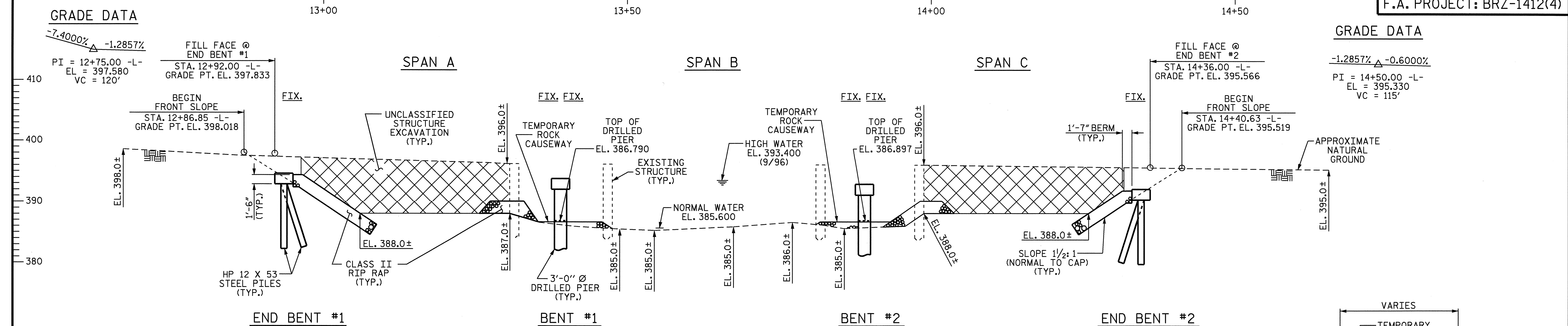


GRADE DATA

-7.4000% Δ -1.2857%
 PI = 12+75.00 -L-
 EL = 397.580
 VC = 120'

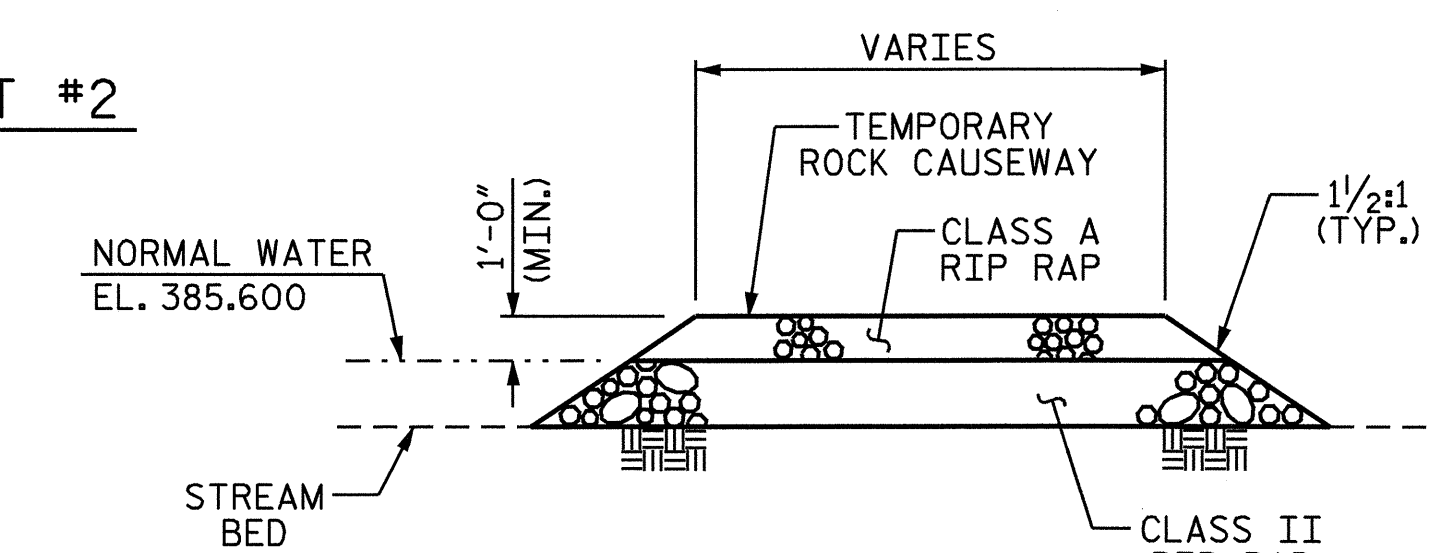
GRADE DATA

-1.2857% Δ -0.6000%
 PI = 14+50.00 -L-
 EL = 395.330
 VC = 115'

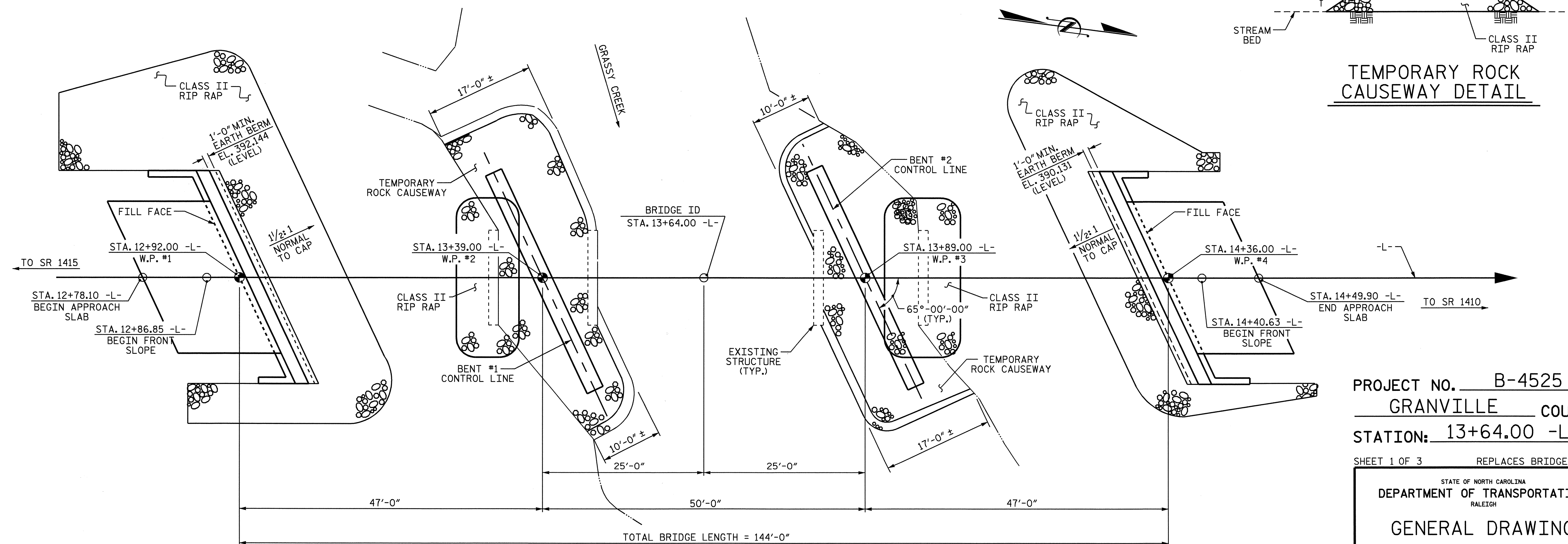


SECTION ALONG -L-

SECTION TAKEN @ RIGHT ANGLES TO BENTS & END BENTS



TEMPORARY ROCK CAUSEWAY DETAIL



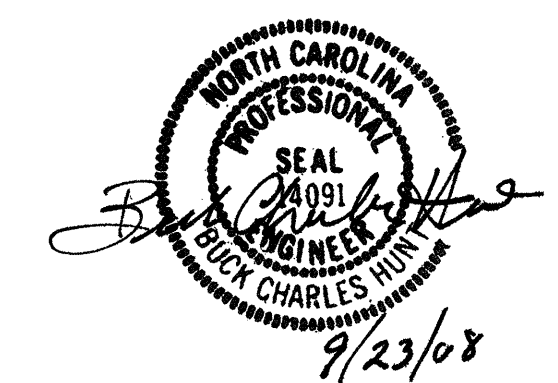
PLAN

PILES NOT SHOWN FOR CLARITY

PROJECT NO. B-4525
 GRANVILLE COUNTY
 STATION: 13+64.00 -L-

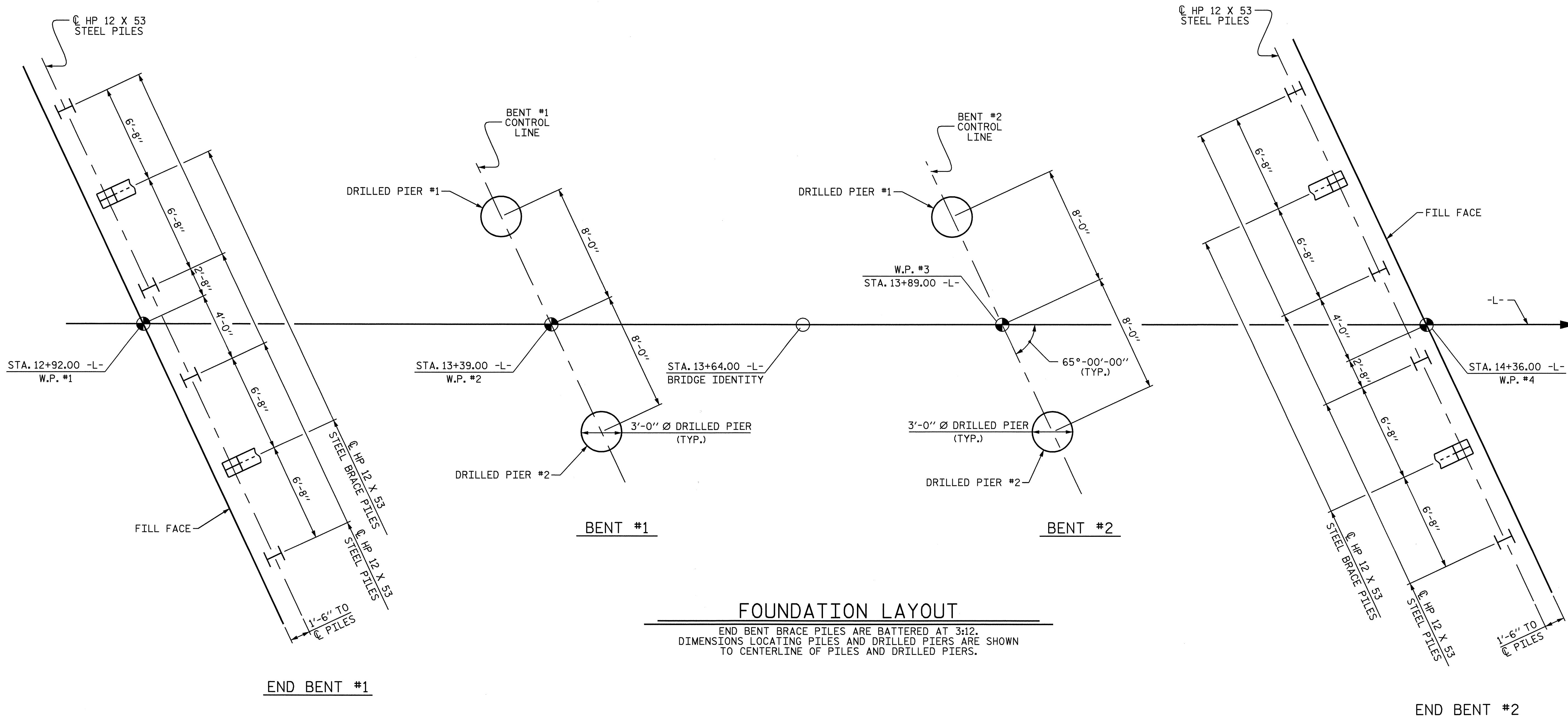
SHEET 1 OF 3 REPLACES BRIDGE NO. 133

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 FOR BRIDGE OVER GRASSY
 CREEK ON SR 1412 BETWEEN
 SR 1410 & SR 1415



DRAWN BY: J.P. ADAMS DATE: 6/10/08
 CHECKED BY: D.E. HENNESSEE DATE: 6/19/08

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



FOUNDATION LAYOUT

END BENT BRACE PILES ARE BATTERED AT 3:12. DIMENSIONS LOCATING PILES AND DRILLED PIERS ARE SHOWN TO CENTERLINE OF PILES AND DRILLED PIERS.

NOTES

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

DRILLED PIERS AT BENT NO.1 AND BENT NO.2 ARE DESIGN FOR AN APPLIED LOAD OF 152 TONS EACH AT THE TOP OF THE COLUMN.

DRILLED PIER NO.1 AT BENT NO.1 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 372.000 AND SATISFY THE REQUIRED END BEARING CAPACITY.

DRILLED PIER NO.2 AT BENT NO.1 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 370.000, SATISFY THE REQUIRED END BEARING CAPACITY, AND HAVE A MINIMUM PENETRATION OF 5 FT. INTO ROCK AS DEFINED BY THE DRILLED PIERS SPECIAL PROVISION.

DRILLED PIER NO.1 AT BENT NO.2 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 376.000, SATISFY THE REQUIRED END BEARING CAPACITY, AND HAVE A MINIMUM PENETRATION OF 5 FT. INTO ROCK AS DEFINED BY THE DRILLED PIERS SPECIAL PROVISION.

DRILLED PIER NO.2 AT BENT NO.2 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 370.000 AND SATISFY THE REQUIRED END BEARING CAPACITY.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT NO.1. DO NOT EXTEND THE CASING BELOW ELEVATION 378.000 WITHOUT PRIOR APPROVAL FROM THE ENGINEER. SEE DRILLED PIERS SPECIAL PROVISION.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT NO.2. DO NOT EXTEND THE CASING BELOW ELEVATION 382.000 (PIER #1) AND 378.000 (PIER #2) WITHOUT PRIOR APPROVAL FROM THE ENGINEER. SEE DRILLED PIERS SPECIAL PROVISION.

THE SCOUR CRITICAL ELEVATION FOR BENT NO.1 AND BENT NO.2 IS 378.000. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

SPT TESTING IS NOT REQUIRED TO DETERMINE THE END BEARING CAPACITY OF THE DRILLED PIERS AT BENT NO.1 AND BENT NO.2.

DO NOT USE SLURRY CONSTRUCTION FOR THIS PROJECT.

FOR DRILLED PIERS, SEE DRILLED PIERS SPECIAL PROVISIONS.

SID INSPECTIONS MAY BE REQUIRED TO INSPECT THE BOTTOM CLEANLINESS OF THE DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTIONS. SEE DRILLED PIERS SPECIAL PROVISION.

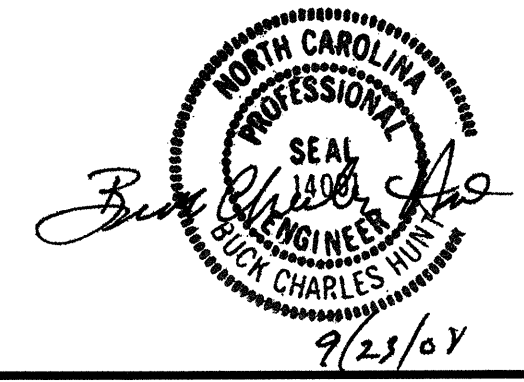
CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. SEE CROSSHOLE SONIC LOGGING SPECIAL PROVISION.

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

THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT NO.1 AND END BENT NO.2 IS 50 TONS PER PILE.

DRAWN BY : J.P. ADAMS DATE : 6/11/08
 CHECKED BY : D. E. HENNESSEE DATE : 6/19/08

22-SEP-2008 09:35
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 jpadams

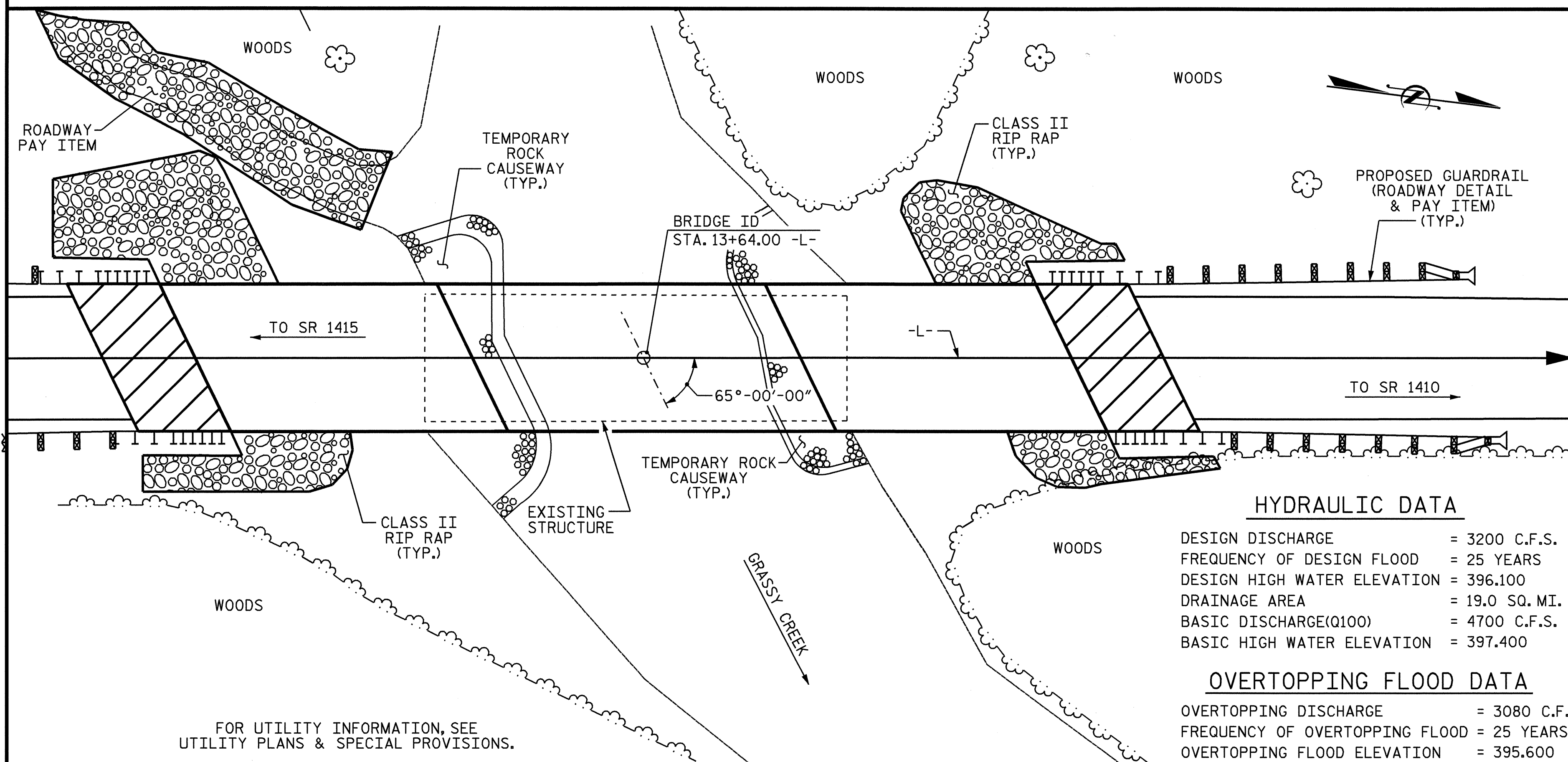


PROJECT NO. B-4525
GRANVILLE COUNTY
 STATION: 13+64.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING					
FOR BRIDGE OVER GRASSY CREEK ON SR 1412 BETWEEN SR 1410 & SR 1415					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-2
					TOTAL SHEETS 22

BENCH MARK #2: R.R. SPIKE IN 20" OAK, 110.35' LT. OF STA. 14+12.56 -L-, EL. 391.70



HYDRAULIC DATA

DESIGN DISCHARGE = 3200 C.F.S.
 FREQUENCY OF DESIGN FLOOD = 25 YEARS
 DESIGN HIGH WATER ELEVATION = 396.100
 DRAINAGE AREA = 19.0 SQ. MI.
 BASIC DISCHARGE(Q100) = 4700 C.F.S.
 BASIC HIGH WATER ELEVATION = 397.400

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 3080 C.F.S.
 FREQUENCY OF OVERTOPPING FLOOD = 25 YEARS
 OVERTOPPING FLOOD ELEVATION = 395.600

FOR UTILITY INFORMATION, SEE UTILITY PLANS & SPECIAL PROVISIONS.

LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HS20 OR ALTERNATE LOADING, EXCEPT THAT CORED SLAB UNITS HAVE BEEN DESIGNED FOR HS25.
 THIS BRIDGE HAS BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.
 THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC PERFORMANCE CATEGORY A.
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
 FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.
 THE EXISTING STRUCTURE CONSISTING OF 3 SPANS (2 @ 17'-6" AND 1 @ 35'-0"); WITH A CLEAR ROADWAY WIDTH OF 17.1' AND HAVING AN ASPHALT WEARING SURFACE ON A TIMBER FLOOR ON STEEL GIRDERS SUPPORTED BY TIMBER CAPS ON TIMBER POST AND CONCRETE SILLS AND LOCATED AT THE PROPOSED SITE SHALL BE REMOVED.
 REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
 THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA AS SHOWN ON SHEET S1 SHALL BE EXCAVATED FOR A DISTANCE OF 23 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR UNCLASSIFIED STRUCTURE EXCAVATION.
 THE 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", MAY, 2001.
 THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.
 INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 13+64.00 -L-."
 AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 13+64.00 -L-.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
 FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
 FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.
 FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMP. ACCESS	REMOVAL OF EXISTING STRUCTURE	3'-0" DIA. DRILLED PIERS IN SOIL	3'-0" DIA. DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 3'-0" DIA. DRILLED PIER	SID INSPECTION	CROSSHOLE SONIC LOGGING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL
	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	CU. YDS.	CU. YDS.	LUMP SUM	LBS.
SUPERSTRUCTURE										LUMP SUM	
END BENT #1								590	13.3		1920
BENT #1			20	12	17.6				14.9		4132
BENT #2			16	12	13.8				14.5		3907
END BENT #2								510	12.1		1794
TOTAL	LUMP SUM	LUMP SUM	36	24	31.4	1	1	1100	54.8	LUMP SUM	11753

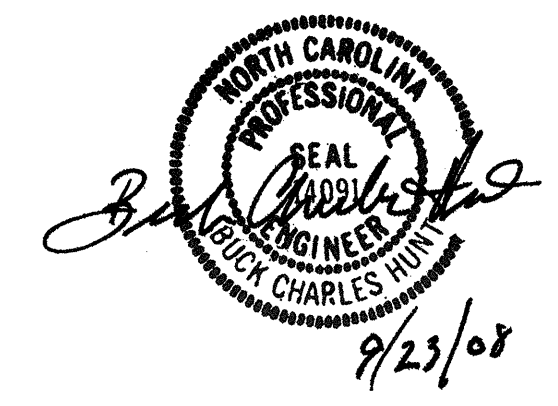
TOTAL BILL OF MATERIAL

	SPRAL COLUMN REINFORCING STEEL	HP 12 X 53 STEEL PILES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS
	LBS.	NO.	LIN. FT.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM
SUPERSTRUCTURE				283.03			LUMP SUM
END BENT #1		6	105		360	400	
BENT #1	799						
BENT #2	697						
END BENT #2		6	60		255	285	
TOTAL	1496	12	165	283.03	615	685	LUMP SUM

PROJECT NO. B-4525
GRANVILLE COUNTY
 STATION: 13+64.00 -L-

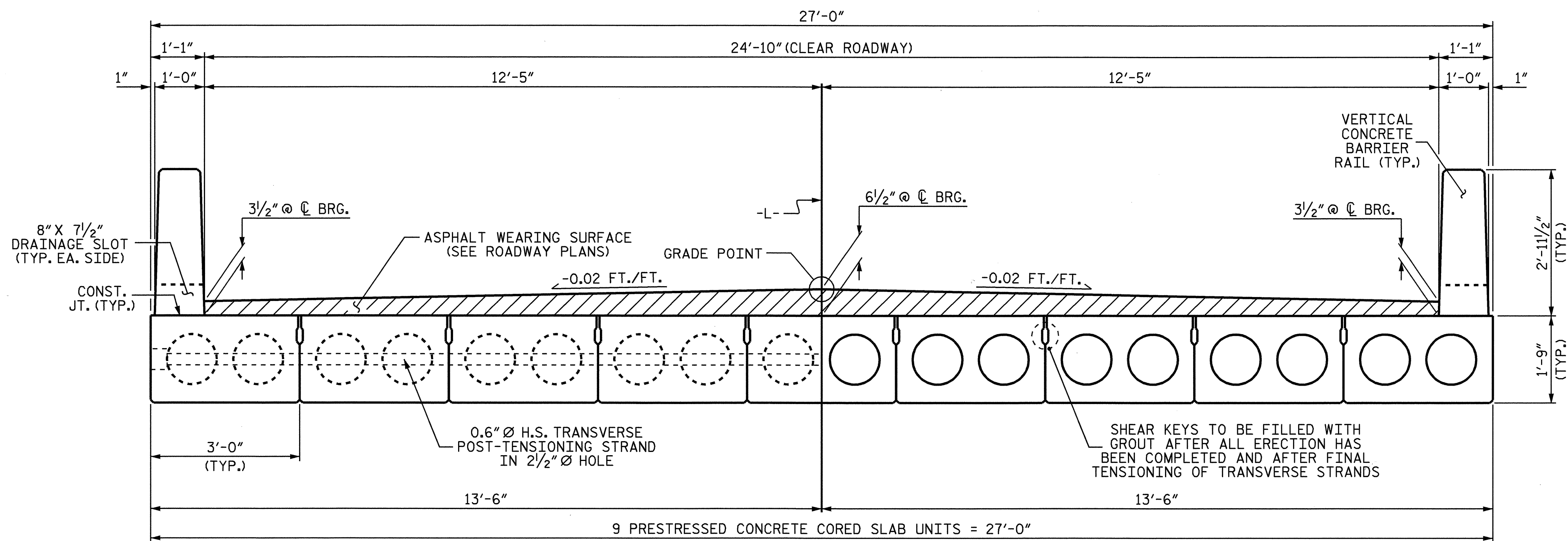
SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE OVER GRASSY CREEK
 ON SR 1412 BETWEEN
 SR 1410 & SR 1415

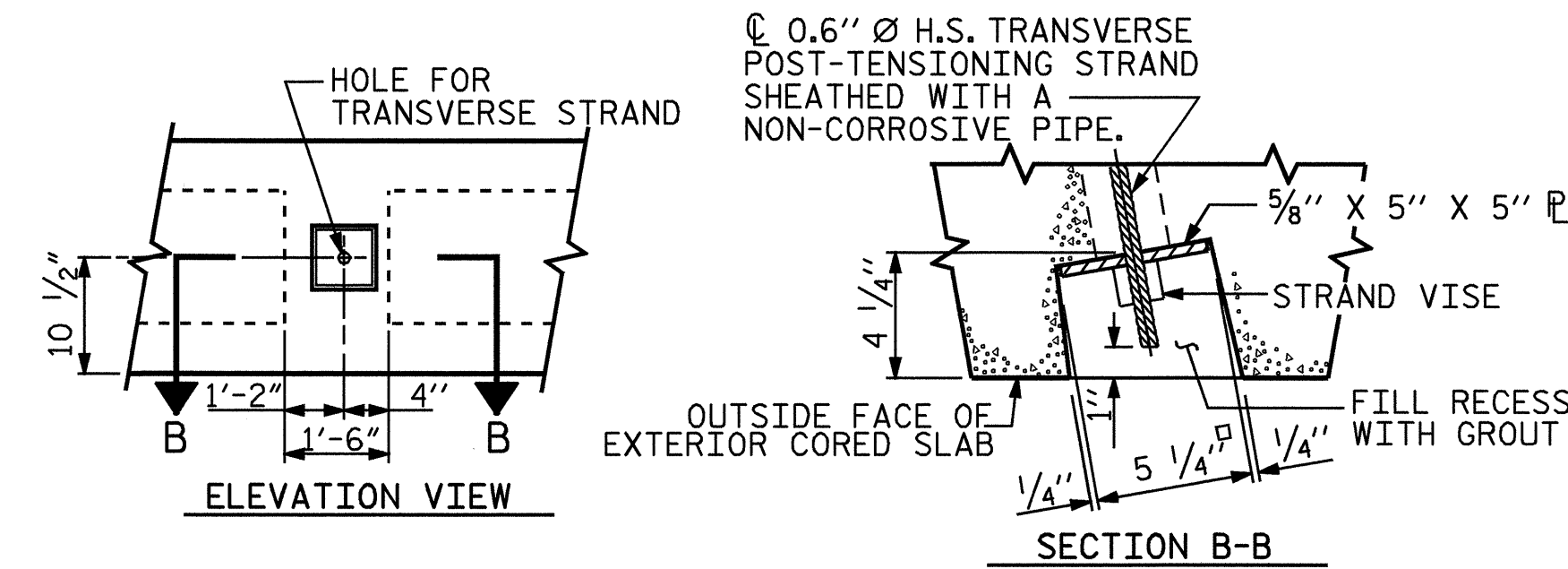


DRAWN BY: J.P. ADAMS DATE: 6/10/08
 CHECKED BY: D. E. HENNESSEE DATE: 6/19/08

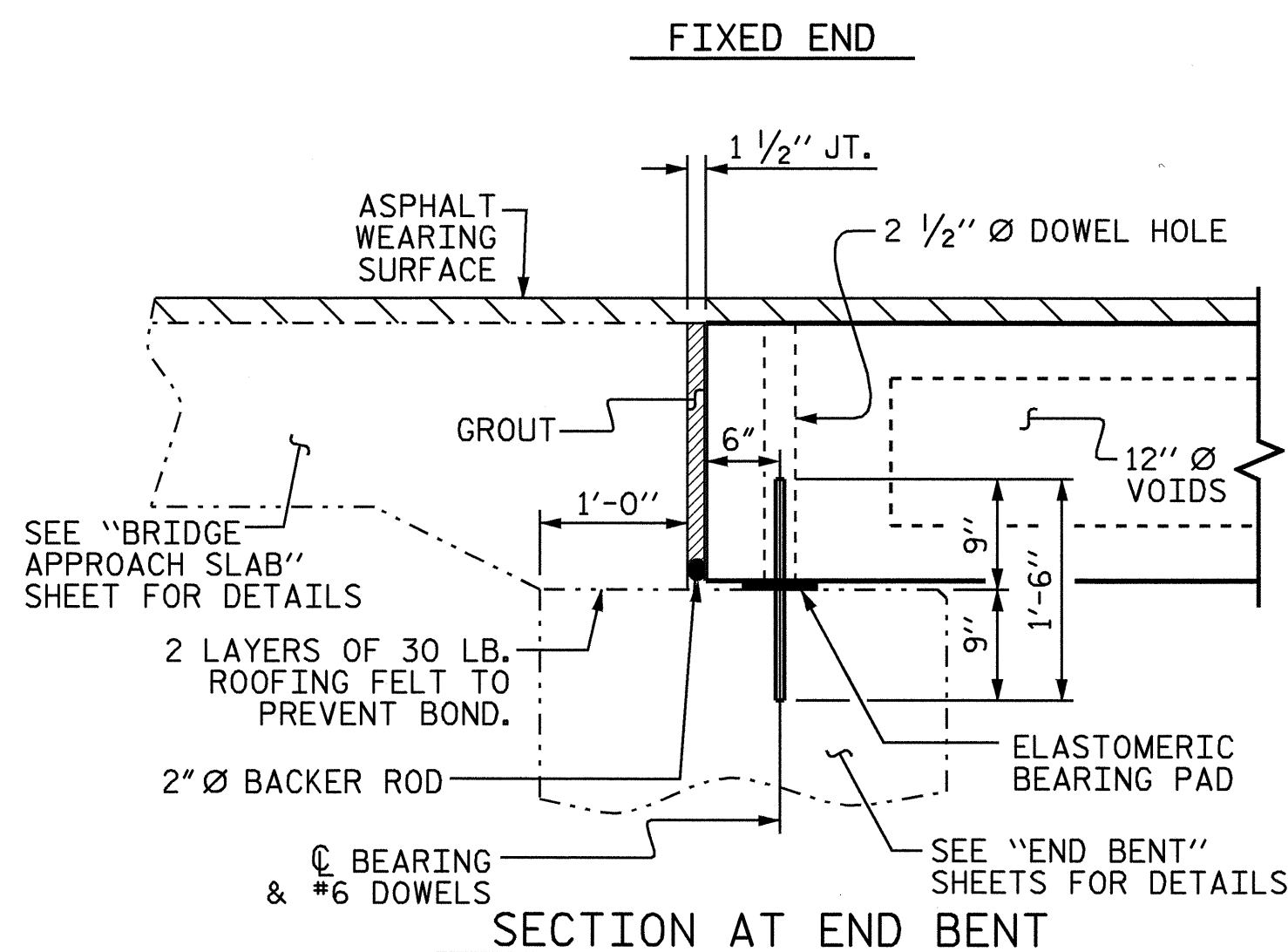
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			22



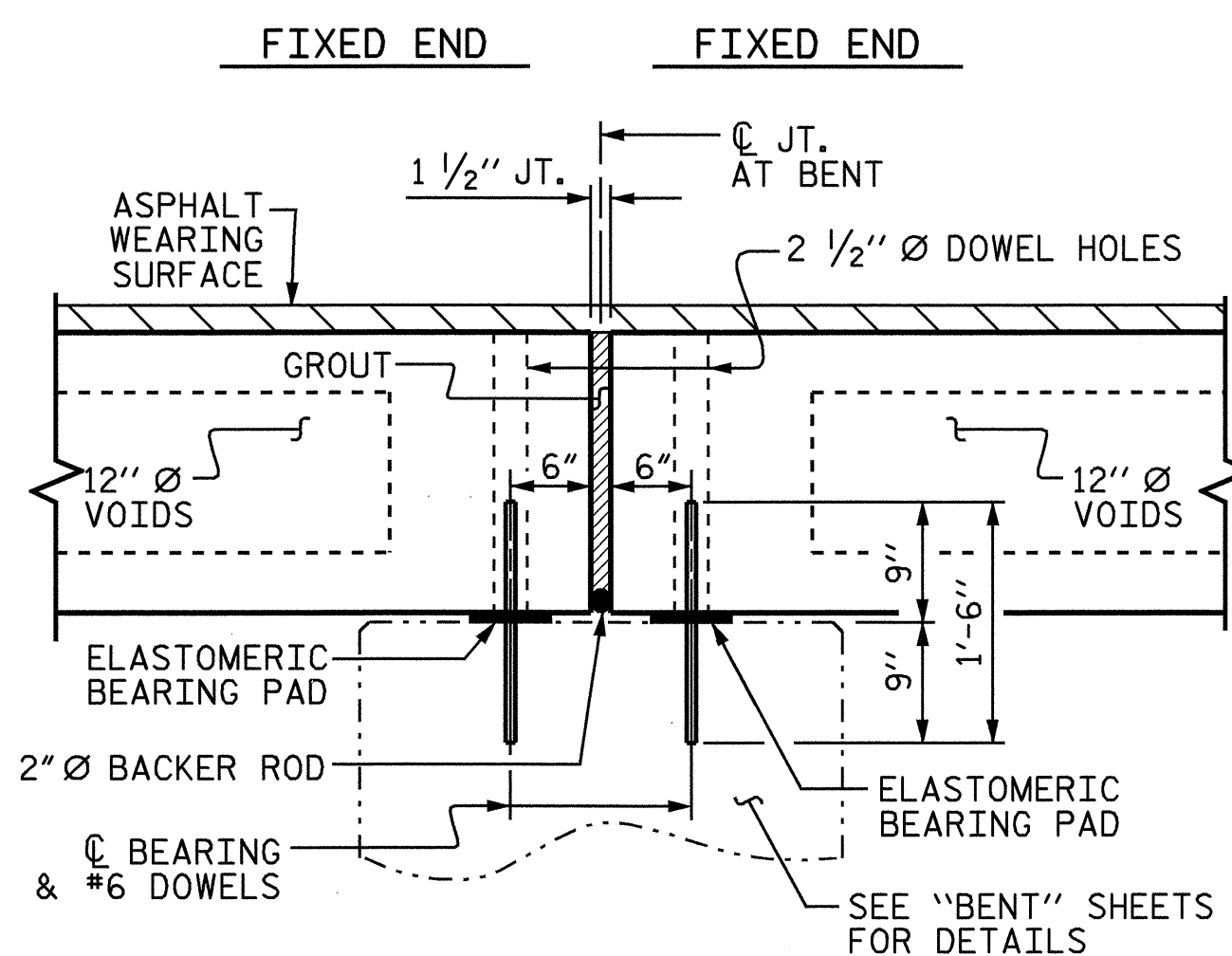
TYPICAL SECTION



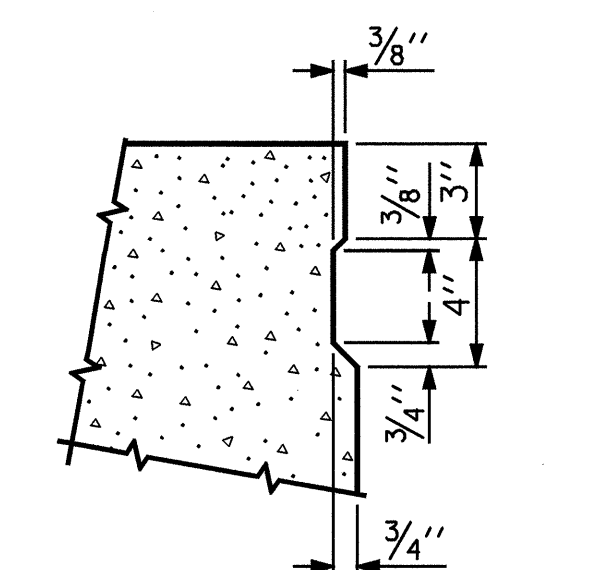
GRouted RECESS AT END OF POST-TENSIONED STRAND-CORED SLABS



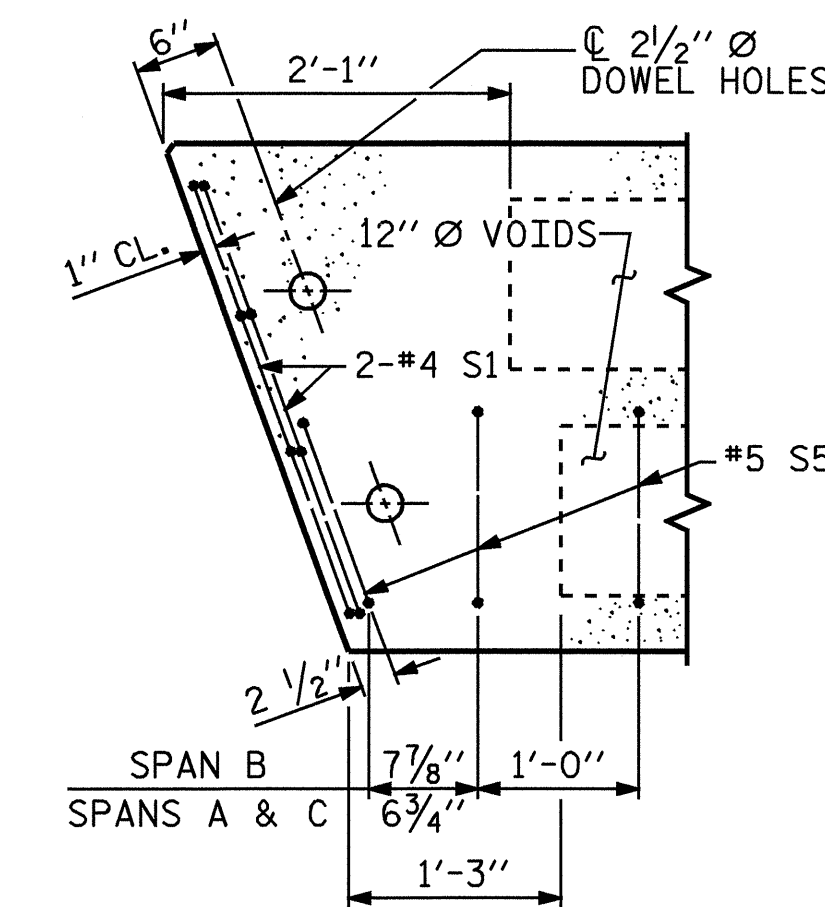
SECTION AT END BENT



SECTION AT BENT

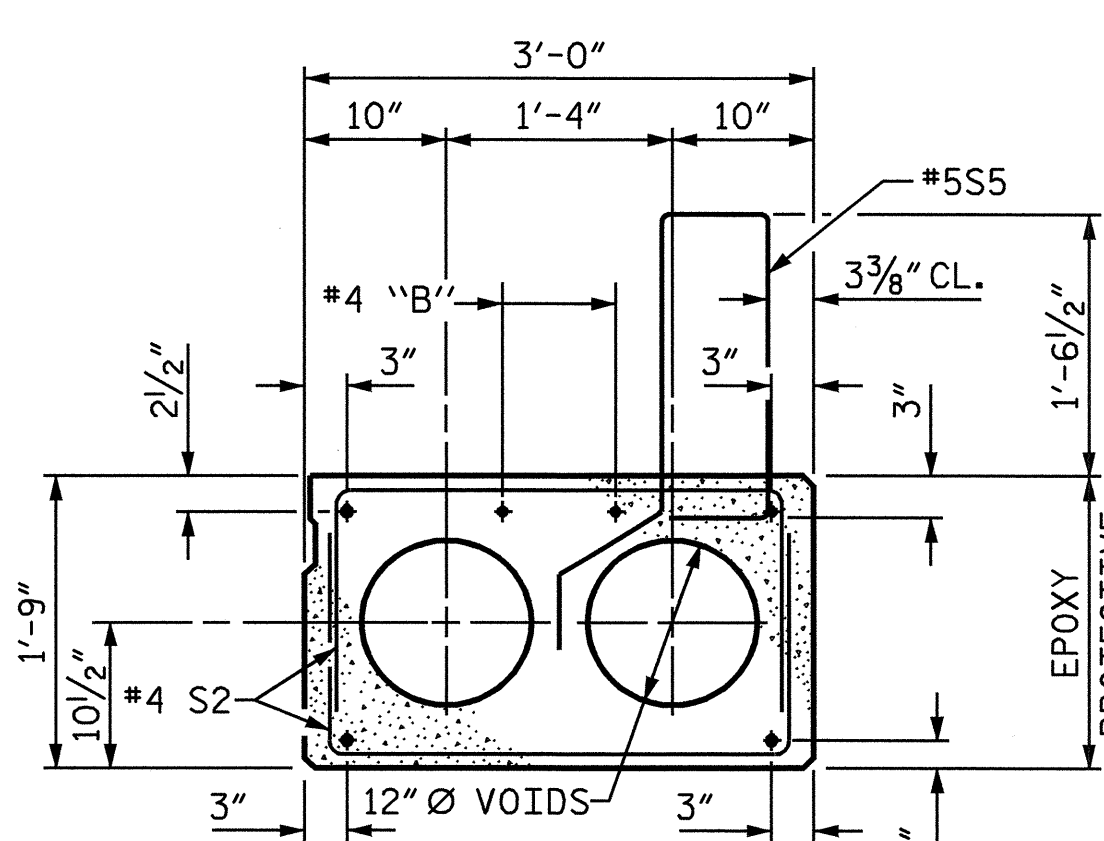


SHEAR KEY DETAIL



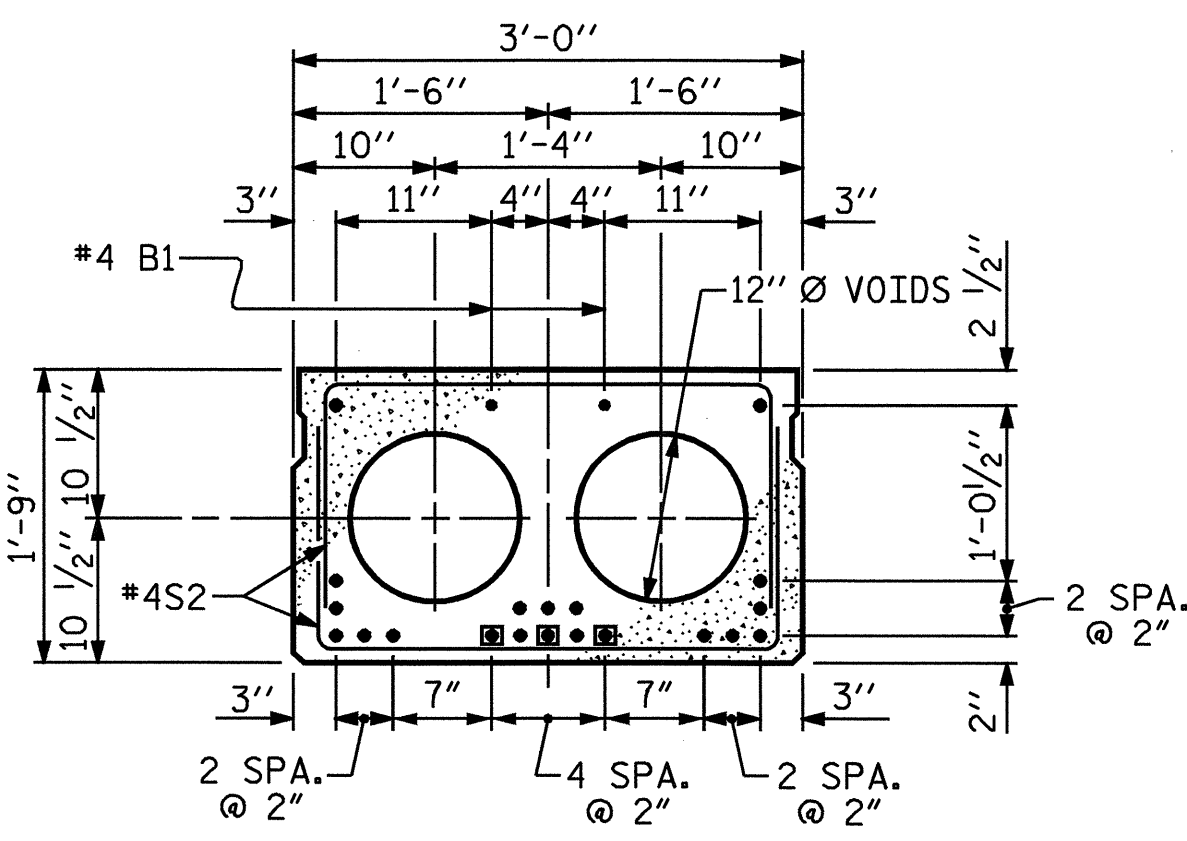
65° SKEW PART PLAN-EXTERIOR SECTION

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



EXTERIOR SLAB SECTION

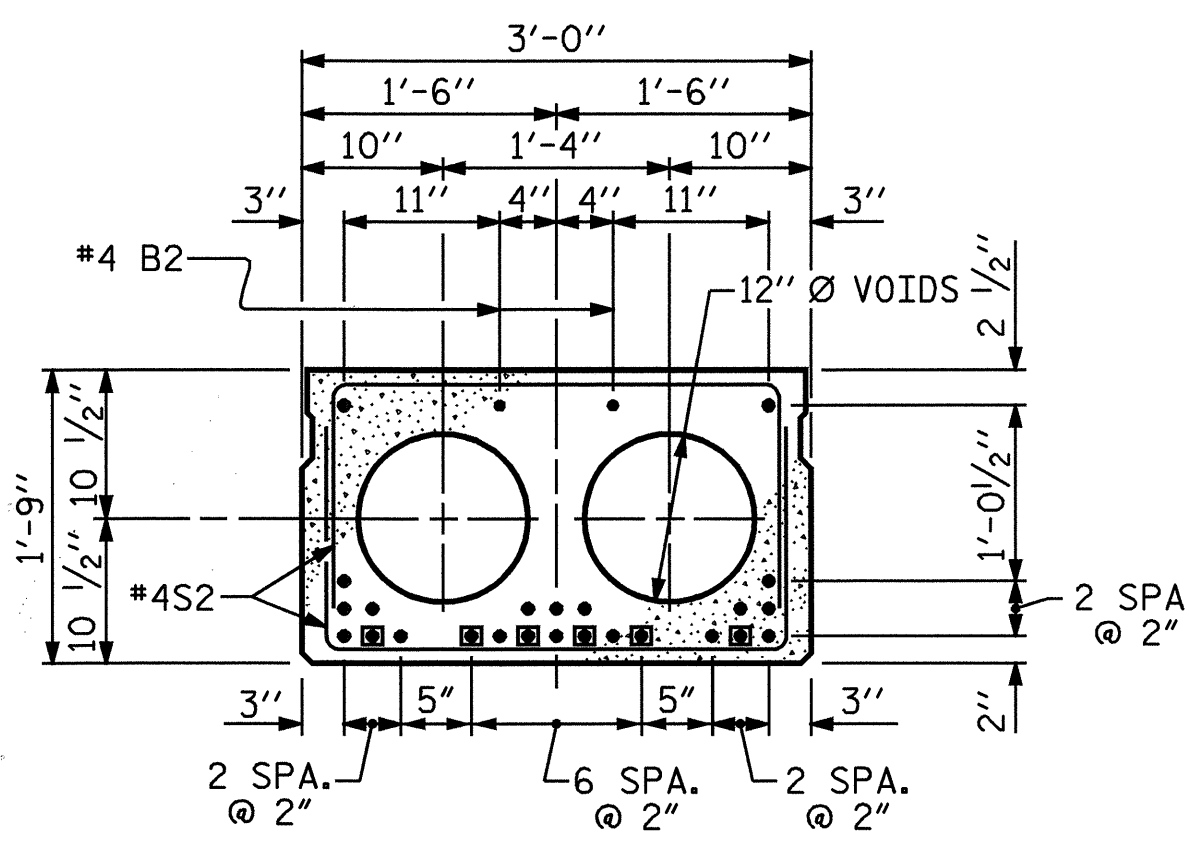
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



INTERIOR SLAB SECTION SPANS A & C

1/2" Ø LOW RELAXATION STRAND LAYOUT

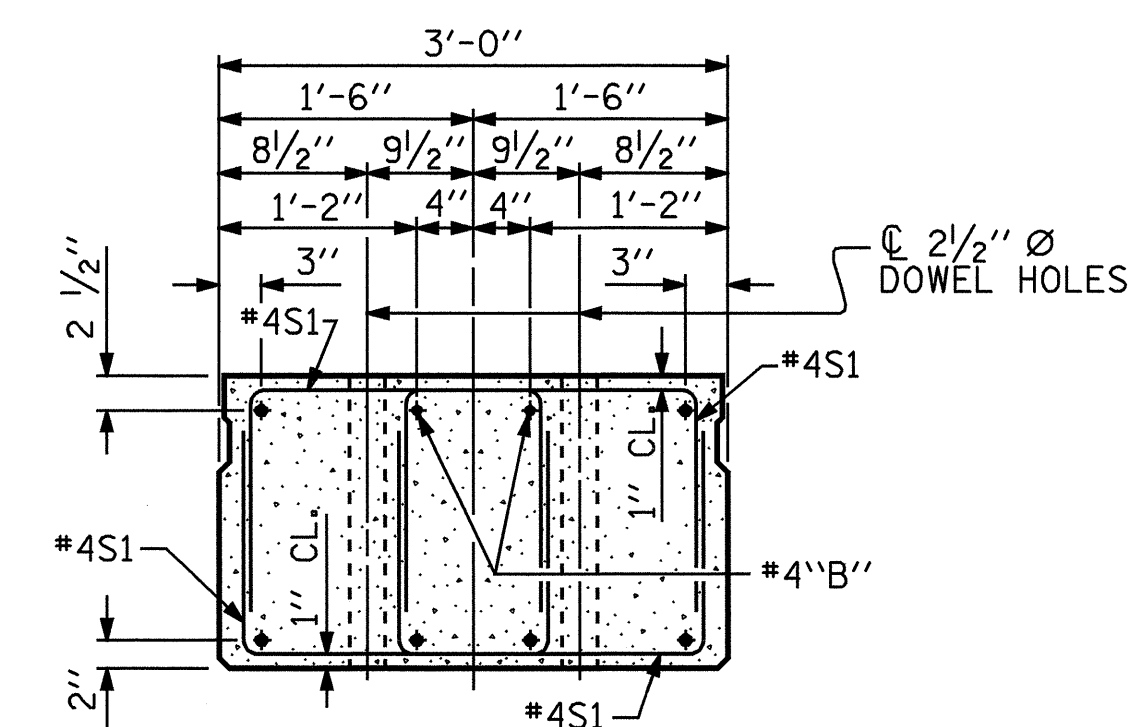
BONDS SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 4'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.



INTERIOR SLAB SECTION SPAN B

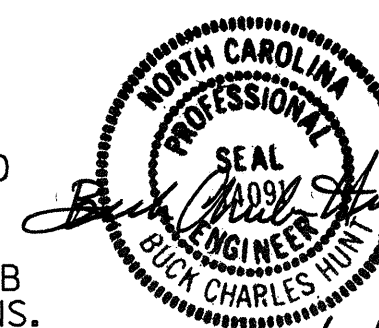
1/2" Ø LOW RELAXATION STRAND LAYOUT

BONDS SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 4'-7" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.



END ELEVATION

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

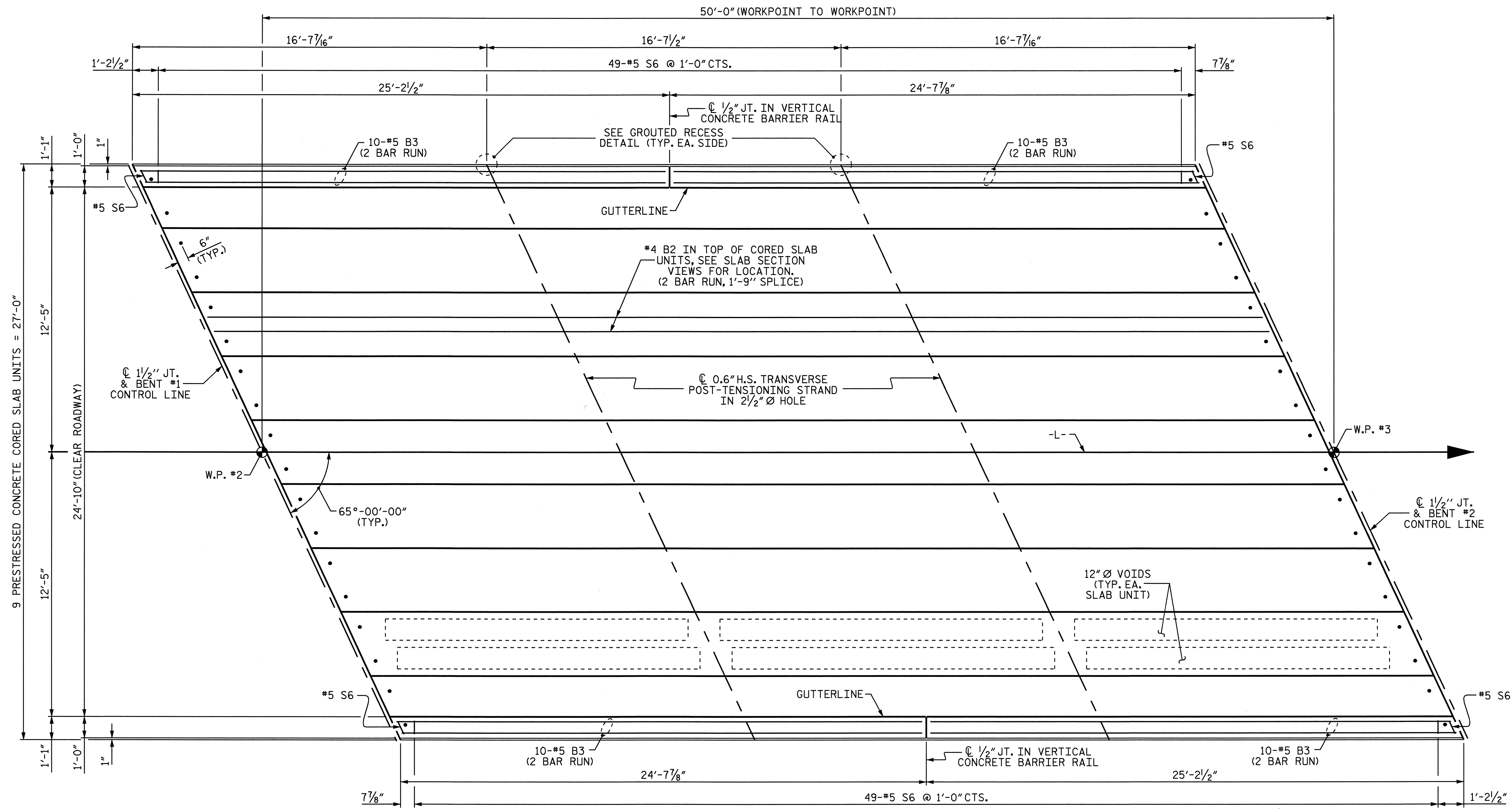


PROJECT NO. B-4525
 GRANVILLE COUNTY
 STATION: 13+64.00 -L-

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

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

ASSEMBLED BY : S. DOMBROWSKI	DATE : 03/08
CHECKED BY : K.D. LAYNE	DATE : 04/08
DRAWN BY : WJH 4/89	REV. 10/17/00 RWW/LES
CHECKED BY : FCJ 5/89	REV. 7/10/01RR RWW/LES
	REV. 5/1/06 TLA/GM



PLAN OF SPAN B

B3 SPLICE = 3'-5"

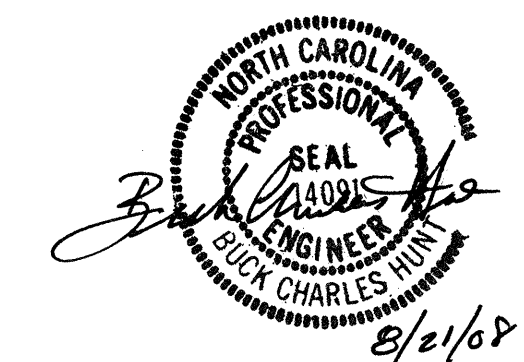
PROJECT NO. B-4525
GRANVILLE COUNTY
 STATION: 13+64.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

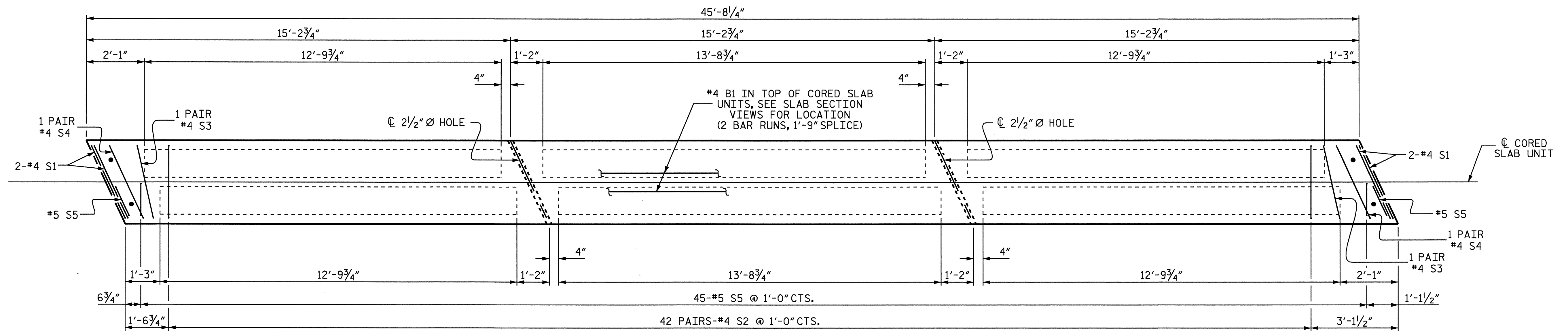
SUPERSTRUCTURE
 PLAN OF SPAN B

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



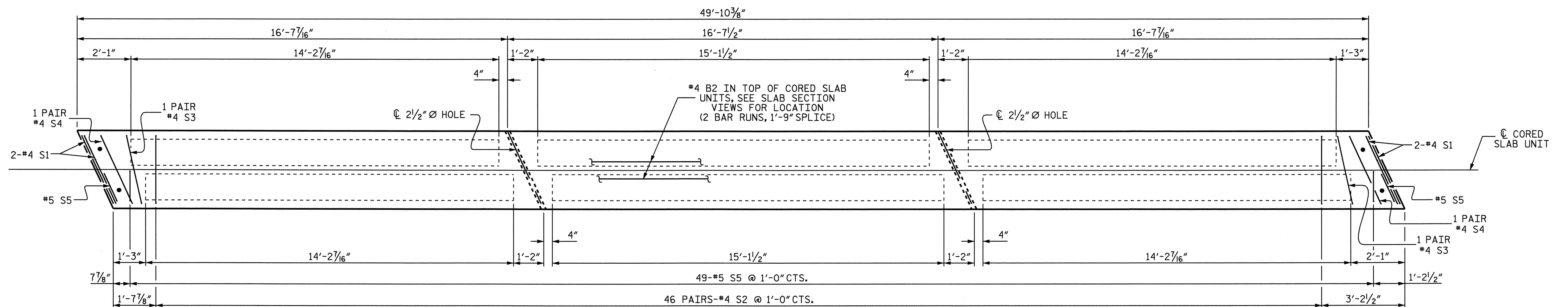
DRAWN BY : S. DOMBROWSKI DATE : 03/08
 CHECKED BY : K.D. LAYNE DATE : 04/08

19-AUG-2008 15:11
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 sdombrowski



PLAN OF EXTERIOR CORED SLAB UNIT - SPANS A & C

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT S5 BARS



PLAN OF EXTERIOR CORED SLAB UNIT - SPAN B

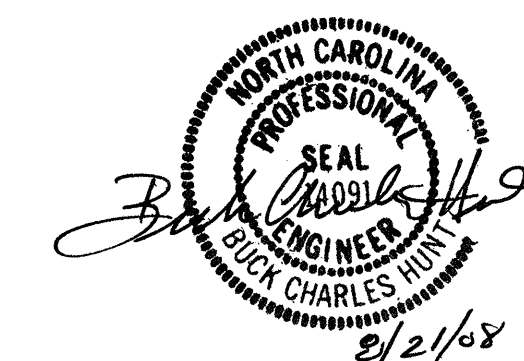
EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT S5 BARS

PROJECT NO. B-4525
GRANVILLE COUNTY
 STATION: 13+64.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF
 CORED SLAB UNIT
 (SPANS A, B & C)

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



DRAWN BY : S. DOMBROWSKI DATE : 03/08
 CHECKED BY : K.D. LAYNE DATE : 04/08

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.

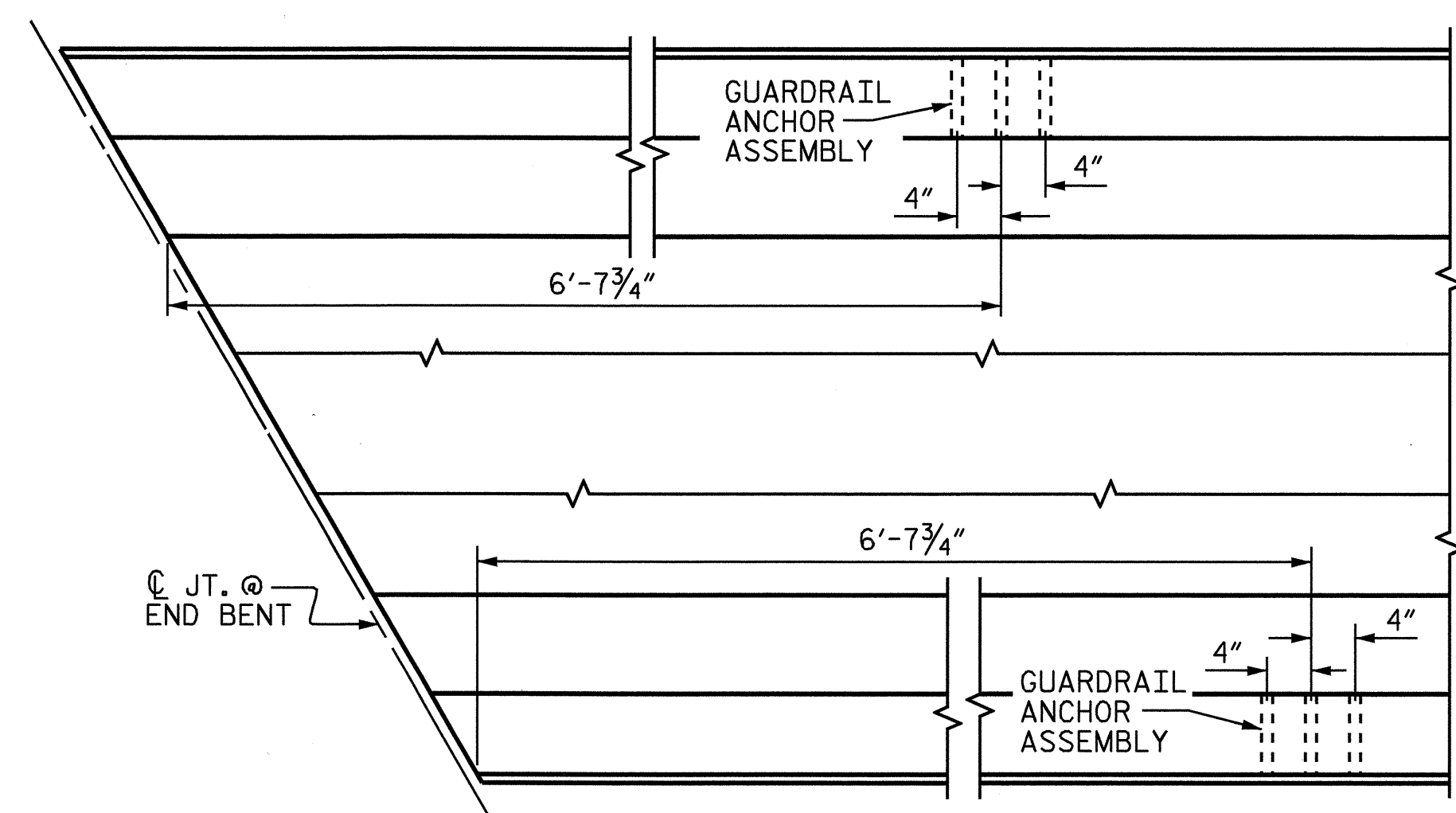
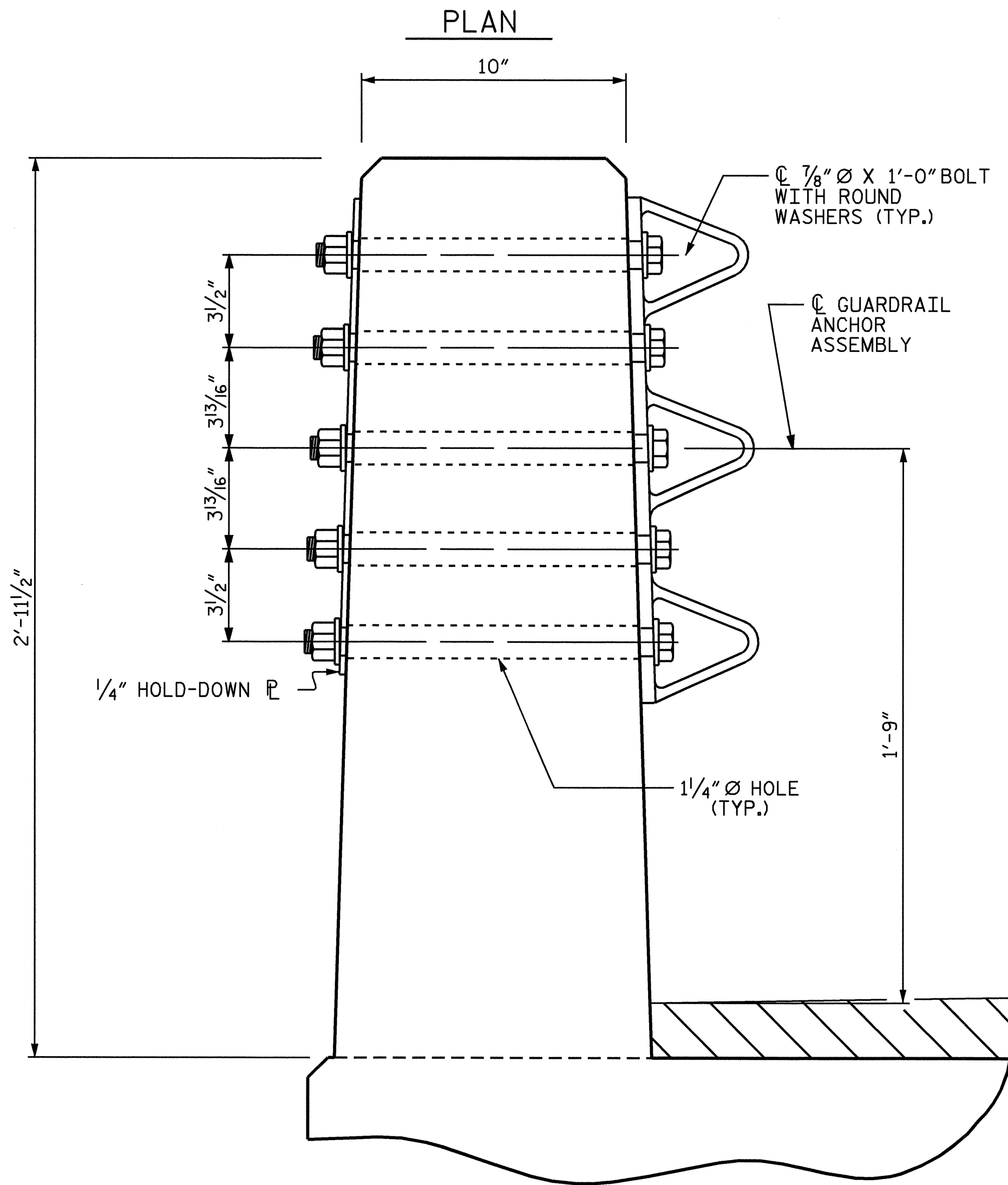
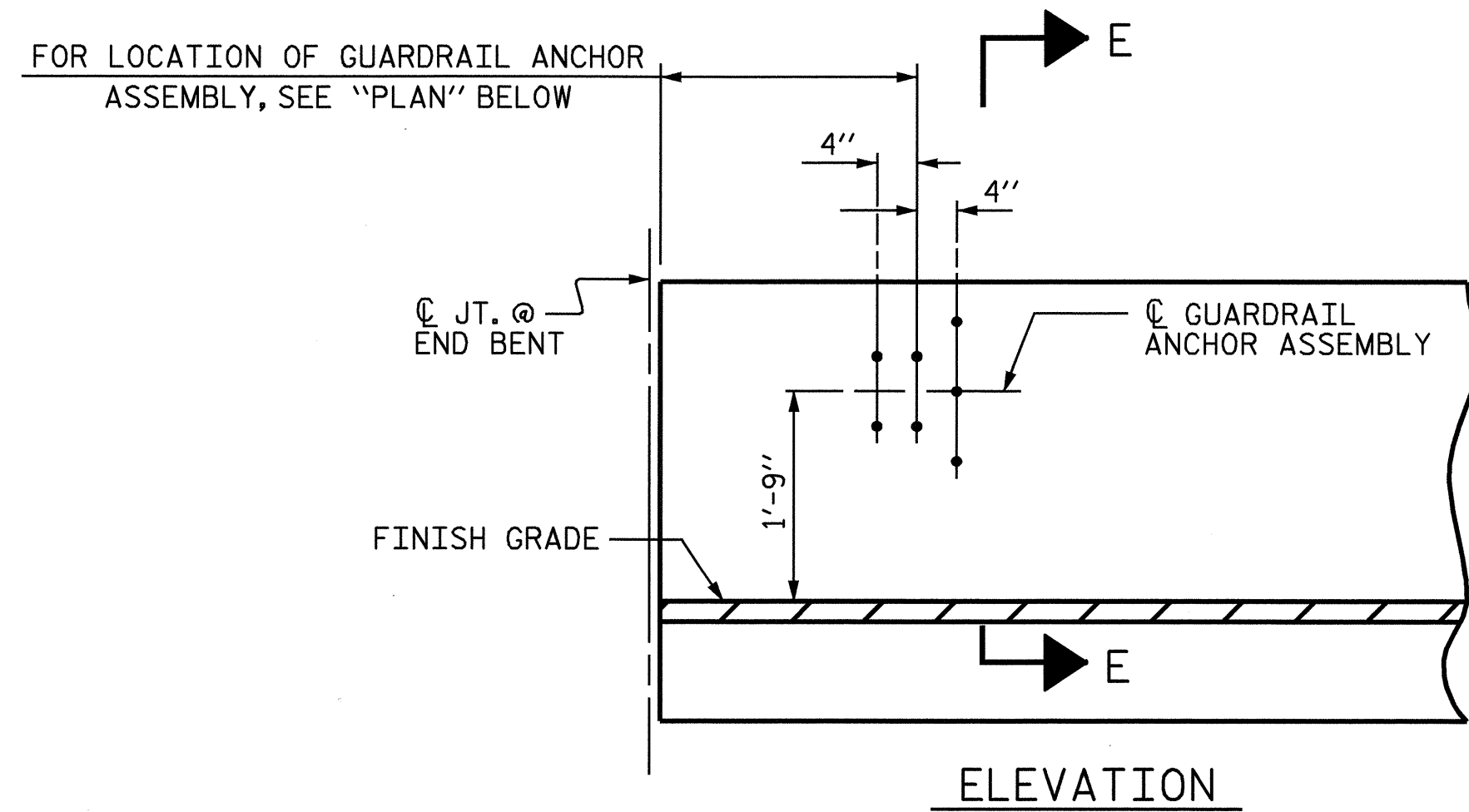
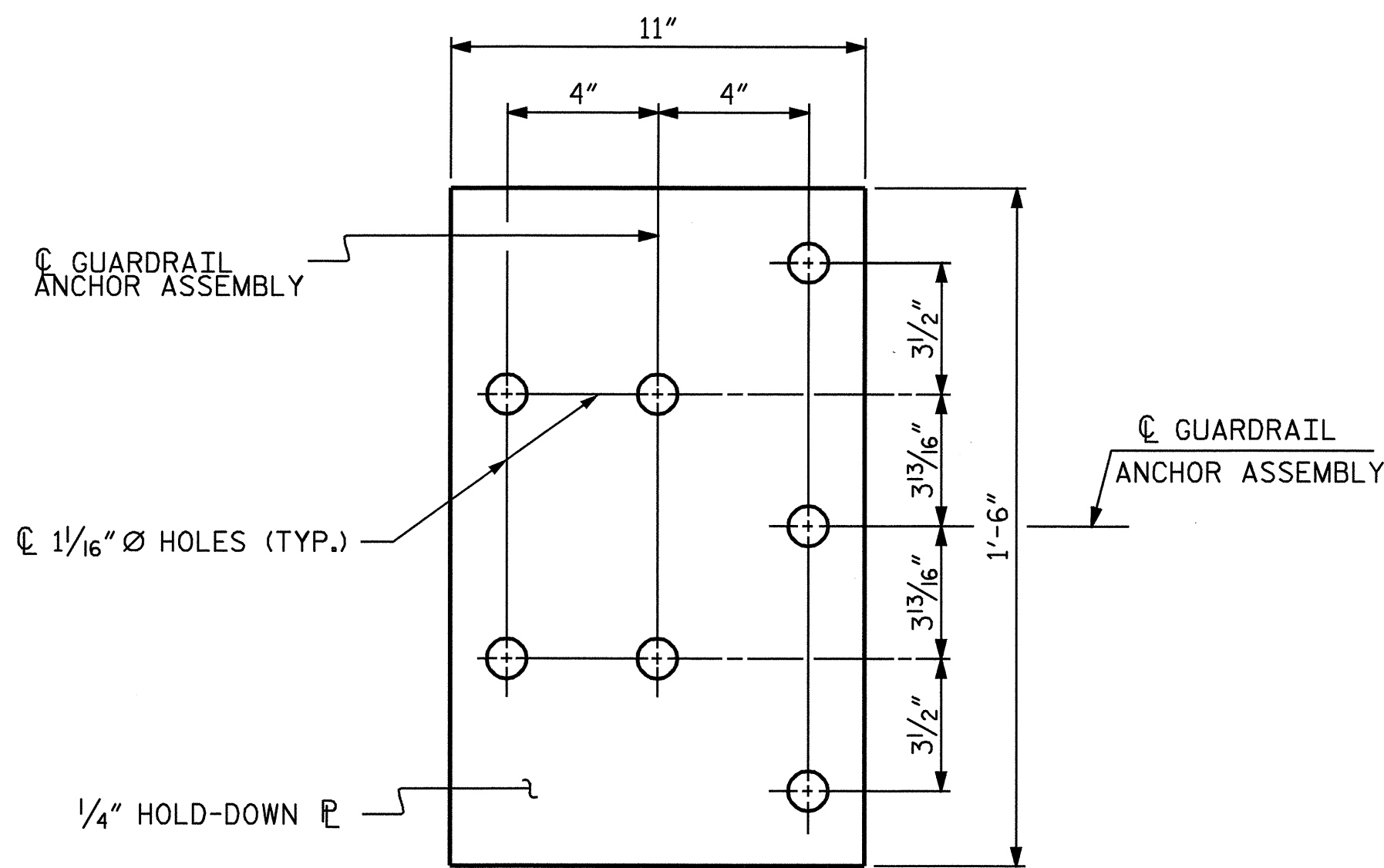
BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS.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

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

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS, NUTS AND WASHERS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

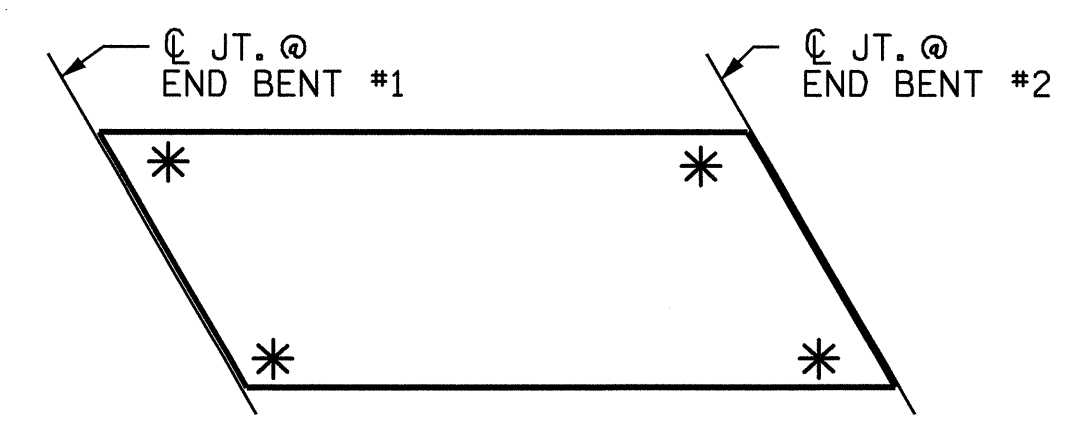
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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.



LOCATION OF ANCHORS FOR GUARDRAIL

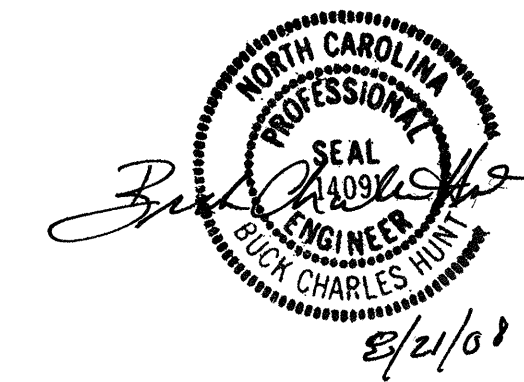
END BENT #1 SHOWN, END BENT #2 SIMILAR.



* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4525
GRANVILLE COUNTY
 STATION: 13+64.00 -L-

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



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

DRAWN BY : S. DOMBROWSKI DATE : 03/08
 CHECKED BY : K.D. LAYNE DATE : 04/08

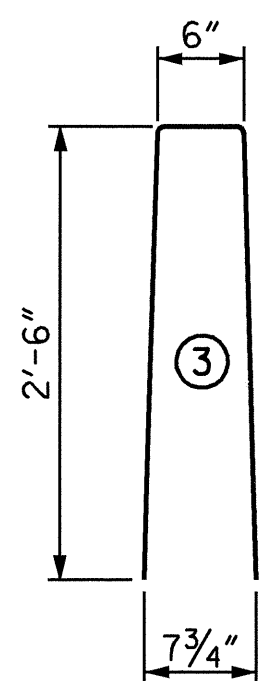
DEAD LOAD DEFLECTION AND CAMBER			
	SPAN A	SPAN B	SPAN C
	1/2" Ø L.R. STRAND	1/2" Ø L.R. STRAND	1/2" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1 9/16" ↑	2 3/8" ↑	1 9/16" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/4" ↓	3/8" ↓	1/4" ↓
FINAL CAMBER	1 5/16" ↑	2" ↑	1 5/16" ↑

** INCLUDES FUTURE WEARING SURFACE

CORED SLABS REQUIRED			
SPAN A	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	45'-8 1/4"	91.38
INTERIOR C.S.	7	45'-8 1/4"	319.81
TOTAL	9	45'-8 1/4"	411.19
SPAN B	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	49'-10 3/8"	99.73
INTERIOR C.S.	7	49'-10 3/8"	349.05
TOTAL	9	49'-10 3/8"	448.78
SPAN C	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	45'-8 1/4"	91.38
INTERIOR C.S.	7	45'-8 1/4"	319.81
TOTAL	9	45'-8 1/4"	411.19
TOTAL LENGTH (SPANS A, B & C)			1271.16

GRADE 270 STRANDS	
	1/2" Ø L.R.
AREA (SQUARE INCHES)	0.153
ULTIMATE STRENGTH (LBS. PER STRAND)	41,300
APPLIED PRESTRESS (LBS. PER STRAND)	30,980

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

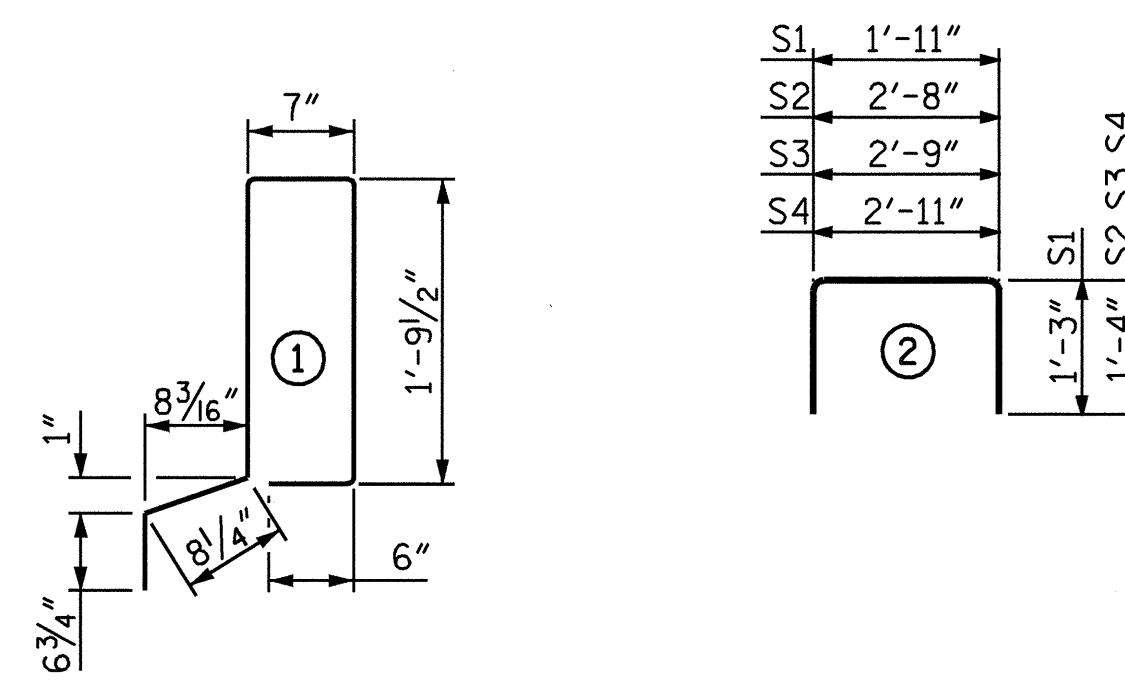
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B3	80	#5	STR	14'-1"	1175
*B4	160	#5	STR	13'-0"	2169
*S6	290	#5	3	5'-6"	1,664

* EPOXY COATED REINFORCING STEEL 5,008 LBS.

CLASS AA CONCRETE 28.4 CU. YDS.

1'-0" x 2'-11 1/2" VERTICAL CONCRETE BARRIER RAIL 283.03 LIN. FT.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR ONE CORED SLAB SECTION

SPANS A & C				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B1	4	#4	STR	23'-6"	63	23'-6"	63
S1	8	#4	2	4'-5"	24	4'-5"	24
S2	84	#4	2	5'-4"	299	5'-4"	299
S3	4	#4	2	5'-5"	14	5'-5"	14
S4	4	#4	2	5'-7"	15	5'-7"	15
*S5	47	#5	1	5'-11"	290		
REINFORCING STEEL				415 LBS.		415 LBS.	
* EPOXY COATED REINFORCING STEEL				290 LBS.		290 LBS.	
5,000 P.S.I. CONCRETE				6.5 CU. YDS.		6.5 CU. YDS.	
1/2" Ø L.R. STRANDS				No. 20		No. 20	
SPAN B				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B2	4	#4	STR	25'-7"	68	25'-7"	68
S1	8	#4	2	4'-5"	24	4'-5"	24
S2	92	#4	2	5'-4"	328	5'-4"	328
S3	4	#4	2	5'-5"	14	5'-5"	14
S4	4	#4	2	5'-7"	15	5'-7"	15
*S5	51	#5	1	5'-11"	315		
REINFORCING STEEL				449 LBS.		449 LBS.	
* EPOXY COATED REINFORCING STEEL				315 LBS.		315 LBS.	
5,000 P.S.I. CONCRETE				7.1 CU. YDS.		7.1 CU. YDS.	
1/2" Ø L.R. STRANDS				No. 24		No. 24	

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 LUMP SUM BID PRICE 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 GROUT.

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

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

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 PSI.

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

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

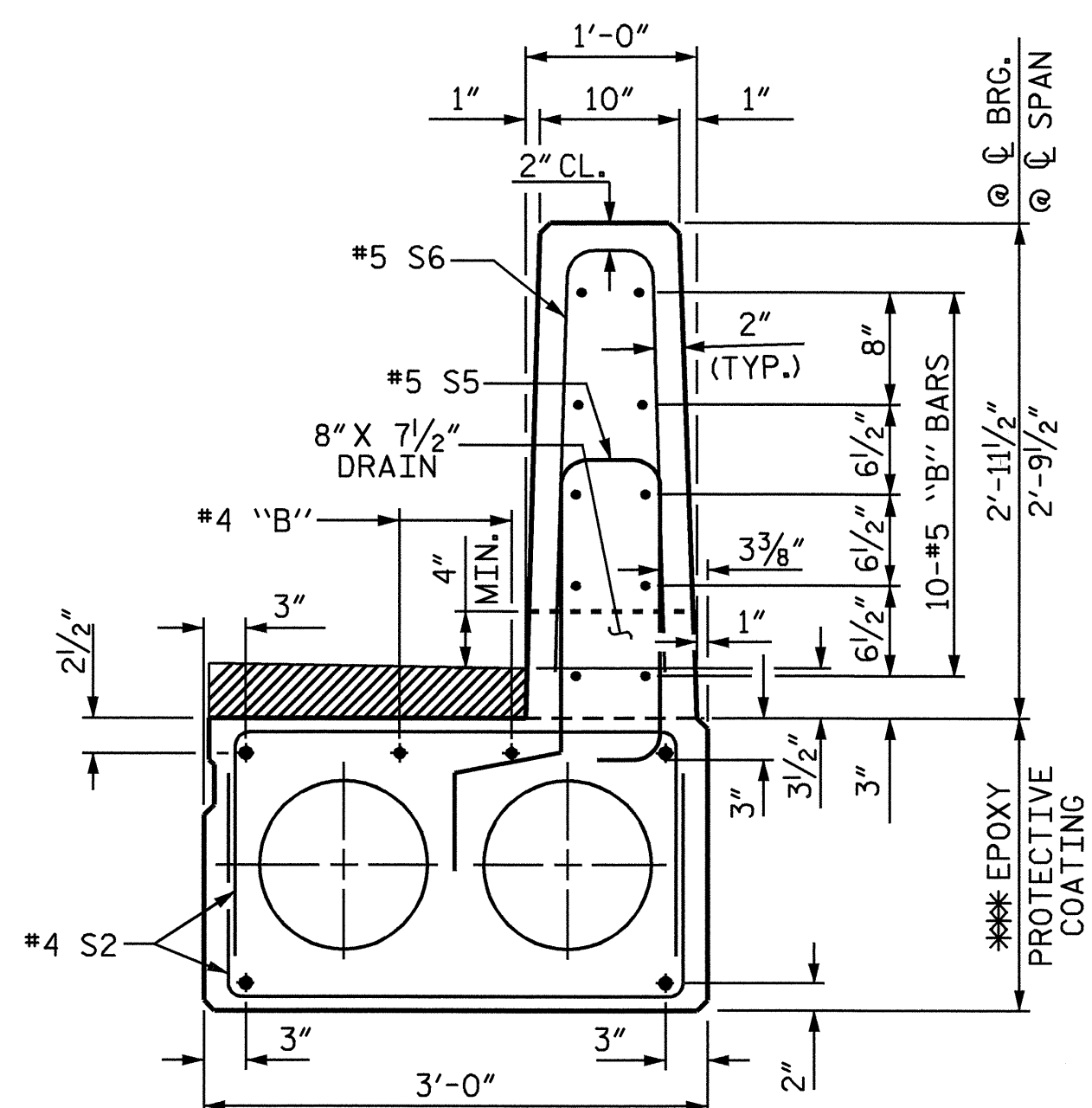
*** APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS AND OUTSIDE FACE AND EXPOSED TOP SURFACE OF EXTERIOR CORED SLAB UNITS.

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

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

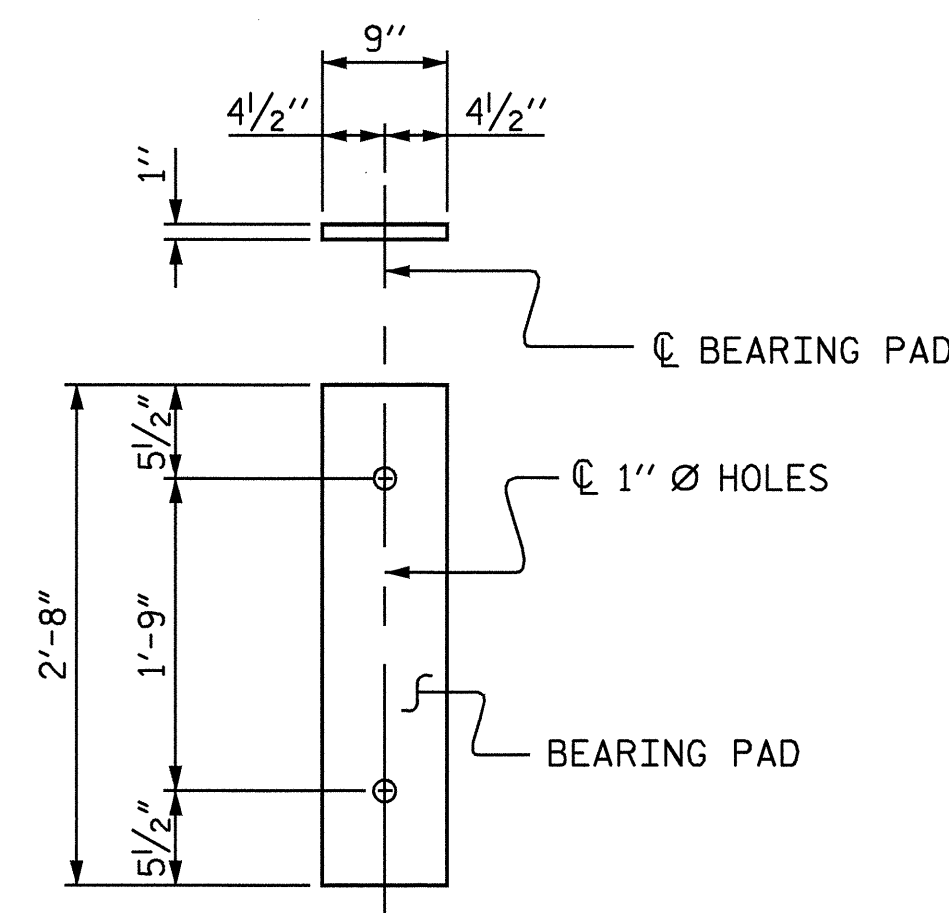
FOR VERTICAL CONCRETE BARRIER RAIL, SEE SPECIAL PROVISIONS.

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



VERTICAL CONCRETE BARRIER RAIL SECTION

(STRAND LAYOUT NOT SHOWN)
FIELD CUT BOTTOM "B" BARS TO AVOID DRAIN



FIXED END
(54 REQ'D)

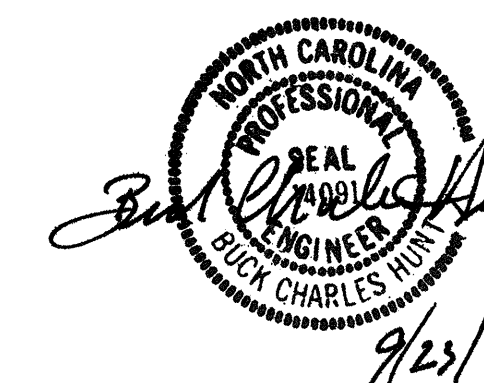
ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

PROJECT NO. B-4525
GRANVILLE COUNTY
STATION: 13+64.00 -L-

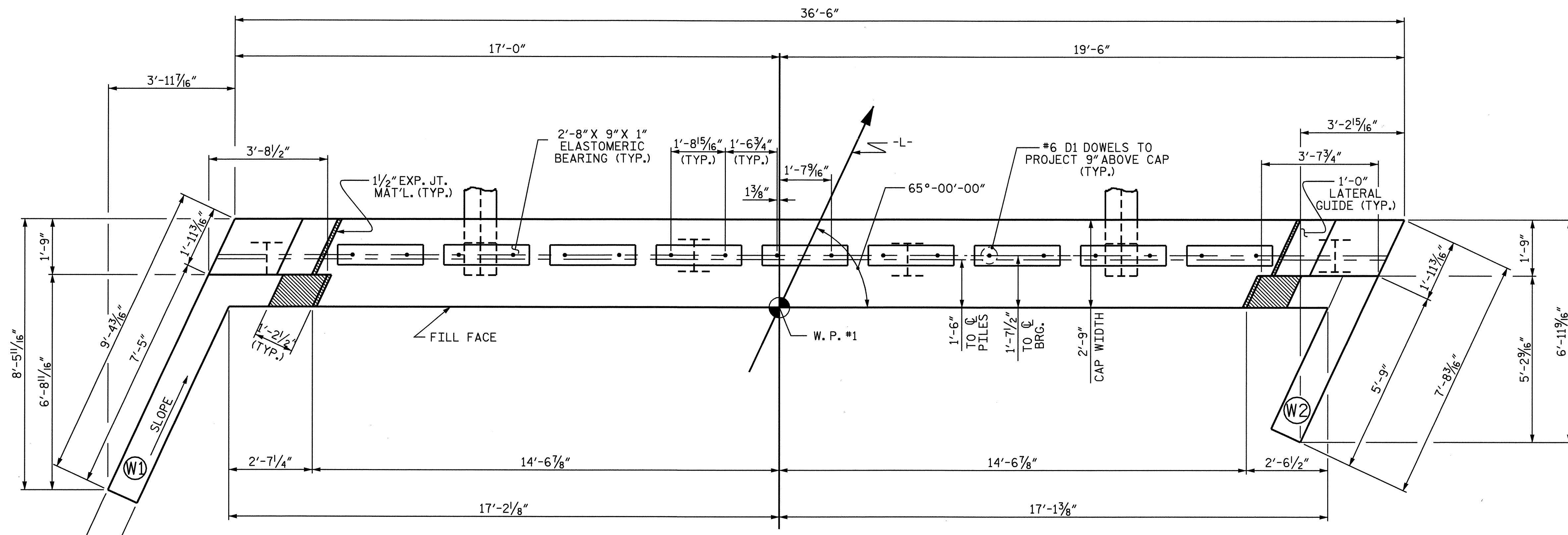
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

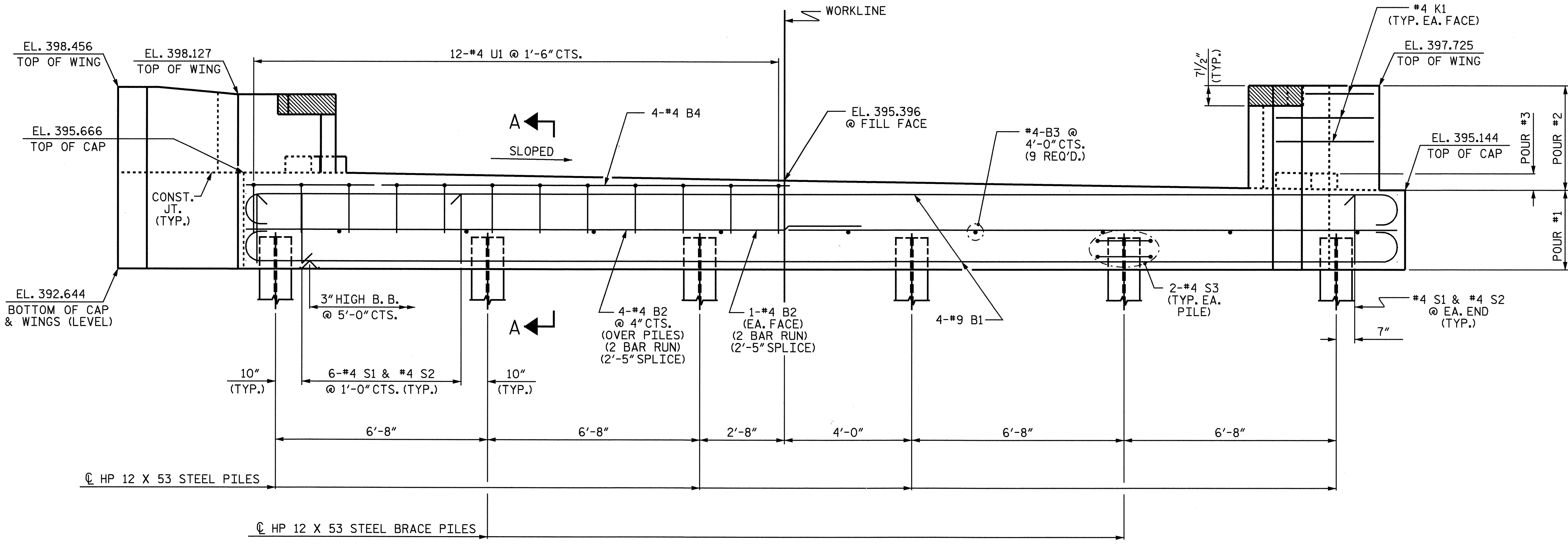


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS 22
2			4			

ASSEMBLED BY : S. DOMBROWSKI	DATE : 03/08
CHECKED BY : K.D. LAYNE	DATE : 04/08
DRAWN BY : WJH 4/89	REV. 7/10/01 RWW/LES
CHECKED BY : FCJ 5/89	REV. 5/7/03RRR RWW/JTE
	REV. 5/1/06 TLA/GM



PLAN



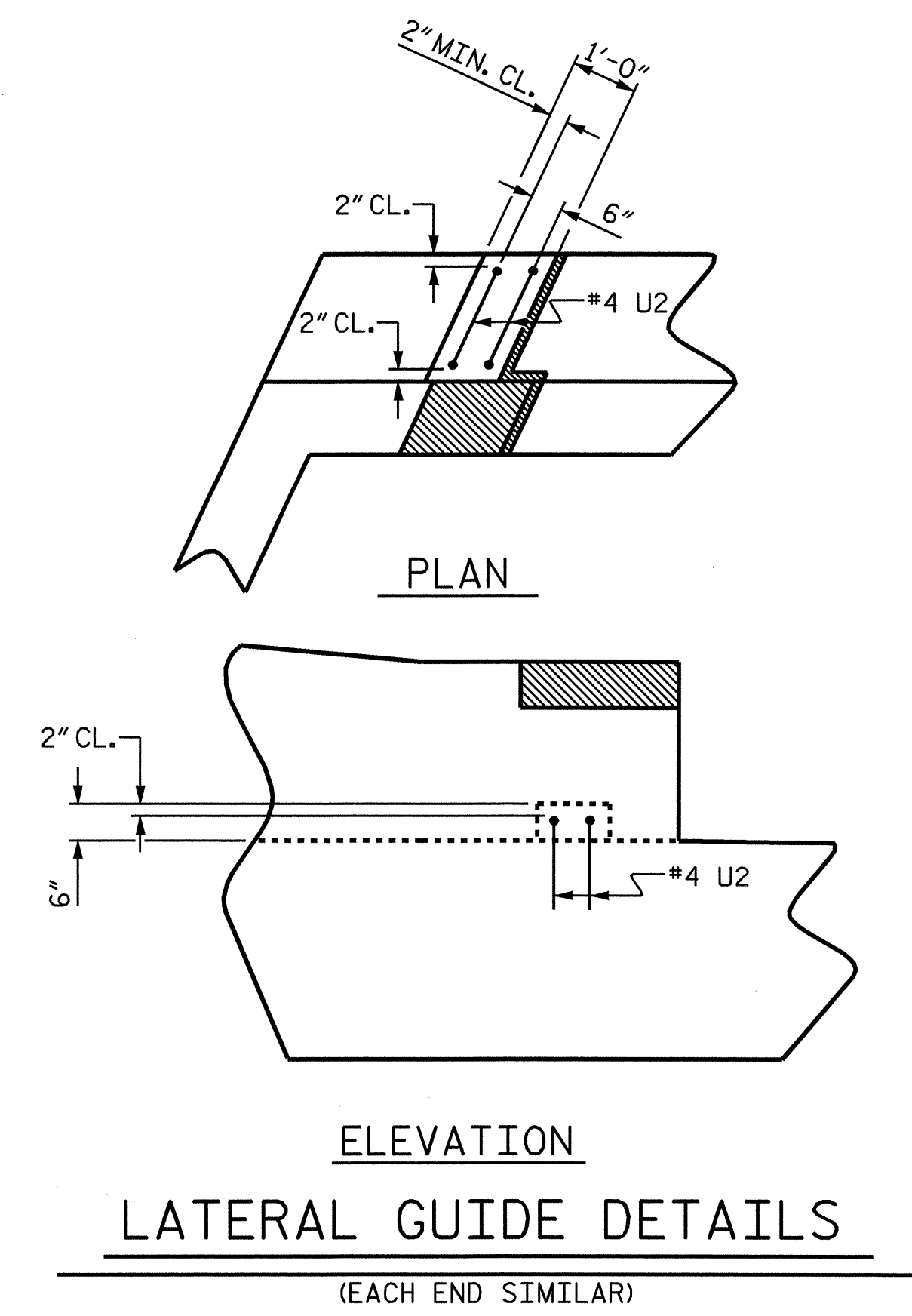
ELEVATION

NOTES

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

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

THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.



PROJECT NO. B-4525

GRANVILLE COUNTY

STATION: 13+64.00 -L-

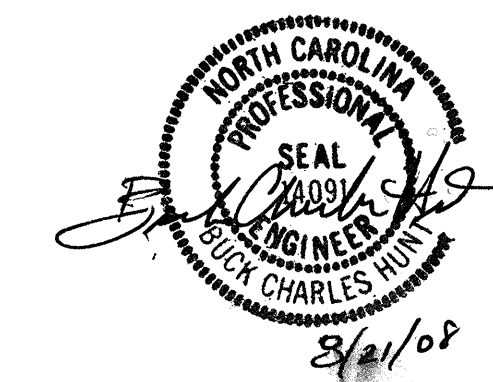
SHEET 1 OF 3

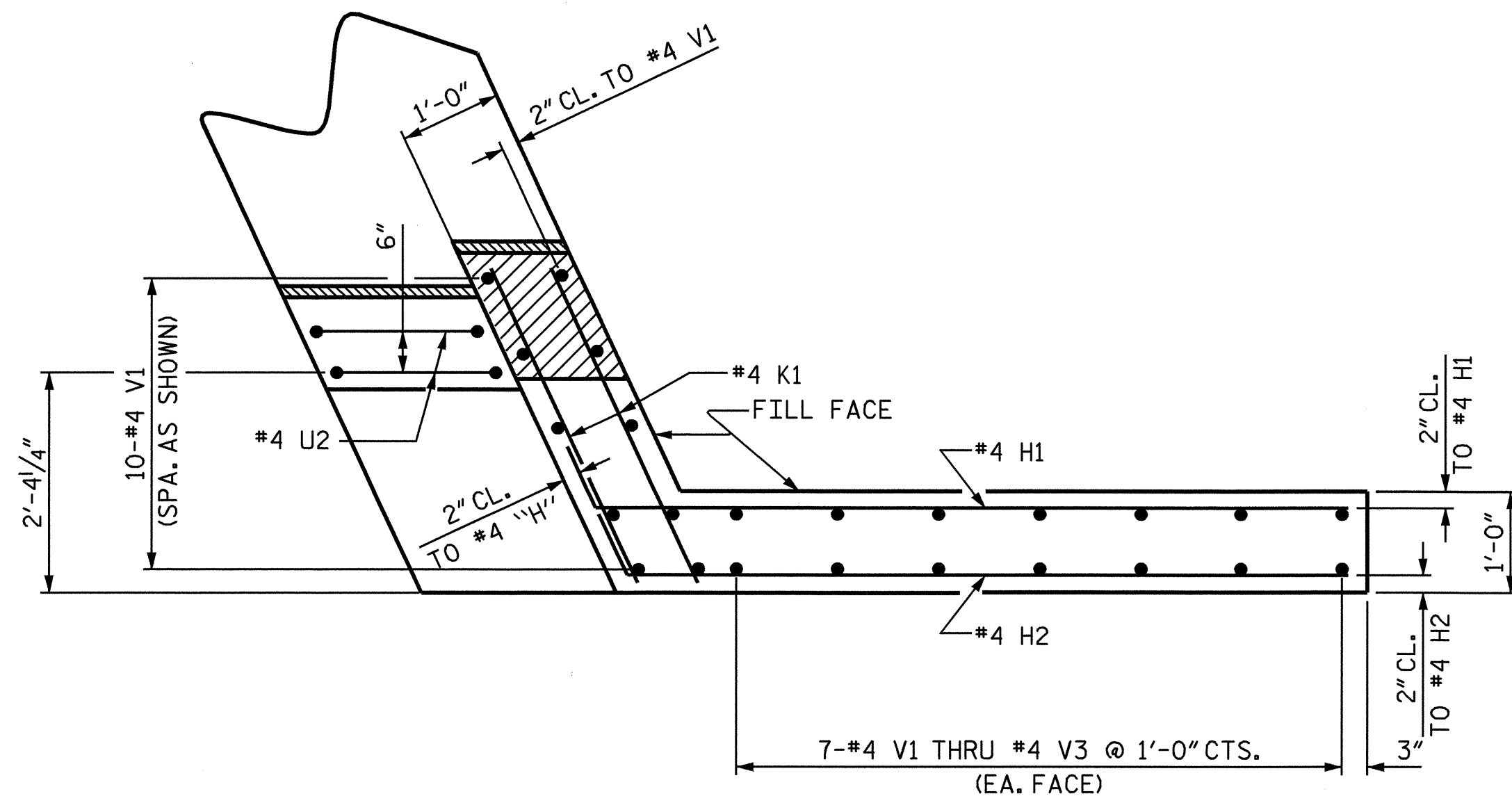
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT #1

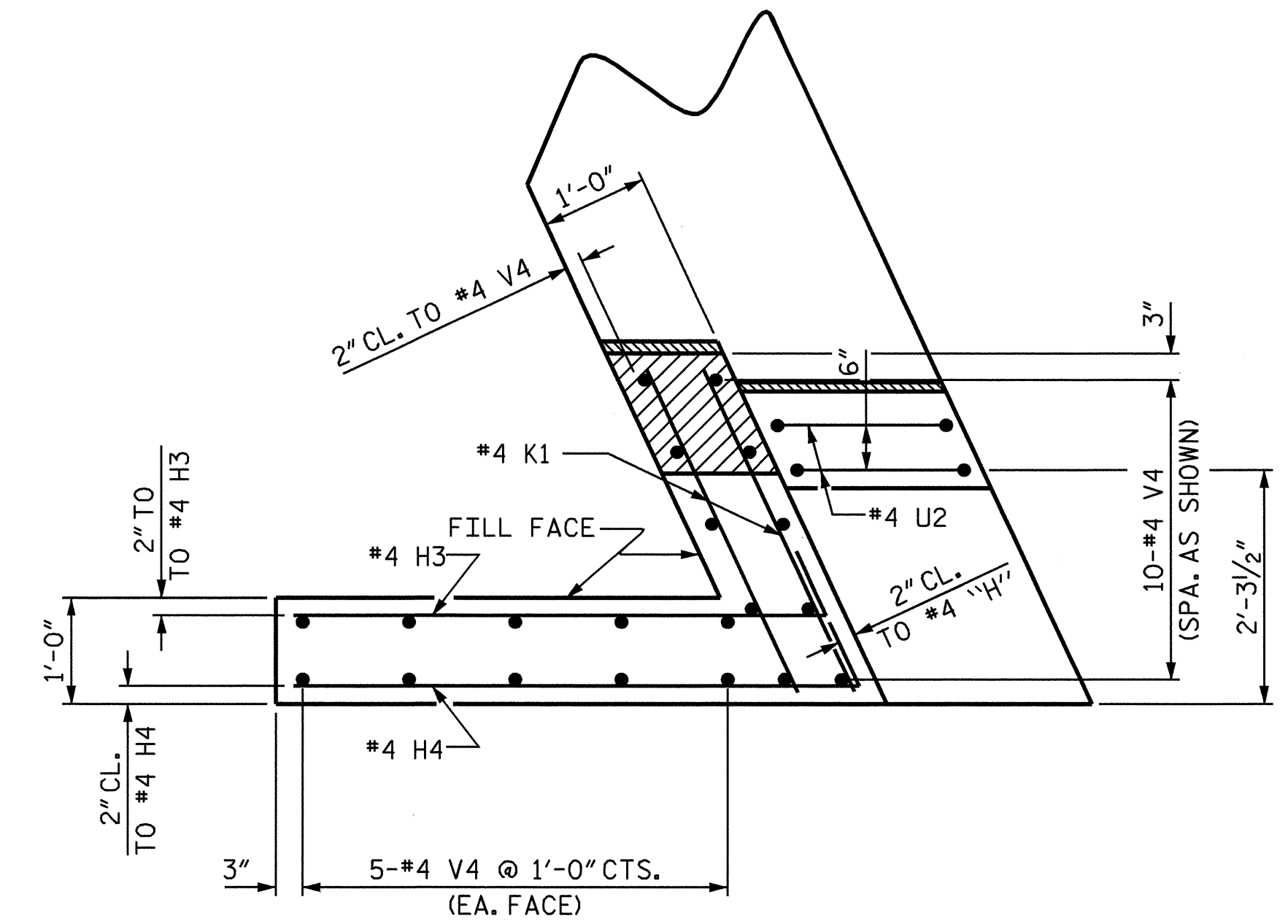
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10	
1			3			TOTAL SHEETS	
2			4			22	

DRAWN BY: R. G. EMERSON DATE: 03/08
CHECKED BY: R. L. CHESSON DATE: 05/08

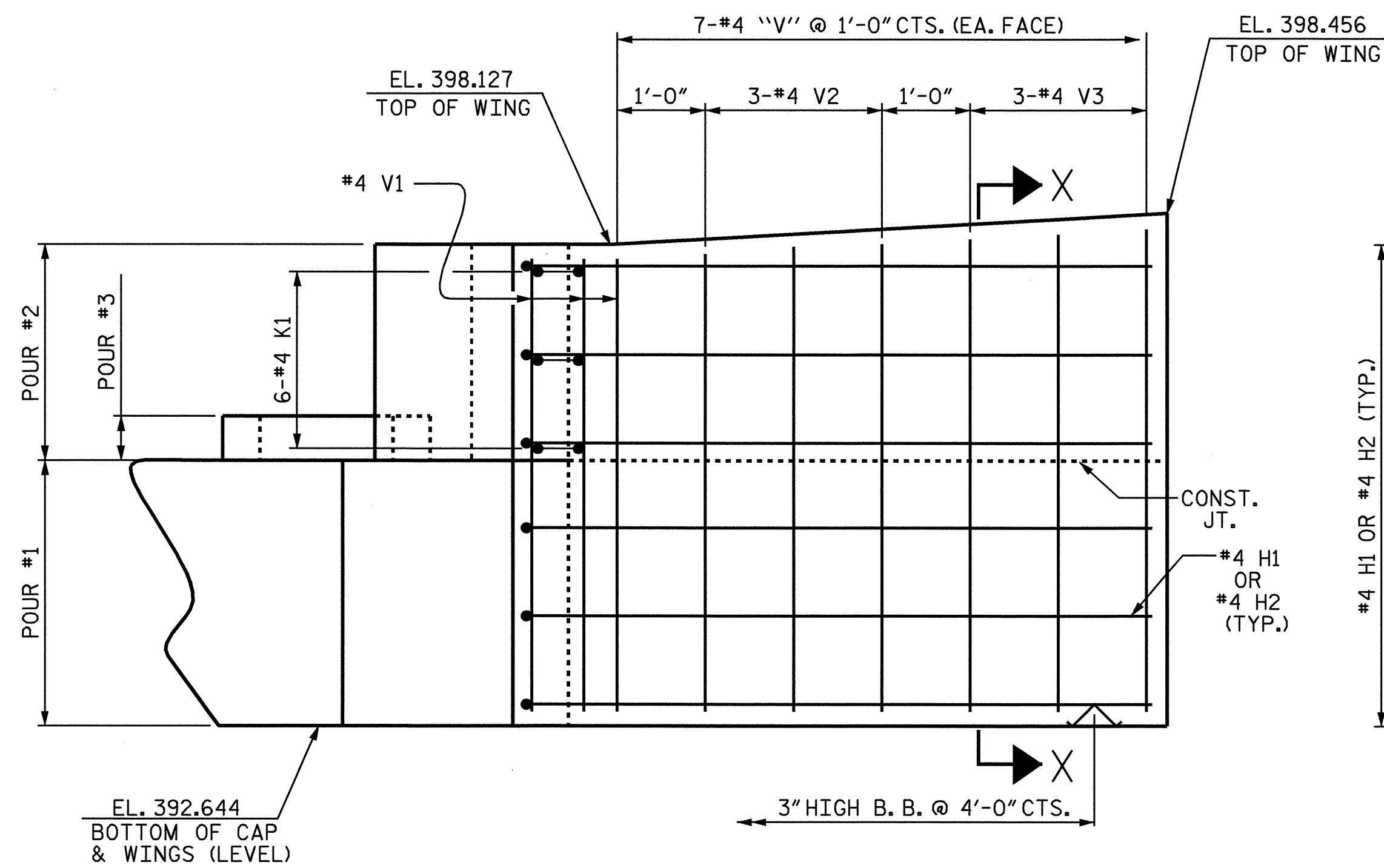




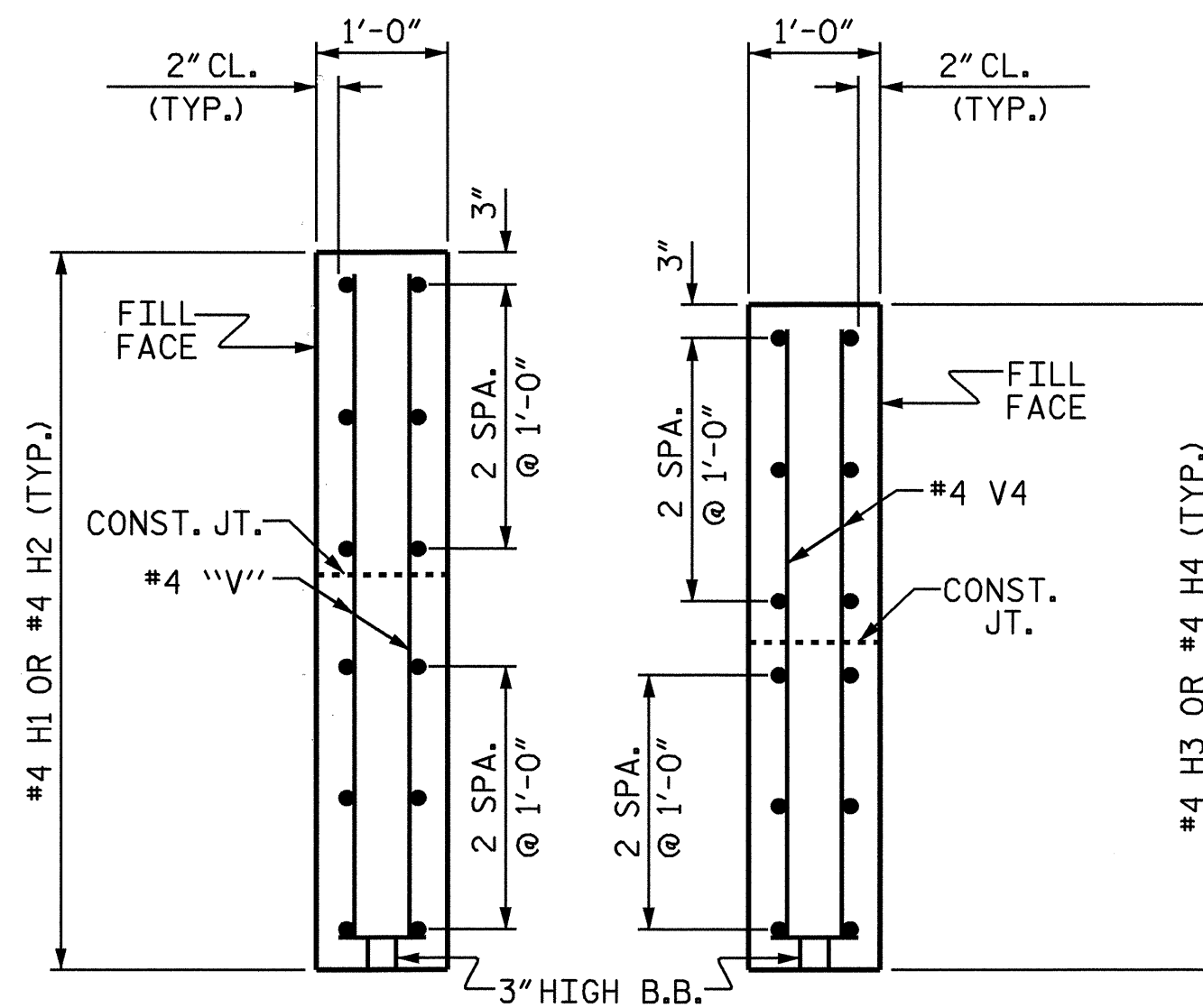
PLAN OF LEFT WING-W1



PLAN OF RIGHT WING-W2

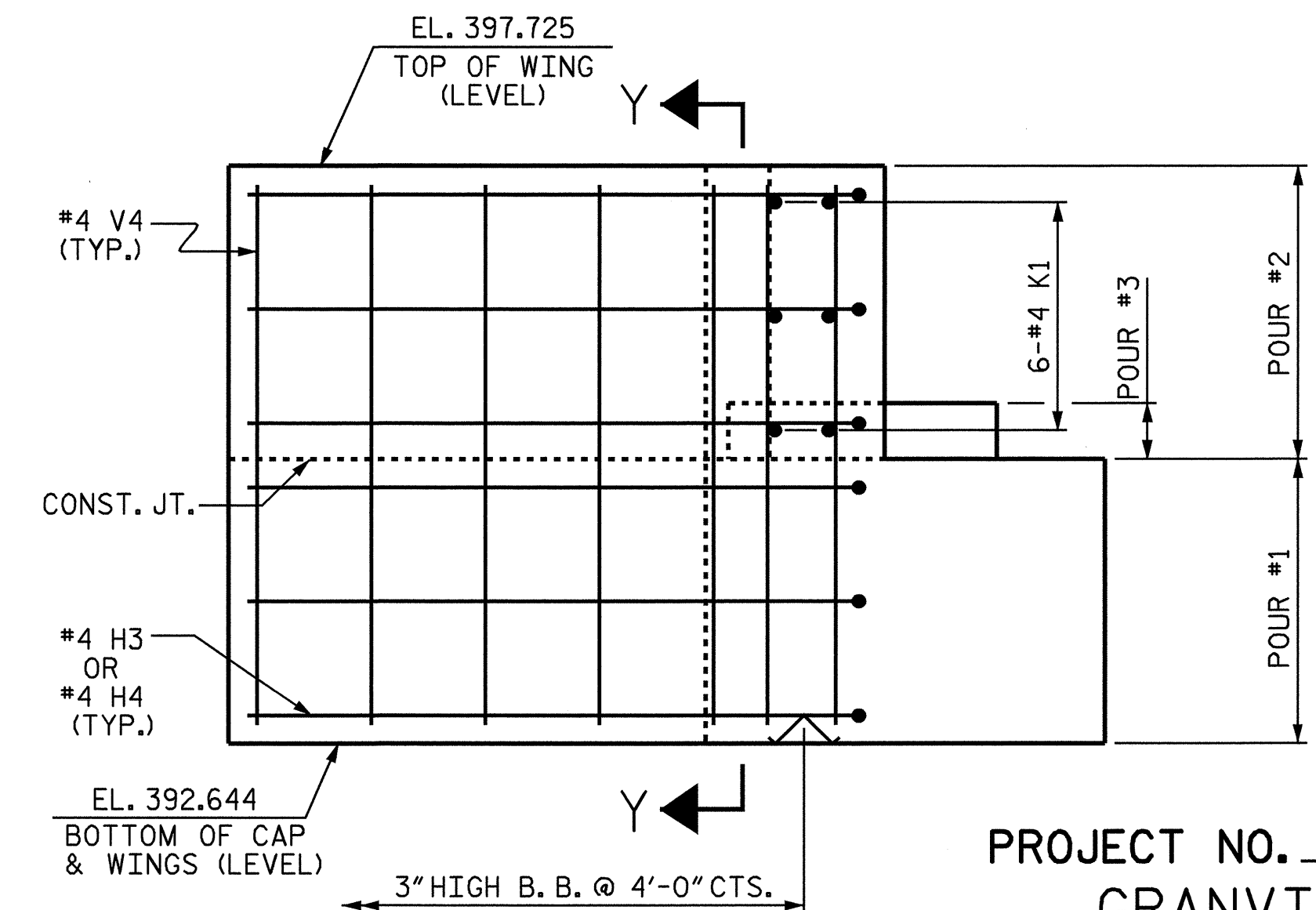


ELEVATION OF LEFT WING-W1



SECTION X-X

SECTION Y-Y

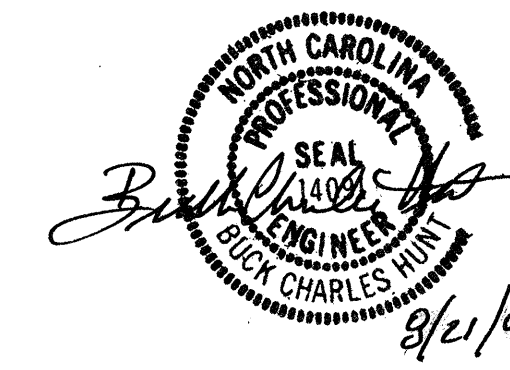


ELEVATION OF RIGHT WING-W2

PROJECT NO. B-4525
GRANVILLE COUNTY
 STATION: 13+64.00 -L-

SHEET 2 OF 3

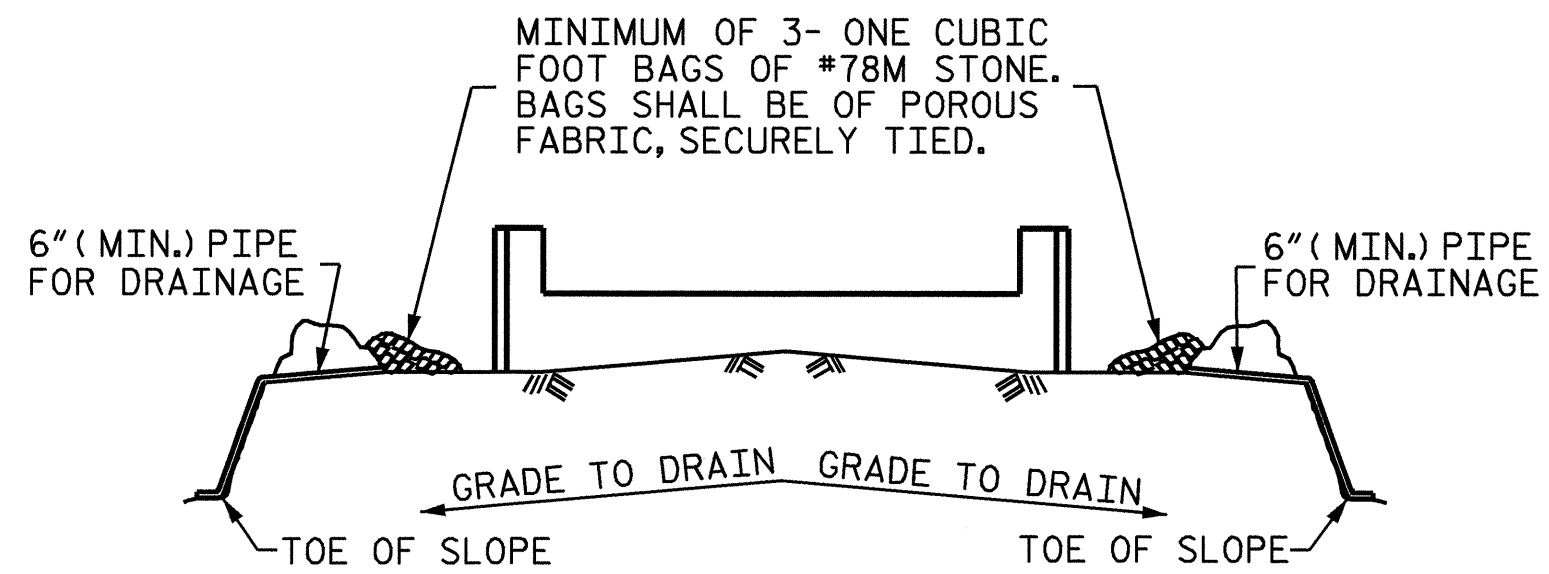
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT #1



DRAWN BY: R. G. EMERSON DATE: 03/08
 CHECKED BY: R. L. CHESSON DATE: 05/08

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REVISIONS						SHEET NO. S-11
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 22
2			4			

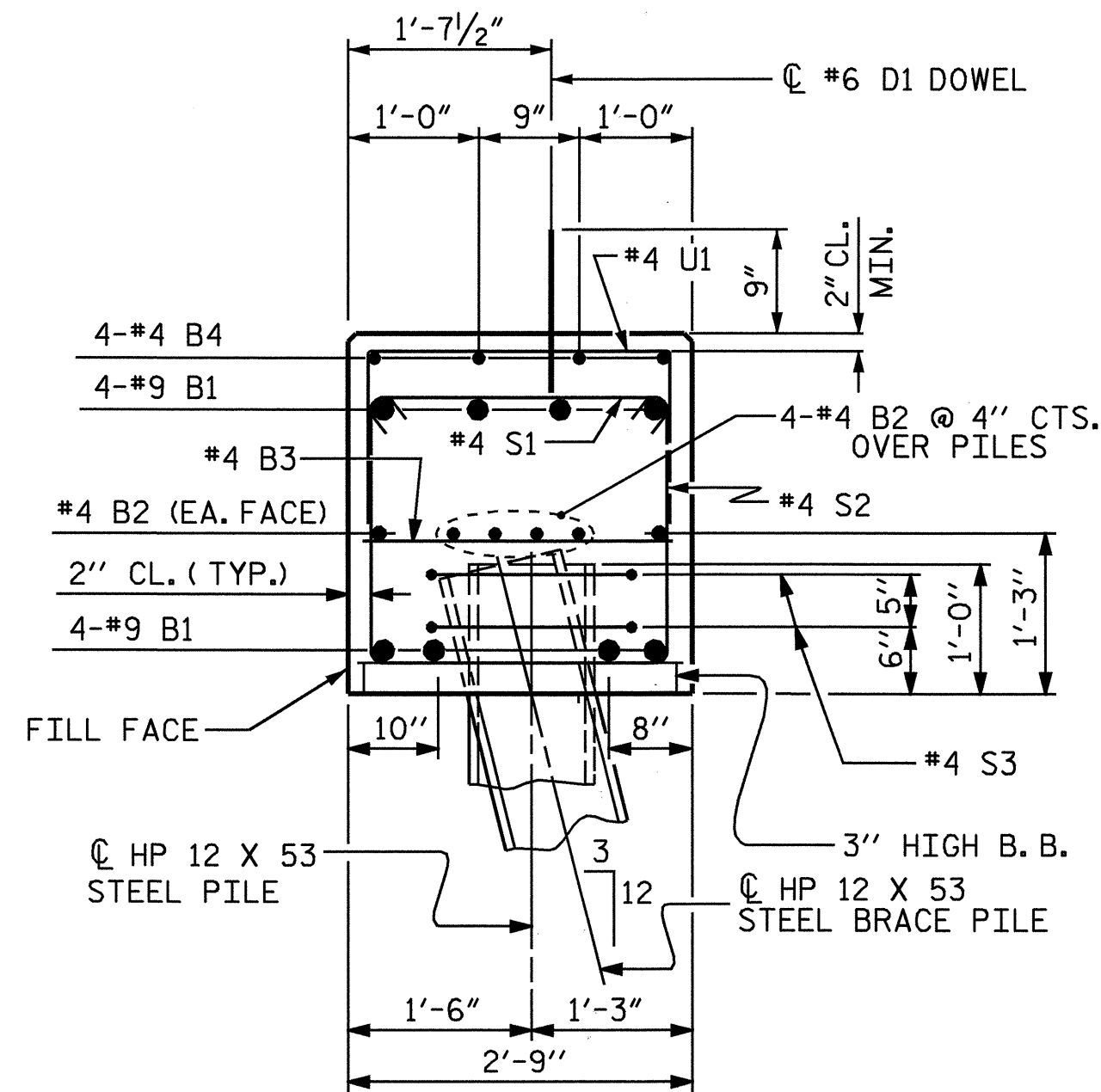


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

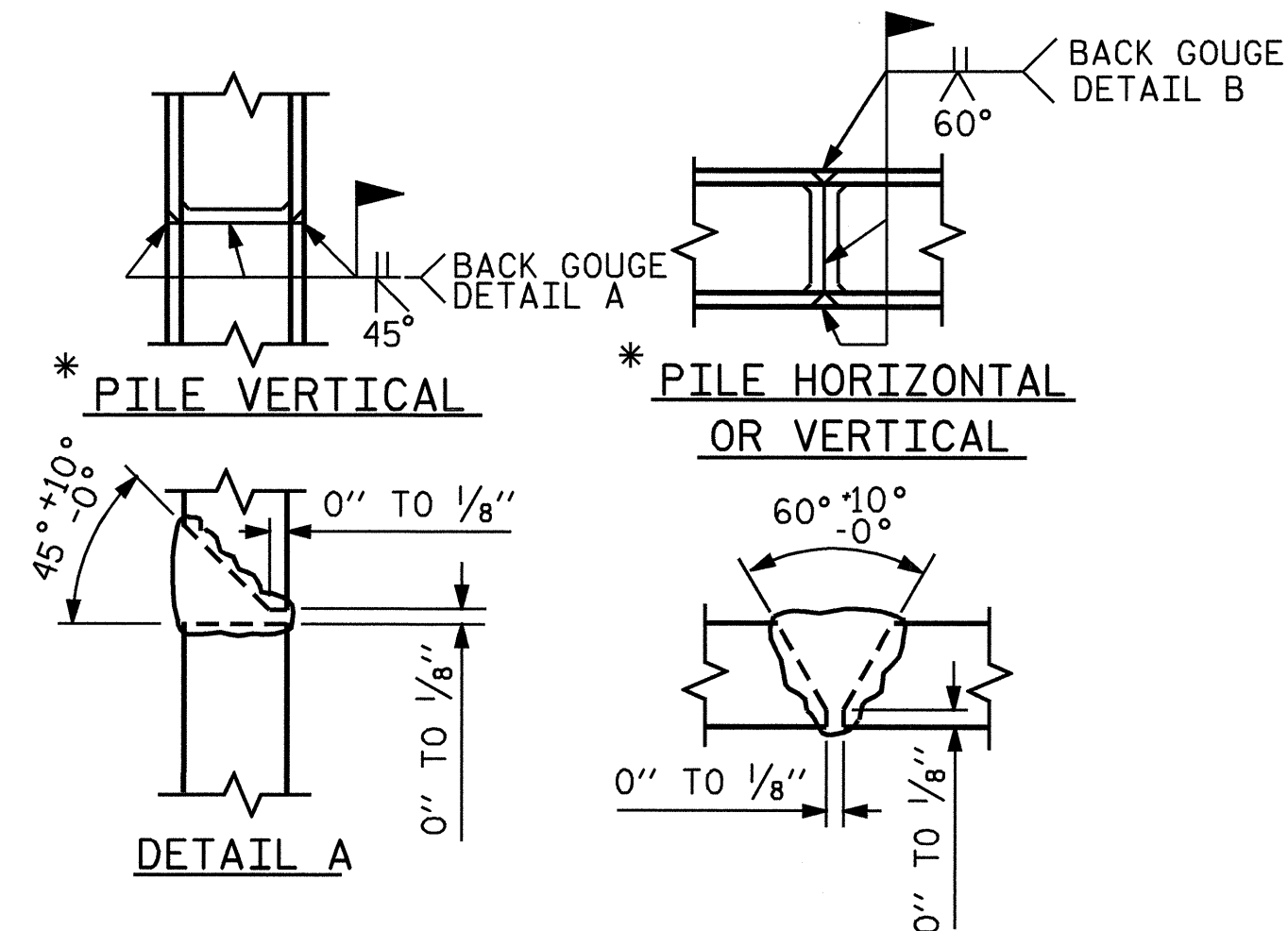
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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



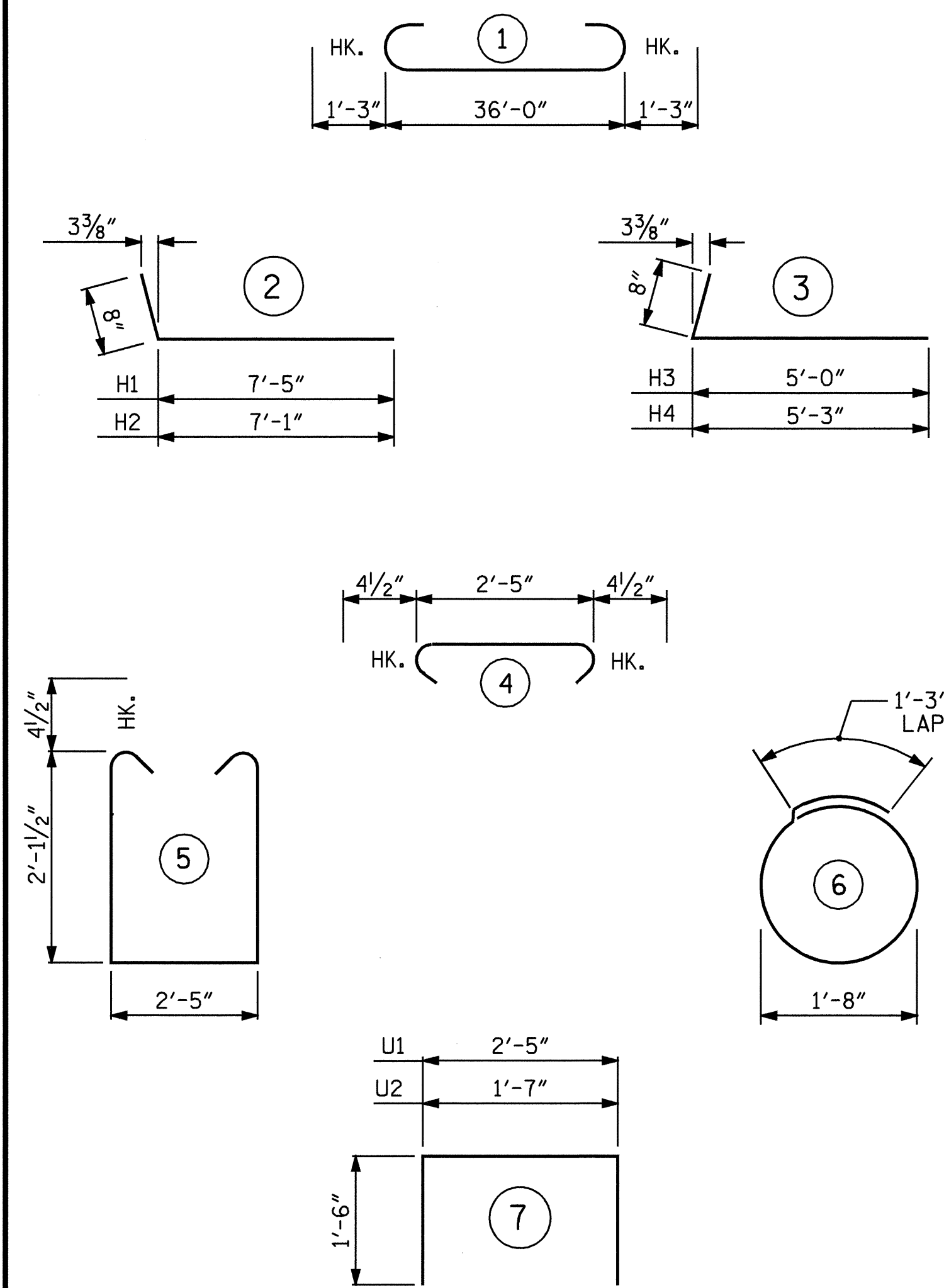
SECTION A-A



* POSITION OF PILE DURING WELDING. DETAIL B

PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	38'-6"	1047
B2	12	#4	STR	19'-3"	154
B3	9	#4	STR	2'-5"	15
B4	4	#4	STR	17'-1"	46
D1	18	#6	STR	1'-6"	41
H1	6	#4	2	8'-1"	32
H2	6	#4	2	7'-9"	32
H3	6	#4	3	5'-8"	23
H4	6	#4	3	5'-11"	24
K1	12	#4	STR	3'-3"	26
S1	32	#4	4	3'-2"	68
S2	32	#4	5	7'-5"	159
S3	12	#4	6	6'-6"	52
U1	12	#4	7	5'-5"	43
U2	4	#4	7	4'-7"	12
V1	12	#4	STR	5'-1"	41
V2	6	#4	STR	5'-3"	21
V3	6	#4	STR	5'-5"	22
V4	20	#4	STR	4'-8"	62

REINFORCING STEEL 1920

CLASS "A" CONCRETE BREAKDOWN

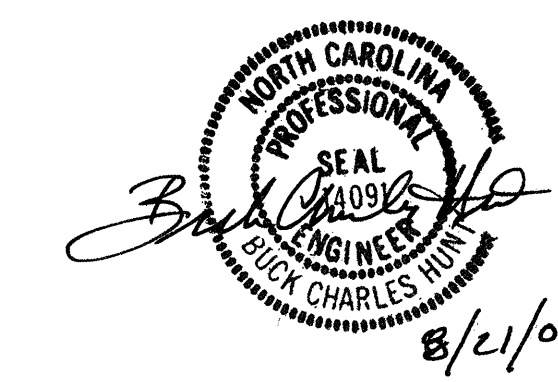
POUR #1 CAP & LOWER WINGS	CU. YDS.	11.4
POUR #2 UPPER WINGS	CU. YDS.	1.8
POUR #3 LATERAL GUIDES	CU. YDS.	0.1
CLASS "A" CONCRETE TOTAL	CU. YDS.	13.3

HP 12X53 STEEL PILES NO. 6 LIN. FT. 105

PROJECT NO. B-4525
GRANVILLE COUNTY
 STATION: 13+64.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT #1



DRAWN BY: R. G. EMERSON DATE: 03/08
 CHECKED BY: R. L. CHESSON DATE: 05/08

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			22

NOTES

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

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

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

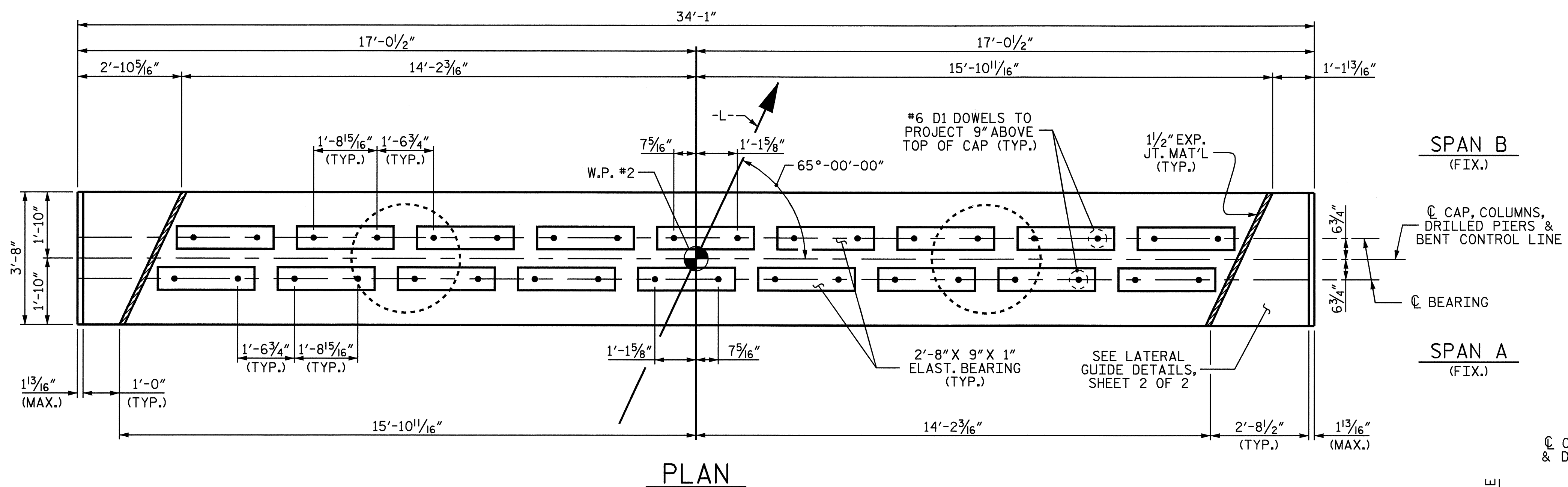
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.

SPlicing OF THE LONGITUDINAL BARS IN THE DRILLED PIERS WILL NOT BE PERMITTED.

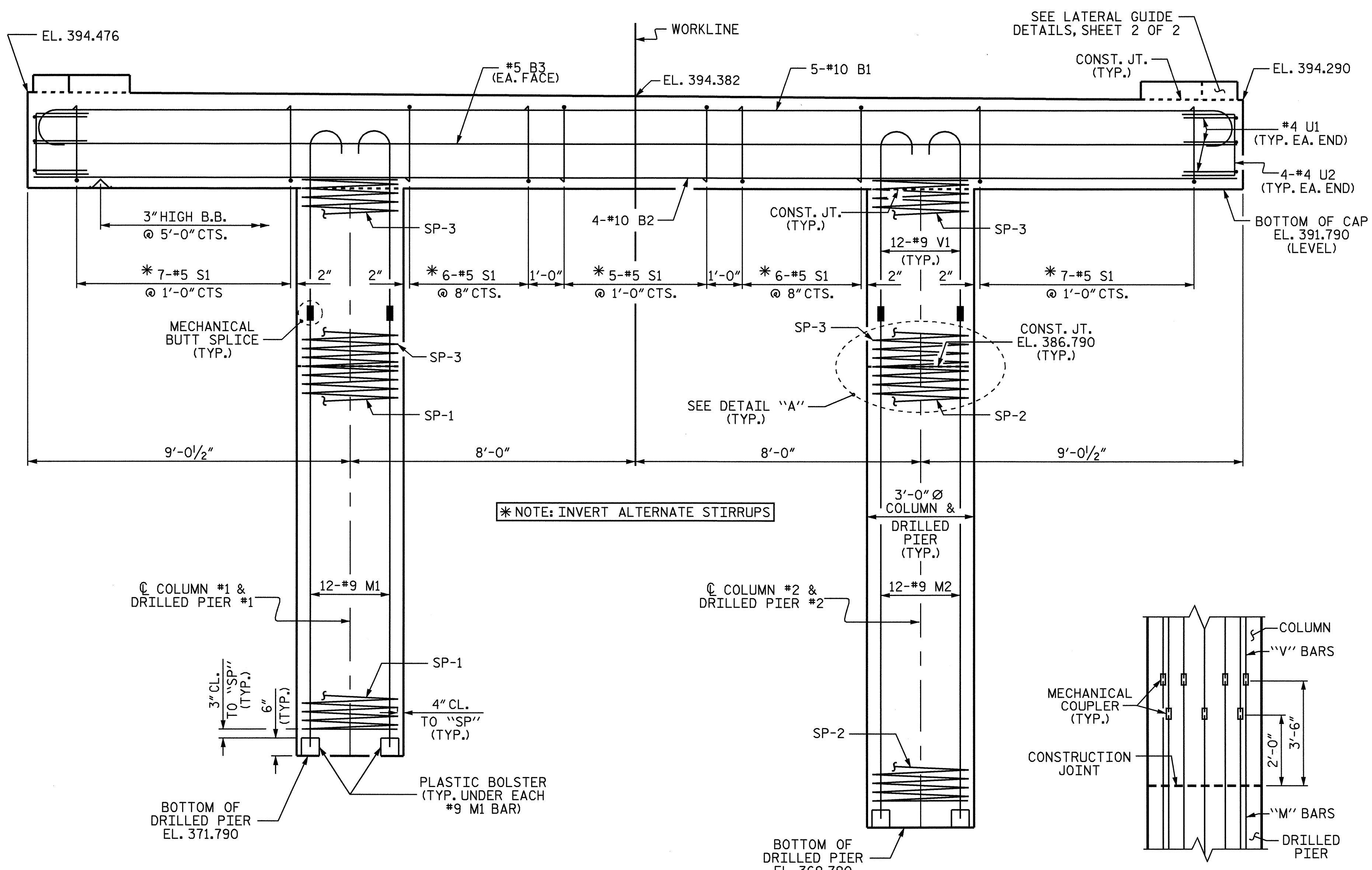
MECHANICAL COUPLERS SHALL BE USED TO JOIN THE LONGITUDINAL DRILLED PIER REINFORCING STEEL TO THE COLUMN REINFORCING STEEL. THE HEIGHT OF THE COUPLERS SHALL BE STAGGERED ON ALTERNATING BARS BY 1'-6" AND THE DRILLED PIER AND COLUMN STEEL SHALL BE CUT ACCORDINGLY. SEE SPECIAL PROVISIONS FOR MECHANICAL BUTT SPlicing FOR REINFORCING STEEL.

FOR PERMANENT STEEL CASING, SEE SPECIAL PROVISION FOR DRILLED PIERS.

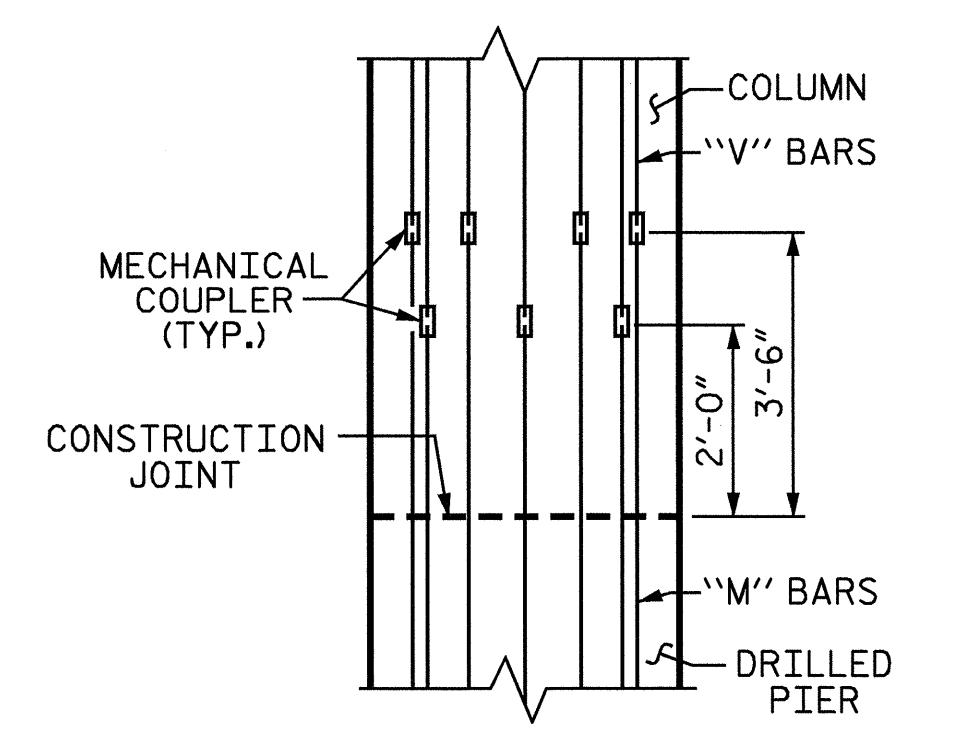
FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.



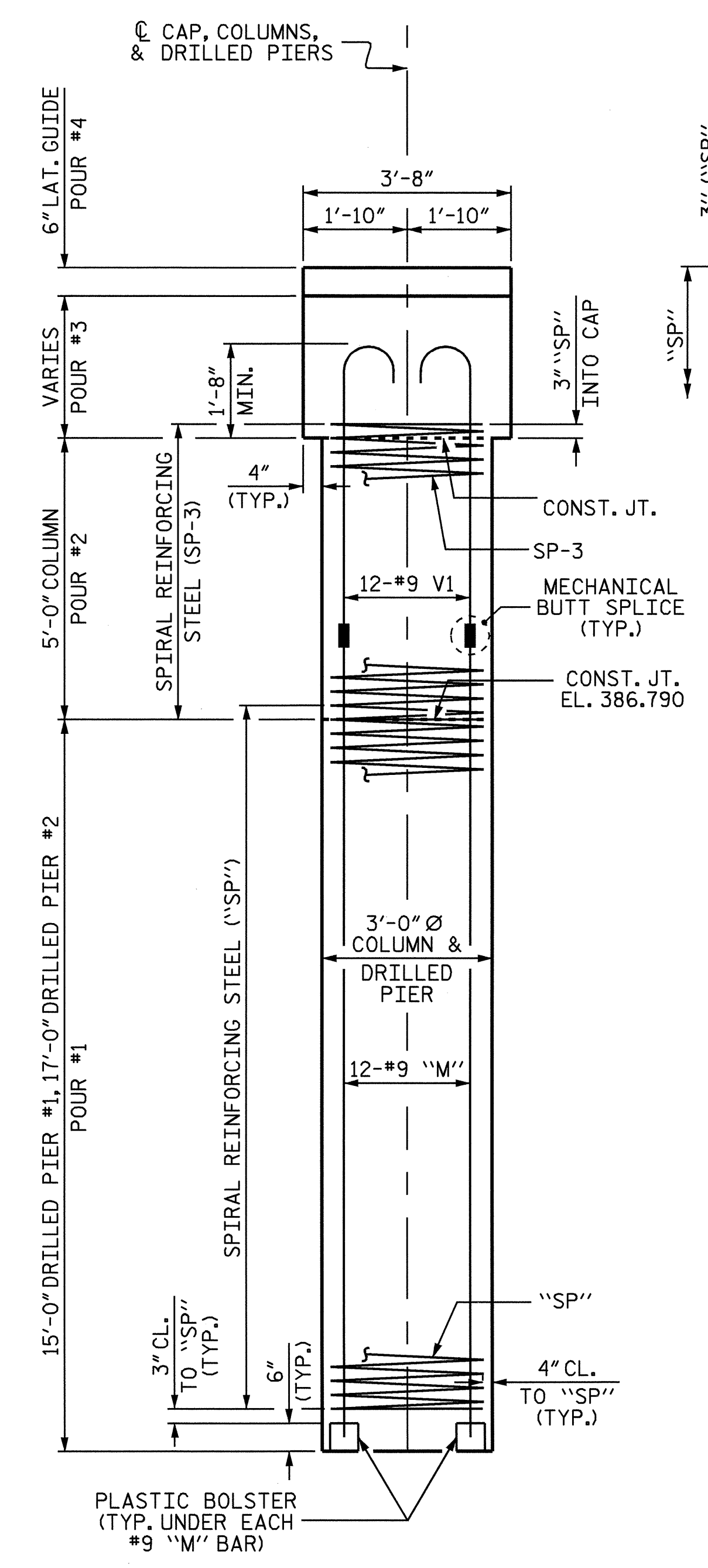
PLAN



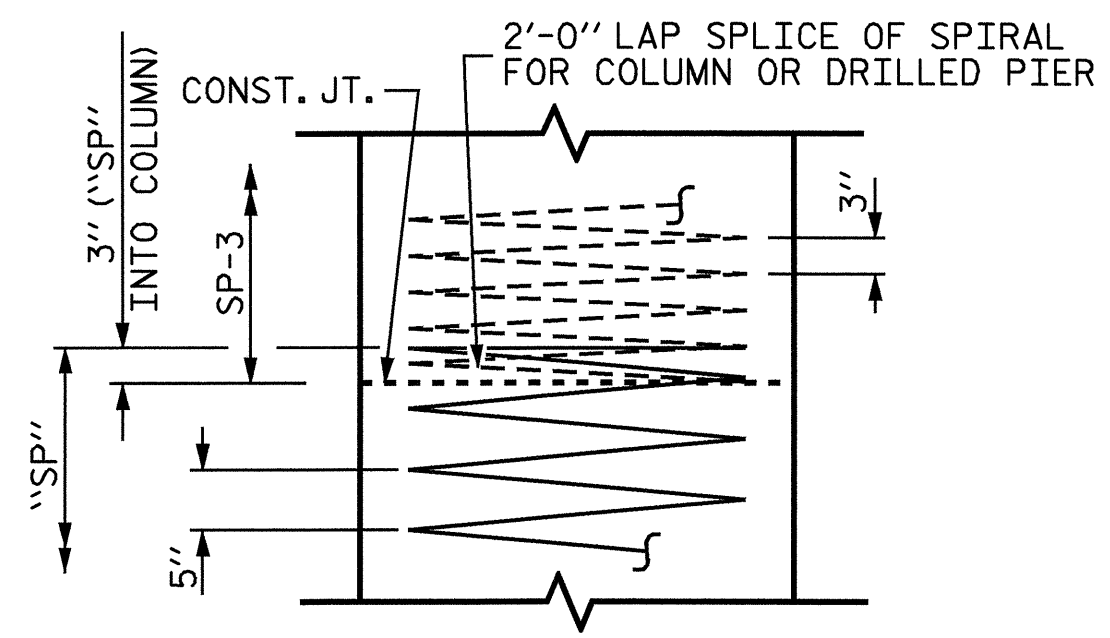
ELEVATION



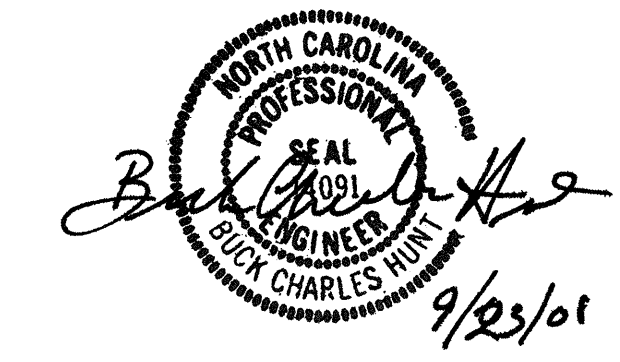
MECHANICAL COUPLER STAGGER DETAIL



END ELEVATION



CONSTRUCTION JOINT DETAIL "A"

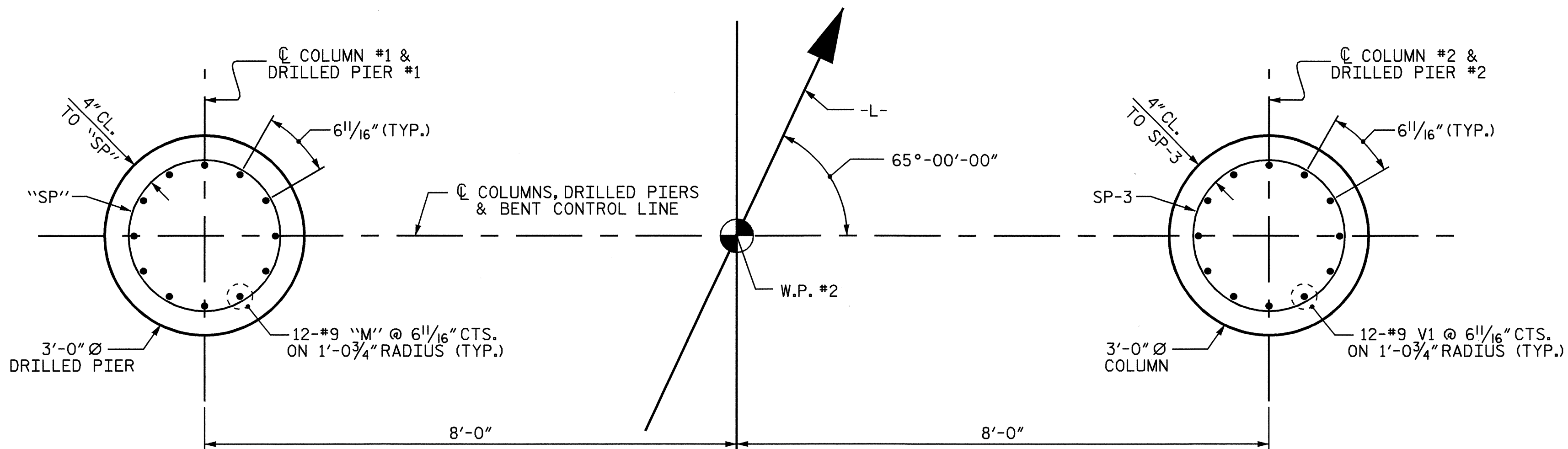


PROJECT NO. B-4525
 GRANVILLE COUNTY
 STATION: 13+64.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT #1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-13 TOTAL SHEETS 22

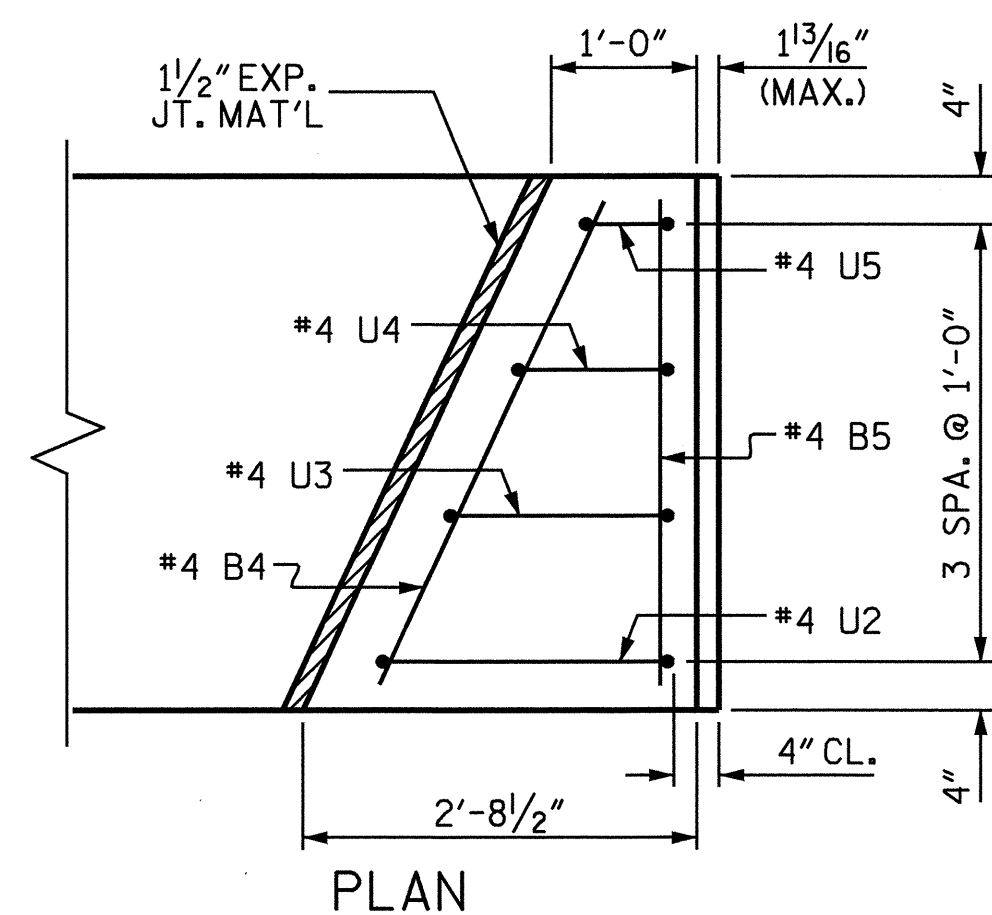
DRAWN BY : S. DOMBROWSKI DATE : 05/08
 CHECKED BY : R.G. EMERSON DATE : 05/08



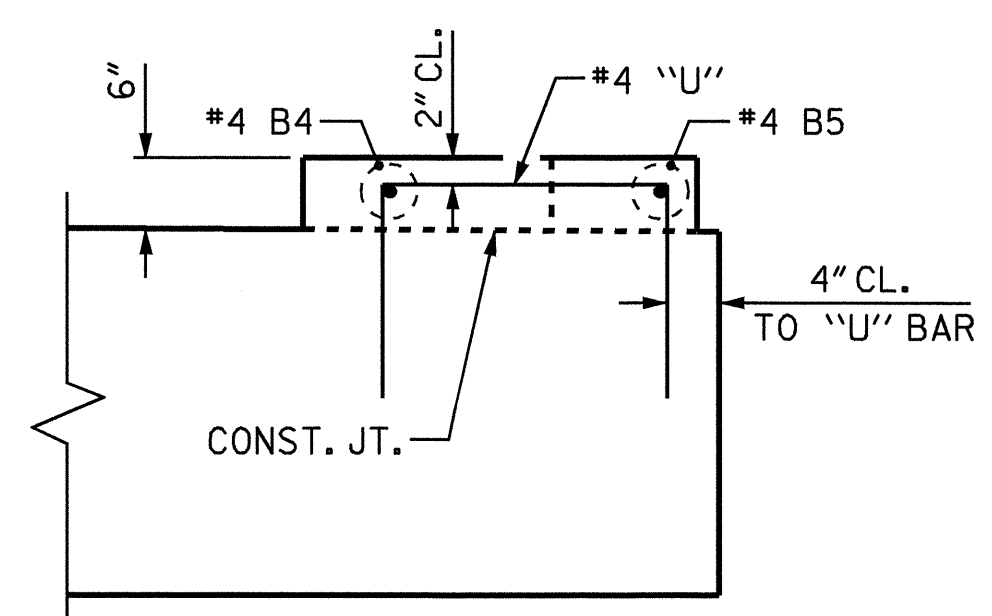
PLAN OF DRILLED PIERS

PLAN OF COLUMNS & DRILLED PIERS

PLAN OF COLUMNS

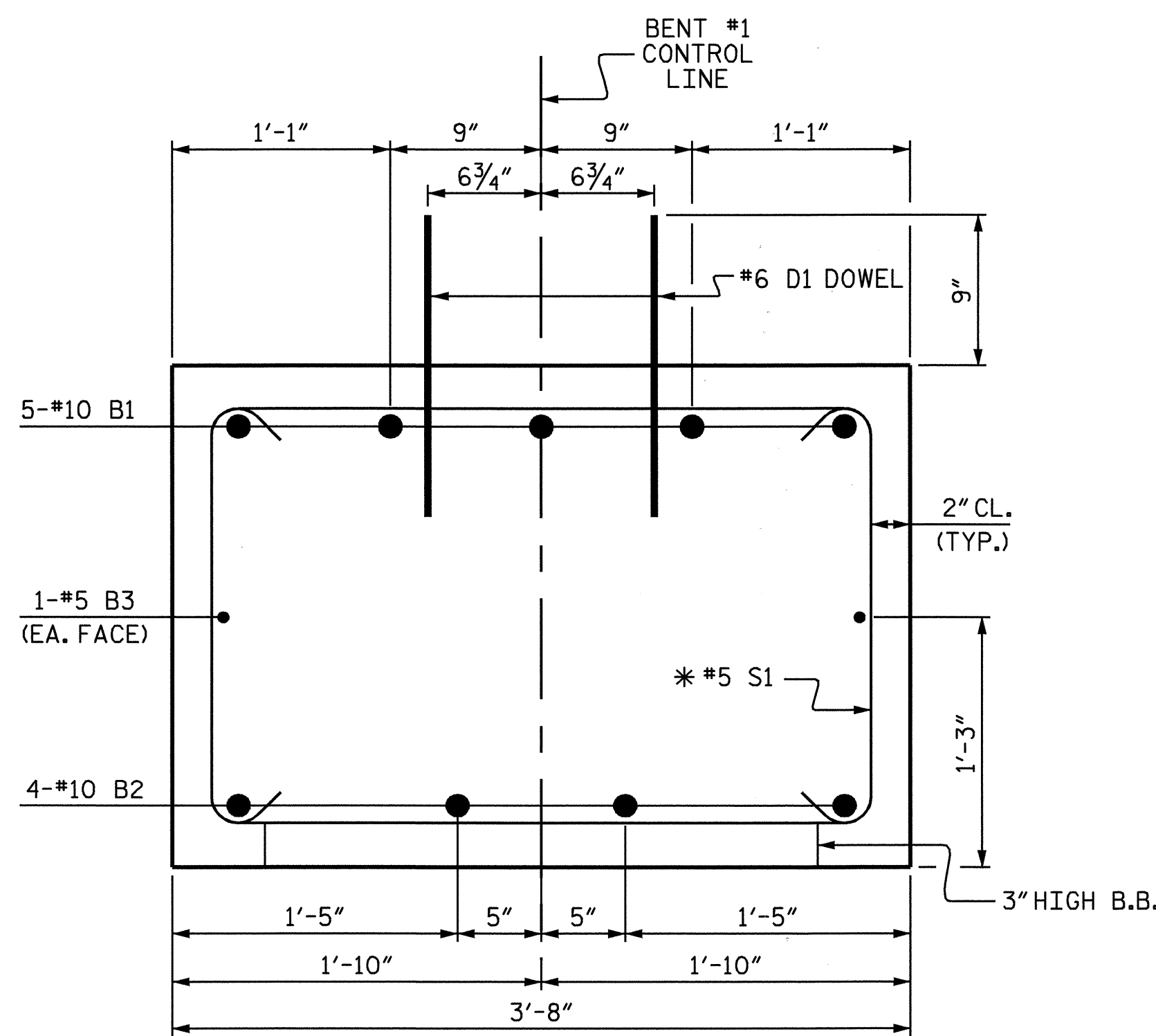


PLAN



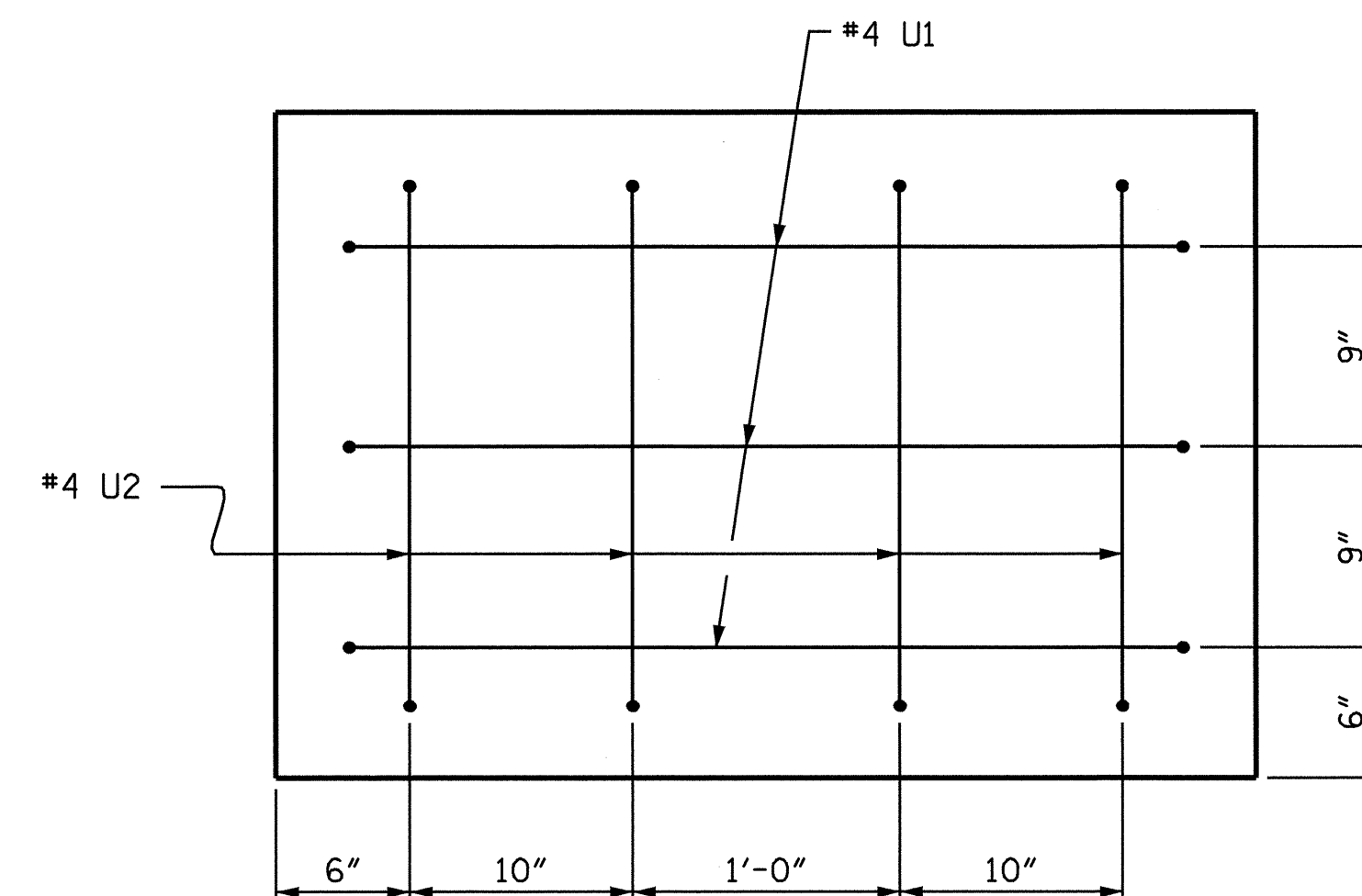
ELEVATION

LATERAL GUIDE DETAILS



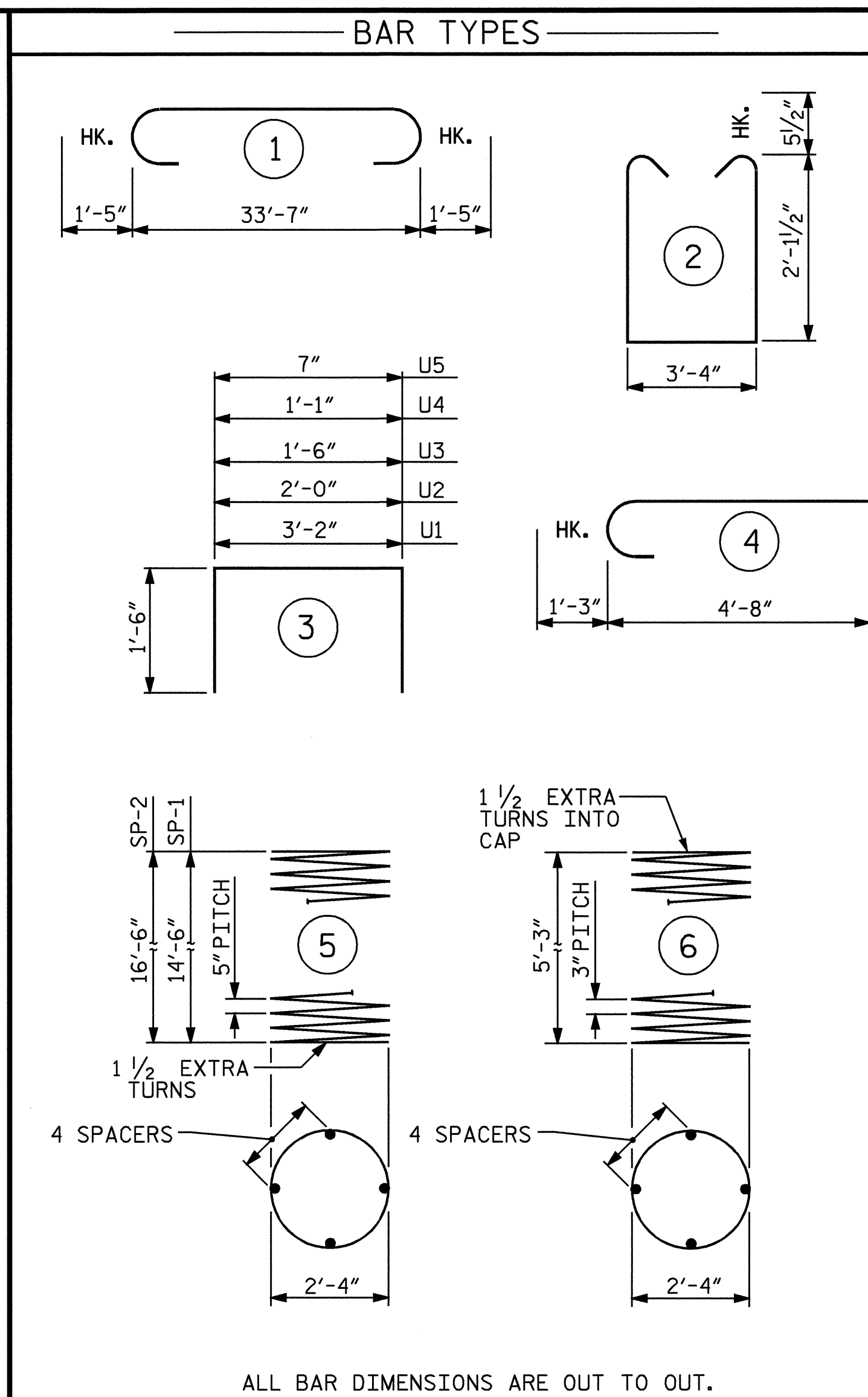
SECTION THRU CAP

* INVERT ALTERNATE STIRRUPS



CAP END VIEW

(TYP. EA. END)



** THE SP-1 AND SP-2 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.

*** THE SP-3 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.

BILL OF MATERIAL BENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	5	#10	1	36'-5"	784
B2	4	#10	STR	33'-9"	581
B3	2	#5	STR	33'-9"	70
B4	2	#4	STR	3'-7"	5
B5	2	#4	STR	3'-4"	4
D1	36	#6	STR	1'-6"	81
M1	12	#9	STR	20'-9"	847
M2	12	#9	STR	22'-9"	928
S1	31	#5	2	8'-6"	275
U1	6	#4	3	6'-2"	25
U2	10	#4	3	5'-0"	33
U3	2	#4	3	4'-6"	6
U4	2	#4	3	4'-1"	5
U5	2	#4	3	3'-7"	5
V1	24	#9	4	5'-11"	483

TOTAL REINFORCING STEEL LBS. 4132

SP-1	1	***	5	262'-1"	273
SP-2	1	***	5	296'-2"	309
SP-3	2	**	6	162'-2"	217

TOTAL SPIRAL COLUMN REINFORCING STEEL LBS. 799

CLASS A CONCRETE BREAKDOWN			
POUR #2 (COLUMNS)			2.6 C.Y.
POUR #3 (BENT CAP)			12.0 C.Y.
POUR #4 (LAT. GUIDE)			0.3 C.Y.
TOTAL			14.9 C.Y.

DRILLED PIER QUANTITIES

DRILLED PIER CONCRETE		
POUR #1 (DRILLED PIERS)		8.4 C.Y.
3'-0" Ø DRILLED PIERS IN SOIL		20.0 LIN. FT.
3'-0" Ø DRILLED PIERS NOT IN SOIL		12.0 LIN. FT.

PERMANENT STEEL CASING FOR 3'-0" DIA DRILLED PIER 17.6 LIN. FT.

CSL TUBES: 148.0 LIN. FT.

PROJECT NO. B-4525
 GRANVILLE COUNTY
 STATION: 13+64.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT #1



DRAWN BY: S. DOMBROWSKI DATE: 05/08
 CHECKED BY: R.G. EMERSON DATE: 05/08

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 sdombrowski

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS 22
2			4			

NOTES

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

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

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

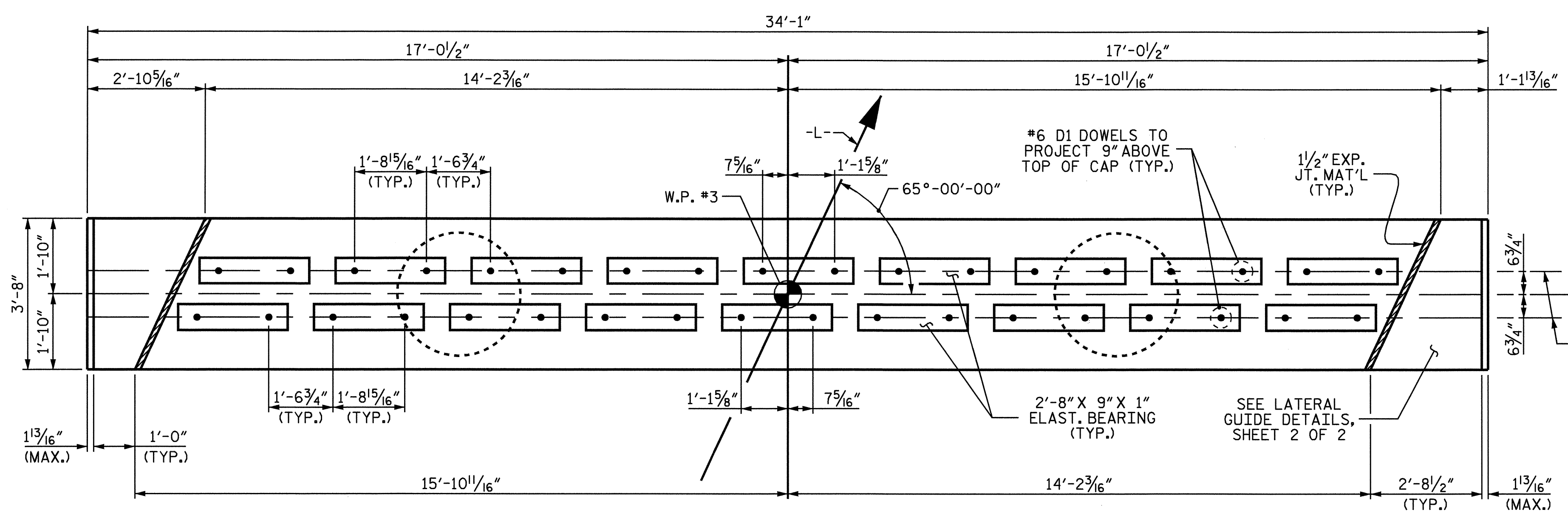
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.

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

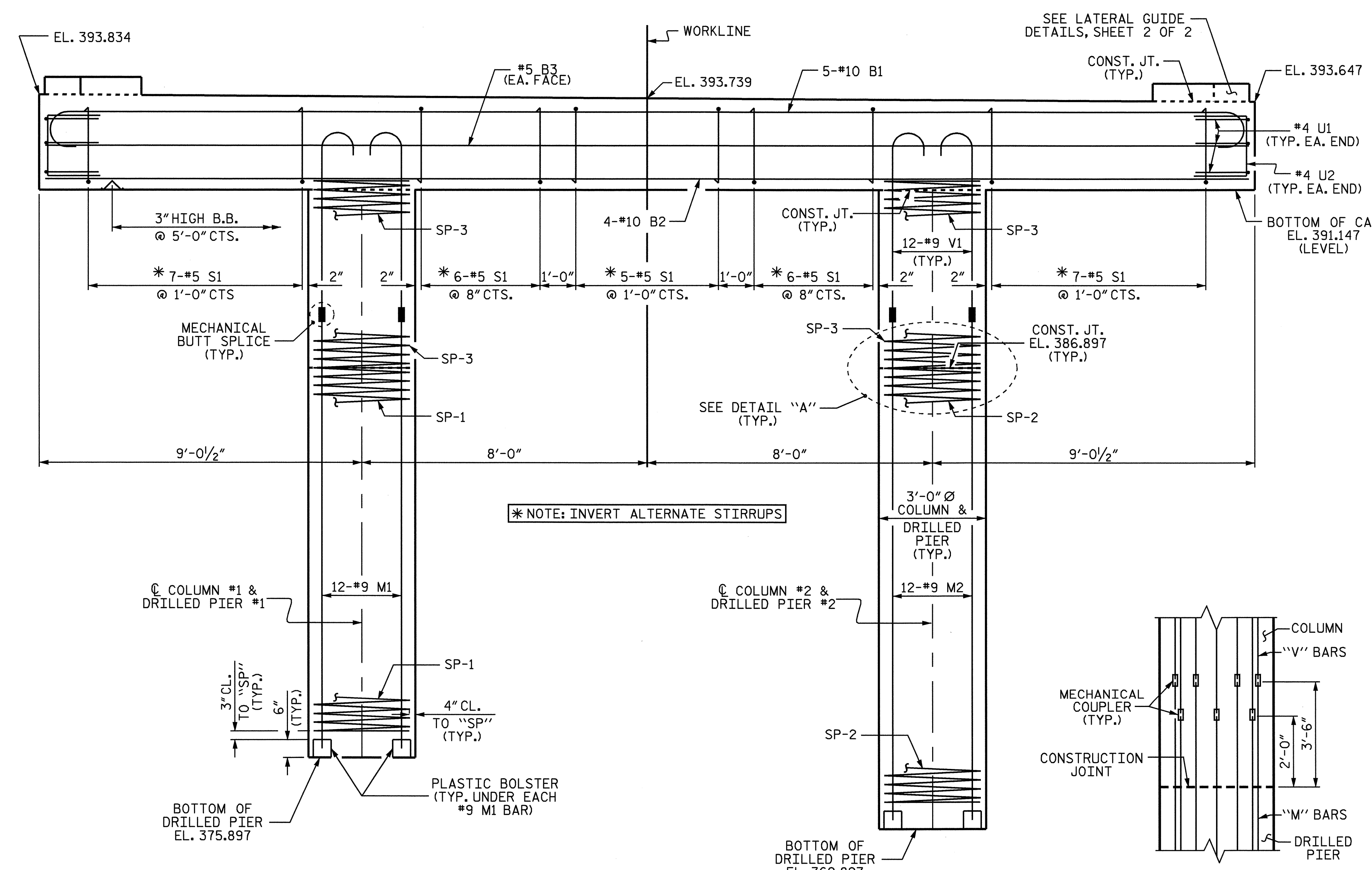
MECHANICAL COUPLERS SHALL BE USED TO JOIN THE LONGITUDINAL DRILLED PIER REINFORCING STEEL TO THE COLUMN REINFORCING STEEL. THE HEIGHT OF THE COUPLERS SHALL BE STAGGERED ON ALTERNATING BARS BY 1'-6" AND THE DRILLED PIER AND COLUMN STEEL SHALL BE CUT ACCORDINGLY. SEE SPECIAL PROVISIONS FOR MECHANICAL BUTT SPLICING FOR REINFORCING STEEL.

FOR PERMANENT STEEL CASING, SEE SPECIAL PROVISION FOR DRILLED PIERS.

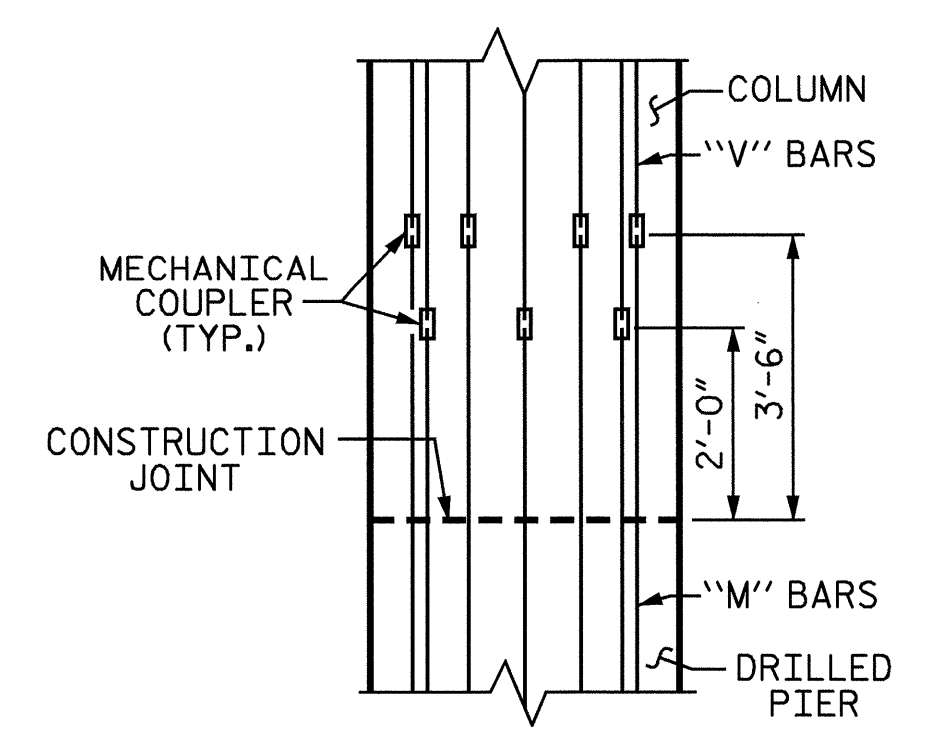
FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.



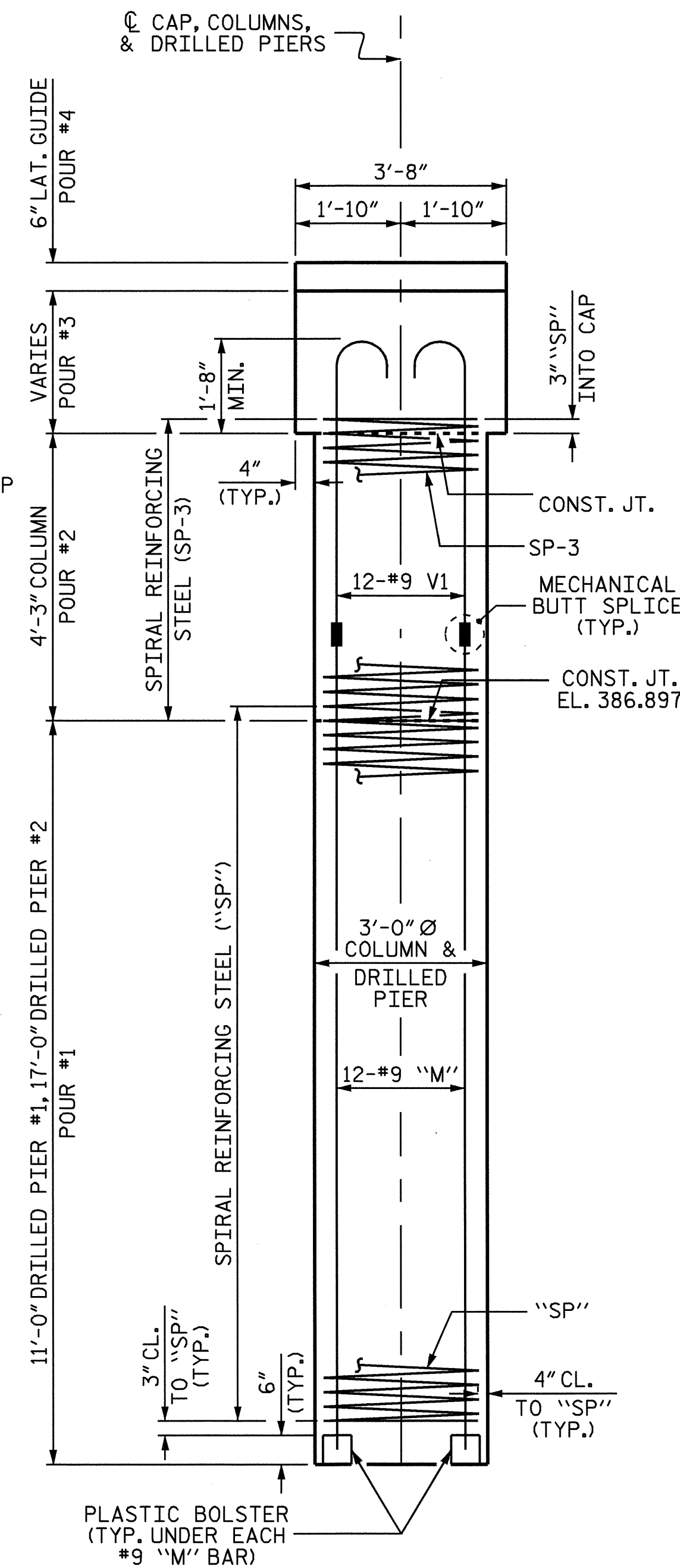
PLAN



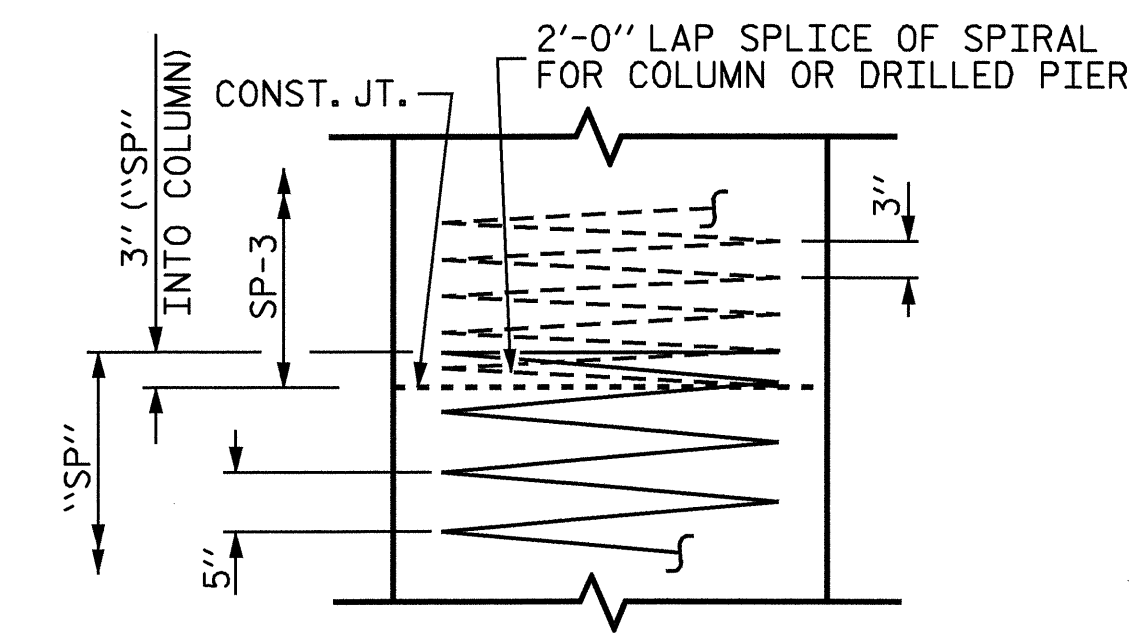
ELEVATION



MECHANICAL COUPLER STAGGER DETAIL



END ELEVATION



CONSTRUCTION JOINT DETAIL "A"



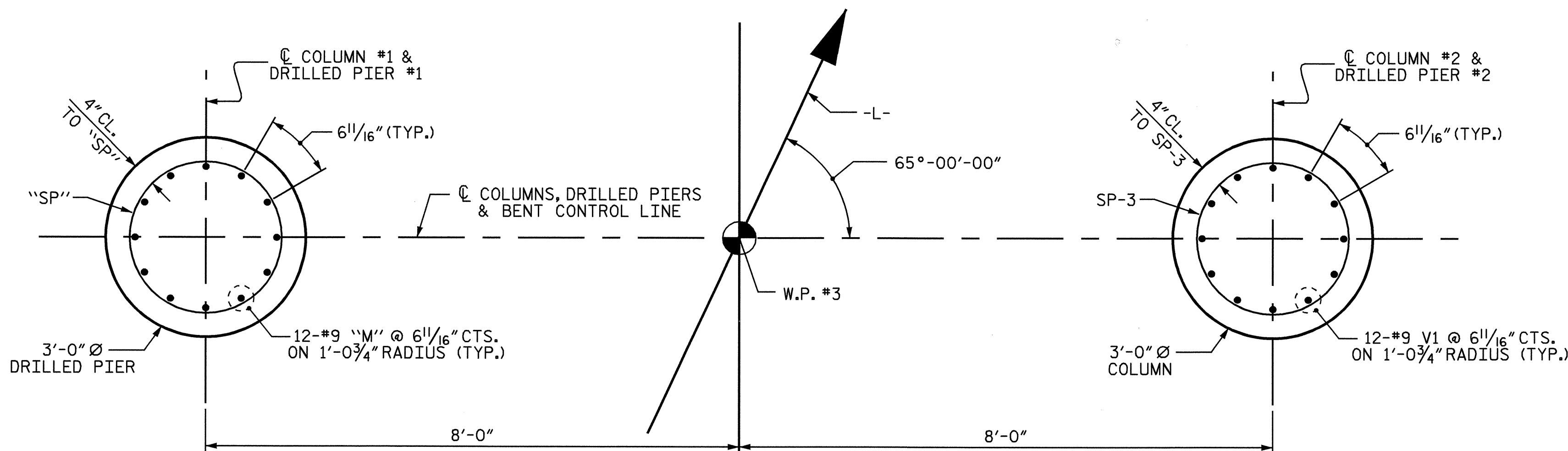
PROJECT NO. B-4525
 GRANVILLE COUNTY
 STATION: 13+64.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT #2

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15	
1			3			TOTAL	22
2			4				

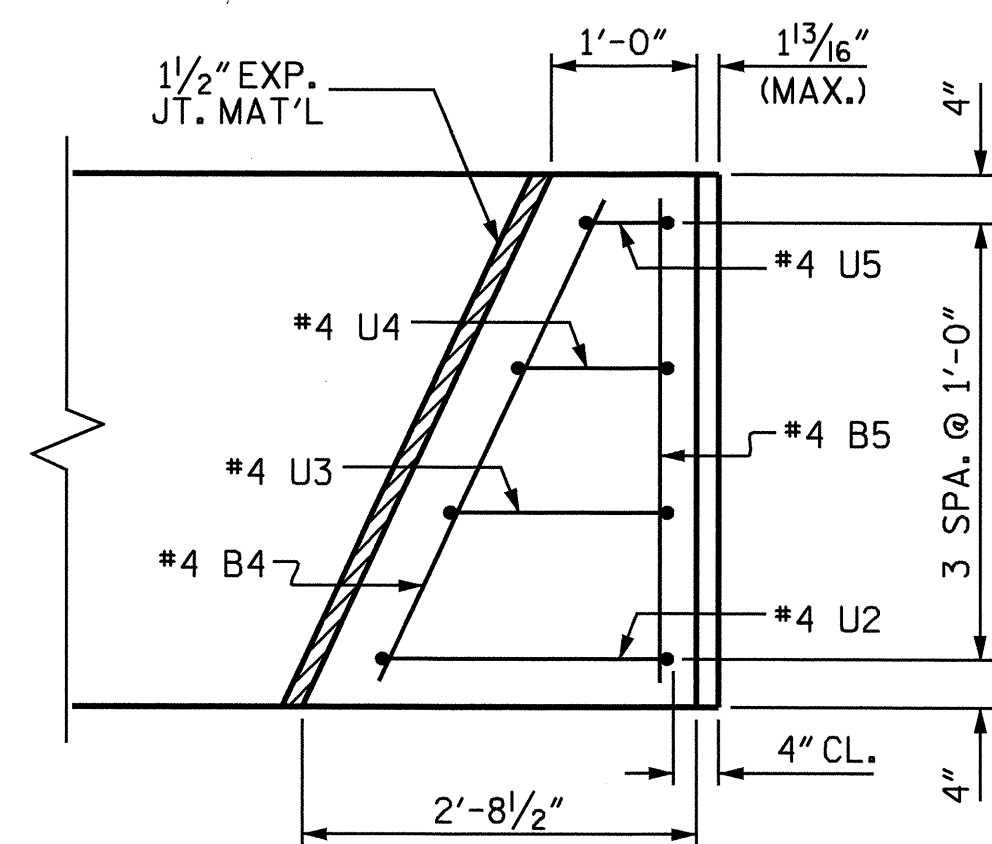
DRAWN BY : S. DOMBROWSKI DATE : 05/08
 CHECKED BY : R.G. EMERSON DATE : 05/08



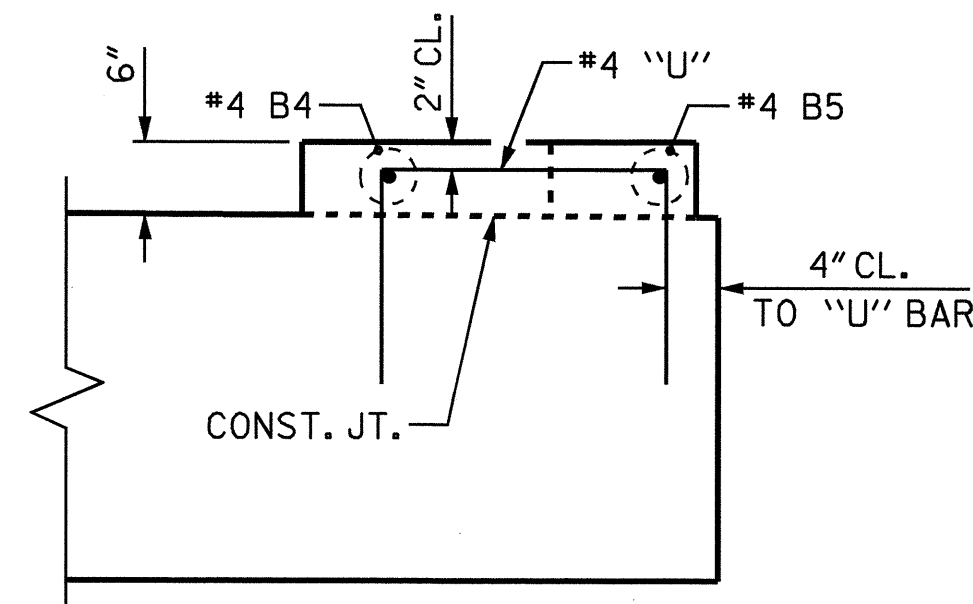
PLAN OF DRILLED PIERS

PLAN OF COLUMNS & DRILLED PIERS

PLAN OF COLUMNS

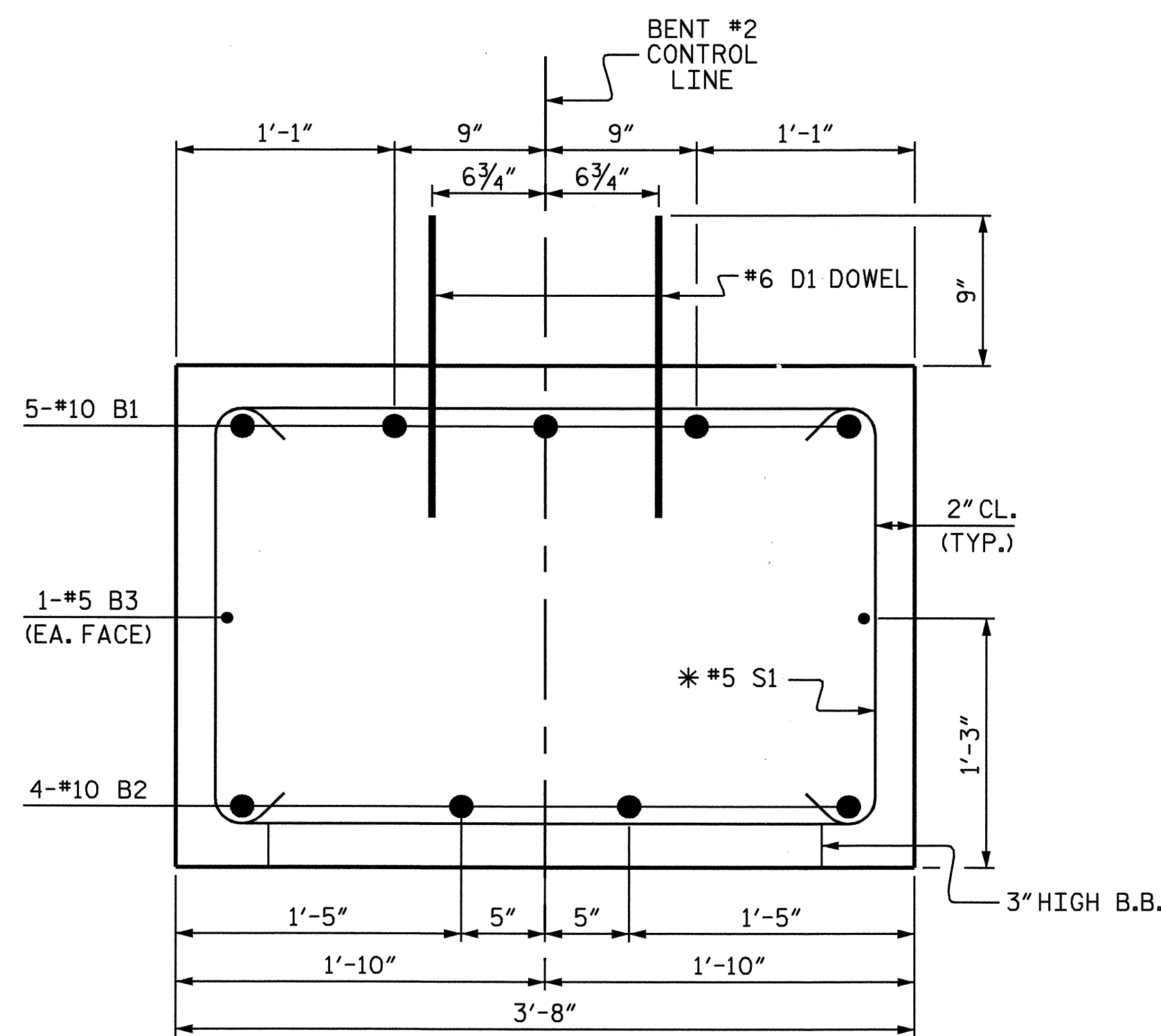


PLAN



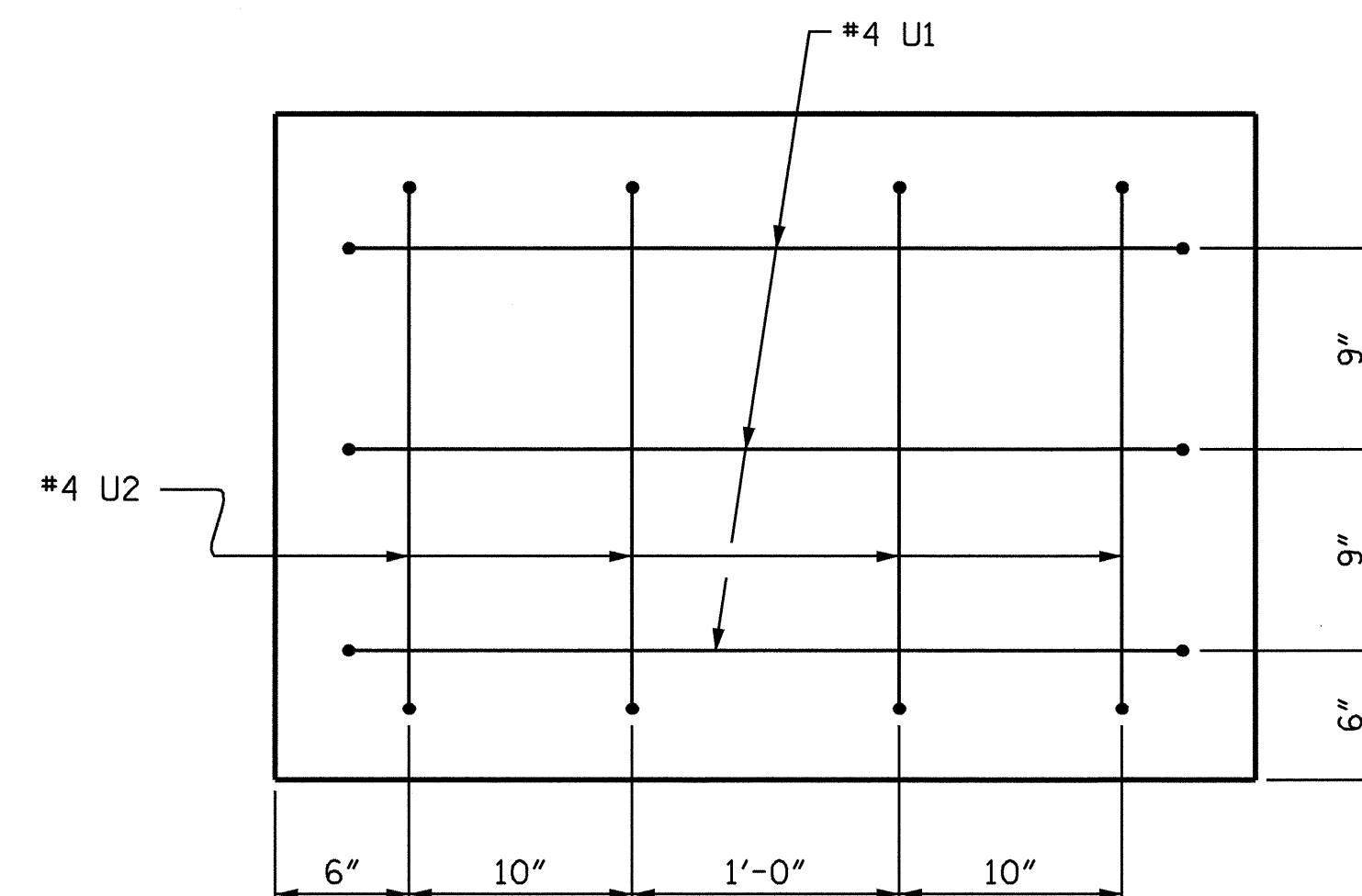
ELEVATION

LATERAL GUIDE DETAILS



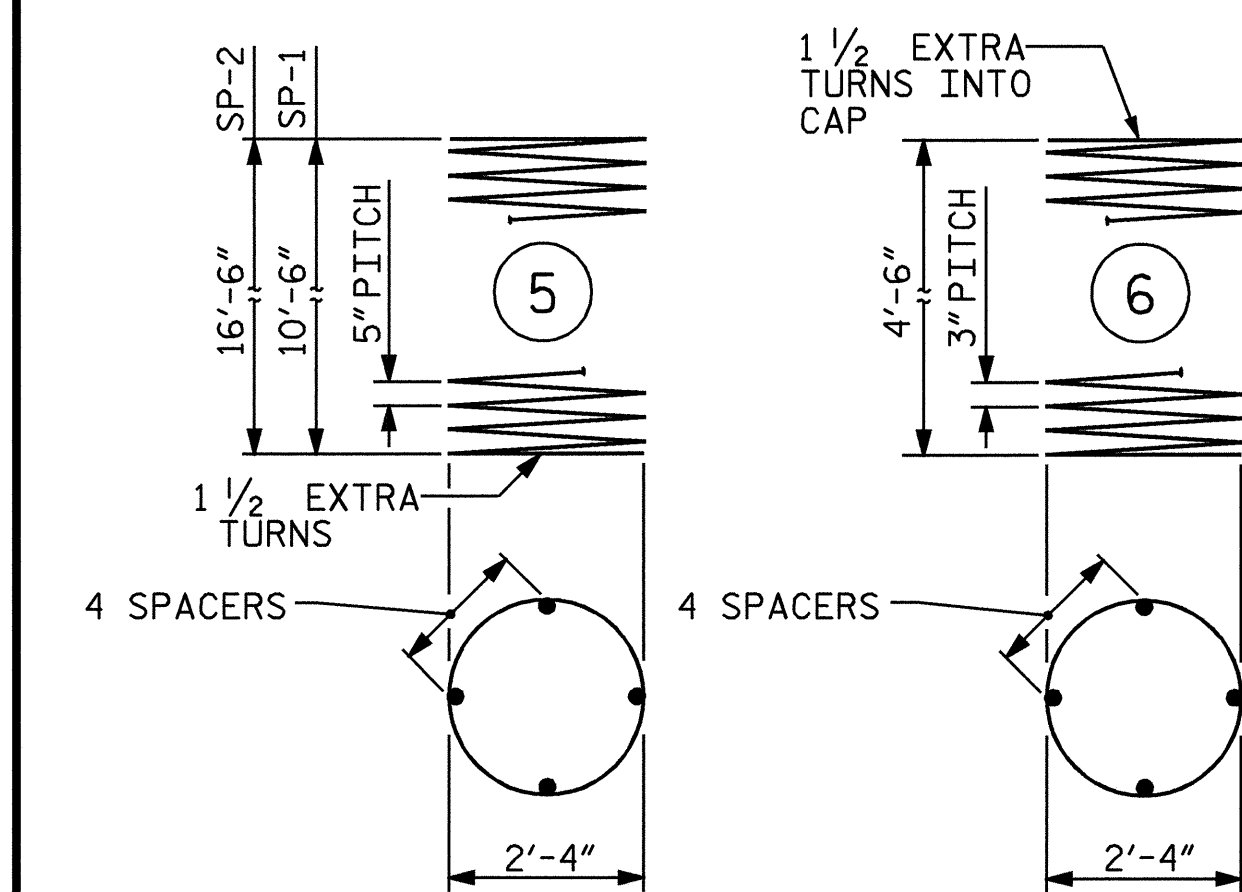
SECTION THRU CAP

* INVERT ALTERNATE STIRRUPS



CAP END VIEW

(TYP. EA. END)



ALL BAR DIMENSIONS ARE OUT TO OUT.

** THE SP-1 AND SP-2 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.

*** THE SP-3 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.

BAR TYPES

BILL OF MATERIAL BENT #2

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	#10		36'-5"	784
B2	#10	STR	33'-9"	581
B3	#5	STR	33'-9"	70
B4	#4	STR	3'-7"	5
B5	#4	STR	3'-4"	4
D1	#6	STR	1'-6"	81
M1	#9	STR	16'-9"	683
M2	#9	STR	22'-9"	928
S1	#5	2	8'-6"	275
U1	#4	3	6'-2"	25
U2	#4	3	5'-0"	33
U3	#4	3	4'-6"	6
U4	#4	3	4'-1"	5
U5	#4	3	3'-7"	5
V1	#9	4	5'-2"	422

TOTAL REINFORCING STEEL LBS. 3907

SP-1	1	***	5	192'-1"	200
SP-2	1	***	5	296'-2"	309
SP-3	2	**	6	140'-6"	188

TOTAL SPIRAL COLUMN REINFORCING STEEL LBS. 697

CLASS A CONCRETE BREAKDOWN		
POUR #2 (COLUMNS)		2.2 C.Y.
POUR #3 (BENT CAP)		12.0 C.Y.
POUR #4 (LAT. GUIDE)		0.3 C.Y.
TOTAL		14.5 C.Y.

DRILLED PIER QUANTITIES

DRILLED PIER CONCRETE	
POUR #1 (DRILLED PIERS)	7.3 C.Y.
3'-0" Ø DRILLED PIERS IN SOIL	16.0 LIN. FT.
3'-0" Ø DRILLED PIERS NOT IN SOIL	12.0 LIN. FT.

PERMANENT STEEL CASING 13.8 LIN. FT. FOR 3'-0" DIA DRILLED PIER

CSL TUBES: 132.0 LIN. FT.

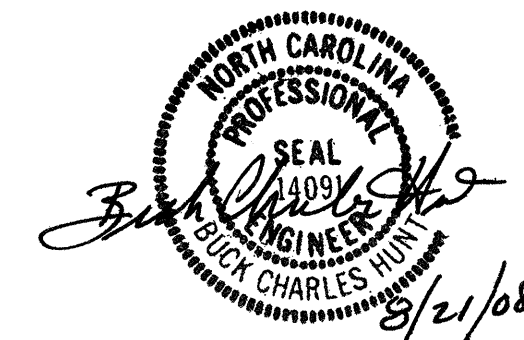
PROJECT NO. B-4525
GRANVILLE COUNTY
 STATION: 13+64.00 -L-

SHEET 2 OF 2

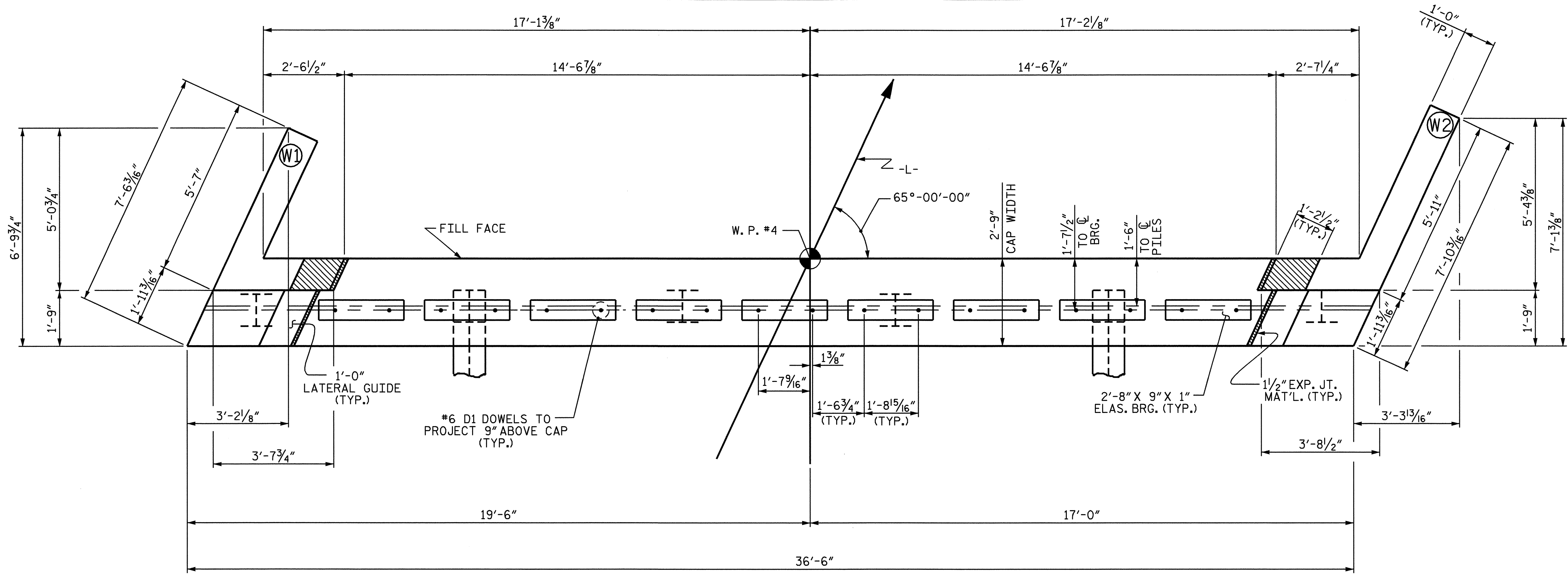
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT #2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS 22
2			4			



DRAWN BY: S. DOMBROWSKI DATE: 05/08
 CHECKED BY: R.G. EMERSON DATE: 05/08



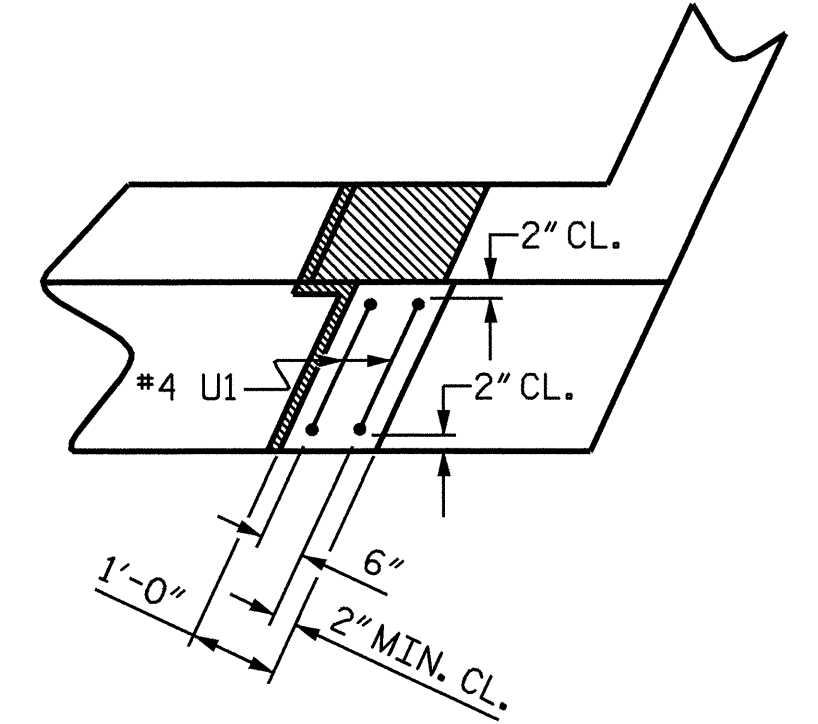
PLAN

NOTES

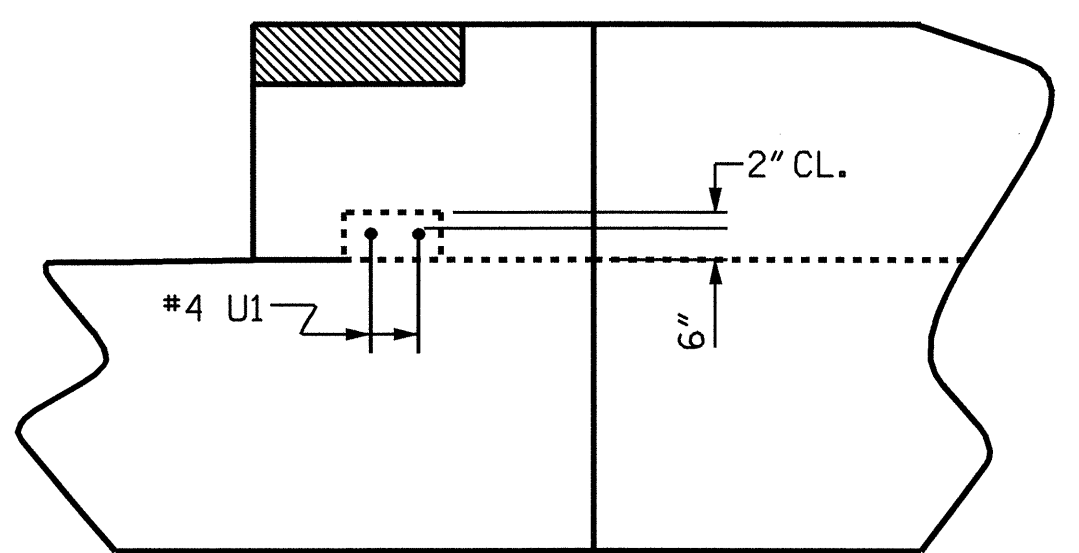
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6 DOWELS.

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

THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.



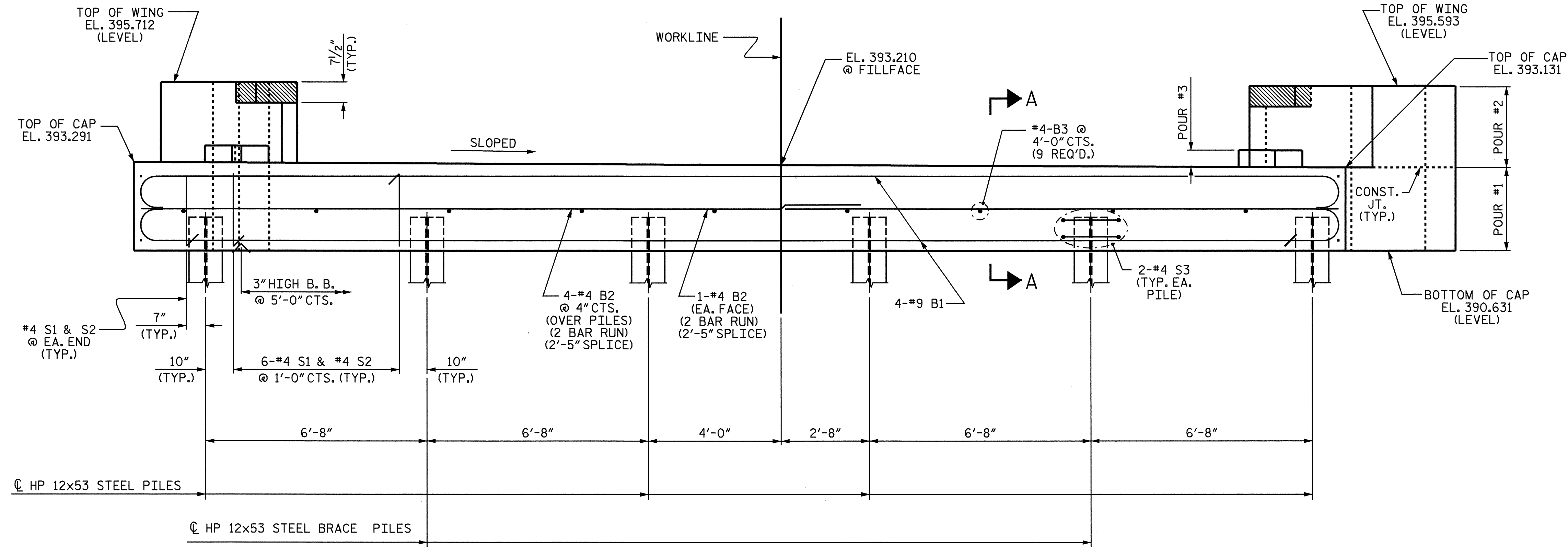
PLAN



ELEVATION

LATERAL GUIDE DETAILS

(EACH END SIMILAR)

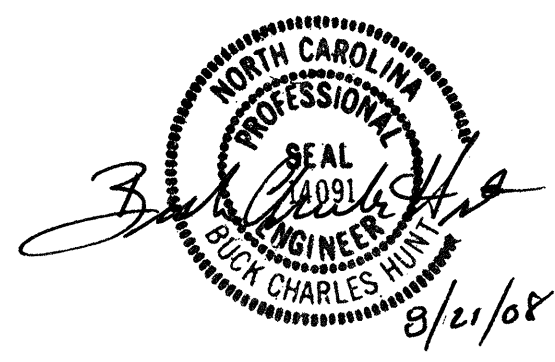


ELEVATION

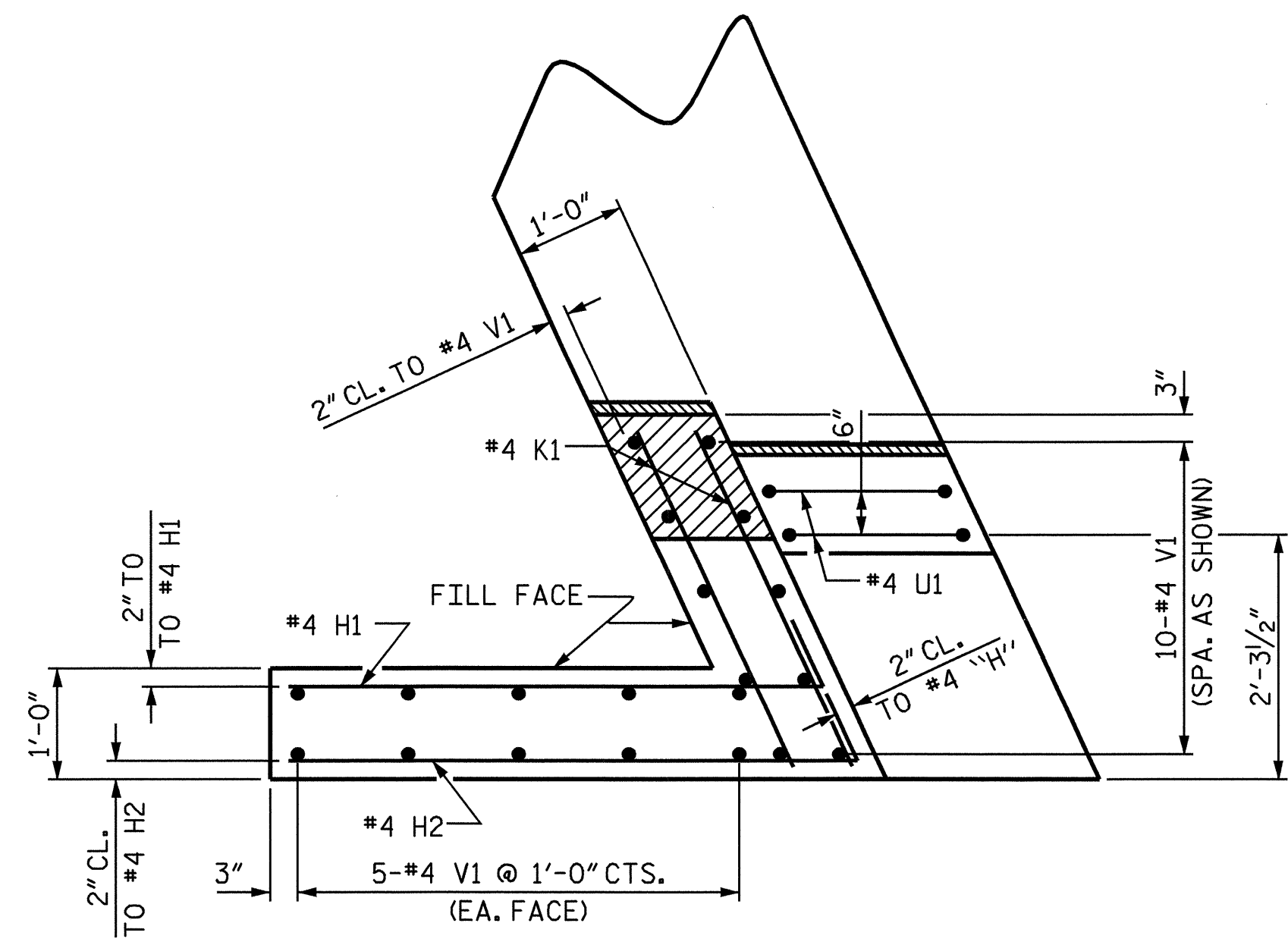
PROJECT NO. B-4525
 GRANVILLE COUNTY
 STATION: 13+64.00 -L-

SHEET 1 OF 3

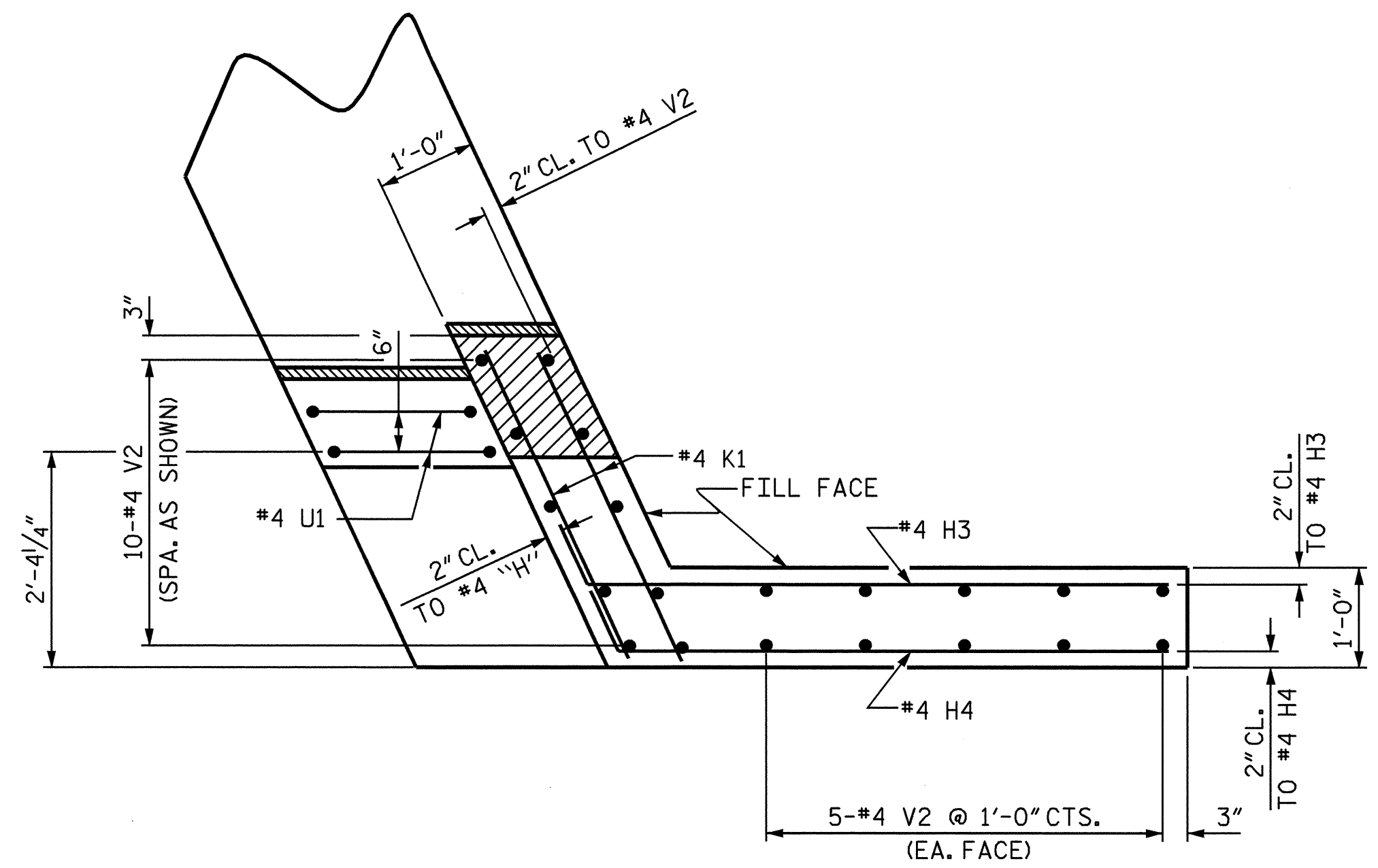
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT #2					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-17
TOTAL SHEETS					22



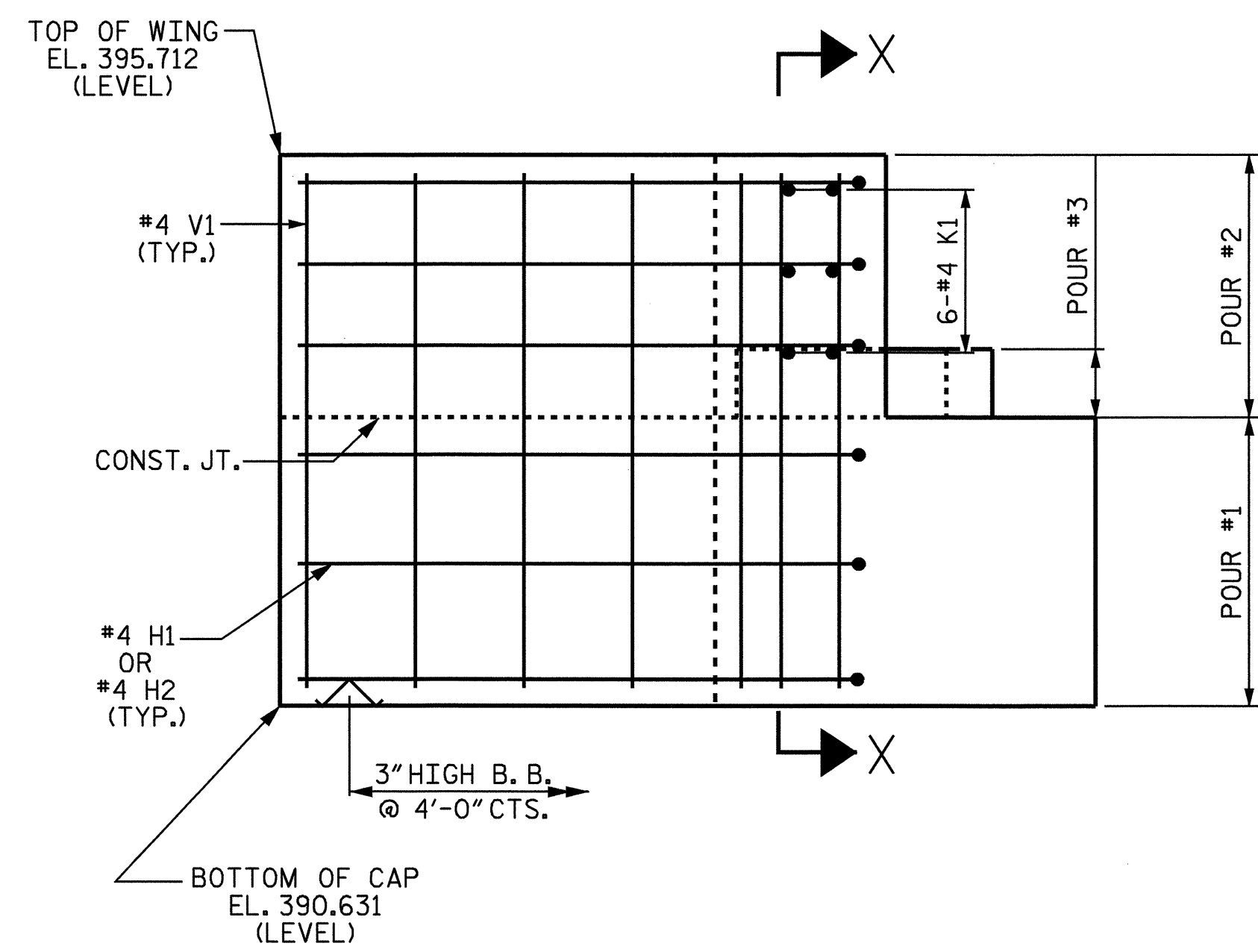
DRAWN BY: R. G. EMERSON DATE: 03/08
 CHECKED BY: R. L. CHESSON DATE: 05/08



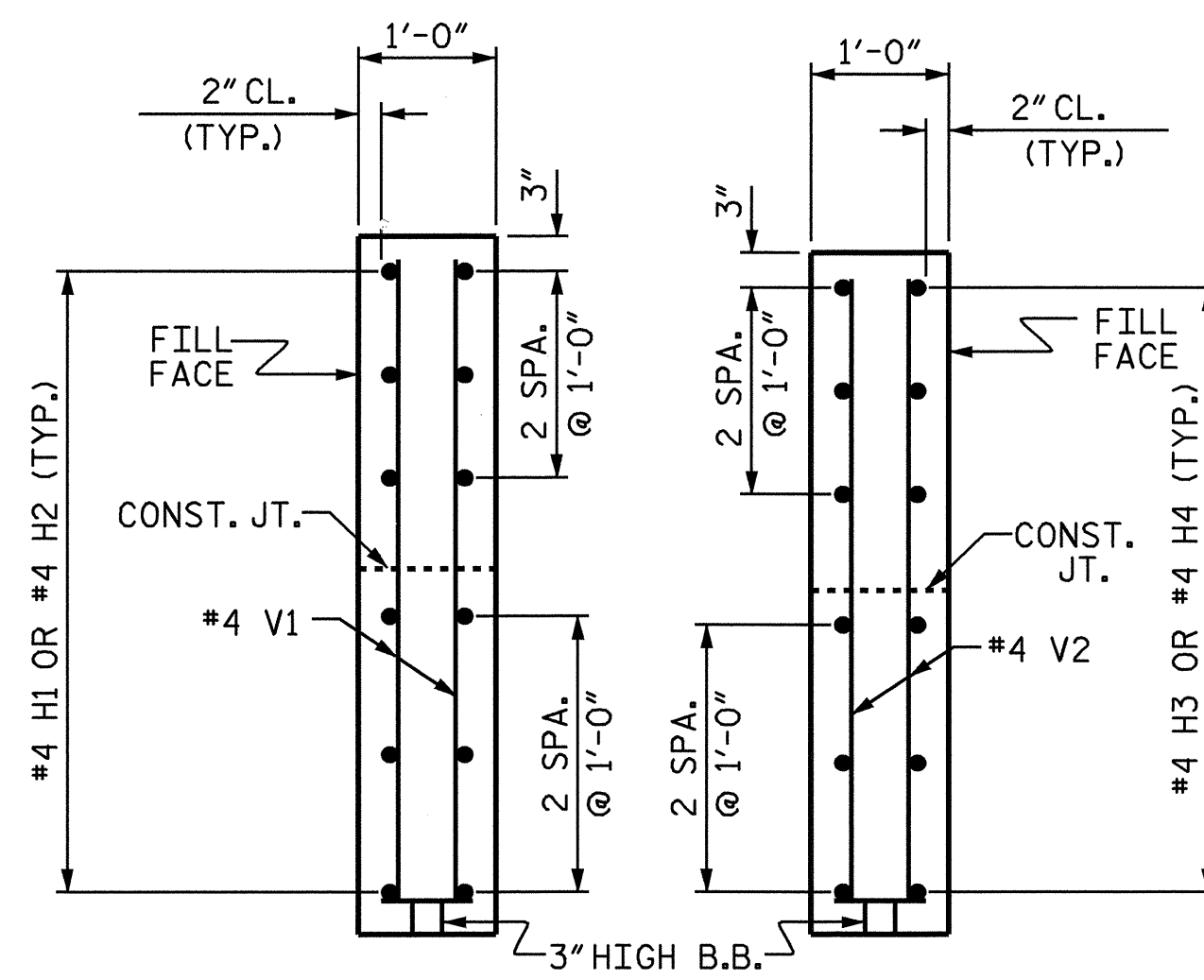
PLAN OF LEFT WING-W1



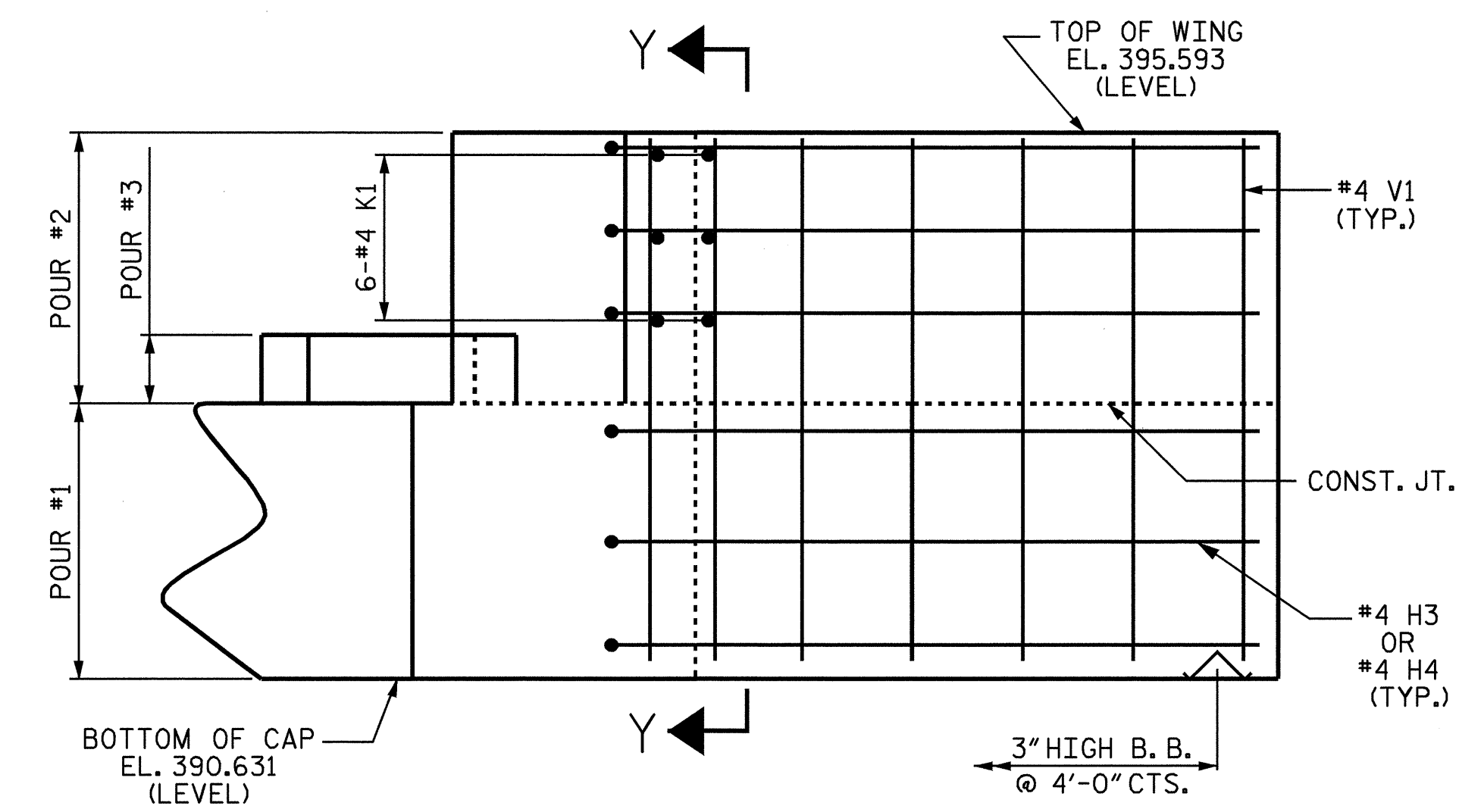
PLAN OF RIGHT WING-W2



ELEVATION OF LEFT WING-W1



SECTION X-X SECTION Y-Y

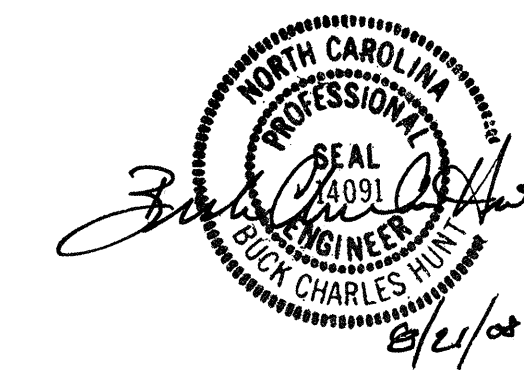


ELEVATION OF RIGHT WING-W2

PROJECT NO. B-4525
 GRANVILLE COUNTY
 STATION: 13+64.00 -L-

SHEET 2 OF 3

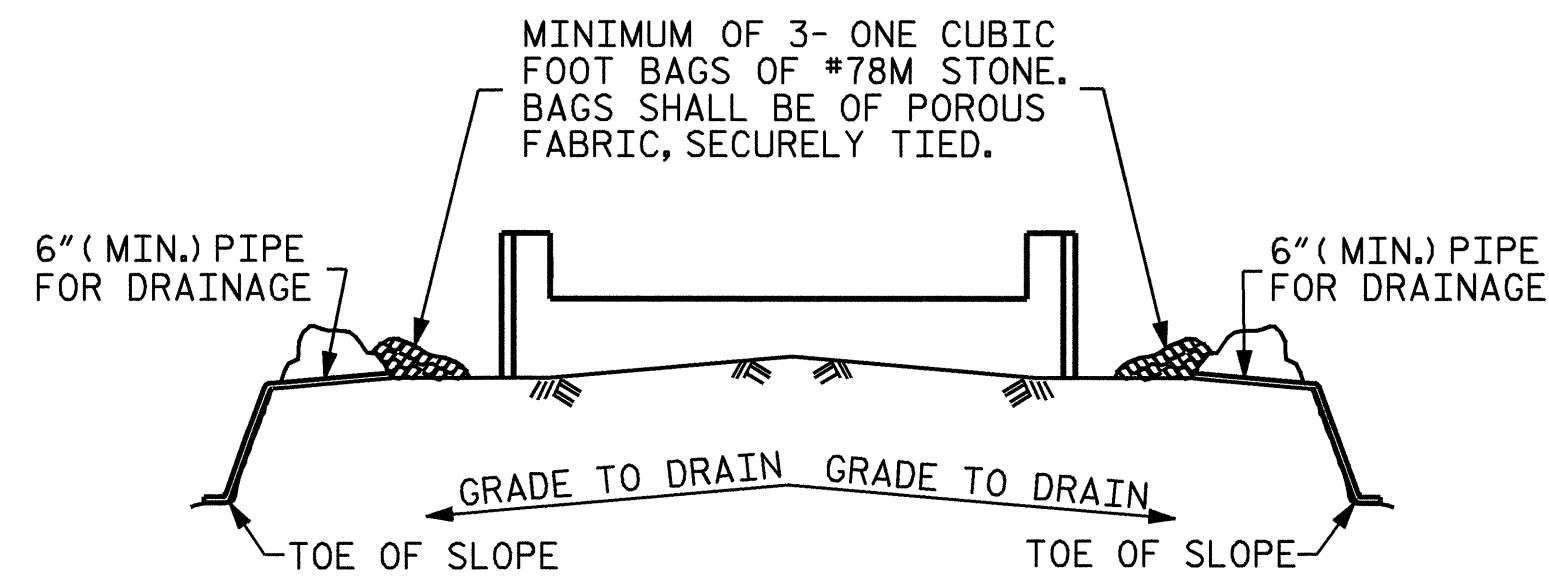
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT #2



DRAWN BY: R. G. EMERSON DATE: 03/08
 CHECKED BY: R. L. CHESSON DATE: 05/08

01-JUL-2008 10:38
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 r-emerson

REVISIONS						SHEET NO. S-18 TOTAL SHEETS 22
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

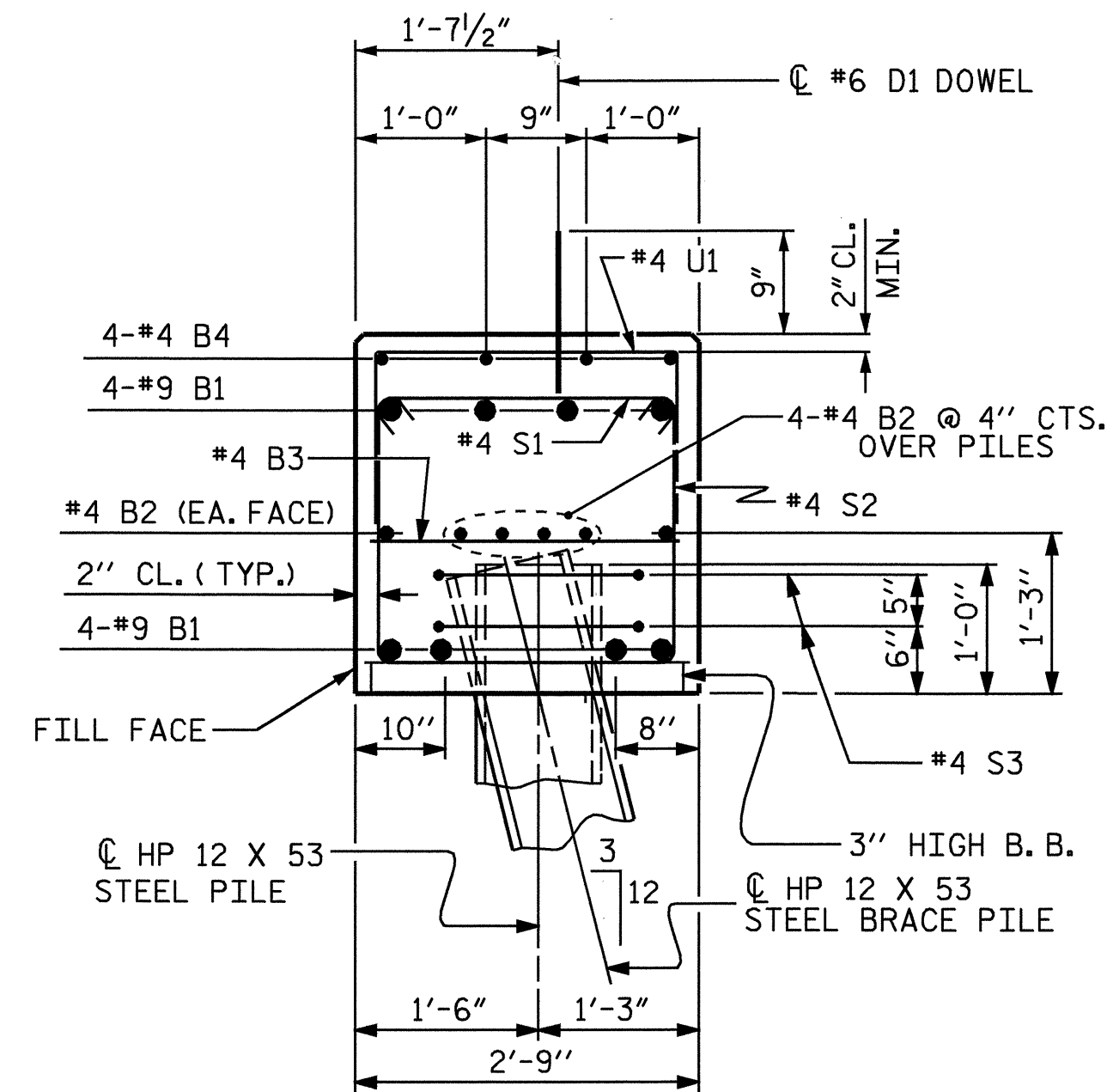


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

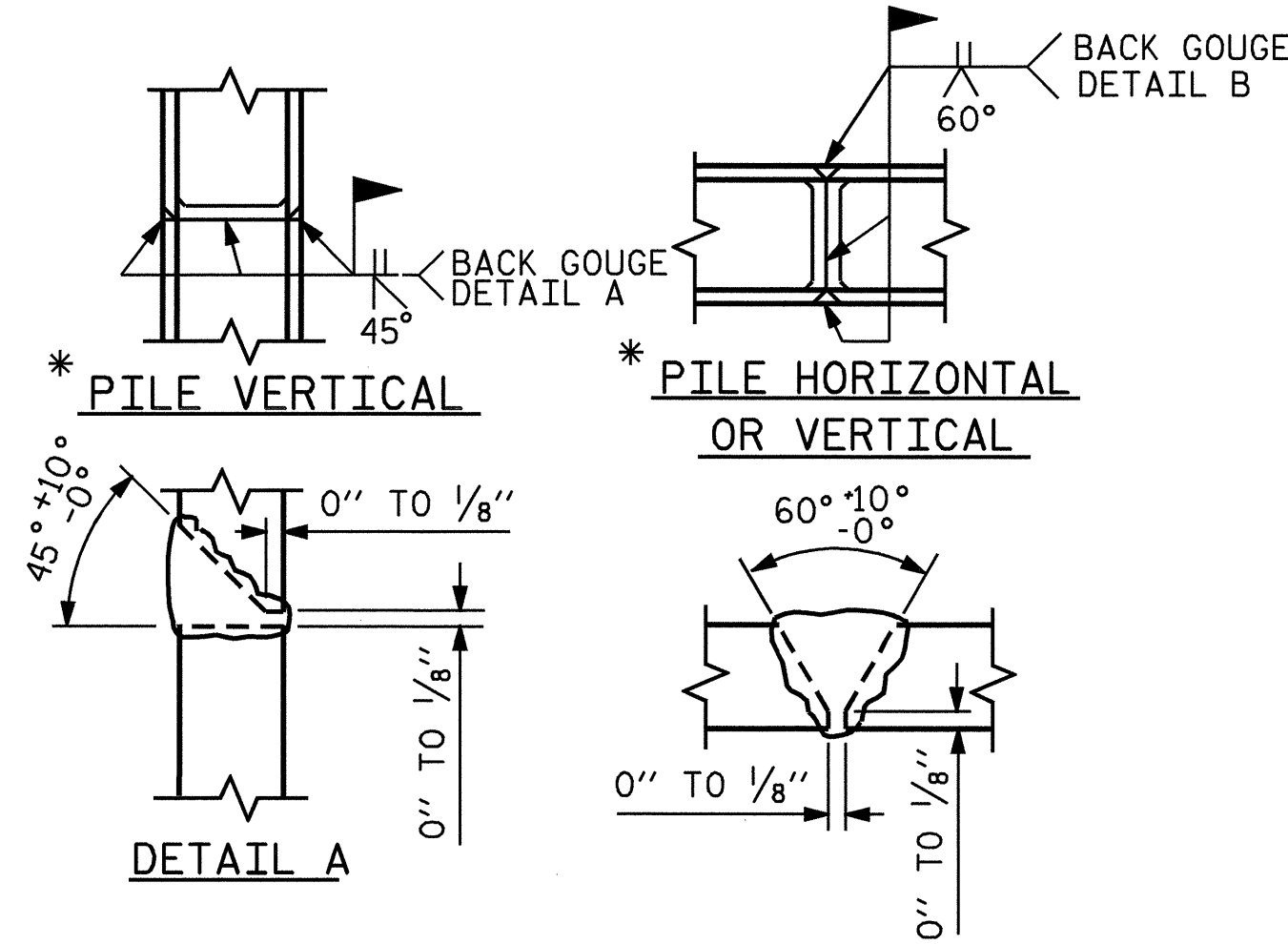
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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



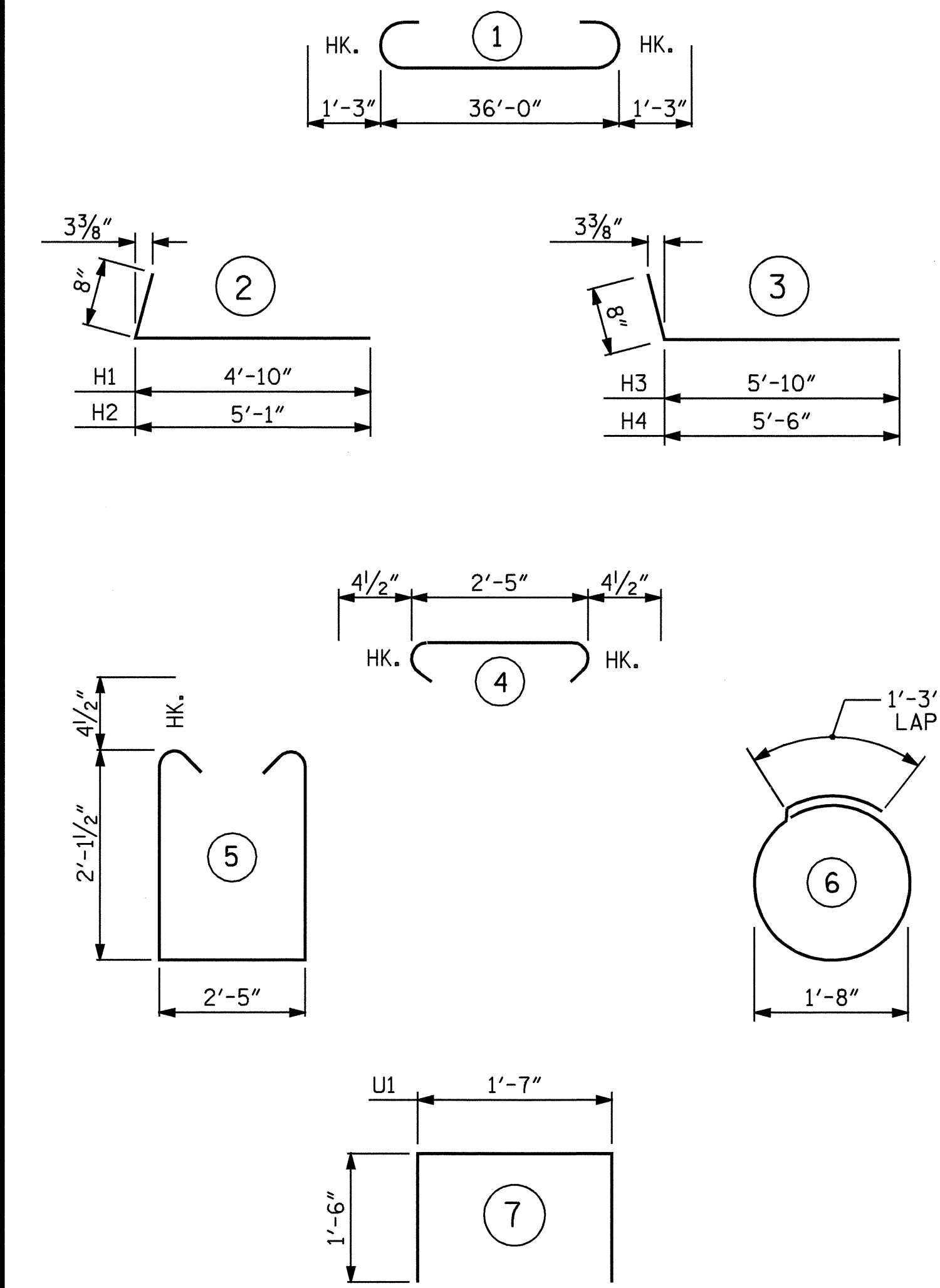
SECTION A-A



* POSITION OF PILE DURING WELDING. **DETAIL B**

PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT #2

BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	38'-6"	1047
B2	12	#4	STR	19'-3"	154
B3	9	#4	STR	2'-5"	15
D1	18	#6	STR	1'-6"	41
H1	6	#4	2	5'-6"	22
H2	6	#4	2	5'-9"	23
H3	6	#4	3	6'-6"	26
H4	6	#4	3	6'-2"	25
K1	12	#4	STR	3'-4"	27
S1	32	#4	4	3'-2"	68
S2	32	#4	5	7'-5"	159
S3	12	#4	6	6'-6"	52
U1	4	#4	7	4'-7"	12
V1	20	#4	STR	4'-8"	62
V2	20	#4	STR	4'-7"	61

REINFORCING STEEL 1794

CLASS "A" CONCRETE BREAKDOWN

POUR	DESCRIPTION	CU. YDS.	WEIGHT
POUR #1	CAP & LOWER WINGS	10.5	
POUR #2	UPPER WINGS	1.5	
POUR #3	LATERAL GUIDES	0.1	
CLASS "A" CONCRETE TOTAL		12.1	

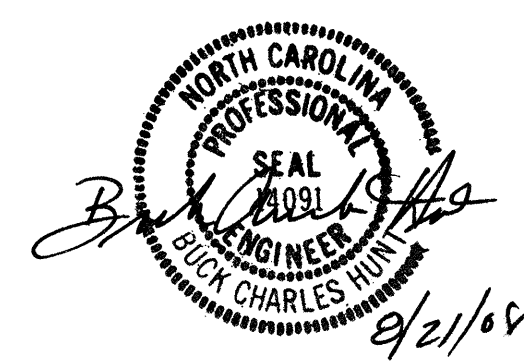
HP 12X53 STEEL PILES NO. 6 LIN. FT. 60

PROJECT NO. B-4525
GRANVILLE COUNTY
 STATION: 13+64.00 -L-

SHEET 3 OF 3

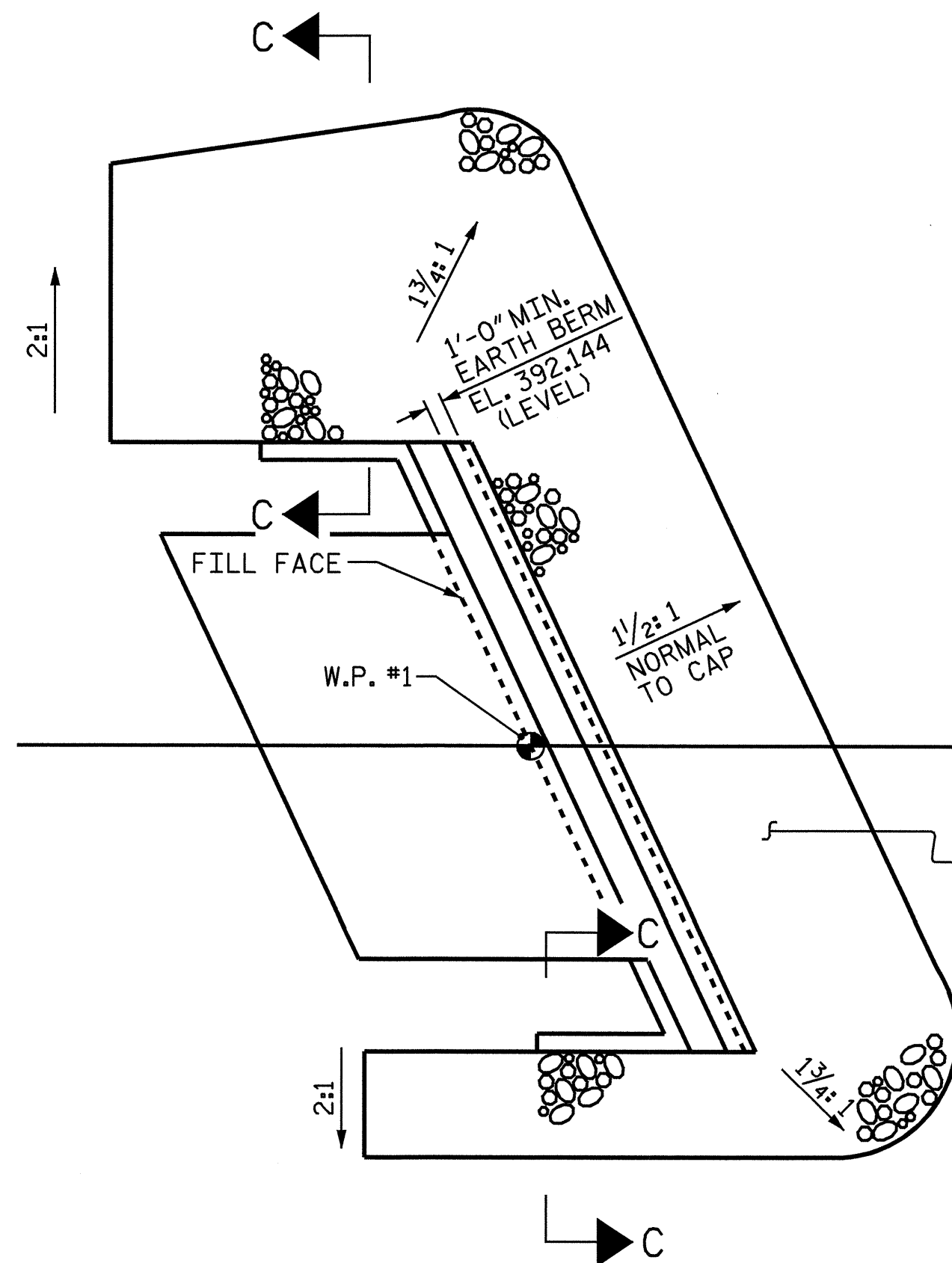
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
END BENT #2

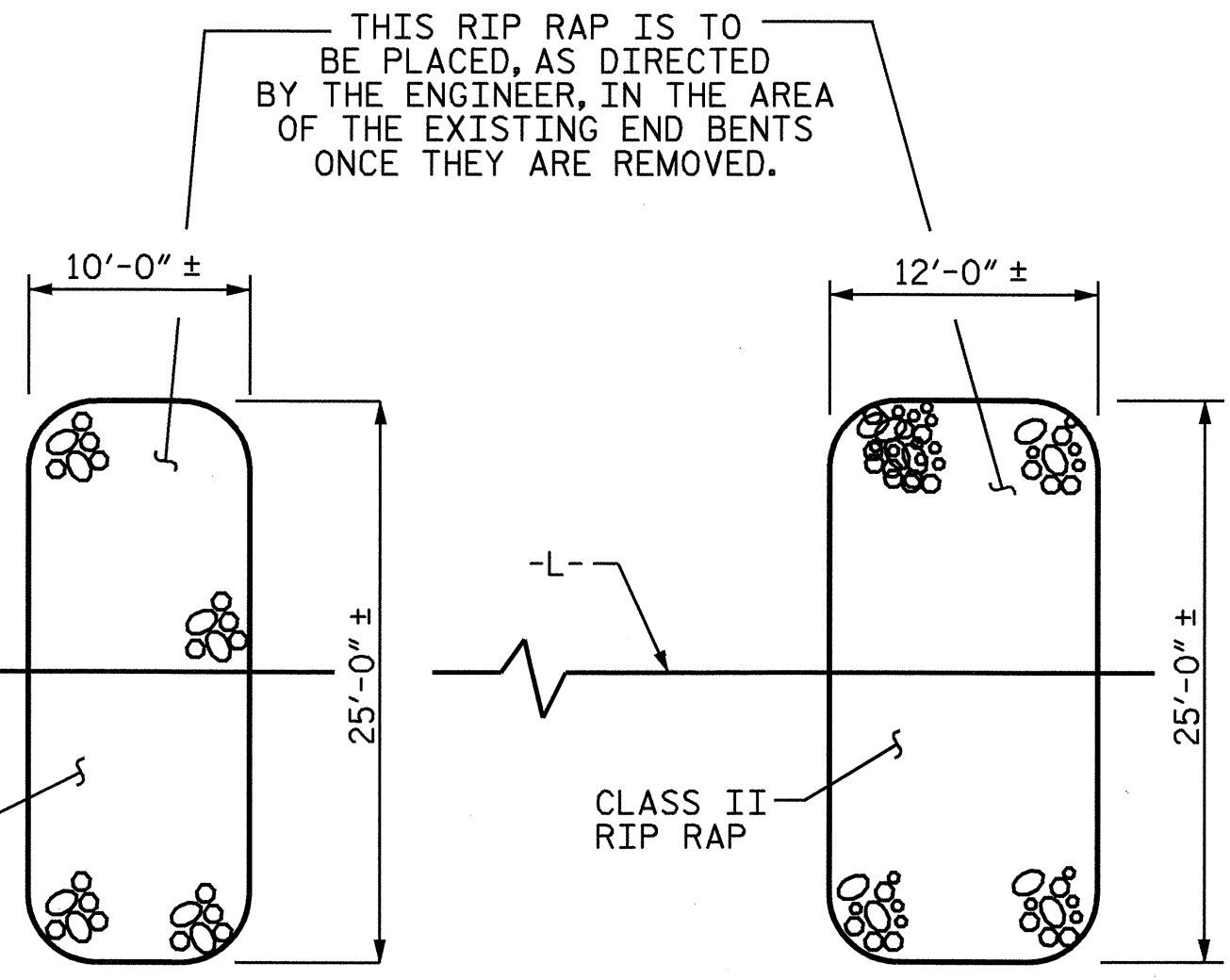


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			22

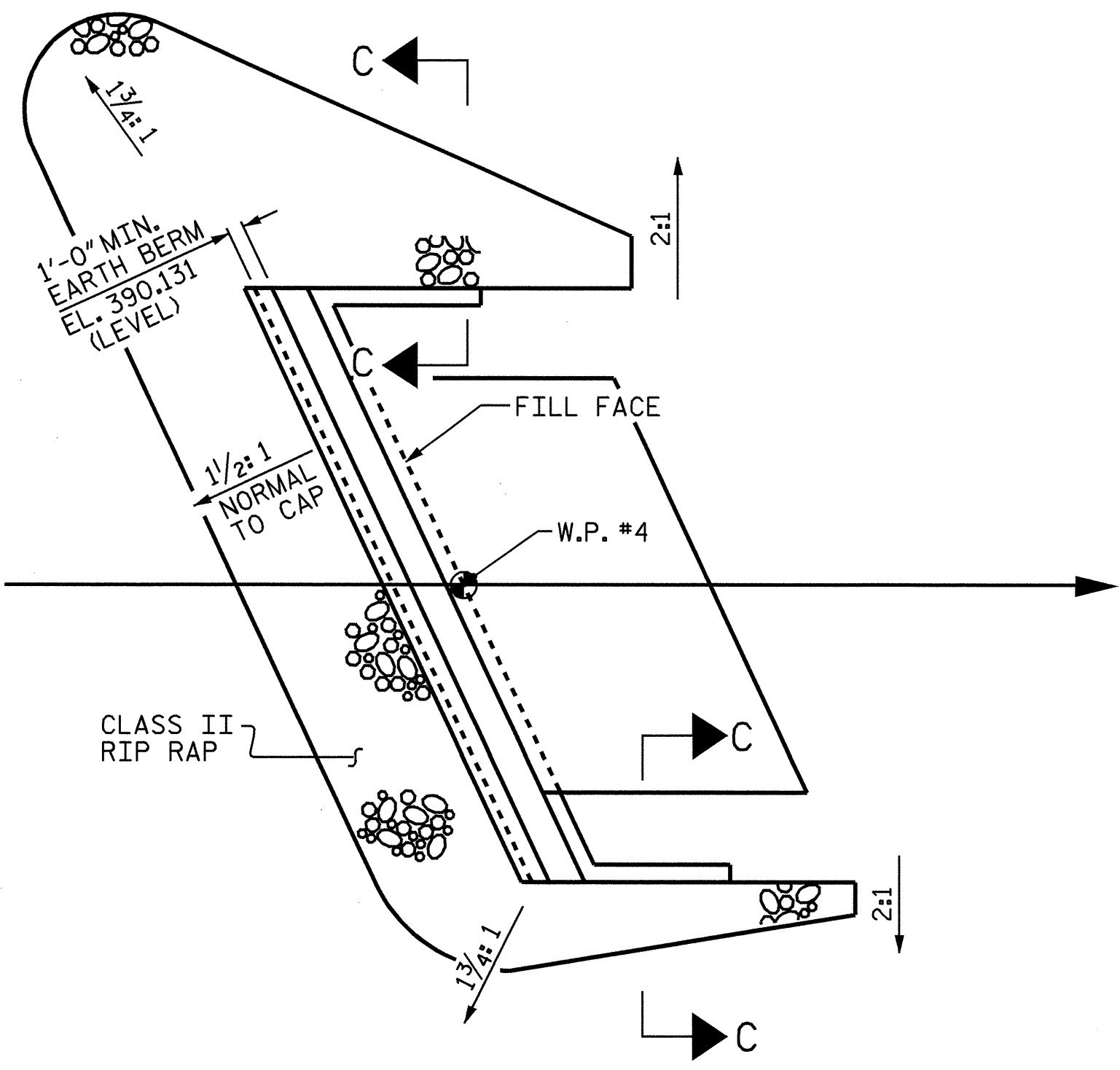
DRAWN BY: R. G. EMERSON DATE: 03/08
 CHECKED BY: R. L. CHESSON DATE: 05/08



END BENT #1

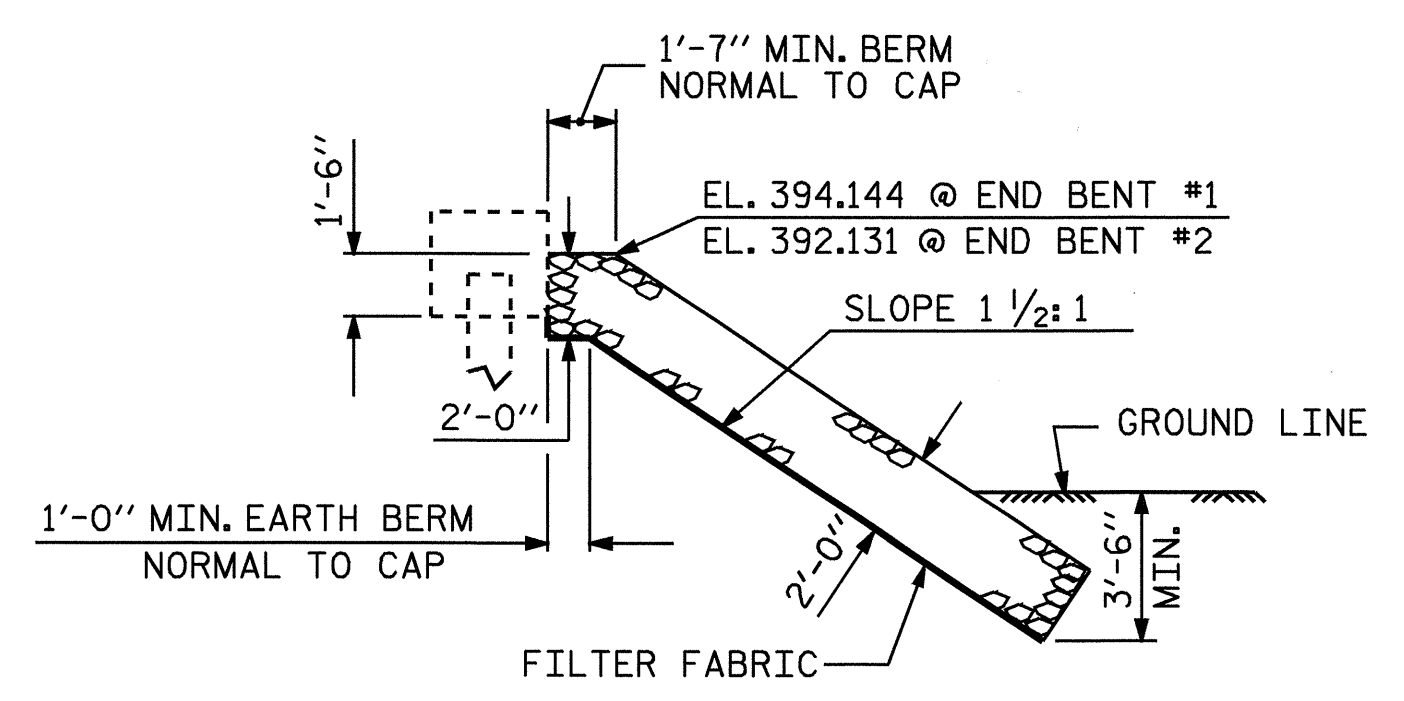


PLAN

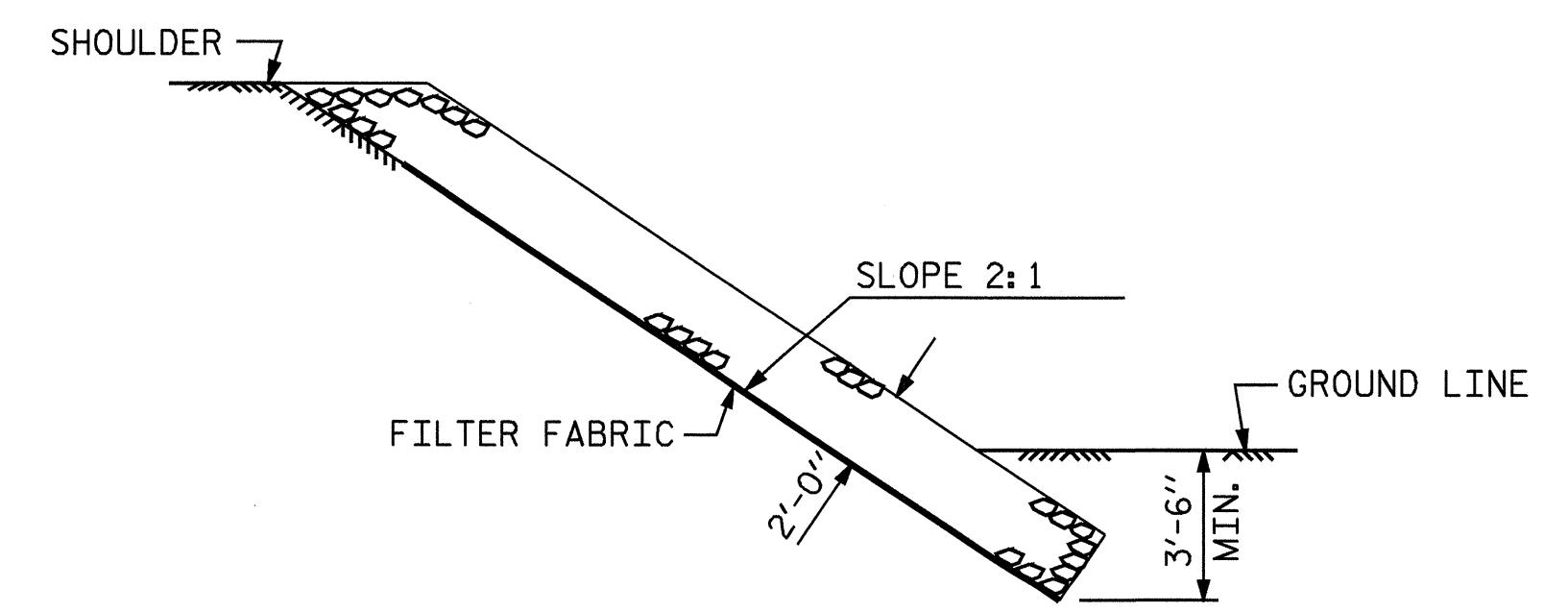


END BENT #2

ESTIMATED QUANTITIES		
BRIDGE @ STA. 13+64.00 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT #1	360	400
END BENT #2	255	285



SECTION C-C
BERM RIP RAPPED

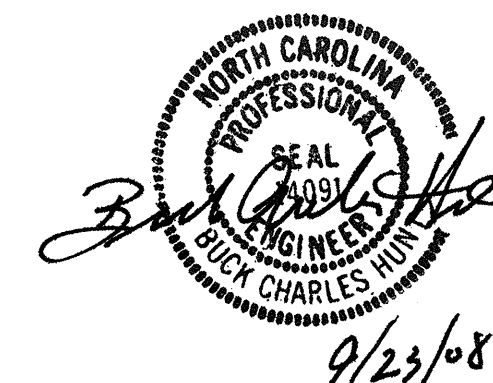


SECTION C-C

PROJECT NO. B-4525
GRANVILLE COUNTY
 STATION: 13+64.00 -L-

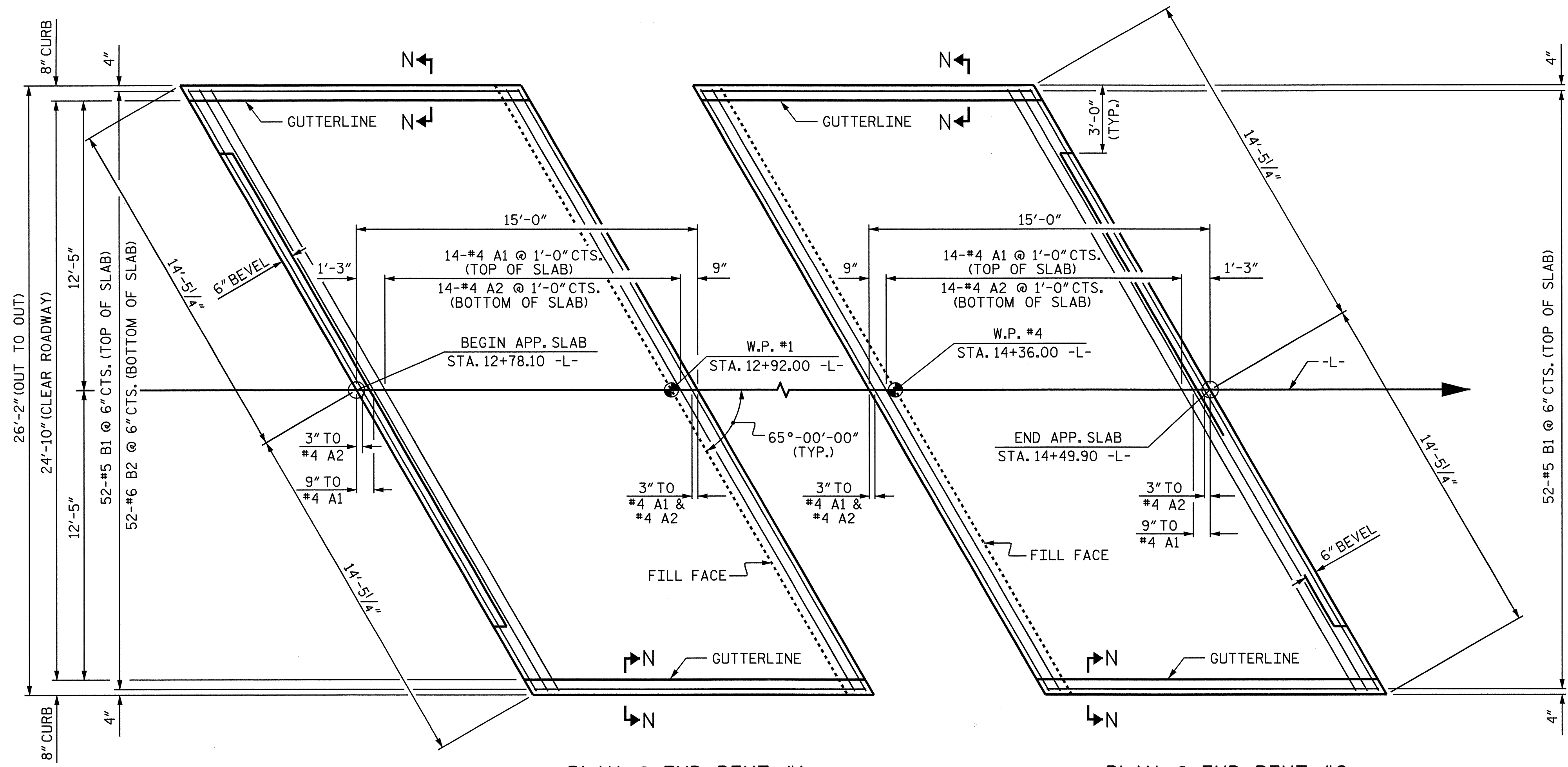
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 —RIP RAP DETAILS—

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

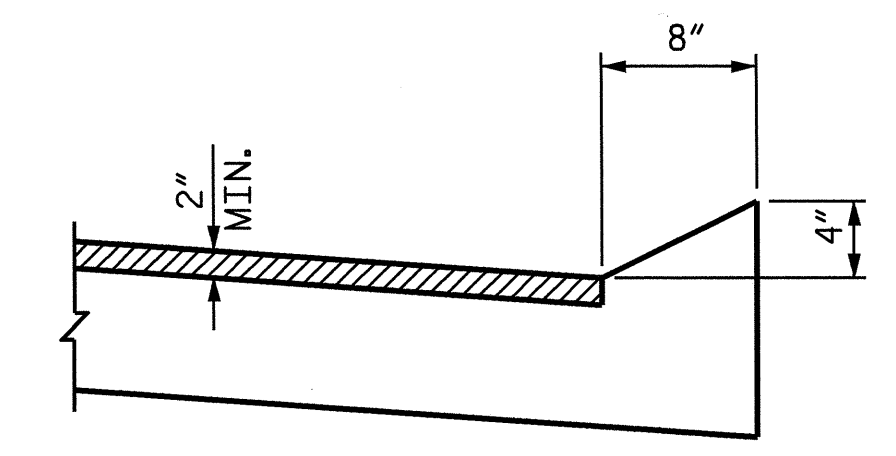


ASSEMBLED BY : J.P. ADAMS DATE : 6/12/08
 CHECKED BY : M.K. BEARD DATE : 6/13/08
 DRAWN BY : REK 1/84 REV. 8/16/99 RWW/LES
 CHECKED BY : RDU 1/84 REV. 10/17/00 RWW/LES
 REV. 5/1/06 TLA/GM

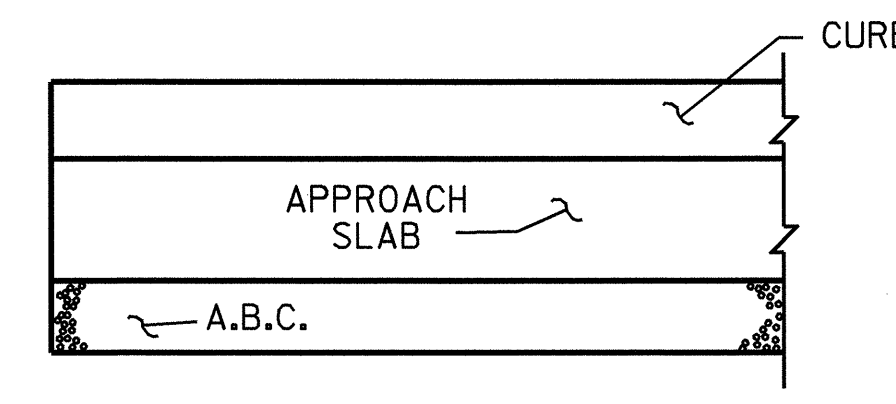
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PLAN @ END BENT #1 PLAN @ END BENT #2
DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION N-N

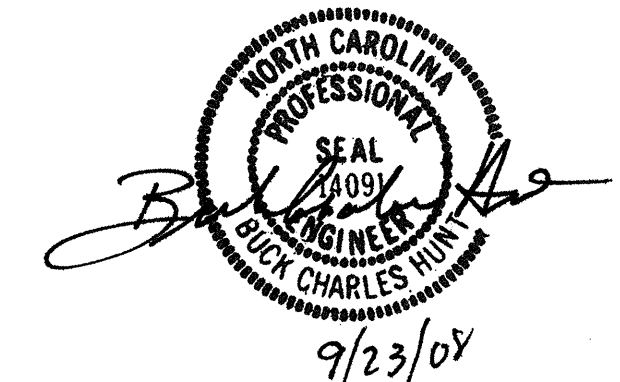


END OF CURB WITH SHOULDER BERM GUTTER
CURB DETAILS

BILL OF MATERIAL					
APPROACH SLAB AT EB #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	16	#4	STR	28'-6"	305
A2	16	#4	STR	28'-6"	305
*B1	52	#5	STR	14'-0"	759
B2	52	#6	STR	14'-8"	1139
REINFORCING STEEL					LBS. 1444
*EPOXY COATED REINFORCING STEEL					LBS. 1064
CLASS AA CONCRETE					C. Y. 16.1
APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	16	#4	STR	28'-6"	305
A2	16	#4	STR	28'-6"	305
*B1	52	#5	STR	14'-0"	759
B2	52	#6	STR	14'-8"	1139
REINFORCING STEEL					LBS. 1444
*EPOXY COATED REINFORCING STEEL					LBS. 1064
CLASS AA CONCRETE					C. Y. 16.1

NOTES

- FOR BRIDGE APPROACH FILL INCLUDING FABRIC, 4" Ø DRAINAGE PIPE, AND #78M STONE BACKFILL, SEE ROADWAY PLANS.
- APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.
- FABRIC SHALL BE TYPE 1 ENGINEERING FABRIC IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.
- #78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.
- #78M STONE BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.
- FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.
- AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.
- THE 6" COMP. A.B.C. SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB AND SHALL EXTEND 1'-0" OUTSIDE OF EACH EDGE OF THE APPROACH SLAB.
- THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.
- THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.
- FOR JOINT DETAILS, SEE "PRESTRESSED CONCRETE CORED SLAB UNIT" SHEETS.
- THE JOINT AT THE END BENT SHALL BE GROUTED AS SOON AS PRACTICAL AFTER THE CONSTRUCTION OF THE APPROACH SLABS.
- APPROACH SLAB GROOVING IS NOT REQUIRED.

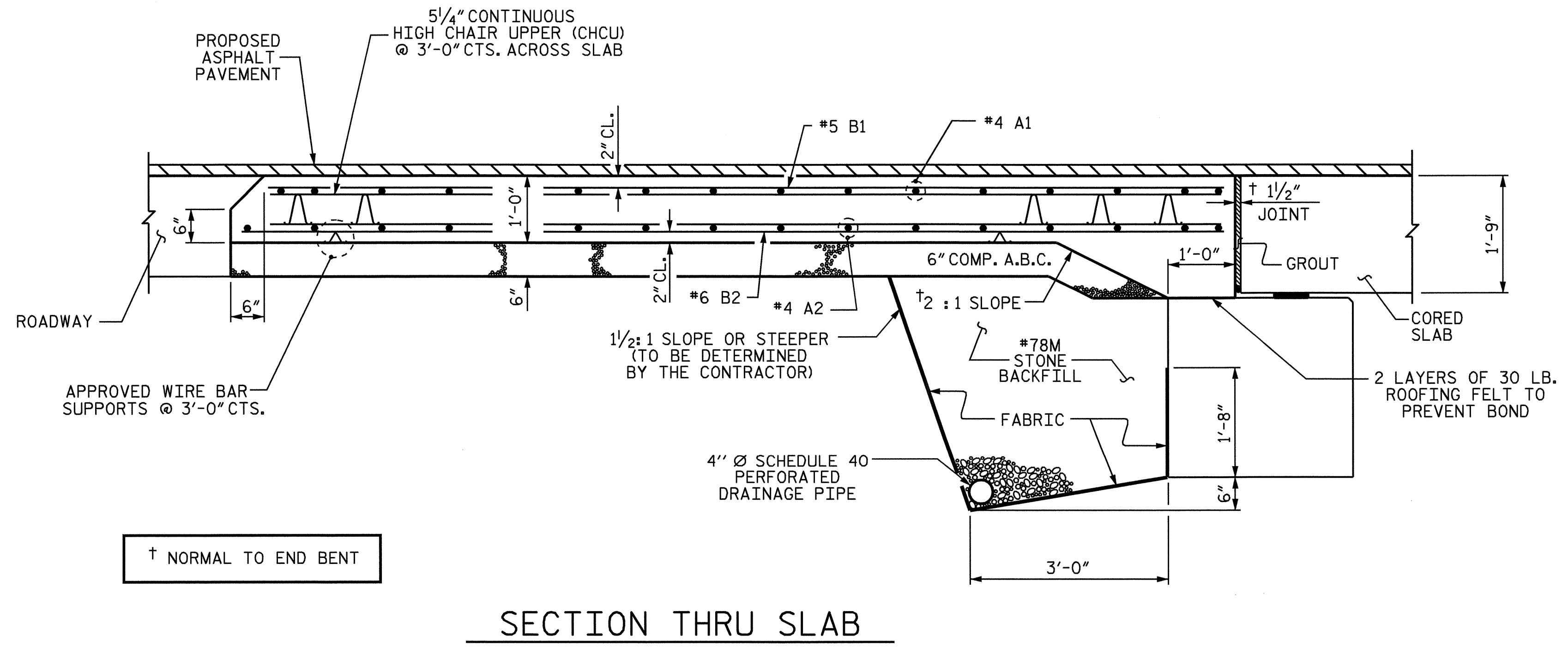


PROJECT NO. B-4525
GRANVILLE COUNTY
STATION: 13+64.00 -L-

SHEET 1 OF 2

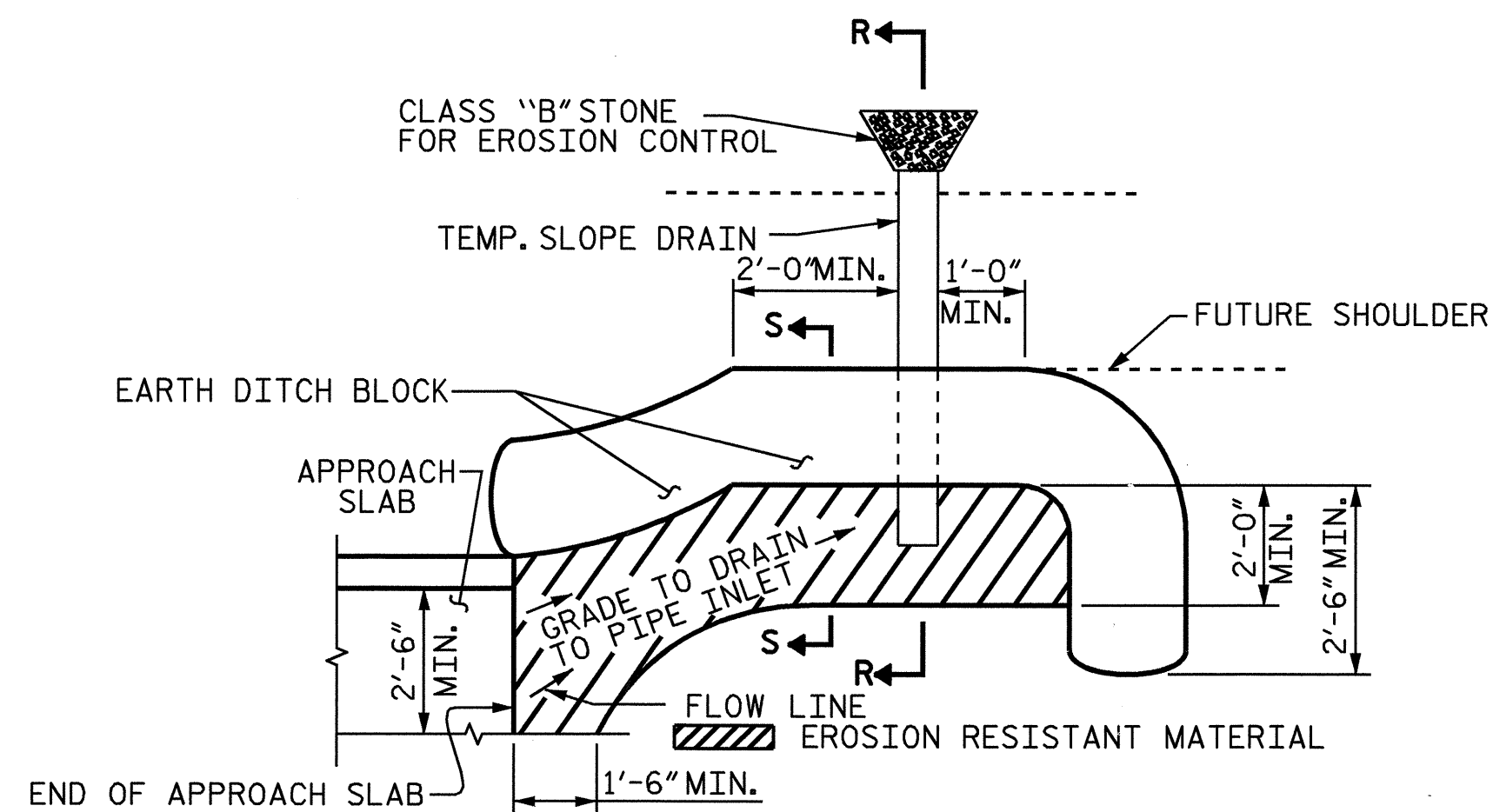
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB UNIT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			22



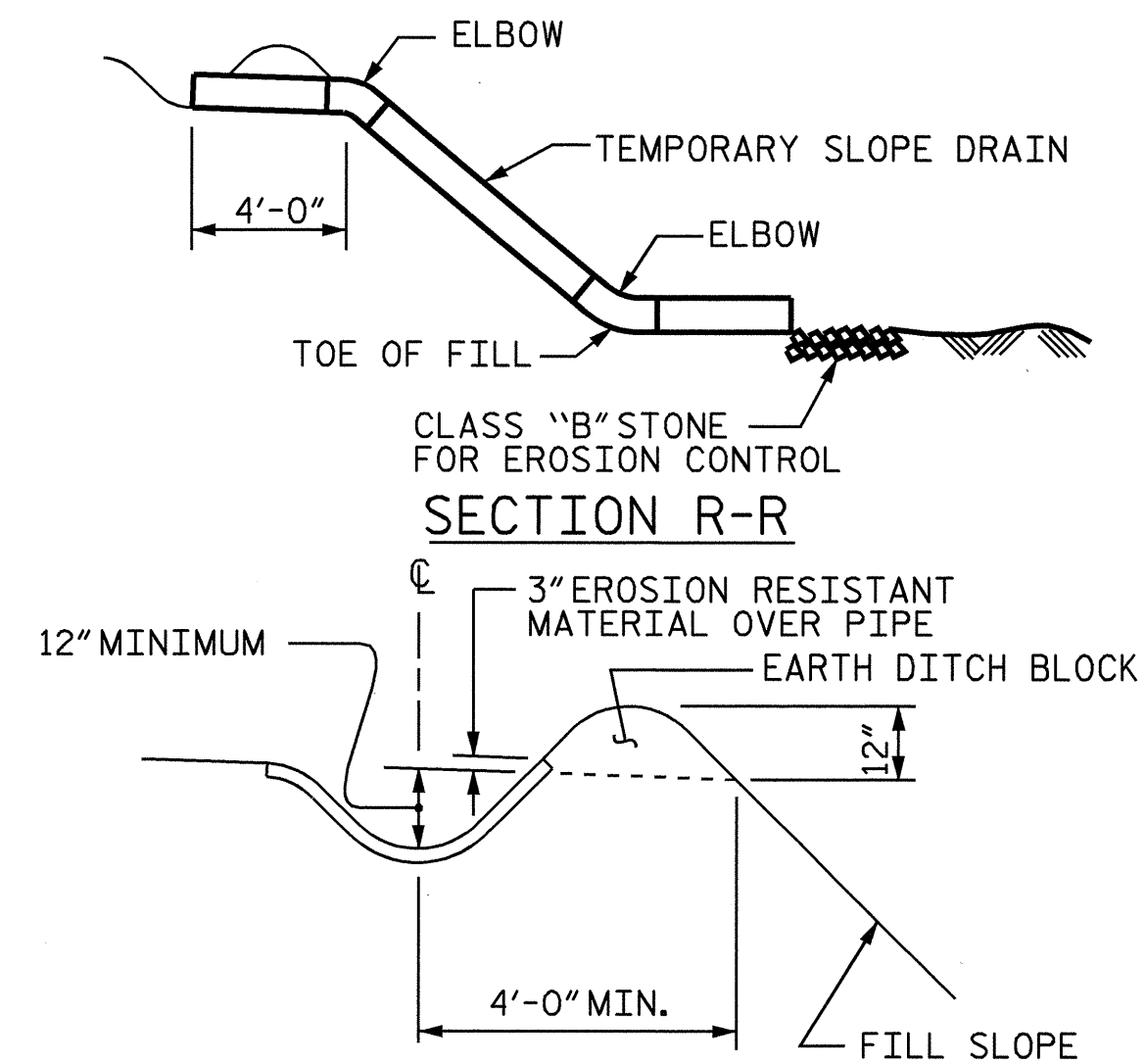
SECTION THRU SLAB

ASSEMBLED BY: R.G. EMERSON	DATE: 8/08
CHECKED BY: H.A. LOCKLEAR	DATE: 8/08
DRAWN BY: KMM 3-08	
CHECKED BY: GM 3-08	



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.

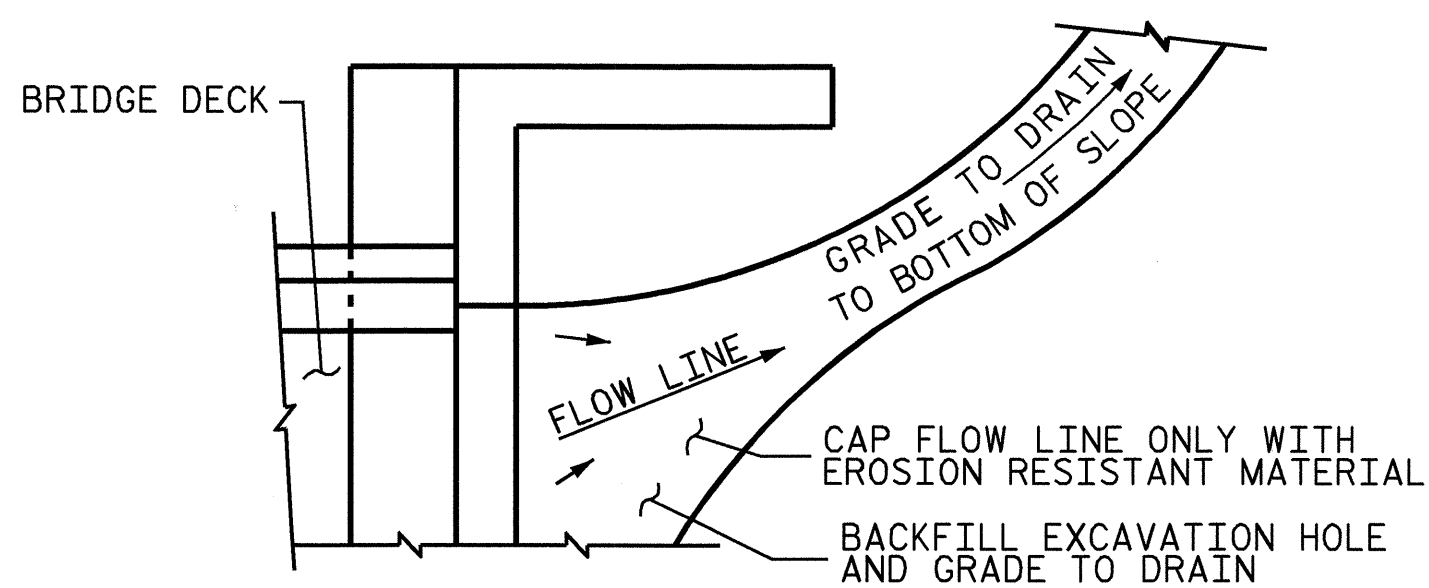
PLAN VIEW



SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



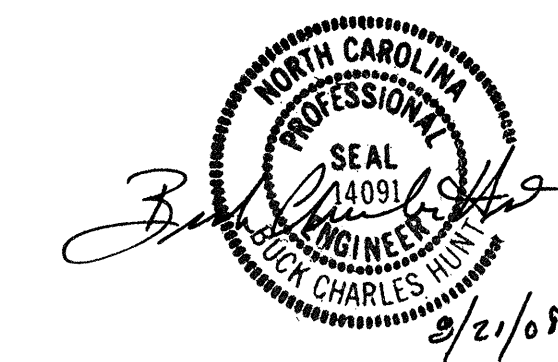
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

PROJECT NO. B-4525
GRANVILLE COUNTY
 STATION: 13+64.00 -L-

SHEET 2 OF 2

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



ASSEMBLED BY : R. G. EMERSON	DATE : 08/07
CHECKED BY : H. A. L.	DATE : 04/08
DRAWN BY : FCJ 11/88	REV. 10/17/00 RWW/LES
CHECKED BY : ARB 11/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM

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

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

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

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

HANDRAILS AND POSTS:

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

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. 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