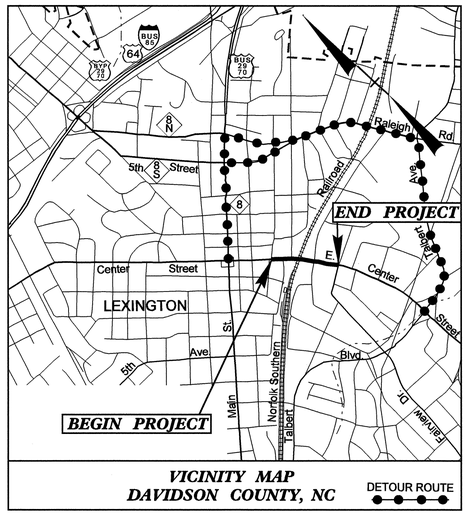
TIP PROJECT: B-3446

CONTRACT: C201604

STRUCTURES



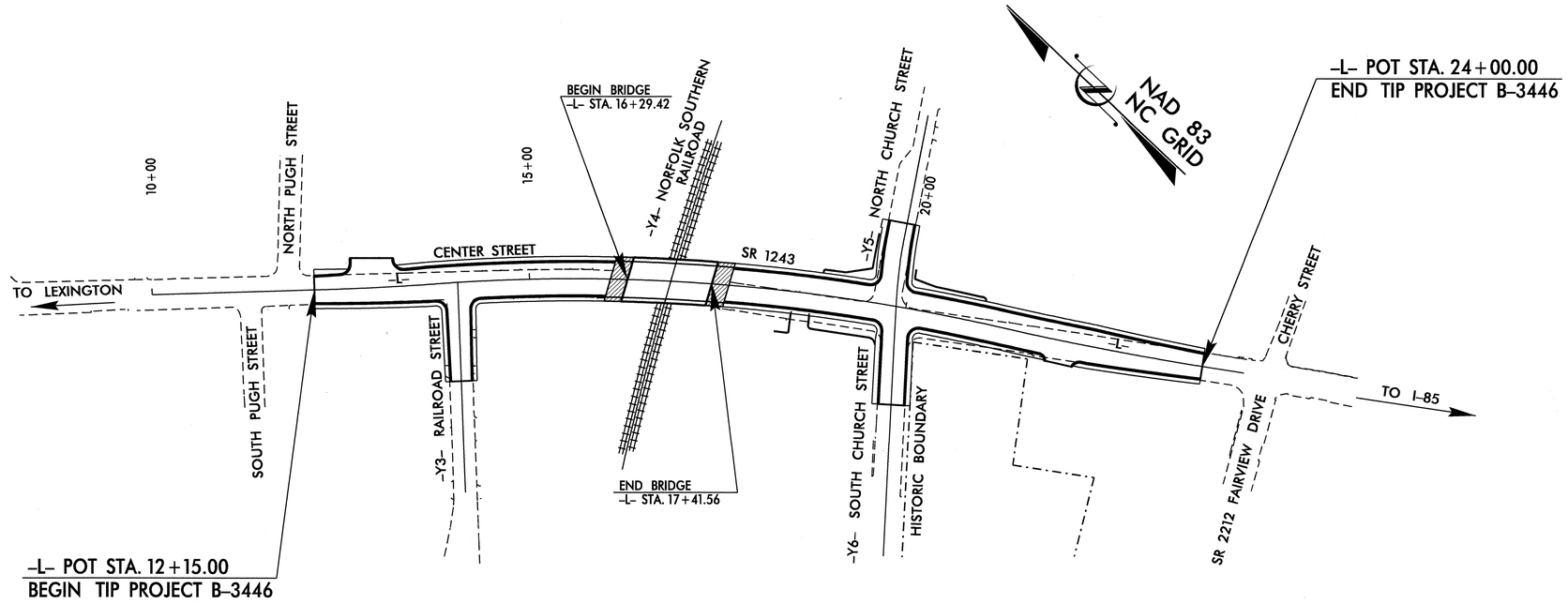
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DAVIDSON COUNTY

STATE	STATE PROJECT REFERENCE NO.		
N.C.	B-3446		
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
33066.1.1	BRSTP-1243(2)	P.E.	
33066.2.2	BRSTP-1243(2)	R /W & UTIL.	
33066.3.2	BRSTP-1243(4)	CONST.	

LOCATION: BRIDGE #415 ON SR 1243 (CENTER STREET) OVER NORFOLK SOUTHERN RAILROAD IN LEXINGTON

TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURES AND SIGNALS



DESIGN DATA

ADT 2006 = 18,410
ADT 2026 = 25,335
DHV = 10 %
D = 55 %
* T = 3 %
V = 25 MPH
* TTST 1% + DUAL 2%
FUNC. CLASS = URBAN MINOR ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3446 = 0.203 MI
LENGTH STRUCTURE TIP PROJECT B-3446 = 0.021 MI
TOTAL LENGTH TIP PROJECT B-3446 = 0.224 MI

2006 STANDARDS SPECIFICATION

LETTING DATE:
AUGUST 21, 2007

Prepared In the Office of:
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
1000 Birch Ridge Drive Raleigh, N.C. 27610

B. S. COX, P. E.
PROJECT ENGINEER

D.E. PETREY, P. E.
PROJECT DESIGN ENGINEER

STRUCTURE DESIGN UNIT

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY ENGINEER - DESIGN

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED FOR
DIVISION ADMINISTRATOR *DATE*

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F.A. PROJECT No. **BRSTP-1243 (4)**

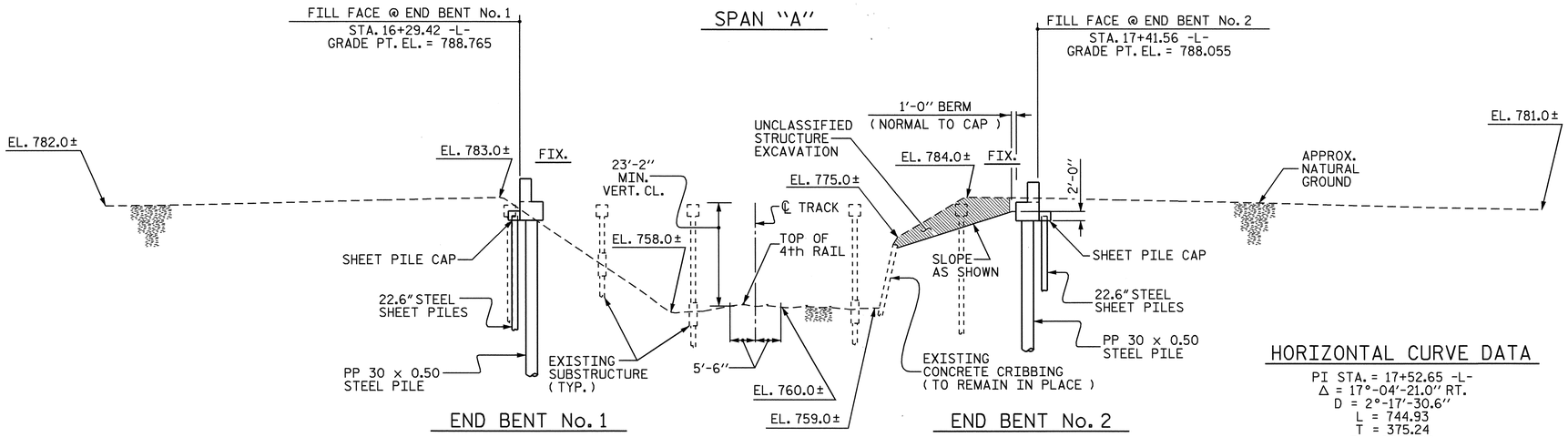
15+50 16+00 16+50 17+00 17+50 18+00 18+50

VERTICAL CURVE DATA

+2.2318% -3.6572%

PI = 16+87.00 -L-
EL. = 790.05
VC = 110'

SPAN "A"



SECTION ALONG ℄ SURVEY -L-

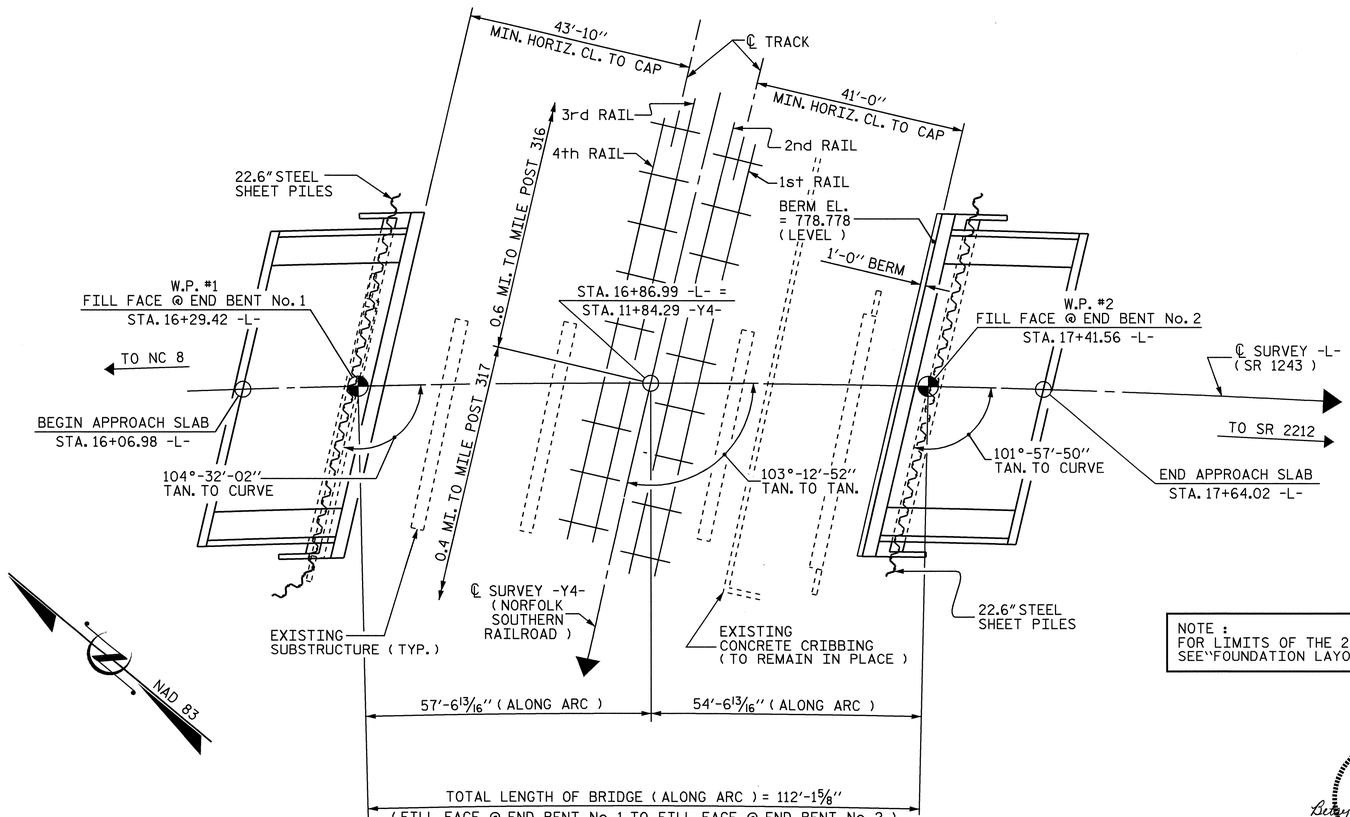
(SECTIONS AT END BENTS ARE AT RIGHT ANGLES)

HORIZONTAL CURVE DATA

PI STA. = 17+52.65 -L-
Δ = 17°-04'-21.0" RT.
D = 2°-17'-30.6"
L = 744.93
T = 375.24
R = 2500.00
SE = NC

TOP OF RAIL ELEVATIONS

STA. -Y4-	1st RAIL	2nd RAIL	3rd RAIL	4th RAIL
10+75.00	759.034	759.160	759.490	759.708
11+00.00	759.155	759.317	759.617	759.815
11+25.00	759.280	759.483	759.713	759.910
11+50.00	759.391	759.598	759.803	760.023
11+75.00	759.488	759.717	759.909	760.140
12+00.00	759.563	759.783	760.017	760.218
12+25.00	759.667	759.886	760.112	760.309
12+50.00	759.754	759.980	760.215	760.416
12+75.00	759.851	759.994	760.321	760.507

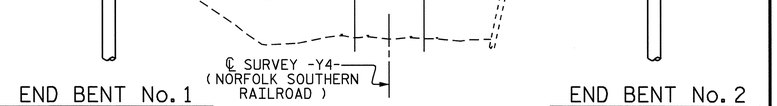


NOTE :
END BENTS ARE PARALLEL.

PLAN

(PP 30 x 0.50 STEEL PILES ARE NOT SHOWN IN PLAN VIEW)

NOTE :
FOR LIMITS OF THE 22.6" STEEL SHEET PILES, SEE "FOUNDATION LAYOUT", SHEET 2 OF 3.



MINIMUM CLEARANCE - RAILROAD

(LOOKING TOWARDS MILEPOST 316)

PROJECT NO. B-3446
DAVIDSON COUNTY
STATION: 16+86.99 -L-

SHEET 1 OF 3 REPLACES BRIDGE No. 415

MILE POST 316.6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER
NORFOLK SOUTHERN RAILROAD
ON SR 1243 (CENTER ST.)
BETWEEN NC 8 AND SR 2212

NORTH CAROLINA PROFESSIONAL SEAL 11268 ENGINEER BETSY S. COX

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY

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

DRAWN BY : MIKE BRITT DATE : 2-8-07
CHECKED BY : D.E. PETREY DATE : 4-07

02-JUL-2007 11:26
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mbritt

NOTES

DRIVE PILES AT END BENTS No. 1 AND No. 2 TO A REQUIRED BEARING CAPACITY OF 435 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO PLUS ANY ADDITIONAL CAPACITY TO ACCOUNT FOR FUTURE EXCAVATION AROUND THE PILES.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENTS No. 1 AND No. 2 IS 200 TONS PER PILE.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 80,000 TO 160,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENTS No. 1 AND No. 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM ARTICLE 450-5 OF THE STANDARD SPECIFICATIONS.

INSTALL STEEL SHEET PILES AT END BENTS No. 1 AND No. 2 TO AN ELEVATION NO HIGHER THAN 740 FT.

TESTING THE FIRST PRODUCTION PILE WITH THE PILE DRIVING ANALYZER (PDA) DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED. SEE PILE DRIVING ANALYZER SPECIAL PROVISION.

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

DRIVE PIPE PILES PRIOR TO INSTALLING STEEL SHEET PILES AT EACH END BENT.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE PRECONSTRUCTION SURVEY AND VIBRATION MONITORING REQUIREMENTS OUTLINED IN THE CONTROL OF VIBRATION SPECIAL PROVISION. SEE CONTROL OF VIBRATION SPECIAL PROVISION.

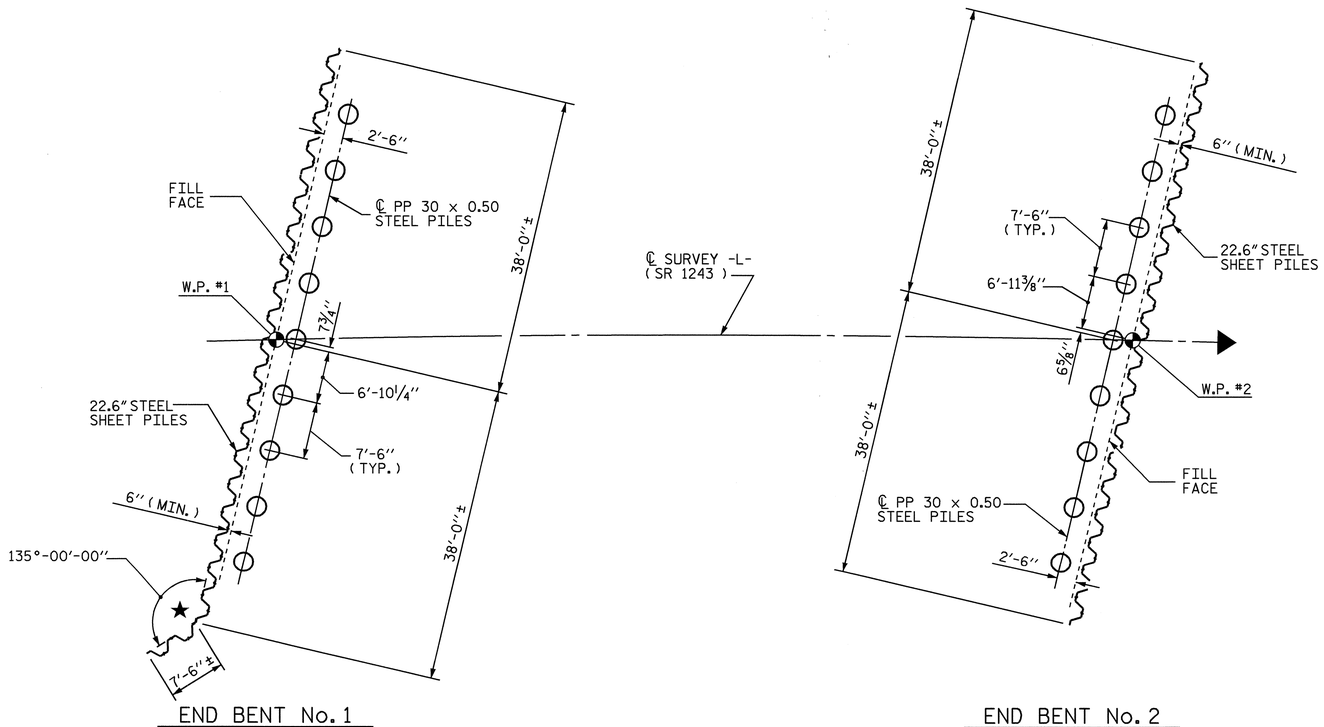
DRIVE PILES AT END BENTS No. 1 AND No. 2 TO A TIP ELEVATION NO HIGHER THAN 732 FT.

PIPE PILE PLATES ARE NOT REQUIRED FOR THE PIPE PILES AT END BENT No. 1 OR No. 2

ANY FUTURE EXCAVATION ADJACENT TO THE PIPE PILES AND STEEL SHEET PILES AT END BENTS No. 1 AND No. 2 MUST NOT EXTEND ANY DEEPER THAN ELEVATION 755 FT.

EXISTING TIMBER PILES AT END BENTS SHALL BE EXTRACTED IN THEIR ENTIRETY TO AVOID INTERFERENCE WITH THE PROPOSED STEEL SHEET PILES AND STEEL PILES. REPORT ANY INABILITY TO COMPLETELY EXTRACT THE EXISTING PILES TO THE ENGINEER. NO SEPARATE PAYMENT WILL BE MADE FOR EXTRACTION OF THE PILES AS IT IS INCLUDED IN THE PAY ITEM FOR REMOVAL OF EXISTING STRUCTURE.

THE RAILROAD TRACK TOP OF RAIL ELEVATIONS SHOWN ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE TOP OF RAIL ELEVATIONS AND REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM VERTICAL CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.



FOUNDATION LAYOUT

ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING, EXCEPT THAT THE GIRDERS HAVE BEEN DESIGNED FOR HS25.

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

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

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W UNLESS OTHERWISE NOTED ON THE PLANS.

THE EXISTING STRUCTURE CONSISTING OF REINFORCED CONCRETE DECK WITH ASPHALT WEARING SURFACE ON I-BEAMS WITH SPANS OF 1 @ 21'-3", 1 @ 21'-0", 1 @ 35'-0" & 1 @ 21'-3" AND A CLEAR ROADWAY WIDTH OF 36'-0" ON REINFORCED CONCRETE CAP ON TIMBER PILE END BENTS AND REINFORCED CONCRETE CAP ON STEEL PILE INTERIOR BENTS AND LOCATED AT THE SITE OF THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 39 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. CONTRACTOR IS CAUTIONED TO AVOID DAMAGING EXISTING CONCRETE CRIBBING WHICH IS TO REMAIN IN PLACE.

THE CONTRACTOR SHALL MINIMIZE HIS DISTURBANCE OF THE NATURAL GROUND AND EXISTING FRONT SLOPES ADJACENT TO THE PROPOSED END BENT LOCATIONS. ALL NATURAL GROUND DISTURBED BY THE CONTRACTOR SHALL BE STABILIZED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER. ANY ASSOCIATED COST SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

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.

THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE COST OF THE REINFORCED CONCRETE DECK SLAB.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC PERFORMANCE CATEGORY A.

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

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 16+86.99 -L-".

NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR SHIPPING STEEL STRUCTURAL MEMBERS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

STEEL SHEET PILES SHALL BE HOT ROLLED.

★ AREA BETWEEN END BENT WING AND TURNED BACK SHEETING SHALL BE GRADED TO DRAIN AWAY FROM THE FILL FACE OF THE BRIDGE AS DIRECTED BY THE ENGINEER.

FOR CLASSIC CONCRETE BRIDGE RAILS, SEE SPECIAL PROVISIONS.

FOR 22.6" STEEL SHEET PILES, SEE STEEL SHEET PILES SPECIAL PROVISION.

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER
NORFOLK SOUTHERN RAILROAD
ON SR 1243 (CENTER ST.)
BETWEEN NC 8 AND SR 2212

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY 8/24/07

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

DRAWN BY : MIKE BRITT DATE : 8-1-07
CHECKED BY : D.E. PETREY DATE : 8-07

02-AUG-2007 12:07
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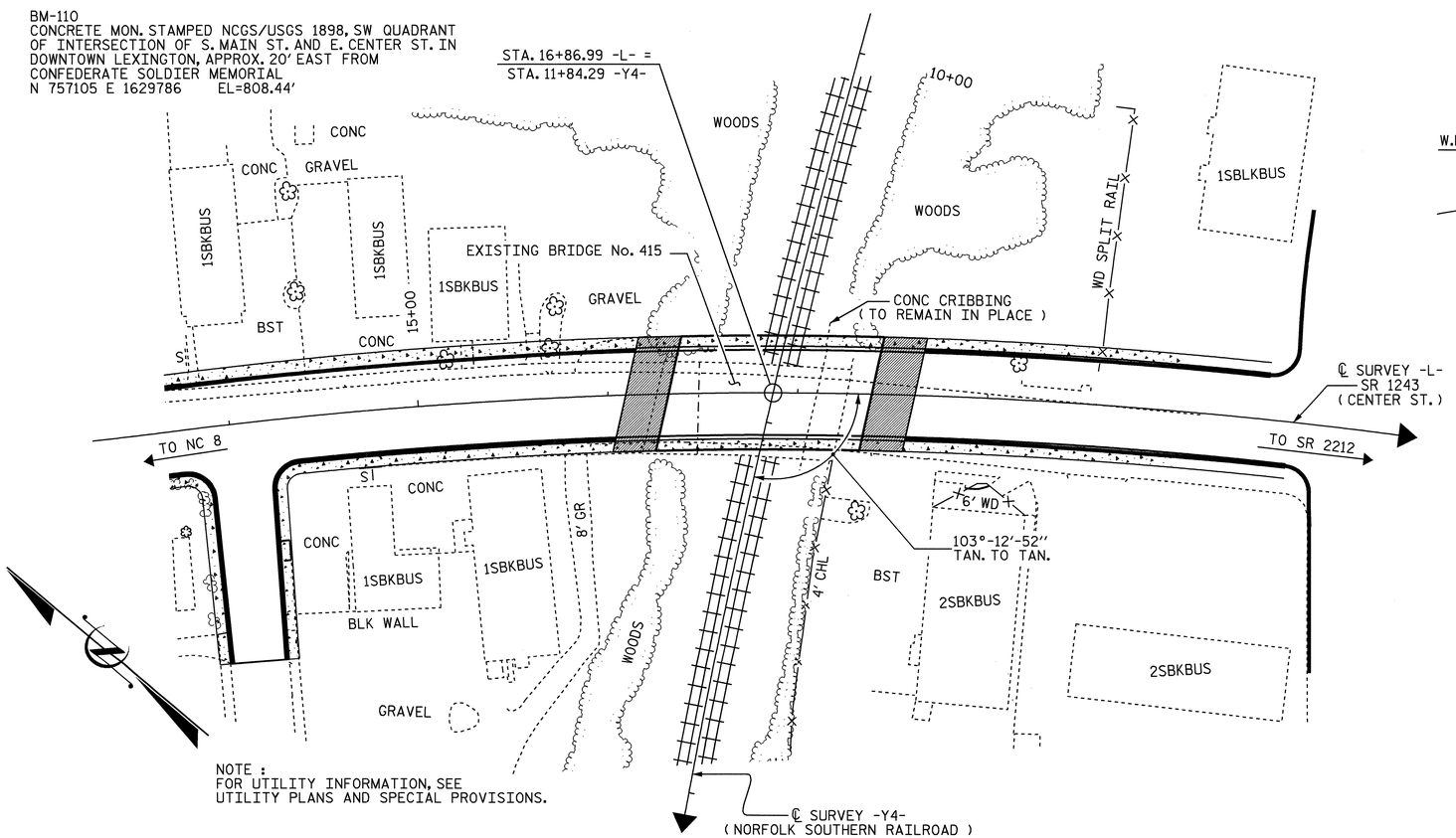
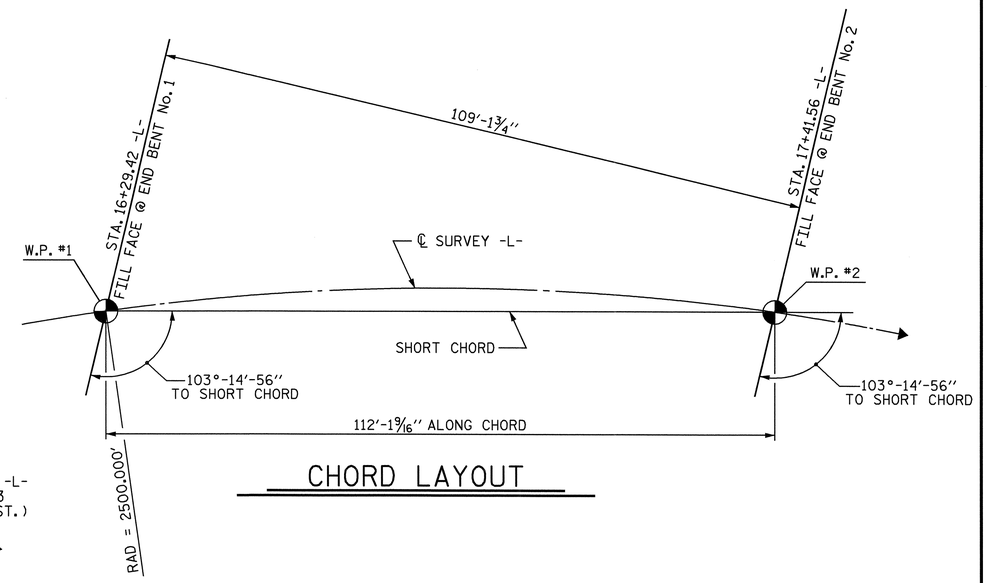
mbritt

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	PDA ASSISTANCE	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	STRUCTURAL STEEL	PP 30 x 0.50 STEEL PILES		PILE REDRIVES	22.6" STEEL SHEET PILES	EVAZOTE JOINT SEALS	ELECTRICAL CONDUIT SYSTEM	VIBRATION MONITORING	CLASSIC CONCRETE BRIDGE RAIL
	LUMP SUM	EACH	EACH	LUMP SUM	SQ. FT.	SQ.FT.	CU. YDS.	LUMP SUM	LBS.	APPROX. LBS.	No.	LIN. FT.	EACH	SQ. FT.	LUMP SUM	LUMP SUM	LUMP SUM	LIN. FT.
SUPERSTRUCTURE					6558	6986				226,300								267.51
END BENT No. 1		1	1				100.9		9,493		9	540	4	3,353				
END BENT No. 2		1	1				100.6		9,374		9	495	5	2,925				
TOTAL	LUMP SUM	2	2	LUMP SUM	6558	6986	201.5	LUMP SUM	18,867	226,300	18	1,035	9	6,278	LUMP SUM	LUMP SUM	LUMP SUM	267.51



LOCATION SKETCH



CHORD LAYOUT

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER
NORFOLK SOUTHERN RAILROAD
ON SR 1243 (CENTER ST.)
BETWEEN NC 8 AND SR 2212

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY 8/2/07

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

DRAWN BY : MIKE BRITT DATE : 8-1-07
CHECKED BY : D.E. PETREY DATE : 8-07

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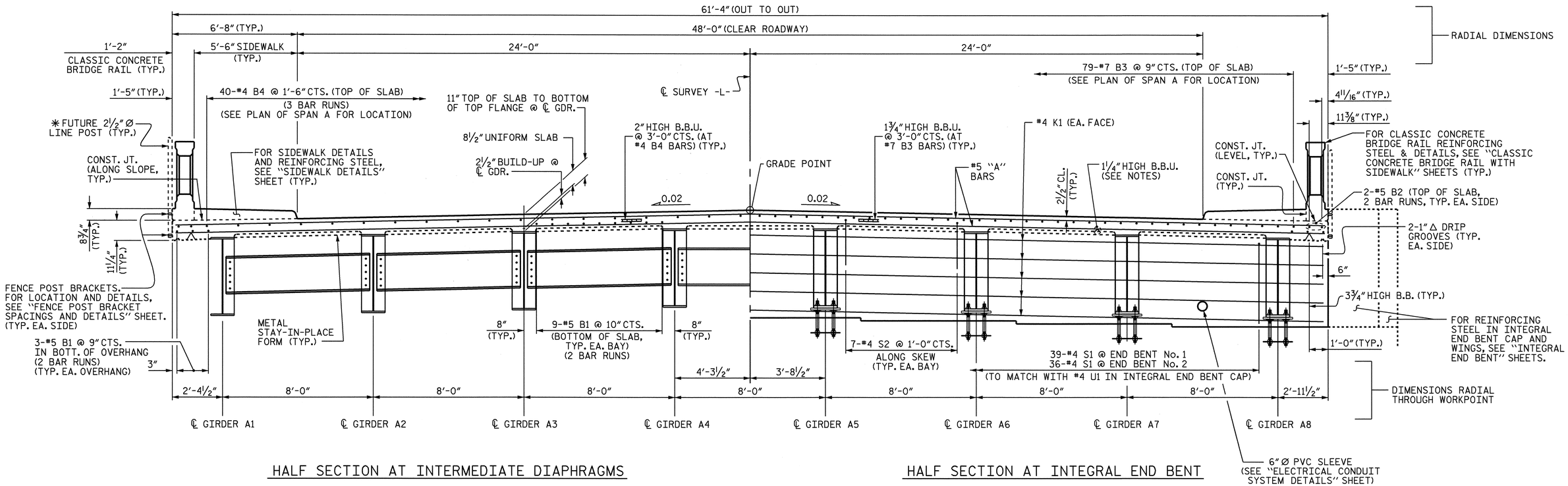
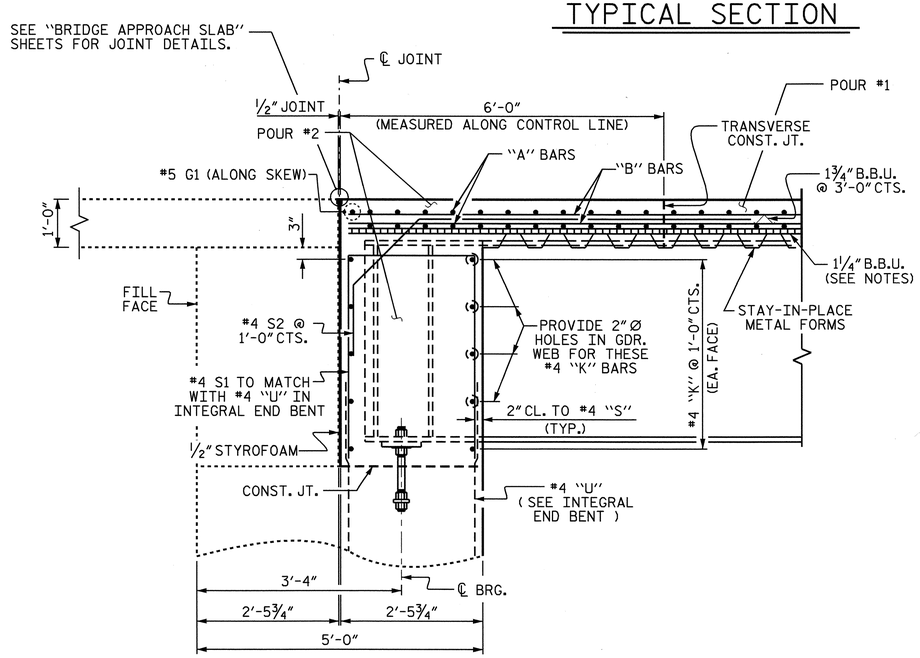


HALF SECTION AT INTERMEDIATE DIAPHRAGMS

HALF SECTION AT INTEGRAL END BENT

TYPICAL SECTION



SECTION THRU INTEGRAL END BENT

END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR.

NOTES :

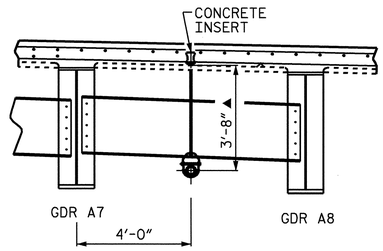
PROVIDE 1 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF "A" BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF "A" BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.

THE CONTRACTOR MAY, WHEN NECESSARY PROPOSE A SCHEME FOR AVOIDING INTERFERENCE BETWEEN METAL STAY-IN-PLACE FORM SUPPORTS OR FORMS AND GIRDER STIFFENER AND CONNECTOR PLATES. THE PROPOSAL SHALL BE INDICATED, AS APPROPRIATE, ON EITHER THE STEEL WORKING DRAWINGS OR THE METAL STAY-IN-PLACE FORM WORKING DRAWINGS.

PREVIOUSLY CAST CONCRETE SHALL HAVE OBTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI. BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

FOR LOCATION AND DETAILS OF MULTI-CELL RACEWAY, HANGER ASSEMBLY, AND CONCRETE INSERTS, SEE "ELECTRICAL CONDUIT SYSTEM DETAILS" SHEET.

* FUTURE 2 1/2" Ø LINE POST ARE NOT INCLUDED IN THIS PROJECT.



HANGER ASSEMBLY

(SEE NOTES)

▲ DIMENSION MEASURED FROM BOTTOM OF SLAB TO ℄ CONDUIT.

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
TYPICAL SECTION

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

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY

DRAWN BY : A.R.CHESSON/BNG DATE : 11/06
CHECKED BY : N.A. PIERCE DATE : 12/06

24-MAY-2007 10:31
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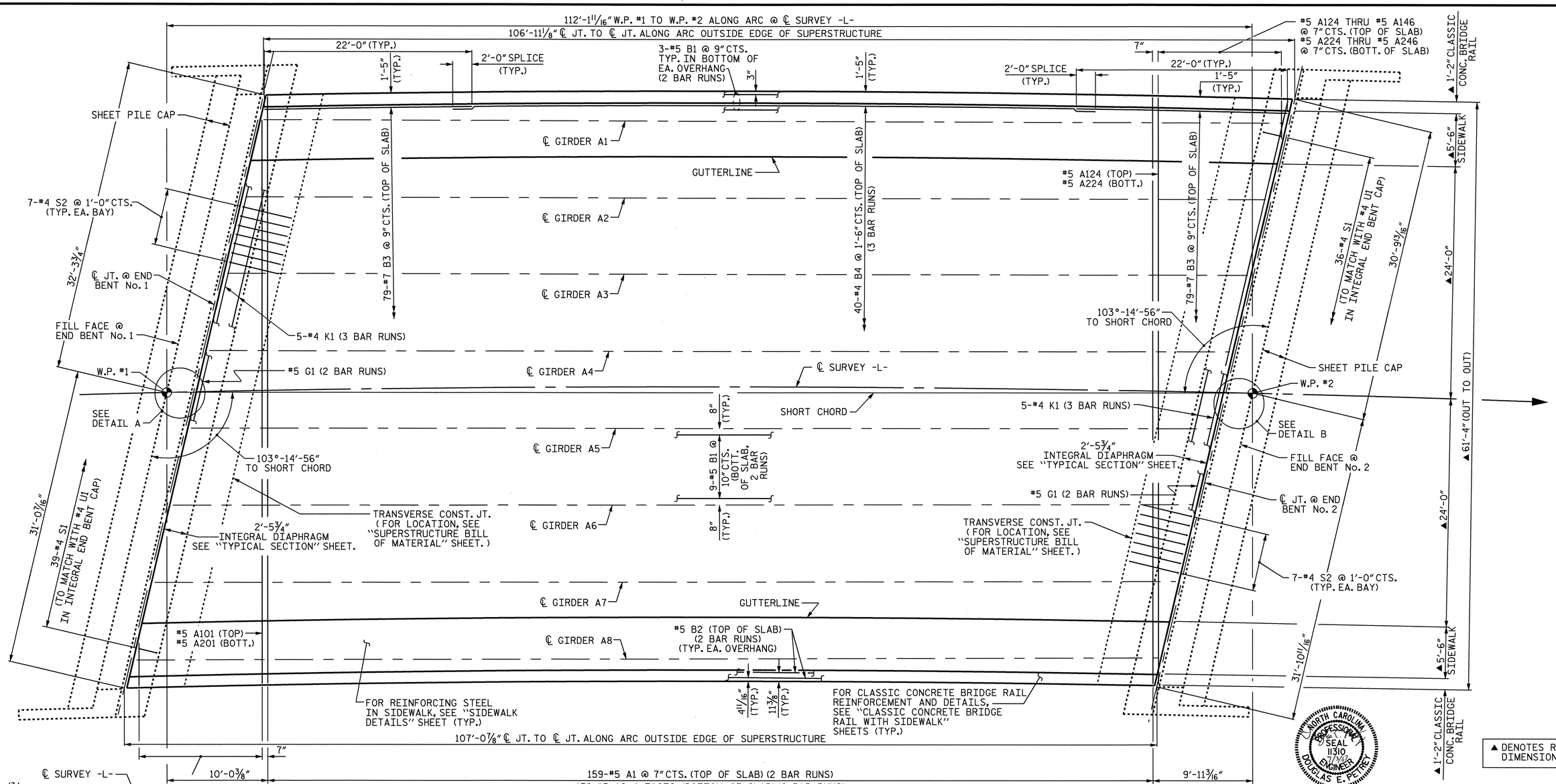
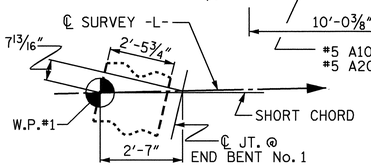
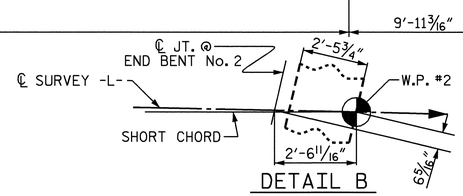


PLAN OF SPAN A

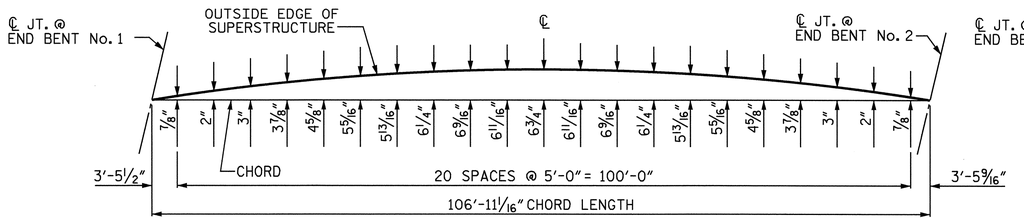
#5-"A" BARS PLACED PERPENDICULAR TO SHORT CHORD AND SPACED ALONG SHORT CHORD.



DETAIL A

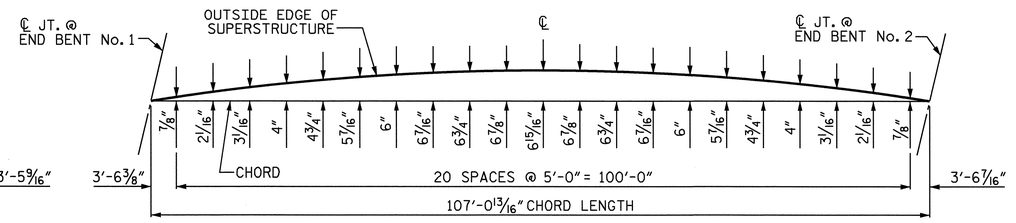


DETAIL B



ARC OFFSETS - LEFT SIDE

TAKEN ALONG OUTSIDE EDGE OF SUPERSTRUCTURE



ARC OFFSETS - RIGHT SIDE

TAKEN ALONG OUTSIDE EDGE OF SUPERSTRUCTURE

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF SPAN A

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : A.R.CHESSON/BNG DATE : 12/06
CHECKED BY : N.A. PIERCE DATE : 12/06

02-JUL-2007 16:02
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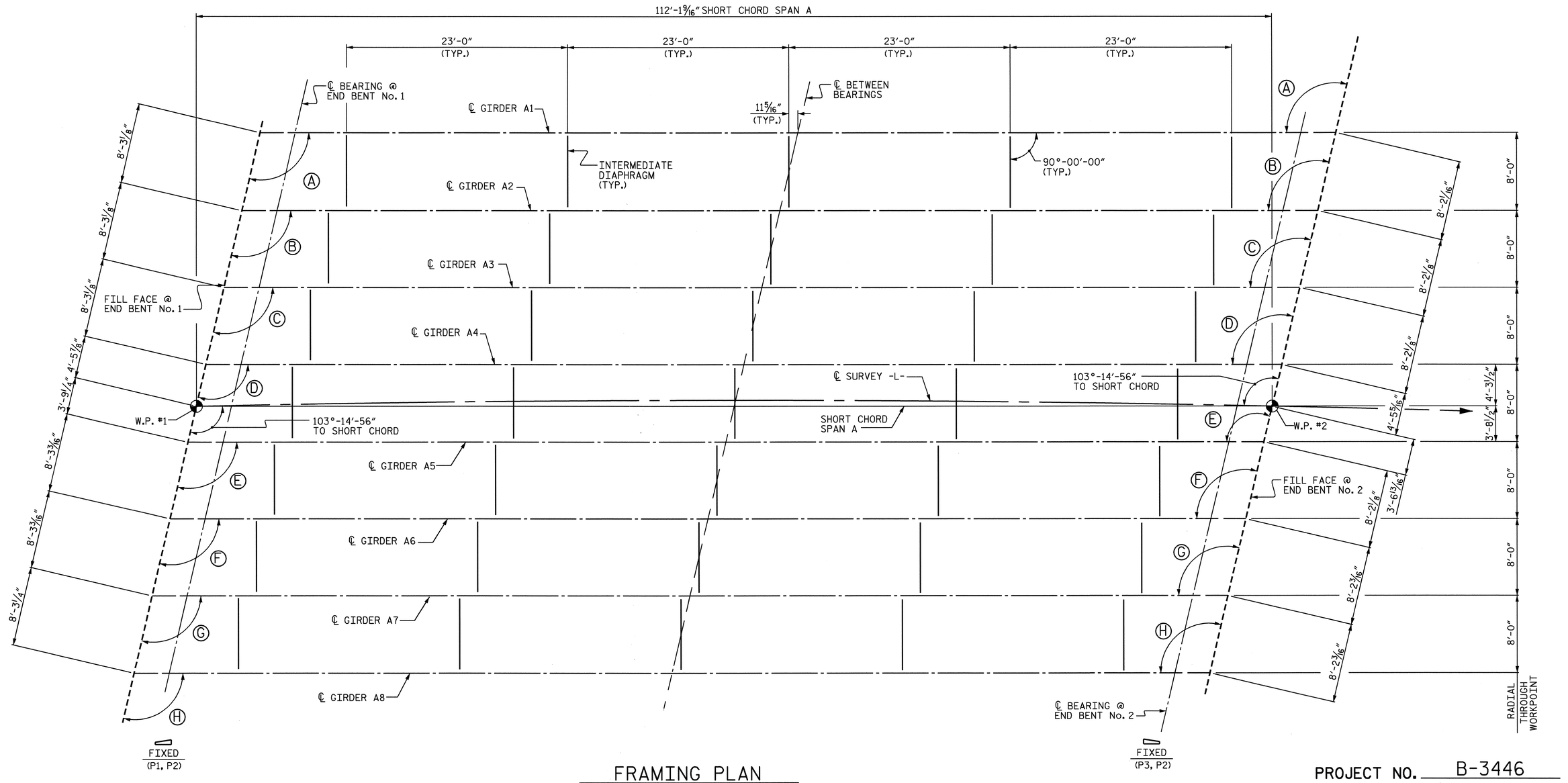

FRAMING PLAN

ANGLES

Ⓐ	103°-05′-51″
Ⓑ	103°-08′-24″
Ⓒ	103°-10′-57″
Ⓓ	103°-13′-32″
Ⓔ	103°-16′-07″
Ⓕ	103°-18′-43″
Ⓖ	103°-21′-21″
Ⓗ	103°-24′-00″

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
FRAMING PLAN

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY 12/12/06

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : A.R.CHESSON/BNG DATE : 12/06
CHECKED BY : N.A. PIERCE DATE : 12/06

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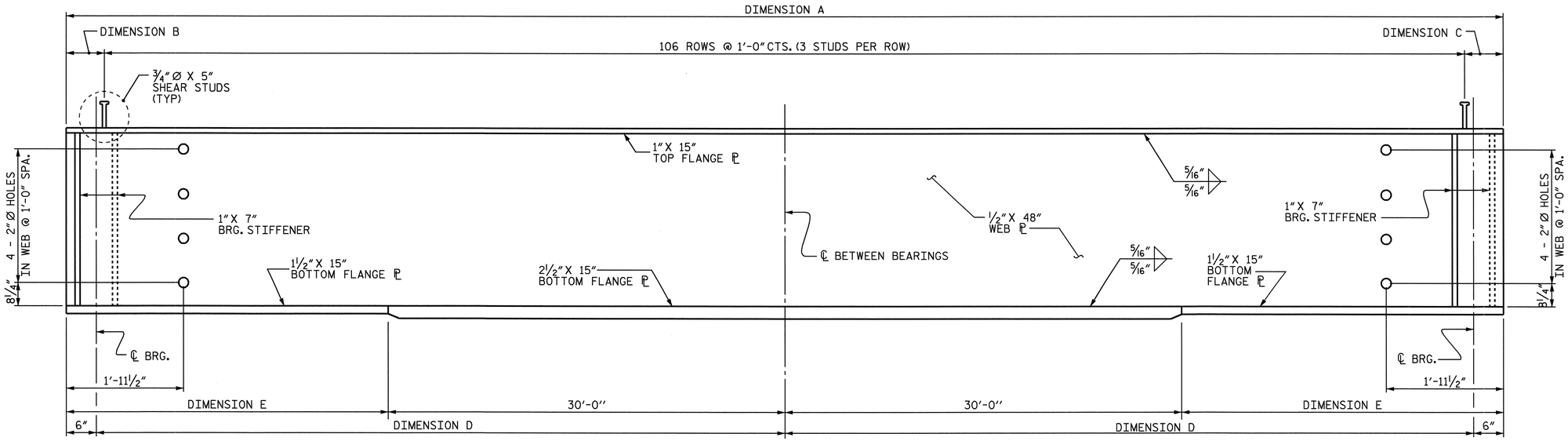
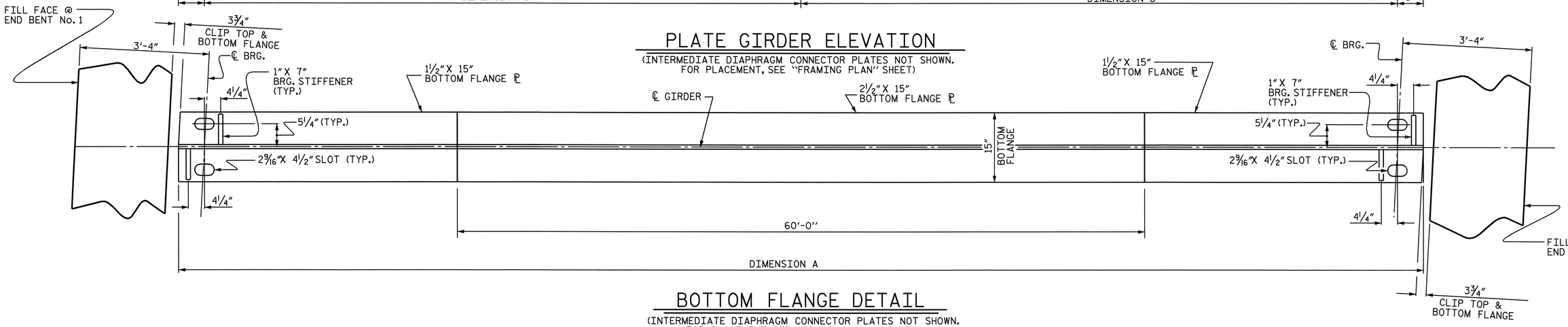


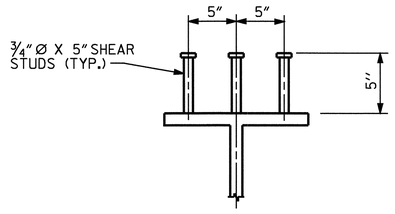
PLATE GIRDER ELEVATION

(INTERMEDIATE DIAPHRAGM CONNECTOR PLATES NOT SHOWN. FOR PLACEMENT, SEE "FRAMING PLAN" SHEET)



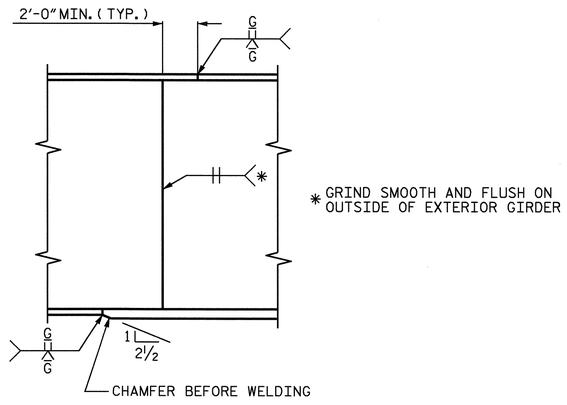
BOTTOM FLANGE DETAIL

(INTERMEDIATE DIAPHRAGM CONNECTOR PLATES NOT SHOWN. FOR PLACEMENT, SEE "FRAMING PLAN" SHEET)



SHEAR STUD DETAIL

(TYPICAL EACH GIRDER)



TYPICAL WEB AND FLANGE BUTT JOINT

(SEE NOTES ON SHEET 2 OF 2 FOR SHOP SPLICES)

GIRDER DIMENSIONS

GIRDER	DIMENSION A	DIMENSION B	DIMENSION C	DIMENSION D	DIMENSION E
A1	106'-2 5/8"	7 5/16"	7 5/16"	52'-7 5/16"	22'-7 5/16"
A2	106'-2 3/4"	7 3/8"	7 3/8"	52'-7 3/8"	22'-7 3/8"
A3	106'-3"	7 1/2"	7 1/2"	52'-7 1/2"	22'-7 1/2"
A4	106'-3 1/4"	7 5/8"	7 5/8"	52'-7 5/8"	22'-7 5/8"
A5	106'-3 1/2"	7 3/4"	7 3/4"	52'-7 3/4"	22'-7 3/4"
A6	106'-3 5/8"	7 13/16"	7 13/16"	52'-7 13/16"	22'-7 13/16"
A7	106'-3 7/8"	7 15/16"	7 15/16"	52'-7 15/16"	22'-7 15/16"
A8	106'-4 1/8"	8 1/16"	8 1/16"	52'-8 1/16"	22'-8 1/16"

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

STRUCTURAL STEEL DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY 2/2/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : A.R.CHESSON/BNG DATE : 12/06
CHECKED BY : N.A. PIERCE DATE : 8-07

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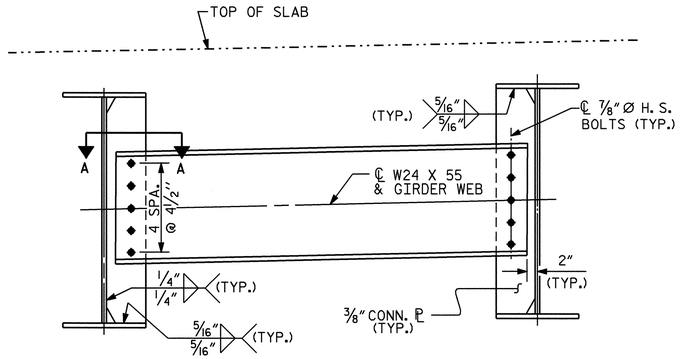
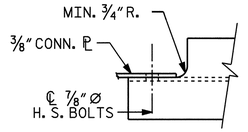


INTERMEDIATE DIAPHRAGM



SECTION A-A

NOTES :

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W UNLESS OTHERWISE NOTED ON THE PLANS.

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.

ALL FIELD CONNECTIONS TO BE 7/8" DIA. HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED. SEE SPECIAL PROVISIONS.

BEARING STIFFENERS ARE TO BE PLACED NORMAL TO THE WEB OF THE GIRDER AND SHALL BE PLUMB.

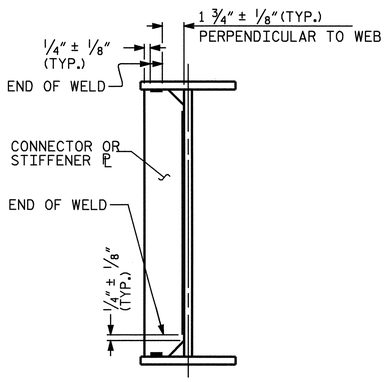
A CHARPY V-NOTCH TEST IS REQUIRED FOR WEB PLATES, BOTTOM FLANGE PLATES, BOTTOM FLANGE SPLICE PLATES AND WEB SPLICE PLATES (IF USED) FOR ALL GIRDERS AND IN ACCORDANCE WITH ARTICLE 1072-9 OF THE STANDARD SPECIFICATIONS.

SHOP SPLICES ARE PERMITTED TO LIMIT THE MAXIMUM REQUIRED FLANGE PIECE LENGTHS TO 60 FEET AND WEB PIECE LENGTHS TO 45 FEET. PERMITTED FLANGE AND WEB SHOP SPLICES SHALL NOT BE LOCATED WITHIN 15 FEET OF MAXIMUM DEAD LOAD DEFLECTION. KEEP 2 FEET MINIMUM BETWEEN WEB AND FLANGE SHOP SPLICES. KEEP 6" MINIMUM BETWEEN CONNECTOR PLATE OR TRANSVERSE STIFFENER WELDS AND WEB OR FLANGE SHOP SPLICES.

STUDS ON GIRDERS MAY BE SHIFTED UP TO 1" IF NECESSARY TO CLEAR FLANGE SPLICE WELD.

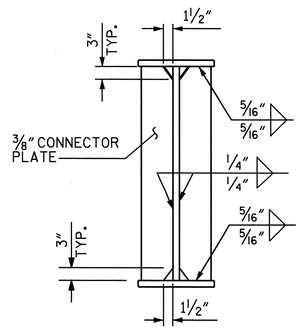
TENSION ON THE AASHTO M164 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-08 OF THE STANDARD SPECIFICATIONS.

END OF GIRDERS SHALL BE PLUMB.

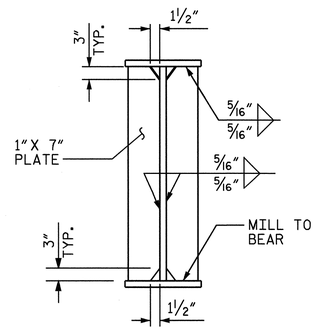


TYPICAL STIFFENER OR CONNECTOR PLATE CONNECTIONS

WELD TERMINATION DETAILS



CONNECTOR PLATE



BEARING STIFFENER

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY 9/21/07

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

STRUCTURAL STEEL DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : A.R.CHESSON/BNG DATE : 12/06
CHECKED BY : N.A. PIERCE DATE : 8-07

02-AUG-2007 12:08
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DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPAN A

GIRDER A1

TWENTIETH POINTS	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.010	0.020	0.030	0.038	0.045	0.051	0.056	0.060	0.062	0.063	0.062	0.060	0.056	0.051	0.045	0.038	0.030	0.020	0.010	0
✳DEFLECTION DUE TO WEIGHT OF SLAB	0	0.018	0.057	0.093	0.126	0.154	0.178	0.198	0.212	0.220	0.223	0.220	0.212	0.198	0.178	0.154	0.126	0.093	0.057	0.018	0
DEFLECTION DUE TO WEIGHT OF RAIL & SIDEWALK	0	0.012	0.024	0.035	0.045	0.054	0.061	0.067	0.071	0.073	0.074	0.073	0.071	0.067	0.061	0.054	0.045	0.035	0.024	0.012	0
TOTAL DEAD LOAD DEFLECTION	0	0.041	0.101	0.158	0.209	0.253	0.290	0.320	0.342	0.356	0.360	0.356	0.342	0.320	0.290	0.253	0.209	0.158	0.101	0.041	0
VERTICAL CURVE ORDINATE	0	0.138	0.261	0.369	0.463	0.543	0.608	0.659	0.695	0.717	0.724	0.717	0.695	0.659	0.608	0.543	0.463	0.369	0.261	0.138	0
▲ SUPERELEVATION ORDINATE	0	0.002	0.004	0.006	0.007	0.008	0.009	0.010	0.011	0.011	0.011	0.011	0.011	0.010	0.009	0.008	0.007	0.006	0.004	0.002	0
REQUIRED CAMBER	0	2 3/16″	4 3/8″	6 3/8″	8 1/8″	9 5/8″	10 7/8″	11 7/8″	12 9/16″	13″	13 1/8″	13″	12 9/16″	11 7/8″	10 7/8″	9 5/8″	8 1/8″	6 3/8″	4 3/8″	2 3/16″	0

GIRDER A2

TWENTIETH POINTS	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.011	0.021	0.030	0.039	0.046	0.053	0.056	0.062	0.064	0.065	0.064	0.062	0.058	0.053	0.046	0.039	0.030	0.021	0.011	0
✳DEFLECTION DUE TO WEIGHT OF SLAB	0	0.018	0.057	0.094	0.127	0.156	0.180	0.199	0.213	0.222	0.225	0.222	0.213	0.199	0.180	0.156	0.127	0.094	0.057	0.018	0
DEFLECTION DUE TO WEIGHT OF RAIL & SIDEWALK	0	0.008	0.015	0.022	0.029	0.034	0.039	0.042	0.045	0.047	0.047	0.047	0.045	0.042	0.039	0.034	0.029	0.022	0.015	0.008	0
TOTAL DEAD LOAD DEFLECTION	0	0.037	0.094	0.147	0.195	0.236	0.271	0.299	0.320	0.332	0.337	0.332	0.320	0.299	0.271	0.236	0.195	0.147	0.094	0.037	0
VERTICAL CURVE ORDINATE	0	0.139	0.263	0.372	0.467	0.547	0.613	0.664	0.700	0.722	0.729	0.722	0.700	0.664	0.613	0.547	0.467	0.372	0.263	0.139	0
▲ SUPERELEVATION ORDINATE	0	0.002	0.004	0.006	0.007	0.008	0.009	0.010	0.011	0.011	0.011	0.011	0.011	0.010	0.009	0.008	0.007	0.006	0.004	0.002	0
REQUIRED CAMBER	0	2 1/8″	4 5/16″	6 5/16″	8″	9 1/2″	10 3/4″	11 11/16″	12 3/8″	12 3/4″	12 15/16″	12 3/4″	12 3/8″	11 11/16″	10 3/4″	9 1/2″	8″	6 5/16″	4 5/16″	2 1/8″	0

GIRDER A3

TWENTIETH POINTS	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.011	0.021	0.030	0.039	0.046	0.053	0.058	0.062	0.064	0.065	0.064	0.062	0.058	0.053	0.046	0.039	0.030	0.021	0.011	0
✳DEFLECTION DUE TO WEIGHT OF SLAB	0	0.019	0.058	0.095	0.128	0.157	0.181	0.201	0.215	0.224	0.227	0.224	0.215	0.201	0.181	0.157	0.128	0.095	0.058	0.019	0
DEFLECTION DUE TO WEIGHT OF RAIL & SIDEWALK	0	0.008	0.015	0.022	0.029	0.034	0.039	0.042	0.045	0.047	0.047	0.047	0.045	0.042	0.039	0.034	0.029	0.022	0.015	0.008	0
TOTAL DEAD LOAD DEFLECTION	0	0.037	0.094	0.148	0.196	0.237	0.273	0.301	0.322	0.334	0.338	0.334	0.322	0.301	0.273	0.237	0.196	0.148	0.094	0.037	0
VERTICAL CURVE ORDINATE	0	0.140	0.264	0.374	0.470	0.551	0.617	0.668	0.705	0.727	0.734	0.727	0.705	0.668	0.617	0.551	0.470	0.374	0.264	0.140	0
▲ SUPERELEVATION ORDINATE	0	0.002	0.004	0.006	0.007	0.008	0.009	0.010	0.011	0.011	0.011	0.011	0.011	0.010	0.009	0.008	0.007	0.006	0.004	0.002	0
REQUIRED CAMBER	0	2 1/8″	4 3/8″	6 5/16″	8 1/16″	9 9/16″	10 13/16″	11 3/4″	12 7/16″	12 7/8″	13″	12 7/8″	12 7/16″	11 3/4″	10 13/16″	9 9/16″	8 1/16″	6 5/16″	4 3/8″	2 1/8″	0

GIRDER A4

TWENTIETH POINTS	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.011	0.021	0.030	0.039	0.046	0.053	0.058	0.062	0.064	0.065	0.064	0.062	0.058	0.053	0.046	0.039	0.030	0.021	0.011	0
✳DEFLECTION DUE TO WEIGHT OF SLAB	0	0.019	0.058	0.095	0.128	0.157	0.181	0.201	0.215	0.224	0.227	0.224	0.215	0.201	0.181	0.157	0.128	0.095	0.058	0.019	0
DEFLECTION DUE TO WEIGHT OF RAIL & SIDEWALK	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
TOTAL DEAD LOAD DEFLECTION	0	0.030	0.079	0.125	0.167	0.203	0.234	0.259	0.277	0.288	0.292	0.288	0.277	0.259	0.234	0.203	0.167	0.125	0.079	0.030	0
VERTICAL CURVE ORDINATE	0	0.140	0.266	0.377	0.473	0.554	0.621	0.673	0.710	0.732	0.739	0.732	0.710	0.673	0.621	0.554	0.473	0.377	0.266	0.140	0
▲ SUPERELEVATION ORDINATE	0	0.002	0.004	0.006	0.007	0.008	0.009	0.010	0.011	0.011	0.011	0.011	0.011	0.010	0.009	0.008	0.007	0.006	0.004	0.002	0
REQUIRED CAMBER	0	2 1/16″	4 3/16″	6 1/8″	7 3/4″	9 3/16″	10 3/8″	11 5/16″	12″	12 3/8″	12 1/2″	12 3/8″	12″	11 5/16″	10 3/8″	9 3/16″	7 3/4″	6 1/8″	4 3/16″	2 1/16″	0

✳ INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "REQUIRED CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

▲ SUPERELEVATION ORDINATE TO BE ADDED TO TOTAL DEAD LOAD DEFLECTION.

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

DEAD LOAD DEFLECTIONS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : A.R.CHESSON/BNG DATE : 12/06
CHECKED BY : N.A. PIERCE DATE : 08/07

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DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPAN A

GIRDER A5

TWENTIETH POINTS	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.011	0.021	0.030	0.039	0.046	0.053	0.058	0.062	0.064	0.065	0.064	0.062	0.058	0.053	0.046	0.039	0.030	0.021	0.011	0
✳ DEFLECTION DUE TO WEIGHT OF SLAB	0	0.019	0.058	0.095	0.128	0.157	0.181	0.201	0.215	0.224	0.227	0.224	0.215	0.201	0.181	0.157	0.128	0.095	0.058	0.019	0
DEFLECTION DUE TO WEIGHT OF RAIL & SIDEWALK	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
TOTAL DEAD LOAD DEFLECTION	0	0.030	0.079	0.125	0.167	0.203	0.234	0.259	0.277	0.288	0.292	0.288	0.277	0.259	0.234	0.203	0.167	0.125	0.079	0.030	0
VERTICAL CURVE ORDINATE	0	0.141	0.268	0.380	0.476	0.558	0.625	0.677	0.714	0.737	0.744	0.737	0.714	0.677	0.625	0.558	0.476	0.380	0.268	0.141	0
★ SUPERELEVATION ORDINATE (-)	0	0.002	0.004	0.006	0.007	0.008	0.009	0.010	0.011	0.011	0.011	0.011	0.011	0.010	0.009	0.008	0.007	0.006	0.004	0.002	0
REQUIRED CAMBER	0	2″	4 1/8″	6″	7 5/8″	9 1/16″	10 3/16″	11 1/8″	11 3/4″	12 3/16″	12 5/16″	12 3/16″	11 3/4″	11 1/8″	10 3/16″	9 1/16″	7 5/8″	6″	4 1/8″	2″	0

GIRDER A6

TWENTIETH POINTS	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.011	0.021	0.030	0.039	0.046	0.053	0.058	0.062	0.064	0.065	0.064	0.062	0.058	0.053	0.046	0.039	0.030	0.021	0.011	0
✳ DEFLECTION DUE TO WEIGHT OF SLAB	0	0.019	0.058	0.095	0.128	0.157	0.181	0.201	0.215	0.224	0.227	0.224	0.215	0.201	0.181	0.157	0.128	0.095	0.058	0.019	0
DEFLECTION DUE TO WEIGHT OF RAIL & SIDEWALK	0	0.008	0.015	0.022	0.029	0.034	0.039	0.042	0.045	0.047	0.047	0.047	0.045	0.042	0.039	0.034	0.029	0.022	0.015	0.008	0
TOTAL DEAD LOAD DEFLECTION	0	0.037	0.094	0.148	0.196	0.237	0.273	0.301	0.322	0.334	0.338	0.334	0.322	0.301	0.273	0.237	0.196	0.148	0.094	0.037	0
VERTICAL CURVE ORDINATE	0	0.141	0.269	0.381	0.479	0.561	0.629	0.681	0.719	0.741	0.749	0.741	0.719	0.681	0.629	0.561	0.479	0.381	0.269	0.141	0
★ SUPERELEVATION ORDINATE (-)	0	0.002	0.004	0.006	0.007	0.008	0.009	0.010	0.011	0.011	0.011	0.011	0.011	0.010	0.009	0.008	0.007	0.006	0.004	0.002	0
REQUIRED CAMBER	0	2 1/8″	4 5/16″	6 1/4″	8″	9 1/2″	10 3/4″	11 11/16″	12 3/8″	12 3/4″	12 15/16″	12 3/4″	12 3/8″	11 11/16″	10 3/4″	9 1/2″	8″	6 1/4″	4 5/16″	2 1/8″	0

GIRDER A7

TWENTIETH POINTS	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.011	0.021	0.030	0.039	0.046	0.053	0.056	0.062	0.064	0.065	0.064	0.062	0.058	0.053	0.046	0.039	0.030	0.021	0.011	0
✳ DEFLECTION DUE TO WEIGHT OF SLAB	0	0.018	0.057	0.094	0.127	0.156	0.180	0.199	0.213	0.222	0.225	0.222	0.213	0.199	0.180	0.156	0.127	0.094	0.057	0.018	0
DEFLECTION DUE TO WEIGHT OF RAIL SIDEWALK	0	0.008	0.015	0.022	0.029	0.034	0.039	0.042	0.045	0.047	0.047	0.047	0.045	0.042	0.039	0.034	0.029	0.022	0.015	0.008	0
TOTAL DEAD LOAD DEFLECTION	0	0.037	0.094	0.147	0.195	0.236	0.271	0.299	0.320	0.332	0.337	0.332	0.320	0.299	0.271	0.236	0.195	0.147	0.094	0.037	0
VERTICAL CURVE ORDINATE	0	0.139	0.267	0.381	0.479	0.562	0.630	0.683	0.721	0.744	0.752	0.745	0.722	0.685	0.632	0.565	0.482	0.384	0.271	0.143	0
★ SUPERELEVATION ORDINATE (-)	0	0.002	0.004	0.006	0.007	0.008	0.009	0.010	0.011	0.011	0.011	0.011	0.011	0.010	0.009	0.008	0.007	0.006	0.004	0.002	0
REQUIRED CAMBER	0	2 1/16″	4 5/16″	6 1/4″	8″	9 1/2″	10 11/16″	11 11/16″	12 3/8″	12 3/4″	12 15/16″	12 13/16″	12 3/8″	11 11/16″	10 3/4″	9 1/2″	8 1/16″	6 5/16″	4 5/16″	2 1/8″	0

GIRDER A8

TWENTIETH POINTS	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.010	0.020	0.030	0.038	0.045	0.051	0.056	0.060	0.062	0.063	0.062	0.060	0.056	0.051	0.045	0.038	0.030	0.020	0.010	0
✳ DEFLECTION DUE TO WEIGHT OF SLAB	0	0.018	0.057	0.093	0.126	0.154	0.178	0.198	0.212	0.220	0.223	0.220	0.212	0.198	0.178	0.154	0.126	0.093	0.057	0.018	0
DEFLECTION DUE TO WEIGHT OF RAIL SIDEWALK	0	0.012	0.024	0.035	0.045	0.054	0.061	0.067	0.071	0.073	0.074	0.073	0.071	0.067	0.061	0.054	0.045	0.035	0.024	0.012	0
TOTAL DEAD LOAD DEFLECTION	0	0.041	0.101	0.158	0.209	0.253	0.290	0.320	0.342	0.356	0.360	0.356	0.342	0.320	0.290	0.253	0.209	0.158	0.101	0.041	0
VERTICAL CURVE ORDINATE	0	0.134	0.264	0.378	0.477	0.562	0.630	0.684	0.723	0.746	0.754	0.747	0.725	0.687	0.635	0.567	0.484	0.386	0.272	0.144	0
★ SUPERELEVATION ORDINATE (-)	0	0.002	0.004	0.006	0.007	0.008	0.009	0.010	0.011	0.011	0.011	0.011	0.011	0.010	0.009	0.008	0.007	0.006	0.004	0.002	0
REQUIRED CAMBER	0	2 1/16″	4 5/16″	6 3/8″	8 1/8″	9 11/16″	10 15/16″	11 15/16″	12 5/8″	13 1/16″	13 1/4″	13 1/8″	12 11/16″	11 15/16″	11″	9 3/4″	8 1/4″	6 7/16″	4 7/16″	2 3/16″	0

✳ INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.

ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "REQUIRED CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

★ SUPERELEVATION ORDINATE TO BE SUBTRACTED FROM TOTAL DEAD LOAD DEFLECTION.

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY 8/3/07

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

DEAD LOAD DEFLECTIONS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : A.R.CHESSON/BNG DATE : 12/06
CHECKED BY : N.A. PIERCE DATE : 08/07

02-AUG-2007 14:58
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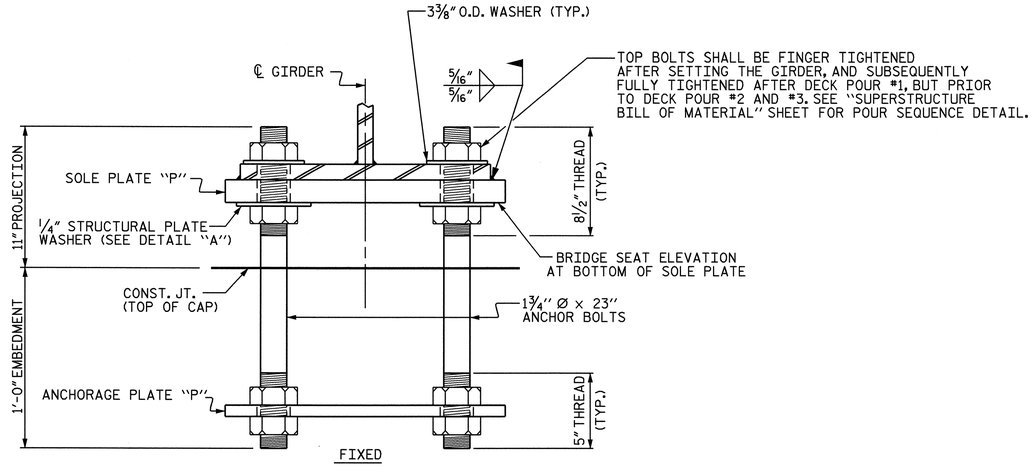
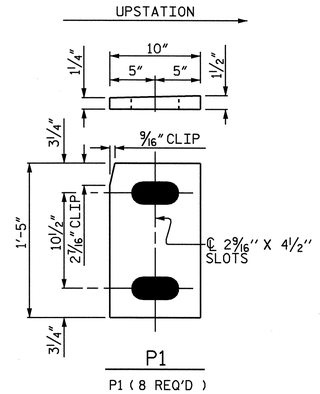
nplarce

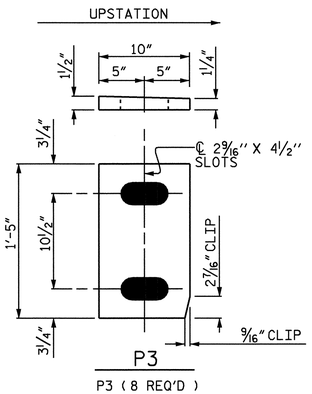


END VIEW



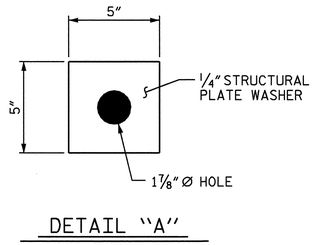
P1 (8 REQ'D)

SOLE PLATE DETAILS ("P")
@ END BENT No. 1

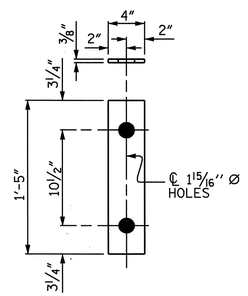


P3 (8 REQ'D)

SOLE PLATE DETAILS ("P")
@ END BENT No. 2



DETAIL "A"



P2 (16 REQ'D)

ANCHORAGE PLATE DETAILS ("P")

NOTES

SOLE PLATES AND ANCHOR PLATES SHALL BE AASHTO M270 GRADE 50W AND SHALL NOT BE GALVANIZED. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

STRUCTURAL PLATE WASHER SHALL BE AASHTO M270 GRADE 50W AND SHALL NOT BE GALVANIZED.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

WHEN FIELD WELDING THE SOLE PLATE TO THE GIRDER FLANGE, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SOLE PLATE DETAILS

(STEEL INTEGRAL SUPERSTRUCTURE)

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY 7/1/06

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			30

ASSEMBLED BY : B.N. GRADY DATE : 12/06
CHECKED BY : N. PIERCE DATE : 12/06

24-MAY-2007 10:29
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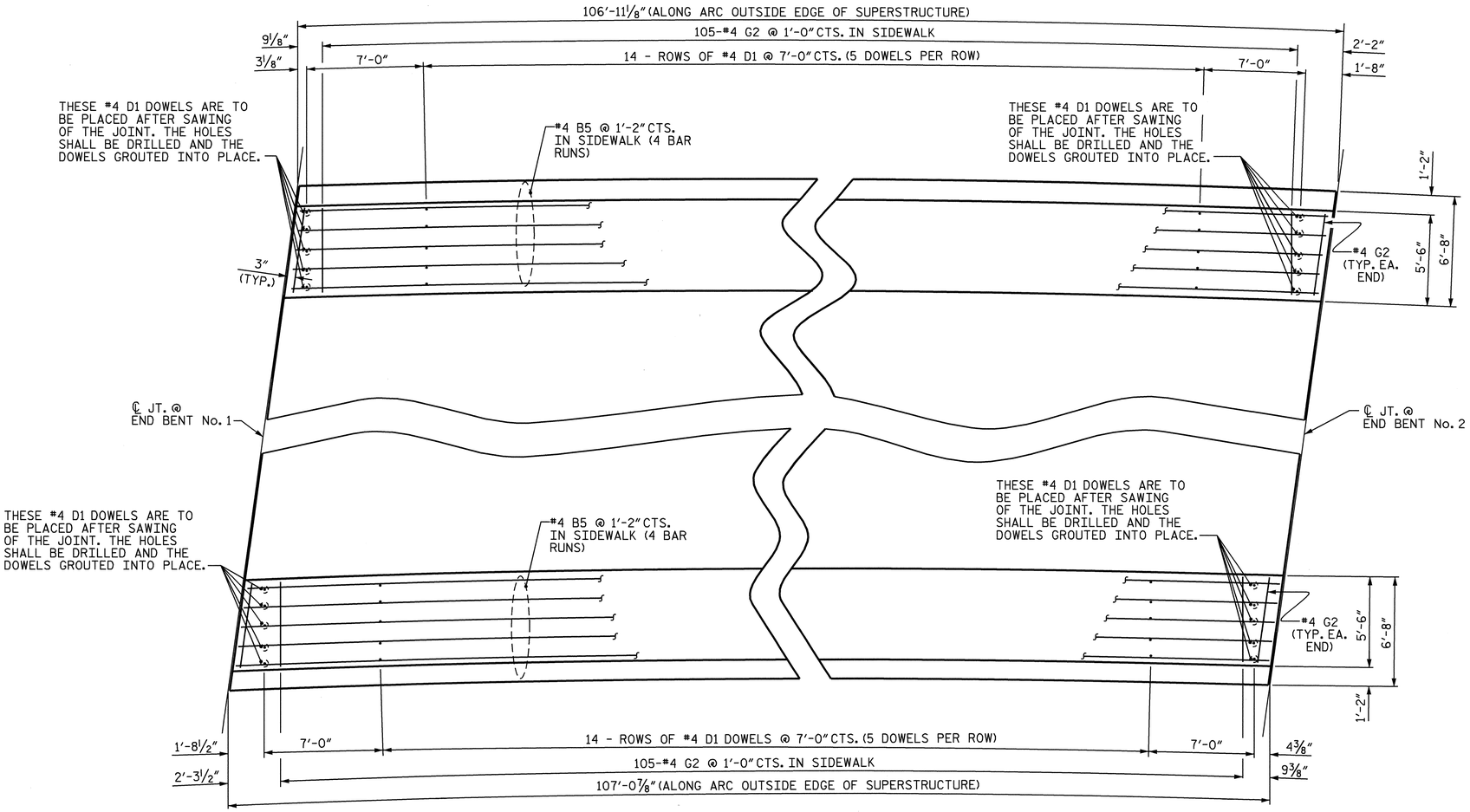
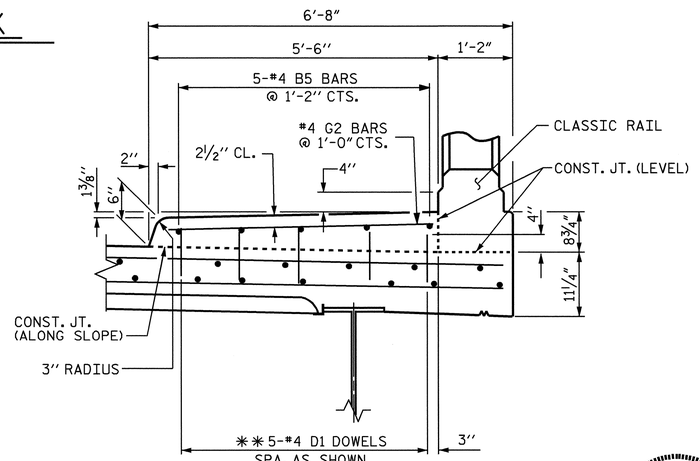


PLAN OF SIDEWALK



SECTION THRU SIDEWALK

**#4 D1 DOWELS MAY BE PUSHED INTO GREEN CONCRETE AFTER SPAN HAS BEEN SCREEDED OFF. EXCEPT AS NOTED ABOVE.

NOTES :

ALL REINFORCING STEEL IN SIDEWALKS SHALL BE EPOXY COATED.

THE JOINT IN THE DECK SHALL BE SAWED PRIOR TO THE CASTING OF THE SIDEWALK.

SIDEWALK SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THE UNIT HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

FOR CLASSIC CONCRETE BRIDGE RAIL REINFORCING STEEL AND DETAILS, SEE "CLASSIC CONCRETE BRIDGE RAIL" SHEETS.

REINFORCING STEEL AND CONCRETE FOR SIDEWALK ON THE BRIDGE SHALL BE INCLUDED IN THE SQ. FT. PAY ITEM FOR "REINFORCED CONCRETE DECK SLAB".

REINFORCING STEEL AND CONCRETE FOR SIDEWALK ON THE APPROACH SLAB SHALL BE INCLUDED IN THE LUMP SUM PAY ITEM FOR BRIDGE APPROACH SLABS.

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

PROJECT NO. B-3446
DAVIDSON COUNTY
STATION: 16+86.99 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

SIDEWALK DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY 7/2/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : A.R.CHESSON/BNG DATE : 10-05
CHECKED BY : B.N. GRADY/NAP DATE : 7/06

24-MAY-2007 10:29
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NOTES

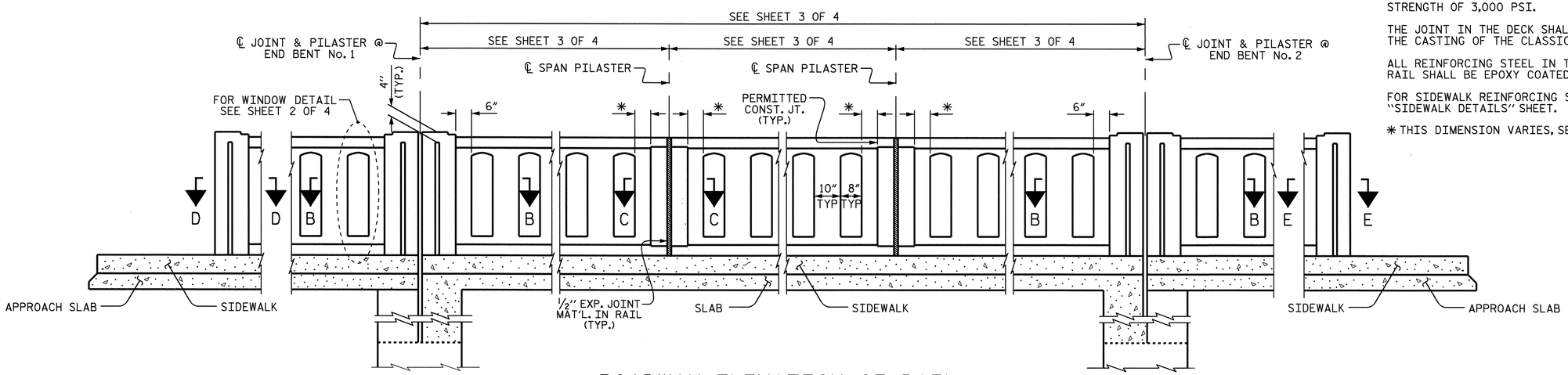
CLASSIC CONCRETE BRIDGE RAIL SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THE UNIT HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

THE JOINT IN THE DECK SHALL BE SAWED PRIOR TO THE CASTING OF THE CLASSIC CONCRETE RAIL.

ALL REINFORCING STEEL IN THE CLASSIC CONCRETE BRIDGE RAIL SHALL BE EPOXY COATED.

FOR SIDEWALK REINFORCING STEEL AND DETAILS, SEE "SIDEWALK DETAILS" SHEET.

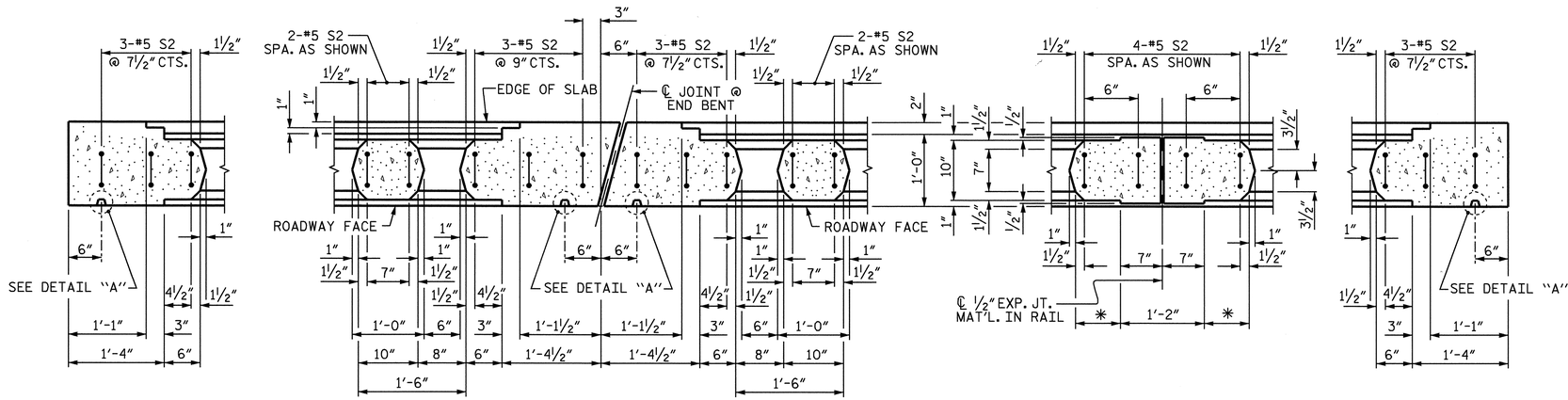
* THIS DIMENSION VARIES, SEE SHEETS 3 OF 4 AND 4 OF 4.



ROADWAY ELEVATION OF RAIL

CHAMFERS NOT SHOWN FOR CLARITY

LEFT SIDE SHOWN, FOR RIGHT SIDE SEE SHEET 4 OF 4



SECTION D-D

SECTION B-B

SHOWING END BENT PILASTER

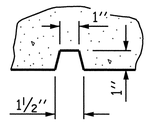
SECTION C-C

SHOWING SPAN PILASTER

SECTION E-E

PARTIAL PLAN

LEFT SIDE SHOWN, RIGHT SIDE SIMILAR



DETAIL "A"

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CLASSIC CONCRETE BRIDGE RAIL WITH SIDEWALK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			30

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY 7/19/07

DRAWN BY : A.R.CHESSON/BNG DATE : 10-05
CHECKED BY : B.N. GRADY/NAP DATE : 7/06

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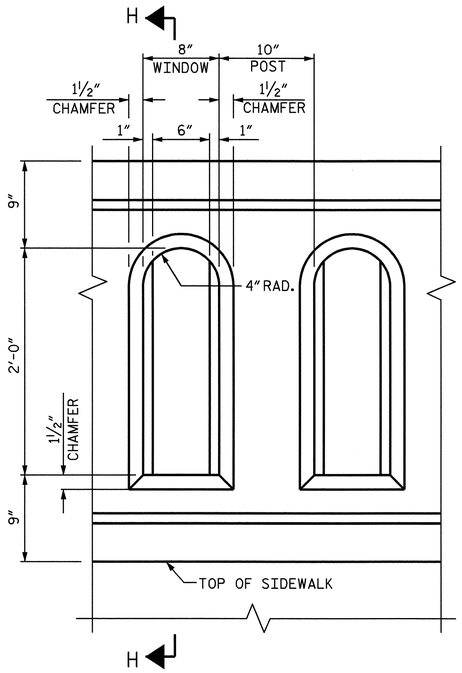
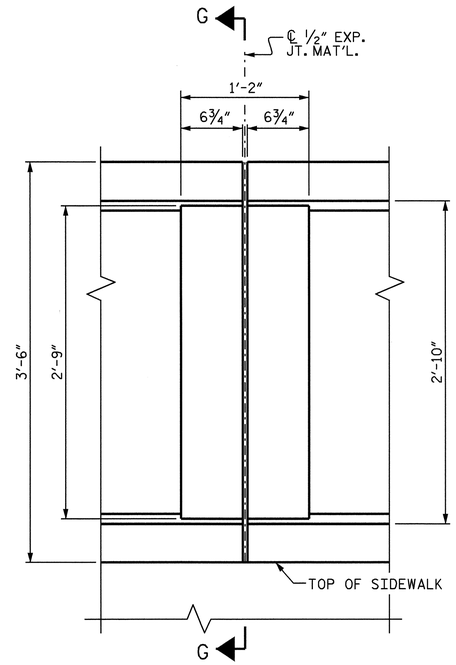
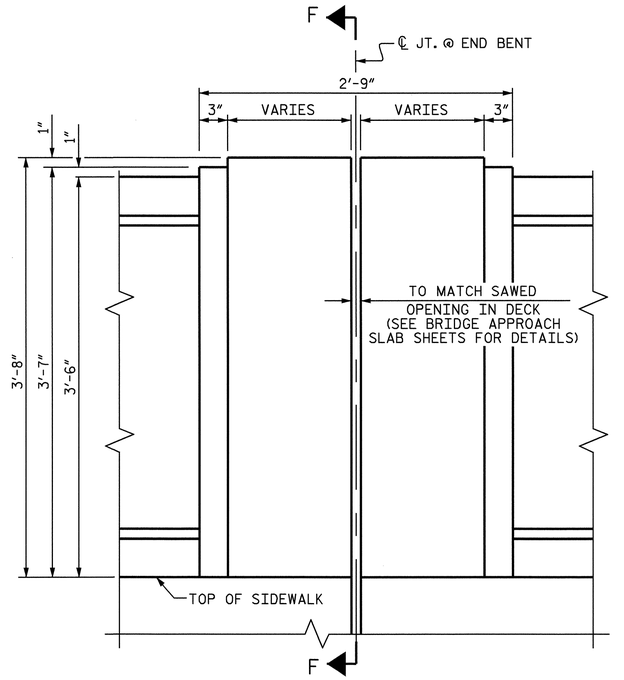


WINDOW DETAIL

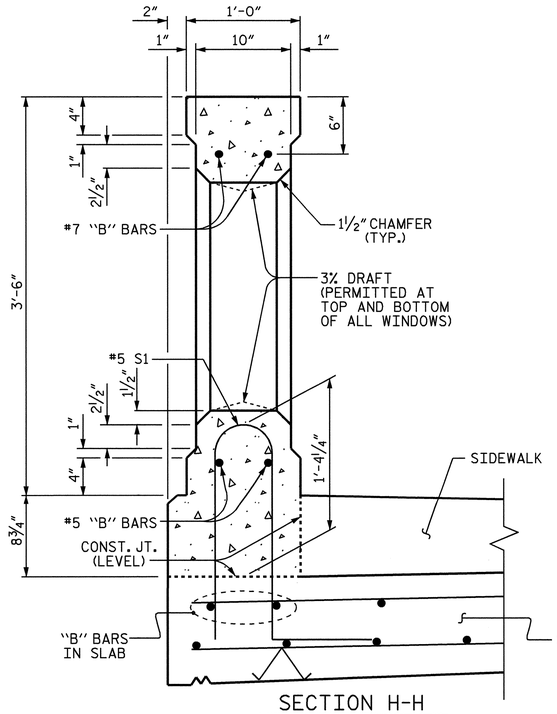


SPAN PILASTER

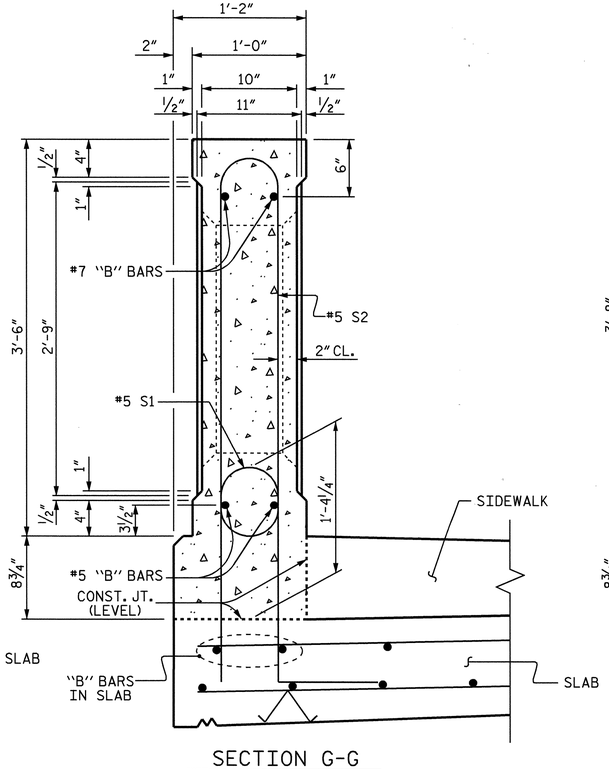


END BENT PILASTER

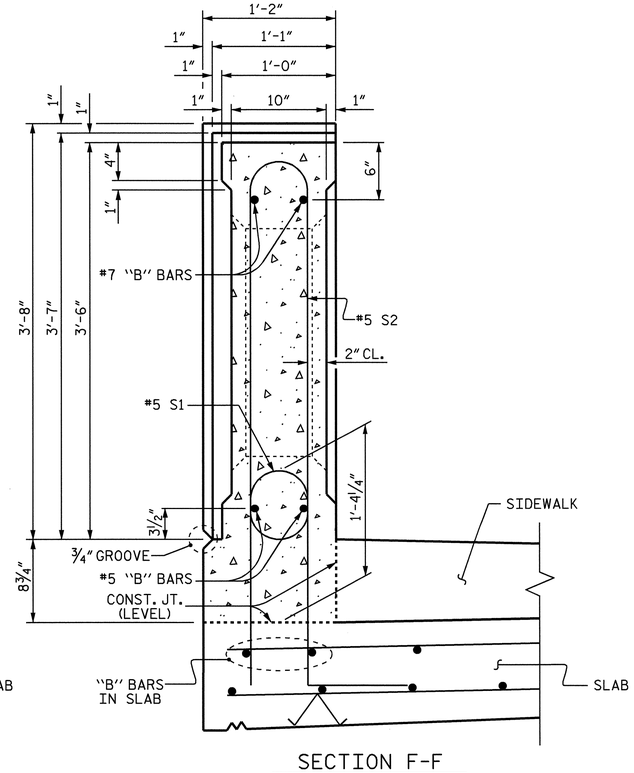
EXTERIOR PILASTER ELEVATIONS



SECTION H-H
(SHOWING WINDOW OF RAIL)



SECTION G-G
(SHOWING SPAN PILASTER)



SECTION F-F
(SHOWING END BENT PILASTER)

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

CLASSIC CONCRETE BRIDGE RAIL WITH SIDEWALK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			30

STD. No. CCR2

DRAWN BY : A.R.CHESSON/BNG DATE : 10-05
CHECKED BY : B.N. GRADY/NAP DATE : 7/06

24-MAY-2007 10:28
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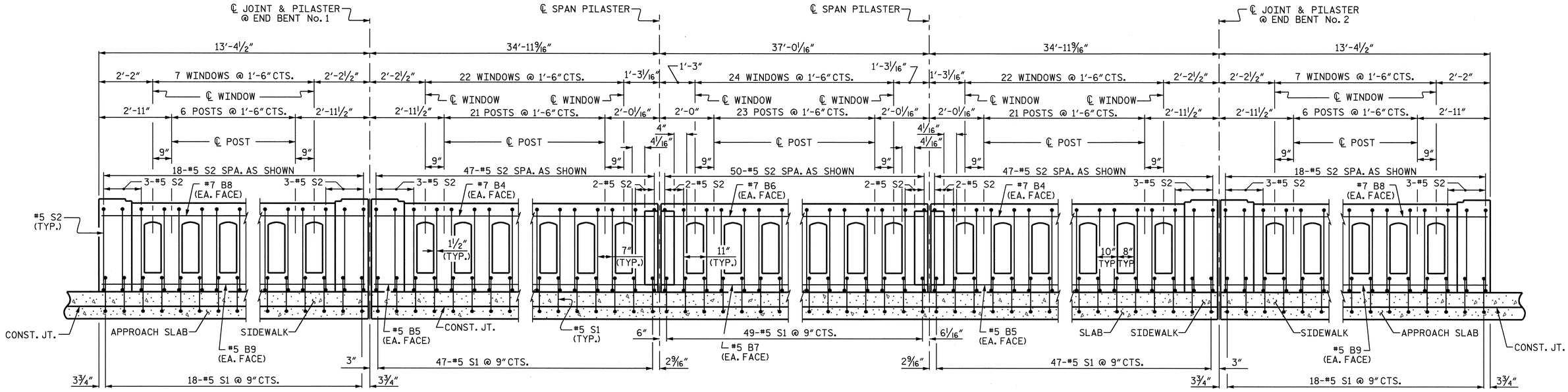

LEFT SIDE REINFORCING PLACEMENT- SPAN "A"

DIMENSIONS SHOWN ARE ALONG ROADWAY FACE OF RAIL ALONG ARC
CHAMFERS NOT SHOWN FOR CLARITY

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

CLASSIC CONCRETE BRIDGE RAIL WITH SIDEWALK

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : A.R. CHESSON/BNG DATE : 10/05
CHECKED BY : B.N. GRADY/NAP DATE : 7/06

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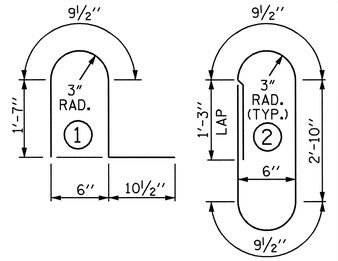
BAR TYPES



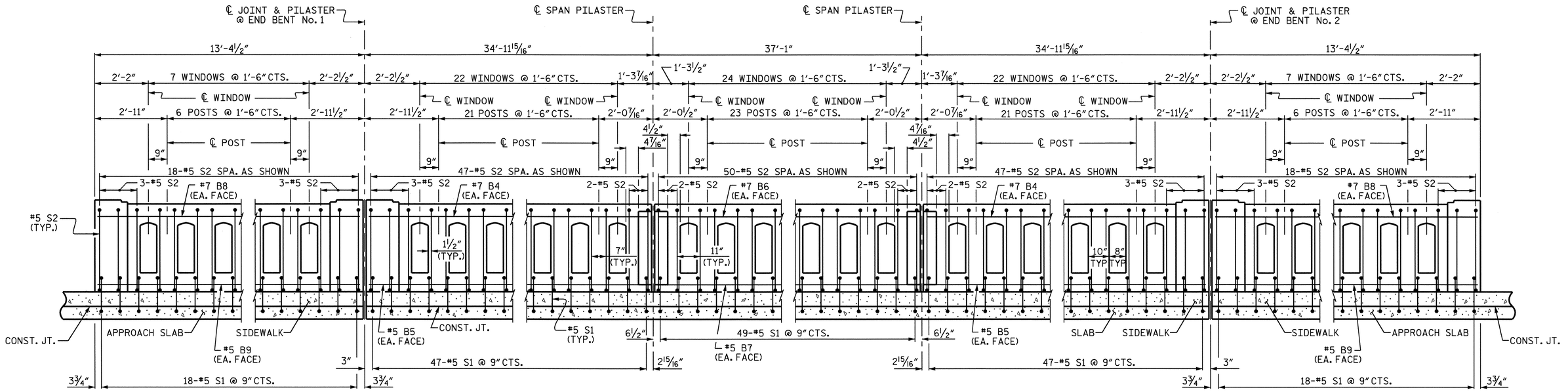
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR CLASSIC BRIDGE RAILING ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✳B4	8	#7	STR	34'-5"	563
✳B5	8	#5	STR	34'-5"	287
✳B6	4	#7	STR	36'-8"	300
✳B7	4	#5	STR	36'-8"	153
✳B8	8	#7	STR	12'-10"	210
✳B9	8	#5	STR	12'-10"	107
✳S1	358	#5	1	4'-10"	1805
✳S2	360	#5	2	8'-6"	3192

✳EPOXY COATED REINFORCING STEEL	6617 LBS.
CLASS AA CONCRETE	29.4 CU. YDS.
CLASSIC CONCRETE BRIDGE RAIL	267.51 LIN. FT.



RIGHT SIDE REINFORCING PLACEMENT- SPAN "A"

DIMENSIONS SHOWN ARE ALONG ROADWAY FACE OF RAIL ALONG ARC
CHAMFERS NOT SHOWN FOR CLARITY

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

CLASSIC CONCRETE BRIDGE RAIL WITH SIDEWALK

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : A.R. CHESSON/BNG DATE : 10/05
CHECKED BY : B.N. GRADY/NAP DATE : 7/06

24-MAY-2007 10:28
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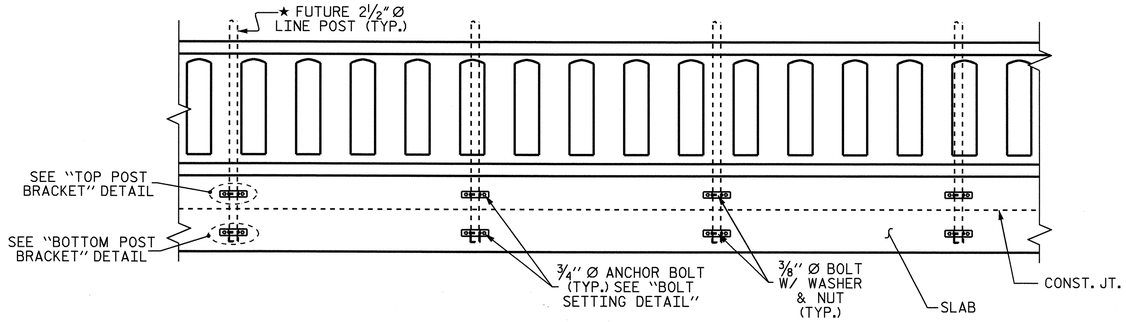


ELEVATION

NOTES

MATERIAL FOR ANCHOR BOLTS SHALL BE TYPE 304 STAINLESS STEEL WITH A MINIMUM 9000 PSI ULTIMATE STRENGTH. NUTS AND WASHERS SHALL BE TYPE 304 STAINLESS STEEL. ANCHOR BOLTS SHALL BE EMBEDDED 8" IN CONCRETE. NUTS SHALL BE AMERICAN STANDARD FINISHED HEXAGON THICK NUTS, CLASS 2B THREADS.

FOR SETTING ANCHOR BOLTS, THE CONTRACTOR SHALL USE AN ADHESIVE BONDING SYSTEM. SEE STANDARD SPECIFICATIONS.

ADHESIVE ANCHOR SYSTEM SHALL HAVE A MINIMUM PULLOUT STRENGTH OF 10 KIPS.

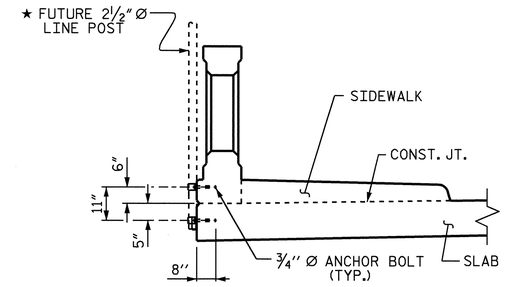
GALVANIZE STEEL PARTS AND HARDWARE IN ACCORDANCE WITH ARTICLE 1076 OF THE STANDARD SPECIFICATIONS.

WELDING SHALL BE DONE IN ACCORDANCE WITH ARTICLE 1072-20 OF THE STANDARD SPECIFICATIONS.

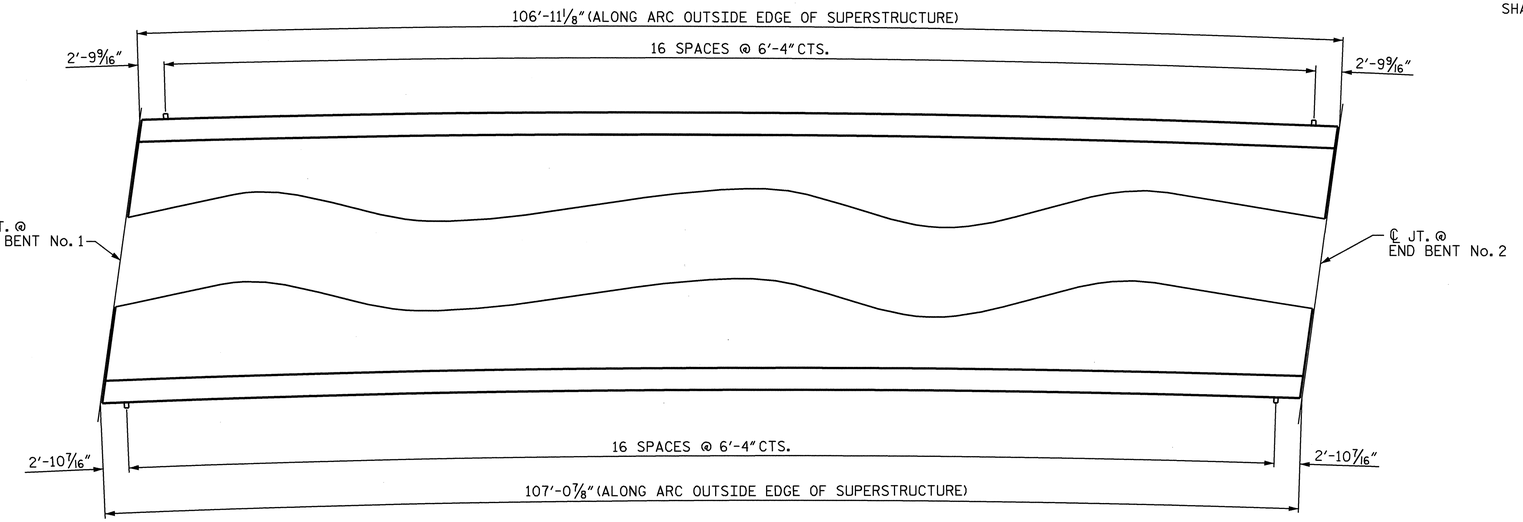
TESTING OF THE ANCHOR BOLTS TO 90% OF THE SPECIFIED STRENGTH SHALL BE PERFORMED AT THE OPTION OF THE ENGINEER.

★ FUTURE 2½" Ø LINE POST ARE NOT INCLUDED IN THIS PROJECT.

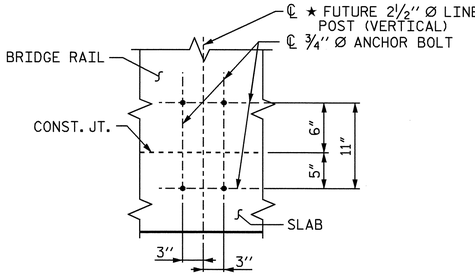
COST AND INSTALLATION OF THE POST BRACKET ASSEMBLIES SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.



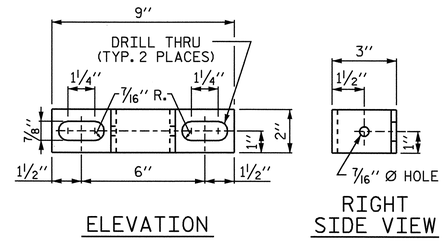
SECTION THRU FENCE



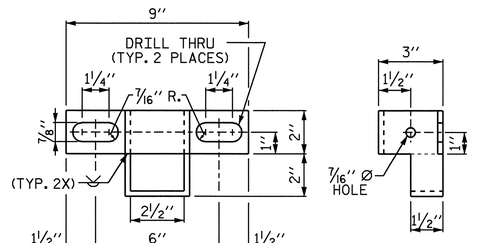
PLAN OF FENCE POST BRACKET SPACINGS



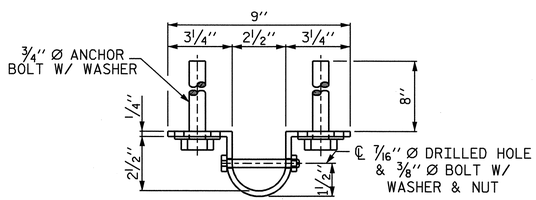
BOLT SETTING DETAIL



ELEVATION — RIGHT SIDE VIEW



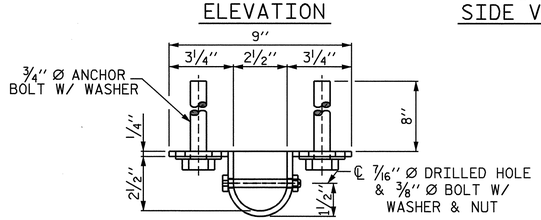
ELEVATION — RIGHT SIDE VIEW



PLAN

TOP POST BRACKET

(34 REQUIRED)



PLAN

BOTTOM POST BRACKET

(34 REQUIRED)

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

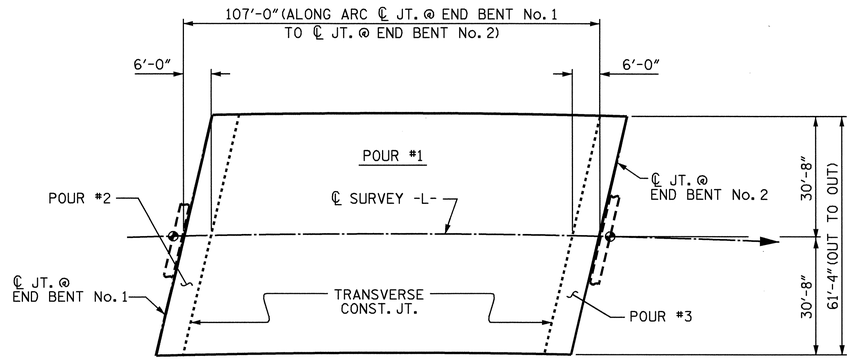
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

FENCE POST BRACKET SPACINGS AND DETAILS

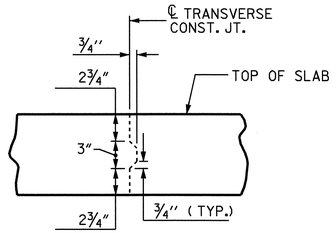
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			30

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREE 7/21/06

DRAWN BY : B.N. GRADY DATE : 8/06
CHECKED BY : N.A. PIERCE DATE : 9/06



POUR SEQUENCE AND LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB
(SQ. FT. = 6,558)



TRANSVERSE CONSTRUCTION JOINT DETAIL

NOTE: REINFORCING STEEL IN SLAB NOT SHOWN.
LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THRU JOINT

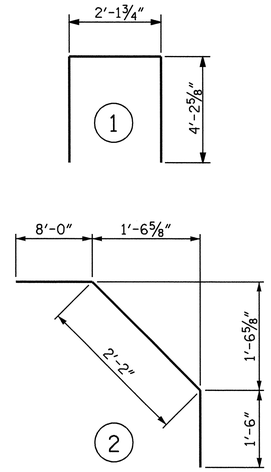
SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS					
BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	2'-0"	1'-9"	2'-0"	1'-9"	2'-9"
#5	2'-6"	2'-2"	2'-6"	2'-2"	3'-5"
#6	3'-0"	2'-7"	3'-10"	2'-7"	4'-4"
#7	5'-3"	3'-6"			
#8	6'-10"	4'-7"			

REINFORCING BAR SCHEDULE

SPAN A

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✳ A1	318	#5	STR	31'-9"	10531	A208	1	#5	STR	41'-5"	43
A2	318	#5	STR	31'-7"	10475	A209	1	#5	STR	38'-11"	41
						A210	1	#5	STR	36'-6"	38
✳ A101	1	#5	STR	58'-8"	61	A211	1	#5	STR	34'-0"	35
✳ A102	1	#5	STR	56'-2"	59	A212	1	#5	STR	31'-7"	33
✳ A103	1	#5	STR	53'-9"	56	A213	1	#5	STR	29'-1"	30
✳ A104	1	#5	STR	51'-3"	53	A214	1	#5	STR	26'-7"	28
✳ A105	1	#5	STR	48'-10"	51	A215	1	#5	STR	24'-2"	25
✳ A106	1	#5	STR	46'-4"	48	A216	1	#5	STR	21'-8"	23
✳ A107	1	#5	STR	43'-10"	46	A217	1	#5	STR	19'-3"	20
✳ A108	1	#5	STR	41'-5"	43	A218	1	#5	STR	16'-9"	17
✳ A109	1	#5	STR	38'-11"	41	A219	1	#5	STR	14'-4"	15
✳ A110	1	#5	STR	36'-6"	38	A220	1	#5	STR	11'-10"	12
✳ A111	1	#5	STR	34'-0"	35	A221	1	#5	STR	9'-4"	10
✳ A112	1	#5	STR	31'-7"	33	A222	1	#5	STR	6'-11"	7
✳ A113	1	#5	STR	29'-1"	30	A223	1	#5	STR	4'-5"	5
✳ A114	1	#5	STR	26'-7"	28	A224	1	#5	STR	58'-8"	61
✳ A115	1	#5	STR	24'-2"	25	A225	1	#5	STR	56'-2"	59
✳ A116	1	#5	STR	21'-8"	23	A226	1	#5	STR	53'-8"	56
✳ A117	1	#5	STR	19'-3"	20	A227	1	#5	STR	51'-2"	53
✳ A118	1	#5	STR	16'-9"	17	A228	1	#5	STR	48'-8"	51
✳ A119	1	#5	STR	14'-4"	15	A229	1	#5	STR	46'-2"	48
✳ A120	1	#5	STR	11'-10"	12	A230	1	#5	STR	43'-9"	46
✳ A121	1	#5	STR	9'-4"	10	A231	1	#5	STR	41'-3"	43
✳ A122	1	#5	STR	6'-11"	7	A232	1	#5	STR	38'-9"	40
✳ A123	1	#5	STR	4'-5"	5	A233	1	#5	STR	36'-3"	38
✳ A124	1	#5	STR	58'-8"	61	A234	1	#5	STR	33'-9"	35
✳ A125	1	#5	STR	56'-2"	59	A235	1	#5	STR	31'-3"	33
✳ A126	1	#5	STR	53'-8"	56	A236	1	#5	STR	28'-9"	30
✳ A127	1	#5	STR	51'-2"	53	A237	1	#5	STR	26'-3"	27
✳ A128	1	#5	STR	48'-8"	51	A238	1	#5	STR	23'-10"	25
✳ A129	1	#5	STR	46'-2"	48	A239	1	#5	STR	21'-4"	22
✳ A130	1	#5	STR	43'-9"	46	A240	1	#5	STR	18'-10"	20
✳ A131	1	#5	STR	41'-3"	43	A241	1	#5	STR	16'-4"	17
✳ A132	1	#5	STR	38'-9"	40	A242	1	#5	STR	13'-10"	14
✳ A133	1	#5	STR	36'-3"	38	A243	1	#5	STR	11'-4"	12
✳ A134	1	#5	STR	33'-9"	35	A244	1	#5	STR	8'-10"	9
✳ A135	1	#5	STR	31'-3"	33	A245	1	#5	STR	6'-4"	7
✳ A136	1	#5	STR	28'-9"	30	A246	1	#5	STR	3'-10"	4
✳ A137	1	#5	STR	26'-3"	27						
✳ A138	1	#5	STR	23'-10"	25	B1	138	#5	STR	54'-5"	7832
✳ A139	1	#5	STR	21'-4"	22	✳ B2	8	#5	STR	54'-7"	455
✳ A140	1	#5	STR	18'-10"	20	✳ B3	158	#7	STR	22'-0"	7105
✳ A141	1	#5	STR	16'-4"	17	✳ B4	120	#4	STR	23'-8"	1897
✳ A142	1	#5	STR	13'-10"	14	✳ B5	40	#4	STR	28'-7"	764
✳ A143	1	#5	STR	11'-4"	12						
✳ A144	1	#5	STR	8'-10"	9	✳ D1	160	#4	STR	10"	89
✳ A145	1	#5	STR	6'-4"	7						
✳ A146	1	#5	STR	3'-10"	4	✳ G1	4	#5	STR	32'-7"	136
						✳ G2	214	#4	STR	5'-0"	715
A201	1	#5	STR	58'-8"	61						
A202	1	#5	STR	56'-2"	59	K1	60	#4	STR	22'-10"	915
A203	1	#5	STR	53'-9"	56						
A204	1	#5	STR	51'-3"	53	S1	75	#4	1	10'-7"	530
A205	1	#5	STR	48'-10"	51	✳ S2	98	#4	2	11'-8"	764
A206	1	#5	STR	46'-4"	48						
A207	1	#5	STR	43'-10"	46	REINFORCING STEEL = 21258 LBS					
						✳ EPOXY COATED REINF. STEEL = 23962 LBS					

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

SUPERSTRUCTURE BILL OF MATERIAL

	CLASS AA CONCRETE	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
	(CU.YDS.)	(LBS.)	(LBS.)
SPAN "A"		21258	23962
POUR #1	174.4		
POUR #2	37.4		
POUR #3	37.4		
POUR #4 (SIDEWALK)	26.3		***
TOTALS**	275.5	21258	23962

** QUANTITIES FOR CLASSIC CONCRETE BRIDGE RAIL ARE NOT INCLUDED.

*** REINFORCING STEEL QUANTITIES FOR SIDEWALK ARE INCLUDED IN SPAN A QUANTITIES.

GROOVING BRIDGE FLOORS		
APPROACH SLABS	2190	SQ.FT.
BRIDGE DECK	4796	SQ.FT.
TOTAL	6986	SQ.FT.

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

SUPERSTRUCTURE BILL OF MATERIAL

OCTOBER 1987

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			30

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREE

ASSEMBLED BY : A.R. CHESSON/BNG	DATE : 12/06		
CHECKED BY : N.A. PIERCE	DATE : 12/06		
DRAWN BY : JMB 5/87	REV. 6/1/94	EEM/GRP	
CHECKED BY : SJD 9/87	REV. 8/16/99	RWW/LES	

02-JUL-2007 16:02
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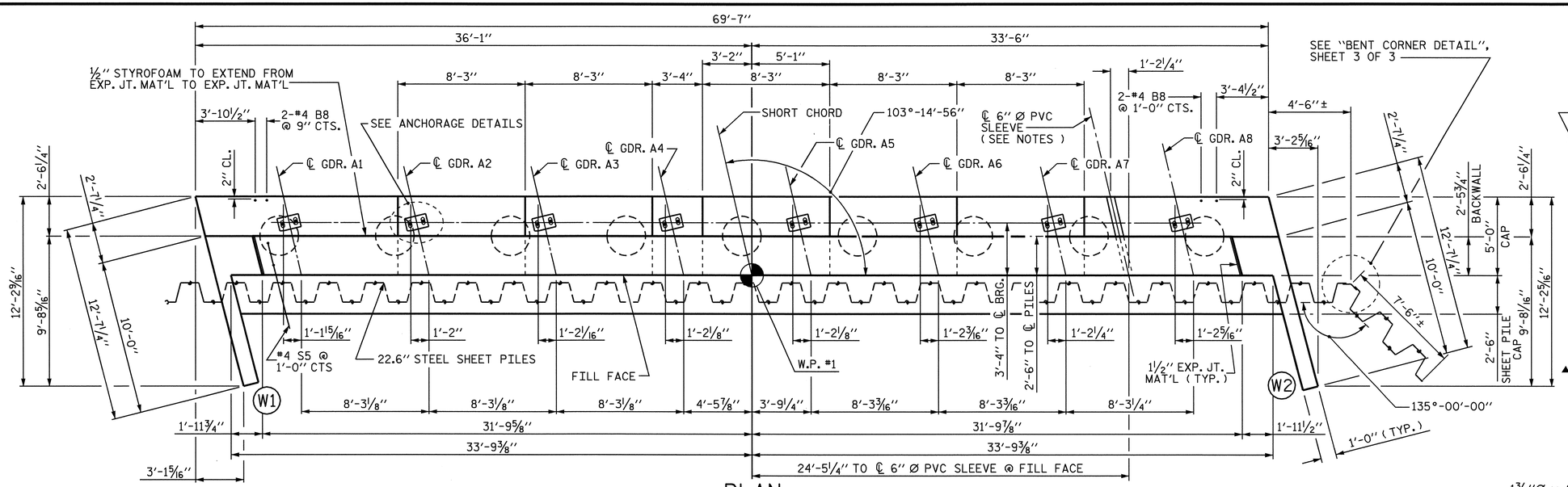
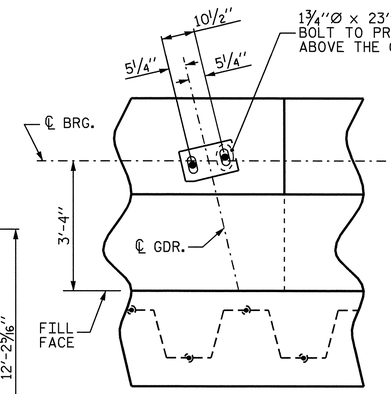
STD. NO. BOM1



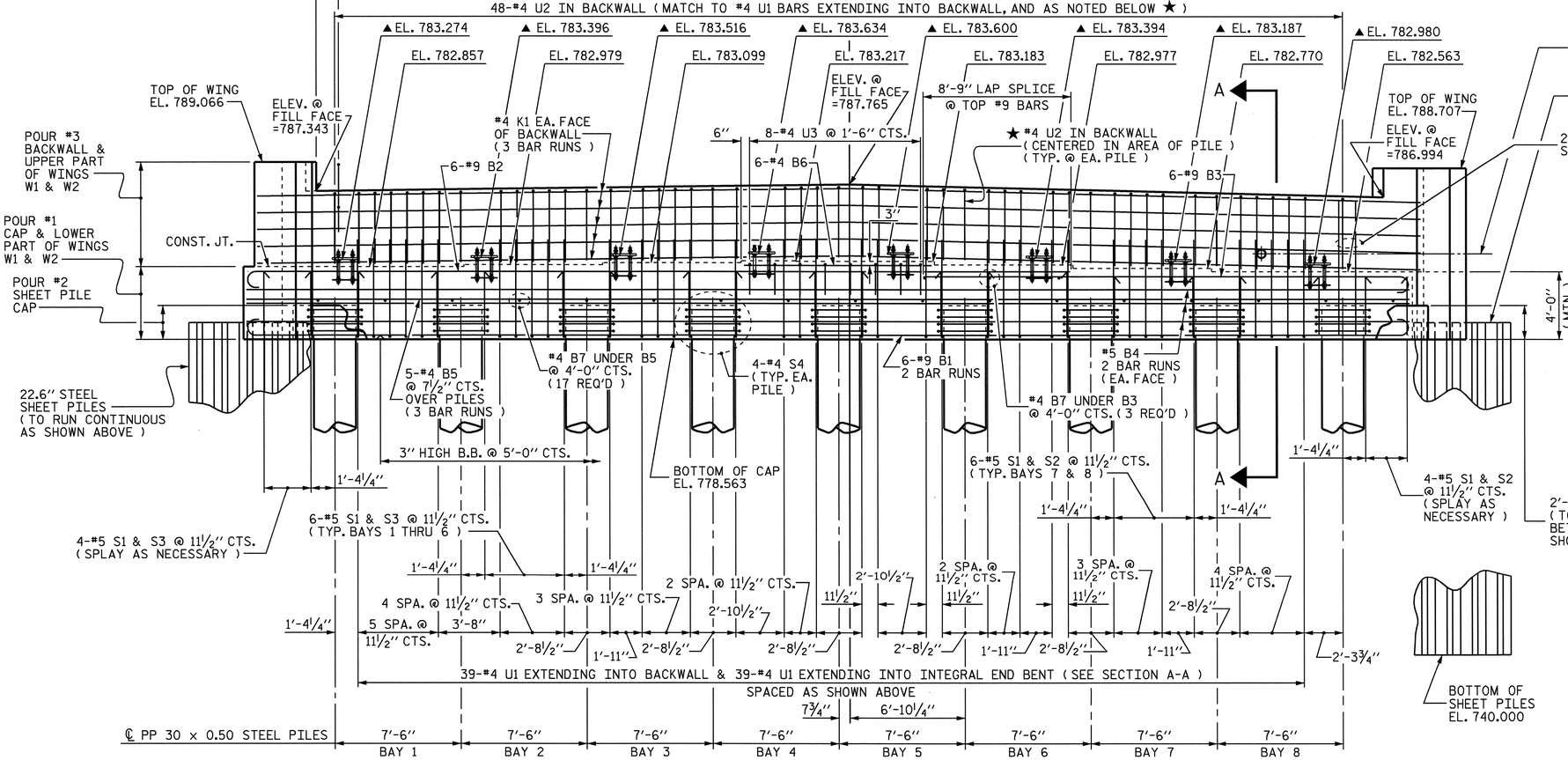
PLAN



ELEVATION

ANCHORAGE DETAILS

(TYP. EA. GIRDER)



ELEVATION

FOR REINFORCING STEEL IN SHEET PILE CAP, SEE DETAIL ON SHEET 3 OF 3

NOTES

REINFORCING STEEL IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR ASSEMBLIES AND 6" Ø PVC SLEEVE.

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. SEE BRIDGE APPROACH SLAB SHEETS FOR MODIFIED VERTICAL LOCATION OF THE DRAIN PIPE.

FOR DETAILS OF 6" Ø PVC SLEEVE, SEE "ELECTRICAL CONDUIT SYSTEM DETAILS" SHEET AND SPECIAL PROVISIONS.

REINFORCING STEEL SPLICES ARE NOT SHOWN. WHEN REQUIRED, THE MINIMUM SPLICE LENGTHS ARE AS FOLLOWS :

#4 BARS = 2'-5"
#5 BARS = 3'-0"
#9 BARS = 6'-3" (EXCEPT AS NOTED)

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : MIKE BRITT DATE : 11-8-06
CHECKED BY : B.N. GRADY DATE : 12/06

26-JUN-2007 09:47
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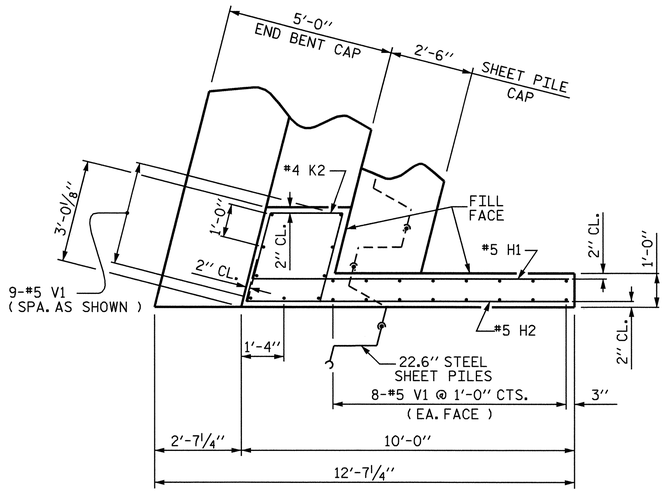
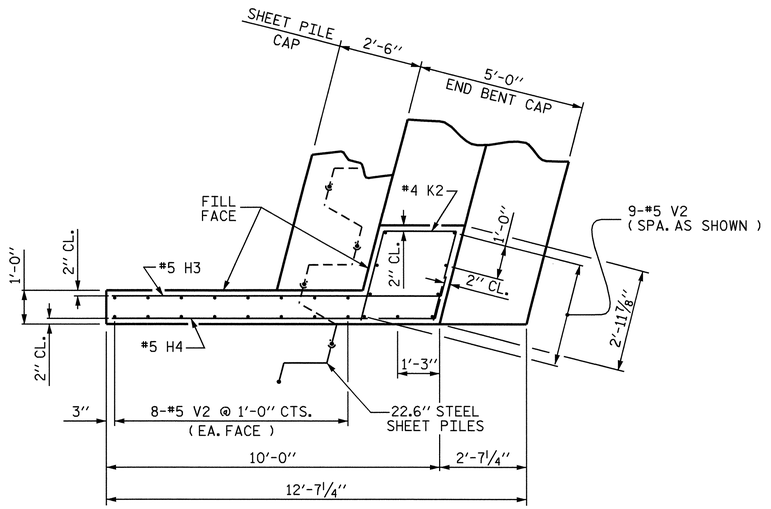
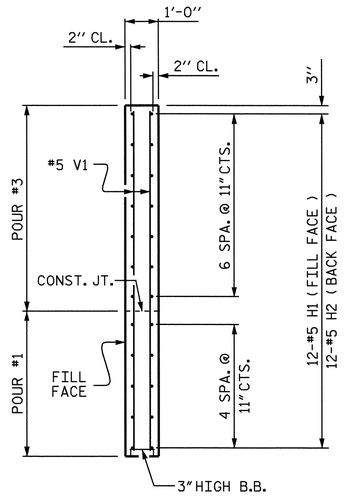
mbritt



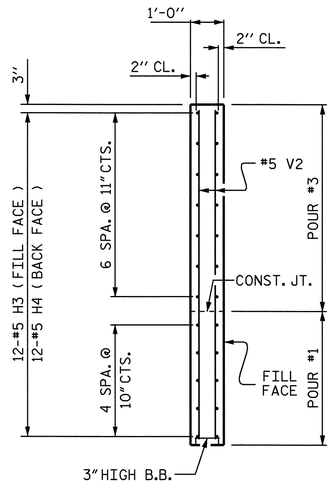
PLAN OF WING (W1)



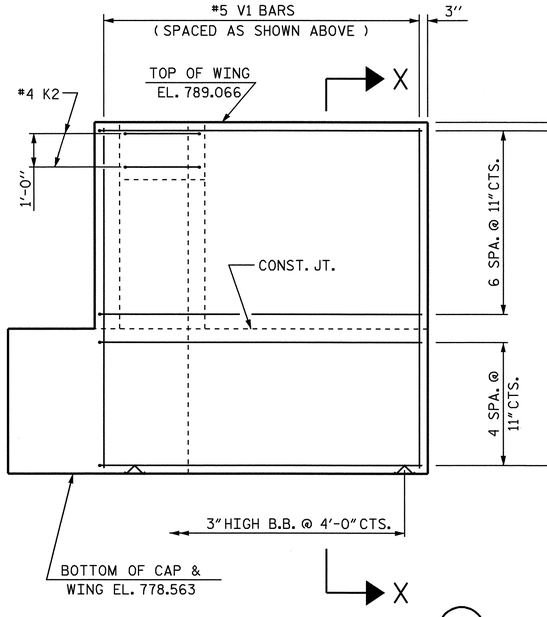
PLAN OF WING (W2)



SECTION X-X

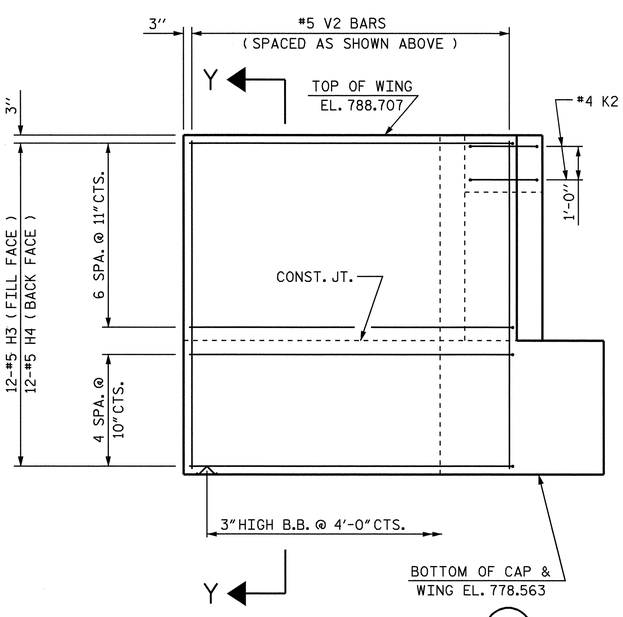


SECTION Y-Y



ELEVATION OF WING (W1)

STEEL SHEET PILES & CAP NOT SHOWN
SEE NOTE "A"



ELEVATION OF WING (W2)

STEEL SHEET PILES & CAP NOT SHOWN
SEE NOTE "A"

NOTE "A"
HOLES OR SLOTS SHALL BE FIELD CUT INTO THE STEEL SHEET PILES TO ALLOW FOR PLACEMENT OF THE WING REINFORCING STEEL.

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREE 12/06

PROJECT NO. B-3446
DAVIDSON COUNTY
STATION: 16+86.99 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : MIKE BRITT DATE : 11-29-06
CHECKED BY : B.N. GRADY DATE : 12/06

26-JUN-2007 09:46
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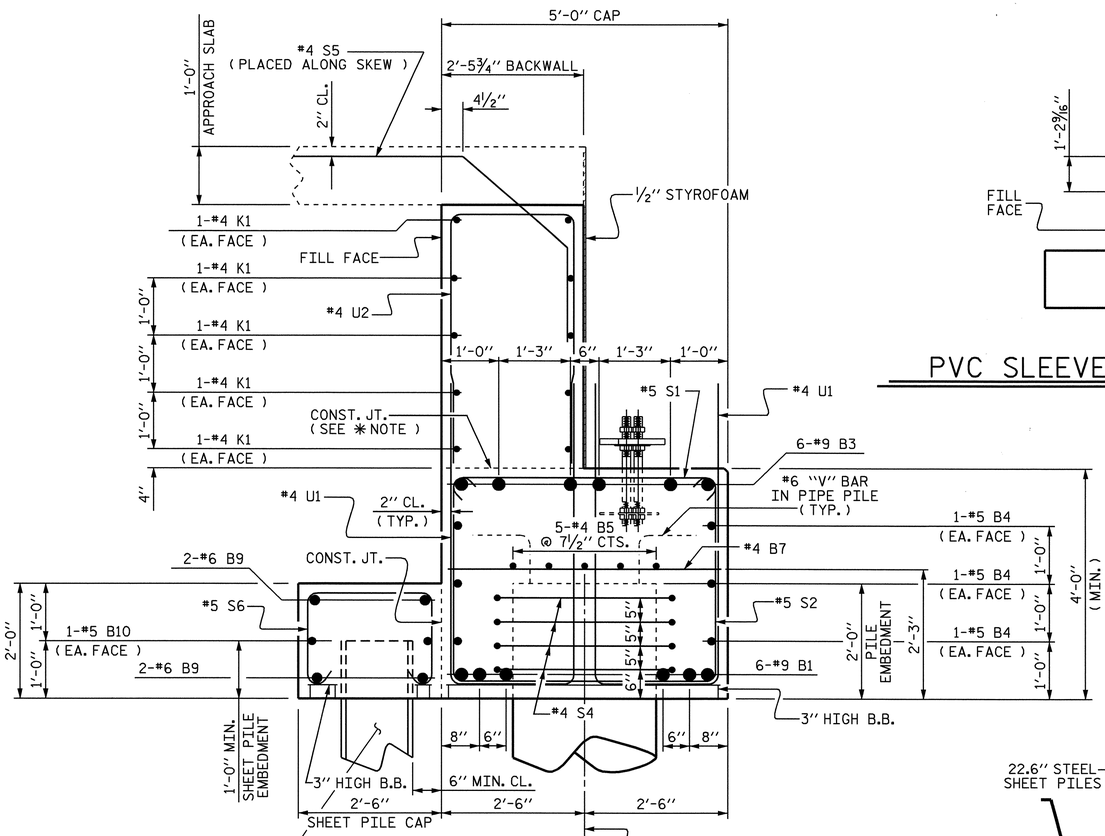
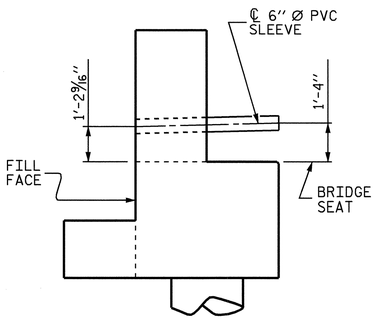
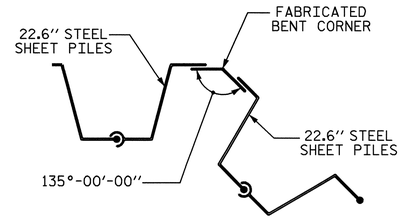


✳ NOTE :
2 LAYERS OF 30 LB. ROOFING FELT SHALL BE PLACED ALONG CONST. JT. ONLY UNDER THE BACKWALL TO PREVENT BOND. THE BOND BREAKING MATERIAL SHALL NOT EXTEND PAST THE LIMITS OF THE BACKWALL.

SECTION A-A

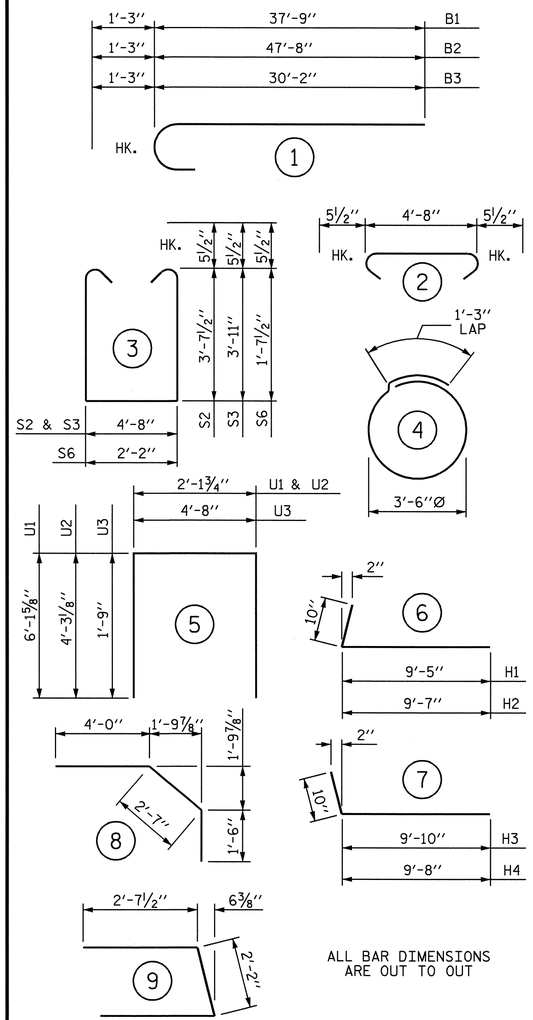


PVC SLEEVE PLACEMENT DETAIL



BENT CORNER DETAIL

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

END BENT No. 1

BAR	No.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	#9	1	39'-0"	1591
B2	6	#9	1	48'-11"	998
B3	6	#9	1	31'-5"	641
B4	12	#5	STR.	36'-2"	453
B5	15	#4	STR.	24'-9"	248
B6	6	#4	STR.	11'-2"	45
B7	20	#4	STR.	4'-8"	62
B8	4	#4	STR.	8'-0"	21
B9	8	#6	STR.	35'-0"	421
B10	4	#5	STR.	34'-9"	145
H1	12	#5	6	10'-3"	128
H2	12	#5	6	10'-5"	130
H3	12	#5	7	10'-8"	134
H4	12	#5	7	10'-6"	131
K1	30	#4	STR.	24'-9"	496
K2	4	#4	9	7'-5"	20
S1	56	#5	2	5'-7"	326
S2	16	#5	3	12'-10"	214
S3	40	#5	3	13'-5"	560
S4	36	#4	4	12'-3"	295
S5	62	#4	8	8'-1"	335
S6	67	#5	3	6'-4"	443
U1	78	#4	5	14'-5"	751
U2	48	#4	5	10'-8"	342
U3	8	#4	5	8'-2"	44
V1	25	#5	STR.	10'-2"	265
V2	25	#5	STR.	9'-9"	254

REINFORCING STEEL 9,493 LBS.

CLASS A CONCRETE BREAKDOWN

POUR #1 (CAP & LOWER PART OF WINGS) = 55.0 CY

POUR #2 (SHEET PILE CAP) = 12.5 CY

POUR #3 (BACKWALL & UPPER PART OF WINGS) = 33.4 CY

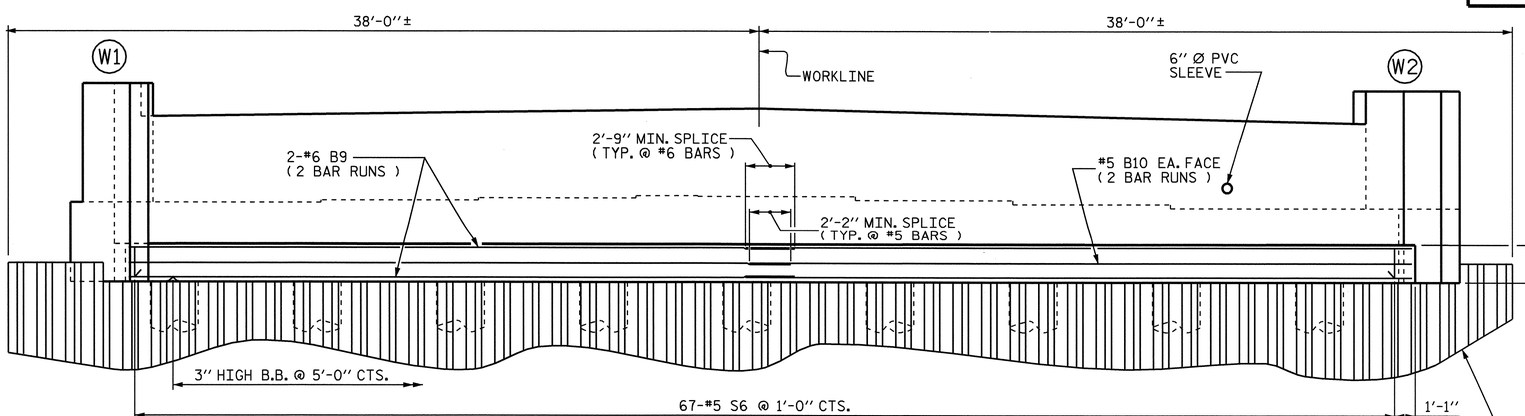
TOTAL CLASS A CONCRETE = 100.9 CY

22.6" STEEL SHEET PILES

No. 45 SQ. FT. 3,353

PP 30 x 0.50 STEEL PILES

No. 9 LINEAR FT. 540



SHEET PILE CAP REINFORCING STEEL DETAIL

SHEET PILE NOTES

STEEL SHEET PILES SHALL BE DRIVEN A MINIMUM OF 6" CLEAR FROM FILL FACE AND EMBEDDED A MINIMUM OF 1'-0" INTO SHEET PILE CAP.

THE STEEL SHEET PILES SHALL BE HOT ROLLED, HAVE A MINIMUM THICKNESS OF 0.50 INCHES AND A MINIMUM SECTION MODULUS OF 48.6 CUBIC INCHES PER LINEAR FOOT OF WALL.

INSTALL SHEET PILES TO AN ELEVATION NO HIGHER THAN 740 FT.

DRIVE PP 30 x 0.50 STEEL PILES PRIOR TO INSTALLING SHEET PILES.

NOTE :
THE CONCRETE DISPLACED BY THE PP 30 x 0.50 STEEL PILES HAS BEEN DEDUCTED FROM THE POUR #1 CONCRETE QUANTITY.

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : MIKE BRITT DATE : 12-6-06
CHECKED BY : B.N. GRADY DATE : 12/06

26-JUN-2007 09:50
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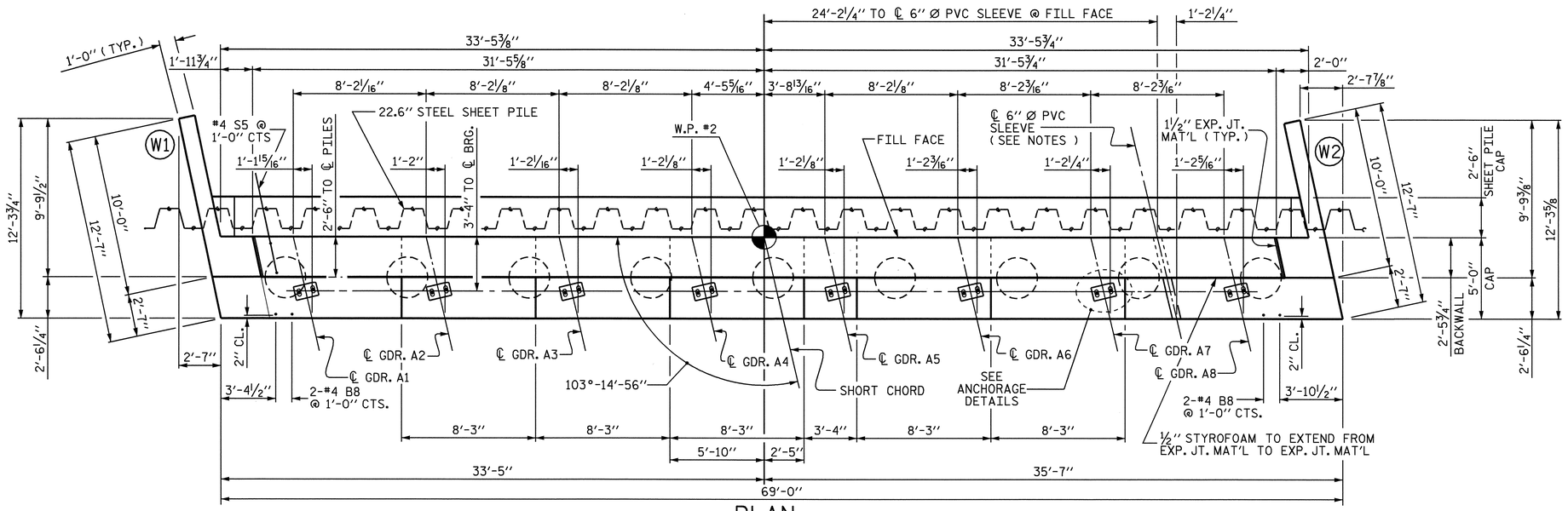

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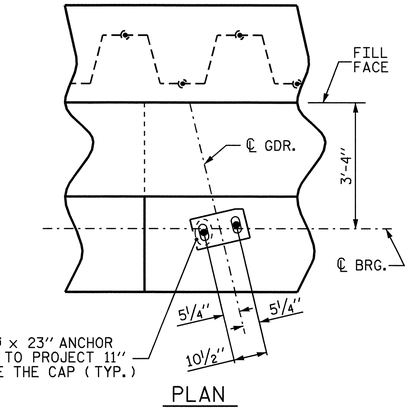

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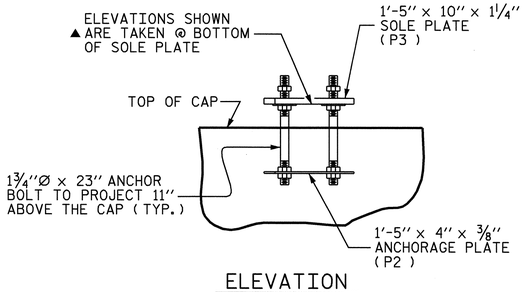
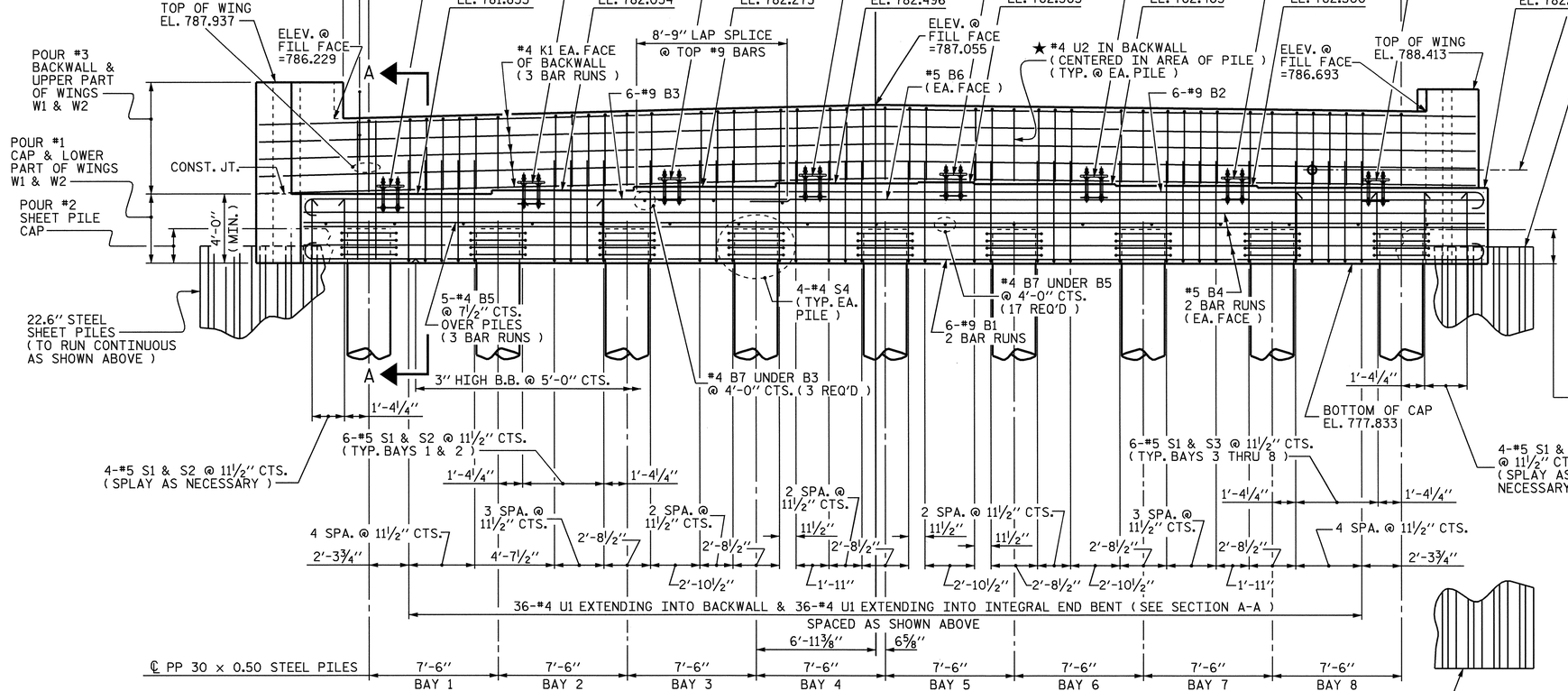


ELEVATION

ANCHORAGE DETAILS

(TYP. EA. GIRDER)



ELEVATION

FOR REINFORCING STEEL IN SHEET PILE CAP, SEE DETAIL ON SHEET 3 OF 3

NOTES

REINFORCING STEEL IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR ASSEMBLIES AND 6" Ø PVC SLEEVE.

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. SEE BRIDGE APPROACH SLAB SHEETS FOR MODIFIED VERTICAL LOCATION OF THE DRAIN PIPE.

FOR DETAILS OF 6" Ø PVC SLEEVE, SEE "ELECTRICAL CONDUIT SYSTEM DETAILS" SHEET AND SPECIAL PROVISIONS.

REINFORCING STEEL SPLICES ARE NOT SHOWN. WHEN REQUIRED, THE MINIMUM SPLICE LENGTHS ARE AS FOLLOWS :

#4 BARS = 2'-5"
#5 BARS = 3'-0"
#9 BARS = 6'-3" (EXCEPT AS NOTED)

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 2

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : MIKE BRITT DATE : 12-14-06
CHECKED BY : B.N. GRADY DATE : 1/07

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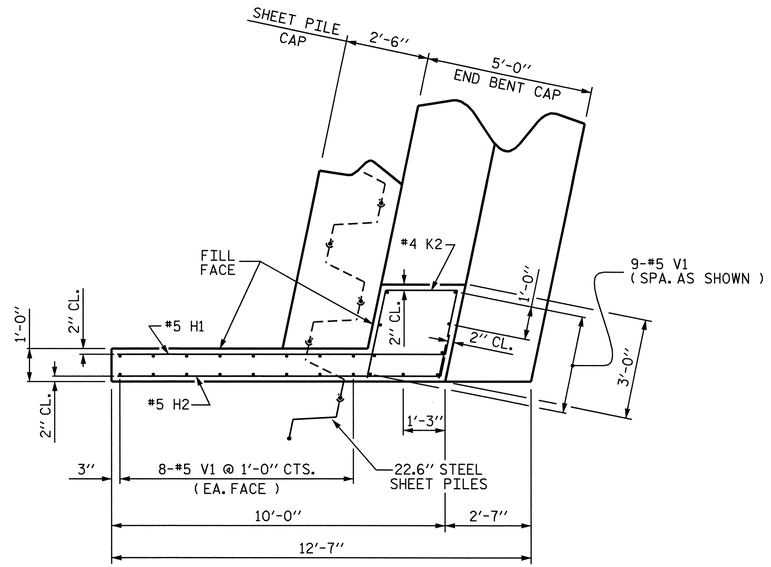
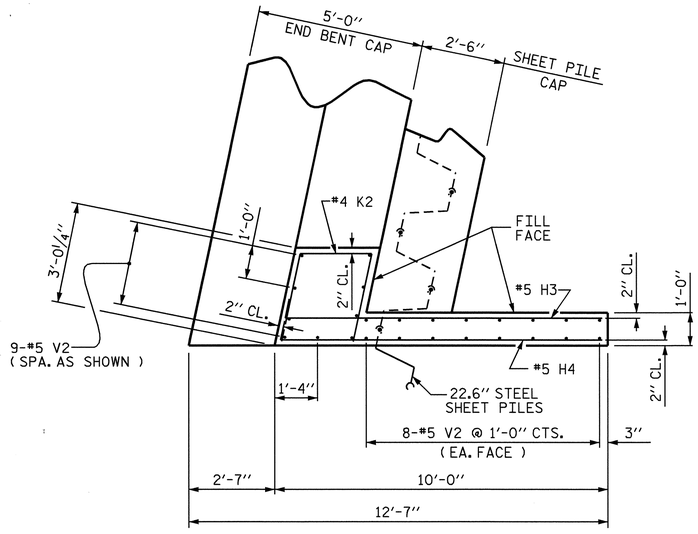
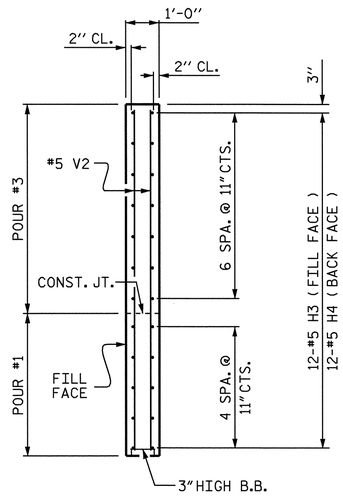


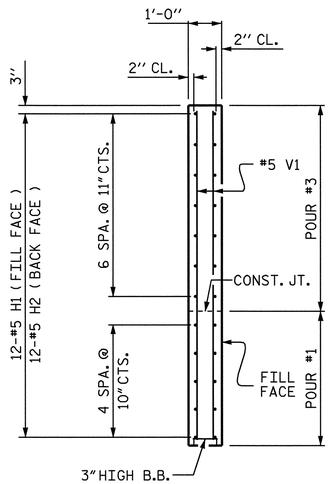
PLAN OF WING (W1)



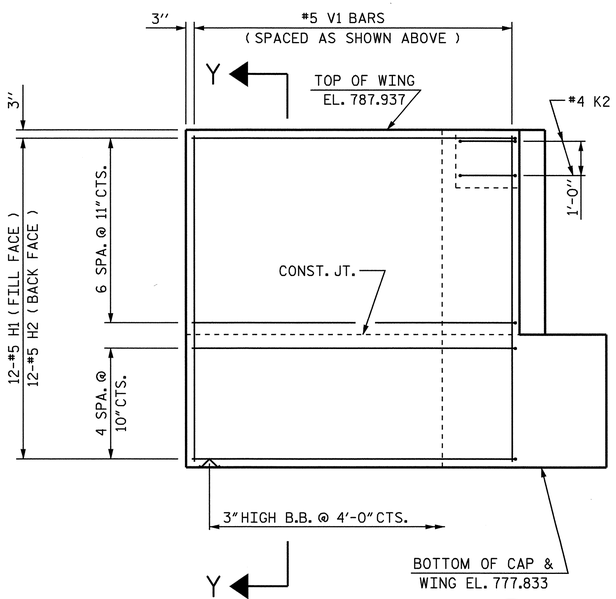
PLAN OF WING (W2)



SECTION X-X

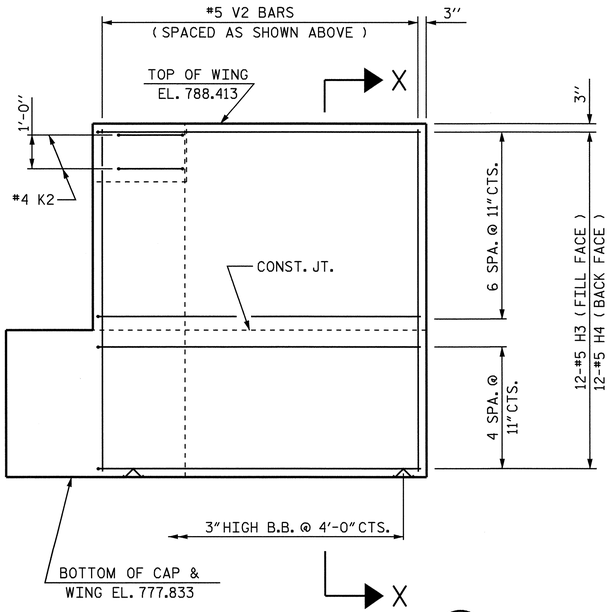


SECTION Y-Y



ELEVATION OF WING (W1)

STEEL SHEET PILES & CAP NOT SHOWN
SEE NOTE "A"



ELEVATION OF WING (W2)

STEEL SHEET PILES & CAP NOT SHOWN
SEE NOTE "A"

NOTE "A"
HOLES OR SLOTS SHALL BE FIELD CUT INTO THE STEEL SHEET PILES TO ALLOW FOR PLACEMENT OF THE WING REINFORCING STEEL.

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY

PROJECT NO. B-3446
DAVIDSON COUNTY
STATION: 16+86.99 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : MIKE BRITT DATE : 12-27-06
CHECKED BY : B.N. GRADY DATE : 1/07

26-JUN-2007 09:53
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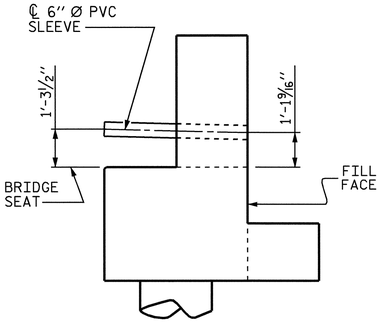
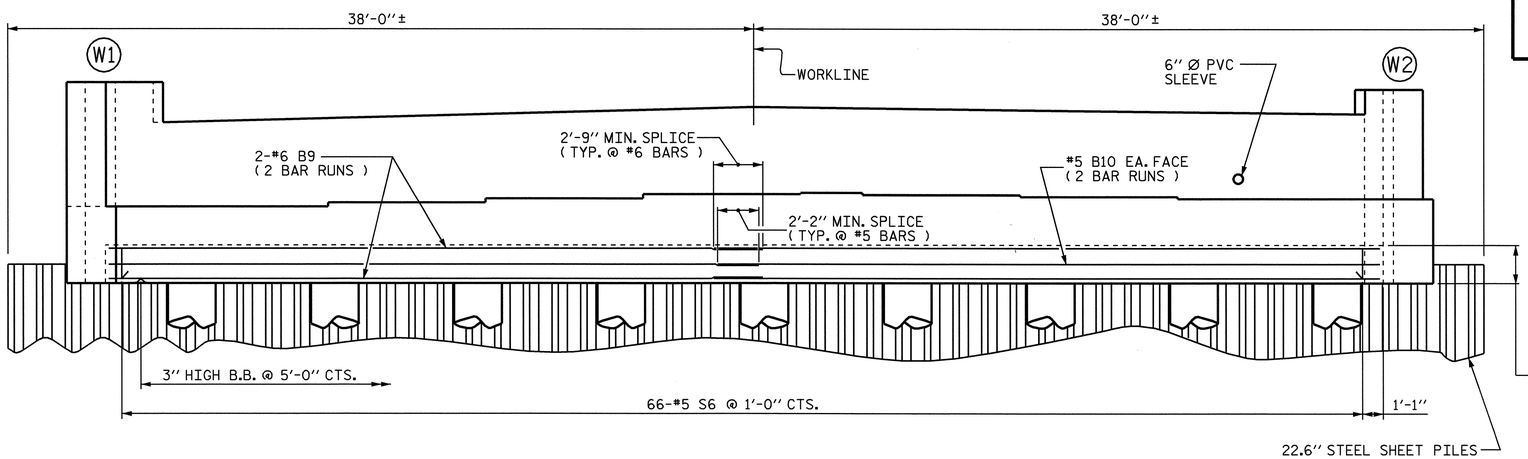


PVC SLEEVE PLACEMENT DETAIL

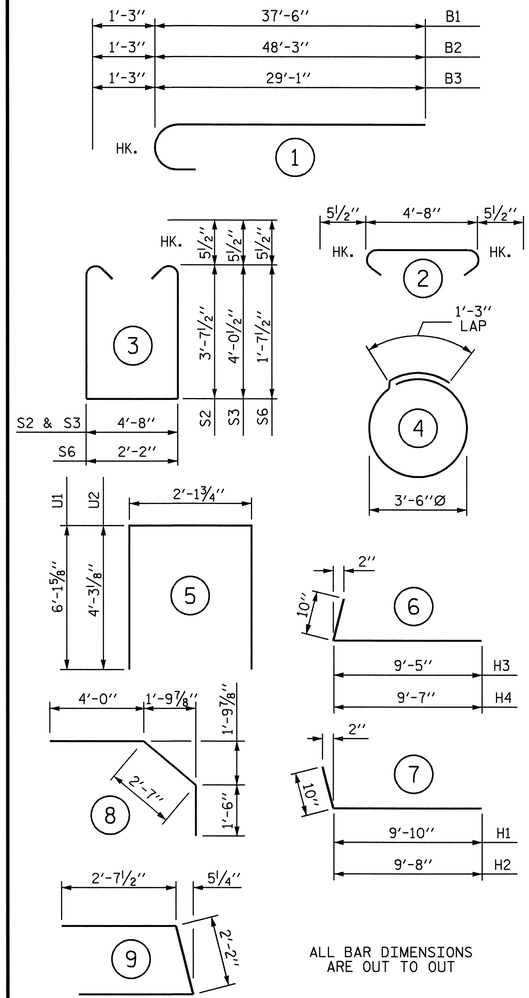
* NOTE :
2 LAYERS OF 30 LB. ROOFING FELT SHALL BE PLACED ALONG CONST. JT. ONLY UNDER THE BACKWALL TO PREVENT BOND. THE BOND BREAKING MATERIAL SHALL NOT EXTEND PAST THE LIMITS OF THE BACKWALL.

SECTION A-A



SHEET PILE CAP REINFORCING STEEL DETAIL

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

END BENT No. 2

BAR	No.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	#9	1	38'-9"	1581
B2	6	#9	1	49'-6"	1010
B3	6	#9	1	30'-4"	619
B4	12	#5	STR.	35'-10"	448
B5	15	#4	STR.	24'-6"	245
B6	2	#5	STR.	42'-7"	89
B7	20	#4	STR.	4'-8"	62
B8	4	#4	STR.	8'-0"	21
B9	8	#6	STR.	34'-9"	418
B10	4	#5	STR.	34'-5"	144
H1	12	#5	7	10'-8"	134
H2	12	#5	7	10'-6"	131
H3	12	#5	6	10'-3"	128
H4	12	#5	6	10'-5"	130
K1	30	#4	STR.	24'-1"	483
K2	4	#4	9	7'-5"	20
S1	56	#5	2	5'-7"	326
S2	16	#5	3	12'-10"	214
S3	40	#5	3	13'-8"	570
S4	36	#4	4	12'-3"	295
S5	62	#4	8	8'-1"	335
S6	66	#5	3	6'-4"	436
U1	72	#4	5	14'-5"	693
U2	45	#4	5	10'-8"	321
V1	25	#5	STR.	9'-9"	254
V2	25	#5	STR.	10'-3"	267

REINFORCING STEEL 9,374 LBS.

CLASS A CONCRETE BREAKDOWN

POUR #1 (CAP & LOWER PART OF WINGS)	= 55.4 CY
POUR #2 (SHEET PILE CAP)	= 12.4 CY
POUR #3 (BACKWALL & UPPER PART OF WINGS)	= 32.8 CY
TOTAL CLASS A CONCRETE	= 100.6 CY

22.6" STEEL SHEET PILES

No. 40 SQ. FT. 2,925

PP 30 x 0.50 STEEL PILES

No. 9 LINEAR FT. 495

SHEET PILE NOTES

STEEL SHEET PILES SHALL BE DRIVEN A MINIMUM OF 6" CLEAR FROM FILL FACE AND EMBEDDED A MINIMUM OF 1'-0" INTO SHEET PILE CAP.

THE STEEL SHEET PILES SHALL BE HOT ROLLED, HAVE A MINIMUM THICKNESS OF 0.50 INCHES AND A MINIMUM SECTION MODULUS OF 48.6 CUBIC INCHES PER LINEAR FOOT OF WALL.

INSTALL SHEET PILES TO AN ELEVATION NO HIGHER THAN 740 FT.

DRIVE PP 30 x 0.50 STEEL PILES PRIOR TO INSTALLING SHEET PILES.

NOTE :
THE CONCRETE DISPLACED BY THE PP 30 x 0.50 STEEL PILES HAS BEEN DEDUCTED FROM THE POUR #1 CONCRETE QUANTITY.

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : MIKE BRITT DATE : 12-28-06
CHECKED BY : B.N. GRADY DATE : 1/07

26-JUN-2007 09:53
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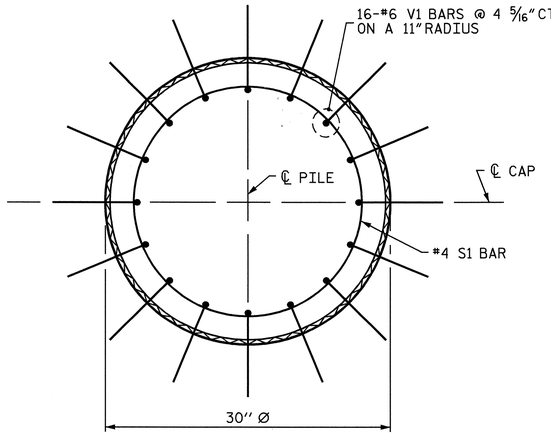
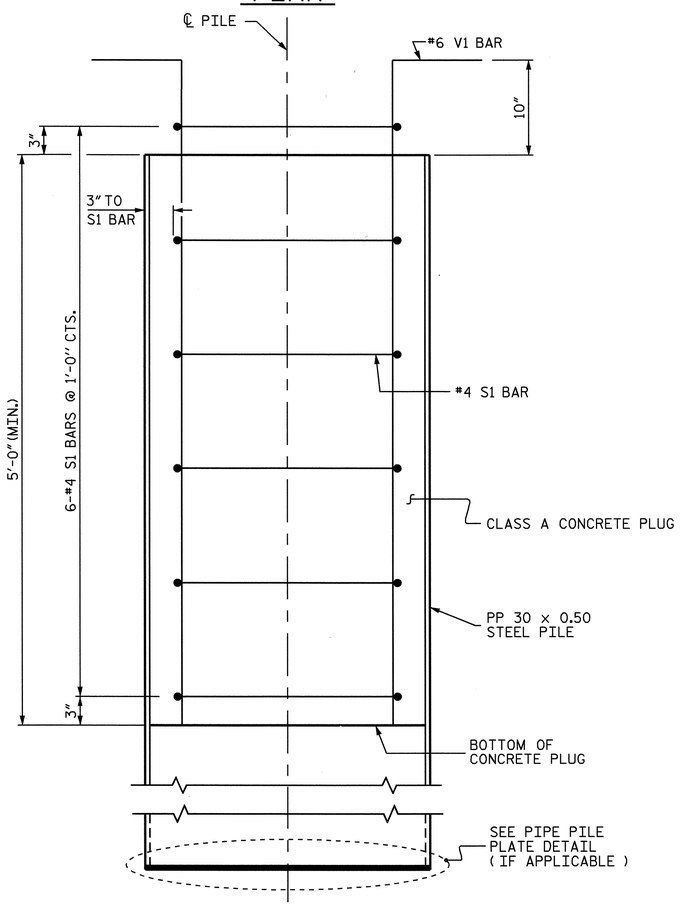


PLAN



ELEVATION

PP 30 x 0.50 STEEL PILE

(OPEN OR CLOSED END)

NOTES

STEEL PIPE PILES SHALL BE OF UNIFORM DIAMETER AND MEET THE REQUIREMENTS OF ASTM A252, GRADE 3 MODIFIED (50,000 PSI YIELD STRENGTH).

REMOVE AND REPLACE OR REPAIR TO THE SATISFACTION OF THE ENGINEER PILES THAT ARE DAMAGED, DEFORMED OR COLLAPSED DURING INSTALLATION OR DRIVING.

PILE SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AWS D1.1.

FOR CLOSED END PIPE PILES, REMOVE ALL SOIL AND WATER FROM INSIDE THE PILES JUST PRIOR TO PLACING REINFORCING STEEL AND CONCRETE FOR THE CONCRETE PLUG.

FOR OPEN END PIPE PILES, REMOVE ENOUGH SOIL AND WATER FROM INSIDE THE PILES TO CONSTRUCT THE CONCRETE PLUG WITHOUT FOULING THE CONCRETE.

FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE BENT CAP UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

THE REINFORCING STEEL, CLASS A CONCRETE, AND THE PIPE PILE PLATES, IF REQUIRED, ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 30 x 0.50 STEEL PILES.

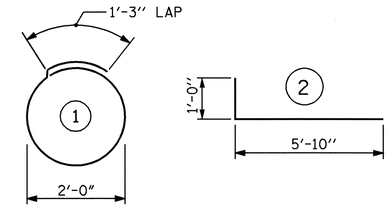
BILL OF MATERIAL FOR ONE PP 30 x 0.50 STEEL PILE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	7'-7"	30
V1	16	#6	2	6'-10"	164
REINFORCING STEEL =				194	lbs

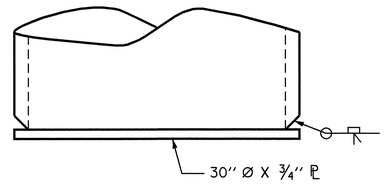
CLASS A CONCRETE

5'-0" MINIMUM PLUG 0.8 CY

BAR TYPES

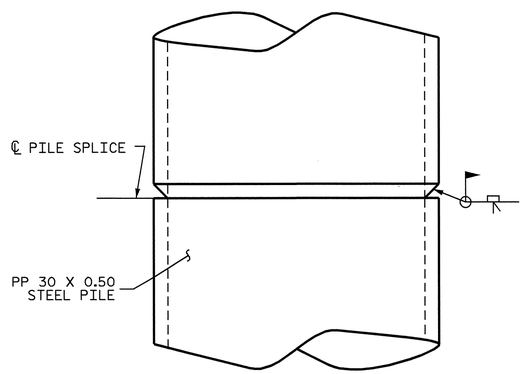


ALL BAR DIMENSIONS ARE OUT TO OUT.



PIPE PILE PLATE DETAIL

(IF APPLICABLE)



PIPE PILE SPLICE DETAIL

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

30" STEEL PIPE PILE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			30

ASSEMBLED BY : MIKE BRITT	DATE : 4-11-07
CHECKED BY : D.E. PETREY	DATE : 4/07
DRAWN BY : TLA 8/05	ADDED 10/1/05
CHECKED BY : GM 9/05	REV. 5/1/06 TLA/GM

24-MAY-2007 10:25
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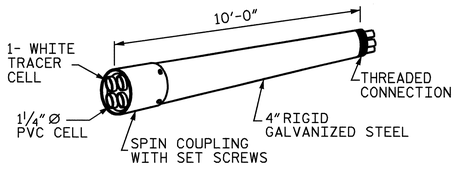
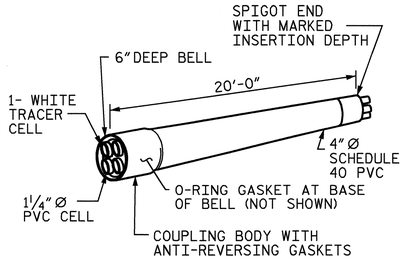
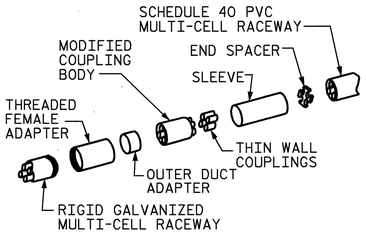
STD. NO. SPP5



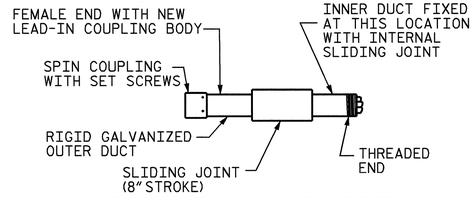
RIGID GALVANIZED (RGC)
MULTI-CELL RACEWAY



SCHEDULE 40 PVC
MULTI-CELL RACEWAY



TRANSITION ADAPTER



EXPANSION JOINT FITTING

NOTES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE TOTAL QUANTITY OF CONDUIT NEEDED TO COMPLETE THE WORK AND THAT THE CONDUIT(S) ARE PLACED AT THE NOTED DIMENSION AND ABOVE THE BOTTOM OF THE GIRDER.

THE INSTALLATION OF THE CONDUIT SYSTEM SHALL BE PAID FOR AS LUMP SUM. THE PRICE SHALL INCLUDE ALL CONDUIT, HANGERS, STABILIZERS, EXPANSION JOINTS, CONCRETE INSERTS, PVC SLEEVES AND ALL NECESSARY HARDWARE TO COMPLETE THE WORK.

SEE DETAIL "C" FOR HANGER ASSEMBLY INSTALLATION.

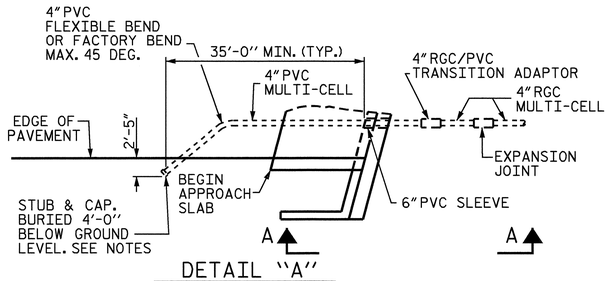
INSTALL SLEEVES PARALLEL TO GIRDERS. SEE DETAIL "B" FOR SLEEVE INSTALLATION.

PROVIDE TRANSITION ADAPTOR AND EXPANSION JOINT, FOR CONDUIT AT END BENT 1 AND END BENT 2.

INSTALL STABILIZER AT OR NEAR MIDSPAN OF SPAN A. STABILIZER CAN NOT BE USED INSTEAD OF A HANGER ASSEMBLY.

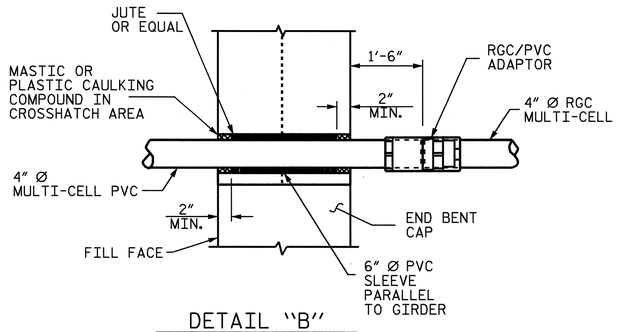
THE CONCRETE SCREW INSERT SHALL HAVE A ROD SIZE OF ⅝" AND A PULL FORCE OF 1260 lbs.

FOR ELECTRICAL CONDUIT SYSTEM, SEE SPECIAL PROVISIONS.

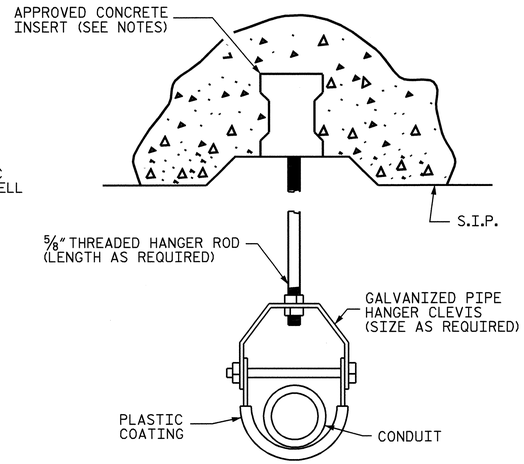


DETAIL "A"
TERMINATION OF CONDUIT AT WING WALL

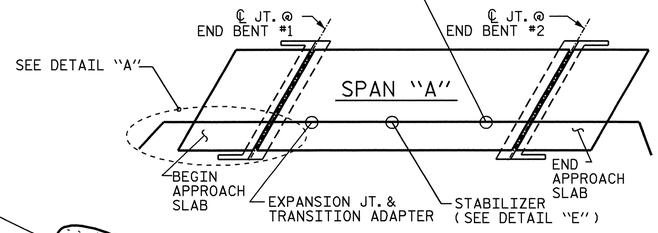
DETAIL "D"
4" MULTI-CELL COMPONENTS



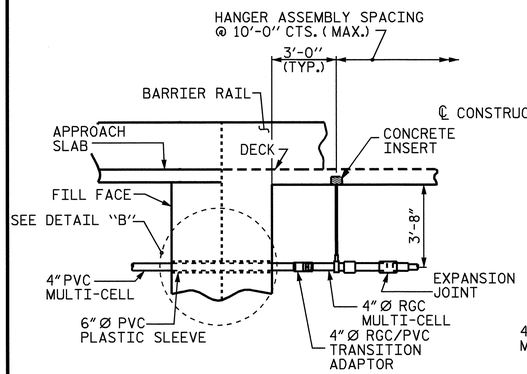
DETAIL "B"
PVC SLEEVE INSTALLATION & RGC/PVC ADAPTOR AT BACKWALL.



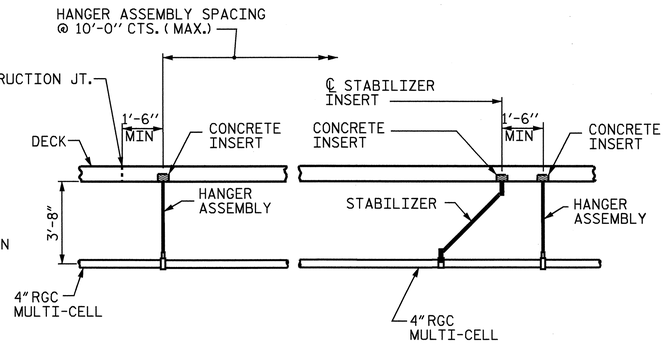
DETAIL "C"
HANGER ASSEMBLY



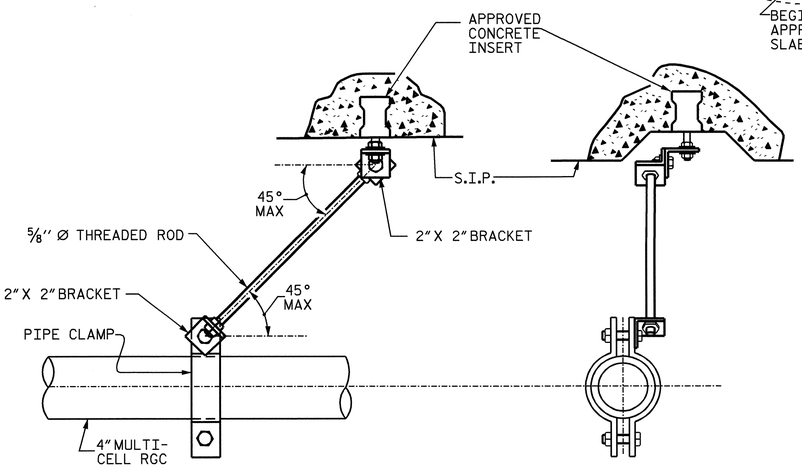
CONDUIT LAYOUT



VIEW A-A
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR)



VIEW B-B
STEEL GIRDERS



DETAIL "E"
STABILIZER

PROJECT NO. B-3446
DAVIDSON COUNTY
STATION: 16+86.99 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
ELECTRICAL CONDUIT SYSTEM DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-26
1			3			TOTAL SHEETS
2			4			30

ASSEMBLED BY :	N. PIERCE	DATE :	04-07
CHECKED BY :	D.E. PETREY	DATE :	04-07
DRAWN BY : RWW	2-4-03	REV. 5/1/06	TLA/GM
CHECKED BY : DBM	2-4-03		

ELECTRIC CONDUIT DETAILS

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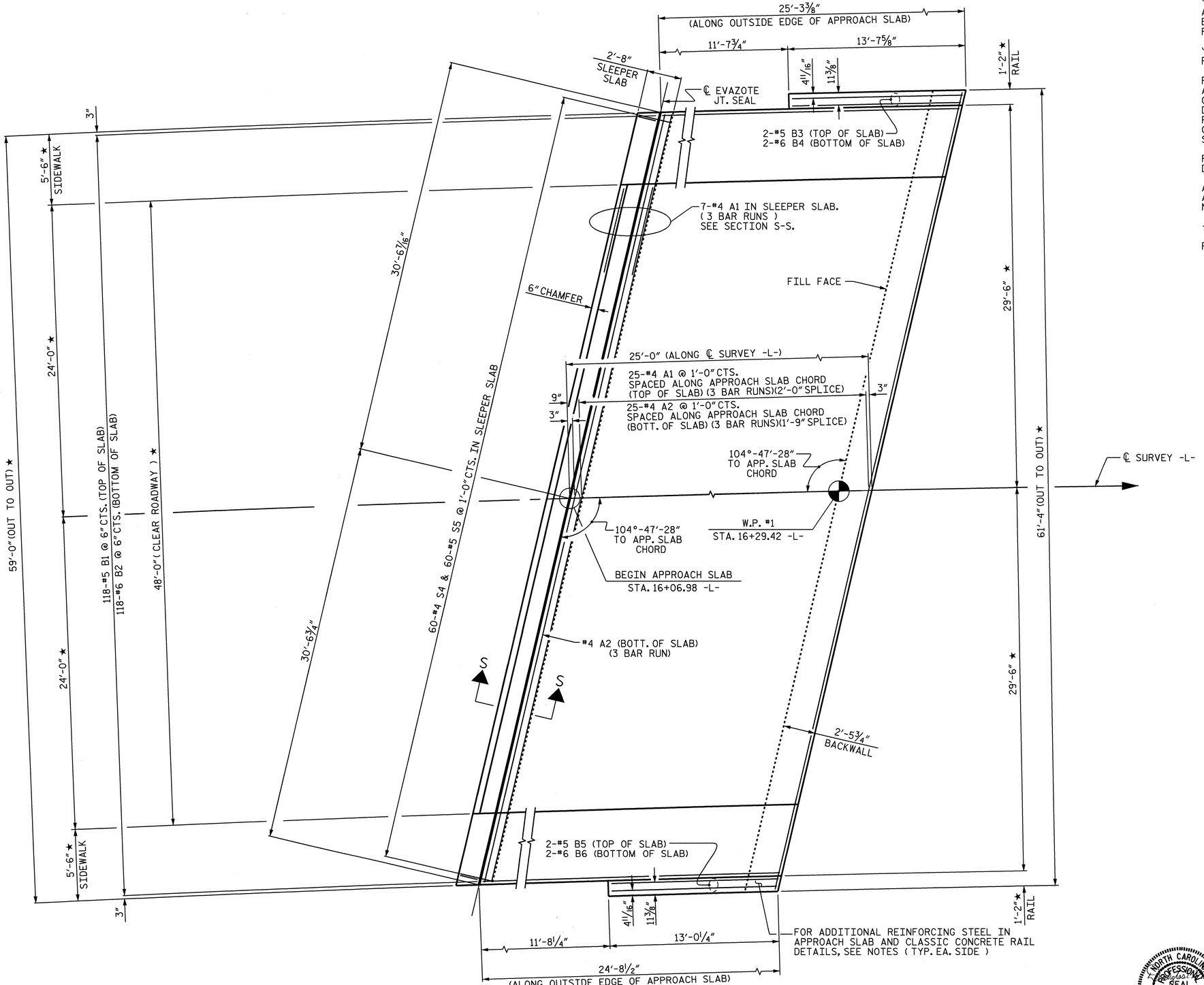
(SHT 2) STD. NO. ECS1



PLAN OF APPROACH SLAB @ END BENT No. 1

NOTES:

"B" BARS SHALL BE PLACED PARALLEL TO THE APPROACH SLAB CHORD EXTENDING FROM THE BEGIN APPROACH SLAB TO THE END BENT WORK POINT.

"A" BARS SHALL BE PLACED PARALLEL TO THE FILL FACE.

FOR PLACEMENT OF THE #5 "S" BARS IN THE APPROACH SLAB THAT EXTEND INTO THE CLASSIC CONCRETE BRIDGE RAIL AND FOR DETAILS OF THE CLASSIC CONCRETE BRIDGE RAIL ON THE APPROACH SLAB, SEE "CLASSIC CONCRETE BRIDGE RAIL WITH SIDEWALK" SHEETS.

FOR SIDEWALK REINFORCING STEEL AND DETAILS, SEE SHEET 3 OF 4.

ARC OFFSETS ALONG OUTSIDE EDGES OF APPROACH SLAB ARE NEGLIGIBLE AND ARE NOT PROVIDED.

★ MEASURED RADIALLY.

FOR SECTION S-S, SEE SHEET 3 OF 4.

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB FOR INTEGRAL ABUTMENT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-27
1			3			TOTAL SHEETS
2			4			30

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY

DRAWN BY : N. PIERCE DATE : 1/07
CHECKED BY : D. PETREY DATE : 1/07

24-MAY-2007 10:24
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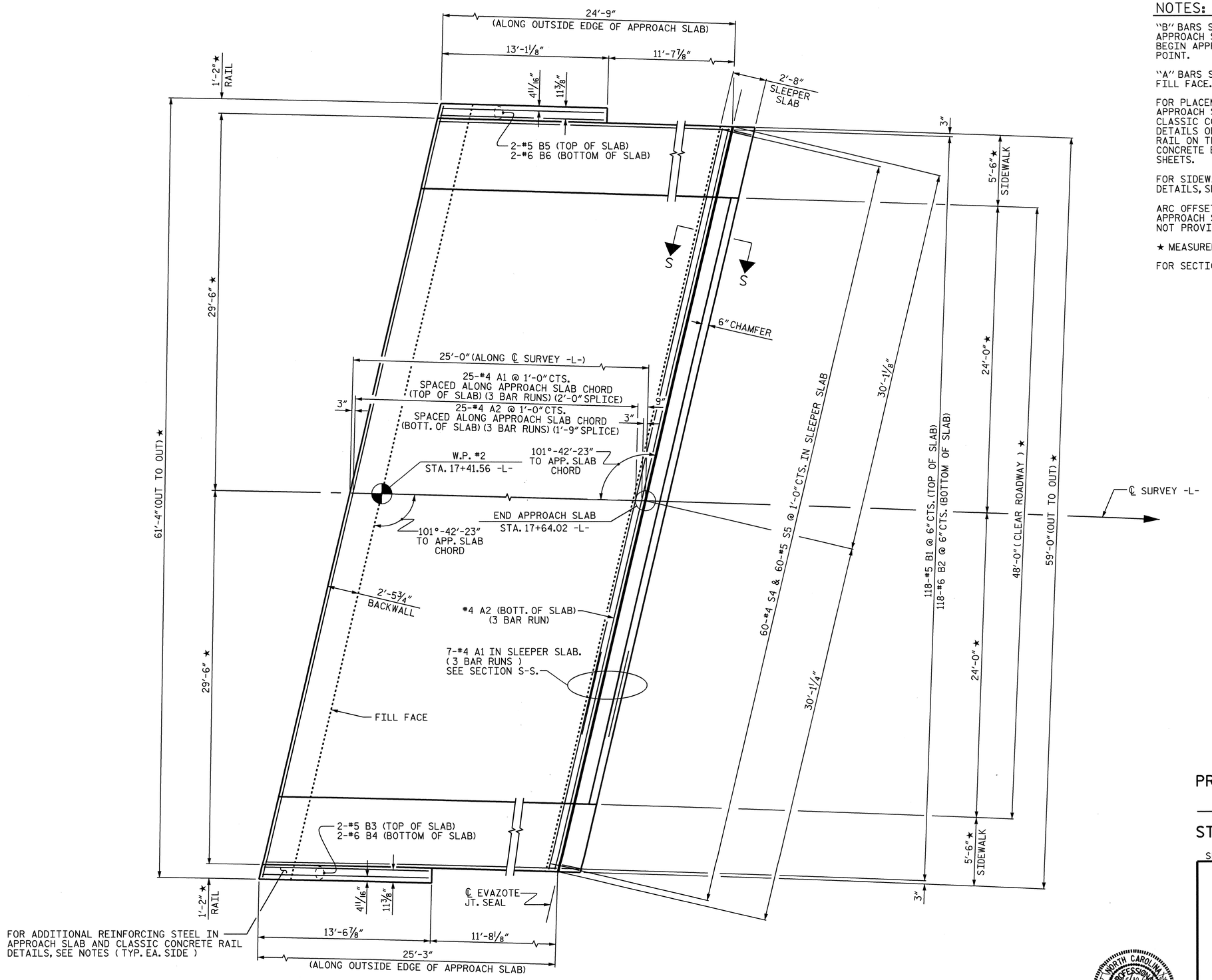
nplerce



NOTES:

"B" BARS SHALL BE PLACED PARALLEL TO THE APPROACH SLAB CHORD EXTENDING FROM THE BEGIN APPROACH SLAB TO THE END BENT WORK POINT.

"A" BARS SHALL BE PLACED PARALLEL TO THE FILL FACE.

FOR PLACEMENT OF THE #5 "S" BARS IN THE APPROACH SLAB THAT EXTEND INTO THE CLASSIC CONCRETE BRIDGE RAIL AND FOR DETAILS OF THE CLASSIC CONCRETE BRIDGE RAIL ON THE APPROACH SLAB, SEE "CLASSIC CONCRETE BRIDGE RAIL WITH SIDEWALK" SHEETS.

FOR SIDEWALK REINFORCING STEEL AND DETAILS, SEE SHEET 3 OF 4.

ARC OFFSETS ALONG OUTSIDE EDGES OF APPROACH SLAB ARE NEGLIGIBLE AND ARE NOT PROVIDED.

★ MEASURED RADIALLY.

FOR SECTION S-S, SEE SHEET 3 OF 4.

PLAN OF APPROACH SLAB @ END BENT No. 2

(#4 A1 BARS IN SLEEPER SLAB NOT SHOWN FOR CLARITY)

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB FOR INTEGRAL ABUTMENT

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-28
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : N. PIERCE DATE : 1/07
CHECKED BY : D. PETREY DATE : 1/07

24-MAY-2007 10:24
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npierce

NOTES

FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE EVAZOTE JOINT SEAL SHALL BE 2½".

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.

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

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

THE 6" COMP. A.B.C. SHALL EXTEND 10'-0" BEYOND THE END OF THE APPROACH SLAB AND 1'-0" OUTSIDE OF EACH EDGE OF SLAB.

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL EXTEND 1'-0" BEYOND THE END OF THE SLEEPER SLAB AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL EXTEND 1'-0" BEYOND THE END OF THE SLEEPER 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.

THE VERTICAL JOINT ON THE RIGHT AND LEFT SIDE OF THE APPROACH SLAB AT THE ENDS OF THE EVAZOTE JOINT SHALL BE FILLED WITH SILICONE OR OTHER APPROVED MATERIAL IN ORDER TO PREVENT BACKFILL FROM ENTERING THE JOINT OPENING.

THE JOINT OPENING AT THE APPROACH SLAB/DECK INTERFACE SHALL BE SAWED NO MORE THAN 12 HOURS AFTER THE APPROACH SLAB IS CAST. THE JOINT SHALL BE CLEANED OF ALL DEBRIS BEFORE THE SEALANT IS APPLIED. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE SL LOW MODULUS SILICONE SEALANT.

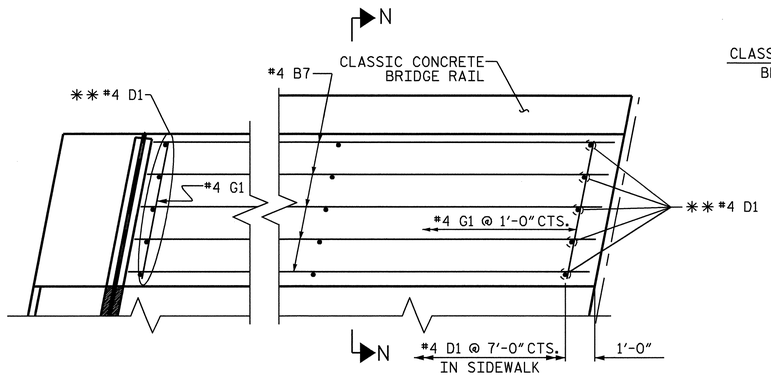
JOINT OPENING IN SIDEWALK AT THE APPROACH SLAB/DECK INTERFACE SHALL BE FORMED TO MATCH THE 1" SAWED OPENING IN THE SLAB/DECK.

▲ FOR PLACING ADDITIONAL REINFORCING STEEL IN APPROACH SLAB THAT EXTENDS INTO BARRIER RAIL, SEE "CLASSIC CONCRETE BRIDGE RAIL WITH SIDEWALK" SHEETS.

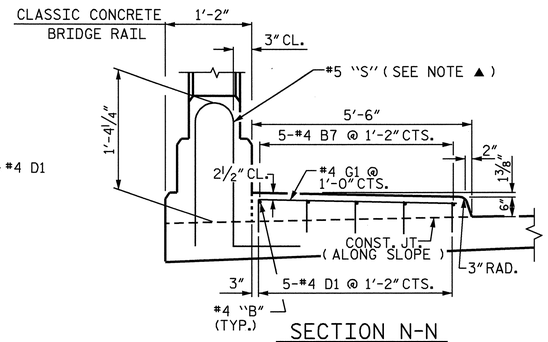
QUANTITIES FOR THE SIDEWALK ON THE BRIDGE APPROACH SLABS SHALL BE PAID FOR AS PART OF THE LUMP SUM PRICE BID FOR BRIDGE APPROACH SLABS.

PAYMENT FOR CLASSIC CONCRETE BRIDGE RAIL ON THE APPROACH SLABS IS INCLUDED IN THE PAY ITEM FOR CLASSIC CONCRETE BRIDGE RAIL.

FOR SHEET PILING CAP AND SHEET PILING DETAILS, SEE END BENT SHEETS.



PLAN

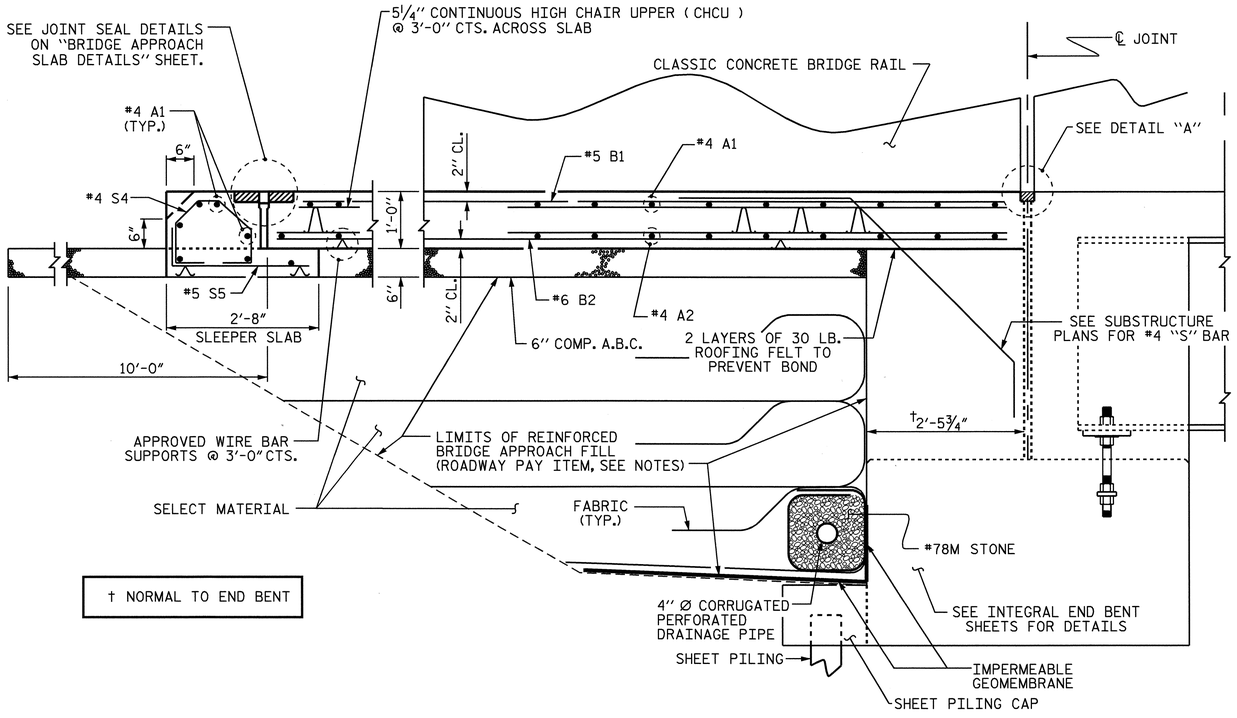


SECTION N-N

**THESE DOWELS ARE TO BE PLACED AFTER SAWING OF THE JOINT. THE HOLES SHALL BE DRILLED AND THE DOWELS GROUTED IN PLACE.

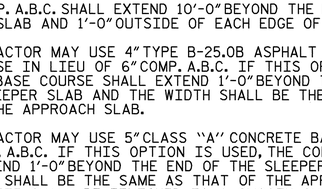
"A" AND "B" BARS IN APPROACH SLAB NOT SHOWN FOR CLARITY.

SIDEWALK DETAILS

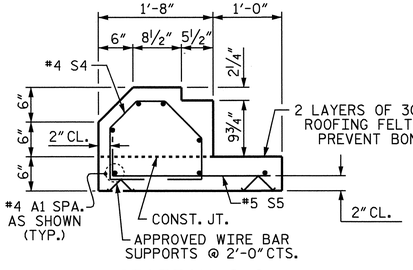


† NORMAL TO END BENT

SECTION THRU SLAB



DETAIL "A"



SECTION S-S

SHOWING SLEEPER SLAB

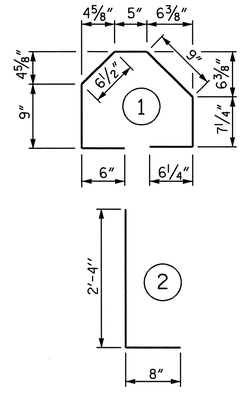
BILL OF MATERIAL

FOR ONE APPROACH SLAB (2 REQ'D)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	96	#4	STR	22'-4"	1432
A2	78	#4	STR	22'-2"	1155
* B1	118	#5	STR	24'-2"	2974
B2	118	#6	STR	24'-7"	4357
* B3	2	#5	STR	12'-11"	27
B4	2	#6	STR	12'-11"	39
* B5	2	#5	STR	12'-8"	26
B6	2	#6	STR	12'-8"	38
* B7	10	#4	STR	24'-7"	164
* D1	40	#4	STR	1'-0"	27
* G1	50	#4	STR	5'-2"	173
* S4	60	#4	1	4'-1"	164
S5	60	#5	2	3'-0"	188

REINFORCING STEEL		LBS. 5777
* EPOXY COATED REINFORCING STEEL		LBS. 4987
CLASS AA CONCRETE		
POUR #1 - SLEEPER SLAB	C. Y.	6.3
POUR #2 - SLAB	C. Y.	55.8
POUR #3 - SIDEWALK	C. Y.	6.2
TOTAL	C. Y.	68.3

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

BRIDGE APPROACH SLAB FOR INTEGRAL ABUTMENT

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY 7/19/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS
2			4			30

ASSEMBLED BY :	N. PIERCE	DATE :	1/07
CHECKED BY :	D. PETREY	DATE :	1/07
DRAWN BY : TLA	10/05	ADDED 5/1/06	
CHECKED BY : GM	5/06		

24-MAY-2007 10:23
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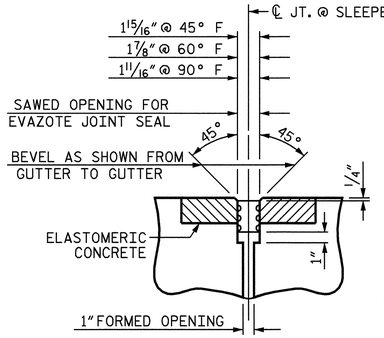
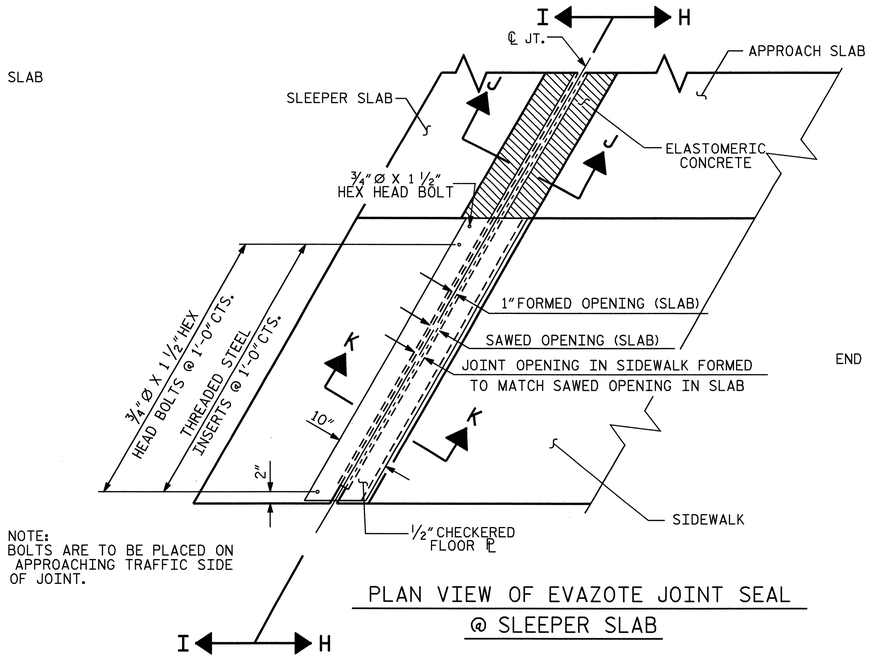
STD. NO. BAS11 (SHT 11)



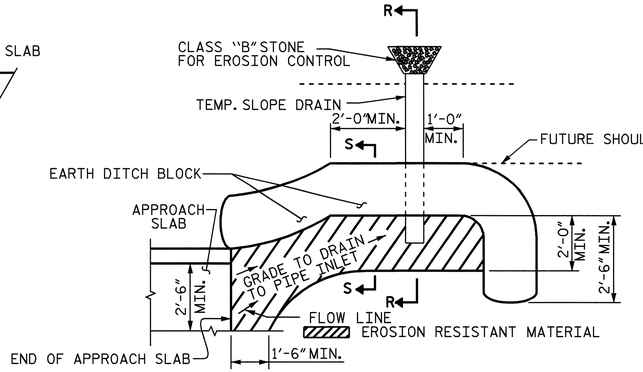
SECTION J-J

EVAZOTE JOINT SEAL @ SLEEPER SLAB



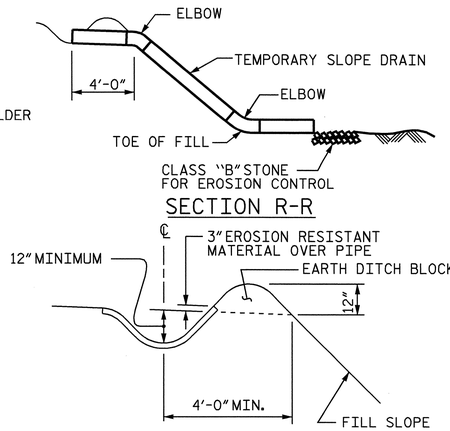
NOTE:
BOLTS ARE TO BE PLACED ON APPROACHING TRAFFIC SIDE OF JOINT.

PLAN VIEW OF EVAZOTE JOINT SEAL @ SLEEPER SLAB



NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

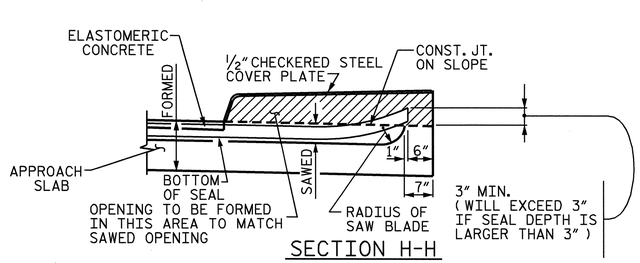
PLAN VIEW



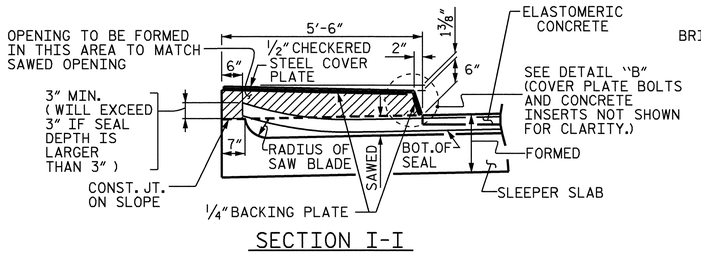
SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

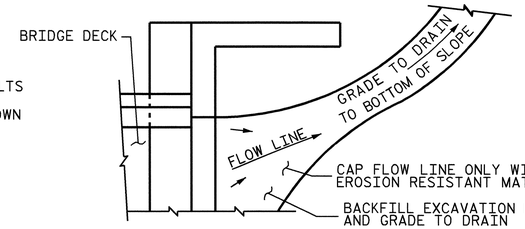
TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED



SECTION H-H

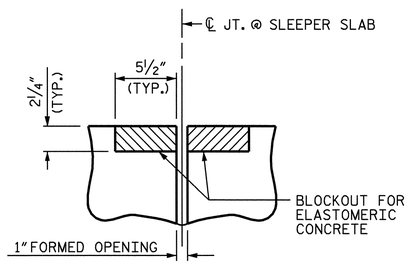


SECTION I-I



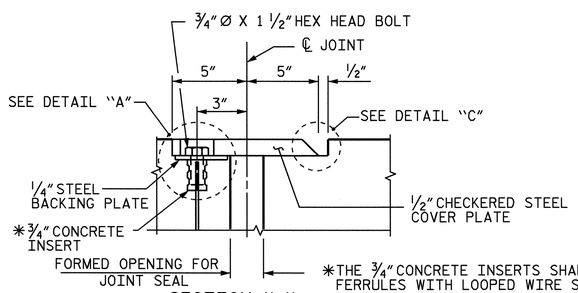
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL



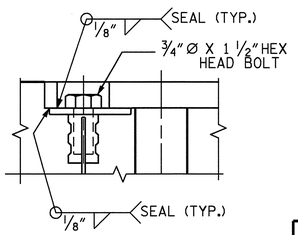
SECTION J-J

EVAZOTE JOINT SEAL (PRE-SAWED ELASTOMERIC CONCRETE DIMENSIONS)

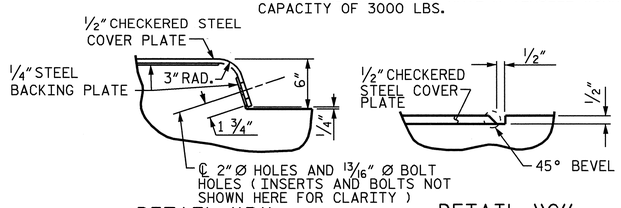


SECTION K-K

*THE 3/4" CONCRETE INSERTS SHALL BE CLOSED-END FERRULES WITH LOOPED WIRE STRUTS ATTACHED TO THEM. THE INSERTS SHALL CONFORM TO AASHTO M169, GRADE 12L14 AND SHALL HAVE A TENSILE WORKING LOAD CAPACITY OF 3000 LBS.



DETAIL "A"



DETAIL "B"

DETAIL "C"

JOINT SEAL DETAILS @ SLEEPER SLAB

(FOR SIDEWALK)

ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE ** (CU. FT.)
1	8.5
2	8.4
TOTAL	16.9

** BASED ON THE MINIMUM BLOCKOUT SHOWN.

JOINT SEAL DETAILS @ SLEEPER SLAB

PROJECT NO. B-3446

DAVIDSON COUNTY

STATION: 16+86.99 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

BRIDGE APPROACH SLAB DETAILS

1988

ASSEMBLED BY : N. PIERCE	DATE : 1/07
CHECKED BY : D. PETREY	DATE : 1/07
DRAWN BY : FCJ 11/88	REV. 8/16/99 MAB/LES
CHECKED BY : ARB 11/88	REV. 10/17/00 RWW/LES
	REV. 5/7/03 RWW/JTE

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

NORTH CAROLINA PROFESSIONAL SEAL 11310 ENGINEER DOUGLAS E. PETREY 7/5/02

STD. NO. BAS10

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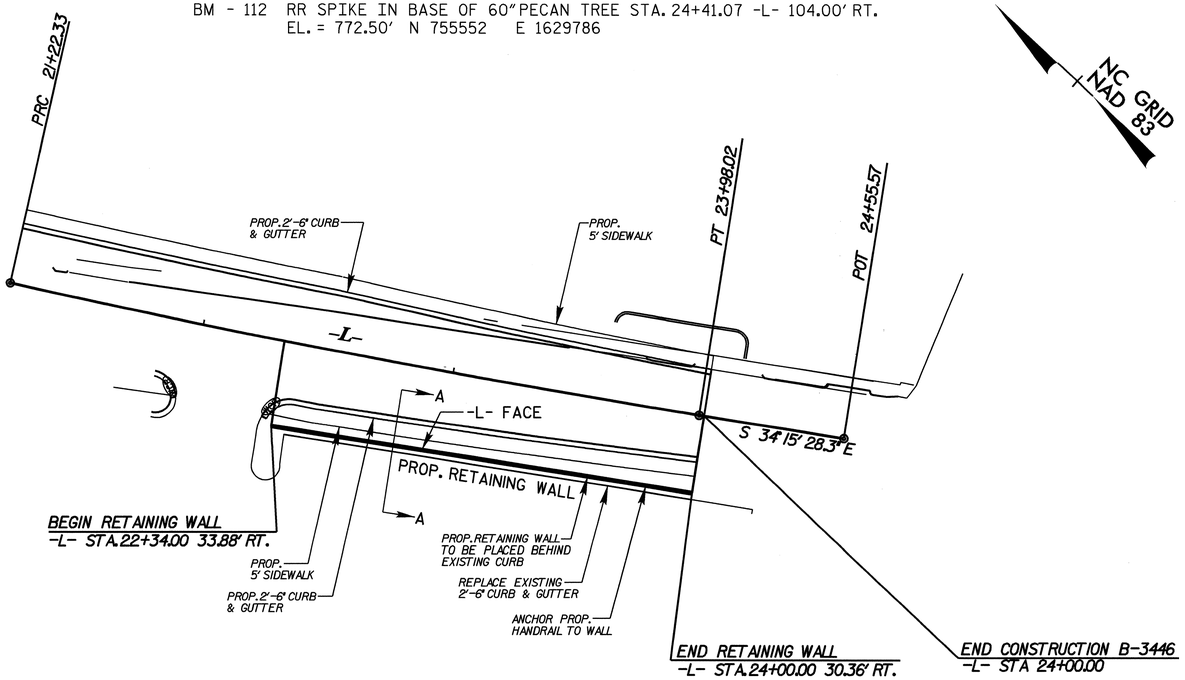


LOCATION SKETCH

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 023480 ENGINEER J. S. W. FARGHER

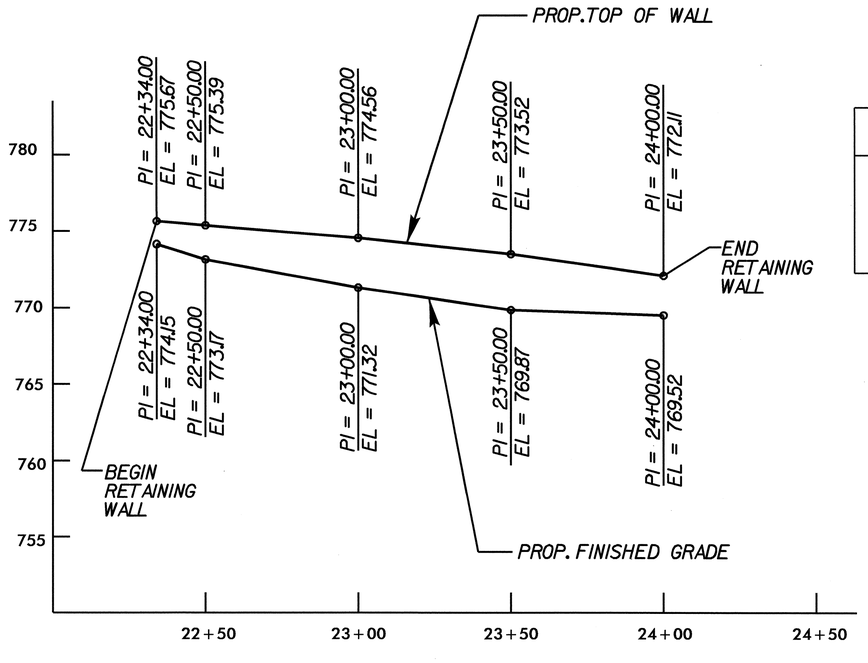
SIGNATURE DATE

GRAVITY RETAINING WALL ELEVATIONS

-L- STA	OFFSET FROM ℄ (RIGHT)	ELEV @ TOP OF WALL	✳ PROPOSED FINISHED GRADE	✳ EXPOSED WALL HEIGHT	✳✳ DESIGN WALL HEIGHT "H"
22+34.00	33.88	775.67	774.15	1.52	1.02
22+50.00	33.54	775.39	773.17	2.22	1.72
23+00.00	32.48	774.56	771.32	3.24	2.74
23+50.00	31.42	773.52	769.87	3.65	3.15
24+00.00	30.36	772.11	769.52	2.59	2.09

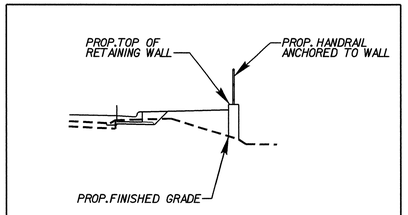
✳ ELEVATION @ PROPOSED FINISHED GRADE AND EXPOSED WALL HEIGHT DO NOT INCLUDE EMBEDMENT DEPTH

✳✳ FOR DESIGN WALL HEIGHT "H", SEE STANDARD DRAWING No. 453.01



TOTAL STRUCTURE QUANTITIES

GRAVITY RETAINING WALLS	500	SQ. FT.
1 ½" GALVANIZED STEEL PIPE RAIL	166	LIN. FT.



SECTION A

NOTES

NO BRICK VENEER WILL BE ALLOWED.

NO FENCE WILL BE REQUIRED

SET APPROVED SLEEVES IN RETAINING WALL IN ACCORDANCE WITH THE DETAILS IN THE PLANS. AFTER THE POSTS HAVE BEEN SET, FILL SLEEVES WITH GROUT.

PREPARED BY:	E.J.S.	DATE:	06/01/07
REVIEWED BY:	J.S.F.	DATE:	06/01/07

PROJECT NO.: B-3446

DAVIDSON COUNTY

STATION: 22+34.00 -L- TO 24+00.00 -L-

GEOTECHNICAL ENGINEERING UNIT

☐ EASTERN REGIONAL OFFICE

☒ WESTERN REGIONAL OFFICE

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

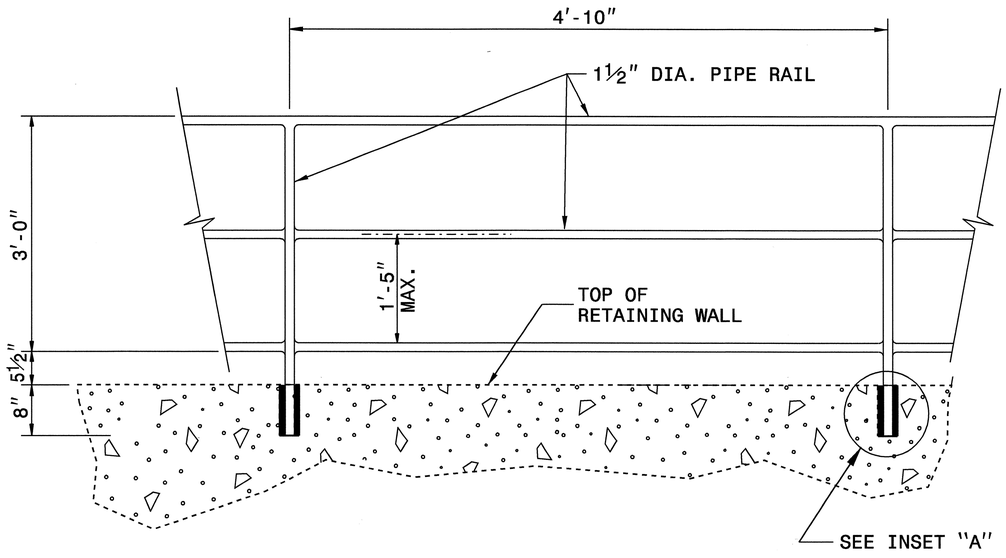
GRAVITY RETAINING WALL

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	W-1
1			3			TOTAL SHEETS
2			4			3

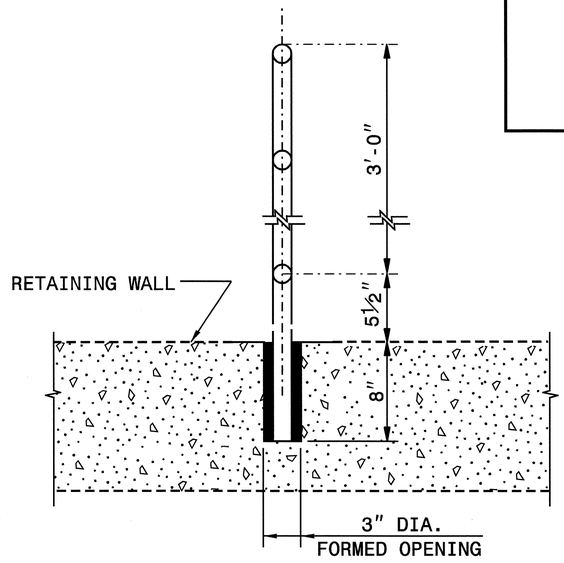
GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 023480 ENGINEER JON S. W. FARGHER

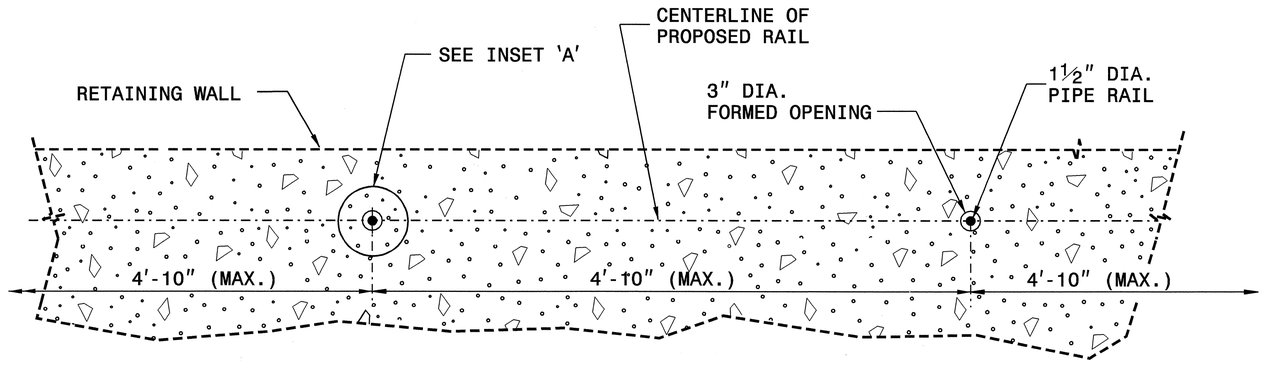
SIGNATURE DATE



ELEVATION OF PROPOSED PEDESTRIAN HANDRAIL



INSET 'A'



PLAN VIEW

NOTES:

CONSTRUCT PROPOSED STEEL PIPE RAIL OF 1½" DIAMETER SCHEDULE 40 PLAIN END GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A53.

REPAIR GALVANIZING IN ACCORDANCE WITH SECTION 1076 OF THE NCDOT STANDARD SPECIFICATIONS.

PAINT, IF REQUIRED BY THE ENGINEER, IN ACCORDANCE WITH SECTION 1080 OF THE STANDARD SPECIFICATIONS.

WELD IN ACCORDANCE WITH ARTICLE 1072-20 OF THE STANDARD SPECIFICATIONS.

1½" DIA. STEEL PIPE SHALL MEET THE REQUIREMENTS OF ASTM A53 FOR STANDARD WEIGHT PIPE AND SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

POSTS AND VERTICAL ELEMENTS OF THE RAIL SHALL BE PLUMB.

THE PIPE RAIL POSTS SHALL BE GROUTED IN PLACE USING NON-SHRINK, NON-METALLIC GROUT AS APPROVED BY THE ENGINEER.

PREPARED BY:	E.J.S.	DATE:	06/01/07
REVIEWED BY:	J.S.F.	DATE:	06/01/07

PROJECT NO.: B-3446

DAVIDSON *COUNTY*

STATION: 22+34.00 -L- TO 24+00.00 -L-

SHEET 2 OF 2

GEOTECHNICAL ENGINEERING UNIT

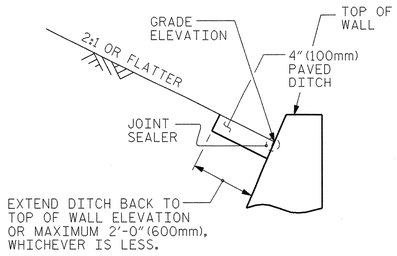
☐ *EASTERN REGIONAL OFFICE*

☒ *WESTERN REGIONAL OFFICE*

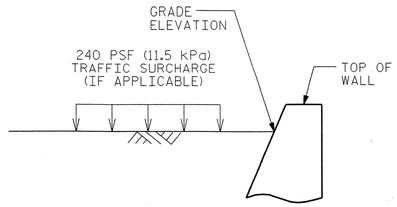
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PEDESTRIAN SAFETY RAIL

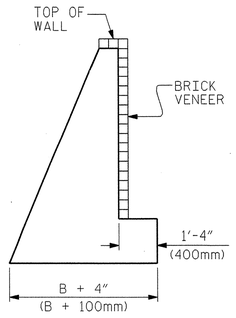
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	W-2
1			3			TOTAL SHEETS
2			4			3



SLOPE CONDITION

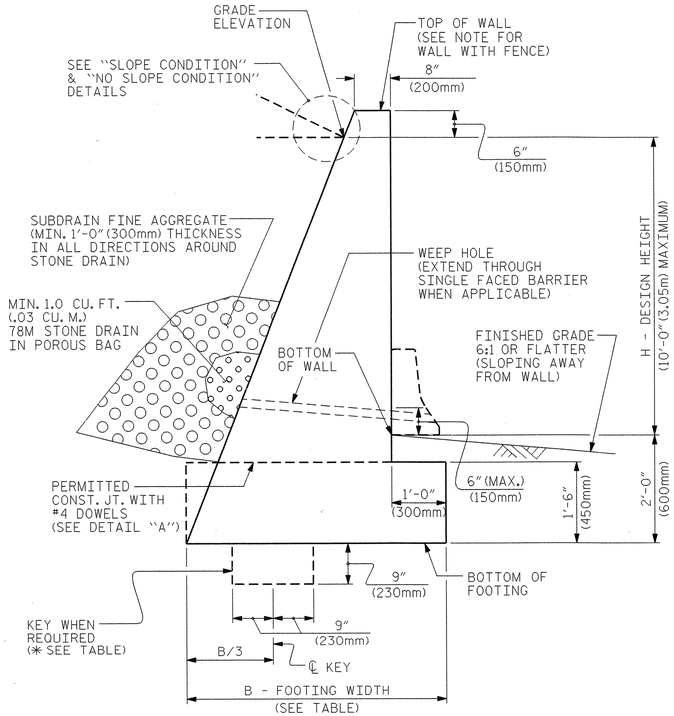


NO SLOPE CONDITION

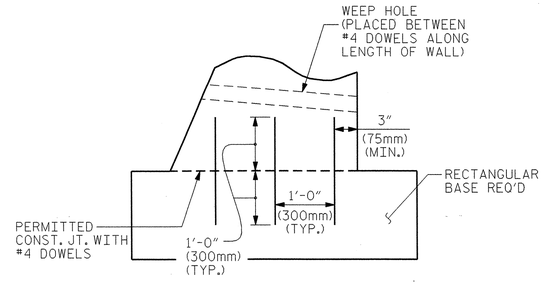


BRICK VENEER DETAIL

(WHEN APPLICABLE)



TYPICAL SECTION



DETAIL "A"

H + 2 (ft)	< 6	6 - 9	> 9 - 12
H + 0.6 (m)	< 1.83	1.83 - 2.74	> 2.74 - 3.65
NO SLOPE CONDITION WITHOUT TRAFFIC SURCHARGE	.60	.60	.60
NO SLOPE CONDITION WITH TRAFFIC SURCHARGE	.80	.75 *	.70 *
SLOPE CONDITION	.66	.70 *	.75 *

B/(H + 2) RATIO

* KEY IS REQUIRED FOR SLOPE CONDITION OR NO SLOPE CONDITION WITH TRAFFIC SURCHARGE WHEN H + 2ft (H + 0.6m) IS 6'-0" (1.83m) OR GREATER.

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022246 ENGINEER SCOTT A. HIDDEN

Scott A. Hidden 4/3/07

SIGNATURE DATE

ENGINEER

SIGNATURE DATE

NOTES

FOR GRAVITY RETAINING WALLS, SEE SECTION 453 OF THE STANDARD SPECIFICATIONS.

THE STANDARD GRAVITY RETAINING WALL IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
TOTAL UNIT WEIGHT = 120 PCF (18.8 kN/m³)
COHESION = 0 PSF (0 kPa)
FRICTION ANGLE = 35 DEGREES
(GROUNDWATER WITHIN 5'-0" (1.5m) OF BOTTOM OF FOOTING)
FRICTION ANGLE = 30 DEGREES
(GROUNDWATER MORE THAN 5'-0" (1.5m) BELOW BOTTOM OF FOOTING)

DO NOT USE A STANDARD GRAVITY RETAINING WALL IF THE ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE THE BOTTOM OF FOOTING.

DO NOT USE A STANDARD GRAVITY RETAINING WALL WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS PRESENT BELOW THE WALL.

DO NOT PLACE CONCRETE UNTIL OBTAINING APPROVAL OF THE EXCAVATION DEPTH AND CHECKING FOUNDATION MATERIAL FOR IN-SITU ASSUMED SOIL PARAMETERS.

USE CLASS "A" CONCRETE AND PROVIDE CLASS I SURFACE FINISH FOR ALL EXPOSED SURFACES.

PROVIDE 3" (75mm) DIAMETER WEEP HOLES ON 10'-0" (3m) CENTERS ALONG WALL. SLOPE WEEP HOLES ON A 1" (25mm) PER FOOT (300mm) SLOPE THROUGH THE WALL SO THAT WATER DRAINS OUT OF THE FRONT OF THE WALL.

CONSTRUCT A HORIZONTAL DRAIN IN SUBDRAIN FINE AGGREGATE AT LEAST 1'-0" (300mm) TALL AND 1'-0" (300mm) WIDE TO CONNECT ALL STONE DRAINS.

PROVIDE GROOVED CONTRACTION JOINTS EVERY 10'-0" (3m) AND EXPANSION JOINTS EVERY 30'-0" (9m) ALONG THE WALL.

FOR WALL WITH BRICK VENEER, SUBMIT BRICK SAMPLES TO THE ENGINEER FOR APPROVAL BEFORE BEGINNING CONSTRUCTION. ANCHOR BRICK VENEER TO CONCRETE RETAINING WALL WITH BRICK TO CONCRETE TYPE ANCHORS ACCORDING TO MANUFACTURER'S SPECIFICATIONS WITH A MINIMUM VERTICAL SPACING OF 1'-4" (400mm) AND A MINIMUM HORIZONTAL SPACING OF 2'-8" (800mm) WITH EACH ROW STAGGERED 1'-4" (400mm) FROM THE ROW OF ANCHORS ABOVE AND BELOW.

DO NOT BACKFILL BEHIND WALL UNTIL CONCRETE DEVELOPS A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI (20.7 MPa). COMPACT BACKFILL IN ACCORDANCE WITH SUBARTICLE 235-4(C) OF THE STANDARD SPECIFICATIONS. PLACE BACKFILL WITHIN 3'-0" (1m) OF THE BACK OF THE WALL WITH HAND OPERATED EQUIPMENT. DO NOT OPERATE HEAVY EARTH MOVING EQUIPMENT WITHIN 10'-0" (3m) OF THE BACK OF WALL.

WHEN A CONSTRUCTION JOINT IS LOCATED AT THE BASE OF THE WALL, IN SECTION, PROVIDE A MINIMUM OF 3-#4 DOWELS AT AN EQUAL SPACING. SPACE ALL DOWELS AT 1'-6" (460mm) CENTERS ALONG THE LENGTH OF THE WALL.

SEE PREVIOUS SHEET(S) FOR PLAN AND PROFILE VIEW (WALL ENVELOPE) AND PROPOSED ELEVATIONS FOR GRAVITY RETAINING WALL(S).

FOR WALL WITH FENCE, USE SLEEVES IN ACCORDANCE WITH SECTION 866 OF THE STANDARD SPECIFICATIONS FOR FENCE POSTS, OR SUBMIT FENCE POST ANCHOR PLATE DETAILS.

PROJECT NO.: B-3446

DAVIDSON ***COUNTY***

STATION: 22+34.00-L- To 24+00.00-L-

SHEET 1 OF 1

GEOTECHNICAL ENGINEERING UNIT

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

STANDARD DRAWING NO. 453.01

STANDARD GRAVITY RETAINING WALL

DATE: 7-18-06

SHEET NO. W-3 TOTAL SHEETS 3

jEC221427 4/3/2007 std no 453 shidden GE-Oce34bond

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

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

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

HANDRAILS AND POSTS:

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

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990