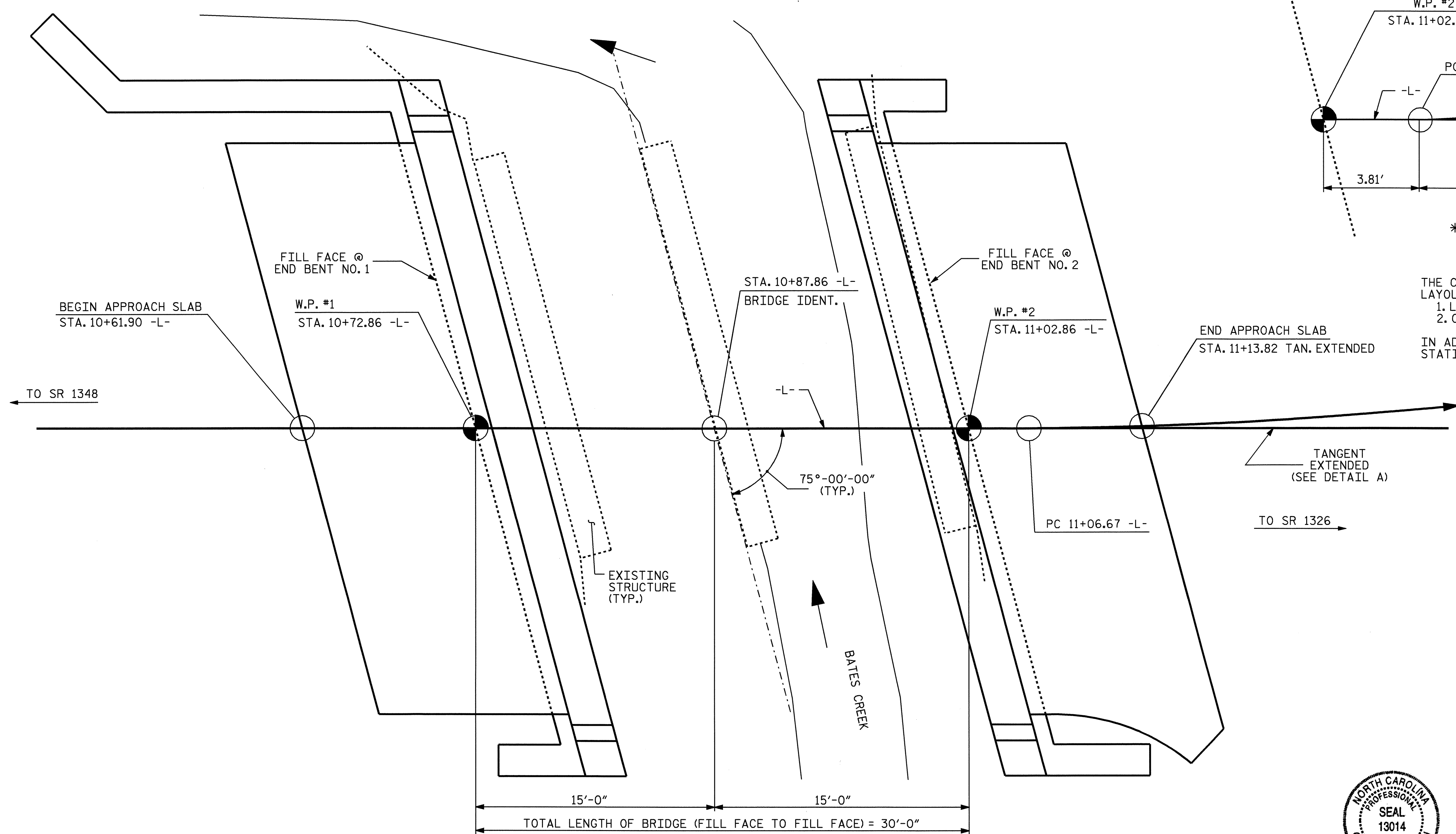
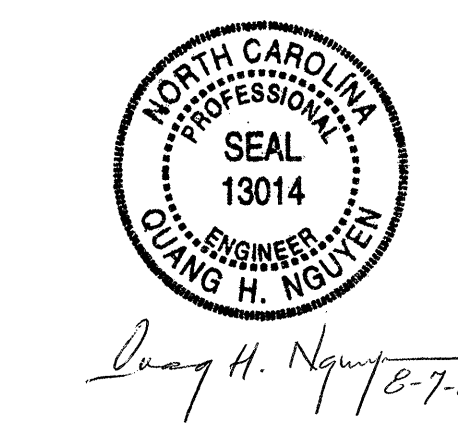


THE CONTRACTOR SHALL USE THE TANGENT EXTENDED FOR THE LAYOUT OF THE FOLLOWING:
 1. LAYOUT OF THE APPROACH SLAB AT END BENT 2
 2. COMPUTATIONS OF APPROACH SLAB ELEVATIONS AT END BENT 2.
 IN ADDITION, THE CONTRACTOR SHALL ASSUME THAT ALL STATIONING OCCURS ALONG THE TANGENT EXTENDED.



DRAWN BY : A.L.FIGUEROA DATE : 10-12-06
 CHECKED BY : MG CHEEK DATE : 07-18-07

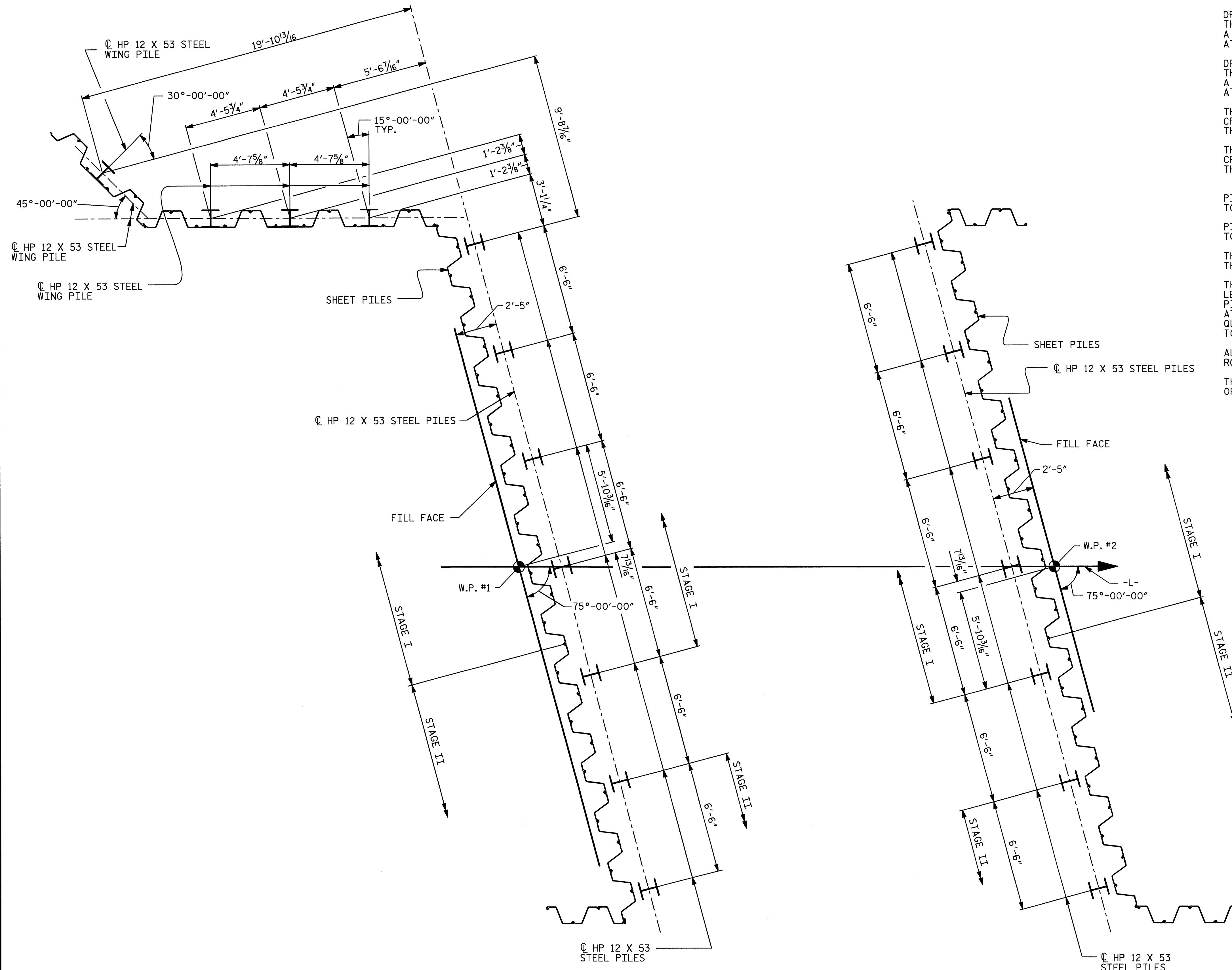
PLAN
 PILES AND SHEET PILES NOT SHOWN IN PLAN VIEW.



PROJECT NO. B-3826
CHEROKEE COUNTY
 STATION: 10+87.86 -L-
 SHEET 1 OF 3 REPLACES BRIDGE #166

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON SR 1331
 OVER BATES CREEK BETWEEN
 SR 1348 AND SR 1326

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



FOUNDATION LAYOUT

NOTES

DRIVE PILES AT END BENT NO.1 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 IS 50 TONS PER PILE.

DRIVE PILES AT 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.2 IS 50 TONS PER PILE.

THE SCOUR CRITICAL ELEVATION FOR END BENT NO.1 IS ELEVATION 1692 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

THE SCOUR CRITICAL ELEVATION FOR END BENT NO.2 IS ELEVATION 1694 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

PILE EXCAVATION IS REQUIRED TO INSTALL PILES AT END BENT NO.1. EXCAVATE HOLES TO ELEVATION 1689 FT. SEE PILE EXCAVATION SPECIAL PROVISION.

PILE EXCAVATION IS REQUIRED TO INSTALL PILES AT END BENT NO.2. EXCAVATE HOLES TO ELEVATION 1691 FT. SEE PILE EXCAVATION SPECIAL PROVISION.

THE CONTRACTOR SHALL INSTALL THE HP 12 X 53 STEEL PILES PRIOR TO DRIVING THE SHEET PILES.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE ESTIMATED PILE LENGTHS FOR THE END BENT PILES AT END BENT NO.1 ARE BASED ON AN ESTIMATED PILE LENGTH OF 10 FEET. THE ESTIMATED PILE LENGTHS FOR THE WINGWALL PILES AT END BENT NO.1 ARE BASED ON AN ESTIMATED PILE LENGTH OF 15 FEET. THESE QUANTITIES ARE REFLECTED IN THE TOTAL PAY ITEM QUANTITIES AS SHOWN IN THE TOTAL BILL OF MATERIAL.

ALL STEEL SHEET PILES SHALL BE ASTM A690 MARINE GRADE STEEL AND SHALL BE HOT ROLLED. FOR STEEL SHEET PILES, SEE SPECIAL PROVISIONS.

THE HP 12 X 53 STEEL PILES SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

CONSTRUCTION SEQUENCE

THE CONSTRUCTION SEQUENCE FOR THE END BENT CAP H-PILES AND SHEET PILES SHALL BE AS FOLLOWS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

- EXCAVATE AND INSTALL H-PILES TO THE REQUIRED TIP ELEVATIONS AS SHOWN IN THE PLANS AND IN ACCORDANCE WITH PILE EXCAVATION SPECIAL PROVISION, OR AS DIRECTED BY THE ENGINEER. CONCRETE SHALL BE PLACED IN THE EXCAVATED HOLE TO THE LEVEL OF THE BOTTOM OF THE END BENT CAP OR GROUND LINE.
- INSTALL SHEET PILES TO REFUSAL ELEVATION USING A VIBRATORY OR IMPACT PILE HAMMER AND IN ACCORDANCE WITH 18" STEEL SHEET PILE SPECIAL PROVISION.

THE CONSTRUCTION SEQUENCE FOR THE WING PILES AND SHEET PILES AT END BENT #1 SHALL BE AS FOLLOWS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

- EXCAVATE AND INSTALL PILES TO THE REQUIRED TIP ELEVATIONS AS SHOWN IN THE PLANS AND IN ACCORDANCE WITH PILE EXCAVATION SPECIAL PROVISION. CONCRETE SHALL BE PLACED IN THE EXCAVATED HOLE TO THE LEVEL OF THE HARD ROCK.
- INSTALL SHEET PILES TO REFUSAL ELEVATION USING A VIBRATORY OR IMPACT PILE HAMMER AND IN ACCORDANCE WITH 18" STEEL SHEET PILE SPECIAL PROVISION.
- CONCRETE SHALL THEN BE PLACED IN THE EXCAVATED PILE HOLES TO THE LEVEL OF THE BOTTOM OF THE WINGWALL AND IN ACCORDANCE WITH THE PILE EXCAVATION SPECIAL PROVISION.

PROJECT NO. B-3826

CHEROKEE COUNTY

STATION: 10+87.86 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

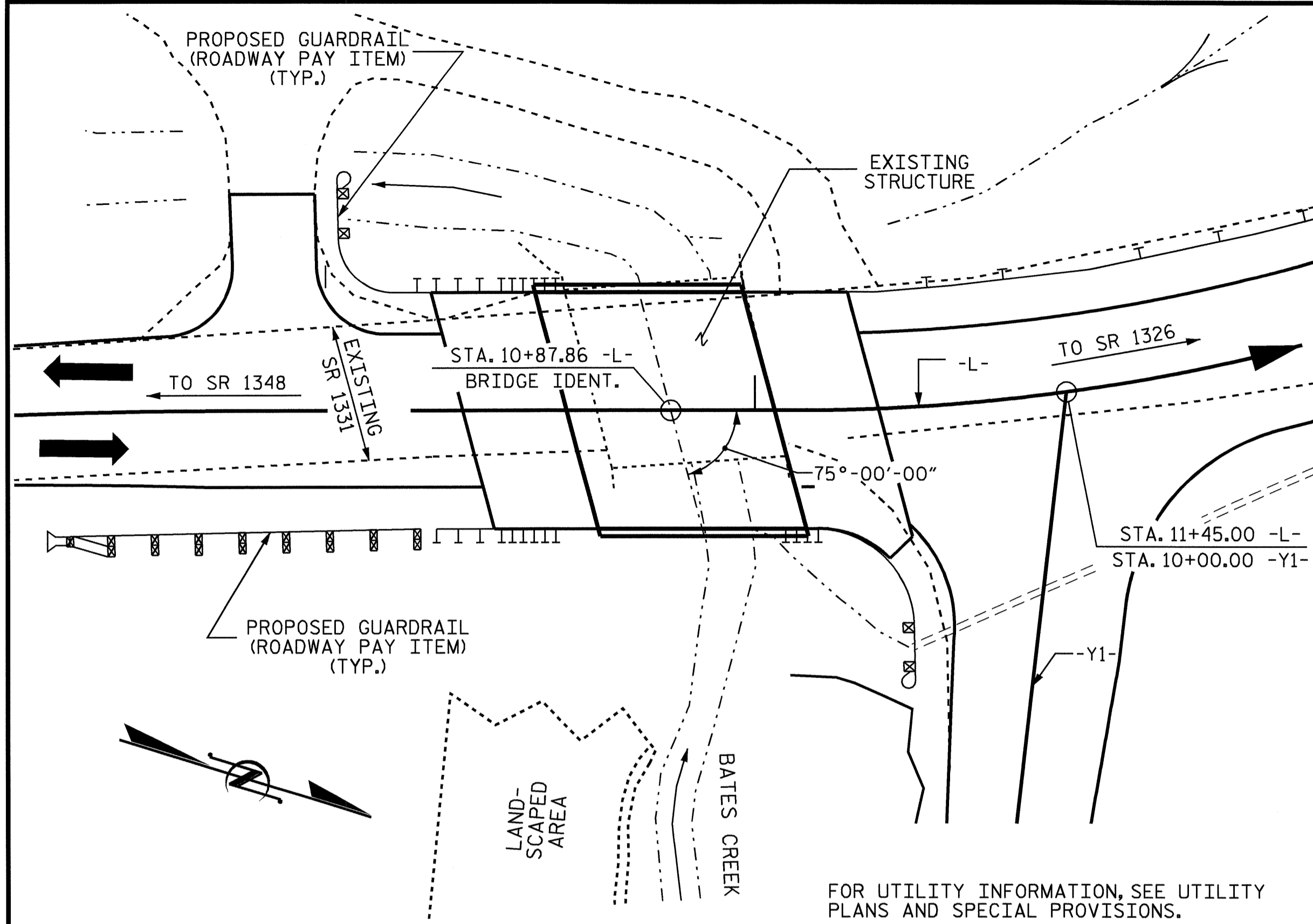
GENERAL DRAWING
FOR BRIDGE ON SR 1331
OVER BATES CREEK
BETWEEN SR 1348
AND SR 1326



DRAWN BY : D. HODGE DATE : 7/07
CHECKED BY : J. HARRIS DATE : 7/07

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

BM #1 : RR SPIKE IN BASE OF 20" OAK N 534978 E 489238 EL = 1,737.61'
 BM #2 : RR SPIKE IN BASE OF 30" HEMLOCK N 534501 E 489775 EL = 1,700.58'



LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HS20 OR ALTERNATE LOADING, EXCEPT THAT CORED SLAB UNITS HAVE BEEN DESIGNED FOR HS25.

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

THIS BRIDGE HAS BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.

THE EXISTING 2 SPAN (2@ 12'-9") STRUCTURE CONSISTING OF A TIMBER FLOOR ON 12" I- BEAMS WITH A 3" ASPHALT WEARING SURFACE AND CLEAR ROADWAY WIDTH OF 24'-6" ON A SUBSTRUCTURE CONSISTING OF TIMBER CAPS ON TIMBER PILES AT THE END BENTS AND TIMBER CAP/TIMBER PILES & CONCRETE SILL CRUTCH BENT AND LOCATED AT THE SITE OF THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE 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.

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 B.

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

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

ANY EXCAVATION REQUIRED FOR CONSTRUCTION OF THE END BENTS SHALL BE CONSIDERED INCIDENTAL.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

HYDRAULIC DATA

DESIGN DISCHARGE _____ = 700 C.F.S.
 FREQUENCY OF DESIGN FLOOD _____ = 25 YRS.
 DESIGN HIGH WATER ELEVATION _____ = 1,703.2 FT.
 DRAINAGE AREA _____ = 1.7 SQ. MI.
 BASIC DISCHARGE (Q100) _____ = 1,000 C.F.S.
 BASIC HIGH WATER ELEVATION _____ = 1,704.1 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE _____ = 329 C.F.S.
 FREQUENCY OF OVERTOPPING FLOOD _____ = 5 YRS.
 OVERTOPPING FLOOD ELEVATION _____ = 1,701.2 FT.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	PILE EXCAVATION IN SOIL	PILE EXCAVATION NOT IN SOIL	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 GALVANIZED STEEL PILES		18" STEEL SHEET PILES	ONE BAR METAL RAIL	1'-0" X 1'-8" CONCRETE PARAPET	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	
							NO.	LIN. FT.					SQ. FT.	LIN. FT.
SUPERSTRUCTURE	LUMP SUM	LIN. FT.	LIN. FT.	CU. YDS.	LUMP SUM	LBS.						LUMP SUM	NO.	LIN. FT.
END BENT NO. 1		52	39	18.7		2622	11	130	511					
END BENT NO. 2		28	25	17.3		2446	7	70	259					
TOTAL	LUMP SUM	80	64	36.0	LUMP SUM	5068	18	200	770	39.81	55.34	LUMP SUM	12	332.06

PROJECT NO. B-3826
 CHEROKEE COUNTY
 STATION: 10+87.86 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE ON SR 1331
 OVER BATES CREEK BETWEEN
 SR 1448 AND SR 1326



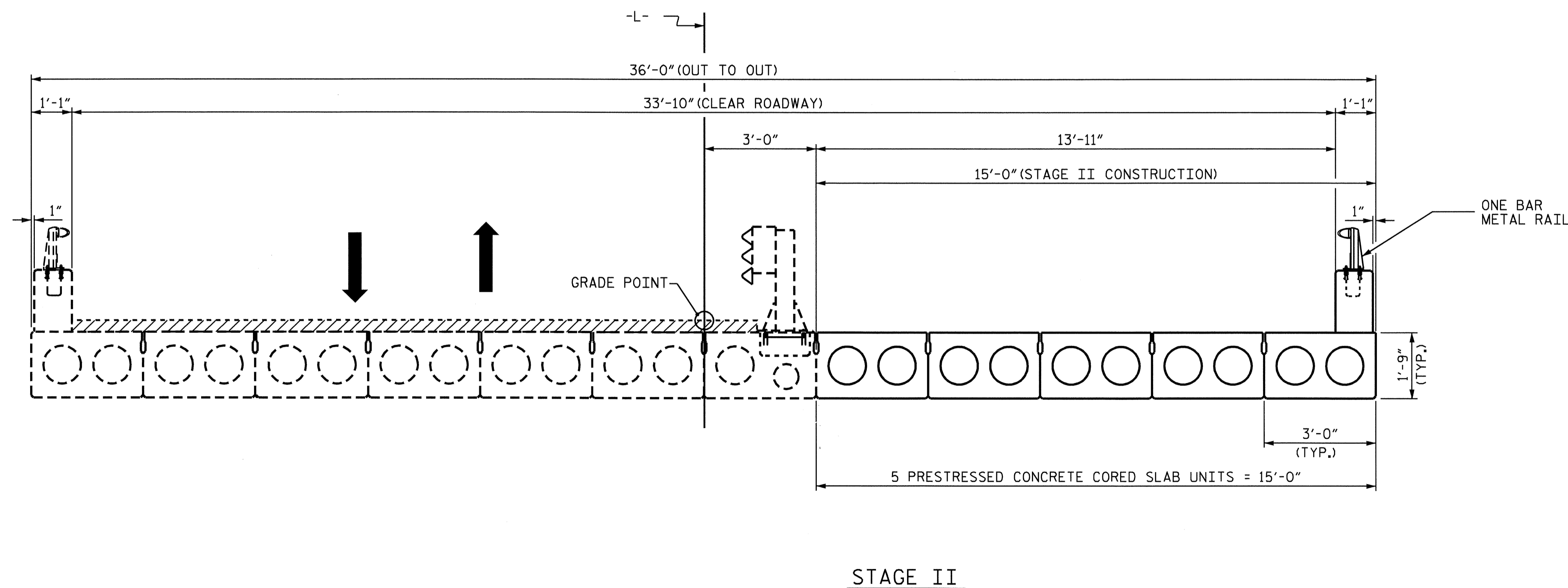
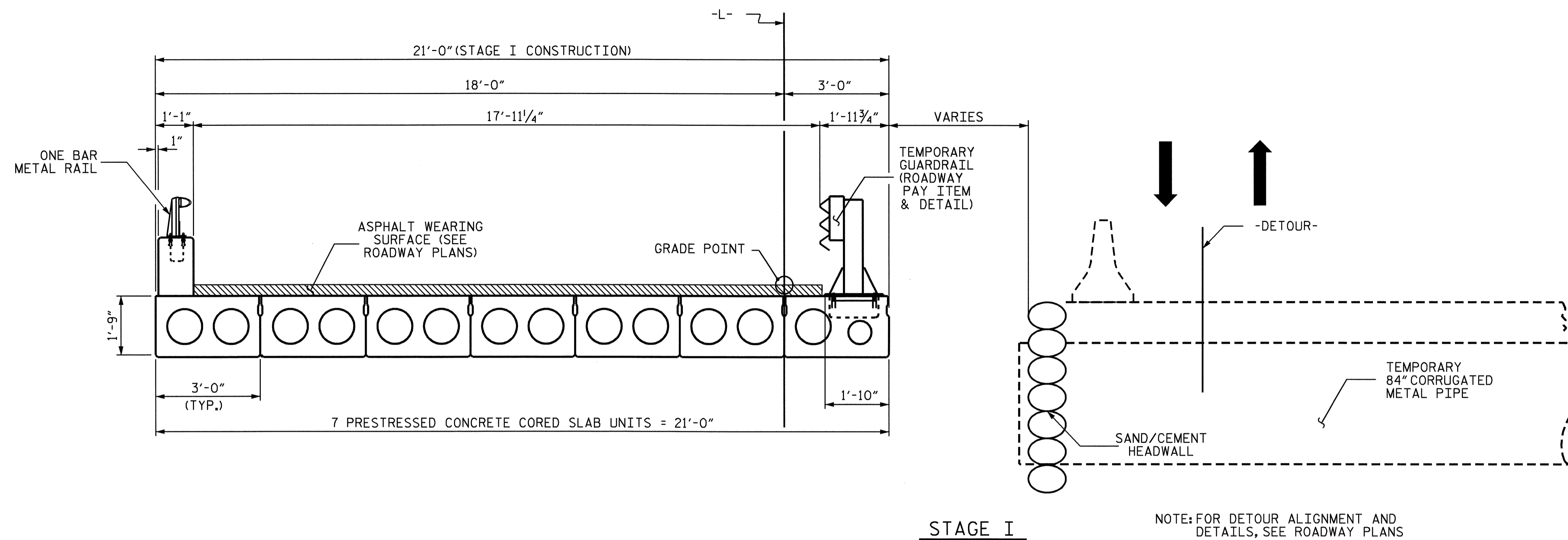
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 CHECKED BY : MG. CHEEK DATE : 07-18-07

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

NOTES

FOR TRAFFIC PHASING, SEE TRAFFIC CONTROL PLANS.
 FOR TEMPORARY GUARDRAIL DETAILS AND PAY ITEM, SEE ROADWAY PLANS.



STAGING SEQUENCE

PROJECT NO. B-3826
CHEROKEE COUNTY
 STATION: 10+87.86 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

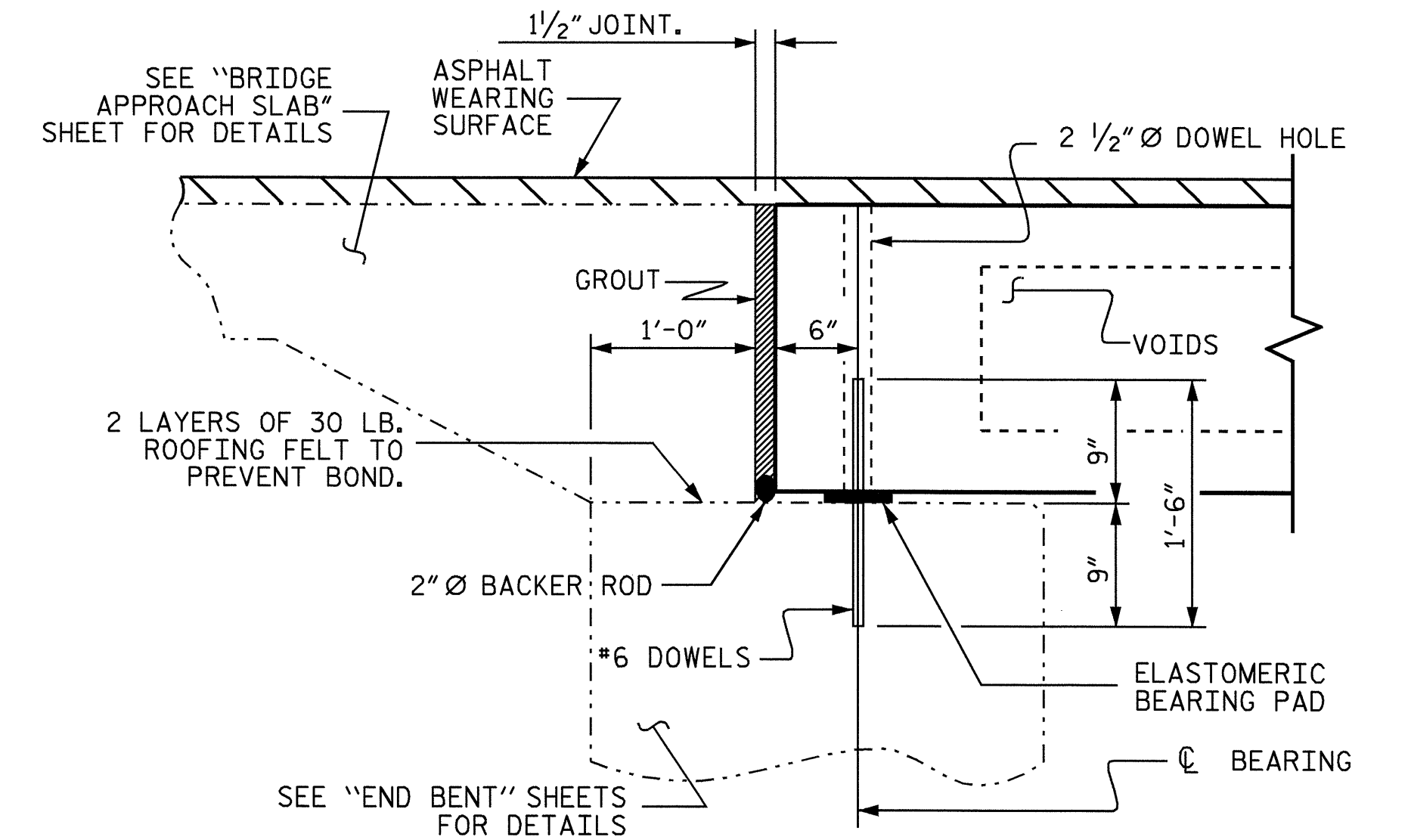
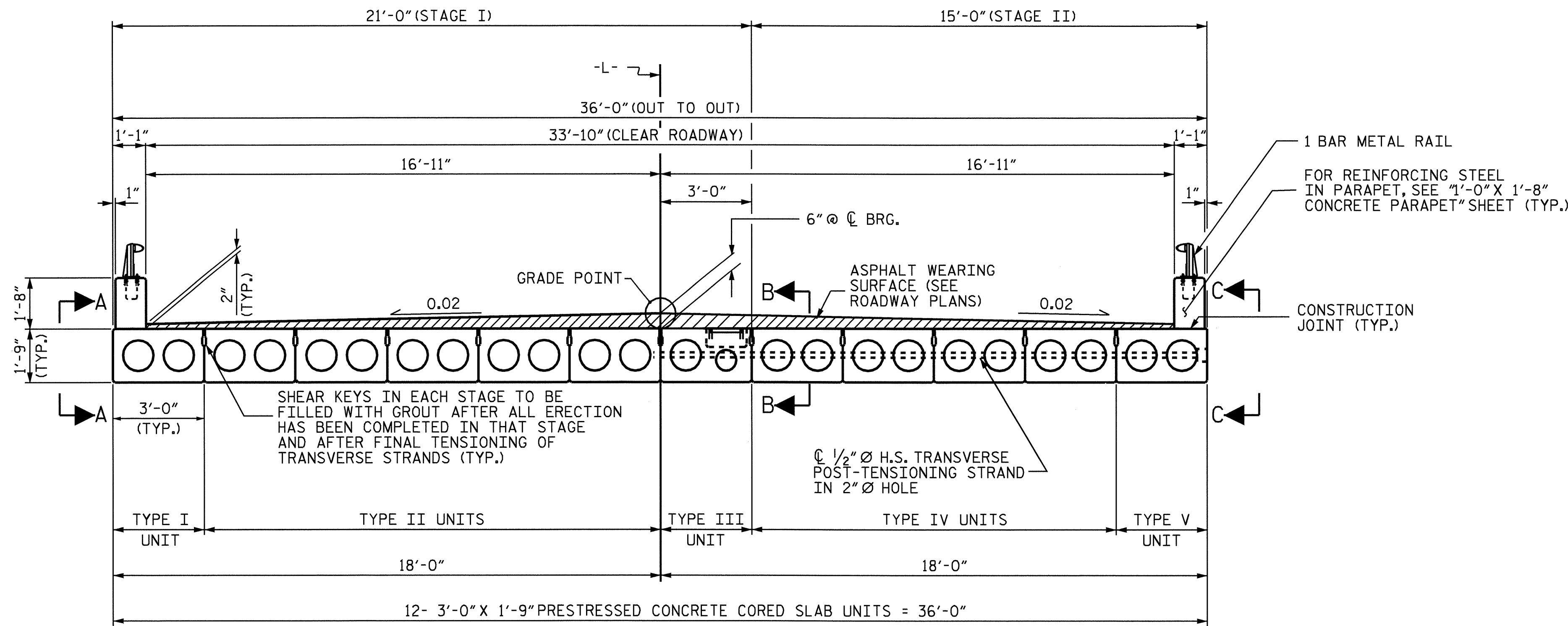
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 CHECKED BY : MG CHEEK DATE : 6-05-07

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



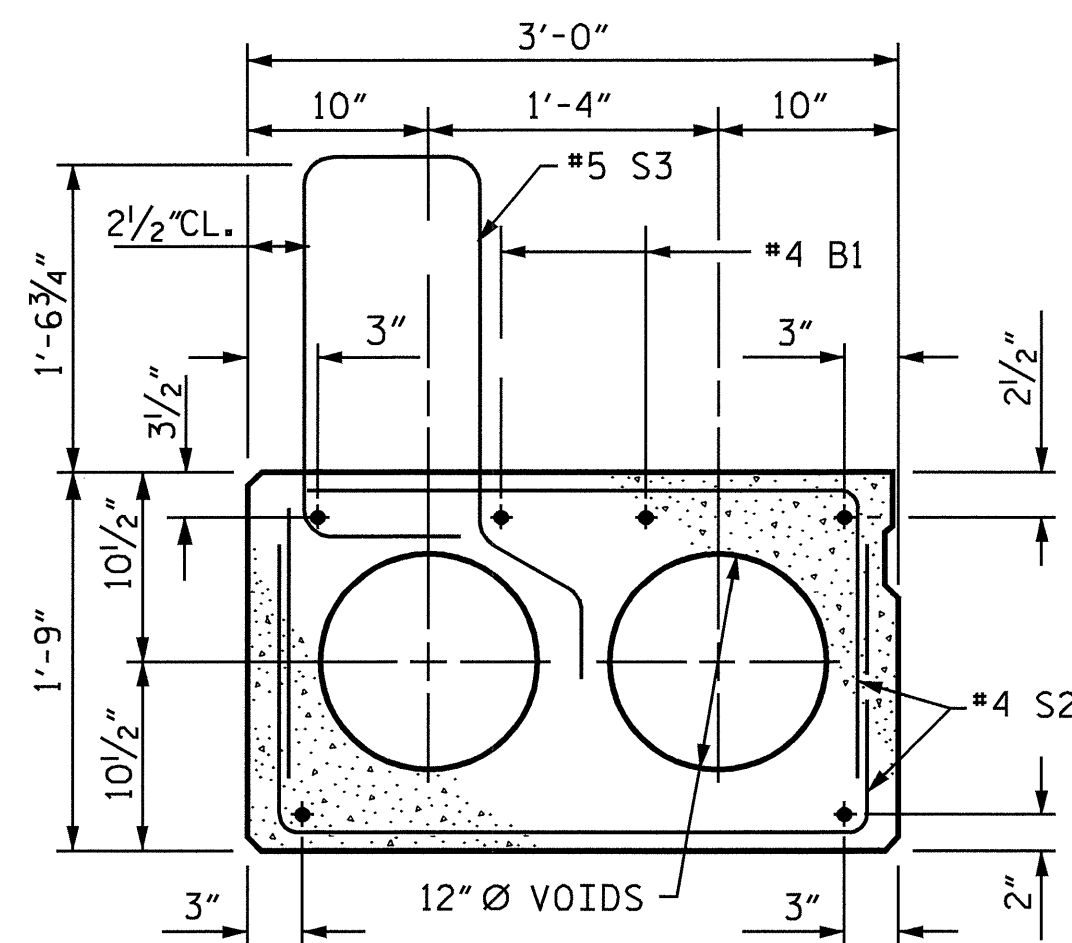
SECTION AT END BENT

HALF SECTION AT VOIDS

HALF SECTION AT INTERMEDIATE DIAPHRAGM

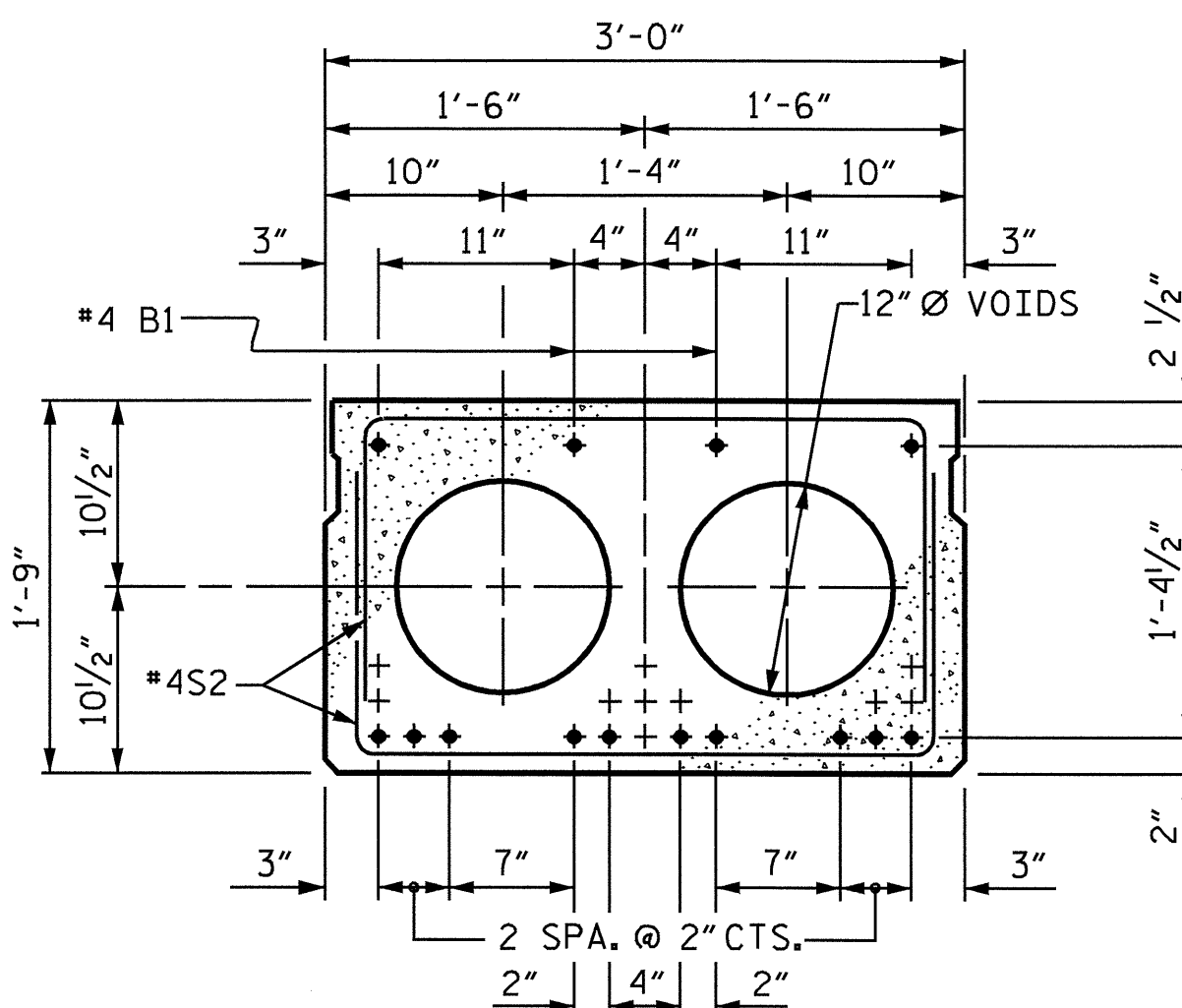
TYPICAL SECTION

FOR VIEWS A-A, B-B AND C-C, SEE SHEET 2 OF 7.



EXTERIOR SLAB SECTION

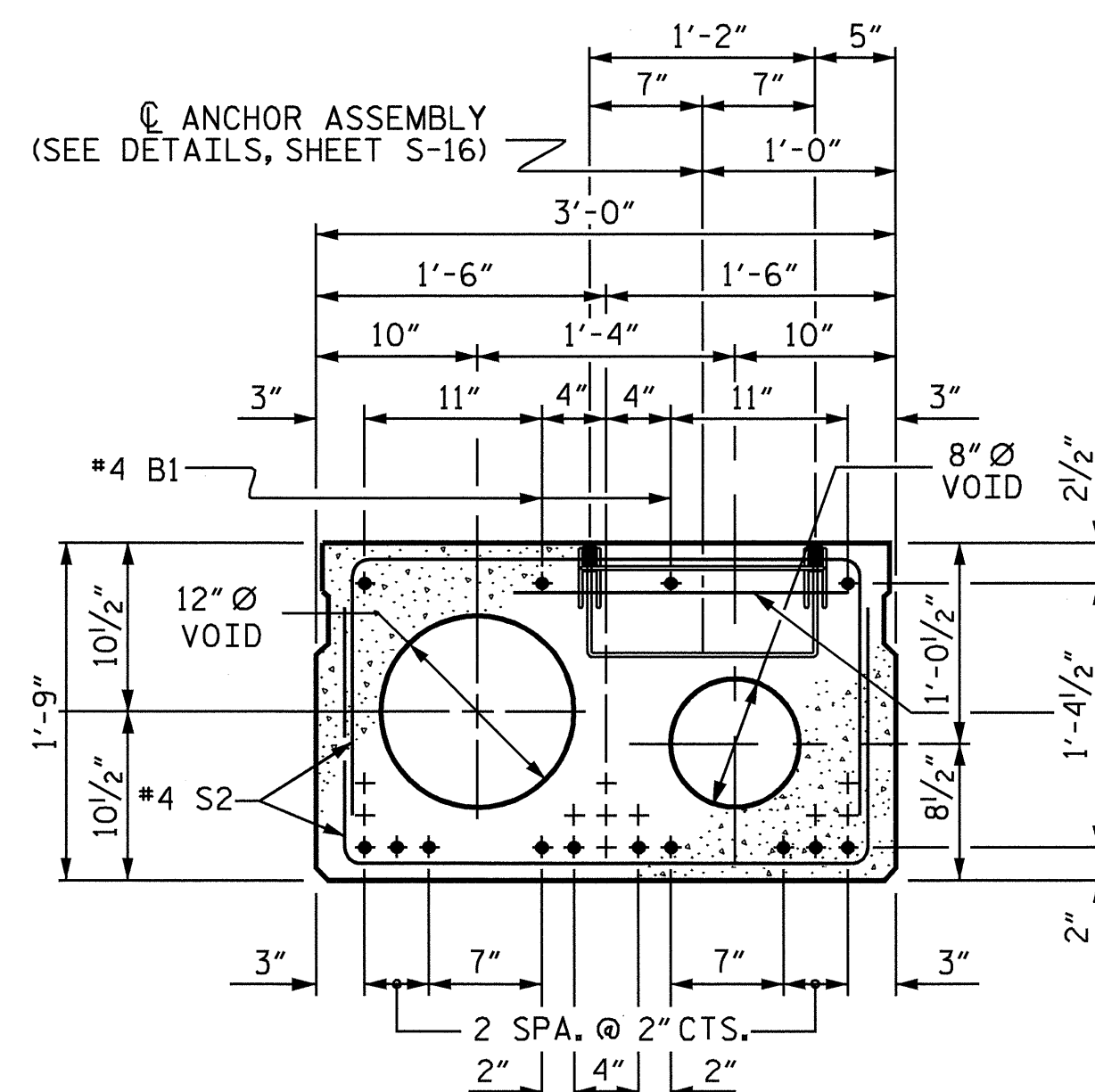
TYPE I & V
 (FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION - TYPE II & IV)



INTERIOR SLAB SECTION

1/2" ϕ LOW RELAXATION STRAND LAYOUT

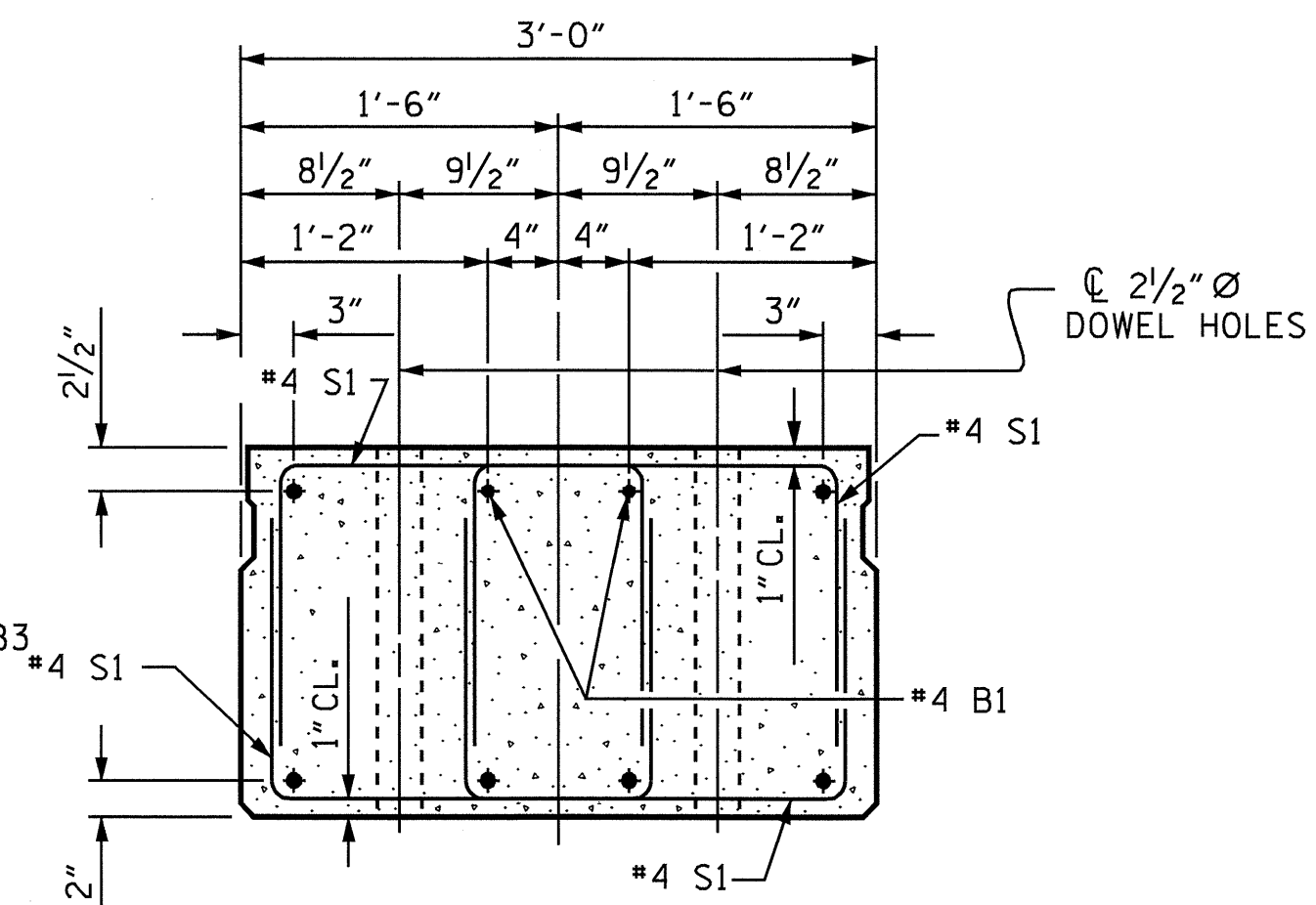
TYPE II & IV (12 STRANDS)



INTERIOR SLAB SECTION

1/2" ϕ LOW RELAXATION STRAND LAYOUT

TYPE III (12 STRANDS)
 FOR TEMPORARY GUARDRAIL ANCHOR ASSEMBLY LOCATION, SEE SECTION OF ANCHOR ASSEMBLY LOCATION ON "ANCHORAGE DETAILS FOR TEMPORARY GUARDRAIL ANCHOR ASSEMBLY FOR TYPE III CORED SLAB UNIT" SHEET.



END ELEVATION

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

PROJECT NO. B-3826
 CHEROKEE COUNTY
 STATION: 10+87.86 -L-

SHEET 1 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

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

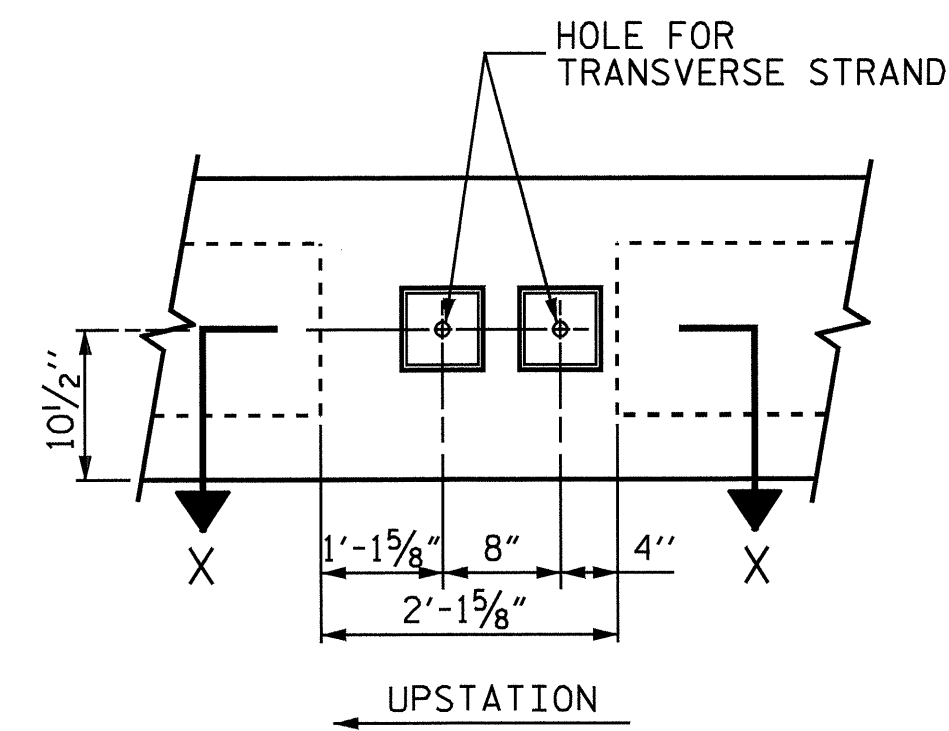
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5	
1			3			TOTAL SHEETS 24	
2			4				

DRAWN BY: A.L. FIGUEROA DATE: 10-12-06
 CHECKED BY: MG CHEEK DATE: 6-05-07

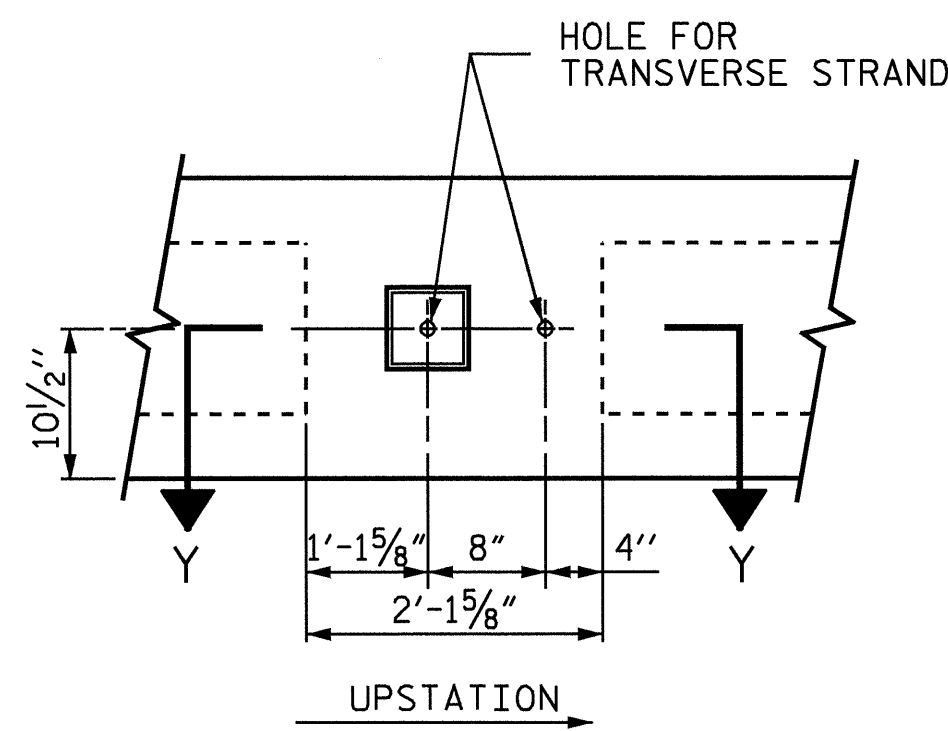
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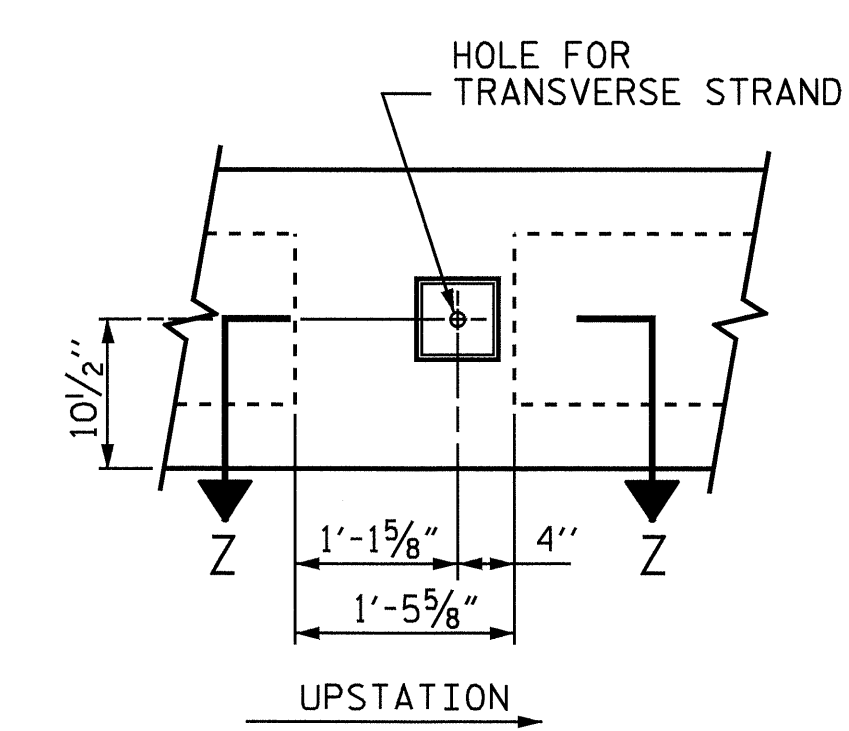
STR # 1 STD NO. PCS2



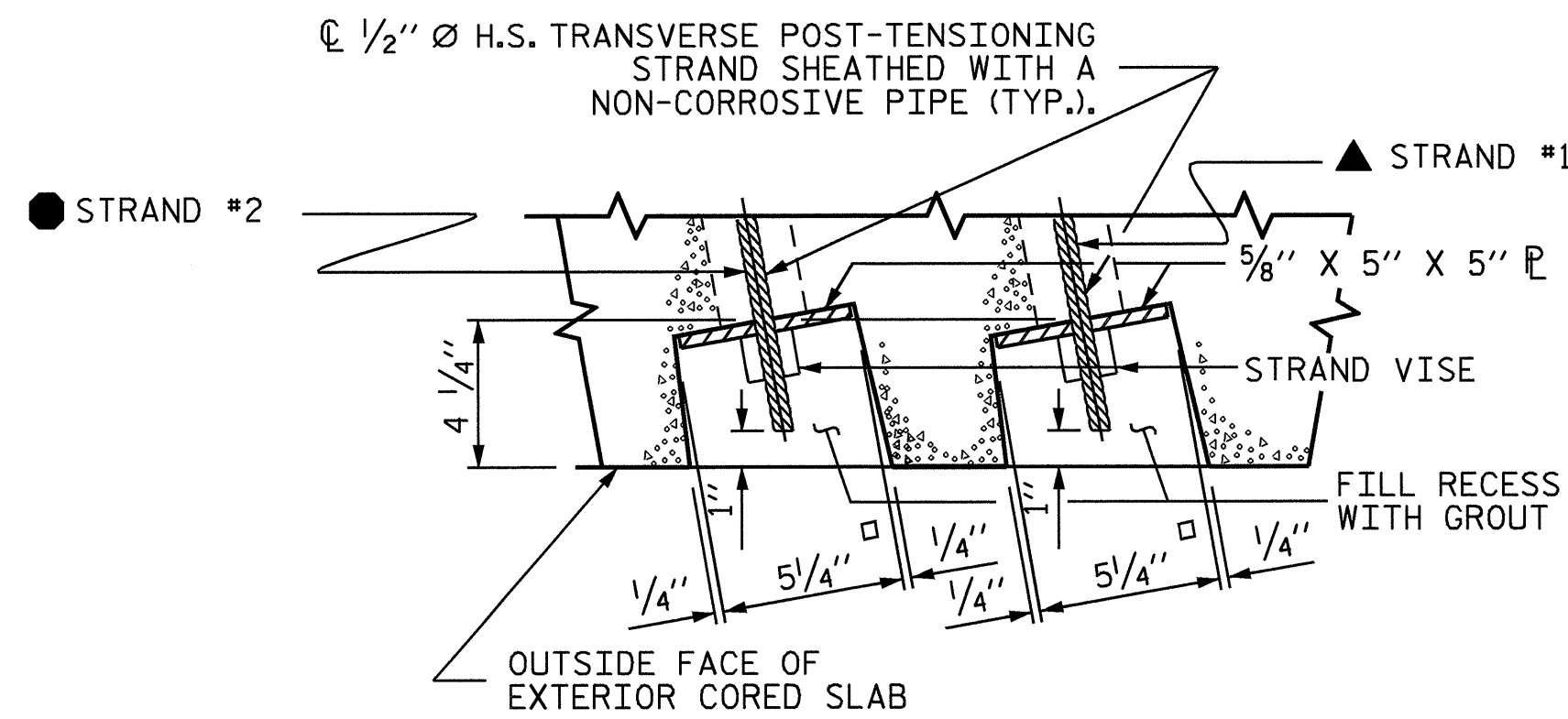
VIEW A-A
SEE SHEET 1 OF 7



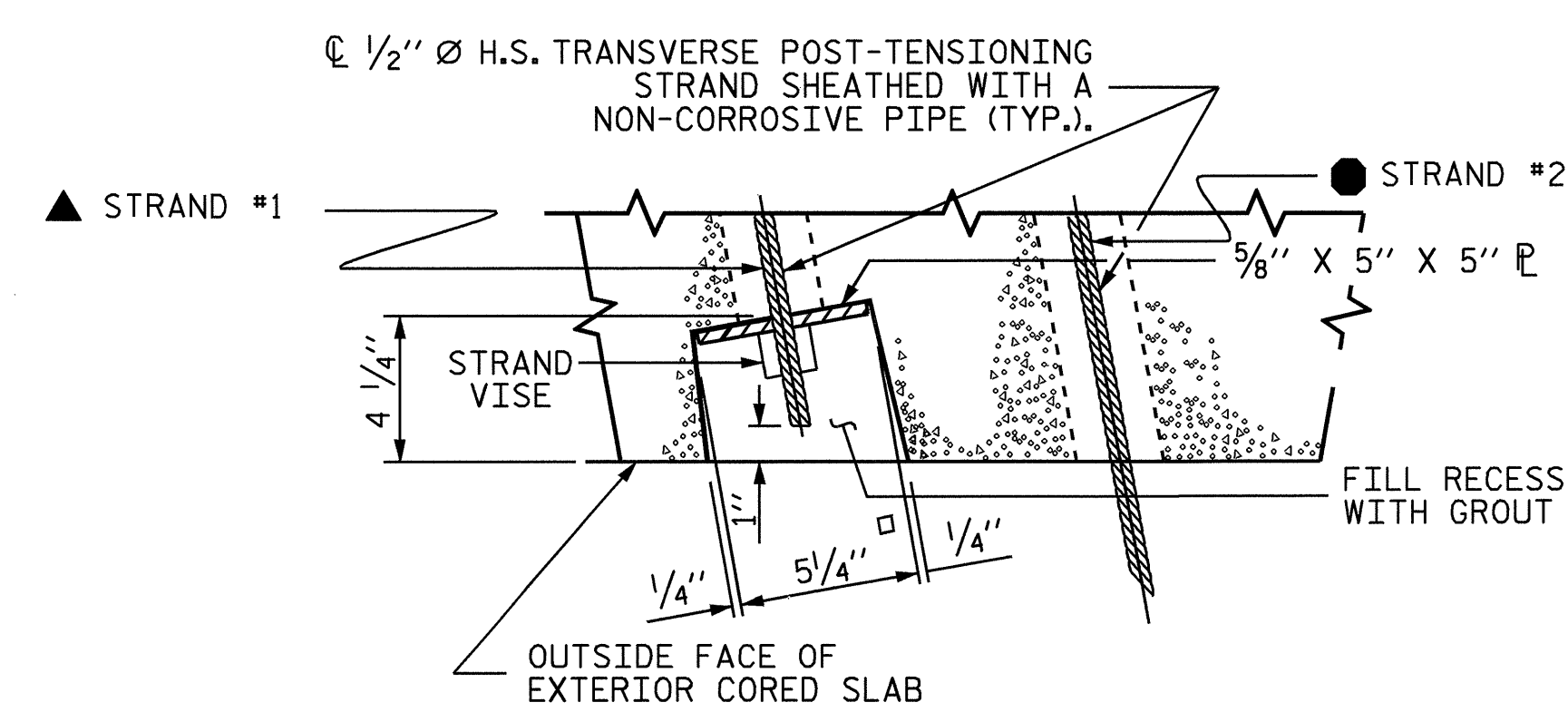
VIEW B-B
SEE SHEET 1 OF 7



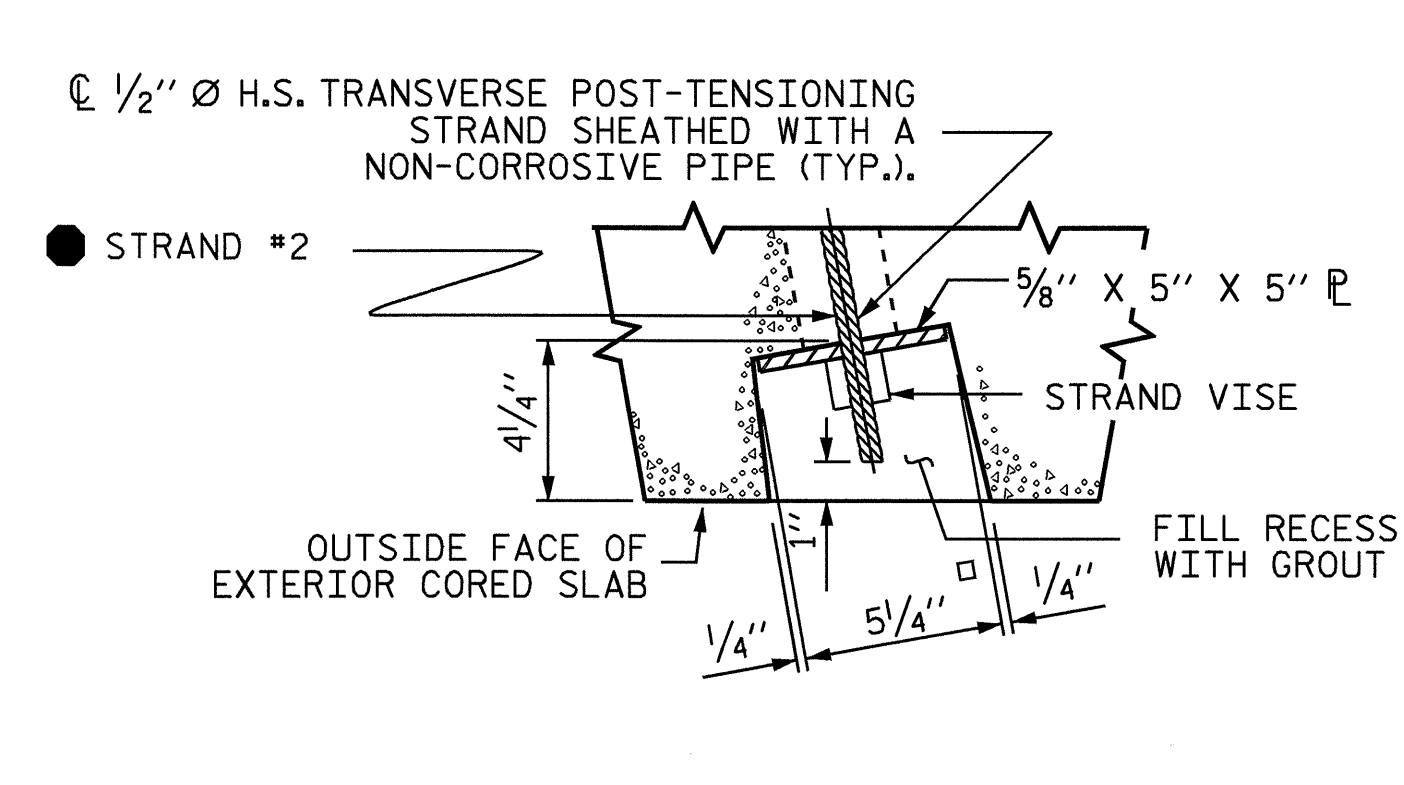
VIEW C-C
SEE SHEET 1 OF 7



SECTION X-X
(TYPE I UNIT)

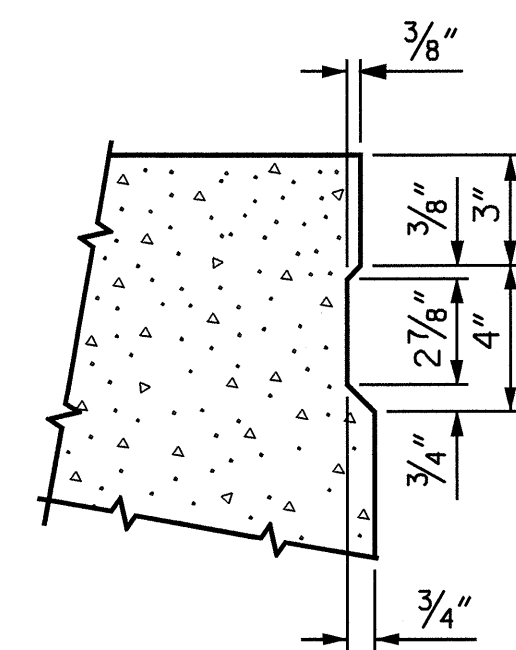


SECTION Y-Y
(TYPE III UNIT)



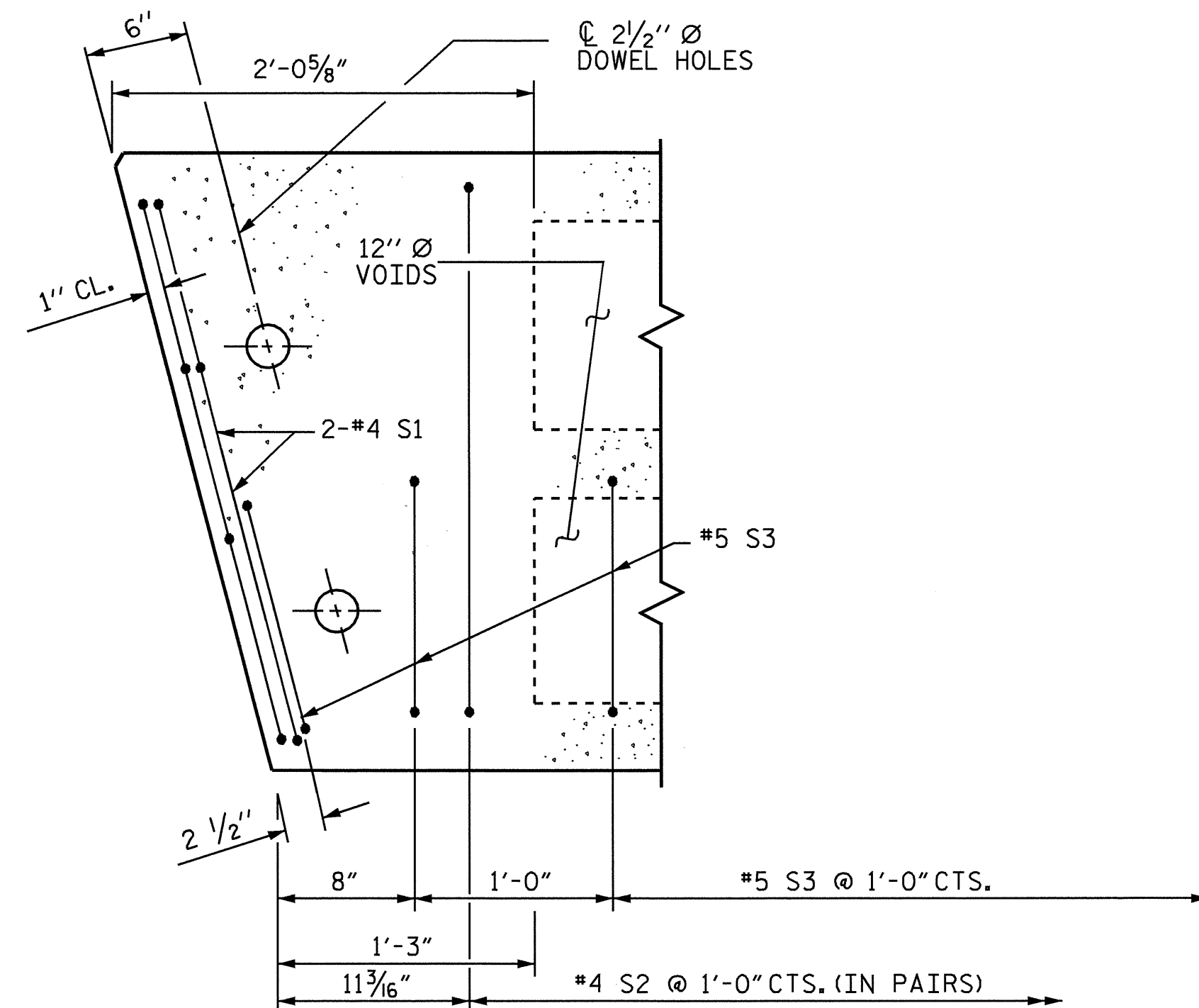
SECTION Z-Z
(TYPE V UNIT)

GROUTED RECESS AT END OF POST-TENSIONED STRAND



SHEAR KEY DETAIL

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



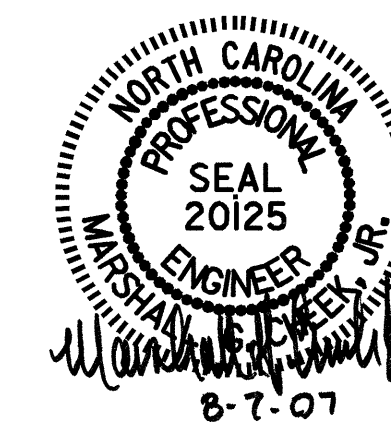
PART PLAN-EXTERIOR SECTION

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

- ▲ STRAND #1 GOES THRU 7 CORED SLAB UNITS (TO BE TENSIONED DURING STAGE I CONSTRUCTION)
- STRAND #2 GOES THRU ALL 12 CORED SLAB UNITS (TO BE TENSIONED DURING STAGE II CONSTRUCTION)

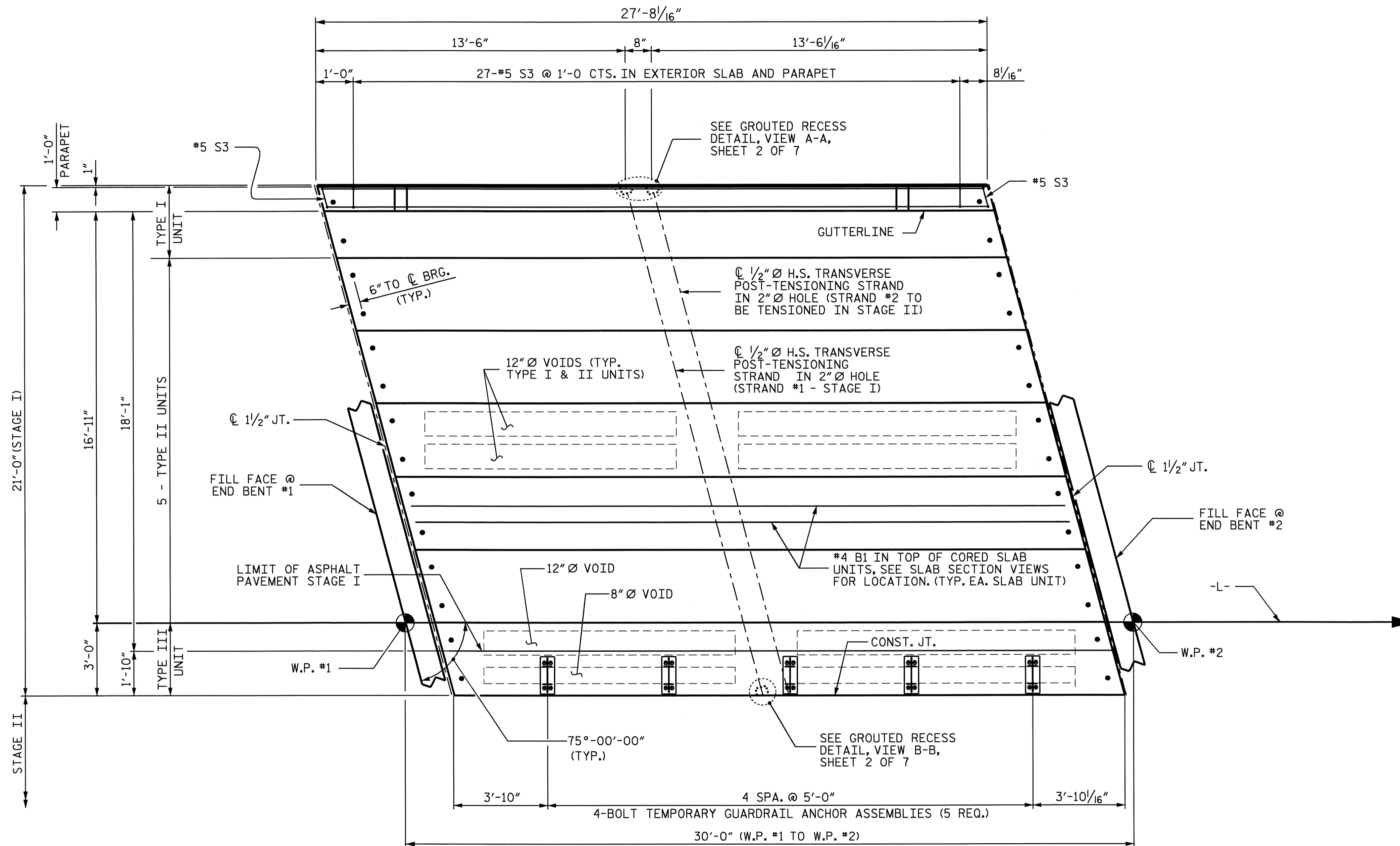
PROJECT NO. B-3826
CHEROKEE COUNTY
 STATION: 10+87.86-L-

SHEET 2 OF 7



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-6
SUPERSTRUCTURE 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT						
REVISIONS						TOTAL SHEETS 24
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

DRAWN BY: A.L. FIGUEROA DATE: 10-19-06
 CHECKED BY: MG CHEEK DATE: 6-05-07



PLAN OF SPAN A

PROJECT NO. B-3826
CHEROKEE COUNTY
 STATION: 10+87.86-L-

SHEET 3 OF 7

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

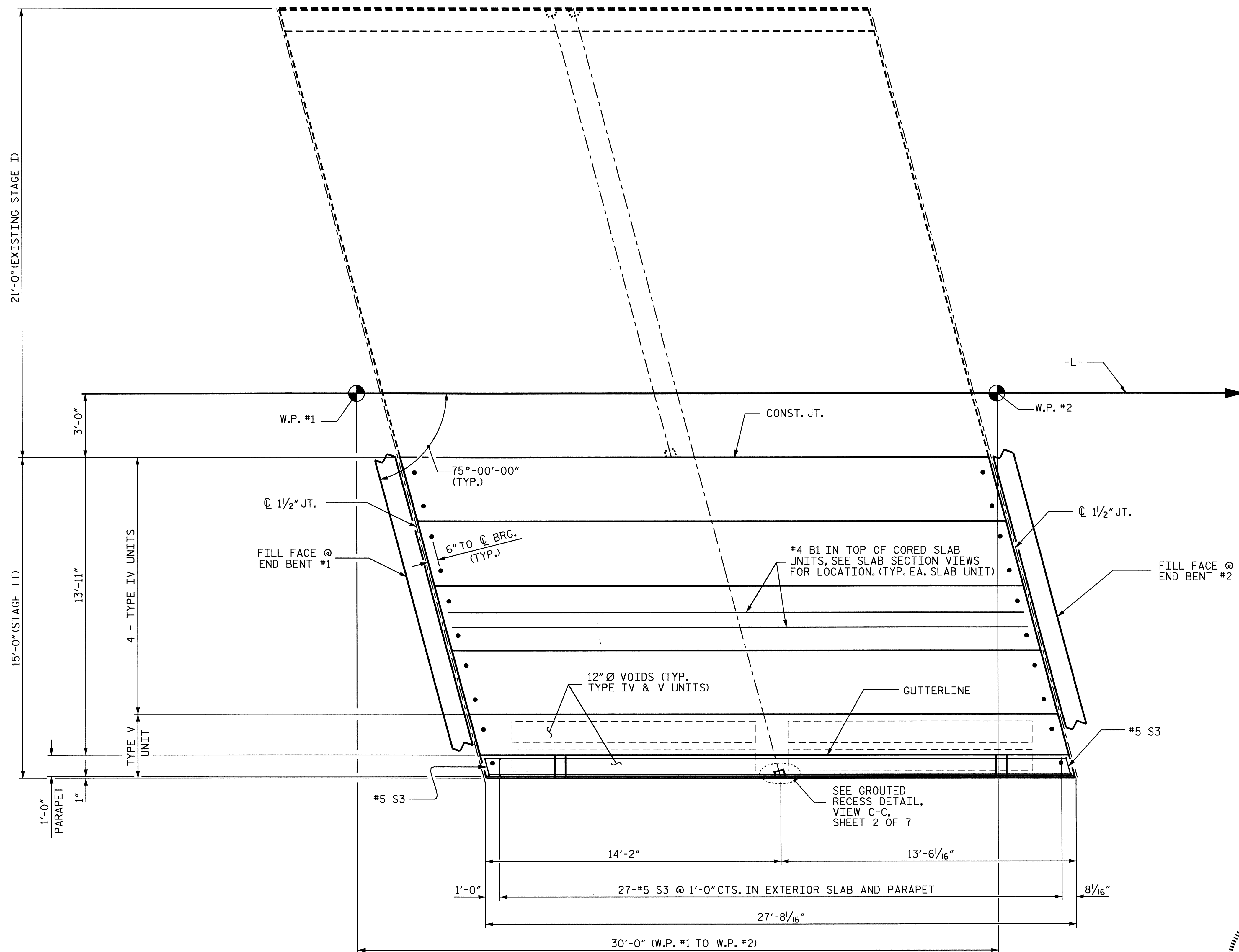


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 CHECKED BY : MG CHEEK DATE : 6-05-07

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			24

STR # 1



PLAN OF SPAN A

PROJECT NO. B-3826
CHEROKEE COUNTY
 STATION: 10+87.86-L-

SHEET 4 OF 7

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

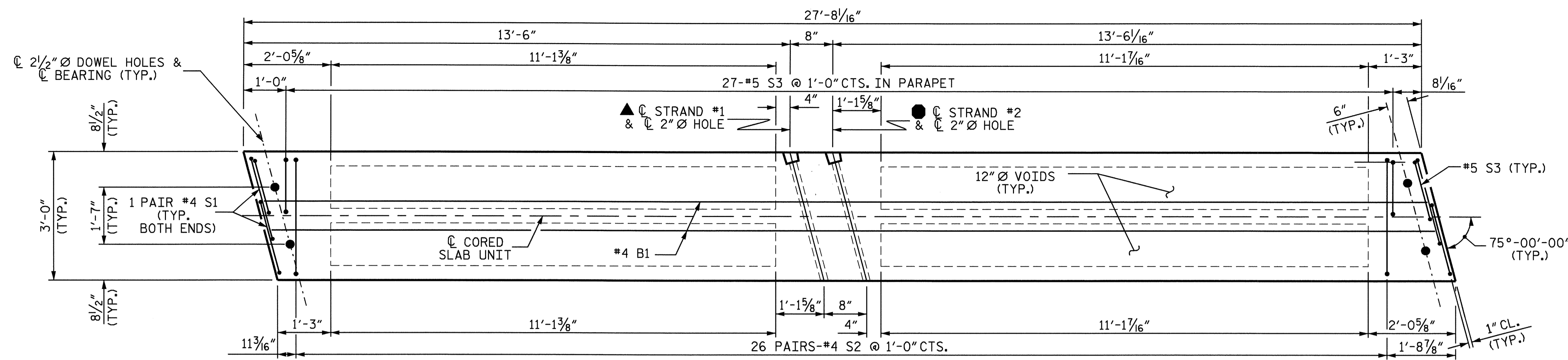


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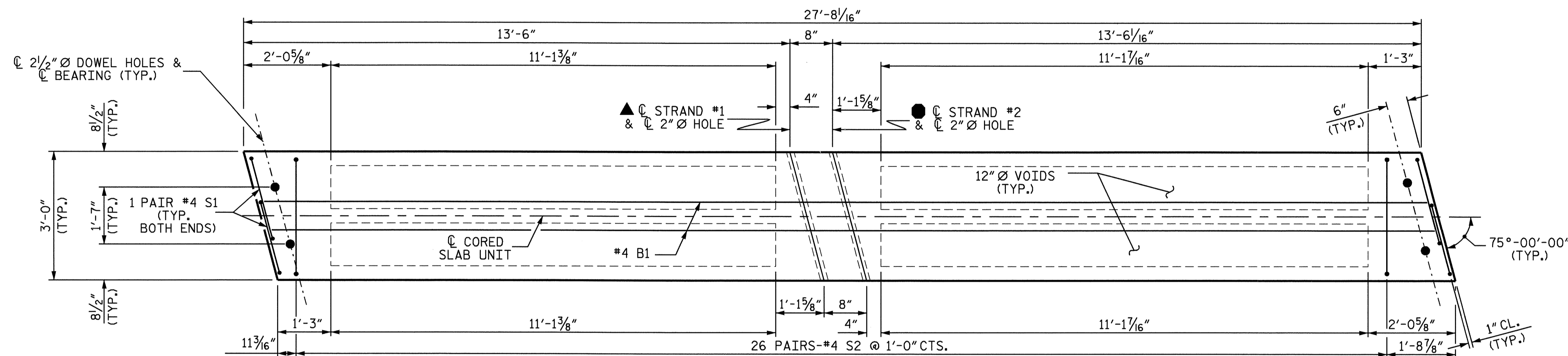
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			24

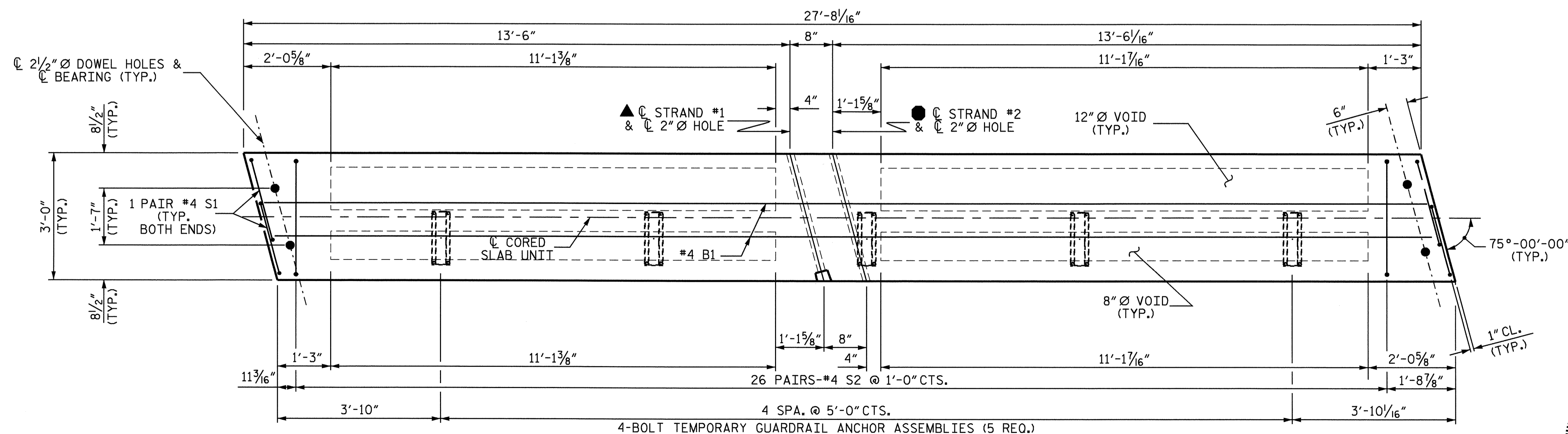
STR # 1



PLAN - TYPE I UNIT - STAGE I



PLAN - TYPE II UNIT - STAGE I



PLAN - TYPE III UNIT - STAGE I

NOTES

- ▲ STRAND #1 GOES THRU 7 CORED SLAB UNITS (TO BE TENSIONED DURING STAGE I CONSTRUCTION)
 - STRAND #2 GOES THRU ALL 12 CORED SLAB UNITS (TO BE TENSIONED DURING STAGE II CONSTRUCTION)
- FOR GROUTED RECESS, SEE SHEET 2 OF 7

PROJECT NO. B-3826
CHEROKEE COUNTY
 STATION: 10+87.86 -L-

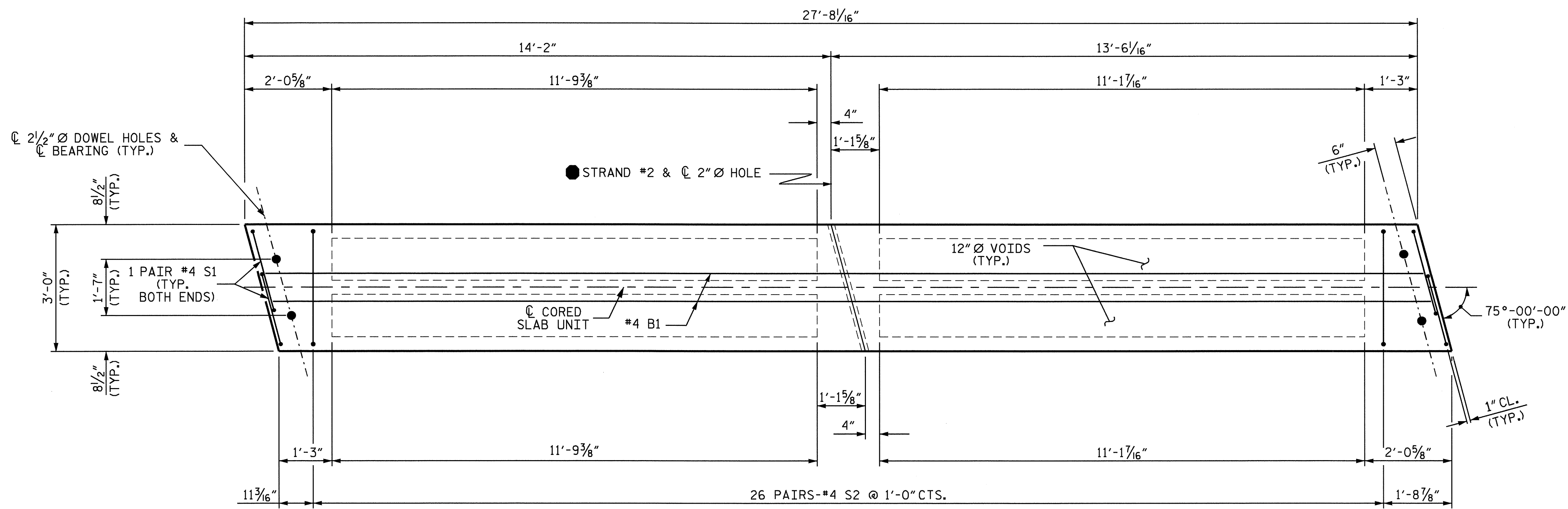
SHEET 5 OF 7

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

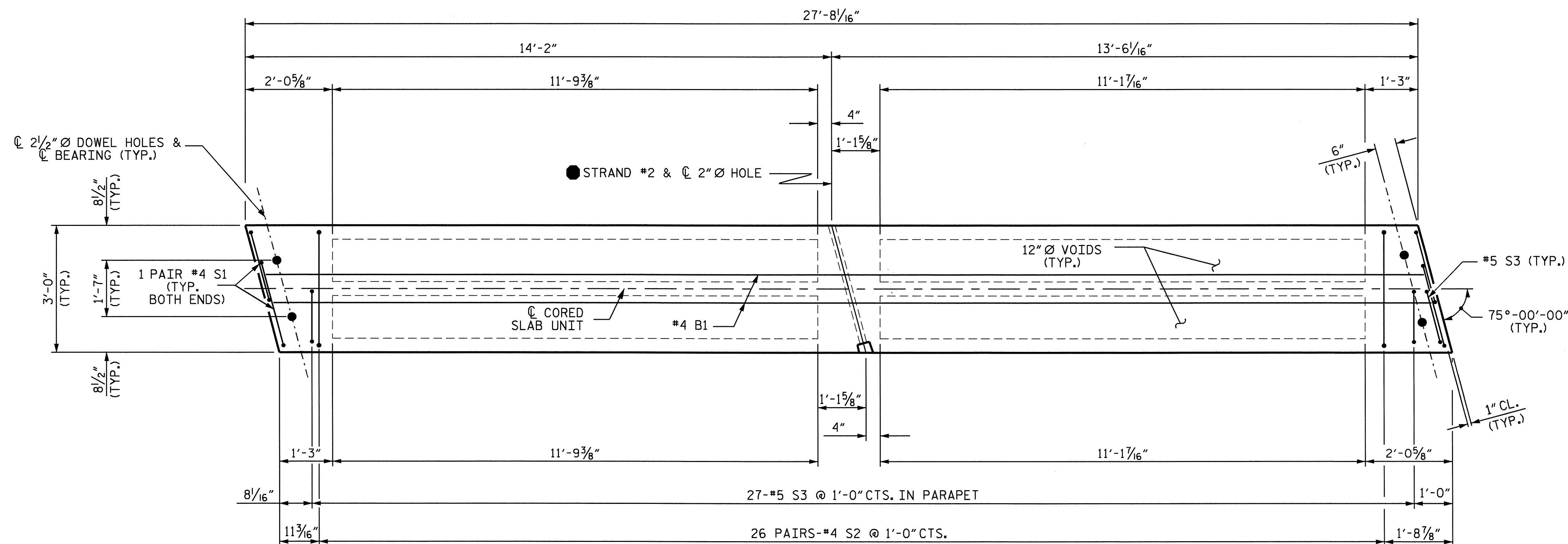


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			24

DRAWN BY: A.L. FIGUEROA DATE: 10-19-06
 CHECKED BY: MG CHEEK DATE: 6-05-07



PLAN - TYPE IV UNIT - STAGE II



PLAN - TYPE V UNIT - STAGE II

NOTES

- STRAND #2 GOES THRU ALL 12 CORED SLAB UNITS (TO BE TENSIONED DURING STAGE II CONSTRUCTION)
- FOR GROUTED RECESS, SEE SHEET 2 OF 7.

PROJECT NO. B-3826
CHEROKEE COUNTY
 STATION: 10+87.86 -L-

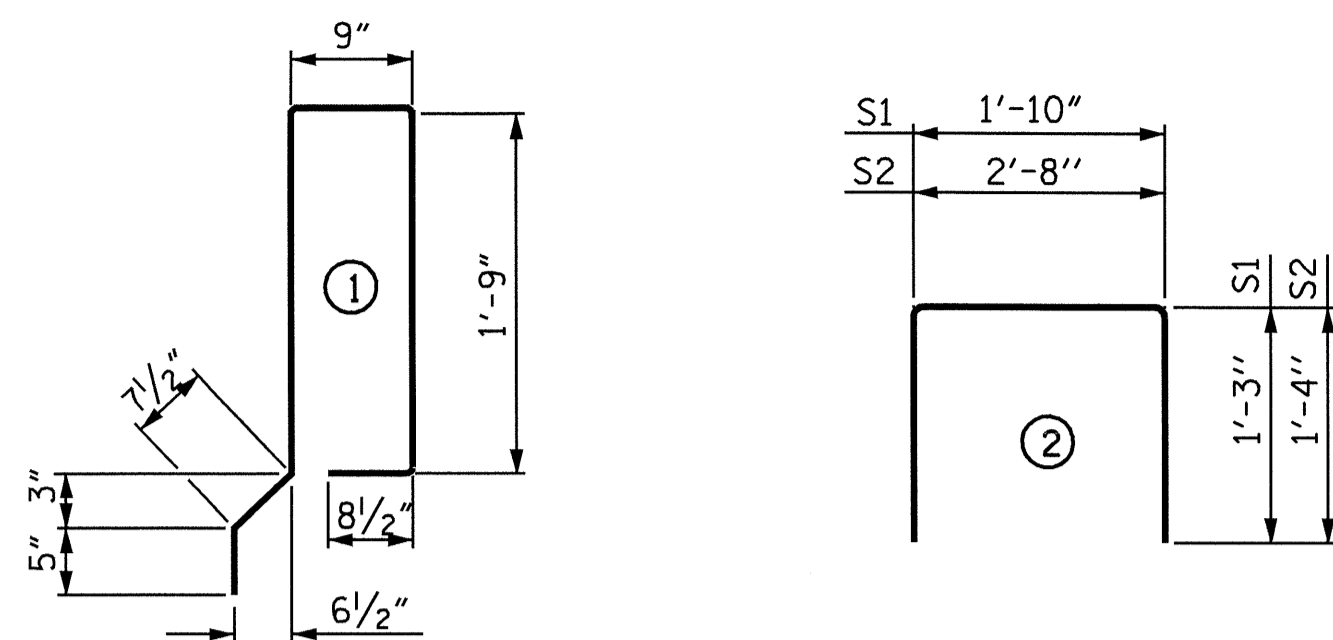
SHEET 6 OF 7



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-10	
SUPERSTRUCTURE 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT DETAILS STAGE II						TOTAL SHEETS 24	
REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				
2			4				

DRAWN BY : A.L. FIGUEROA DATE : 10-19-06
 CHECKED BY : MG CHEEK DATE : 6-05-07

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR ONE CORED SLAB UNIT

				STAGE I				STAGE II					
				TYPE I UNIT		TYPE II UNIT		TYPE III UNIT		TYPE IV UNIT		TYPE V UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT
*B1	2	#4	STR	27'-3"	36	27'-3"	36	27'-3"	36	27'-3"	36	27'-3"	36
S1	8	#4	2	4'-4"	23	4'-4"	23	4'-4"	23	4'-4"	23	4'-4"	23
S2	52	#4	2	5'-4"	185	5'-4"	185	5'-4"	185	5'-4"	185	5'-4"	185
*S3	29	#5	1	6'-0"	181							6'-0"	181
REINFORCING STEEL				LBS.	208		208		208		208		208
* EPOXY COATED REINFORCING STEEL				LBS.	217		36		36		36		217
5,000 P.S.I. CONCRETE				CU. YDS.	4.1		4.1		4.4		4.1		4.1
1/2" Ø L.R. STRANDS				No.	12		12		12		12		12

* THESE BARS ARE EPOXY COATED

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 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.

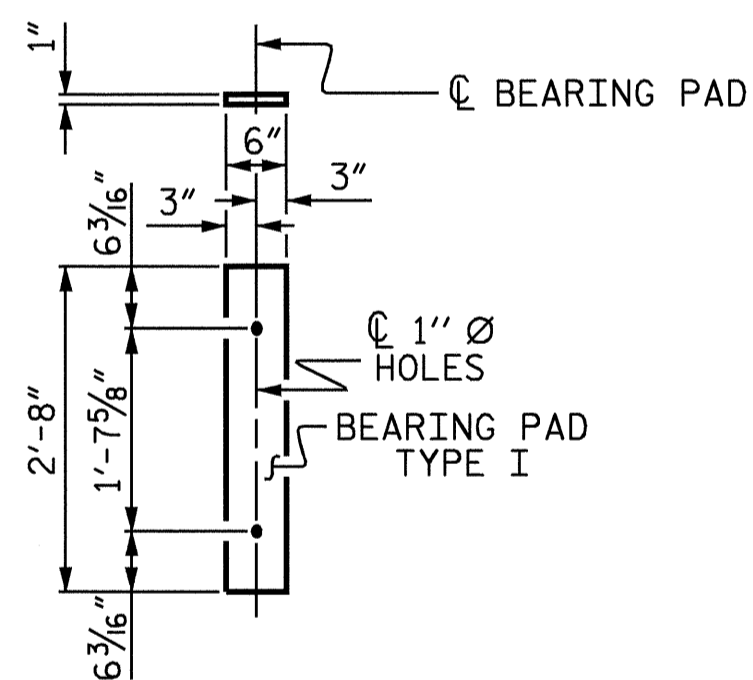
THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4,000 PSI.

ALL REINFORCING STEEL IN PARAPET RAILS SHALL BE EPOXY COATED.

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.



FIXED END
(TYPE I - 24 REQ'D)

ELASTOMERIC BEARING DETAILS

DEAD LOAD DEFLECTION AND CAMBER

	STAGE I			STAGE II	
	TYPE I 1/2" Ø L.R. STRAND	TYPE II 1/2" Ø L.R. STRAND	TYPE III 1/2" Ø L.R. STRAND	TYPE IV 1/2" Ø L.R. STRAND	TYPE V 1/2" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1/16" ↑	1/16" ↑	1/16" ↑	1/16" ↑	1/16" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	1/16" ↓	1/16" ↓	1/16" ↓	1/16" ↓	1/16" ↓
FINAL CAMBER	3/8" ↑	3/8" ↑	3/8" ↑	3/8" ↑	3/8" ↑

** INCLUDES FUTURE WEARING SURFACE

CORED SLABS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
STAGE I	TYPE I	1 27'-8 1/16"	27'-8 1/16"
	TYPE II	5 27'-8 1/16"	138'-4 5/16"
	TYPE III	1 27'-8 1/16"	27'-8 1/16"
STAGE II	TYPE IV	4 27'-8 1/16"	110'-8 1/4"
	TYPE V	1 27'-8 1/16"	27'-8 1/16"
TOTAL	12		332'-0 3/4"

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

PROJECT NO. B-3826
CHEROKEE COUNTY
 STATION: 10+87.86 -L-

SHEET 7 OF 7

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

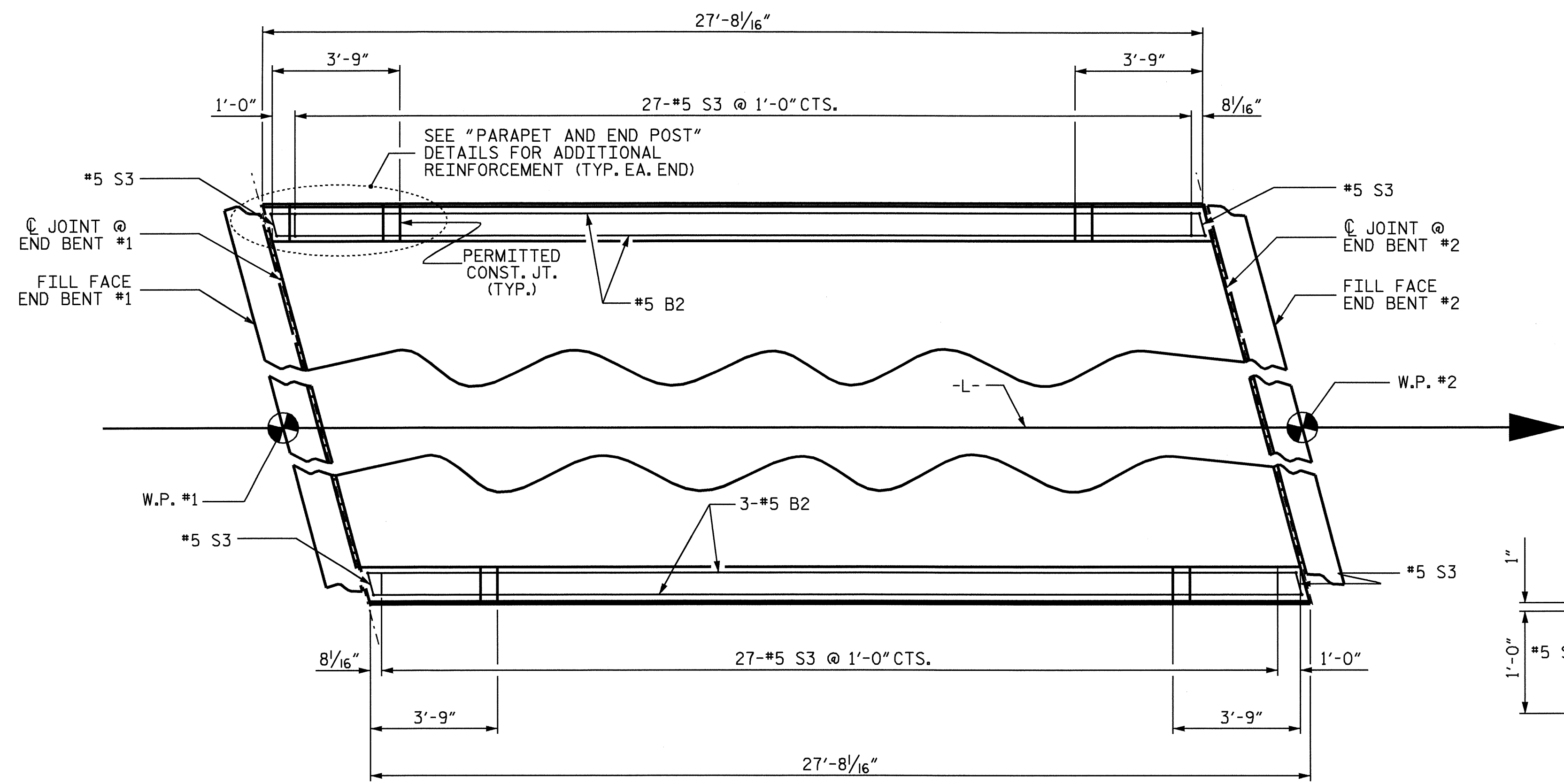


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS 24
2			4			

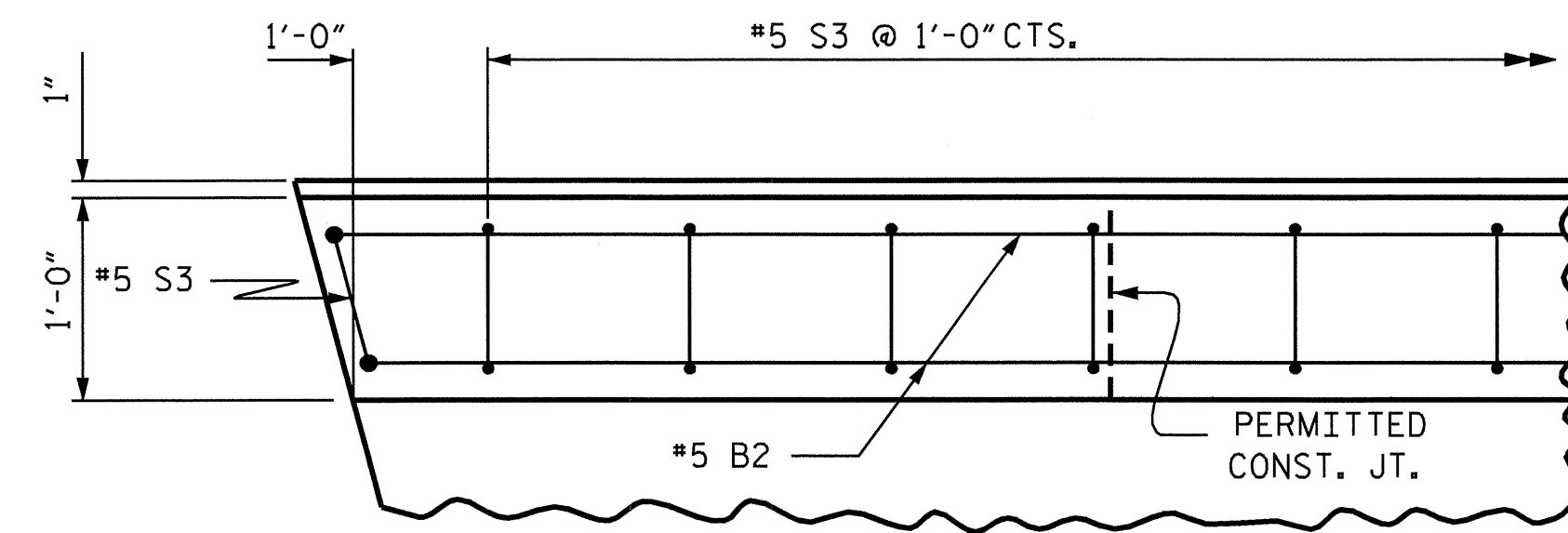
STD. NO. PCS3

03-AUG-2007 10:06 R:\AS\Structure\B3826\A.L. Figueroa\Micro-Station\B3826.sd.cs.dgn

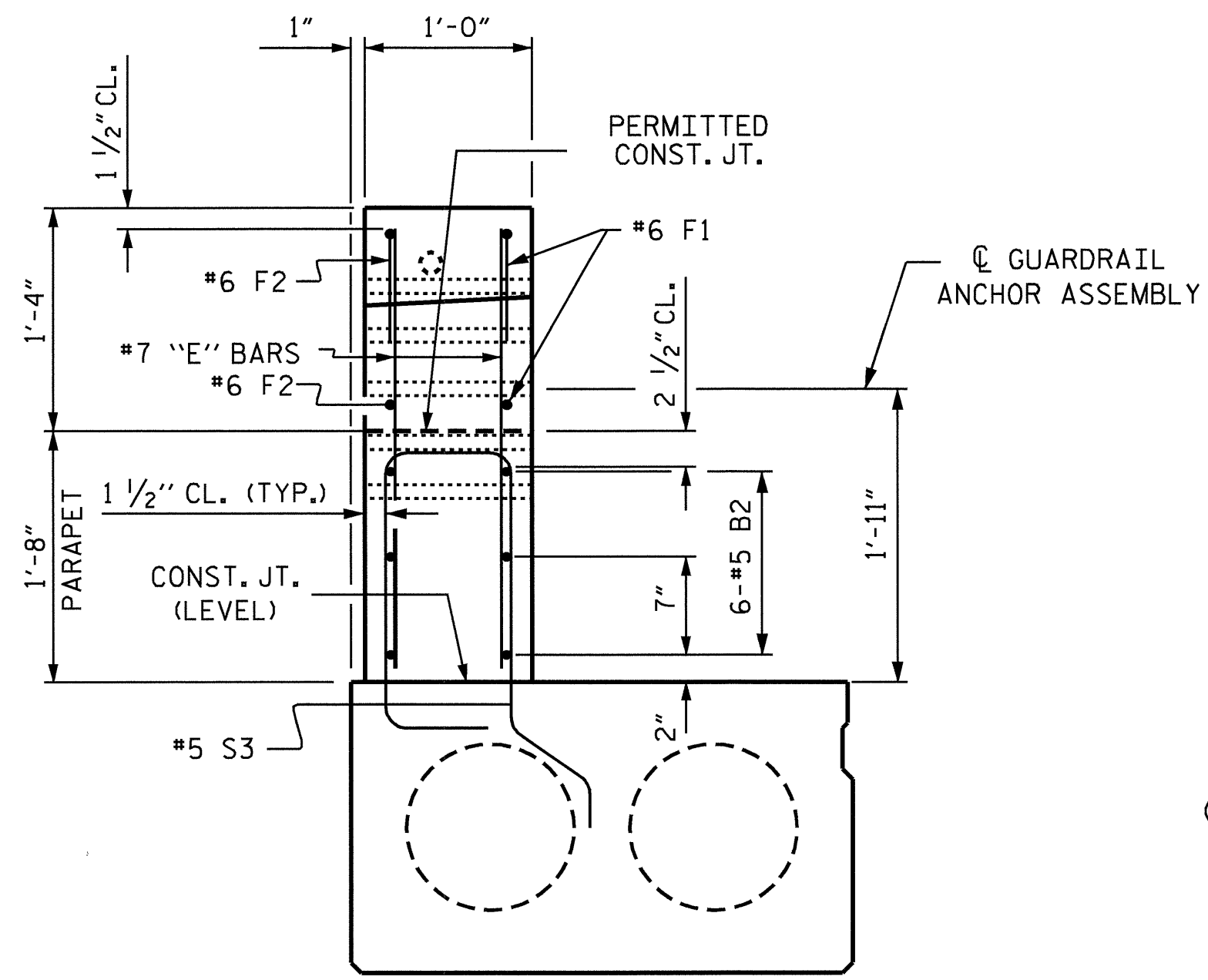
ASSEMBLED BY : A. L. FIGUEROA DATE : 10-12-06
 CHECKED BY : MG CHEEK DATE : 6-05-07
 DRAWN BY : WJH 4/89 REV. 7/10/01 RWW/LES
 CHECKED BY : FCJ 5/89 REV. 5/7/03RRR RWW/JTE
 REV. 5/01/06 TLA/GM



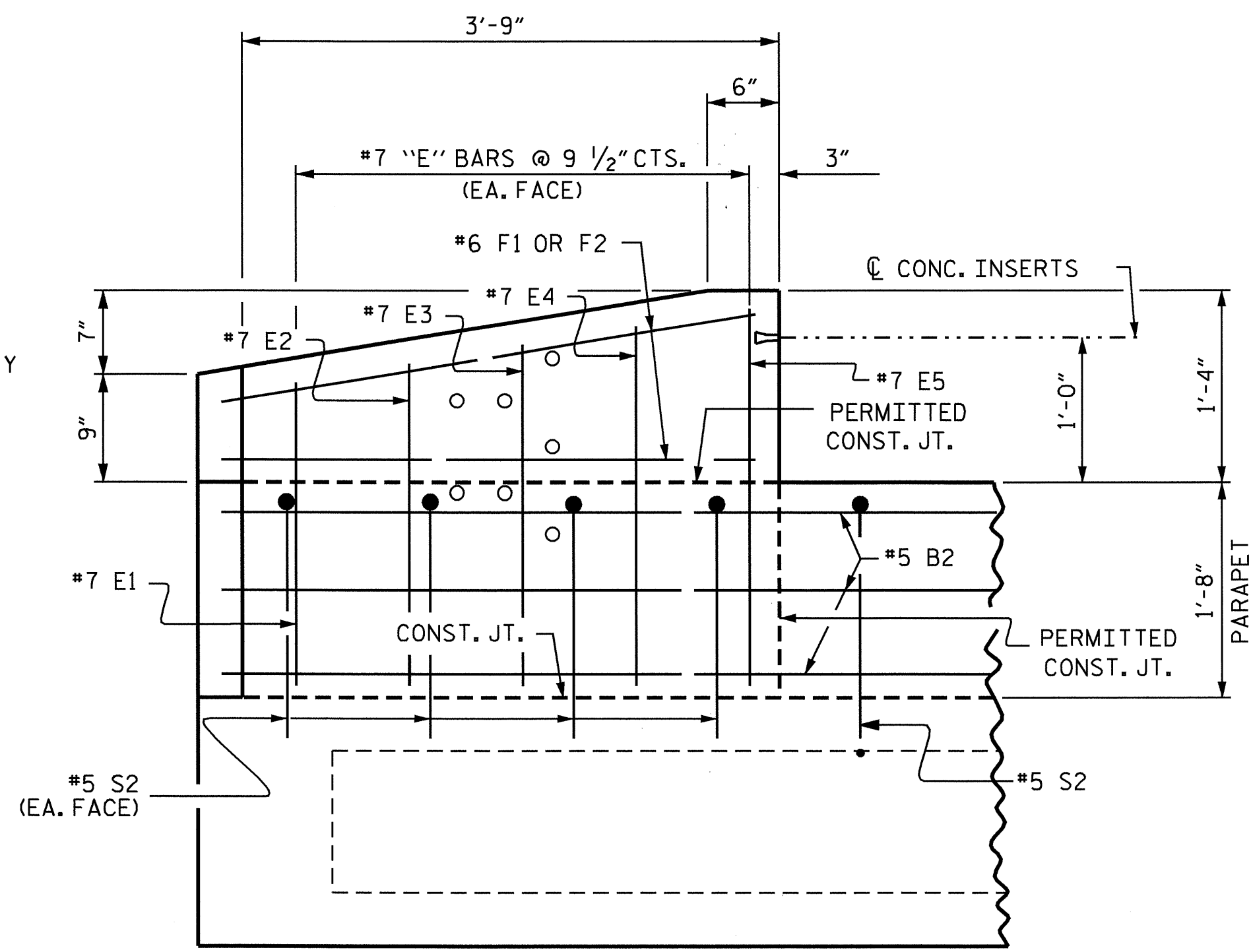
PLAN



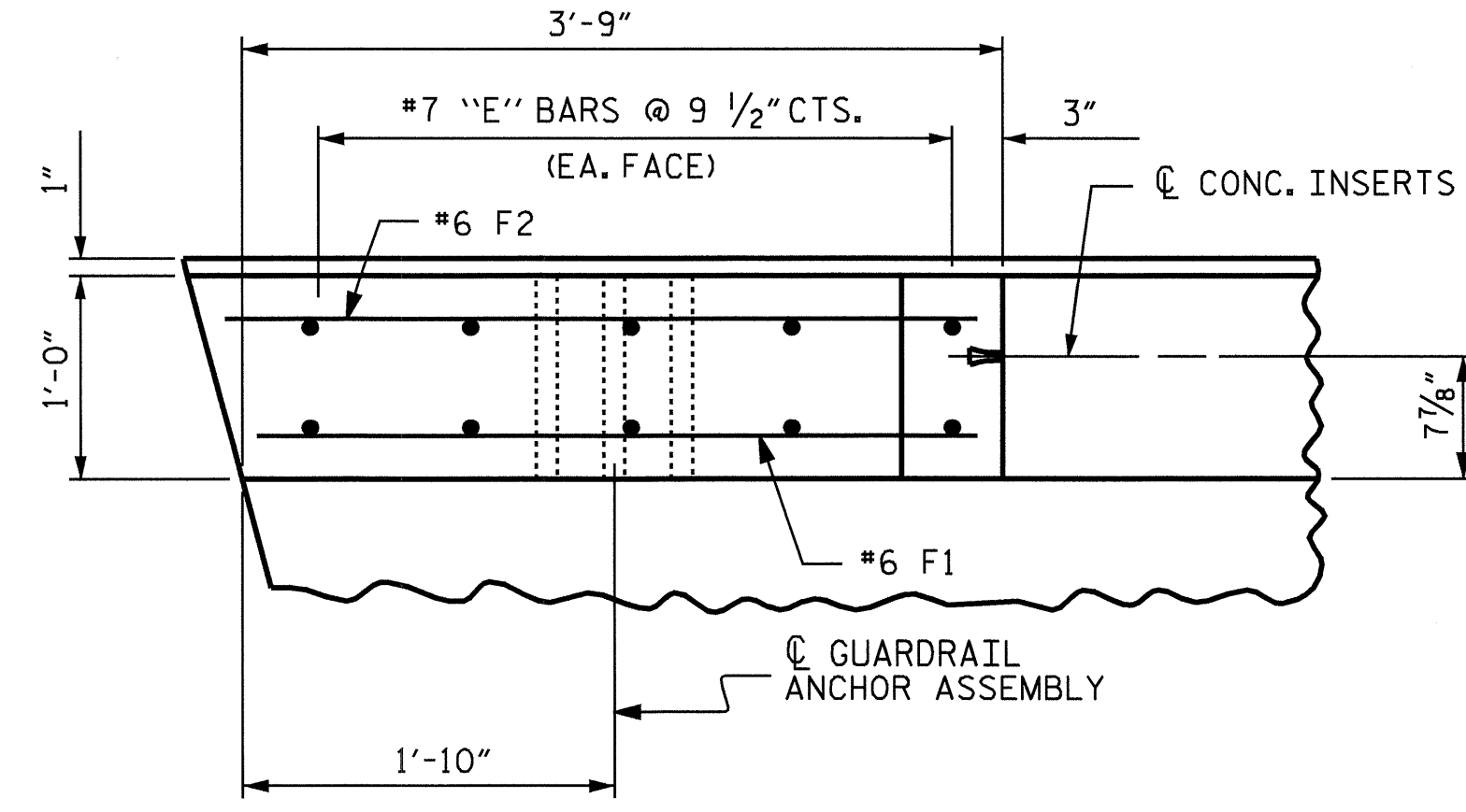
PLAN OF PARAPET



END VIEW



ELEVATION



PLAN OF END POST

BILL OF MATERIAL FOR PARAPETS AND END POSTS

STAGE I						STAGE II							
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	NO.	SIZE	TYPE	LENGTH	WEIGHT			
* B2	6	#5	STR	27'-3"	171	6	#5	STR	27'-3"	171			
* E1	4	#7	STR	2'-0"	16	4	#7	STR	2'-0"	16			
* E2	4	#7	STR	2'-2"	18	4	#7	STR	2'-2"	18			
* E3	4	#7	STR	2'-4"	19	4	#7	STR	2'-4"	19			
* E4	4	#7	STR	2'-6"	20	4	#7	STR	2'-6"	20			
* E5	4	#7	STR	2'-7"	21	4	#7	STR	2'-7"	21			
* F1	4	#6	STR	3'-5"	21	4	#6	STR	3'-5"	21			
* F2	4	#6	STR	3'-8"	22	4	#6	STR	3'-8"	22			
* EPOXY COATED REINF. STEEL					LBS.	308	* EPOXY COATED REINF. STEEL					LBS.	308
CLASS AA CONCRETE					CU. YDS.	2.0	CLASS AA CONCRETE					CU. YDS.	2.0
1'-0" X 1'-8" CONCRETE PARAPET					LIN. FT.	27.67	1'-0" X 1'-8" CONCRETE PARAPET					LIN. FT.	27.67

* THESE BARS ARE EPOXY COATED

NOTES

FOR DETAILS OF CONCRETE INSERT AND GUARDRAIL ANCHOR ASSEMBLY, SEE "RAIL POST SPACINGS AND END OF RAIL DETAILS" SHEETS.
 ALL DIMENSIONS ARE TAKEN ALONG OUTSIDE EDGE OF PARAPET.
 ALL REINFORCING STEEL IN CONCRETE PARAPET SHALL BE EPOXY COATED.
 THE REINFORCING STEEL & CONCRETE IN THE END POSTS IS INCLUDED IN THE UNIT PRICE BID FOR THE "1'-0" X 1'-8" CONCRETE PARAPET".

DRAWN BY : A.L. FIGUEROA DATE : 10-23-06
 CHECKED BY : MG CHEEK DATE : 6-05-07

PARAPET AND END POST FOR ONE BAR RAIL



PROJECT NO. B-3826
CHEROKEE COUNTY
 STATION: 10+87.86 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

1'-0" X 1'-8"
 CONCRETE PARAPET

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTALS
2			4			24

NOTES

AT THE CONTRACTOR'S OPTION, METAL RAIL MAY BE EITHER ALUMINUM OR GALVANIZED STEEL IN ACCORDANCE WITH THE REQUIREMENTS OF THE GENERAL NOTES AND THE FOLLOWING SPECIFICATIONS FOR THE ALTERNATE MATERIALS; HOWEVER THE CONTRACTOR WILL BE REQUIRED TO USE THE SAME RAIL MATERIAL ON ALL STRUCTURES ON THE PROJECT FOR WHICH METAL RAIL IS DESIGNATED.

ALUMINUM RAILS

MATERIAL FOR POSTS, BASES AND RAILS, EXPANSION BARS AND CLAMP BARS SHALL BE ASTM B221 ALLOY 6061-T6. MATERIAL FOR RIVETS SHALL BE ASTM B316 ALLOY 6061-T6. RIVETS SHALL BE STANDARD BUTTON HEAD AND CONE POINT COLD DRIVEN AS PER DRAWING.

THE BASE OF RAIL POSTS, OR ANY OTHER ALUMINUM SURFACE IN CONTACT WITH CONCRETE SHALL BE THOROUGHLY COATED WITH AN ALUMINUM IMPREGNATED CAULKING COMPOUND OF APPROVED QUALITY.

MATERIAL FOR SHIMS TO BE ASTM B209 ALLOY 6061-T6.

GALVANIZED STEEL RAILS

MATERIALS AND GALVANIZING ARE TO CONFORM TO THE FOLLOWING SPECIFICATIONS:

POST, POST BASES, RAILS, EXPANSION BARS AND CLAMP BARS: AASHTO M270 GRADE 36 STRUCTURAL STEEL - GALVANIZED TO AASHTO M111.

RIVETS: RIVETS SHALL MEET THE REQUIREMENTS OF ASTM A502 FOR GRADE 1 RIVETS.

THE CUT ENDS OF GALVANIZED STEEL RAILING, AFTER GRINDING SMOOTH SHALL BE GIVEN TWO COATS OF ZINC RICH PAINT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION MIL-P-26915 USAF TYPE 1, OR OF FEDERAL SPECIFICATIONS TT-P-641.

SHIMS: SHIMS SHALL MEET THE REQUIREMENTS OF ASTM A570 FOR GRADE 33 OR A611 FOR GRADE C AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.

CLOSURE PLATES: CLOSURE PLATES SHALL MEET THE REQUIREMENTS OF ASTM A570 FOR GRADE 33 OR A611 FOR GRADE C AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.

GENERAL NOTES

RAILING SHALL BE CONTINUOUS FROM END POST TO END POST OF BRIDGE. EACH JOINT IN RAIL LENGTH SHALL BE SPLICED AS DETAILED. PANEL LENGTHS OF RAIL SHALL BE ATTACHED TO A MINIMUM OF THREE POSTS.

FOR END OF RAIL TO CLEAR FACE OF CONCRETE END POST DIMENSION, SEE STANDARD NO. BMR2.

MATERIAL FOR ANCHOR STUDS SHALL BE ASTM F593 ALLOY 304 STAINLESS STEEL WITH MINIMUM 75,000 PSI ULTIMATE STRENGTH. STUDS TO BE EMBEDDED 7" IN CONCRETE. NUTS SHALL BE AMERICAN STANDARD FINISHED HEXAGON THICK, CLASS 2B THREAD, AND MEET THE REQUIREMENTS OF ASTM F594 ALLOY 304 STAINLESS STEEL. WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL. ANCHOR P SHALL BE AASHTO M270 GRADE 36.

CAP SCREWS SHALL BE ASTM F593 ALLOY 305 STAINLESS STEEL.

CERTIFIED MILL REPORTS ARE REQUIRED FOR RAILS AND POSTS. SHOP INSPECTION IS NOT REQUIRED.

METAL RAIL POSTS SHALL BE SET NORMAL TO CURB GRADE.

METHOD OF MEASUREMENT FOR METAL RAILS: FOR LENGTH OF METAL RAILS TO BE PAID FOR, SEE THE STANDARD SPECIFICATIONS.

CURVED RAIL USAGE: WHERE RAILS ARE TO BE USED ON BRIDGES ON HORIZONTAL AND/OR VERTICAL CURVATURE THE CONTRACTOR MAY, AT HIS OPTION, HAVE THE REQUIRED CURVATURE IN THE RAIL FORMED IN THE SHOP OR IN THE FIELD. IN EITHER EVENT, THE RAIL SHALL CONFORM WITHOUT BUCKLING OR KINKING TO THE REQUIRED CURVATURE IN A UNIFORM MANNER ACCEPTABLE TO THE ENGINEER.

TO INSURE FUTURE IDENTIFICATION OF THE FABRICATOR, A PERMANENT IDENTIFYING MARK SHALL BE PLACED ON EACH POST. THE METHOD OF MARKING AND LOCATION SHALL BE SUCH THAT IT DOES NOT DETRACT FROM THE APPEARANCE OF THE POST.

SHIMS SHALL BE USED AS NECESSARY FOR POST ALIGNMENT.

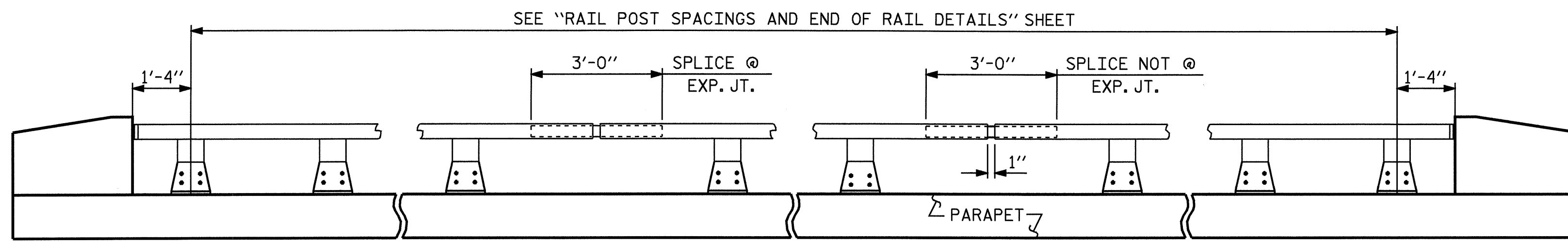
ALLOY 6351-T5 MAY BE SUBSTITUTED FOR ALLOY 6061-T6 WHERE APPLICABLE.

MINOR VARIATIONS IN DETAILS OF METAL RAIL WILL BE CONSIDERED. DETAILS OF SUCH VARIATIONS, IF DESIRED, SHALL BE SUBMITTED FOR APPROVAL.

THE CONTRACTOR, AT HIS OPTION, MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS IN LIEU OF THE ANCHOR ASSEMBLY. THE YIELD LOAD OF THE 3/4" BOLT IS 10 KIPS. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS REQUIRED.

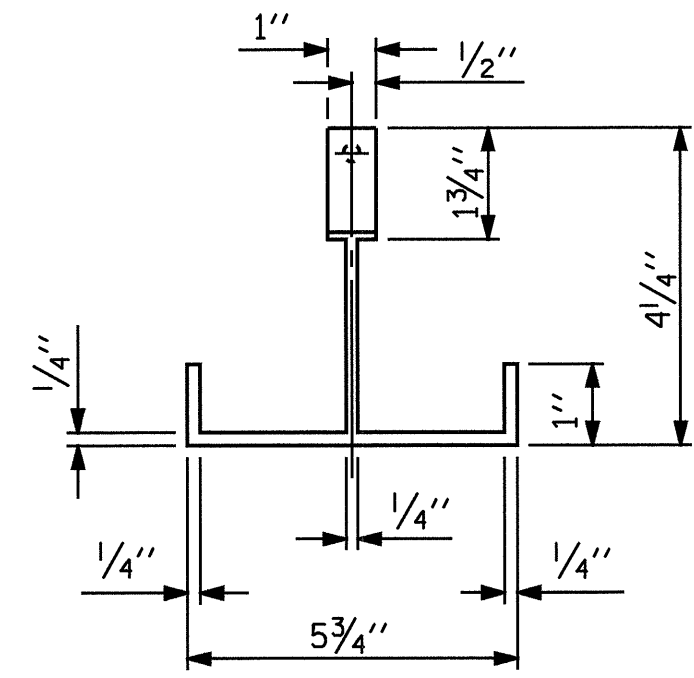
WHEN ADHESIVELY ANCHORED ANCHOR BOLTS ARE USED, BOLTS, NUTS AND WASHERS SHALL MEET THE SAME REQUIREMENTS AS THE ANCHOR STUDS, NUTS AND WASHERS FOR USE WITH THE ANCHOR ASSEMBLY.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE PARAPET IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINT SHALL BE LOCATED AT A SPACING OF 8 FT. TO 10 FT. BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.



SEE "RAIL POST SPACINGS AND END OF RAIL DETAILS" SHEET

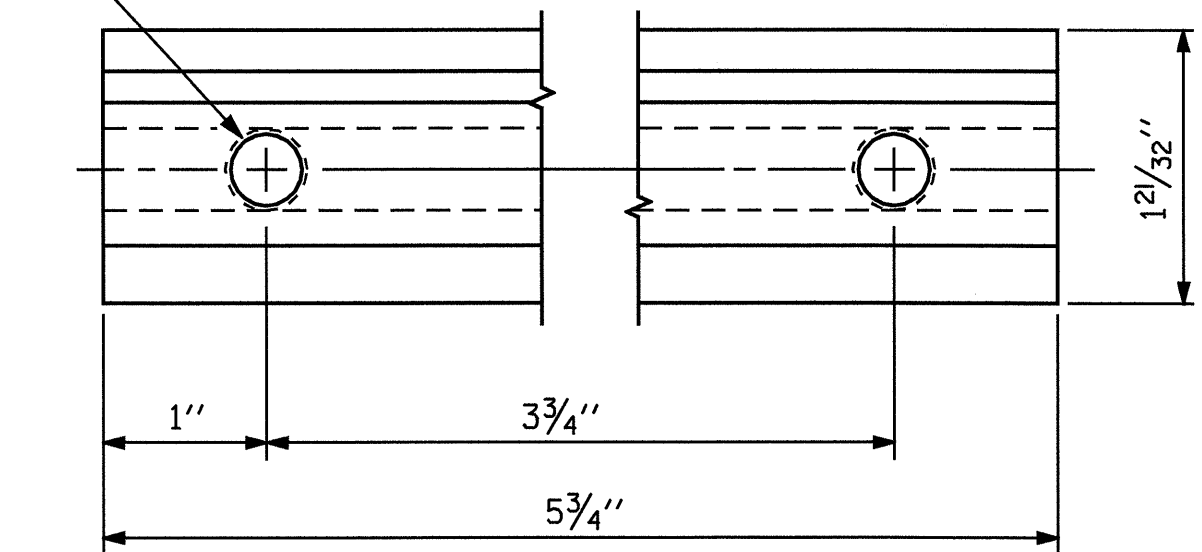
NOTE:
FOR ATTACHMENT OF METAL RAIL TO END POST, SEE "RAIL POST SPACING AND END OF RAIL DETAIL" SHEET.



PLAN

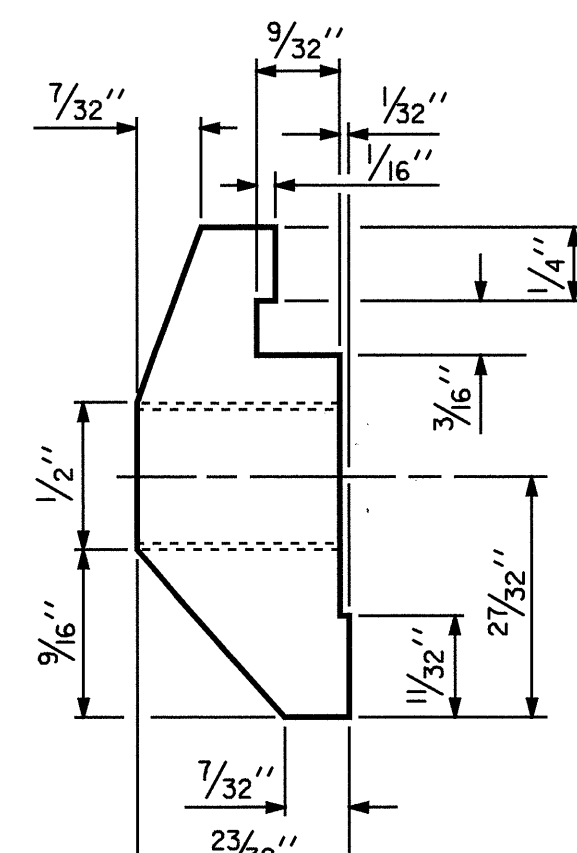
ELEVATION

1/2" Ø [13 THREAD] HOLE FOR 1/2" Ø X 1" STAINLESS STEEL HEX HEAD CAP SCREW & 1/16" O.D., 1 7/32" I.D., 1/16" THICK WASHER (TYP.)



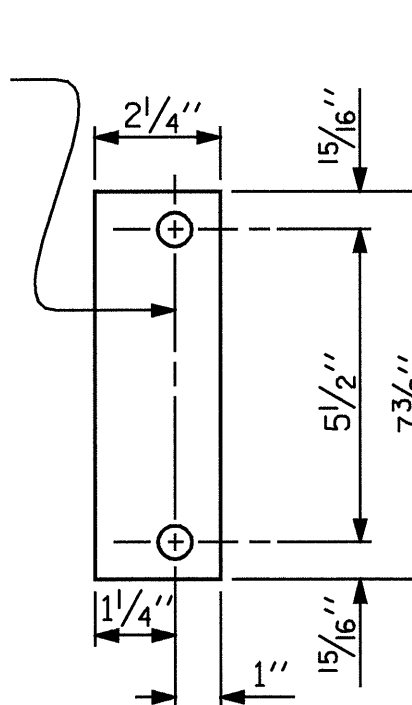
CLAMP BAR DETAIL

(2 REQUIRED PER POST)

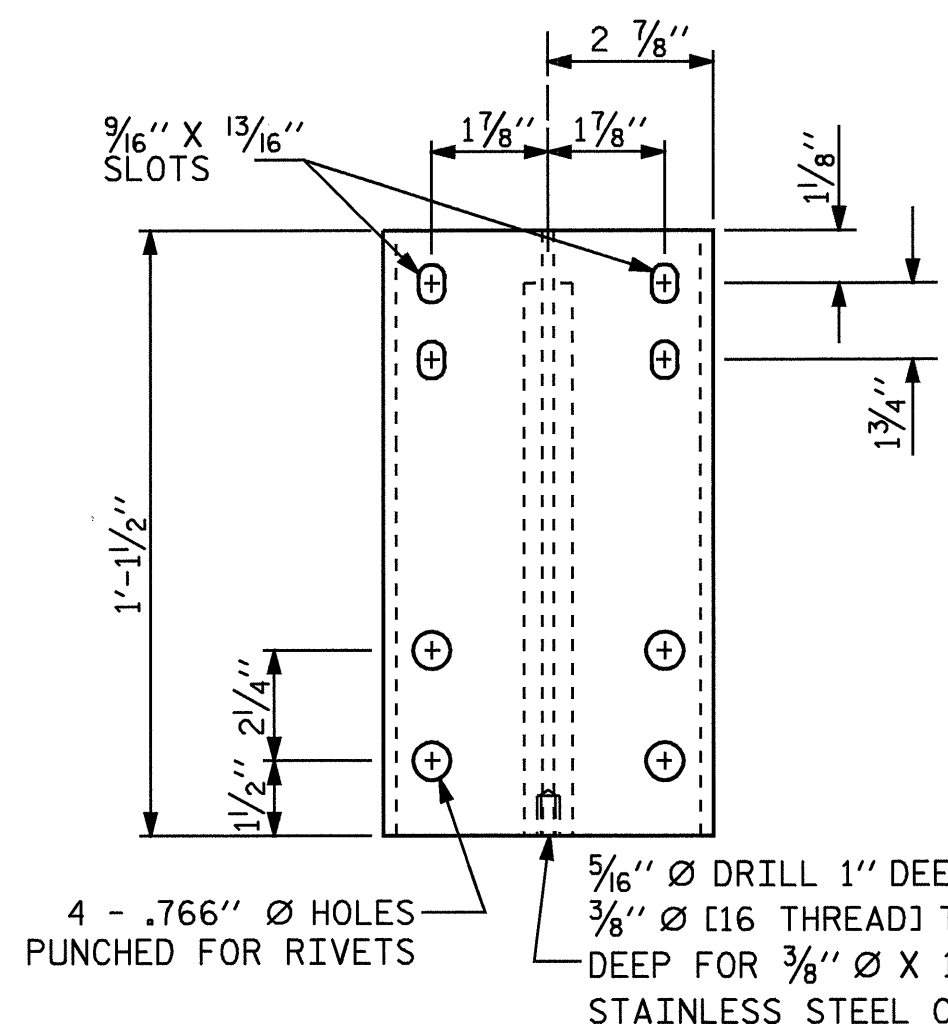


RIVET DETAIL

Ø 7/8" Ø HOLES (PERMITTED CUTLINE)



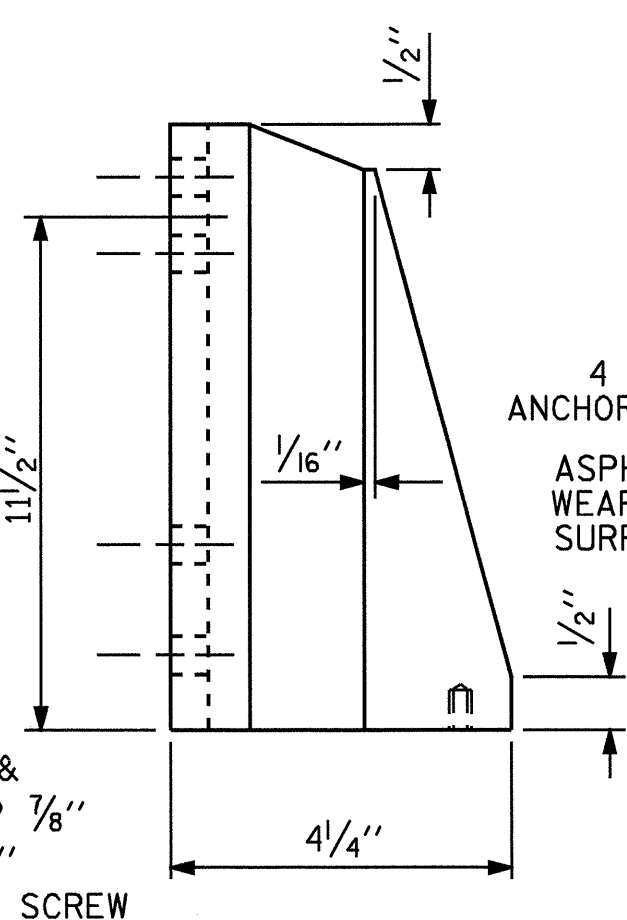
REAR PLATE



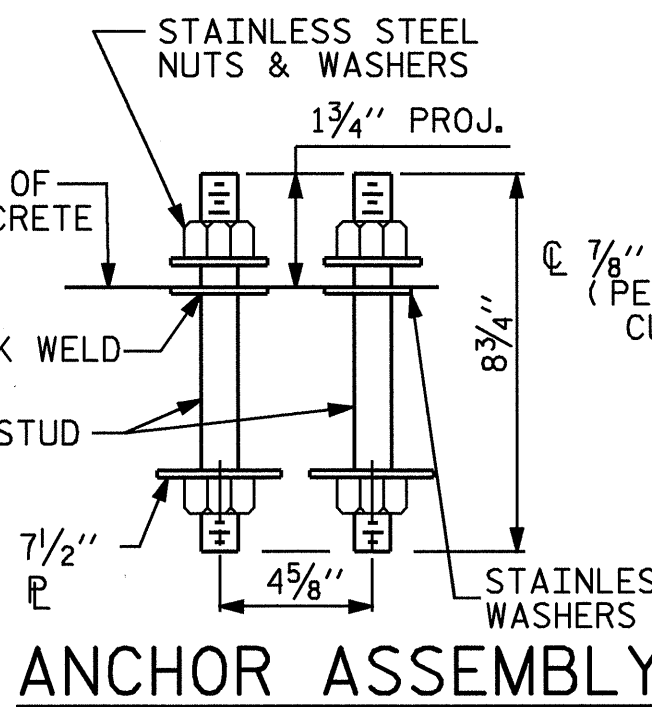
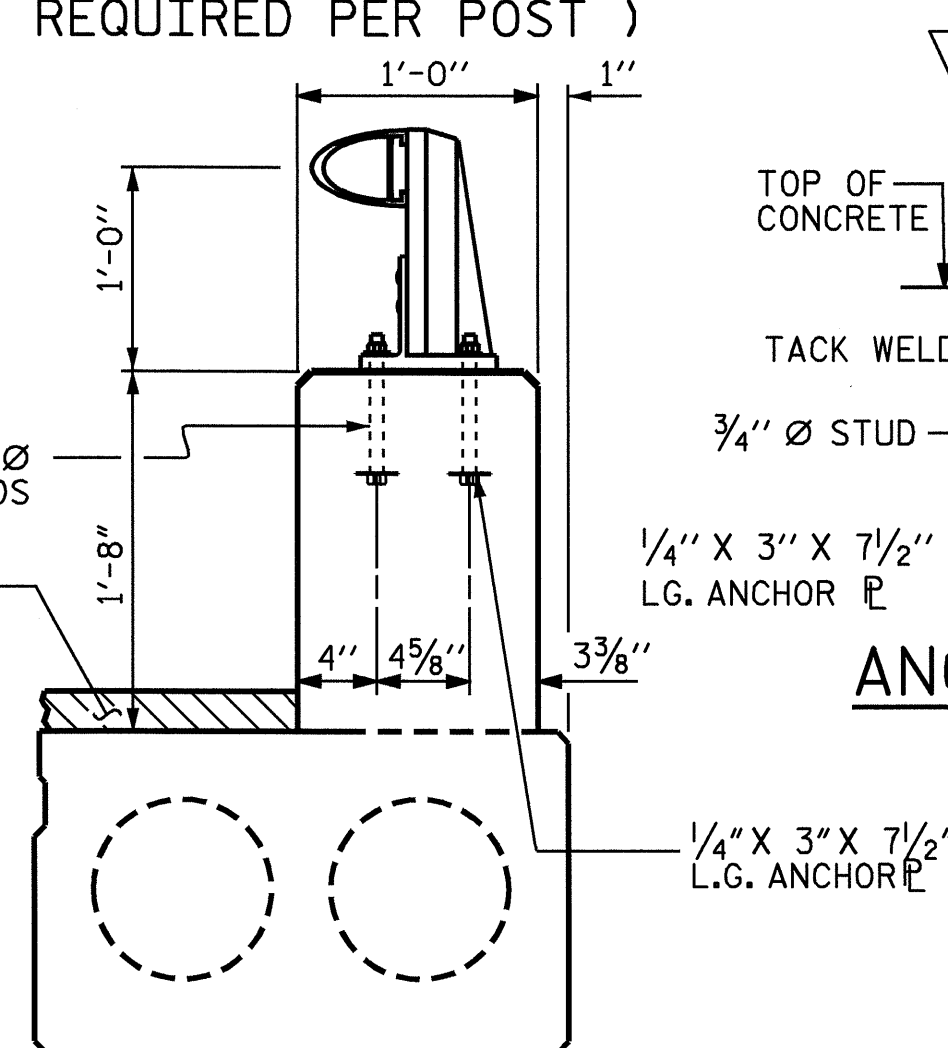
FRONT ELEVATION

SIDE ELEVATION

DETAILS OF POST



SECTION THRU PARAPET AND RAIL

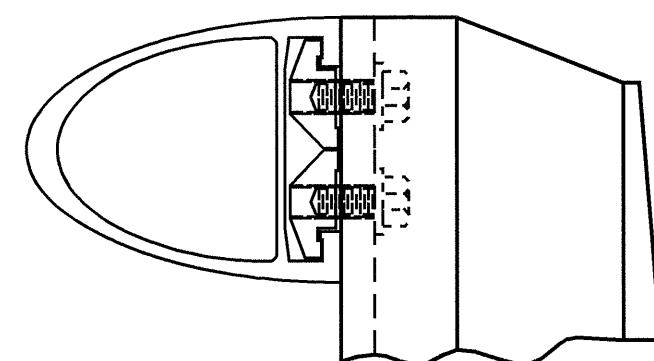


ANCHOR ASSEMBLY

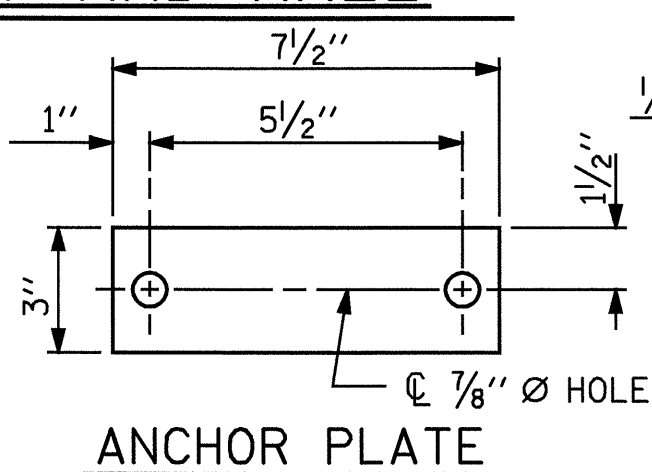
FRONT PLATE

SHIM DETAILS

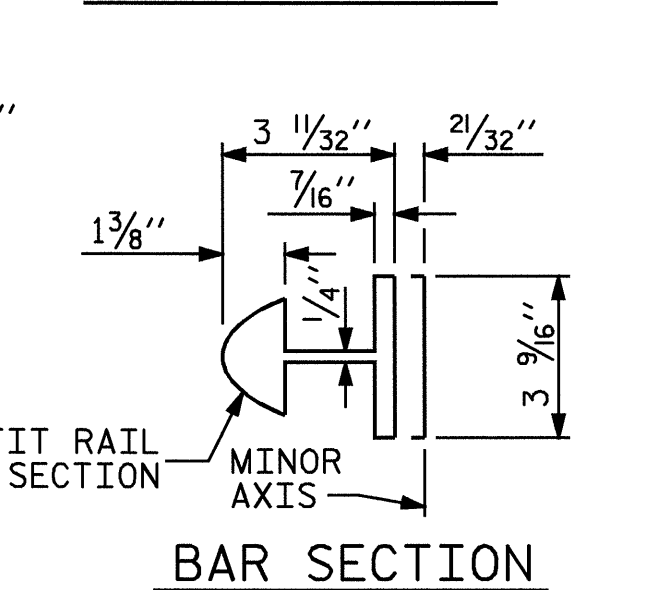
NOTE: SHIMS MAY BE CUT ALONG PERMITTED CUTLINE OR SLOTTED TO EDGE OF PLATE TO FACILITATE PLACEMENT.



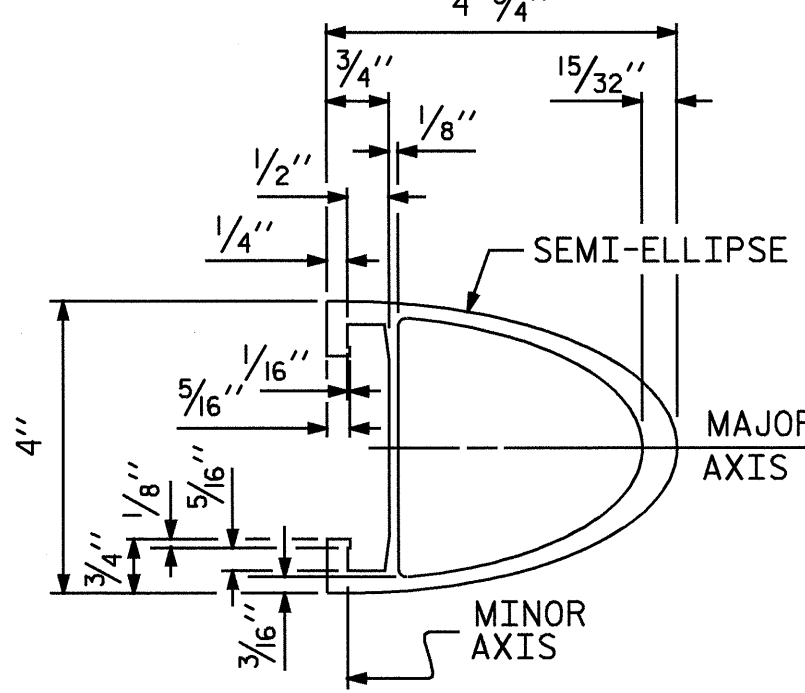
CLAMP & RAIL ASSEMBLY



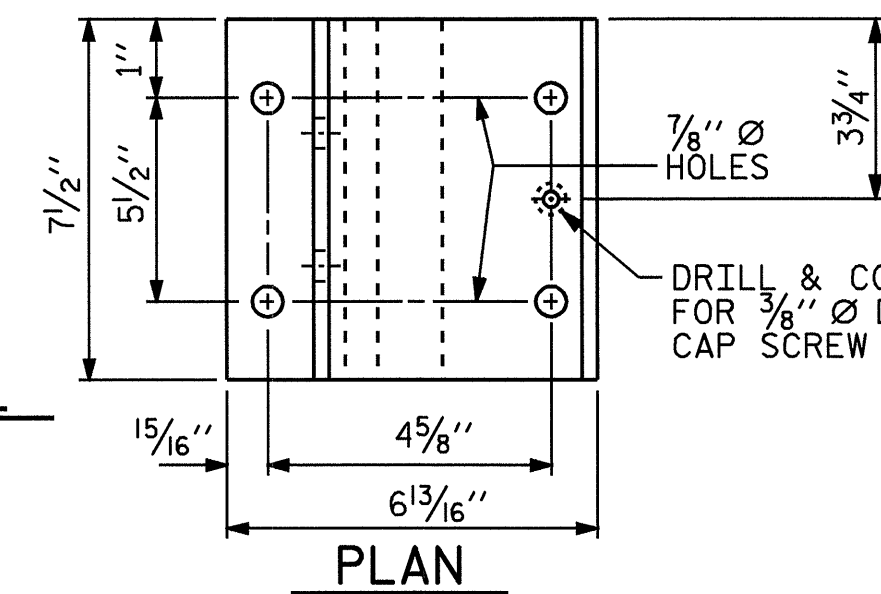
ANCHOR PLATE



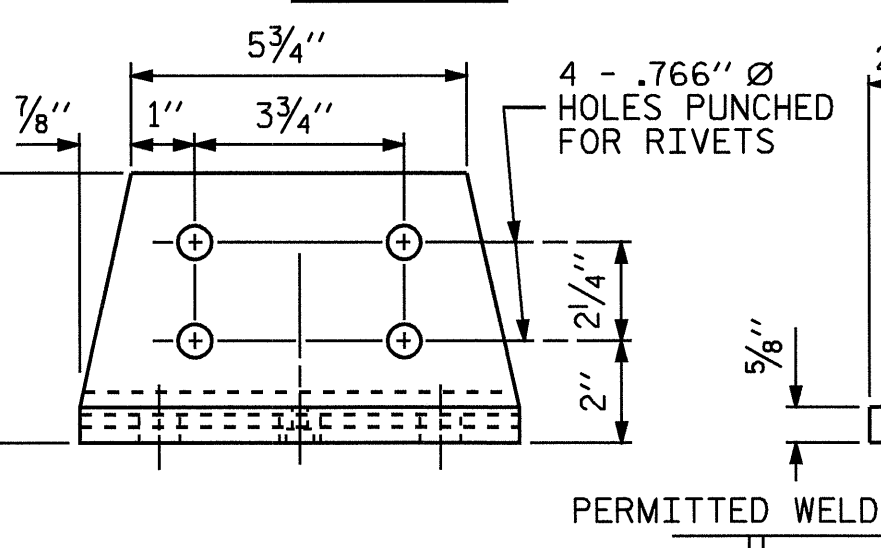
BAR SECTION



RAIL SECTION

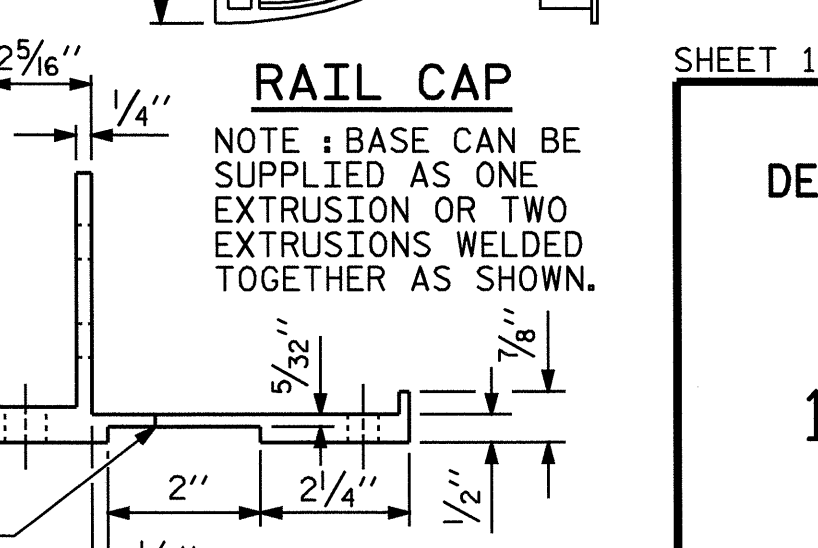
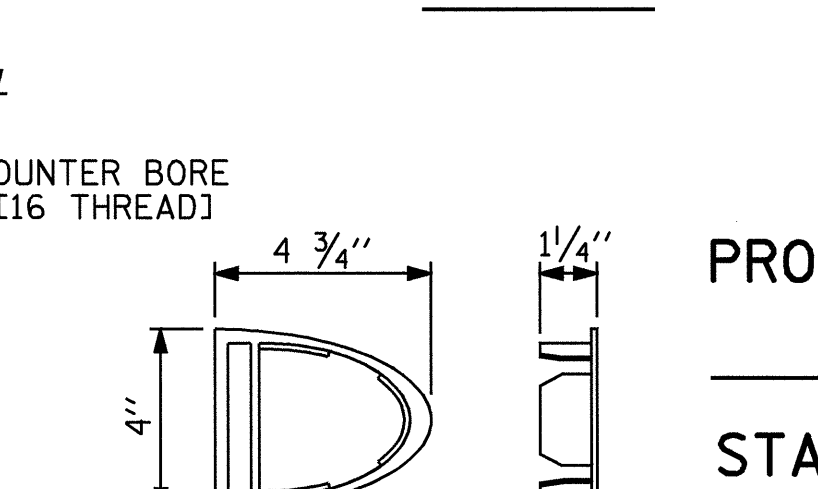


PLAN



FRONT ELEVATION

PAY LENGTH = 39.81 LIN. FT.

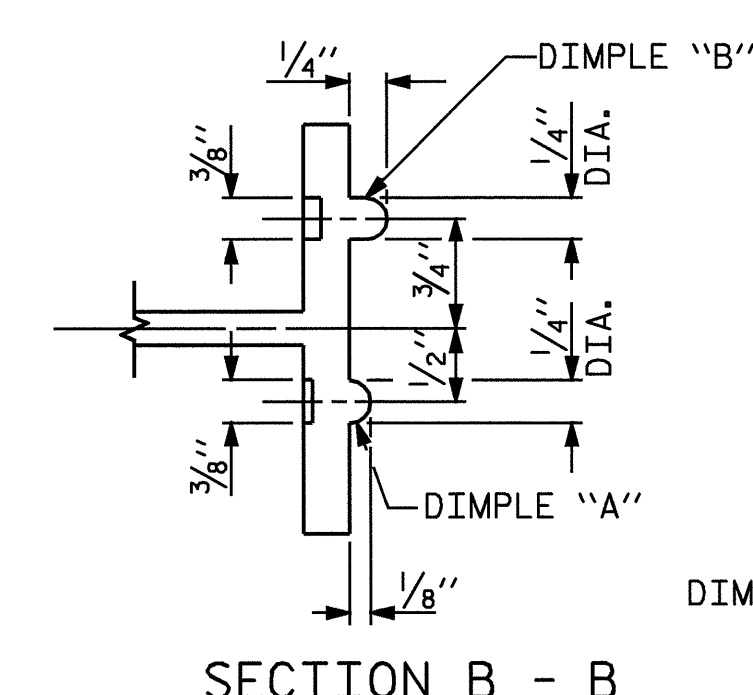


SIDE ELEVATION

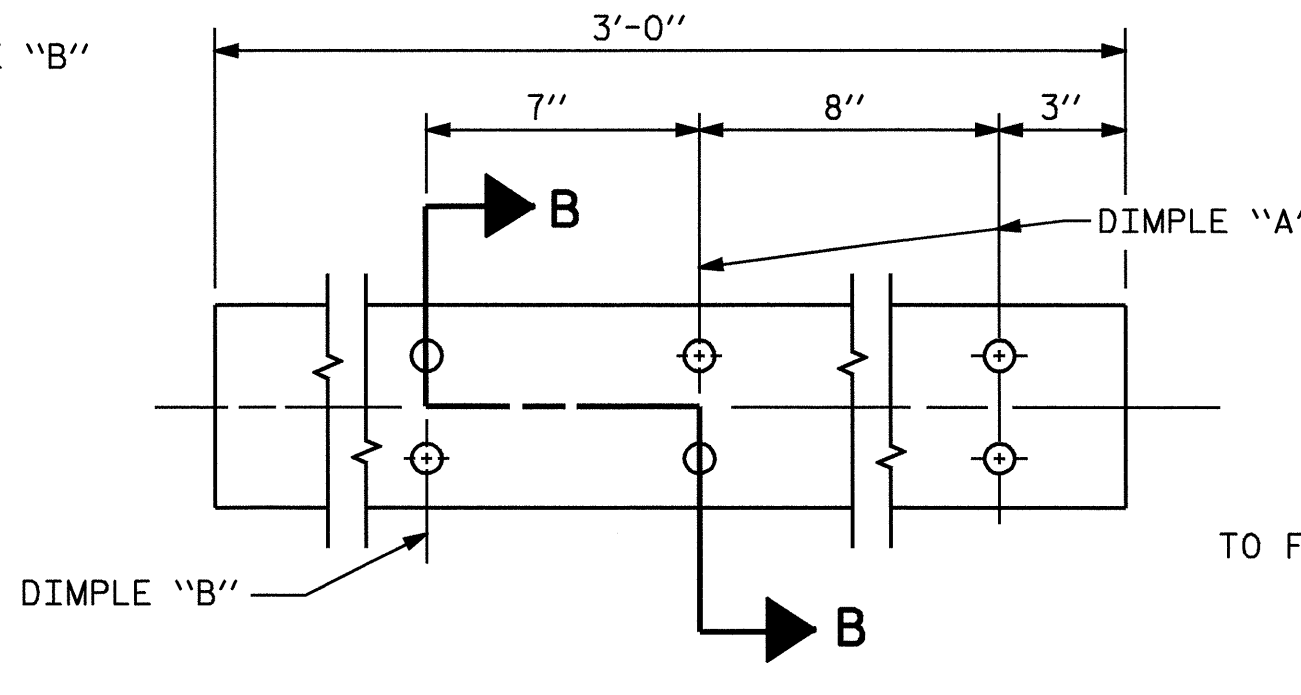
POST BASE DETAILS

RAIL CAP

NOTE: BASE CAN BE SUPPLIED AS ONE EXTRUSION OR TWO EXTRUSIONS WELDED TOGETHER AS SHOWN.

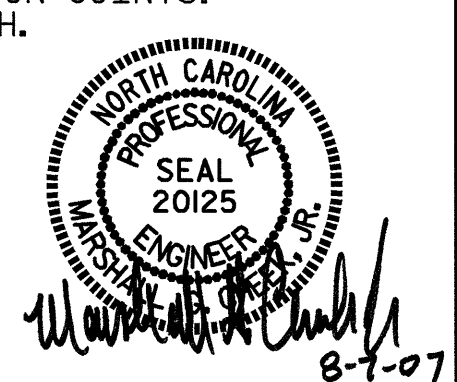


SECTION B - B



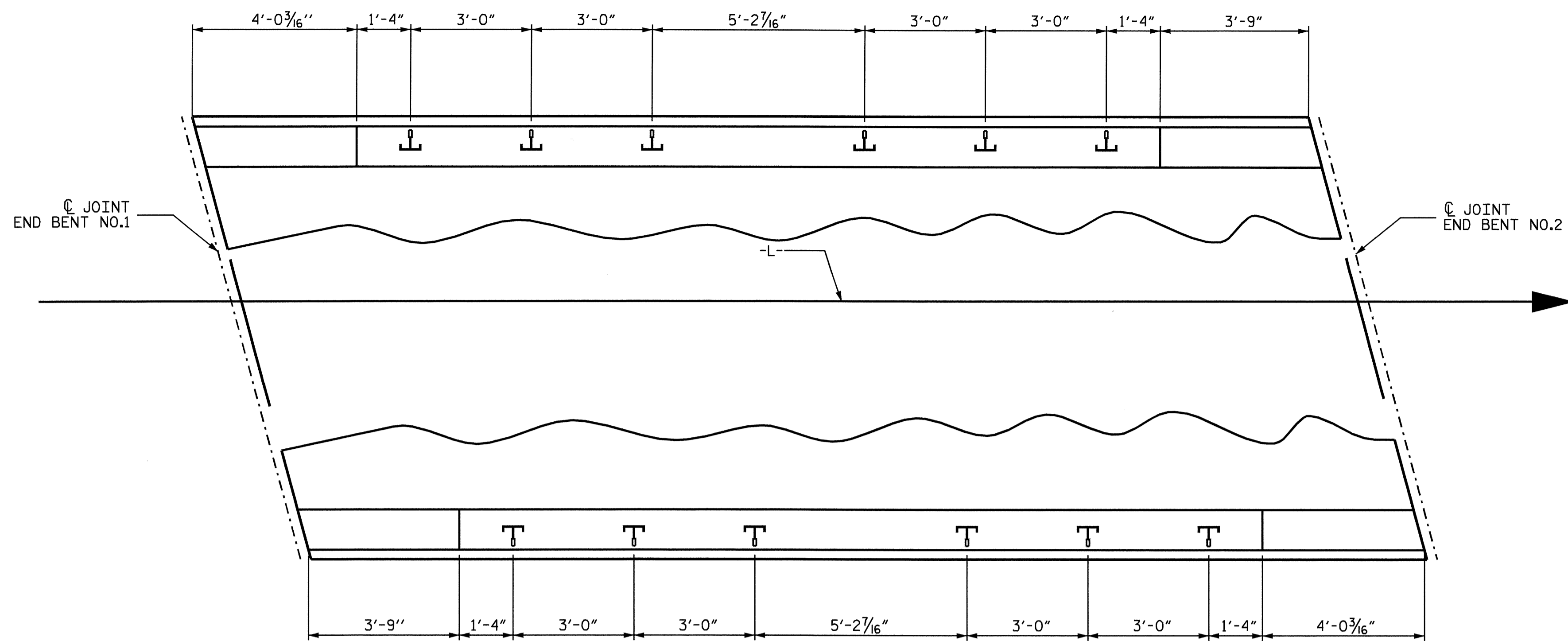
EXPANSION BAR DETAILS

ASSEMBLED BY :	A.L. FIGUEROA	DATE :	10-23-06
CHECKED BY :	MG CHEEK	DATE :	6-05-07
DRAWN BY :	FCJ 1/88	REV. 10/17/00	LES/RDR
CHECKED BY :	CRK 3/89	REV. 5/17/03R	RWW/JTE
		REV. 5/1/06	TLA/GM

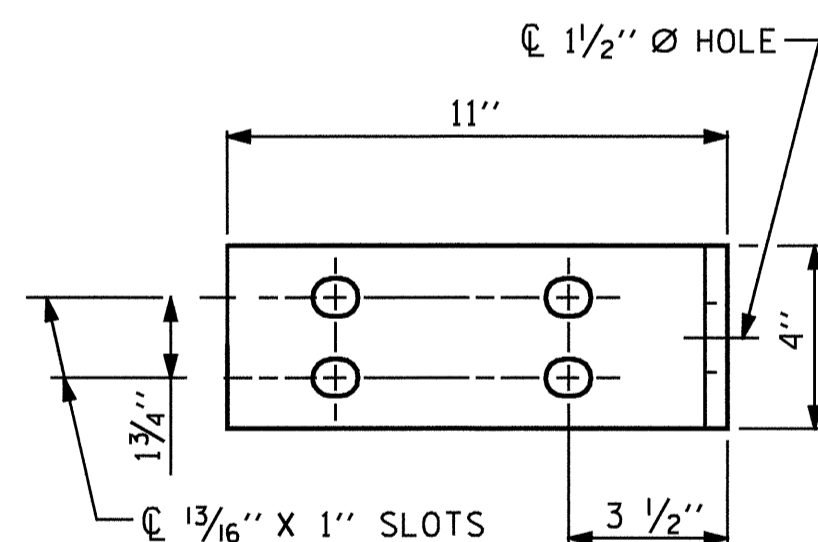


PROJECT NO. B-3826
CHEROKEE COUNTY
STATION: 10+87.86 -L-

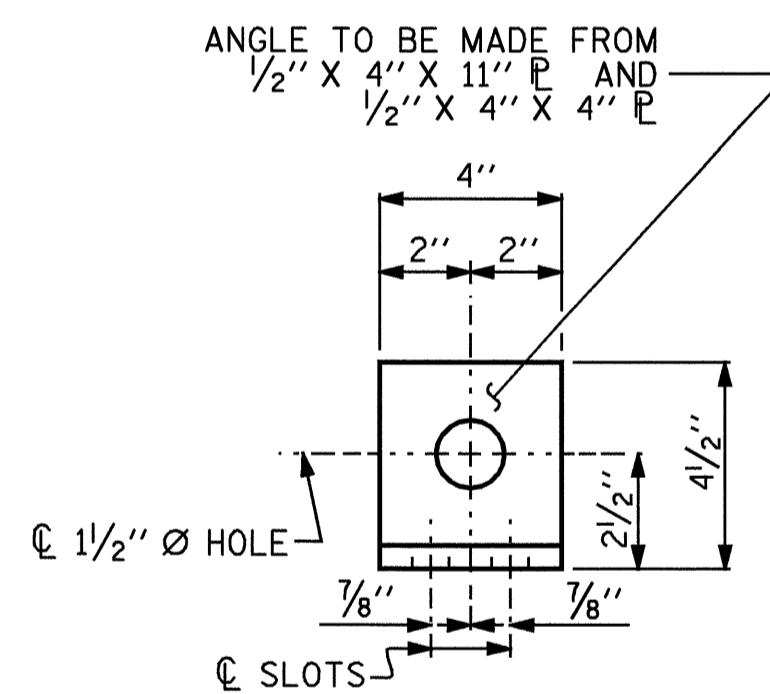
STATE OF NORTH CAROLINA				SHEET NO.	
DEPARTMENT OF TRANSPORTATION				S-13	
RALEIGH				TOTAL SHEETS	
STANDARD				24	
1 BAR METAL RAIL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		



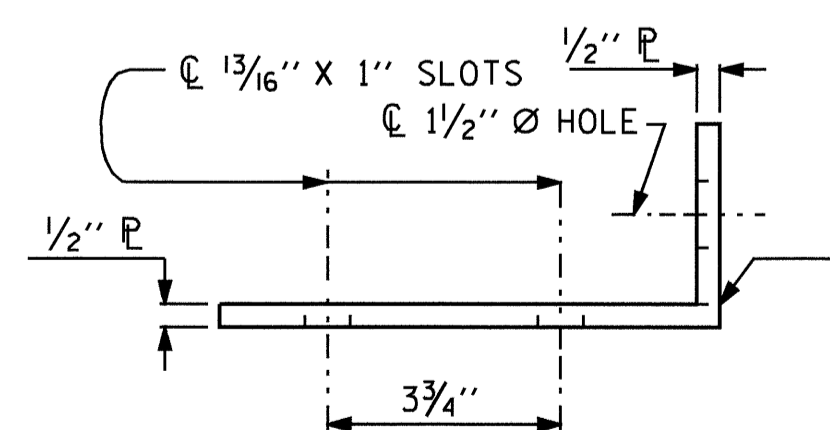
PLAN OF RAIL POST SPACINGS



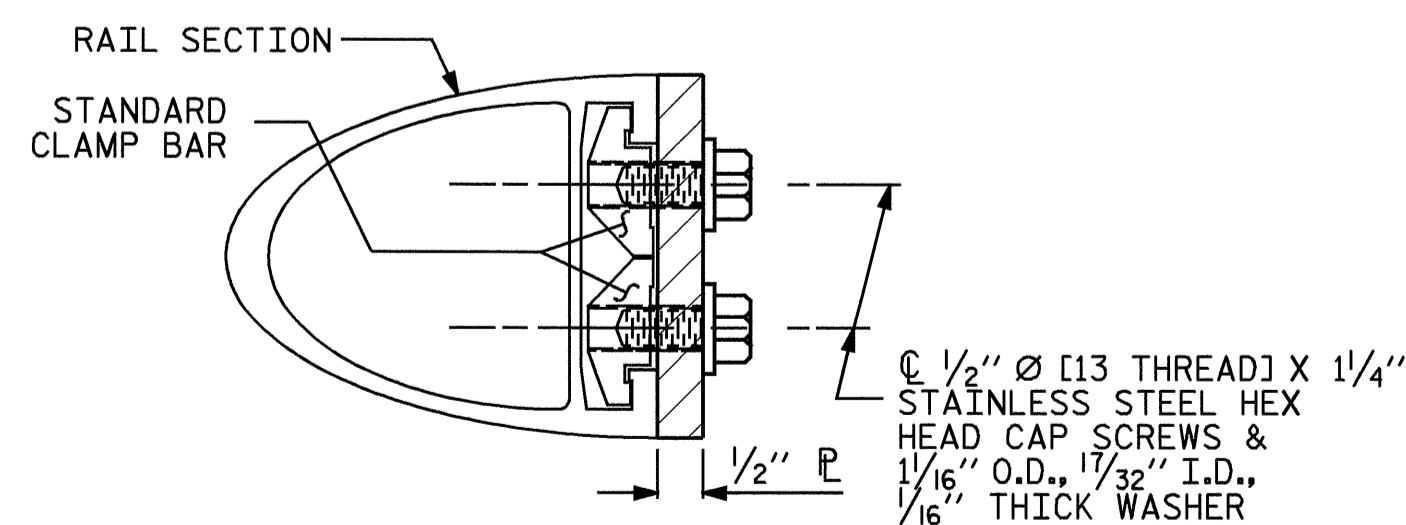
ELEVATION



END VIEW



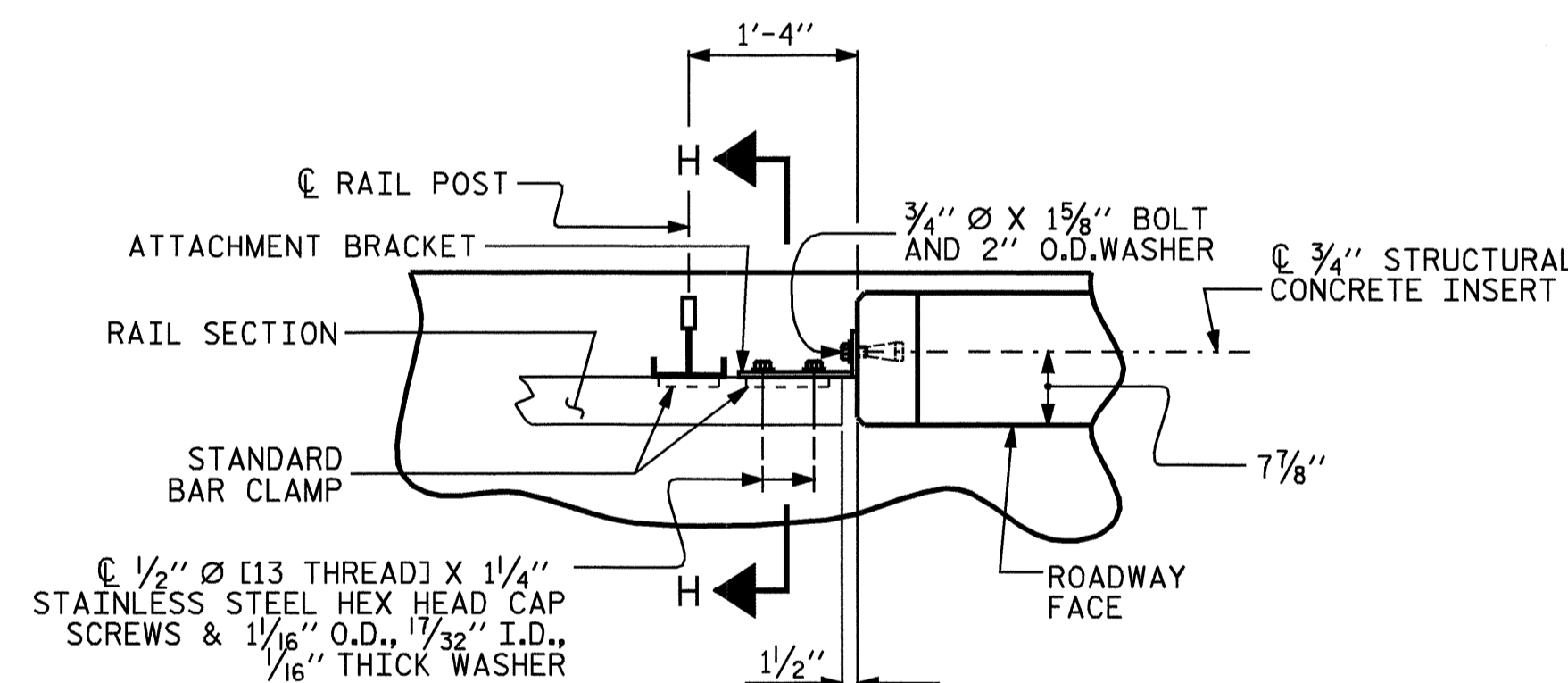
TOP VIEW



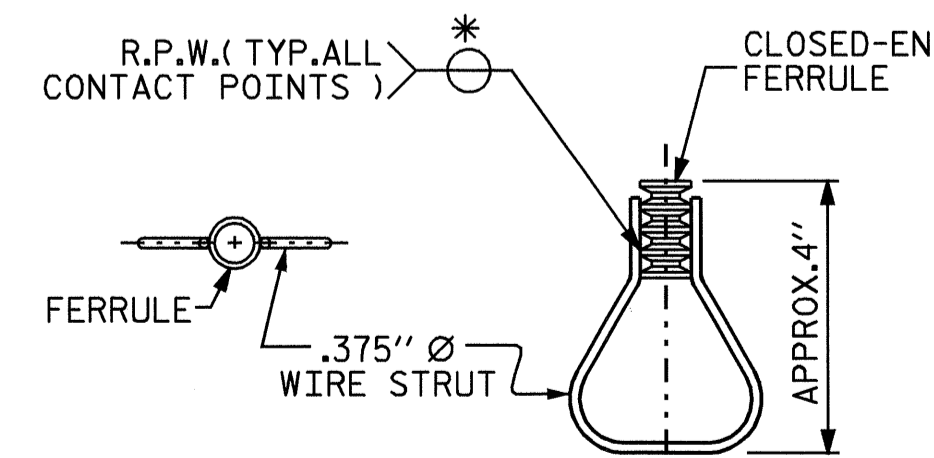
SECTION H-H

DETAILS FOR ATTACHING METAL RAIL TO END POST

ASSEMBLED BY :	A.L. FIGUEROA	DATE :	10-23-06
CHECKED BY :	MG CHEEK	DATE :	6-05-07
DRAWN BY :	FCJ 1/88	REV. 10/17/00	LES/RDR
CHECKED BY :	CRK 3/89	REV. 5/7/03R	RWW/JTE
		REV. 5/1/06	TLA/GM



PLAN - RAIL AND END POST



PLAN ELEVATION
STRUCTURAL CONCRETE INSERT

* EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.

NOTES

STRUCTURAL CONCRETE INSERT

- THE STRUCTURAL CONCRETE INSERT ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:
- FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 1 1/2".
 - 1 - 3/4" Ø X 1 5/8" BOLT WITH WASHER. BOLT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLT AND WASHER SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLT AND WASHER MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø X 1 5/8" GALVANIZED BOLT AND WASHER. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)
 - WIRE STRUT SHOWN IN THE CONCRETE INSERT ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 7/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.

NOTES

METAL RAIL TO END POST CONNECTION

- THE METAL RAIL TO END POST CONNECTION SHALL CONSIST OF THE FOLLOWING COMPONENTS:
- 1/2" PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 AND SHALL BE GALVANIZED AFTER FABRICATION.
 - 3/4" STRUCTURAL CONCRETE INSERT SHALL HAVE A WORKING LOAD SHEAR CAPACITY OF 4800 LBS. THE FERRULES SHALL ENGAGE A 3/4" Ø X 1 5/8" BOLT WITH 2" O.D. WASHER IN PLACE. THE 3/4" Ø X 1 5/8" BOLT SHALL HAVE N.C. THREADS.
 - CAP SCREWS FOR RAIL ATTACHMENT TO ANGLE SHALL CONFORM TO THE REQUIREMENTS OF ASTM F593 ALLOY 305 STAINLESS STEEL. CAP SCREWS TO BE CENTERED IN SLOTS AT 60°F.
 - STANDARD CLAMP BARS (SEE METAL RAIL SHEET).
 - 1/2" Ø PIPE SLEEVES (IF REQUIRED) TO BE GALVANIZED.
- THE COST OF THE STANDARD CLAMP BARS AND CAP SCREWS USED IN THE METAL RAIL TO END POST CONNECTION SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR LINEAR FEET OF 1 OR 2 BAR METAL RAILS.
- THE 3/4" STRUCTURAL CONCRETE INSERT WITH BOLT SHALL BE ASSEMBLED IN THE SHOP.
- THE COST OF THE 3/4" STRUCTURAL CONCRETE INSERT ASSEMBLY, AND THE 1/2" PLATES COMPLETE IN PLACE SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.
- THE CONTRACTOR, AT HIS OPTION, MAY USE AN ADHESIVE BONDING SYSTEM IN LIEU OF THE STRUCTURAL CONCRETE INSERT EMBEDDED IN THE END POST. IF THE ADHESIVE BONDING SYSTEM IS USED, THE 3/4" Ø X 1 5/8" BOLT WITH WASHER SHALL BE REPLACED WITH A 3/4" Ø X 6 1/2" BOLT AND 2" O.D. WASHER. ALL SPECIFICATIONS THAT APPLY TO THE 3/4" Ø X 1 5/8" BOLT SHALL APPLY TO THE 3/4" Ø X 6 1/2" BOLT. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

PROJECT NO. B-3826
CHEROKEE COUNTY
STATION: 10+87.86 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
RAIL POST SPACINGS
AND
END OF RAIL DETAILS

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14	
1			3			TOTAL SHEETS	24
2			4				



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.

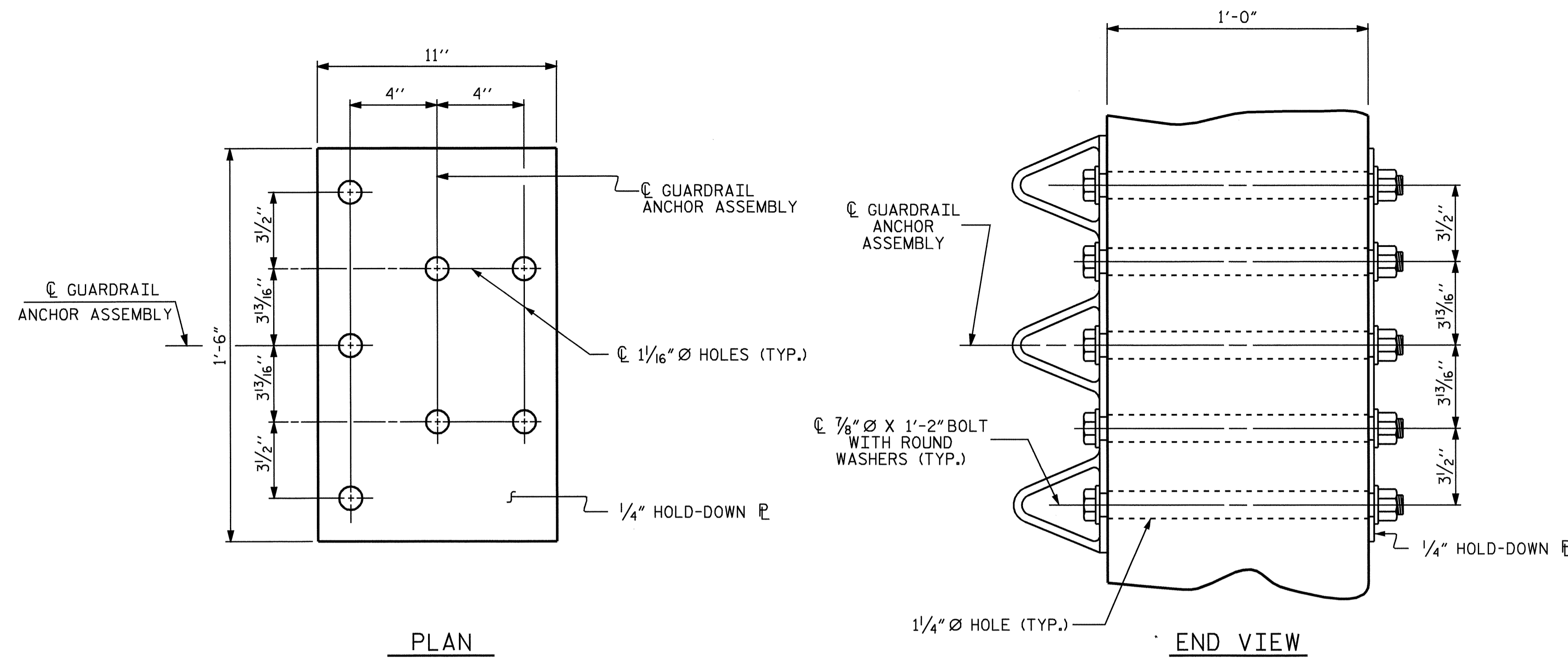
BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. 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 END POST TO CLEAR ASSEMBLY BOLTS.

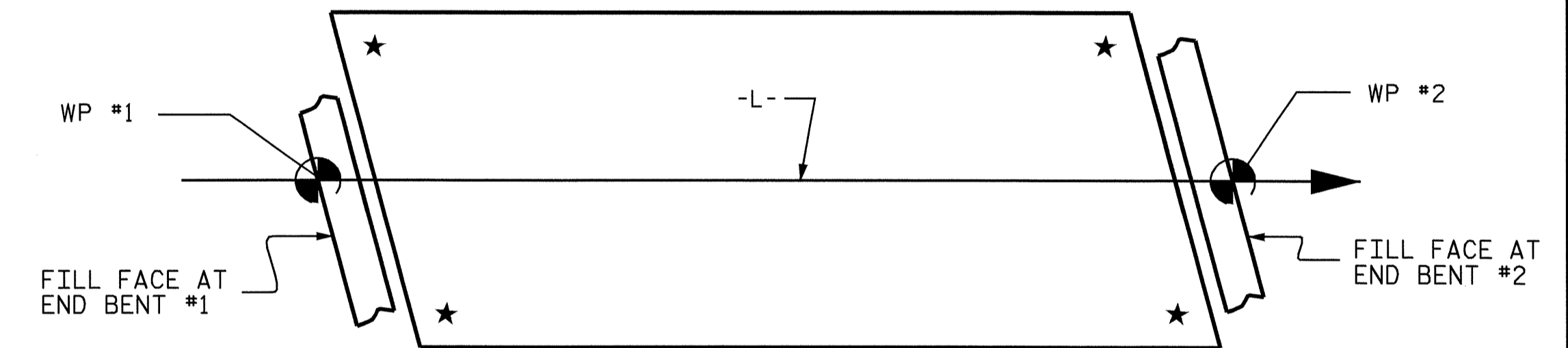
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



PLAN

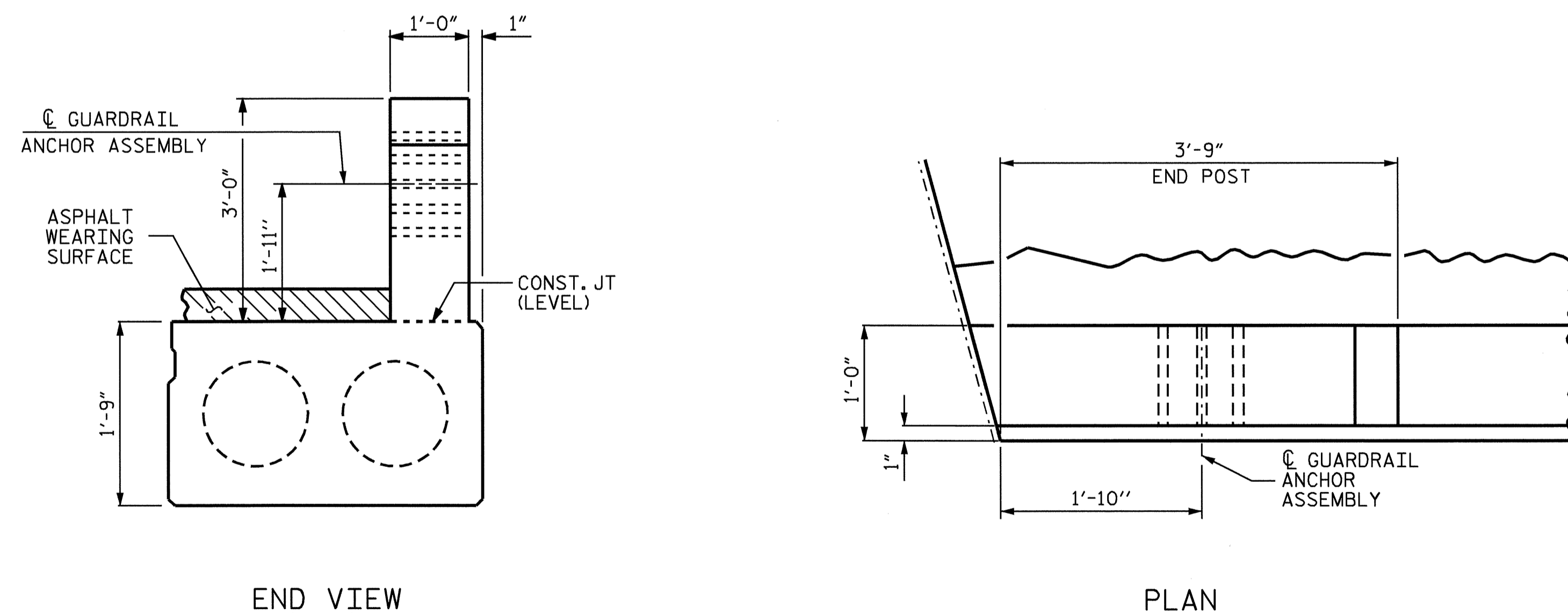
END VIEW

GUARDRAIL ANCHOR ASSEMBLY DETAILS



SKETCH SHOWING POINTS OF ATTACHMENT

★ LOCATION OF GUARDRAIL ATTACHMENT



END VIEW

PLAN

LOCATION OF GUARDRAIL ANCHOR AT END POST

PROJECT NO. B-3826
CHEROKEE COUNTY
 STATION: 10+87.86 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 DETAILS
 FOR METAL RAILS



ASSEMBLED BY :	A.L. FIGUEROA	DATE :	10-23-06
CHECKED BY :	MG CHEEK	DATE :	6-05-07
DRAWN BY :	EEM 6/94	REV. 10/17/00	RWW/LJS
CHECKED BY :	RGW 6/94	REV. 5/7/03	RWW/JTE
		REV. 5/1/06	TLA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			24

NOTES

- THE TEMPORARY GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:
- A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2 1/2".
 - B. 4 EA. 1" Ø X 2 1/4" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 1" Ø X 2 1/4" GALVANIZED BOLTS 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.
 - C. WIRE STRUTS SHOWN IN THE TEMPORARY GUARDRAIL ANCHOR ASSEMBLY DETAIL ARE THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI.

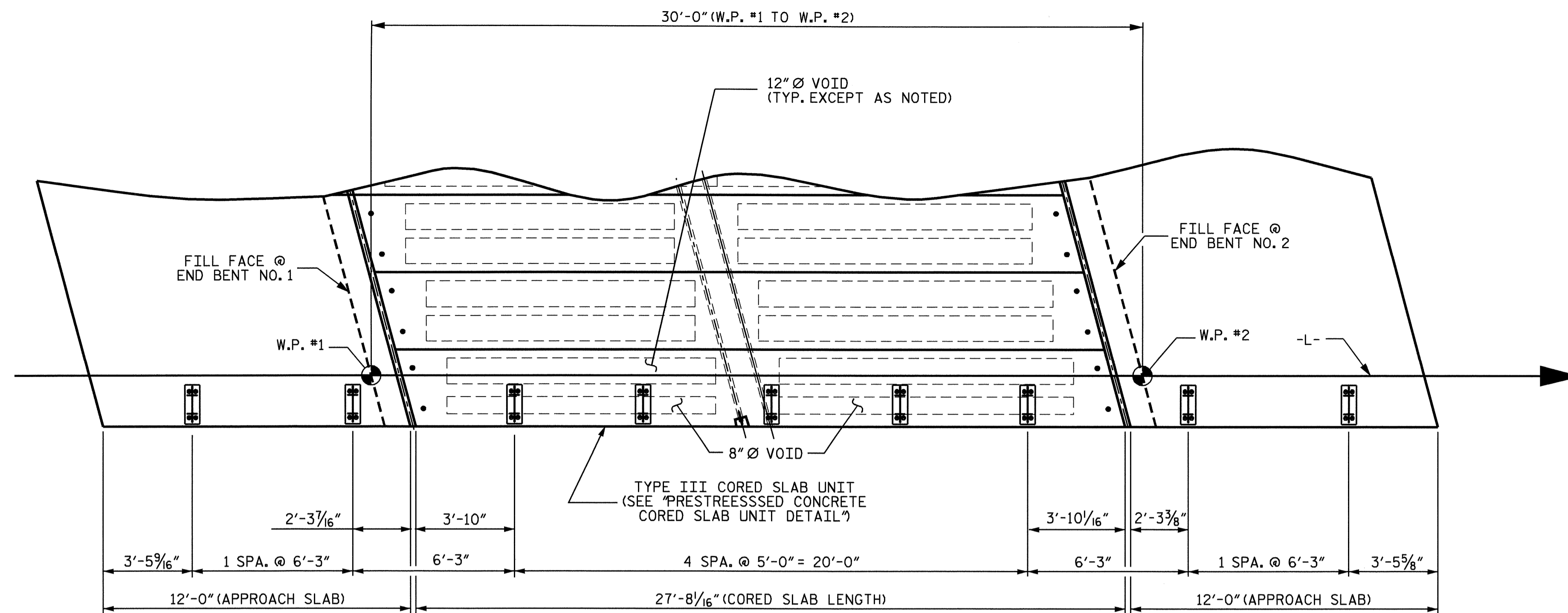
TEMPORARY GUARDRAIL ANCHOR ASSEMBLY WITH BOLTS SHALL BE ASSEMBLED IN THE SHOP. BOLT THREADS MAY BE RECUT AS NECESSARY TO INSURE FIT.

THE COST OF THE TEMPORARY GUARDRAIL ANCHOR ASSEMBLY COMPLETE IN PLACE, SHALL BE INCLUDED AS APPLICABLE, IN THE UNIT CONTRACT PRICE BID FOR 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB OR LUMP SUM PRICE BID FOR APPROACH SLABS.

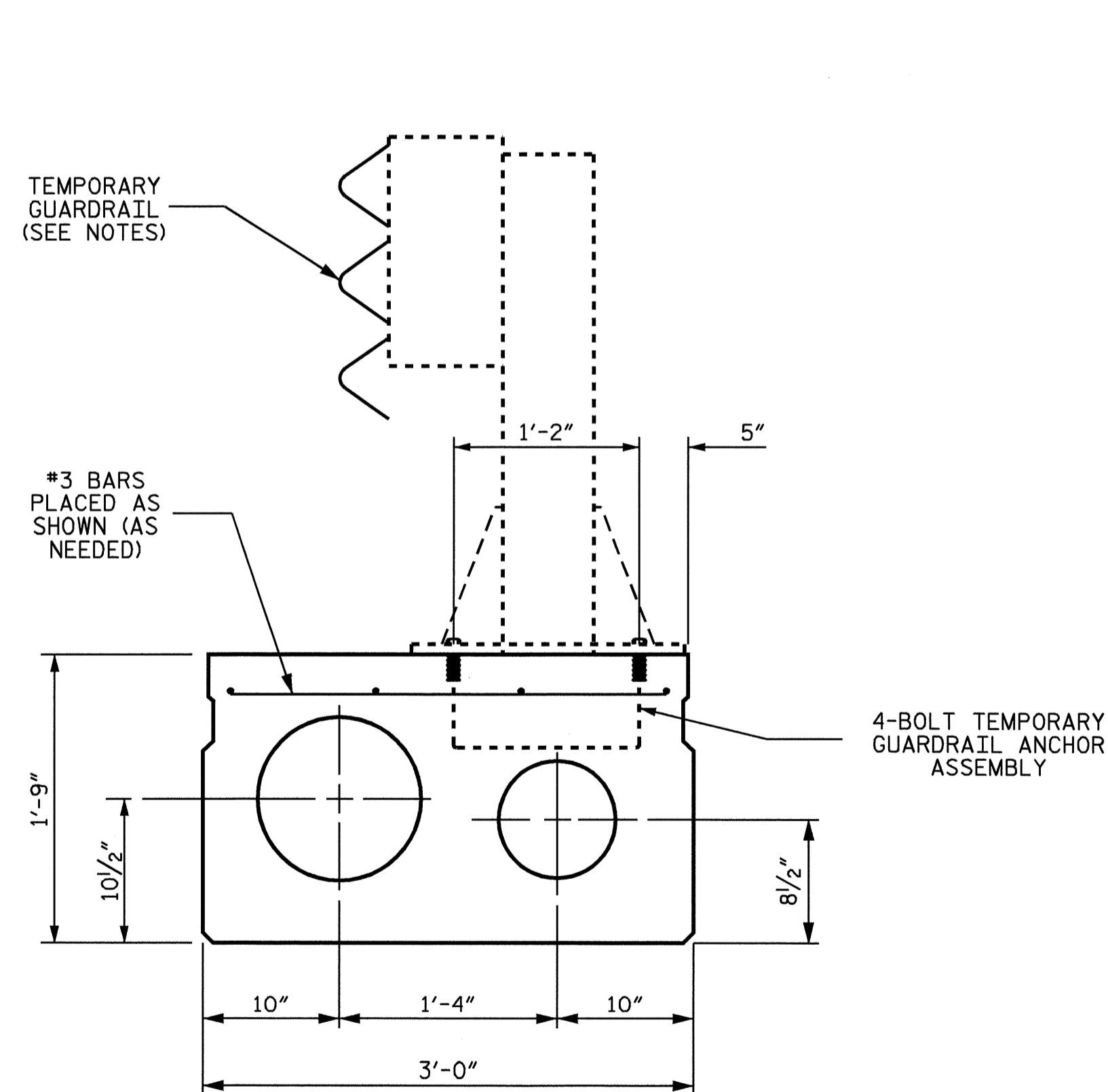
FERRULES TO BE PLUGGED DURING CASTING OF THE CORED SLAB UNITS OR POURING OF APPROACH SLABS AS RECOMMENDED BY THE MANUFACTURER.

AT THE CONTRACTOR'S OPTION, FERRULES WITH OPEN OR CLOSED ENDS MAY BE USED.

PAYMENT FOR TEMPORARY GUARDRAIL IS INCLUDED IN ROADWAY PAY ITEMS.

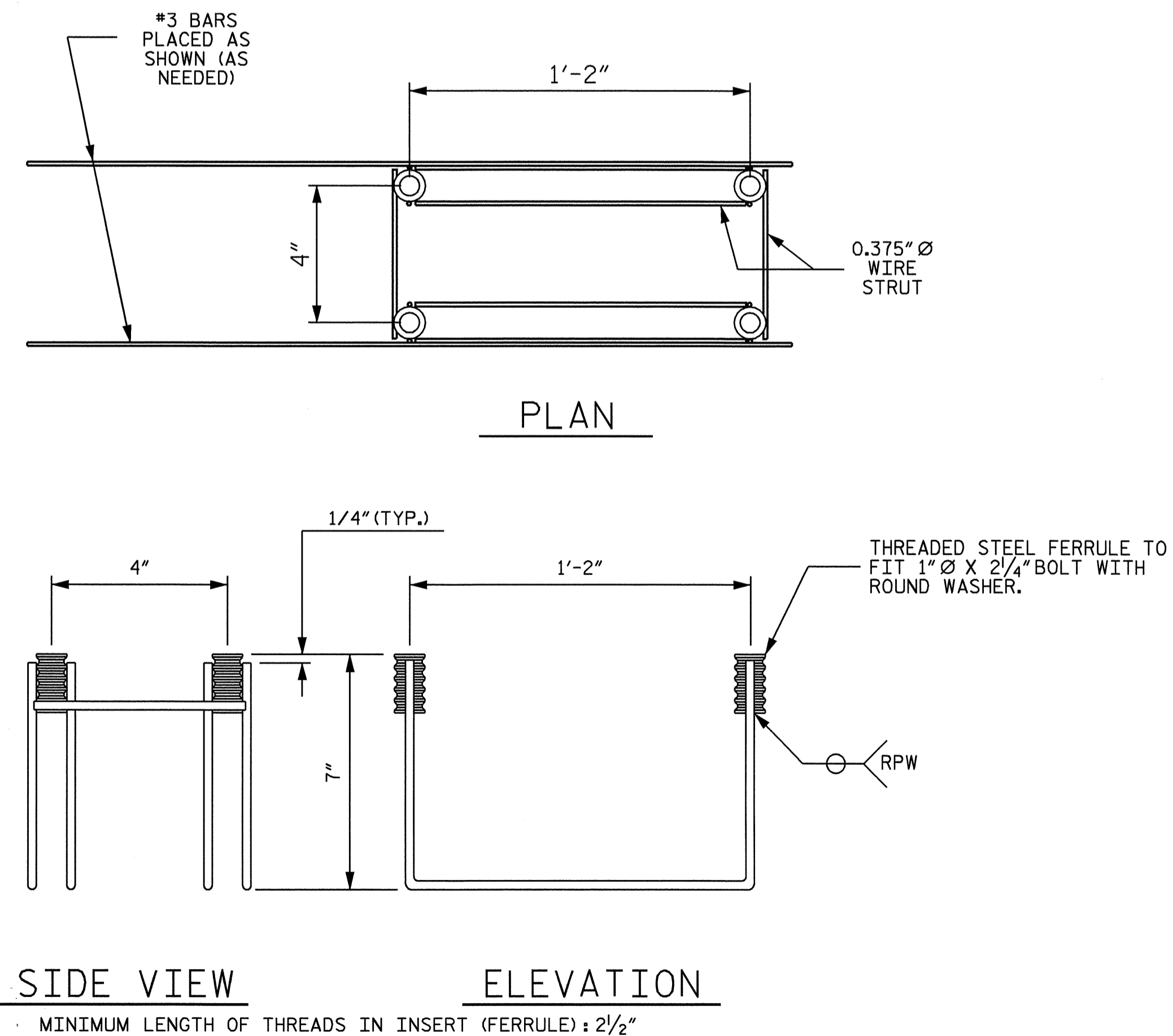


RAIL POST SPACING FOR TEMPORARY GUARDRAIL - STAGE 1



SECTION OF ANCHOR ASSEMBLY LOCATION

(TYPE III UNIT OF STAGE I)
THE #3 BARS ARE INCIDENTAL AND THEIR COST SHALL BE INCLUDED IN THE PRICE BID FOR THE PRESTRESSED CONCRETE CORED SLABS.



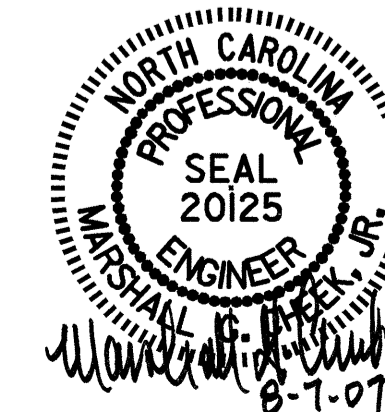
SIDE VIEW ELEVATION

TEMPORARY GUARDRAIL ANCHOR ASSEMBLY

(5 ASSEMBLIES REQUIRED IN THE TYPE III CORED SLAB UNIT)
(4 ASSEMBLIES REQUIRED IN THE APPROACH SLABS)

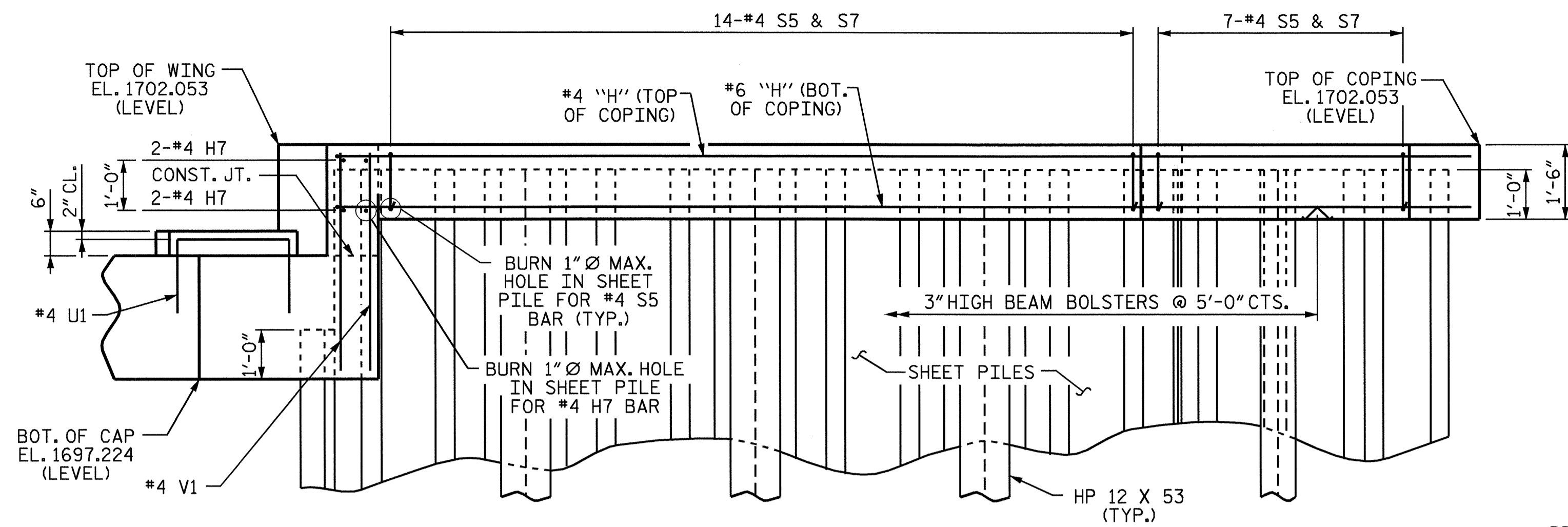
PROJECT NO. B-3826
CHEROKEE COUNTY
STATION: 10+87.86-L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
ANCHORAGE DETAILS FOR
TEMPORARY GUARDRAIL
ANCHOR ASSEMBLY FOR
TYPE III CORED
SLAB UNIT STAGE I

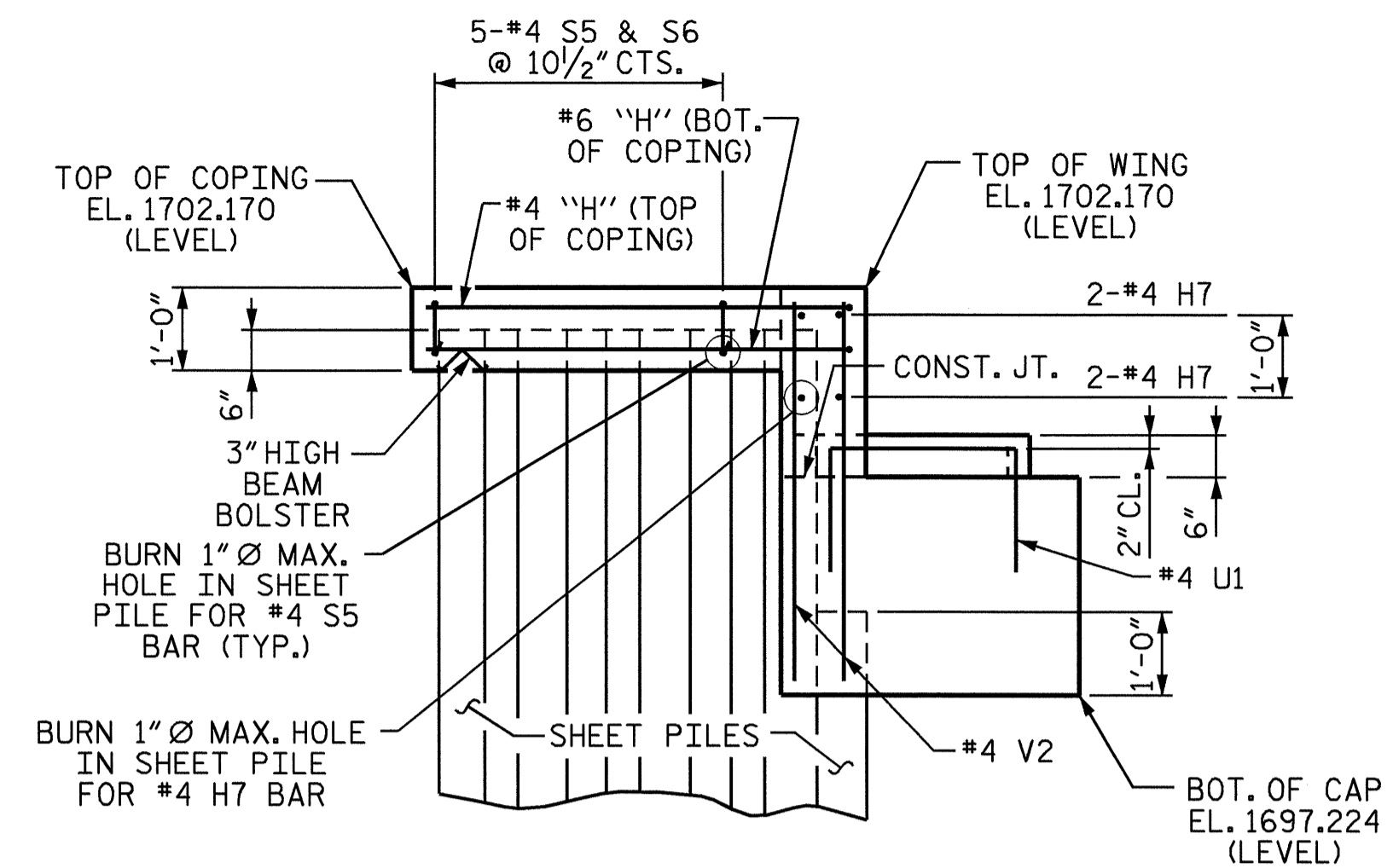


REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16	
1			3			TOTAL SHEETS 24	
2			4				

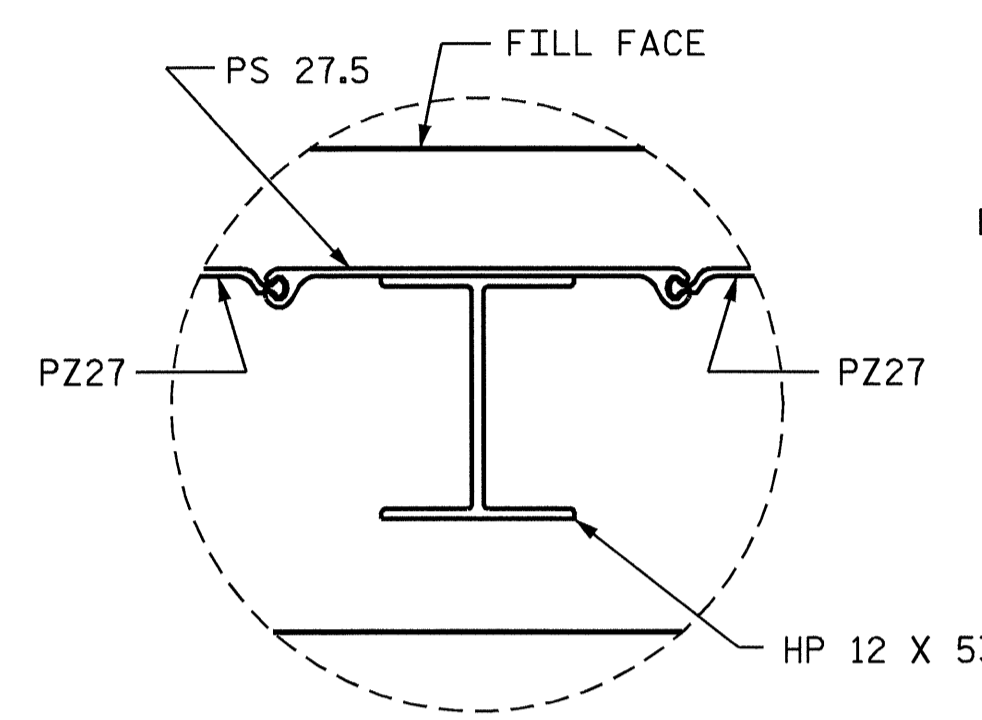
DRAWN BY : A.L. FIGUEROA DATE : 10-12-06
CHECKED BY : MG CHEEK DATE : 6-05-07



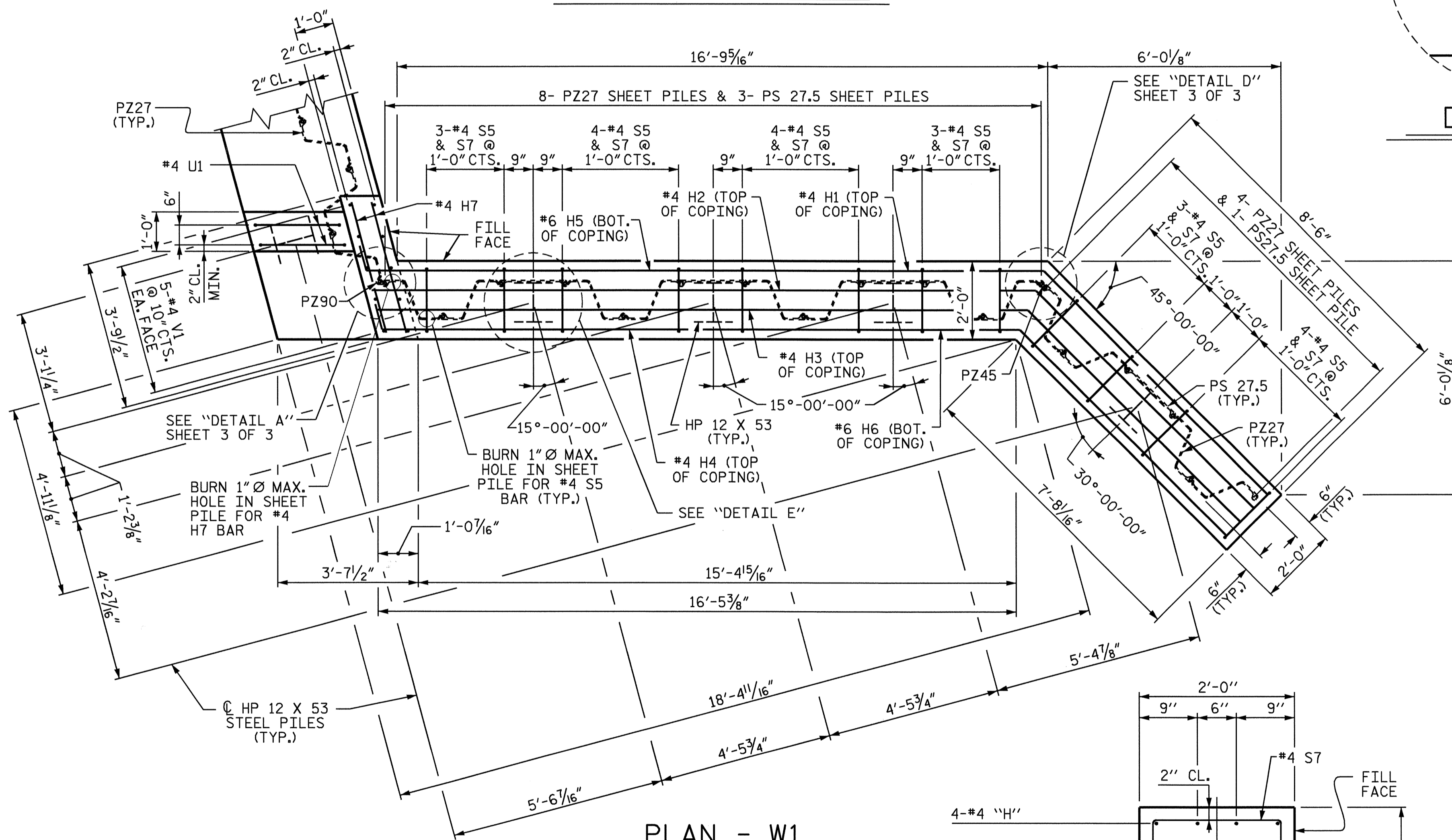
ELEVATION - W1



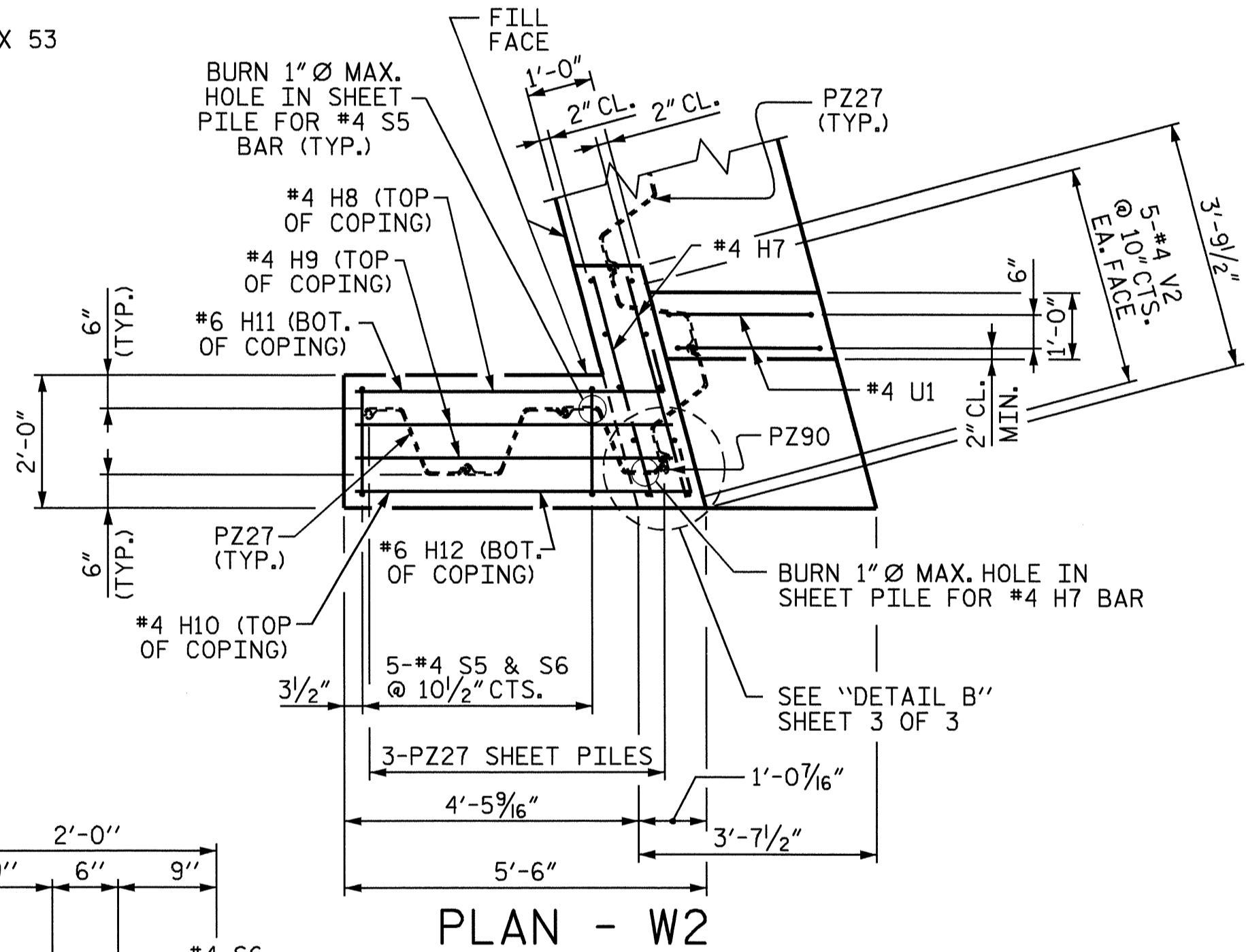
ELEVATION - W2



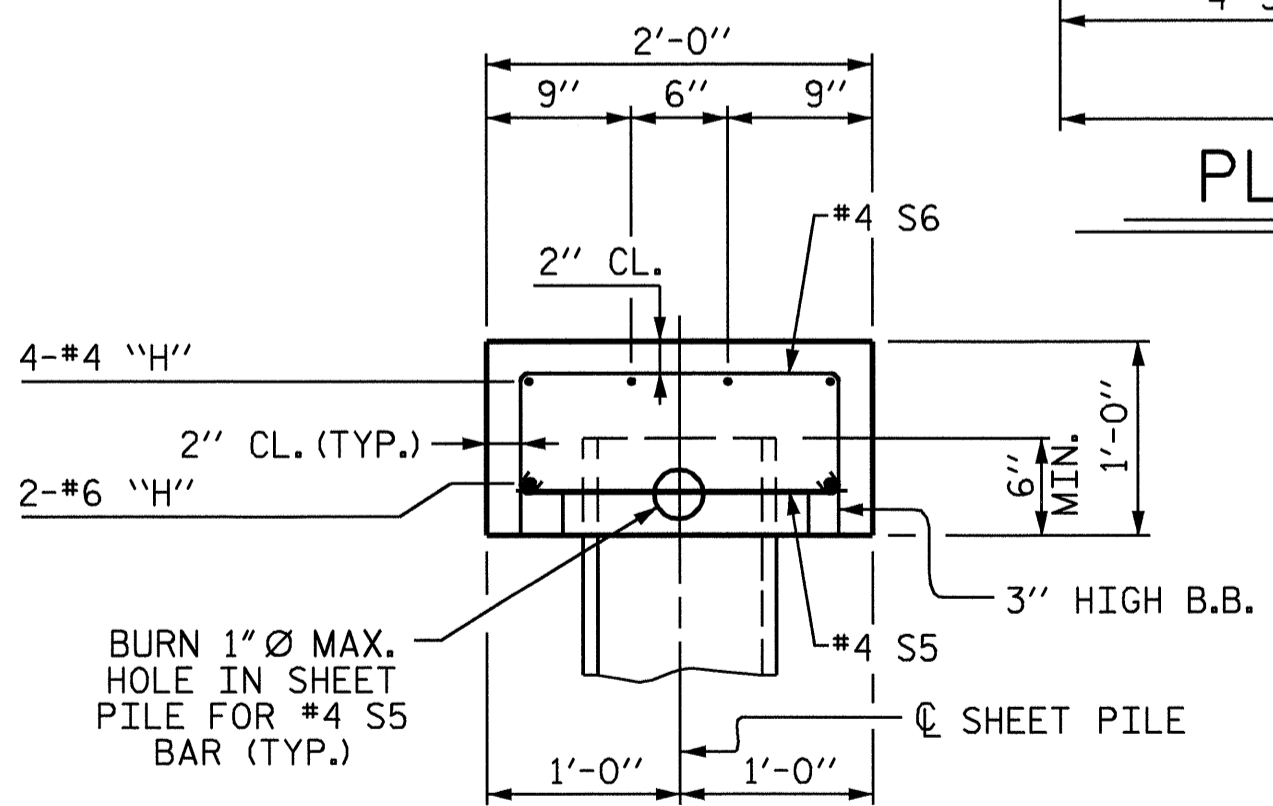
DETAIL E



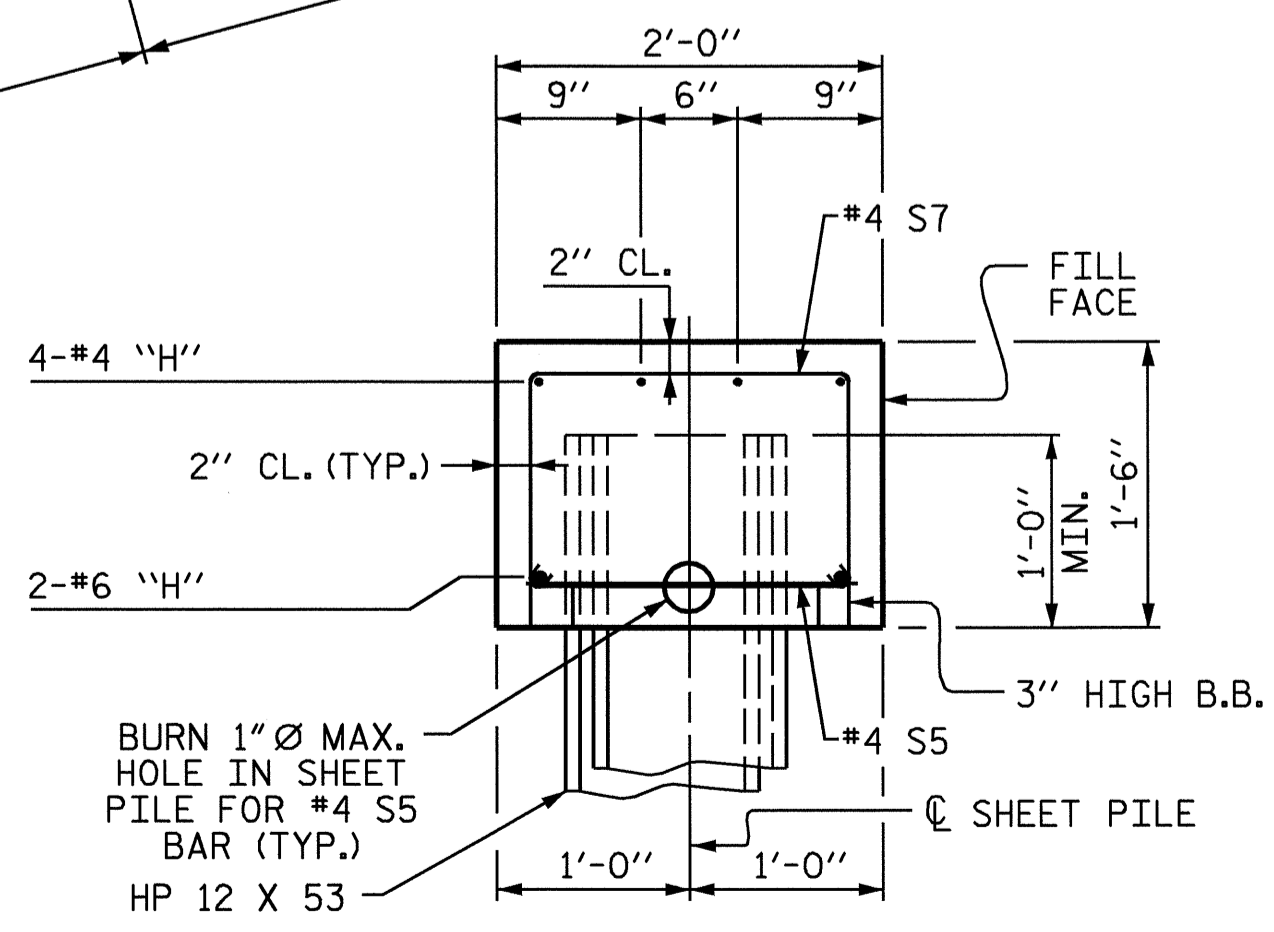
PLAN - W1



PLAN - W2



SECTION THRU COPING - W2



SECTION THRU COPING - W1

NOTES

- THE LATERAL GUIDE AT THE ENDS OF CAP ARE NOT TO BE POURED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.
- 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 PARAPETS ARE CAST IF SLIP FORMING IS USED.
- FOR PILE SPLICE DETAILS, SEE END BENT 2, SHEET 2 OF 3.

DRAWN BY: William J. Parker DATE: 05/23/07
 CHECKED BY: D. HODGE DATE: 6/07

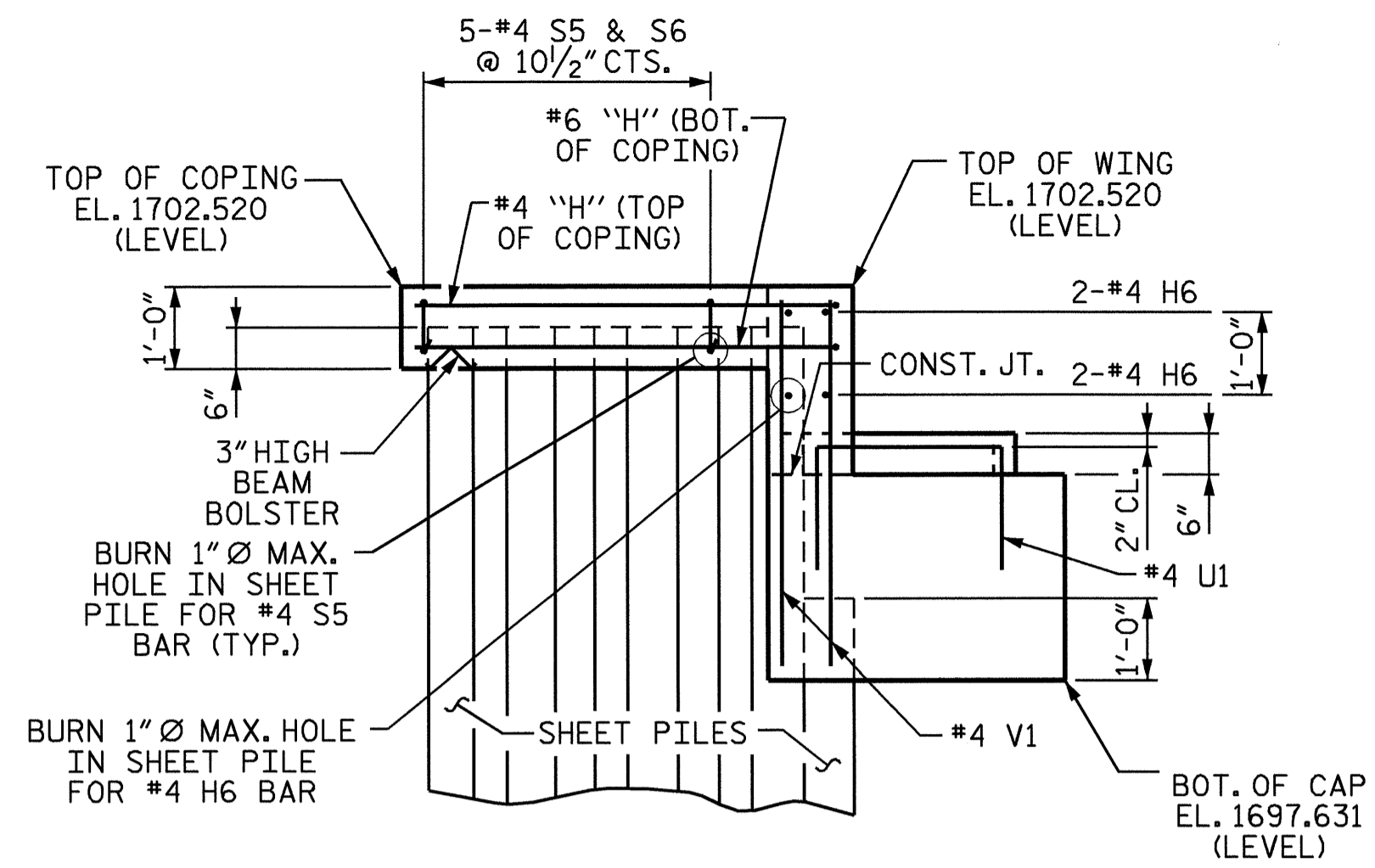
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 vnguyen



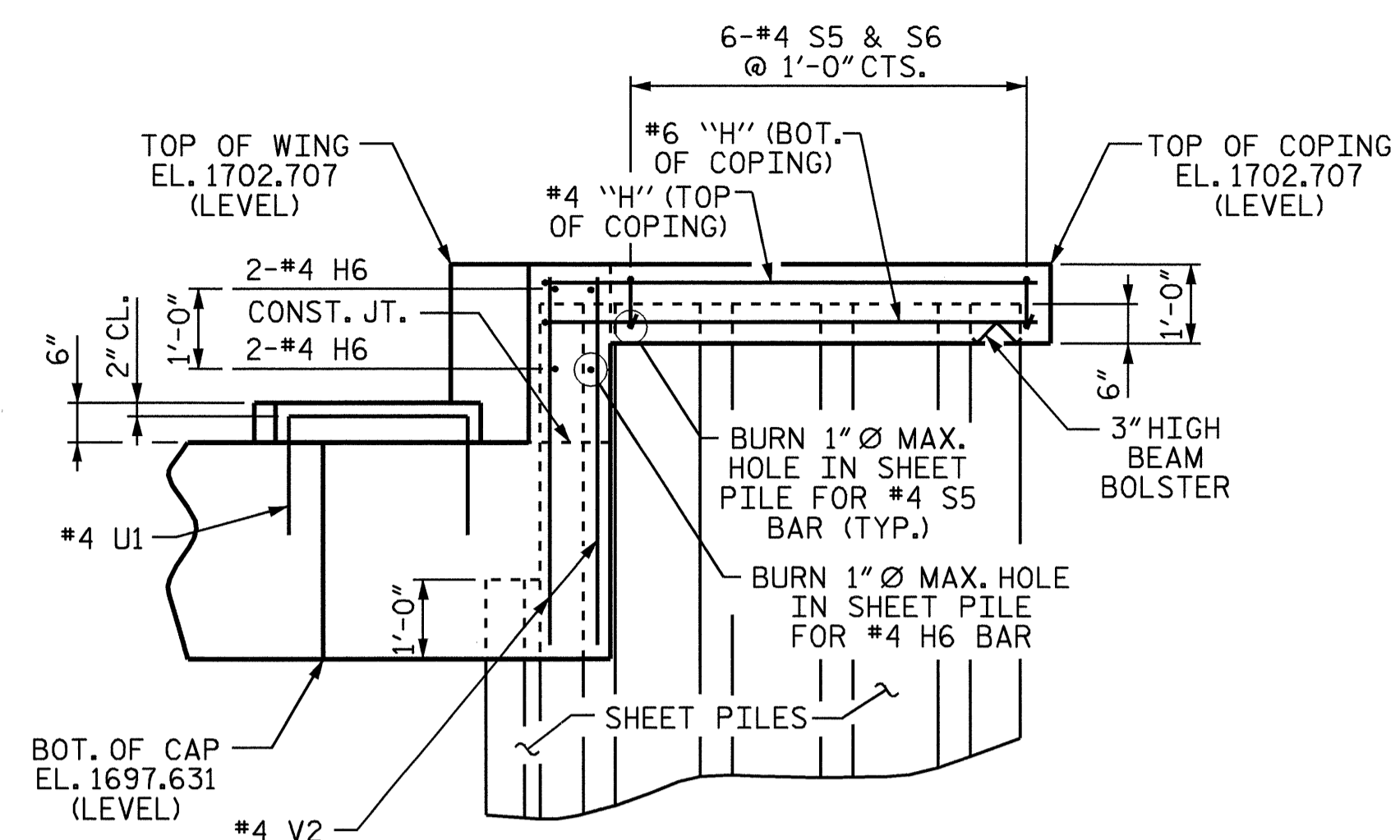
PROJECT NO. B-3826
CHEROKEE COUNTY
 STATION: 10+87.86 -L-

SHEET 2 OF 3
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 1

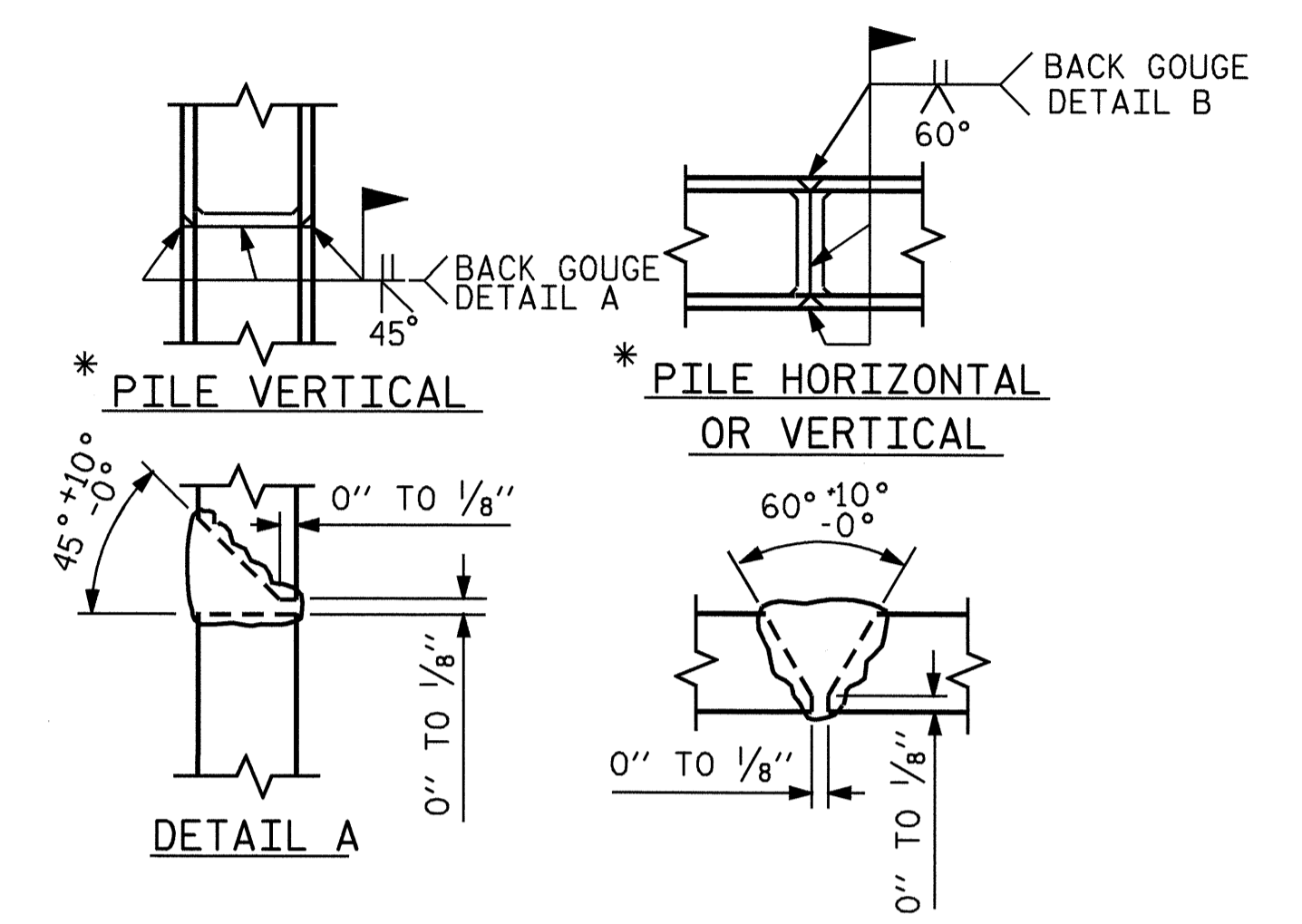
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS 24
2			4			



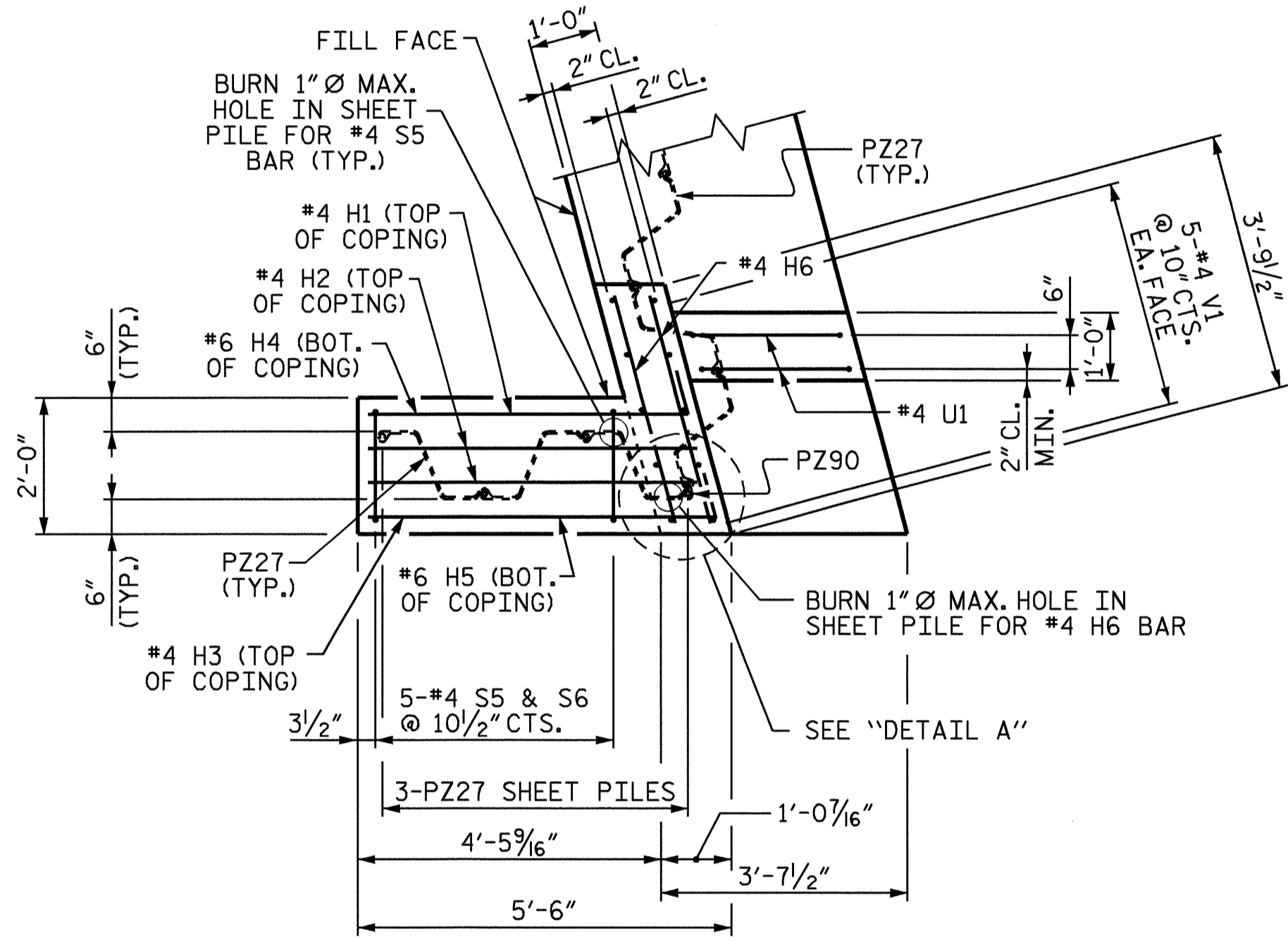
ELEVATION - W1



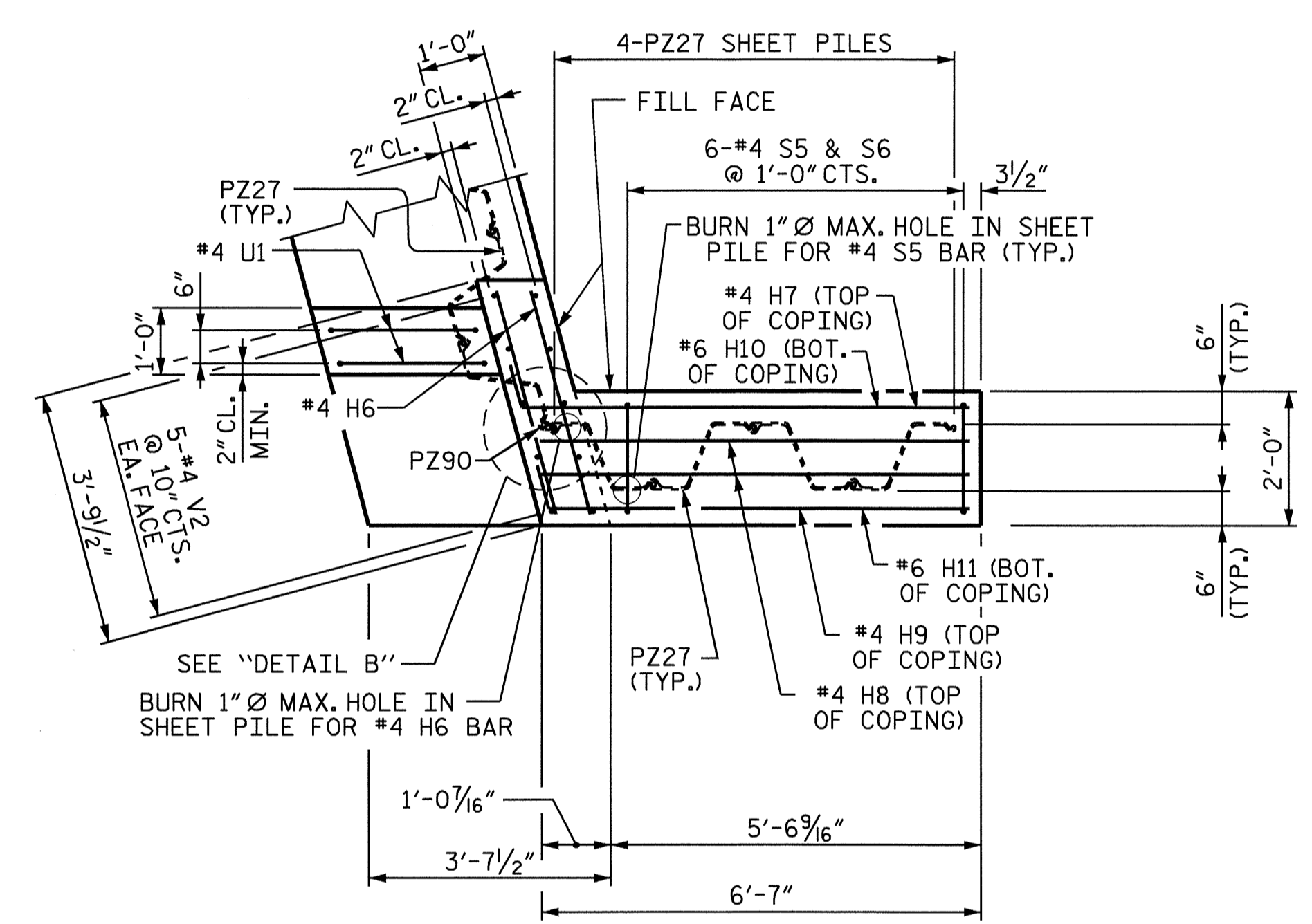
ELEVATION - W2



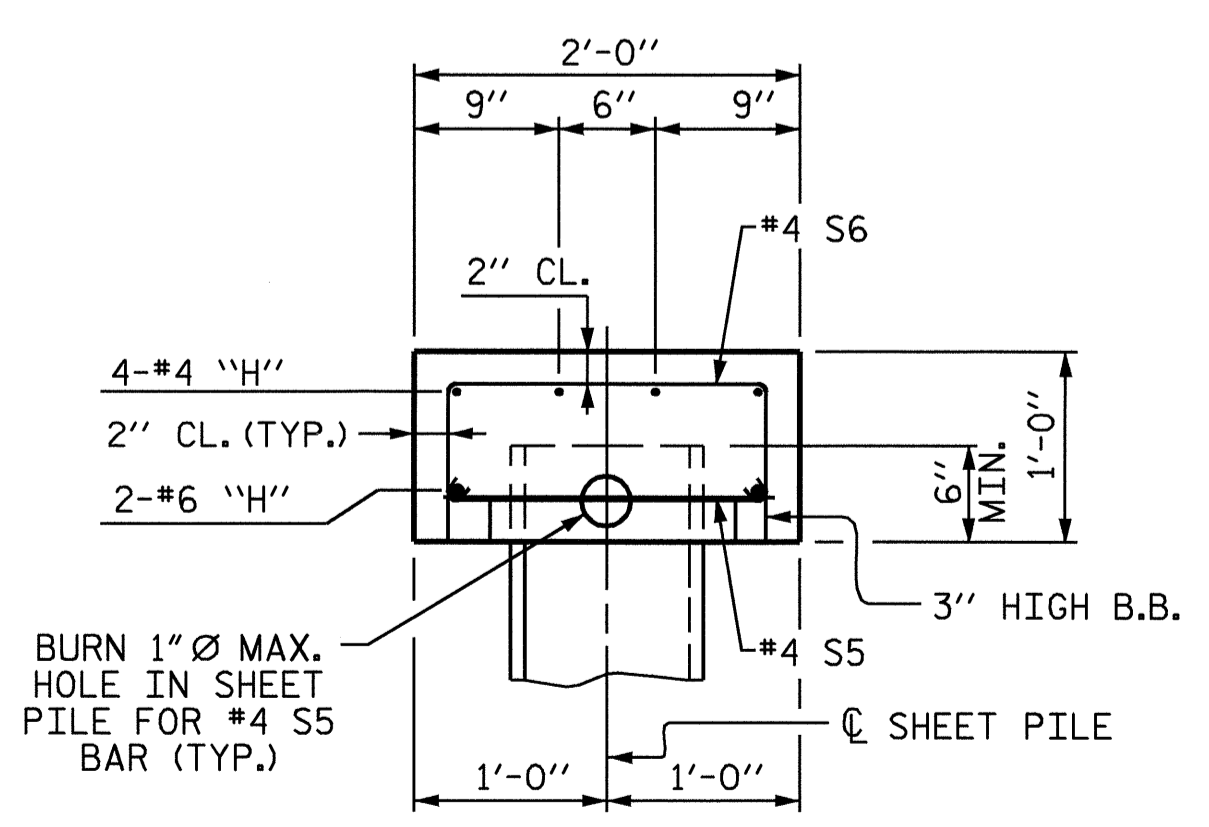
PILE SPLICE DETAILS



PLAN - W1



PLAN - W2



SECTION THRU COPING

NOTES

- THE LATERAL GUIDE AT THE ENDS OF CAP ARE NOT TO BE POURED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.
- 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 PARAPETS ARE CAST IF SLIP FORMING IS USED.

DRAWN BY: *William J. Parker* DATE: 05/23/07
 CHECKED BY: *D. HODGE* DATE: 6/07

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PROJECT NO. B-3826
CHEROKEE COUNTY
 STATION: 10+87.86 -L-

SHEET 2 OF 3

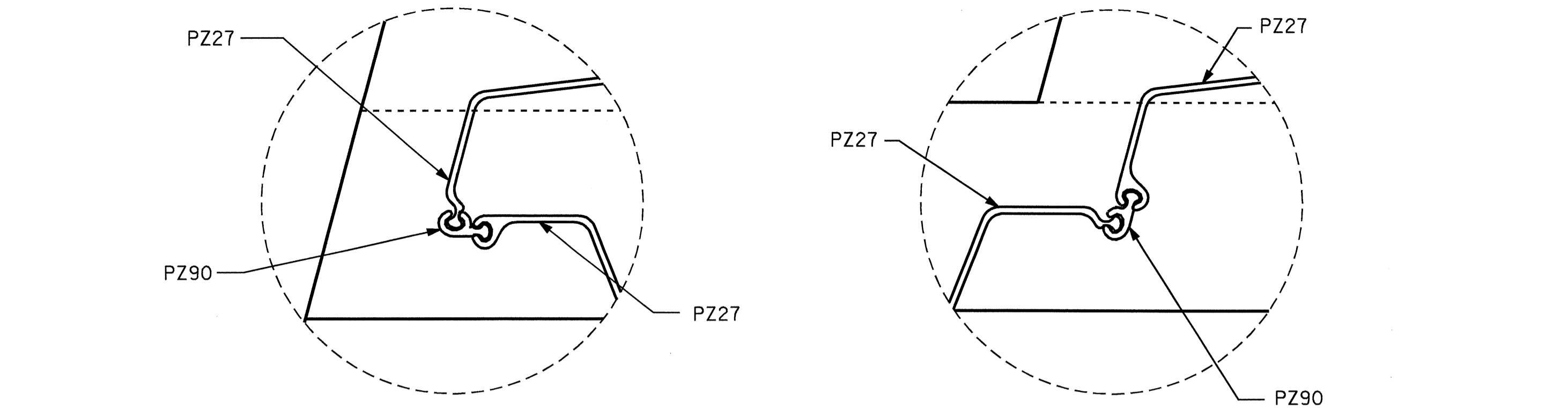
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT 2

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

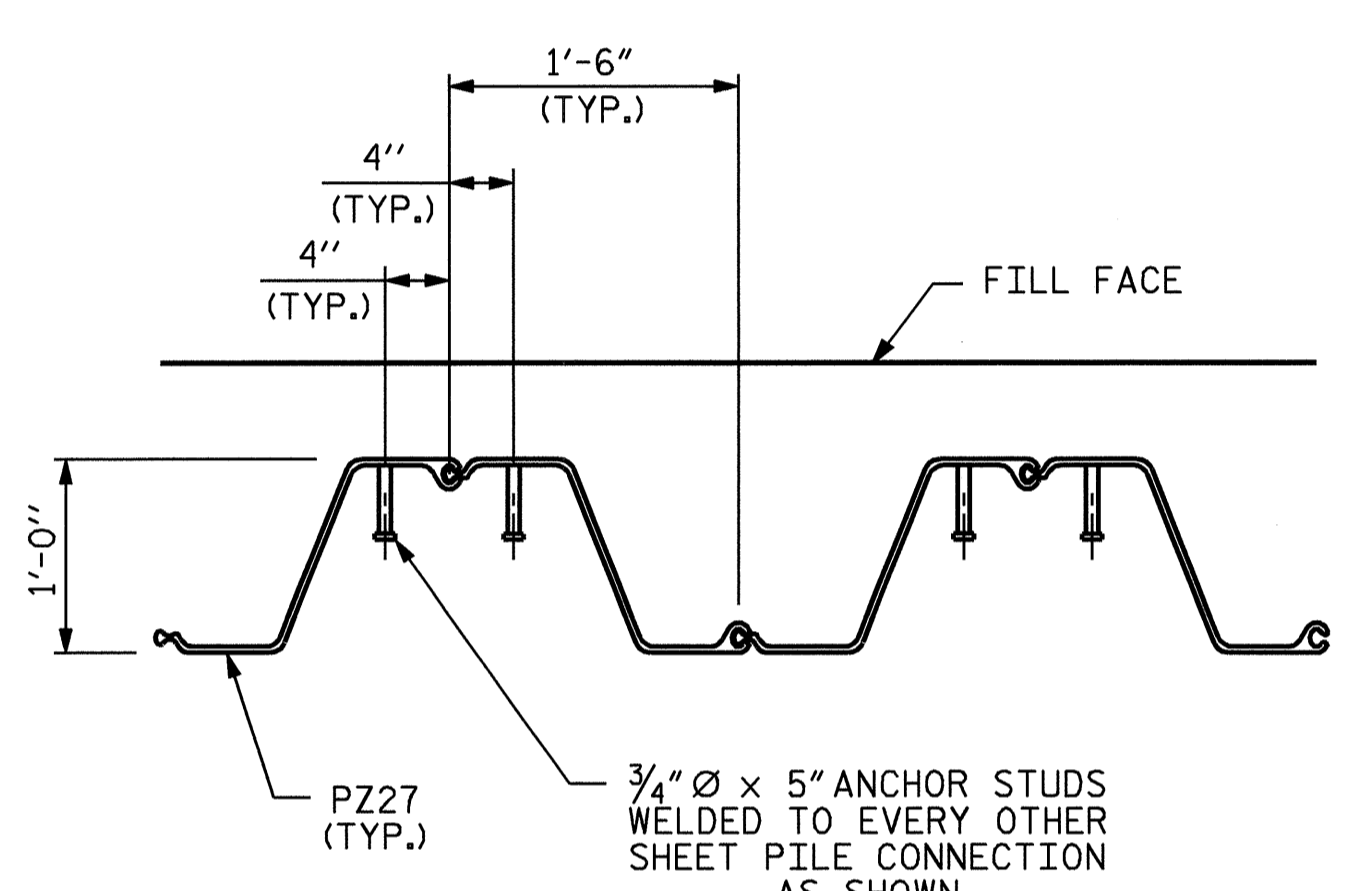
SHEET NO. S-21
 TOTAL SHEETS 24



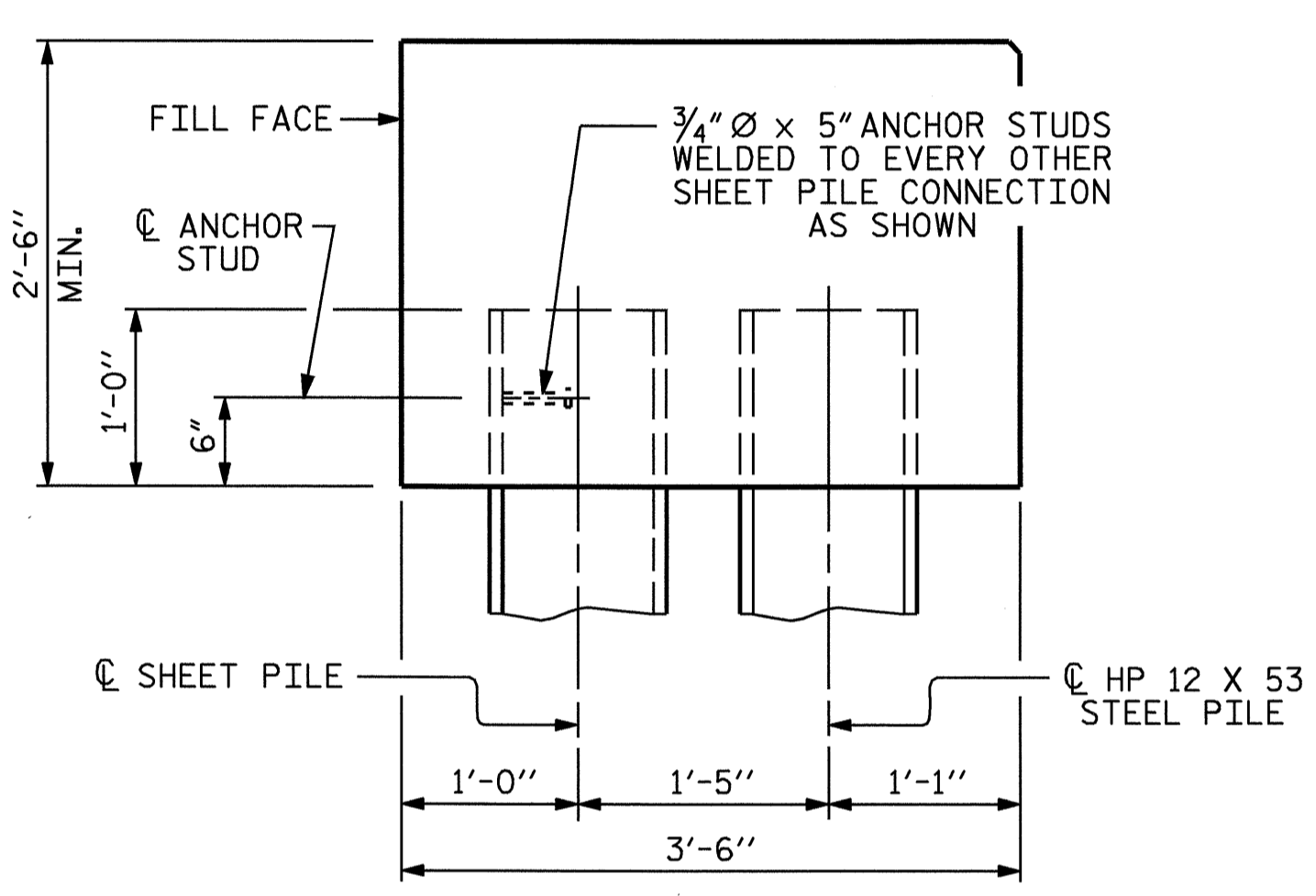


DETAIL A

DETAIL B

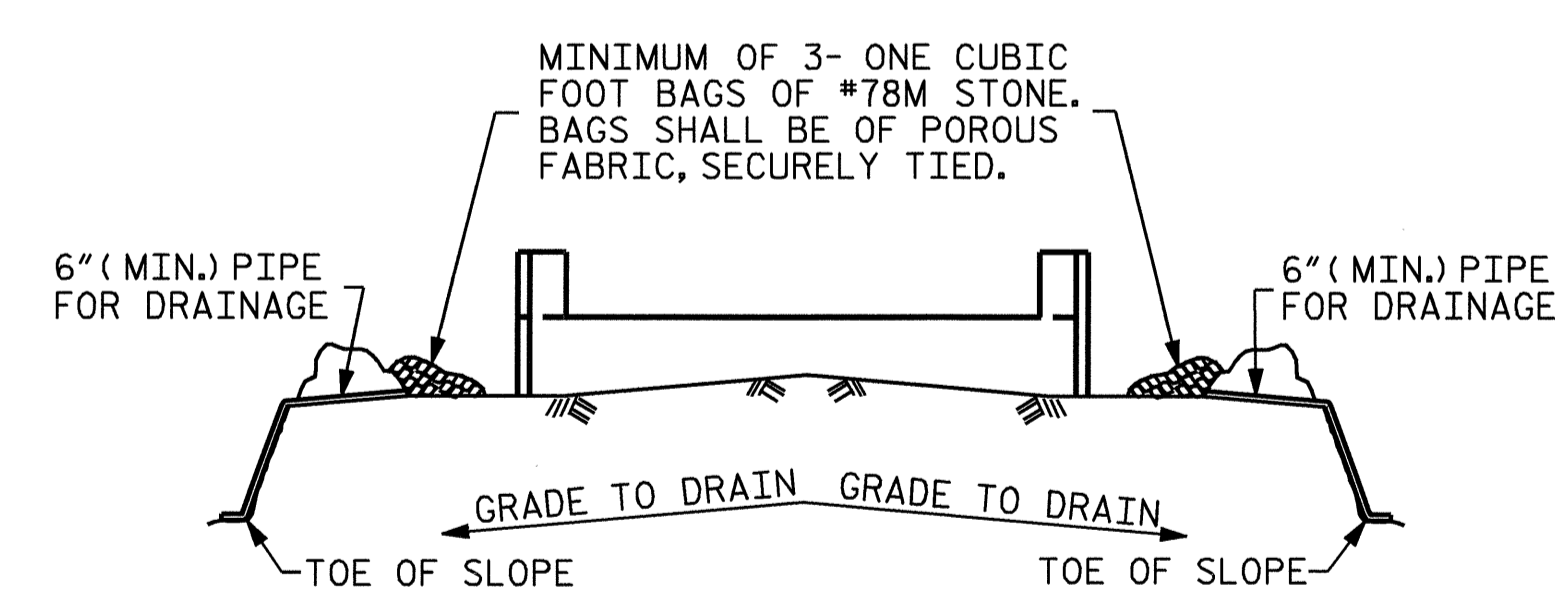


PLAN



SECTION

SHEET PILE ANCHOR STUD DETAILS



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

6\" (MIN.) PIPE FOR DRAINAGE

GRADE TO DRAIN GRADE TO DRAIN

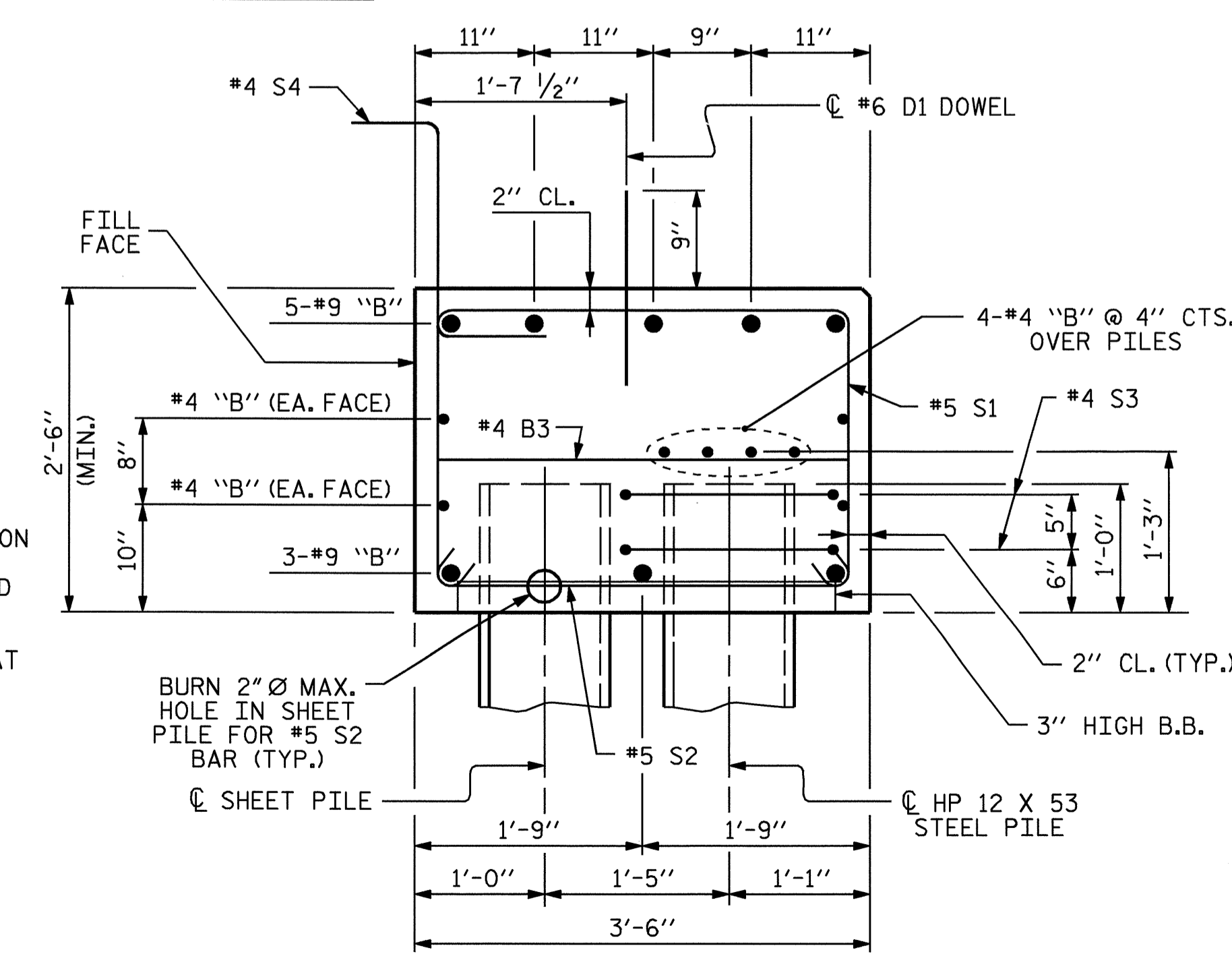
TOE OF SLOPE

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.

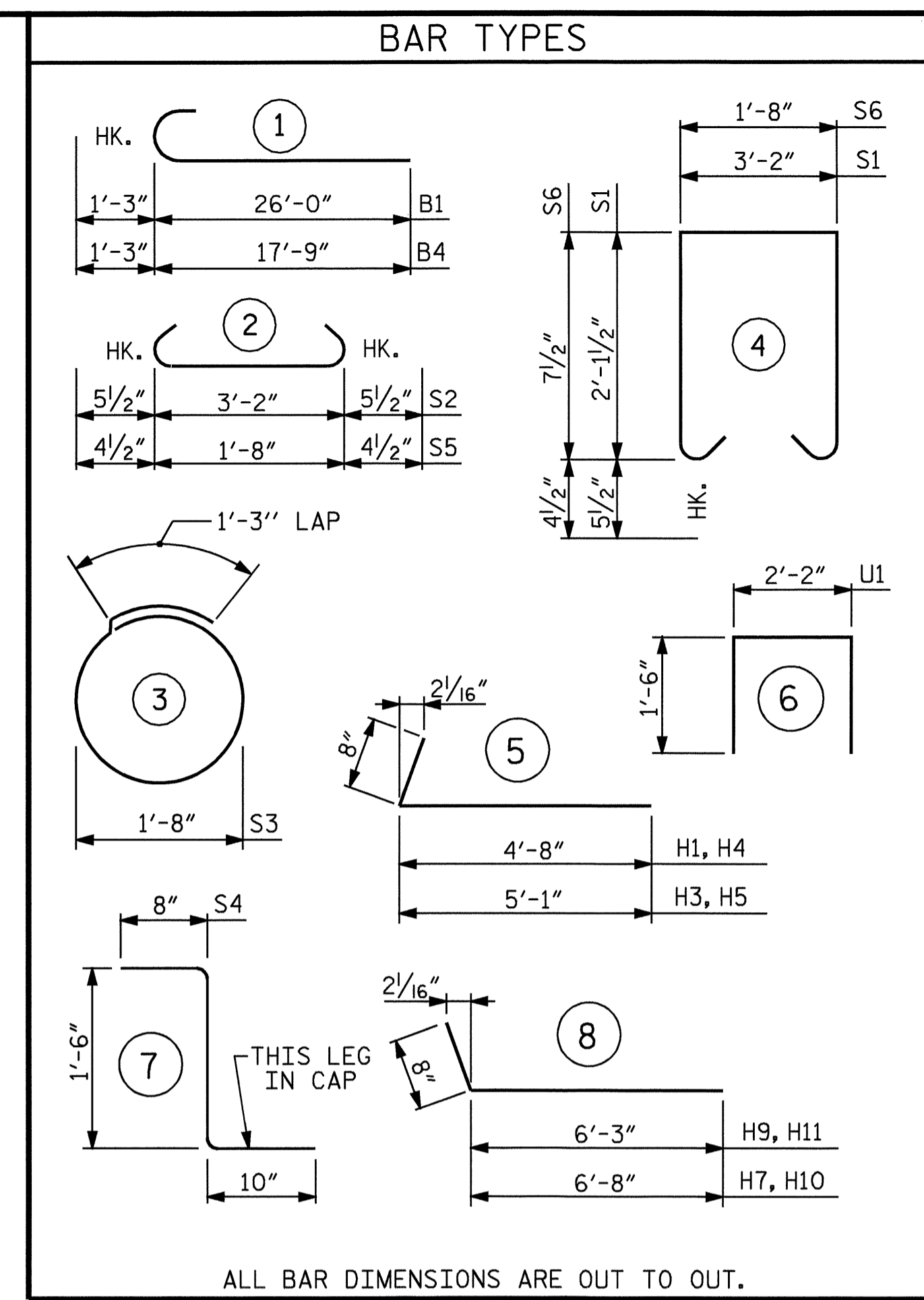
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL											
STAGE I					STAGE II						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	9	1	27'-3"	741	B3	5	4	STR	3'-2"	11
B2	8	4	STR	27'-6"	147	B4	8	9	1	19'-0"	517
B3	6	4	STR	3'-2"	13	B5	8	4	STR	18'-10"	101
D1	14	6	STR	1'-6"	32	D1	10	6	STR	1'-6"	23
H1	1	4	5	5'-4"	4	H6	4	4	STR	3'-5"	9
H2	2	4	STR	4'-10"	6	H7	1	4	8	7'-4"	5
H3	1	4	5	5'-9"	4	H8	2	4	STR	6'-5"	9
H4	1	6	5	5'-4"	8	H9	1	4	8	6'-11"	5
H5	1	6	5	5'-9"	9	H10	1	6	8	7'-4"	11
H6	4	4	STR	3'-5"	9	H11	1	6	8	6'-11"	10
S1	23	5	4	8'-4"	200	S1	17	5	4	8'-4"	148
S2	23	5	2	4'-1"	98	S2	17	5	2	4'-1"	72
S3	8	4	3	6'-6"	35	S3	6	4	3	6'-6"	26
S4	21	4	7	3'-0"	42	S4	15	4	7	3'-0"	30
S5	5	4	2	2'-5"	8	S5	6	4	2	2'-5"	10
S6	5	4	4	3'-8"	12	S6	6	4	4	3'-8"	15
U1	2	4	6	5'-2"	7	U1	2	4	6	5'-2"	7
V1	10	4	STR	4'-6"	30	V2	10	4	STR	4'-9"	32
REINFORCING STEEL					1405 LBS.	REINFORCING STEEL					1041 LBS.
CLASS A CONCRETE BREAKDOWN						CLASS A CONCRETE BREAKDOWN					
POUR 1 - CAP					8.4 C.Y.	POUR 4 - CAP					6.6 C.Y.
POUR 2 - WING AND COPING					1.0 C.Y.	POUR 5 - WING AND COPING					1.1 C.Y.
POUR 3 - LATERAL GUIDE					0.1 C.Y.	POUR 6 - LATERAL GUIDE					0.1 C.Y.
CLASS A CONCRETE TOTAL					9.5 C.Y.	CLASS A CONCRETE TOTAL					7.8 C.Y.
HP 12 x 53 GALVANIZED STEEL PILES						HP 12 x 53 GALVANIZED STEEL PILES					
NO. 5					50 LIN. FEET	NO. 2					20 LIN. FEET
18\"/>											
NO. PZ27 = 21					146 SQ. FT.	NO. PZ27 = 14					109 SQ. FT.
NO. PZ90 = 1					2 SQ. FT.	NO. PZ90 = 1					2 SQ. FT.
TOTAL NO. = 22					148 SQ. FT.	TOTAL NO. = 15					111 SQ. FT.
PILE EXCAVATION QUANTITIES						PILE EXCAVATION QUANTITIES					
PILE EXCAVATION IN SOIL					20 LIN. FT.	PILE EXCAVATION IN SOIL					8 LIN. FT.
PILE EXCAVATION NOT IN SOIL					18 LIN. FT.	PILE EXCAVATION NOT IN SOIL					7 LIN. FT.

TOTAL QUANTITIES (END BENT No. 2)			
ITEM	STAGE I	STAGE II	TOTAL
REINFORCING STEEL	1,405 LBS.	1,041 LBS.	2,446 LBS.
CLASS A CONCRETE	9.5 C.Y.	7.8 C.Y.	17.3 C.Y.
18\"/>			
HP 12 x 53 GALVANIZED STEEL PILES	No. 5 LIN. FT. 50	No. 2 LIN. FT. 20	No. 7 LIN. FT. 70
PILE EXCAVATION IN SOIL	LIN. FT. 20	LIN. FT. 8	LIN. FT. 28
PILE EXCAVATION NOT IN SOIL	LIN. FT. 18	LIN. FT. 7	LIN. FT. 25

PROJECT NO. B-3826
 CHEROKEE COUNTY
 STATION: 10+87.86 -L-
 SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT 2

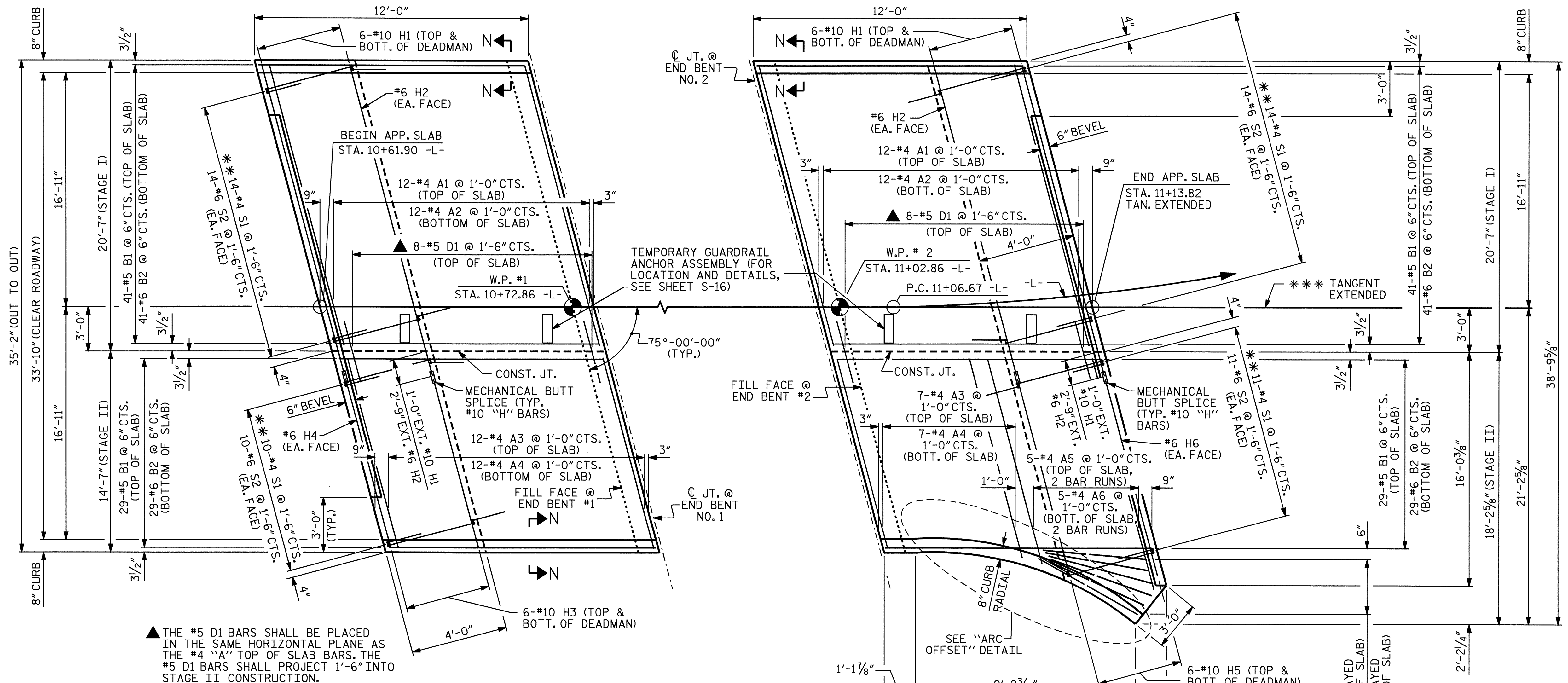
REVISIONS

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

SHEET NO. S-22
 TOTAL SHEETS 24

DRAWN BY: William J. Parker DATE: 05/23/07
 CHECKED BY: D. HODGE DATE: 6/07





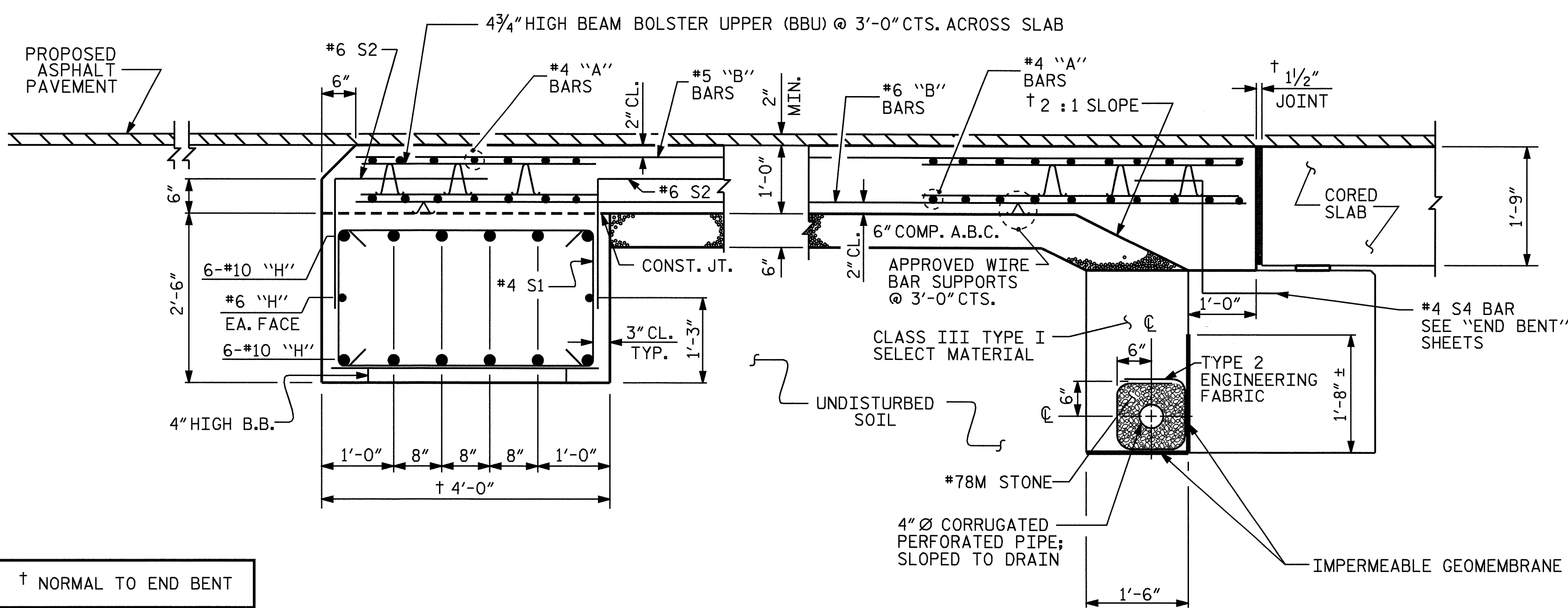
PLAN @ END BENT NO. 1

PLAN @ END BENT NO. 2

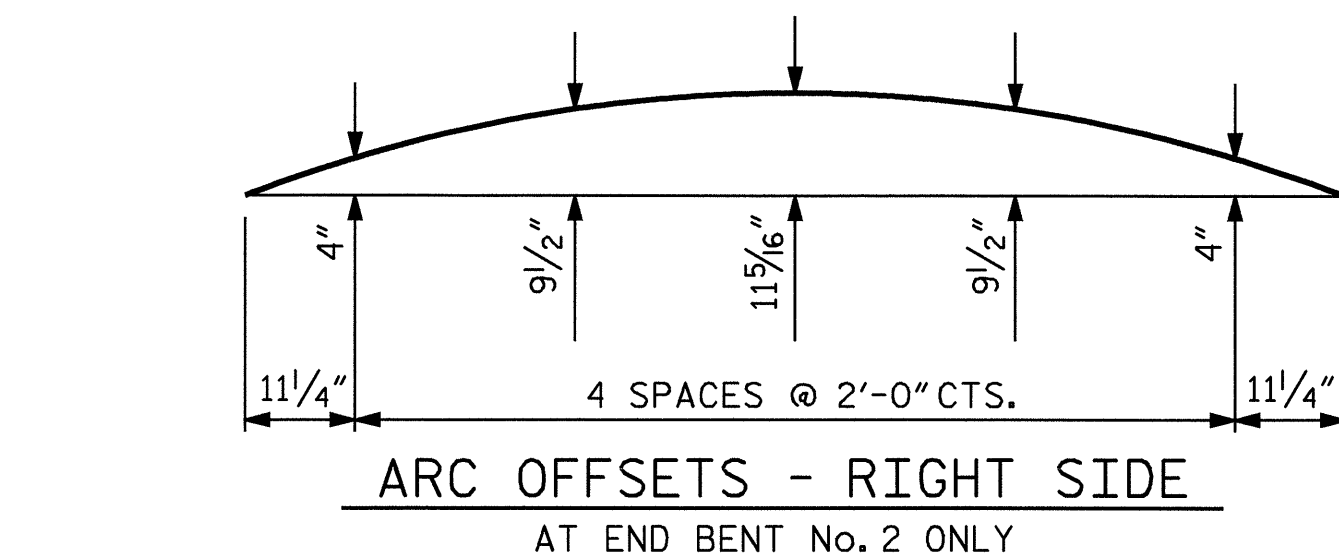
▲ THE #5 D1 BARS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE #4 "A" TOP OF SLAB BARS. THE #5 D1 BARS SHALL PROJECT 1'-6" INTO STAGE II CONSTRUCTION.

** INVERT ALTERNATE STIRRUPS

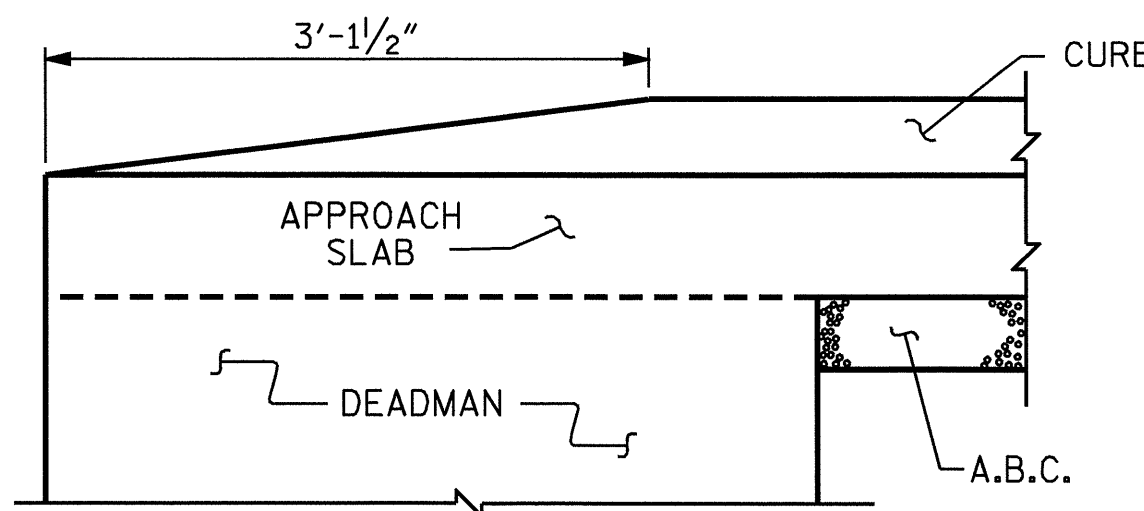
*** FOR LAYOUT OF TANGENT EXTENDED, SEE "DETAIL A" ON GENERAL DRAWING SHEET NO. S-1.



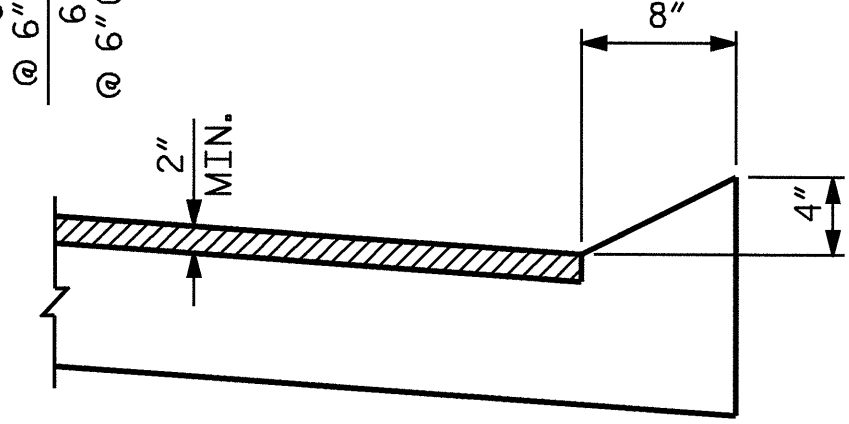
SECTION THRU SLAB



ARC OFFSETS - RIGHT SIDE AT END BENT No. 2 ONLY



END OF CURB WITHOUT SHOULDER BERM GUTTER CURB DETAILS



SECTION N-N

PROJECT NO. B-3826
 CHEROKEE COUNTY
 STATION: 10+87.86 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-23
					TOTAL SHEETS 24



ASSEMBLED BY : CR YARBROUGH/AS	DATE : 12/05
CHECKED BY : M.G. CHEEK	DATE : 07/07
DRAWN BY : FCJ 6/87	REV. 10/17/00 RWW/LES
CHECKED BY : EGA 6/87	REV. 7/10/01 LES/RDR
	REV. 5/7/03R RWW/JTE

NOTES

TEMPORARY DRAINAGE AND TEMPORARY BERM AND SLOPE DRAINS WILL BE PAID FOR UNDER THE LUMP SUM PRICE FOR BRIDGE APPROACH SLABS.

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 EXTEND 1'-0" OUTSIDE OF EACH EDGE OF 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 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 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.

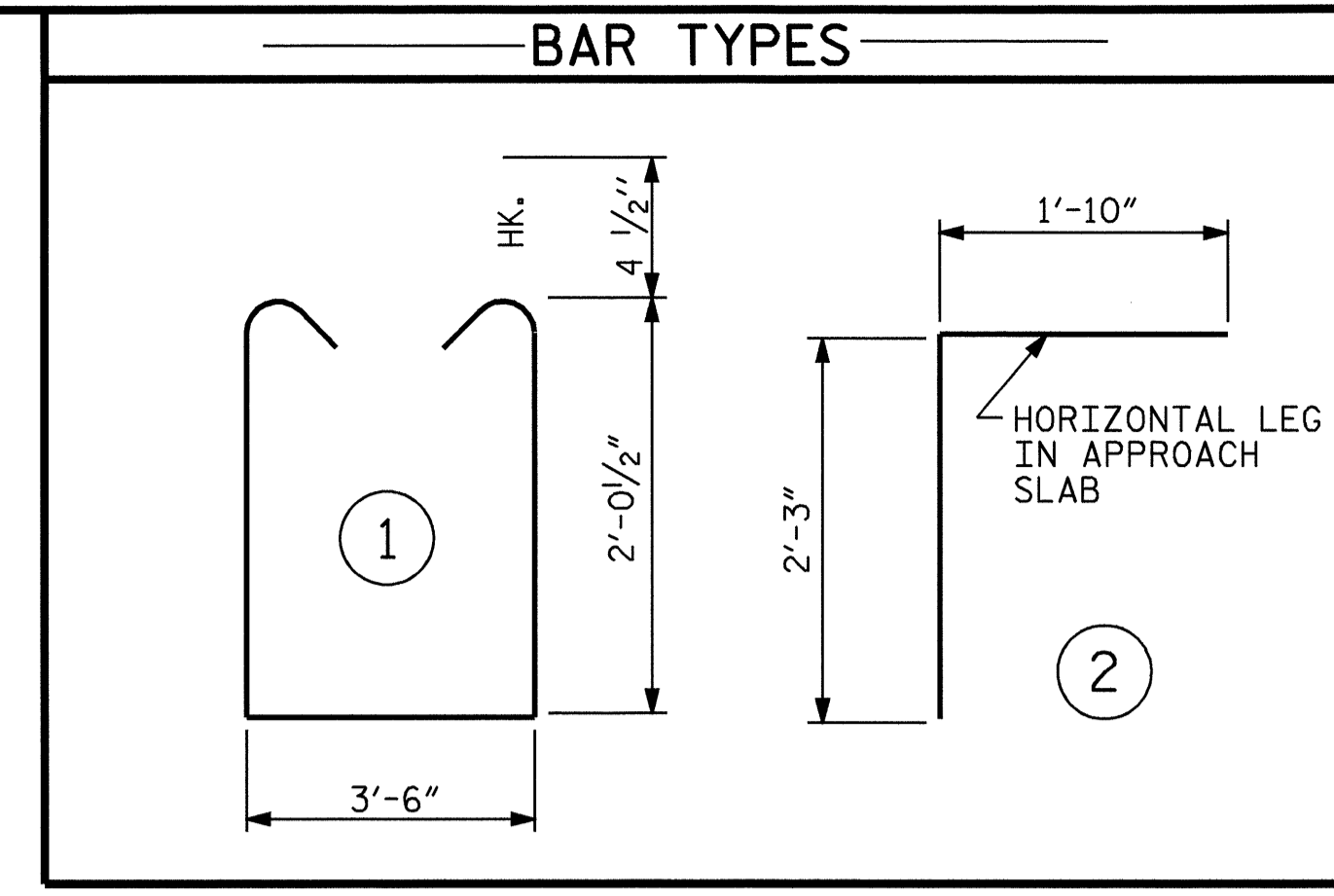
FOR JOINT DETAILS, SEE "PRESTRESSED CONCRETE CORED SLAB UNIT" SHEETS.

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

APPROACH SLAB GROOVING IS NOT REQUIRED.

CONCRETE AND REINFORCING STEEL IN DEADMAN TO BE PAID FOR UNDER LUMPSUM PRICE BID FOR BRIDGE APPROACH SLABS.

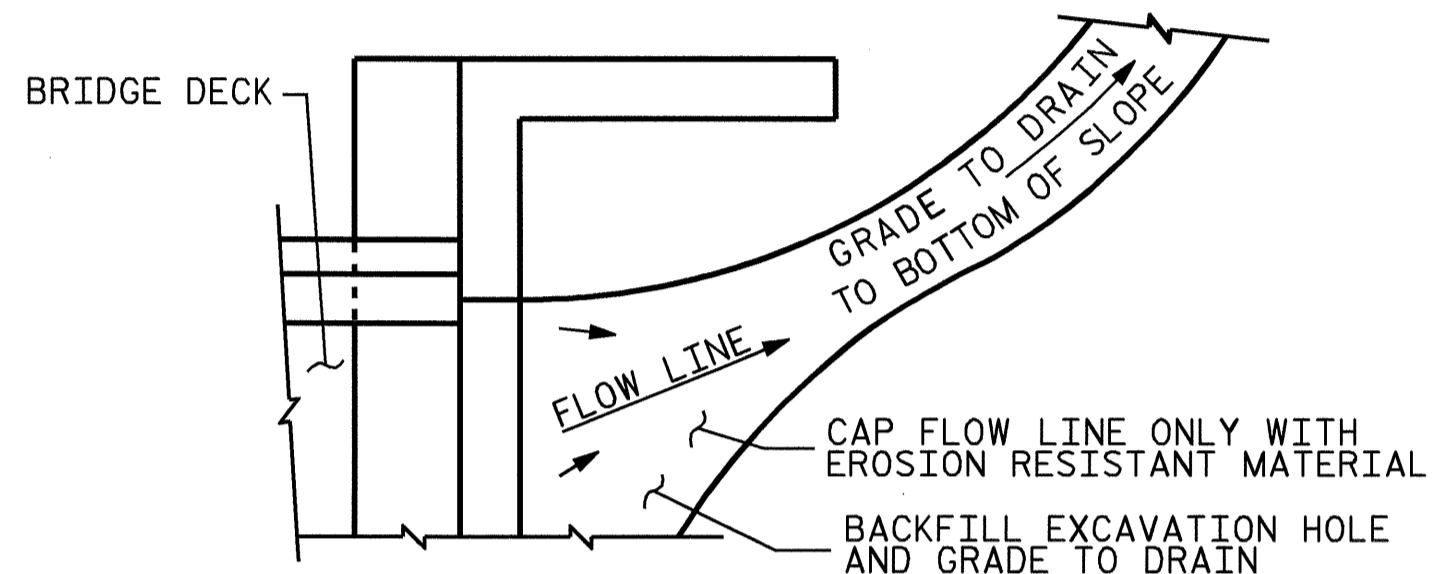
IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, TYPE 2 ENGINEERING FABRIC, SELECT MATERIAL, 6" COMP. A.B.C. & #78M STONE SHALL BE PAID FOR UNDER LUMP SUM PRICE BID FOR BRIDGE APPROACH SLABS.



ALL BAR DIMENSIONS ARE OUT TO OUT

APPROACH SLAB AT EB NO. 1 STAGE I						APPROACH SLAB AT EB NO. 1 STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	12	#4	STR	20'-11"	168	*A3	12	#4	STR	14'-9"	118
A2	12	#4	STR	20'-11"	168	A4	12	#4	STR	14'-9"	118
*B1	41	#5	STR	11'-2"	478	*B1	29	#5	STR	11'-2"	338
B2	41	#6	STR	11'-8"	718	B2	29	#6	STR	11'-8"	508
*D1	8	#5	STR	3'-0"	25	H3	12	#10	STR	13'-11"	719
						H4	2	#6	STR	14'-11"	45
H1	12	#10	STR	22'-2"	1145	S1	10	#4	1	8'-4"	56
H2	2	#6	STR	23'-11"	72	S2	20	#6	2	4'-1"	123
S1	14	#4	1	8'-4"	78						
S2	28	#6	2	4'-1"	172						
REINFORCING STEEL LBS. 2353						REINFORCING STEEL LBS. 1569					
*EPOXY COATED REINFORCING STEEL LBS. 671						*EPOXY COATED REINFORCING STEEL LBS. 456					
CLASS AA CONCRETE BREAKDOWN						CLASS AA CONCRETE BREAKDOWN					
POUR 1 DEADMAN			C. Y. 7.9			POUR 1 DEADMAN			C. Y. 5.6		
POUR 2 APPROACH SLAB			C. Y. 10.4			POUR 2 APPROACH SLAB			C. Y. 7.4		
TOTAL CLASS AA CONCRETE C. Y. 18.3						TOTAL CLASS AA CONCRETE C. Y. 13.0					

* THESE BARS ARE EPOXY COATED

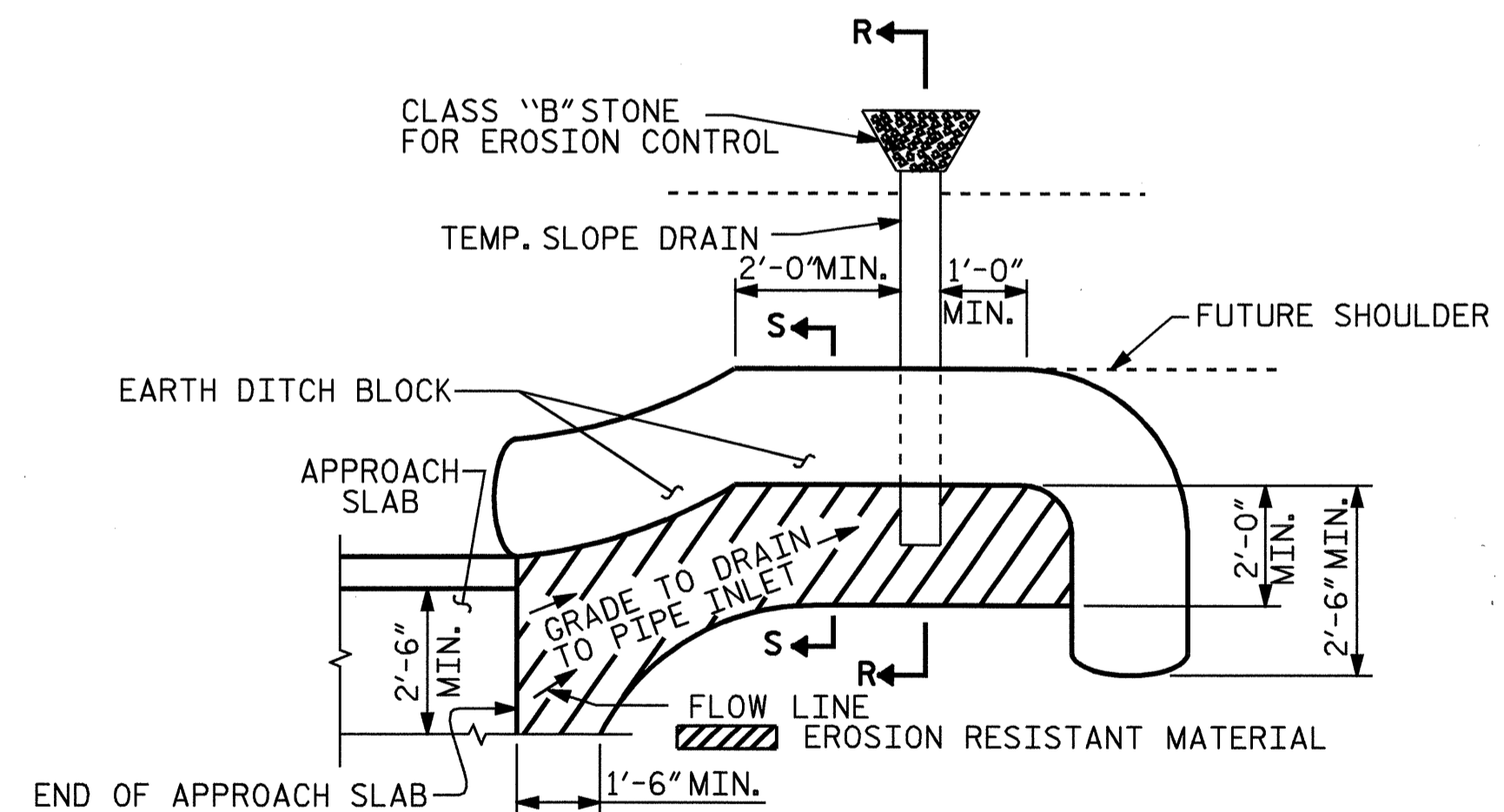


IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO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

TEMPORARY DRAINAGE DETAIL

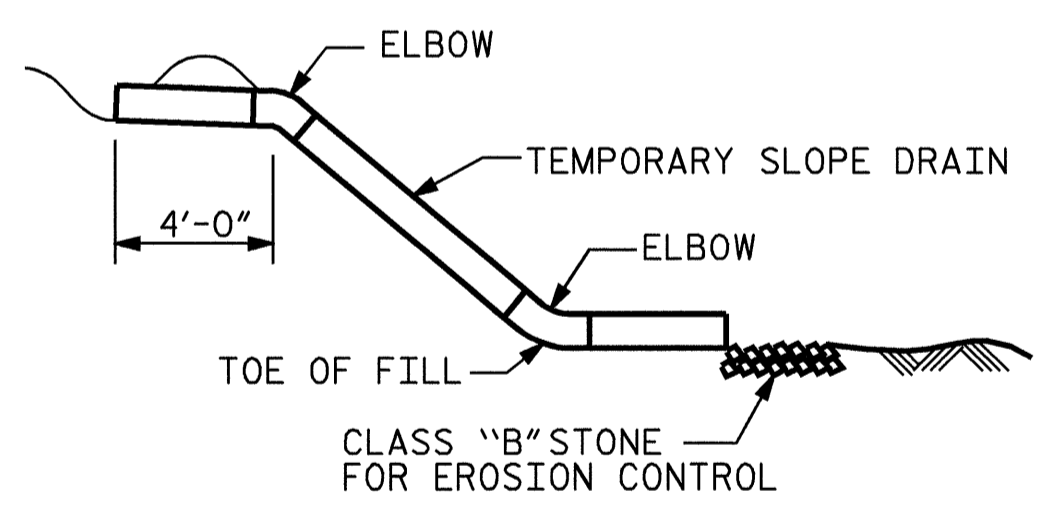
APPROACH SLAB AT EB NO. 2 STAGE I						APPROACH SLAB AT EB NO. 2 STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	12	#4	STR	20'-11"	168	*A3	7	#4	STR	14'-9"	69
A2	12	#4	STR	20'-11"	168	A4	7	#4	STR	14'-9"	69
						*A5	10	#4	STR	10'-4"	69
*B1	41	#5	STR	11'-2"	478	A6	10	#4	STR	10'-2"	68
B2	41	#6	STR	11'-8"	718						
*D1	8	#5	STR	3'-0"	25	*B1	29	#5	STR	11'-2"	338
						B2	29	#6	STR	11'-8"	508
H1	12	#10	STR	22'-2"	1145	*B3	6	#5	STR	7'-10"	49
H2	2	#6	STR	23'-11"	72	B4	6	#6	STR	8'-4"	75
S1	14	#4	1	8'-4"	78	H5	12	#10	STR	15'-7"	805
S2	28	#6	2	4'-1"	172	H6	2	#6	STR	16'-7"	50
						S1	11	#4	1	8'-4"	61
						S2	22	#6	2	4'-1"	135
REINFORCING STEEL LBS. 2353						REINFORCING STEEL LBS. 1771					
*EPOXY COATED REINFORCING STEEL LBS. 671						*EPOXY COATED REINFORCING STEEL LBS. 525					
CLASS AA CONCRETE BREAKDOWN						CLASS AA CONCRETE BREAKDOWN					
POUR 1 DEADMAN			C. Y. 7.9			POUR 1 DEADMAN			C. Y. 6.6		
POUR 2 APPROACH SLAB			C. Y. 10.4			POUR 2 APPROACH SLAB			C. Y. 7.9		
TOTAL CLASS AA CONCRETE C. Y. 18.3						TOTAL CLASS AA CONCRETE C. Y. 14.5					

* THESE BARS ARE EPOXY COATED

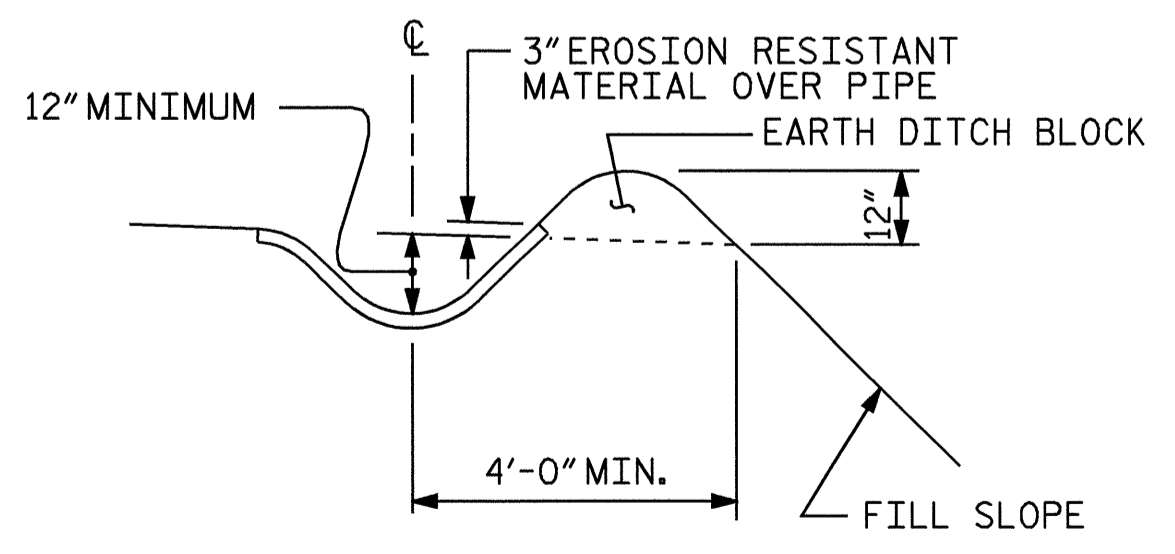


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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



SECTION S-S

SPLICE LENGTH CHART	
BAR	SPLICE LENGTH
A5	2'-0"
A6	1'-9"

PROJECT NO. B-3826
CHEROKEE COUNTY
 STATION: 10+87.86 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD BRIDGE APPROACH SLAB DETAILS					
REVISIONS					1988 SHEET NO. S-24
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 24

ASSEMBLED BY : CR YARBROUGH/AS	DATE : 12/05
CHECKED BY : M.G. CHEEK	DATE : 07/07
DRAWN BY : FCJ 11/88	REV. 8/16/99 MAB/LES
CHECKED BY : ARB 11/88	REV. 10/17/00 RWW/LES
	REV. 5/7/03 RWW/JTE

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