

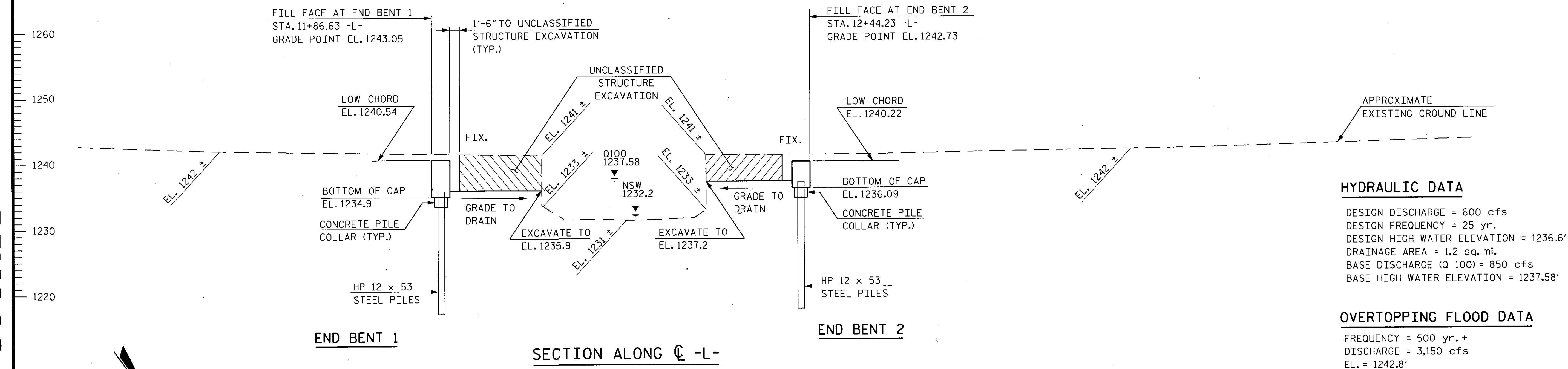
BRIDGE NO. 95 CALDWELL COUNTY BD-5111AE

F.A. PROJECT NO. BRZ-1715 (4)

PVI = 11+05.00
EL. = 1243.50
V.C. = 170 FT.
(-)5.1684% (-)0.5556%
-L- GRADE DATA

PVI = 13+12.00
EL. = 1242.35
V.C. = 115 FT.
(-)0.5556% (+)3.4288%
-L- GRADE DATA

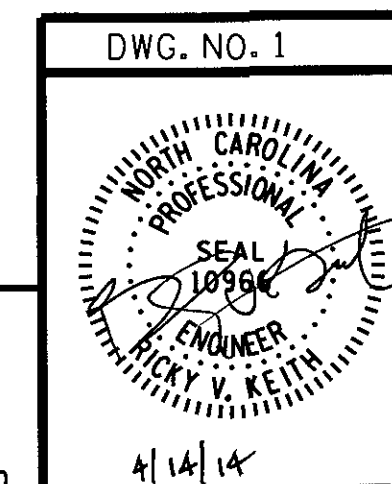
SPAN A



DRAWN BY : F.D. WEEDEN DATE : APR. 2014
CHECKED BY : R.V. KEITH DATE : APR. 2014

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RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NUMBER: F-0112



PROJECT NO. BD-5111AE
CALDWELL COUNTY
STATION: 12+15.43 -L-

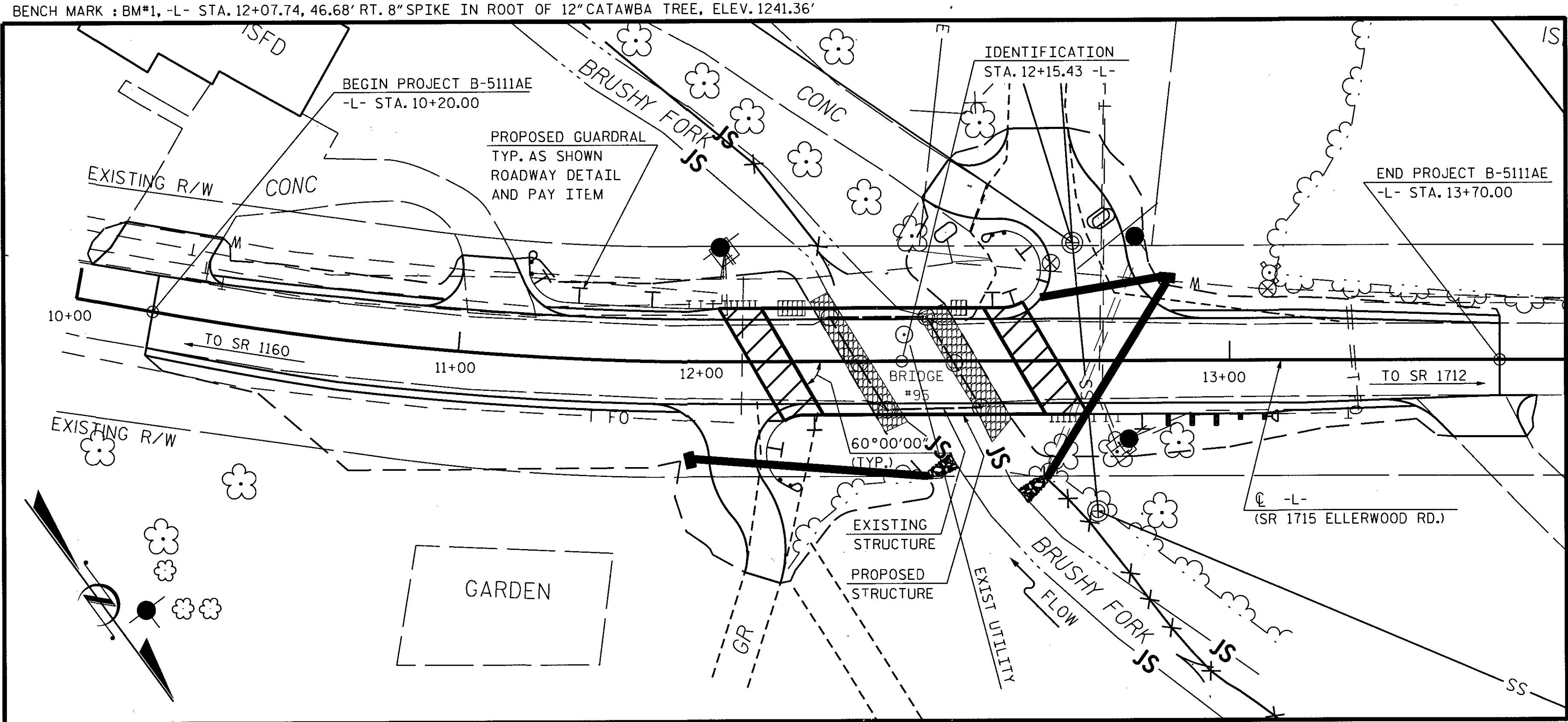
SHEET 1 OF 3 REPLACES BRIDGE NO. 95

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER BRUSHY FORK
ON SR 1715 (ELLERWOOD ROAD)
BETWEEN SR 1160 AND SR 1712

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

TOTAL BILL OF MATERIAL													
	REMOVAL OF EXISTING STRUCTURE	PILE EXCAVATION IN SOIL	PILE EXCAVATION NOT IN SOIL	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES		VERTICAL CONCRETE BARRIER RAIL	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	
	LUMP SUM	LIN. FT.	LIN. FT.	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	LIN. FT.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE						LUMP SUM				110.29		10	550.0
END BENT NO. 1		20	50	LUMP SUM	32.2		3,350	7	70.0				
END BENT NO. 2		20	30	LUMP SUM	24.7		2,973	5	50.0				
TOTAL	LUMP SUM	40	80	LUMP SUM	56.9	LUMP SUM	6,323	12	120.0	110.29	LUMP SUM	10	550.0



FOR UTILITY INFORMATION,
SEE UTILITY PLANS AND SPECIAL PROVISIONS

LOCATION SKETCH

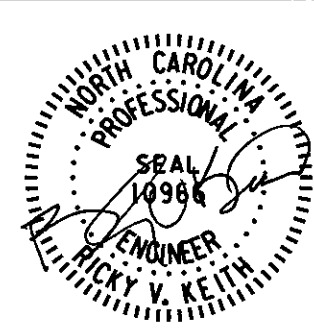
PROJECT NO. BD-5111AE
CALDWELL COUNTY
STATION: 12+15.43 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER BRUSHY FORK
ON SR 1715 (ELLERWOOD ROAD)
BETWEEN SR 1160 AND SR 1712

DWG. NO. 2



RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NUMBER: F-0112

DRAWN BY : F.D. WEEDEN DATE : APR. 2014
CHECKED BY : R.V. KEITH DATE : APR. 2014

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

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

FOR EROSION CONTROL MEASURES,SEE EROSION CONTROL PLANS.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

THE EXISTING STRUCTURE CONSISTING OF 1 SPAN @ 25'-7" WITH AN ASPHALT WEARING SURFACE OVER A STEEL PLANK FLOOR ON I-BEAM SUPERSTRUCTURE AND A CLEAR ROADWAY WIDTH OF 24.0' ON A SUBSTRUCTURE CONSISTING OF TIMBER CAPS/TIMBER POST & SILLS AND LOCATED AT THE PROPOSED STRUCTURE LOCATION SHALL BE REMOVED. SEE SPECIAL PROVISION FOR "REMOVAL OF EXISTING STRUCTURE AT STA.12+15.43 -L-".

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.

ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.

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

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 12+15.43 -L-".

FOR SUBMITTAL OF WORKING DRAWINGS,SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK,SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY,SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES,SEE SPECIAL PROVISIONS.

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.

FOUNDATION NOTES:

FOR PILES,SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 70 TONS PER PILE.

DRIVE PILES AT END BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.

PILES AT END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 85 TONS PER PILE

DRIVE PILES AT END BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 145 TONS PER PILE.

PILE EXCAVATION IS REQUIRED TO INSTALL PILES AT END BENT NO.1. EXCAVATE HOLES AT PILES LOCATIONS TO ELEVATION 1225 FT. FOR PILE EXCAVATION,SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

CONCRETE OR GROUT IS REQUIRED TO FILL HOLES FOR PILE EXCAVATION AT END BENT NO.1.

PILE EXCAVATION IS REQUIRED TO INSTALL PILES AT END BENT NO.2. EXCAVATE HOLES AT PILE LOCATIONS TO ELEVATION 1226 FT. FOR PILE EXCAVATION,SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

CONCRETE OR GROUT IS REQUIRED TO FILL HOLES FOR PILE EXCAVATION AT END BENT NO.2.

PROJECT NO. BD-5111AE
CALDWELL COUNTY
STATION: 12+15.43 -L-

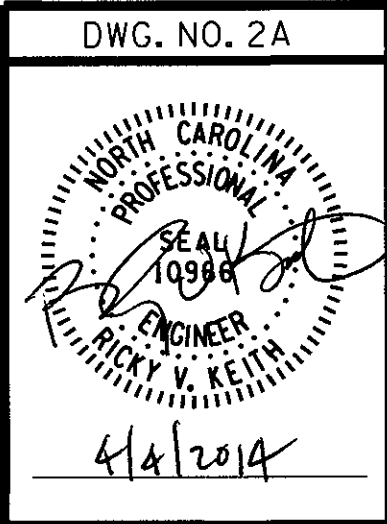
SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER BRUSHY FORK
ON SR 1715 (ELLERWOOD ROAD)
BETWEEN SR 1160 AND SR 1712

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

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NUMBER: F-0112



DRAWN BY : F.D. WEEDEN DATE : APR. 2014
CHECKED BY : R.V. KEITH DATE : APR. 2014

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	1.163	--	1.75	0.249	1.36	55'	EL	26.923	0.659	1.21	55'	EL	10.769	0.80	0.249	1.16	55'	EL	26.923	
		HL-93(0pr)	N/A	--	1.564	--	1.35	0.249	1.76	55'	EL	26.923	0.659	1.56	55'	EL	10.769	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.424	51.265	1.75	0.249	1.7	55'	EL	26.923	0.659	1.42	55'	EL	10.769	0.80	0.249	1.46	55'	EL	26.923	
		HS-20(0pr)	36.000	--	1.846	66.455	1.35	0.249	2.2	55'	EL	26.923	0.659	1.85	55'	EL	10.769	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.057	41.264	1.4	0.249	4.46	55'	EL	26.923	0.659	3.96	55'	EL	10.769	0.80	0.249	3.06	55'	EL	26.923	
		SNGARBS2	20.000	--	2.374	47.473	1.4	0.249	3.46	55'	EL	26.923	0.659	2.9	55'	EL	10.769	0.80	0.249	2.37	55'	EL	26.923	
		SNAGRIS2	22.000	--	2.291	50.392	1.4	0.249	3.34	55'	EL	26.923	0.659	2.72	55'	EL	10.769	0.80	0.249	2.29	55'	EL	26.923	
		SNCOTTS3	27.250	--	1.524	41.521	1.4	0.249	2.22	55'	EL	26.923	0.659	1.98	55'	EL	10.769	0.80	0.249	1.52	55'	EL	26.923	
		SNAGGRS4	34.925	--	1.31	45.74	1.4	0.249	1.91	55'	EL	26.923	0.659	1.71	55'	EL	10.769	0.80	0.249	1.31	55'	EL	26.923	
		SNS5A	35.550	--	1.278	45.439	1.4	0.249	1.86	55'	EL	26.923	0.659	1.76	55'	EL	10.769	0.80	0.249	1.28	55'	EL	26.923	
		SNS6A	39.950	--	1.189	47.481	1.4	0.249	1.73	55'	EL	26.923	0.659	1.63	55'	EL	10.769	0.80	0.249	1.19	55'	EL	26.923	
	SNS7B	42.000	--	1.132	47.562	1.4	0.249	1.65	55'	EL	26.923	0.659	1.64	55'	EL	10.769	0.80	0.249	1.13	55'	EL	26.923		
	TTST	TNAGRIT3	33.000	--	1.454	47.984	1.4	0.249	2.12	55'	EL	26.923	0.659	1.92	55'	EL	10.769	0.80	0.249	1.45	55'	EL	26.923	
		TNT4A	33.075	--	1.465	48.451	1.4	0.249	2.14	55'	EL	26.923	0.659	1.85	55'	EL	10.769	0.80	0.249	1.46	55'	EL	26.923	
		TNT6A	41.600	--	1.213	50.478	1.4	0.249	1.77	55'	EL	26.923	0.659	1.81	55'	EL	10.769	0.80	0.249	1.21	55'	EL	26.923	
		TNT7A	42.000	--	1.228	51.576	1.4	0.249	1.79	55'	EL	26.923	0.659	1.67	55'	EL	10.769	0.80	0.249	1.23	55'	EL	26.923	
		TNT7B	42.000	--	1.282	53.827	1.4	0.249	1.87	55'	EL	26.923	0.659	1.58	55'	EL	10.769	0.80	0.249	1.28	55'	EL	26.923	
		TNAGRIT4	43.000	--	1.213	52.158	1.4	0.249	1.77	55'	EL	26.923	0.659	1.52	55'	EL	10.769	0.80	0.249	1.21	55'	EL	26.923	
TNAGT5A		45.000	--	1.136	51.134	1.4	0.249	1.66	55'	EL	26.923	0.659	1.55	55'	EL	10.769	0.80	0.249	1.14	55'	EL	26.923		
TNAGT5B	45.000	3	1.116	50.224	1.4	0.249	1.63	55'	EL	26.923	0.659	1.44	55'	EL	10.769	0.80	0.249	1.12	55'	EL	26.923			

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:

-
-
-
-

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

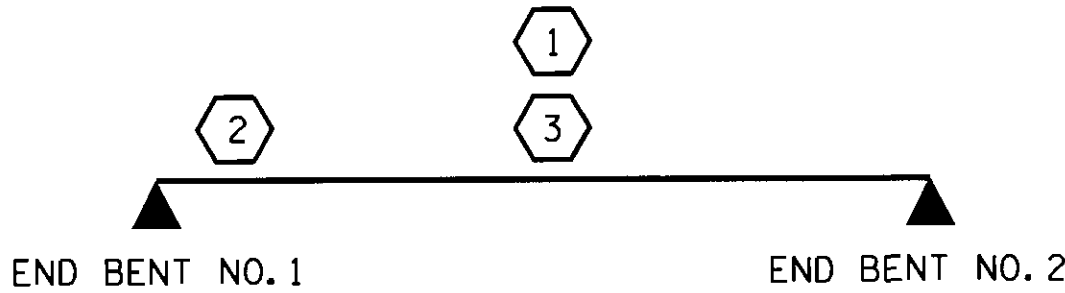
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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

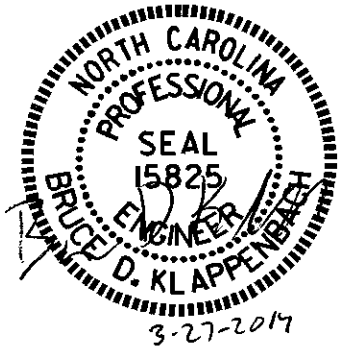


LRFR SUMMARY
FOR SPAN "A"

ASSEMBLED BY : W DEBREW	DATE : 11-13
CHECKED BY : H. T. BARBOUR	DATE : 3-14
DRAWN BY : CVC	6/10
CHECKED BY : DNS	6/10

27-MAR-2014 09:34
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bklappenbach

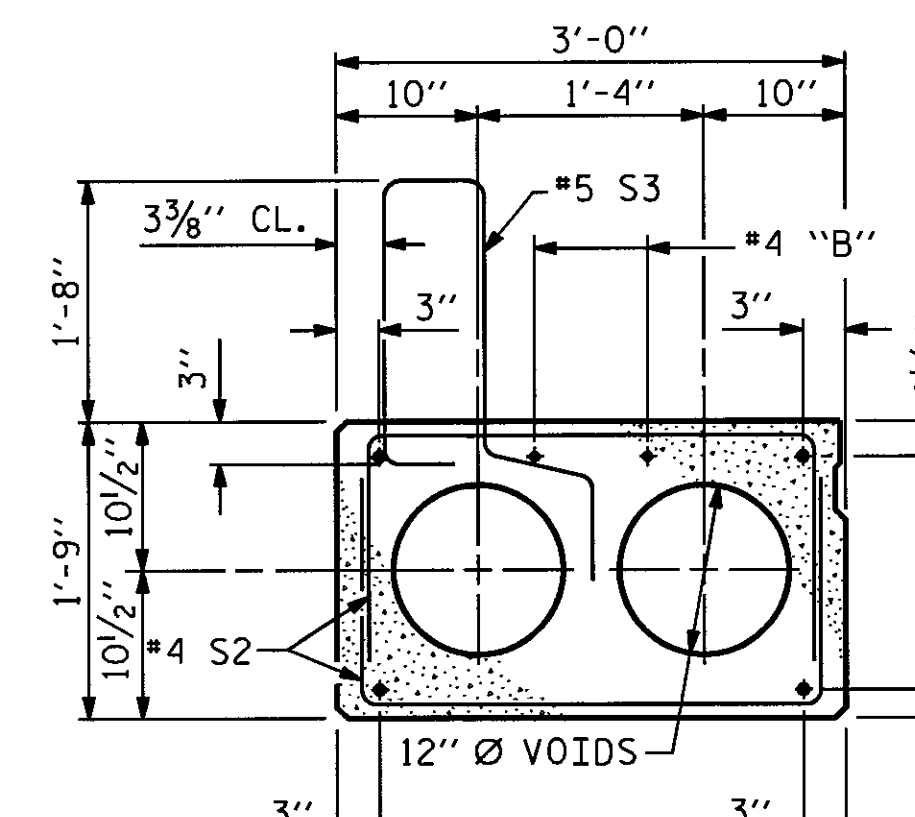
PROJECT NO. BD-5111AE
CALDWELL COUNTY
STATION: 12+15.43 -L-



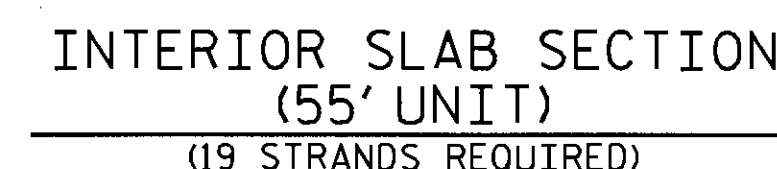
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
55' CORED SLAB UNIT
60° SKEW & 120° SKEW
(NON-INTERSTATE TRAFFIC)

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

STD. NO. 21LRFR1.60&120S.55L



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



0.6" Ø LOW
RELAXATION STRAND LAYOUT

△ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

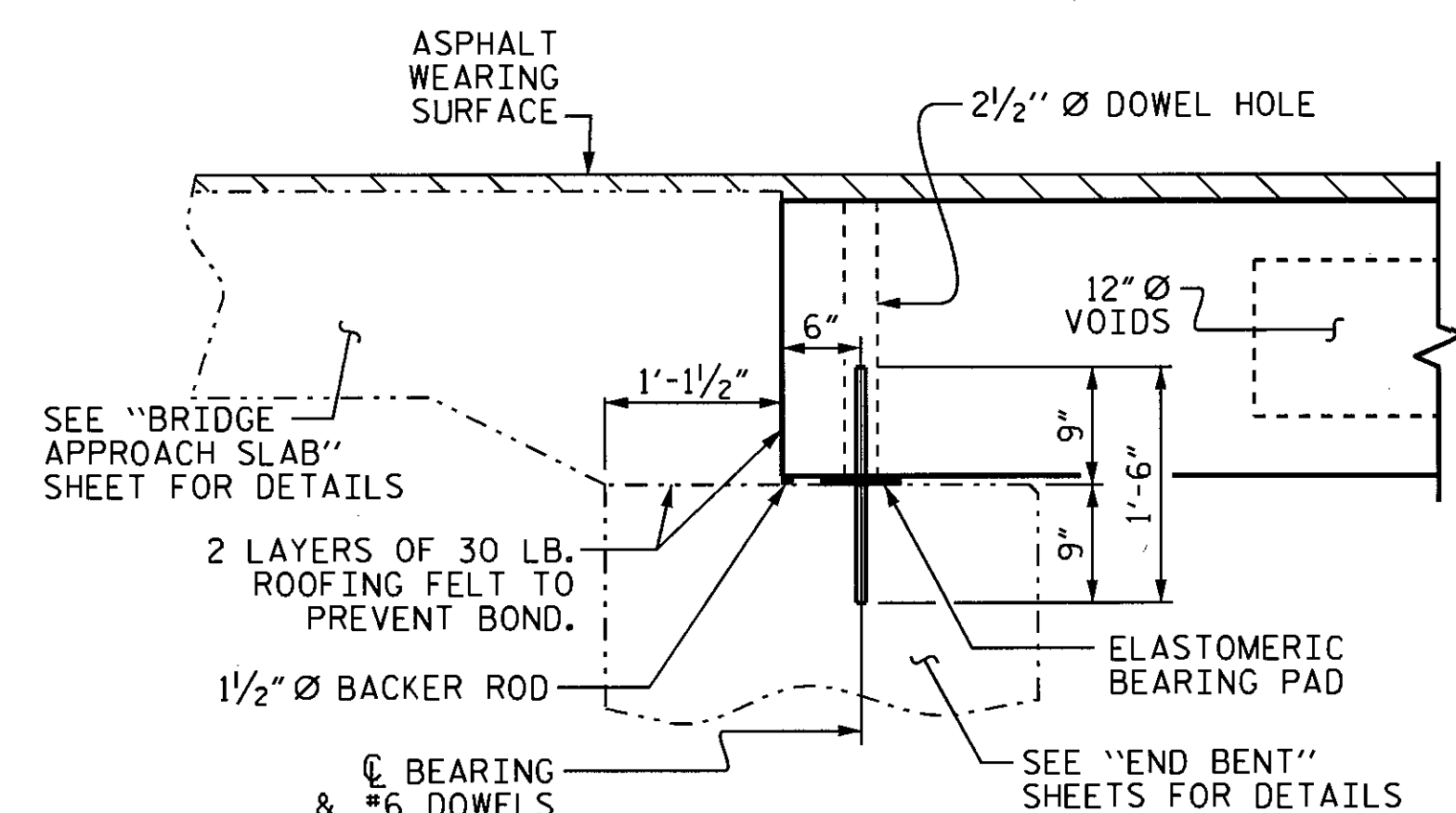
DEBONDING LEGEND



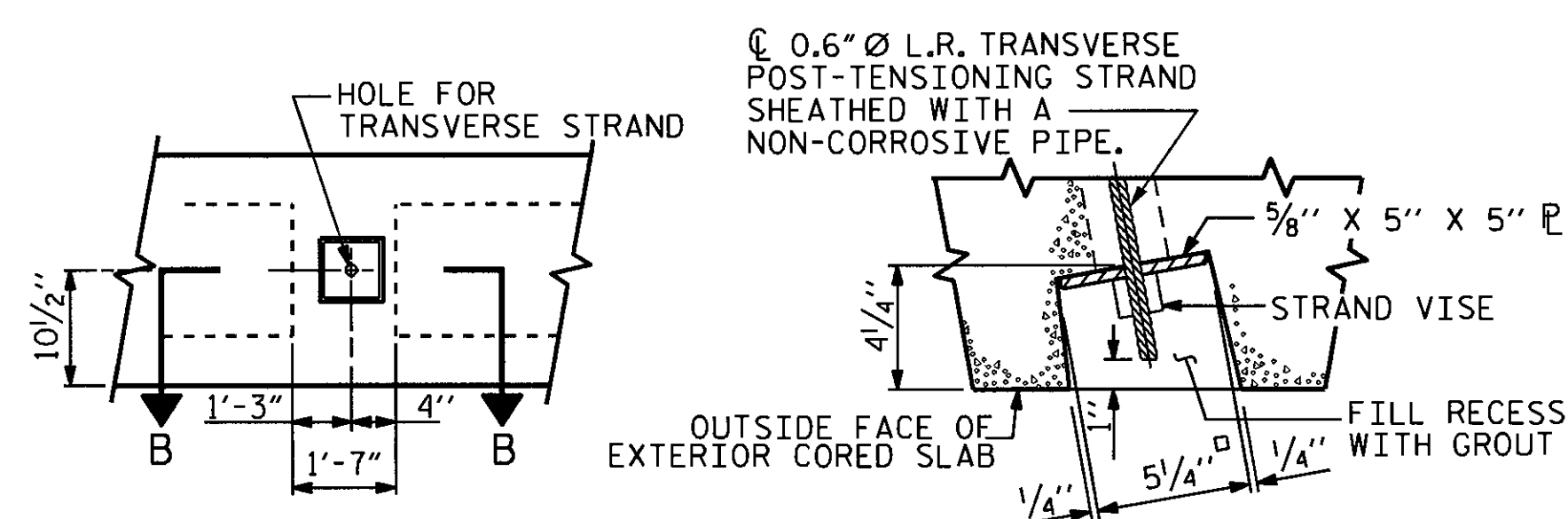
TYPICAL SECTION

* - 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



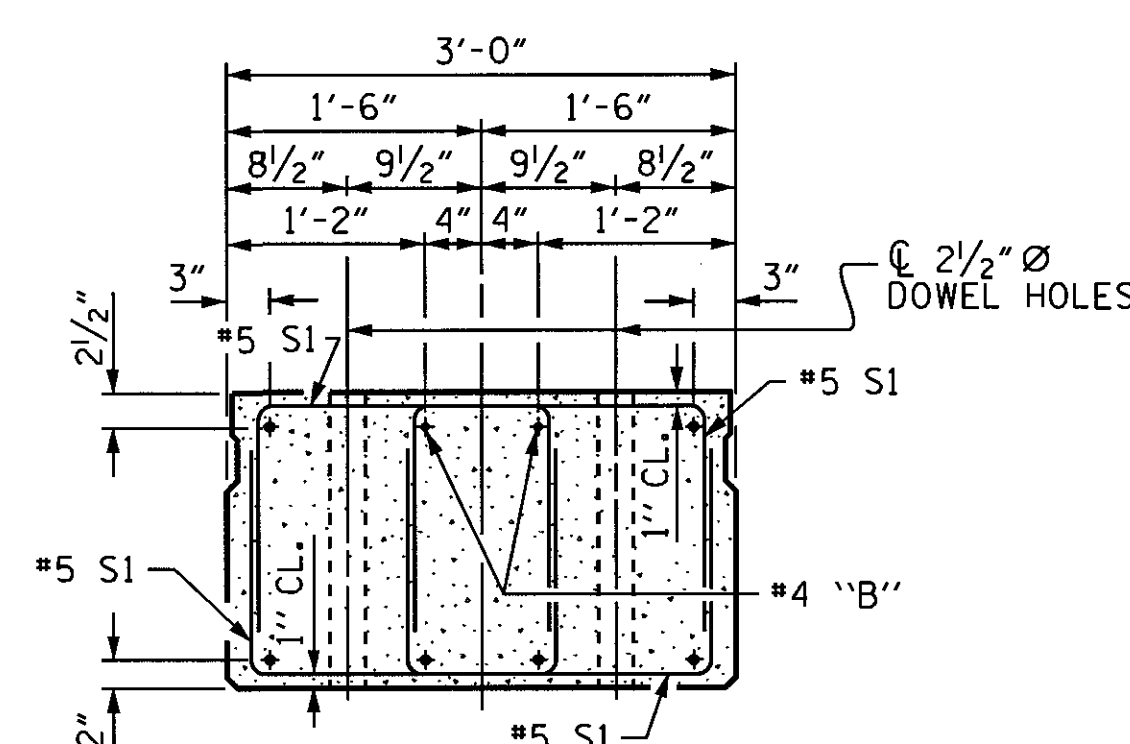
SECTION AT END BENT



ELEVATION VIEW

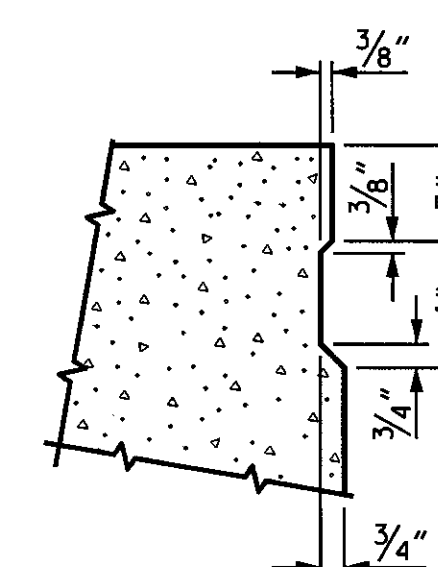
SECTION B-B

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



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.

ASSEMBLED BY :	W DEBREW	DATE :	11-13
CHECKED BY :	H. T. BARBOUR	DATE :	3-14
DRAWN BY :	DGE 5/09	REV. 12/11	MAA/AAC
CHECKED BY :	BCH 6/09		

PROJECT NO. BD-5111AE
CALDWELL COUNTY
 STATION: 12+15.43 -L-

SHEET 1 OF 3

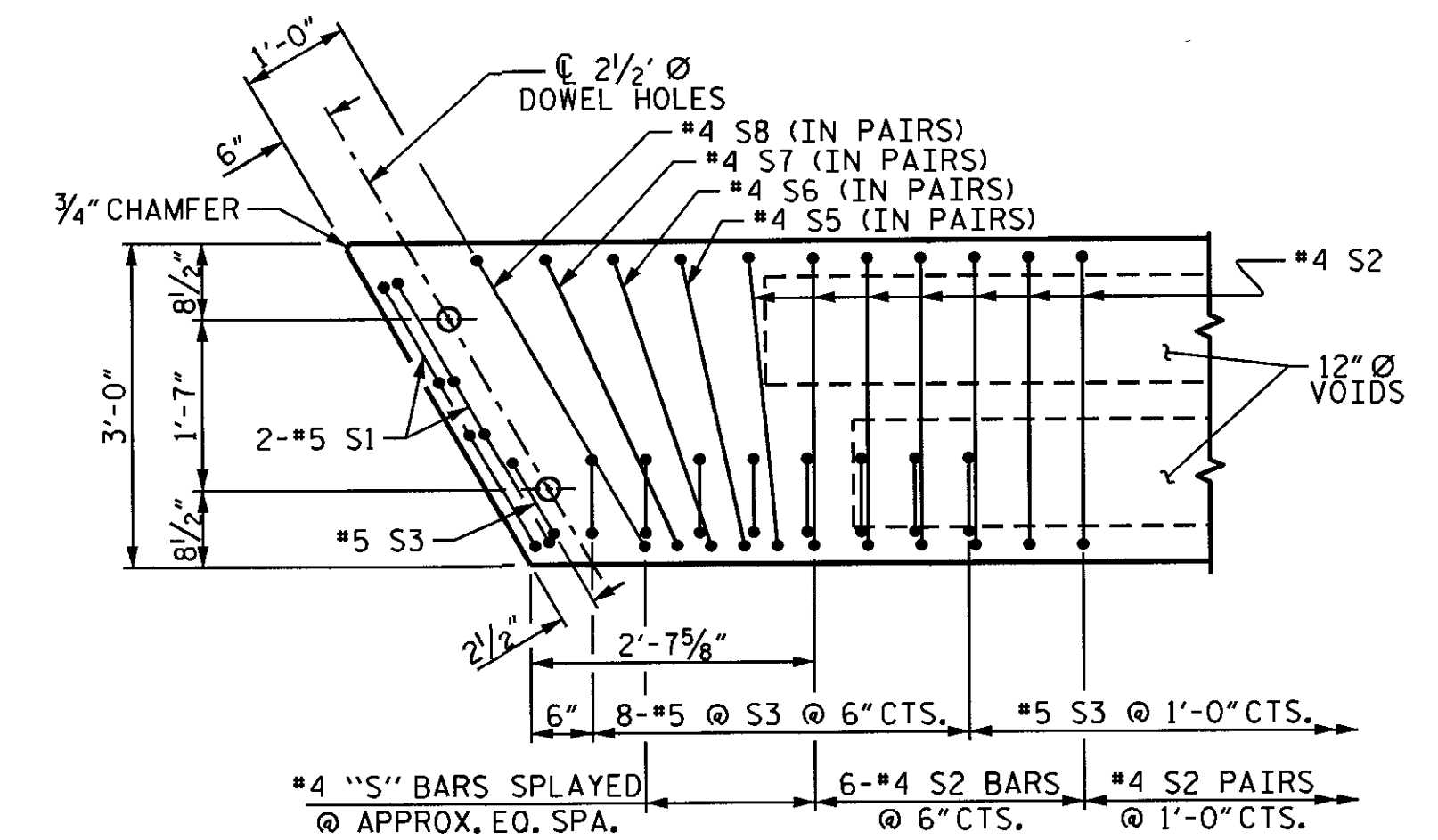
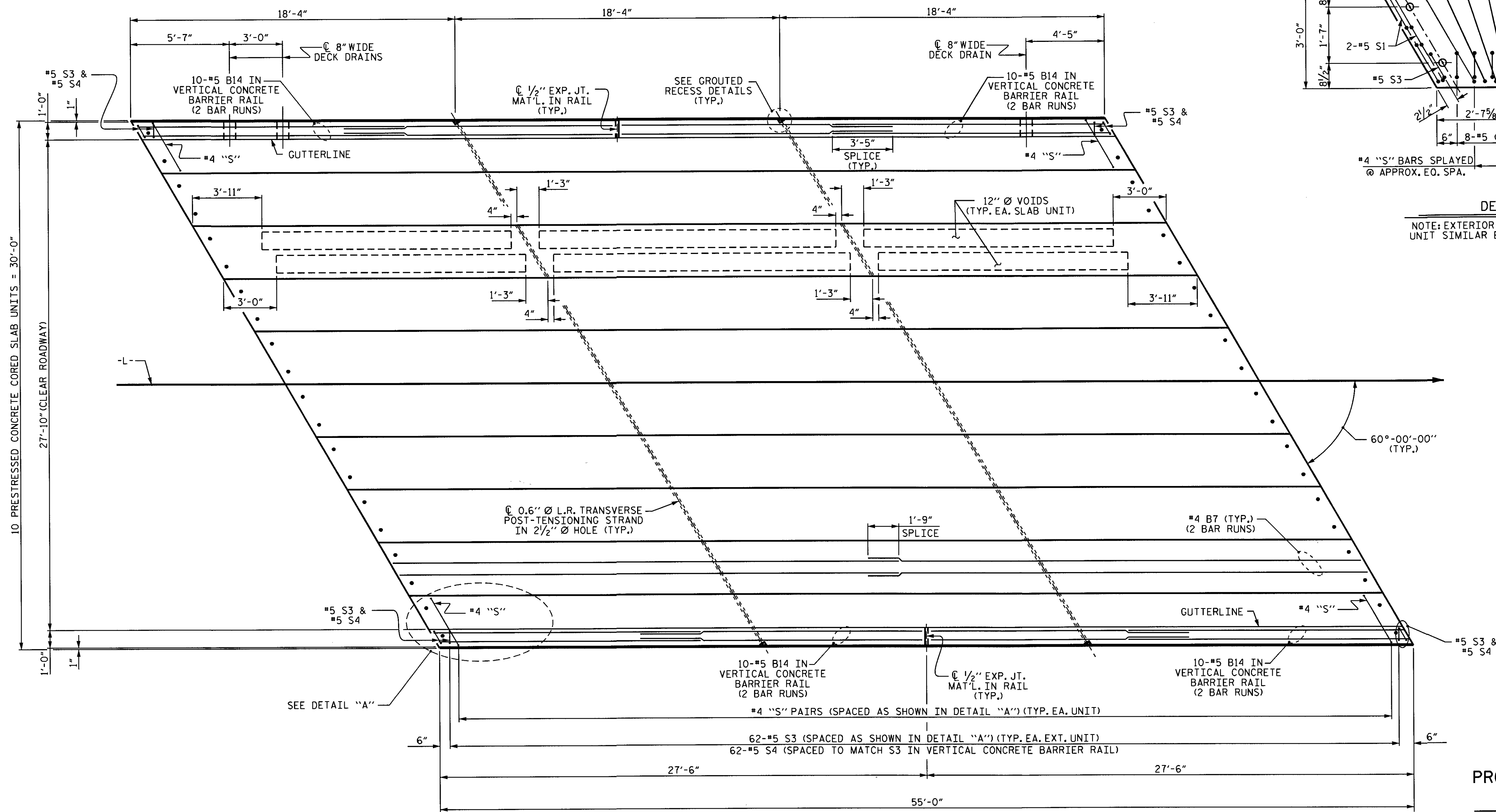
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
60° SKEW

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

STD. NO. 21" PCS2_30_60S

27-MAR-2014 09:34
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hklappanbach



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

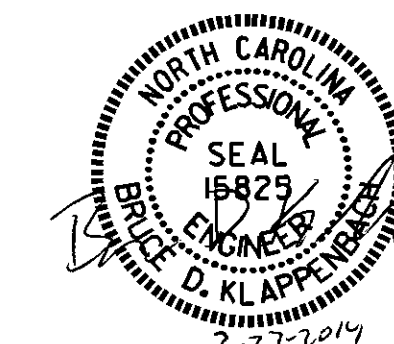
PLAN OF UNIT

PROJECT NO. BD-5111AE
CALDWELL COUNTY
STATION: 12+15.43 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 55' UNIT
27'-10" CLEAR ROADWAY
60° SKEW



ASSEMBLED BY : W DEBREW DATE : 11-13
CHECKED BY : H. T. BARBOUR DATE : 4-14
DRAWN BY : DGE 3/09 REV. 12/5/11 MAA/AAC
CHECKED BY : BCH 3/09

27-MAR-2014 09:34
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bklappenbach

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-5
2			4			
TOTAL SHEETS						14

STD.NO. 21" PCS-30-60S-55L

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.

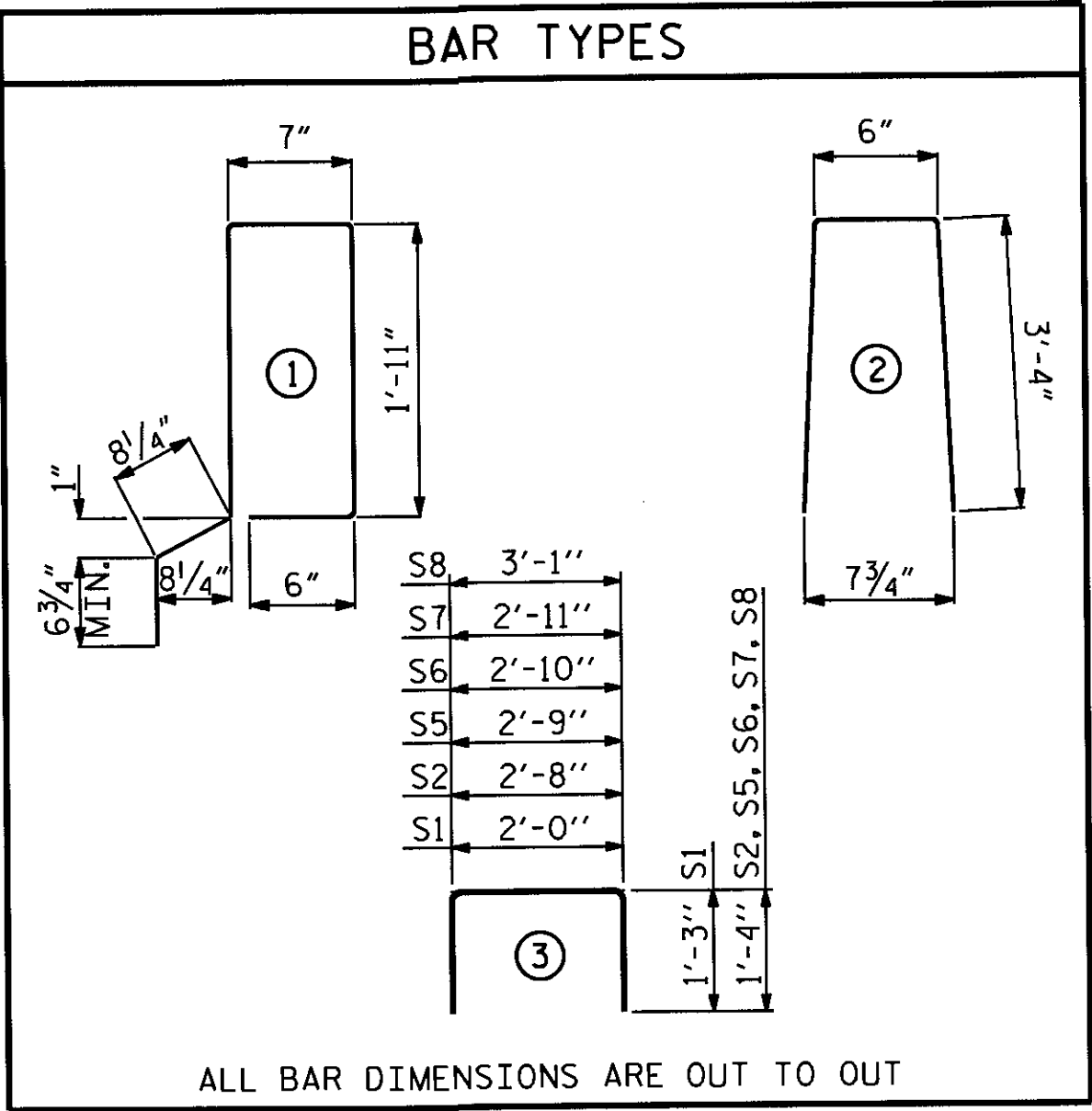
TRANSVERSE POST TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

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.

THE DRAIN OPENING AT THE GUTTERLINE SHALL BE 4" X 8". THE HEIGHT OF THE BLOCKOUT IN THE VERTICAL CONCRETE BARRIER RAIL SHALL EXTEND FROM THE TOP OF THE CORED SLAB UNIT TO THE TOP OF THE DRAIN OPENING.

APPLY EPOXY PROTECTIVE COATING TO EXTERIOR FACE OF THE EXTERIOR CORED SLAB UNITS THAT REQUIRE DRAINS IN THE BARRIER RAIL.



BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT

BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B7	4	#4	STR	28'-3"	75	28'-3"	75
S1	8	#5	3	4'-6"	38	4'-6"	38
S2	112	#4	3	5'-4"	399	5'-4"	399
* S3	64	#5	1	6'-2"	412		
S5	4	#4	3	5'-5"	14	5'-5"	14
S6	4	#4	3	5'-6"	15	5'-6"	15
S7	4	#4	3	5'-7"	15	5'-7"	15
S8	4	#4	3	5'-9"	15	5'-9"	15
REINFORCING STEEL				LBS.	571		571
* EPOXY COATED REINFORCING STEEL				LBS.	412		
6500 P.S.I. CONCRETE				CU. YDS.	8.0		8.0
0.6" Ø L.R. STRANDS				No.	19		19

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

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

GRADE 270 STRANDS

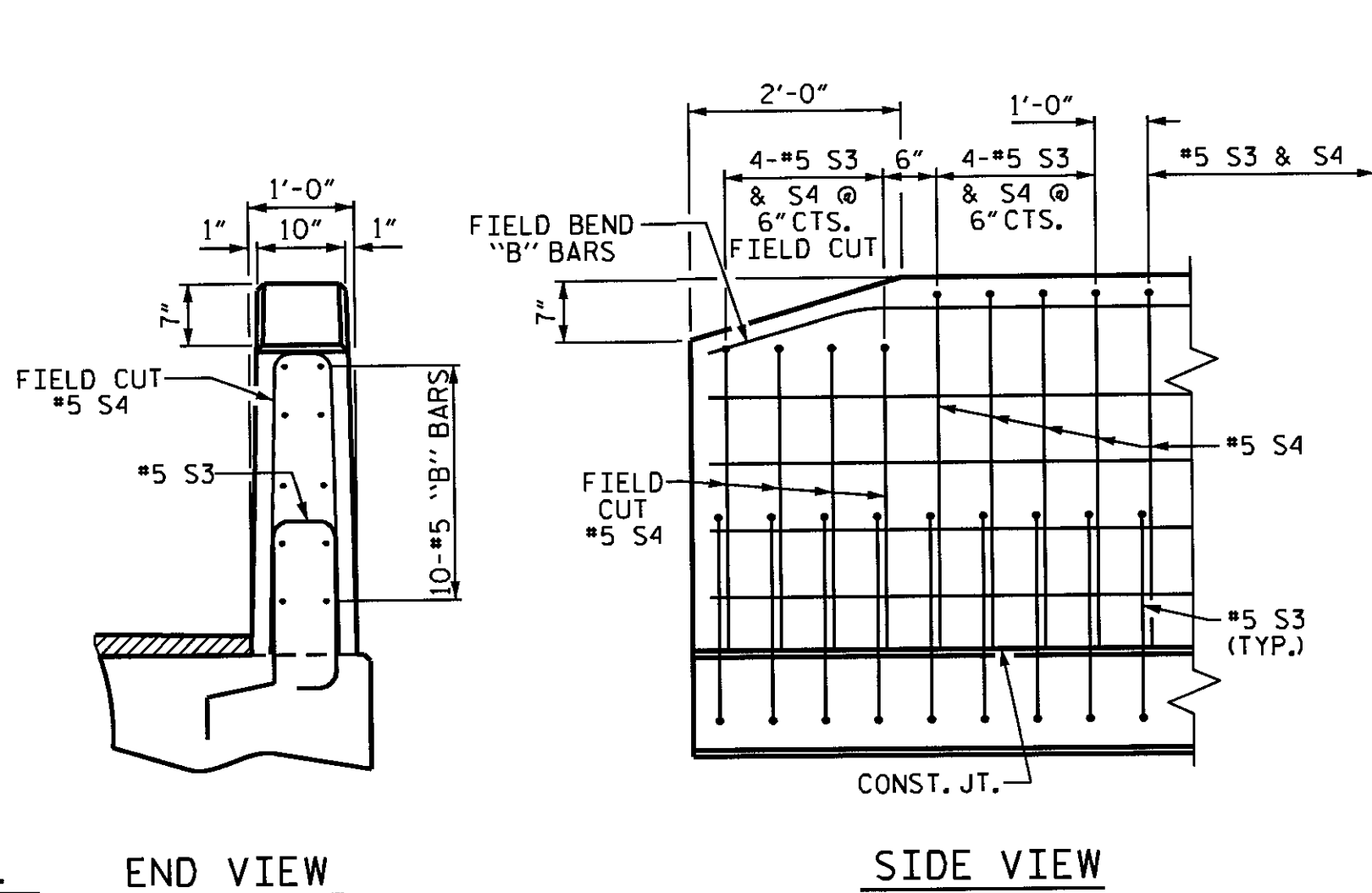
	0.6" Ø L.R.
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

CORED SLABS REQUIRED

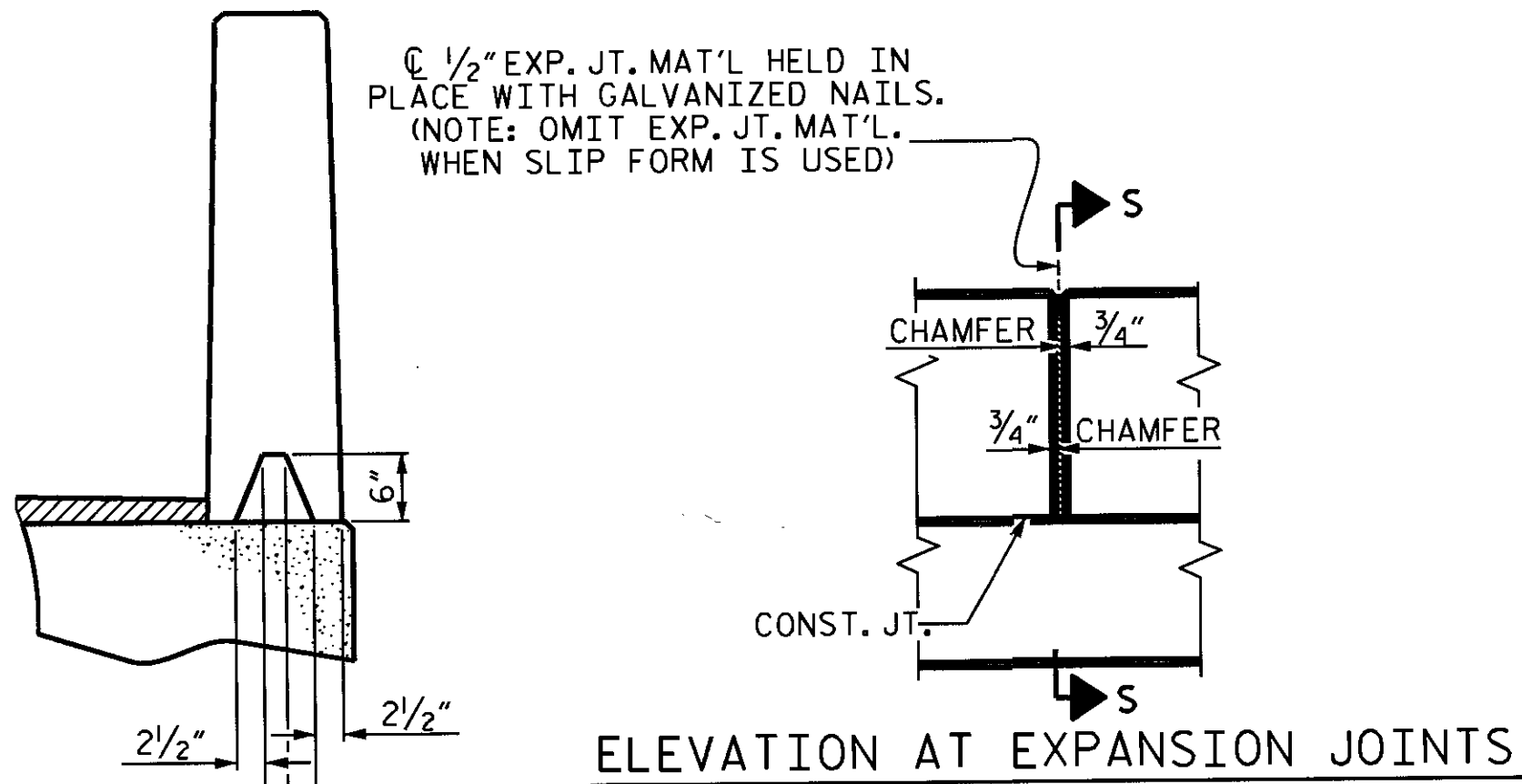
	NUMBER	LENGTH	TOTAL LENGTH
55' UNIT			
EXTERIOR C.S.	2	55'-0"	110'-0"
INTERIOR C.S.	8	55'-0"	440'-0"
TOTAL	10		550'-0"

CONCRETE RELEASE STRENGTH

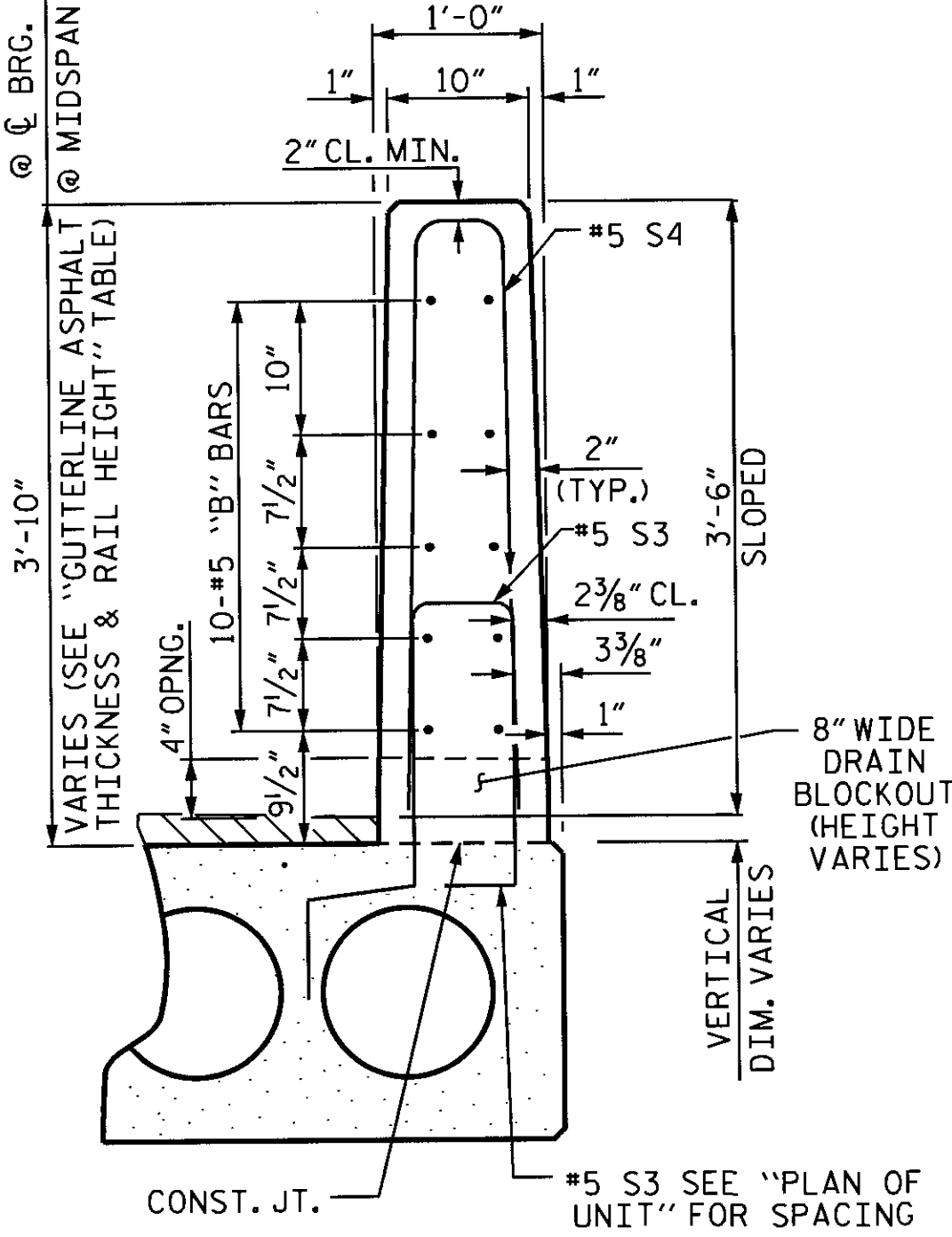
UNIT	PSI
55' UNITS	4900



END OF RAIL DETAILS



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



DEAD LOAD DEFLECTION AND CAMBER

55' 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" ↓
** INCLUDES FUTURE WEARING SURFACE	

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
*B14	80	80	#5	STR	15'-6"	1293
* S4	128	128	#5	2	7'-2"	957
* EPOXY COATED REINFORCING STEEL						LBS. 2250
CLASS AA CONCRETE						CU. YDS. 14.4
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN. FT. 110.29

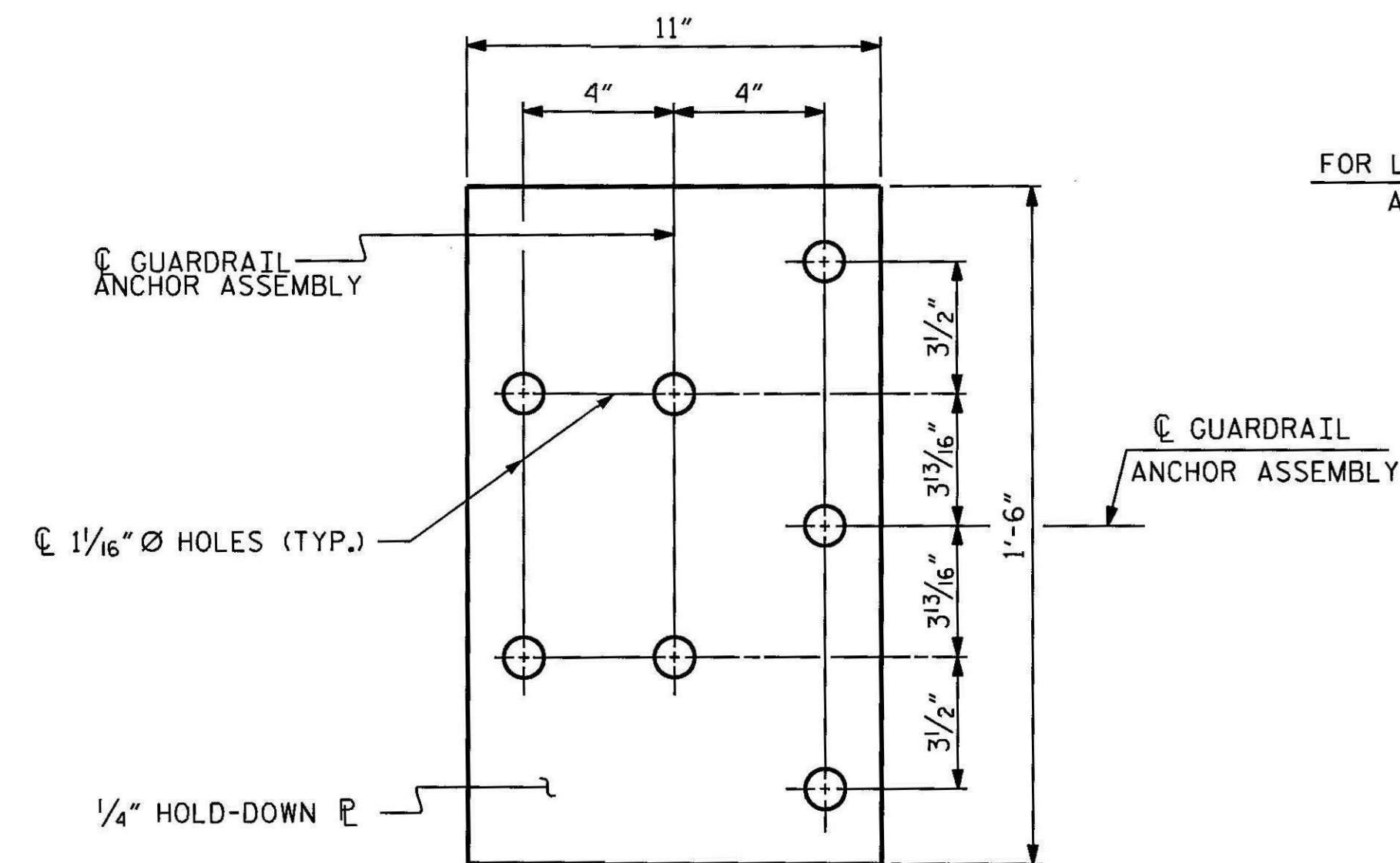
ASSEMBLED BY : W DEBREW DATE : 11-13
CHECKED BY : H.T. BARBOUR DATE : 3-14
DRAWN BY : DGE 5/09 REV. 12/11 MAA/AAC
CHECKED BY : BCH 6/09

PROJECT NO. BD-5111AE
CALDWELL COUNTY
STATION: 12+15.43 -L-

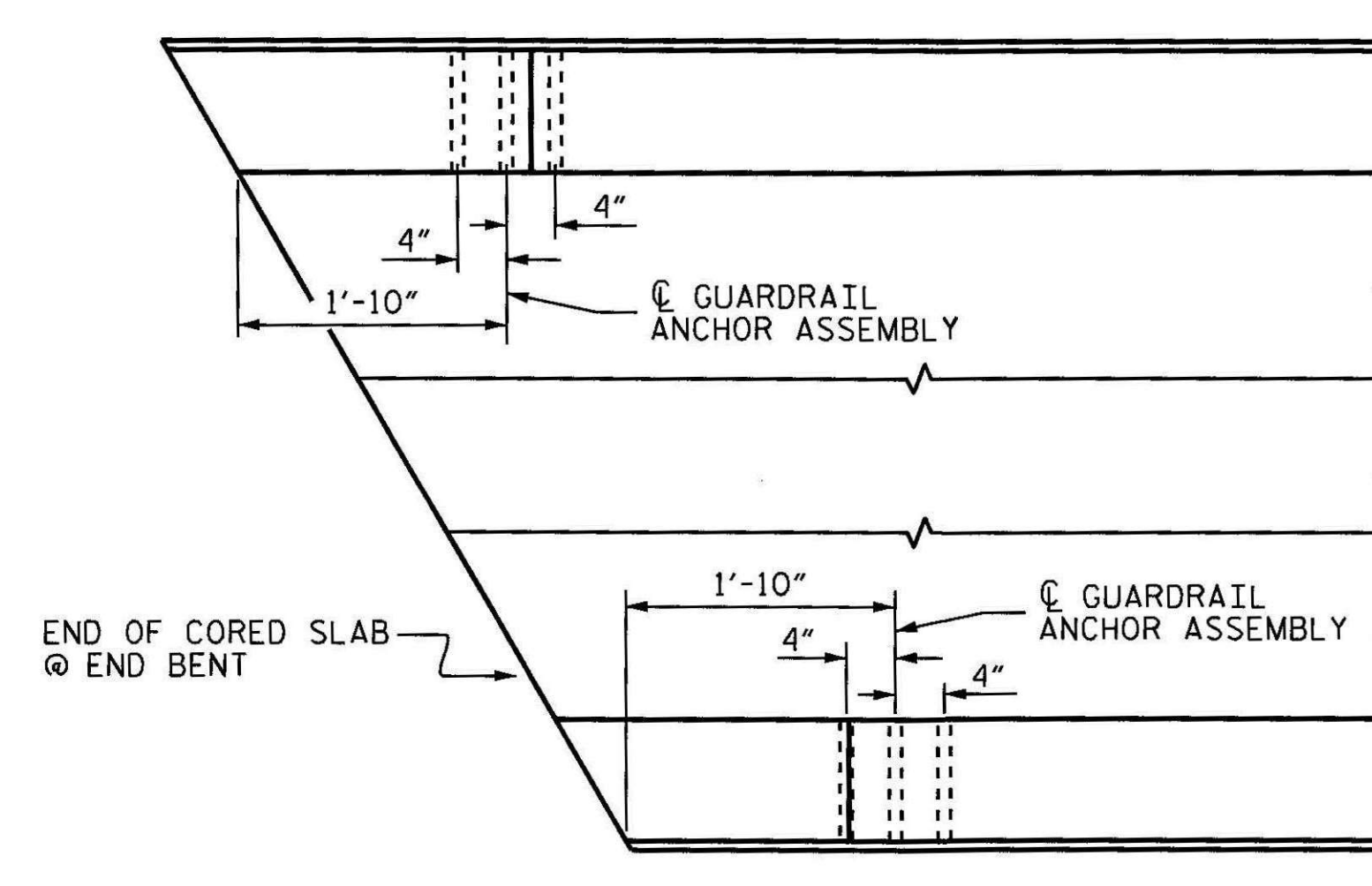
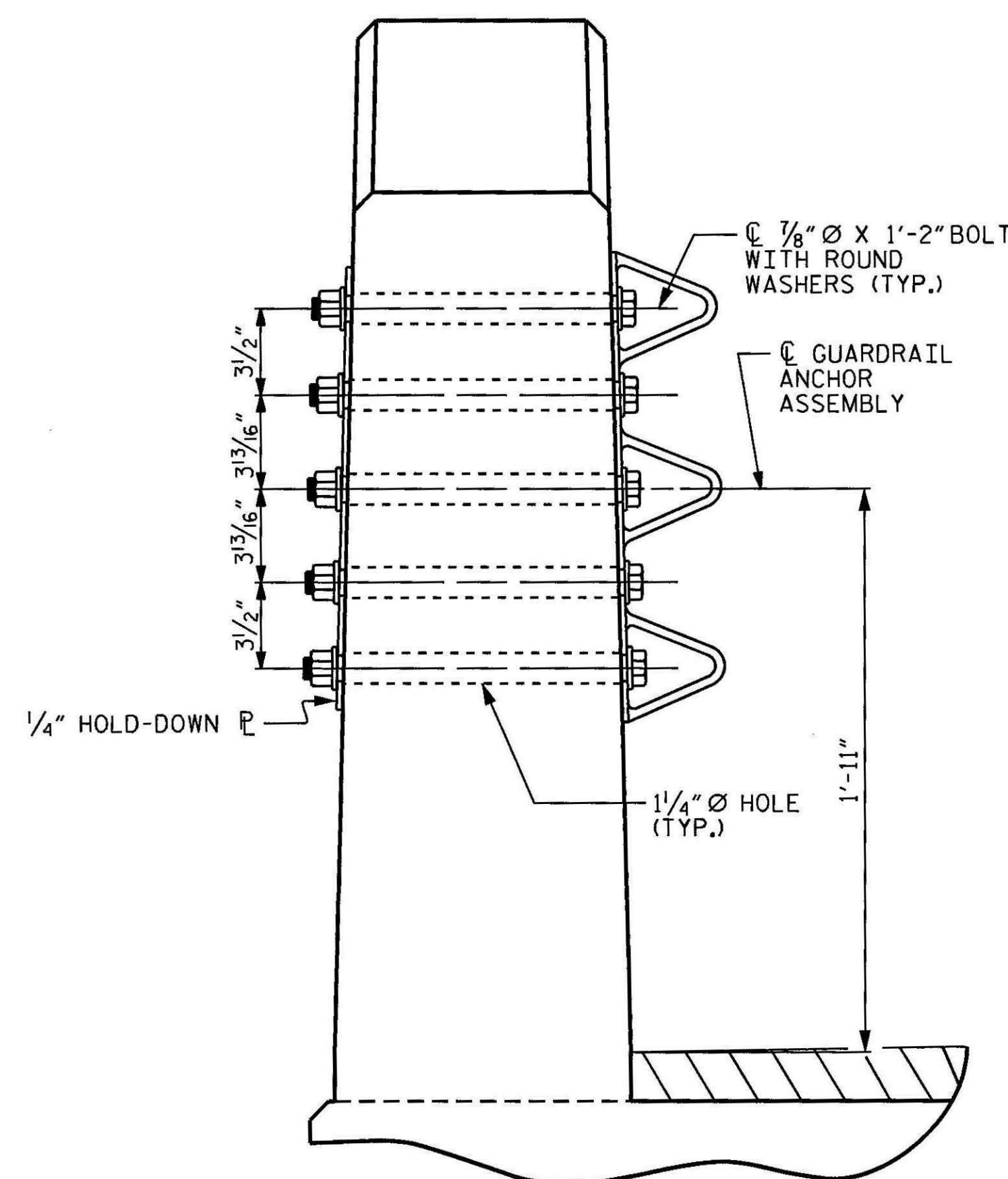
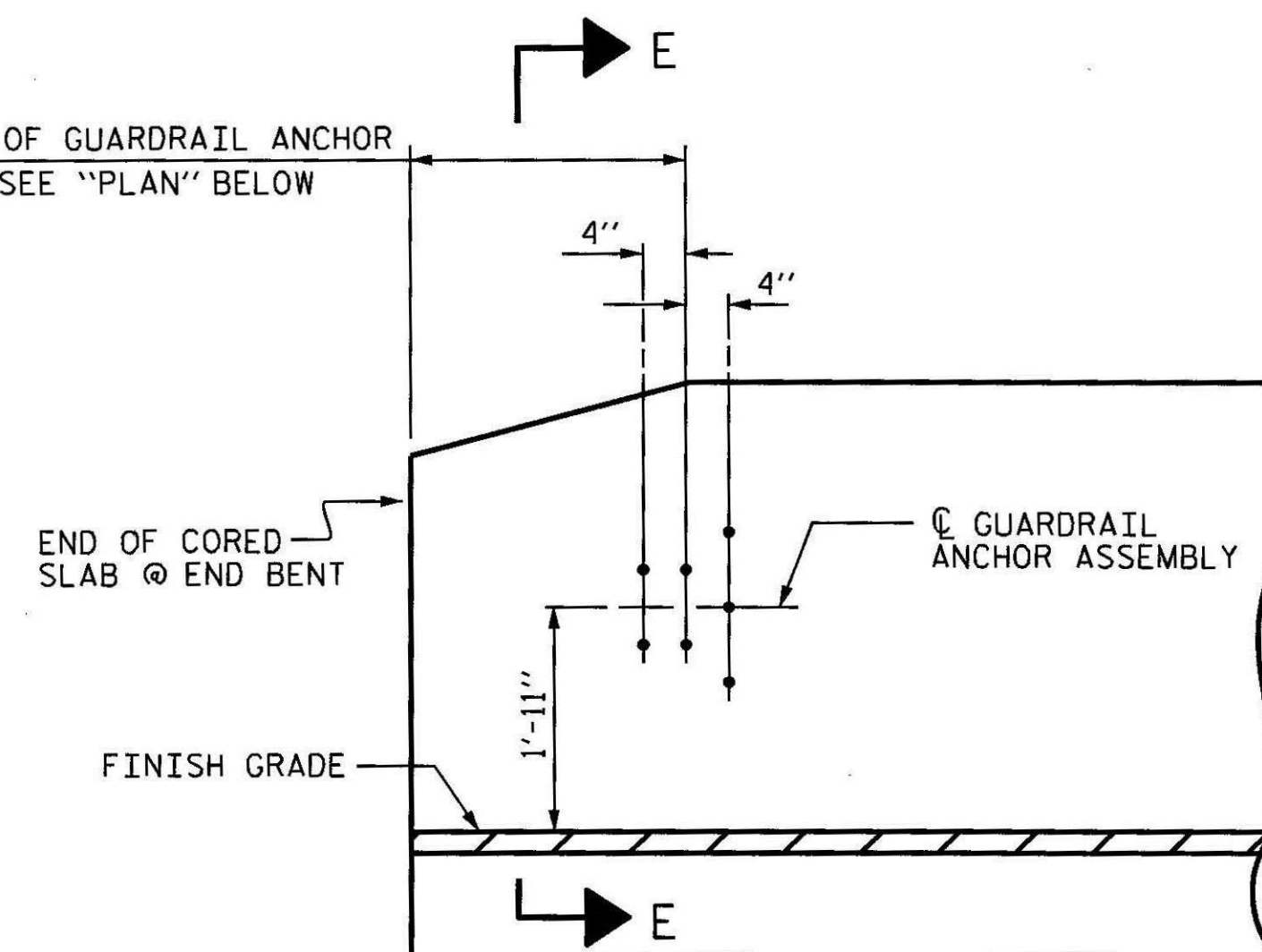
SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
60° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-6
2			4			TOTAL SHEETS 14

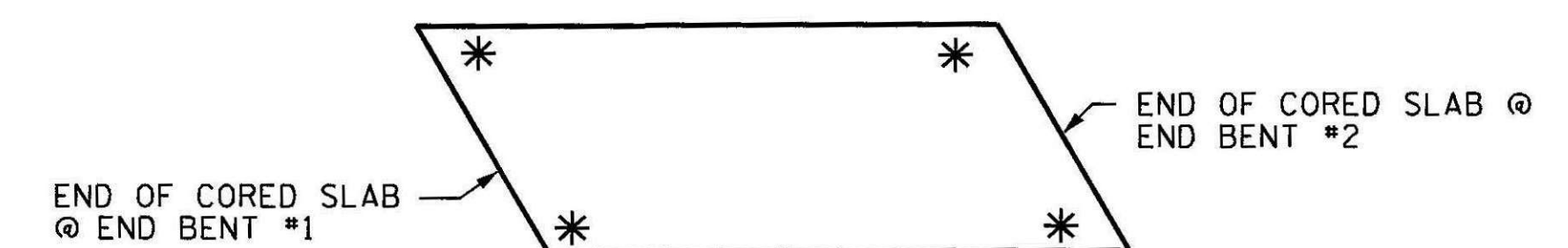


FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



LOCATION OF ANCHORS FOR GUARDRAIL

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



NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 3/8" 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 3/8" 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. BD-5111AE
CALDWELL COUNTY
STATION: 12+15.43 -L-

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

REVISIONS						SHEET NO. S-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 14
2			4			

(SHT 3) STD. NO. GRA3

ASSEMBLED BY : W DEBREW	DATE : 11-13
CHECKED BY : H. T. BARBOUR	DATE : 3-14
DRAWN BY : MAA 5/10	REV. 10/1/11 MAA/GM
CHECKED BY : GM 5/10	REV. 12/5/11 MAA/GM
	REV. 6/13 MAA/GM

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bkloppenbach



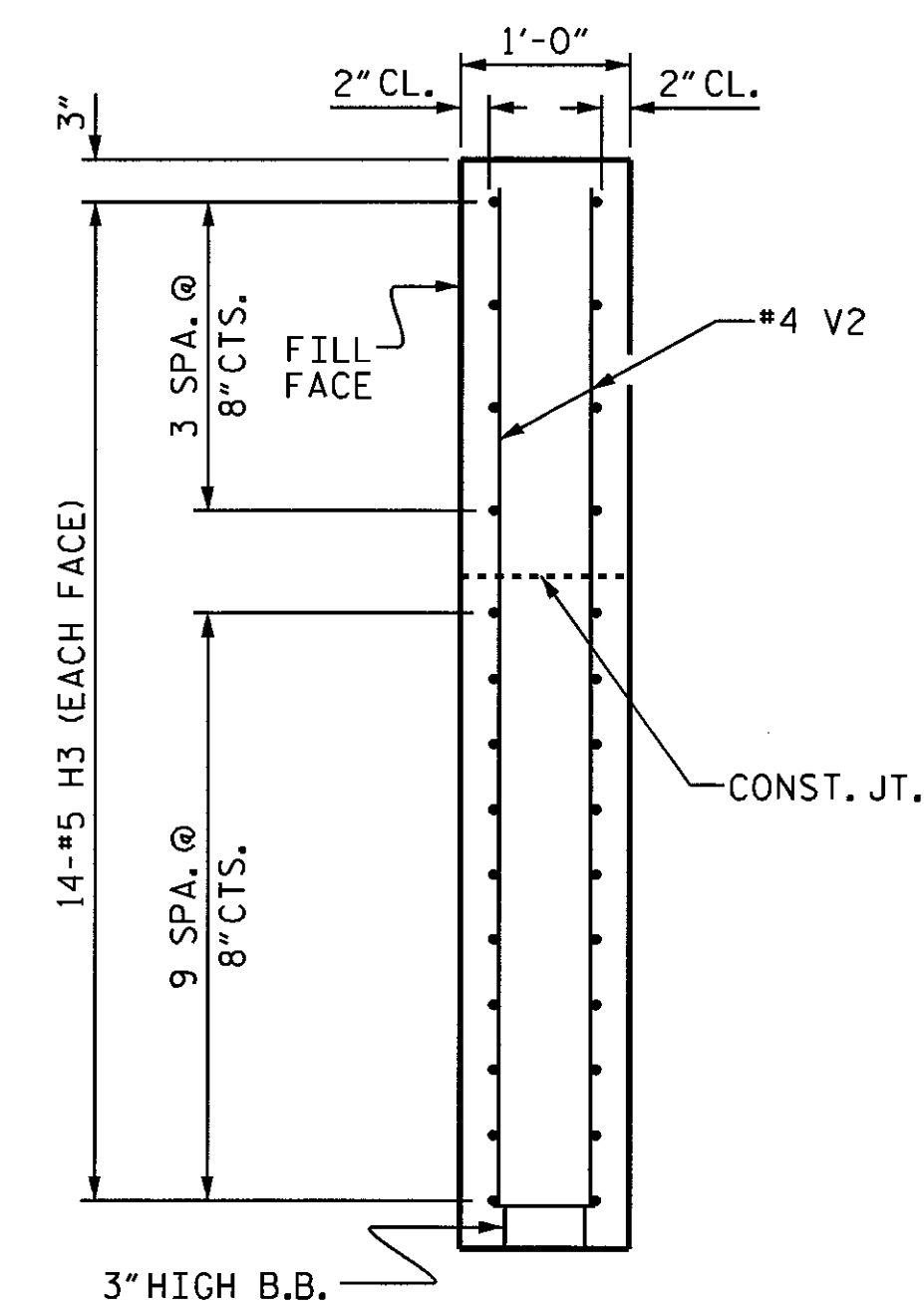
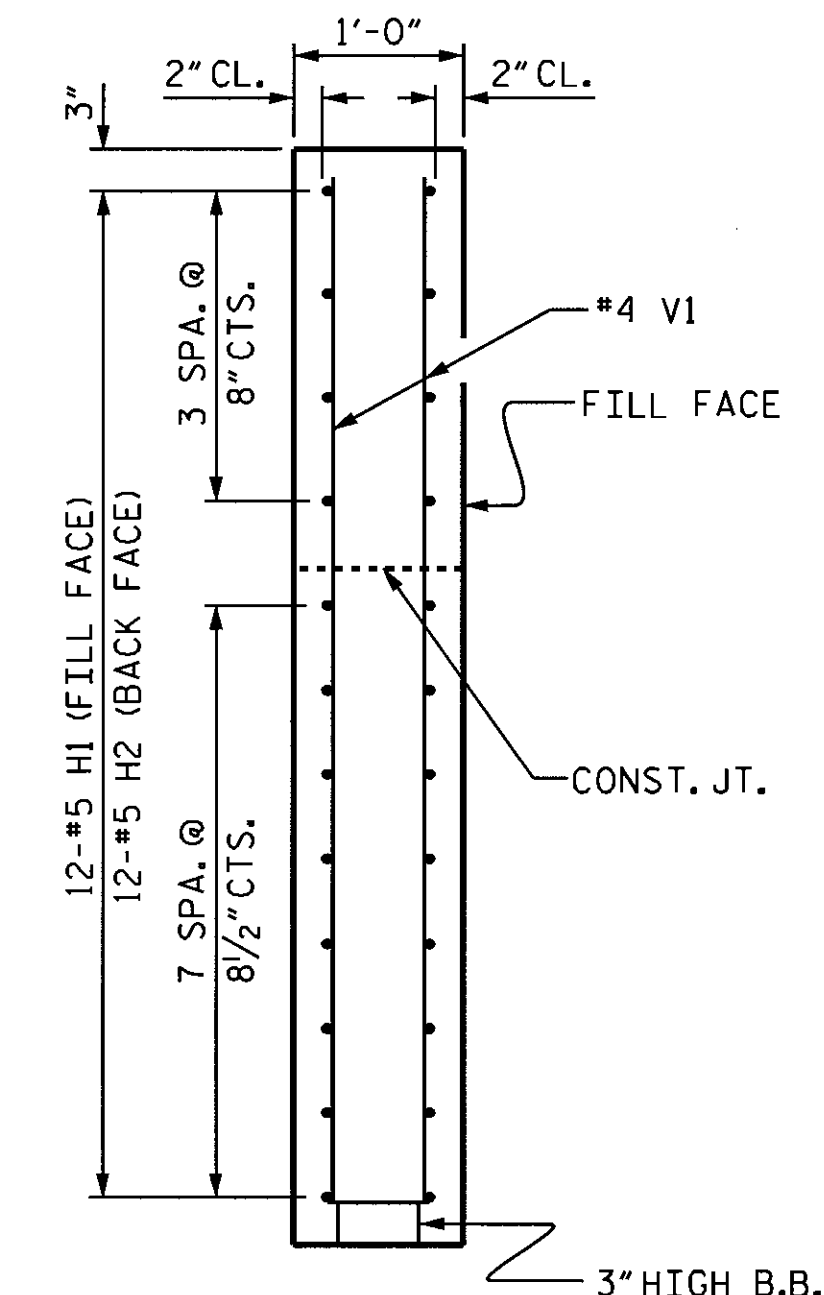
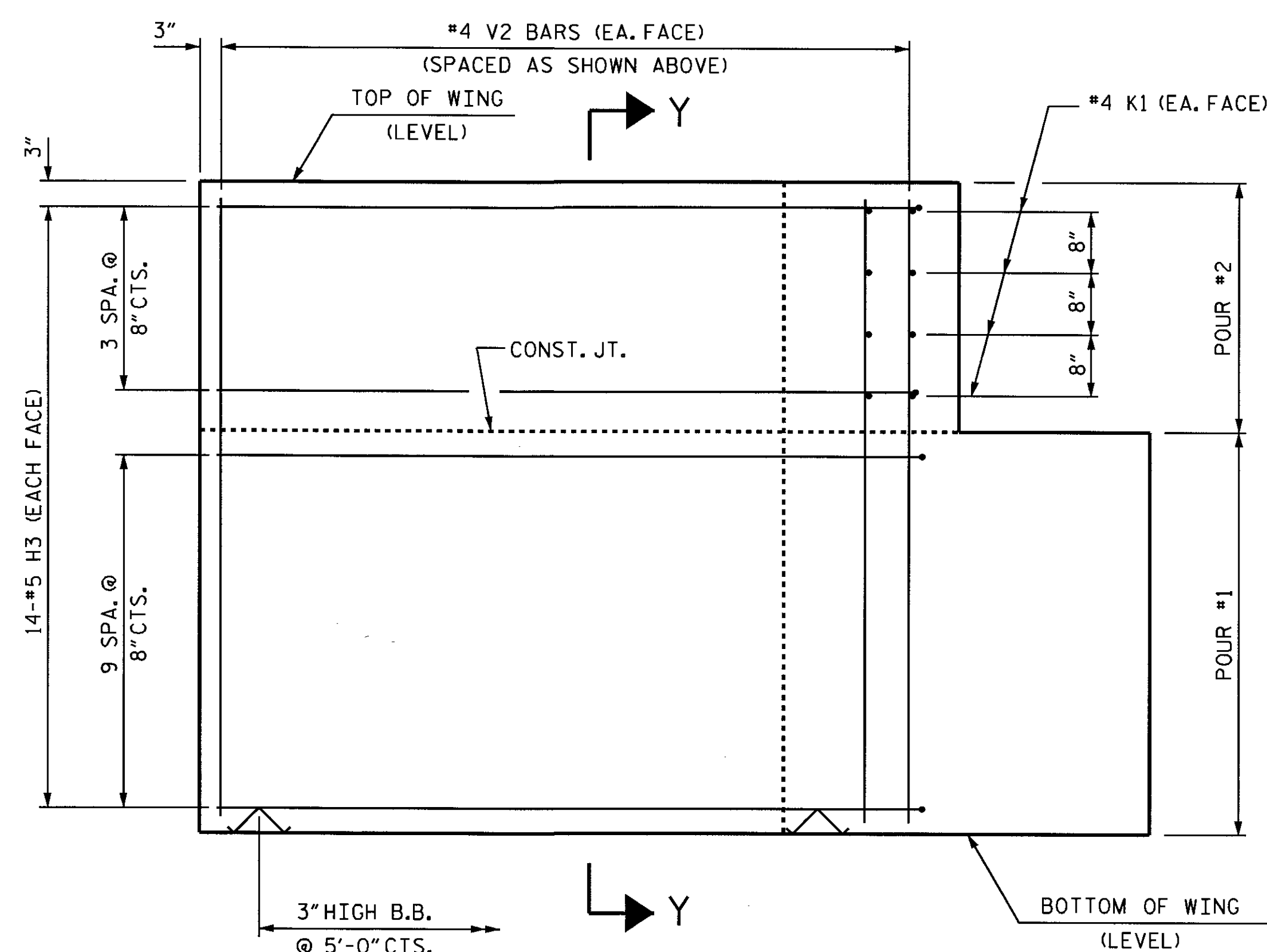
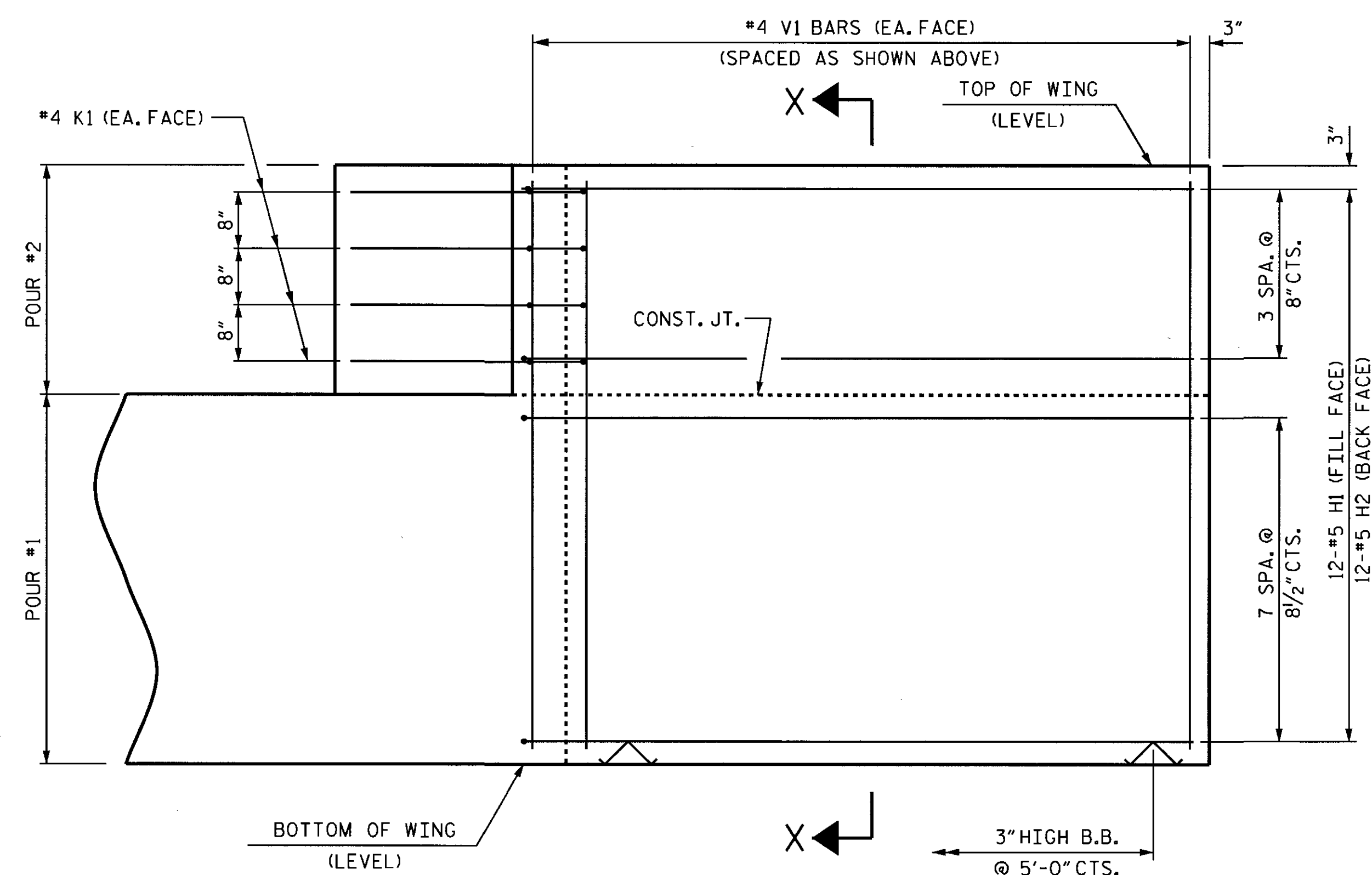
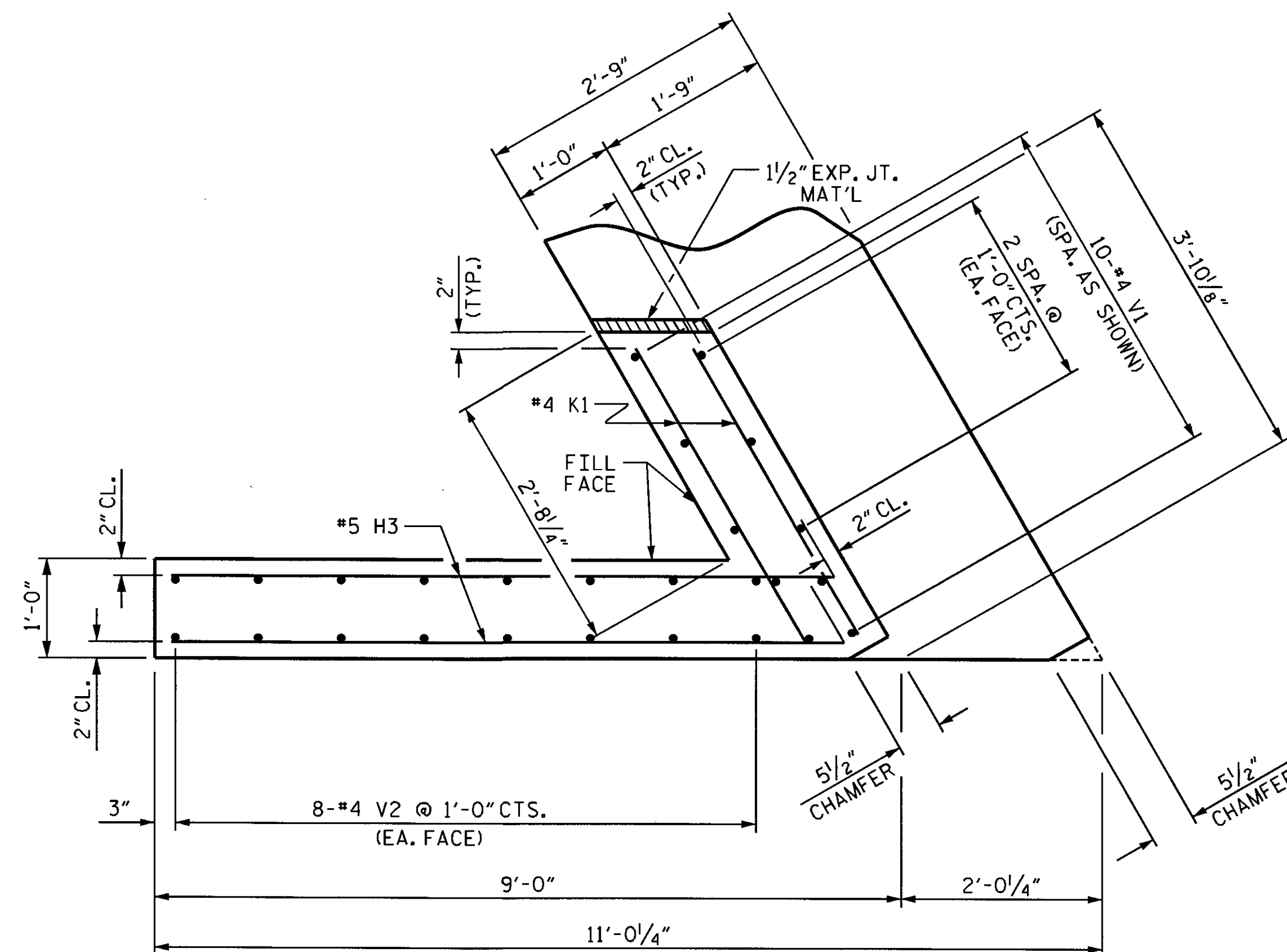
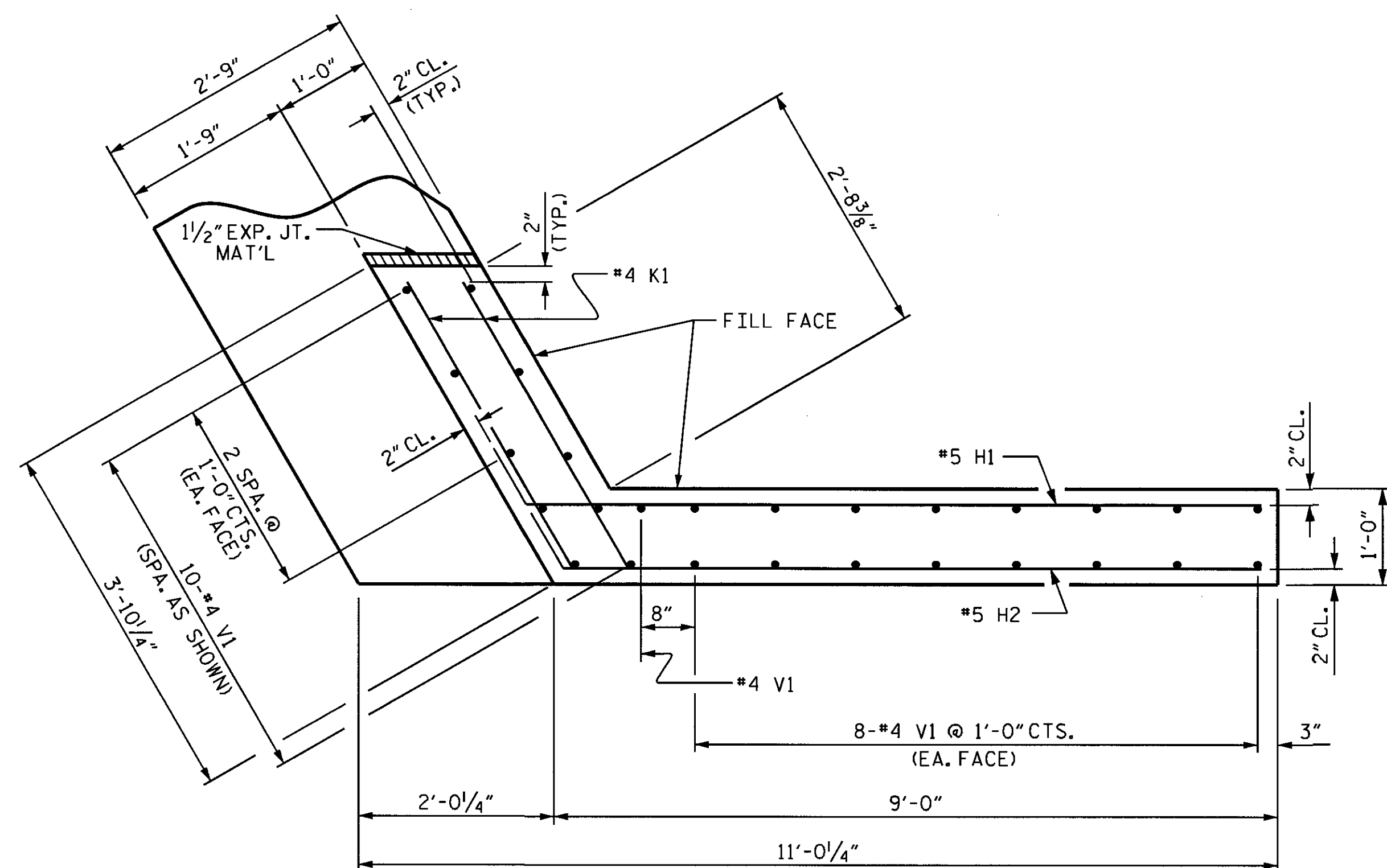
FOR WING DETAILS, SEE SHEET 2 OF 3.



A circular professional engineer seal for the State of North Carolina. The outer ring contains the text "NORTH CAROLINA" at the top and "PROFESSIONAL" at the bottom. The center of the seal features the word "SEAL" above the license number "15825". Below the license number is the name "BRUCE D. KLAPPENBACH" and the title "ENGINEER". The seal is stamped over a handwritten signature that appears to be "Bruce D. Klappenbach". At the bottom of the seal, the date "4-8-2014" is handwritten.

STD. NO. EB_30_60S4

08-APR-2014 16:00
R:\Structures\Plans\bkloppenbach\Microstation\B05111AE_SD_E*.dgn
bkloppenbach



PROJECT NO. BD-5111AE
CALDWELL COUNTY
 STATION: 12+15.43 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 1
WING DETAILS

REVISIONS						SHEET NO S-9
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 14
2			4			

ASSEMBLED BY :B. KLAPPENBACH DATE :2-6-2014
CHECKED BY : H. T. BARBOUR DATE :3-11-2014

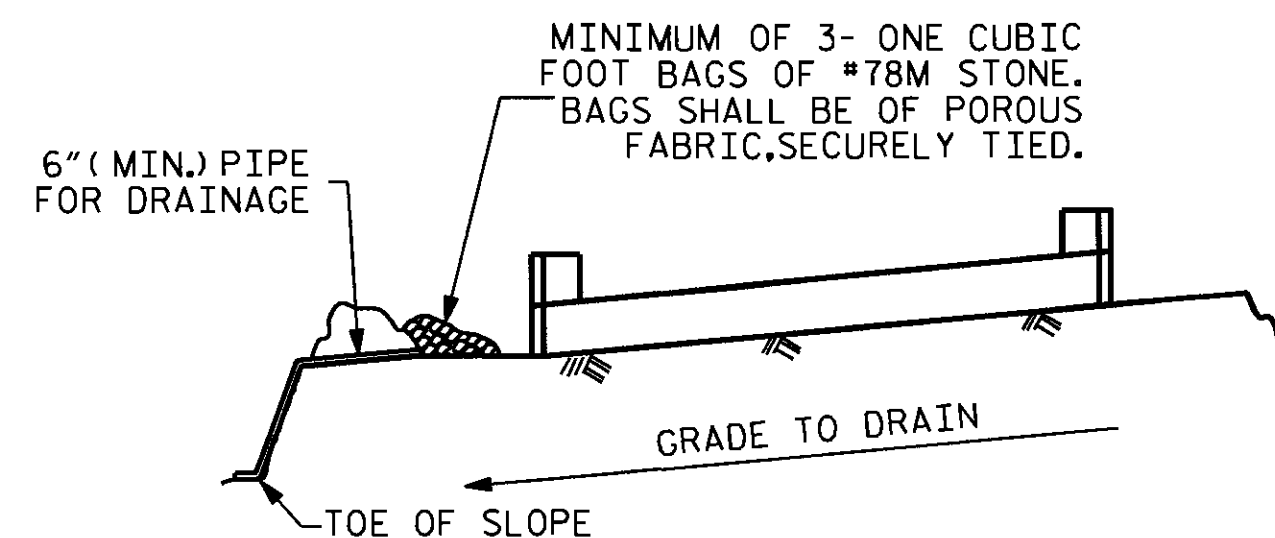
DRAWN BY : WJH 12/11
CHECKED BY : AAC 12/11

DESIGN ENGINEER OF RECORD:
B. D. KLAPPENBACH DATE : 3-26-2014

08-APR-2014 16:00
R:\Structures\Plans\bkloppenbach\Microstation\BD5111AE_SD_E*.dgn
bkloppenbach

A circular professional engineer seal for the State of North Carolina. The outer ring contains the text "NORTH CAROLINA" at the top and "PROFESSIONAL ENGINEER" at the bottom. The center of the seal contains the text "SEAL 15825". The name "BRUCE D. KLAPPENBACH" is written across the seal in a stylized, handwritten font. Below the seal, the date "4-8-2014" is handwritten.

STD. NO. EB_30_60S4

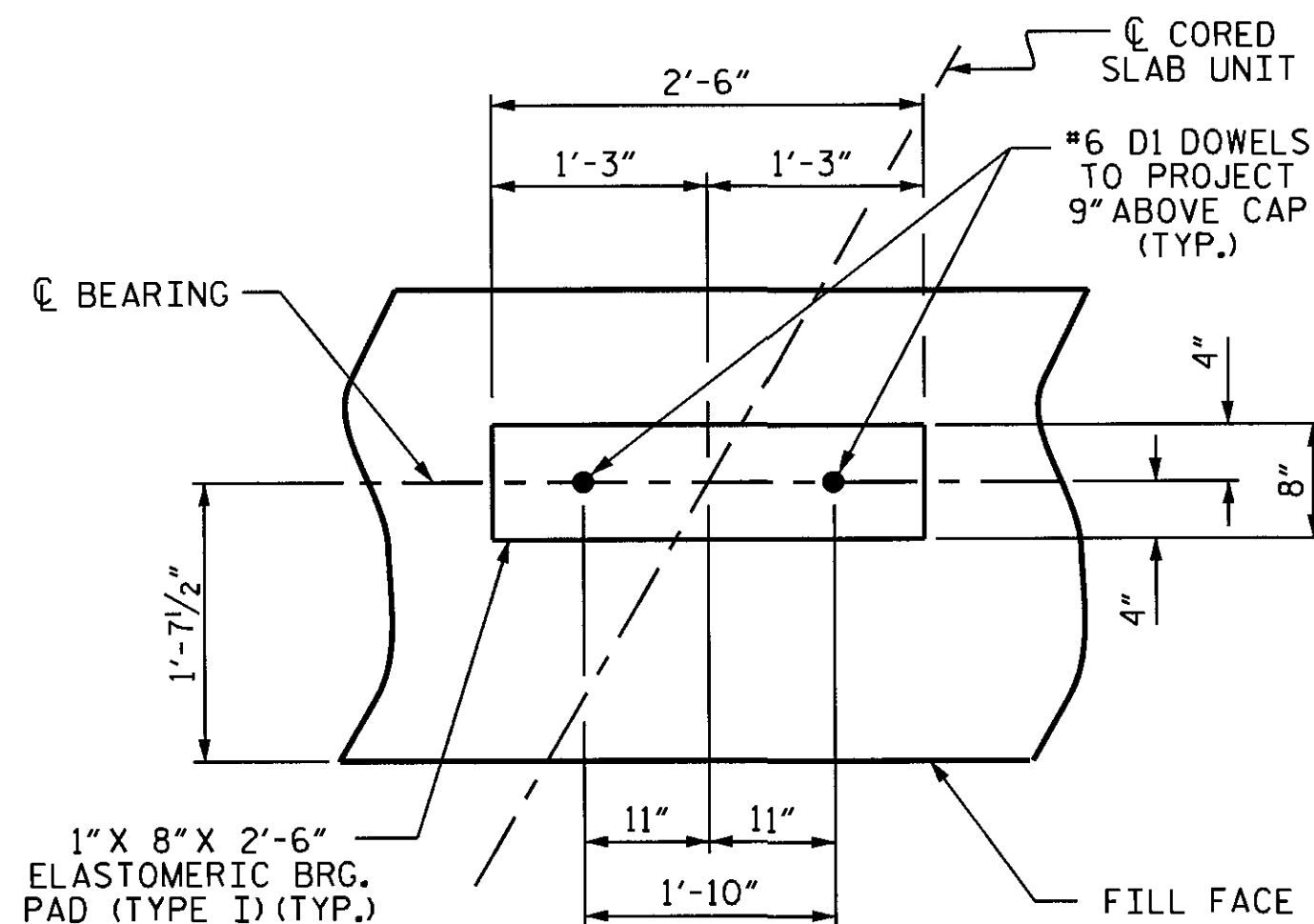


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

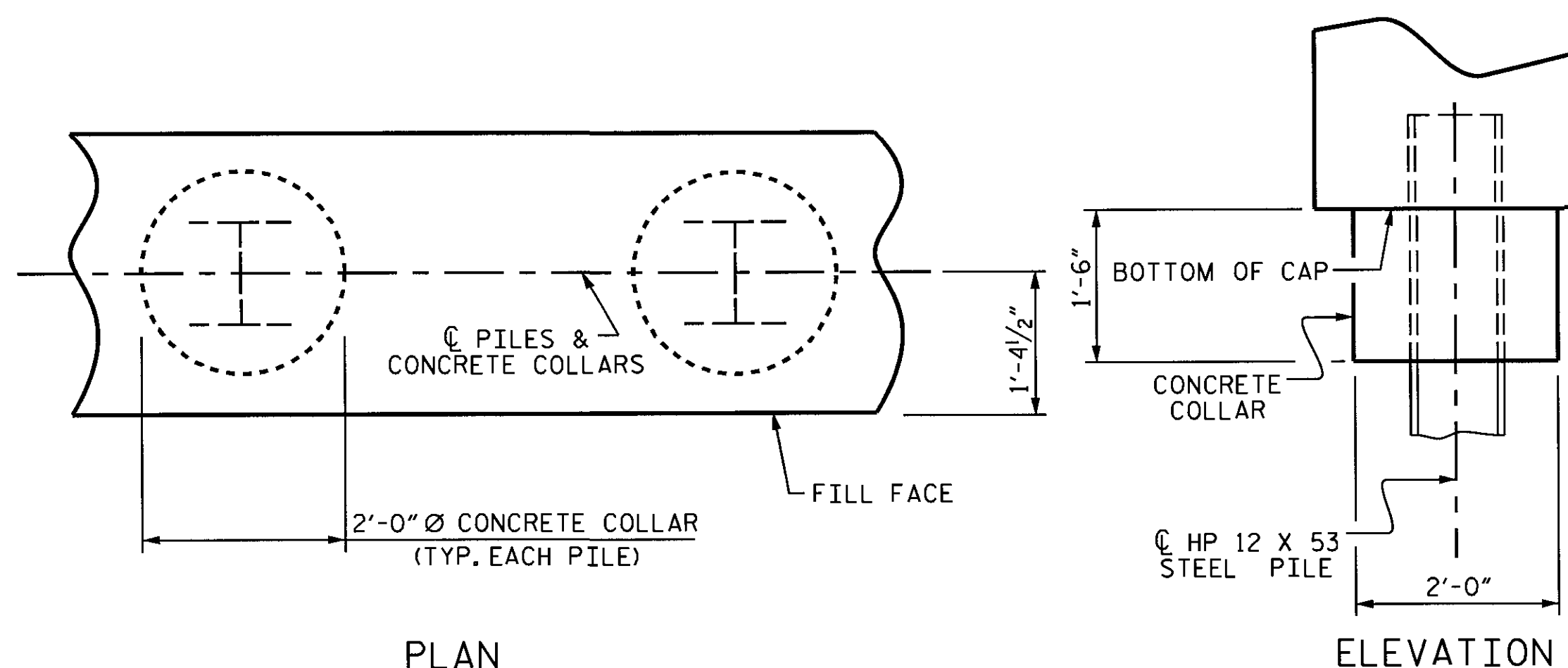
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

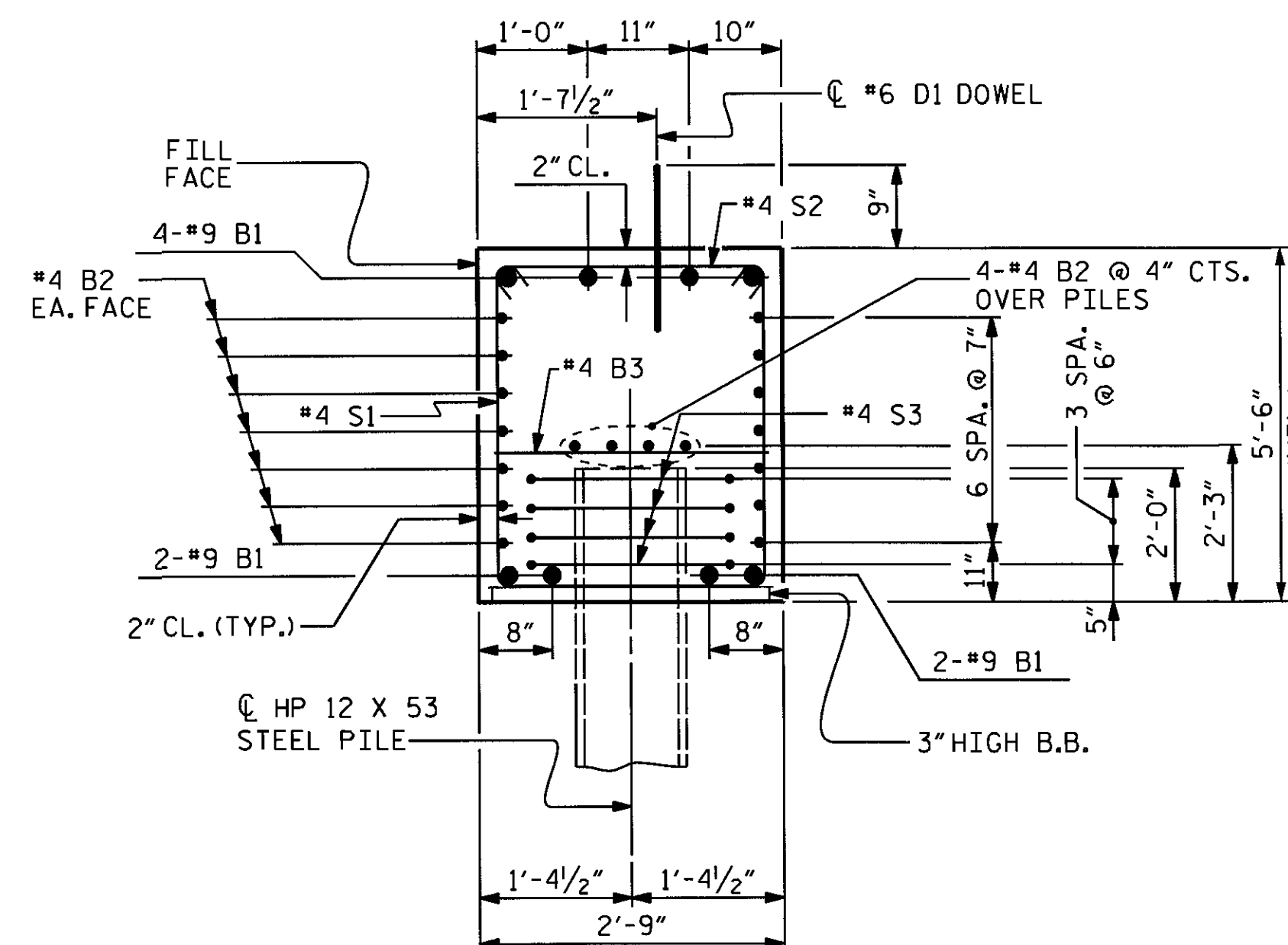


DETAIL "A"

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

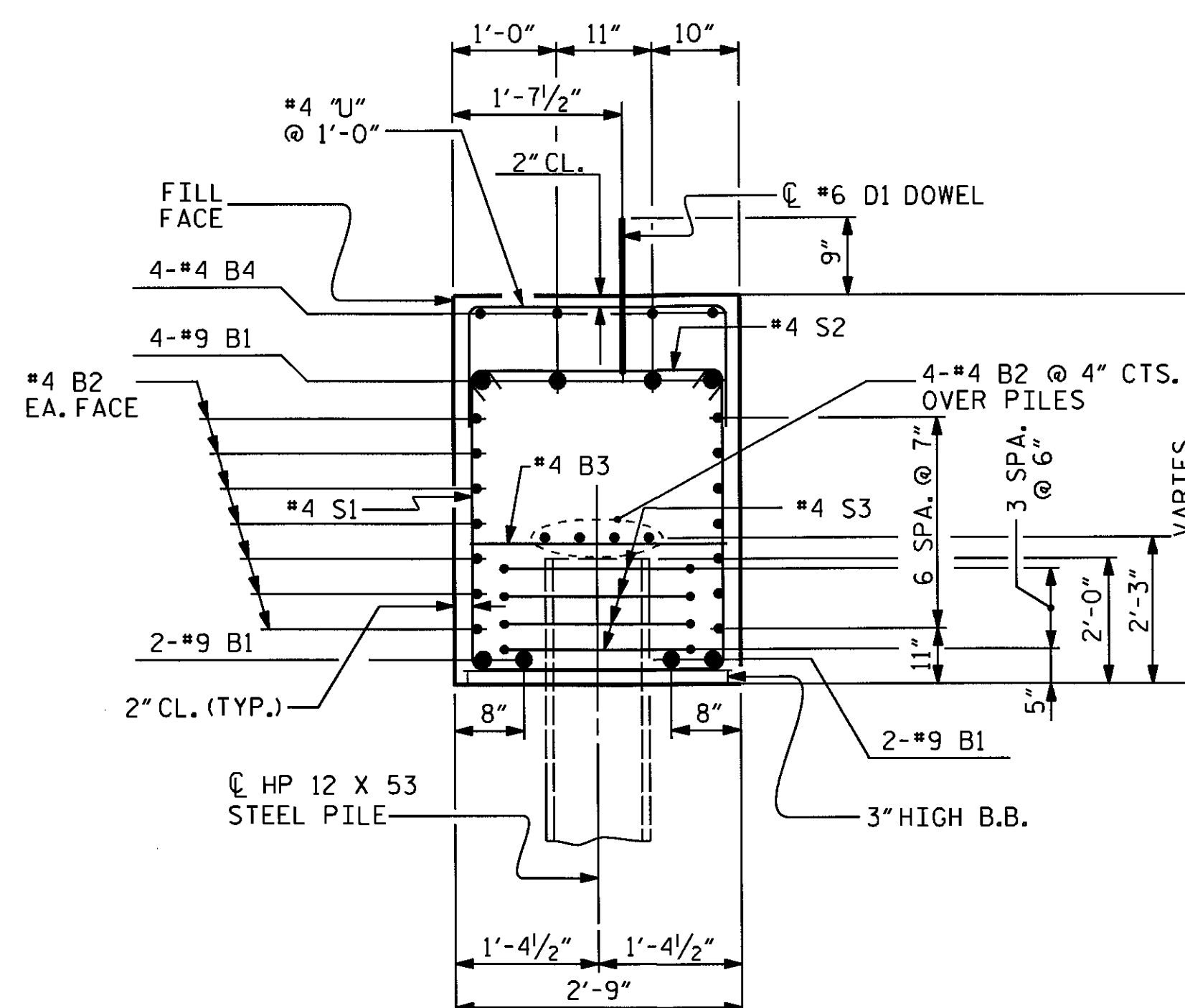


CORROSION PROTECTION FOR STEEL PILES DETAIL



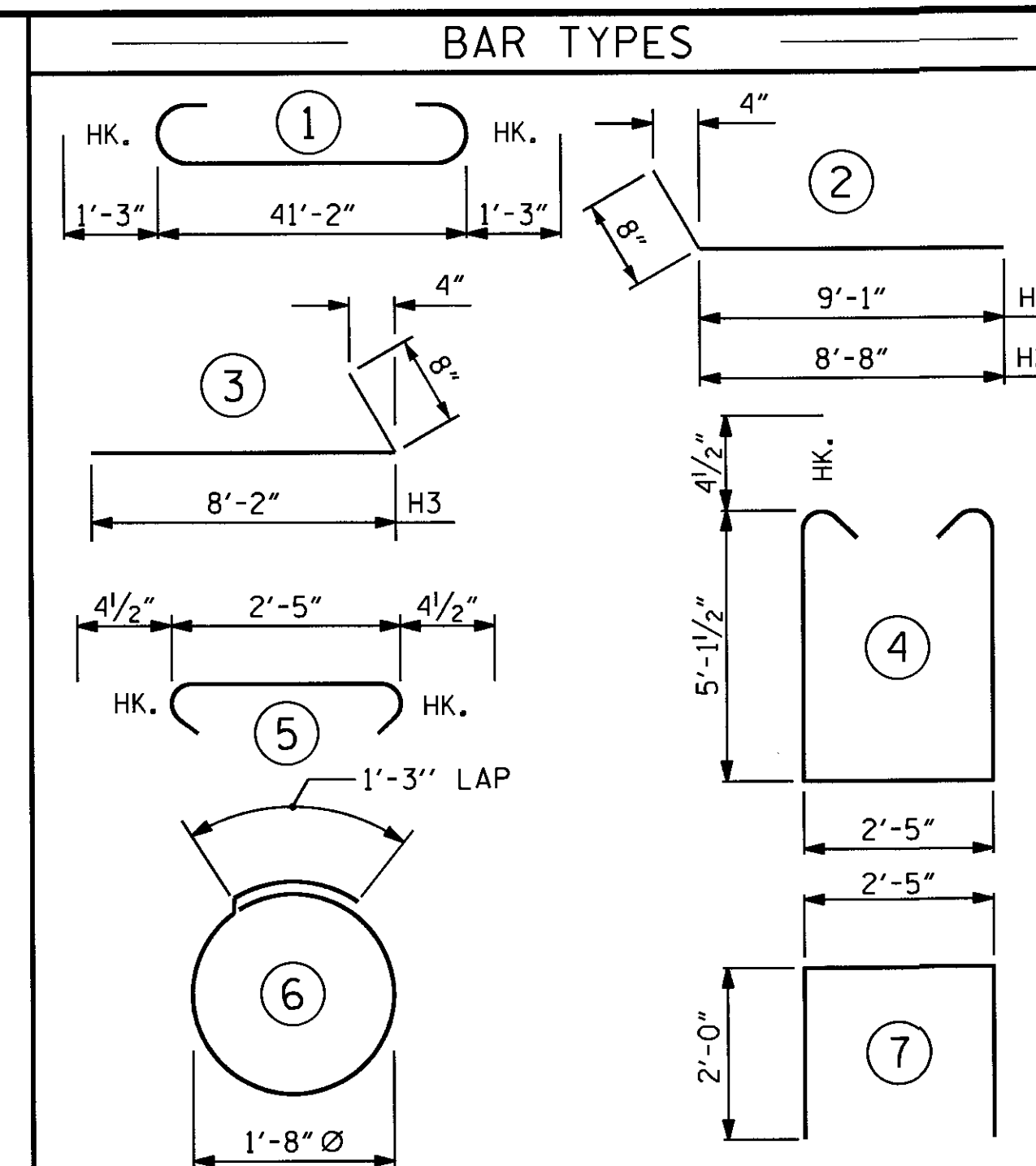
SECTION A-A

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



SECTION B-B

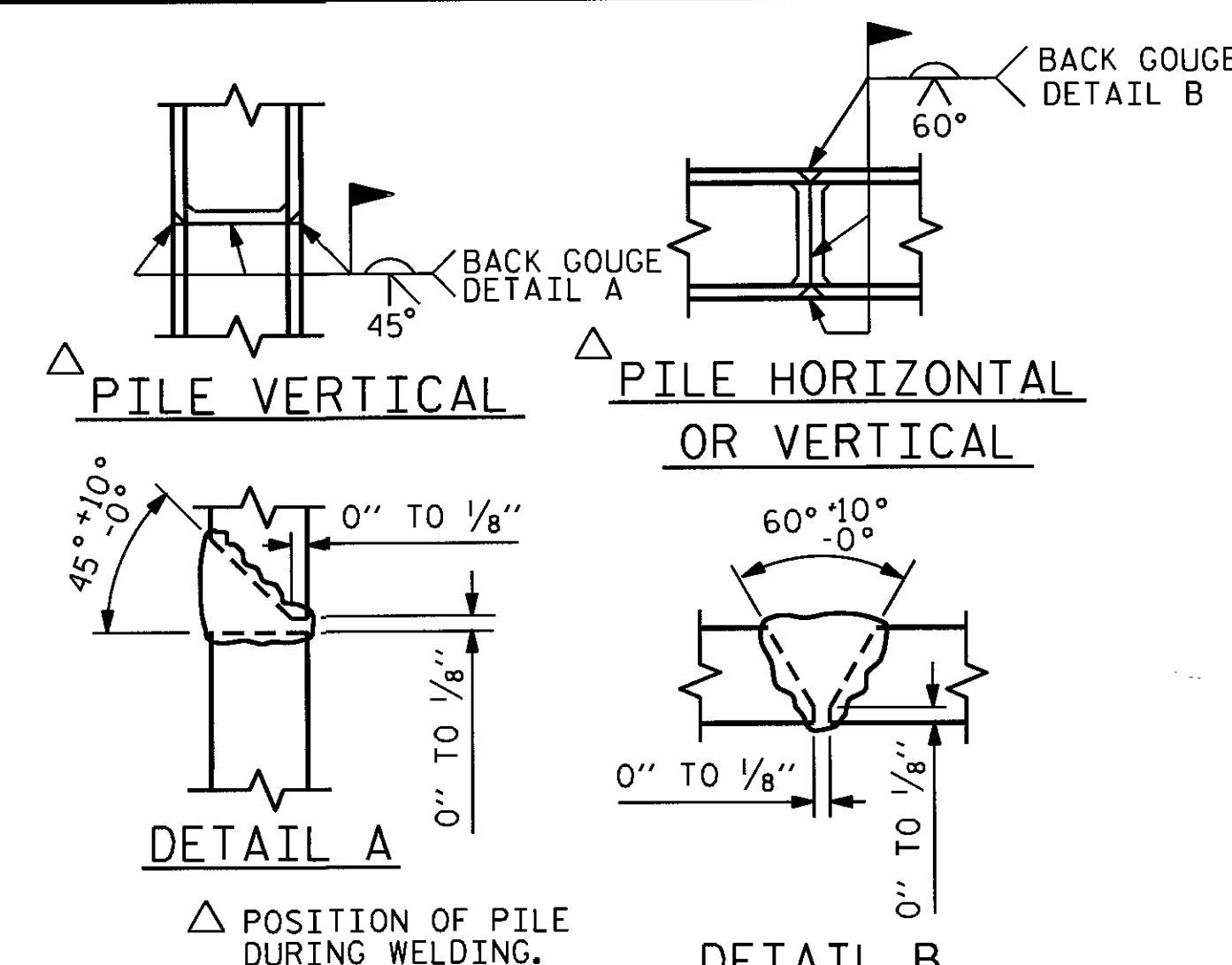
(CONCRETE COLLAR NOT SHOWN FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")



ALL BAR DIMENSIONS ARE OUT TO OUT.

HP 12 X 53 STEEL PILES NO: 7 LIN. FT.= 70	PILE EXCAVATION IN SOIL LIN. FT.=
	PILE EXCAVATION NOT IN SOIL LIN. FT.=

BILL OF MATERIAL					
FOR END BENT NO. 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	43'-8"	1188
B2	36	#4	STR	21'-11"	527
B3	11	#4	STR	2'-5"	18
B4	4	#4	STR	30'-0"	80
D1	20	#6	STR	1'-6"	45
H1	12	#5	2	9'-9"	122
H2	12	#5	2	9'-4"	117
H3	28	#5	3	8'-10"	258
K1	16	#4	STR	3'-3"	35
S1	38	#4	4	13'-5"	341
S2	38	#4	5	3'-2"	80
S3	28	#4	6	6'-6"	122
U1	30	#4	7	6'-5"	129
V1	27	#4	STR	7'-9"	140
V2	26	#4	STR	8'-6"	148
REINFORCING STEEL					3350
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)					
POUR #1 CAP, LOWER PART OF WINGS & COLLARS					30.0 C.Y.
POUR #2 UPPER PART OF WINGS					2.2 C.Y.
TOTAL CLASS A CONCRETE					32.2 C.Y.



PILE SPLICE DETAILS

PROJECT NO. BD-5111AE
CALDWELL COUNTY
 STATION: 12+15.43 -L-

SHEET 3 OF 3

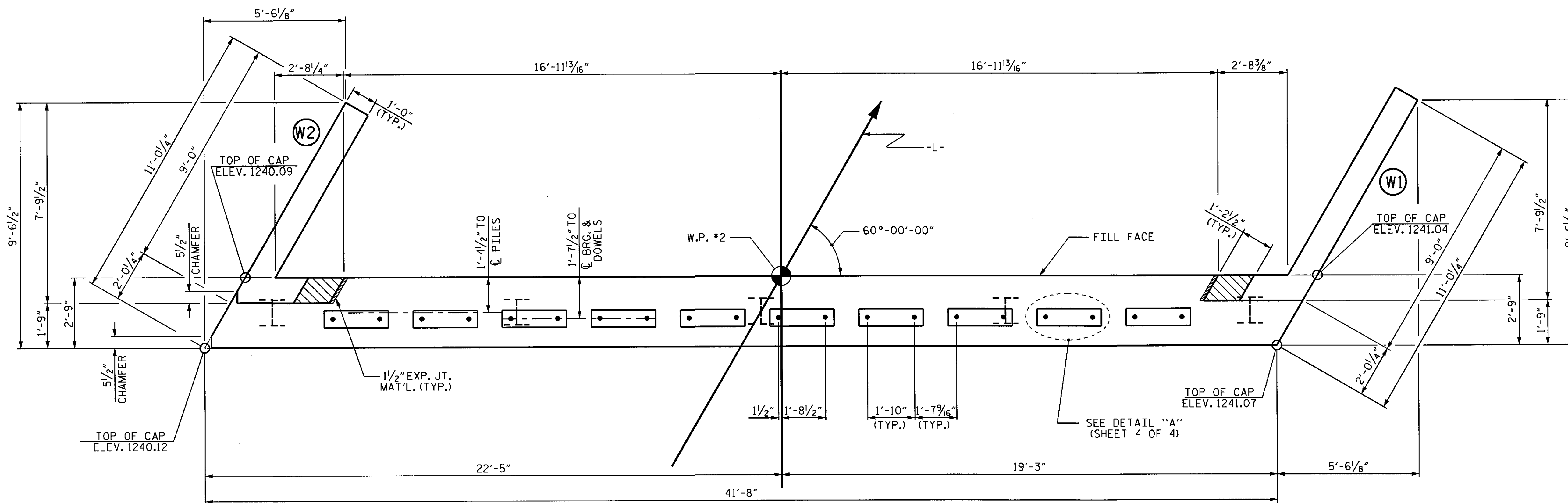
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

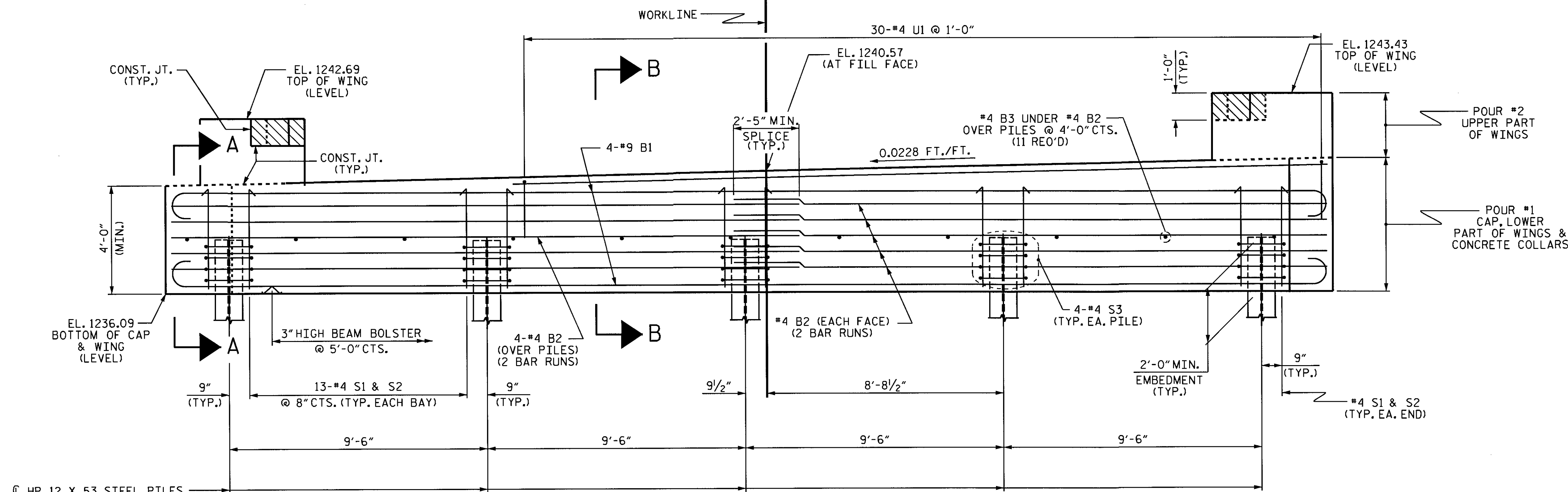
END BENT No. 1
DETAILS

REVISIONS						SHEET NO. S-10
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 14
2			4			

STD. NO. FB 30-60S4



PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 3 OF 3.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 3 OF 3.

NOTES

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

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 3 OF 3.

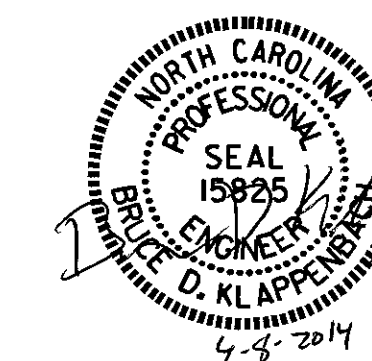
FOR WING DETAILS, SEE SHEET 2 OF 3.

PROJECT NO. BD-5111AE
CALDWELL COUNTY
STATION: 12+15.43 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 2

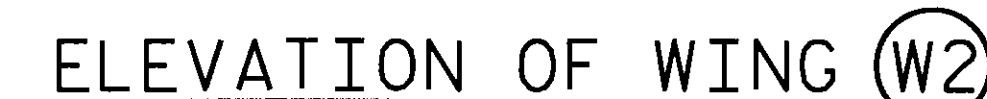


ASSEMBLED BY : B. KLAPPENBACH DATE : 2-6-2014
CHECKED BY : H. T. BARBOUR DATE : 3-11-2014
DRAWN BY : WJH 12/11
CHECKED BY : AAC 12/11

08-APR-2014 16:00
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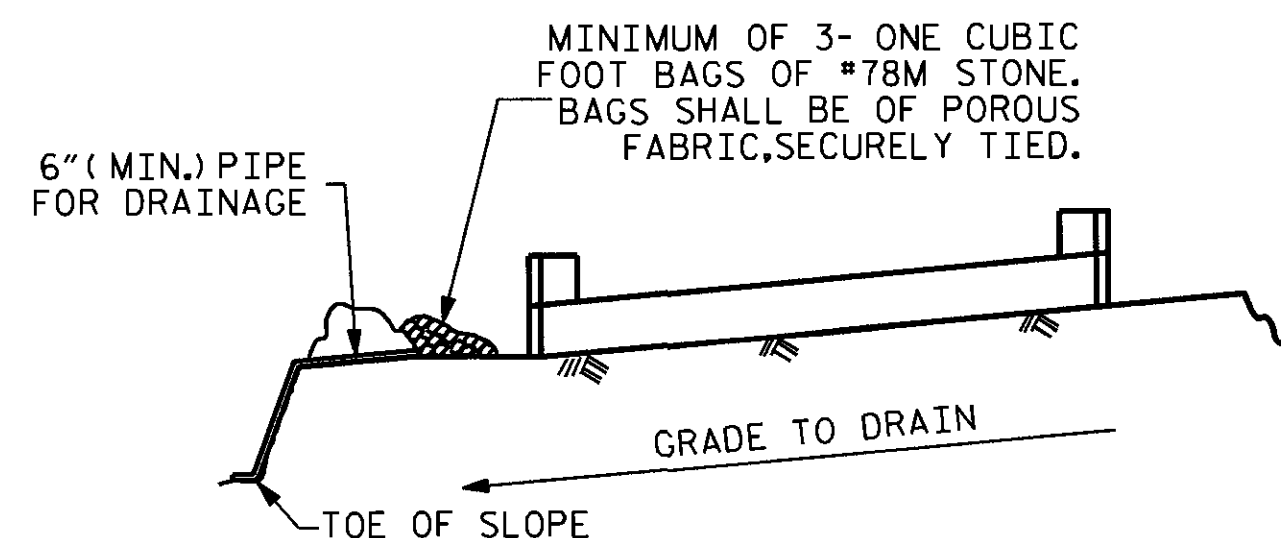
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-11
2			4			
TOTAL SHEETS						14

STD. NO. EB-30-60S4



REVISIONS						SHEET NO. S-12
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1			3			TOTAL SHEETS 14
2			4			

STD. NO. EB_30_60S4

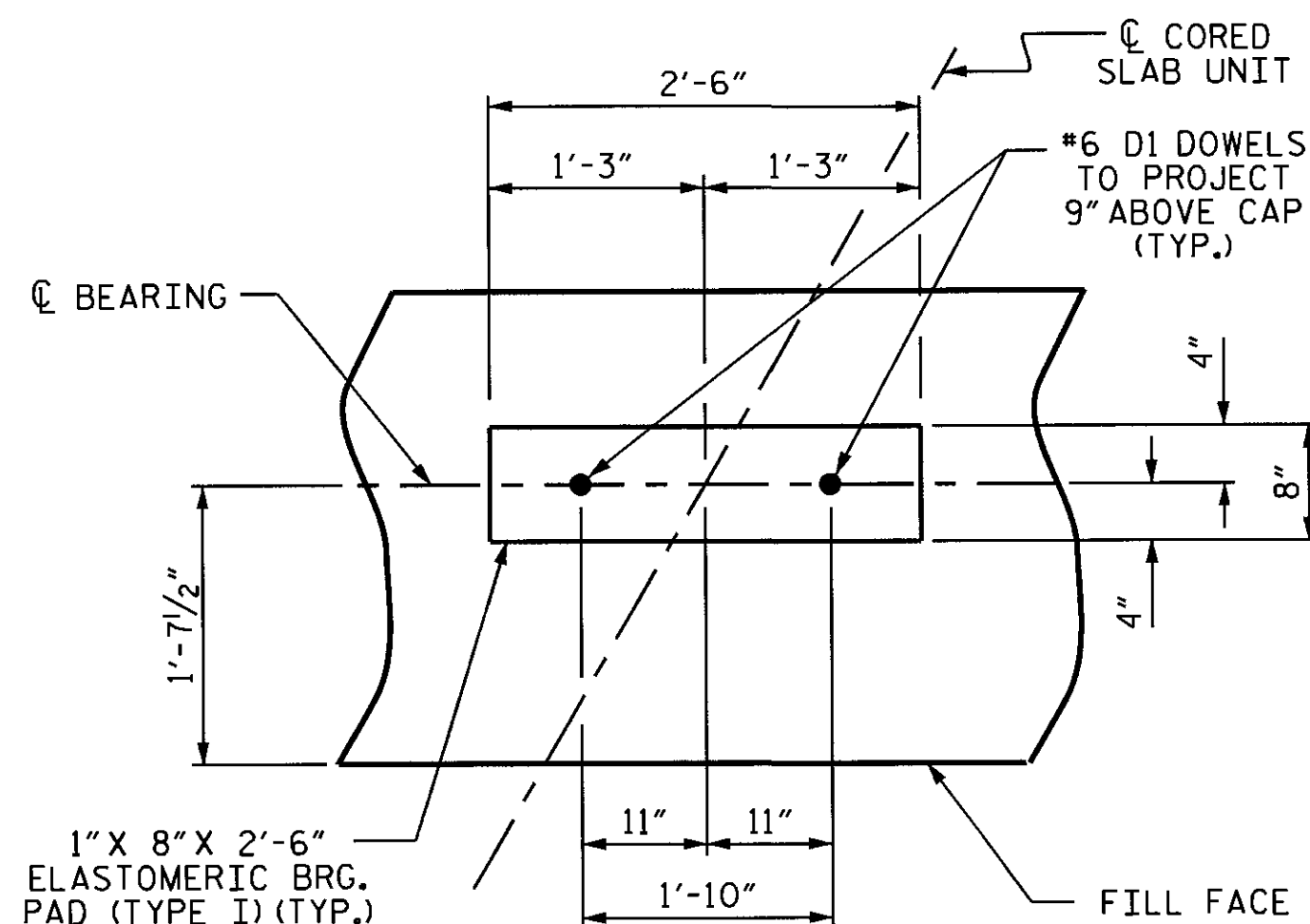


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

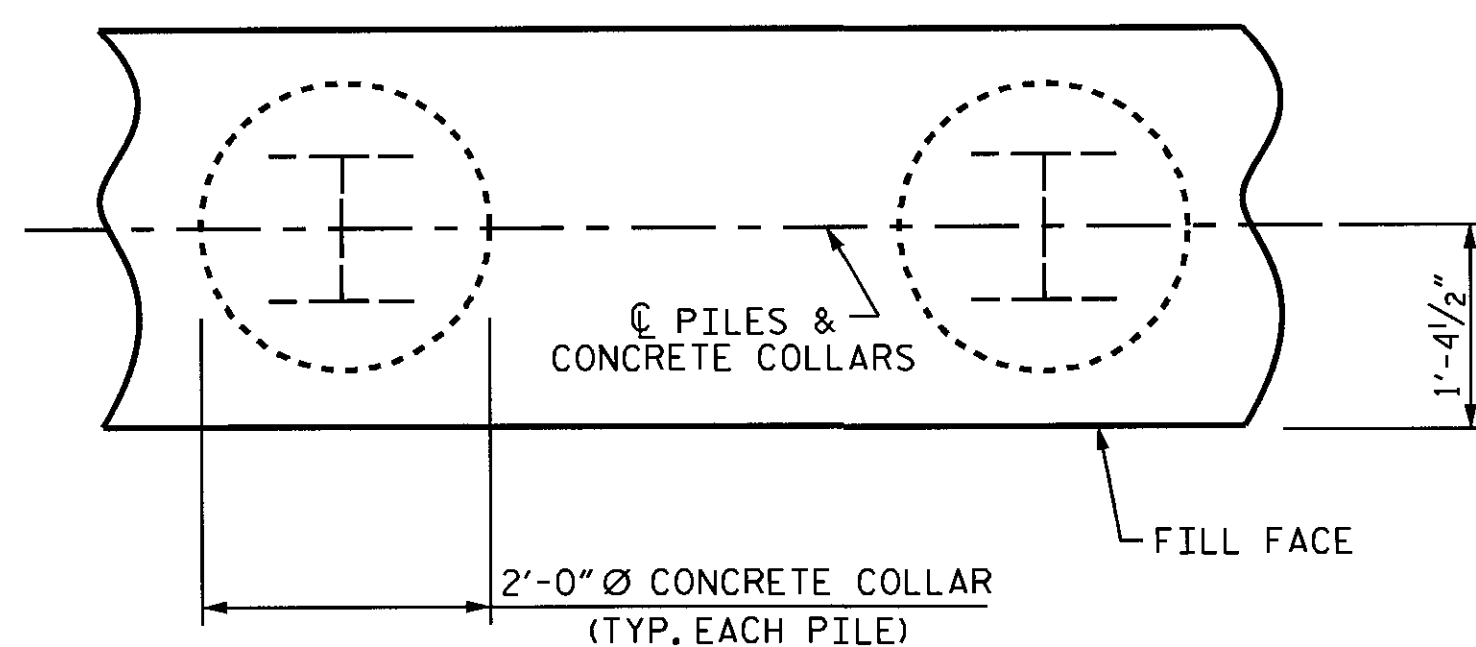
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



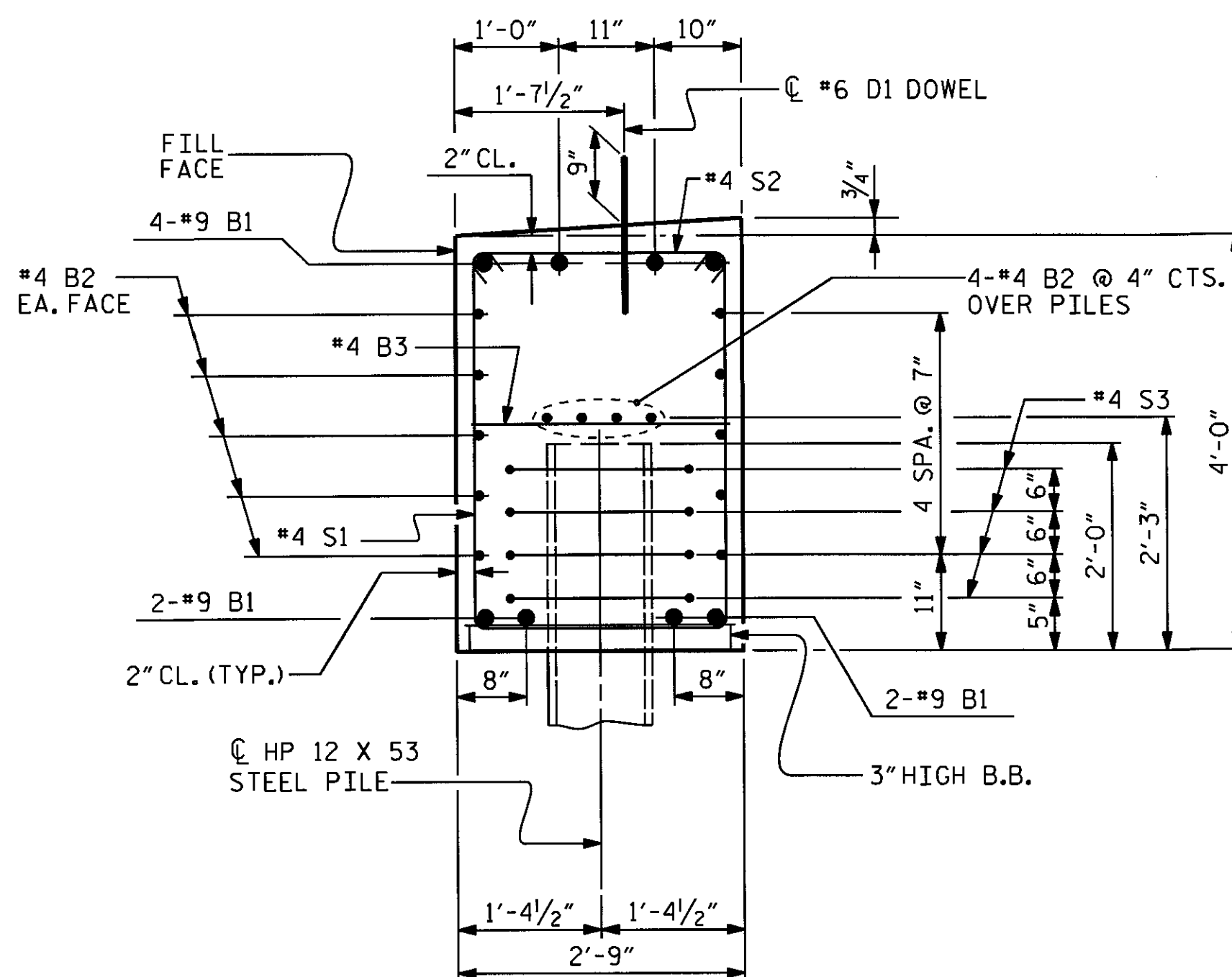
DETAIL "A"

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



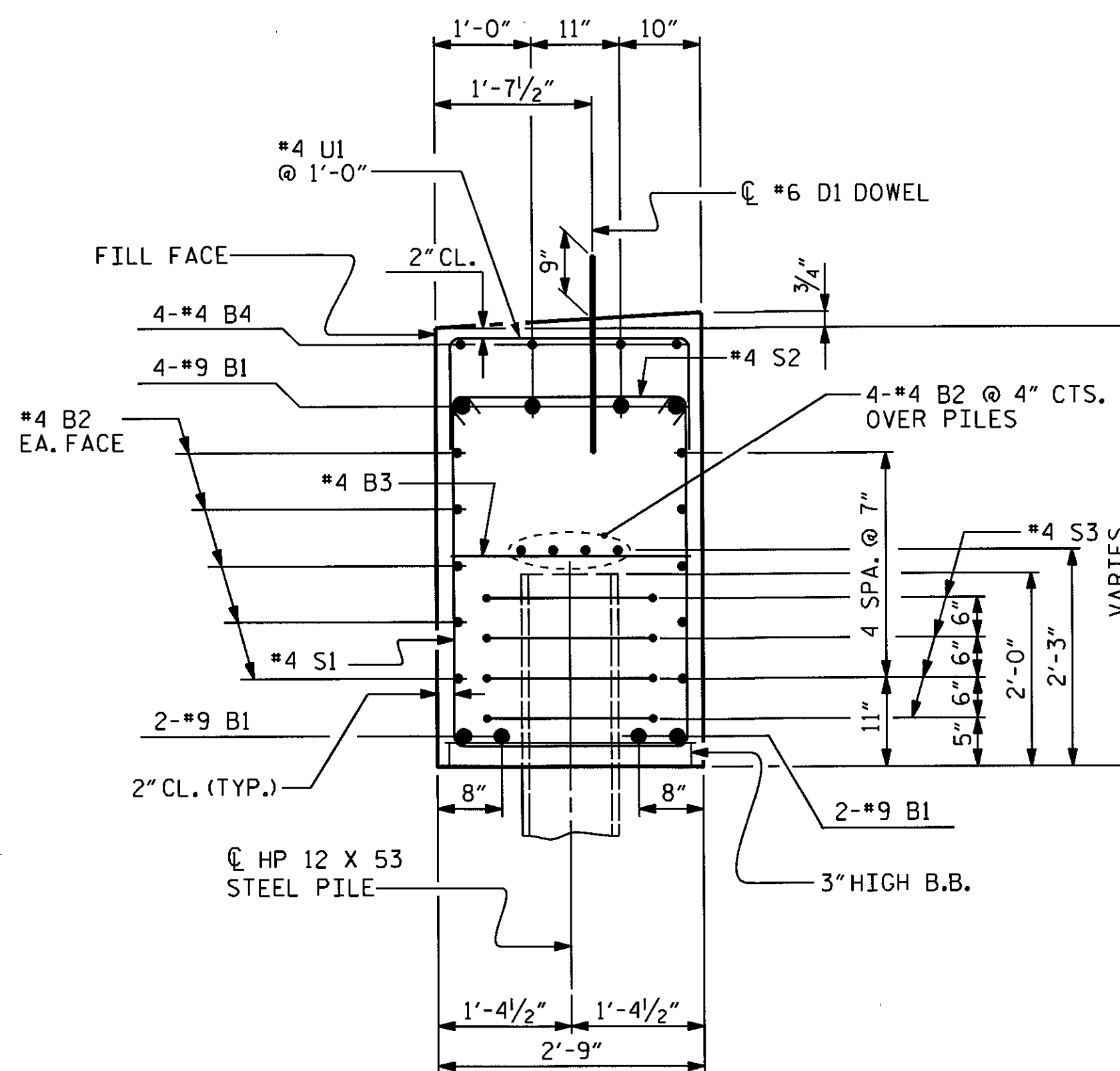
PLAN

CORROSION PROTECTION FOR STEEL PILES DETAIL



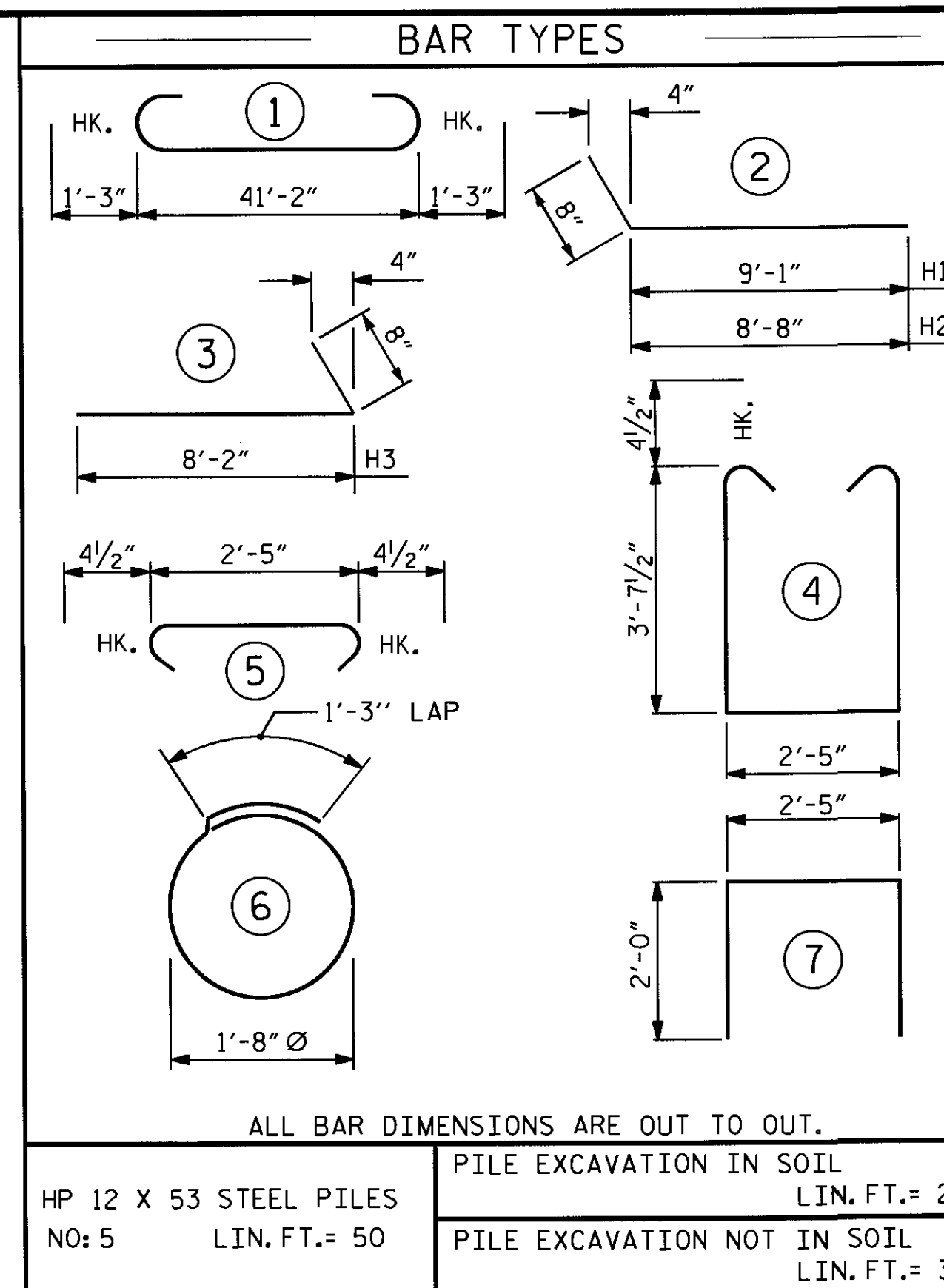
SECTION A-A

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



SECTION B-B

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



BILL OF MATERIAL

FOR END BENT NO. 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	43'-8"	1188
B2	28	#4	STR	21'-11"	410
B3	11	#4	STR	2'-5"	18
B4	4	#4	STR	30'-0"	80
D1	20	#6	STR	1'-6"	45
H1	11	#4	2	9'-9"	72
H2	11	#4	2	9'-4"	69
H3	20	#4	3	8'-10"	118
K1	16	#4	STR	3'-3"	35
S1	54	#4	4	10'-5"	376
S2	54	#4	5	3'-2"	114
S3	20	#4	6	6'-6"	87
U1	30	#4	7	6'-5"	129
V1	27	#4	STR	6'-11"	125
V2	26	#4	STR	6'-2"	107

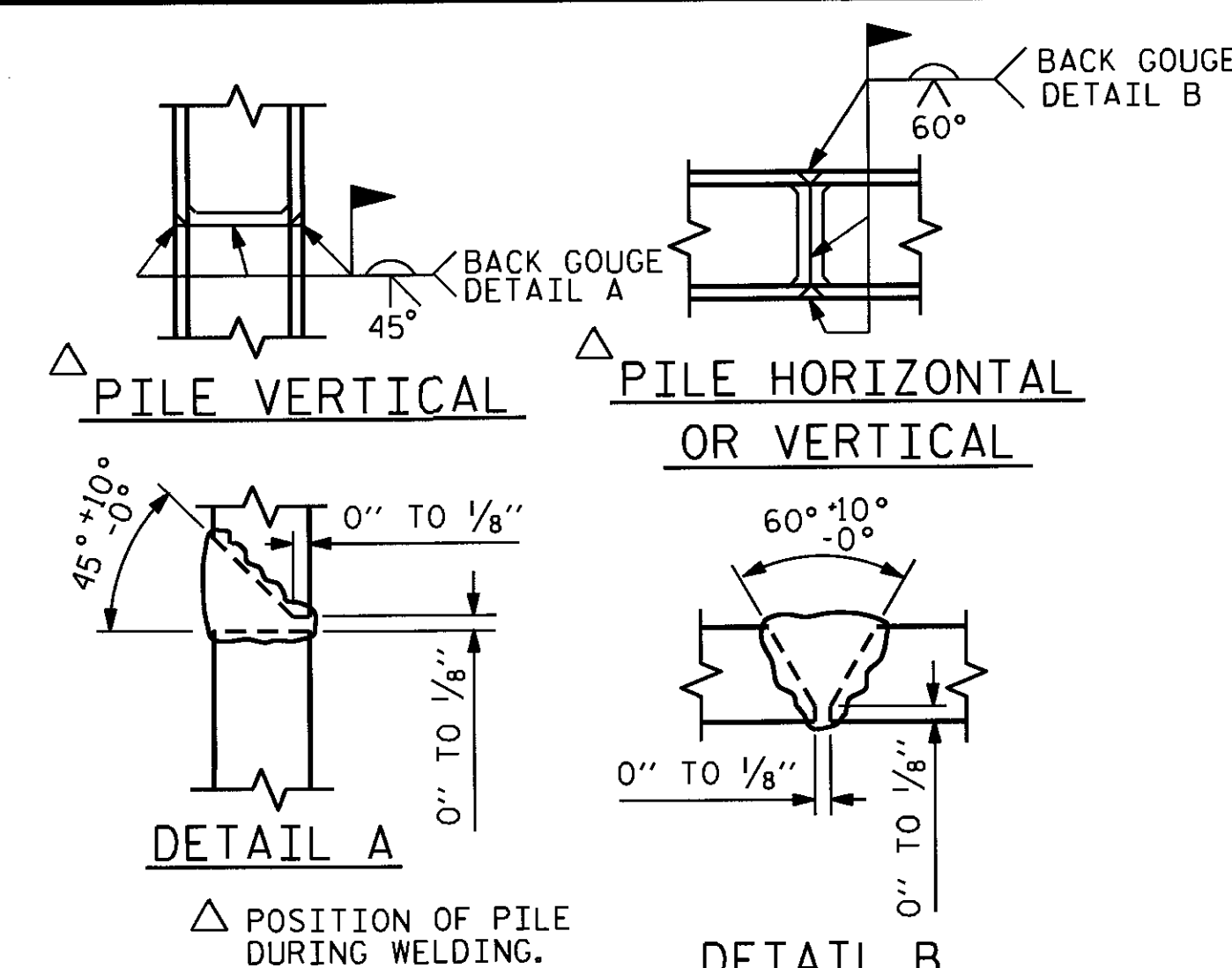
REINFORCING STEEL 2973 LBS.

CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR #1 CAP, LOWER PART OF WINGS & COLLARS 22.5 C.Y.

POUR #2 UPPER PART OF WINGS 2.2 C.Y.

TOTAL CLASS A CONCRETE 24.7 C.Y.



PILE SPLICE DETAILS

PROJECT NO. BD-5111AE

CALDWELL COUNTY

STATION: 12+15.43 -L-

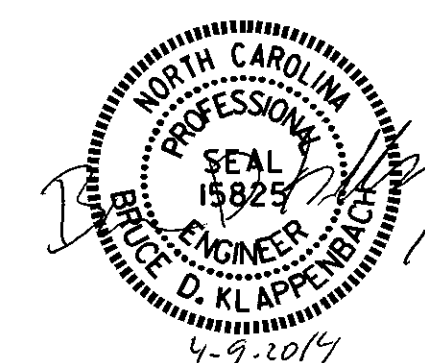
SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 2
DETAILS

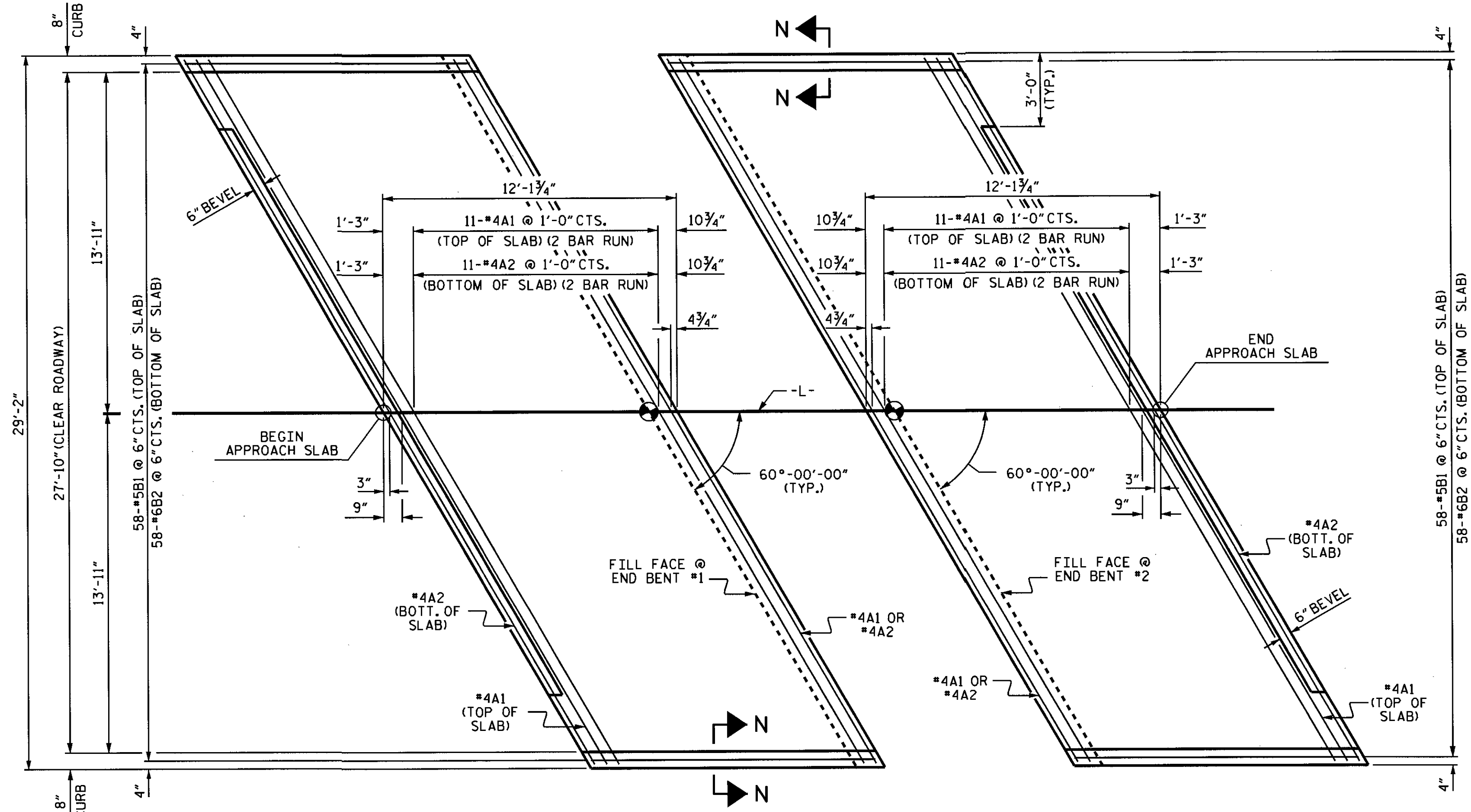
REVISIONS						SHEET NO. S-13
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 14
2			4			



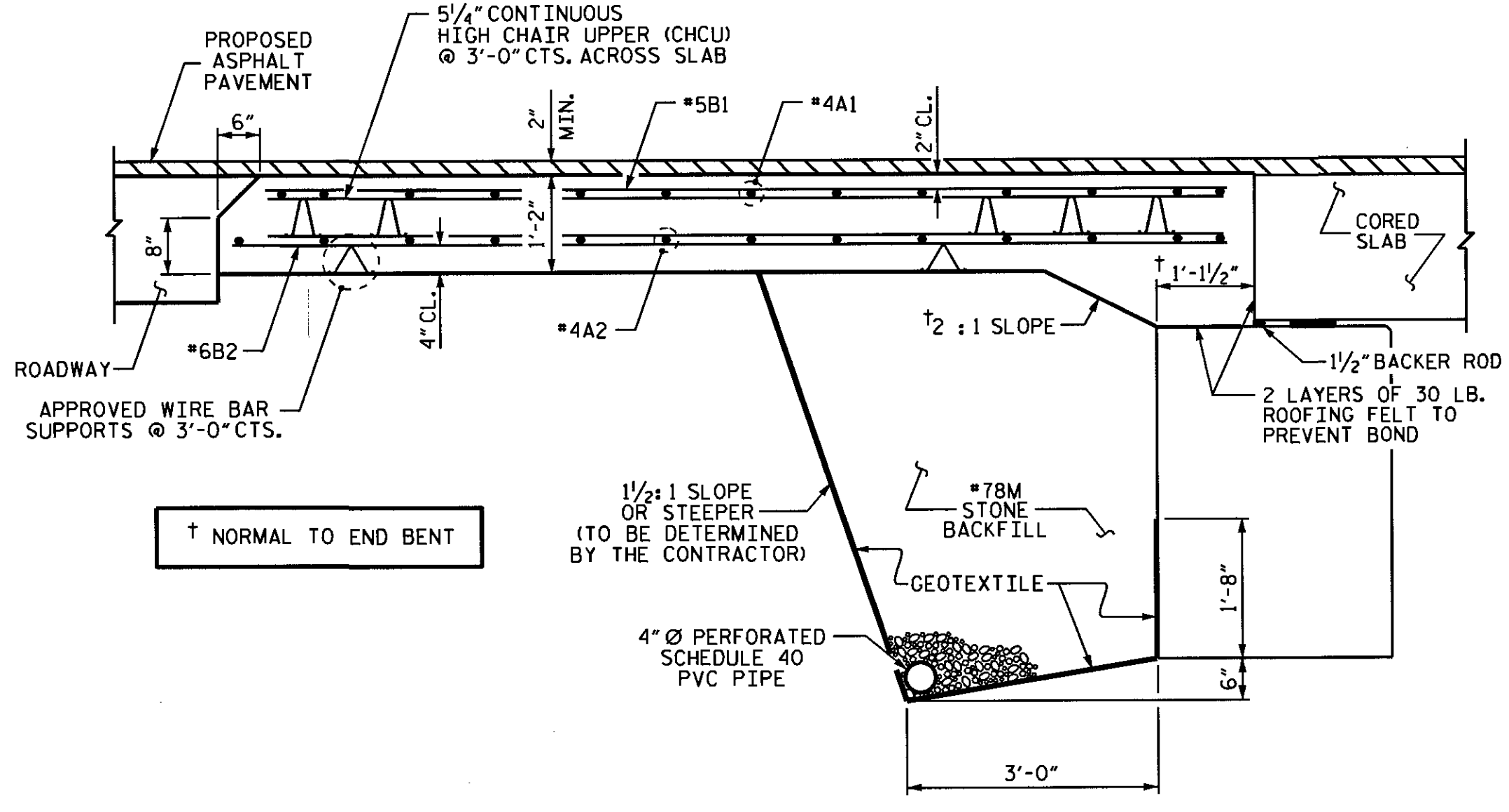
ASSEMBLED BY : B. KLAPPENBACH DATE : 2-6-2014
CHECKED BY : H. T. BARBOUR DATE : 3-11-2014
DRAWN BY : WJH 12/II
CHECKED BY : AAC 12/II

09-APR-2014 13:32
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bklappenbach

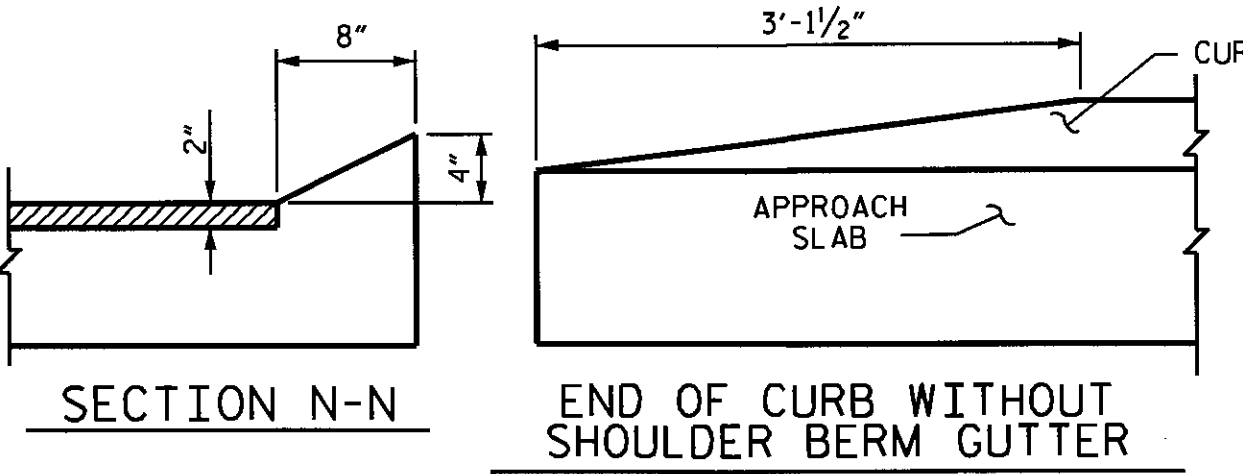
STD. NO. EB_30_60S4



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



SECTION THRU SLAB



CURB DETAILS

NOTES

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

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

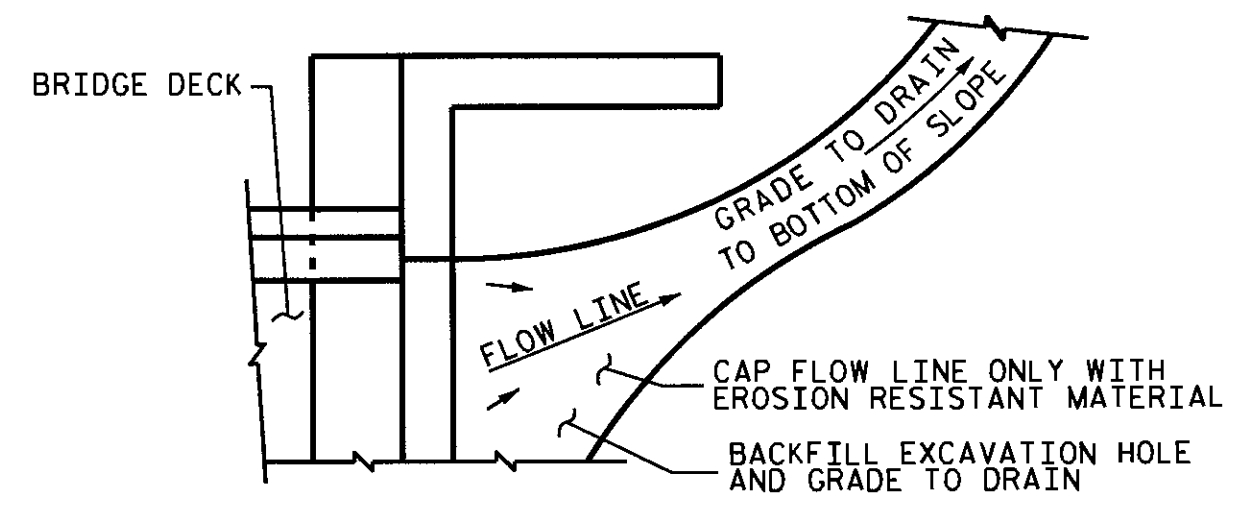
#78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

#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.

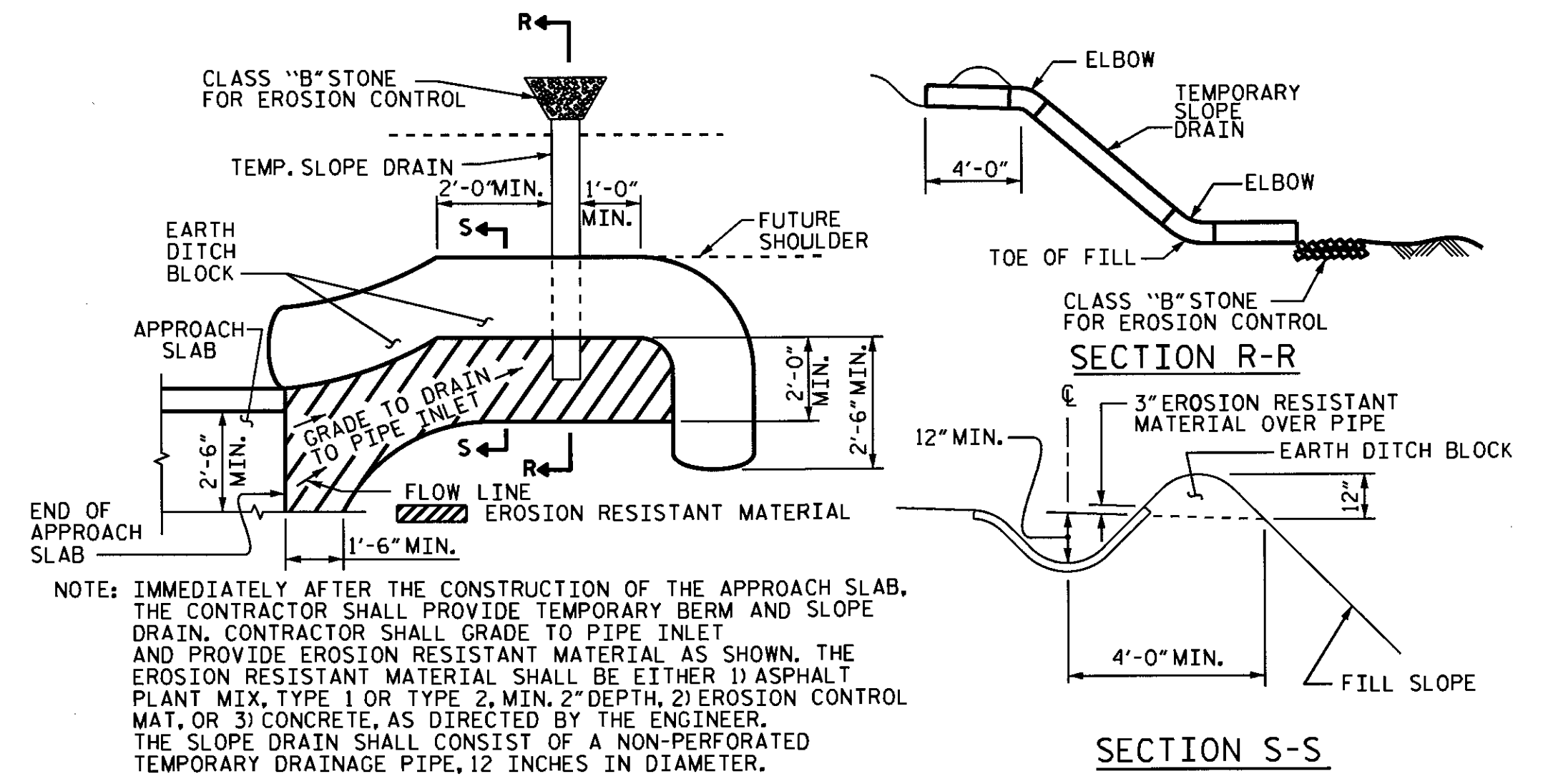
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

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



PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

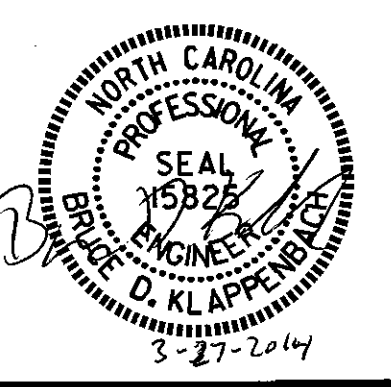
(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

BILL OF MATERIAL					
APPROACH SLAB AT EB #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	26	*4	STR	17'-8"	307
A2	26	*4	STR	17'-7"	305
*B1	58	*5	STR	11'-1"	670
B2	58	*6	STR	11'-7"	1009
REINFORCING STEEL				LBS.	1314
*EPOXY COATED REINFORCING STEEL				LBS.	977
CLASS AA CONCRETE				C. Y.	17.1
APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	26	*4	STR	17'-8"	307
A2	26	*4	STR	17'-7"	305
*B1	58	*5	STR	11'-1"	670
B2	58	*6	STR	11'-7"	1009
REINFORCING STEEL				LBS.	1314
*EPOXY COATED REINFORCING STEEL				LBS.	977
CLASS AA CONCRETE				C. Y.	17.1

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

ASSEMBLED BY : W DEBREW DATE : 11-13
CHECKED BY : H. T. BARBOUR DATE : 3-14
DRAWN BY : SHS/MAA 5-09 REV. 12-11 MAA/AAC
CHECKED BY : BCH 5-09

27-MAR-2014 09:33
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bklaappenbach



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT (SUB-REGIONAL TIER) 60° SKEW					
REVISIONS					SHEET NO. S-14
NO.	BY:	DATE:	NO.	BY:	
1			3		TOTAL SHEETS 14
2			4		

STD. NO. BAS_30_60S

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.

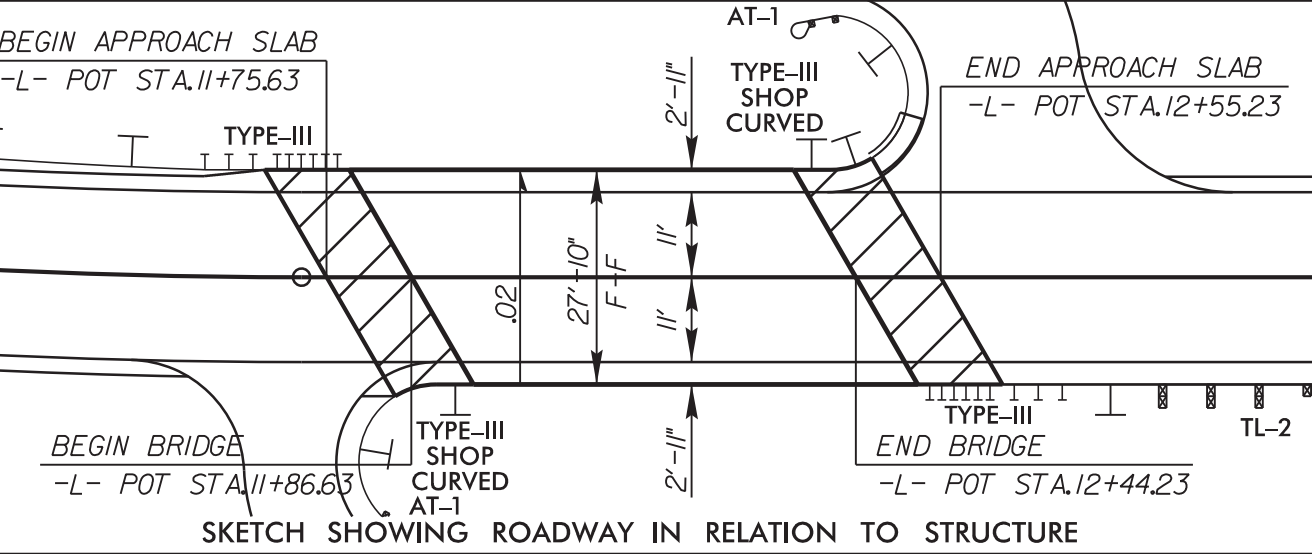
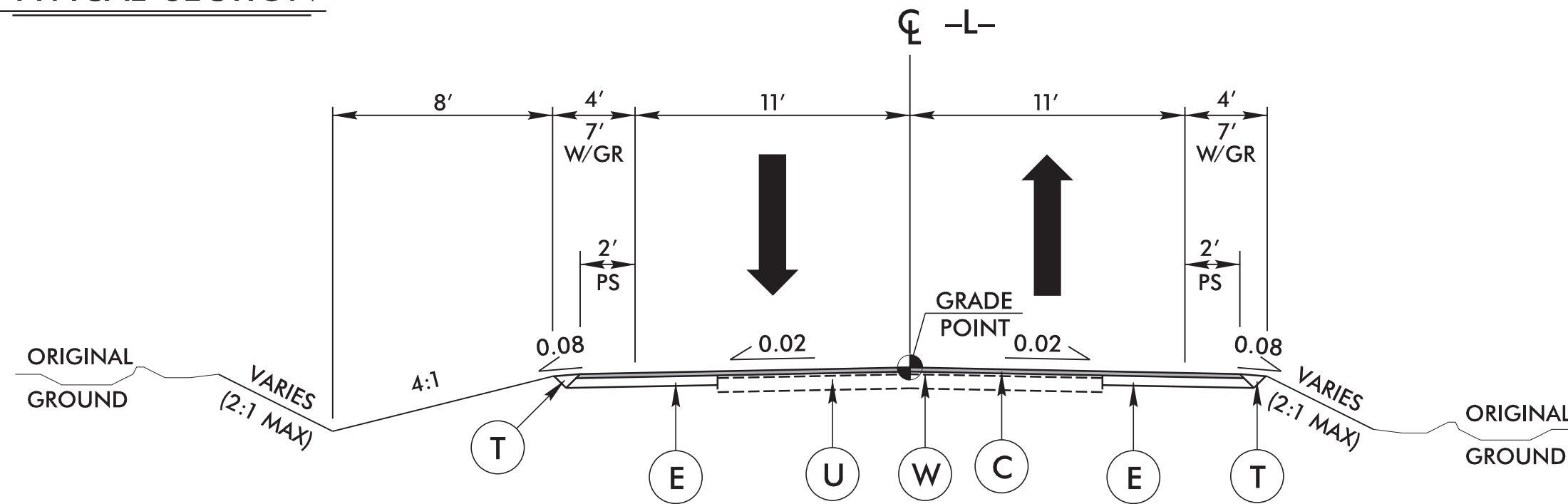
METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL 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.

8/17/99

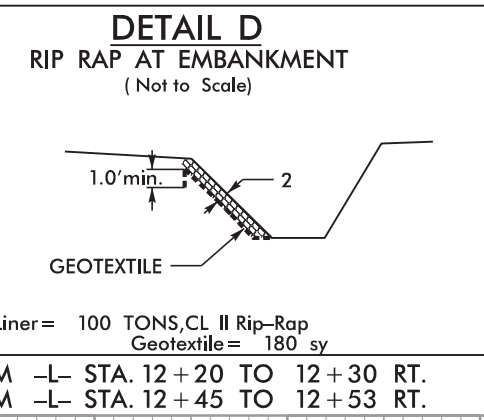
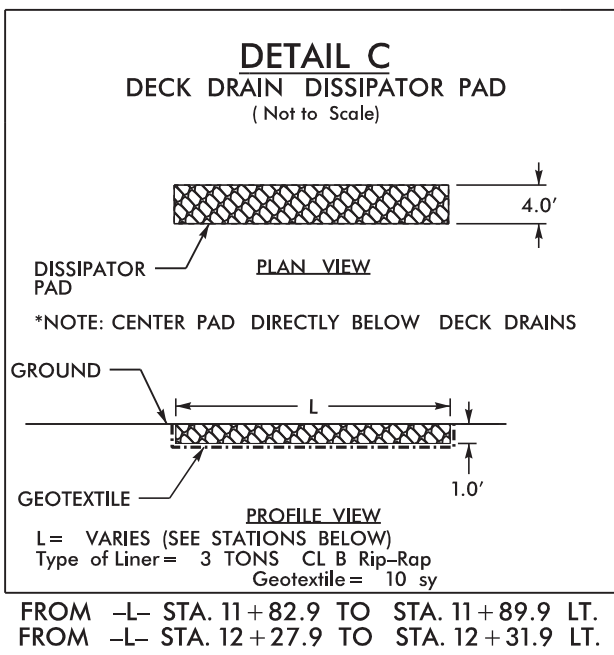
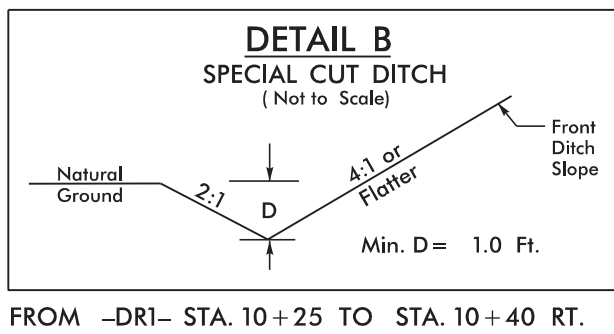
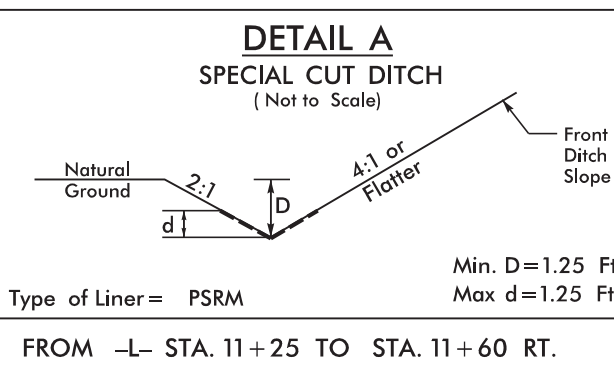
TYPICAL SECTION



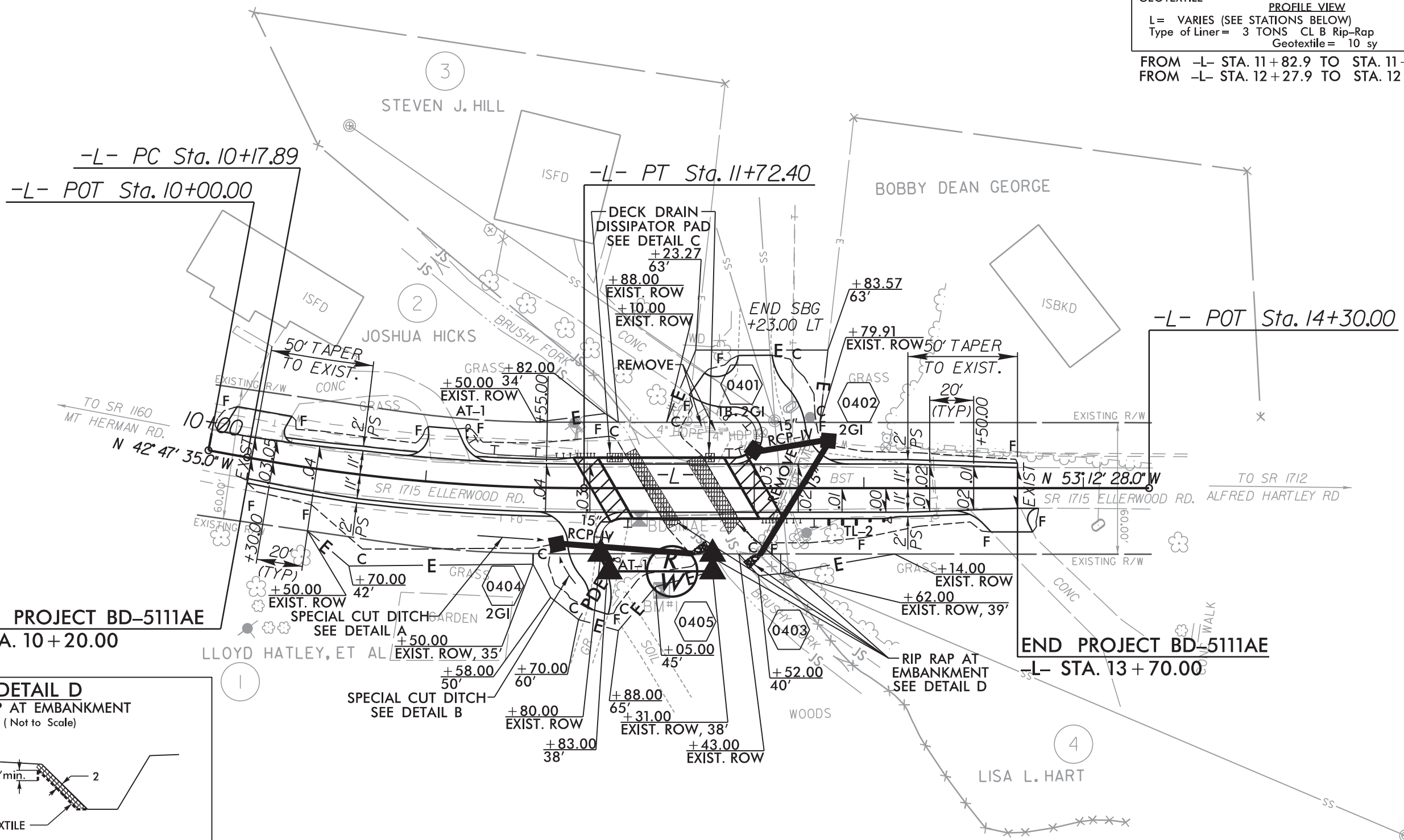
-L-
PI Sta 10+95.36
Δ = 10° 24' 53.0" (LT)
D = 6' 44' 26.4"
L = 154.5'
T = 77.47'
R = 850.00'
SE = 0.04
V = 48 mph

NAD 83/NSRS 2007

PAVEMENT SCHEDULE	
C	1½" SURFACE COURSE, TYPE SF9.5A
E	5½" BASE COURSE, TYPE B25.0B
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W	WEDGING



RIGHT-OF-WAY AREAS									
PARCEL #	PROPERTY OWNER'S NAME	TOTAL AREA	AREA TAKEN	AREA REMAINING RIGHT	AREA REMAINING LEFT	CONSTRUCTION EASEMENT	PERMANENT DRAINAGE EASEMENT	TEMPORARY DRAINAGE EASEMENT	PERMANENT UTILITY EASEMENT
1	LLOYD HATLEY, ET AL	N/A	0.009 Ac.	N/A	N/A	0.034 Ac.	0.017 Ac.	0 Ac.	0 Ac.
2	JOSHUA HICKS	N/A	0 Ac.	N/A	N/A	0.002 Ac.	0 Ac.	0 Ac.	0 Ac.
3	STEVEN J. HILL	N/A	0 Ac.	N/A	N/A	0.004 Ac.	0 Ac.	0 Ac.	0 Ac.
4	LISA L. HART	N/A	0 Ac.	N/A	N/A	0.005 Ac.	0.001 Ac.	0 Ac.	0 Ac.



PROJECT REFERENCE NO. **BD-5111AE** SHEET NO. **RDY-1**

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

GRAPHIC SCALES

50 0 50 100
PLANS

50 0 50 100
PROFILE (HORIZONTAL)

10 0 10 20
PROFILE (VERTICAL)

DESIGN SPEED = 40 mph
POSTED SPEED = 35 mph
ADT = 2,100 (2009)

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY MCDOT FOR MONUMENT "BD5111AE-2"

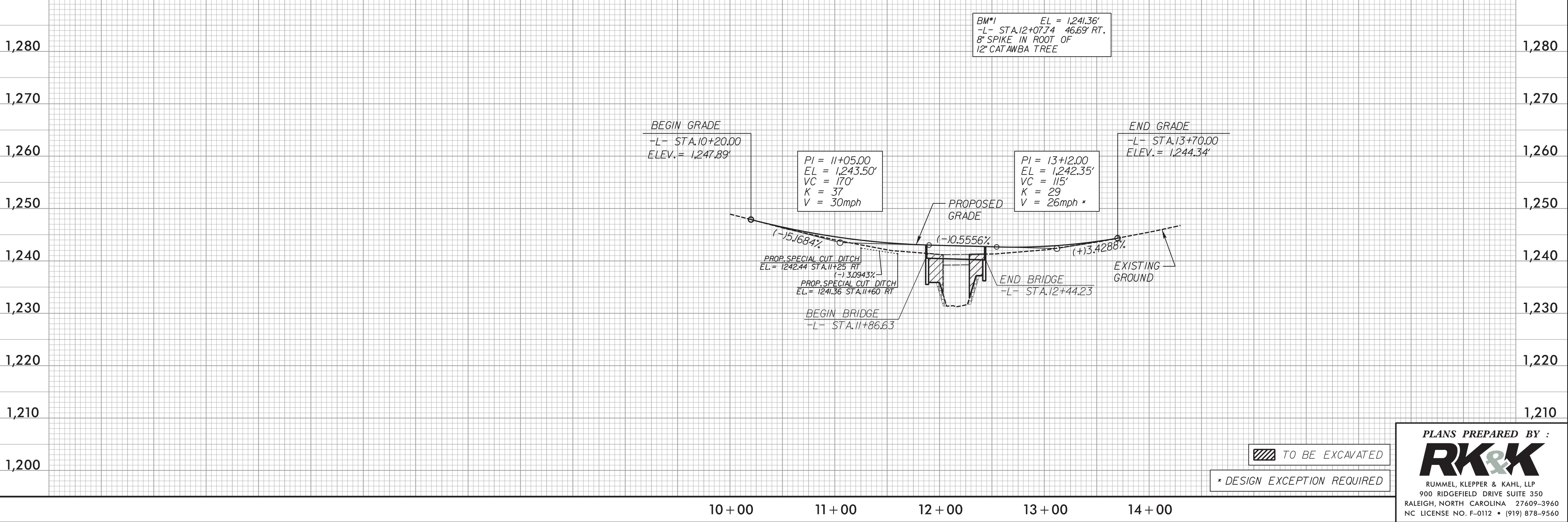
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 782573.8028(ft) EASTING: 1264758.1153(ft) ELEVATION: 1241.3271(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998774619

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BD5111AE-2" TO -L- STATION IS N 44° 14' 15.0" W 198.8850(ft)

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

7/15/2014
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Ekeus



TO BE EXCAVATED

* DESIGN EXCEPTION REQUIRED

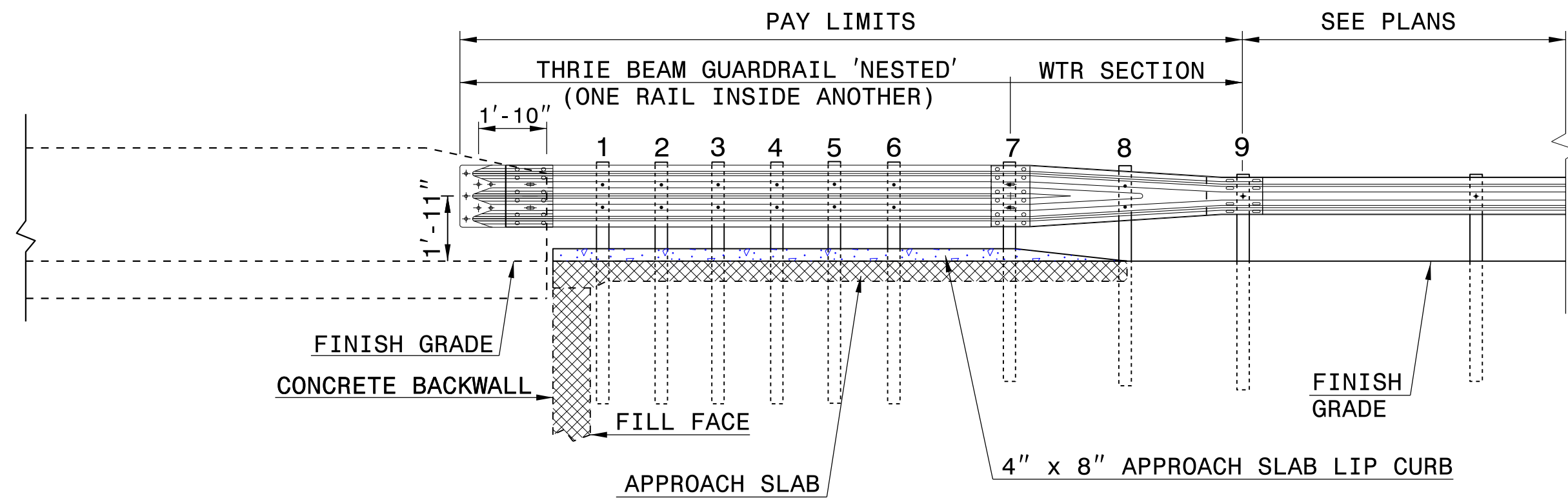
PLANS PREPARED BY :

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT**

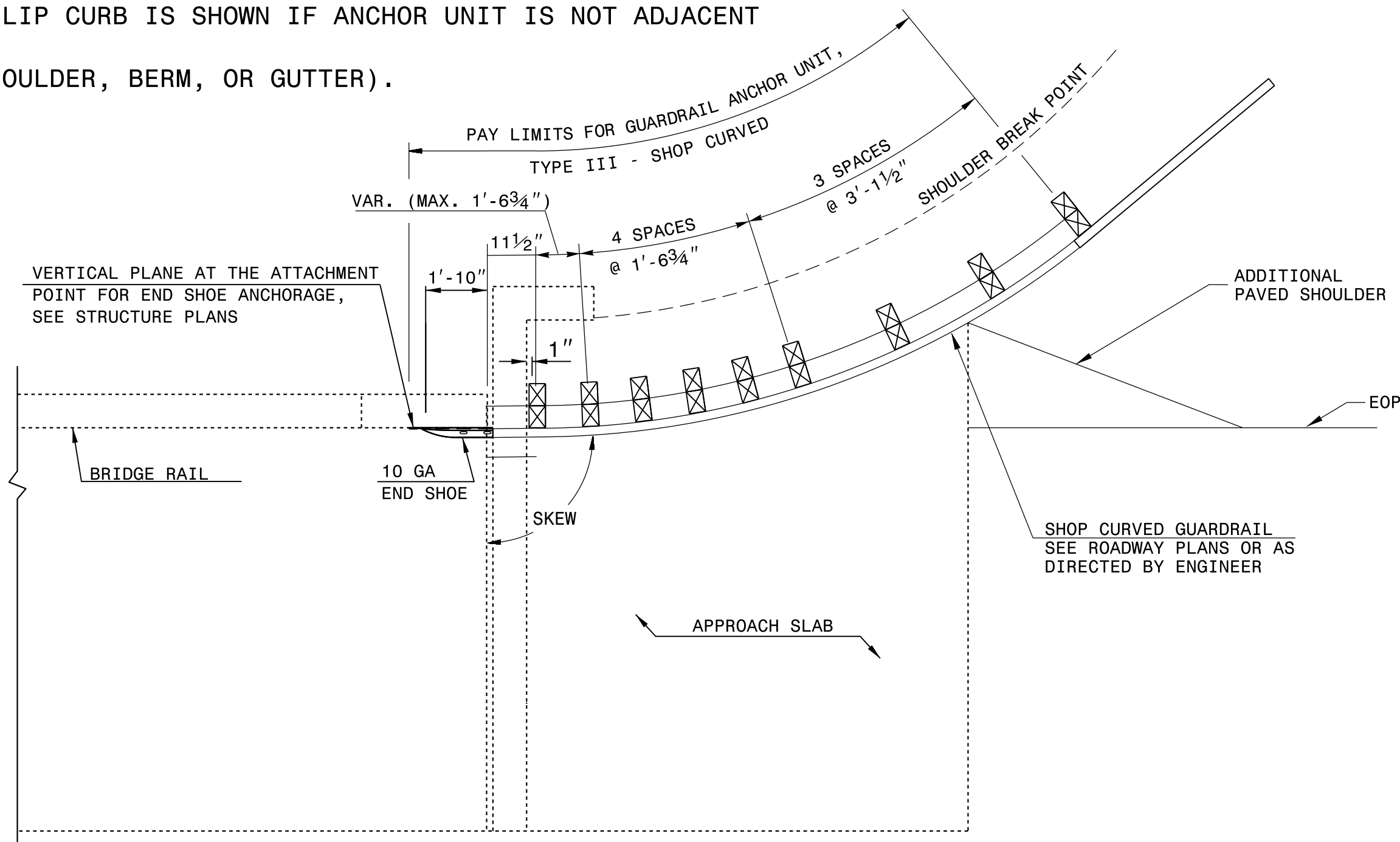
SHEET 1 OF 1
TYPE III SC



ELEVATION

NOTE:

- **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
- SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
- MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
- USE NO STEEL POSTS WITHIN THE GUARDRAIL ANCHOR UNIT LIMITS.
- LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
- SEE STANDARD 862.03 SHEET 4 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

**GUARDRAIL ANCHOR UNIT, TYPE III - SHOP CURVED
FOR ATTACHMENT TO RAIL ON BRIDGE**

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT**

SHEET 1 OF 1
TYPE III SC

**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: E.E.Ward DATE: 4-4-02
MODIFIED BY: T.S.Spell DATE: 5-29-09
CHECKED BY: DATE:
FILE SPEC.: ward\usr\details\stand\862stds\typeiiisc.dgn

9/11/2013
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mcole

TIP PROJECT:

BD-5111AE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
BD-5111AE	TCP-1

PLAN FOR PROPOSED
TRAFFIC CONTROL, MARKING & DELINEATION
CALDWELL COUNTY

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS"-
PROJECT SERVICES UNIT-N.C. DEPARTMENT OF TRANSPORTATION-RALEIGH, N.C.,
DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE
CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

PROJECT PHASING

PHASE I

STEP 1: USING ROADWAY STANDARD DRAWING NUMBER 1101.04, INSTALL ADVANCE WARNING FOR THE
SR 1715 OFFSITE DETOUR, KEEPING SIGNS COVERED. REFER TO ROADWAY STANDARD DRAWING 1101.03
SHEET 1 AND TCP-2 FOR SIGN LOCATIONS.

WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING WORK IN PHASE I, STEP 2.

STEP 2: CLOSE SR 1715, (ELLERWOOD RD.) TO TRAFFIC, USING ROADWAY STANDARD DRAWING 1101.03 SHEET 1.
UNCOVER ALL ADVANCE WARNING SIGNS FOR ROAD CLOSURE, OFFSITE DETOUR AND SHIFT TRAFFIC TO
TEMPORARY DETOUR.

STEP 3: DEMOLISH AND REMOVE EXISTING BRIDGE NO. 95 OVER BRUSHY FORK.

STEP 4: COMPLETE CONSTRUCTION OF PROPOSED STRUCTURE, APPROACH ROADWAY WIDENING
AND PAVING OF SR 1715, (SEE ROADWAY PLANS & STRUCTURE PLANS).

STEP 5: STATE FORCES TO PLACE FINAL PAVEMENT MARKINGS, (PAINT) ON SR 1715, (ELLERWOOD RD.).

WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING WORK IN PHASE I, STEP 6.

STEP 6: USING ROADWAY STANDARD DRAWING NO. 1101.04, SHEET 1, THE CONTRACTOR SHALL REMOVE
SIGNS AND TRAFFIC CONTROL DEVICES ERECTED IN STEPS 1 AND 2 AND OPEN SR 1715,
(ELLERWOOD RD.) TO TRAFFIC. STATE FORCES WILL REMOVE OFF SITE DETOUR SIGNING.

FINAL PAVEMENT MARKING SCHEDULE

<u>SYMBOL</u>	<u>DESCRIPTION</u>	<u>QUANTITY BREAKDOWN</u>	<u>PAY ITEM</u>	<u>TOTAL QUANTITY</u>
PAVEMENT MARKING LINES			PAINT (4")	
PA	WHITE EDGELINE 2X	1400 LF		
PI	YELLOW DOUBLE CENTER 2X	1400 LF		

2X = TWO APPLICATIONS

PROJECT NOTES

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS,
STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD
CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRABLE OVERLAPPING OF DEVICES.
MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL
OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE
CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED
BY THE ENGINEER.

TRAFFIC PATTERN ALTERATIONS

A) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY
TRAFFIC PATTERN ALTERATIONS.

SIGNING

B) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE
ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

C) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN
ROAD CLOSURE IS NOT IN OPERATION.

D) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY
TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

E) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED,
OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

F) STATE FORCES TO INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING
1. SR 1715 (ELLERWOOD RD.)	PAINT

G) STATE FORCES TO PLACE AT LEAST TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS
ON THE FINAL WEARING SURFACE ON NEW ASPHALT PAVEMENT. PLACE ADDITIONAL
APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY
THE ENGINEER.

H) MAINTAIN ACCESS TO ALL DRIVEWAYS, WITHIN THE PROJECT LIMITS AT ALL TIMES.

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

FOR
DIVISION OF HIGHWAYS

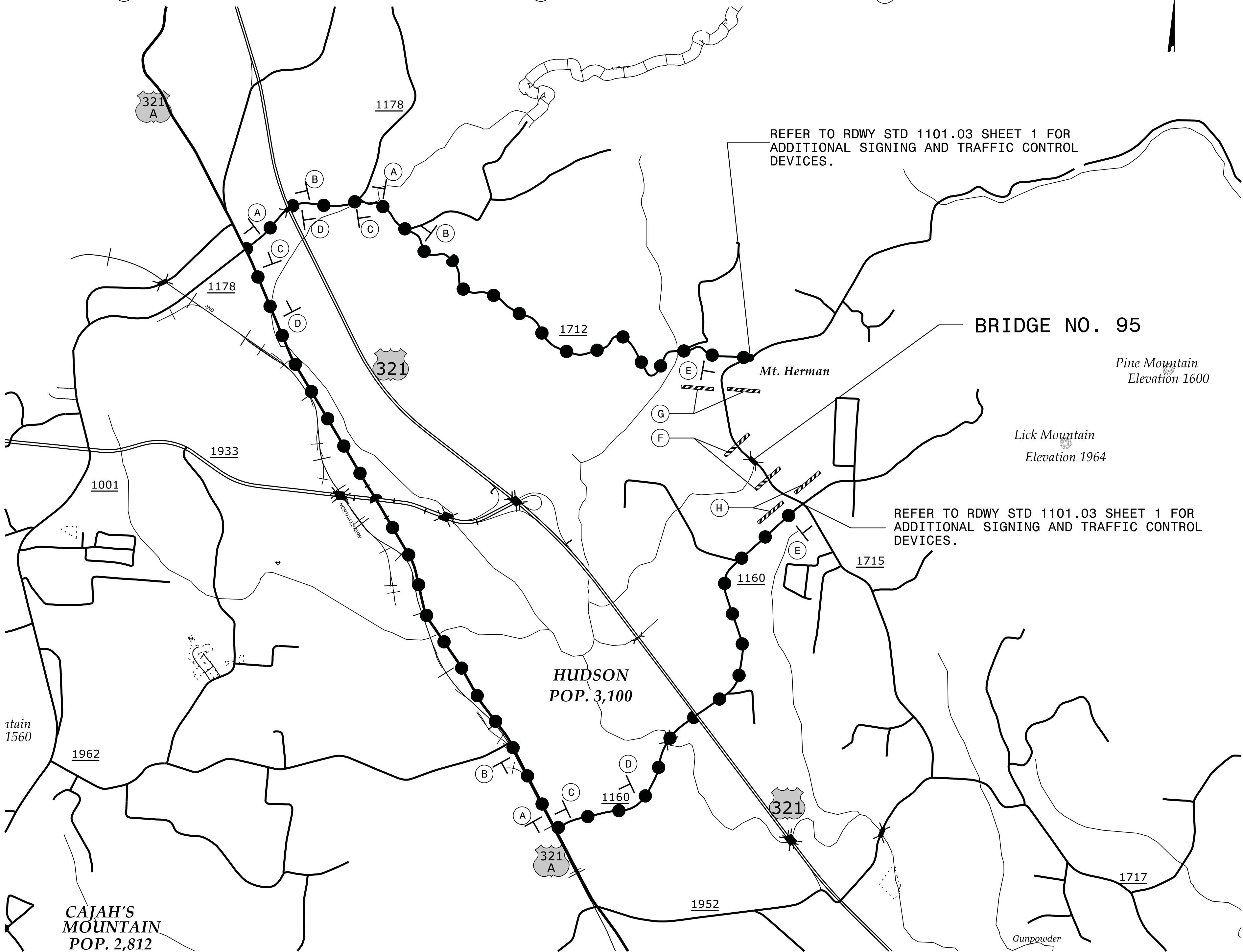
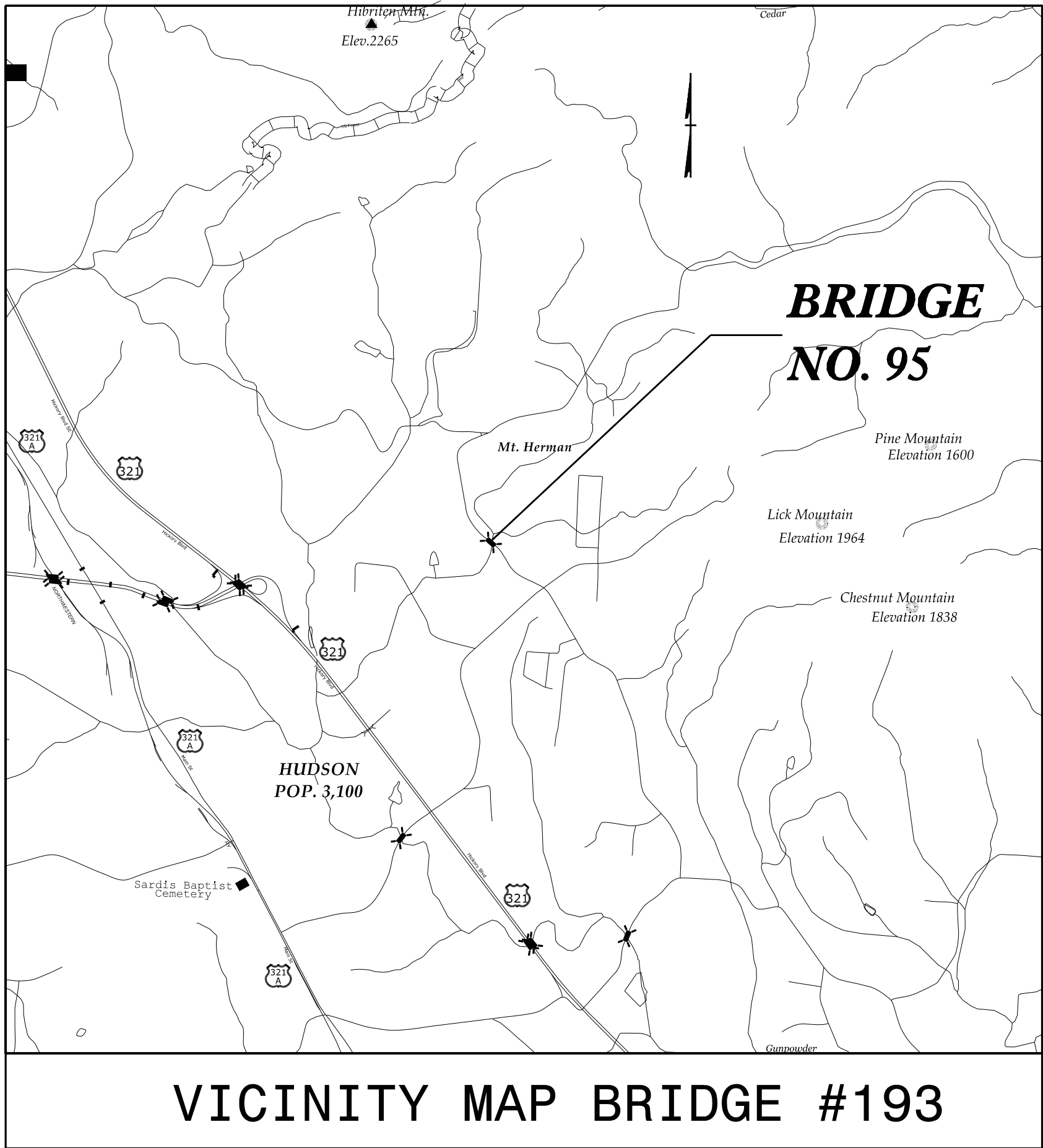
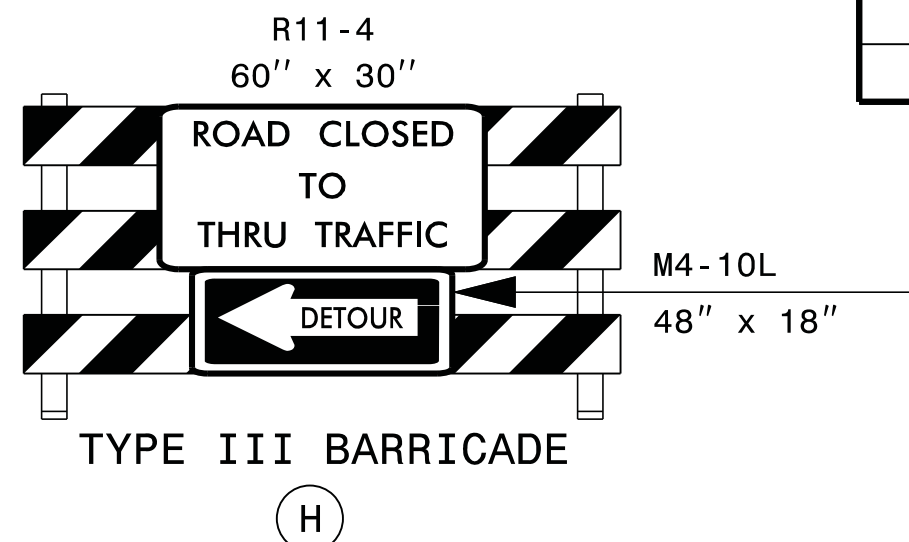
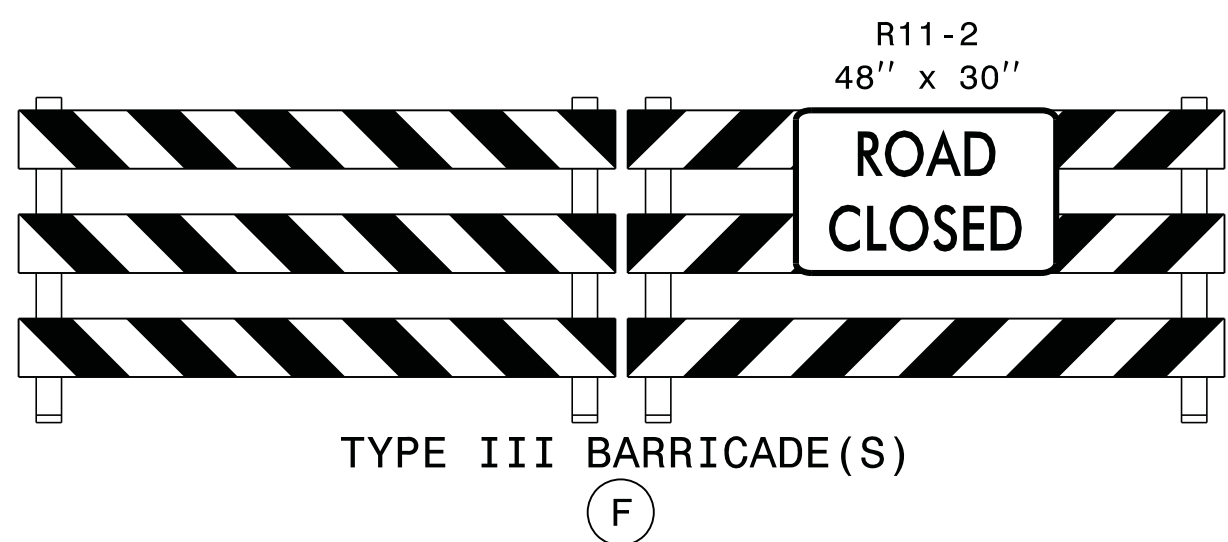
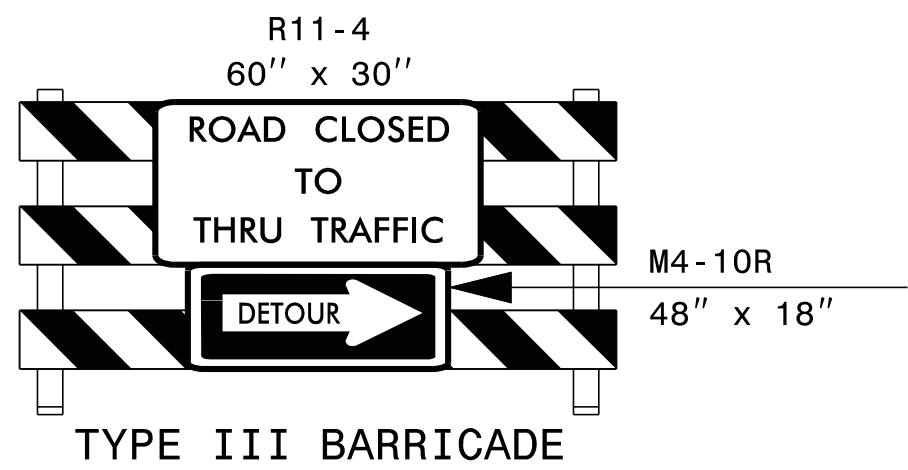
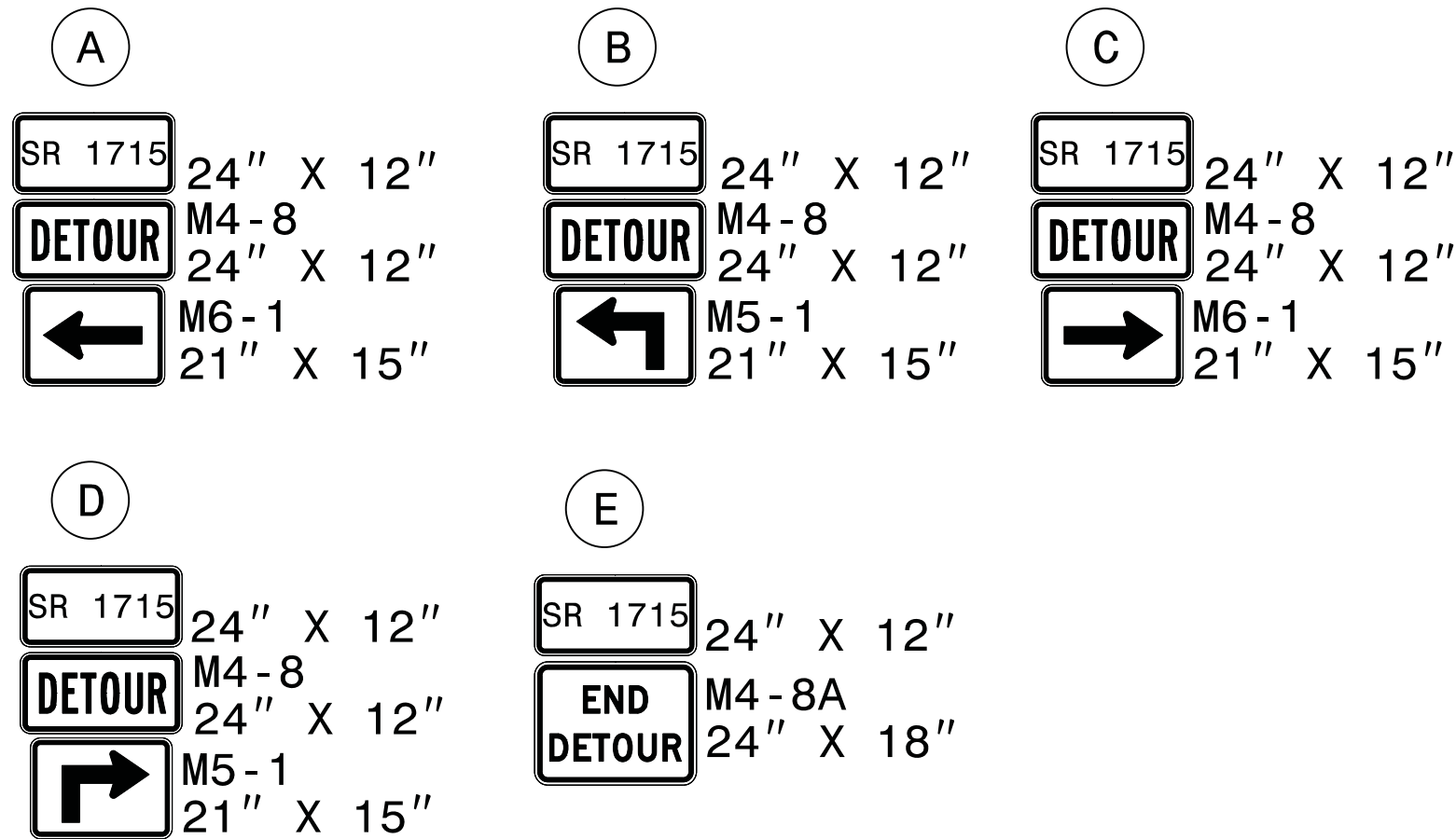
SEAL



K. W. BISBY, PE TRAFFIC CONTROL ENGINEER

M. A. COLE TRAFFIC CONTROL PROJECT DESIGNER

A. TUTT TRAFFIC CONTROL PROJECT DESIGNER



PLANS PREPARED BY : RK&K RUMMEL, KLEPPER & KAHL, LLP 900 RIDGEFIELD DRIVE SUITE 350 RALEIGH, NORTH CAROLINA 27609-3960 (919) 878-9560 FOR DIVISION OF HIGHWAYS	SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 2047 07:59:45 AM 09-11-2013 (-04'00' SMT) ENGINEER KIMMY W. BLOOM SEPT. 11, 2013	OFFSITE DETOUR BRIDGE #95 SR 1715 SCALE: NONE DATE: 8/2013 DWG. BY: MAC DESIGN BY: MAC REVIEWED BY: KWB	REVISIONS CADD FILE: bd5111ae_tcp_tmp02.dgn
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EROSION CONTROL PLAN

PROJECT REFERENCE NO.
BD-5111AE

SHEET NO.
EC-1

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

GRAPHIC SCALES

500 0 500 1000

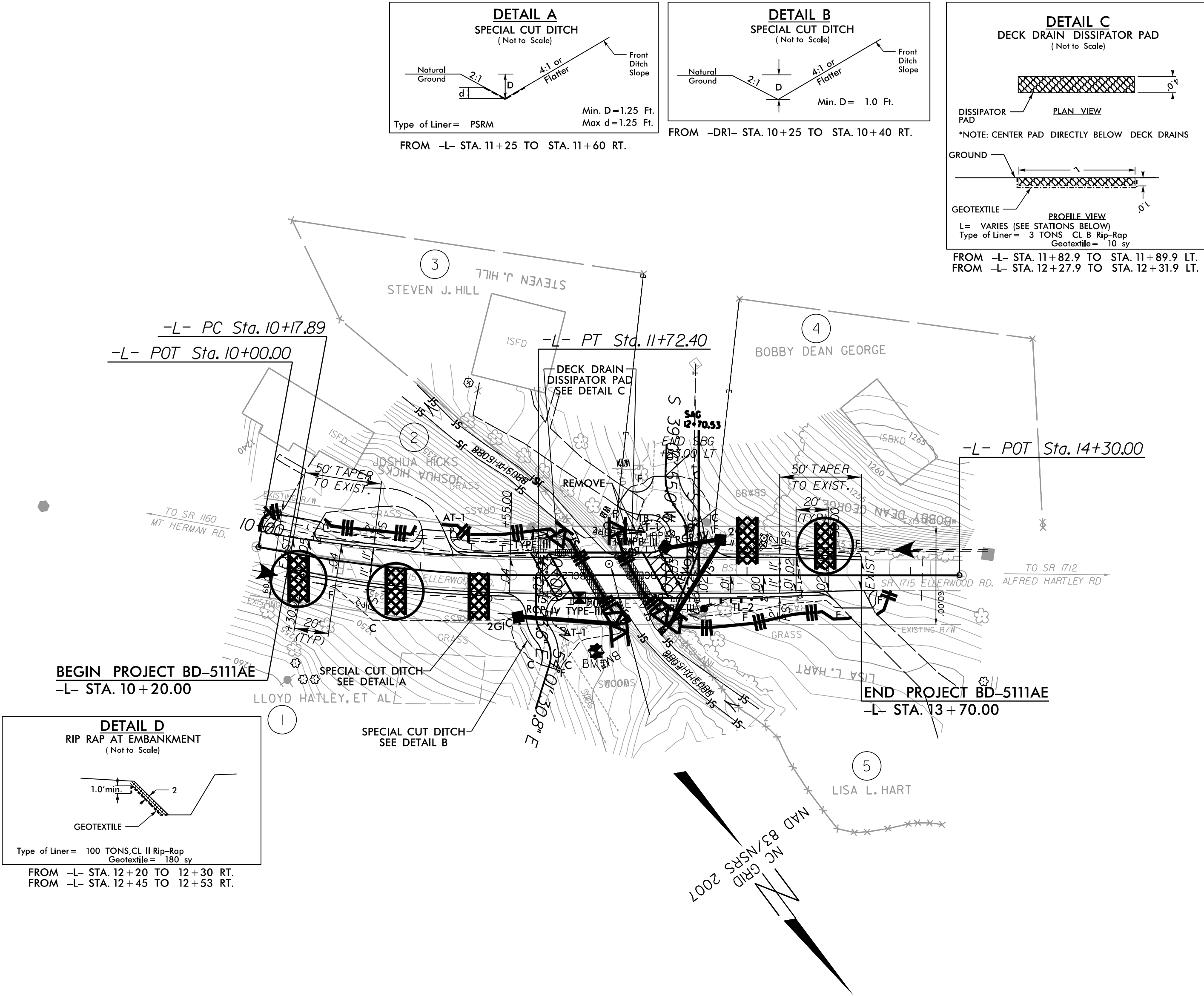
PLANS

500 0 500 1000

PROFILE (HORIZONTAL)

100 0 100 200

PROFILE (VERTICAL)



EROSION CONTROL PLAN

PROJECT REFERENCE NO.
BD-5111AE

SHEET NO.
EC-1A

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

GRAPHIC SCALES

500050100

PLANS

500050100

PROFILE (HORIZONTAL)

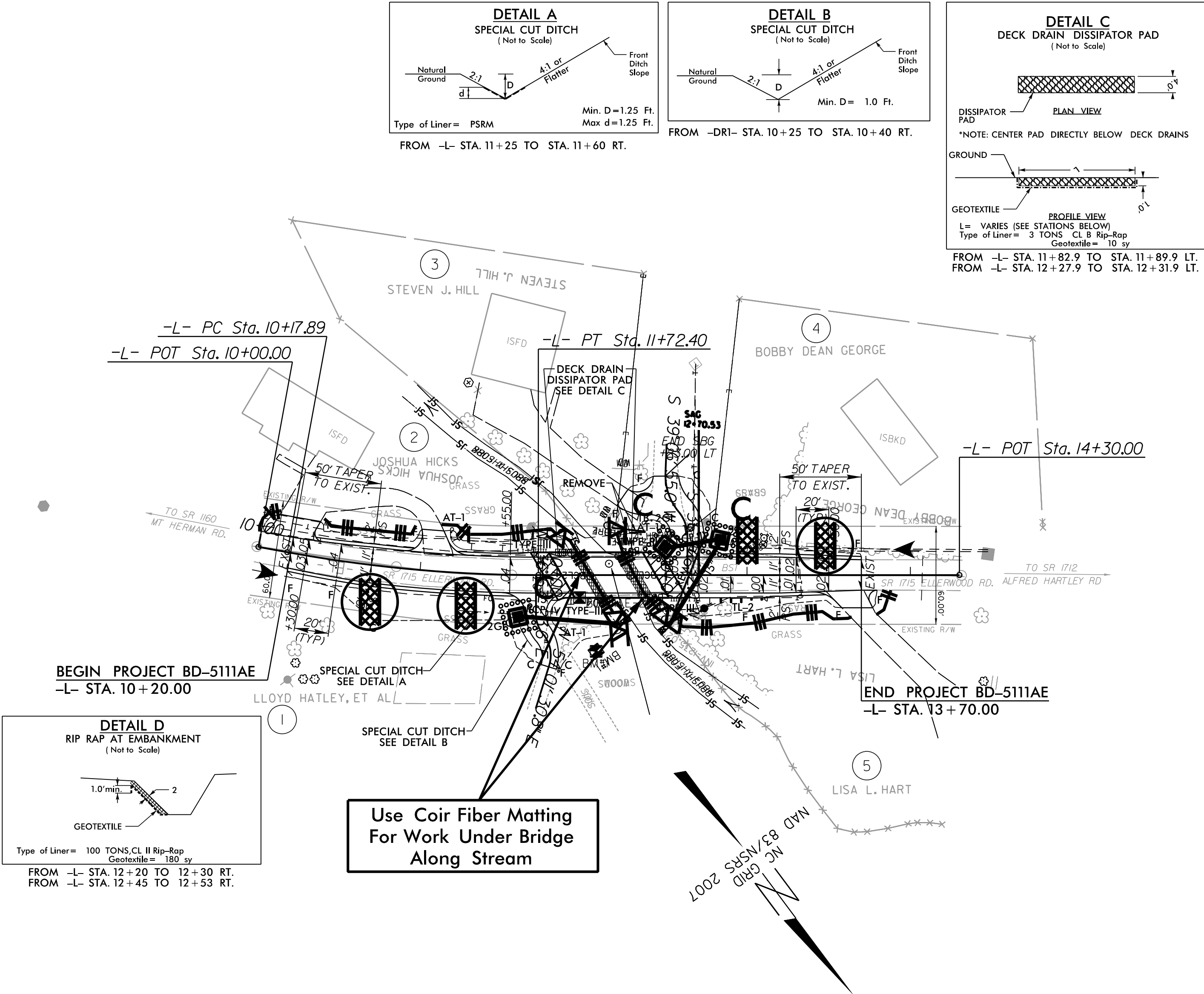
10001020

PROFILE (VERTICAL)

2012 STANDARD SPECIFICATIONS

NOTES:
1. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

Place Matting for Erosion Control on Slope as Work Allows.



AUDREY BURNETTE

LEVEL IIIA NAME

3081

LEVEL IIIA CERTIFICATION NO.

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.

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

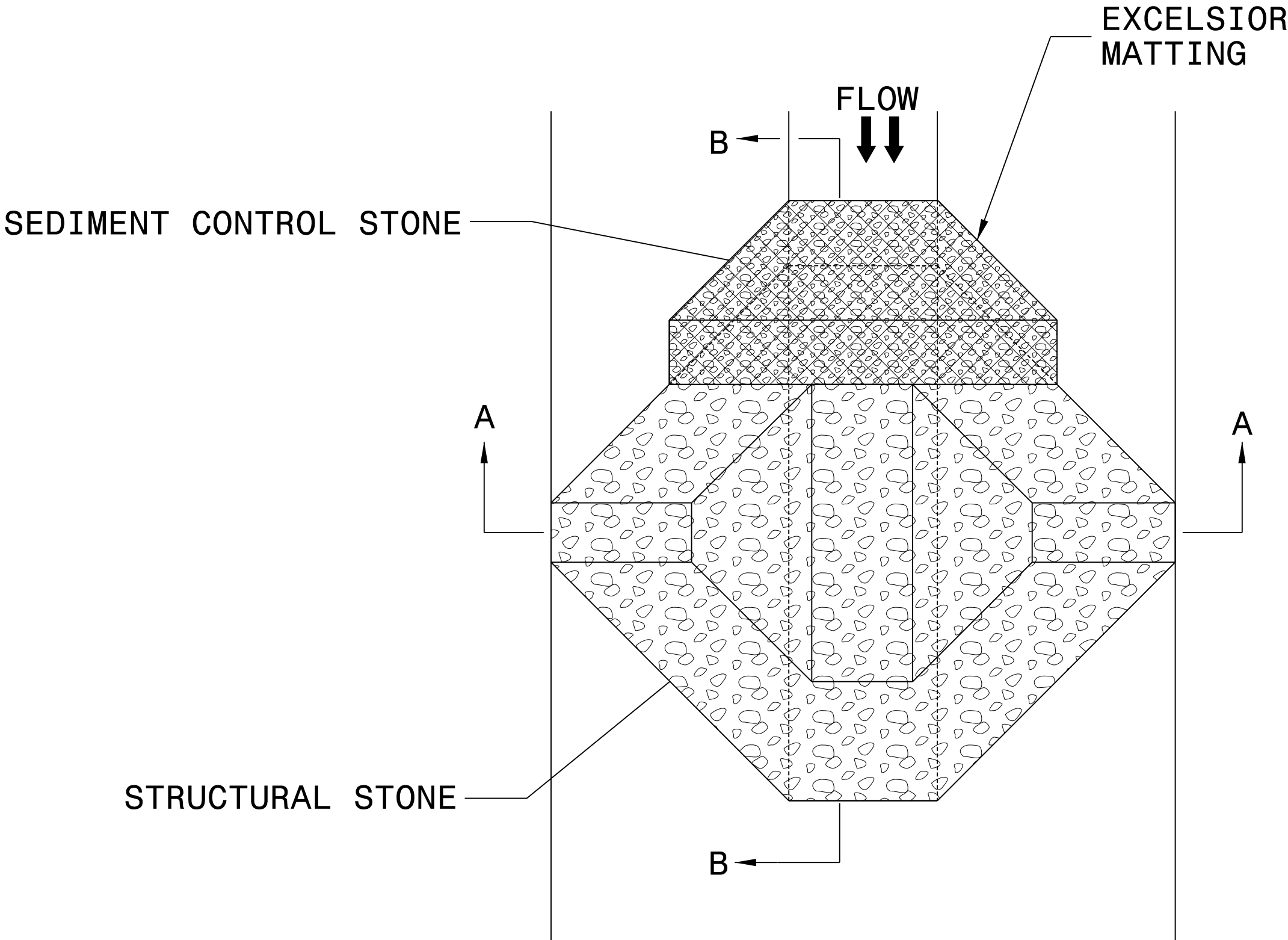
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

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		

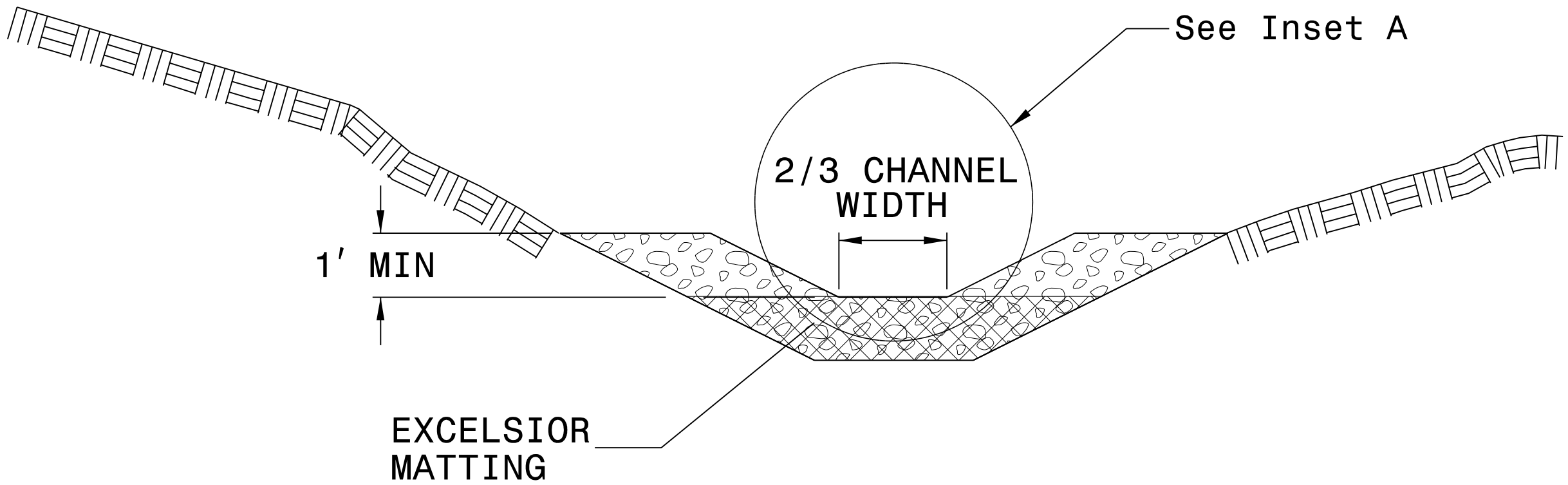
Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	
1630.05	Temporary Diversion	
1630.06	Special Stilling Basin	
1632.03	Rock Inlet Sediment Trap Type C	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle	
	Wattle with Polyacrylamide (PAM)	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	

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

PROJECT REFERENCE NO.	SHEET NO.
BD-5111AE	EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PLAN



SECTION A-A

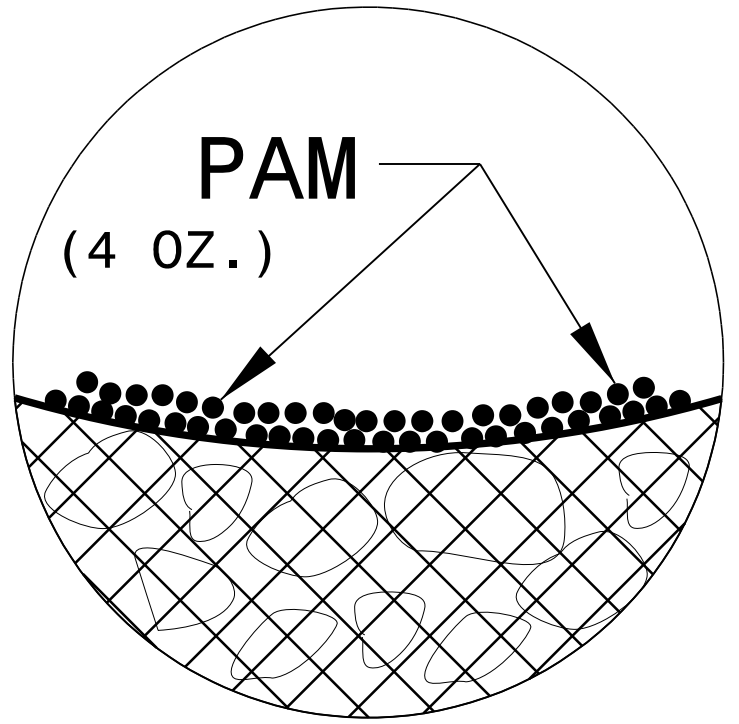
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

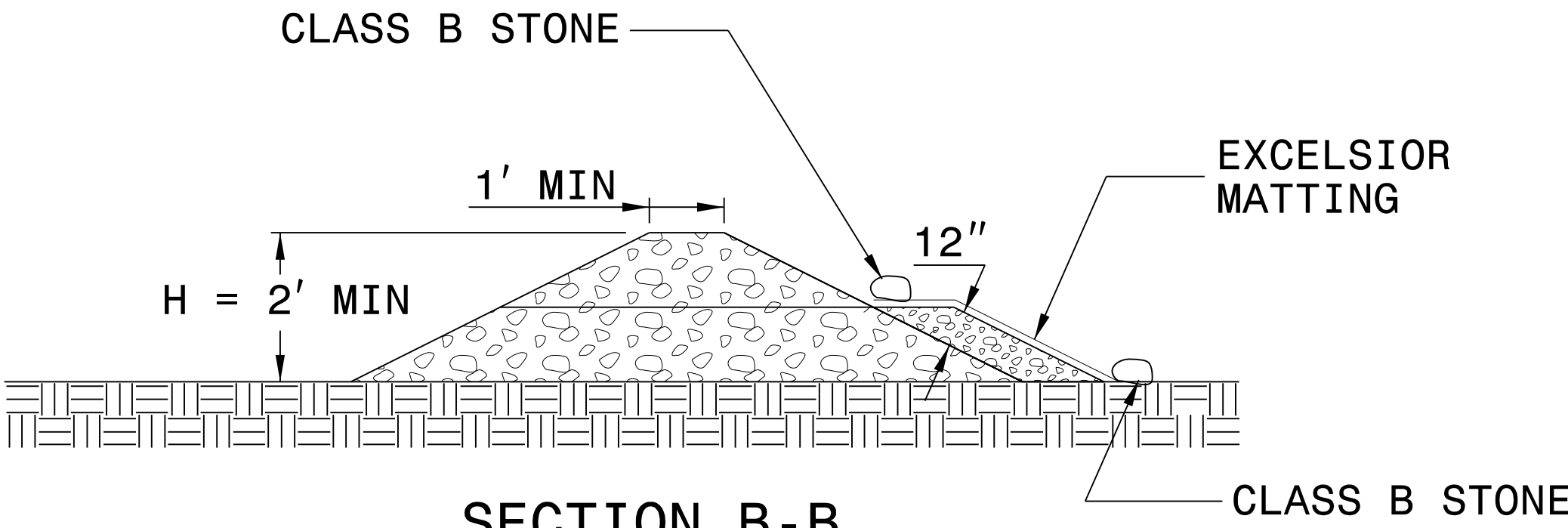
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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 4 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

NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
BD-5111AE	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.

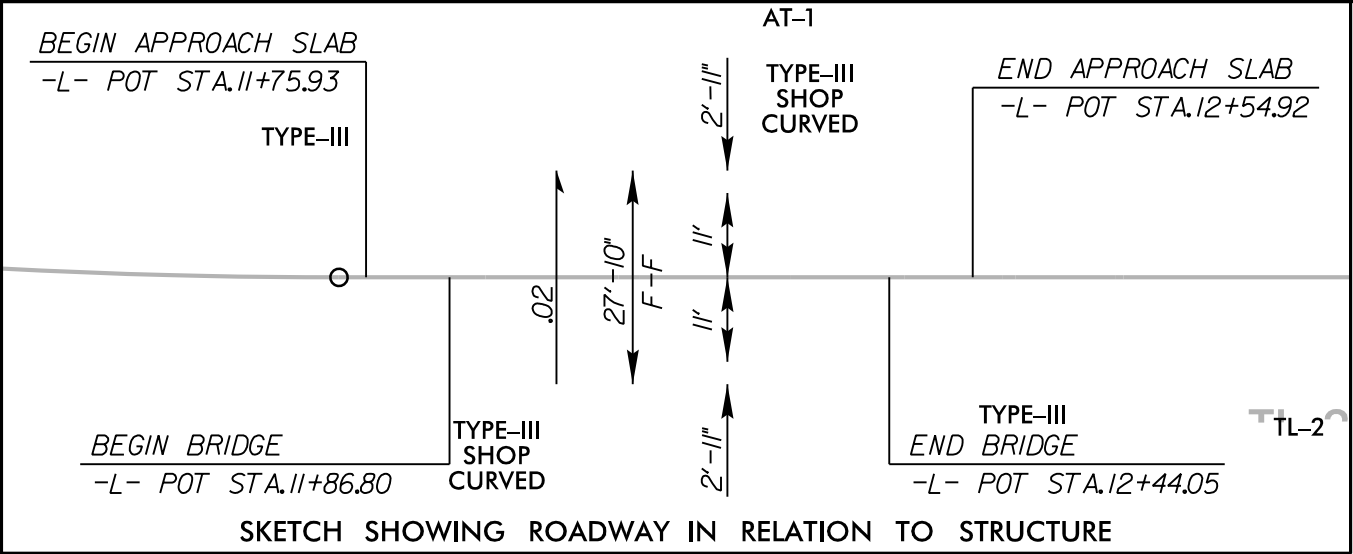
PERMANENT SOIL REINFORCEMENT MAT

[illegible]

[illegible]

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

NAD 83/NSRS 2007

[illegible]

NOTE:

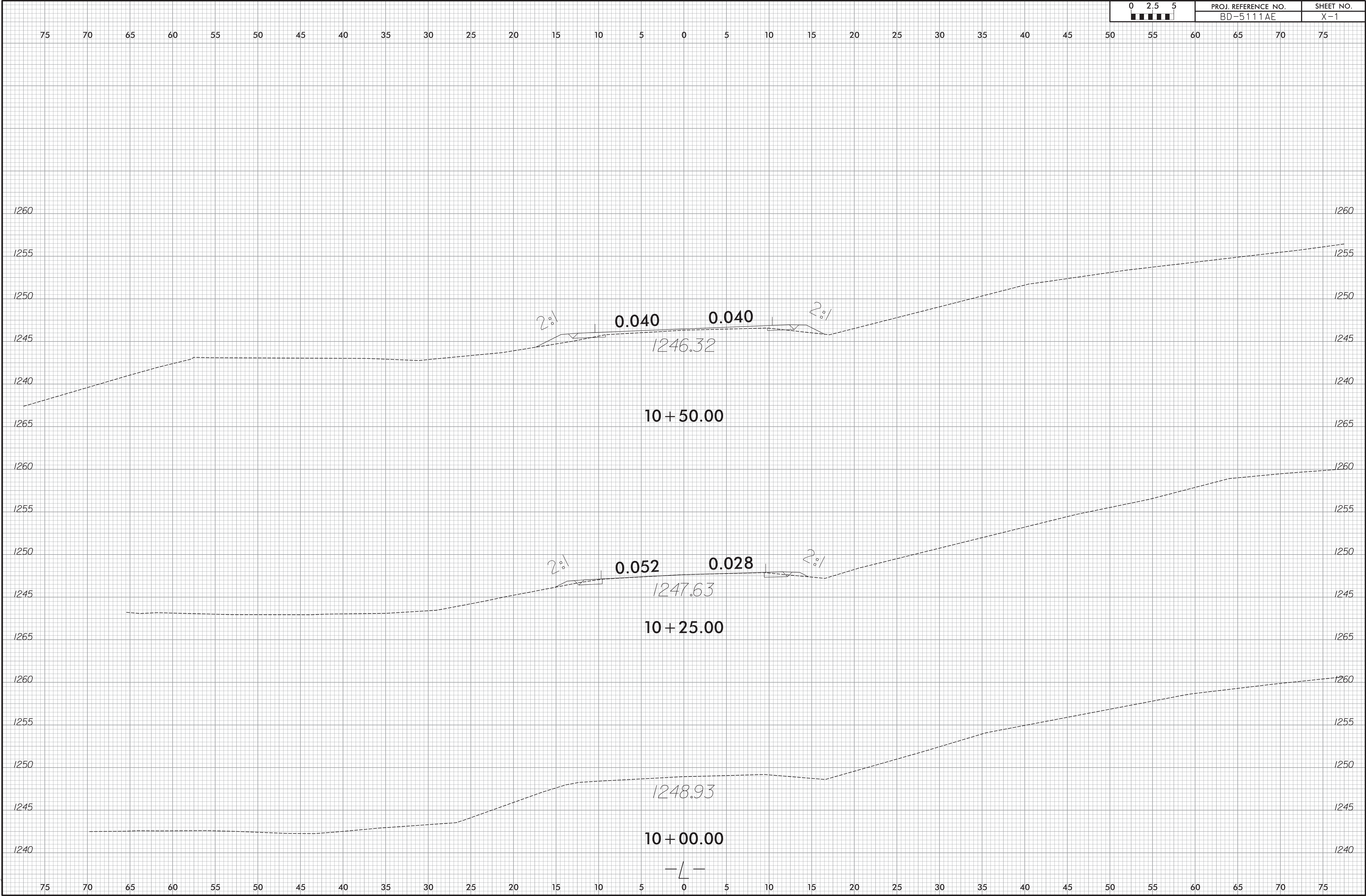
1. AT&T TO ABANDON ALL UNDERGROUND FIBER OPTIC AND ADJUST AS NECESSARY THE COPPER CABLES ON THE EAST SIDE OF THE BRIDGE AS NOTED.
2. CITY OF LENOIR/BREMCO TO REMOVE LIGHT AND LIGHT POLE AFTER CONSTRUCTION RELOCATE.
3. CITY OF LENOIR TO INSTALL 6"GV AND 8"GV AS WELL AS RELOCATE THREE (3) WATER METERS AS SHOWN ON PLAN SHEET. CITY OF LENOIR TO AVOID CB 0402 WITH INSTALLATION OF NEW 8"GV. CITY OF LENOIR INSTALLING NEW 6"GV WITH 6" WATERLINE ON MARLEY PL. CITY OF LENOIR TO BE ON-SITE DURING GUARD RAIL INSTALLATION, INSTALLATION OF INLET #0402 INSTALLATION AND WHEN DRIVING PILES FOR SANITARY SEWER CROSSING.

UTILITY OWNERS ON PROJECT

BLUE RIDGE EMC – POWER
AT&T – TELEPHONE
CITY OF LENOIR PUBLIC WORKS – WATERLINE, SANITARY
SEWER AND LIGHT
POLE

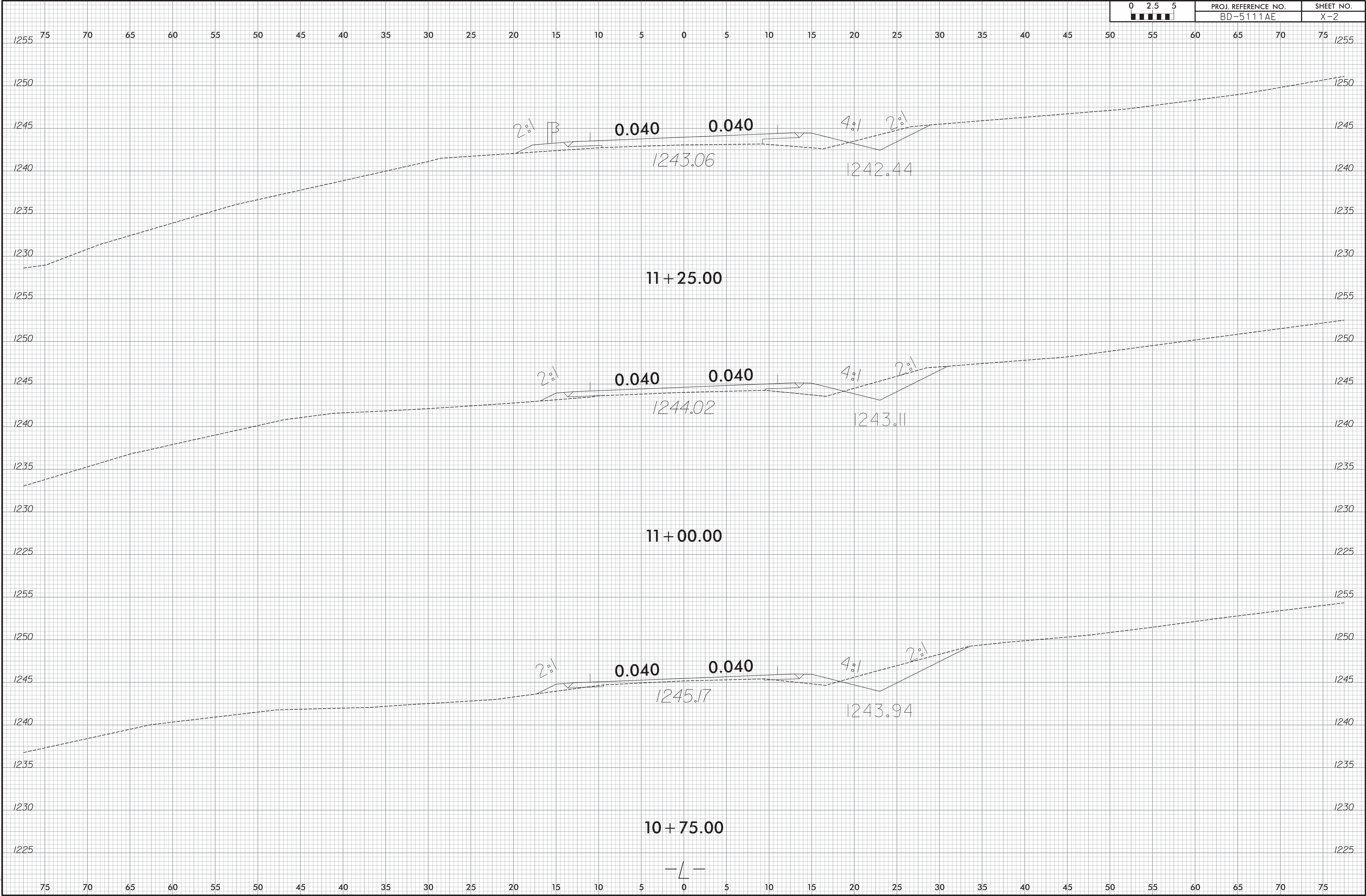
PLANS PREPARED BY :

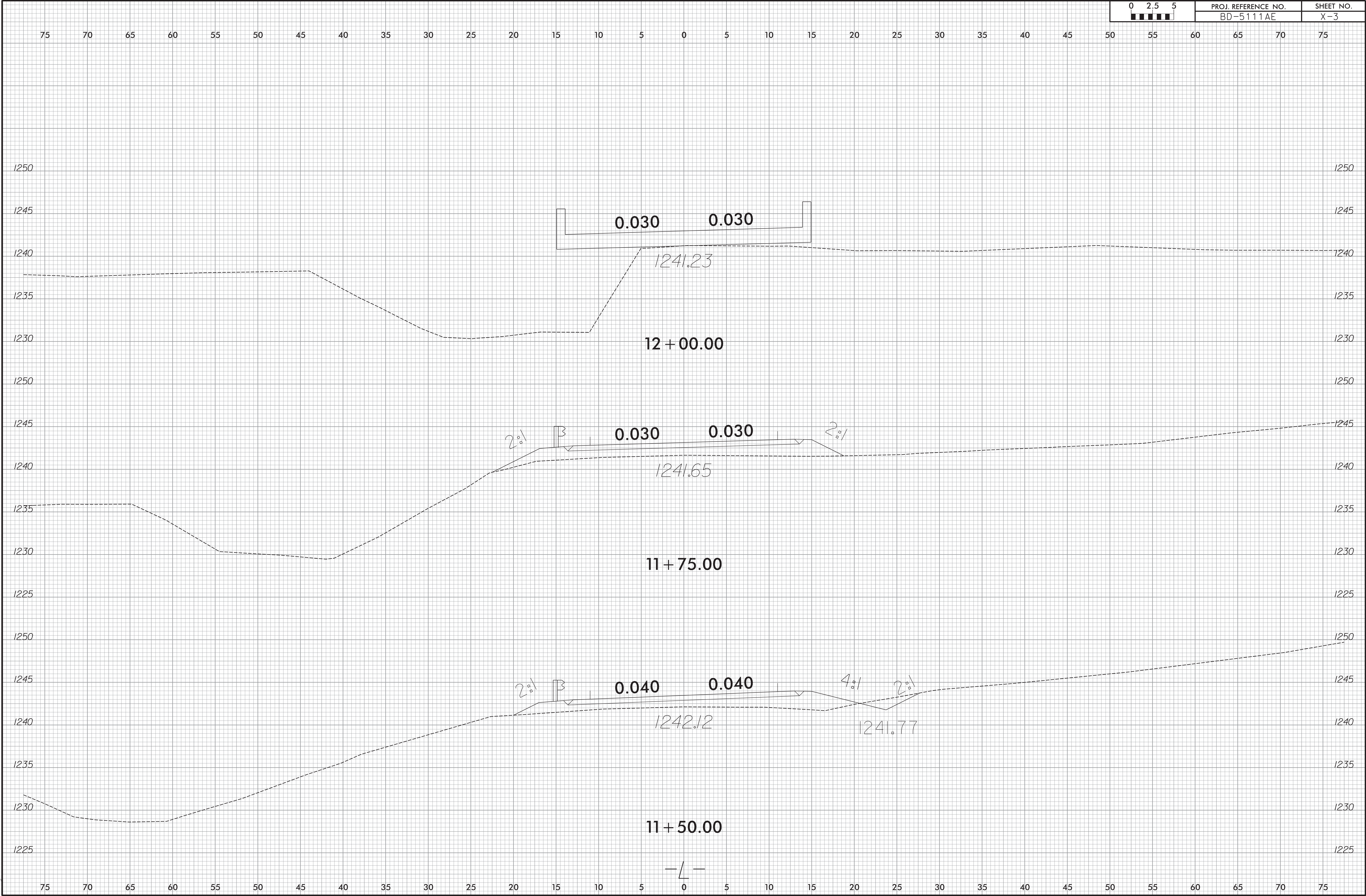
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
EIGH, NORTH CAROLINA 27609-3960
LICENSE NO. F-0112 • (919) 878-9560



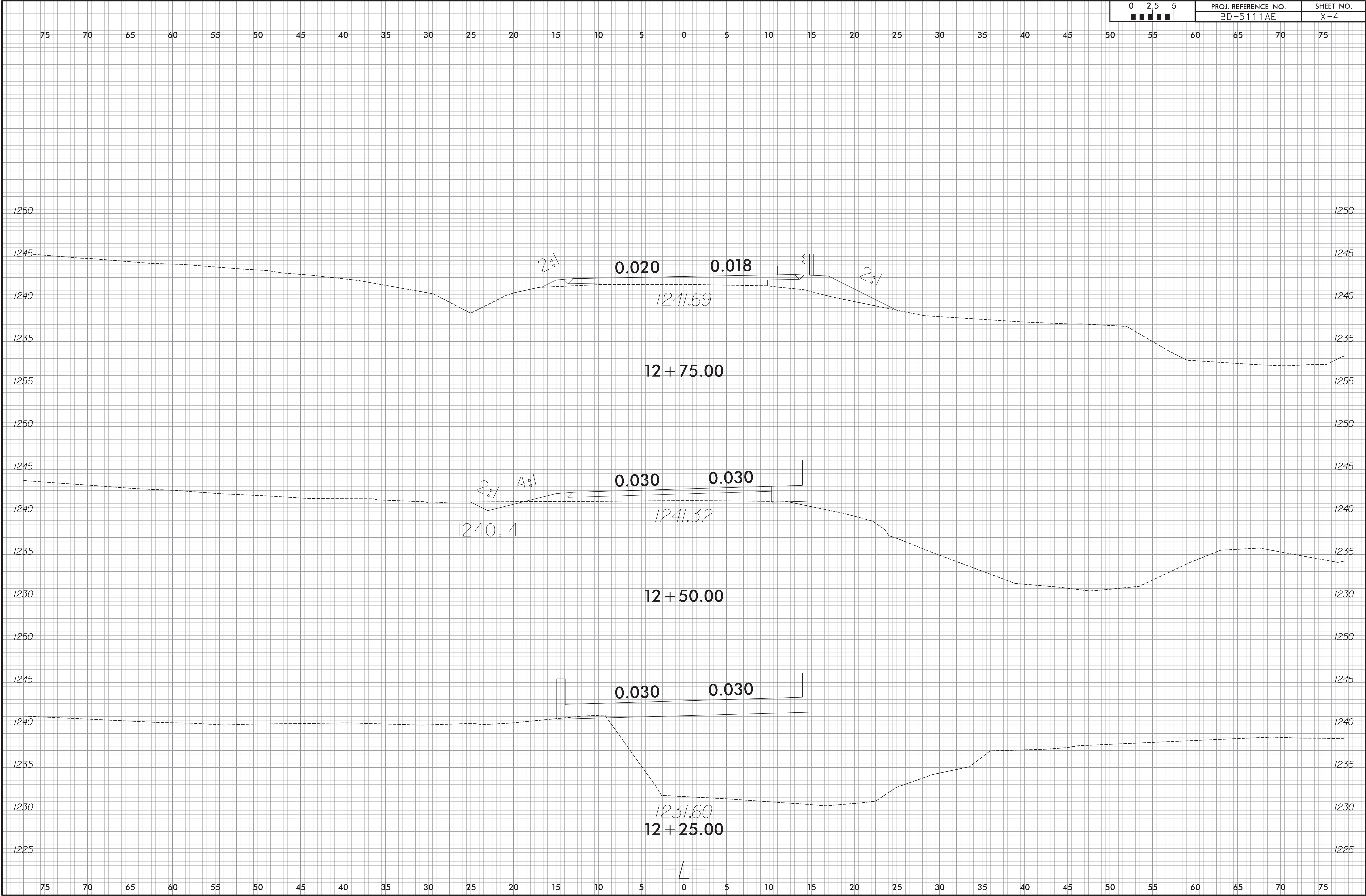
8/23/99

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	BD-5111AE	X-2





8/23/99



8/23/99

