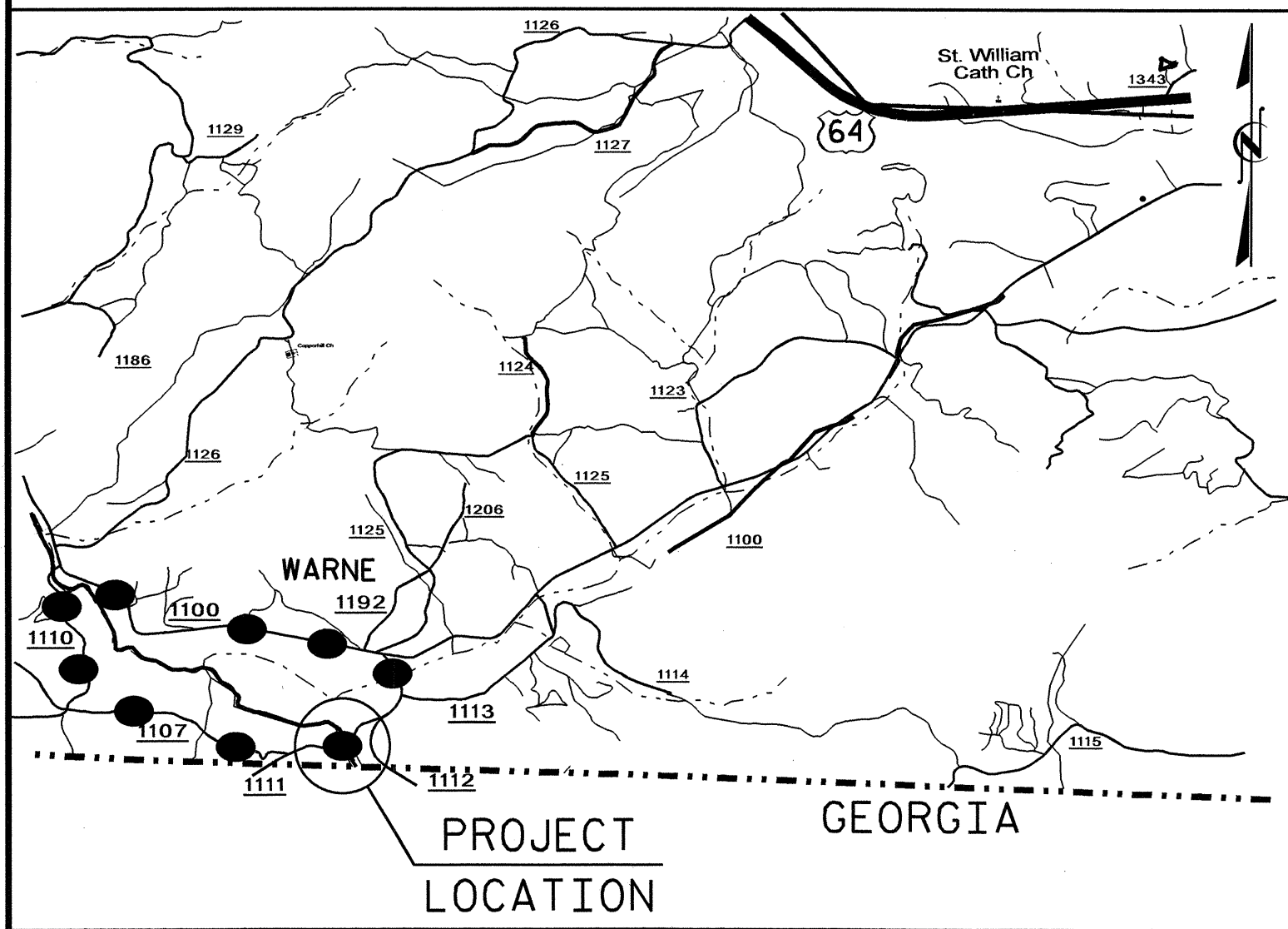


09/08/99

TIP PROJECT: B-4467

C202430

CONTRACT:



VICINITY MAP

OFF-SITE DETOUR ROUTE ●●●●●●●●●●

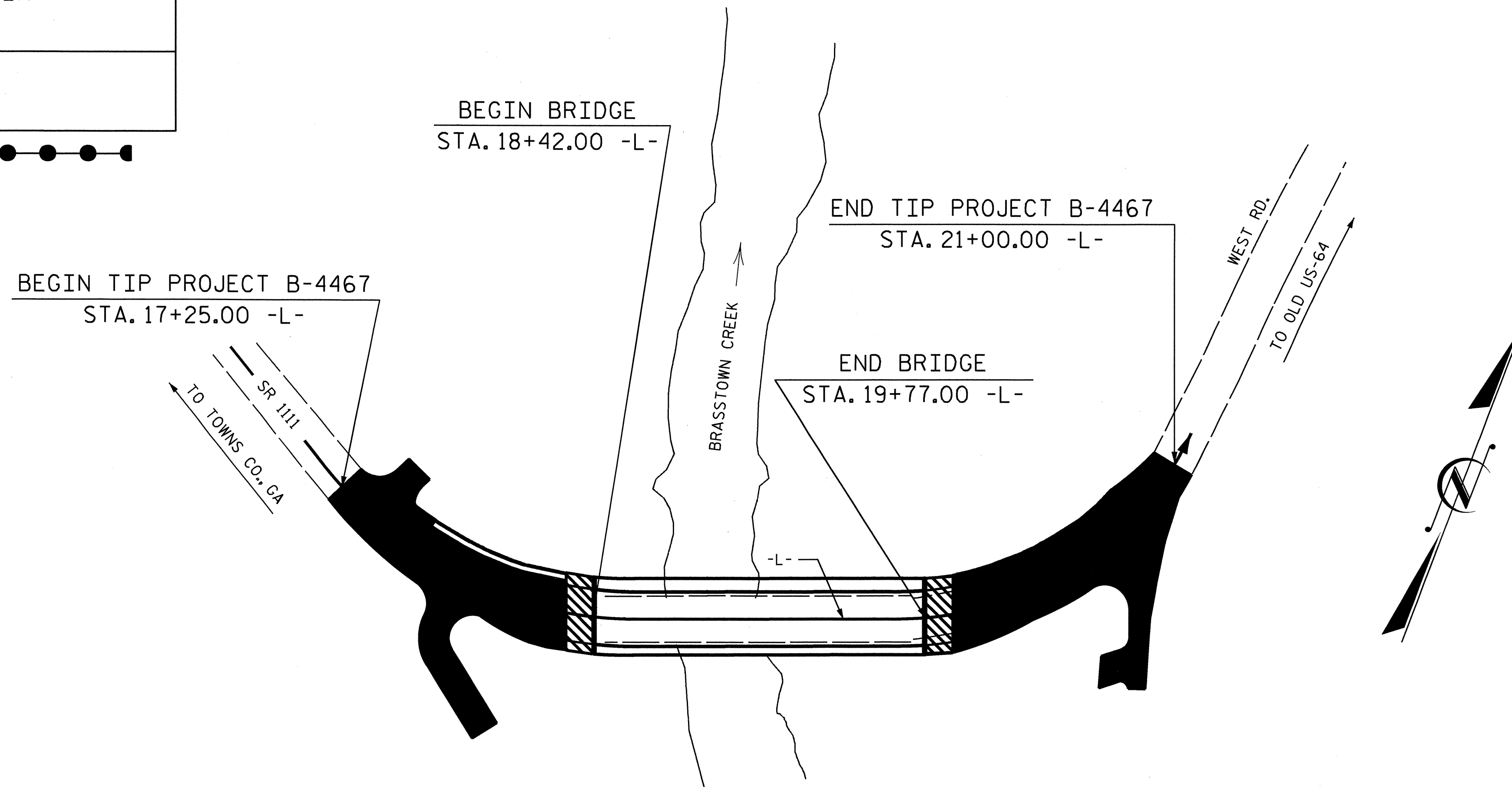
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CLAY COUNTY

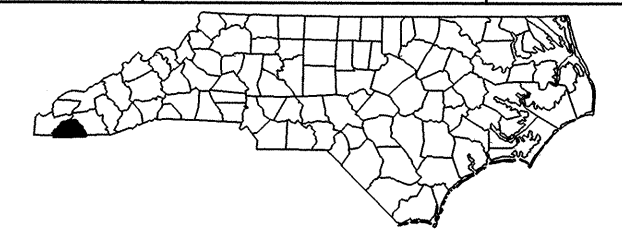
**LOCATION: BRIDGE #3 OVER BRASSTOWN CREEK
ON SR 1111 (WEST ROAD)**

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

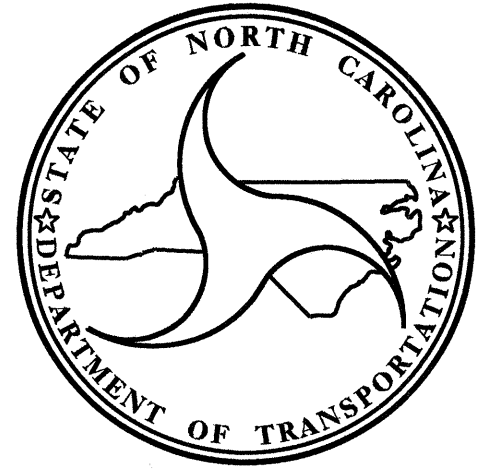
STRUCTURE



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4467		
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33716.1.1	BRZ-1111 (7)	PE	
33717.2.1	BRZ-1111(7)	R /W & UTIL.	
33716.3.1	BRZ-1111(7)	CONSTRUCTION	



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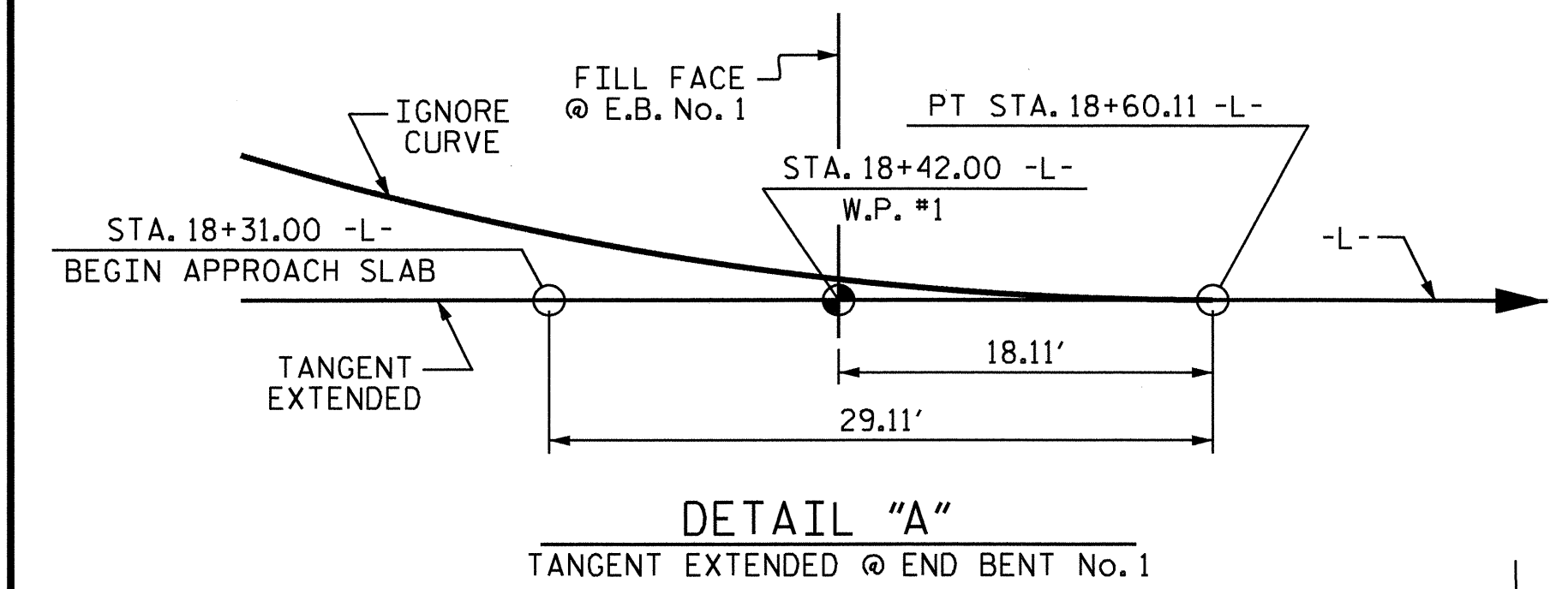
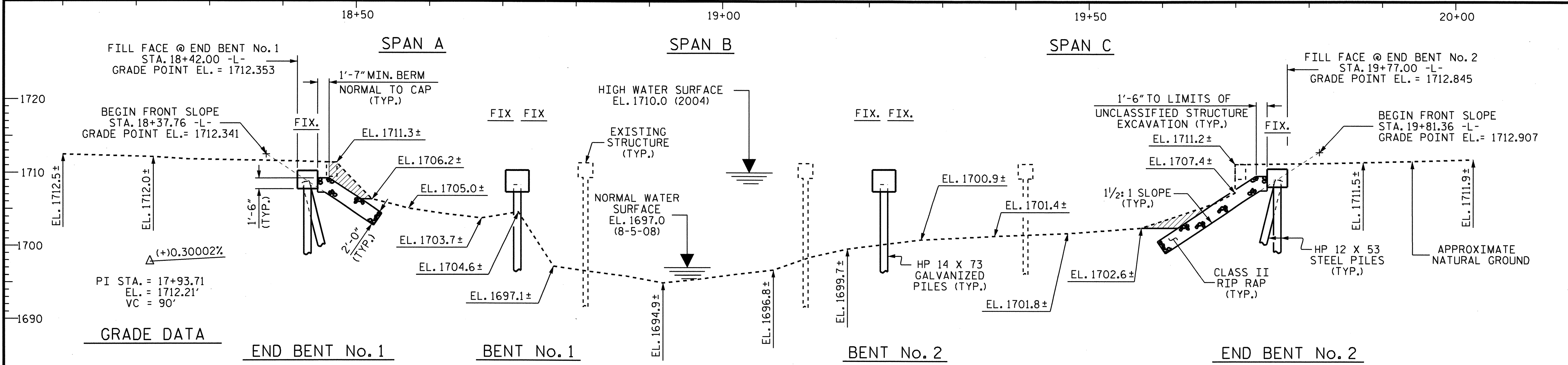


DESIGN DATA	
ADT 2011 =	1,416
ADT 2031 =	2,031
DHV =	10 %
D =	60 %
* T =	6 %
** V =	40 MPH
* TTST 1% DUAL 5%	
FUNCTIONAL CLASSIFICATION	
RURAL LOCAL	

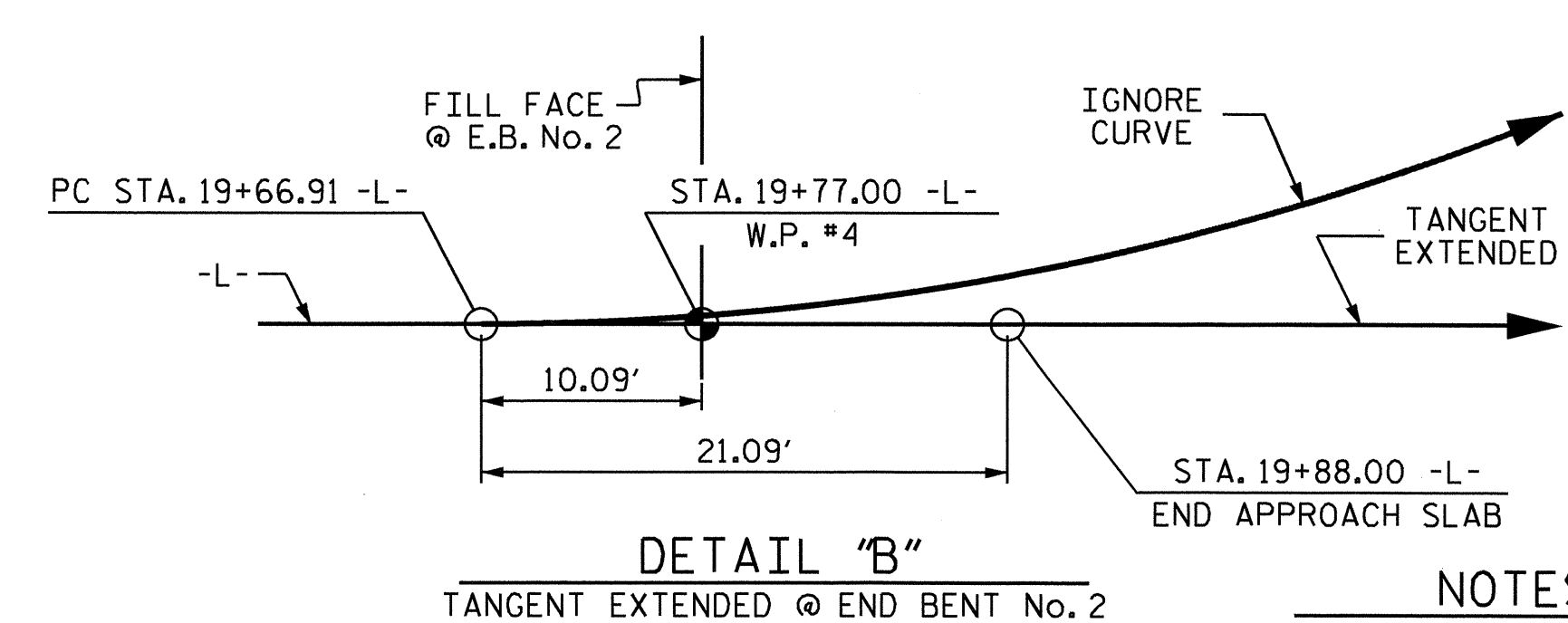
PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT B-4467 =	0.045 MILES
LENGTH STRUCTURE TIP PROJECT B-4467 =	0.026 MILES
TOTAL LENGTH TIP PROJECT B-4467 =	0.071 MILES

PLANS PREPARED IN THE OFFICE OF: DIVISION OF HIGHWAYS	
2006 STANDARD SPECIFICATIONS	
LETTING DATE: APRIL 19, 2011	Q. H. NGUYEN, P.E. PROJECT ENGINEER
	MARC G. CHEEK, P.E. PROJECT DESIGN ENGINEER

STRUCTURE DESIGN UNIT 1000 BIRCH RIDGE DRIVE RALEIGH, N.C. 27610	
DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA	
STATE DESIGN ENGINEER DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
APPROVED DIVISION ADMINISTRATOR	DATE



SECTION THROUGH END BENTS AND BENTS ARE TAKEN AT RIGHT ANGLES

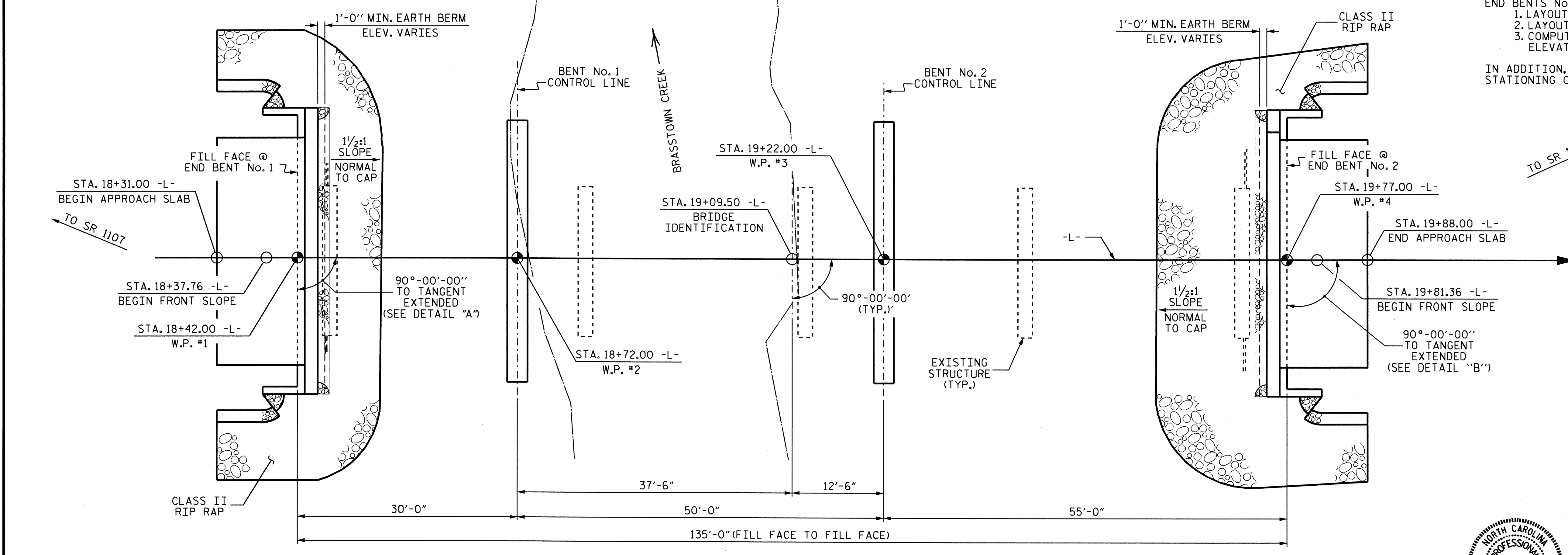


NOTES FOR DETAIL "A" & "B"

THE CONTRACTOR SHALL USE THE TANGENT EXTENDED AT END BENTS No. 1 AND No. 2 FOR THE LAYOUT OF THE FOLLOWING:

- LAYOUT OF END BENTS No. 1 AND No. 2.
- LAYOUT OF APPROACH SLABS AT END BENTS No. 1 AND No. 2.
- COMPUTATIONS OF BRIDGE OR APPROACH SLAB ELEVATIONS.

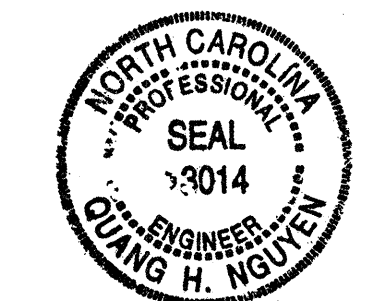
IN ADDITION, THE CONTRACTOR SHALL ASSUME THAT ALL STATIONING OCCURS ALONG THE TANGENT EXTENDED.



DRAWN BY : A. SORSENGINH DATE : 10/25/10
CHECKED BY : M.G. CHEEK DATE : 11/10

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w/jnar16

PLAN
PILES ARE NOT SHOWN IN PLAN VIEW.

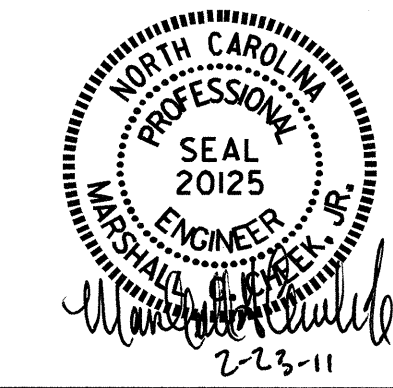


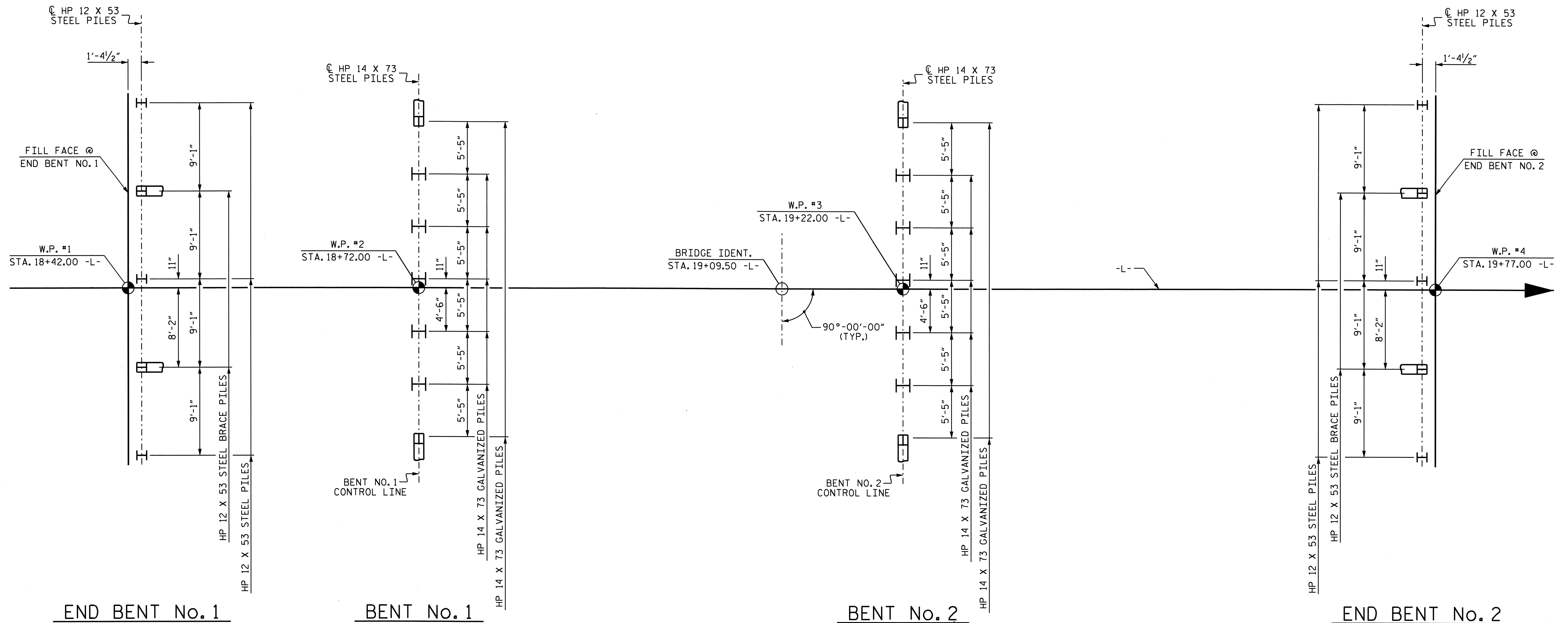
Quang H. Nguyen 2-23-11

PROJECT NO. B-4467
CLAY COUNTY
STATION: 19+09.50 -L-

SHEET 1 OF 3 REPLACES BRIDGE #3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING FOR BRIDGE ON SR 1111 OVER BRASSTOWN CREEK BETWEEN SR 1107 AND SR 1112					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 22





FOUNDATION LAYOUT

ALL END BENT PILES ARE HP 12 X 53.
 DIMENSIONS LOCATING PILES ARE SHOWN TO THE
 PILE CENTERLINE AT THE BOTTOM OF THE CAP.
 END BENT BRACE PILES ARE BATTERED 3:12.
 BENT BRACE PILES ARE BATTERED 1 1/2: 12.

NOTES

FOR PILES, SEE SPECIAL PROVISIONS.

PILES AT END BENT NO.1 ARE DESIGNED FOR A FACTORED
 RESISTANCE OF 65 TONS PER PILE. DRIVE PILES TO A REQUIRED
 DRIVING RESISTANCE OF 108 TONS PER PILE.

PILES AT BENT NO.1 ARE DESIGNED FOR A FACTORED
 RESISTANCE OF 95 TONS PER PILE. DRIVE PILES TO A REQUIRED
 DRIVING RESISTANCE OF 158 TONS PER PILE.

INSTALL PILES AT BENT NO.1 TO A TIP ELEVATION NO HIGHER
 THAN 1665.

THE SCOUR CRITICAL ELEVATION FOR BENT NO.1 IS ELEVATION
 1683.5. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR
 POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

PILES AT BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE
 105 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING
 RESISTANCE OF 175 TONS PER PILE.

INSTALL PILES AT BENT NO.2 TO A TIP ELEVATION NO HIGHER
 THAN 1665 (LT) AND 1673.0 (RT).

THE SCOUR CRITICAL ELEVATION FOR BENT NO.2 IS ELEVATION 1685.
 SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR
 PROBLEMS DURING THE LIFE OF THE STRUCTURE.

PILES AT END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE
 OF 80 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING
 RESISTANCE OF 133 TONS PER PILE.

DRAWN BY : A. SORSENGINH DATE : 10/27/10
 CHECKED BY : M.G. CHEEK DATE : 11/10

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 wjharris

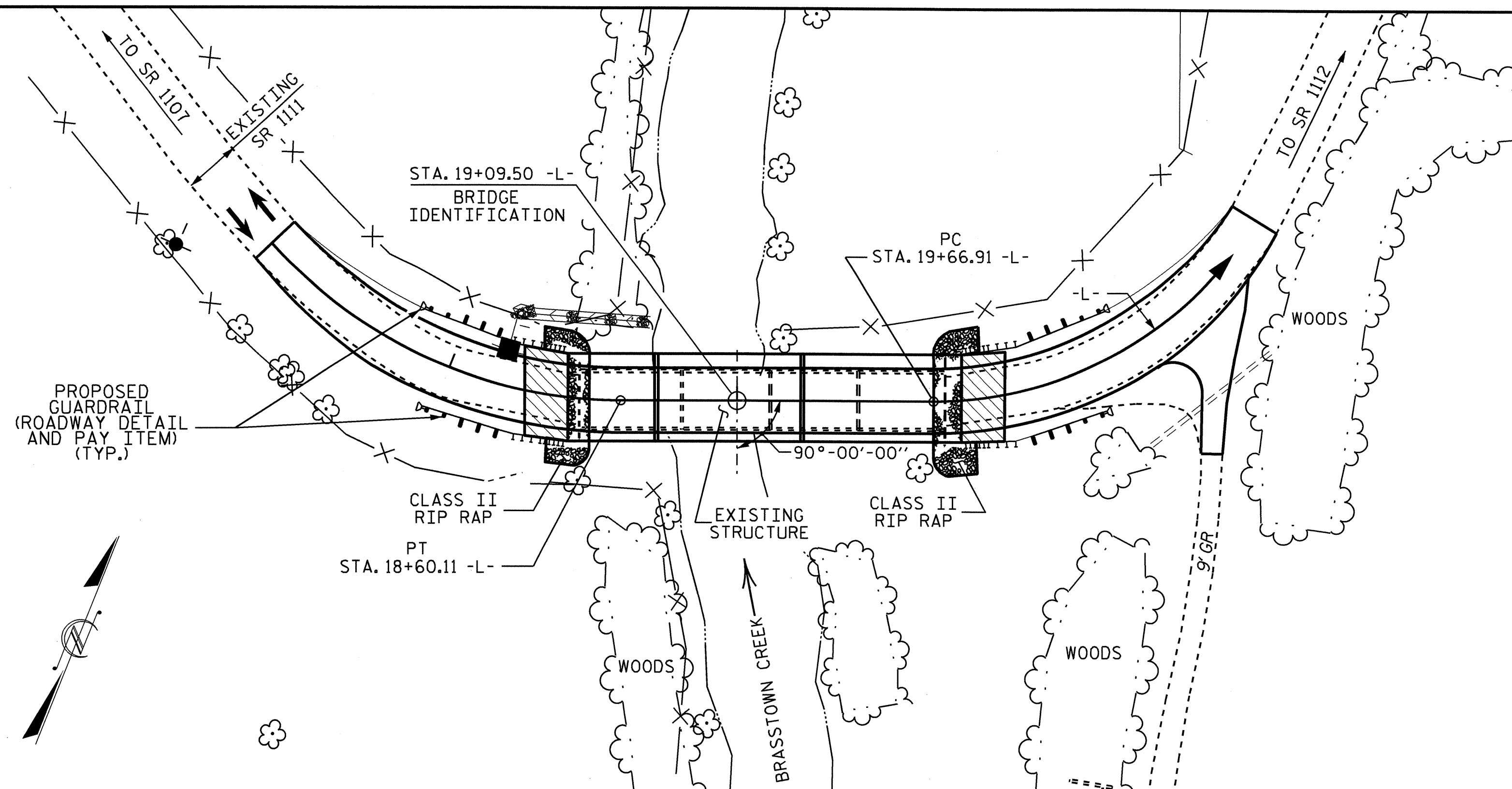
PROJECT NO. B-4467
CLAY COUNTY
 STATION: 19+09.50 -L-

SHEET 2 OF 3



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING FOR BRIDGE ON SR 111 OVER BRASSTOWN CREEK BETWEEN SR 1107 AND SR 1112					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					22

BENCH MARK #2: 8" SPIKE IN ROOT OF 48" SYCAMORE TREE, STA. 17+25.00 -L-, 167.45' RIGHT, EL. 1726.98



HYDRAULIC DATA

DESIGN DISCHARGE	=	4,900 CFS.
FREQUENCY OF DESIGN FLOOD	=	25 YRS.
DESIGN HIGH WATER ELEVATION	=	1,708.9
DRAINAGE AREA	=	37.3 SQ. MI.
BASIC DISCHARGE (Q100)	=	7,300 CFS.
BASIC HIGH WATER ELEVATION	=	1,710.80

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=	8,800 CFS.
FREQUENCY OF OVERTOPPING FLOOD	=	200 YRS.+
OVERTOPPING FLOOD ELEVATION	=	1,712.30

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

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.

THE EXISTING 4 SPAN STRUCTURE (3 @ 30'-0", 1 @ 35'-0") CONSISTING OF A TIMBER FLOOR ON STEEL I-BEAMS AND WITH A 1 1/2" ASPHALT WEARING SURFACE, AND A SUBSTRUCTURE CONSISTING OF TIMBER CAPS AND TIMBER PILES AT THE END BENTS AND INTERIOR BENTS SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION 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 THE STANDARD SPECIFICATIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 25 FEET EACH SIDE 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 SPECIFICATIONS.

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

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

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

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CURING CONCRETE, SEE SPECIAL PROVISIONS.

FOR VERTICAL CONCRETE BARRIER RAIL, SEE SPECIAL PROVISIONS.

FOR INTERIOR BENTS, 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 PILES.

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS.

TOTAL BILL OF MATERIAL

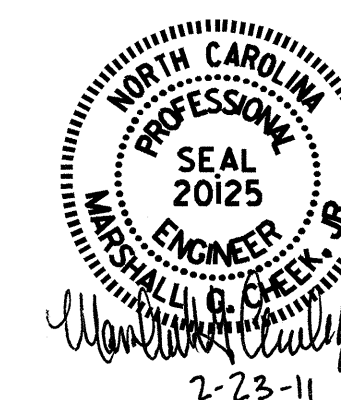
	CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMPORARY ACCESS	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES	HP 14 X 73 GALVANIZED PILES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS			
	LUMP SUM	LUMP SUM	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	LIN. FT.	TONS	SQ. YDS	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE	LUMP SUM	LUMP SUM			LUMP SUM				265.50			LUMP SUM	33	1457.50		
END BENT NO. 1			LUMP SUM	13.2		1924	5	175								
BENT NO. 1				11.9		1823										
BENT NO. 2				11.9		1823										
END BENT NO. 2			LUMP SUM	13.2		1924	5	325								
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	50.2	LUMP SUM	7494	10	500	14	765	265.50	161	179	LUMP SUM	33	1457.50

PROJECT NO. B-4467
CLAY COUNTY
 STATION: 19+09.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE ON SR 1111
 OVER BRASSTOWN CREEK
 BETWEEN SR 1107 AND SR 1112

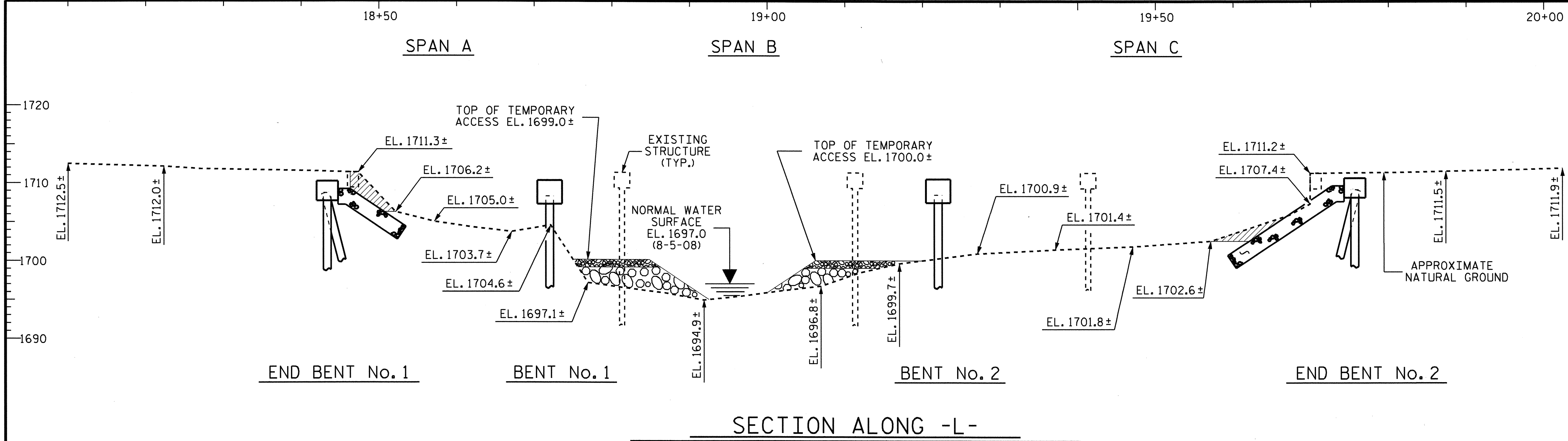


REVISIONS

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

SHEET NO.
 S-3
 TOTAL SHEETS
 22

DRAWN BY : A. SORSENGINH DATE : 10/26/10
 CHECKED BY : M.G. CHEEK DATE : 11/10



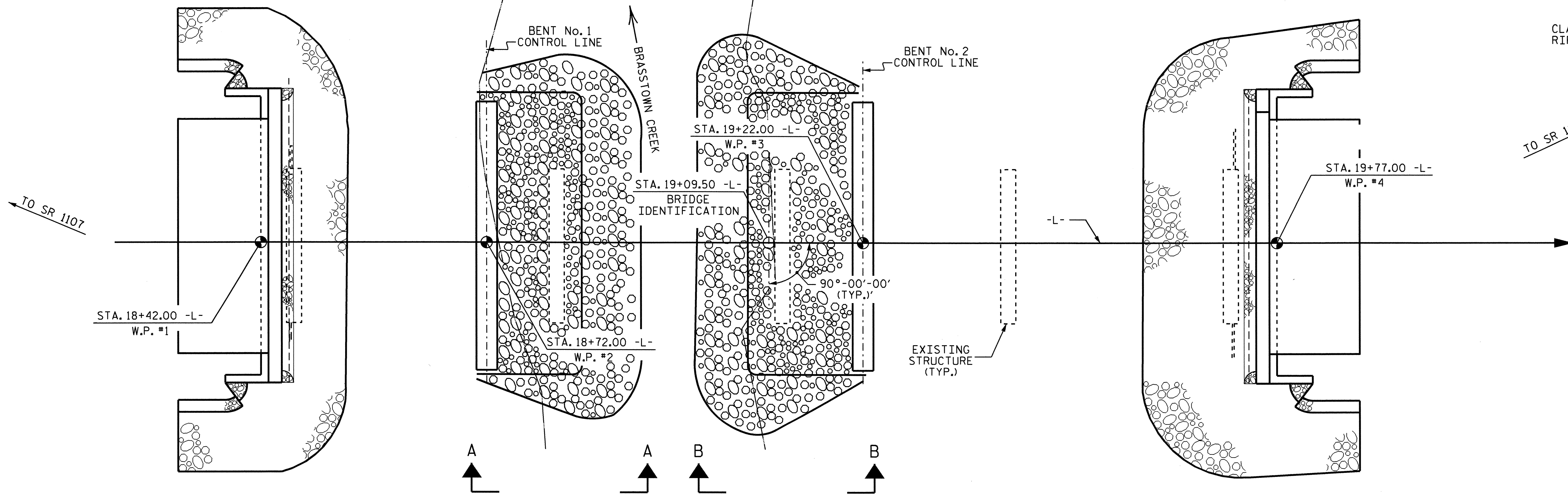
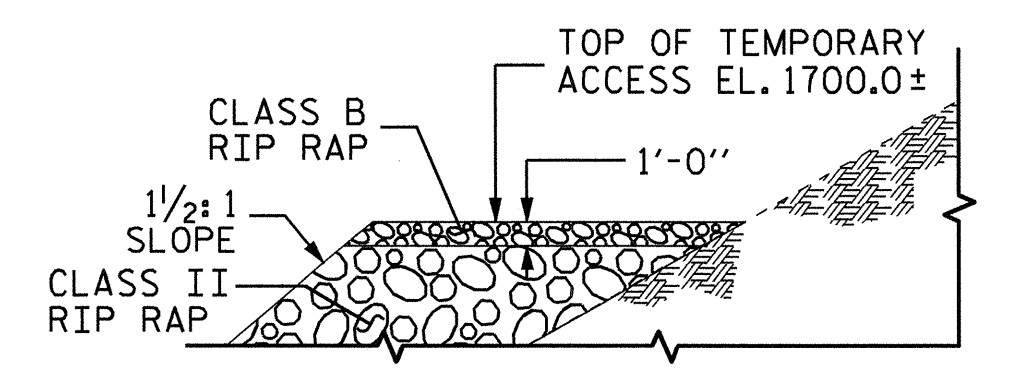
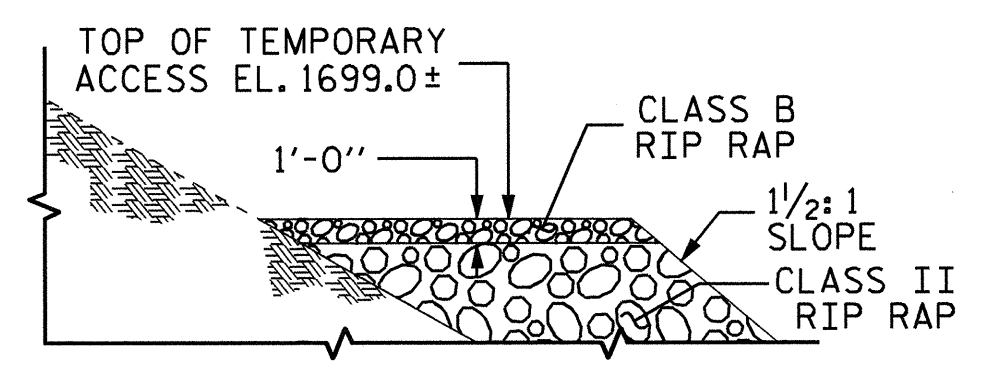
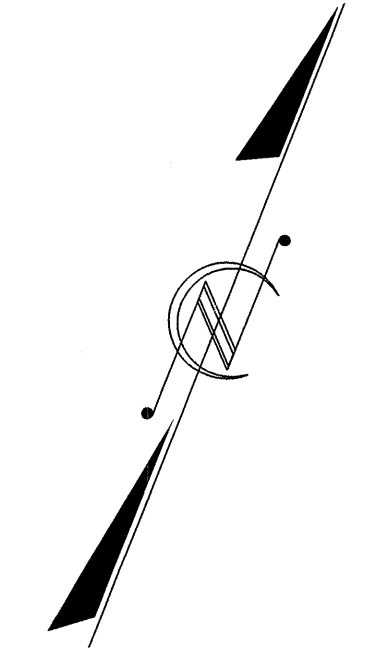
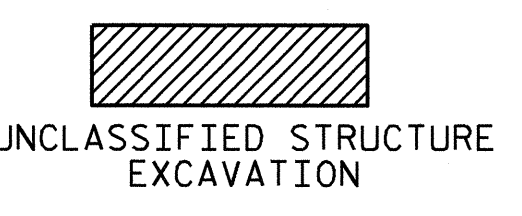
NOTES

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

ALL GRADING REQUIRED FOR ACCESS TO THE TEMPORARY ACCESS SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR "CONSTRUCTION, MAINTENANCE, AND REMOVAL OF TEMPORARY ACCESS."

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LOCATION AND PROFILE OF THE TEMPORARY ACCESS SHOWN ON THE PLANS IS FOR ESTIMATING PURPOSES ONLY. THE ACTUAL LOCATION AND PROFILE SHALL BE DETERMINED IN THE FIELD BY THE APPROVAL OF THE ENGINEER.

FOR CLASS II RIP RAP AND CLASS B RIP RAP, SEE SPECIAL PROVISION, "CONSTRUCTION, MAINTENANCE, AND REMOVAL OF TEMPORARY ACCESS."

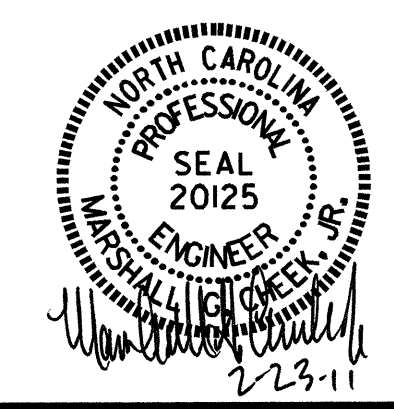


PLAN

PILES ARE NOT SHOWN IN PLAN VIEW.

DRAWN BY : Z. H. BROWN DATE : 12/22/10
CHECKED BY : M. G. CHEEK DATE : 1/3/10

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wjharris



PROJECT NO. B-4467
CLAY COUNTY
STATION: 19+09.50 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
TEMPORARY ACCESS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-4
					TOTAL SHEETS 22

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			
						MOMENT					SHEAR					MOMENT								
						LIVELOAD FACTORS	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)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	①	1.06	--	1.75	0.284	1.73	A	EL	13.906	0.578	1.06	A	EL	1.391	0.80	0.284	1.42	A	EL	13.906		
	HL-93(Opr)	N/A	--	1.37	--	1.35	0.284	2.24	A	EL	13.906	0.578	1.37	A	EL	1.391	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	②	1.19	42.84	1.75	0.284	2.43	A	EL	11.125	0.578	1.19	A	EL	1.391	0.80	0.284	2.02	A	EL	11.125		
	HS-20(Opr)	36.000	--	1.55	55.80	1.35	0.284	3.15	A	EL	11.125	0.578	1.55	A	EL	1.391	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.84	38.34	1.40	0.274	4.89	C	EL	26.406	0.525	4.63	C	EL	2.641	0.80	0.274	2.84	C	EL	26.406	
		SNGARBS2	20.000	--	2.21	44.20	1.40	0.274	3.81	C	EL	26.406	0.525	3.35	C	EL	2.641	0.80	0.274	2.21	C	EL	26.406	
		SNAGRIS2	22.000	--	2.14	47.08	1.40	0.274	3.68	C	EL	26.406	0.525	3.13	C	EL	2.641	0.80	0.274	2.14	C	EL	26.406	
		SNCOTTS3	27.250	--	1.42	38.70	1.40	0.274	2.44	C	EL	26.406	0.525	2.32	C	EL	2.641	0.80	0.274	1.42	C	EL	26.406	
		SNAGGRS4	34.925	--	1.22	42.61	1.40	0.274	2.10	C	EL	26.406	0.525	1.96	C	EL	2.641	0.80	0.274	1.22	C	EL	26.406	
		SNS5A	35.550	--	1.19	42.30	1.40	0.274	2.05	C	EL	26.406	0.525	2.01	C	EL	2.641	0.80	0.274	1.19	C	EL	26.406	
		SNS6A	39.950	--	1.11	44.34	1.40	0.274	1.91	C	EL	26.406	0.525	1.85	C	EL	2.641	0.80	0.274	1.11	C	EL	26.406	
	SNS7B	42.000	--	1.06	44.52	1.40	0.274	1.82	C	EL	26.406	0.525	1.84	C	EL	2.641	0.80	0.274	1.06	C	EL	26.406		
	TTST	TNAGRIT3	33.000	--	1.36	44.88	1.40	0.274	2.33	C	EL	26.406	0.525	2.19	C	EL	2.641	0.80	0.274	1.36	C	EL	26.406	
		TNT4A	33.075	--	1.37	45.31	1.40	0.274	2.35	C	EL	26.406	0.525	2.12	C	EL	2.641	0.80	0.274	1.37	C	EL	26.406	
		TNT6A	41.600	--	1.13	47.01	1.40	0.274	1.95	C	EL	26.406	0.525	2.01	C	EL	2.641	0.80	0.274	1.13	C	EL	26.406	
		TNT7A	42.000	--	1.15	48.30	1.40	0.274	1.97	C	EL	26.406	0.525	1.89	C	EL	2.641	0.80	0.274	1.15	C	EL	26.406	
		TNT7B	42.000	--	1.20	50.40	1.40	0.274	2.06	C	EL	26.406	0.525	1.78	C	EL	2.641	0.80	0.274	1.20	C	EL	26.406	
		TNAGRIT4	43.000	--	1.13	48.59	1.40	0.274	1.95	C	EL	26.406	0.525	1.72	C	EL	2.641	0.80	0.274	1.13	C	EL	26.406	
TNAGT5A		45.000	--	1.06	47.70	1.40	0.274	1.83	C	EL	26.406	0.525	1.74	C	EL	2.641	0.80	0.274	1.06	C	EL	26.406		
TNAGT5B	45.000	③	1.04	46.80	1.40	0.274	1.79	C	EL	26.406	0.525	1.63	C	EL	2.641	0.80	0.274	1.04	C	EL	26.406			

LOAD FACTORS:

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

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.

CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

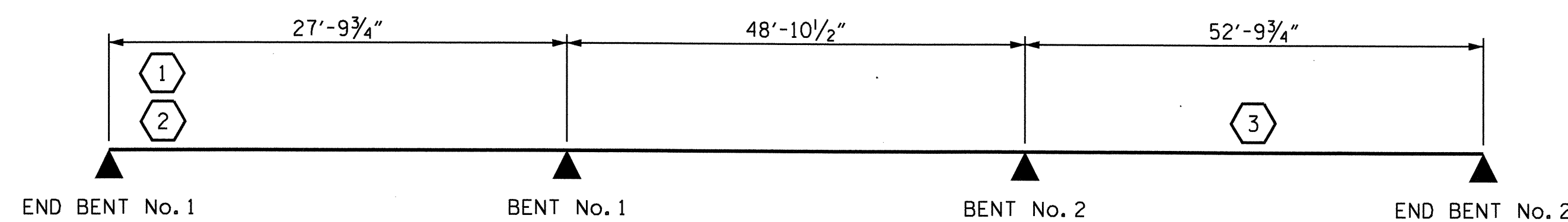
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

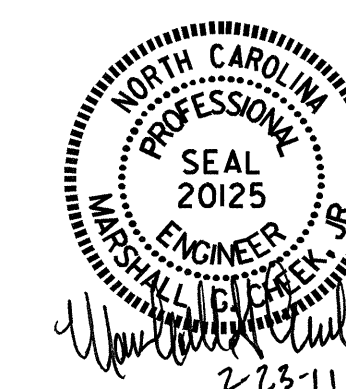
NOTE: SPAN DIMENSIONS SHOWN ARE C BEARING TO C BEARING

PROJECT NO. B-4467
CLAY COUNTY
STATION: 19+09.50 -L-

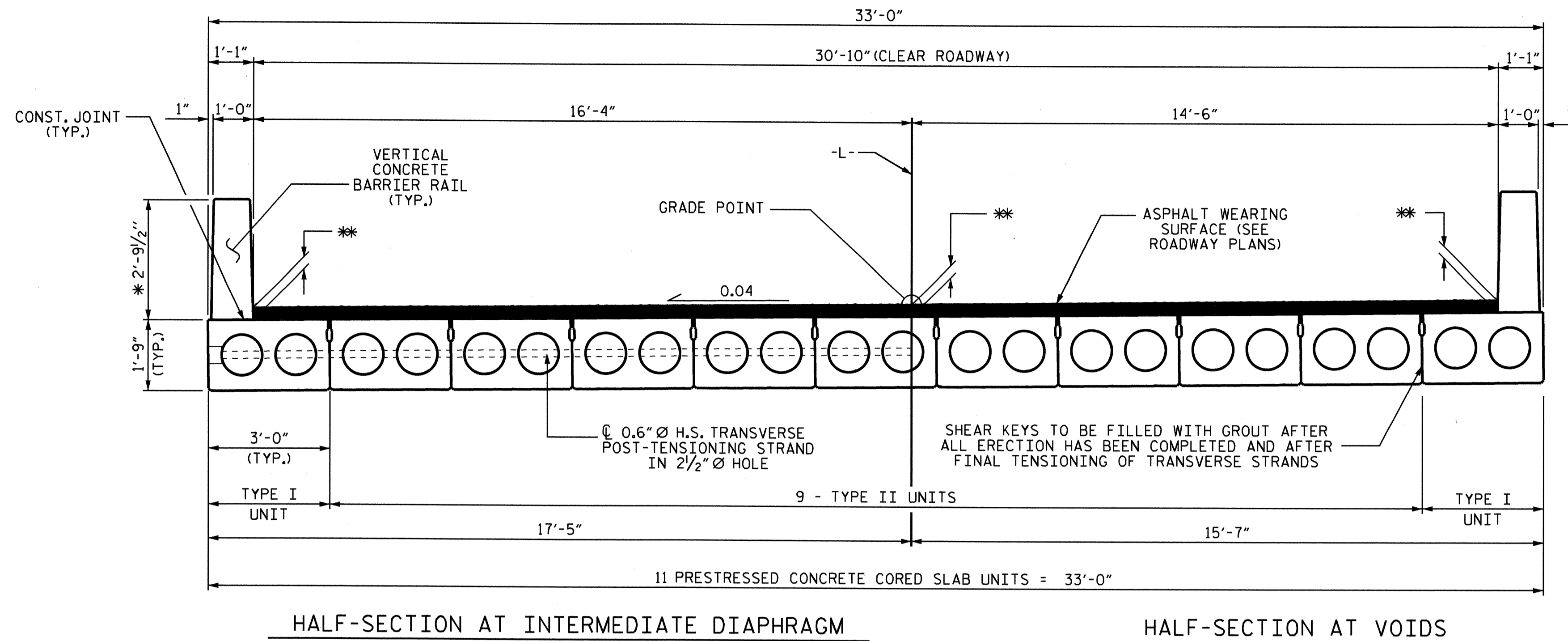
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY

ASSEMBLED BY : J.R. MCROY DATE : 12/10
CHECKED BY : M.G. CHEEK DATE : 1/11
DRAWN BY : MAA 1/08 REV. 11/12/08R MAA/GM
CHECKED BY : GM/DI 2/08



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			22



HALF-SECTION AT INTERMEDIATE DIAPHRAGM

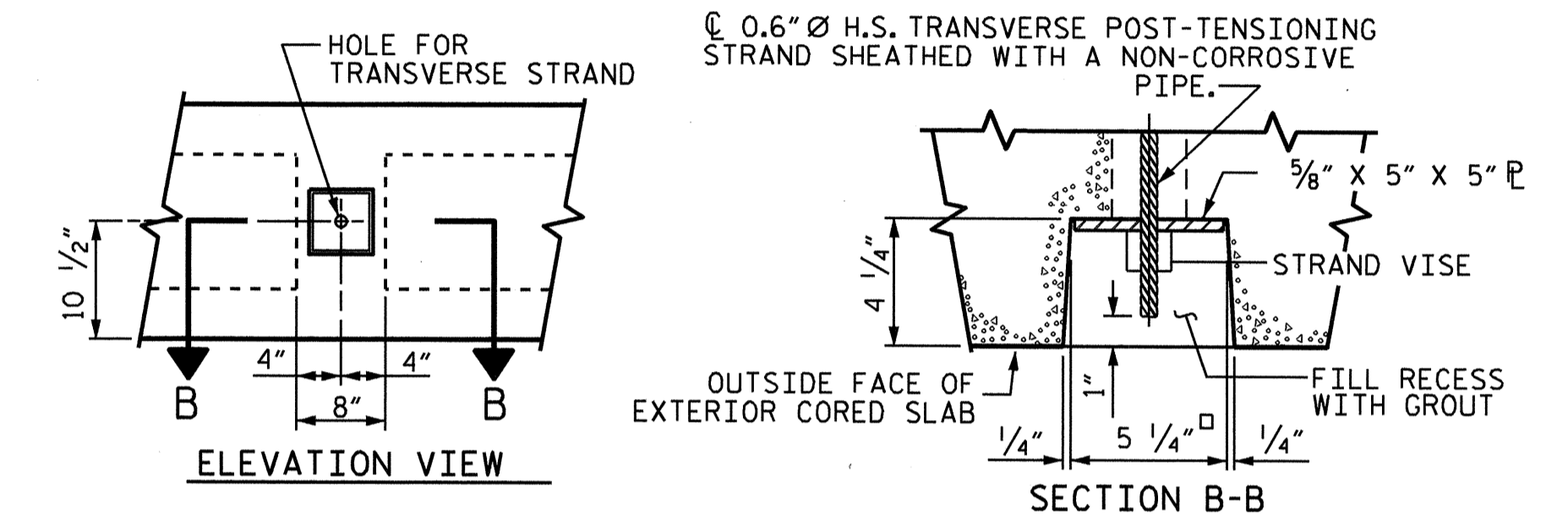
HALF-SECTION AT VOIDS

TYPICAL SECTION

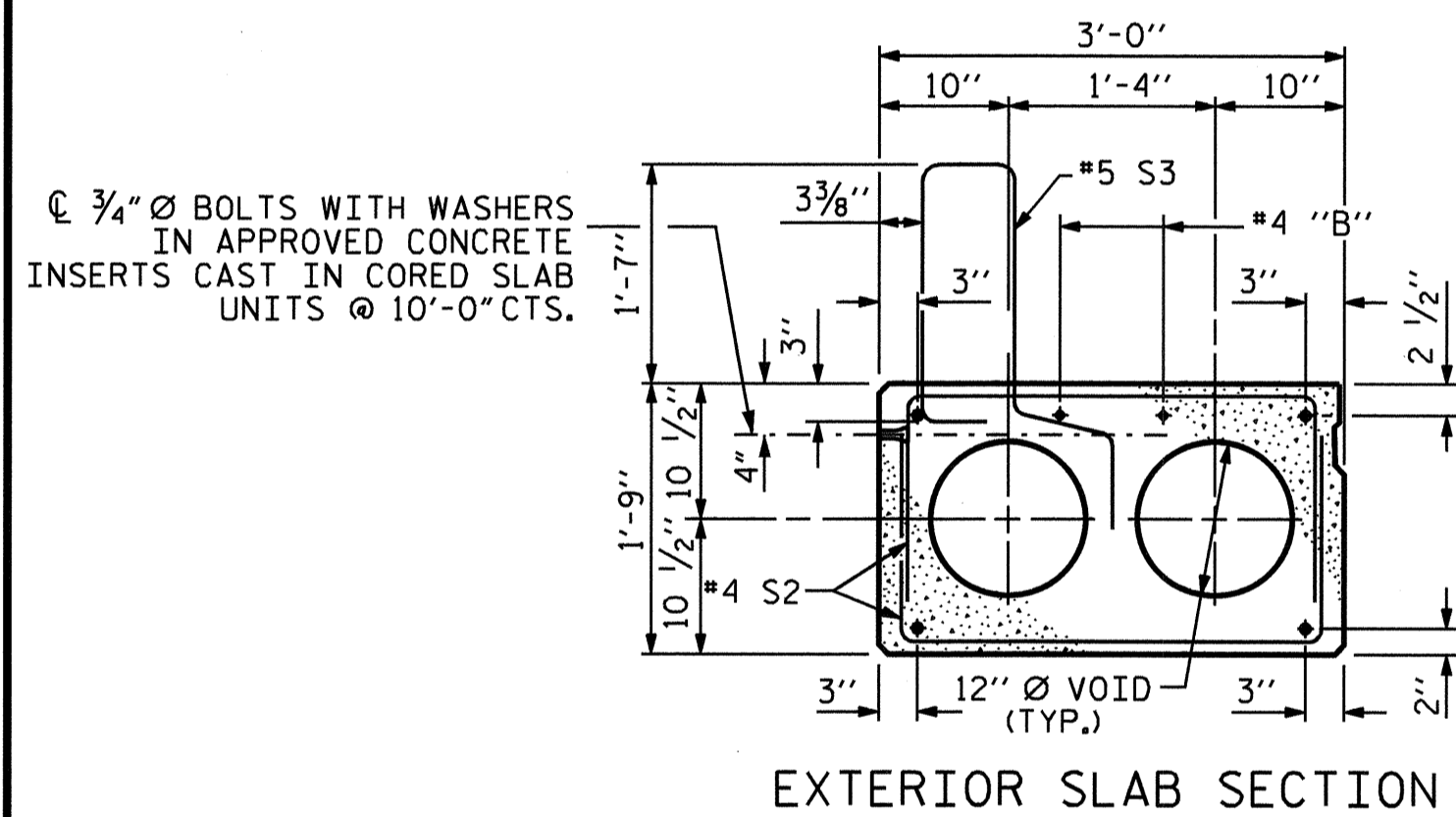
NOTE
 * THE MINIMUM HEIGHT OF THE VERTICAL CONCRETE BARRIER RAIL IS SHOWN. THE HEIGHT OF THE VERTICAL CONCRETE BARRIER RAIL VARIES WHILE THE TOP OF THE RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE.

ASPHALT WEARING SURFACE THICKNESS TABLE
 BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS

SPAN	** AT @ BEARINGS		** AT MID-SPAN	
	GUTTERS	GRADE PT.	GUTTERS	GRADE PT.
A	3 3/4"	3 3/4"	3 1/2"	3 1/2"
B	3 3/4"	3 3/4"	2 1/4"	2 1/4"
C	3 3/4"	3 3/4"	3 1/2"	1 1/2"

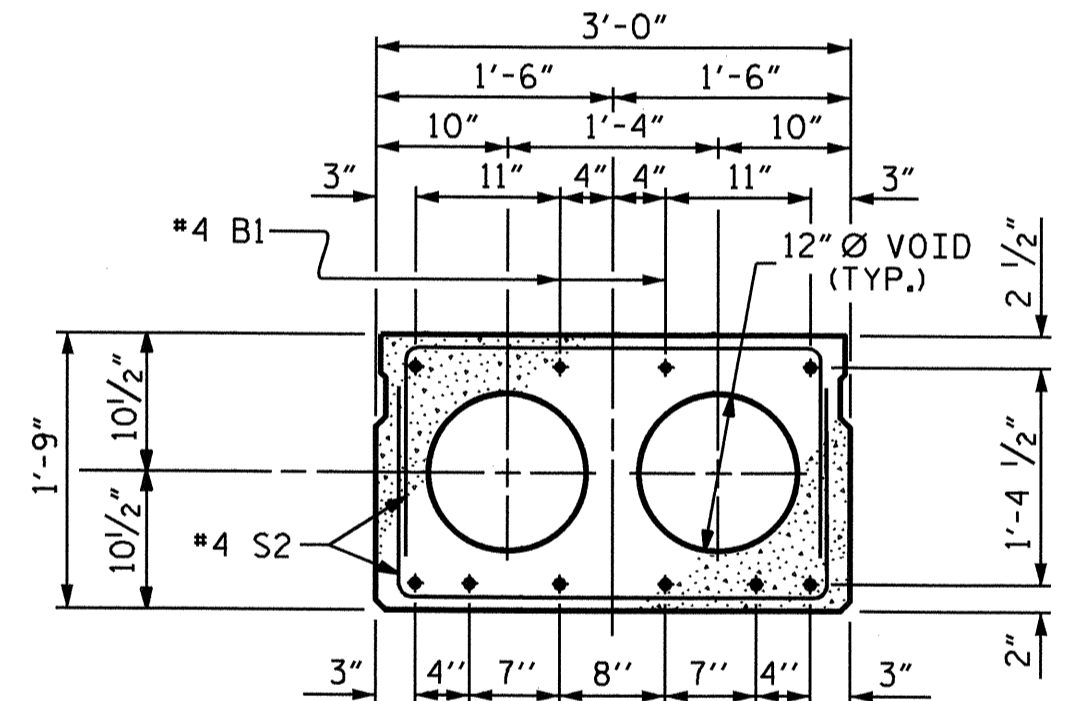


GRouted RECESS AT END OF POST-TENSIONING STRAND-CORED SLABS



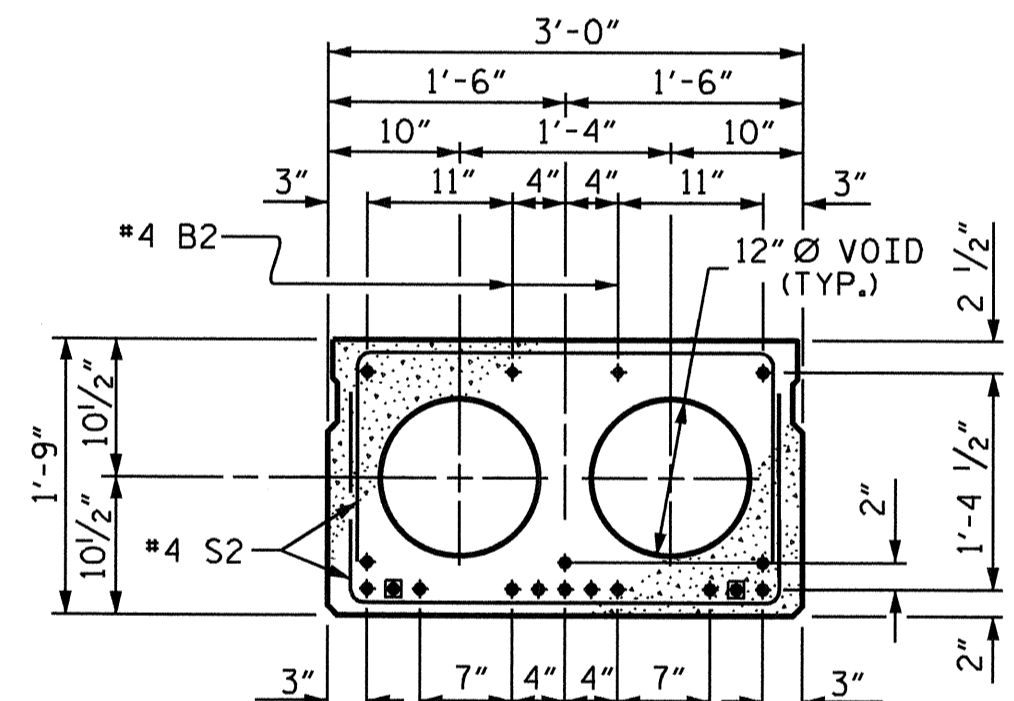
EXTERIOR SLAB SECTION

TYPE I
 (FOR PRESTRESSED STRAND LAYOUT, SEE "INTERIOR SLAB SECTIONS")



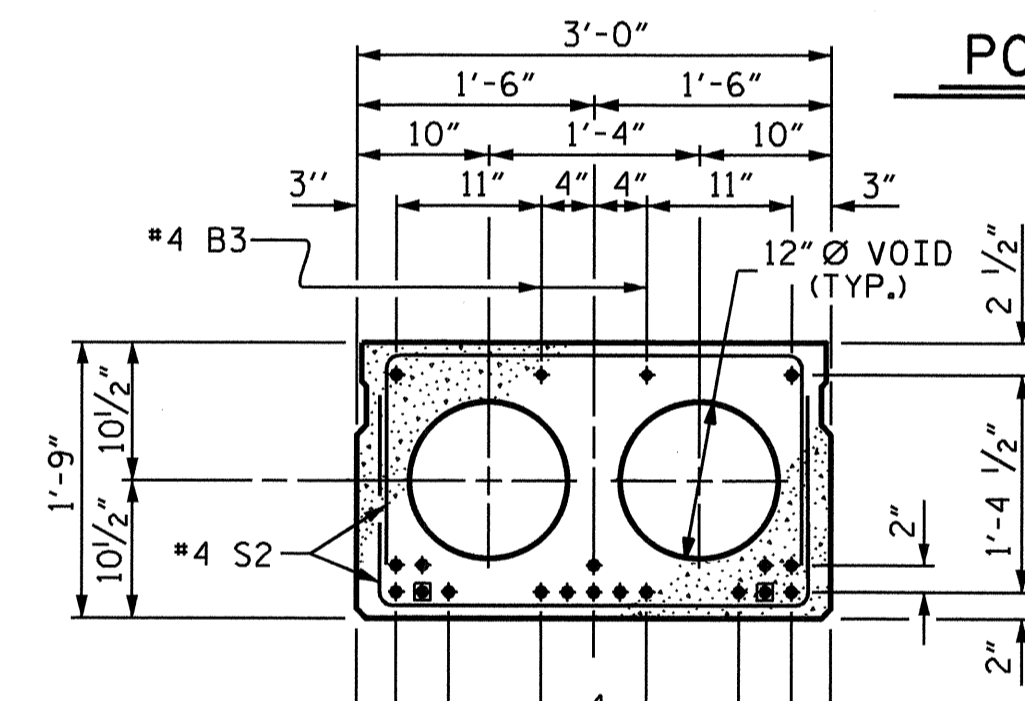
INTERIOR SLAB SECTION
 0.6" Ø LOW RELAXATION STRAND LAYOUT

TYPE II UNITS (8) H.S. STRANDS (SPAN A)



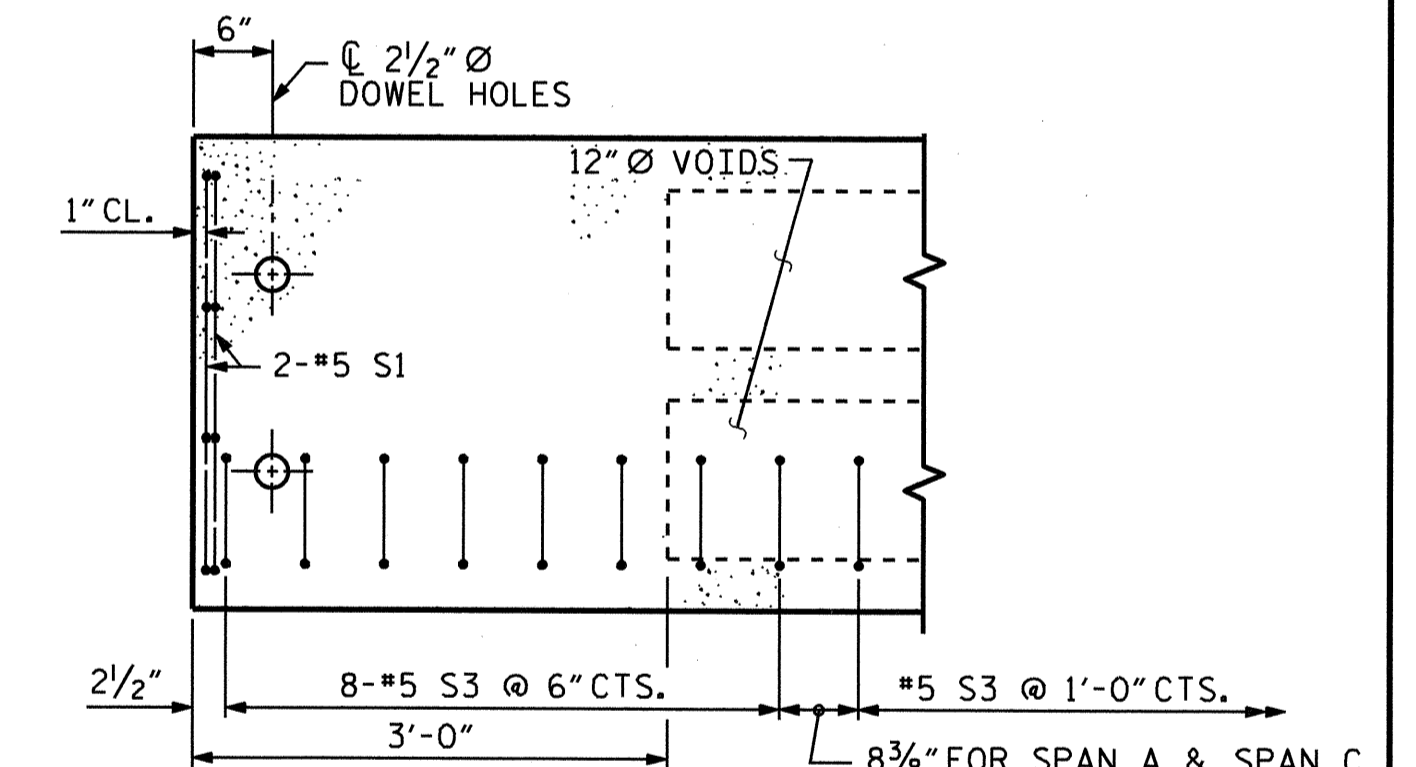
INTERIOR SLAB SECTION
 0.6" Ø LOW RELAXATION STRAND LAYOUT

TYPE II UNITS (16) H.S. STRANDS (SPAN B)
 □ DEBONDED STRAND 2'-0" LENGTH FROM END OF SLAB



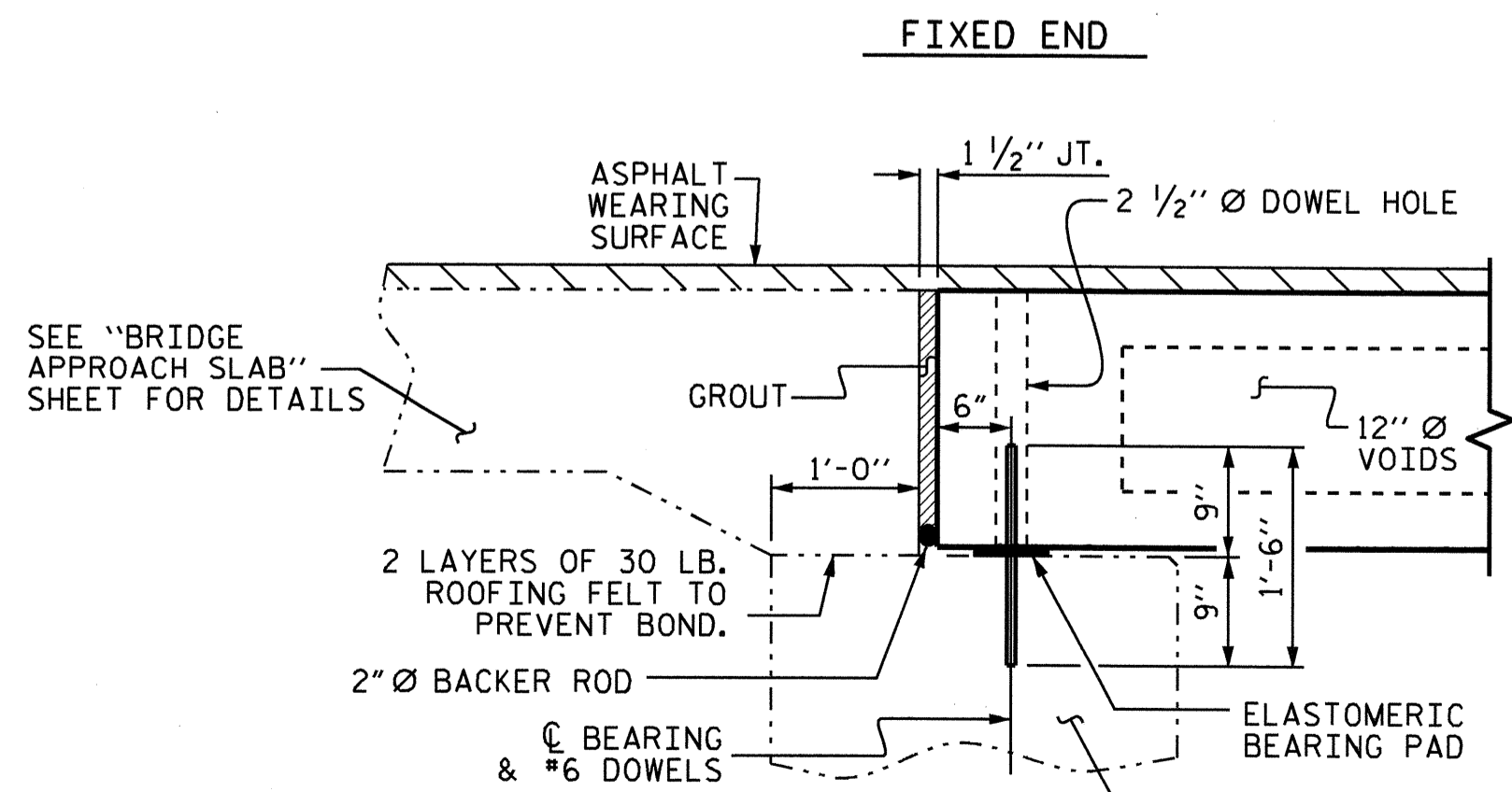
INTERIOR SLAB SECTION
 0.6" Ø LOW RELAXATION STRAND LAYOUT

TYPE II UNITS (18) H.S. STRANDS (SPAN C)
 □ DEBONDED STRAND 2'-0" LENGTH FROM END OF SLAB

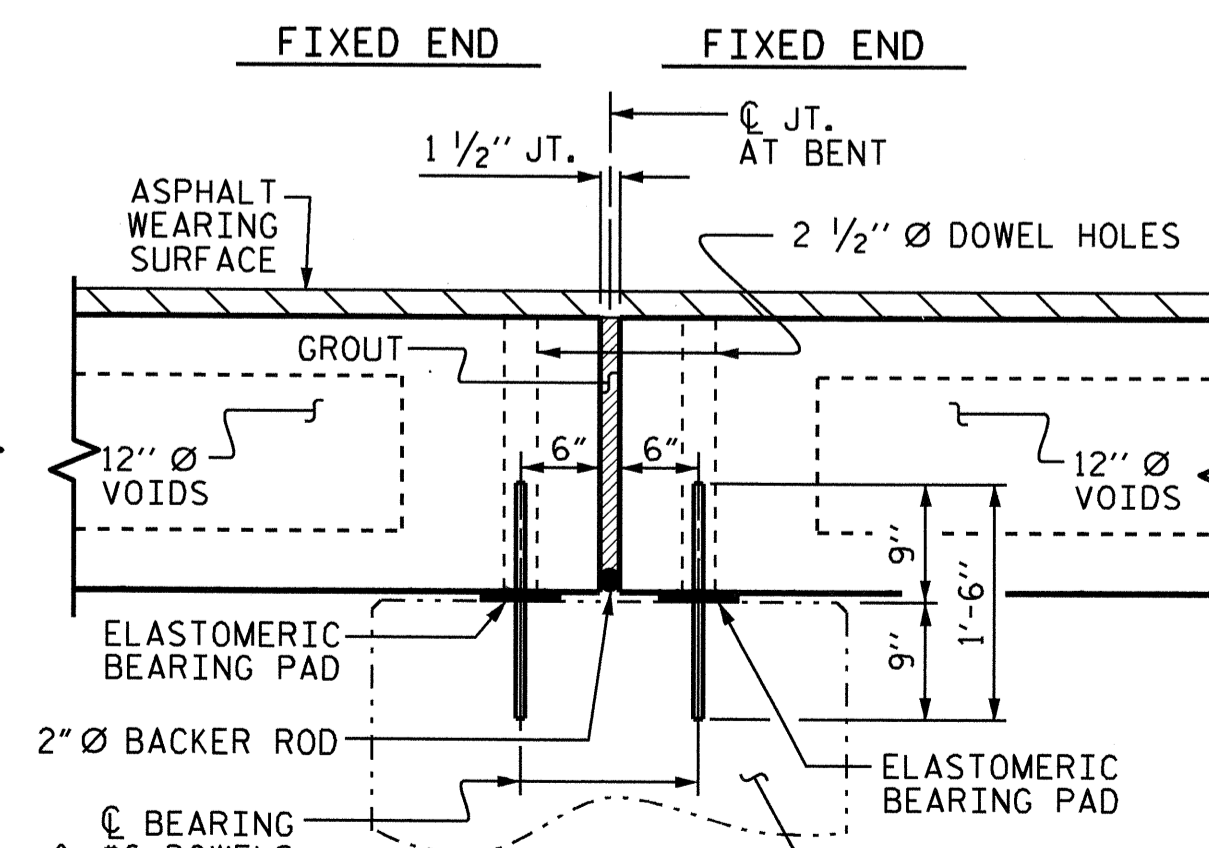


PART PLAN-EXTERIOR SECTION

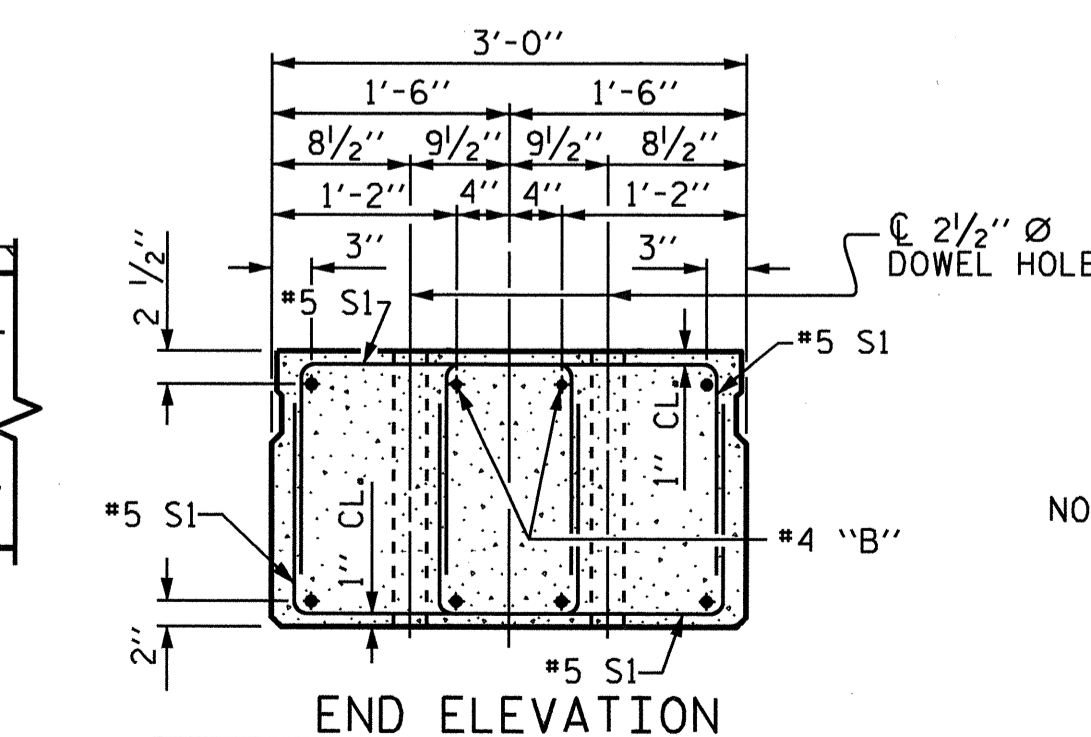
NOTE: EXTERIOR SECTION SHOWN-INTERIOR SECTION SIMILAR EXCEPT OMIT S3 BARS.



SECTION AT END BENT

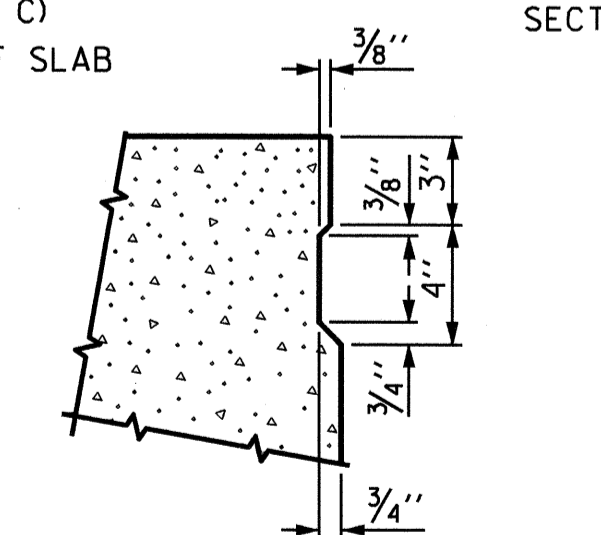


SECTION AT BENT



END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB SECTION SHOWN-EXTERIOR SLAB SECTION SIMILAR EXCEPT SHEAR KEY LOCATION.

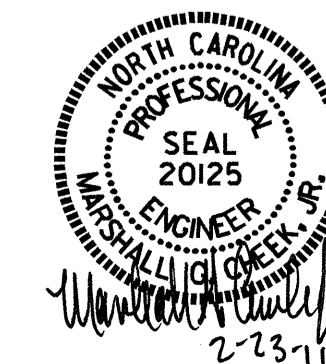


SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

ASSEMBLED BY : A.L. FIGUEROA DATE : 08-12-09
 CHECKED BY : W.D. CRUTCHER DATE : 03-26-10
 DRAWN BY : WJH 4/89 REV. 10/17/00 RWW/LES
 CHECKED BY : FCJ 5/89 REV. 7/10/01RR RWW/LES
 REV. 5/1/06 TLA/GM

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 jharris

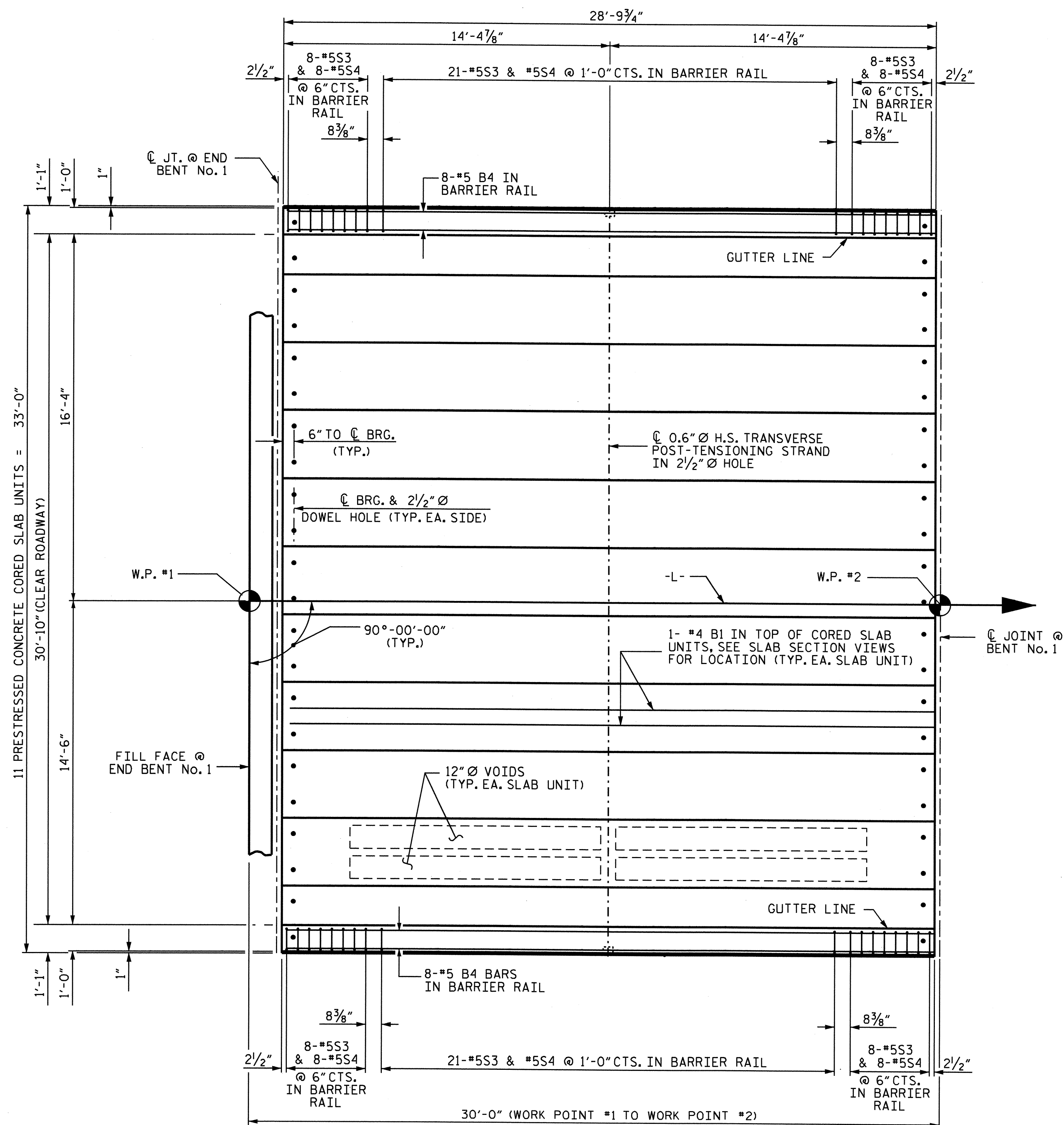


PROJECT NO. B-4467
 CLAY COUNTY
 STATION: 19+09.50 -L-

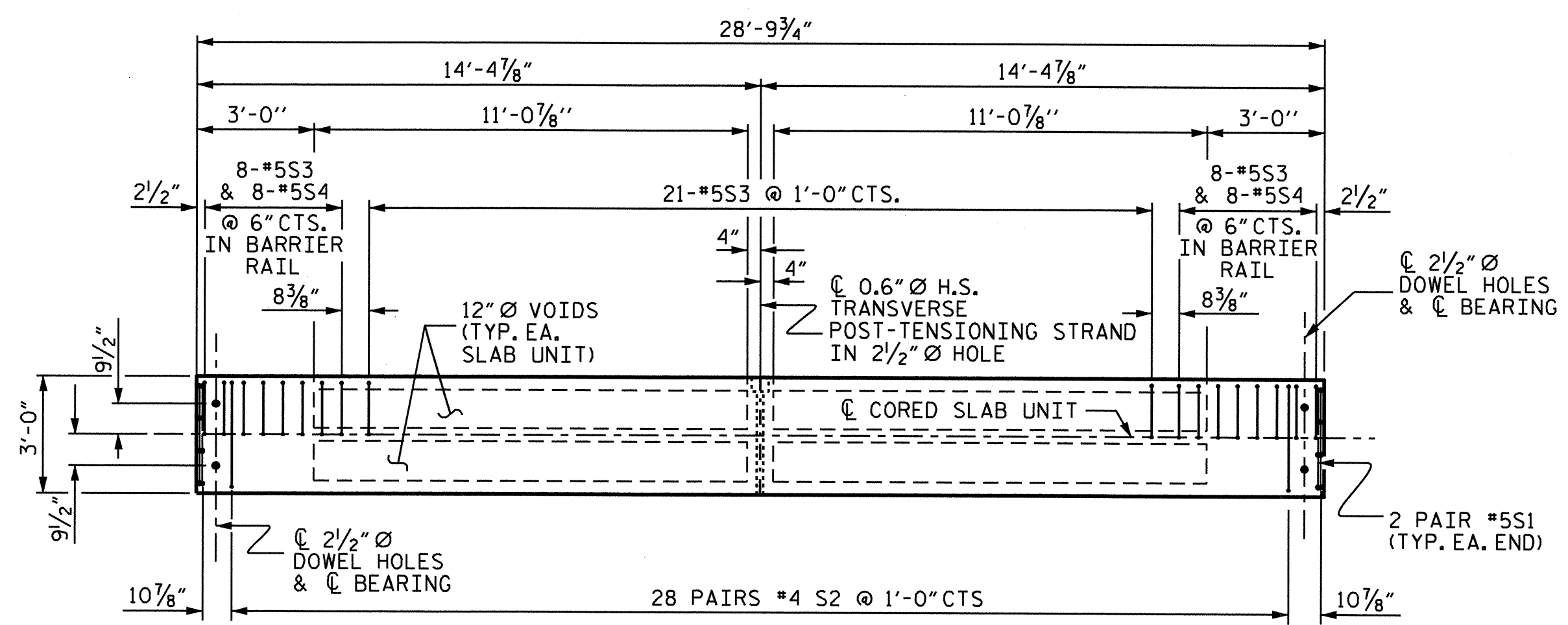
SHEET 1 OF 6
 DEPARTMENT OF TRANSPORTATION
 SUPERSTRUCTURE
 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT

REVISIONS						SHEET NO. S-6
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			

STD. NO. PCS2



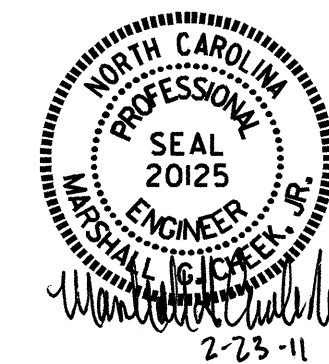
PLAN OF SPAN A



PARTIAL PLAN OF SLAB - SPAN A
EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS

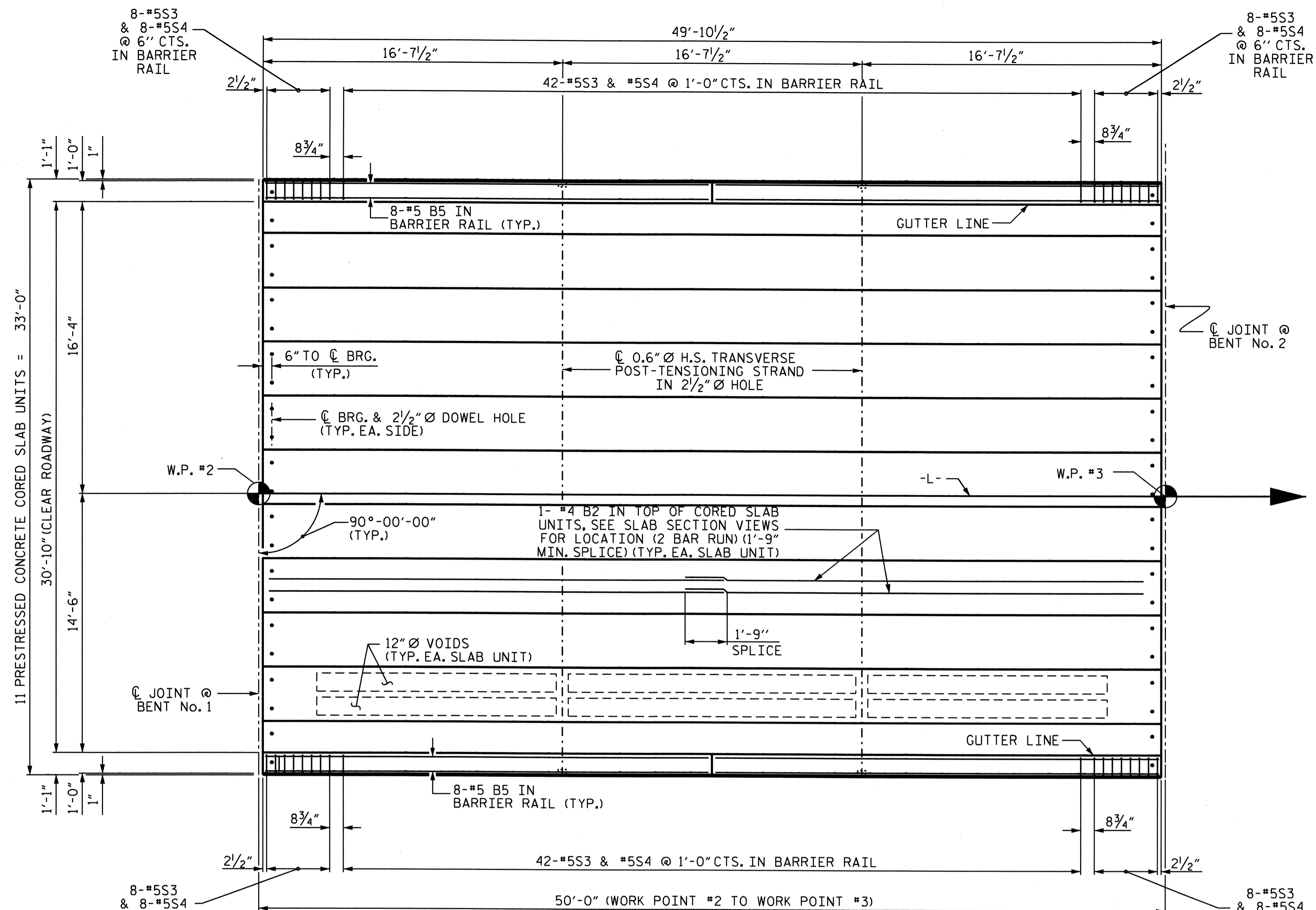
PROJECT NO. B-4467
CLAY COUNTY
 STATION: 19+09.50 -L-
 SHEET 2 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN A

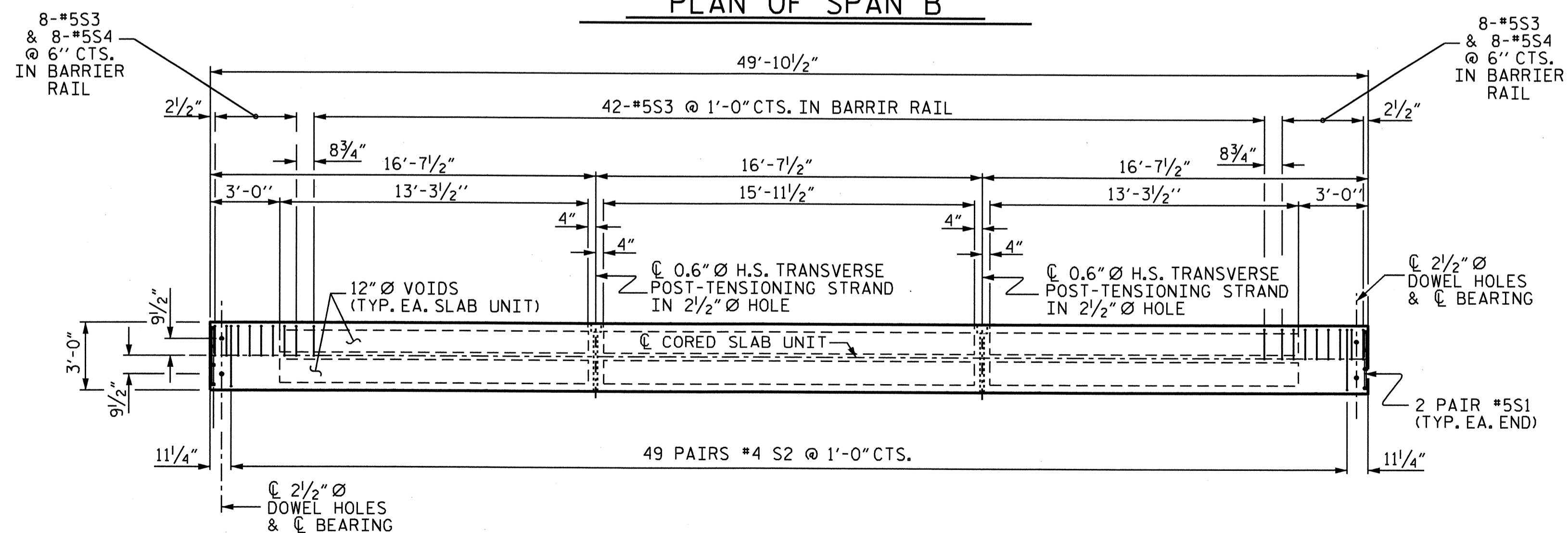


REVISIONS						SHEET NO. S-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			

DRAWN BY: A.L. FIGUEROA DATE: 08-12-09
 CHECKED BY: W.D. CRUTCHER DATE: 03-26-10



PLAN OF SPAN B



PARTIAL PLAN OF SLAB - SPAN B

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS

DRAWN BY : A.L. FIGUEROA DATE : 08-12-09
 CHECKED BY : W.D. CRUTCHER DATE : 03-26-10

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 wjharris

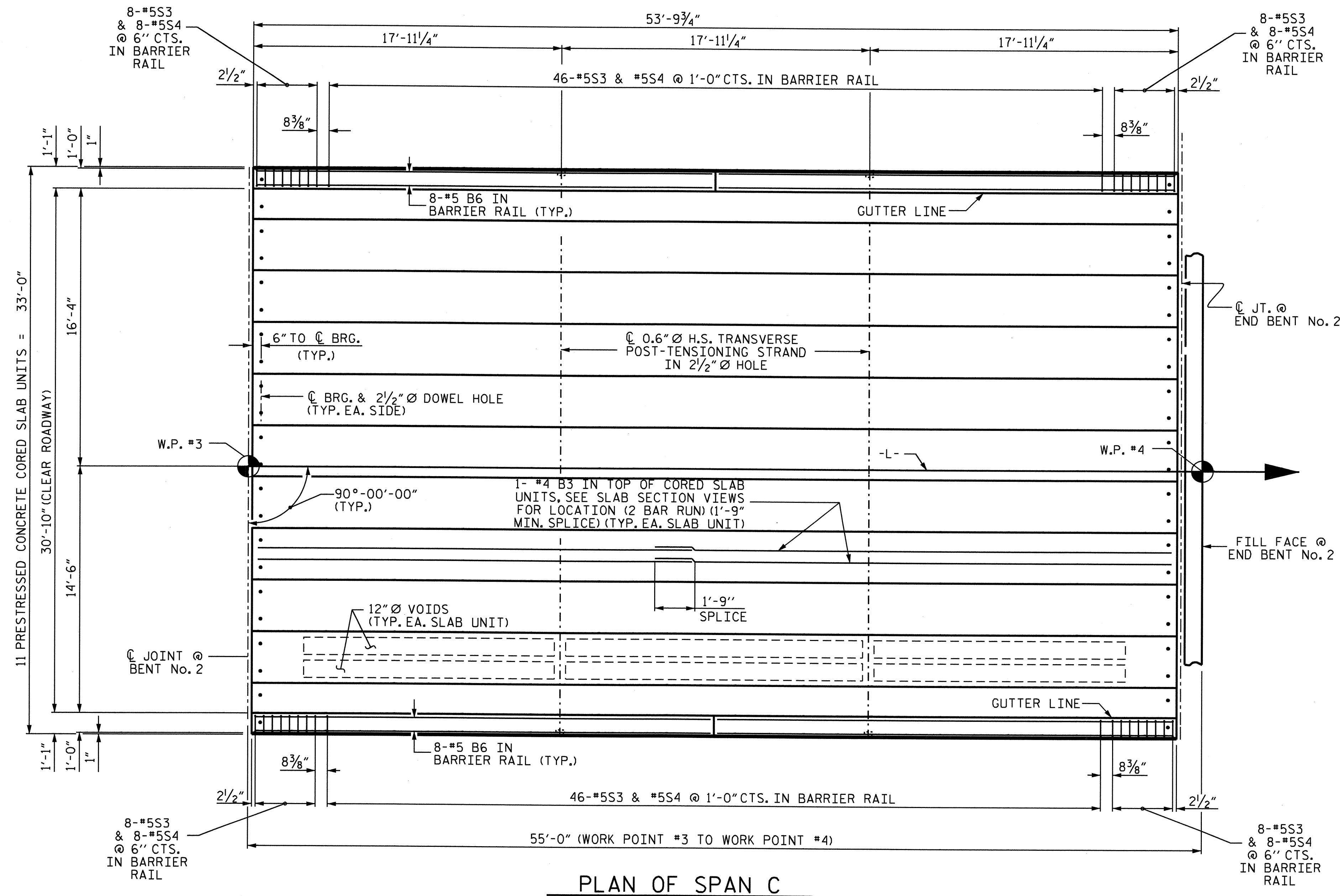
PROJECT NO. B-4467
 CLAY COUNTY
 STATION: 19+09.50 -L-
 SHEET 3 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN B

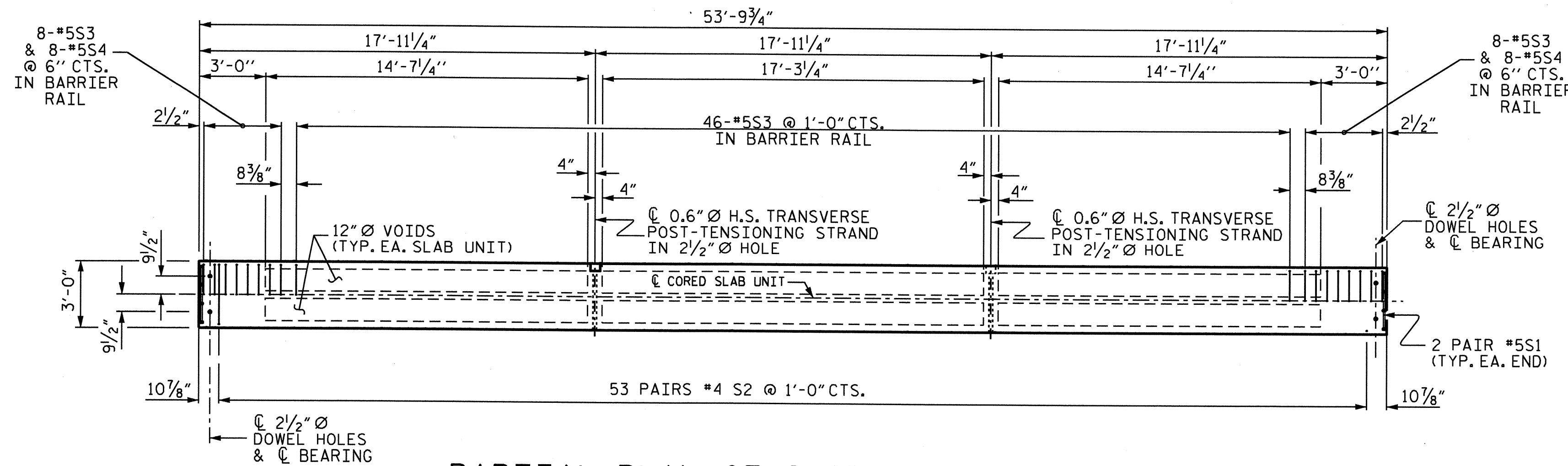


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			22

NC006



PLAN OF SPAN C

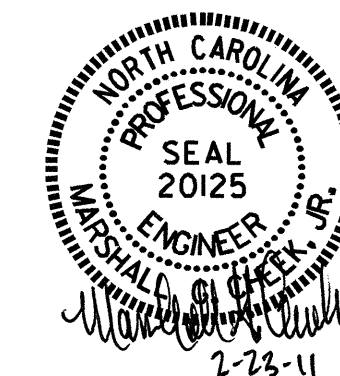


PARTIAL PLAN OF SLAB - SPAN C

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS

DRAWN BY: A.L. FIGUEROA DATE: 08-12-09
 CHECKED BY: W.D. CRUTCHER DATE: 03-26-10

22-FEB-2011 14:10
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 wjharris



PROJECT NO. B-4467
 CLAY COUNTY
 STATION: 19+09.50 -L-
 SHEET 4 OF 6

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			22

NC006

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 CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE 2" Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 PSI FOR SPAN A, 4300 PSI FOR SPAN B, OR 5100 PSI FOR SPAN C.

ALL REINFORCING STEEL IN THE VERTICAL CONCRETE BARRIER RAIL SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

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. A 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.

CONCRETE INSERTS SHALL HAVE A MINIMUM WORKING LOAD SHEAR CAPACITY OF 2.5 KIPS.

THE 3/4" Ø BOLTS, WASHERS AND CONCRETE INSERTS SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

THE BOLTS, WASHERS AND CONCRETE INSERTS ARE PROVIDED AS AN OPTION FOR THE CONTRACTOR TO ATTACH MATERIALS TO PREVENT DEBRIS FROM DROPPING INTO THE WATER DURING CONSTRUCTION OF THE VERTICAL CONCRETE BARRIER RAILS.

UPON COMPLETION OF THE BRIDGE CONSTRUCTION, THE 3/4" Ø BOLTS, AND WASHERS SHALL BE REMOVED AND THE CONCRETE INSERTS SHALL BE GROUTED.

THE COST OF THE 3/4" Ø BOLTS, WASHERS, AND INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

FOR VERTICAL CONCRETE BARRIER RAIL, SEE SPECIAL PROVISIONS.

TRANSVERSE POST-TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, EXCEPT THAT THE STRANDS SHALL BE 0.6" Ø AND TENSIONED TO 43,950 POUNDS.

BILL OF MATERIAL FOR ONE CORED SLAB SECTION							
SPAN A							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	WEIGHT	INTERIOR UNIT LENGTH	WEIGHT
B1	2	#4	STR	28'-5"	38	28'-5"	38
S1	8	#5	1	4'-3"	35	4'-3"	35
S2	56	#4	1	5'-4"	200	5'-4"	200
*S3	37	#5	2	6'-0"	232		
REINFORCING STEEL				273 LBS.		273 LBS.	
* EPOXY COATED REINFORCING STEEL				232 LBS.			
5600 P.S.I. CONCRETE				4.3 CU. YDS.		4.3 CU. YDS.	
0.6" Ø L.R. STRANDS				8		8	
SPAN B							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	WEIGHT	INTERIOR UNIT LENGTH	WEIGHT
B2	4	#4	STR	25'-8"	69	25'-8"	69
S1	8	#5	1	4'-3"	35	4'-3"	35
S2	98	#4	1	5'-4"	349	5'-4"	349
*S3	58	#5	2	6'-0"	363		
REINFORCING STEEL				453 LBS.		453 LBS.	
* EPOXY COATED REINFORCING STEEL				363 LBS.			
7100 P.S.I. CONCRETE				7.2 CU. YDS.		7.2 CU. YDS.	
0.6" Ø L.R. STRANDS				16		16	
SPAN C							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	WEIGHT	INTERIOR UNIT LENGTH	WEIGHT
B3	4	#4	STR	27'-8"	74	27'-8"	74
S1	8	#5	1	4'-3"	35	4'-3"	35
S2	106	#4	1	5'-4"	378	5'-4"	378
*S3	62	#5	2	6'-0"	388		
REINFORCING STEEL				487 LBS.		487 LBS.	
* EPOXY COATED REINFORCING STEEL				388 LBS.			
8400 P.S.I. CONCRETE				7.8 CU. YDS.		7.8 CU. YDS.	
0.6" Ø L.R. STRANDS				18		18	

* THESE BARS ARE EPOXY COATED.

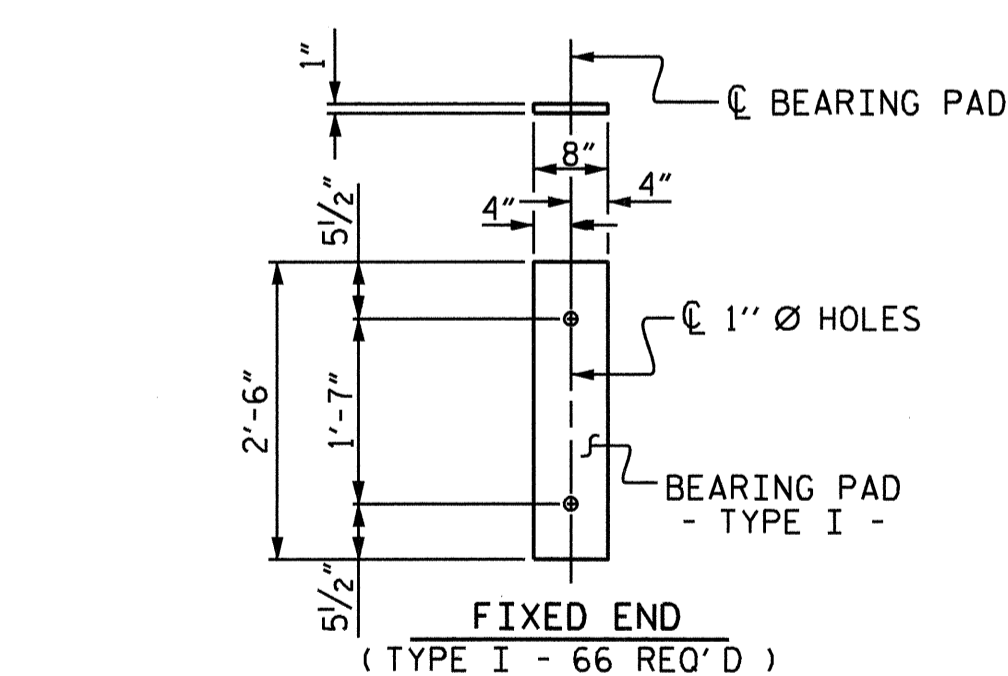
BILL OF MATERIAL FOR CONCRETE BARRIER RAIL									
BAR	BARS PER SPAN			TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT	
	SPAN A	SPAN B	SPAN C						
B4	16			16	#5	STR	28'-5"	474	
B5		32		32	#5	STR	24'-7"	820	
B6			32	32	#5	STR	26'-6"	884	
*S4	74	116	124	314	#5	3	6'-2"	2020	
REINFORCING STEEL								2,178	LBS.
* EPOXY COATED REINFORCING STEEL								2,020	LBS.
CLASS AA CONCRETE								25.4	CU. YDS.
TOTAL LIN. FT. OF VERTICAL CONCRETE BARRIER RAIL								265.50	LIN. FT.
BAR TYPES									
ALL BAR DIMENSIONS ARE OUT TO OUT									
CORED SLABS REQUIRED					GRADE 270 STRANDS				
SPAN A					0.6" Ø L.R.				
EXTERIOR UNIT	NUMBER	LENGTH	TOTAL LENGTH	AREA (SQUARE INCHES)					
INTERIOR UNIT	2	28'-9 3/4"	57'-7 1/2"	0.217					
	9	28'-9 3/4"	259'-3 3/4"	58,600					
SPAN B					APPLIED PRESTRESS (LBS. PER STRAND)				
EXTERIOR UNIT	NUMBER	LENGTH	TOTAL LENGTH						
INTERIOR UNIT	2	49'-10 1/2"	99'-9"	43,950					
	9	49'-10 1/2"	448'-10 1/2"						
SPAN C									
EXTERIOR UNIT	NUMBER	LENGTH	TOTAL LENGTH						
INTERIOR UNIT	2	53'-9 3/4"	107'-7 1/2"						
	9	53'-9 3/4"	484'-3 3/4"						
TOTAL	33		1457'-6"						

DEAD LOAD DEFLECTION AND CAMBER	
SPAN A	
CAMBER (SLAB ALONE IN PLACE)	0.6" Ø L.R. STRAND 1/4" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/16" ↓
FINAL CAMBER	3/16" ↓

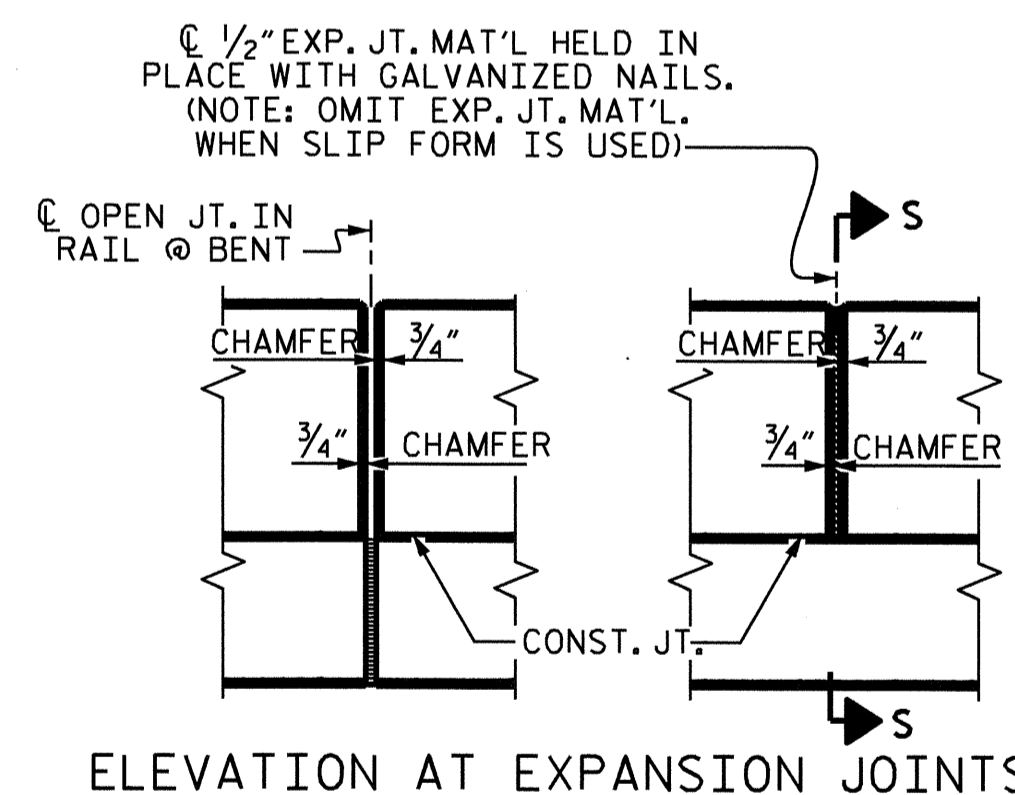
DEAD LOAD DEFLECTION AND CAMBER	
SPAN B	
CAMBER (SLAB ALONE IN PLACE)	0.6" Ø L.R. STRAND 1/4" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/4" ↓
FINAL CAMBER	1/2" ↓

DEAD LOAD DEFLECTION AND CAMBER	
SPAN C	
CAMBER (SLAB ALONE IN PLACE)	0.6" Ø L.R. STRAND 2/16" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	3/8" ↓
FINAL CAMBER	1 1/16" ↓

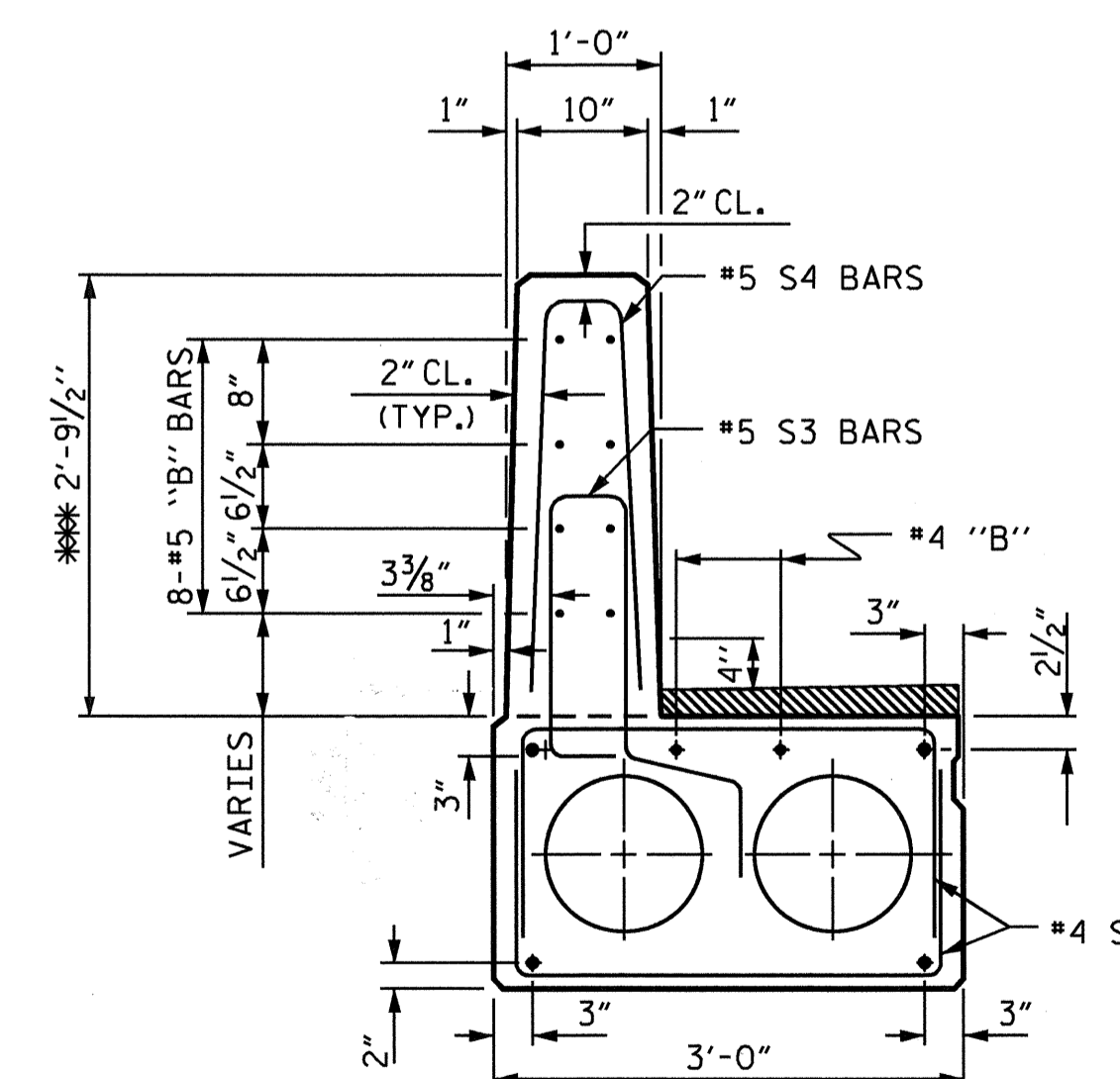
** INCLUDES FUTURE WEARING SURFACE



ELASTOMERIC BEARING DETAILS



ELEVATION AT EXPANSION JOINTS
VERTICAL CONCRETE BARRIER RAIL DETAILS



SECTION THRU CONCRETE BARRIER RAIL

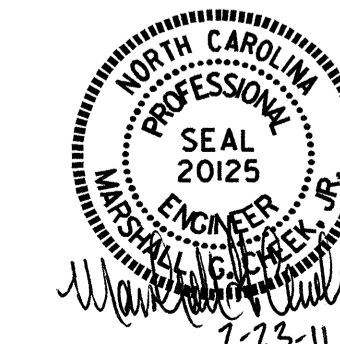
(FOR PRESTRESSED STRAND LAYOUT, SEE "INTERIOR SLAB SECTIONS")

** THE MINIMUM HEIGHT OF THE BARRIER RAIL IS SHOWN. THE HEIGHT OF THE BARRIER RAIL VARIES WHILE THE TOP OF THE RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE.

PROJECT NO. B-4467
CLAY COUNTY
STATION: 19+09.50 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT



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

ASSEMBLED BY : A.L. FIGUEROA	DATE : 08-12-09
CHECKED BY : W.D. CRUTCHER	DATE : 03-26-10
DRAWN BY : WJH 4/89	REV. 7/10/01 RWW/LJS
CHECKED BY : FCJ 5/89	REV. 5/7/03RRR RWW/JTE
	REV. 5/1/06 TLA/GM

NOTES

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

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

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

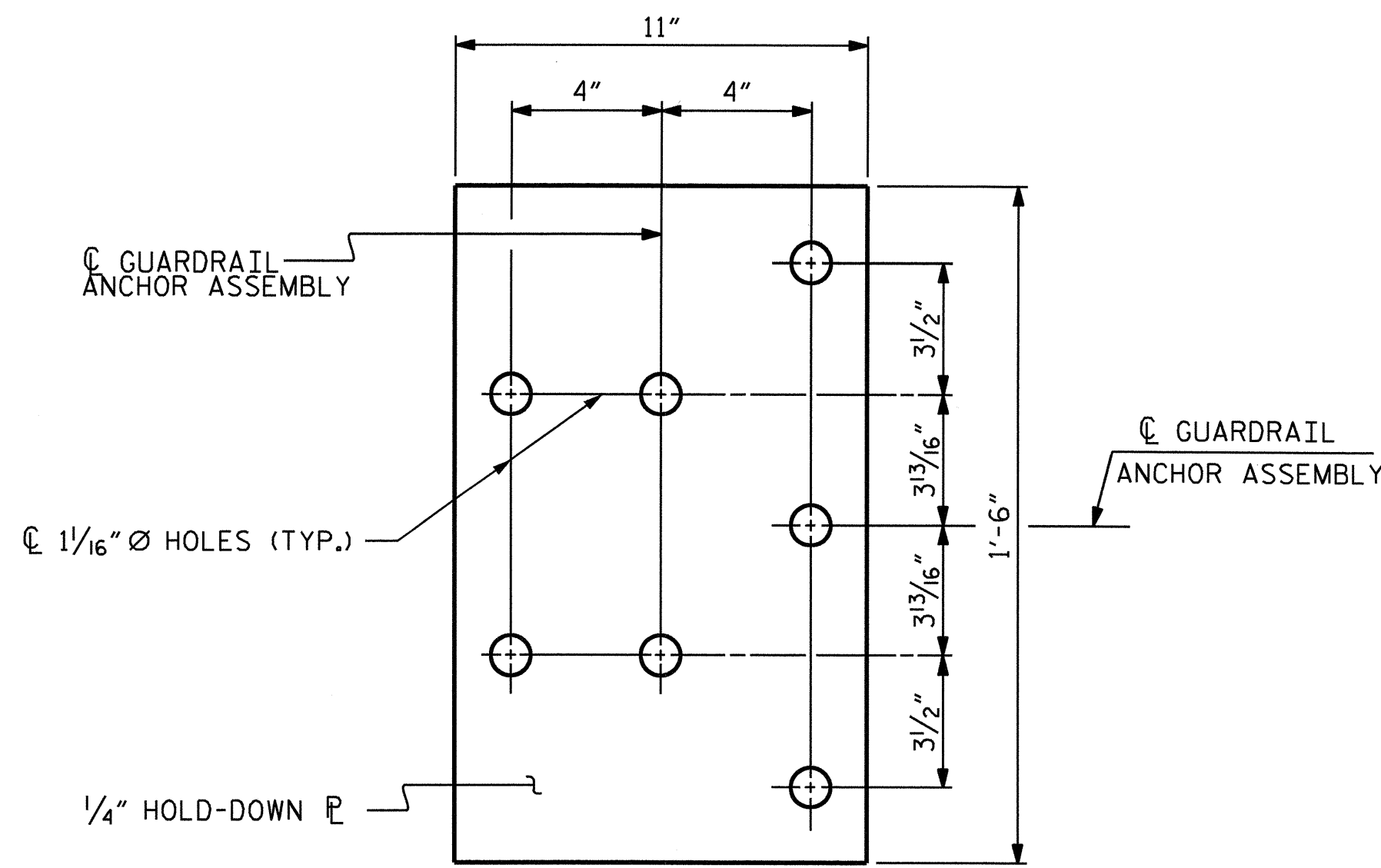
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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 VERTICAL CONCRETE BARRIER RAIL.

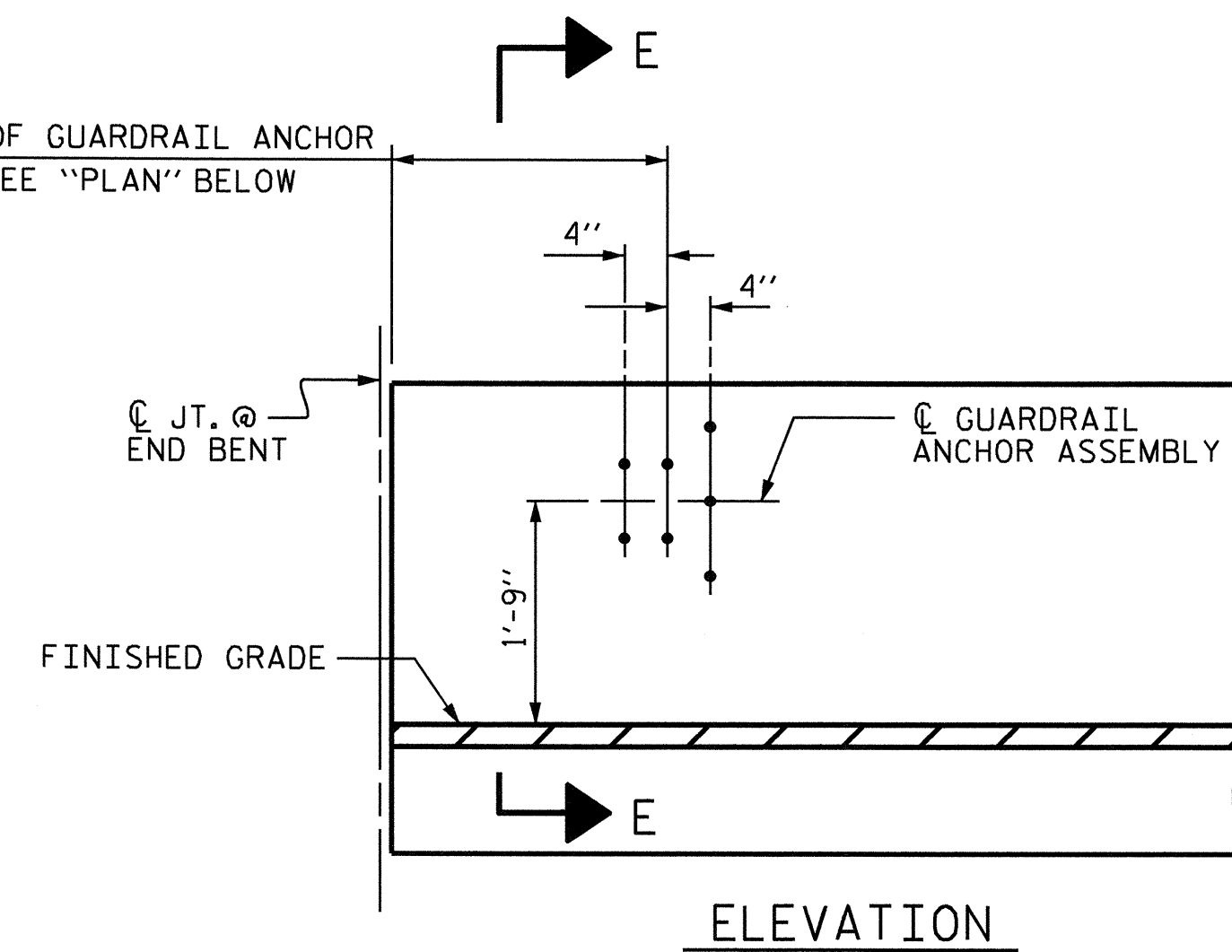
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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

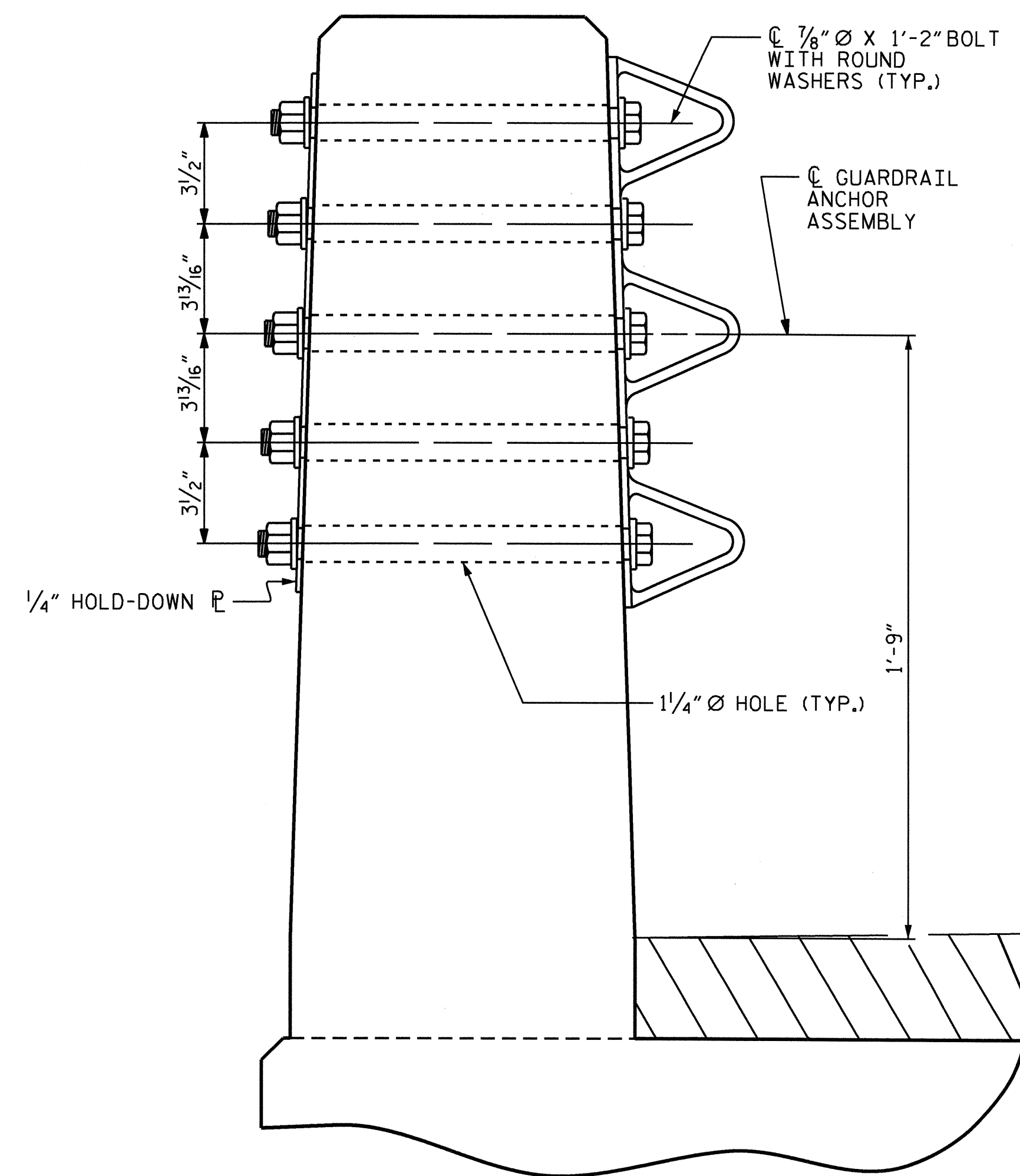


PLAN

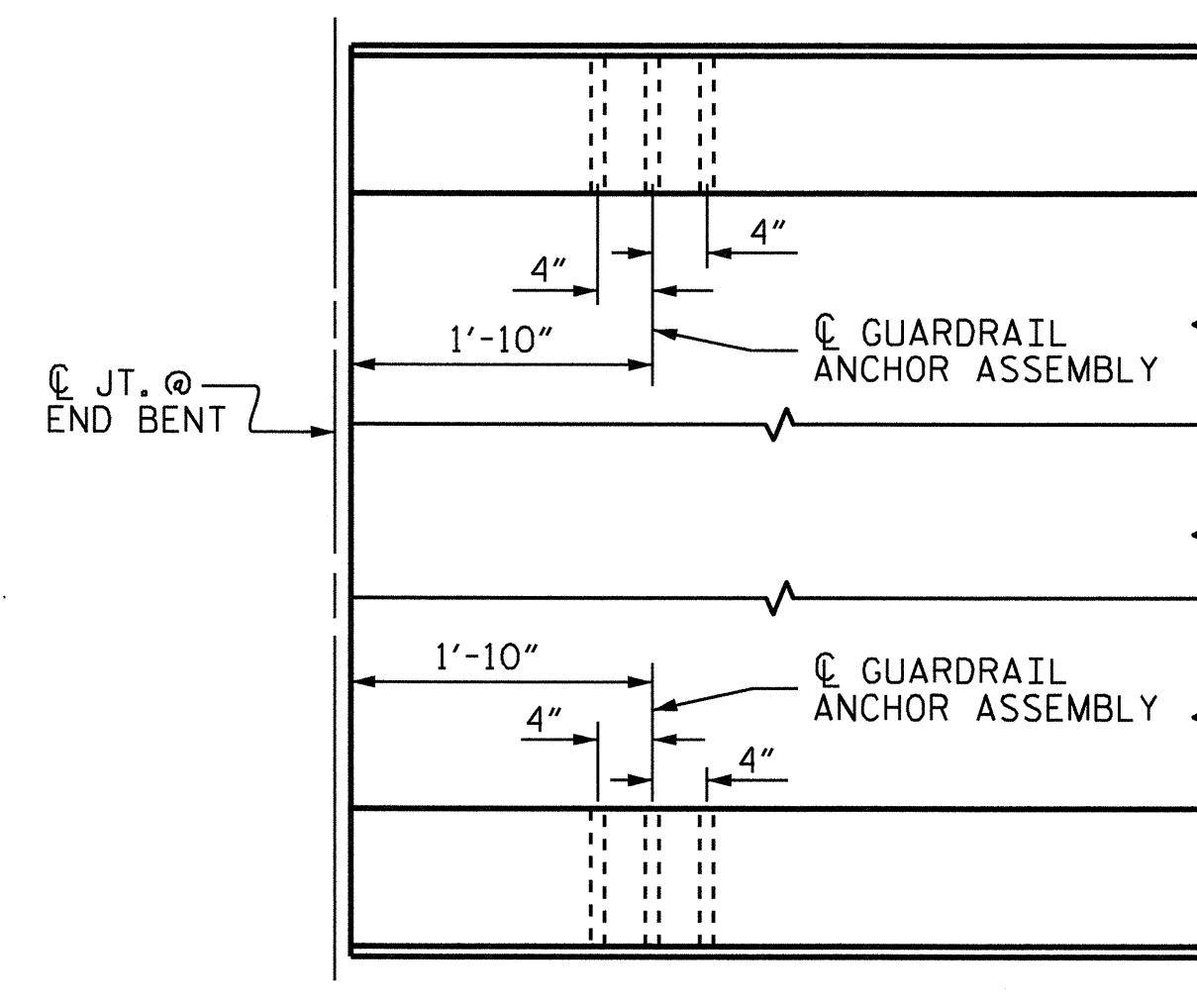
FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



ELEVATION



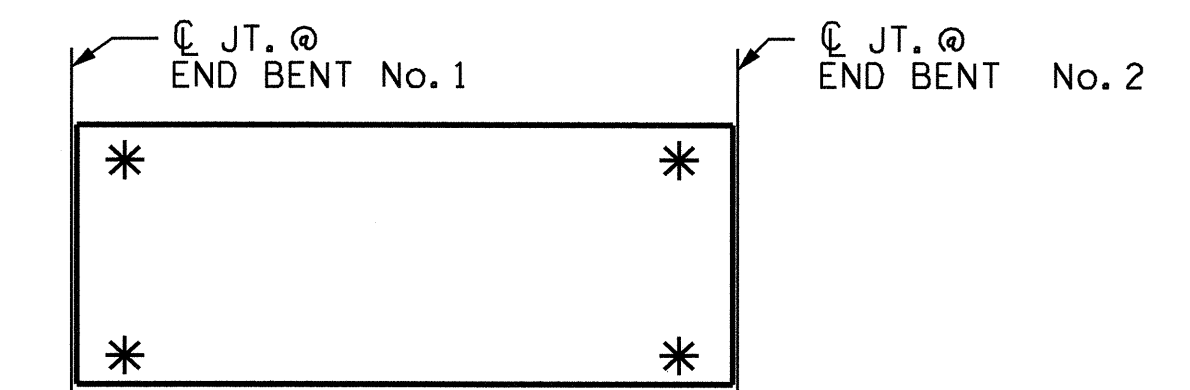
SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4467
CLAY COUNTY
 STATION: 19+09.50 -L-

SHEET 6 OF 6

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



ASSEMBLED BY : Z. H. BROWN	DATE : 12/14/10
CHECKED BY : M. G. CHEEK	DATE : 12/14/10
DRAWN BY : MAA 5/10	ADDED 5/6/10
CHECKED BY : GM 5/10	

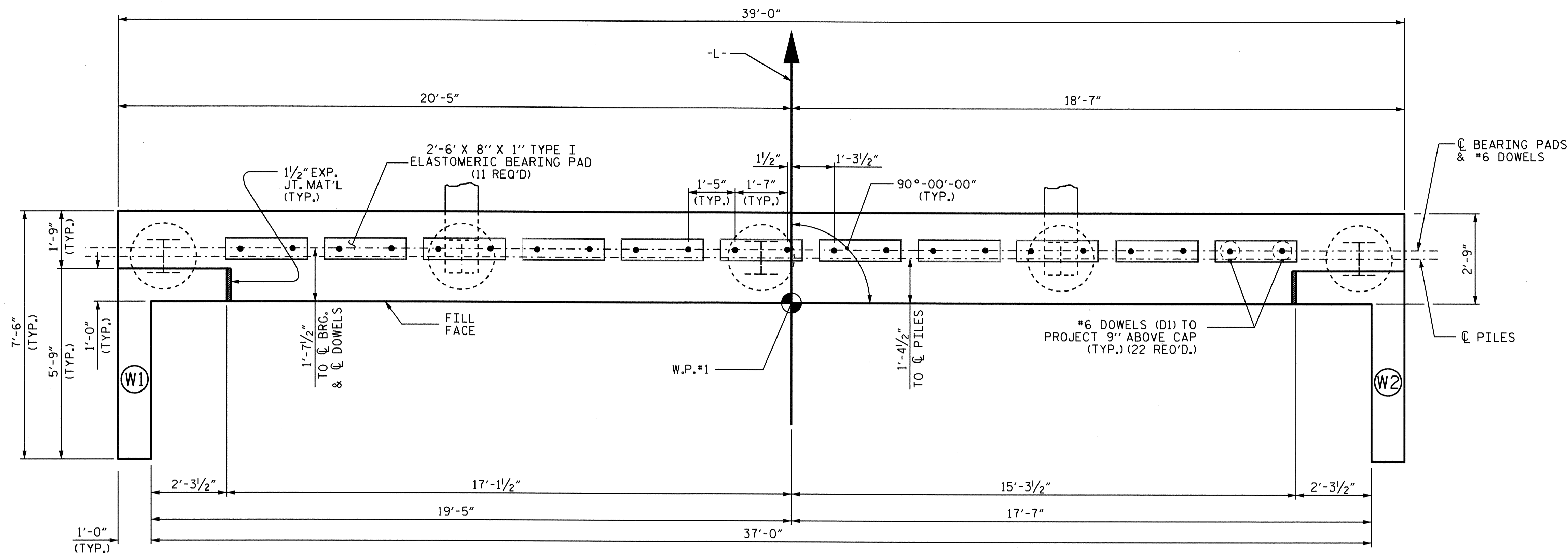
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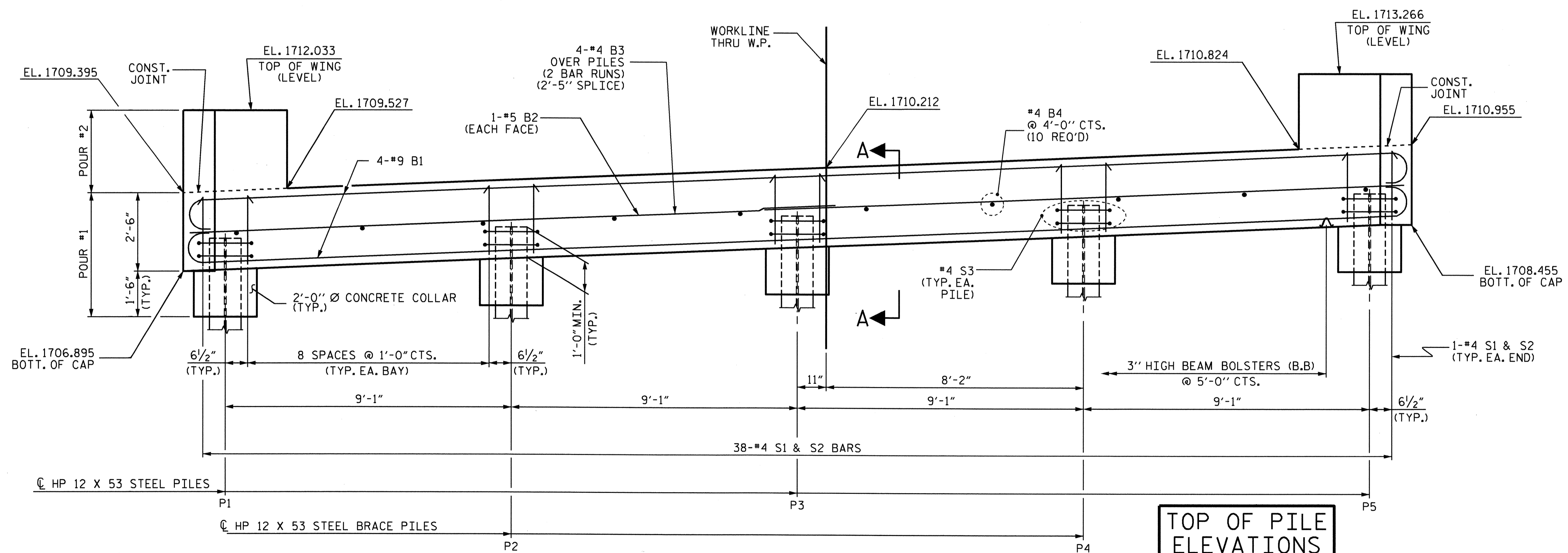
STD. NO. GRA3

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6 DOWELS.
 FOR SECTION A-A, SEE SHEET 3 OF 3.
 FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.



PLAN



ELEVATION

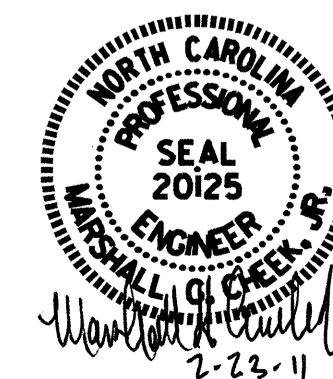
TOP OF PILE ELEVATIONS	
PILE #	ELEVATION
1	EL. 1707.969
2	EL. 1708.332
3	EL. 1708.695
4	EL. 1709.059
5	EL. 1709.422

PROJECT NO. B-4467
 CLAY COUNTY
 STATION: 19+09.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT NO. 1

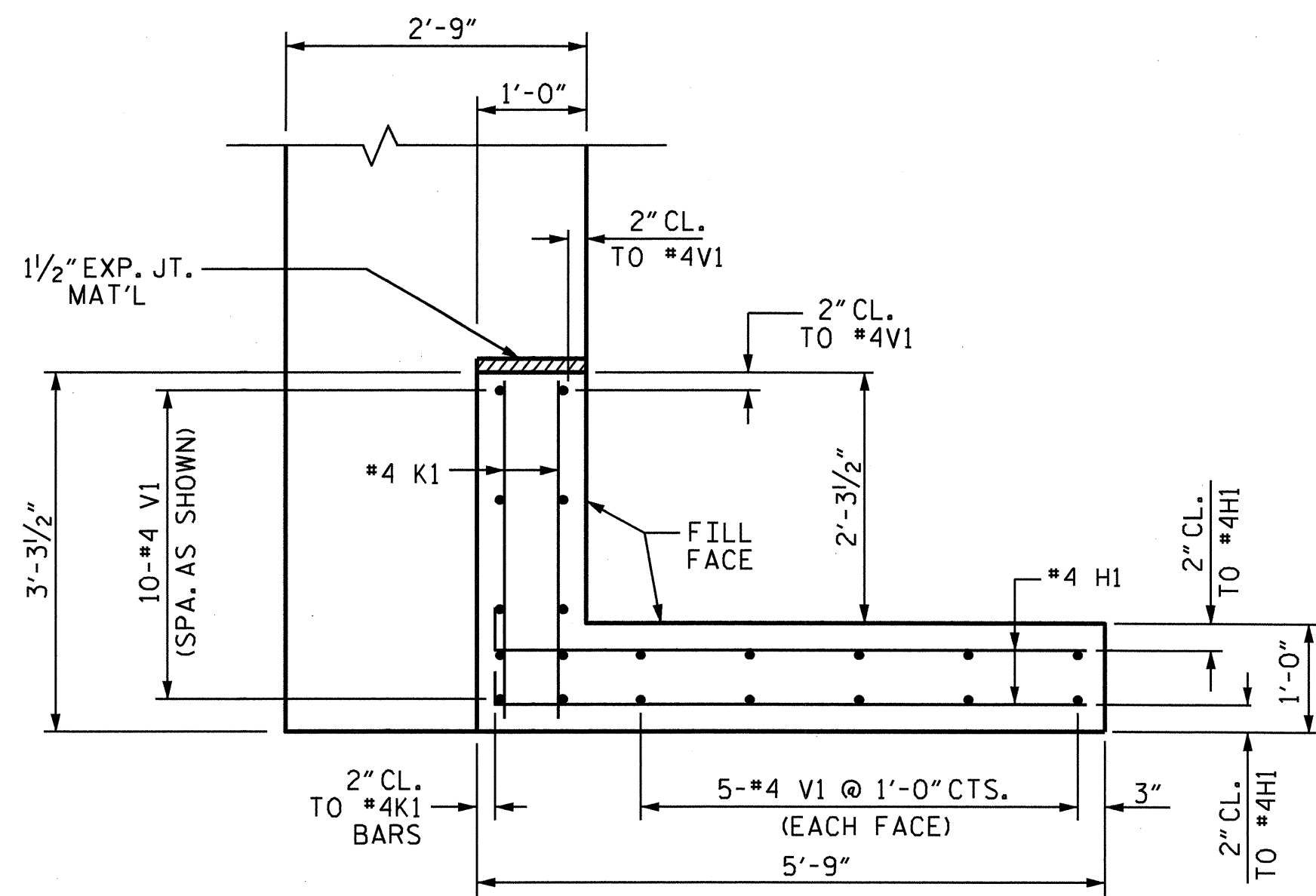


DRAWN BY: A.L. FIGUEROA DATE: 04-20-10
 CHECKED BY: M.E. POOLE DATE: 04-10

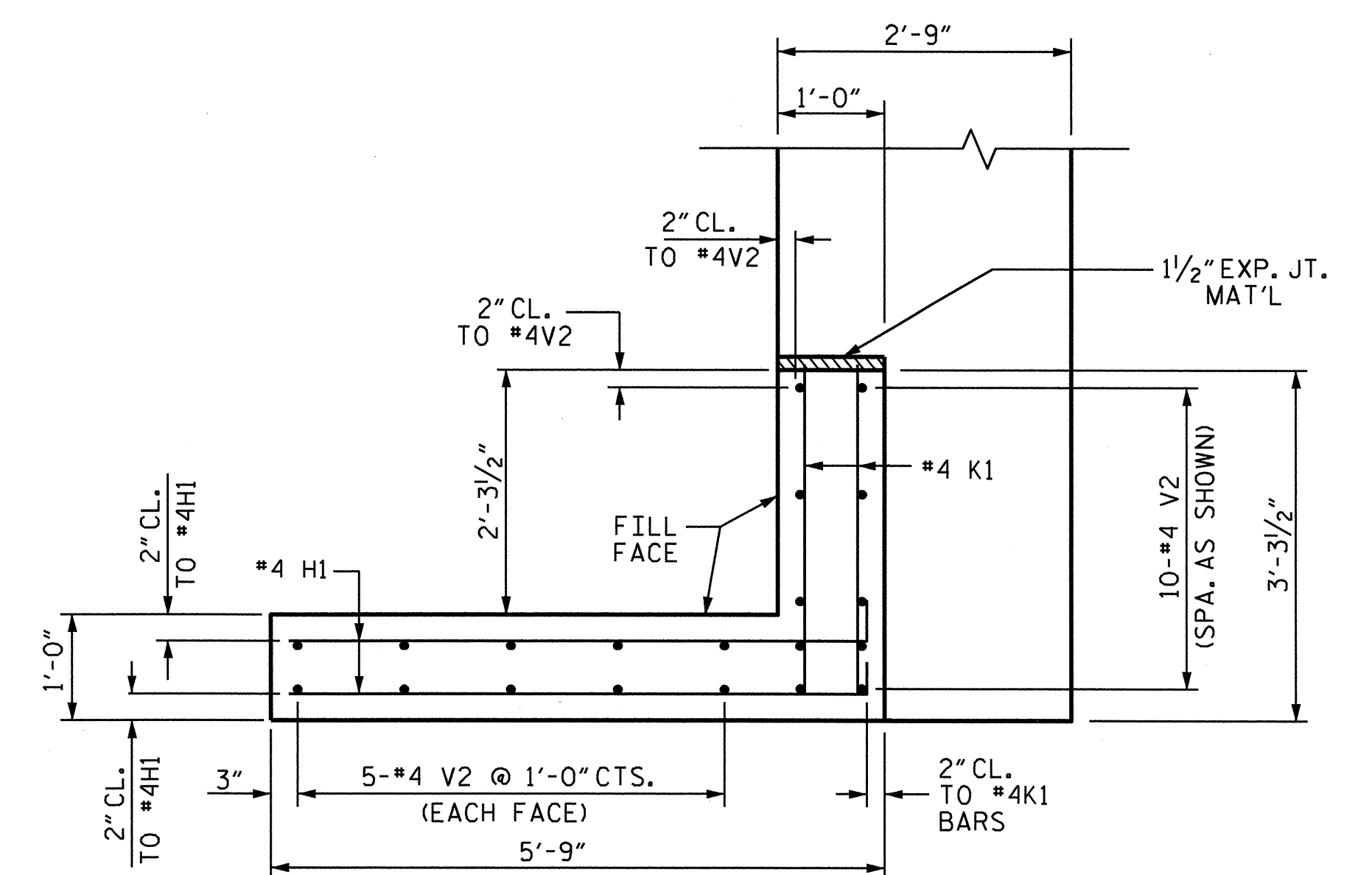
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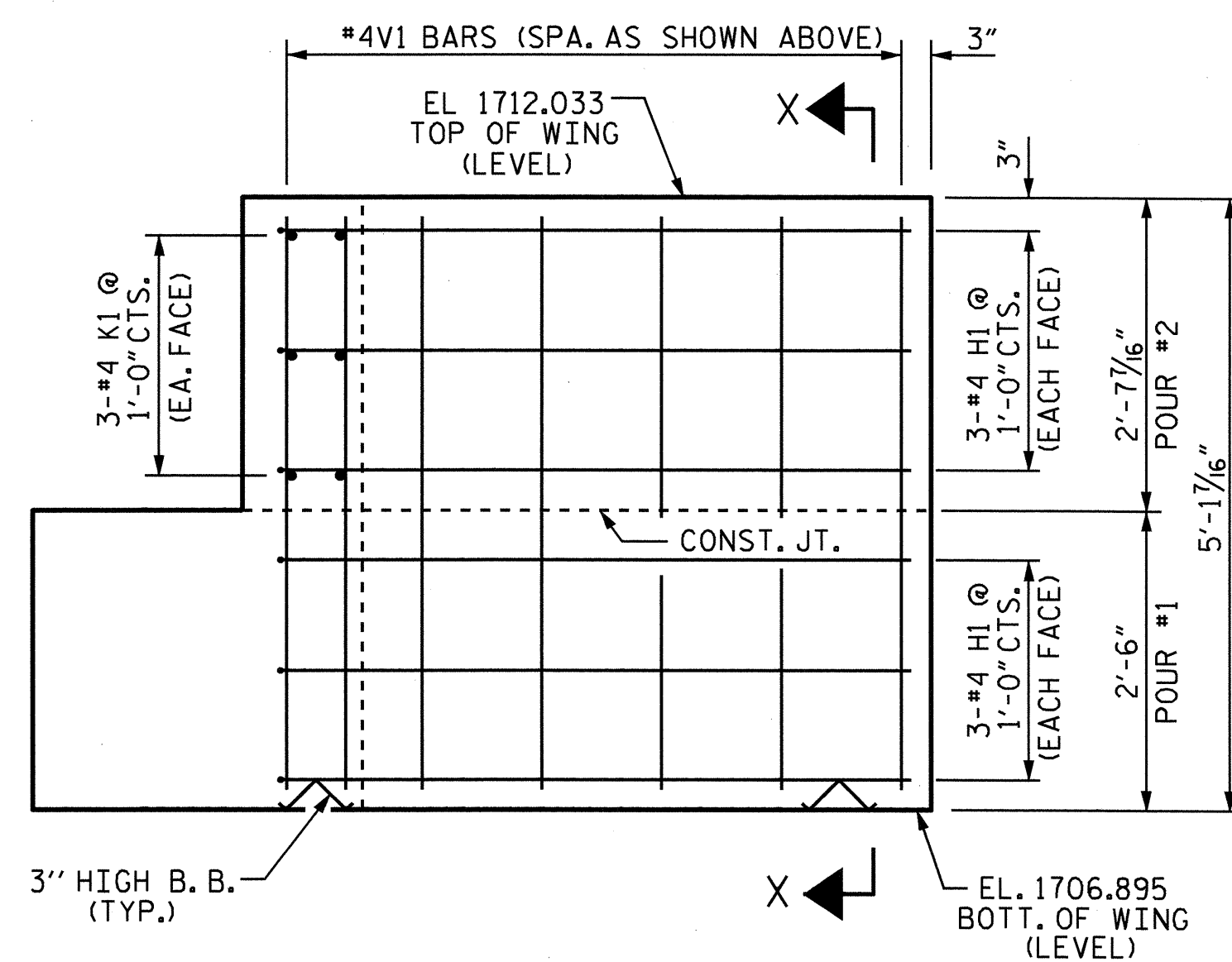
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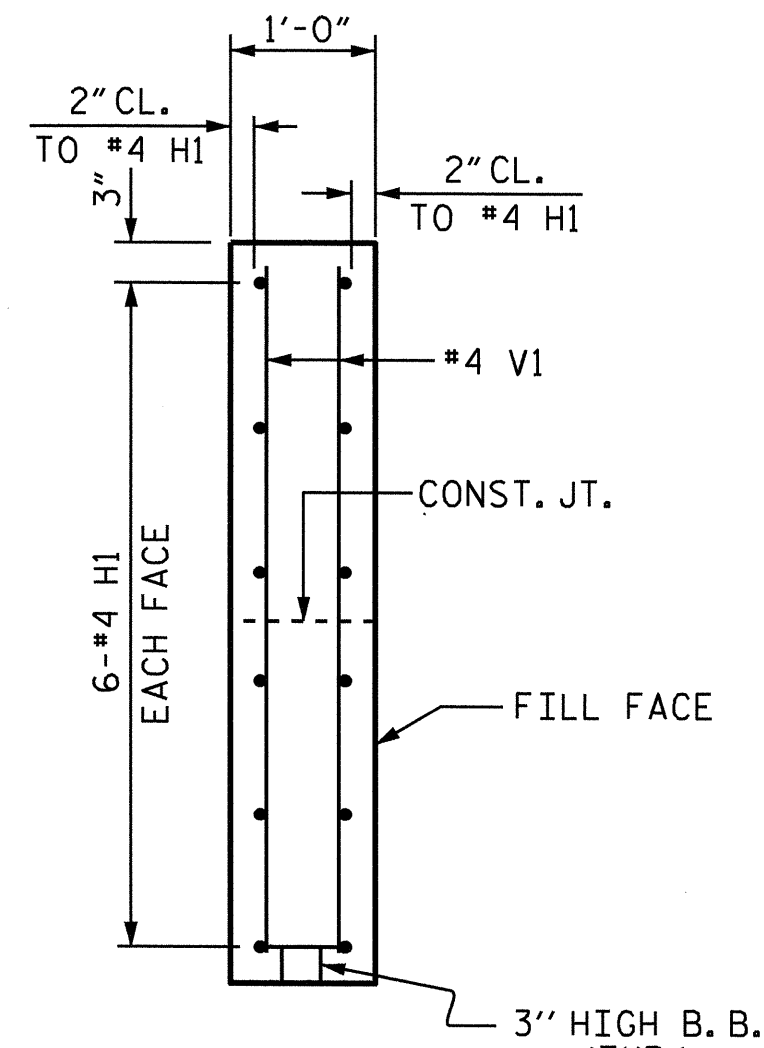
PLAN OF WING W1



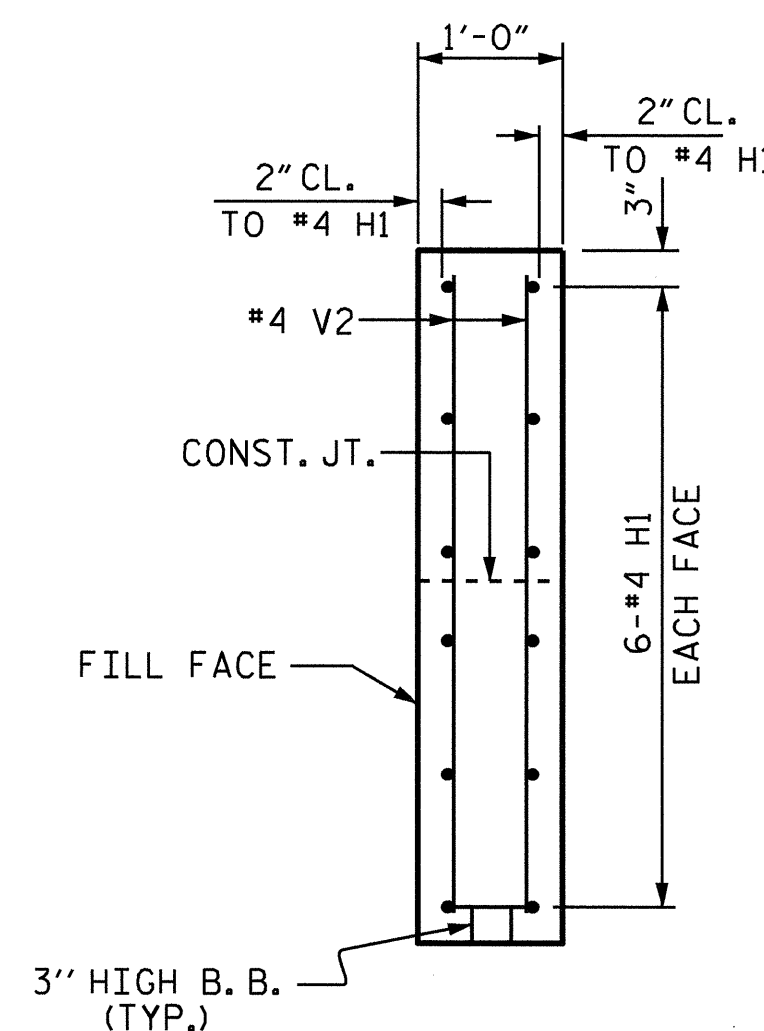
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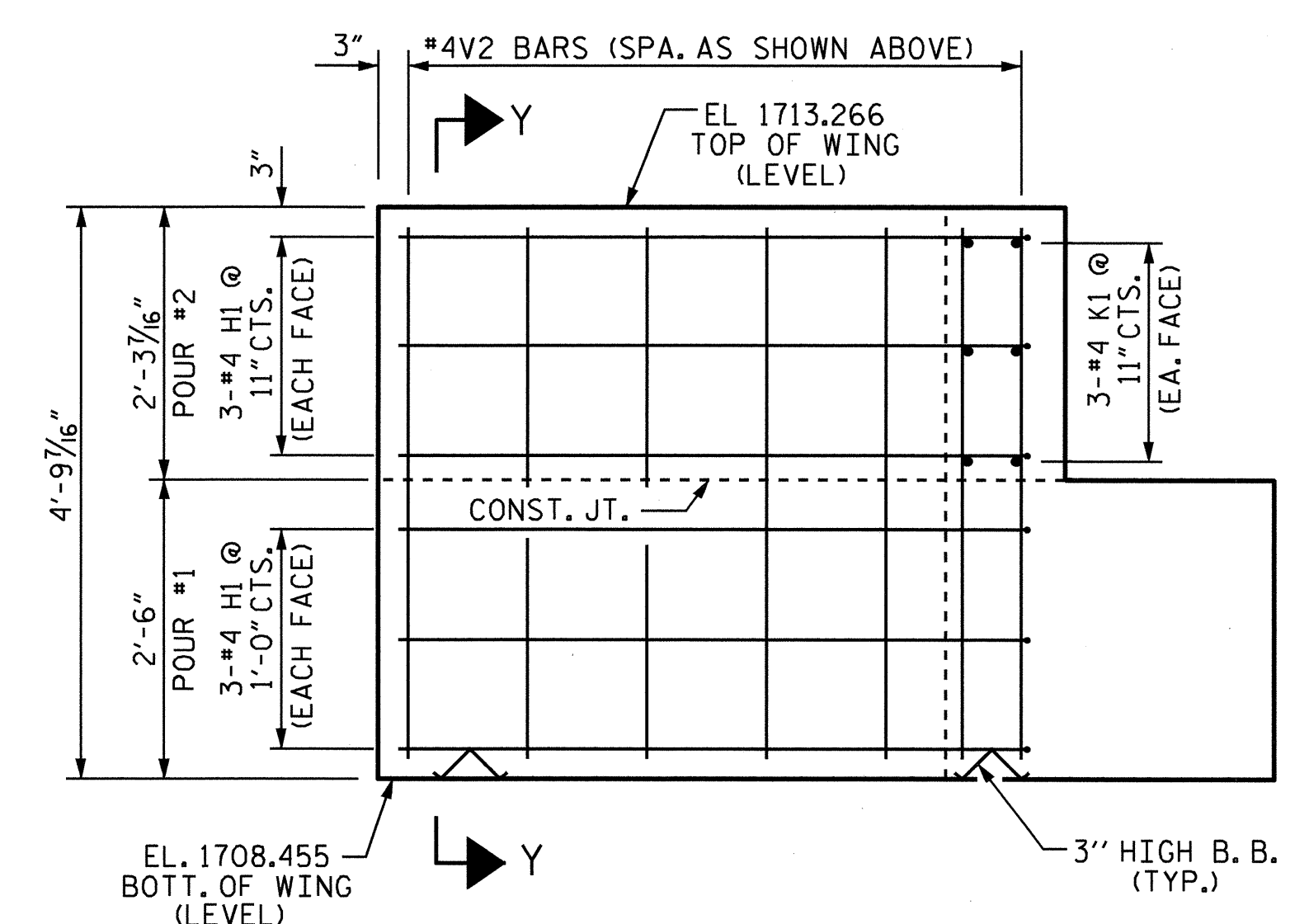
ELEVATION OF WING W1



SECTION X-X



SECTION Y-Y



ELEVATION OF WING W2

PROJECT NO. B-4467
 CLAY COUNTY
 STATION: 19+09.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

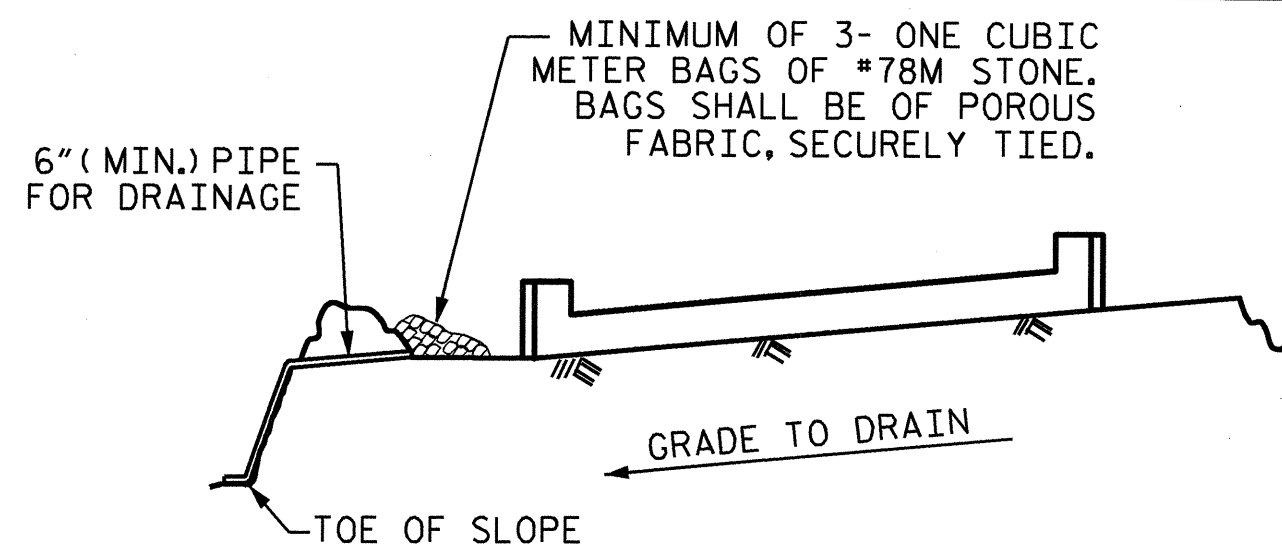
SUBSTRUCTURE
 END BENT NO. 1



DRAWN BY: A.L. FIGUEROA DATE: 04-20-10
 CHECKED BY: M.E. POOLE DATE: 04-10

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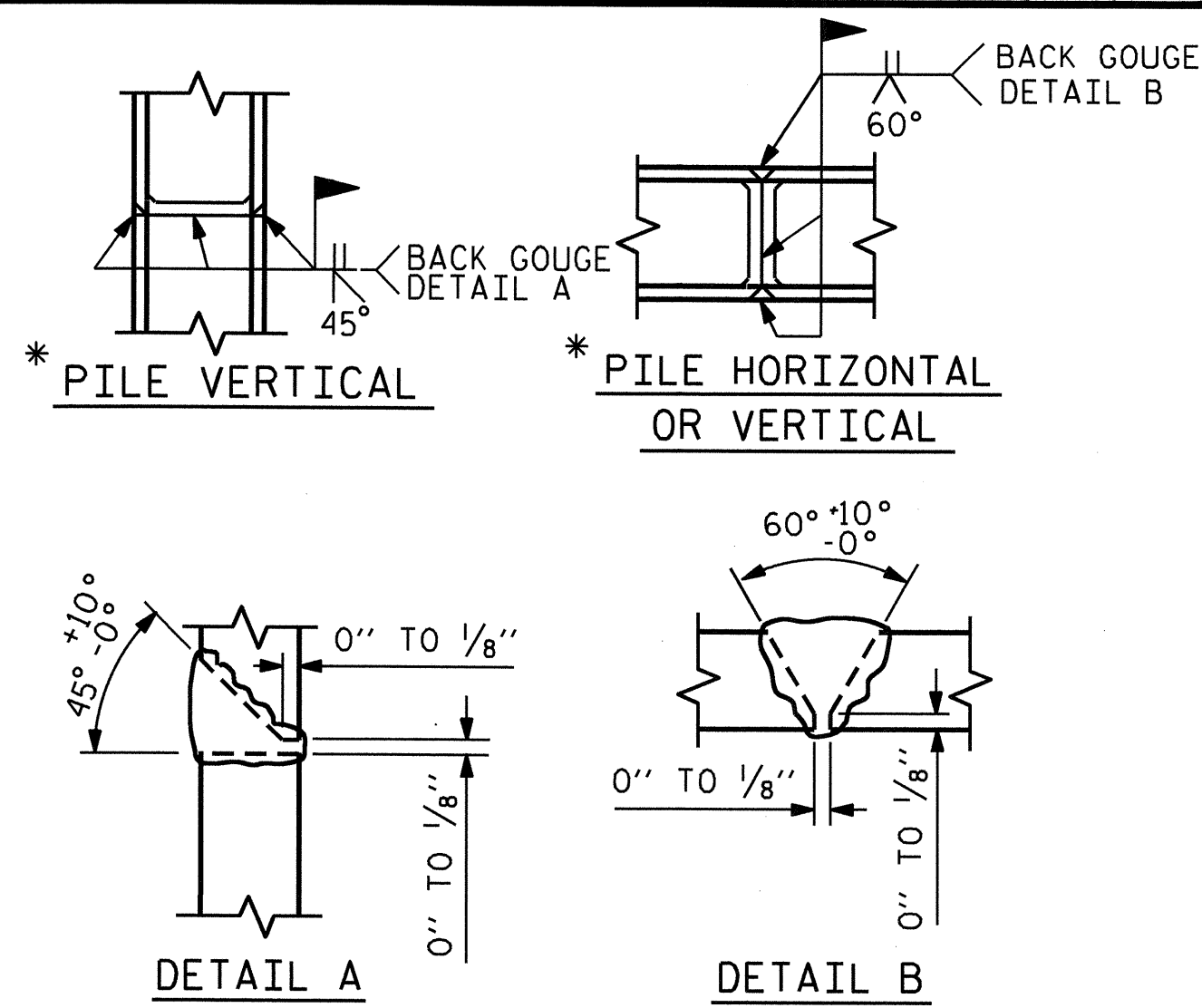


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

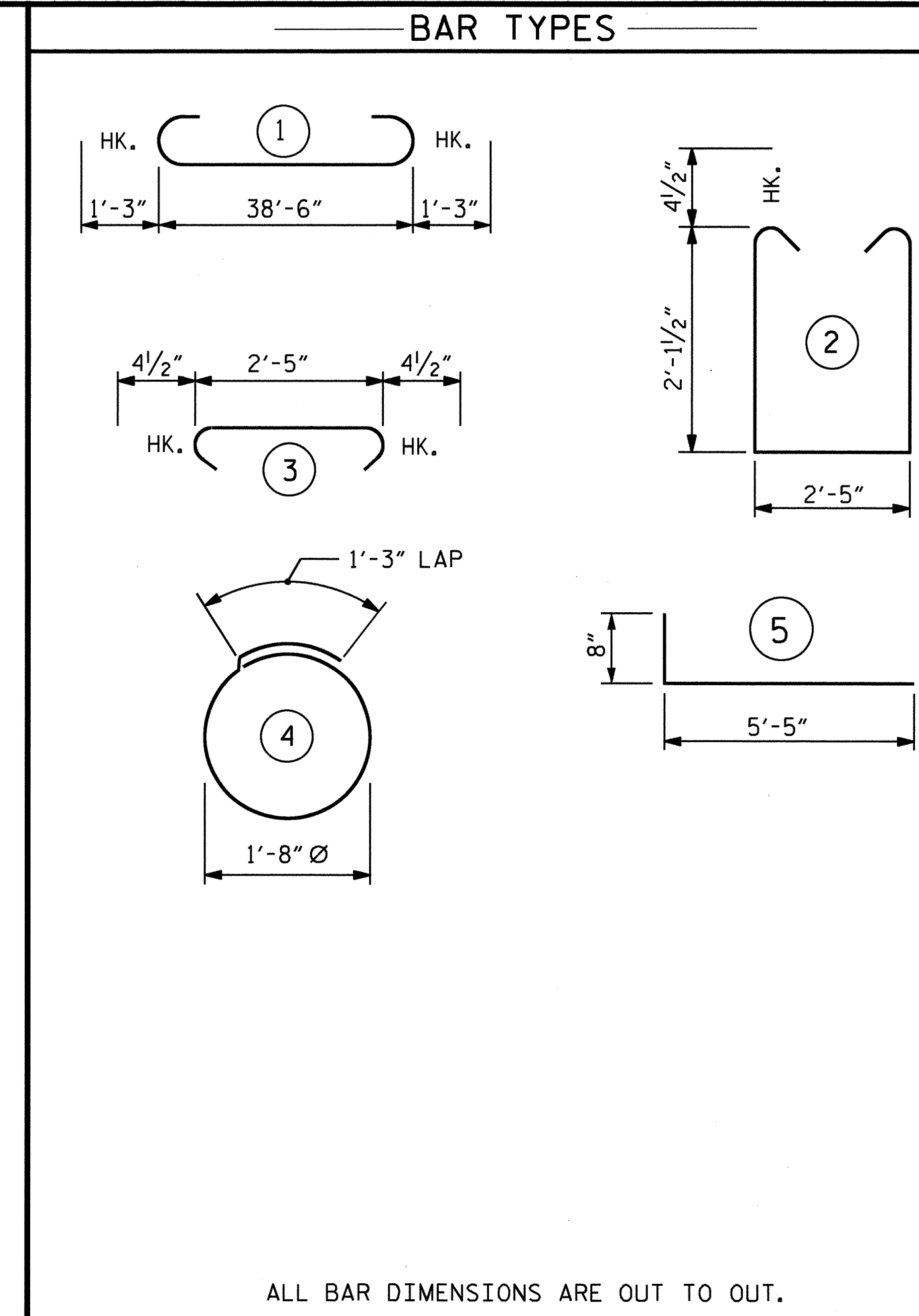
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



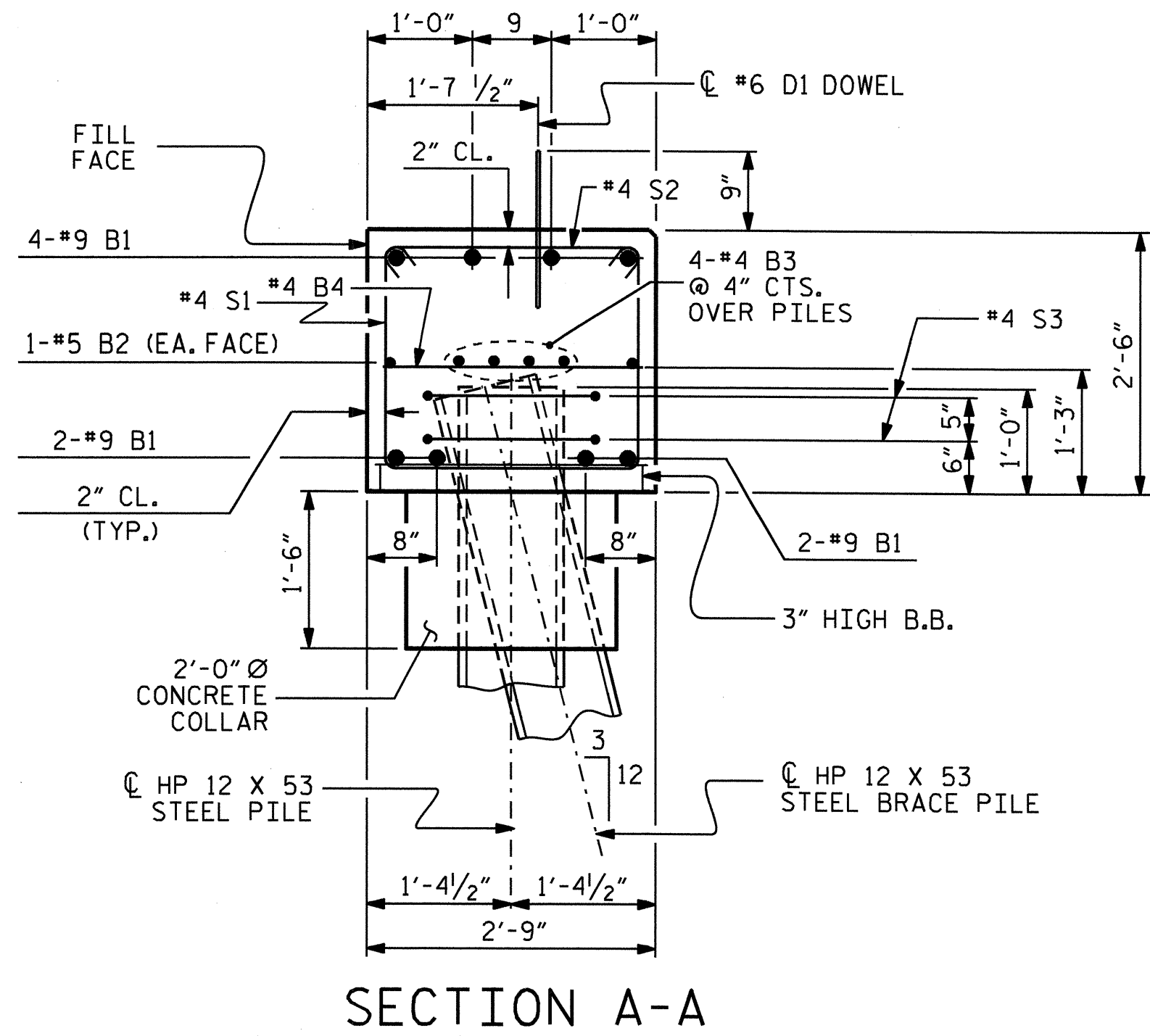
* POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



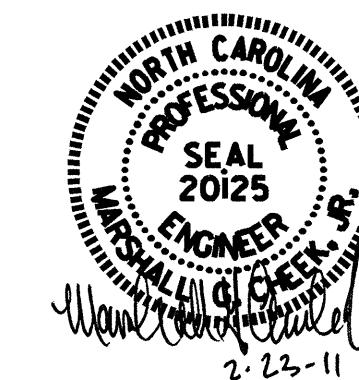
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT NO.1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-0"	1115
B2	2	#5	STR	38'-8"	81
B3	8	#4	STR	20'-7"	110
B4	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	24	#4	5	6'-1"	98
K1	12	#4	STR	2'-11"	23
S1	38	#4	2	7'-5"	188
S2	38	#4	3	3'-2"	80
S3	10	#4	4	6'-6"	43
V1	20	#4	STR	4'-8"	62
V2	20	#4	STR	4'-4"	58
REINFORCING STEEL				=	1,924 LBS.
CLASS A CONCRETE					
POUR #1: CAP, BOTTOM PORTION OF WINGS, & COLLARS				11.7	C.Y.
POUR #2: TOP OF WINGS				1.5	C.Y.
TOTAL CLASS A CONCRETE				13.2	C.Y.
HP 12 X 53 STEEL PILES NO. 5					LIN. FT. 175



DRAWN BY: A.L. FIGUEROA DATE: 04-20-10
 CHECKED BY: M.E. POOLE DATE: 04-10

22-FEB-2011 14:12
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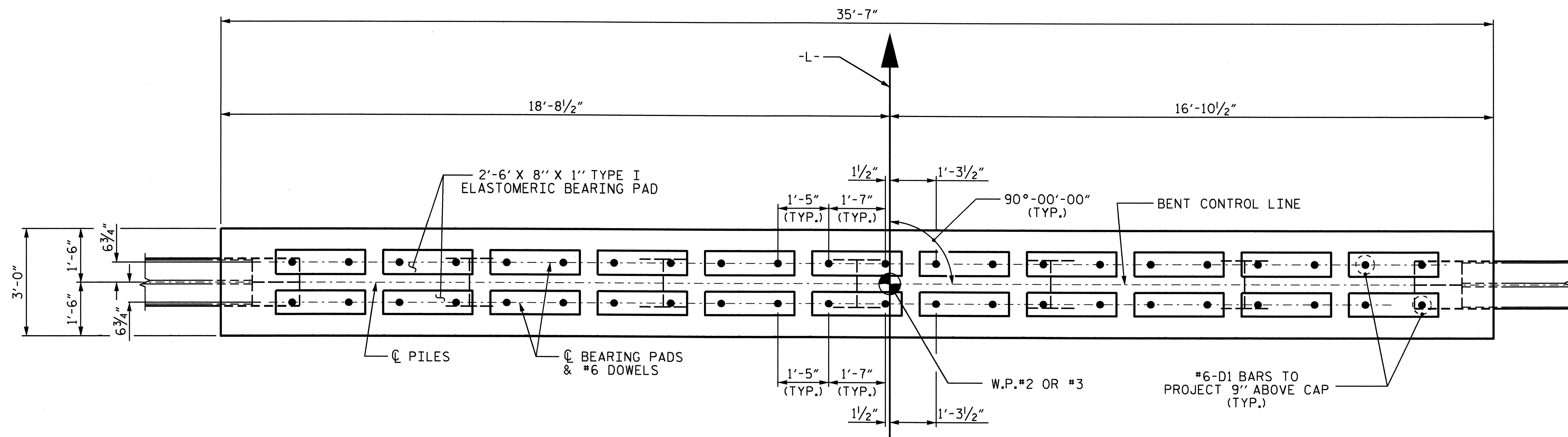


PROJECT NO. B-4467
 CLAY COUNTY
 STATION: 19+09.50 -L-
 SHEET 3 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT NO. 1					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
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2			4		
					S-14
					TOTAL SHEETS 22

NOTES

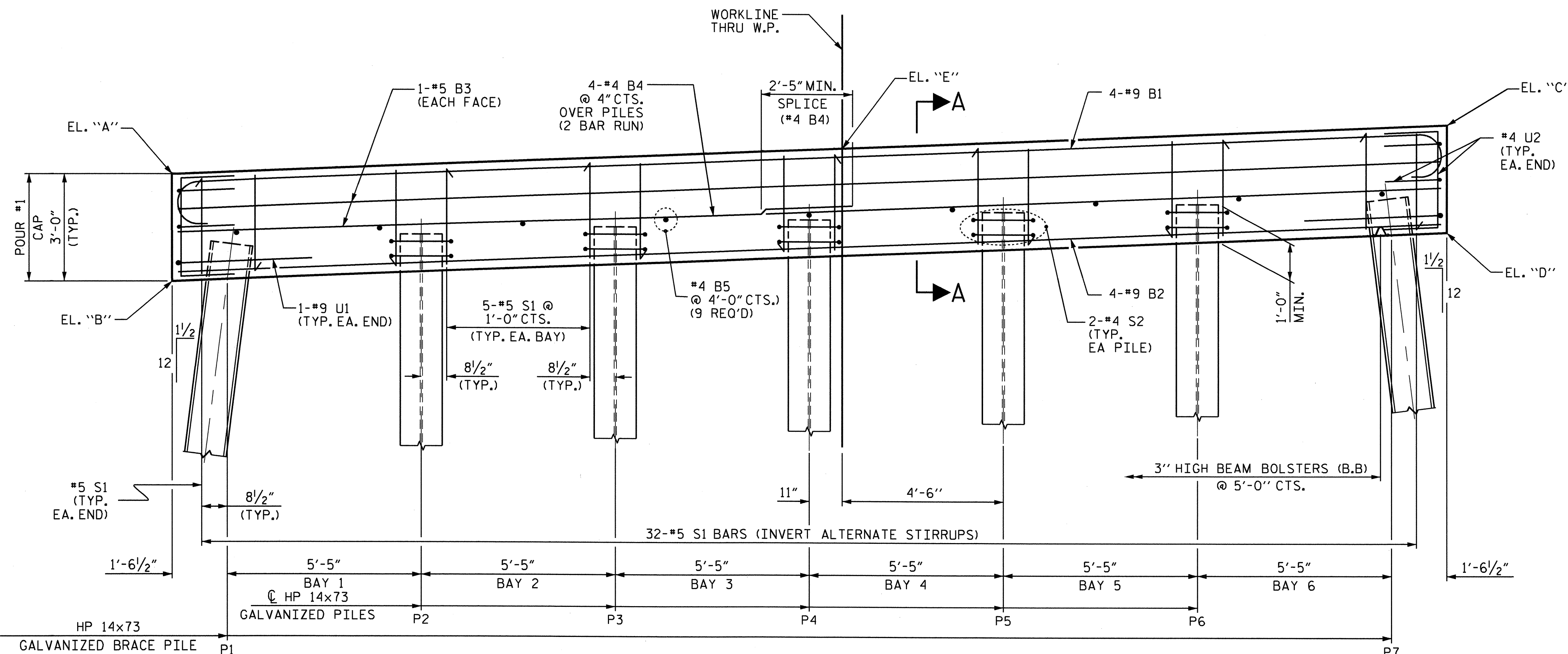
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6 DOWELS.
 FOR SECTION A-A, SEE SHEET 2 OF 2.
 FOR PILE SPLICE DETAILS SEE SHEET 2 OF 2.
 FOR BENT NO. 1, GALVANIZE THE TOP OF EACH PILE A MINIMUM OF 25 FEET, GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.
 FOR BENT NO. 2, GALVANIZE THE TOP OF EACH PILE A MINIMUM OF 30 FEET, GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



PLAN

TOP OF PILE ELEVATIONS		
PILE #	BENT NO. 1 ELEVATION	BENT NO. 2 ELEVATION
1	EL. 1707.687	EL. 1707.836
2	EL. 1707.849	EL. 1707.999
3	EL. 1708.065	EL. 1708.215
4	EL. 1708.282	EL. 1708.432
5	EL. 1708.499	EL. 1708.649
6	EL. 1708.715	EL. 1708.865
7	EL. 1708.976	EL. 1709.131

CAP ELEVATIONS		
POINT	BENT NO. 1 ELEVATION	BENT NO. 2 ELEVATION
EL. "A"	EL. 1709.547	EL. 1709.697
EL. "B"	EL. 1706.547	EL. 1706.697
EL. "C"	EL. 1710.971	EL. 1711.121
EL. "D"	EL. 1707.971	EL. 1708.121
EL. "E"	EL. 1710.296	EL. 1710.446



ELEVATION

PROJECT NO. B-4467
CLAY COUNTY
 STATION: 19+09.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT NO. 1 & NO. 2

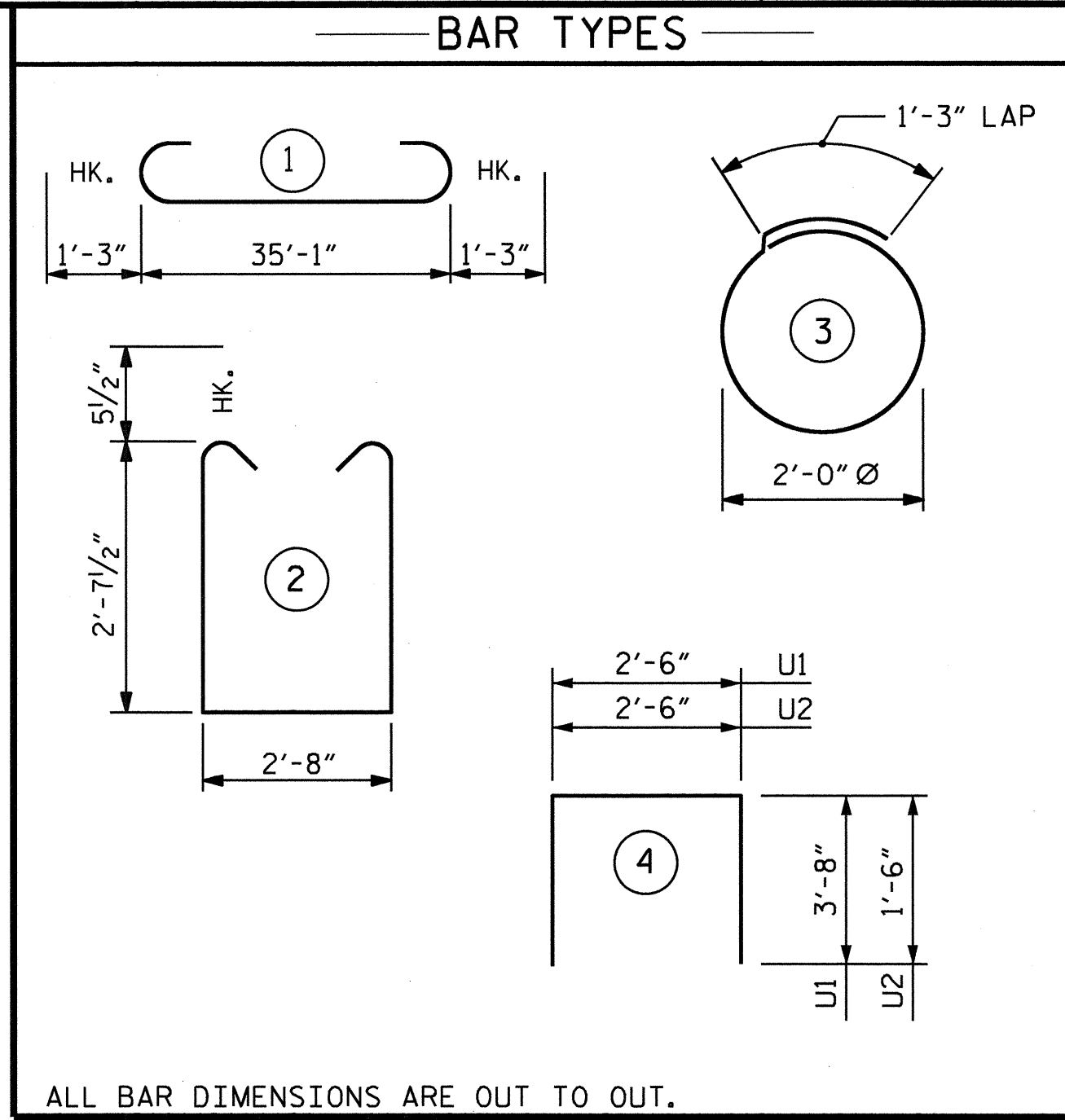
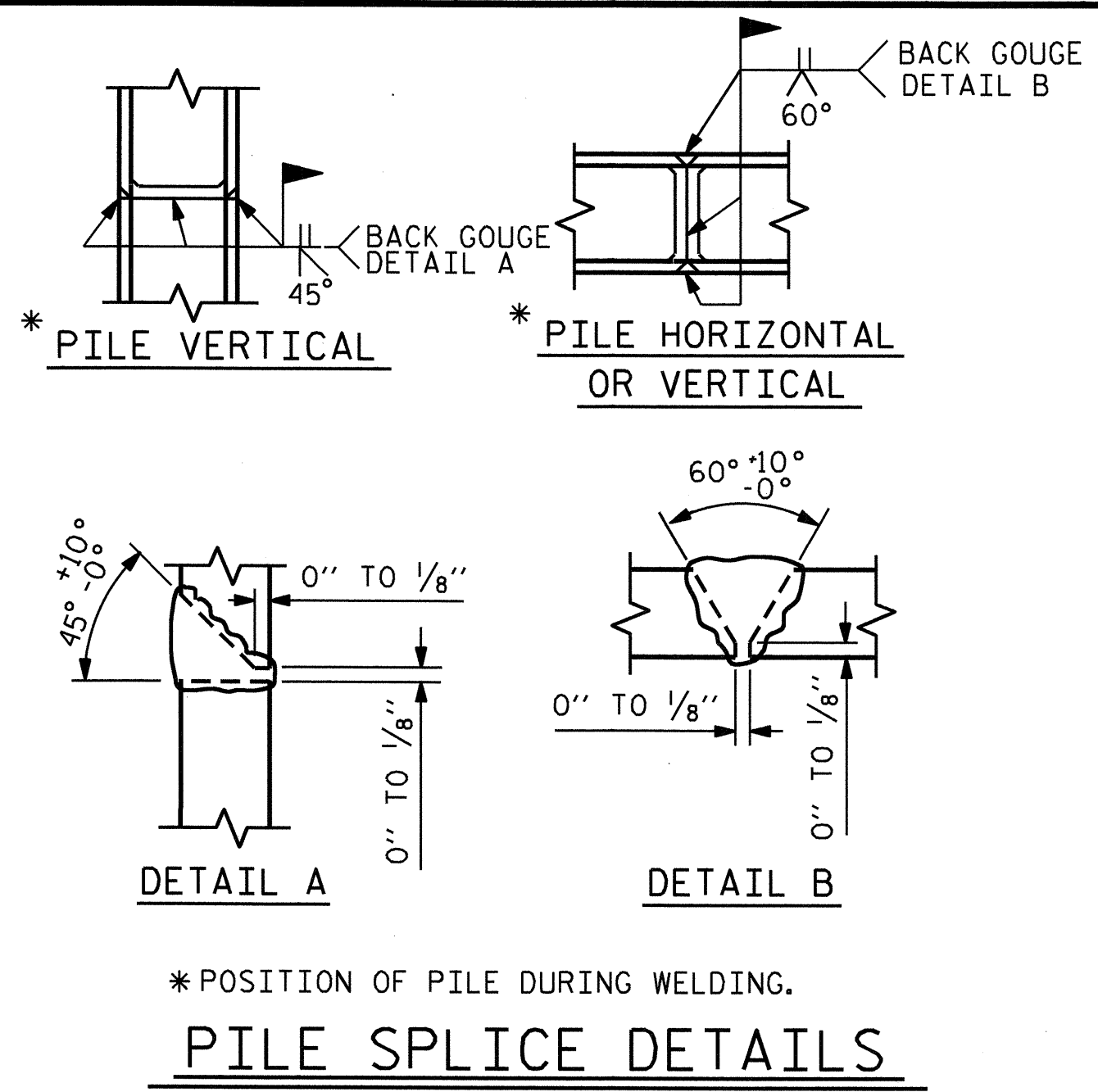
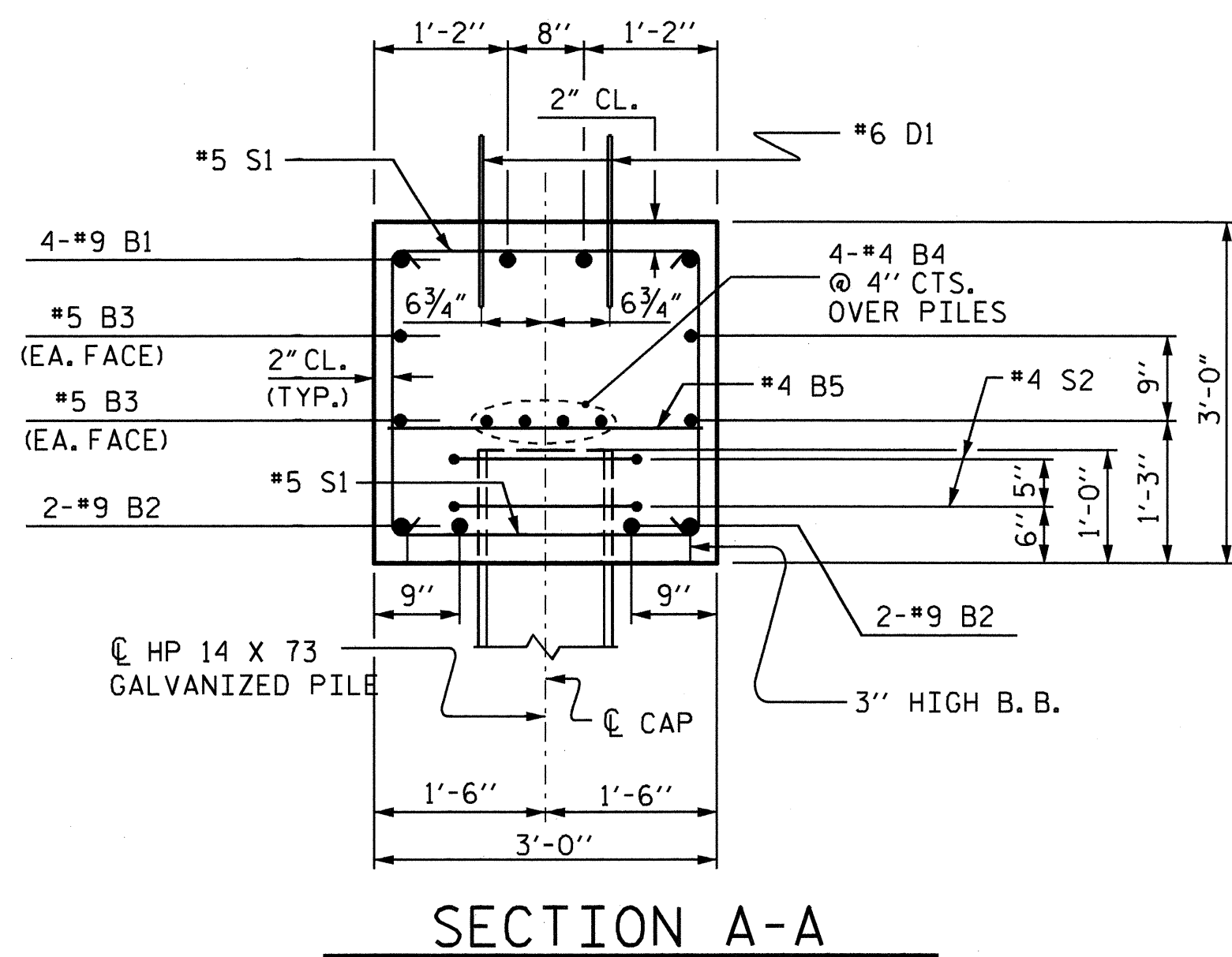


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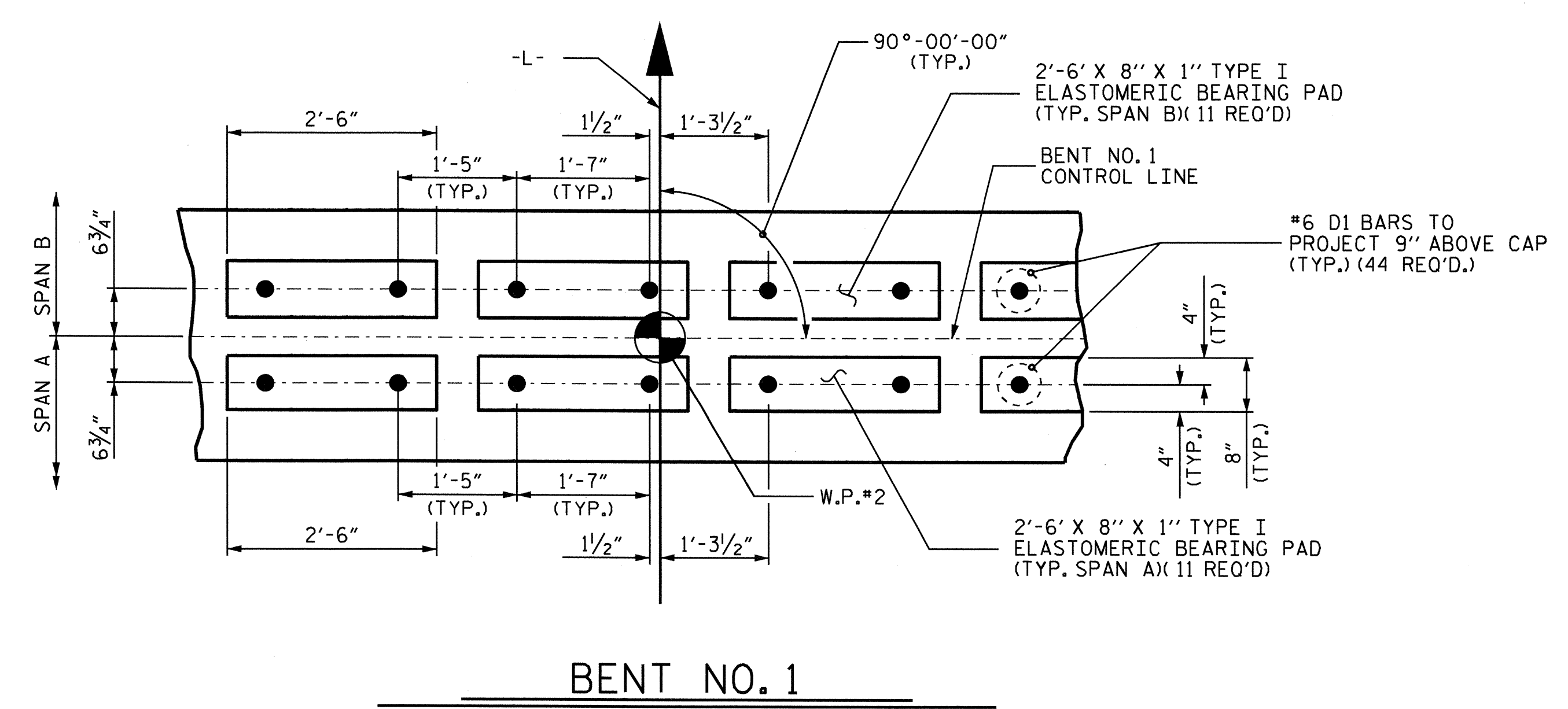
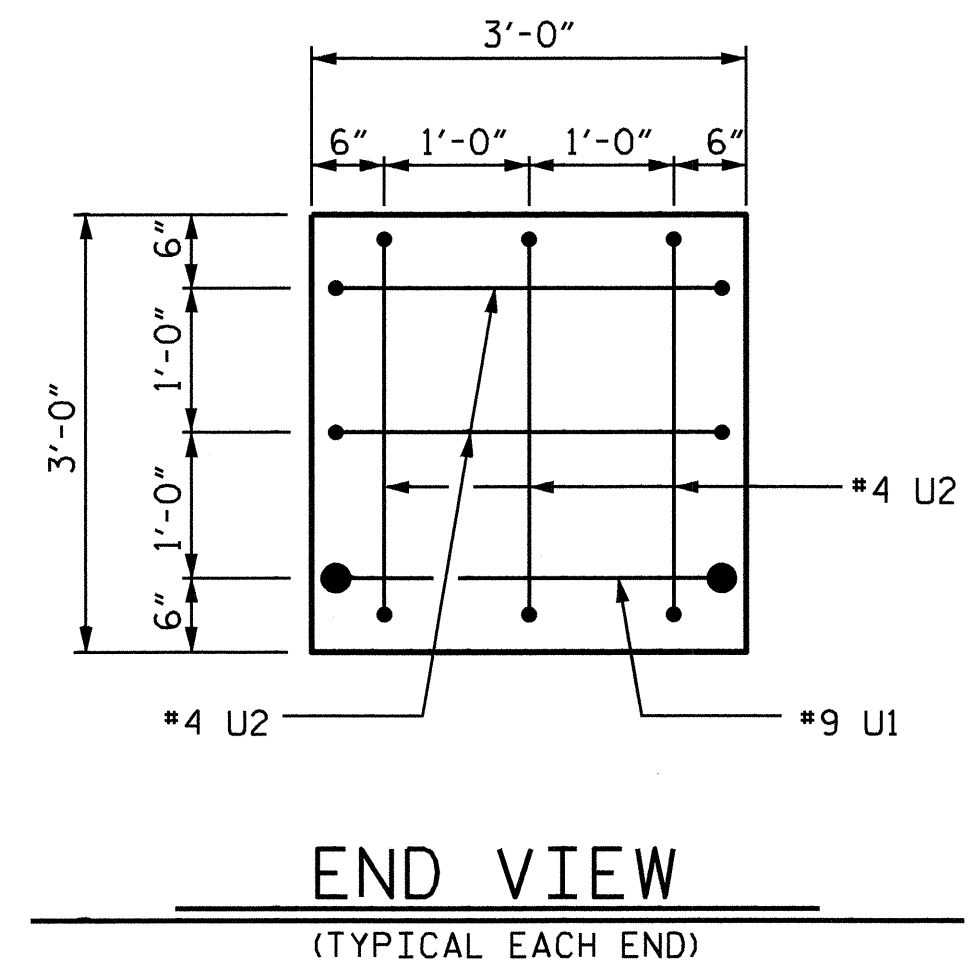
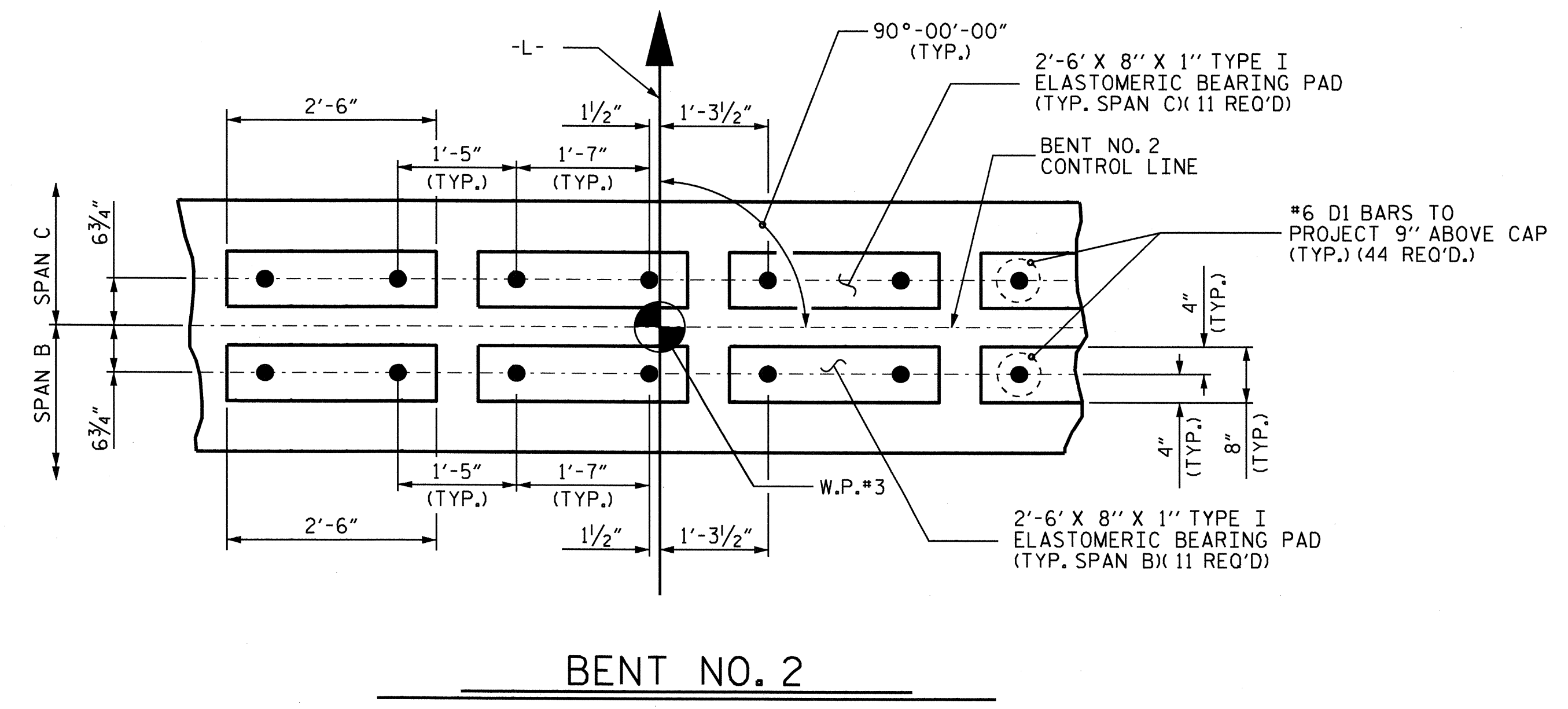
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 CHECKED BY: V.X. NGUYEN DATE: 10-15-10

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NC006



BILL OF MATERIAL FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#9	1	37'-7"	511
B2	4	#9	STR	35'-3"	479
B3	4	#5	STR	35'-3"	147
B4	8	#4	STR	18'-10"	101
B5	9	#4	STR	2'-8"	16
D1	44	#6	STR	1'-6"	99
S1	32	#5	2	8'-10"	295
S2	14	#4	3	7'-7"	71
U1	2	#9	4	9'-10"	67
U2	10	#4	4	5'-6"	37
REINFORCING STEEL					= 1,823 LBS
CLASS A CONCRETE					
POUR #1: CAP					11.9 C.Y.
TOTAL CLASS A CONCRETE					11.9 C.Y.
HP 14 X 73 GALVANIZED PILES					
NO. 7	BENT No. 1	LIN. FT.	385		
NO. 7	BENT No. 2	LIN. FT.	380		



DRAWN BY: A.L. FIGUEROA DATE: 04-27-10
 CHECKED BY: V.X. NGUYEN DATE: 10-15-10

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PROJECT NO. B-4467
 CLAY COUNTY
 STATION: 19+09.50 -L-
 SHEET 2 OF 2

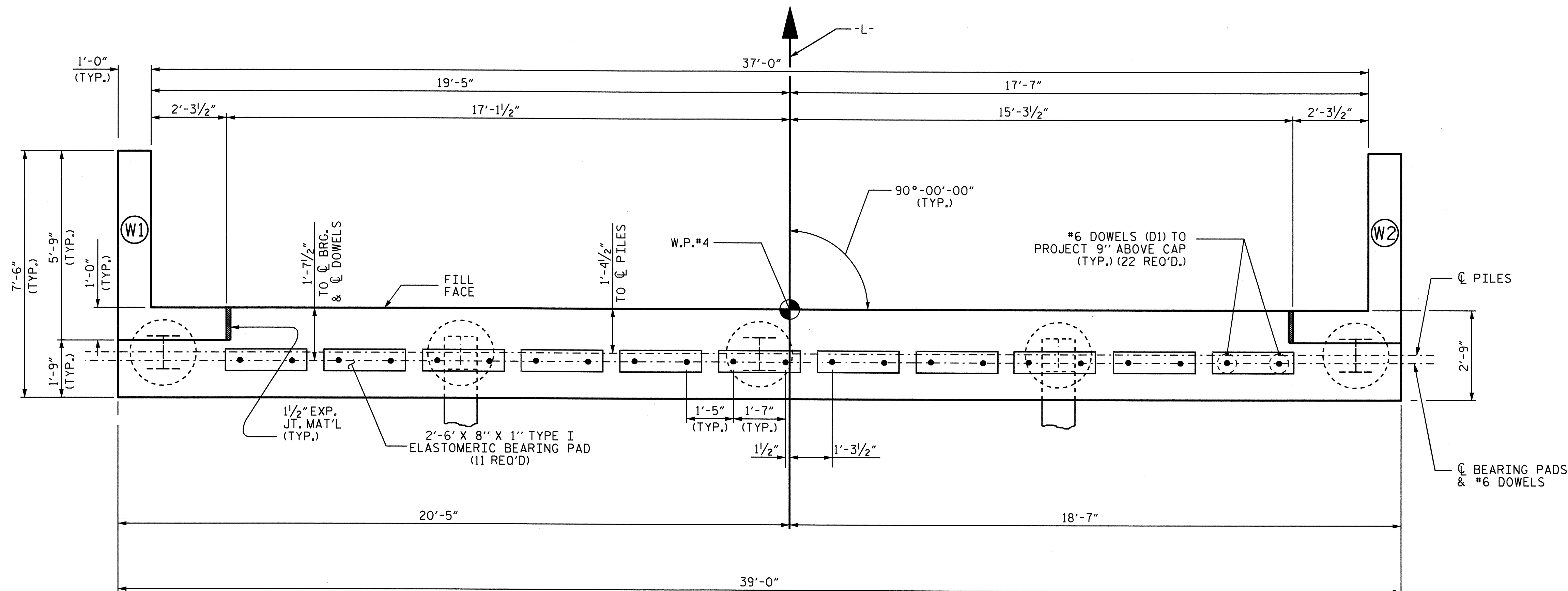
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT NO. 1 & NO. 2					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
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2			4		
TOTAL SHEETS					22

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6 DOWELS.

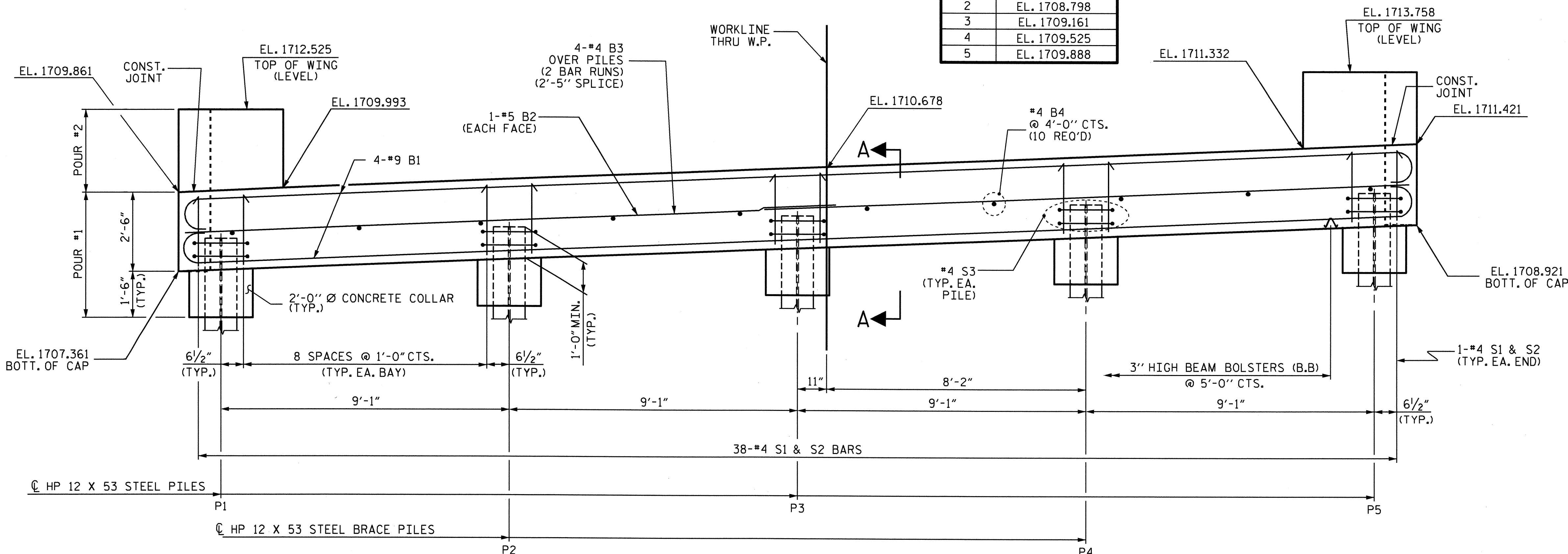
FOR SECTION A-A, SEE SHEET 3 OF 3.

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.



PLAN

PILE #	ELEVATION
1	EL. 1708.435
2	EL. 1708.798
3	EL. 1709.161
4	EL. 1709.525
5	EL. 1709.888



ELEVATION

PROJECT NO. B-4467
CLAY COUNTY
 STATION: 19+09.50 -L-

SHEET 1 OF 3
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SUBSTRUCTURE
 END BENT NO. 2**



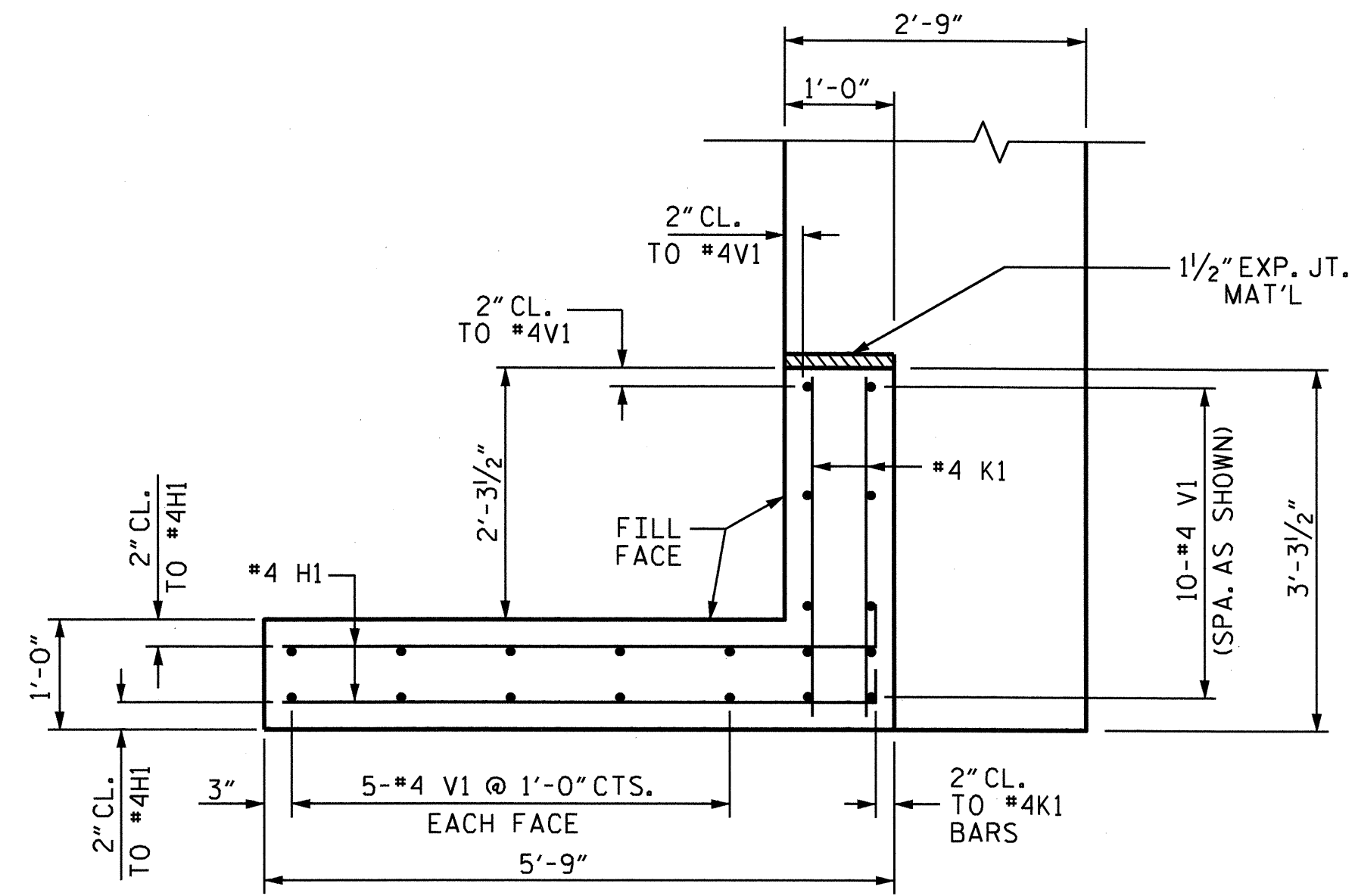
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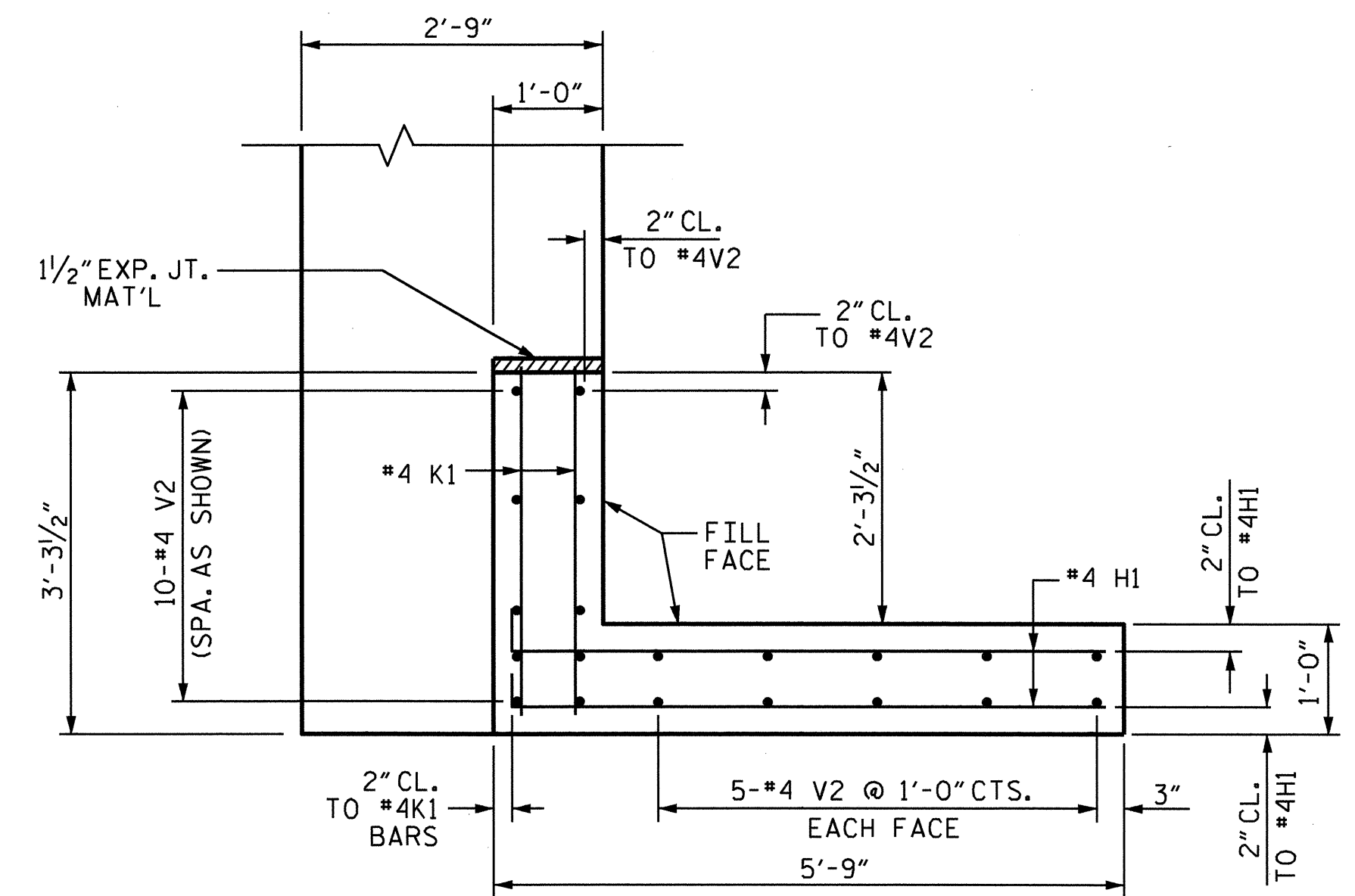
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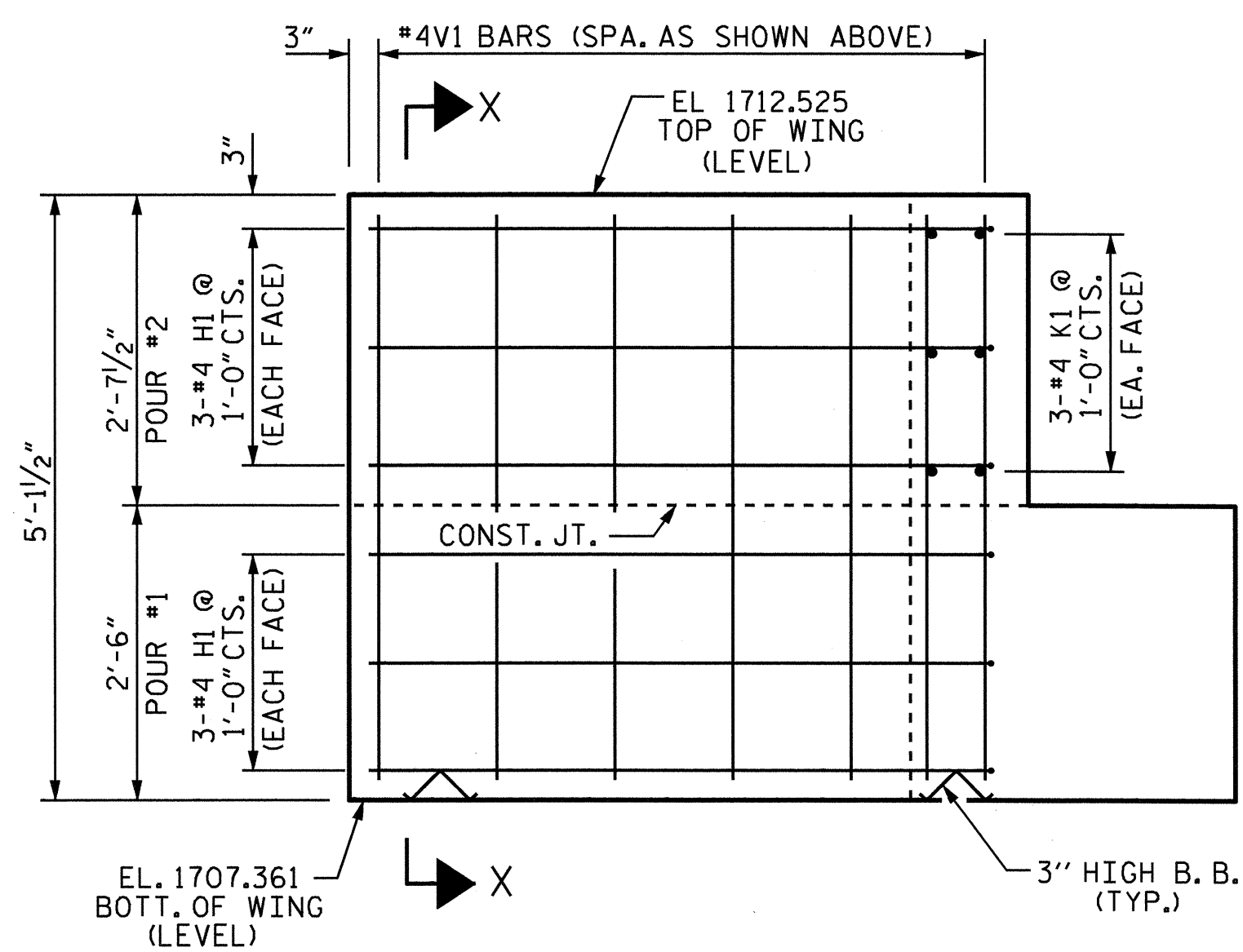
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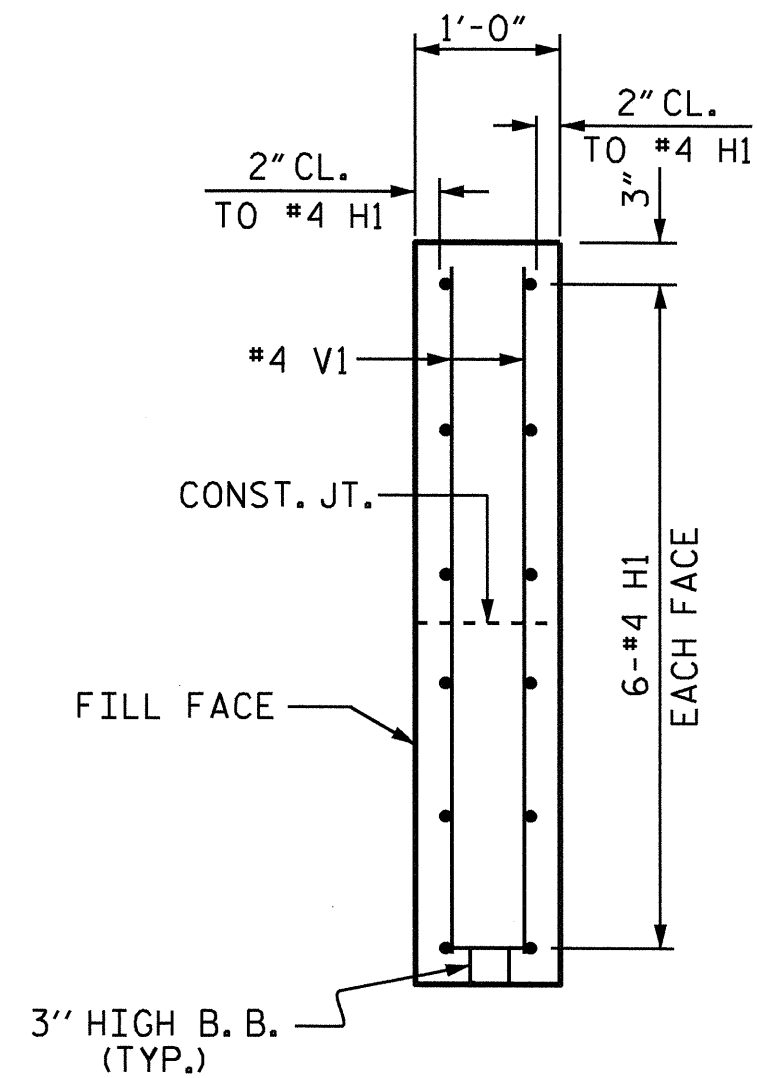
PLAN OF WING W1



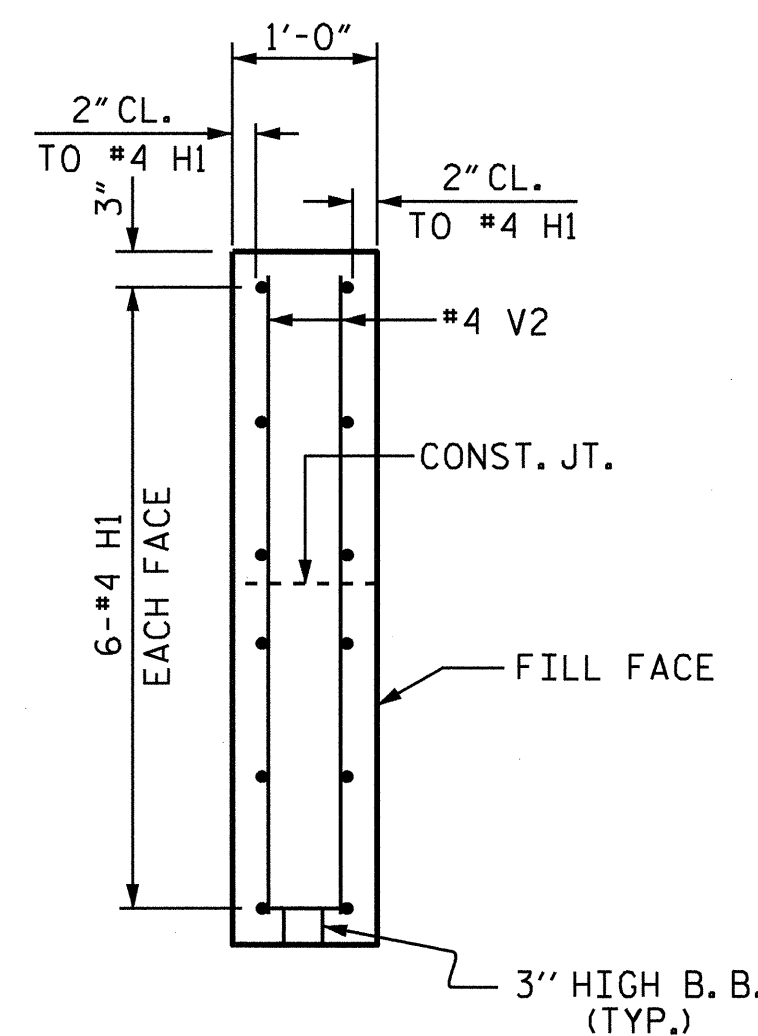
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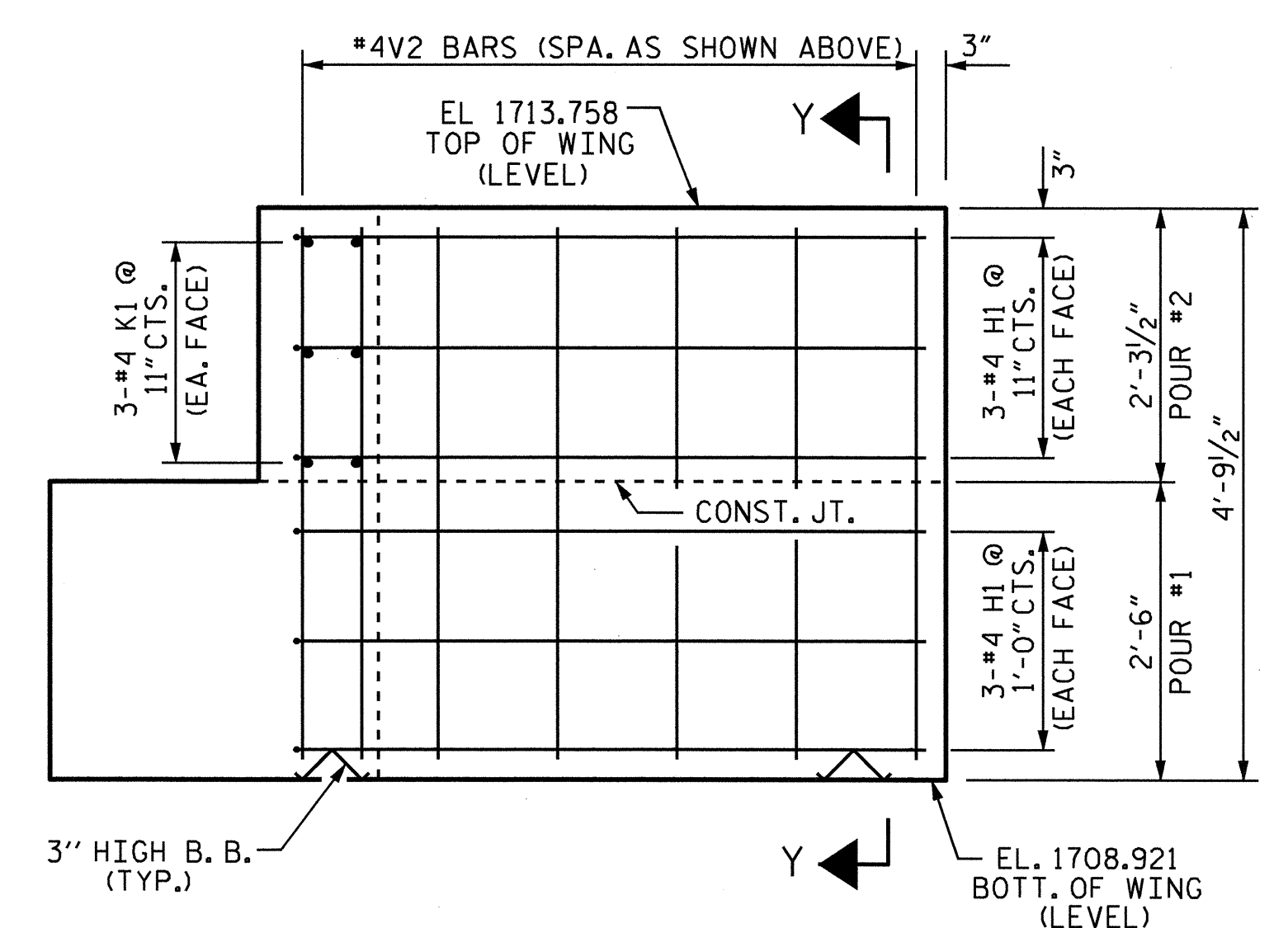
ELEVATION OF WING W1



SECTION X-X



SECTION Y-Y



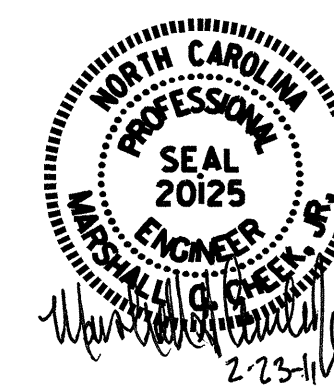
ELEVATION OF WING W2

PROJECT NO. B-4467
CLAY COUNTY
 STATION: 19+09.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

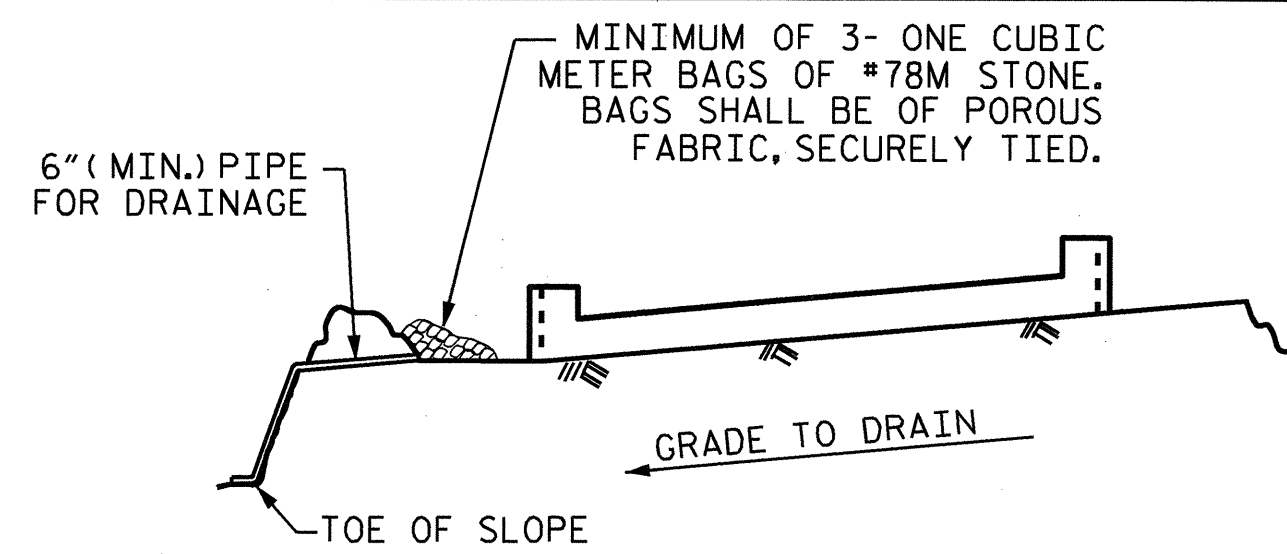
SUBSTRUCTURE
 END BENT NO. 2



DRAWN BY: A. L. FIGUEROA DATE: 04-20-10
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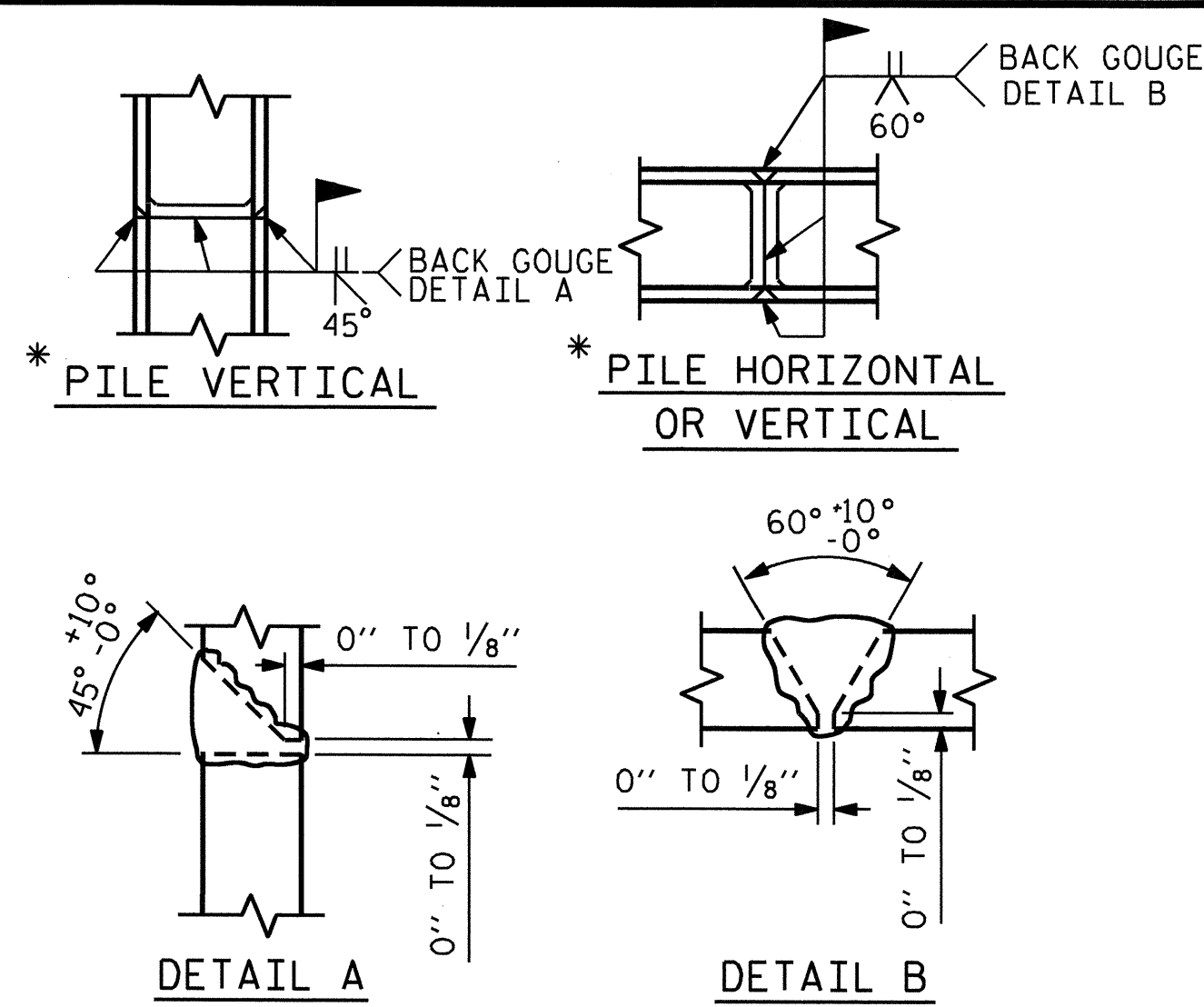


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

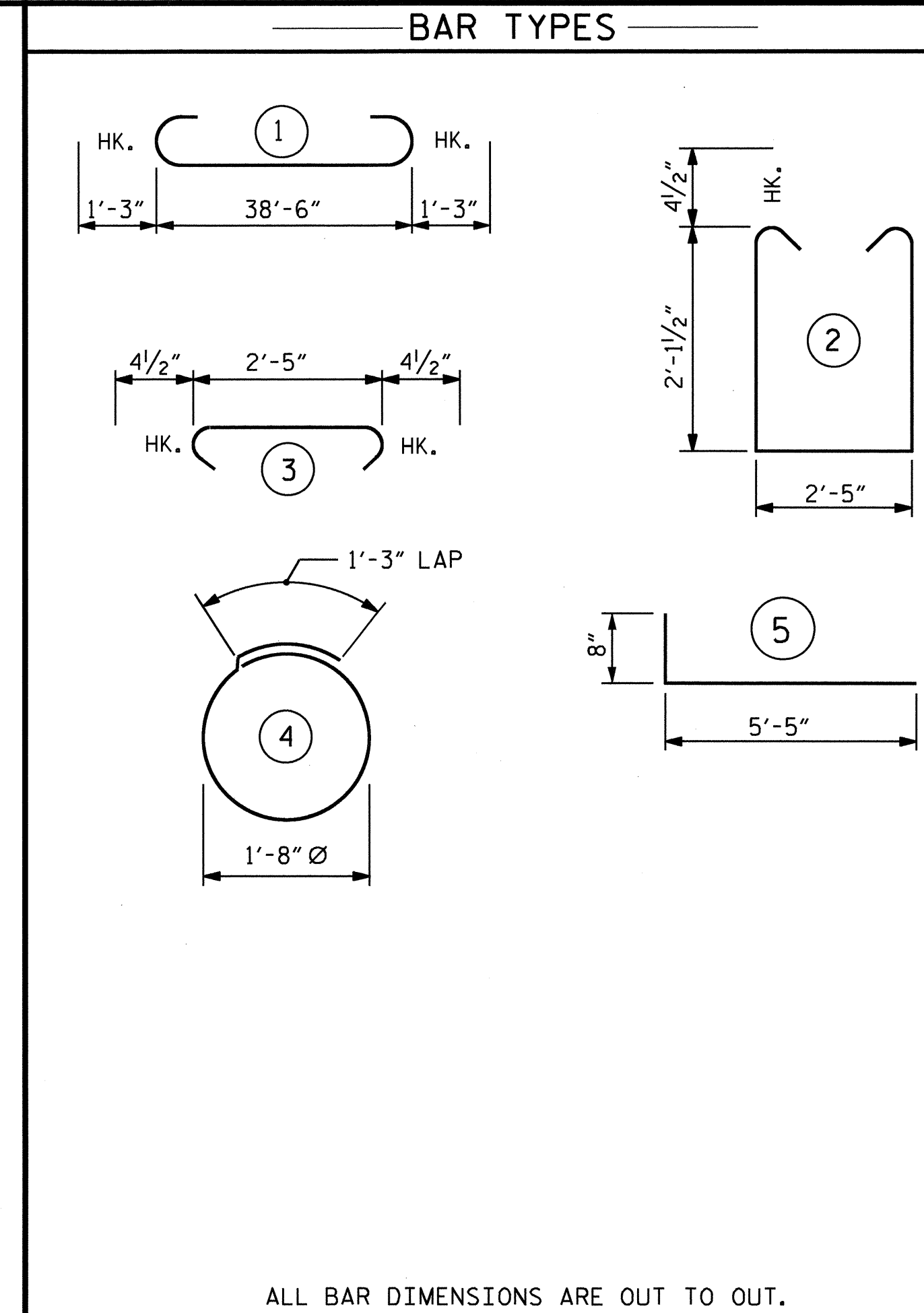
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



* POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT NO. 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-0"	1115
B2	2	#5	STR	38'-8"	81
B3	8	#4	STR	20'-7"	110
B4	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	24	#4	5	6'-1"	98
K1	12	#4	STR	2'-11"	23
S1	38	#4	2	7'-5"	188
S2	38	#4	3	3'-2"	80
S3	10	#4	4	6'-6"	43
V1	20	#4	STR	4'-8"	62
V2	20	#4	STR	4'-4"	58

REINFORCING STEEL = 1,924 LBS.

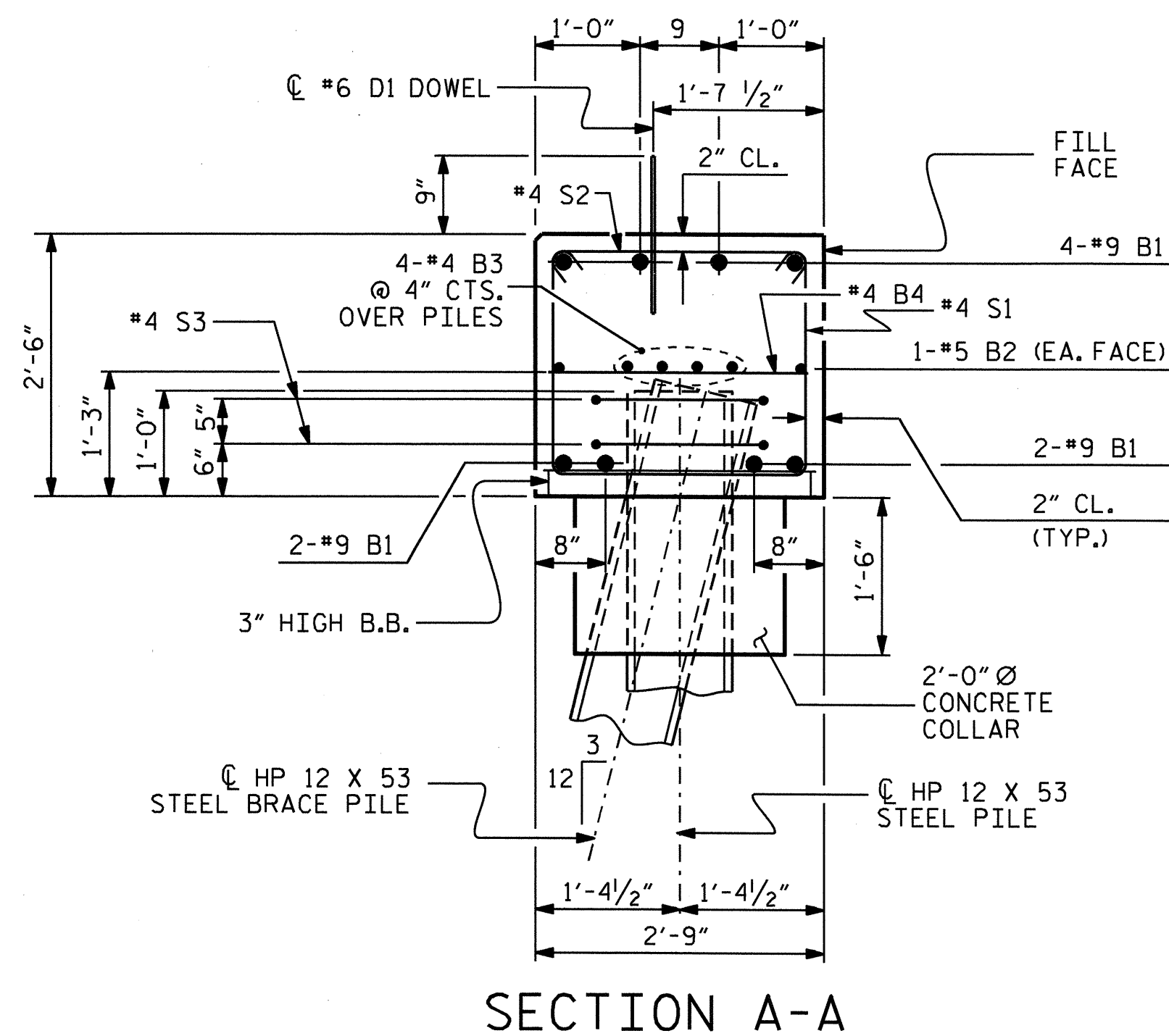
CLASS A CONCRETE

POUR #1: CAP, BOTTOM PORTION OF WINGS, & COLLARS 11.7 C.Y.

POUR #2: TOP OF WINGS 1.5 C.Y.

TOTAL CLASS A CONCRETE 13.2 C.Y.

HP 12 X 53 STEEL PILES NO. 5 LIN. FT. 325



SECTION A-A

PROJECT NO. B-4467

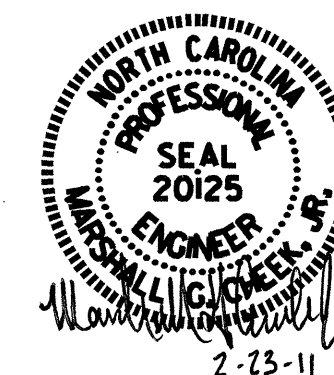
CLAY COUNTY

STATION: 19+09.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

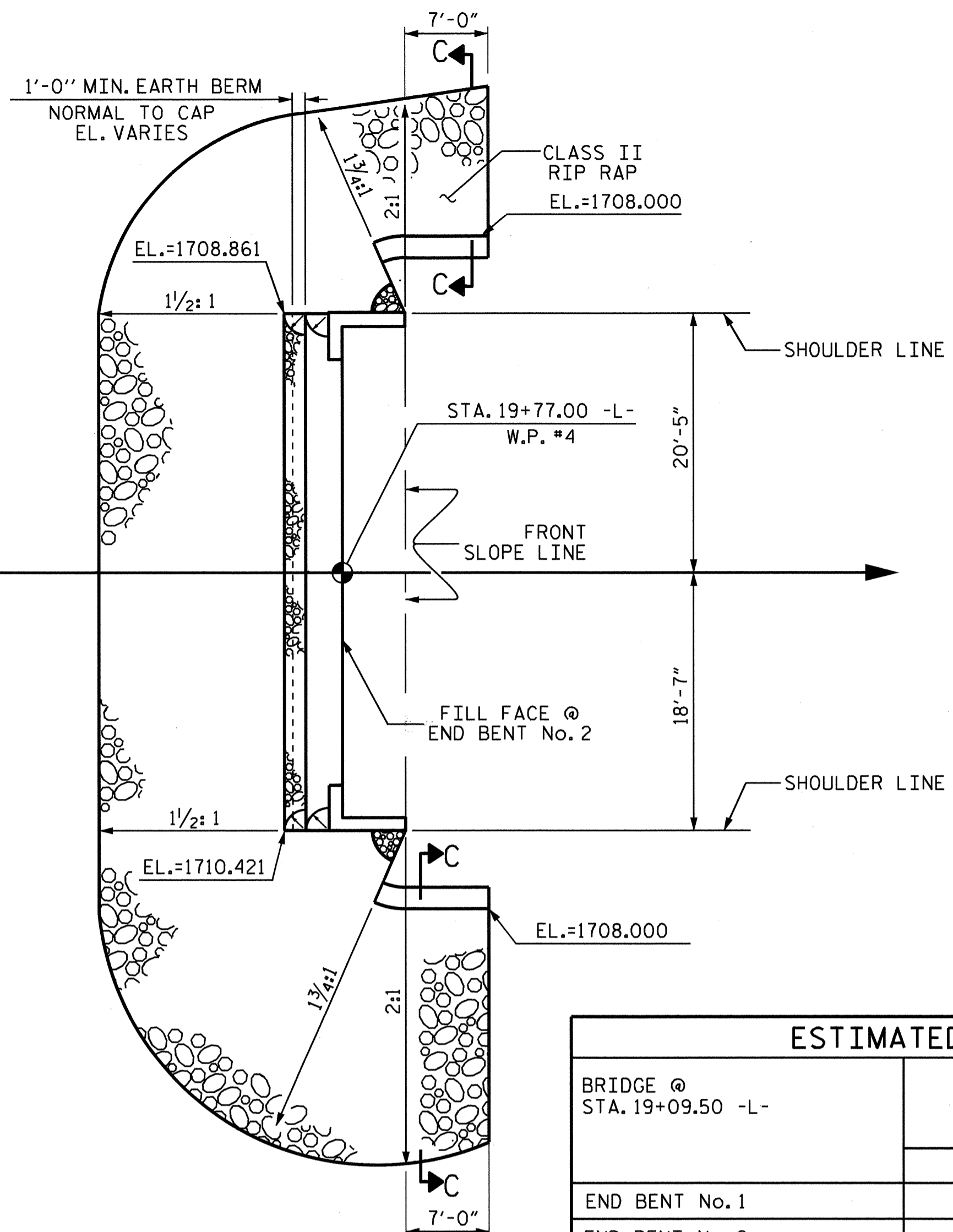
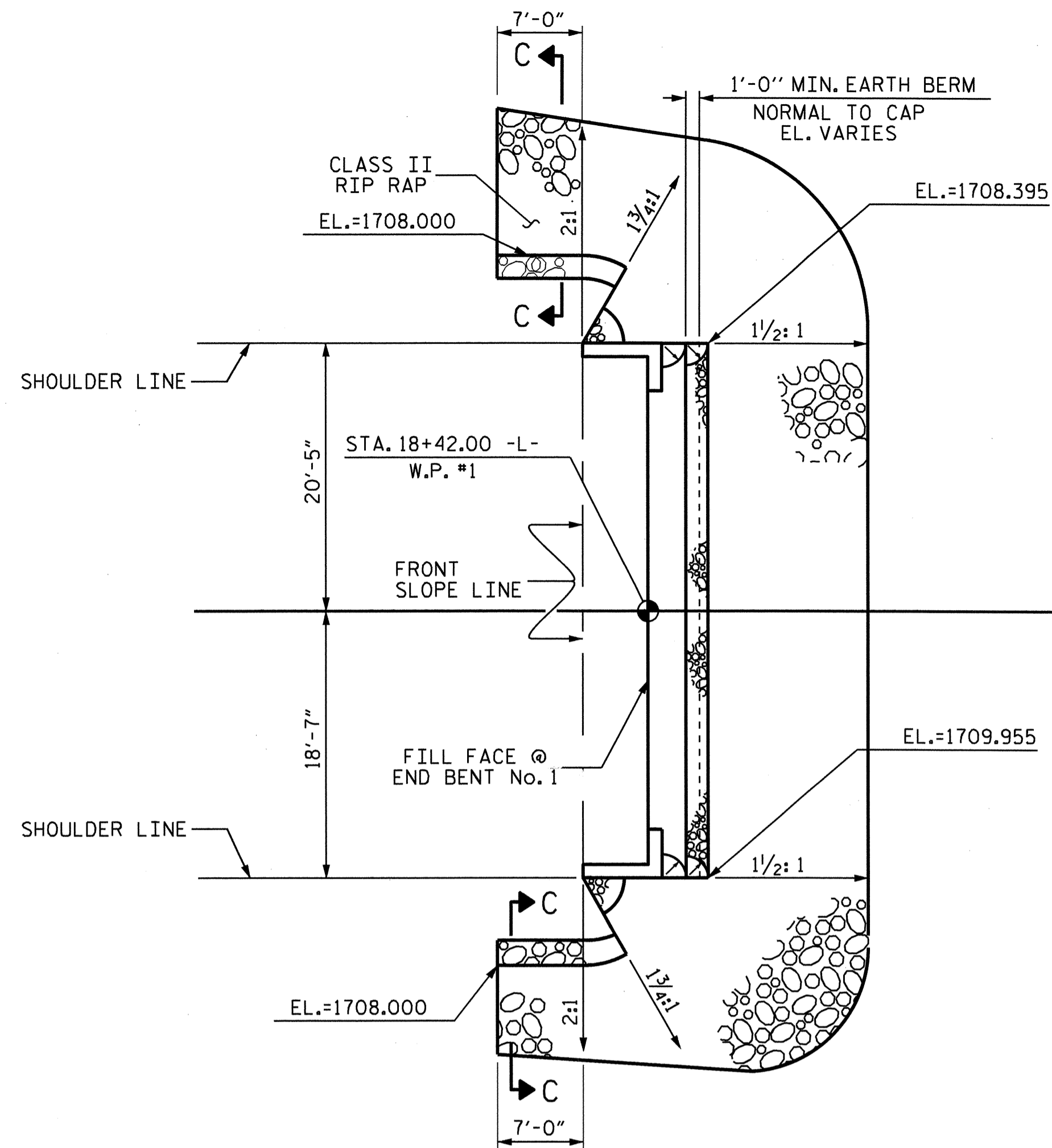
SUBSTRUCTURE
END BENT NO. 2



DRAWN BY: A.L. FIGUEROA DATE: 04-20-10
CHECKED BY: M.E. POOLE DATE: 04-10

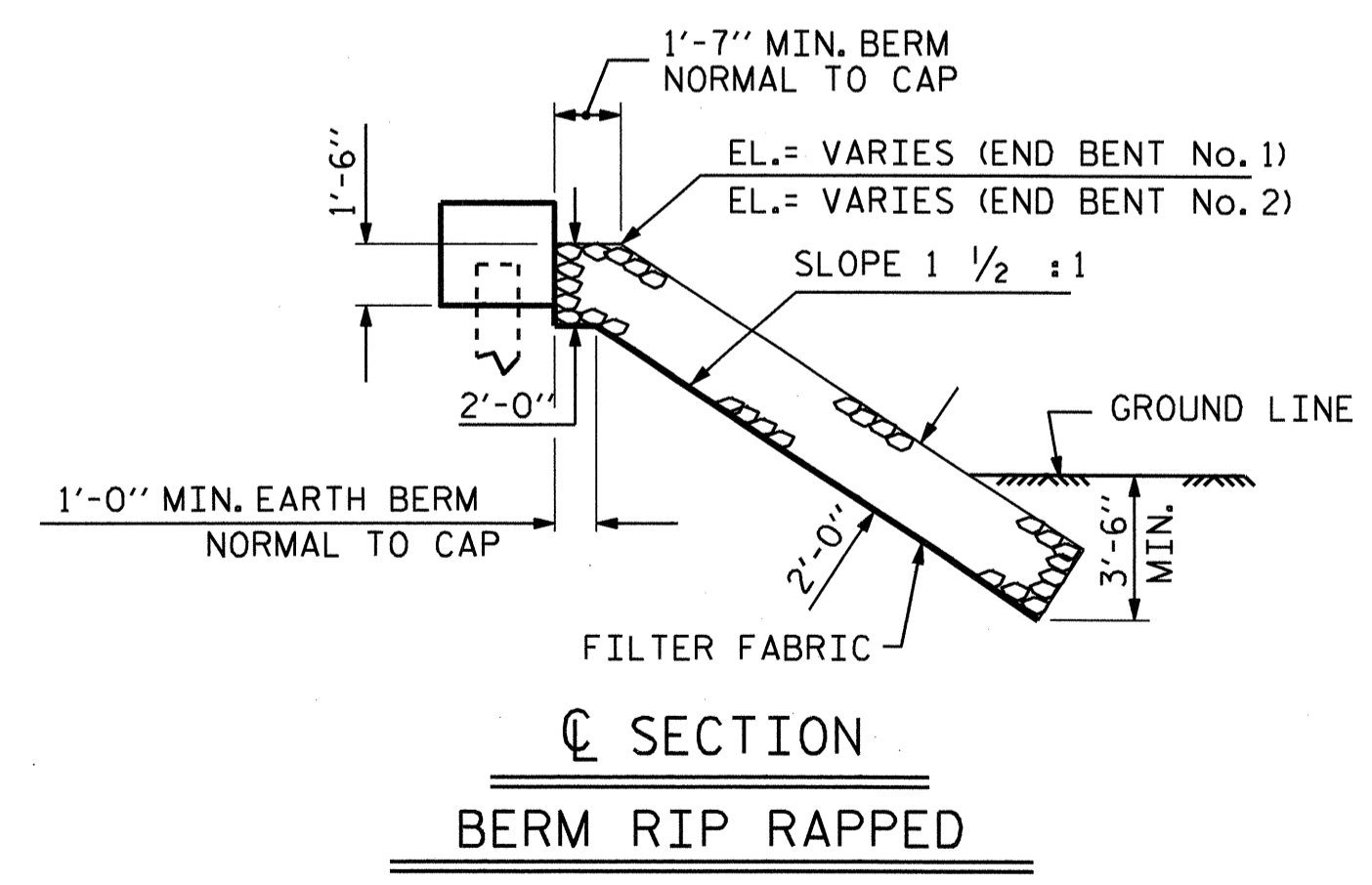
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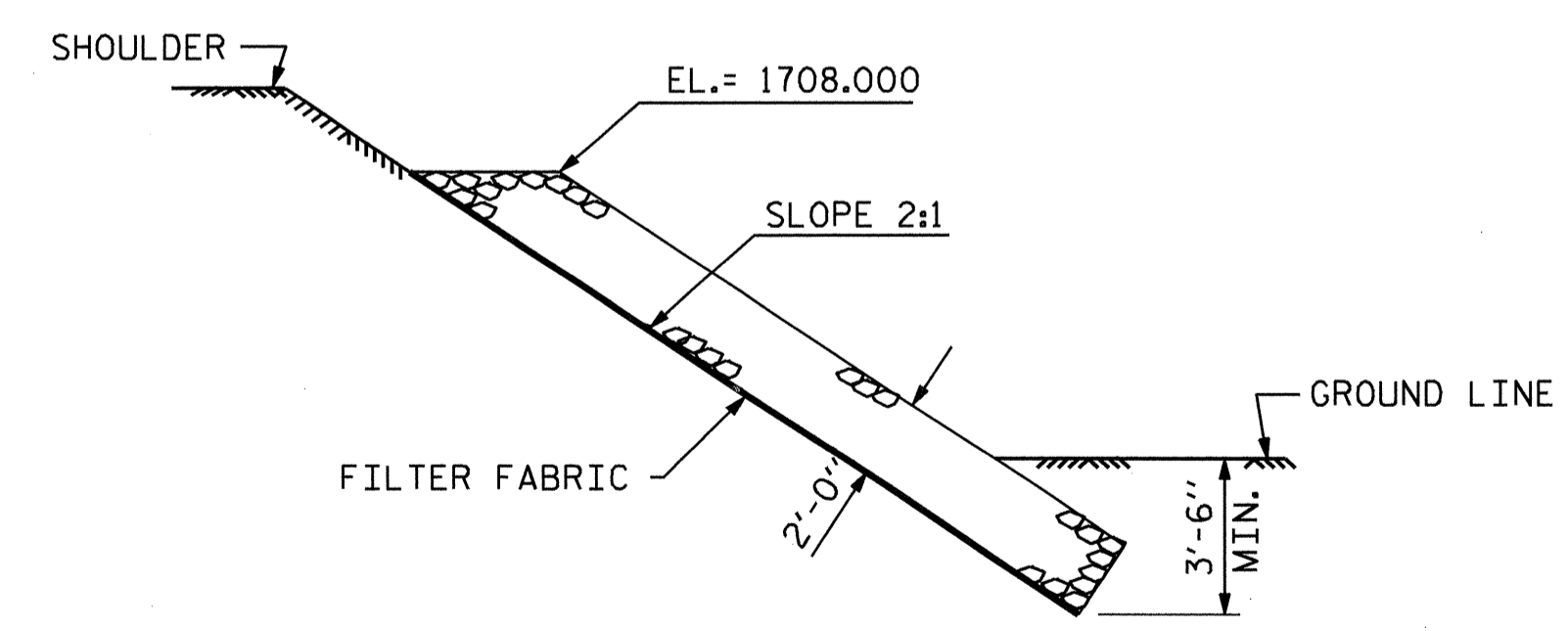


PLAN

ESTIMATED QUANTITIES		
BRIDGE @ STA. 19+09.50 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT No. 1	71	79
END BENT No. 2	90	100



SECTION C-C
BERM RIP RAPPED



SECTION C-C

PROJECT NO. B-4467
CLAY COUNTY
 STATION: 19+09.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

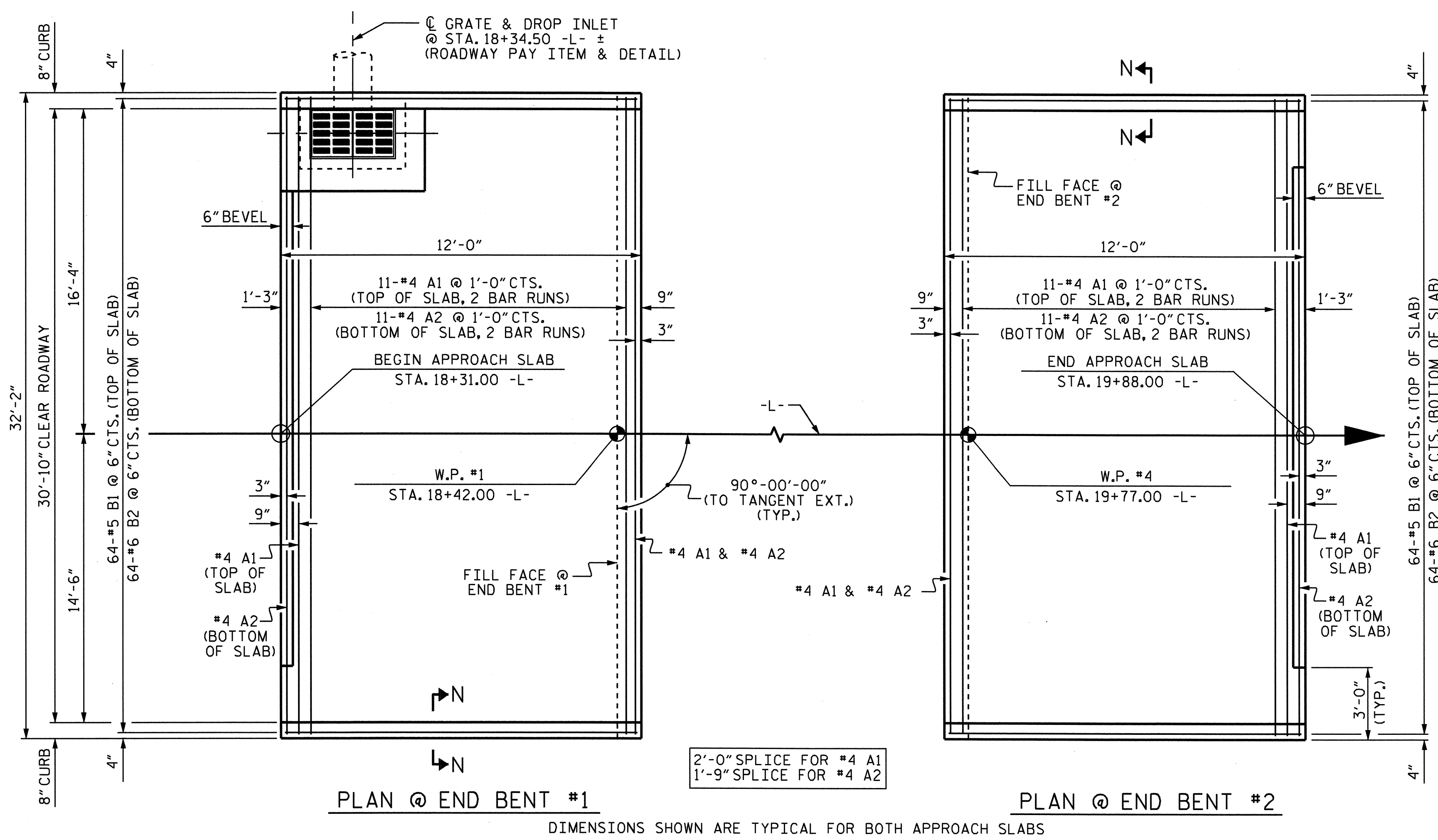
STANDARD
 RIP RAP DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			5-20
2			4			22



DRAWN BY : A.L. FIGUEROA DATE : 04/29/10
 CHECKED BY : D. HODGE DATE : 12/10
 DRAWN BY : FCJ 2/88 REV. 8/16/99 RWW/LES
 CHECKED BY : ARB 8/88 REV. 10/17/00 RWW/LES
 REV. 5/1/06 TLA/GM

22-FEB-2011 14:15
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 wjharris



NOTES

FOR BRIDGE APPROACH FILL INCLUDING FABRIC, 4" Ø DRAINAGE PIPE, AND #78M STONE BACKFILL, SEE ROADWAY PLANS.

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

FABRIC SHALL BE TYPE I ENGINEERING FABRIC IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

#78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

#78M STONE BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

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

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

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

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

FOR JOINT DETAILS, SEE "PRESTRESSED CONCRETE CORED SLAB UNIT" SHEETS.

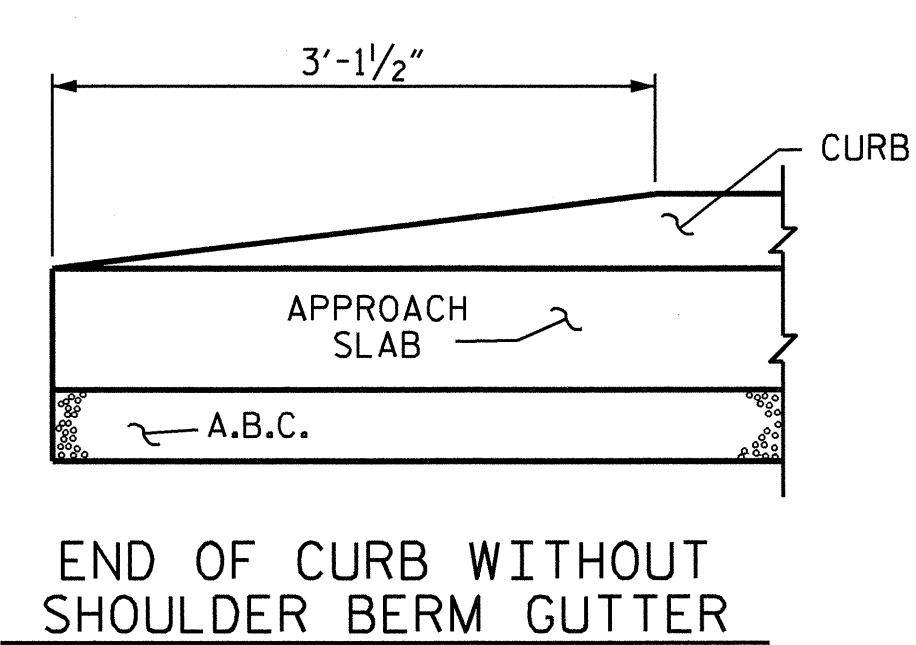
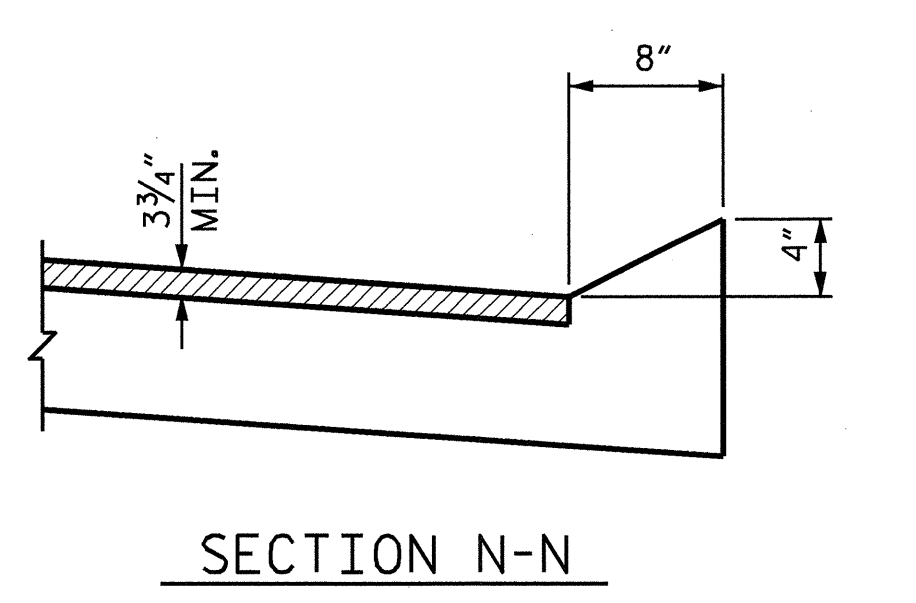
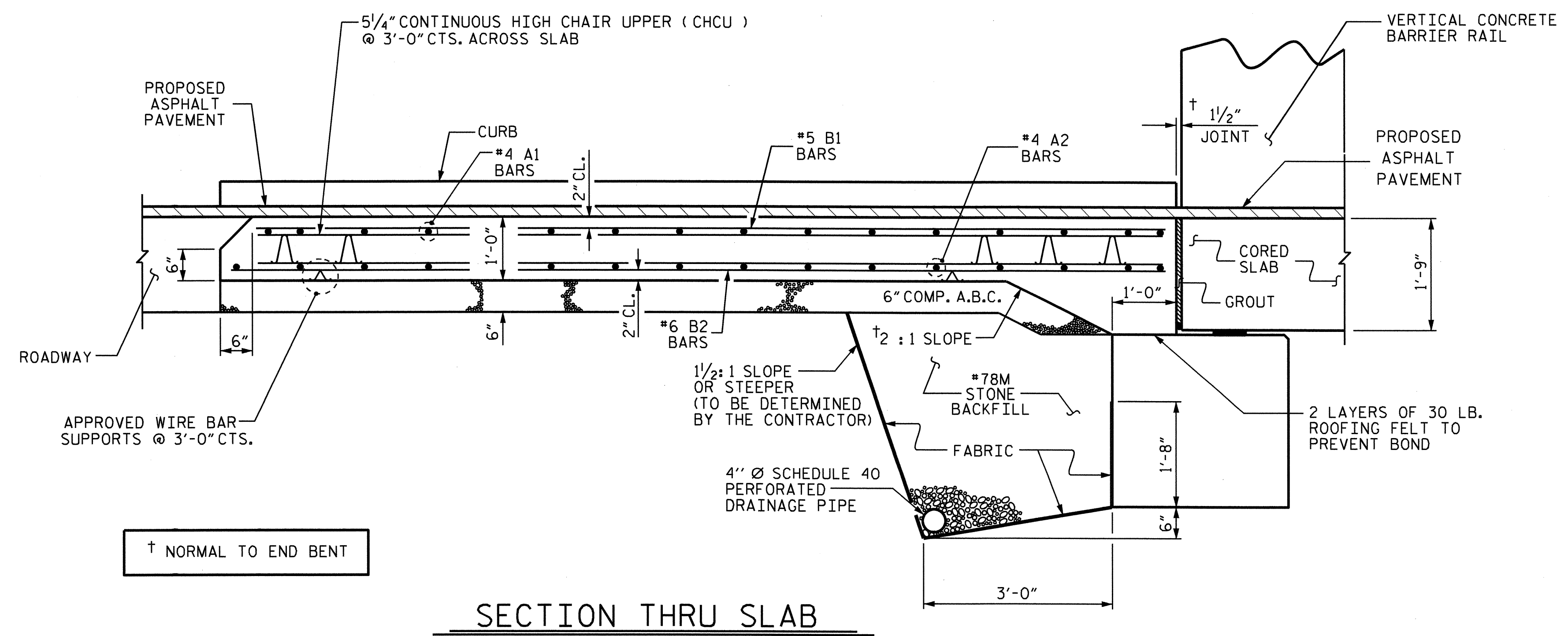
THE JOINT AT THE END BENT SHALL BE GROUTED AS SOON AS PRACTICAL AFTER THE CONSTRUCTION OF THE APPROACH SLABS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

REINFORCING STEEL SHALL BE FIELD CUT IN ORDER TO MAINTAIN A 2" MINIMUM CLEARANCE TO THE DROP INLET. SEE ROADWAY PLANS FOR DROP INLET REINFORCING STEEL AND DETAILS.

BILL OF MATERIAL					
APPROACH SLAB AT EB #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	26	#4	STR	16'-11"	294
A2	26	#4	STR	16'-10"	292
*B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1413
*EPOXY COATED REINFORCING STEEL				LBS.	1039
CLASS AA CONCRETE				C. Y.	16.0
APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	26	#4	STR	16'-11"	294
A2	26	#4	STR	16'-10"	292
*B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1413
*EPOXY COATED REINFORCING STEEL				LBS.	1039
CLASS AA CONCRETE				C. Y.	16.0

* THESE BARS ARE EPOXY COATED



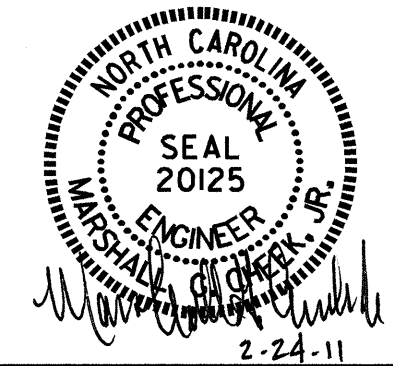
PROJECT NO. B-4467
 CLAY COUNTY
 STATION: 19+09.50 -L-

SHEET 1 OF 2

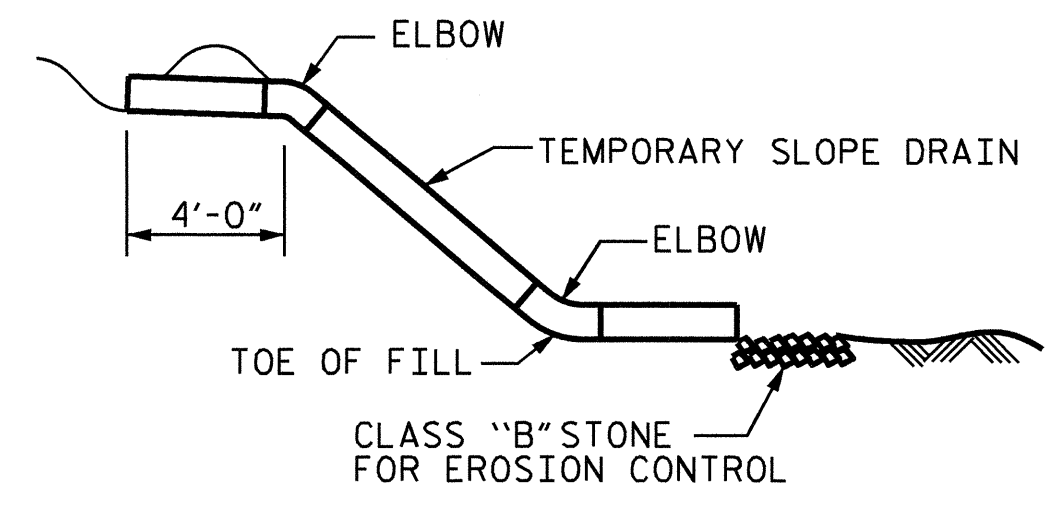
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 CORED SLAB UNIT
 (SUB-REGIONAL TIER)

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

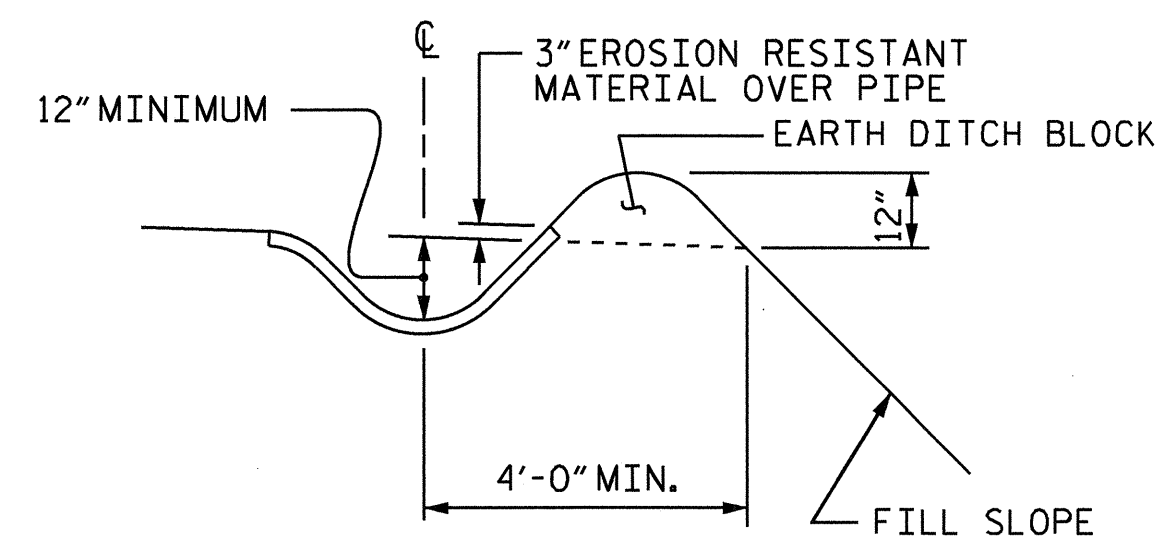
TOTAL SHEETS: 22



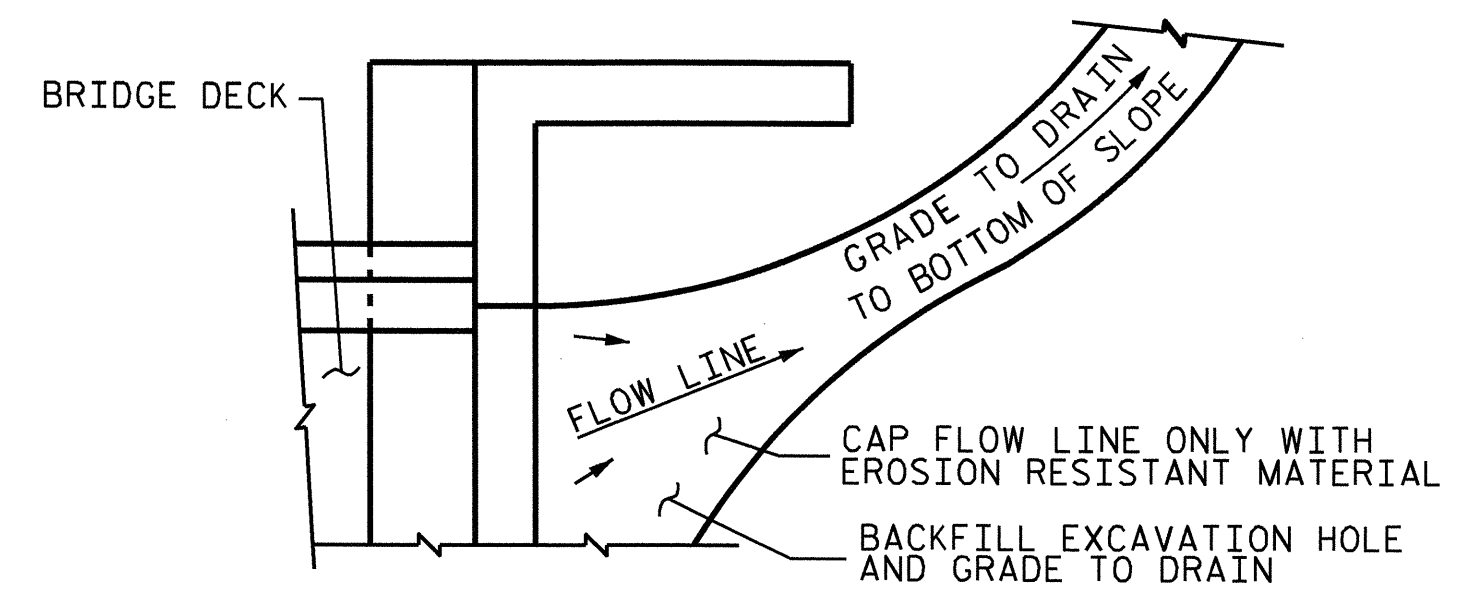
ASSEMBLED BY : A.L.FIGUEROA DATE : 04/21/10
 CHECKED BY : M.G.CHEEK DATE : 08/31/10
 DRAWN BY : KMM 3-08
 CHECKED BY : GM 3-08



SECTION R-R

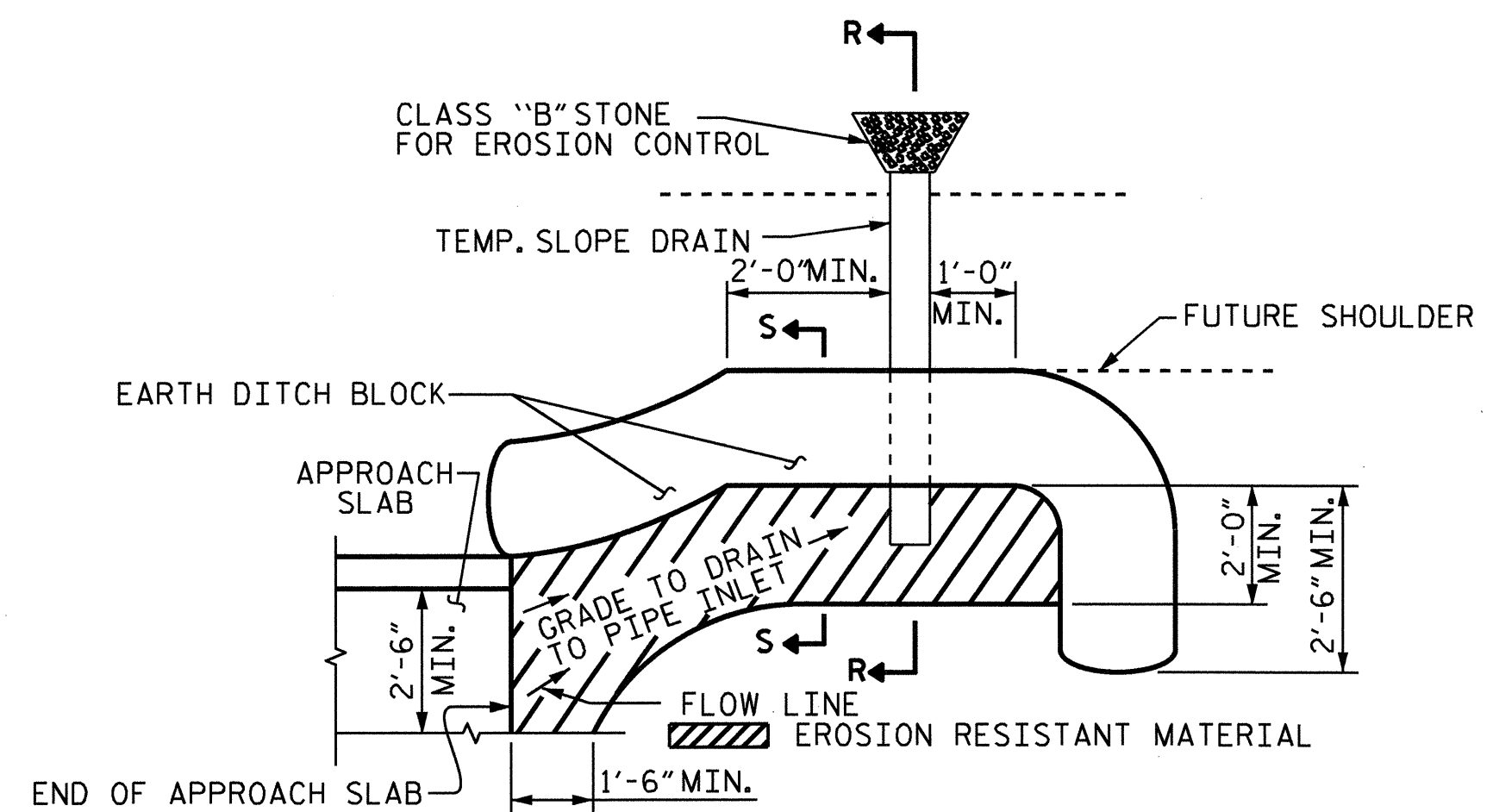


SECTION S-S



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

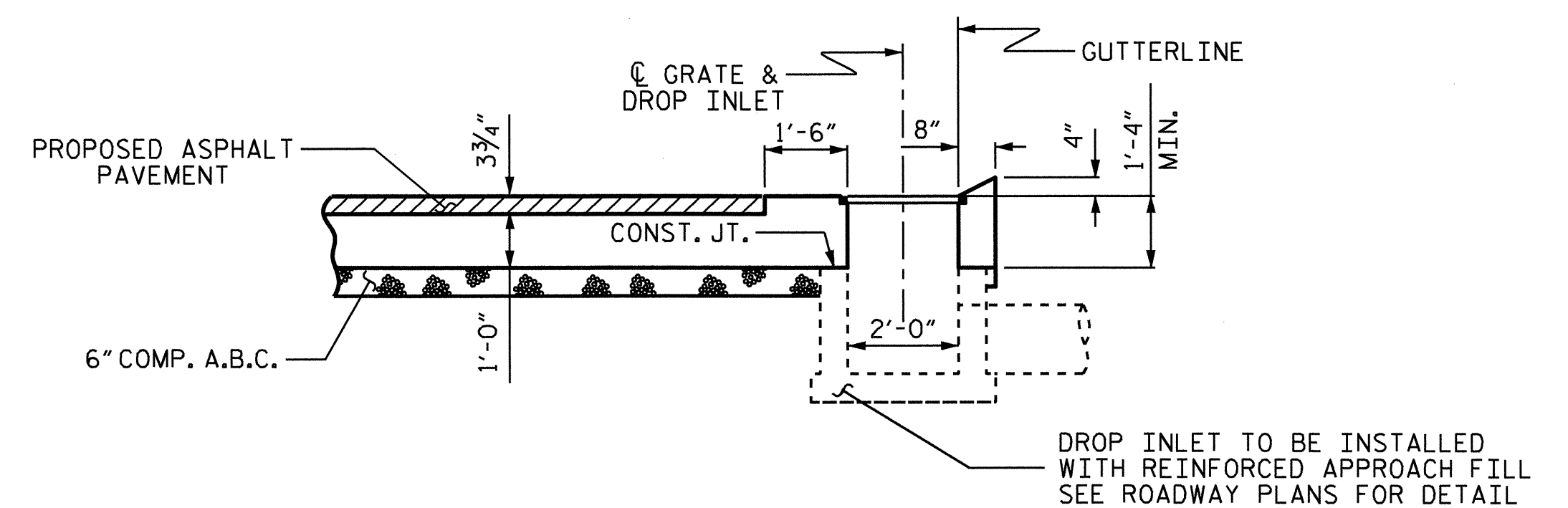
TEMPORARY DRAINAGE DETAIL



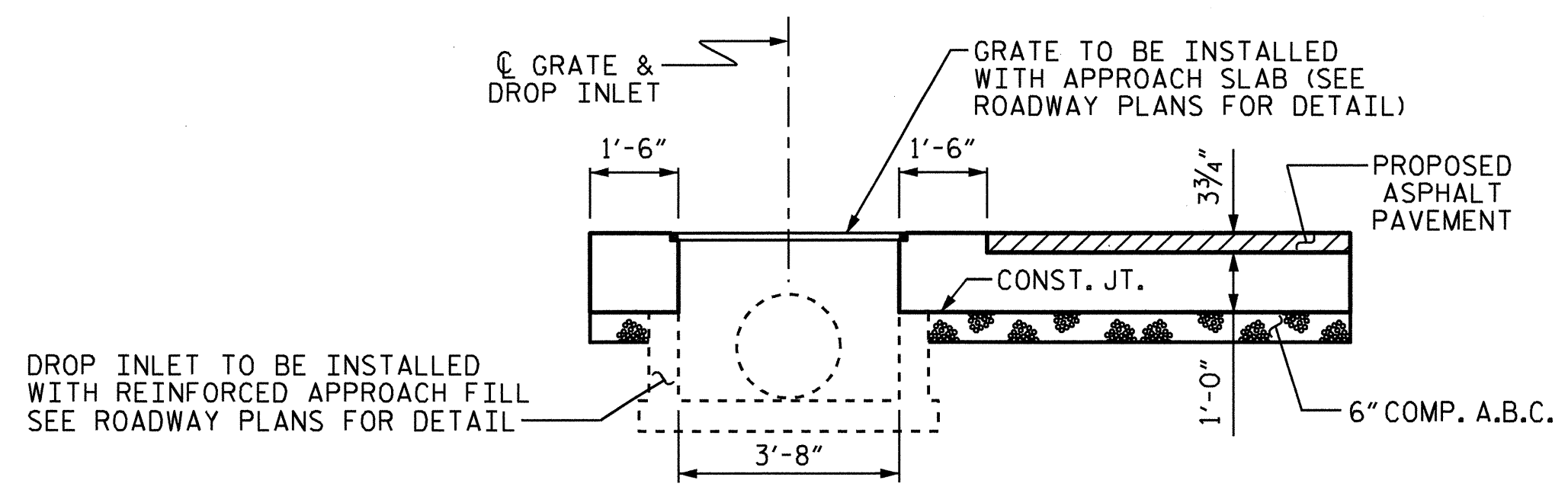
NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

PLAN VIEW

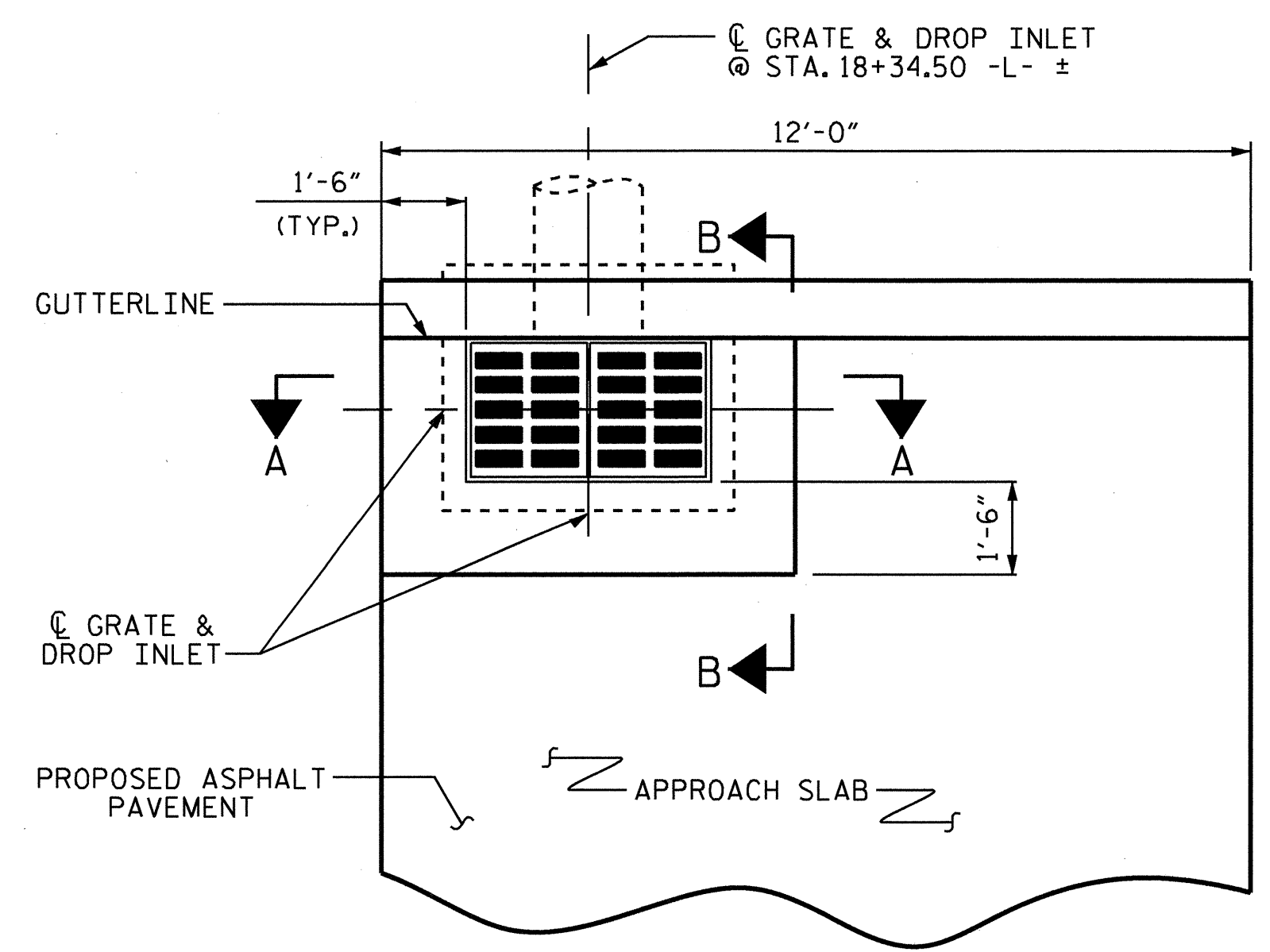
TEMPORARY BERM AND SLOPE DRAIN DETAILS



SECTION B-B



SECTION A-A

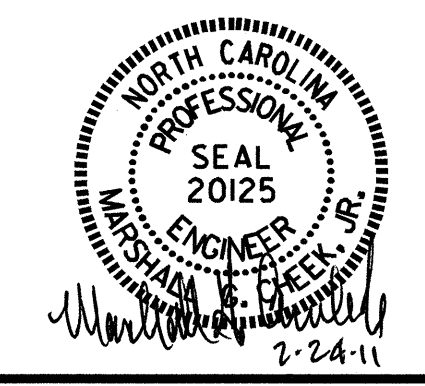


TYPICAL PART PLAN

PROJECT NO. B-4467
 CLAY COUNTY
 STATION: 19+09.50 -L-

SHEET 2 OF 2

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



ASSEMBLED BY : A.L.FIGUEROA	DATE : 04/21/10
CHECKED BY : M.G.CHEEK	DATE : 08/31/10
DRAWN BY : FCJ 6/87	REV. 7/10/01 LES/RDR
CHECKED BY : EGA 6/87	REV. 5/7/03R RWW/JTE
	REV. 5/1/06R KMM/GM

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

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 2006 "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