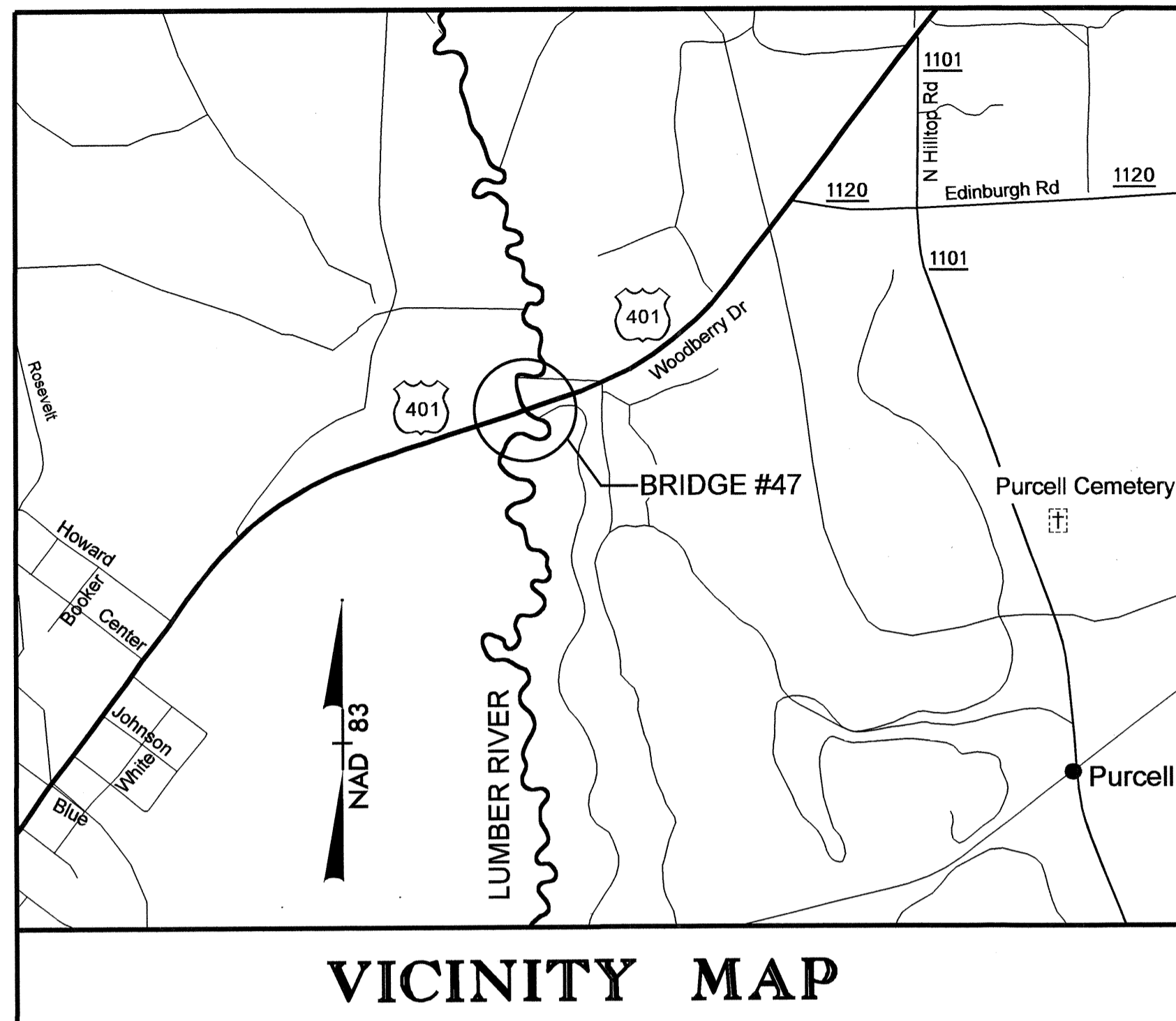


CONTRACT: C202949 TIP PROJECT: B-4273

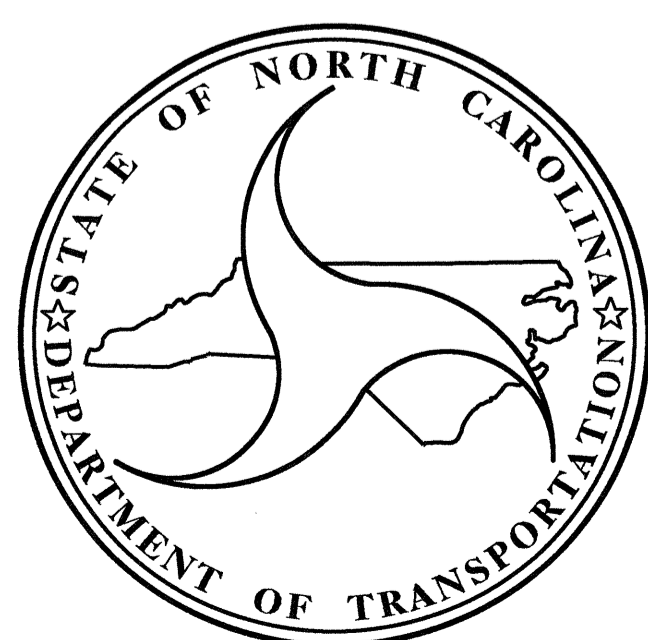
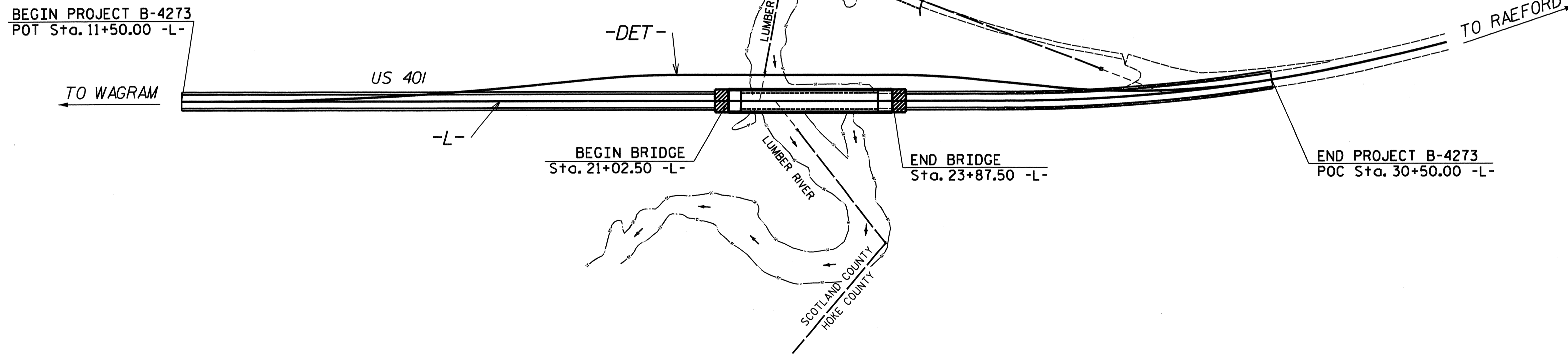
STRUCTURE



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SCOTLAND & HOKE COUNTIES

LOCATION: BRIDGE NO. 47 OVER LUMBER RIVER ON US 401
TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4273		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33614.1.1	BRNHS-401(14)	P.E.	
33614.2.1	BRNHS-401(14)	UTIL. & RW	
33614.3.1	BRNHS-401(14)	CONST.	



DESIGN DATA

ADT 2012 =	5,600
ADT 2032 =	7,500
DHV =	9 %
D =	55 %
T =	10 % *
V =	50 MPH
FUNC. CLASS = PRINCIPAL ARTERIAL	
* TTST 6 %	DUAL 4 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4273	=	0.306 mi.
LENGTH STRUCTURE TIP PROJECT B-4273	=	0.054 mi.
TOTAL LENGTH TIP PROJECT B-4273	=	0.360 mi.

Prepared In the Office of:

DIVISION OF HIGHWAYS

2012 STANDARD SPECIFICATIONS

<p>LETTING DATE : NOVEMBER 20, 2012</p>	<p>J. M. BAILEY, P.E. PROJECT ENGINEER</p> <hr/> <p>T. H. FANG, P.E. PROJECT DESIGN ENGINEER</p>
--	--

STRUCTURES MANAGEMENT UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.

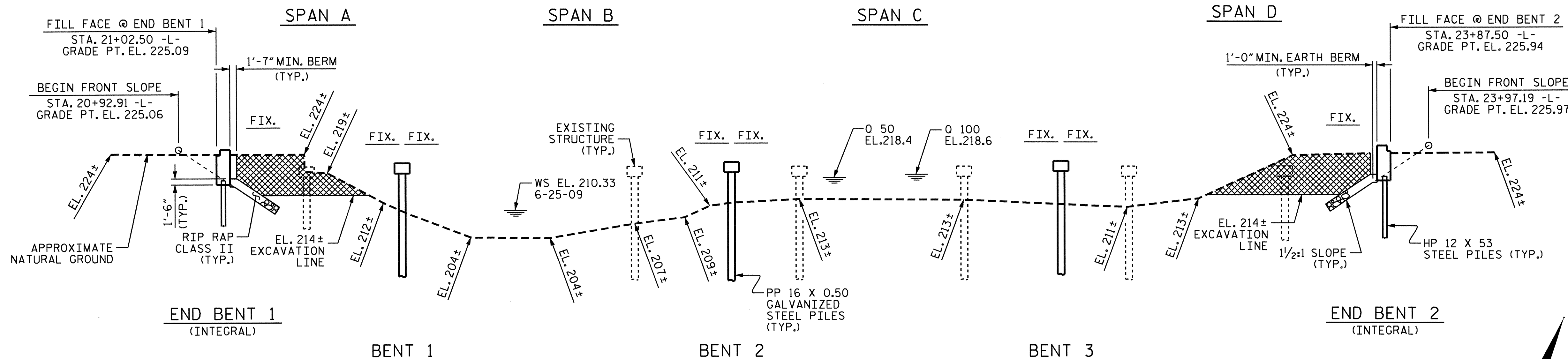
STATE DESIGN ENGINEER
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED _____
DIVISION ADMINISTRATOR DATE _____

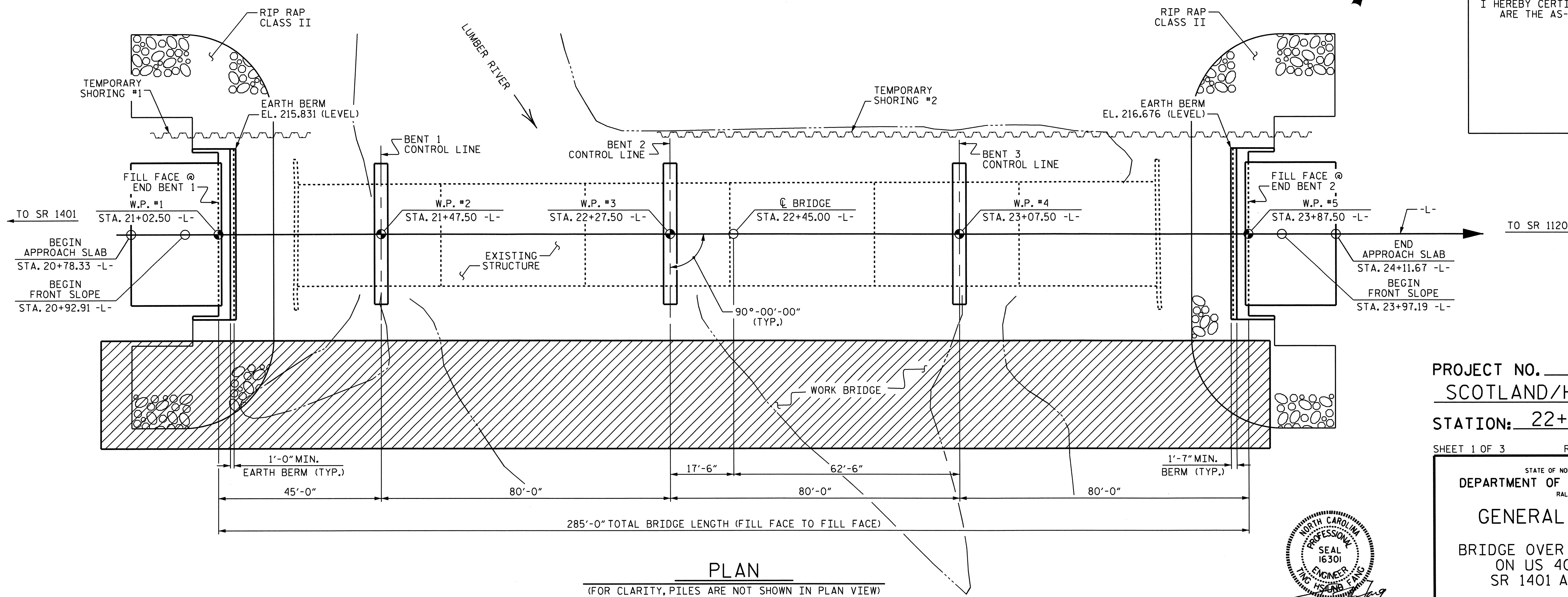
0.3000% Δ -0.4400%

PI STA. 24+50.00
EL = 226.13'
VC = 100'

GRADE DATA



I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS



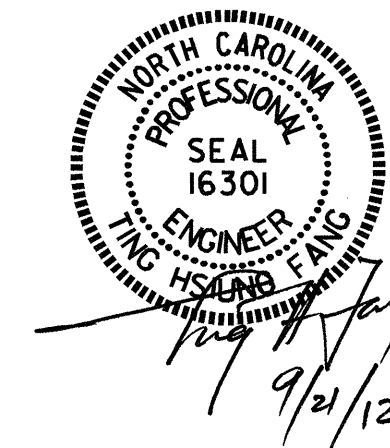
PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
STATION: 22+45.00 -L-

SHEET 1 OF 3 REPLACES BRIDGE NO. 47

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

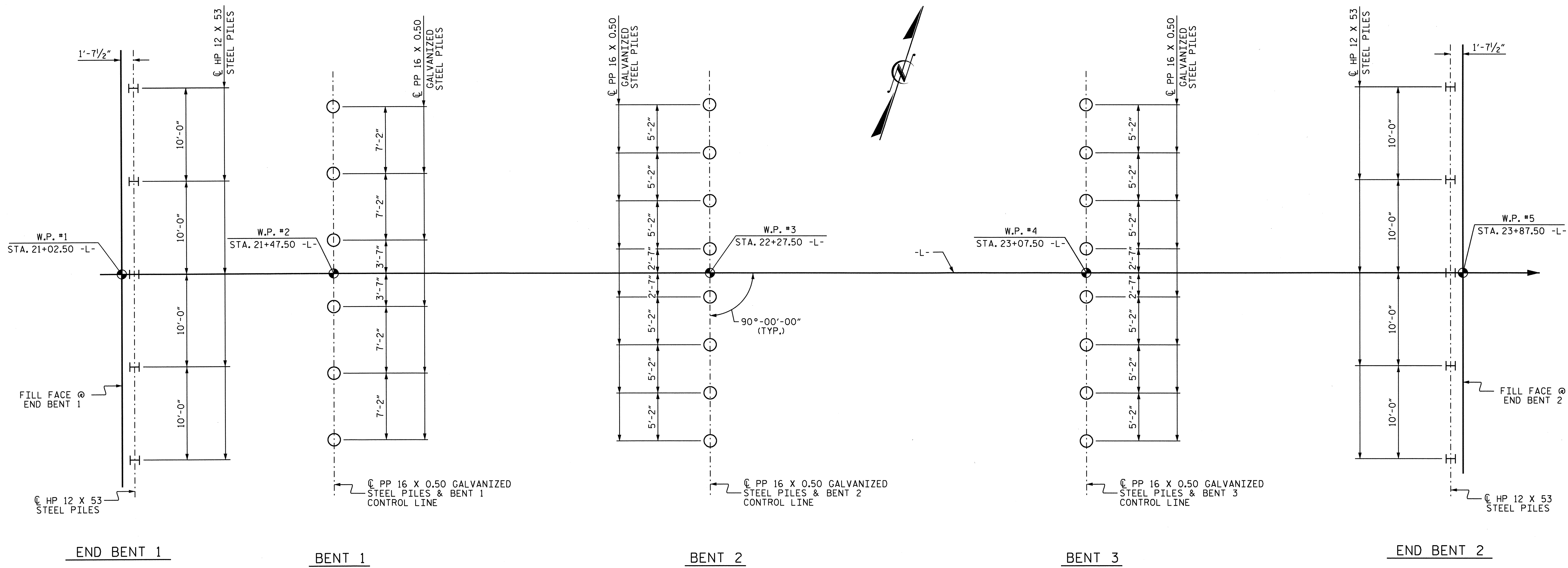
GENERAL DRAWING

BRIDGE OVER LUMBER RIVER
ON US 401 BETWEEN
SR 1401 AND SR 1120



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

DRAWN BY: E.C. LOCKLEAR DATE: 3-9-10
CHECKED BY: T.H. FANG DATE: 3-10-10



FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO THE CENTERLINE OF PILES.
ALL PILES ARE VERTICAL.

NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENTS 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 135 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.

PILES AT BENTS 1, 2 AND 3 ARE DESIGNED FOR A FACTORED RESISTANCE OF 160 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 270 TONS PER PILE. THE REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG AND SCOUR.

PIPE PILE PLATES MAY BE REQUIRED FOR STEEL PIPE PILES AT BENT 1, 2 OR 3. THE ENGINEER WILL DETERMINE THE NEED FOR PIPE PILE PLATES AFTER DRIVING TEST PILES OR A FEW INITIAL PRODUCTION PILES. USE PIPE PILE PLATES WITH A DIAMETER EQUAL TO THE PIPE PILE DIAMETER. FOR STEEL PIPE PILE PLATES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

INSTALL PILES AT BENTS 1, 2 AND 3 TO A TIP ELEVATION NO HIGHER THAN 182 FT.

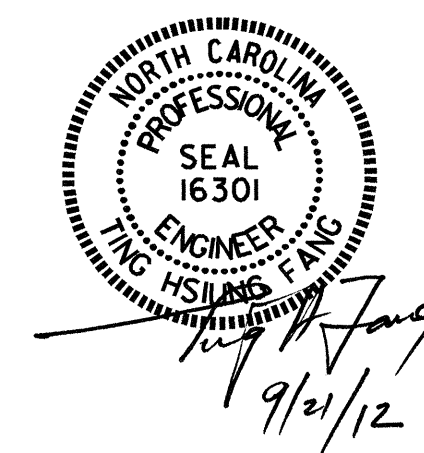
THE SCOUR CRITICAL ELEVATION FOR BENT 1 IS ELEVATION 203 FT., BENT 2 IS ELEVATION 204 FT., AND BENT 3 IS ELEVATION 204 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

TESTING THE FIRST PRODUCTION 16 X 0.50 PIPE PILE WITH THE PILE DRIVING ANALYZER DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT BENT 1, 2 OR 3. DRIVE THE PILE TO A TIP ELEVATION OF 155 FT. FOR PILE DRIVING ANALYZER, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

TESTING THE FIRST PRODUCTION HP 12 X 53 STEEL PILE WITH THE PILE DRIVING ANALYZER DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT END BENT 1 OR 2. DRIVE THE PILE TO A TIP ELEVATION OF 155 FT. FOR PILE DRIVING ANALYZER, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

SHEET 2 OF 3



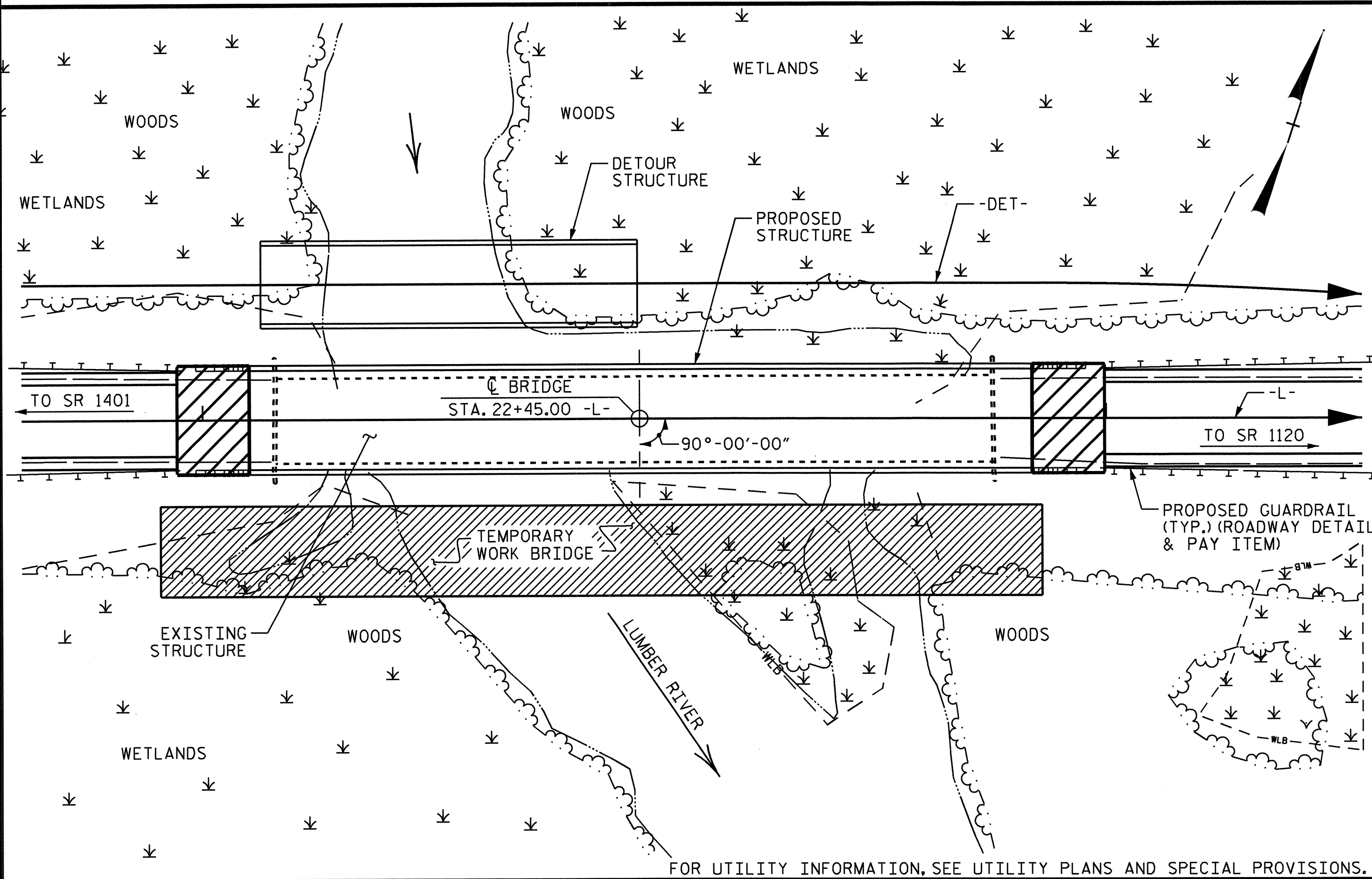
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 BRIDGE OVER LUMBER RIVER
 ON US 401 BETWEEN
 SR 1401 AND SR 1120

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

DRAWN BY : HARISH SHAH DATE : 6-23-10
 CHECKED BY : J.A. YANNACCONE DATE : 2-22-11

TOTAL BILL OF MATERIAL																						
	CONST. MAINT. & REMOVAL OF TEMP. STRUCT.	CONST. MAINT. & REMOVAL OF TEMP. ACCESS	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	45° PRESTRESSED CONCRETE GIRDERS	HP 12 X 53 STEEL PILES	PP 16 X 0.50 GALVANIZED STEEL PILES	PIPE PILE PLATES	PILE REDRIVES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS			
	LUMP SUM	LUMP SUM	LUMP SUM	EACH	LUMP SUM	SO. FT.	SO. FT.	CU. YDS.	LUMP SUM	LBS.	NO.	NO.	NO.	NO.	EACH	EACH	TONS	SO. YDS.	LUMP SUM			
SUPERSTRUCTURE						11,756	11,597				20	1,402.92					566.67					
END BENT 1								23.7		3,121		5	300		5		250	275				
BENT 1								17.5		2,913				6	6							
BENT 2								17.4		2,666				8	8							
BENT 3								17.4		2,666				8	8							
END BENT 2								23.7		3,458		5	300		5		275	305				
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	2	LUMP SUM	11,756	11,597	99.7	LUMP SUM	14,824	20	1,402.92	10	600	22	1,540	22	32	566.67	525	580	LUMP SUM

BENCH MARK #2: RR SPIKE IN BASE OF 10" GUM, 240.11' LEFT OF STA. 42+59.33 -BL-, EL. 215.50.



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE	= 4400 CFS
FREQUENCY OF DESIGN FLOOD	= 50 YEARS
DESIGN HIGH WATER ELEVATION	= 218.3
DRAINAGE AREA	= 336 SQ. MI.
BASE DISCHARGE (Q100)	= 5000 CFS
BASE HIGH WATER ELEVATION	= 218.6

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= > 6400 CFS
FREQUENCY OF OVERTOPPING FLOOD	= > 500 YRS
OVERTOPPING FLOOD ELEVATION	= 223.2

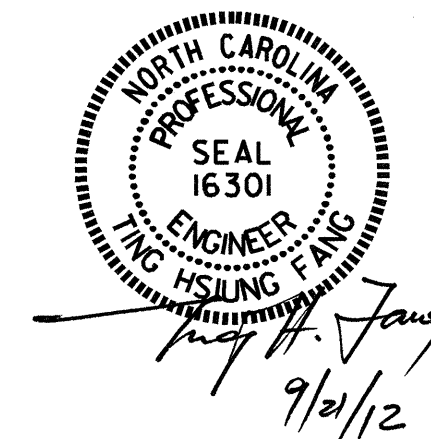
NOTES:

- ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
- THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", MAY, 2001.
- REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
- FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 22+45.00 -L-, SEE SPECIAL PROVISIONS.
- THE EXISTING STRUCTURE CONSISTING OF SIX 40'-0" SPANS; 26'-0" CLEAR ROADWAY WIDTH ON 4 REINFORCED CONCRETE DECK GIRDERS @ 7'-6" CENTERS; SUBSTRUCTURE CONSISTING OF END BENTS AND INTERIOR BENTS ON REINFORCED CONCRETE CAPS ON REINFORCED CONCRETE PILES LOCATED AT THE PROPOSED STRUCTURE SITE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.
- 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 STANDARD SPECIFICATIONS.
- THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY STRUCTURE AT STATION 22+45.00 -L- FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS.
- THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 35 FT. EACH SIDE OF CENTERLINE ROADWAY AT END BENT 1 AND 30 FT. LEFT SIDE, 45 FT. RIGHT SIDE OF CENTERLINE ROADWAY AT END BENT 2 OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATION.
- 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.
- FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.
- THE 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 SPICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.
- 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.
- 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 GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR PILE DRIVING CRITERIA, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, 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.
- FOR INTERIOR BENTS 1 THRU 3, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEETS FOR REQUIRED GALVANIZED LENGTHS. PAYMENT FOR PARTIALLY GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.

PROJECT NO. B-4273
 SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 BRIDGE OVER LUMBER RIVER
 ON US 401 BETWEEN
 SR 1401 AND SR 1120



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

DRAWN BY: HARISH SHAH DATE: 6-23-10
 CHECKED BY: J.A. YANNACCONE DATE: 2-22-11

LOAD FACTORS:

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

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT						
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	①	1.019	--	1.75	0.834	1.24	A	I	21.146	0.867	1.14	A	I	12.688	0.80	0.867	1.02	B	I	38.917		
	HL-93(0pr)	N/A	--	1.48	--	1.35	0.834	1.61	A	I	21.146	0.867	1.48	A	I	12.688	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	②	1.332	47.966	1.75	0.834	1.51	A	I	21.146	0.867	1.33	A	I	12.688	0.80	0.722	1.35	B	I	38.917		
	HS-20(0pr)	36.000	--	1.727	62.178	1.35	0.834	1.96	A	I	21.146	0.867	1.73	A	I	12.688	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.088	41.688	1.4	0.834	3.64	A	I	21.146	0.867	3.33	A	I	12.688	0.80	0.722	3.09	B	I	38.917	
		SNGARBS2	20.000	--	2.285	45.691	1.4	0.834	2.96	A	I	16.917	0.867	2.55	A	I	12.688	0.80	0.722	2.28	B	I	38.917	
		SNAGRIS2	22.000	--	2.157	47.445	1.4	0.834	2.87	A	I	16.917	0.867	2.44	A	I	12.688	0.80	0.722	2.16	B	I	38.917	
		SNCOTTS3	27.250	--	1.536	41.862	1.4	0.834	1.82	A	I	21.146	0.867	1.68	A	I	12.688	0.80	0.722	1.54	B	I	38.917	
		SNAGGRS4	34.925	--	1.277	44.613	1.4	0.834	1.61	A	I	21.146	0.867	1.53	A	I	12.688	0.80	0.722	1.28	B	I	38.917	
		SNS5A	35.550	--	1.25	44.423	1.4	0.834	1.57	A	I	21.146	0.867	1.62	A	I	12.688	0.80	0.722	1.25	B	I	38.917	
		SNS6A	39.950	--	1.144	45.696	1.4	0.834	1.48	A	I	21.146	0.867	1.55	A	I	12.688	0.80	0.722	1.14	B	I	38.917	
	SNS7B	42.000	--	1.089	45.746	1.4	0.834	1.41	A	I	21.146	0.867	1.62	A	I	12.688	0.80	0.722	1.09	B	I	38.917		
	TTST	TNAGRIT3	33.000	--	1.394	46.004	1.4	0.834	1.82	A	I	21.146	0.867	1.79	A	I	12.688	0.80	0.722	1.39	B	I	38.917	
		TNT4A	33.075	--	1.399	46.288	1.4	0.834	1.84	A	I	21.146	0.867	1.67	A	I	12.688	0.80	0.722	1.40	B	I	38.917	
		TNT6A	41.600	--	1.142	47.495	1.4	0.834	1.55	A	I	21.146	0.867	1.68	A	I	12.688	0.80	0.722	1.14	B	I	38.917	
		TNT7A	42.000	--	1.146	48.135	1.4	0.834	1.58	A	I	21.146	0.867	1.57	A	I	12.688	0.80	0.722	1.15	B	I	38.917	
		TNT7B	42.000	--	1.182	49.657	1.4	0.834	1.65	A	I	21.146	0.867	1.49	A	I	12.688	0.80	0.722	1.18	B	I	38.917	
		TNAGRIT4	43.000	--	1.127	48.469	1.4	0.834	1.57	A	I	21.146	0.867	1.44	A	I	12.688	0.80	0.722	1.13	B	I	38.917	
TNAGT5A		45.000	--	1.064	47.879	1.4	0.834	1.46	A	I	21.146	0.867	1.54	A	I	12.688	0.80	0.722	1.06	B	I	38.917		
TNAGT5B	45.000	③	1.052	47.346	1.4	0.834	1.42	A	I	21.146	0.867	1.35	A	I	12.688	0.80	0.722	1.05	B	I	38.917			

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

- 1.
- 2.
- 3.
- 4.

⑥ CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

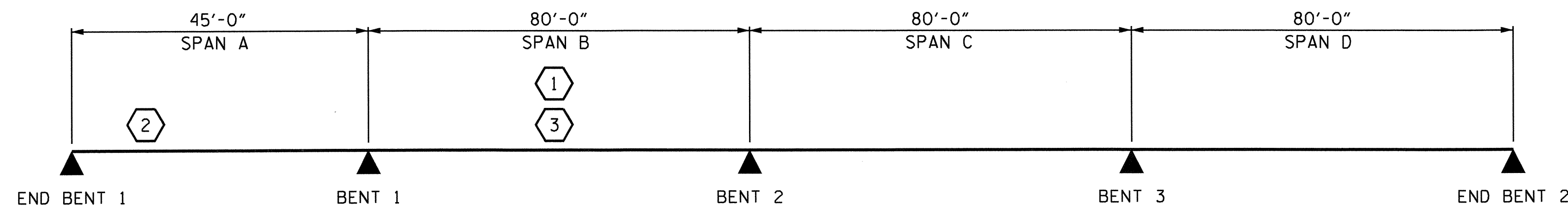
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING ***

*** SEE CHART FOR VEHICLE TYPE

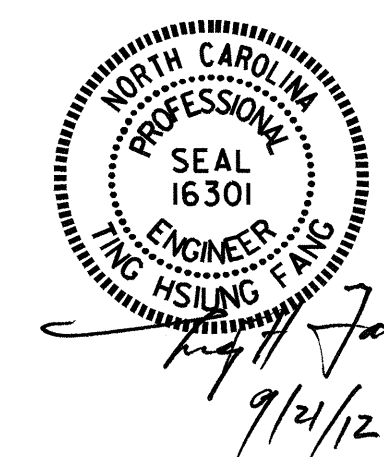
GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
STATION: 22+45.00 -L-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR
PRESTRESSED
CONCRETE GIRDERS
(NON-INTERSTATE TRAFFIC)

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

ASSEMBLED BY : R.P.PATEL DATE : 5-3-12
CHECKED BY : T.H.FANG DATE : 5-4-12
DRAWN BY : MAA 1/08 REV. 11/12/08R MAA/GM
CHECKED BY : GM/DI 2/08

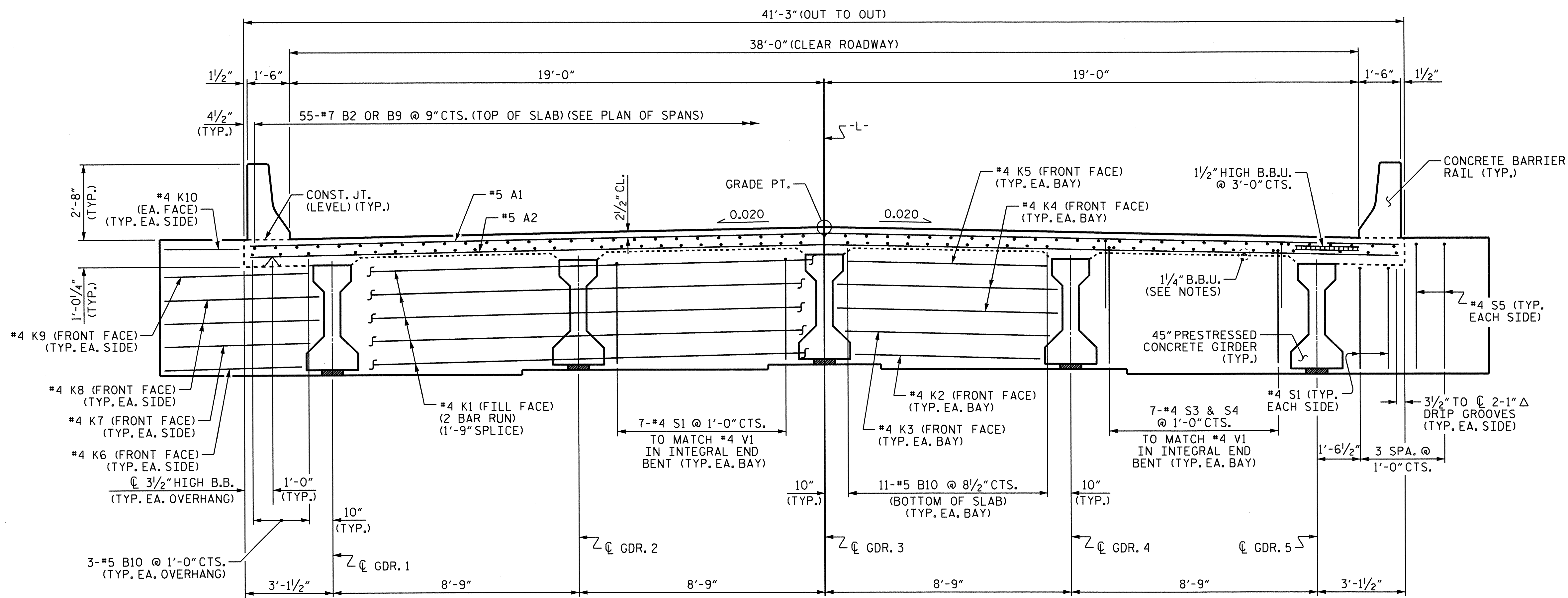
NOTES

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

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

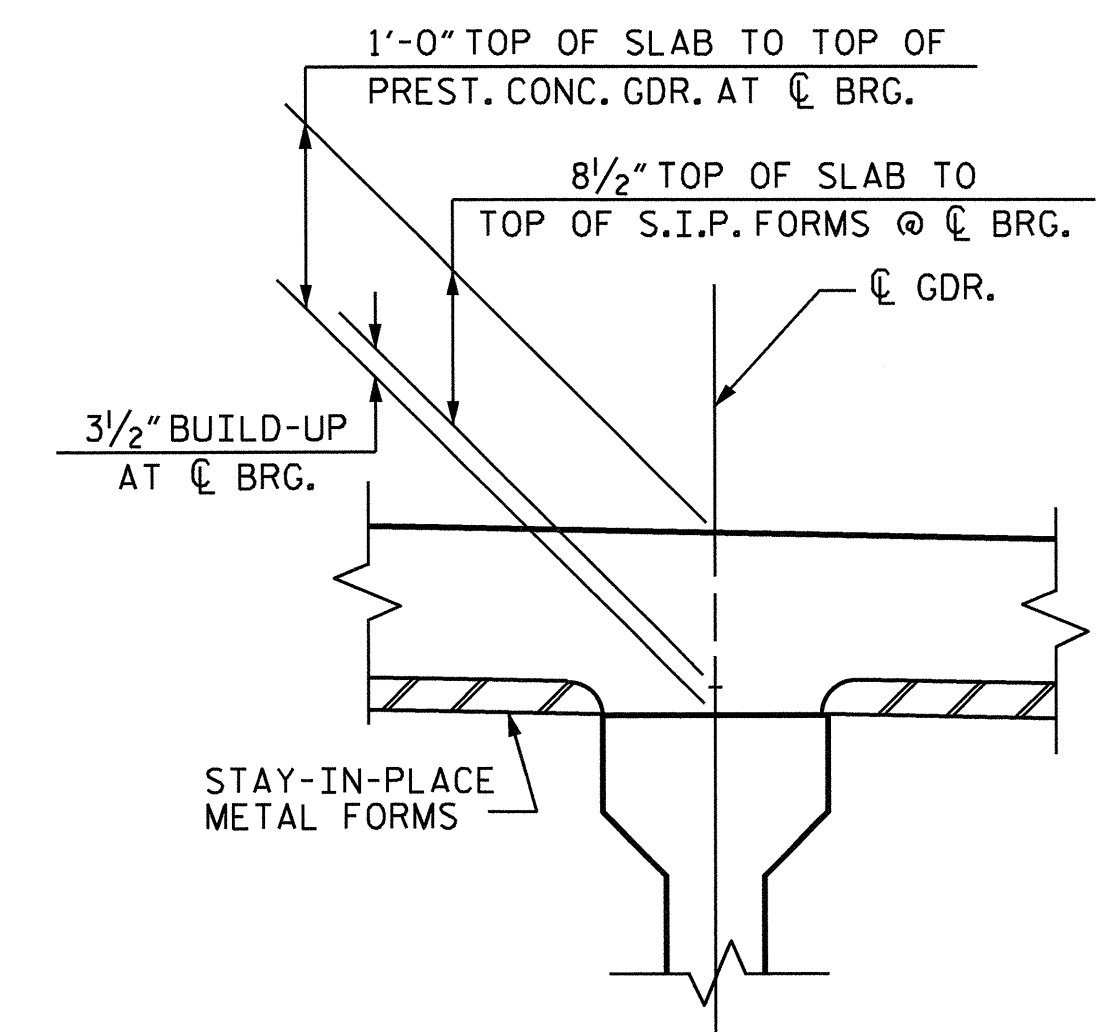
PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

FOR WING ELEVATIONS AND DETAILS, SEE "PLAN OF SPANS DETAILS" SHEETS.

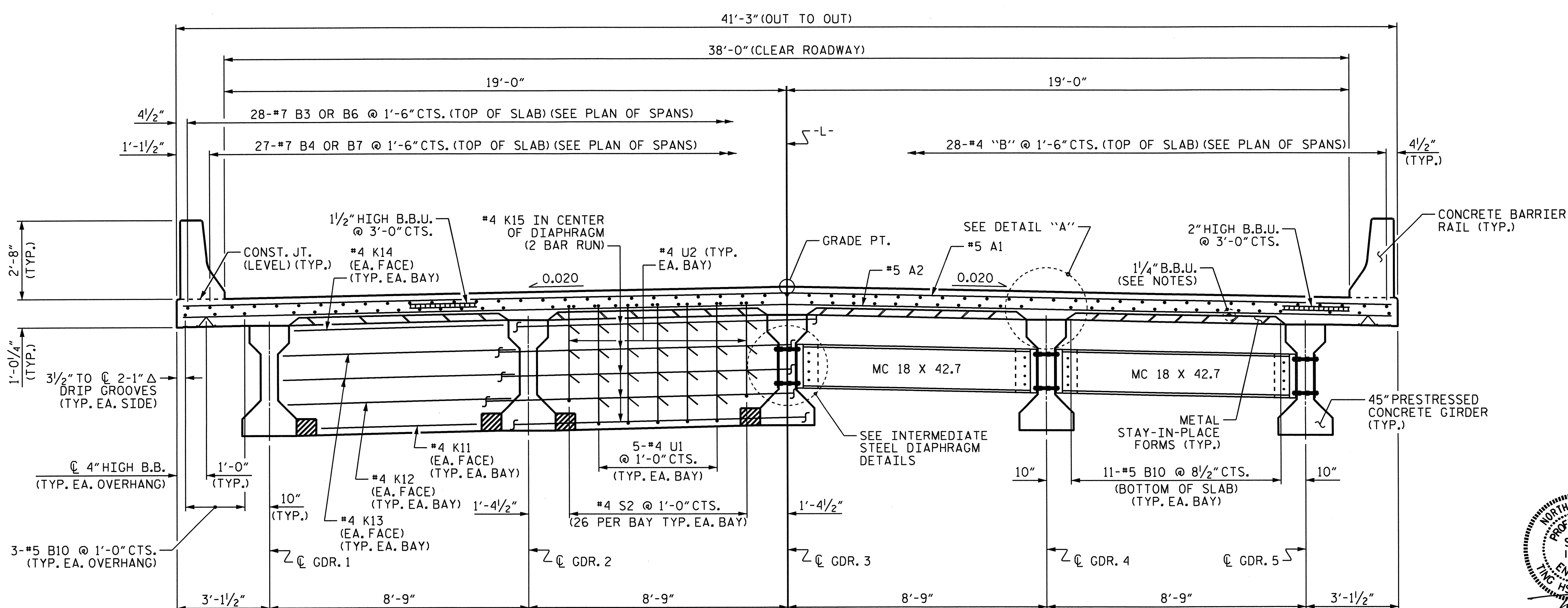


TYPICAL SECTION

SHOWING ABUTMENT WALL AT END BENT WINGS, APPROACH SLAB BLOCKOUT & SIP FORMS NOT SHOWN FOR CLARITY.



DETAIL A



HALF TYPICAL SECTION

(SHOWING BENT DIAPHRAGM)

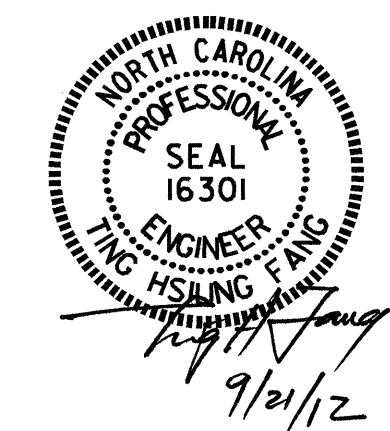
HALF TYPICAL SECTION

(SHOWING INTERMEDIATE DIAPHRAGMS)

PROJECT NO. B-4273
 SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

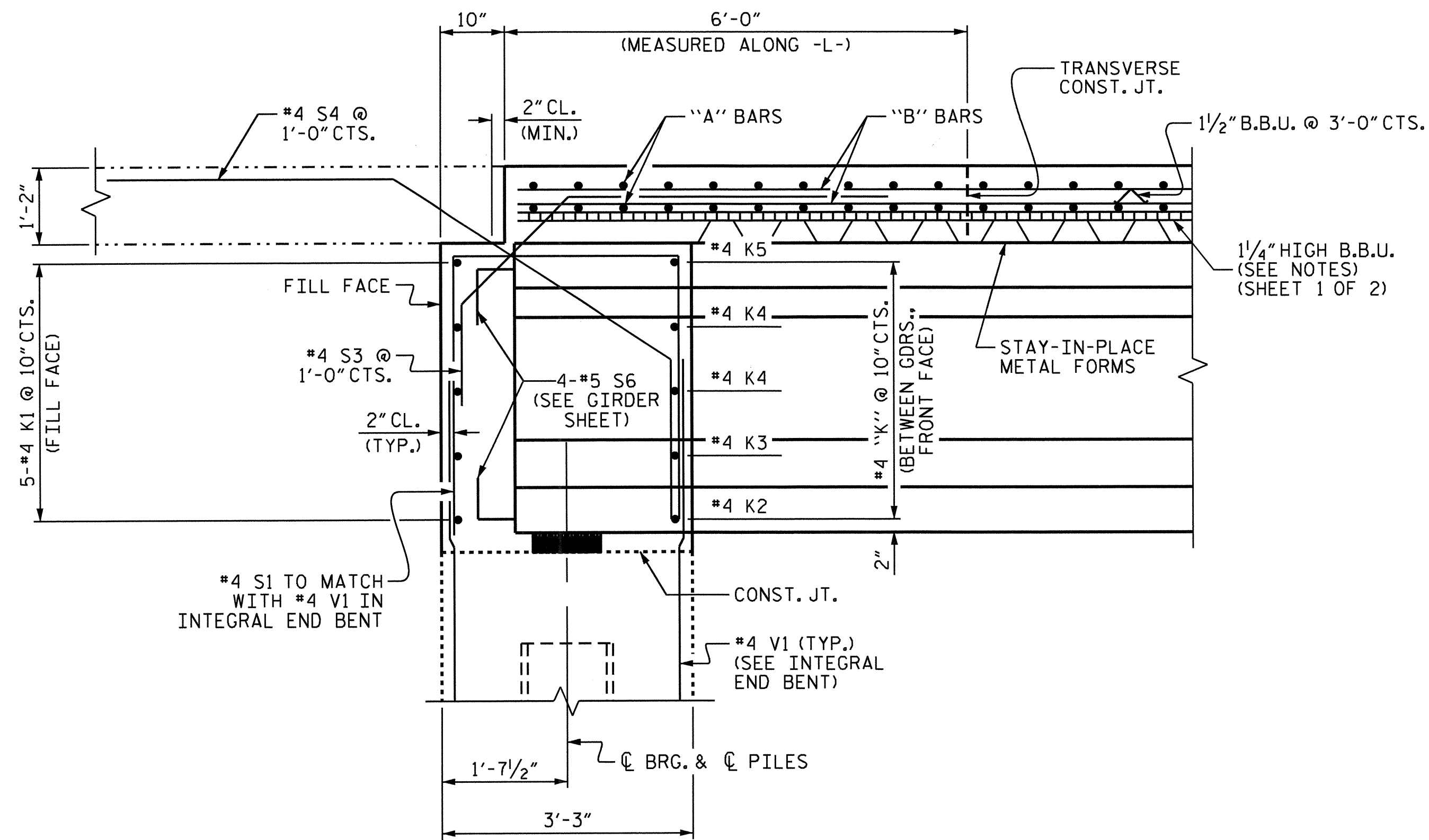
SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION

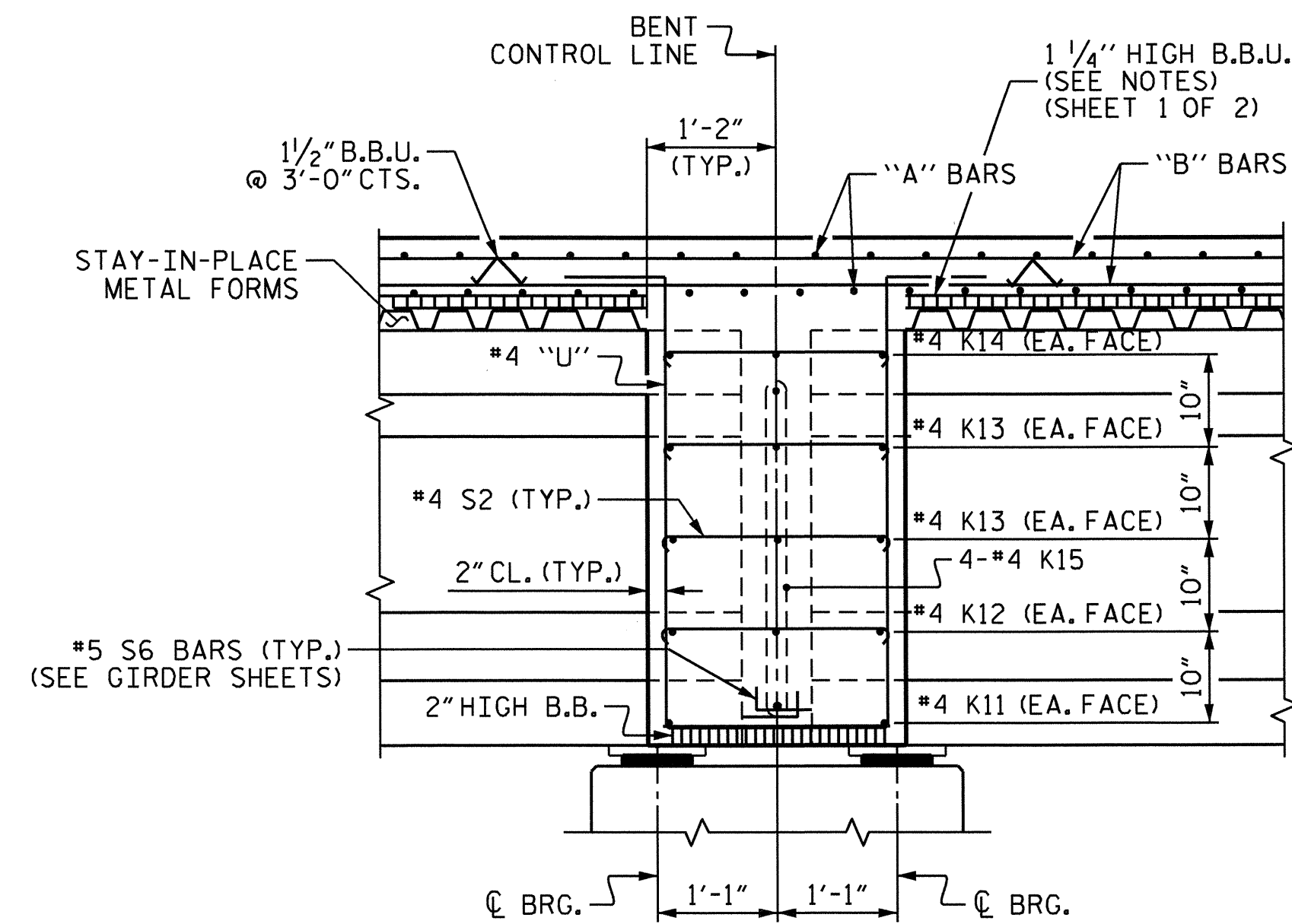


REVISIONS				SHEET NO.			
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5	
1			3			TOTAL SHEETS	
2			4			35	

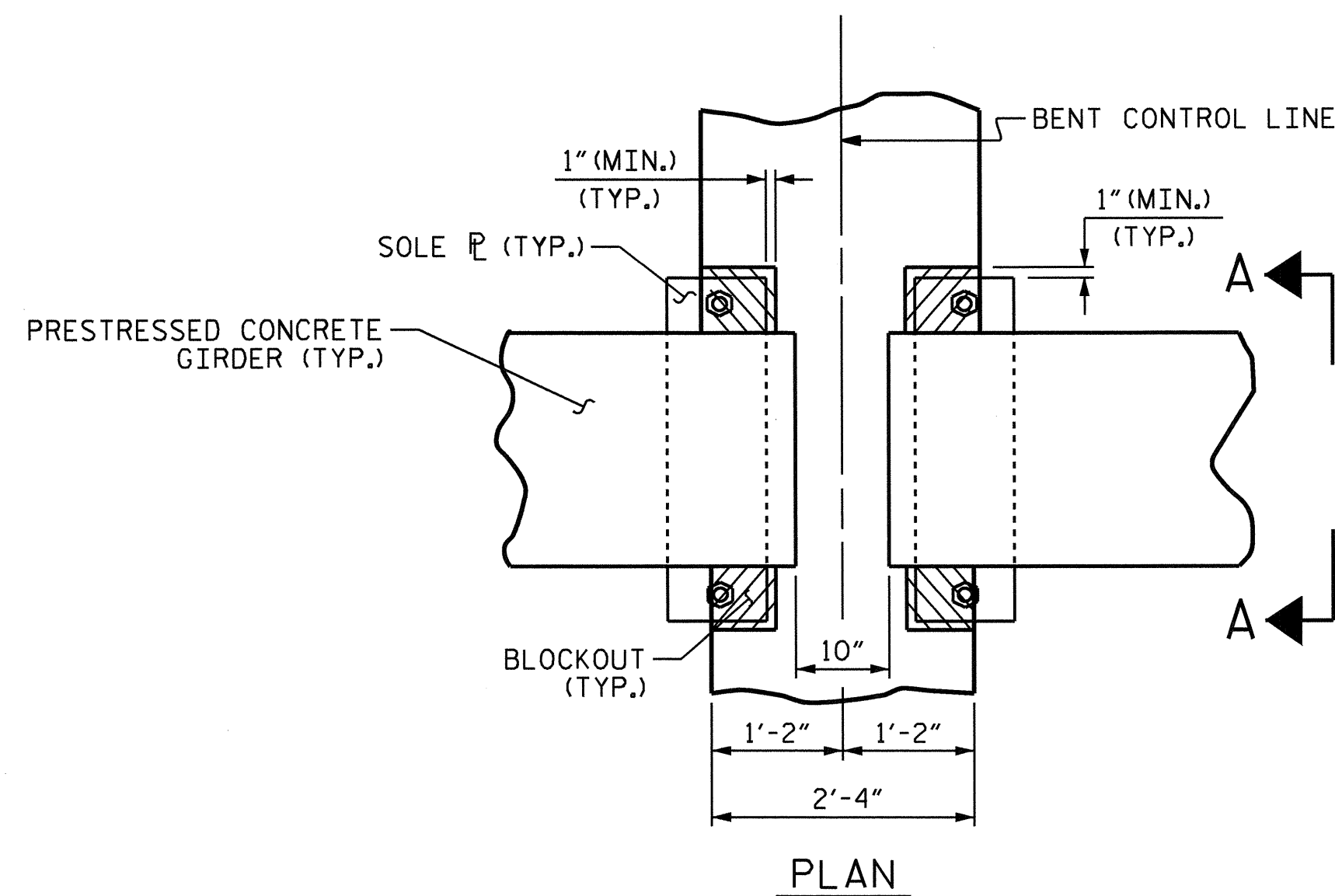
DRAWN BY : E.C. LOCKLEAR DATE : 6-8-10
 CHECKED BY : J.A. YANNAACONE DATE : 2-23-11



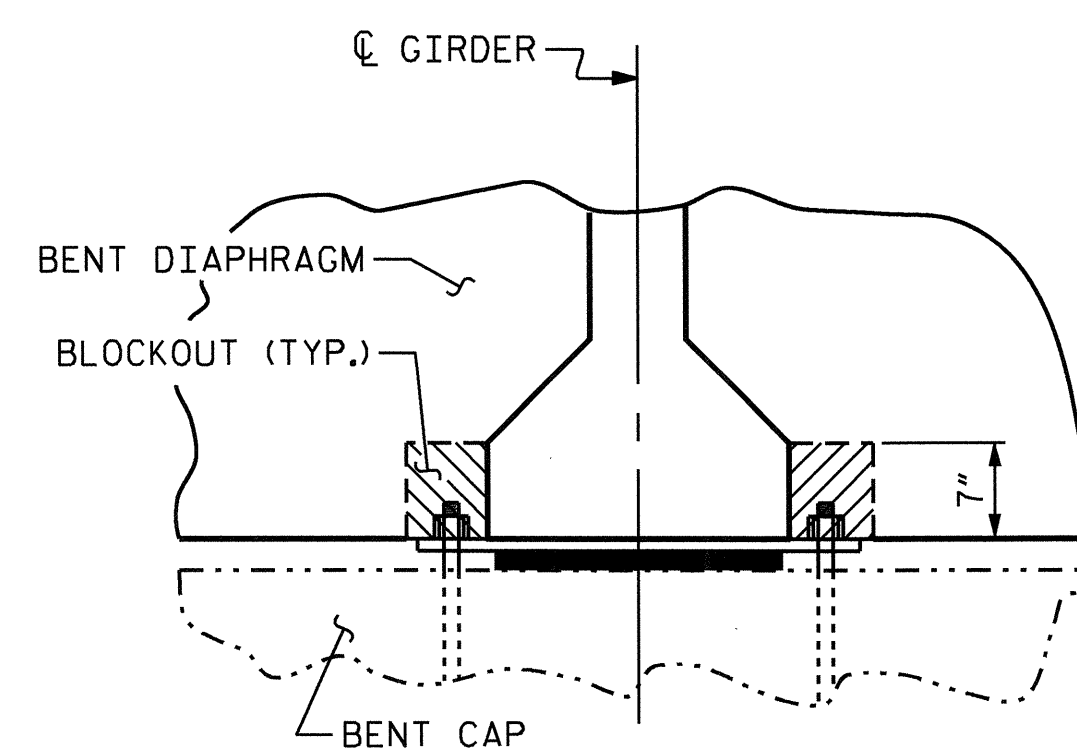
SECTION THRU INTEGRAL END BENT



SECTION THRU BENT



PLAN



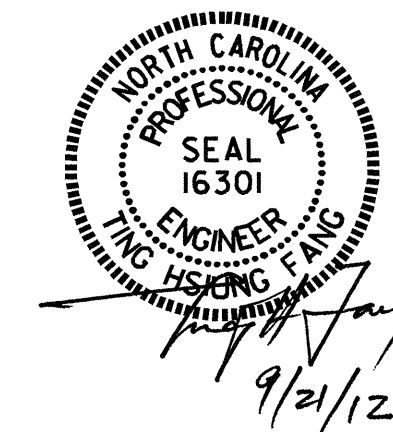
SECTION A-A

BENT DIAPHRAGM BLOCKOUT DETAIL

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

SHEET 2 OF 2

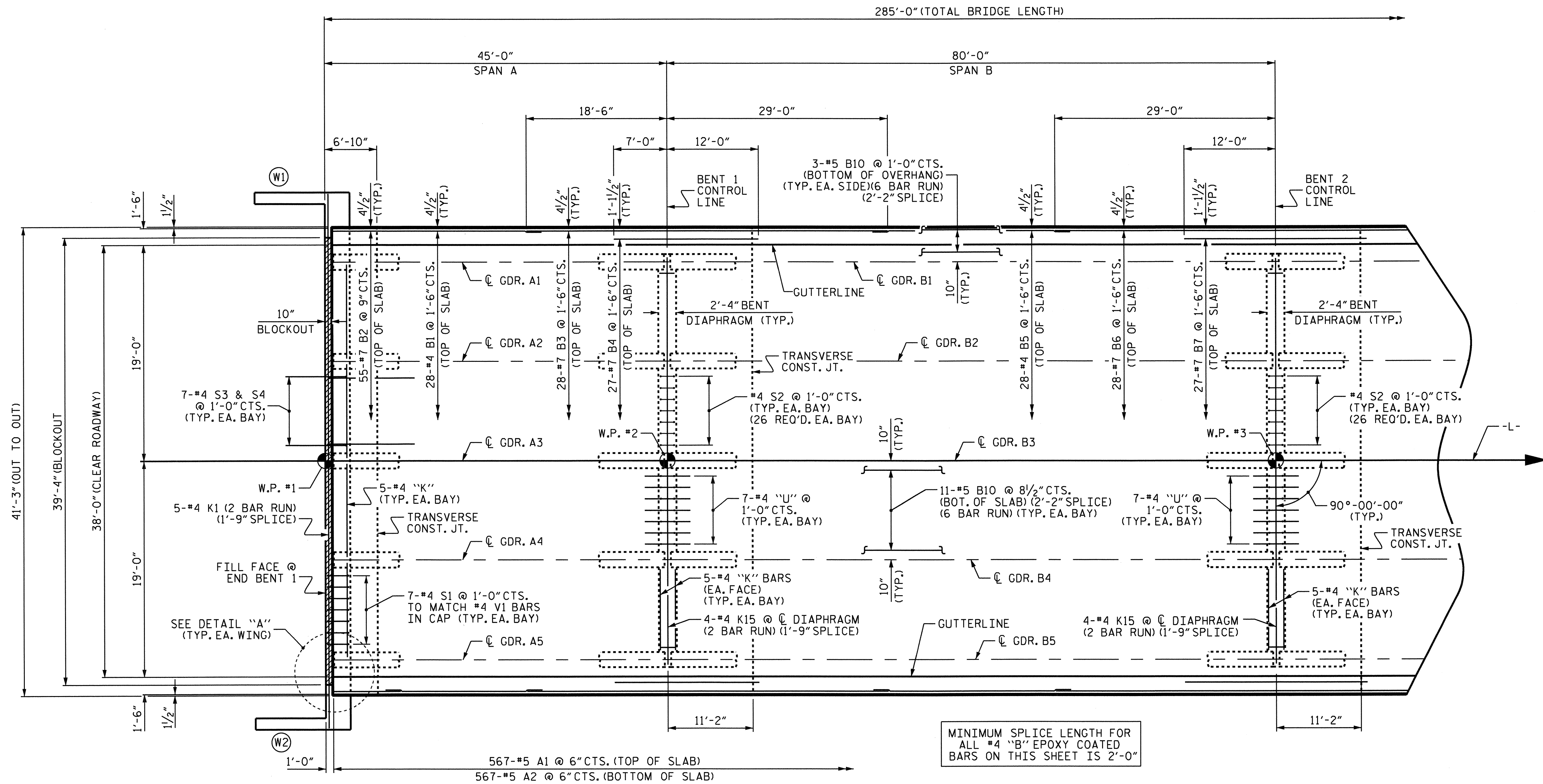
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION
 DETAILS



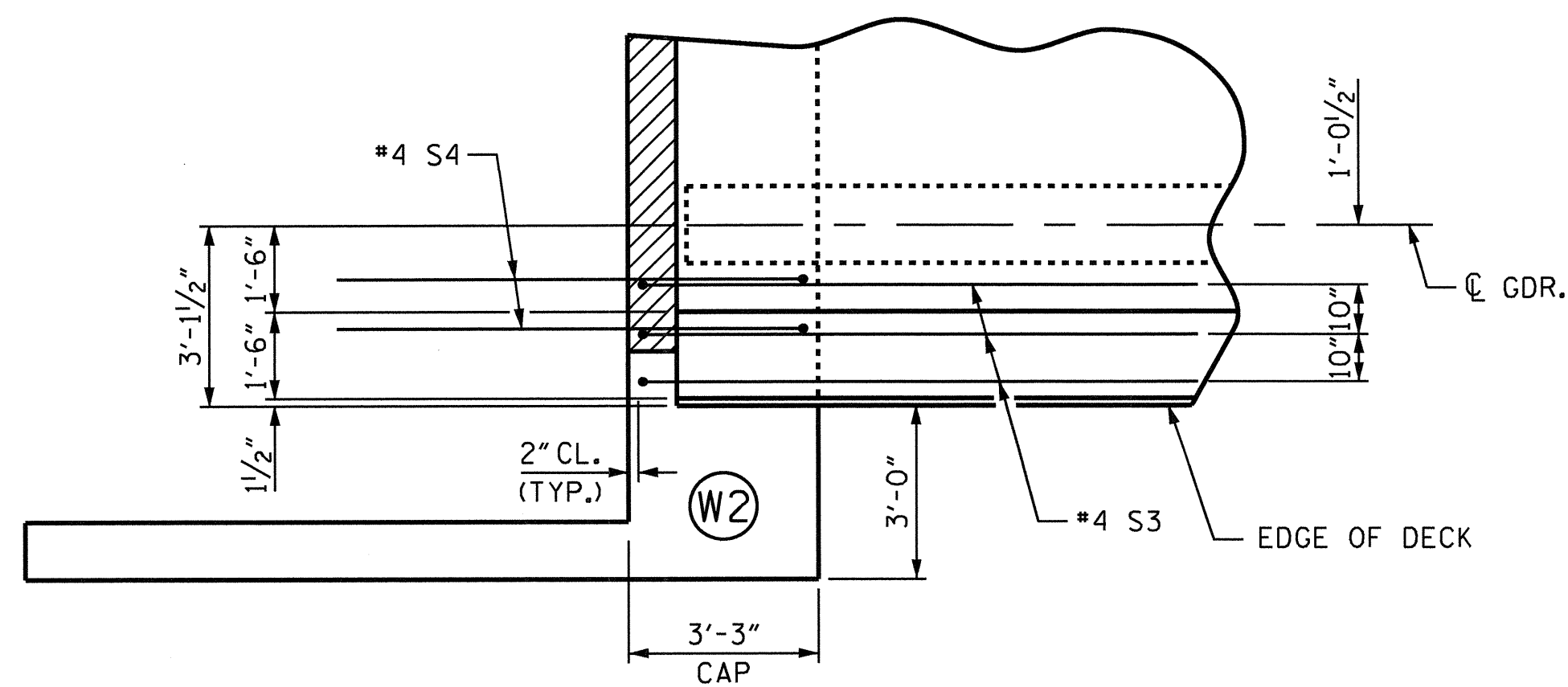
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			35

DRAWN BY : E.C. LOCKLEAR DATE : 6-10-10
 CHECKED BY : J.A. YANNAACONE DATE : 2-24-11

21-SEP-2012 14:00
 Y:\TIP\Projects-B\B4273\Structures\FinalPlans\B4273_SD_TS.dgn
 kprenton



PLAN OF SPANS A & B



DETAIL "A"

S1 BARS NOT SHOWN FOR CLARITY.

DRAWN BY: E.C. LOCKLEAR DATE: 6-3-10
CHECKED BY: Z.H. BROWN DATE: 3-1-11

21-SEP-2012 14:00
\\TIP\Projects-B\B4273\Structures\Final Plans\B4273_SD.S.dgn
kpnwton

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
STATION: 22+45.00 -L-

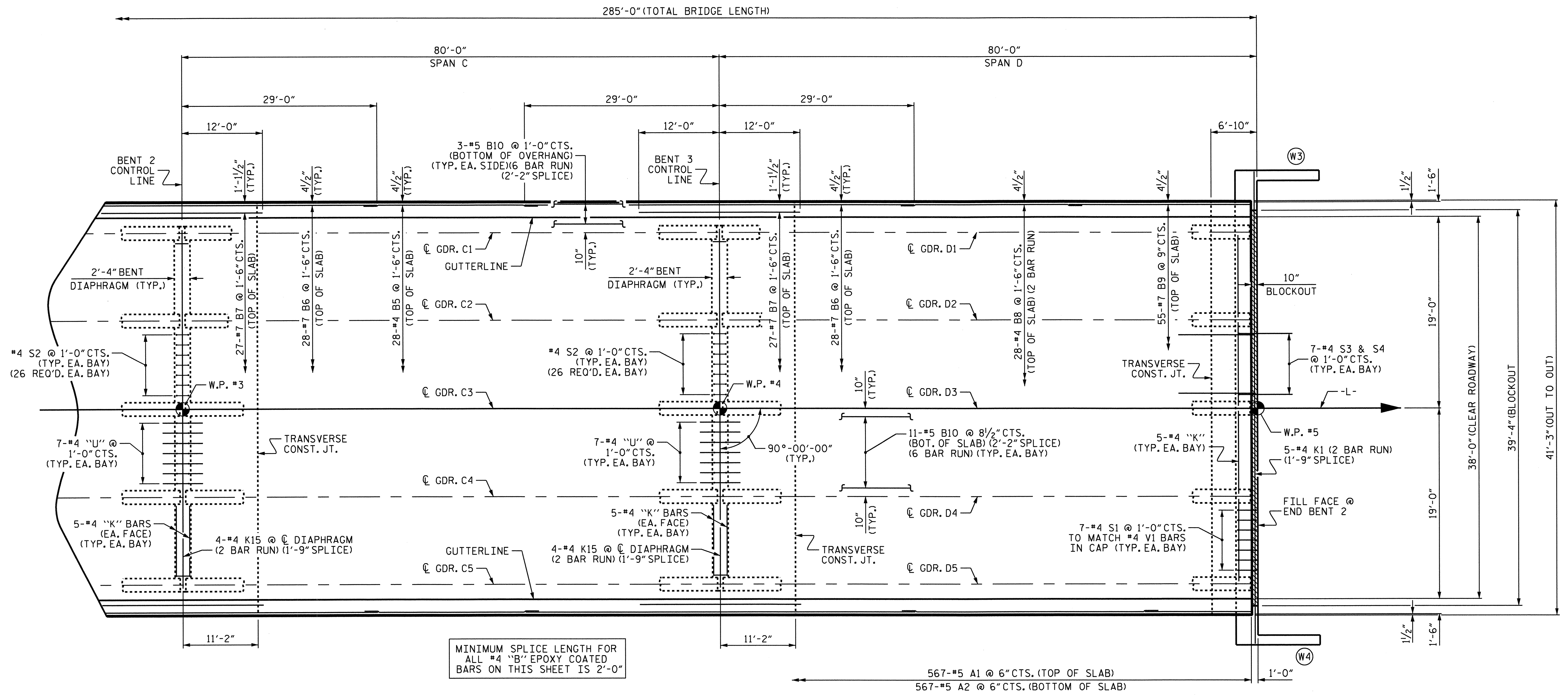
SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF SPANS
SPANS A & B



REVISIONS						SHEET NO. S-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 35
2			4			

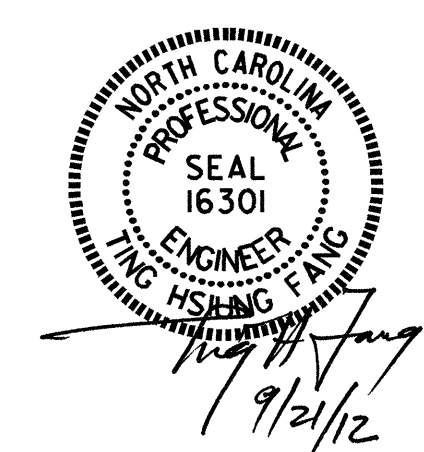


MINIMUM SPLICE LENGTH FOR ALL #4 "B" EPOXY COATED BARS ON THIS SHEET IS 2'-0"

PLAN OF SPANS C & D

PROJECT NO. B-4273
 SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

SHEET 2 OF 4

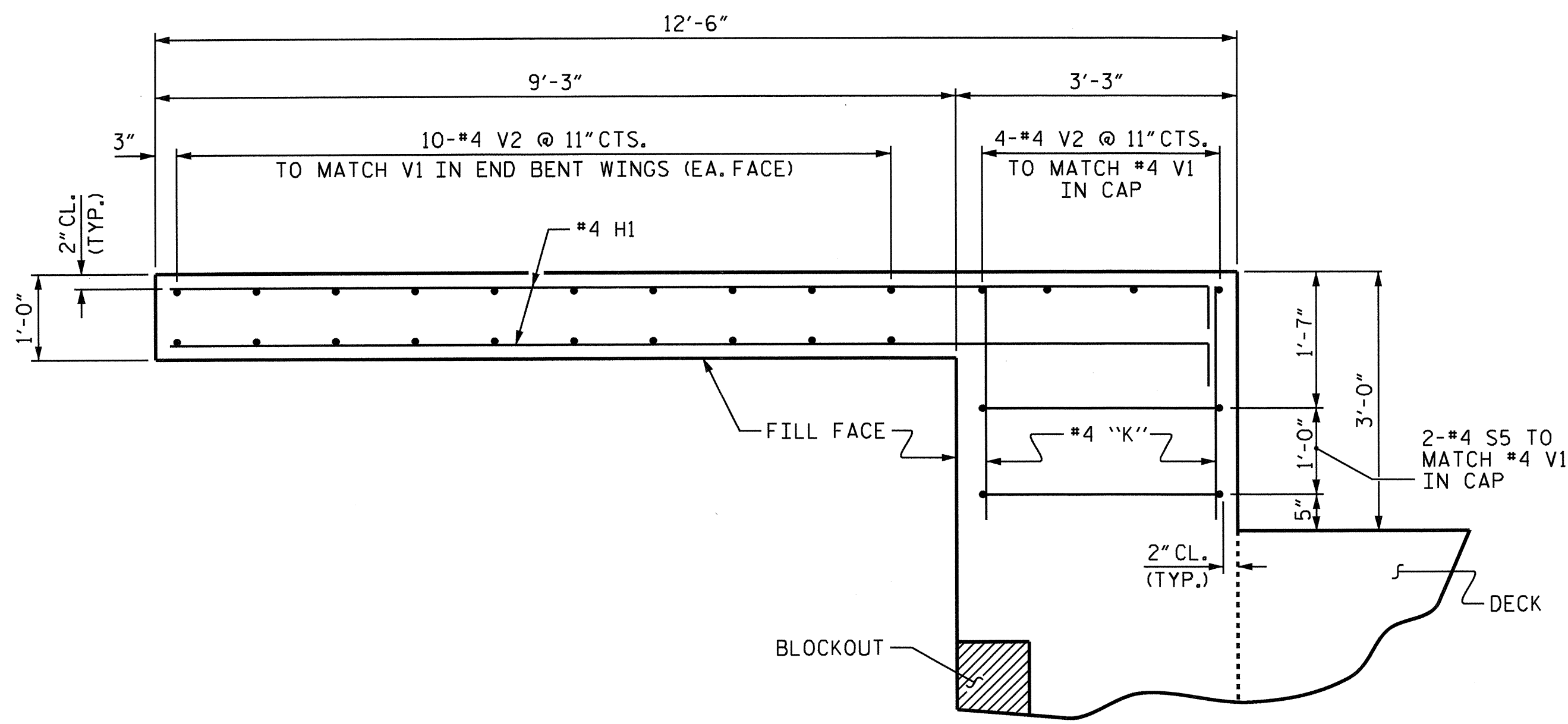


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPANS
 SPANS C & D

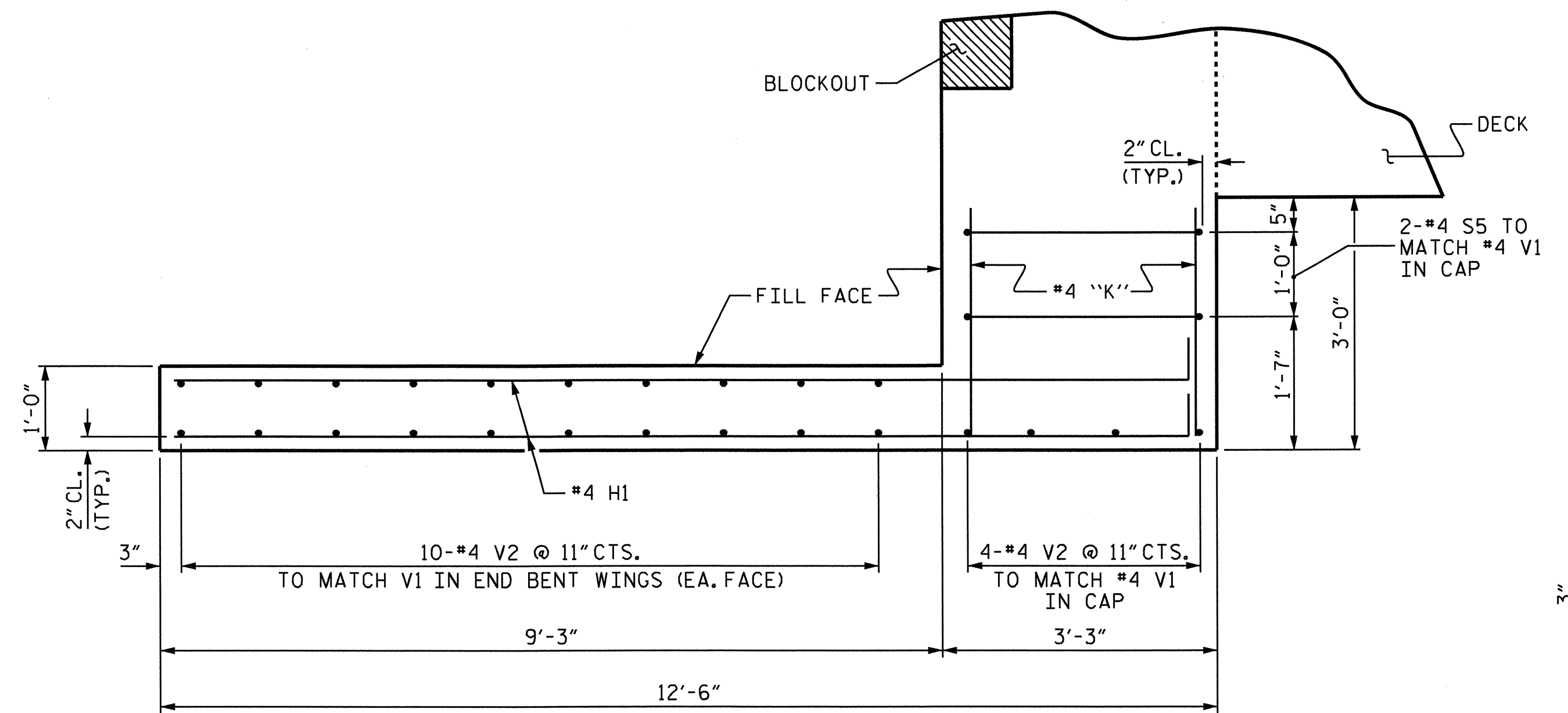
REVISIONS						SHEET NO. S-8
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 35
2			4			

DRAWN BY: E.C. LOCKLEAR DATE: 6-3-10
 CHECKED BY: Z.H. BROWN DATE: 3-1-11

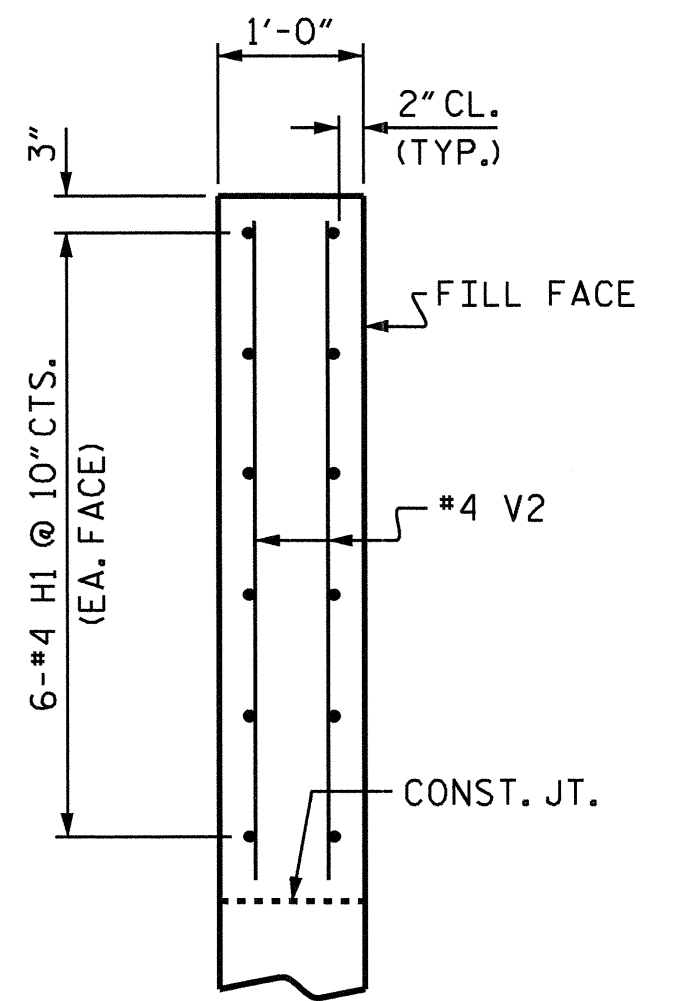
21-SEP-2012 14:00
 Y:\TIP\Projects-B\B4273\Structures\Final Plans\B4273_SD_S*.dgn
 kpnwton



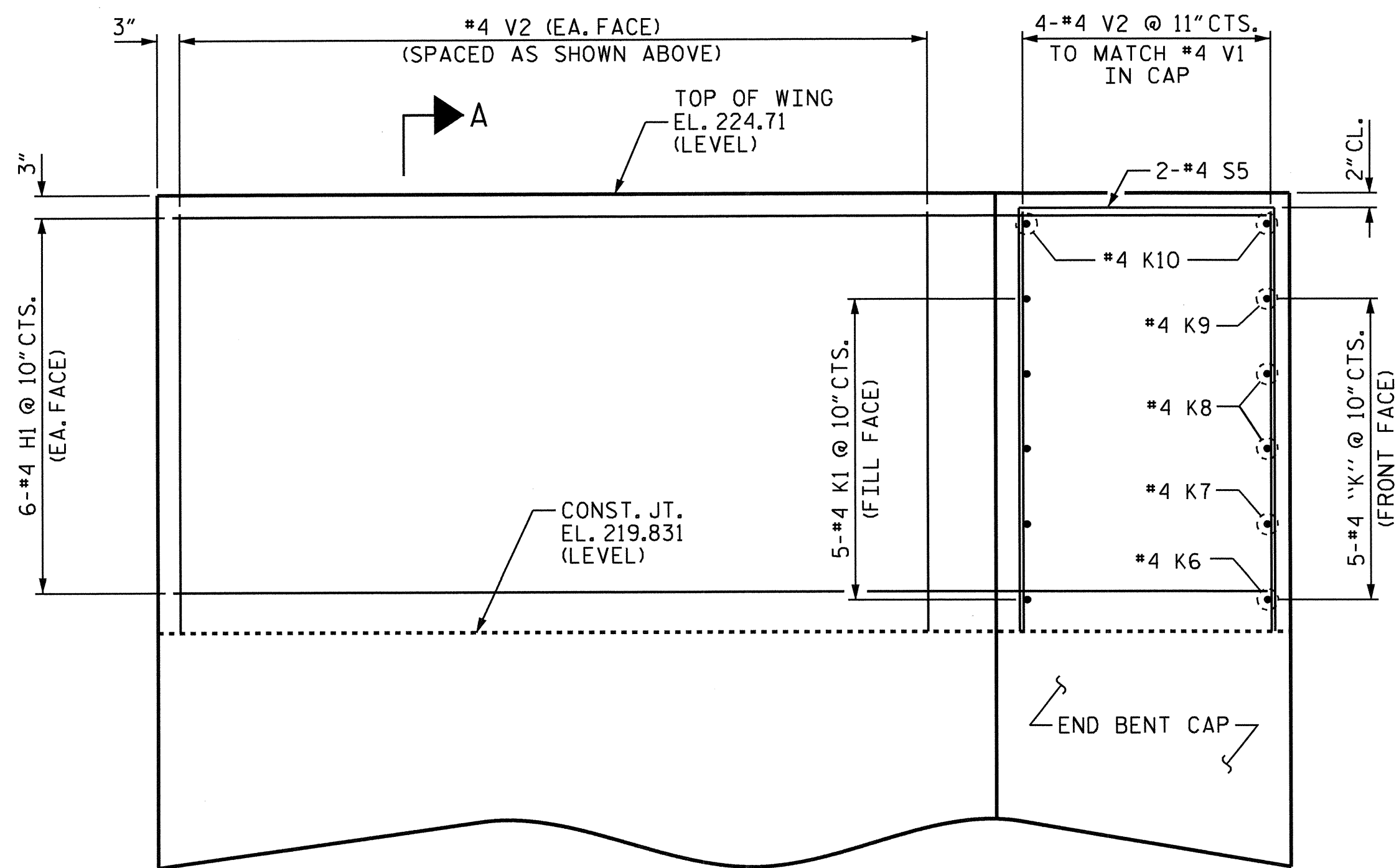
PLAN OF WING (W1)



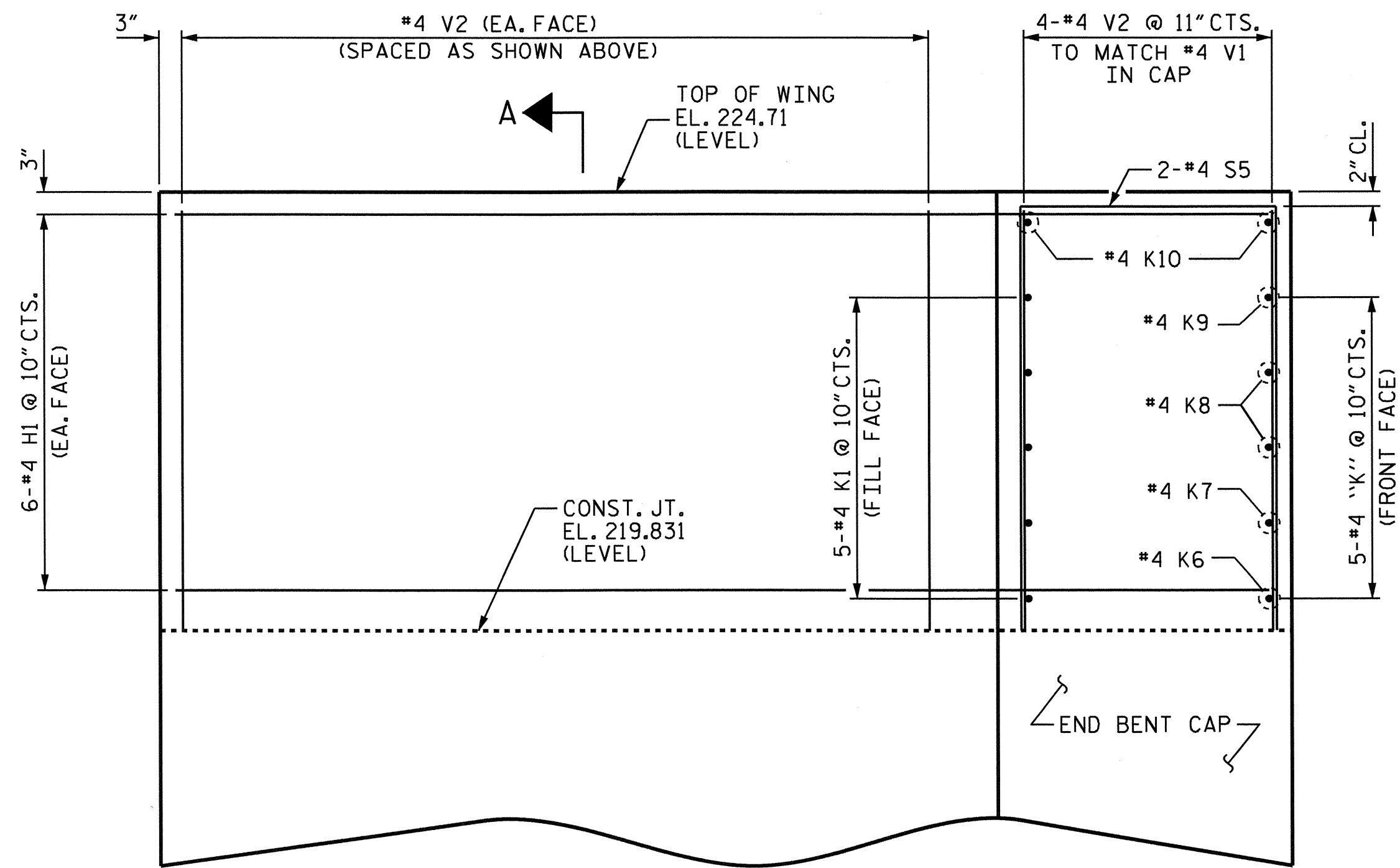
PLAN OF WING (W2)



SECTION A-A



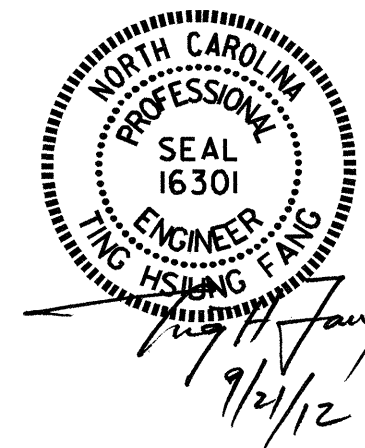
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

ABUTMENT WINGS

FOR END BENT REINFORCING STEEL AND DETAILS, SEE "SUBSTRUCTURE END BENTS 1 & 2" SHEETS.



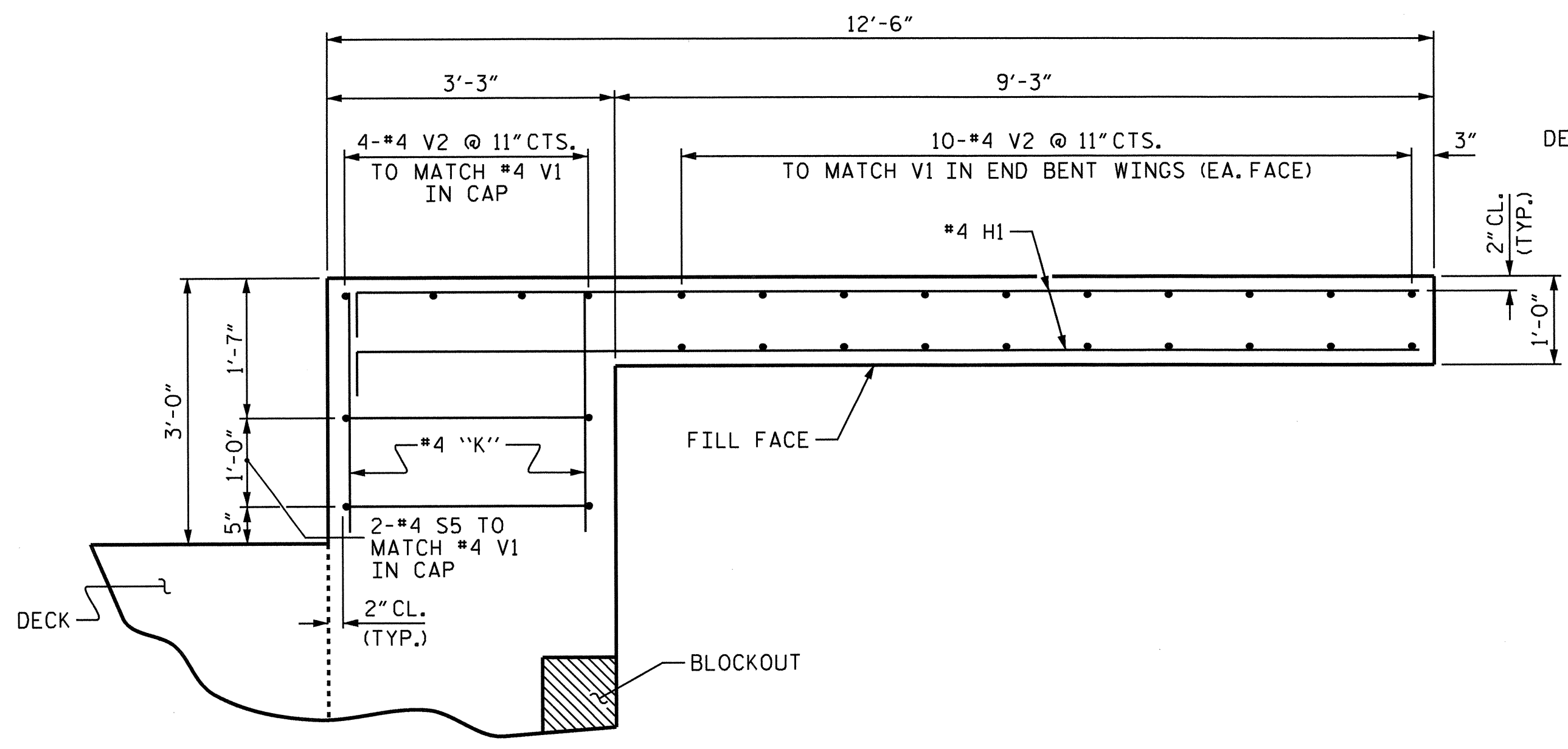
PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

SHEET 3 OF 4

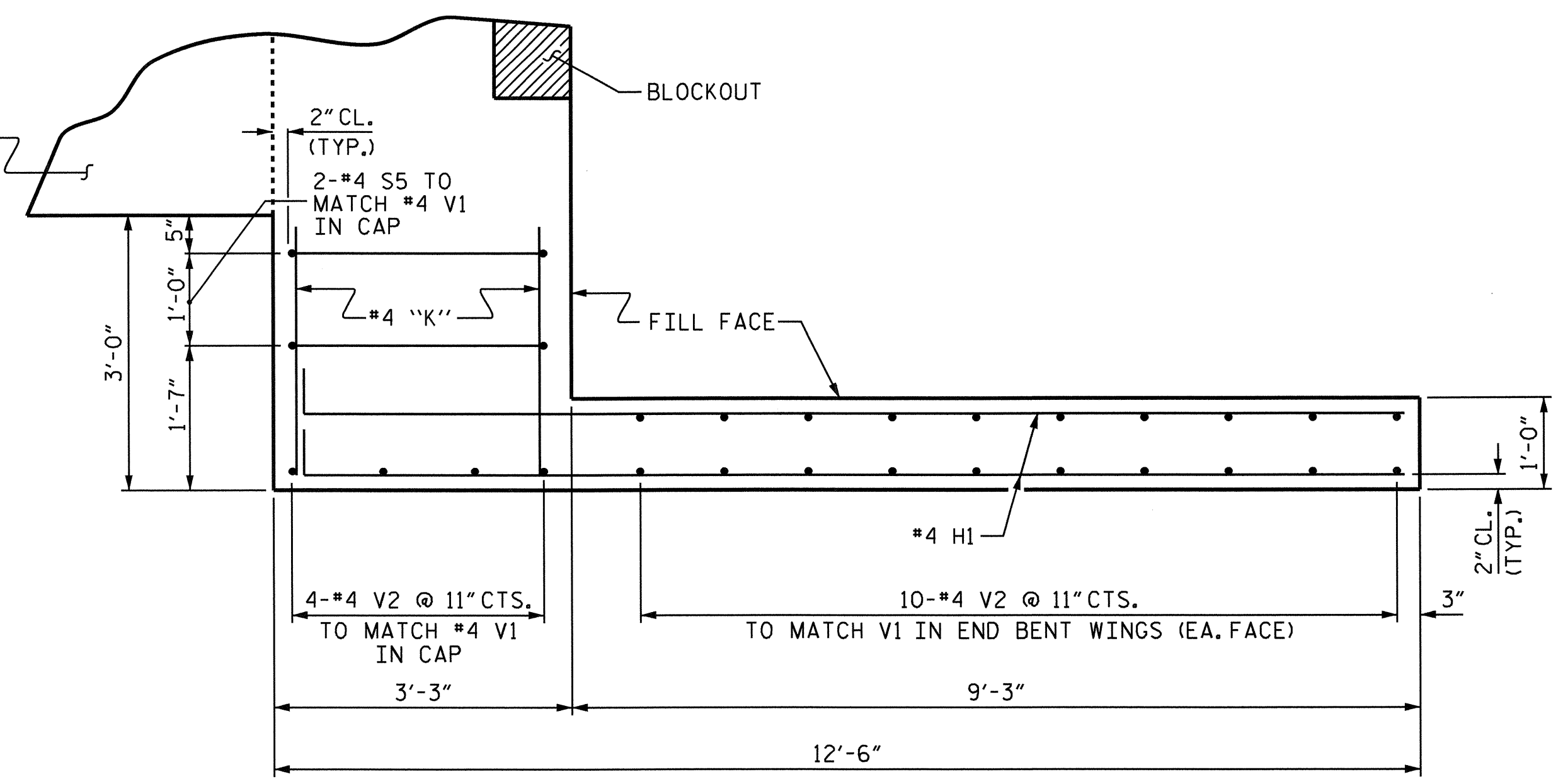
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN
 DETAILS
 END BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-9
1			3			TOTAL SHEETS
2			4			35

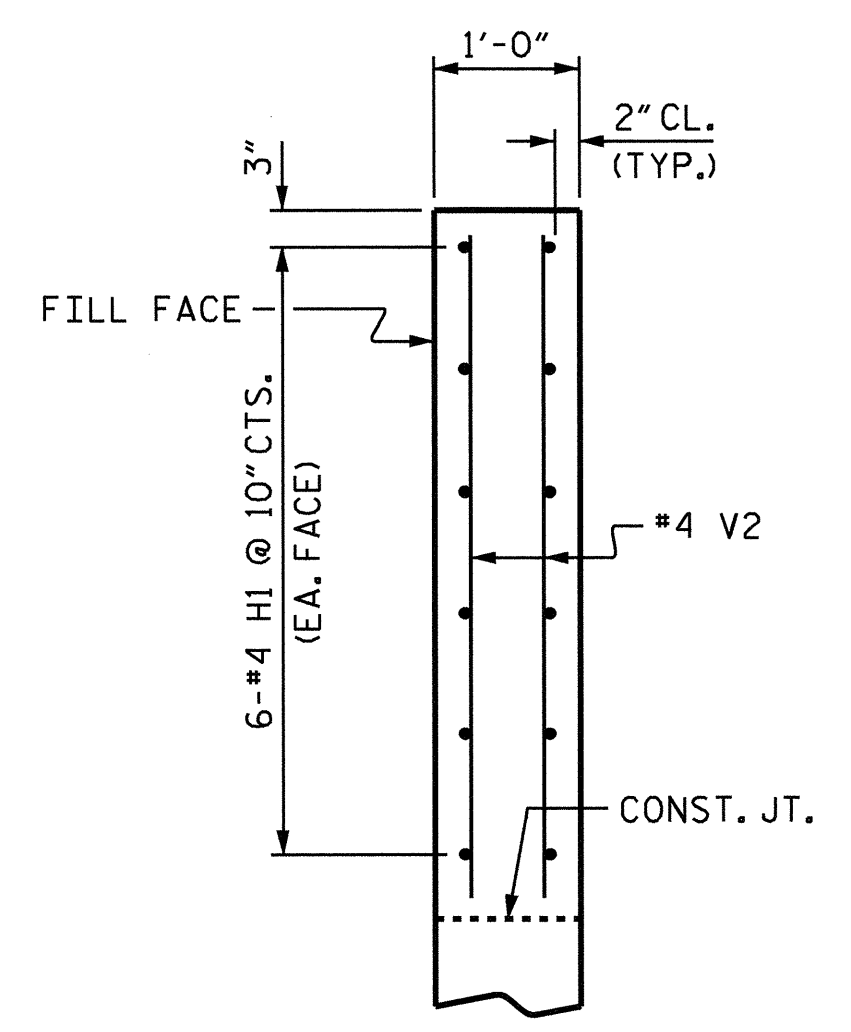
DRAWN BY: E.C. LOCKLEAR DATE: 5-28-10
 CHECKED BY: W.F. PARKER DATE: 4-2-12



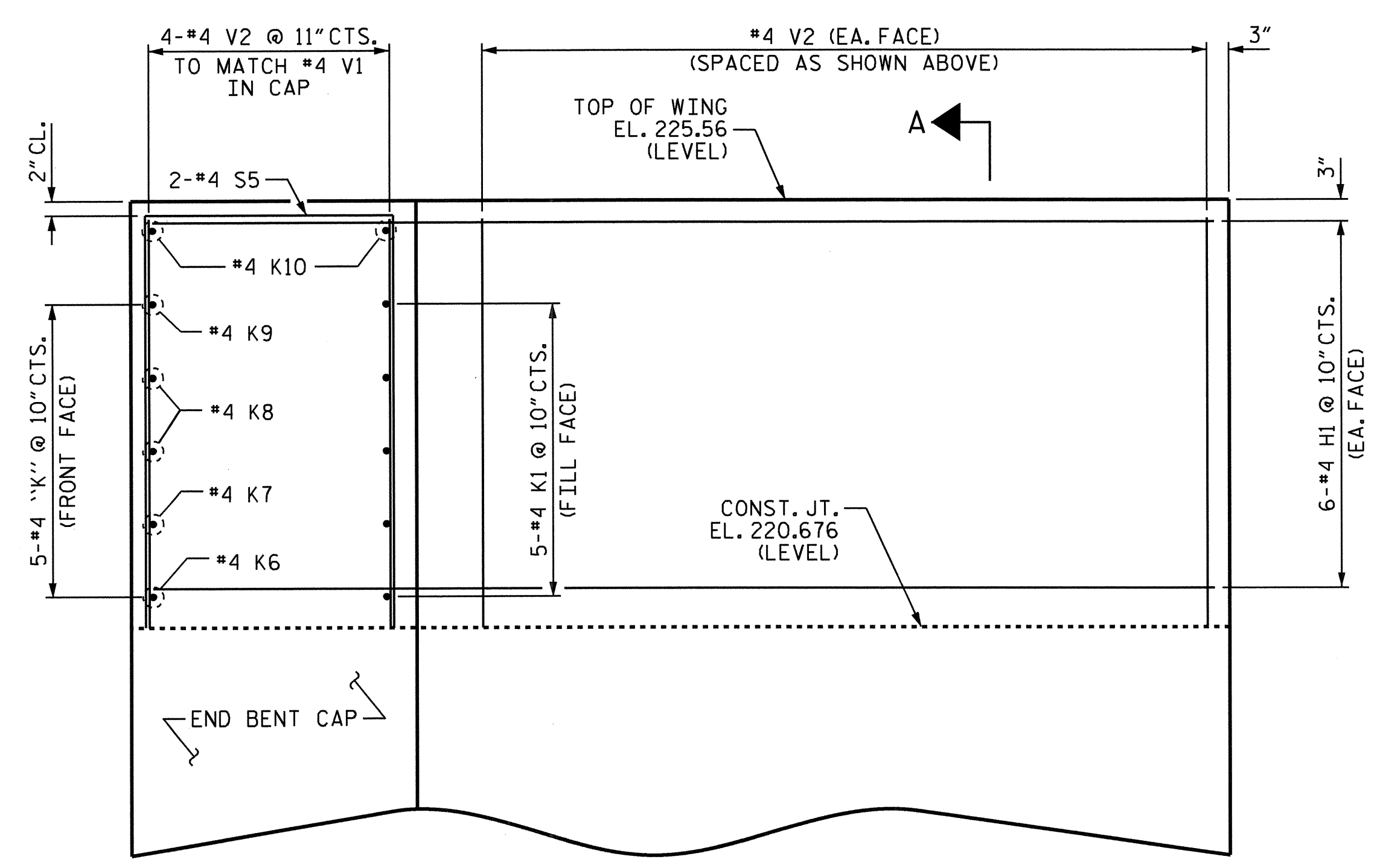
PLAN OF WING (W3)



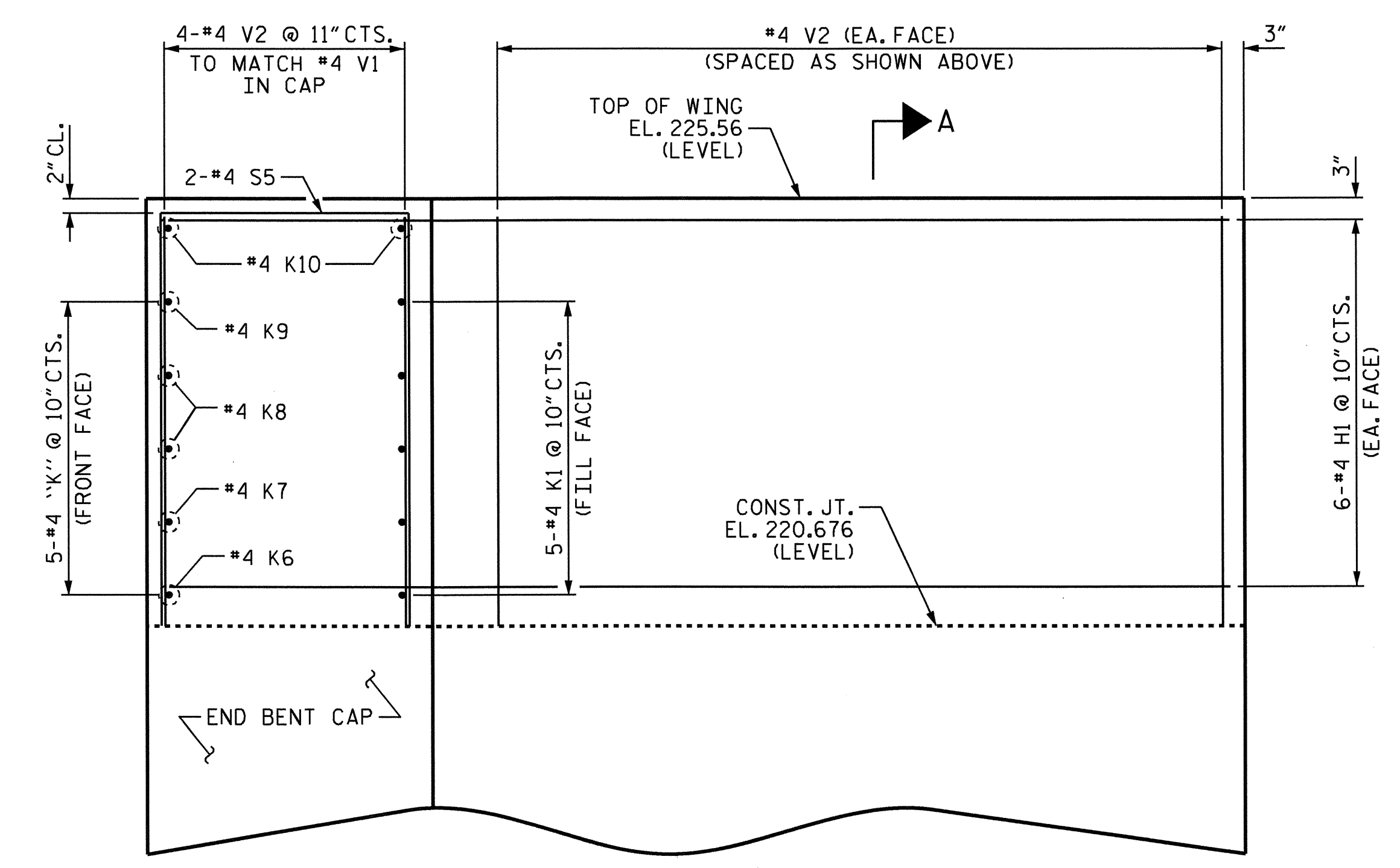
PLAN OF WING (W4)



SECTION A-A



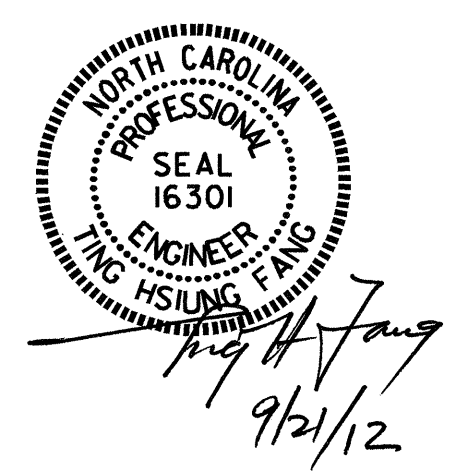
ELEVATION OF WING (W3)



ELEVATION OF WING (W4)

ABUTMENT WINGS @ END BENT 2

FOR END BENT REINFORCING STEEL AND DETAILS, SEE "SUBSTRUCTURE END BENTS 2" SHEETS.

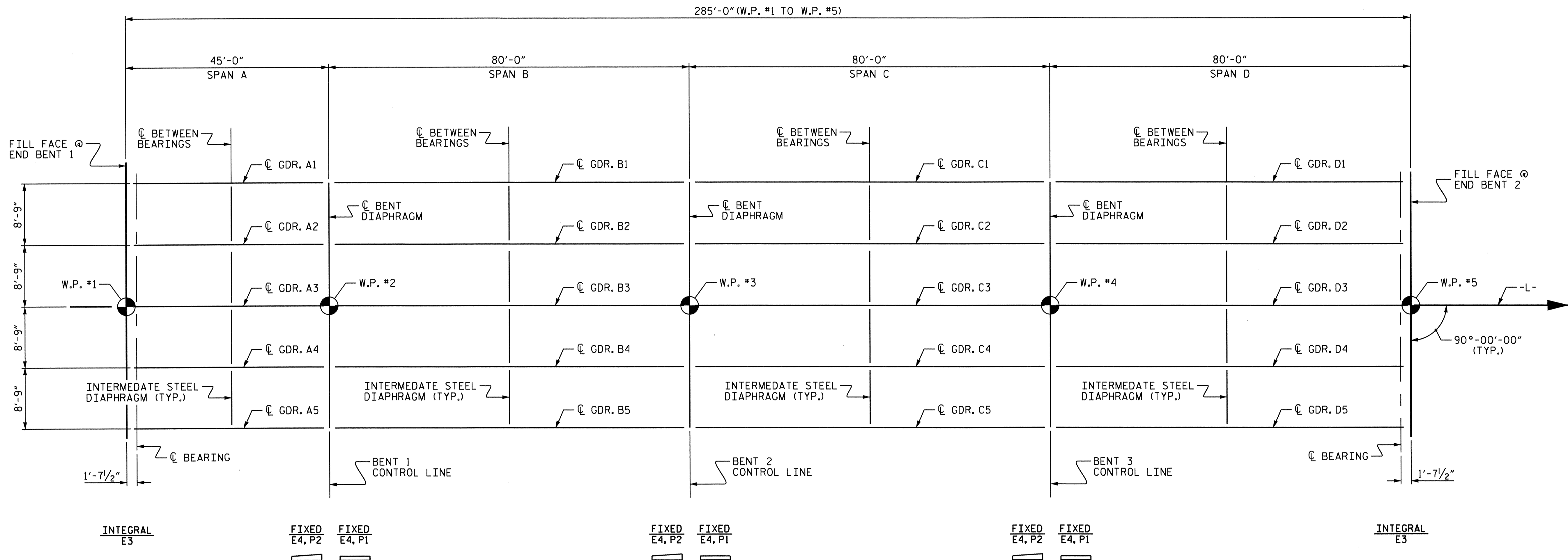


PROJECT NO. B-4273
 SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

SHEET 4 OF 4

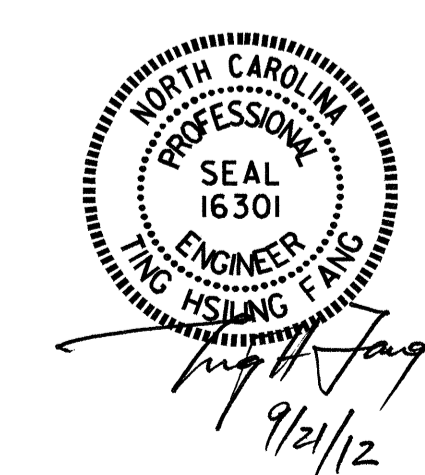
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-10
SUPERSTRUCTURE PLAN OF SPAN DETAILS END BENT 2						
REVISIONS						TOTAL SHEETS 35
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

DRAWN BY: E.C. LOCKLEAR DATE: 5-28-10
 CHECKED BY: W.F. PARKER DATE: 4-2-12



FRAMING PLAN

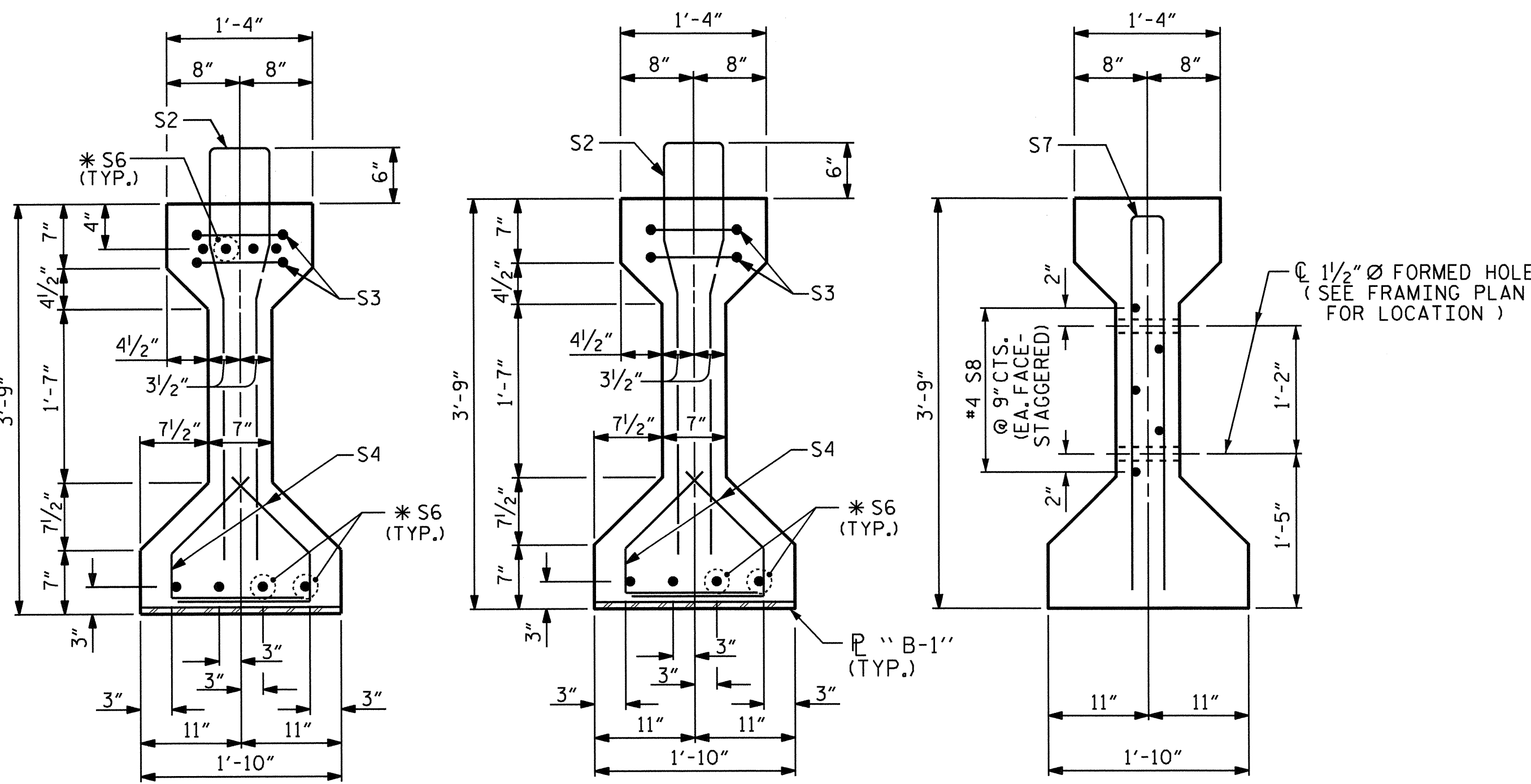
PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-11
SUPERSTRUCTURE						
FRAMING PLAN						TOTAL SHEETS 35
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

DRAWN BY : E.C. LOCKLEAR DATE : 6-21-10
 CHECKED BY : W.F. PARKER DATE : 4-2-12

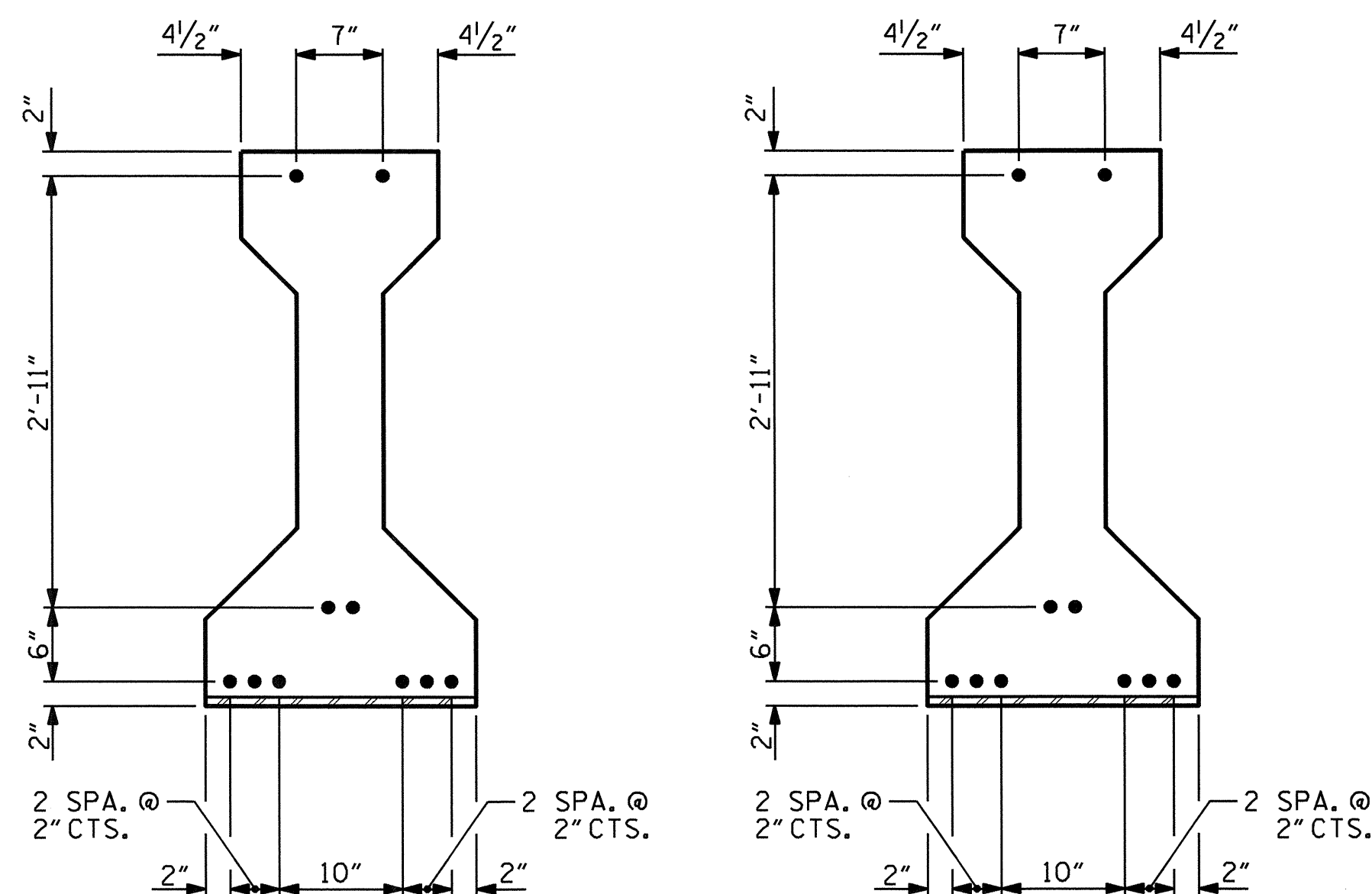
21-SEP-2012 14:00
 Y:\TIP\Projects-B\B4273\Structures\Final Plans\B4273_SD_FP.dgn
 kpnewton



SECTION A-A

SECTION B-B
(FOR EMBEDDED "B-1" DETAILS, SEE SHEET 5 OF 5)

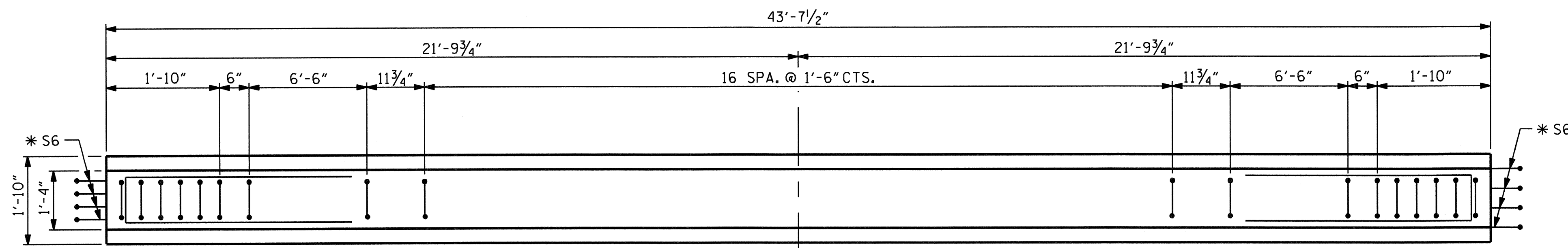
SECTION C-C
(S1 BARS NOT SHOWN)



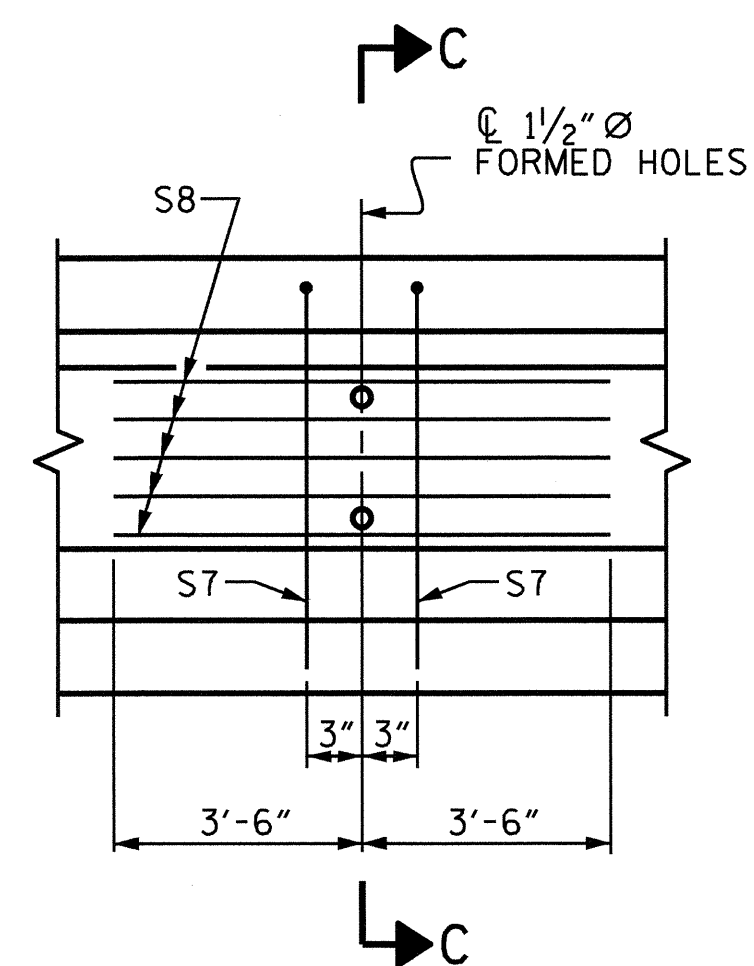
AT END OF GIRDER

AT C OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT
(10 STRANDS REQUIRED, ALL STRAIGHT)

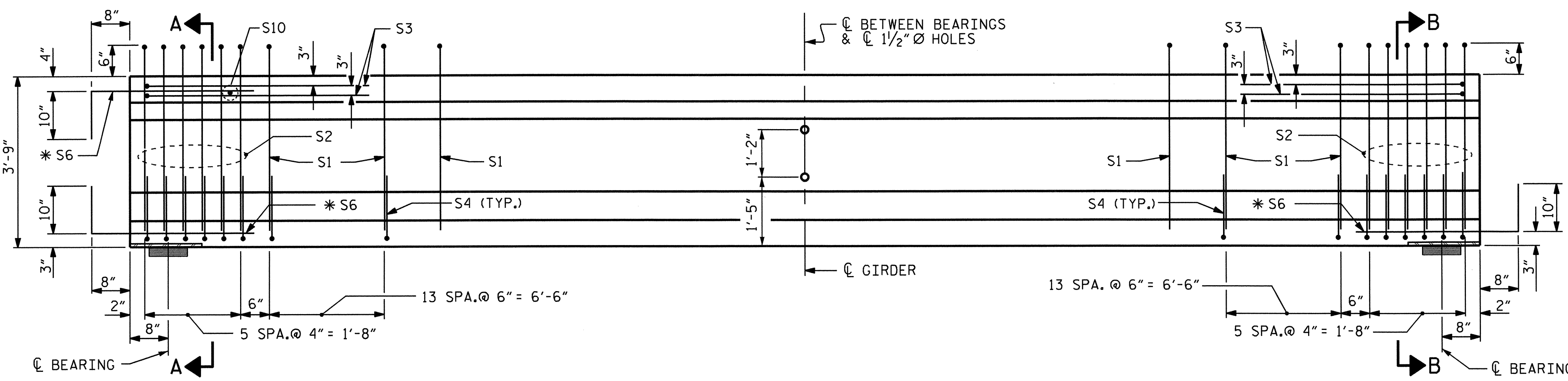


PLAN OF GIRDER



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR ALL GIRDERS.



ELEVATION OF GIRDER

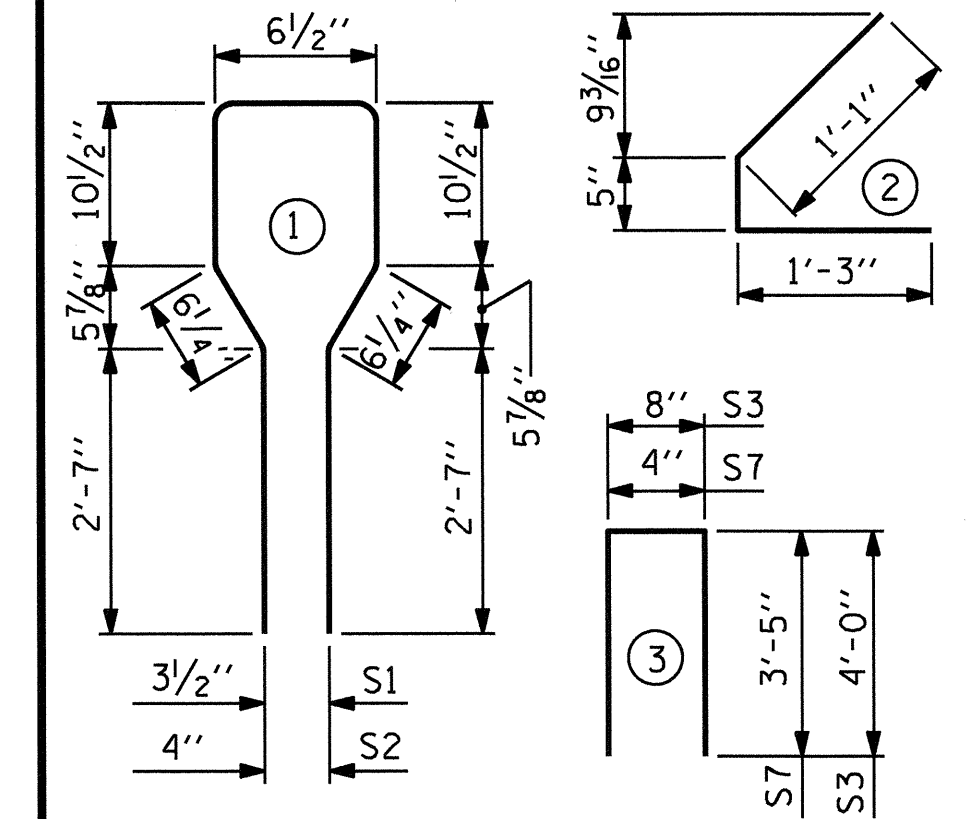
(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)

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	45	#4	1	8'-6"	256
S2	12	#6	1	8'-6"	153
S3	4	#4	3	8'-8"	23
S4	80	#4	2	2'-9"	147
*S6	12	#5	STR	3'-8"	46
S7	2	#5	3	7'-2"	15
S8	5	#4	STR	7'-0"	23
S10	1	#3	STR	1'-0"	1

*S6 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	5000 PSI CONCRETE	0.6" Ø L. R. STRANDS	
LB.	C.Y.	NO.	
664	6.28	10	

GIRDERS REQUIRED

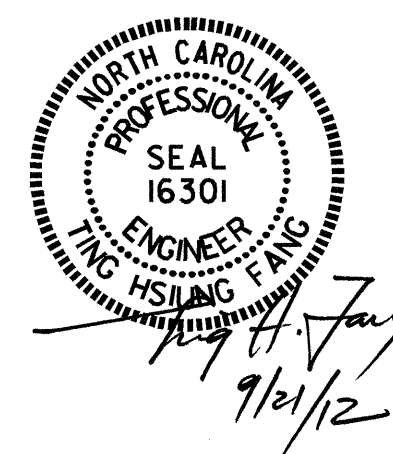
NUMBER	LENGTH	TOTAL LENGTH
5	43'- 7 1/2"	218.13'

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
STATION: 22+45.00 -L-

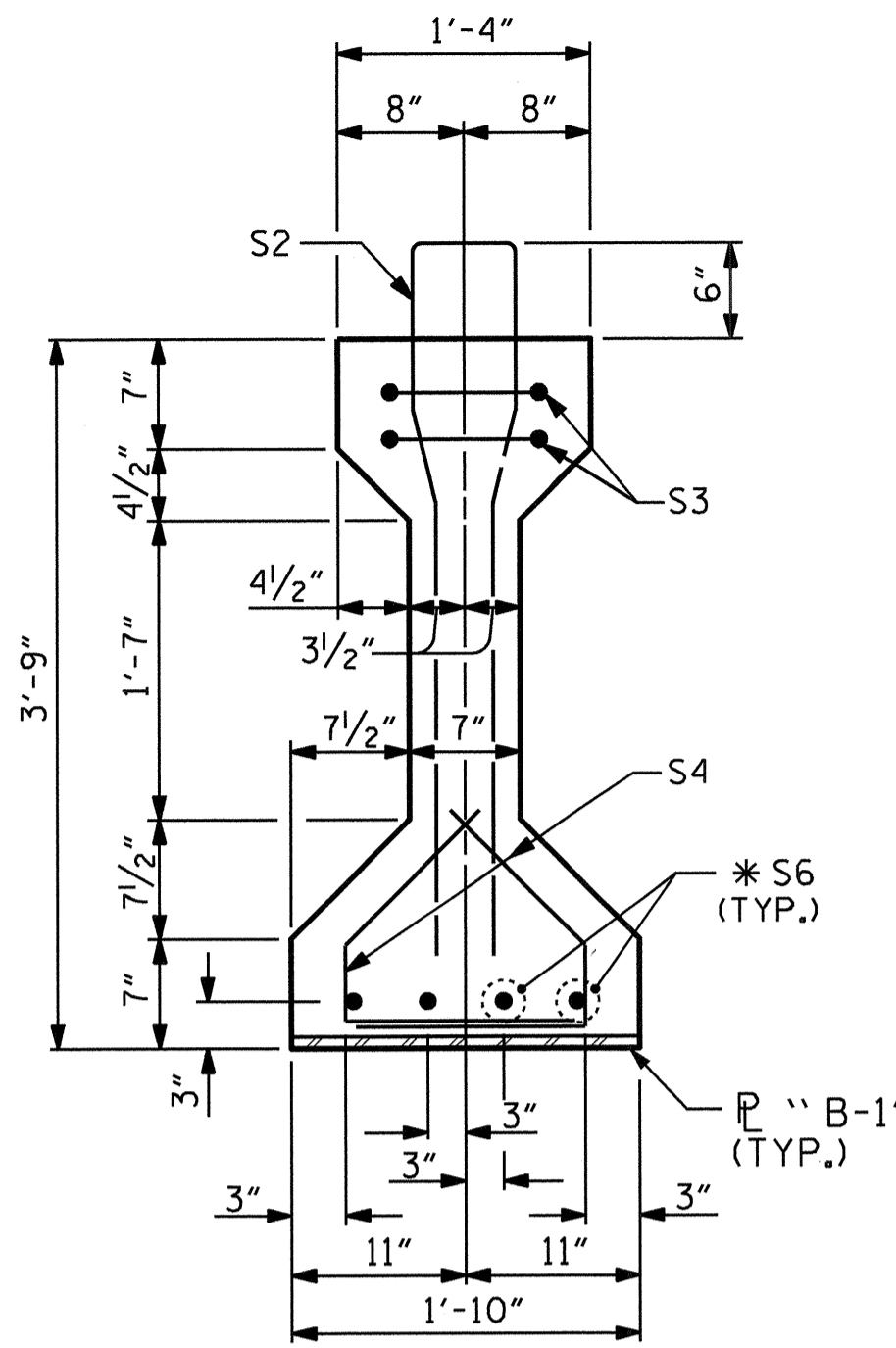
SHEET 1 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
AASHTO TYPE III
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPAN A

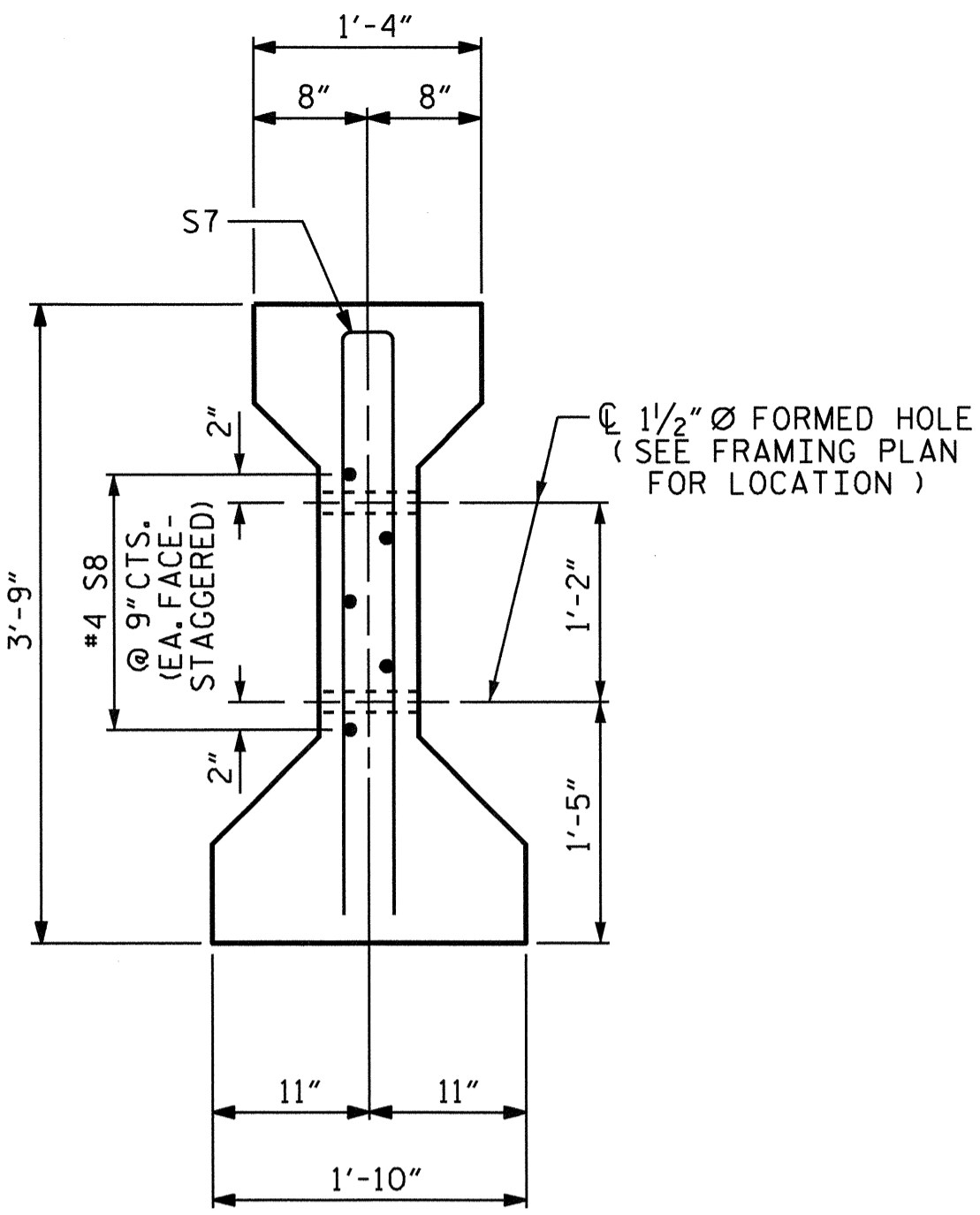
REVISIONS						SHEET NO. S-12
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 35
2			4			



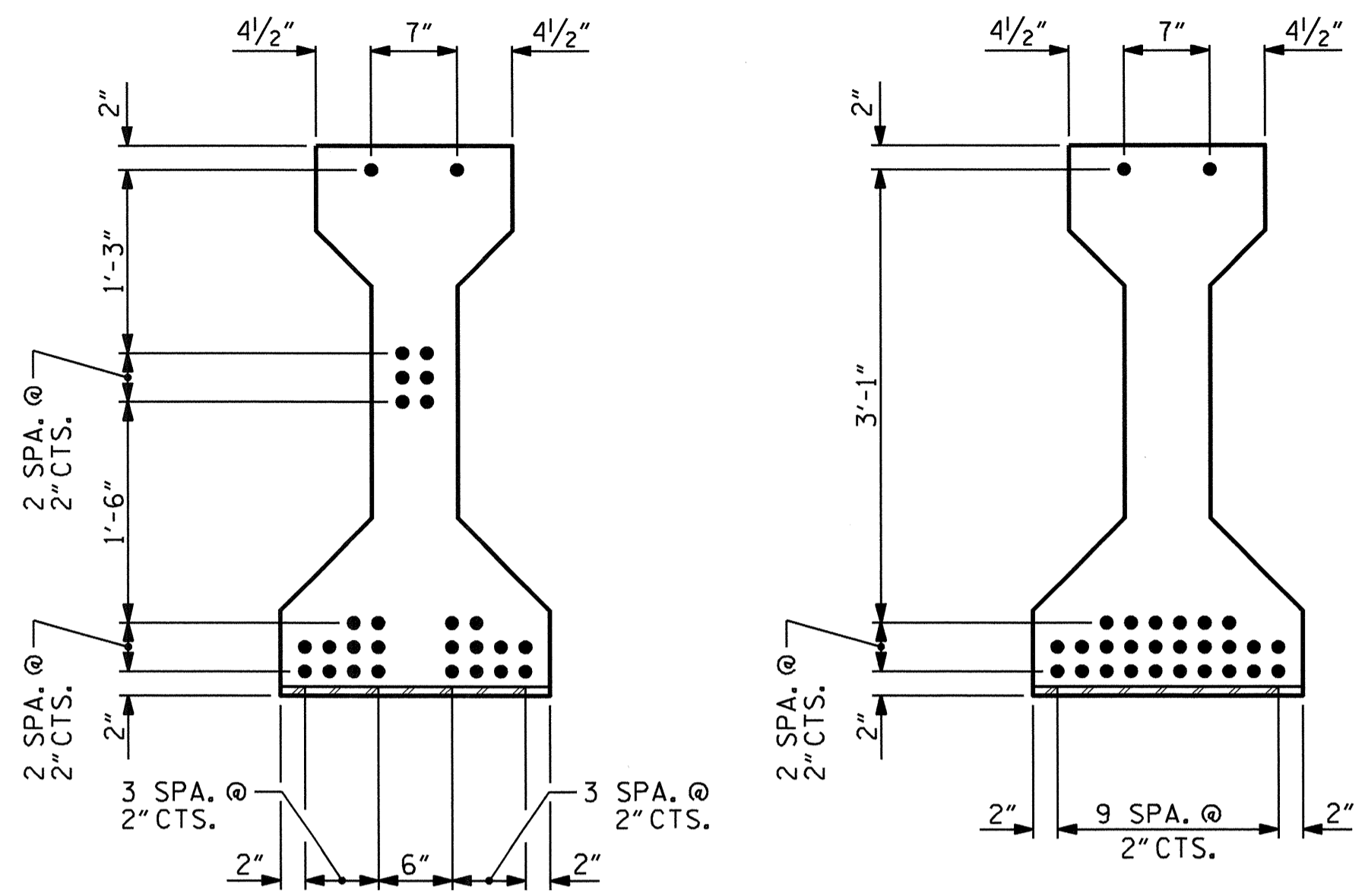
ASSEMBLED BY : E.C. LOCKLEAR DATE : 6-11-10
CHECKED BY : W.F. PARKER DATE : 4-2-12
DRAWN BY : ELR 8/91 REV. 10/17/00R RWW/LES
CHECKED BY : GRP 8/91 REV. 5/1/06R TLA/GM
REV. 10/1/11 MAA/GM



SECTION B-B
(FOR EMBEDDED P "B-1" DETAILS, SEE SHEET 5 OF 5)



SECTION C-C
(S1 BARS NOT SHOWN)



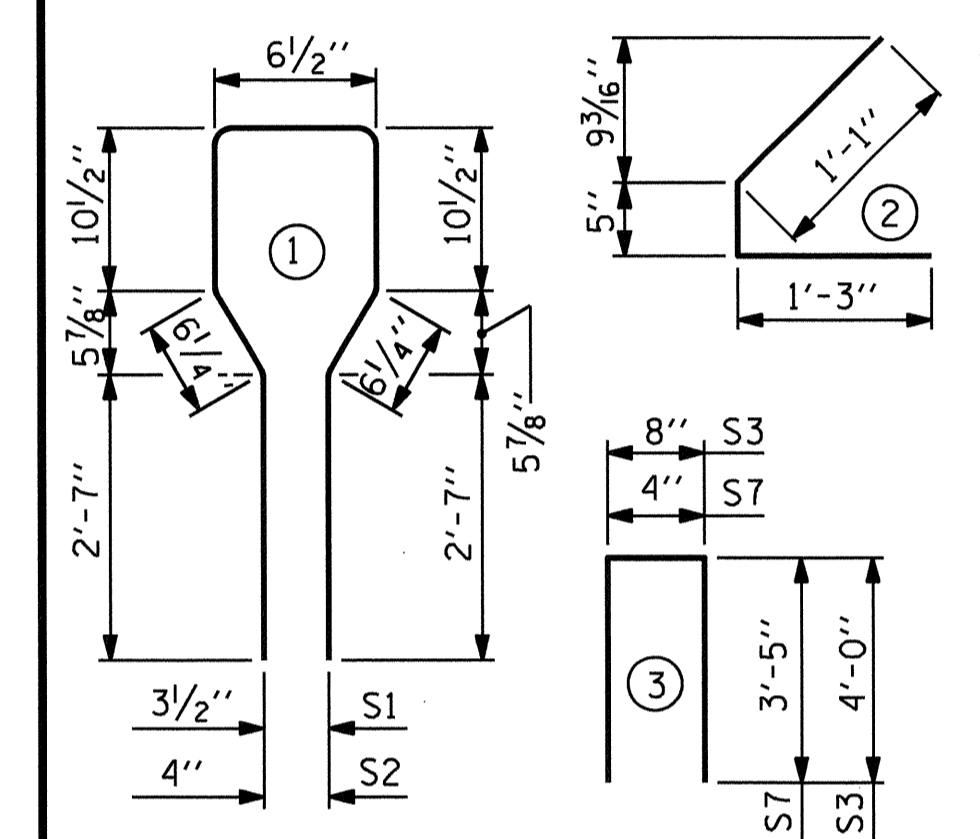
0.6" Ø LOW RELAXATION STRAND LAYOUT
(28 STRANDS REQUIRED, 22 STRAIGHT, 6 DRAPED)

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	68	#4	1	8'-6"	386
S2	12	#6	1	8'-6"	153
S3	4	#4	3	8'-8"	23
S4	80	#4	2	2'-9"	147
*S6	8	#5	STR	3'-8"	31
S7	2	#5	3	7'-2"	15
S8	5	#4	STR	7'-0"	23

* S6 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

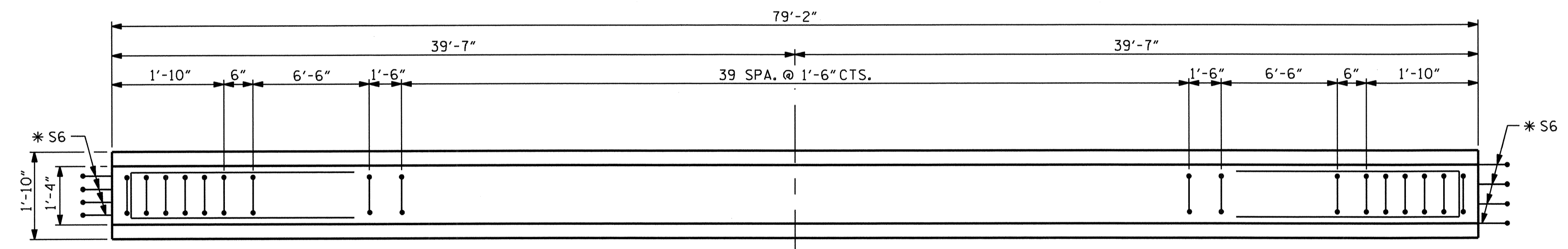


ALL BAR DIMENSIONS ARE OUT-TO-OUT.

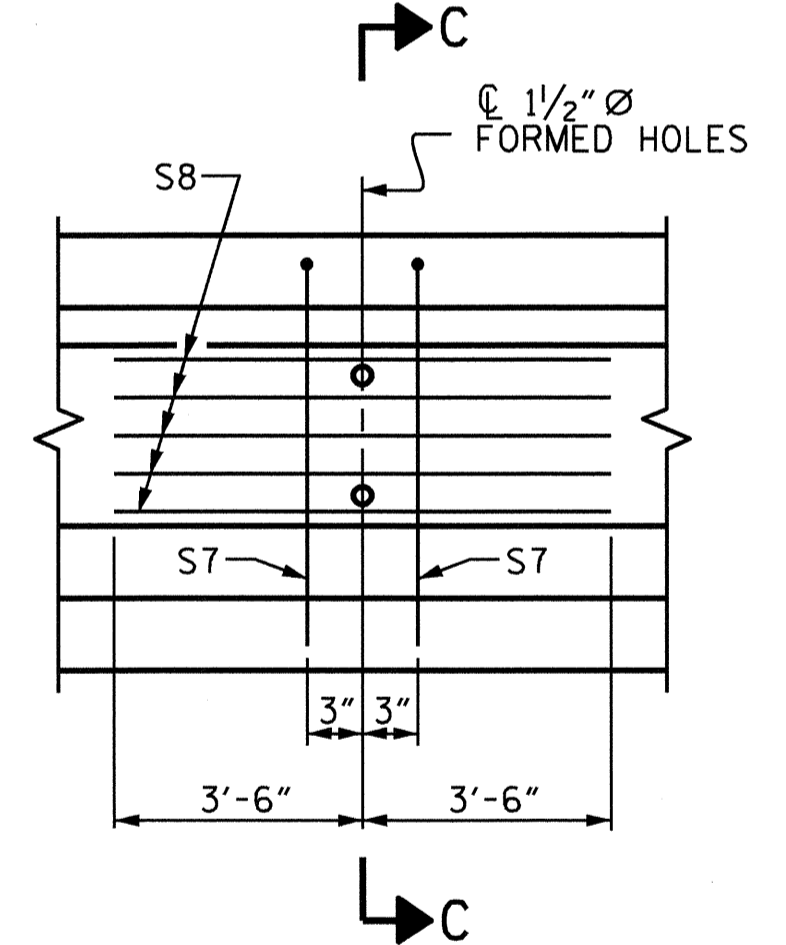
QUANTITIES FOR ONE GIRDER			
REINFORCING STEEL	8000 PSI CONCRETE		0.6" Ø L. R. STRANDS
	LB.	C.Y.	NO.
	778	11.4	28

GIRDERS REQUIRED

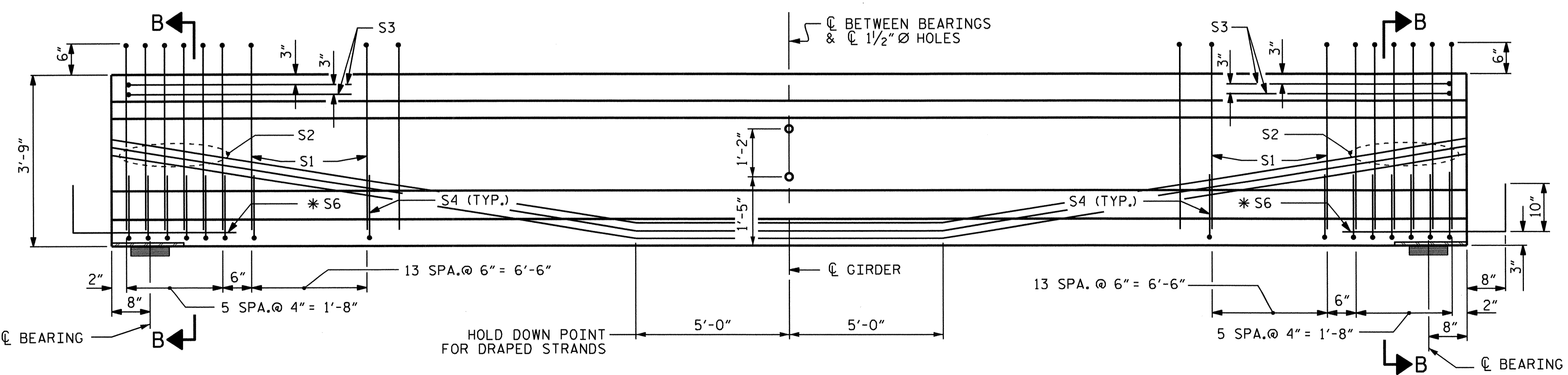
SPAN	NUMBER	LENGTH	TOTAL LENGTH
B	5	79'-2"	395.83'
C	5	79'-2"	395.83'



PLAN OF GIRDER



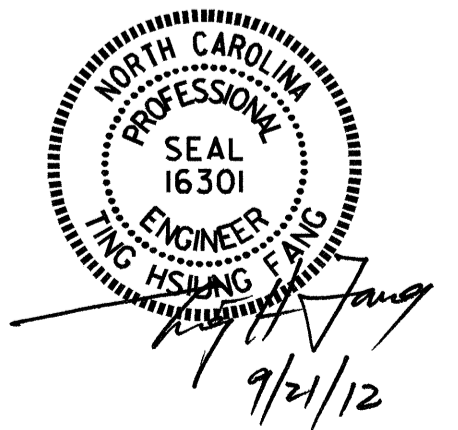
PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR ALL GIRDERS.



ELEVATION OF GIRDER
(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
STATION: 22+45.00 -L-
SHEET 2 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
AASHTO TYPE III
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPANS B & C



ASSEMBLED BY : E.C. LOCKLEAR	DATE : 6-14-10
CHECKED BY : W.F. PARKER	DATE : 4-2-12
DRAWN BY : ELR 8/91	REV. 10/17/00R RWW/LES
CHECKED BY : GRP 8/91	REV. 5/1/06R TLA/GM
	REV. 10/1/11 MAA/GM

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

TOTAL SHEETS: 35

STRUCTURAL STEEL NOTES

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

TENSION ON THE ASTM A325 BOLTS THROUGH THE CHANNEL MEMBER SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TENSION ON THE ASTM A449 BOLTS THROUGH THE GIRDER WEB SHALL BE SNUG TIGHTENED FOLLOWED BY AN ADDITIONAL 1/4 TURN.

THE PLATES, BENT PLATES, CHANNELS, AND ANGLES SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

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

GALVANIZE THE HIGH STRENGTH BOLTS, NUTS, WASHERS AND DIRECT TENSION INDICATORS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

USE AN ASTM F436 HARDENED WASHER WITH STANDARD AND SLOTTED HOLES UNDER EACH BOLT HEAD AND NUT.

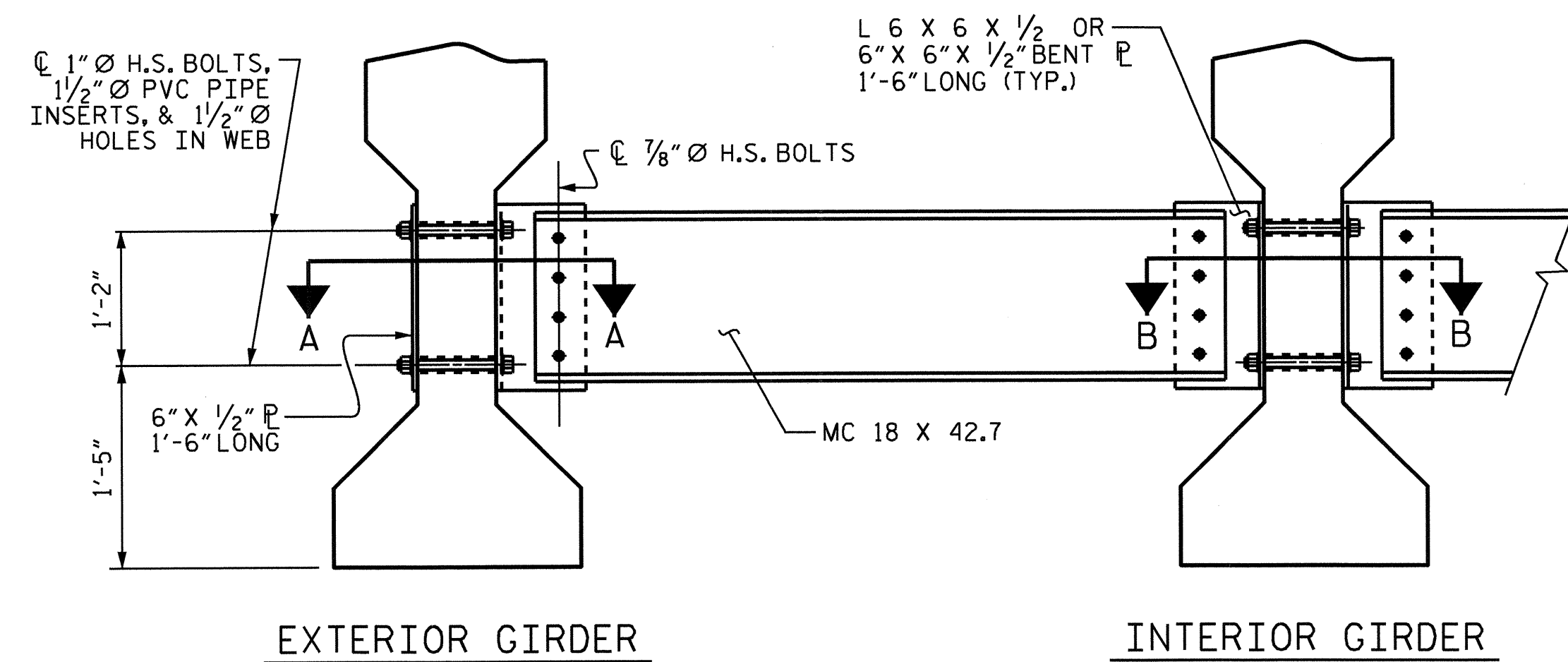
FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST 1/4" PROJECTION BEYOND THE NUT.

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

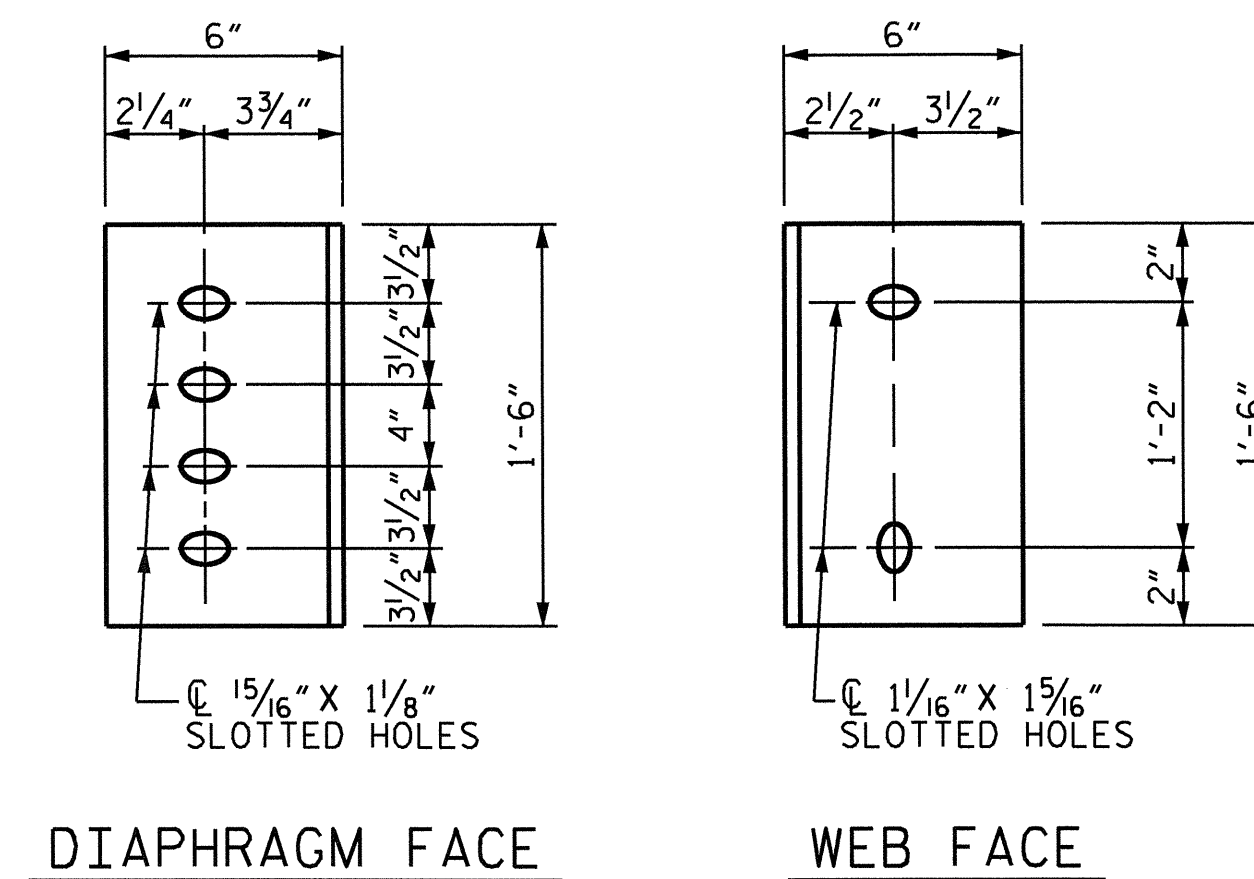
SUBMIT TWO SETS OF WORKING DRAWINGS FOR THE INTERMEDIATE DIAPHRAGM ASSEMBLY FOR REVIEW, COMMENTS AND ACCEPTANCE. AFTER REVIEW, COMMENTS, AND ACCEPTANCE, SUBMIT SEVEN SETS FOR DISTRIBUTION.

IN THE EXTERIOR BAYS, PLACE TEMPORARY STRUTS BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE STEEL DIAPHRAGMS. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED.

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



PART SECTION AT INTERMEDIATE DIAPHRAGM



CONNECTOR PLATE DETAILS

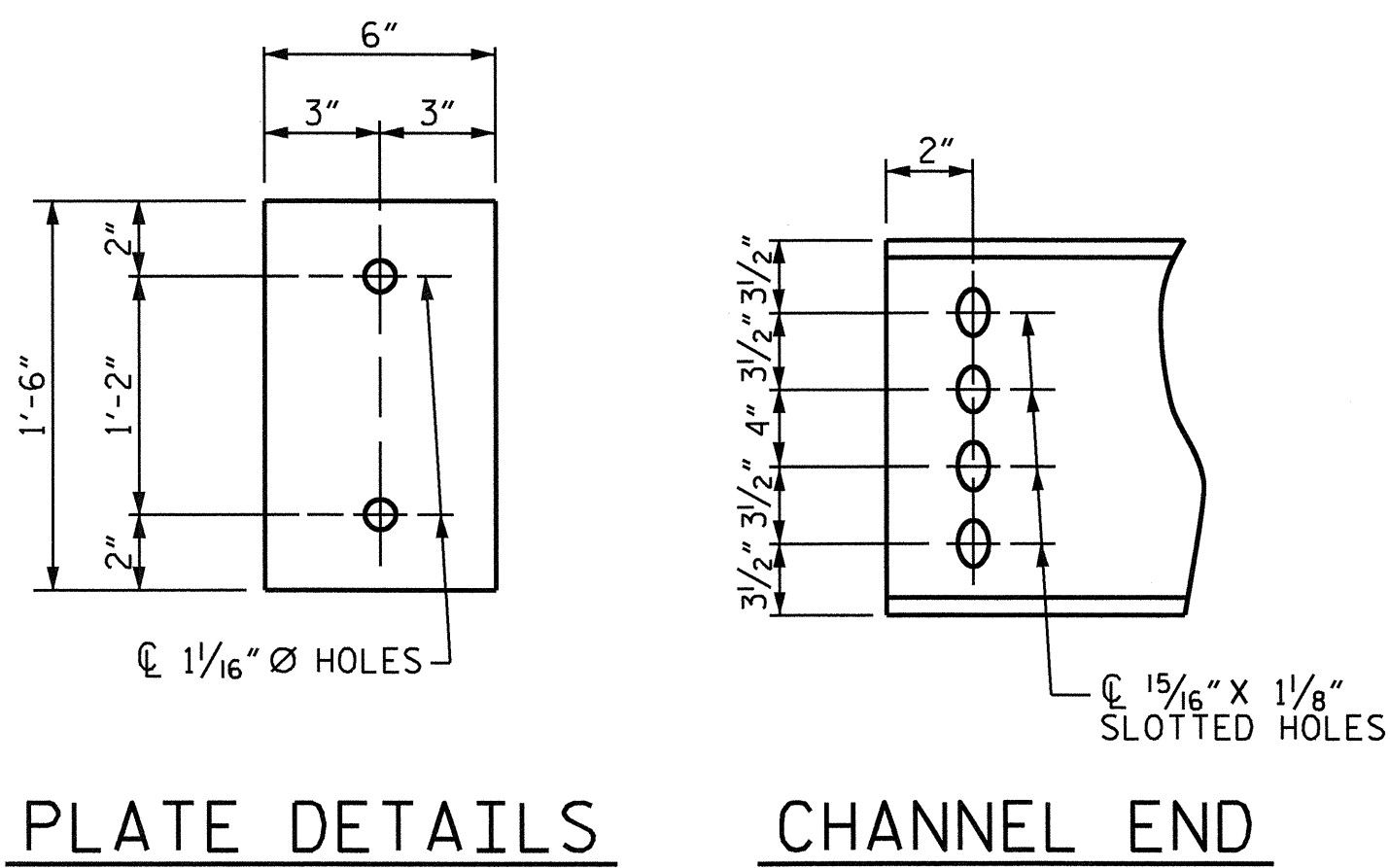
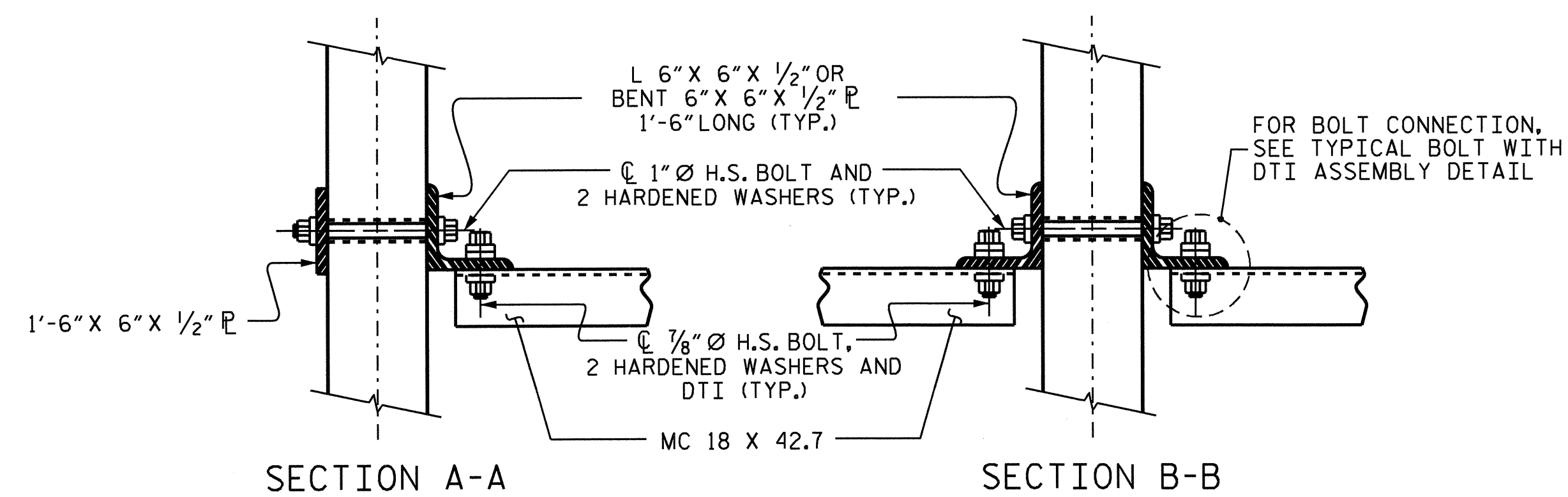
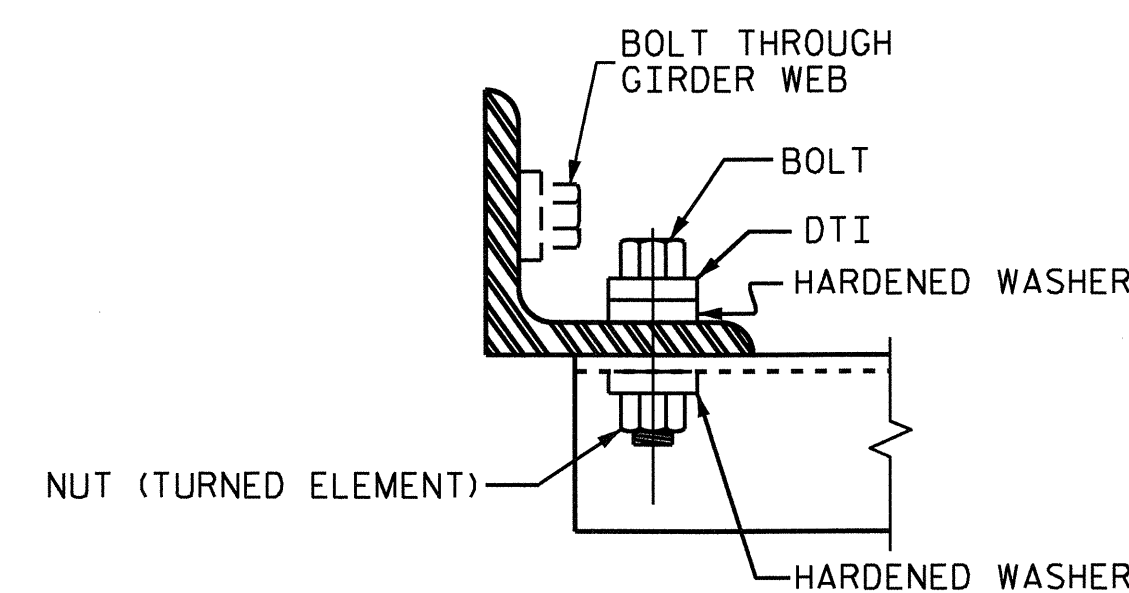


PLATE DETAILS CHANNEL END



CONNECTION DETAILS

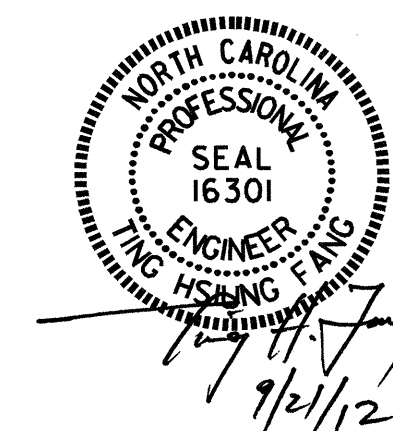
FOR LOCATION OF INTERMEDIATE DIAPHRAGMS, SEE "FRAMING PLAN" SHEET.



BOLT WITH DTI ASSEMBLY DETAIL

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

SHEET 4 OF 5



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE III PRESTRESSED CONCRETE GIRDERS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					35

ASSEMBLED BY : E.C. LOCKLEAR	DATE : 6-15-10
CHECKED BY : T. H. FANG	DATE : 6-15-12
DRAWN BY : TLA 6/05	ADDED 10/21/05
CHECKED BY : VC 6/05	REV. 5/1/06RRR KMM/GM
	REV. 10/1/11 MAA/GM

DEAD LOAD DEFLECTION TABLE																							
SPAN A																							
0.6" LOW RELAXATION		GIRDERS 1 & 5										GIRDERS 2, 3 & 4											
TENTH POINTS		BRG.	.1	.2	.3	.4	.5	.6	.7	.8	.9	BRG.	BRG.	.1	.2	.3	.4	.5	.6	.7	.8	.9	BRG.
CAMBER (GIRDER ALONE IN PLACE) ↑		0	0.009	0.017	0.023	0.027	0.028	0.027	0.023	0.017	0.009	0	0	0.009	0.017	0.023	0.027	0.028	0.027	0.023	0.017	0.009	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓		0	0.004	0.008	0.011	0.013	0.013	0.013	0.011	0.008	0.004	0	0	0.005	0.009	0.012	0.014	0.014	0.014	0.012	0.009	0.005	0
FINAL CAMBER ↑		0	1/16"	1/8"	1/8"	3/16"	3/16"	3/16"	1/8"	1/8"	1/16"	0	0	1/16"	1/8"	1/8"	3/16"	3/16"	3/16"	1/8"	1/8"	1/16"	0
SPANS B & C																							
0.6" LOW RELAXATION		GIRDERS 1 & 5										GIRDERS 2, 3 & 4											
TENTH POINTS		BRG.	.1	.2	.3	.4	.5	.6	.7	.8	.9	BRG.	BRG.	.1	.2	.3	.4	.5	.6	.7	.8	.9	BRG.
CAMBER (GIRDER ALONE IN PLACE) ↑		0	0.093	0.176	0.241	0.282	0.296	0.282	0.241	0.176	0.093	0	0	0.093	0.176	0.241	0.282	0.296	0.282	0.241	0.176	0.093	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓		0	0.038	0.071	0.097	0.114	0.120	0.114	0.097	0.071	0.038	0	0	0.041	0.077	0.106	0.124	0.130	0.124	0.106	0.077	0.041	0
FINAL CAMBER ↑		0	1/16"	1/4"	1 3/4"	2 1/8"	2 1/8"	2 1/8"	1 3/4"	1 1/4"	1 1/16"	0	0	5/8"	1 3/16"	1 5/8"	1 7/8"	2"	1 5/8"	1 5/8"	1 3/16"	5/8"	0
SPAN D																							
0.6" LOW RELAXATION		GIRDERS 1 & 5										GIRDERS 2, 3 & 4											
TENTH POINTS		BRG.	.1	.2	.3	.4	.5	.6	.7	.8	.9	BRG.	BRG.	.1	.2	.3	.4	.5	.6	.7	.8	.9	BRG.
CAMBER (GIRDER ALONE IN PLACE) ↑		0	0.092	0.175	0.239	0.280	0.294	0.280	0.239	0.175	0.092	0	0	0.092	0.175	0.239	0.280	0.294	0.280	0.239	0.175	0.092	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓		0	0.037	0.069	0.095	0.111	0.116	0.111	0.095	0.069	0.037	0	0	0.040	0.075	0.103	0.121	0.127	0.121	0.103	0.075	0.040	0
FINAL CAMBER ↑		0	1/16"	1 1/4"	1 3/4"	2"	2 1/8"	2"	1 3/4"	1 1/4"	1 1/16"	0	0	5/8"	1 3/16"	1 5/8"	1 5/16"	2"	1 5/16"	1 5/8"	1 3/16"	5/8"	0

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

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.

THE CONTRACTOR HAS THE OPTION TO PROVIDE, AT NO ADDITIONAL COST TO THE DEPARTMENT, 2 ADDITIONAL STRANDS AT THE TOP OF THE GIRDER TO FACILITATE TYING OF THE REINFORCING STEEL. THESE STRANDS SHALL BE PULLED TO A LOAD OF 4500 LBS.

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

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

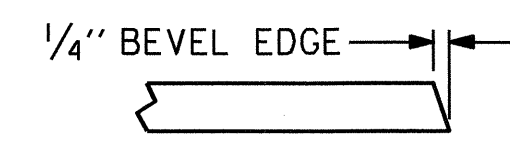
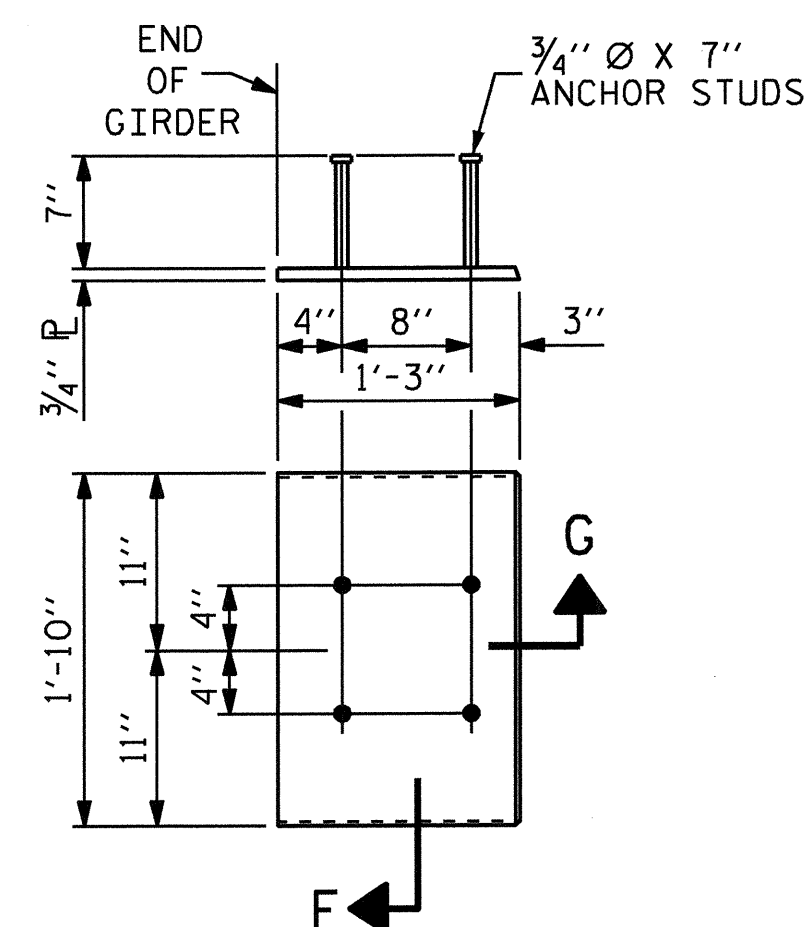
AT ENDS OF GIRDERS TO BE EMBEDDED IN CONCRETE DIAPHRAGMS OR END WALLS, PRESTRESSING STRANDS MAY EXTEND A MAXIMUM OF 2" BEYOND THE GIRDER ENDS. OTHERWISE, PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 PSI IN SPAN A AND 6000 PSI IN SPANS B, C & D.

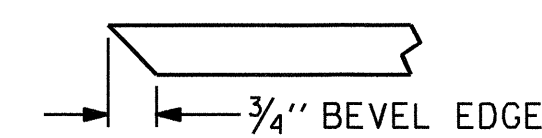
DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

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.



SECTION "G"



SECTION "F"

(SEE NOTES)

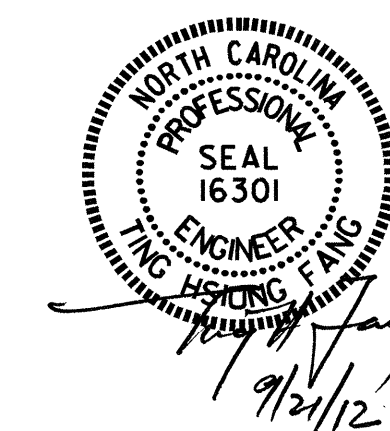
EMBEDDED PLATE "B-1" DETAILS

(2 REQ'D PER GIRDER)

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
STATION: 22+45.00 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
DEAD LOAD
DEFLECTIONS



DRAWN BY : E.C. LOCKLEAR DATE : 6-15-10
CHECKED BY : W.F. PARKER DATE : 4-2-12

21-SEP-2012 14:00
Y:\TIP\Projects-B\B4273\Structures\Final Plans\B4273_S0_DL.dgn
kpennton

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			35

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.

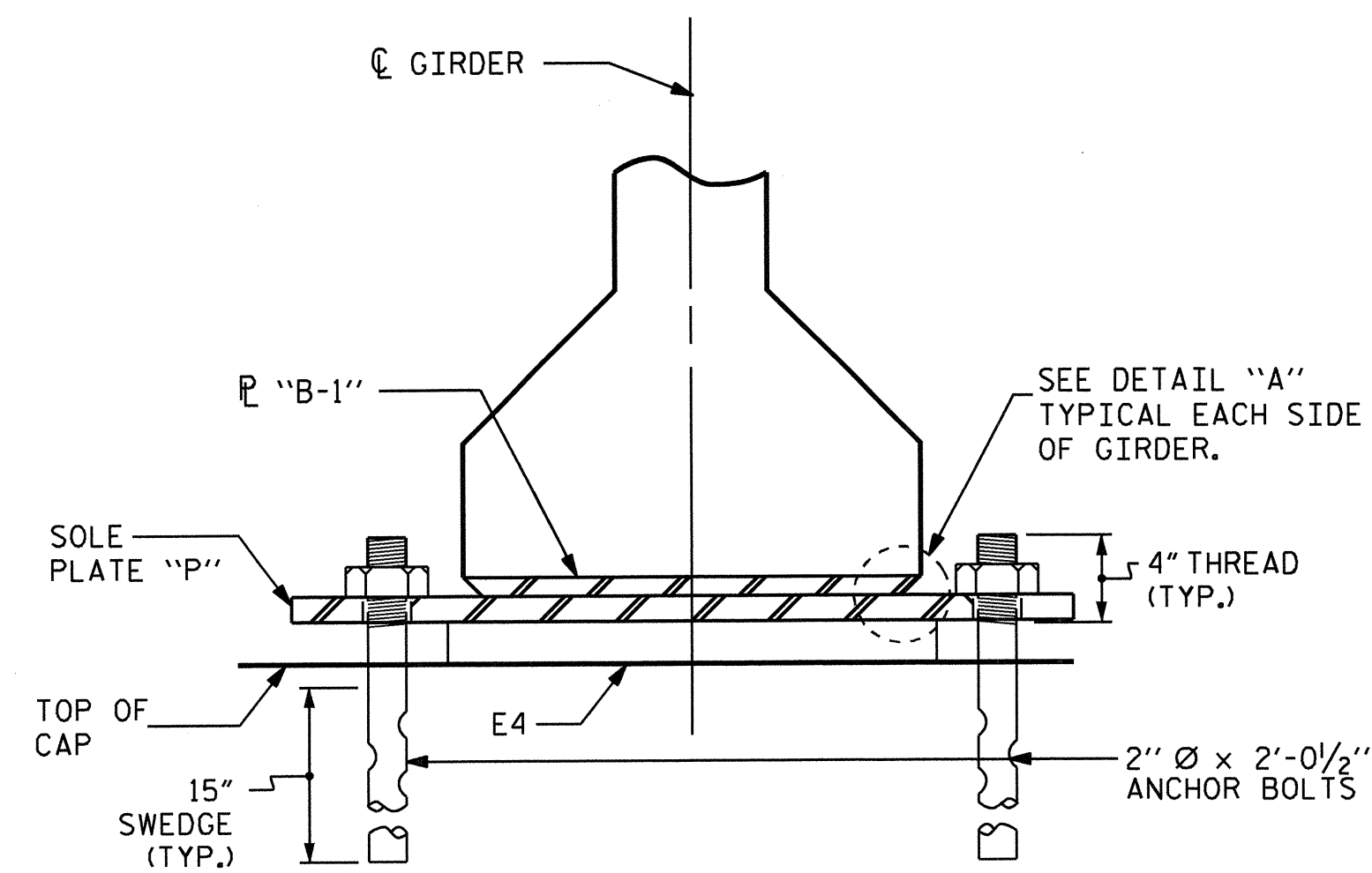
WHEN WELDING THE SOLE PLATE TO THE EMBEDDED PLATE IN THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

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

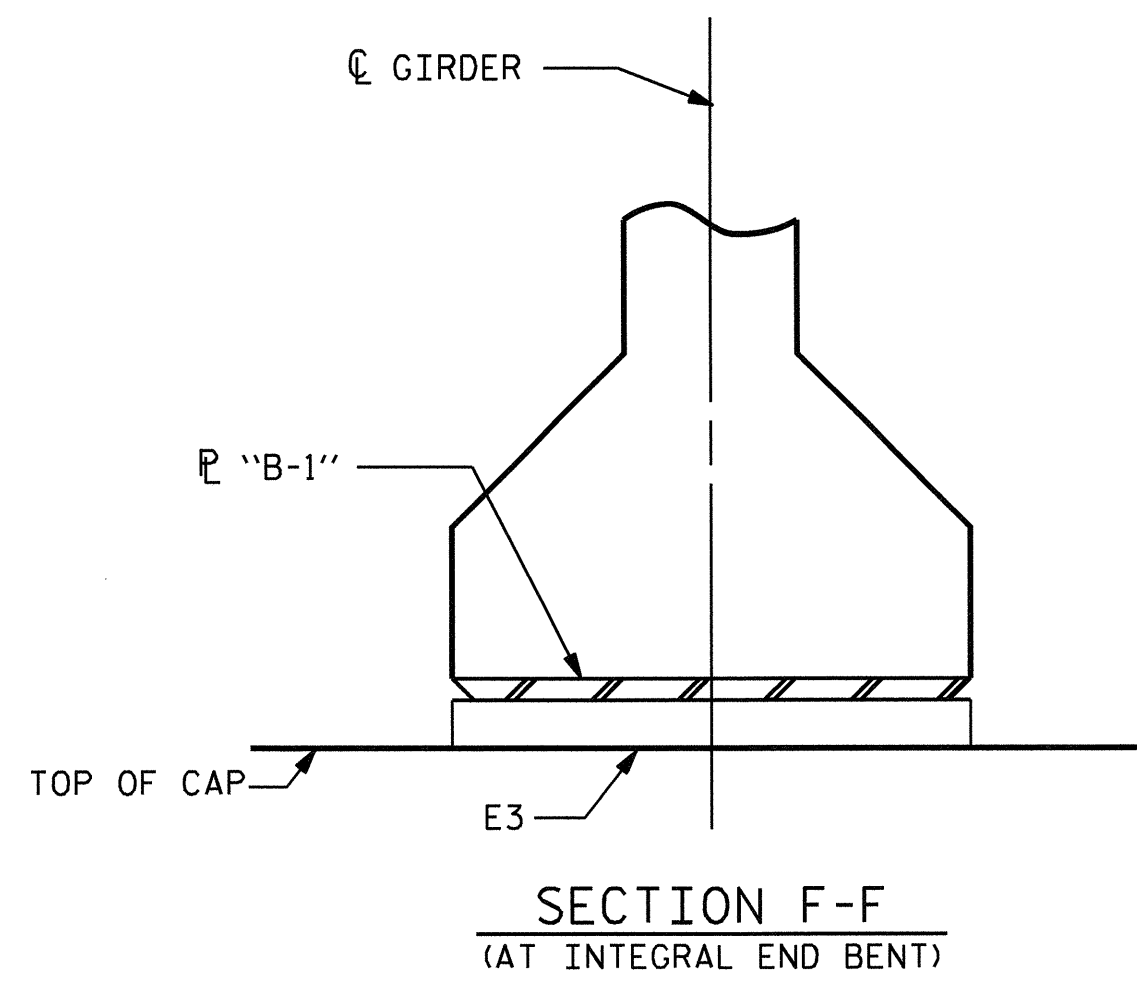
ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. NO SHOP DRAWINGS ARE REQUIRED FOR ANCHOR BOLTS AND NUTS. SHOP INSPECTION IS REQUIRED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

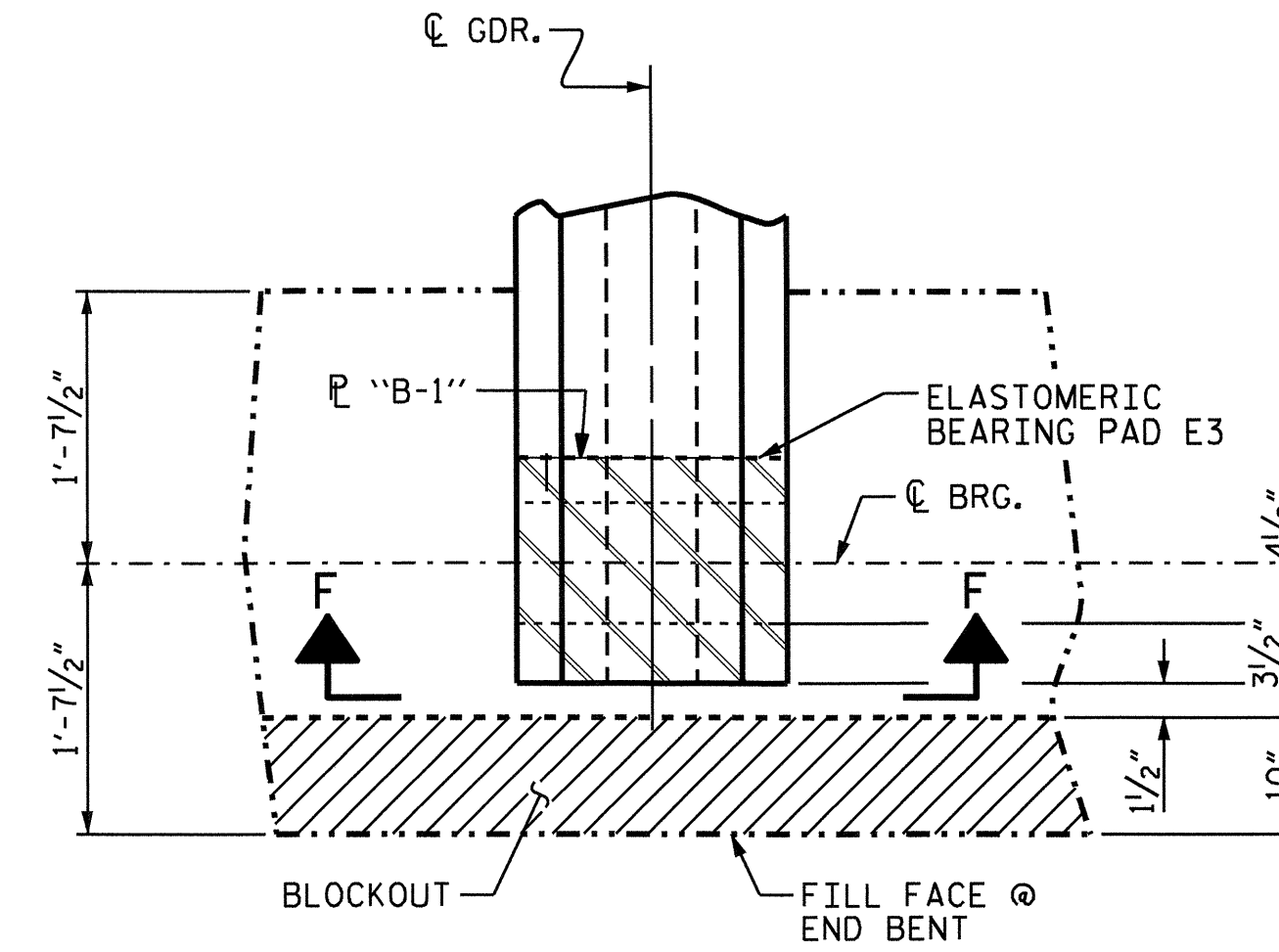
ELASTOMER IN ALL BENT LOCATIONS SHALL BE 60 DROMETER HARDNESS.



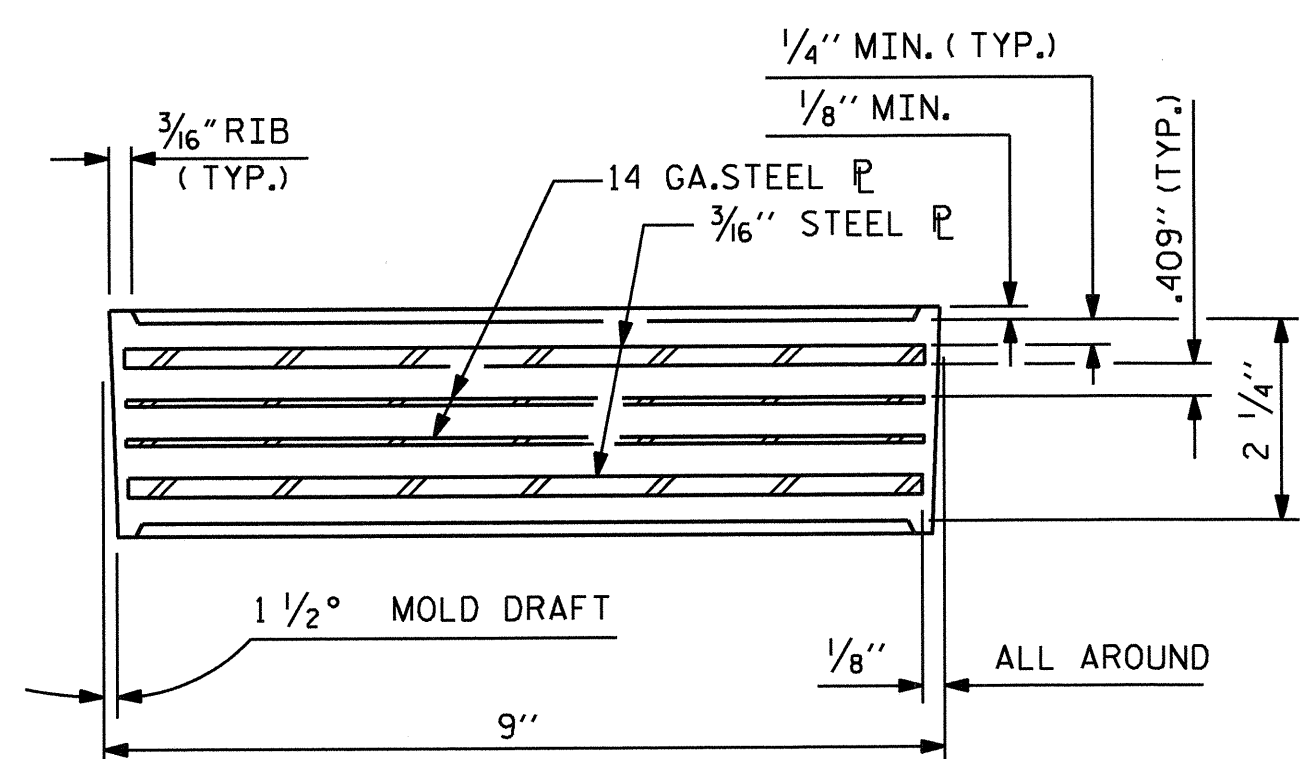
**SECTION E-E
(FIXED)**



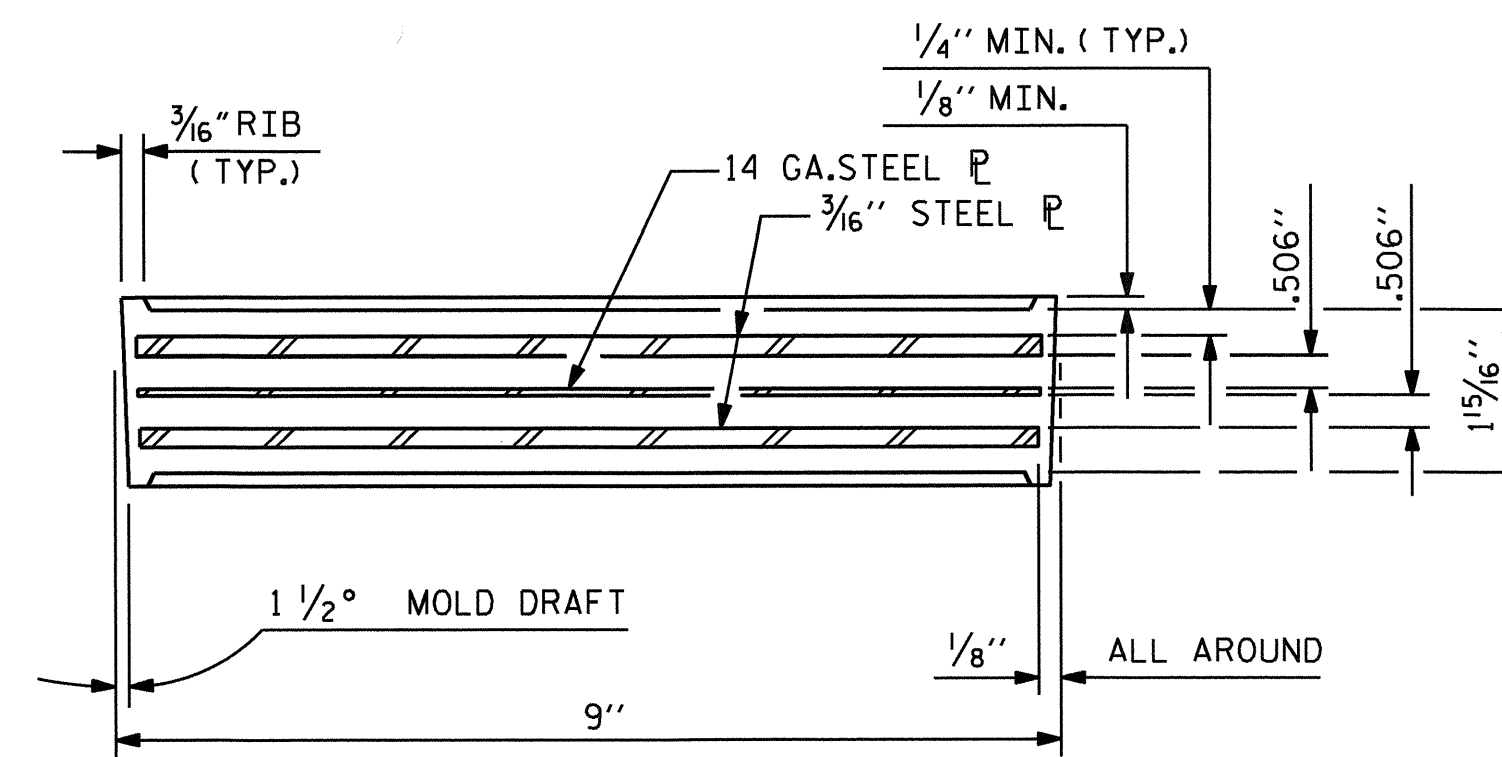
**SECTION F-F
(AT INTEGRAL END BENT)**



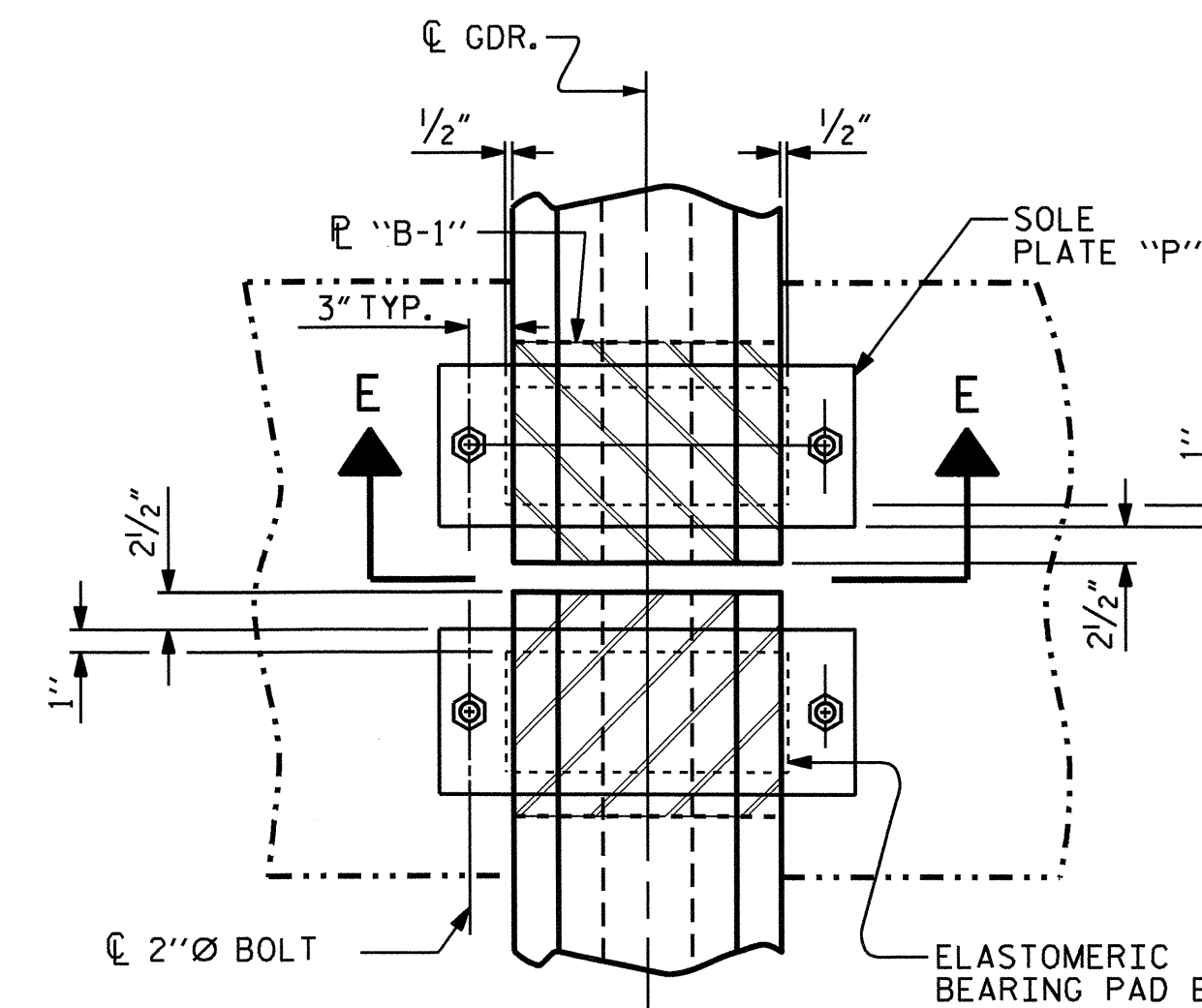
**TYPICAL PLAN @ END BENT
(INTEGRAL)**



TYPICAL SECTION OF ELASTOMERIC BEARINGS

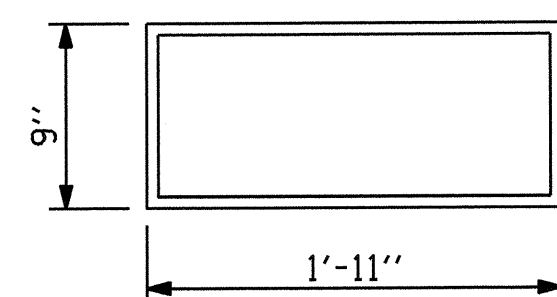


TYPICAL SECTION OF ELASTOMERIC BEARINGS



TYPICAL PLAN @ BENT

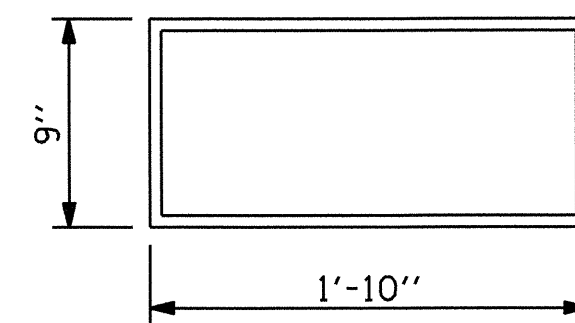
— LOAD RATINGS —	
	MAX. D.L. + L.L.
TYPE IV	137 K
TYPE V	180 K



E4 (30 REQ'D)

PLAN VIEW OF ELASTOMERIC BEARING

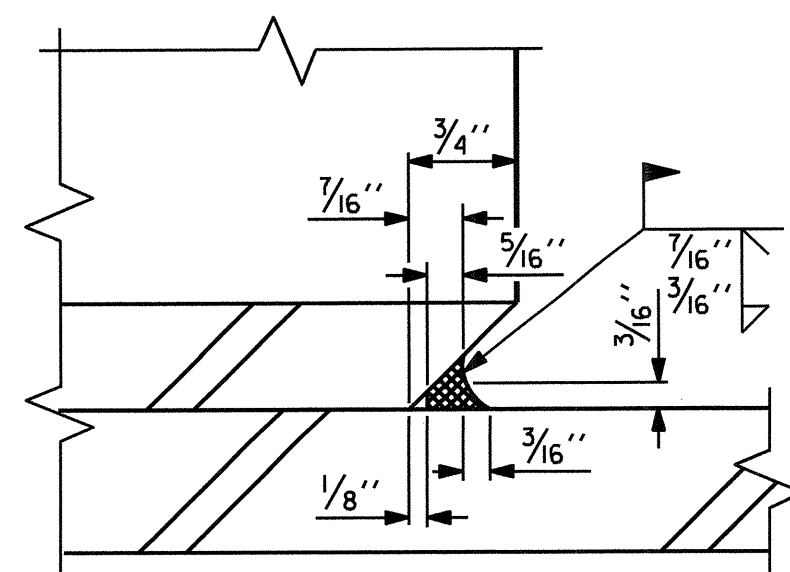
TYPE V



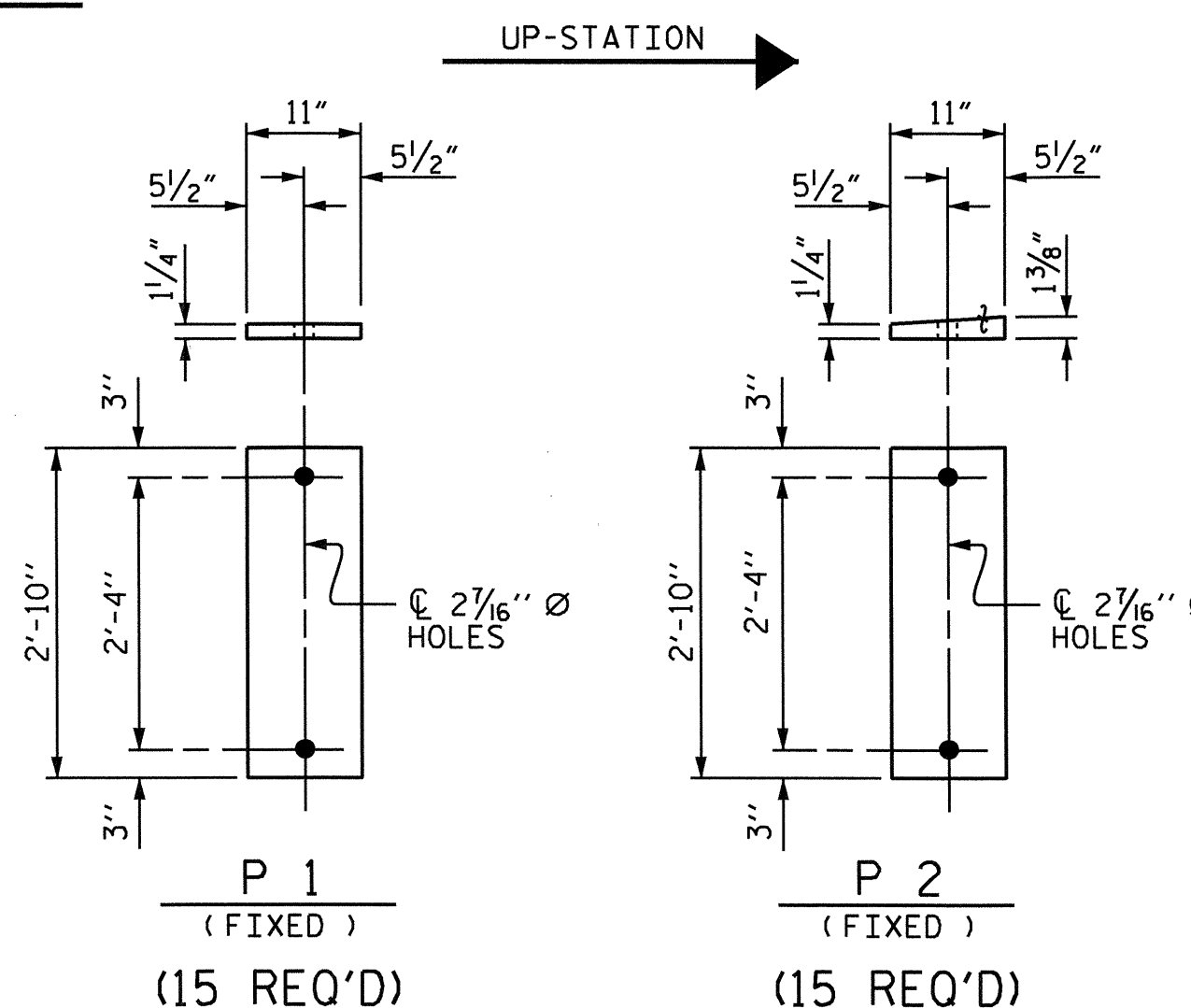
E3 (10 REQ'D)

PLAN VIEW OF ELASTOMERIC BEARING

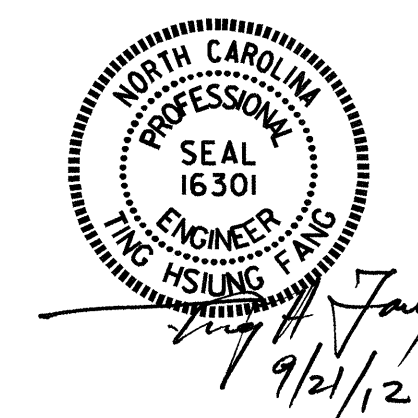
TYPE IV



DETAIL "A"



SOLE PLATE DETAILS ("P")



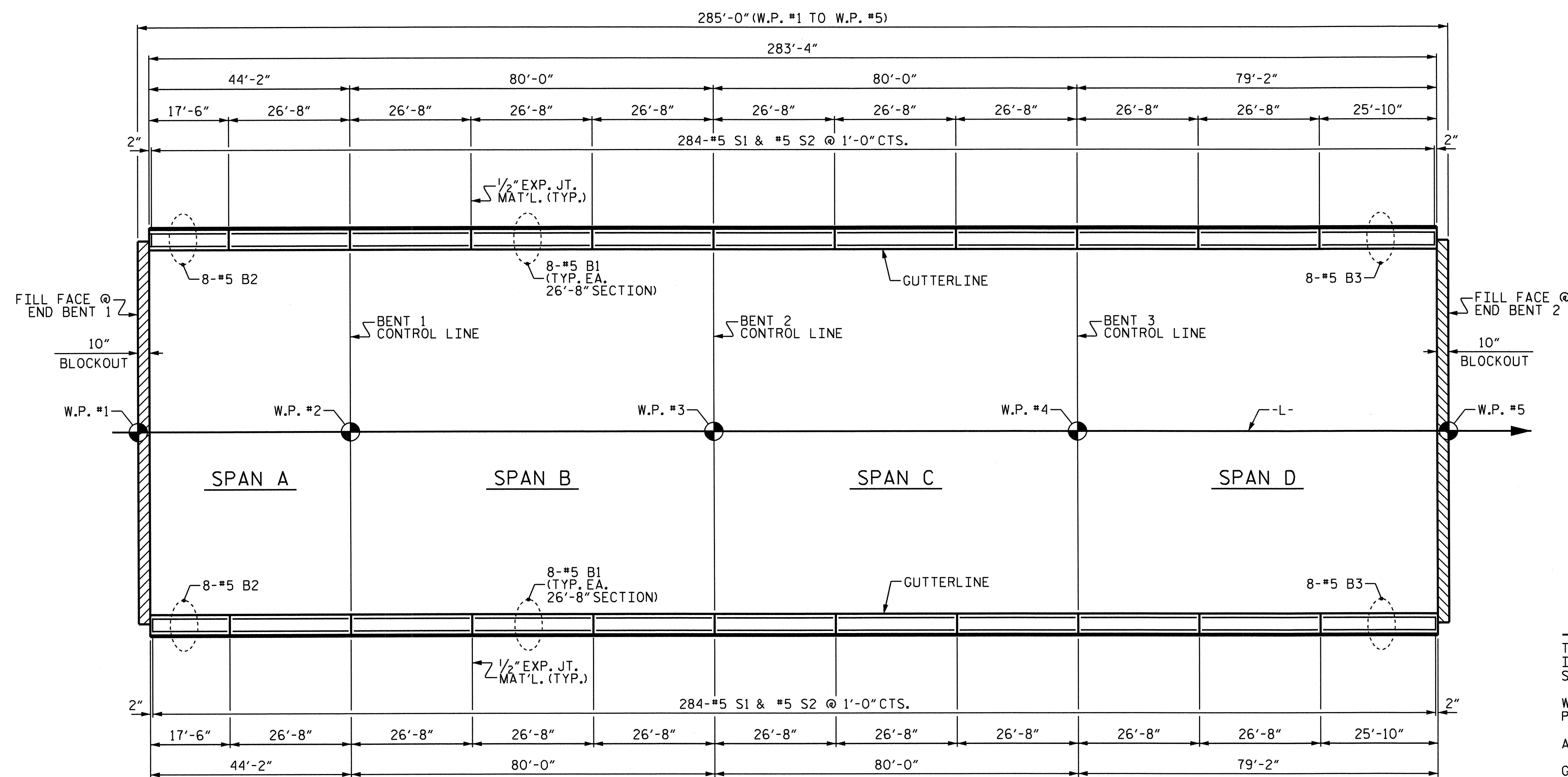
PROJECT NO. B-4273
 SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
**ELASTOMERIC BEARING
 DETAILS**
 PRESTRESSED CONCRETE GIRDER
 SUPERSTRUCTURE

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

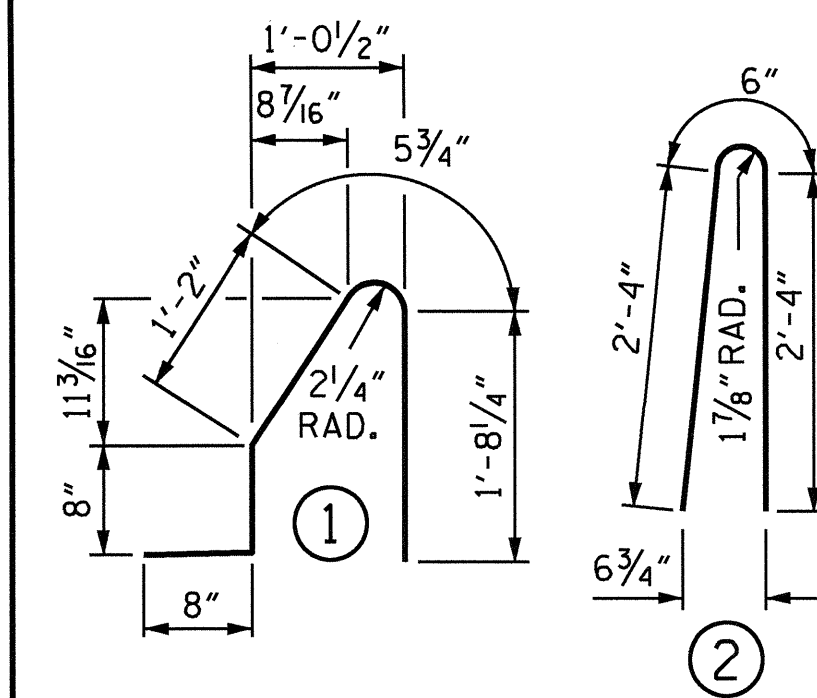
TOTAL SHEETS: 35

ASSEMBLED BY: E.C. LOCKLEAR DATE: 6-21-10
 CHECKED BY: W.F. PARKER DATE: 4-2-12
 DRAWN BY: EEM 2/97 REV. 10/17/00 RWW/LES
 CHECKED BY: VAP 2/97 REV. 5/1/06 TLA/GM
 REV. 10/1/11 MAA/GM



PLAN

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	144	#5	STR	26'-4"	3955
* B2	16	#5	STR	17'-2"	286
* B3	16	#5	STR	25'-6"	426
* S1	568	#5	1	4'-8"	2765
* S2	568	#5	2	5'-2"	3061
* EPOXY COATED REINFORCING STEEL					10493
CLASS AA CONCRETE					56.8 CU. YDS.
CONCRETE BARRIER RAIL					566.67 LIN. FT.

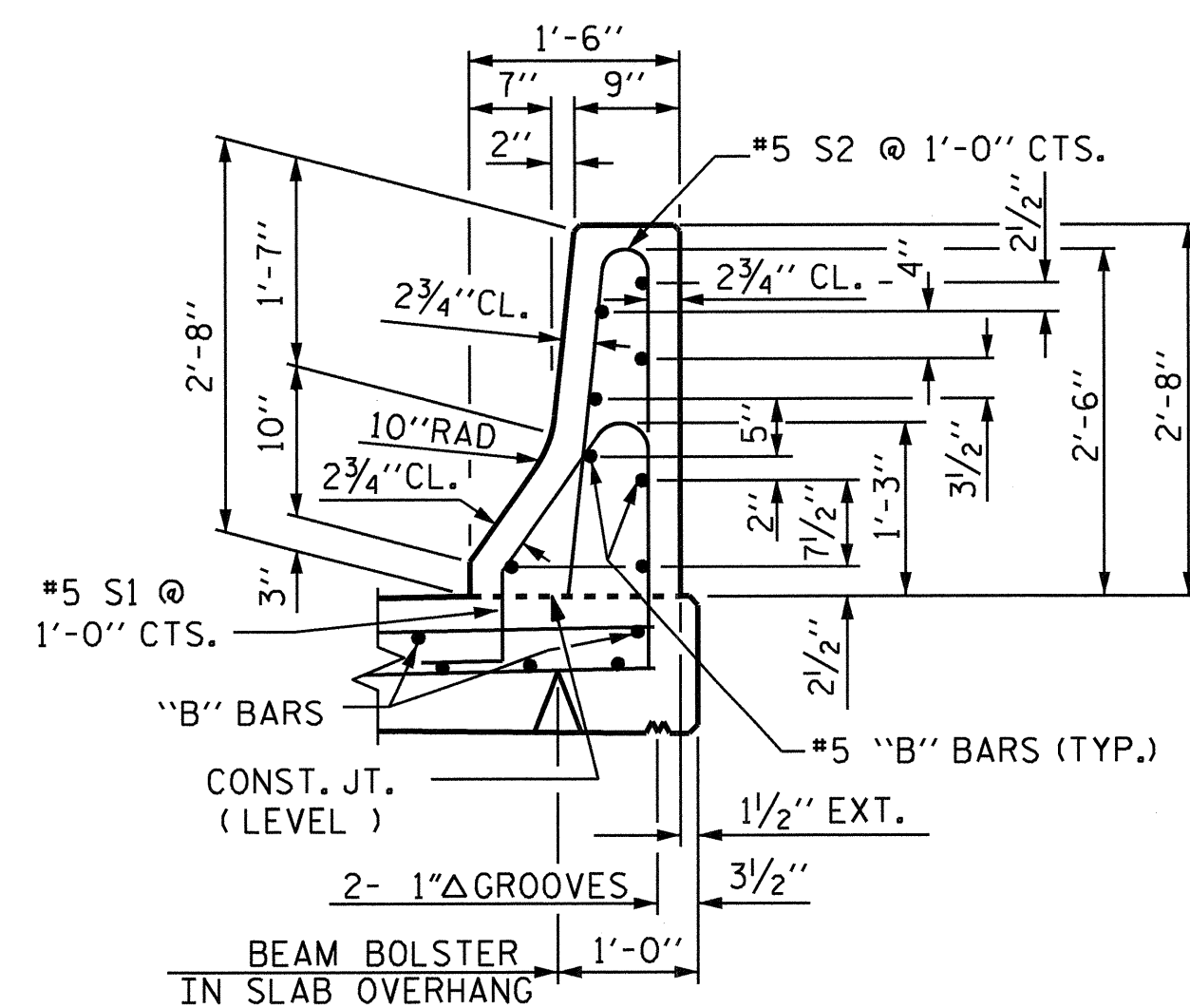
NOTES

THE BARRIER RAIL IN EACH SPAN 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.

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

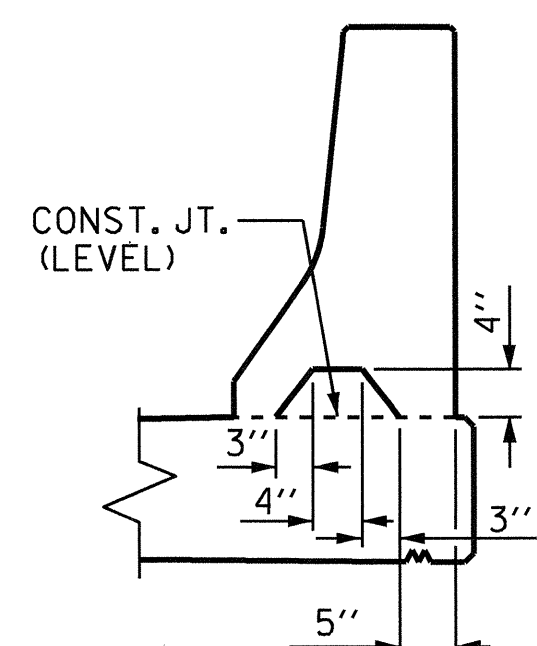
ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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.

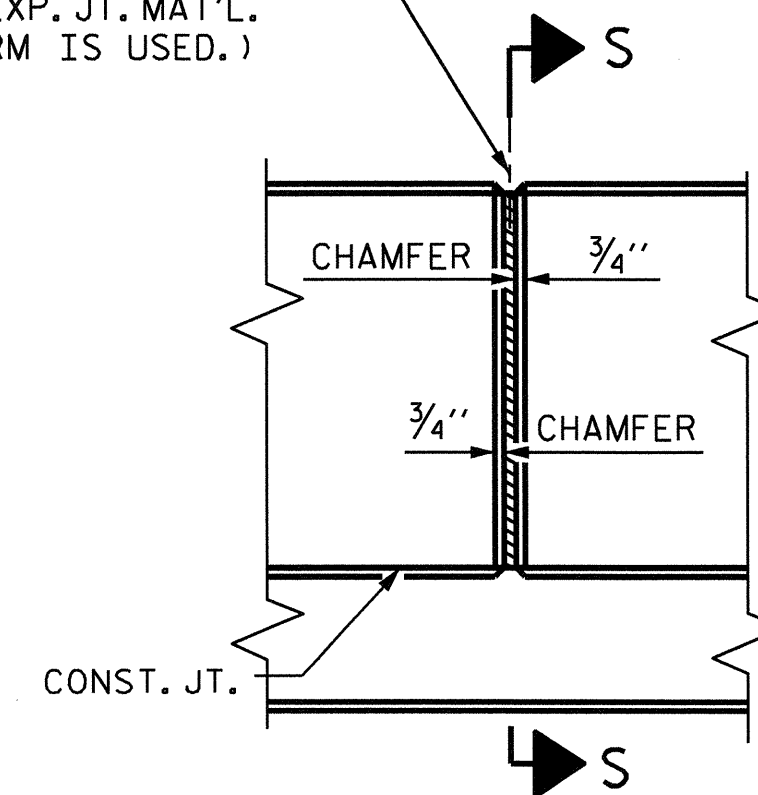


SECTION THRU RAIL

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

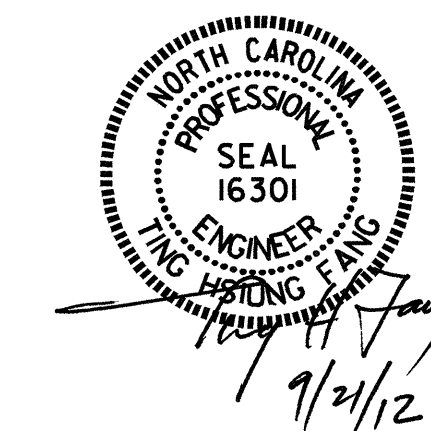


SECTION S-S AT DAM IN OPEN JOINT (THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE BARRIER RAIL

REVISIONS						SHEET NO. S-18
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 35
2			4			

DRAWN BY: E.C. LOCKLEAR DATE: 6-17-10
 CHECKED BY: Z.H. BROWN DATE: 3-18-11

NOTES

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

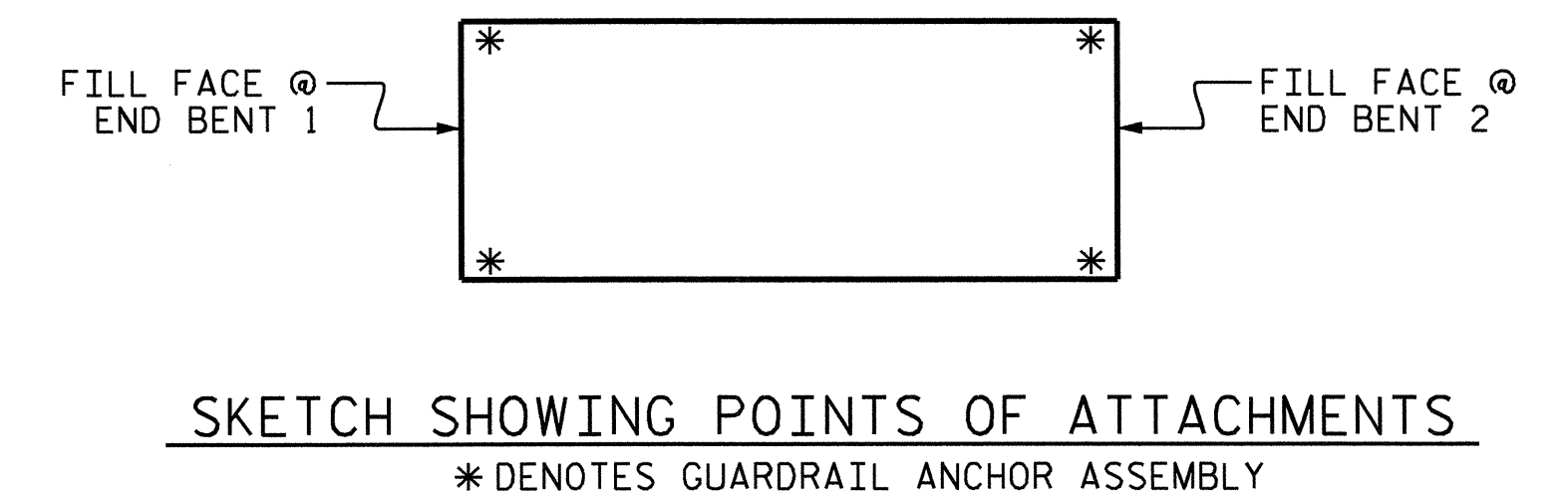
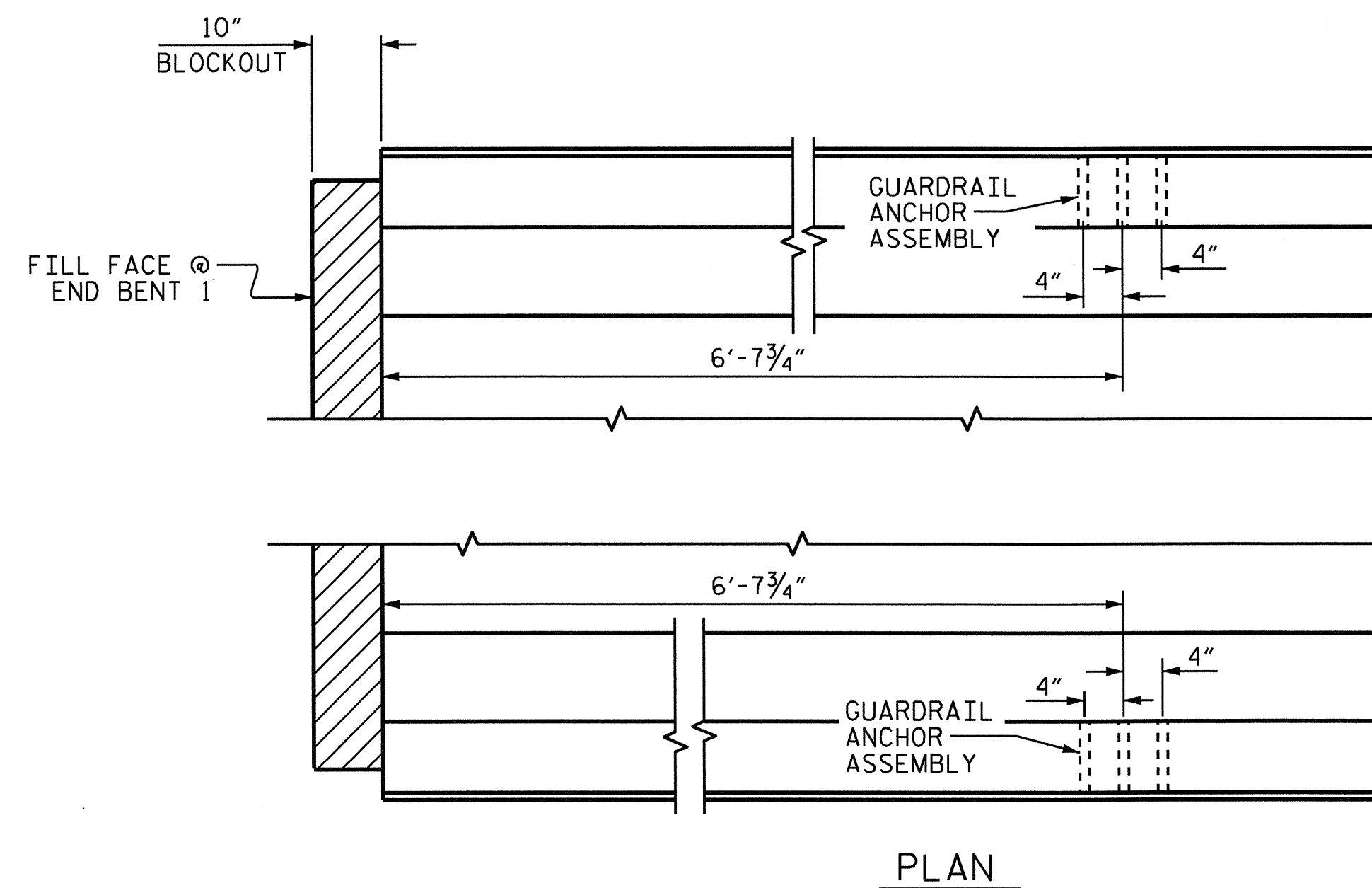
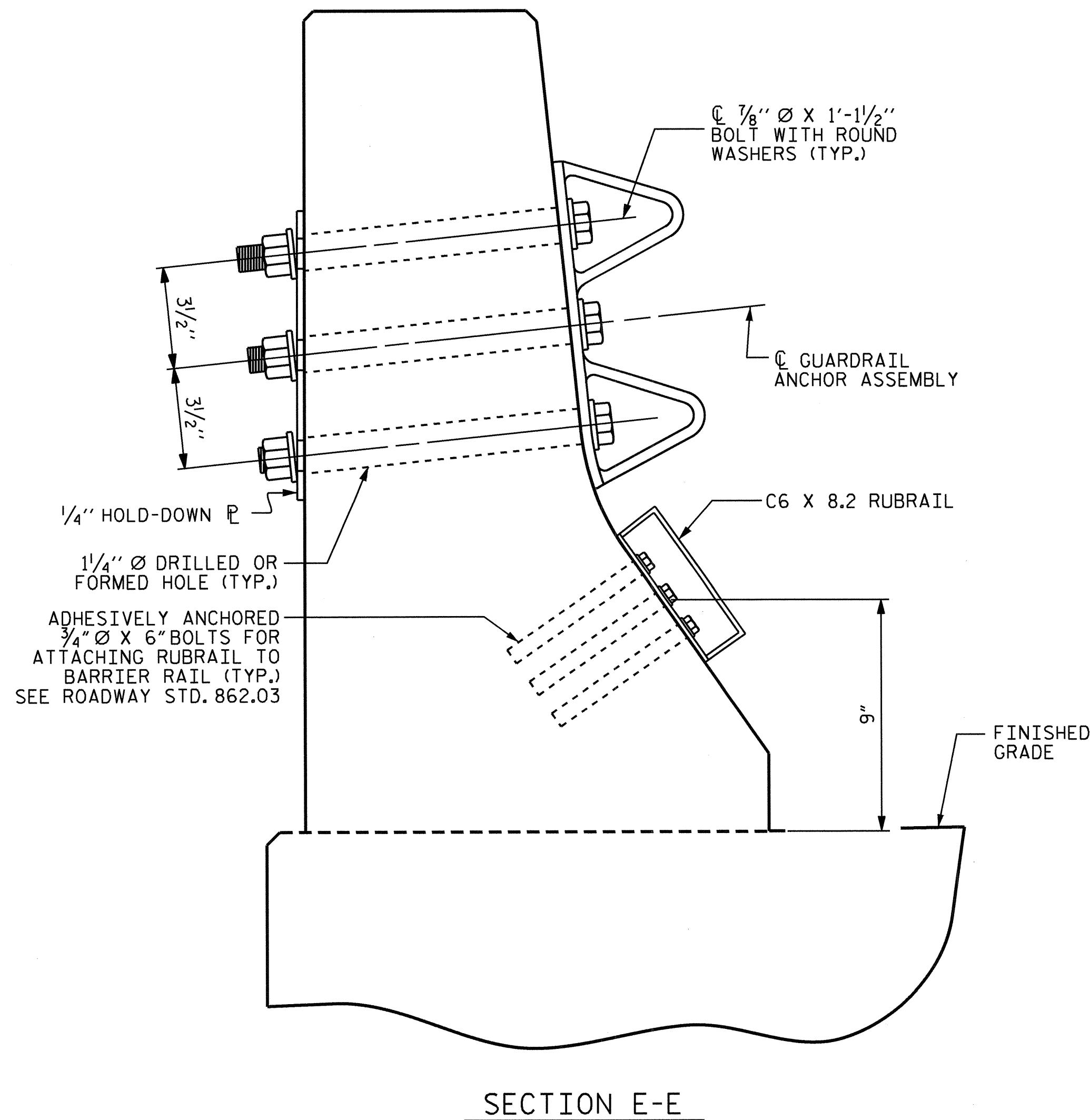
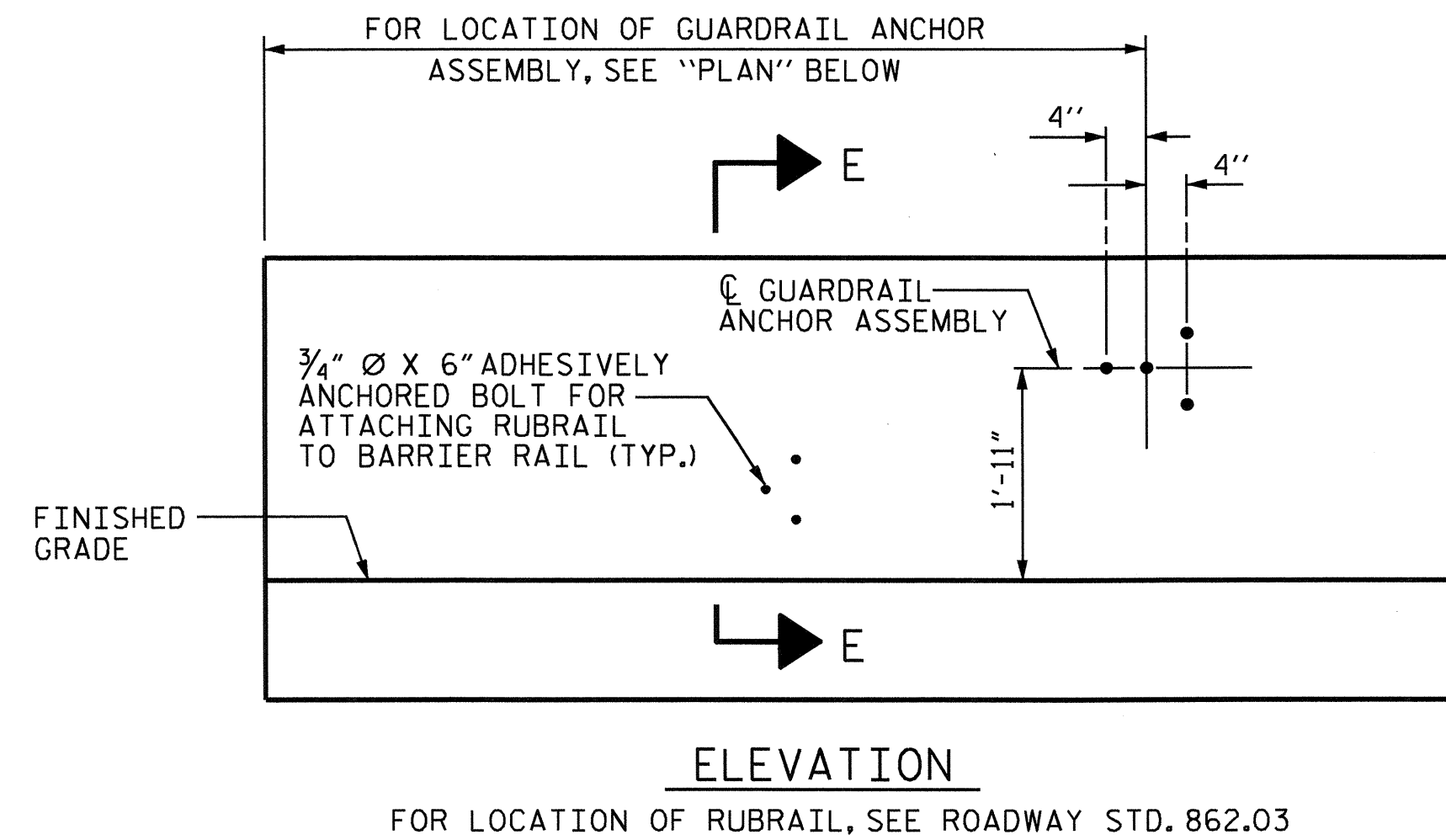
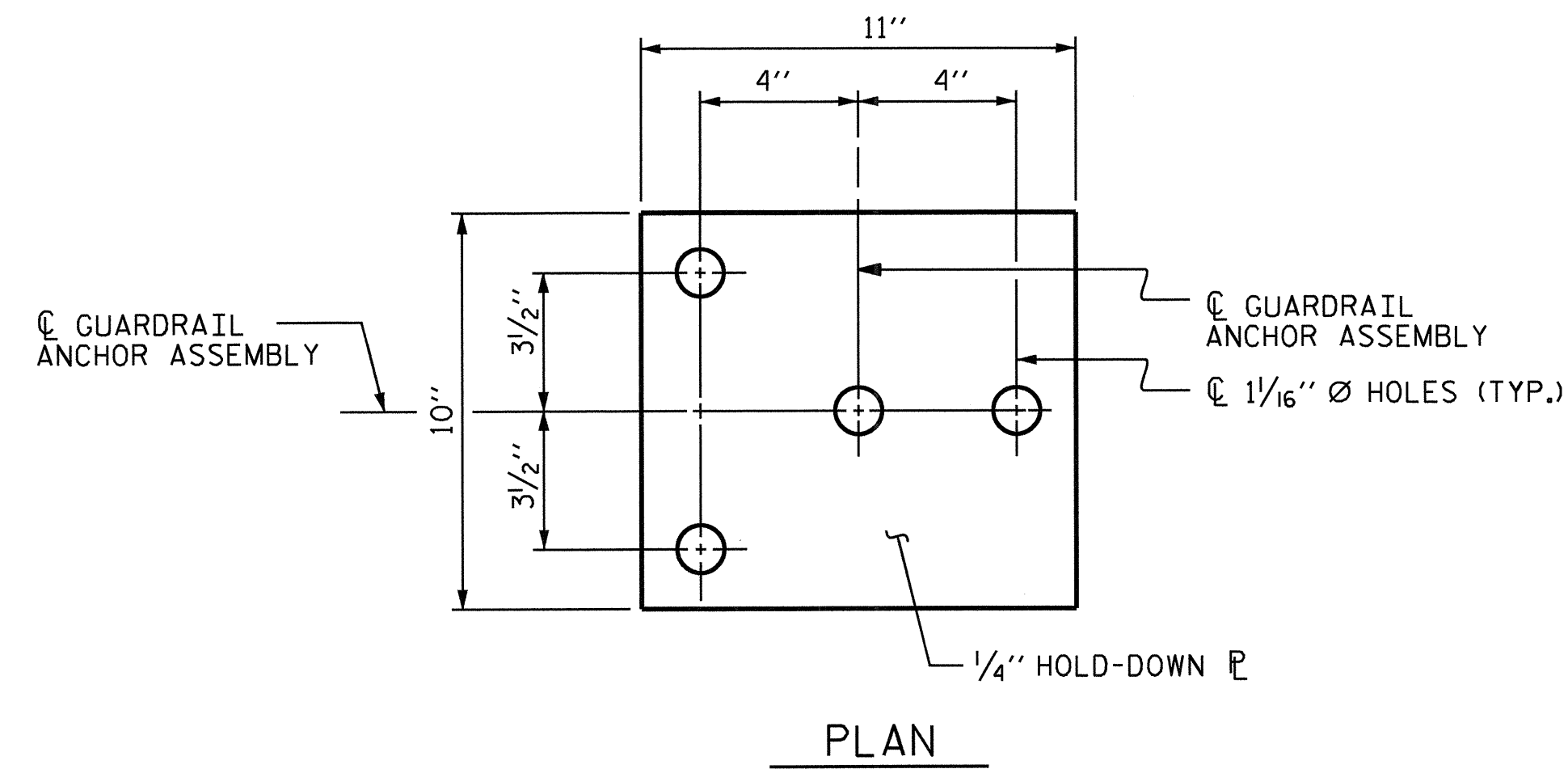
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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.

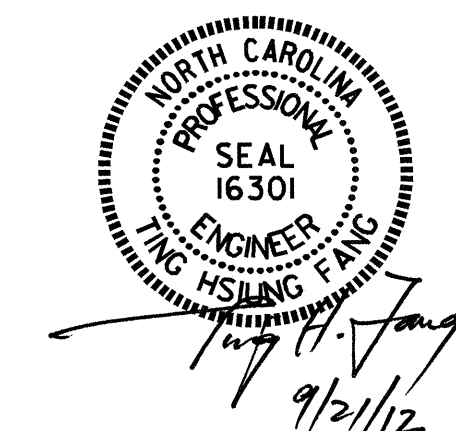
THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR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



LOCATION OF ANCHORS FOR GUARDRAIL

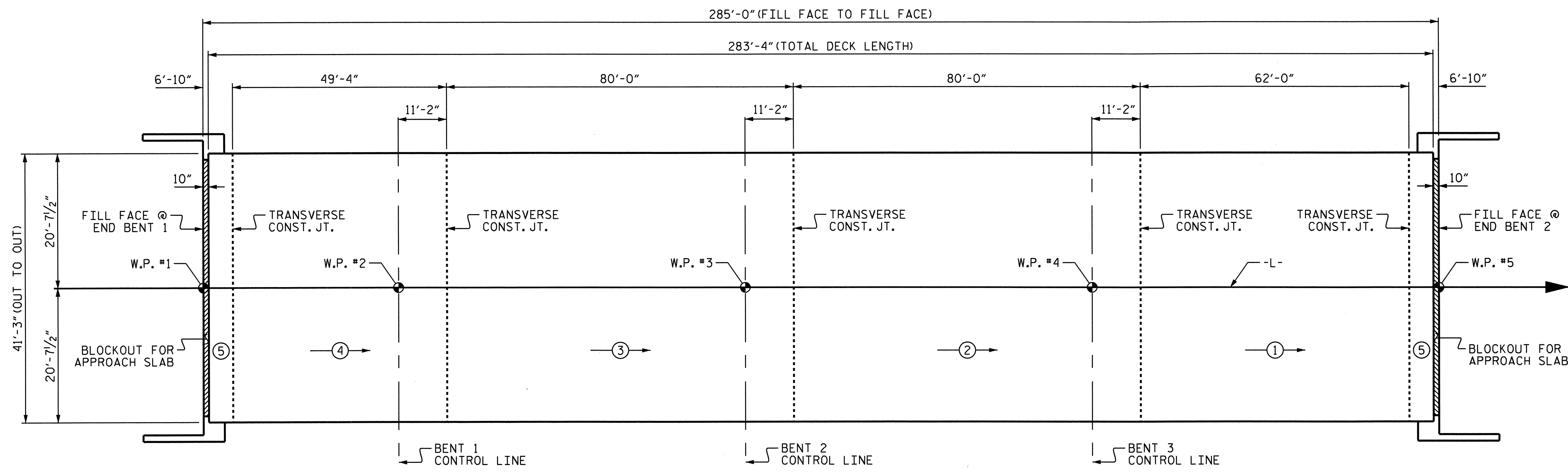
END BENT 1 SHOWN, END BENT 2 SIMILAR.

PROJECT NO. B-4273
 SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. 5-19
STANDARD GUARDRAIL ANCHORAGE FOR BARRIER RAIL						TOTAL SHEETS 35
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

ASSEMBLED BY : E.C. LOCKLEAR	DATE : 6-17-10
CHECKED BY : Z. H. BROWN	DATE : 3-11-11
DRAWN BY : TLA 5/06	ADDED 5/1/06RR KMM/GM
CHECKED BY : GM 5/06	REV. 10/1/11 MAA/GM



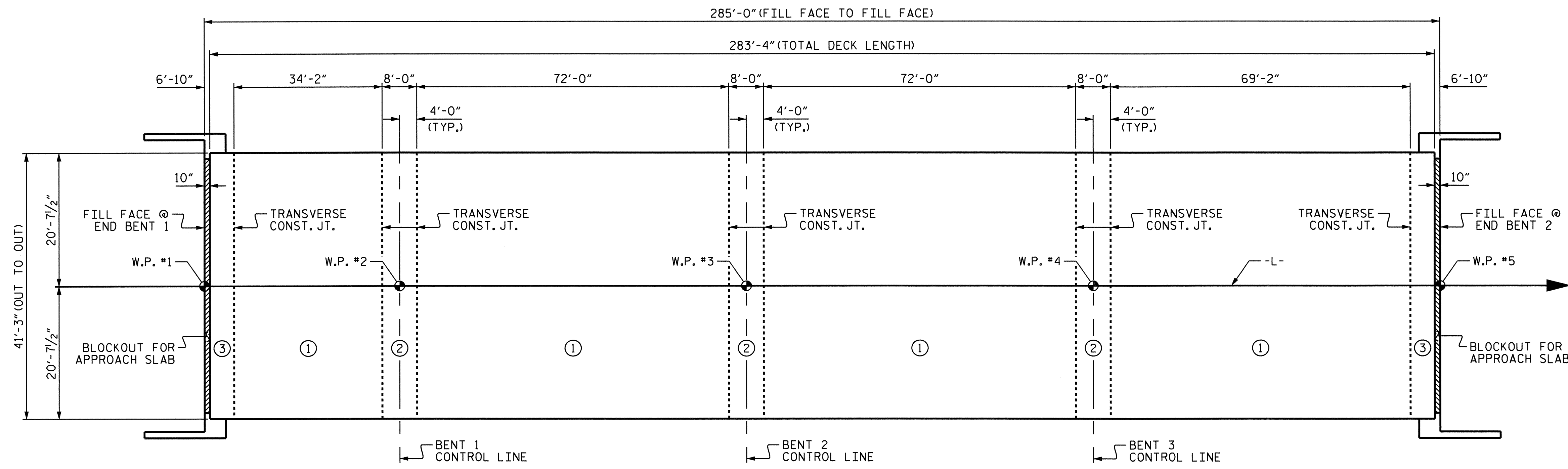
POURING SEQUENCE
SEE TRANSVERSE CONSTRUCTION JOINT DETAIL

⊙ = INDICATES POUR NUMBER AND DIRECTION OF POUR

TRANSVERSE CONSTRUCTION JOINT DETAIL

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

NOTE: THE UPPER PORTION OF THE WINGS SHALL BE POURED WITH THE SUPERSTRUCTURE.



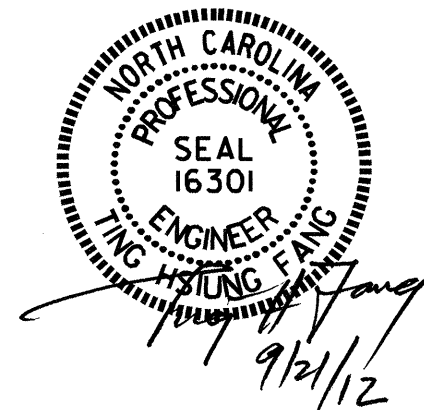
OPTIONAL POURING SEQUENCE

POUR 2 CANNOT BE STARTED UNTIL BOTH ADJACENT POUR 1 REACH A MINIMUM OF 3000 PSI RESPECTIVELY. SEE TRANSVERSE CONSTRUCTION JOINT DETAIL

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
STATION: 22+45.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

POUR SEQUENCE



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			38

DRAWN BY: E.C. LOCKLEAR DATE: 6-24-10
CHECKED BY: W.F. PARKER DATE: 4-2-12

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS					
BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	2'-0"	1'-9"	2'-0"	1'-9"	2'-9"
#5	2'-6"	2'-2"	2'-6"	2'-2"	3'-5"
#6	3'-0"	2'-7"	3'-10"	2'-7"	4'-4"
#7	5'-3"	3'-6"			
#8	6'-10"	4'-7"			

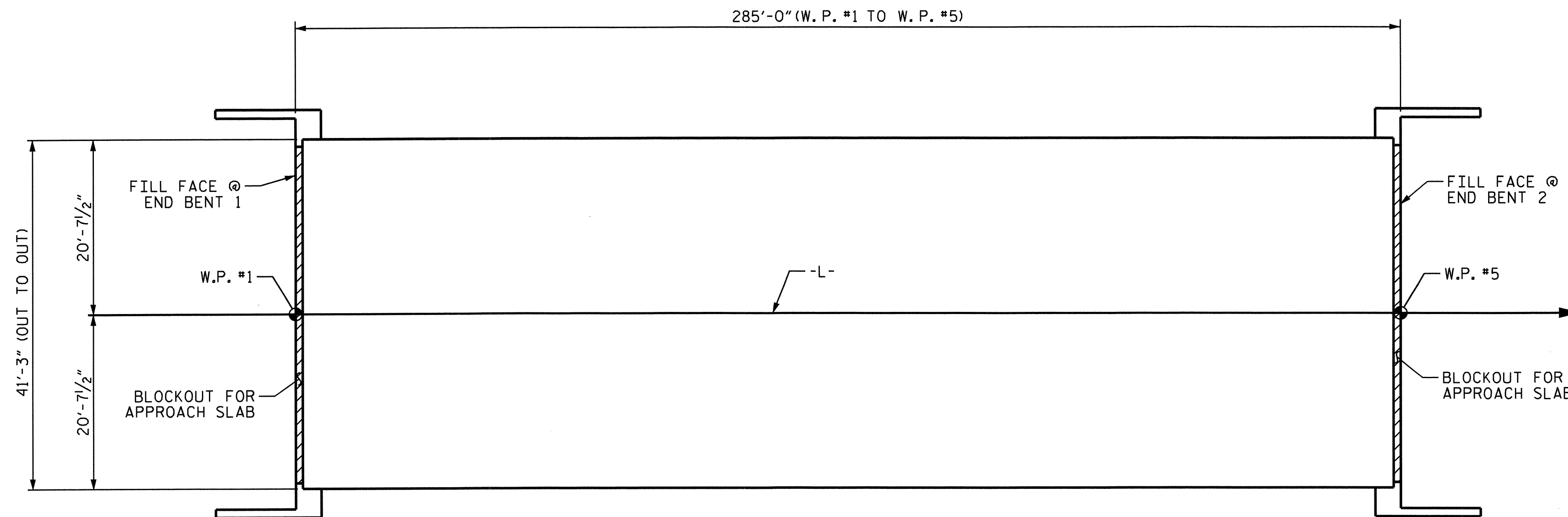
GROOVING BRIDGE FLOORS	
APPROACH SLABS	1,692 SQ.FT.
BRIDGE DECK	9,905 SQ.FT.
TOTAL	11,597 SQ.FT.

SUPERSTRUCTURE BILL OF MATERIAL			
	CLASS AA CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EPOXY COATED REINFORCING STEEL (LBS.)
POUR 1	82.1		
POUR 2	117.7		
POUR 3	117.7		
POUR 4	77.1		
POUR 5	64.8		
TOTAL **	459.4	42,849	42,092

** QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED

BAR TYPES						BILL OF MATERIAL					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	567	#5	STR	40'-11"	24197	* B1	28	#4	STR	20'-8"	387
A2	567	#5	STR	40'-11"	24197	* B2	55	#7	STR	8'-10"	993
						* B3	28	#7	STR	47'-6"	2719
						* B4	27	#7	STR	19'-0"	1049
						* B5	56	#4	STR	26'-0"	973
						* B6	56	#7	STR	58'-0"	6639
						* B7	54	#4	STR	24'-0"	866
						* B8	56	#4	STR	20'-1"	751
						* B9	55	#7	STR	15'-10"	1780
						B10	300	#5	STR	49'-0"	15332
						H1	48	#4	5	12'-10"	411
						K1	20	#4	STR	24'-4"	325
						K2	8	#4	STR	6'-7"	35
						K3	8	#4	STR	7'-4"	39
						K4	16	#4	STR	7'-10"	84
						K5	8	#4	STR	7'-1"	38
						K6	4	#4	STR	4'-10"	13
						K7	4	#4	STR	5'-2"	14
						K8	8	#4	STR	5'-6"	29
						K9	4	#4	STR	5'-1"	14
						K10	8	#4	STR	2'-8"	14
						K11	24	#4	STR	5'-5"	87
						K12	24	#4	STR	7'-4"	118
						K13	48	#4	STR	7'-10"	251
						K14	24	#4	STR	7'-1"	114
						K15	30	#4	STR	18'-5"	371
						S1	64	#4	3	10'-1"	431
						S2	312	#4	2	2'-9"	573
						* S3	68	#4	4	11'-8"	530
						* S4	64	#4	4	10'-1"	431
						S5	8	#4	3	12'-1"	65
						* U1	60	#4	1	14'-4"	574
						* U2	24	#4	1	12'-8"	203
						V2	96	#4	STR	4'-7"	294
REINFORCING STEEL = 42,849 LBS											
* EPOXY COATED REIN. STEEL = 42,092 LBS											

ALL BAR DIMENSIONS ARE OUT TO OUT



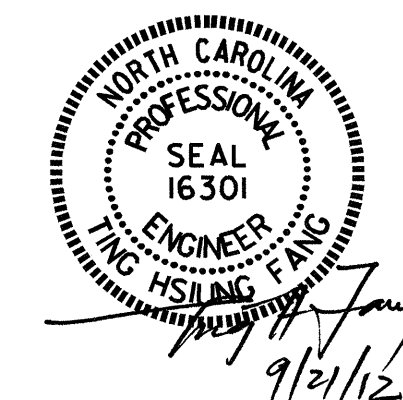
LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB (SQ. FT. = 11,756)

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
STATION: 22+45.00 -L-

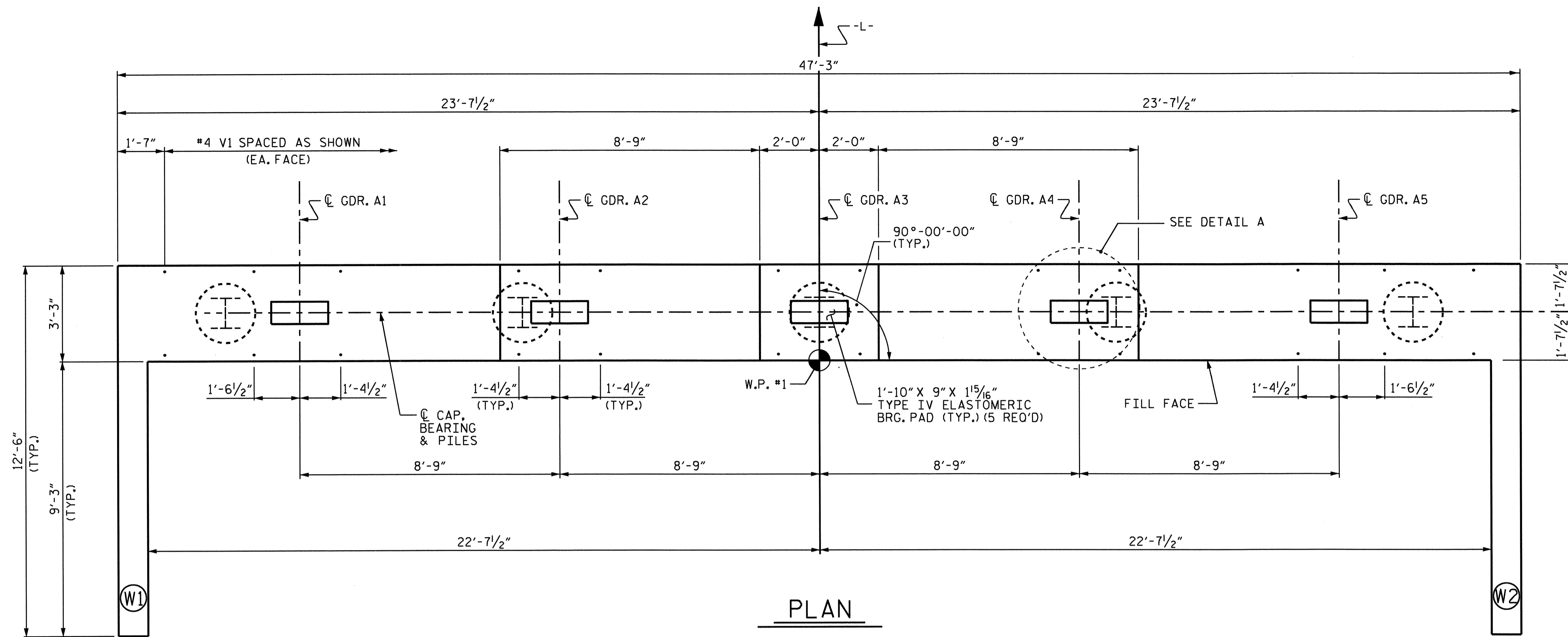
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
BILL OF MATERIAL

ASSEMBLED BY: E.C. LOCKLEAR DATE: 6-23-10
CHECKED BY: T.H. FANG DATE: 6-12
DRAWN BY: JMB 5/87 REV. 6/1/94 EEM/GRP
CHECKED BY: SJD 9/87 REV. 8/16/99 RWW/LES
REV. 5/1/06 TLA/GM



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS 38
2			4			



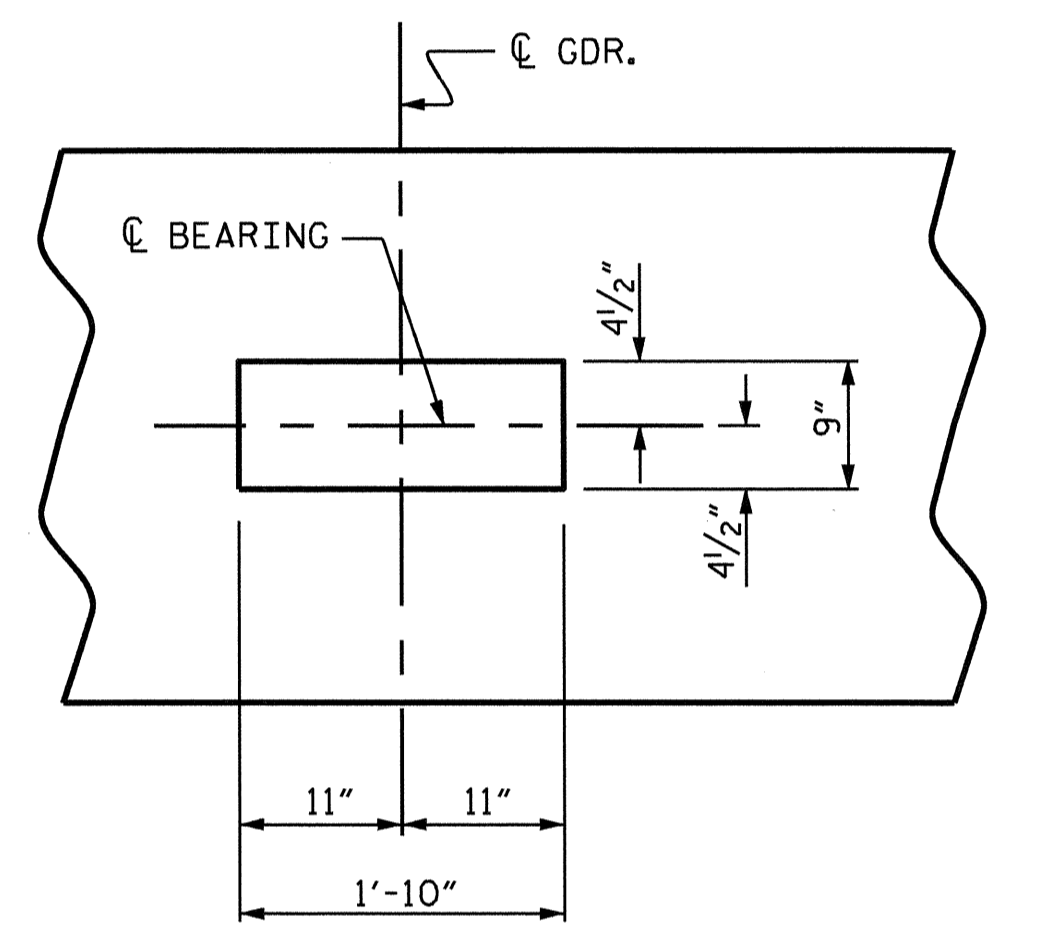
PLAN

NOTES

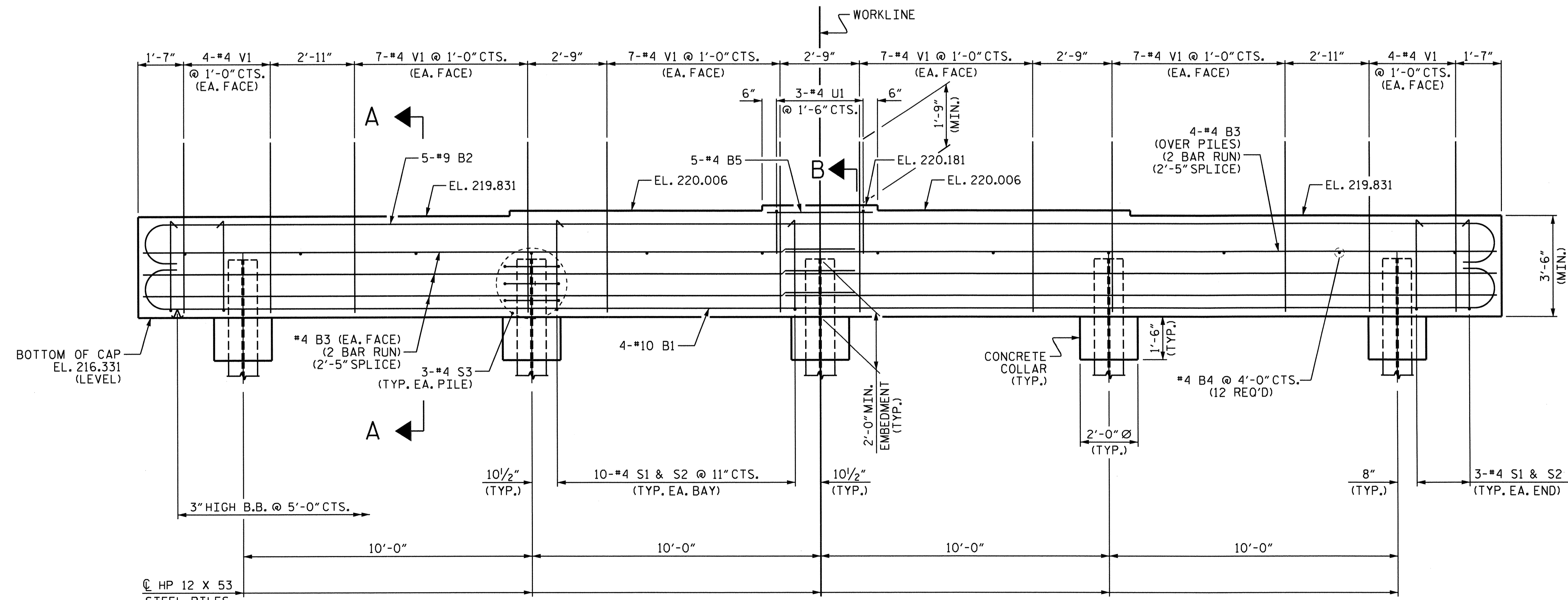
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

SEE SUPERSTRUCTURE SHEETS FOR THE ABUTMENT DETAILS.

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.



DETAIL A



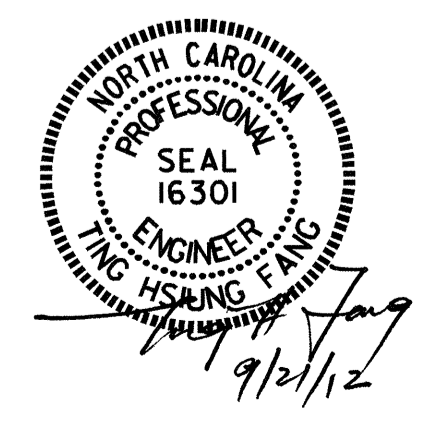
ELEVATION

WINGWALLS NOT SHOWN FOR CLARITY

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

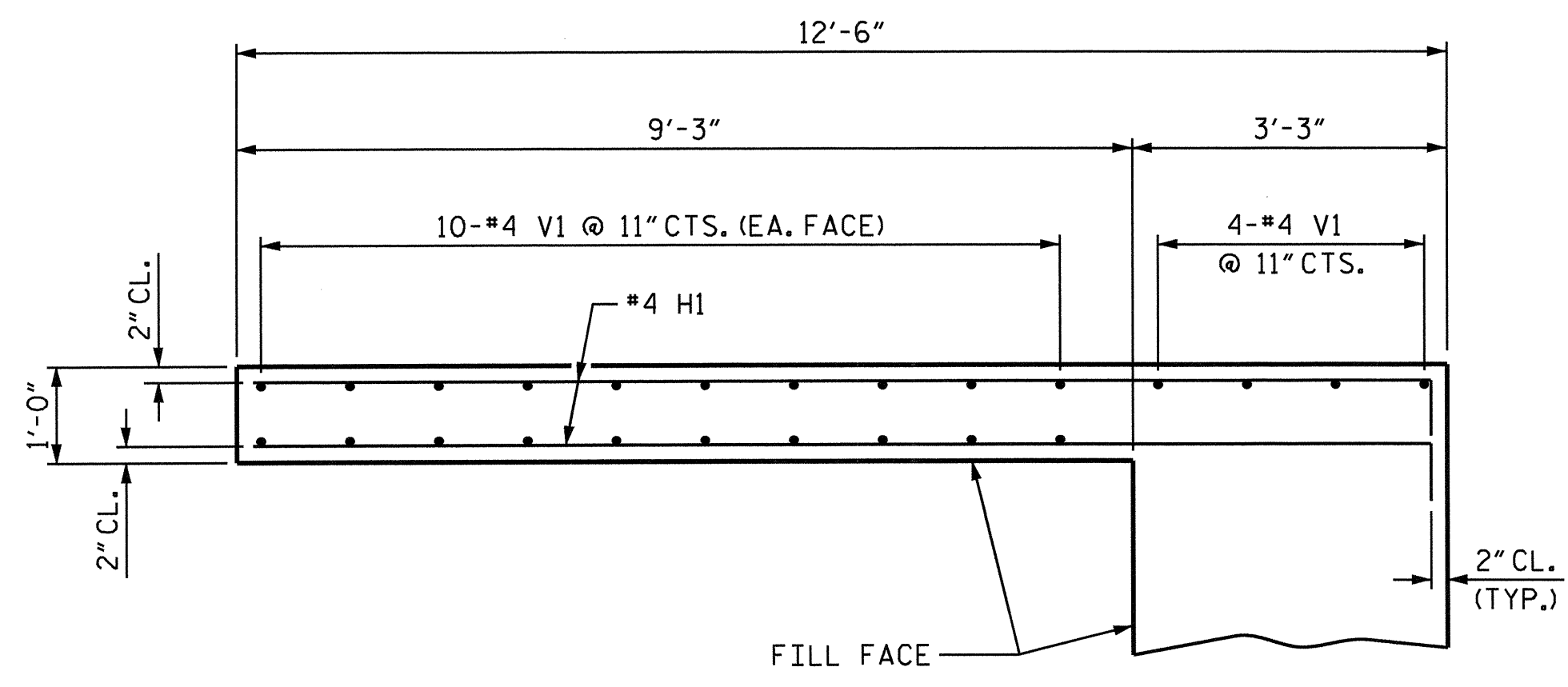
SHEET 1 OF 3

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

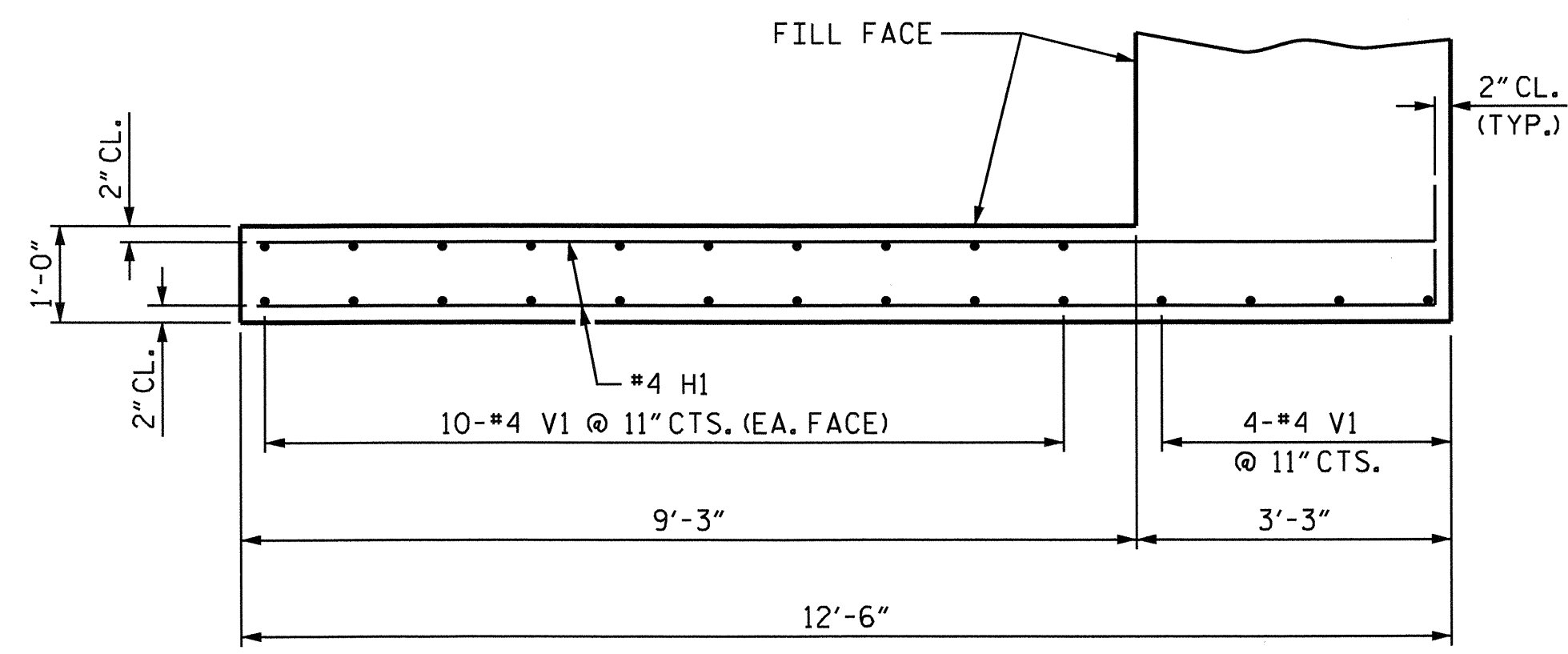


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			35

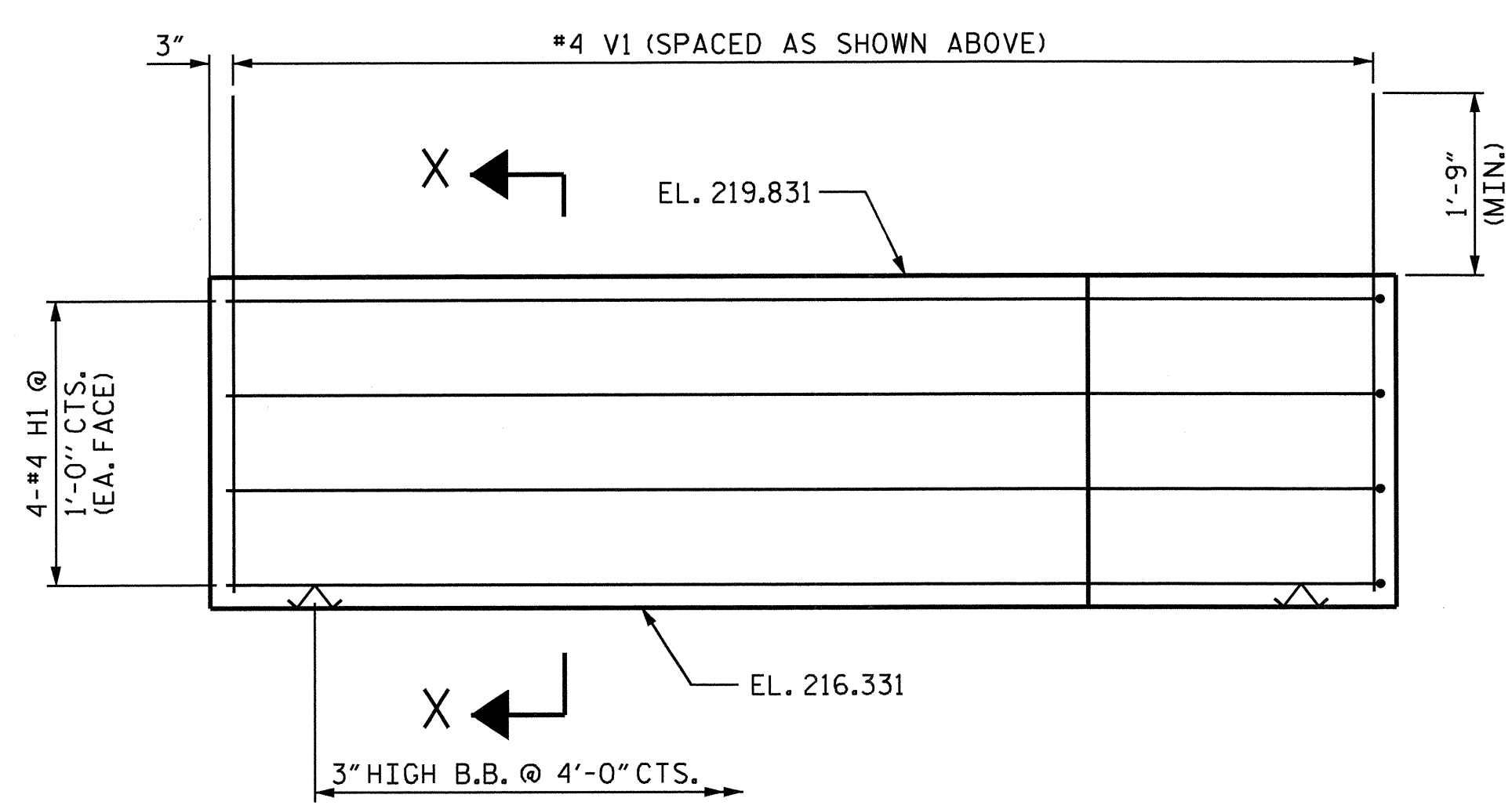
DRAWN BY : J.A. YANNACCONE DATE : 10/18/10
 CHECKED BY : R.P.PATEL DATE : 10/27/10



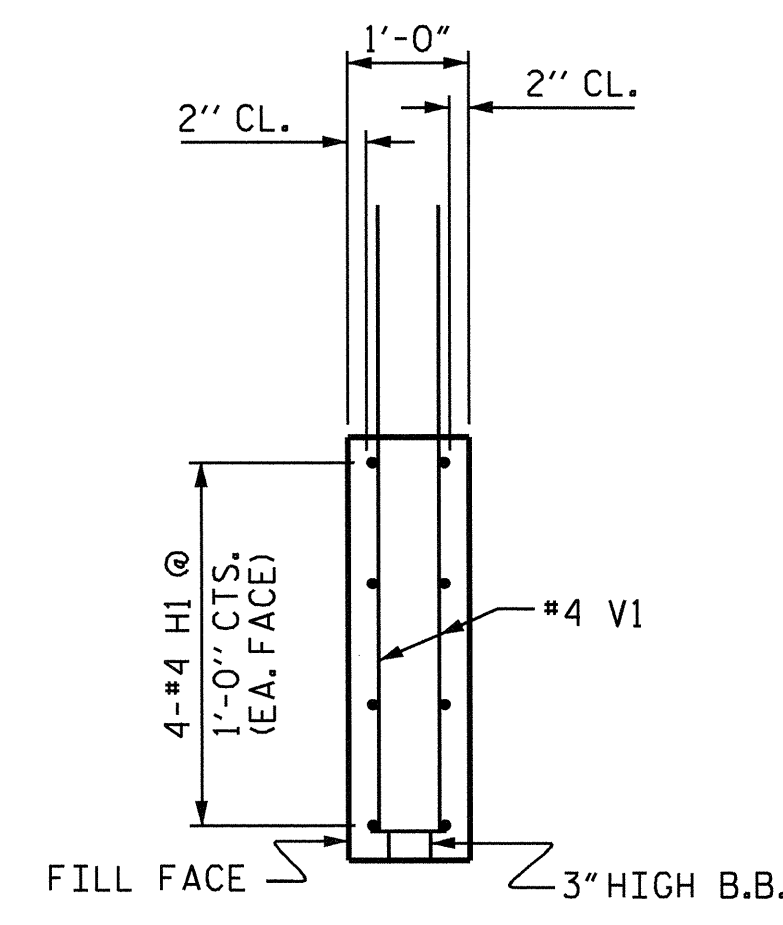
PLAN OF WING (W1)



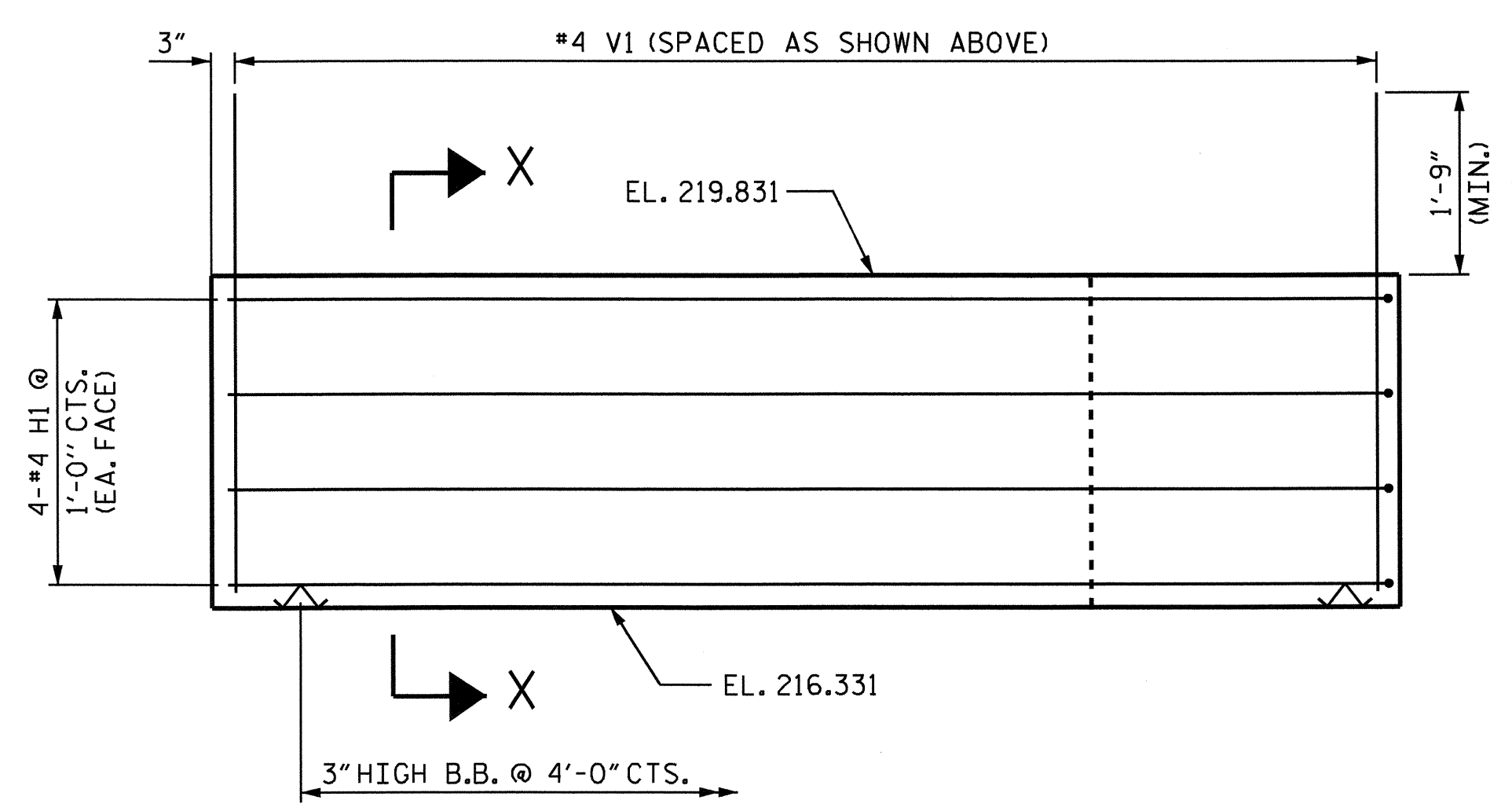
PLAN OF WING (W2)



ELEVATION OF WING (W1)



SECTION X-X

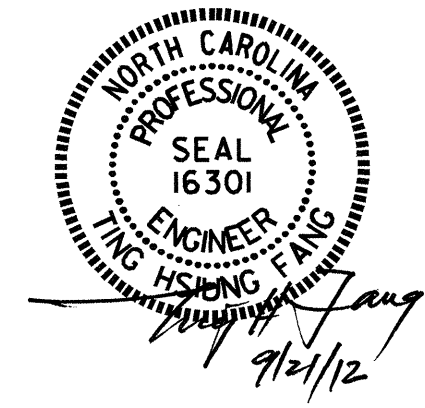


ELEVATION OF WING (W2)

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

SHEET 2 OF 3

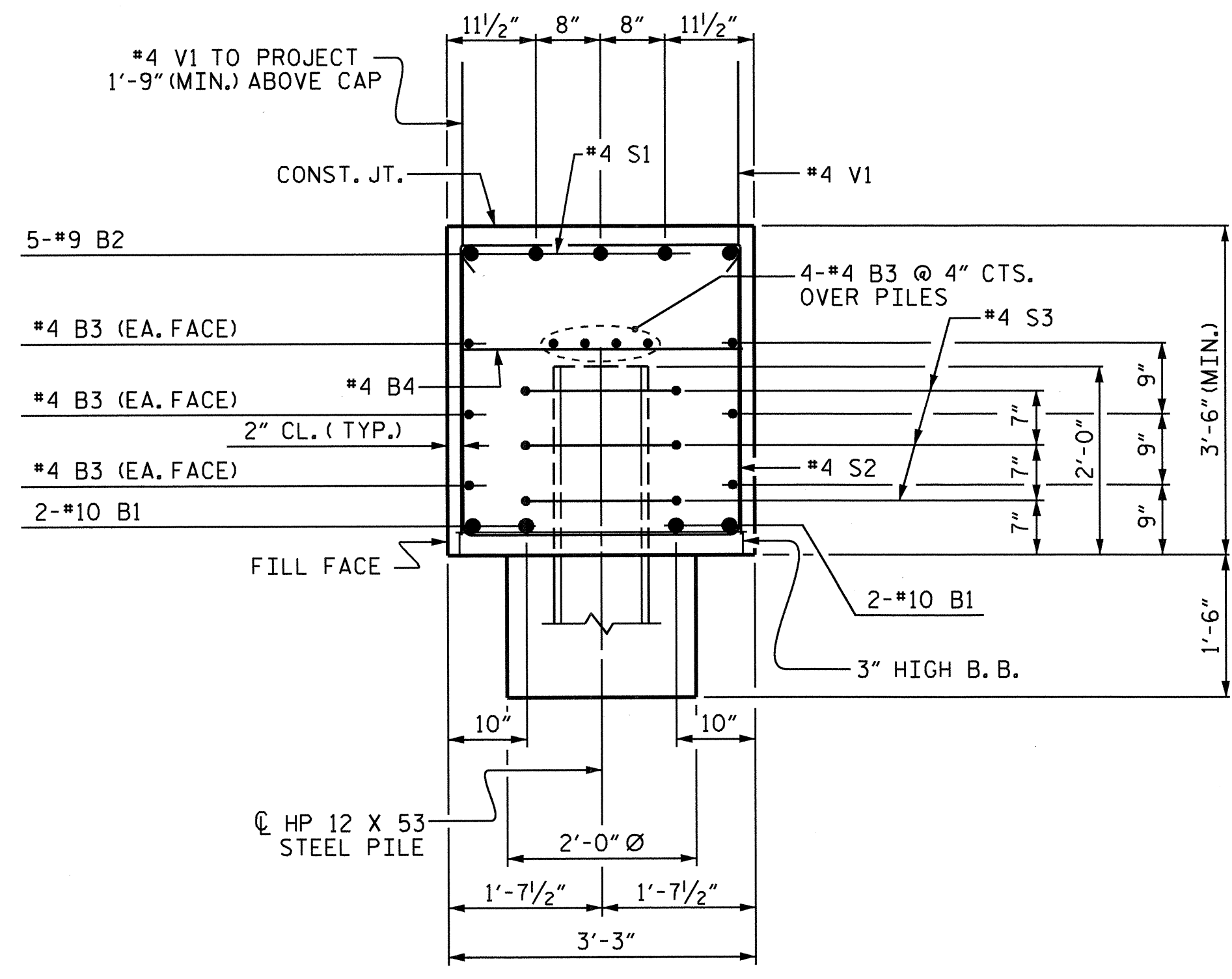
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 1
 (INTEGRAL)



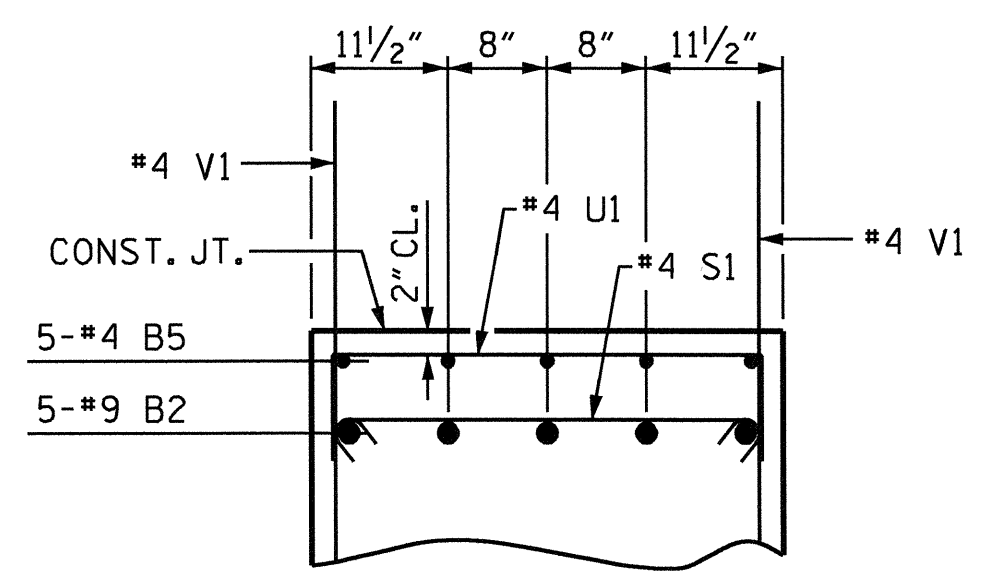
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			35

DRAWN BY : J.A. YANNAKONE DATE : 10/18/10
 CHECKED BY : R.P. PATEL DATE : 10/27/10

21-SEP-2012 13:59
 Y:\TIPProjects-B\B4273\Structures\FinalPlans\B-4273_SD.E*.dgn
 kprenton



SECTION A-A

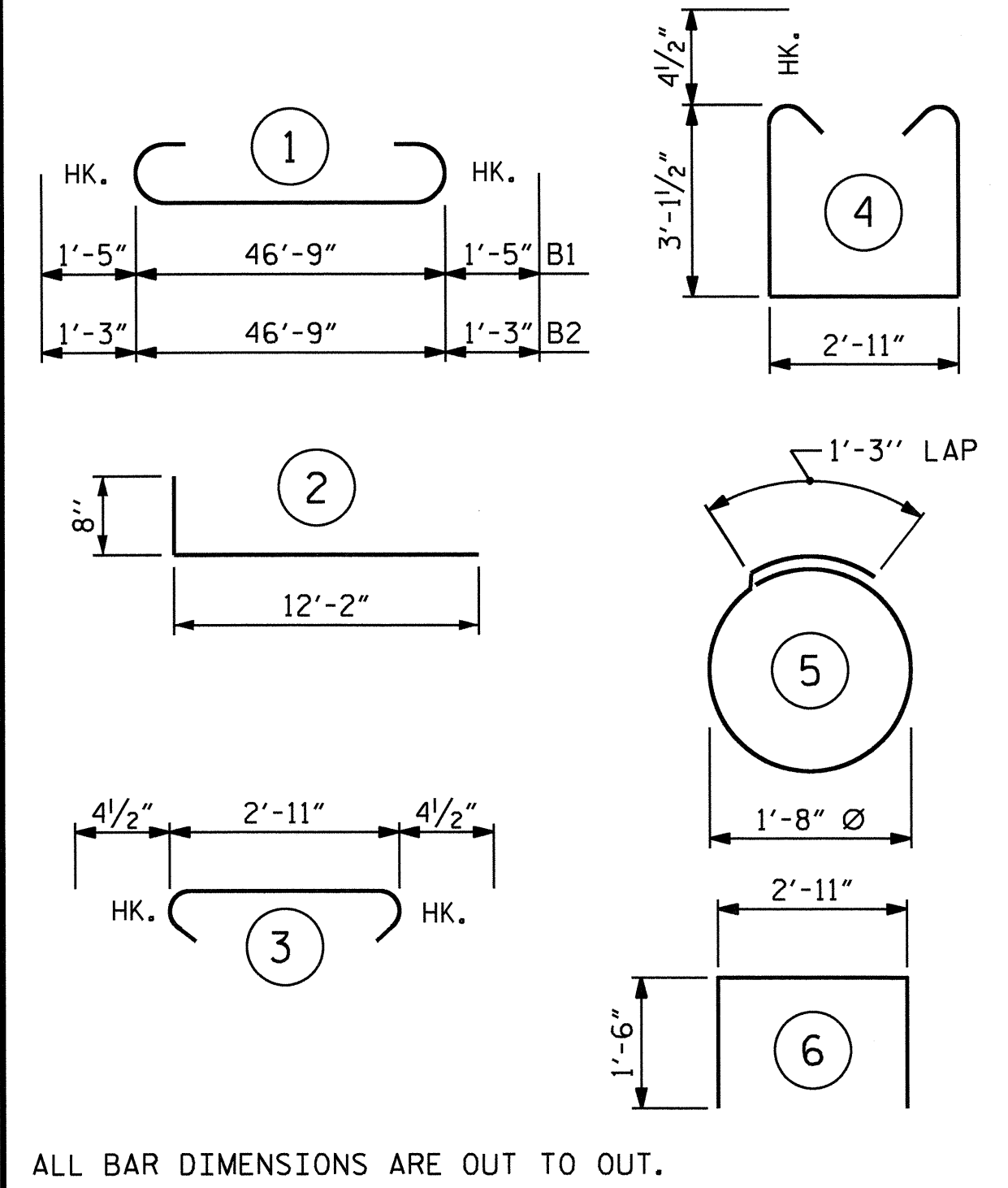


PARTIAL SECTION B-B

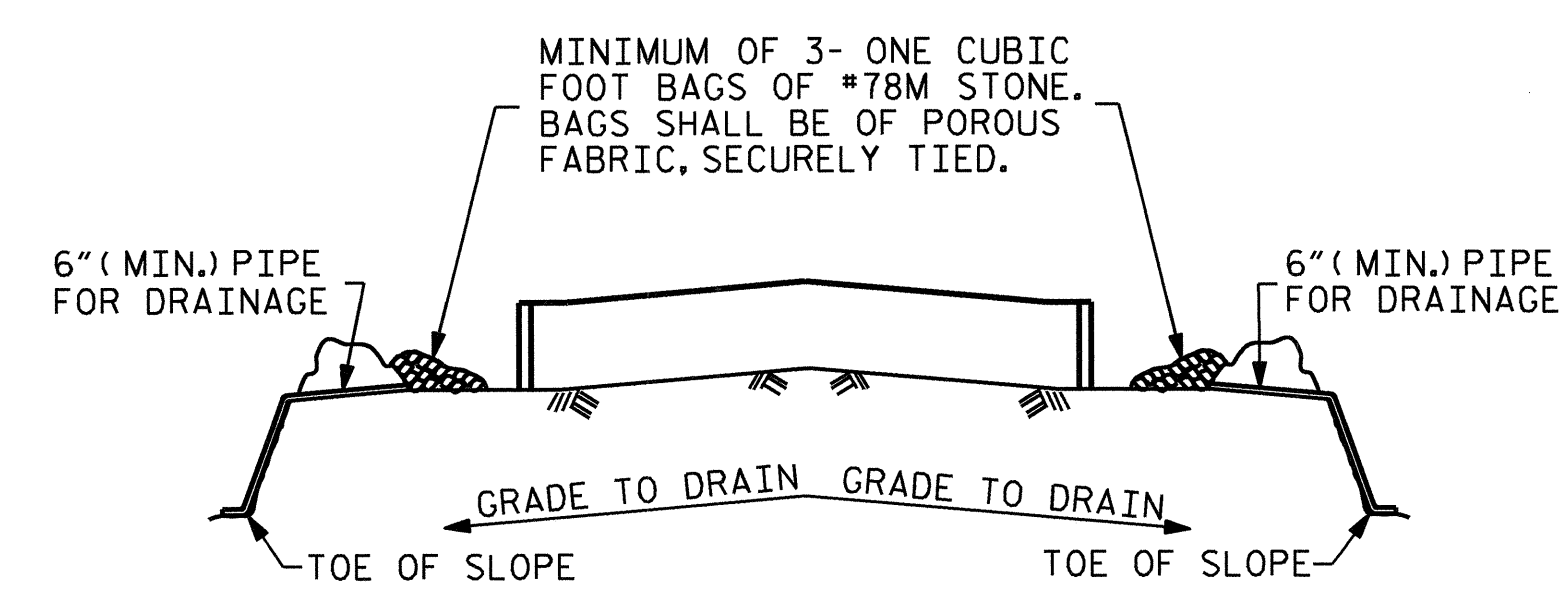
BILL OF MATERIAL

END BENT 1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	4	#10	1	49'-7"	853	
B2	5	#9	1	49'-3"	837	
B3	20	#4	STR	24'-8"	330	
B4	12	#4	STR	2'-11"	23	
B5	5	#4	STR	3'-8"	12	
H1	16	#4	2	12'-10"	137	
S1	46	#4	3	3'-8"	113	
S2	46	#4	4	9'-11"	305	
S3	15	#4	5	6'-6"	65	
U1	3	#4	6	5'-11"	12	
V1	120	#4	STR	5'-5"	434	
REINFORCING STEEL				= 3121 LBS		
CLASS A CONCRETE: CAP, LOWER WINGS & COLLARS = 23.7 C.Y.						
HP 12 X 53 STEEL PILES :						
No. 5				LIN. FT. 300		
PILE REDRIVES				EA. 5		

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.



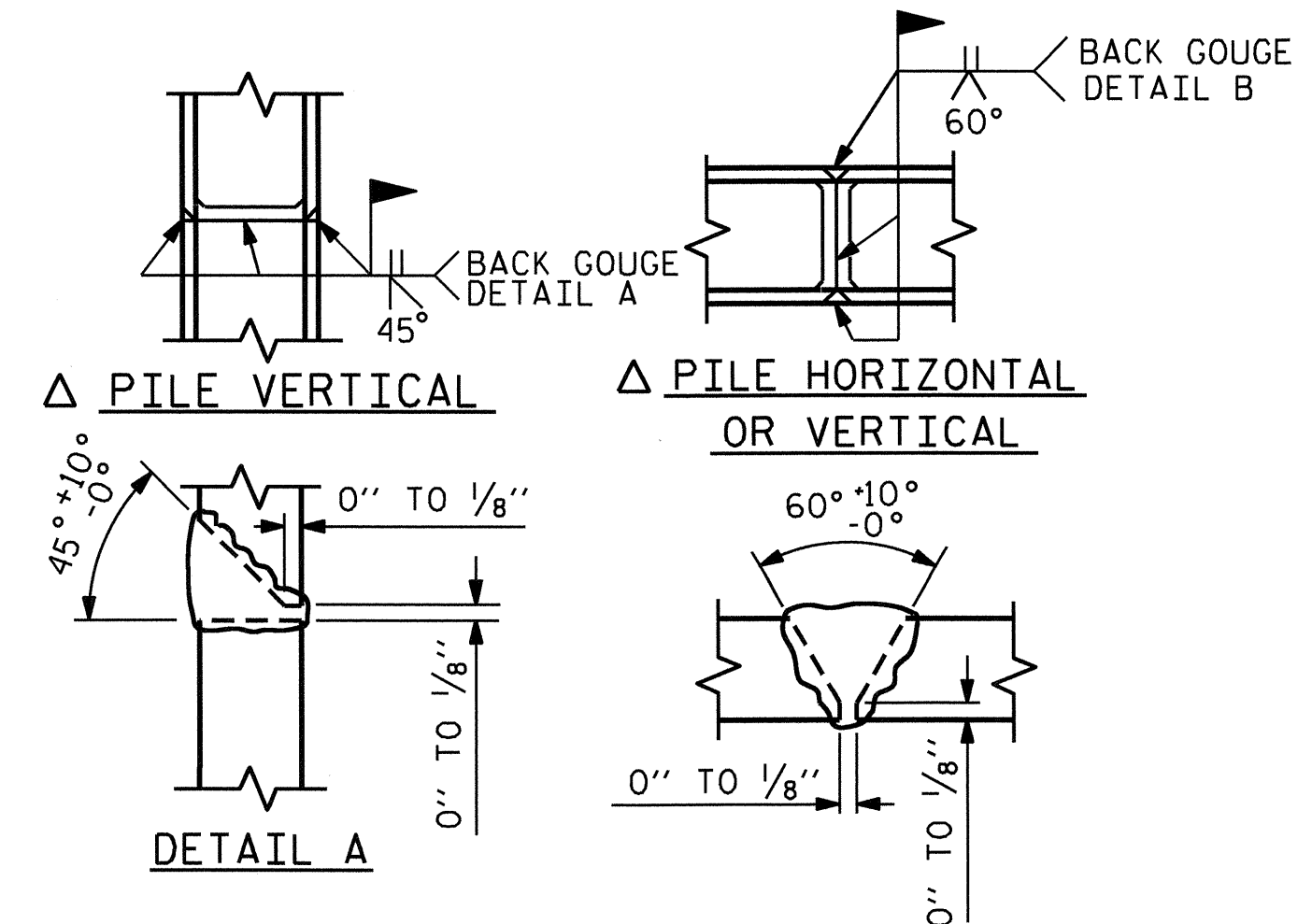
MINIMUM OF 3- ONE CUBIC FOOT BAGS OF #78M STONE. BAGS SHALL BE OF POROUS FABRIC, SECURELY TIED.

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

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

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

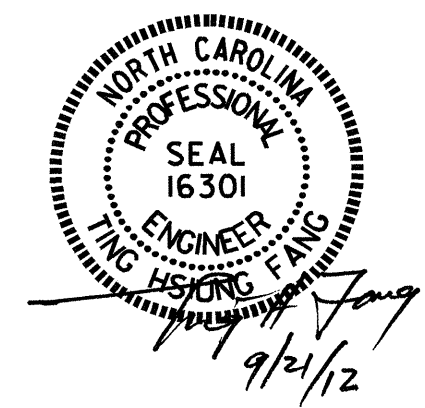
TEMPORARY DRAINAGE AT END BENT



POSITION OF PILE DURING WELDING. PILE SPLICE DETAILS

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
STATION: 22+45.00 -L-

SHEET 3 OF 3
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 1
(INTEGRAL)



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			35

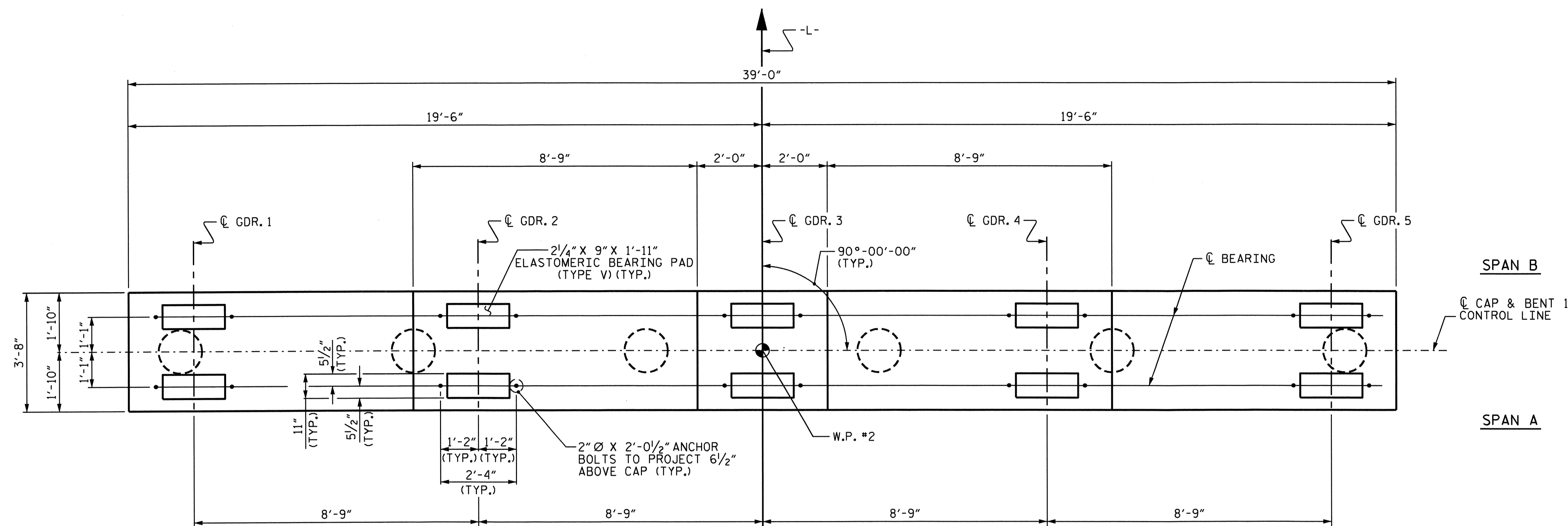
DRAWN BY : J.A. YANNACCONE DATE : 10/18/10
CHECKED BY : R.P. PATEL DATE : 10/27/10

NOTES

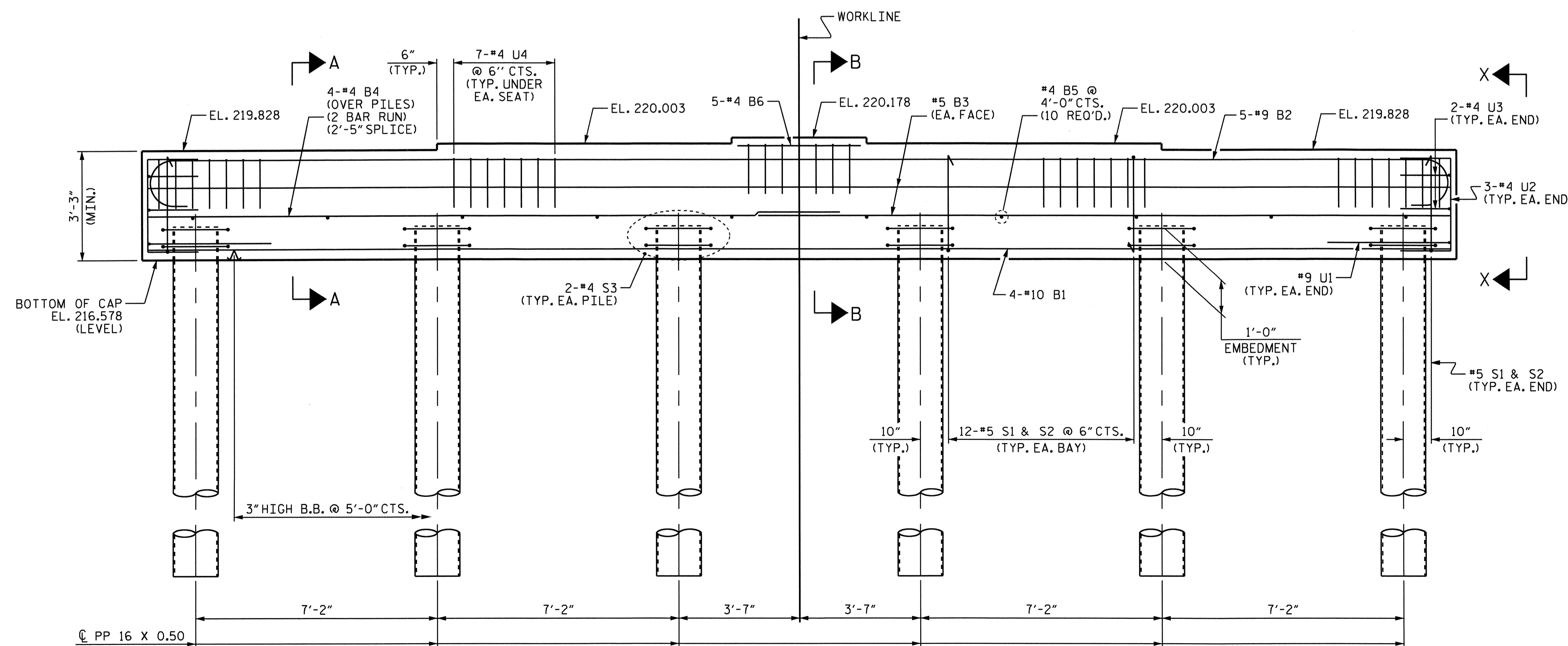
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

GALVANIZE THE TOP 30 FEET AT ALL INTERIOR BENTS OF EACH PP 16 X 0.5 STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR PP 16 X 0.5 STEEL PIPE PILES, SEE PIPE SHEET.



PLAN

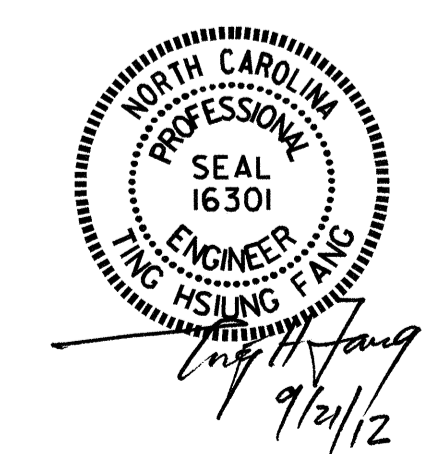


ELEVATION

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

SHEET 1 OF 2

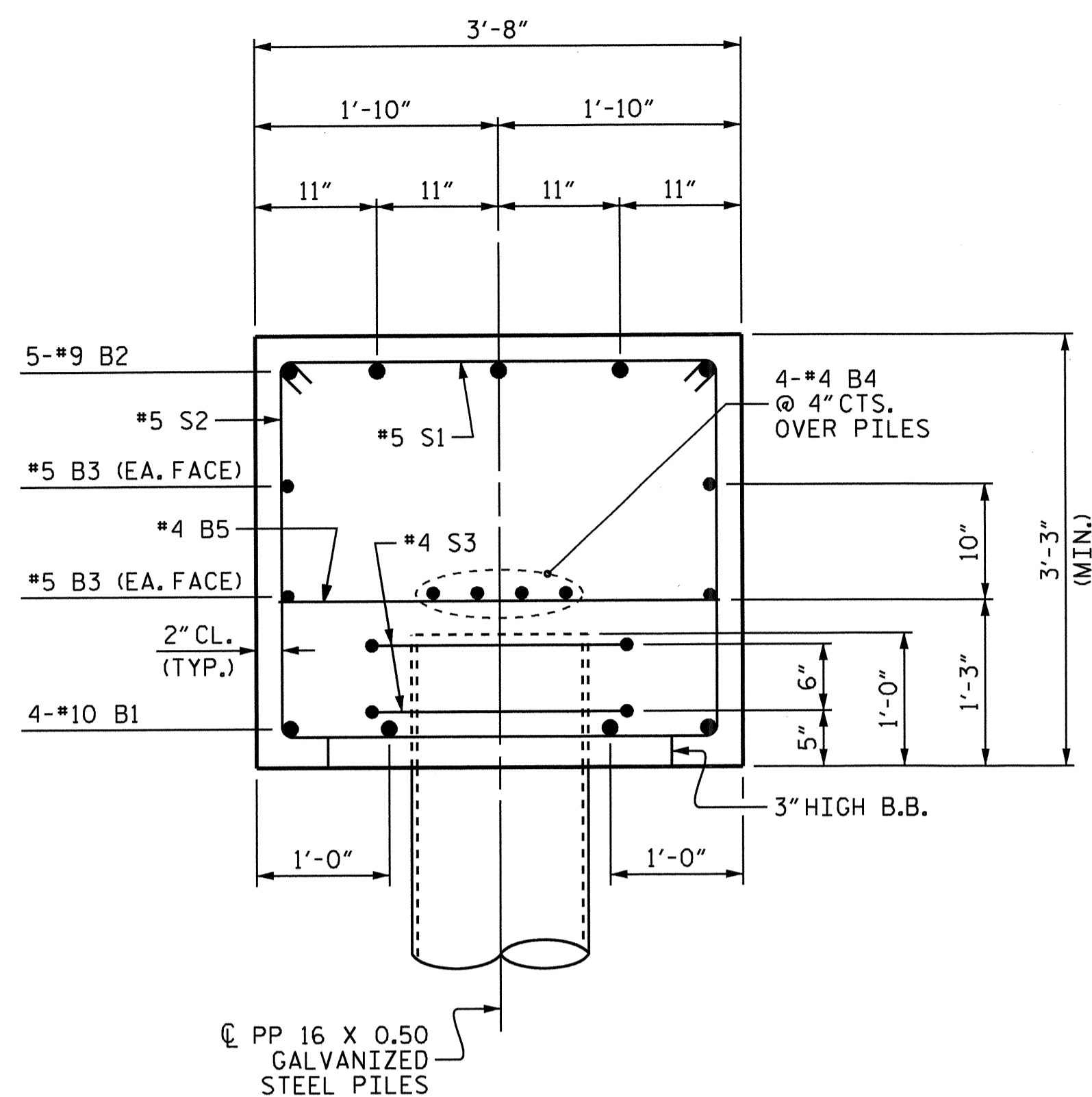
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT 1



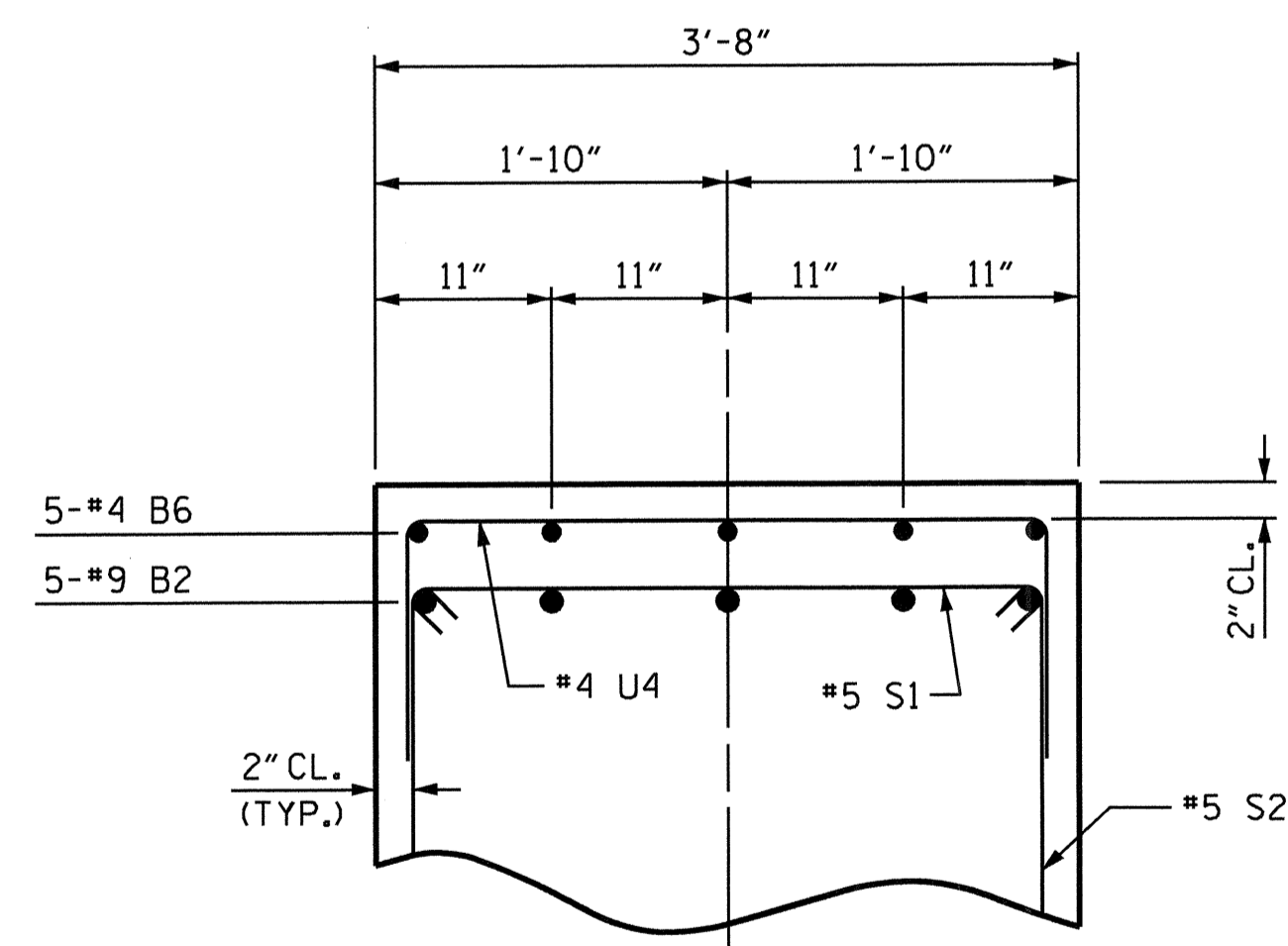
DRAWN BY : J.A. YANNAACONE DATE : 10/29/10
 CHECKED BY : W.F. PARKER DATE : 4/19/12

21-SEP-2012 13:59
 Y:\TIP\Projects-B\B4273\Structures\Final Plans\B-4273_SD.B*.dgn
 kpnewton

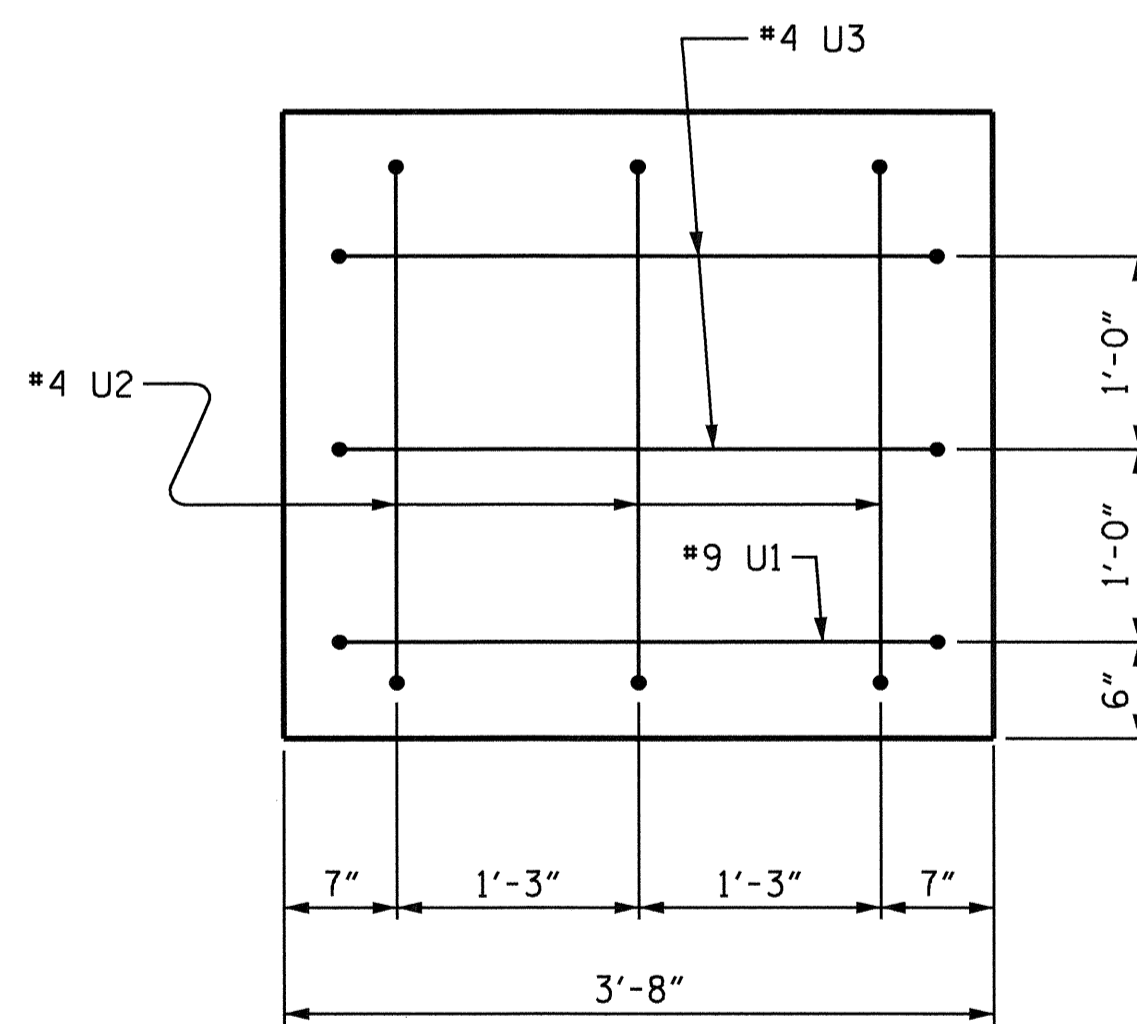
REVISIONS						SHEET NO. S-25
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 35
2			4			



SECTION A-A



PARTIAL SECTION B-B



SECTION X-X
(TYP. E.A. END)

BILL OF MATERIAL

FOR BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	STR	38'-8"	666
B2	5	#9	1	41'-0"	697
B3	4	#5	STR	38'-8"	161
B4	8	#4	STR	20'-7"	110
B5	10	#4	STR	3'-4"	22
B6	5	#4	STR	3'-8"	12
S1	62	#5	2	4'-3"	275
S2	62	#5	3	10'-0"	647
S3	12	#4	5	8'-1"	65
U1	2	#9	4	10'-6"	71
U2	6	#4	4	5'-9"	23
U3	4	#4	4	6'-2"	16
U4	35	#4	4	6'-4"	148

REINFORCING STEEL = 2913 LBS

CLASS A CONCRETE

** TOTAL CLASS A CONCRETE C.Y. 17.5

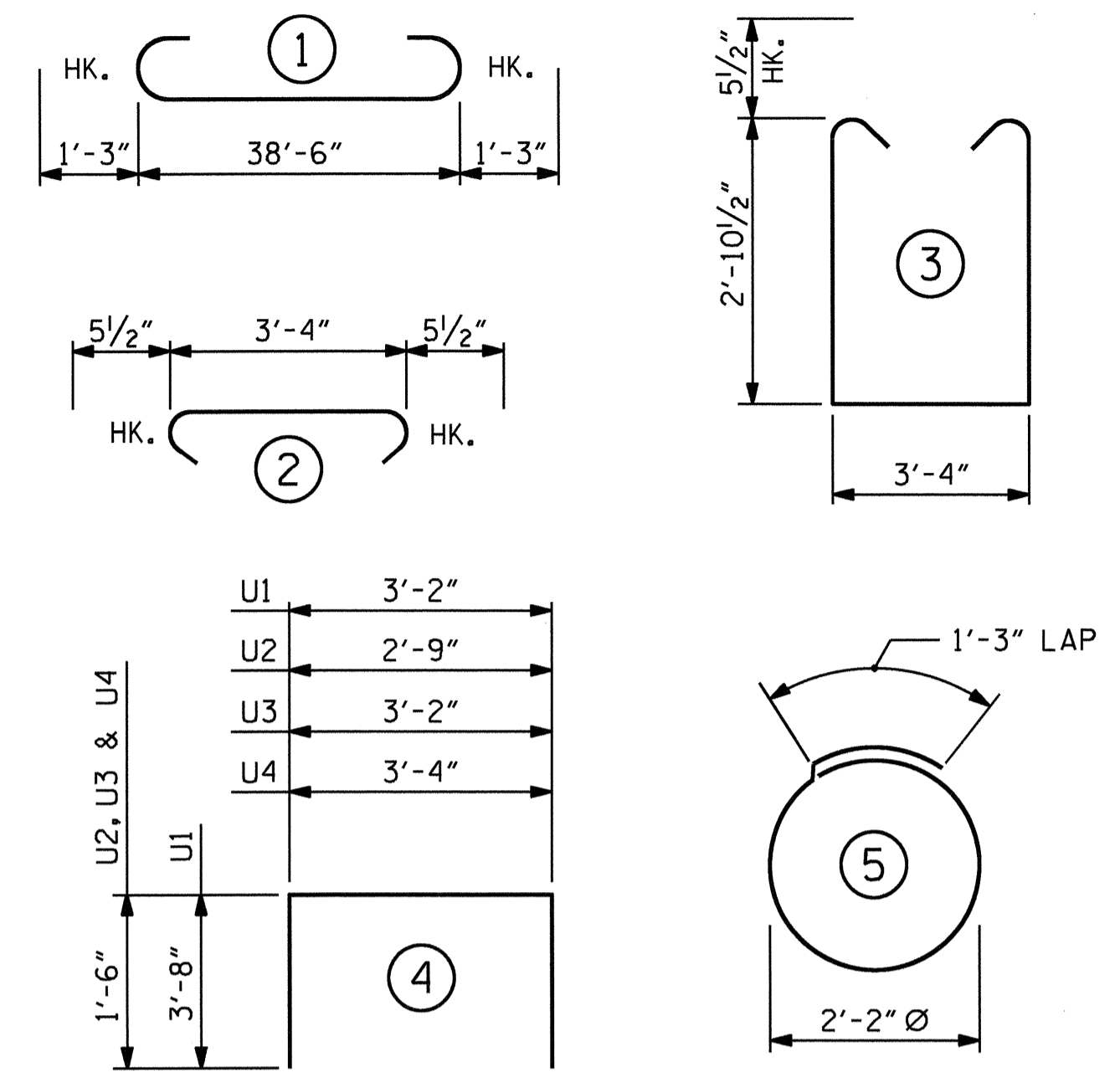
PP 16 X 0.50 GALVANIZED STEEL PILES

NUMBER = 6 420 LIN. FT.

PILE REDRIVES 6 EACH

PIPE PILE PLATES 6 EACH

BAR TYPES



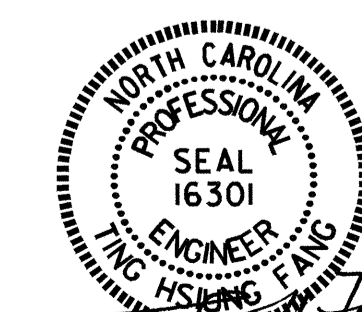
ALL BAR DIMENSIONS ARE OUT TO OUT.

** CONCRETE DISPLACED BY THE PP 16 X 0.50 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE CONCRETE TOTAL.

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT 1



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-26
1			3			TOTAL SHEETS
2			4			35

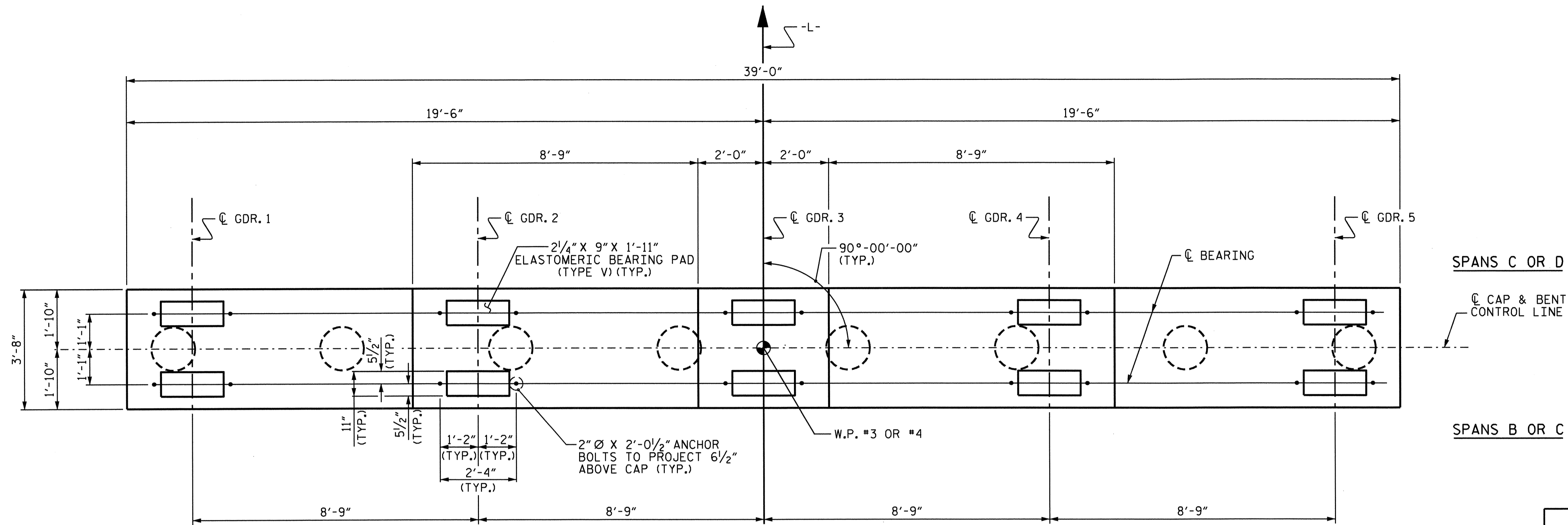
DRAWN BY : J.A. YANNACCONE DATE : 11/01/10
 CHECKED BY : W.F. PARKER DATE : 4/19/12

NOTES

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

GALVANIZE THE TOP 30 FEET AT ALL INTERIOR BENTS OF EACH PP 16 X 0.5 STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR PP 16 X 0.5 STEEL PIPE PILES, SEE PIPE PILES SHEET.



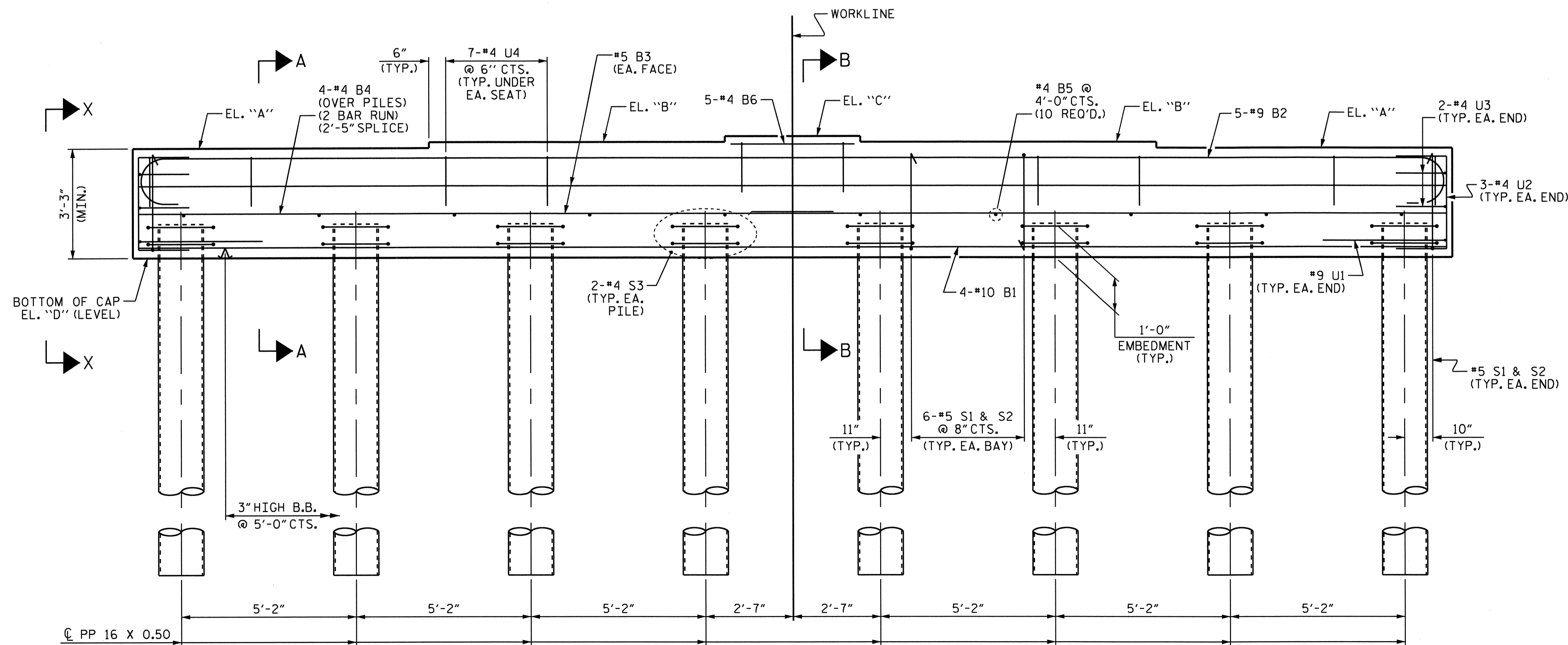
PLAN

SPANS C OR D

CL CAP & BENT CONTROL LINE

SPANS B OR C

ELEVATION		
POINT	BENT 2	BENT 3
"A"	220.068	220.308
"B"	220.243	220.483
"C"	220.418	220.658
"D"	216.818	217.058



ELEVATION

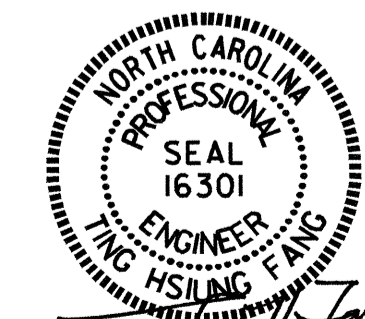
PROJECT NO. B-4273
 SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

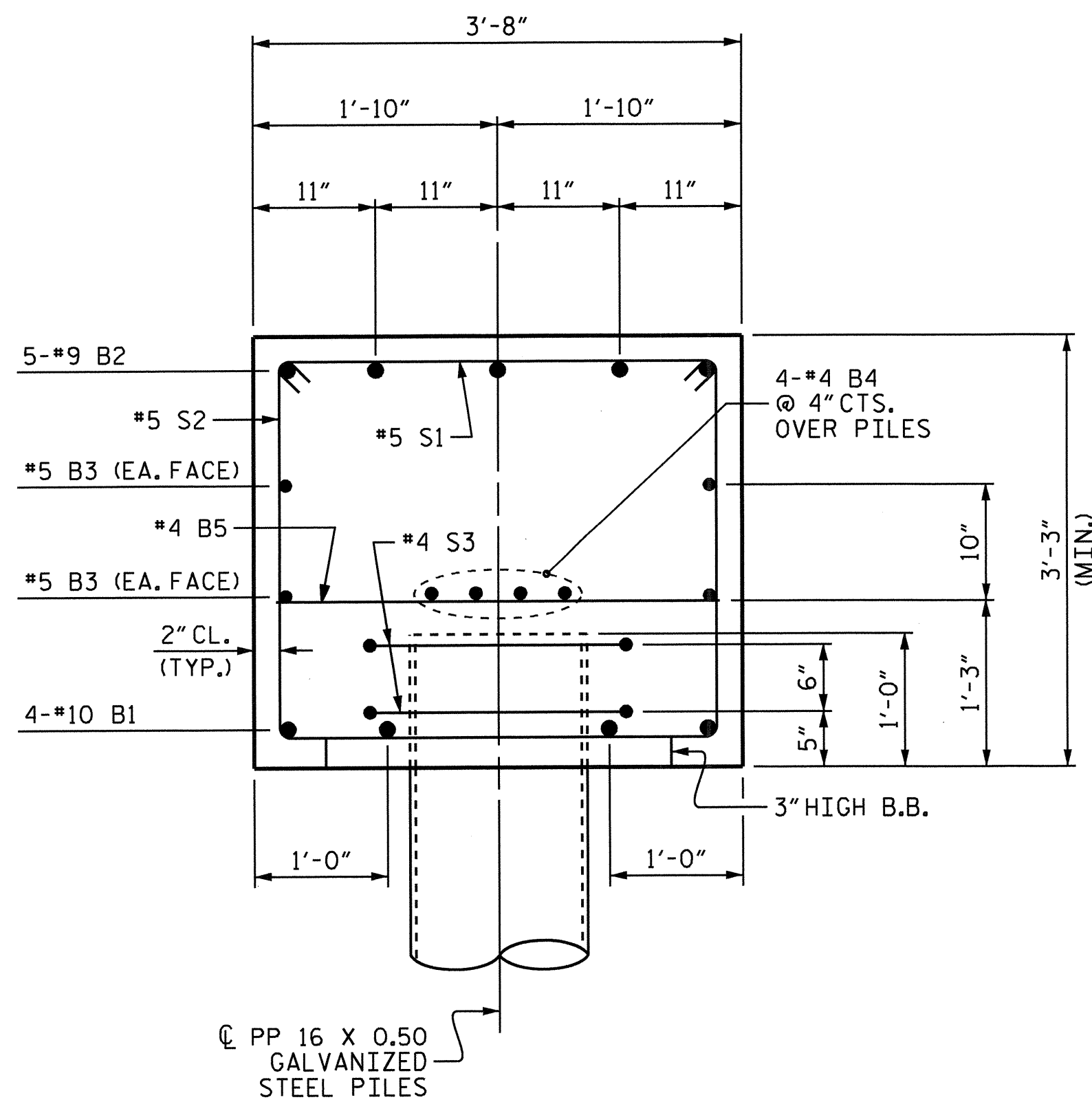
SUBSTRUCTURE

BENTS 2 & 3

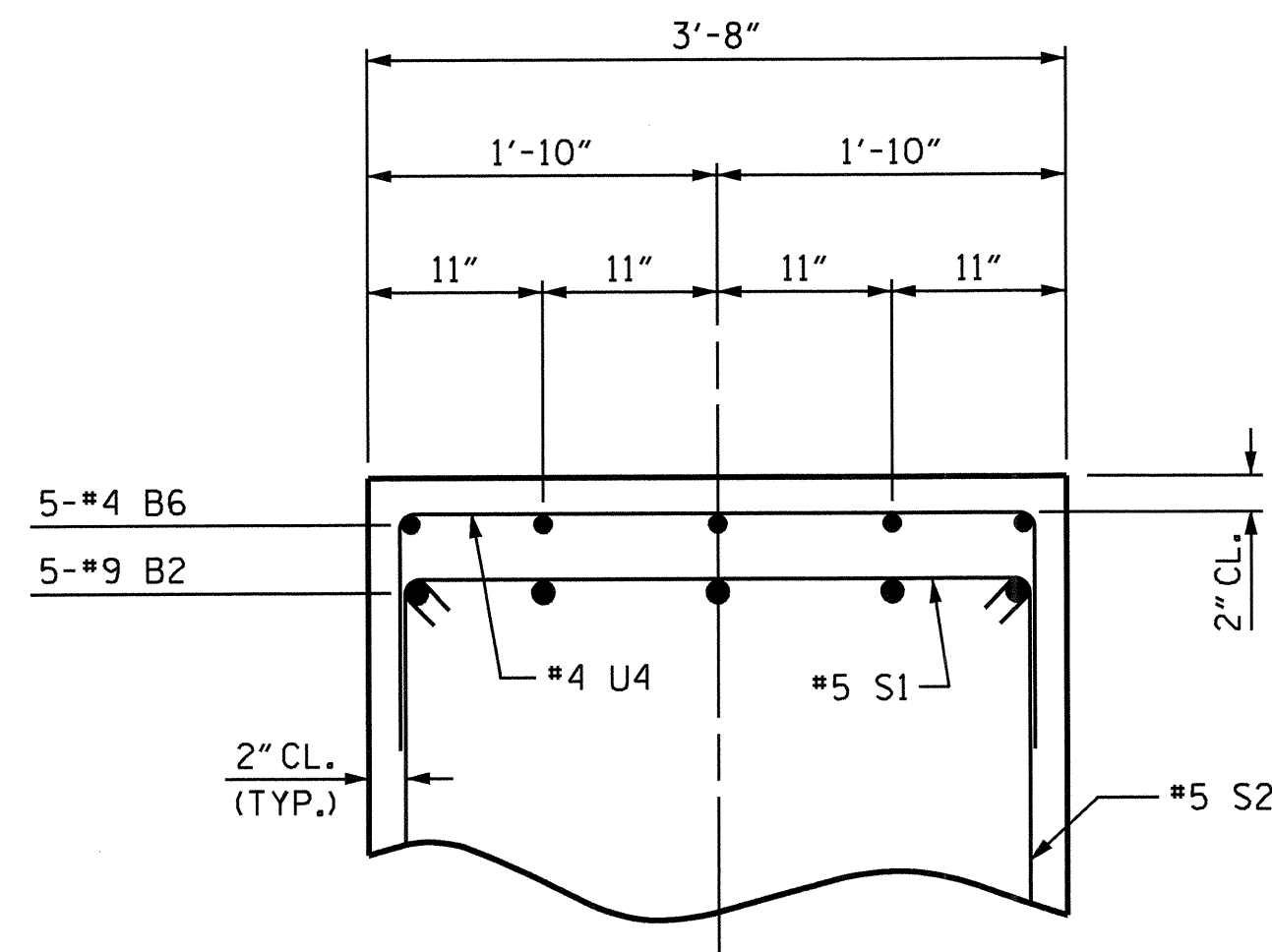


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-27
1			3			TOTAL SHEETS
2			4			35

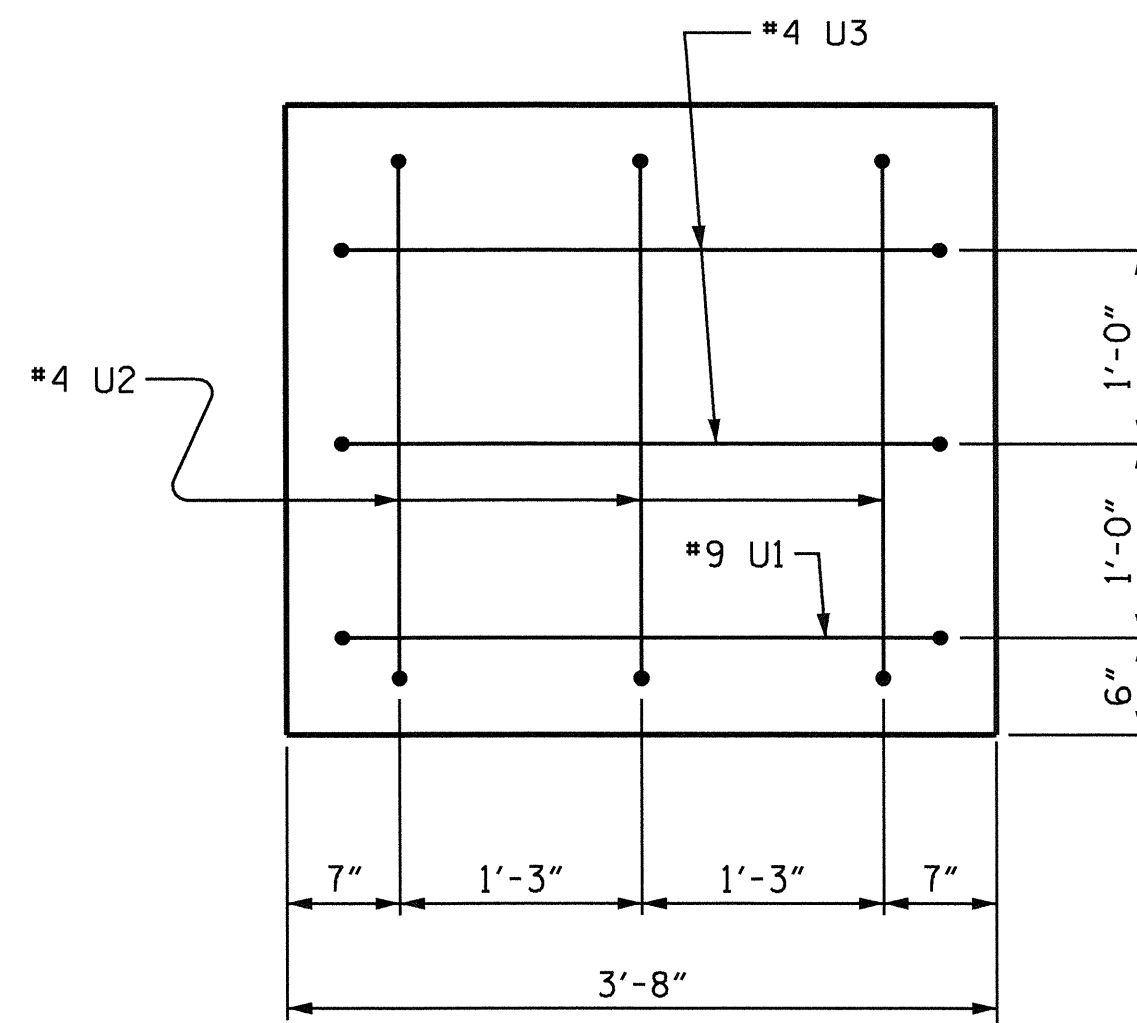
DRAWN BY : J.A. YANNACCONE DATE : 10/29/10
 CHECKED BY : W.F. PARKER DATE : 4/19/12



SECTION A-A



PARTIAL SECTION B-B



SECTION X-X
(TYP. EA. END)

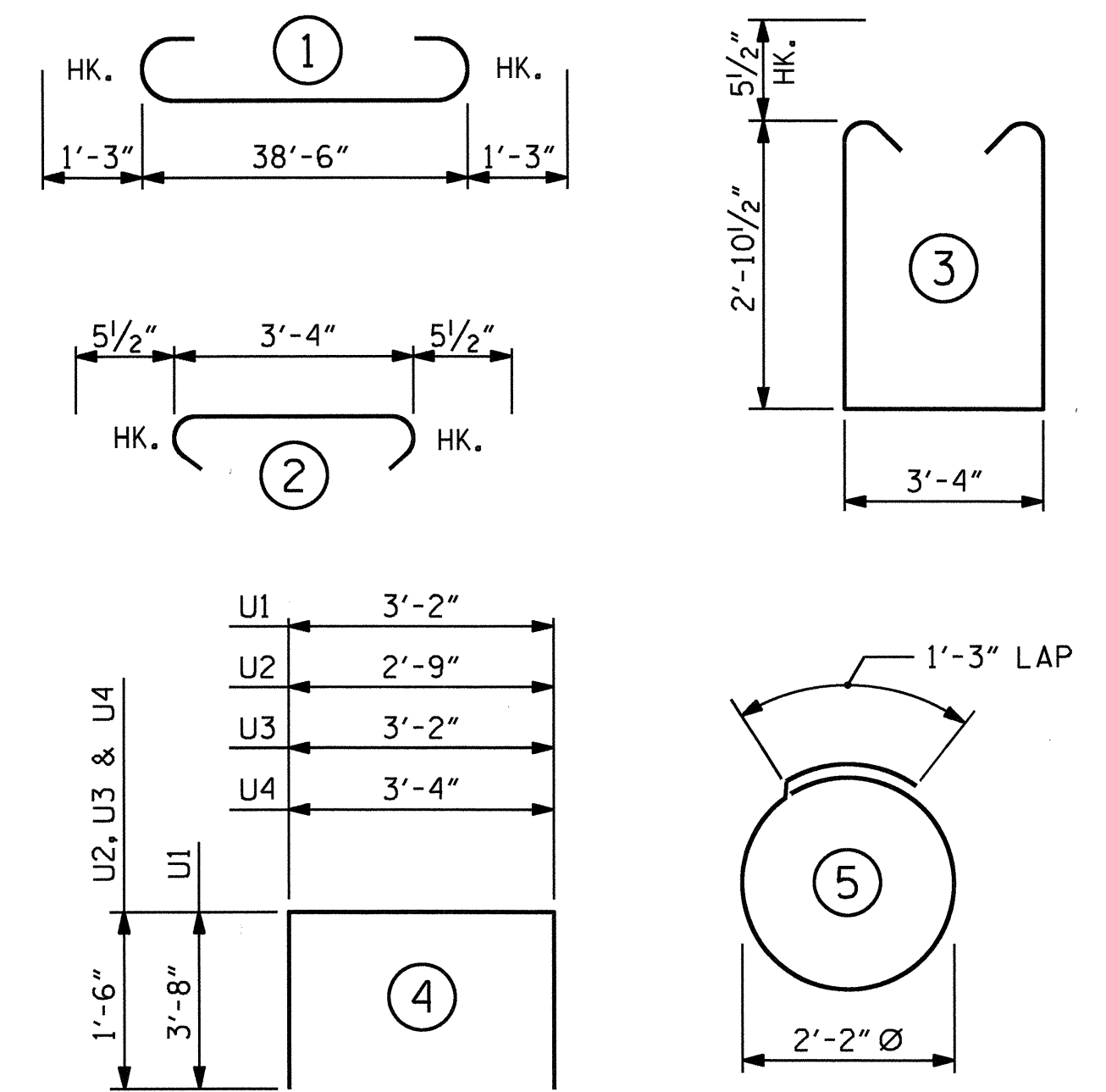
BILL OF MATERIAL

FOR ONE BENT (2 REQ'D)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	STR	38'-8"	666
B2	5	#9	1	41'-0"	697
B3	4	#5	STR	38'-8"	161
B4	8	#4	STR	20'-7"	110
B5	10	#4	STR	3'-4"	22
B6	5	#4	STR	3'-8"	12
S1	44	#5	2	4'-3"	195
S2	44	#5	3	10'-0"	459
S3	16	#4	5	8'-1"	86
U1	2	#9	4	10'-6"	71
U2	6	#4	4	5'-9"	23
U3	4	#4	4	6'-2"	16
U4	35	#4	4	6'-4"	148

REINFORCING STEEL = 2666 LBS
 CLASS A CONCRETE
 **TOTAL CLASS A CONCRETE C.Y. 17.4
 PP 16 X 0.50 GALVANIZED STEEL PILES
 NUMBER = 8 560 LIN. FT.
 PILE REDRIVES 8 EACH
 PIPE PILE PLATES 8 EACH

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

** CONCRETE DISPLACED BY THE PP 16 X 0.50 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE CONCRETE TOTAL.

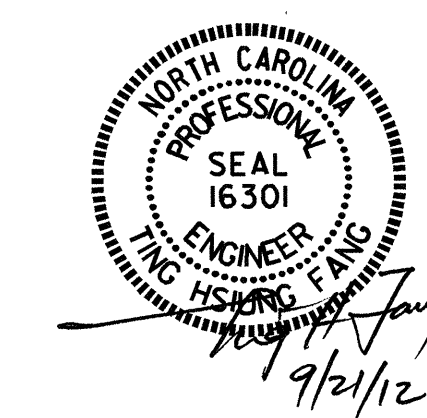
PROJECT NO. B-4273
 SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE

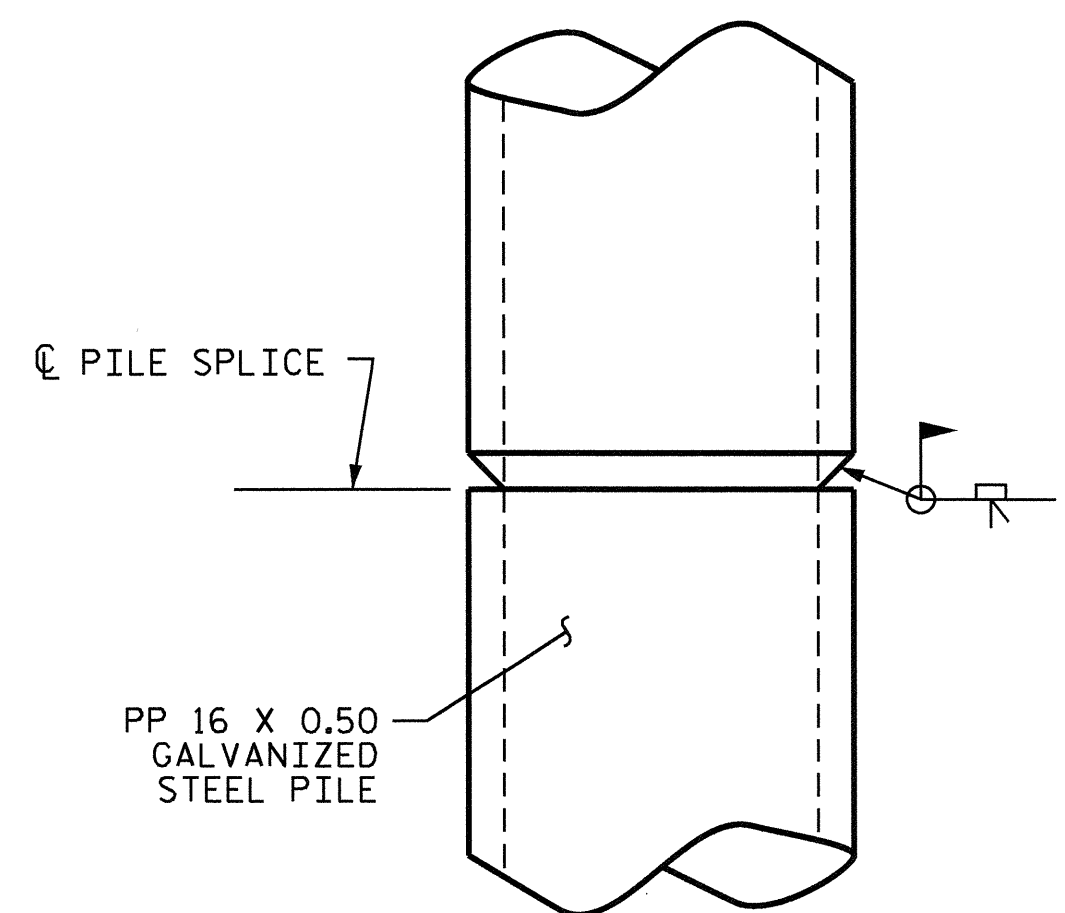
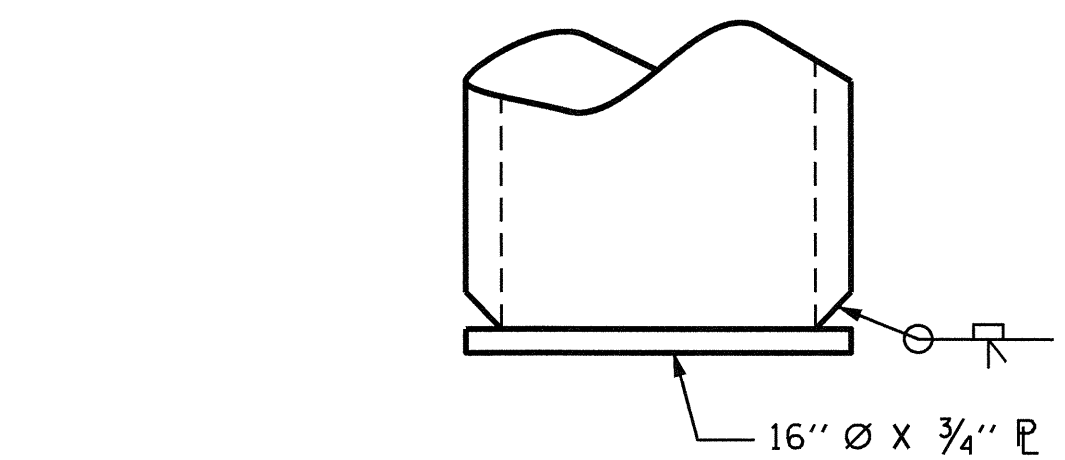
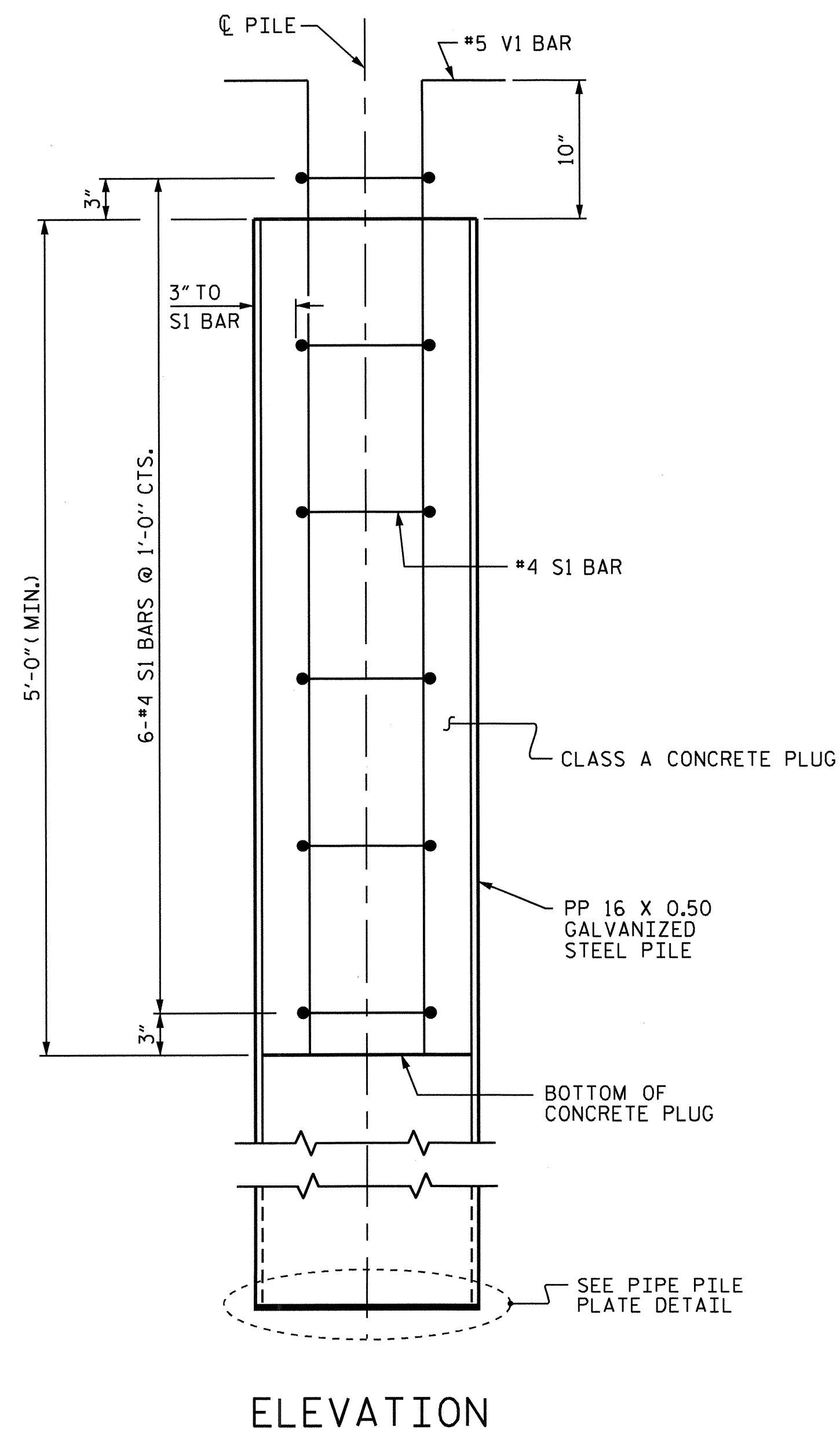
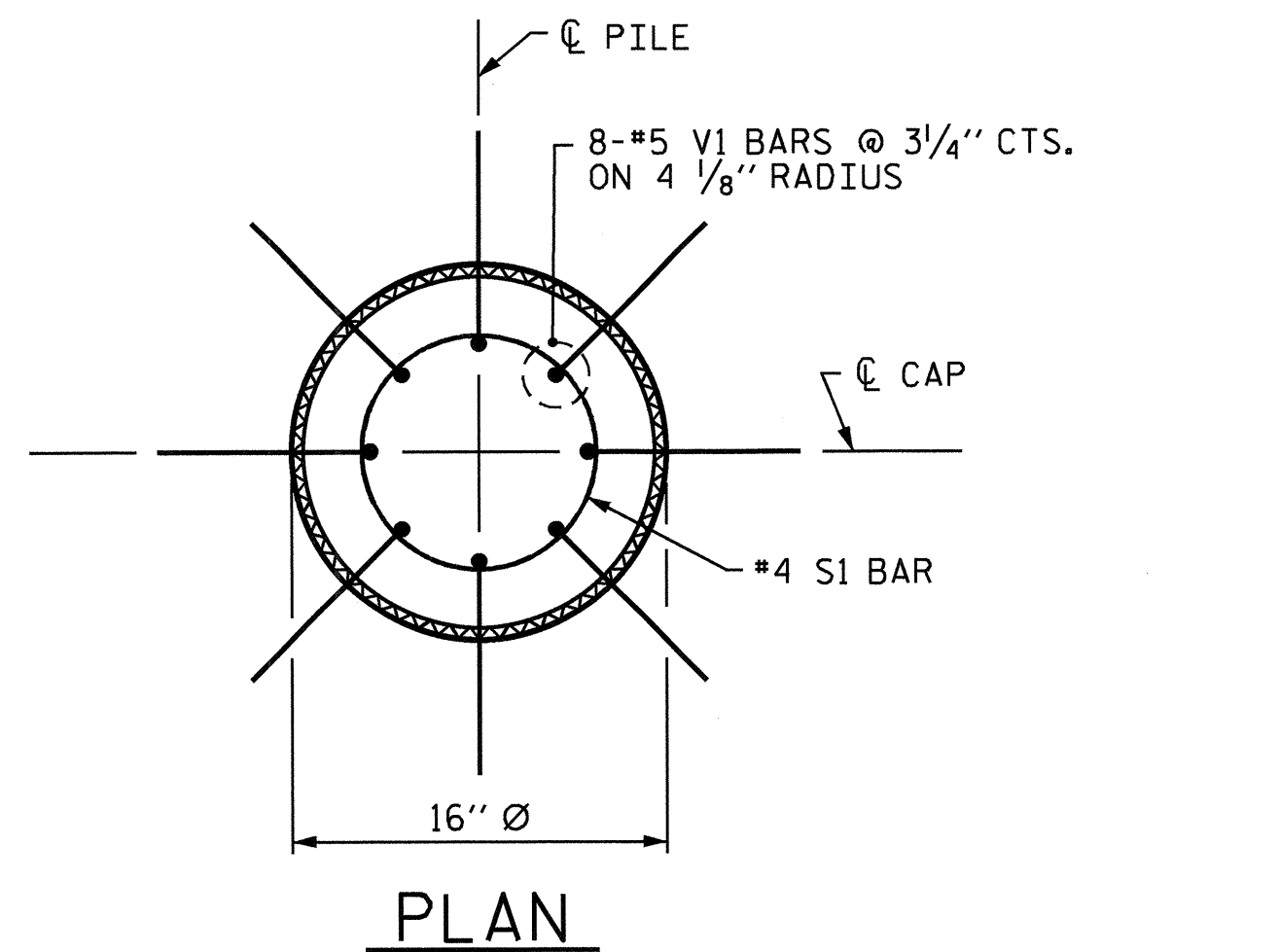
BENTS 2 & 3



DRAWN BY : J.A. YANNAKONE DATE : 11/01/10
 CHECKED BY : W.F. PARKER DATE : 4/19/12

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

TOTAL SHEETS 35



PP 16 X 0.50 GALVANIZED STEEL PILE

NOTES

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

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

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

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

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

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

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

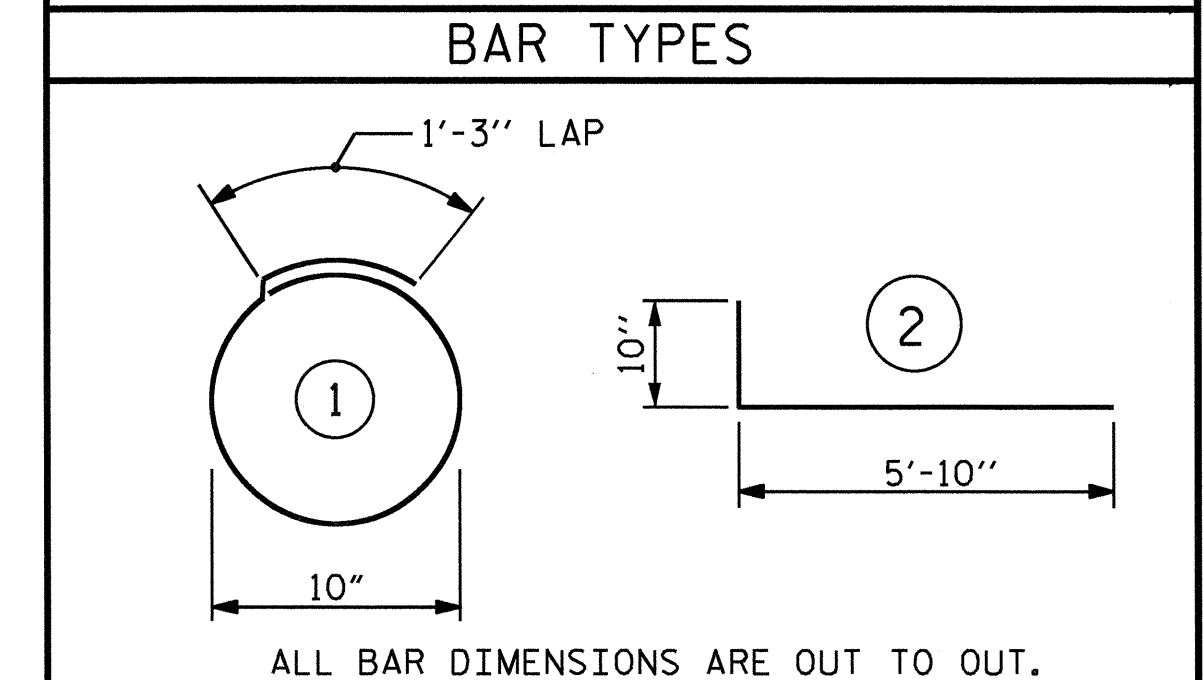
FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE BENT CAP UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF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

THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 16 X 0.50 GALVANIZED STEEL PILES.

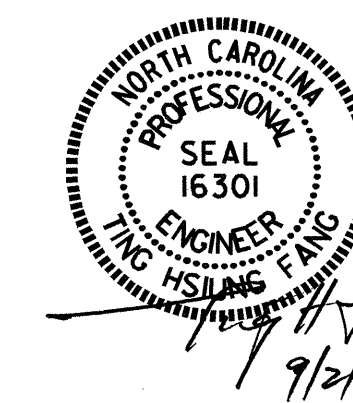
BILL OF MATERIAL FOR ONE PP 16 X 0.50 GALVANIZED STEEL PILE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	3'-11"	16
V1	8	#5	2	6'-8"	56
REINFORCING STEEL =				72	lbs

CLASS A CONCRETE
5'-0" MINIMUM PLUG 0.2 CY

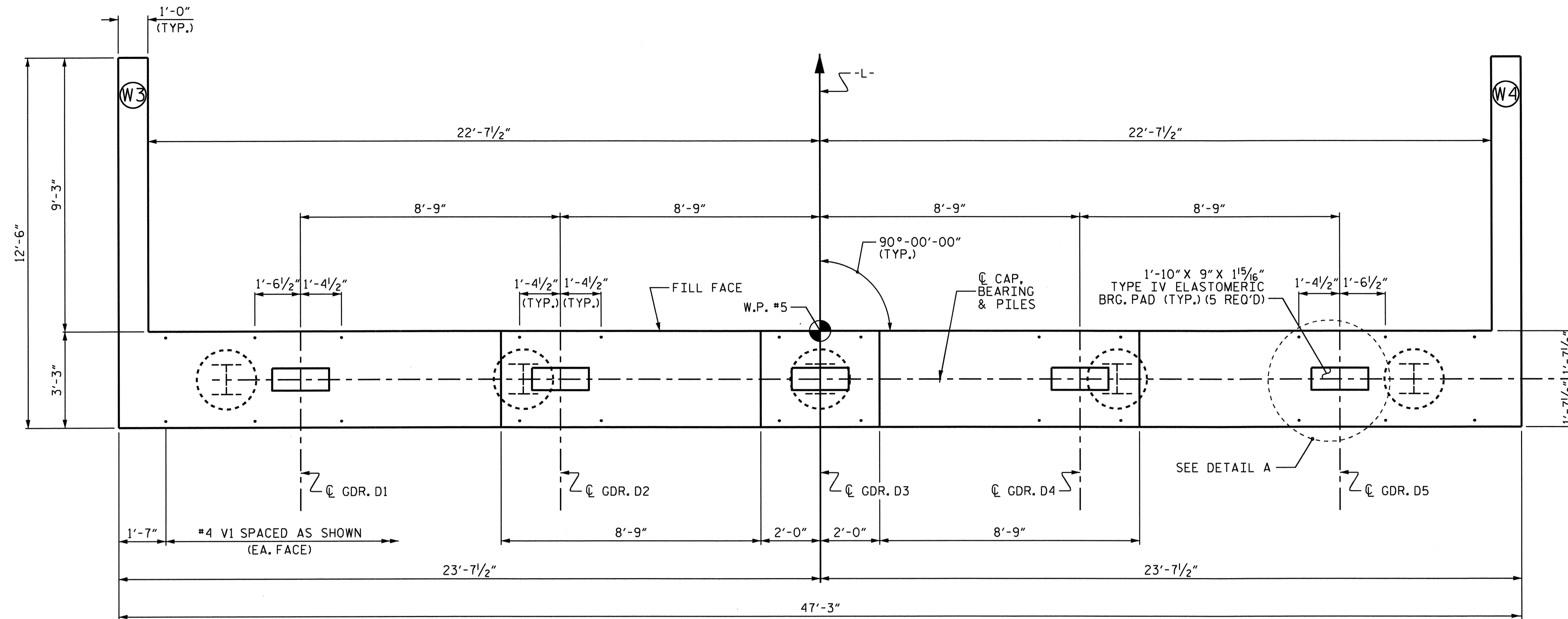


PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
STATION: 22+45.00 -L-

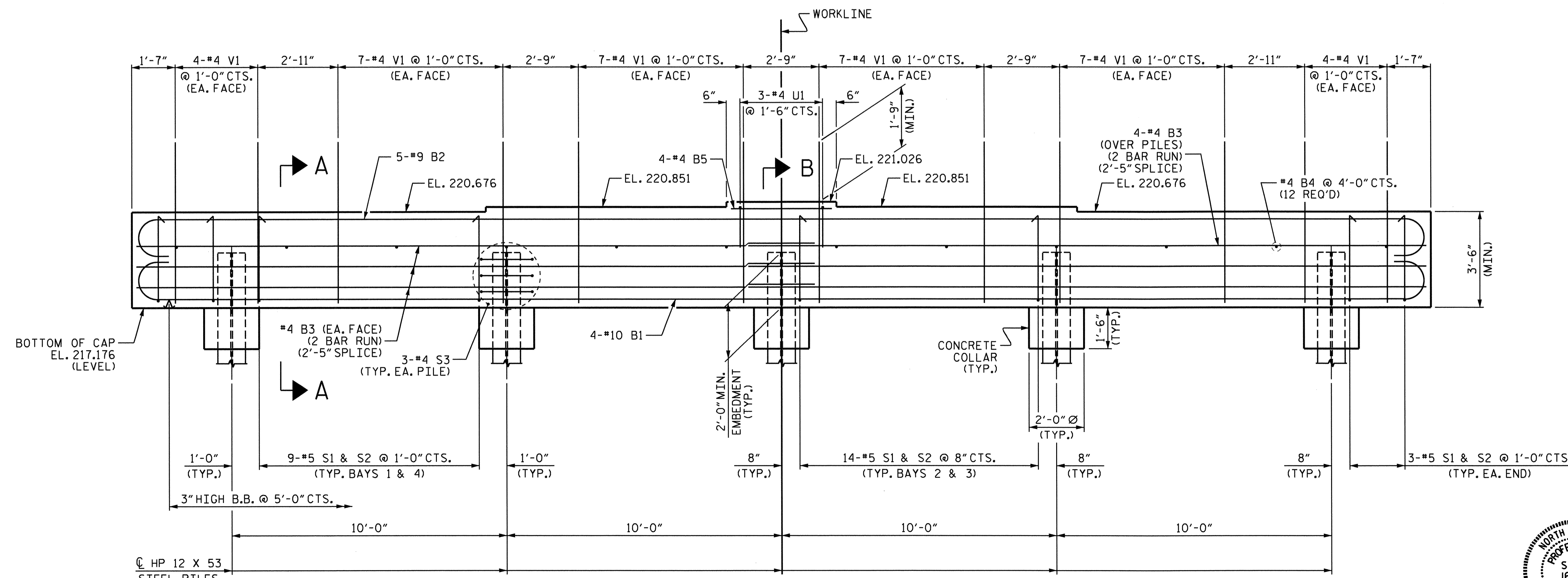


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS 35
2			4			

ASSEMBLED BY : J.A. YANACCONI	DATE : 2/21/11
CHECKED BY : W.F. PARKER	DATE : 2/19/12
DRAWN BY : TLA 8/05	ADDED 10/1/05
CHECKED BY : GM 9/05	REV. 5/1/06R MAA/KMM
	REV. 10/1/11 MAA/GM



PLAN



ELEVATION

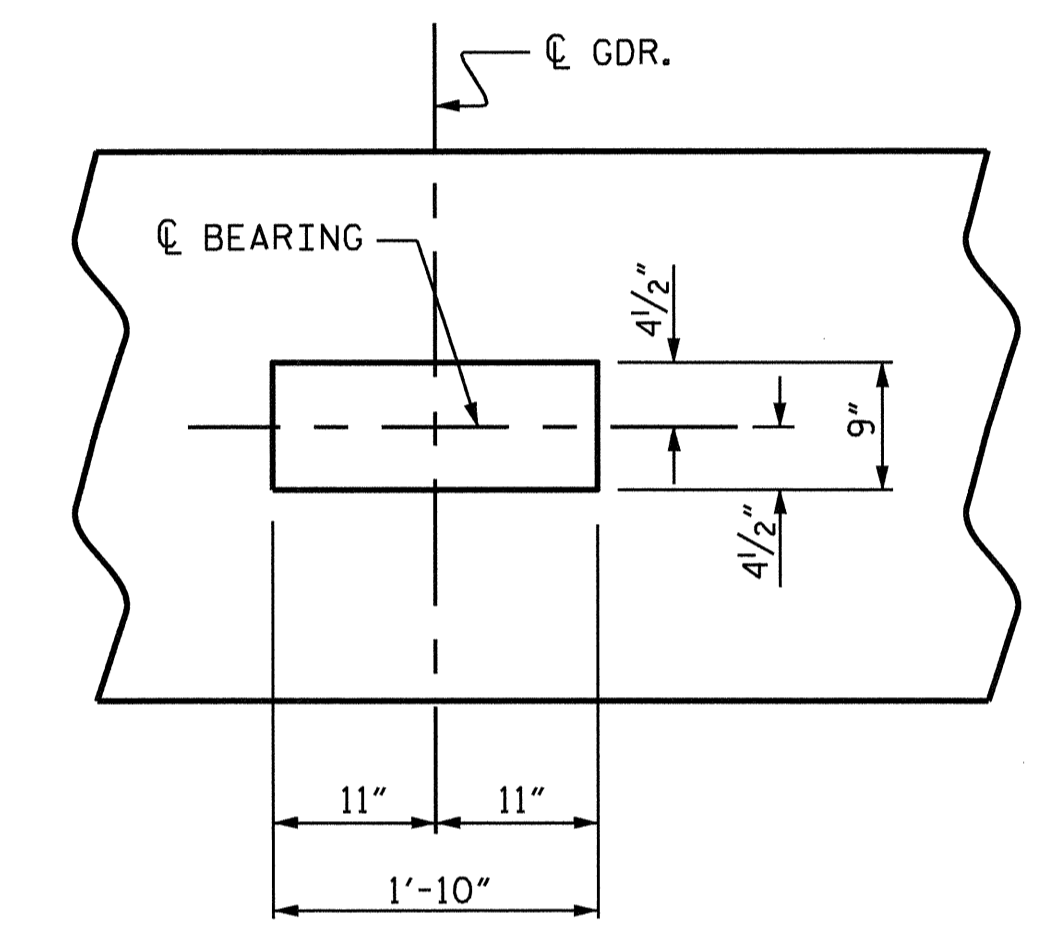
(WINGWALLS NOT SHOWN FOR CLARITY)

NOTES

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.

SEE SUPERSTRUCTURE SHEETS FOR THE ABUTMENT DETAILS.

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

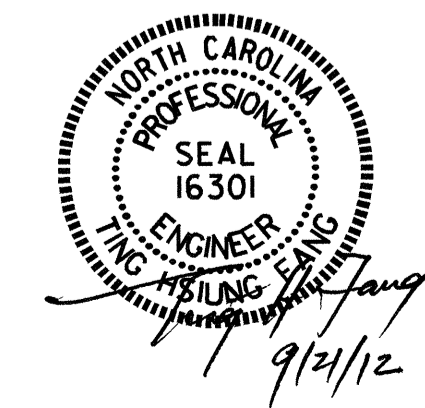


DETAIL A

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

SHEET 1 OF 3

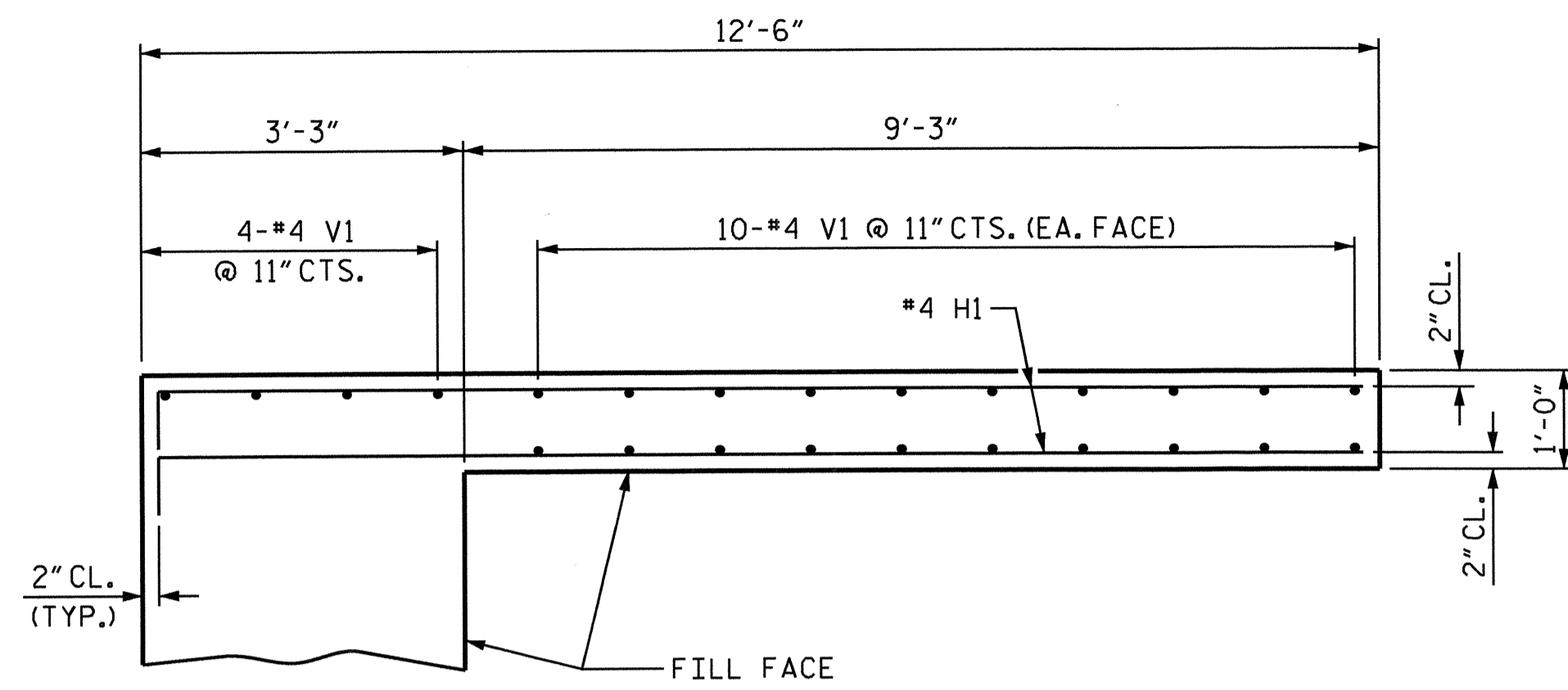
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 2
 (INTEGRAL)



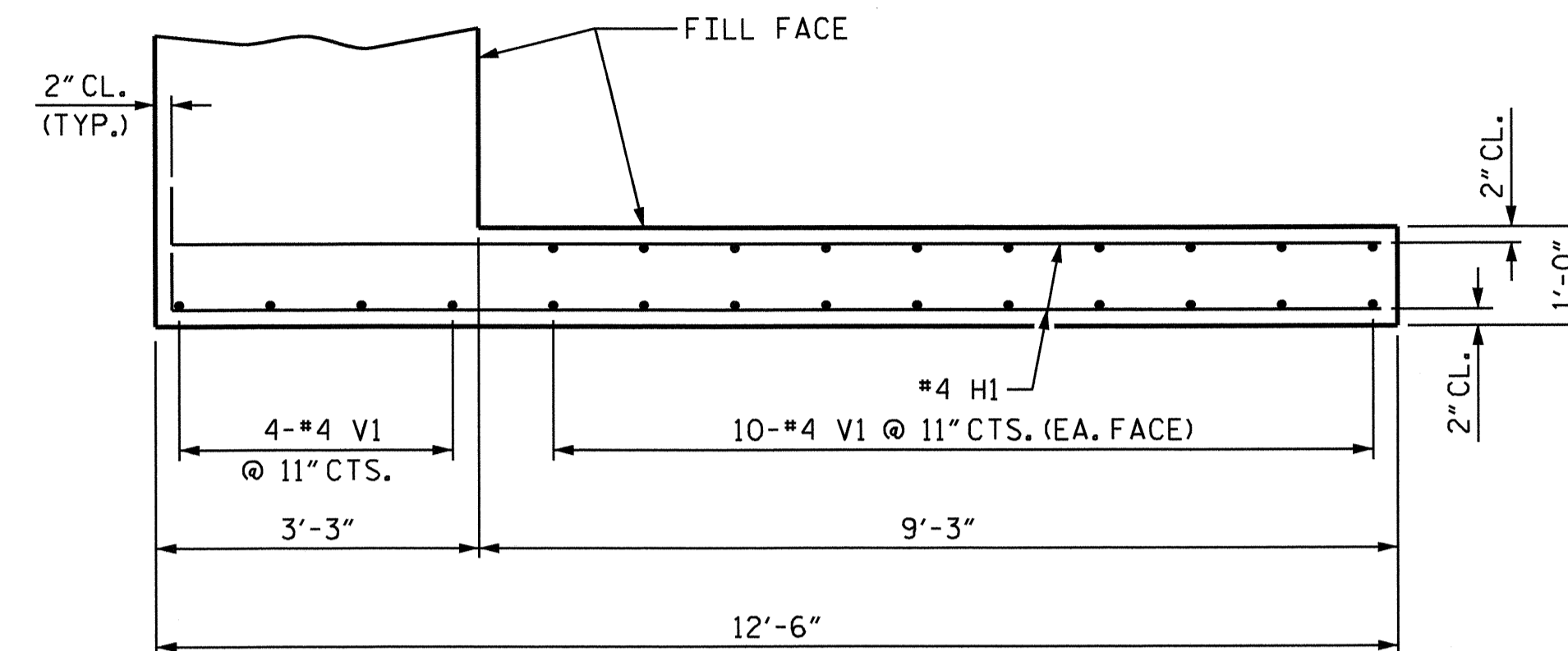
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-30
1			3			TOTAL SHEETS
2			4			35

DRAWN BY : J.A. YANNACCONI DATE : 10/18/10
 CHECKED BY : R.P.PATEL DATE : 10/28/10

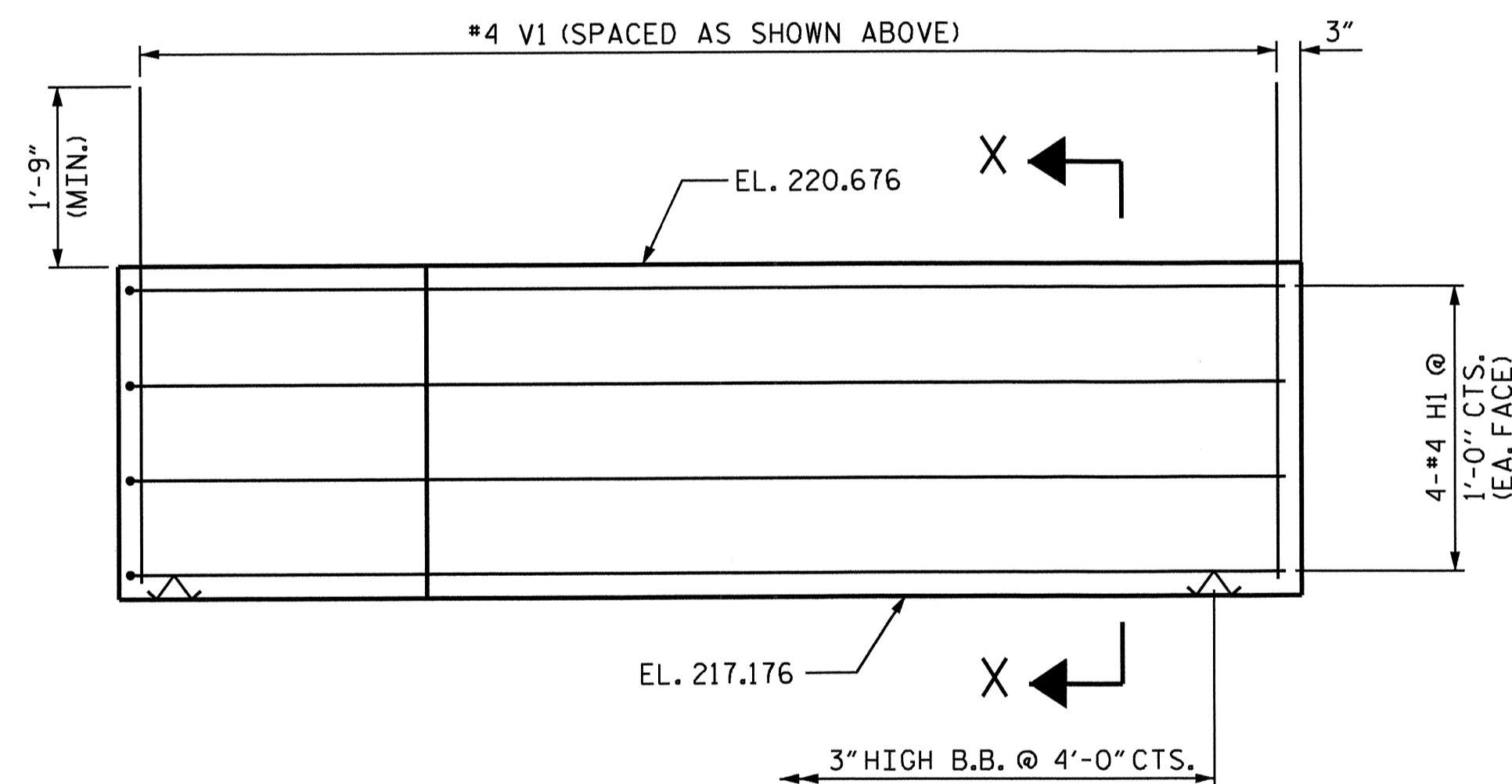
21-SEP-2012 13:59
 Y:\TIP\Projects-B\B4273\Structures\Final Plans\B-4273.SD.E.dgn
 kpnewton



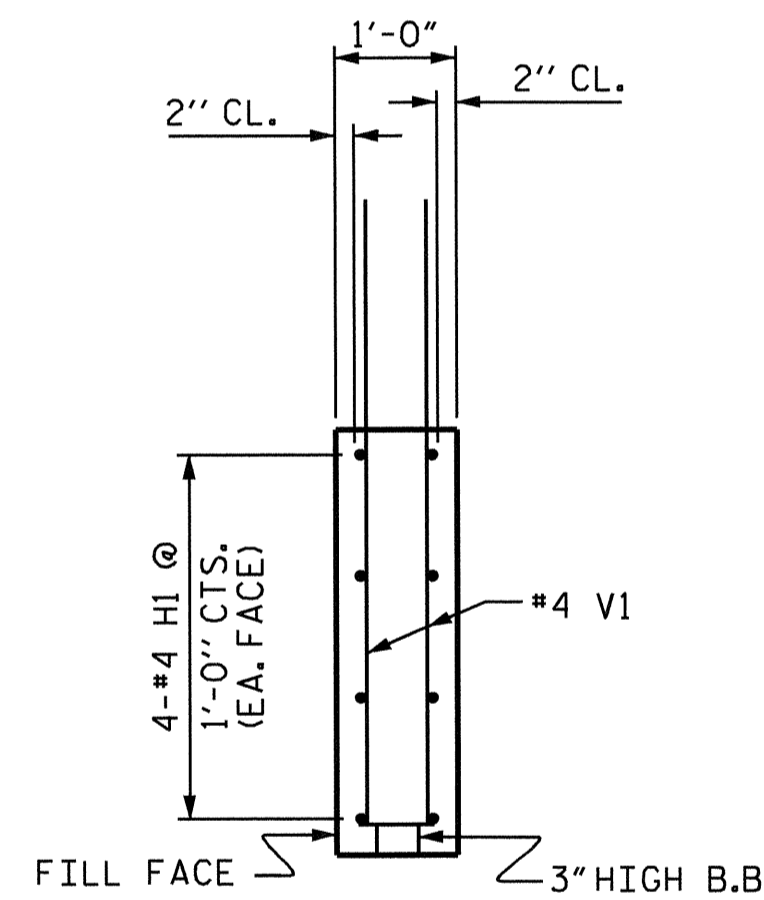
PLAN OF WING (W3)



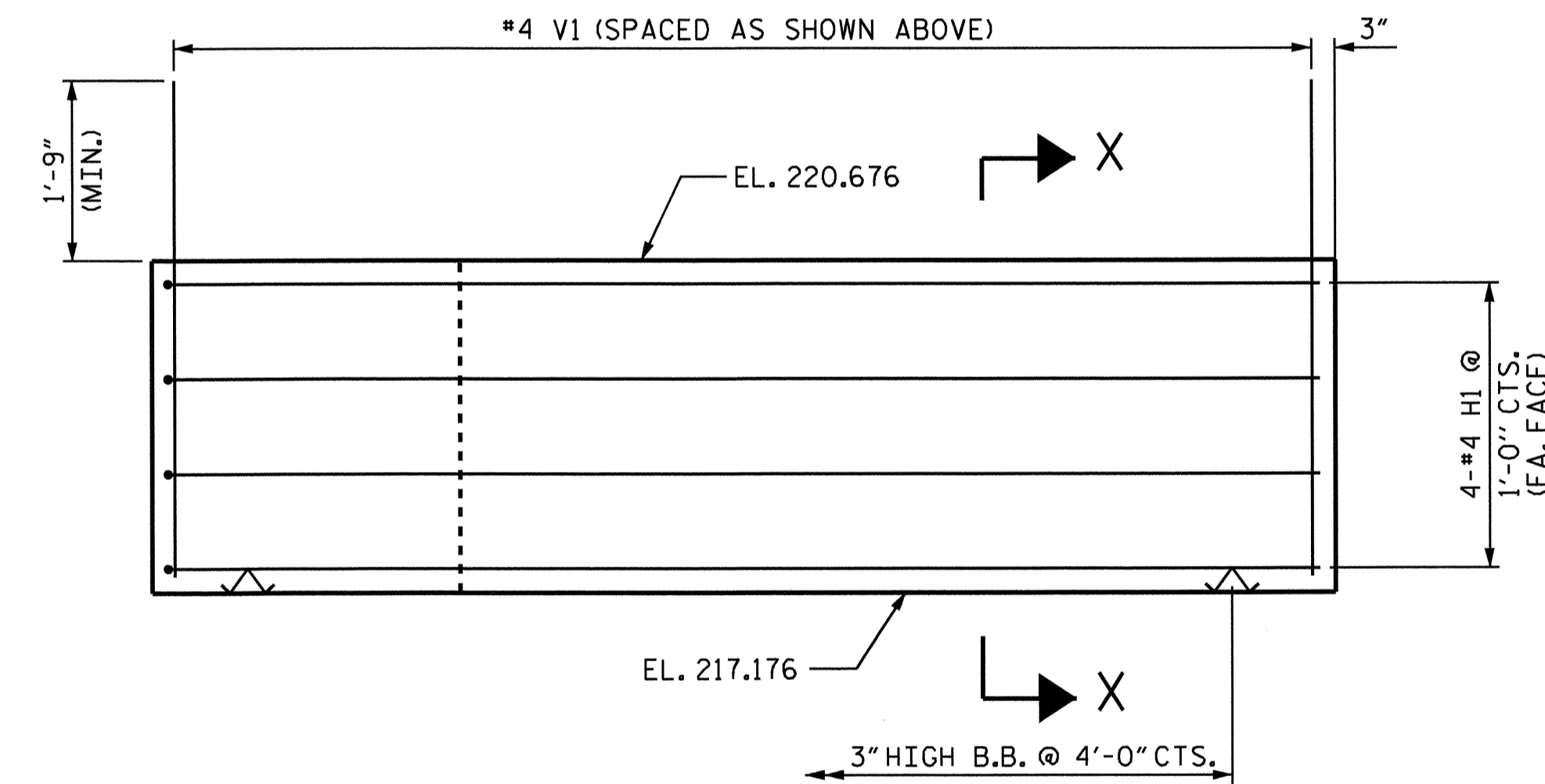
PLAN OF WING (W4)



ELEVATION OF WING (W3)



SECTION X-X



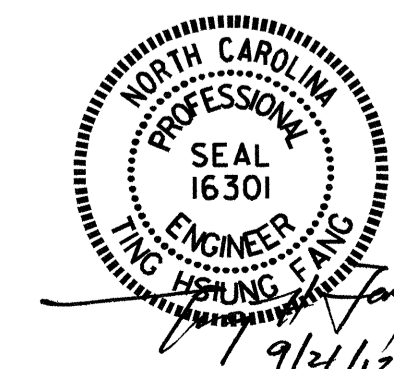
ELEVATION OF WING (W4)

PROJECT NO. B-4273
 SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

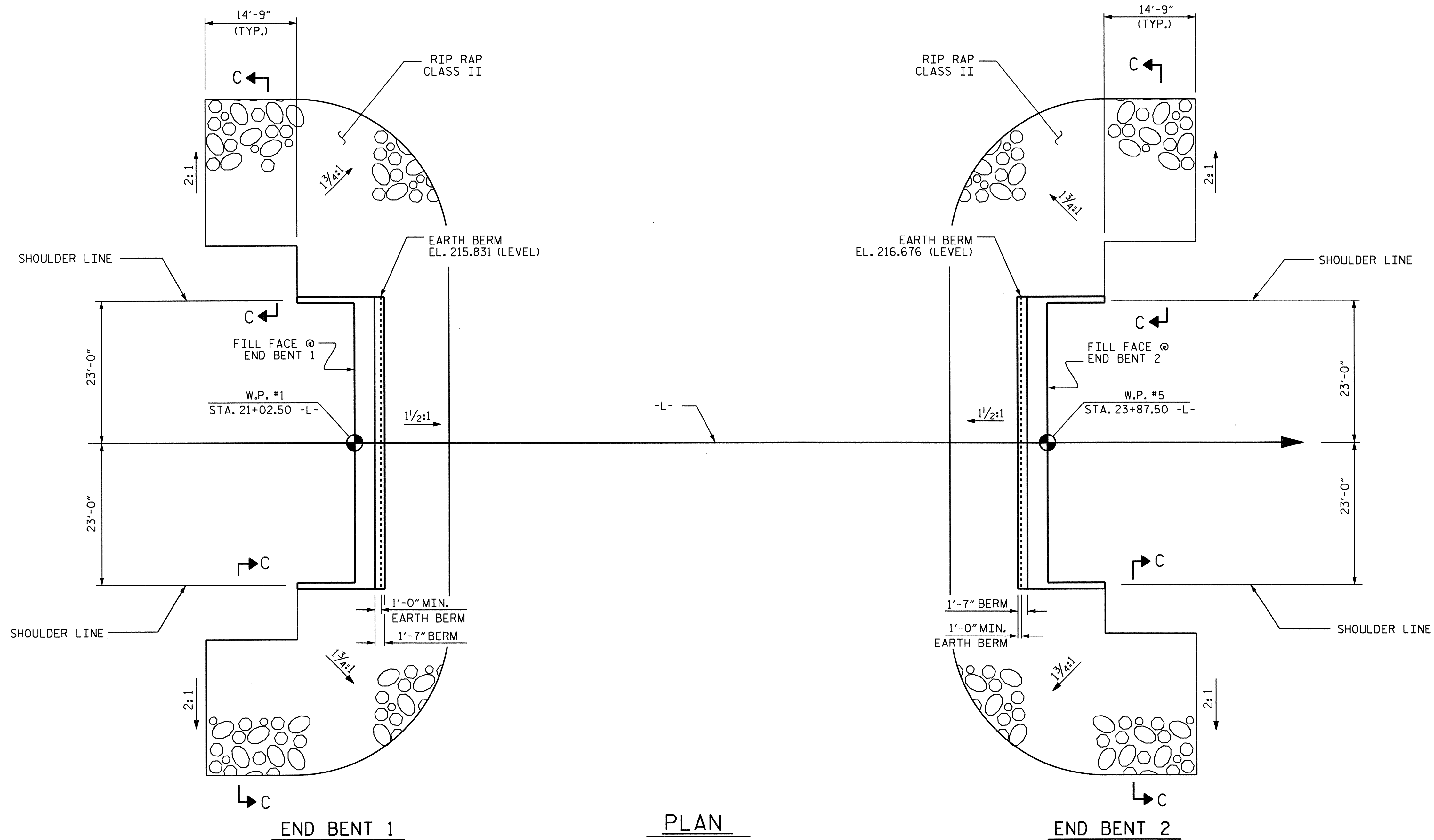
END BENT 2
 (INTEGRAL)



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-31
1			3			TOTAL SHEETS
2			4			35

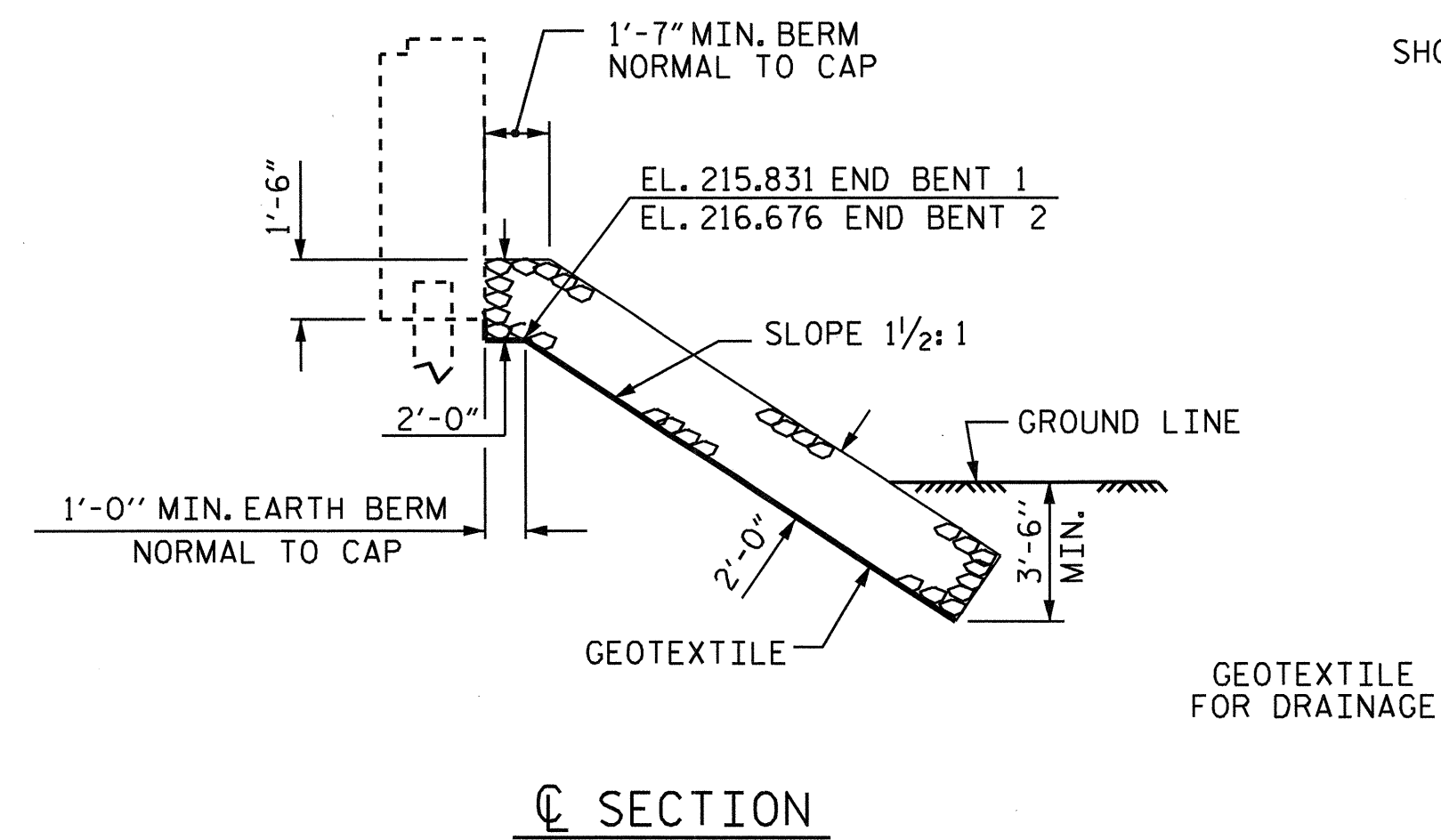
DRAWN BY : J.A. YANNACCONI DATE : 10/18/10
 CHECKED BY : R.P. PATEL DATE : 10/29/10

ESTIMATED QUANTITIES		
BRIDGE @ STA. 22+45.00 -L-	RIP RAP CLASS II	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	250	275
END BENT 2	275	305
TOTAL	525	580

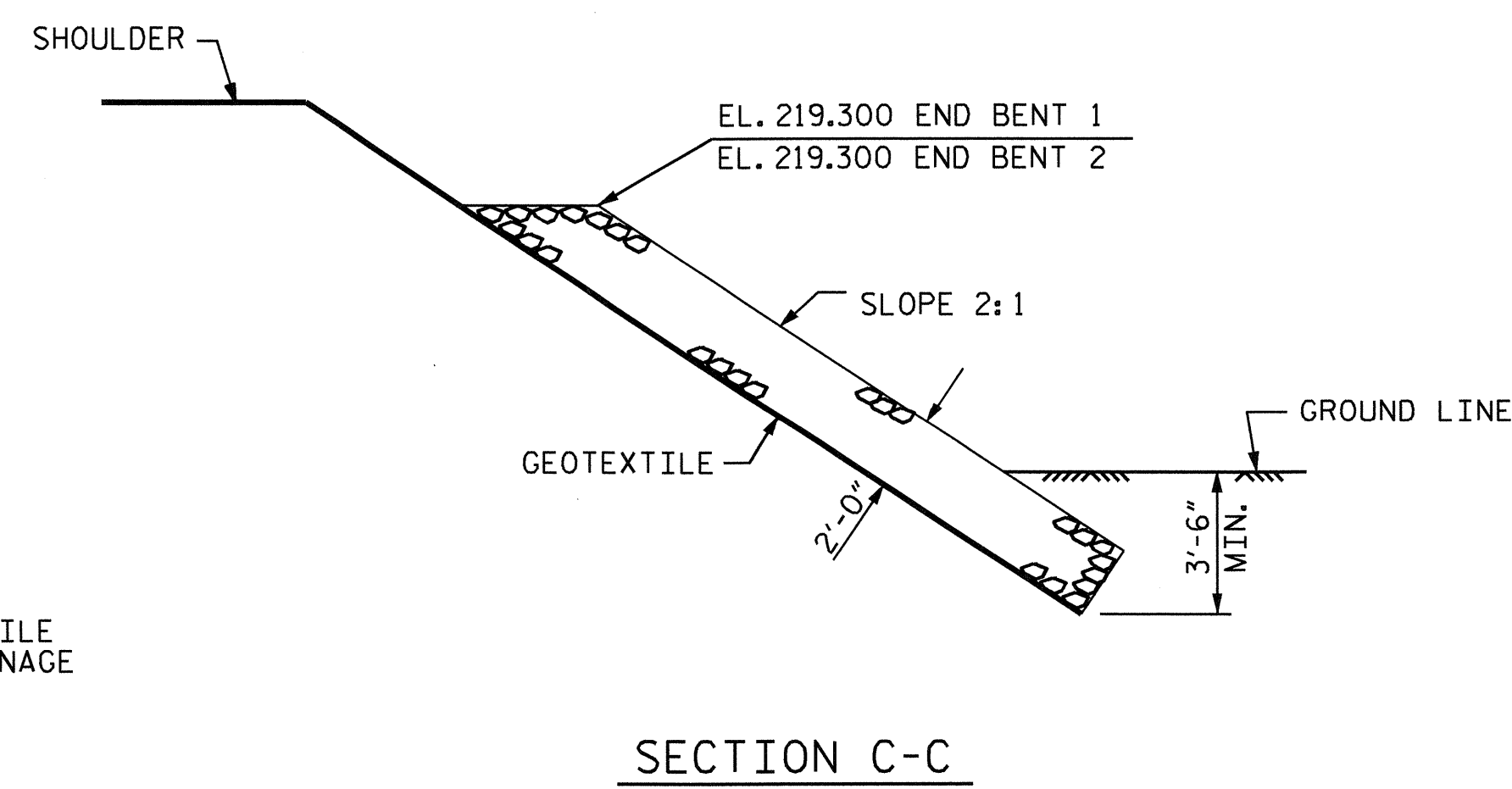


END BENT 1 PLAN

END BENT 2 PLAN



SECTION C-C BERM RIP RAPPED

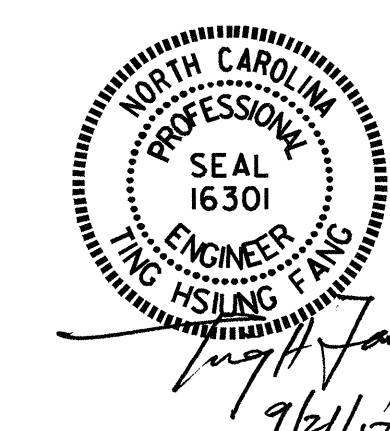


SECTION C-C

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

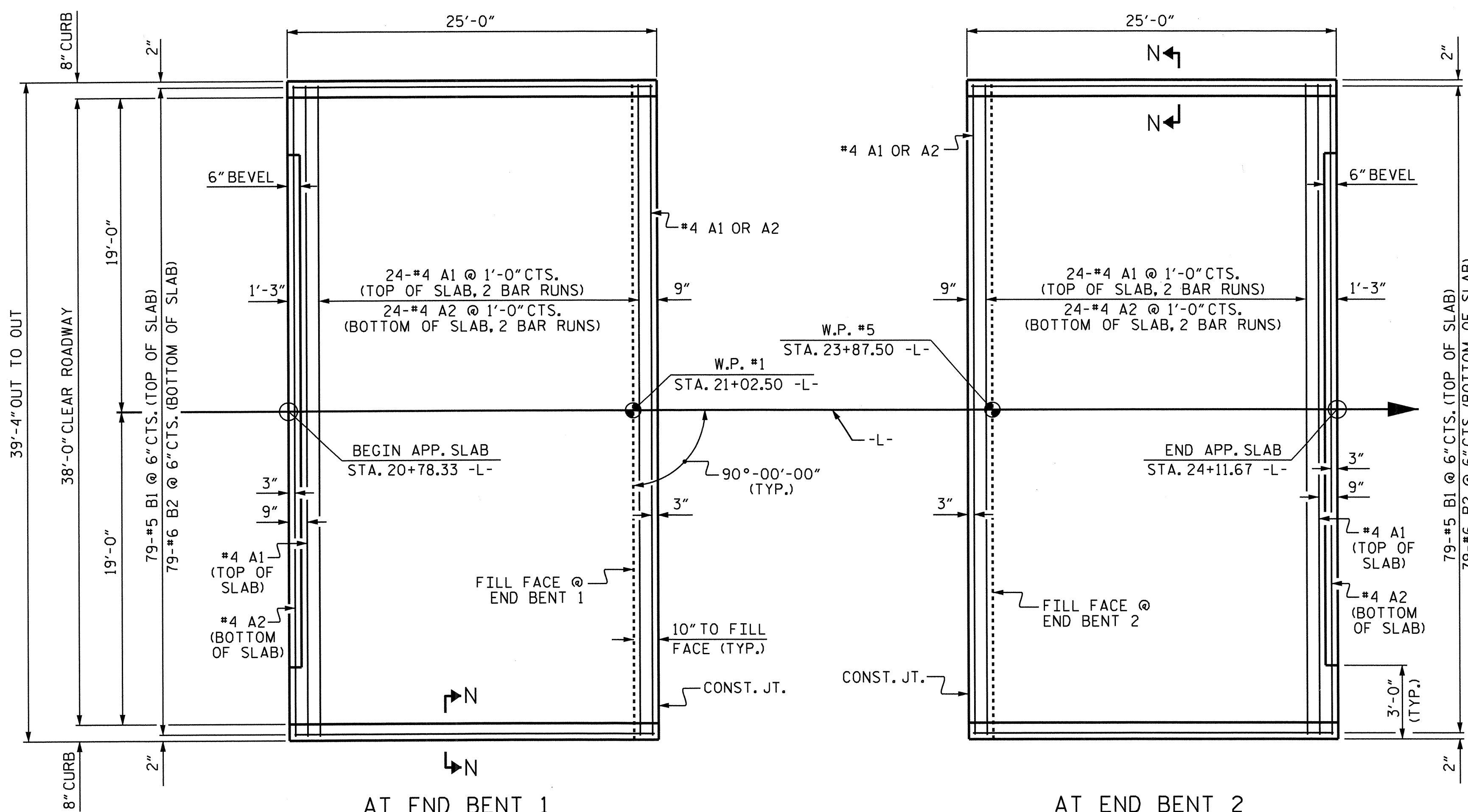
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

RIP RAP DETAILS



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-33
1			3			TOTAL SHEETS
2			4			35

DRAWN BY : HARISH SHAH DATE : 4-20-10
 CHECKED BY : W.F. PARKER DATE : 4-19-12



AT END BENT 1 AT END BENT 2

PLAN
DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS.

NOTES

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

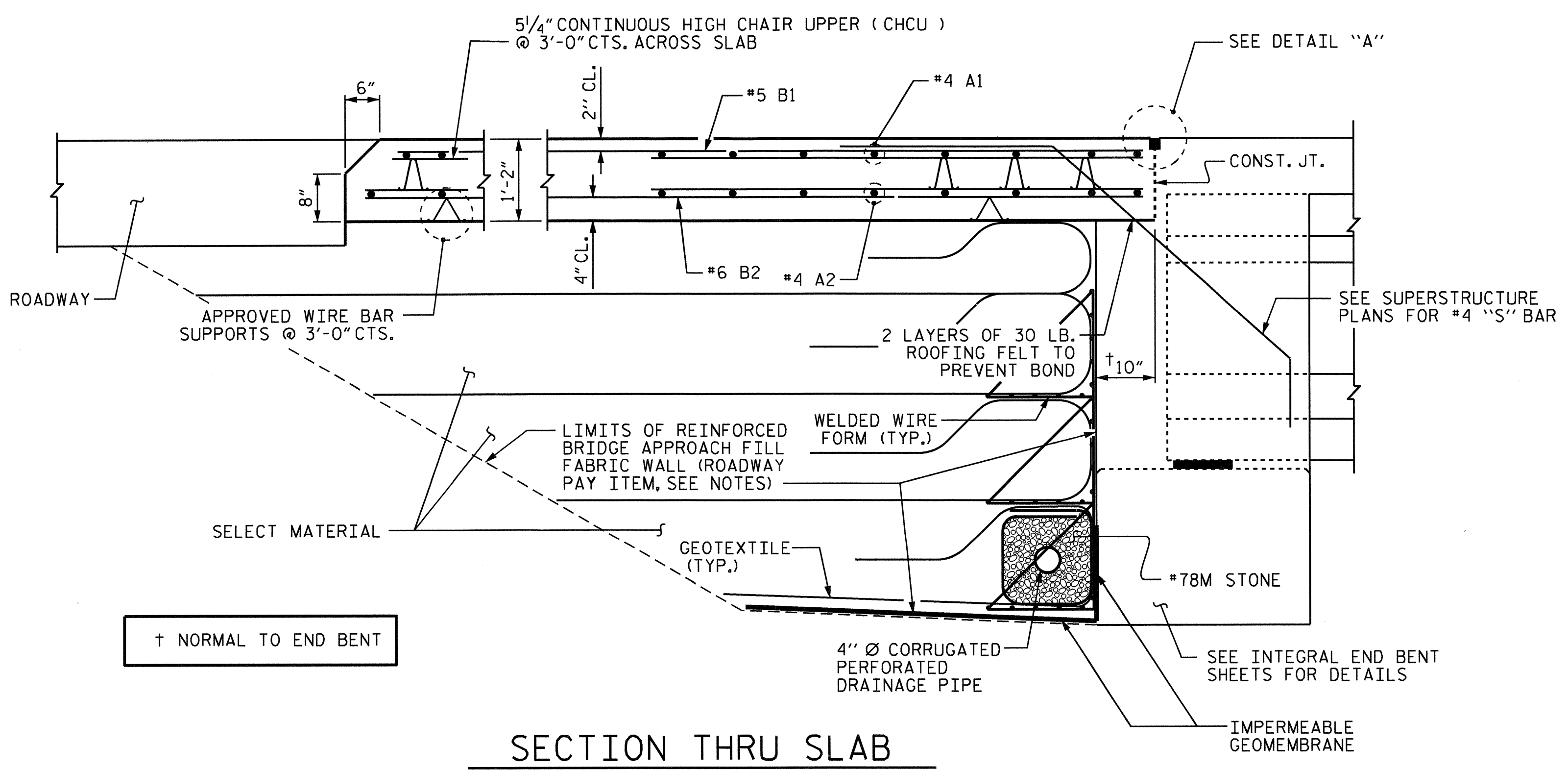
FOR REINFORCED BRIDGE APPROACH FILL FABRIC WALL INCLUDING GEOTEXTILE, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, WELDED WIRE FORM, AND SELECT MATERIAL, SEE ROADWAY PLANS.

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.

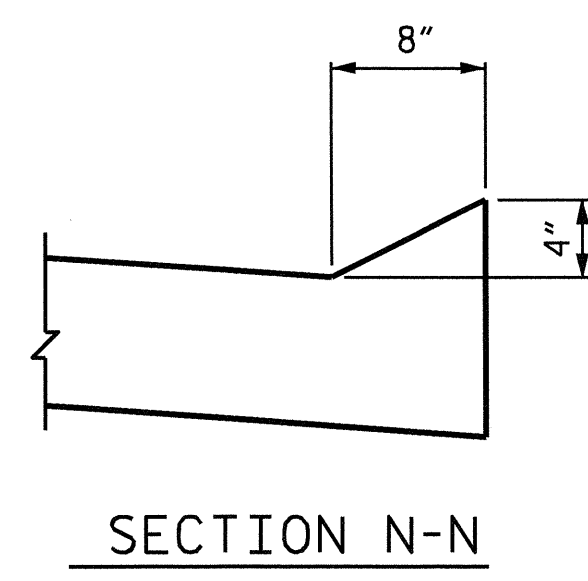
THE JOINT OPENING AT THE APPROACH SLAB/DECK INTERFACE SHALL BE SAWED NO MORE THAN 12 HOURS AFTER THE APPROACH SLAB IS CAST. THE JOINT SHALL BE CLEANED OF ALL DEBRIS BEFORE THE SEALANT IS APPLIED. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1028-3 OF THE STANDARD SPECIFICATIONS.

BILL OF MATERIAL					
FOR ONE APPROACH SLAB (2 REQ'D)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	52	#4	STR	20'-6"	712
A2	52	#4	STR	20'-4"	706
* B1	79	#5	STR	24'-2"	1991
B2	79	#6	STR	24'-8"	2927
REINFORCING STEEL				LBS.	3633
* EPOXY COATED REINFORCING STEEL				LBS.	2703
CLASS AA CONCRETE				C. Y.	42.9

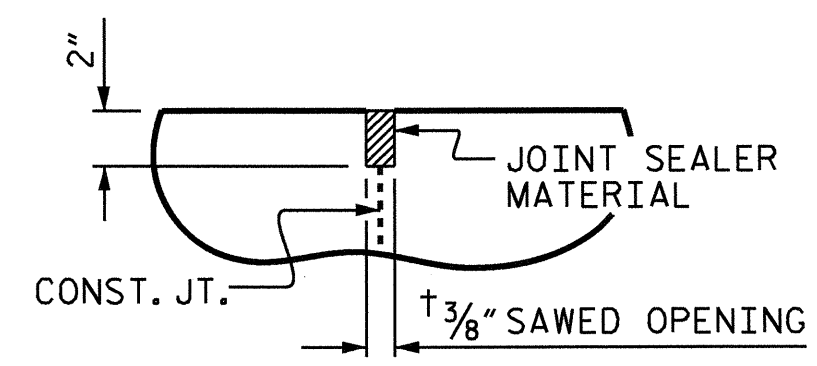
SPLICE CHART		
BAR	SIZE	SPLICE
* A1	#4	2'-0"
A2	#4	1'-9"



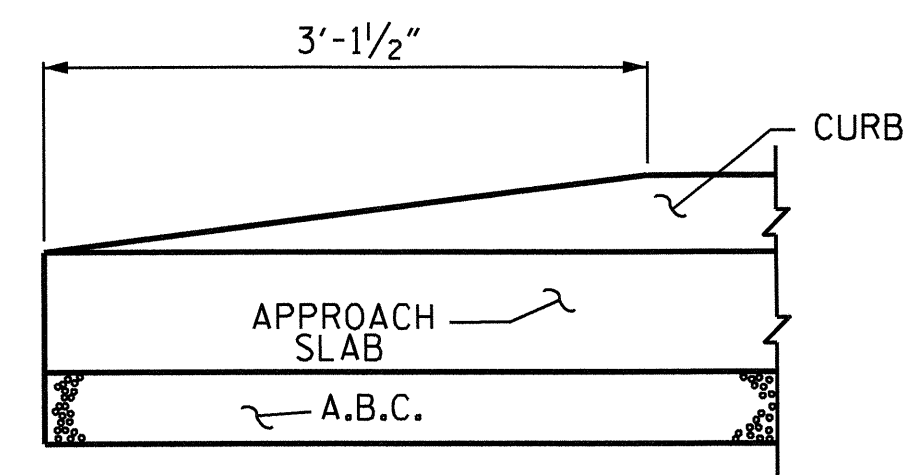
SECTION THRU SLAB



SECTION N-N



DETAIL "A"

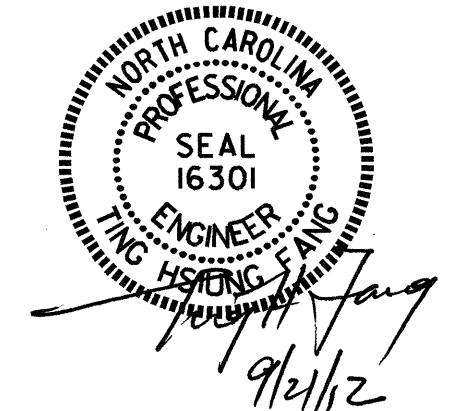


END OF CURB WITHOUT SHOULDER BERM GUTTER
CURB DETAILS

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
STATION: 22+45.00 -L-

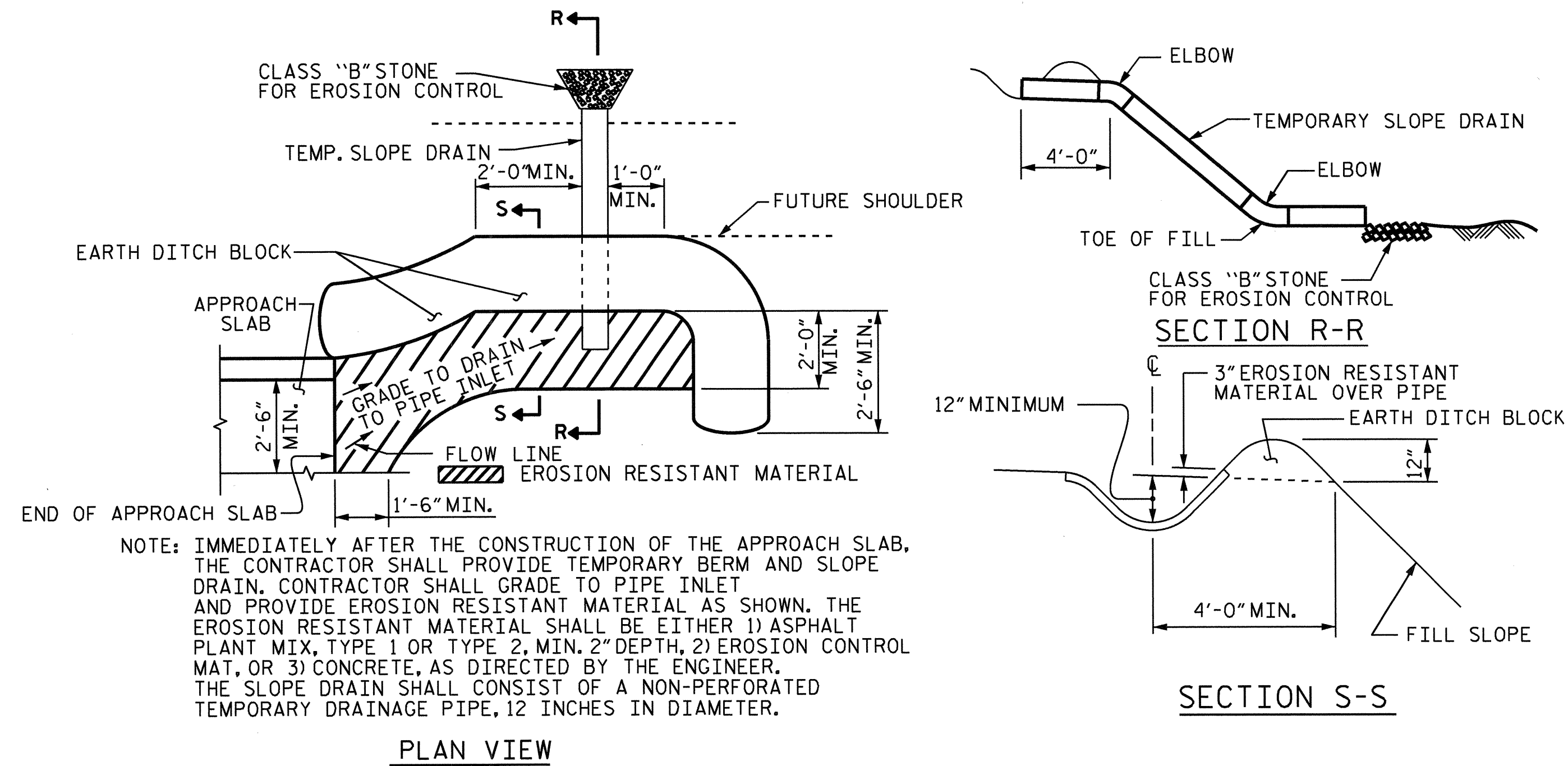
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH SLAB
FOR
INTEGRAL ABUTMENT



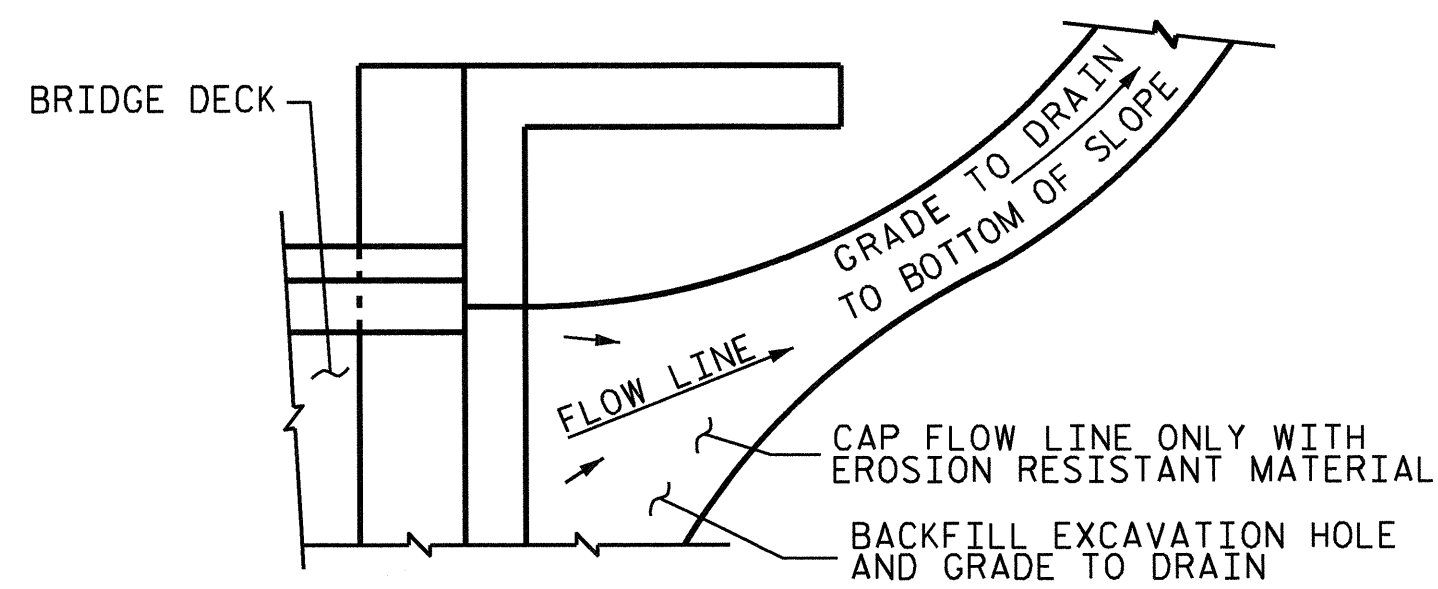
ASSEMBLED BY: HARISH SHAH DATE: 4-21-10
CHECKED BY: O.T. NGUYEN DATE: 4-22-10
DRAWN BY: TLA 10/05
CHECKED BY: GM 5/06
ADDED 5/1/06RR KMM/GM
REV. 10/1/11 MAA/GM
REV. 12/21/11 MAA/GM

REVISIONS						SHEET NO. S-34
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 35
2			4			



TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM CUTTER IS REQUIRED)



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.

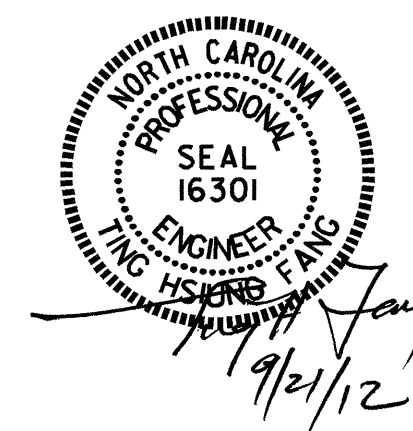
TEMPORARY DRAINAGE DETAIL

PROJECT NO. B-4273
SCOTLAND/HOKE COUNTY
 STATION: 22+45.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 BRIDGE APPROACH
 SLAB DETAILS



ASSEMBLED BY : HARISH SHAH	DATE : 4-21-10
CHECKED BY : O.T. NGUYEN	DATE : 4-22-10
DRAWN BY : FCJ 11/88	REV. 5/7/03 RWW/JTE
CHECKED BY : ARB 11/88	REV. 5/1/06RRR MAA/KMM
	REV. 10/1/11 MAA/GM

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

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

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

STRUCTURAL STEEL:

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

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

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

STD. NO. SN