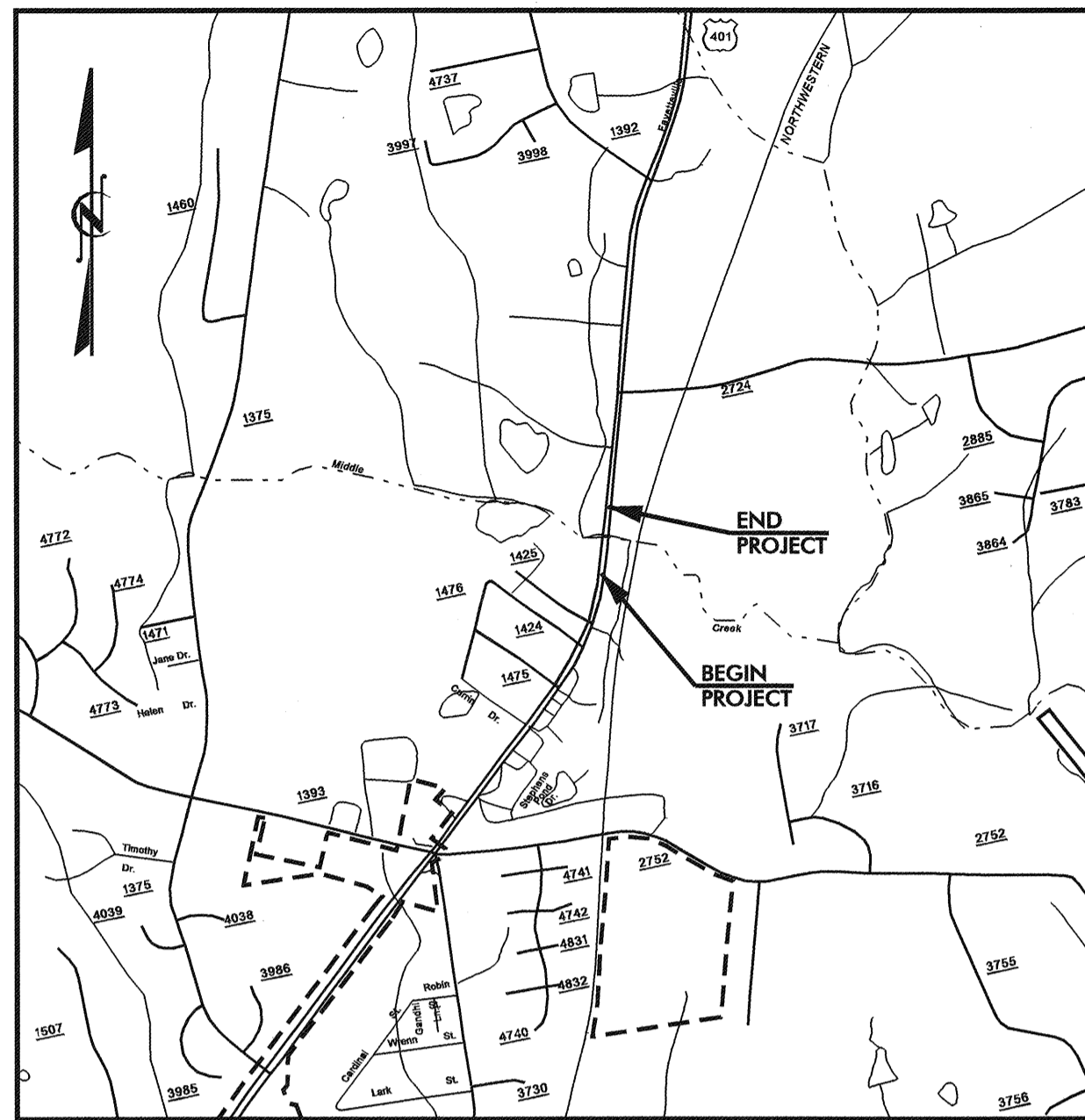


CONTRACT: C201546 TIP PROJECT: B-3916

STRUCTURE



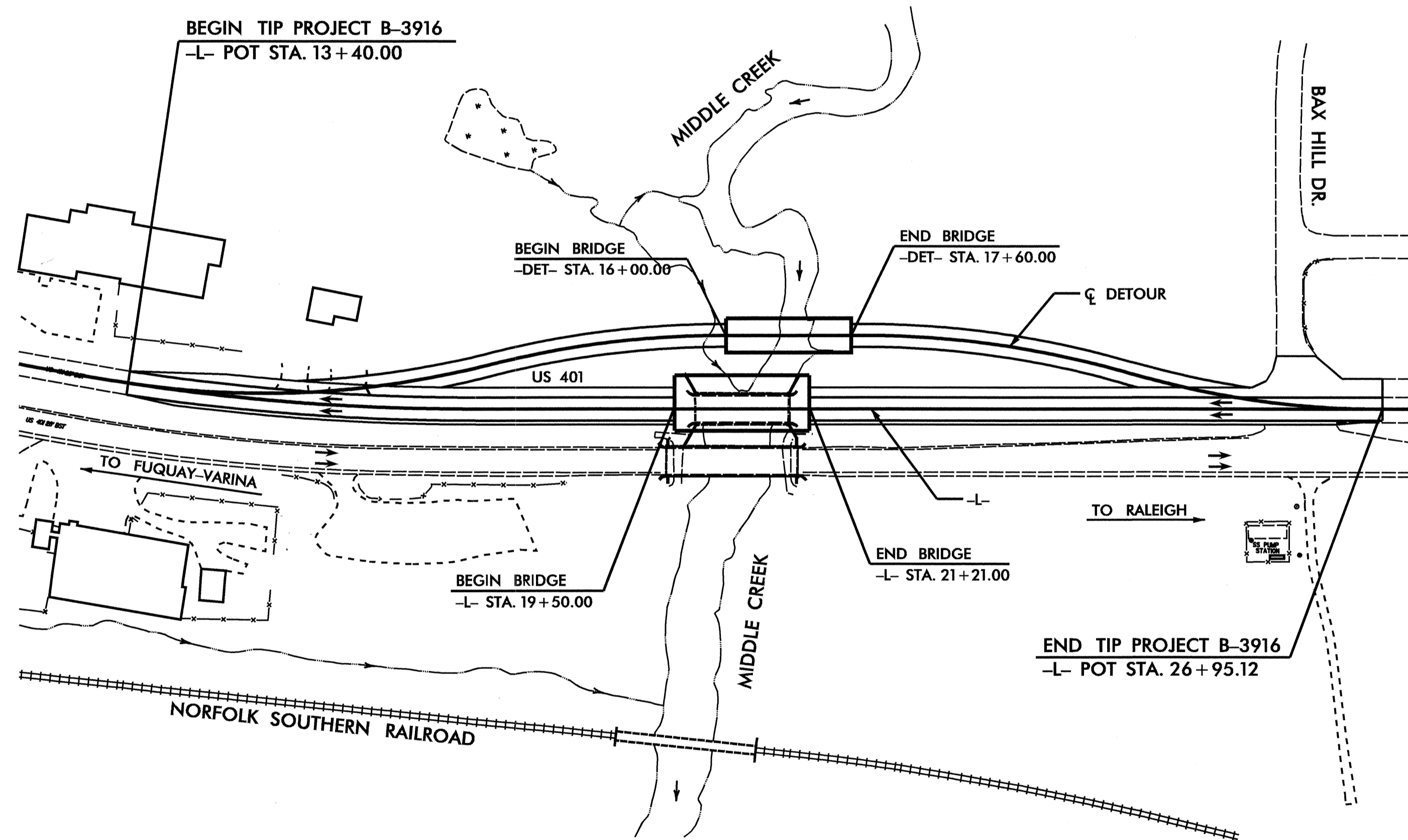
VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

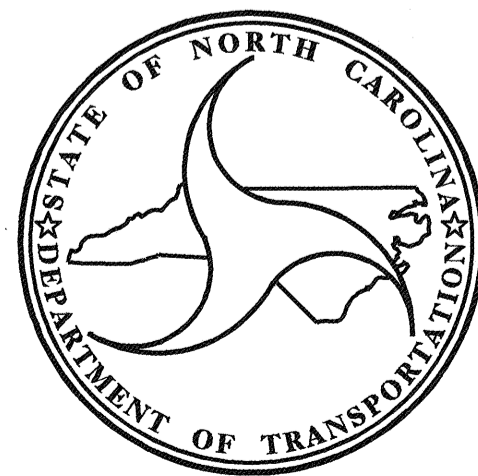
WAKE COUNTY

**LOCATION: BRIDGE NO. 63 AND APPROACHES
ON US SOUTHBOUND 401 OVER
MIDDLE CREEK**

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



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3916		
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33350.1.1	BRSTP-401(13)	P.E.	
33350.2.1	BRSTP-401(13)	R/W & UTILITY	
33350.3.1	BRSTP-401(154)	CONST.	



DESIGN DATA

ADT 2007 =	31,250
ADT 2027 =	58,750
DHV =	10 %
D =	60 %
T =	8 % *
V =	60 MPH
V(DET) =	50 MPH
* TTST 4 %	DUAL 4 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3916	=	0.225 mi
LENGTH STRUCTURE TIP PROJECT B-3916	=	0.032 mi
TOTAL LENGTH OF TIP PROJECT B-3916	=	0.257 mi

Plans prepared in the office of:
DIVISIONS OF HIGHWAYS

2006 STANDARD SPECIFICATIONS	Q. H. NGUYEN, P.E. PROJECT ENGINEER
LETTING DATE: MAY 15, 2007	J. R. DUGGINS, JR., P.E. PROJECT DESIGN ENGINEER

STRUCTURE DESIGN UNIT
1000 BIRCH RIDGE DRIVE
RALEIGH, NC 27610

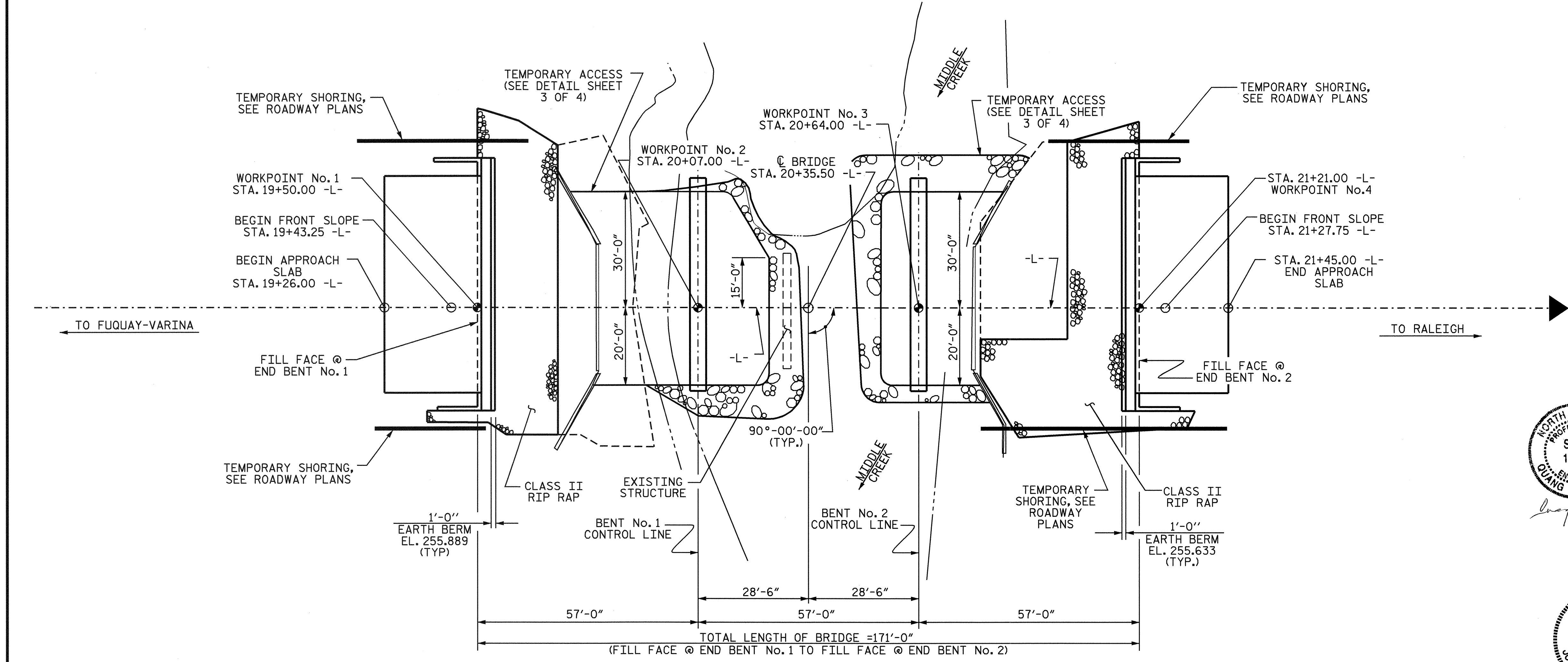
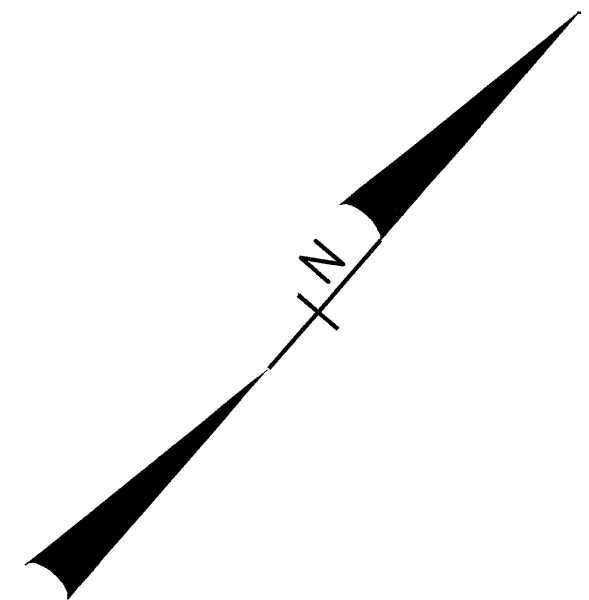
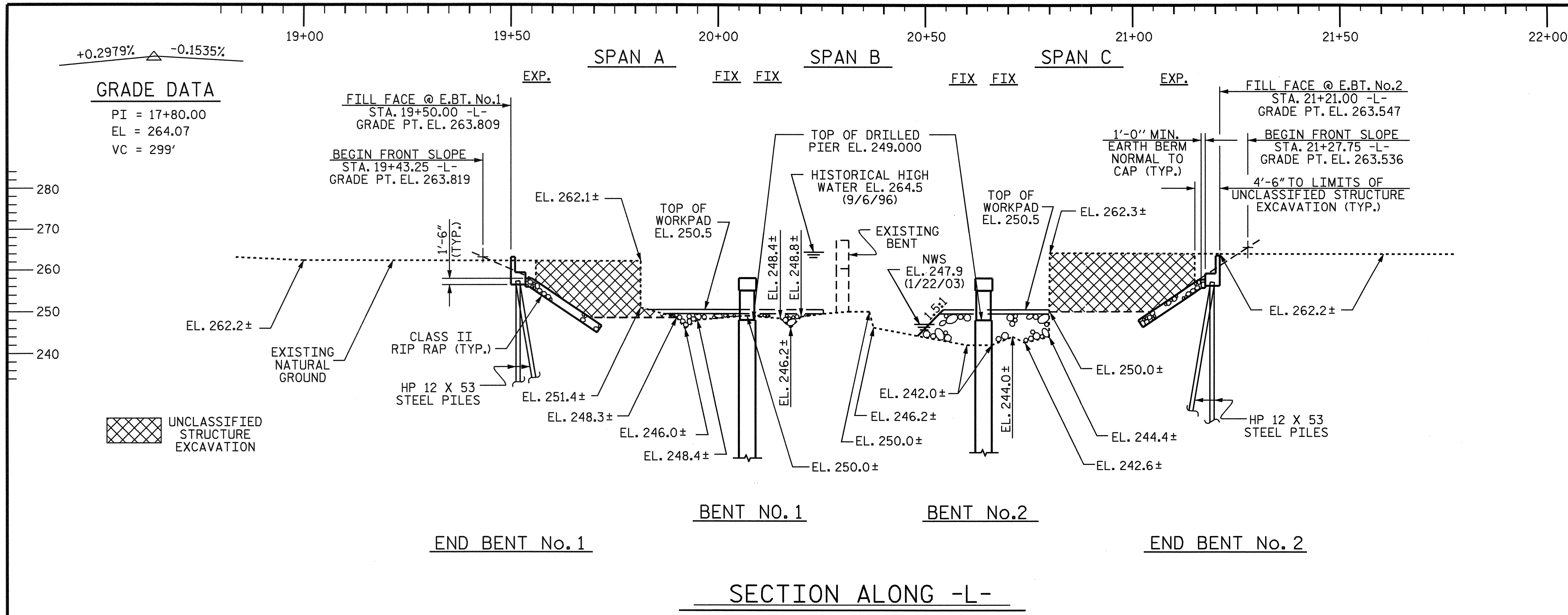
Gregory R. Perrett
3-29-07

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER _____ P.E.

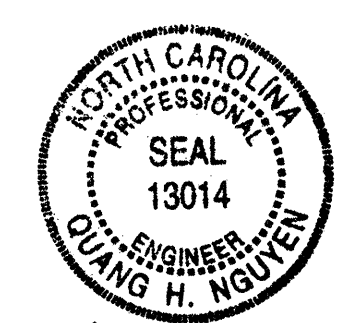
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED _____ DATE _____
DIVISION ADMINISTRATOR

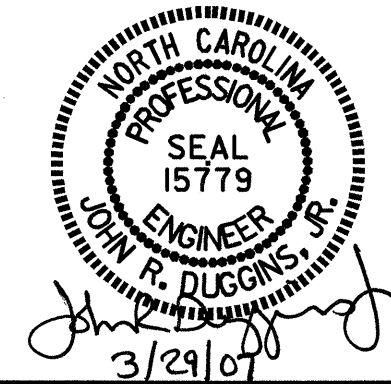


PROJECT NO. B-3916
WAKE COUNTY
 STATION: 20+35.50 -L-

SHEET 1 OF 4 REPLACES BRIDGE NO. 63



Quang H. Nguyen 3-29-07



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE OVER MIDDLE
 CREEK ON HWY US 401 (SBL)
 BETWEEN SR 2724 AND SR 1425

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-1
1			3			TOTAL SHEETS
2			4			30

DRAWN BY: J. LAMBERT DATE: 1/07
 CHECKED BY: J.R. DUGGINS DATE: 1/07

28-MAR-2007 14:10
 R:\Structures\B-3916\JLambert\Microstation\B-3916.ed.GD.dgn
 jlambert

NOTES

DRIVE PILES AT END BENT No.1 AND END BENT No.2 TO A REQUIRED BEARING CAPACITY OF 100 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO. THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT No.1 AND END BENT No.2 IS 50 TONS PER PILE.

DRILLED PIERS AT BENT No.1 AND BENT No.2 ARE DESIGNED FOR BOTH SKIN FRICTION AND END BEARING. CHECK FIELD CONDITIONS FOR THE REQUIRED END BEARING CAPACITY OF 45 TSF.

DRILLED PIERS AT BENT No.1 AND BENT No.2 ARE DESIGNED FOR AN APPLIED LOAD OF 235 TONS EACH AT THE TOP OF THE COLUMN.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT No.1. DO NOT EXTEND THE CASING BELOW ELEVATION 236.0 FT. WITHOUT PRIOR APPROVAL FROM THE ENGINEER. SEE DRILLED PIERS SPECIAL PROVISION.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT No.2. DO NOT EXTEND THE CASING BELOW ELEVATION 232.0 FT. WITHOUT PRIOR APPROVAL FROM THE ENGINEER. SEE DRILLED PIERS SPECIAL PROVISION.

DRILLED PIERS AT BENT No.1 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 219.0 FT. AND SATISFY THE REQUIRED END BEARING CAPACITY.

DRILLED PIERS AT BENT No.2 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 214.0 FT. AND SATISFY THE REQUIRED END BEARING CAPACITY.

THE SCOUR CRITICAL ELEVATION FOR BENT No.1 IS ELEVATION 231.0 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

THE SCOUR CRITICAL ELEVATION FOR BENT No.2 IS ELEVATION 227.0 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

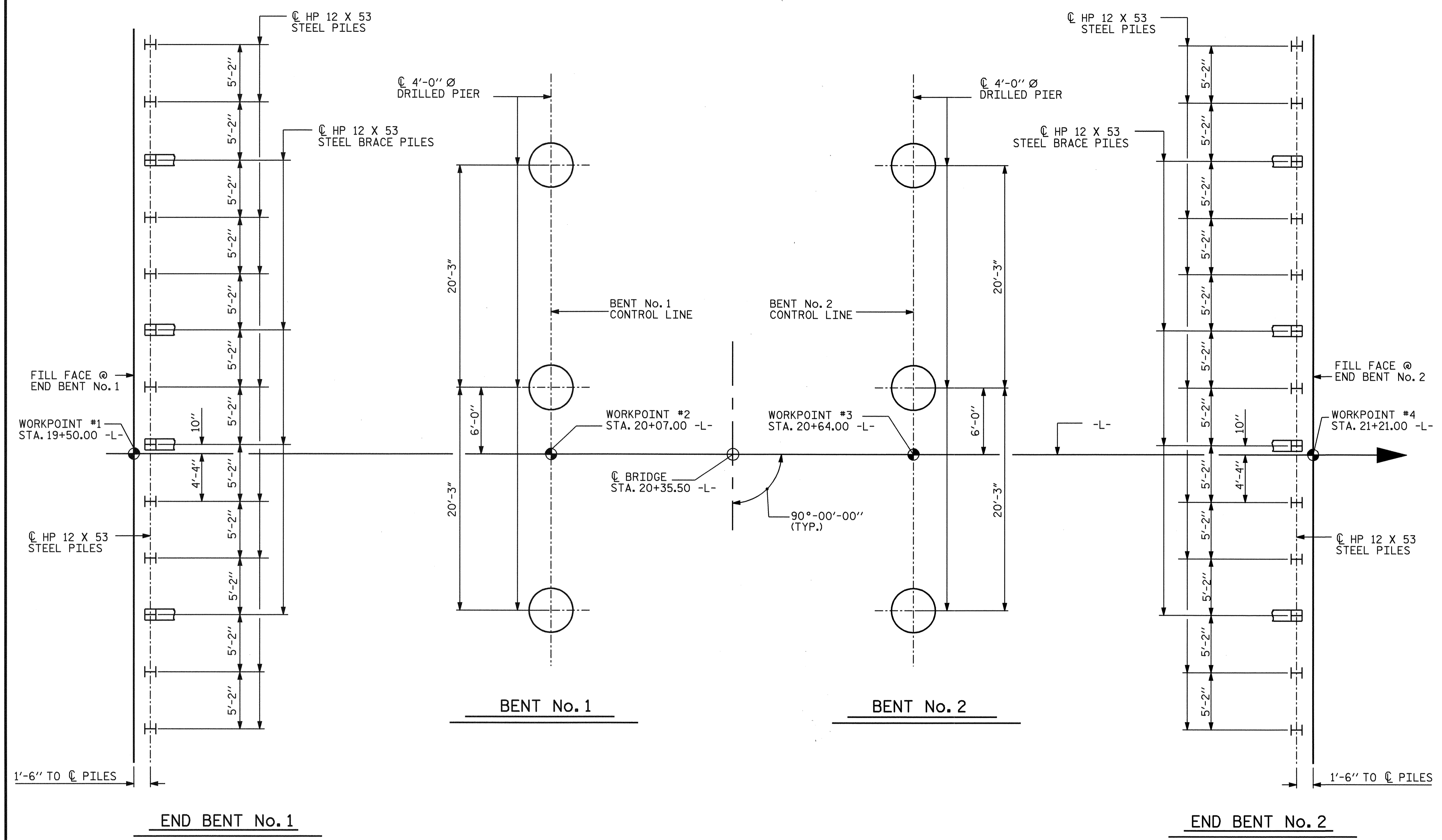
FOR DRILLED PIERS, SEE DRILLED PIER SPECIAL PROVISIONS.

SPT TESTING IS REQUIRED TO DETERMINE THE END BEARING CAPACITY OF THE DRILLED PIERS AT BENT No.1 AND BENT No.2. SEE DRILLED PIERS SPECIAL PROVISION.

SID INSPECTIONS ARE REQUIRED TO INSPECT THE BOTTOM CLEANLINESS OF THE DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTIONS. SEE DRILLED PIERS SPECIAL PROVISIONS.

DO NOT DEWATER THE DRILLED PIER EXCAVATIONS AT BENT No.1 AND BENT No.2. CLEAN THE BOTTOM OF THE EXCAVATIONS WITH A SUBMERSIBLE PUMP OR AN AIRLIFT. WET PLACEMENT OF CONCRETE IS REQUIRED. SEE DRILLED PIERS SPECIAL PROVISIONS.

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



FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE AT THE BOTTOM OF CAP. BRACE PILES ARE BATTERED 3 : 12

PROJECT NO. B-3916
WAKE COUNTY
 STATION: 20+35.50 -L-

SHEET 2 OF 4

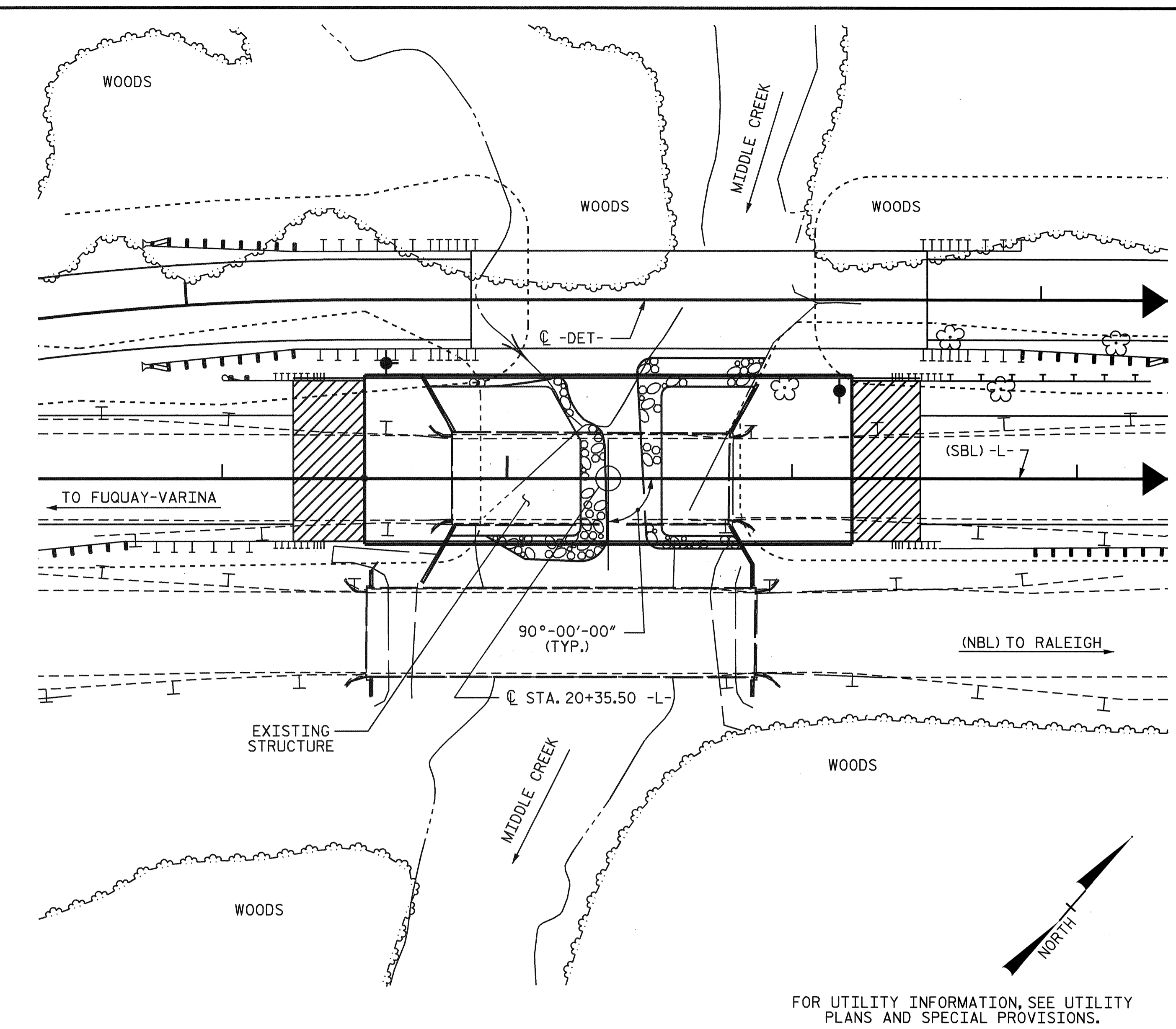
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE OVER MIDDLE CREEK ON HWY US 401 (SBL) BETWEEN SR 2724 AND SR 1425



DRAWN BY: M. POOLE DATE: 01/07
 CHECKED BY: J.R. DUGGINS DATE: 01/07

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

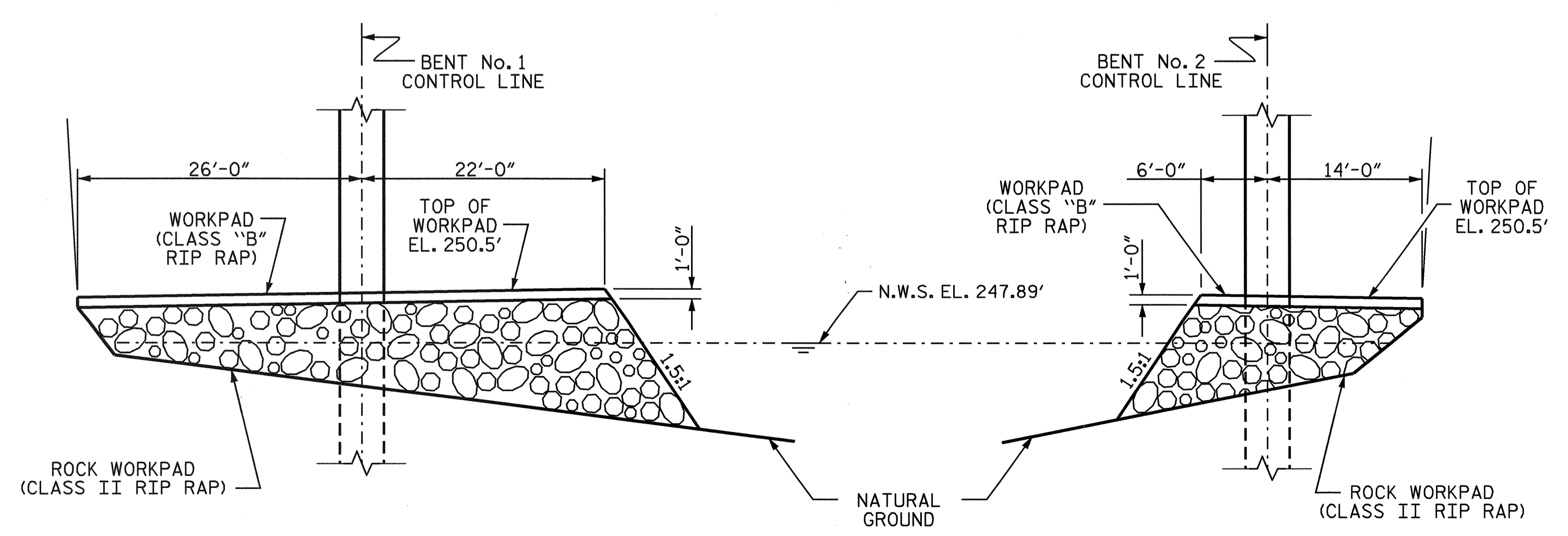
B.M. #1: RR SPIKE IN 12" PINE TREE, 223.40' RIGHT OF -L- STA. 11+31.25, EL. 275.58



LOCATION SKETCH

HYDRAULIC DATA
 DESIGN DISCHARGE..... 6100 CFS.
 FREQUENCY OF DESIGN FLOOD..... 50 YEARS
 DESIGN HIGH WATER ELEVATION..... 258.8
 DRAINAGE AREA..... 38.2 SQ. MI.
 BASIC DISCHARGE(Q100)..... 7500 CFS.
 BASIC HIGH WATER ELEVATION..... 259.8

OVERTOPPING FLOOD DATA
 OVERTOPPING DISCHARGE..... 12000 CFS.
 FREQUENCY OF OVERTOPPING FLOOD..... 200± YRS.
 OVERTOPPING FLOOD ELEVATION..... 262.14



TEMPORARY ACCESS DETAIL
(NOT TO SCALE)

PROJECT NO. B-3916
WAKE COUNTY
 STATION: 20+35.50 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER MIDDLE
 CREEK ON HWY US 401 (SBL)
 BETWEEN SR 2724 AND SR 1425



DRAWN BY : J. LAMBERT DATE : 1/07
 CHECKED BY : J.R. DUGGINS DATE : 1/07

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

TOTAL BILL OF MATERIAL

	CONSTRUCTION MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE	CONSTRUCTION MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS	REMOVAL OF EXISTING STRUCTURE	4'-0" Ø DRILLED PIERS IN SOIL	4'-0" Ø DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 4'-0" Ø DRILLED PIER	SID INSPECTION	SPT TESTING	CROSSHOLE SONIC LOGGING	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	36" PRESTRESSED CONCRETE GIRDERS	HP 12 X 53 STEEL PILES	CONCRETE BARRIER RAIL	RIP RAP CLASS II 2'-0" THICK	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS		
	LUMP SUM	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	CU. YDS.	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	LUMP SUM
SUPERSTRUCTURE	LUMP SUM	LUMP SUM	LUMP SUM								10,008	10,317		LUMP SUM			24	1,333.33			337.83			LUMP SUM	LUMP SUM
END BENT NO. 1										575			31.9		4,975			13	260			200	225		
BENT NO. 1				60.00	30.00	39.00	3	3					36.6		11,956	2,847									
BENT NO. 2				75.00	30.00	51.00	3	3					36.5		11,944	3,215									
END BENT NO. 2										735			31.9		4,975			13	260			190	210		
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	135.00	60.00	90.00	6	6	1	1,310	10,008	10,317	136.9	LUMP SUM	33,850	6,062	24	1,333.33	26	520	337.83	390	435	LUMP SUM	LUMP SUM

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 AASHTO STANDARD SPECIFICATIONS.

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.

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

THE LOCATIONS OF THE CONSTRUCTION JOINT IN DRILLED PIER No.1 IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FT. BELOW THE GROUND LINE.

THE EXISTING STRUCTURE CONSISTING OF 2 SPANS, 1 @ 47'-6" AND 1 @ 47'-0" WITH A REINFORCED CONCRETE DECK GIRDER SUPERSTRUCTURE AND A CLEAR ROADWAY WIDTH OF 28'-1" ON A SUBSTRUCTURE CONSISTING OF REINFORCED CONCRETE ABUTMENTS AT THE END BENTS AND A REINFORCED CONCRETE POST AND WEB BENT AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED.

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

THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY STRUCTURE AT STATION 16+80.00 -DET- FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT. RIGHT AND 45 FT. LEFT OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR UNCLASSIFIED STRUCTURE EXCAVATION.

THE EXISTING WALL AT END BENT No. 2 SHALL BE REMOVED AS DIRECTED BY THE ENGINEER. THE WALL SHALL BE REMOVED TO THE EXPANSION JOINT LOCATED APPROXIMATELY 30' ± RIGHT OF THE -L- LINE.

THE CONTRACTORS ATTENTION IS CALLED TO THE FACT THAT A COFFERDAM MAY BE REQUIRED FOR THE REMOVAL OF THE EXISTING STRUCTURE BENT.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

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

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

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC PERFORMANCE CATEGORY A.

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

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.

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE TEMPORARY ACCESS, THE CLASS II RIP RAP USED IN THE TEMPORARY ACCESS MAY BE REPLACED AS RIP RAP SLOPE PROTECTION; SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 20+35.50 -L-.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

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

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.

THE BRIDGE RAILS ON THE TEMPORARY STRUCTURE SHALL BE DESIGNED FOR THE AASHTO LRFD TEST LEVEL 3 (TL-3) CRASH TEST CRITERIA. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS.

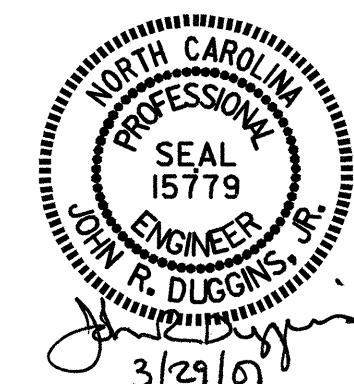
PROJECT NO. B-3916
WAKE COUNTY
 STATION: 20+35.50 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

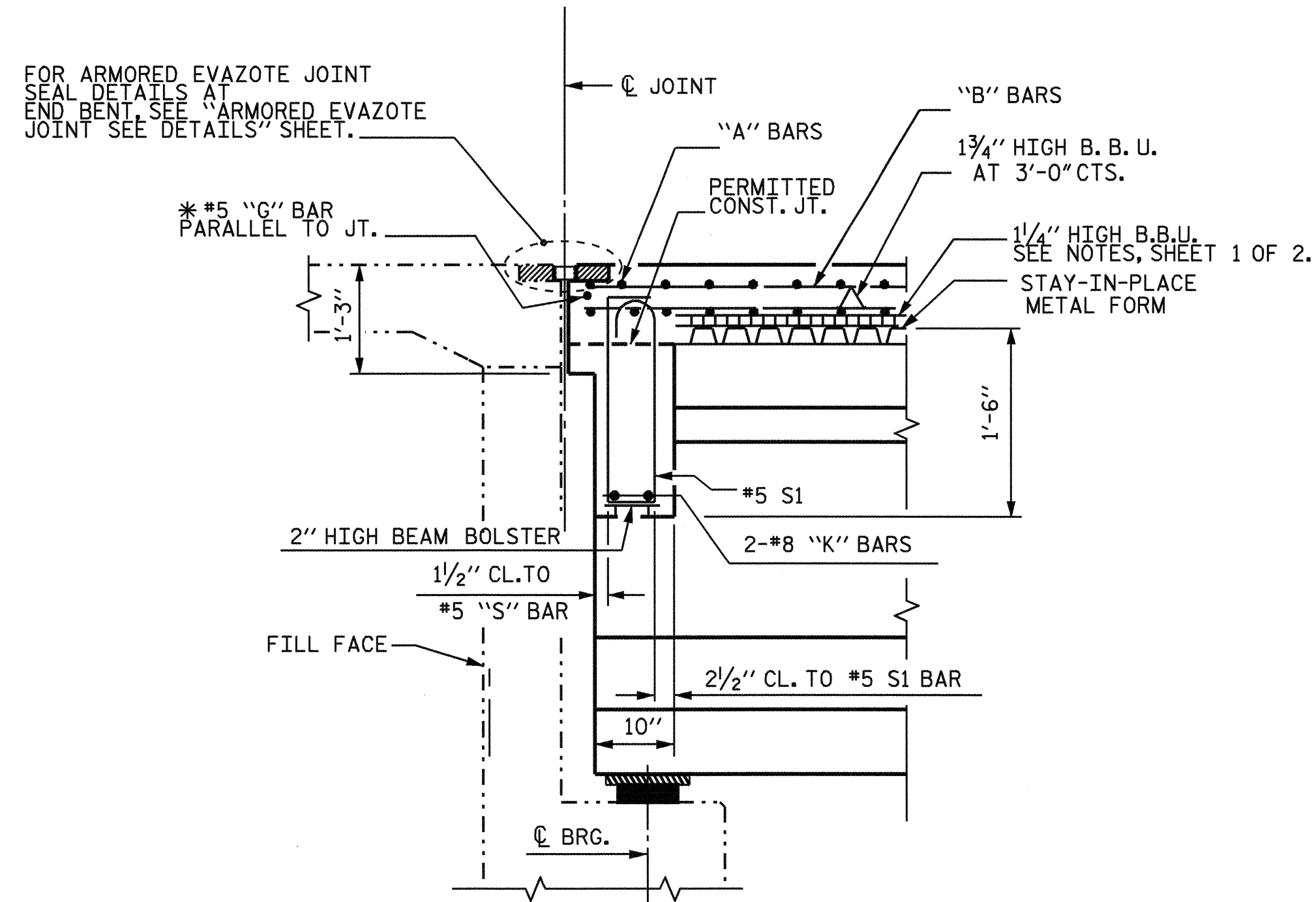
GENERAL DRAWING

FOR BRIDGE OVER MIDDLE CREEK ON HWY US 401 (SBL) BETWEEN SR 2724 AND SR 1425



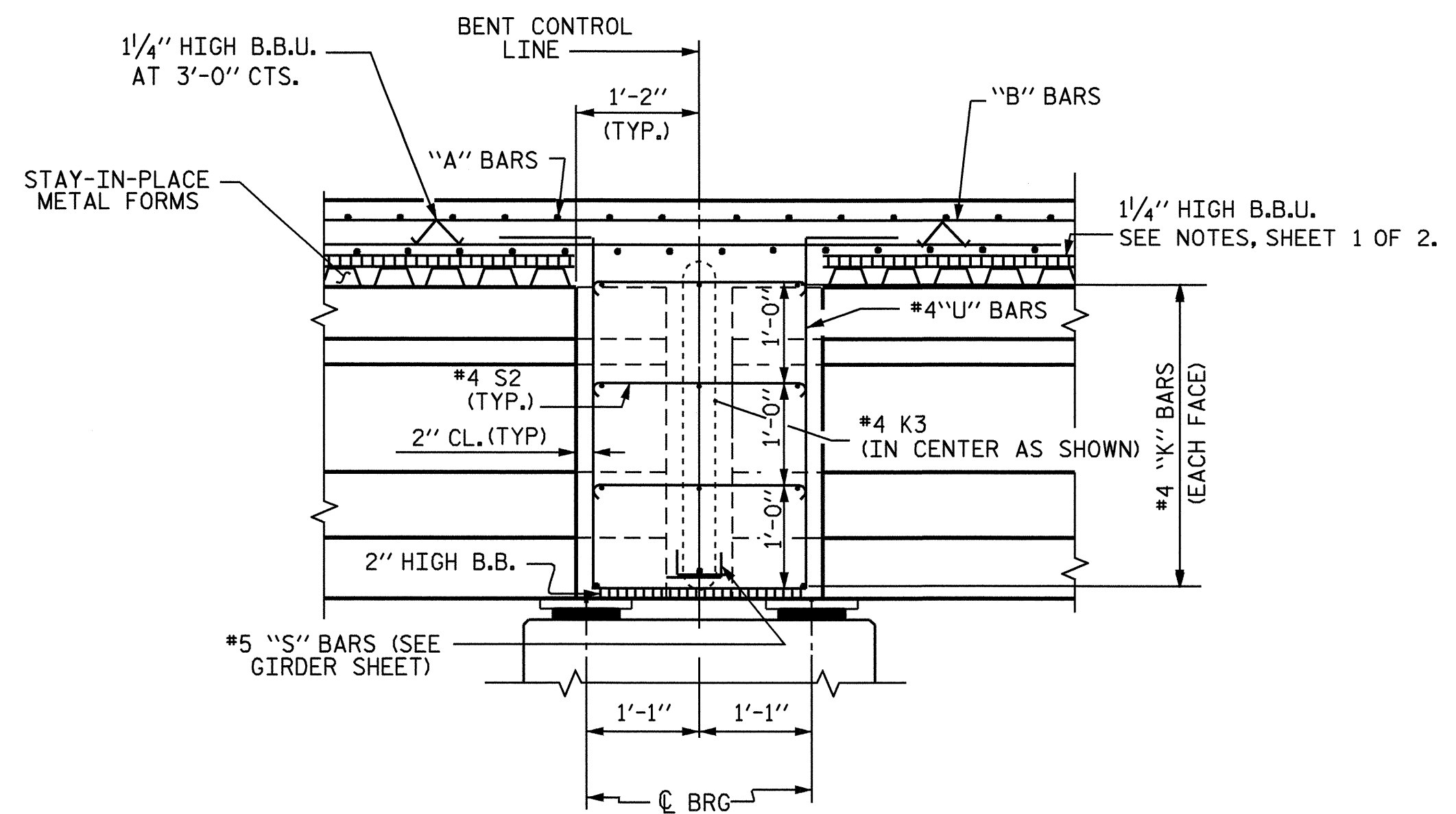
DRAWN BY : J. LAMBERT DATE : 1/07
 CHECKED BY : J. R. DUGGINS DATE : 1/07

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

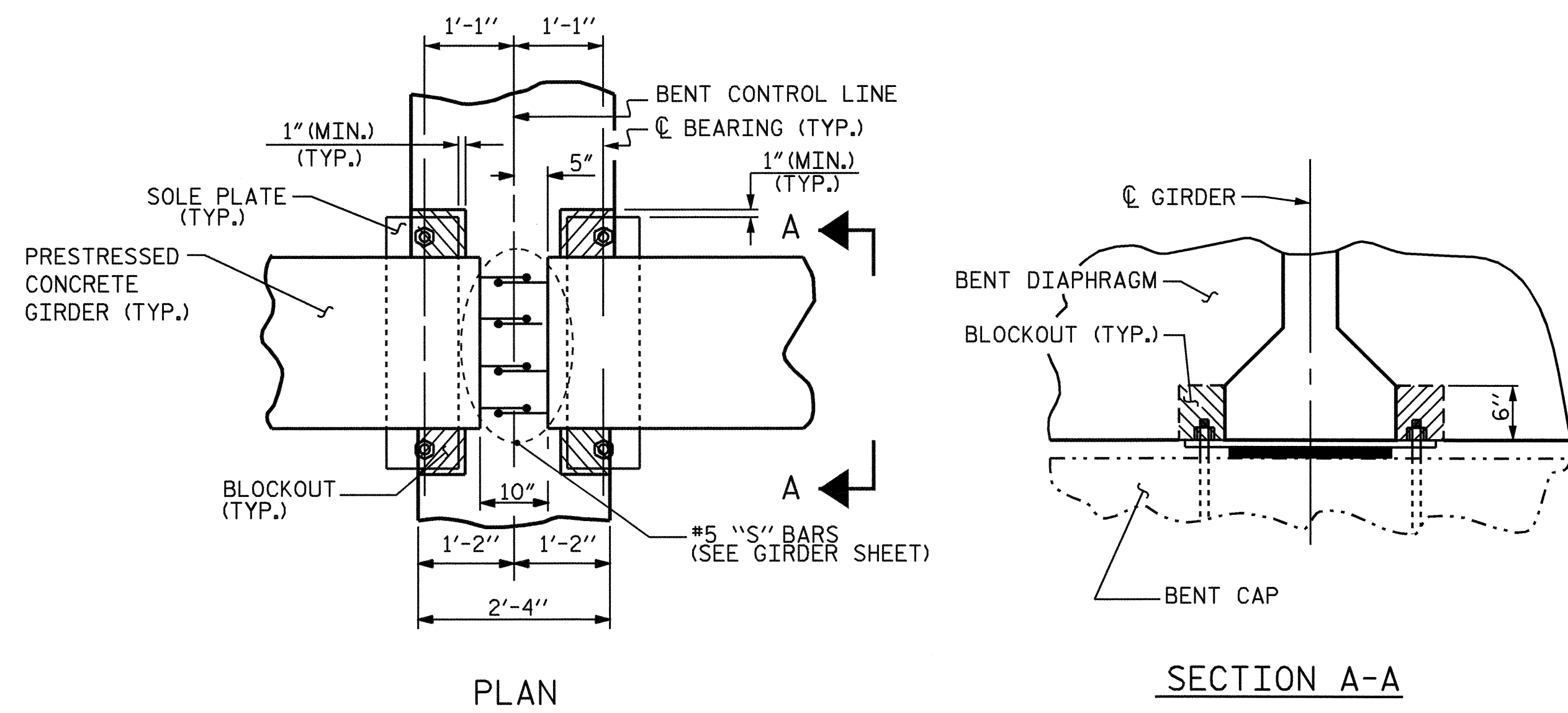


SECTION THRU END BENT DIAPHRAGM

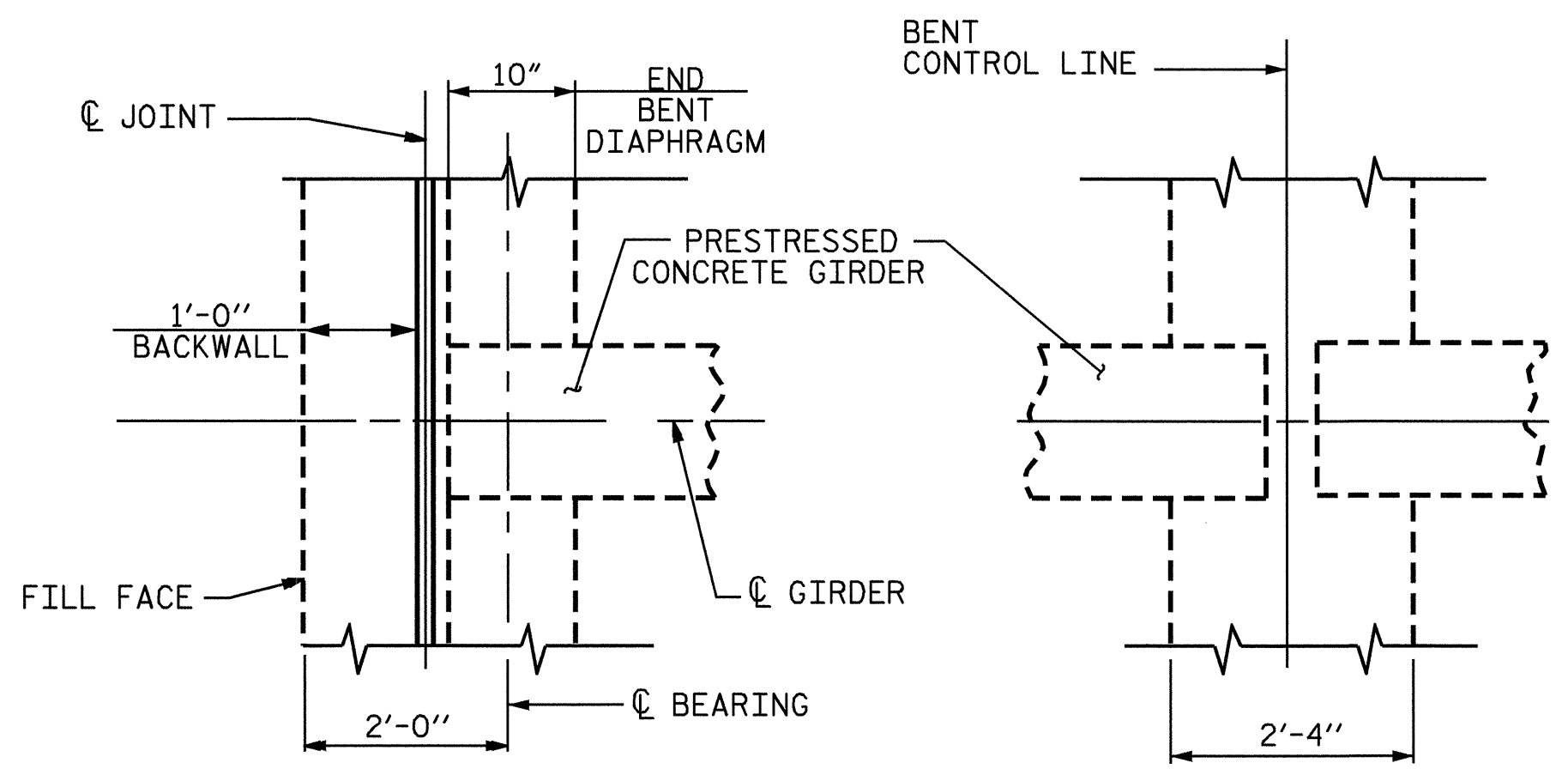
*5 G1 BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL AND STIRRUPS.



SECTION THRU BENT DIAPHRAGM



BENT DIAPHRAGM BLOCKOUT DETAIL



END BENT DIAPHRAGM CONTINUOUS BENT DIAPHRAGM

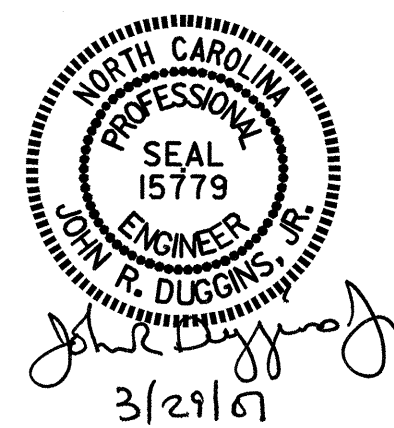
PLAN

PROJECT NO. B-3916
WAKE COUNTY
 STATION: 20+35.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

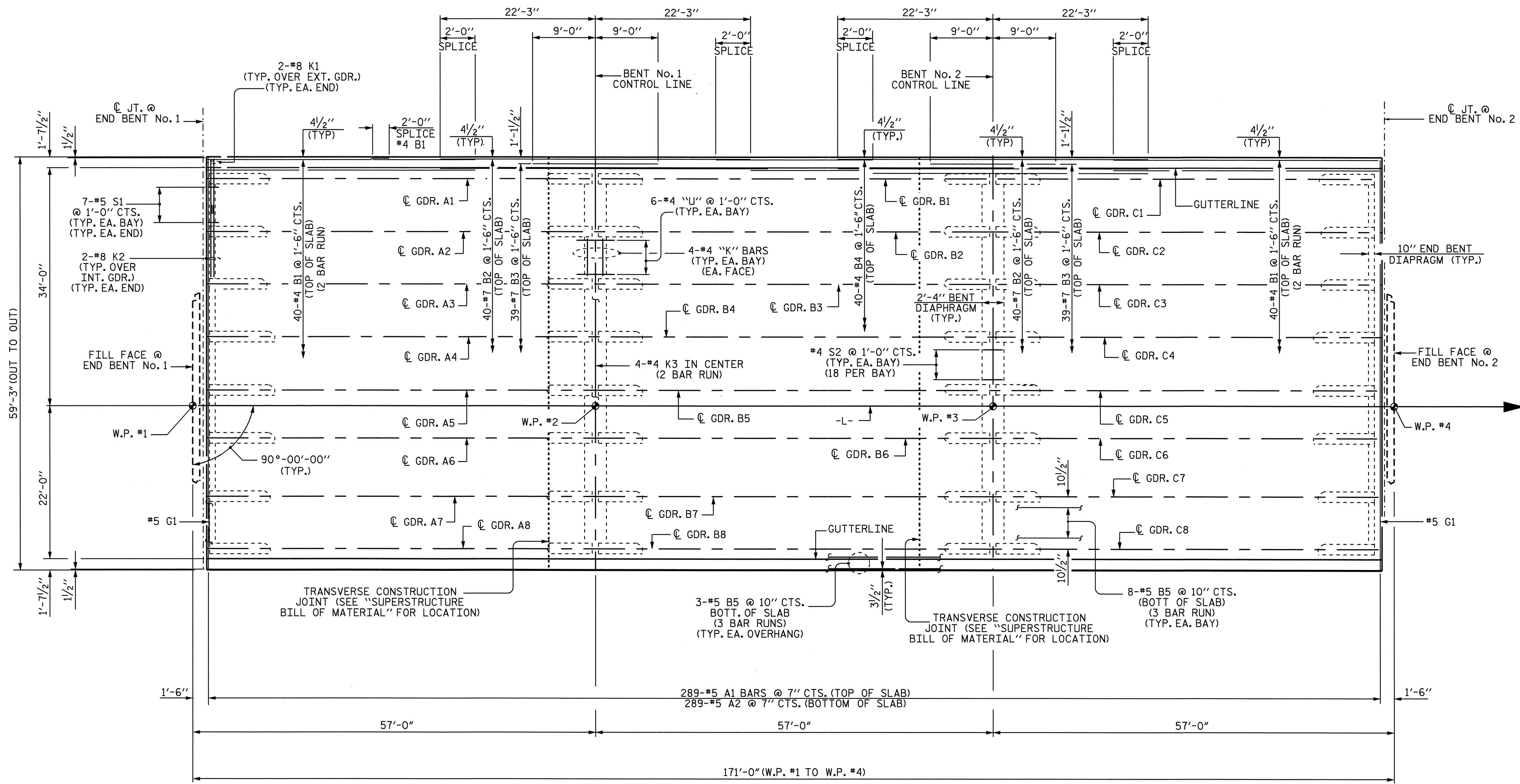
**SUPERSTRUCTURE
 TYPICAL SECTION**



DRAWN BY : M. POOLE DATE : 10/05
 CHECKED BY : D. HODGE DATE : 02/07

28-MAR-2007 10:04
 R:\Structures\B-3916\m\poole\Microstation\B3916.sd.TS_01.dgn
 mpoole

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			5-6
2			4			30



SPAN A

SPAN B

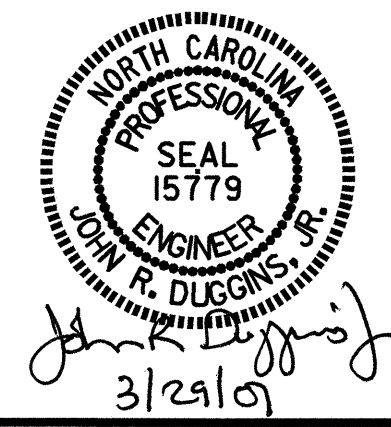
SPAN C

PLAN OF SPANS A, B, & C

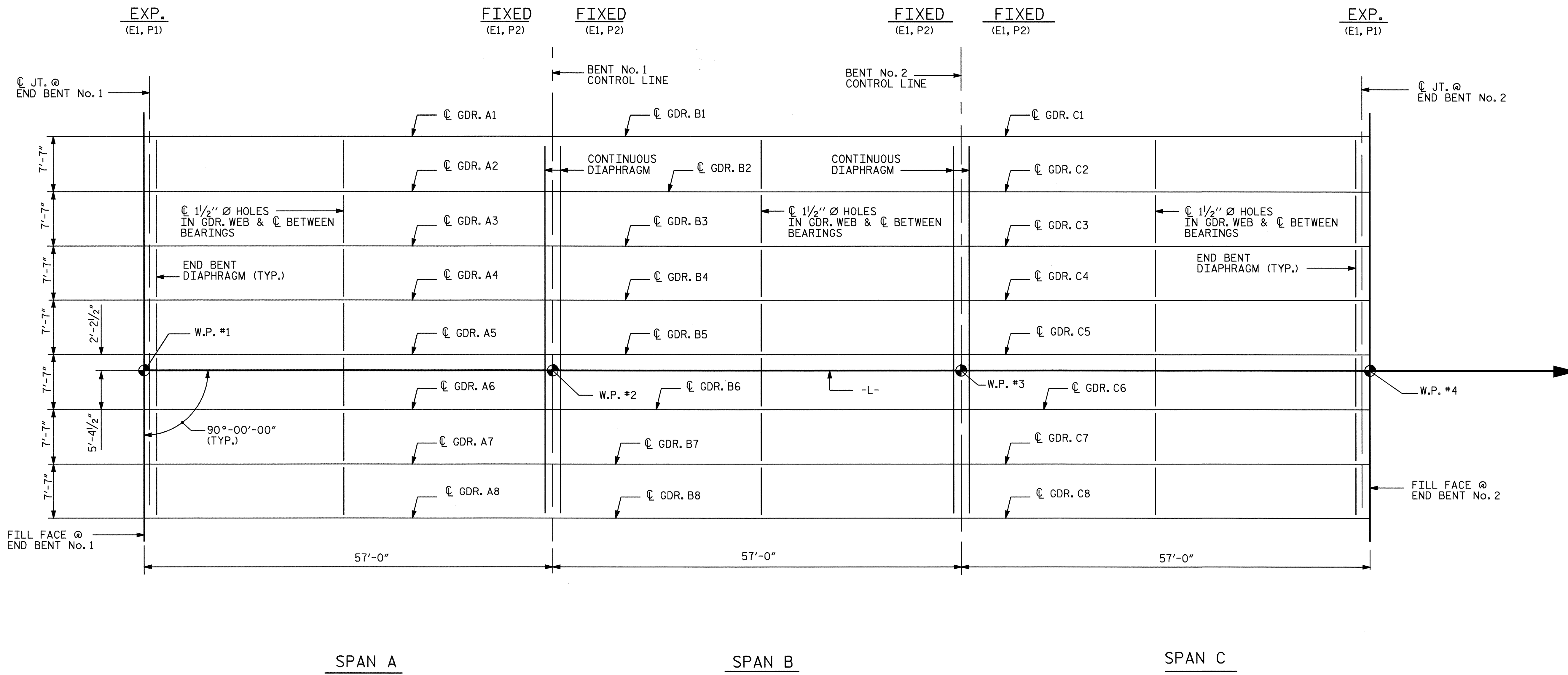
FOR REINFORCING STEEL IN BARRIER RAIL, SEE "CONCRETE BARRIER RAIL" SHEET.

PROJECT NO. B-3916
WAKE COUNTY
 STATION: 20+35.50 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN OF SPANS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-7
TOTAL SHEETS					30



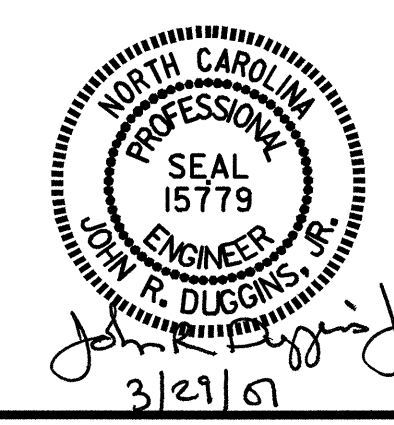
DRAWN BY: M. POOLE DATE: 10/05
 CHECKED BY: D. HODGE DATE: 02/07



FRAMING PLAN

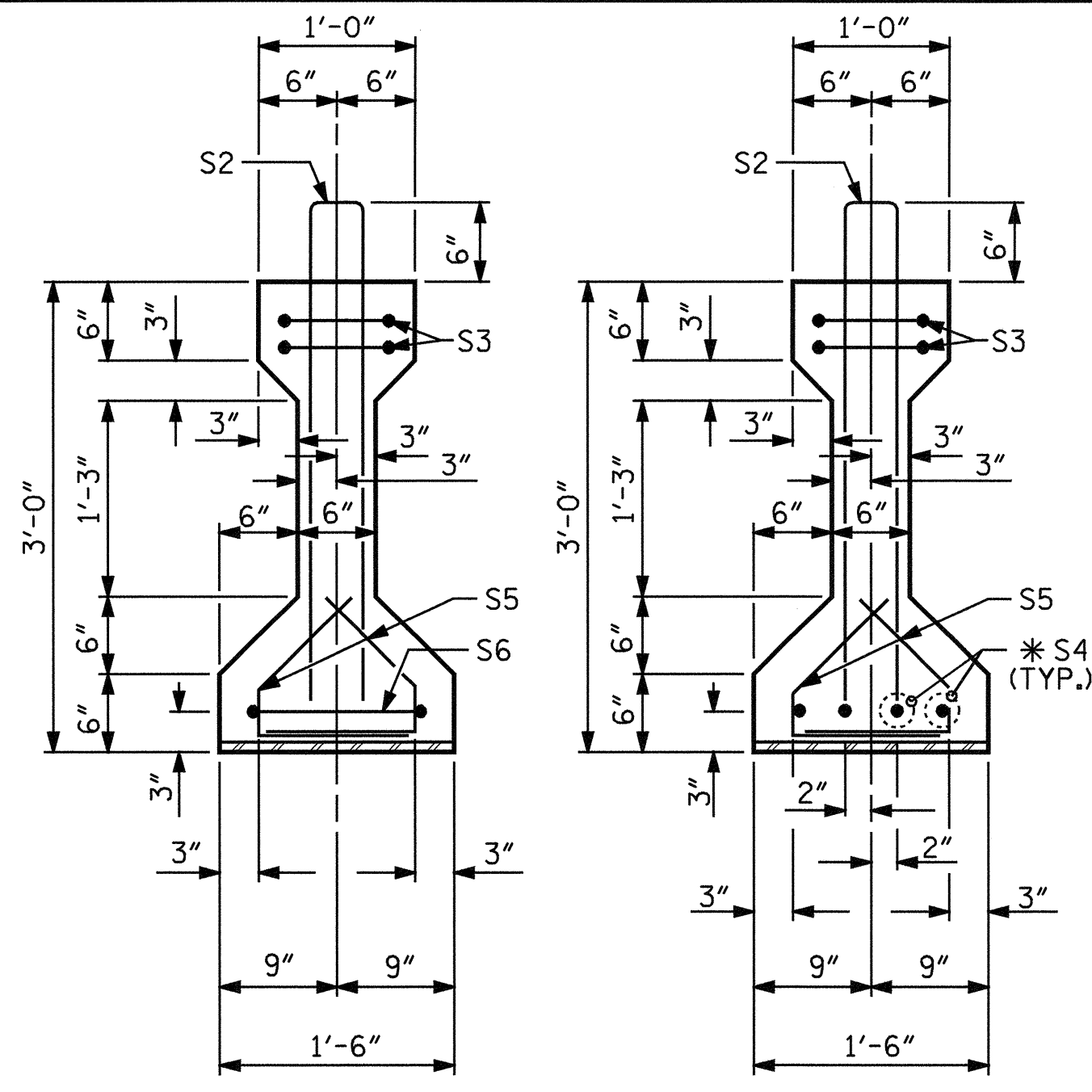
PROJECT NO. B-3916
WAKE COUNTY
 STATION: 20+35.50 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
SUPERSTRUCTURE FRAMING PLAN						S-8
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	30
1			3			
2			4			

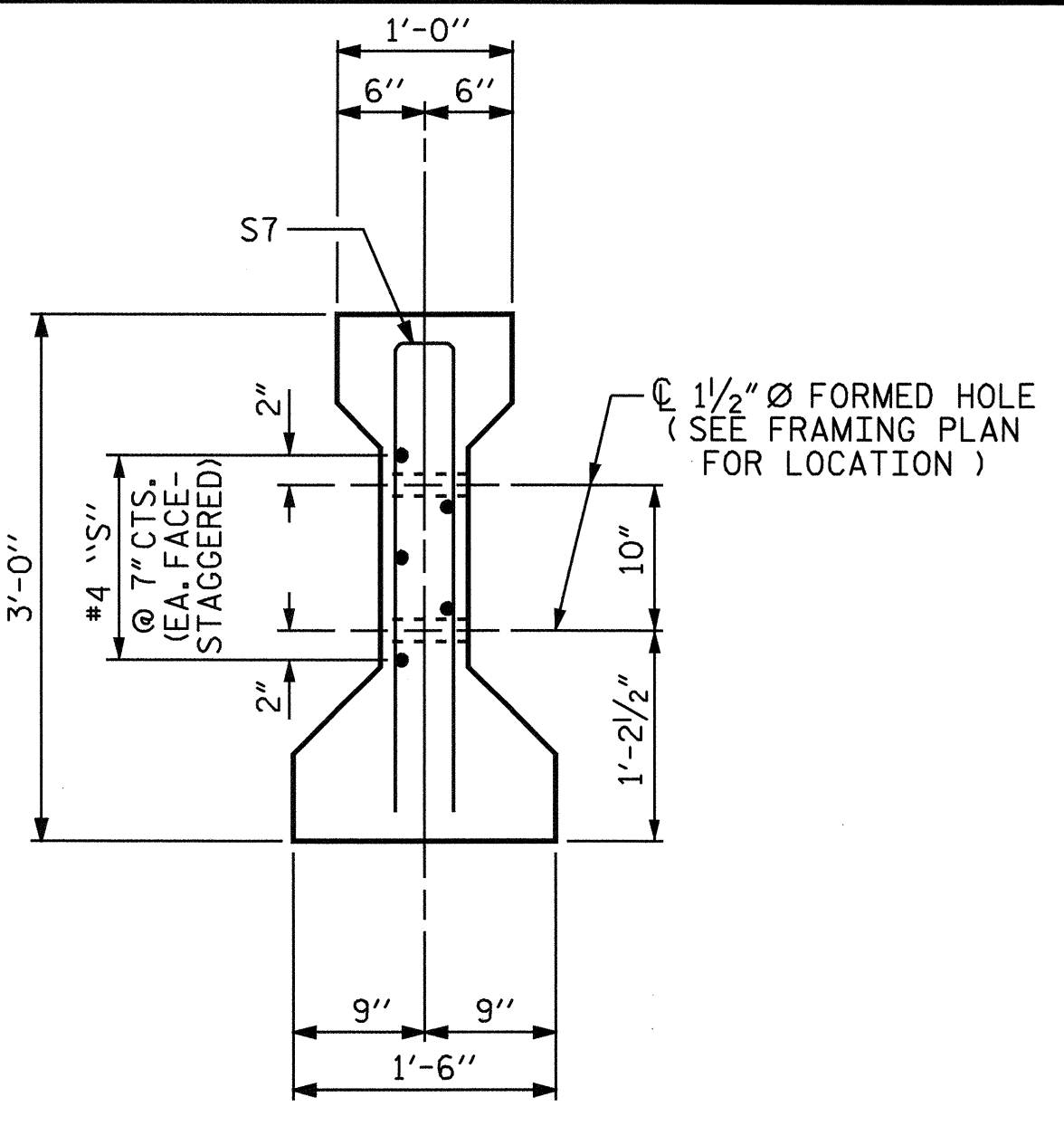


DRAWN BY : M. POOLE DATE : 10/05
 CHECKED BY : D. HODGE DATE : 02/07

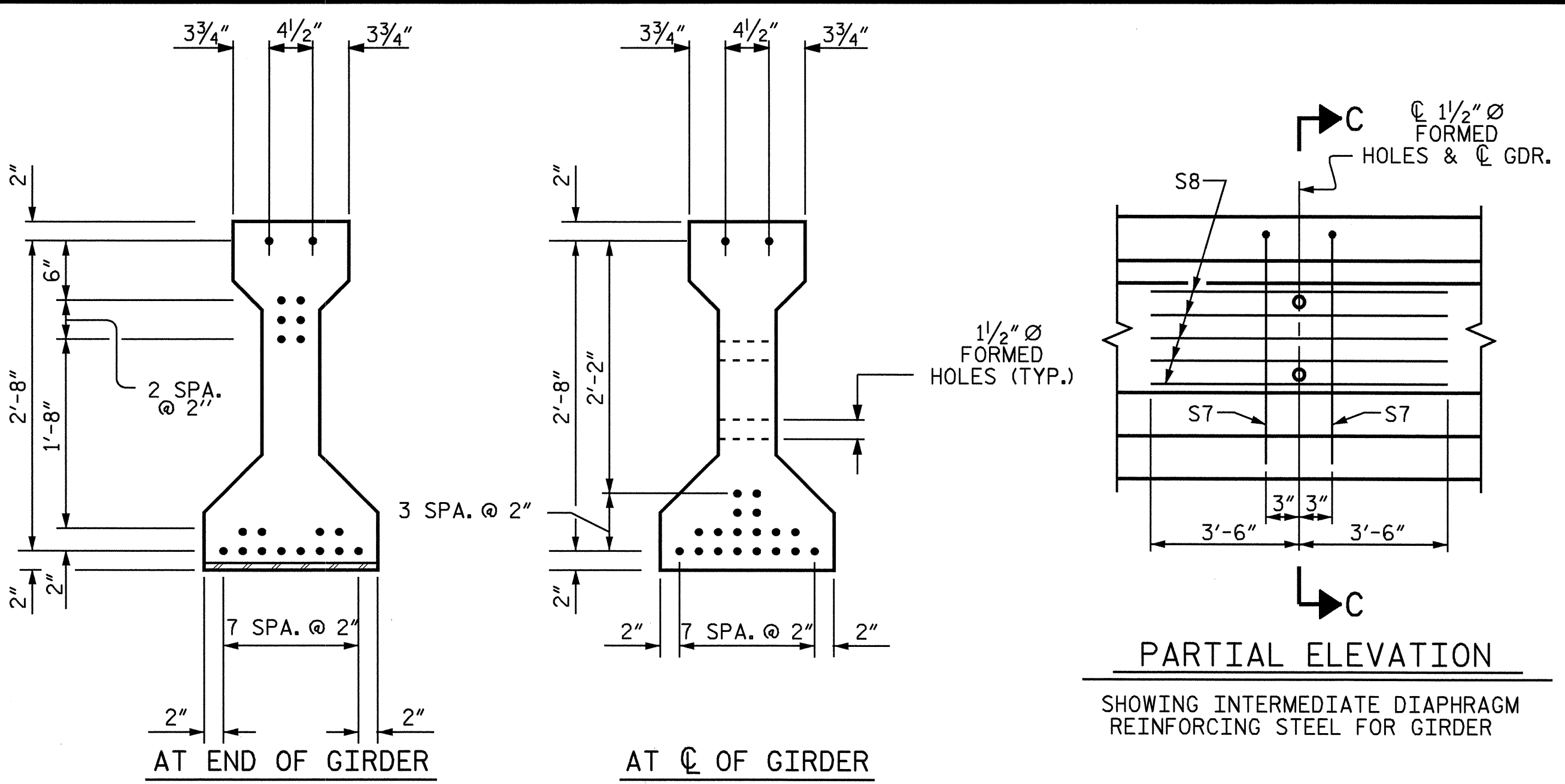
23-MAR-2007 09:11
 R:\Structures\B-3916\m\poole\microstation\B3916.ed.FP_01.dgn
 dahodge



SECTION A-A SECTION B-B

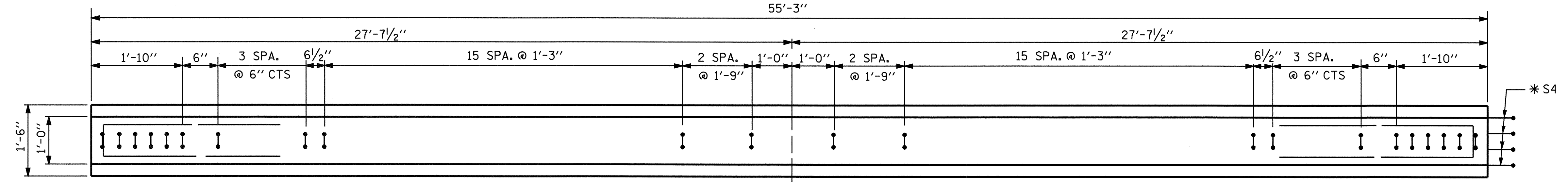


SECTION C-C (S1 BARS NOT SHOWN)

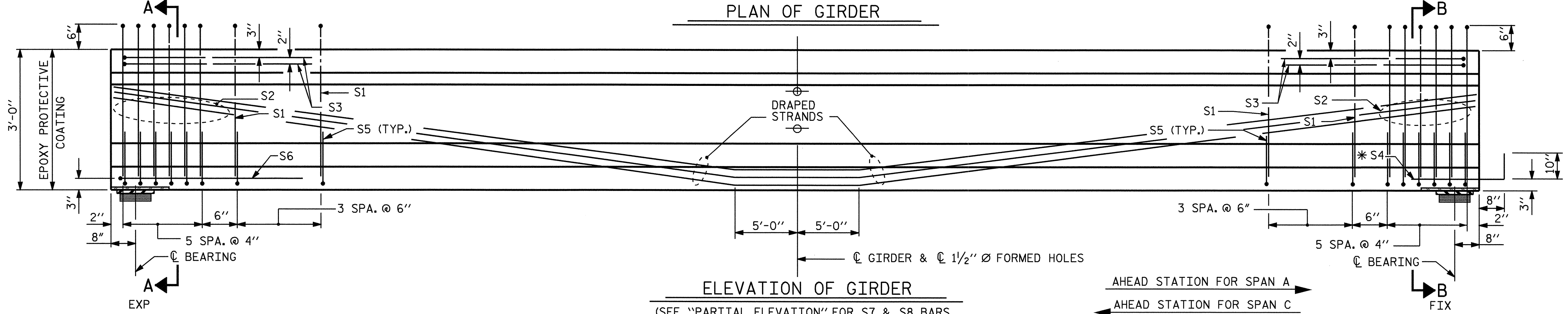


0.6" Ø LOW RELAXATION STRAND LAYOUT

PARTIAL ELEVATION SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER



PLAN OF GIRDER



ELEVATION OF GIRDER

DEAD LOAD DEFLECTION TABLE FOR BEAMS

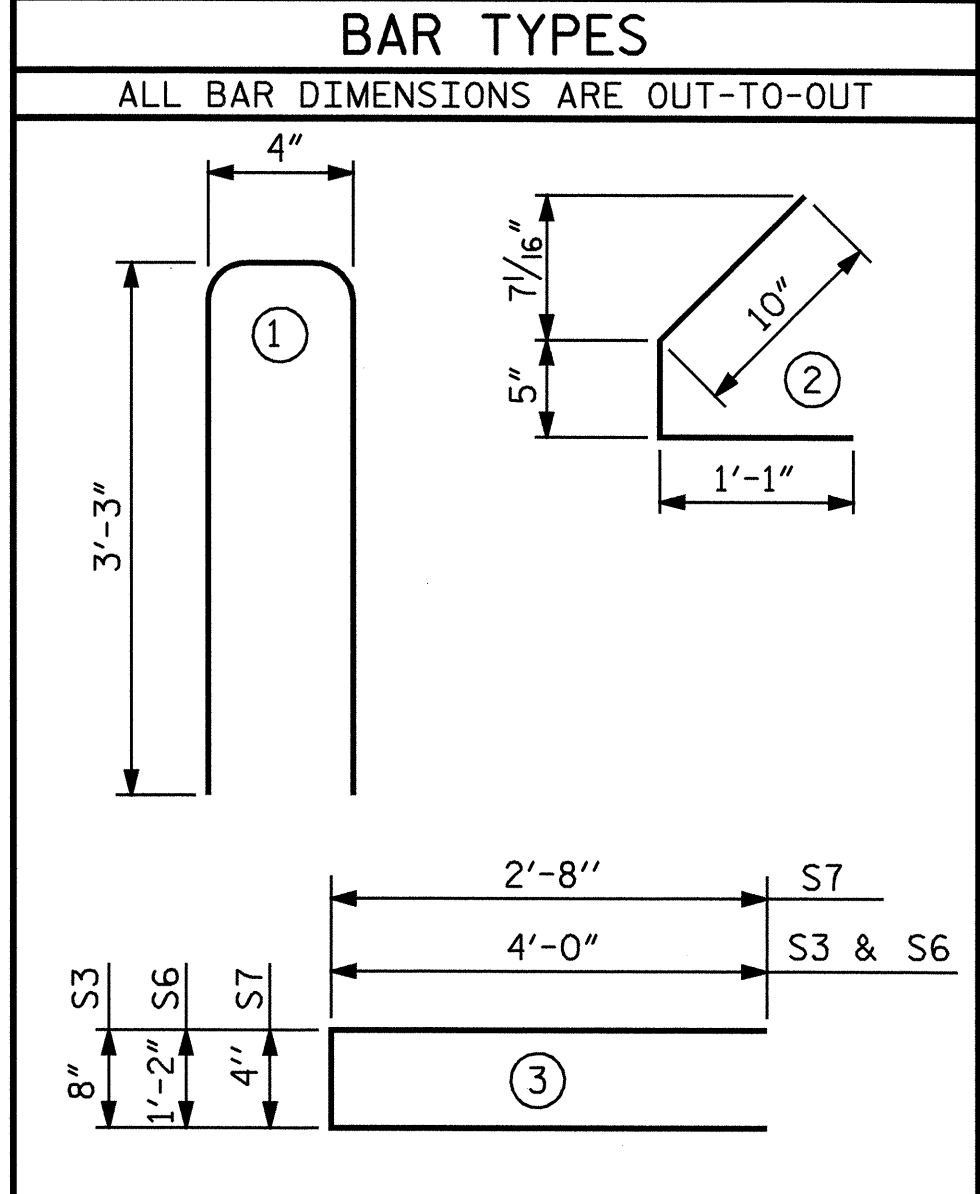
	SPAN A & C GIRDERS 2 THRU 7										SPAN A & C GIRDERS 1 & 8										
	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	.063	.119	.163	.191	.201	.191	.163	.119	.063	0	.063	.119	.163	.191	.201	.191	.163	.119	.063	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	.020	.038	.052	.061	.064	.061	.052	.038	.020	0	.019	.036	.049	.057	.060	.057	.049	.036	.019	0
FINAL CAMBER ↑	0	1/2"	1"	1 1/16"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1"	1/2"	0	1/2"	1"	1 3/8"	1 5/8"	1 11/16"	1 5/8"	1 3/8"	1"	1/2"	0

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

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	44	#4	1	6'-10"	201
S2	12	#5	1	6'-10"	86
S3	4	#4	3	8'-8"	23
* S4	4	#5	STR	3'-8"	15
S5	40	#4	2	2'-4"	62
S6	1	#4	3	9'-2"	6
S7	2	#5	3	5'-8"	12
S8	5	#4	STR	7'-0"	23

* NOTE: S4 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

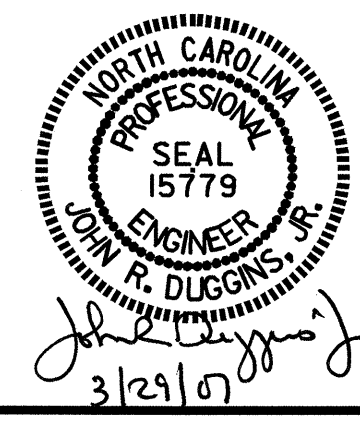


QUANTITIES FOR ONE GIRDER			
	REINFORCING STEEL	8,500 PSI CONCRETE	0.6" Ø L.R. STRANDS
	LB.	C.Y.	No.
	428	5.2	20

GIRDERS REQUIRED		
NUMBER	LENGTH	TOTAL LENGTH
16	55'-3"	884.00

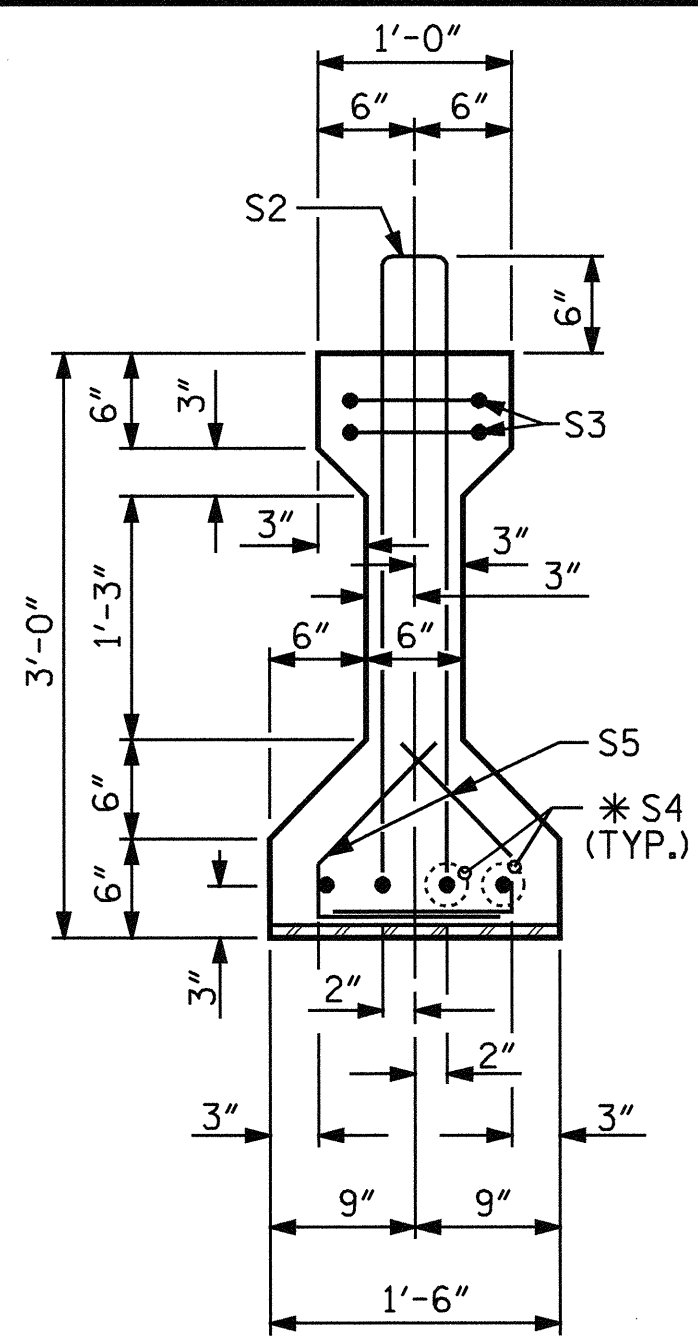
PROJECT NO. B-3916
WAKE COUNTY
STATION: 20+35.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
AASHTO TYPE II
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPANS A & C

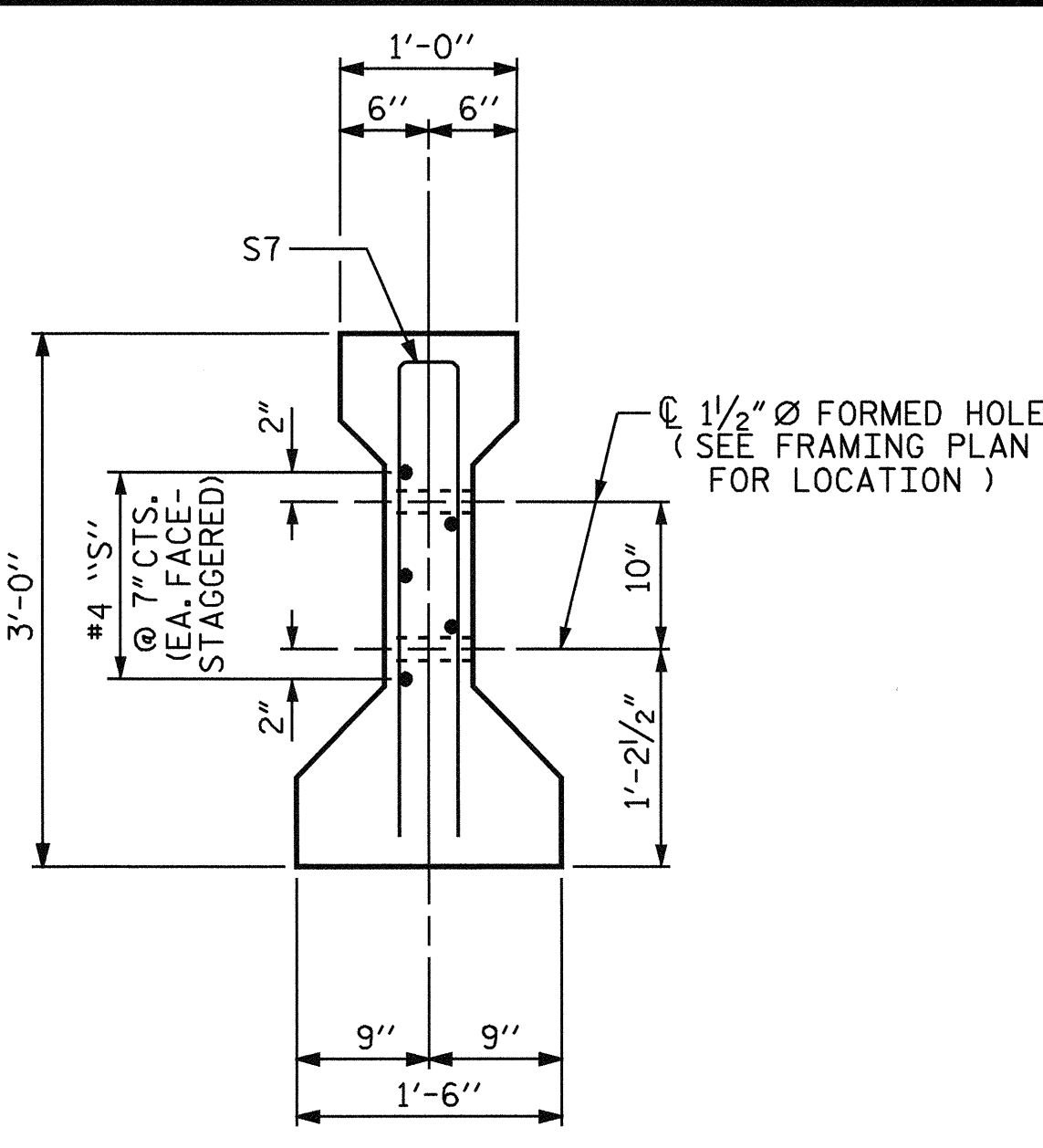


ASSEMBLED BY : M. POOLE	DATE : 10/05	CADD STANDARD
CHECKED BY : D. HODGE	DATE : 01/07	
DRAWN BY : RB 2/97	REV. 8/16/99	RWW/LES
CHECKED BY : EEM 2/97		

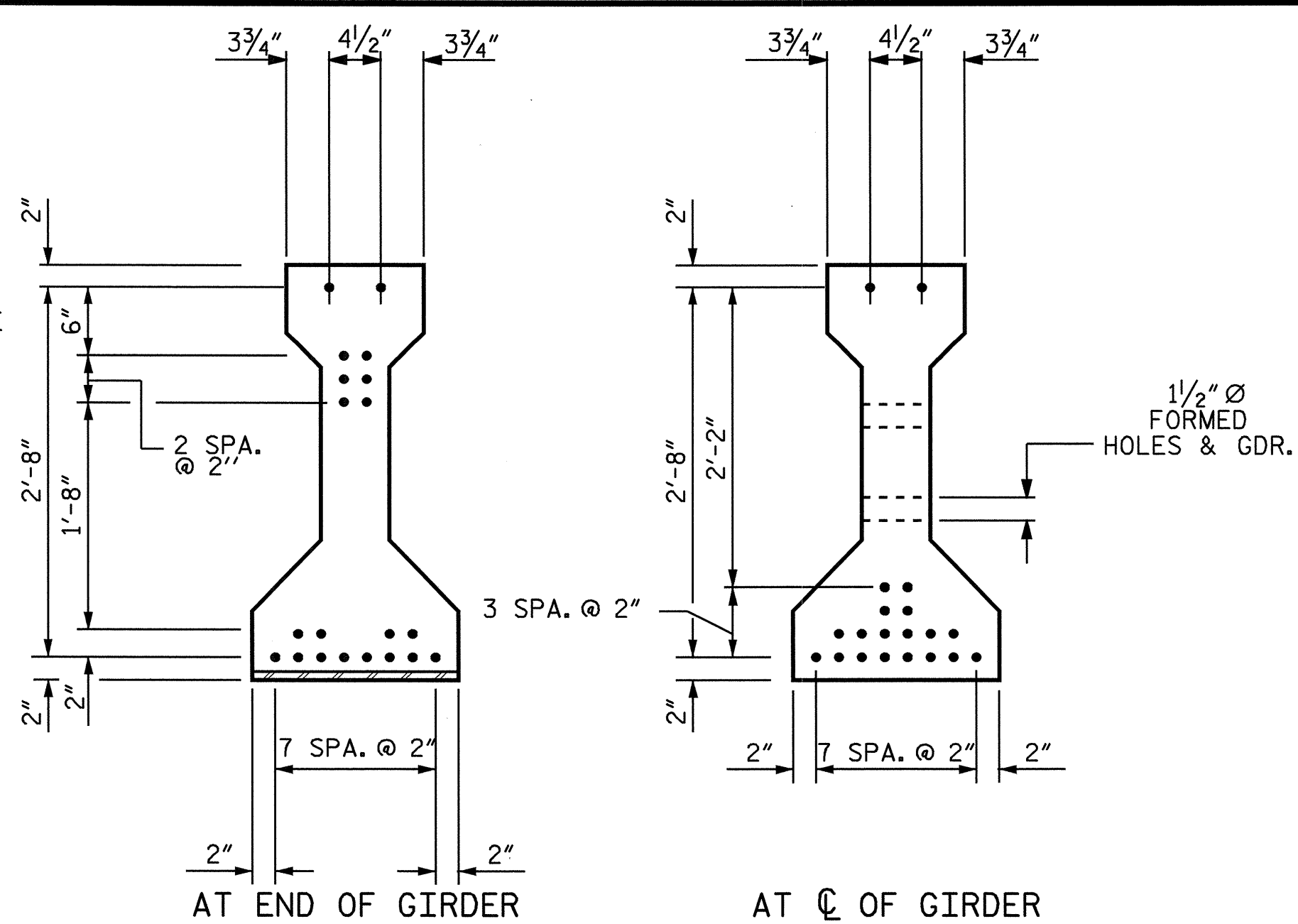
REVISIONS						SHEET NO. 3-9
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			



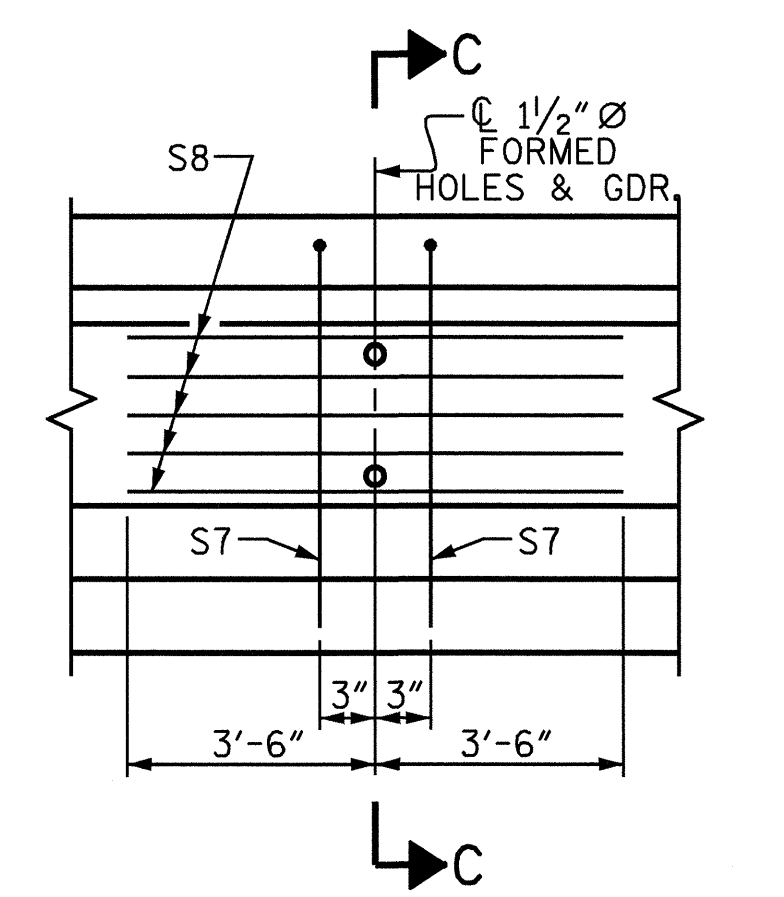
SECTION B-B



SECTION C-C
(S1 BARS NOT SHOWN)

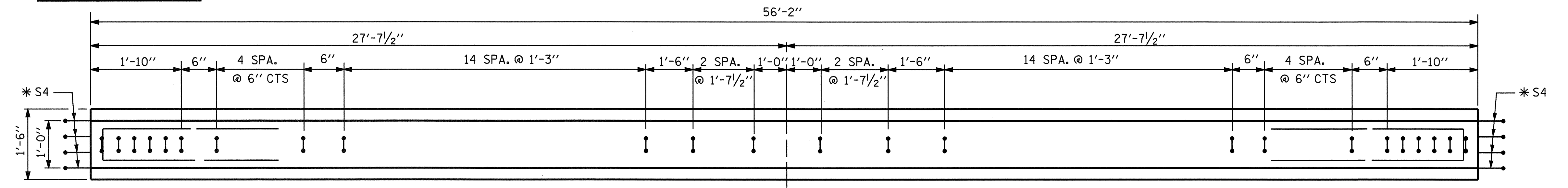


0.6" Ø LOW RELAXATION STRAND LAYOUT

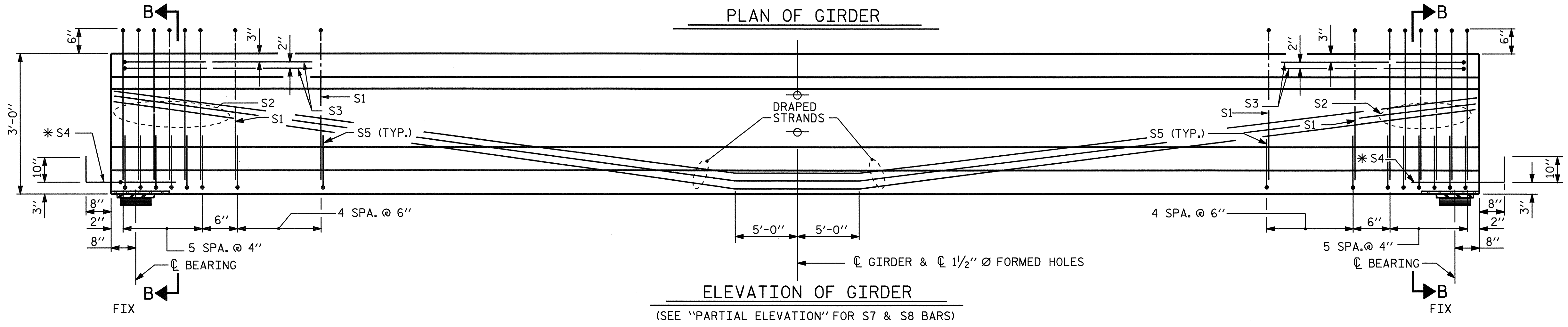


PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER



PLAN OF GIRDER



ELEVATION OF GIRDER

(SEE "PARTIAL ELEVATION" FOR S7 & S8 BARS)

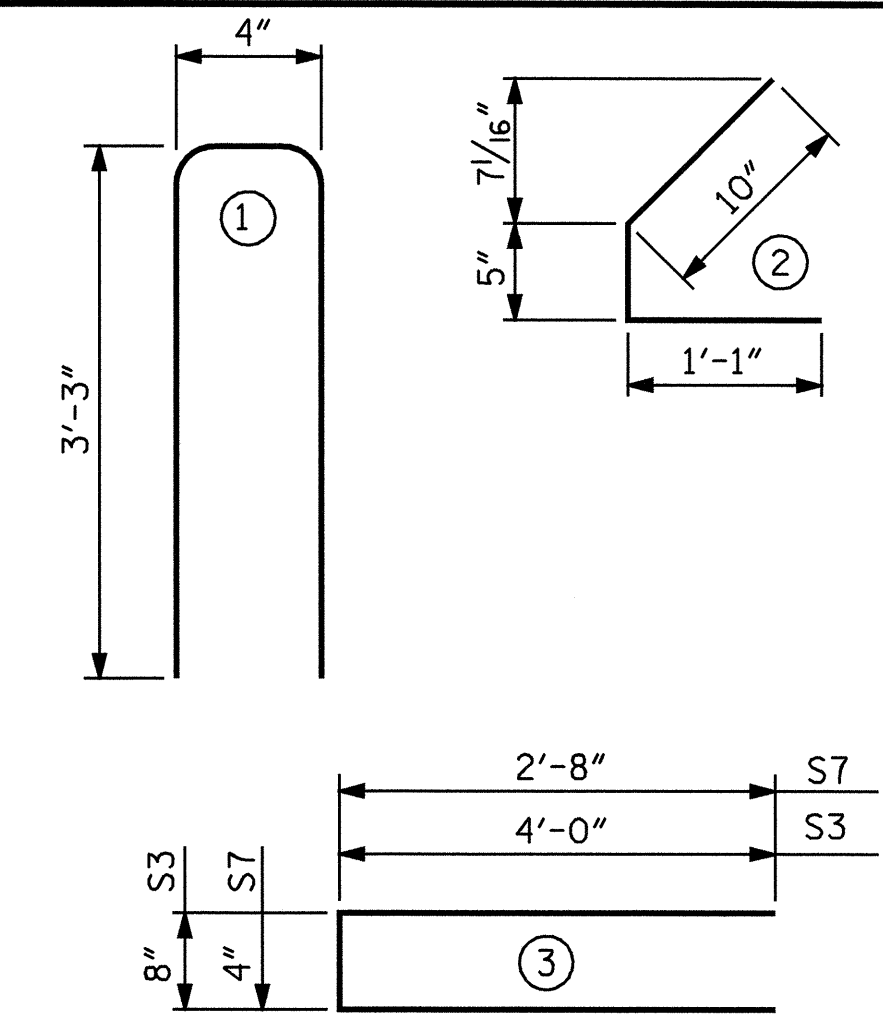
0.6" Ø L. R. GRADE 270 STRANDS		
AREA (SQ. INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

REINFORCING STEEL FOR ONE GIRDER					
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	46	#4	1	6'-10"	210
S2	12	#5	1	6'-10"	86
S3	4	#4	3	8'-8"	23
*S4	8	#5	STR	3'-8"	31
S5	44	#4	2	2'-4"	69
S7	2	#5	3	5'-8"	12
S8	5	#4	STR	7'-0"	23

* NOTE: S4 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	8,500 PSI CONCRETE	0.6" Ø L.R. STRANDS
	LB.	C.Y.	No.
	454	5.3	20

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
8	56'-2"	449.33

PROJECT NO. B-3916
 WAKE COUNTY
 STATION: 20+35.50 -L-

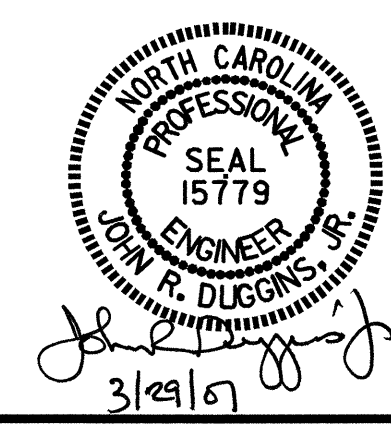
DEAD LOAD DEFLECTION TABLE FOR BEAMS																						
	SPAN B GIRDERS 2 THRU 7											SPAN B GIRDERS 1 & 8										
	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	.064	.122	.167	.196	.205	.196	.167	.122	.064	0	0	.064	.122	.167	.196	.205	.196	.167	.122	.064	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	.022	.041	.056	.065	.069	.065	.056	.041	.022	0	0	.020	.038	.052	.061	.064	.061	.052	.038	.020	0
FINAL CAMBER ↑	0	1/2"	1"	15/16"	19/16"	15/8"	19/16"	15/16"	1"	1/2"	0	0	1/2"	1"	13/8"	15/8"	11/16"	15/8"	13/8"	1"	1/2"	0

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

ASSEMBLED BY: M. POOLE
 CHECKED BY: D. HODGE
 DATE: 10/05
 DATE: 01/07

CADD
 STANDARD

DRAWN BY: RB 2/97
 CHECKED BY: EEM 2/97
 REV. 8/16/99 RWW/LES



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 AASHTO TYPE II
 PRESTRESSED CONCRETE GIRDER
 CONTINUOUS FOR LIVE LOAD
 SPAN B

REVISIONS						SHEET NO. S-10
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			

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, PRESTRESSING STRANDS MAY EXTEND A MAXIMUM OF 2" BEYOND THE GIRDER ENDS. OTHERWISE, PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

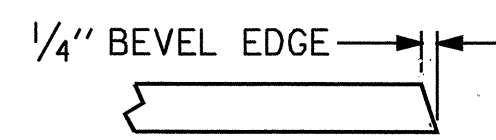
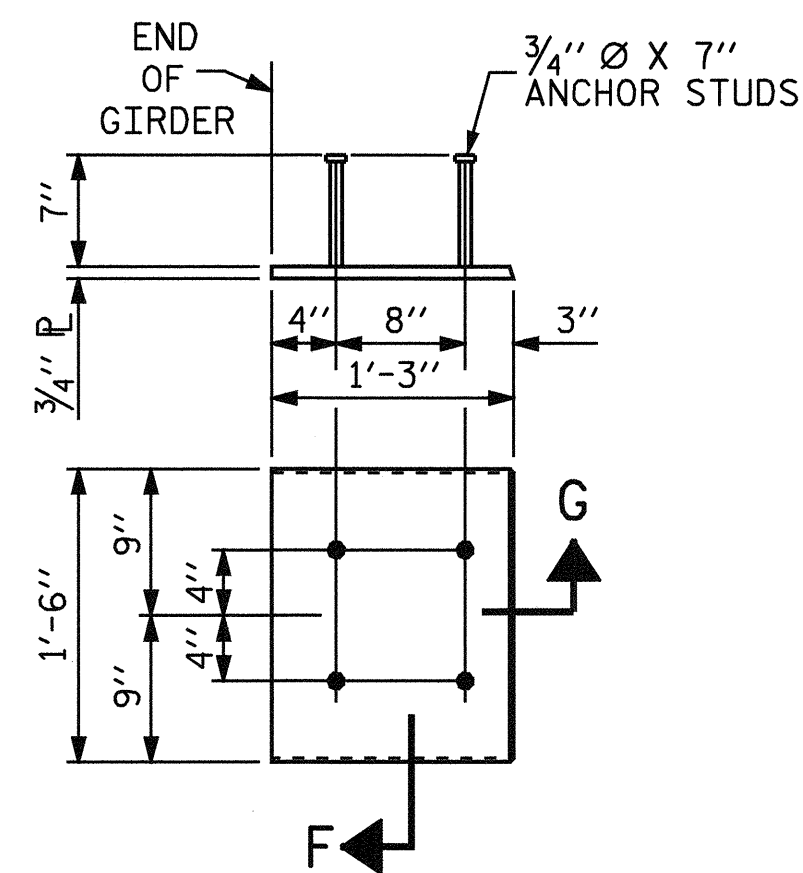
THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6500 PSI.

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

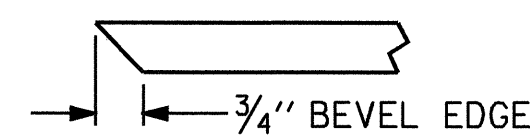
THE TOP SURFACE OF THE GIRDER, EXCLUDING THE OUTSIDE 4", SHALL BE RAKED TO A DEPTH OF 1/4".

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.



SECTION "G"



SECTION "F"

(SEE NOTES)

EMBEDDED PLATE "B-1" DETAILS
FOR AASHTO TYPE II GIRDER
(2 REQ'D PER GIRDER)

PROJECT NO. B-3916
WAKE COUNTY
STATION: 20+35.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD



ASSEMBLED BY : M. POOLE	DATE : 10/05
CHECKED BY : D. HODGE	DATE : 02/07
DRAWN BY : ELR 11/91	REV. 8/16/99 MAB/LES
CHECKED BY : GRP 11/91	REV. 10/17/00 RWW/LES
	REV. 7/10/01RR LES/RDR

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-11
2			4			TOTAL SHEETS 30

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 440-10 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, BOLTS, WASHERS, PLATE WASHERS AND DIRECT TENSION INDICATORS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, OR METALLIZED. FOR METALLIZATION, SEE SPECIAL PROVISIONS. APPLY TSC WITH THE ALLOY (85 / 15 ZINC (W-Zn-AL-2)) TO THE THICKNESS OF 8 MIL AND A SEAL COAT OF 0.5 MIL.

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 ACCOMODATE WASHERS, DIRECT TENSION INDICATORS, THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST 1/4" PROJECTION BEYOND THE NUT.

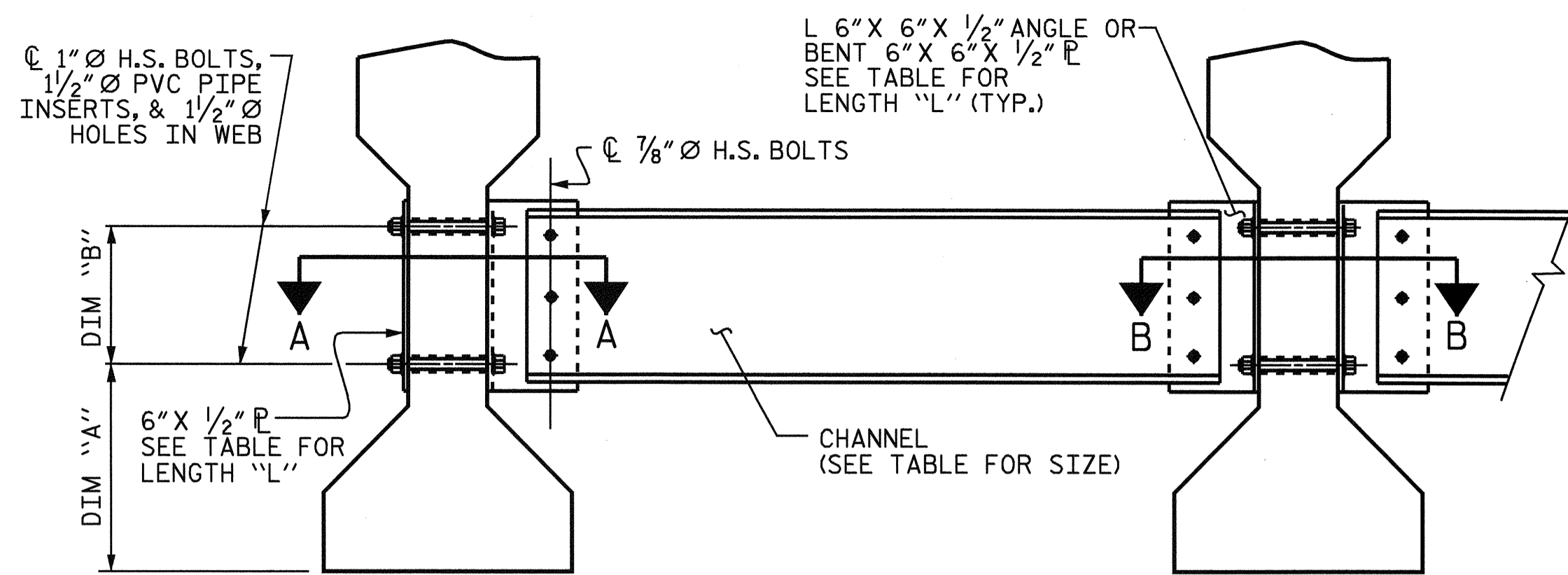
INTERMEDIATE DIAPHRAGM ASSEMBLY SHALL COMPLY WITH SECTION 1072 OF THE STANDARD SPECIFICATIONS.

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.

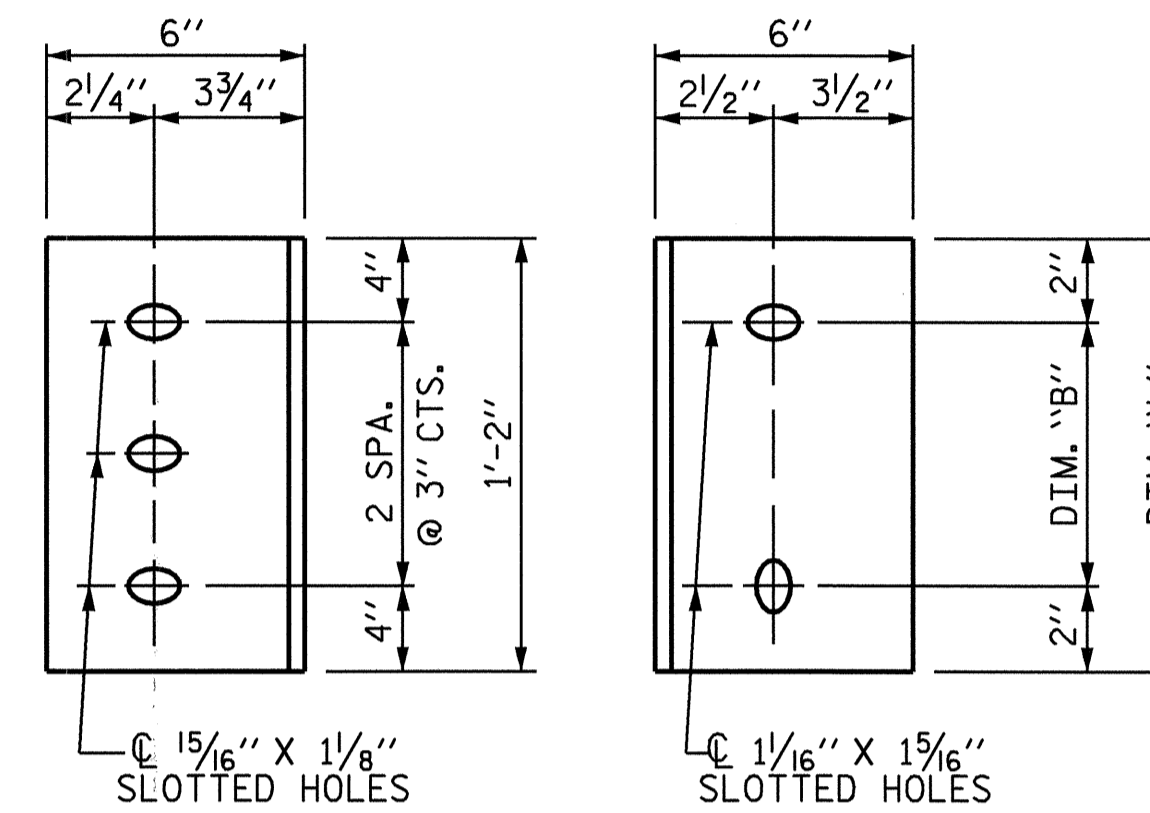
FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.



EXTERIOR GIRDER
INTERIOR GIRDER
PART SECTION AT INTERMEDIATE DIAPHRAGM

TABLE

GIRDER TYPE	CHANNEL SIZE	DIM "A"	DIM "B"	DIM "L"
II	MC 12 x 31	1'-2 1/2"	10"	1'-2"



DIAPHRAGM FACE
(TYPE II GDR.)
WEB FACE
CONNECTOR PLATE DETAILS

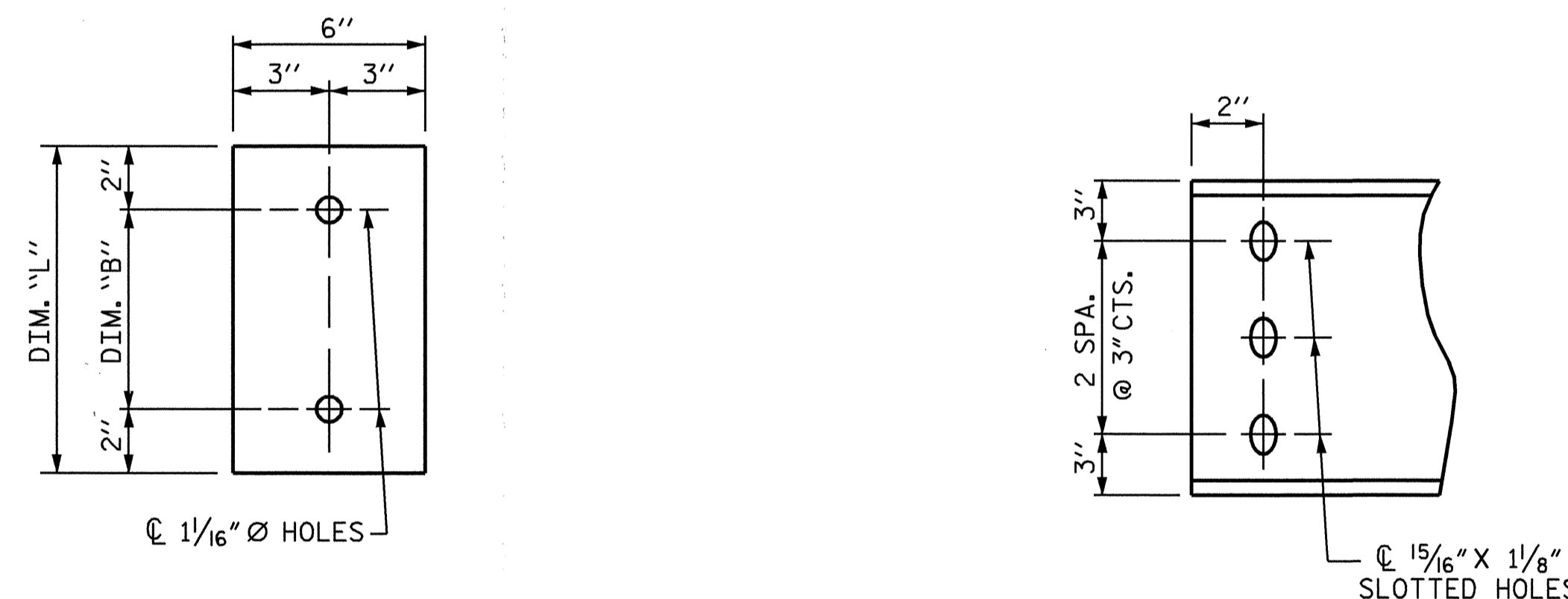
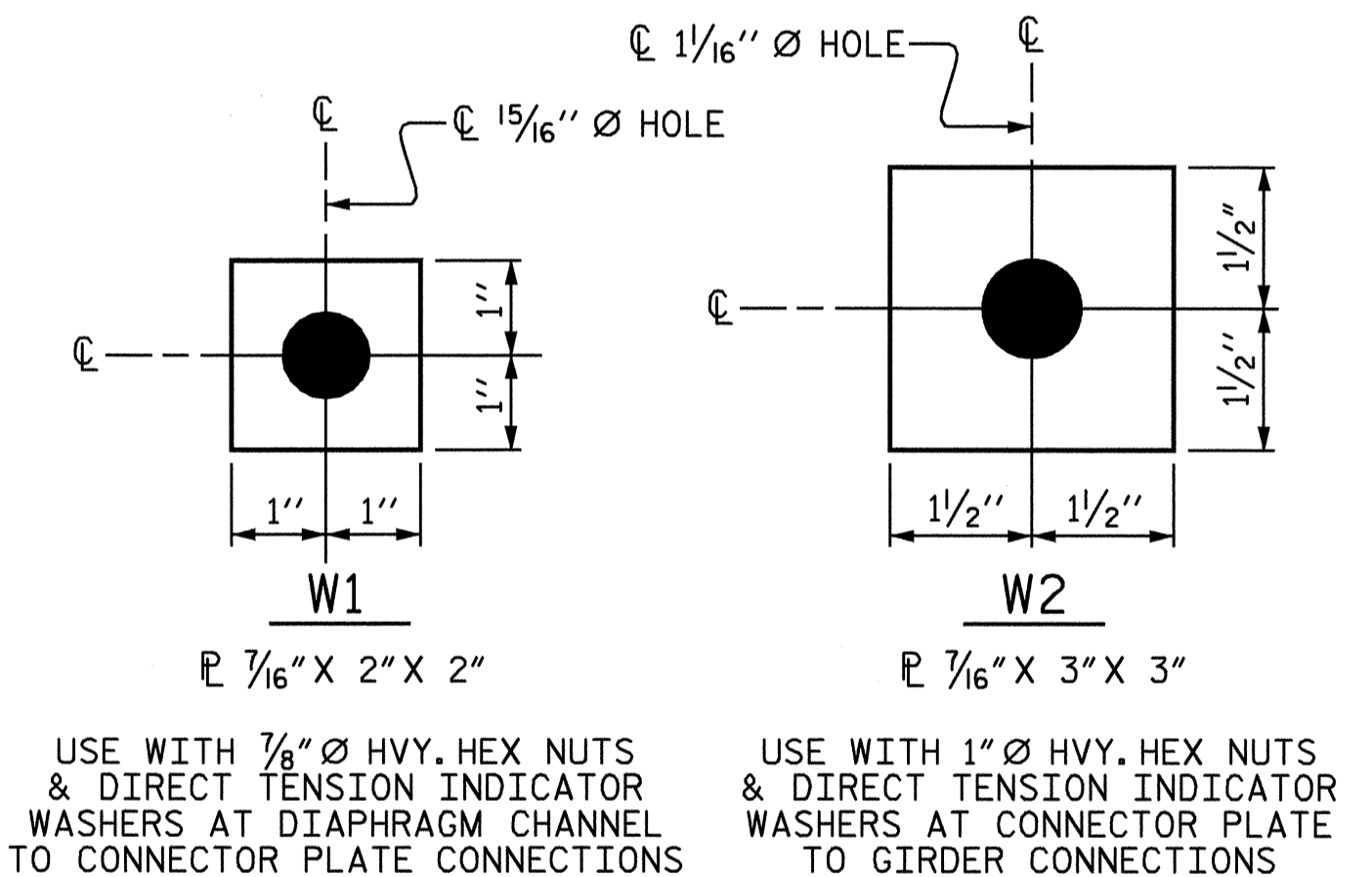
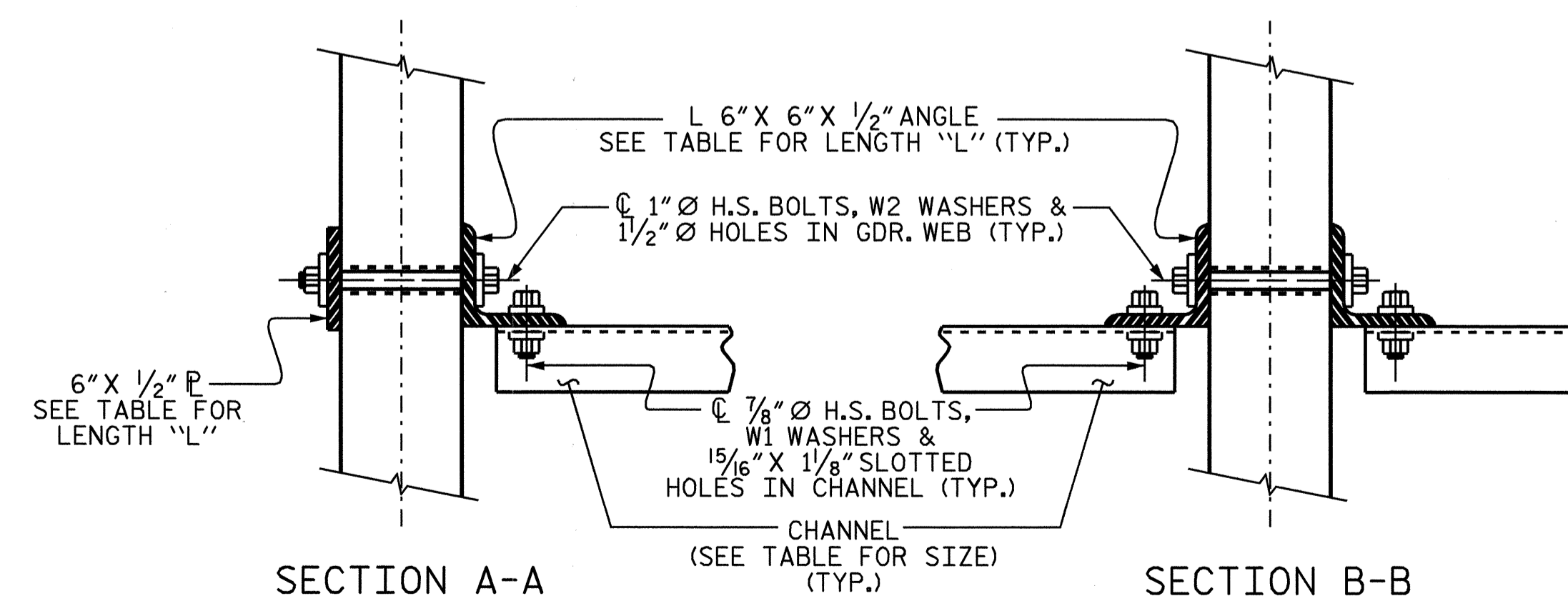


PLATE DETAILS
CHANNEL END
(TYPE II GDR.)



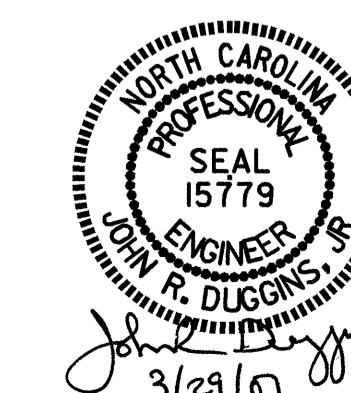
WASHER DETAILS



SECTION A-A
SECTION B-B
CONNECTION DETAILS
(FOR SKEW = 90°)

PROJECT NO. B-3916
WAKE COUNTY
STATION: 20+35.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**INTERMEDIATE
STEEL DIAPHRAGMS
FOR TYPE II
PRESTRESSED CONCRETE
GIRDERS**



ASSEMBLED BY : M. POOLE DATE : 02/07
CHECKED BY : D. HODGE DATE : 02/07
DRAWN BY : TLA 6/05
CHECKED BY : VC 6/05
ADDED 10/21/05
REV. 5/1/06 TLA/GM

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

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.

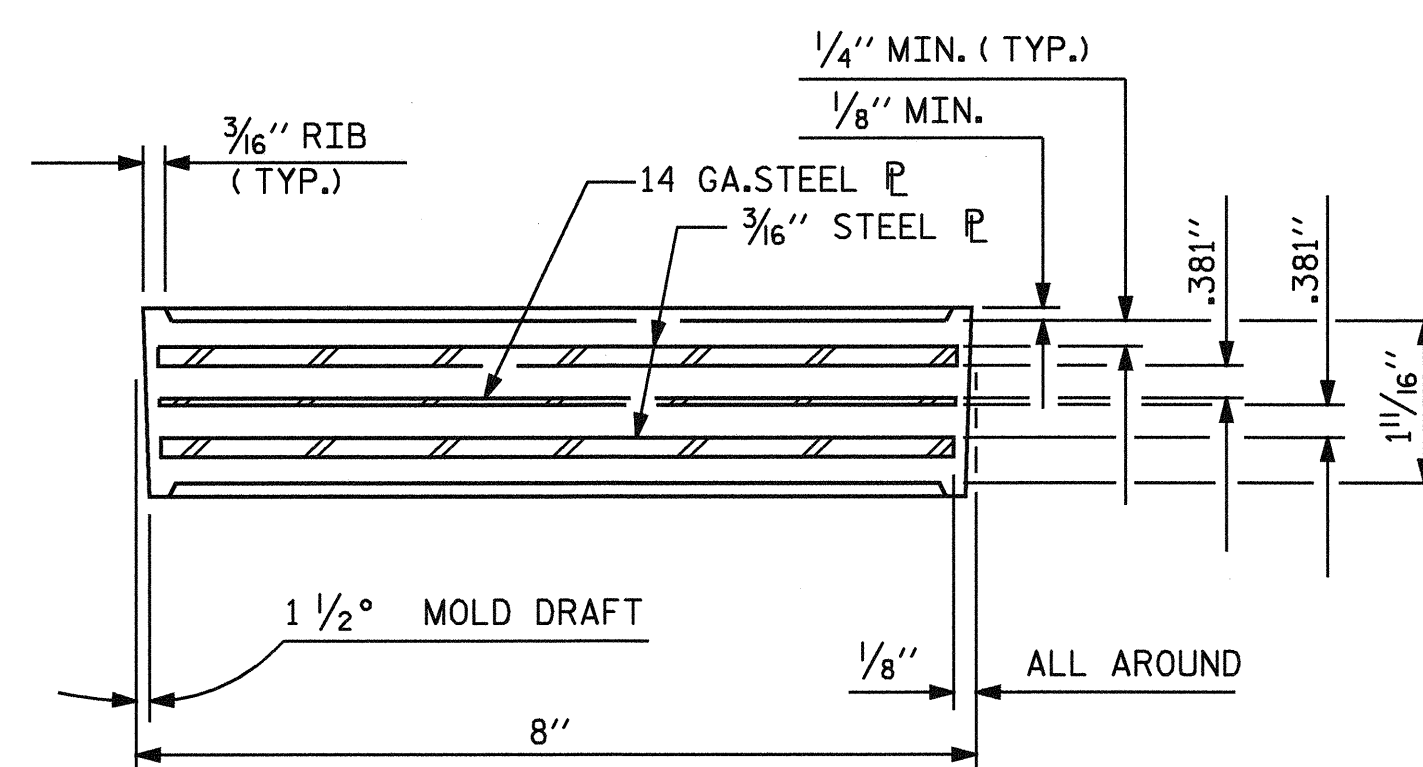
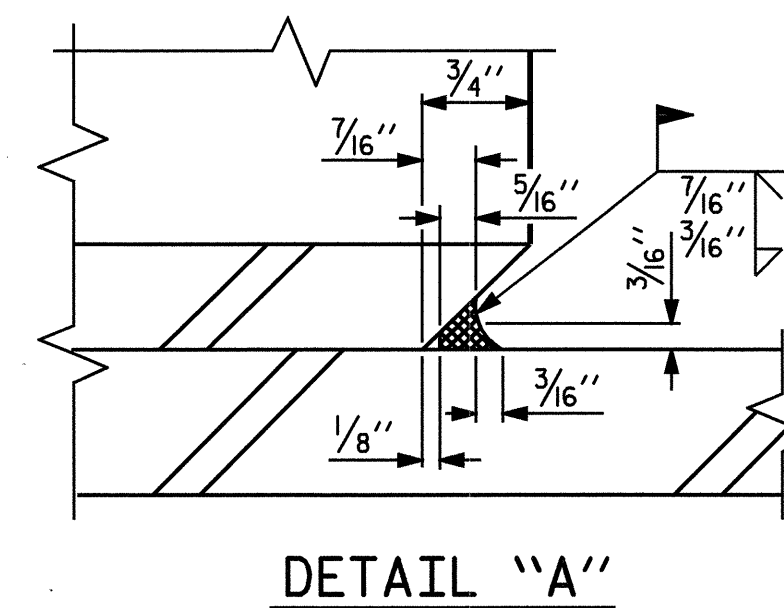
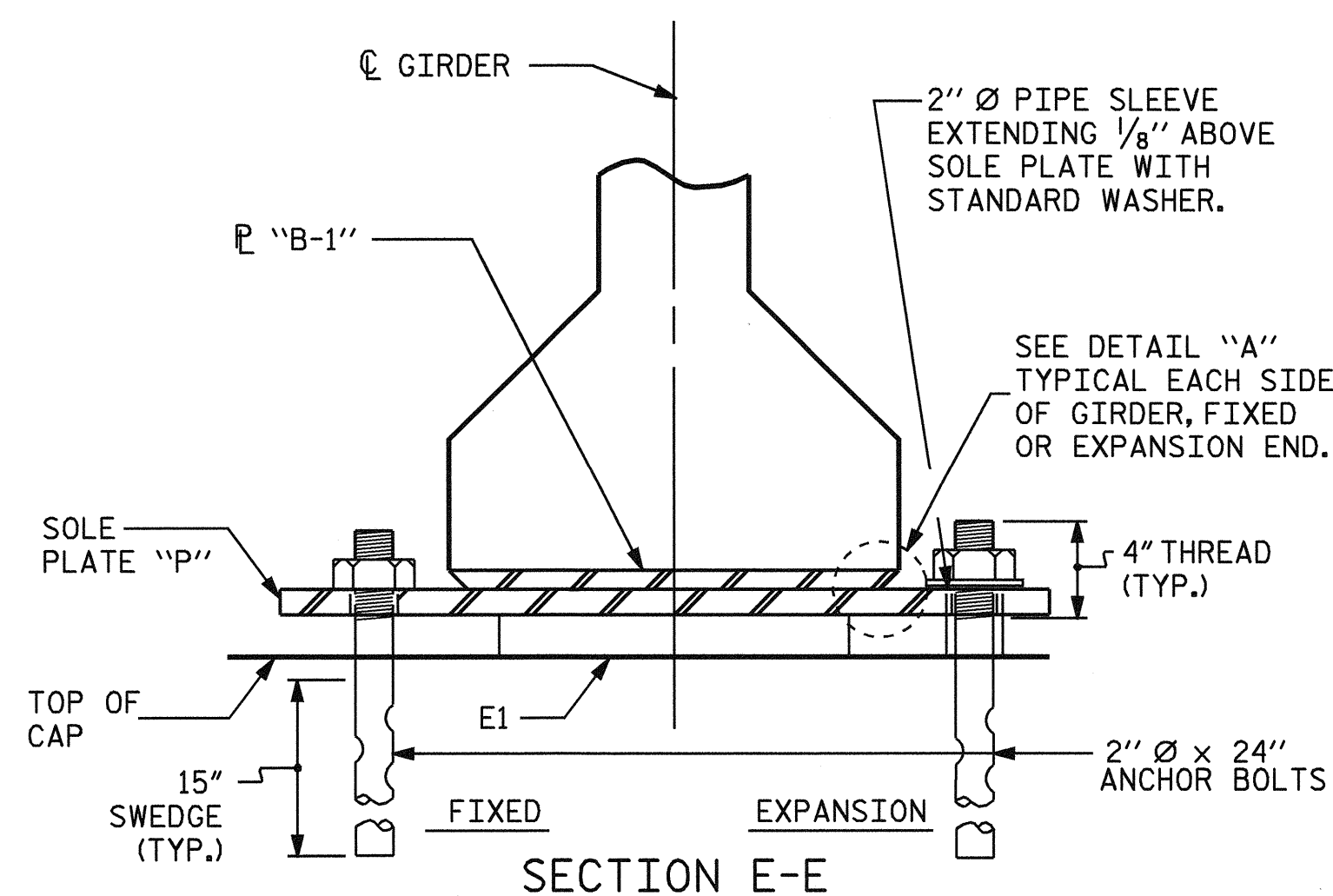
WHEN WELDING THE SOLE PLATE TO THE EMBEDDED PLATE IN THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

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

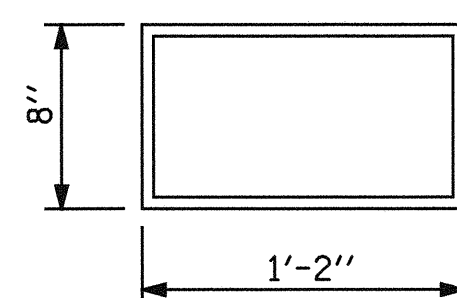
ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLT, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

ELASTOMERIC IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.



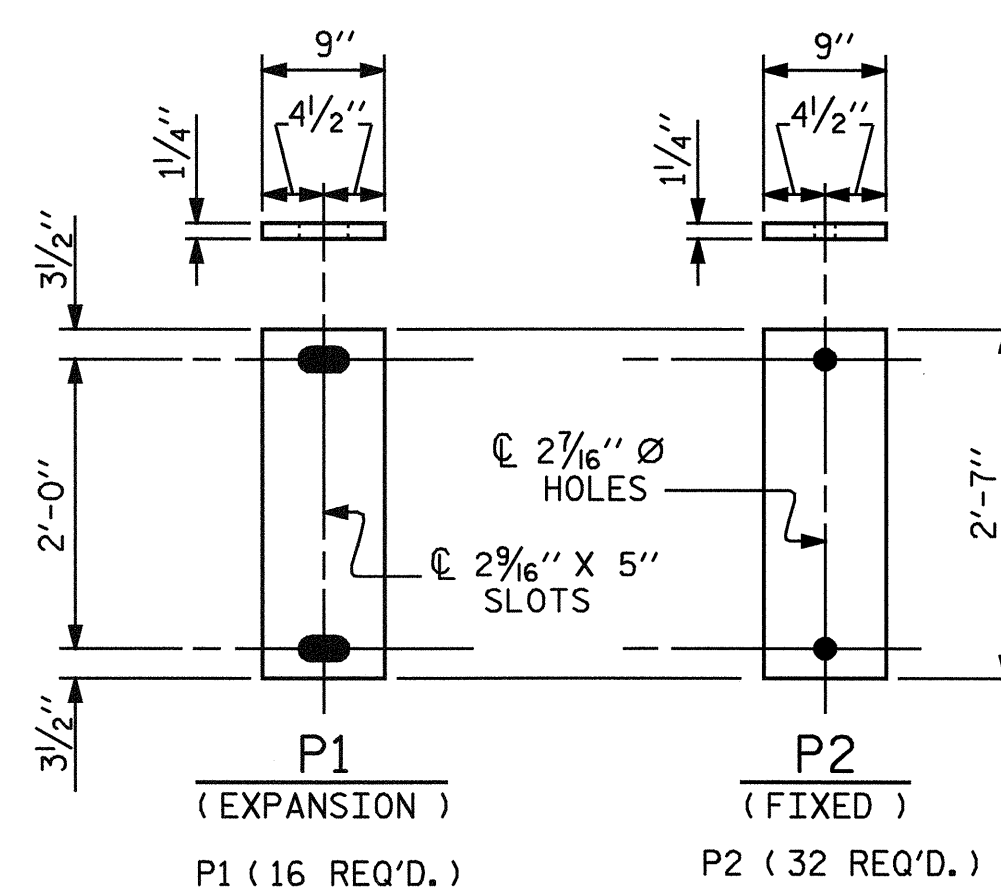
TYPICAL SECTION OF ELASTOMERIC BEARINGS



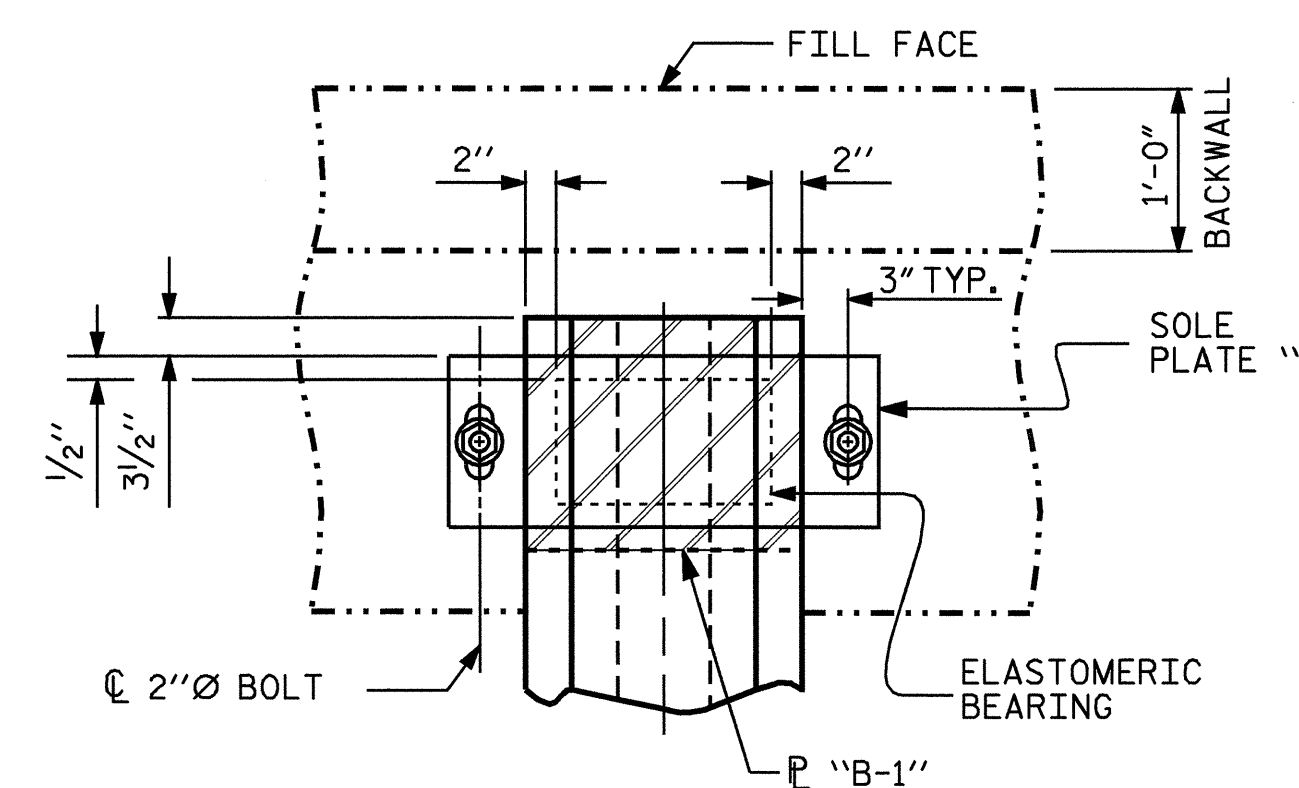
E1 (48 REQ'D.)

PLAN VIEW OF ELASTOMERIC BEARING

TYPE II

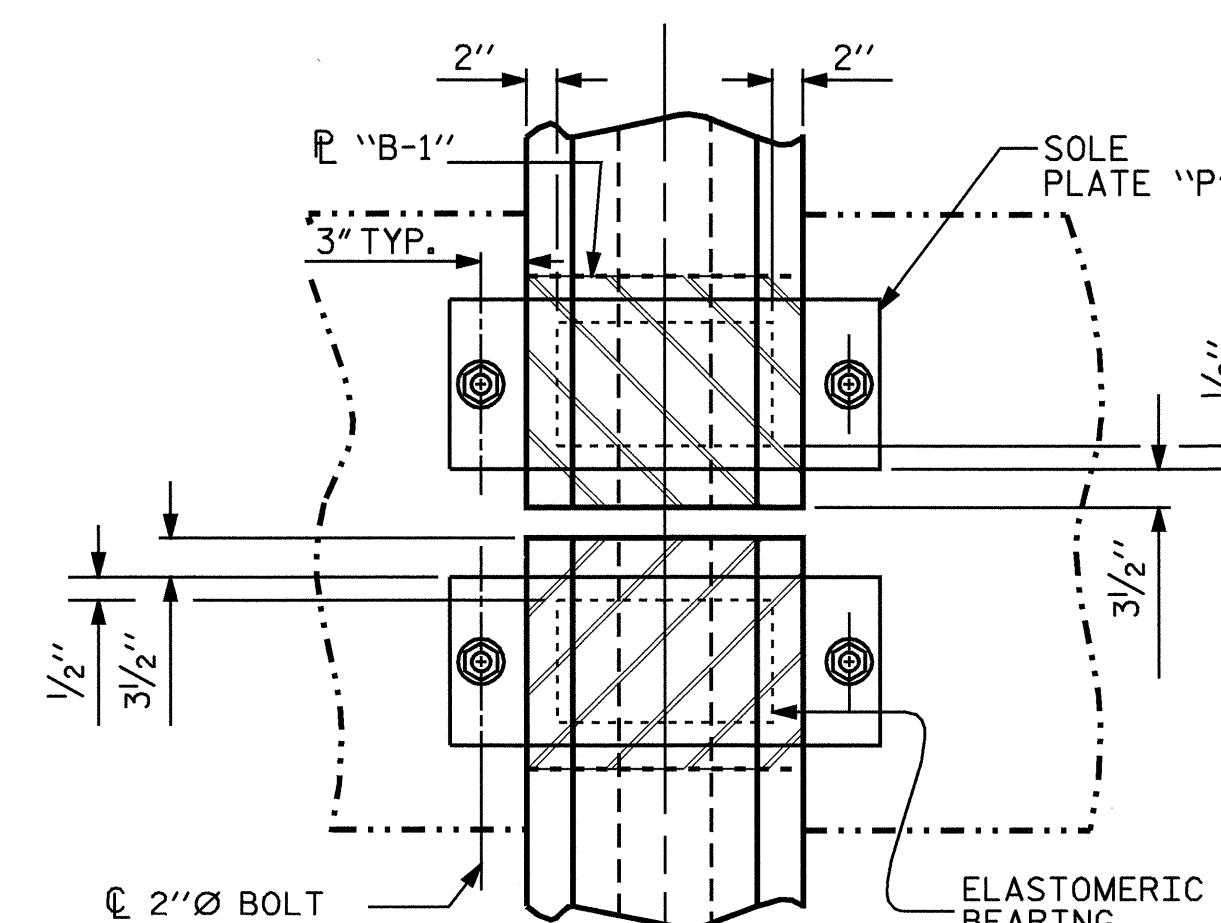


SOLE PLATE DETAILS ("P")



PLAN VIEW AT END BENTS

(EXPANSION)



PLAN VIEW AT BENTS

(FIXED)

— LOAD RATINGS —

	MAX.D.L.+L.L.
36" PCG -TYPE II	82 K

PROJECT NO. B-3916
 WAKE COUNTY
 STATION: 20+35.50 -L-

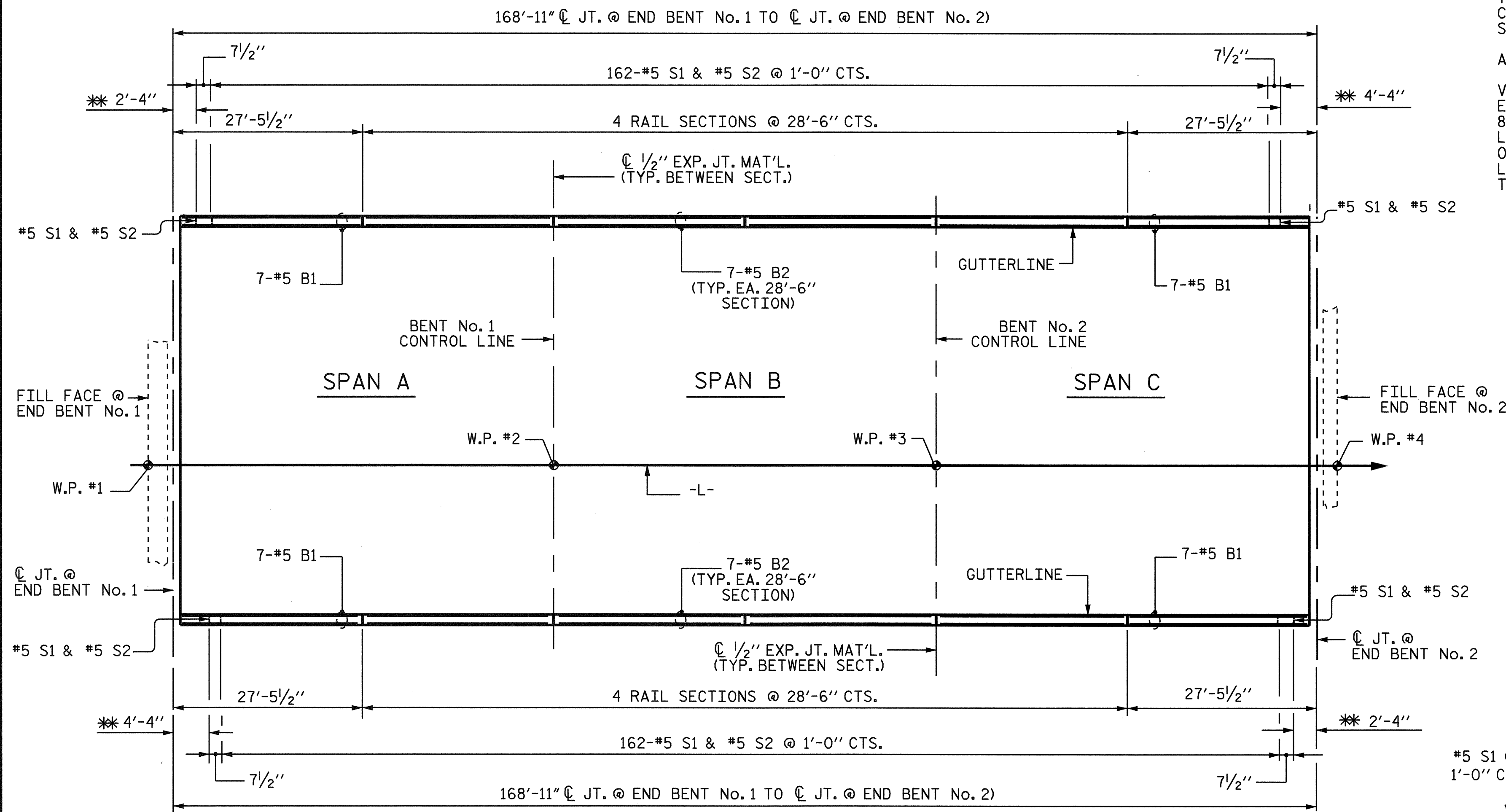
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**ELASTOMERIC BEARING
 DETAILS**
 PRESTRESSED CONCRETE GIRDER
 SUPERSTRUCTURE



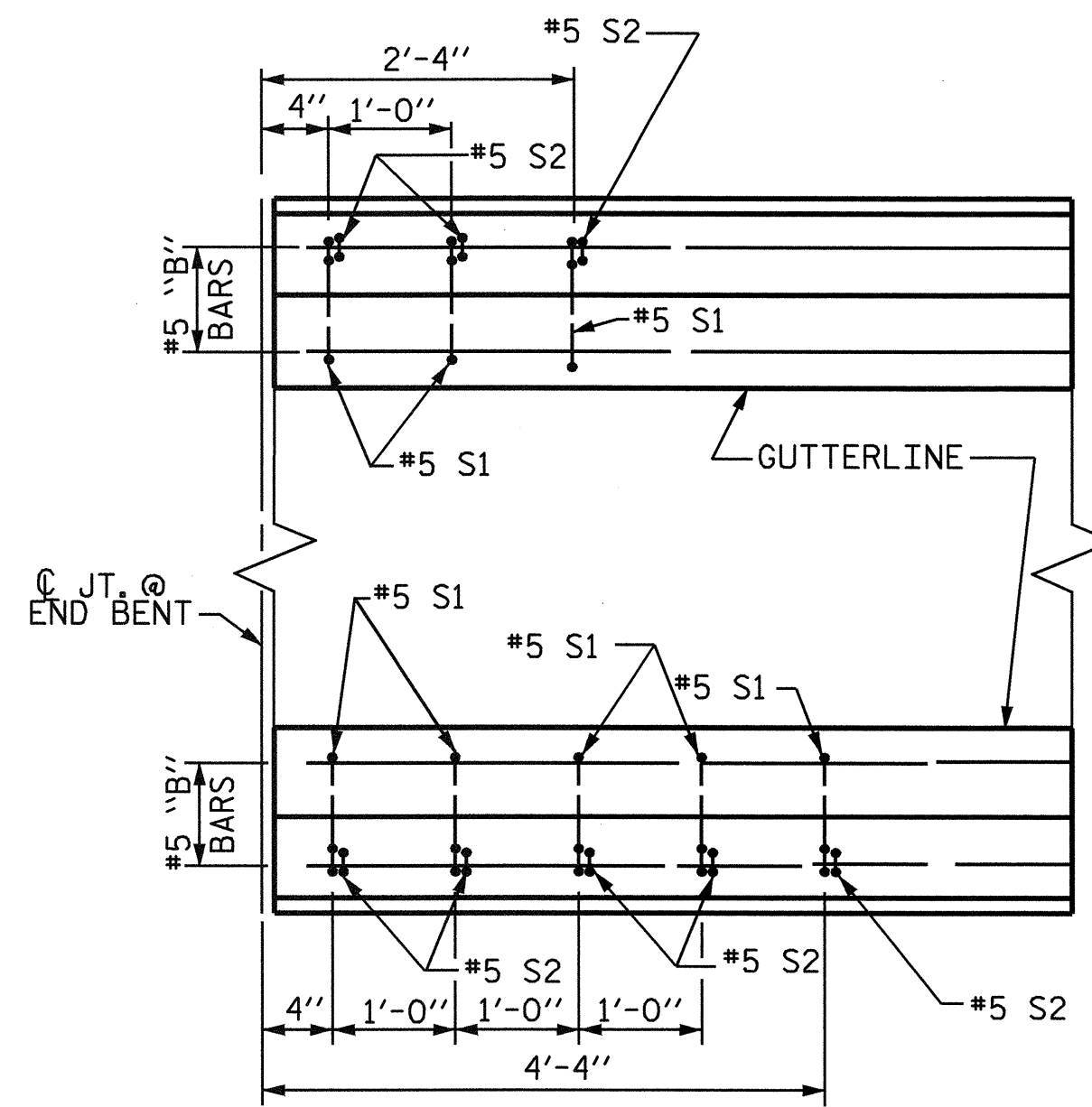
ASSEMBLED BY : M. POOLE	DATE : 10/05
CHECKED BY : D. HODGE	DATE : 02/07
DRAWN BY : WJH 8/89	REV. 8/16/99 RWW/LES
CHECKED BY : CRK 8/89	REV. 10/17/00 RWW/LES
	REV. 7/10/01 RWW/LES

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



PLAN

** FOR REINFORCING STEEL IN THIS AREA, SEE "BARRIER RAIL - END OF RAIL DETAILS"



PLAN

END OF RAIL DETAILS

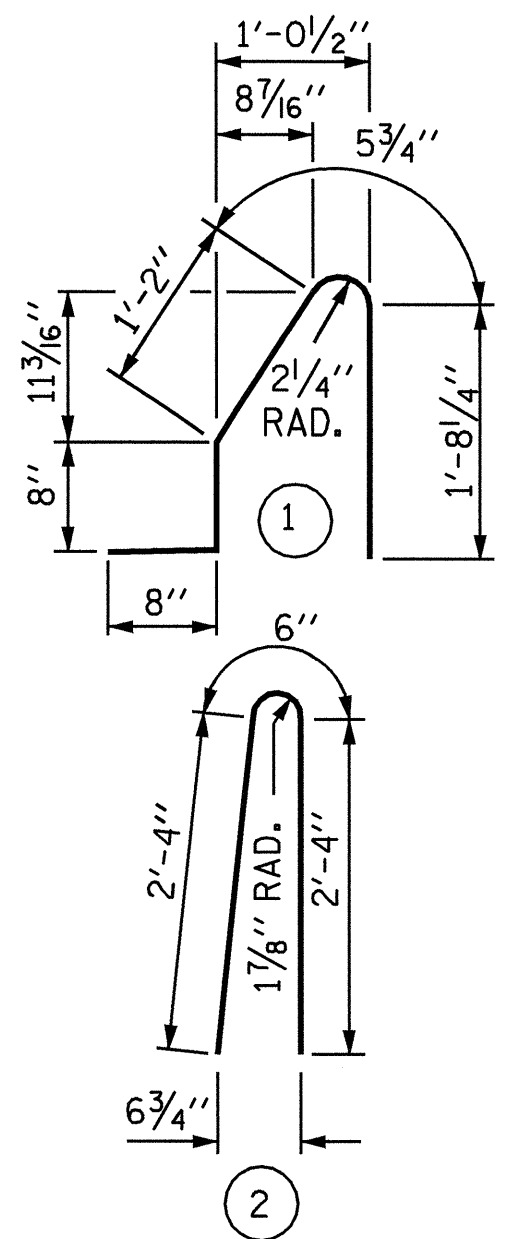
NOTES

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

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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

BAR TYPES



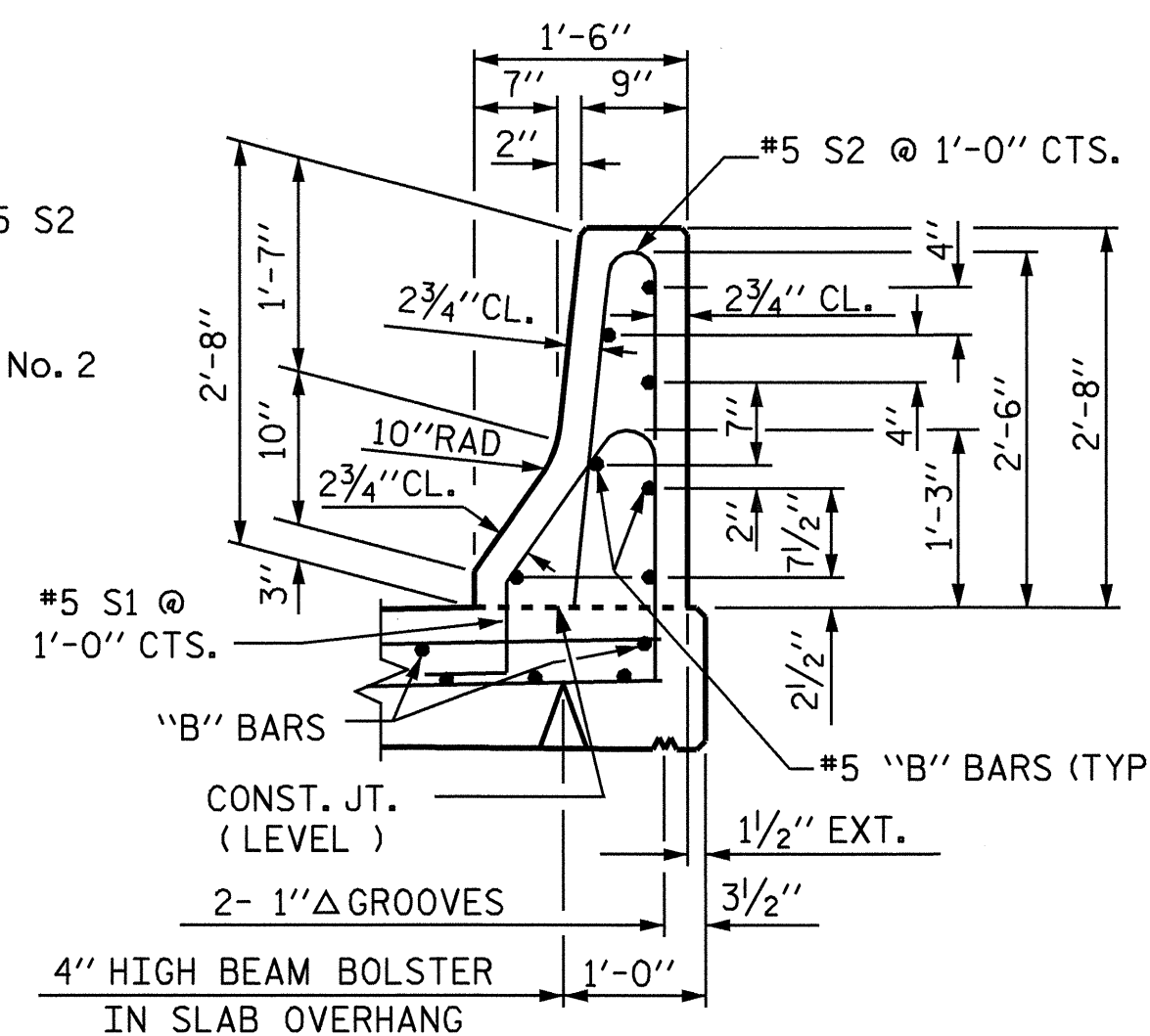
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

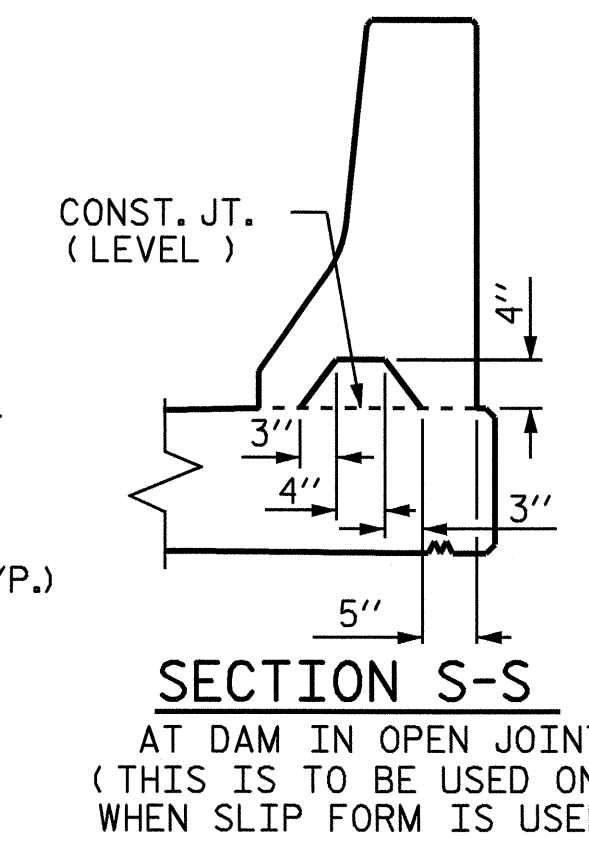
FOR CONCRETE BARRIER RAIL ONLY

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
* S1	340 #5	1	4'-8"	1655
* S2	340 #5	2	5'-2"	1832
* B1	28 #5	STR	27'-0"	789
* B2	56 #5	STR	28'-1"	1640

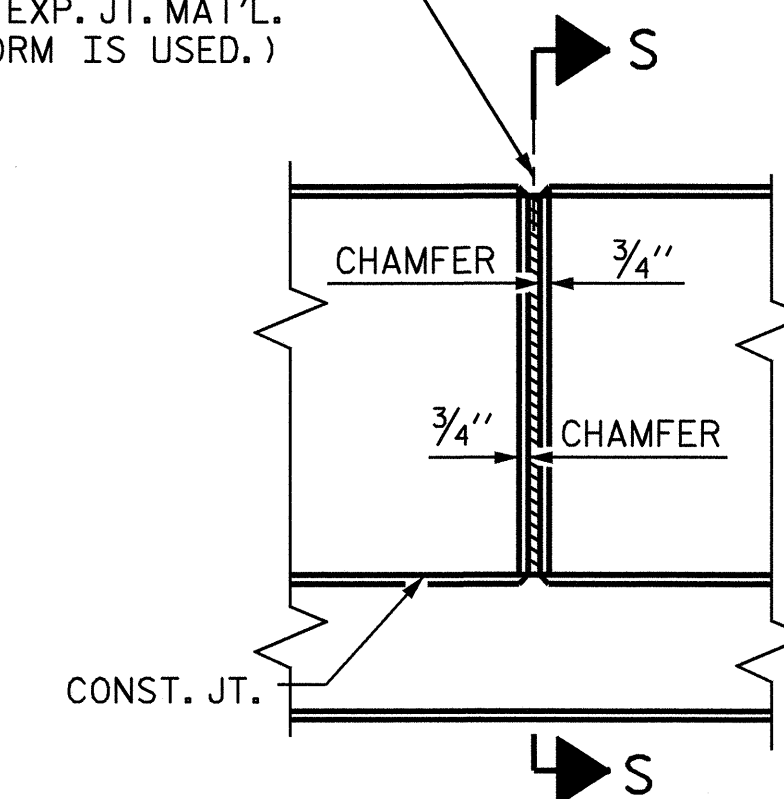
* EPOXY COATED REINFORCING STEEL 5916 LBS.
 CLASS AA CONCRETE 33.8 CU. YDS.
 CONCRETE BARRIER RAIL 337.83 LIN. FT.



SECTION THRU RAIL



1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS.
 (NOTE: OMIT EXP. JT. MAT'L WHEN SLIP FORM IS USED.)

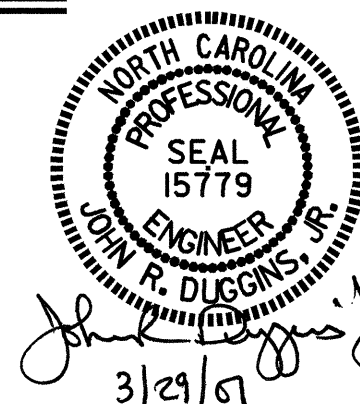


ELEVATION AT EXPANSION JOINTS
 BARRIER RAIL DETAILS

PROJECT NO. B-3916
 WAKE COUNTY
 STATION: 20+35.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE BARRIER RAIL



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

STD. NO. CBRI

ASSEMBLED BY: M. POOLE DATE: 10/05
 CHECKED BY: D. HODGE DATE: 02/07
 DRAWN BY: ARB 5/87 REV. 8/16/99 RWW/LES
 CHECKED BY: SJD 9/87 REV. 10/17/00 RWW/LES
 REV. 5/7/03R RWW/JTE

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 4 - 5/8" 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 5/8" 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.)

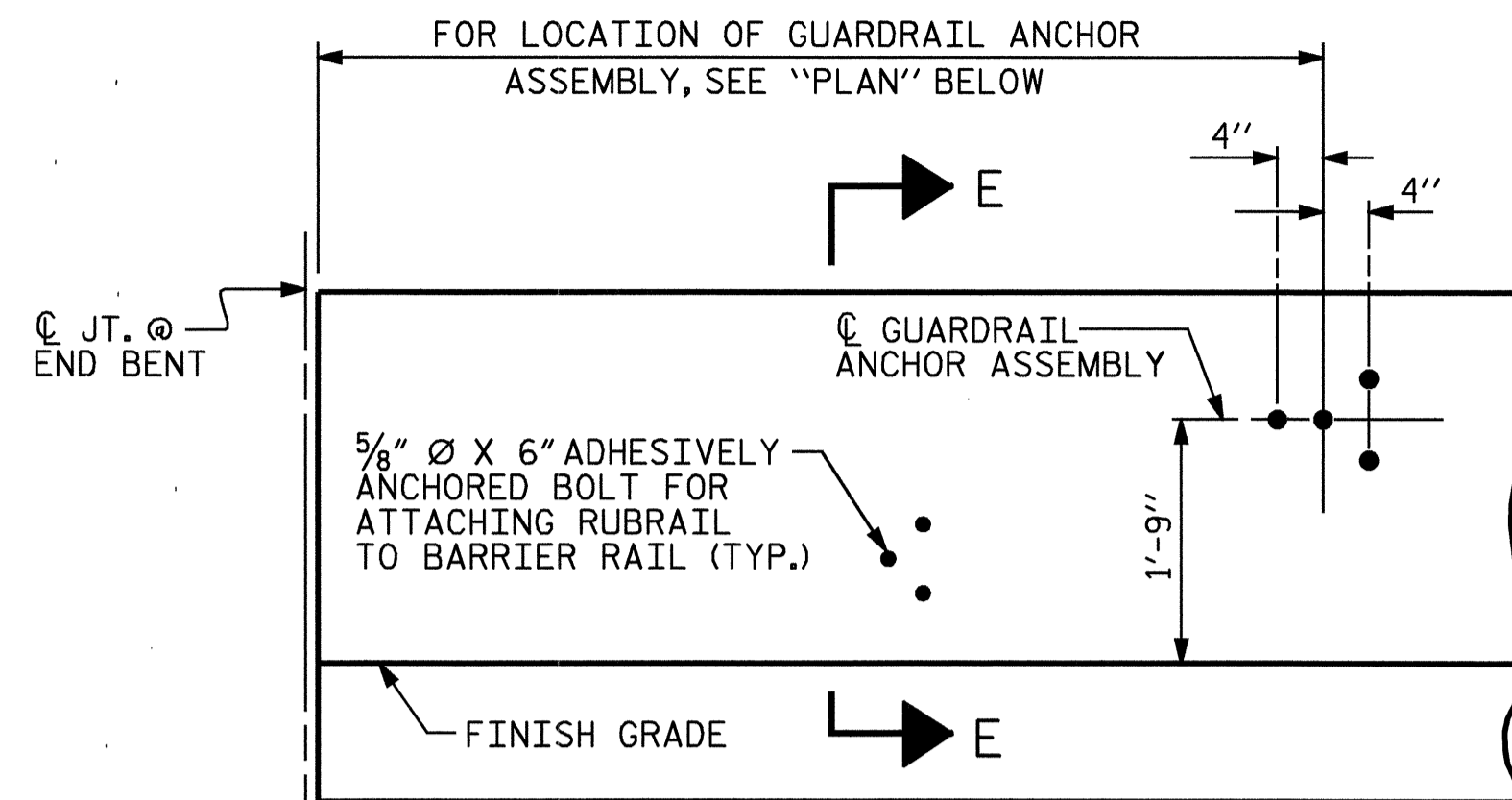
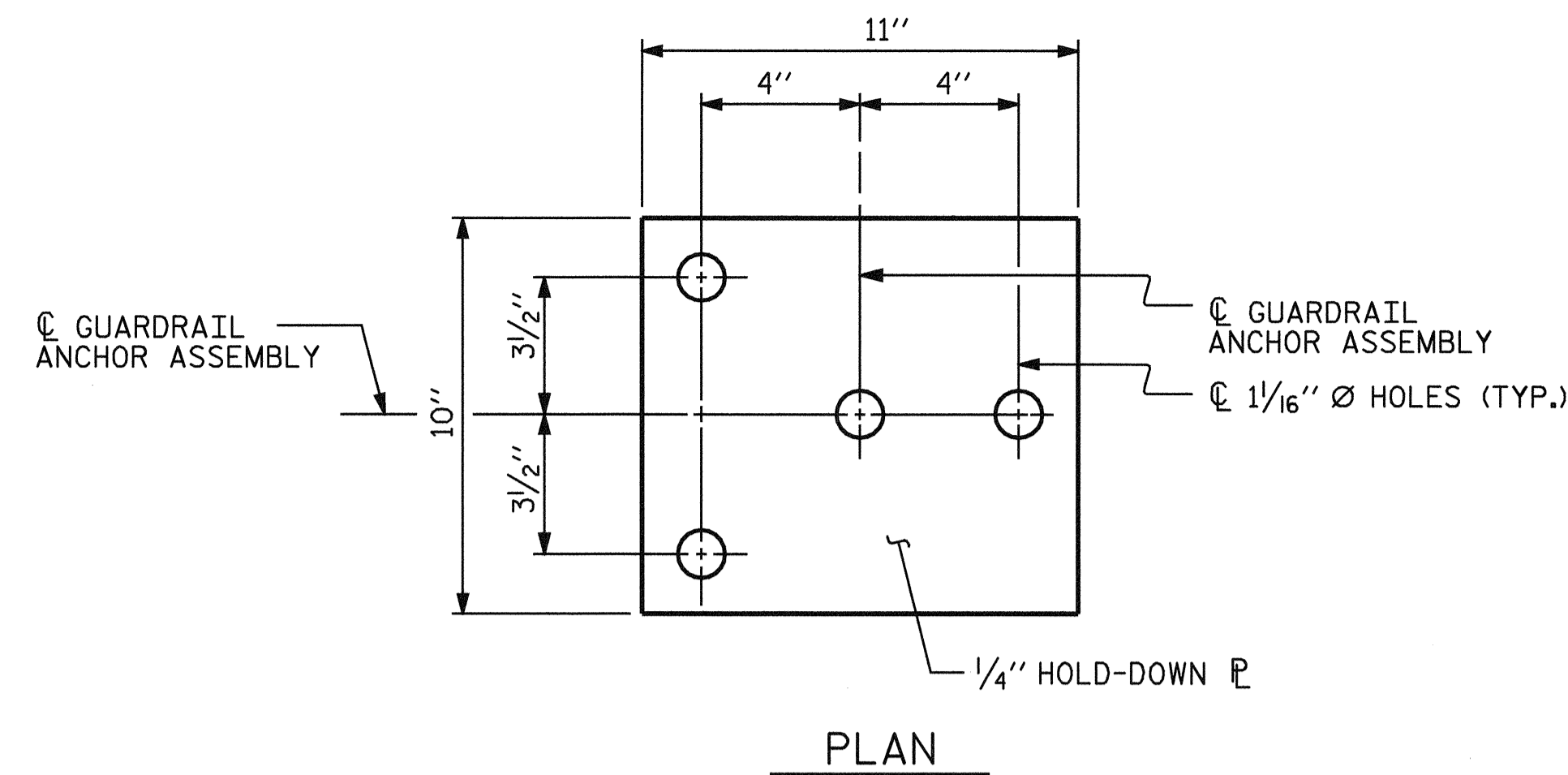
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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.

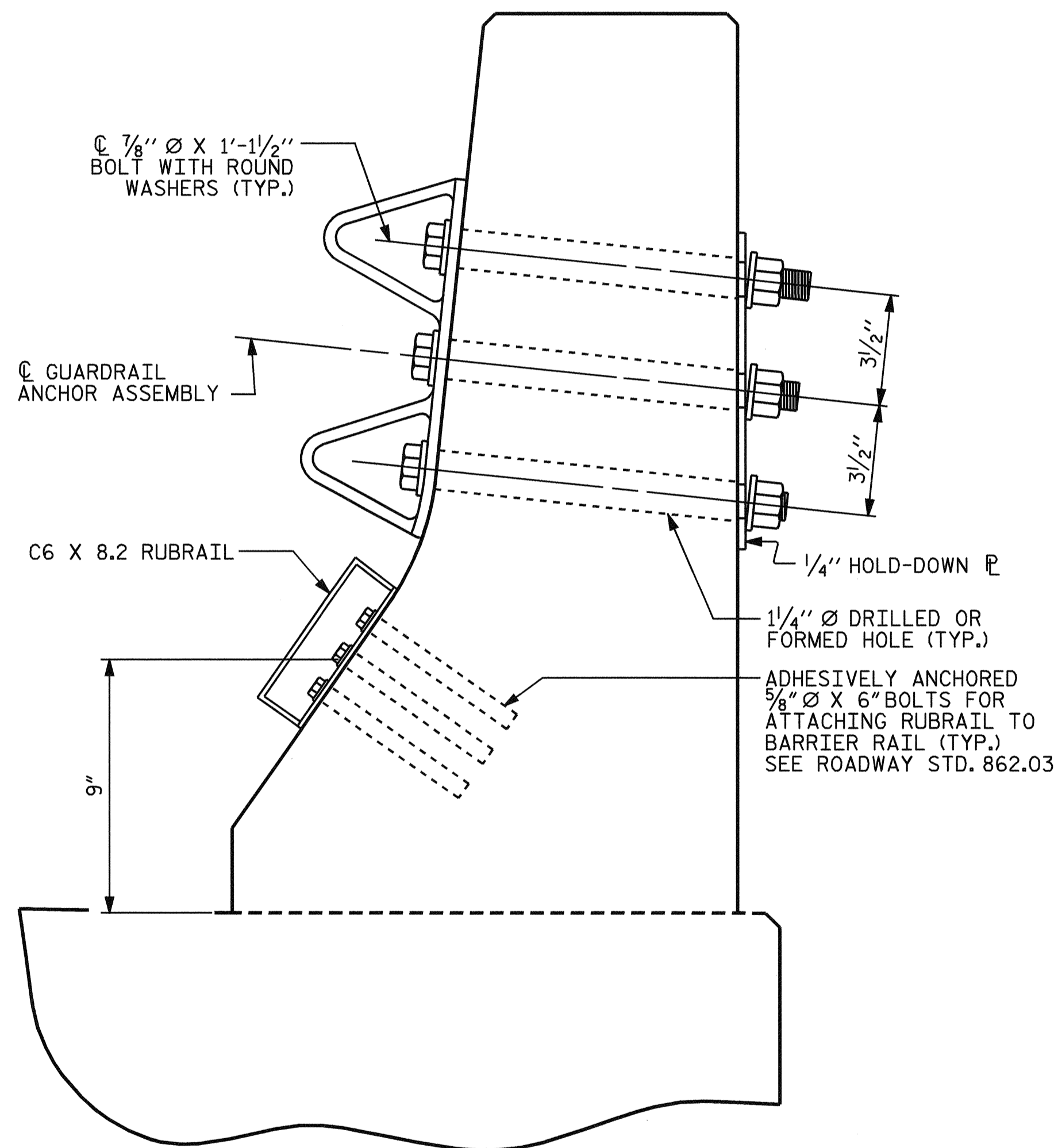
THE 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 5/8" Ø X 6" BOLTS WITH WASHERS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



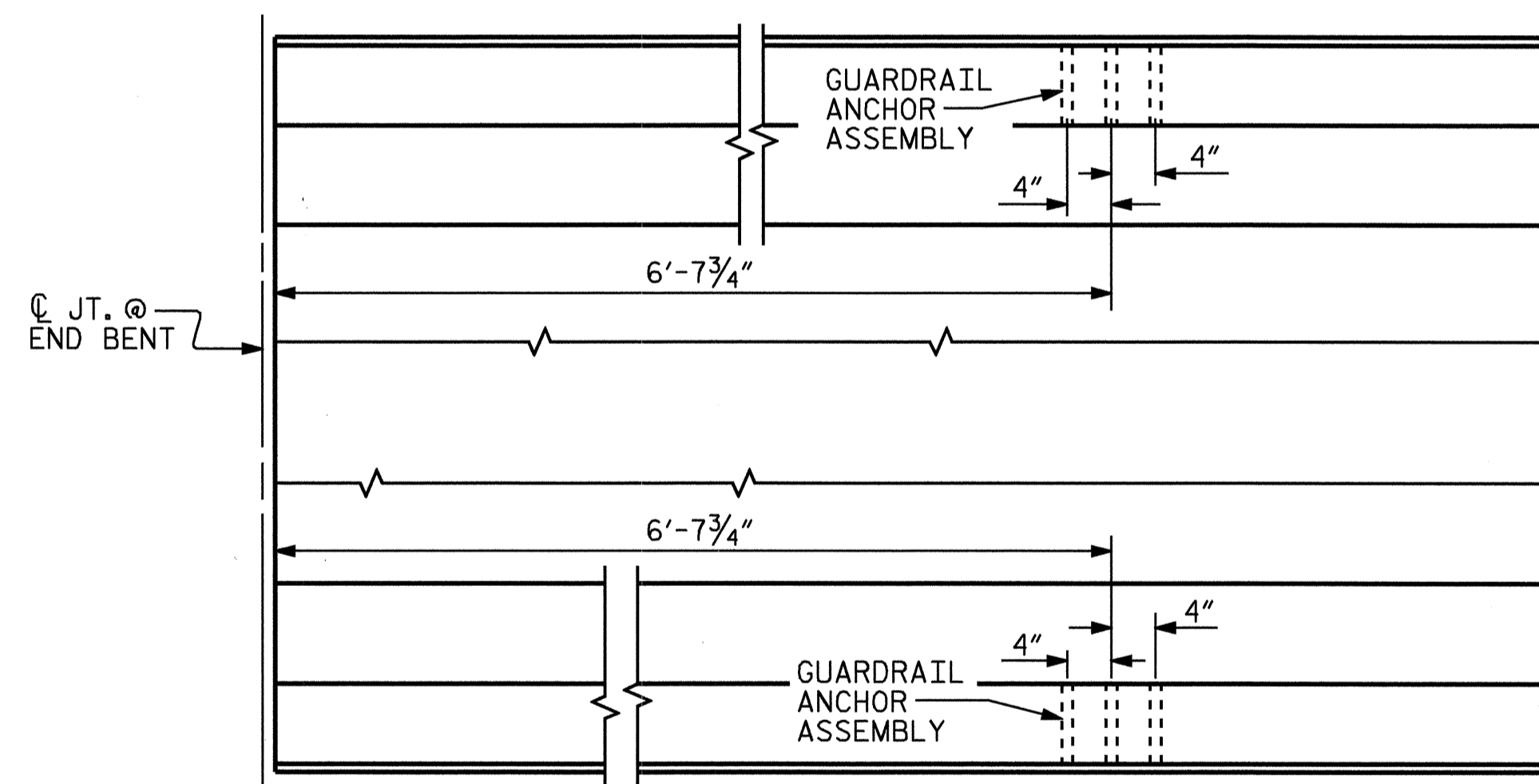
ELEVATION

FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03



SECTION E-E

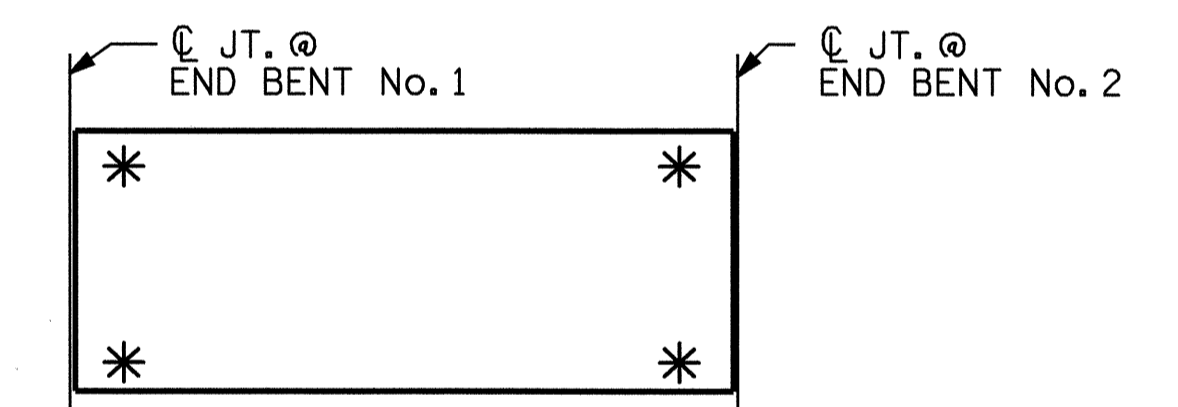
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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



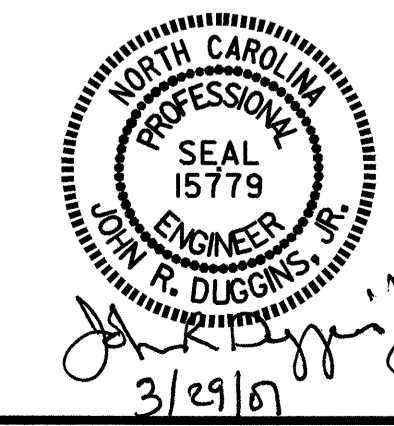
SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-3916
 WAKE COUNTY
 STATION: 20+35.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GUARDRAIL ANCHORAGE
 FOR BARRIER RAIL



ASSEMBLED BY : M. POOLE	DATE : 10/06
CHECKED BY : D. HODGE	DATE : 02/07
DRAWN BY : TLA 5/06	ADDED 5/1/06
CHECKED BY : GM 5/06	

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			30

NOTES

ANGLES SHALL CONFORM TO AASHTO M270 GRADE 36 STEEL OR APPROVED EQUAL. ALL STUD ANCHORS SHALL CONFORM TO AASHTO M169 GRADES 1010 THRU 1020 OR APPROVED EQUAL.

STUD ANCHORS SHALL BE SHOP WELDED AND ALL HOLES SHALL BE SHOP DRILLED AS SHOWN ON THE PLANS. STUD ANCHORS SHALL BE ELECTRIC ARC END WELDED WITH COMPLETE FUSION.

UPON COMPLETION OF SHOP FABRICATION, THE ENTIRE ANCHOR ASSEMBLY SHALL BE METALLIZED. THE 1/2" Ø STUD ANCHORS AND ANCHOR TABS NEED NOT BE METALLIZED. SEE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).

ANCHOR ASSEMBLY SHALL BE MADE CONTINUOUS THE LENGTH OF THE JOINT FROM GUTTER TO GUTTER. FOR FIELD SPLICES AT ALL CROWN BREAK POINTS, THE ENDS OF THE STEEL ANGLES SHALL BE CUT PARALLEL TO THE BRIDGE CENTERLINE. FINISHED FIELD WELDS SHALL BE GROUND SMOOTH AND COATED WITH A MINIMUM THICKNESS OF 4 DRY MILS OF ZINC-RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

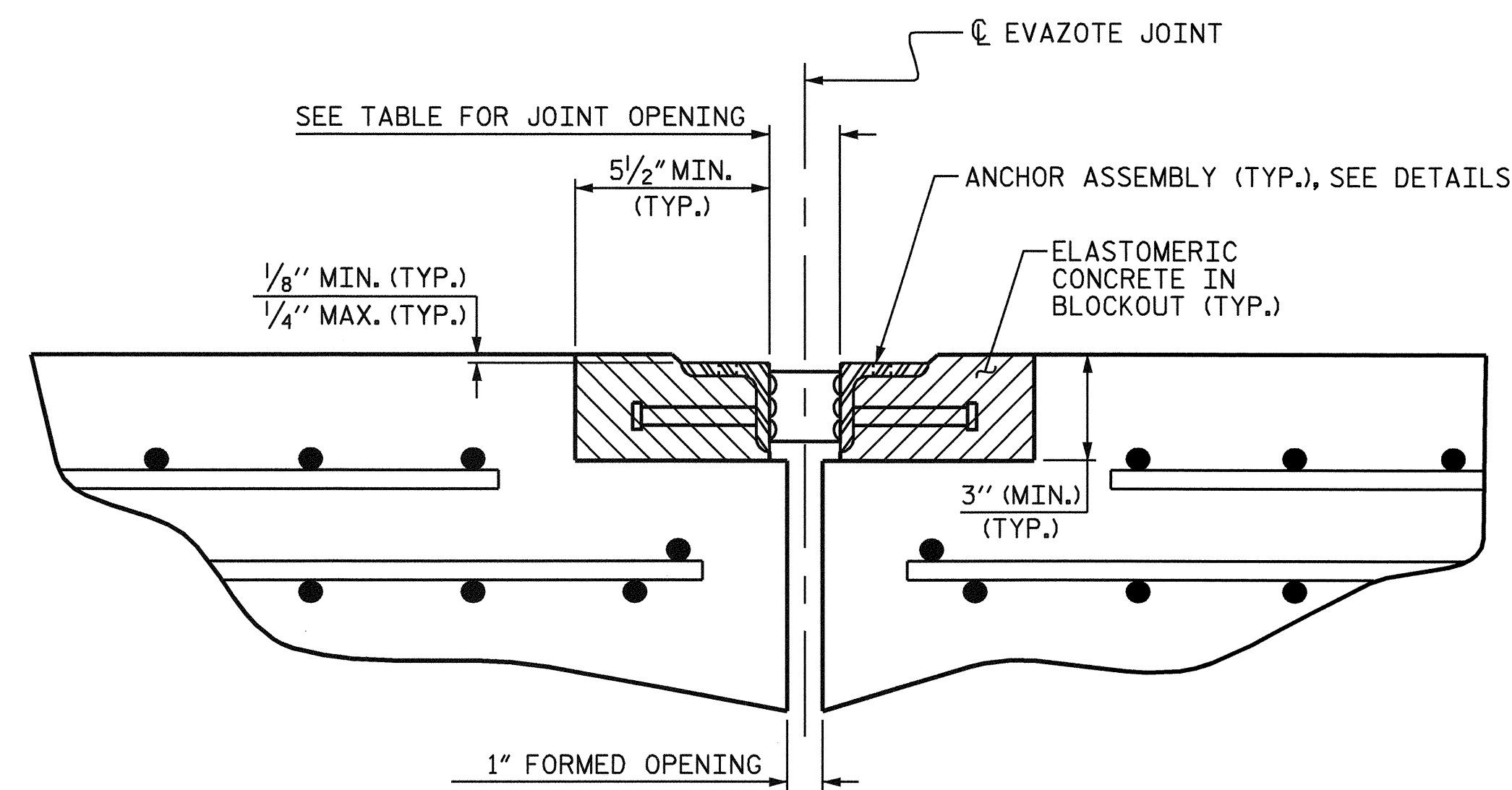
ANCHOR ASSEMBLY SEGMENTS SHALL NOT BE LESS THAN 12 FEET NOR MORE THAN 20 FEET IN LENGTH. SHORTER SEGMENTS MAY BE USED AT THE EDGE OF ROADWAY OR AT POINTS OF STAGED CONSTRUCTION.

THE ANCHOR ASSEMBLY SHALL BE SECURED AND LEVELED AS SHOWN IN THE "ARMORED JOINT ANCHOR ASSEMBLY DETAILS". NO SUBMITTALS ARE REQUIRED FOR 3/8" Ø EXPANSION ANCHORS, NUTS OR WASHERS. THE CONTRACTOR MAY SUBMIT FOR APPROVAL AN ALTERNATE METHOD OF ALIGNING AND LEVELING THE ANGLES. THE ALTERNATE METHOD SHALL NOT INCLUDE ANY WELDING TO THE OUTSIDE FACE OF THE ANGLES.

AFTER THE ELASTOMERIC CONCRETE HAS BEEN CAST ON BOTH SIDES OF THE JOINT, REMOVE ANY EXCESS CONCRETE THAT COMES THROUGH THE WEEP HOLES AND THOROUGHLY CLEAN THE ANGLES. ANY DAMAGED STEEL SHALL BE COATED WITH A MINIMUM OF 4 MILS OF ZINC-RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

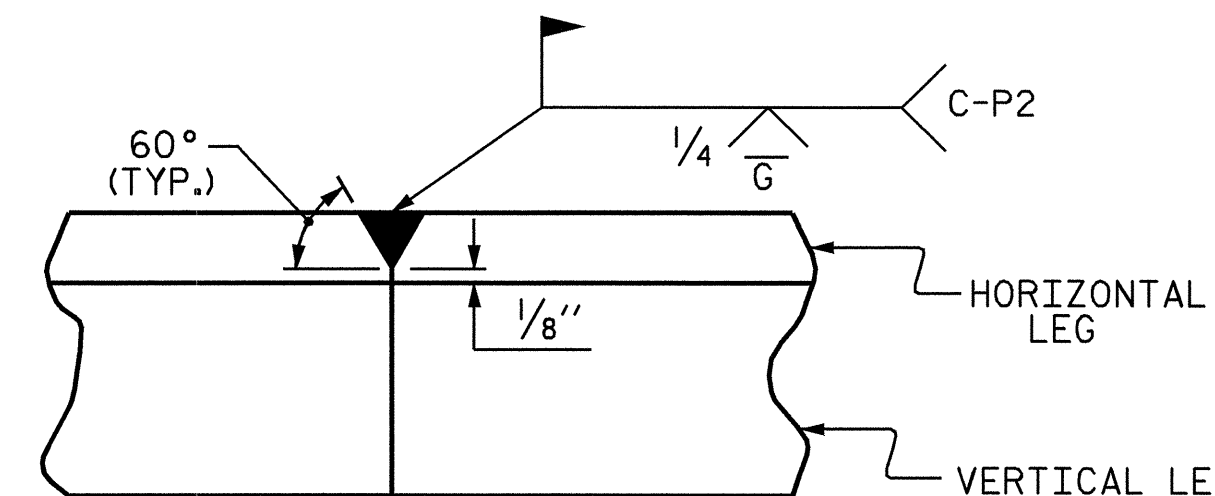
SEE SPECIAL PROVISIONS FOR EVAZOTE JOINT SEALS.

SEE SPECIAL PROVISIONS FOR ELASTOMERIC CONCRETE.

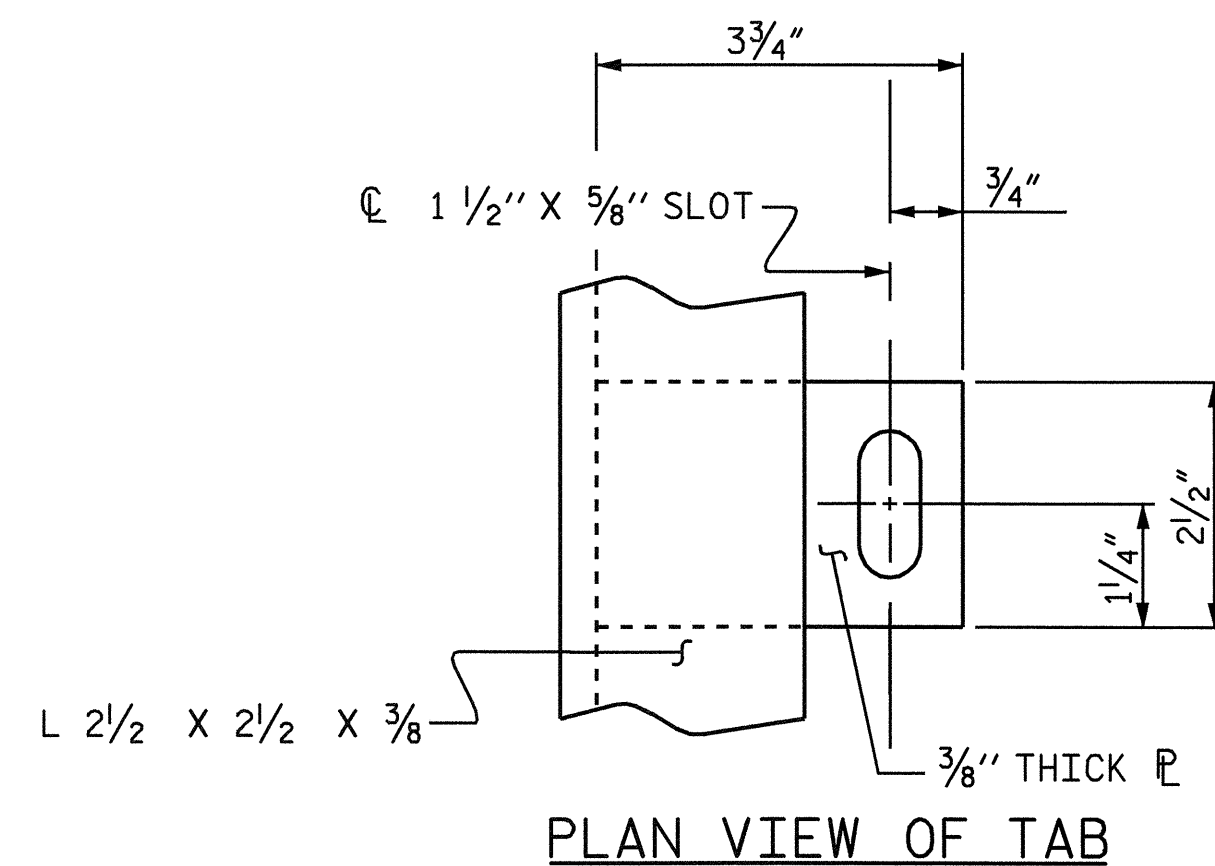


ARMORED JOINT DETAILS

SECTION NORMAL TO JOINT AT END BENTS



DETAIL- FIELD WELD SPLICE OF ANGLE



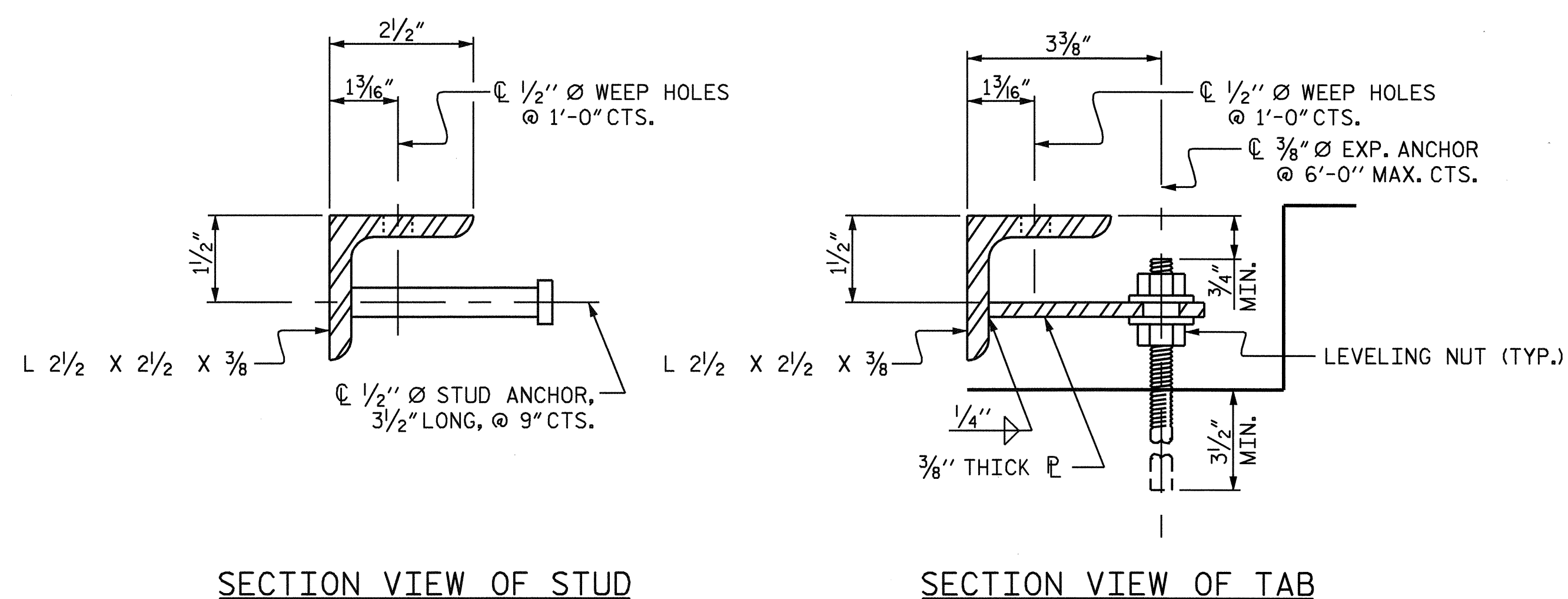
PLAN VIEW OF TAB

MOVEMENT AND SETTING AT EVAZOTE JOINT						
END BENT NO.	SKIEW ANGLE	NOMINAL UNCOMPRESSED SEAL WIDTH	TOTAL MOVEMENT (ALONG C. RDWY)	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
1	90°-00'-00"	2 1/2"	1 1/16"	2 1/8"	2"	1 3/4"
2	90°-00'-00"	2 1/2"	1 1/16"	2 1/8"	2"	1 3/4"

TOTAL MOVEMENT IS CALCULATED ALONG THE CENTERLINE OF ROADWAY. JOINT OPENINGS ARE MEASURED PERPENDICULAR TO THE JOINT.

BILL OF MATERIAL		
END BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)	TOTAL LENGTH OF ANGLE (FT)
1	12.8	112
2	12.8	112

* BASED ON THE MINIMUM BLOCKOUT SHOWN.



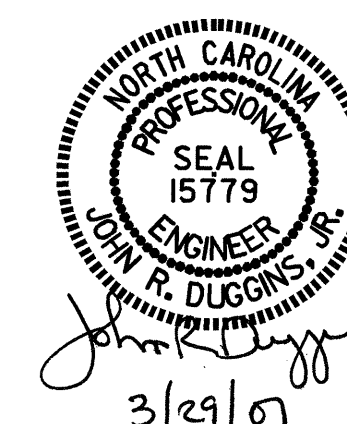
SECTION VIEW OF STUD

SECTION VIEW OF TAB

ARMORED JOINT ANCHOR ASSEMBLY DETAILS

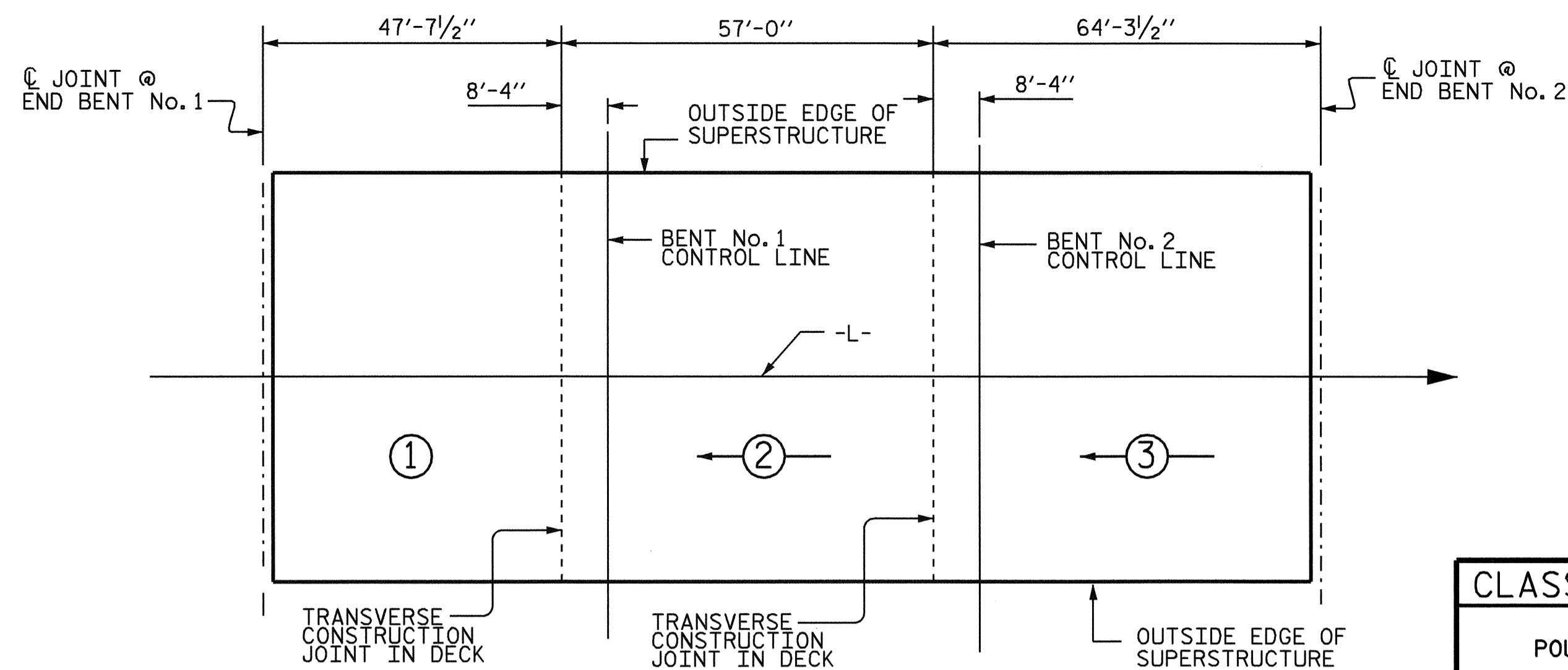
PROJECT NO. B-3916
WAKE COUNTY
 STATION: 20+35.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 ARMORED EVAZOTE
 JOINT DETAILS



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

ASSEMBLED BY : M. POOLE	DATE : 02/07
CHECKED BY : D. HODGE	DATE : 02/07
DRAWN BY : EEM 1/96	REV. 7/10/01 LES/RDR
CHECKED BY : RGW 1/96	REV. 5/7/03RR RWW/JTE
	REV. 5/1/06 TLA/GM

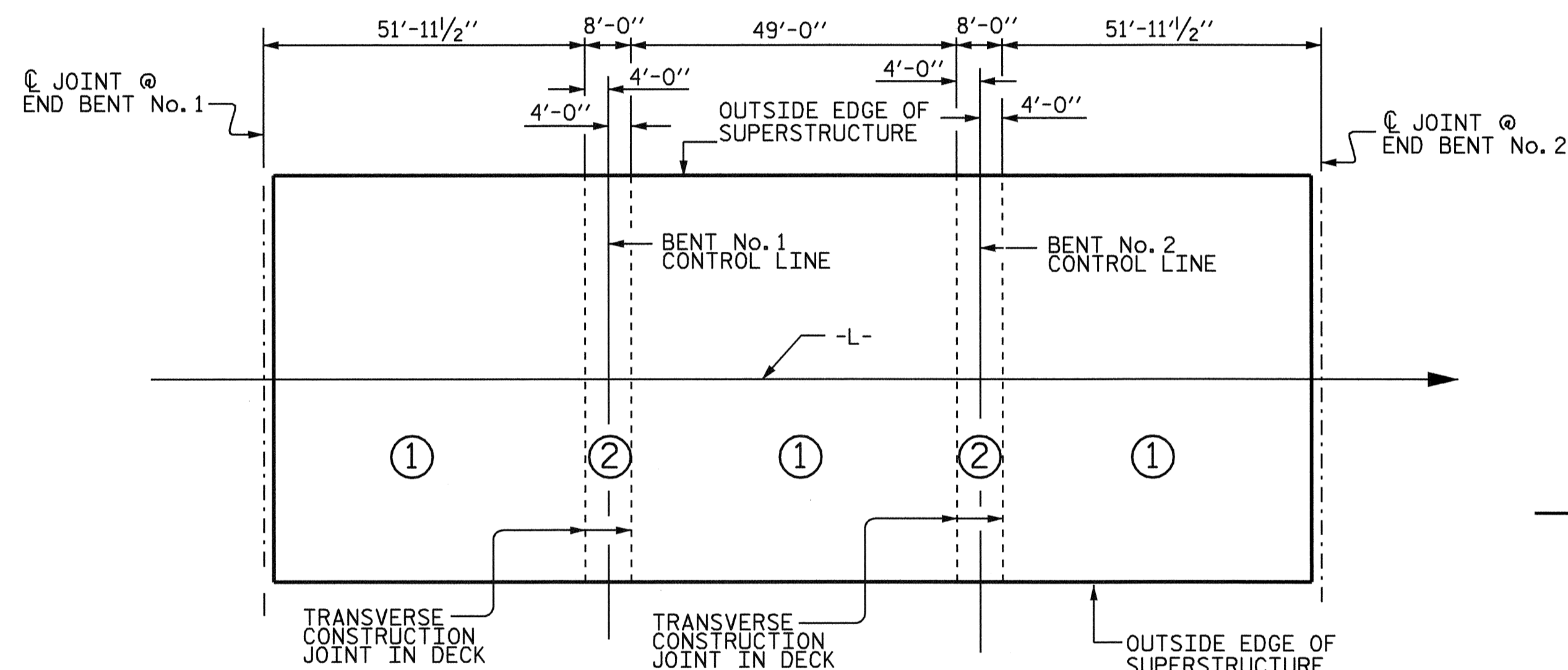


CONCRETE DECK POURING DETAIL

SEE TRANSVERSE CONSTRUCTION JOINT DETAIL
 # INDICATES POUR NUMBER AND DIRECTION OF POUR

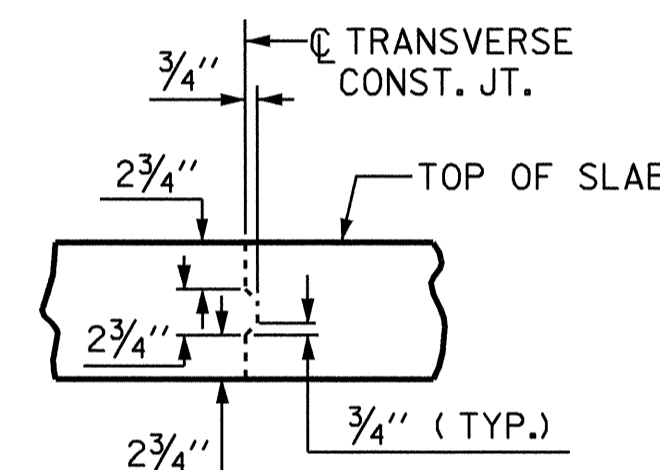
CLASS AA CONCRETE BREAKDOWN		
POUR #1	89.7	CU. YD.
POUR #2	117.8	CU. YD.
POUR #3	133.4	CU. YD.
** TOTAL	340.9	

** QUANTITIES FOR BARRIER RAIL NOT INCLUDED



OPTIONAL POURING SEQUENCE

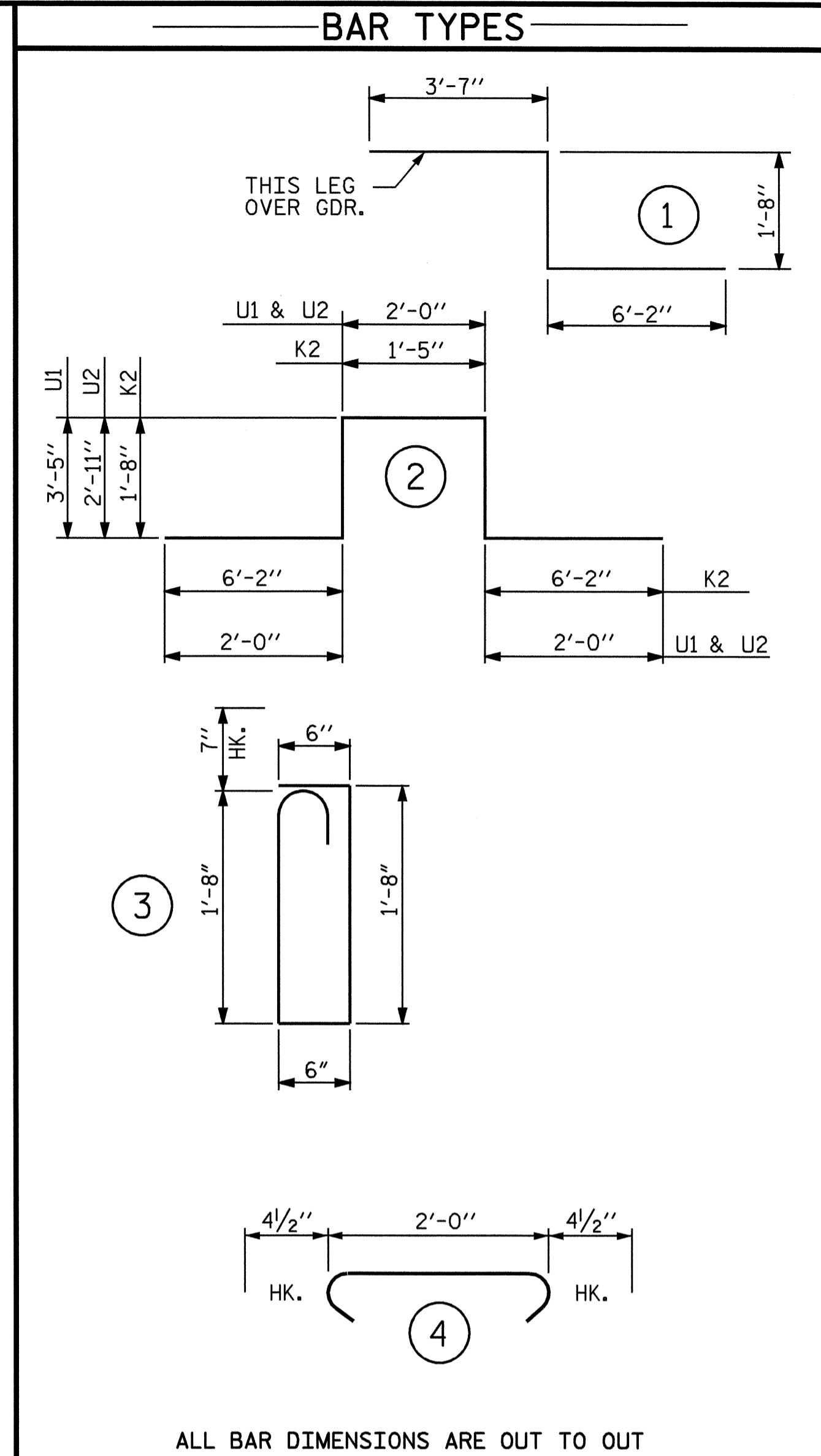
SEE TRANSVERSE CONSTRUCTION JOINT DETAIL



TRANSVERSE CONSTRUCTION JOINT DETAIL

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

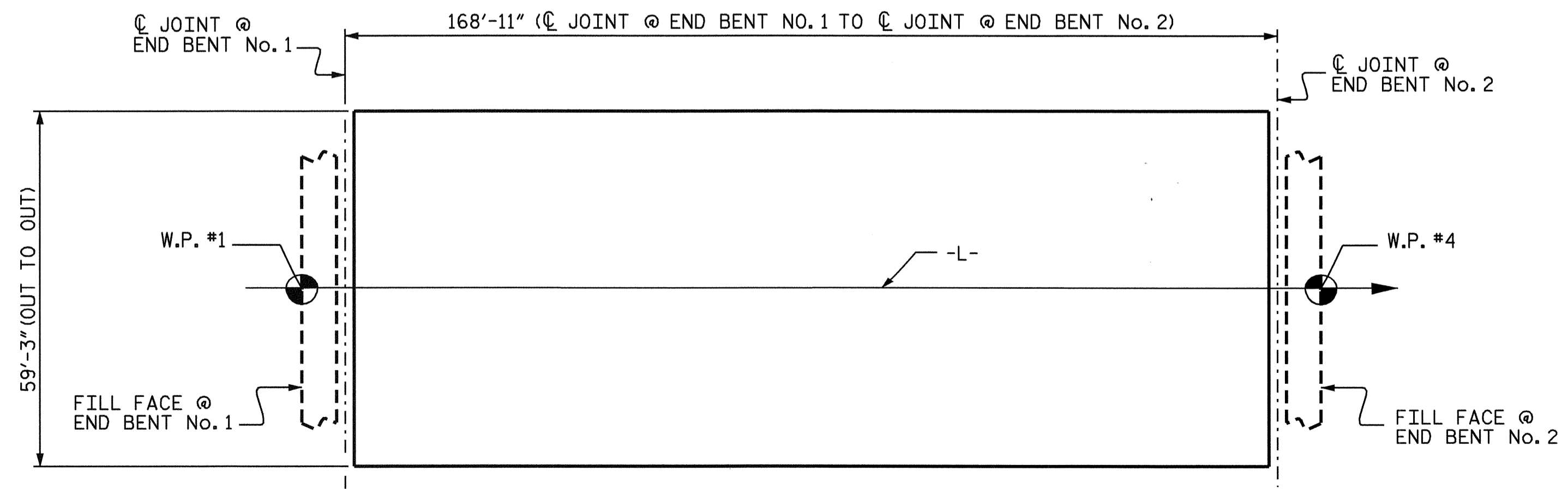
REINFORCING BAR SCHEDULE					
SPANS A THRU C					
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
* A1	289	5	STR	58'-11"	17759
A2	289	5	STR	58'-11"	17759
* B1	160	4	STR	18'-9"	2004
* B2	80	7	STR	44'-6"	7277
* B3	78	7	STR	18'-0"	2870
* B4	40	4	STR	16'-6"	441
B5	186	5	STR	57'-8"	11187
* G1	2	5	STR	58'-11"	123
* K1	8	8	1	11'-5"	244
* K2	24	8	2	17'-1"	1095
K3	16	4	STR	27'-6"	294
K4	28	4	STR	6'-3"	117
K5	56	4	STR	6'-8"	249
K6	28	4	STR	4'-6"	84
* S1	98	5	3	4'-11"	502
S2	252	4	4	2'-9"	463
* U1	56	4	2	12'-10"	480
* U2	28	4	2	11'-10"	221
REINFORCING STEEL			30153 LBS.		
EPOXY COATED REINFORCING STEEL			33016 LBS.		
* THESE BARS ARE EPOXY COATED					



ALL BAR DIMENSIONS ARE OUT TO OUT

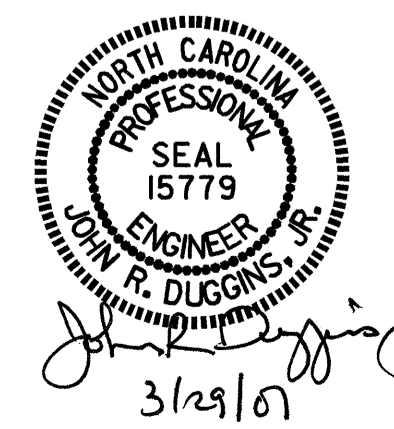
BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	2'-0"	1'-9"	2'-0"	1'-9"	2'-9"
#5	2'-6"	2'-2"	2'-6"	2'-2"	3'-5"
#6	3'-0"	2'-7"	3'-10"	2'-7"	4'-4"
#7	5'-3"	3'-6"			
#8	6'-10"	4'-7"			

GROOVING BRIDGE FLOORS	
BRIDGE DECK	8873 SQ.FT.
APPROACH SLABS	2518 SQ.FT.
TOTAL	11391 SQ.FT.



LAYOUT FOR COMPUTING AREA REINFORCED CONCRETE DECK SLAB (SQ. FT. = 10,008)

ASSEMBLED BY : M. POOLE	DATE : 10/05
CHECKED BY : D. HODGE	DATE : 02/07
DRAWN BY : JMB 5/87	REV. 6/1/94 EEM/GRP
CHECKED BY : SJD 9/87	REV. 8/16/99 RWW/LES



PROJECT NO. B-3916
WAKE COUNTY
 STATION: 20+35.50 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE BILL OF MATERIAL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-17
 TOTAL SHEETS 30

NOTES

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

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

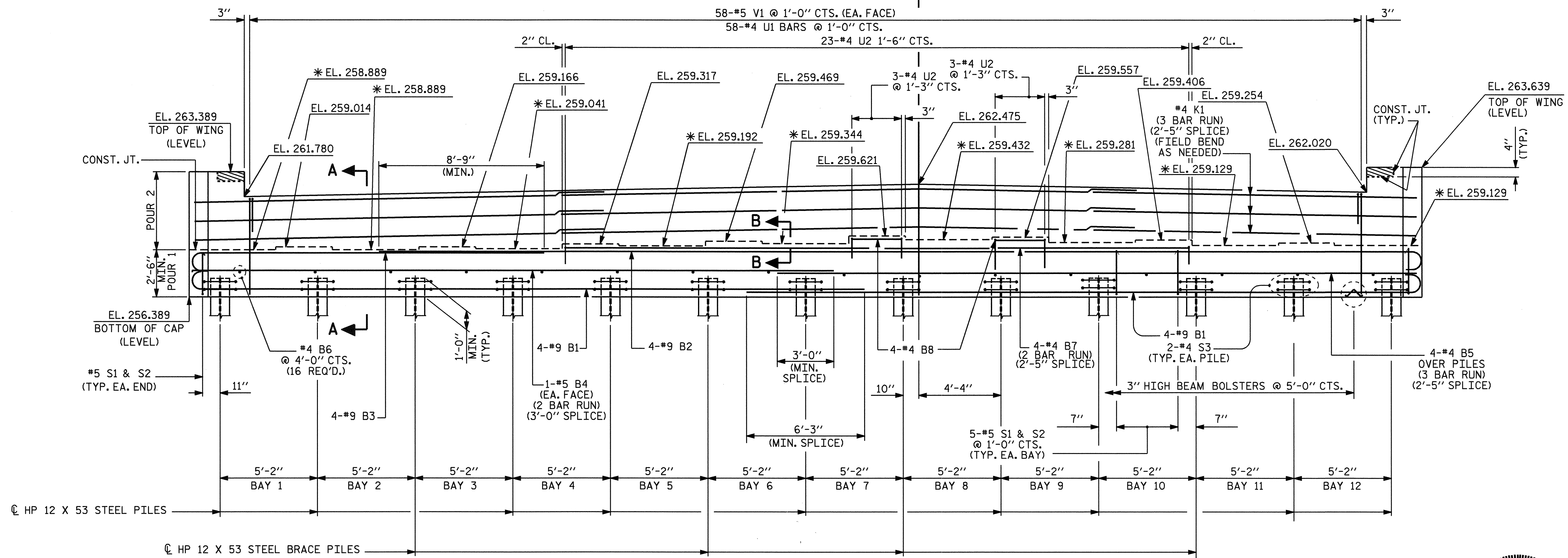
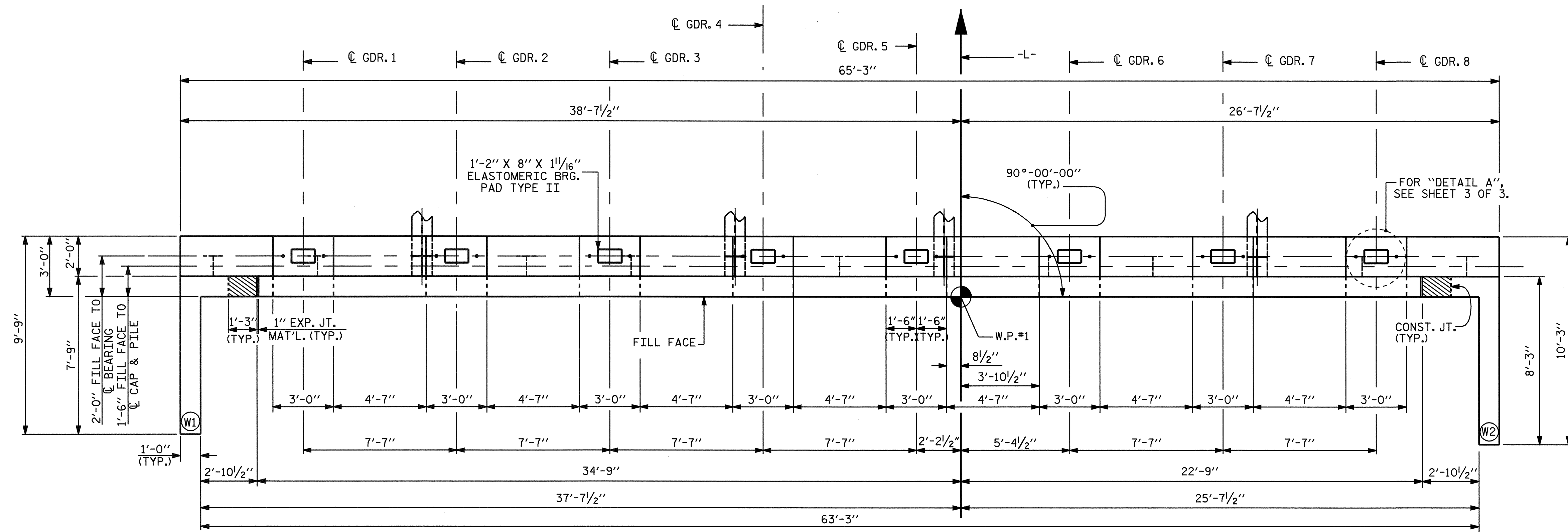
BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

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

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

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

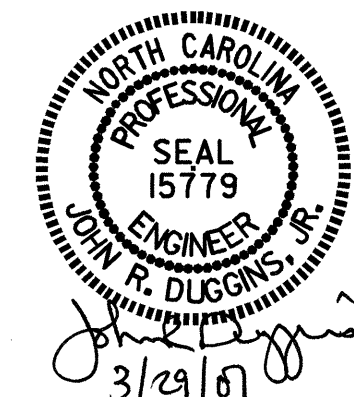


PROJECT NO. B-3916
 WAKE COUNTY
 STATION: 20+35.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

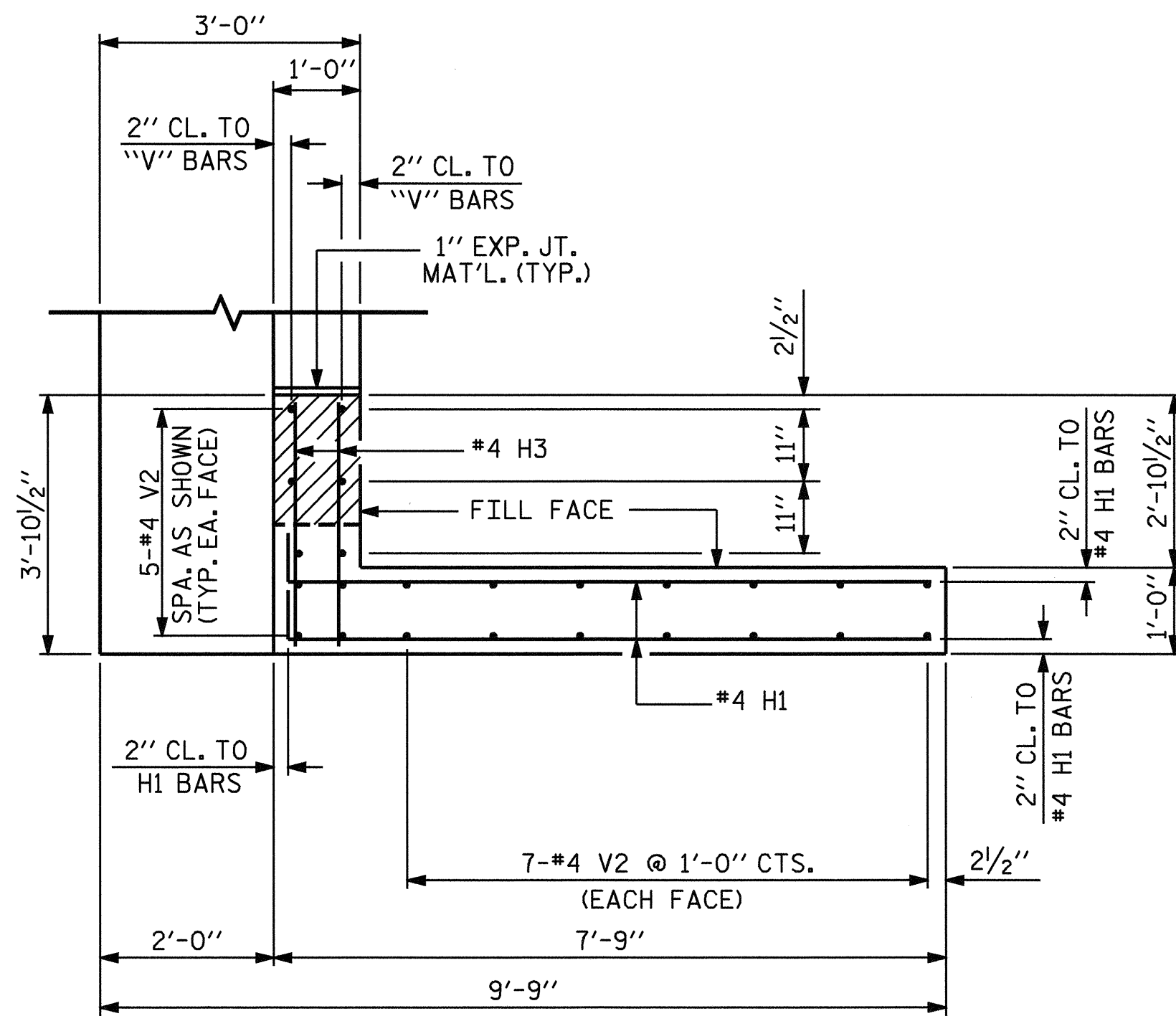
SUBSTRUCTURE
 END BENT No. 1



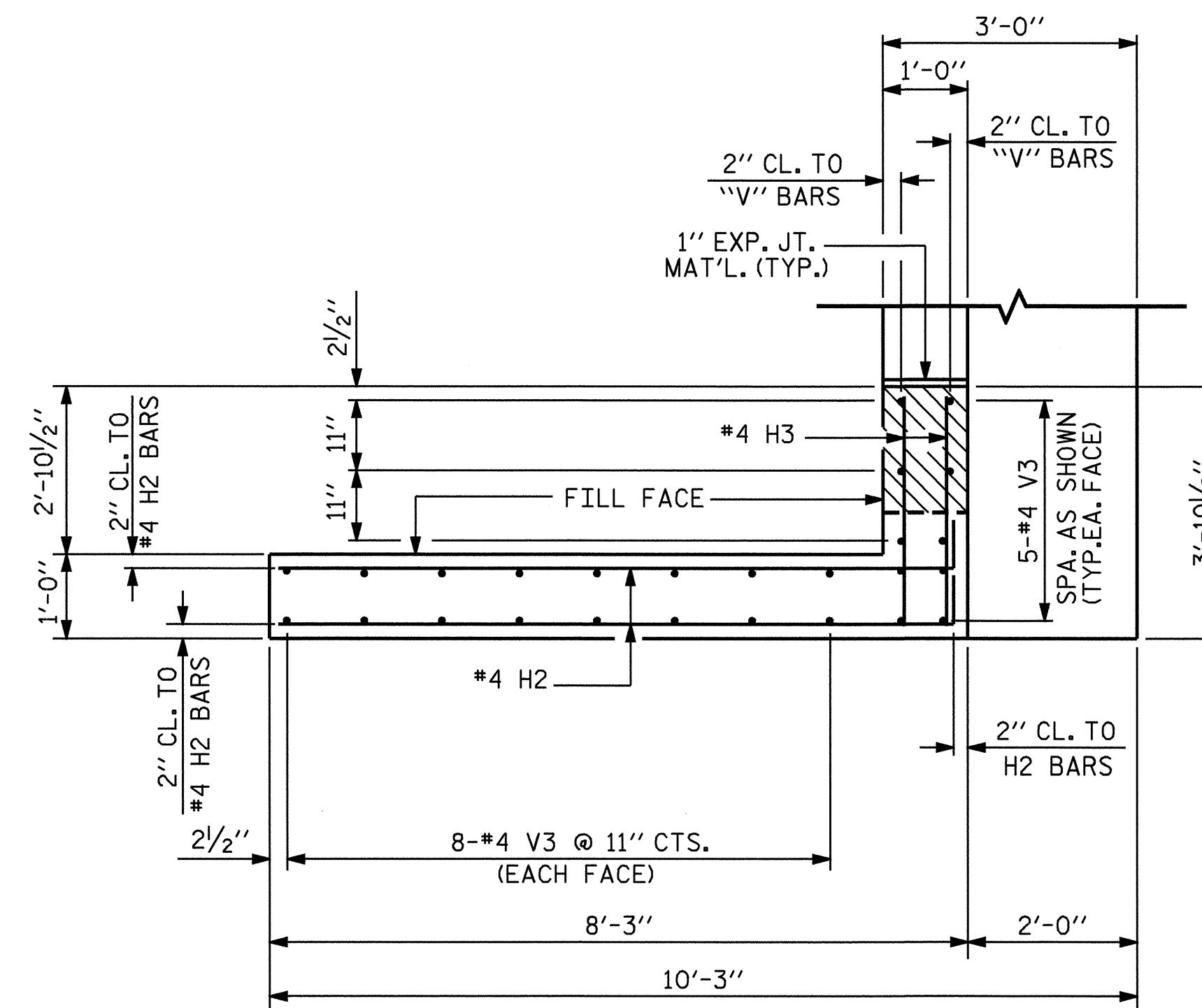
DRAWN BY: M. POOLE DATE: 07/06
 CHECKED BY: J.R. DUGGINS DATE: 01/07

FOR "SECTION A-A", SEE SHEET 3 OF 3.
 * FOR LOCATION OF ELEVATIONS BETWEEN BUILD-UPS, SEE "SECTION A-A", SHEET 3 OF 3.

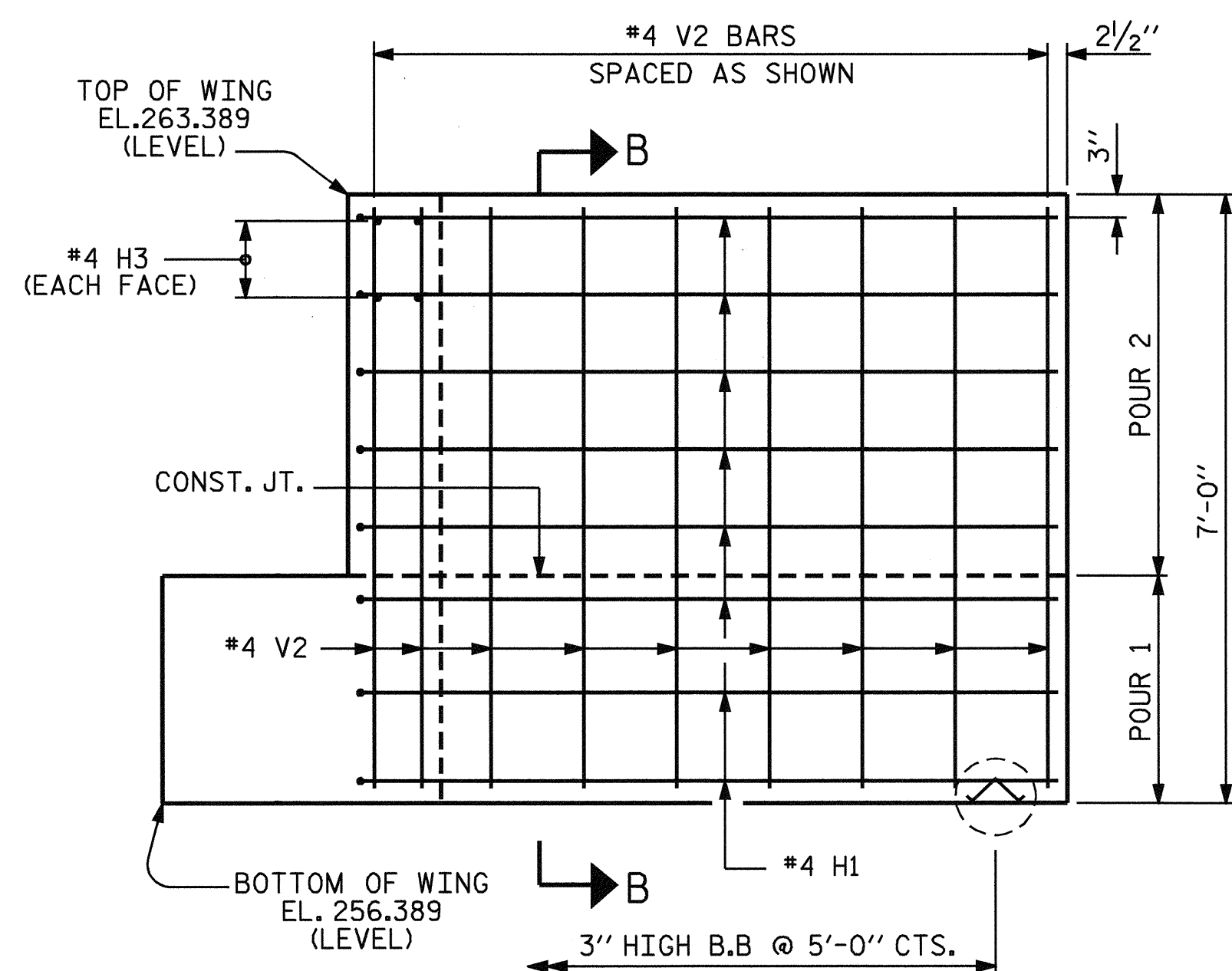
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	30
1			3			30
2			4			30



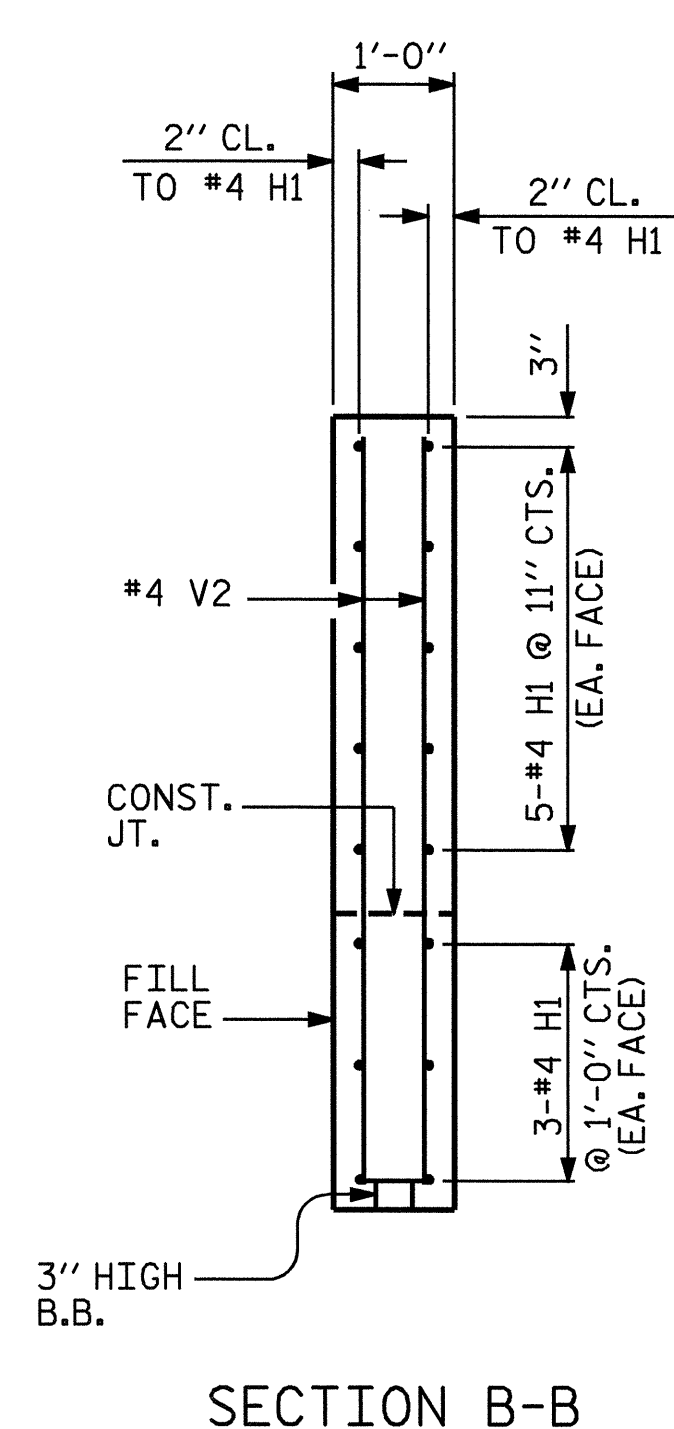
PLAN OF LEFT WING - W1



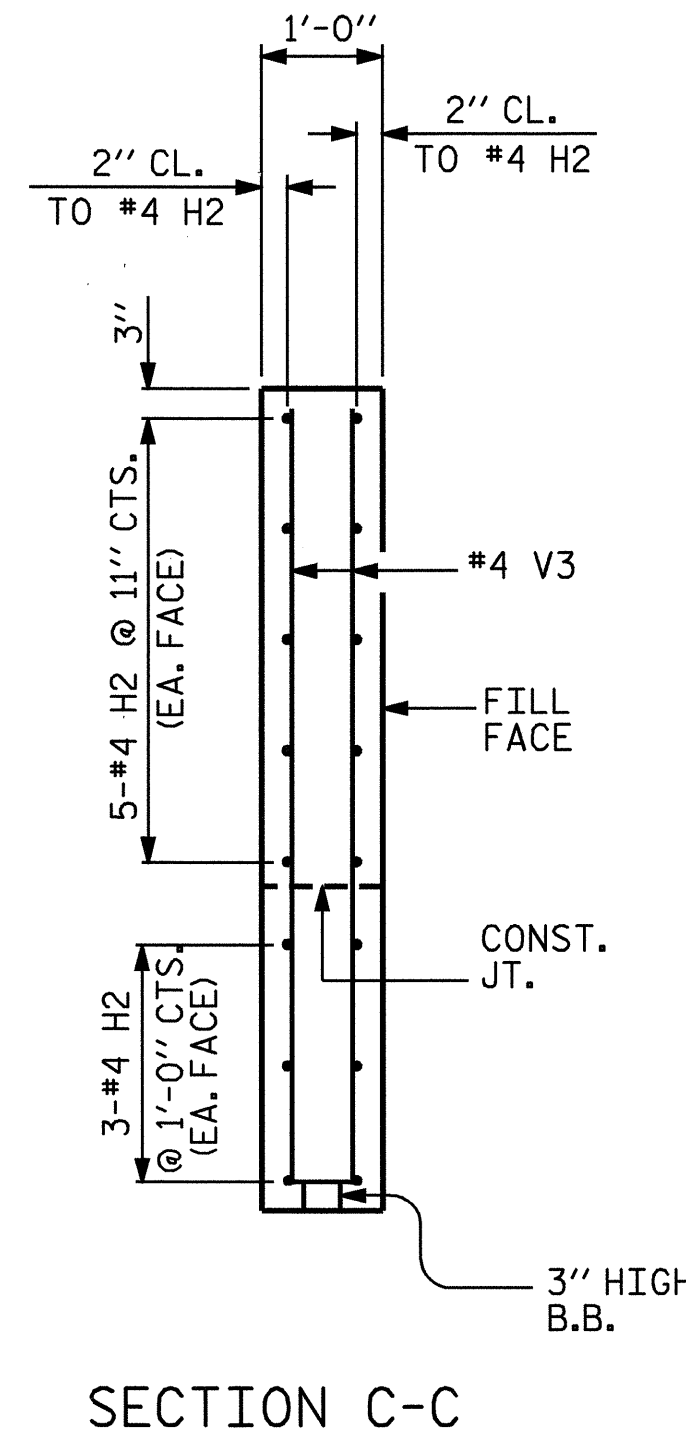
PLAN OF RIGHT WING - W2



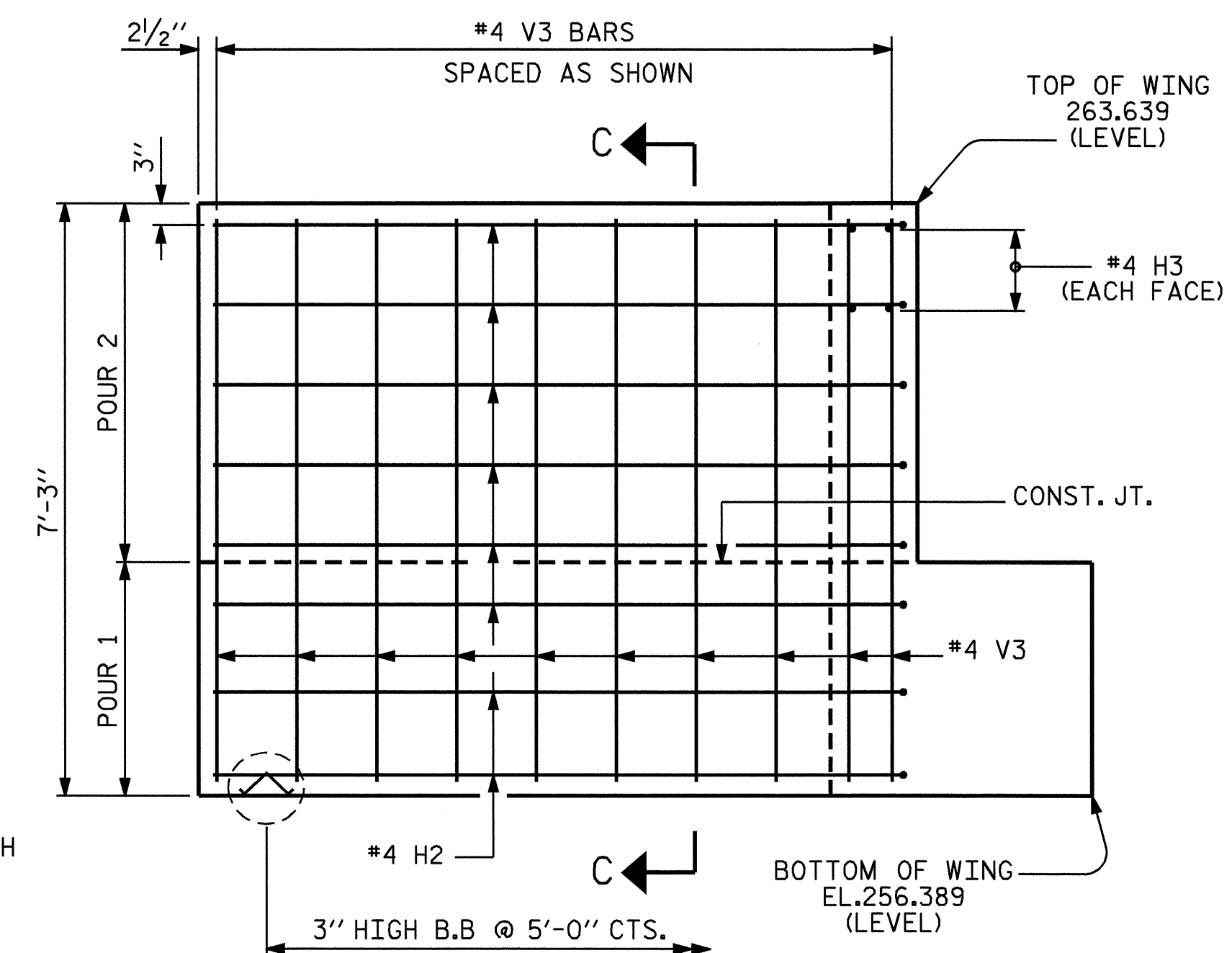
ELEVATION OF LEFT WING - W1



SECTION B-B



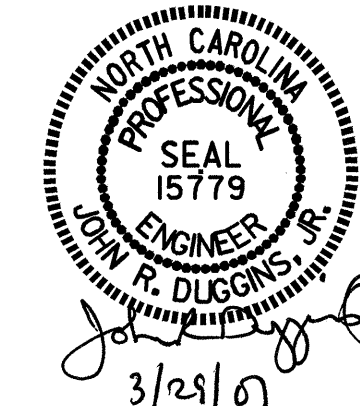
SECTION C-C



ELEVATION OF RIGHT WING - W2

DRAWN BY : M. POOLE DATE : 07/06
 CHECKED BY : J.R. DUGGINS DATE : 02/07

09-MAR-2007 13:14
 R:\Structures\B-3916\m\poole\Microstation\B3916.sd.E1.01.dgn
 dhodge



PROJECT NO. B-3916
 WAKE COUNTY
 STATION: 20+35.50 -L-

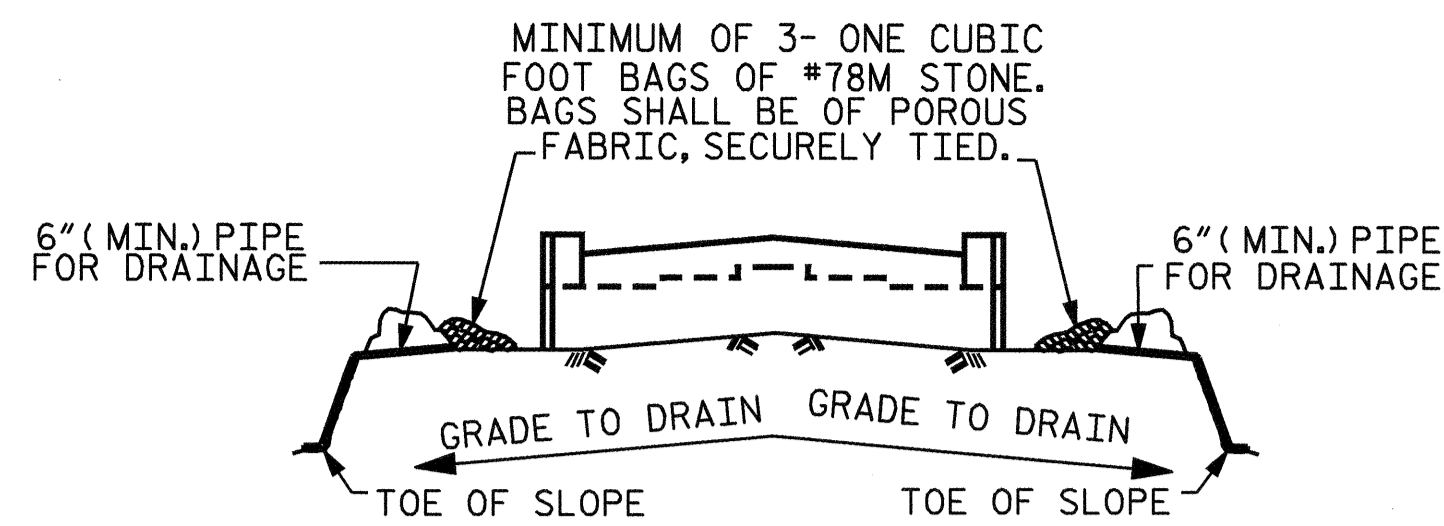
SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 1

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

SHEET NO.
 S-19

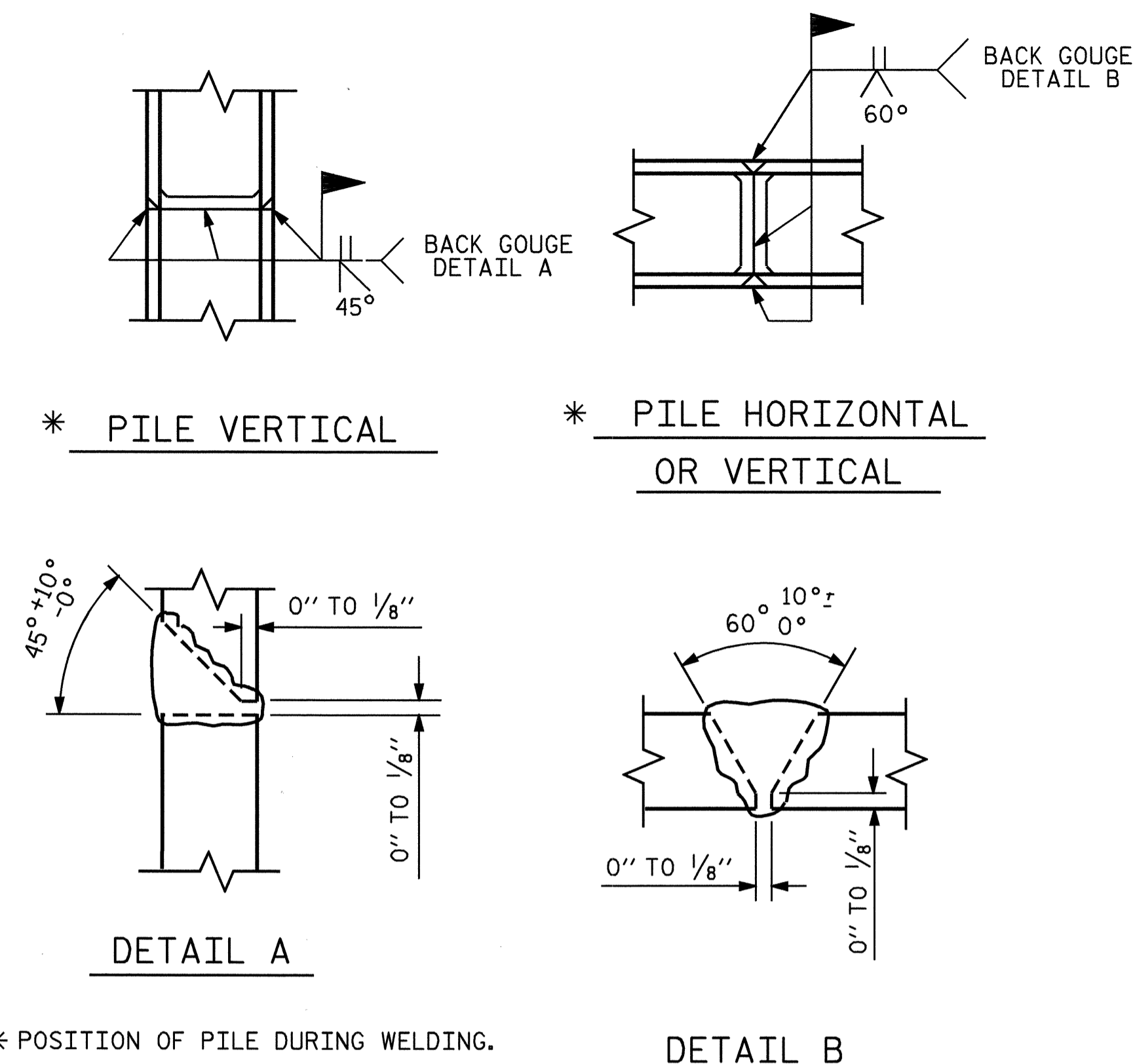
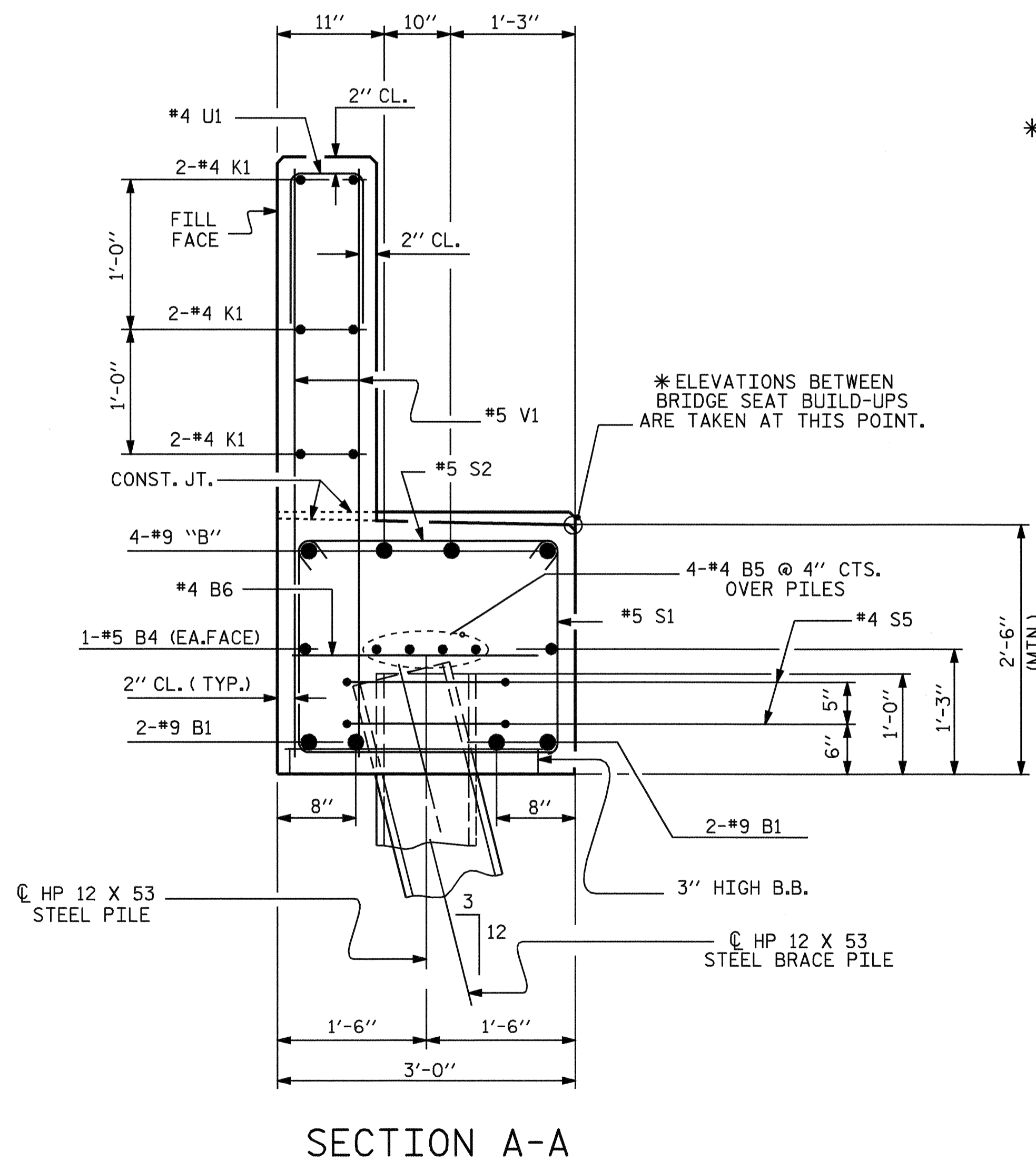


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

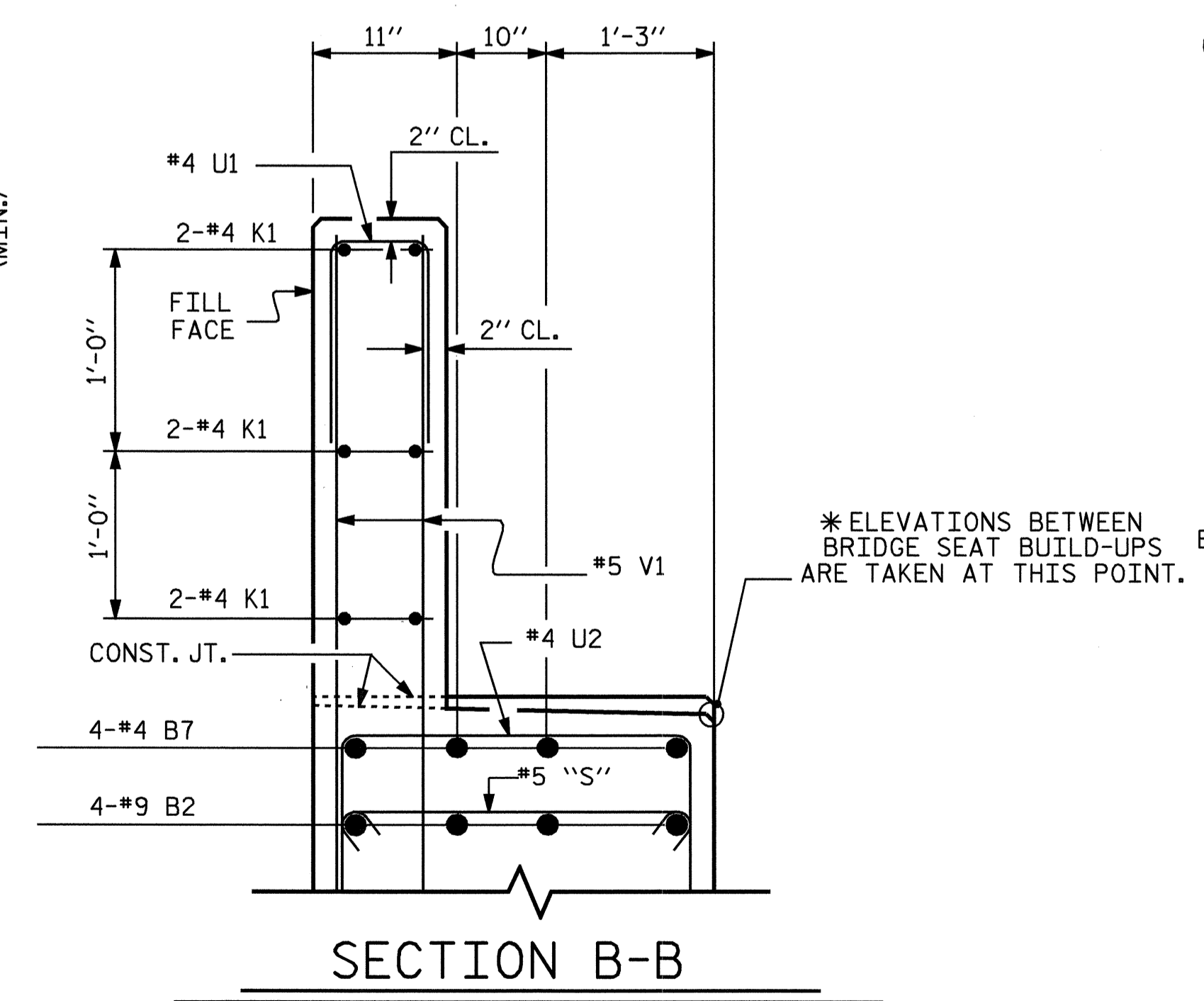
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

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

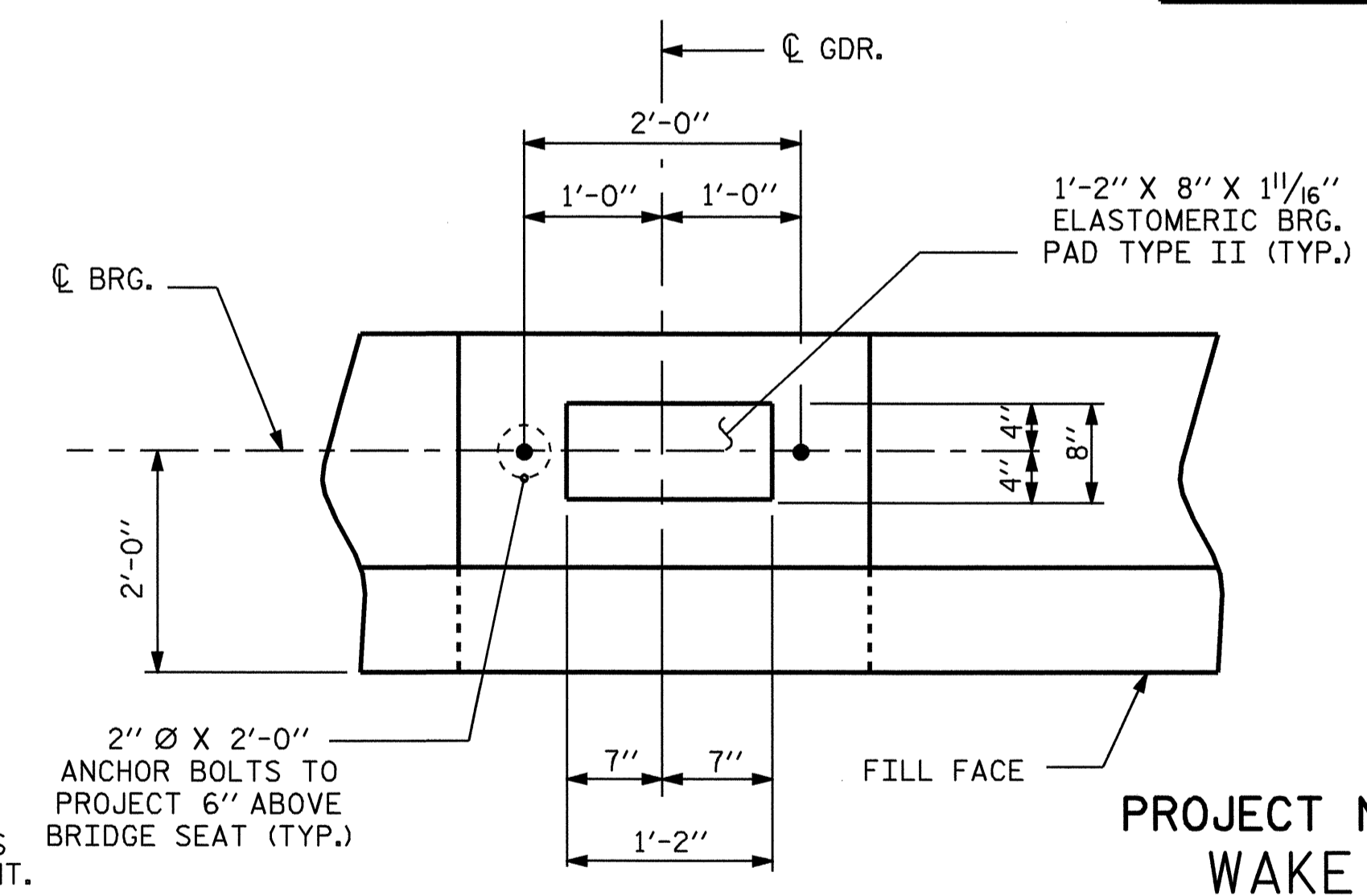
TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS



BAR TYPES					BILL OF MATERIAL				
END BENT No. 1									
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT				
B1	8	9	1	36'-10"	1002				
B2	4	9	1	58'-9"	799				
B3	4	9	1	17'-5"	237				
B4	4	5	STR	34'-0"	142				
B5	12	4	STR	23'-3"	186				
B6	16	4	STR	2'-8"	29				
B7	8	4	STR	17'-9"	95				
B8	8	4	STR	2'-8"	14				
H1	16	4	2	8'-1"	86				
H2	16	4	2	8'-7"	92				
H3	8	4	STR	3'-6"	19				
K1	18	4	STR	23'-3"	280				
S1	62	5	3	7'-10"	507				
S2	62	5	4	3'-7"	232				
S3	26	4	5	6'-6"	113				
U1	58	4	6	5'-2"	200				
U2	29	4	6	5'-8"	110				
V1	116	5	STR	5'-0"	605				
V2	24	4	STR	6'-8"	107				
V3	26	4	STR	6'-11"	120				
REINFORCING STEEL					4975 LBS.				
CLASS A CONCRETE BREAKDOWN									
POUR 1									
(CAP & LOWER WINGS)					21.9 C.Y.				
POUR 2									
(BACKWALL & UPPER WINGS)					10.0 C.Y.				
TOTAL					31.9 C.Y.				
HP 12 x 53 STEEL PILES									
NO. 13					260 LIN FT.				



PROJECT NO. B-3916

WAKE COUNTY

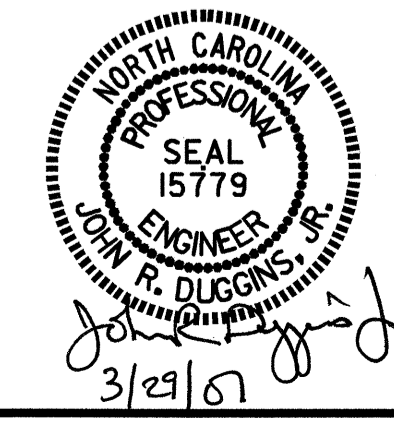
STATION: 20+35.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
SUBSTRUCTURE					
END BENT No. 1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO.
					S-20
					TOTAL SHEETS
					30

DRAWN BY : M. POOLE DATE : 07/06

CHECKED BY : J.R. DUGGINS DATE : 02/07



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 FEET OF EXTRA LENGTH. IF DUE TO THIS EXTRA LENGTH THE "M" BARS EXTEND INTO THE BENT CAP, THE "M" BARS SHALL BE FIELD CUT TO THE PROPER BRIDGE LENGTH.

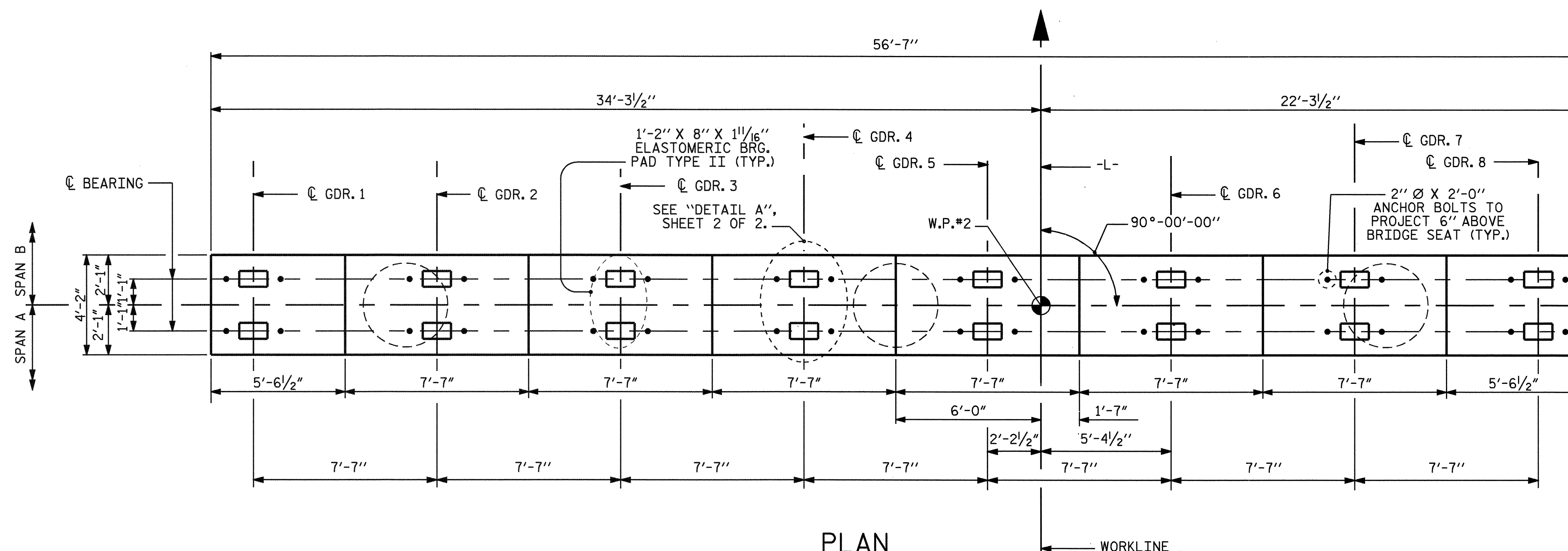
THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND LINE ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FT. BELOW THE GROUND LINE.

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

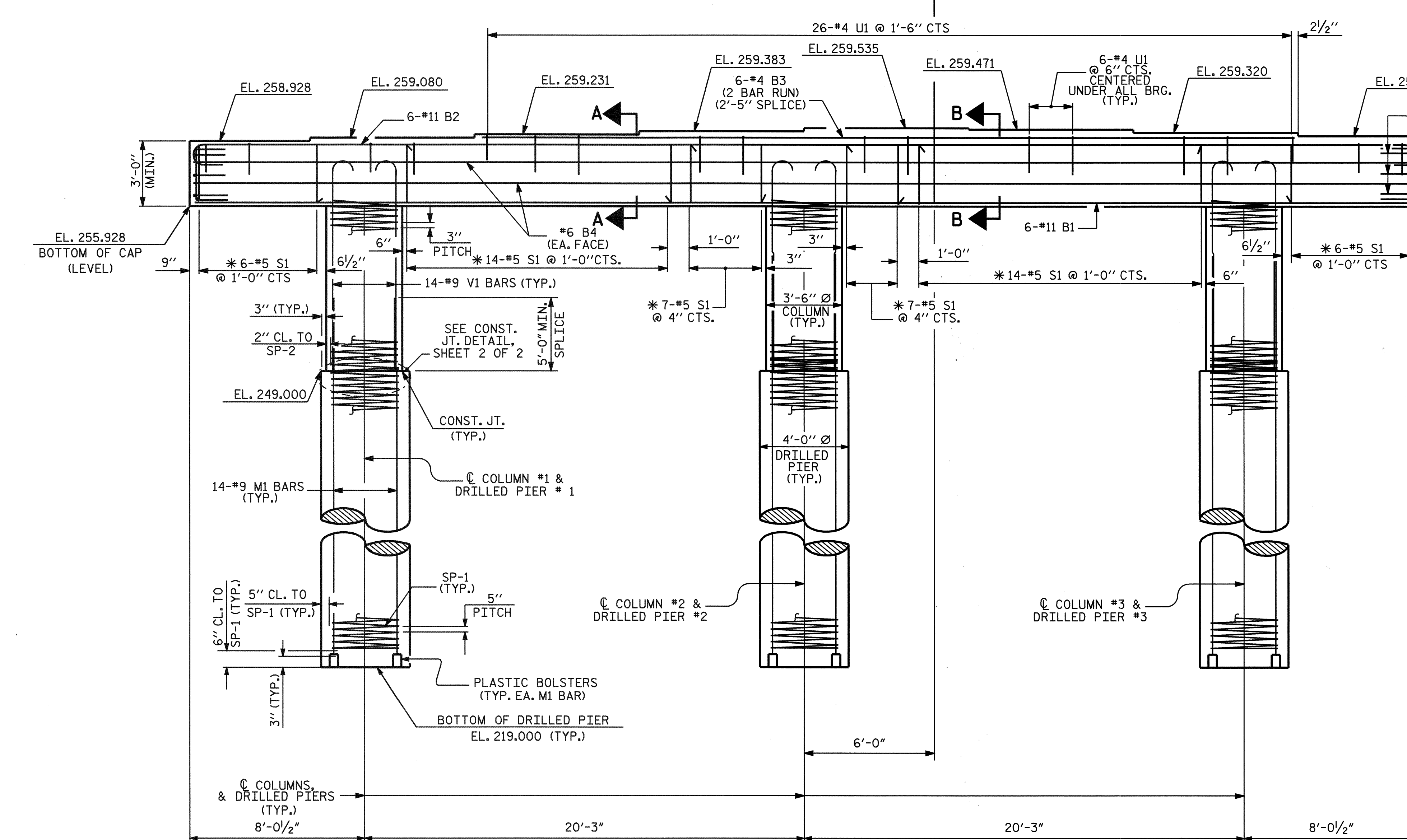
"U" BARS IN THE END OF CAP MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR "B" BARS.

2" MINIMUM CONCRETE COVER FROM END OF CAP IS REQUIRED FOR ALL "U" BARS.

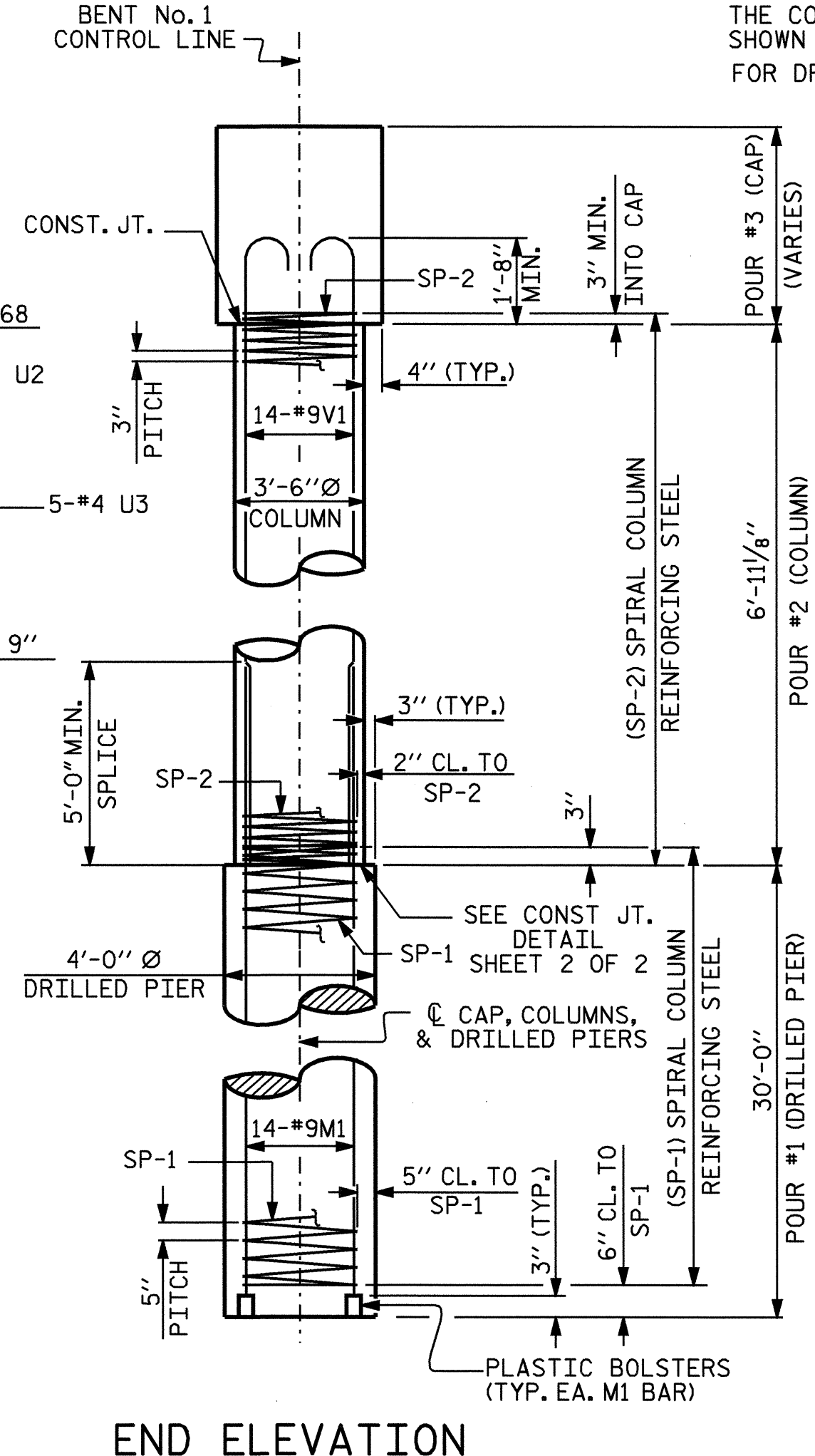
THE CONTRACTOR SHALL ALIGN THE "M" AND "V" BARS AS SHOWN IN THE PLAN OF DRILLED PIERS AND COLUMNS. FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.



PLAN



ELEVATION

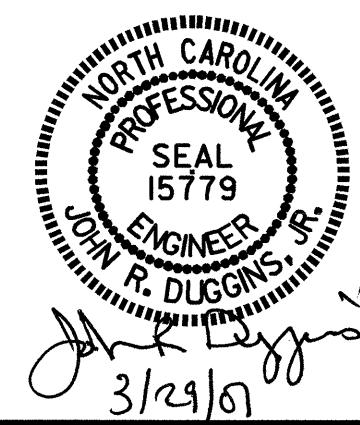


END ELEVATION

PROJECT NO. B-3916
 WAKE COUNTY
 STATION: 20+35.50 -L-

SHEET 1 OF 2

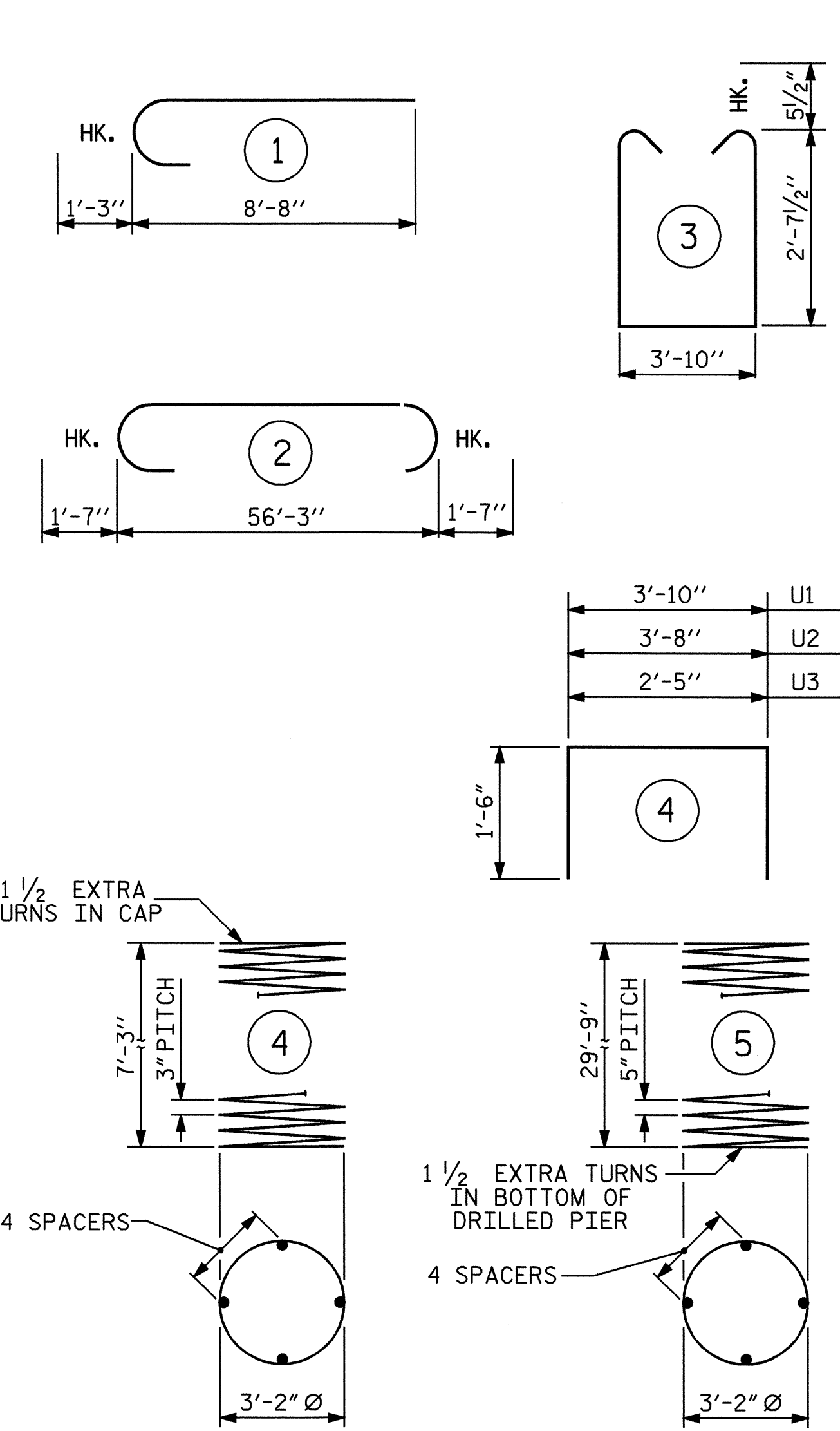
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT No. 1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-21
					TOTAL SHEETS 30



DRAWN BY : M. POOLE DATE : 07/06
 CHECKED BY : J. R. DUGGINS DATE : 01/07

DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER
 * INVERT ALTERNATE STIRRUPS

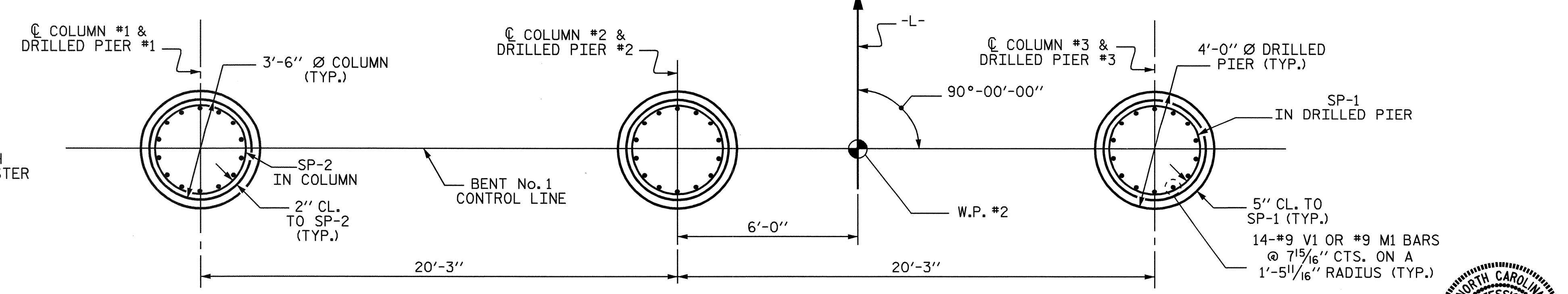
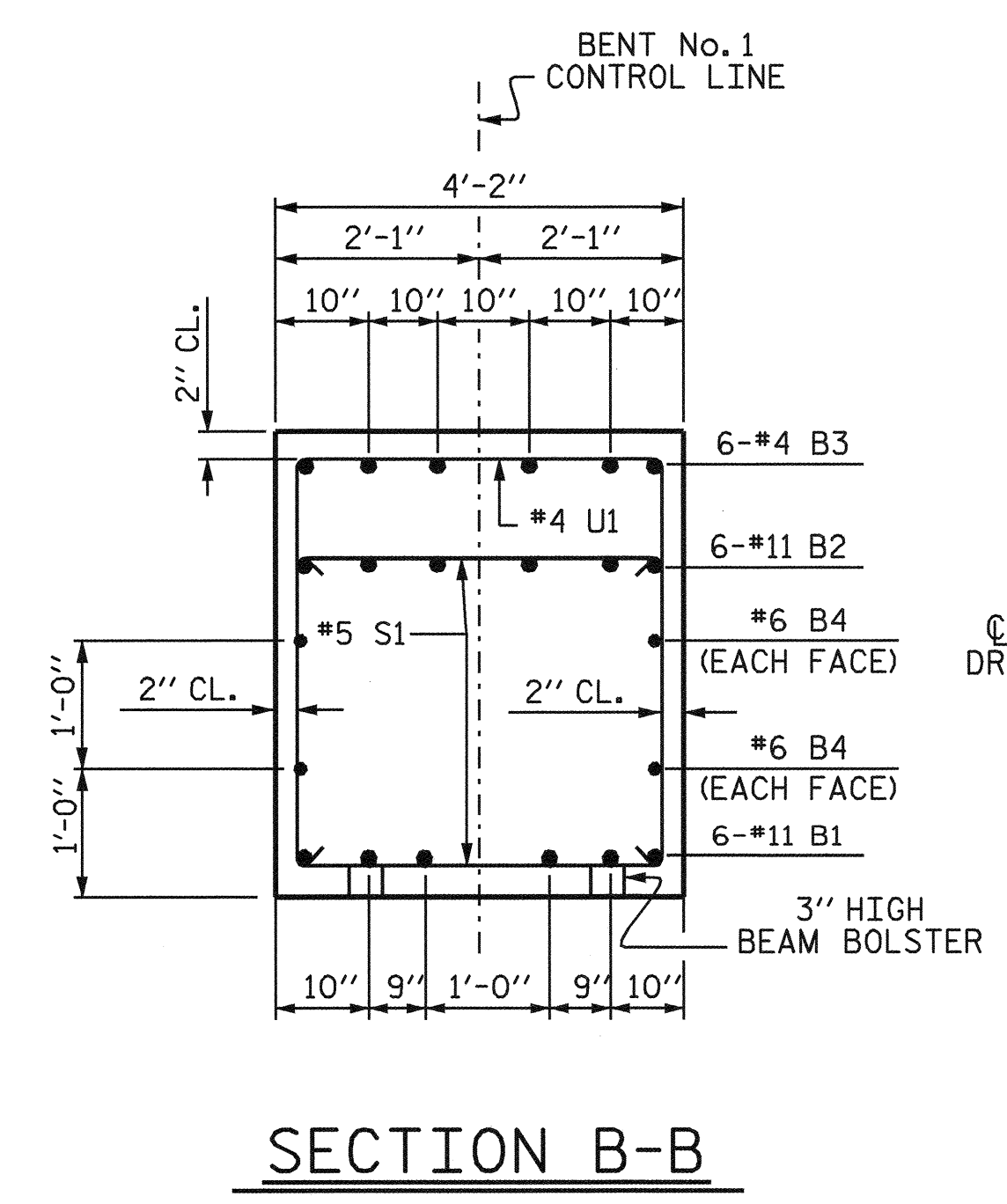
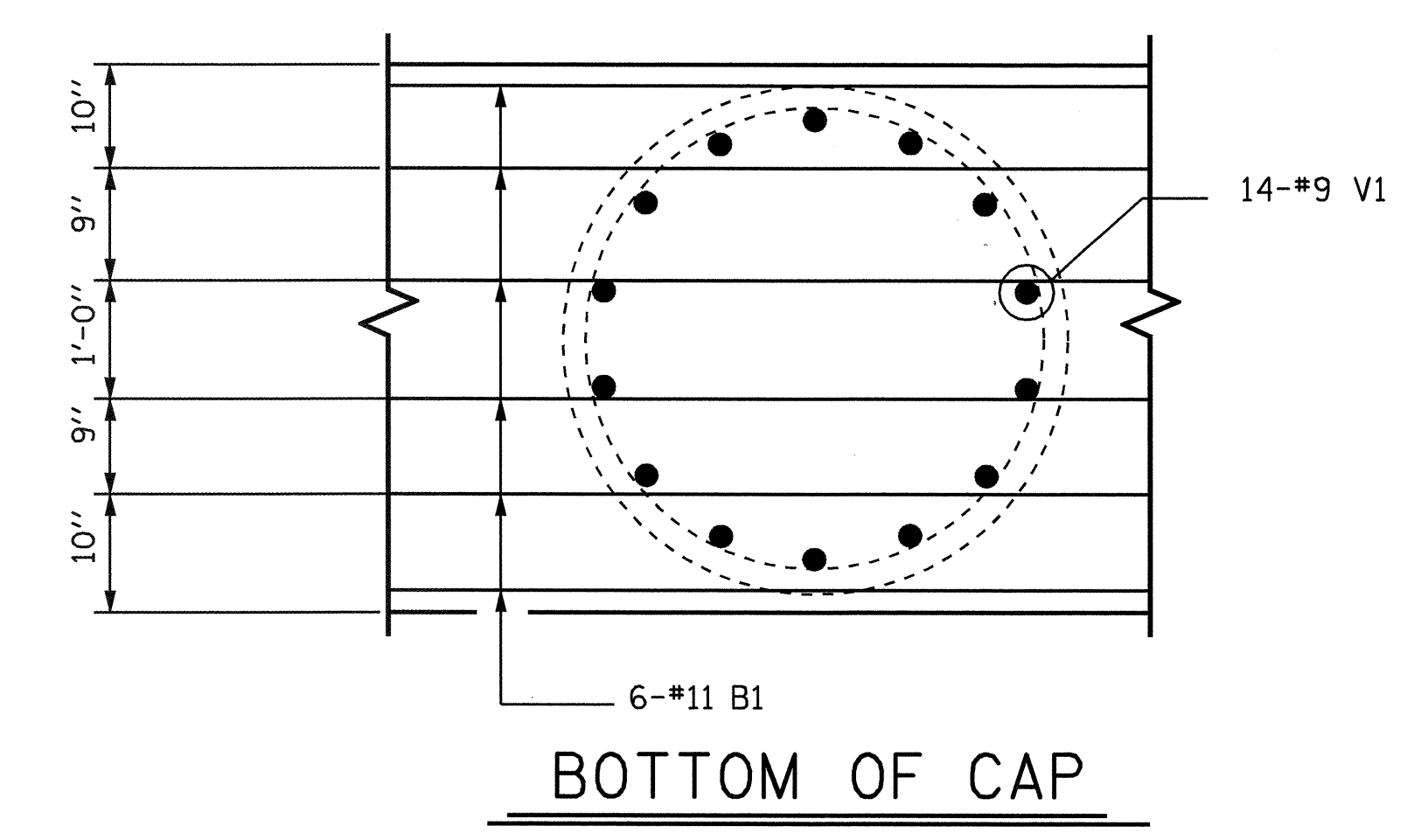
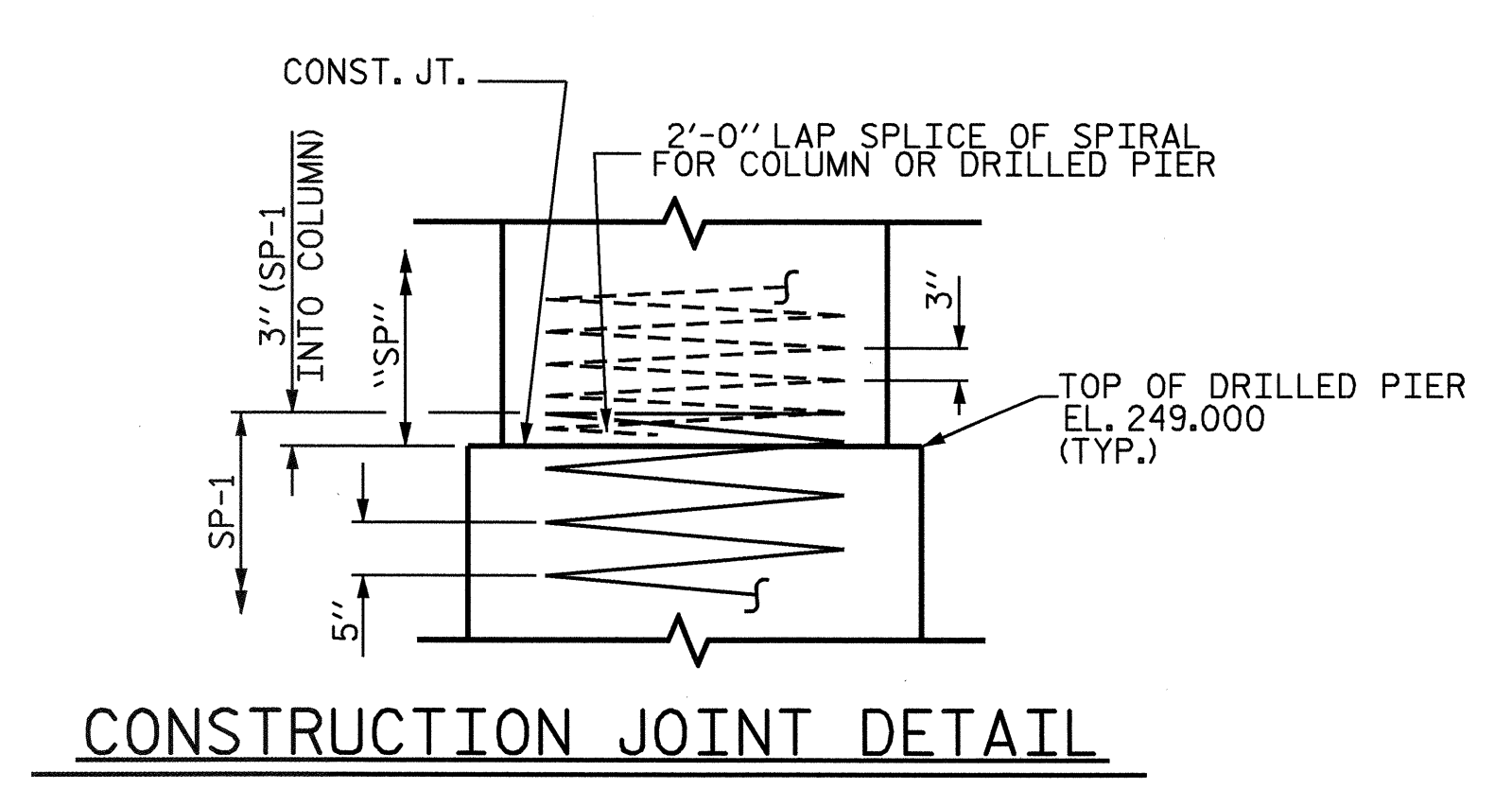
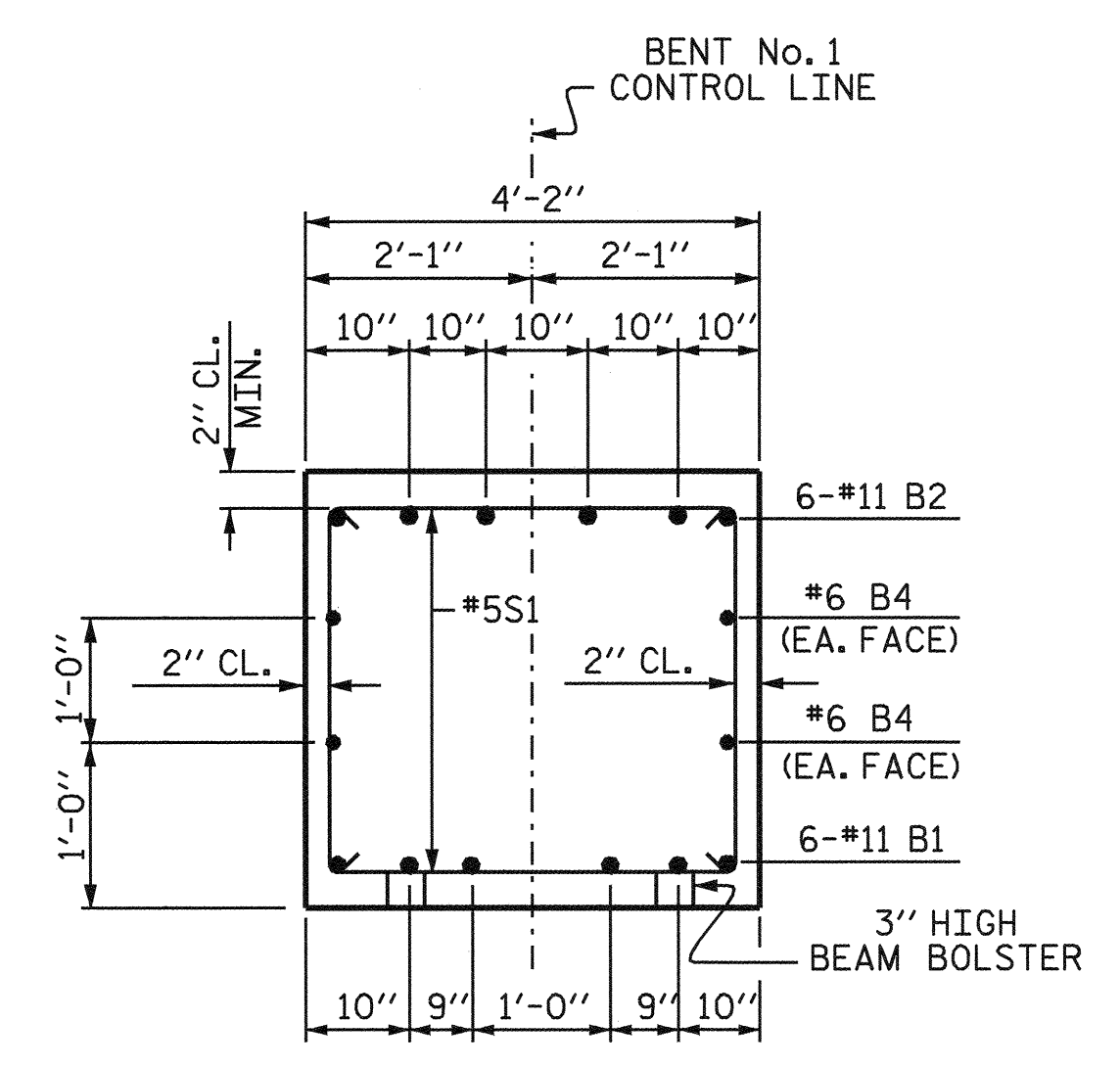
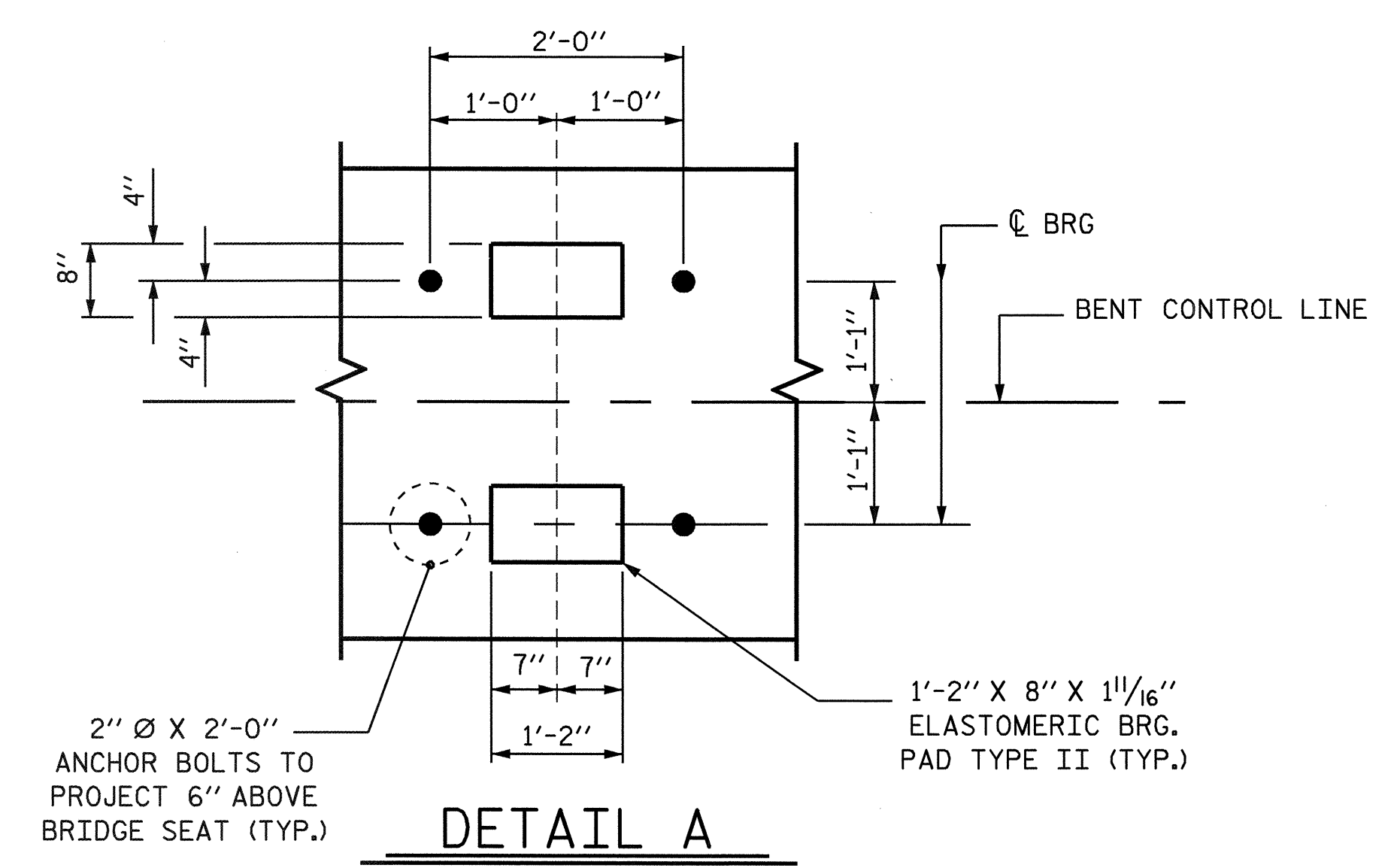
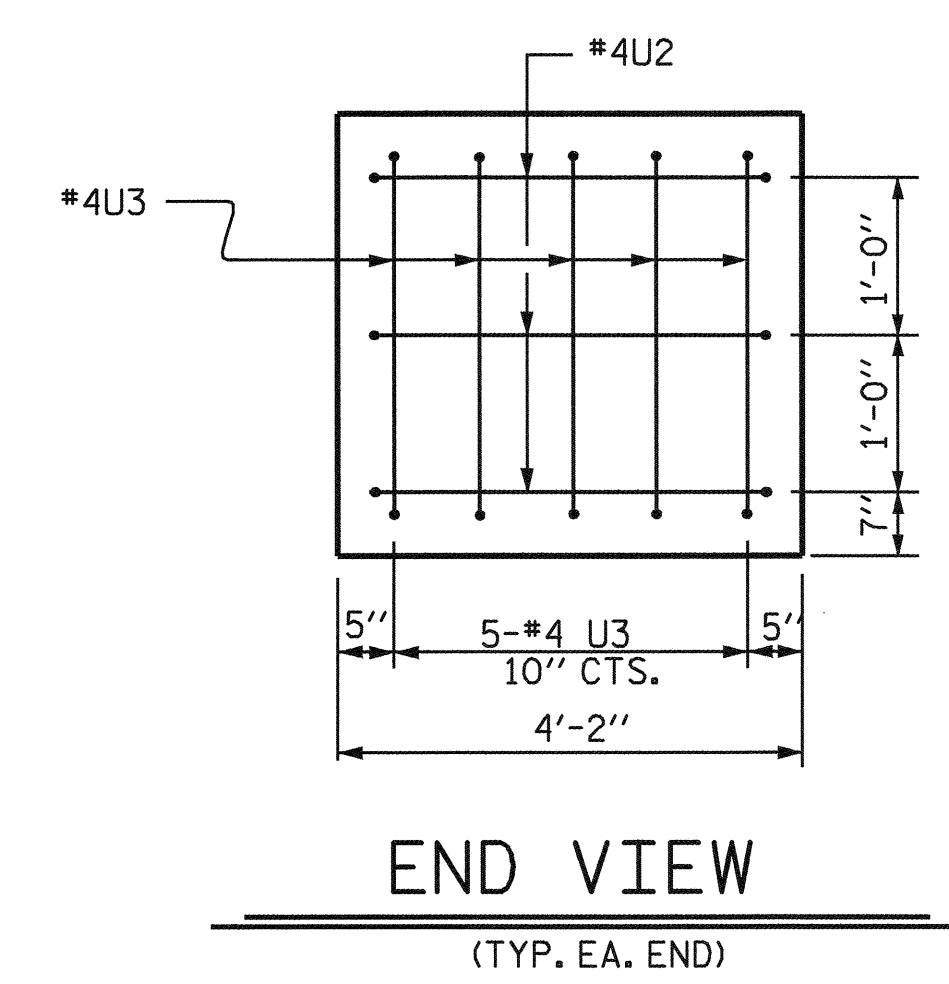
BAR TYPES



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.

BILL OF MATERIAL

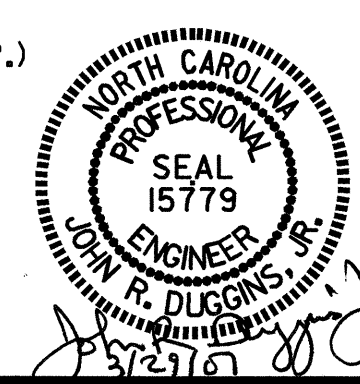
BENT No. 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#11	STR	56'-3"	1793
B2	6	#11	2	59'-5"	1894
B3	12	#4	STR	20'-0"	160
B4	4	#6	STR	56'-3"	338
M1	42	#9	STR	37'-9"	5391
S1	54	#5	3	10'-0"	563
U1	74	#4	4	6'-10"	338
U2	6	#4	4	6'-8"	27
U3	10	#4	4	5'-5"	36
V1	42	#9	1	9'-11"	1416
REINFORCING STEEL				=	11956 LBS
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
SP-1	3	***	5	715-0	2237
SP-2	3	**	4	304-6	610
SPIRAL COLUMN REINF. STEEL				=	2847 LBS
CLASS A CONCRETE BREAKDOWN					
POUR #2 (COLUMNS)					7.4 C.Y.
POUR #3 (CAP)					29.2 C.Y.
TOTAL					36.6 C.Y.
DRILLED PIER QUANTITIES					
DRILLED PIER CONCRETE BREAKDOWN					
POUR #1 (DRILLED PIERS)					41.9 C.Y.
4'-0" Ø DRILLED PIERS IN SOIL					85.00 LIN. FT.
4'-0" Ø DRILLED PIERS NOT IN SOIL					5.00 LIN. FT.
PERMANENT STEEL CASING					39.00 LIN. FT.
CSL TUBES					390 LIN. FT.



PLAN OF DRILLED PIERS & COLUMNS
 (REINFORCING STEEL IS TYPICAL FOR EACH COLUMN & DRILLED PIER)

PROJECT NO. B-3916
 WAKE COUNTY
 STATION: 20+35.50 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT No. 1



DRAWN BY: M. POOLE DATE: 07/06
 CHECKED BY: J.R. DUGGINS DATE: 01/07

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

NOTES

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

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

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

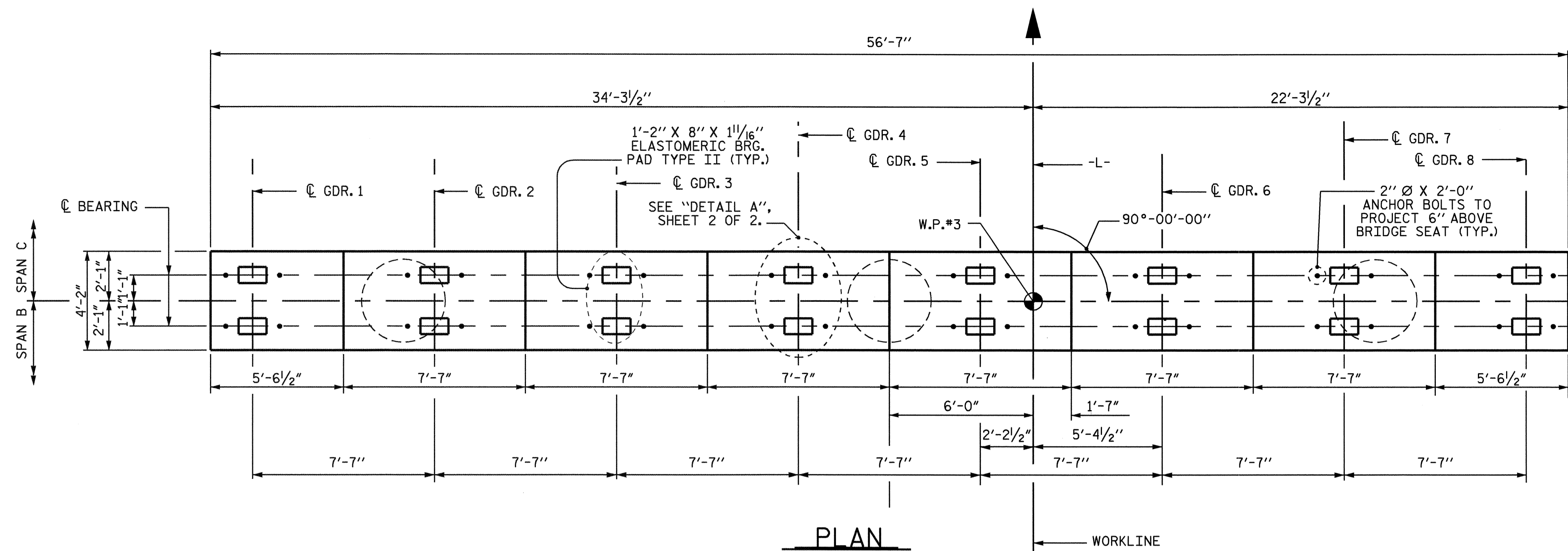
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH. IF DUE TO THIS EXTRA LENGTH THE "M" BARS EXTEND INTO THE BENT CAP. THE "M" BARS SHALL BE FIELD CUT TO THE PROPER SPLICE LENGTH.

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

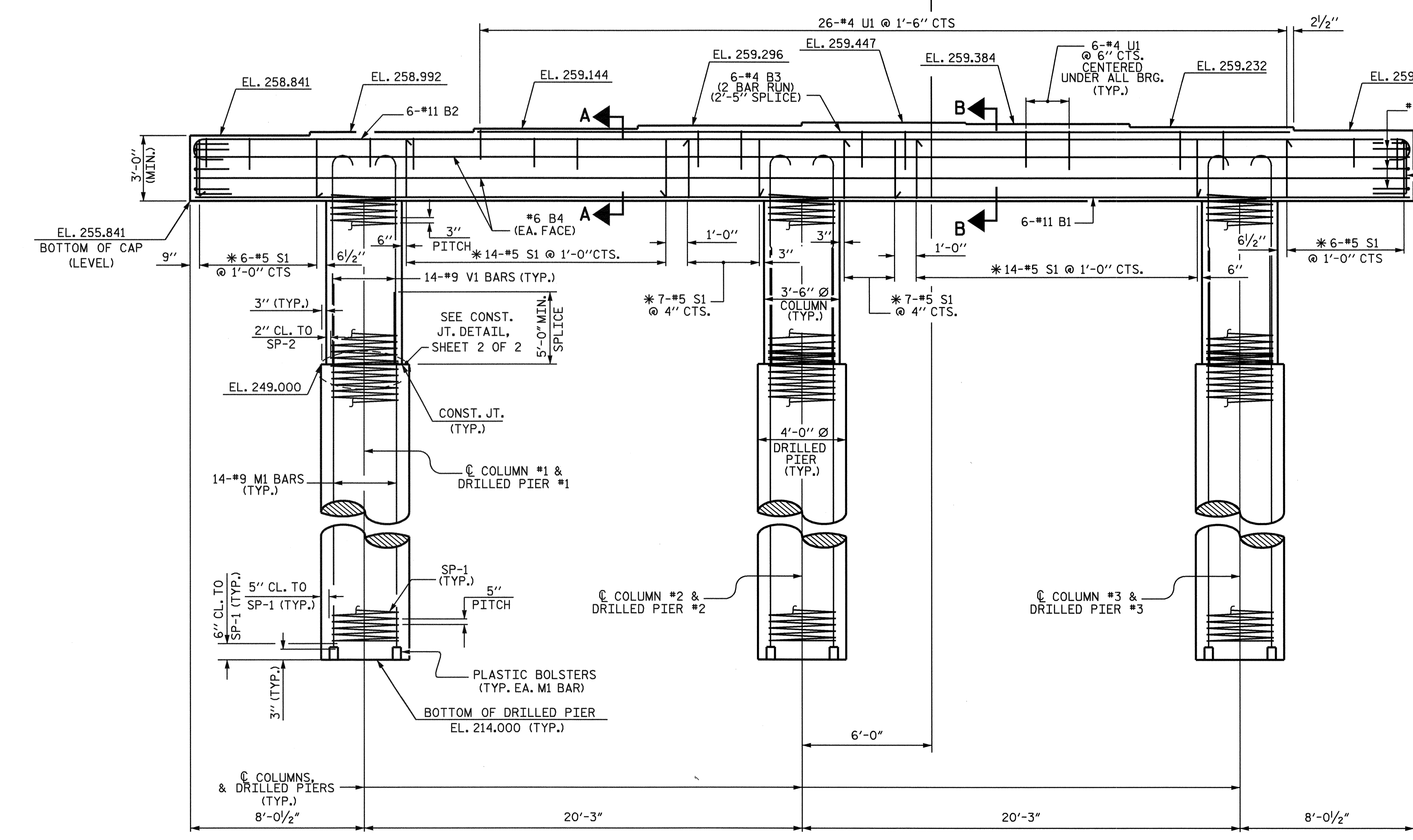
"U" BARS IN THE END OF CAP MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR "B" BARS.

2" MINIMUM CONCRETE COVER FROM END OF CAP IS REQUIRED FOR ALL "U" BARS.

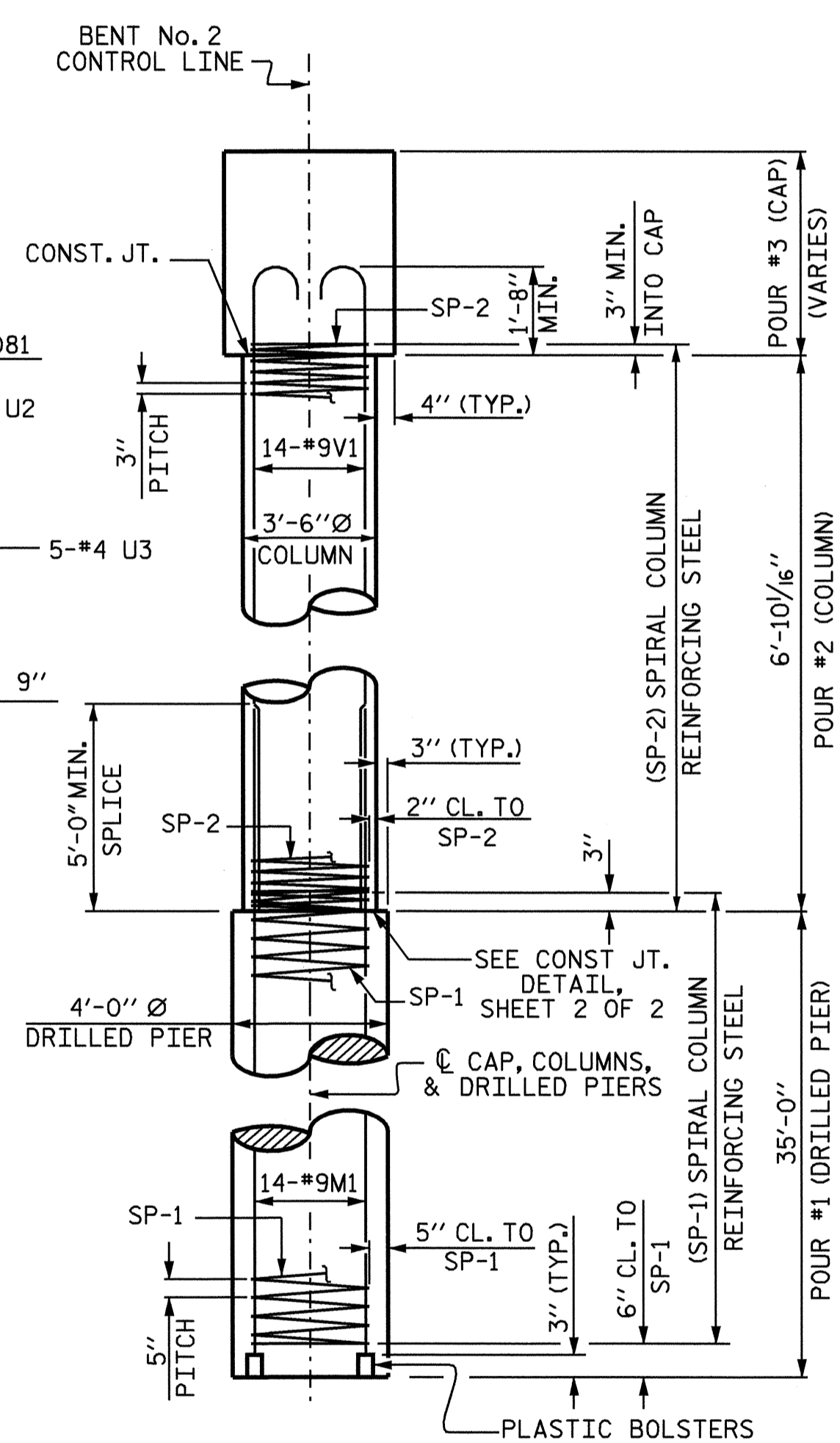
THE CONTRACTOR SHALL ALIGN THE "M" AND "V" BARS AS SHOWN IN THE PLAN OF DRILLED PIERS AND COLUMNS. FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.



PLAN



ELEVATION



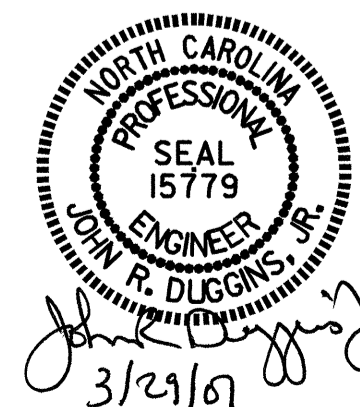
END ELEVATION

PROJECT NO. B-3916
 WAKE COUNTY
 STATION: 20+35.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

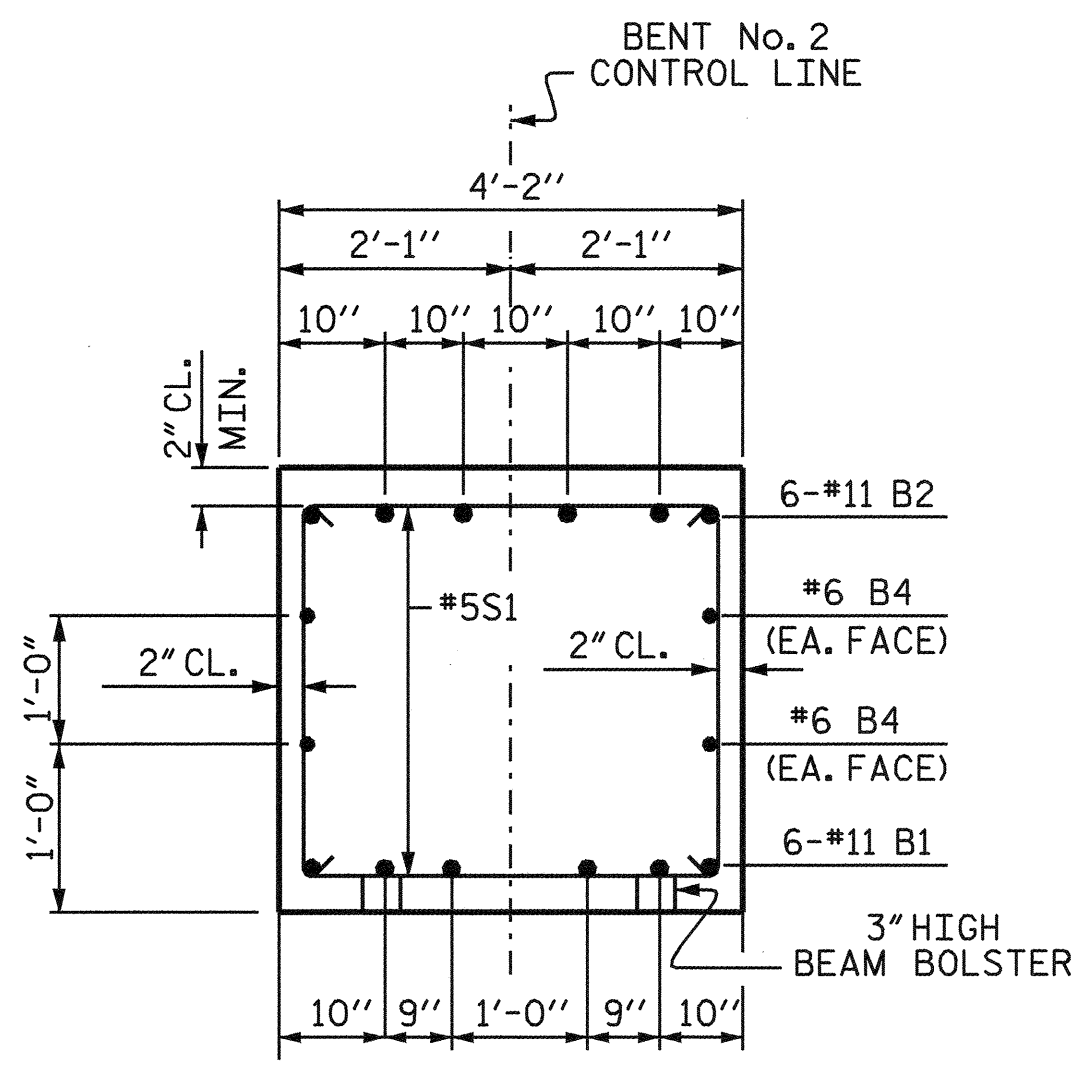
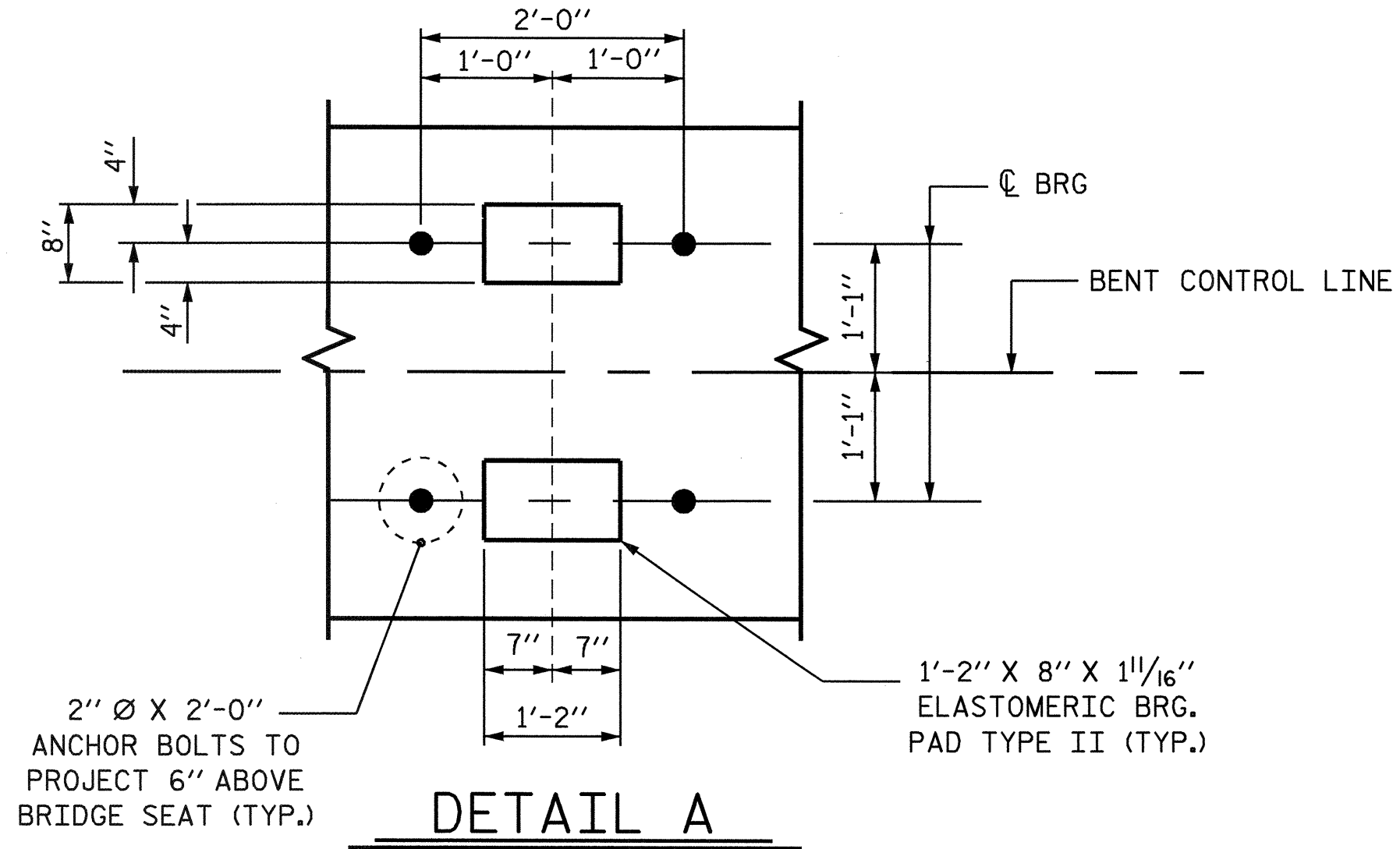
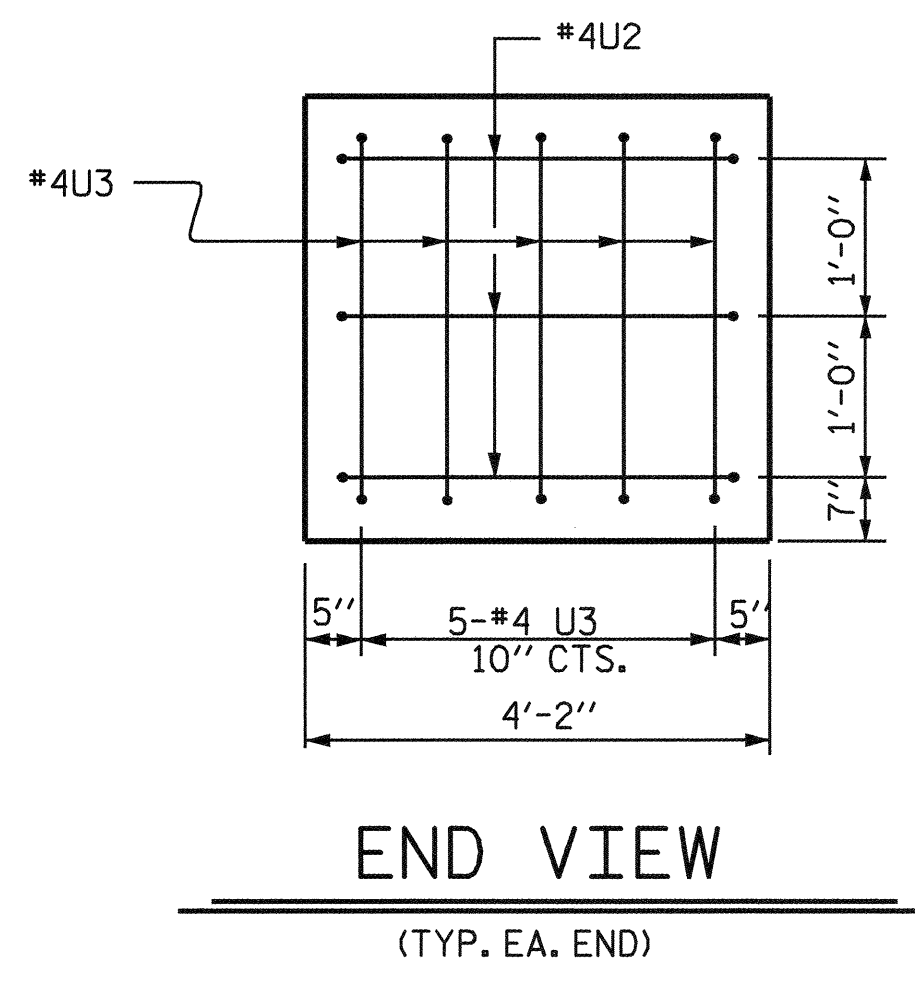
SUBSTRUCTURE
 BENT No. 2



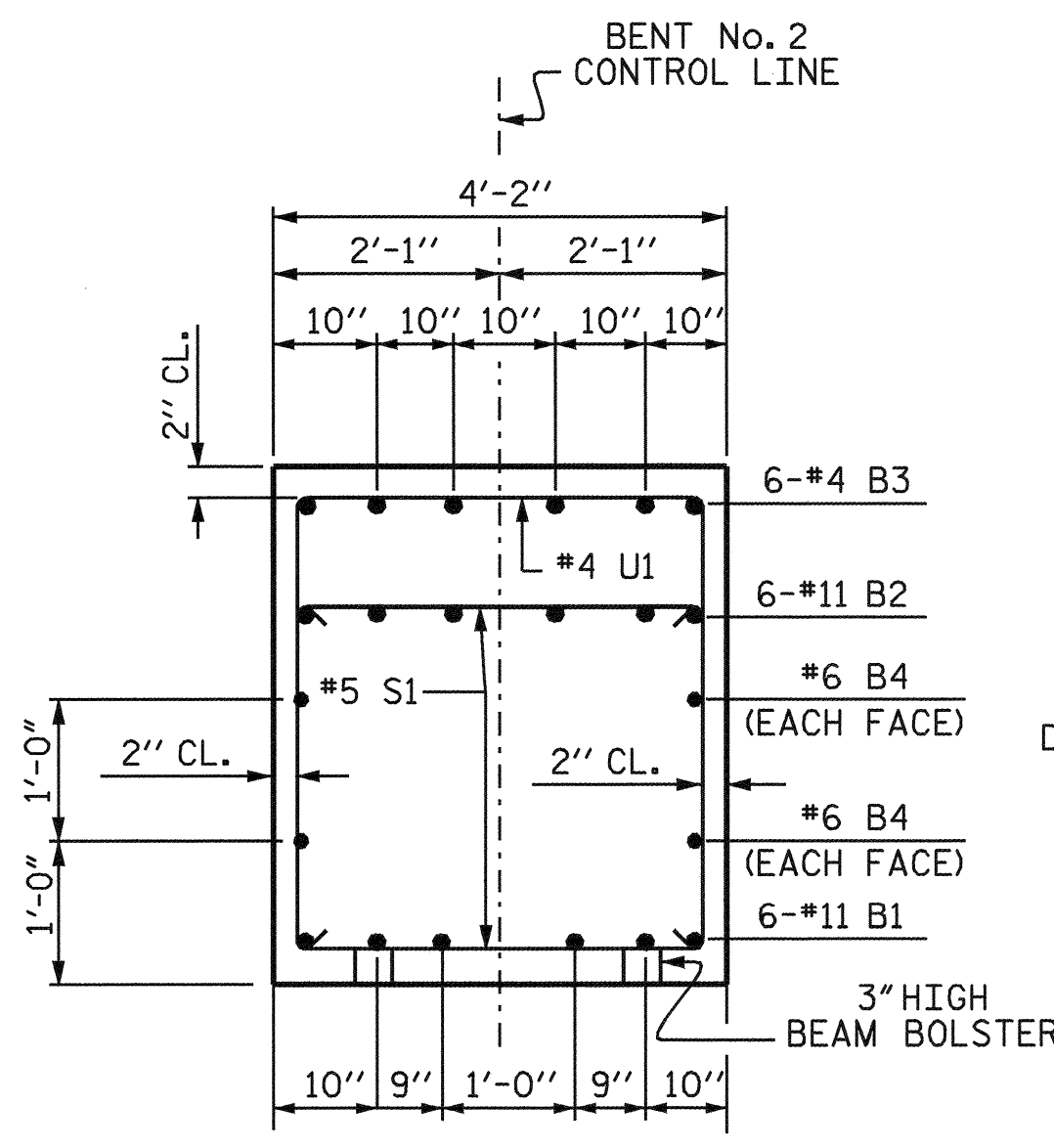
DRAWN BY: M. POOLE DATE: 07/06
 CHECKED BY: J. R. DUGGINS DATE: 01/07

DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER
 *INVERT ALTERNATE STIRRUPS

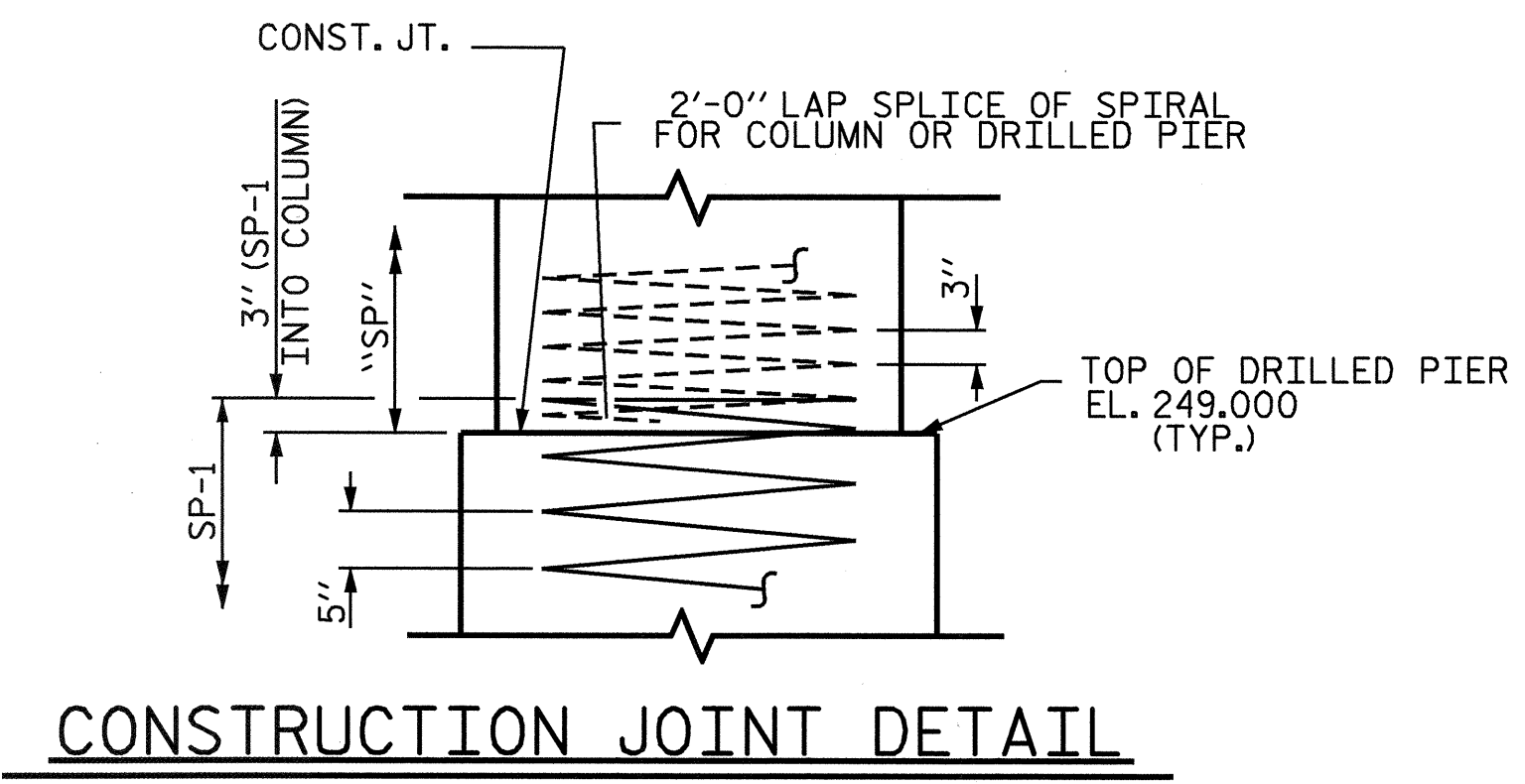
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	3-23
1			3			TOTAL SHEETS
2			4			30



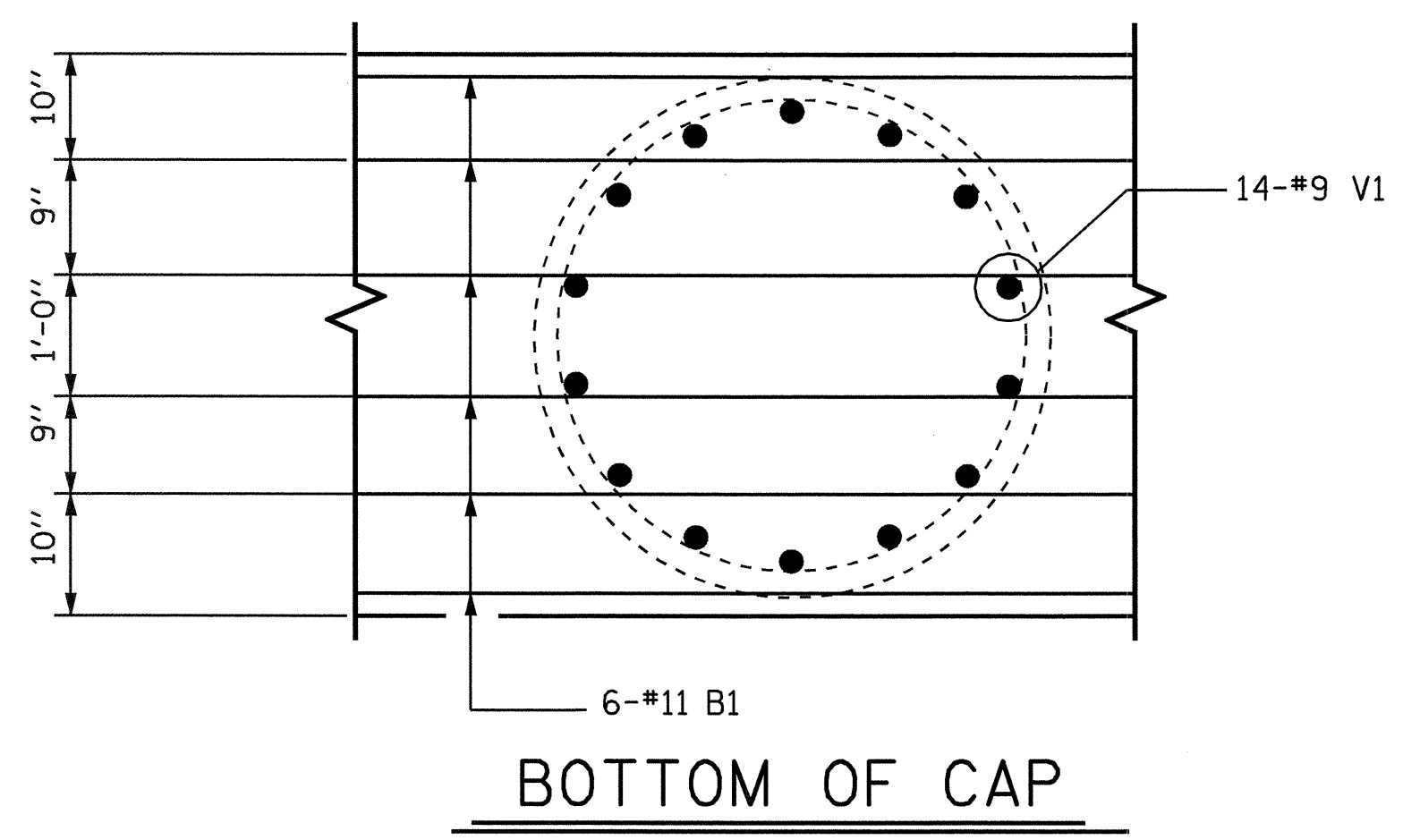
SECTION A-A



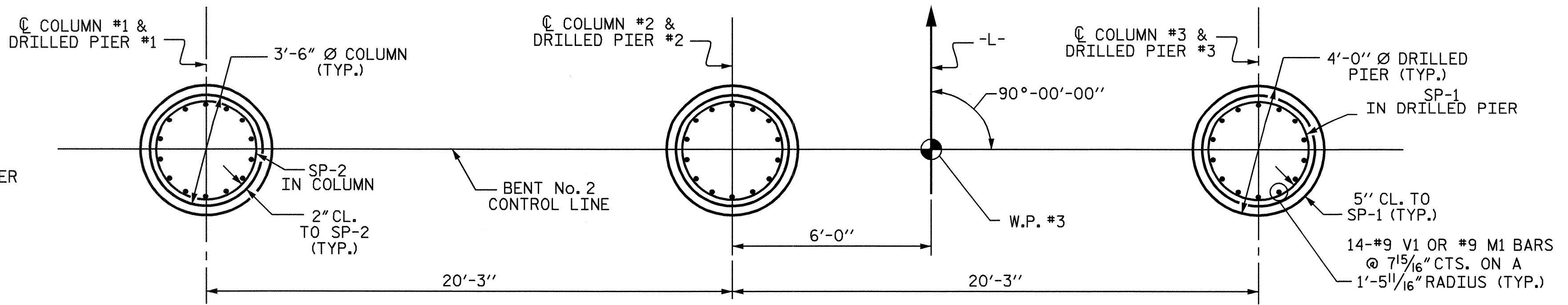
SECTION B-B



CONSTRUCTION JOINT DETAIL

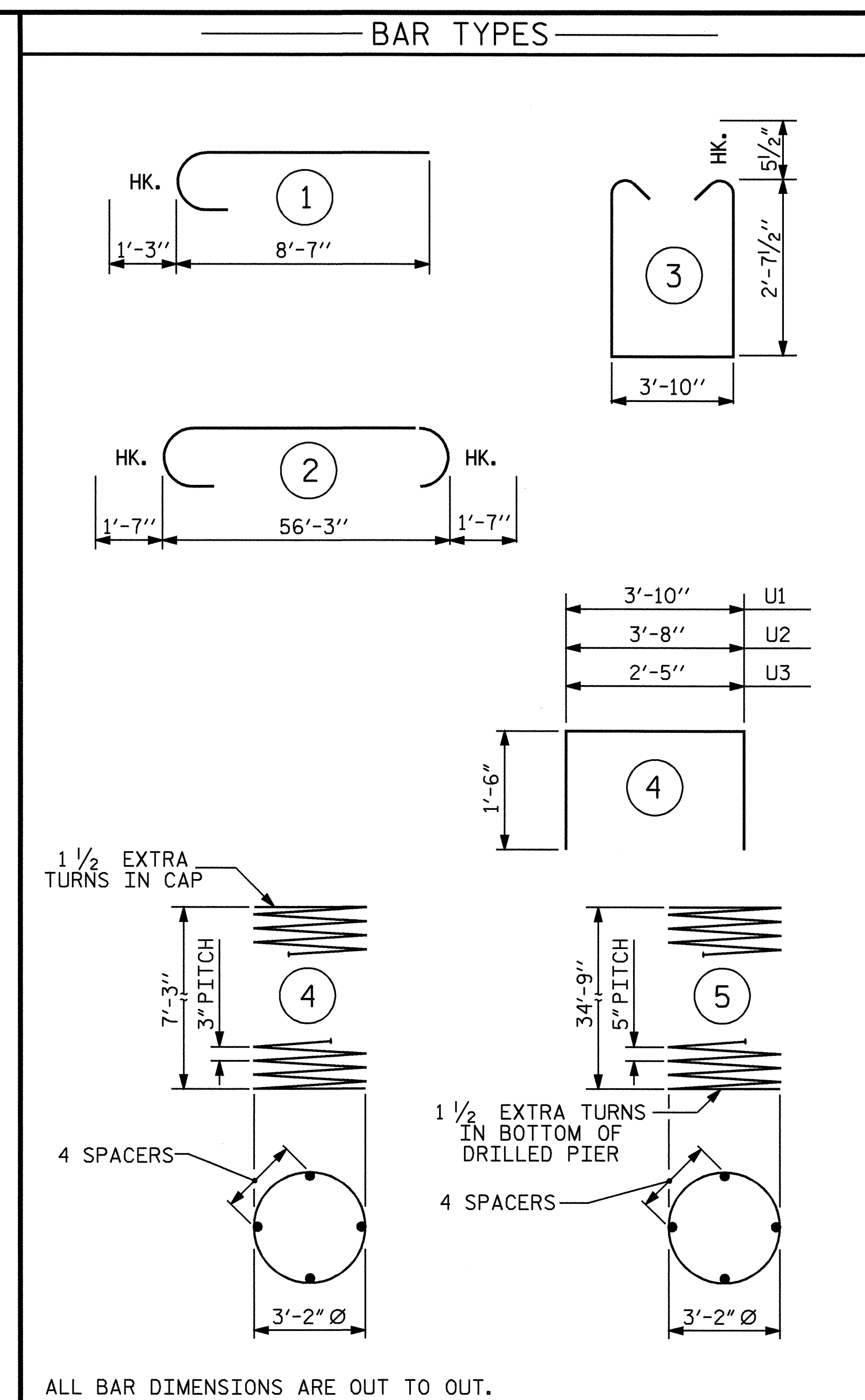


BOTTOM OF CAP



PLAN OF DRILLED PIERS & COLUMNS

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



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

BILL OF MATERIAL							
BENT No. 2							
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT		
B1	6	#11	STR	56'-3"	1793		
B2	6	#11	2	59'-5"	1894		
B3	12	#4	STR	20'-0"	160		
B4	4	#6	STR	56'-3"	338		
M1	42	#9	STR	42'-9"	5391		
S1	54	#5	3	10'-0"	563		
U1	74	#4	4	6'-10"	338		
U2	6	#4	4	6'-8"	27		
U3	10	#4	4	5'-5"	36		
V1	42	#9	1	9'-10"	1404		
REINFORCING STEEL				=	11944	LBS	
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT		
SP-1	3	***	5	832'-6"	2605		
SP-2	3	**	4	304'-6"	610		
SPIRAL COLUMN REINF. STEEL				=	3215	LBS	
CLASS A CONCRETE BREAKDOWN							
POUR #2 (COLUMNS)					7.3	C.Y.	
POUR #3 (CAP)					29.2	C.Y.	
TOTAL					36.5	C.Y.	
DRILLED PIER QUANTITIES							
DRILLED PIER CONCRETE BREAKDOWN							
POUR #1 (DRILLED PIERS)							48.9 C.Y.
4'-0" Ø DRILLED PIERS IN SOIL					100.00	LIN. FT.	
4'-0" Ø DRILLED PIERS NOT IN SOIL					5.00	LIN. FT.	
PERMANENT STEEL CASING					51.00	LIN. FT.	
CSL TUBES					450	LIN. FT.	

PROJECT NO. B-3916
 WAKE COUNTY
 STATION: 20+35.50 -L-

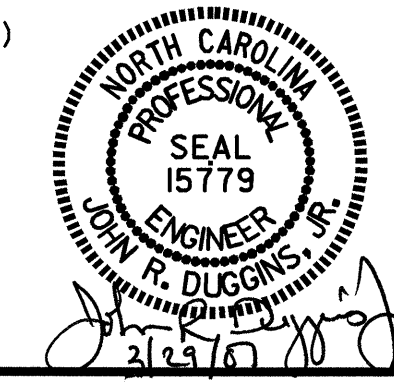
SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT No. 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			24
2			4			30

DRAWN BY: M. POOLE DATE: 07/06
 CHECKED BY: J.R. DUGGINS DATE: 01/07



NOTES

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

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

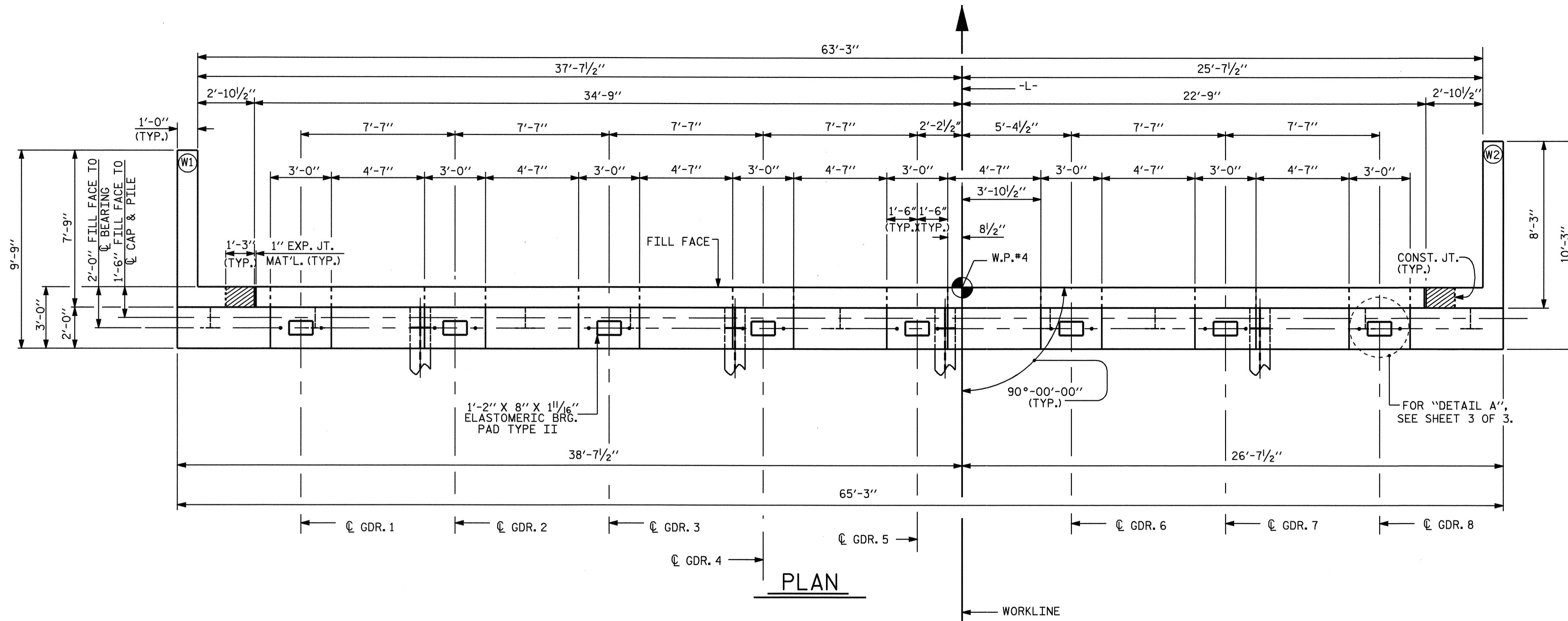
BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

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

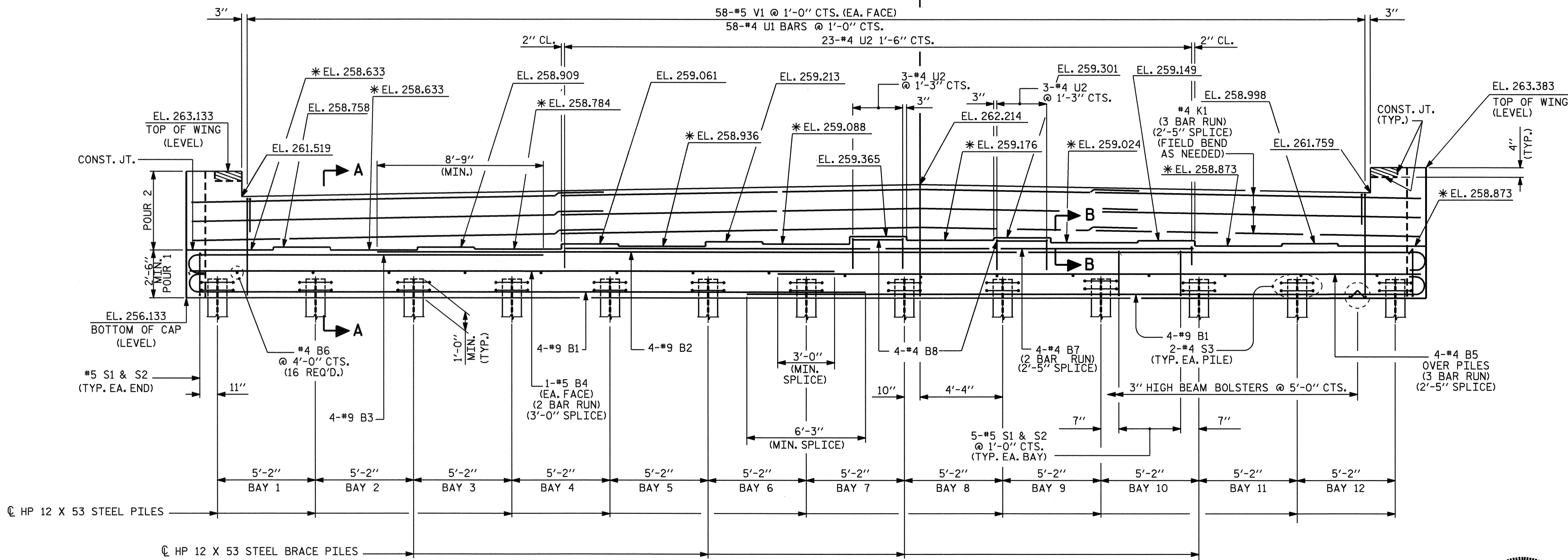
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

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



PLAN

WORKLINE



ELEVATION

FOR "SECTION A-A", SEE SHEET 3 OF 3.

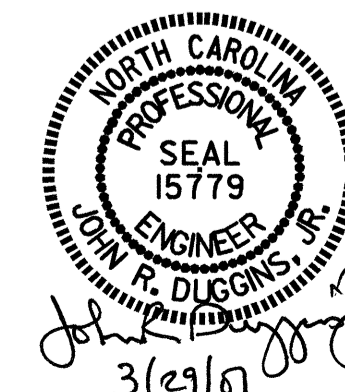
*FOR LOCATION OF ELEVATIONS BETWEEN BUILD-UPS, SEE "SECTION A-A", SHEET 3 OF 3.

PROJECT NO. B-3916
WAKE COUNTY
STATION: 20+35.50 -L-

SHEET 1 OF 3

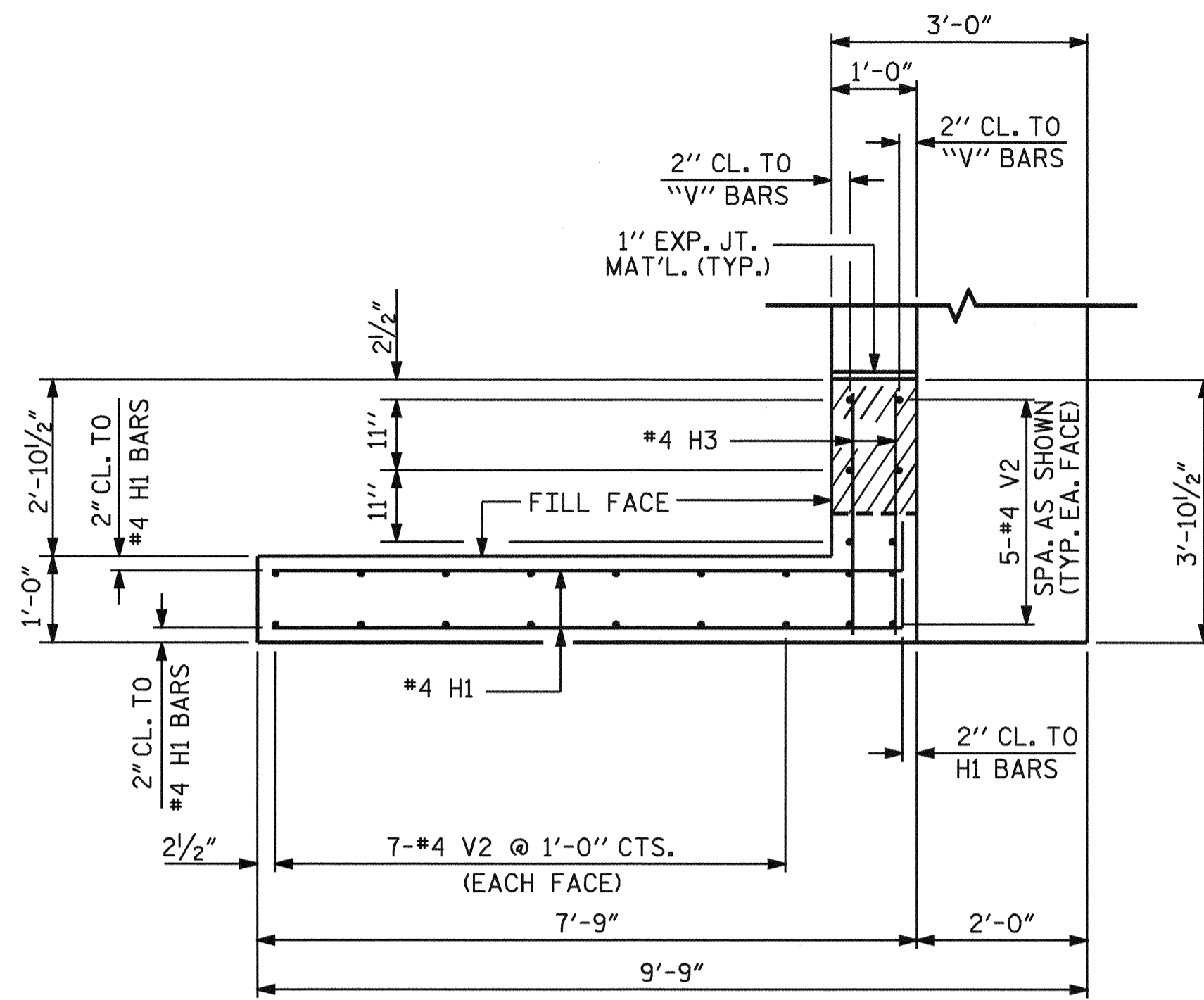
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 2

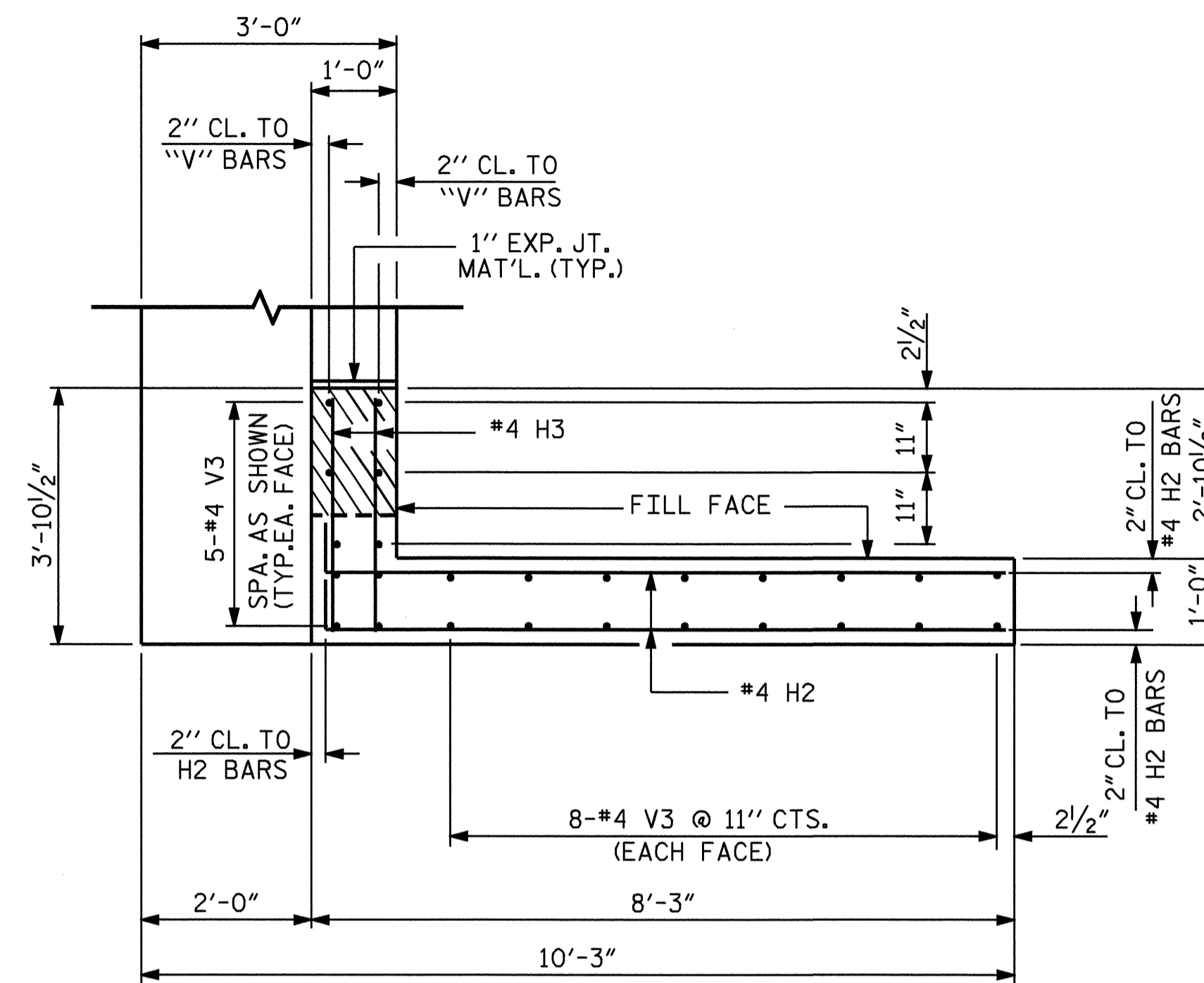


DRAWN BY: M. POOLE DATE: 07/06
CHECKED BY: J.R. DUGGINS DATE: 01/07

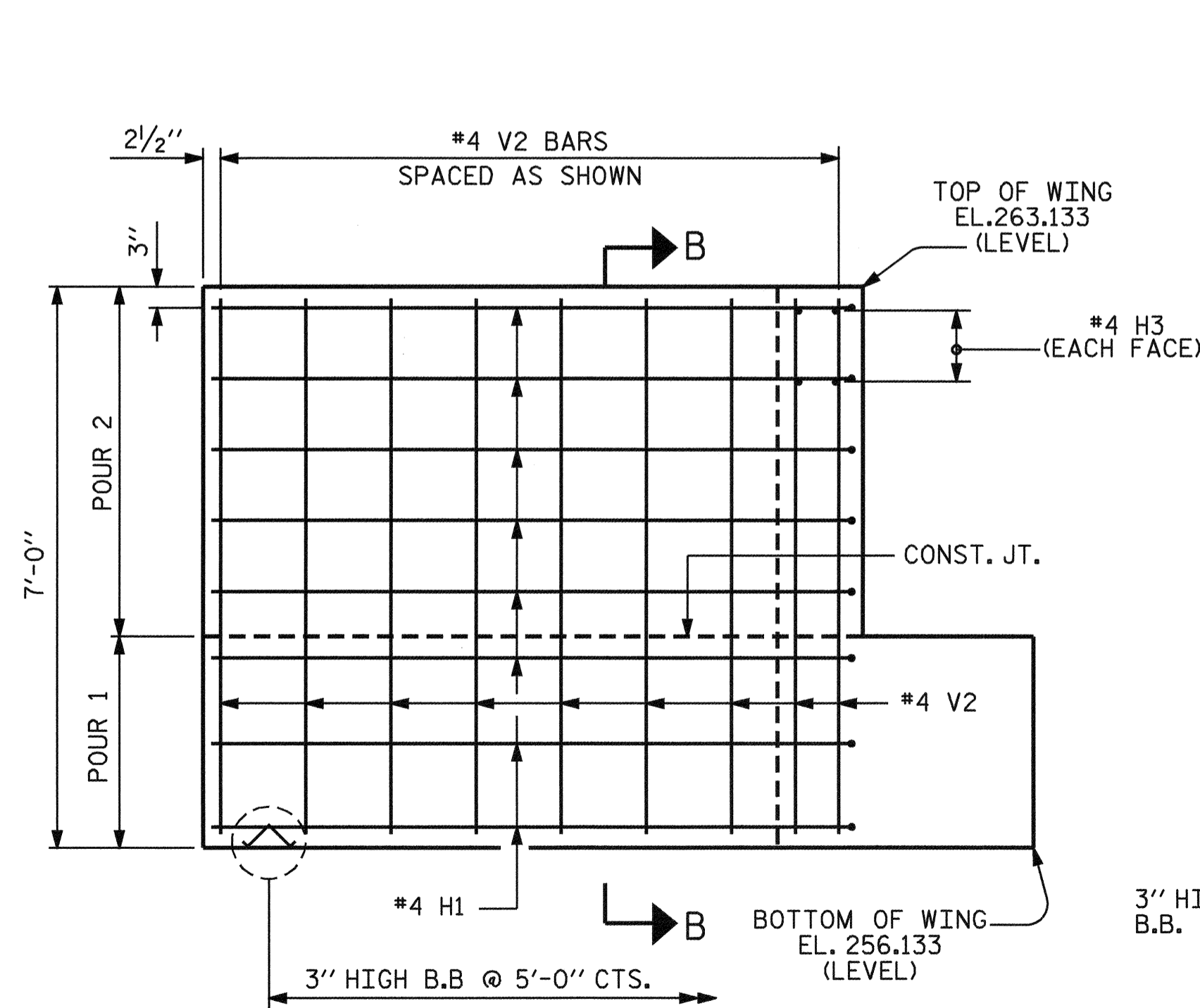
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTALS
2			4			30



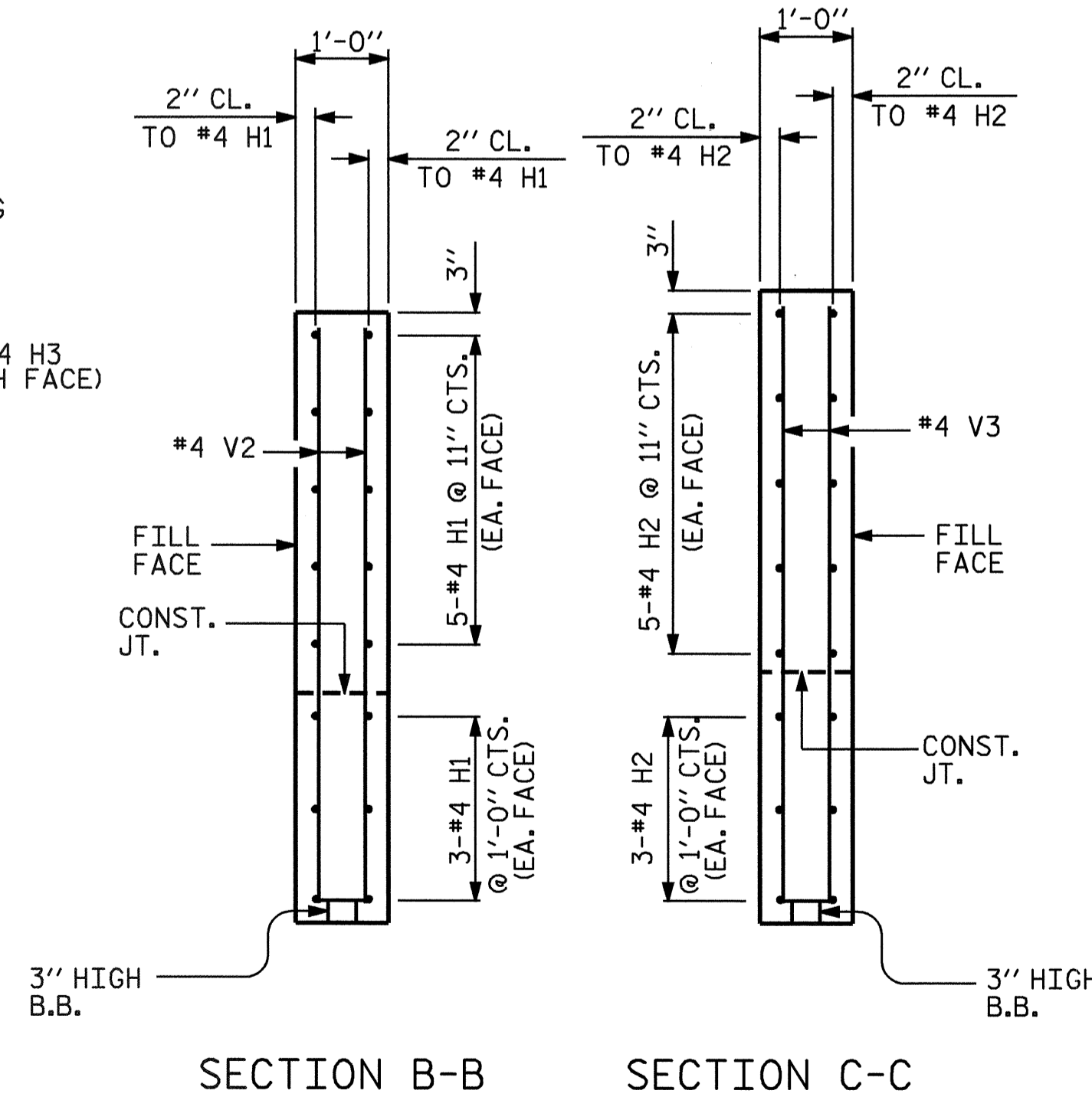
PLAN OF LEFT WING - W1



PLAN OF RIGHT WING - W2

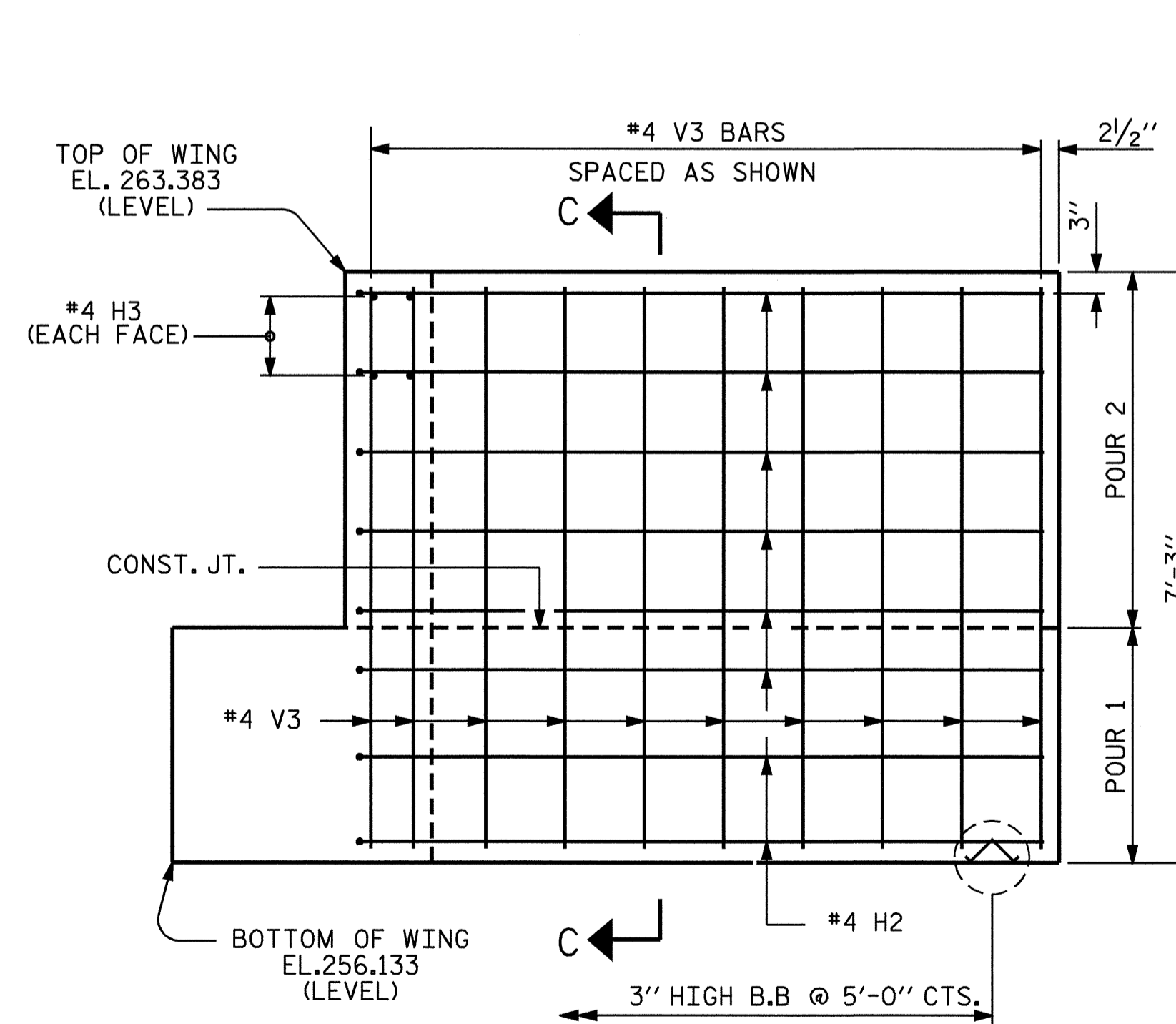


ELEVATION OF LEFT WING - W1



SECTION B-B

SECTION C-C

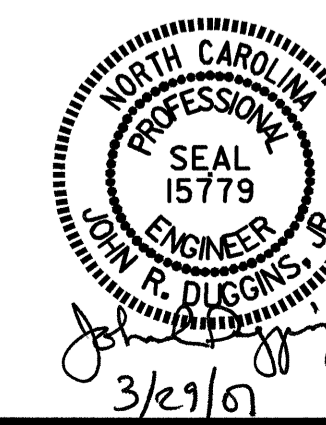


ELEVATION OF RIGHT WING - W2

PROJECT NO. B-3916
 WAKE COUNTY
 STATION: 20+35.50 -L-
 SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

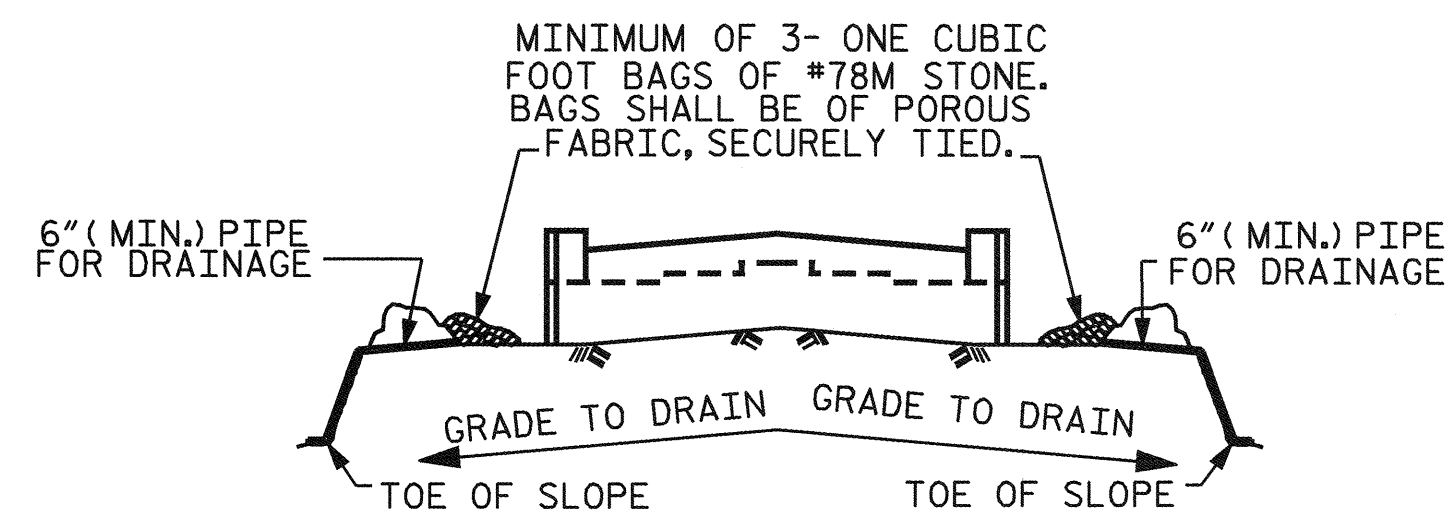
SUBSTRUCTURE
 END BENT No. 2



DRAWN BY: M. POOLE DATE: 07/06
 CHECKED BY: J.R. DUGGINS DATE: 01/07/06

09-MAR-2007 13:15
 RA:\Structures\B-3916\m\poole\Microstation\B3916.sd.E2.01.dgn
 cdndodge

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-26	
1			3			TOTAL SHEETS	
2			4			30	

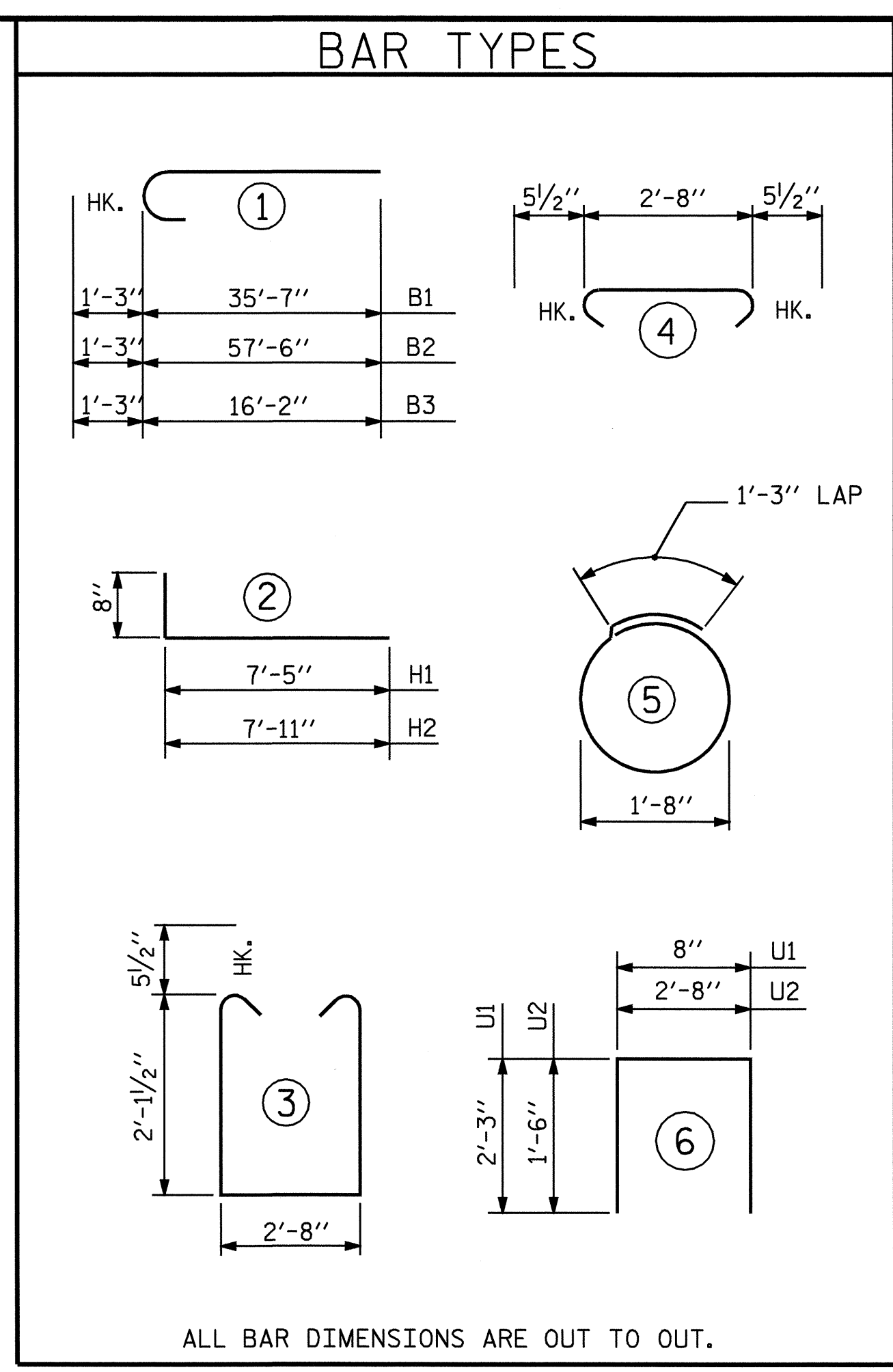
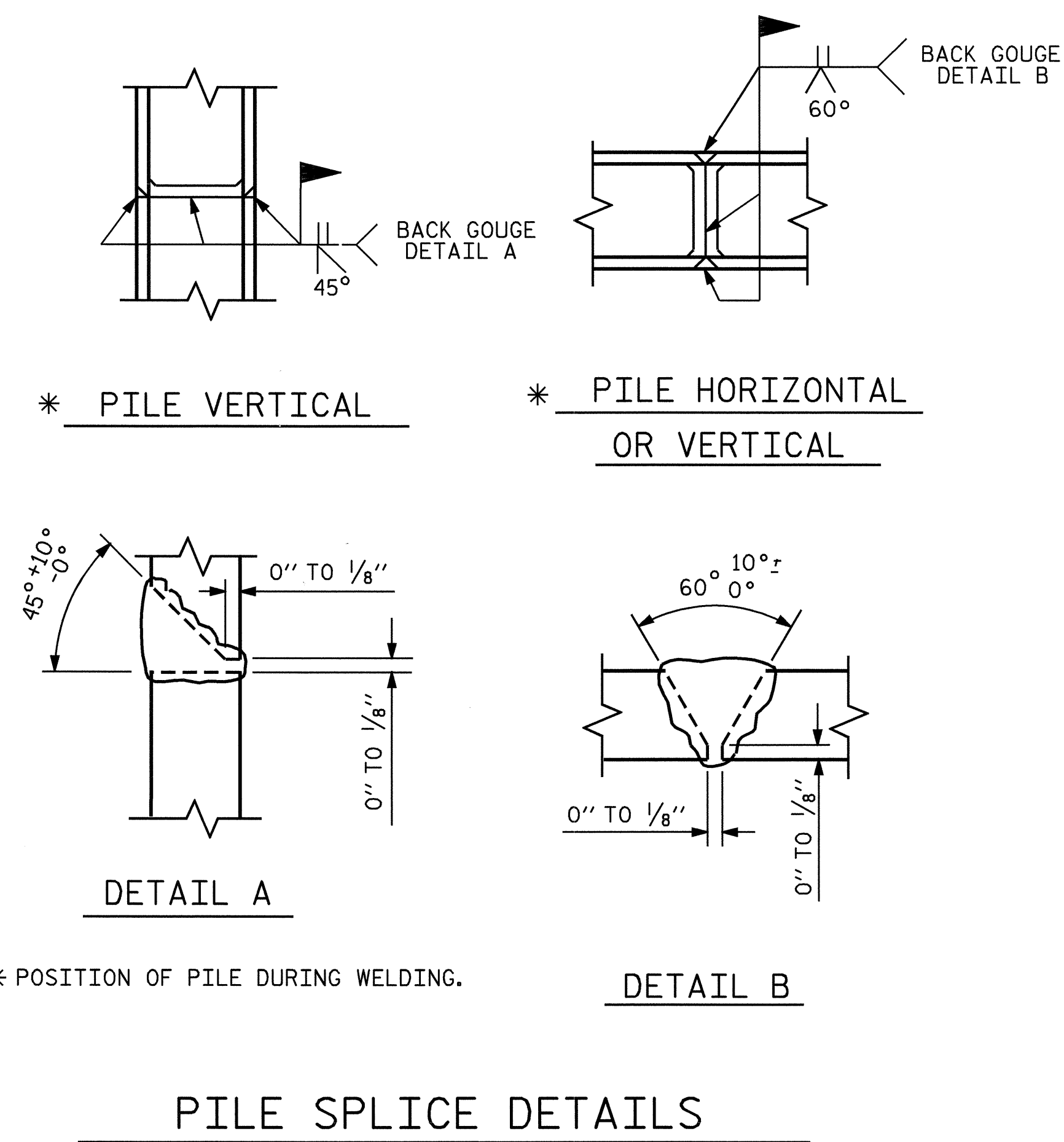
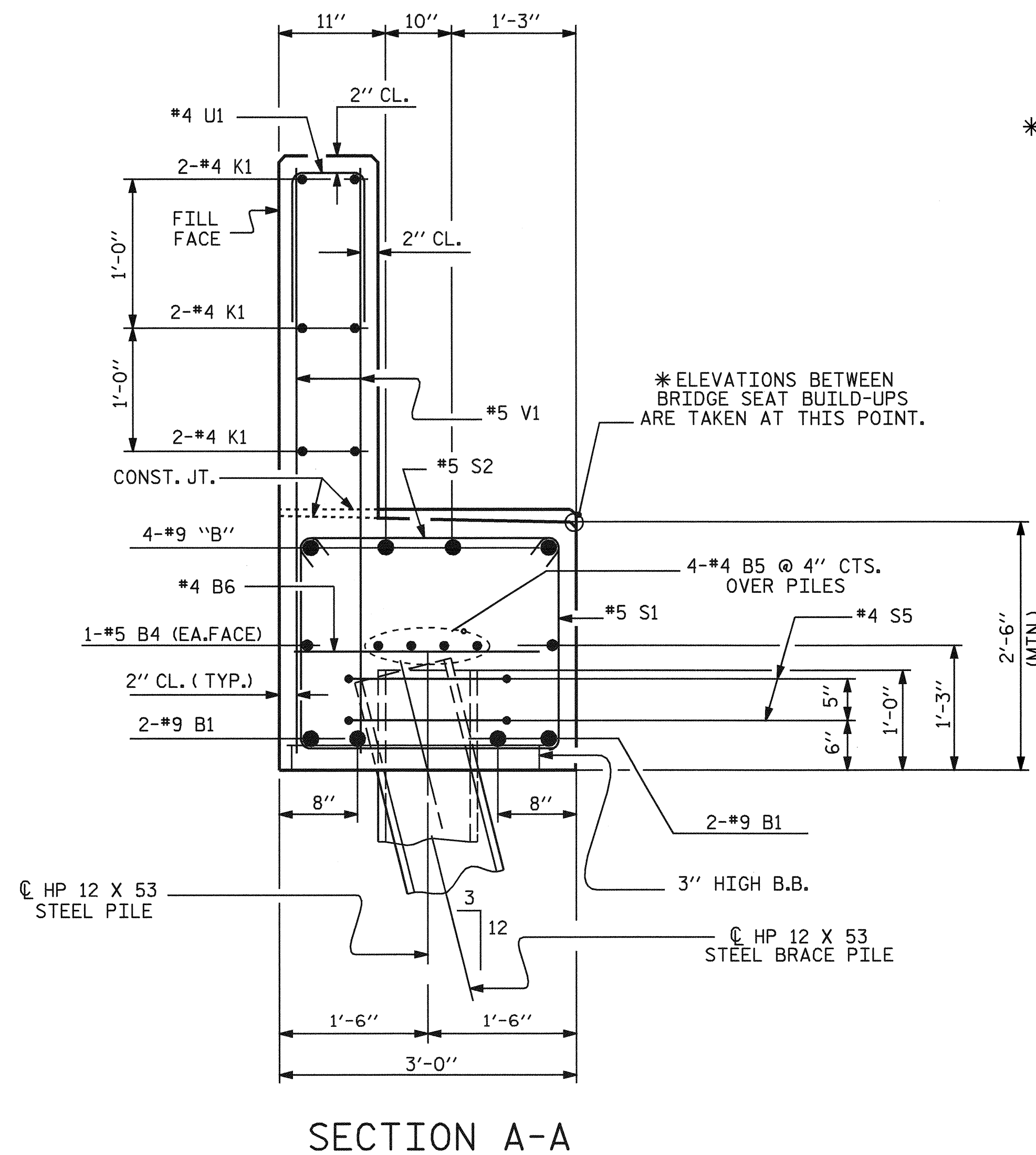


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

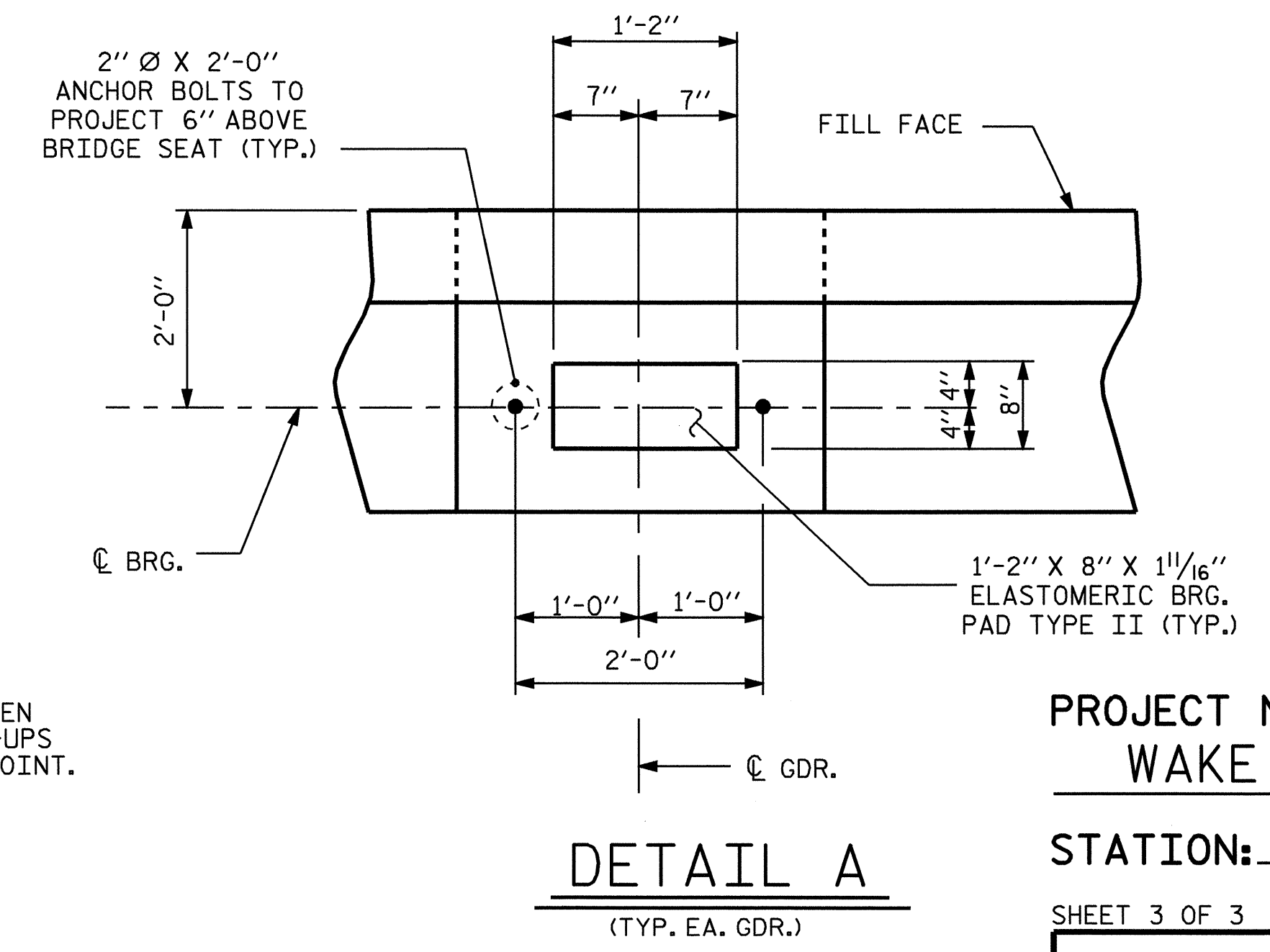
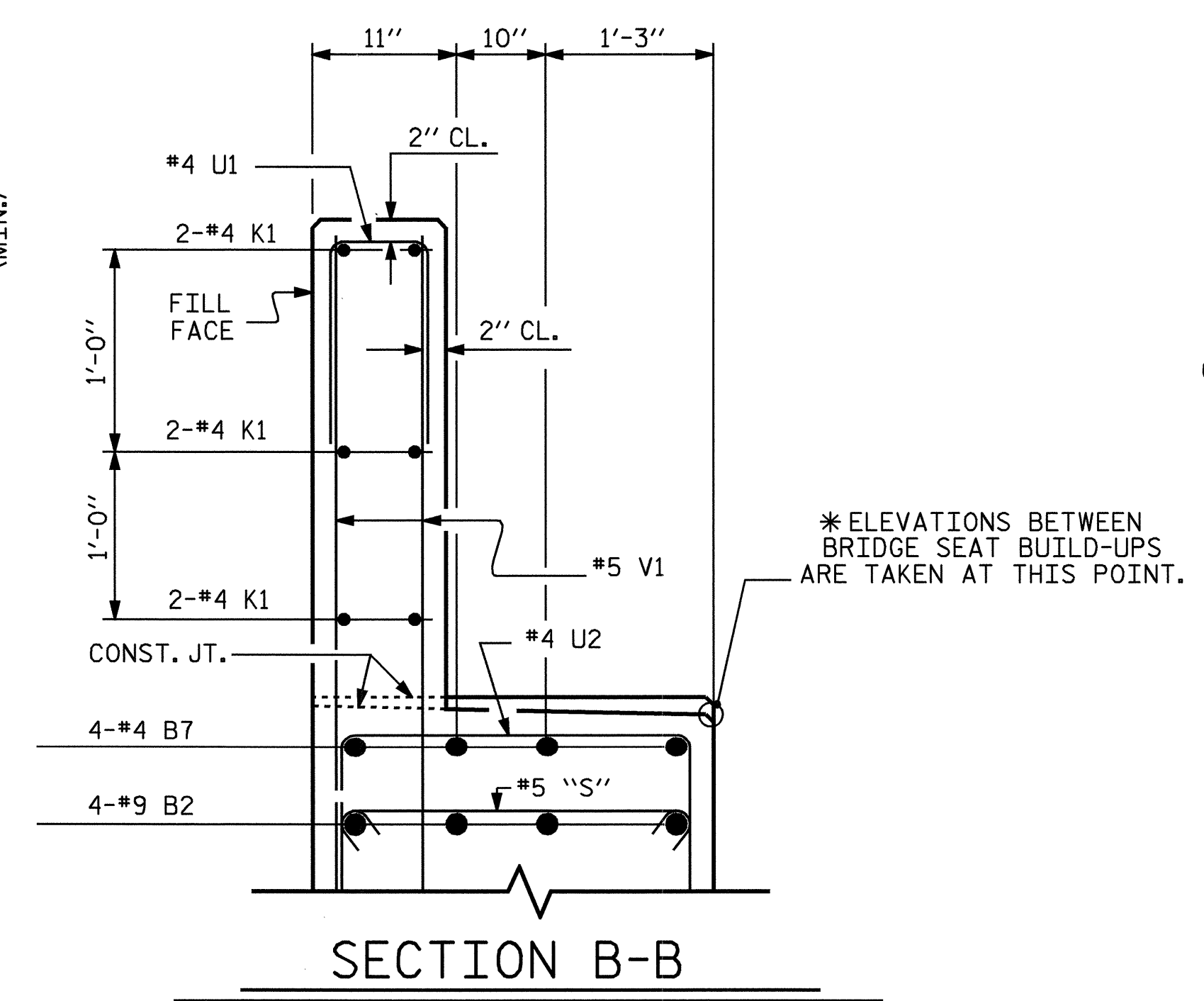
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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



BILL OF MATERIAL					
END BENT No. 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	9	1	36'-10"	1002
B2	4	9	1	58'-9"	799
B3	4	9	1	17'-5"	237
B4	4	5	STR	34'-0"	142
B5	12	4	STR	23'-3"	186
B6	16	4	STR	2'-8"	29
B7	8	4	STR	17'-9"	95
B8	8	4	STR	2'-8"	14
H1	16	4	2	8'-1"	86
H2	16	4	2	8'-7"	92
H3	8	4	STR	3'-6"	19
K1	18	4	STR	23'-3"	280
S1	62	5	3	7'-10"	507
S2	62	5	4	3'-7"	232
S3	26	4	5	6'-6"	113
U1	58	4	6	5'-2"	200
U2	29	4	6	5'-8"	110
V1	116	5	STR	5'-0"	605
V2	24	4	STR	6'-8"	107
V3	26	4	STR	6'-11"	120
REINFORCING STEEL					4975 LBS.
CLASS A CONCRETE BREAKDOWN					
POUR 1 (CAP & LOWER WINGS)					21.9 C.Y.
POUR 2 (BACKWALL & UPPER WINGS)					10.0 C.Y.
TOTAL					31.9 C.Y.
HP 12 x 53 STEEL PILES					
NO. 13					260 LIN FT.



PROJECT NO. B-3916

WAKE COUNTY

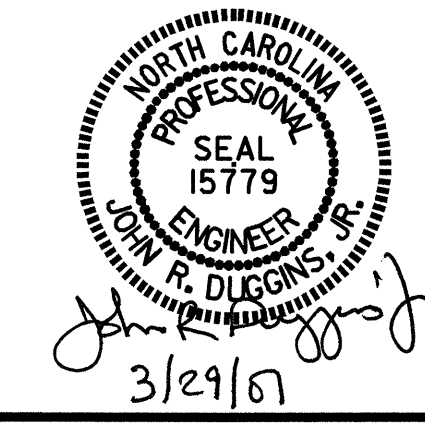
STATION: 20+35.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
SUBSTRUCTURE					
END BENT No. 2					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					30

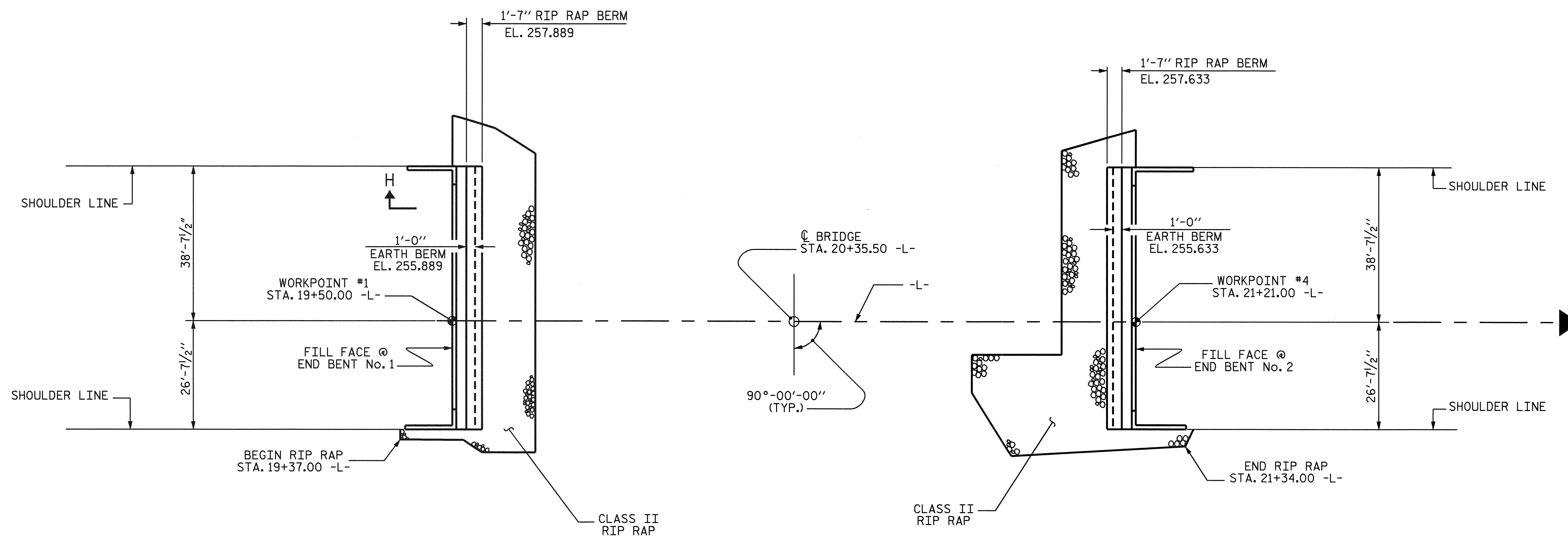
DRAWN BY: M. POOLE DATE: 07/06

CHECKED BY: J.R. DUGGINS DATE: 02/07



NOTES

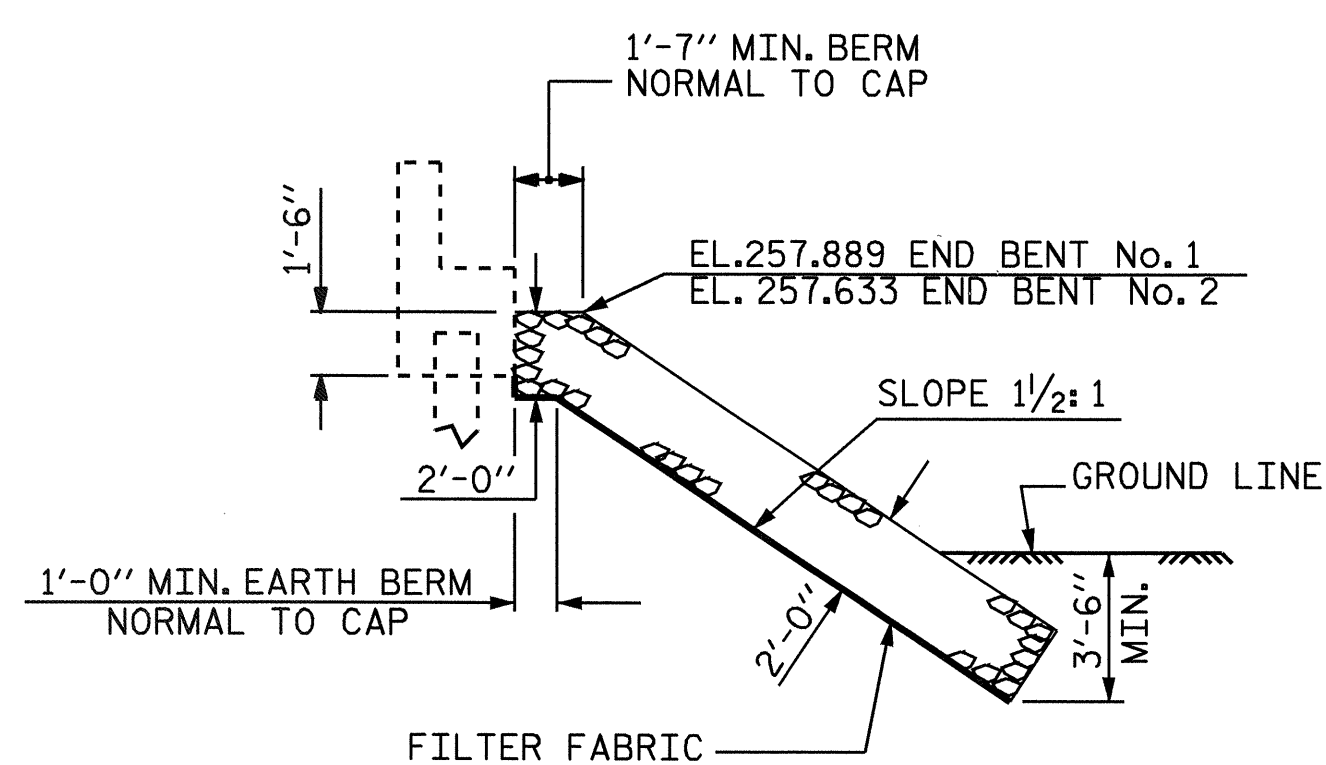
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.



PLAN

ESTIMATED QUANTITIES

BRIDGE @ STA. 20+35.50 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT No. 1	200	225
END BENT No. 2	190	210

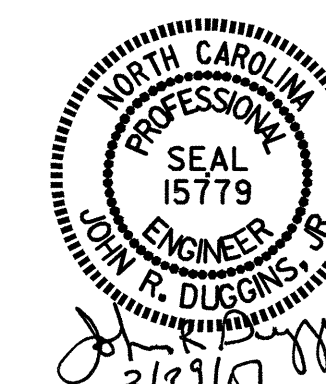


**SECTION
BERM RIP RAPPED**

PROJECT NO. B-3916
WAKE COUNTY
 STATION: 20+35.50 -L-

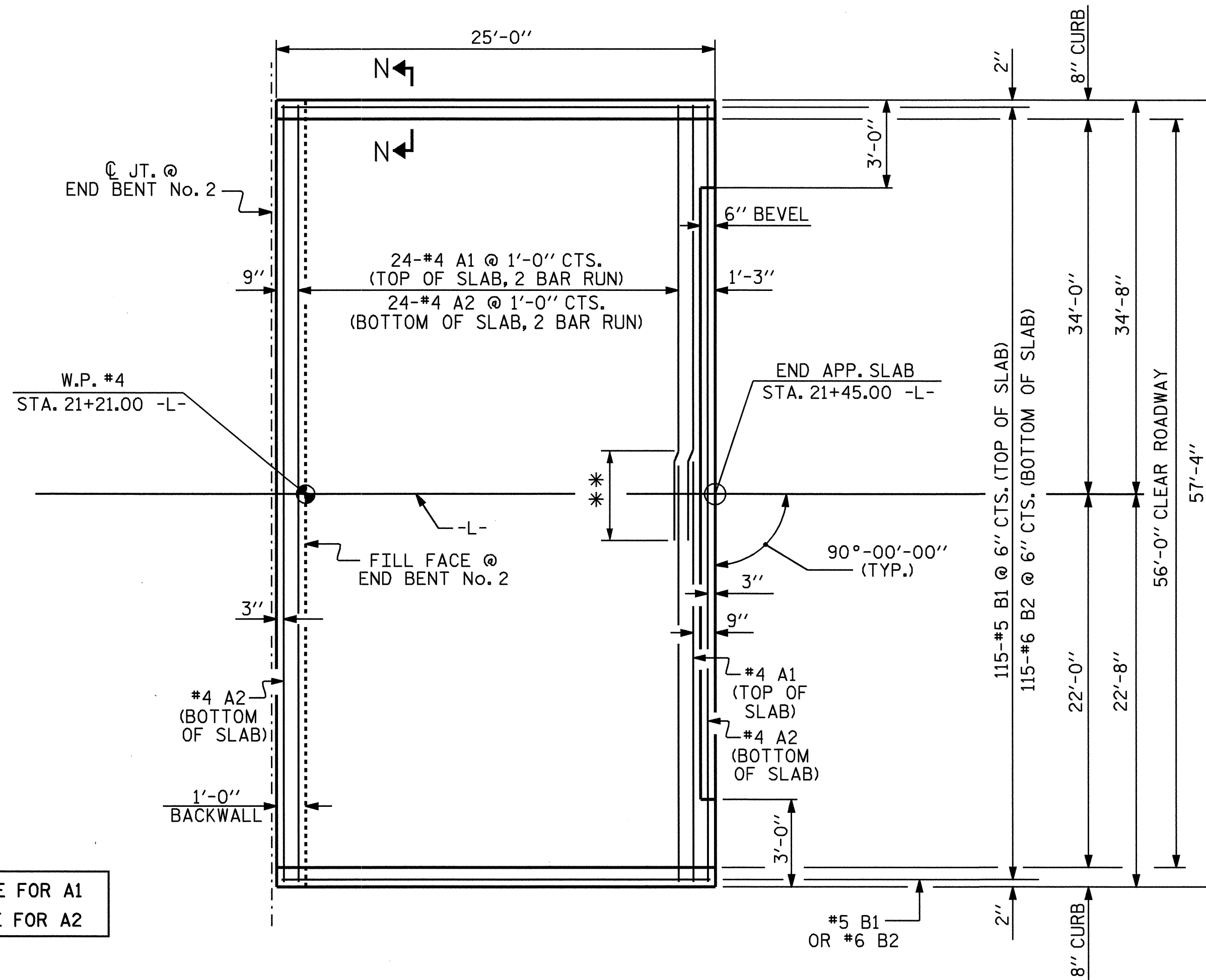
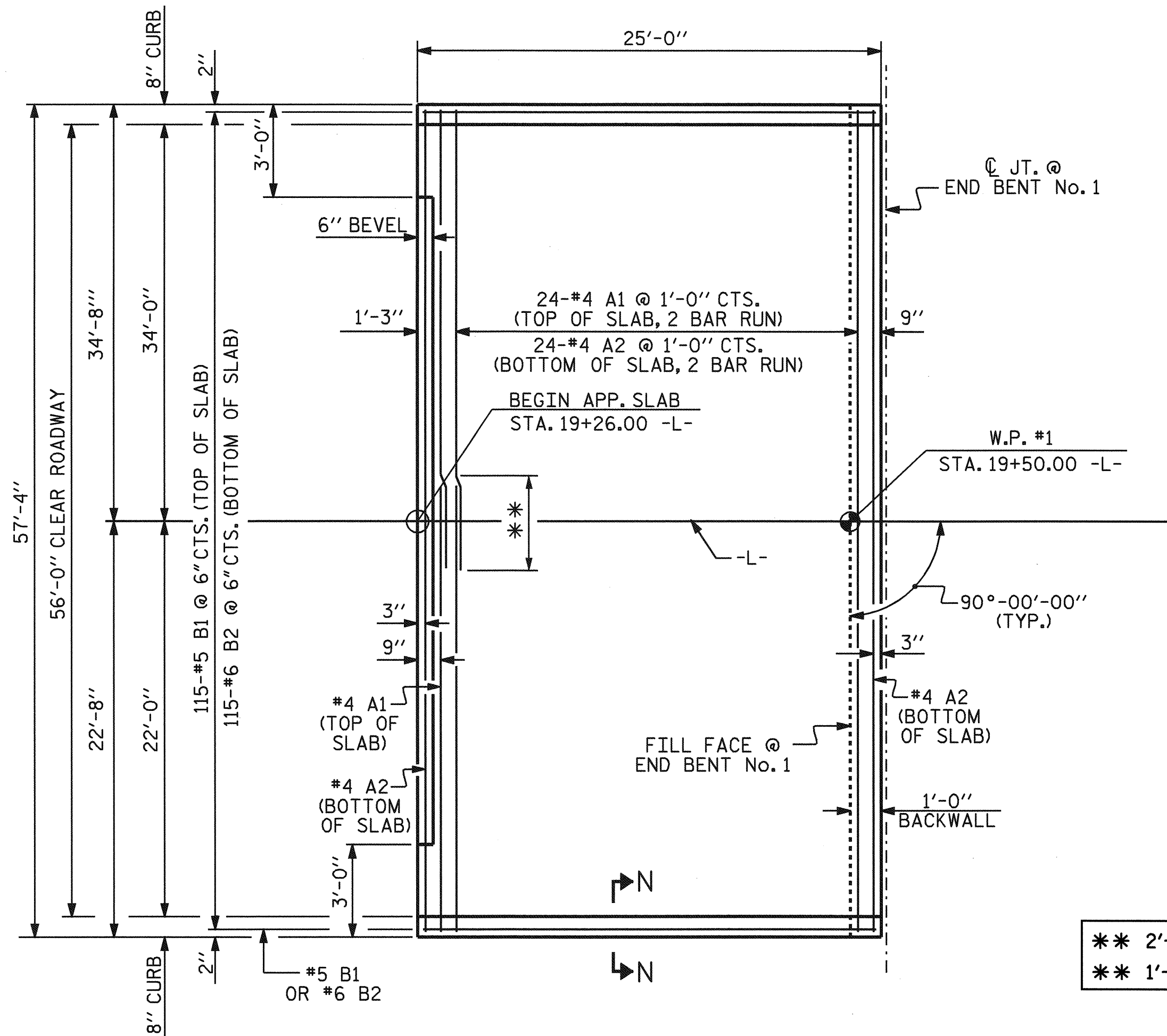
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

—RIP RAP DETAILS—



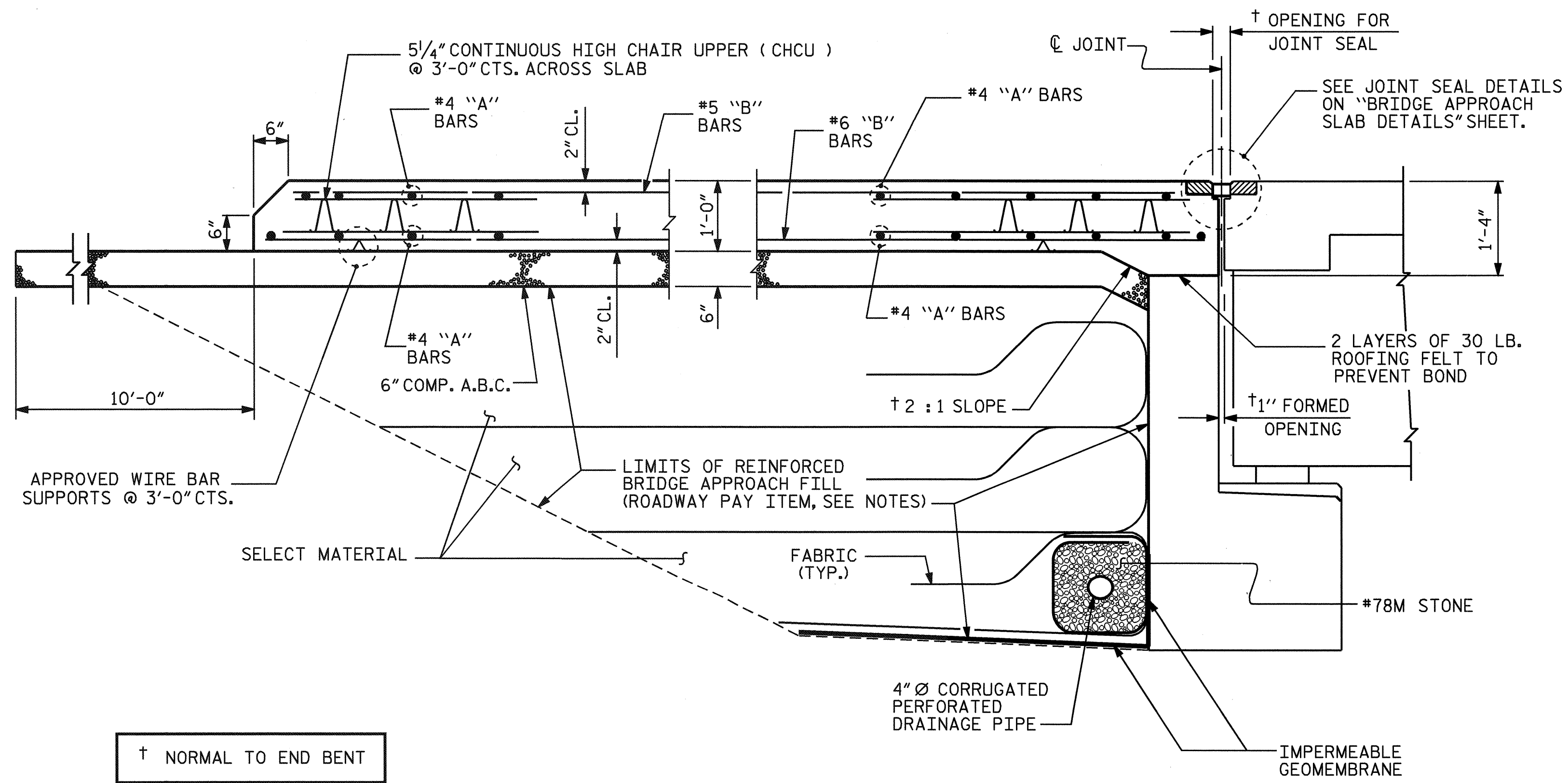
DRAWN BY: M. POOLE DATE: 10/06
 CHECKED BY: J.R. DUGGINS DATE: 02/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			5-28
2			4			30

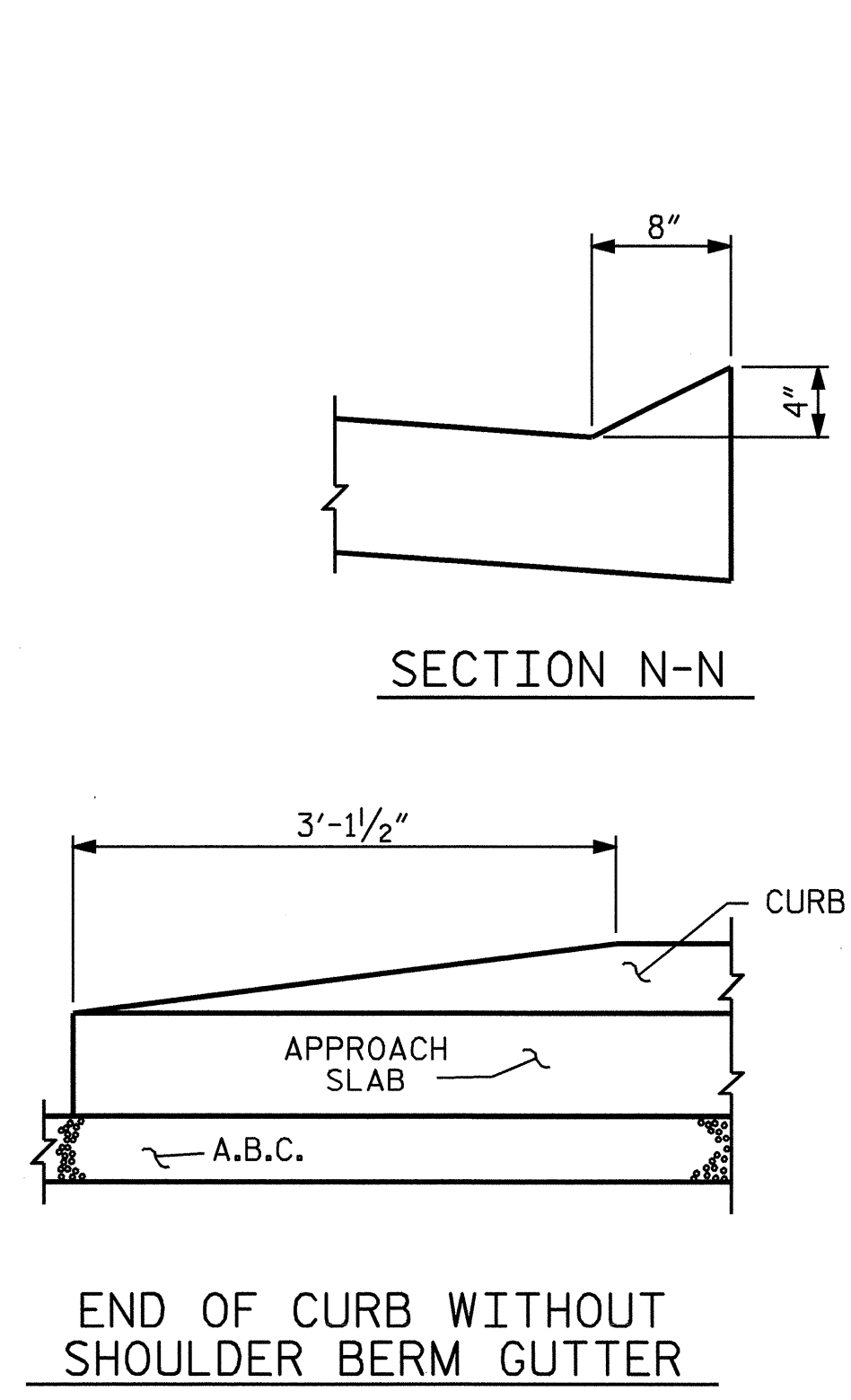


PLAN OF APPROACH SLAB @ END BENT No. 1

PLAN OF APPROACH SLAB @ END BENT No. 2



SECTION THRU SLAB

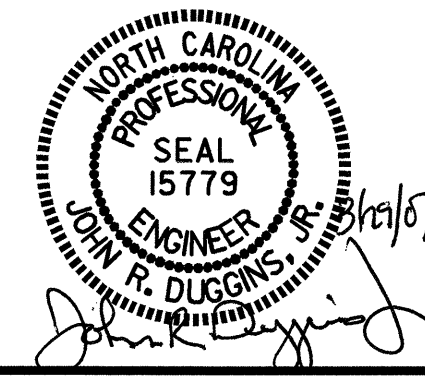


CURB DETAILS

BILL OF MATERIAL					
APPROACH SLAB AT END BENT No. 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	50	4	STR	29'-6"	985
A2	52	4	STR	29'-5"	1022
* B1	115	5	STR	23'-9"	2849
B2	115	6	STR	24'-8"	4261
REINFORCING STEEL				LBS.	5283
* EPOXY COATED REINFORCING STEEL				LBS.	3834
CLASS AA CONCRETE					54.0 C.Y.
APPROACH SLAB AT END BENT No. 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	50	4	STR	29'-6"	985
A2	52	4	STR	29'-5"	1022
* B1	115	5	STR	23'-9"	2849
B2	115	6	STR	24'-8"	4261
REINFORCING STEEL				LBS.	5283
* EPOXY COATED REINFORCING STEEL				LBS.	3834
CLASS AA CONCRETE					54.0 C.Y.

PROJECT NO. B-3916
 WAKE COUNTY
 STATION: 20+35.50 -L-

SHEET 1 OF 2
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 BRIDGE APPROACH SLAB
 FOR FLEXIBLE PAVEMENT



ASSEMBLED BY : M. POOLE	DATE : 10/06
CHECKED BY : J.R. DUGGINS	DATE : 02/07
DRAWN BY : EEM 3/95	REV. 10/17/00 RWW/LES
CHECKED BY : VAP 3/95	REV. 7/10/01 LES/RDR
	REV. 5/7/03R RWW/JTE

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

SHEET NO. S-29
TOTAL SHEETS 30

NOTES

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

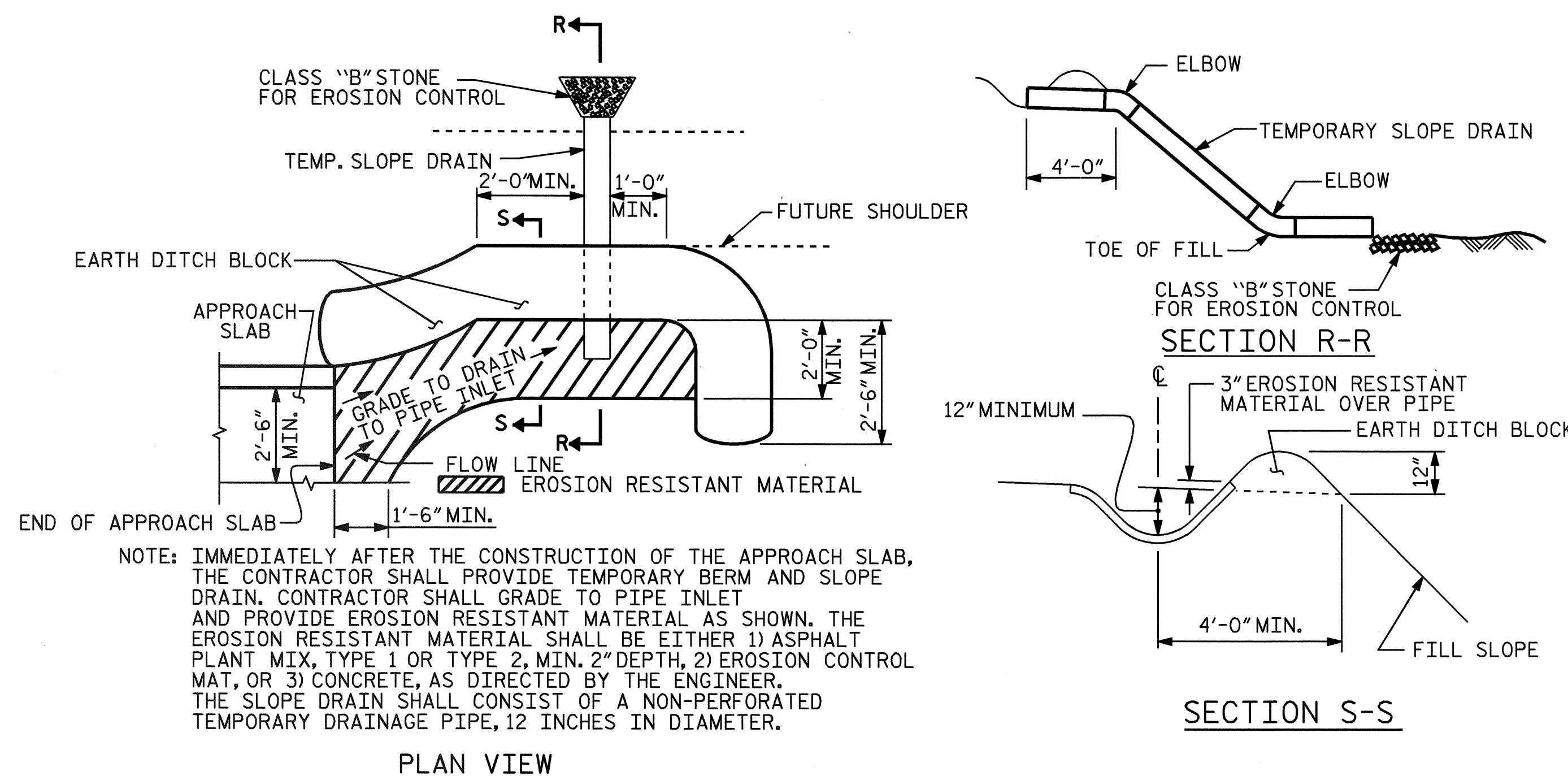
FOR REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

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

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

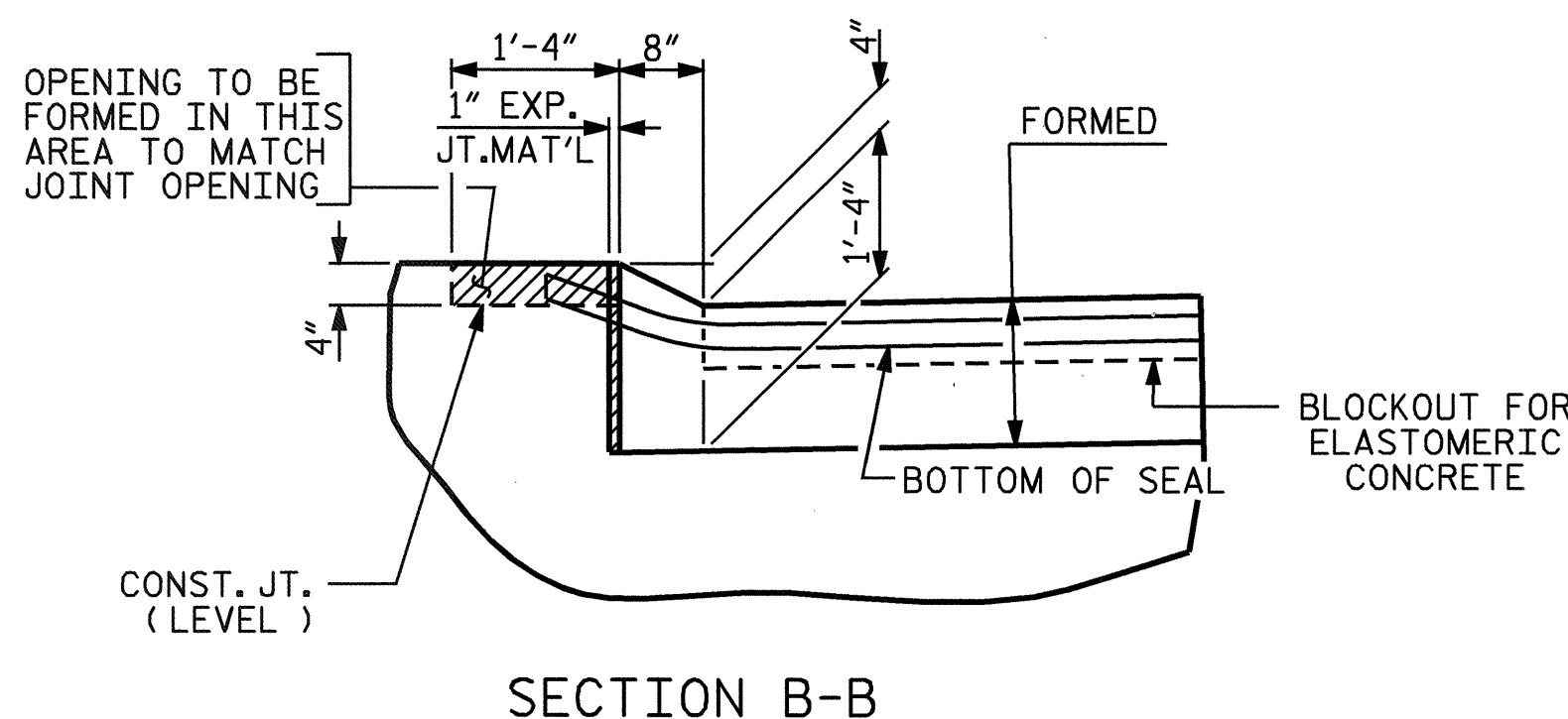
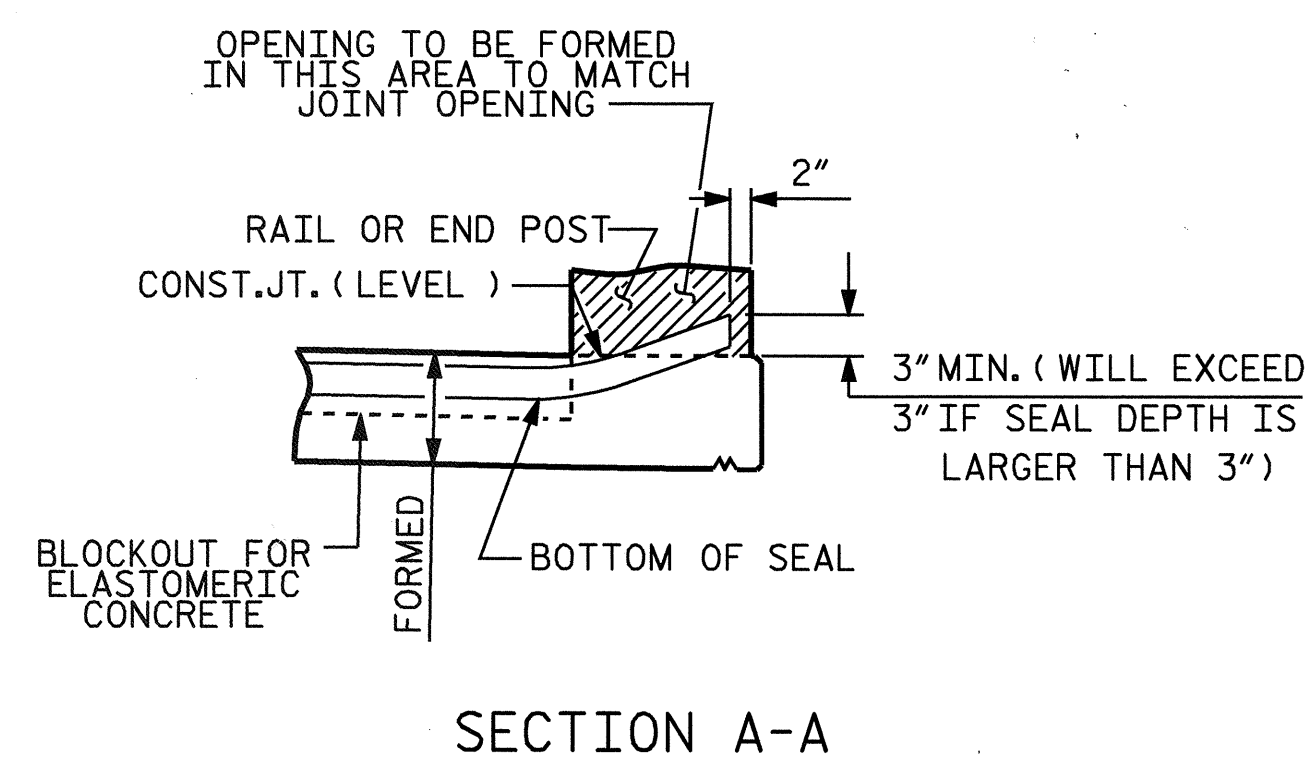
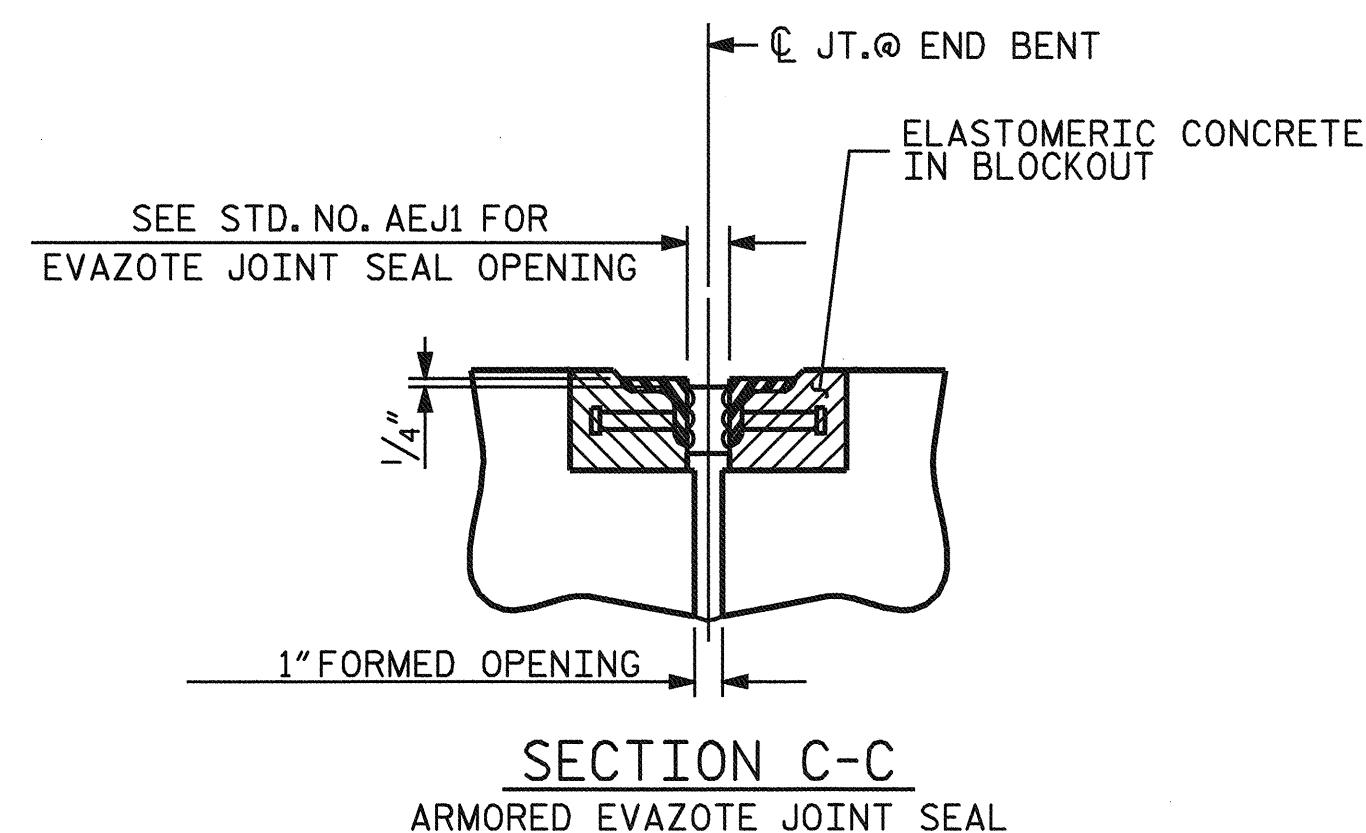
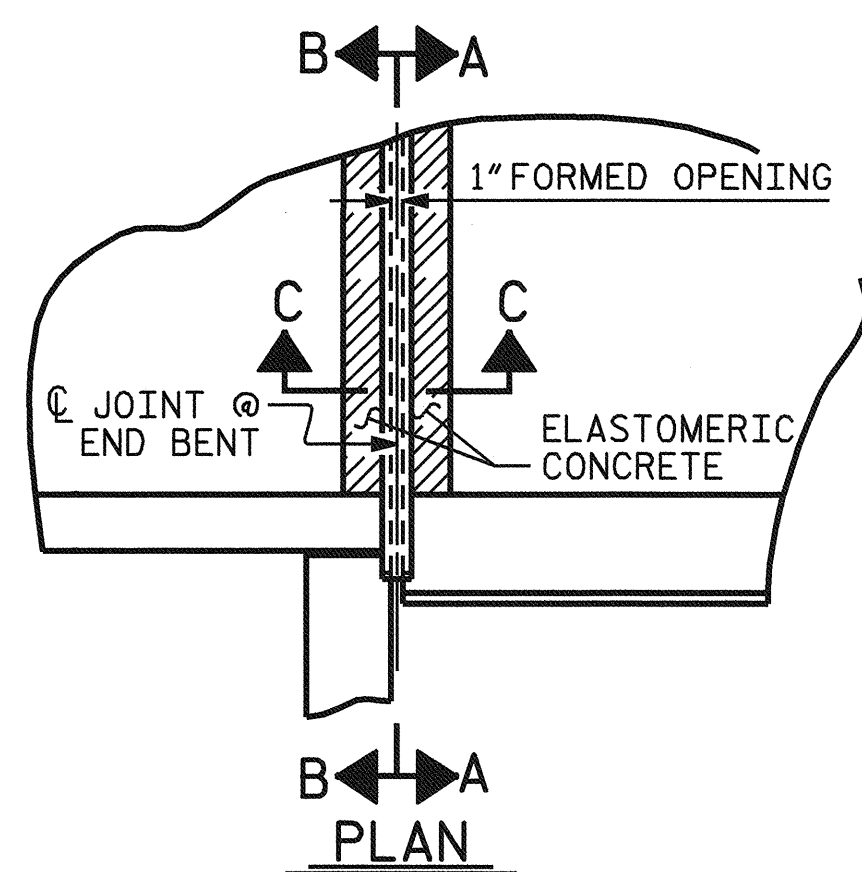
THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL EXTEND 1'-0" BEYOND THE END OF THE APPROACH SLAB AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

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

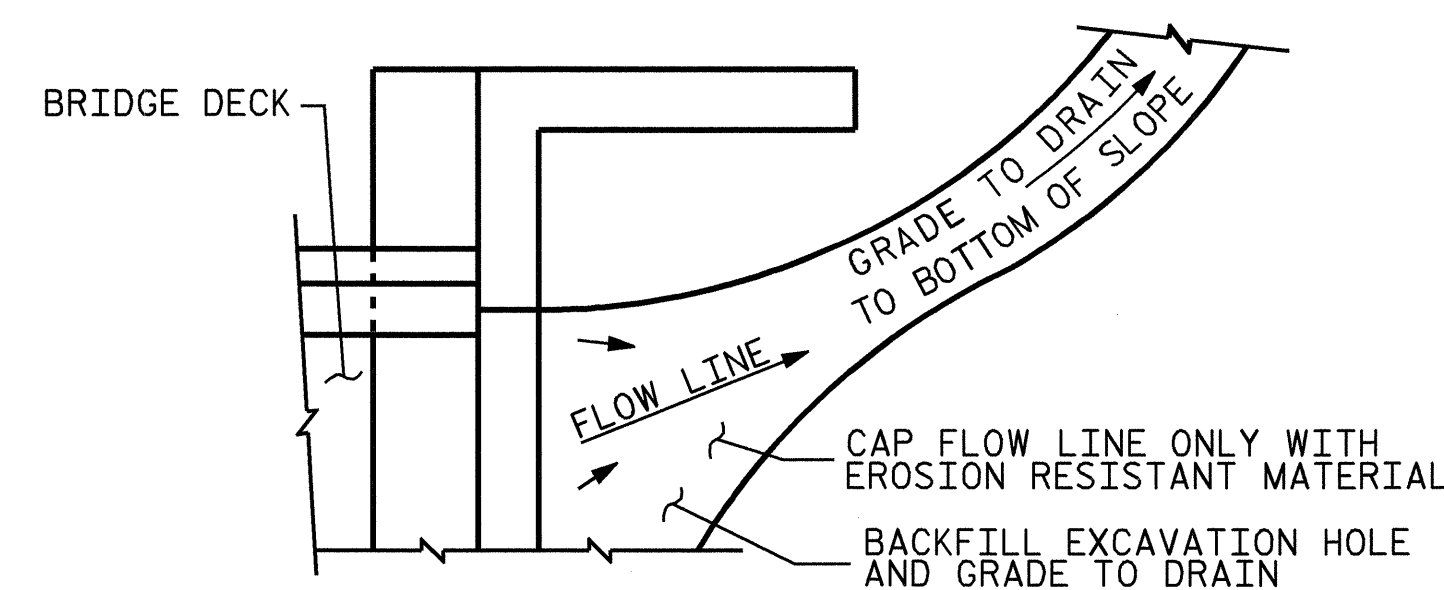


TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



JOINT SEAL DETAILS @ END BENT

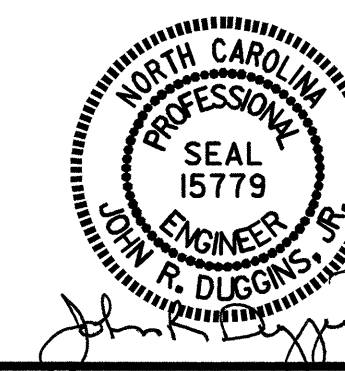


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

ASSEMBLED BY : M. POOLE	DATE : 10/06
CHECKED BY : J.R. DUGGINS	DATE : 02/07
DRAWN BY : FCJ 11/88	REV. 10/17/00 RWW/LES
CHECKED BY : ARB 11/88	REV. 5/1/03 RWW/JTE
	REV. 5/1/06 TLA/GM

12-MAR-2007 15:05
R:\Structures\b-3916\m\poole\Microstation\B3916.sd_AS.01.dgn
dahodge



PROJECT NO. B-3916
WAKE COUNTY
STATION: 20+35.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH
SLAB DETAILS

REVISIONS						1988
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-30
2			4			TOTAL SHEETS
						30

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

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

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

STD. NO. SN