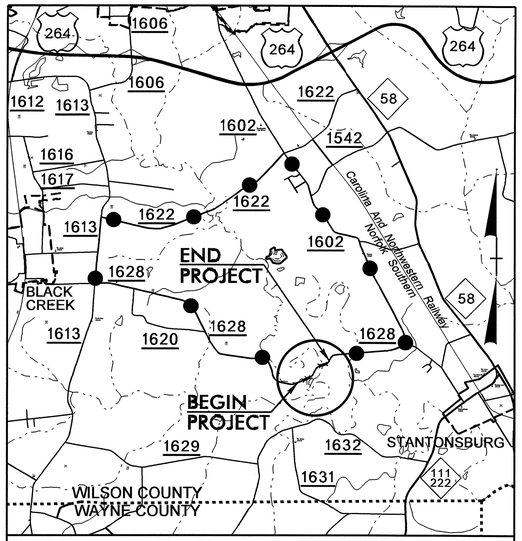
TIP PROJECT: B-4682/B-4992

CONTRACT: C202236/C202237

Structure



VICINITY MAP

OFF-SITE DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

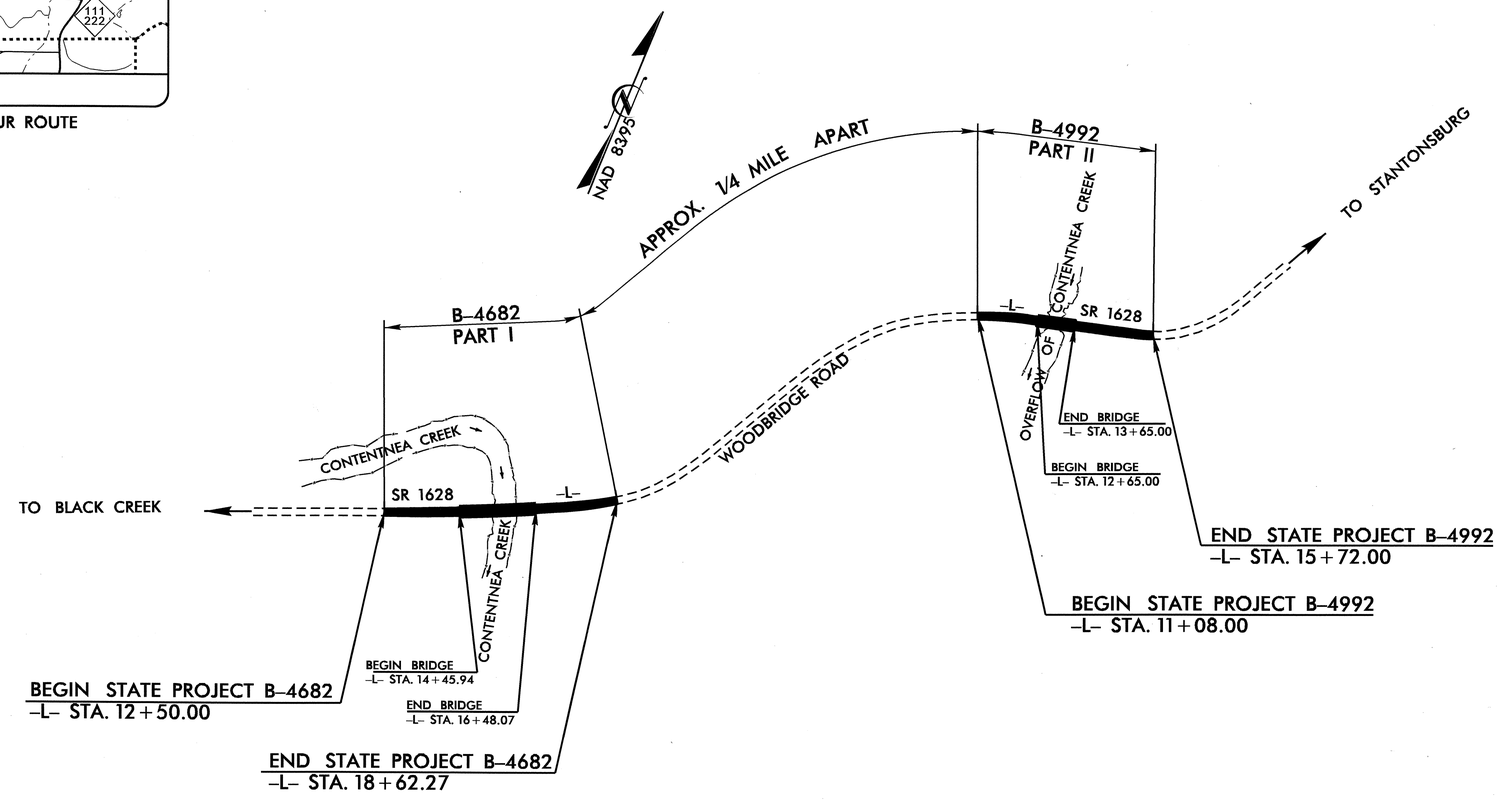
WILSON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4682/B-4992		

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
	B-4682	
33835.1.1	BRSTP-1628(1)	PE
33835.2.1	BRSTP-1628(1)	R/W, UTIL.
33835.3.1	BRSTP-1628(1)	CONST.
	B-4992	
41537.1.1	BRSTP-1628(2)	PE
41537.2.1	BRSTP-1628(2)	R/W, UTIL.
41537.3.1	BRSTP-1628(2)	CONST.

LOCATION: BRIDGE NO. 1 AND NO. 2 ON SR 1628 (WOODBRIDGE ROAD)

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



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DESIGN DATA

ADT 2007 = 550
ADT 2030 = 800
DHV = 10 %
D = 60 %
T = 3 % *
V = 50 MPH

* TTST 1% DUAL 2%
FUNC. CLASS = LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4682 /B-4992 = 0.147 MI

LENGTH STRUCTURE TIP PROJECT B-4682 /B-4992 = 0.057 MI

TOTAL LENGTH TIP PROJECT B-4682 /B-4992 = 0.204 MI

Prepared In the Office of:

DIVISION OF HIGHWAYS

1000 BIRCH RIDGE DR., RALEIGH, NC 27610

2006 STANDARD SPECIFICATIONS

LETTING DATE:
JUNE 15, 2010

B. C. Hunt, P.E.
N. N. Bullock, Jr., P.E.
PROJECT ENGINEER

W. K. Fischer, P.E.
A. K. Paschal, P.E.
PROJECT DESIGN ENGINEER

STRUCTURE DESIGN UNIT

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SIGNATURE:
DIVISION ADMINISTRATOR DATE

F.A.PROJECT NO. BRSTP-1628(1)

14+50 15+00 15+50 16+00 16+50

+1.2500 % ∧ -1.400 %

PI = 15+48.00 -L-
EL. = 71.040
VC = 310'

GRADE DATA

80 70 60 50 40

FILL FACE @ END BENT #1
STA. 14+45.94 -L-
GRADE POINT EL. 69.644

BEGIN FRONT SLOPE
STA. 14+42.07 -L-
GRADE POINT EL. 69.613

APPROXIMATE NATURAL GROUND LINE

1'-6" (TYP.)

1'-0" EARTH BERM NORMAL TO CAP

FIX

1½:1 SLOPE

UNCLASSIFIED STRUCTURE EXCAVATION

FIX FIX

HISTORIC HIGH WATER ELEV. 64.9

EXISTING STRUCTURE

N.W.S. EL. 54.75 (12-06-07)

UNCLASSIFIED STRUCTURE EXCAVATION

FIX FIX

1'-0" EARTH BERM NORMAL TO CAP

1½:1 SLOPE

FIX

FILL FACE @ END BENT #2
STA. 16+48.07 -L-
GRADE POINT EL. 69.510

BEGIN FRONT SLOPE
STA. 16+51.93 -L-
GRADE POINT EL. 69.474

APPROXIMATE NATURAL GROUND LINE

EL. 69.0± EL. 62.0± EL. 69.0± EL. 67.0± EL. 62.0± EL. 60.0± EL. 57.0± EL. 54.0± EL. 53.0± EL. 52.0± EL. 53.0± EL. 61.0± EL. 57.0± EL. 59.0± EL. 62.0± EL. 64.0± EL. 66.0± EL. 70.0± EL. 62.0± EL. 69.0± EL. 69.0±

HP 12 x 53 GALVANIZED STEEL PILES (TYP. AT BENTS)

HP 12 x 53 STEEL PILES (TYP. AT END BENTS)

SPAN A | SPAN B | SPAN C | SPAN D

END BENT #1 | BENT #1 | BENT #2 | BENT #3 | END BENT #2

SECTION ALONG -L-

NAD 83

PI STA. = 15+03.76
Δ = 3°-49'-15.6" (LT)
D = 0°-57'-17.7"
L = 400.13'
T = 200.14'
R = 6,000.00'
SE = 0.02

HORIZONTAL CURVE DATA

CONTENTNEA CREEK

CLASS II RIP RAP

1'-0" EARTH BERM EL. 64.171

2:1 SLOPE

CLASS II RIP RAP

EXISTING STRUCTURE

CLASS II RIP RAP

1'-0" EARTH BERM EL. 64.039

2:1 SLOPE

1½:1 SLOPE NORMAL TO CAP

FILL FACE

BEGIN FRONT SLOPE
STA. 14+42.07 -L-

STA. 14+45.94 -L-
W.P. #1

STA. 14+97.00
W.P. #2 (LONG CHORD)

LONG CHORD

BRIDGE IDENTITY
STA. 15+47.00
W.P. #3 (LONG CHORD)

STA. 16+48.07 -L-
W.P. #5

BEGIN FRONT SLOPE
STA. 16+51.93 -L-

TO SR 1602

TO SR 1613

STA. 14+34.94 -L-
BEGIN APPROACH SLAB

FILL FACE

1½:1 SLOPE NORMAL TO CAP

-L-

90°-00'-00" TO CHORD (TYP.)

STA. 15+97.00
W.P. #4 (LONG CHORD)

STA. 16+59.07 -L-
END APPROACH SLAB

2:1 SLOPE

1'-0" EARTH BERM EL. 64.891

1'-0" EARTH BERM EL. 64.759

2:1 SLOPE

CONTENTNEA CREEK

51'-0¾" | 50'-0" | 50'-0" | 51'-0¾"

TOTAL LENGTH OF BRIDGE = 202'-1½" (FILL FACE TO FILL FACE)

PLAN

PILES NOT SHOWN IN PLAN VIEW FOR CLARITY

NOTE: ALL STATIONING ON THE BRIDGE OCCUR ALONG THE LONG CHORD FROM W.P. #1 TO W.P. #5.

NORTH CAROLINA PROFESSIONAL SEAL 24091 ENGINEER BRUCE CHARLES HUNT
2/24/10

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KEITH FISCHER
2/23/10

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -L-

SHEET 1 OF 3 REPLACES BRIDGE #2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER CONTENTNEA CREEK ON SR 1628 (WOODBRIDGE RD.) BETWEEN SR 1613 & SR 1602

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : R. G. EMERSON DATE : 03/09
CHECKED BY : K. D. LAYNE DATE : 05/09

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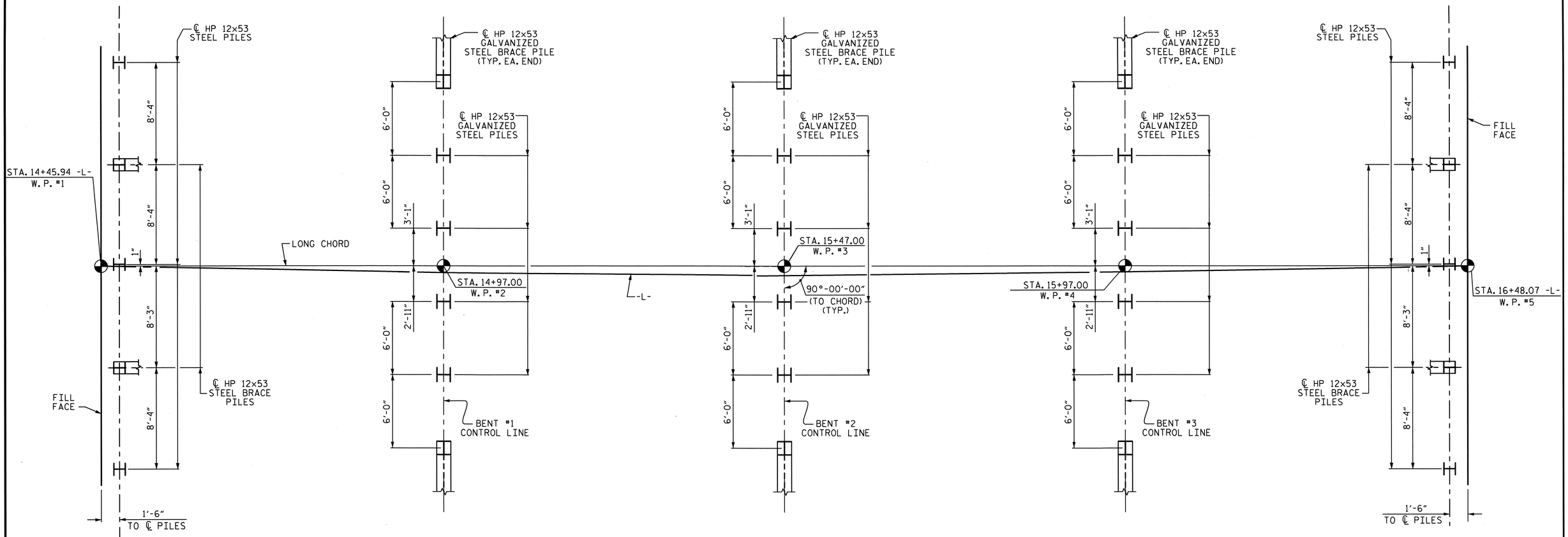

END BENT #1 | BENT #1 | BENT #2 | BENT #3 | END BENT #2

FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE.

BRACE PILES AT END BENTS ARE BATTERED 3:12

BRACE PILES AT INTERIOR BENTS ARE BATTERED $1\frac{1}{2}$: 12

FOUNDATION NOTES

FOR PILES, SEE SPECIAL PROVISIONS.

PILES AT END BENT No. 1 AND END BENT No. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 75 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 125 TONS PER PILE.

PILES AT BENT NO. 1, BENT NO. 2, AND BENT NO. 3 ARE DESIGNED FOR A FACTORED RESISTANCE OF 120 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 200 TONS PER PILE.

INSTALL PILES AT BENT No. 1 TO A TIP ELEVATION NO HIGHER THAN 41.0.

INSTALL PILES AT BENT No. 2 TO A TIP ELEVATION NO HIGHER THAN 32.0.

INSTALL PILES AT BENT No. 3 TO A TIP ELEVATION NO HIGHER THAN 37.0.

SCOUR CRITICAL ELEVATION FOR BENT No. 1 IS ELEVATION 46.0. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURINGTHE LIFE OF THE STRUCTURE.

FOR BENT No. 1, BENT No. 2, AND BENT No. 3, ONLY PARTIAL GALVANIZING IS REQUIRED. SEE INTERIOR BENT SHEETS FOR DETAILS.

SCOUR CRITICAL ELEVATION FOR BENT NO. 2 AND BENT NO. 3 ARE ELEVATION 42.0. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

TESTING PILES WITH THE PILE DRIVING ANALYZER (PDA) DURING DRIVING, RESTRIKING OR REDRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PILE DRIVING ANALYZER, SEE PILE SPECIAL PROVISION.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 25-55 FT.-KIPS PER BLOW, WILL BE REQUIRED TO DRIVE PILES AT END BENT NO. 1 AND END BENT NO. 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH THE PILES PROVISION.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40-70 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT NO. 1, BENT NO. 2, AND BENT NO. 3. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH THE PILES PROVISION.

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER K. KEVIN FISCHER
4/13/10

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER CONTENTNEA CREEK ON SR 1628 (WOODBRIDGE RD.) BETWEEN SR 1613 & SR 1602

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : R. G. EMERSON DATE : 03/09
CHECKED BY : K. D. LAYNE DATE : 05/09

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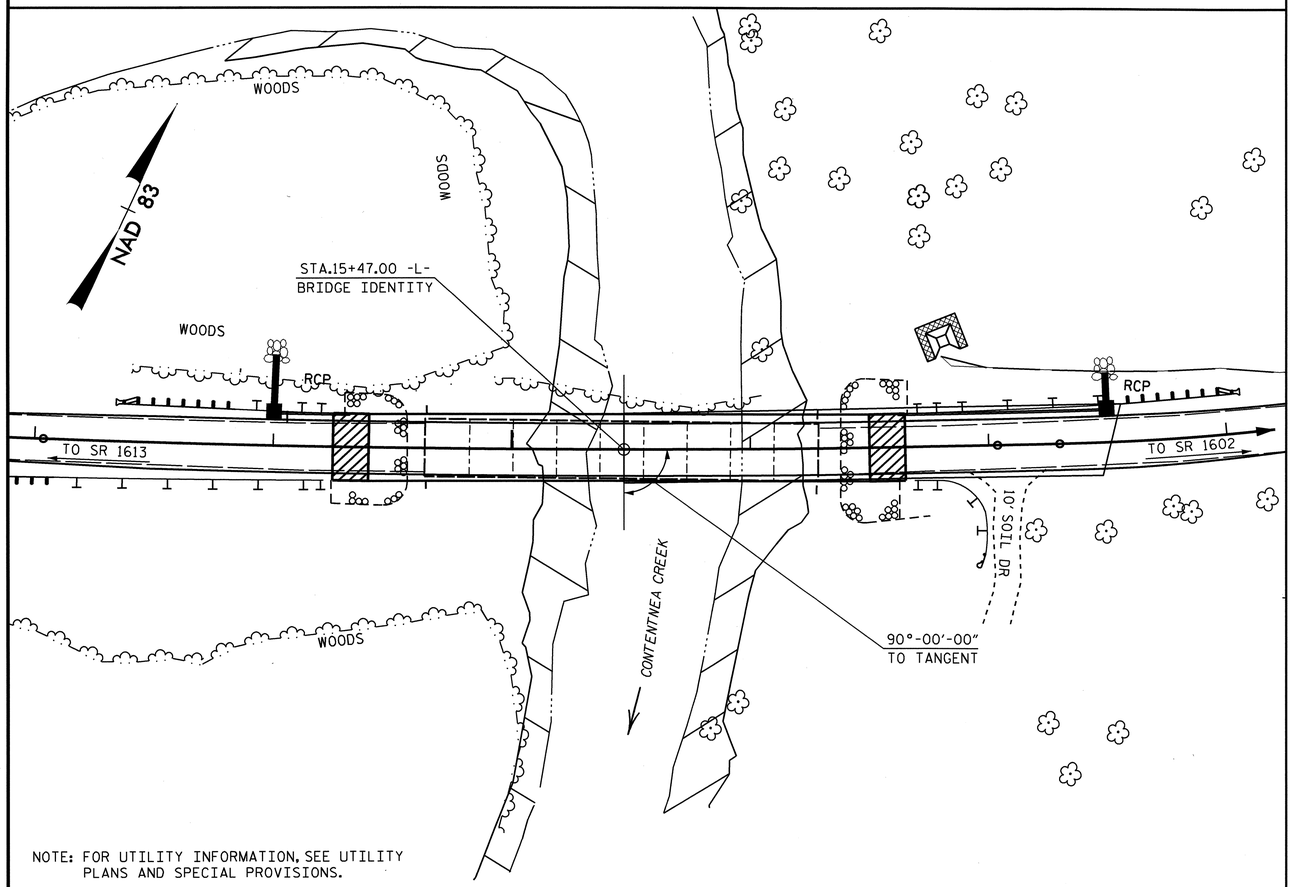
TBM #2: RAILWAY SPIKE IN BASE OF 36"Ø PIN OAK TREE, 61.04' LT. OF STA. 13+65.12 -L-, EL. 69.710



NOTE: FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HL 93 OR ALTERNATE LOADING.

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

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

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

THE EXISTING STRUCTURE CONSISTING OF 9 SPANS @ 18'-3" WITH A REINFORCED CONCRETE DECK ON 12 LINES OF 4 X 12 I-BEAMS @ 2'-2½" CENTERS WITH A CLEAR ROADWAY WIDTH OF 24.0' ON A SUBSTRUCTURE CONSISTING OF: REINFORCED CONCRETE CAPS ON TIMBER PILES @ 7'-6" CENTERS AT ALL LOCATIONS AND LOCATED AT PROPOSED STRUCTURE SITE, SHALL BE REMOVED. FOR REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

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 30.0 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE 412 OF THE STANDARD SPECIFICATIONS.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

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 15+47.00 -L-."

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

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

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CURING CONCRETE, 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.

HYDRAULIC DATA

DESIGN DISCHARGE	7,800 CFS
FREQUENCY OF DESIGN FLOOD	25 YR
DESIGN HIGH WATER ELEVATION	66.200
DRAINAGE AREA	270.4 SQ. MI.
BASIC DISCHARGE (Q100)	11,000 CFS
BASIC HIGH WATER ELEVATION	67.400

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	5,900 CFS
FREQUENCY OF OVERTOPPING FLOOD	10 YR
OVERTOPPING FLOOD ELEVATION	65.100

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	PDA ASSISTANCE	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 x 53 STEEL PILES		HP 12 x 53 GALVANIZED STEEL PILES		PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	
	LUMP SUM	PER EA.	PER EA.	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	PER EA.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE						LUMP SUM							399.75			LUMP SUM	40	1995.0
END BENT #1				LUMP SUM	12.6		1808	5	250			5		280	305			
BENT #1					8.4		1810			6	360	6						
BENT #2					8.4		1810			6	420	6						
BENT #3					8.4		1810			6	390	6						
END BENT #2				LUMP SUM	12.6		1808	5	225			5		260	285			
TOTAL	LUMP SUM	2	2	LUMP SUM	50.4	LUMP SUM	9046	10	475	18	1170	28	399.75	540	590	LUMP SUM	40	1995.0

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KEVIN FISCHER
4/13/10

PROJECT NO. B-4682
WILSON COUNTY
STATION: 15+47.00 -L-
SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER CONTENTNEA CREEK ON SR 1628 (WOODBRIDGE RD.) BETWEEN SR 1613 & SR 1602

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : R. G. EMERSON DATE : 03/09
CHECKED BY : K. D. LAYNE DATE : 05/09

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

LEVEL		VEHICLE	WEIGHT (W) (TONS)	⟨#⟩ CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER
							LIVE-LOAD FACTORS (γ_{LL})	MOMENT					SHEAR						MOMENT					
								DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93 (INVENTORY)	N/A	⟨1⟩	1.06	--	1.75	0.277	1.06	A-D	ER	24.438	0.531	1.09	A-D	ER	4.888	0.80	0.277	1.41	A-D	ER	24.438	1
		HL-93 (OPERATING)	N/A		1.38	--	1.35	0.277	1.38	A-D	ER	24.438	0.531	1.42	A-D	ER	4.888	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	⟨2⟩	1.12	40.320	1.80	0.277	1.28	A-D	ER	24.438	0.531	1.27	A-D	ER	4.888	1.00	0.277	1.12	A-D	ER	24.438	1
		HS-20 (OPERATING)	36.000		1.69	60.840	1.35	0.277	1.71	A-D	ER	24.438	0.531	1.69	A-D	ER	4.888	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		2.86	38.644	1.40	0.277	3.35	A-D	ER	24.438	0.531	3.64	A-D	ER	4.888	0.80	0.277	2.86	A-D	ER	24.438	1
		SNGARBS2	20.000		2.26	45.250	1.40	0.277	2.65	A-D	ER	24.438	0.531	2.66	A-D	ER	4.888	0.80	0.277	2.26	A-D	ER	24.438	1
		SNAGRIS2	22.000		2.20	48.400	1.40	0.277	2.58	A-D	ER	24.438	0.531	2.50	A-D	ER	4.888	0.80	0.277	2.20	A-D	ER	24.438	1
		SNCOTTS3	27.250		1.43	38.831	1.40	0.277	1.67	A-D	ER	24.438	0.531	1.82	A-D	ER	4.888	0.80	0.277	1.43	A-D	ER	24.438	1
		SNAGGRS4	34.925		1.24	43.220	1.40	0.277	1.45	A-D	ER	24.438	0.531	1.56	A-D	ER	4.888	0.80	0.277	1.24	A-D	ER	24.438	1
		SNS5A	35.550		1.21	43.104	1.40	0.277	1.42	A-D	ER	24.438	0.531	1.61	A-D	ER	4.888	0.80	0.277	1.21	A-D	ER	24.438	1
		SNS6A	39.950		1.13	44.944	1.40	0.277	1.33	A-D	ER	24.438	0.531	1.49	A-D	ER	4.888	0.80	0.277	1.13	A-D	ER	24.438	1
		SNS7B	42.000	⟨3⟩	1.08	45.150	1.40	0.277	1.26	A-D	ER	24.438	0.531	1.50	A-D	ER	4.888	0.80	0.277	1.08	A-D	ER	24.438	1 & 2
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.39	45.788	1.40	0.277	1.62	A-D	ER	24.438	0.531	1.76	A-D	ER	4.888	0.80	0.277	1.39	A-D	ER	24.438	1
		TNT4A	33.075		1.40	46.305	1.40	0.277	1.64	A-D	ER	24.438	0.531	1.69	A-D	ER	4.888	0.80	0.277	1.40	A-D	ER	24.438	1
		TNT6A	41.600		1.16	48.360	1.40	0.277	1.37	A-D	ER	24.438	0.531	1.64	A-D	ER	4.888	0.80	0.277	1.16	A-D	ER	24.438	1
		TNT7A	42.000		1.19	49.875	1.40	0.277	1.39	A-D	ER	24.438	0.531	1.52	A-D	ER	4.888	0.80	0.277	1.19	A-D	ER	24.438	1
		TNT7B	42.000		1.24	51.975	1.40	0.277	1.44	A-D	ER	24.438	0.531	1.44	A-D	ER	4.888	0.80	0.277	1.24	A-D	ER	24.438	1
		TNAGRIT4	43.000		1.18	50.525	1.40	0.277	1.37	A-D	ER	24.438	0.531	1.39	A-D	ER	4.888	0.80	0.277	1.18	A-D	ER	24.438	1
		TNAGT5A	45.000		1.09	48.938	1.40	0.277	1.28	A-D	ER	24.438	0.531	1.41	A-D	ER	4.888	0.80	0.277	1.09	A-D	ER	24.438	1
		TNAGT5B	45.000	⟨3⟩	1.08	48.375	1.40	0.277	1.25	A-D	ER	24.438	0.531	1.32	A-D	ER	4.888	0.80	0.277	1.08	A-D	ER	24.438	1 & 2

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

	YEAR	ADTT
CURRENT	2007	17
FUTURE	2030	24

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

1. ALL SPANS ARE EQUAL.
2. MINIMUM LEGAL LOAD RATING FACTOR IS SHOWN FOR SPAN A WITH SPANS B, C AND D EQUAL TO SPAN A.
3.
4.

⟨#⟩ CONTROLLING LOAD RATING

⟨1⟩ DESIGN LOAD RATING (HL-93)

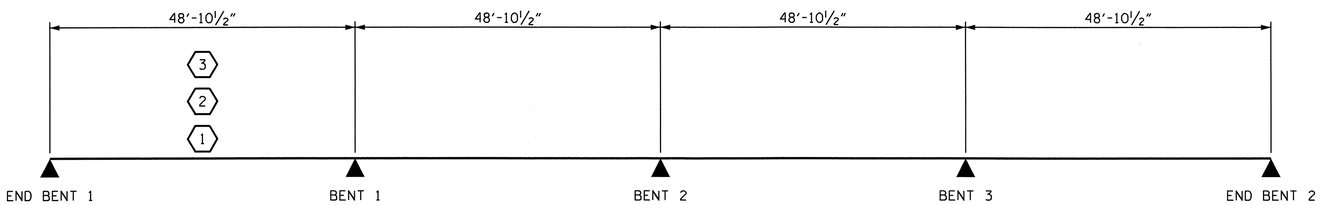
⟨2⟩ DESIGN LOAD RATING (HS-20)

⟨3⟩ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. B-4682
WILSON COUNTY
STATION: 15+47.00 -L-POC

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR PRESTRESSED CONCRETE GIRDERS
(NON-INTERSTATE TRAFFIC)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KEVIN PATTERSON
2/23/10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			40

STD. NO. LRFR1

ASSEMBLED BY : HA LOCKLEAR DATE : 9-09
CHECKED BY : TR PETERSON DATE : 9-09
DRAWN BY : MAA 1/08
CHECKED BY : GM/DI 2/08
REV. 11/12/08RR MAA/GM

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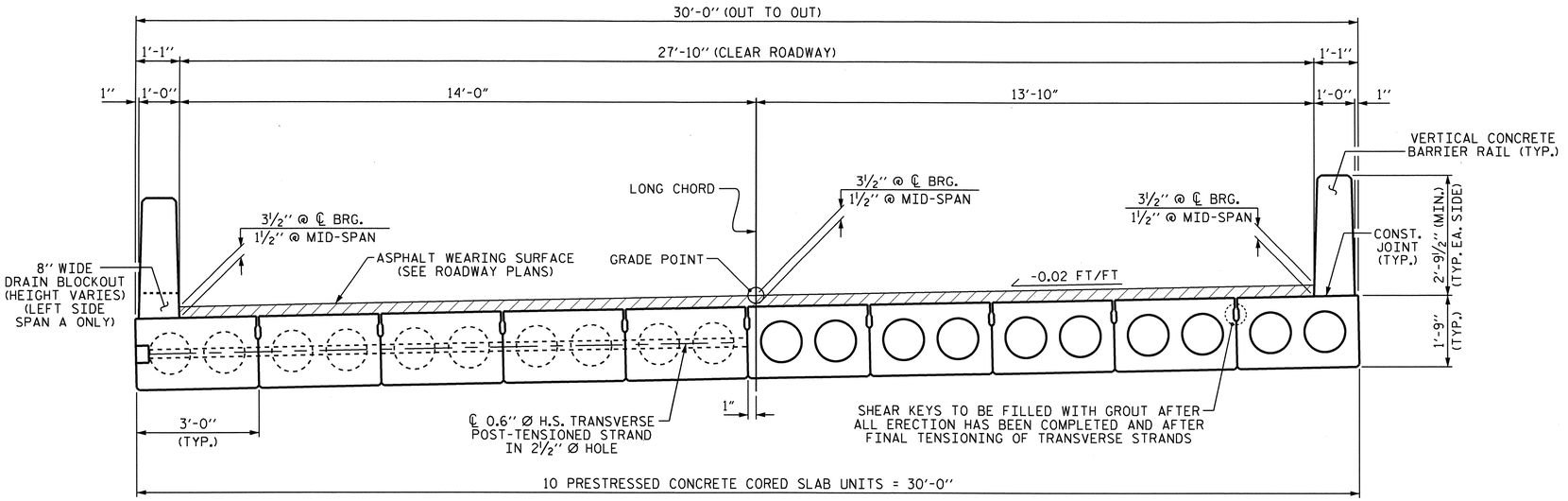
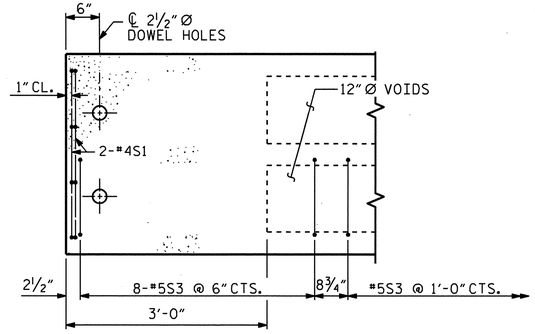
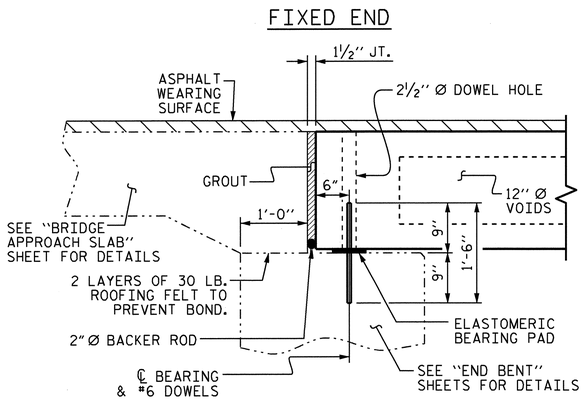


TYPICAL SECTION

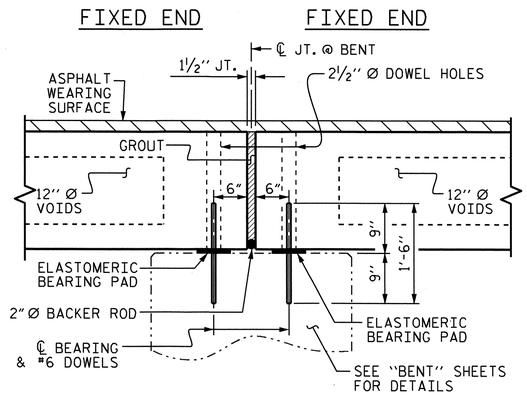


PART PLAN-EXTERIOR SECTION

EXTERIOR SECTION SHOWN-INTERIOR SECTION SIMILAR EXCEPT OMIT #5S3 BARS.



SECTION AT END BENT



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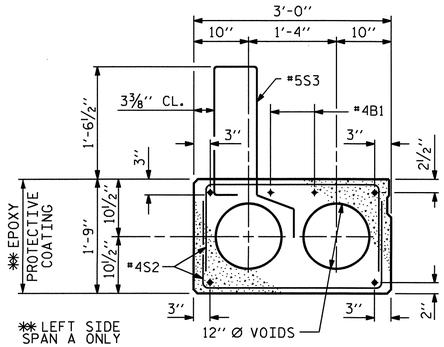
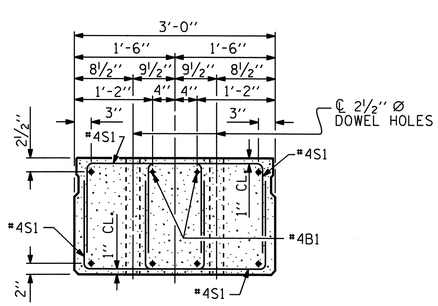


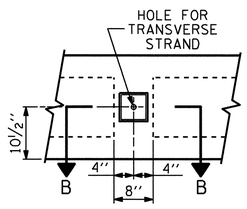
EXTERIOR SLAB SECTION

FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.

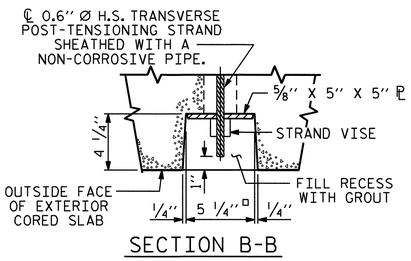


END ELEVATION

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

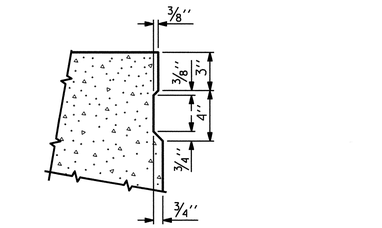


ELEVATION VIEW



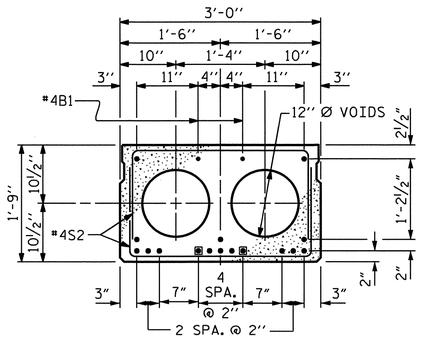
SECTION B-B

GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS



SHEAR KEY DETAIL

OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.



INTERIOR SLAB SECTION

(16 STRANDS)

0.6" Ø LOW RELAXATION STRAND LAYOUT

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

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER M. KEITH FISCHER
4/13/10

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			40

ASSEMBLED BY : J.P. ADAMS	DATE : 8/18/08
CHECKED BY : M.K. BEARD	DATE : 8/29/08
DRAWN BY : WJH 4/89	REV. 10/17/00 RWW/LES
CHECKED BY : FCJ 5/89	REV. 7/10/01RR RWW/LES
	REV. 5/1/06 TLA/GM

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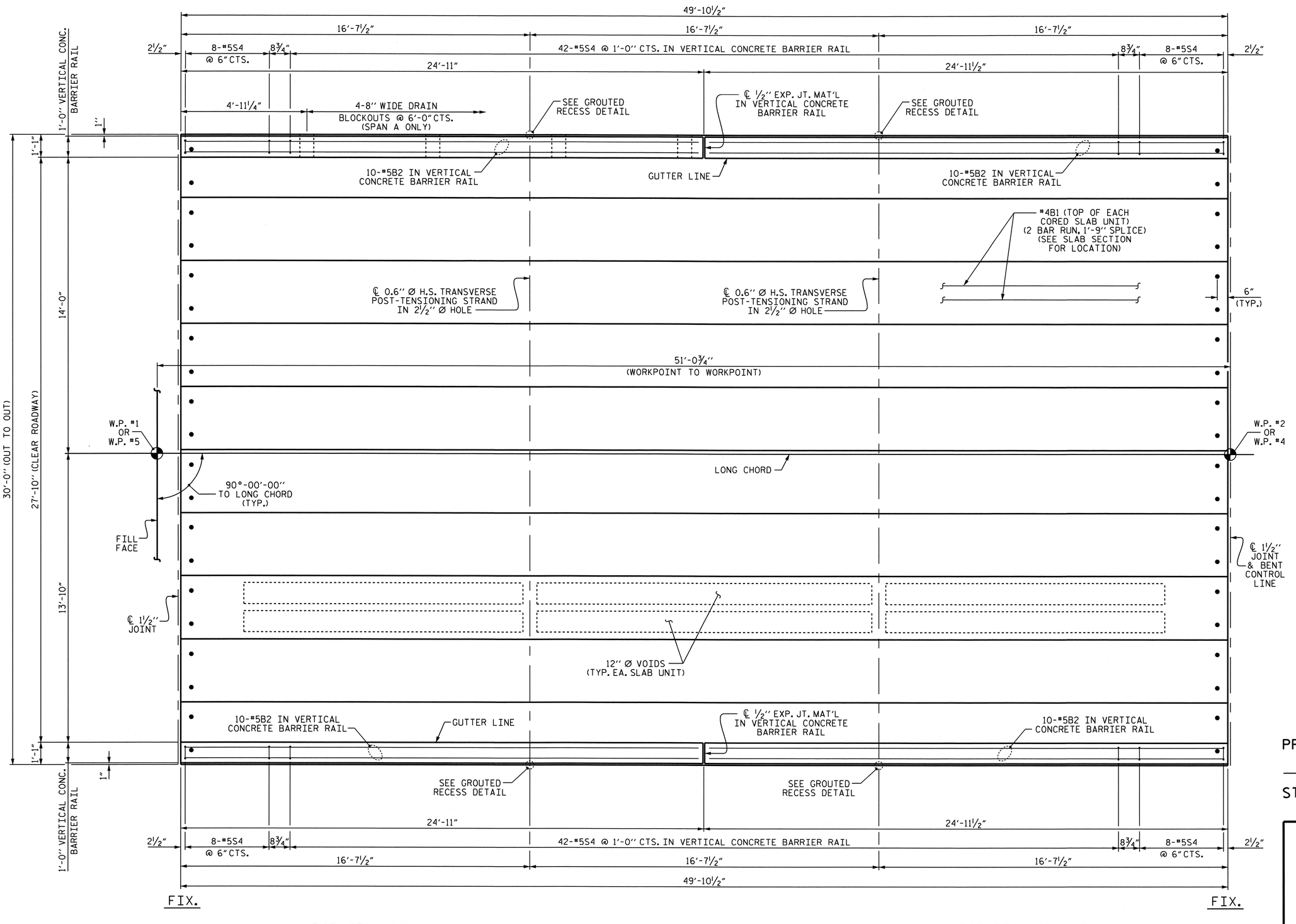
STD. NO. PCS2



NO DRAINAGE SLOTS ARE REQUIRED FOR SPAN D

UPSTATION SPAN A

UPSTATION SPAN D

SPAN A OR SPAN D

SPAN A SHOWN, SPAN D SIMILAR
EXCEPT OMIT DRAINAGE SLOTS

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KEVIN BEARD
2/23/10

PROJECT NO. B-4682
WILSON COUNTY
STATION: 15+47.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN
(SPAN A OR SPAN D)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : J.P. ADAMS DATE : 8/19/08
CHECKED BY : M.K. BEARD DATE : 8/29/08

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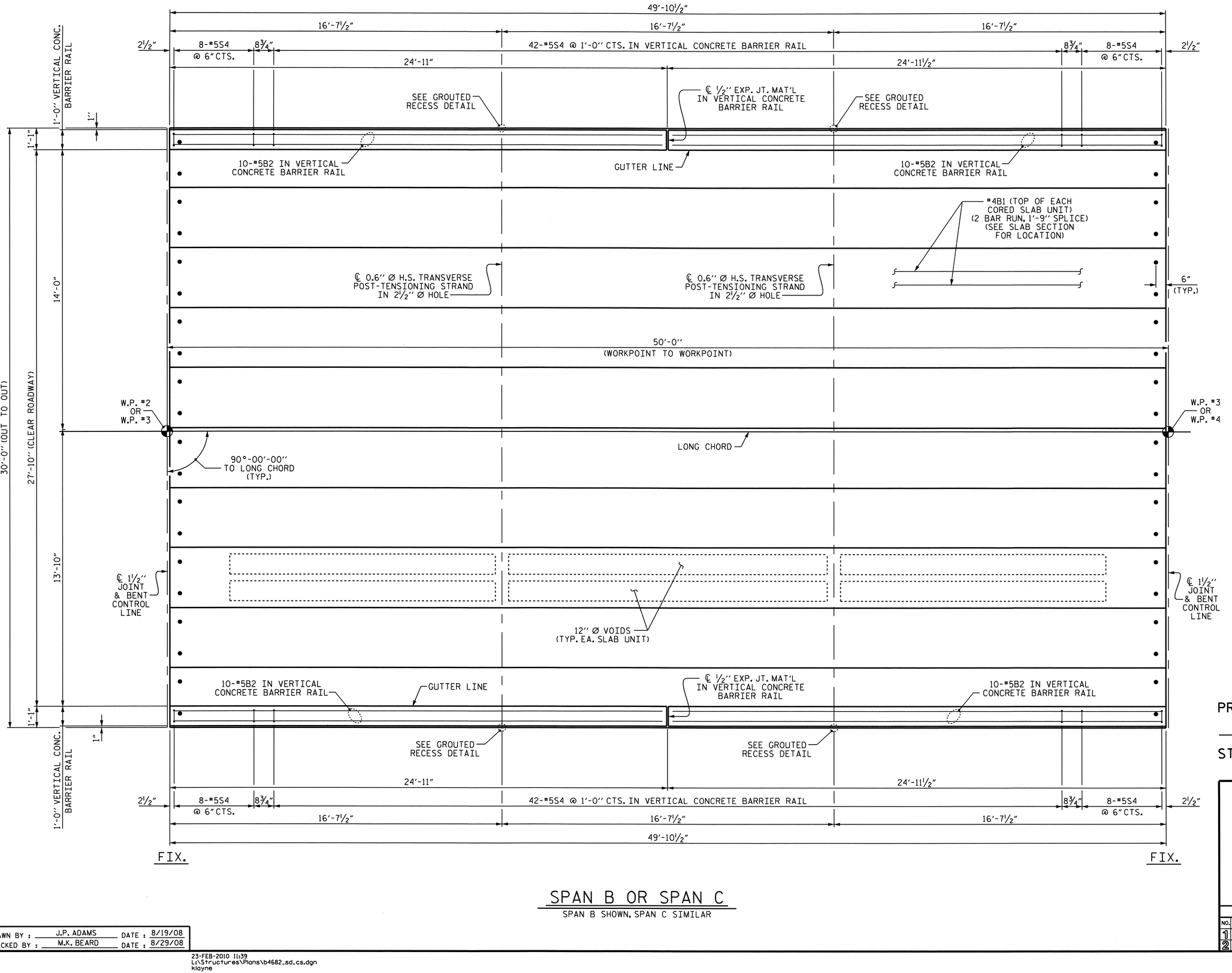

SPAN B OR SPAN C

SPAN B SHOWN, SPAN C SIMILAR

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. MARK BEARD
2/23/10

PROJECT NO. B-4682
WILSON COUNTY
STATION: 15+47.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN

(SPAN B OR SPAN C)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : J.P. ADAMS DATE : 8/19/08
CHECKED BY : M.K. BEARD DATE : 8/29/08

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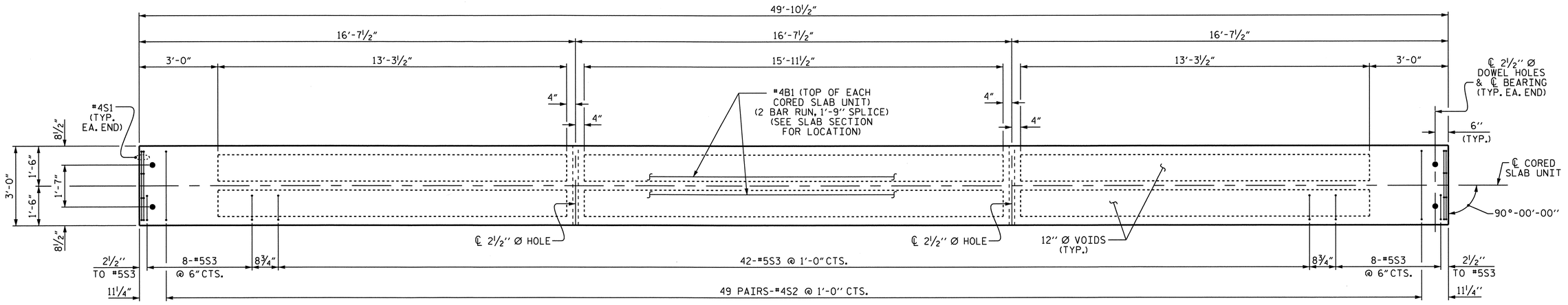

PLAN OF CORED SLAB UNIT

EXTERIOR SLAB UNIT SHOWN, INTERIOR SIMILAR EXCEPT OMIT *5S3 BARS.
FOR *4S1 BARS, SEE PART PLAN-EXTERIOR SECTION.

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -L-

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KEVIN FISCHER

2/23/10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF CORED SLAB UNIT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : J.P. ADAMS DATE : 8/19/08
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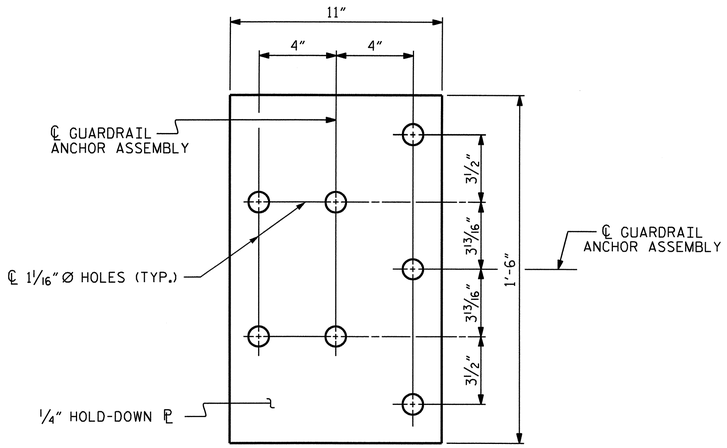
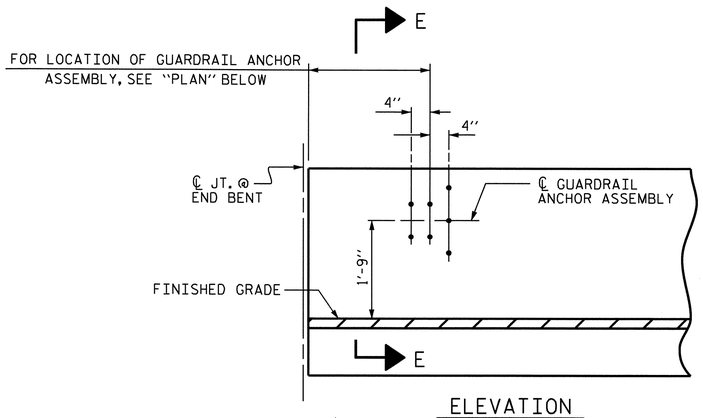


PLAN



ELEVATION

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 7/8" Ø BOLTS WITH NUTS AND WASHERS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

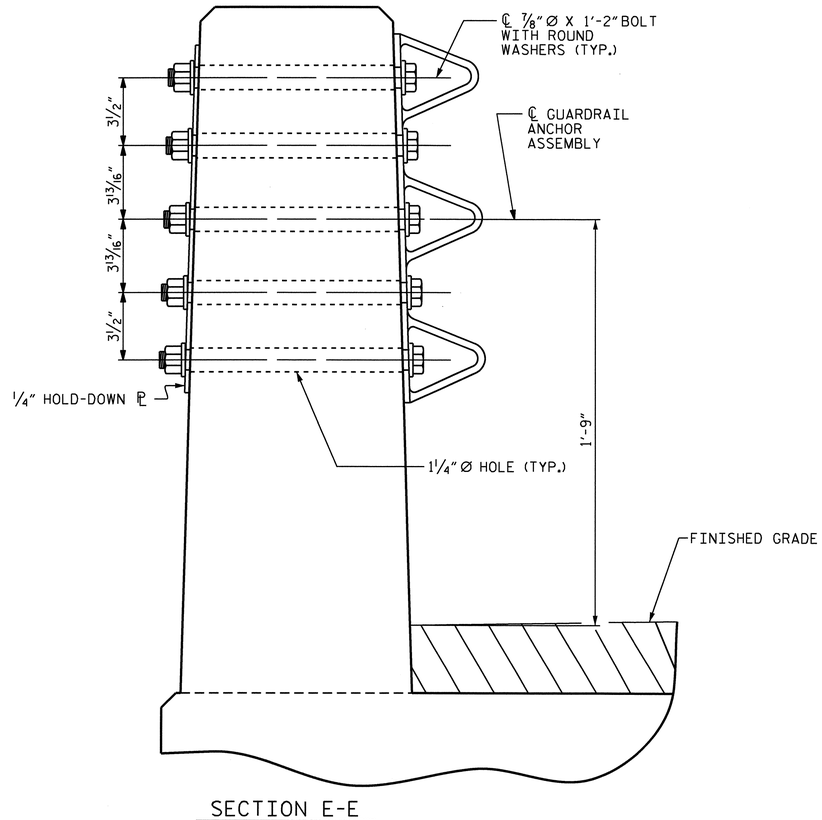
BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS.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

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

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

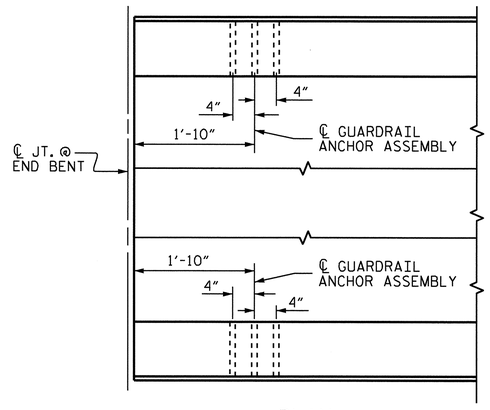
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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



SECTION E-E

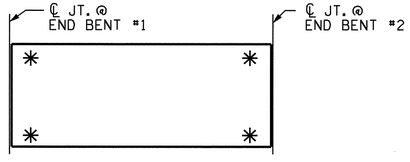
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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



SKETCH SHOWING POINTS OF ATTACHMENTS

✳ DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -L-

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KEITH FISCHER
2/23/10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
GUARDRAIL ANCHORAGE FOR VERTICAL CONCRETE BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			40

ASSEMBLED BY : J.P. ADAMS	DATE : 8/18/08
CHECKED BY : M.K. BEARD	DATE : 8/29/08
DRAWN BY : MAA 12/06	ADDED 12/15/06
CHECKED BY : GM 12/06	

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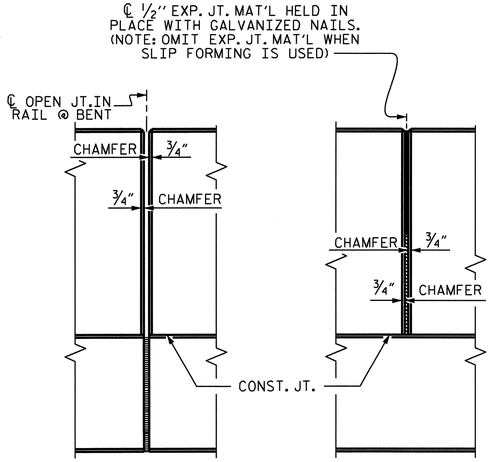
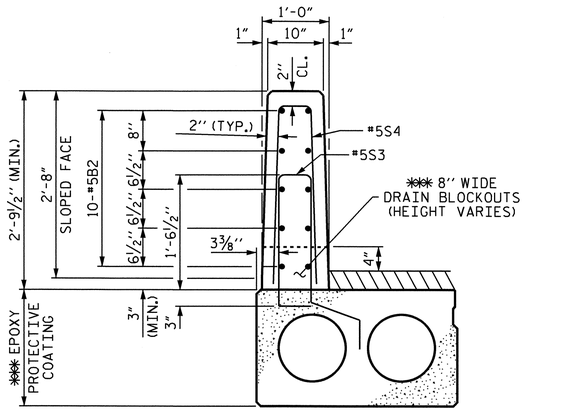


ELEVATION AT EXPANSION JOINTS



SECTION THRU RAIL

FIELD CUT BOTTOM "B" BARS TO CLEAR DRAINAGE SLOTS. DRAINAGE SLOTS MAY BE SHIFTED AS NECESSARY TO CLEAR S3 BARS IN CORED SLAB UNITS.

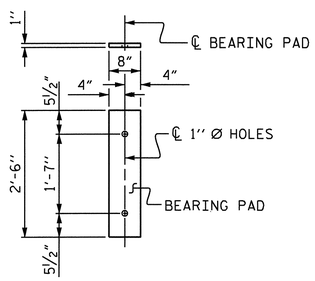
✱✱✱ LEFT SIDE OF SPAN A ONLY

VERTICAL CONCRETE BARRIER RAIL DETAILS

DEAD LOAD DEFLECTION AND CAMBER

	SPAN A THRU SPAN D 0.6" Ø L.R. STRANDS
CAMBER (SLAB ALONE IN PLACE)	2 1/16" ↑
✱✱ DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD	5/16" ↓
FINAL CAMBER	1 3/4" ↑

✱✱ INCLUDES FUTURE WEARING SURFACE



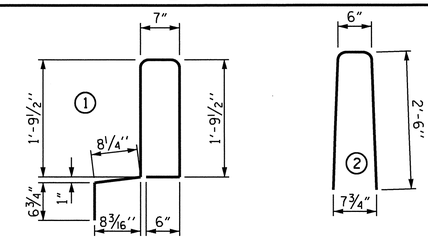
FIXED
(80 REQ'D.)

ELASTOMERIC BEARING DETAILS

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
✱ B2	160	#5	STR	24'-6"	4089
✱ S4	464	#5	2	5'-6"	2662
✱ EPOXY COATED REINFORCING STEEL					6751 LBS.
CLASS AA CONCRETE					40.20 CU.YDS.
TOTAL LIN. FT. OF VERTICAL CONCRETE BARRIER RAIL					399.75 LIN. FT.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR ONE CORED SLAB UNIT (TYPICAL FOR EACH SPAN)

SPAN A THRU SPAN D				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B1	4	#4	STR	25'-8"	69	25'-8"	69
S1	8	#4	3	4'-3"	23	4'-3"	23
S2	98	#4	3	5'-4"	349	5'-4"	349
✱ S3	58	#5	1	5'-11"	358	----	----
REINFORCING STEEL					441 LBS.		441 LBS.
✱ EPOXY COATED REINFORCING STEEL					358 LBS.		----
5000 P.S.I. CONCRETE					7.0 CU. YDS.		7.0 CU. YDS.
0.6" Ø L.R. STRANDS					No. 16		No. 16

CORED SLABS REQUIRED

SPAN A	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	49'-10½"	99.75
INTERIOR C.S.	8	49'-10½"	399.00
TOTAL	10		498.75
SPAN B	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	49'-10½"	99.75
INTERIOR C.S.	8	49'-10½"	399.00
TOTAL	10		498.75
SPAN C	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	49'-10½"	99.75
INTERIOR C.S.	8	49'-10½"	399.00
TOTAL	10		498.75
SPAN D	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	49'-10½"	99.75
INTERIOR C.S.	8	49'-10½"	399.00
TOTAL	10		498.75
TOTAL LENGTH (SPANS A, B, C & D)			1995.00

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

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

THE 2½" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

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

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

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

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

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS. APPLY EPOXY PROTECTIVE COATING TO OUTSIDE FACE OF EXTERIOR CORED SLAB UNITS IN SPAN A ON LEFT SIDE ONLY.

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.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR VERTICAL CONCRETE BARRIER RAIL, SEE SPECIAL PROVISIONS.

THE MINIMUM HEIGHT OF THE BARRIER RAIL IS SHOWN, THE HEIGHT OF THE BARRIER RAIL VARIES WHILE THE TOP OF THE RAIL FOLLOWS THE PROFILE OF THE GUTTER LINE.

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

GRADE 270 STRANDS

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

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			40

STD. NO. PCS3

ASSEMBLED BY : J.P. ADAMS	DATE : 8/18/08
CHECKED BY : M.K. BEARD	DATE : 8/29/08
DRAWN BY : WJH 4/89	REV. 7/10/01 RWW/LES
CHECKED BY : FCJ 5/89	REV. 5/1/03RRR RWW/JTE
	REV. 5/1/06 TLA/GM

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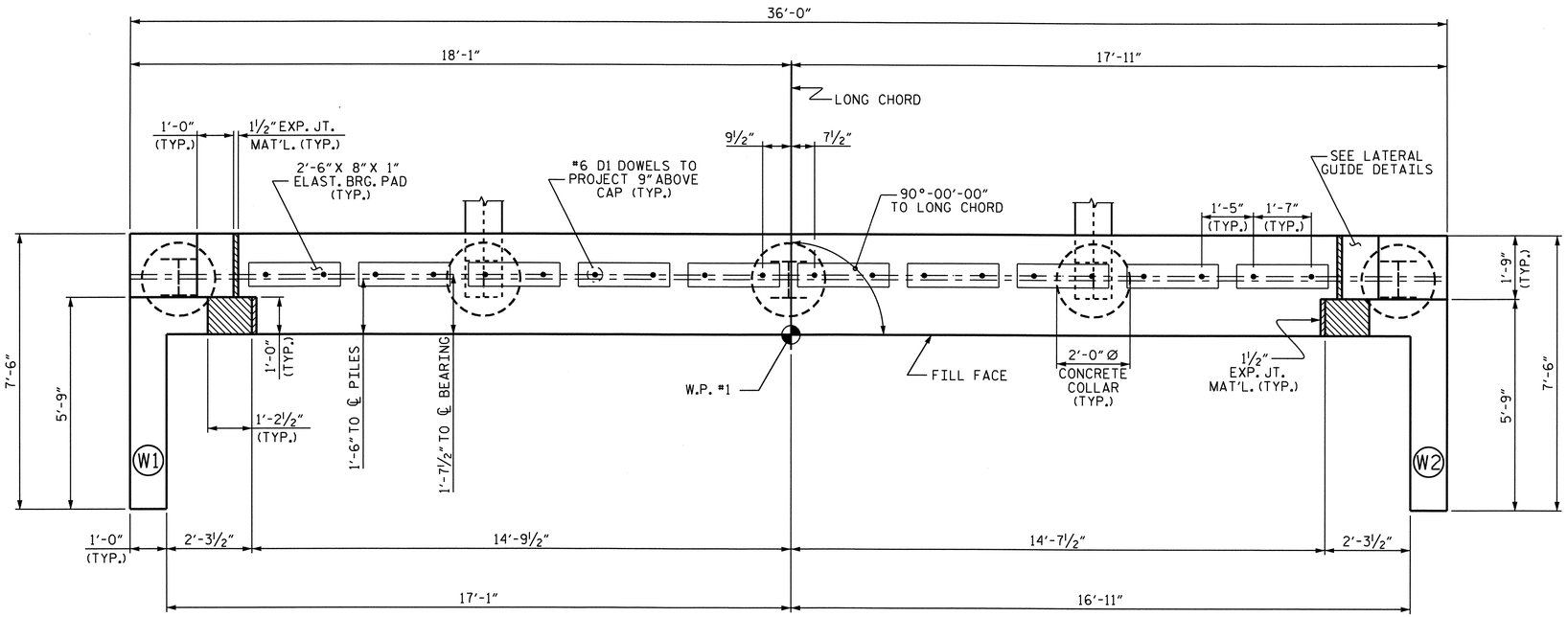
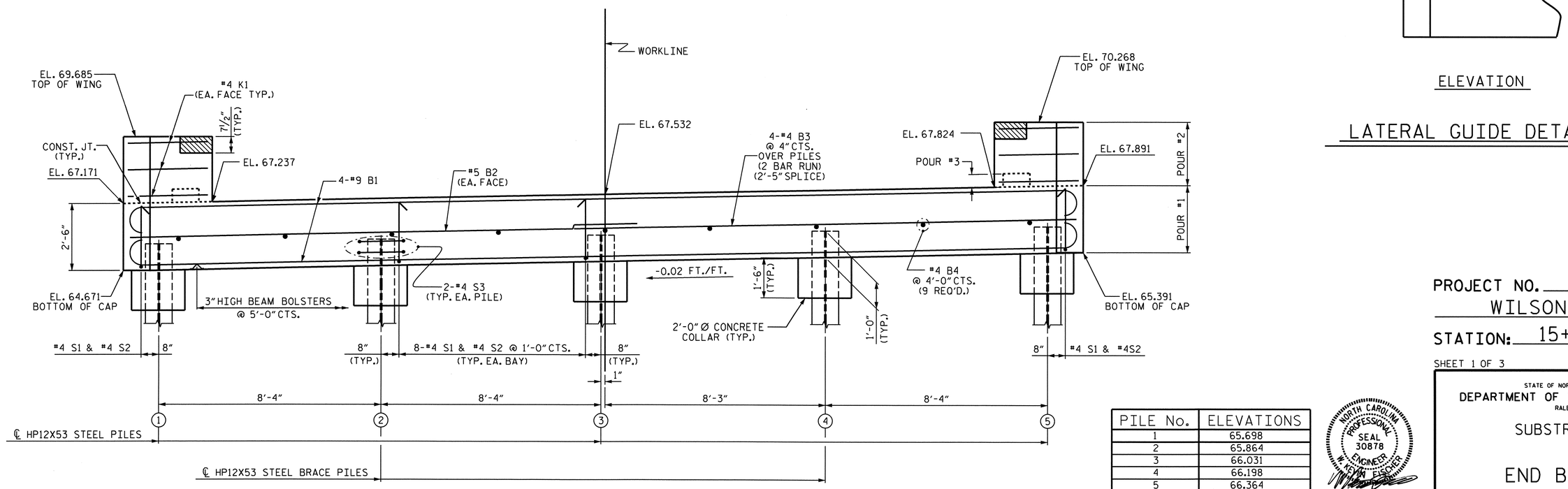
klayne



PLAN



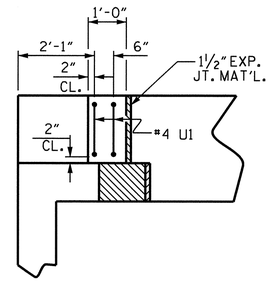
ELEVATION

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.

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



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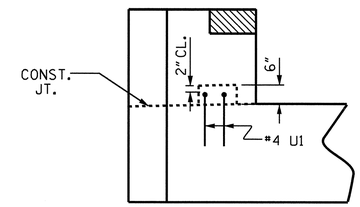

ELEVATION

LATERAL GUIDE DETAILS

PILE No.	ELEVATIONS
1	65.698
2	65.864
3	66.031
4	66.198
5	66.364

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KEVIN FISCHER
4/13/10

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT #1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : R. G. EMERSON DATE : 04/09
CHECKED BY : K. D. LAYNE DATE : 05/09

24-FEB-2010 07:53
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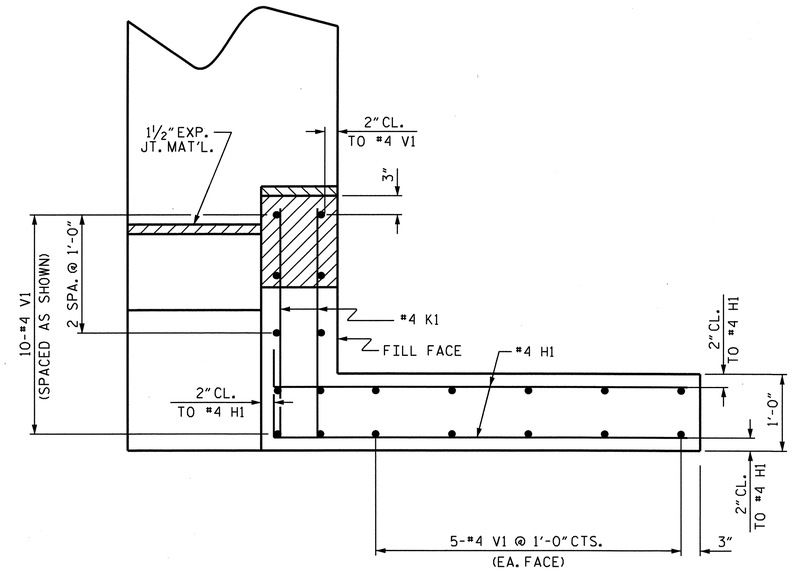
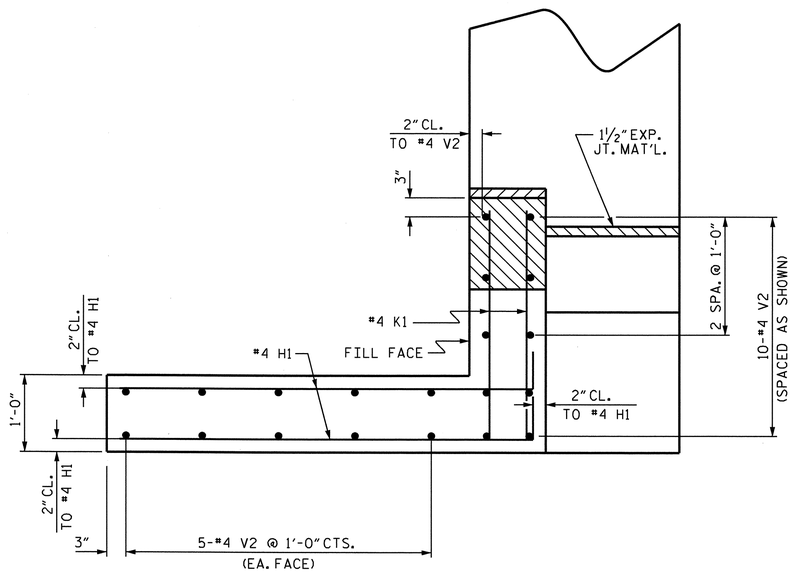
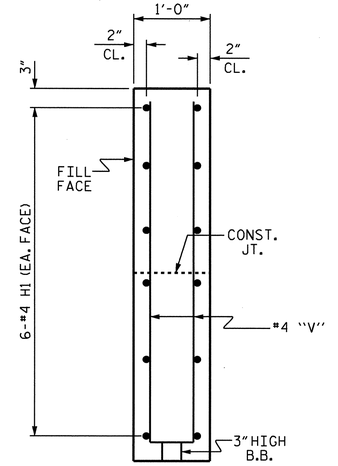
remerson



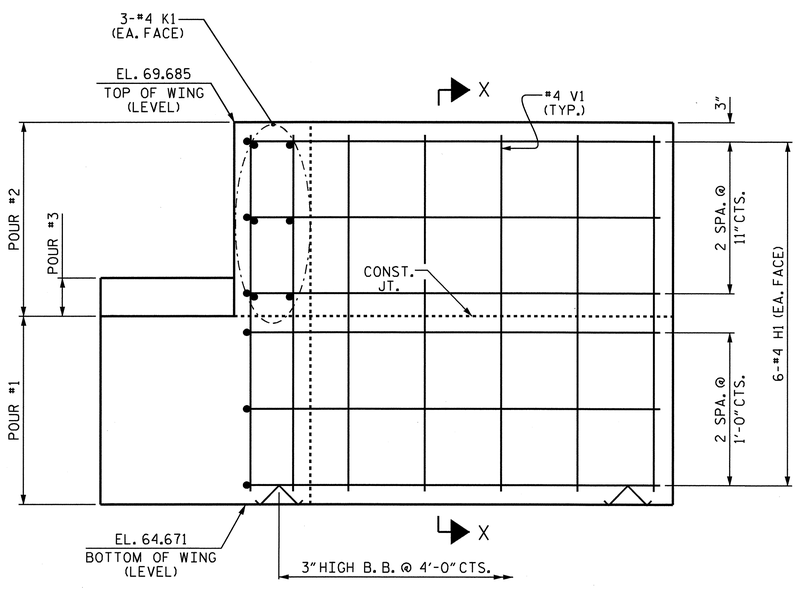
PLAN OF WING-W1



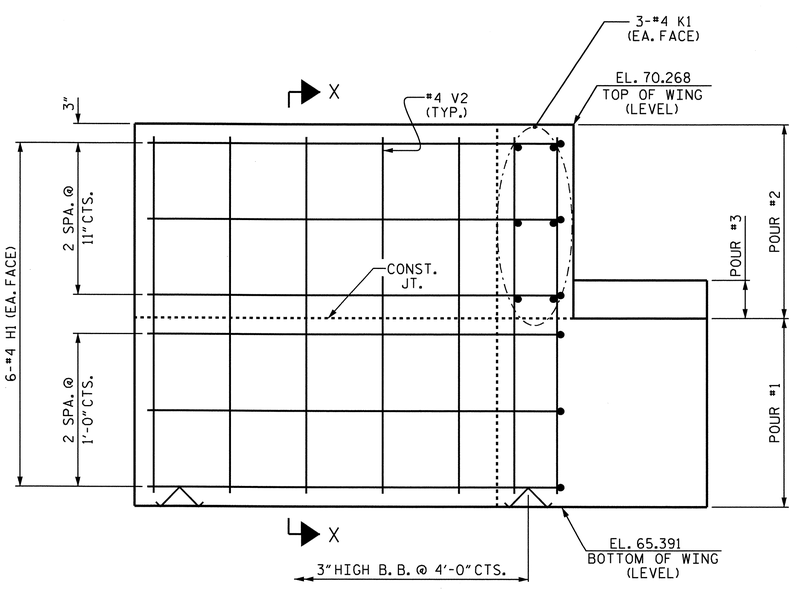
PLAN OF WING-W2



SECTION X-X



ELEVATION OF WING-W1



ELEVATION OF WING-W2

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT #1

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KEVIN PASCHER
4/13/10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : R. G. EMERSON DATE : 04/09
CHECKED BY : K. D. LAYNE DATE : 05/09

13-APR-2010 10:46
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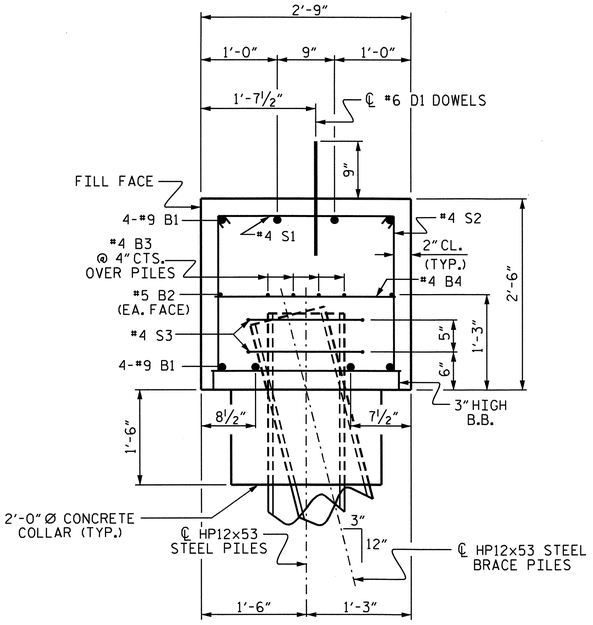
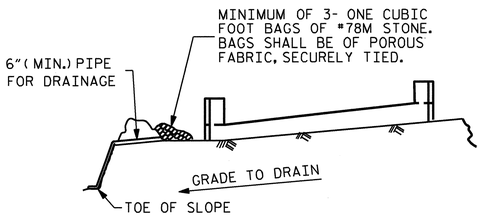
remerson



SECTION THRU CAP

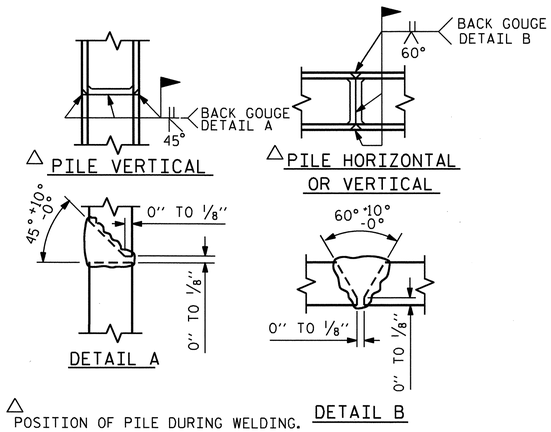


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

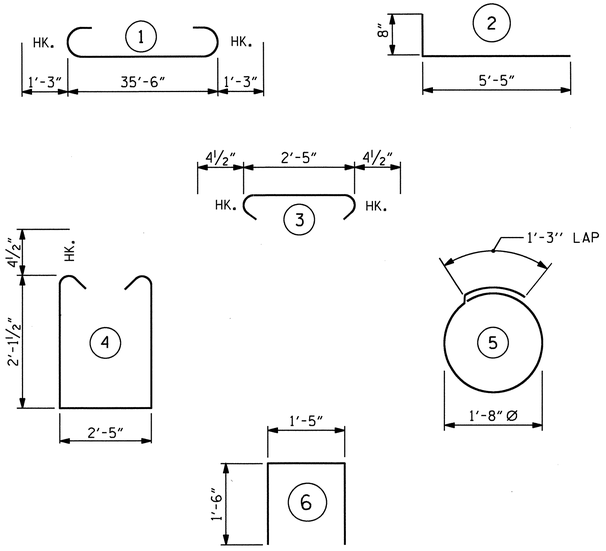
TEMPORARY DRAINAGE AT END BENT



△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	38'-0"	1034
B2	2	#5	STR.	35'-8"	74
B3	8	#4	STR.	19'-1"	102
B4	9	#4	STR.	2'-5"	15
D1	20	#6	STR.	1'-6"	45
H1	24	#4	2	6'-1"	98
K1	12	#4	STR.	2'-11"	23
S1	34	#4	3	3'-2"	72
S2	34	#4	4	7'-5"	168
S3	10	#4	5	6'-6"	43
U1	4	#4	6	4'-5"	12
V1	20	#4	STR.	4'-8"	62
V2	20	#4	STR.	4'-6"	60
REINFORCING STEEL					1808

CLASS "A" CONCRETE BREAKDOWN

POUR #1 CAP, LOWER WINGS & COLLAR	11.0
POUR #2 UPPER WINGS	1.5
POUR #3 LATERAL GUIDES	0.1
CLASS "A" CONCRETE TOTAL	12.6

HP 12X53 STEEL PILES

No. 5 250 LIN. FT.

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT #1

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KENNY FISCHER
4/13/10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : R. G. EMERSON DATE : 04/09
CHECKED BY : K. D. LAYNE DATE : 05/09

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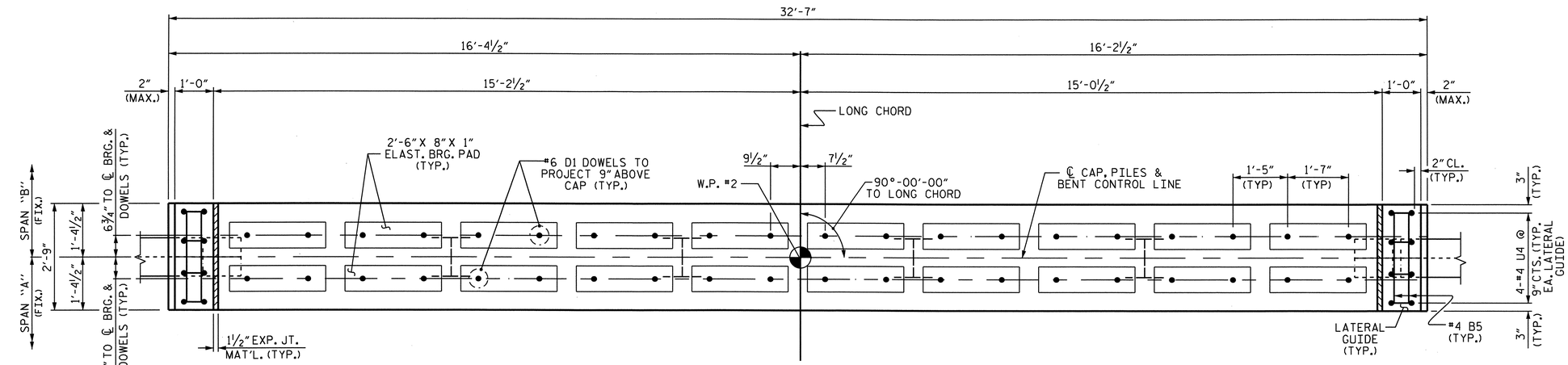
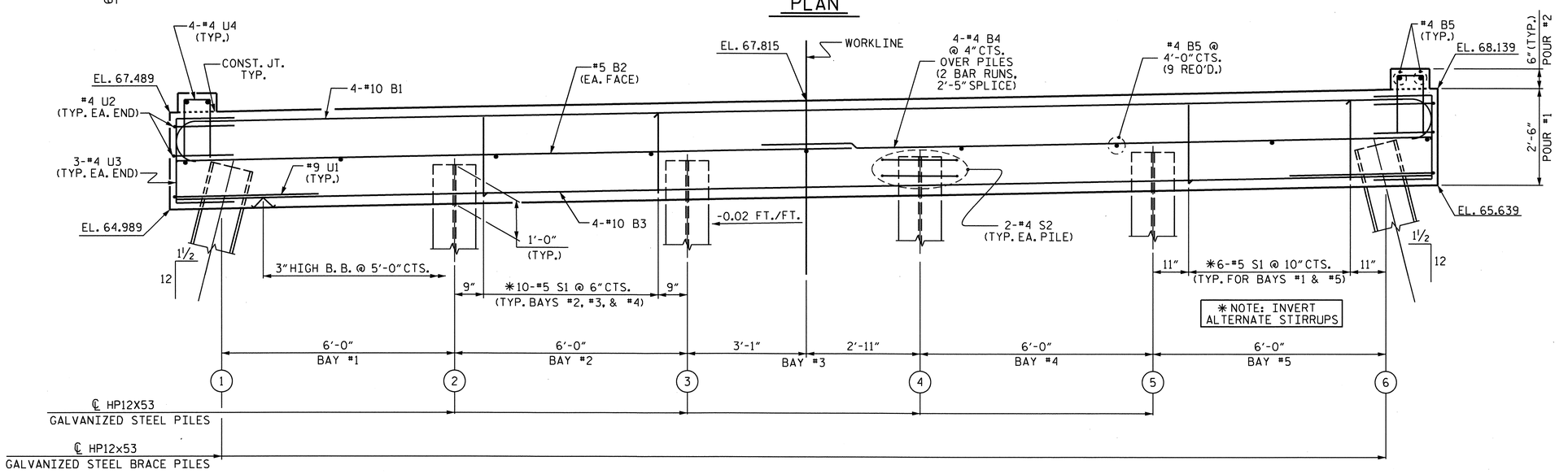
remerson



PLAN



BILL OF MATERIAL

BENT #1

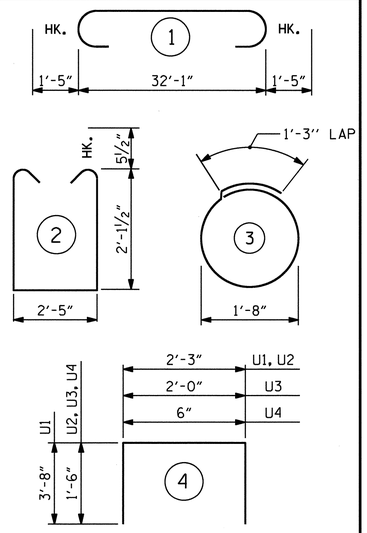
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	34'-11"	601
B2	2	#5	STR.	32'-3"	67
B3	4	#10	STR.	32'-3"	555
B4	8	#4	STR.	17'-5"	93
B5	13	#4	STR.	2'-5"	21
D1	40	#6	STR.	1'-6"	90
S1	42	#4	2	7'-7"	213
S2	12	#4	3	6'-6"	52
U1	2	#9	4	9'-7"	65
U2	4	#4	4	5'-3"	14
U3	6	#4	4	5'-0"	20
U4	8	#4	4	3'-6"	19
REINFORCING STEEL -TOTAL-					1810

CLASS "A" CONCRETE

POUR #1 CAP	8.3
POUR #2 LATERAL GUIDES	0.1
TOTAL	8.4

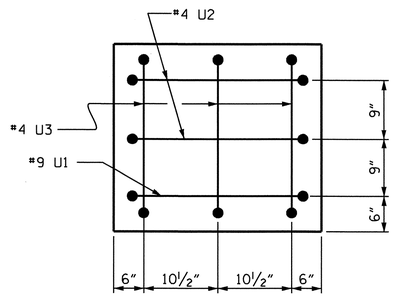
HP 12X53 GALVANIZED STEEL PILES No. 6 LIN. FT. 360

BAR TYPES

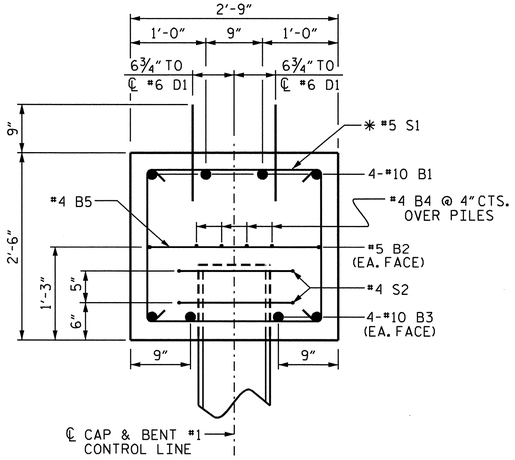


ALL BAR DIMENSIONS ARE OUT TO OUT.

ELEVATION



END VIEW



SECTION THRU CAP

NOTES

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

FOR PILE SPLICE DETAILS, SEE END BENT #1.

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

GALVANIZE THE TOP 26 FEET OF INTERIOR BENT PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

TOP OF PILE ELEVATIONS	
1	66.016
2	66.136
3	66.256
4	66.376
5	66.496
6	66.616

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -L-

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. MARVIN FISCHER

4/13/10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : R. G. EMERSON DATE : 04/09
CHECKED BY : K. D. LAYNE DATE : 05/09

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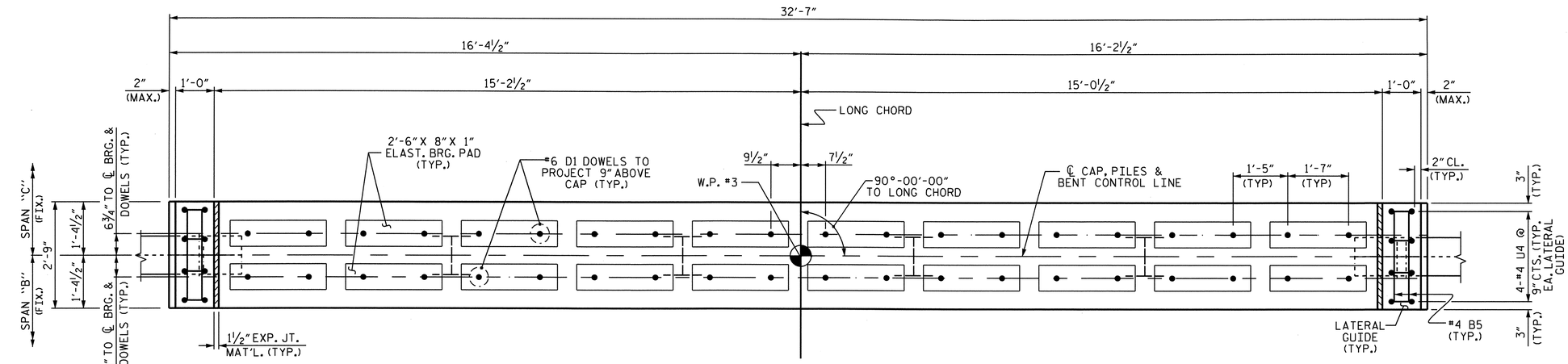
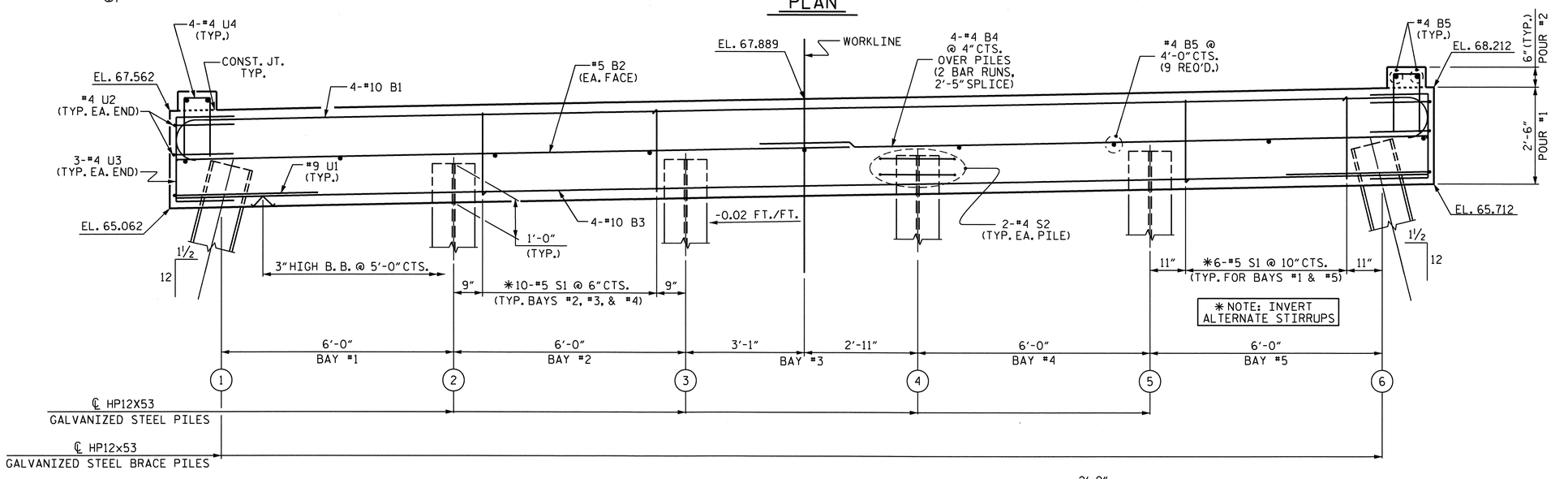
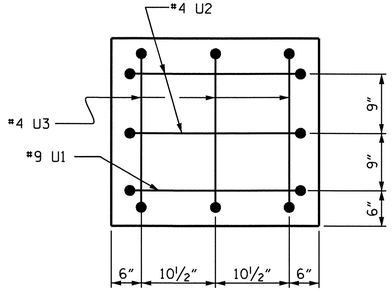
remerson



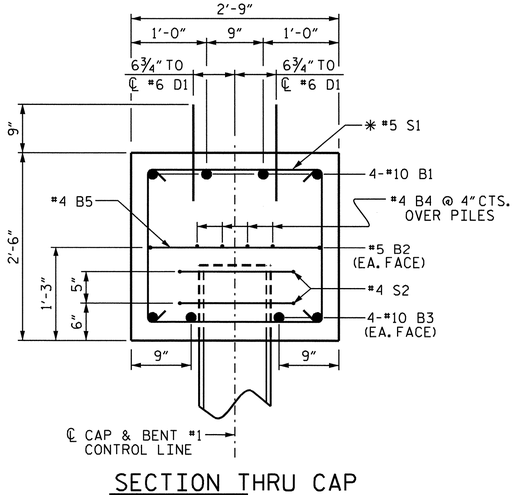
PLAN



ELEVATION



END VIEW



SECTION THRU CAP

NOTES

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

FOR PILE SPLICE DETAILS, SEE END BENT #1.

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

GALVANIZE THE TOP 33 FEET OF INTERIOR BENT PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

TOP OF PILE ELEVATIONS	
1	66.089
2	66.209
3	66.329
4	66.449
5	66.569
6	66.689

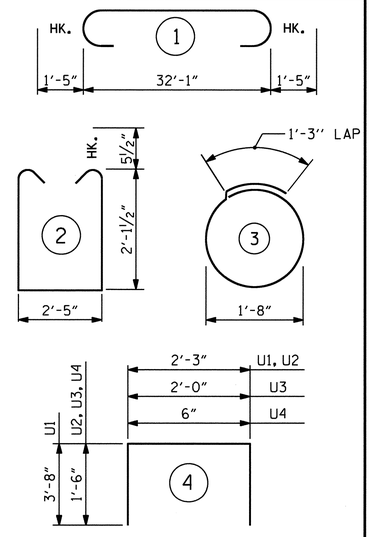
BILL OF MATERIAL

BENT #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	34'-11"	601
B2	2	#5	STR.	32'-3"	67
B3	4	#10	STR.	32'-3"	555
B4	8	#4	STR.	17'-5"	93
B5	13	#4	STR.	2'-5"	21
D1	40	#6	STR.	1'-6"	90
S1	42	#4	2	7'-7"	213
S2	12	#4	3	6'-6"	52
U1	2	#9	4	9'-7"	65
U2	4	#4	4	5'-3"	14
U3	6	#4	4	5'-0"	20
U4	8	#4	4	3'-6"	19

REINFORCING STEEL -TOTAL-	1810
CLASS "A" CONCRETE	
POUR #1 CAP	8.3
POUR #2 LATERAL GUIDES	0.1
TOTAL	8.4
HP 12X53 GALVANIZED STEEL PILES No. 6	420

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #2

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER M. KEVIN EMERSON
2/23/10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : R. G. EMERSON DATE : 04/09
CHECKED BY : K. D. LAYNE DATE : 05/09

24-FEB-2010 07:55
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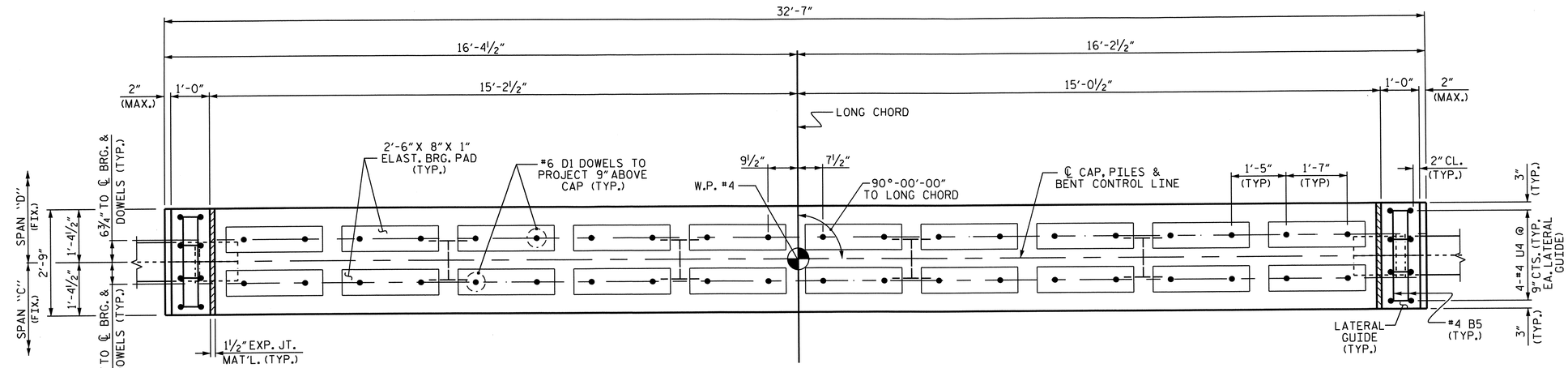
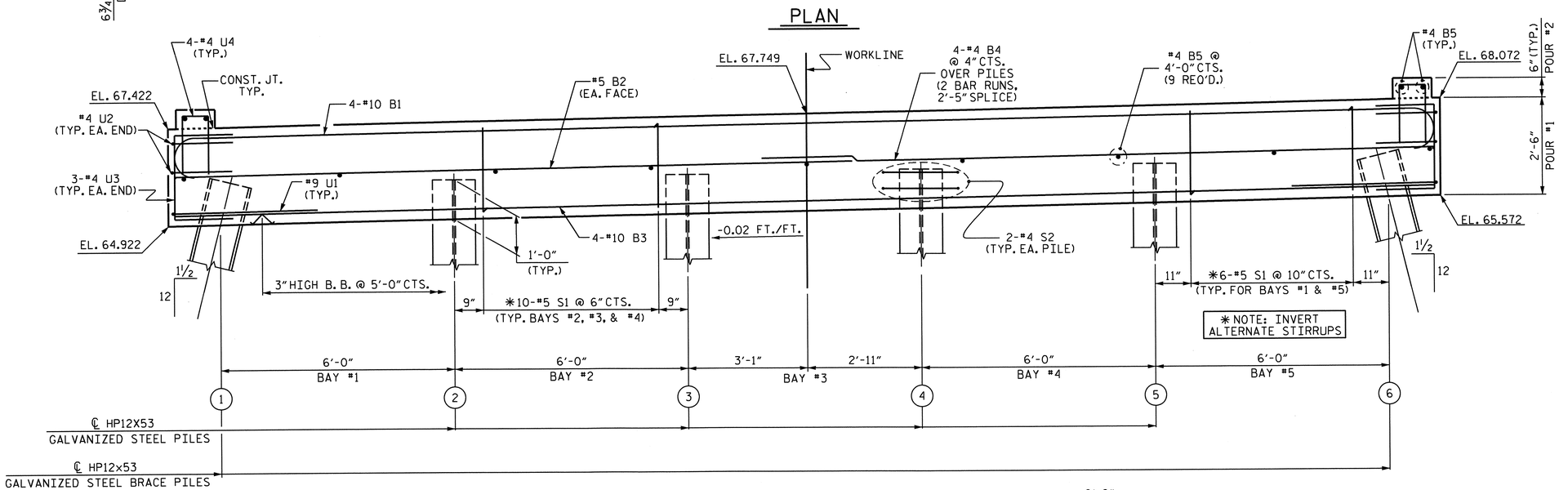
remerson



PLAN



ELEVATION

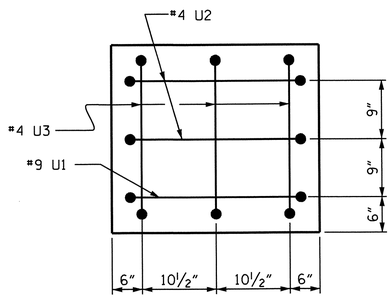
NOTES

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

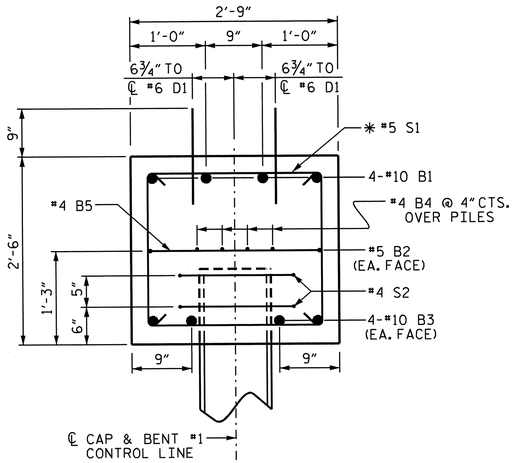
FOR PILE SPLICE DETAILS, SEE END BENT #1.

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

GALVANIZE THE TOP 32 FEET OF INTERIOR BENT PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



END VIEW



SECTION THRU CAP

BILL OF MATERIAL

BENT #3

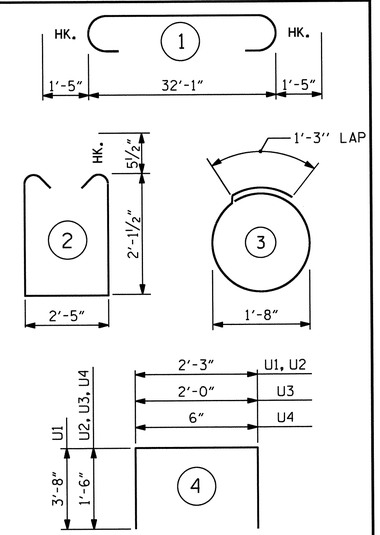
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	34'-11"	601
B2	2	#5	STR.	32'-3"	67
B3	4	#10	STR.	32'-3"	555
B4	8	#4	STR.	17'-5"	93
B5	13	#4	STR.	2'-5"	21
D1	40	#6	STR.	1'-6"	90
S1	42	#4	2	7'-7"	213
S2	12	#4	3	6'-6"	52
U1	2	#9	4	9'-7"	65
U2	4	#4	4	5'-3"	14
U3	6	#4	4	5'-0"	20
U4	8	#4	4	3'-6"	19
REINFORCING STEEL -TOTAL-					1810

CLASS "A" CONCRETE

POUR #1 CAP	8.3
POUR #2 LATERAL GUIDES	0.1
TOTAL	8.4

HP 12X53 GALVANIZED STEEL PILES No. 6 LIN. FT. 390

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

TOP OF PILE ELEVATIONS

1	65.949
2	66.069
3	66.189
4	66.309
5	66.429
6	66.549

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #3

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KEVIN FESSLER

12/23/10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : R. G. EMERSON DATE : 04/09
CHECKED BY : K. D. LAYNE DATE : 05/09

24-FEB-2010 07:55
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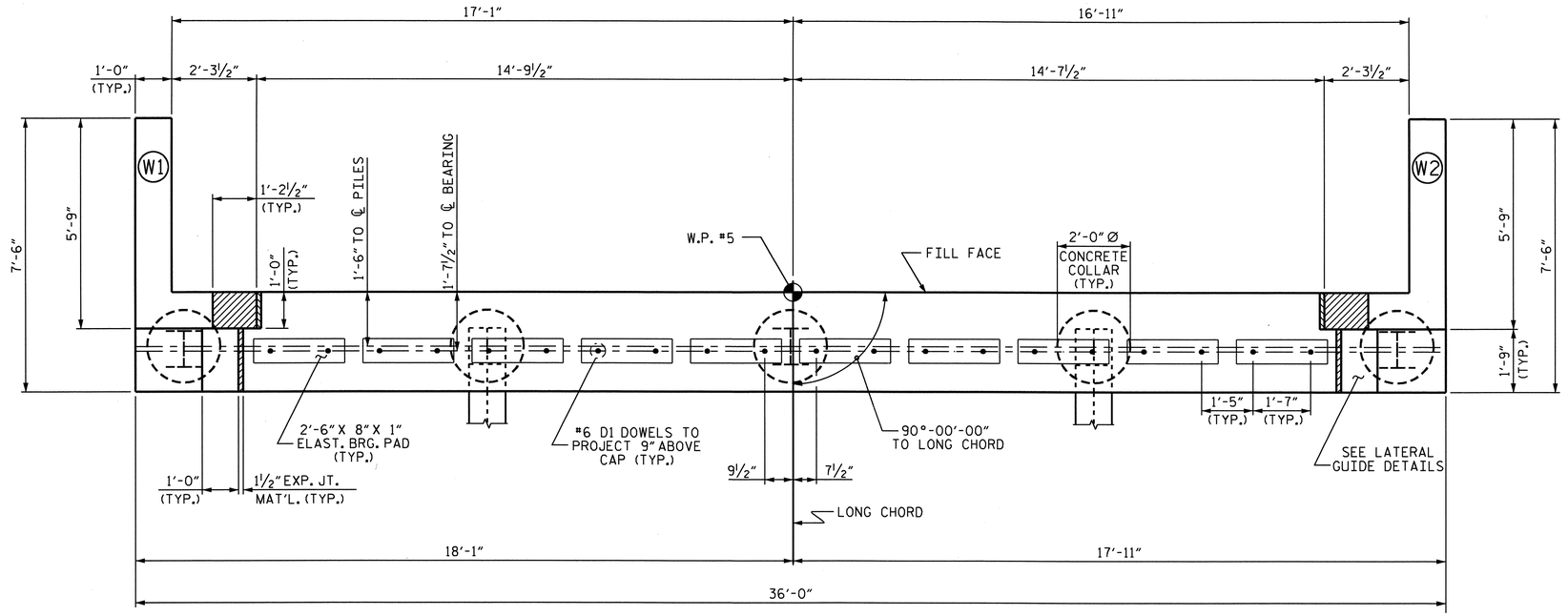
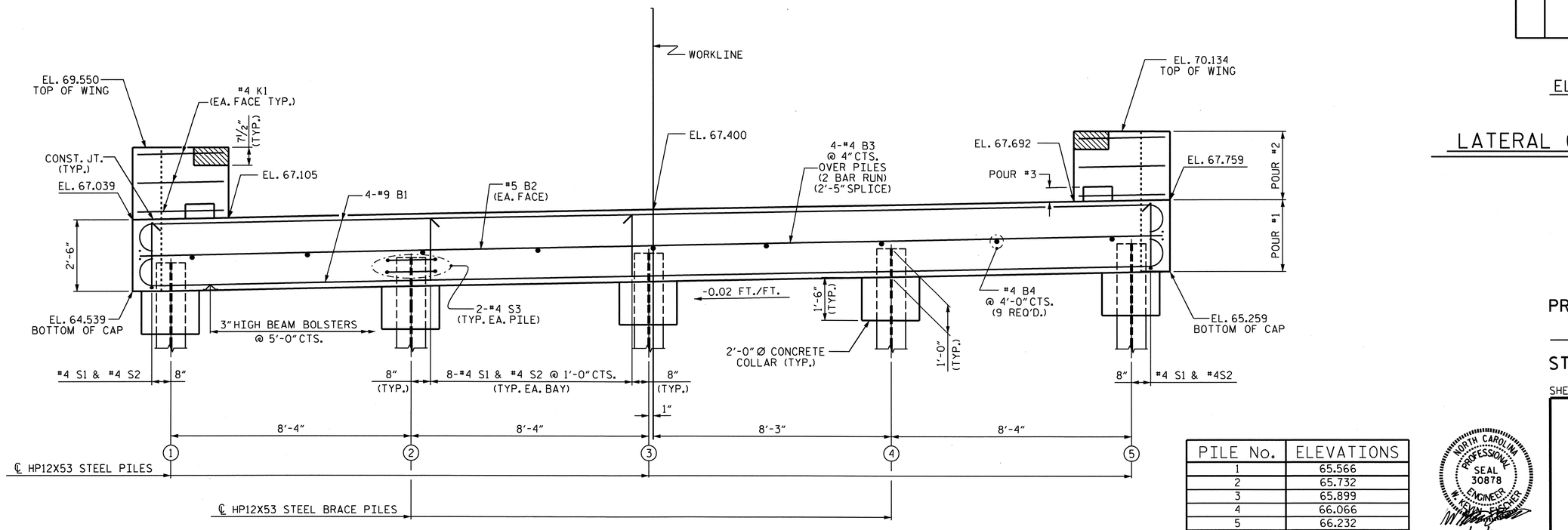
remerson



PLAN



ELEVATION

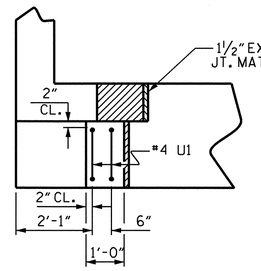
PILE No.	ELEVATIONS
1	65.566
2	65.732
3	65.899
4	66.066
5	66.232

NOTES:

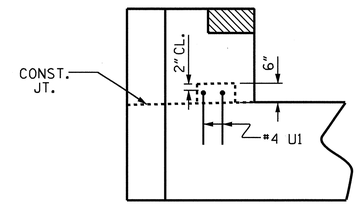
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

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



PLAN



ELEVATION

LATERAL GUIDE DETAILS

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT #2

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN L. FISCHER
4/13/10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : R. G. EMERSON DATE : 04/09
CHECKED BY : K. D. LAYNE DATE : 05/09

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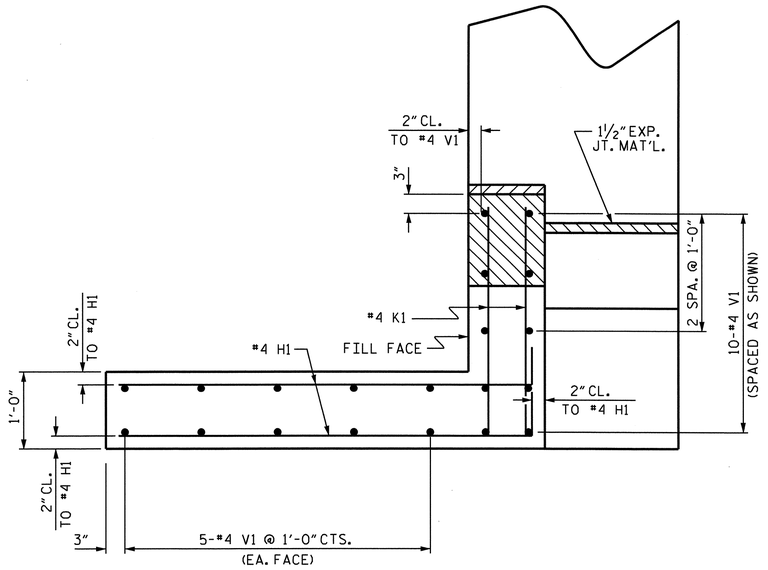
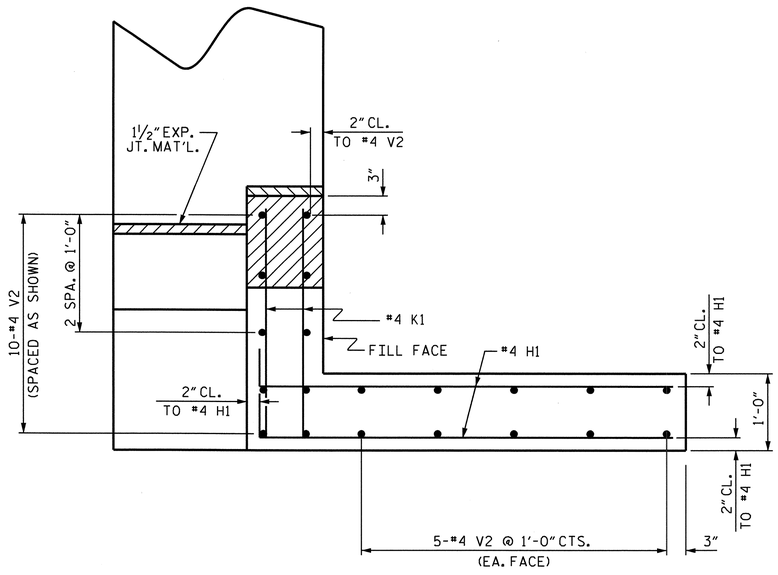
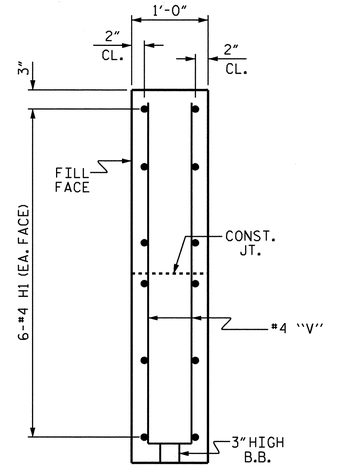
remerson



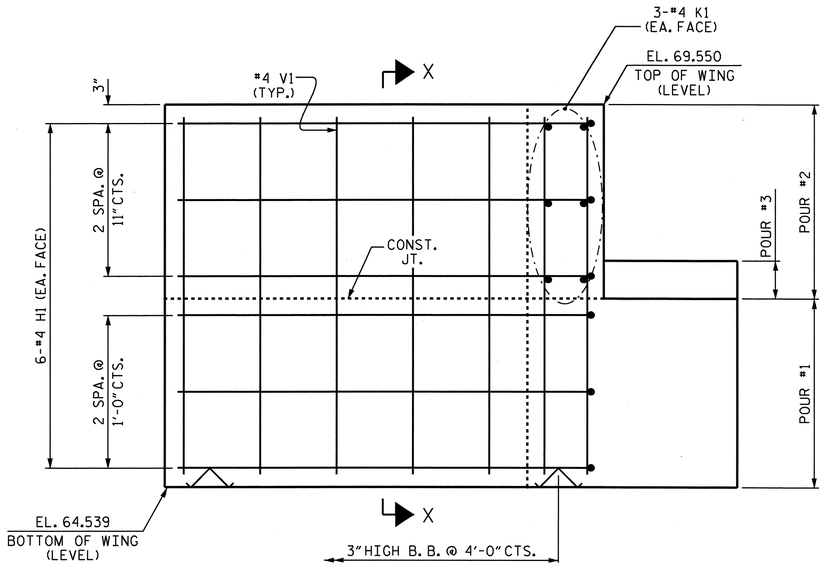
PLAN OF WING-W1



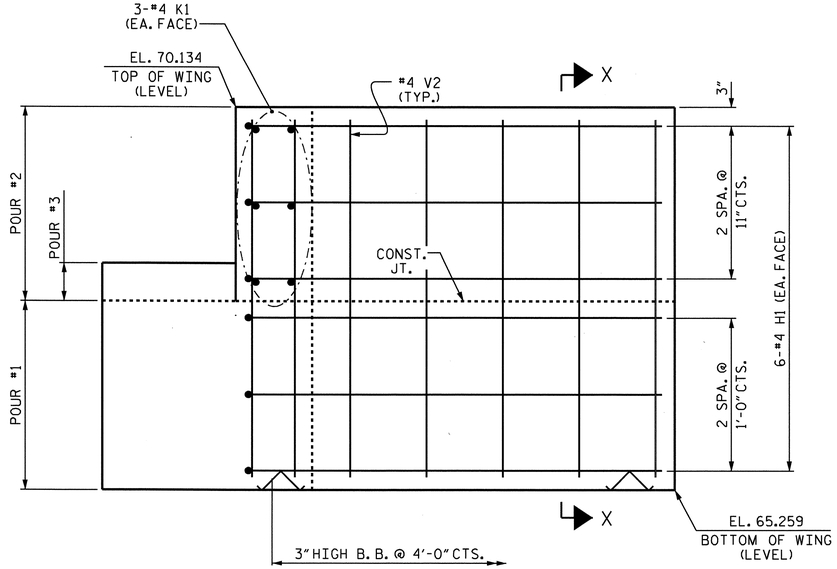
PLAN OF WING-W2



SECTION X-X



ELEVATION OF WING-W1



ELEVATION OF WING-W2

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -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-18
1			3			TOTAL SHEETS
2			4			40

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KEVIN EMERSON
4/13/10

DRAWN BY : R. G. EMERSON DATE : 04/09
CHECKED BY : K. D. LAYNE DATE : 05/09

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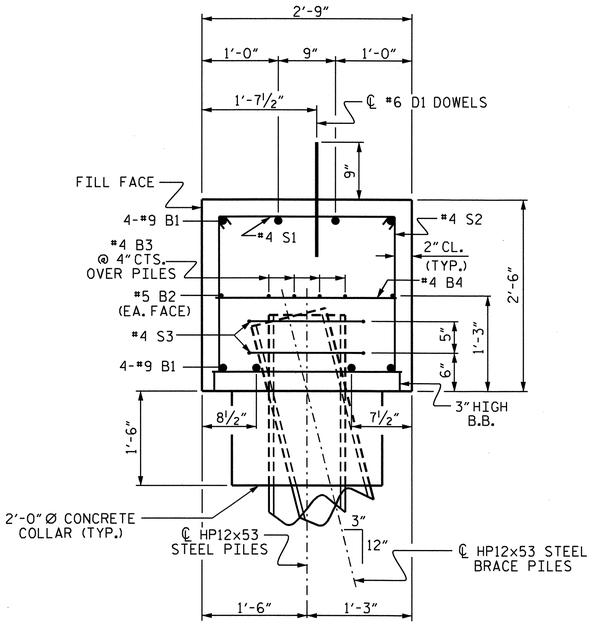
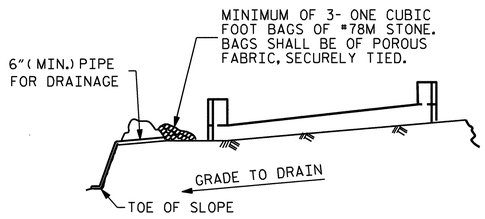


SECTION THRU CAP

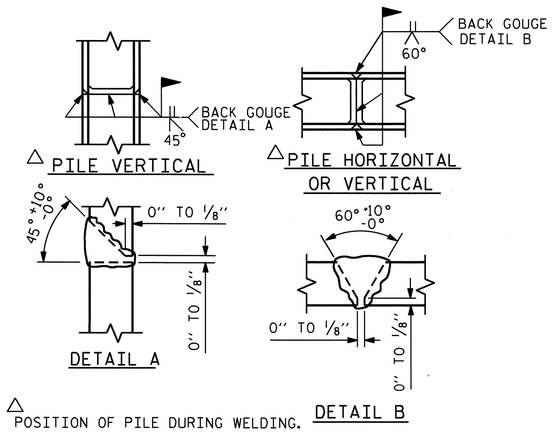


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

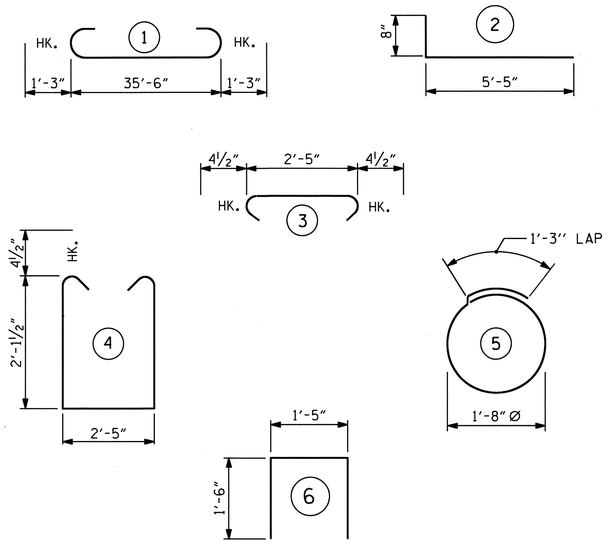
TEMPORARY DRAINAGE AT END BENT



△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

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	38'-0"	1034
B2	2	#5	STR.	35'-8"	74
B3	8	#4	STR.	19'-1"	102
B4	9	#4	STR.	2'-5"	15
D1	20	#6	STR.	1'-6"	45
H1	24	#4	2	6'-1"	98
K1	12	#4	STR.	2'-11"	23
S1	34	#4	3	3'-2"	72
S2	34	#4	4	7'-5"	168
S3	10	#4	5	6'-6"	43
U1	4	#4	6	4'-5"	12
V1	20	#4	STR.	4'-8"	62
V2	20	#4	STR.	4'-6"	60
REINFORCING STEEL					1808

CLASS "A" CONCRETE BREAKDOWN

POUR #1 CAP, LOWER WINGS & COLLAR	11.0
POUR #2 UPPER WINGS	1.5
POUR #3 LATERAL GUIDES	0.1
CLASS "A" CONCRETE TOTAL	12.6

HP 12X53 STEEL PILES

No. 5 225 LIN. FT.

DRAWN BY : R. G. EMERSON DATE : 04/09
CHECKED BY : K. D. LAYNE DATE : 05/09

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PROJECT NO. B-4682
WILSON COUNTY
STATION: 15+47.00 -L-

SHEET 3 OF 3

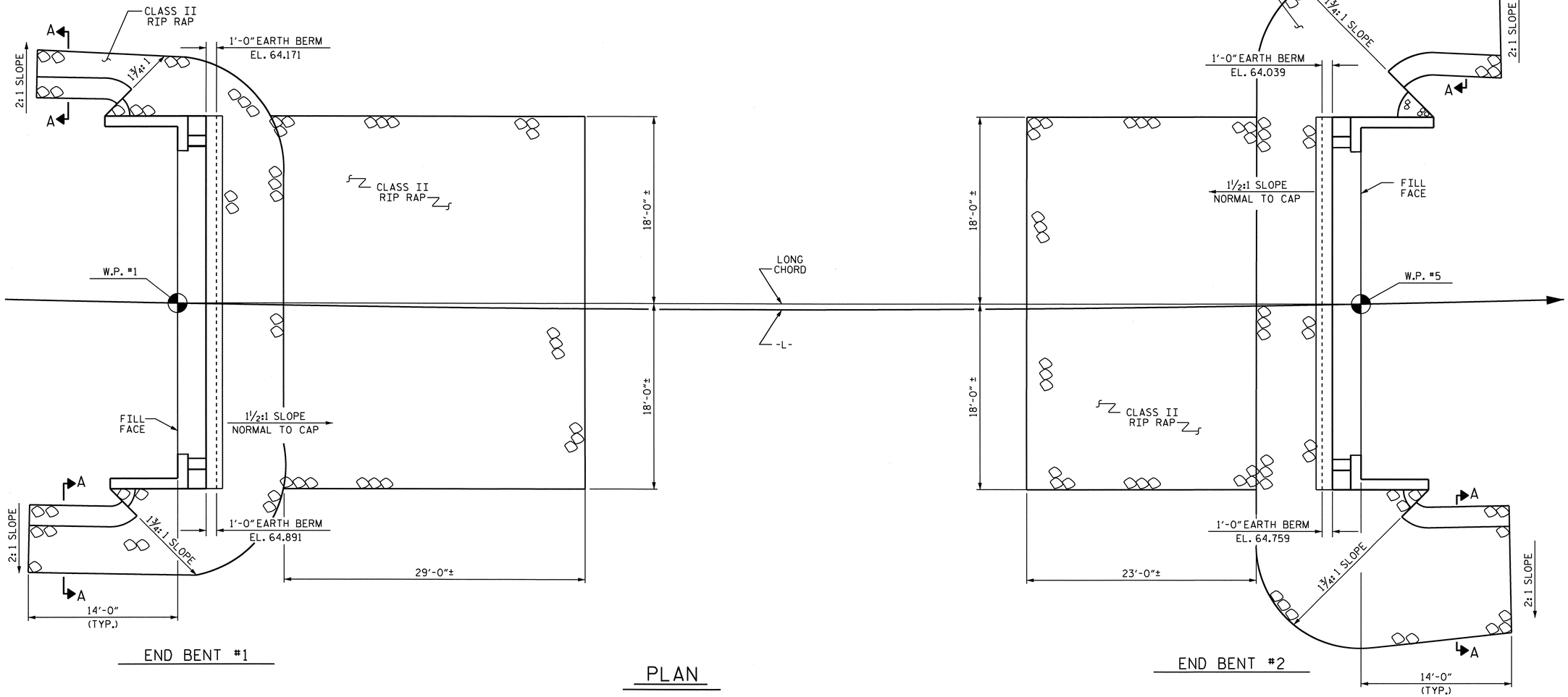
NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KEVIN FISCHER
4/13/10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

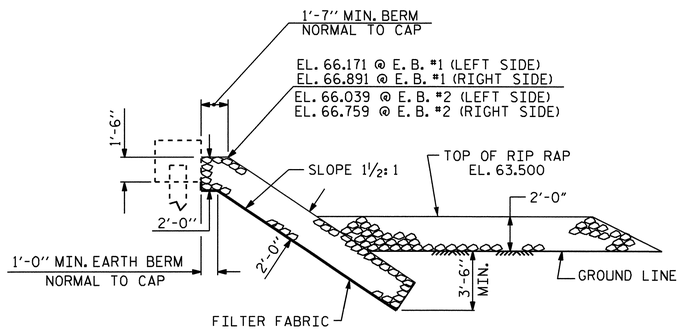
SUBSTRUCTURE

END BENT #2

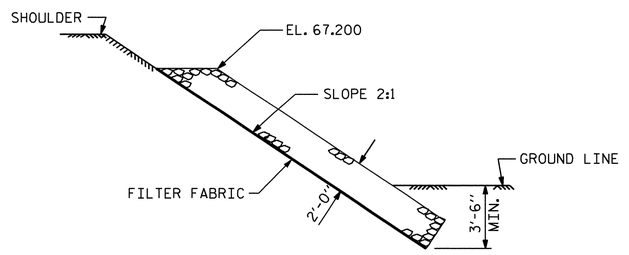
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			40



PLAN



℄ SECTION
BERM RIP RAPPED



SECTION A-A

ESTIMATED QUANTITIES

BRIDGE @ STA. 15+47.00 -L-	RIP RAP CLASS II (2'-0" THICK)			FILTER FABRIC FOR DRAINAGE		
	TONS			SQUARE YARDS		
	@ END BENT	@ EMBANKMENT	TOTAL	@ END BENT	@ EMBANKMENT	TOTAL
END BENT #1	185	95	280	210	105	305
END BENT #2	185	75	260	200	85	285

PROJECT NO. B-4682
WILSON COUNTY
STATION: 15+47.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
RIP RAP DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN C. FISCHER
2/23/10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : R. G. EMERSON DATE : 03/09
CHECKED BY : M. K. BEARD DATE : 03/09

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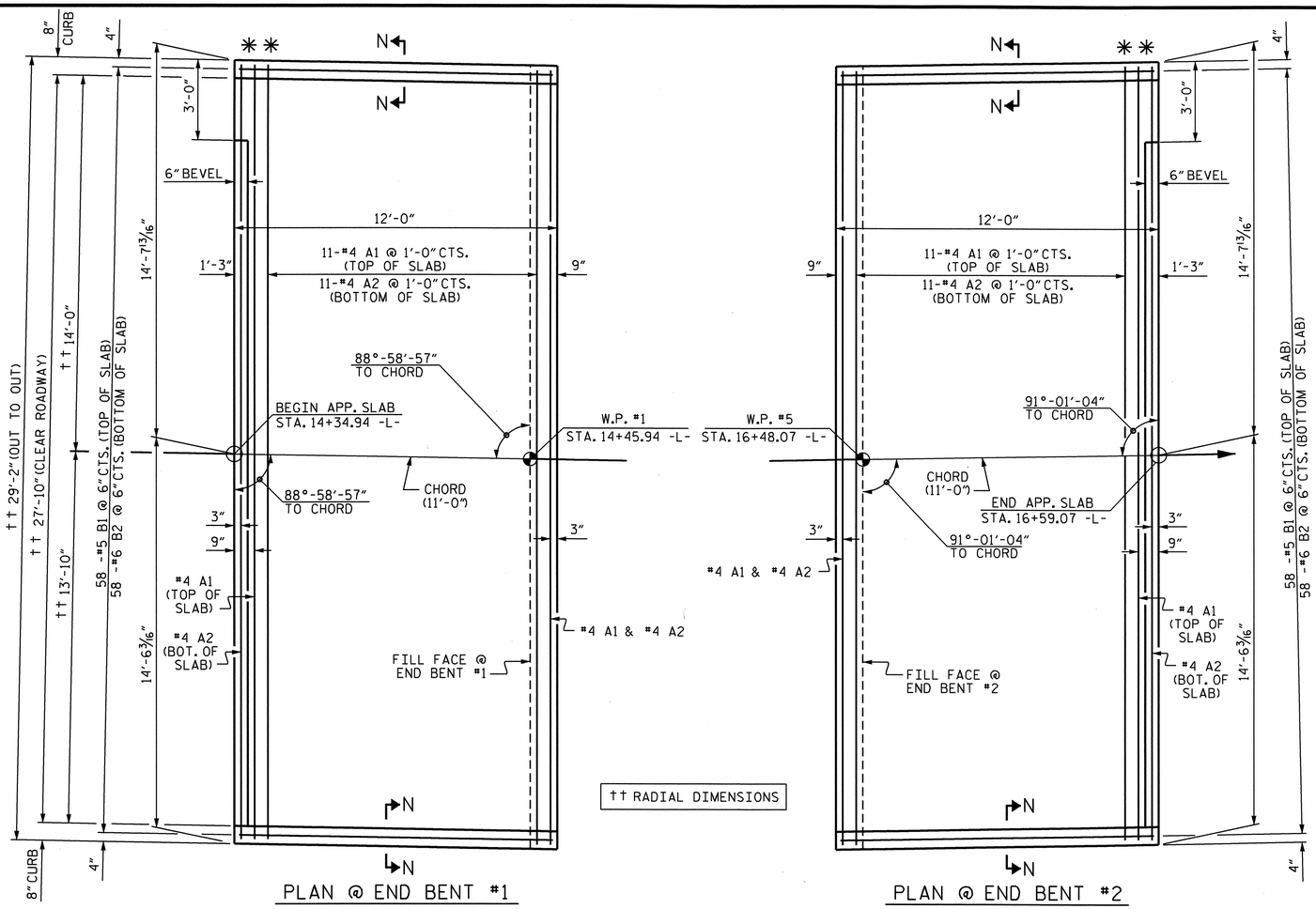
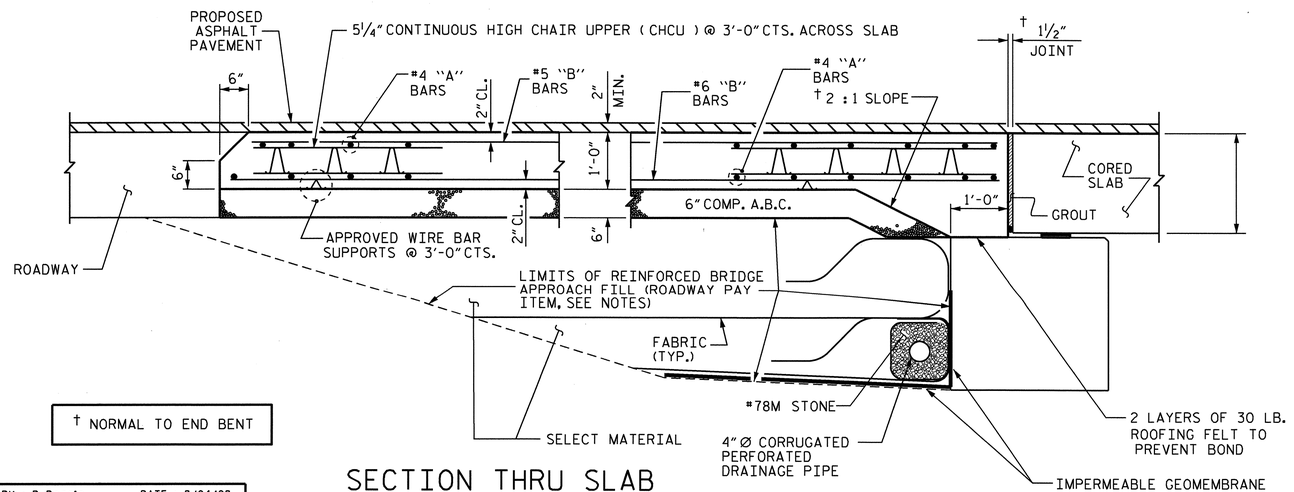




SECTION THRU SLAB

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 BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB AND SHALL EXTEND 1'-0" OUTSIDE OF EACH EDGE OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

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

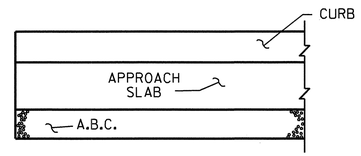
THE JOINT AT THE END BENT SHALL BE GROUTED AS SOON AS PRACTICAL AFTER THE CONSTRUCTION OF THE APPROACH SLABS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

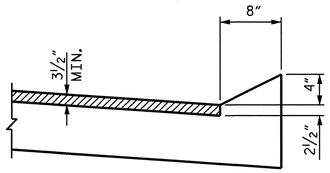
THE ARC OFFSETS ARE NEGLIGIBLE AND THEREFORE ARE NOT SHOWN.

BILL OF MATERIAL FOR ONE APPROACH SLAB (2 REQUIRED)

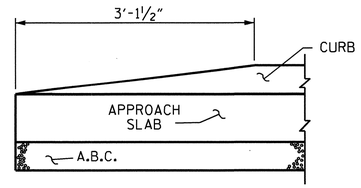
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱ A1	13	#4	STR	28'-10"	250
A2	13	#4	STR	28'-10"	250
✱ B1	58	#5	STR	11'-2"	676
B2	58	#6	STR	11'-8"	1016
REINFORCING STEEL				LBS.	1,266
✱ EPOXY COATED REINFORCING STEEL				LBS.	926
CLASS AA CONCRETE				C. Y.	14.7



✱✱ END OF CURB WITH SHOULDER BERM GUTTER



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -L-

SHEET 1 OF 2

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-21
1			3			TOTAL SHEETS
2			4			40

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KEVIN ESCHER
4/13/10

ASSEMBLED BY : B. Bergin	DATE : 8/04/08	
CHECKED BY : K. D. Layne	DATE : 8/05/08	
DRAWN BY : FCJ 6/87	REV. 7/10/01	LES/RDR
CHECKED BY : EGA 6/87	REV. 5/7/03R	RWW/JTE
	REV. 5/1/06R	KWM/GM

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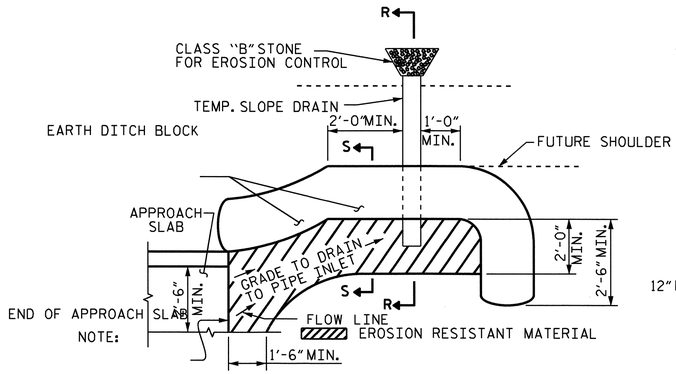
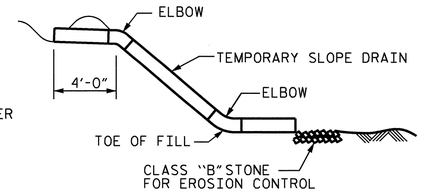
STD. NO. BAS7 (SHT 1)

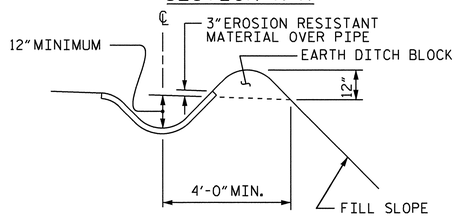


IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH,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



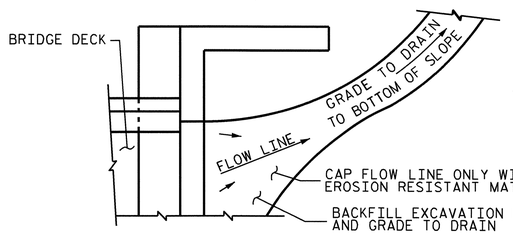
SECTION R-R



SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



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

TEMPORARY DRAINAGE DETAIL

ASSEMBLED BY :	B. Bergin	DATE :	8/4/08
CHECKED BY :	K.D. Layne	DATE :	8/5/08
DRAWN BY : FCJ	11/88	REV. 10/17/00	RWW/LES
CHECKED BY : ARB	11/88	REV. 5/7/03	RWW/JTE
		REV. 5/1/06R	MAA/KMM

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. ANDREW FISCHER
2/23/10

PROJECT NO. B-4682

WILSON COUNTY

STATION: 15+47.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

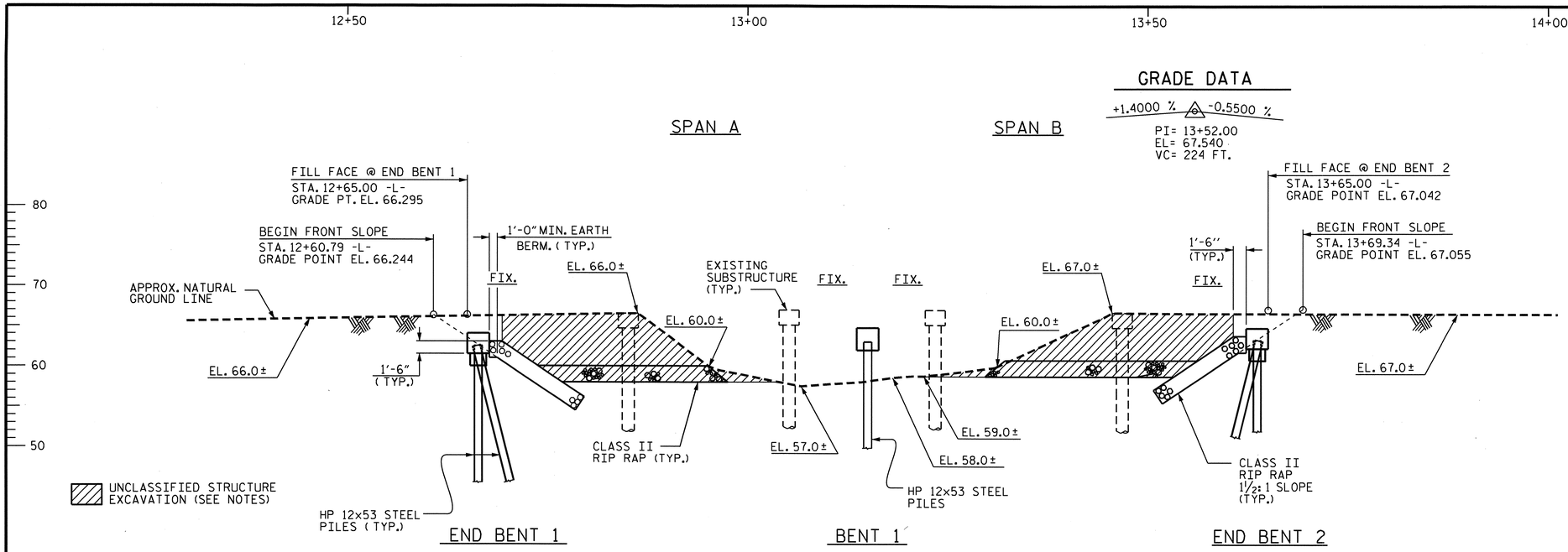
STANDARD

BRIDGE APPROACH SLAB DETAILS

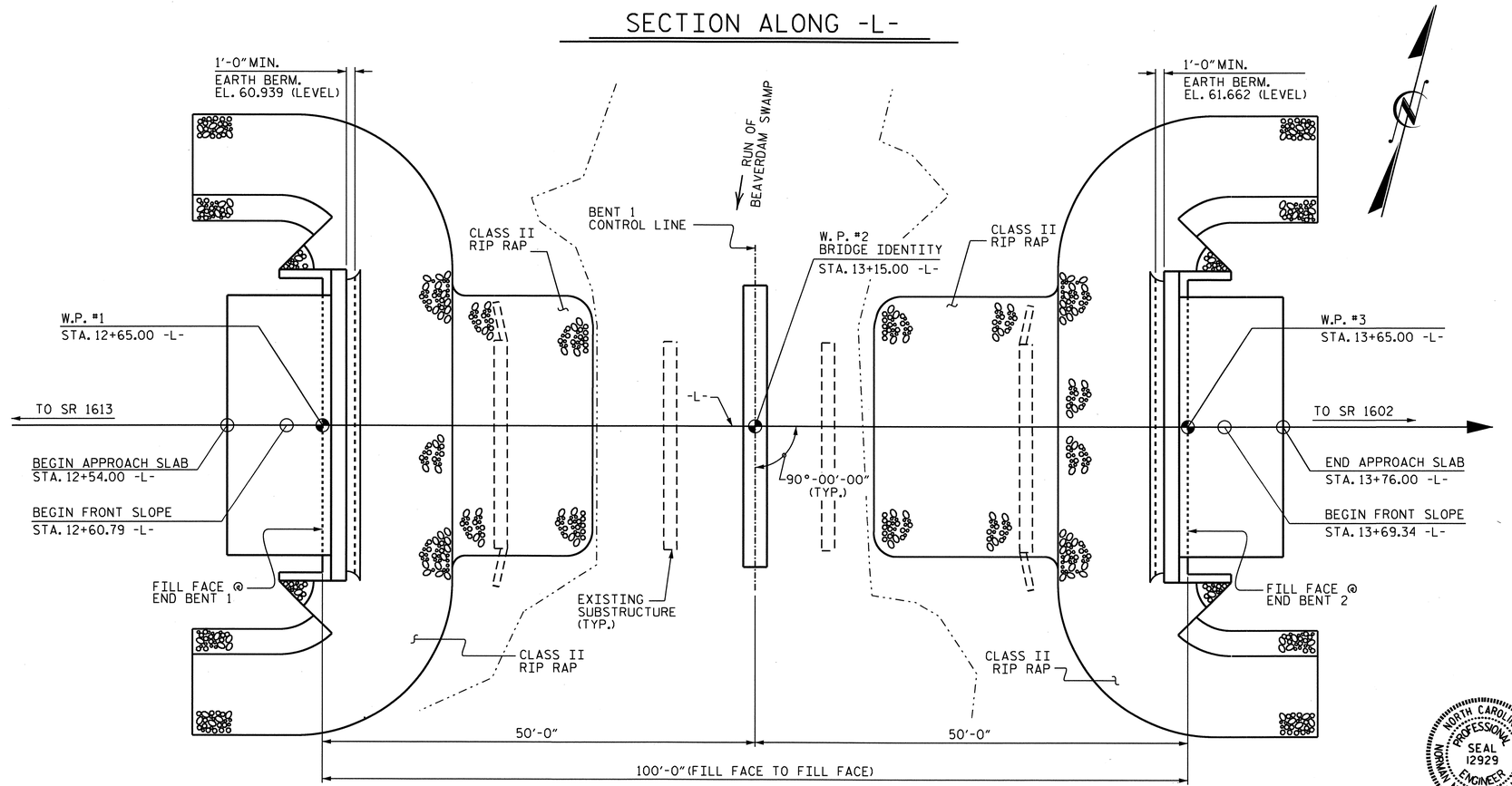
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			40

STD. NO. BAS10

F.A. PROJECT NO. : BRSTP-1628(1)



SECTION ALONG -L-



PLAN

(PILES ARE NOT SHOWN FOR CLARITY)

NOTES:

ASSUMED LIVE LOAD = HL 93 OR ALTERNATE LOADING.

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

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

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

THE EXISTING STRUCTURE CONSISTING OF THREE (1 @ 18'-8", 1 @ 18'-4", 1 @ 18'-9") REINFORCED CONCRETE DECK SPANS ON STEEL I-BEAMS WITH A CLEAR ROADWAY WIDTH OF 24'-0" ON REINFORCED CONCRETE CAP, END BENTS AND BENTS WITH TIMBER PILES LOCATED AT THE PROPOSED STRUCTURE 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 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.

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.

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

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

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+15.00 -L-."

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR CONCRETE CURING, SEE SPECIAL PROVISIONS.

SEE SHEET 2 OF 3 FOR FOUNDATION NOTES.

PROJECT NO. B-4992

WILSON COUNTY

STATION: 13+15.00 -L-

SHEET 1 OF 3 REPLACES BRIDGE NO. 1

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON SR 1628
OVER RUN OF BEAVERDAM SWAMP
BETWEEN SR 1613 AND SR 1602

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			40

NORTH CAROLINA PROFESSIONAL SEAL 12929 ENGINEER NORMAN NEREUS BLACK, JR. 4/14/10

NORTH CAROLINA PROFESSIONAL SEAL 32005 ENGINEER KEITH PASCHAL 4.14.10

DRAWN BY : J. MYA DATE : 3-26-09
CHECKED BY : J. G. KHARVA DATE : 4-13-09

14-APR-2010 11:31
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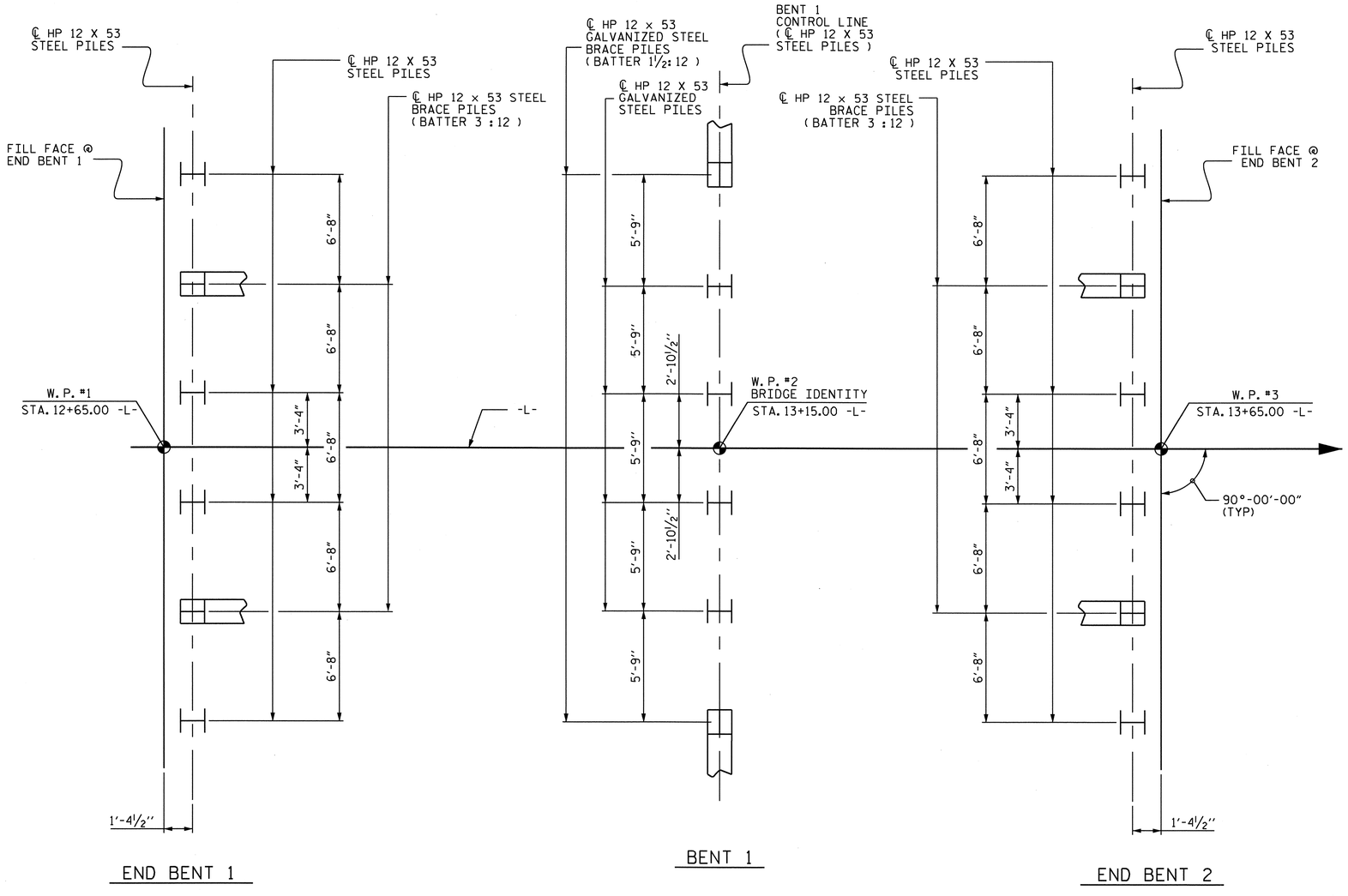
jdhawk



FOUNDATION LAYOUT

(DIMENSIONS LOCATING END BENT & BENT PILES ARE SHOWN TO CENTERLINE OF PILES)

FOUNDATION NOTES :

FOR PILES, SEE SPECIAL PROVISIONS.

PILES AT END BENT 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 65 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE.

PILES AT BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 120 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 195 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

INSTALL PILES AT BENT 1 TO A TIP ELEVATION NO HIGHER THAN 41 FT.

THE SCOUR CRITICAL ELEVATION FOR BENT 1 IS ELEVATION 49 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40 TO 75 FT-KIP PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT 1, BENT 1 AND END BENT 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH THE PILES PROVISIONS.

PROJECT NO. B-4992

WILSON COUNTY

STATION: 13+15.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON SR 1628
OVER RUN OF BEAVERDAM SWAMP
BETWEEN SR 1613 AND SR 1602

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER KEITH PASCHAL
4·14·10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : J. MYA DATE : 3-26-09
CHECKED BY : J. G. KHARVA DATE : 4-13-09

14-APR-2010 11:32
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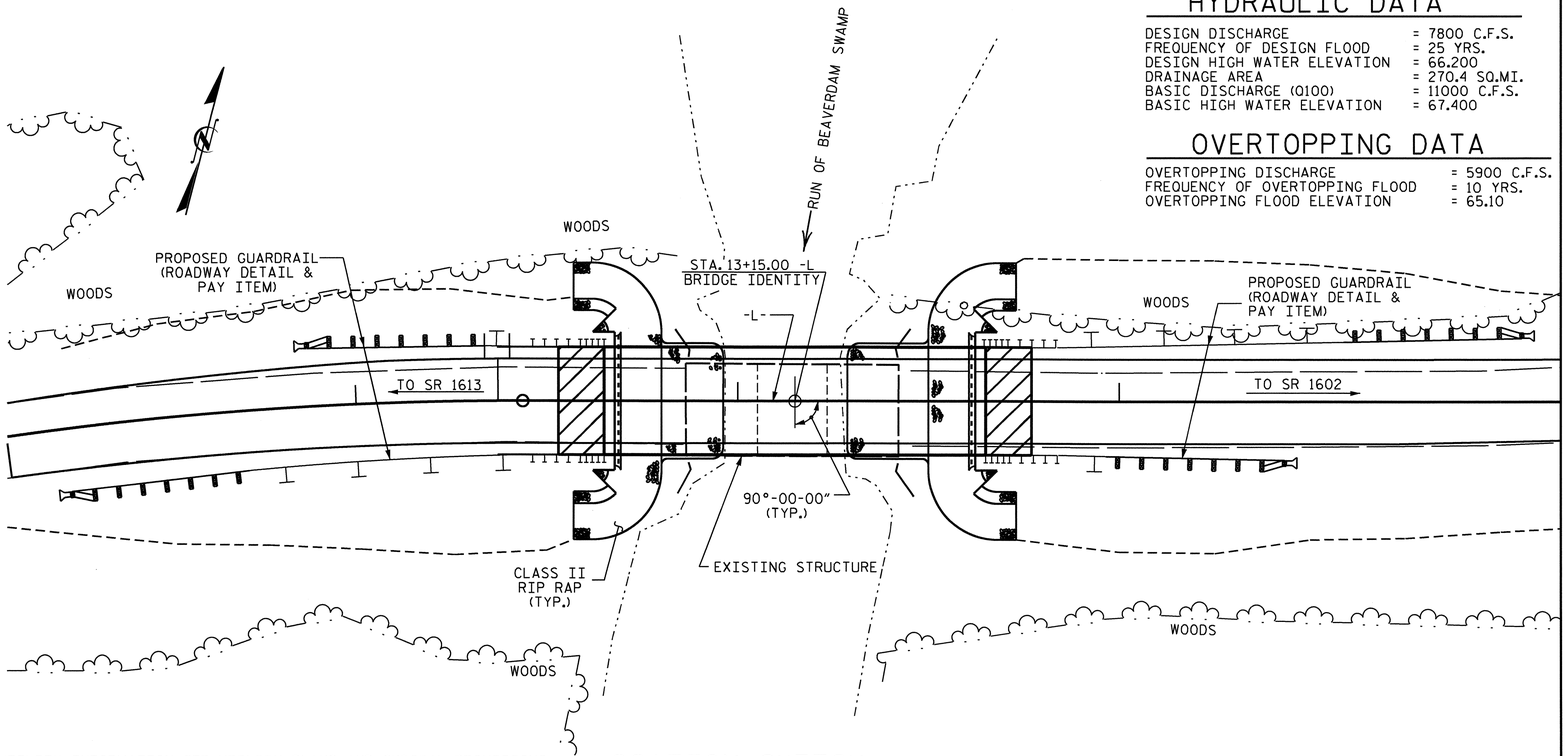
jdhawk

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES		▲HP 12 X 53 GALVANIZED STEEL PILES		PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	
	LUMP SUM	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE				LUMP SUM							195.50			LUMP SUM	20	976.25
END BENT 1		LUMP SUM	12.7		1810	6	240			3		191	213			
BENT 1			8.4		1710			6	360	3						
END BENT 2		LUMP SUM	12.7		1810	6	240			3		206	229			
TOTAL	LUMP SUM	LUMP SUM	33.8	LUMP SUM	5330	12	480	6	360	9	195.50	397	442	LUMP SUM	20	976.25

▲FOR INTERIOR BENT 1, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEET FOR DETAILS.

T.B.M. #4 : R. R. SPIKE IN BASE OF 30'' TWIN PINE 44.71' RT. STA. 16+35.19-L-, EL. 67.650



LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

HYDRAULIC DATA

DESIGN DISCHARGE	= 7800 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 25 YRS.
DESIGN HIGH WATER ELEVATION	= 66.200
DRAINAGE AREA	= 270.4 SQ.MI.
BASIC DISCHARGE (Q100)	= 11000 C.F.S.
BASIC HIGH WATER ELEVATION	= 67.400

OVERTOPPING DATA

OVERTOPPING DISCHARGE	= 5900 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 10 YRS.
OVERTOPPING FLOOD ELEVATION	= 65.10

PROJECT NO. B-4992

WILSON COUNTY

STATION: 13+15.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE ON SR 1628 OVER RUN OF BEAVERDAM SWAMP BETWEEN SR 1613 AND SR 1602

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER J. KEITH PASCHAL
4-14-10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : J. MYA DATE : 3-20-09
CHECKED BY : J. G. KHARVA DATE : 4-13-09

23-FEB-2010 12:05
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jdhawk

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

LEVEL		VEHICLE	WEIGHT (W) (TONS)	⟨#⟩ CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER
							LIVE-LOAD FACTORS (γ_{LL})	MOMENT					SHEAR					LIVE-LOAD FACTORS (γ_{LL})	MOMENT					
								DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93 (INVENTORY)	N/A	⟨1⟩	1.03	----	1.75	0.277	1.42	A	EL	23.906	0.533	1.03	A	EL	2.391	0.80	0.277	1.13	A	EL	23.906	
		HL-93 (OPERATING)	N/A		1.34	----	1.35	0.277	1.84	A	EL	23.906	0.533	1.34	A	EL	2.391	N/A	----	----	----	--	----	
		HS-20 (INVENTORY)	36.000	⟨2⟩	1.23	44.168	1.75	0.277	1.75	A	EL	23.906	0.533	1.23	A	EL	2.391	1.00	0.277	1.39	A	EL	23.906	
		HS-20 (OPERATING)	36.000		1.59	57.255	1.35	0.277	2.27	A	EL	23.906	0.533	1.59	A	EL	2.391	N/A	----	----	----	--	----	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		2.81	37.967	1.40	0.277	4.42	A	EL	23.906	0.533	3.45	A	EL	2.391	0.80	0.277	2.81	A	EL	23.906	
		SNGARBS2	20.000		2.23	44.631	1.40	0.277	3.51	A	EL	23.906	0.533	2.51	A	EL	2.391	0.80	0.277	2.23	A	EL	23.906	
		SNAGRIS2	22.000		2.17	47.840	1.40	0.277	3.40	A	EL	28.688	0.533	2.36	A	EL	2.391	0.80	0.277	2.17	A	EL	23.906	
		SNCOTTS3	27.250		1.40	38.237	1.40	0.277	2.21	A	EL	23.906	0.533	1.73	A	EL	2.391	0.80	0.277	1.40	A	EL	23.906	
		SNAGGRS4	34.925		1.22	42.742	1.40	0.277	1.93	A	EL	23.906	0.533	1.48	A	EL	2.391	0.80	0.277	1.22	A	EL	23.906	
		SNS5A	35.550		1.19	42.417	1.40	0.277	1.88	A	EL	23.906	0.533	1.52	A	EL	2.391	0.80	0.277	1.19	A	EL	23.906	
		SNS6A	39.950		1.12	44.640	1.40	0.277	1.76	A	EL	23.906	0.533	1.41	A	EL	2.391	0.80	0.277	1.12	A	EL	23.906	
		SNS7B	42.000	⟨3⟩	1.06	44.728	1.40	0.277	1.68	A	EL	23.906	0.533	1.41	A	EL	2.391	0.80	0.277	1.06	A	EL	23.906	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.37	45.192	1.40	0.277	2.15	A	EL	23.906	0.533	1.66	A	EL	2.391	0.80	0.277	1.37	A	EL	23.906	
		TNT4A	33.075		1.38	45.707	1.40	0.277	2.17	A	EL	23.906	0.533	1.60	A	EL	2.391	0.80	0.277	1.38	A	EL	23.906	
		TNT6A	41.600		1.15	47.960	1.40	0.277	1.81	A	EL	23.906	0.533	1.54	A	EL	2.391	0.80	0.277	1.15	A	EL	23.906	
		TNT7A	42.000		1.17	49.195	1.40	0.277	1.84	A	EL	23.906	0.533	1.43	A	EL	2.391	0.80	0.277	1.17	A	EL	23.906	
		TNT7B	42.000		1.22	51.274	1.40	0.277	1.92	A	EL	23.906	0.533	1.36	A	EL	2.391	0.80	0.277	1.22	A	EL	23.906	
		TNAGRIT4	43.000		1.16	49.853	1.40	0.277	1.82	A	EL	23.906	0.533	1.31	A	EL	2.391	0.80	0.277	1.16	A	EL	23.906	
		TNAGT5A	45.000		1.08	48.697	1.40	0.277	1.70	A	EL	23.906	0.533	1.33	A	EL	2.391	0.80	0.277	1.08	A	EL	23.906	
		TNAGT5B	45.000	⟨3⟩	1.06	47.677	1.40	0.277	1.67	A	EL	23.906	0.533	1.24	A	EL	2.391	0.80	0.277	1.06	A	EL	23.906	

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

	YEAR	ADTT
CURRENT	2003	9
FUTURE	2030	15

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

1.
2.
3.
4.

⟨#⟩ CONTROLLING LOAD RATING

⟨1⟩ DESIGN LOAD RATING (HL-93)

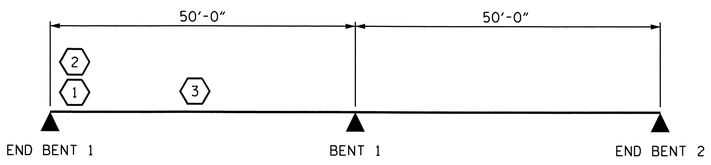
⟨2⟩ DESIGN LOAD RATING (HS-20)

⟨3⟩ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. B-4992
WILSON COUNTY
STATION: 13+15.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR PRESTRESSED CONCRETE GIRDERS
(NON-INTERSTATE TRAFFIC)

NORTH CAROLINA PROFESSIONAL SEAL 22008 ENGINEER KEITH PASCHAL
4.14.10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-26
1			3			TOTAL SHEETS
2			4			40

STD. NO. LRFR1

ASSEMBLED BY : J.D. HAWK DATE : 2/05/10
CHECKED BY : J. LAZAROVICH DATE : 2/06/10
DRAWN BY : MAA 1/08
CHECKED BY : GM/DI 2/08
REV. 11/12/08RR MAA/GM

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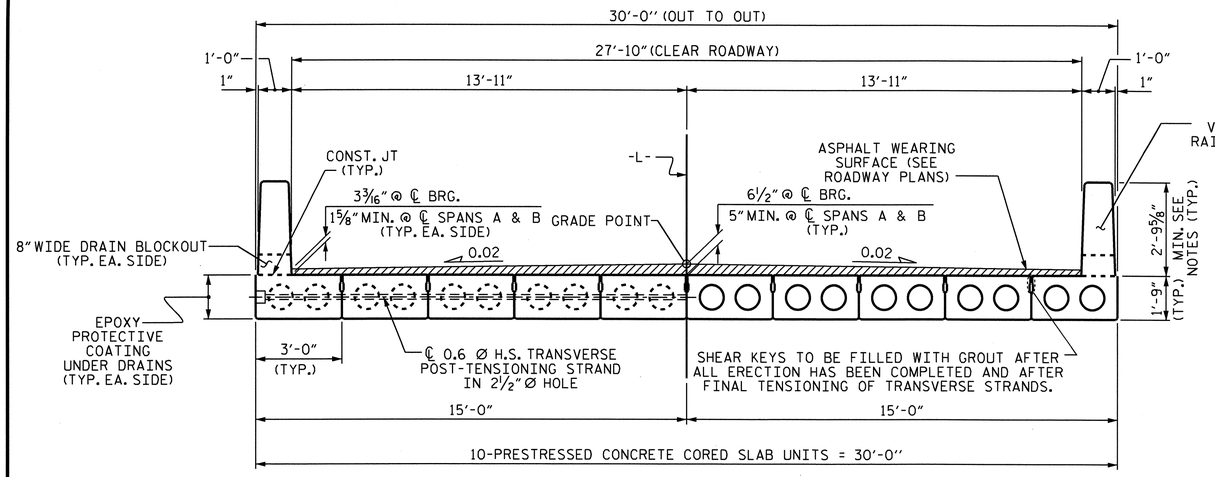
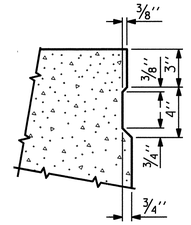


HALF SECTION @ DIAPHRAGMS

HALF SECTION @ 12" Ø VOIDS

TYPICAL SECTION



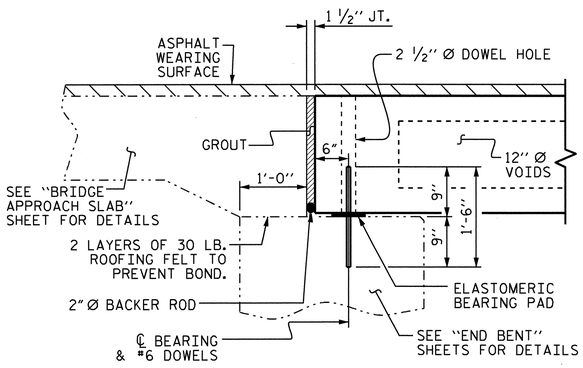
SHEAR KEY DETAIL

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

NOTES:

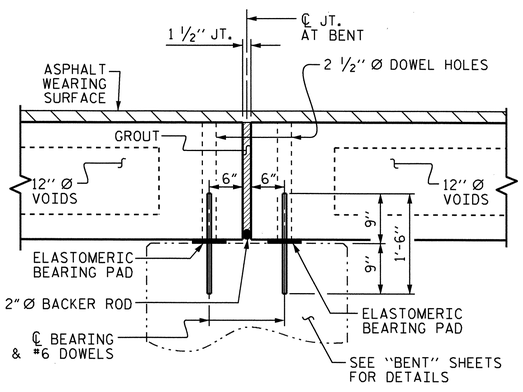
THE MINIMUM HEIGHT OF THE BARRIER RAIL IS SHOWN. THE HEIGHT OF THE BARRIER RAIL VARIES WHILE THE TOP OF THE RAIL FOLLOWS THE PROFILE OF THE GUTTER LINE.

FIXED END

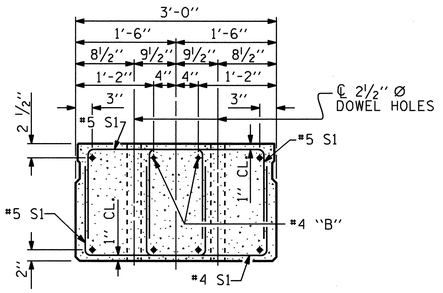


SECTION AT END BENT

FIXED END FIXED END

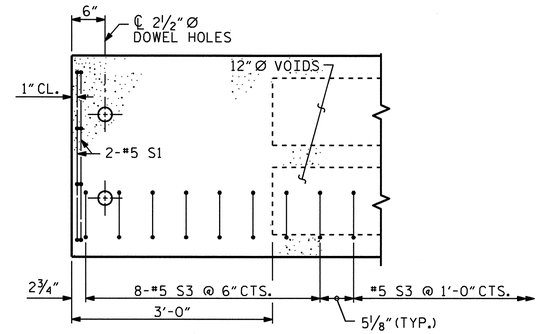


SECTION AT BENT



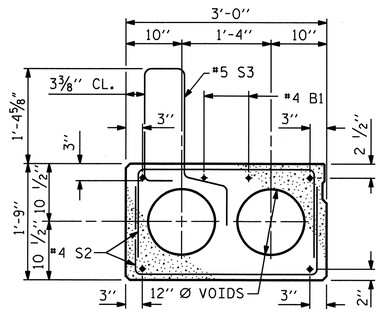
END ELEVATION

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



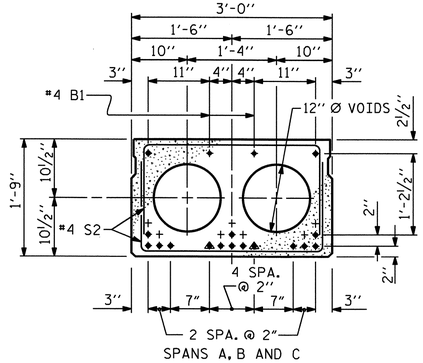
PART PLAN-EXTERIOR SECTION

NOTE: EXTERIOR SECTION SHOWN-INTERIOR SECTION SIMILAR EXCEPT OMIT S3 BARS.
(SPANS A SHOWN, SPAN B SIMILAR)



EXTERIOR SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION

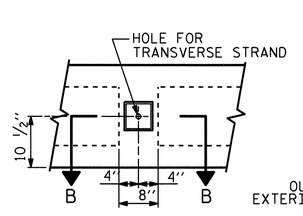


SPANS A, B AND C

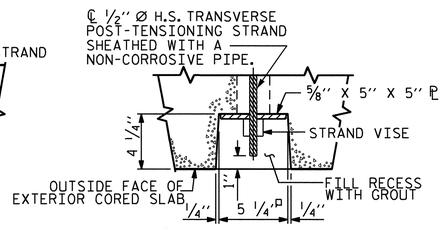
INTERIOR SLAB SECTION

(16 STRANDS)

0.6" Ø LOW RELAXATION STRAND LAYOUT



ELEVATION VIEW



SECTION B-B

PROJECT NO. B-4992

WILSON COUNTY

STATION: 13+15.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

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

ASSEMBLED BY : M. FOWLER	DATE : 3-16-09
CHECKED BY : J. D. HAWK	DATE : 3-18-09
DRAWN BY : WJH 4/89	REV. 10/17/00 RWW/LES
CHECKED BY : FCJ 5/89	REV. 7/10/01RR RWW/LES
	REV. 5/1/06R TLA/GM

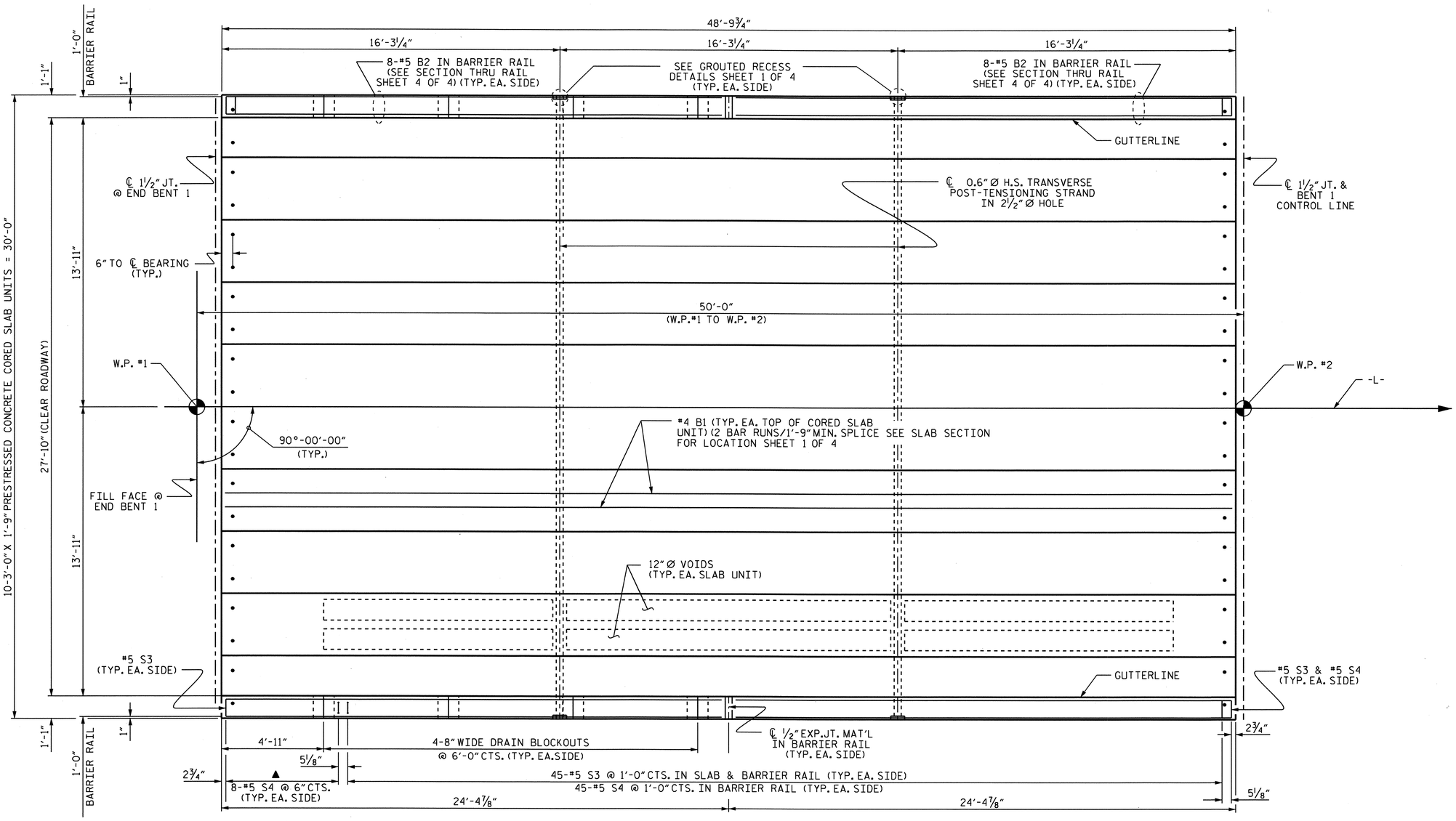
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-27
1			3			TOTAL SHEETS
2			4			40

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER KEITH PASCHAL

4.14.10

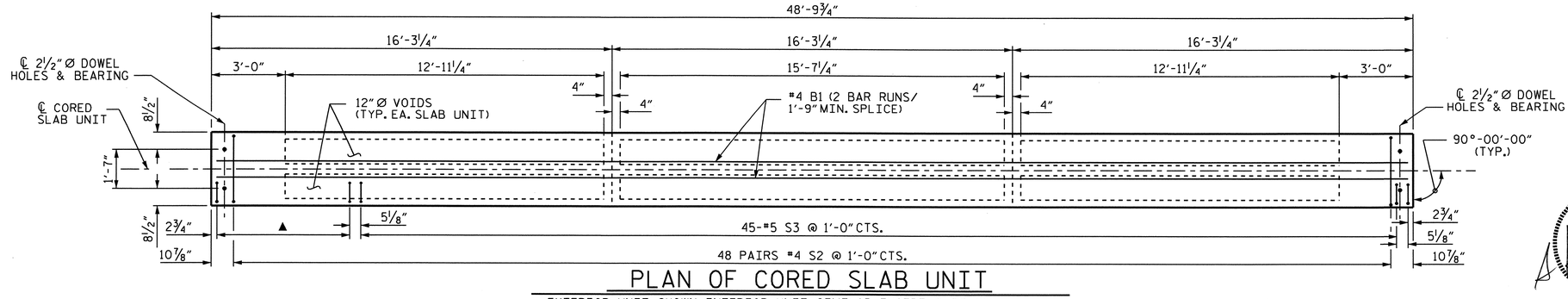
STD. NO. PCS2

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



▲ SEE PART PLAN-EXTERIOR SECTION ON SHEET 1 OF 4 FOR ADDITIONAL #5 S3 BARS

PLAN OF SPAN A



PLAN OF CORED SLAB UNIT

EXTERIOR UNIT SHOWN. INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.
FOR LOCATION OF ADDITIONAL REINFORCING STEEL AT END OF SLAB UNIT, SEE "PART-PLAN EXTERIOR SECTION" SHEET 1 OF 4.

PROJECT NO. B-4992

WILSON COUNTY

STATION: 13+15.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN A

NORTH CAROLINA PROFESSIONAL SEAL 32005 ENGINEER KEITH PASCHAL

4.14.10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-28
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : M.FOWLER DATE : 3/13/09
CHECKED BY : J.D. HAWK DATE : 3/18/09

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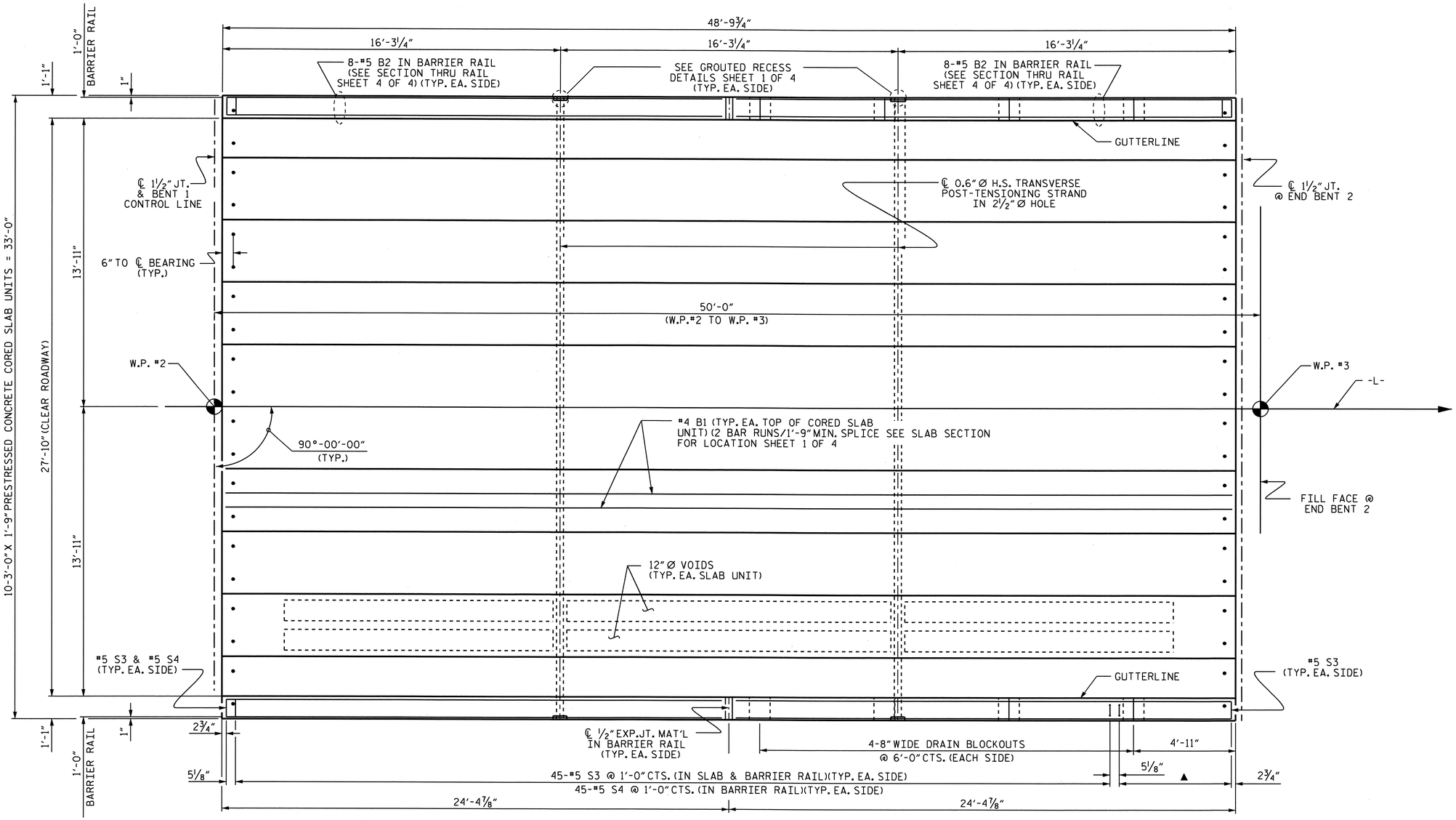
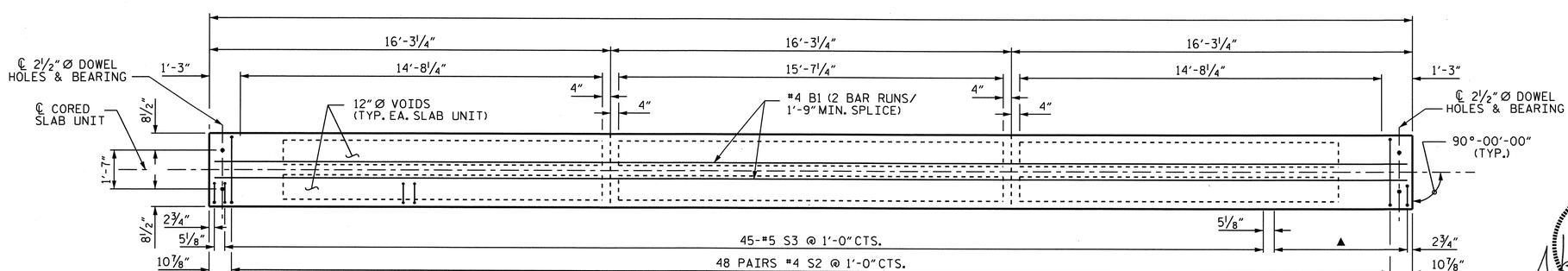
jdhawk



PLAN OF SPAN B

▲ SEE PART PLAN-EXTERIOR SECTION ON SHEET 1 OF 4 FOR ADDITIONAL #5 S3 BARS



PLAN OF CORED SLAB UNIT

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS. FOR LOCATION OF ADDITIONAL REINFORCING STEEL AT END OF SLAB UNIT, SEE "PART-PLAN EXTERIOR SECTION" SHEET 1 OF 4.

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER KEITH PASCHAL

4.14.10

PROJECT NO. B-4992

WILSON COUNTY

STATION: 13+15.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN B

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS
2			4			S-40

DRAWN BY : M.FOWLER DATE : 3/13/09
CHECKED BY : J.D. HAWK DATE : 3/18/09

14-APR-2010 11:02
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jdhawk

DEAD LOAD DEFLECTION AND CAMBER

	SPAN A & B
	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE) ↑	1 13/16"
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD** ↓	3/8"
FINAL CAMBER ↑	1 7/16"

** INCLUDES FUTURE WEARING SURFACE

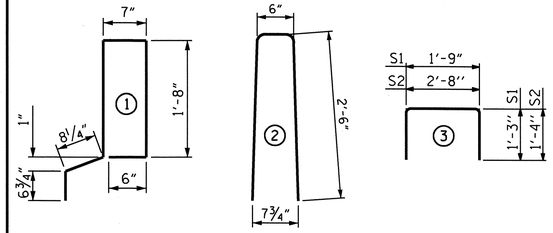
CORED SLABS REQUIRED

	NUMBER PER SPAN	LENGTH	TOTAL LENGTH
EXTERIOR C.S. - SPAN A	2	48'-9 3/4"	97'-7 1/2"
INTERIOR C.S. - SPAN A	8	48'-9 3/4"	390'-6"
EXTERIOR C.S. - SPAN B	2	48'-9 3/4"	97'-7 1/2"
INTERIOR C.S. - SPAN B	8	48'-9 3/4"	390'-6"
TOTAL	20		976'-3"

GRADE 270 STRANDS

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

BAR TYPES



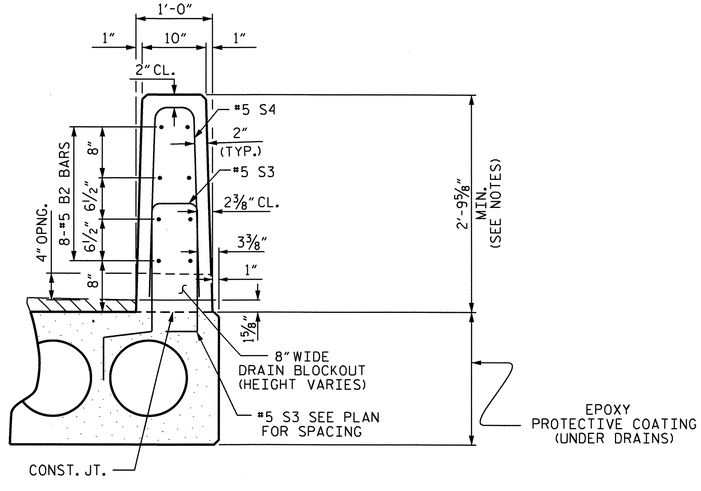
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR ONE CORED SLAB SECTION

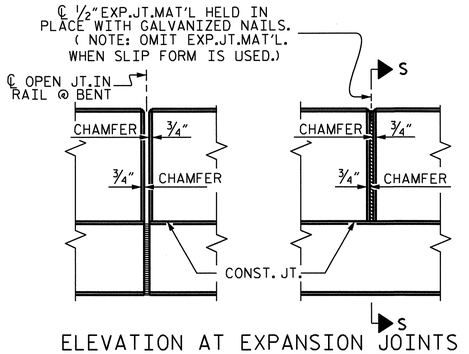
	SPAN A & B			EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B1	4	#4	STR	25'-2"	67	25'-2"	67
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	96	#4	3	5'-4"	342	5'-4"	342
* S3	54	#5	1	5'-8"	319		
REINFORCING STEEL				LBS.	444		444
* EPOXY COATED REINFORCING STEEL				LBS.	319		
5,000 P.S.I. CONCRETE				CU. YDS.	6.8		6.8
0.6" Ø L.R. STRANDS				No.	16		

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

BAR	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
* B2	64	#5	STR	24'-0"	1602
* S4	216	#5	2	5'-6"	1239
* EPOXY COATED REINFORCING STEEL				LBS.	2841
CLASS AA CONCRETE				C.Y.	19.0
TOTAL LIN. FT. OF VERTICAL CONCRETE BARRIER RAIL				LIN. FT.	195.50

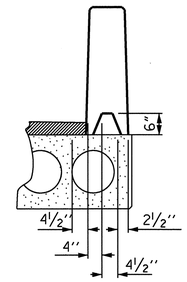


VERTICAL CONCRETE BARRIER RAIL SECTION

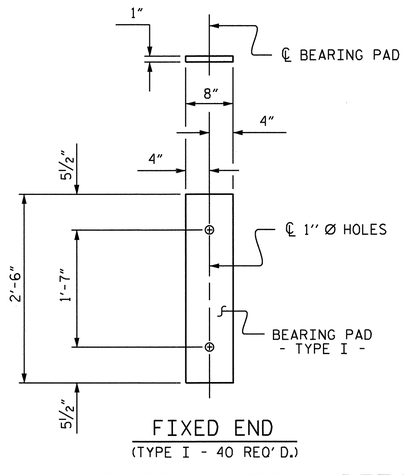


ELEVATION AT EXPANSION JOINTS

BARRIER RAIL DETAILS



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



FIXED END
(TYPE I - 40 REQ'D.)

ELASTOMERIC BEARING DETAILS
(50 DUROMETER HARDNESS)

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

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

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE 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 BARRIER RAILS SHALL BE EPOXY COATED.

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS 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.

THE MINIMUM HEIGHT OF THE BARRIER RAIL IS SHOWN. THE HEIGHT OF THE BARRIER RAIL VARIES WHILE THE TOP OF THE RAIL FOLLOWS THE PROFILE OF THE GUTTER LINE.

FOR VERTICAL CONCRETE BARRIER RAIL, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

PROJECT NO. B-4992
WILSON COUNTY
STATION: 13+15.00 -L-

SHEET 4 OF 4

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-30
1			3			TOTAL SHEETS
2			4			40

NORTH CAROLINA PROFESSIONAL SEAL 27005 ENGINEER KEITH PASCHAL
4.14.10

ASSEMBLED BY : M.FOWLER	DATE : 3/16/09
CHECKED BY : J.D HAWK	DATE : 3/18/09
DRAWN BY : WJH 4/89	REV. 10/17/00 RWW/LES
CHECKED BY : FCJ 5/89	REV. 7/10/01 RWW/LES
	REV. 5/7/03RRR RWW/JTE

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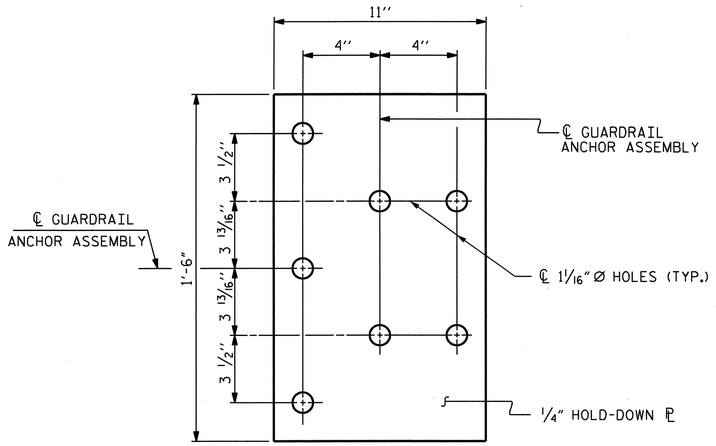
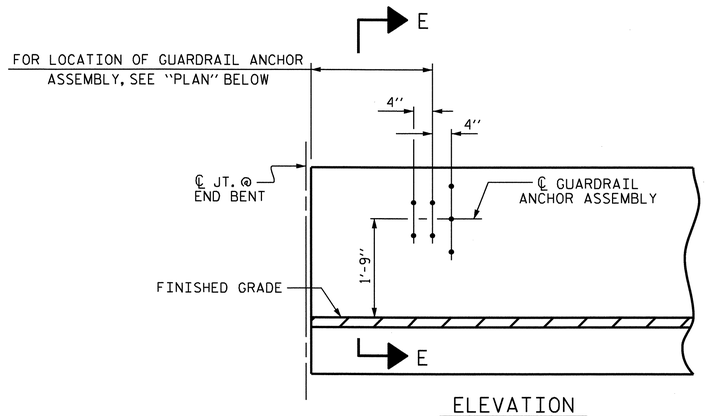
jdhawk

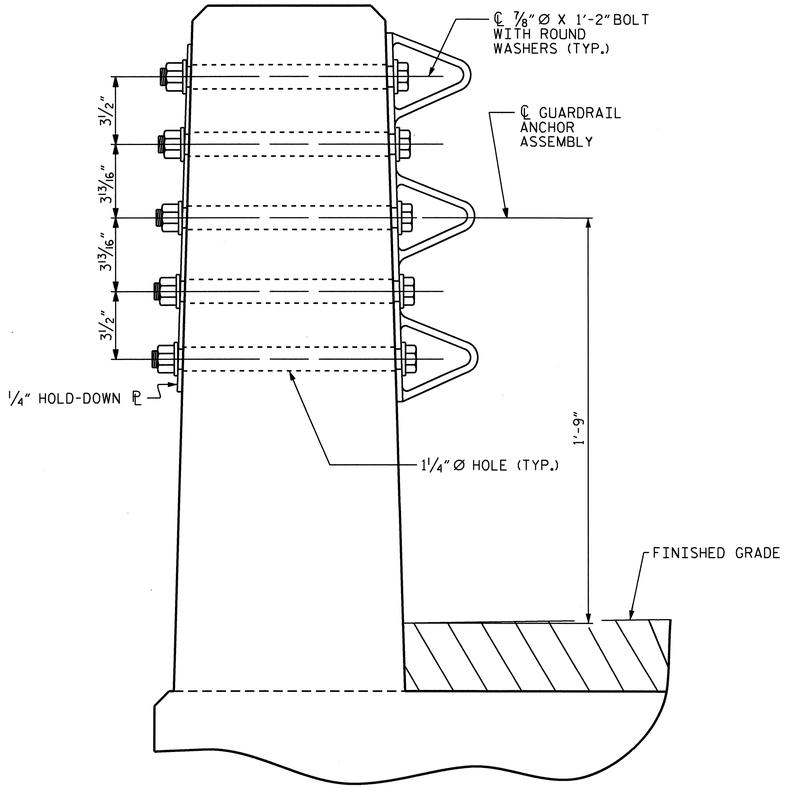
(SHEET 4) STD. NO. PCS3



PLAN



ELEVATION



SECTION E-E

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.

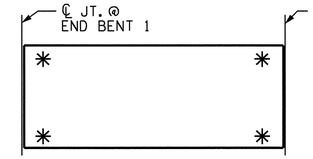
AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

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

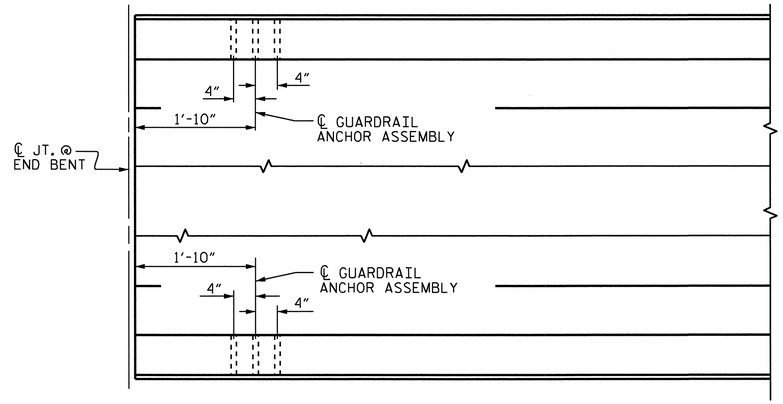
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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

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



SKETCH SHOWING POINTS OF ATTACHMENTS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT 1 SHOWN, END BENT 2 SIMILAR.

PROJECT NO. B-4992

WILSON COUNTY

STATION: 13+15.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

GUARDRAIL ANCHORAGE FOR VERTICAL CONCRETE BARRIER RAIL

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER KEITH PASCHAL

4.14.10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-31
1			3			TOTAL SHEETS
2			4			40

ASSEMBLED BY : M.FOWLER	DATE : 4/13/09
CHECKED BY : J.D. HAWK	DATE : 4/15/09
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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jdhawk

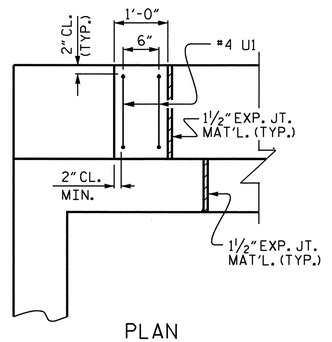
NOTES

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

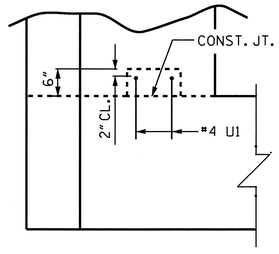
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

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

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



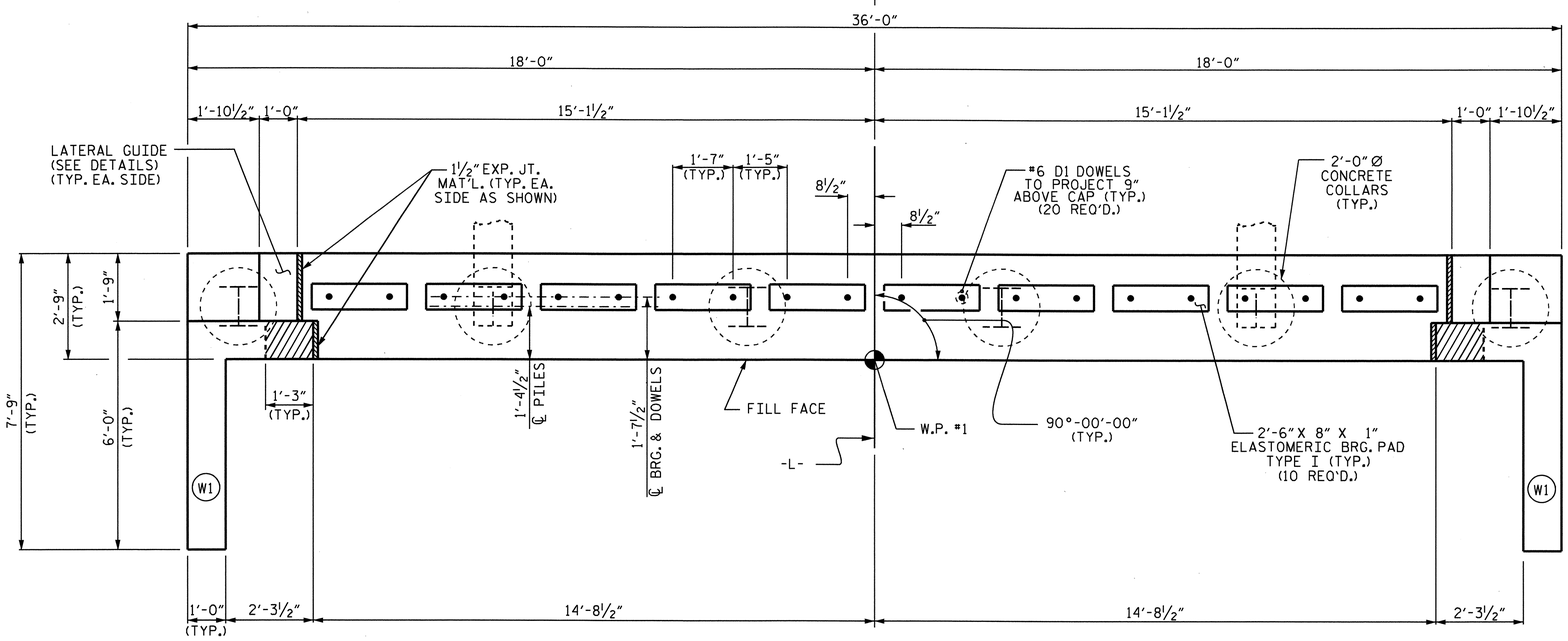
PLAN



ELEVATION

LATERAL GUIDE

(EACH END SIMILAR)



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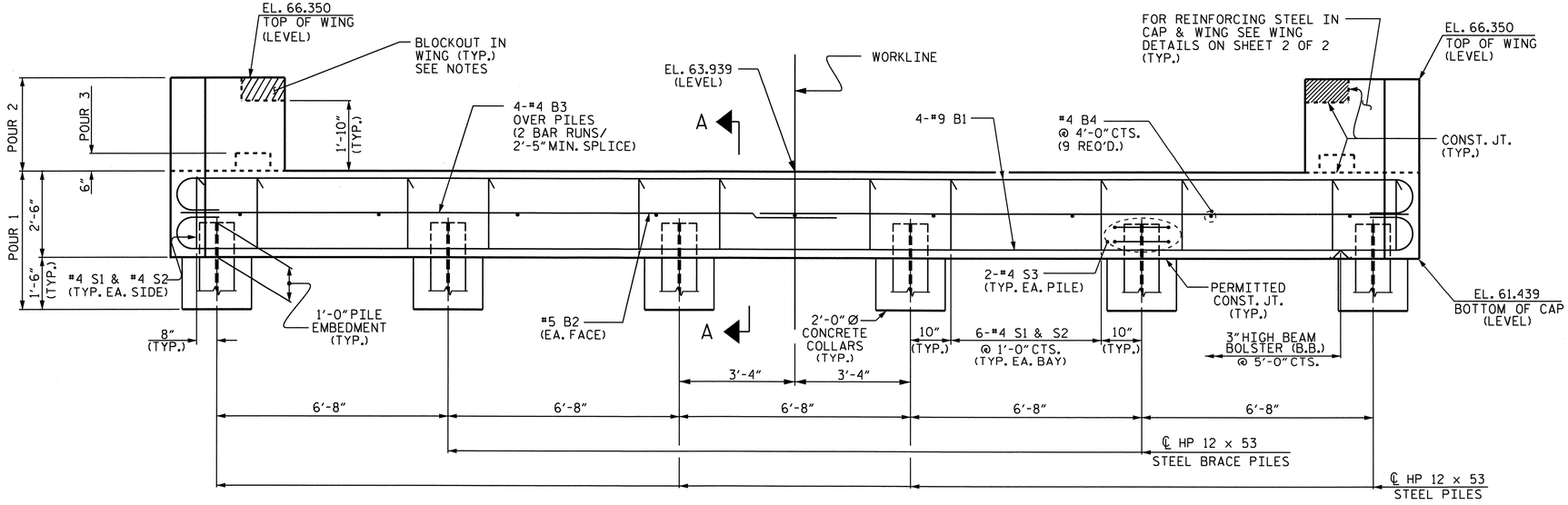

ELEVATION

PROJECT NO. B-4992

WILSON COUNTY

STATION: 13+15.00 -L

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-32
1			3			TOTAL SHEETS
2			4			40

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER KEITH PASCHAL
4-14-10

DRAWN BY : J. G. KHARVA DATE : 03/10/09
CHECKED BY : J. D. HAWK DATE : 04/15/09

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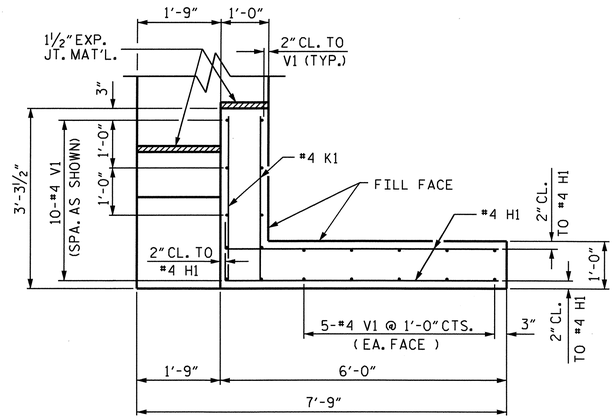
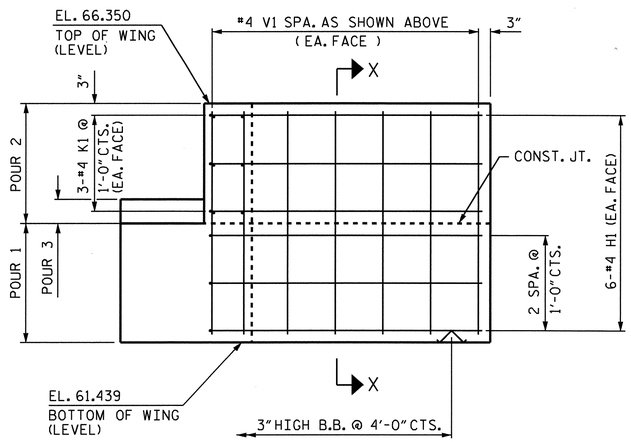


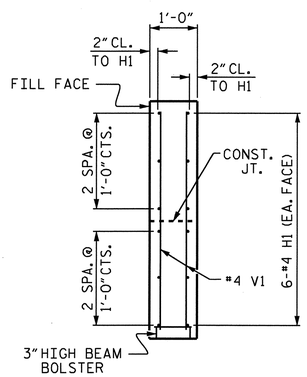
PLAN OF WING (W1)

LEFT WING SHOWN RIGHT WING SIMILAR

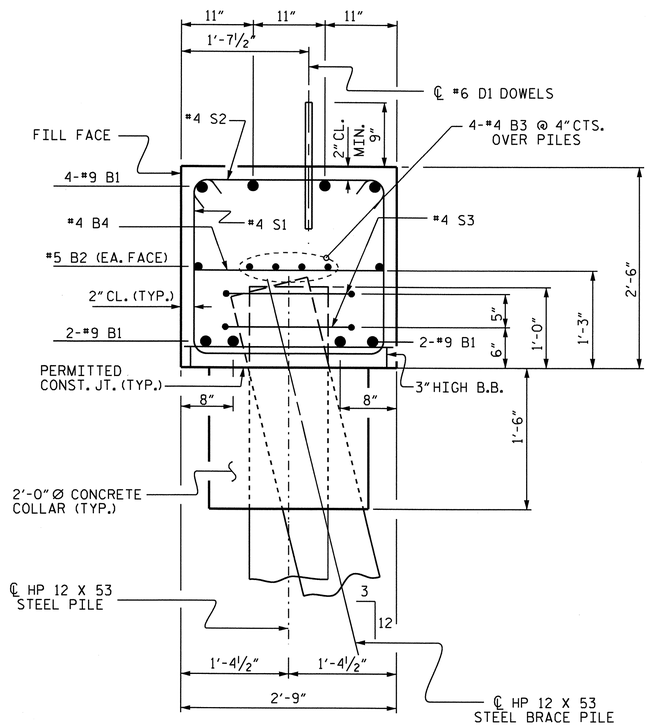


ELEVATION OF WING (W1)

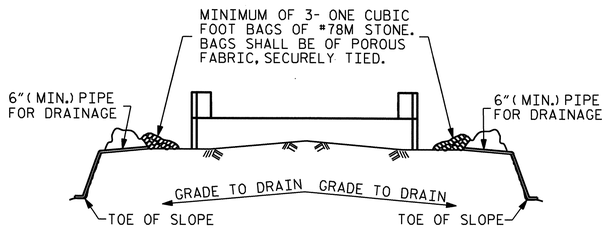
LEFT WING SHOWN RIGHT WING SIMILAR



SECTION X-X



SECTION A-A



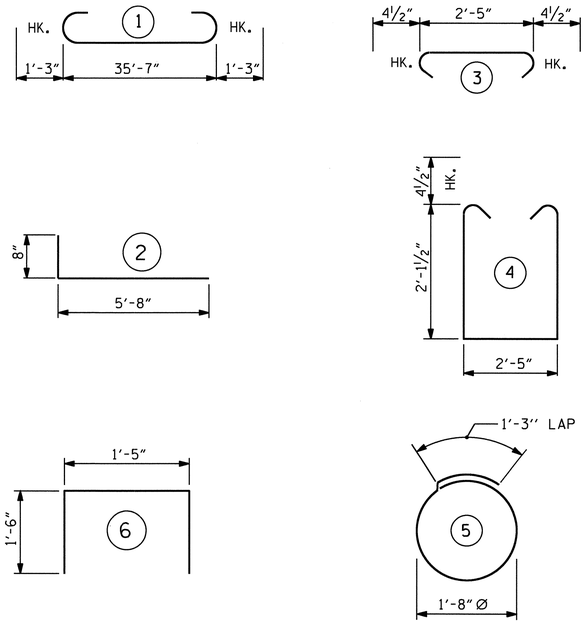
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	38'-1"	1036
B2	2	#5	STR	35'-8"	74
B3	8	#4	STR	19'-1"	102
B4	9	#4	STR	2'-5"	15
D1	20	#6	STR	1'-6"	45
H1	24	#4	2	6'-4"	102
K1	12	#4	STR	2'-11"	23
S1	32	#4	4	7'-5"	159
S2	32	#4	3	3'-2"	68
S3	12	#4	5	6'-6"	52
U1	4	#4	6	4'-5"	12
V1	40	#4	STR	4'-7"	122

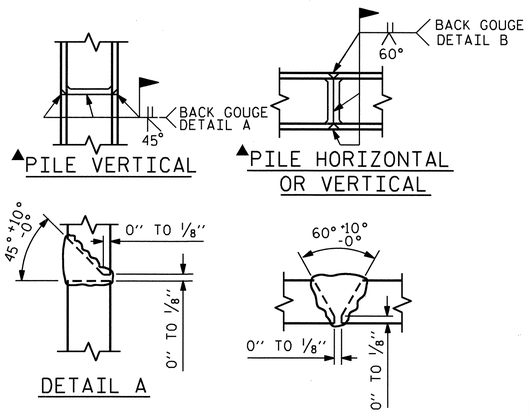
TOTAL REINFORCING STEEL = 1810 LBS

CLASS A CONCRETE BREAKDOWN

POUR 1	(CAP, CONCRETE COLLARS, & LOWER PART OF WINGS)	11.1 C.Y.
POUR 2	(UPPER PART OF WINGS)	1.5 C.Y.
POUR 3	(LATERAL GUIDES)	0.1 C.Y.
TOTAL CLASS A CONCRETE		12.7 C.Y.

HP 12 X 53 STEEL PILES
NO.: 6 LIN. FT.: 240

PILE REDRIVES 3



▲POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

PROJECT NO. B-4992

WILSON COUNTY

STATION: 13+15.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-33
1			3			TOTAL SHEETS
2			4			40

NORTH CAROLINA PROFESSIONAL SEAL 27005 ENGINEER KEITH PASCHAL
4-14-10

DRAWN BY : J. G. KHARVA DATE : 3/10/09
CHECKED BY : J. D. HAWK DATE : 4/15/09

14-APR-2010 11:04
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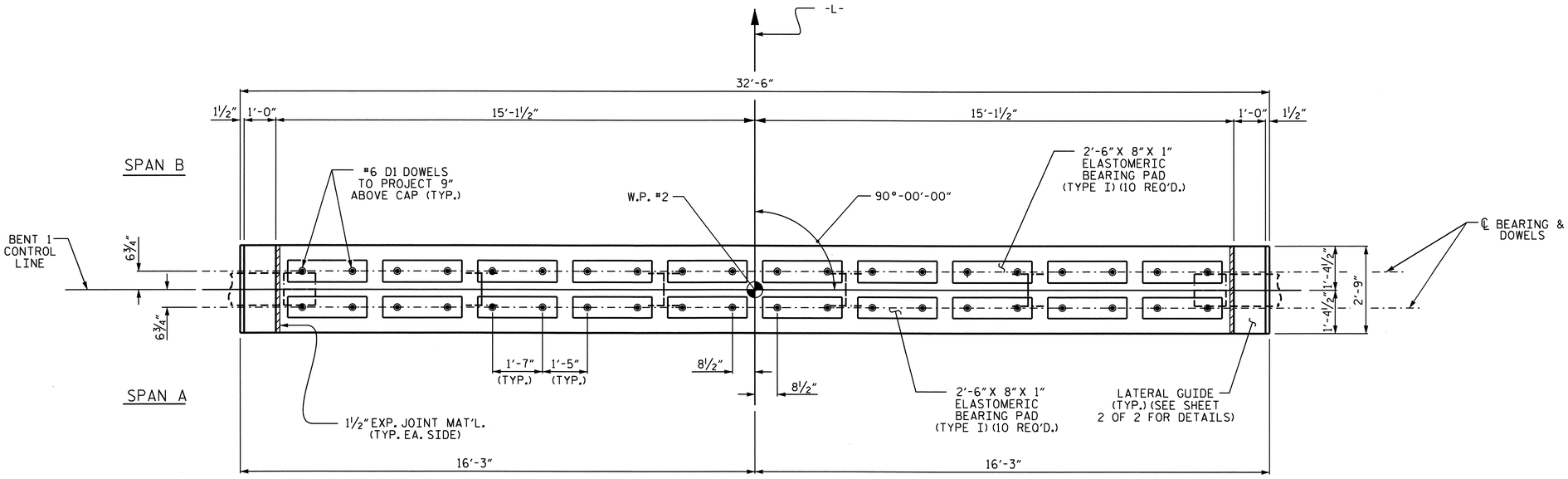
jdhawk

NOTES

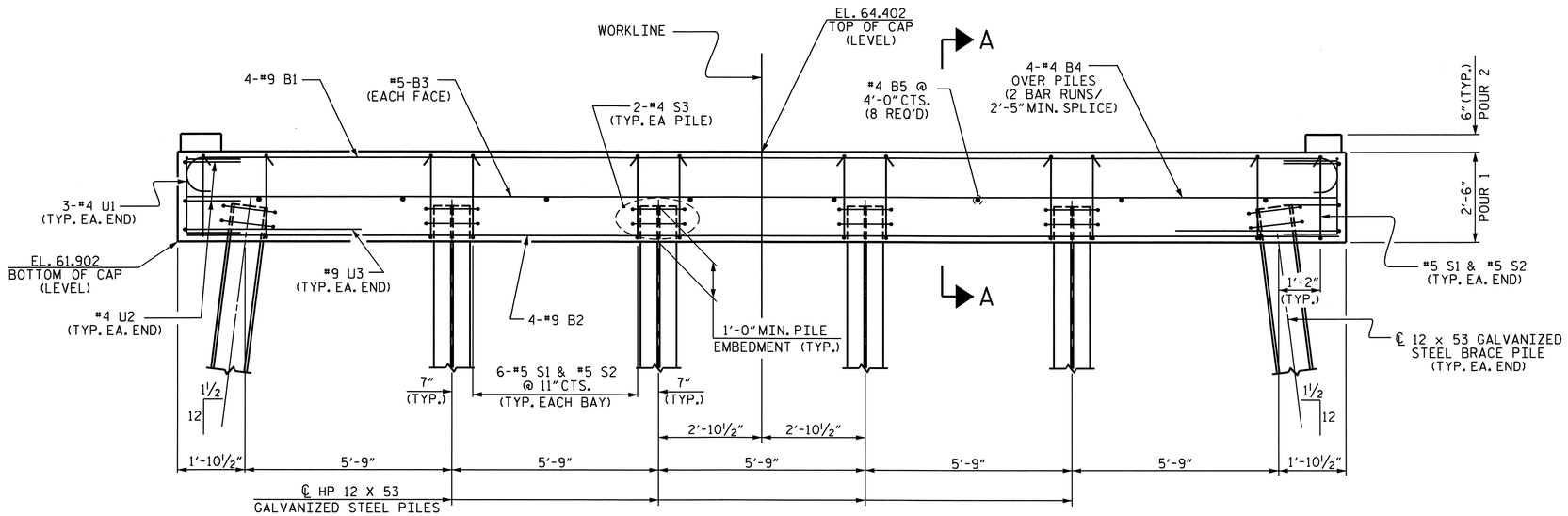
STIRRUPS IN CAP MY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

A MINIMUM OF 25'-0" OF THE TOP OF EACH PILE SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



PLAN



ELEVATION

PROJECT NO. B-4992

WILSON COUNTY

STATION: 13+15.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-34
1			3			TOTAL SHEETS
2			4			40

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER KEITH PASCHAL

4.14.10

DRAWN BY : J. G. KHARVA DATE : 3/03/09
CHECKED BY : J. D. HAWK DATE : 4/16/09

23-FEB-2010 12:05
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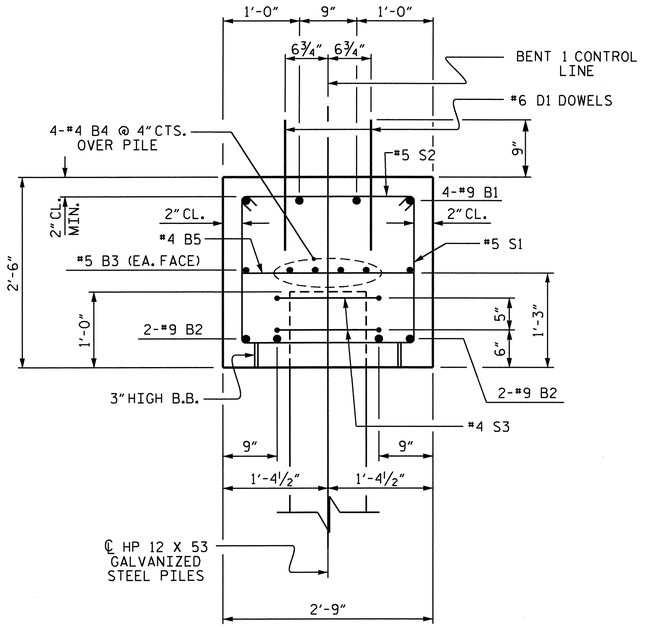
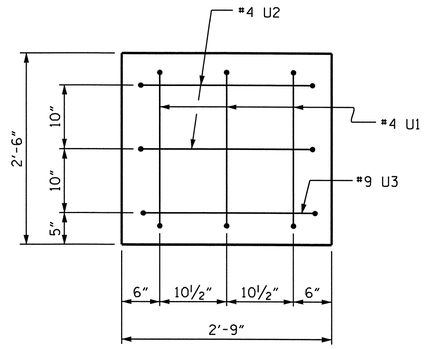


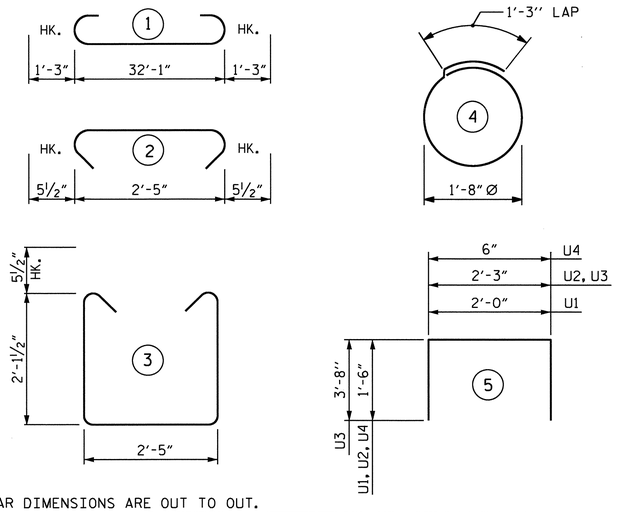
SECTION A-A



END VIEW

(TYP. EA. END)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 1

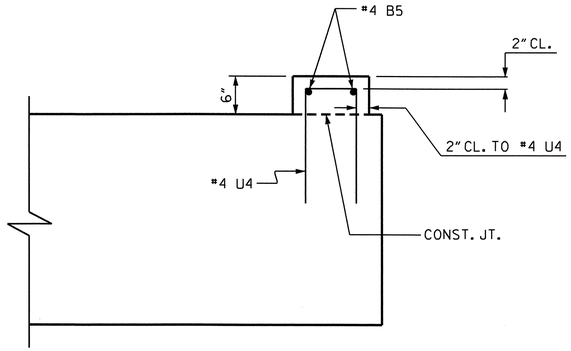
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#9	1	34'-7"	470
B2	4	#9	STR	32'-2"	437
B3	2	#5	STR	32'-2"	67
B4	8	#4	STR	17'-4"	93
B5	12	#4	STR	2'-5"	19
D1	40	#6	STR	1'-6"	90
S1	32	#5	3	7'-7"	253
S2	32	#5	2	3'-4"	111
S3	12	#4	4	6'-6"	52
U1	6	#4	5	5'-0"	20
U2	4	#4	5	5'-3"	14
U3	2	#9	5	9'-7"	65
U4	8	#4	5	3'-6"	19

REINFORCING STEEL 1710 LBS.

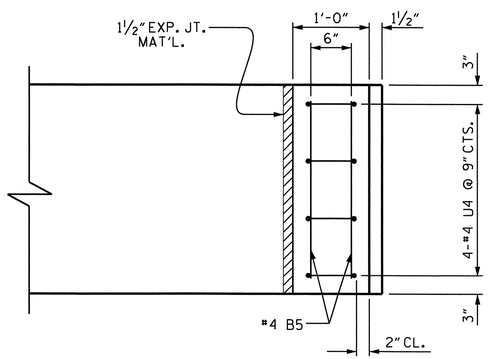
CLASS A CONCRETE
POUR 1 (CAP) C.Y. 8.3
POUR 2 (LATERAL GUIDE) C.Y. 0.1
TOTAL C.Y. 8.4

HP 12 x 53 GALVANIZED STEEL PILES
NO.: 6 LIN. FT. 360.0

PILE REDRIVES NO.: 3



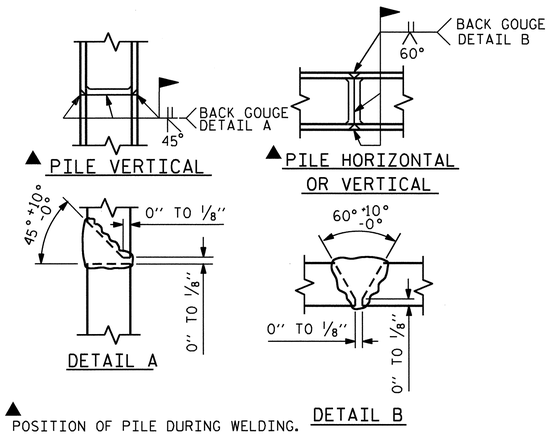
ELEVATION



PLAN

LATERAL GUIDE DETAIL

(EACH END SIMILAR)



▲POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

PROJECT NO. B-4992

WILSON COUNTY

STATION: 13+15.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-35
1			3			TOTAL SHEETS
2			4			40

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER KEITH PASCHAL

4.14.10

DRAWN BY : J. G. KHARVA DATE : 3/03/09
CHECKED BY : J. D. HAWK DATE : 4/16/09

23-FEB-2010 12:05
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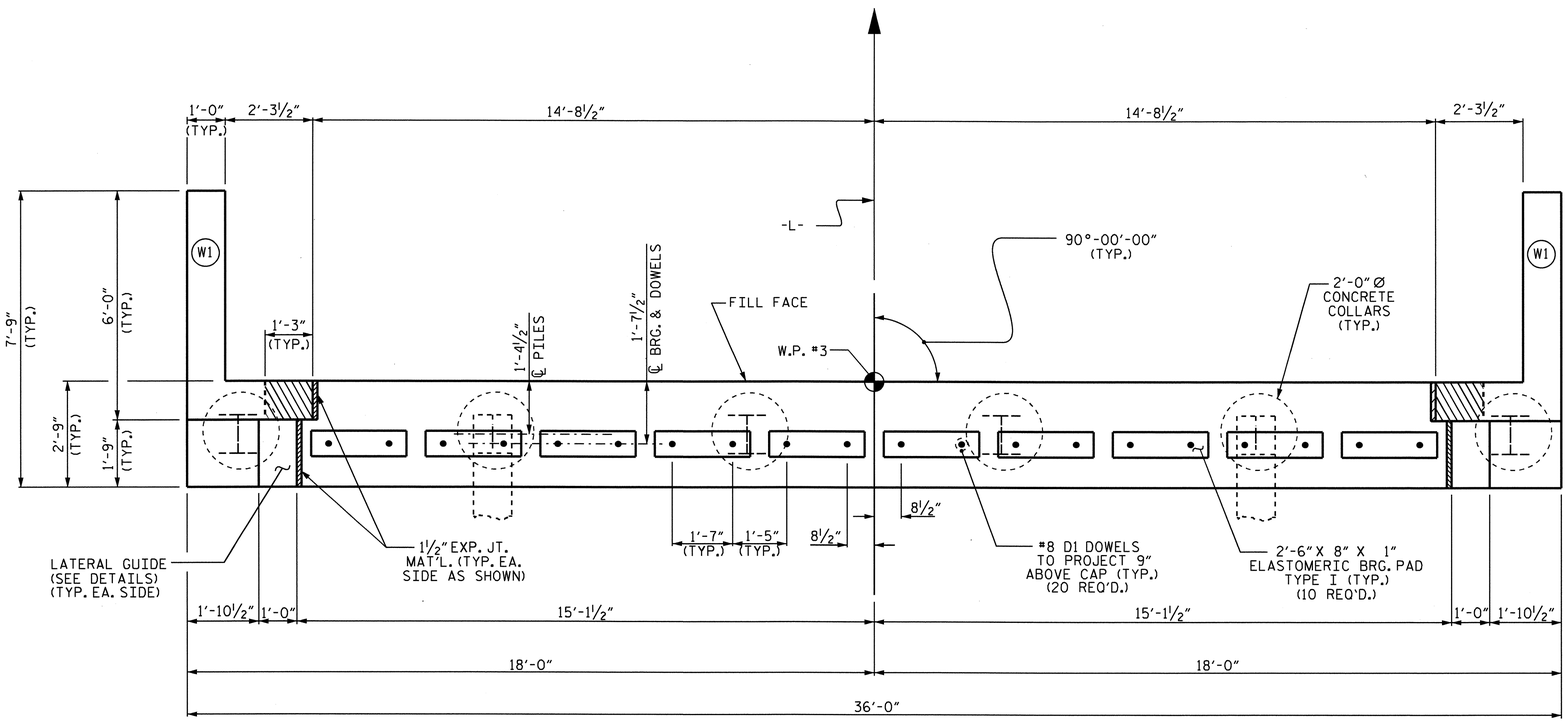
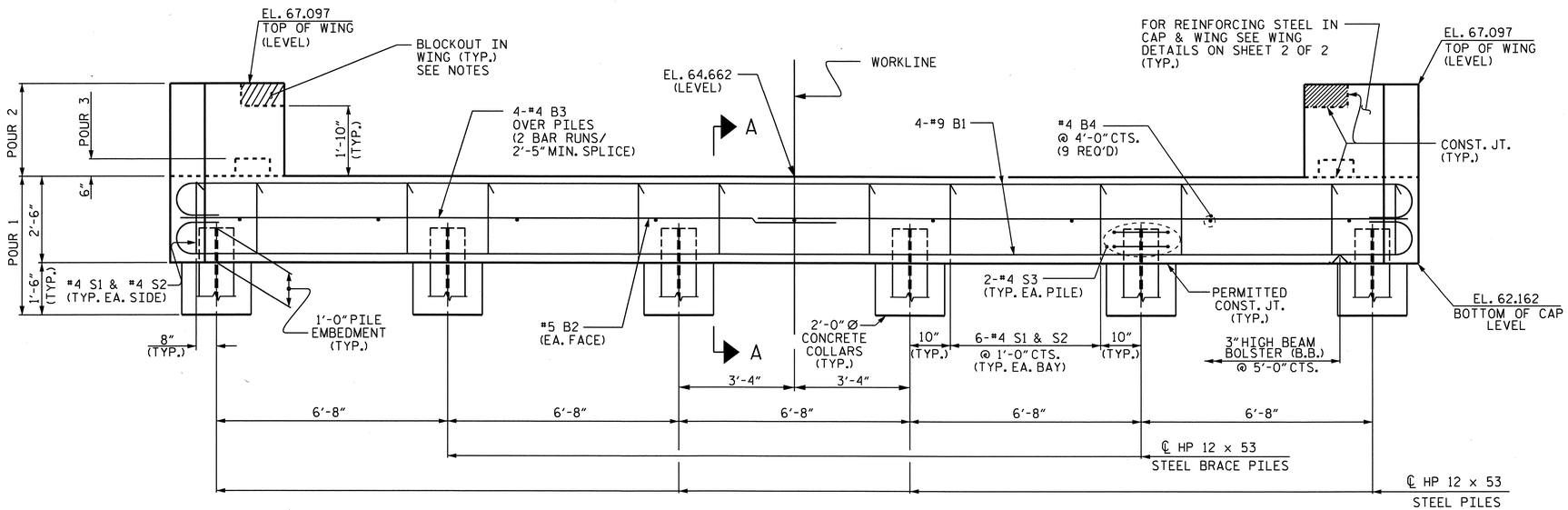
jdhawk



PLAN



ELEVATION

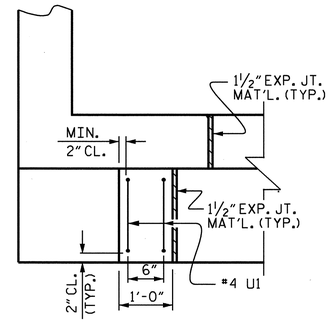
NOTES

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

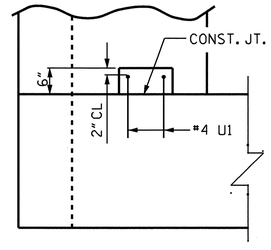
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

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 BARRIER RAIL IS CAST IF SLIP FORMING IS USED.



PLAN



ELEVATION

LATERAL GUIDE

(EACH END SIMILAR)

PROJECT NO. B-4992

WILSON COUNTY

STATION: 13+15.00-L

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER KEITH PASCHAL
4.14.10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-36
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : J. G. KHARVA DATE : 03/10/09
CHECKED BY : J. D. HAWK DATE : 04/15/09

14-APR-2010 11:04
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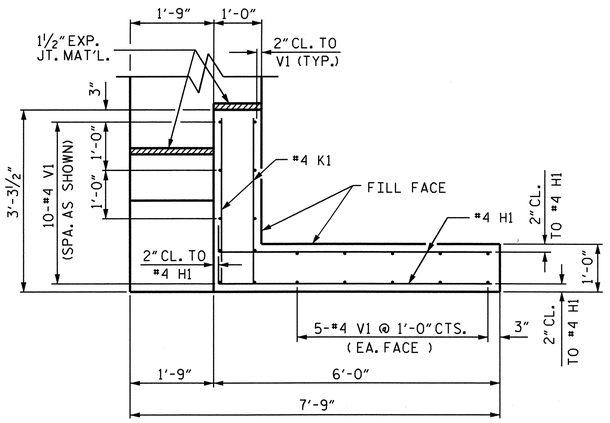
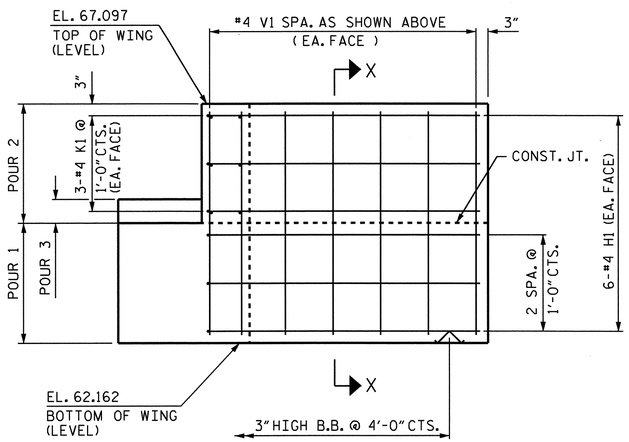
jdhawk



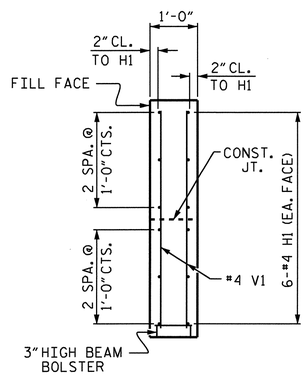
PLAN OF WING (W1)

LEFT WING SHOWN RIGHT WING SIMILAR

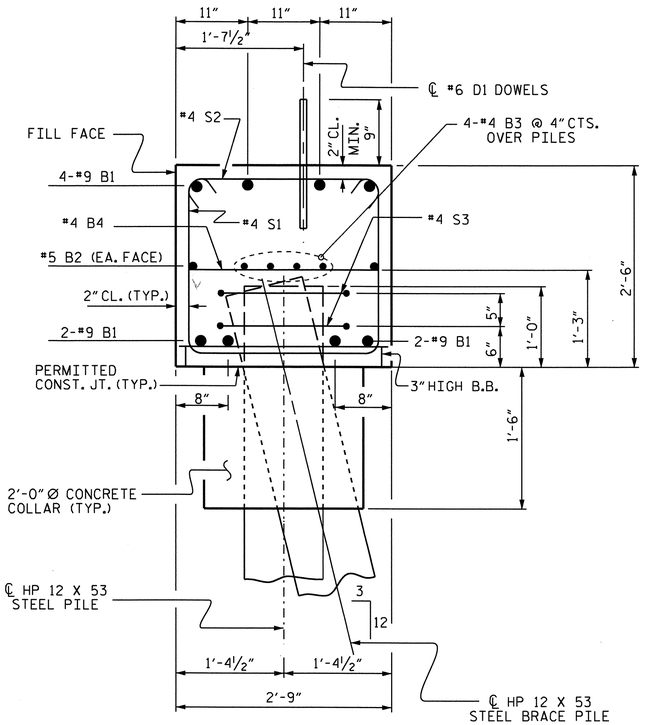


ELEVATION OF WING (W1)

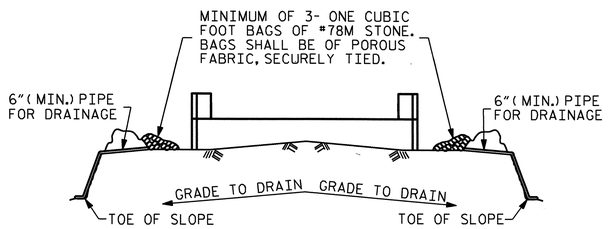
RIGHT WING SHOWN LEFT WING SIMILAR



SECTION X-X



SECTION A-A



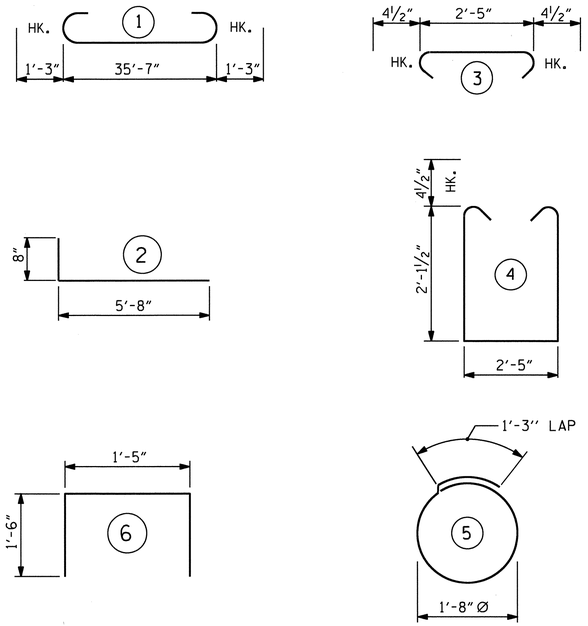
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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	38'-1"	1036
B2	2	#5	STR	35'-8"	74
B3	8	#4	STR	19'-1"	102
B4	9	#4	STR	2'-5"	15
D1	20	#6	STR	1'-6"	45
H1	24	#4	2	6'-4"	102
K1	12	#4	STR	2'-11"	23
S1	32	#4	4	7'-5"	159
S2	32	#4	3	3'-2"	68
S3	12	#4	5	6'-6"	52
U1	4	#4	6	4'-5"	12
V1	40	#4	STR	4'-7"	122

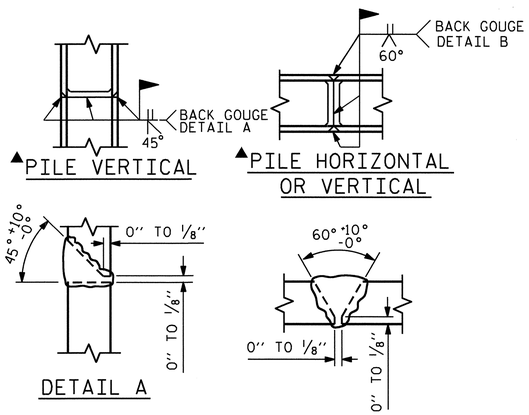
TOTAL REINFORCING STEEL = 1810 LBS

CLASS A CONCRETE BREAKDOWN

POUR 1	(CAP, CONCRETE COLLARS, & LOWER PART OF WINGS)	11.1 C.Y.
POUR 2	(UPPER PART OF WINGS)	1.5 C.Y.
POUR 3	(LATERAL GUIDES)	0.1 C.Y.
TOTAL CLASS A CONCRETE		12.7 C.Y.

HP 12 X 53 STEEL PILES
NO.: 6 LIN. FT.: 240

PILE REDRIVES 3



▲POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER KEITH PASCHAL
4.14.10

PROJECT NO. B-4992
WILSON COUNTY
STATION: 13+15.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-37
1			3			TOTAL SHEETS
2			4			40

DRAWN BY : J. G. KHARVA DATE : 3/10/09
CHECKED BY : J. D. HAWK DATE : 4/15/09

14-APR-2010 11:05
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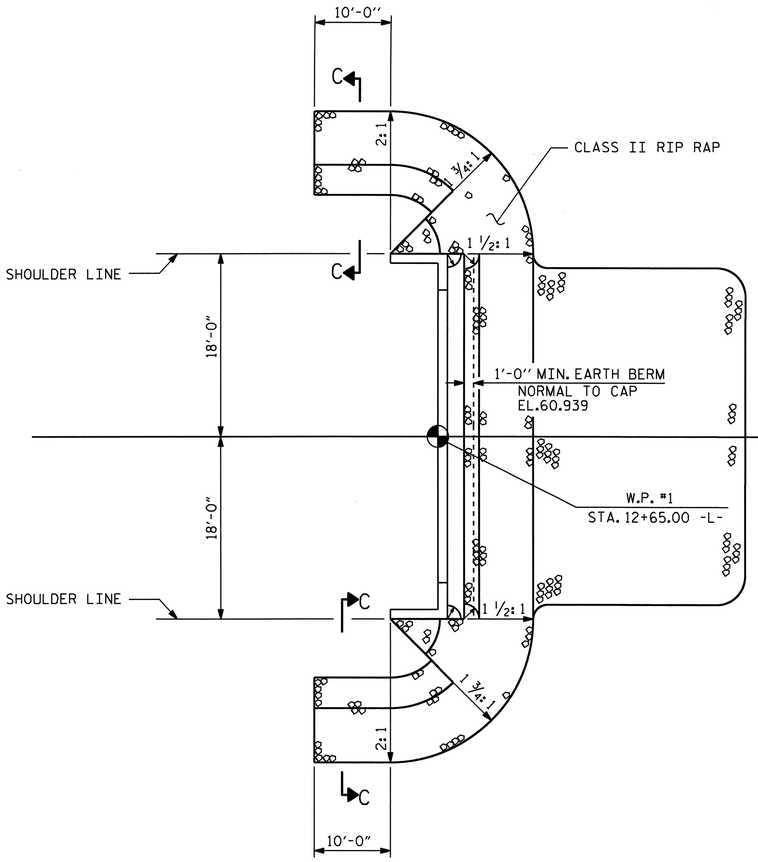
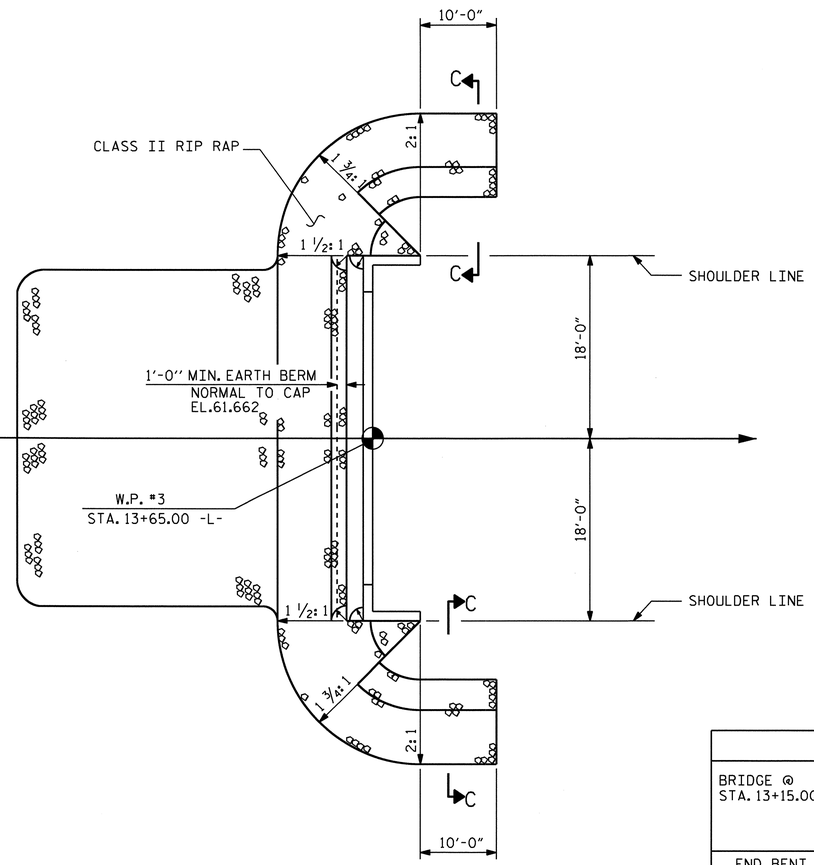


END BENT 1

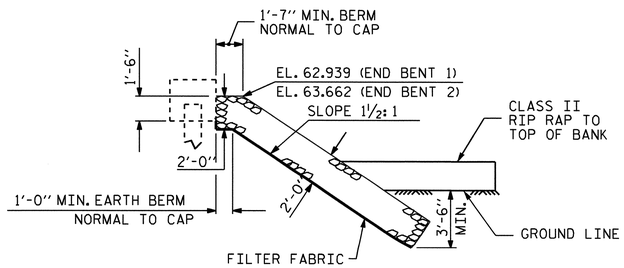


END BENT 2

-L-

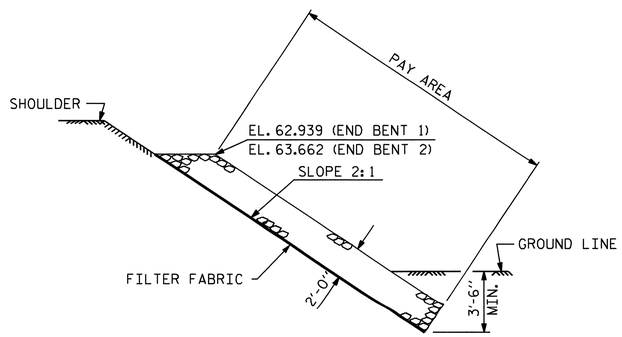
PLAN

ESTIMATED QUANTITIES		
BRIDGE @ STA. 13+15.00 -L-	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	191	213
END BENT 2	206	229
TOTAL	397	442



℄ SECTION

BERM RIP RAPPED



SECTION C-C

PROJECT NO. B-4992

WILSON COUNTY

STATION: 13+15.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

RIP RAP DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER KEITH PASCHAL

4-14-10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-38
1			3			TOTAL SHEETS
2			4			40

ASSEMBLED BY : MARVIN FOWLER	DATE : 9/15/08
CHECKED BY : J.G. KHARVA	DATE : 10/31/08
DRAWN BY : FCJ 2/88	REV. 8/16/99 RWW/LES
CHECKED BY : ARB 8/88	REV. 10/17/00 RWW/LES
	REV. 5/1/06 TLA/GM

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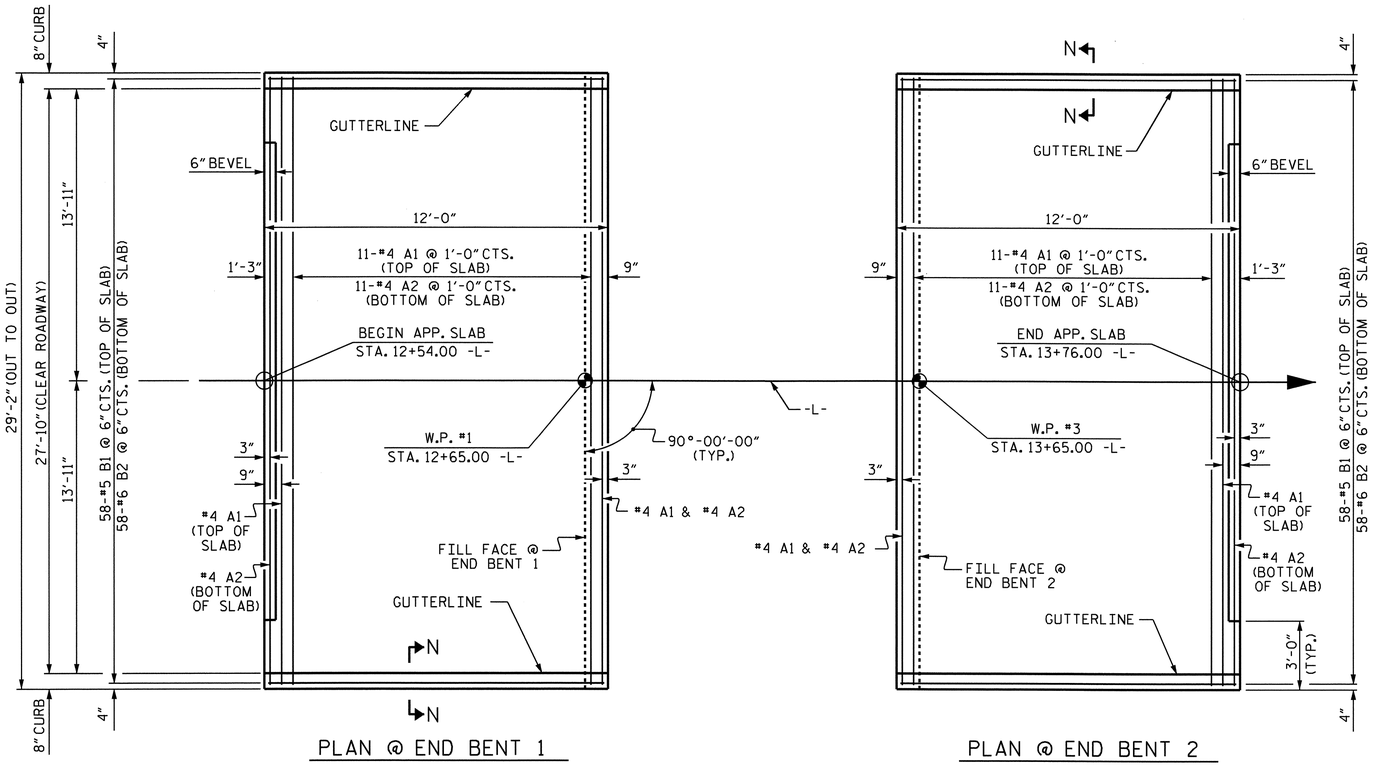
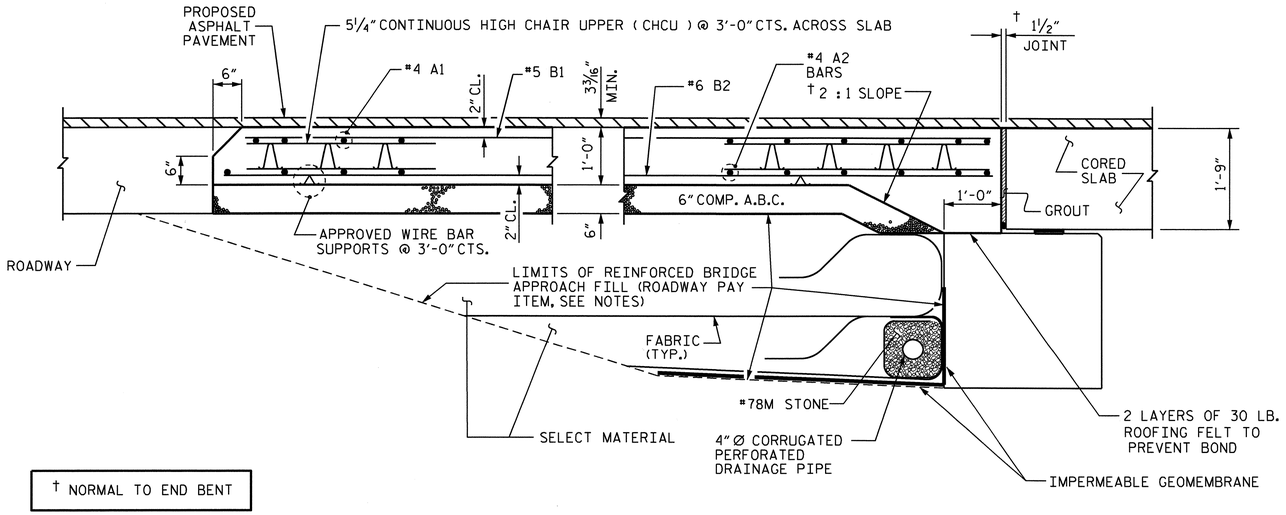
SKEW 90°

STD. NO. RR2

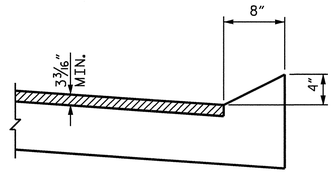


DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

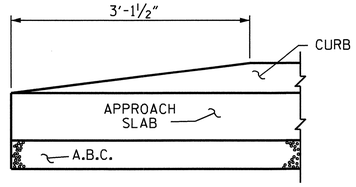


† NORMAL TO END BENT

SECTION THRU SLAB



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER
(OMIT TAPER WHEN SHOULDER BERM GUTTER IS REQUIRED)

CURB DETAILS

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 BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB AND SHALL EXTEND 1'-0" OUTSIDE OF EACH EDGE OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

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

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

APPROACH SLAB GROOVING IS NOT REQUIRED.

BILL OF MATERIAL

FOR ONE APPROACH SLAB (2 REQ'D)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	13	#4	STR	28'-10"	250
A2	13	#4	STR	28'-10"	250
* B1	58	#5	STR	11'-5"	691
B2	58	#6	STR	11'-8"	1016
REINFORCING STEEL				LBS.	1266
* EPOXY COATED REINFORCING STEEL				LBS.	941
CLASS AA CONCRETE				C. Y.	14.4

PROJECT NO. B-4992

WILSON COUNTY

STATION: 13+15.00 -L-

SHEET 1 OF 2

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-39
1			3			TOTAL SHEETS
2			4			40

NORTH CAROLINA PROFESSIONAL SEAL 27005 ENGINEER J. KEITH PASCHAL
4.14.10

ASSEMBLED BY : M.FOWLER	DATE : 9/5/08		
CHECKED BY : J.G. KHARVA	DATE : 10/28/08		
DRAWN BY : FCJ 6/87	REV. 7/10/01	LES/RDR	
CHECKED BY : EGA 6/87	REV. 5/7/03R	RWW/JTE	
	REV. 5/1/06R	KMM/GM	

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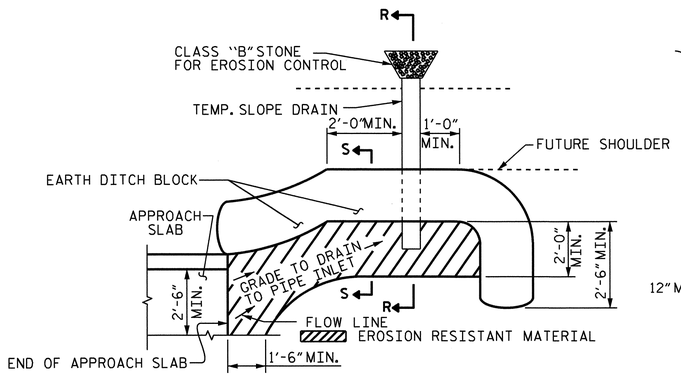
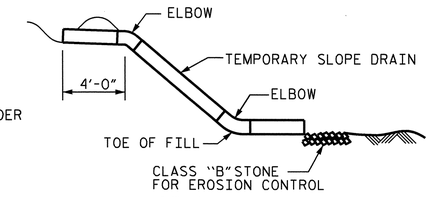
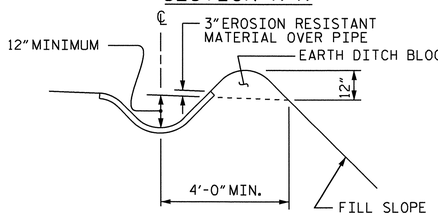


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

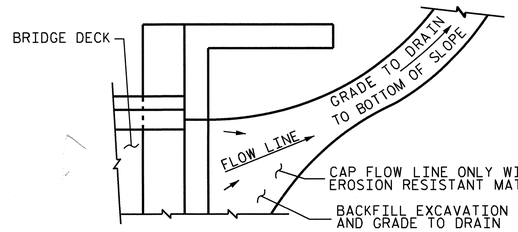
PLAN VIEW



SECTION R-R



SECTION S-S



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

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

ASSEMBLED BY : M.FOWLER		DATE : 9/5/08	
CHECKED BY : J.G. KHARVA		DATE : 10/28/08	
DRAWN BY : FCJ 11/88	REV. 10/17/00	RWW/LES	
CHECKED BY : ARB 11/88	REV. 5/7/03	RWW/JTE	
	REV. 5/1/06R	MAA/KMM	

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PROJECT NO. B-4992

WILSON COUNTY

STATION: 13+15.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

BRIDGE APPROACH SLAB DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER KEITH PASCHAL

4.14.10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-40
1			3			TOTAL SHEETS
2			4			40

STD. NO. BAS10

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 2006 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

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

STRUCTURAL STEEL:

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

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

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

HANDRAILS AND POSTS:

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

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. 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 EEM @ RGW REV. 5-7-03 RWW @ JTE
REV. 8-16-99 RWW @ LES REV. 5-1-06 TLA @ GM

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