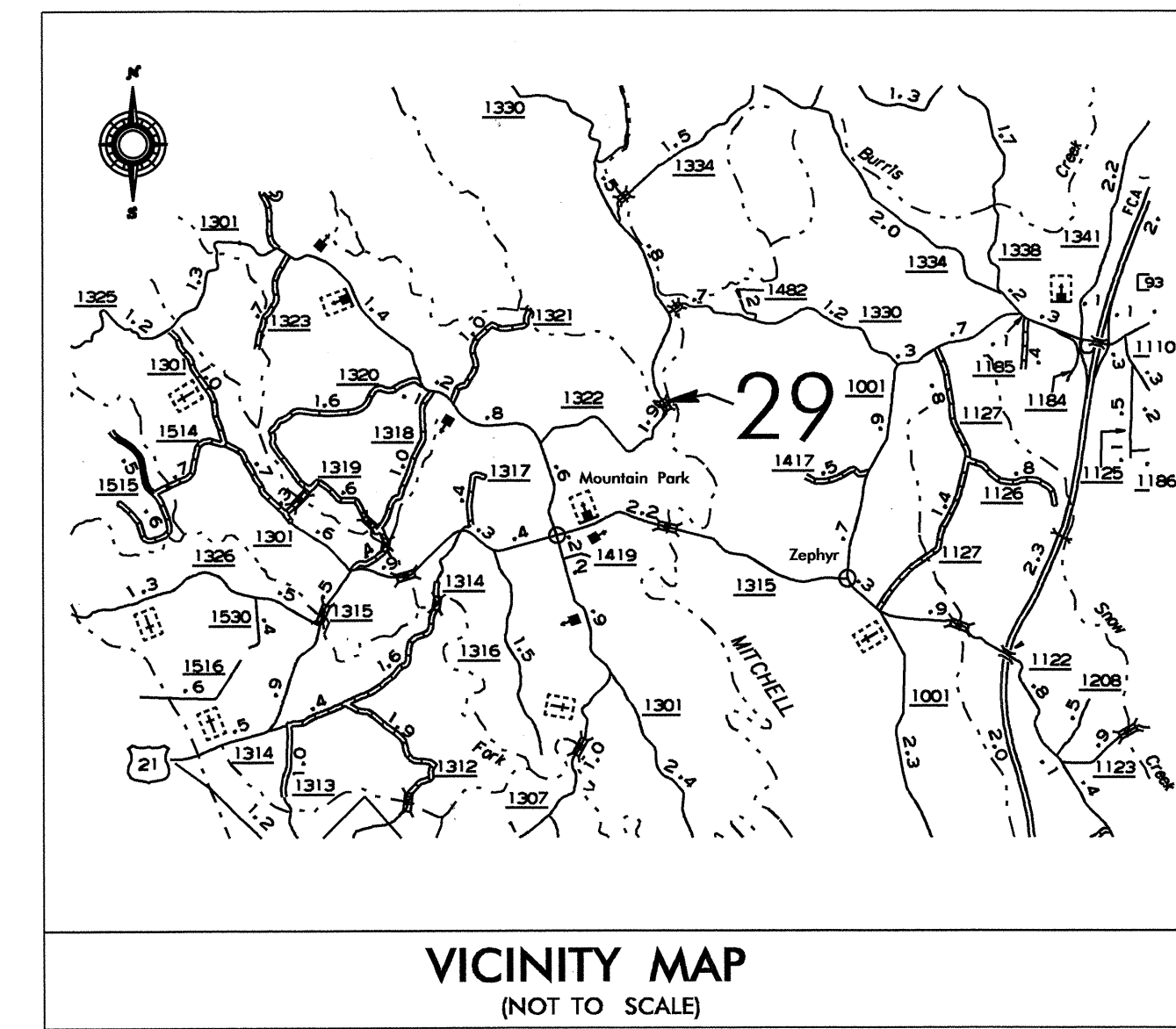


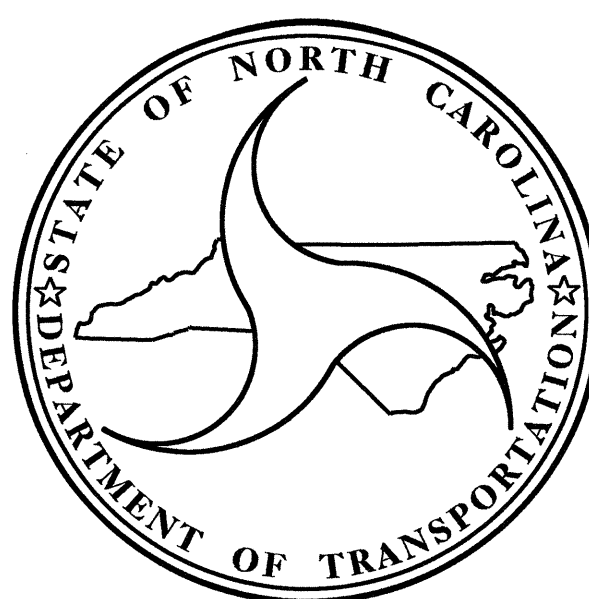
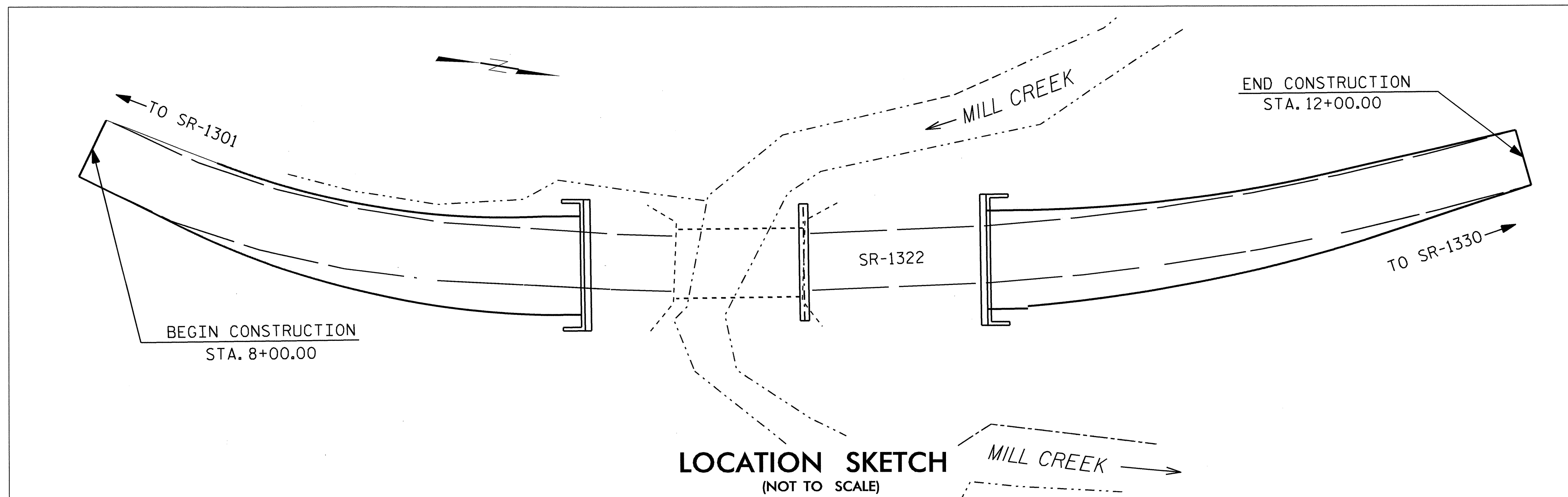
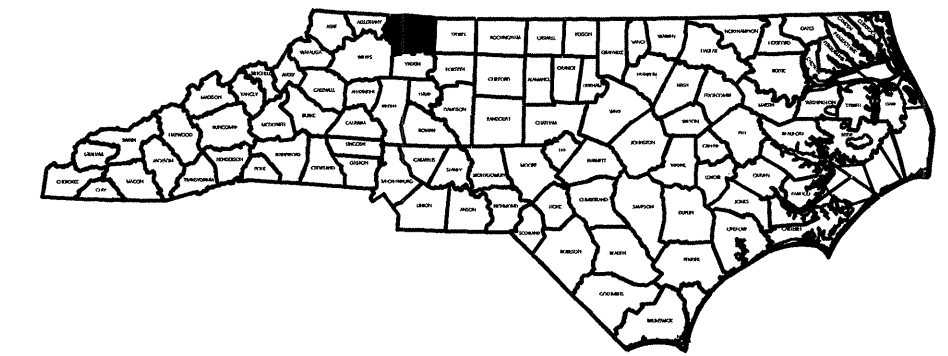
	\$DATE\$	\$TIME\$
\$FILE\$		



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
=====

LOCATION: BRIDGE NO. 29 ON SR-1322 (DEVOTION RD)
OVER MILL CREEK
TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	33623.1.1		
STATE PROJECT NO.	F. A. PROJ. NO.	DESCRIPTION	
33623.1.1	BRZ-1322 (5)	PE	
33623.2.1	BRZ-1322 (5)	UTIL & R / W	
33623.3.1	BRZ-1322 (5)	CONSTR	



DESIGN DATA

ADT 2009 = 320
(CURRENT YEAR)

ADT 2025 = 640
(DESIGN YEAR)

PROJECT LENGTH

LENGTH ROADWAY PROJECT = 0.056 MI
LENGTH STRUCTURE PROJECT = 0.020 MI
TOTAL LENGTH PROJECT = 0.076 MI

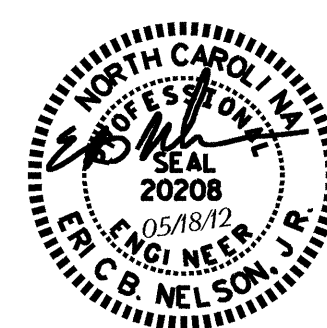
Prepared In the Office of:
STRUCTURES MANAGEMENT UNIT
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

LETTING DATE:
JULY 31, 2012

RICK NELSON, PE
PROJECT ENGINEER

ZAKE Wafa, P.E.
PROJECT MANAGEMENT ENGINEER

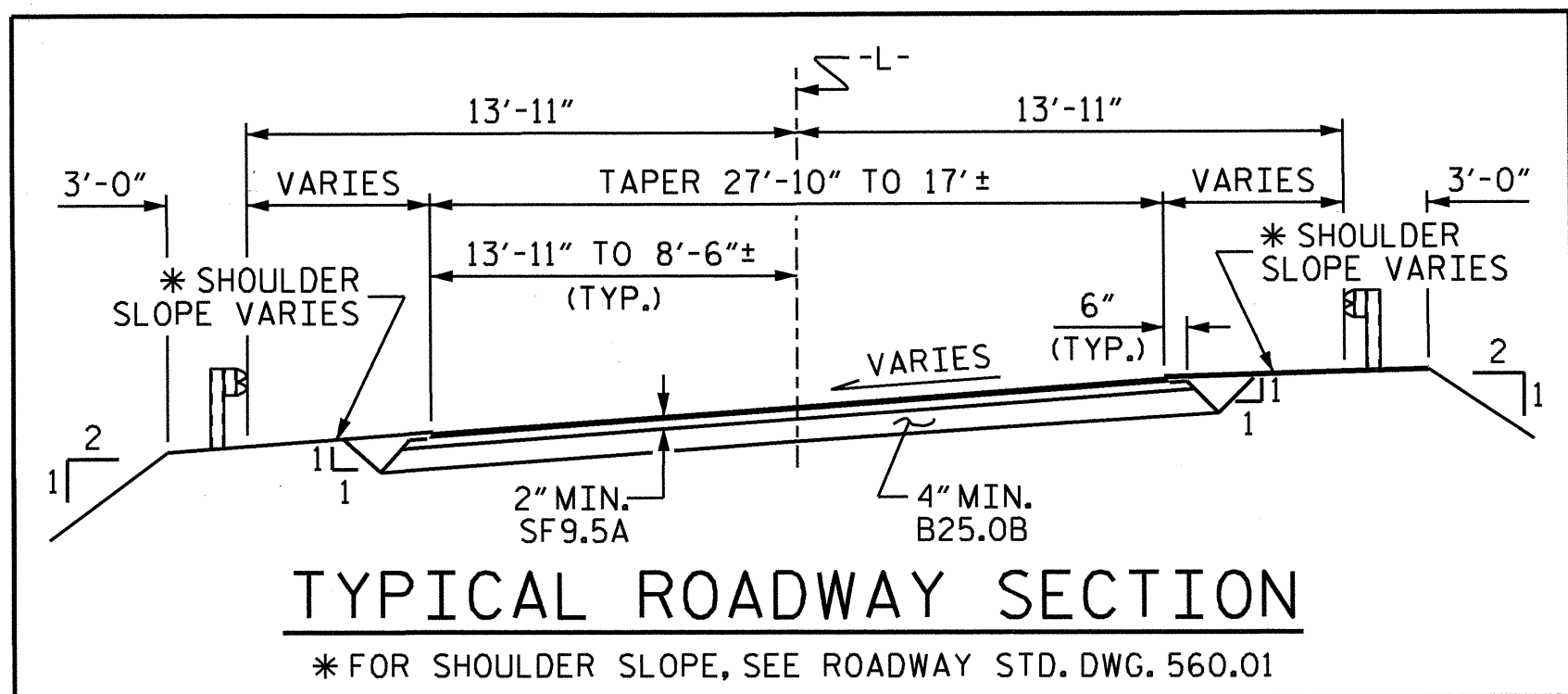


RICK NELSON, PE

①
MENDENHALL JAMES B.
MENDENHALL SPEAS CAROL M.
699 DEVOTION RD.
THURMOND, NC 28683
DEED BOOK 396 PG 950

EXISTING BRIDGE #29

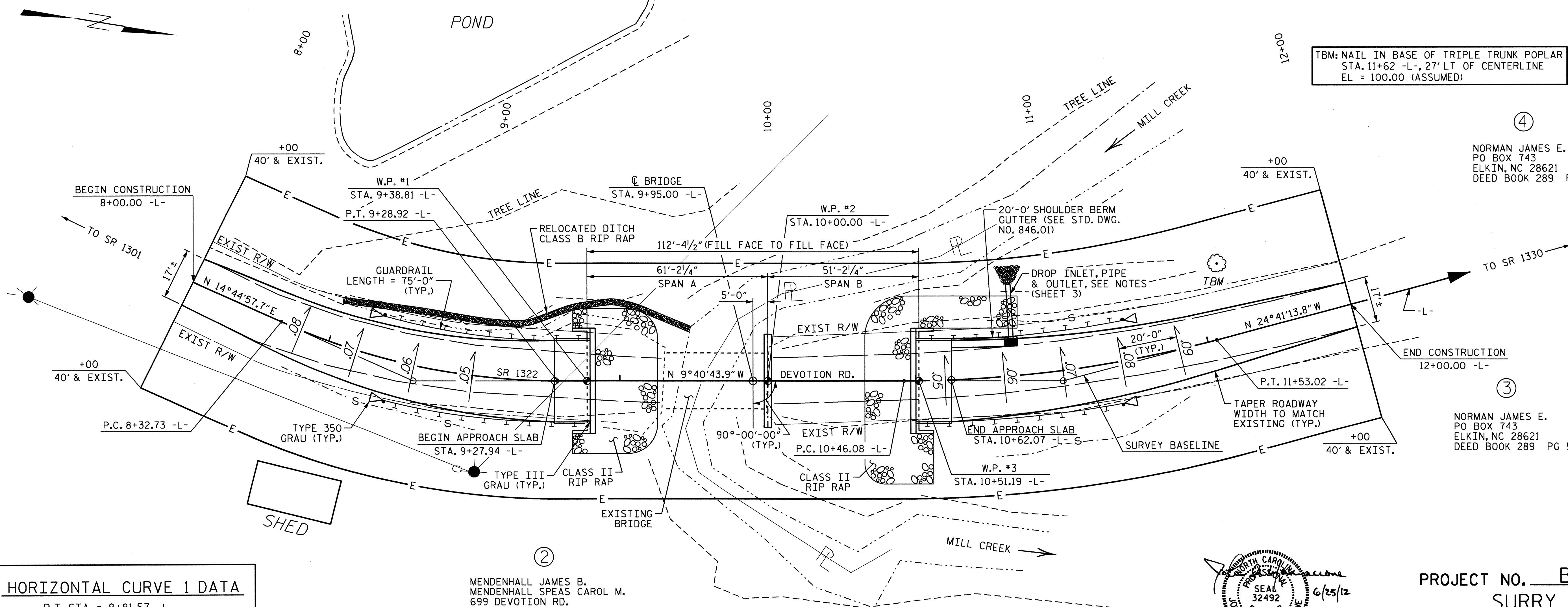
19'-2" CLEAR ROADWAY
SPANS: 1 @ 36'-4"
TIMBER DECK ON STEEL I-BEAMS
END BENTS: REINFORCED CONCRETE
FULL RETAINING ABUTMENTS.



TBM: NAIL IN BASE OF TRIPLE TRUNK POPLAR
STA. 11+62 -L-, 27' LT OF CENTERLINE
EL = 100.00 (ASSUMED)

④
NORMAN JAMES E.
PO BOX 743
ELKIN, NC 28621
DEED BOOK 289 PG 52

③
NORMAN JAMES E.
PO BOX 743
ELKIN, NC 28621
DEED BOOK 289 PG 52



HORIZONTAL CURVE 1 DATA

P.I. STA. = 8+81.57 -L-
Δ = 24°-25'-37" (L.T.)
D = 25°-23'-43"
L = 96.19'
T = 48.84'
R = 225.61'

HORIZONTAL CURVE 2 DATA

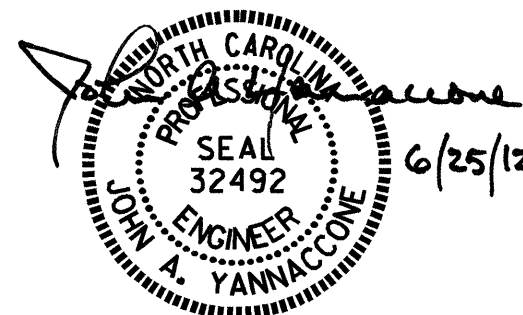
P.I. STA. = 10+99.86 -L-
Δ = 15°-00'-32" (L.T.)
D = 14°-02'-05"
L = 106.94'
T = 53.78'
R = 408.24'

②
MENDENHALL JAMES B.
MENDENHALL SPEAS CAROL M.
699 DEVOTION RD.
THURMOND, NC 28683
DEED BOOK 396 PG 950

CLASS II
RIP RAP

I.S.B.D

EXISTING RIGHT OF WAY INFORMATION
MAINTAINED LIMITS 15'
LEFT AND RIGHT OF
EXISTING ROADWAY CENTER LINE



PROJECT NO. B-4284
SURRY COUNTY
STATION: 9+95.00 -L-

SHEET 1 OF 3 REPLACES BRIDGE NO. 29

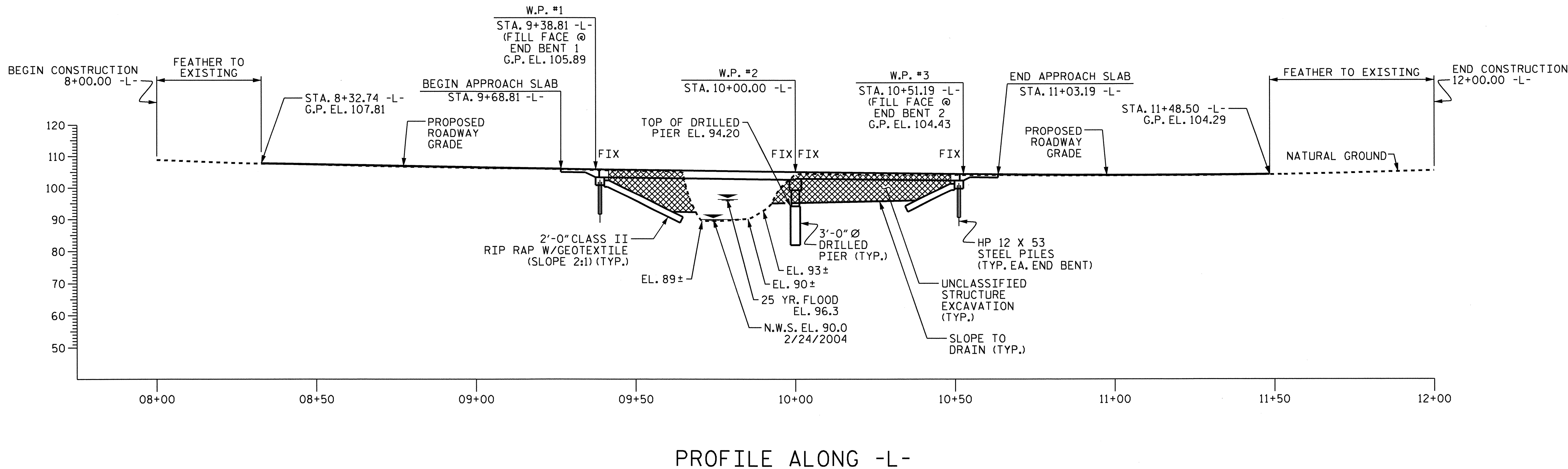
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER MILL
CREEK ON SR 1322
(DEVOTION RD) BETWEEN
SR 1301 AND SR 1330

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			1
2			4			19

DRAWN BY : J. A. YANNACCONI DATE : 2/24/12
CHECKED BY : R. N. WEISZ DATE : 4/20/12



HYDRAULIC DATA

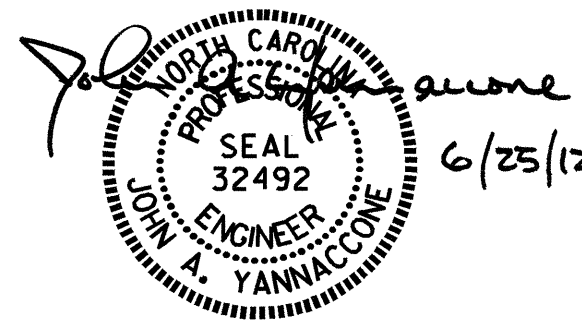
DESIGN DISCHARGE 1,450 CFS
 FREQUENCY OF DESIGN FLOOD 25 YRS.
 DESIGN HIGH WATER ELEVATION 96.3'
 DRAINAGE AREA 5.6 SQ. MI.
 BASIC DISCHARGE (Q100) 2,200 CFS
 BASIC HIGH WATER ELEVATION 97.7'

OVERTOPPING FLOOD DATA

FREQUENCY OF OVERTOPPING FLOOD 500 YRS.
 OVERTOPPING FLOOD ELEVATION 103.7'

PROJECT NO. B-4284
SURRY COUNTY
 STATION: 9+95.00 -L-

SHEET 2 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE OVER MILL CREEK ON SR 1322 (DEVOTION RD) BETWEEN SR 1301 AND SR 1330

DRAWN BY : J.A. YANNACCONI DATE : 2/24/12
 CHECKED BY : R.N. WEISZ DATE : 4/20/12

22-JUN-2012 16:37
 K:\TIP\Projects\B4284\Structures\FINAL\B4284.SD.GD.dgn
 JAYannaccone

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			2
2			4			TOTAL SHEETS 19

TOTAL BILL OF MATERIAL																								
	REMOVAL OF EXISTING STRUCTURE @ 9+95.00 -L-	3'-0"Ø DRILLED PIERS IN SOIL	3'-0"Ø DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 3'-0"Ø DRILLED PIERS	SID INSPECTIONS	SPT TESTING	CSL TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	HP 12 X 53 STEEL PILES	PILE EXCAVATION IN SOIL	PILE EXCAVATON NOT IN SOIL	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLABS			
	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	LBS.	NO.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	TONS	SQ. YD.	LUMP SUM	NO.	LIN. FT.	NO.	LIN. FT.
SUPERSTRUCTURE																220.25			LUMP SUM	10	500	10	600	
END BENT 1									13.3		1,977		5	50				130	145					
BENT 1		15.75	21.00	15.6					15.3		6,661	959												
END BENT 2									13.1		1,977		5	50	20	25		170	190					
TOTAL	LUMP SUM	15.75	21.00	15.6	1	1	1	LUMP SUM	41.7	LUMP SUM	10,615	959	10	100	20	25	220.25	300	335	LUMP SUM	10	500	10	600

NOTES

ASSUMED LIVE LOAD = HL 93 OR ALTERNATE LOADING.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

FOR OTHER DESIGN DATA AND GENERAL NOTES,SEE SHEET SN.

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

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

FOR CRANE SAFETY,SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS,SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK,SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES,SEE SPECIAL PROVISIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT.EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER.THIS WORK WILL BE PAID FOR BY THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION.SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

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.PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

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 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.

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 AT STATION 9+95.00 -L-."

THE QUANTITY OF RIP RAP TO BE PAID FOR WILL BE THE ACTUAL NUMBER OF TONS OF EACH CLASS OF RIP RAP WHICH HAS BEEN INCORPORATED INTO THE COMPLETED AND ACCEPTED WORK.THE RIP RAP WILL BE MEASURED BY BEING WEIGHED IN TRUCKS ON CERTIFIED PLATFORM SCALES OR OTHER CERTIFIED WEIGHING DEVICES.THE QUANTITY OF RIP RAP WILL BE PAID AT CONTRACT UNIT PRICE PER TON.

FOR UTILITY INFORMATION,SEE SPECIAL PROVISIONS.

INSTALL TRAFFIC BEARING DROP INLET WITH CAST IRON DOUBLE FRAME AND GRATES AND 20 LINEAR FEET OF 18"CMP WITH ELBOWS. INVERT ELEVATION OF DROP INLET SHALL BE 100.50 FT. INSTALL CLASS "B" RIP RAP WITH FILTER FABRIC AT PIPE OUTLET. SEE ROADWAY STANDARD DRAWINGS 840.29, 840.35, 846.04 & 876.02.

PLAIN RIP RAP CLASS II (2'-0"THICK) & GEOTEXTILE.	
END BENT #1	130 TONS & 145 SY GEOTEXTILE
END BENT #2	170 TONS & 190 SY GEOTEXTILE
TOTAL	300 TONS & 335 SY GEOTEXTILE

FOUNDATION NOTES

FOR PILES,SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 85 TONS PER PILE.

DRIVE PILES AT END BENT 1 TO A REQUIRED DRIVING RESISTANCE OF 142 TONS PER PILE.

FOR DRILLED PIERS,SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

DRILLED PIERS AT BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 345.0 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 30.0 TSF.

PERMANENT STEEL CASINGS MAY BE REQUIRED FOR DRILLED PIERS AT BENT 1. IF REQUIRED, DO NOT EXTEND PERMANENT CASINGS BELOW ELEVATION 89.0 FT.WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE ENGINEER WILL DETERMINE THE NEED FOR PERMANENT STEEL CASINGS.

INSTALL DRILLED PIERS AT BENT 1 THAT EXTEND TO AN ELEVATION NO HIGHER THAN 82.0 FT.;; SATISFY THE REQUIRED TIP RESISTANCE AND HAVE A PENETRATION OF AT LEAST 6 FT.INTO ROCK AS DEFINED BY ARTICLE 411-1 OF THE STANDARD SPECIFICATIONS.

THE SCOUR CRITICAL ELEVATION FOR BENT 1 IS ELEVATION 87.0 FT. THE SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

SID INSPECTIONS MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTIONS. FOR SID INSPECTIONS,SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. FOR CSL TESTING,SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

SPT MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SPT. FOR SPT TESTING,SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE.

PILE EXCAVATION IS REQUIRED TO INSTALL PILES AT END BENT 2. EXCAVATE HOLES AT PILE LOCATION TO ELEVATION 91.0 FT. FOR PILE EXCAVATION,SEE SECTION 450 OF THE STANDARD SPECIFICATION.

CONCRETE OR GROUT IS REQUIRED TO FILL HOLES FOR PILE EXCAVATION AT END BENT 2.

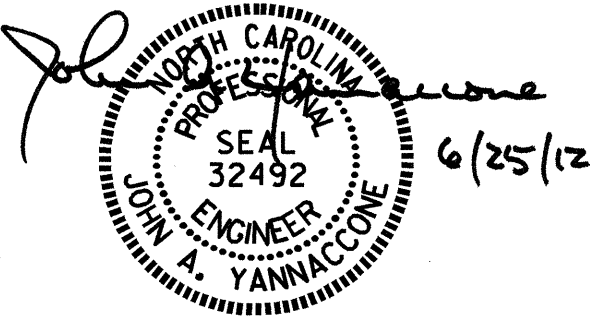
PROJECT NO. B-4284

SURRY COUNTY

STATION: 9+95.00 -L-

SHEET 3 OF 3

DRAWN BY : J. A. YANNACCONI DATE : 2/24/12
CHECKED BY : R. N. WEISZ DATE : 4/20/12



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOR BRIDGE OVER MILL CREEK ON SR 1322 (DEVOTION RD) BETWEEN SR 1301 AND SR 1330

REVISIONS						SHEET NO. 3
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 19
2			4			

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL		VEHICLE	WEICHT (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	1.33	--	1.75	0.275	1.33	60'	EL	29.5	0.52	1.33	60'	EL	5.9	0.80	0.275	1.37	60'	EL	29.5	
		HL-93(0pr)	N/A	--	1.725	--	1.35	0.275	1.73	60'	EL	29.5	0.52	1.72	60'	EL	5.9	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.601	57.643	1.75	0.275	1.69	60'	EL	29.5	0.52	1.6	60'	EL	5.9	0.80	0.275	1.74	60'	EL	29.5	
		HS-20(0pr)	36.000	--	2.076	74.723	1.35	0.275	2.19	60'	EL	29.5	0.52	2.08	60'	EL	5.9	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.745	50.557	1.4	0.275	4.55	60'	EL	29.5	0.52	4.63	60'	EL	5.9	0.80	0.275	3.74	60'	EL	29.5	
		SNGARBS2	20.000	--	2.867	57.338	1.4	0.275	3.48	60'	EL	29.5	0.52	3.33	60'	EL	5.9	0.80	0.275	2.87	60'	EL	29.5	
		SNAGRIS2	22.000	--	2.748	60.46	1.4	0.275	3.34	60'	EL	29.5	0.52	3.11	60'	EL	5.9	0.80	0.275	2.75	60'	EL	29.5	
		SNCOTTS3	27.250	--	1.866	50.841	1.4	0.275	2.27	60'	EL	29.5	0.52	2.31	60'	EL	5.9	0.80	0.275	1.87	60'	EL	29.5	
		SNAGGRS4	34.925	--	1.588	55.465	1.4	0.275	1.93	60'	EL	29.5	0.52	1.95	60'	EL	5.9	0.80	0.275	1.59	60'	EL	29.5	
		SNS5A	35.550	--	1.551	55.139	1.4	0.275	1.89	60'	EL	29.5	0.52	1.99	60'	EL	5.9	0.80	0.275	1.55	60'	EL	29.5	
		SNS6A	39.950	--	1.435	57.347	1.4	0.275	1.74	60'	EL	29.5	0.52	1.83	60'	EL	5.9	0.80	0.275	1.44	60'	EL	29.5	
		SNS7B	42.000	--	1.367	57.434	1.4	0.275	1.66	60'	EL	29.5	0.52	1.81	60'	EL	5.9	0.80	0.275	1.37	60'	EL	29.5	
	TTST	TNAGRIT3	33.000	--	1.754	57.887	1.4	0.275	2.13	60'	EL	29.5	0.52	2.17	60'	EL	5.9	0.80	0.275	1.75	60'	EL	29.5	
		TNT4A	33.075	--	1.765	58.389	1.4	0.275	2.15	60'	EL	29.5	0.52	2.1	60'	EL	5.9	0.80	0.275	1.77	60'	EL	29.5	
		TNT6A	41.600	--	1.456	60.551	1.4	0.275	1.77	60'	EL	29.5	0.52	1.96	60'	EL	5.9	0.80	0.275	1.46	60'	EL	29.5	
		TNT7A	42.000	--	1.469	61.714	1.4	0.275	1.79	60'	EL	29.5	0.52	1.88	60'	EL	5.9	0.80	0.275	1.47	60'	EL	29.5	
		TNT7B	42.000	--	1.535	64.463	1.4	0.275	1.87	60'	EL	29.5	0.52	1.76	60'	EL	5.9	0.80	0.275	1.53	60'	EL	29.5	
		TNAGRIT4	43.000	--	1.45	62.329	1.4	0.275	1.76	60'	EL	29.5	0.52	1.7	60'	EL	5.9	0.80	0.275	1.45	60'	EL	29.5	
		TNAGT5A	45.000	--	1.361	61.247	1.4	0.275	1.65	60'	EL	29.5	0.52	1.71	60'	EL	5.9	0.80	0.275	1.36	60'	EL	29.5	
		TNAGT5B	45.000	3	1.34	60.282	1.4	0.275	1.63	60'	EL	29.5	0.52	1.61	60'	EL	5.9	0.80	0.275	1.34	60'	EL	29.5	

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)

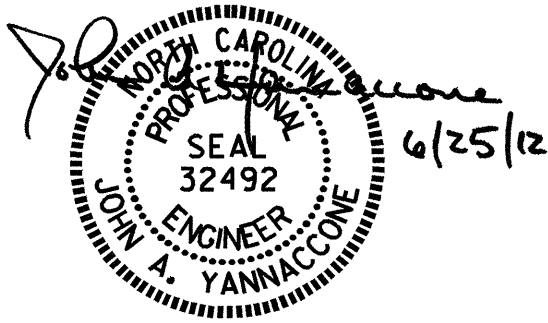
3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

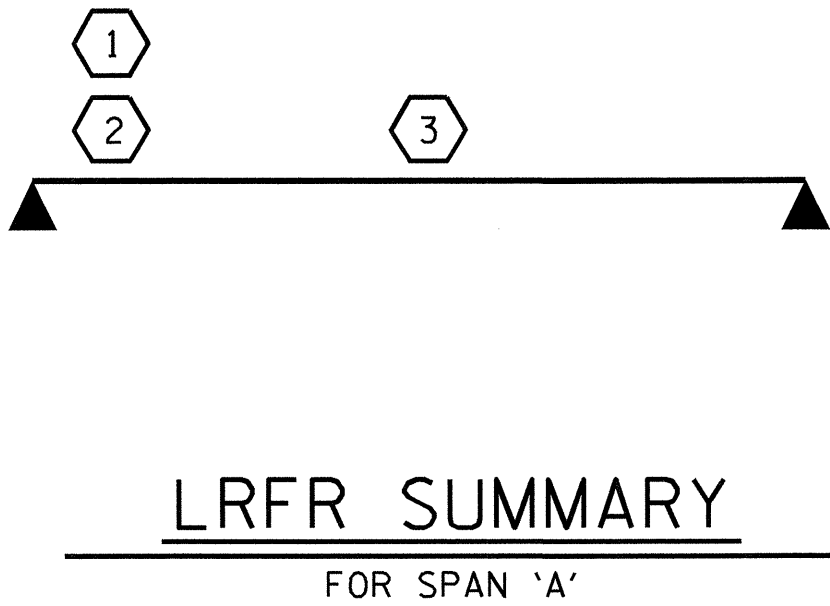
I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER

PROJECT NO. B-4284
SURRY COUNTY
STATION: 9+95.00 -L-



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD LRFR SUMMARY FOR 60' CORED SLAB UNIT 90° SKEW (NON-INTERSTATE TRAFFIC)					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					19

ASSEMBLED BY : J.A. YANNACCONI	DATE : 2/20/12
CHECKED BY : R. N. WEISZ	DATE : 4/20/12
DRAWN BY : CVC	6/10
CHECKED BY : DNS	6/10



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	1.394	--	1.75	0.276	1.57	50'	EL	24.5	0.531	1.39	50'	EL	2.45	0.80	0.276	1.44	50'	EL	24.5	
		HL-93(0pr)	N/A	--	1.807	--	1.35	0.276	2.03	50'	EL	24.5	0.531	1.81	50'	EL	2.45	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.667	60.007	1.75	0.276	1.95	50'	EL	24.5	0.531	1.67	50'	EL	2.45	0.80	0.276	1.79	50'	EL	24.5	
		HS-20(0pr)	36.000	--	2.161	77.787	1.35	0.276	2.52	50'	EL	24.5	0.531	2.16	50'	EL	2.45	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.635	49.079	1.4	0.276	4.95	50'	EL	24.5	0.531	4.7	50'	EL	2.45	0.80	0.276	3.64	50'	EL	24.5	
		SNGARBS2	20.000	--	2.871	57.42	1.4	0.276	3.91	50'	EL	24.5	0.531	3.42	50'	EL	2.45	0.80	0.276	2.87	50'	EL	24.5	
		SNAGRIS2	22.000	--	2.778	61.109	1.4	0.276	3.78	50'	EL	19.6	0.531	3.21	50'	EL	2.45	0.80	0.276	2.78	50'	EL	24.5	
		SNCOTTS3	27.250	--	1.814	49.418	1.4	0.276	2.47	50'	EL	24.5	0.531	2.36	50'	EL	2.45	0.80	0.276	1.81	50'	EL	24.5	
		SNAGGRS4	34.925	--	1.577	55.063	1.4	0.276	2.15	50'	EL	24.5	0.531	2.01	50'	EL	2.45	0.80	0.276	1.58	50'	EL	24.5	
		SNS5A	35.550	--	1.537	54.657	1.4	0.276	2.09	50'	EL	24.5	0.531	2.07	50'	EL	2.45	0.80	0.276	1.54	50'	EL	24.5	
		SNS6A	39.950	--	1.438	57.43	1.4	0.276	1.96	50'	EL	24.5	0.531	1.91	50'	EL	2.45	0.80	0.276	1.44	50'	EL	24.5	
		SNS7B	42.000	--	1.370	57.54	1.4	0.276	1.87	50'	EL	24.5	0.531	1.91	50'	EL	2.45	0.80	0.276	1.37	50'	EL	24.5	
	TTST	TNAGRIT3	33.000	--	1.761	58.118	1.4	0.276	2.4	50'	EL	24.5	0.531	2.25	50'	EL	2.45	0.80	0.276	1.76	50'	EL	24.5	
		TNT4A	33.075	--	1.777	58.759	1.4	0.276	2.42	50'	EL	24.5	0.531	2.17	50'	EL	2.45	0.80	0.276	1.78	50'	EL	24.5	
		TNT6A	41.600	--	1.480	61.558	1.4	0.276	2.01	50'	EL	24.5	0.531	2.08	50'	EL	2.45	0.80	0.276	1.48	50'	EL	24.5	
		TNT7A	42.000	--	1.502	63.087	1.4	0.276	2.05	50'	EL	24.5	0.531	1.94	50'	EL	2.45	0.80	0.276	1.50	50'	EL	24.5	
		TNT7B	42.000	--	1.566	65.773	1.4	0.276	2.13	50'	EL	24.5	0.531	1.84	50'	EL	2.45	0.80	0.276	1.57	50'	EL	24.5	
		TNAGRIT4	43.000	--	1.486	63.902	1.4	0.276	2.02	50'	EL	24.5	0.531	1.77	50'	EL	2.45	0.80	0.276	1.49	50'	EL	24.5	
		TNAGT5A	45.000	--	1.388	62.47	1.4	0.276	1.89	50'	EL	24.5	0.531	1.8	50'	EL	2.45	0.80	0.276	1.39	50'	EL	24.5	
		TNAGT5B	45.000	3	1.360	61.206	1.4	0.276	1.85	50'	EL	24.5	0.531	1.68	50'	EL	2.45	0.80	0.276	1.36	50'	EL	2.45	

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)

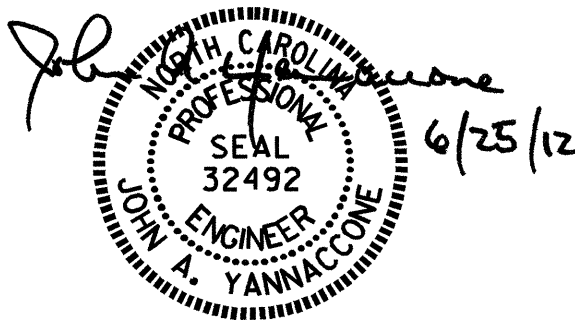
3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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

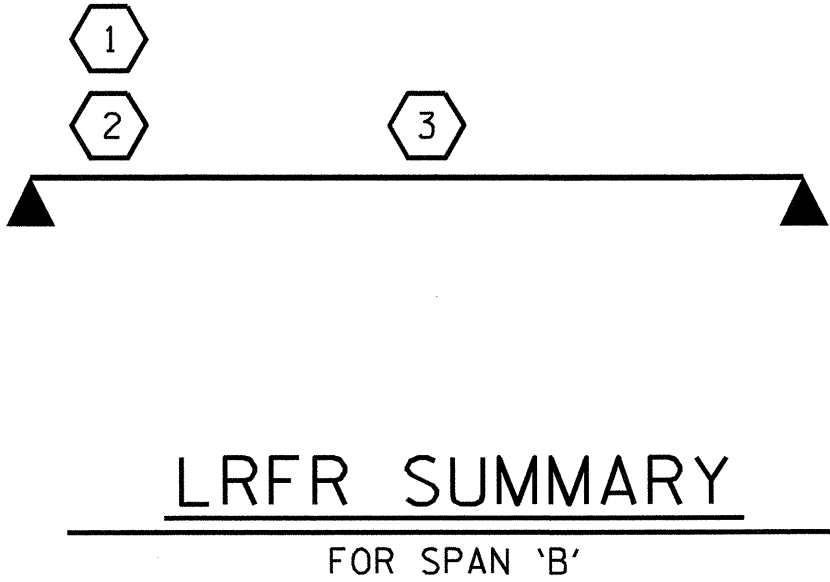
PROJECT NO. B-4284
SURRY COUNTY
STATION: 9+95.00 -L-

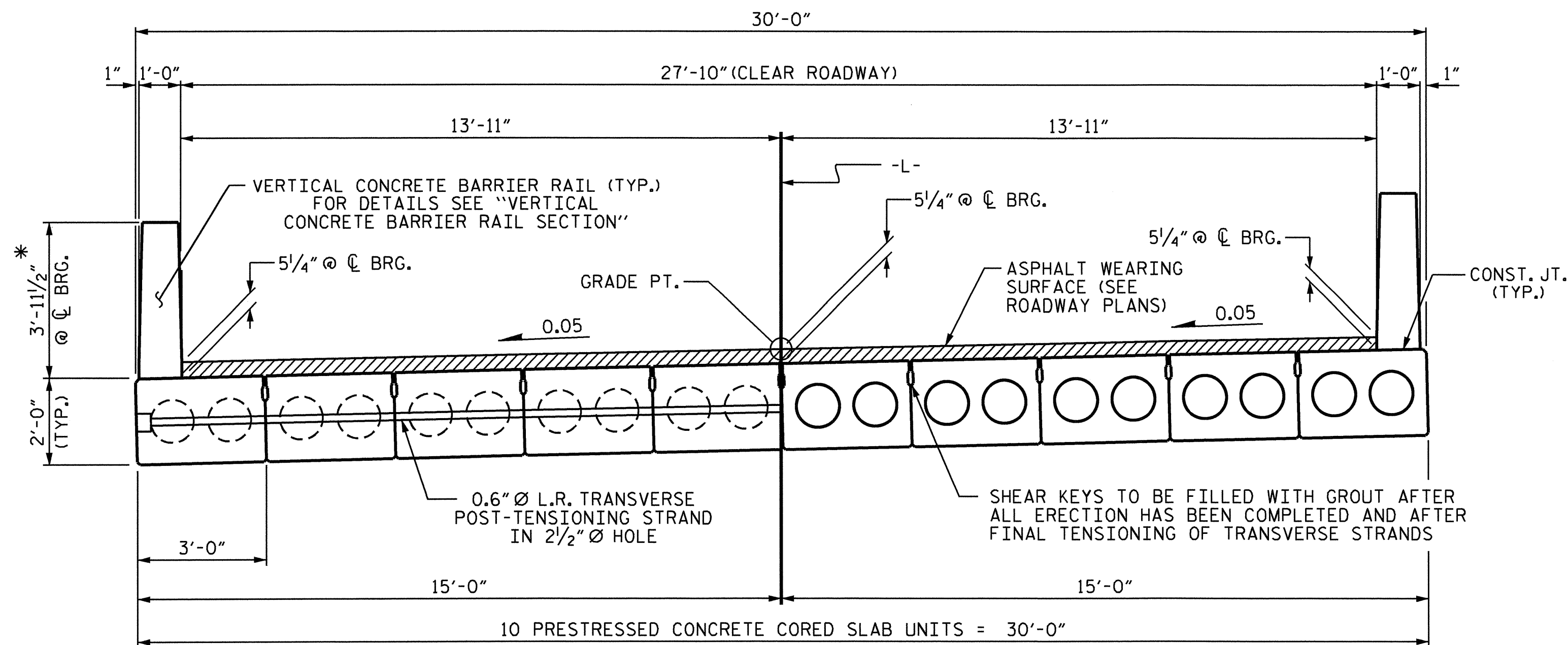


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
50' CORED SLAB UNIT
90° SKEW
(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO. 5
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 19
2			4			

ASSEMBLED BY : J.A. YANNACCONI DATE : 2/20/12	
CHECKED BY : R. N. WEISZ DATE : 4/20/12	
DRAWN BY : CVC 6/10	
CHECKED BY : DNS 6/10	





HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

HALF SECTION
THROUGH VOIDS

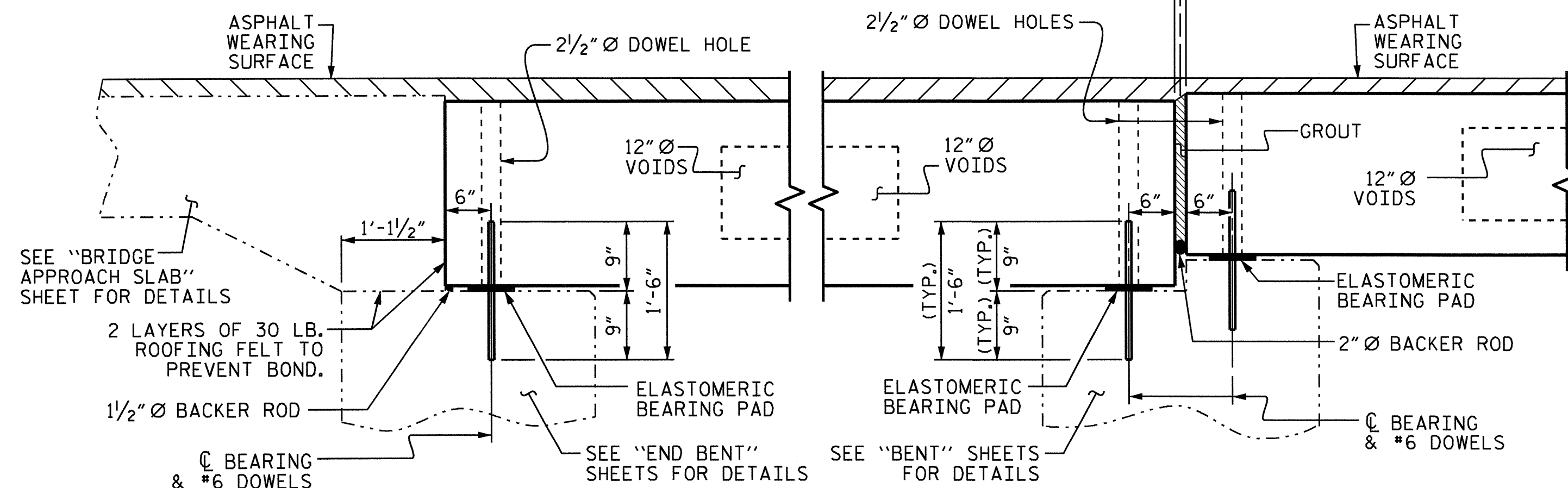
TYPICAL SECTION (60' SPAN)

* - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS, SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.

FIXED END

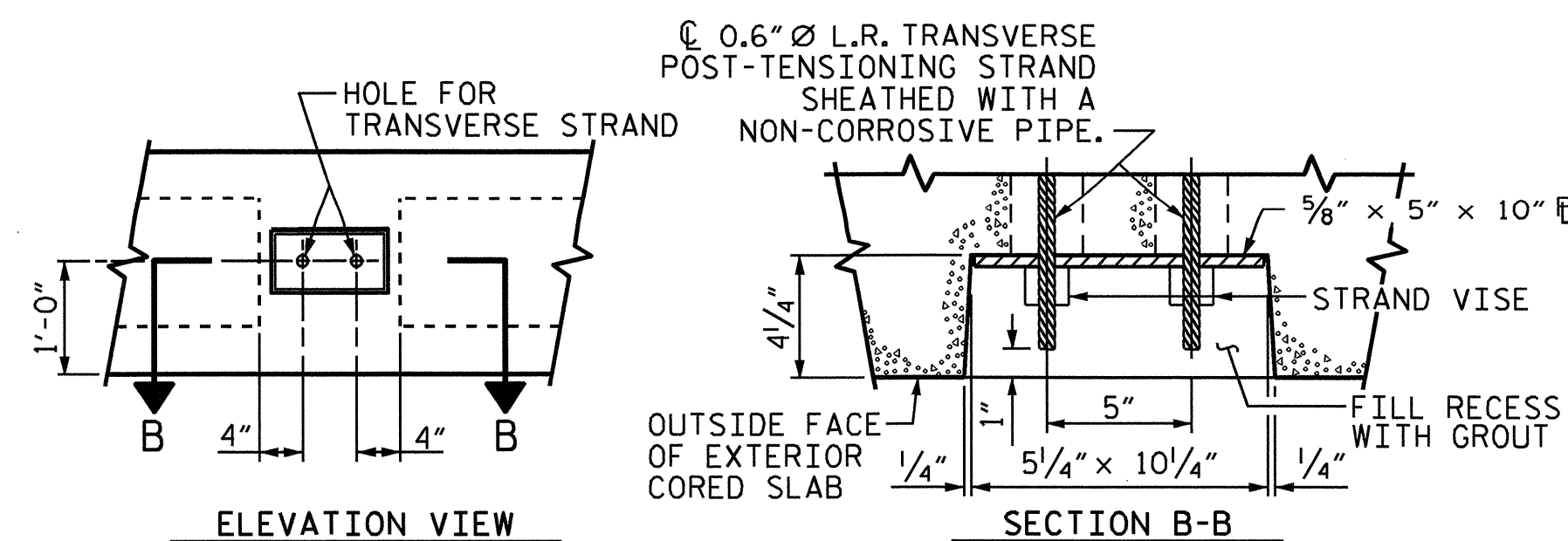
FIXED END

FIXED END



SECTION AT END BENT

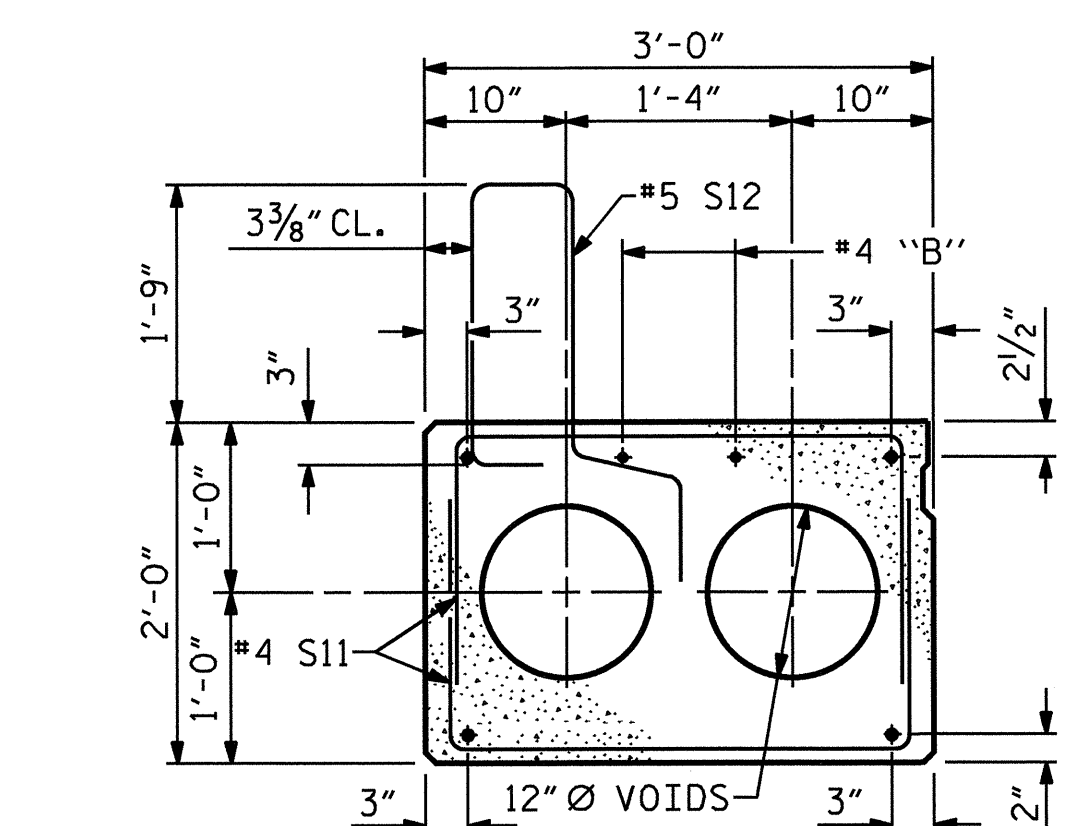
SECTION AT BENT



ELEVATION VIEW

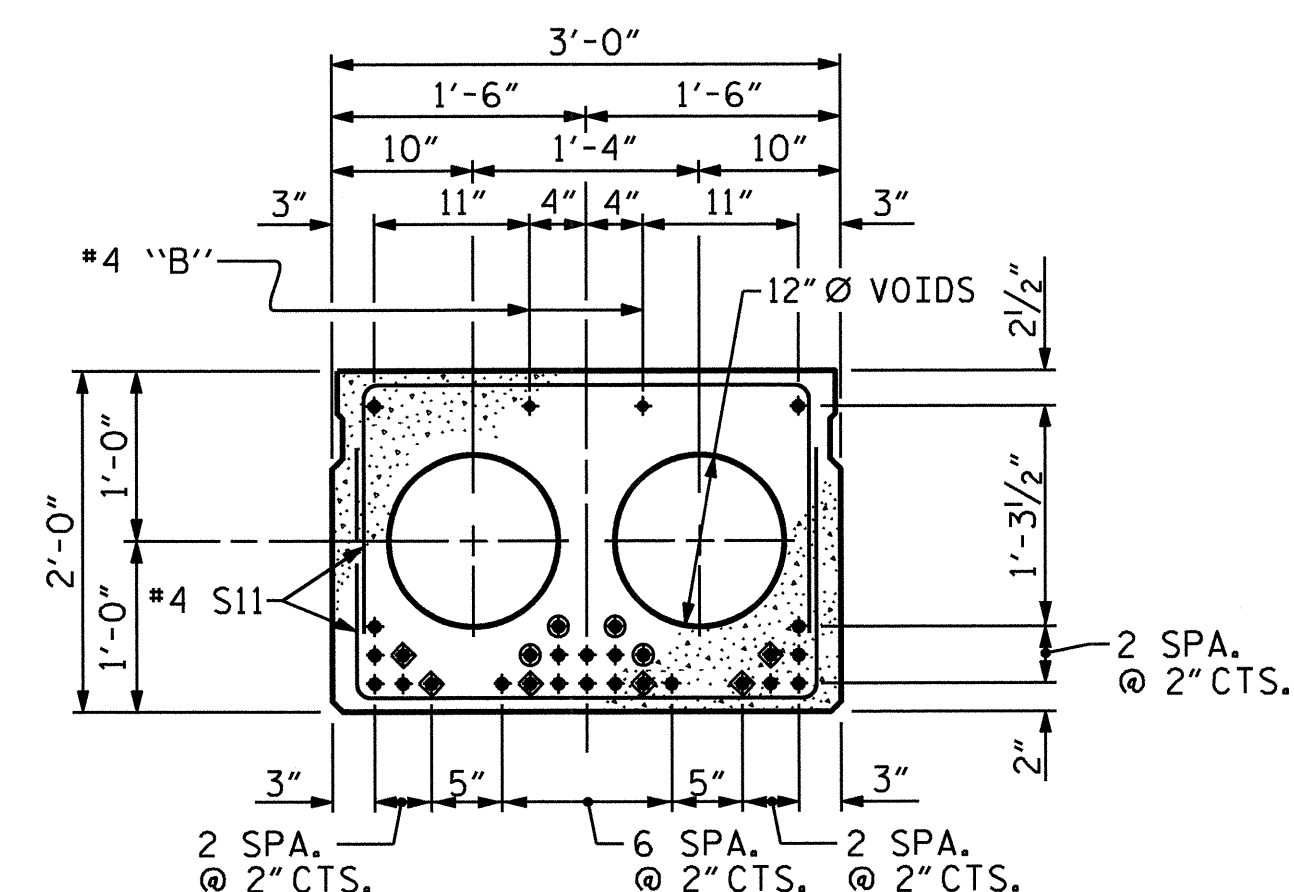
SECTION B-B

GRAUTED RECESS AT END OF POST-TENSIONED STRAND-CORED SLABS



EXTERIOR SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE
INTERIOR SLAB SECTION.)



INTERIOR SLAB SECTION (60' UNIT)

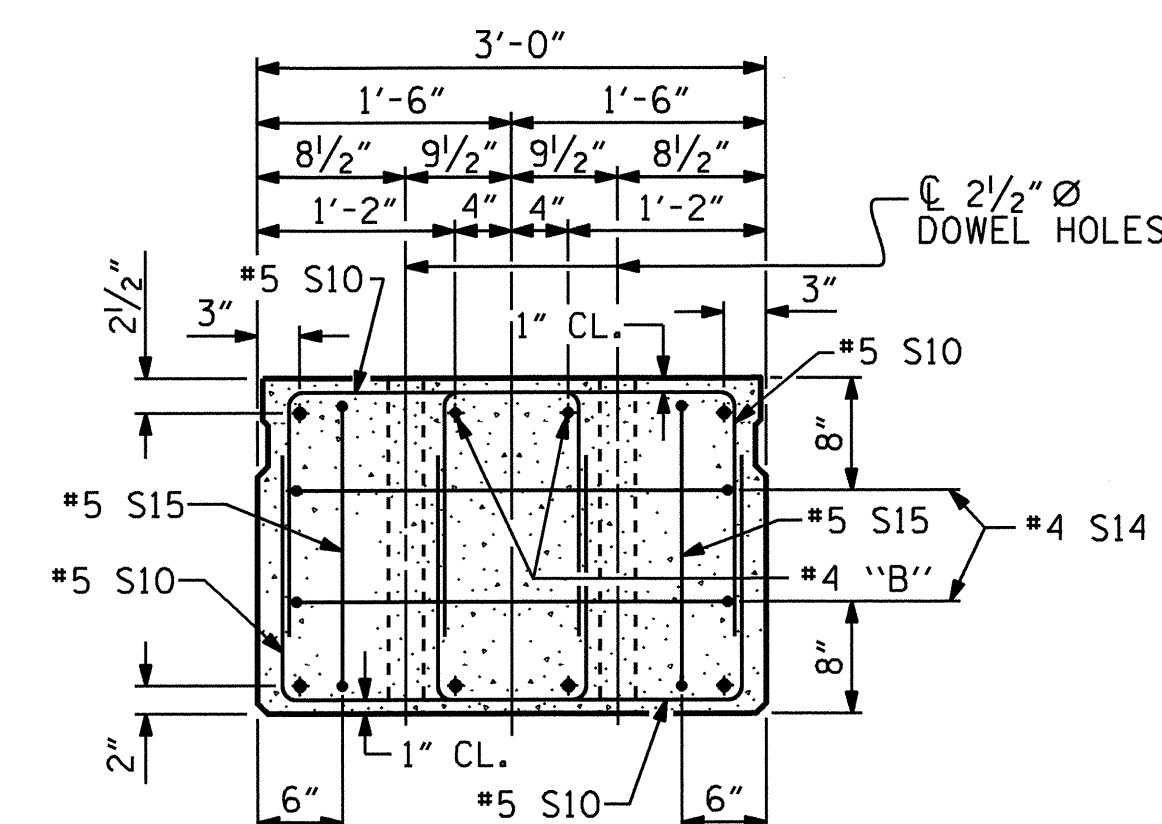
(24 STRANDS REQUIRED)

0.6" Ø LOW RELAXATION STRAND LAYOUT

◆ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

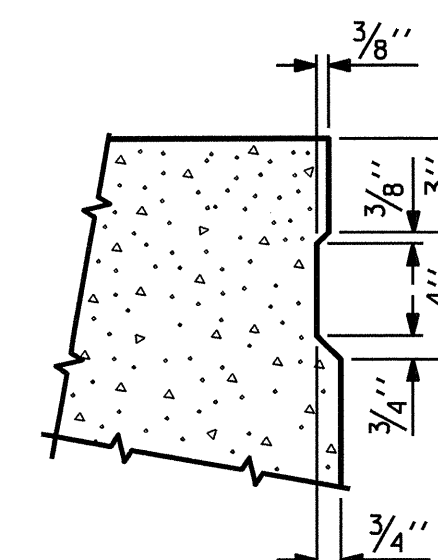
● OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND



END ELEVATION

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



SHEAR KEY DETAIL

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

PROJECT NO. B-4284

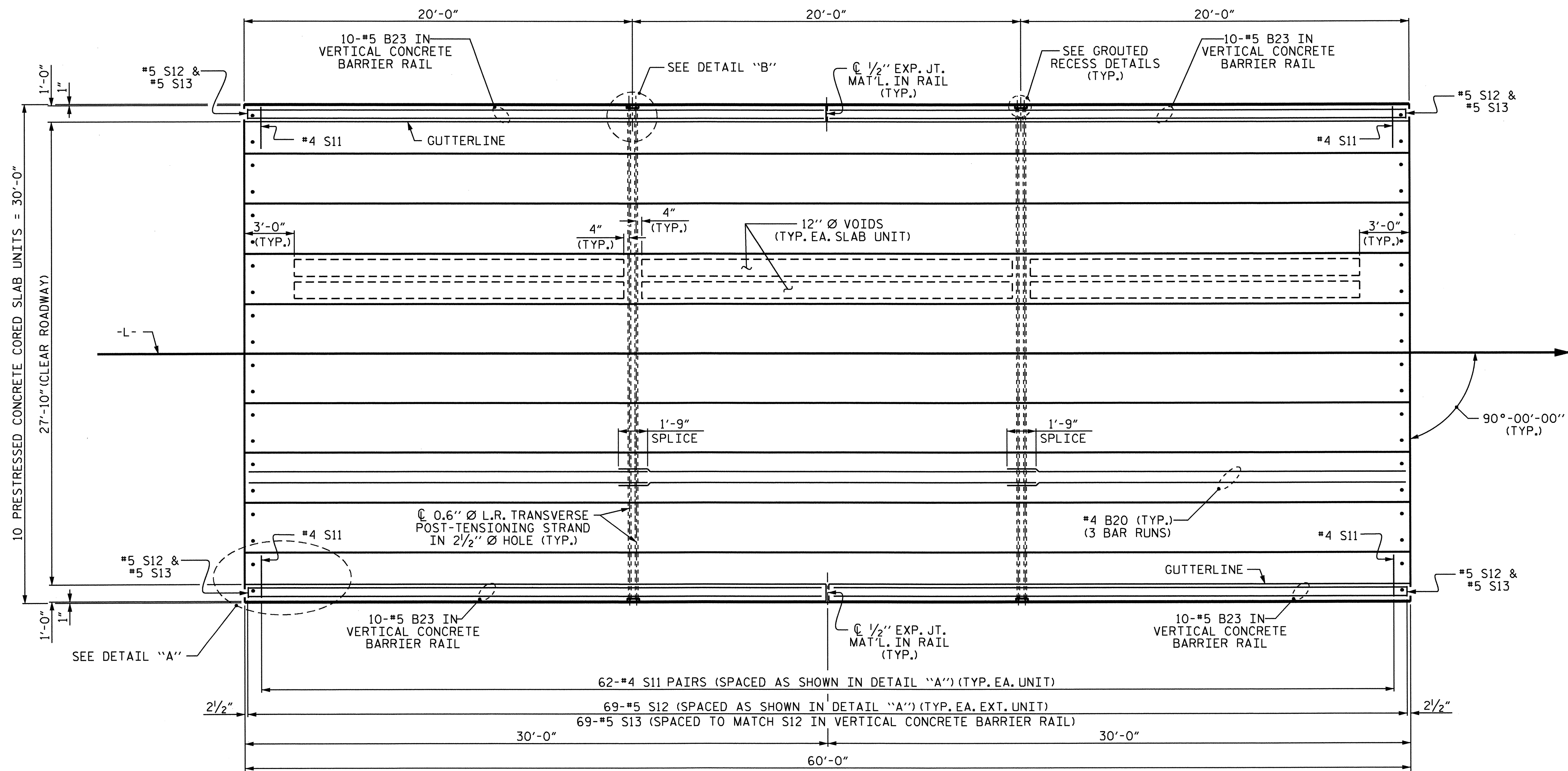
SURRY COUNTY

STATION: 9+95.00 -L-

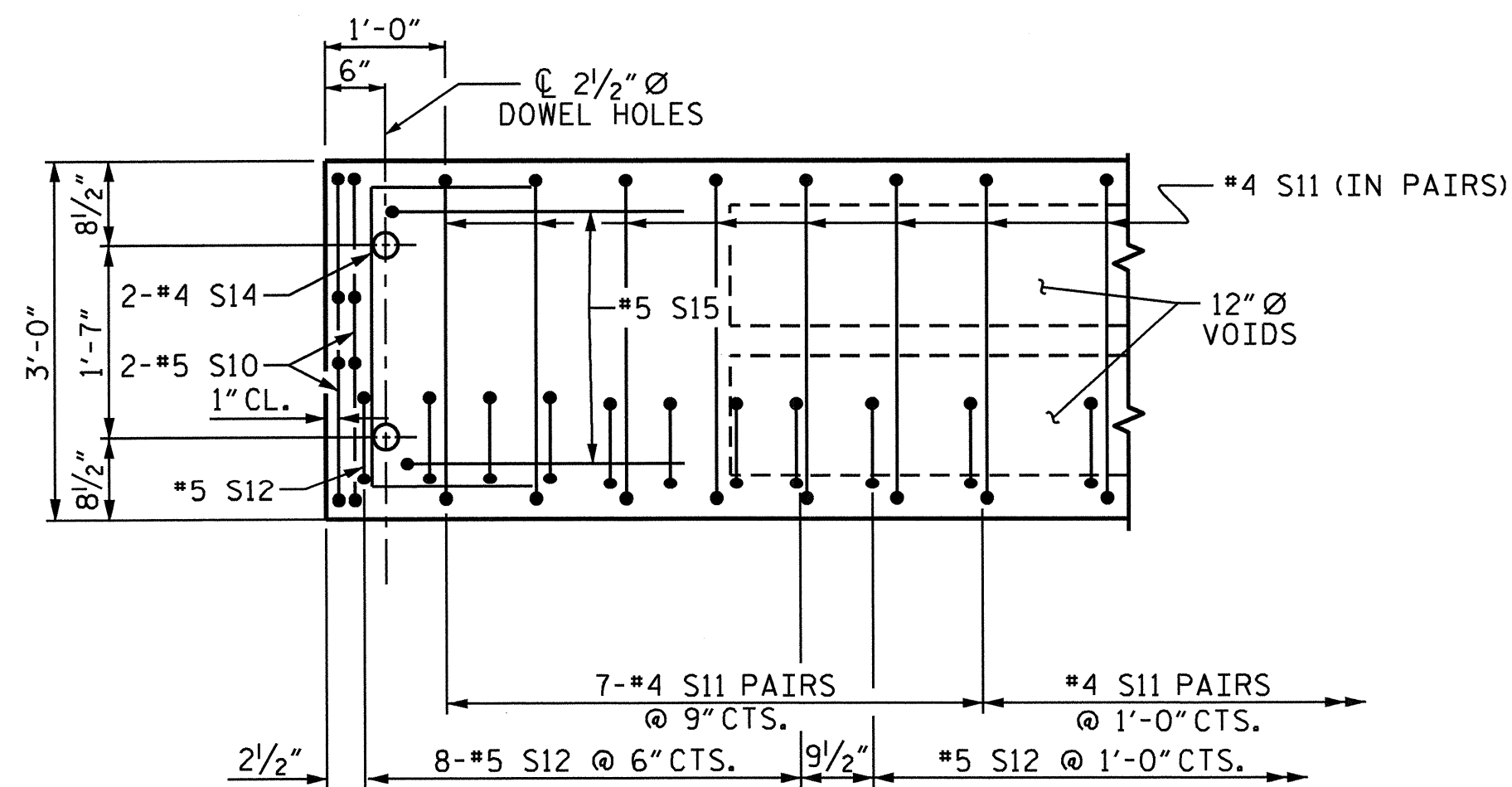
SHEET 1 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD					
3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB UNIT					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. 6					TOTAL SHEETS 19

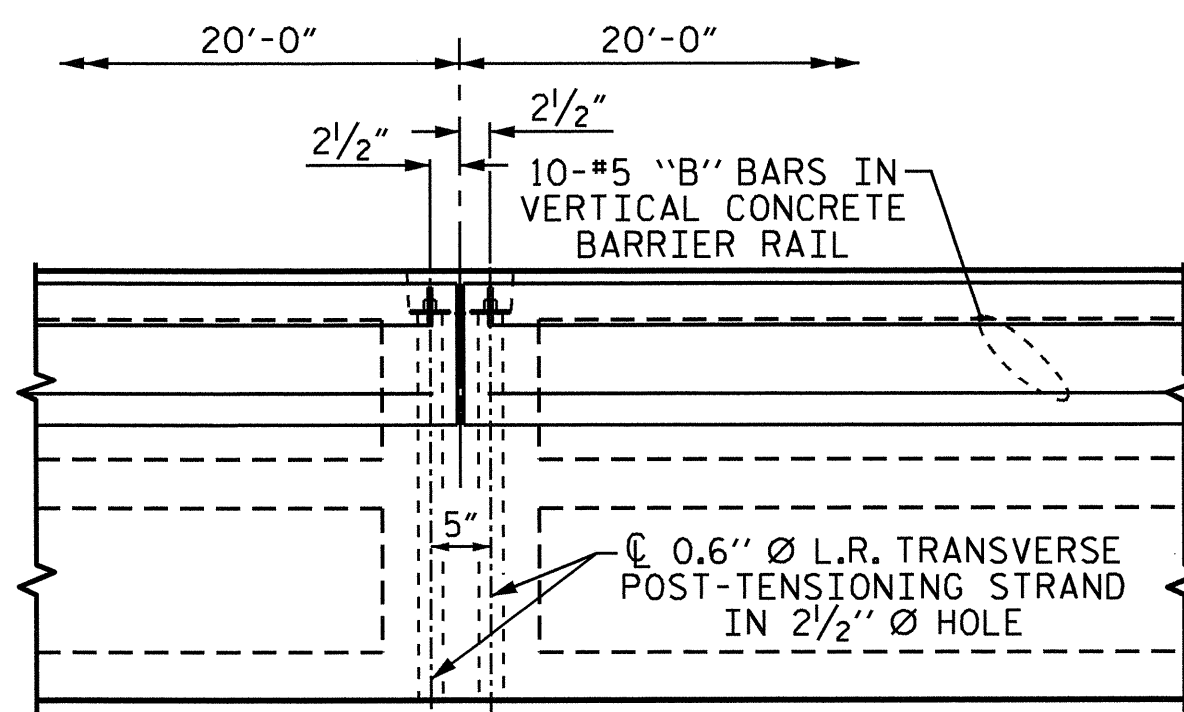
ASSEMBLED BY : J.A. YANNACCONE	DATE : 2/15/12
CHECKED BY : R.N. WEISZ	DATE : 4/20/12
DRAWN BY : MAA	6/10
CHECKED BY : MKT	7/10
REV. 12/11	MAA/AAC



PLAN OF UNIT



DETAIL "A"



DETAIL "B"

*4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUDED RECESS AND 2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES

ASSEMBLED BY : J.A. YANNACCONE DATE : 2/15/12
 CHECKED BY : R.N. WEISZ DATE : 4/20/12
 DRAWN BY : MAA 6/10
 CHECKED BY : MKT 7/10

REV. 12/5/11 MAA/AAC

22-JUN-2012 16:36
 K:\TIP\Projects\B4284\Structures\FINAL\B4284.SD.CS.dgn
 JAYannaccone

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.

PROJECT NO. B-4284
 SURRY COUNTY
 STATION: 9+95.00 -L-

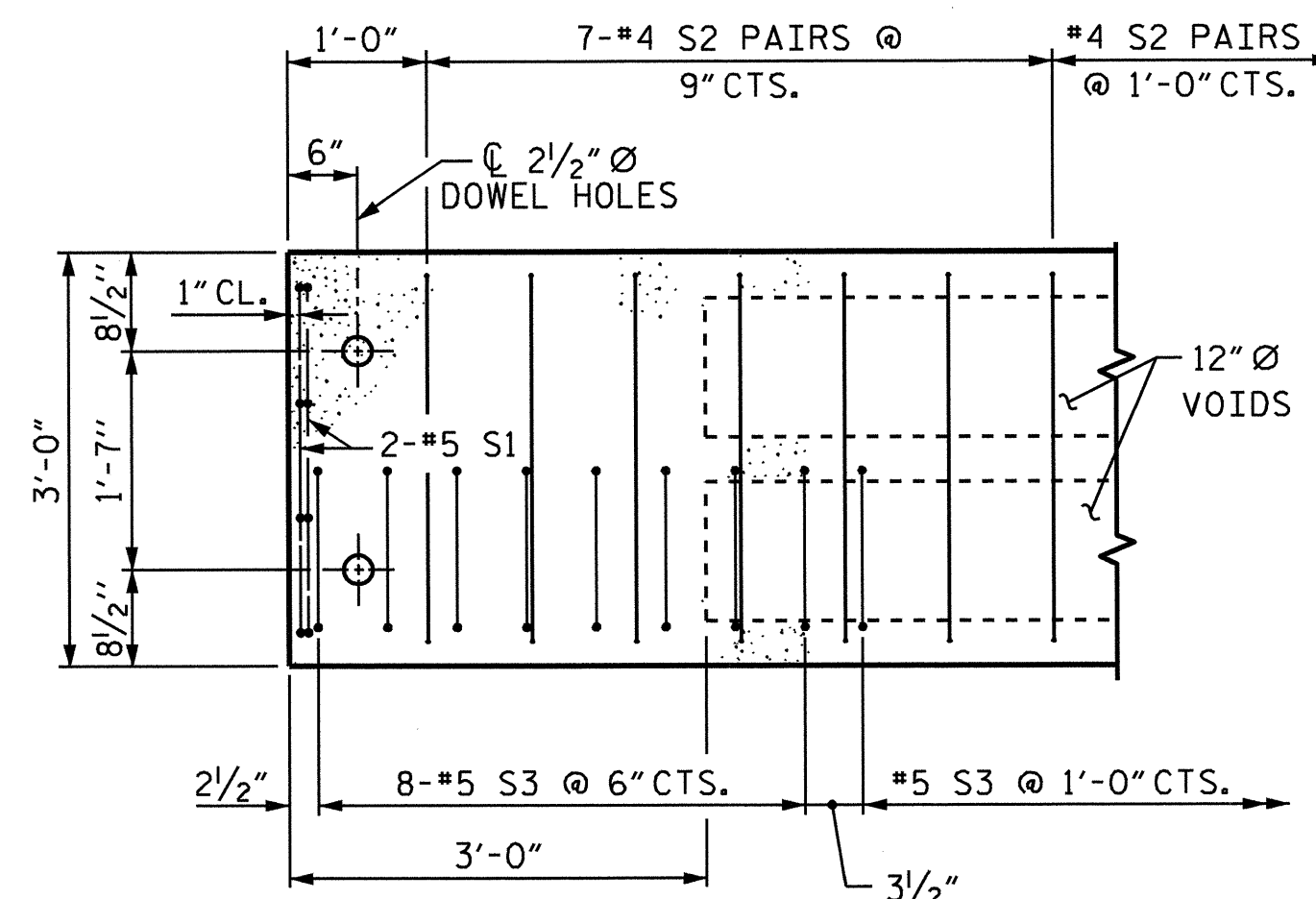
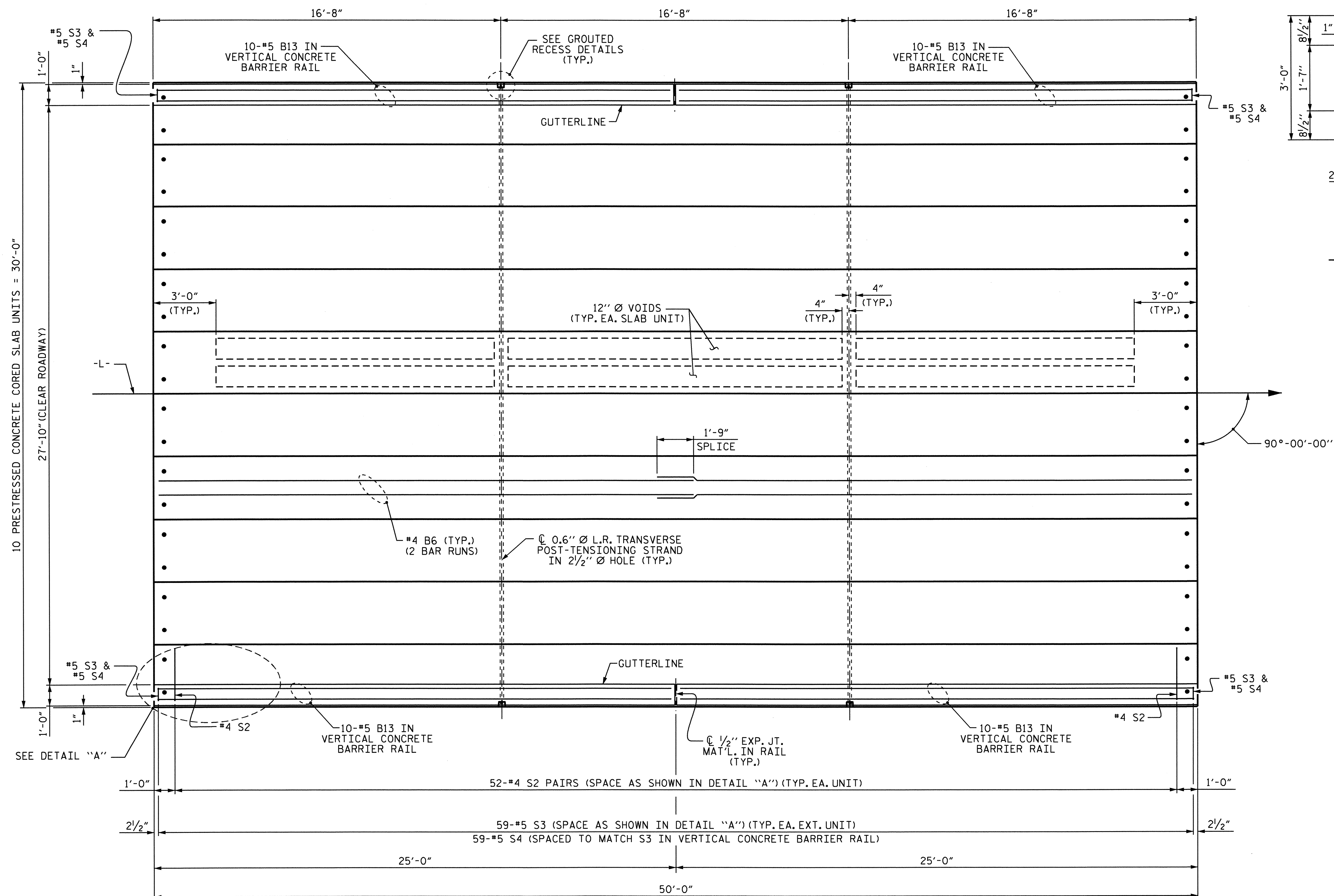
SHEET 3 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF 60' UNIT
 27'-10" CLEAR ROADWAY
 90° SKEW

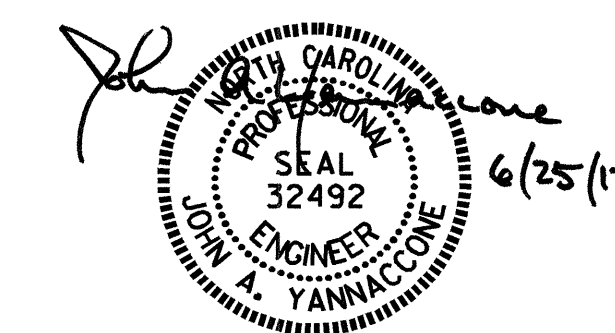
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			8
2			4			TOTAL SHEETS 19

STD. NO. 24PCS-30-90S-60L



DETAIL "A"

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.



PROJECT NO. B-4284
SURREY COUNTY
STATION: 9+95.00 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

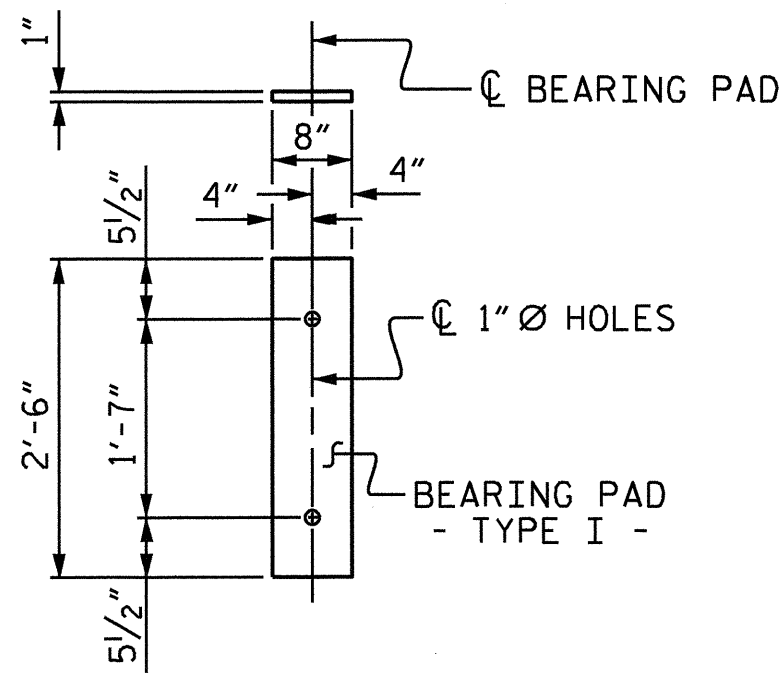
PLAN OF 50' UNIT
27'-10" CLEAR ROADWAY
90° SKEW

ASSEMBLED BY : J.A. YANNACCONI DATE : 2/15/12
CHECKED BY : R. N. WEISZ DATE : 4/20/12
DRAWN BY : DGE 3/09 REV. 12/5/11 MAA/AAC
CHECKED BY : BCH 3/09

22-JUN-2012 16:36
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JAYannaccone

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			9
2			4			TOTAL SHEETS 19

STD. NO. 21" PCS_30_90S_50L



FIXED END
(TYPE I - 20 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

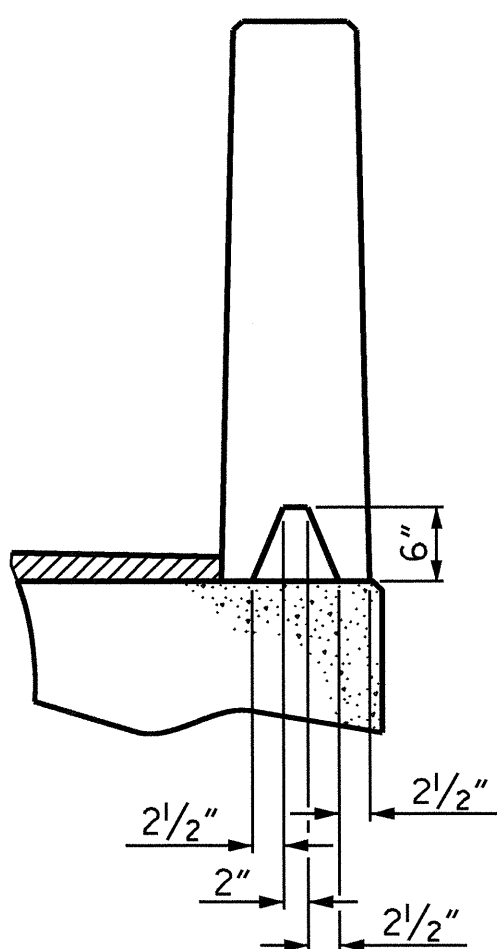
CONCRETE RELEASE STRENGTH	
UNIT	PSI
60' UNITS	4800

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

CORED SLABS REQUIRED			
60' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	60'-0"	120'-0"
INTERIOR C.S.	8	60'-0"	480'-0"
TOTAL	10		600'-0"

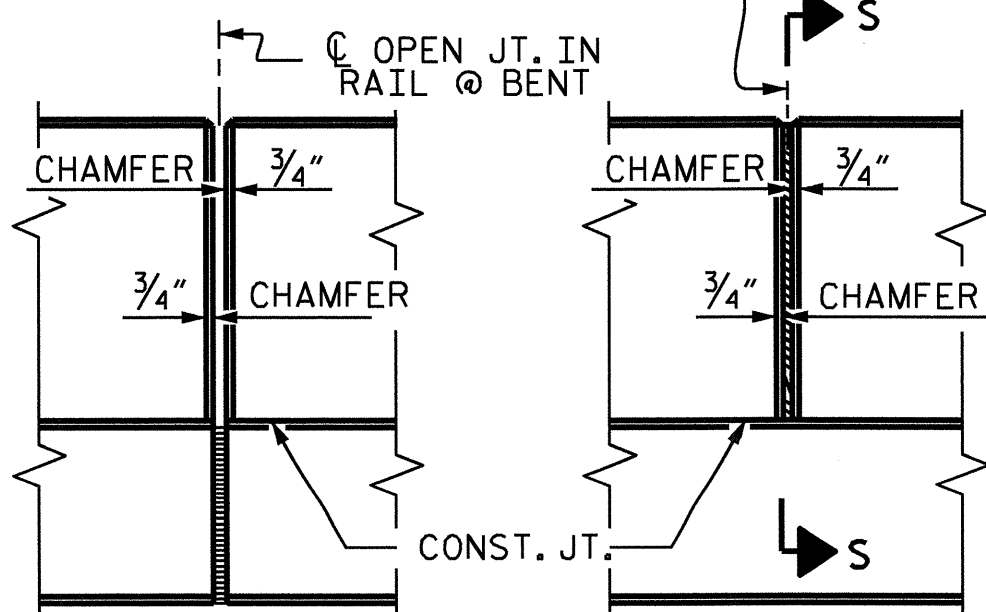
DEAD LOAD DEFLECTION AND CAMBER	
60' CORED SLAB UNIT	3'-0" x 2'-0"
CAMBER (SLAB ALONE IN PLACE)	0.6" Ø L.R. STRAND
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	3 3/8" ↑
FINAL CAMBER	1/2" ↓
	2 7/8" ↑

** INCLUDES FUTURE WEARING SURFACE



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

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



ELEVATION AT EXPANSION JOINTS

BILL OF MATERIAL FOR ONE 60' CORED SLAB UNIT							
				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B20	6	#4	STR	21'-2"	85	21'-2"	85
S10	8	#5	3	4'-9"	40	4'-9"	40
S11	124	#4	3	5'-10"	483	5'-10"	483
*S12	69	#5	1	6'-4"	456		
S14	4	#4	3	5'-7"	15	5'-7"	15
S15	4	#5	3	7'-1"	30	7'-1"	30
REINFORCING STEEL				LBS.	653	LBS.	653
* EPOXY COATED REINFORCING STEEL				LBS.	456		
6000 P.S.I. CONCRETE				CU. YDS.	10.2	CU. YDS.	10.2
0.6" Ø L.R. STRANDS				No.	24	No.	24
BAR TYPES							
ALL BAR DIMENSIONS ARE OUT TO OUT							

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
	ASPHALT OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
60' UNITS	2 3/8"	3'-8 5/8"

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
60' UNIT						
*B23	40	40	#5	STR	29'-7"	1234
*S13	138	138	#5	2	7'-2"	1032
* EPOXY COATED REINFORCING STEEL					LBS.	2266
CLASS AA CONCRETE					CU. YDS.	16.2
TOTAL VERTICAL CONCRETE BARRIER RAIL					LN. FT.	120.25

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 BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER, SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDeways. AT LEAST SIX 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 THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

ALL REINFORCING STEEL IN VERTICAL CONCRETE BARRIER RAILS 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.

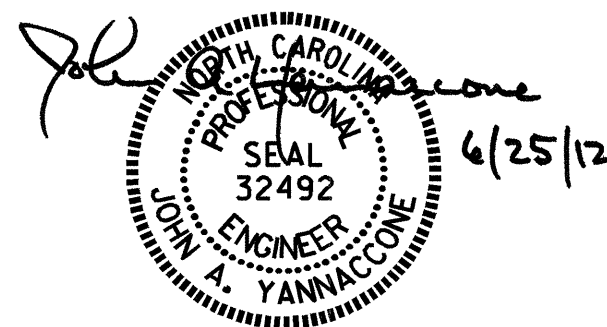
GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED 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.

TRANSVERSE POST TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST TENSIONING STRANDS IN THE DIAPHRAGM.

THE #4 S11 STIRRUPS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO THE GROUTED RECESS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

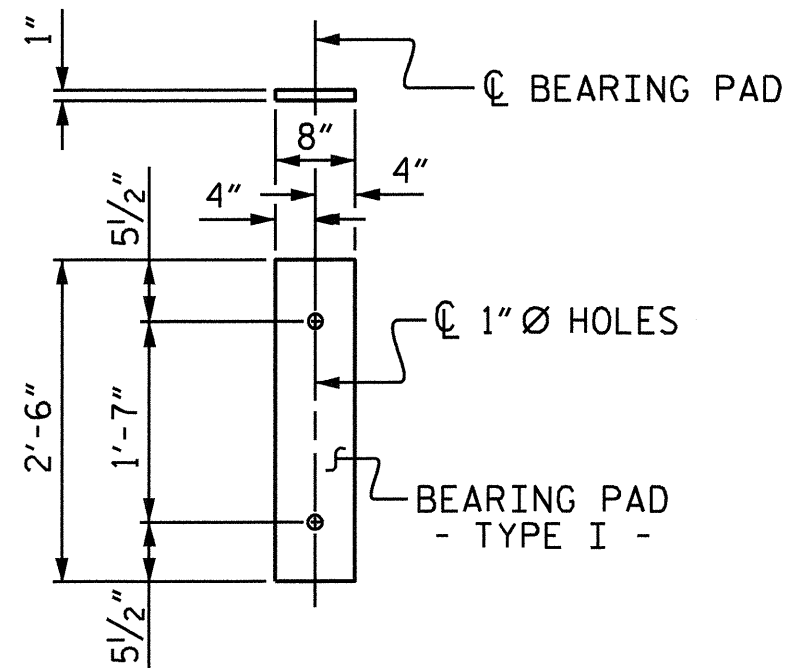


PROJECT NO. B-4284
SURRY COUNTY
STATION: 9+95.00 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD 3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB UNIT					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. 10					TOTAL SHEETS 19

ASSEMBLED BY : J.A. YANNACONE	DATE : 2/15/12
CHECKED BY : R.N. WEISZ	DATE : 4/20/12
DRAWN BY : MAA	6/10
CHECKED BY : MKT	7/10
REV. 12/11	MAA/AAC



FIXED END
(TYPE I - 20 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

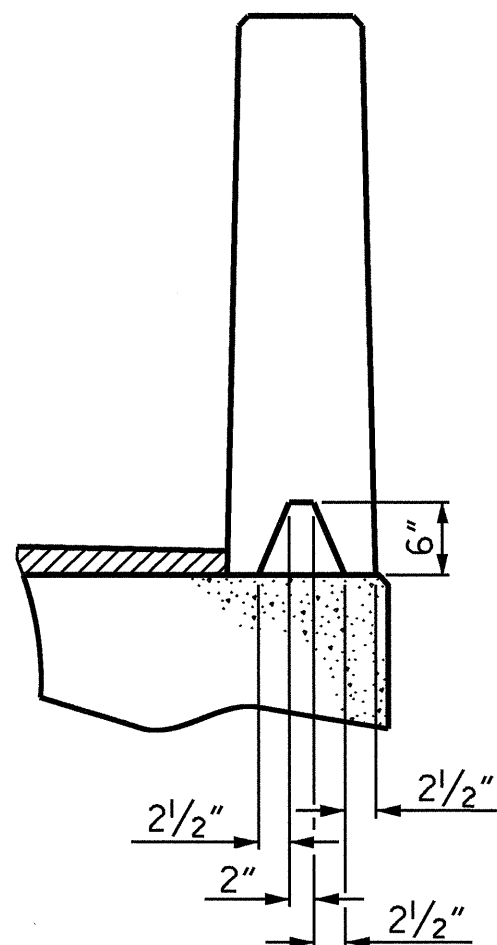
CONCRETE RELEASE STRENGTH	
UNIT	PSI
50' UNITS	4900

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

CORED SLABS REQUIRED			
50' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	50'-0"	100'-0"
INTERIOR C.S.	8	50'-0"	400'-0"
TOTAL	10		500'-0"

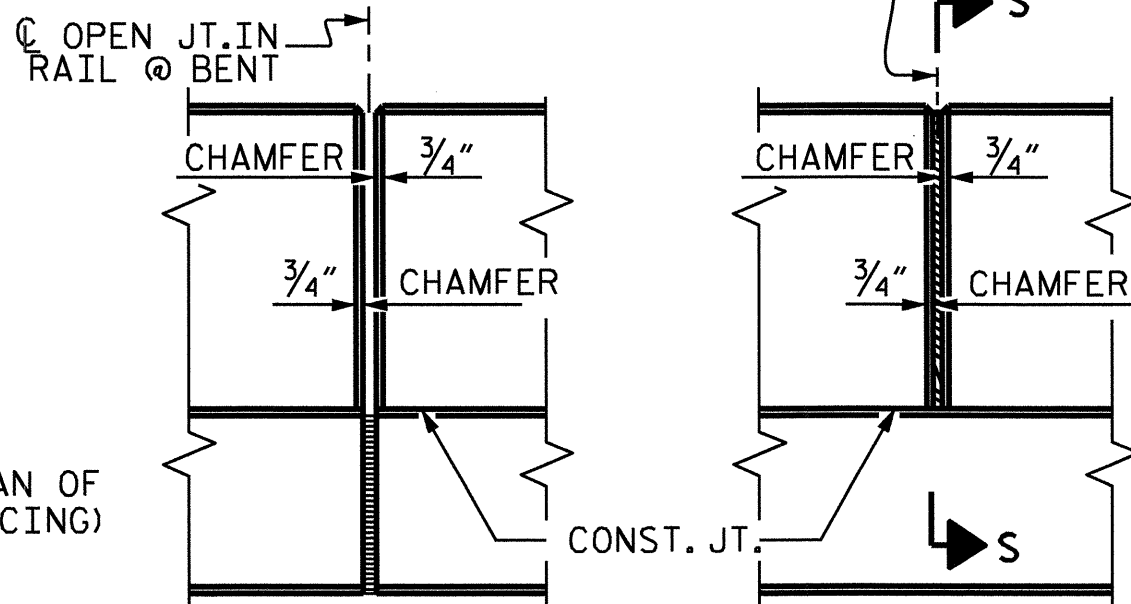
DEAD LOAD DEFLECTION AND CAMBER	
50' CORED SLAB UNIT	3'-0" x 1'-9"
CAMBER (SLAB ALONE IN PLACE)	0.6" Ø L.R. STRAND
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	2 1/2" ↑
FINAL CAMBER	1/4" ↓
	2 1/4" ↑

** INCLUDES FUTURE WEARING SURFACE



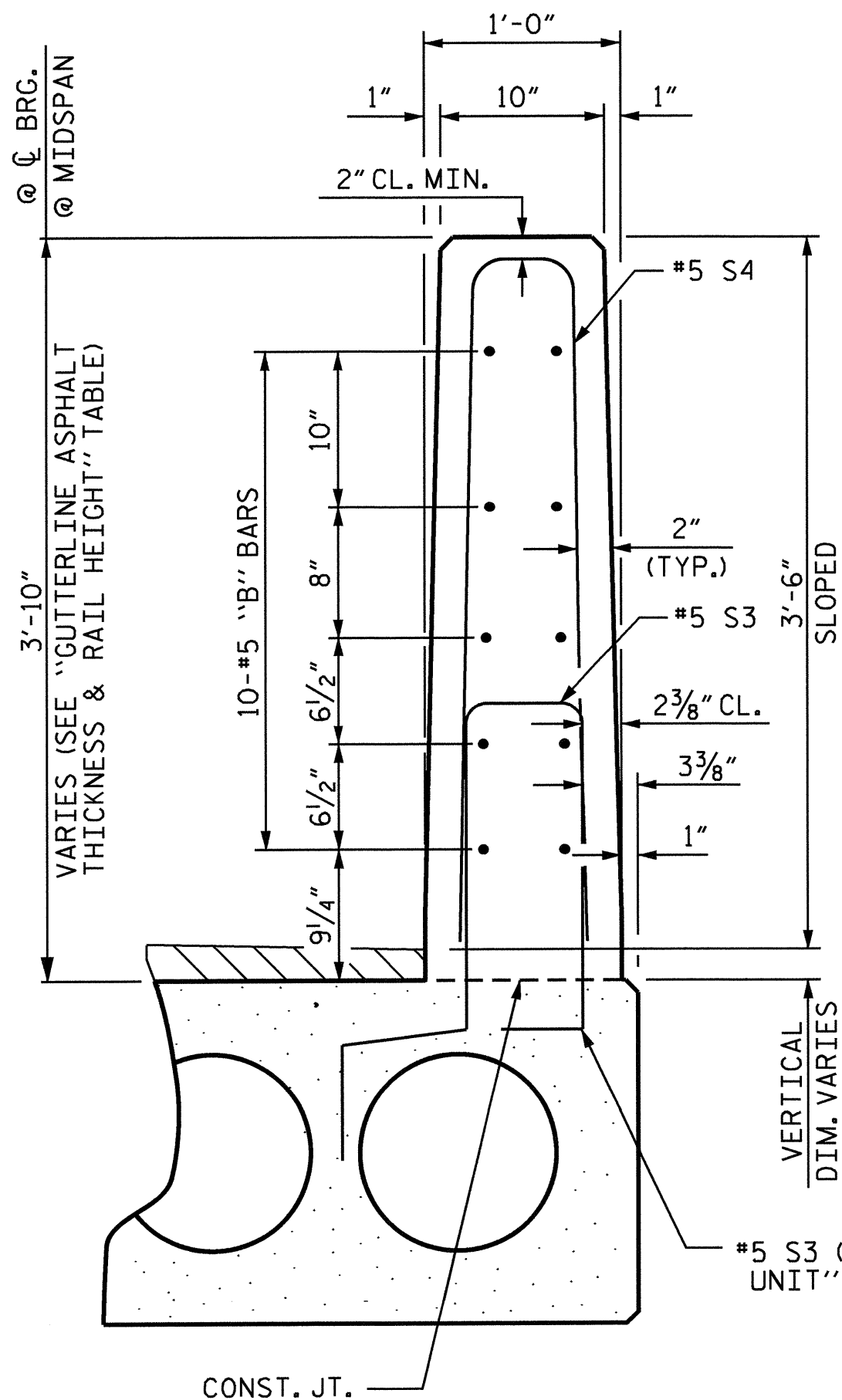
SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)

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



ELEVATION AT EXPANSION JOINTS

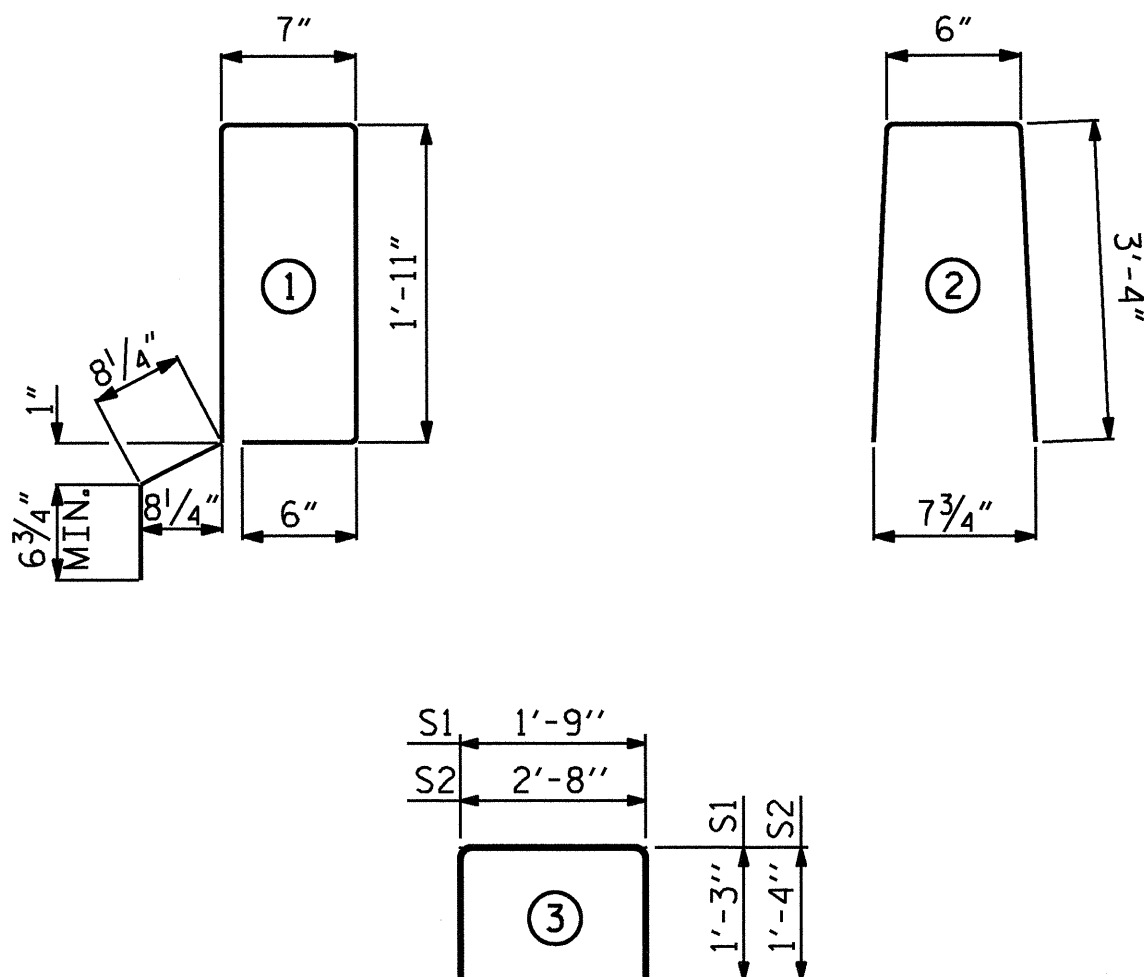
VERTICAL CONCRETE BARRIER RAIL SECTION



BILL OF MATERIAL FOR ONE
50' CORED SLAB UNIT

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B6	4	#4	STR	25'-9"	69	25'-9"	69
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	104	#4	3	5'-4"	371	5'-4"	371
* S3	59	#5	1	6'-2"	379		
REINFORCING STEEL				LBS.	475		475
* EPOXY COATED REINFORCING STEEL				LBS.	379		
6500 P.S.I. CONCRETE				CU. YDS.	7.1		7.1
0.6" Ø L.R. STRANDS				No.	19		19

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

27'-10" CLEAR ROADWAY	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
	SUPERED SECTION	
50' UNITS	1 1/2"	3'-7 3/4"

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
50' UNIT						
* B13	40	40	#5	STR	24'-7"	1026
* S4	118	118	#5	2	7'-2"	882
* EPOXY COATED REINFORCING STEEL					LBS.	1908
CLASS AA CONCRETE					CU. YDS.	13.1
TOTAL VERTICAL CONCRETE BARRIER RAIL					LN. FT.	100.25

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 BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. AT LEAST SIX 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.

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.

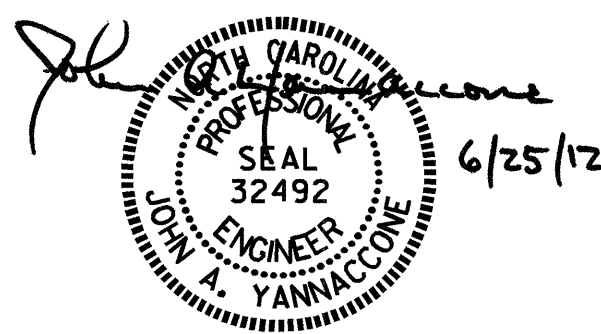
APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

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.

TRANSVERSE POST TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

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 THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.



PROJECT NO. B-4284
SURRY COUNTY
STATION: 9+95.00 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
90° SKEW

REVISIONS						SHEET NO. 11
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 19
2			4			

STD. NO. 21" PCS3-30-90S

ASSEMBLED BY : J.A. YANNACCONI	DATE : 2/15/12
CHECKED BY : R.N. WEISZ	DATE : 4/20/12
DRAWN BY : DCE 5/09	REV. 12/11
CHECKED BY : BCH 6/09	MAA/AAC

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.)

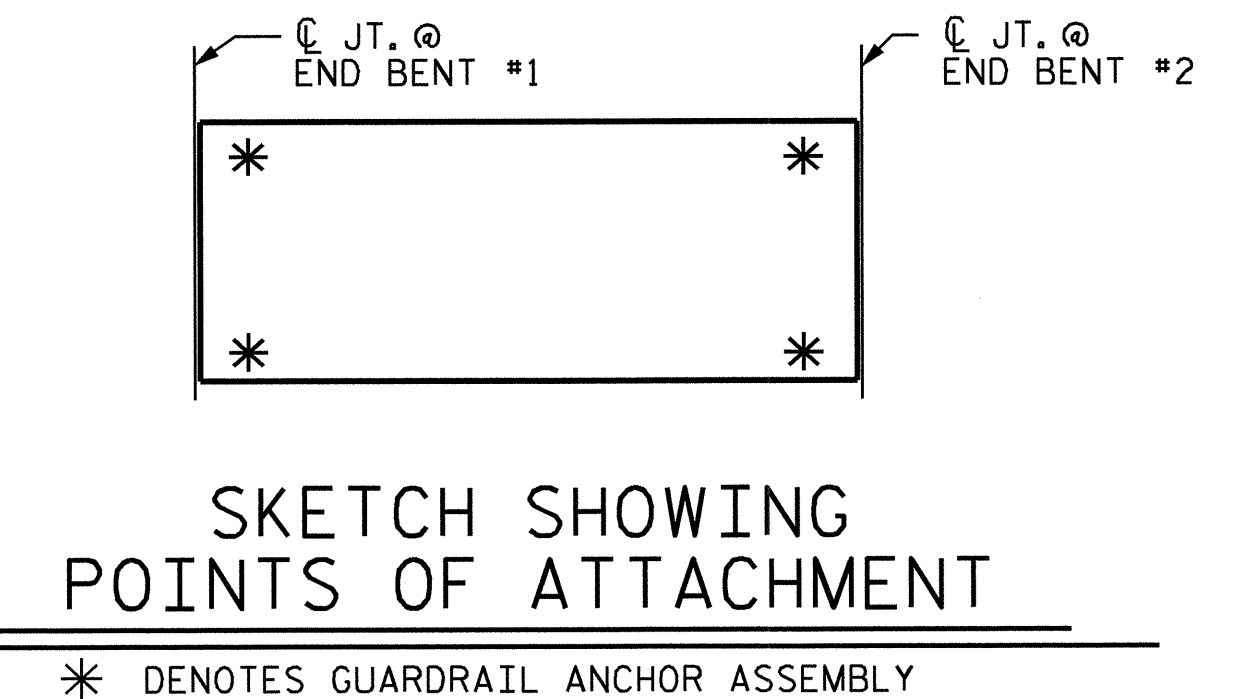
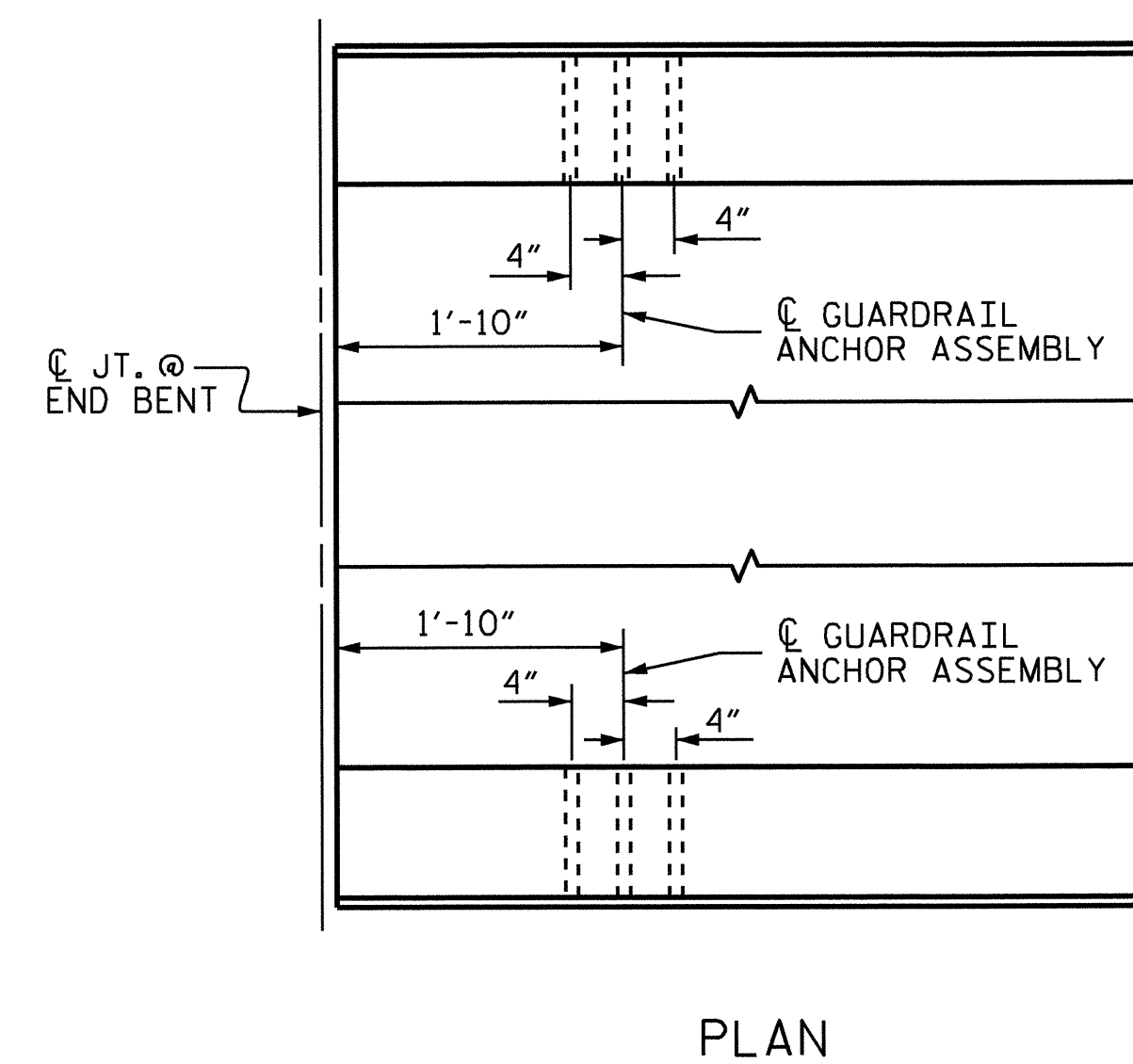
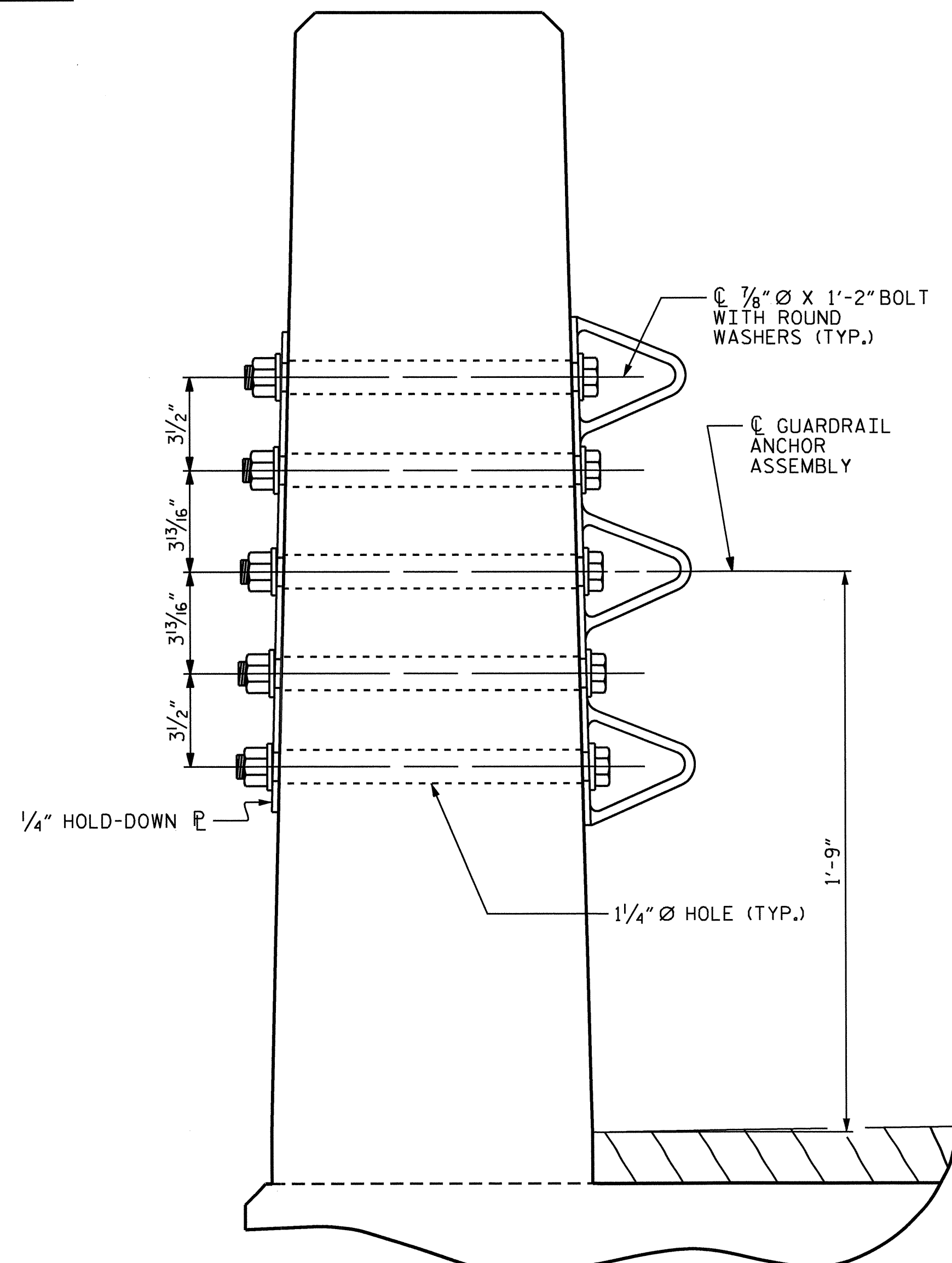
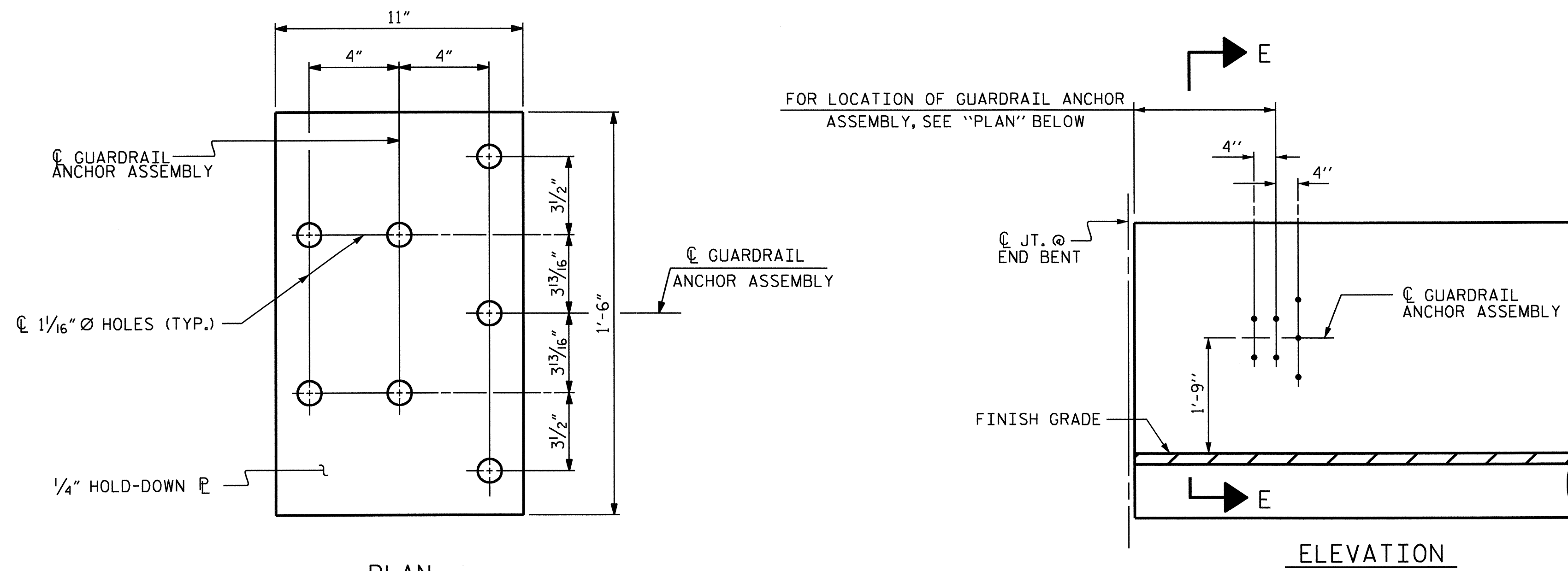
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

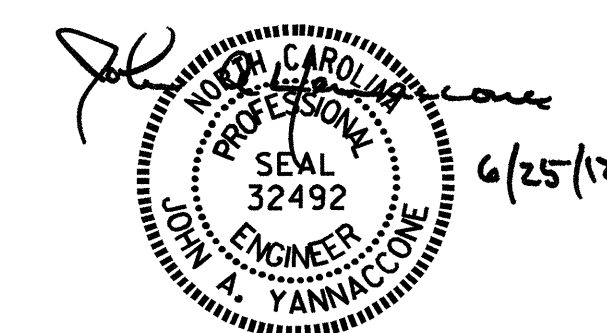
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

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.



PROJECT NO. B-4284
SURRY COUNTY
 STATION: 9+95.00 -L-



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD GUARDRAIL ANCHORAGE FOR VERTICAL CONCRETE BARRIER RAIL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. 12					TOTAL SHEETS 19

ASSEMBLED BY: J.A. YANNACCON	DATE: 5/17/12
CHECKED BY: R. N. WEISZ	DATE: 5/17/12
DRAWN BY: MAA 5/10	ADDED 5/6/10
CHECKED BY: GM 5/10	REV. 10/1/11
	REV. 12/5/11
	MAA/GM

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(SHT 1) STD. NO. GRA3

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

THE LATERAL GUIDES ARE NOT TO BE
POURED UNTIL AFTER THE CORED SLAB
UNITS ARE IN PLACE.

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

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.



WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

TOP OF PILE ELEVATIONS	
①	101.02
②	101.44
③	101.85
④	102.26
⑤	102.67

PROJECT NO. B-4284
SURRY COUNTY
 STATION: 9+95.00 -L-

SHEET 1 OF 4

SHEET 1 OF 4

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

SUBSTRUCTURE

END BENT No. 1

SHEET NO.

13

TOTAL SHEETS

19

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 19
2			4			

STD. NO. EB_30_90S

THE CONTRACTOR HAS THE OPTION TO OMIT
THE LATERAL GUIDE IF APPROVED BY THE
ENGINEER.

[illegible][illegible]

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

ASSEMBLED BY : J.A. YANNACCONI		DATE : 2/20/12
CHECKED BY : R. N. WEISZ		DATE : 4/20/12
DRAWN BY : DGE		02/10
CHECKED BY : MKT		02/10

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 6/25/11

PROJECT NO. B-4284
SURRY COUNTY
 STATION: 9+95.00 -L-

SHEET 2 OF 4

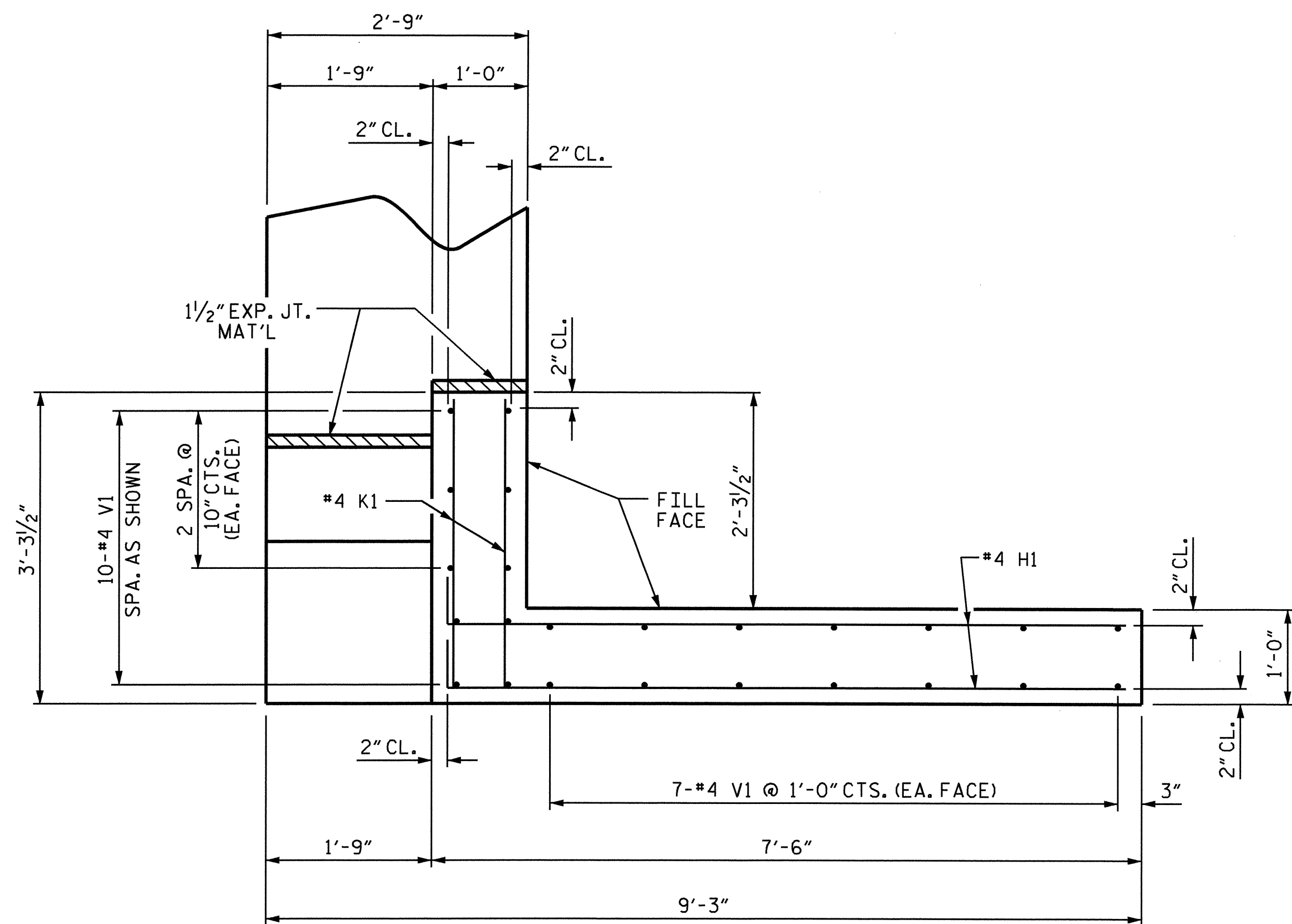
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

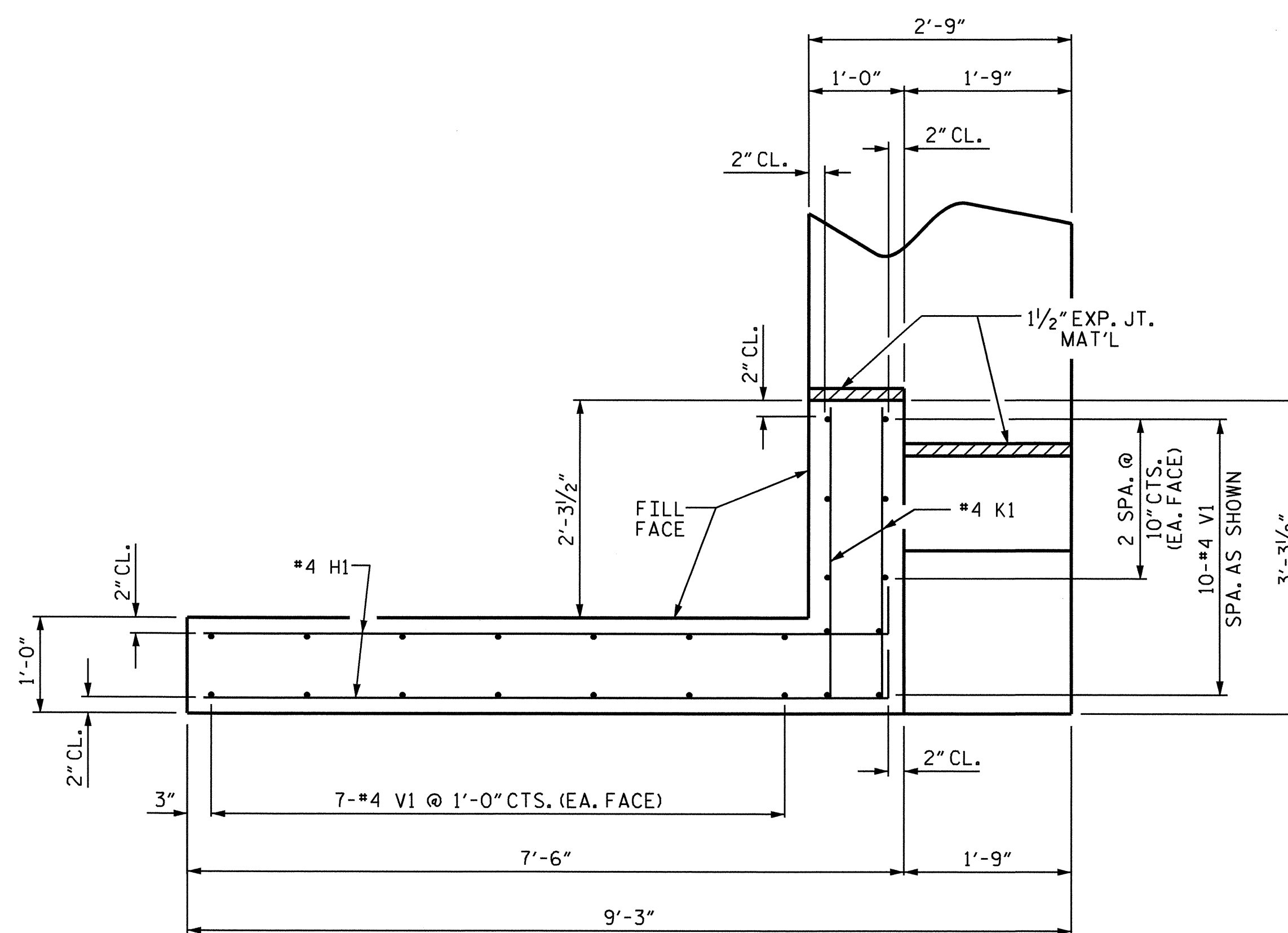
END BENT No. 2

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

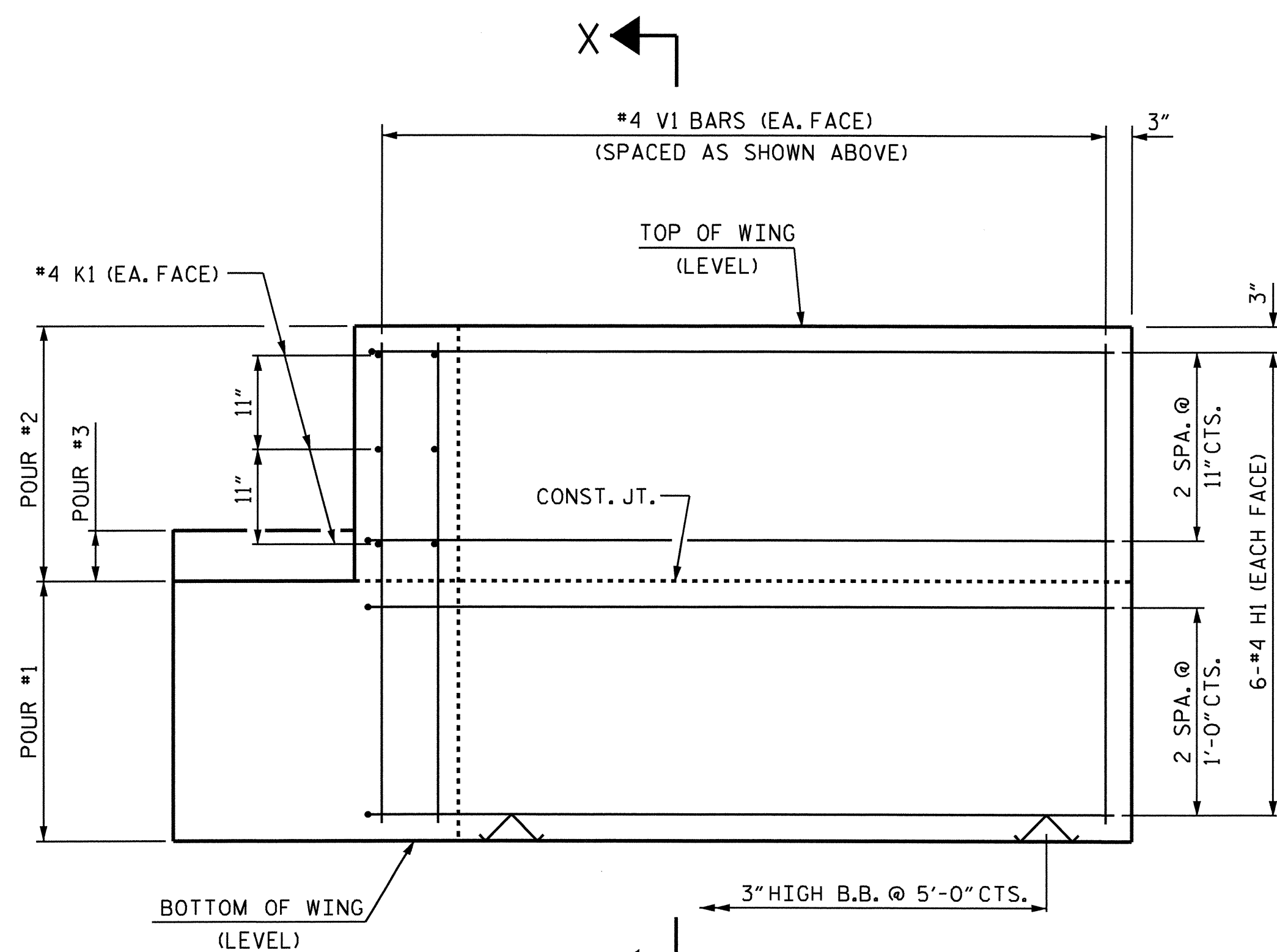
STD. NO. EB_30_90S



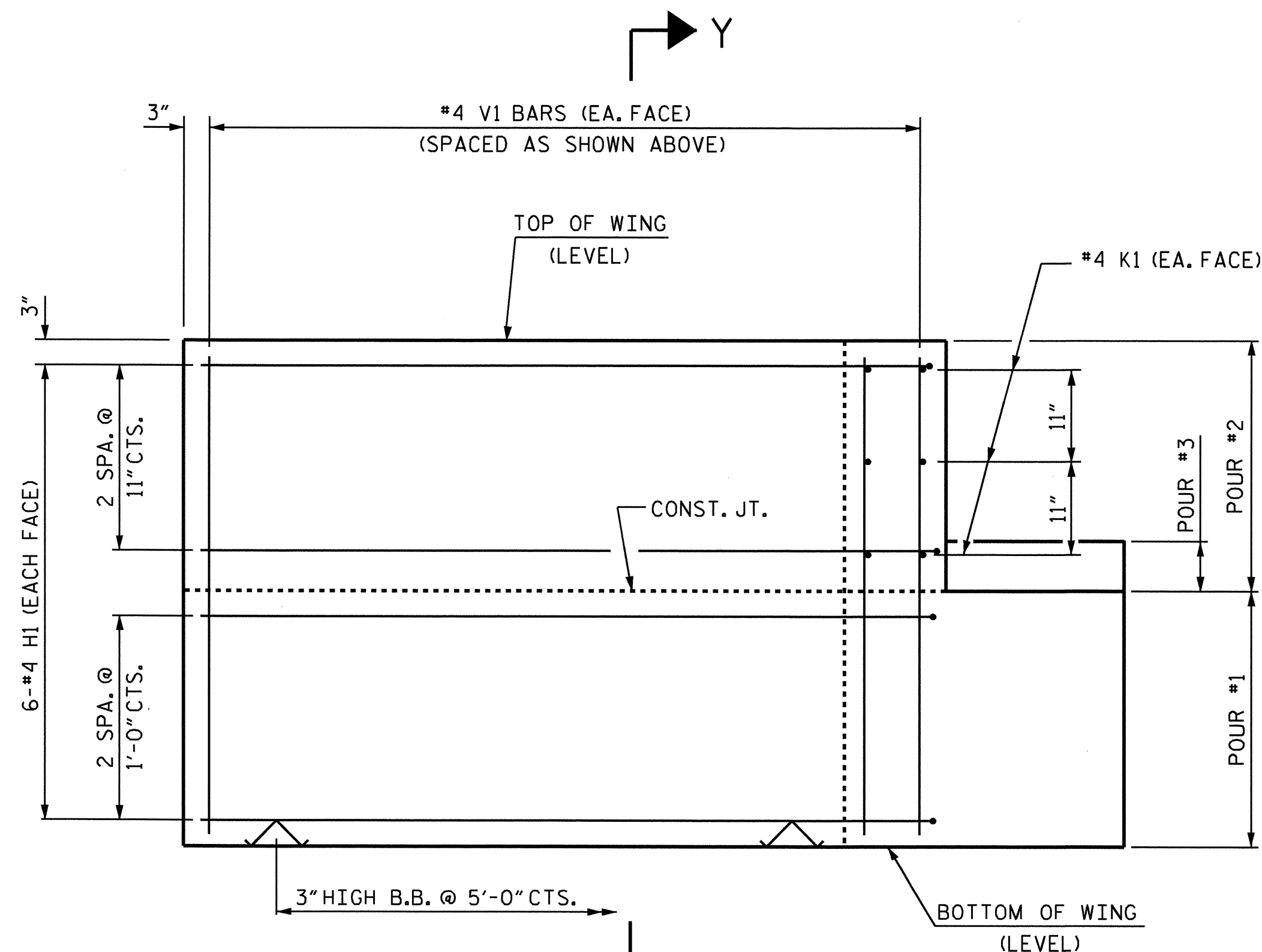
PLAN OF WING (W1)



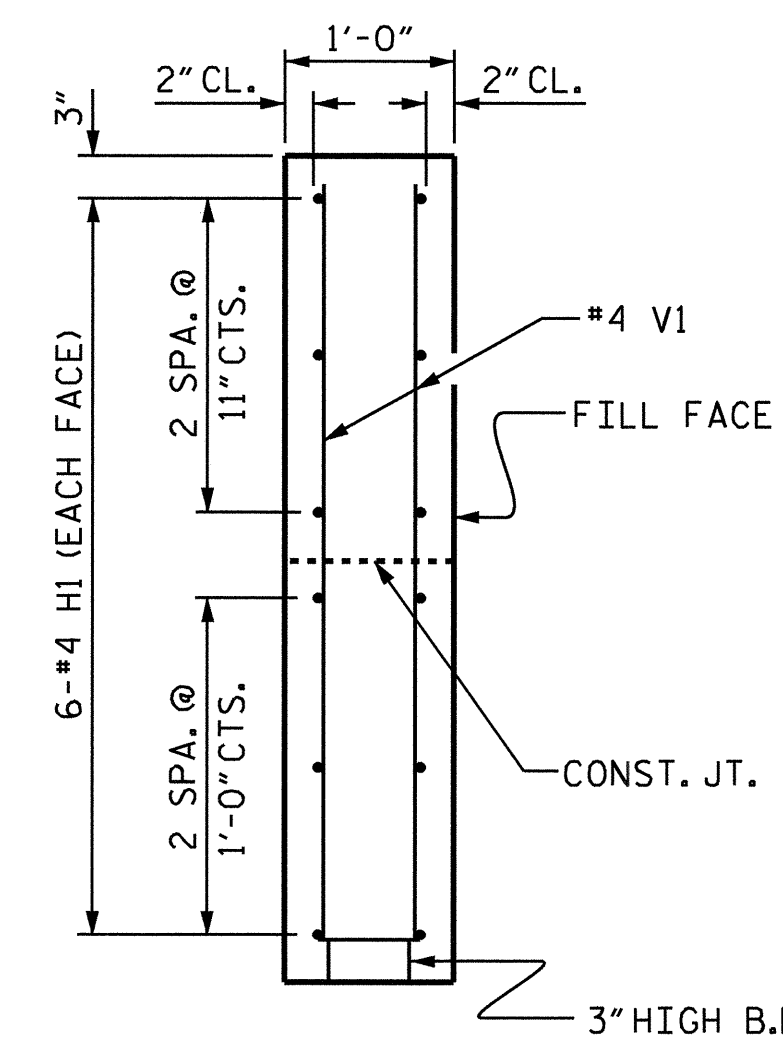
PLAN OF WING (W2)



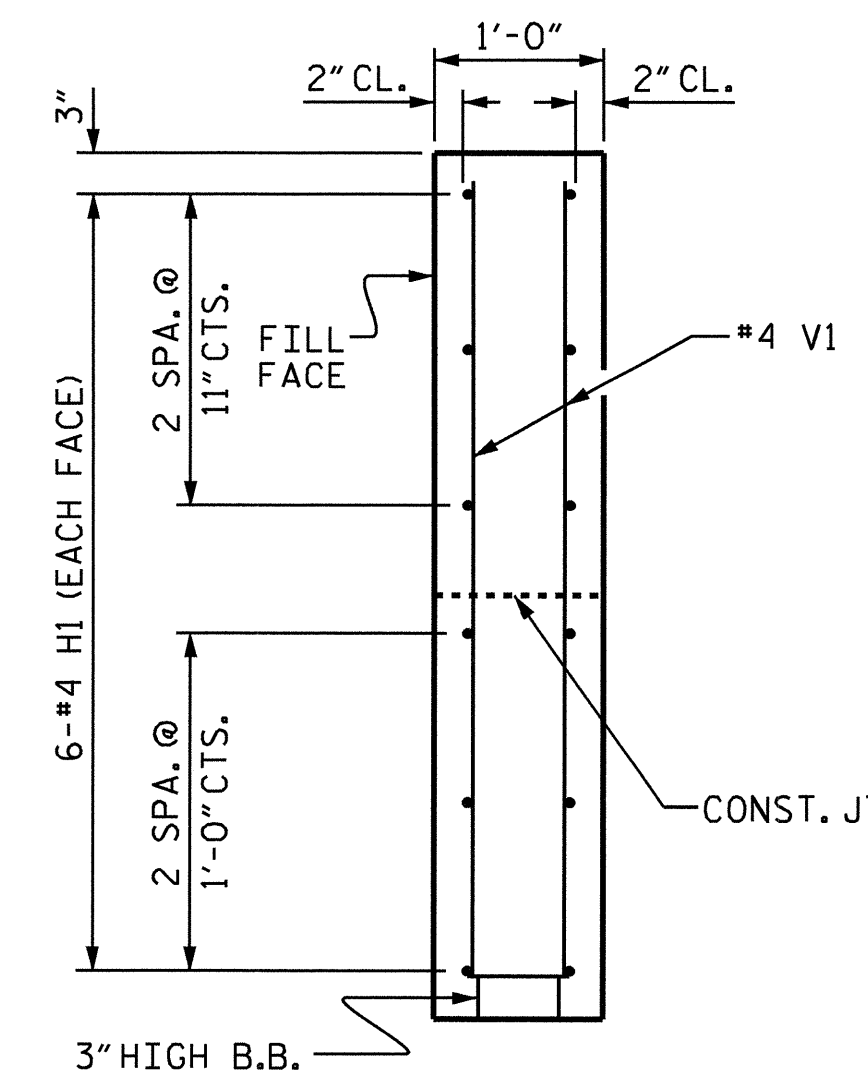
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X

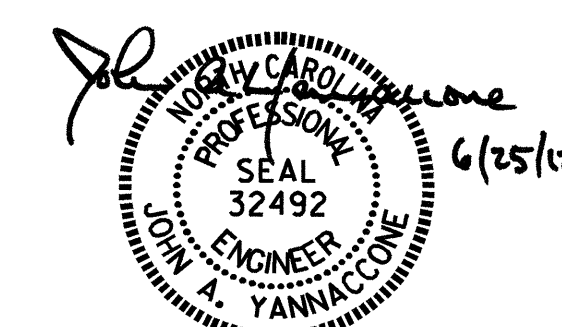


SECTION Y-Y

WING DETAILS

ASSEMBLED BY : J.A. YANNACONE DATE : 2/20/12
 CHECKED BY : R. N. WEISZ DATE : 4/20/12
 DRAWN BY : DGE 02/10
 CHECKED BY : MKT 02/10

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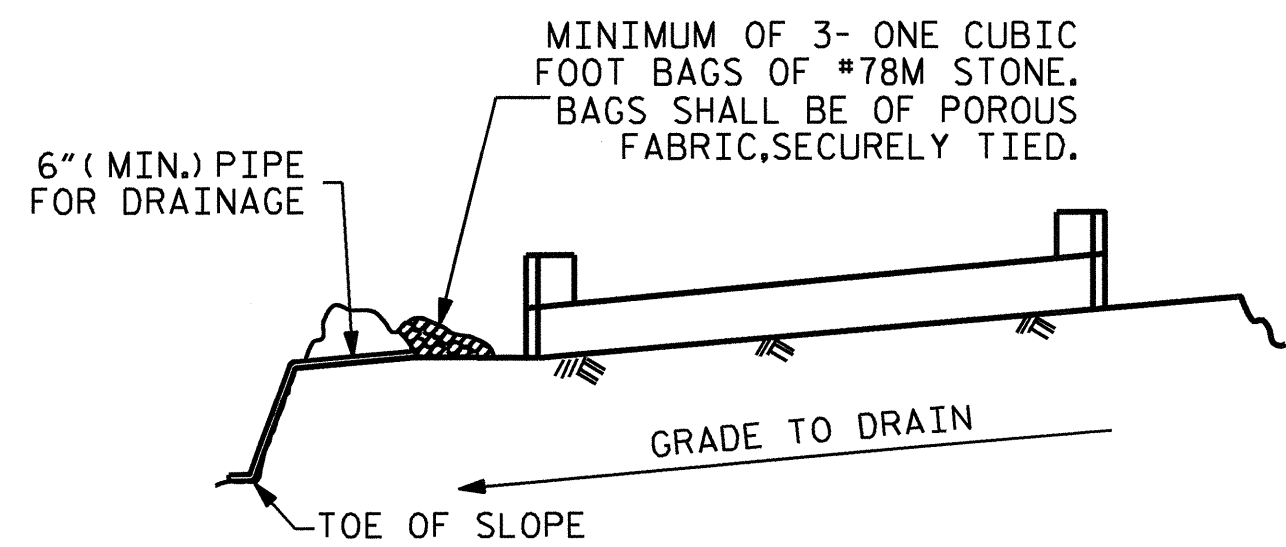


PROJECT NO. B-4284
 SURRY COUNTY
 STATION: 9+95.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT WING DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. 15					TOTAL SHEETS 19

STD. NO. EB_30_90S

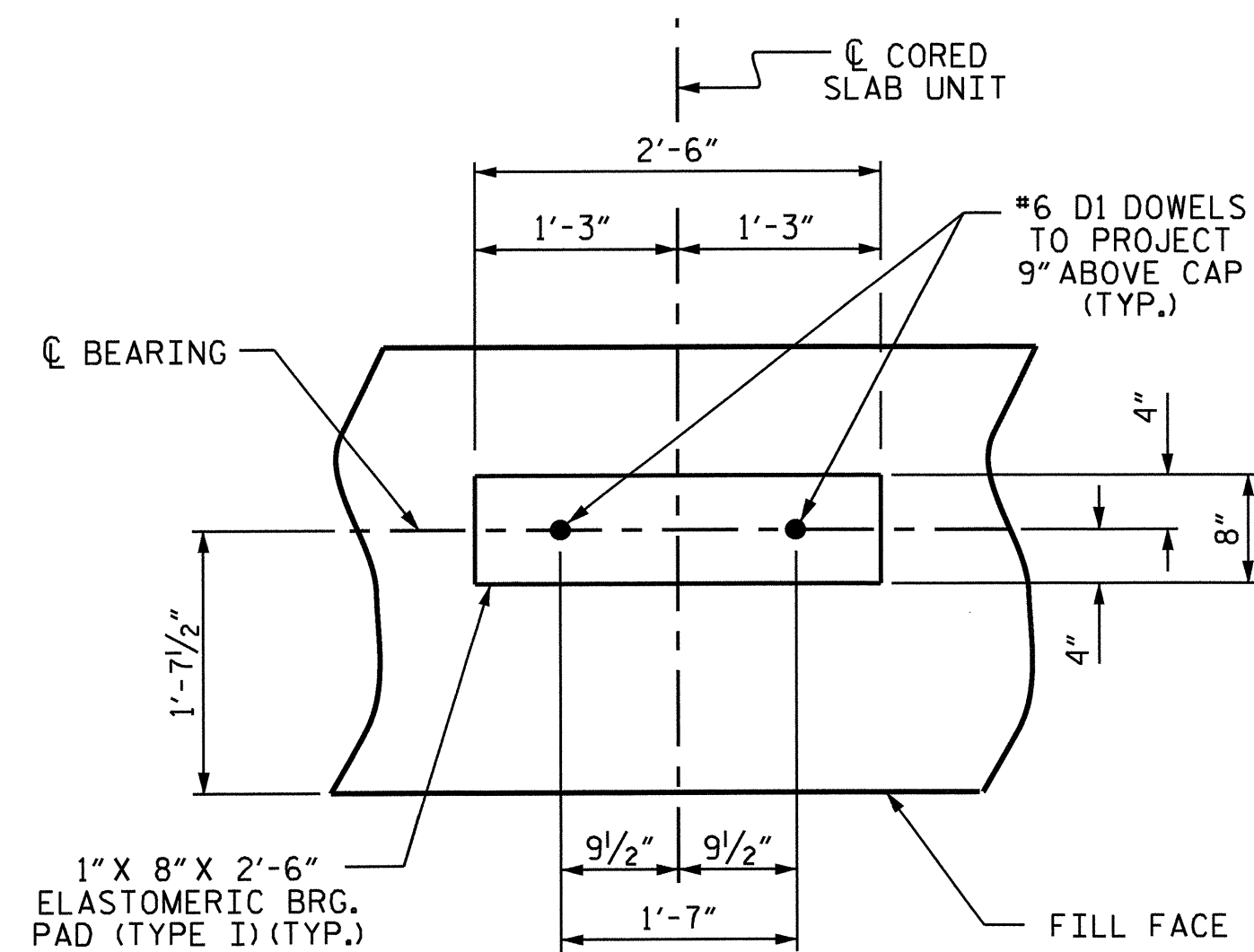


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

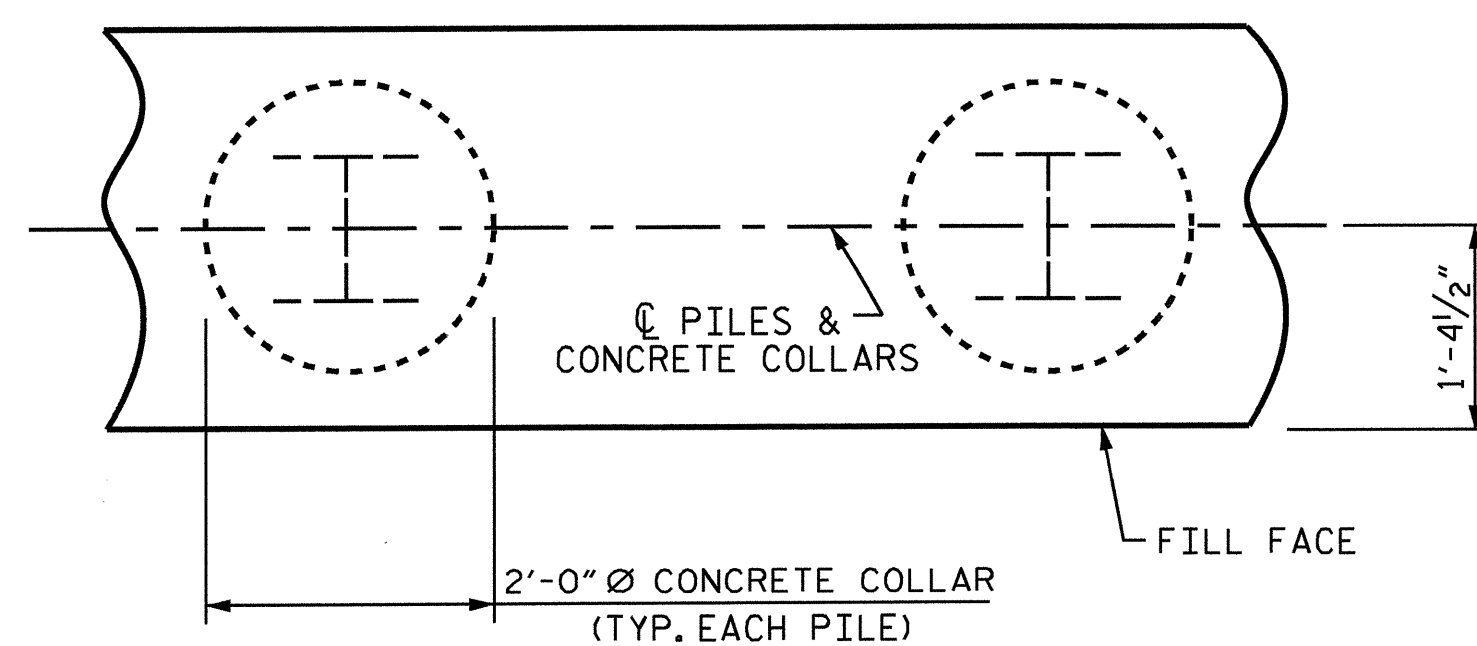
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



DETAIL "A"

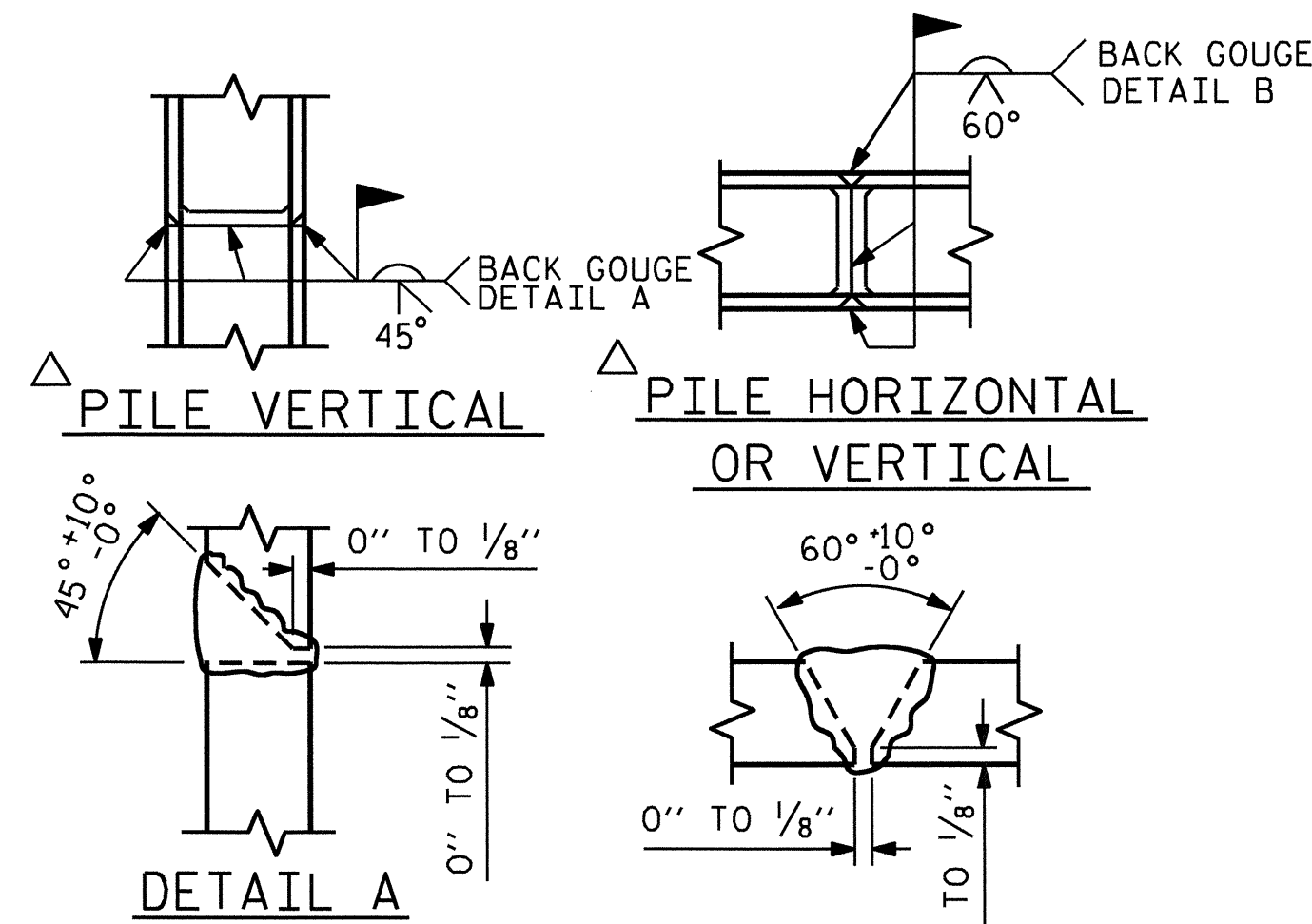
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



PLAN

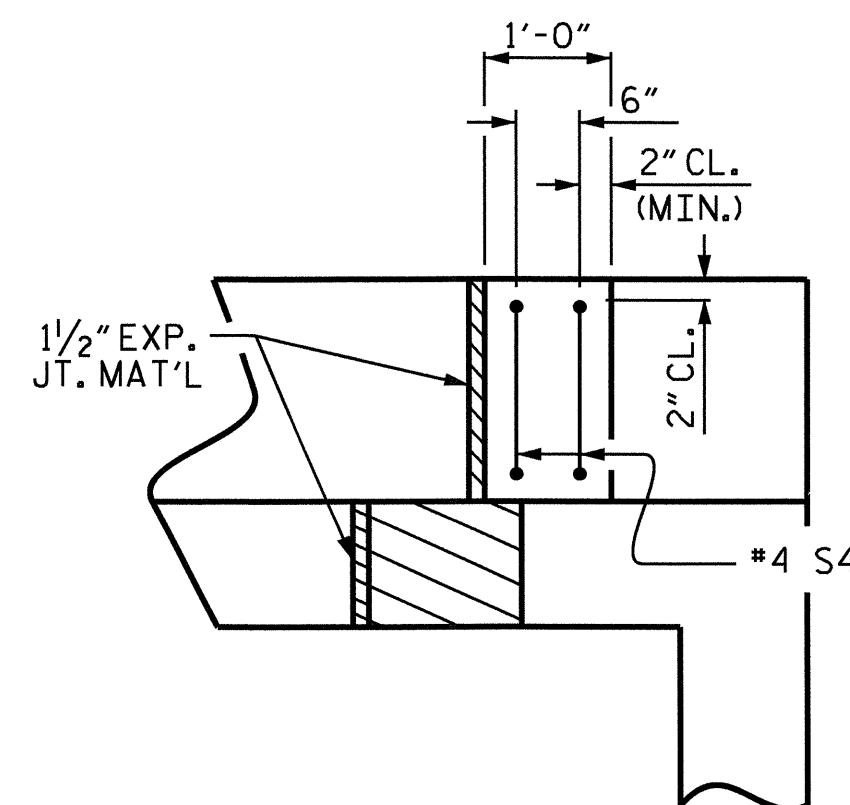
CORROSION PROTECTION FOR STEEL PILES DETAIL

(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)

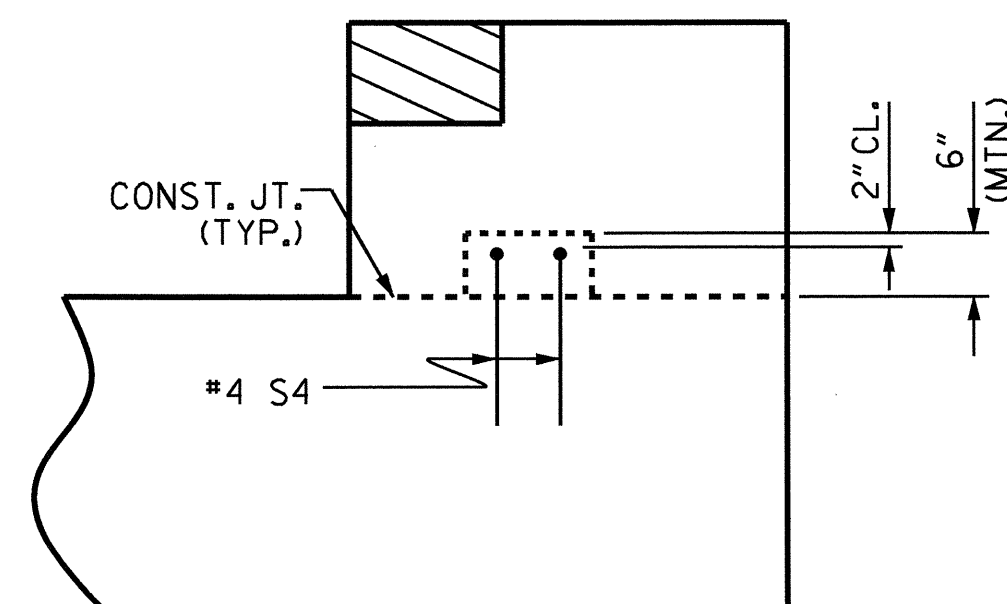


POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



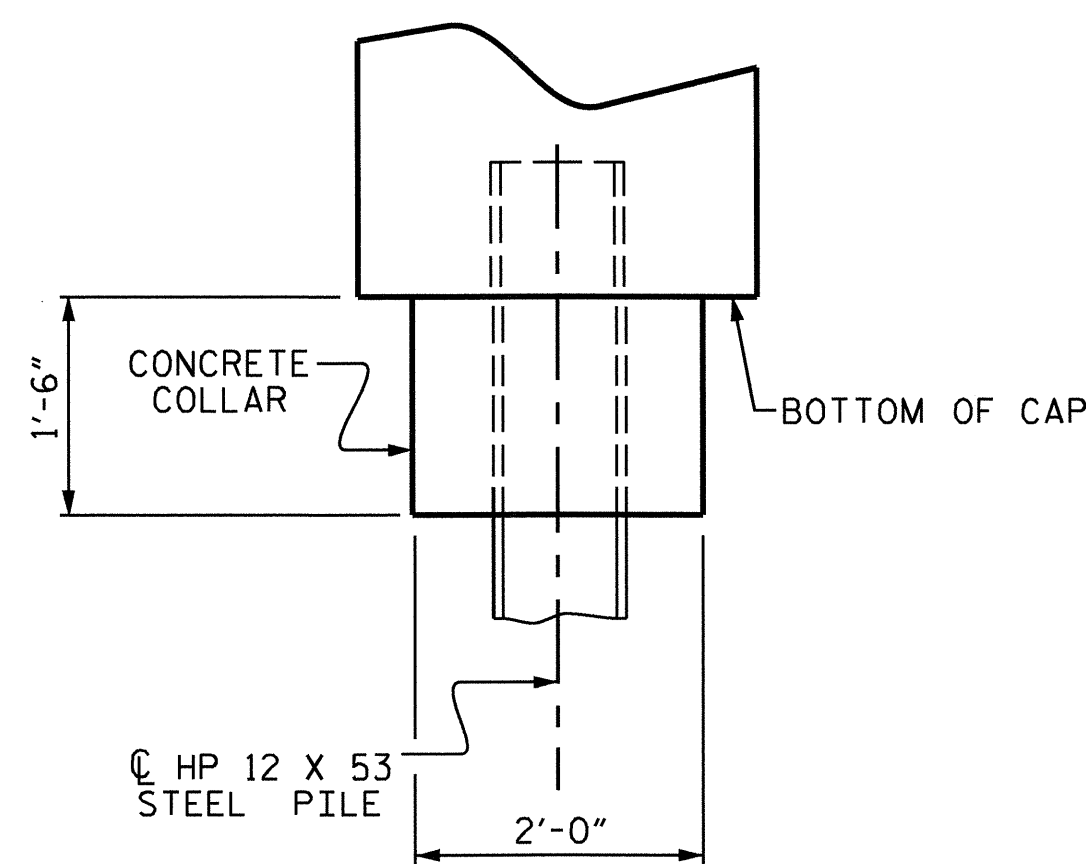
PLAN



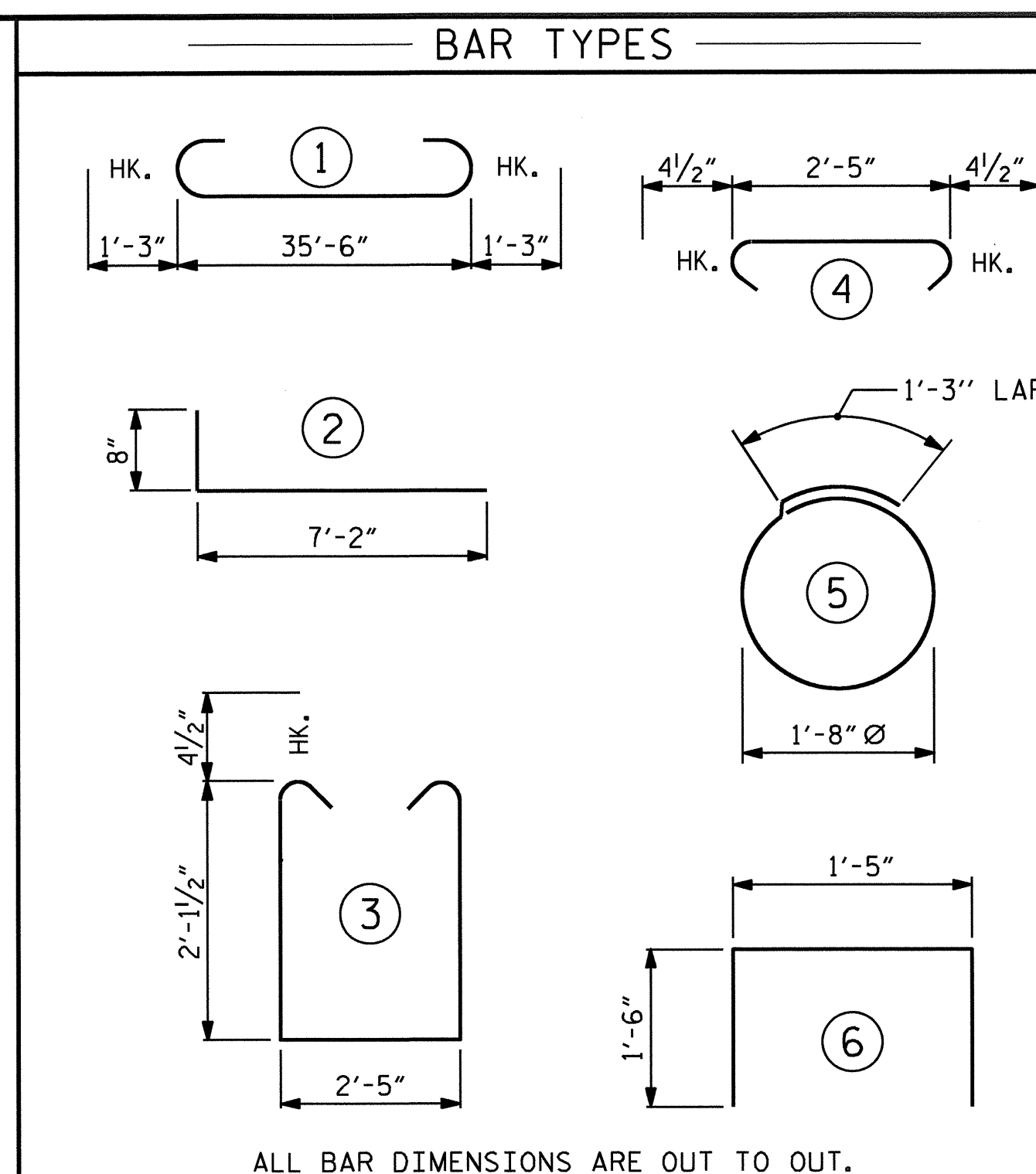
ELEVATION

LATERAL GUIDE DETAILS

(RIGHT LATERAL GUIDE SHOWN, LEFT END SIMILAR)



ELEVATION



ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT No. 1	END BENT No. 2
HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES
NO: 5	NO: 5
LIN. FT.= 50	LIN. FT.= 50

BILL OF MATERIAL

FOR ONE END BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	38'-0"	1034
B2	16	#4	STR	19'-1"	204
B3	9	#4	STR	2'-5"	15
D1	20	#6	STR	1'-6"	45
H1	24	#4	2	7'-10"	126
K1	12	#4	STR	2'-11"	23
S1	46	#4	3	7'-5"	228
S2	46	#4	4	3'-2"	97
S3	10	#4	5	6'-6"	43
S4	4	#4	6	4'-5"	12
V1	48	#4	STR	4'-8"	150

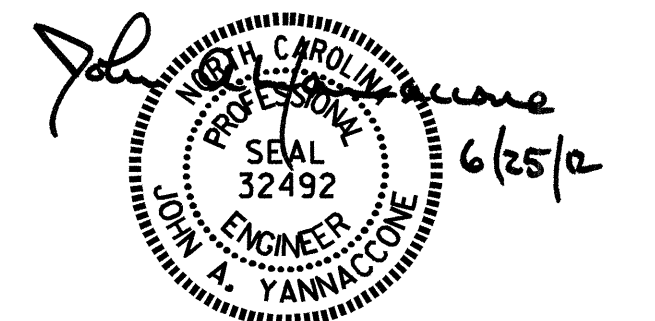
REINFORCING STEEL (FOR ONE END BENT) 1977 LBS.

CLASS A CONCRETE BREAKDOWN (FOR END BENT No. 1)

POUR #1	CAP, LOWER PART OF WINGS & COLLARS	11.2 C.Y.
POUR #2	UPPER PART OF WINGS	2.0 C.Y.
POUR #3	LATERAL GUIDES	0.1 C.Y.
TOTAL CLASS A CONCRETE		13.3 C.Y.

CLASS A CONCRETE BREAKDOWN (FOR END BENT No. 2)

POUR #1	CAP, LOWER PART OF WINGS & COLLARS	11.2 C.Y.
POUR #2	UPPER PART OF WINGS	1.8 C.Y.
POUR #3	LATERAL GUIDES	0.1 C.Y.
TOTAL CLASS A CONCRETE		13.1 C.Y.



PROJECT NO. B-4284
SURRY COUNTY
STATION: 9+95.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1 & 2
DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			16
2			4			19

STD. NO. EB_30_90S

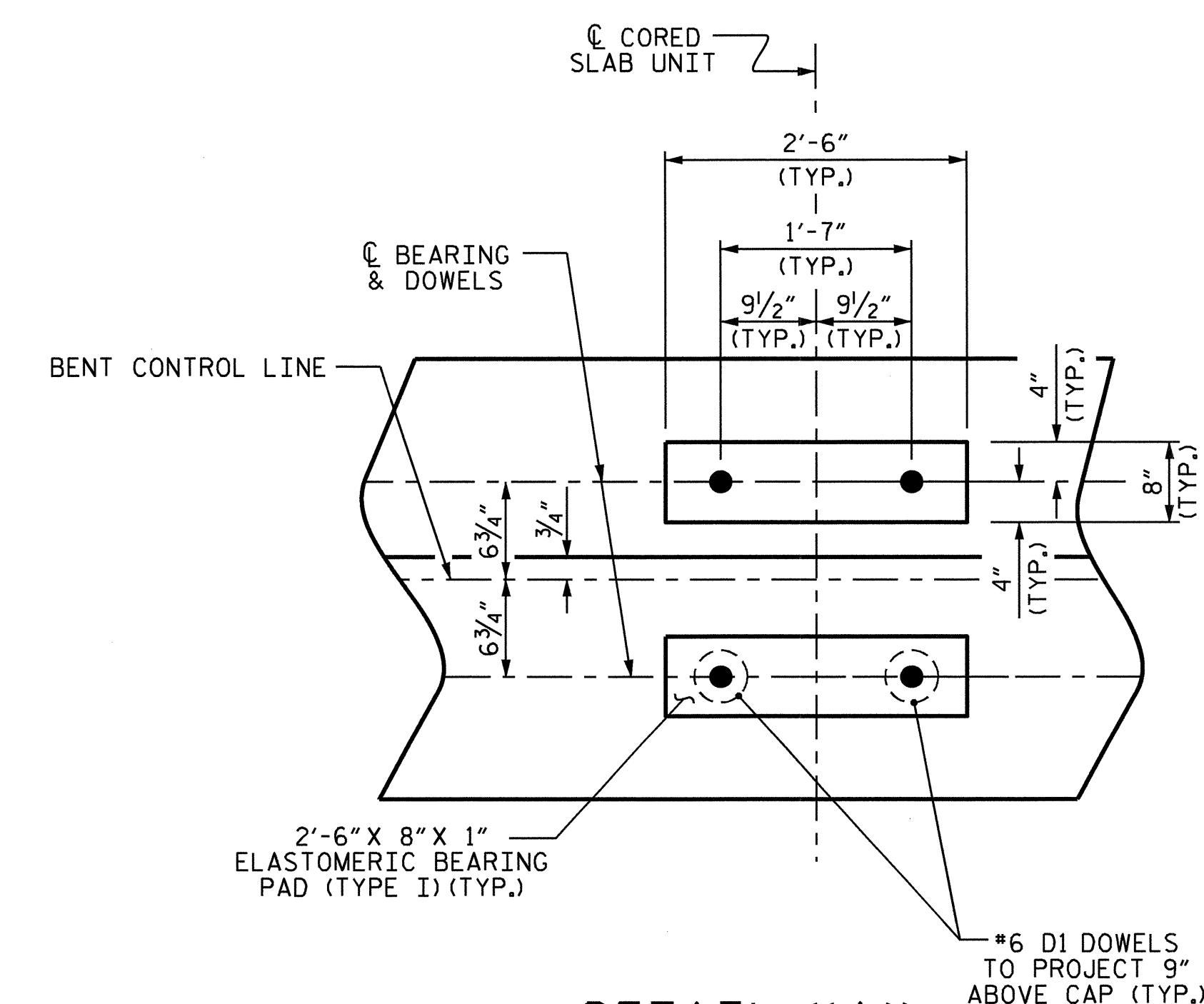
ASSEMBLED BY : J.A. YANNACCON	DATE : 2/20/12
CHECKED BY : R. N. WEISZ	DATE : 4/20/12
DRAWN BY : DGE	02/10
CHECKED BY : MKT	02/10

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(CONCRETE COLLAR NOT SHOWN FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")

SECTION A-A

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



(DIMENSIONS ARE TYPICAL EACH BEARING)

BRIDGE NO. B-4284
SURRY COUNTY
 STATION: 9+95.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

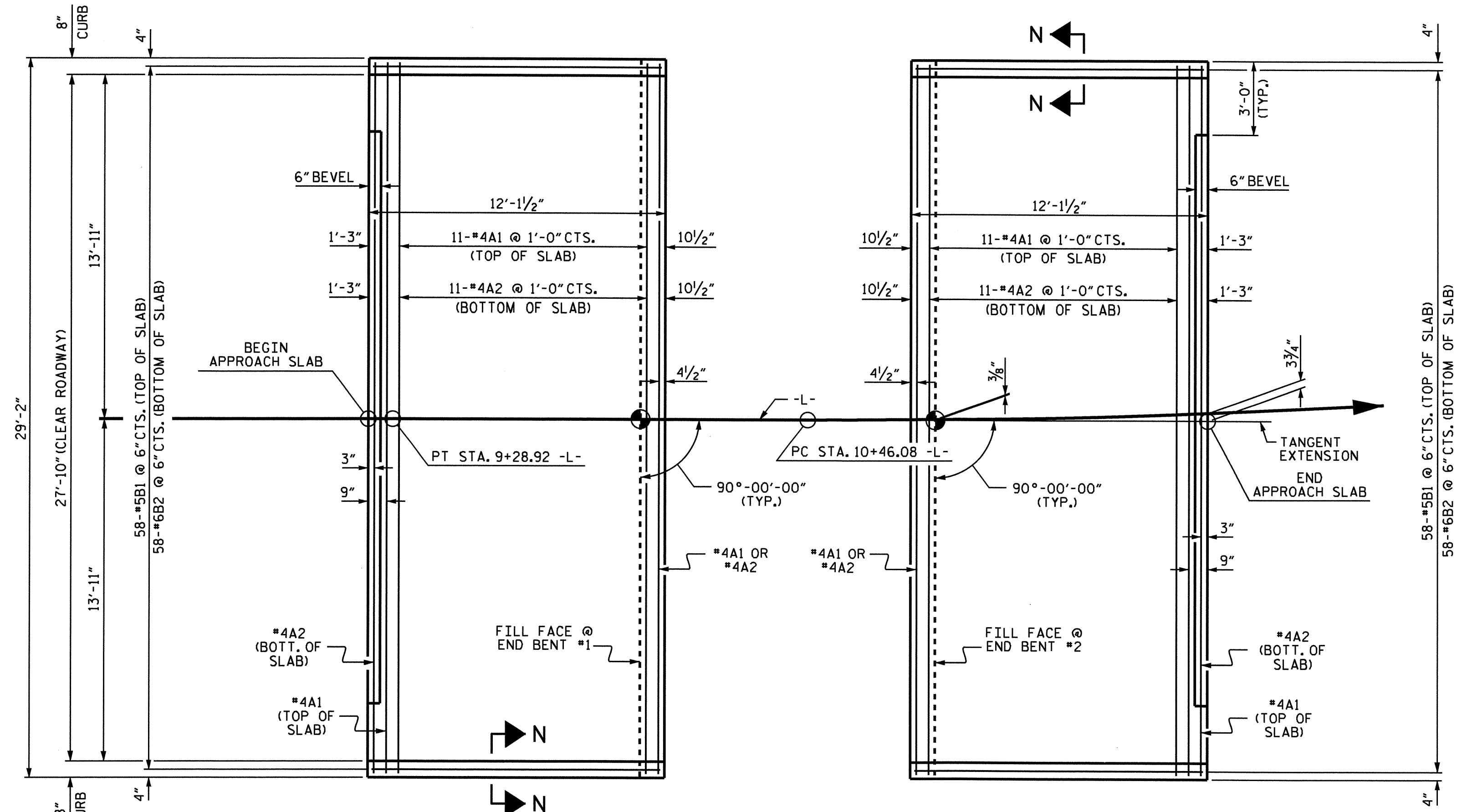
SUBSTRUCTURE
BENT No. 1

REVISIONS						SHEET NO. 17
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 19
2			4			

STD. NO. DP_BT_30_90S_<50'

DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER UNLESS OTHERWISE NOTED.

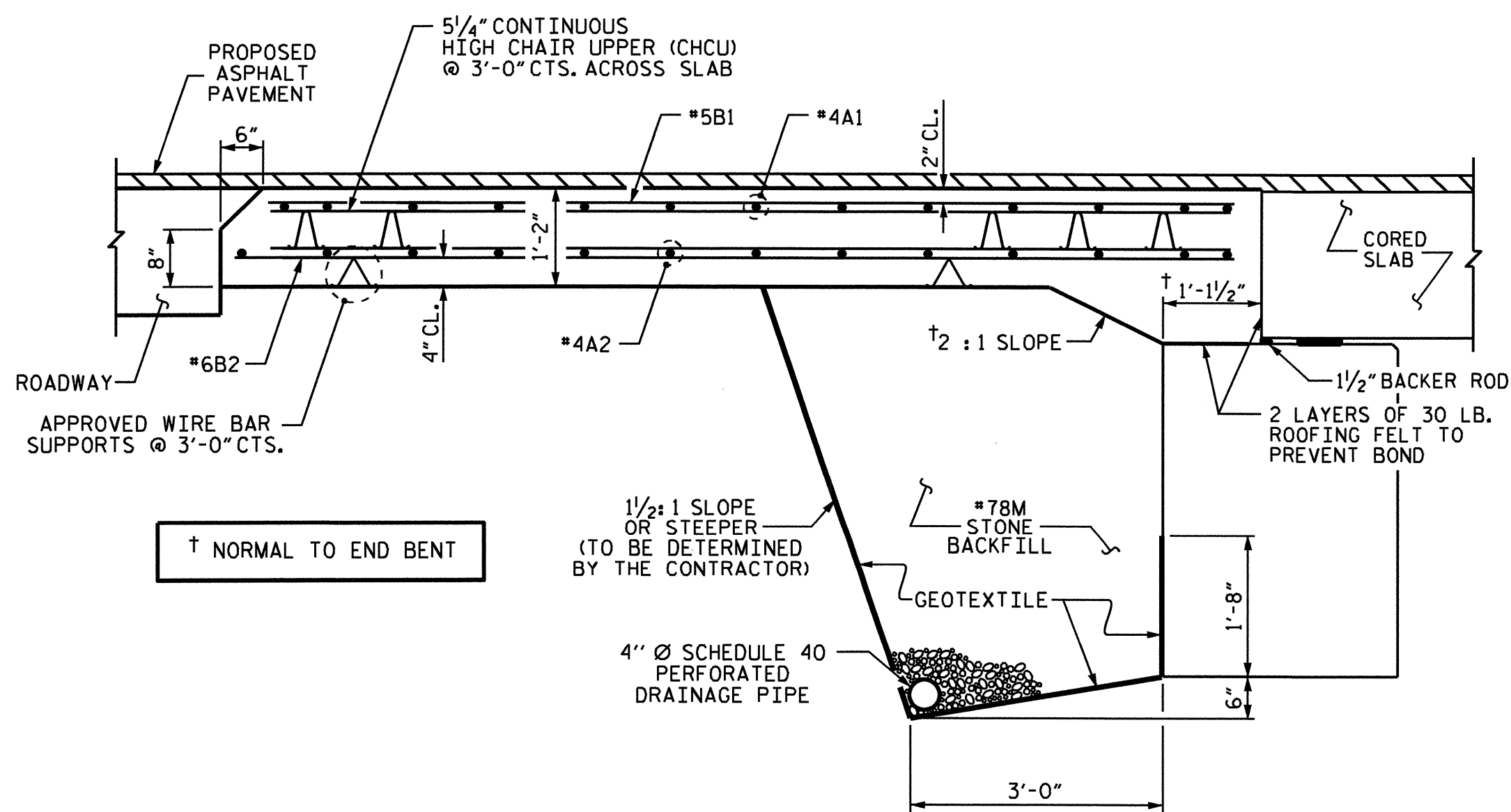
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JAYannaccone



PLAN @ END BENT #1

PLAN @ END BENT #2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB

ASSEMBLED BY : J.A. YANNACCONE DATE : 2/16/12
 CHECKED BY : R. N. WEISZ DATE : 4/20/12
 DRAWN BY : SHS/MAA 5-09 REV. 12-11 MAA/AAC
 CHECKED BY : BCH 5-09

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NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 4"Ø DRAINAGE PIPE, AND #78M STONE BACKFILL, SEE ROADWAY STANDARD 422.10.

GEOTEXTILE SHALL BE TYPE 1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

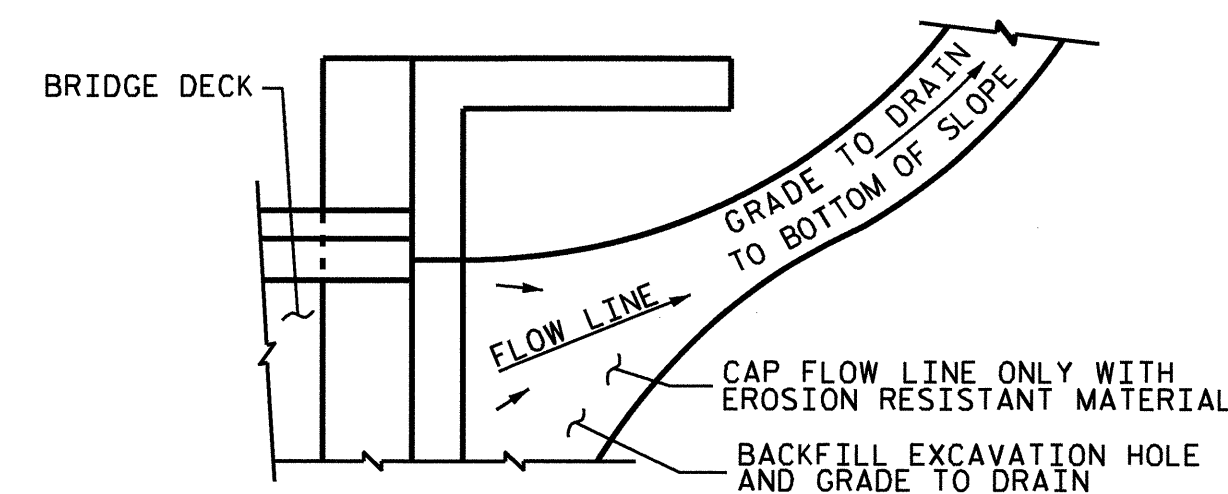
#78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

#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.

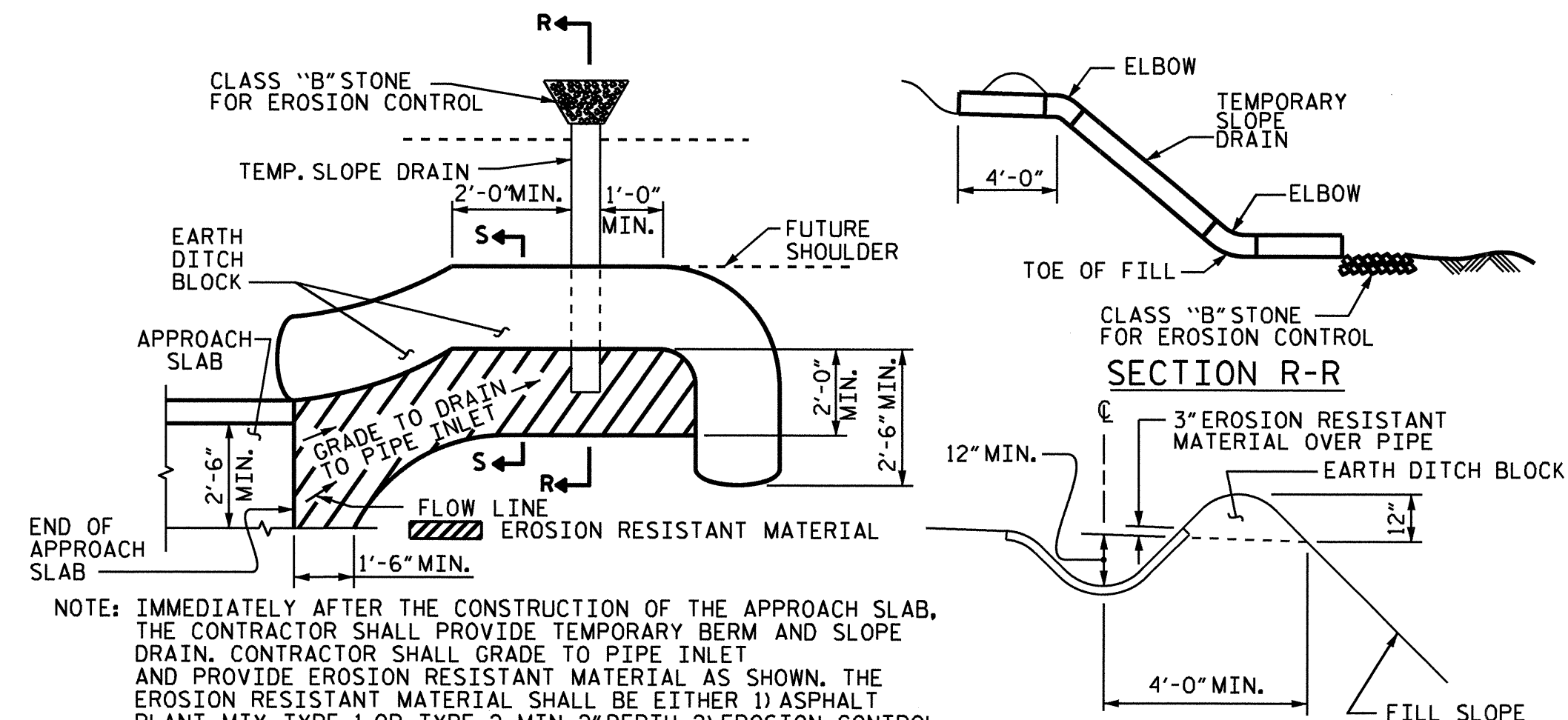
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED WITH 4" OF SURFACE COURSE ASPHALT.

APPROACH SLAB GROOVING IS NOT 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

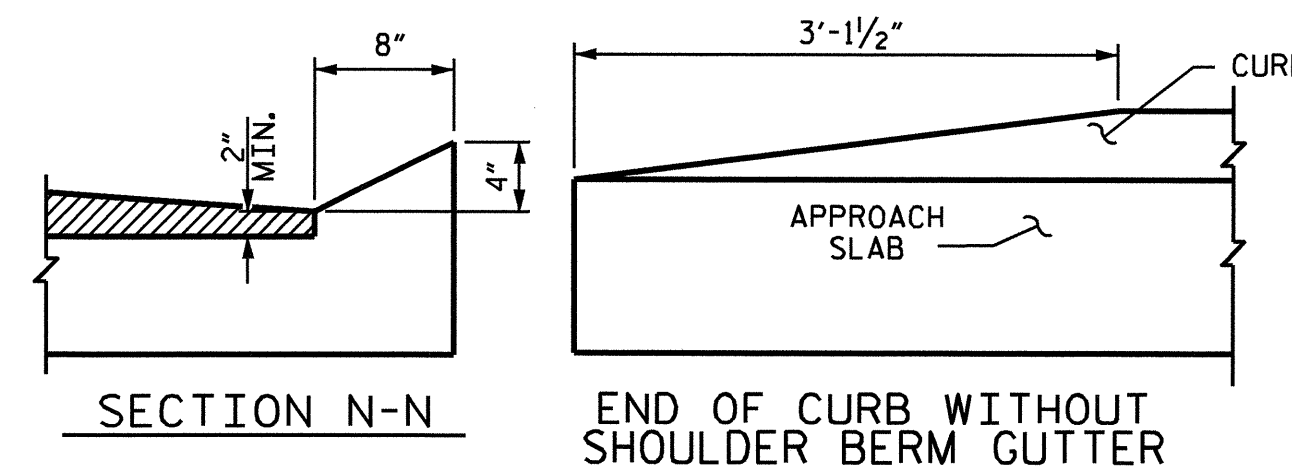


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 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

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



SECTION N-N

END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

SPlice LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"

BILL OF MATERIAL

APPROACH SLAB AT EB #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	28'-10"	250
A2	13	#4	STR	28'-10"	250
*B1	58	#5	STR	11'-2"	676
B2	58	#6	STR	11'-8"	1016

REINFORCING STEEL	LBS.	1266
*EPOXY COATED REINFORCING STEEL	LBS.	926

CLASS AA CONCRETE	C. Y.	18.1
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APPROACH SLAB AT EB #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	28'-10"	250
A2	13	#4	STR	28'-10"	250
*B1	58	#5	STR	11'-2"	676
B2	58	#6	STR	11'-8"	1016

REINFORCING STEEL	LBS.	1266
*EPOXY COATED REINFORCING STEEL	LBS.	926

CLASS AA CONCRETE	C. Y.	16.9
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PROJECT NO. B-4284
SURRY COUNTY
 STATION: 9+95.00 -L-

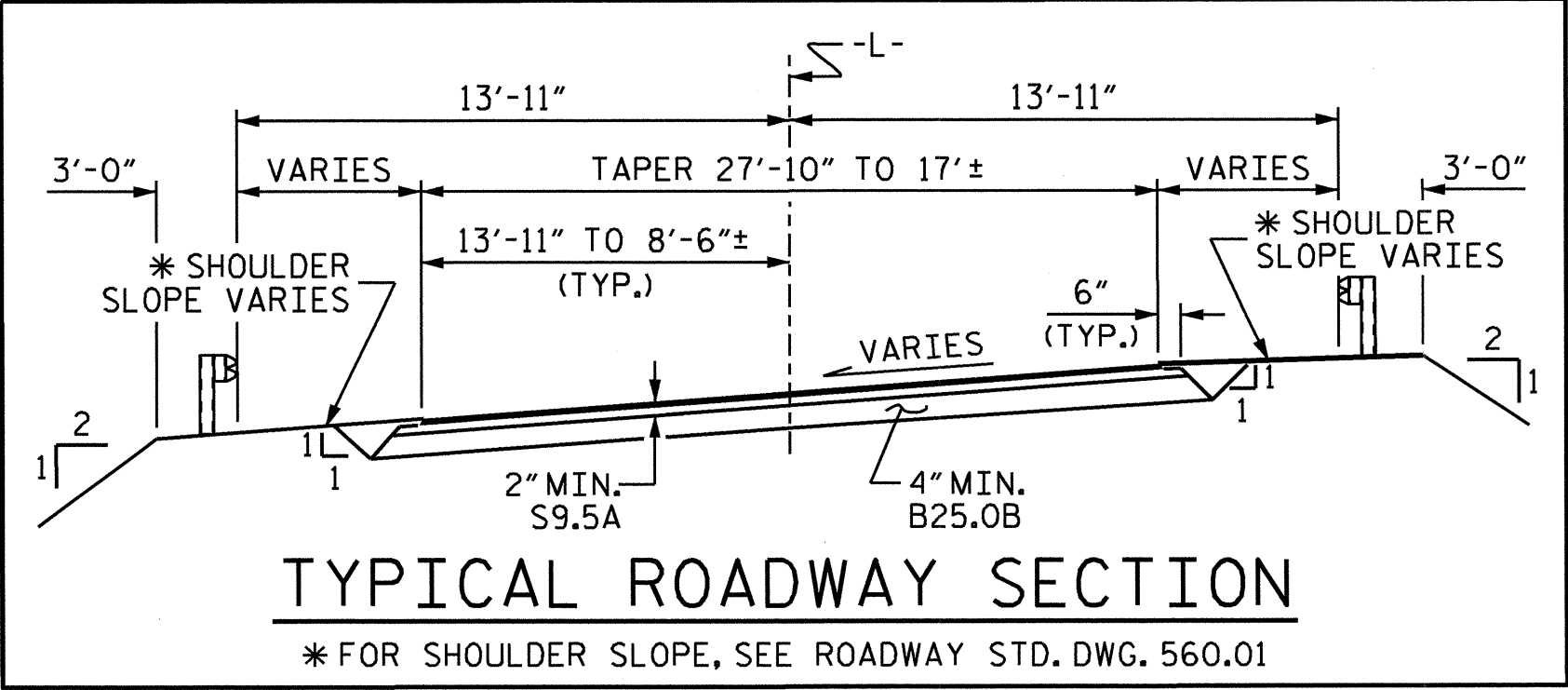
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 CORED SLAB UNIT
 (SUB-REGIONAL TIER)
 90° SKEW

REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
				TOTAL SHEETS	19

STD. NO. BAS_30_90S

EROSION CONTROL PLAN



TBM: NAIL IN BASE OF TRIPLE TRUNK POPLAR
STA. 11+62 -L-, 27' LT OF CENTERLINE
EL = 100.00 (ASSUMED)

NORMAN JAMES E.
PO BOX 743
ELKIN, NC 28621
DEED BOOK 289 PG 52

NORMAN JAMES E.
PO BOX 743
ELKIN, NC 28621
DEED BOOK 289 PG 52

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY
WITH THE REGULATIONS SET FORTH BY THE
NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011
ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES DIVISION OF WATER QUALITY.

PROJECT NO. B-4284
SURRY COUNTY
STATION: 9+95.00 -L-

SHEET 1 OF 3 REPLACES BRIDGE NO. 29

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOR BRIDGE OVER MILL
CREEK ON SR 1322
(DEVOTION RD) BETWEEN
SR 1301 AND SR 1330

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

2012 STANDARD DRAWINGS

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

ENVIRONMENTALLY SENSITIVE AREA
PLEASE SEE HIGH QUALITY WATERS NOTE

CLASS II
RIP RAP

I.S.B.D
PLAN VIEW

MENDENHALL JAMES B.
MENDENHALL SPEAS CAROL M.
699 DEVOTION RD.
THURMOND, NC 28683
DEED BOOK 396 PG 950

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY
NEED TO BE INSTALLED AS DIRECTED BY THE
ENGINEER.

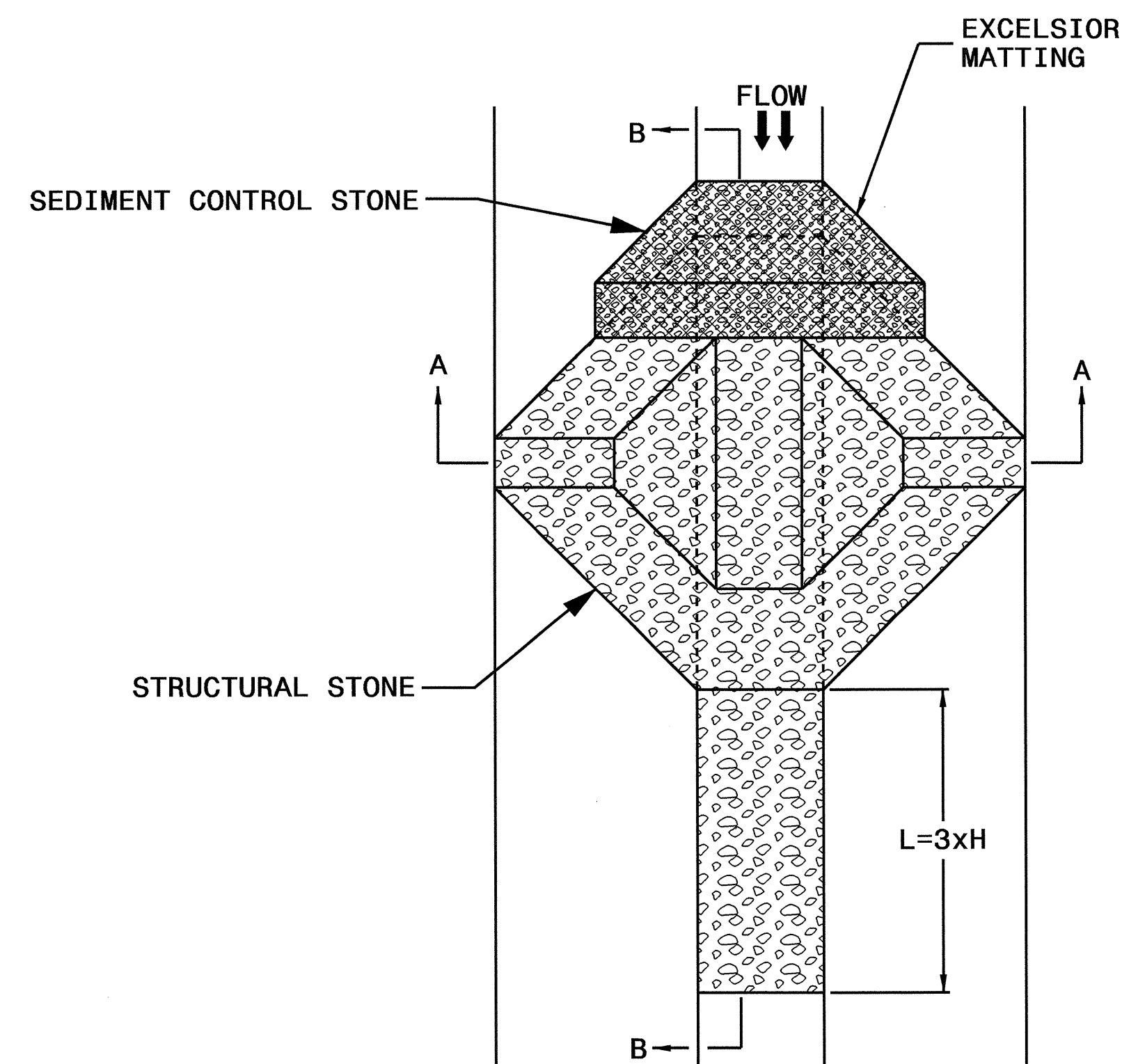
ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
2012 STANDARD SPECIFICATIONS

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1630.06	Special Stilling Basin	
1632.03	Rock Inlet Sediment Trap Type C	□
1633.01	Temporary Rock Silt Check Type-A	⊗
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	⊗

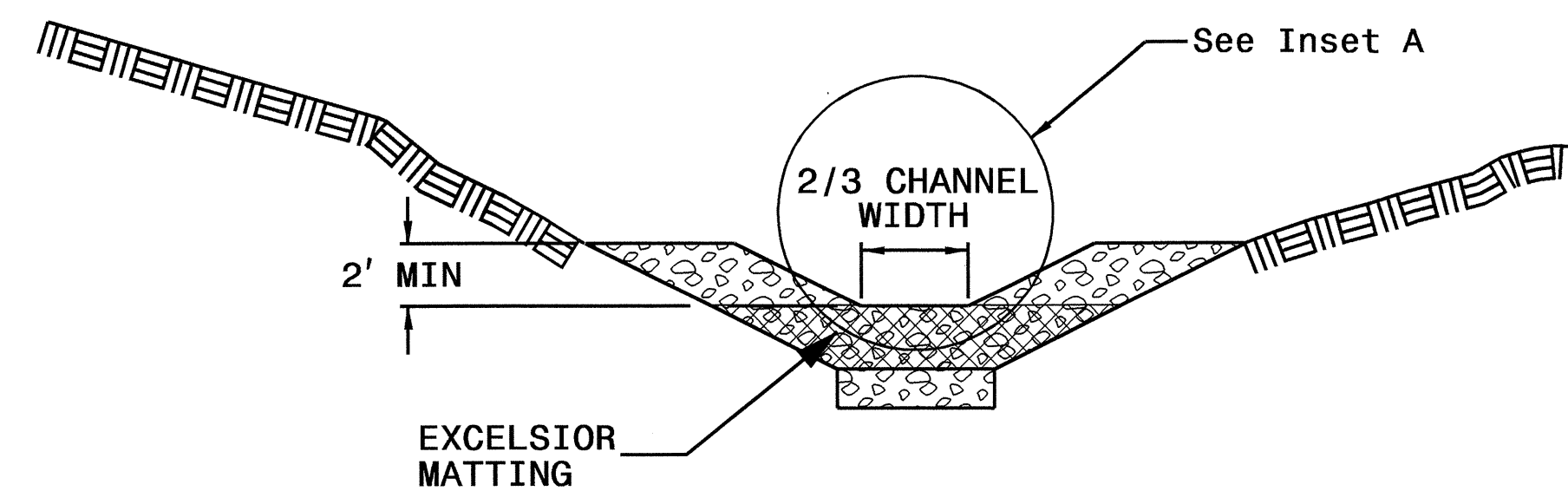
DRAWN BY : _____ DATE : _____
CHECKED BY : _____ DATE : _____

PROJECT REFERENCE NO.	SHEET NO.
B-4284	EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN



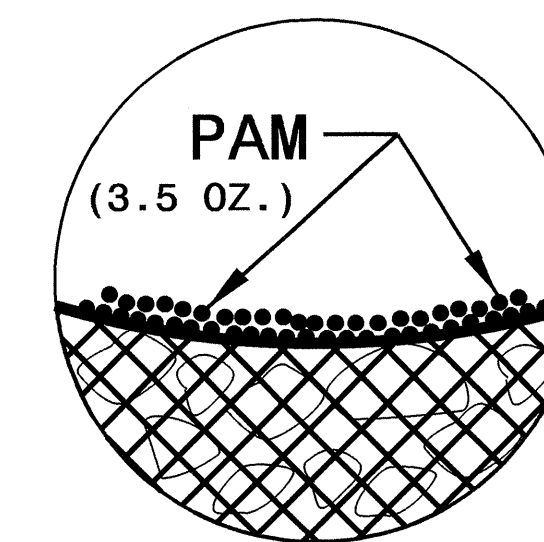
SECTION A-A

NOTES

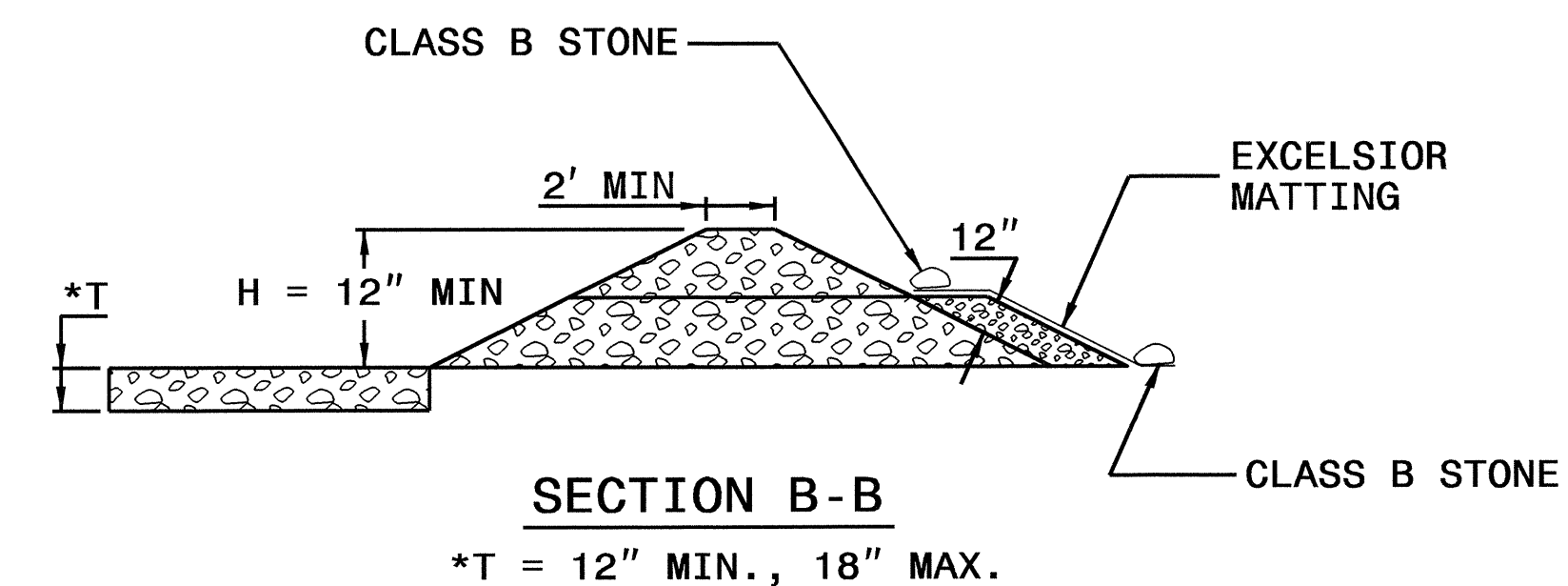
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 3.5 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION B-B

*T = 12" MIN., 18" MAX.

NOT TO SCALE

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2012 STANDARD SPECIFICATIONS

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

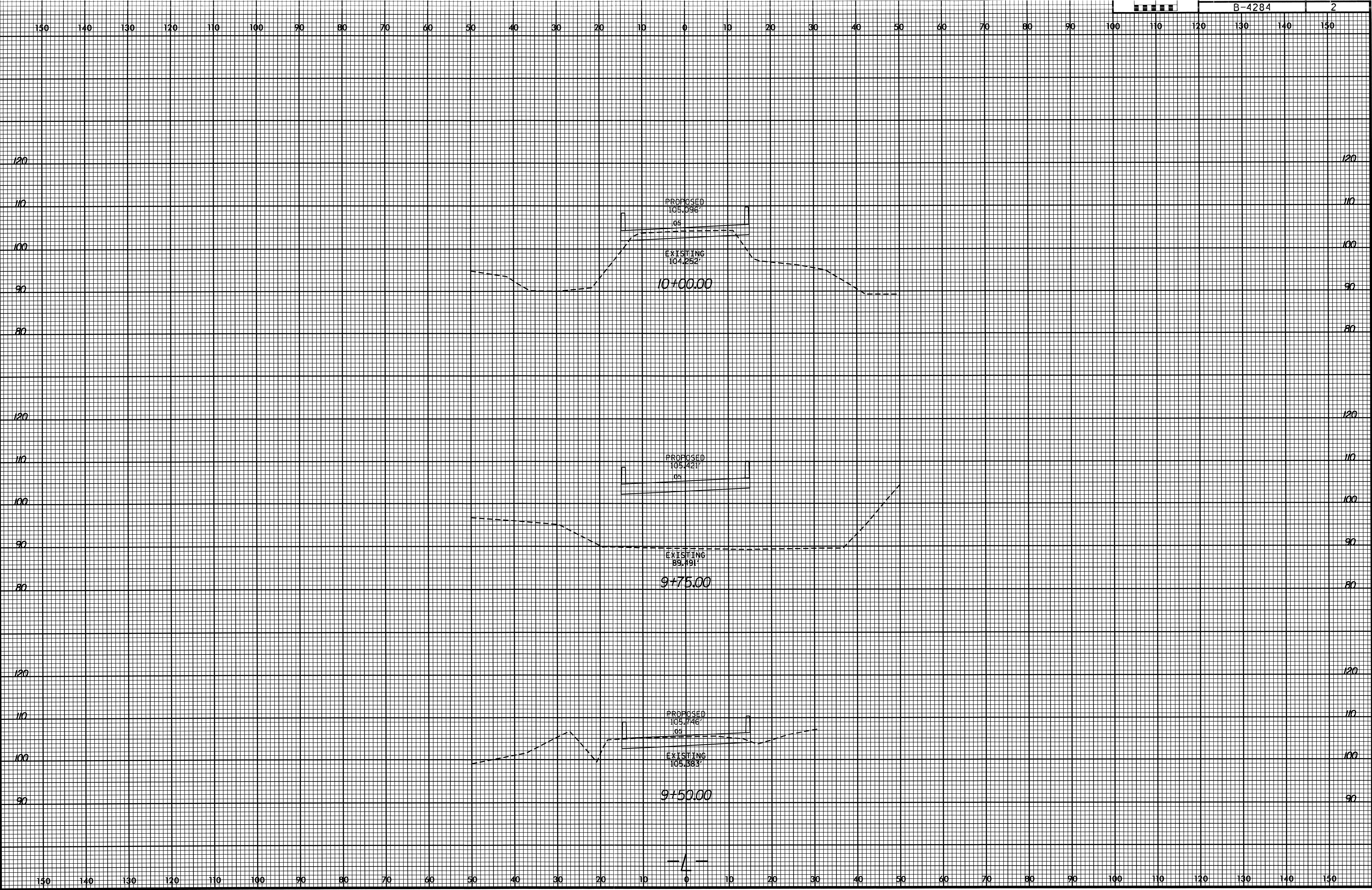
SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

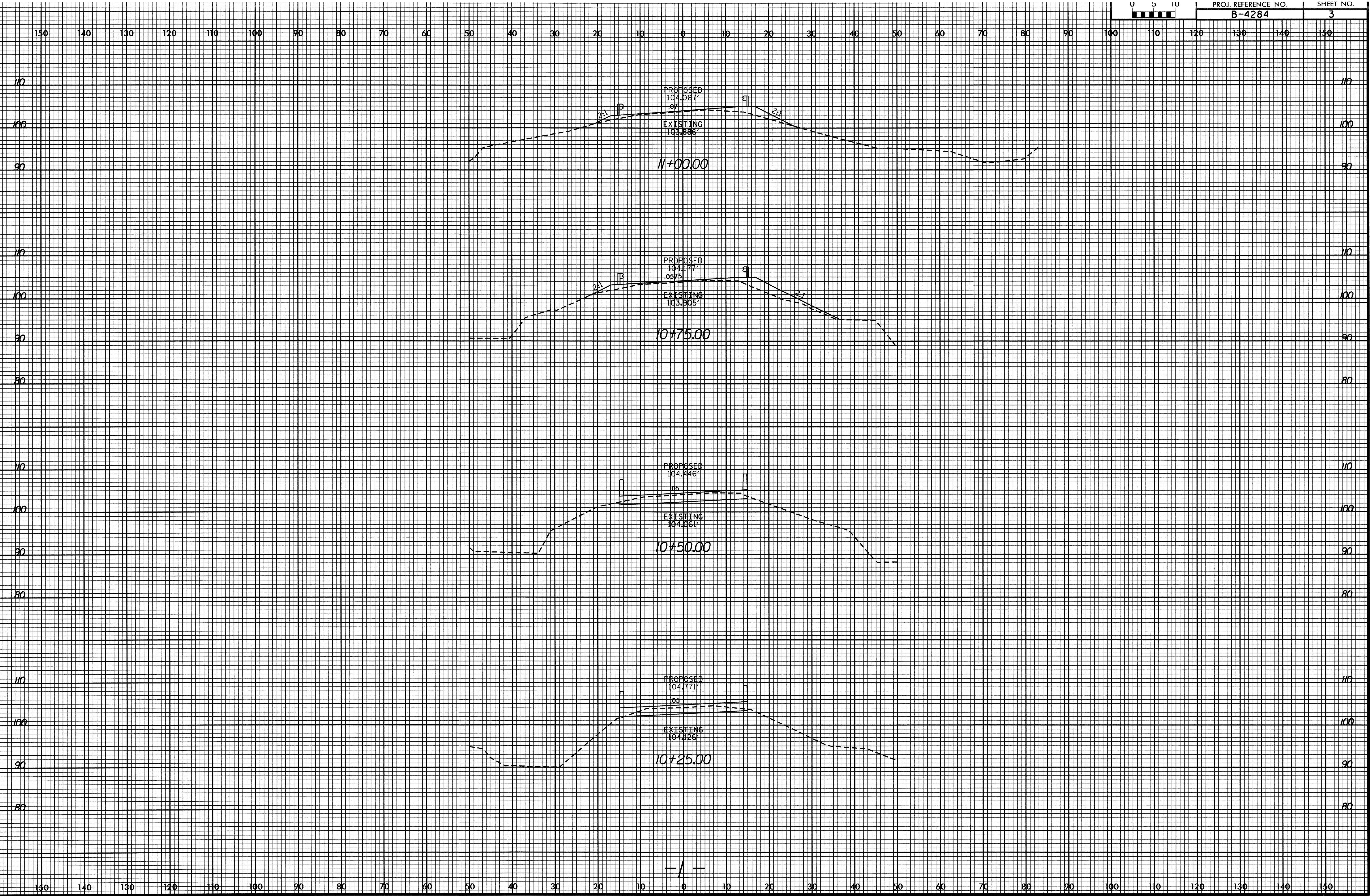
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

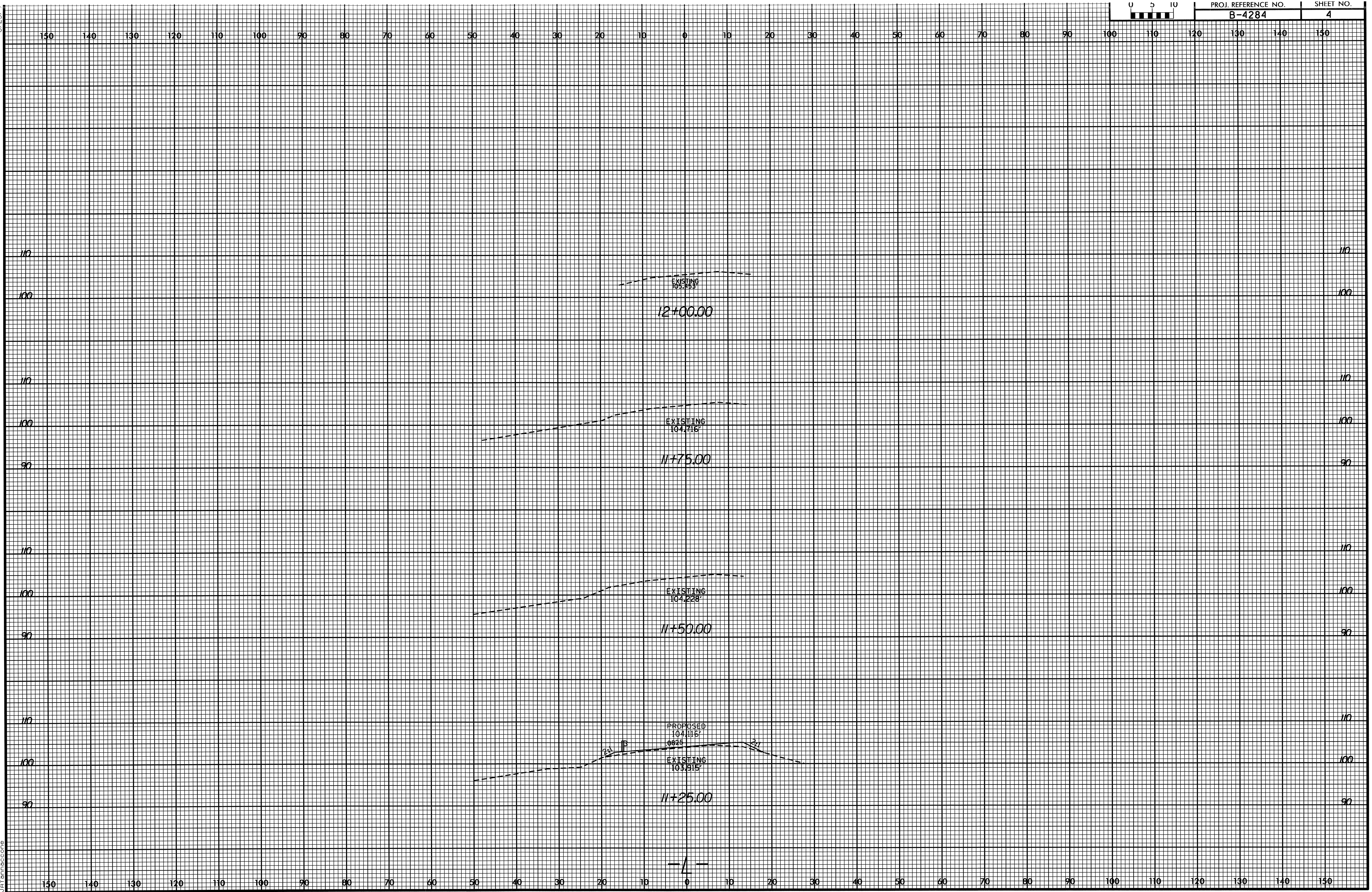
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2012 STANDARD SPECIFICATIONS







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