TIP PROJECT: B-4127

CONTRACT: C201639

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

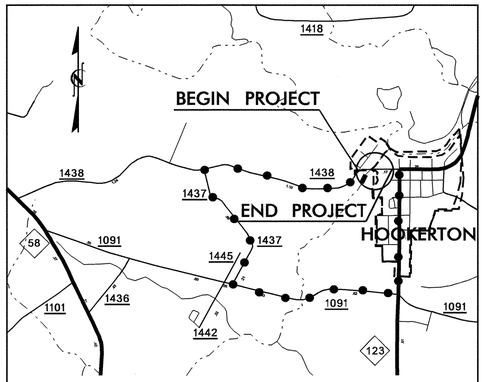
GREENE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4127		

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33480.1.1	BRZ-1438(5)	PE
33480.2.1	BRZ-1438(5)	RW & UTIL
33480.3.1	BRZ-1438(5)	CONST

LOCATION: BRIDGE NO. 43 OVER RAINBOW CREEK ON SR 1438 (DIXON FARM ROAD)

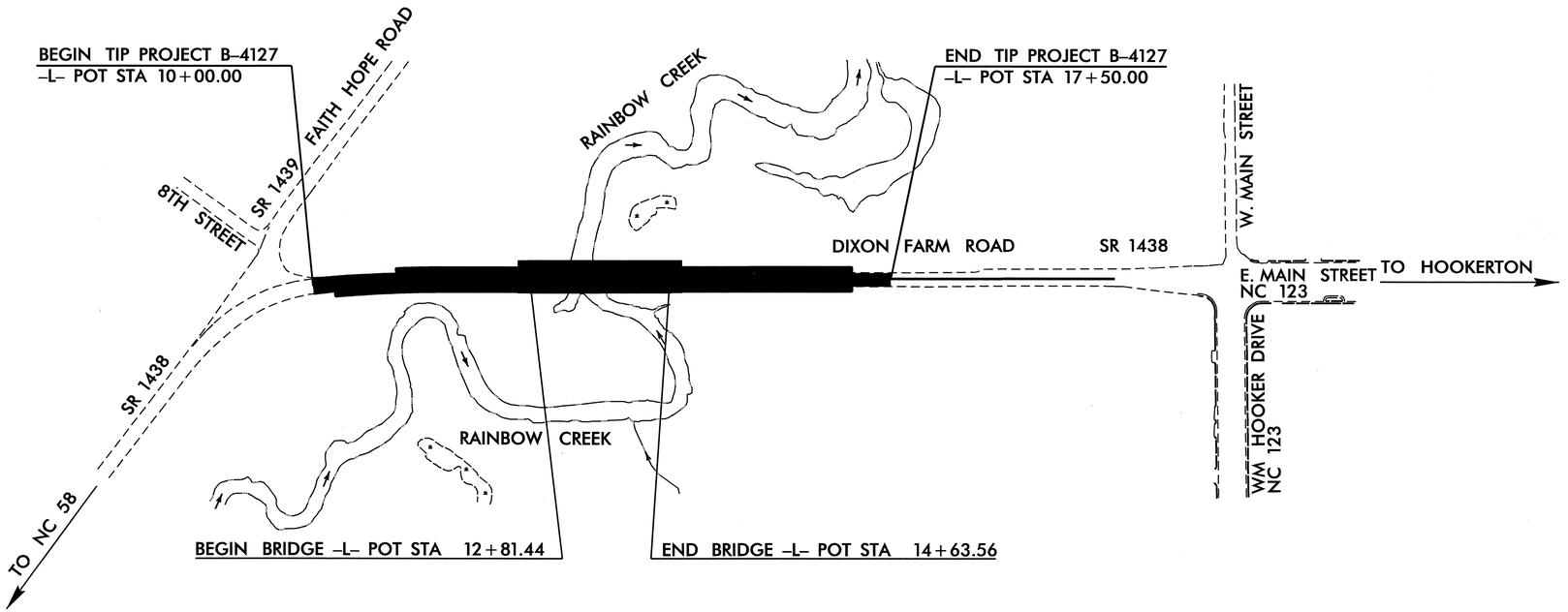
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE



VICINITY MAP

PROP. DETOUR

NAD 83/95



STRUCTURE

DESIGN DATA

ADT 2006 = 2000
ADT 2026 = 3300
DHV = 10 %
D = 60 %
T = 4 % *
V = 40 MPH
FUNC CLASS = LOCAL
* TTST 2% + DUAL 2%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4127 = 0.108 MILES
LENGTH STRUCTURE TIP PROJECT B-4127 = 0.034 MILES
TOTAL LENGTH TIP PROJECT B-4127 = 0.142 MILES

Prepared In the Office of:
DIVISION OF HIGHWAYS
1000 BIRCH RIDGE DR., RALEIGH, NC 27610

2006 STANDARD SPECIFICATIONS

LETTING DATE:
MAY 15, 2007

B. C. Hunt, PE
PROJECT ENGINEER

V. A. Patel, PE
PROJECT DESIGN ENGINEER

STRUCTURE DESIGN UNIT

NORTH CAROLINA PROFESSIONAL SEAL 14552 ENGINEER GREGORY R. PERFETTI

3-30-07

STATE BRIDGE DESIGN ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR *DATE*

24-JAN-2007 08:23
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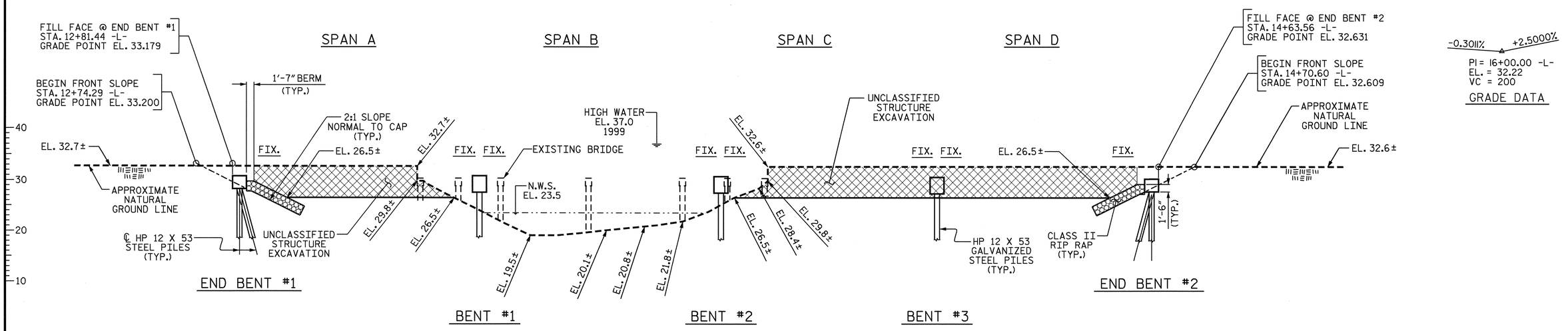
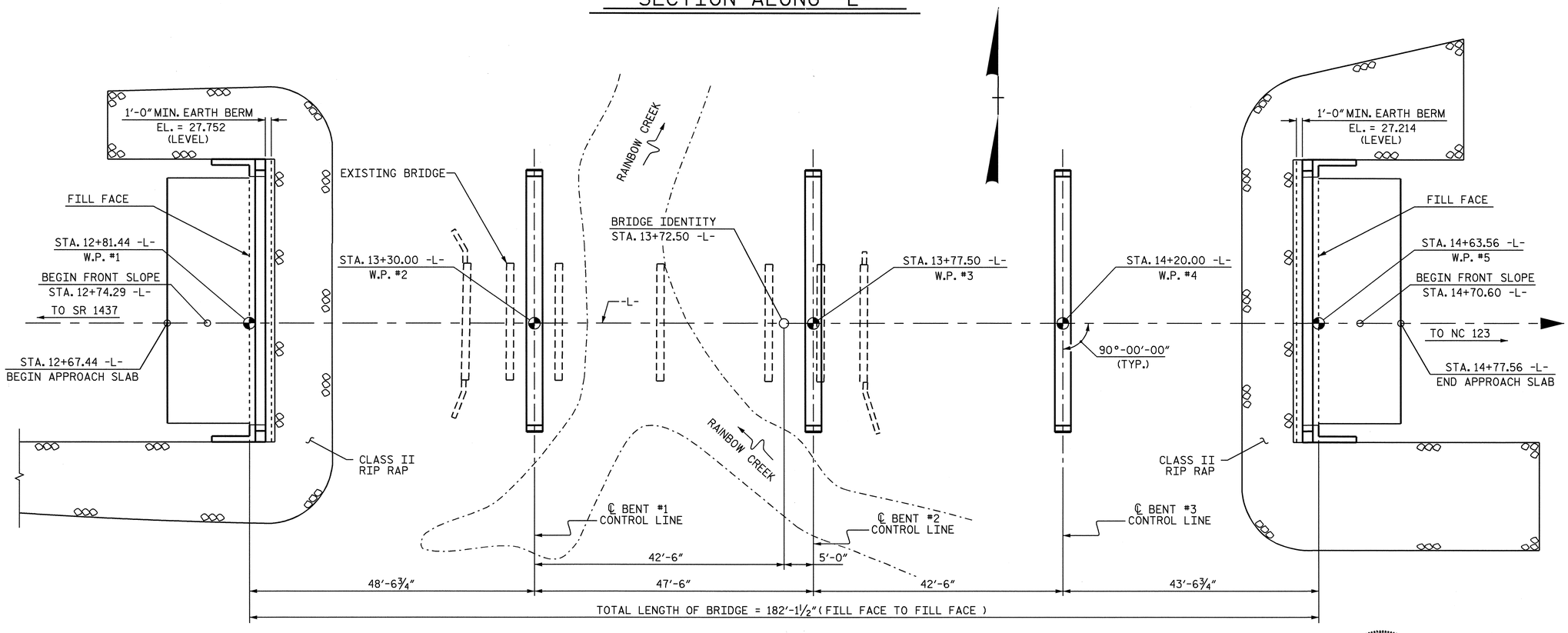
klayne

F.A. PROJECT NO.: BRZ-1438(5)

13+00 13+50 14+00 14+50



SECTION ALONG -L-



PLAN

PILES NOT SHOWN IN PLAN VIEW FOR CLARITY

NORTH CAROLINA PROFESSIONAL SEAL 14081 ENGINEER DUCK CHARLES HUN 3/28/07

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL 3/28/07

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

SHEET 1 OF 3 REPLACES BRIDGE #43

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER RAINBOW CREEK ON SR 1438 (DIXON FARM RD.) BETWEEN NC 123 AND SR 1437

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : D.V. JOYNER DATE : 10-06
CHECKED BY : R.G. EMERSON DATE : 10-06

28-MAR-2007 10:56
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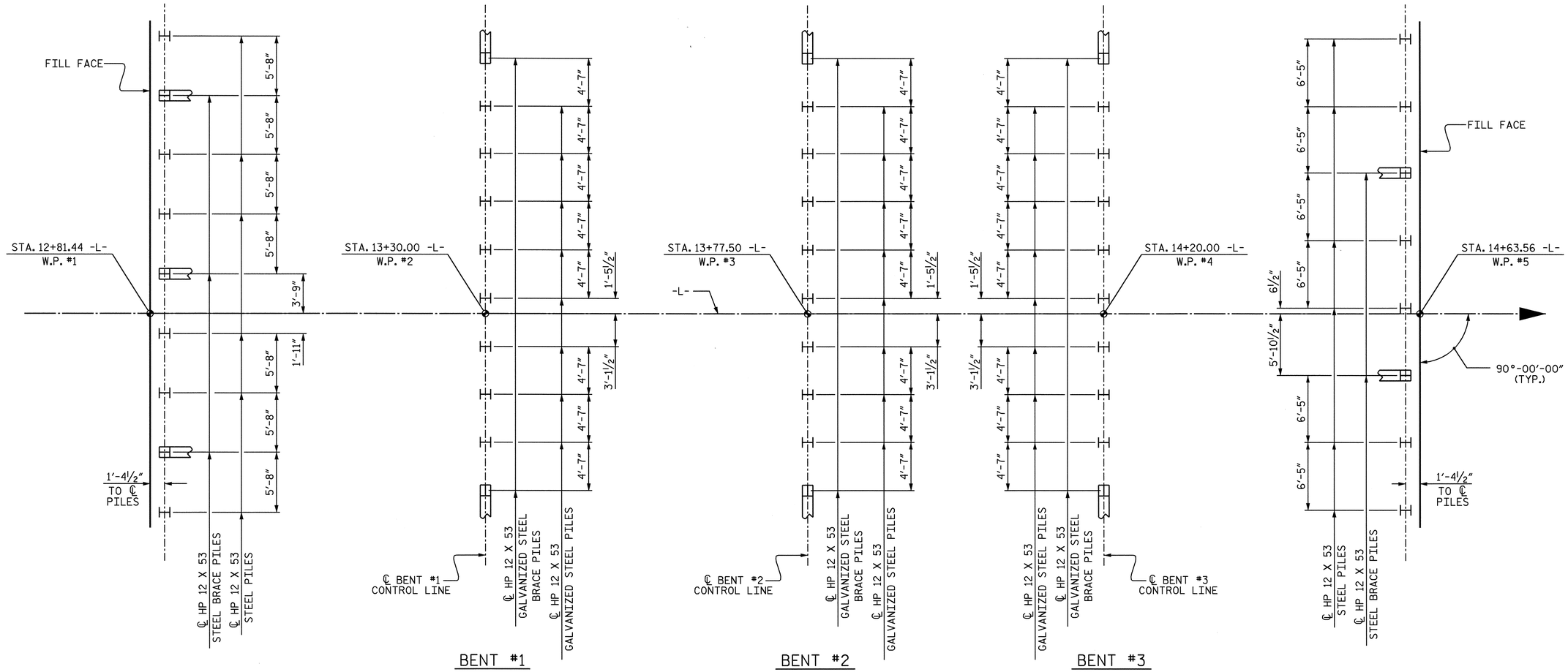
vpatel



FOUNDATION LAYOUT

END BENT BRACE PILES ARE BATTERED AT 3:12 WHERE SHOWN.
BENT BRACE PILES ARE BATTERED AT 1½:12 WHERE SHOWN.
DIMENSIONS LOCATING PILES ARE SHOWN TO THE CENTERLINE OF PILES

NOTES

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.

DRIVE PILES AT BENT NO. 1 AND BENT NO. 2 TO A REQUIRED BEARING CAPACITY OF 125 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO PLUS ANY ADDITIONAL CAPACITY TO ACCOUNT FOR DOWN DRAG OR NEGATIVE SKIN FRICTION AND SCOUR.

DRIVE PILES AT BENT NO. 3 TO A REQUIRED BEARING CAPACITY OF 105 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO PLUS ANY ADDITIONAL CAPACITY TO ACCOUNT FOR DOWN DRAG OF NEGATIVE SKIN FRICTION AND SCOUR.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT BENT NO. 1, BENT NO. 2, AND BENT NO. 3 IS 50 TONS PER PILE.

DRIVE PILES AT BENT NO. 1, BENT NO. 2, AND BENT NO. 3 TO A TIP ELEVATION NO HIGHER THAN 2.000.

THE SCOUR CRITICAL ELEVATION FOR BENT NO. 1, BENT NO. 2, AND BENT NO.3 IS ELEVATION 12.000. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

TESTING THE FIRST PRODUCTION PILE WITH THE PILE DRIVING ANALYZER (PDA) DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED. THE FIRST PRODUCTION PILE SHALL BE AT BENT NO. 3 - RIGHT SIDE. SEE PILE DRIVING ANALYZER SPECIAL PROVISION. THE PILE DRIVING ANALYZER AND WAVE EQUATION SHALL BE USED TO DETERMINE THE DRIVING CRITERIA FOR THE HP 12 X 53 GALVANIZED STEEL PILES.

PILE RESTRIKES FOR LRFD ARE REQUIRED FOR PILES AT BENT #3 RIGHT SIDE.
SEE PILE RESTIKES FOR LRFD SPECIAL PROVISIONS.

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
3/28/07

PROJECT NO. B-4127
GREENE COUNTY
STATION: 13+72.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER RAINBOW CREEK ON SR 1438 (DIXON FARM ROAD) BETWEEN NC 123 AND SR 1437

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : D.V. JOYNER DATE : 10-06
CHECKED BY : R.G. EMERSON DATE : 10-06

28-MAR-2007 10:56
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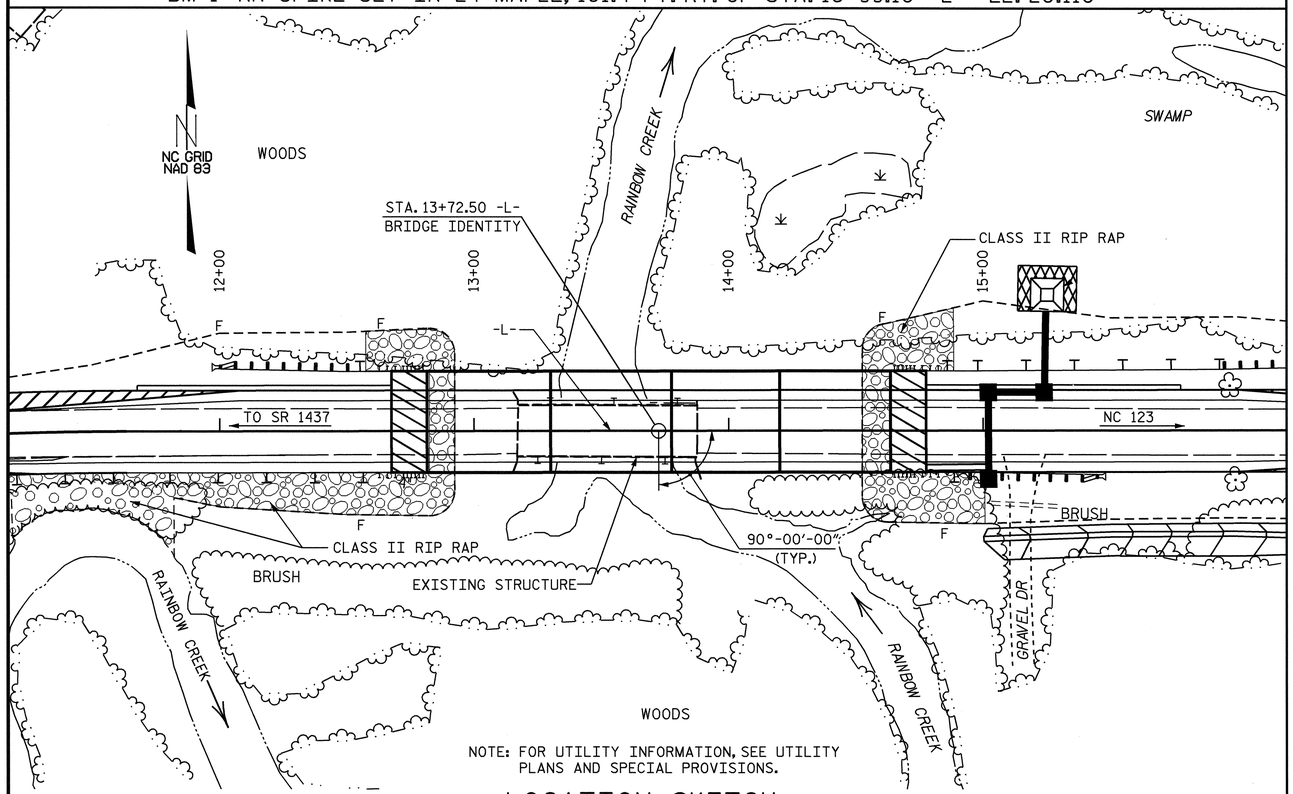

LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING, EXCEPT THAT THE CORED SLABS HAVE BEEN DESIGNED FOR HS-25.

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.

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.

THE EXISTING STRUCTURE CONSISTING OF 6 SPANS , 1 @ 9'-3", 1 @ 8'-1", 1 @ 18'-1", 1 @ 17'-7", 1 @ 8'-3", AND 1 @ 9'-8" WITH A TIMBER DECK COVERED WITH 3¾" OF ASPHALT ON I-BEAMS & TIMBER JOISTS WITH A CLEAR ROADWAY WIDTH OF 19'-4" AND HAVING A SUBSTRUCTURE CONSISTING OF TIMBER CAPS & TIMBER PILES 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 SHALL BE EXCAVATED FOR A DISTANCE OF 40 FT. ON LEFT SIDE & 30 FT. ON RIGHT SIDE OF SURVEY LINE 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.

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

LAMP POST AND ANCHORAGE FOR LIGHTING ON BRIDGE IS TO BE PROVIDED BY OTHERS.

2-BAR METAL RAIL SHALL BE ANODIZED BLACK. SEE "2-BAR METAL RAIL" SHEETS.

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.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

THIS BRIDGE SHALL BE CONSTRUCTED USING TOP-DOWN CONSTRUCTION METHODS. THE USE OF A TEMPORARY CAUSEWAY OR WORK BRIDGE IS NOT PERMITTED.

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

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR CONSTRUCTION OF SUPERSTRUCTURE, SEE SPECIAL PROVISIONS.

FOR CONSTRUCTION OF SUBSTRUCTURE, SEE SPECIAL PROVISIONS.

FOR ELECTRICAL CONDUIT SYSTEM, SEE SPECIAL PROVISIONS.

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+72.50 -L-."

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

HYDRAULIC DATA

DESIGN DISCHARGE	1,420 CFS
FREQUENCY OF DESIGN FLOOD	25 YRS
DESIGN HIGH WATER ELEVATION	33.200
DRAINAGE AREA	14.3 SQ.MI.
BASIC DISCHARGE (Q100)	2,600 CFS
BASIC HIGH WATER ELEVATION	34.900

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	1,060 CFS
FREQUENCY OF OVERTOPPING FLOOD	10 YRS
OVERTOPPING FLOOD ELEVATION	32.500

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	PDA ASSISTANCE	UNCLASSIFIED STRUCTURE EXCAVATION	BRIDGE APPROACH SLABS	HP 12 X 53 STEEL PILES		HP 12 X 53 GALVANIZED STEEL PILES		PILE REDRIVES	RIP RAP CLASS II (2'-0" THICK)	ELECTRICAL CONDUIT SYSTEM	CONSTRUCTION OF SUBSTRUCTURE	CONSTRUCTION OF SUPERSTRUCTURE
	LUMP SUM	EACH	EACH	CU. YD.	LUMP SUM	NO.	LIN.FT.	NO.	LIN.FT.	EACH	TONS	LUMP SUM	LUMP SUM	LUMP SUM
SUPERSTRUCTURE														
END BENT NO. 1				380		9	225				500			
BENT NO. 1								10	300	6				
BENT NO. 2								10	300	6				
BENT NO. 3		1	1					10	300	6				
END BENT NO. 2				930		8	200				225			
TOTAL	LUMP SUM	1	1	1310	LUMP SUM	17	425	30	900	18	725	LUMP SUM	LUMP SUM	LUMP SUM

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER RAINBOW CREEK ON SR 1438 (DIXON FARM RD.) BETWEEN NC 123 AND SR 1437

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIMAL A. PATEL
3/28/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : D.V. JOYNER DATE : 10-06
CHECKED BY : R.G. EMERSON DATE : 10-06

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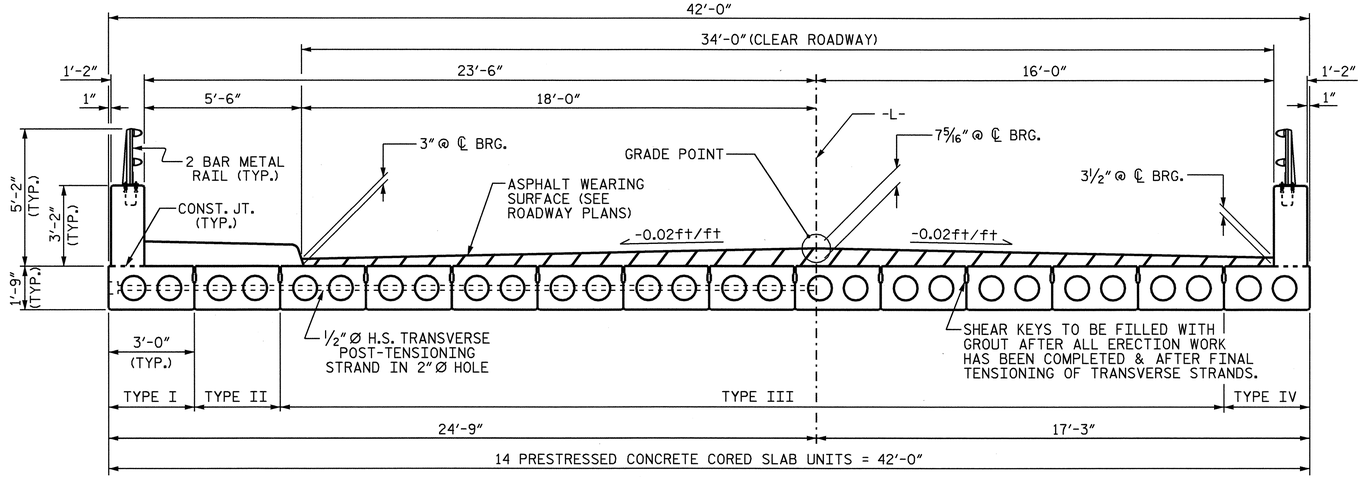
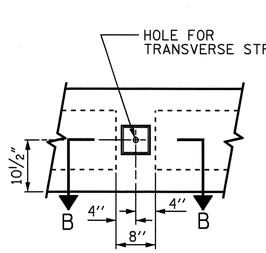
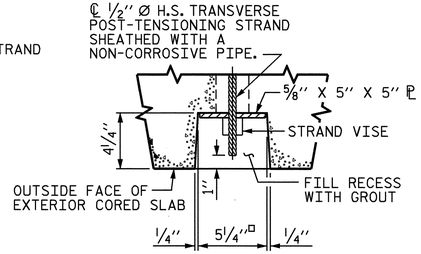


TYPICAL SECTION

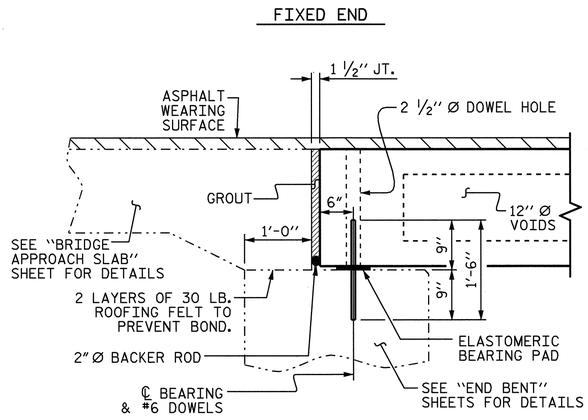


ELEVATION VIEW

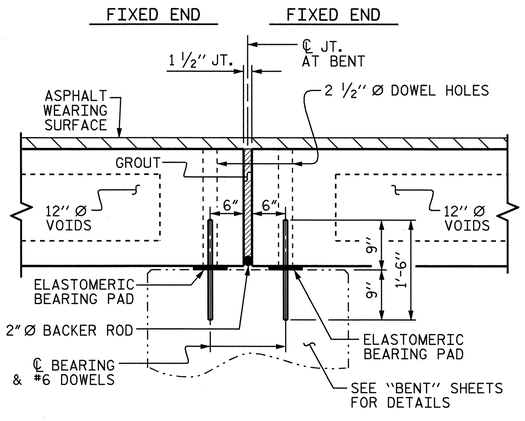


SECTION B-B

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



SECTION AT END BENT



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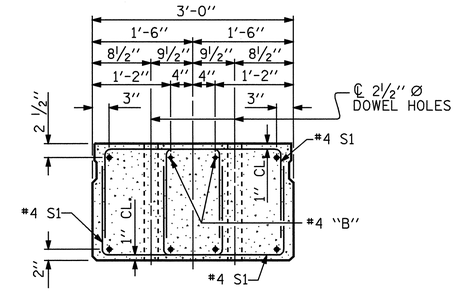
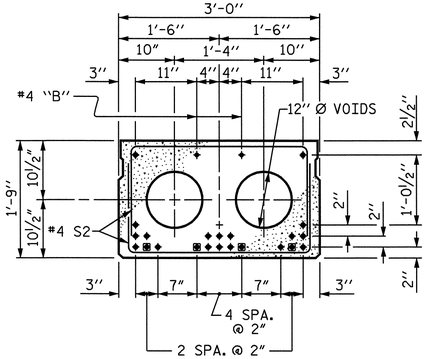
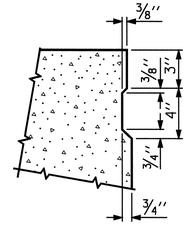


END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) (TYP. ALL TYPES)



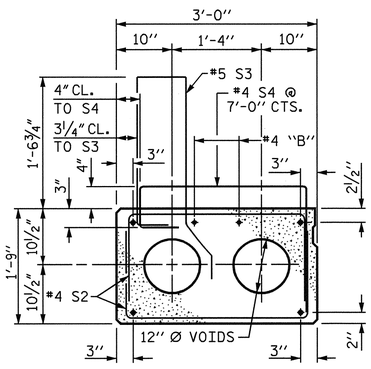


SHEAR KEY DETAIL

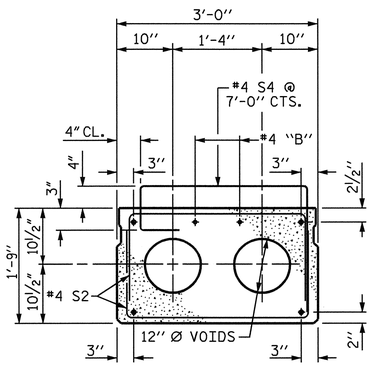
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

CORED SLAB UNIT 1/2'' Ø LOW RELAXATION STRAND LAYOUT (TYP. ALL TYPES)

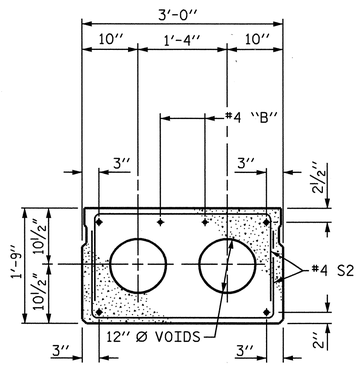
* BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 4'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATION ARTICLE 1078-7. FOR ADDITIONAL REINFORCING STEEL, SEE TYPE I, TYPE II, TYPE III & TYPE IV CORED SLAB UNITS.



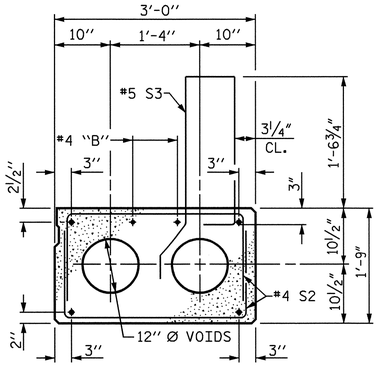
* TYPE I-CORED SLAB UNIT



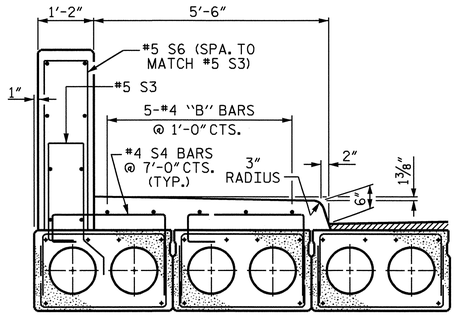
* TYPE II-CORED SLAB UNIT



* TYPE III-CORED SLAB UNIT



* TYPE IV-CORED SLAB UNIT



SECTION THROUGH SIDEWALK

* FOR PRESTRESSED STRAND LAYOUT, SEE CORED SLAB UNIT STRAND LAYOUT

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL 11/25/07

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

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

ASSEMBLED BY : M.K. BEARD	DATE : 07/05
CHECKED BY : S.H. SOCKWELL	DATE : 9/22/05
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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			32

STD. NO. PCS2

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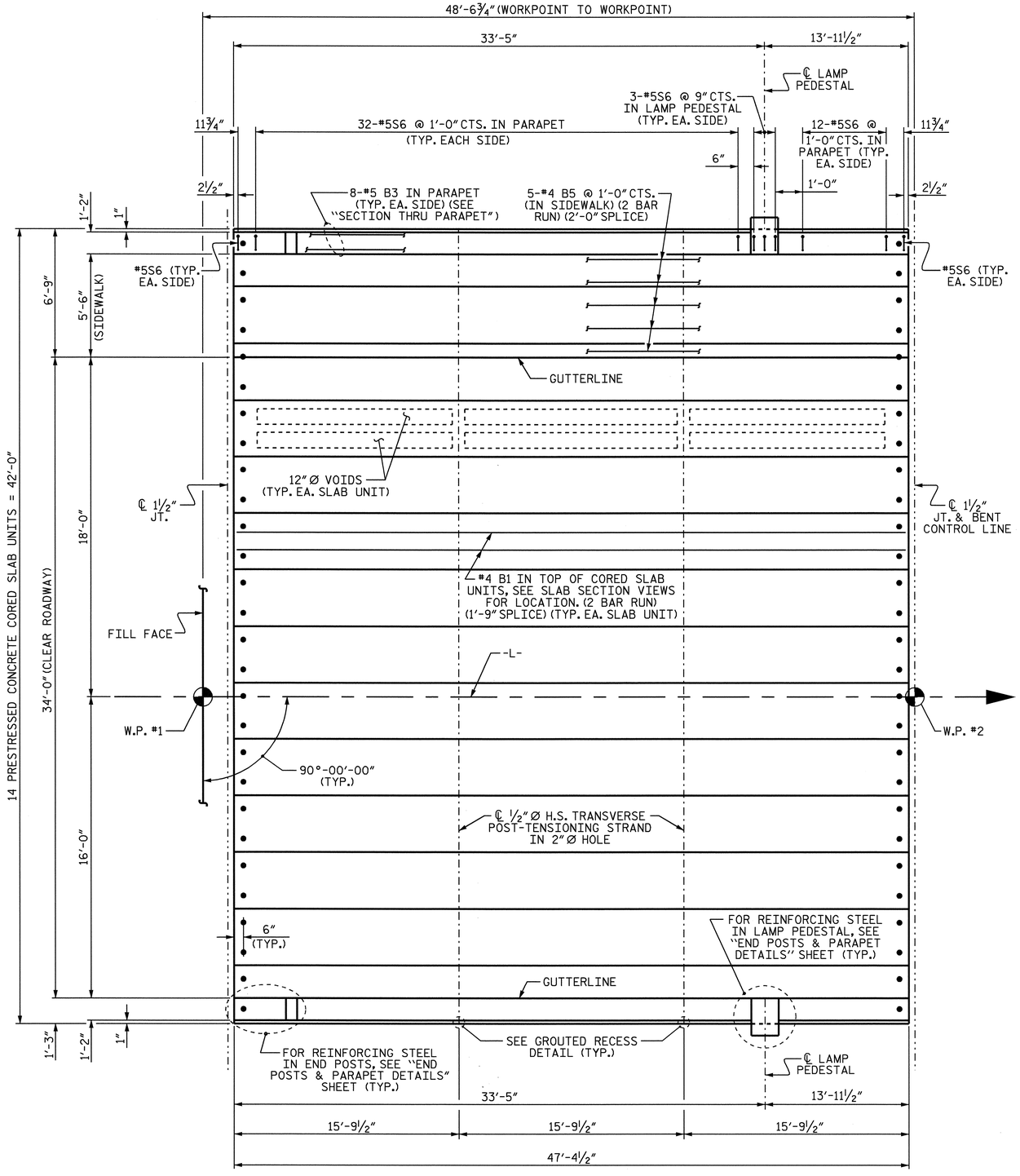

SPAN A

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN A

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
1/25/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : M.K. BEARD DATE : 7/2/05
CHECKED BY : S.H. SOCKWELL DATE : 9/22/05

24-JAN-2007 08:20
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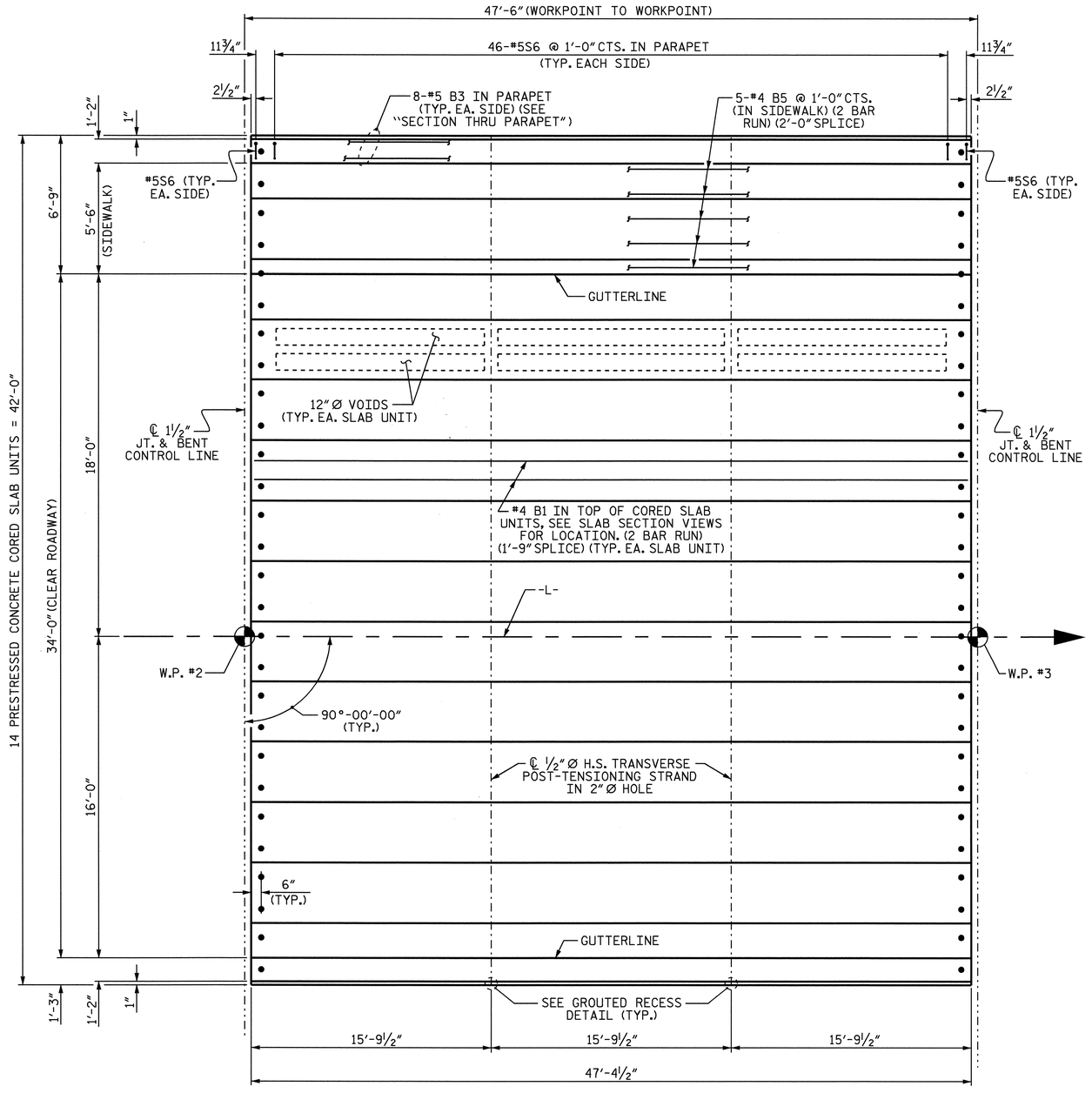

SPAN B

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN B

NORTH CAROLINA PROFESSIONAL SEAL 23371 A ENGINEER VIPUL A. PATEL
1/25/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : M.K. BEARD DATE : 7/2/05
CHECKED BY : S.H. SOCKWELL DATE : 9/22/05

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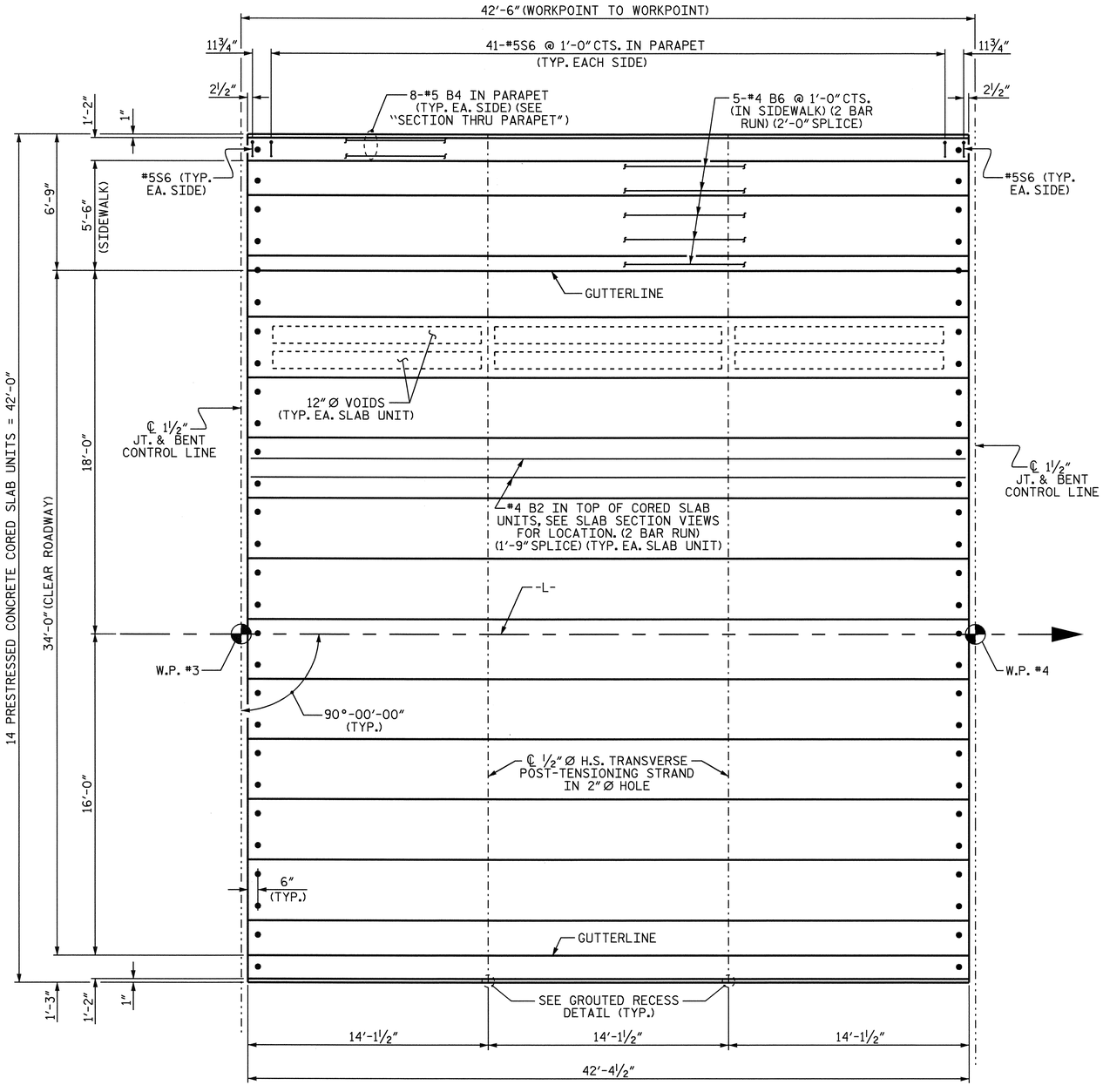

SPAN C

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN C

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIRUL A. PATEL
1/25/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : M.K. BEARD DATE : 7/2/05
CHECKED BY : S.H. SOCKWELL DATE : 9/22/05

24-JAN-2007 08:20
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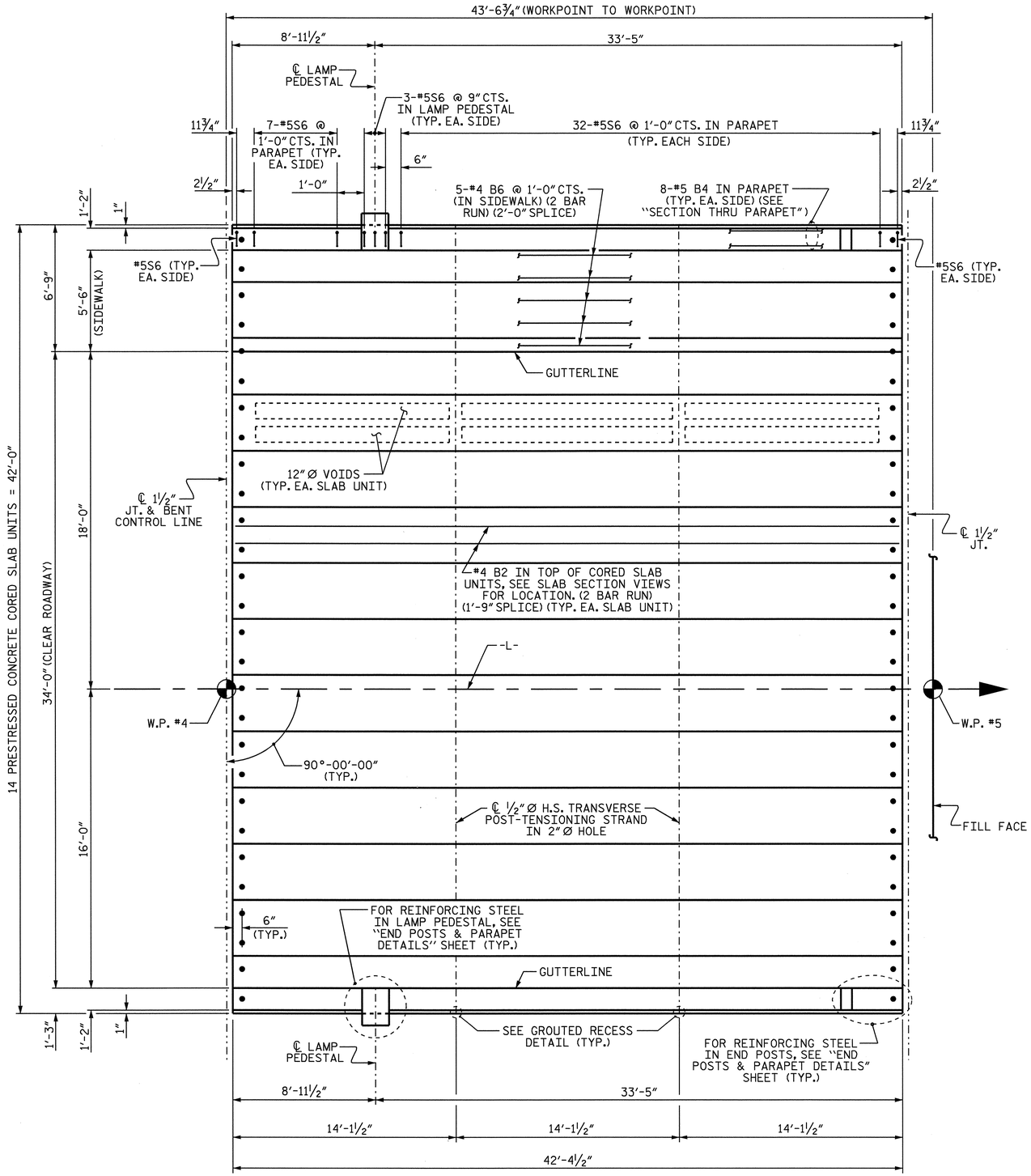

SPAN D

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN D

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
1/25/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : M.K. BEARD DATE : 7/2/05
CHECKED BY : S.H. SOCKWELL DATE : 9/22/05

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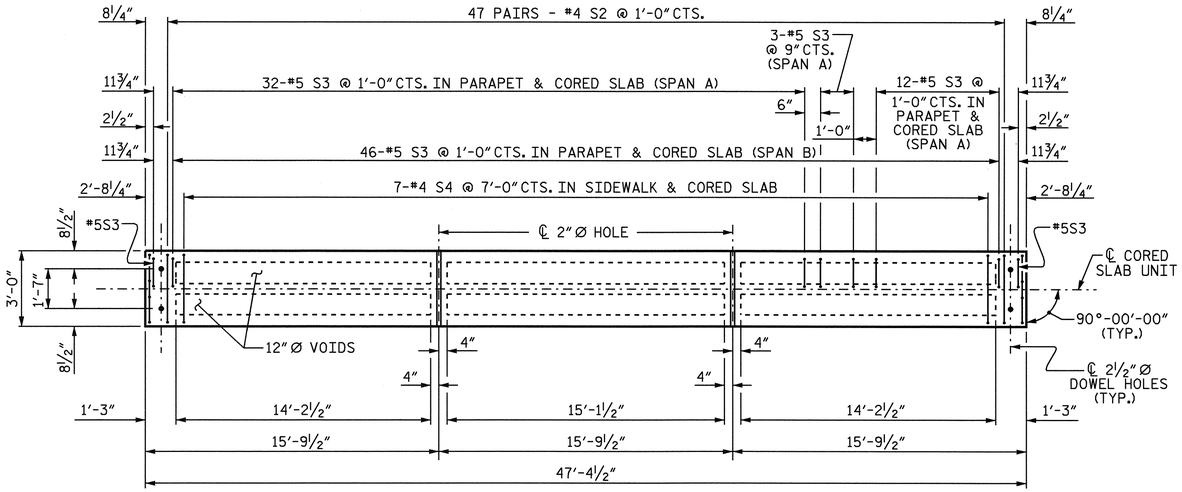
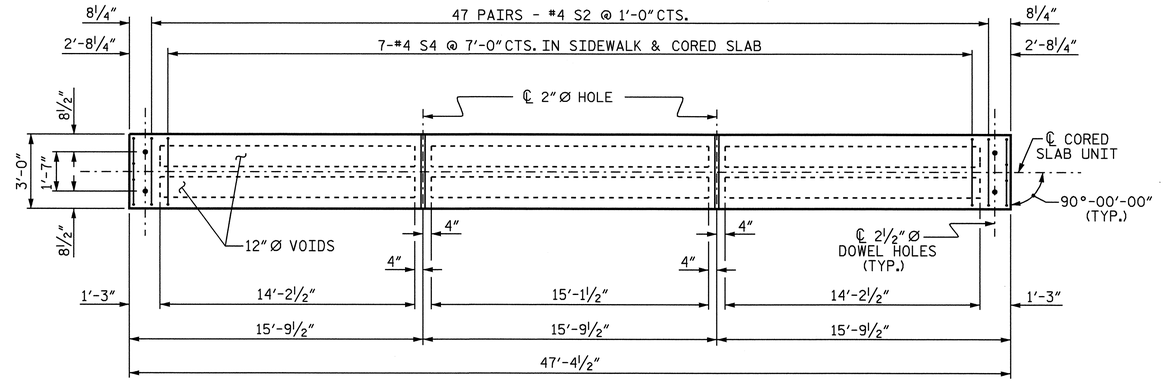


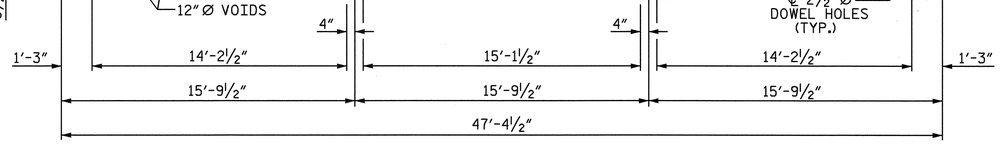
PLAN OF TYPE I CORED SLAB UNIT

FOR LOCATION OF S1 BARS AT ENDS OF SLAB, SEE "TYPE I PART PLAN SECTION"



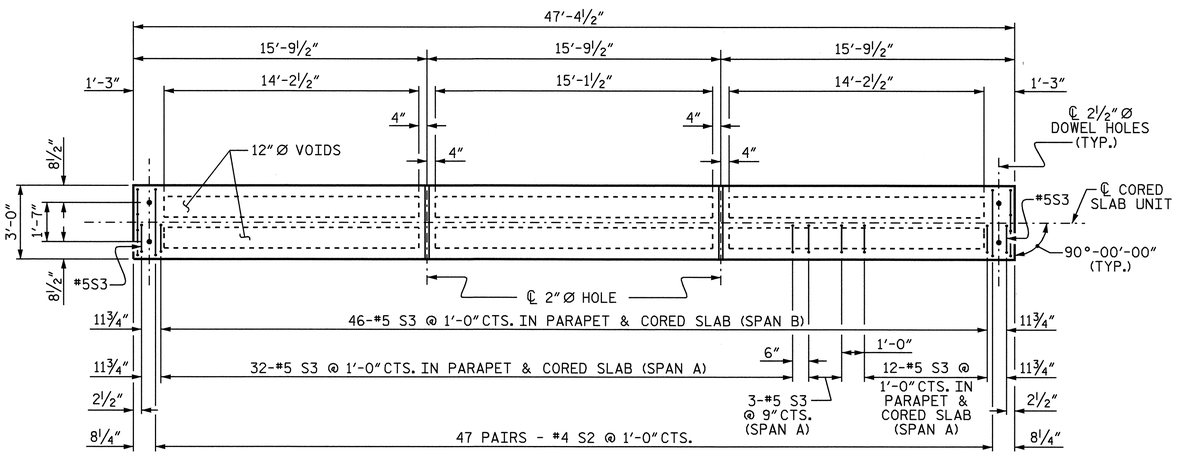
PLAN OF TYPE II CORED SLAB UNIT

FOR LOCATION OF S1 BARS AT ENDS OF SLAB, SEE "TYPE I PART PLAN SECTION"



PLAN OF TYPE III CORED SLAB UNIT

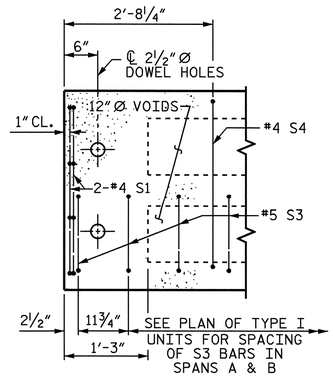
FOR LOCATION OF S1 BARS AT ENDS OF SLAB, SEE "TYPE IV PART PLAN SECTION"



PLAN OF TYPE IV CORED SLAB UNIT

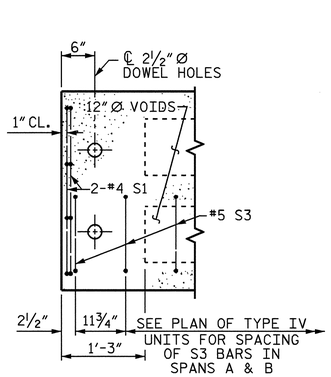
FOR LOCATION OF S1 BARS AT ENDS OF SLAB, SEE "TYPE IV PART PLAN SECTION"

CORED SLAB UNITS FOR SPAN A & SPAN B



TYPE I PART PLAN SECTION

NOTE: TYPE II SECTION SIMILAR EXCEPT OMIT S3 BARS.



TYPE IV PART PLAN SECTION

NOTE: TYPE III SECTION SIMILAR EXCEPT OMIT S3 BARS.

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT DETAILS (SPANS A & B)

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIRUL A. PATEL 1/25/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			32

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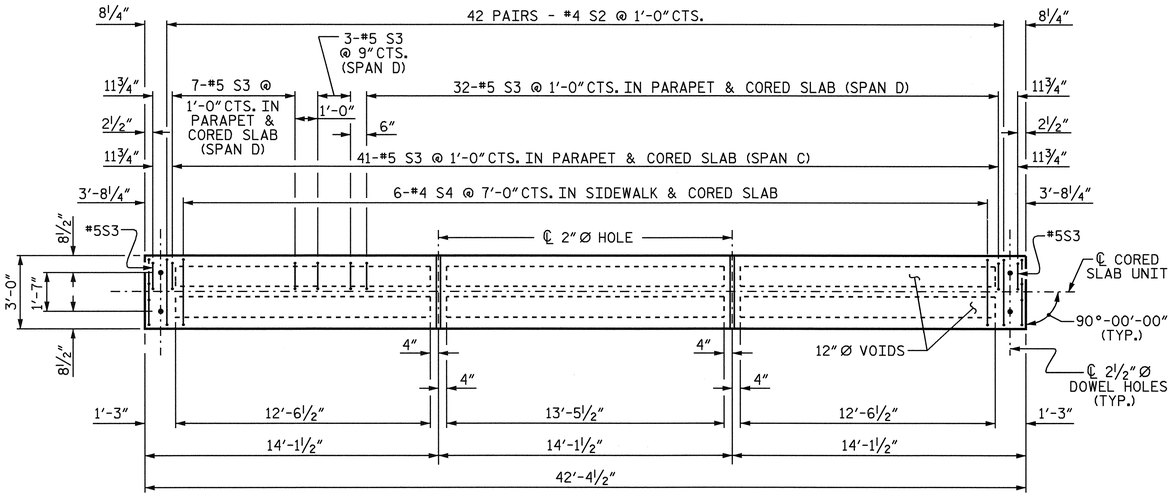
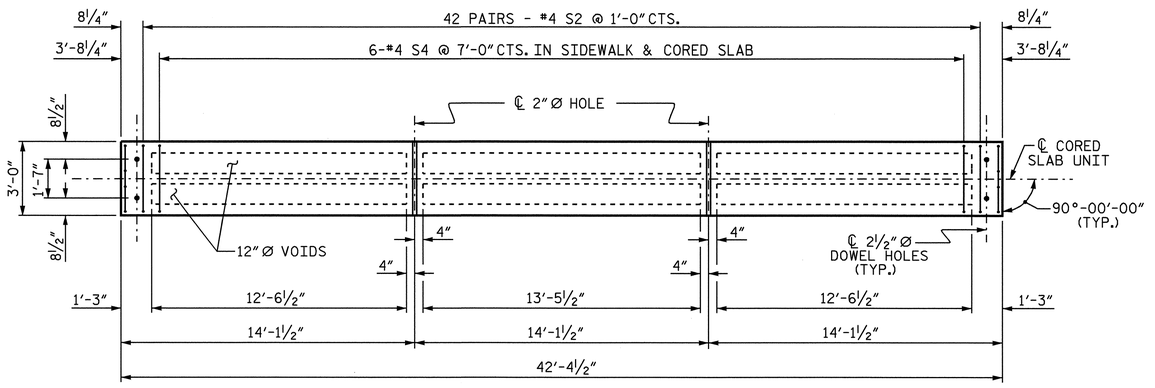


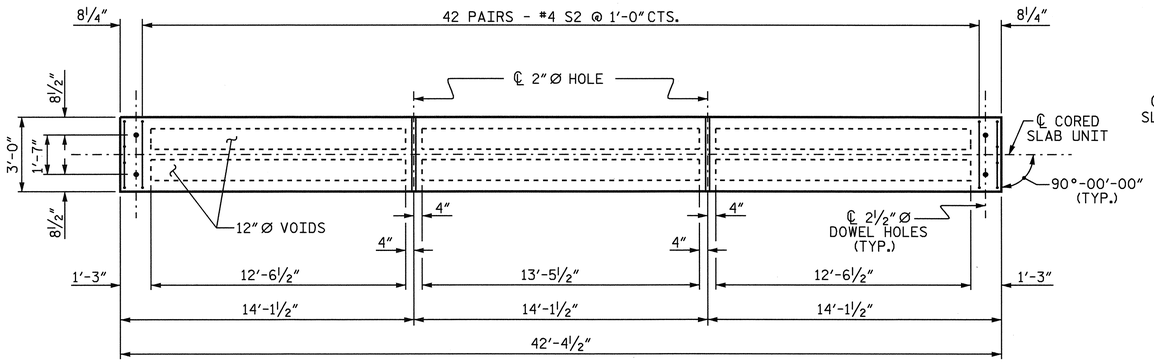
PLAN OF TYPE I CORED SLAB UNIT

FOR LOCATION OF S1 BARS AT ENDS OF SLAB, SEE "TYPE I PART PLAN SECTION"



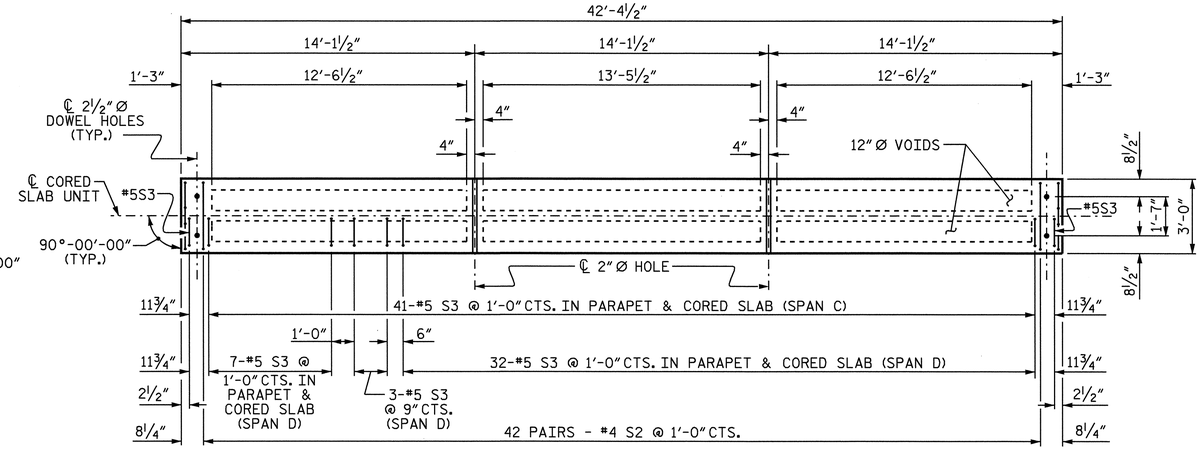
PLAN OF TYPE II CORED SLAB UNIT

FOR LOCATION OF S1 BARS AT ENDS OF SLAB, SEE "TYPE I PART PLAN SECTION"



PLAN OF TYPE III CORED SLAB UNIT

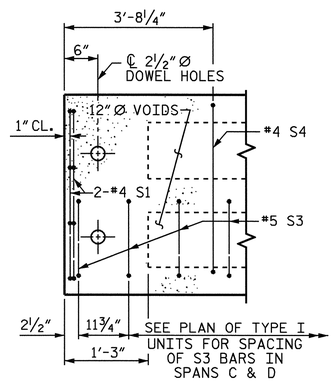
FOR LOCATION OF S1 BARS AT ENDS OF SLAB, SEE "TYPE IV PART PLAN SECTION"



PLAN OF TYPE IV CORED SLAB UNIT

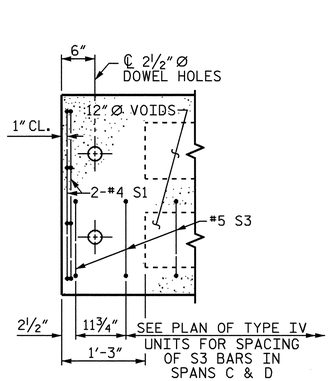
FOR LOCATION OF S1 BARS AT ENDS OF SLAB, SEE "TYPE IV PART PLAN SECTION"

CORED SLAB UNITS FOR SPAN C & SPAN D



TYPE I PART PLAN SECTION

NOTE: TYPE II SECTION SIMILAR EXCEPT OMIT S3 BARS.



TYPE IV PART PLAN SECTION

NOTE: TYPE III SECTION SIMILAR EXCEPT OMIT S3 BARS.

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT DETAILS (SPANS C & D)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : M.K. BEARD DATE : 12/1/06
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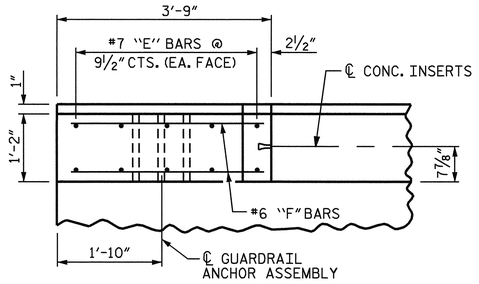
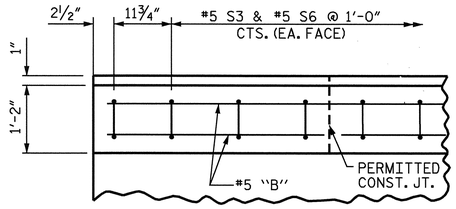
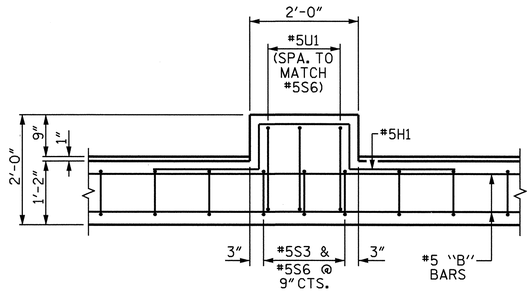


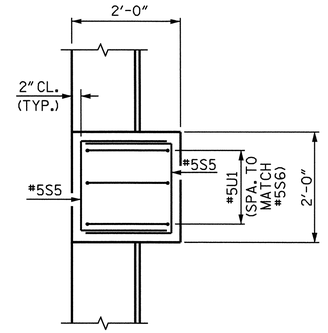
PLAN OF END POST



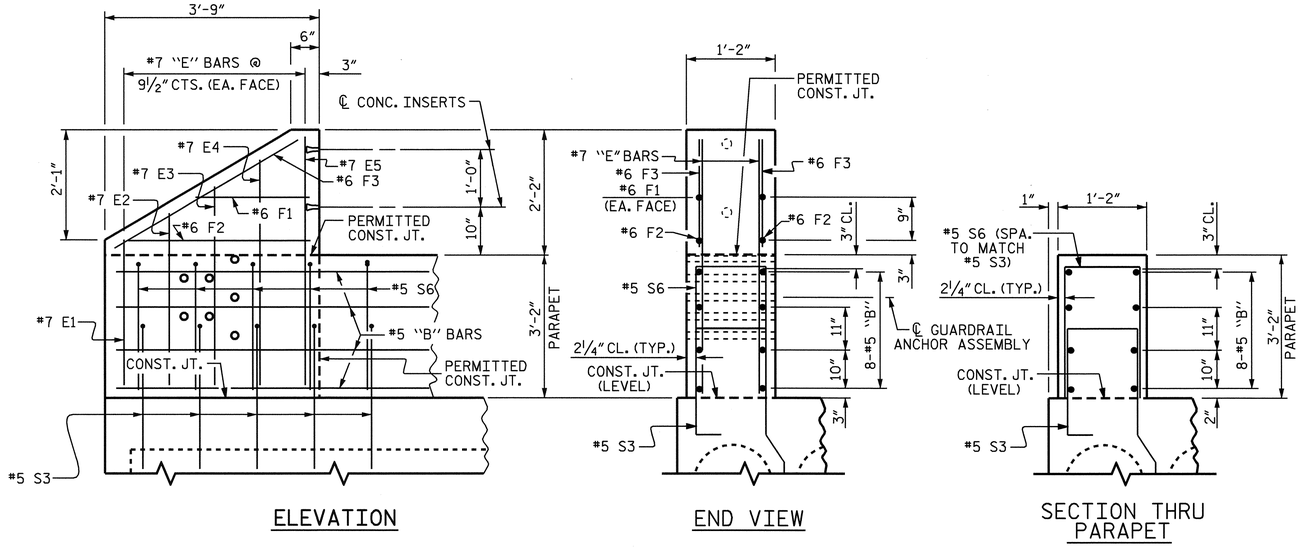
PLAN OF PARAPET



PLAN THRU PARAPET



PLAN ABOVE PARAPET

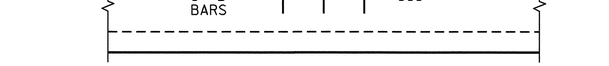


ELEVATION

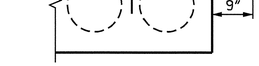
END VIEW

SECTION THRU PARAPET

PARAPET AND END POST FOR TWO BAR RAIL



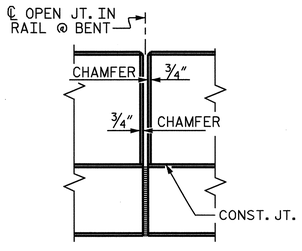
ELEVATION
(FRONT VIEW)



ELEVATION
(RIGHT VIEW)

LAMP PEDESTAL DETAILS

(✳LAMP POLE & ANCHORAGE TO BE PROVIDED BY OTHERS.)



ELEVATION AT JOINTS

PARAPET DETAIL

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

SHEET 1 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

END POSTS & PARAPET DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			32

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
3|28|07

DRAWN BY : M.K. BEARD DATE : 7/3/05
CHECKED BY : S.H. SOCKWELL DATE : 9/22/05

28-MAR-2007 10:51
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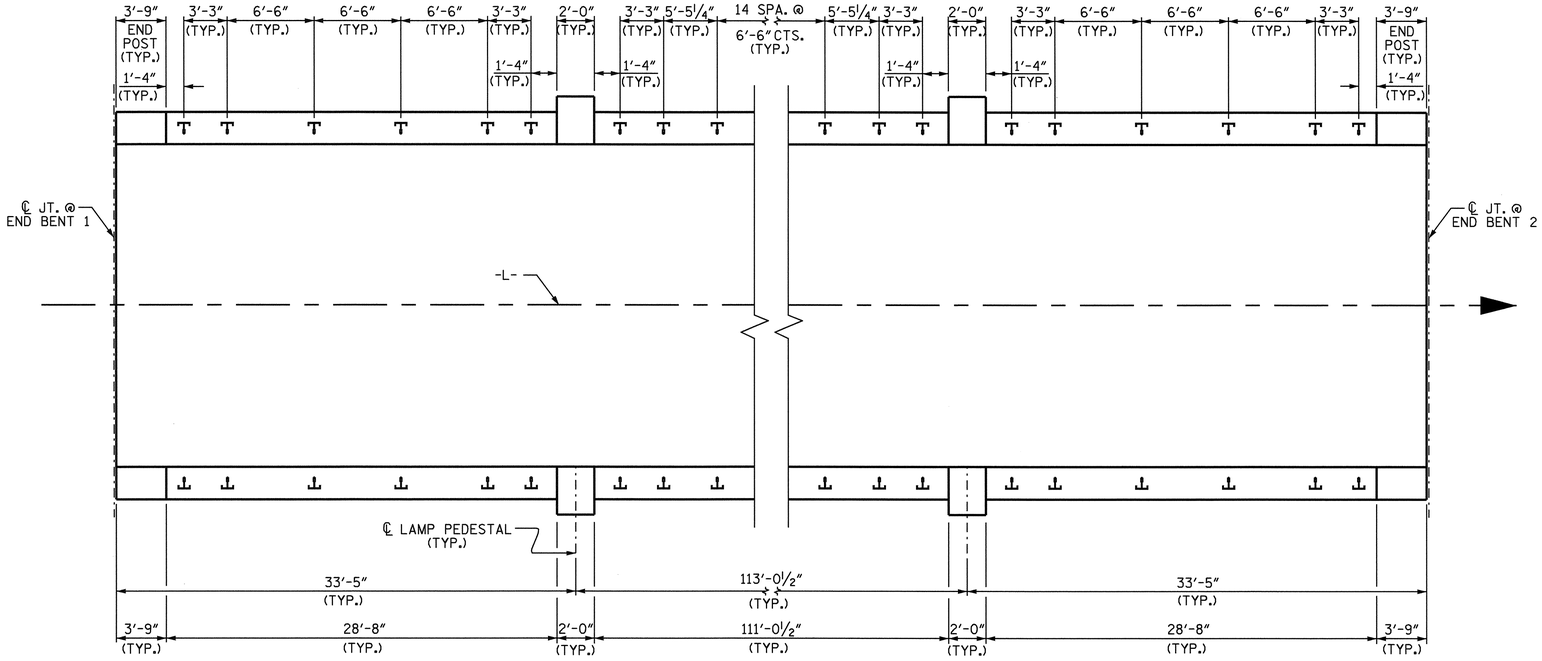
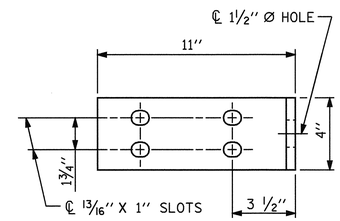
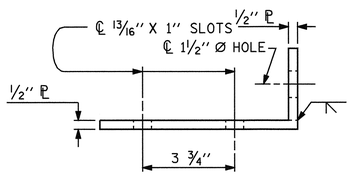


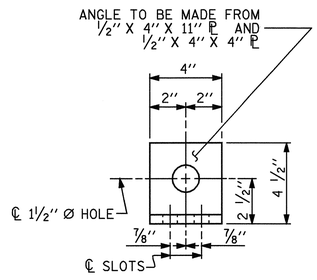
PLAN OF RAIL POST SPACINGS



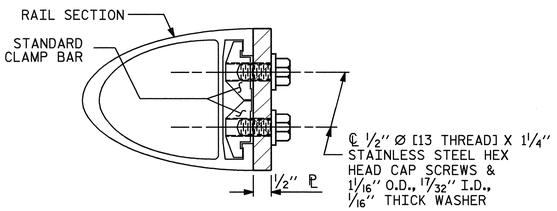
ELEVATION



TOP VIEW

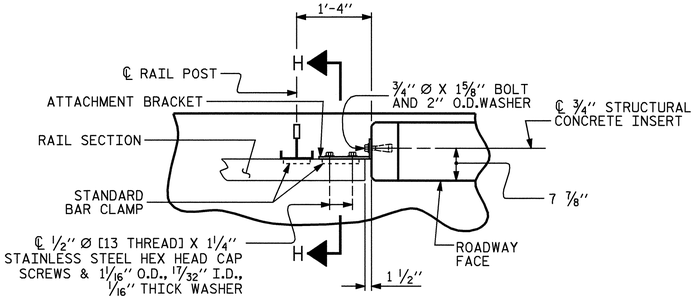


END VIEW

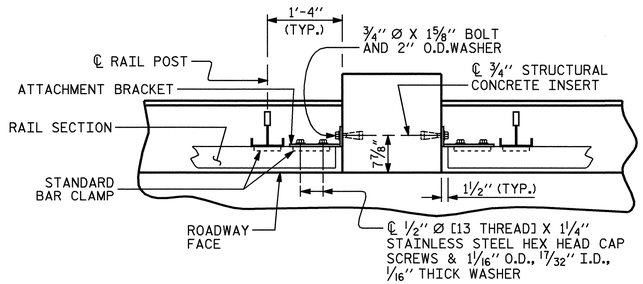


SECTION H-H

DETAILS FOR ATTACHING METAL RAIL TO END POST



PLAN - RAIL AND END POST



PLAN - RAIL AND LAMP PEDESTAL

RAIL ATTACHMENT TYPICAL EACH SIDE OF LAMP PEDESTAL

NOTES

STRUCTURAL CONCRETE INSERT

THE STRUCTURAL CONCRETE INSERT 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 1½".

B. 1 - ¾" Ø X 1⅝" 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 ¾" Ø X 1⅝" 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.)

C. 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:

A. ½" PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 AND SHALL BE GALVANIZED AFTER FABRICATION.

B. ¾" STRUCTURAL CONCRETE INSERT SHALL HAVE A WORKING LOAD SHEAR CAPACITY OF 4800 LBS. THE FERRULES SHALL ENGAGE A ¾"Ø X 1⅝" BOLT WITH 2" O.D. WASHER IN PLACE. THE ¾"Ø X 1⅝" BOLT SHALL HAVE N. C. THREADS.

C. 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.

D. STANDARD CLAMP BARS (SEE METAL RAIL SHEET).

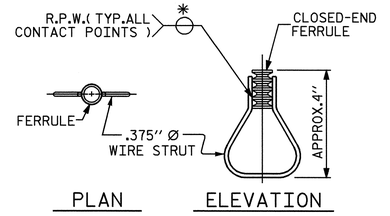
E. ½" Ø PIPE SLEEVES (IF REQUIRED) TO BE GALVANIZED.

THE COST OF THE STANDARD CLAMP BARS AND CAP SCREWS USED IN THE METAL RAIL TO END POST CONNECTION SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR CONSTRUCTION OF SUPERSTRUCTURE.

THE ¾" STRUCTURAL CONCRETE INSERT WITH BOLT SHALL BE ASSEMBLED IN THE SHOP.

THE COST OF THE ¾" STRUCTURAL CONCRETE INSERT ASSEMBLY, AND THE ½" 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 ¾" Ø X 1⅝" BOLT WITH WASHER SHALL BE REPLACED WITH A ¾"Ø X 6½" BOLT AND 2" O.D. WASHER. ALL SPECIFICATIONS THAT APPLY TO THE ¾" Ø X 1⅝" BOLT SHALL APPLY TO THE ¾"Ø X 6 ½" BOLT. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.



STRUCTURAL CONCRETE INSERT

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

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
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RALEIGH

RAIL POST SPACING AND END OF RAIL DETAILS
TWO BAR METAL RAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			32

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL

ASSEMBLED BY : M.K. BEARD DATE : 7/3/05
CHECKED BY : S.H. SOCKWELL DATE : 9/22/05

28-MAR-2007 12:00
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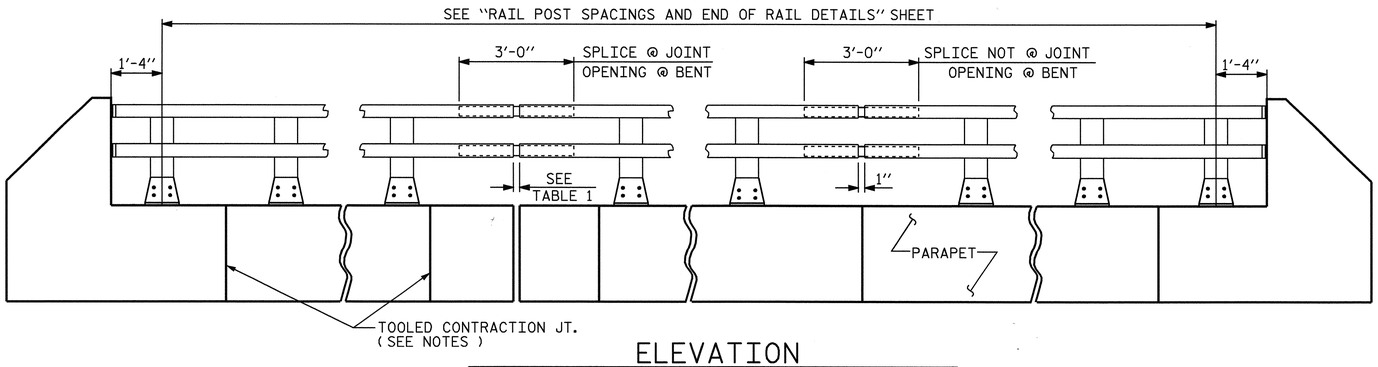
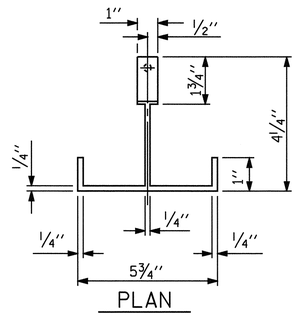
STD. NO. BMR2



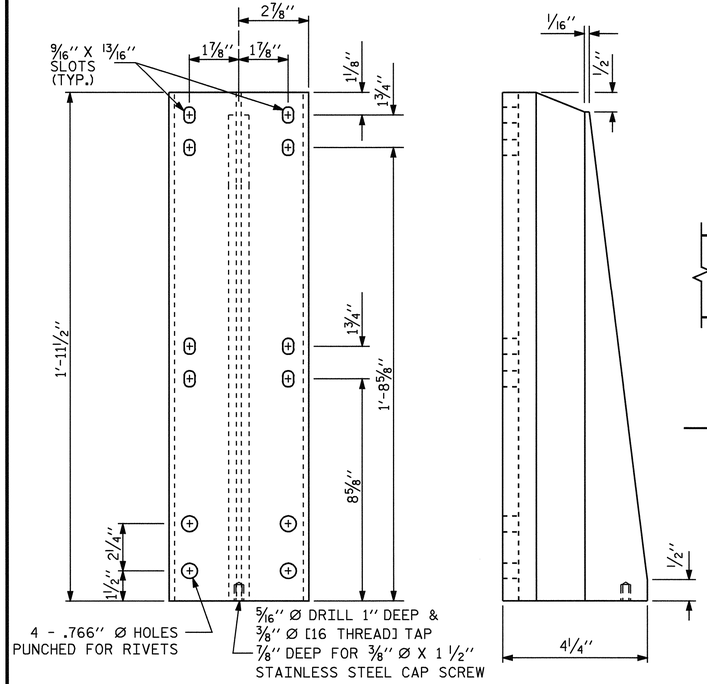
ELEVATION

NOTE : FOR ATTACHMENT OF METAL RAIL TO END POST AND LAMP PEDESTAL, SEE SHEET ENTITLED "RAIL POST SPACING AND END OF RAIL DETAILS".

TABLE 1	
℄ JT. @	RAIL OPENING
BENT No. 1	1½"
BENT No. 2	1½"
BENT No. 3	1½"

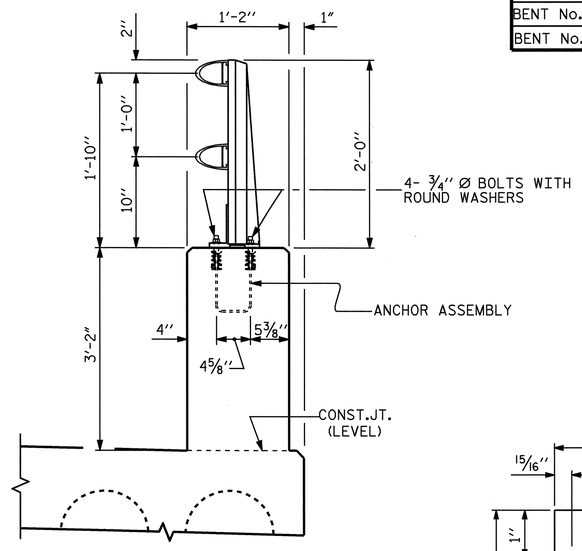


PLAN

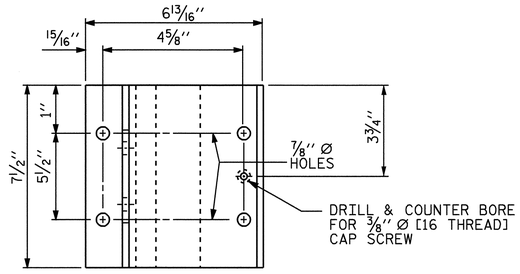


FRONT ELEVATION — SIDE ELEVATION

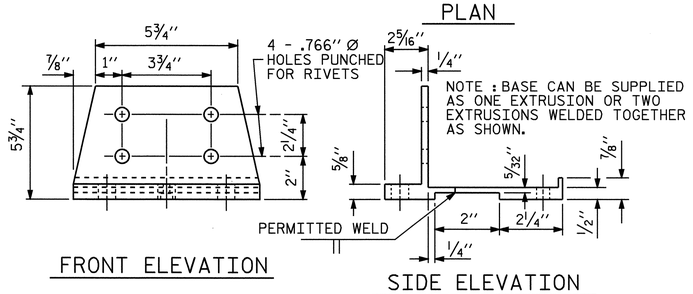
DETAILS OF POST



SECTION THRU PARAPET AND RAIL

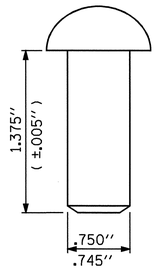


PLAN



FRONT ELEVATION — SIDE ELEVATION

POST BASE DETAILS



RIVET DETAIL

NOTES

ALUMINUM RAILS

MATERIAL FOR POSTS, BASES AND RAILS, EXPANSION BARS AND CLAMP BARS SHALL BE ASTM B-221 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.

ANODIZING

ALUMINUM FOR POSTS, BASES, RAILS, EXPANSION BARS, CLAMP BARS, RIVETS, CAPS, SHIMS, ATTACHMENT BRACKETS AND HOLD-DOWN PLATES SHALL BE ANODIZED BLACK.

ANY DAMAGE TO THE ANODIZED SURFACE OF THE RAIL OR COMPONENTS DURING CONSTRUCTION SHALL BE REPAIRED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AT THE DIRECTION OF THE ENGINEER AND AT THE CONTRACTOR'S EXPENSE.

THE CONTRACTOR SHALL SUBMIT A SAMPLE OF COMPATIBLE BLACK EXTERIOR ACRYLIC PAINT TO THE ENGINEER. THIS PAINT SHALL MATCH THE ANODIZED RAIL COLOR AS CLOSELY AS POSSIBLE. AFTER ERECTION OF THE ANODIZED ALUMINUM RAILING, ALL EXPOSED ANCHOR BOLTS, NUTS, WASHERS, MACHINE SCREWS, CAP SCREWS, BOLTS, ATTACHMENT BRACKETS, AND BUILT UP ANGLES SHALL BE COATED WITH TWO COATS OF THIS PAINT.

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.

CAP SCREWS SHALL BE ASTM F593 ALLOY 305 STAINLESS STEEL. WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 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.

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, BUT REMAINS VISIBLE AFTER RAIL PLACEMENT.

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.

GROOVED CONTRACTION JOINTS, ½" 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 8FT. TO 10FT. BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.

COST OF THE METAL RAIL AND ALL ATTACHMENTS SHALL BE INCLUDED IN THE PAY ITEM "CONSTRUCTION OF SUPERSTRUCTURE".

METAL RAIL LENGTH = 336.75 LIN. FT.

2 BAR METAL RAIL SHALL BE ANODIZED BLACK, SEE NOTES.

ASSEMBLED BY : M.K. BEARD DATE : 7/3/05
CHECKED BY : S.H. SOCKWELL DATE : 9/22/05

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PROJECT NO. B-4127
GREENE COUNTY
STATION: 13+72.50 -L-

SHEET 3 OF 5

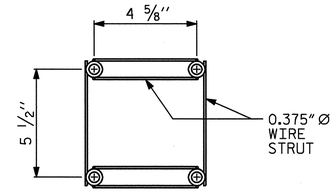
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

2 BAR METAL RAIL

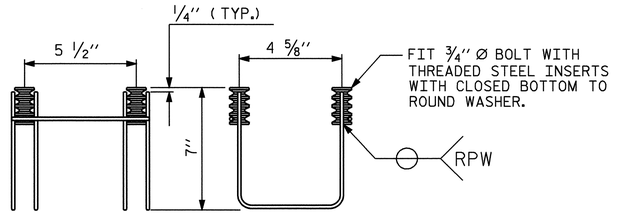
NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIKAL A. PATEL 3/28/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			32

~~STD. NO. BMR3~~



PLAN



SIDE VIEW ELEVATION

MINIMUM LENGTH OF THREADS IN INSERT (FERRULE): 1 3/4''

4-BOLT METAL RAIL ANCHOR ASSEMBLY

(62 ASSEMBLIES REQUIRED)

NOTES

STRUCTURAL CONCRETE ANCHOR ASSEMBLY

THE STRUCTURAL CONCRETE 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'' FOR 3/4'' FERRULES.

B. 4 - 3/4'' Ø X 2 1/2'' 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 3/4'' Ø X 2 1/2'' 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 STRUT SHOWN IN THE CONCRETE ANCHOR 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.

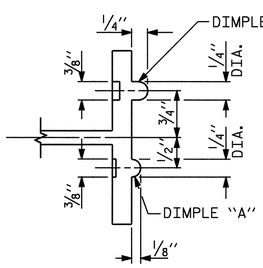
D. THE METAL RAIL ANCHOR ASSEMBLIES TO BE HOT DIPPED GALVANIZED TO CONFORM TO REQUIREMENTS OF AASHTO M111.

E. THE COST OF THE METAL RAIL ANCHOR ASSEMBLY WITH BOLTS AND WASHERS COMPLETE IN PLACE SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR CONSTRUCTION OF SUPERSTRUCTURE.

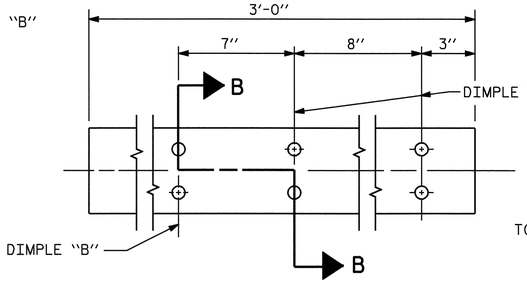
F. BOLTS TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM A FINGER-TIGHT POSITION.

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

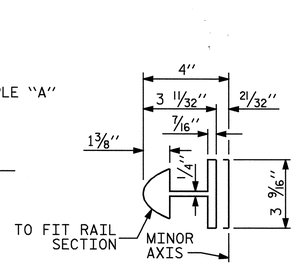
WHEN ADHESIVELY ANCHORED ANCHOR BOLTS ARE USED, BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F593 ALLOY 304 STAINLESS STEEL WITH MINIMUM 75,000 PSI ULTIMATE STRENGTH. NUTS SHALL MEET THE REQUIREMENTS OF ASTM F594 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.



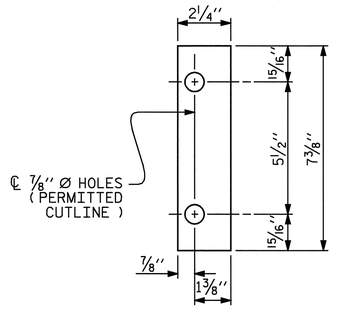
SECTION B - B



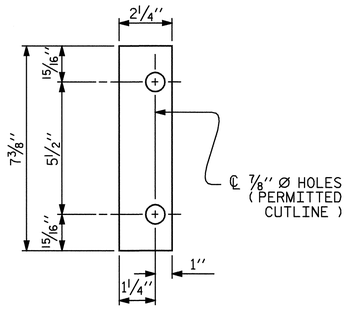
EXPANSION BAR DETAILS



BAR SECTION



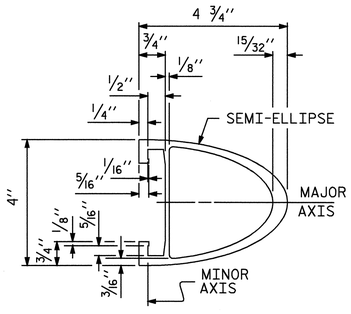
FRONT PLATE



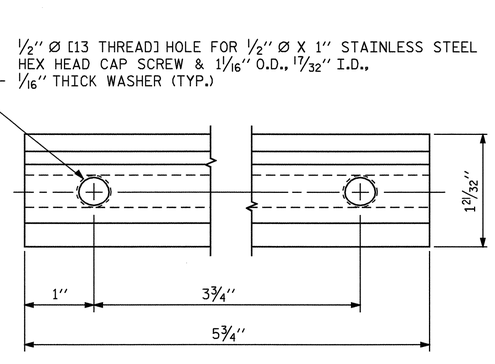
REAR PLATE

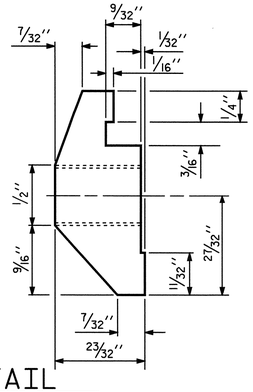
SHIM DETAILS

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



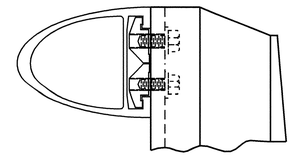
RAIL SECTION



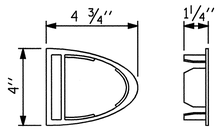


CLAMP BAR DETAIL

(4 REQUIRED PER POST)



CLAMP ASSEMBLY



RAIL CAP

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
3/28/07

PROJECT NO. B-4127
GREENE COUNTY
STATION: 13+72.50 -L-
SHEET 4 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

2 BAR METAL RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			32

ASSEMBLED BY : M.K. BEARD		DATE : 7/3/05	
CHECKED BY : S.H. SOCKWELL		DATE : 9/22/05	
DRAWN BY : EEM 6/94	REV. 2/6/97	EEM/RGW	
CHECKED BY : RGW 6/94	REV. 8/16/99	MAB/LES	
	REV. 5/7/03	RWW/JTE	

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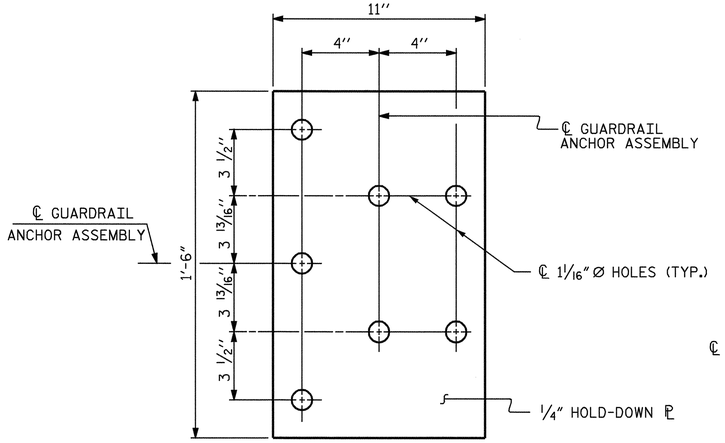
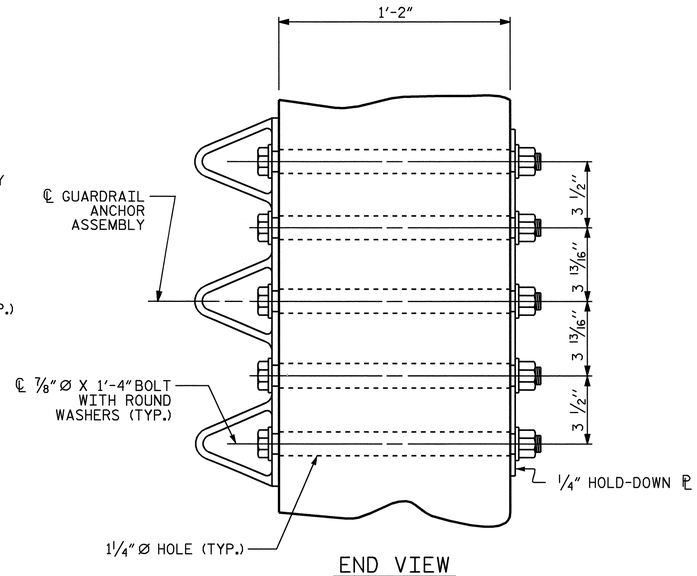
STD. NO. BMR4



PLAN



END VIEW

GUARDRAIL ANCHOR ASSEMBLY DETAILS

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.

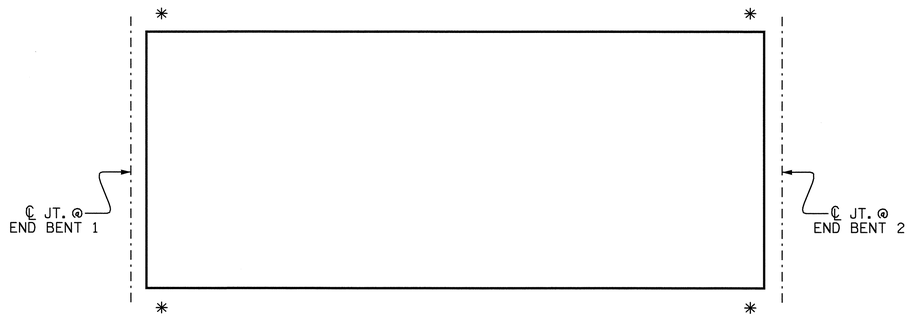
BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8'' Ø GALVANIZED BOLTS, NUTS AND WASHERS.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

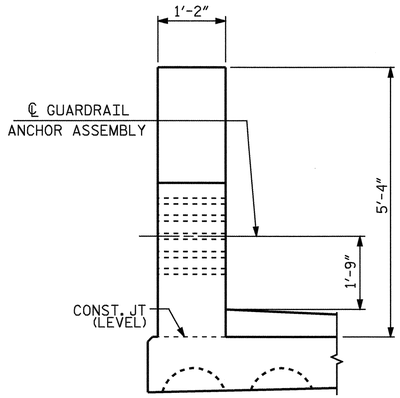
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE END POST TO CLEAR ASSEMBLY BOLTS.

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.

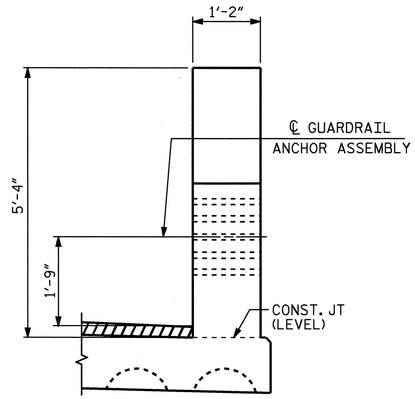


SKETCH SHOWING POINTS OF ATTACHMENT

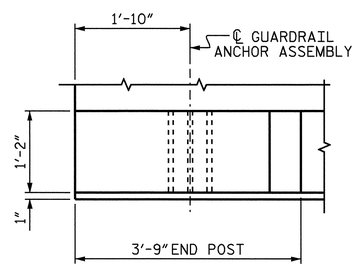
*LOCATION OF GUARDRAIL ATTACHMENT



END VIEW
(SIDEWALK)



END VIEW
(TWO BAR METAL RAIL)



PLAN

LOCATION OF GUARDRAIL ANCHOR AT END POST

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
3/28/07

PROJECT NO. B-4127
GREENE COUNTY
STATION: 13+72.50 -L-

SHEET 5 OF 5

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			32

ASSEMBLED BY : M.K. BEARD		DATE : 7/3/05	
CHECKED BY : S.H. SOCKWELL		DATE : 9/22/05	
DRAWN BY : EEM 6/94	REV. 10/17/00	RWW/LES	
CHECKED BY : RGW 6/94	REV. 5/7/03	RWW/JTE	
	REV. 5/1/06	TLA/GM	

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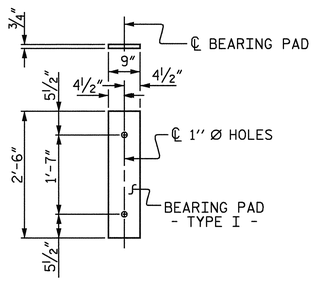
STD. NO. BMR8

GRADE 270 STRANDS	
	½" Ø L.R.
AREA (SQUARE INCHES)	0.153
ULTIMATE STRENGTH (LBS. PER STRAND)	41,300
APPLIED PRESTRESS (LBS. PER STRAND)	30,980



FIXED END
(TYPE I-112 REQ'D.)

ELASTOMERIC BEARING DETAILS

BILL OF MATERIAL FOR PARAPET, END POSTS & LAMP BASE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✳B3	32	#5	STR	47'-0"	1569
✳B4	32	#5	STR	42'-0"	1402
✳E1	8	#7	STR	3'-2"	52
✳E2	8	#7	STR	3'-8"	60
✳E3	8	#7	STR	4'-2"	68
✳E4	8	#7	STR	4'-8"	76
✳E5	8	#7	STR	5'-0"	82
✳F1	8	#6	STR	2'-0"	24
✳F2	8	#6	STR	3'-3"	39
✳F3	8	#6	STR	3'-10"	46
✳H1	16	#5	4	7'-3"	121
✳S5	24	#5	3	4'-2"	104
✳S6	368	#5	3	5'-9"	2207
✳U1	12	#5	3	11'-6"	144
✳EPOXY COATED REINFORCING STEEL				LBS.	5994
CLASS "AA" CONCRETE				C.Y.	53.2
1'-2"X 3'-2" CONCRETE PARAPET				L.F.	359.75

BILL OF MATERIAL FOR SIDEWALK

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✳B5	20	#4	STR	24'-7"	328
✳B6	20	#4	STR	22'-1"	295
✳EPOXY COATED REINFORCING STEEL				LBS.	623
CLASS "AA" CONCRETE				C.Y.	29.6

CORED SLABS REQUIRED

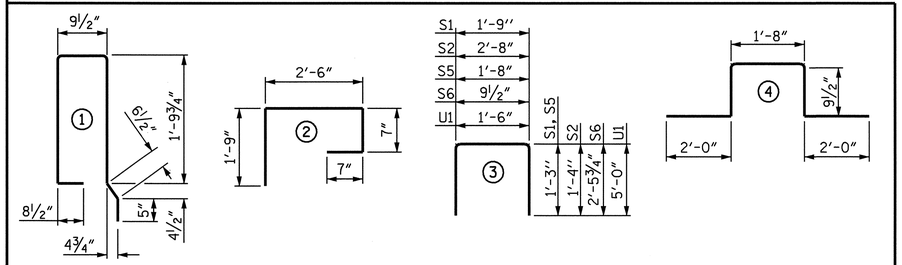
		NUMBER	LENGTH	TOTAL LENGTH
SPAN A	TYPE I	1	47'-4½"	47'-4½"
	TYPE II	1	47'-4½"	47'-4½"
	TYPE III	11	47'-4½"	521'-1½"
	TYPE IV	1	47'-4½"	47'-4½"
SPAN B	TYPE I	1	47'-4½"	47'-4½"
	TYPE II	1	47'-4½"	47'-4½"
	TYPE III	11	47'-4½"	521'-1½"
	TYPE IV	1	47'-4½"	47'-4½"
SPAN C	TYPE I	1	42'-4½"	42'-4½"
	TYPE II	1	42'-4½"	42'-4½"
	TYPE III	11	42'-4½"	466'-1½"
	TYPE IV	1	42'-4½"	42'-4½"
SPAN D	TYPE I	1	42'-4½"	42'-4½"
	TYPE II	1	42'-4½"	42'-4½"
	TYPE III	11	42'-4½"	466'-1½"
	TYPE IV	1	42'-4½"	42'-4½"
TOTAL	———	56	———	2513'-0"

DEAD LOAD DEFLECTION AND CAMBER

	3'-0"x 1'-9"
SPAN A OR B	½" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1⅞" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD✳✳	5/16" ↑
FINAL CAMBER	1⅜" ↑
SPAN C OR D	½" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1¾" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD✳✳	3/16" ↑
FINAL CAMBER	1⅜" ↑

✳✳ INCLUDES FUTURE WEARING SURFACE

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE CORED SLAB UNIT - SPAN A

				TYPE I		TYPE II		TYPE III		TYPE IV	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT
B1	4	# 4	STR	24'- 5"	65	24'- 5"	65	24'- 5"	65	24'- 5"	65
S1	8	# 4	3	4'- 3"	23	4'- 3"	23	4'- 3"	23	4'- 3"	23
S2	94	# 4	3	5'- 4"	335	5'- 4"	335	5'- 4"	335	5'- 4"	335
✳ S3	49	# 5	1	6'- 1"	311	———	———	———	———	6'- 1"	311
✳ S4	7	# 4	2	5'- 5"	25	5'- 5"	25	———	———	———	———
REINFORCING STEEL			LBS.		423		423		423		423
✳EPOXY COATED REINFORCING STEEL			LBS.		336		25		———		311
5,000 P.S.I. CONC.			CU. YDS.		6.7		6.7		6.7		6.7
½" Ø L.R. STRANDS			No.		22		22		22		22

BILL OF MATERIAL FOR ONE CORED SLAB UNIT - SPAN B

				TYPE I		TYPE II		TYPE III		TYPE IV	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT
B1	4	# 4	STR	24'- 5"	65	24'- 5"	65	24'- 5"	65	24'- 5"	65
S1	8	# 4	3	4'- 3"	23	4'- 3"	23	4'- 3"	23	4'- 3"	23
S2	94	# 4	3	5'- 4"	335	5'- 4"	335	5'- 4"	335	5'- 4"	335
✳ S3	48	# 5	1	6'- 1"	305	———	———	———	———	6'- 1"	305
✳ S4	7	# 4	2	5'- 5"	25	5'- 5"	25	———	———	———	———
REINFORCING STEEL			LBS.		423		423		423		423
✳EPOXY COATED REINFORCING STEEL			LBS.		330		25		———		305
5,000 P.S.I. CONC.			CU. YDS.		6.7		6.7		6.7		6.7
½" Ø L.R. STRANDS			No.		22		22		22		22

BILL OF MATERIAL FOR ONE CORED SLAB UNIT - SPAN C

				TYPE I		TYPE II		TYPE III		TYPE IV	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT
B2	4	# 4	STR	21'-11"	59	21'-11"	59	21'-11"	59	21'-11"	59
S1	8	# 4	3	4'- 3"	23	4'- 3"	23	4'- 3"	23	4'- 3"	23
S2	84	# 4	3	5'- 4"	299	5'- 4"	299	5'- 4"	299	5'- 4"	299
✳ S3	43	# 5	1	6'- 1"	273	———	———	———	———	6'- 1"	273
✳ S4	6	# 4	2	5'- 5"	22	5'- 5"	22	———	———	———	———
REINFORCING STEEL			LBS.		381		381		381		381
✳EPOXY COATED REINFORCING STEEL			LBS.		295		22		———		273
5,000 P.S.I. CONC.			CU. YDS.		6.0		6.0		6.0		6.0
½" Ø L.R. STRANDS			No.		22		22		22		22

BILL OF MATERIAL FOR ONE CORED SLAB UNIT - SPAN D

				TYPE I		TYPE II		TYPE III		TYPE IV	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT
B2	4	# 4	STR	21'-11"	59	21'-11"	59	21'-11"	59	21'-11"	59
S1	8	# 4	3	4'- 3"	23	4'- 3"	23	4'- 3"	23	4'- 3"	23
S2	84	# 4	3	5'- 4"	299	5'- 4"	299	5'- 4"	299	5'- 4"	299
✳ S3	44	# 5	1	6'- 1"	279	———	———	———	———	6'- 1"	279
✳ S4	6	# 4	2	5'- 5"	22	5'- 5"	22	———	———	———	———
REINFORCING STEEL			LBS.		381		381		381		381
✳EPOXY COATED REINFORCING STEEL			LBS.		301		22		———		279
5,000 P.S.I. CONC.			CU. YDS.		6.0		6.0		6.0		6.0
½" Ø L.R. STRANDS			No.		22		22		22		22

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 PRICE FOR CONSTRUCTION OF SUPERSTRUCTURE.

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

THE 2½" 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 PARAPETS 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.

VERTICAL GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A VERTICAL CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

COST OF THE 1'-2"X 3'-2" CONCRETE PARAPET SHALL BE INCLUDED IN THE PAY ITEM "CONSTRUCTION OF SUPERSTRUCTURE".

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -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-16
1			3			TOTAL SHEETS
2			4			32

ASSEMBLED BY : M.K. BEARD DATE : 7/5/05
CHECKED BY : S.H. SOCKWELL DATE : 9/22/05

DRAWN BY : WJH 4/89
CHECKED BY : FCJ 5/89

REV. 7/10/01 RWW/LES
REV. 5/7/03RRR RWW/JTE
REV. 5/1/06 TLA/GM

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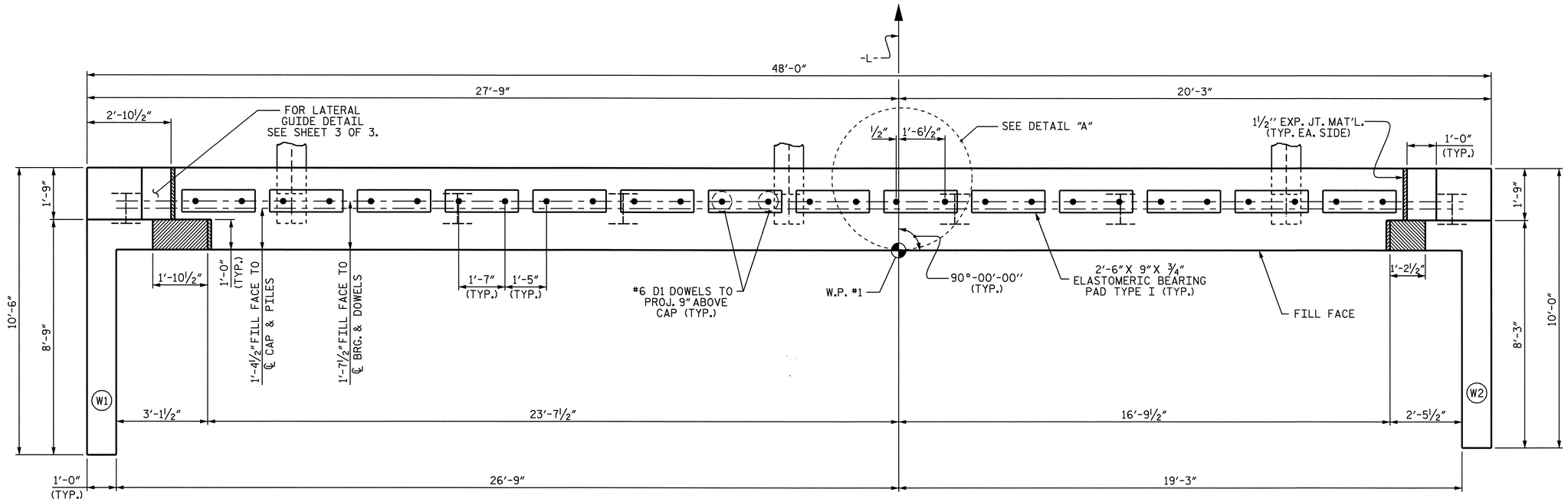
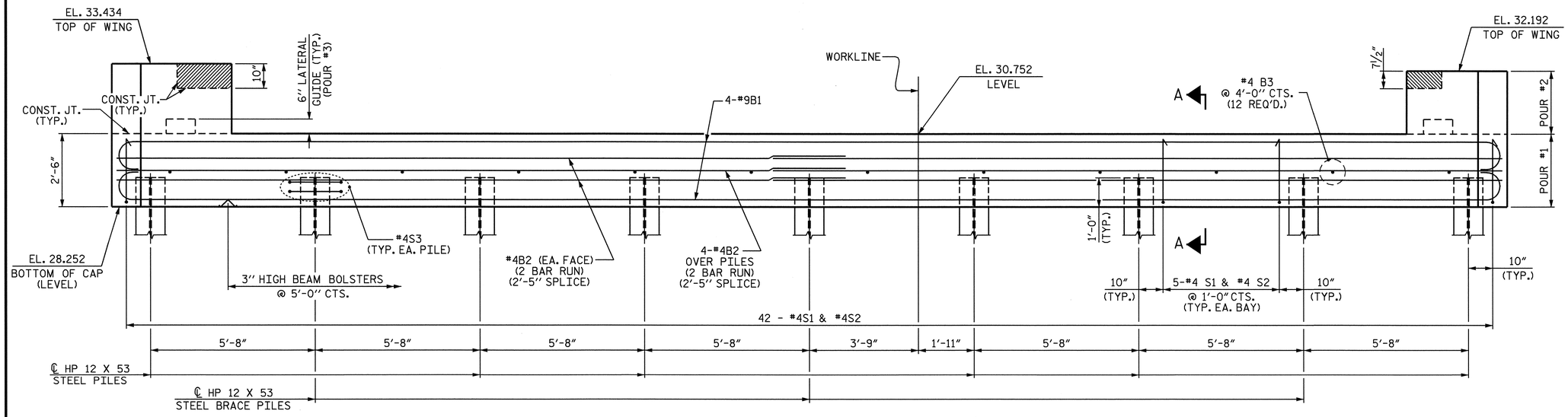
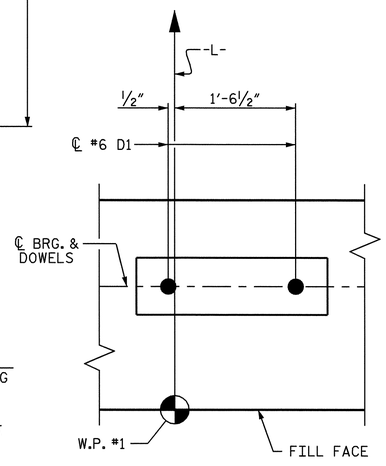
STD. NO. PCS3



PLAN



ELEVATION



DETAIL A

NOTES

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

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

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

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE PARAPET AND END POST ARE CAST IF SLIP FORMING IS USED.

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50-L-

SHEET 1 OF 3

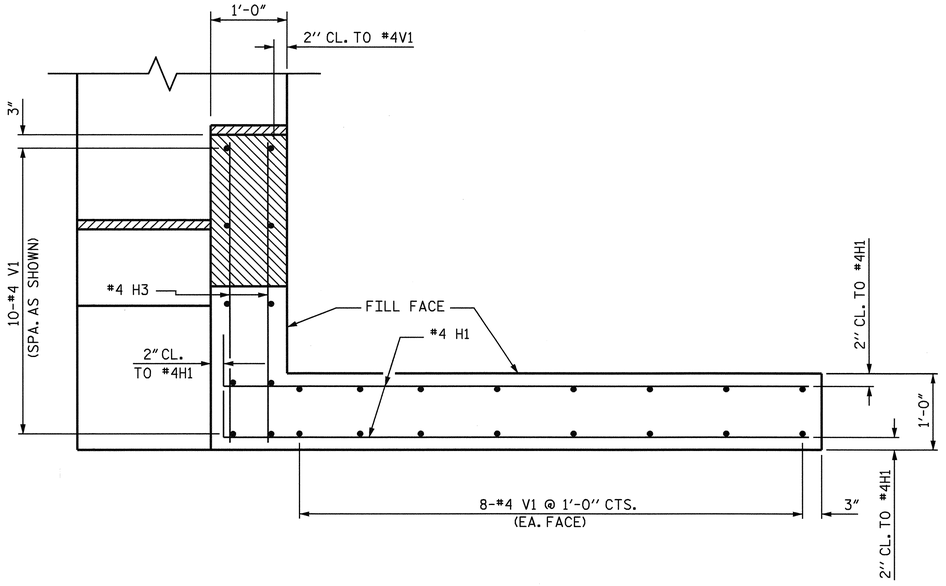
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT #1

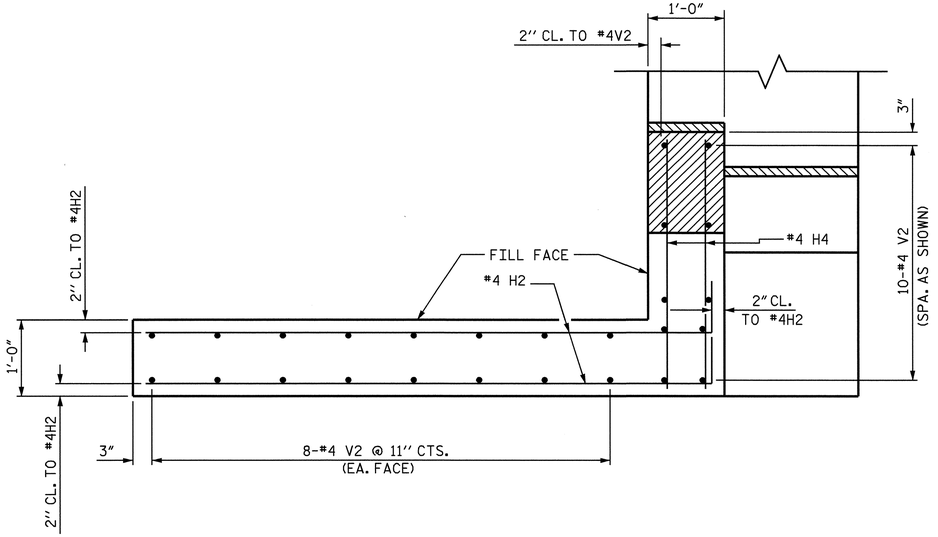
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			32

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
3/28/07

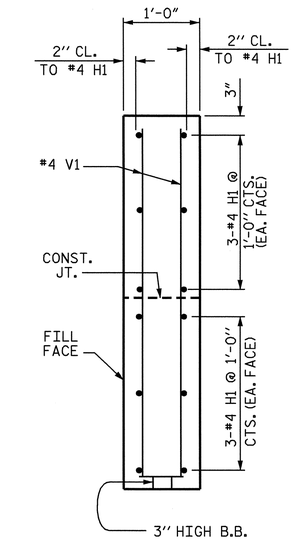
DRAWN BY : D.V. JOYNER DATE : 11-05
CHECKED BY : A. CHAN DATE : 11-05



PLAN OF WING - W1



PLAN OF WING - W2



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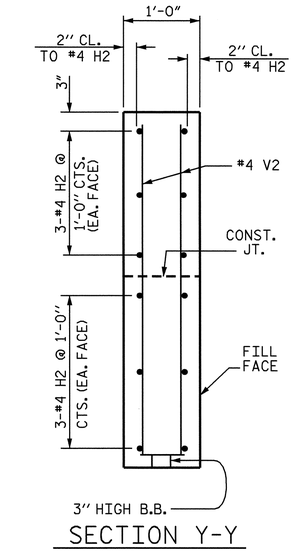
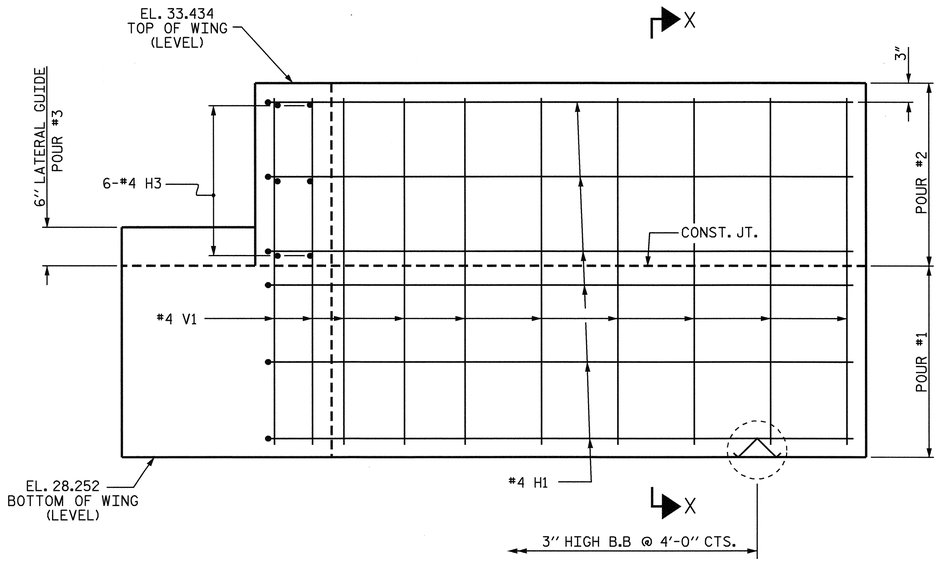
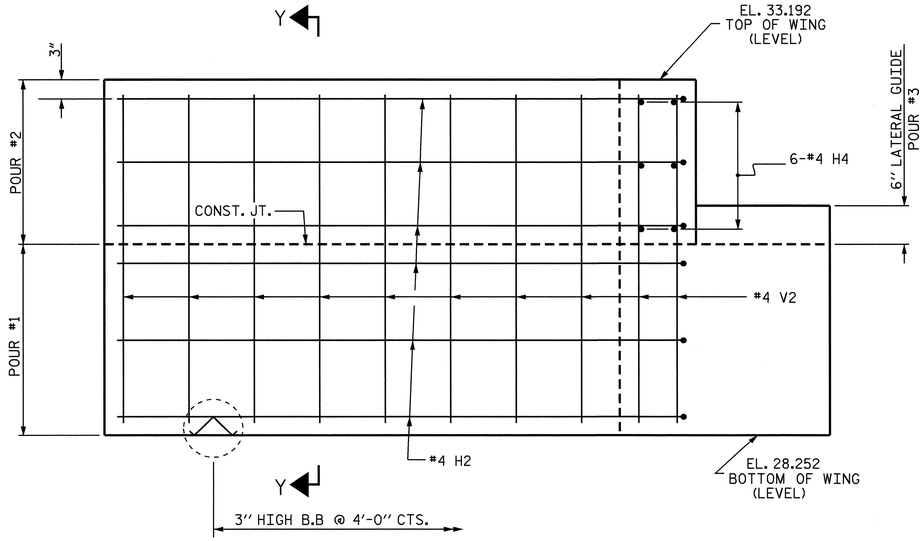


SECTION Y-Y



ELEVATION OF WING - W1



ELEVATION OF WING - W2

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
11/25/07

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

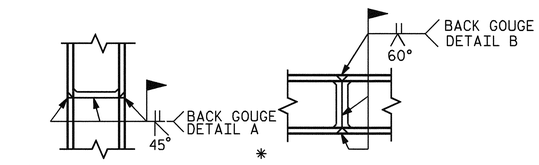
SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT #1

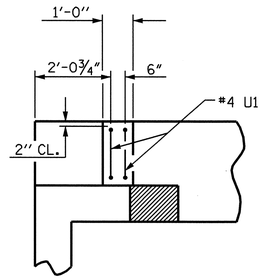
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			32

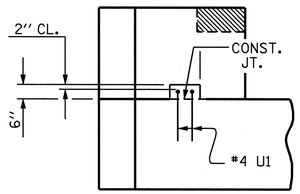
DRAWN BY : D.V. JOYNER DATE : 11-05
CHECKED BY : A. CHAN DATE : 11-05



*POSITION OF PILE DURING WELDING.

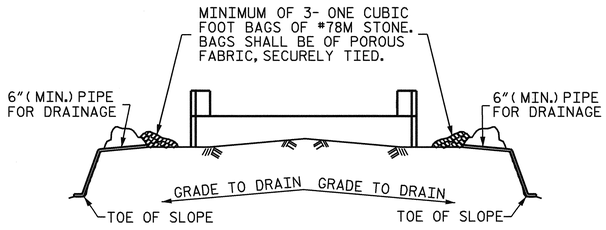
PILE SPLICE DETAILS





LATERAL GUIDE DETAILS

(EACH END SIMILAR)

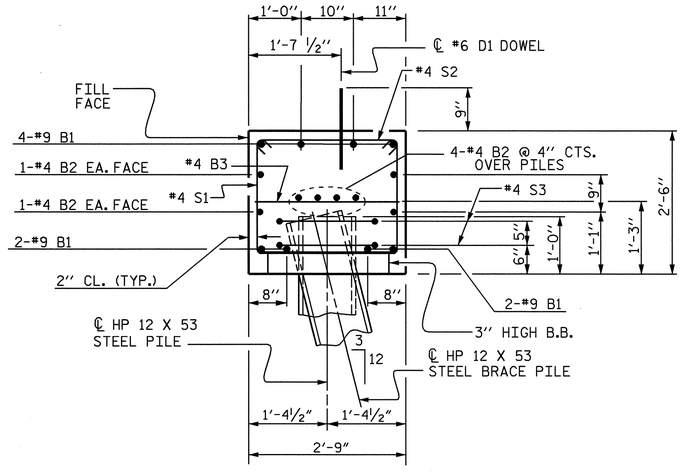


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

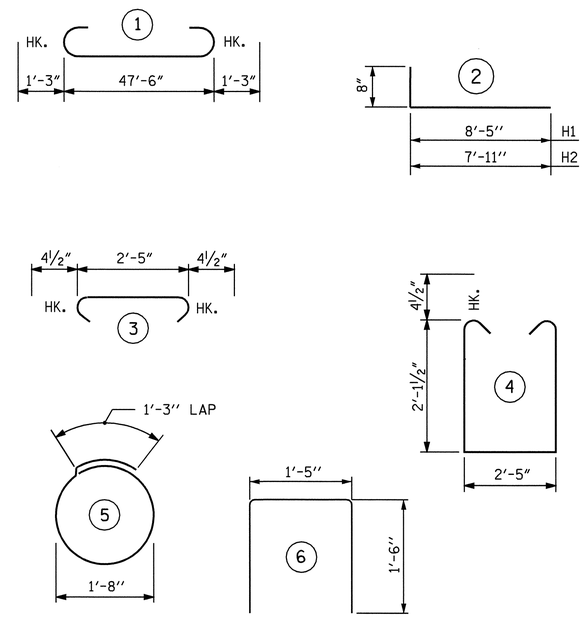
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



SECTION A-A

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	50'-0"	1360
B2	16	4	STR	25'-1"	268
B3	12	4	STR	2'-5"	19
D1	28	6	STR	1'-6"	63
H1	12	4	2	9'-1"	73
H2	12	4	2	8'-7"	69
H3	6	4	STR	3'-9"	15
H4	6	4	STR	3'-1"	12
S1	42	4	4	7'-5"	208
S2	42	4	3	3'-2"	89
S3	18	4	5	6'-6"	78
U1	4	4	6	4'-5"	12
V1	26	4	STR	4'-10"	84
V2	26	4	STR	4'-7"	80

REINFORCING STEEL 2430 LBS

CLASS A CONCRETE BREAKDOWN :

POUR #1 (CAP & LOWER WINGS)	13.5 C.Y.
POUR #2 (UPPER WINGS)	1.9 C.Y.
POUR #3 (LATERAL GUIDES)	0.1 C.Y.
TOTAL	15.5 C.Y.

HP 12 X 53 STEEL PILES
NO. 9 225 LIN. FT.

PROJECT NO. B-4127
GREENE COUNTY
STATION: 13+72.50-L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT #1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			32

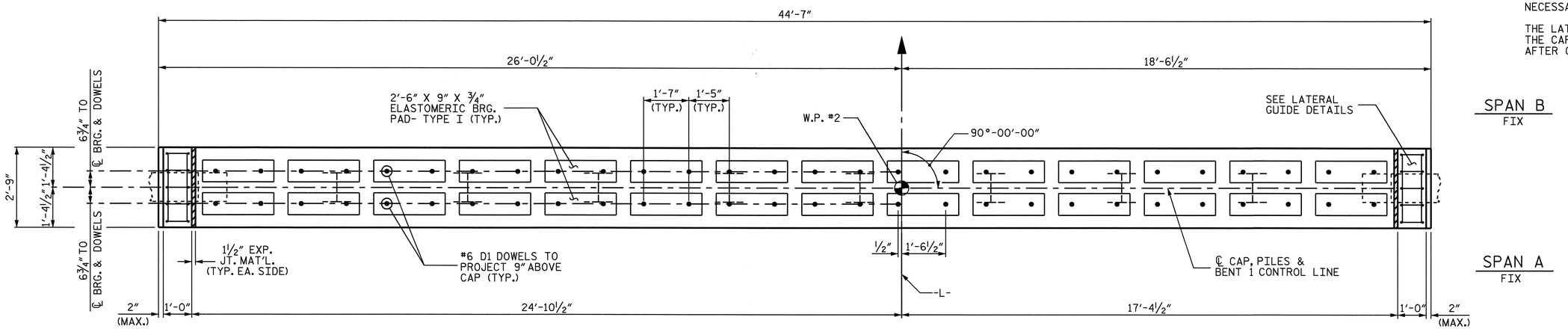
NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
1/25/07

DRAWN BY : D.V. JOYNER DATE : 11-05
CHECKED BY : A. CHAN DATE : 11-05

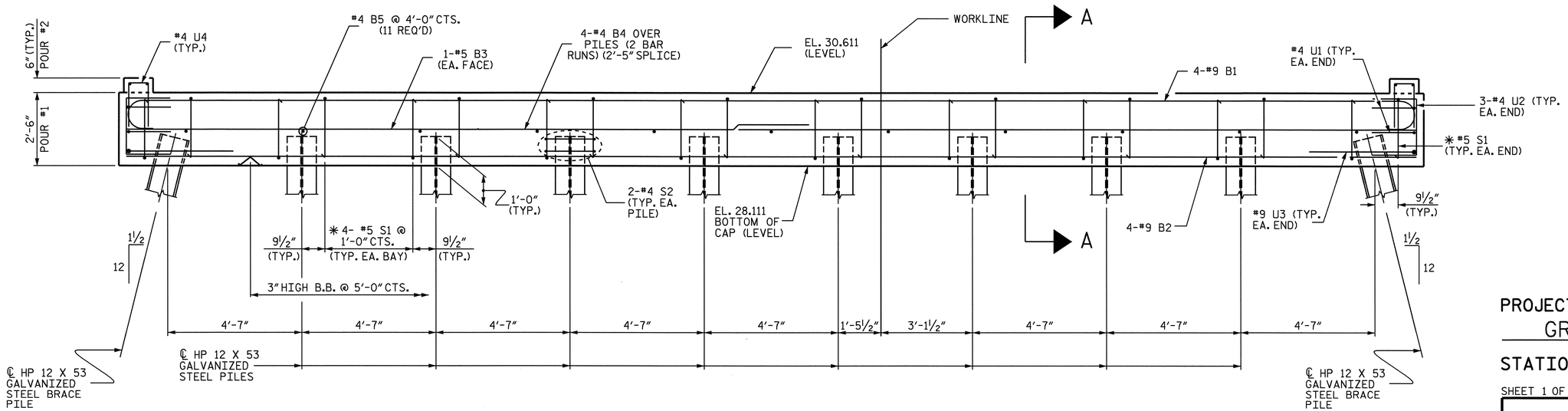
NOTES

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

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



PLAN



ELEVATION

*INVERT ALTERNATE STIRRUPS

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #1

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
1/26/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : S. DOMBROWSKI DATE : 8/06
CHECKED BY : K. D. LAYNE DATE : 8/06

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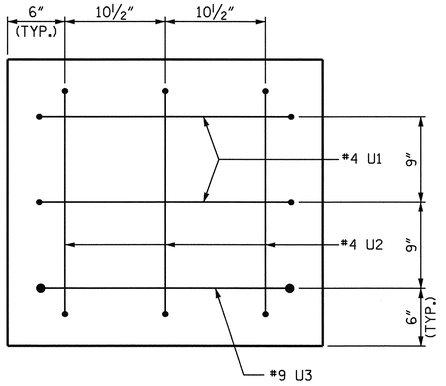
SDOMBROWSKI

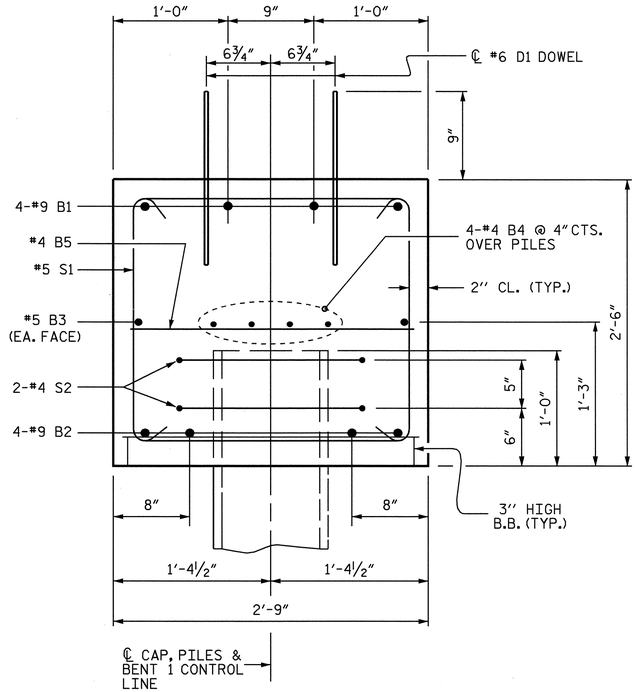


END VIEW

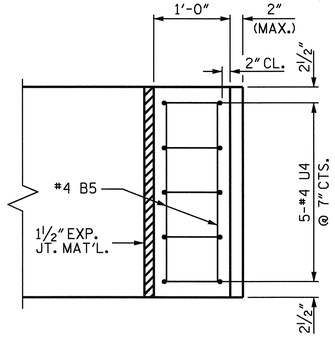
(TYP. EA. END)

2" MIN. COVER FROM END OF CAP REQUIRED FOR ALL #4U1, #4U2 AND #9U3 BARS.

#4U1, #4U2 AND #9U3 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS



SECTION A-A



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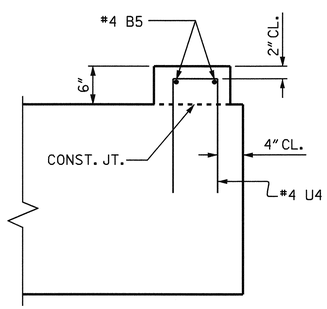
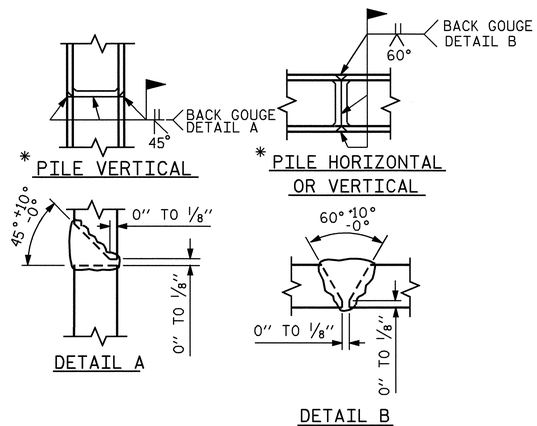


ELEVATION

LATERAL GUIDE DETAILS

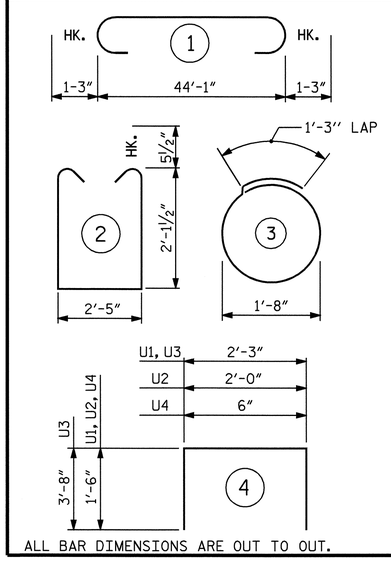
(EACH END SIMILAR)



PILE SPLICE DETAILS

*POSITION OF PILE DURING WELDING.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL BENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	9	1	46'-7"	634
B2	4	9	STR	44'-3"	602
B3	2	5	STR	44'-3"	92
B4	8	4	STR	23'-4"	125
B5	15	4	STR	2'-5"	24
D1	56	6	STR	1'-6"	126
S1	38	5	2	7'-7"	301
S2	20	4	3	6'-6"	87
U1	4	4	4	5'-3"	14
U2	6	4	4	5'-0"	20
U3	2	9	4	9'-7"	65
U4	10	4	4	3'-6"	23
TOTAL REINFORCING STEEL LBS.					2113

CLASS A CONCRETE BREAKDOWN

POUR #1 (CAP)	11.4 C.Y.
POUR #2 (LAT. GUIDES)	0.1 C.Y.
TOTAL CLASS A CONCRETE	11.5 C.Y.

HP 12 X 53 GALVANIZED STEEL PILES NO. 10	300 LIN. FT.
PILE REDRIVES	6 EA.

DRAWN BY : S. DOMBROWSKI DATE : 8/06
CHECKED BY : K.D. LAYNE DATE : 8/06

PROJECT NO. B-4127
GREENE COUNTY
STATION: 13+72.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #1

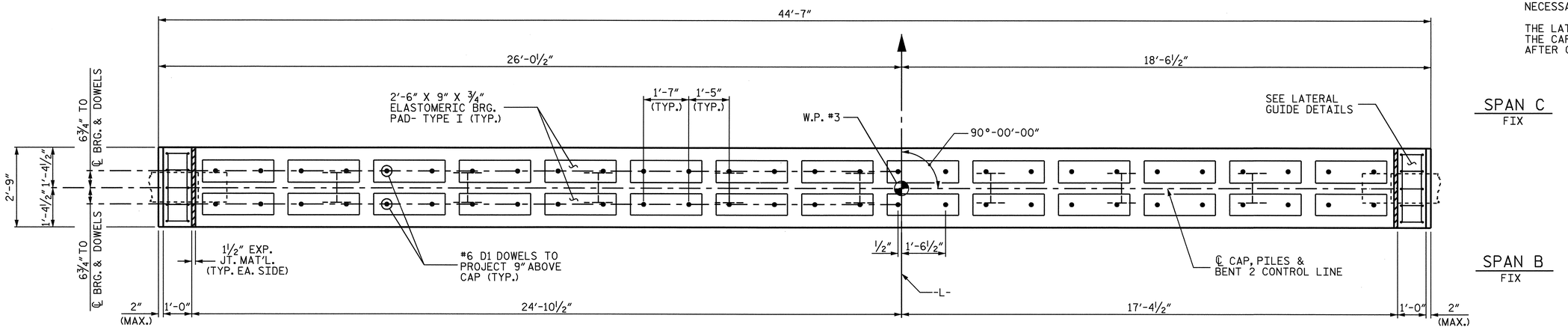
NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
1/26/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			32

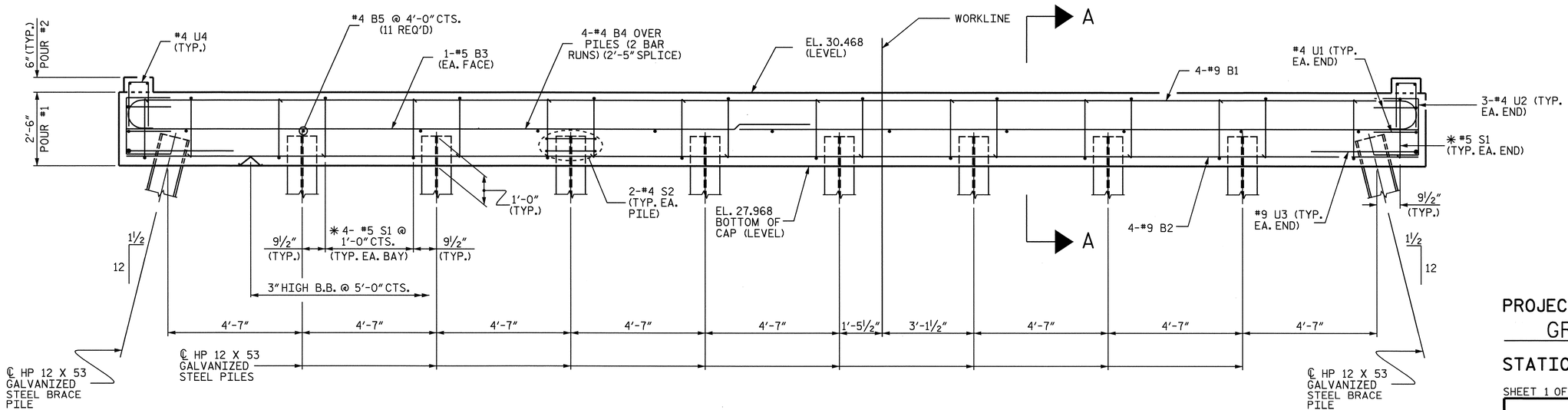
NOTES

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

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



PLAN



ELEVATION

*INVERT ALTERNATE STIRRUPS

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #2

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
1/26/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : S. DOMBROWSKI DATE : 8/06
CHECKED BY : K. D. LAYNE DATE : 8/06

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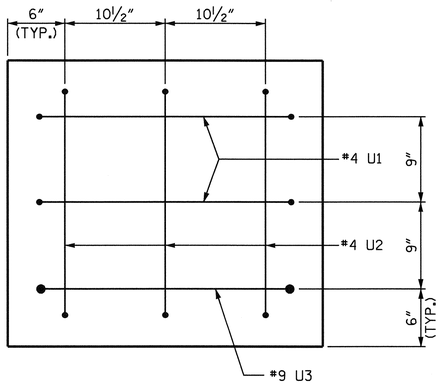
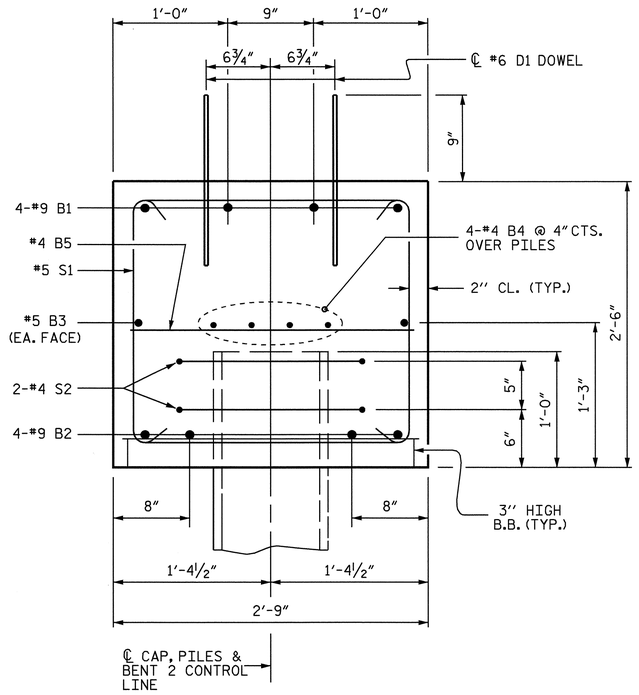


END VIEW

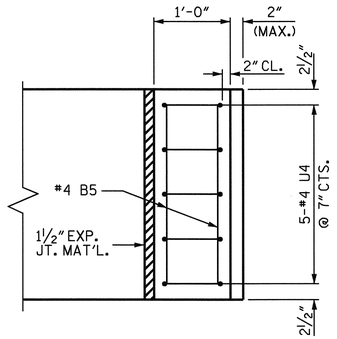
(TYP. EA. END)

2" MIN. COVER FROM END OF CAP REQUIRED FOR ALL #4U1, #4U2 AND #9U3 BARS.

#4U1, #4U2 AND #9U3 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS



SECTION A-A



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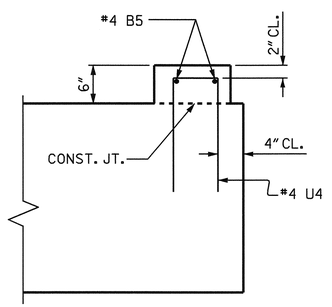
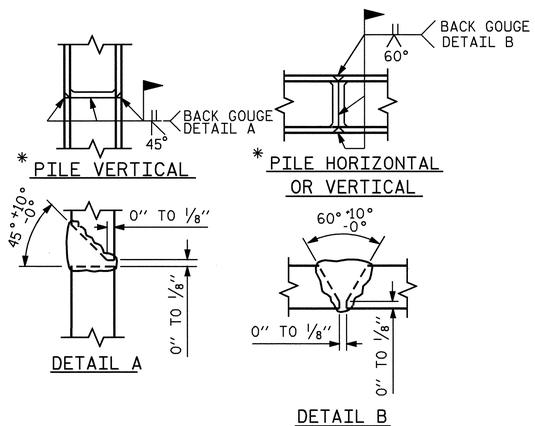


ELEVATION

LATERAL GUIDE DETAILS

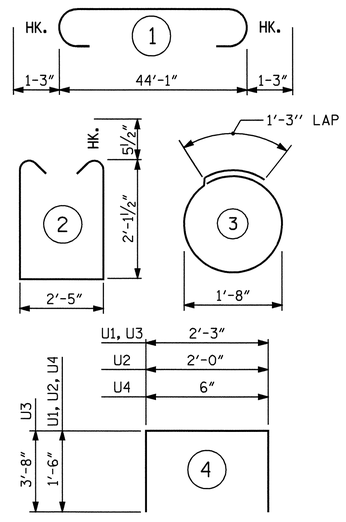
(EACH END SIMILAR)



PILE SPLICE DETAILS

*POSITION OF PILE DURING WELDING.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL BENT #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	9	1	46'-7"	634
B2	4	9	STR	44'-3"	602
B3	2	5	STR	44'-3"	92
B4	8	4	STR	23'-4"	125
B5	15	4	STR	2'-5"	24
D1	56	6	STR	1'-6"	126
S1	38	5	2	7'-7"	301
S2	20	4	3	6'-6"	87
U1	4	4	4	5'-3"	14
U2	6	4	4	5'-0"	20
U3	2	9	4	9'-7"	65
U4	10	4	4	3'-6"	23

TOTAL REINFORCING STEEL LBS. 2113

CLASS A CONCRETE BREAKDOWN

POUR #1 (CAP) 11.4 C.Y.
POUR #2 (LAT. GUIDES) 0.1 C.Y.

TOTAL CLASS A CONCRETE 11.5 C.Y.

HP 12 X 53 GALVANIZED STEEL PILES
NO. 10 300 LIN. FT.

PILE REDRIVES 6 EA.

DRAWN BY : S. DOMBROWSKI DATE : 8/06
CHECKED BY : K. D. LAYNE DATE : 8/06

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
11/21/07

PROJECT NO. B-4127
GREENE COUNTY
STATION: 13+72.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

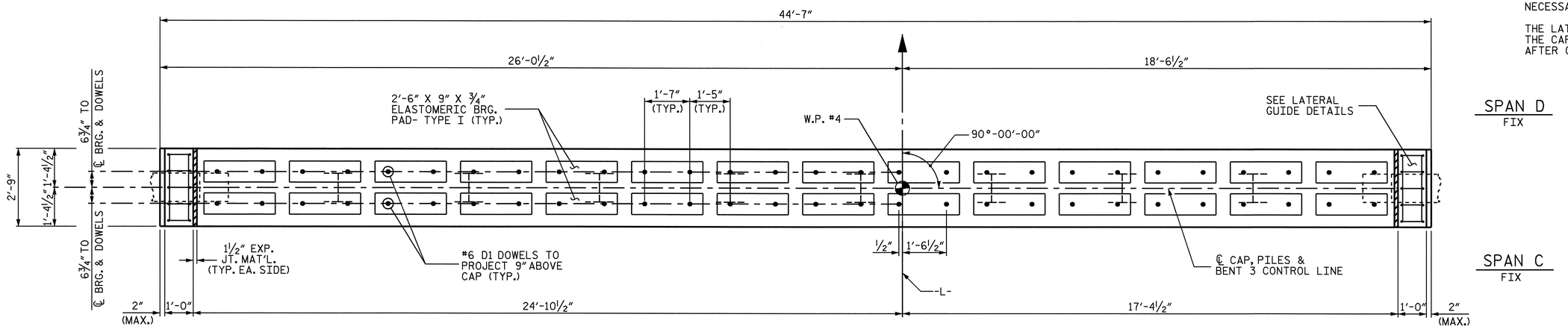
BENT #2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			32

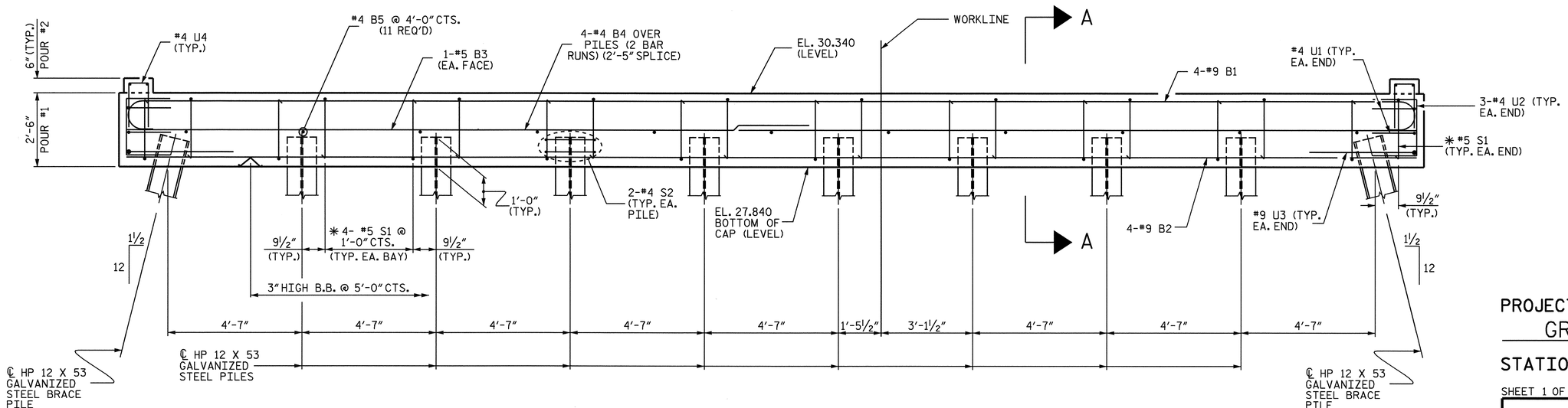
NOTES

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

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



PLAN



ELEVATION

*INVERT ALTERNATE STIRRUPS

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #3

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
1/26/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : S. DOMBROWSKI DATE : 8/06
CHECKED BY : K. D. LAYNE DATE : 8/06

26-JAN-2007 14:20
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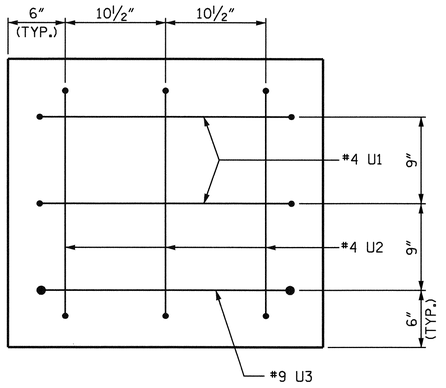
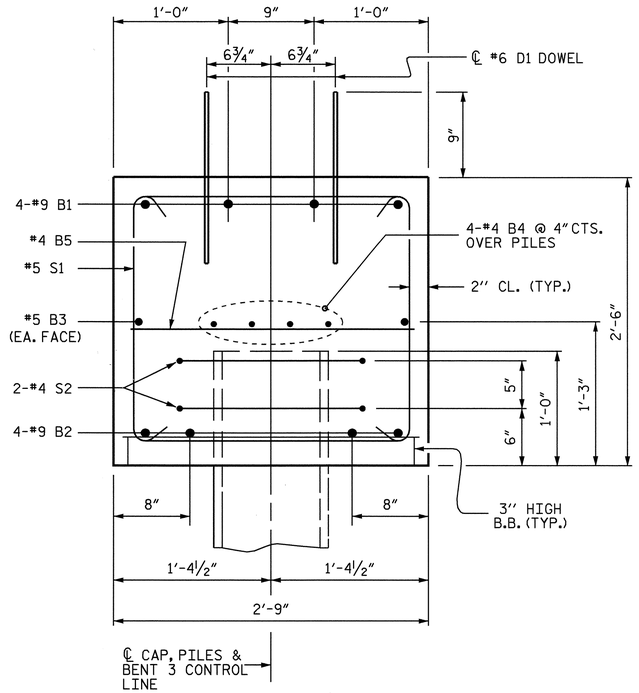
SDOMBROWSKI



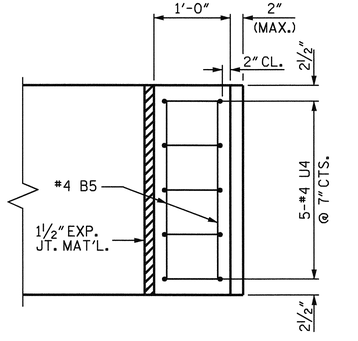
END VIEW
(TYP. EA. END)

2" MIN. COVER FROM END OF CAP REQUIRED FOR ALL #4U1, #4U2 AND #9U3 BARS.

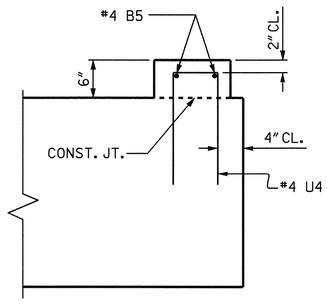
#4U1, #4U2 AND #9U3 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS



SECTION A-A

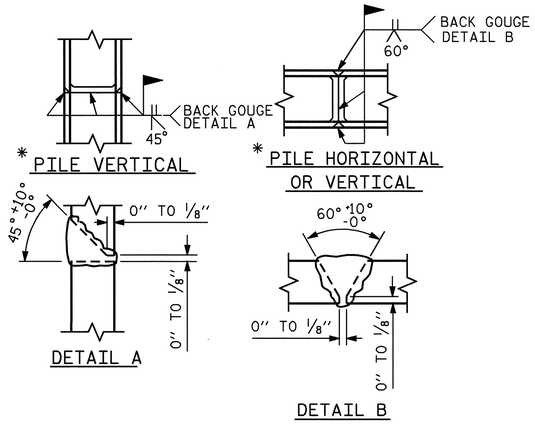


PLAN



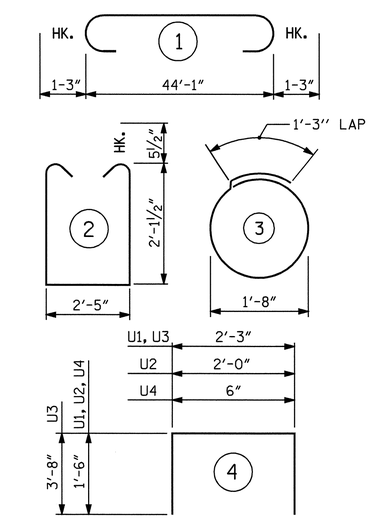
ELEVATION

LATERAL GUIDE DETAILS
(EACH END SIMILAR)



PILE SPLICE DETAILS
*POSITION OF PILE DURING WELDING.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
BENT #3

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	9	1	46'-7"	634
B2	4	9	STR	44'-3"	602
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U1	4	4	4	5'-3"	14
U2	6	4	4	5'-0"	20
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U4	10	4	4	3'-6"	23

TOTAL REINFORCING STEEL LBS. 2113

CLASS A CONCRETE BREAKDOWN

POUR #1 (CAP)	11.4 C.Y.
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TOTAL CLASS A CONCRETE	11.5 C.Y.

HP 12 X 53 GALVANIZED STEEL PILES
NO. 10 300 LIN. FT.

PILE REDRIVES 6 EA.

DRAWN BY : S. DOMBROWSKI DATE : 8/06
CHECKED BY : K. D. LAYNE DATE : 8/06

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
1/26/07

PROJECT NO. B-4127
GREENE COUNTY
STATION: 13+72.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #3

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			32

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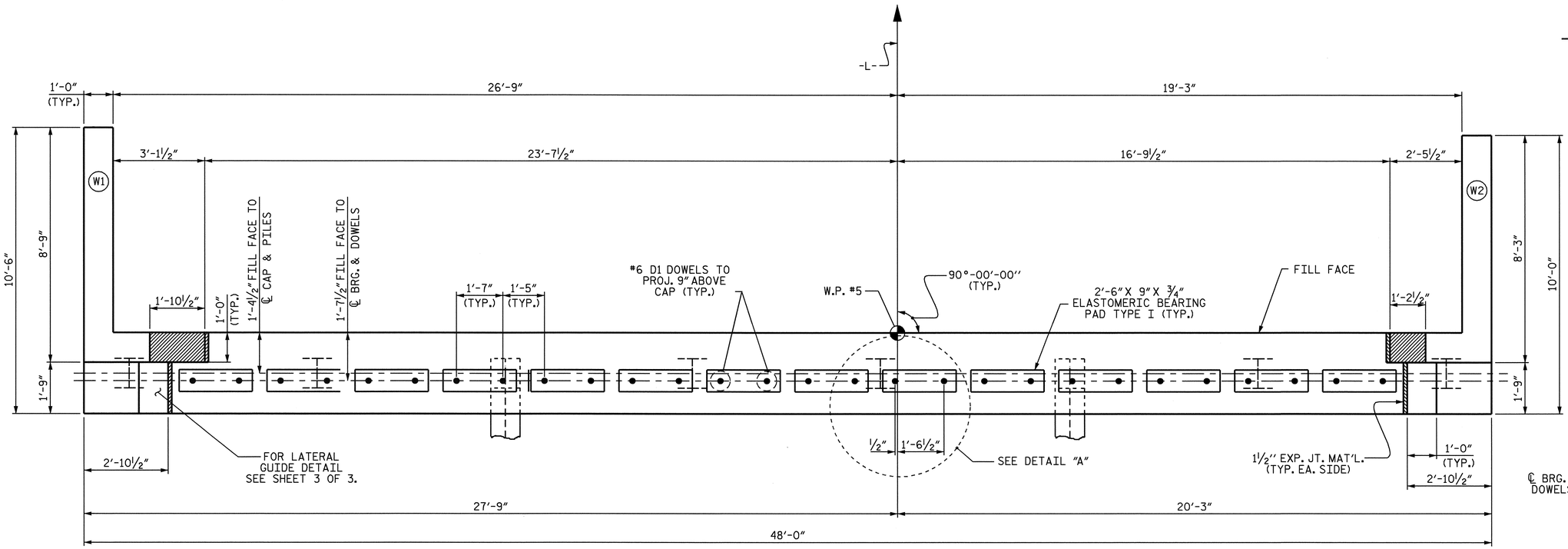
vpatel



PLAN

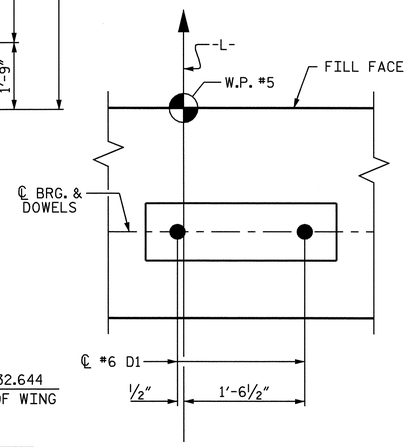
NOTES

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

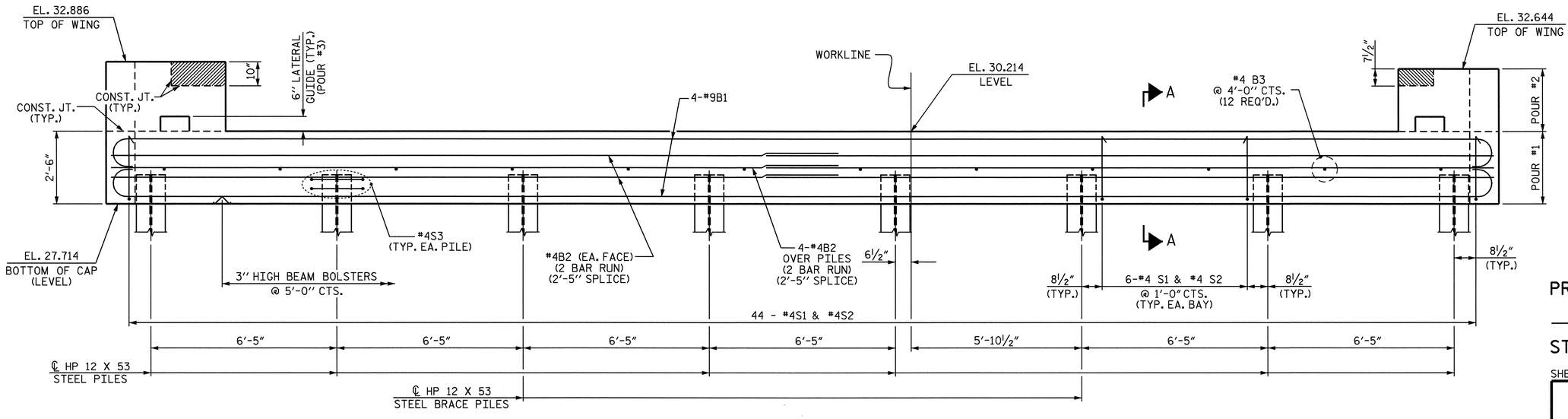
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

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

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE PARAPET AND END POST ARE CAST IF SLIP FORMING IS USED.



DETAIL A



ELEVATION

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50-L-

SHEET 1 OF 3

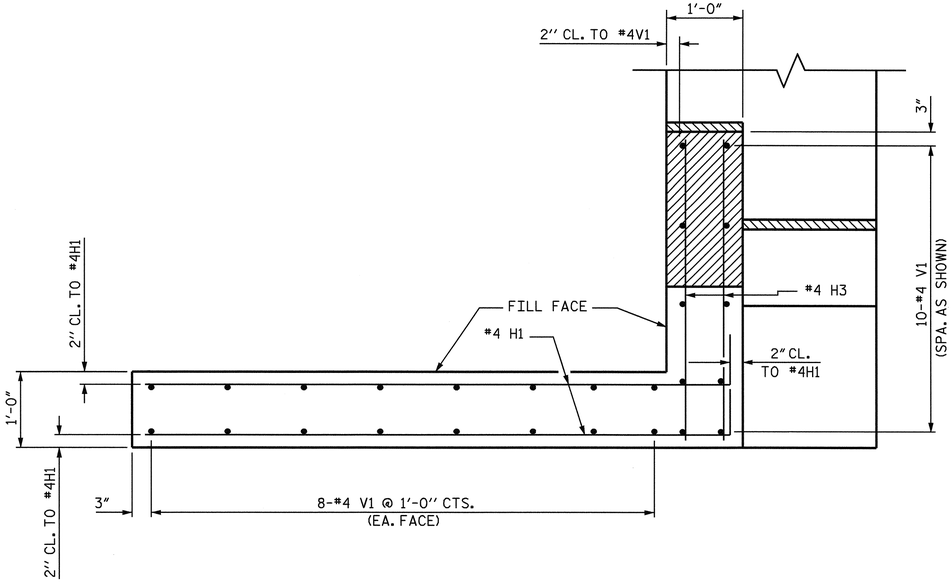
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT #2

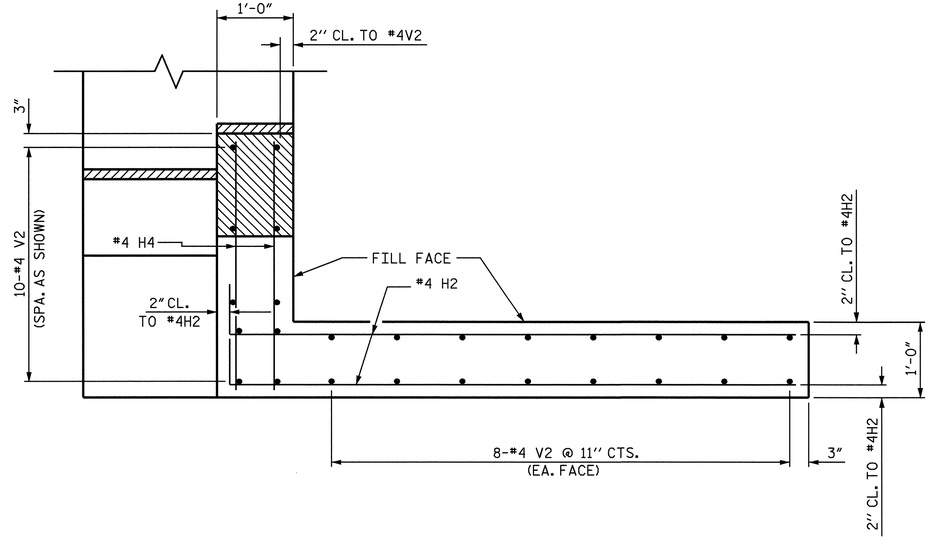
NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-26
1			3			TOTAL SHEETS
2			4			32

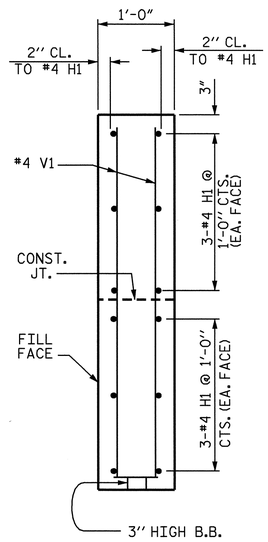
DRAWN BY : D.V. JOYNER DATE : 11-05
CHECKED BY : A. CHAN DATE : 11-05



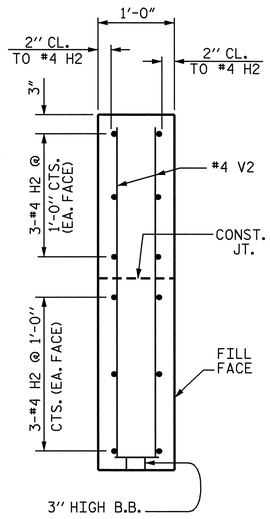
PLAN OF WING - W1



PLAN OF WING - W2



SECTION X-X



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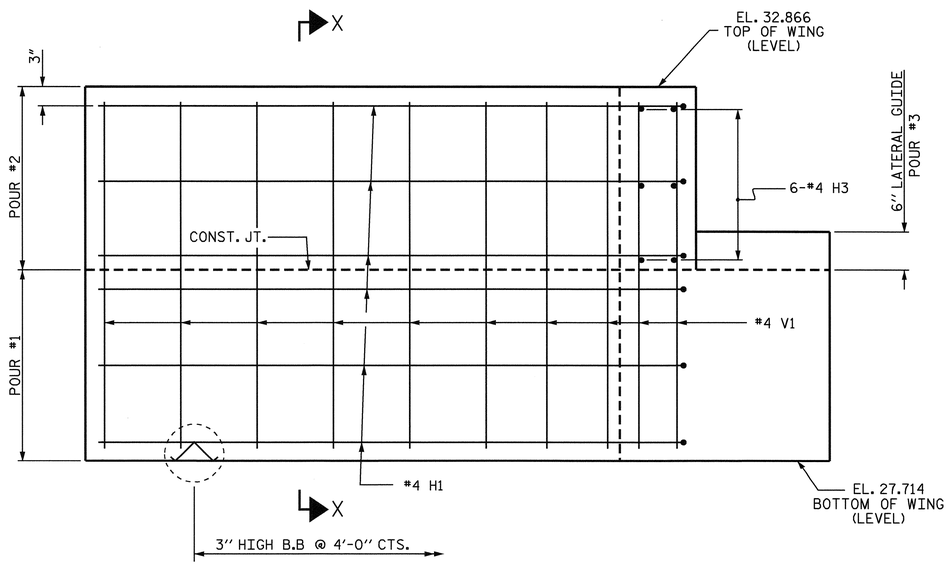
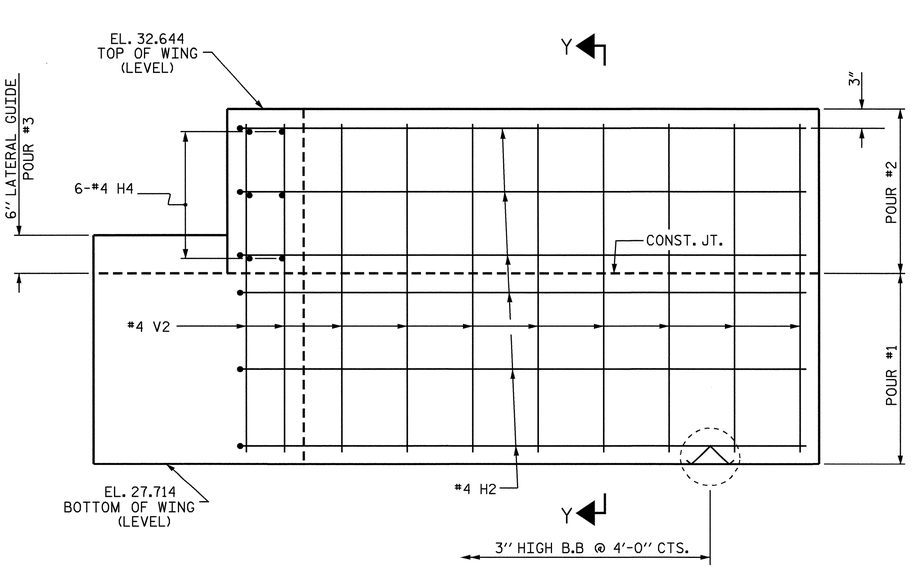
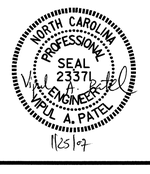


ELEVATION OF WING - W1



ELEVATION OF WING - W2



DRAWN BY : D.V. JOYNER DATE : 11-05
CHECKED BY : A. CHAN DATE : 11-05

PROJECT NO. B-4127

GREENE COUNTY

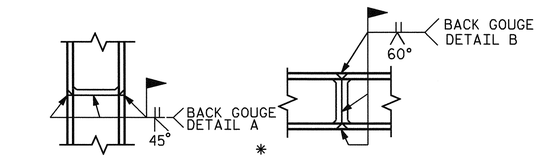
STATION: 13+72.50 -L-

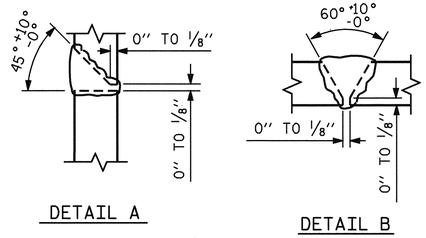
SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT #2

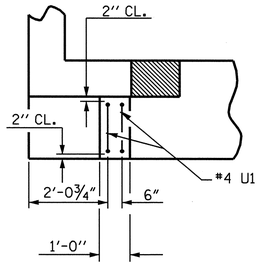
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-27
1			3			TOTAL SHEETS
2			4			32

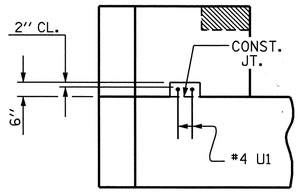




*POSITION OF PILE DURING WELDING.

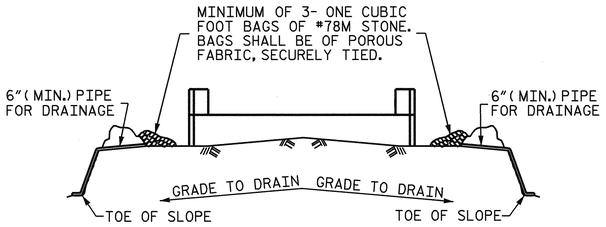
PILE SPLICE DETAILS





LATERAL GUIDE DETAILS

(EACH END SIMILAR)

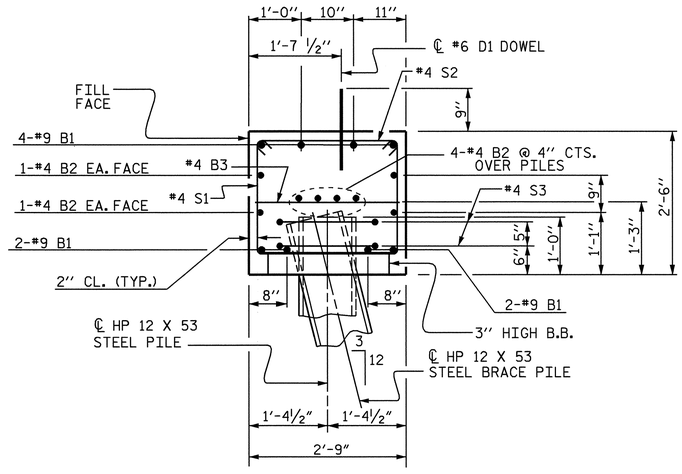


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

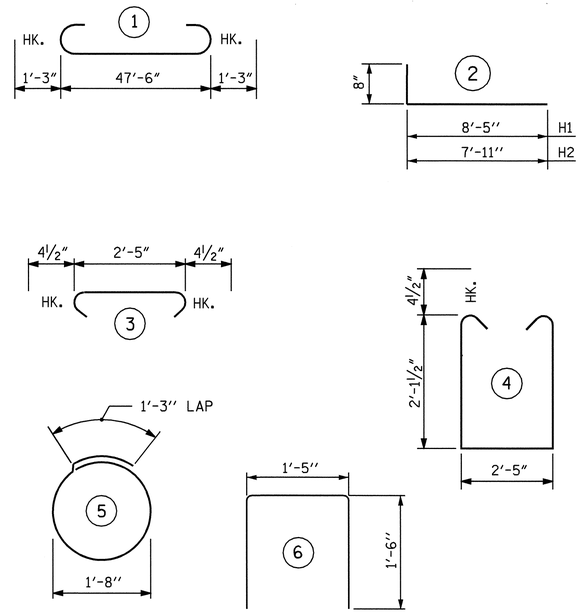
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



SECTION A-A

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
END BENT #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	9	1	50'-0"	1360
B2	16	4	STR	25'-1"	268
B3	12	4	STR	2'-5"	19
D1	28	6	STR	1'-6"	63
H1	12	4	2	9'-1"	73
H2	12	4	2	8'-7"	69
H3	6	4	STR	3'-9"	15
H4	6	4	STR	3'-1"	12
S1	44	4	4	7'-5"	218
S2	44	4	3	3'-2"	93
S3	16	4	5	6'-6"	69
U1	4	4	6	4'-5"	12
V1	26	4	STR	4'-10"	84
V2	26	4	STR	4'-7"	80

REINFORCING STEEL 2435 LBS

CLASS A CONCRETE BREAKDOWN :

POUR #1 (CAP & LOWER WINGS)	13.5 C.Y.
POUR #2 (UPPER WINGS)	1.9 C.Y.
POUR #3 (LATERAL GUIDES)	0.1 C.Y.
TOTAL	15.5 C.Y.

HP 12 X 53 STEEL PILES
NO. 8 200 LIN. FT.

PROJECT NO. B-4127
GREENE COUNTY
STATION: 13+72.50-L-
SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT #2

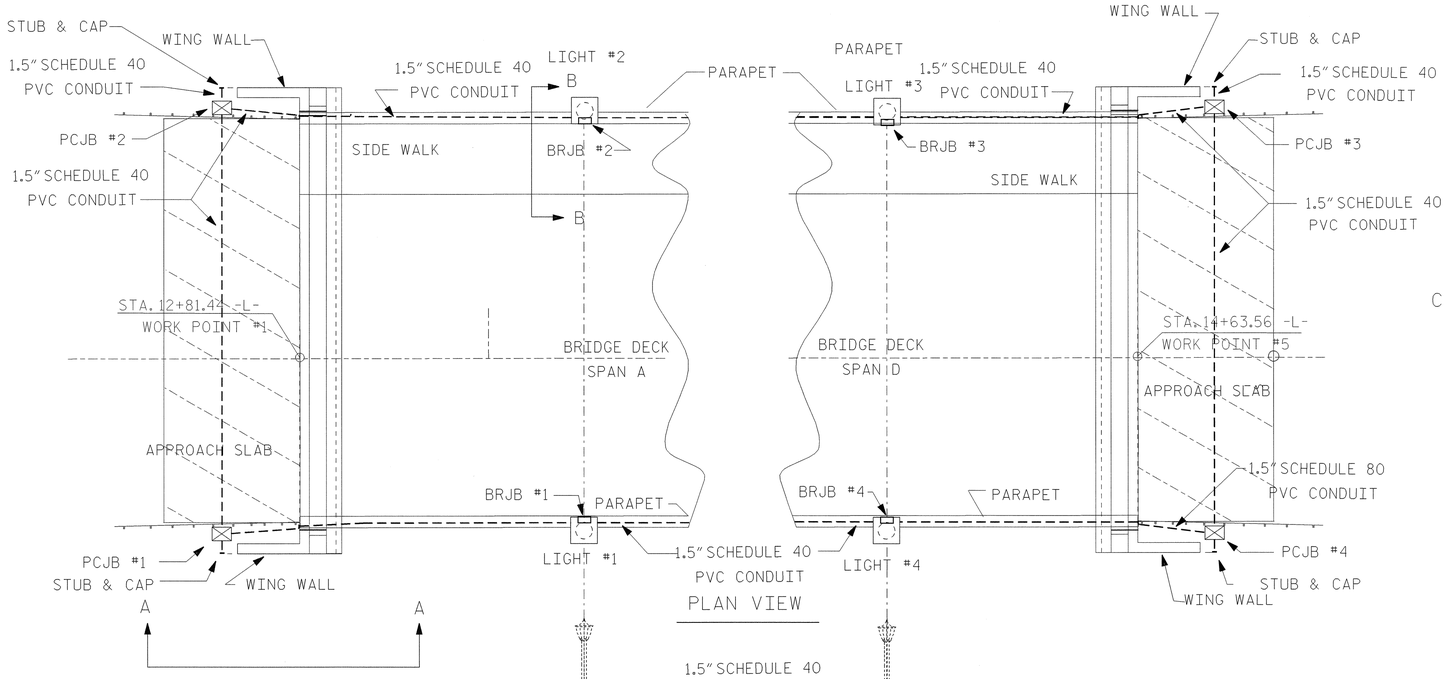
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-28
1			3			TOTAL SHEETS
2			4			32

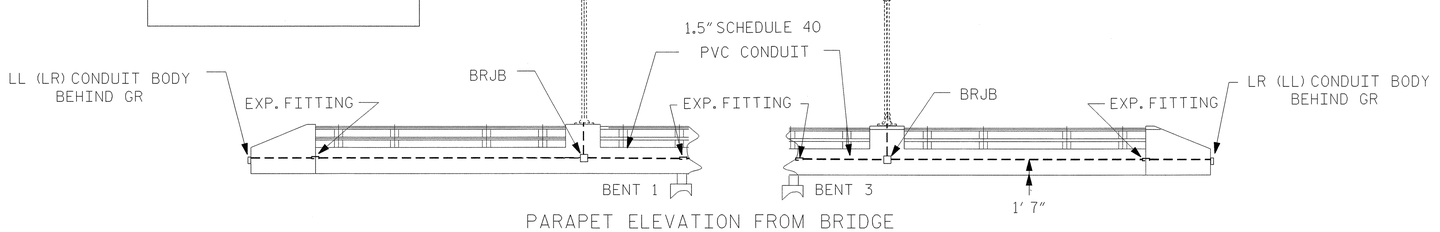
DRAWN BY : D.V. JOYNER DATE : 11-05
CHECKED BY : A. CHAN DATE : 11-05

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
11/25/07

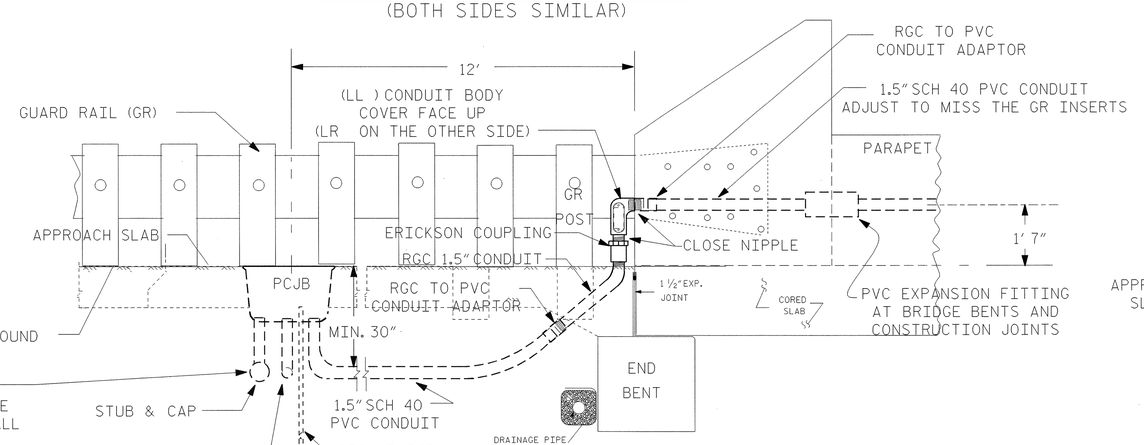
PROJECT REFERENCE NO.	SHEET NO.
B-4127	ECS-1

USE FOR ELECTRICAL CONDUIT SYSTEM ONLY

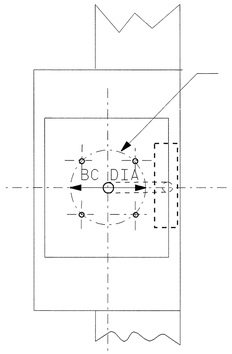




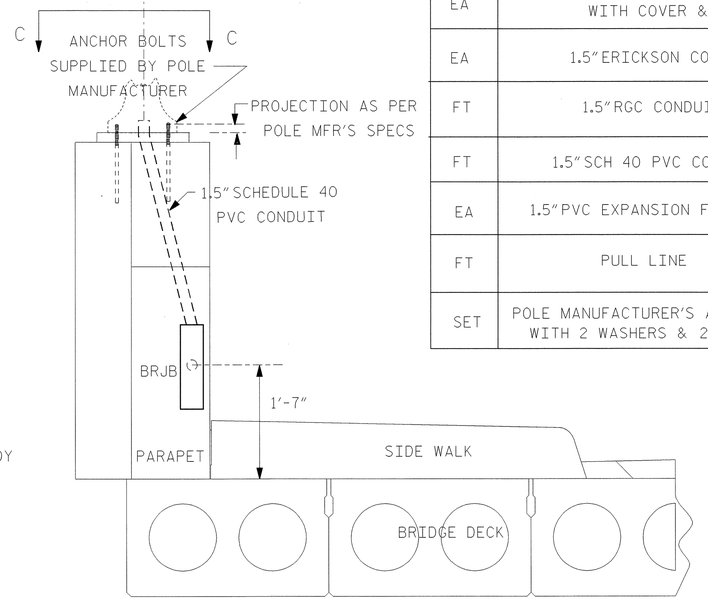
PARAPET ELEVATION FROM BRIDGE
(BOTH SIDES SIMILAR)



VIEW A-A
SIMILAR AT EACH WING WALL



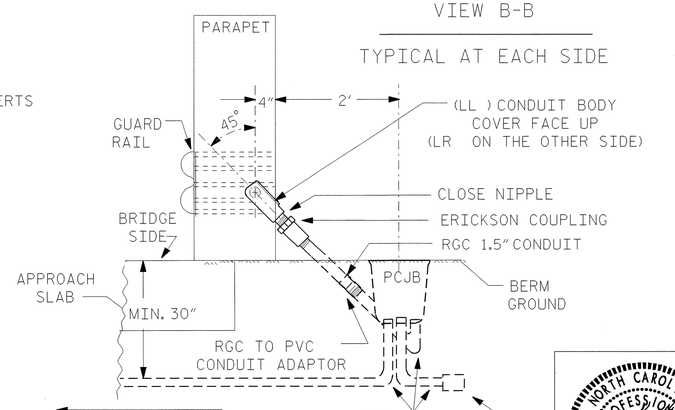
VIEW C-C



VIEW B-B

ESTIMATED BILL OF MATERIALS		
UNIT	ITEM	QNTY
EA	PCJB: 12"X11"X18" POLYMER CONCRETE JUNCTION BOX	4
EA	BRJB :12"X12"X4" CAST IRON FLUSH MOUNT JUNCTION BOX	4
EA	PVC TO RGC CODUIT 1.5" ADAPTER	8
EA	1.5" RGC CLOSE NIPPLE	8
EA	GALVANIZED IRON 1.5" LL CONDUIT BODY WITH COVER & GASKET	2
EA	GALVANIZED IRON 1.5" LR CONDUIT BODY WITH COVER & GASKET	2
EA	1.5" ERICKSON COUPLING	4
FT	1.5" RGC CONDUIT	6
FT	1.5" SCH 40 PVC CONDUIT	530
EA	1.5" PVC EXPANSION FITTINGS	10
FT	PULL LINE	600
SET	POLE MANUFACTURER'S ANCHOR BOLT SET WITH 2 WASHERS & 2 NUTS PER BOLT	4

TYPICAL AT EACH SIDE



END VIEW

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

SHEET 1 OF 1

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

FOR BRIDGE LIGHTING
TOWN OF HOOKERTON

NORTH CAROLINA PROFESSIONAL SEAL 022582 ENGINEER PAUL KI-BUN CHIN
3-28-06

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS 32

DRAWN BY : SKS LIGHTING & ELECTRICAL DATE :
CHECKED BY : DATE : 3.28.06

28-MAR-2006 08:11
sksaha RD214523

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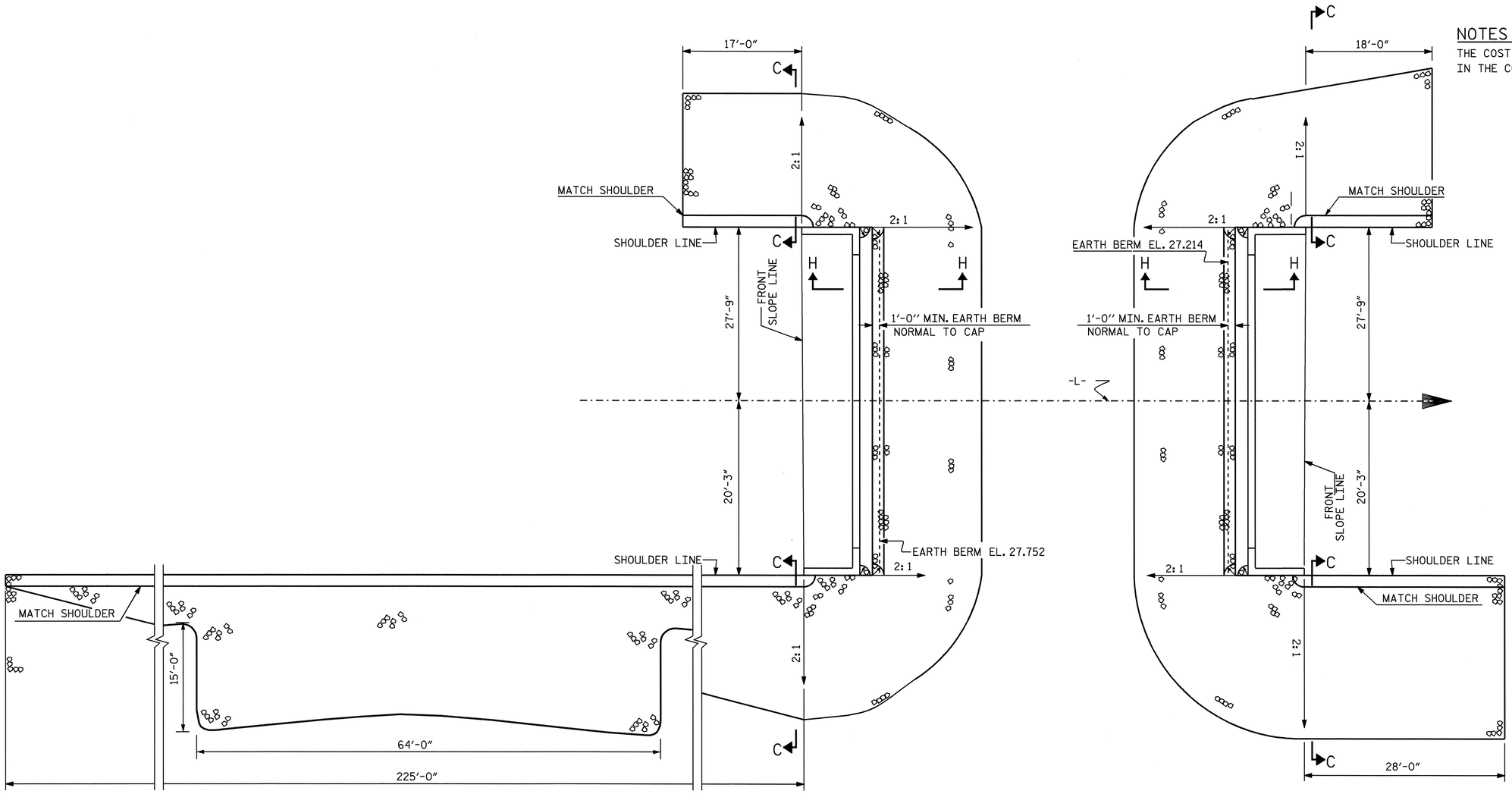
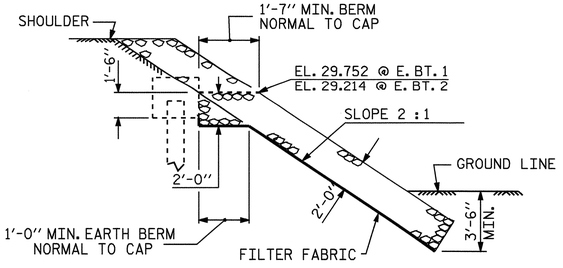
NCBDS



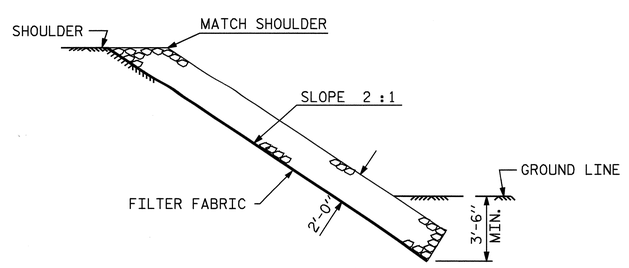
NOTES :

THE COST OF THE FILTER FABRIC WILL BE INCLUDED IN THE CONTRACT PRICE BID FOR RIP RAP CLASS II

ESTIMATED QUANTITIES		
BRIDGE @ STA.13+72.50 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	500	550
END BENT 2	225	250



SECTION H-H



SECTION C-C

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A PATEL
3/13/07

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RIP RAP DETAILS

ASSEMBLED BY : G. A. THOMPSON	DATE : 12/05
CHECKED BY : M. K. BEARD	DATE : 1/06
DRAWN BY : FCJ 2/88	REV. 7/17/98 REK/RWW
CHECKED BY : ARB 8/88	REV. 8/16/99 RWW/LES
	REV. 10/17/00 RWW/LES

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-30
1			3			TOTAL SHEETS
2			4			32

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SKEW 90°

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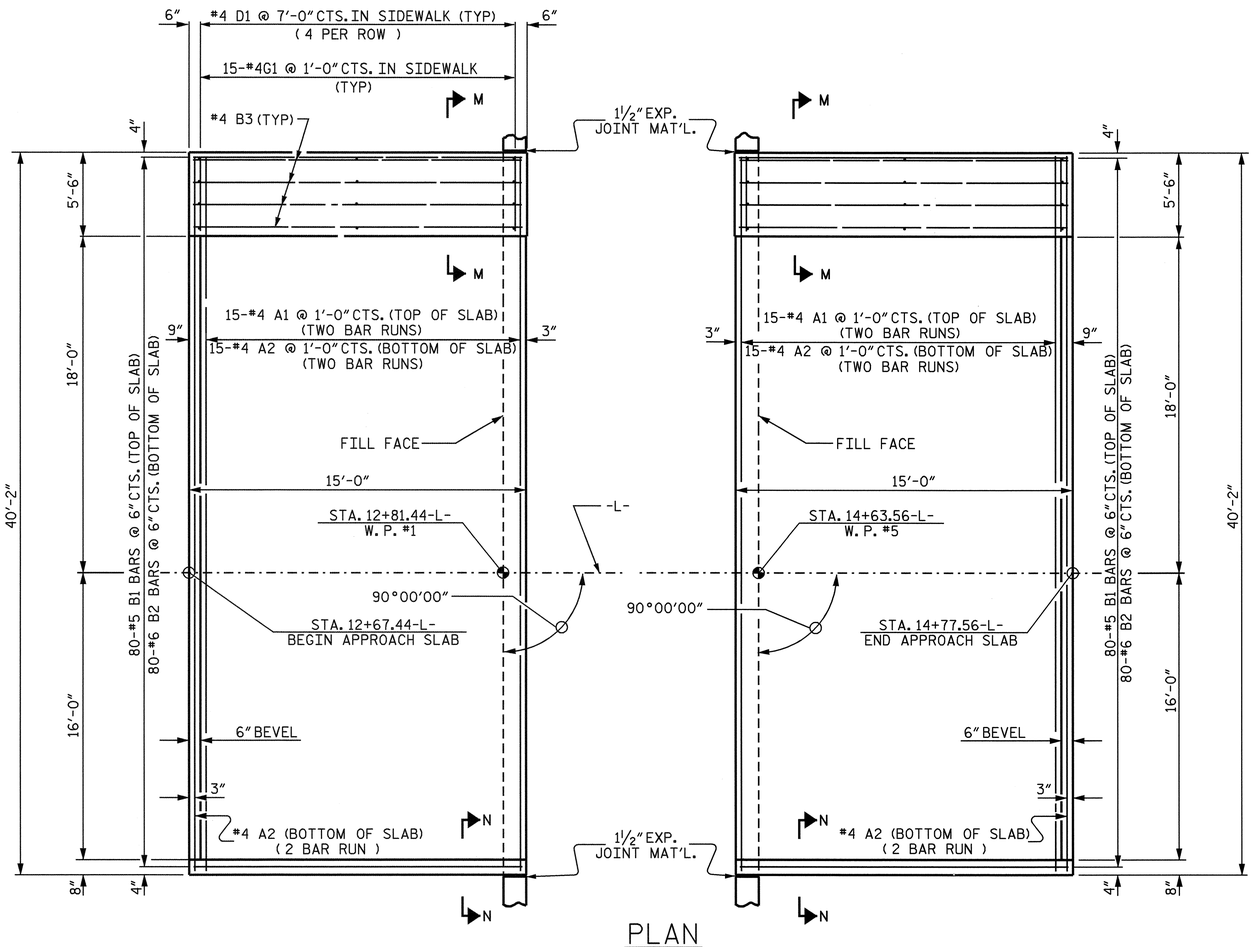


PLAN

NOTES

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE GEOMEMBRANE, 4″ Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

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 10′-0″BEYOND THE END OF THE APPROACH SLAB AND 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 SHALL EXTEND 1′-0″BEYOND THE 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 EXTEND 1′-0″BEYOND THE 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.

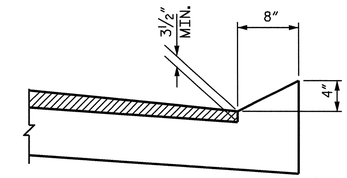
THE JOINT AT THE END BENT SHALL BE SEALED AS SOON AS PRACTICAL AFTER THE CONSTRUCTION OF THE APPROACH SLABS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

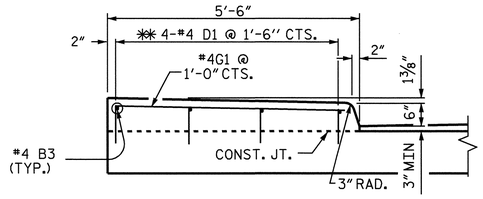
BILL OF MATERIAL
FOR ONE APPROACH SLAB (2 REQUIRED)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✳A1	30	#4	STR	20′-11″	419
A2	32	#4	STR	20′-10″	445
✳B1	80	#5	STR	14′-2″	1182
B2	80	#6	STR	14′-8″	1762
✳B3	4	#4	STR	14′-8″	39
✳D1	12	#4	STR	1′-0″	8
✳G1	15	#4	STR	5′-0″	50

REINFORCING STEEL	LBS.	2207
✳EPOXY COATED REINFORCING STEEL	LBS.	1698
CLASS AA CONCRETE BREAK DOWN		
POUR 1 (SLAB)	C. Y.	25.0
POUR 2 (SIDEWALK)	C. Y.	2.4
CLASS AA CONCRETE TOTAL:	C. Y.	27.4



SECTION N-N



SECTION M-M

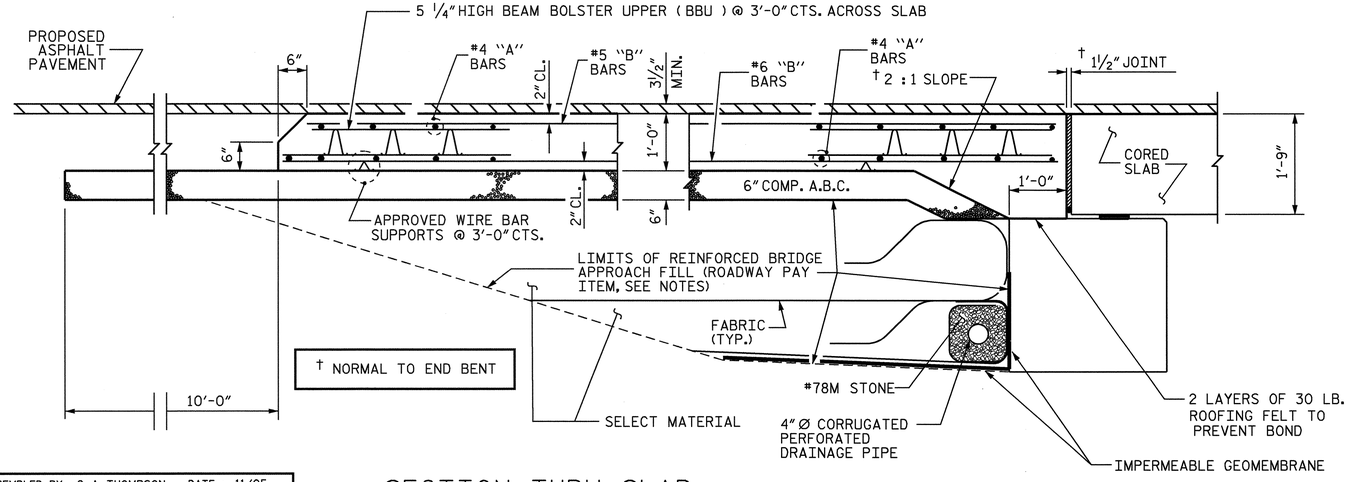
SIDEWALK DETAILS

✳✳ DOWELS MAY BE PUSHED INTO GREEN CONCRETE.

END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

REINFORCING STEEL SPLICE LENGTH		
BAR SIZE	EPOXY-COATED	UN-COATED
#4	2′-0″	1′-9″



SECTION THRU SLAB

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIPUL A. PATEL
3/28/07

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-31
1			3			TOTAL SHEETS
2			4			32

ASSEMBLED BY : G. A. THOMPSON DATE : 11/05
CHECKED BY : K. D. LAYNE DATE : 12/14/05

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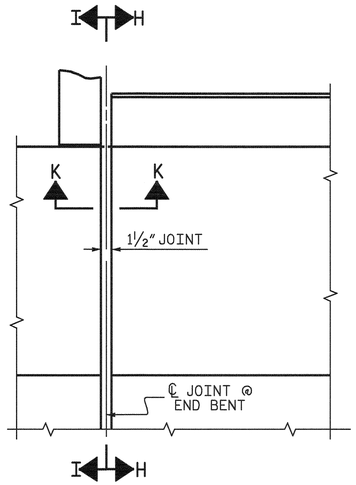
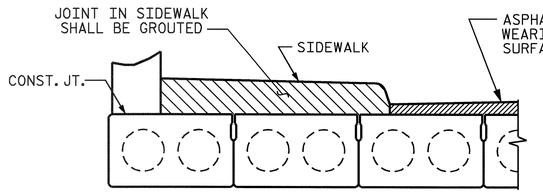
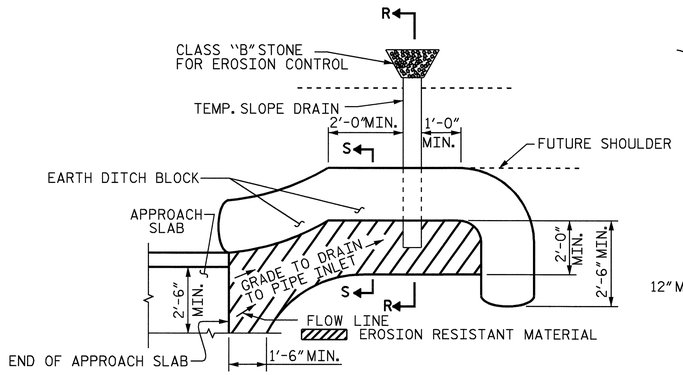


PLAN

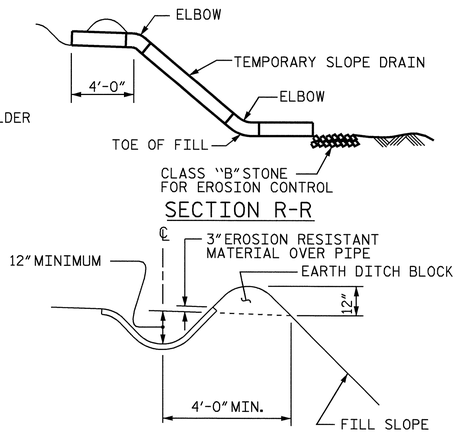


SECTION H-H



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.

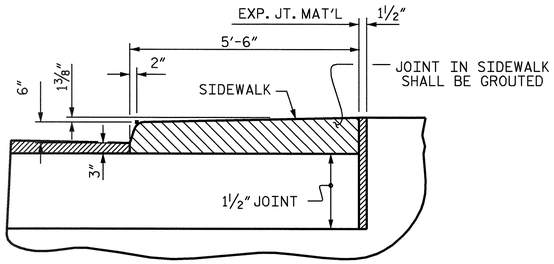
PLAN VIEW



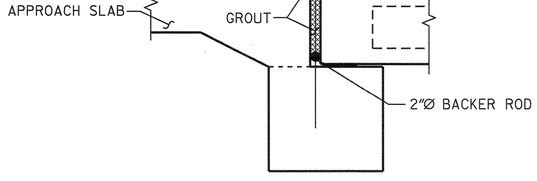
SECTION R-R

SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS



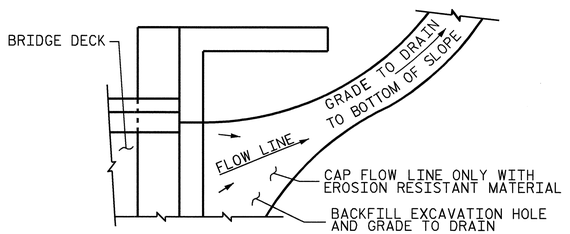
SECTION I-I



SECTION K-K

JOINT OPENING IN SIDEWALK

JOINT AT END BENTS SHOWN, JOINT AT BENTS SIMILAR



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

NORTH CAROLINA PROFESSIONAL SEAL 23371 ENGINEER VIMAL A. PATEL
3/28/07

PROJECT NO. B-4127

GREENE COUNTY

STATION: 13+72.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

BRIDGE APPROACH SLAB DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-32
1			3			TOTAL SHEETS
2			4			32

ASSEMBLED BY : G. A. THOMPSON		DATE : 11/05	
CHECKED BY : K. D. LAYNE		DATE : 12/14/05	
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	

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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. FINS 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

REV. 6-16-95 EFM 40 RCW REV. 6-27-02 RWW 50 JTF