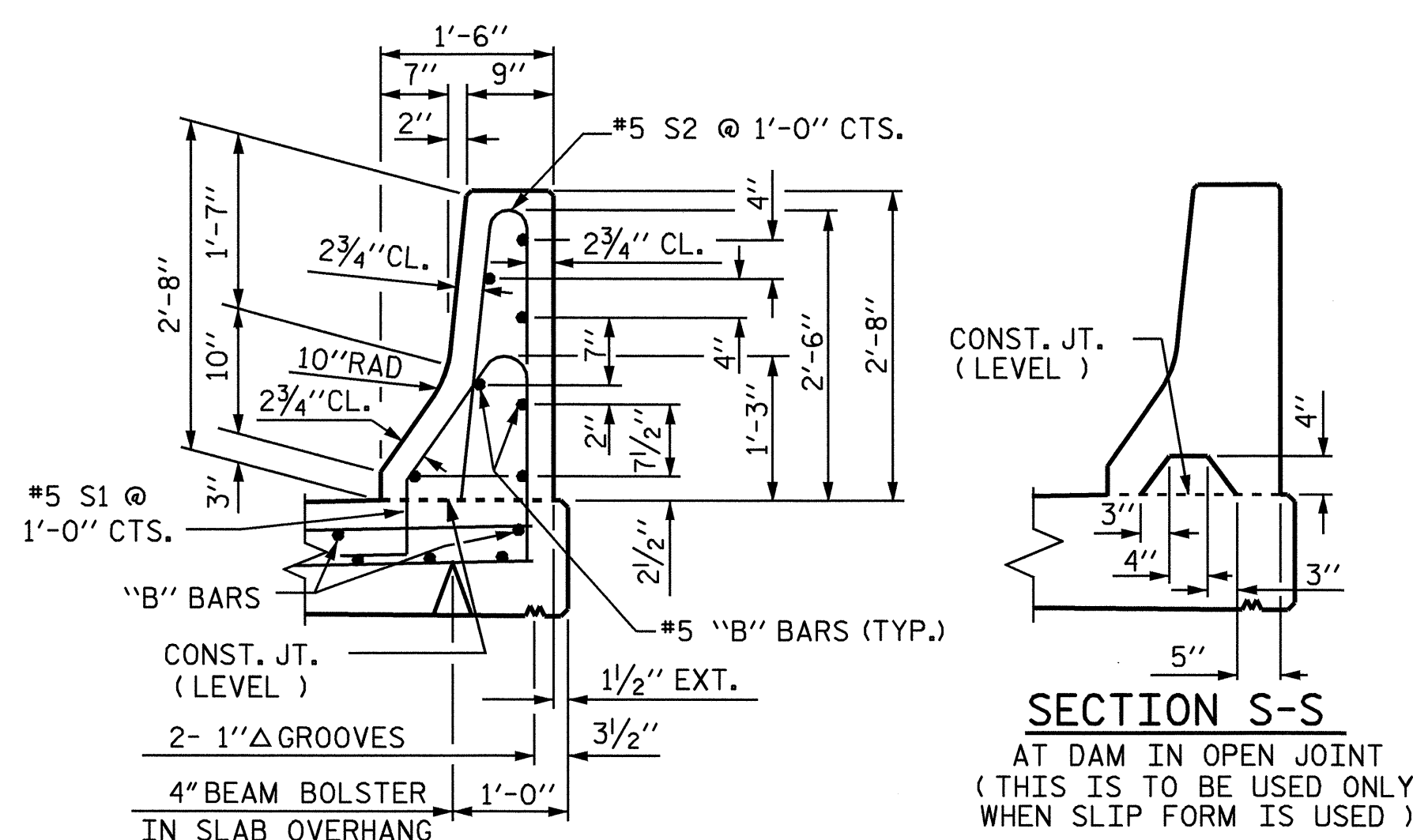


ALL BAR DIMENSIONS ARE OUT TO OUT

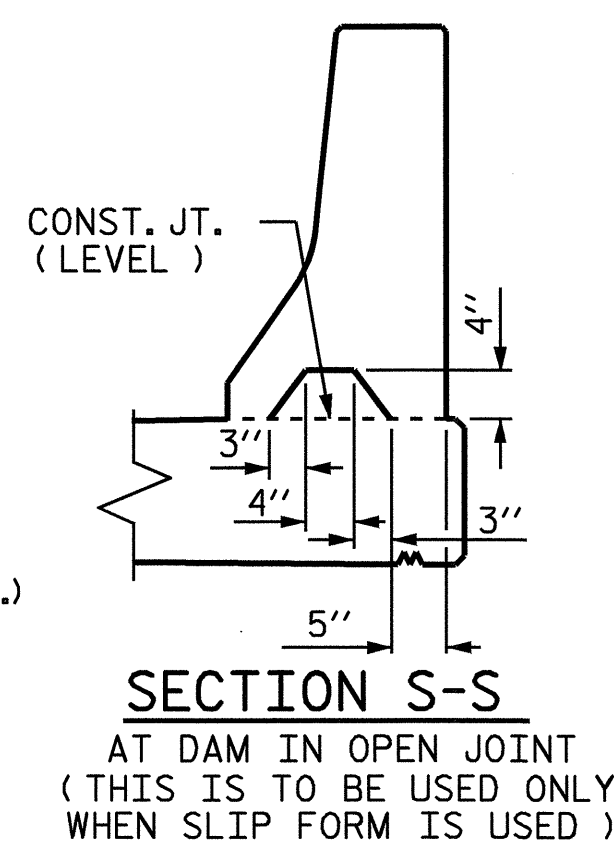
BILL OF MATERIAL

FOR CONCRETE BARRIER RAIL ONLY

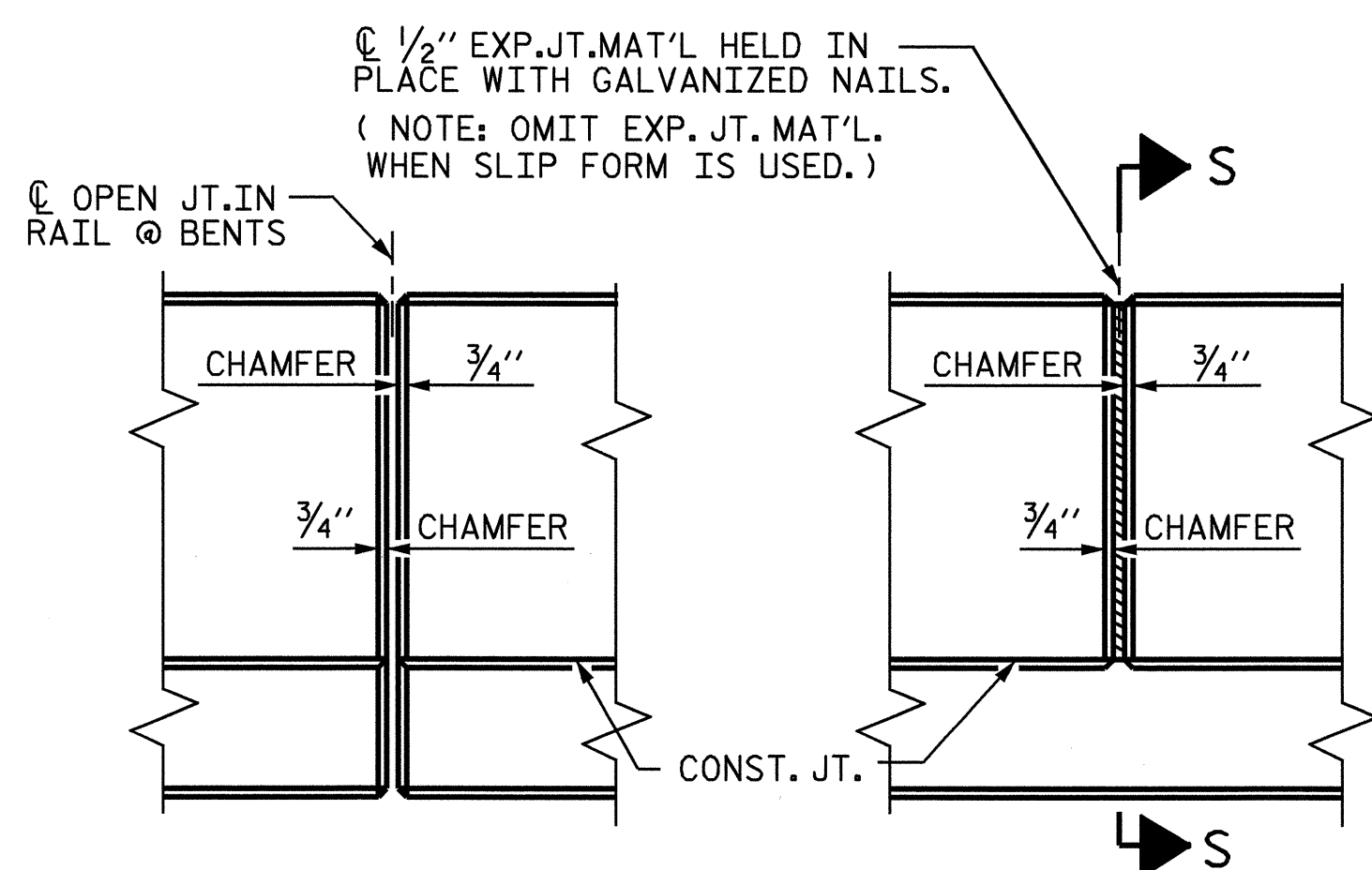
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	224	#5	STR	25'-3"	5899
* B2	616	#5	STR	24'-7"	15794
* B3	210	#5	STR	29'-7"	6480
* S1	3820	#5	1	4'-6"	17929
* S2	3820	#5	2	5'-2"	20585
* S3	120	#5	3	3'-4"	417
* S4	120	#5	STR	3'-2"	396
* EPOXY COATED REINFORCING STEEL					67500 LBS.
CLASS AA CONCRETE					392.9 CU. YDS.
CONCRETE BARRIER RAIL					3922.50 LIN. FT.



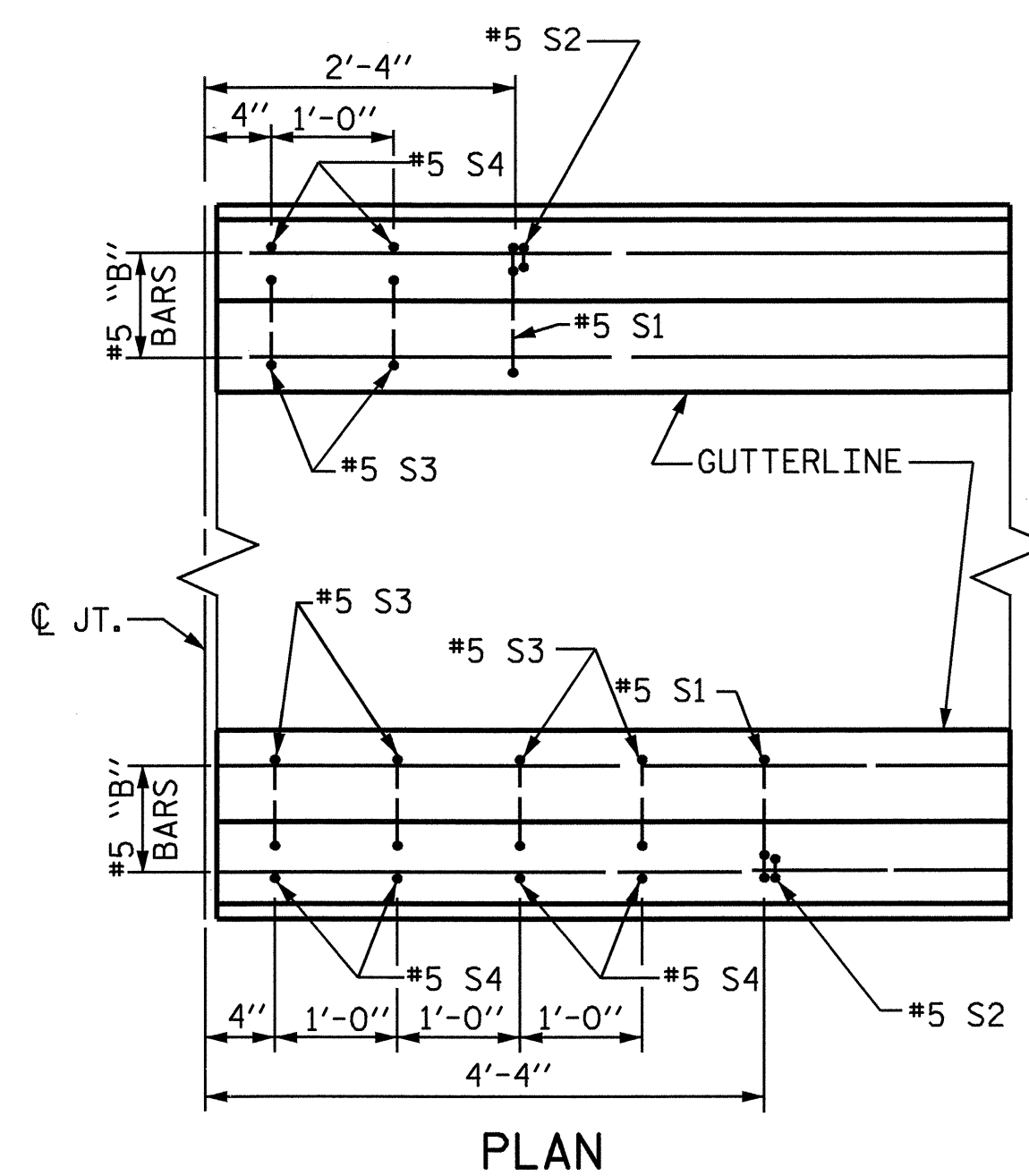
SECTION THRU RAIL



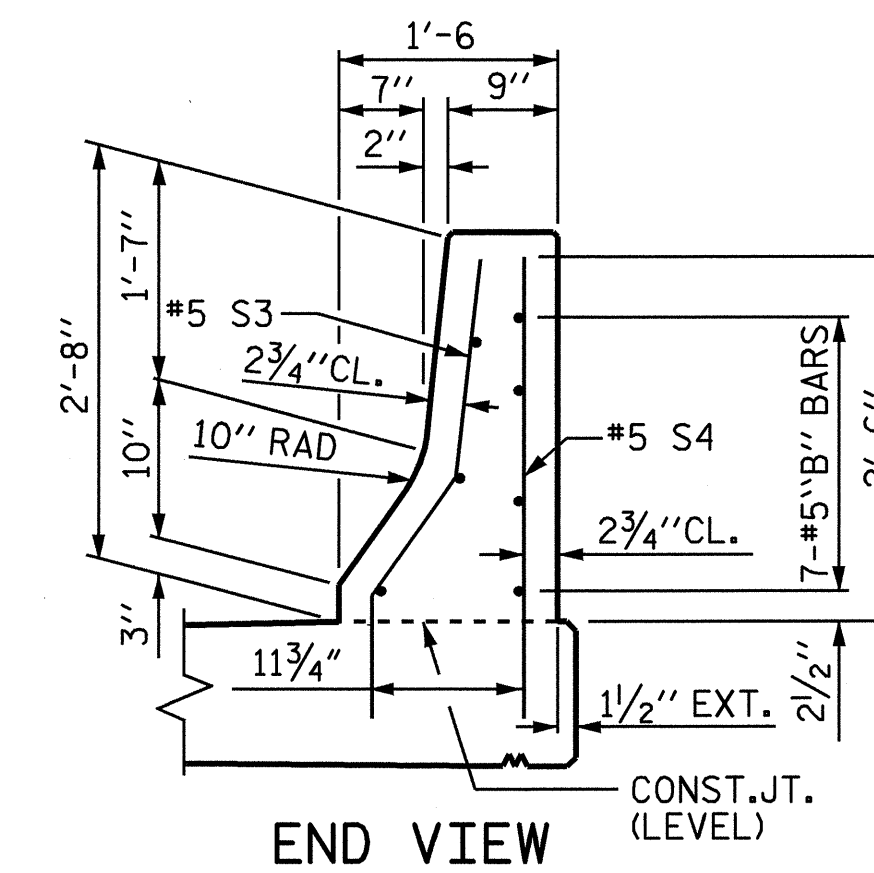
SECTION S-S  
AT DAM IN OPEN JOINT  
(THIS IS TO BE USED ONLY  
WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS  
BARRIER RAIL DETAILS



PLAN



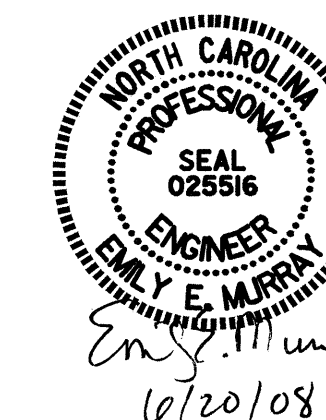
END VIEW

END OF RAIL DETAILS

FOR ADHESIVE ANCHORING AT SAWED JOINTS

PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-

SHEET 4 OF 4



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

ASSEMBLED BY : J.B. WILSON	DATE : 2/2008
CHECKED BY : PEGGY ADKINS	DATE : 3/2008
DRAWN BY : ARB 5/87	REV. 8/16/99 RWW/LES
CHECKED BY : SJD 9/87	REV. 10/17/00 RWW/LES
	REV. 5/1/03R RWW/JTE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-31
1			3			TOTAL SHEETS 67
2			4			

STD. NO. CBRI

NOTES

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

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

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

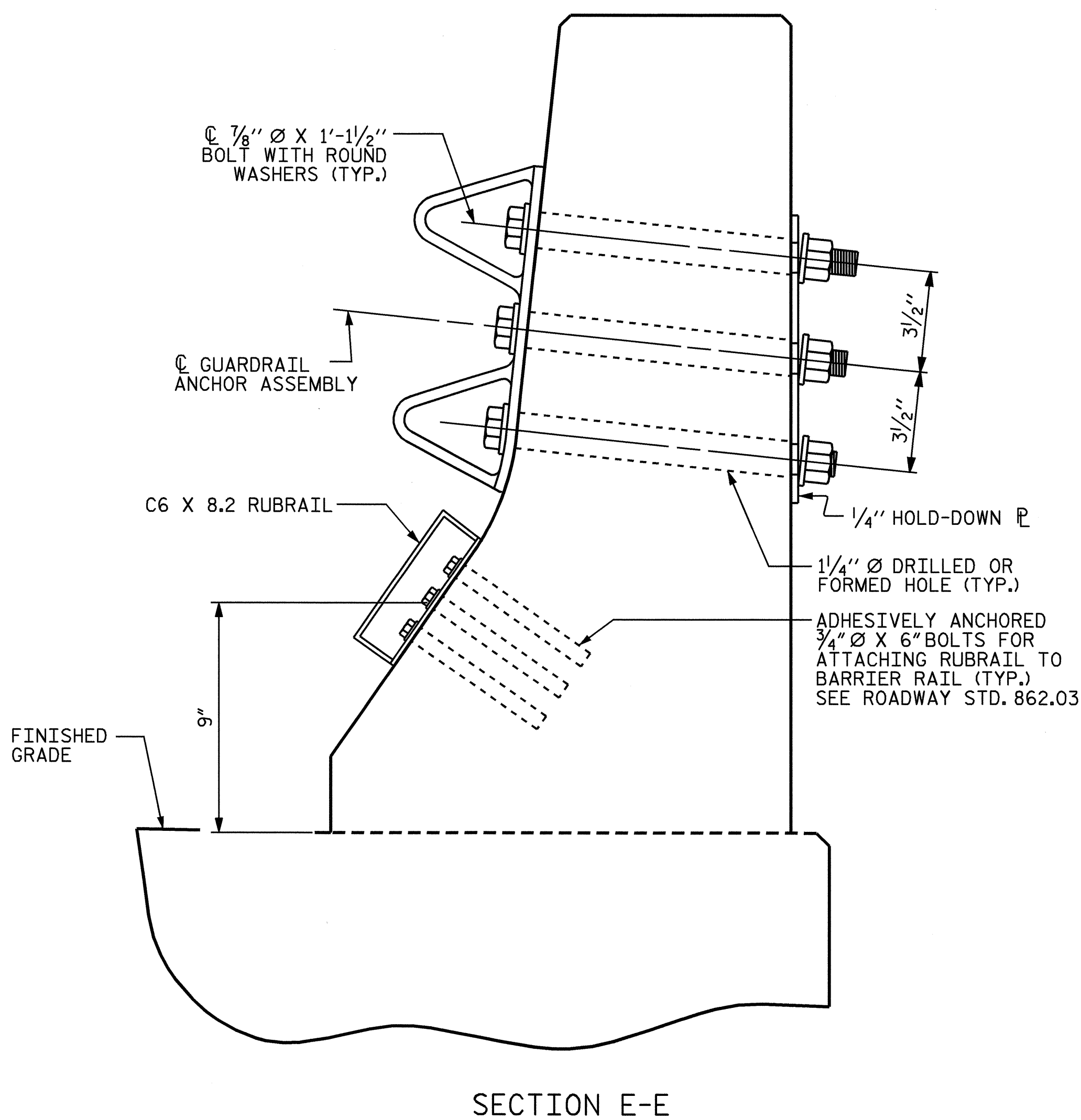
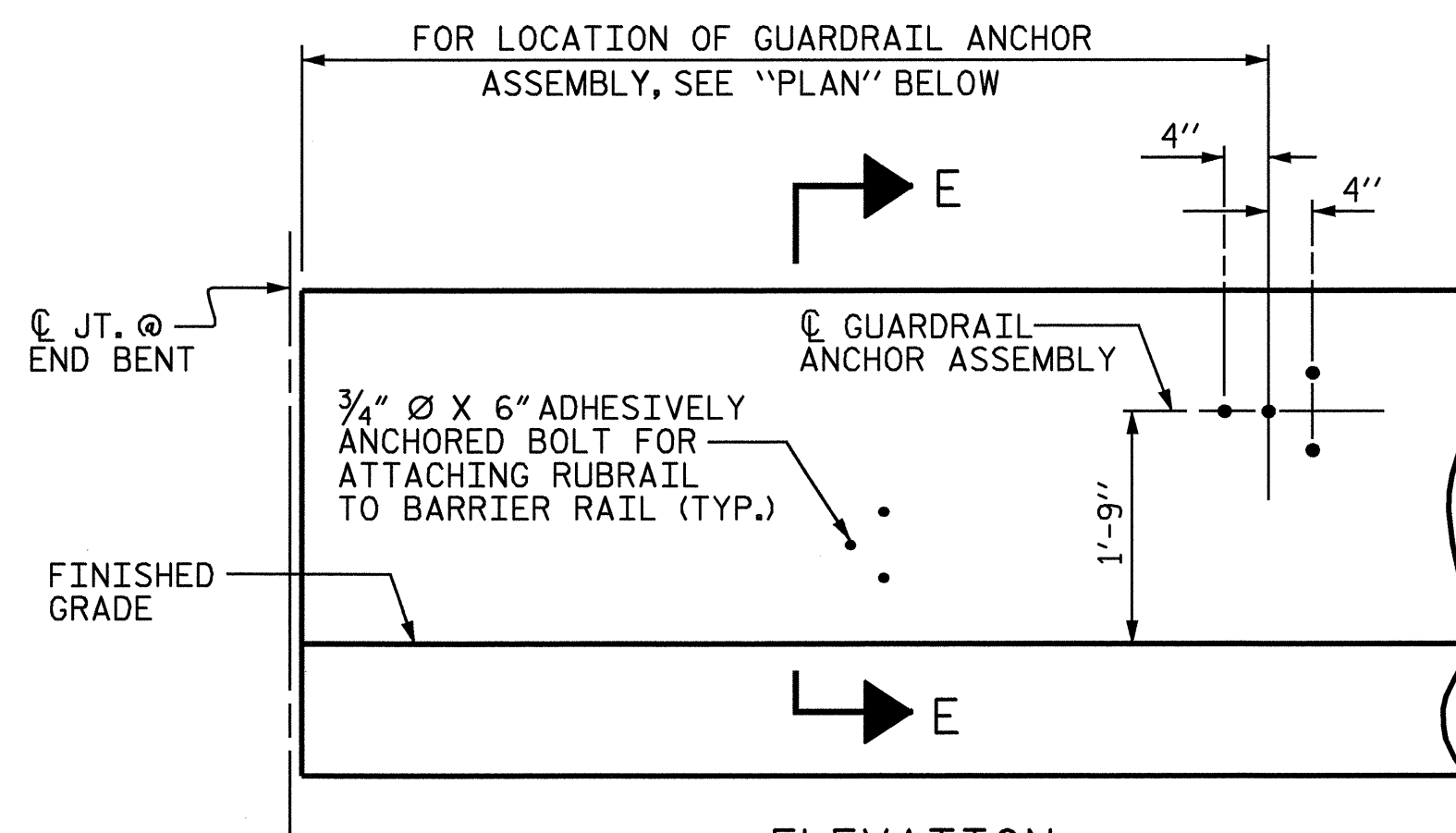
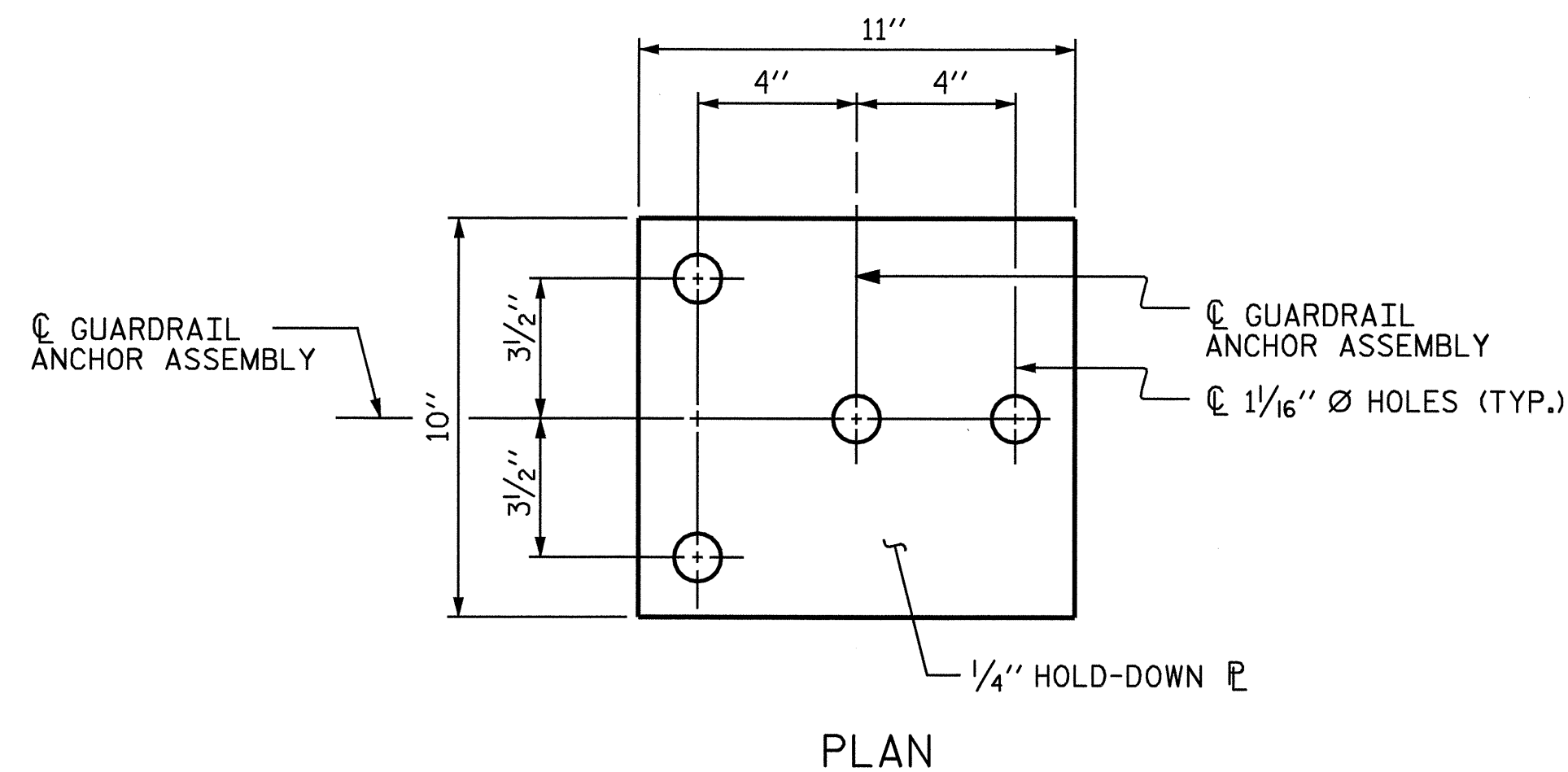
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

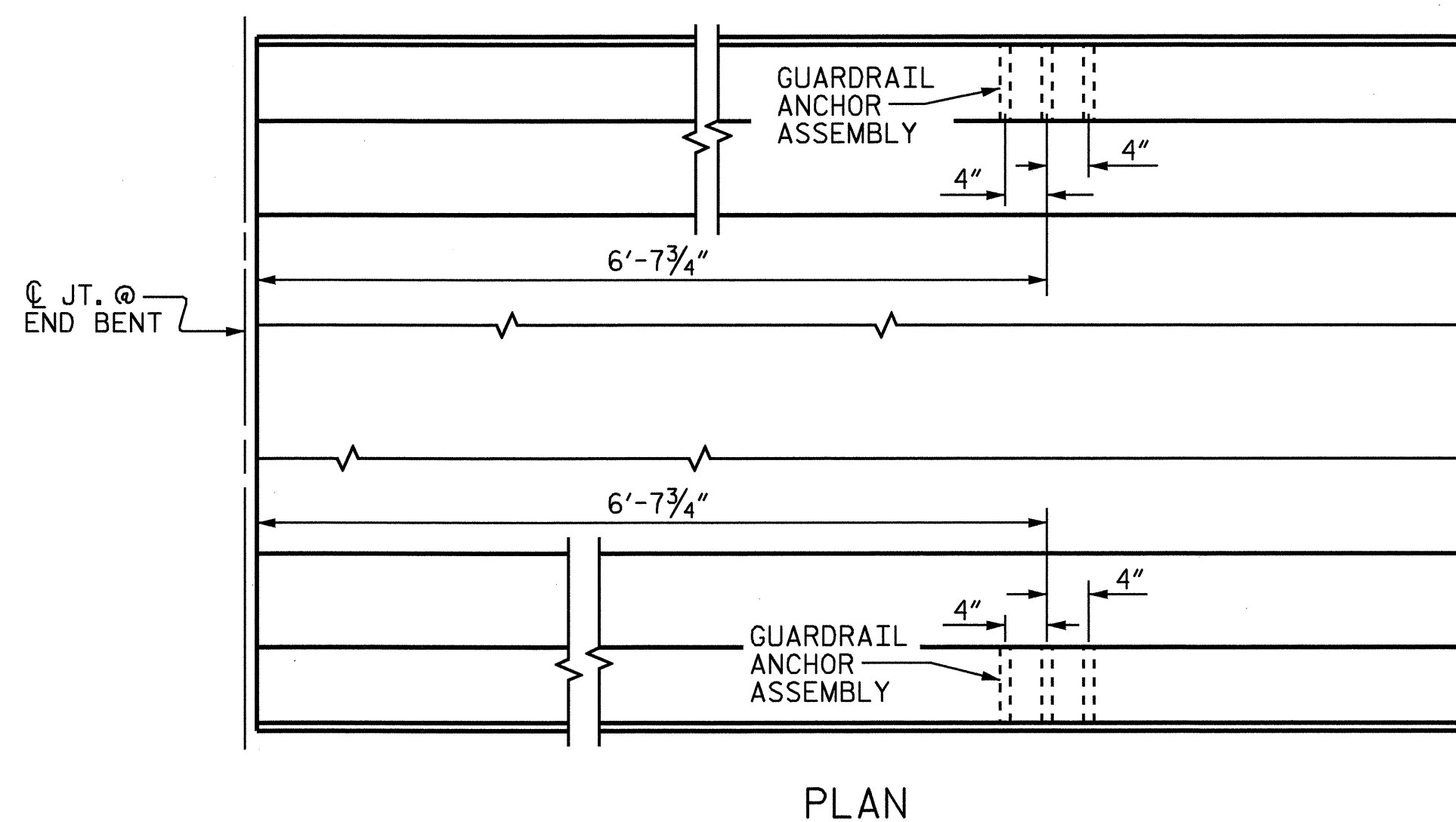
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

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

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.

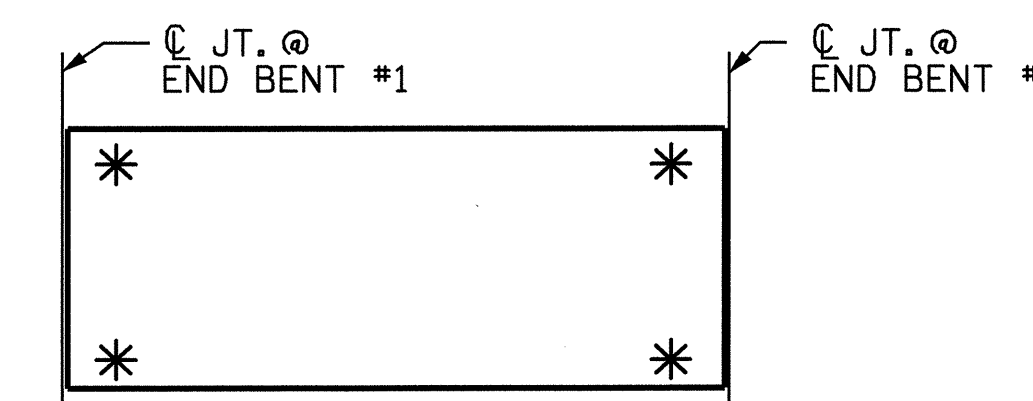


FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03



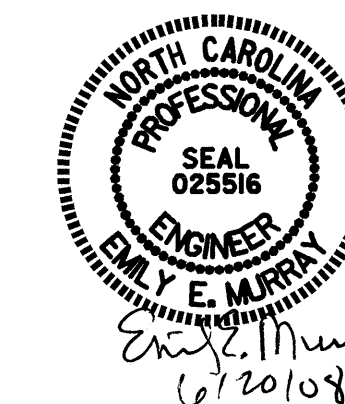
LOCATION OF ANCHORS FOR GUARDRAIL

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



\* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-3684  
 PITT COUNTY  
 STATION: 38+88.50 -L-

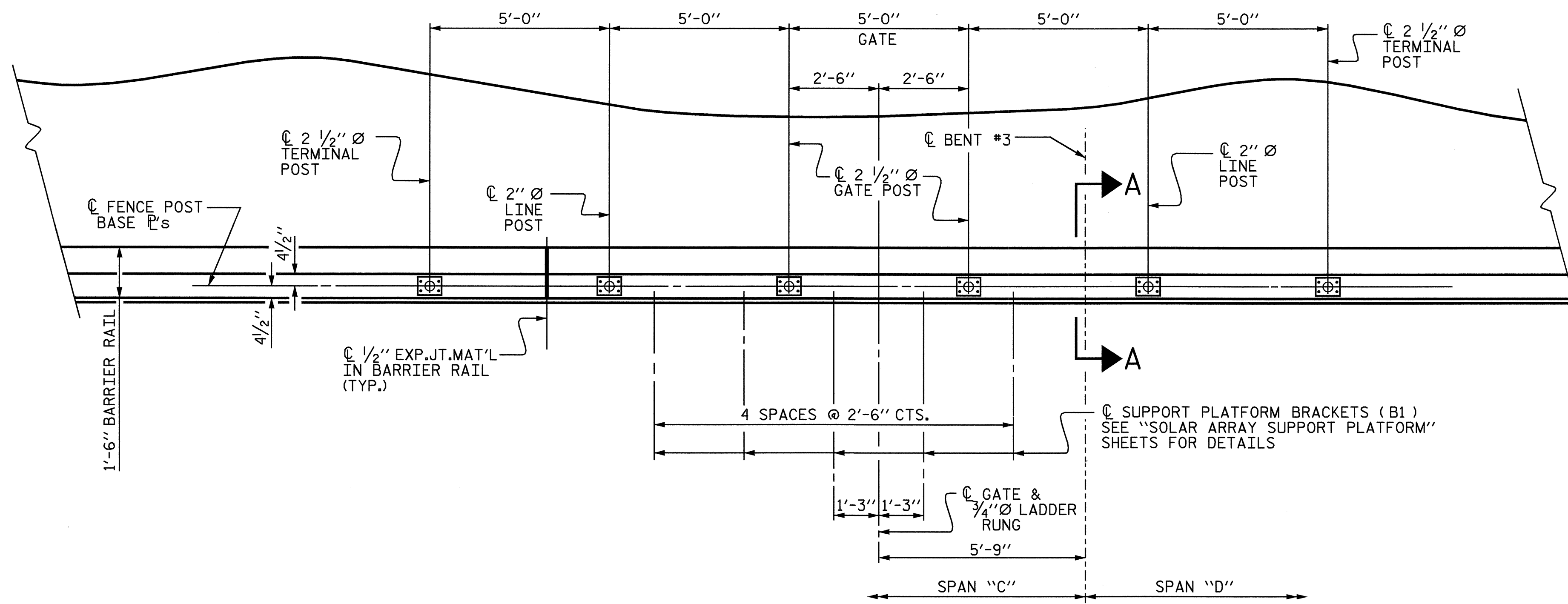


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 GUARDRAIL ANCHORAGE  
 FOR BARRIER RAIL

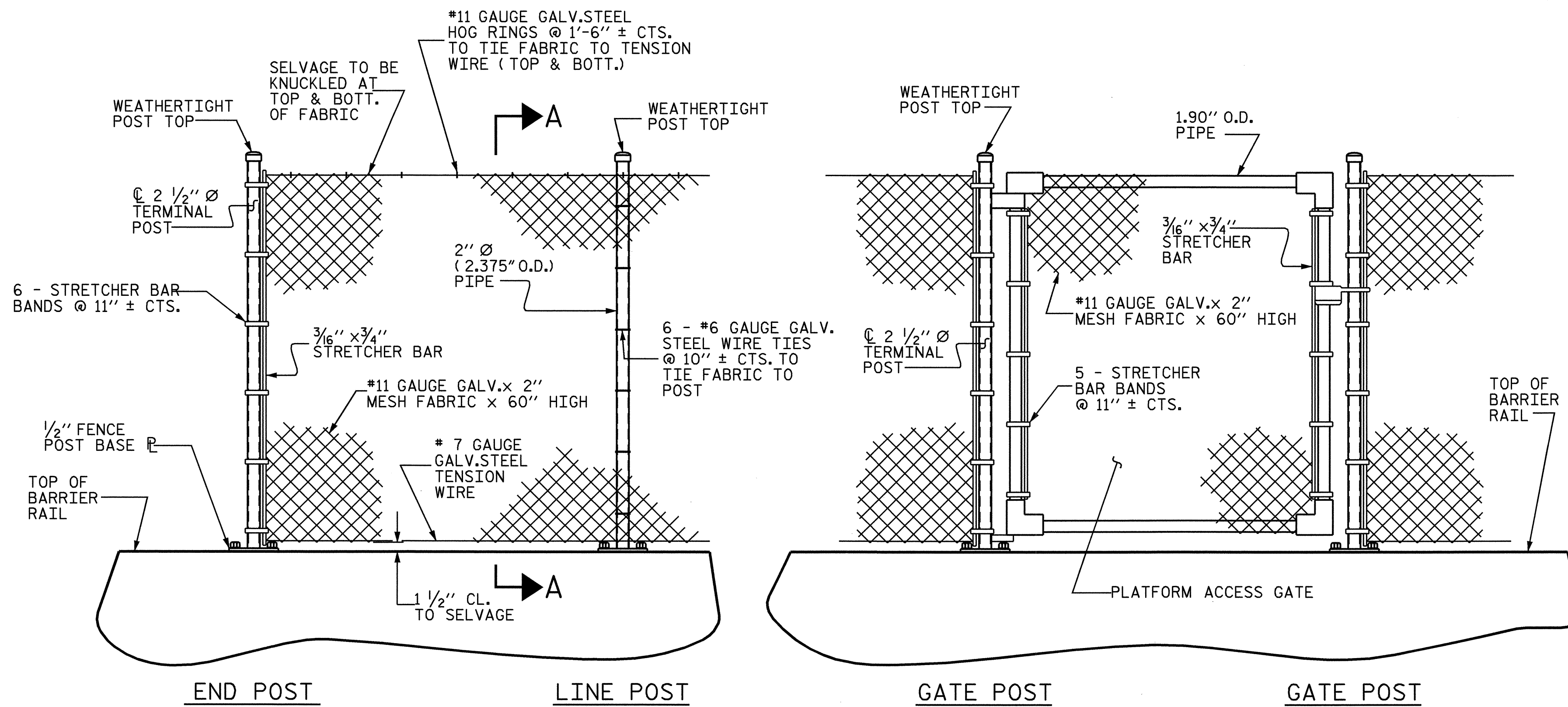
ASSEMBLED BY : J.B. WILSON DATE : 2/2008  
 CHECKED BY : PEGGY ADKINS DATE : 3/2008  
 DRAWN BY : TLA 5/06  
 CHECKED BY : GM 5/06

ADDED 5/1/06R KMM/GM

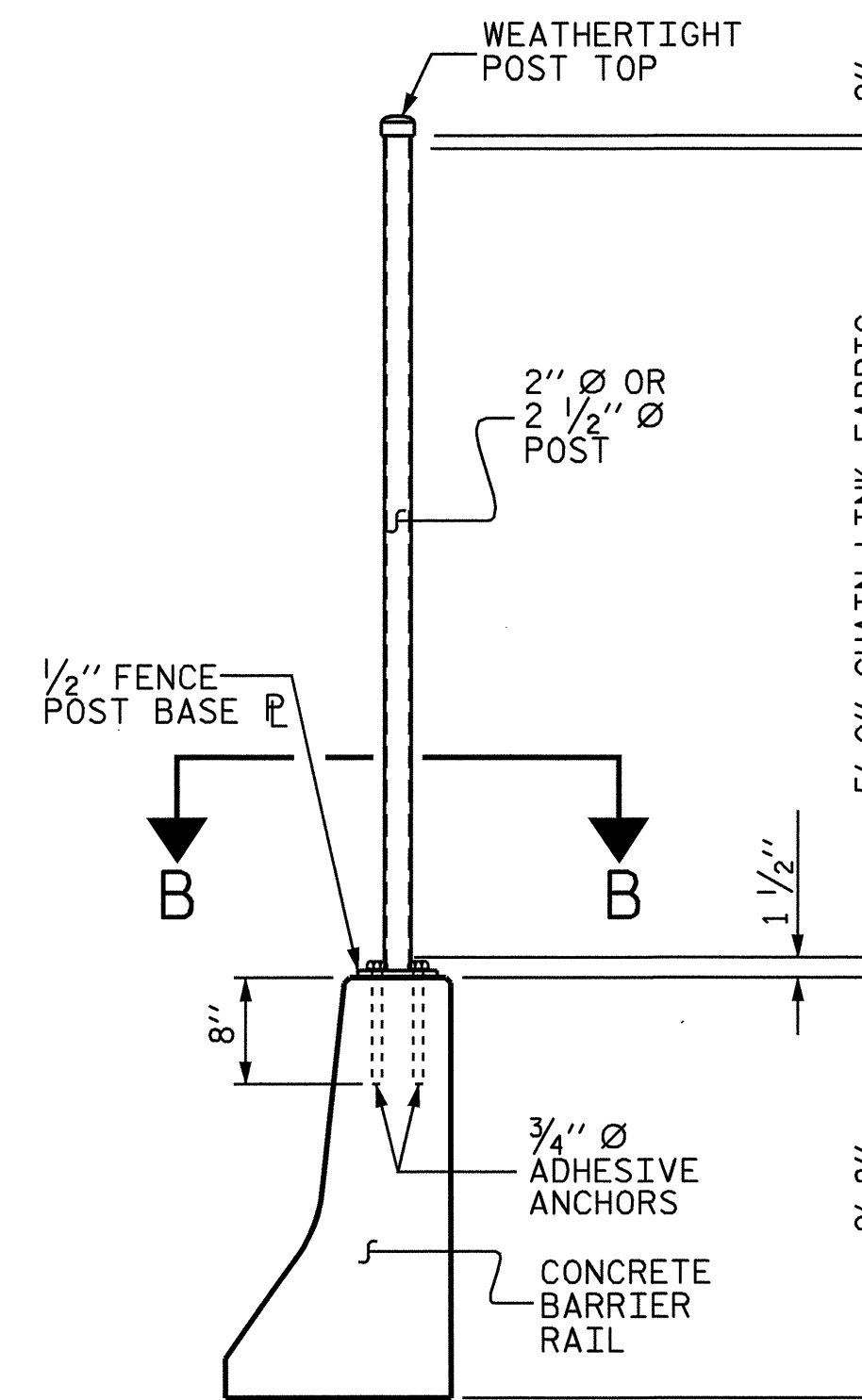
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-32
1			3			TOTAL SHEETS 67
2			4			



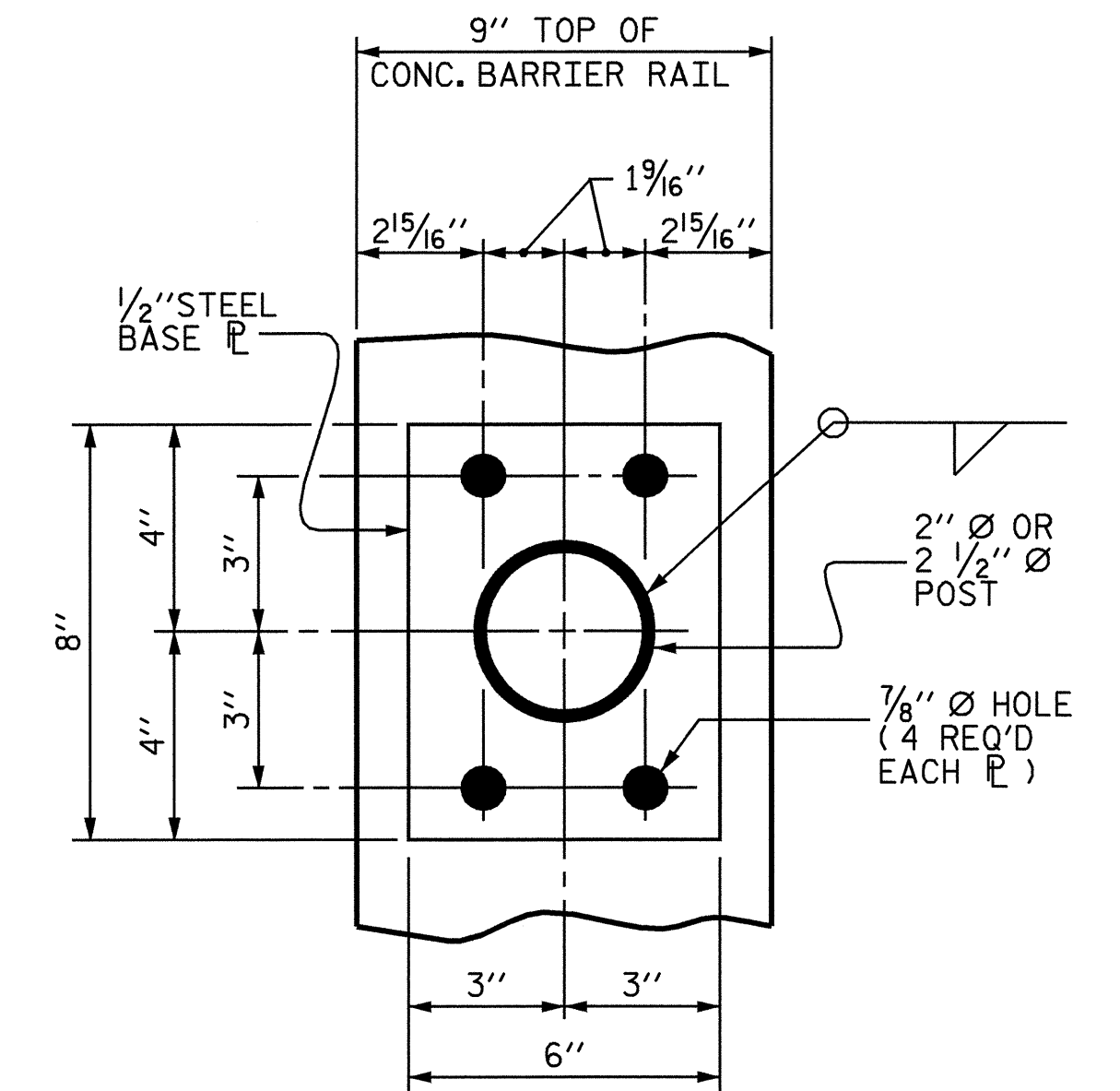
**PLAN OF FENCE POST SPACING**



**FENCE DETAILS ON BARRIER RAIL**

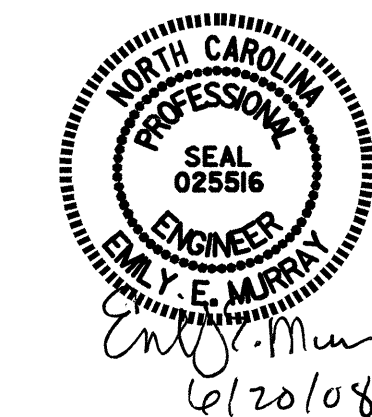


**SECTION A-A**



**SECTION B-B  
BASE PLATE DETAIL**

PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**CHAIN LINK FENCE  
 DETAILS**

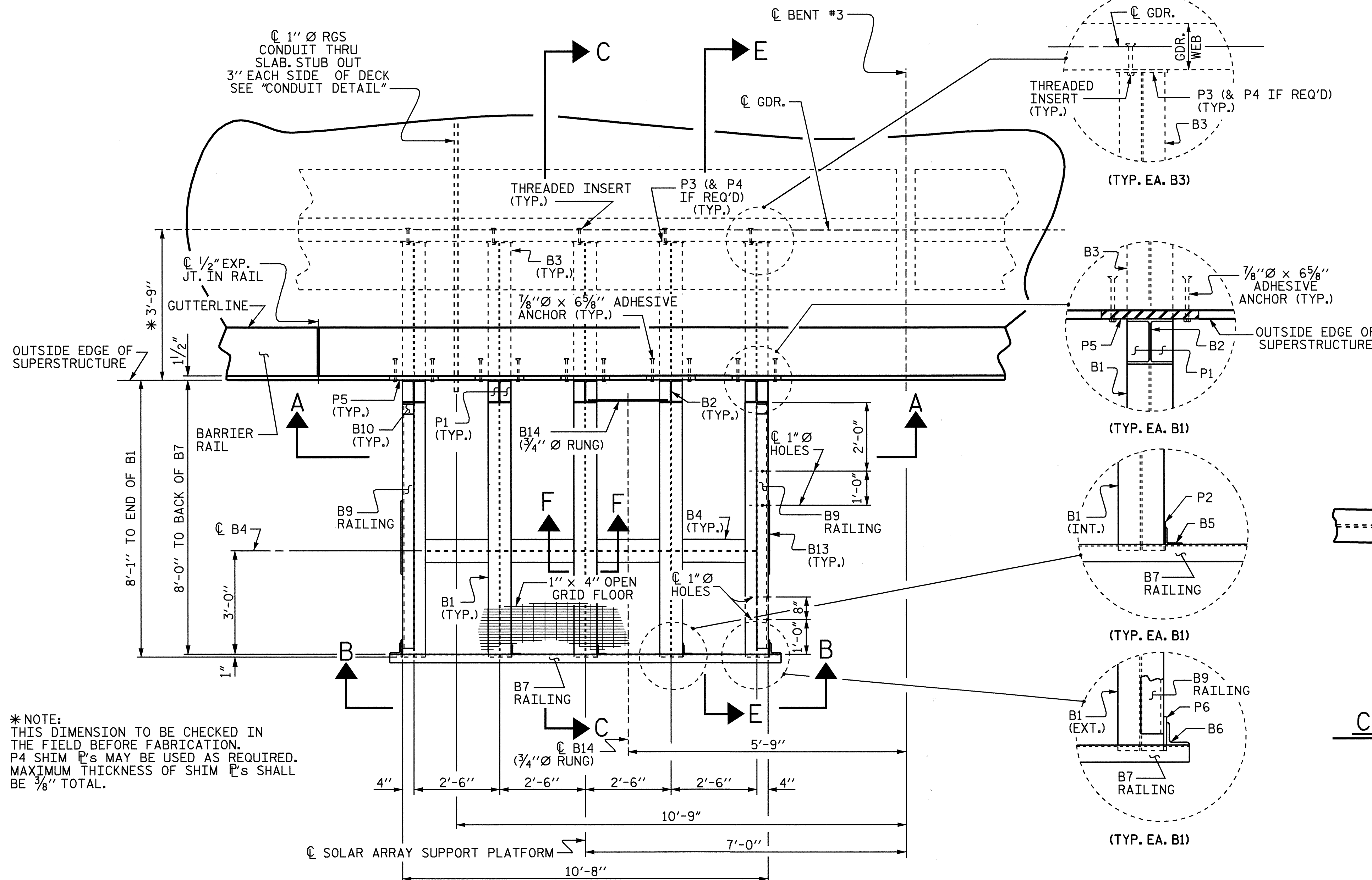
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-33	
1			3			TOTAL SHEETS	
2			4			67	

DRAWN BY: J.B. WILSON DATE: 2/2008  
 CHECKED BY: PEGGY ADKINS DATE: 3/2008

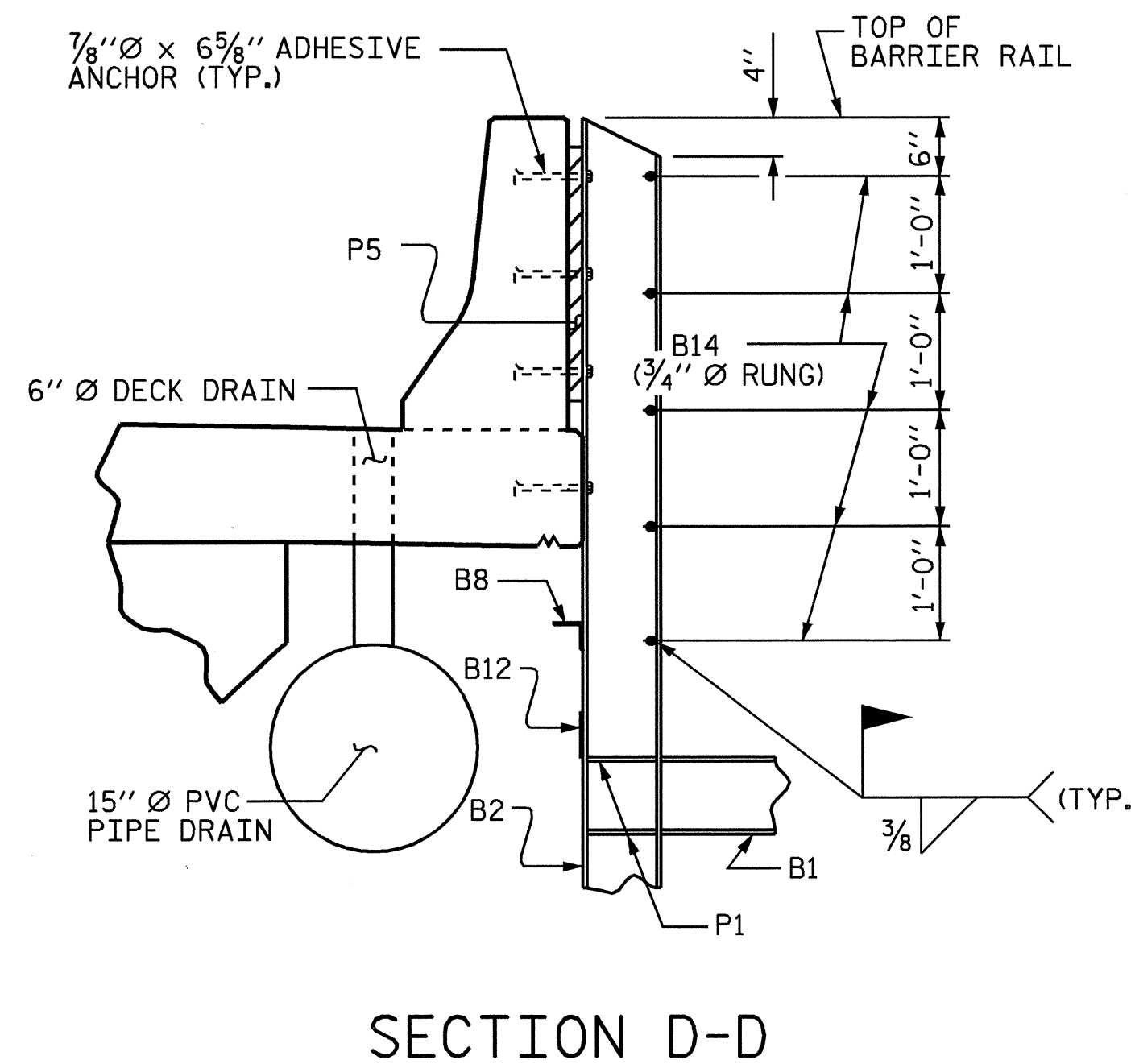
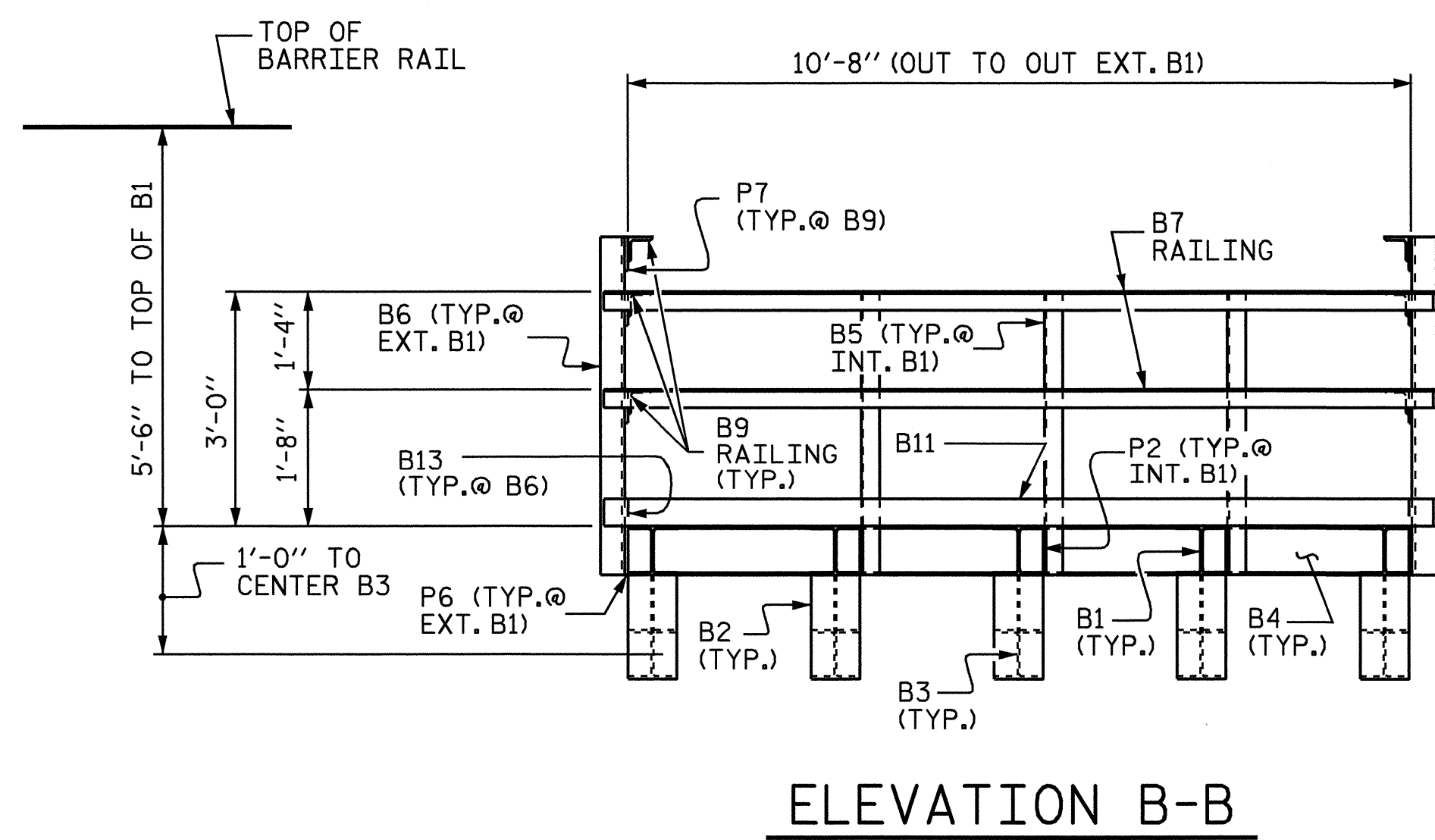
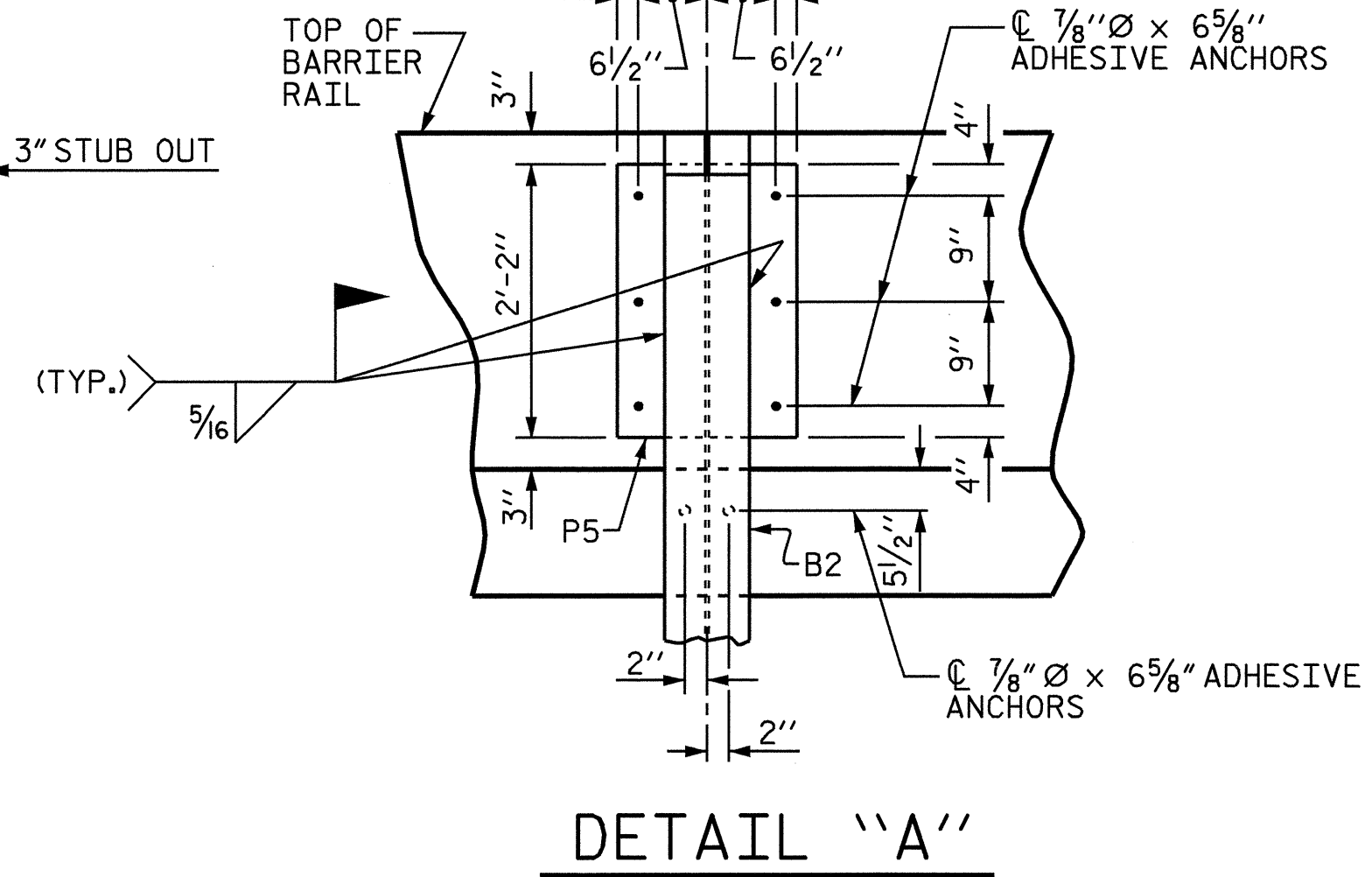
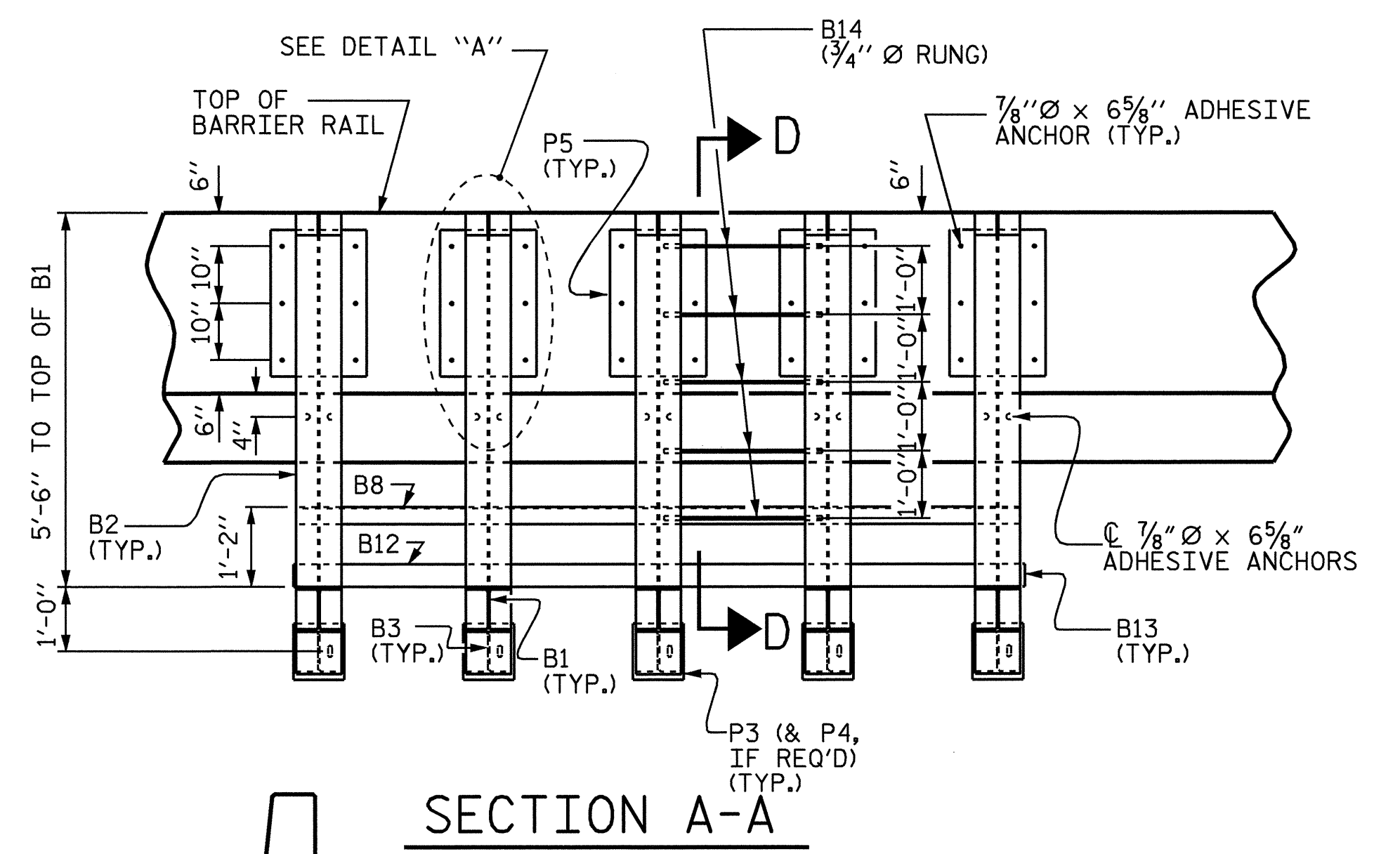
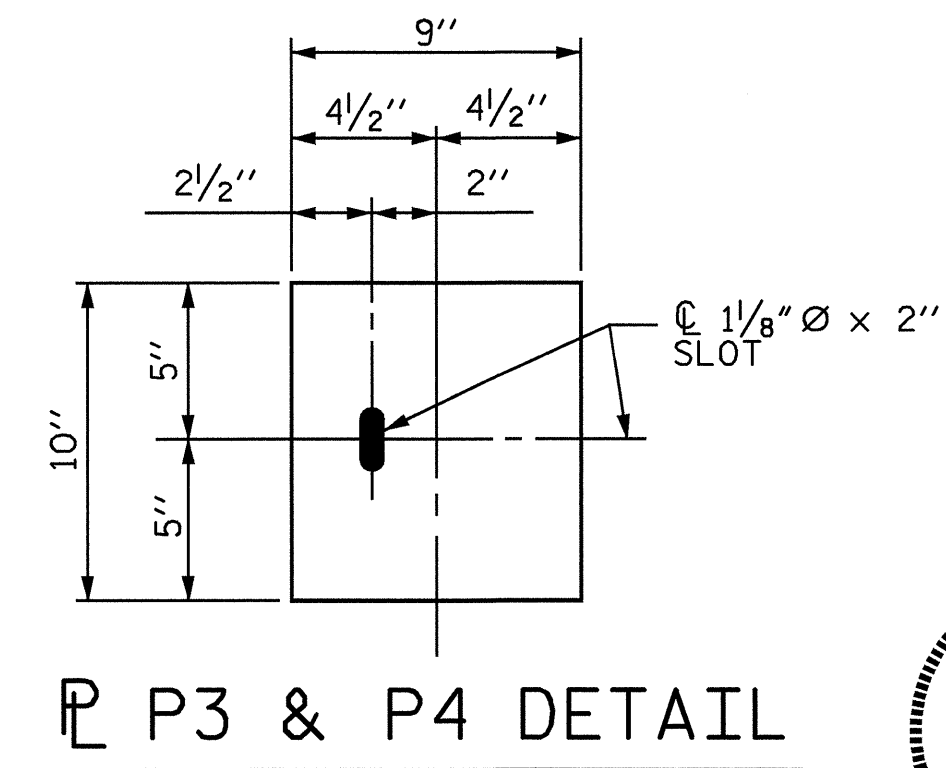
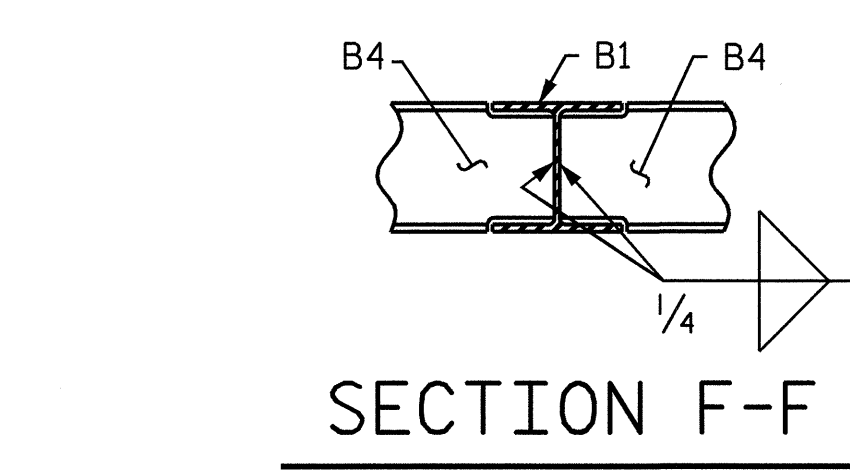
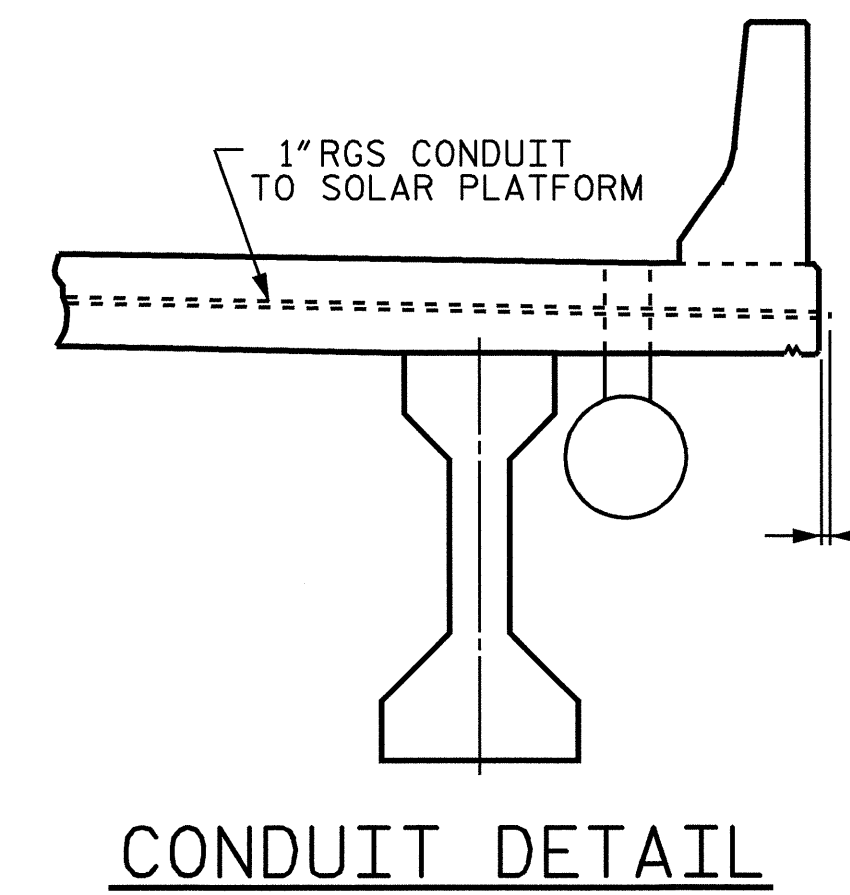
19-JUN-2008 11:02  
 r:\structures\b3684\final plans\b3684\_sd.s\*.dgn  
 padkins

**NOTES :**  
 ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 36.  
 CHAIN LINK FENCE FABRIC, FENCE POSTS, HARDWARE AND ACCESSORIES SHALL BE GALVANIZED STEEL, SEE STANDARD SPECIFICATIONS.  
 GATE, HINGES, AND LATCH SHALL BE DESIGNED TO PERMIT THE GATE OUTWARD (AWAY FROM TRAFFIC) ONLY. HINGES AND LATCH SHALL BE REASONABLY TAMPER RESISTANT. MAKE PROVISIONS FOR LATCH TO BE SECURED BY PADLOCK.  
 ADHESIVE ANCHOR SYSTEM SHALL HAVE A MINIMUM PULLOUT STRENGTH OF 7.5 KIPS. A MINIMUM OF FOUR (4) ANCHORS SHALL BE TESTED. IF ANY ANCHOR FAILS, THE CONTRACTOR SHALL, AT HIS EXPENSE, TEST ALL ANCHORS UNLESS DIRECTED OTHERWISE BY THE ENGINEER.  
 FOR ADHESIVE ANCHOR SYSTEM, SEE SPECIAL PROVISION FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS.  
 THE ENTIRE COST FOR THE LABOR AND MATERIALS NECESSARY TO INSTALL CHAIN LINK FENCE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR THE "SOLAR ARRAY SUPPORT PLATFORM".  
 LINEAR FEET OF CHAIN LINK FENCE = 25 FEET.  
 ALL STRUCTURAL STEEL SHALL BE GALVANIZED AFTER FABRICATION PER STANDARD SPECIFICATION.  
 ADHESIVE ANCHORS SHALL BE ASTM F593 TYPE 305 STAINLESS STEEL. HEX NUTS SHALL BE STAINLESS STEEL AND MEET THE REQUIREMENTS OF ASTM F594. WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.  
 THE BASE PLATE AND FENCE POST SHALL BE WELDED PRIOR TO GALVANIZATION.





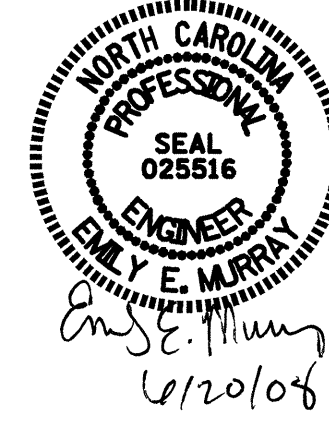
\* NOTE:  
THIS DIMENSION TO BE CHECKED IN THE FIELD BEFORE FABRICATION. P4 SHIM P's MAY BE USED AS REQUIRED. MAXIMUM THICKNESS OF SHIM P's SHALL BE 3/8" TOTAL.



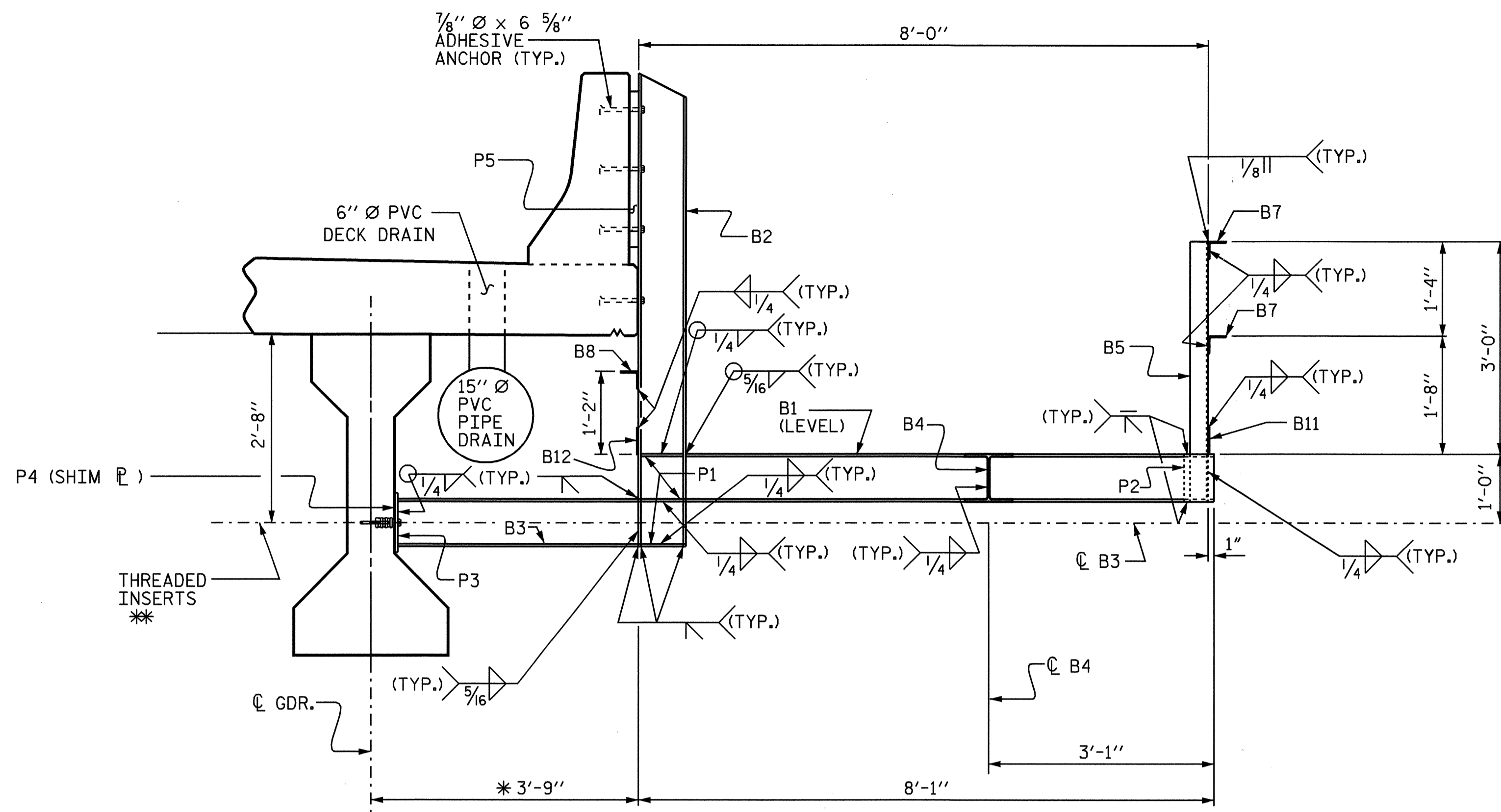
PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 1 OF 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-34
1			3			TOTAL SHEETS 67
2			4			



DRAWN BY: J.B. WILSON DATE: 2/2008  
 CHECKED BY: PEGGY ADKINS DATE: 3/2008



SECTION C-C

\* NOTE:  
THIS DIMENSION TO BE CHECKED IN THE FIELD BEFORE FABRICATION. P4 SHIM P's MAY BE USED AS REQUIRED. MAXIMUM THICKNESS OF SHIM P's SHALL BE 3/8" TOTAL.

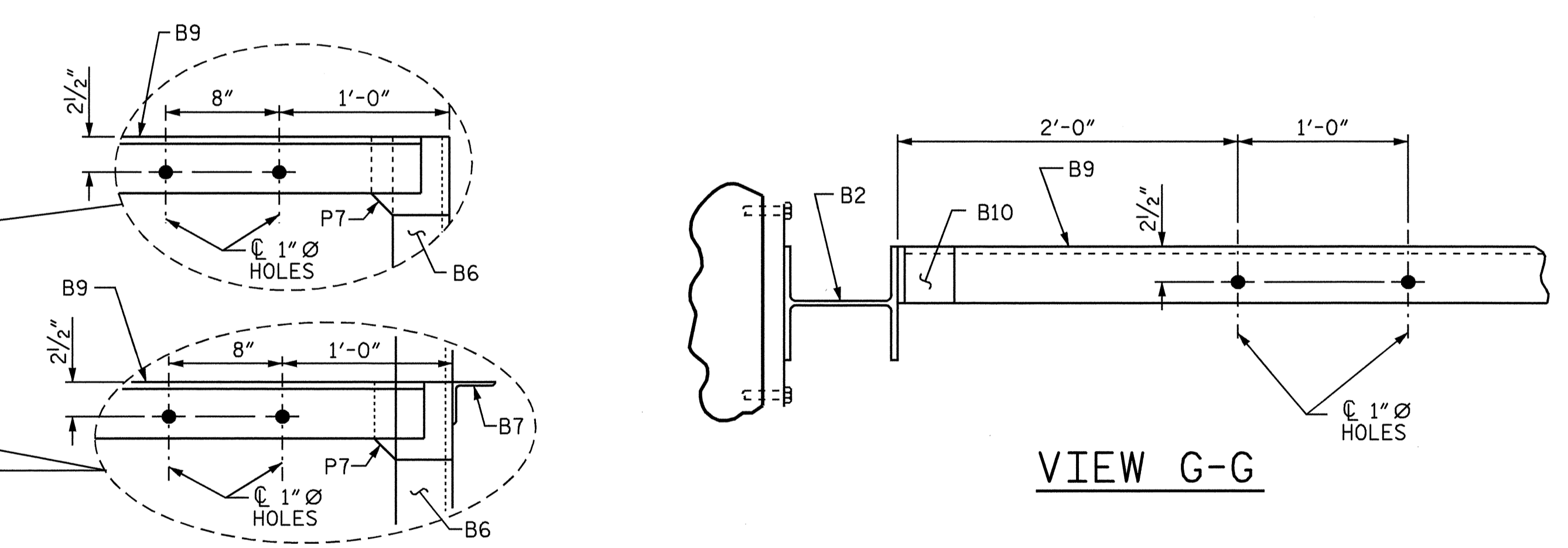
\*\* NOTE:  
FOR THREADED INSERT DETAILS, SEE PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD DETAILS SHEET.

NOTES

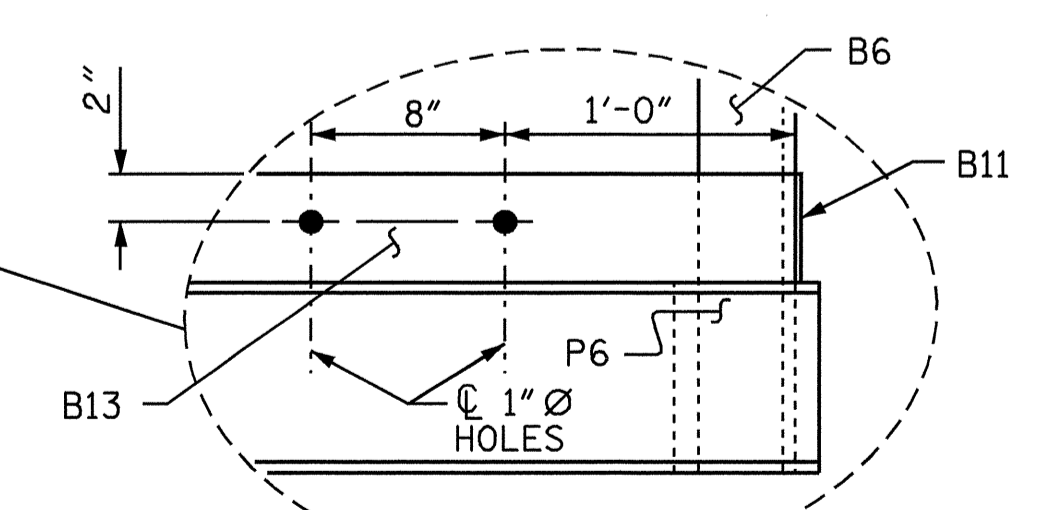
- ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 36.
- ALL STRUCTURAL MEMBERS, INCLUDING OPEN GRID FLOOR, SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION PER STANDARD SPECIFICATIONS, AND SHALL BE PAINTED WITH A TOP COAT OF ACRYLIC PAINT 2 - 4 MILS (DFT) AS PER STANDARD SPECIFICATION 1080 - 13.
- THE GALVANIZED SURFACE SHALL BE CLEANED TO (SSPC SP - 1) PRIOR TO COATING.
- ALL FABRICATION SHALL CONFORM TO THE APPLICABLE SECTION OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- OPEN GRID FLOOR SHALL BE WELDED SECURELY TO EACH HORIZONTAL FLOOR MEMBER (B1).
- FOR SOLAR ARRAY SUPPORT PLATFORM, SEE SPECIAL PROVISIONS FOR "SOLAR ARRAY SUPPORT PLATFORM".
- FOR ADHESIVE ANCHOR SYSTEM, SEE SPECIAL PROVISION FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS.
- ADHESIVE ANCHOR SYSTEM SHALL HAVE A MINIMUM PULLOUT STRENGTH OF 7.5 KIPS. A MINIMUM OF EIGHT (8) ANCHORS SHALL BE TESTED. IF ANY ANCHOR FAILS THE CONTRACTOR SHALL, AT HIS EXPENSE, TEST ALL ANCHORS UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
- THE ENTIRE COST FOR THE LABOR AND MATERIALS NECESSARY TO FABRICATE AND INSTALL SOLAR ARRAY SUPPORT PLATFORM SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR THE "SOLAR ARRAY SUPPORT PLATFORM".
- ADHESIVE ANCHORS SHALL BE ASTM F593 TYPE 305 STAINLESS STEEL. HEX NUTS SHALL BE STAINLESS STEEL AND MEET THE REQUIREMENTS OF ASTM F594. WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.
- IN LIEU OF GALVANIZING AND PAINTING WITH A TOP COAT, THE CONTRACTOR MAY AT HIS OPTION UPON COMPLETION OF SHOP FABRICATION BLAST CLEAN AND METALLIZE THE STRUCTURAL STEEL (EXCLUDING STAINLESS STEEL NUTS, BOLTS, AND WASHERS) TO A MINIMUM THICKNESS OF 8 MILS. SEE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).
- ALL METALLIZED SURFACES SHALL RECEIVE A SEAL COATING AS SPECIFIED IN THE SPECIAL PROVISION, THERMAL SPRAYED COATINGS (METALLIZATION).

BILL OF MATERIAL

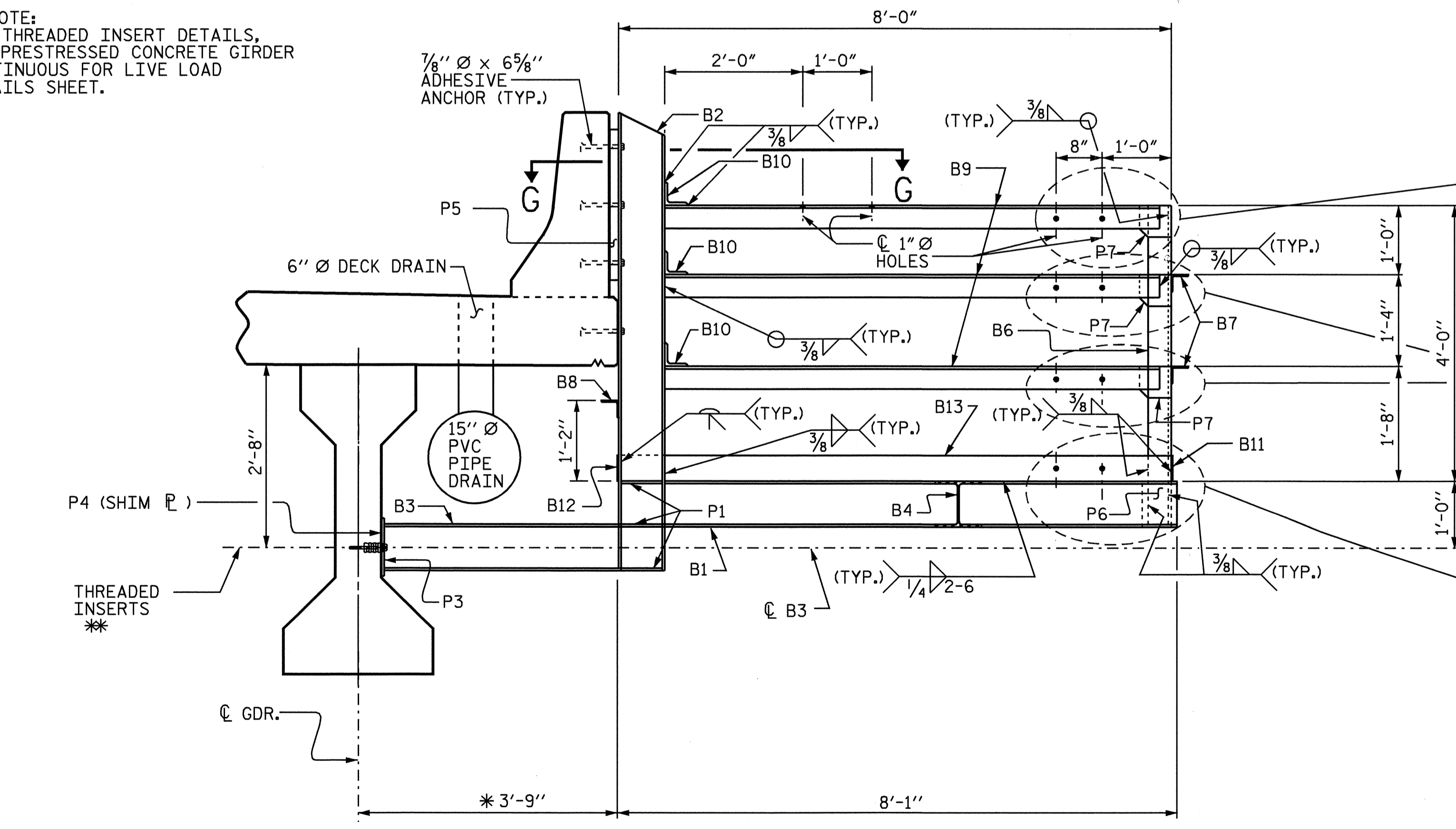
ITEM	NUMBER	DESCRIPTION	LENGTH ***
B1	5	W8 x 31	7'-5"
B2	5	W8 x 31	6'-7"
B3	5	W8 x 31	3'-4 1/2"
B4	4	W8 x 31	2'-5 5/8"
B5	3	L 3 x 3 x 1/4	3'-8"
B6	2	L 4 x 4 x 1/2	4'-8"
B7	2	L 3 x 3 x 1/4	11'-5"
B8	1	L 3 x 3 x 1/4	10'-8"
B9	6	L 4 x 4 x 1/2	7'-2"
B10	6	L 4 x 4 x 1/2	0'-4"
B11	1	P 1/4 x 4 1/2	11'-5"
B12	1	P 1/4 x 4 1/2	11'-0"
B13	2	P 1/2 x 4 1/2	8'-0"
B14	5	3/4" Ø RUNG	2'-4"
P1	30	P 7/16 x 3 3/4 x 7	---
P2	3	P 1/4 x 5 x 8	---
P3	5	P 1/2 x 9 x 10	---
P4	AS REQ'D	P 1/8 x 9 x 10	---
P5	5	P 1/2 x 17 x 26	---
P6	2	P 1/2 x 6 x 8	---
P7	6	P 1/2 x 5 1/2 x 5 1/2	---
1" x 4" OPEN GRID FLOOR W/ 3/4" x 3/16" BEARING BARS			
7/8" Ø x 6 5/8" ADHESIVE ANCHOR			
WITH HEX NUT AND WASHER (40 REQUIRED)			
5/8" Ø x 5" ADHESIVE ANCHOR			
WITH HEX NUT AND WASHER (5 REQUIRED)			
*** LENGTHS OF MEMBERS MAY BE ADJUSTED IF REQUIRED BY FABRICATOR.			



VIEW G-G



Professional Engineer  
Seal 025516  
Emily E. Murray  
6/20/08



SECTION E-E

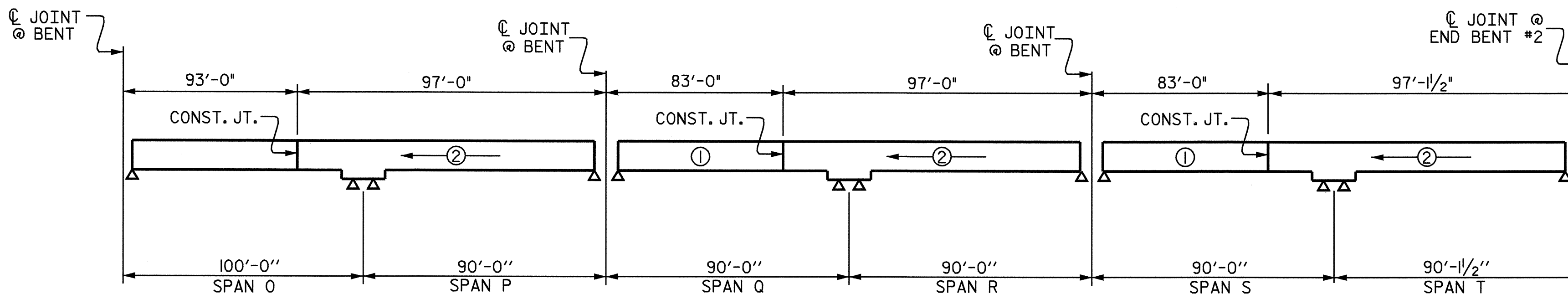
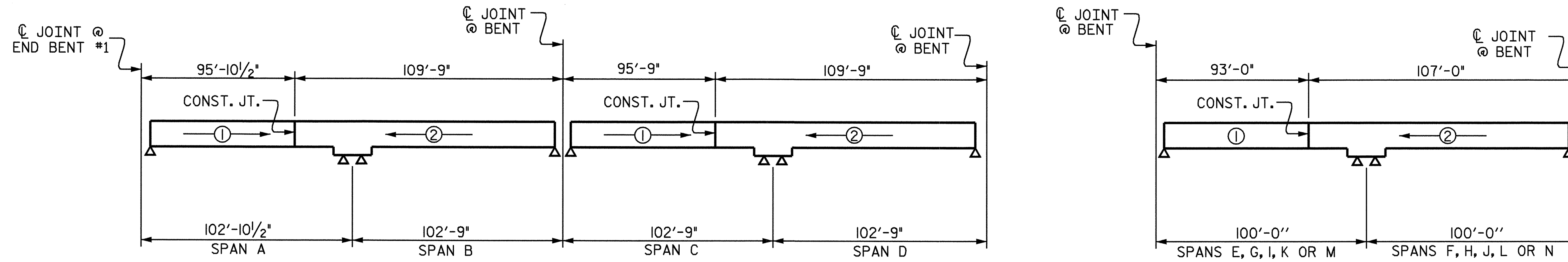
PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-  
SHEET 2 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

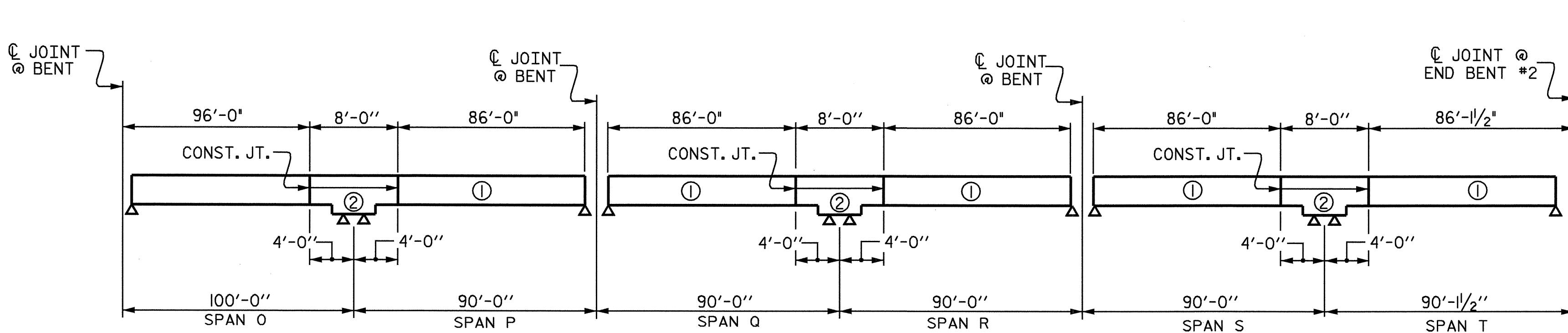
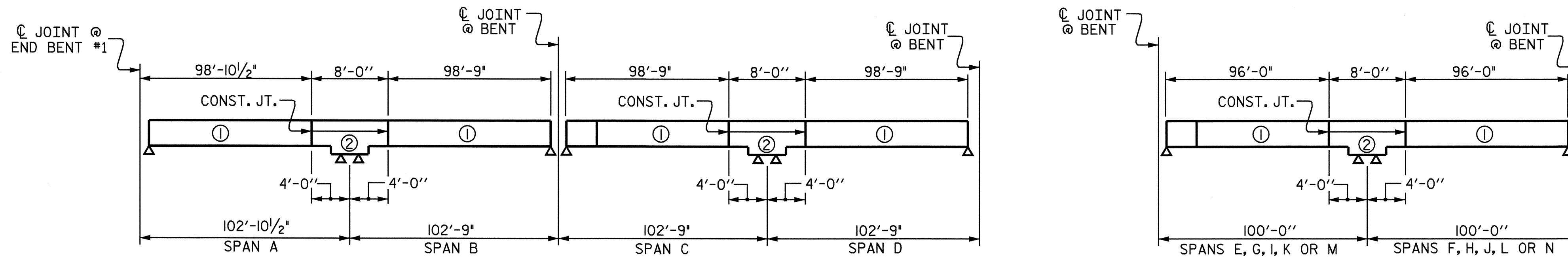
SOLAR ARRAY  
SUPPORT PLATFORM  
DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-35
1			3			TOTAL SHEETS
2			4			67

DRAWN BY: J.B. WILSON DATE: 2/2008  
CHECKED BY: PEGGY ADKINS DATE: 3/2008

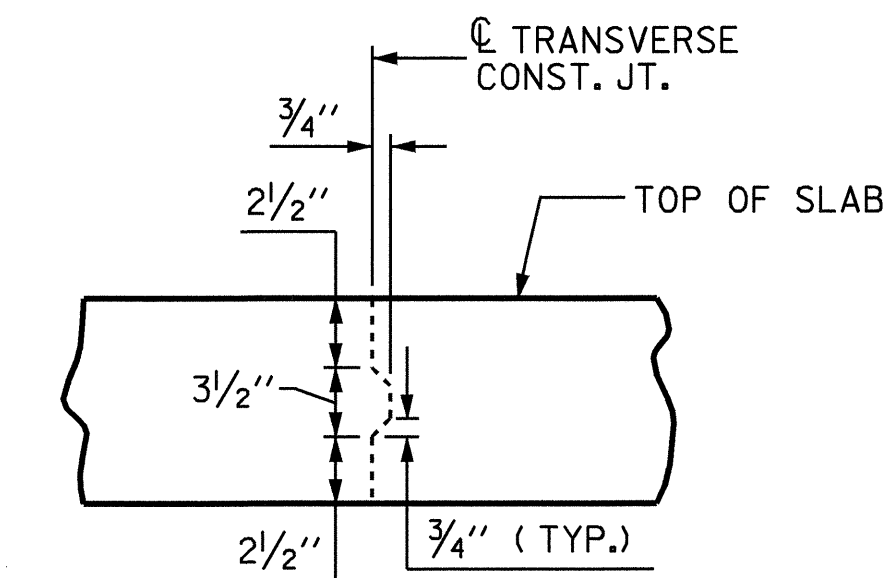


**POURING SEQUENCE**



**OPTIONAL POURING SEQUENCE**

POUR ② CAN NOT BE STARTED UNTIL BOTH ADJACENT ① POURS REACH A MINIMUM OF 3000 PSI.



**TRANSVERSE CONSTRUCTION JOINT DETAIL**

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

PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50-L-

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

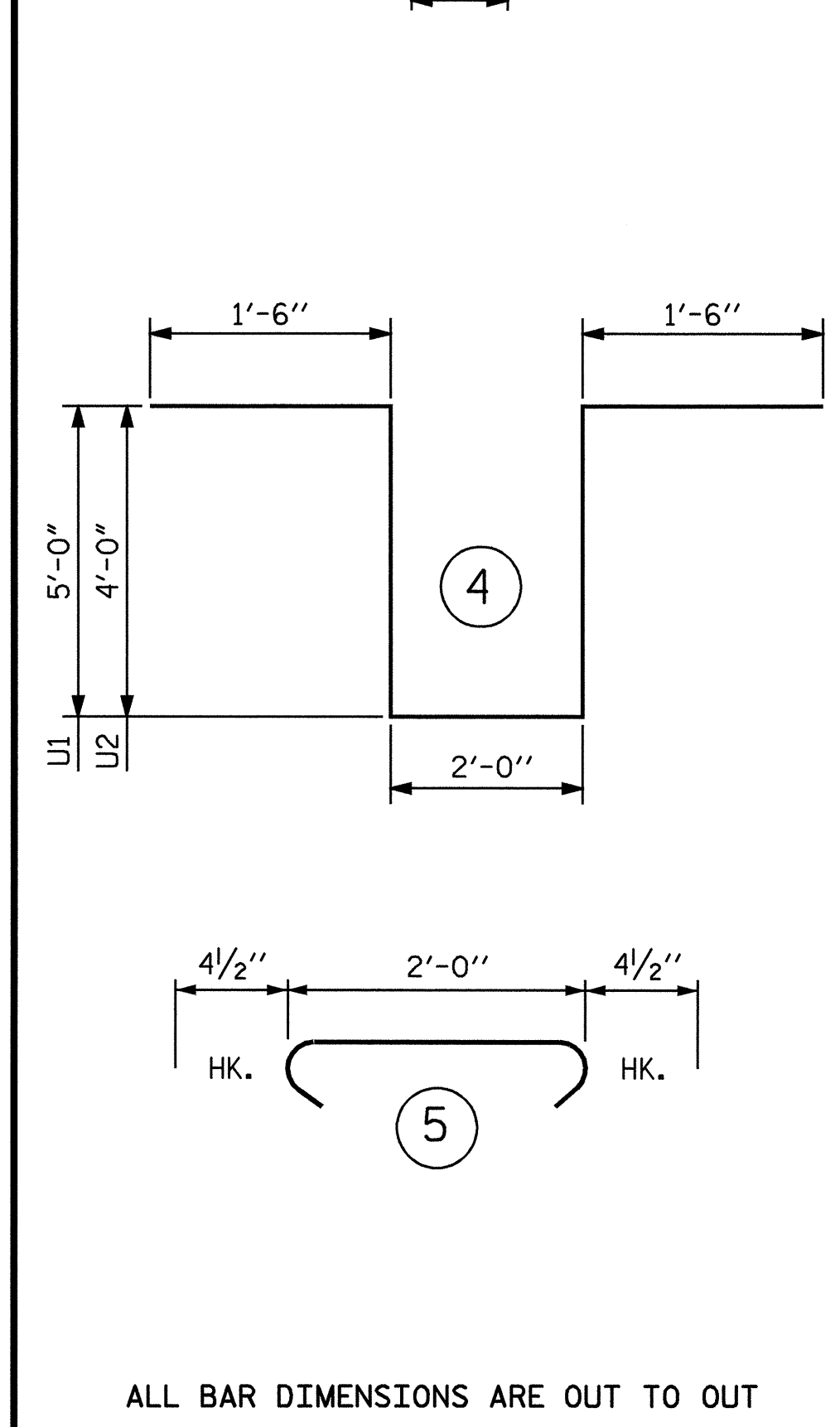
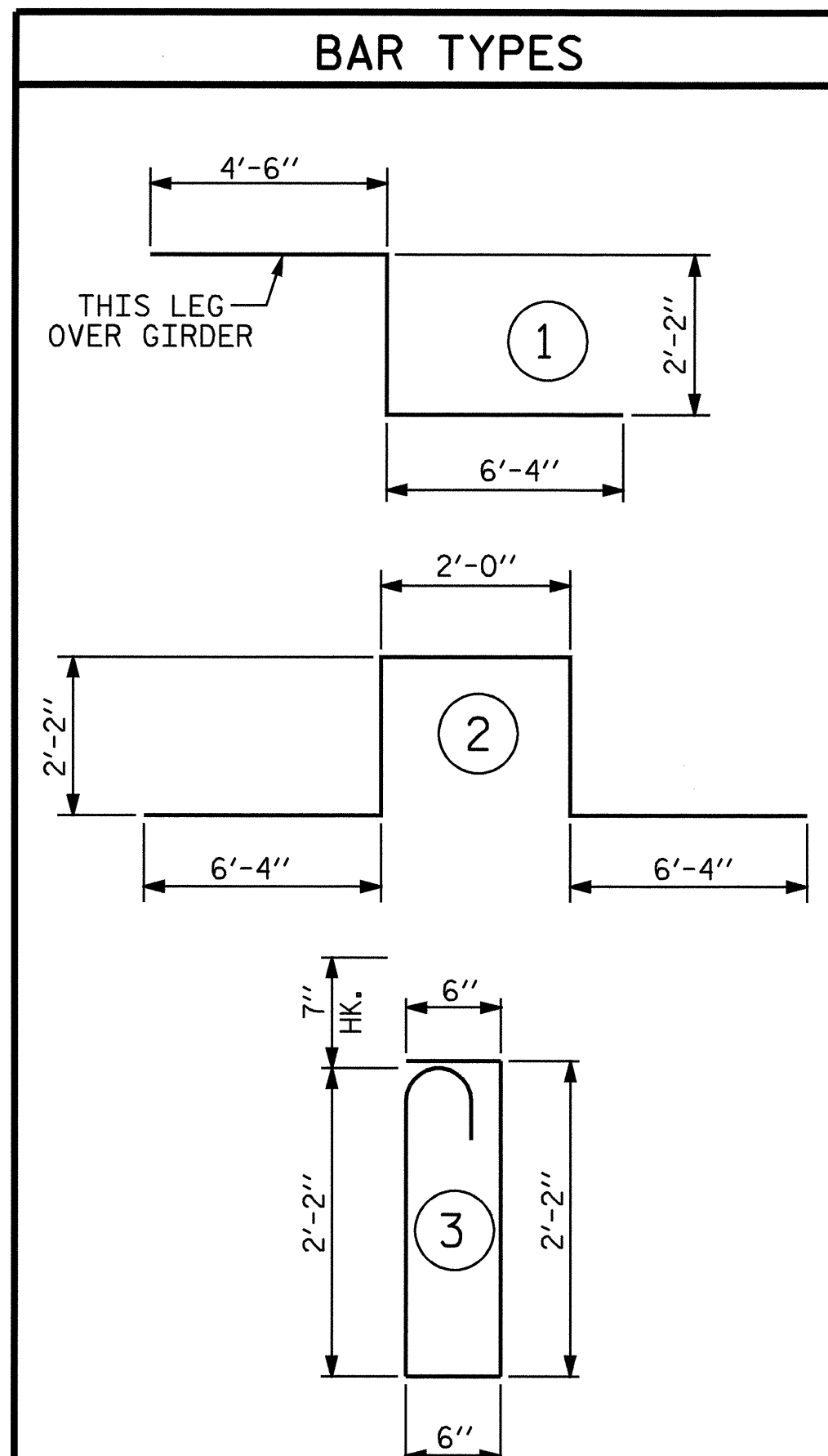
**SUPERSTRUCTURE  
 POURING SEQUENCE**



DRAWN BY: J.B. WILSON DATE: 2/2008  
 CHECKED BY: PEGGY ADKINS DATE: 3/2008

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-36
1			3			TOTAL SHEETS
2			4			67





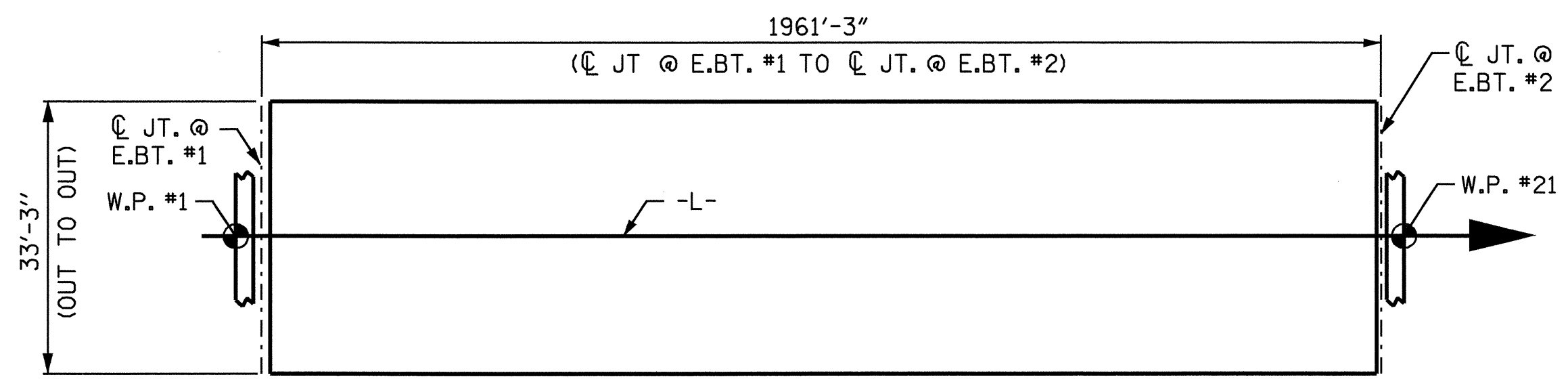
SPANS A & B						SPANS C & D						SPANS E & F (TYPICAL FOR SPANS G & H, I & J, K & L, AND M & N)						SPANS O & P						SPANS Q & R					
BAR	NO	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO	SIZE	TYPE	LENGTH	WEIGHT
*A1	378	5	STR	32'-11"	12978	*A1	379	5	STR	32'-11"	13012	*A1	369	5	STR	32'-11"	12669	*A1	350	5	STR	32'-11"	12016	*A1	332	5	STR	32'-11"	11398
A2	378	5	STR	32'-11"	12978	A2	379	5	STR	32'-11"	13012	A2	369	5	STR	32'-11"	12669	A2	350	5	STR	32'-11"	12016	A2	332	5	STR	32'-11"	11398
*B1	144	4	STR	25'-2"	2421	*B1	144	4	STR	25'-2"	2421	*B3	24	7	STR	34'-3"	1680	*B3	24	7	STR	34'-3"	1680						
*B3	24	7	STR	34'-3"	1680	*B3	24	7	STR	34'-3"	1680	*B4	21	7	STR	31'-0"	1331	*B4	21	7	STR	31'-0"	1331						
*B4	21	7	STR	31'-0"	1331	*B4	21	7	STR	31'-0"	1331	*B5	24	7	STR	43'-0"	2109	*B5	24	7	STR	43'-0"	2109						
*B5	24	7	STR	43'-0"	2109	*B5	24	7	STR	43'-0"	2109	*B9	72	4	STR	24'-3"	1166	*B11	144	4	STR	21'-0"	2020						
B6	160	5	STR	53'-0"	8845	B8	160	5	STR	52'-11"	8831	*B11	72	4	STR	21'-0"	1010	B13	160	5	STR	46'-7"	7774						
												B12	160	5	STR	49'-1"	8191												
*K1	8	8	1	13'-0"	278	*K1	8	8	1	13'-0"	278	*K1	8	8	1	13'-0"	278	*K1	8	8	1	13'-0"	278						
*K2	8	8	2	19'-0"	406	*K2	8	8	2	19'-0"	406	*K2	8	8	2	19'-0"	406	*K2	8	8	2	19'-0"	406						
K3	6	4	STR	6'-7"	26	K3	6	4	STR	6'-7"	26	K3	6	4	STR	6'-7"	26	K3	6	4	STR	6'-7"	26						
K4	12	4	STR	7'-7"	61	K4	12	4	STR	7'-7"	61	K4	12	4	STR	7'-7"	61	K4	12	4	STR	7'-7"	61						
K5	6	4	STR	6'-11"	28	K5	6	4	STR	6'-11"	28	K5	6	4	STR	6'-11"	28	K5	6	4	STR	6'-11"	28						
K6	6	4	STR	4'-9"	19	K6	6	4	STR	4'-9"	19	K6	6	4	STR	4'-9"	19	K6	6	4	STR	4'-9"	19						
K7	5	4	STR	25'-9"	86	K7	5	4	STR	25'-9"	86	K7	5	4	STR	25'-9"	86	K7	5	4	STR	25'-9"	86						
*S1	42	5	3	5'-11"	259	*S1	42	5	3	5'-11"	259	*S1	42	5	3	5'-11"	259	*S1	42	5	3	5'-11"	259						
S2	78	4	5	2'-9"	143	S2	78	4	5	2'-9"	143	S2	78	4	5	2'-9"	143	S2	78	4	5	2'-9"	143						
*U1	15	4	4	15'-0"	150	*U1	15	4	4	15'-0"	150	*U1	15	4	4	15'-0"	150	*U1	15	4	4	15'-0"	150						
*U2	6	4	4	13'-0"	52	*U2	6	4	4	13'-0"	52	*U2	6	4	4	13'-0"	52	*U2	6	4	4	13'-0"	52						
REINFORCING STEEL					LBS. 22186	REINFORCING STEEL					LBS. 22206	REINFORCING STEEL					LBS. 21640	REINFORCING STEEL					LBS. 20570	REINFORCING STEEL					LBS. 19535
*EPOXY COATED REINFORCING STEEL					LBS. 21664	*EPOXY COATED REINFORCING STEEL					LBS. 21698	*EPOXY COATED REINFORCING STEEL					LBS. 21267	*EPOXY COATED REINFORCING STEEL					LBS. 20457	*EPOXY COATED REINFORCING STEEL					LBS. 19683
CLASS AA CONCRETE						CLASS AA CONCRETE						CLASS AA CONCRETE						CLASS AA CONCRETE						CLASS AA CONCRETE					
POUR #1					128.9 yd.3	POUR #1					128.9 yd.3	POUR #1					125.1 yd.3	POUR #1					125.1 yd.3	POUR #1					113.1 yd.3
POUR #2					157.6 yd.3	POUR #2					157.6 yd.3	POUR #2					154.0 yd.3	POUR #2					142.0 yd.3	POUR #2					142.0 yd.3
TOTAL					286.5 yd.3	TOTAL					286.5 yd.3	TOTAL					279.1 yd.3	TOTAL					267.1 yd.3	TOTAL					255.1 yd.3

SPANS S & T					
BAR	NO	SIZE	TYPE	LENGTH	WEIGHT
*A1	332	5	STR	32'-11"	11398
A2	332	5	STR	32'-11"	11398
*B3	24	7	STR	34'-3"	1680
*B4	21	7	STR	31'-0"	1331
*B5	24	7	STR	43'-0"	2109
*B11	144	4	STR	21'-0"	2020
B13	160	5	STR	46'-7"	7774
*K1	8	8	1	13'-0"	278
*K2	8	8	2	19'-0"	406
K3	6	4	STR	6'-7"	26
K4	12	4	STR	7'-7"	61
K5	6	4	STR	6'-11"	28
K6	6	4	STR	4'-9"	19
K7	5	4	STR	25'-9"	86
*S1	42	5	3	5'-11"	259
S2	78	4	5	2'-9"	143
*U1	15	4	4	15'-0"	150
*U2	6	4	4	13'-0"	52
REINFORCING STEEL					LBS. 19535
*EPOXY COATED REINFORCING STEEL					LBS. 19683
CLASS AA CONCRETE					
POUR #1					113.1 yd.3
POUR #2					142.0 yd.3
TOTAL					255.1 yd.3

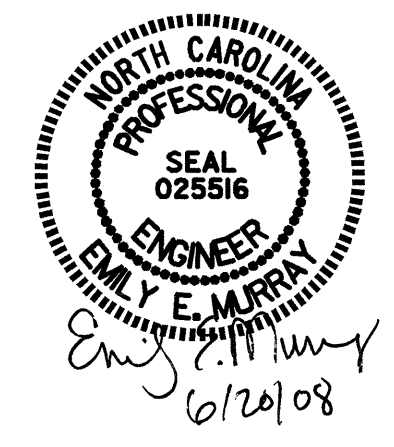
SUPERSTRUCTURE BILL OF MATERIAL				SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS			
	CLASS AA CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EPOXY COATED REINFORCING STEEL (LBS.)	BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		PARAPET AND BARRIER RAIL
SPAN A-B	286.5	22186	21664	#4	2'-0"	1'-9"	2'-0"
SPAN C-D	286.5	22206	21698				
SPAN E-F	279.1	21640	21267	#5	2'-6"	2'-2"	2'-6"
SPAN G-H	279.1	21640	21267				
SPAN I-J	279.1	21640	21267	#6	3'-0"	2'-7"	3'-10"
SPAN K-L	279.1	21640	21267				
SPAN M-N	279.1	21640	21267	#7	5'-3"	3'-6"	
SPAN O-P	267.1	20570	20457				
SPAN Q-R	255.1	19535	19683	#8	6'-10"	4'-7"	
SPAN S-T	255.1	19535	19683				
TOTALS**	2745.8	212232	209520				

GROOVING BRIDGE FLOORS	
BRIDGE DECK	52679 SQ.FT.
APPROACH SLABS	1318 SQ.FT.
TOTAL	53997 SQ.FT.

\*\* QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED



LAYOUT FOR COMPUTING AREA REINFORCED CONCRETE DECK SLAB (SQ. FT. = 65212)



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-37
1			3			TOTAL SHEETS
2			4			67

ASSEMBLED BY : J.B. WILSON	DATE : 2/2008
CHECKED BY : PEGGY ADKINS	DATE : 3/2008
DRAWN BY : JMB 5/87	REV. 6/1/94 EEM/GRP
CHECKED BY : SJD 9/87	REV. 8/16/99 RWW/LES

**NOTES**

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

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 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.

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

THE CONTRACTOR SHALL VERIFY THE SLEEVE ELEVATION SHOWN ON PLANS BEFORE CONSTRUCTION OF THE BACKWALL.

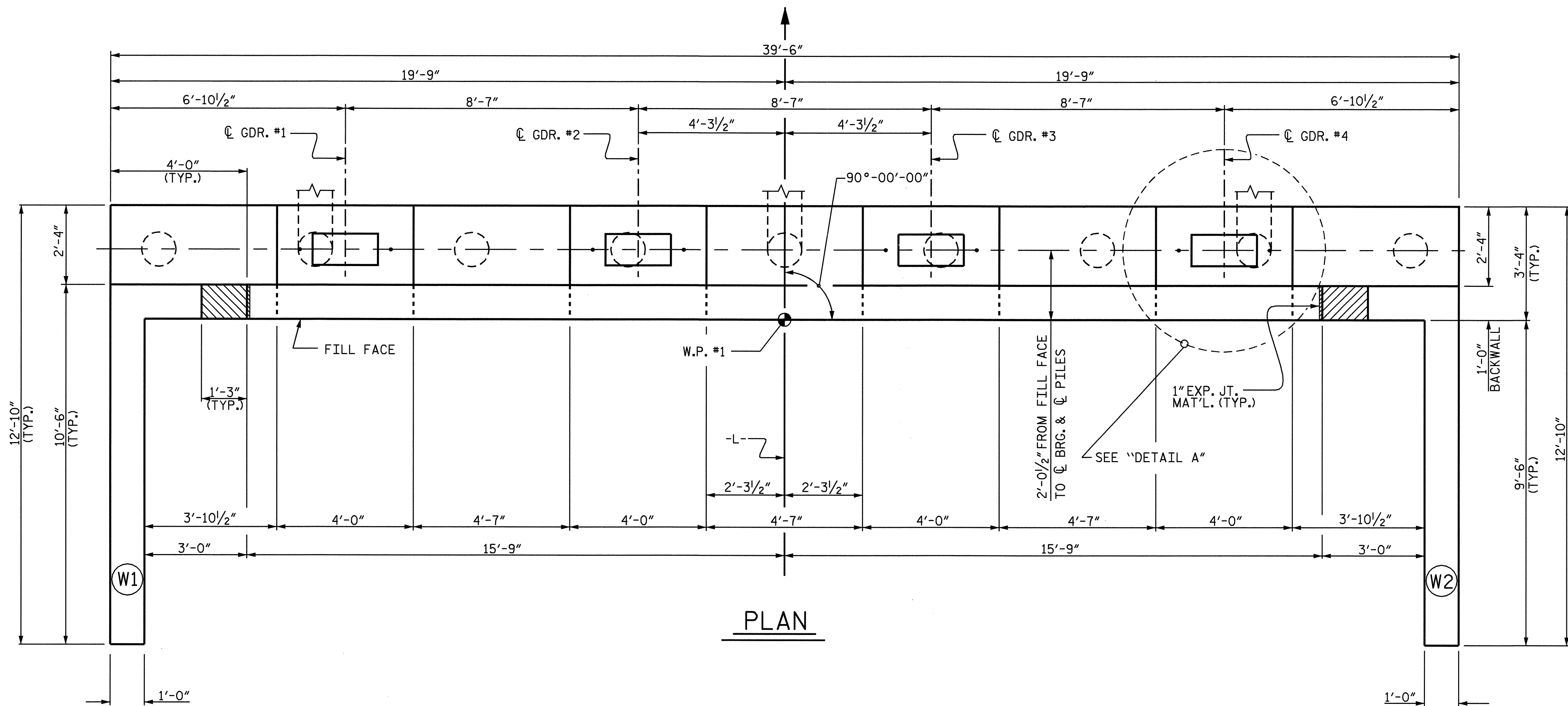
HORIZONTAL AND VERTICAL REINFORCING STEEL IN BACKWALL SHALL BE FIELD BENT OR CUT AS NECESSARY TO INSTALL 20" O.D. PLASTIC OR STEEL SLEEVE.

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

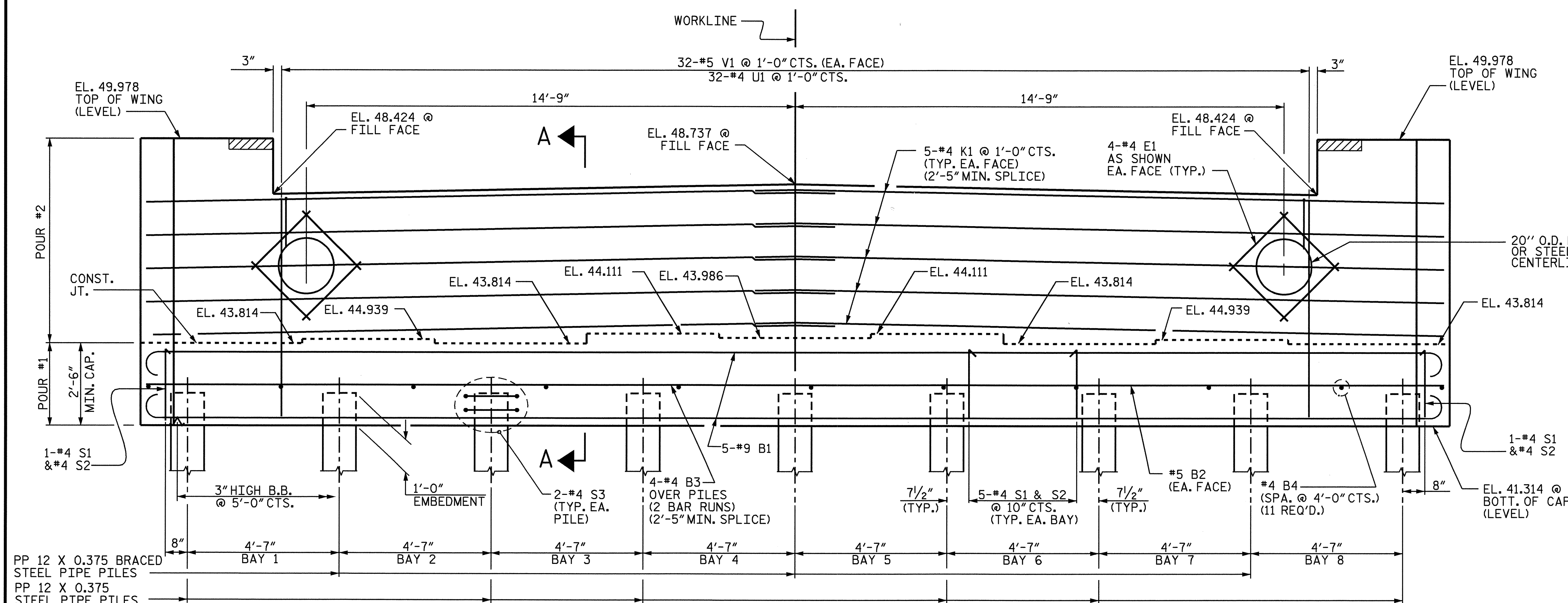
PIPE PILE PLATES, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

REMOVE AND REPLACE OR REPAIR TO THE SATISFACTION OF THE ENGINEER PILES THAT ARE DAMAGED, DEFORMED OR COLLAPSED DURING INSTALLATION OR DRIVING.

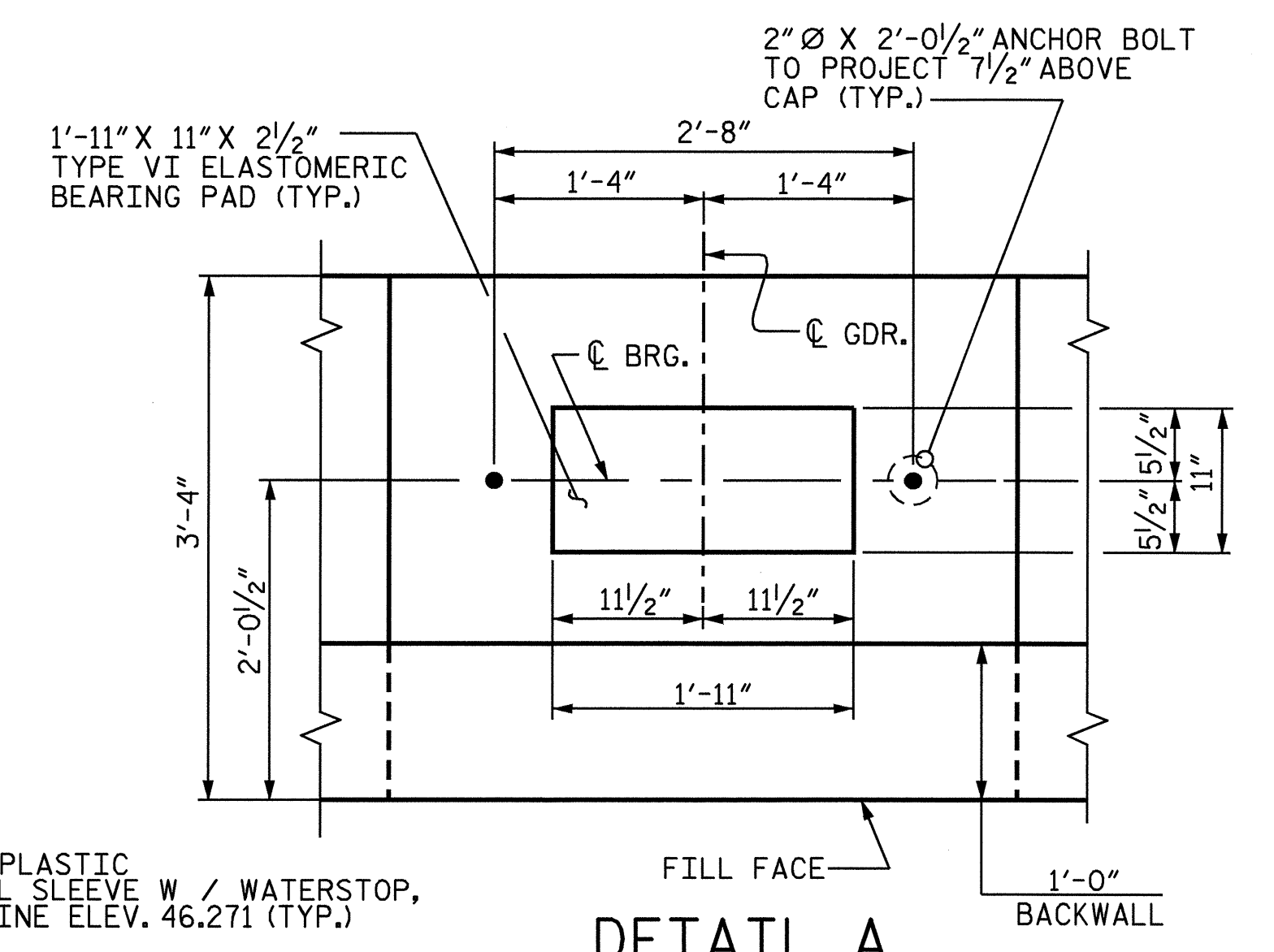
PILE SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AWS D1.1.



**PLAN**



**ELEVATION**

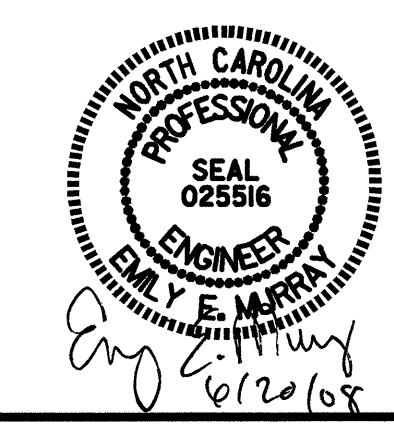


**DETAIL A**

PROJECT NO. B-3684  
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 STATION: 38+88.50 -L-

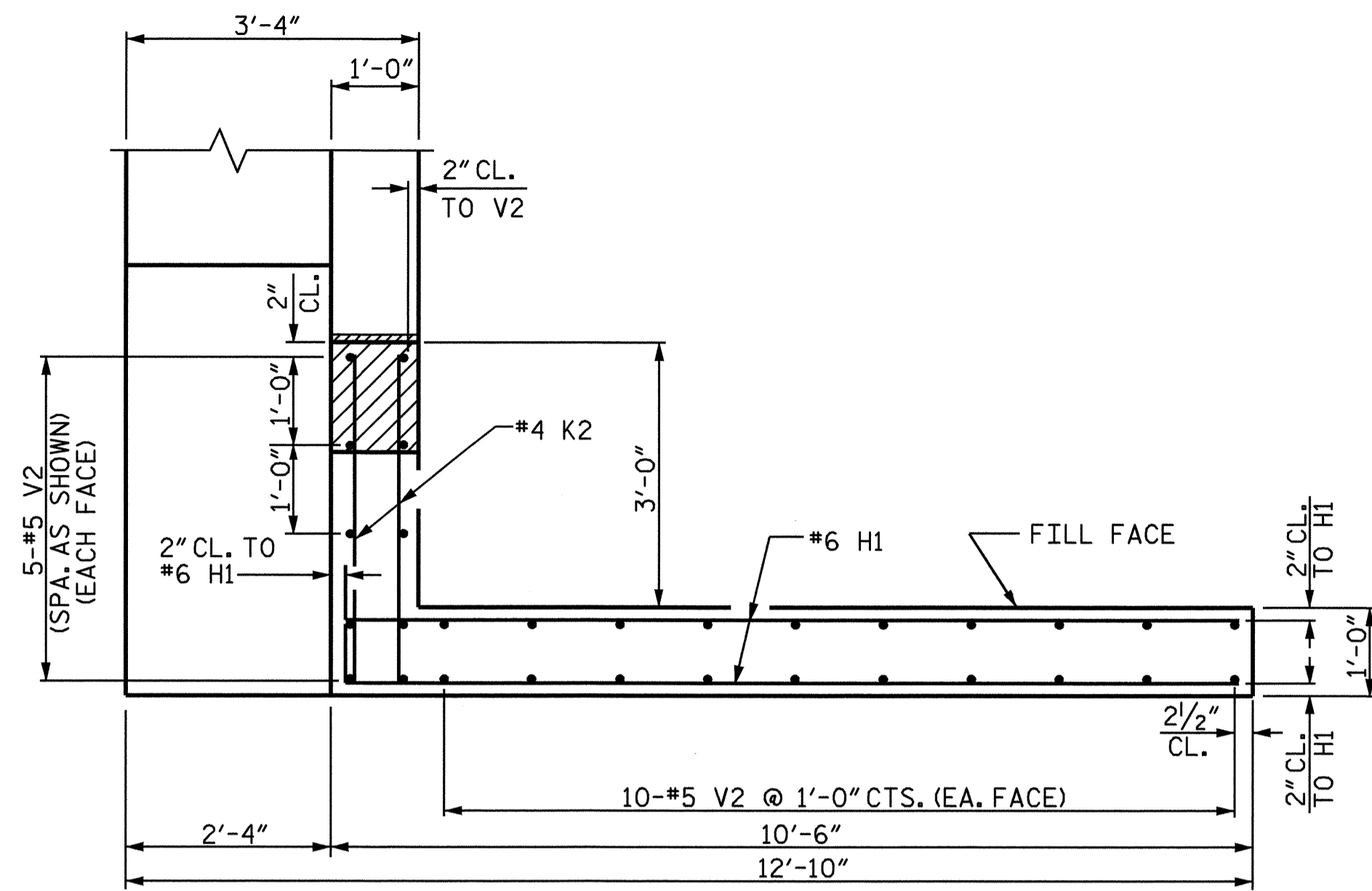
SHEET 1 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT #1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-38
					TOTAL SHEETS 67

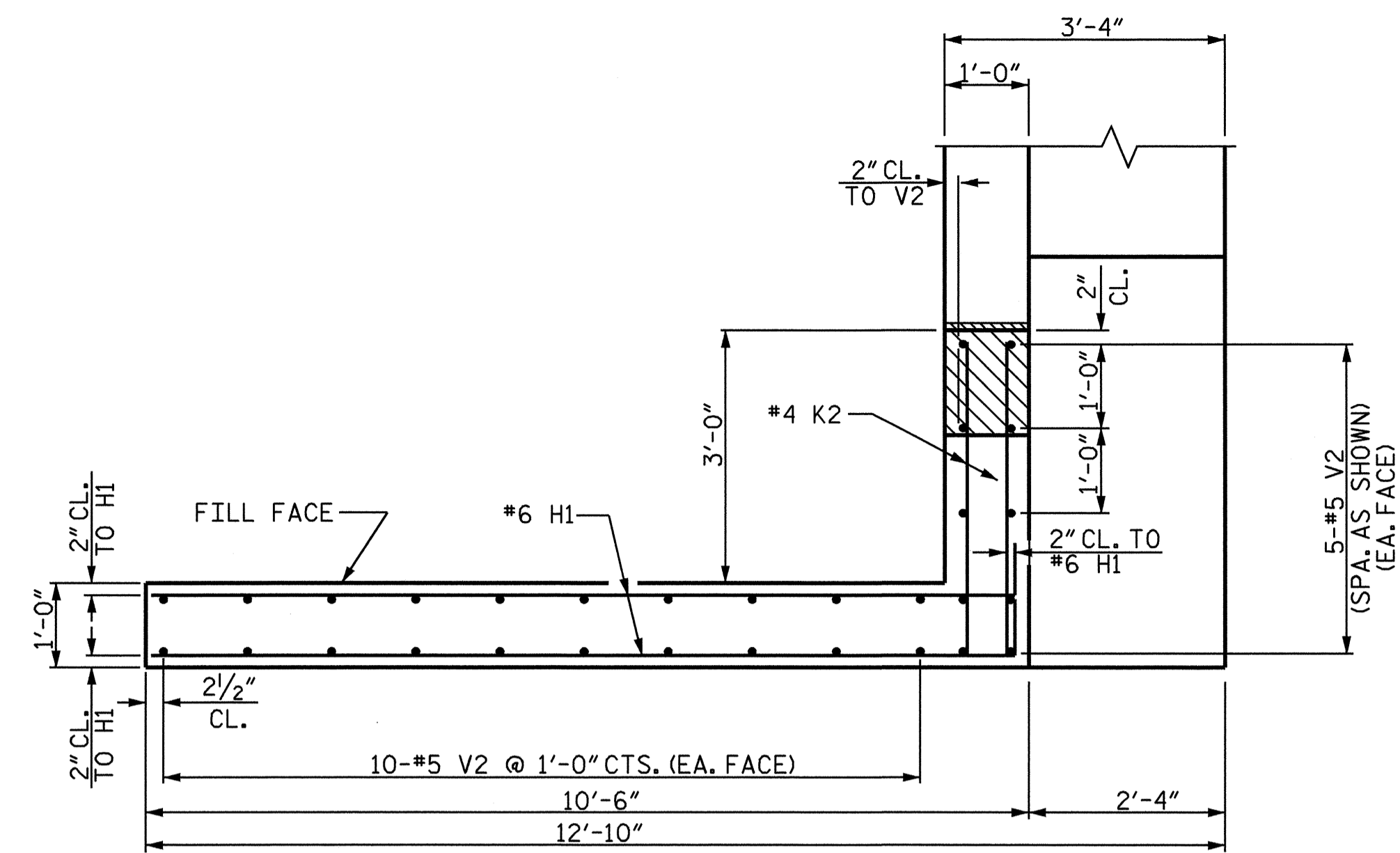


DRAWN BY : M.D.PISO DATE : 03/2008  
 CHECKED BY : M.GUDLAUGSSON DATE : 04/2008

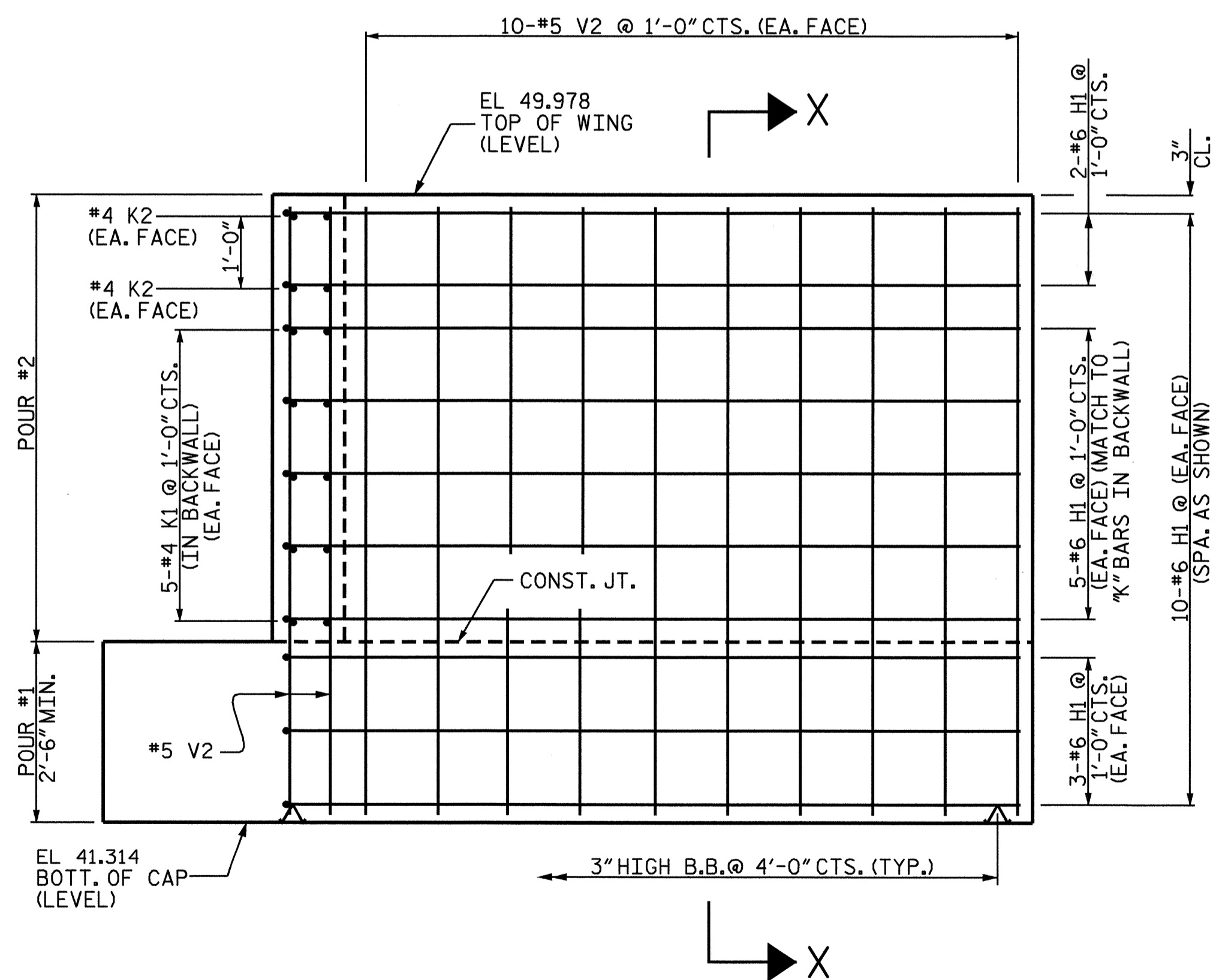




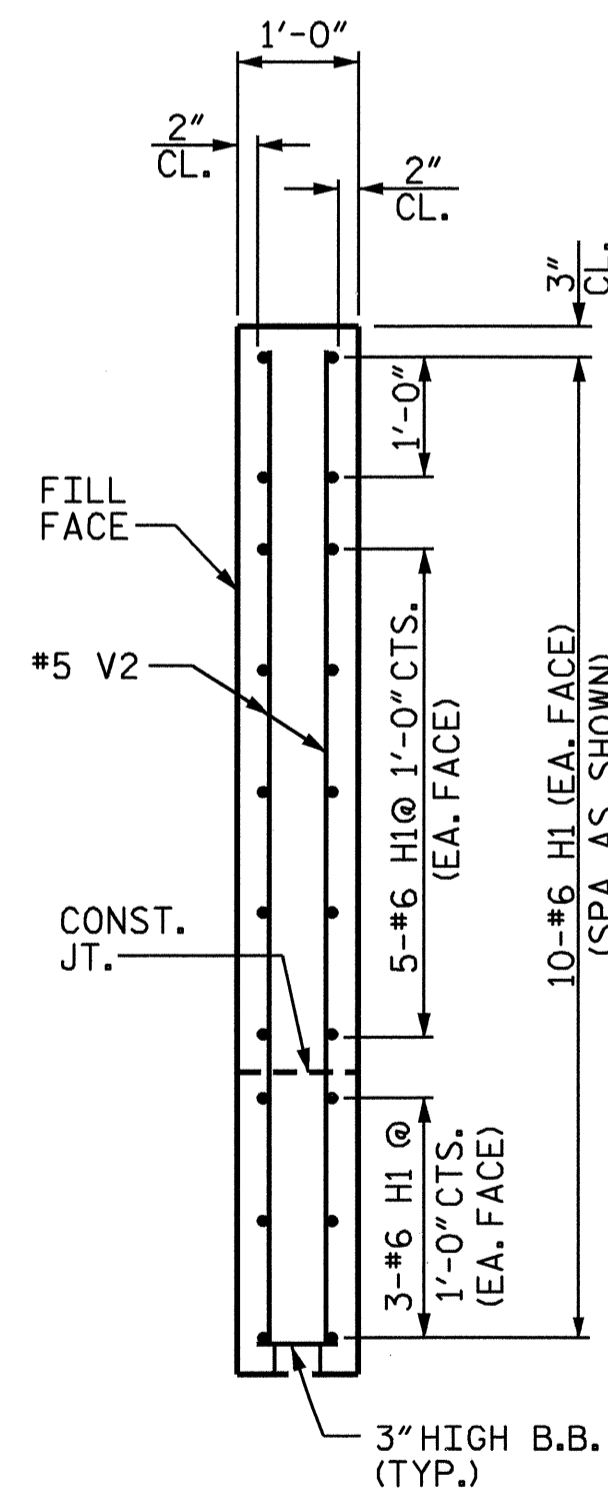
PLAN OF WING (W1)



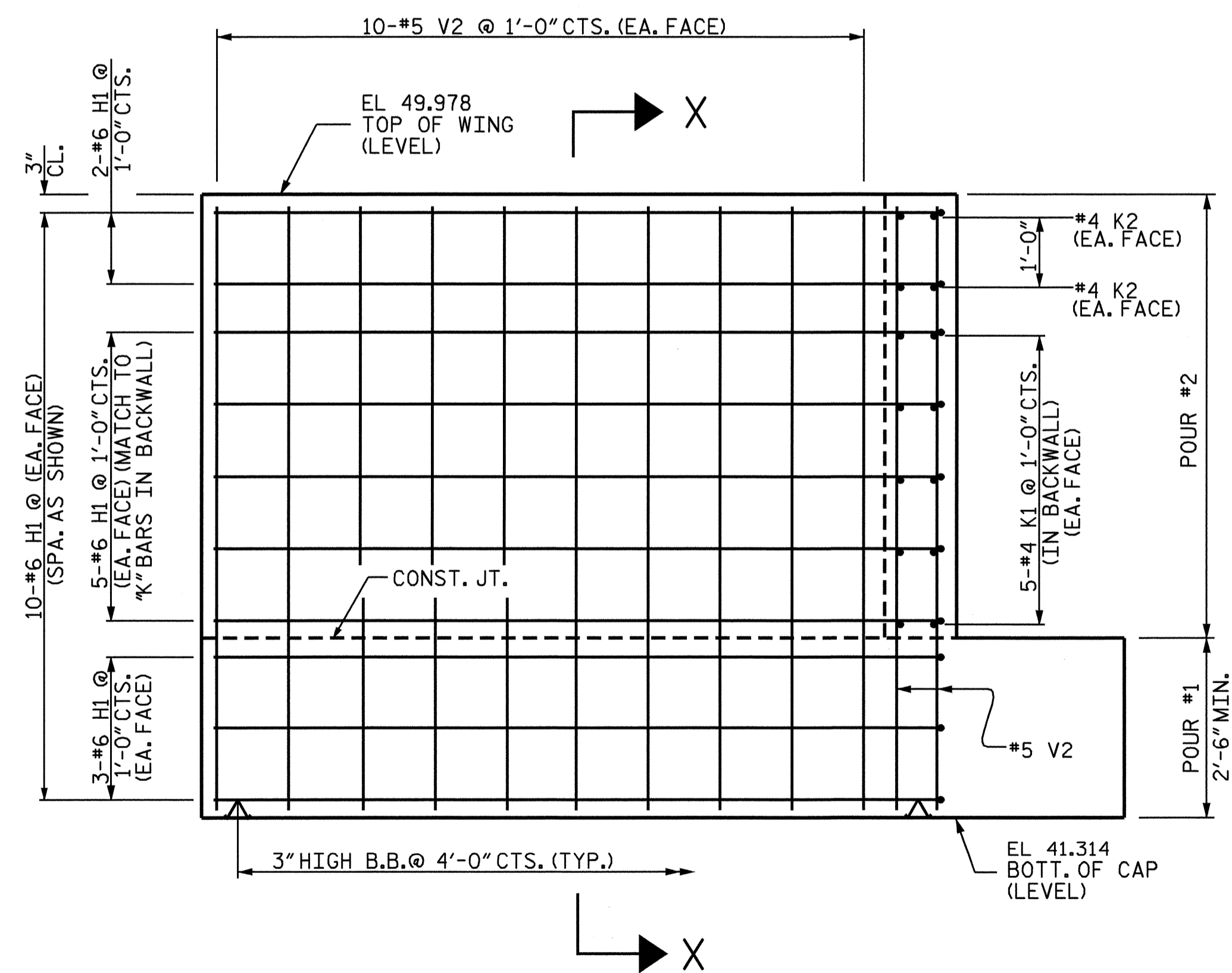
PLAN OF WING (W2)



ELEVATION OF WING (W1)



SECTION X-X

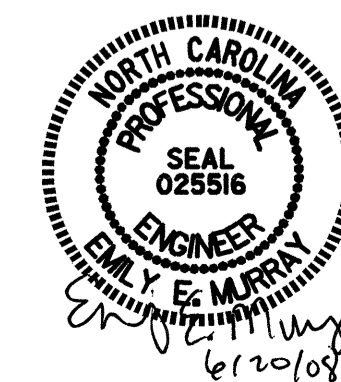


ELEVATION OF WING (W2)

PROJECT NO. B-3684  
 PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 2 OF 3

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

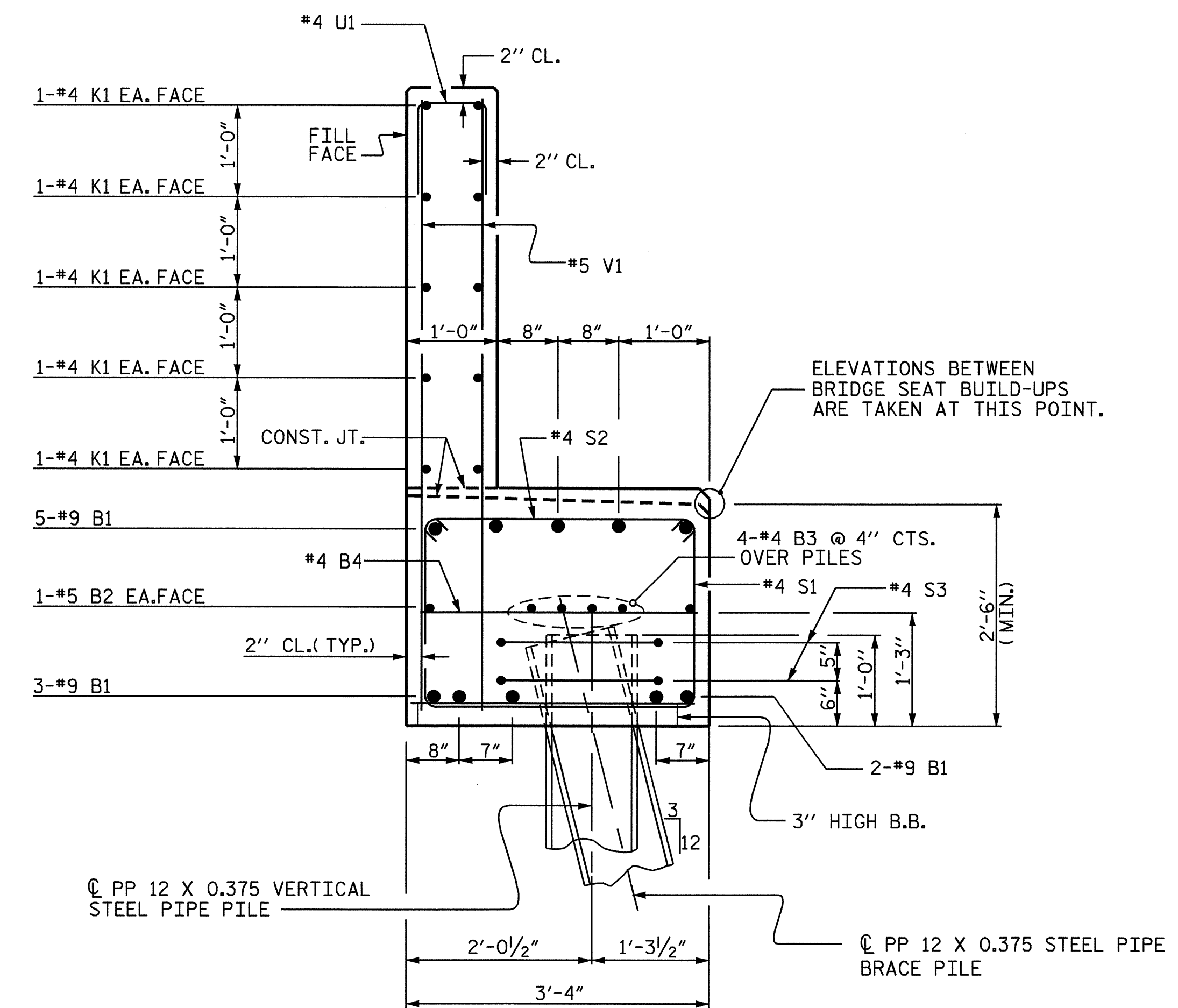


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 CHECKED BY: M.GUDLAUGSSON DATE: 04/2008

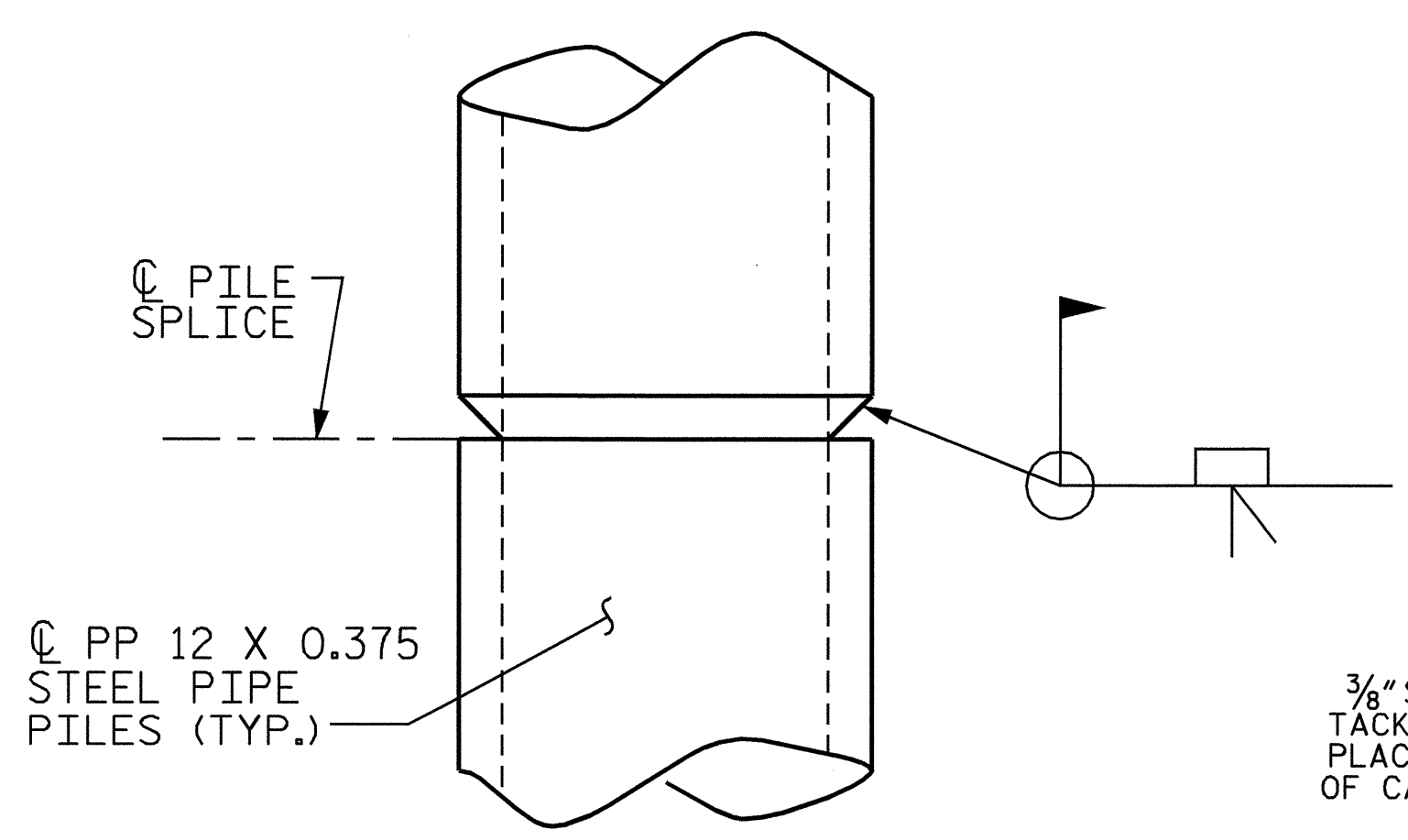
19-JUN-2008 11:08  
 r:\structures\b3684\final plans\b-3684\_sd\_eb1.dgn  
 padkins

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-39
1			3			TOTAL SHEETS
2			4			67

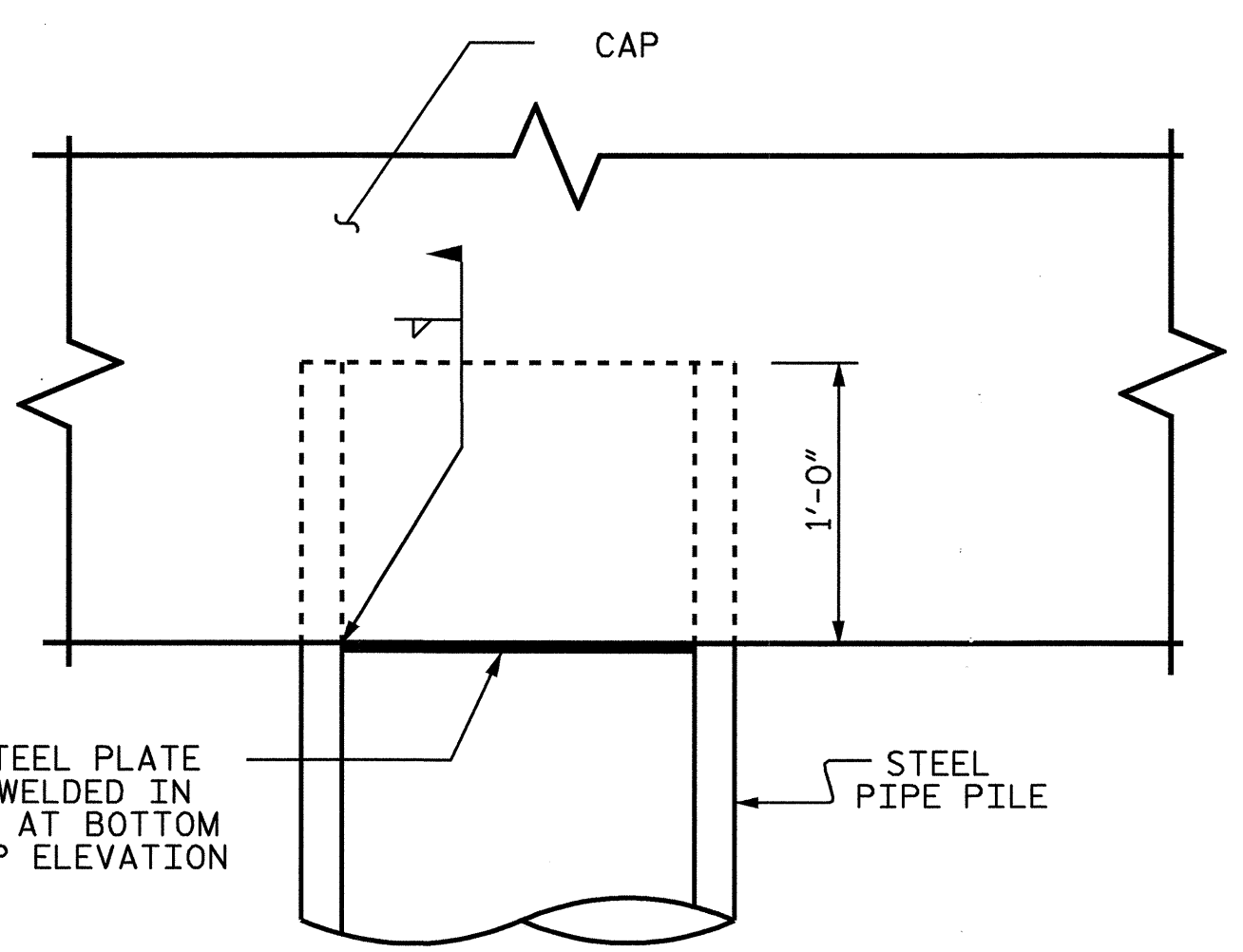




**SECTION A-A**

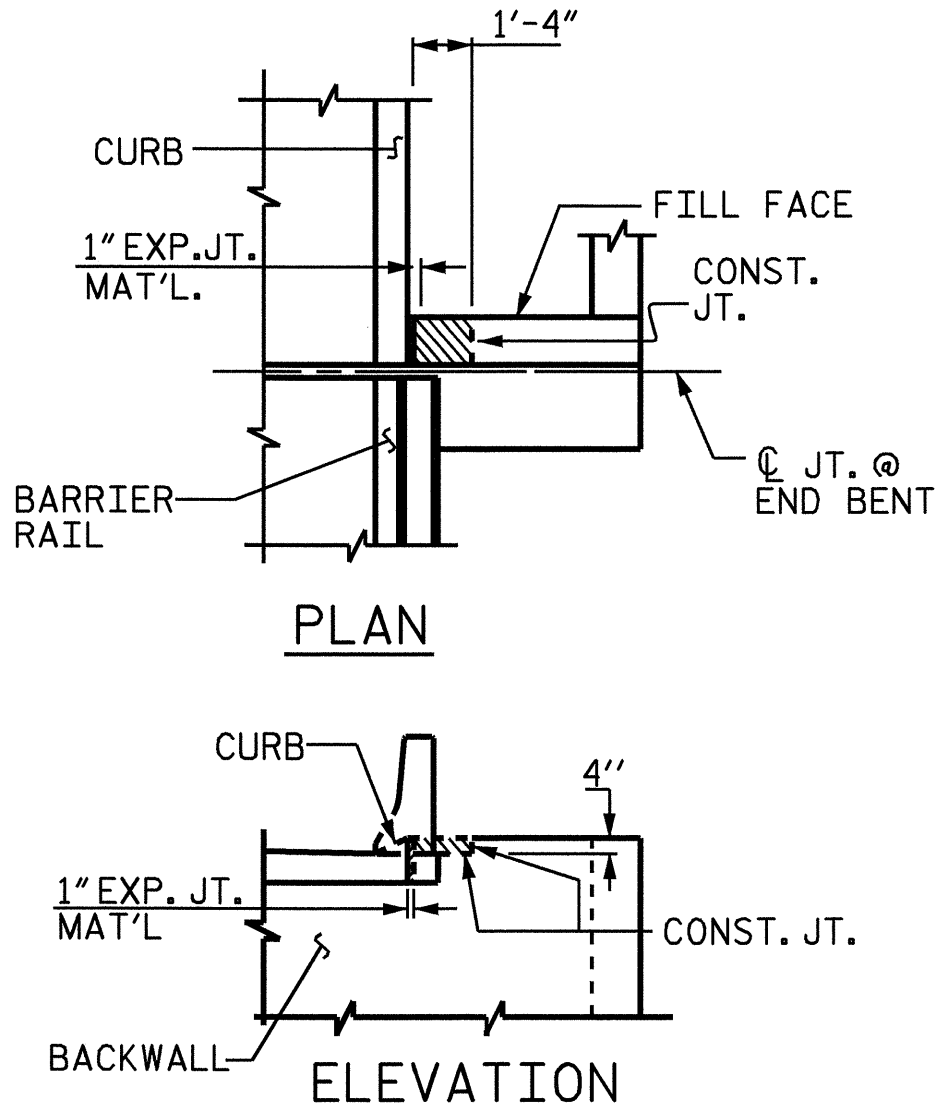


**PIPE PILE SPLICE DETAIL**



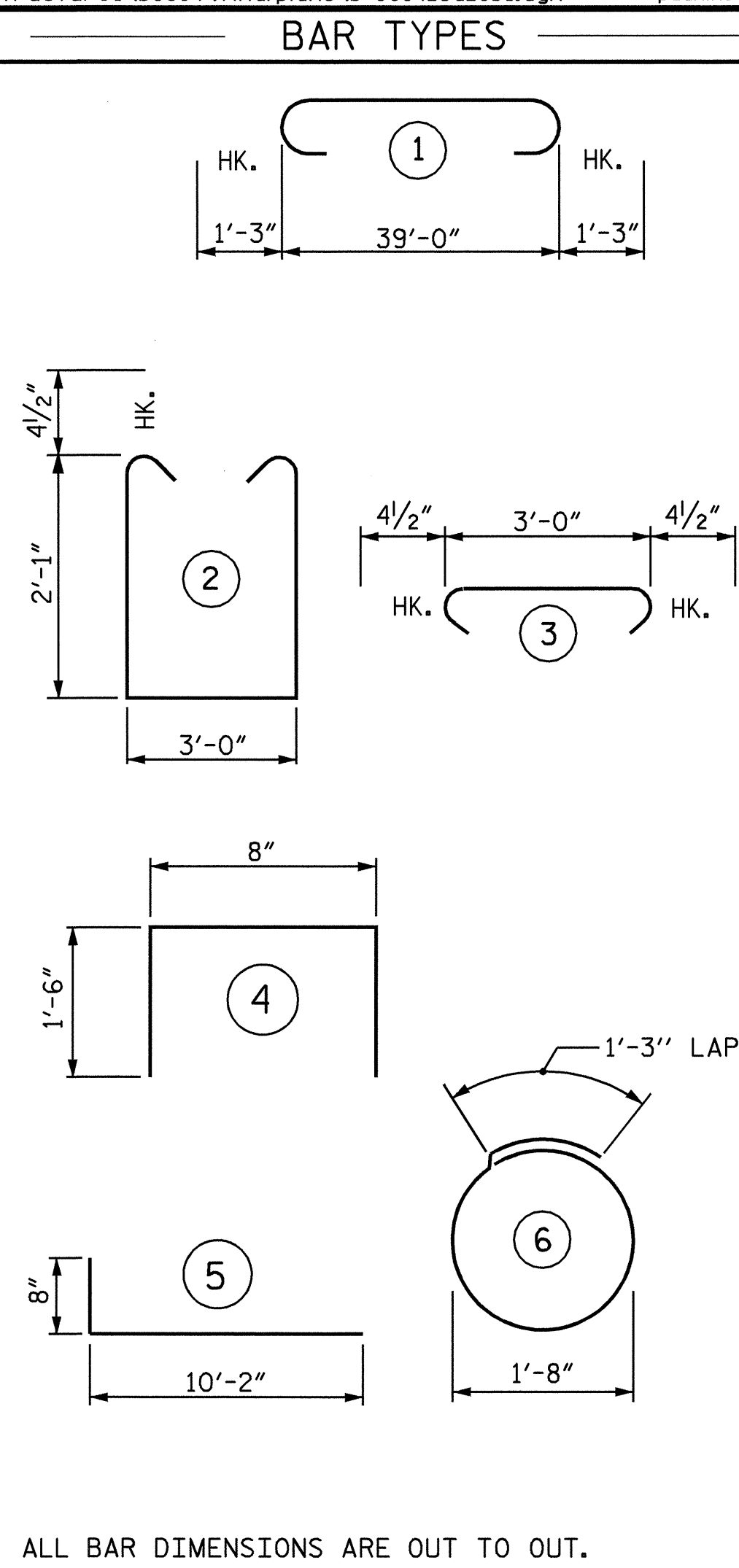
**PIPE PILE IN CAP DETAIL**

THE CONTRACTOR MAY PROPOSE AN ALTERNATE METHOD FOR PLUGGING THE STEEL PIPE PILE, SUBJECT TO APPROVAL BY THE ENGINEER.

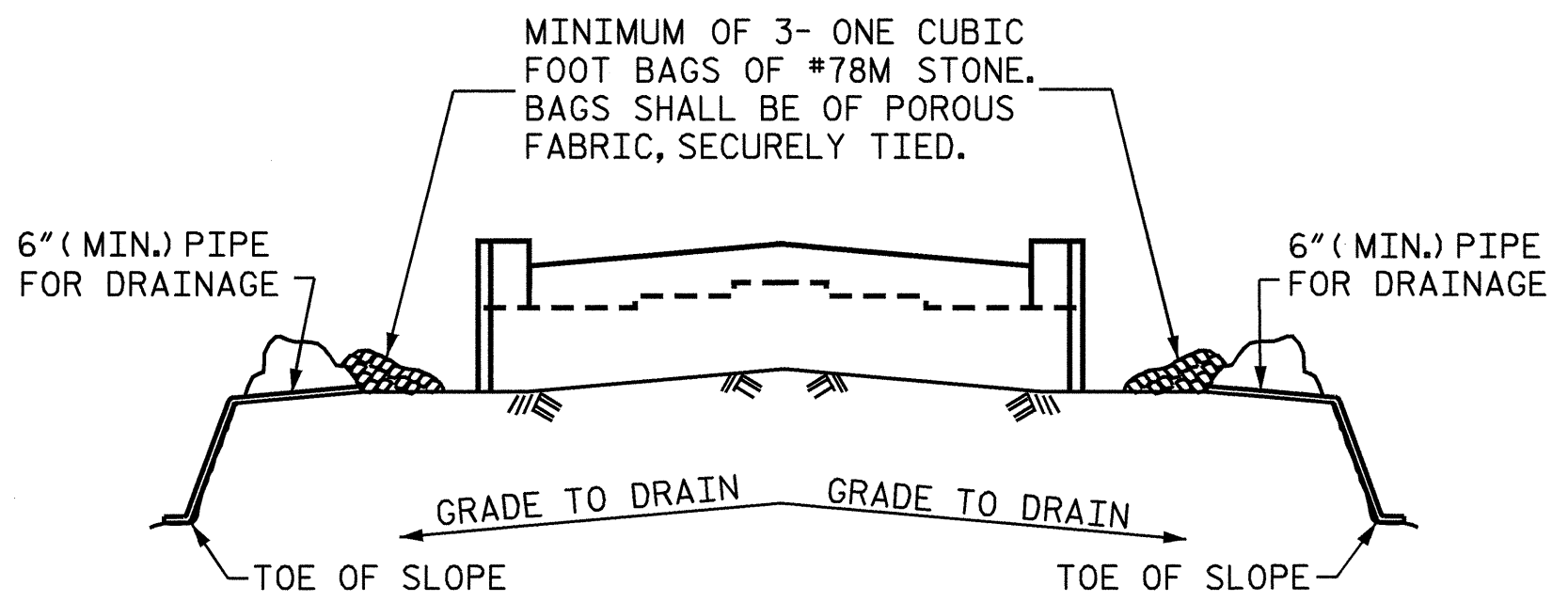


**BLOCKOUT IN WING WALL FOR FITTING EVAZOTE JOINT SEAL**

NOTE: THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND APPROACH SLAB HAS BEEN SAWED AND THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.



BILL OF MATERIAL					
END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#9		41'-6"	1411
B2	2	#5	STR.	39'-0"	81
B3	8	#4	STR.	20'-9"	111
B4	11	#4	STR.	3'-0"	23
E1	16	#4	STR.	2'-6"	27
H1	40	#6	5	10'-10"	651
K1	20	#4	STR.	20'-10"	278
K2	8	#4	STR.	3'-8"	20
S1	42	#4	2	7'-11"	222
S2	42	#4	3	3'-9"	108
S3	18	#4	6	6'-6"	78
U1	32	#4	4	3'-8"	78
V1	64	#5	STR.	6'-8"	445
V2	60	#5	STR.	8'-4"	522
REINFORCING STEEL LBS.					4055 LBS.
CLASS A CONCRETE CU. YDS.					
POUR #1					
CAP & LOWER WINGS					14.5 CU. YDS.
POUR #2					
UPPER WINGS					6.2 CU. YDS.
BACKWALL					7.4 CU. YDS.
TOTAL CONCRETE CU. YDS.					28.1 CU. YDS.
PP 12 X 0.375 STEEL PIPE PILES					
NO. 9					405'-0" LIN. FT.
PILE REDRIVES					EA. 6
PIPE PILE PLATES					EA. 9



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

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

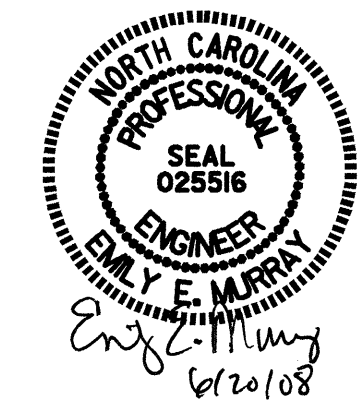
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

**TEMPORARY DRAINAGE AT END BENT**

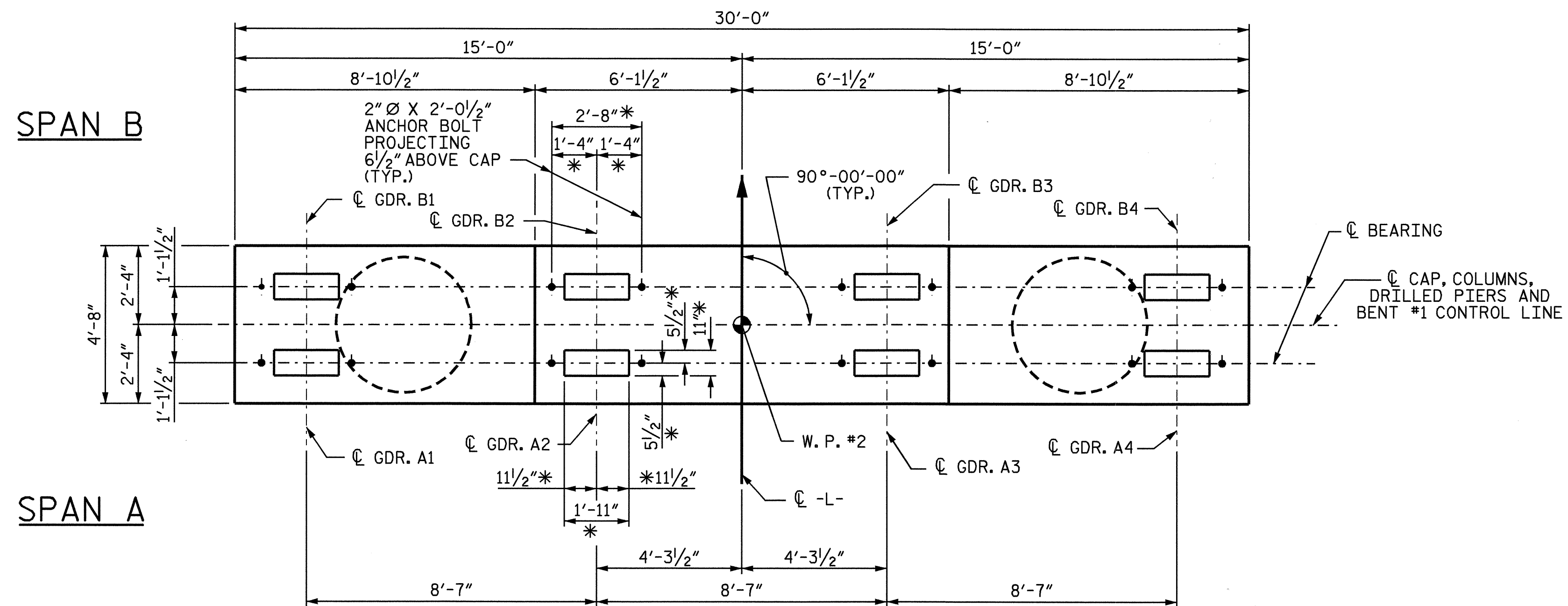
PROJECT NO. B-3684  
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 STATION: 38+88.50 -L-

SHEET 3 OF 3

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



REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-40	
1			3			TOTAL SHEETS	
2			4			67	



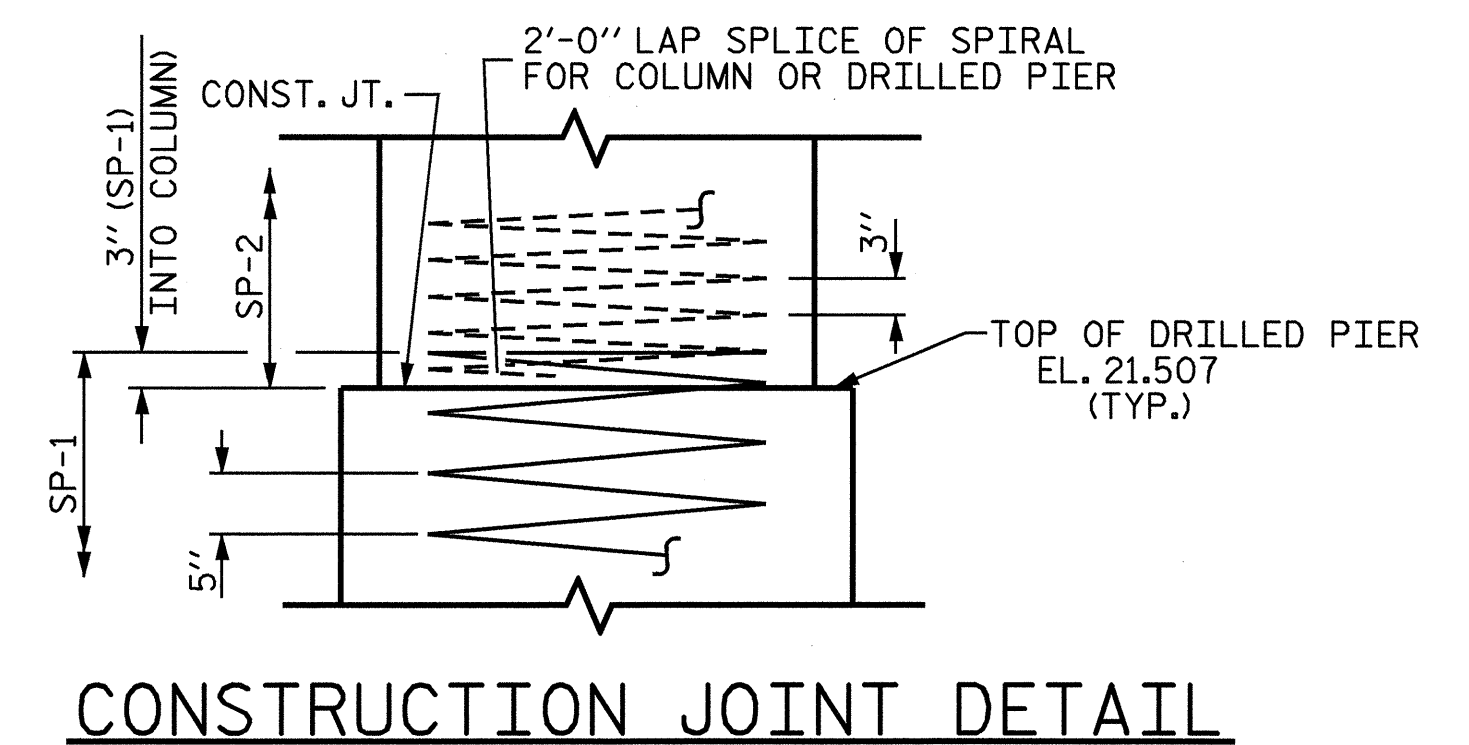
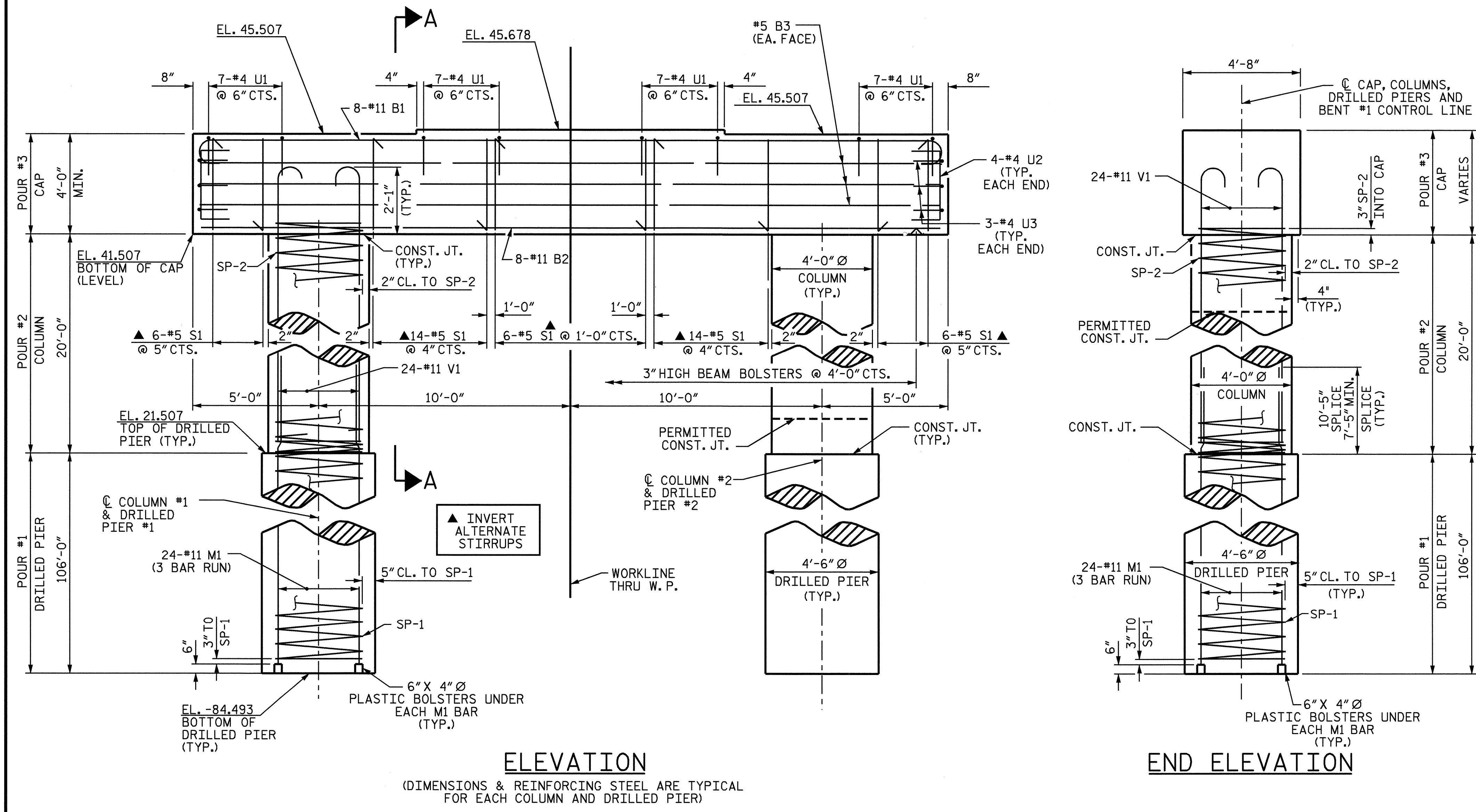
**NOTES**

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

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

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

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH 3'-0" OF EXTRA LENGTH.



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SHEET 1 OF 2

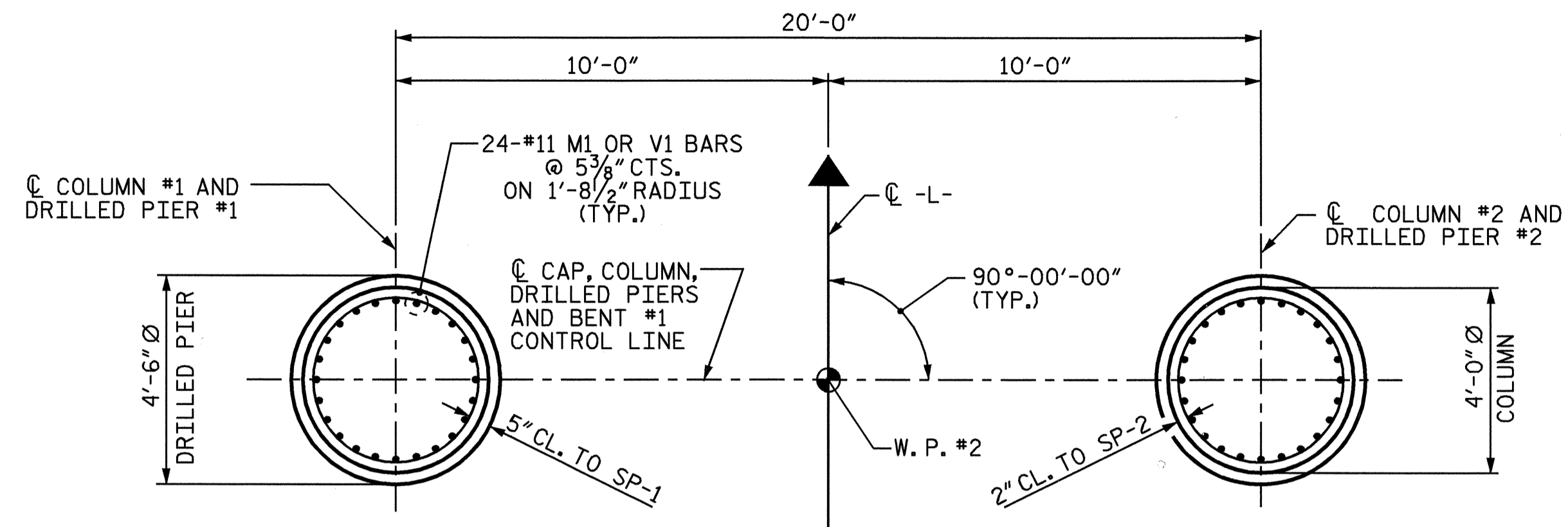
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
**BENT #1**

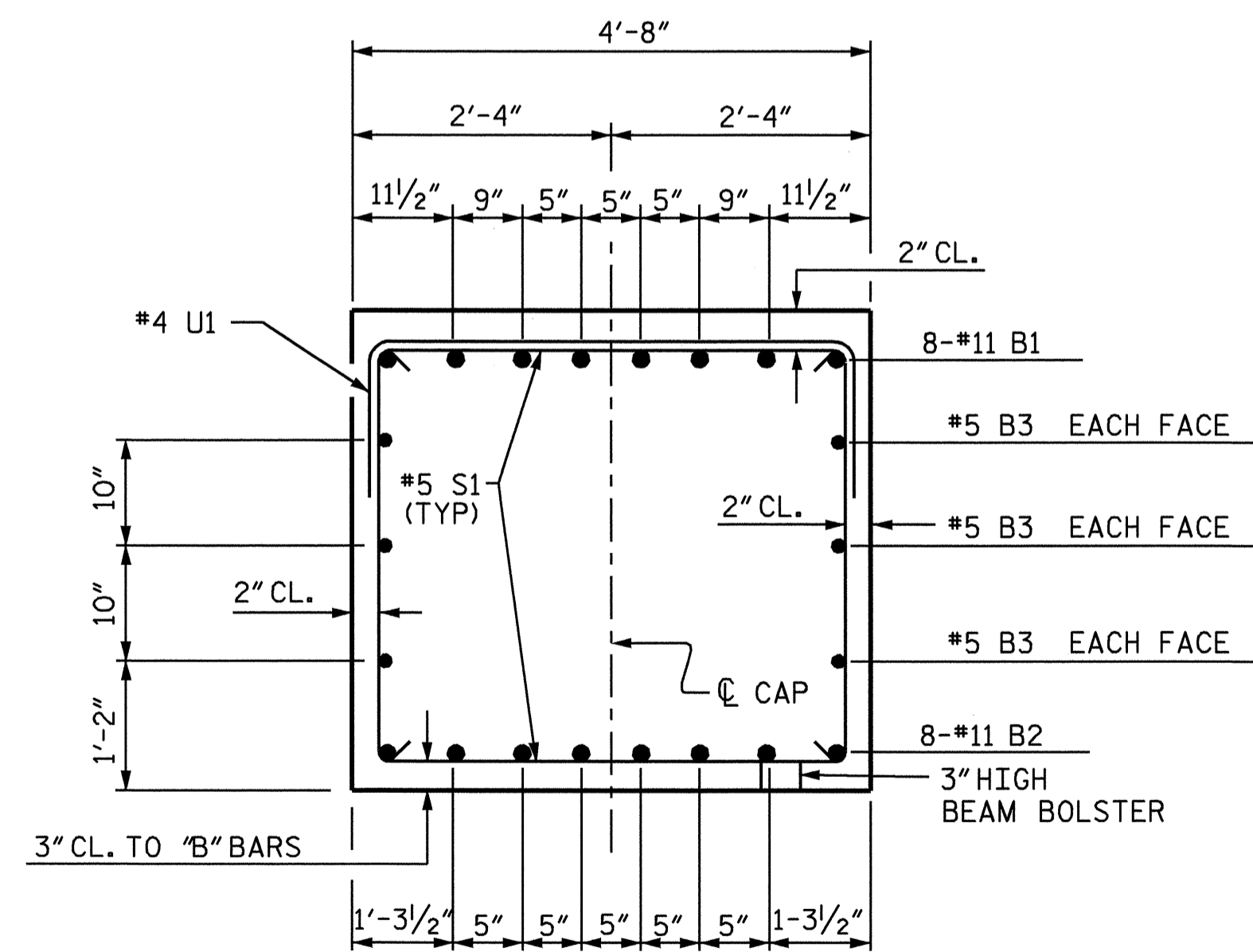
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-41	
1			3			TOTAL SHEETS	
2			4			67	



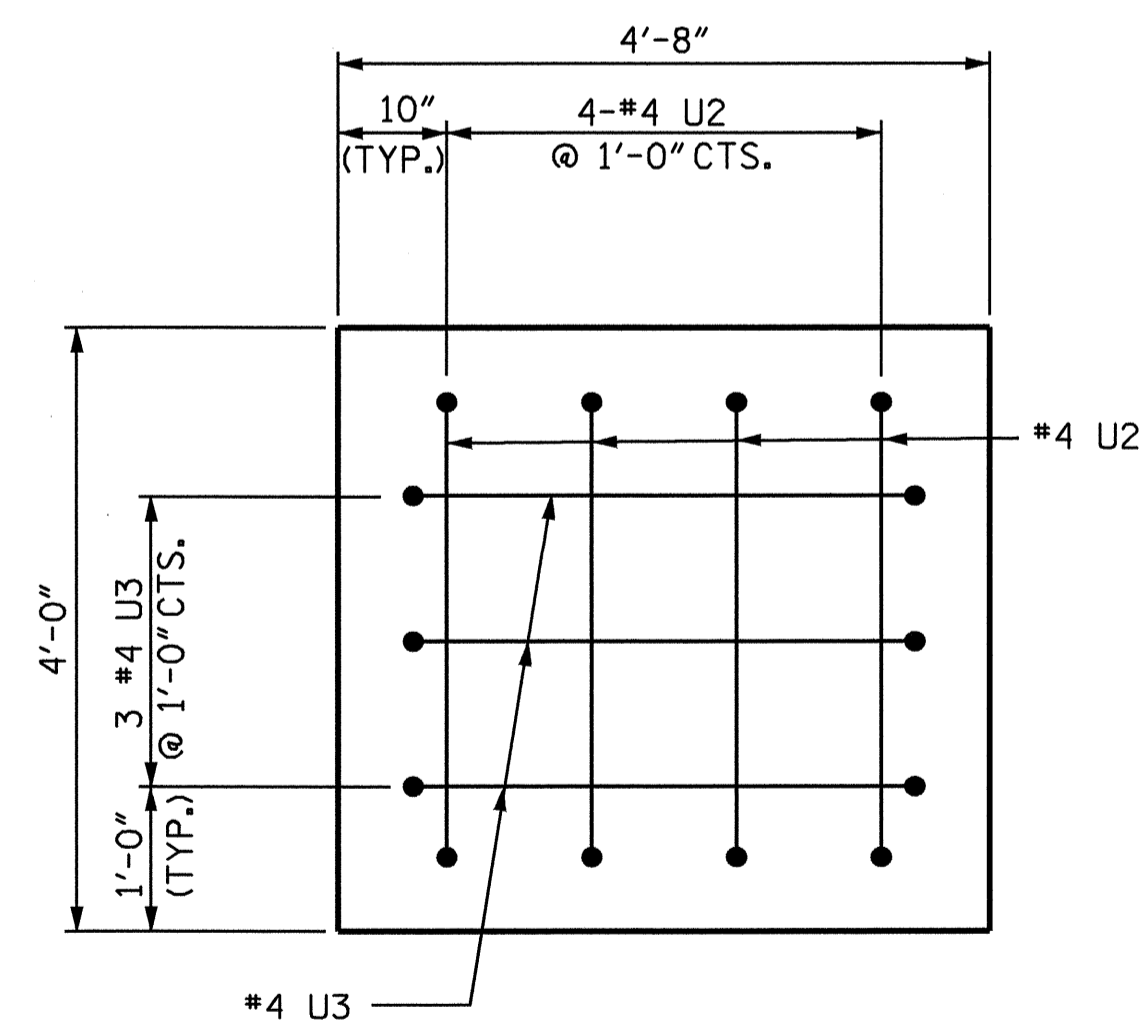
DRAWN BY: PEGGY ADKINS DATE: 4-08  
 CHECKED BY: O. R. AZIZI DATE: 4-08



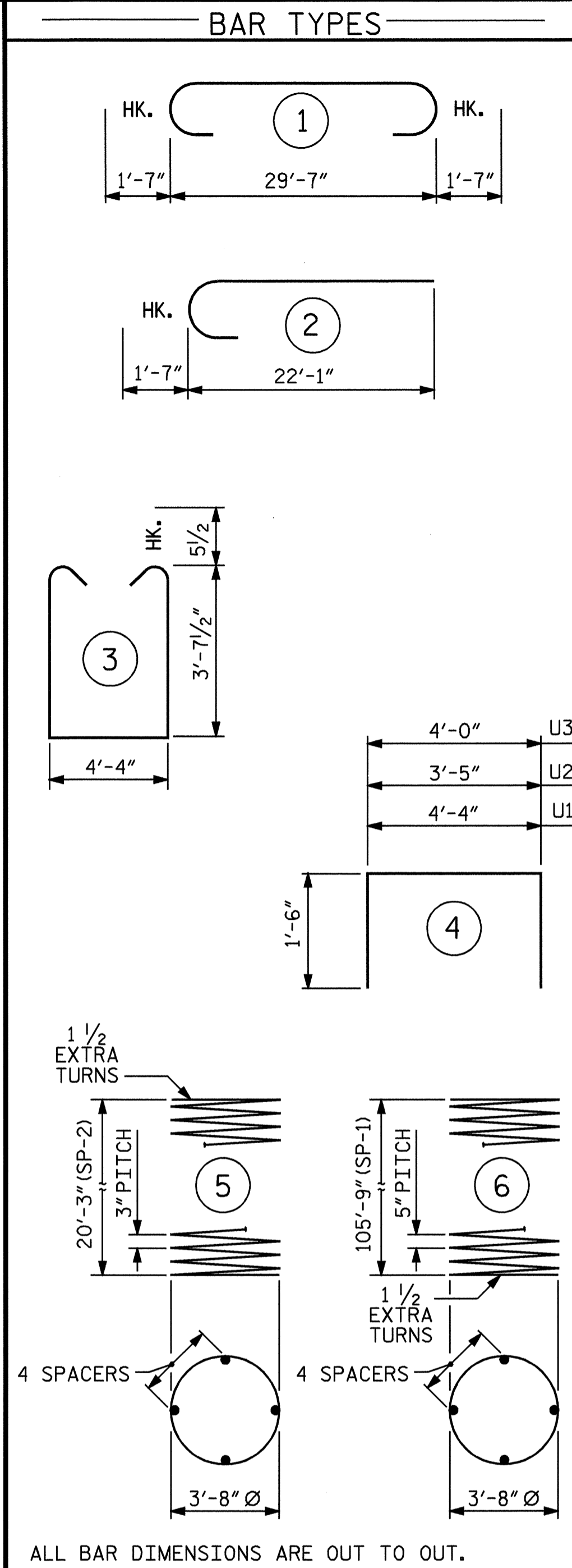
**PLAN OF COLUMNS AND DRILLED PIERS**  
(DIM. & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN AND DRILLED PIER)



**SECTION A-A**



**END VIEW**



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

**BILL OF MATERIAL**

**BENT #1**

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	11	1	32'-9"	1392
B2	8	11	STR	29'-8"	1261
B3	6	5	STR	29'-8"	186
M1	144	11	STR	43'-7"	33344
S1	46	5	3	12'-6"	600
U1	28	4	4	7'-4"	137
U2	8	4	4	6'-5"	34
U3	6	4	4	7'-0"	28
V1	48	11	2	23'-8"	6036

REINFORCING STEEL 43018 LBS

SP-1	2	*	6	2901'-1"	6052
SP-2	2	*	5	939'-10"	1256

SPIRAL COLUMN REINFORCING STEEL 7308

CLASS A CONCRETE BREAKDOWN			CU. YD.	WEIGHT
POUR #3 CAP			21.1	
POUR #2 COLUMNS			18.6	
<b>TOTAL CLASS A CONCRETE</b>			<b>39.7</b>	

DRILLED PIERS  
DRILLED PIER CONCRETE  
POUR #1 DRILLED PIERS CU. YD. 124.9

4'-6" Ø DRILLED PIERS  
LIN. FT. 212.00

CSL TUBES  
LIN. FT. 868

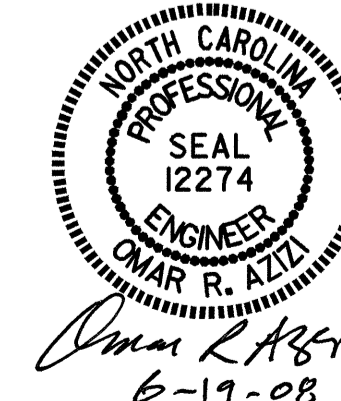
CROSSHOLE SONIC LOGGING  
EA. 1

PROJECT NO. B-3684  
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STATION: 38+88.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE  
BENT #1



Omar R. Azizi  
6-19-08

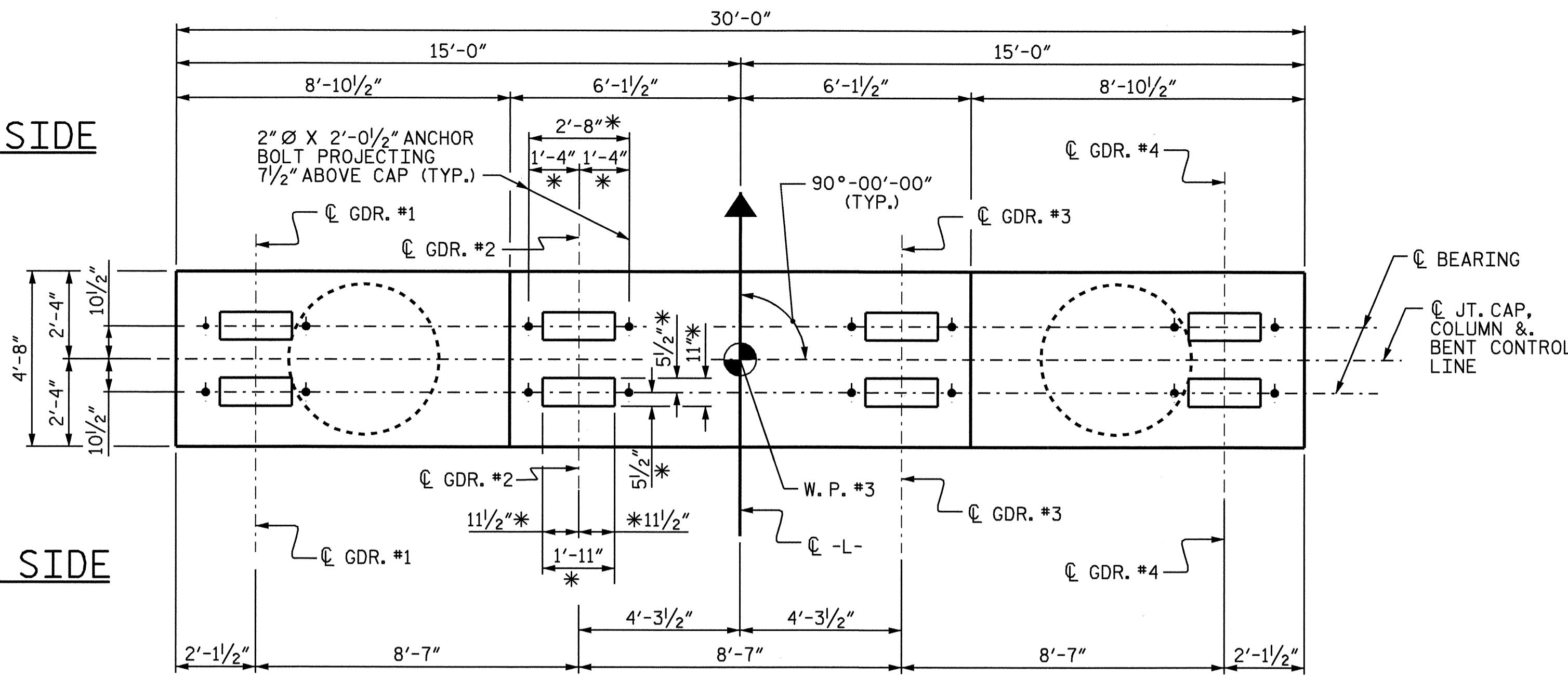
DRAWN BY: PEGGY ADKINS DATE: 4-08  
CHECKED BY: O. R. AZIZI DATE: 4-08

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-42
1			3			TOTAL SHEETS
2			4			67



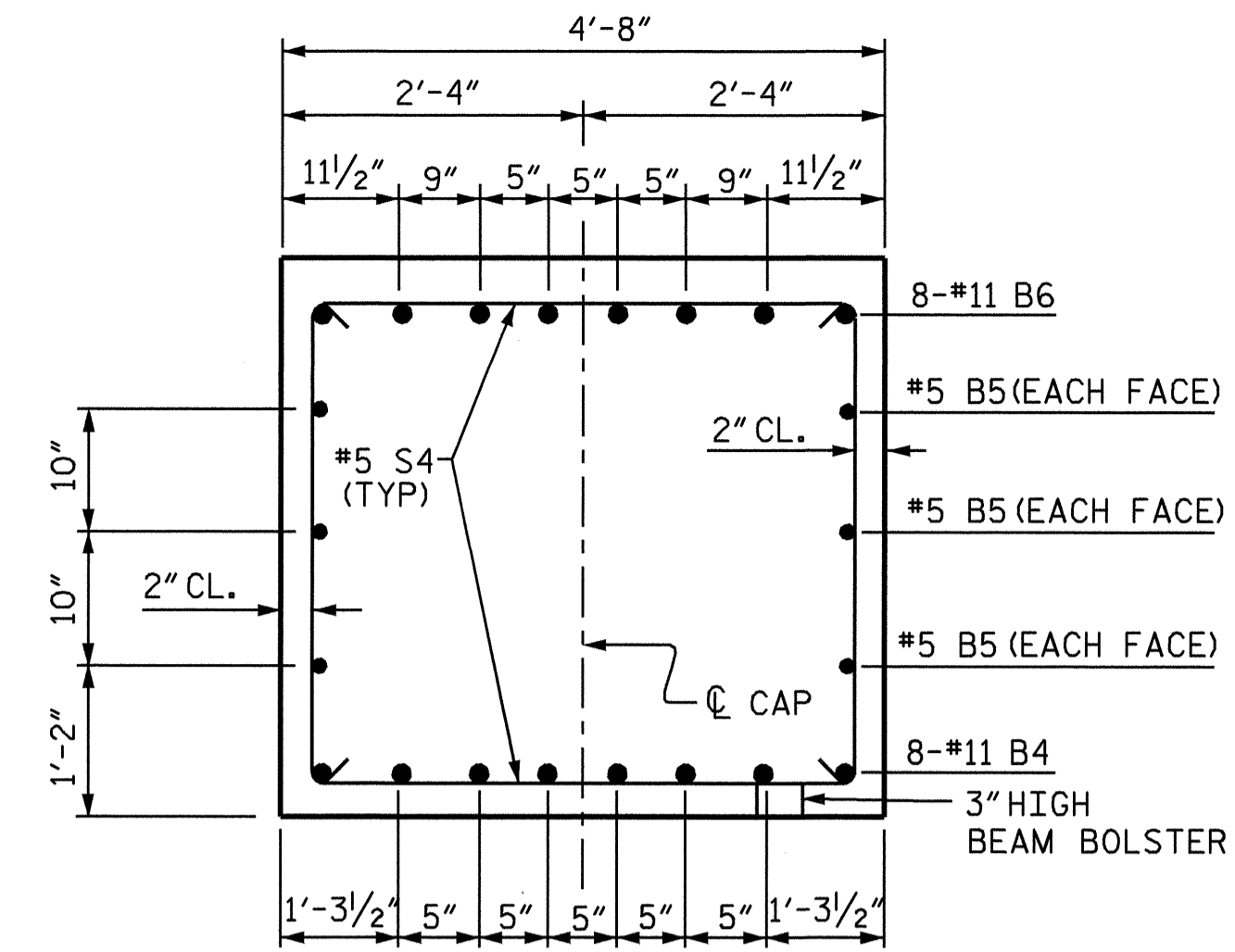
FAR SIDE

NEAR SIDE



\* DIMENSIONS FOR BRG. PADS AND ANCHOR BOLTS ARE TYP. FOR EACH GDR.

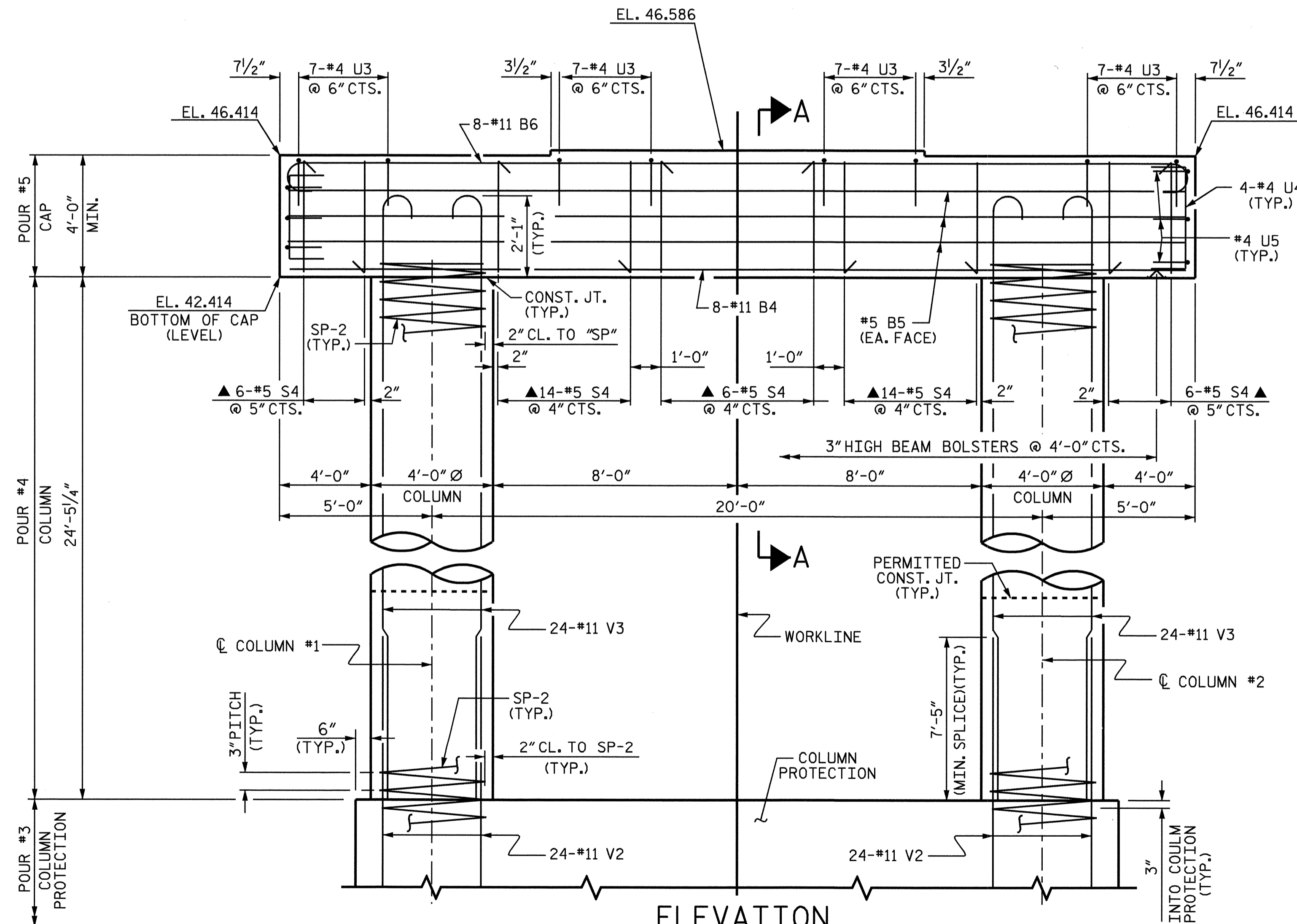
PLAN



SECTION A-A

NOTES

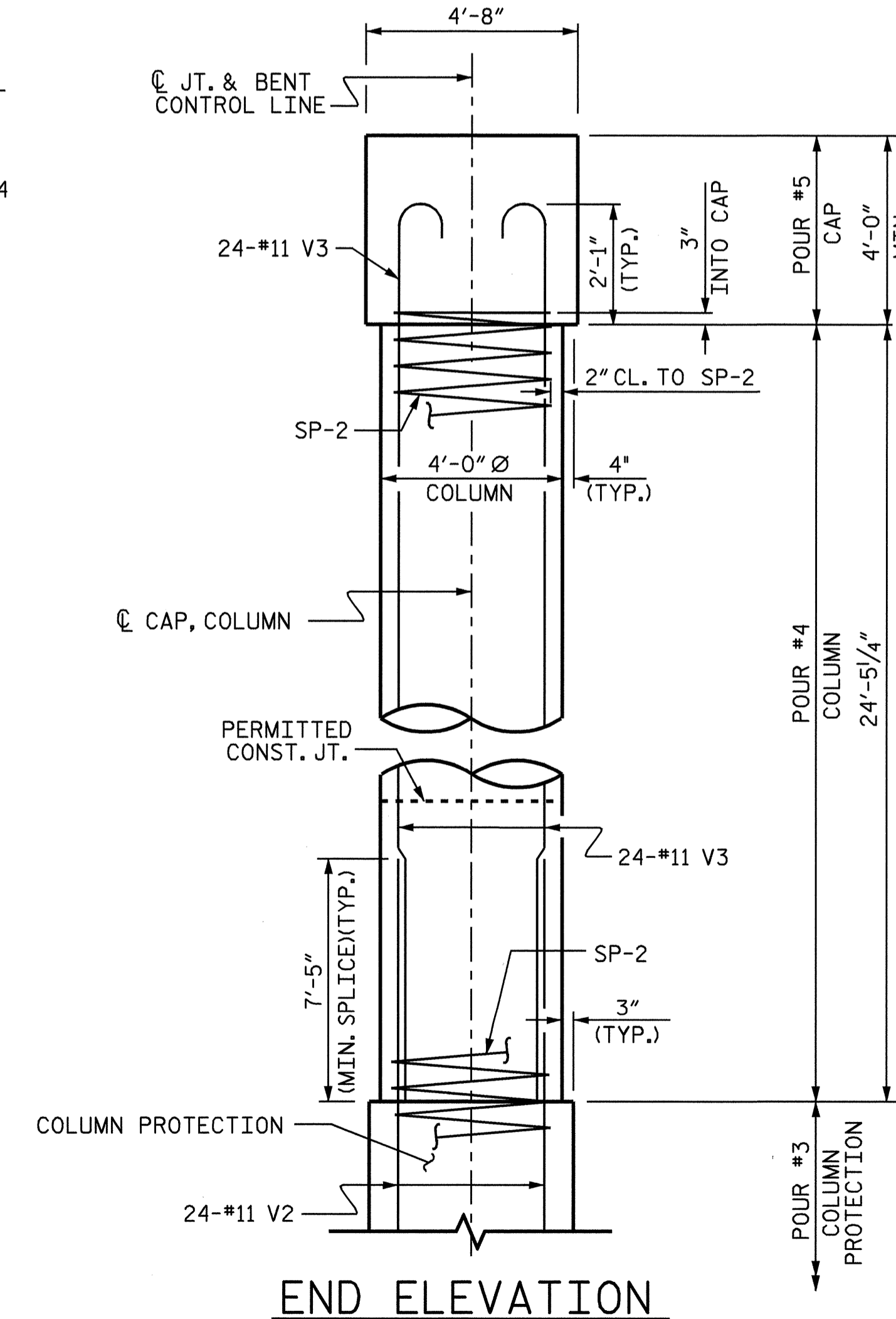
- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
- ALL STEEL IN THE COLUMNS AND DRILLED PIER IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL AND SPIRAL COLUMN REINFORCING STEEL.
- THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE COLUMN IS DETAILED WITH 3'-0" OF EXTRA LENGTH.
- MECHANICAL COUPLERS SHALL BE USED TO JOIN THE LONGITUDINAL REINFORCING STEEL IN THE DRILLED PIER. THE HEIGHT OF THE COUPLERS SHALL BE STAGGERED ON ALTERNATING BARS BY 2'-0".
- THE TOP SURFACE AREAS OF THE BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
- THE FOOTING ELEVATIONS MAY BE ADJUSTED UPWARD BY UP TO 1'-8". THE "M" BAR PROVIDED IS OF SUFFICIENT LENGTH TO ACCOMMODATE THE CHANGE IN ELEVATION.
- THE EMBEDMENT OF THE M3 AND M4 BARS MAY BE REDUCED TO THE MINIMUM EMBEDMENT SHOWN ON PLANS.



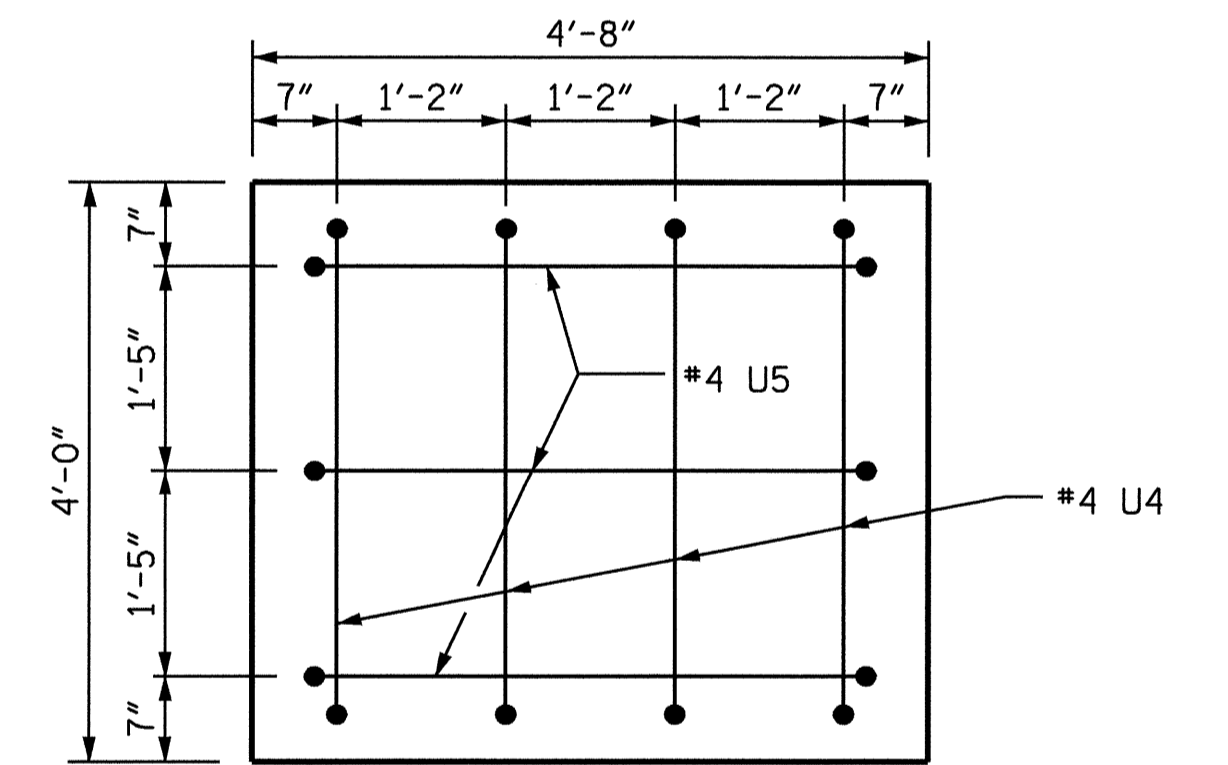
ELEVATION

(DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN AND DRILLED PIER)

▲ INVERT ALTERNATE STIRRUPS



END ELEVATION



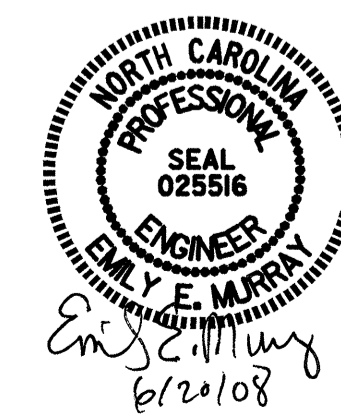
END VIEW  
(TYP. EACH END)

PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+94.00 -L-

SHEET 1 OF 4

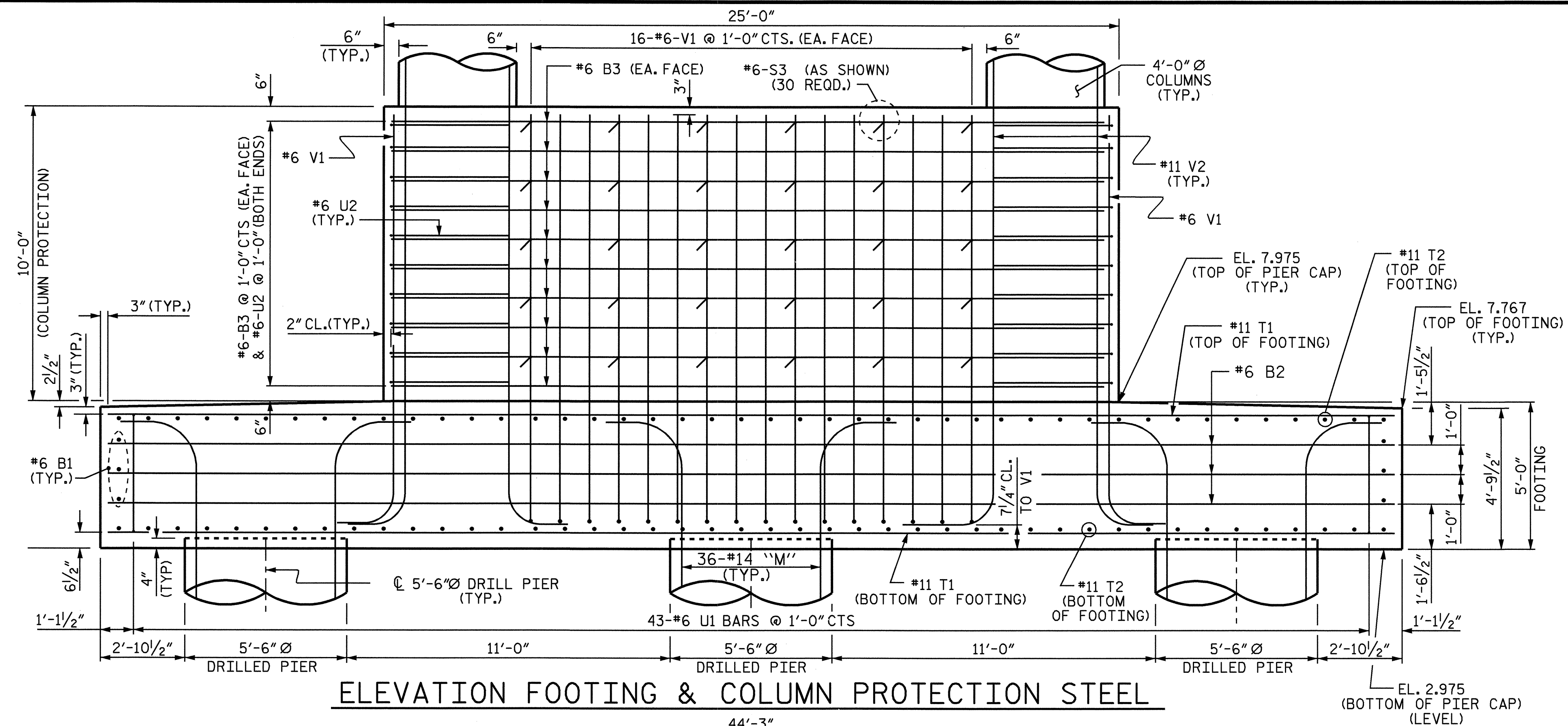
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE  
BENT #2

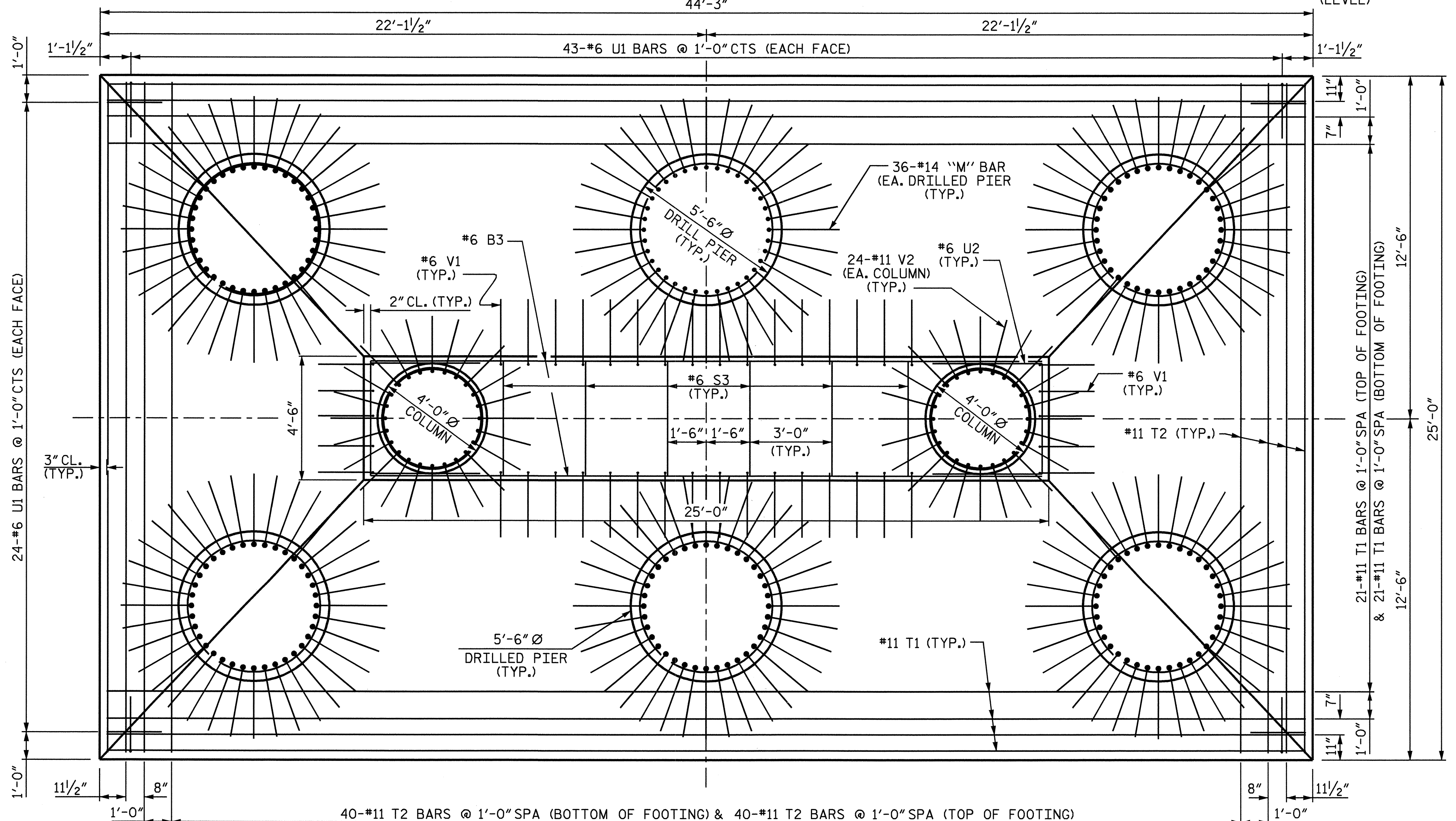


DRAWN BY: B.N. BARODAWALA DATE: 3-14-08  
CHECKED BY: PEGGY ADKINS DATE: 4-08

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-43
1			3			TOTAL SHEETS 67
2			4			



ELEVATION FOOTING & COLUMN PROTECTION STEEL



PLAN OF FOOTING STEEL

DRAWN BY : B.N.BARODAWALA DATE : 3-14-08  
 CHECKED BY : PEGGY ADKINS DATE : 4-08

19-JUN-2008 11:16  
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 padkins

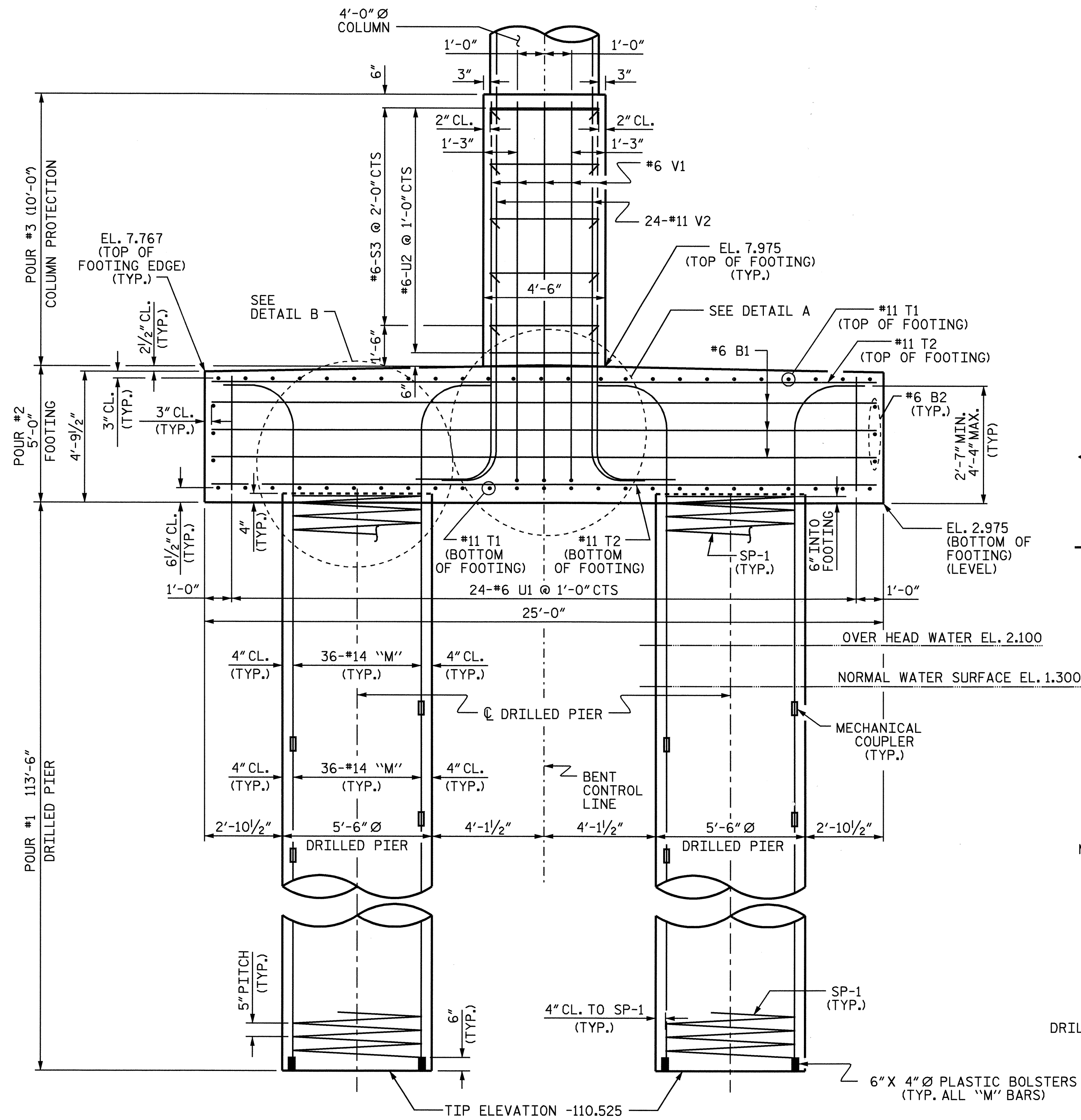
PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+94.000 -L-

SHEET 2 OF 4

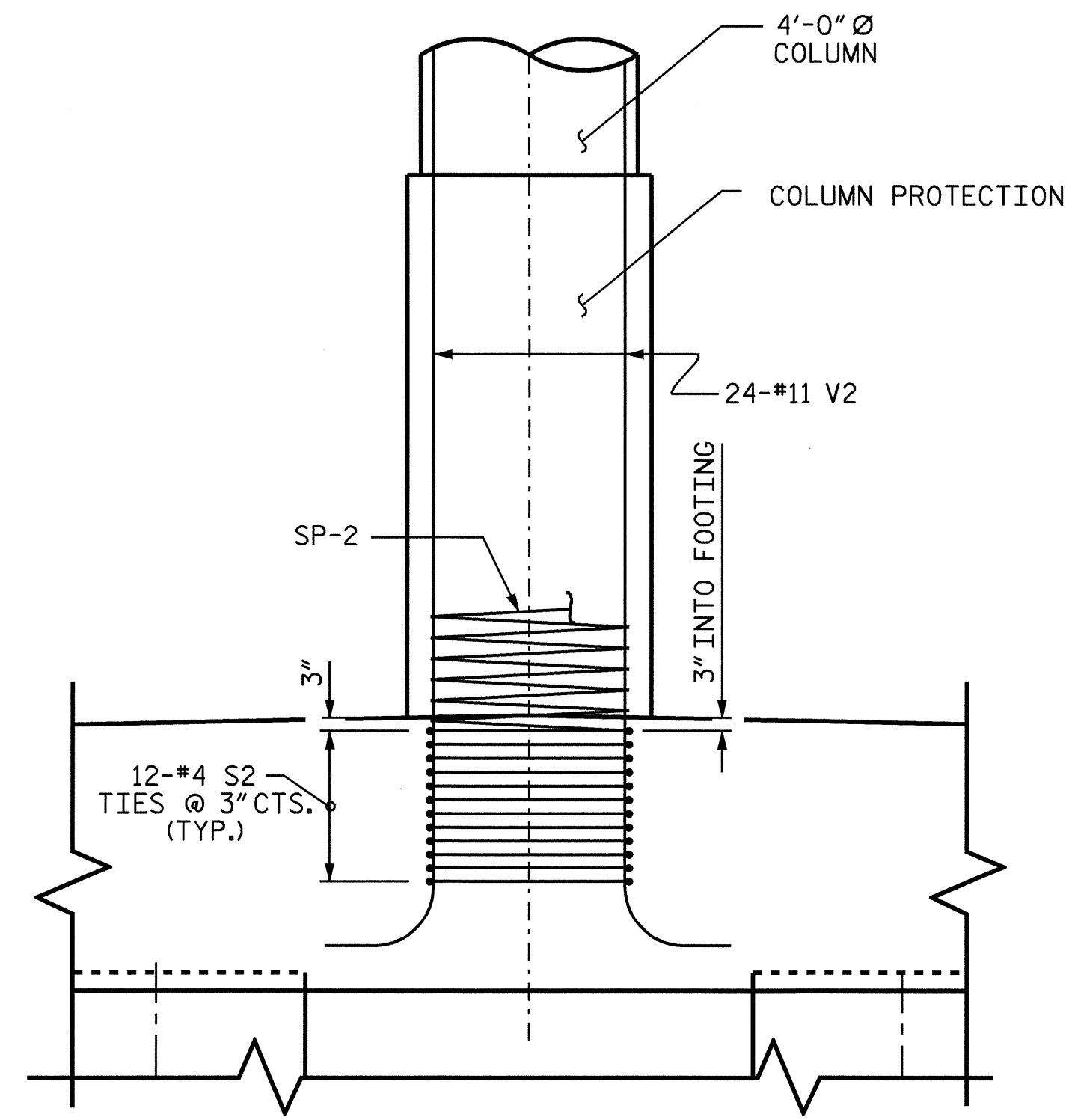
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BENT #2					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-44					TOTAL SHEETS 67



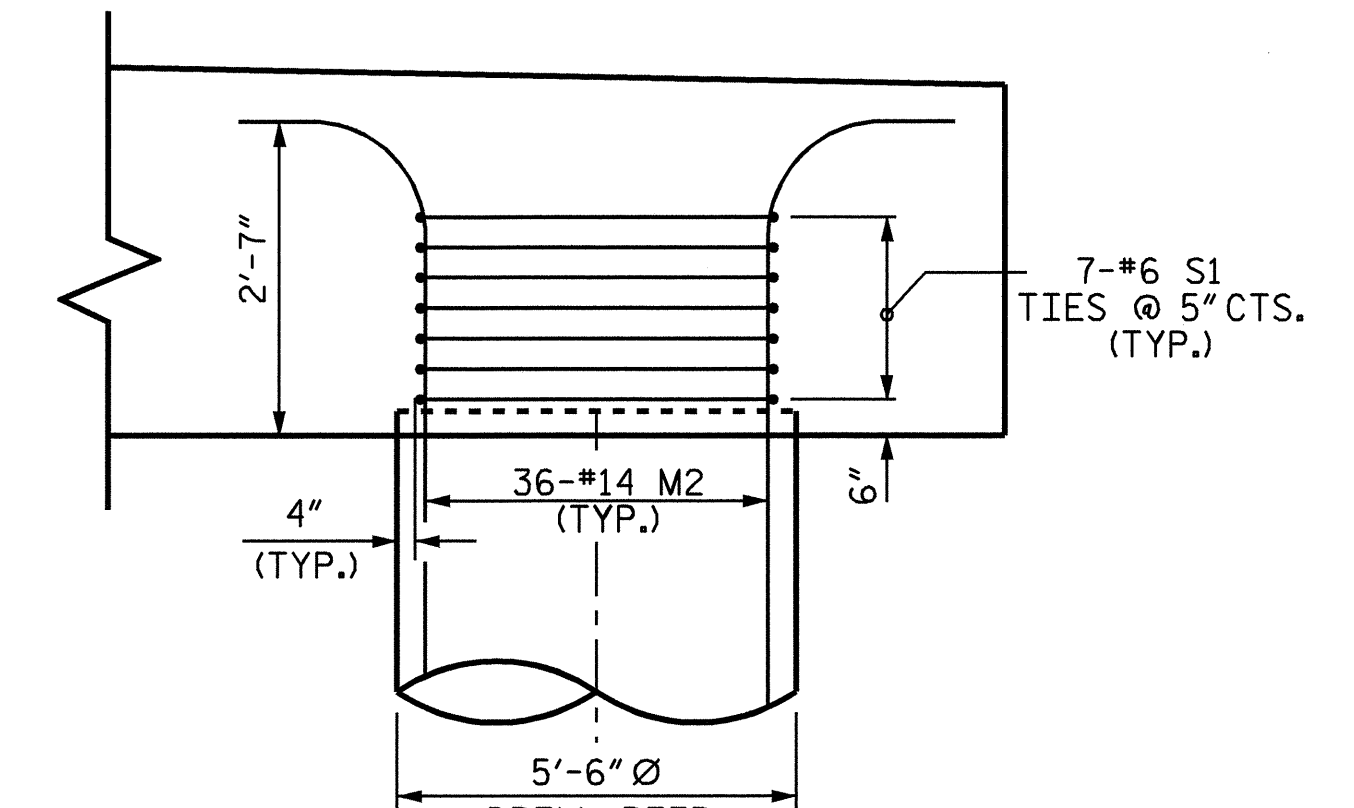




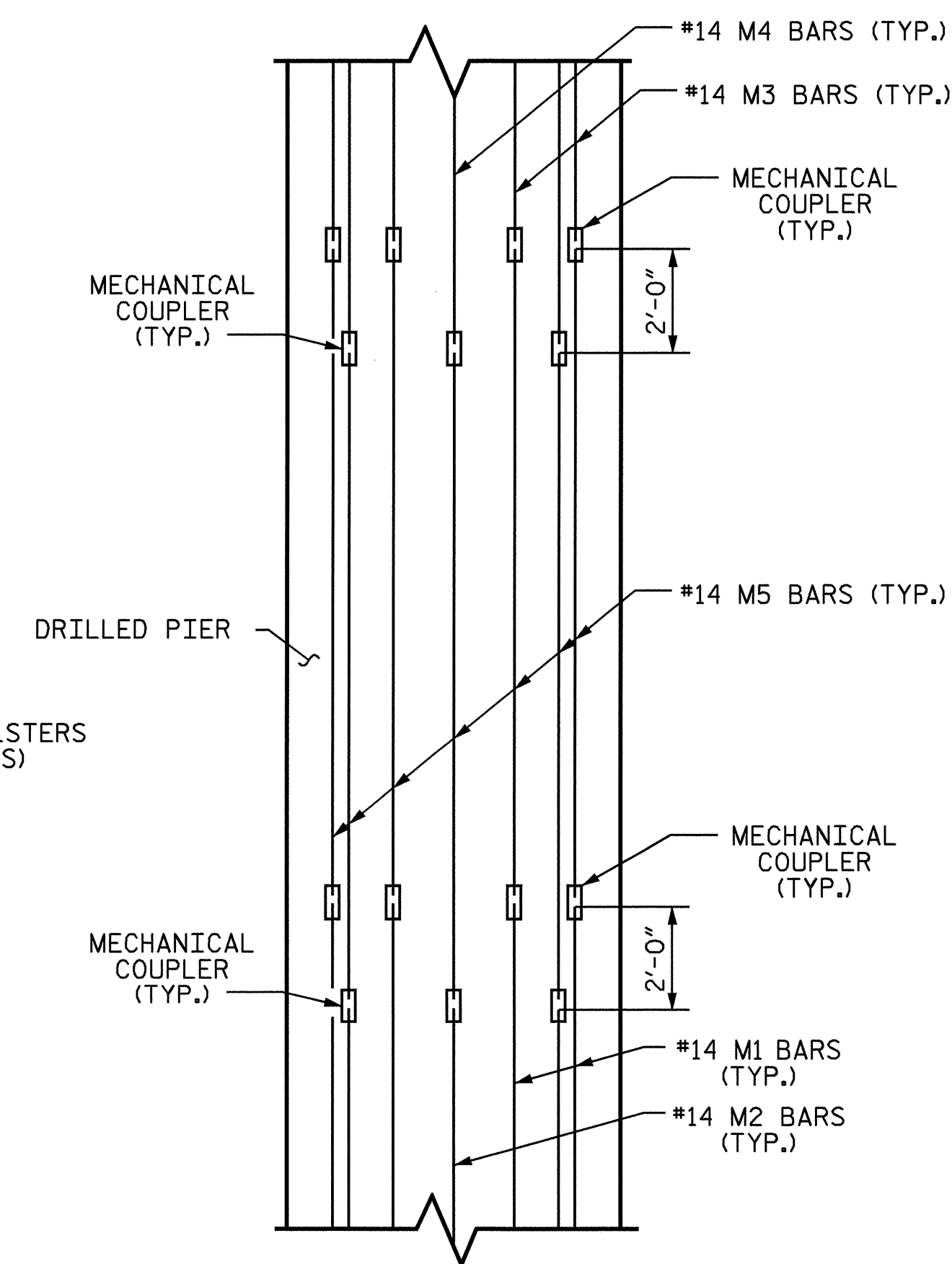
END ELEVATION



DETAIL A



DETAIL B



MECHANICAL COUPLER STAGGER DETAIL

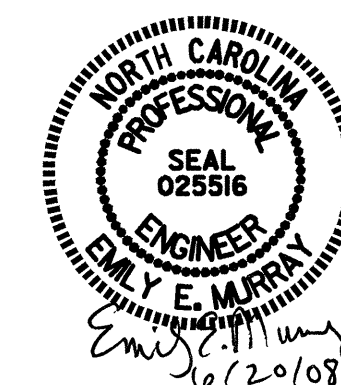
(ALTERNATE M1/M3 BARS WITH M2/M4 BARS)

PROJECT NO. B-3684  
 PITT COUNTY  
 STATION: 38+94.000 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT #2

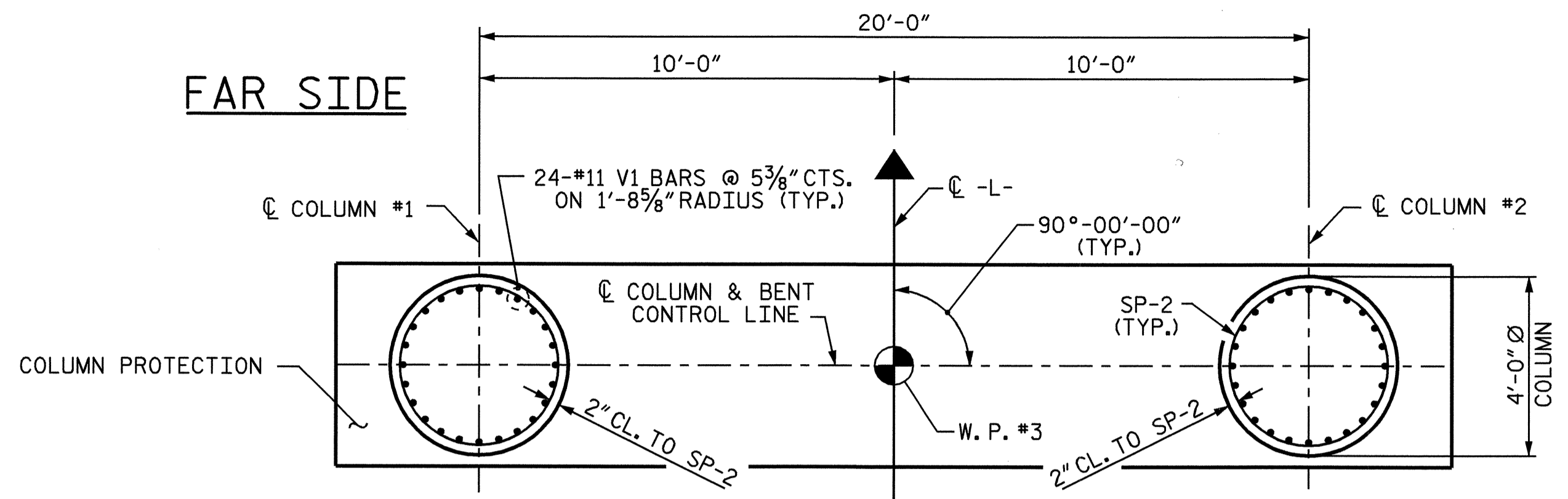


DRAWN BY: B.N.BARODAWALA DATE: 3-14-08  
 CHECKED BY: PEGGY ADKINS DATE: 4-08

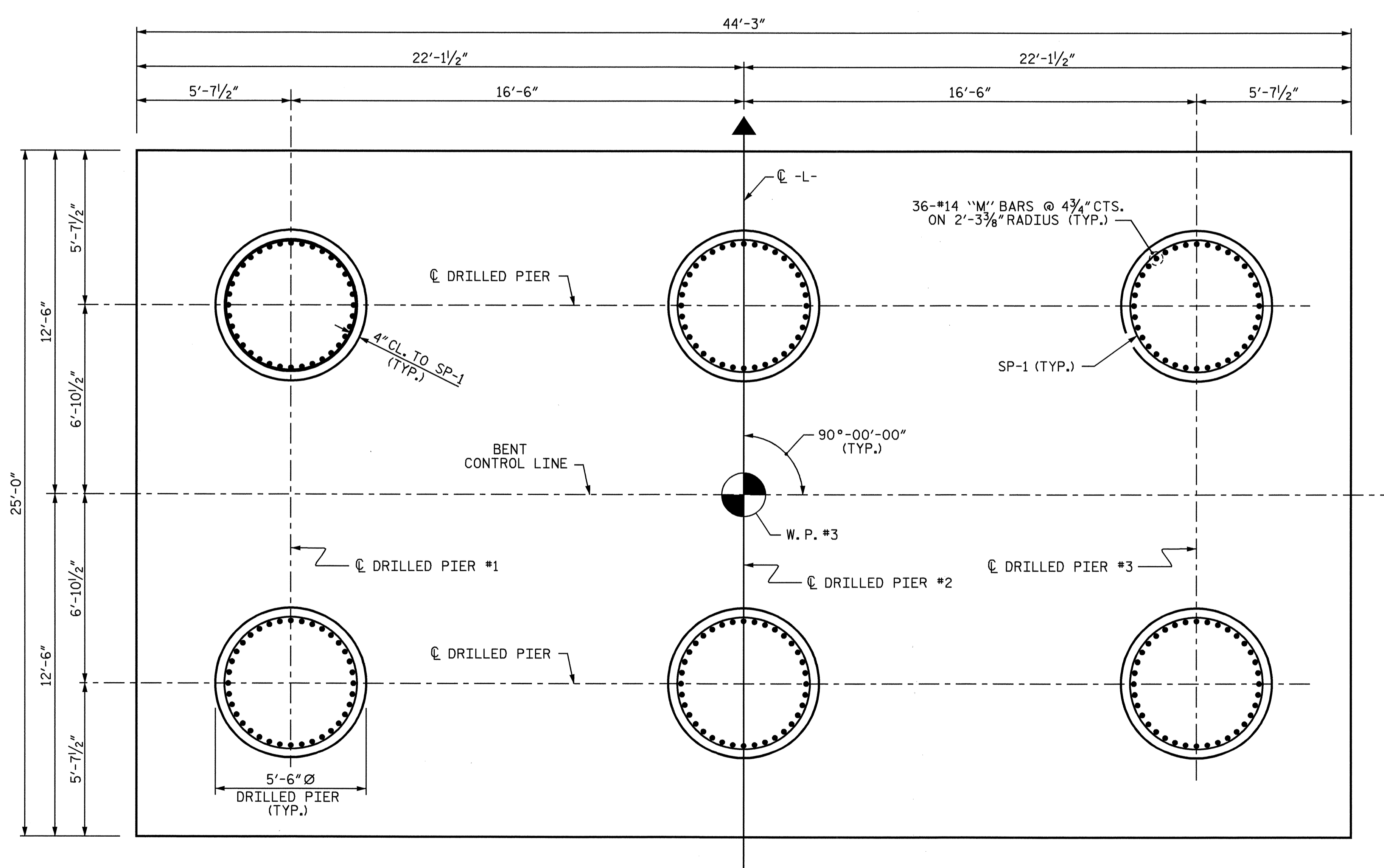
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 padkins

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-45
1			3			TOTAL SHEETS
2			4			67





**PLAN OF COLUMNS**  
(DIM. & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN)



**PLAN OF DRILLED PIER**  
(DIM. & REINFORCING STEEL ARE TYPICAL FOR EACH DRILLED PIER)

**BAR TYPES**

**BILL OF MATERIAL**

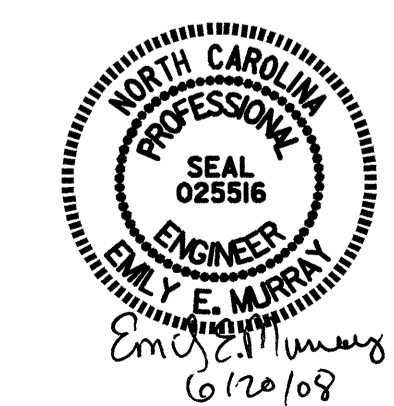
BENT #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	6	STR	24'-6"	221
B2	6	6	STR	43'-9"	394
B3	20	6	STR	24'-8"	741
B4	8	11	STR	29'-8"	1261
B5	6	5	STR	29'-8"	186
B6	8	11	1	32'-8"	1388
M1	108	14	STR	60'-0"	49572
M2	108	14	STR	58'-0"	47920
M3	108	14	4	22'-1"	18245
M4	108	14	4	24'-1"	19898
M5	216	14	STR	37'-9"	62378
S1	42	6	5	16'-6"	1041
S2	24	4	5	12'-9"	204
S3	30	6	6	5'-6"	248
S4	46	5	3	12'-6"	600
T1	54	11	STR	43'-9"	12552
T2	92	11	STR	24'-6"	11976
U1	134	6	7	8'-0"	1610
U2	20	6	7	12'-2"	365
U3	28	4	7	7'-4"	137
U4	8	4	7	6'-6"	35
U5	6	4	7	7'-2"	29
V1	42	6	4	16'-5"	1036
V2	48	11	4	23'-8"	6036
V3	48	11	2	28'-1"	7162
REINFORCING STEEL					245235 LBS
SP-1	6	**	8	4115'-10"	25757
SP-2	2	*	9	1603'-5"	2142
SPIRAL COLUMN REINFORCING STEEL					27899 LBS
CLASS A CONCRETE BREAKDOWN					
POUR #3 COLUMNS PROTECTION CU. YD. 41.7					
POUR #4 COLUMNS CU. YD. 22.7					
POUR #5 CAP CU. YD. 21.1					
TOTAL CLASS A CONCRETE CU. YD. 85.5					
CLASS AA CONCRETE BREAKDOWN					
POUR #2 FOOTING CU. YD. 204.9					
TOTAL CLASS AA CONCRETE CU. YD. 204.9					
DRILLED PIER CONCRETE BREAKDOWN					
POUR #1 DRILLED PIER CU. YD. 599.2					
5'-6" DRILLED PIERS LIN. FT. 681.0					
PERMANENT STEEL CASING FOR 5'-6" DRILLED PIER LIN. FT. 258.6					
CROSSHOLE SONIC LOGGING EA. 1					
CSL TUBES LIN. FT. 4176					
SID INSPECTION NO. 6					
SPT TESTING NO. 6					

ALL BAR DIMENSIONS ARE OUT TO OUT.

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

DRAWN BY: B.N. BARODAWALA DATE: 3-14-08  
CHECKED BY: PEGGY ADKINS DATE: 4-08

19-JUN-2008 11:16  
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PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+94.000 -L-

SHEET 4 OF 4

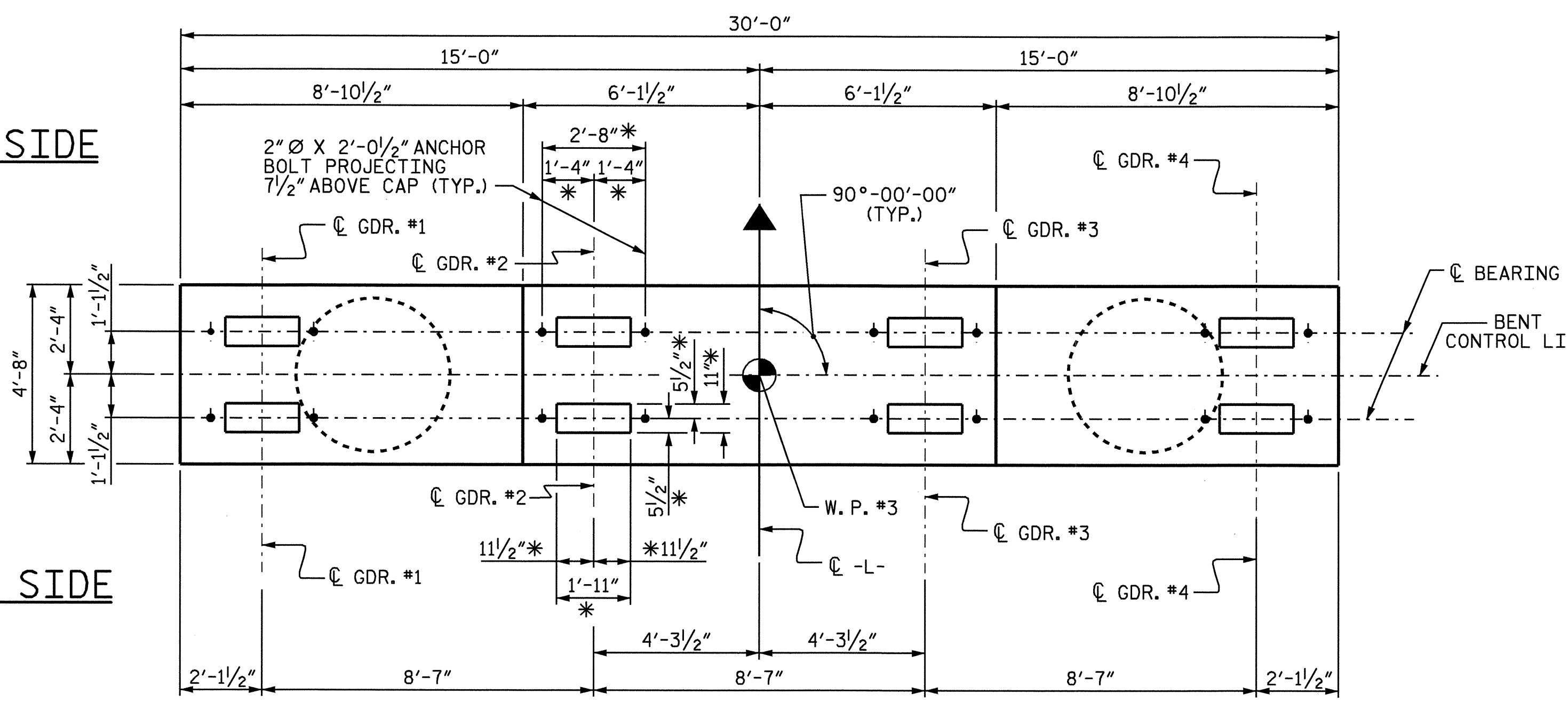
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**BENT #2**

REVISIONS						SHEET NO. S-46
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 67
2			4			

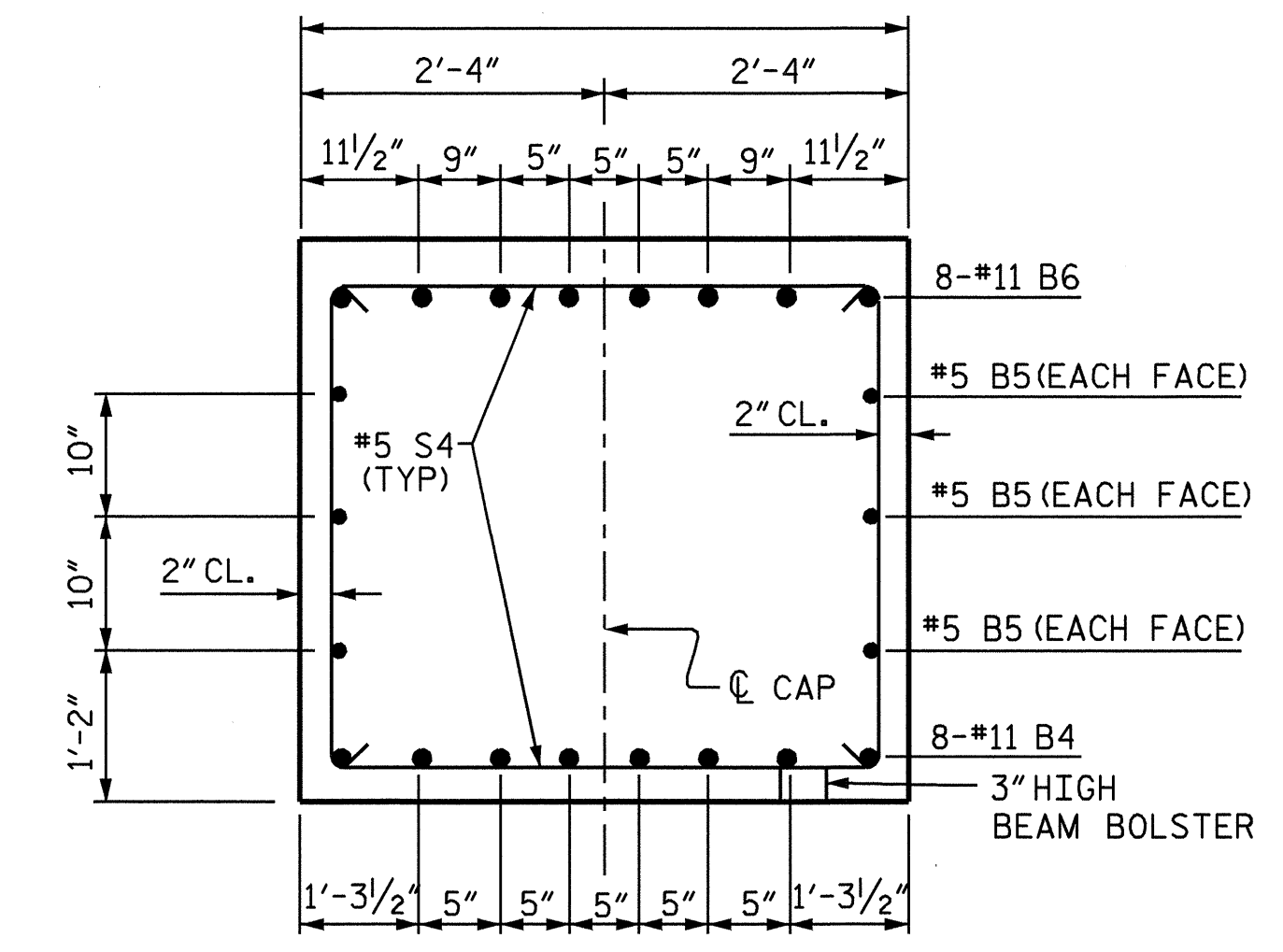
FAR SIDE

NEAR SIDE



\* DIMENSIONS FOR BRG. PADS AND ANCHOR BOLTS ARE TYP. FOR EACH GDR.

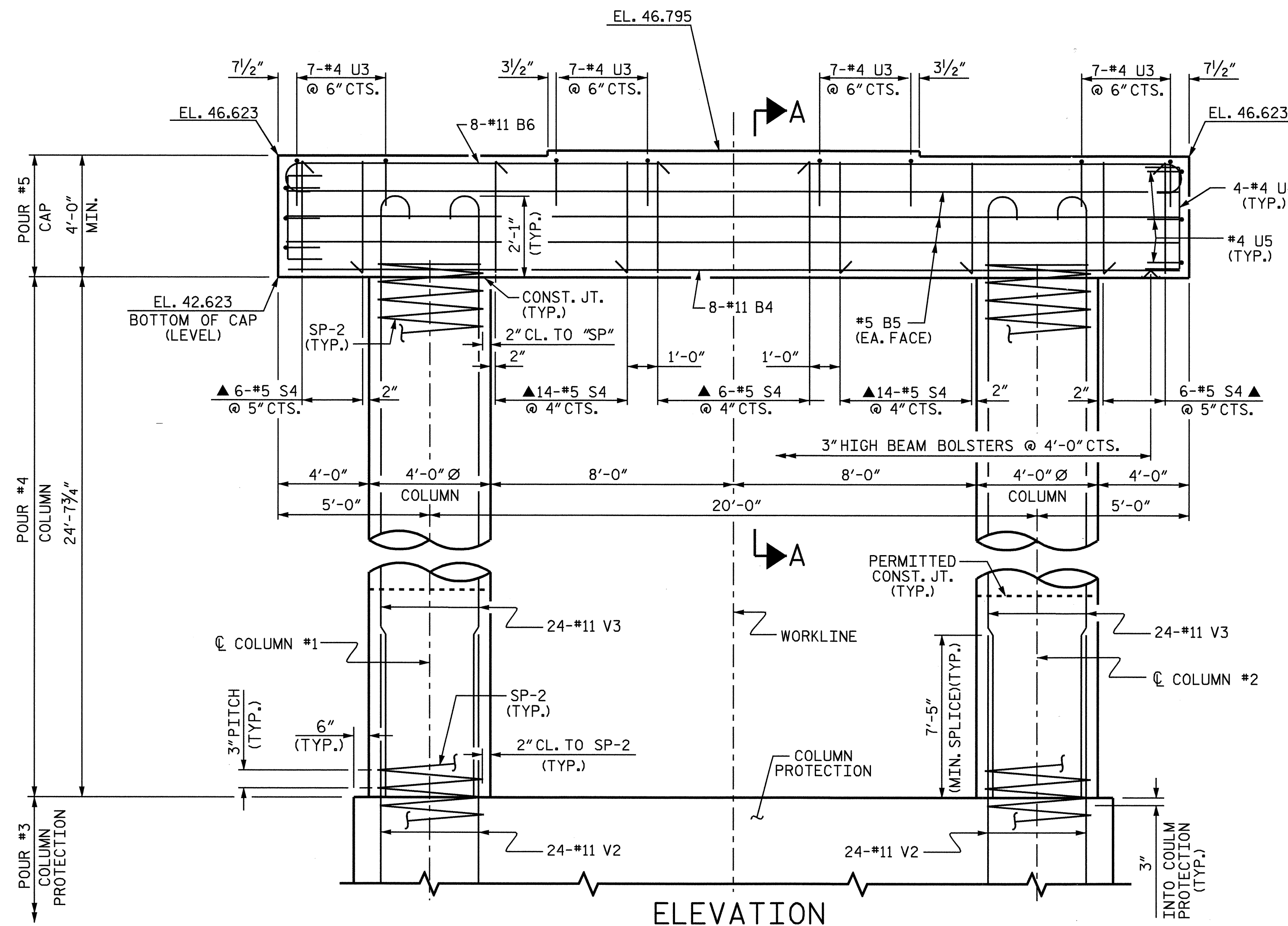
PLAN



SECTION A-A

NOTES

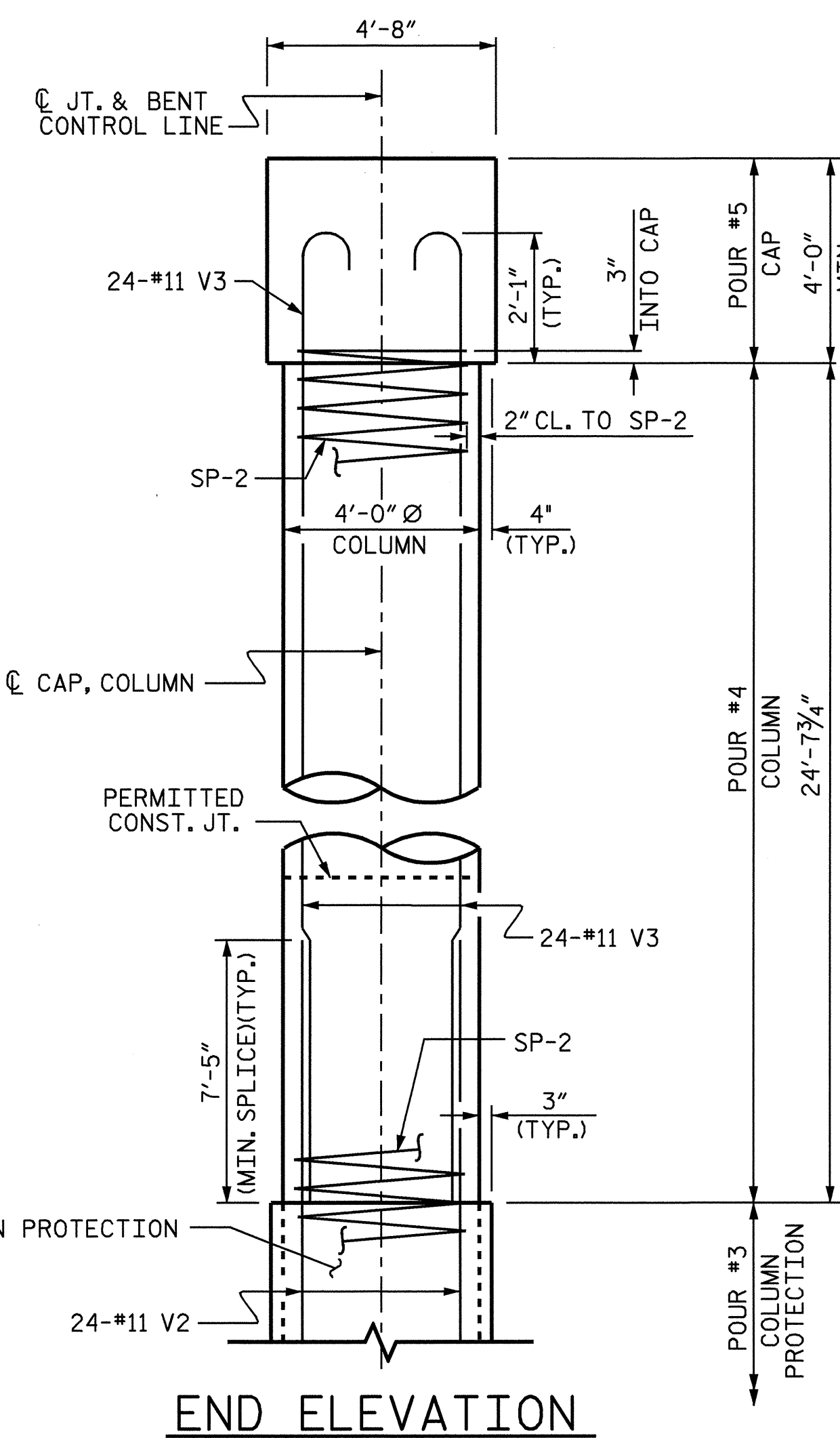
- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
- ALL STEEL IN THE COLUMNS AND DRILLED PIER IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL AND SPIRAL COLUMN REINFORCING STEEL.
- THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE COLUMN IS DETAILED WITH 3'-0" OF EXTRA LENGTH.
- MECHANICAL COUPLERS SHALL BE USED TO JOIN THE LONGITUDINAL REINFORCING STEEL IN THE DRILLED PIER. THE HEIGHT OF THE COUPLERS SHALL BE STAGGERED ON ALTERNATING BARS BY 2'-0".
- THE TOP SURFACE AREAS OF THE BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
- THE FOOTING ELEVATIONS MAY BE ADJUSTED UPWARD BY UP TO 1'-8". THE "M" BAR PROVIDED IS OF SUFFICIENT LENGTH TO ACCOMMODATE THE CHANGE IN ELEVATION.
- THE EMBEDMENT OF THE M3 AND M4 BARS MAY BE REDUCED TO THE MINIMUM EMBEDMENT SHOWN ON PLANS.



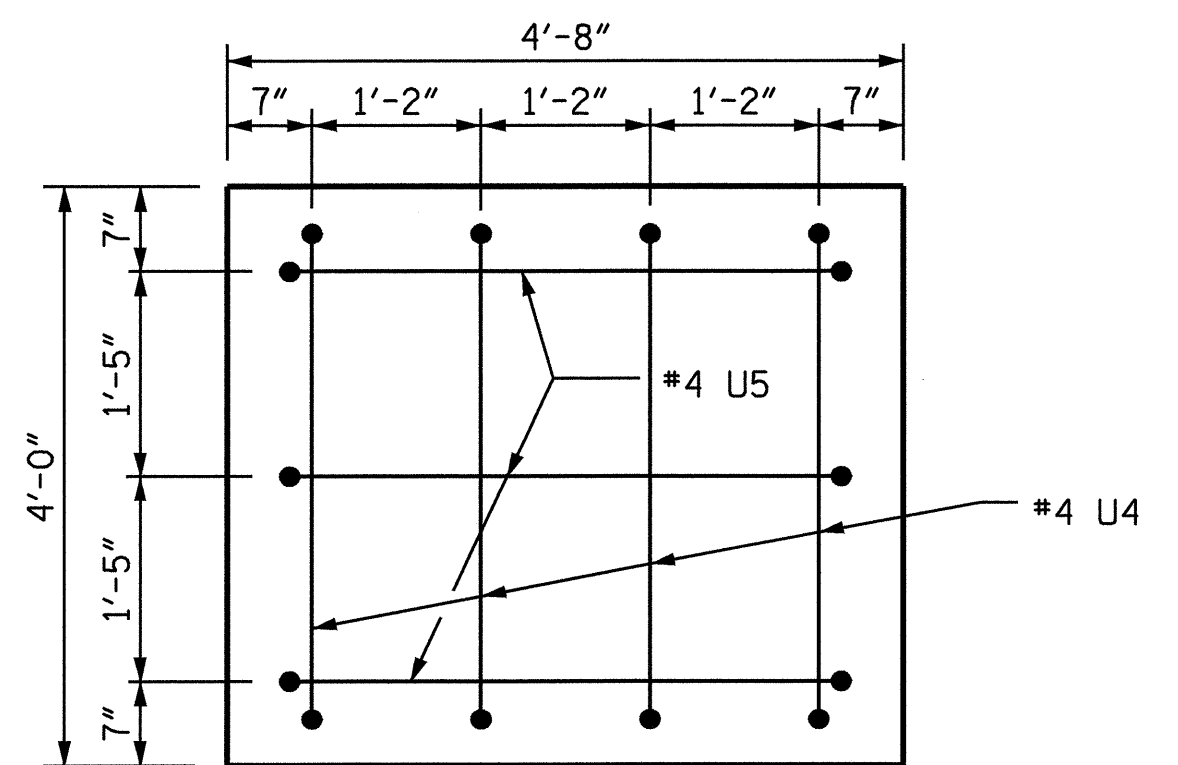
ELEVATION

(DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN AND DRILLED PIER)

▲ INVERT ALTERNATE STIRRUPS



END ELEVATION



END VIEW (TYP. EACH END)

DRAWN BY: B.N. BARODAWALA DATE: 3-14-08  
 CHECKED BY: PEGGY ADKINS DATE: 4-08

19-JUN-2008 11:16  
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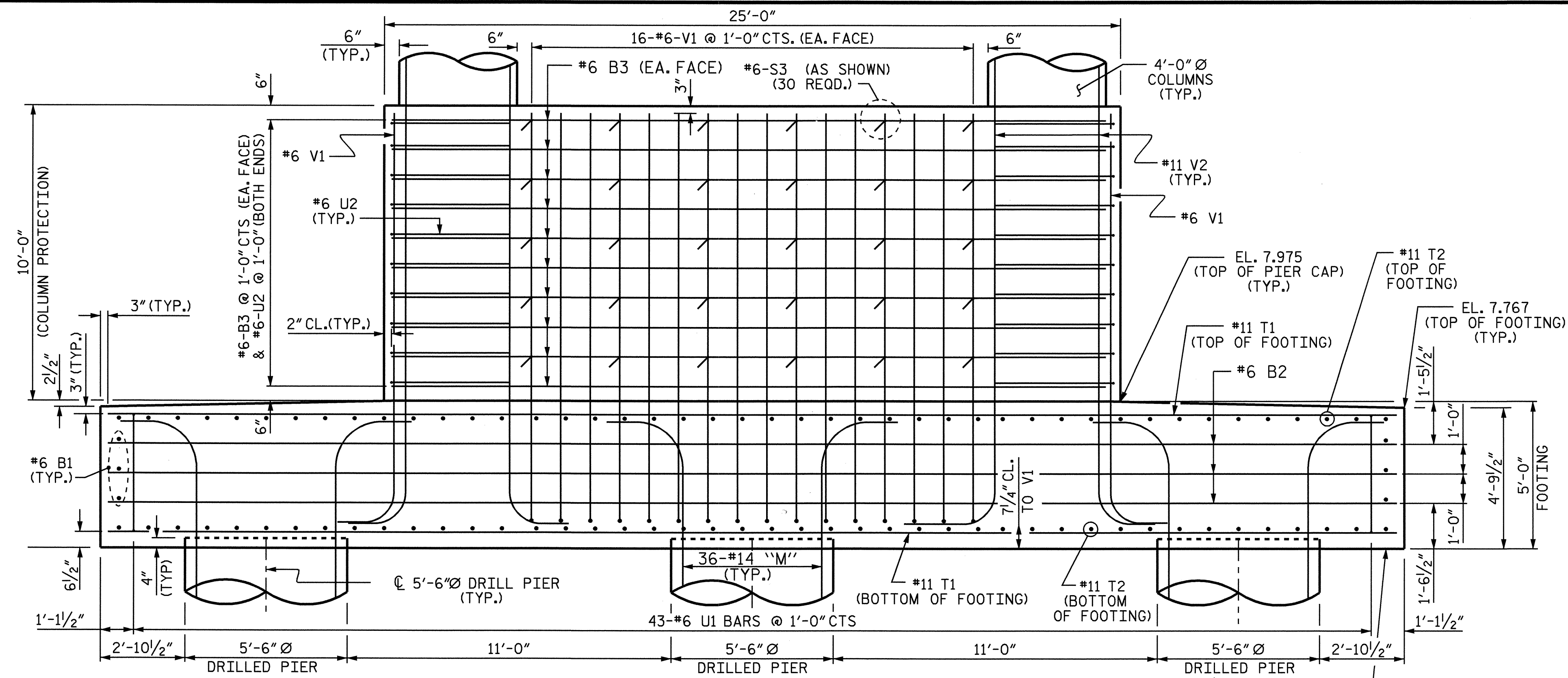


PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+94.00 -L-

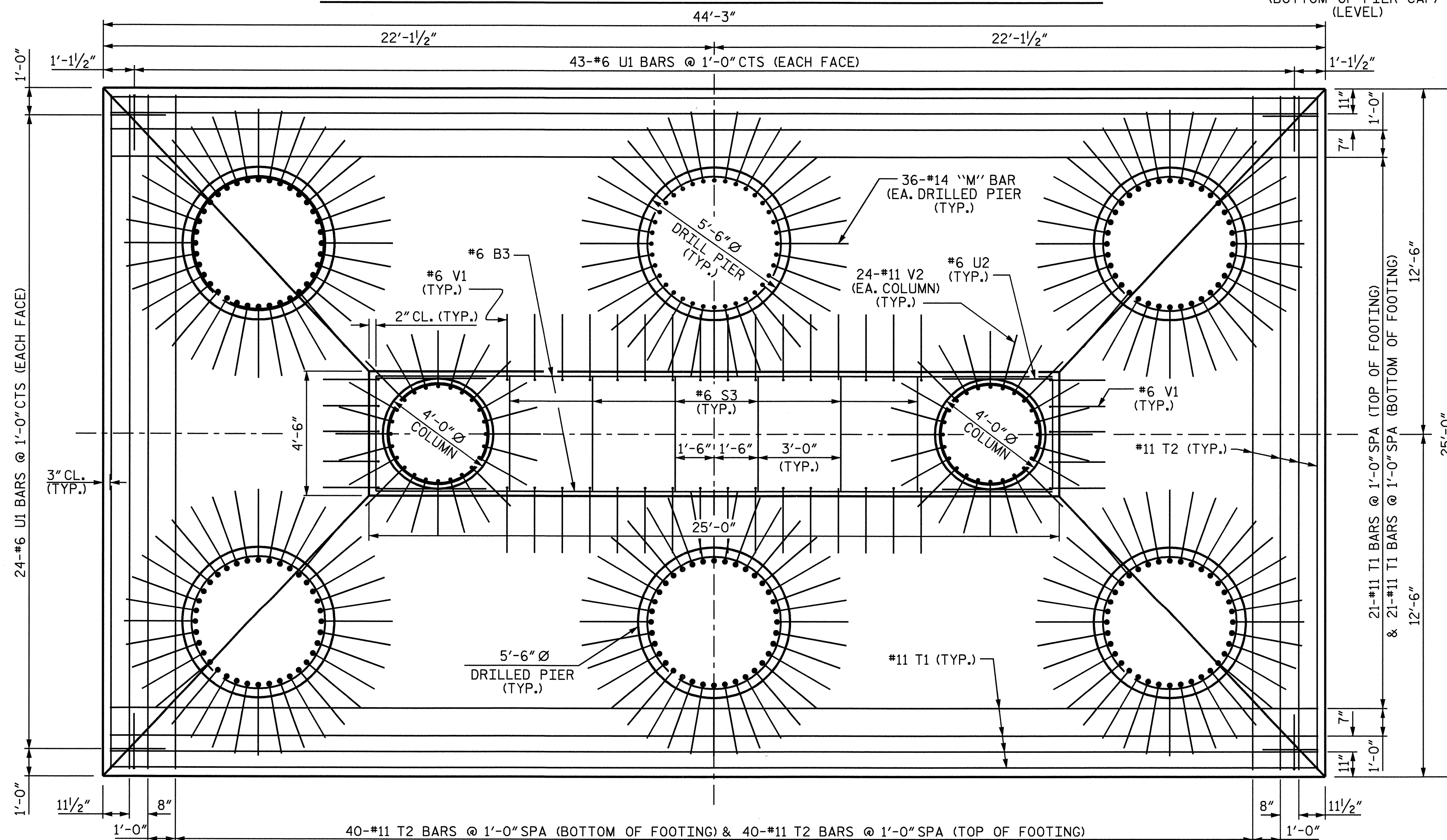
SHEET 1 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT #3					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-47					TOTAL SHEETS 67





ELEVATION FOOTING & COLUMN PROTECTION STEEL



PLAN OF FOOTING STEEL

DRAWN BY : B.N.BARODAWALA DATE : 3-14-08  
 CHECKED BY : PEGGY ADKINS DATE : 4-08

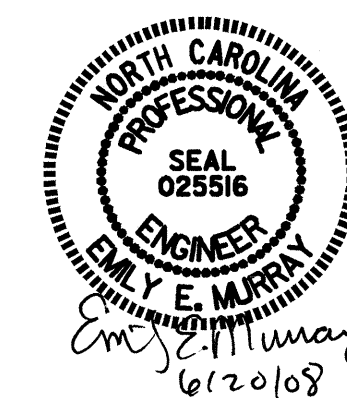
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PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+94.000 -L-

SHEET 2 OF 4

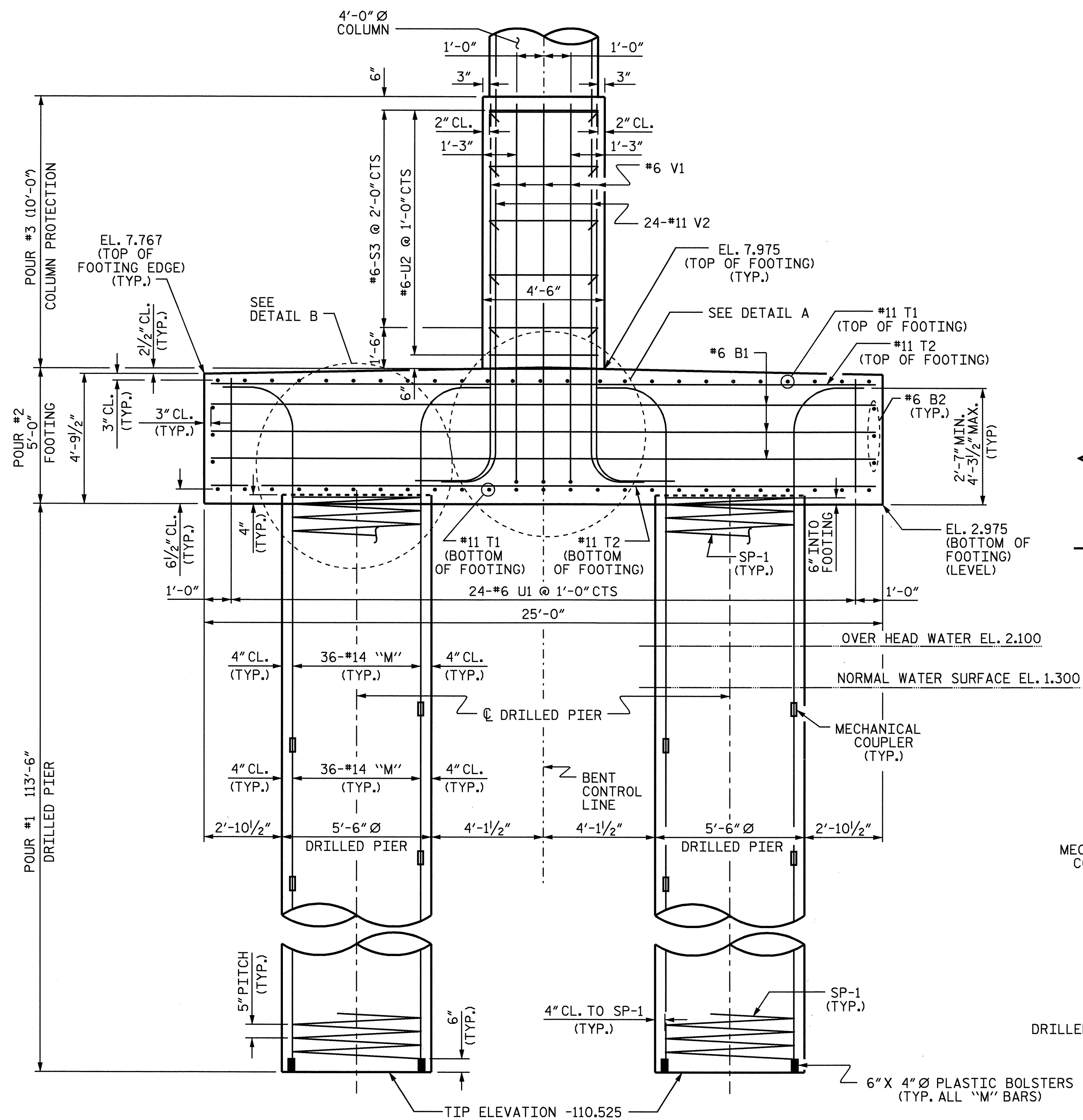
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT #3

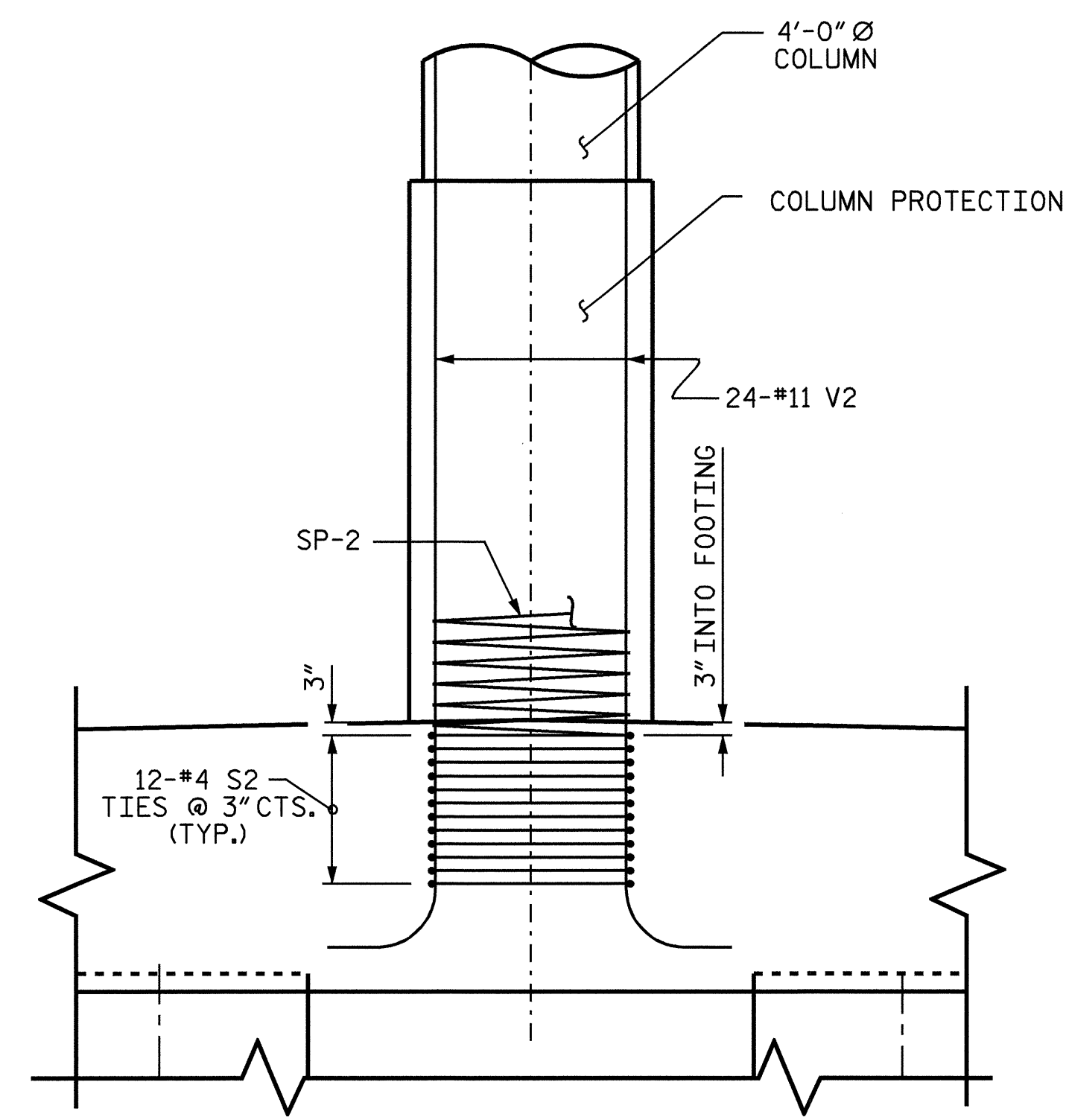


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-48
1			3			TOTAL SHEETS
2			4			67

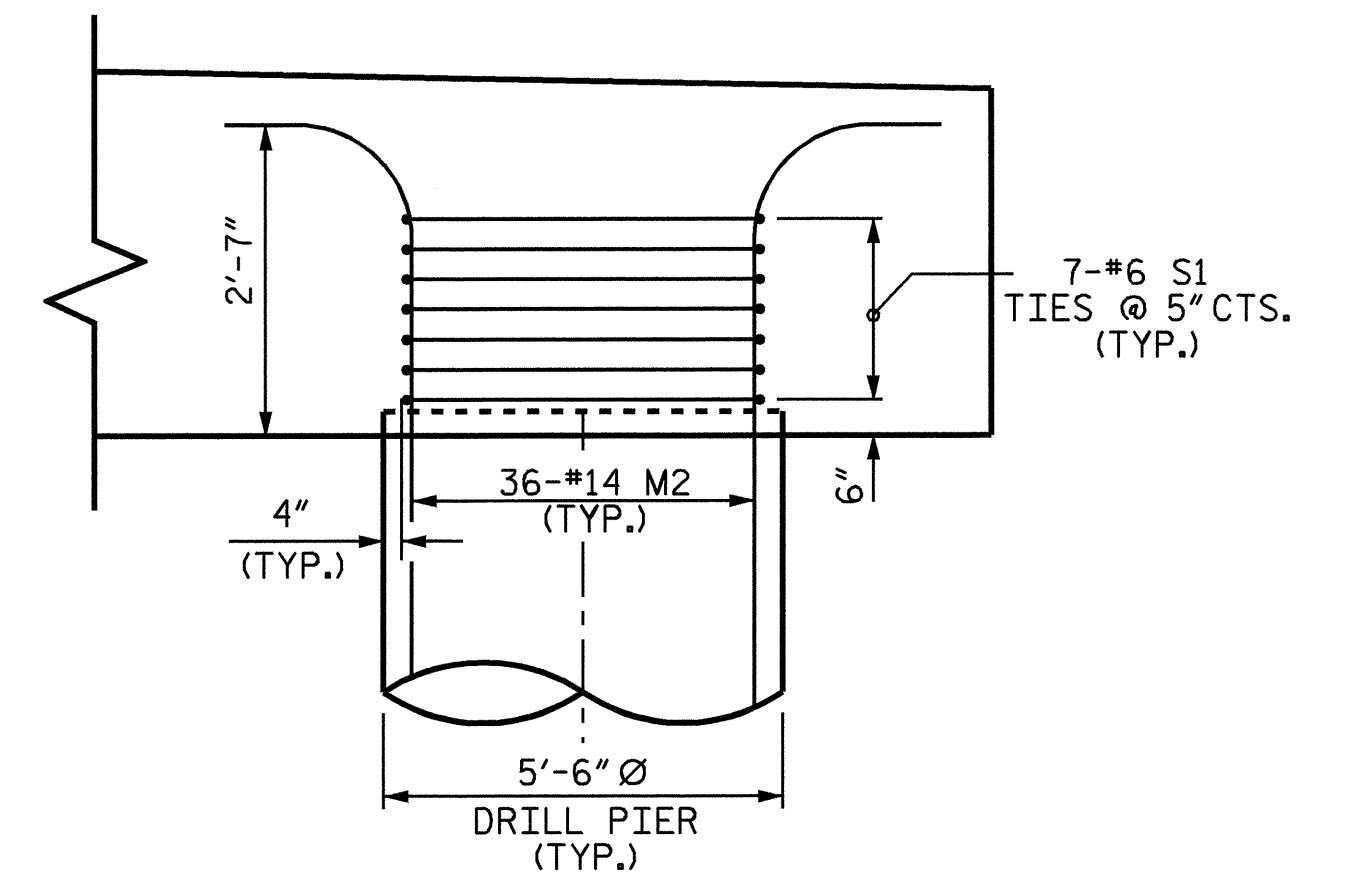




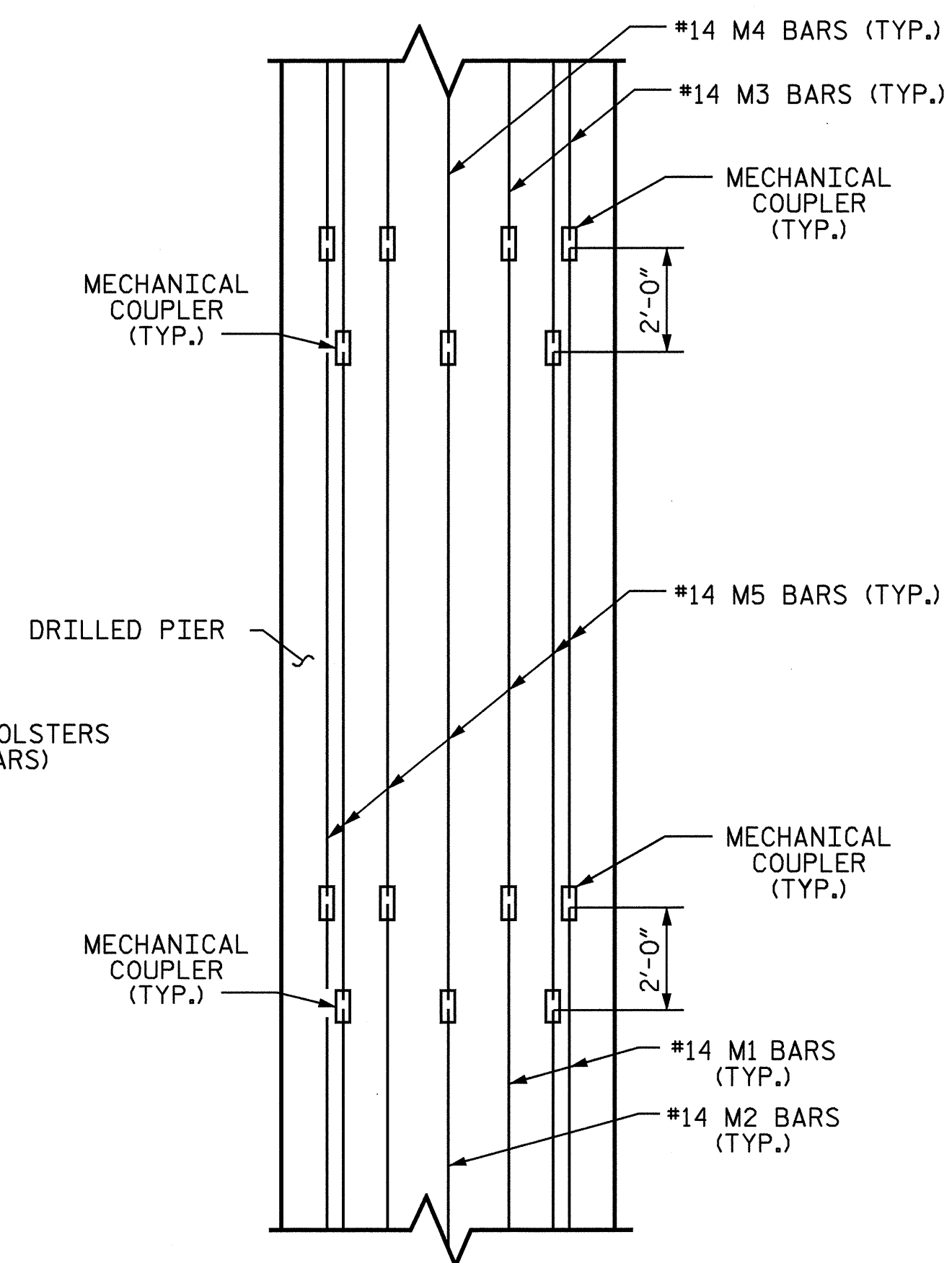
END ELEVATION



DETAIL A



DETAIL B



MECHANICAL COUPLER STAGGER DETAIL

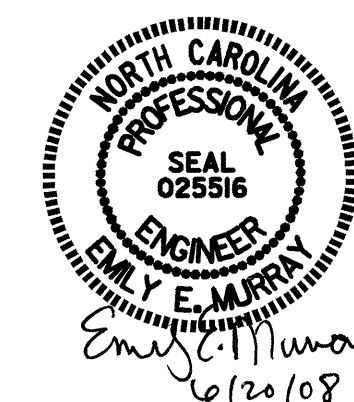
(ALTERNATE M1/M3 BARS WITH M2/M4 BARS)

PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+94.000 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

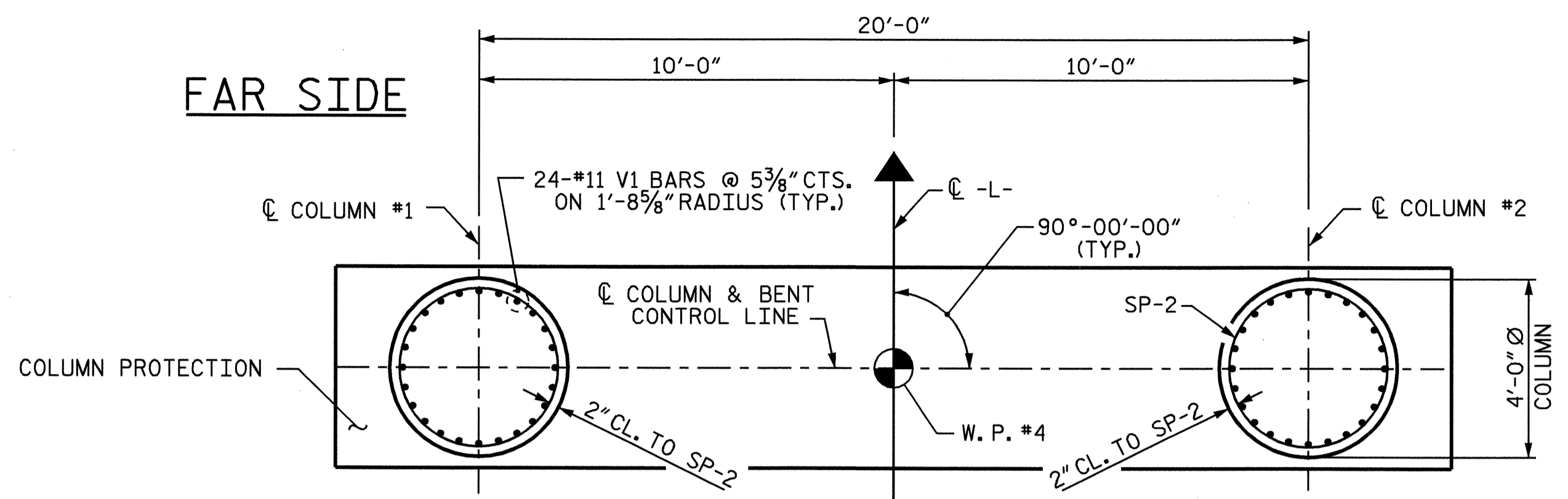
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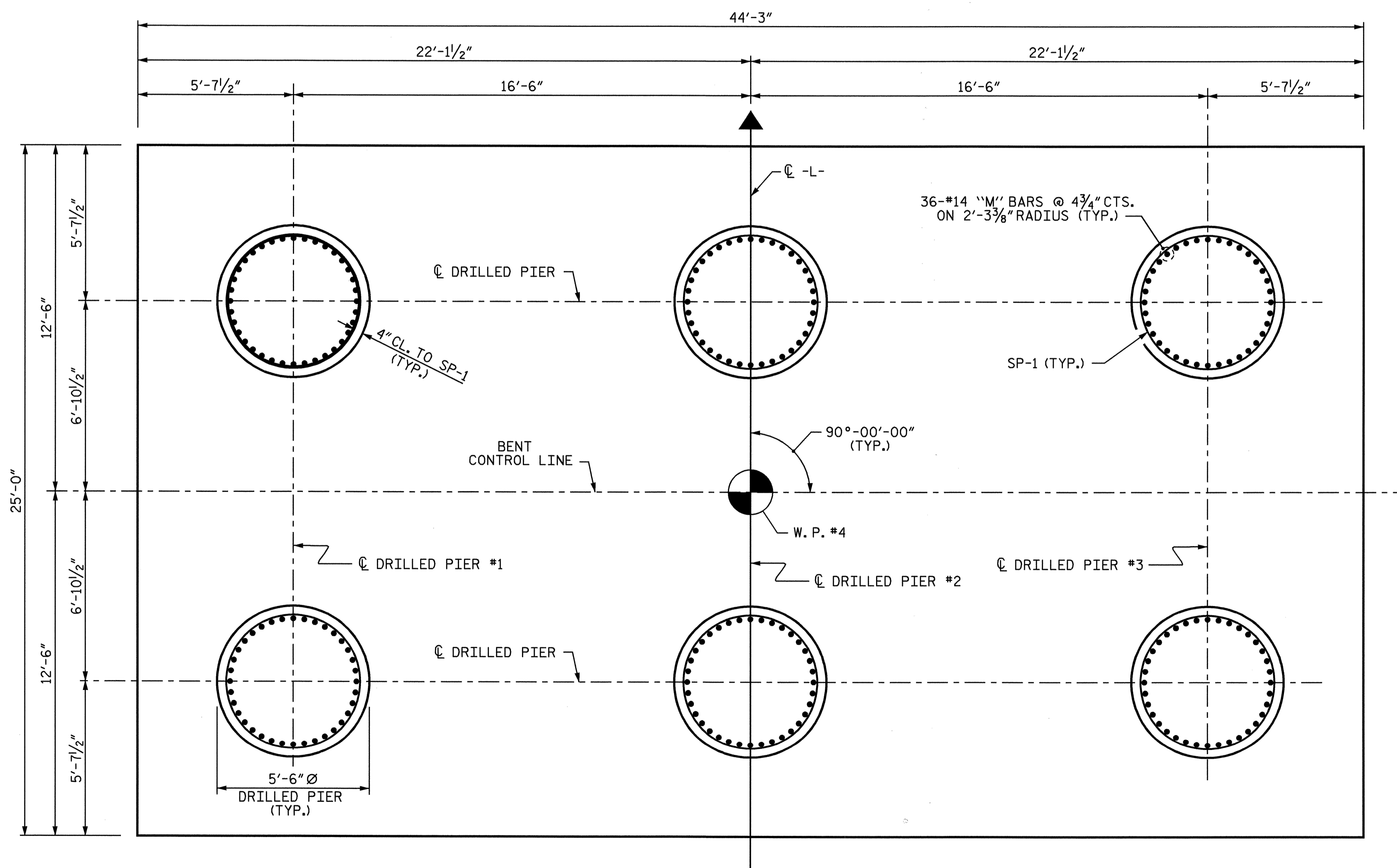
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-49
1			3			TOTAL SHEETS
2			4			67



**PLAN OF COLUMNS**  
(DIM. & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN)



**PLAN OF DRILLED PIER**  
(DIM. & REINFORCING STEEL ARE TYPICAL FOR EACH DRILLED PIER)

**BAR TYPES**

**BILL OF MATERIAL**

BENT #3					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	6	STR	24'-6"	221
B2	6	6	STR	43'-9"	394
B3	20	6	STR	24'-8"	741
B4	8	11	STR	29'-8"	1261
B5	6	5	STR	29'-8"	186
B6	8	11	1	32'-8"	1388
M1	108	14	STR	60'-0"	49572
M2	108	14	STR	58'-0"	47920
M3	108	14	4	22'-1"	18245
M4	108	14	4	24'-1"	19898
M5	216	14	STR	37'-9"	62378
S1	42	6	5	16'-6"	1041
S2	24	4	5	12'-9"	204
S3	30	6	6	5'-6"	248
S4	46	5	3	12'-6"	600
T1	54	11	STR	43'-9"	12552
T2	92	11	STR	24'-6"	11976
U1	134	6	7	8'-0"	1610
U2	20	6	7	12'-2"	365
U3	28	4	7	7'-4"	137
U4	8	4	7	6'-6"	35
U5	6	4	7	7'-2"	29
V1	42	6	4	16'-5"	1036
V2	48	11	4	23'-8"	6036
V3	48	11	2	28'-3"	7204
REINFORCING STEEL					245277 LBS
SP-1	6	**	8	4115'-10"	25757
SP-2	2	*	9	1612'-11"	2155
SPIRAL COLUMN REINFORCING STEEL					27912 LBS
CLASS A CONCRETE BREAKDOWN					
POUR #3 COLUMNS PROTECTION CU. YD. 41.7					
POUR #4 COLUMNS CU. YD. 23.6					
POUR #5 CAP CU. YD. 21.1					
TOTAL CLASS A CONCRETE CU. YD. 86.4					
CLASS AA CONCRETE BREAKDOWN					
POUR #2 FOOTING CU. YD. 204.9					
TOTAL CLASS AA CONCRETE CU. YD. 204.9					
DRILLED PIER CONCRETE BREAKDOWN					
POUR #1 DRILLED PIERS CU. YD. 599.2					
5'-6" Ø DRILLED PIERS LIN. FT. 681.0					
PERMANENT STEEL CASING FOR 5'-6" Ø DRILLED PIER LIN. FT. 258.6					
CROSSHOLE SONIC LOGGING EA. 1					
CSL TUBES LIN. FT. 4176					
SID INSPECTION NO. 6					
SPT TESTING NO. 6					

ALL BAR DIMENSIONS ARE OUT TO OUT.  
 \*\* THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.  
 \*\* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.

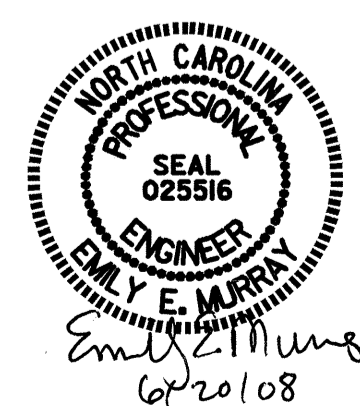
PROJECT NO. B-3684  
 PITT COUNTY  
 STATION: 38+94.000 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT #3**

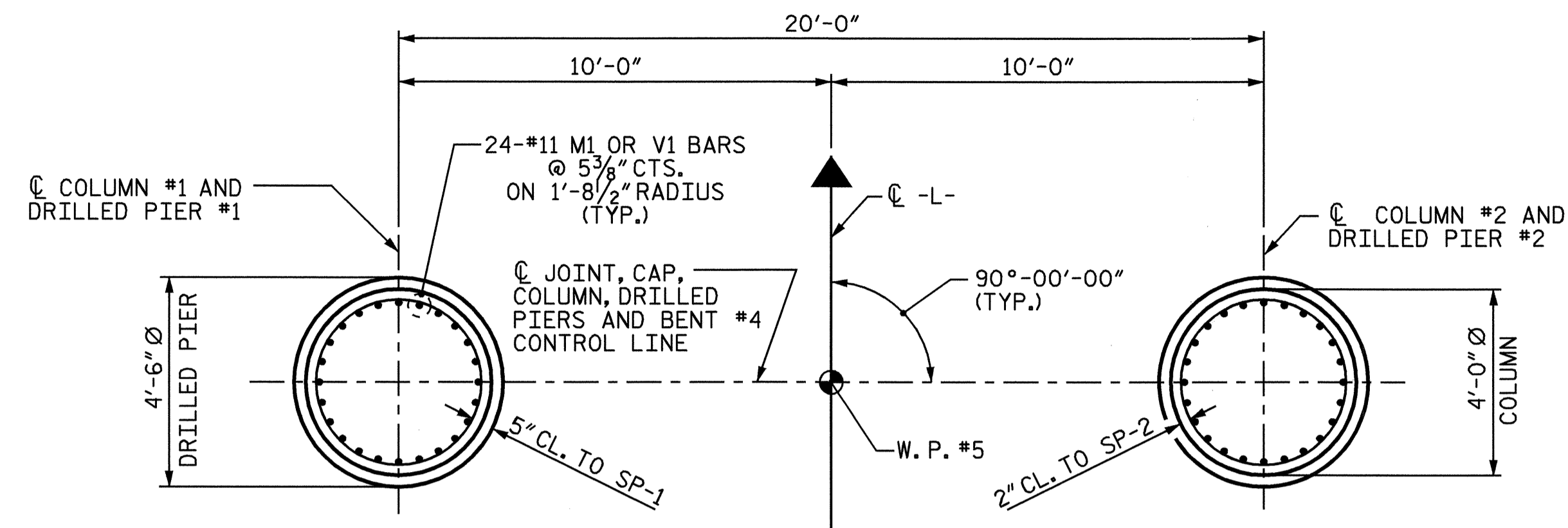
REVISIONS						SHEET NO. S-50
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 67
2			4			



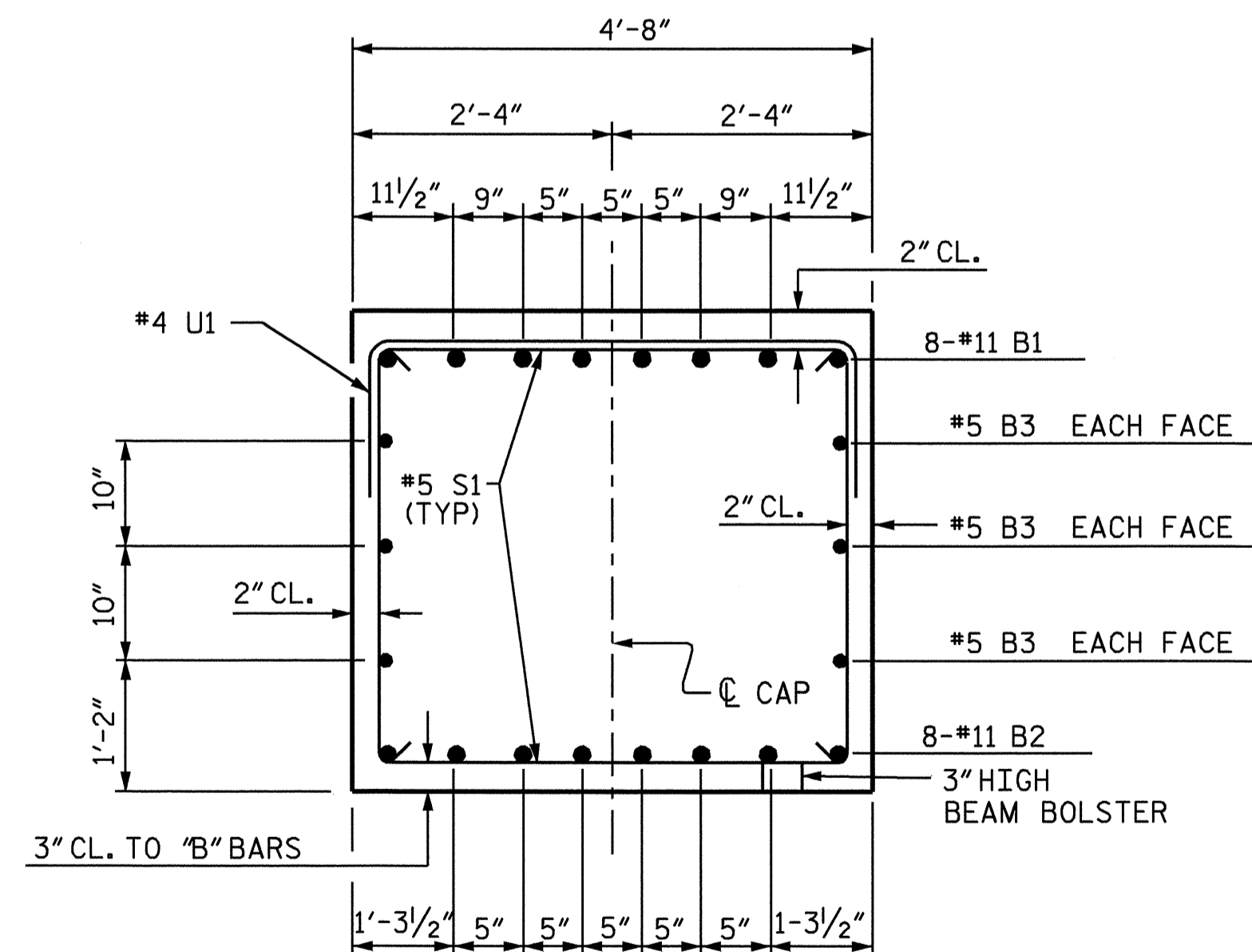
DRAWN BY: B.N. BARODAWALA DATE: 3-14-08  
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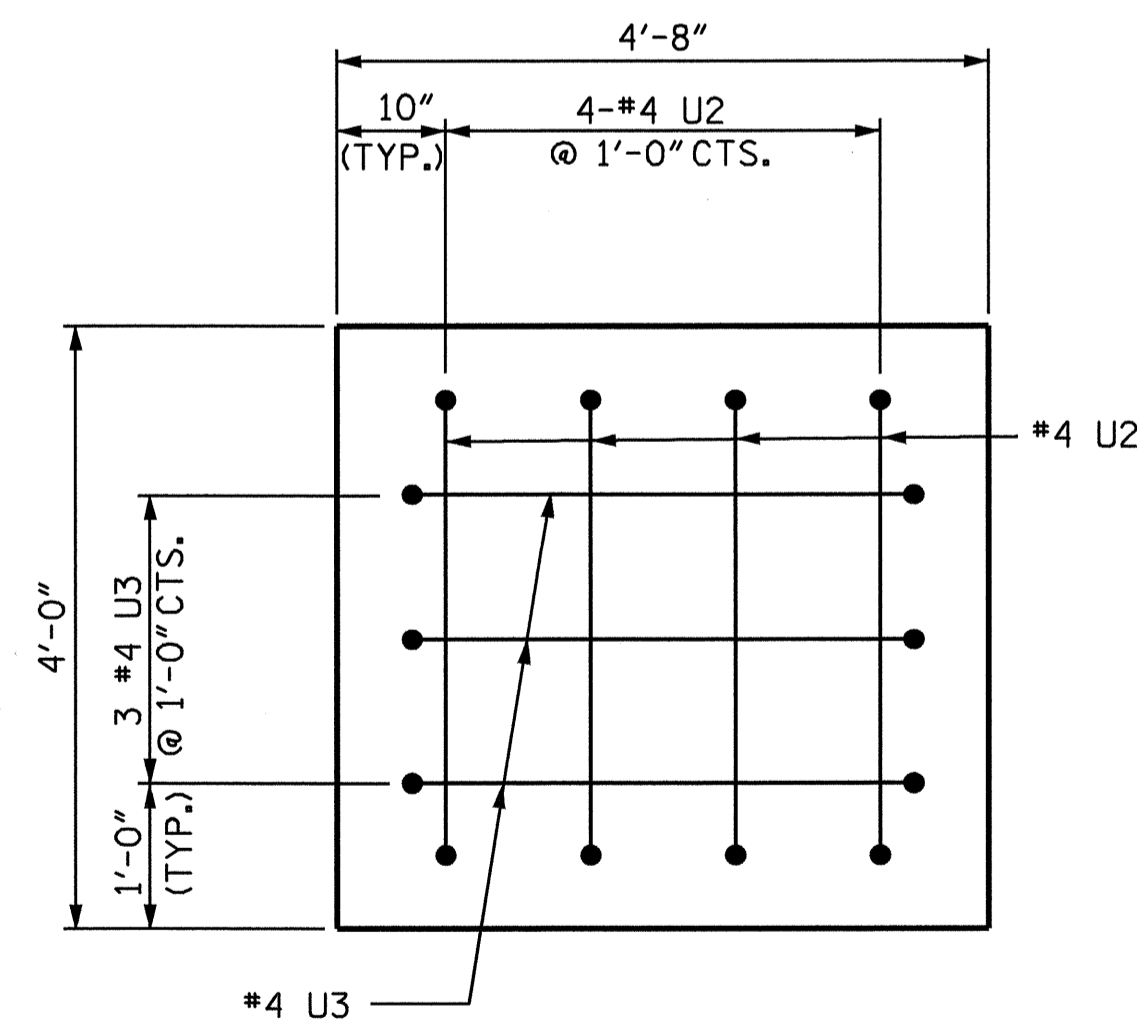




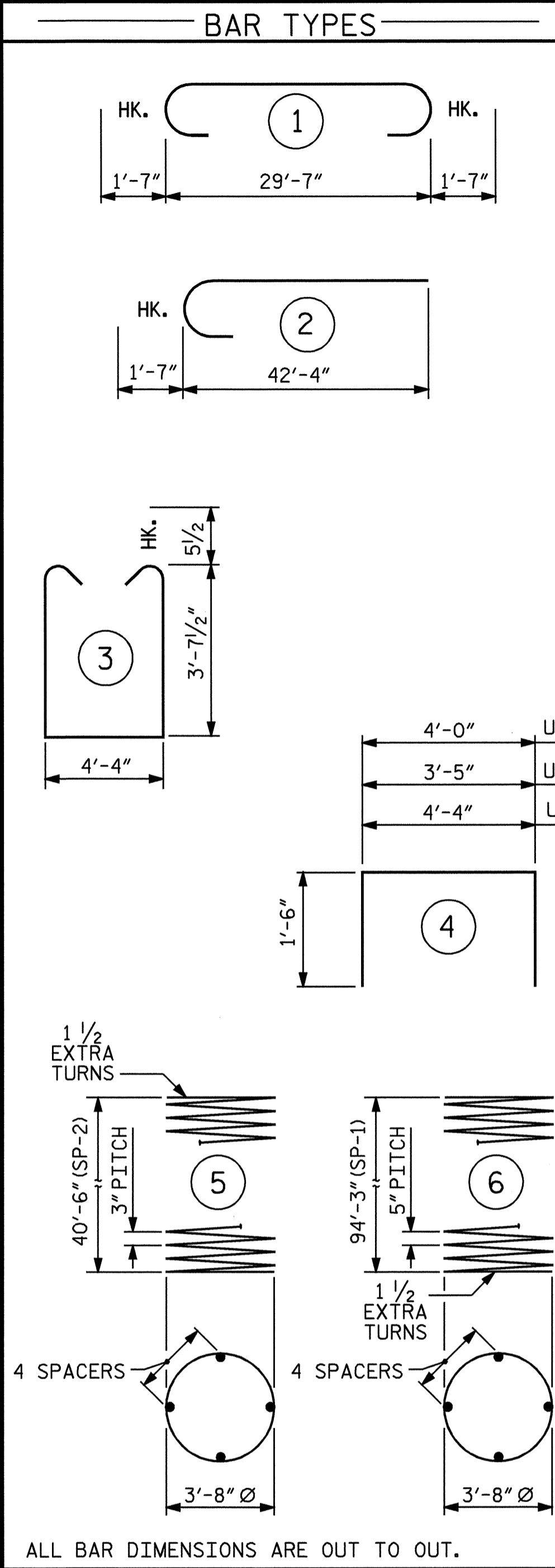
**PLAN OF COLUMNS AND DRILLED PIERS**  
(DIM. & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN AND DRILLED PIER)



**SECTION A-A**



**END VIEW**



ALL BAR DIMENSIONS ARE OUT TO OUT.

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

BILL OF MATERIAL					
BENT #4					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	11	1	32'-9"	1392
B2	8	11	STR	29'-8"	1261
B3	6	5	STR	29'-8"	186
M1	96	11	STR	55'-11"	28520
S1	46	5	3	12'-6"	600
U1	28	4	4	7'-4"	137
U2	8	4	4	6'-5"	34
U3	6	4	4	7'-0"	28
V1	48	11	2	43'-11"	11200

REINFORCING STEEL 43358 LBS

SP-1	2	*	6	2587'-5"	5397
SP-2	2	*	5	1862'-6"	2488

SPIRAL COLUMN REINFORCING STEEL 7885 LBS

CLASS A CONCRETE BREAKDOWN		
POUR #3 CAP	CU. YD.	21.1
POUR #2 COLUMNS	CU. YD.	37.5
<b>TOTAL CLASS A CONCRETE</b>	<b>CU. YD.</b>	<b>58.6</b>

DRILLED PIERS  
DRILLED PIER CONCRETE  
POUR #1 DRILLED PIERS CU. YD. 111.3

4'-6" Ø DRILLED PIERS  
LIN. FT. 189.00

CSL TUBES  
LIN. FT. 776

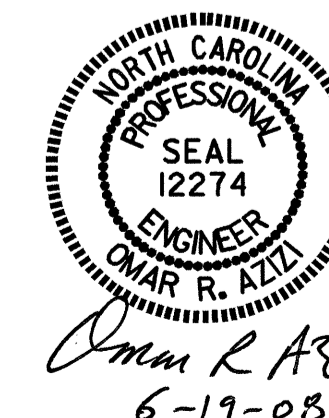
CROSSHOLE SONIC LOGGING  
EA. 1

PERMANENT STEEL CASING FOR 4'-6" Ø DRILLED PIER  
LIN. FT. 10.00

PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-

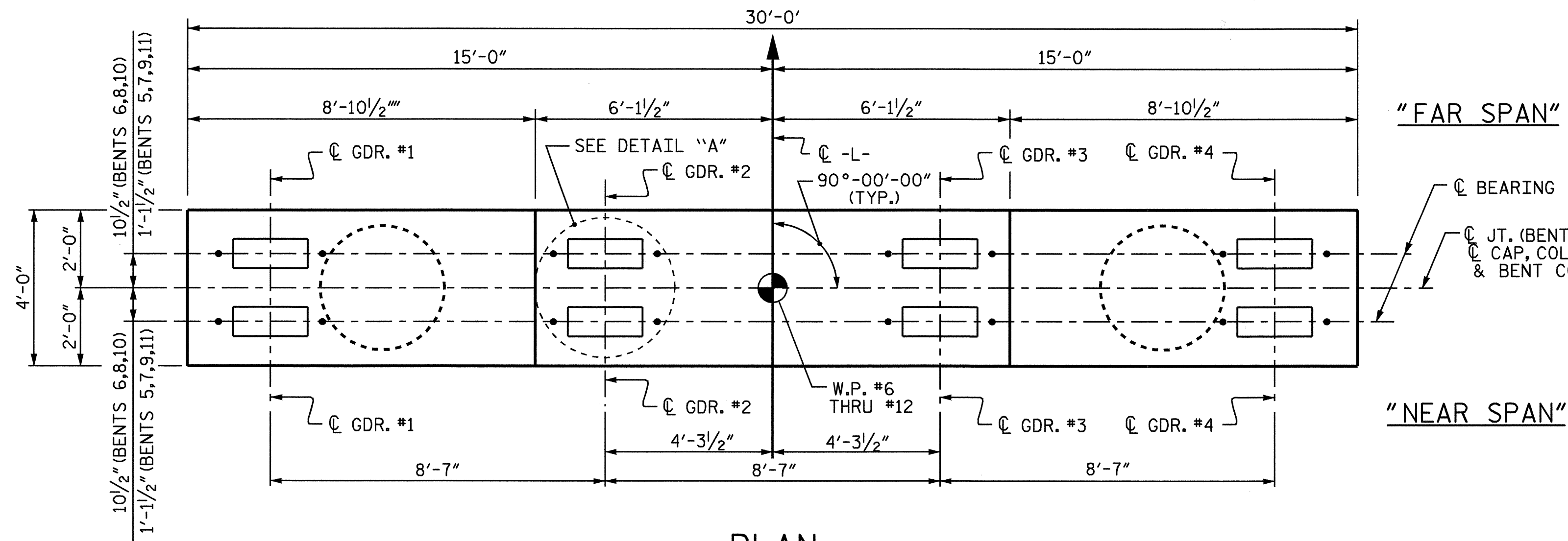
SHEET 2 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
SUBSTRUCTURE  
BENT #4



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-52
1			3			TOTAL SHEETS 67
2			4			

DRAWN BY: PEGGY ADKINS DATE: 4-08  
CHECKED BY: O. R. AZIZI DATE: 4-08



PLAN

ELEVATION TABLE							
	BENT #5	BENT #6	BENT #7	BENT #8	BENT #9	BENT #10	BENT #11
EL. "A"	44.987	43.185	40.729	37.792	34.811	31.846	28.865
EL. "B"	45.159	43.357	40.900	37.964	34.983	32.017	29.036
EL. "C"	44.987	43.185	40.729	37.792	34.811	31.846	28.865
EL. "D"	40.987	39.185	36.729	33.792	30.811	27.846	24.865
EL. "E"	8.570	9.268	11.062	10.209	8.811	10.013	8.865
EL. "F"	5.237	5.935	7.729	6.876	5.478	6.680	5.532

COLUMN HEIGHT TABLE							
DIM. "G"	32'-5"	29'-11"	25'-8"	23'-7"	22'-0"	17'-10"	16'-0"

**NOTES**

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

FOR GIRDER DESIGNATION SEE "PLAN OF SPAN" SHEETS.

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

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

GALVANIZE STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED. GALVANIZING OR METALLIZING PIPE PILE PLATES IS NOT REQUIRED.

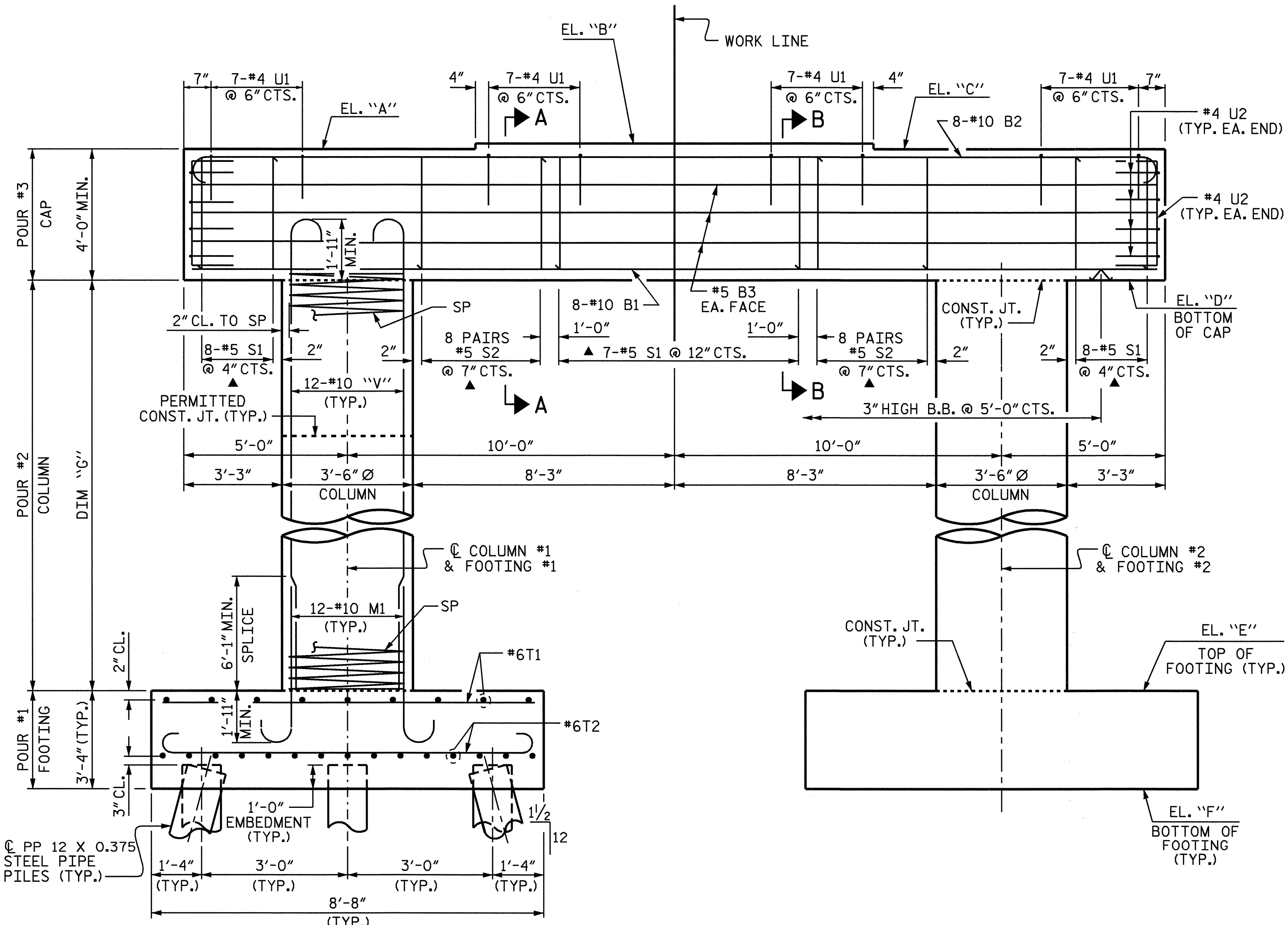
PIPE PILE PLATES SHALL BE IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

REMOVE AND REPLACE OR REPAIR TO THE SATISFACTION OF THE ENGINEER PILES THAT ARE DAMAGED, DEFORMED OR COLLAPSED DURING INSTALLATION OR DRIVING.

PILE SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AWS D1.1.

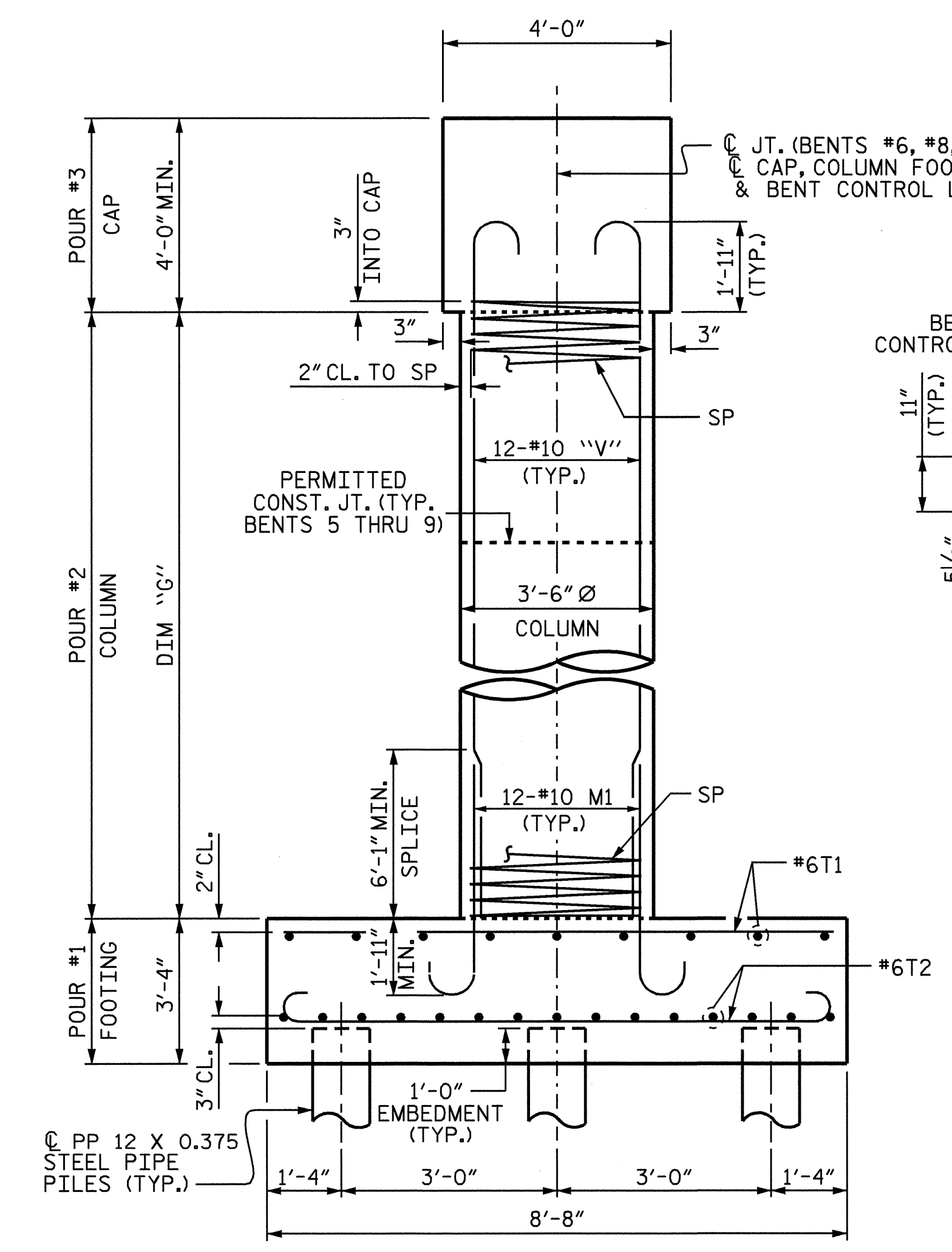
GALVANIZING IS CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 12 X 0.375 GALVANIZED STEEL PILES.

**FOR BENTS # 6, #8 AND #10 ONLY:**  
 THE TOP SURFACE AREAS OF THE BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

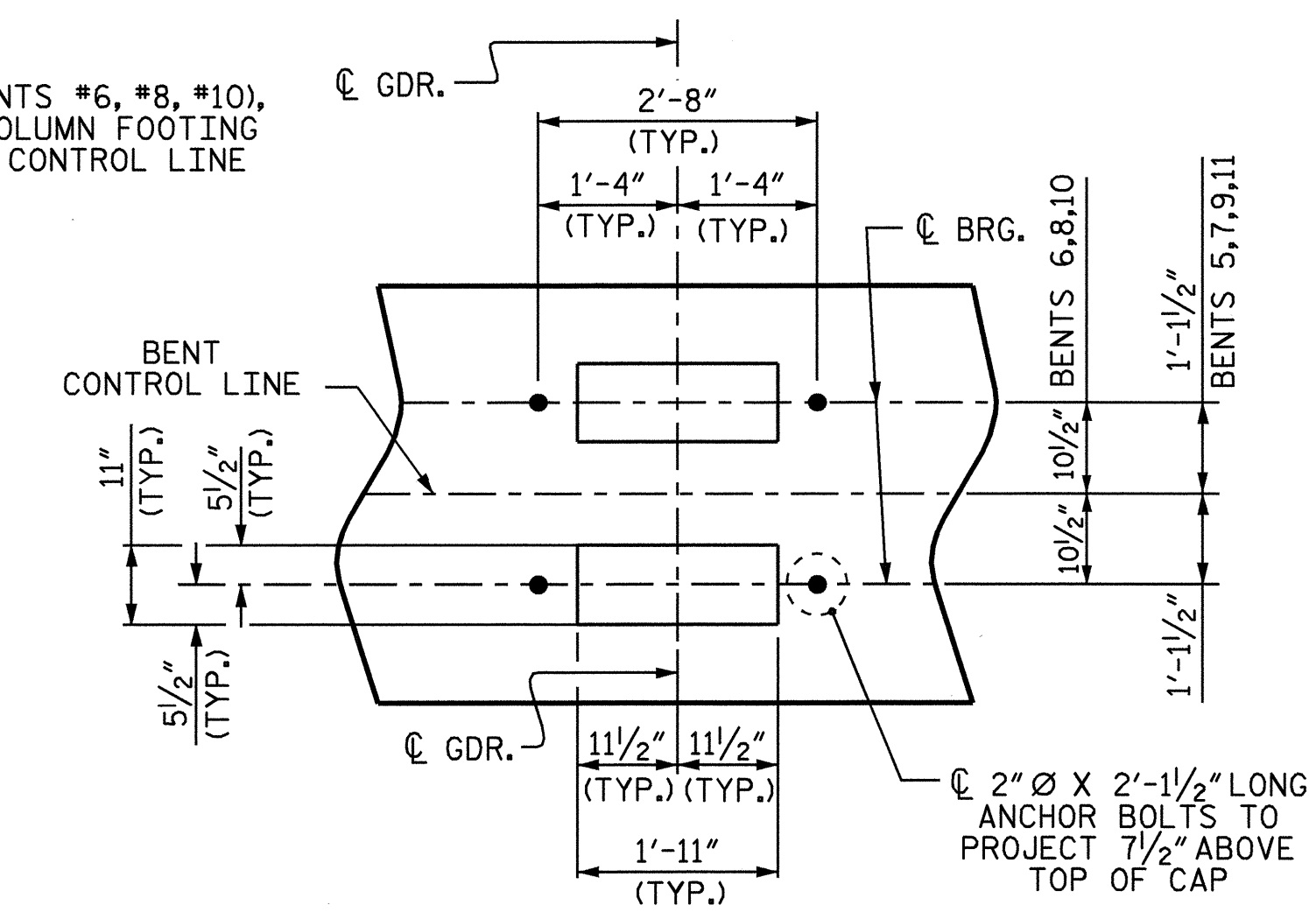


ELEVATION

▲ INVERT ALTERNATE STIRRUPS



END ELEVATION



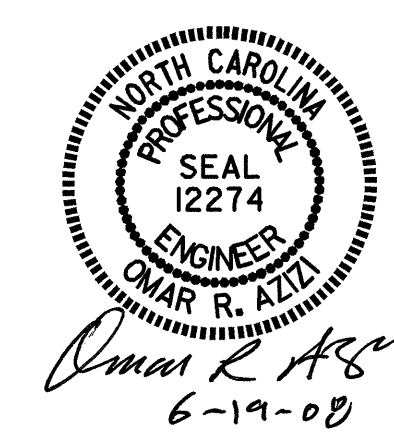
DETAIL "A"

(TYP. EACH GDR.)

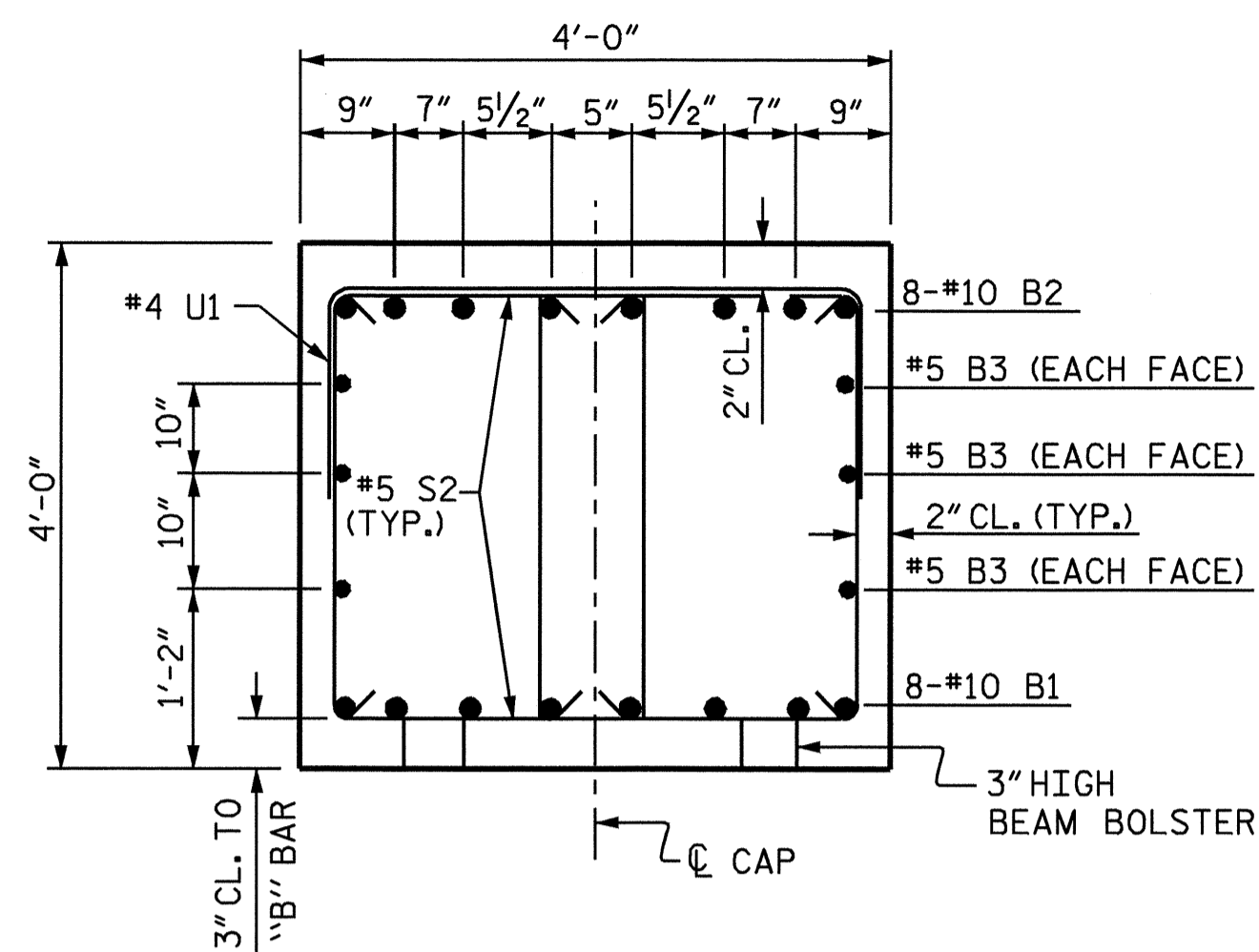
PROJECT NO. B-3684  
 COUNTY PITT  
 STATION: 38+88.50 -L-

SHEET 1 OF 3

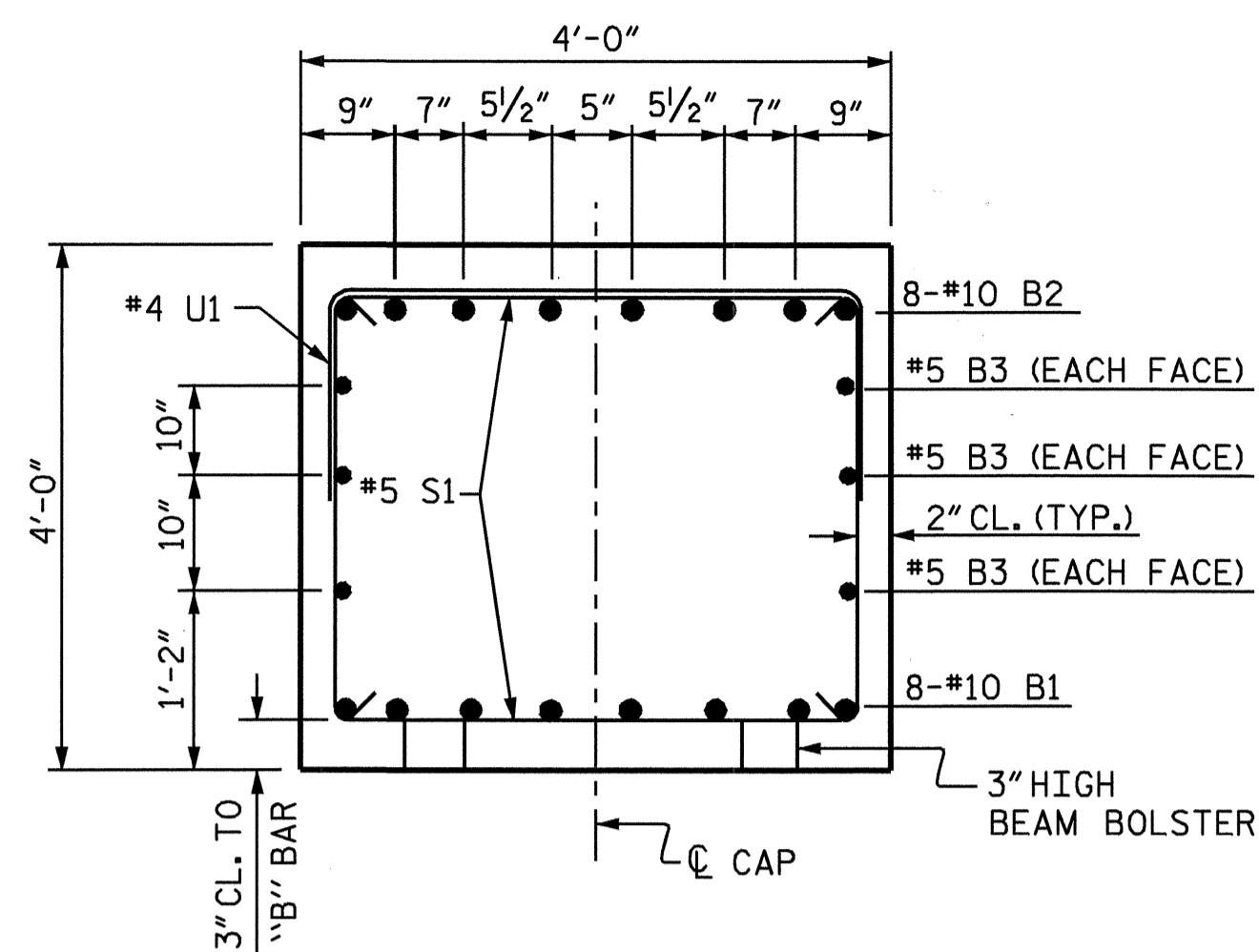
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE					
BENT #5 THRU #11					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		



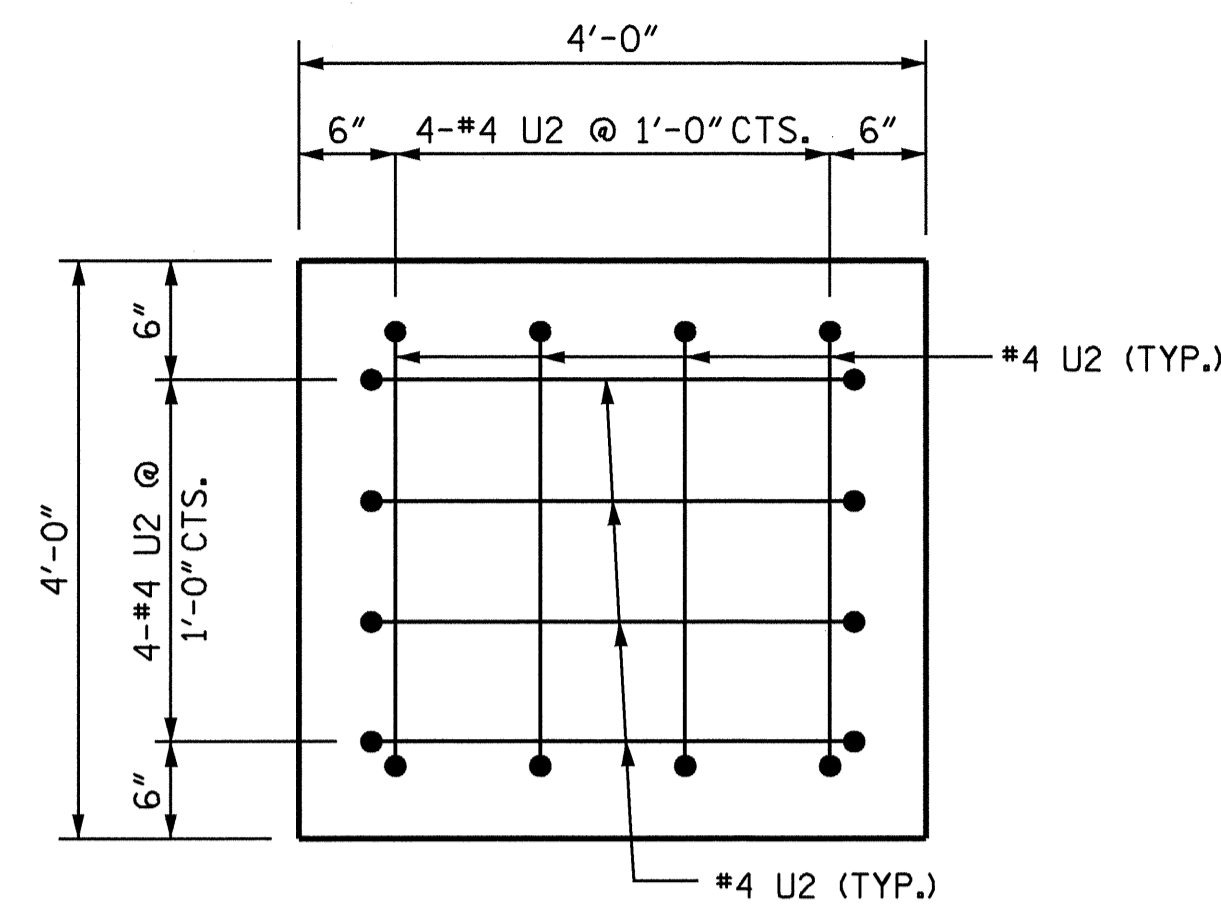
DRAWN BY: B.N. BARODAWALA DATE: 4-17-08  
 CHECKED BY: O.R. AZIZI DATE: 4-08



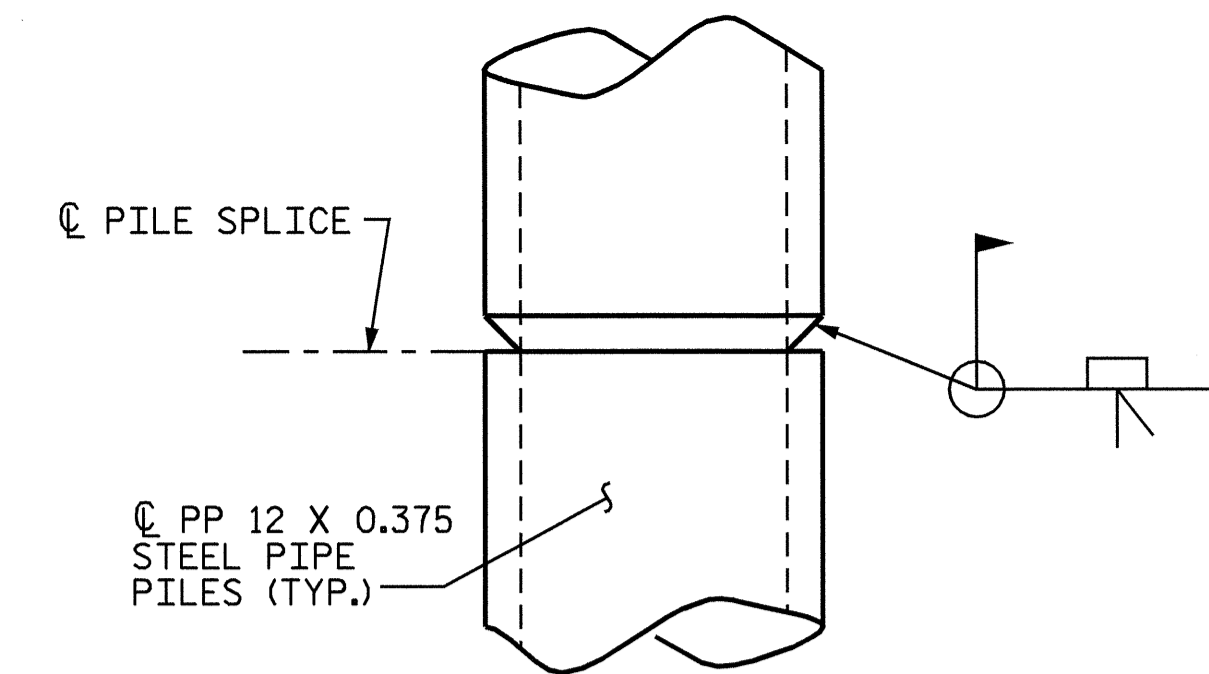
SECTION A-A



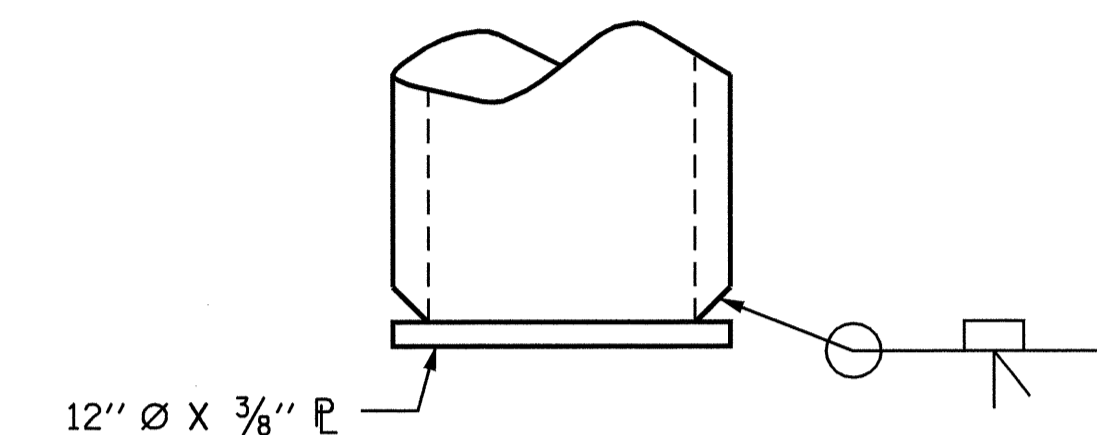
SECTION B-B



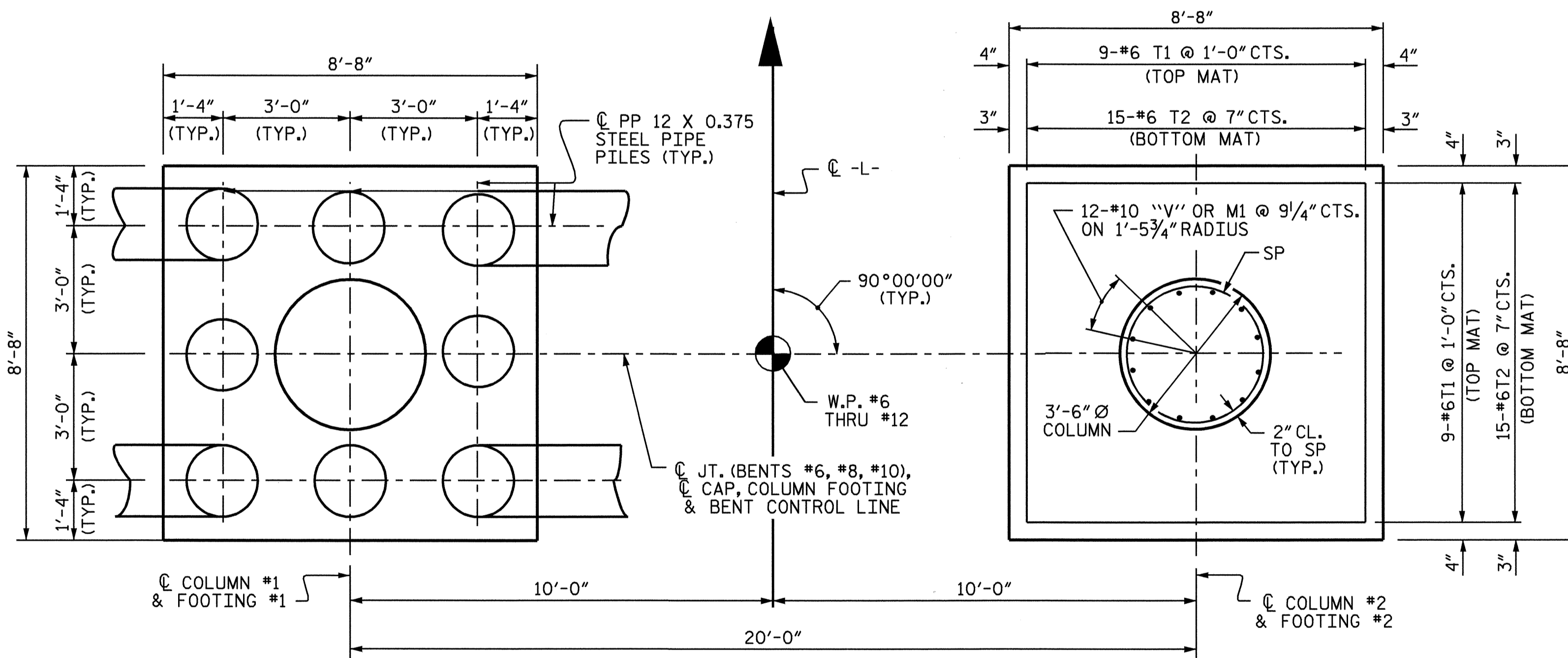
END VIEW



PIPE PILE SPLICE DETAIL

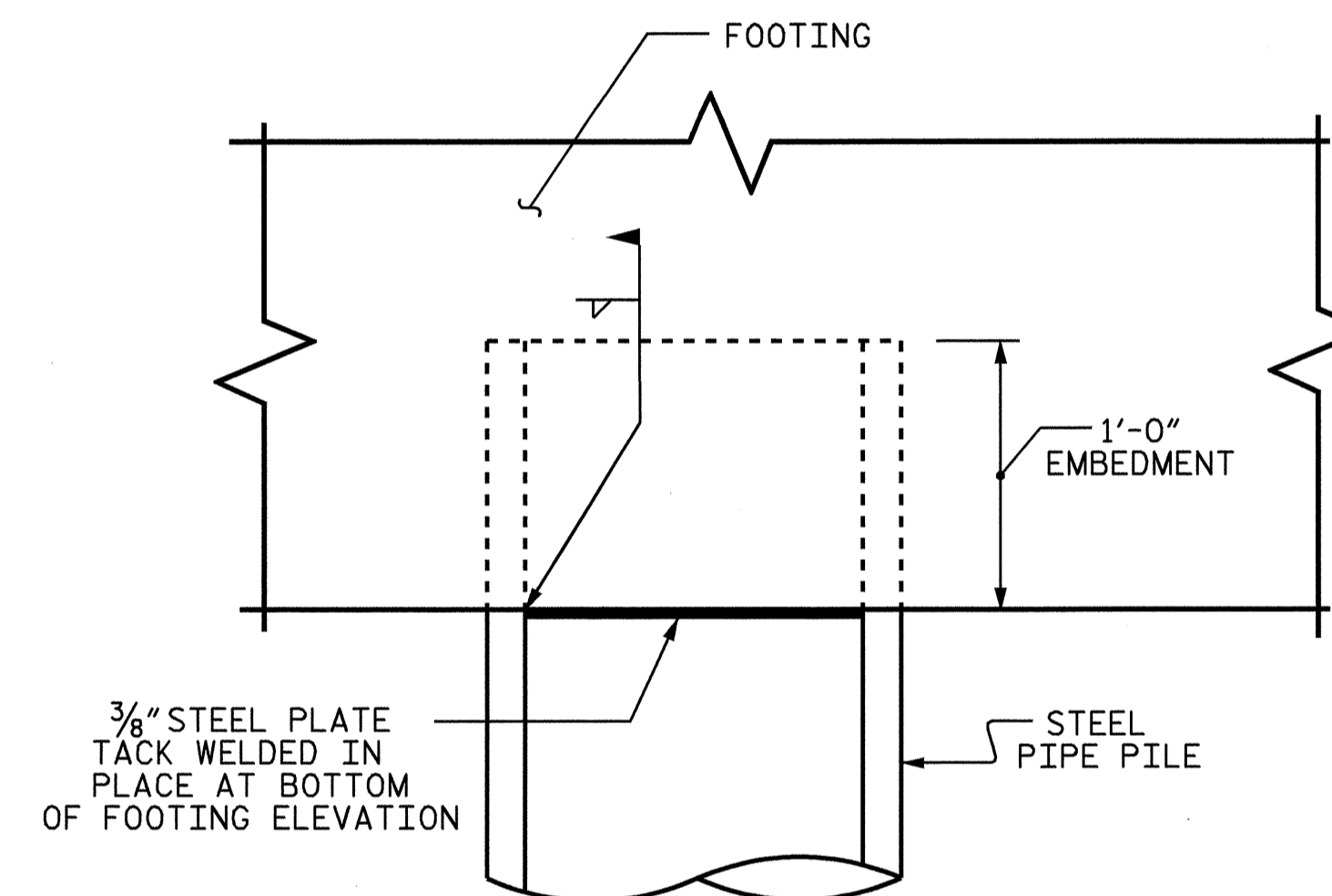


PIPE PILE PLATE DETAIL



PLAN OF FOOTING

ALL FOOTING, COLUMNS DIMENSIONS AND REINFORCING STEEL ARE TYPICAL.



PIPE PILE IN FOOTING DETAIL

THE CONTRACTOR MAY PROPOSE AN ALTERNATE METHOD FOR PLUGGING THE STEEL PIPE PILE, SUBJECT TO APPROVAL BY THE ENGINEER.

PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE

BENT #5 THRU #11



Omar R. Aziz  
 6-19-08

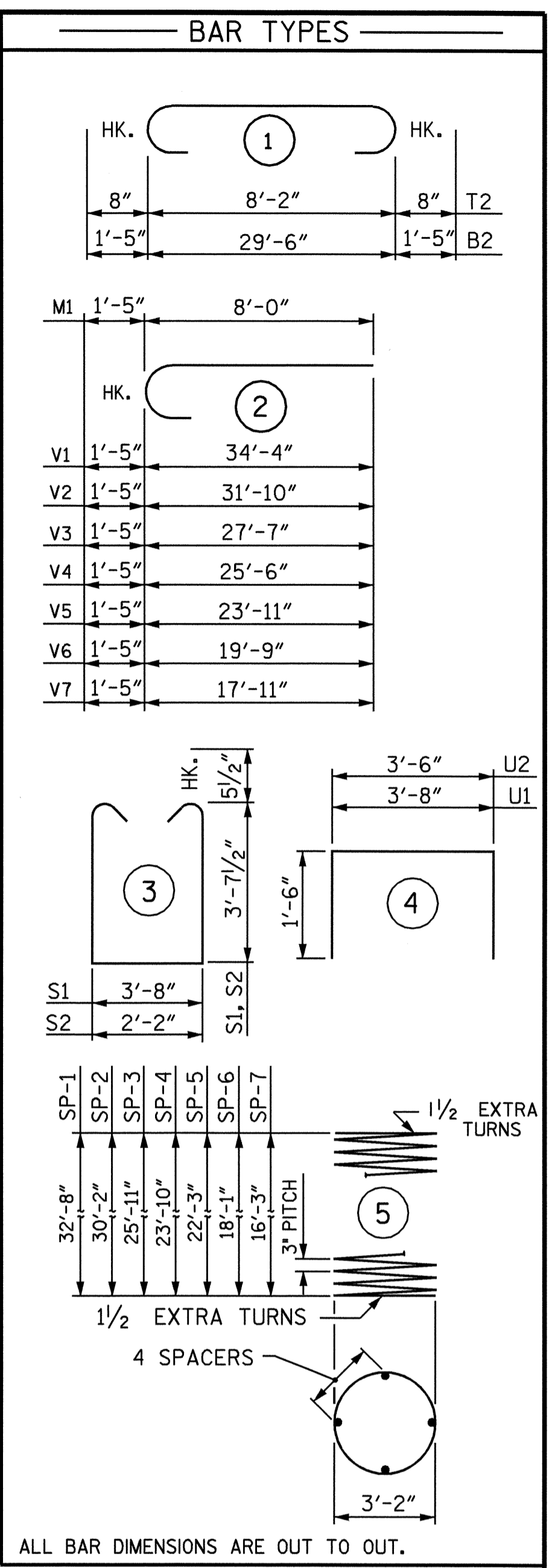
DRAWN BY: B.N.BARODAWALA DATE: 4-17-08  
 CHECKED BY: O.R. AZIZI DATE: 4-08

19-JUN-2008 14:25  
 r:\structures\3684\finalplans\3684.sd.b\*5 thru 11.dgn  
 padkine

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-54
1			3			TOTAL SHEETS
2			4			67



BILL OF MATERIAL						BILL OF MATERIAL						BILL OF MATERIAL						BILL OF MATERIAL					
BENT #5						BENT #6						BENT #7						BENT #8					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	STR	29'-8"	1021	B1	8	10	STR	29'-8"	1021	B1	8	10	STR	29'-8"	1021	B1	8	10	STR	29'-8"	1021
B2	8	10	1	32'-4"	1113	B2	8	10	1	32'-4"	1113	B2	8	10	1	32'-4"	1113	B2	8	10	1	32'-4"	1113
B3	6	5	STR	29'-8"	186	B3	6	5	STR	29'-8"	186	B3	6	5	STR	29'-8"	186	B3	6	5	STR	29'-8"	186
M1	24	10	2	9'-5"	972	M1	24	10	2	9'-5"	972	M1	24	10	2	9'-5"	972	M1	24	10	2	9'-5"	972
S1	23	5	3	11'-10"	284	S1	23	5	3	11'-10"	284	S1	23	5	3	11'-10"	284	S1	23	5	3	11'-10"	284
S2	32	5	3	10'-4"	345	S2	32	5	3	10'-4"	345	S2	32	5	3	10'-4"	345	S2	32	5	3	10'-4"	345
T1	36	6	STR	8'-2"	442	T1	36	6	STR	8'-2"	442	T1	36	6	STR	8'-2"	442	T1	36	6	STR	8'-2"	442
T2	60	6	1	9'-6"	856	T2	60	6	1	9'-6"	856	T2	60	6	1	9'-6"	856	T2	60	6	1	9'-6"	856
U1	28	4	4	6'-8"	125	U1	28	4	4	6'-8"	125	U1	28	4	4	6'-8"	125	U1	28	4	4	6'-8"	125
U2	16	4	4	6'-6"	69	U2	16	4	4	6'-6"	69	U2	16	4	4	6'-6"	69	U2	16	4	4	6'-6"	69
V1	24	10	2	35'-9"	3692	V2	24	10	2	33'-3"	3434	V3	24	10	2	29'-0"	2995	V4	24	10	2	26'-11"	2780
REINFORCING STEEL					9105 LBS	REINFORCING STEEL					8847 LBS	REINFORCING STEEL					8408 LBS	REINFORCING STEEL					8193 LBS
SP-1	2	**	5	1312'-10"	1754	SP-2	2	**	5	1214'-7"	1623	SP-3	2	**	5	1047'-6"	1399	SP-4	2	**	5	965'-8"	1290
SPIRAL COLUMN REINFORCING STEEL					1754 LBS	SPIRAL COLUMN REINFORCING STEEL					1623 LBS	SPIRAL COLUMN REINFORCING STEEL					1399 LBS	SPIRAL COLUMN REINFORCING STEEL					1290 LBS
CLASS A CONCRETE BREAKDOWN						CLASS A CONCRETE BREAKDOWN						CLASS A CONCRETE BREAKDOWN						CLASS A CONCRETE BREAKDOWN					
POUR #1 FOOTING					CU. YD. 9.3	POUR #1 FOOTING					CU. YD. 9.3	POUR #1 FOOTING					CU. YD. 9.3	POUR #1 FOOTING					CU. YD. 9.3
POUR #2 COLUMNS					CU. YD. 11.6	POUR #2 COLUMNS					CU. YD. 10.7	POUR #2 COLUMNS					CU. YD. 9.1	POUR #2 COLUMNS					CU. YD. 8.4
POUR #3 CAP					CU. YD. 18.1	POUR #3 CAP					CU. YD. 18.1	POUR #3 CAP					CU. YD. 18.1	POUR #3 CAP					CU. YD. 18.1
TOTAL CLASS A CONCRETE					CU. YD. 39.0	TOTAL CLASS A CONCRETE					CU. YD. 38.1	TOTAL CLASS A CONCRETE					CU. YD. 36.5	TOTAL CLASS A CONCRETE					CU. YD. 35.8
PP 12 X 0.375 NO.16 LIN. FT. 640 GALVANIZED STEEL PIPE PILES						PP 12 X 0.375 NO.16 LIN. FT. 640 GALVANIZED STEEL PIPE PILES						PP 12 X 0.375 NO.16 LIN. FT. 560 GALVANIZED STEEL PIPE PILES						PP 12 X 0.375 NO.16 LIN. FT. 560 GALVANIZED STEEL PIPE PILES					
PILE REDRIVES					EA. 7	PILE REDRIVES					EA. 7	PILE REDRIVES					EA. 7	PILE REDRIVES					EA. 7
PIPE PILE PLATES					NO. 16	PIPE PILE PLATES					NO. 16	PIPE PILE PLATES					NO. 16	PIPE PILE PLATES					NO. 16



BILL OF MATERIAL						BILL OF MATERIAL						BILL OF MATERIAL					
BENT #9						BENT #10						BENT #11					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	STR	29'-8"	1021	B1	8	10	STR	29'-8"	1021	B1	8	10	STR	29'-8"	1021
B2	8	10	1	32'-4"	1113	B2	8	10	1	32'-4"	1113	B2	8	10	1	32'-4"	1113
B3	6	5	STR	29'-8"	186	B3	6	5	STR	29'-8"	186	B3	6	5	STR	29'-8"	186
M1	24	10	2	9'-5"	972	M1	24	10	2	9'-5"	972	M1	24	10	2	9'-5"	972
S1	23	5	3	11'-10"	284	S1	23	5	3	11'-10"	284	S1	23	5	3	11'-10"	284
S2	32	5	3	10'-4"	345	S2	32	5	3	10'-4"	345	S2	32	5	3	10'-4"	345
T1	36	6	STR	8'-2"	442	T1	36	6	STR	8'-2"	442	T1	36	6	STR	8'-2"	442
T2	60	6	1	9'-6"	856	T2	60	6	1	9'-6"	856	T2	60	6	1	9'-6"	856
U1	28	4	4	6'-8"	125	U1	28	4	4	6'-8"	125	U1	28	4	4	6'-8"	125
U2	16	4	4	6'-6"	69	U2	16	4	4	6'-6"	69	U2	16	4	4	6'-6"	69
V5	24	10	2	25'-4"	2616	V6	24	10	2	21'-2"	2186	V7	24	10	2	19'-4"	1997
REINFORCING STEEL					8029 LBS	REINFORCING STEEL					7599 LBS	REINFORCING STEEL					7410 LBS
SP-5	2	**	5	903'-6"	1207	SP-6	2	**	5	739'-10"	988	SP-7	2	**	5	667'-10"	892
SPIRAL COLUMN REINFORCING STEEL					1207 LBS	SPIRAL COLUMN REINFORCING STEEL					988 LBS	SPIRAL COLUMN REINFORCING STEEL					892 LBS
CLASS A CONCRETE BREAKDOWN						CLASS A CONCRETE BREAKDOWN						CLASS A CONCRETE BREAKDOWN					
POUR #1 FOOTING					CU. YD. 9.3	POUR #1 FOOTING					CU. YD. 9.3	POUR #1 FOOTING					CU. YD. 9.3
POUR #2 COLUMNS					CU. YD. 7.8	POUR #2 COLUMNS					CU. YD. 6.3	POUR #2 COLUMNS					CU. YD. 5.7
POUR #3 CAP					CU. YD. 18.1	POUR #3 CAP					CU. YD. 18.1	POUR #3 CAP					CU. YD. 18.1
TOTAL CLASS A CONCRETE					CU. YD. 35.2	TOTAL CLASS A CONCRETE					CU. YD. 33.7	TOTAL CLASS A CONCRETE					CU. YD. 33.1
PP 12 X 0.375 NO.16 LIN. FT. 720 GALVANIZED STEEL PIPE PILES						PP 12 X 0.375 NO.16 LIN. FT. 720 GALVANIZED STEEL PIPE PILES						PP 12 X 0.375 NO.16 LIN. FT. 720 GALVANIZED STEEL PIPE PILES					
PILE REDRIVES					EA. 7	PILE REDRIVES					EA. 7	PILE REDRIVES					EA. 7
PIPE PILE PLATES					NO. 16	PIPE PILE PLATES					NO. 16	PIPE PILE PLATES					NO. 16

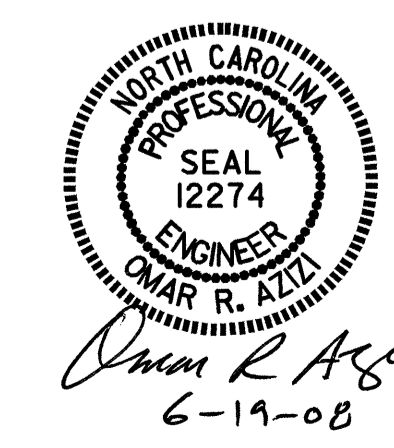
ALL BAR DIMENSIONS ARE OUT TO OUT.  
 \*\* THE "SP" SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.

PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-  
 SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 BENT #5 THRU #11

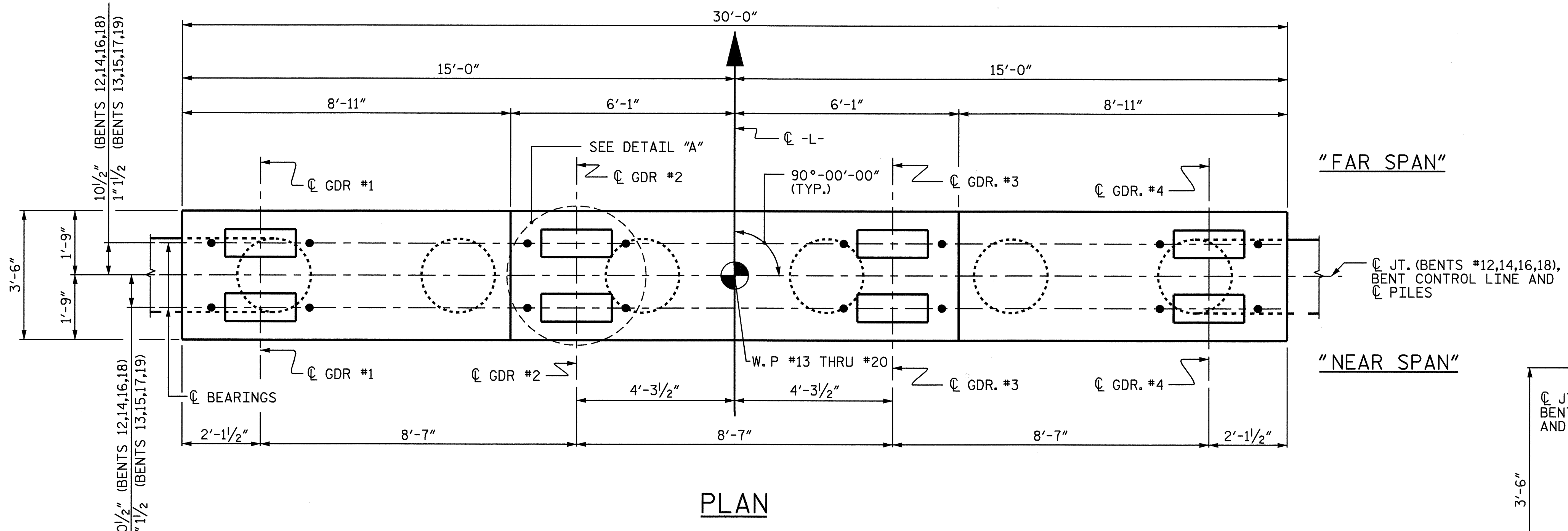
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-55	
1			3			TOTAL SHEETS	67
2			4				



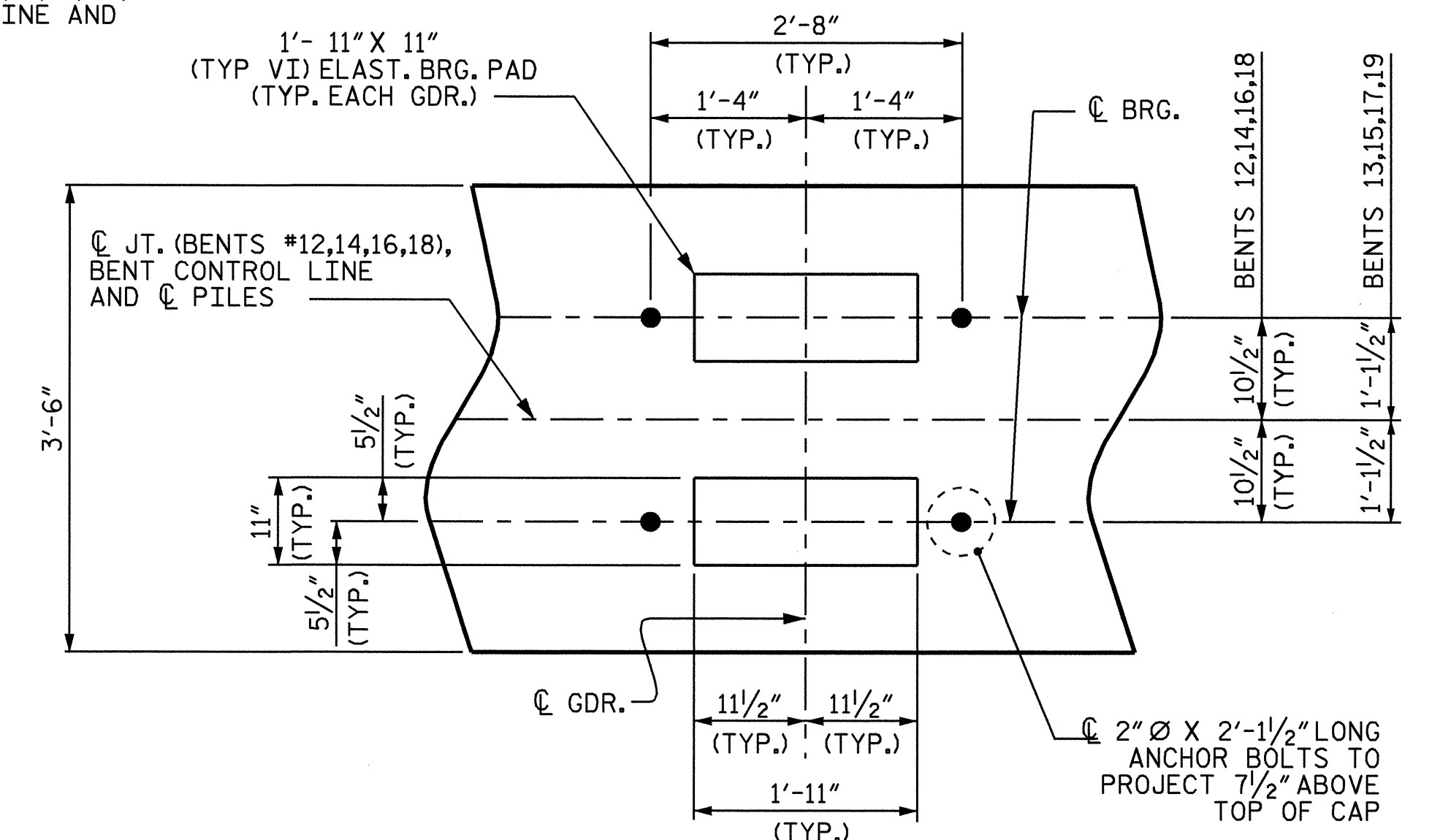
DRAWN BY: B.N. BARODAWALA DATE: 4-17-08  
 CHECKED BY: O. R. AZIZI DATE: 4-08

**NOTES**

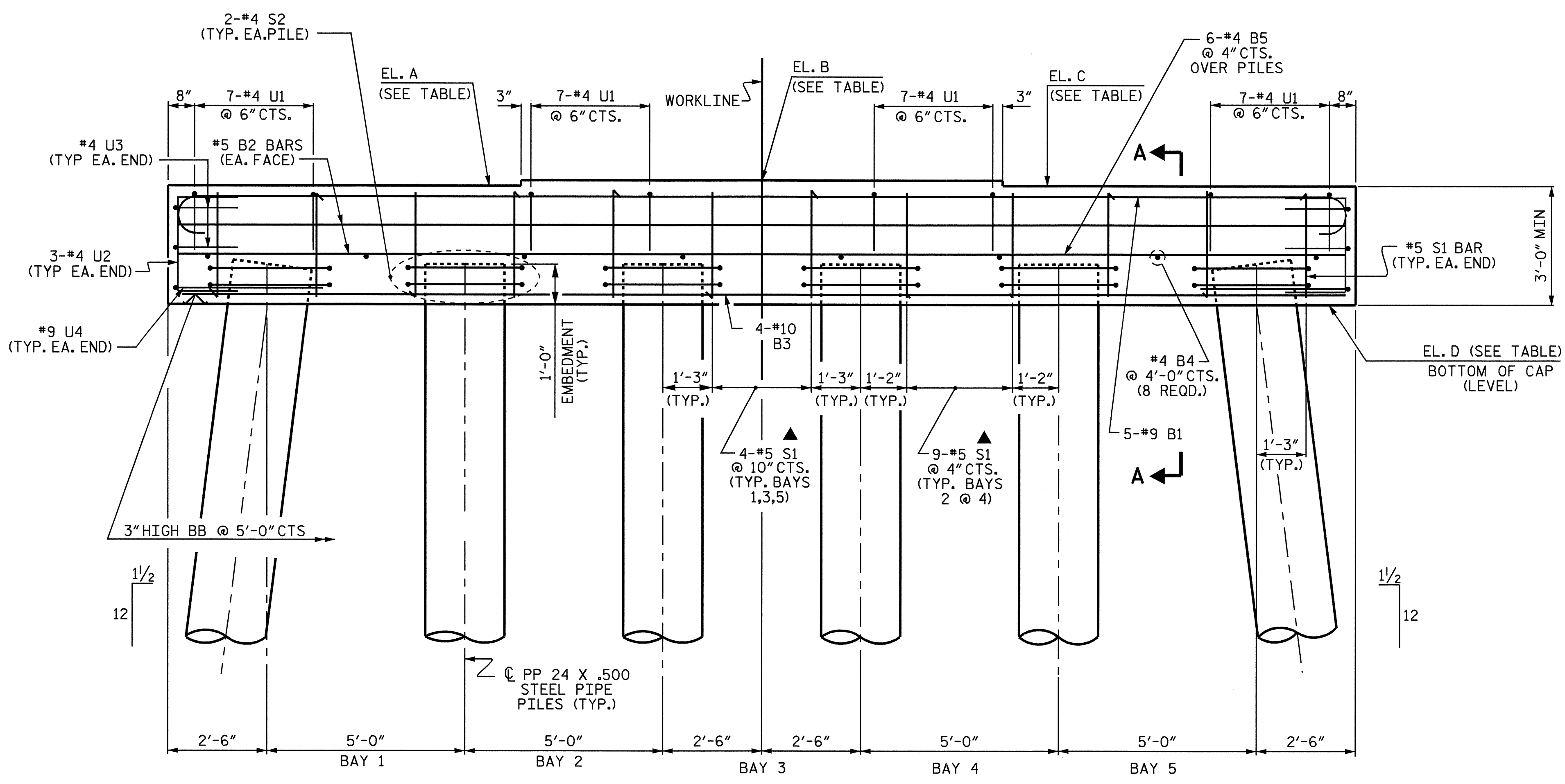
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.  
 FOR REINFORCING STEEL IN PIPE PILES, SEE "24" STEEL PIPE PILE" SHEET.  
 FOR GIRDER DESIGNATION SEE "PLAN OF SPAN" SHEETS.  
 CONCRETE DISPLACED BY THE FILLED 24" STEEL PIPE PILES HAS BEEN DEDUCTED FROM THE QUANTITY OF CLASS "A" CONCRETE FOR THE BENT CAP.  
**FOR BENTS #12,14,16,18 ONLY,**  
 THE TOP SURFACE AREAS OF THE BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.



**PLAN**



**DETAIL "A"**  
(TYP. EACH GDR.)



**ELEVATION**

▲ INVERT ALTERNATE STIRRUPS

**ELEVATION TABLE**

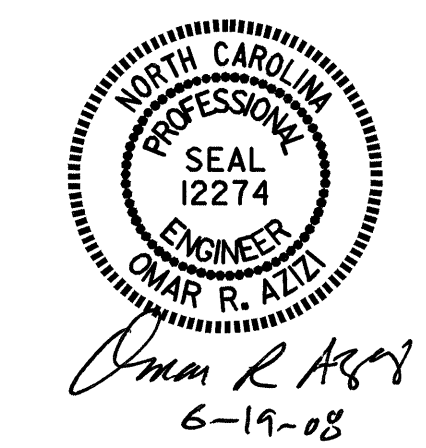
	BENT #12	BENT #13	BENT #14	BENT #15	BENT #16	BENT #17	BENT #18	BENT #19
EL. "A"	25.899	22.918	19.952	16.972	14.376	12.289	10.786	9.861
EL. "B"	26.071	23.090	20.124	17.143	14.547	12.461	10.958	10.033
EL. "C"	25.899	22.918	19.952	16.972	14.376	12.289	10.786	9.861
EL. "D"	22.899	19.918	16.952	13.972	11.376	9.289	7.786	6.861

PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 1 OF 2

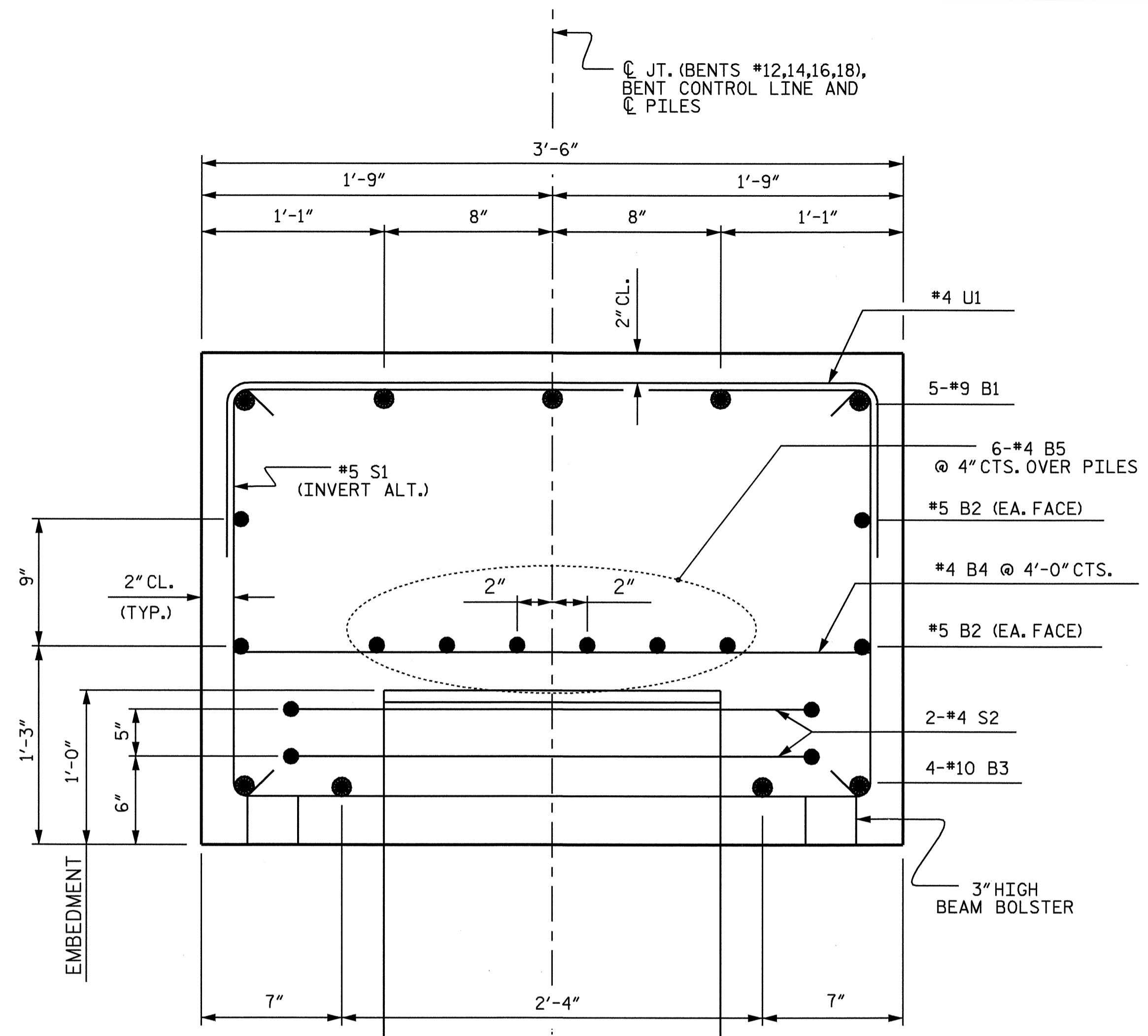
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 BENTS 12 THRU 19



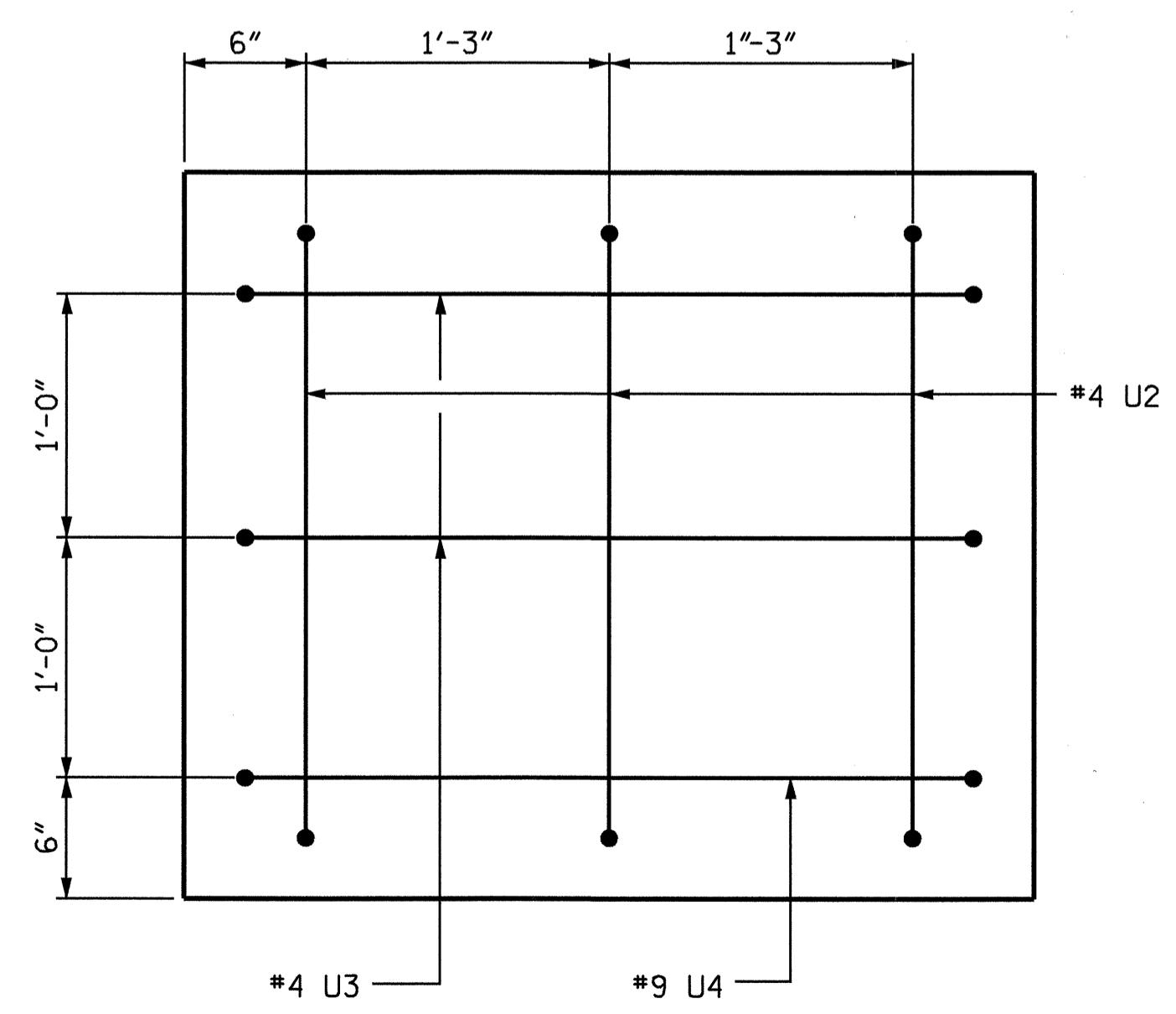
DRAWN BY: M. GUDLAUGSSON DATE: 06/07  
 CHECKED BY: O.R. AZIZI DATE: 04/08

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-56	
1			3			TOTAL SHEETS	
2			4			67	

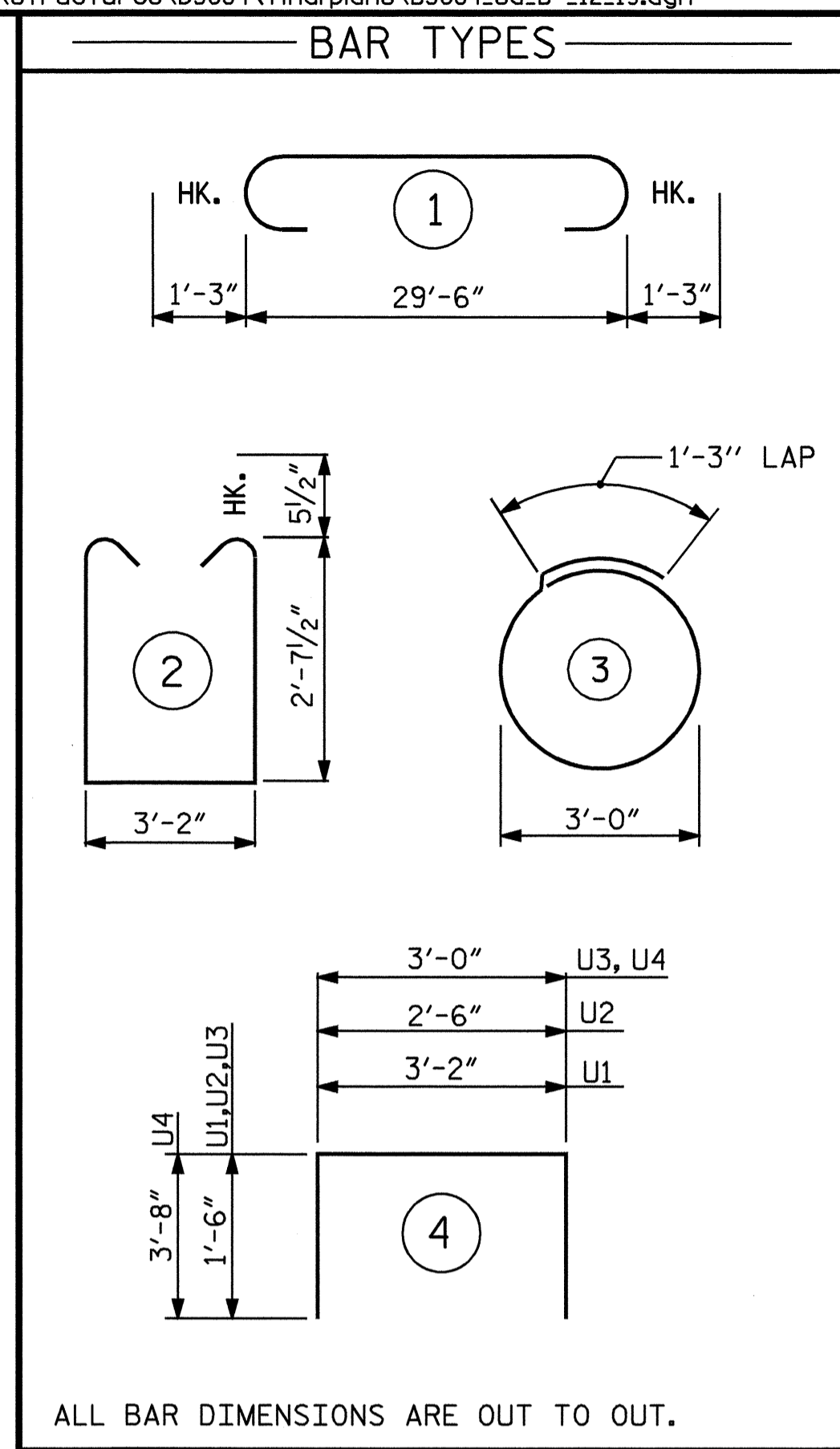


PP 24 x 0.50 STEEL PIPE PILE

SECTION A-A



END VIEW



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR ONE BENT ONLY					
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	5	#9	1	32'-0"	544
B2	4	#5	STR	29'-6"	123
B3	4	#10	STR	29'-6"	508
B4	8	#4	STR	3'-2"	17
B5	6	#4	STR	29'-6"	118
S1	32	#5	2	9'-4"	312
S2	12	#4	3	10'-9"	86
U1	28	#4	4	6'-2"	115
U2	6	#4	4	5'-6"	22
U3	4	#4	4	6'-0"	16
U4	2	#9	4	10'-4"	70
REINFORCING STEEL					LBS. 1931
CLASS A CONCRETE TOTAL					CU.YD. 11.2
PILE REDRIVES					EA. 3
PIPE PILE PLATES					EA. 6

PP 24 X 0.50 GALVANIZED STEEL PILES			PILE REDRIVES (EACH)
BENT #12	NO. 6	420 LIN. FT.	3
BENT #13	NO. 6	390 LIN. FT.	3
BENT #14	NO. 6	360 LIN. FT.	3
BENT #15	NO. 6	360 LIN. FT.	3
BENT #16	NO. 6	330 LIN. FT.	3
BENT #17	NO. 6	330 LIN. FT.	3
BENT #18	NO. 6	330 LIN. FT.	3
BENT #19	NO. 6	300 LIN. FT.	3

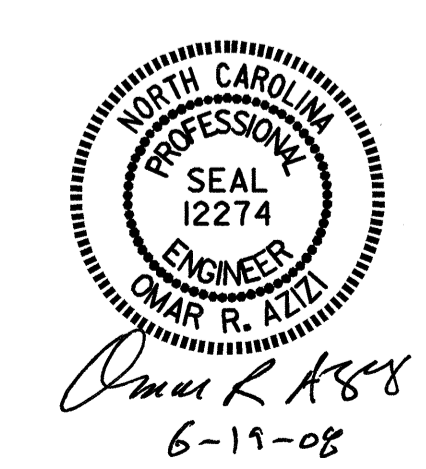
PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

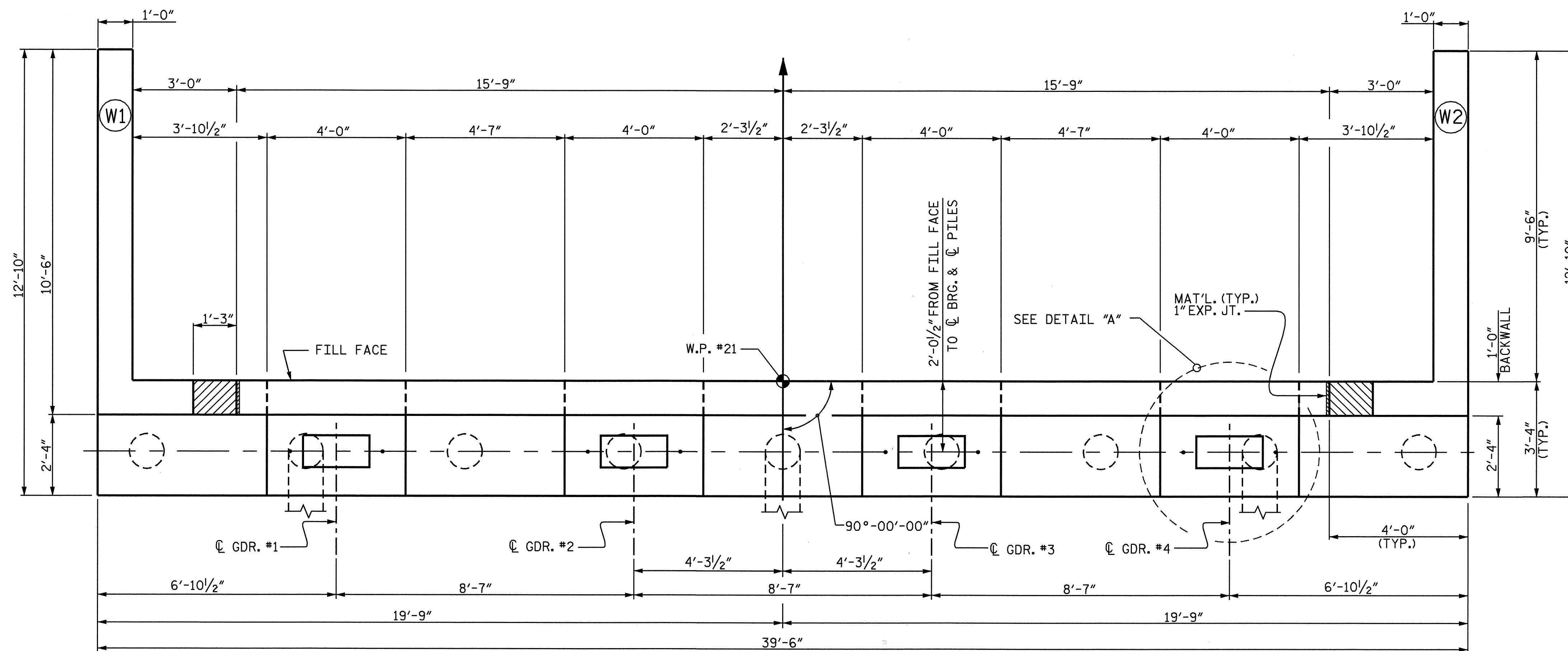
SUBSTRUCTURE  
 BENTS 12 THRU 19

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-57
1			3			TOTAL SHEETS 67
2			4			

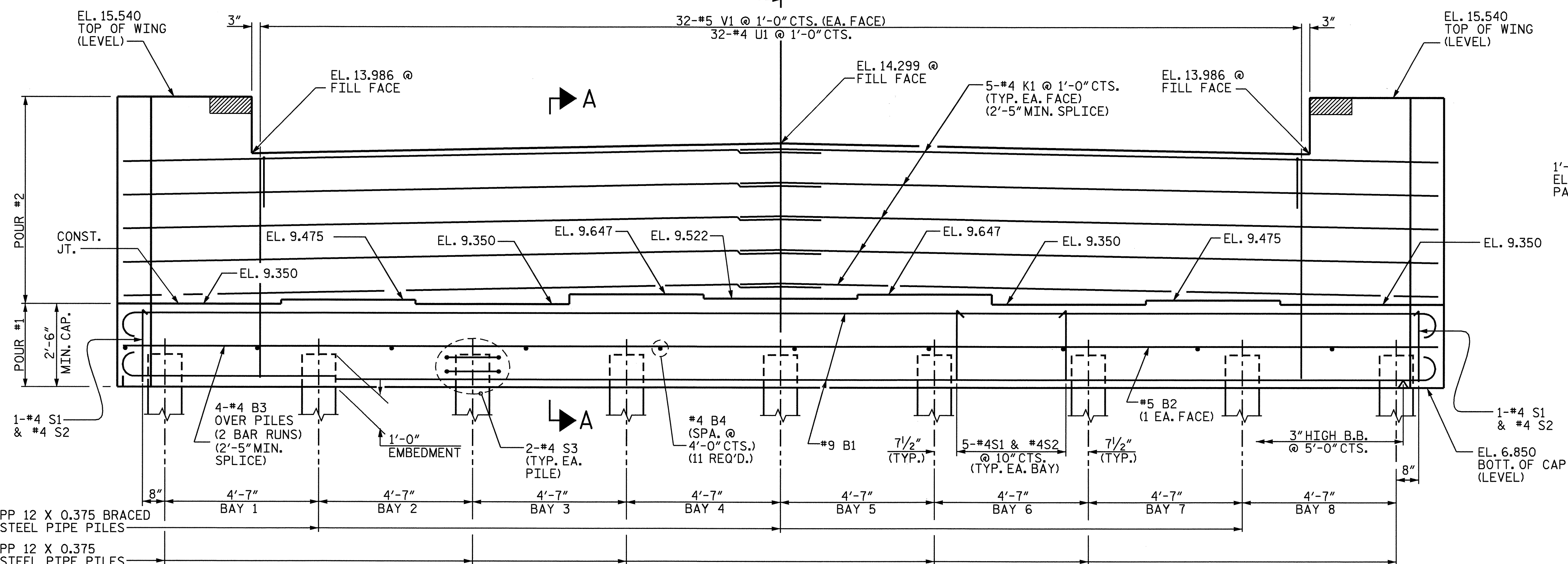


DRAWN BY: M. GUDLAUGSSON DATE: 06/07  
 CHECKED BY: O.R. AZIZI DATE: 04/08





PLAN



ELEVATION

NOTES

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

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

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

THE TOP SURFACE OF THE END BENT CAP EXCEPT THE BRIDGE 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.

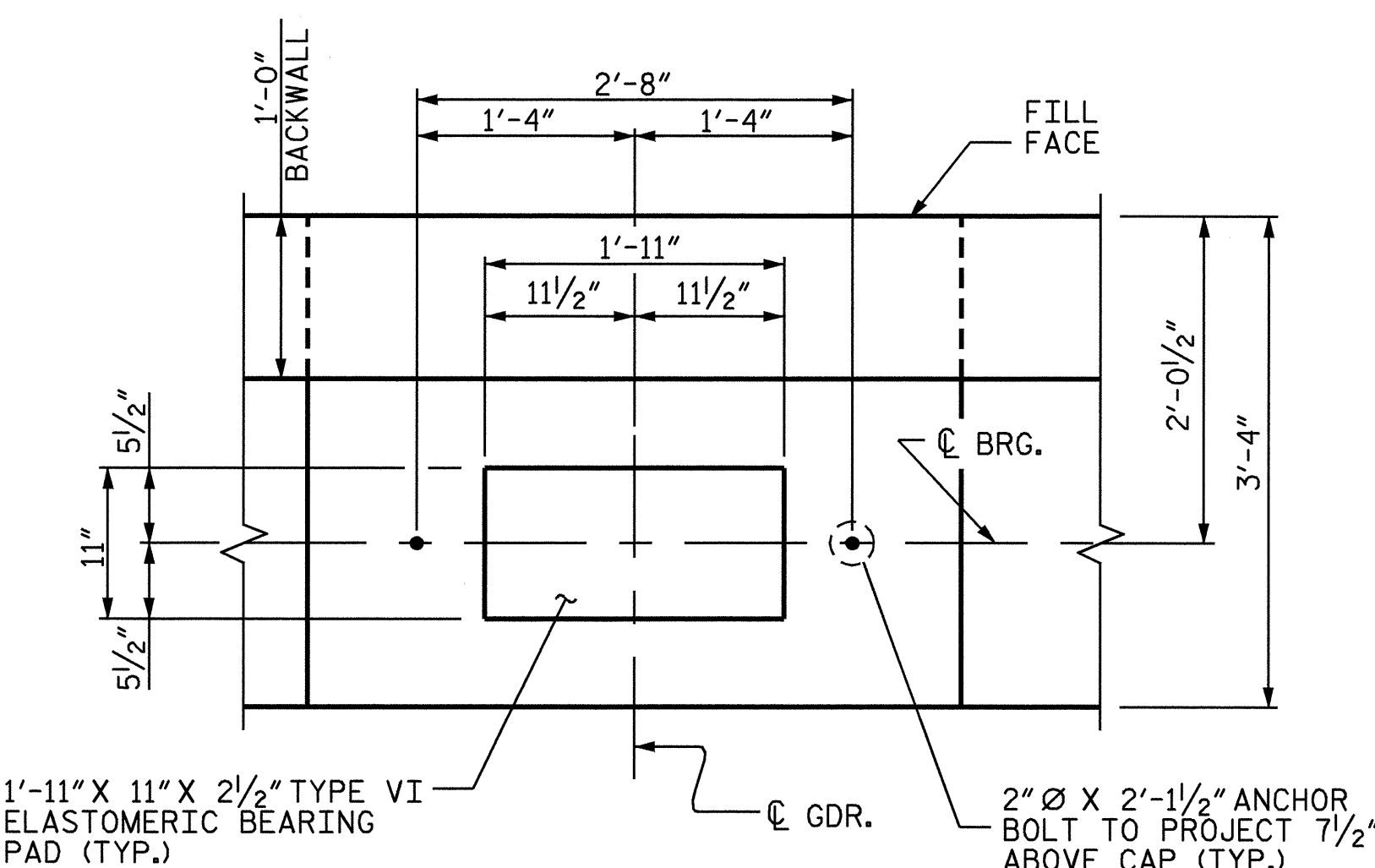
FOR PILE SPLICE DETAILS SEE SHEET 3 OF 3.

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

PIPE PILE PLATES, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

REMOVE AND REPLACE OR REPAIR TO THE SATISFACTION OF THE ENGINEER PILES THAT ARE DAMAGED, DEFORMED OR COLLAPSED DURING INSTALLATION OR DRIVING.

PILE SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AWS D1.1.



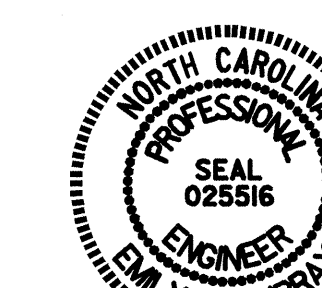
DETAIL "A"

PROJECT NO. B-3684  
 PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 1 OF 3

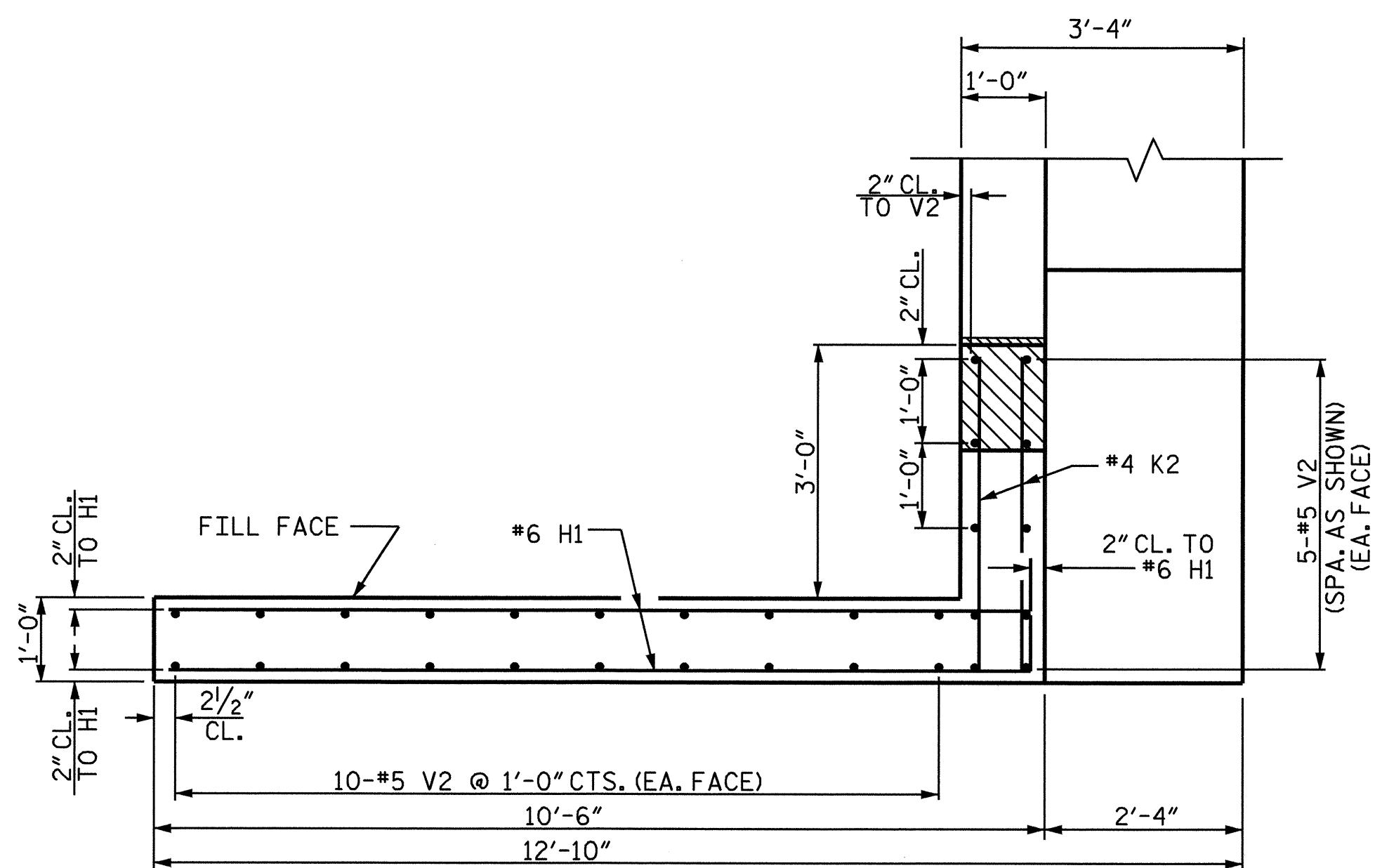
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 END BENT #2

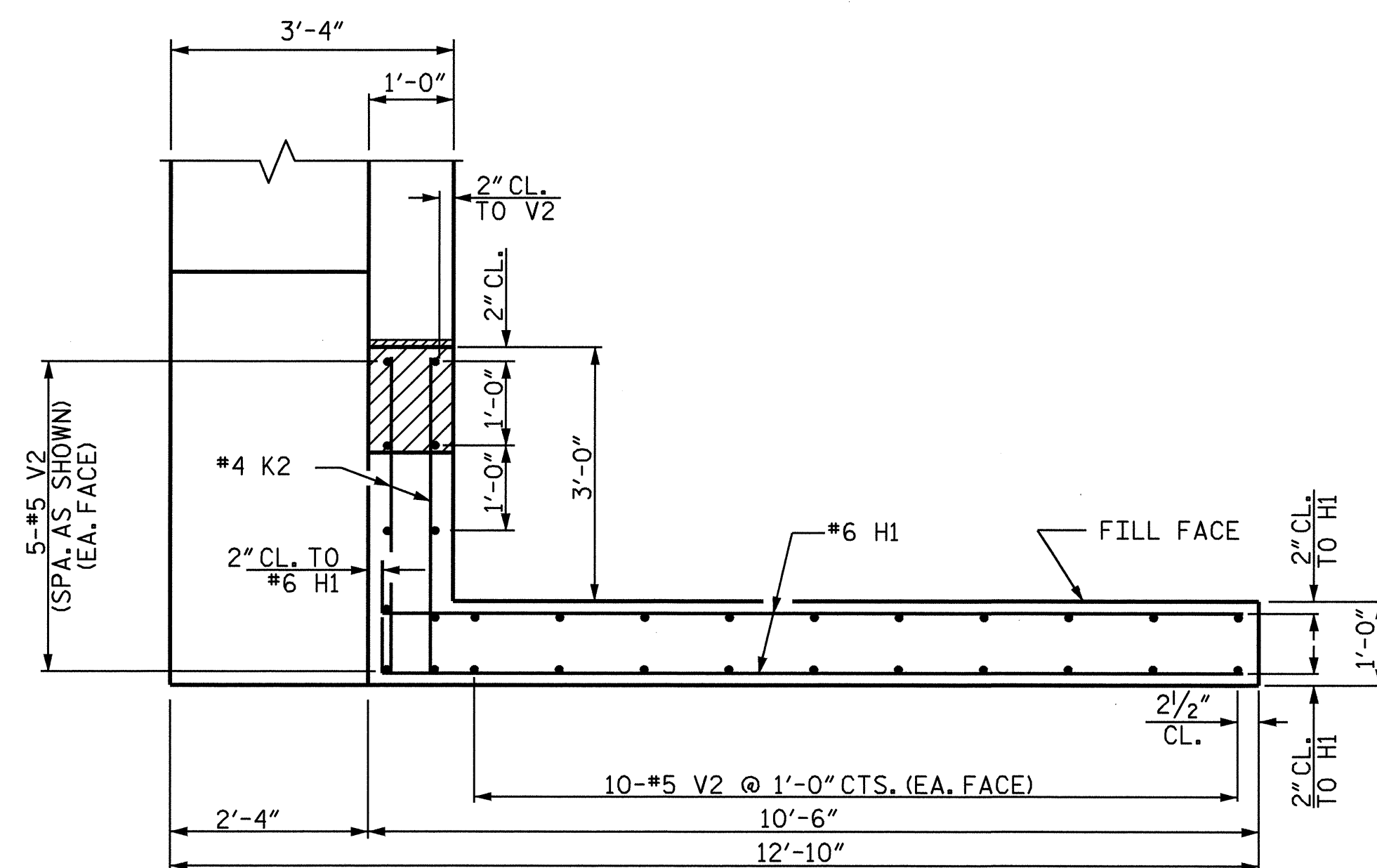


REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-58	
1			3			TOTAL SHEETS	
2			4			67	

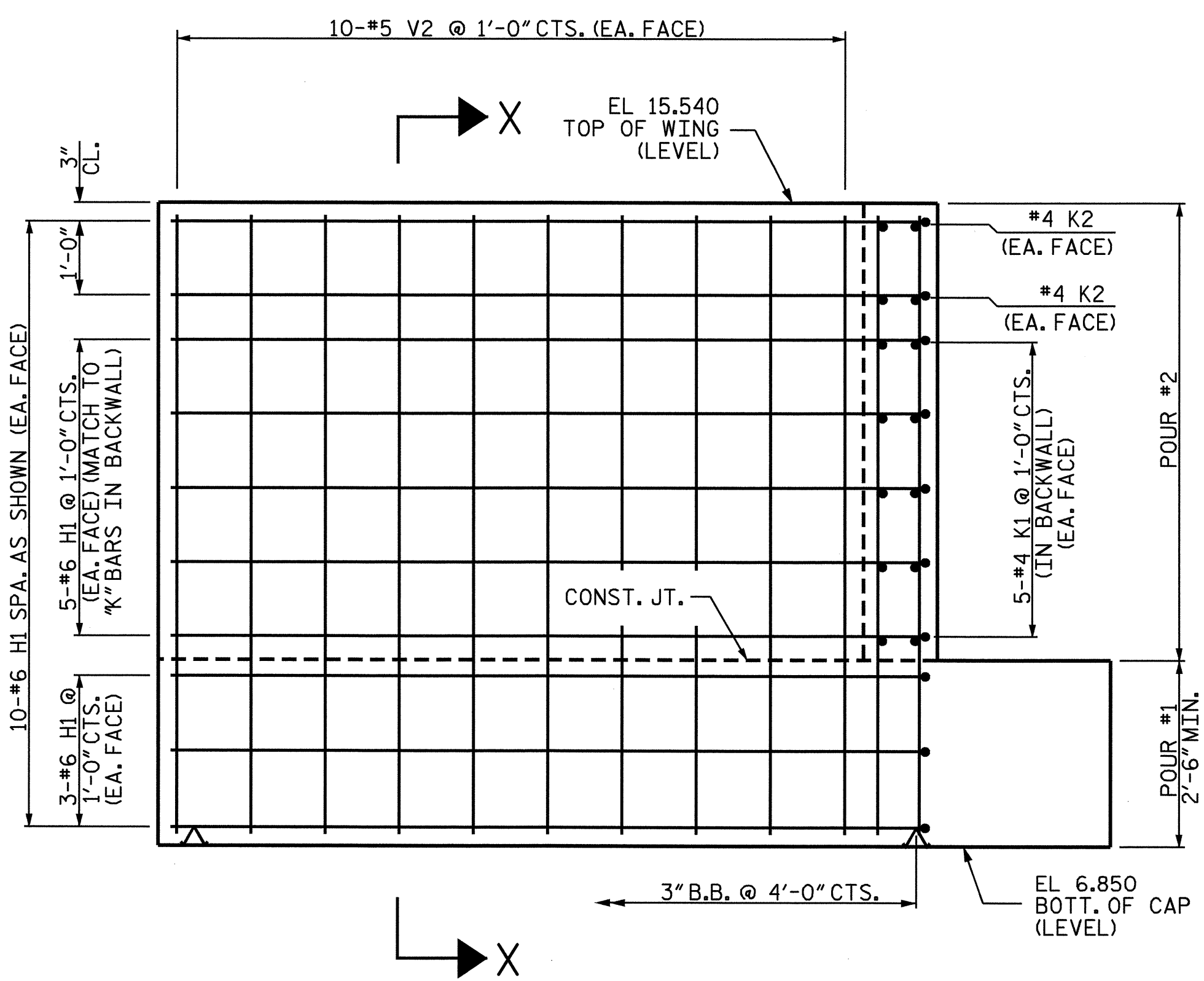
DRAWN BY: M.D.PISO DATE: 03/2008  
 CHECKED BY: M.GUDLAUGASSON DATE: 04/2008



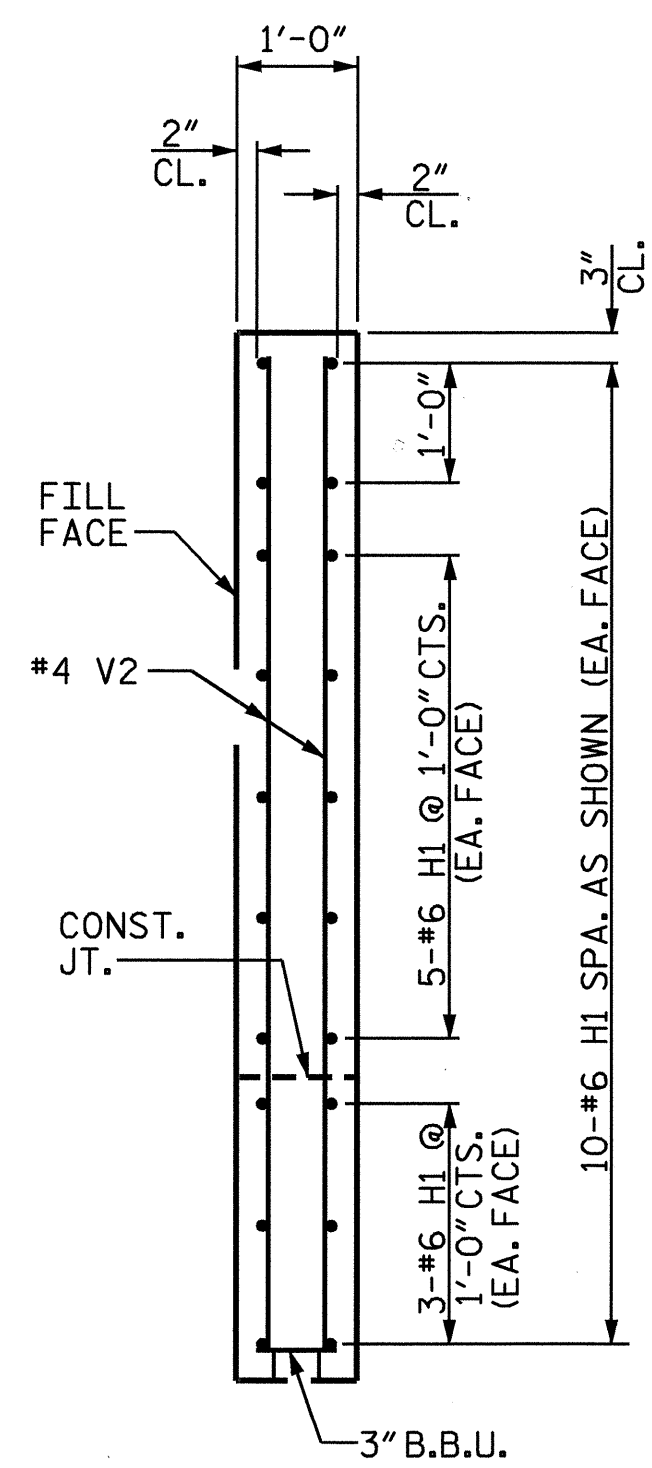
PLAN OF WING (W1)



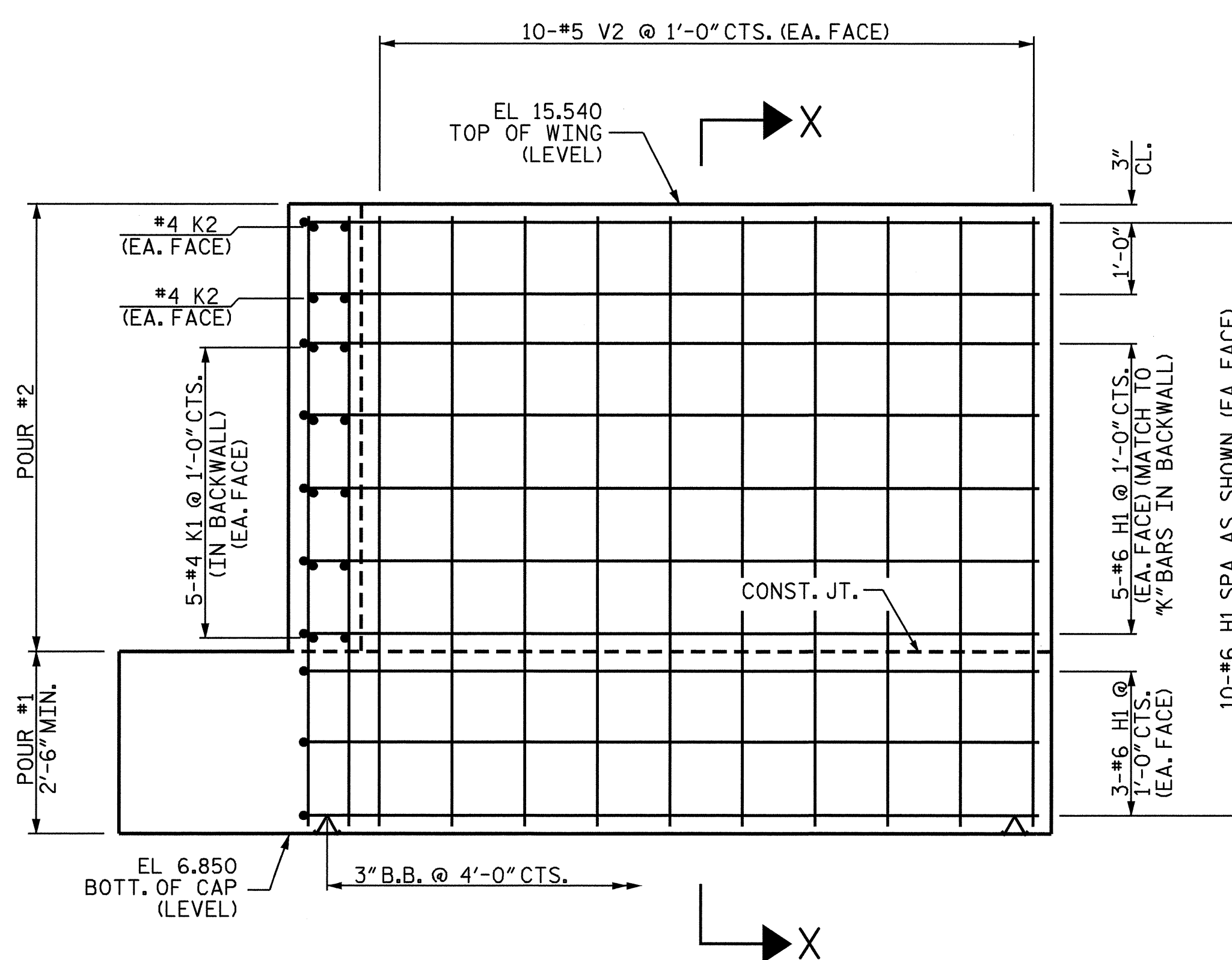
PLAN OF WING (W2)



ELEVATION OF WING (W1)



SECTION X-X

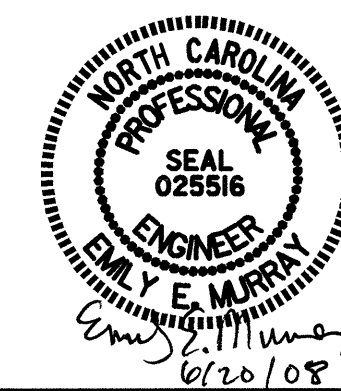


ELEVATION OF WING (W2)

PROJECT NO. B-3684  
 PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUBSTRUCTURE  
 END BENT #2



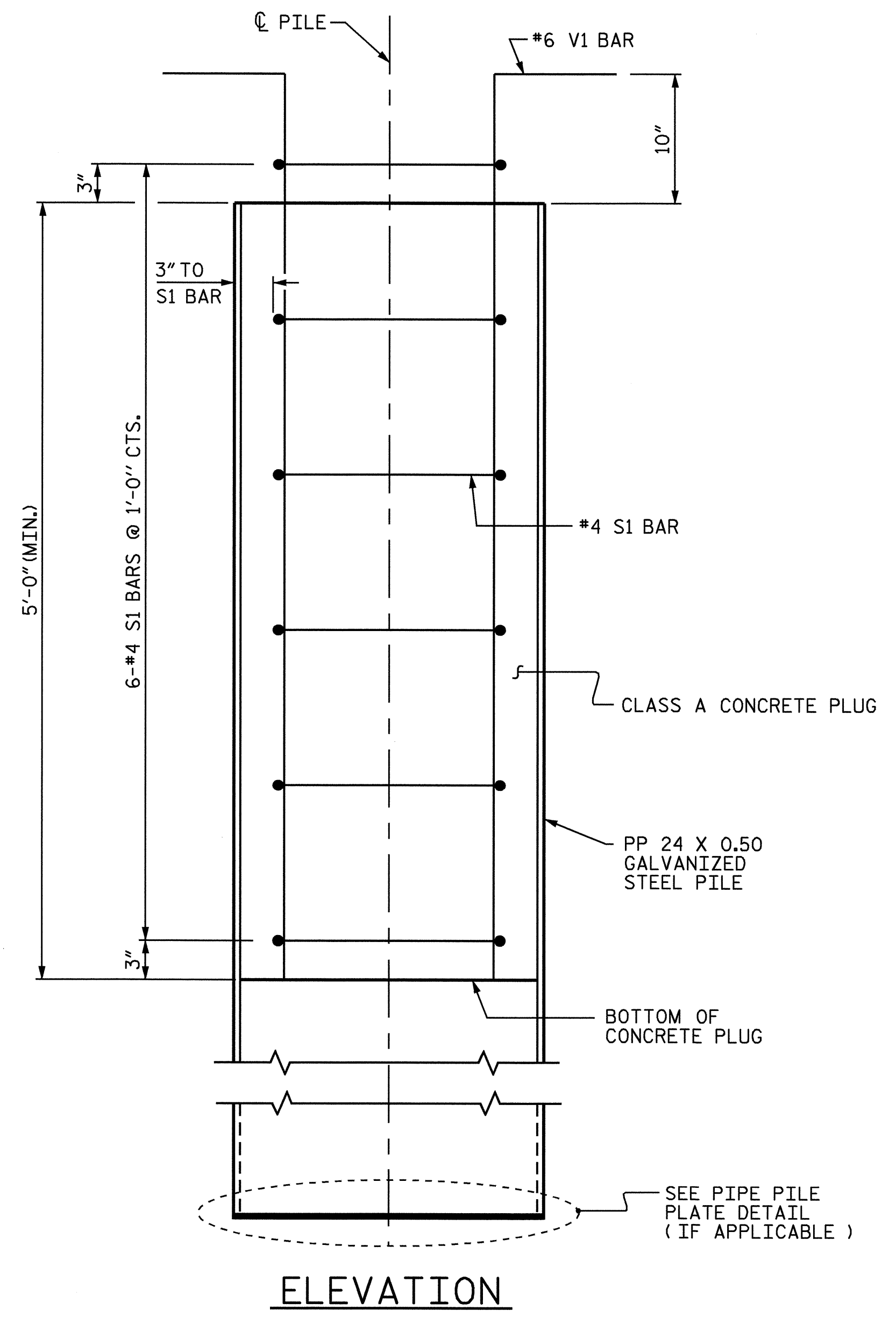
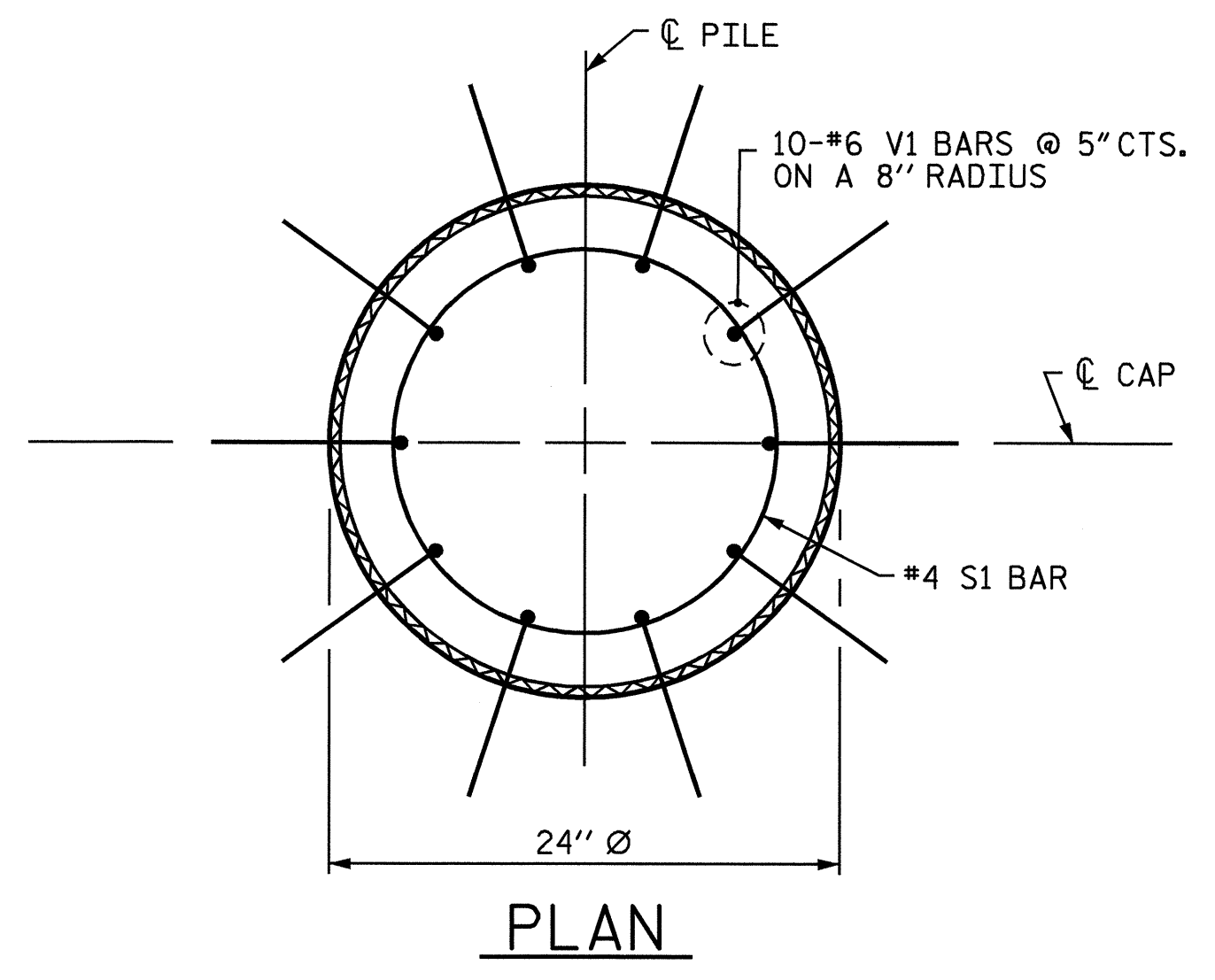
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 CHECKED BY: M.GUDLAUGASSON DATE: 04/2008

19-JUN-2008 11:39  
 R:\structures\b3684\final plans\b-3684.ed\_eb2.dgn  
 padkins

REVISIONS						SHEET NO. S-59
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 67
2			4			







PP 24 X 0.50 GALVANIZED STEEL PILE  
\*( OPEN OR CLOSED END )

NOTES

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

GALVANIZE STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED. GALVANIZING OR METALLIZING PIPE PILE PLATES IS NOT REQUIRED.

PIPE PILE PLATES, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

REMOVE AND REPLACE OR REPAIR TO THE SATISFACTION OF THE ENGINEER PILES THAT ARE DAMAGED, DEFORMED OR COLLAPSED DURING INSTALLATION OR DRIVING.

PILE SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AWS D1.1.

FOR CLOSED END PIPE PILES, REMOVE ALL SOIL AND WATER FROM INSIDE THE PILES JUST PRIOR TO PLACING REINFORCING STEEL AND CONCRETE FOR THE CONCRETE PLUG.

FOR OPEN END PIPE PILES, REMOVE ENOUGH SOIL AND WATER FROM INSIDE THE PILES TO CONSTRUCT THE CONCRETE PLUG WITHOUT FOULING THE CONCRETE.

FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE BENT CAP UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

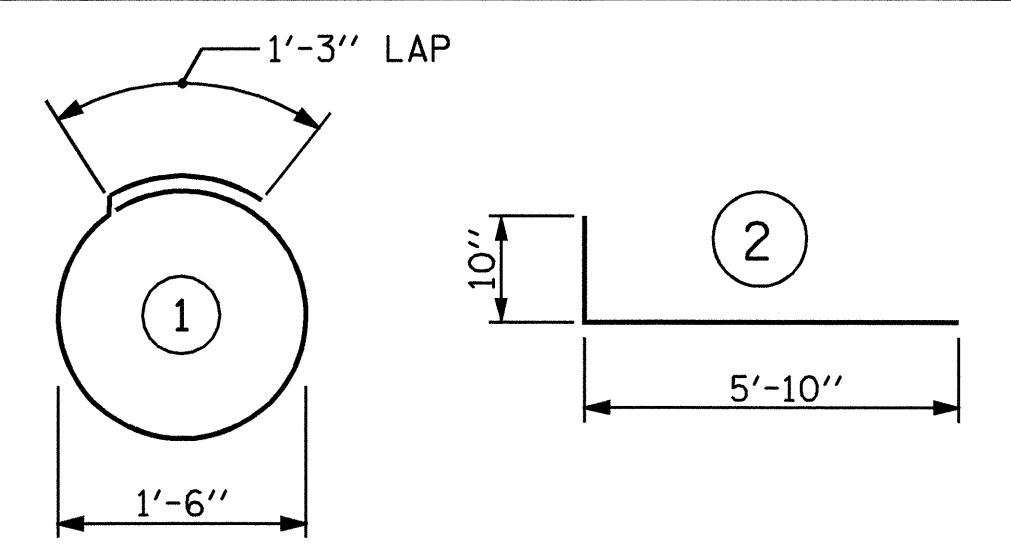
THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 24 X 0.50 GALVANIZED STEEL PILES.

BILL OF MATERIAL FOR ONE  
PP 24 X 0.50 GALVANIZED STEEL PILE

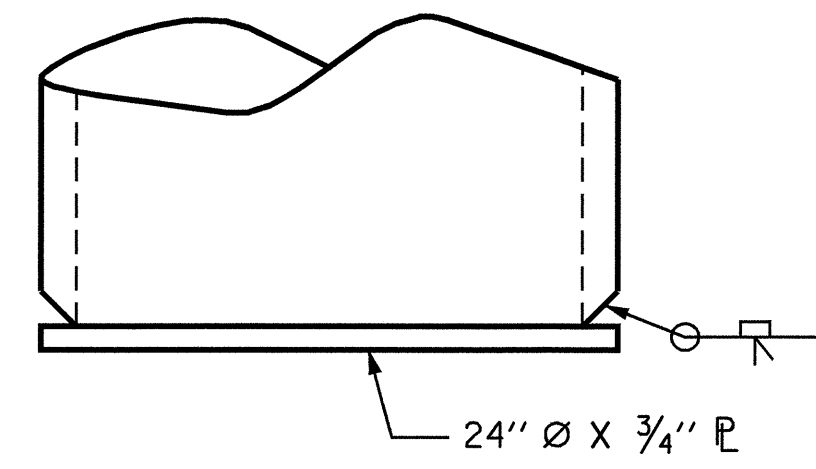
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	6'-0"	24
V1	10	#6	2	6'-8"	100
REINFORCING STEEL =					124 lbs

CLASS A CONCRETE  
5'-0" MINIMUM PLUG 0.5 CY

BAR TYPES

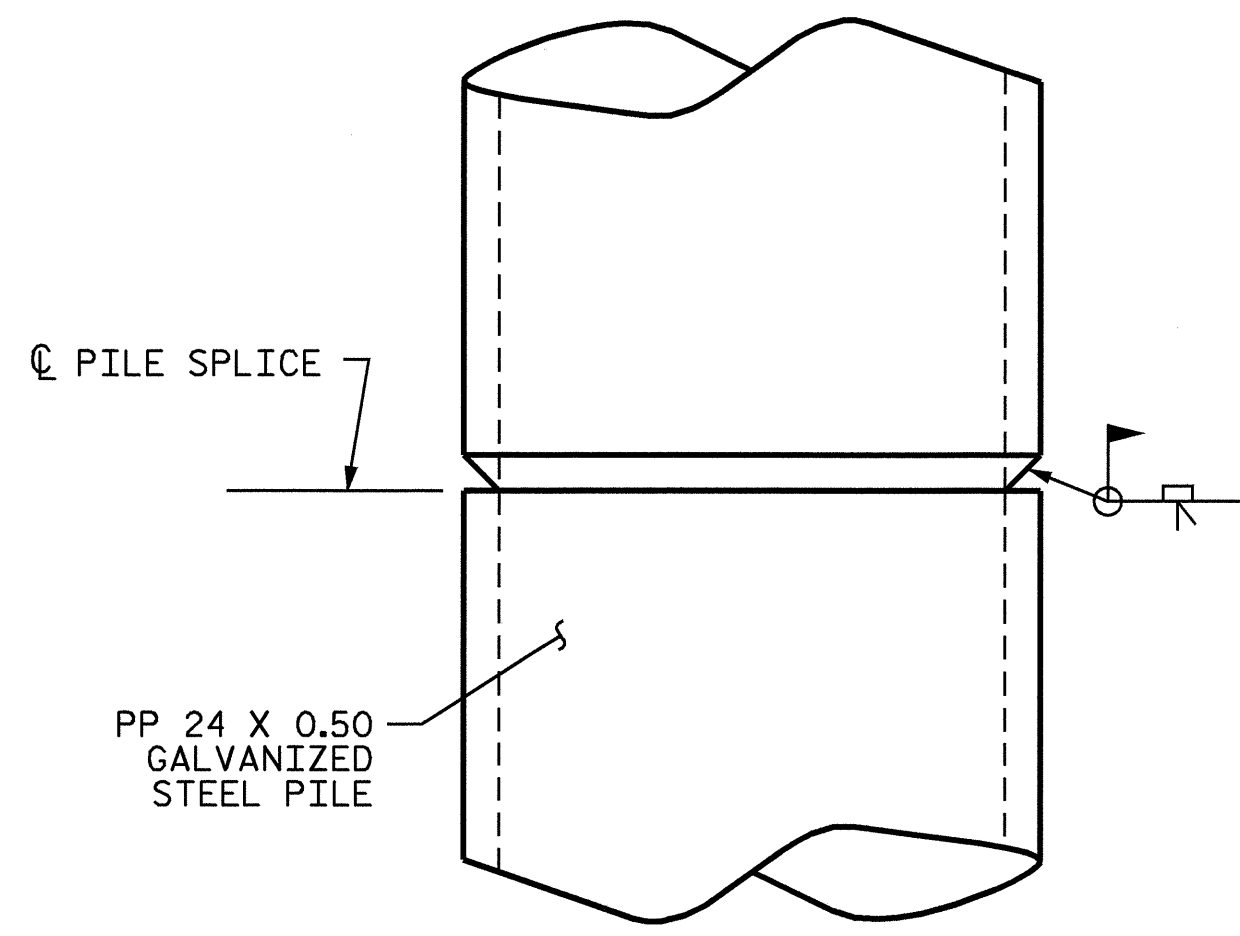


ALL BAR DIMENSIONS ARE OUT TO OUT.



PIPE PILE PLATE DETAIL  
\*( IF APPLICABLE )

\* PIPE PILE PLATES MAY BE REQUIRED FOR THE PIPE PILES AT BENT NO. 12 THRU 19. THE ENGINEER WILL DETERMINE THE NEED FOR PIPE PILE PLATES AFTER DRIVING TEST PILES OR A FEW INITIAL PRODUCTION PILES. USE PIPE PILE PLATES WITH A DIAMETER EQUAL TO THE PIPE PILE DIAMETER.

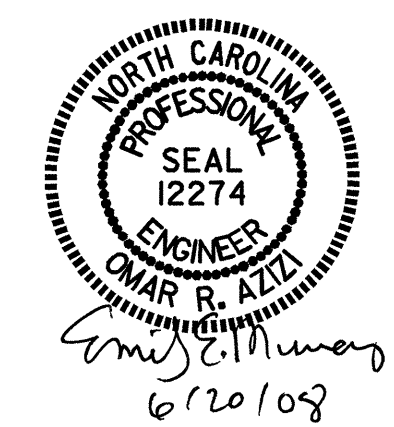


PIPE PILE SPLICE DETAIL

PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

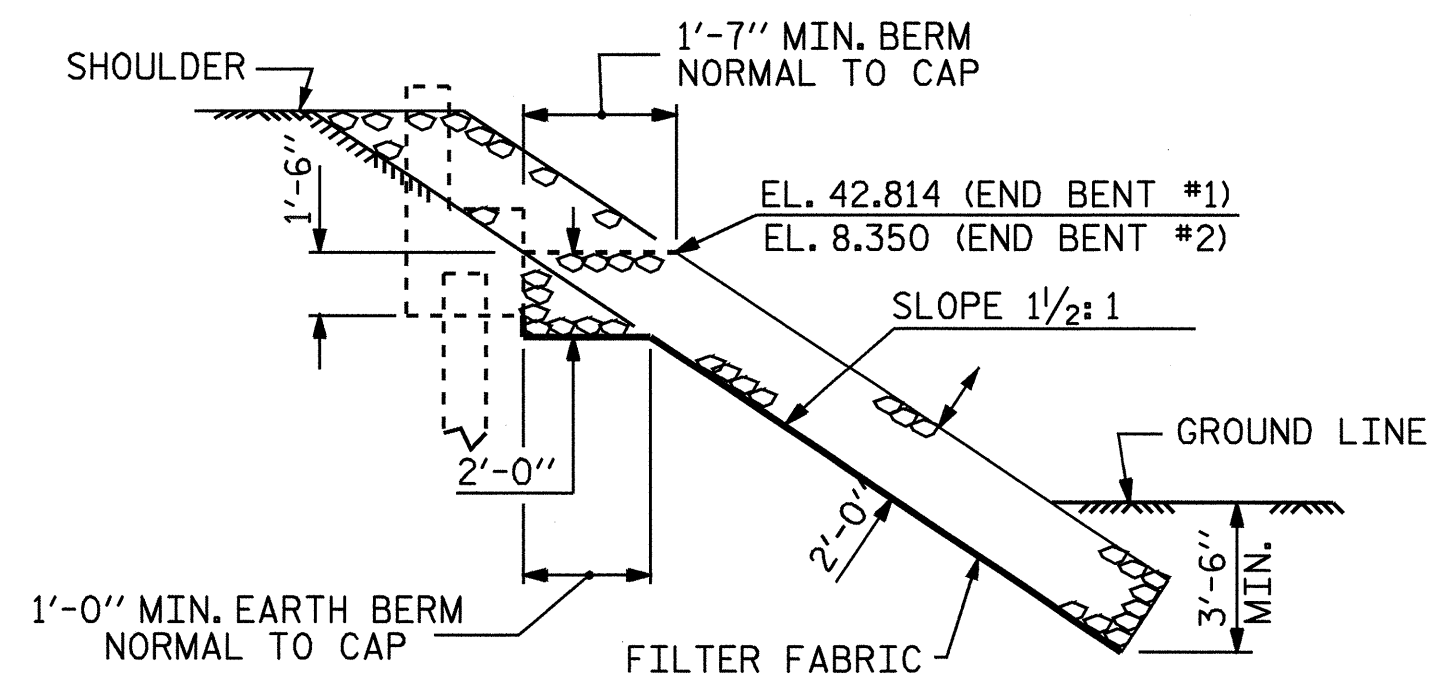
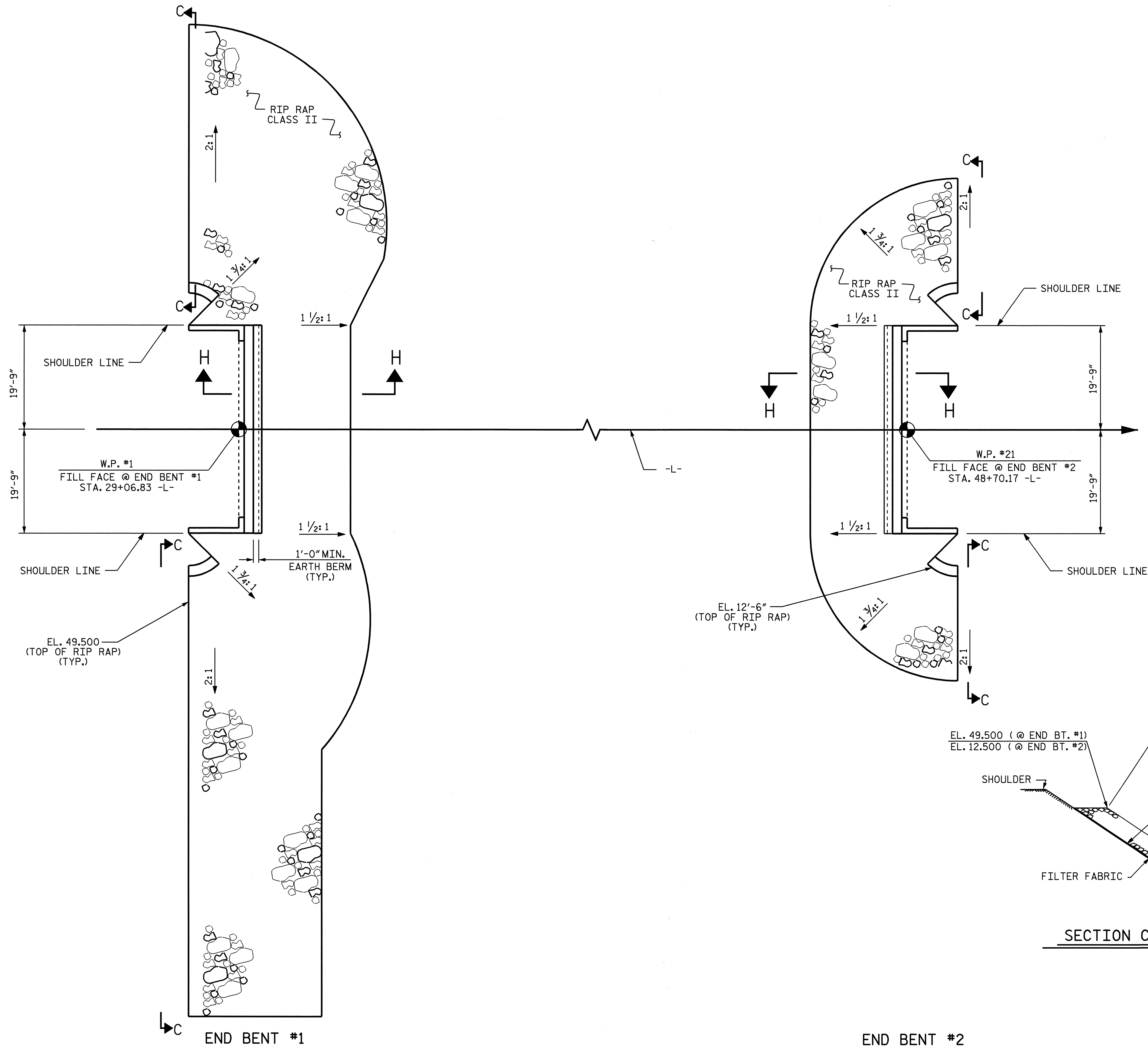
24" STEEL PIPE PILE



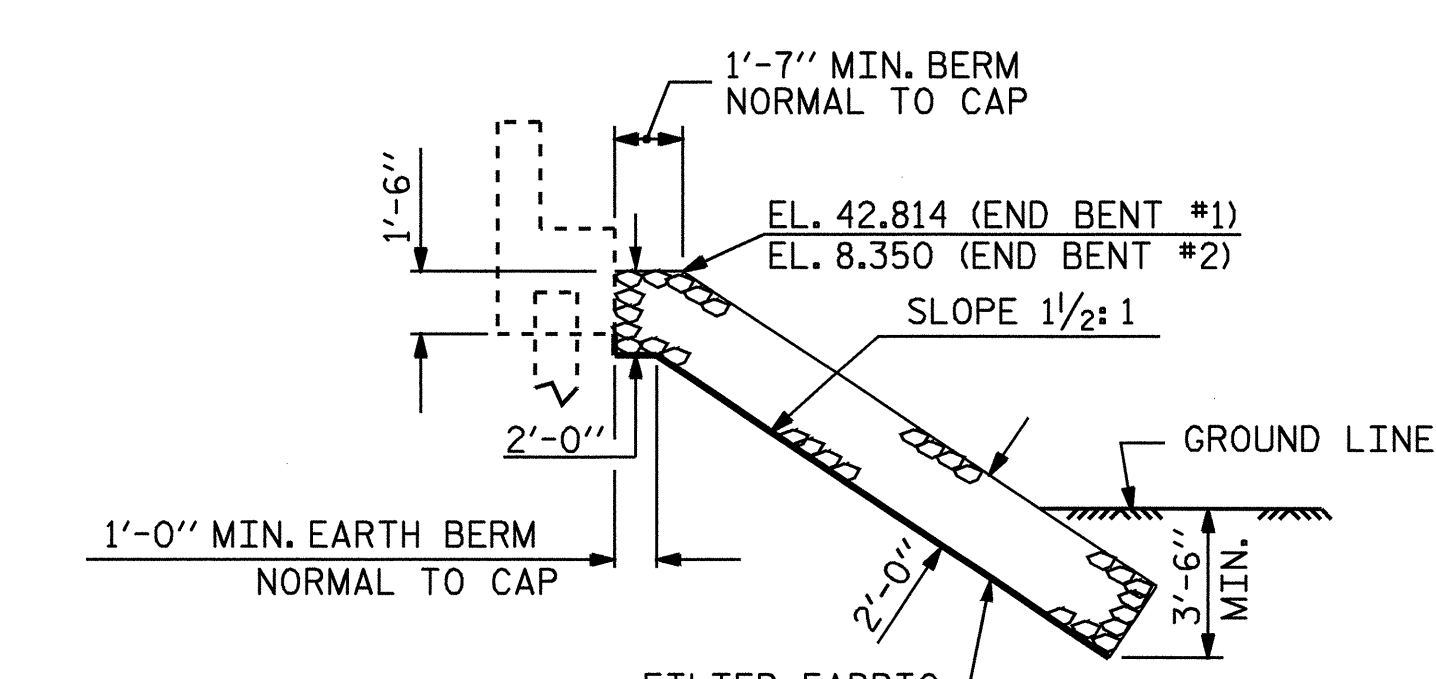
ASSEMBLED BY : M. GUDLAUGSSON	DATE : 06/07
CHECKED BY : O.R. AZIZI	DATE : 04/08
DRAWN BY : TLA	8/05
CHECKED BY : GM	9/05
ADDED	10/1/05
REV.	5/1/06R
MAA/KMM	

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-61
1			3			TOTAL SHEETS
2			4			67

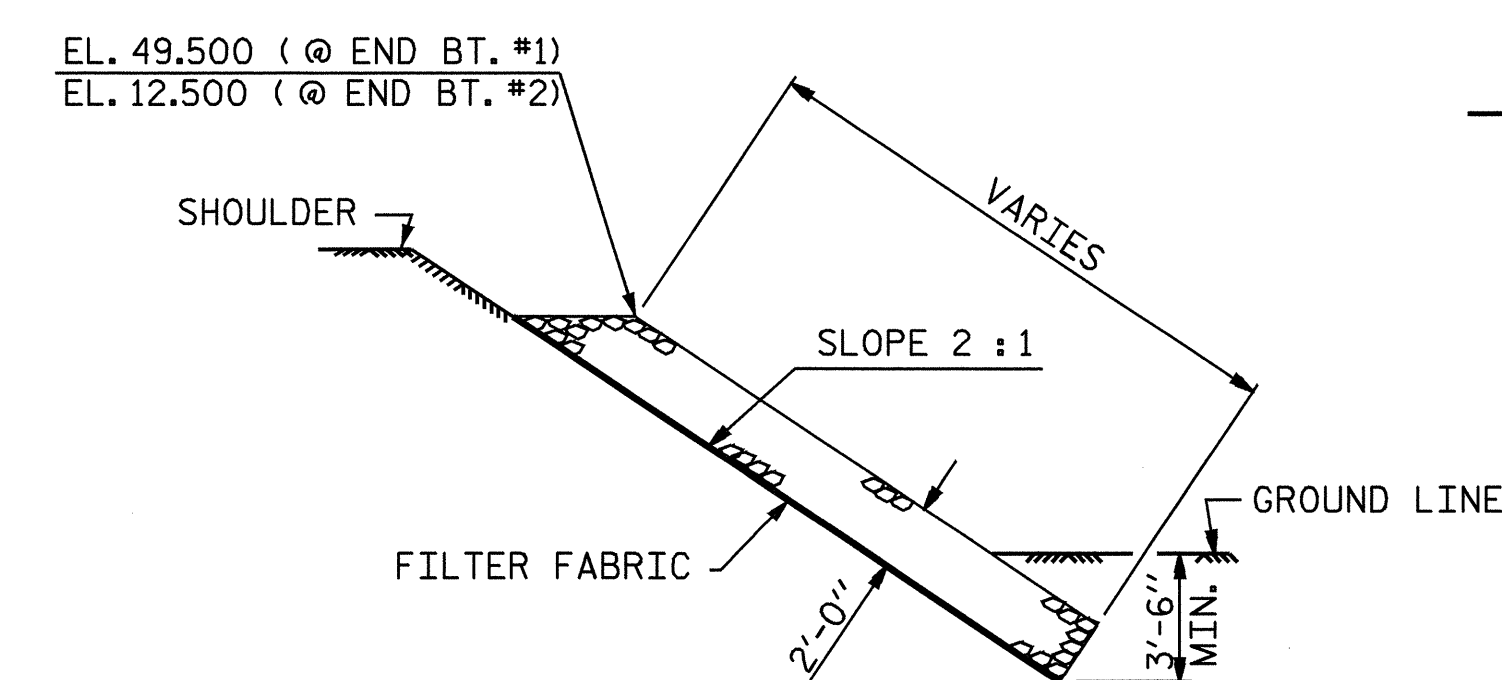
ESTIMATED QUANTITIES		
BRIDGE @ STA. 38+88.50 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	830	922
END BENT 2	206	229



SECTION H-H



SECTION C-C  
BERM RIP RAPPED



SECTION C-C

PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
RIP RAP DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

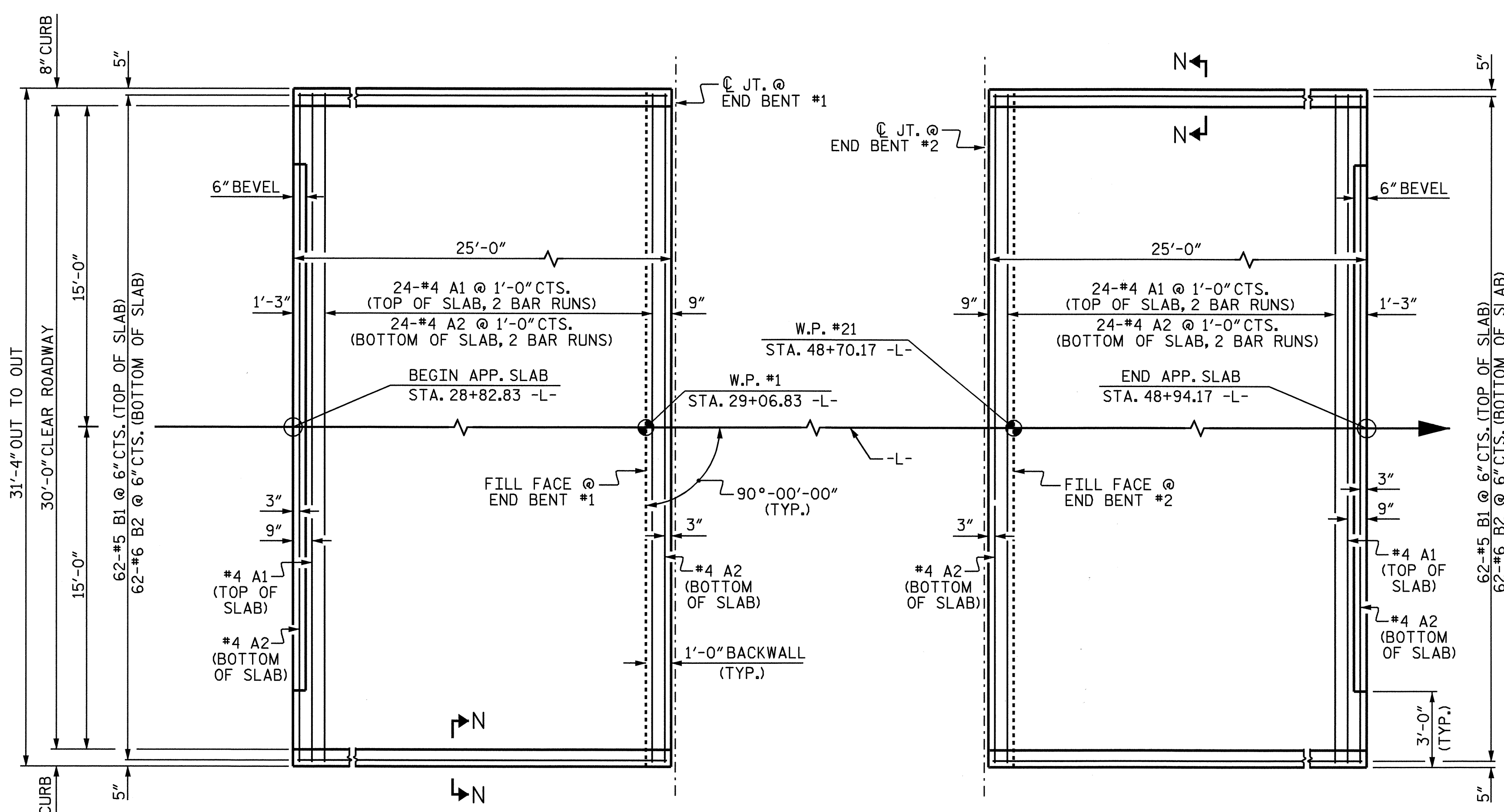
DRAWN BY: C.MILLER DATE: 03/05  
CHECKED BY: PEGGY ADKINS DATE: 04-08

PLAN OF RIP RAP

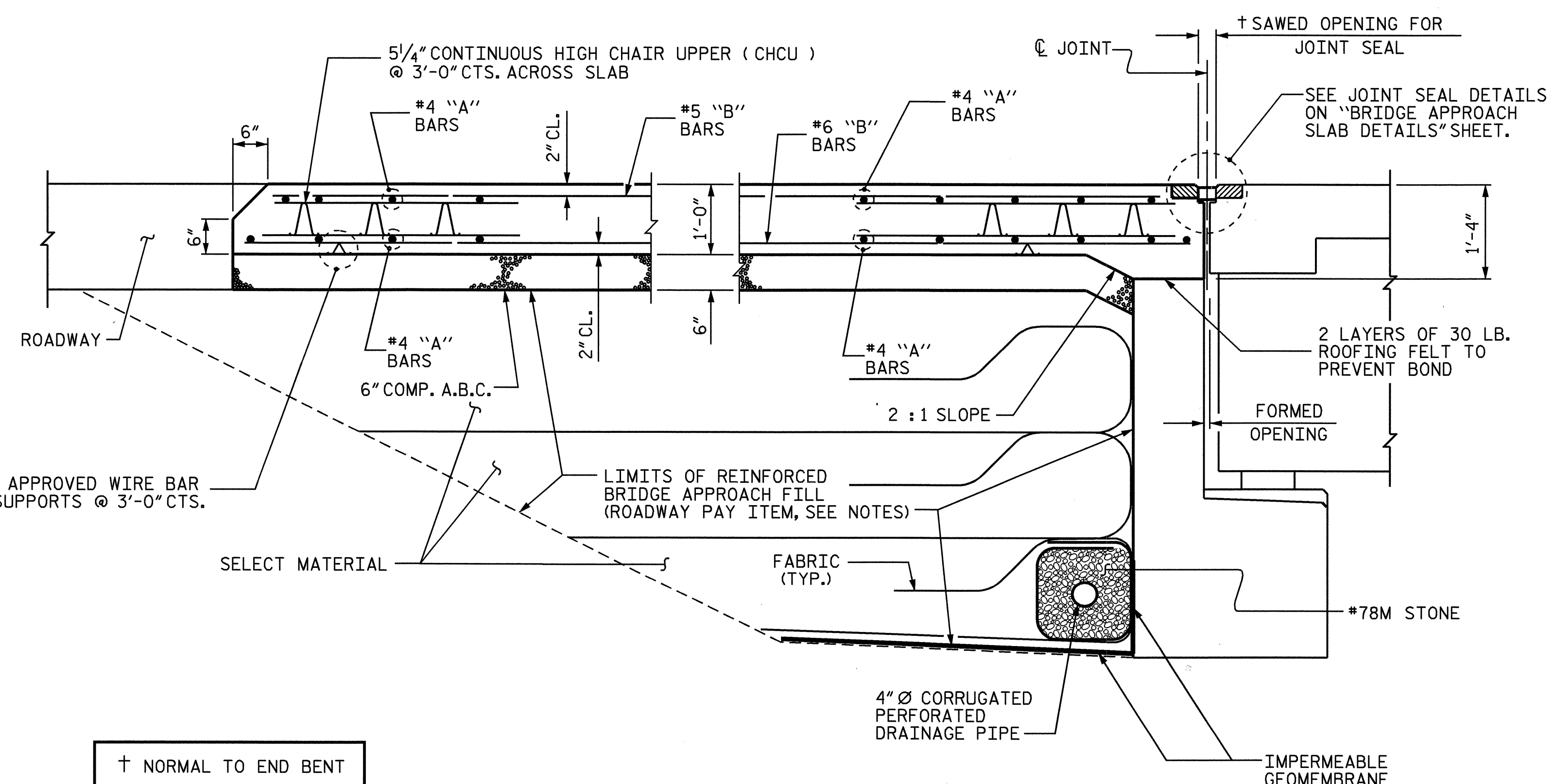
END BENT #2

END BENT #1

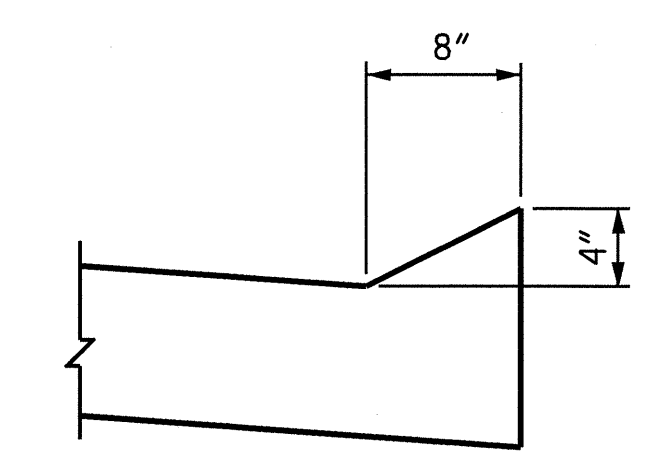
SHEET NO.  
S-62  
TOTAL SHEETS  
67



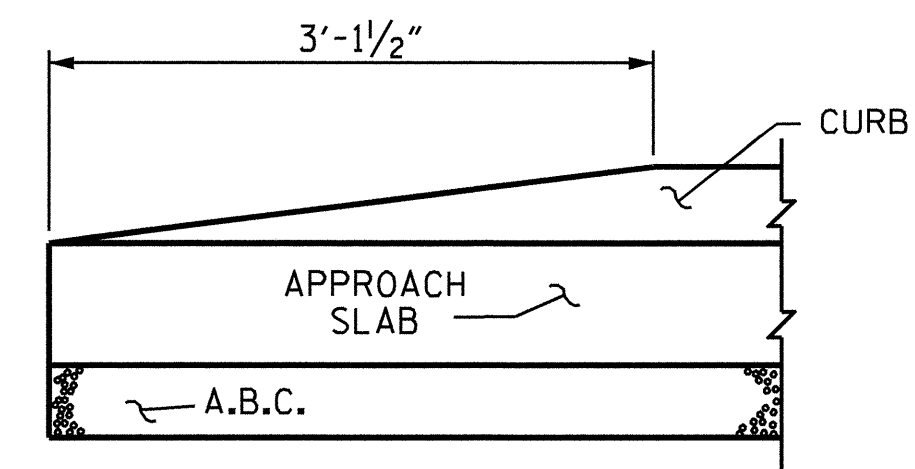
PLAN @ END BENT #1  
 PLAN @ END BENT #2  
 DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

NOTES

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

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

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

THE 6" COMP. A.B.C. SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB AND SHALL EXTEND 1'-0" OUTSIDE EACH EDGE OF THE APPROACH SLAB.

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

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

THE JOINT SHALL BE SAWS PRIOR TO THE CASTING OF THE BARRIER RAIL.

WITH EVAZOTE JOINT SEAL

FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

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

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

BILL OF MATERIAL					
<b>APPROACH SLAB AT EB #1</b>					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	50	#4	STR	16'-6"	551
A2	52	#4	STR	16'-5"	570
*B1	62	#5	STR	23'-8"	1530
B2	62	#6	STR	24'-8"	2297
REINFORCING STEEL (LBS.)					2867 LBS.
*EPOXY COATED REINFORCING STEEL (LBS.)					2081 LBS.
CLASS AA CONCRETE (C.Y.)					29.5 C.Y.
<b>APPROACH SLAB AT EB #2</b>					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	50	#4	STR	16'-6"	551
A2	52	#4	STR	16'-5"	570
*B1	62	#5	STR	23'-8"	1530
B2	62	#6	STR	24'-8"	2297
REINFORCING STEEL (LBS.)					2867 LBS.
*EPOXY COATED REINFORCING STEEL (LBS.)					2081 LBS.
CLASS AA CONCRETE					29.5 C.Y.
<b>SPLICE CHART</b>					
SIZE	EPOXY COATED (LENGTH)	UNCOATED (LENGTH)			
#4	2'-0"	1'-9"			

ASSEMBLED BY : M.D.PISO DATE : 04/2008  
 CHECKED BY : M.GUDLAUGSSON DATE : 04/2008  
 DRAWN BY : EEM 3/95 REV. 7/10/01 LES/RDR  
 CHECKED BY : VAP 3/95 REV. 5/7/03R RWW/JTE  
 REV. 5/1/06R KMM/GM



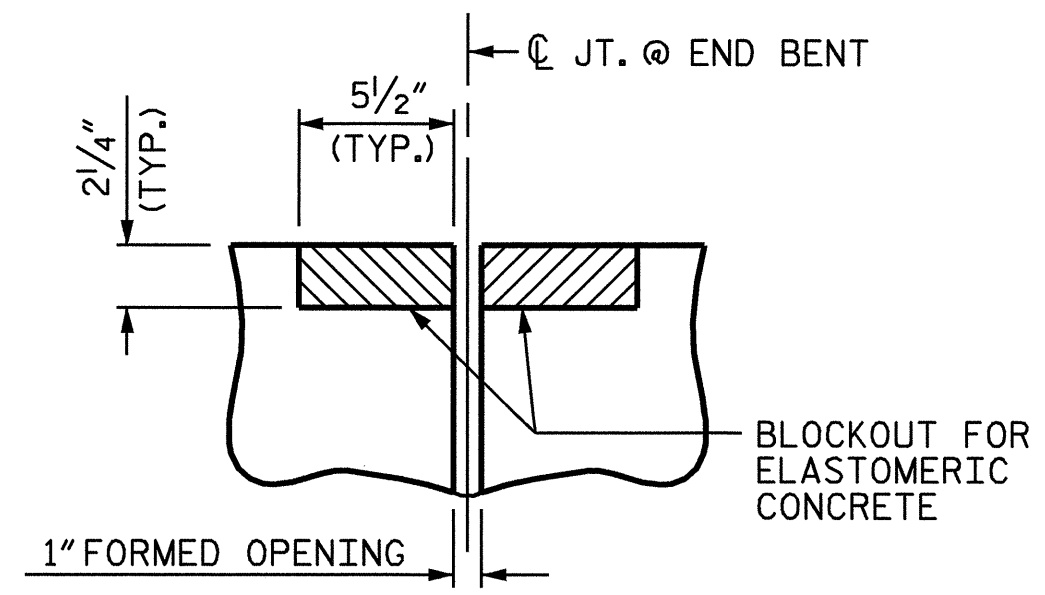
PROJECT NO. B-3684  
 PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 1 OF 2

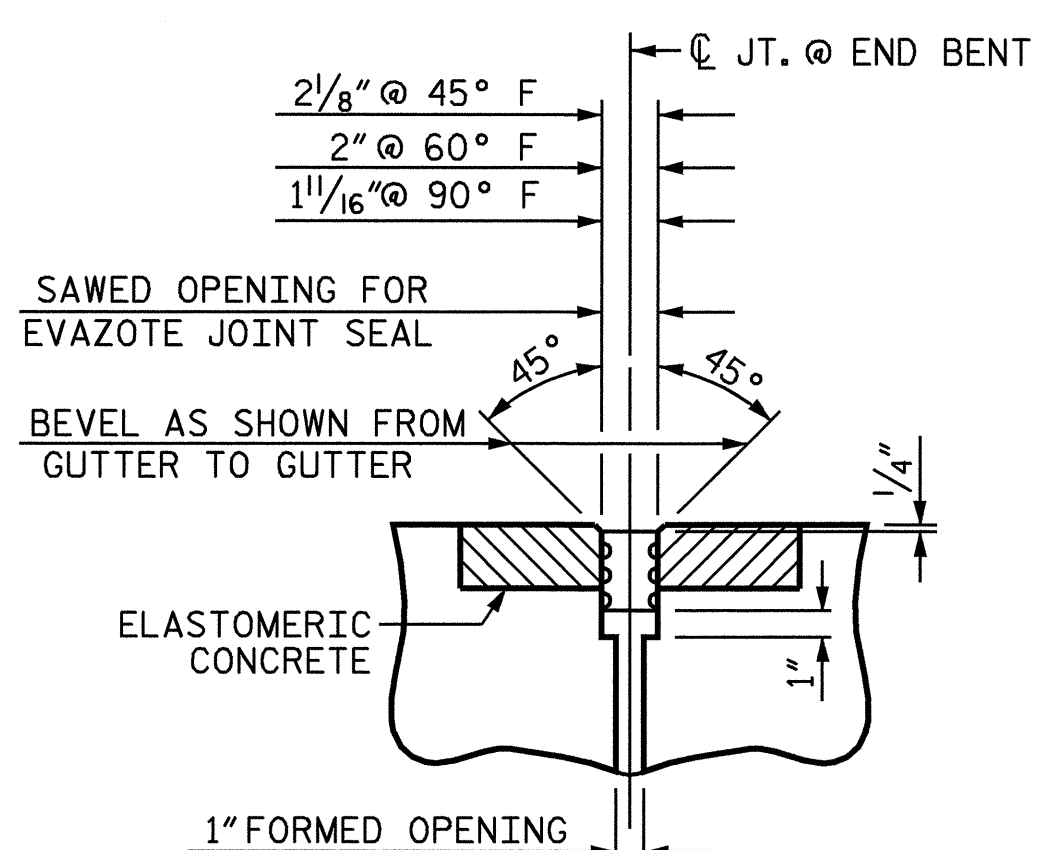
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-63  
 TOTAL SHEETS 67

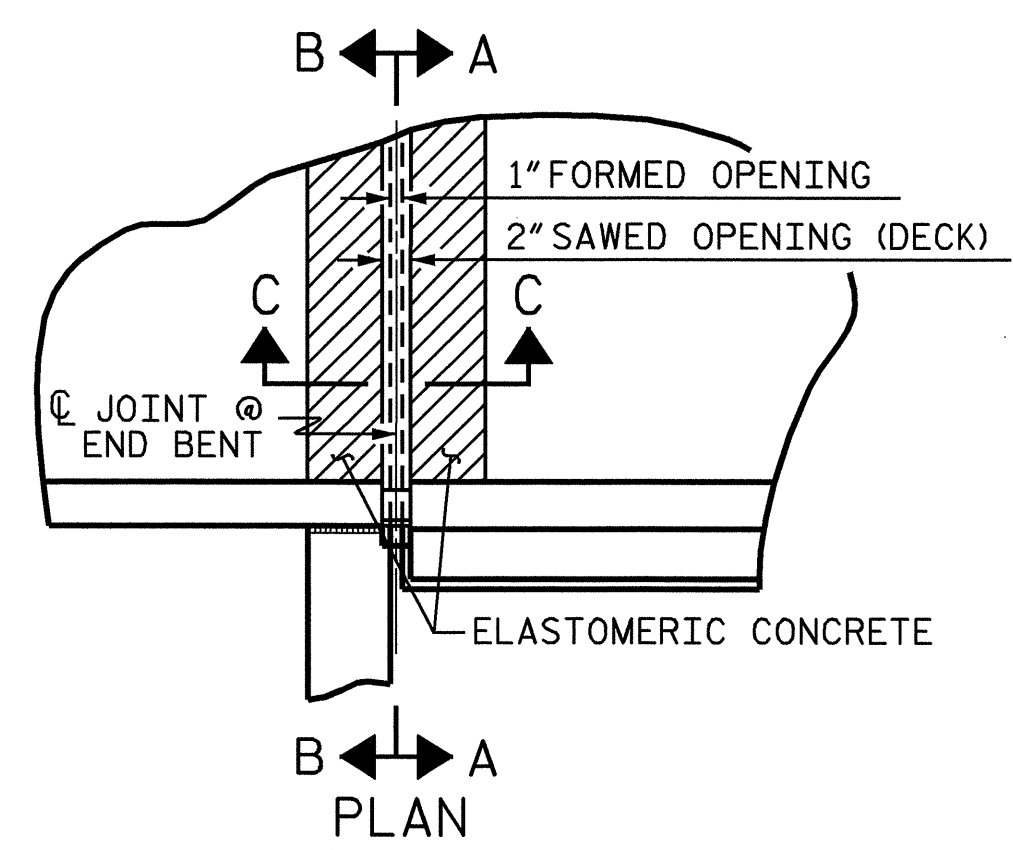




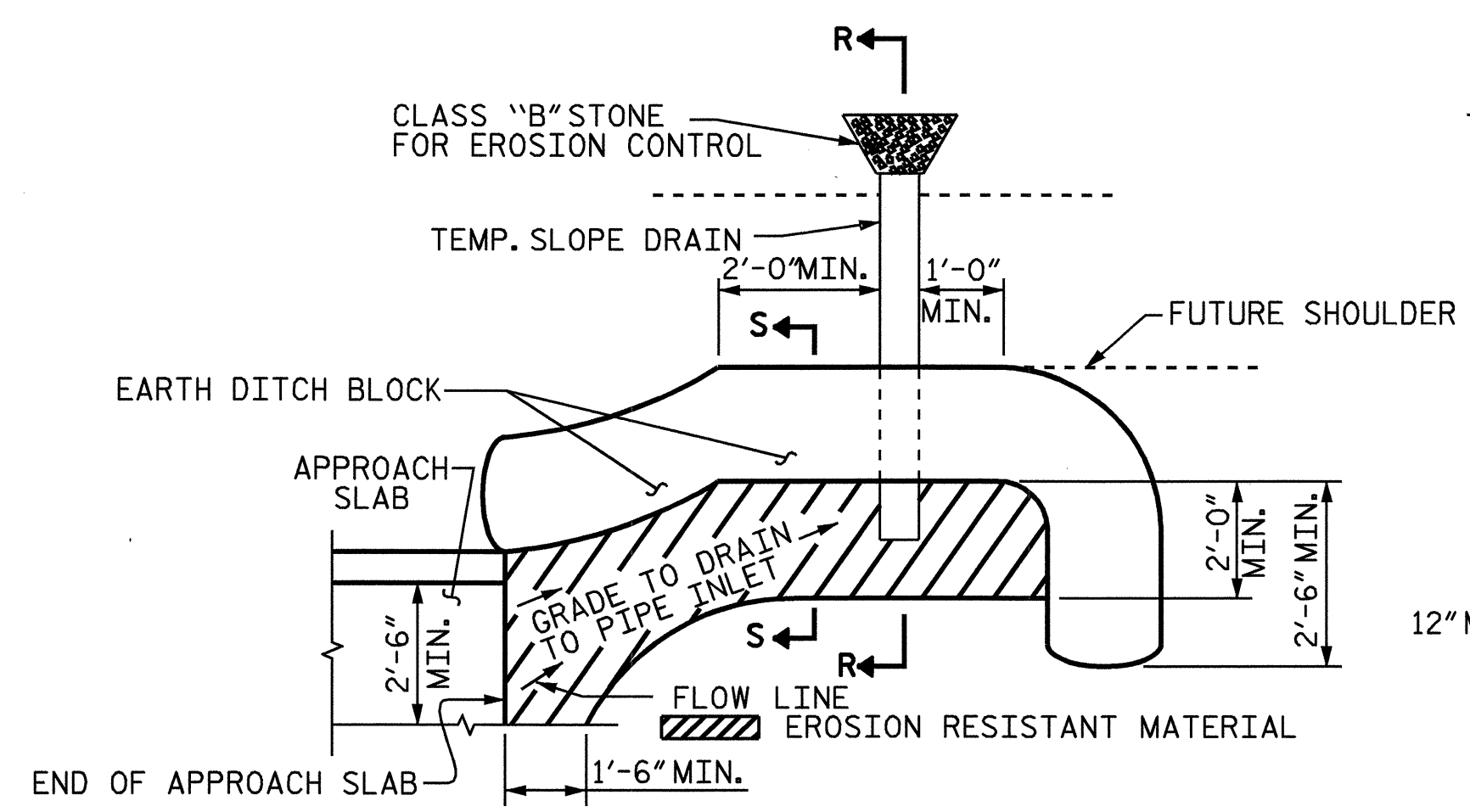
**SECTION C-C**  
EVAZOTE JOINT SEAL  
(PRE-SAWED ELASTOMERIC  
CONCRETE DIMENSIONS)



**SECTION C-C**  
EVAZOTE JOINT SEAL  
(EXPANSION)

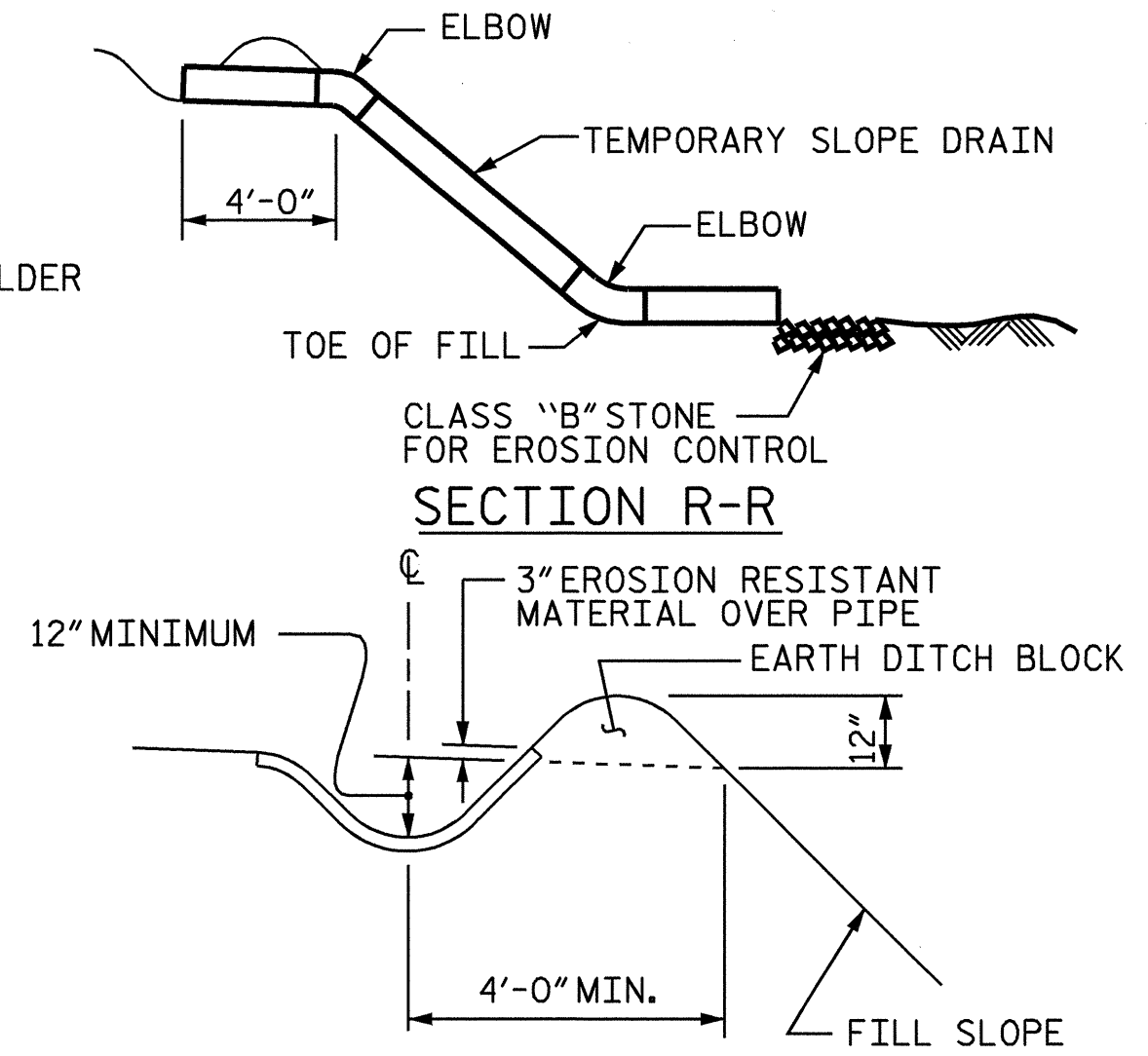


**PLAN**



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.

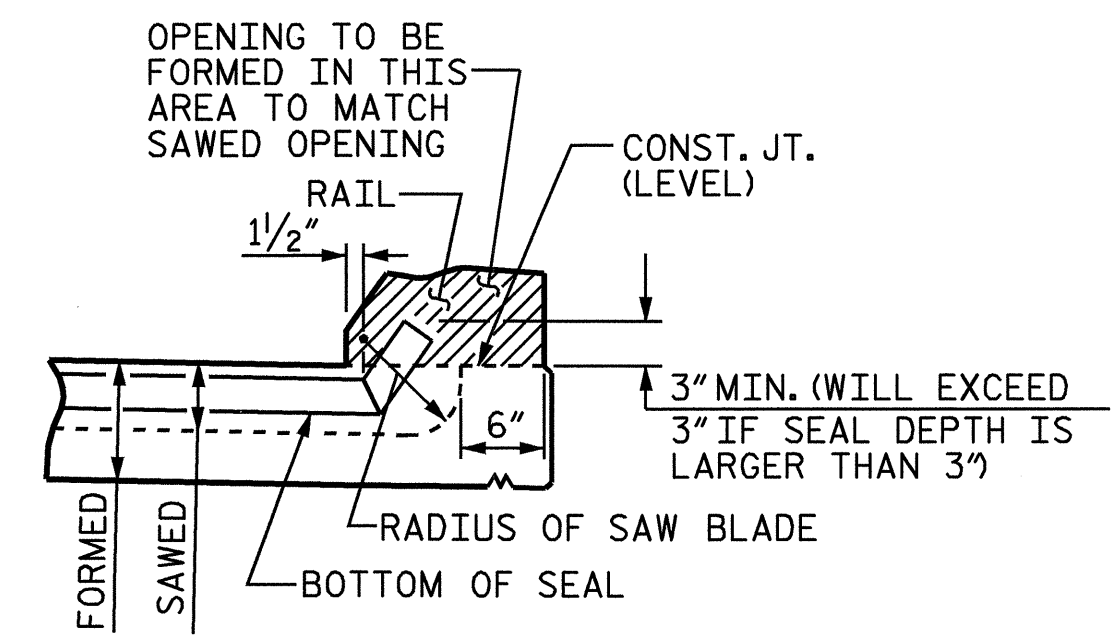
**PLAN VIEW**



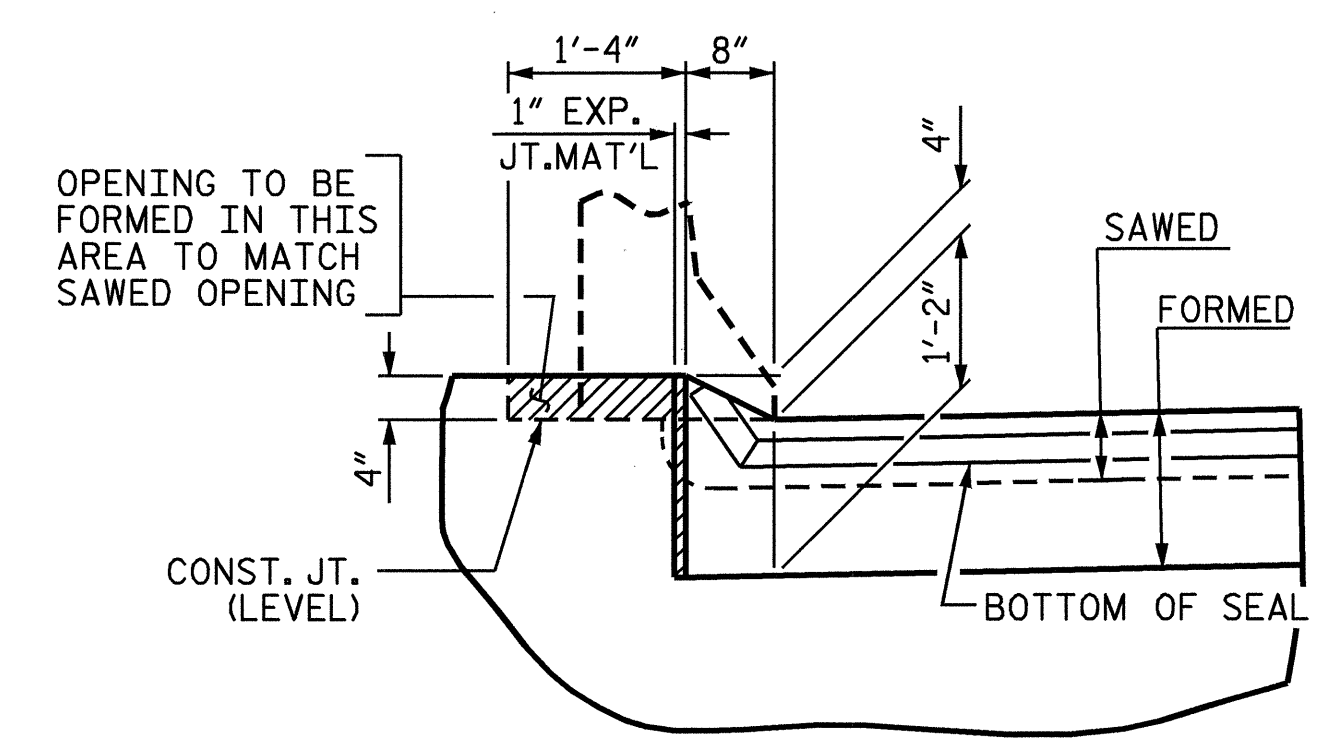
**SECTION S-S**

**TEMPORARY BERM AND SLOPE DRAIN DETAILS**

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



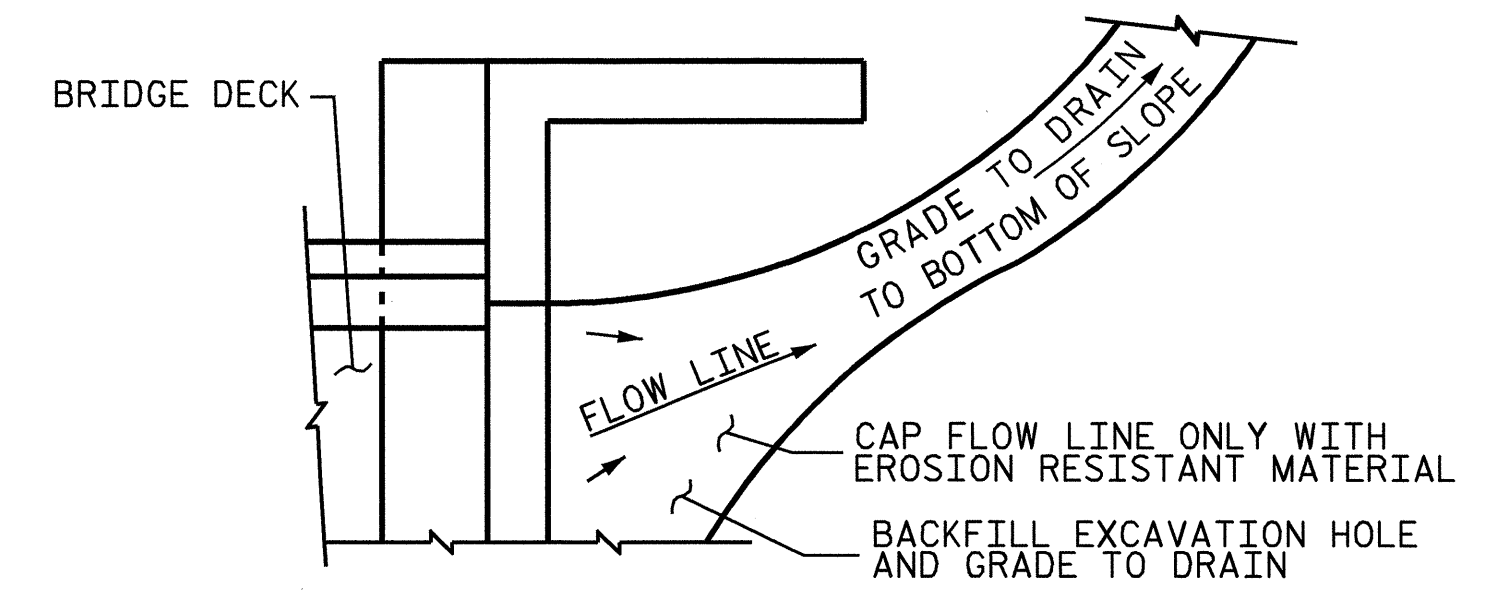
**SECTION A-A**



**SECTION B-B**

**JOINT SEAL DETAILS @ END BENT**

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



NOTE: 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**

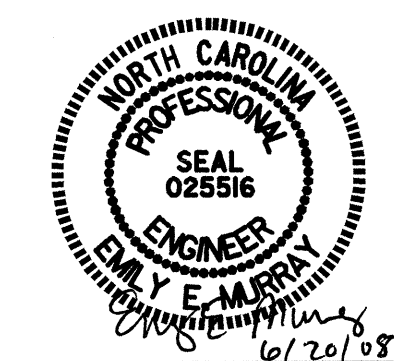
ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	5.2 C.F.
2	5.2 C.F.
TOTAL	10.4 C.F.

\* BASED ON THE MINIMUM BLOCKOUT SHOWN.

PROJECT NO. B-3684  
PITT COUNTY  
STATION: 38+88.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
BRIDGE APPROACH  
SLAB DETAILS



REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-64	
1			3			TOTAL SHEETS	67
2			4				

ASSEMBLED BY : M.D.PISO	DATE : 04/2008
CHECKED BY : M.GUDLAUGSSON	DATE : 04/2008
DRAWN BY : FCJ 11/88	REV. 10/17/00 RWW/LES
CHECKED BY : ARB 11/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06R MAA/KMM

OVERHANG BRACKET CALCULATION INSTRUCTIONS

AASHTO SHAPES - TYPES III, IV, V, AND VI

- RECORD KNOWN INFORMATION ON "BRIDGE OVERHANG BRACKET SUMMARY" ON SHEET 2
- CALCULATE THE MAXIMUM SCREED LOAD PER BRACKET (SLPB) WITH AN ESTIMATED  $R = 1.5$ .  $SLPB = R \times W$ . ROUND VALUE UP TO NEAREST SLPB VALUE INDICATED ON APPROPRIATE TABLE 1-1, 1-2, 1-3, OR 1-4.
- WITH THE ESTIMATED SLPB, OVERHANG SLAB THICKNESS, "K" VALUE, AND 45° HANGER SAFE WORKING LOAD (SWL), ENTER THE APPROPRIATE TABLE 1-1, 1-2, 1-3, OR 1-4 (BASED ON OVERHANG DIMENSION) AND DETERMINE THE BRACKET SPACING, S.
- CALCULATE S/D1 AND S/D2, ROUNDING UP TO NEAREST VALUE IN TABLE 2. ENTER TABLE 2 AND DETERMINE R VALUE.
- CALCULATE REVISED SLPB. ROUND VALUE UP TO NEAREST SLPB VALUE INDICATED ON APPROPRIATE TABLE 1-1, 1-2, 1-3, OR 1-4.
- WITH THE REVISED SLPB, OVERHANG SLAB THICKNESS, "K" VALUE AND 45° HANGER SAFE WORKING LOAD (SWL), ENTER THE APPROPRIATE TABLE 1-1, 1-2, 1-3 OR 1-4 (BASED ON OVERHANG DIMENSION) AND DETERMINE REVISED BRACKET SPACING, S.
- CONTINUE ITERATIONS OF STEPS 4-6 UNTIL THE REVISED BRACKET SPACING, S, IS THE SAME AS THE PREVIOUS S VALUE.
- CHECK LUMBER JOIST SPACING: WITH BRACKET SPACING VALUE, S, ROUND THIS VALUE UP TO THE NEAREST VALUE OF ALLOWABLE SPAN LENGTH OF JOIST OF TABLE 3. USING THIS VALUE, ALONG WITH THE AVERAGE OVERHANG SLAB THICKNESS AND THE LUMBER JOIST SIZE, DETERMINE JOIST SPACING FROM TABLE 3. IF NECESSARY, ADJUST LUMBER JOIST SIZE AND/OR JOIST SPACING TO MEET ALLOWABLE SPAN LENGTH OF JOIST.
- CONVERSELY, IF THE DESIRED JOIST SPACING IS KNOWN, USE THIS ALONG WITH THE AVERAGE OVERHANG SLAB THICKNESS AND THE LUMBER JOIST SIZE TO DETERMINE IF ALLOWABLE SPAN LENGTH OF JOIST IS GREATER THAN THE BRACKET SPACING, S. IF NECESSARY, ADJUST LUMBER JOIST SIZE TO MEET REQUIREMENTS OF ALLOWABLE SPAN LENGTH OF JOIST AND JOIST SPACING.
- RECORD REMAINING INFORMATION ON "BRIDGE OVERHANG BRACKET SUMMARY" FORM.
- SUBMIT FORM AND CALCULATIONS FOR REVIEW AND APPROVAL.

TABLE 1-1 (FOR USE ON UP TO 2'-0" OVERHANG (L) & 54" HORIZONTAL LEG LENGTH OF THE OVERHANG BRACKET)

AVG. SLAB THICKNESS (t) (in)	BRACKET DIMENSION (K) (in)	SCREED LOAD PER BRACKET								45° HANGER SWL (lbs)	
		2500 lbs.	2250 lbs.	2000 lbs.	1750 lbs.	1500 lbs.	1250 lbs.	1000 lbs.	750 lbs.		0 lbs.
10	30	3'-6"	4'-0"	4'-5"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	6'-7"	4000
	40	3'-6"	4'-0"	4'-5"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	6'-7"	4000
	50	3'-6"	4'-0"	4'-5"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	6'-7"	4000
12	30	3'-2"	3'-7"	4'-1"	4'-7"	5'-0"	5'-2"	5'-4"	5'-7"	6'-5"	4000
	40	3'-2"	3'-7"	4'-1"	4'-7"	5'-0"	5'-2"	5'-4"	5'-7"	6'-5"	4000
	50	3'-2"	3'-7"	4'-1"	4'-7"	5'-0"	5'-2"	5'-4"	5'-7"	6'-5"	4000
14	30	2'-10"	3'-4"	3'-9"	4'-2"	4'-7"	5'-0"	5'-4"	5'-7"	6'-4"	4000
	40	2'-10"	3'-4"	3'-9"	4'-2"	4'-7"	5'-0"	5'-4"	5'-7"	6'-4"	4000
	50	2'-10"	3'-4"	3'-9"	4'-2"	4'-7"	5'-0"	5'-4"	5'-7"	6'-4"	4000
16	30	2'-8"	3'-0"	3'-5"	3'-10"	4'-3"	4'-7"	5'-0"	5'-5"	6'-3"	4000
	40	2'-8"	3'-0"	3'-5"	3'-10"	4'-3"	4'-7"	5'-0"	5'-5"	6'-3"	4000
	50	2'-8"	3'-0"	3'-5"	3'-10"	4'-3"	4'-7"	5'-0"	5'-5"	6'-3"	4000

TABLE 1-2 (FOR USE ON OVER 2'-0" TO 2'-6" OVERHANG (L) & 54" HORIZONTAL LEG LENGTH OF THE OVERHANG BRACKET)

AVG. SLAB THICKNESS (t) (in)	BRACKET DIMENSION (K) (in)	SCREED LOAD PER BRACKET								45° HANGER SWL (lbs)	
		2500 lbs.	2250 lbs.	2000 lbs.	1750 lbs.	1500 lbs.	1250 lbs.	1000 lbs.	750 lbs.		0 lbs.
10	30	3'-1"	3'-6"	4'-0"	4'-5"	4'-11"	5'-3"	5'-5"	5'-7"	6'-7"	4000
	40	3'-1"	3'-6"	4'-0"	4'-5"	4'-11"	5'-3"	5'-5"	5'-7"	6'-7"	4000
	50	3'-1"	3'-6"	4'-0"	4'-5"	4'-11"	5'-3"	5'-5"	5'-7"	6'-7"	4000
12	30	2'-9"	3'-2"	3'-7"	4'-0"	4'-5"	4'-10"	5'-3"	5'-7"	6'-5"	4000
	40	2'-9"	3'-2"	3'-7"	4'-0"	4'-5"	4'-10"	5'-3"	5'-7"	6'-5"	4000
	50	2'-9"	3'-2"	3'-7"	4'-0"	4'-5"	4'-10"	5'-3"	5'-7"	6'-5"	4000
14	30	2'-6"	2'-10"	3'-3"	3'-7"	4'-0"	4'-4"	4'-9"	5'-1"	6'-3"	4000
	40	2'-6"	2'-10"	3'-3"	3'-7"	4'-0"	4'-4"	4'-9"	5'-1"	6'-3"	4000
	50	2'-6"	2'-10"	3'-3"	3'-7"	4'-0"	4'-4"	4'-9"	5'-1"	6'-3"	4000
16	30	2'-3"	2'-7"	2'-11"	3'-4"	3'-8"	4'-0"	4'-4"	4'-8"	5'-8"	4000
	40	2'-3"	2'-7"	2'-11"	3'-4"	3'-8"	4'-0"	4'-4"	4'-8"	5'-8"	4000
	50	2'-3"	2'-7"	2'-11"	3'-4"	3'-8"	4'-0"	4'-4"	4'-8"	5'-8"	4000

TABLE 1-3 (FOR USE ON OVER 2'-6" TO 3'-0" OVERHANG (L) & 54" HORIZONTAL LEG LENGTH OF THE OVERHANG BRACKET)

AVG. SLAB THICKNESS (t) (in)	BRACKET DIMENSION (K) (in)	SCREED LOAD PER BRACKET								45° HANGER SWL (lbs)	
		2500 lbs.	2250 lbs.	2000 lbs.	1750 lbs.	1500 lbs.	1250 lbs.	1000 lbs.	750 lbs.		0 lbs.
10	30										4000
	40	2'-9"	3'-2"	3'-7"	4'-0"	4'-5"	4'-10"	5'-3"	5'-7"	6'-7"	4000
	50	2'-9"	3'-2"	3'-7"	4'-0"	4'-5"	4'-10"	5'-3"	5'-7"	6'-7"	4000
12	30										4000
	40	2'-5"	2'-10"	3'-2"	3'-6"	3'-11"	4'-3"	4'-8"	5'-0"	6'-1"	4000
	50	2'-5"	2'-10"	3'-2"	3'-6"	3'-11"	4'-3"	4'-8"	5'-0"	6'-1"	4000
14	30										4000
	40	2'-2"	2'-6"	2'-10"	3'-2"	3'-6"	3'-10"	4'-2"	4'-6"	5'-6"	4000
	50	2'-2"	2'-6"	2'-10"	3'-2"	3'-6"	3'-10"	4'-2"	4'-6"	5'-6"	4000
16	30										4000
	40	2'-0"	2'-4"	2'-7"	2'-11"	3'-2"	3'-6"	3'-10"	4'-1"	5'-0"	4000
	50	2'-0"	2'-4"	2'-7"	2'-11"	3'-2"	3'-6"	3'-10"	4'-1"	5'-0"	4000

TABLE 1-4 (FOR USE ON OVER 3'-0" TO 3'-6" OVERHANG (L) & 54" HORIZONTAL LEG LENGTH OF THE OVERHANG BRACKET)

AVG. SLAB THICKNESS (t) (in)	BRACKET DIMENSION (K) (in)	SCREED LOAD PER BRACKET								45° HANGER SWL (lbs)	
		2500 lbs.	2250 lbs.	2000 lbs.	1750 lbs.	1500 lbs.	1250 lbs.	1000 lbs.	750 lbs.		0 lbs.
10	30										4000
	40										4000
	50										4000
12	30										4000
	40										4000
	50										4000
14	30										4000
	40										4000
	50										4000
16	30										4000
	40										4000
	50										4000

DEFINITIONS

- SLPB = SCREED LOAD PER BRACKET (R x W)
- R = SCREED LOAD FACTOR, OBTAINED FROM TABLE 2
- W = WHEEL LOAD
- S = BRACKET SPACING
- T = AVERAGE SLAB THICKNESS
- SWL = SAFE WORKING LOAD
- K = DIMENSION DEFINED ON "BRIDGE OVERHANG BRACKET SUMMARY" ON SHEET 2
- L = OVERHANG MEASURED FROM EDGE OF TOP FLANGE TO EDGE OF SUPERSTRUCTURE

PROJECT NO. B-3684  
 PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

STANDARD OVERHANG FALSEWORK  
 AASHTO TYPES  
 III, IV, V, AND VI



Chang-Chuan Victor Chao  
 4-22-2008

REVISIONS						SHEET NO. S-65
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 67
2			4			

ASSEMBLED BY:	DATE:
CHECKED BY:	DATE:
DRAWN BY: R. WRIGHT 06/04	REV.
CHECKED BY: C. V. CHAO 06/04	

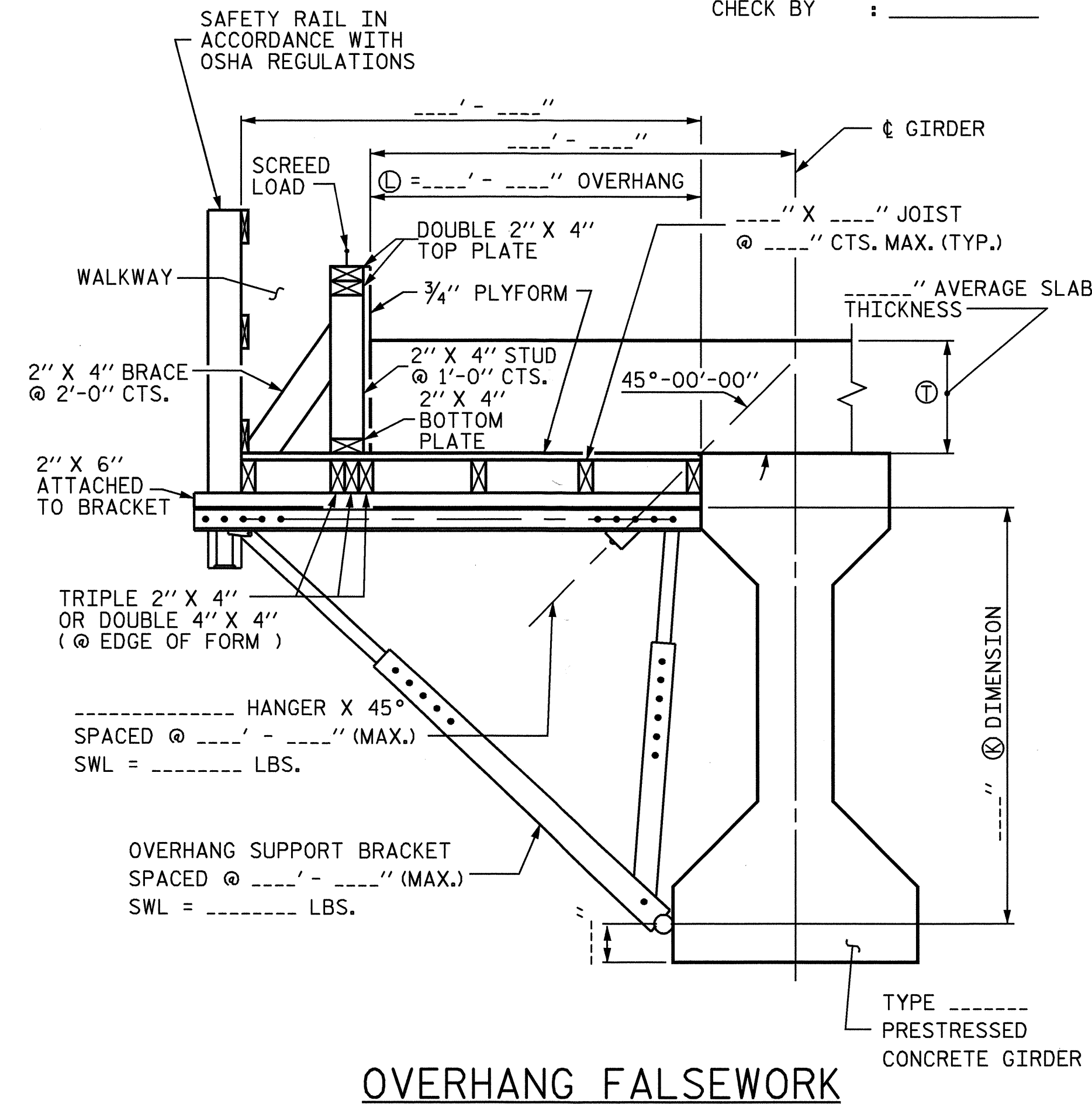


BRIDGE OVERHANG BRACKET SUMMARY

TOTAL SCREED WEIGHT = \_\_\_\_\_ LBS.  
 NUMBER OF SCREED WHEELS = \_\_\_\_\_  
 SCREED WHEEL LOAD (W) = \_\_\_\_\_ LBS.  
 SCREED LOAD PER BRACKET = \_\_\_\_\_ LBS.

PROJECT No. : \_\_\_\_\_  
 COUNTY : \_\_\_\_\_  
 STATION : \_\_\_\_\_  
 DESCRIPTION : \_\_\_\_\_

DATE : \_\_\_\_\_  
 DESIGN BY : \_\_\_\_\_  
 CHECK BY : \_\_\_\_\_



4 WHEEL MACHINE	
S/D1	R
<= 1.0	1.00
1.1	1.09
1.2	1.17
1.3	1.23
1.4	1.29
1.5	1.33
1.6	1.38
1.7	1.41
1.8	1.44
1.9	1.47
2.0	1.50
2.2	1.55
2.4	1.58
2.6	1.62
2.8	1.64
3.0	1.67
3.5	1.71
4.0	1.75

TABLE 2: SCREED LOAD FACTOR "R"

		THE SCREED LOAD FACTOR R (FOR 8 WHEEL MACHINE)																	
		S/D <sub>2</sub>																	
		<= 1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.2	2.4	2.6	2.8	3.0	3.5	4.0
S/D <sub>1</sub>	<= 1.0	1.00	1.09	1.17	1.23	1.29	1.33	1.38	1.41	1.44	1.47	1.50	1.55	1.58	1.62	1.64	1.67	1.71	1.75
	1.1	1.09	1.18	1.26	1.32	1.38	1.42	1.47	1.50	1.54	1.56	1.59	1.64	1.67	1.71	1.73	1.76	1.81	1.84
	1.2	1.17	1.26	1.33	1.40	1.45	1.50	1.54	1.58	1.61	1.64	1.67	1.71	1.75	1.78	1.81	1.83	1.88	1.92
	1.3	1.23	1.32	1.40	1.46	1.52	1.56	1.61	1.64	1.68	1.70	1.73	1.78	1.81	1.85	1.87	1.90	1.95	1.98
	1.4	1.29	1.38	1.45	1.52	1.57	1.62	1.66	1.70	1.73	1.76	1.79	1.83	1.87	1.90	1.93	1.95	2.00	2.07
	1.5	1.33	1.42	1.50	1.56	1.62	1.67	1.71	1.75	1.78	1.81	1.83	1.88	1.92	1.95	1.98	2.00	2.10	2.17
	1.6	1.38	1.47	1.54	1.61	1.66	1.71	1.75	1.79	1.82	1.85	1.88	1.92	1.96	1.99	2.04	2.08	2.18	2.25
	1.7	1.41	1.50	1.58	1.64	1.70	1.75	1.79	1.82	1.86	1.89	1.91	1.96	2.00	2.05	2.11	2.16	2.25	2.32
	1.8	1.44	1.54	1.61	1.68	1.73	1.78	1.82	1.86	1.89	1.92	1.94	1.99	2.06	2.12	2.17	2.22	2.32	2.39
	1.9	1.47	1.56	1.64	1.70	1.76	1.81	1.85	1.89	1.92	1.95	1.97	2.04	2.11	2.18	2.23	2.28	2.38	2.45
	2.0	1.50	1.59	1.67	1.73	1.79	1.83	1.88	1.91	1.94	1.97	2.00	2.09	2.17	2.23	2.29	2.33	2.43	2.50
2.2	1.55	1.64	1.71	1.78	1.83	1.88	1.92	1.96	1.99	2.04	2.09	2.18	2.26	2.32	2.38	2.42	2.52	2.59	
2.4	1.58	1.67	1.75	1.81	1.87	1.92	1.96	2.00	2.06	2.11	2.17	2.26	2.33	2.40	2.45	2.50	2.60	2.67	
2.6	1.62	1.71	1.78	1.85	1.90	1.95	1.99	2.05	2.12	2.18	2.23	2.32	2.40	2.46	2.52	2.56	2.66	2.73	
2.8	1.64	1.73	1.81	1.87	1.93	1.98	2.04	2.11	2.17	2.23	2.29	2.38	2.45	2.52	2.57	2.62	2.71	2.79	
3.0	1.67	1.76	1.83	1.90	1.95	2.00	2.08	2.16	2.22	2.28	2.33	2.42	2.50	2.56	2.62	2.67	2.76	2.83	
3.5	1.71	1.81	1.88	1.95	2.00	2.10	2.18	2.25	2.32	2.38	2.43	2.52	2.60	2.66	2.71	2.76	2.86	2.93	
4.0	1.75	1.84	1.92	1.98	2.07	2.17	2.25	2.32	2.39	2.45	2.50	2.59	2.67	2.73	2.79	2.83	2.93	3.00	

TABLE 3: ALLOWABLE SPAN LENGTH OF JOISTS AND JOIST SPACINGS

AVG. SLAB THICKNESS (IN)	LUMBER JOIST SIZE (IN X IN)	JOIST SPACINGS			
		15 IN	12 IN	10 IN	8 IN
10	2 X 4	---	4' - 6"	4' - 9"	5' - 0"
	4 X 4	5' - 9"	6' - 3"	6' - 6"	6' - 7"
12	2 X 4	---	4' - 3"	4' - 9"	5' - 0"
	4 X 4	5' - 3"	6' - 0"	6' - 3"	6' - 5"
14	2 X 4	---	4' - 0"	4' - 6"	5' - 0"
	4 X 4	---	5' - 6"	6' - 0"	6' - 4"
16	2 X 4	---	4' - 0"	4' - 3"	4' - 9"
	4 X 4	---	5' - 3"	5' - 9"	6' - 3"

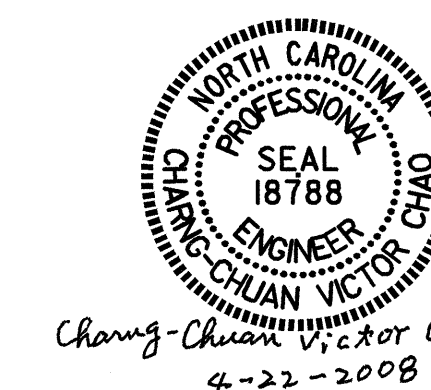
PROJECT NO. B-3684  
PITT COUNTY  
 STATION: 38+88.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

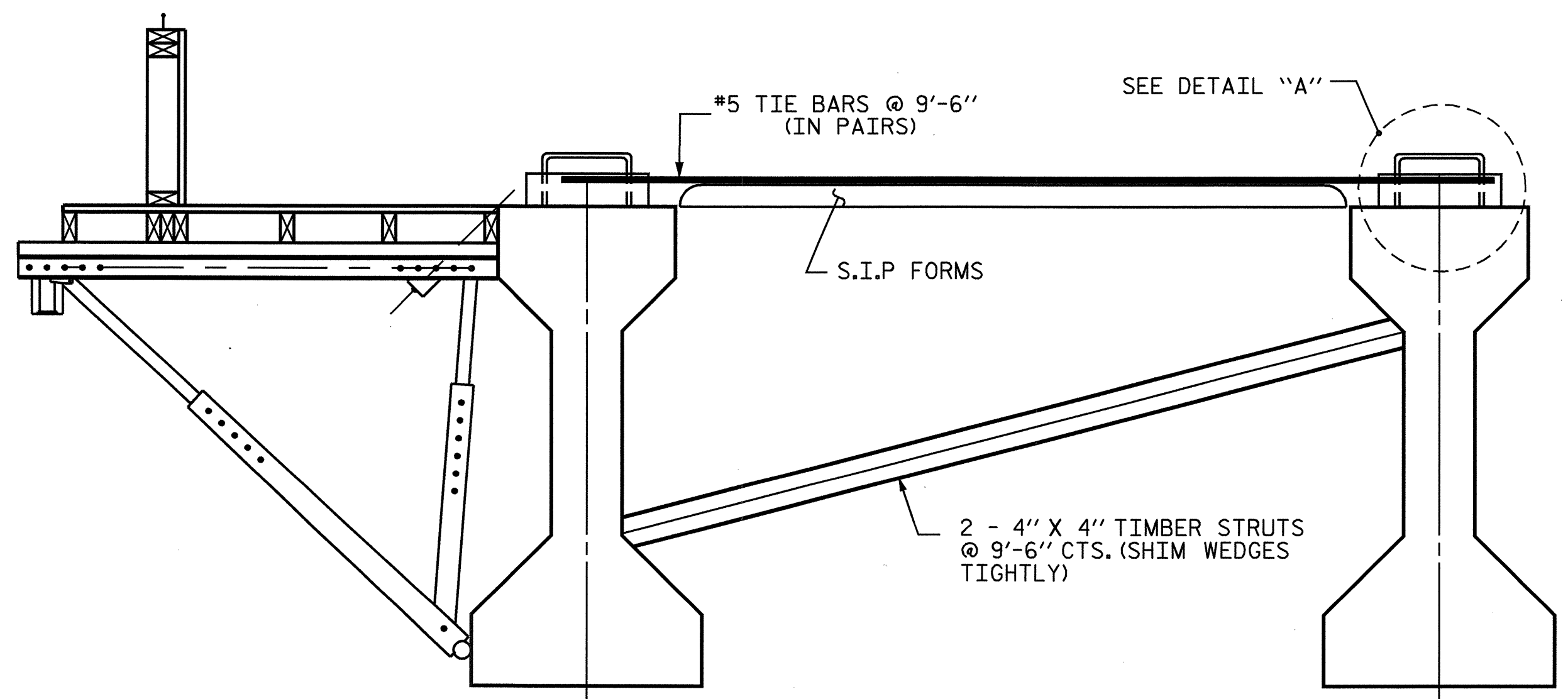
STANDARD OVERHANG FALSEWORK

AASHTO TYPES III, IV, V, AND VI



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			5-66
2			4			67

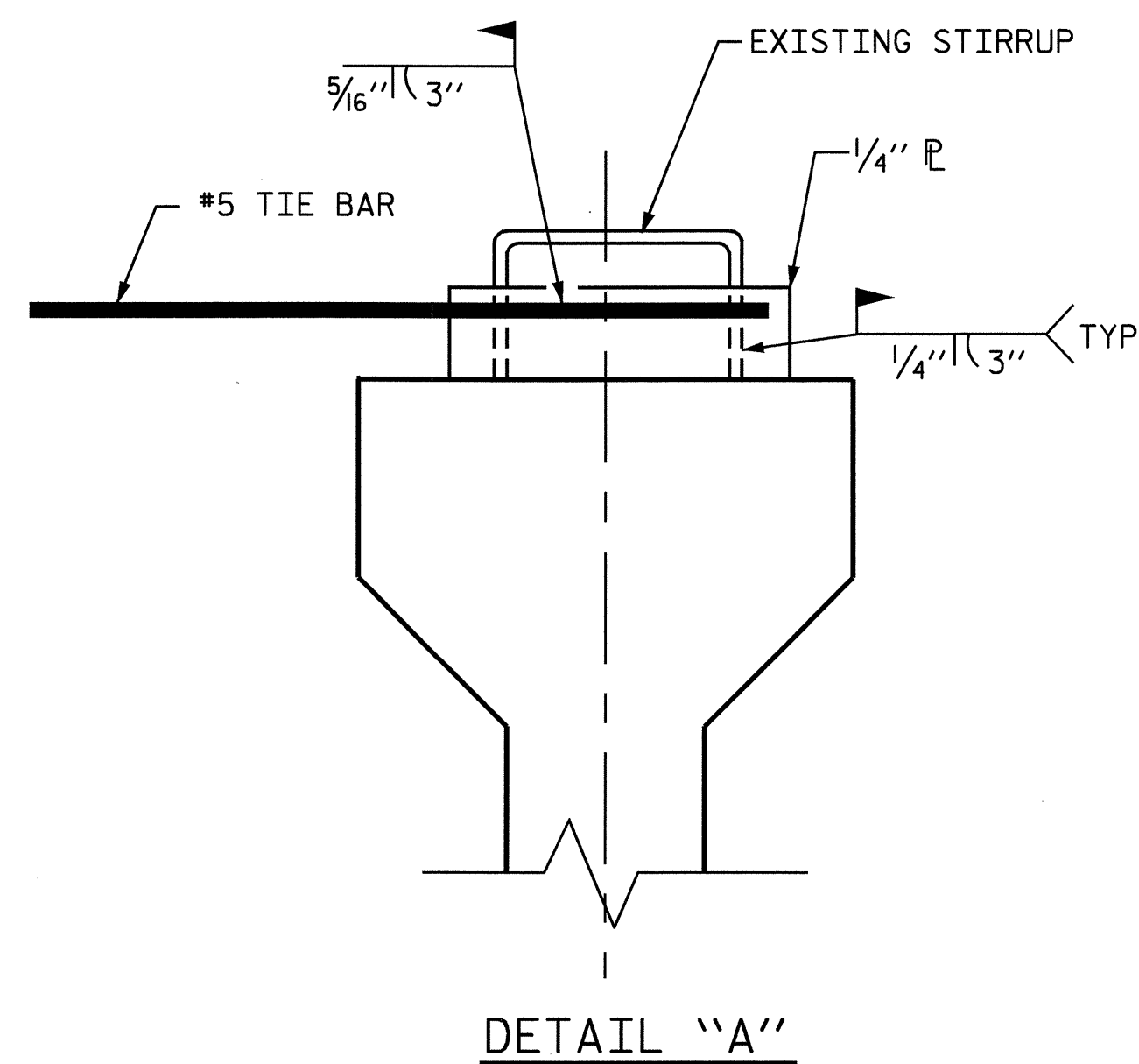




EXTERIOR GIRDER

INTERIOR GIRDER

DETAIL OF REQUIRED OVERHANG FALSEWORK BRACING SYSTEM



NOTES:

EACH #5 TIE BAR SHALL BE WELDED TO ONE STIRRUP LOOP AS SHOWN IN DETAIL "A". #5 TIE BARS SHALL BE WELDED TO TWO ADJACENT STIRRUPS OF THE EXTERIOR GIRDER AND THE ADJACENT INTERIOR GIRDER BETWEEN PERMANENT DIAPHRAGMS. WELD STEEL PLATES IN BETWEEN THE TIE BARS AND THE STIRRUP LOOP. WELDING TWO TIE BARS TO THE SAME STIRRUP LOOP SHALL NOT BE PERMITTED.

MAXIMUM SPACING BETWEEN THE BRACING (TIE BARS-TIMBER STRUT) IS 9'-6" CTS. #5 TIE BARS SHALL BE LOCATED OVER A TIMBER STRUT.

INSTALL TIE BARS AND TIMBER STRUTS PRIOR TO PLACEMENT OF CONCRETE OR SCREED WEIGHT ONTO THE OVERHANG FALSEWORK.

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SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

STANDARD OVERHANG FALSEWORK  
 AASHTO TYPES  
 III, IV, V, AND VI



Chang-Chuan Victor Chao  
 4-22-2008

DRAWN BY: R. WRIGHT 06/04 DATE : \_\_\_\_\_  
 CHECKED BY: C. V. CHAO 06/04 DATE : \_\_\_\_\_

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			5-67
2			4			67

## STANDARD NOTES

### DESIGN DATA:

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

### MATERIAL AND WORKMANSHIP:

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

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

### CONCRETE:

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

### CONCRETE CHAMFERS:

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

### DOWELS:

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

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

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

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

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

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

### REINFORCING STEEL:

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

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

### STRUCTURAL STEEL:

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

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

PLACEMENT OF BEAM OR GIRDER MEMBERS ON TRUCKS FOR HAULING SHALL BE DONE IN COMPLIANCE WITH LIMITS SHOWN ON SKETCHES PROVIDED TO THE MATERIALS AND TEST UNIT APPROVED BY THE STRUCTURE DESIGN UNIT DATED MAY 8, 1991.

THESE SKETCHES PRIMARILY LIMIT THE UNSUPPORTED CANTILEVER LENGTH OF MEMBERS. WHEN THE CONTRACTOR WISHES TO PLACE MEMBERS ON TRUCKS NOT IN ACCORDANCE WITH THESE LIMITS, TO SHIP BY RAIL, TO ATTACH SHIPPING RESTRAINTS TO THE MEMBERS OR TO INVERT MEMBERS, HE SHALL SUBMIT A SKETCH FOR APPROVAL PRIOR TO SHIPPING. SEE ALSO ARTICLE 1072-11.

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

### HANDRAILS AND POSTS:

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

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

### SPECIAL NOTES:

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

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