TIP PROJECT: B-4599

CONTRACT: C202823

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

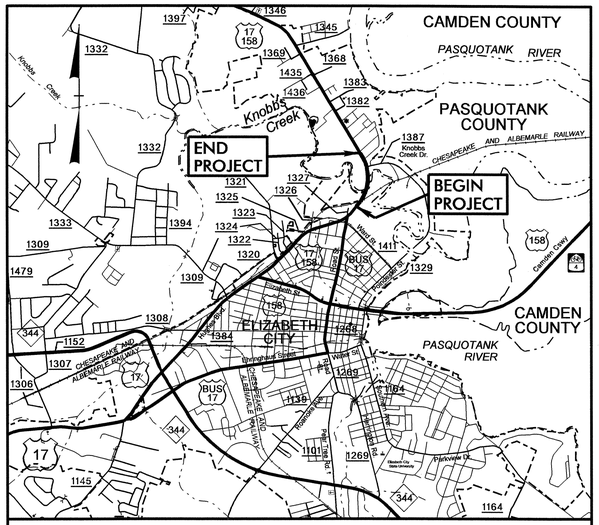
PASQUOTANK COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4599		

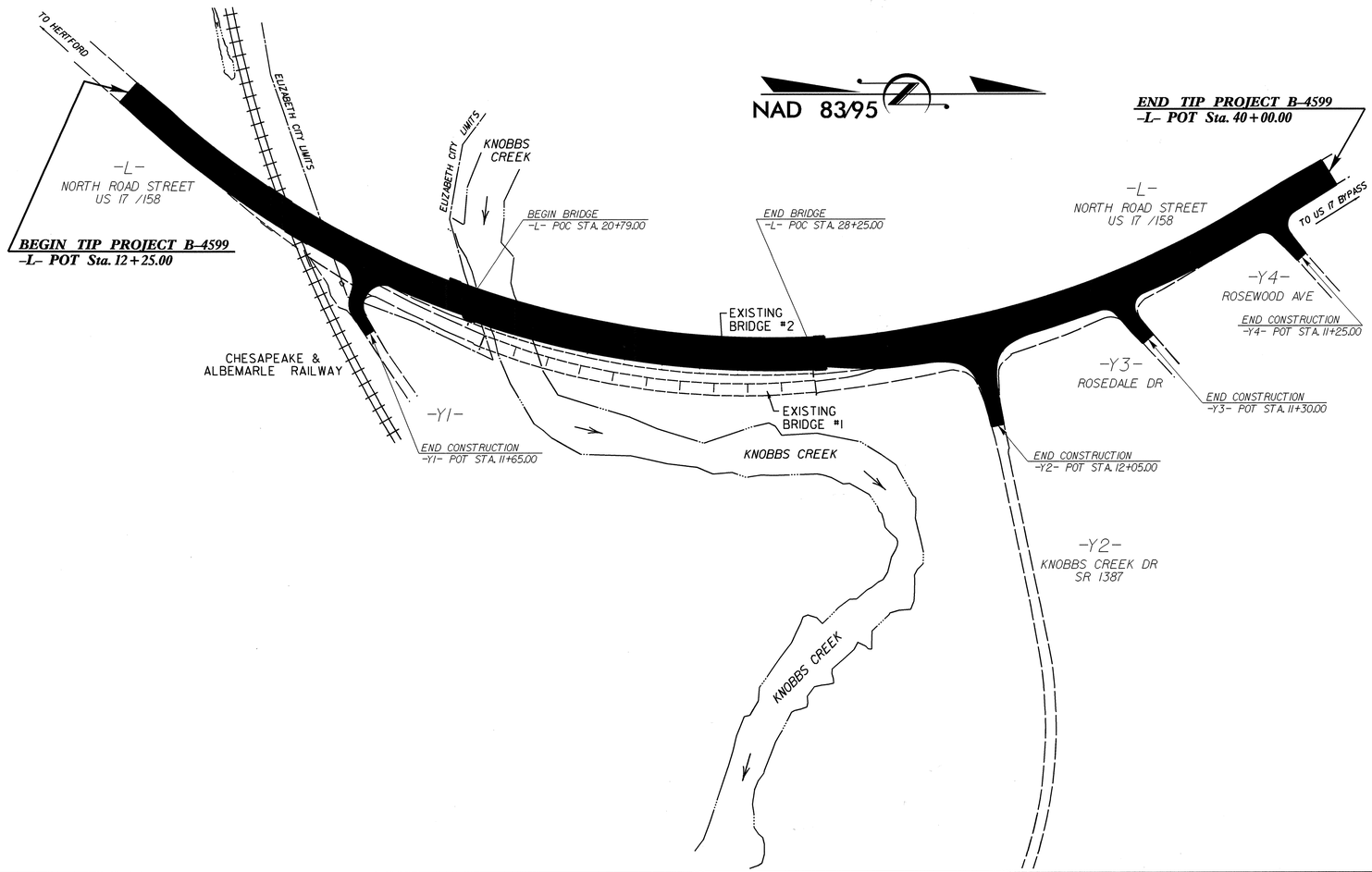
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33791.1.1	BRSTP-17(41)	PE
33791.2.1	BRSTP-17(41)	R/W, UTILITIES
33791.3.1	BRSTP-17(41)	CONSTR.

LOCATION: BRIDGE NOS. 1 & 2 OVER KNOBBS CREEK ON US 17 / US 158.

TYPE OF WORK: GRADING, DRAINAGE, PAVING, CURB & GUTTER, SIGNAL & STRUCTURE.



VICINITY MAP (N.T.S.)



STRUCTURE

DESIGN DATA

ADT 2012 = 41600
ADT 2032 = 59400
DHV = 10 %
D = 60 %
T = 7 % *
V = 50 MPH
* (TTST 4% + DUAL 3%)

FUNC. CLASS = URBAN PRINCIPAL ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4599	=	*0.385 mile*
LENGTH STRUCTURE TIP PROJECT B-4599	=	*0.141 mile*
TOTAL LENGTH TIP PROJECT B-4599	=	*0.526 mile*

Prepared By:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

LETTING DATE:
JUNE 19, 2012

B.C. HUNT
PROJECT ENGINEER

W.K. FISCHER
PROJECT DESIGN ENGINEER

STRUCTURES MANAGEMENT UNIT

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

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F.A. PROJ. NO: BRSTP-17(41)

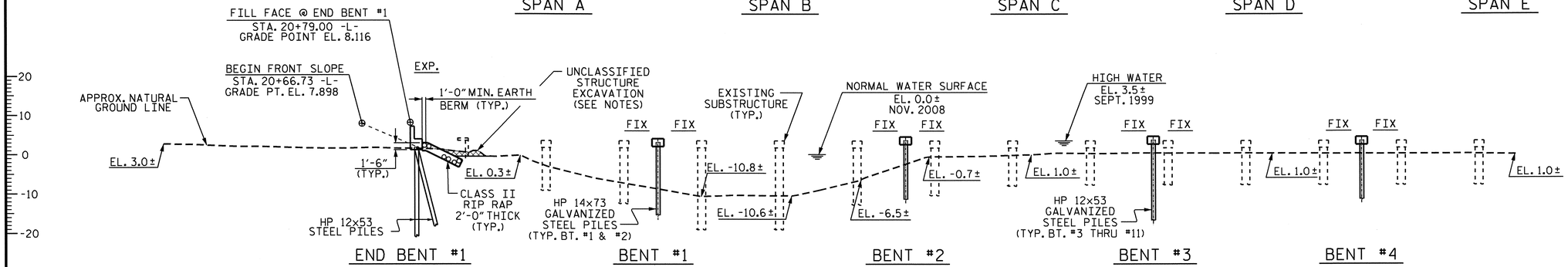
20+00 20+50 21+00 21+50 22+00 22+50 23+00 23+50

GRADE DATA

+1.7762% △ -0.3000%

PI = 21+80.00-L-
EL = 9.910
VC = 200'

SPAN A SPAN B SPAN C SPAN D SPAN E

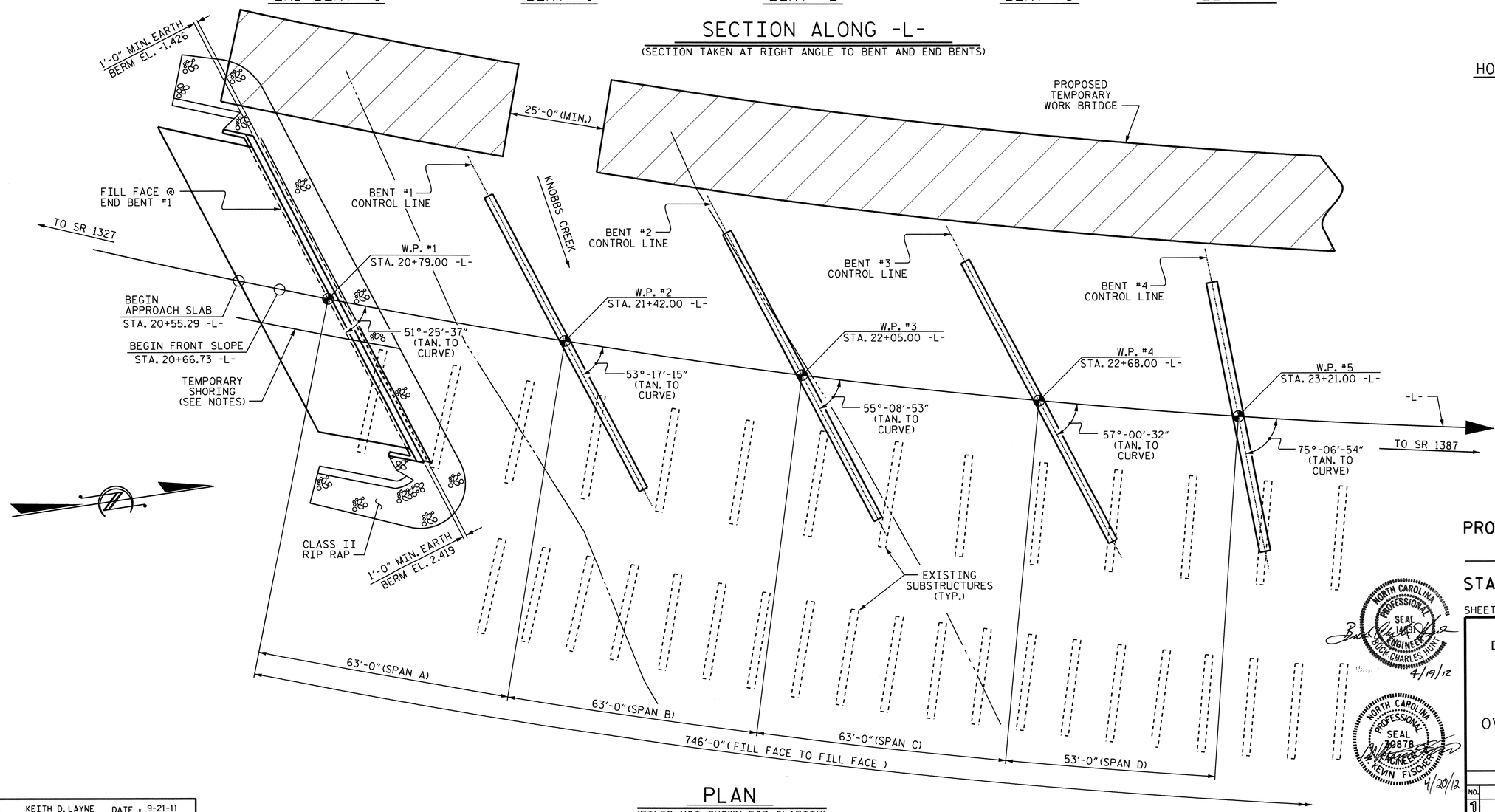


SECTION ALONG -L-

(SECTION TAKEN AT RIGHT ANGLE TO BENT AND END BENTS)

PI STA. = 27+60.68 -L-
△ = 72°-33'-14.9" (LT)
D = 2°-57'-12.2"
L = 2456.64'
T = 1423.88'
R = 1940.00'
SE = 0.035 FT./FT.

HORIZONTAL CURVE DATA



PLAN

(PILES NOT SHOWN FOR CLARITY)

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 6 REPLACES BRIDGE Nos. 1 & 2

NORTH CAROLINA PROFESSIONAL SEAL 14081 ENGINEER BUCK CHARLES HUNT
4/19/12

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
4/20/12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE ON US 17/158 OVER KNOBBS CREEK BETWEEN SR 1327 AND SR 1387

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : KEITH D. LAYNE DATE : 9-21-11
CHECKED BY : H. DIEU DATE : 10-20-11

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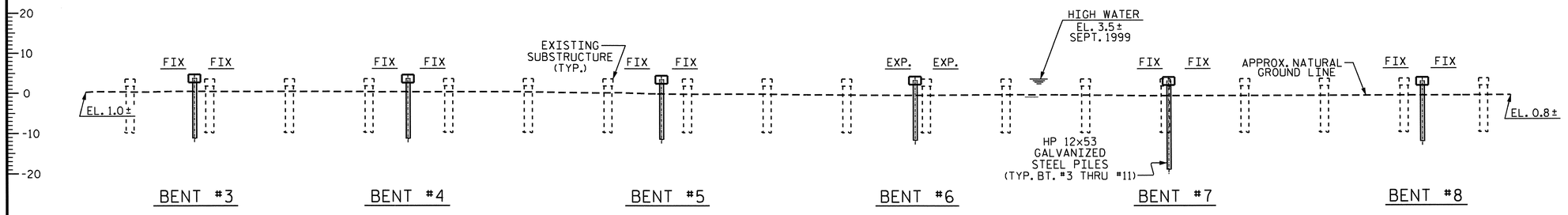
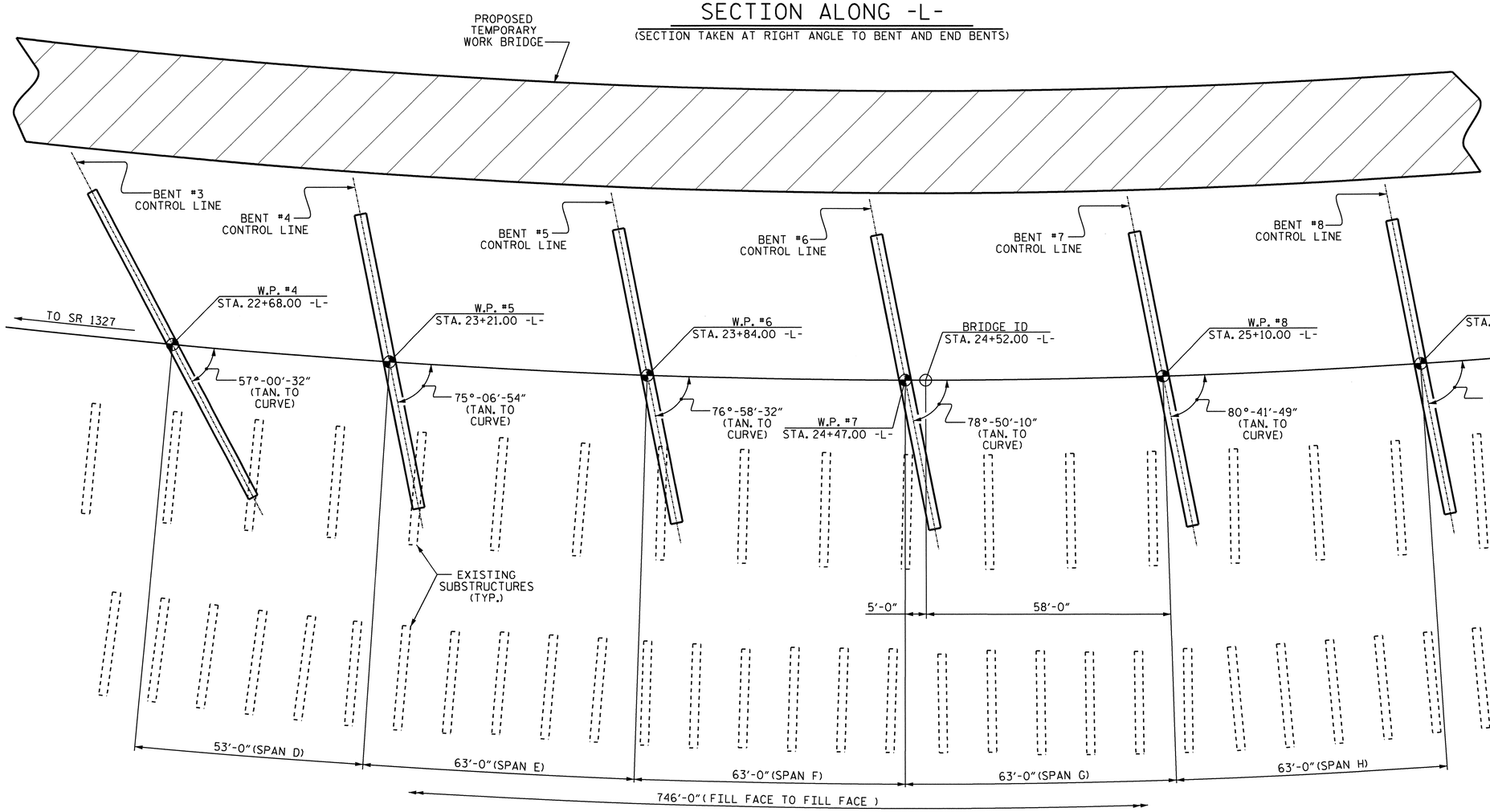
22+50 23+00 23+50 24+00 24+50 25+00 25+50 26+00

SPAN D SPAN E SPAN F SPAN G SPAN H SPAN I



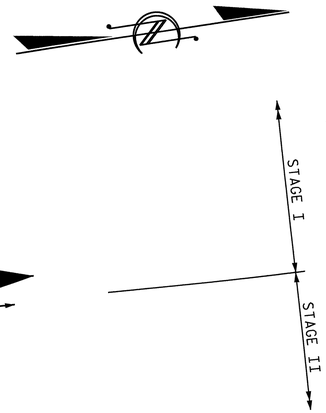
SECTION ALONG -L-

(SECTION TAKEN AT RIGHT ANGLE TO BENT AND END BENTS)



PLAN

(PILES NOT SHOWN FOR CLARITY)



PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 6 REPLACES BRIDGE Nos. 1 & 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE ON US 17/158 OVER KNOBBS CREEK BETWEEN SR 1327 AND SR 1387

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : KEITH D. LAYNE DATE : 9-21-11
CHECKED BY : H. DIEU DATE : 10-20-11

18-APR-2012 09:58
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25+00 25+50 26+00 26+50 27+00 27+50 28+00 28+50 29+00

GRADE DATA

-0.3000% △ -1.3444%

PI = 28+50.00-L-
EL = 7.900
VC = 100'

SPAN H SPAN I SPAN J SPAN K SPAN L

20 10 0 -10 -20

FIX FIX

EL. 0.0±

EXISTING SUBSTRUCTURE (TYP.)

NORMAL WATER SURFACE
EL. 0.0±
NOV. 2008

HIGH WATER
EL. 3.5±
SEPT. 1999

EL. 0.8±

HP 12x53 GALVANIZED STEEL PILES (TYP. BT. #3 THRU #11)

FILL FACE @ END BENT #2
STA. 28+25.00 -L-
GRADE POINT EL. 7.942

1'-7" (TYP.)

EXP.

BEGIN FRONT SLOPE
STA. 28+34.98 -L-
GRADE POINT EL. 7.881

APPROX. NATURAL GROUND LINE

EL. 1.0±

2:1 SLOPE NORMAL TO CAP (TYP.)

HP 12x53 STEEL PILES

BENT #7 BENT #8 BENT #9 BENT #10 BENT #11 END BENT #2

SECTION ALONG -L-

(SECTION TAKEN AT RIGHT ANGLE TO BENT AND END BENTS)

PROPOSED TEMPORARY WORK BRIDGE

CLASS II RIP RAP

1'-0" MIN. EARTH BERM EL. -1.012

FILL FACE @ END BENT #2

BENT #7 CONTROL LINE

BENT #8 CONTROL LINE

BENT #9 CONTROL LINE

BENT #10 CONTROL LINE

BENT #11 CONTROL LINE

W.P. #13
STA. 28+25.00 -L-

BEGIN FRONT SLOPE
STA. 28+34.98 -L-

-L-

STAGE I

STAGE II

TO SR 1387

W.P. #12
STA. 27+62.00 -L-

END APPROACH SLAB
STA. 28+49.00 -L-

90°-00'-00"

TEMPORARY SHORING (SEE NOTES)

W.P. #11
STA. 26+99.00 -L-

W.P. #10
STA. 26+36.00 -L-

W.P. #9
STA. 25+73.00 -L-

W.P. #8
STA. 25+10.00 -L-

88°-08'-22" (TAN. TO CURVE)

86°-16'-43" (TAN. TO CURVE)

84°-25'-05" (TAN. TO CURVE)

82°-33'-27" (TAN. TO CURVE)

80°-41'-49" (TAN. TO CURVE)

TO SR 1327

1'-0" MIN. EARTH BERM EL. 1.772

EXISTING SUBSTRUCTURES (TYP.)

63'-0" (SPAN H)

63'-0" (SPAN I)

63'-0" (SPAN J)

63'-0" (SPAN K)

63'-0" (SPAN L)

746'-0" (FILL FACE TO FILL FACE)

PLAN

(PILES NOT SHOWN FOR CLARITY)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 3 OF 6 REPLACES BRIDGE Nos. 1 & 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE ON US 17/158 OVER KNOBBS CREEK BETWEEN SR 1327 AND SR 1387

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : KEITH D. LAYNE DATE : 9-21-11
CHECKED BY : H. DIEU DATE : 10-20-11

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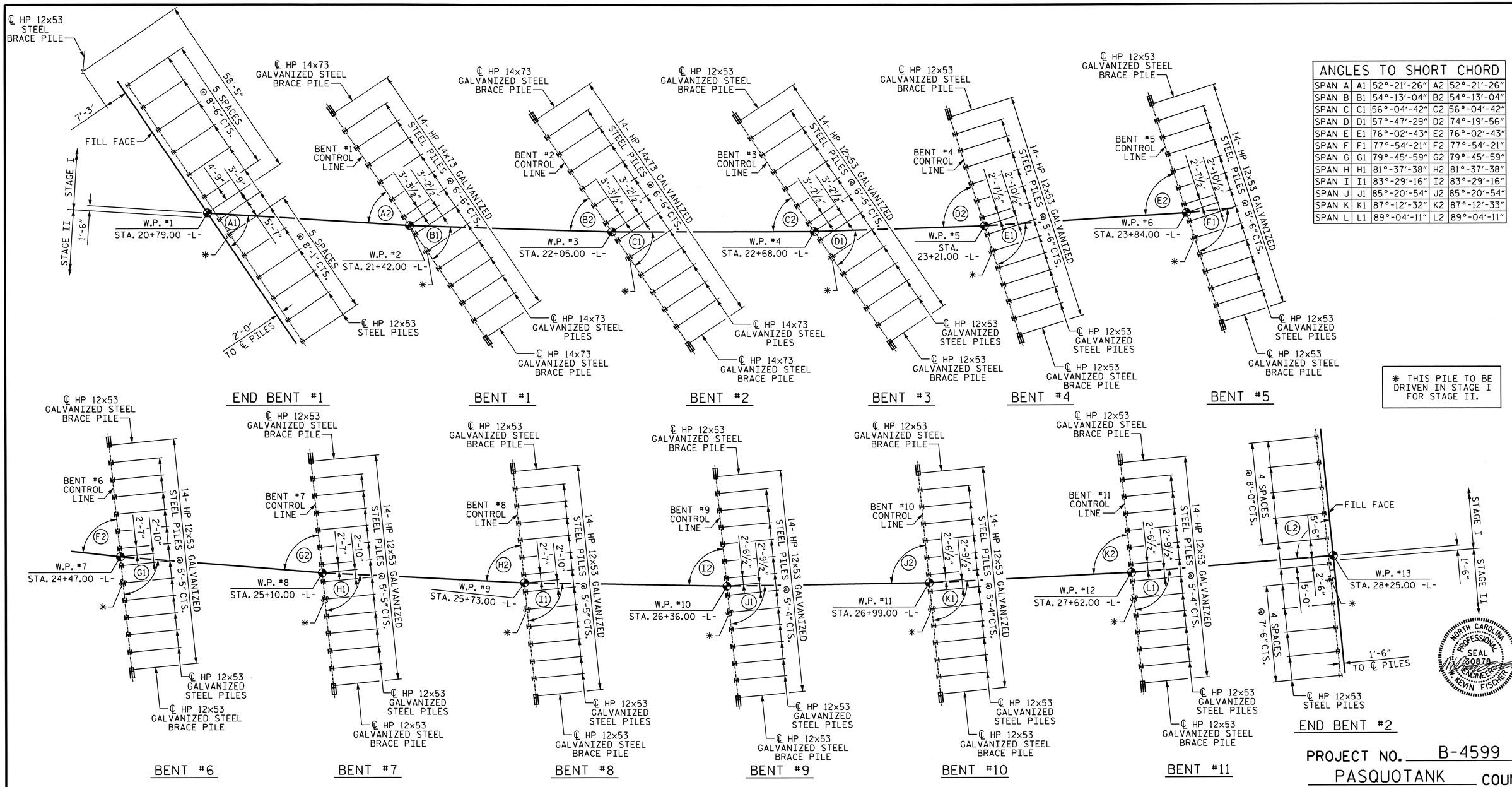

ANGLES TO SHORT CHORD				
SPAN A	A1	52°-21'-26"	A2	52°-21'-26"
SPAN B	B1	54°-13'-04"	B2	54°-13'-04"
SPAN C	C1	56°-04'-42"	C2	56°-04'-42"
SPAN D	D1	57°-47'-29"	D2	74°-19'-56"
SPAN E	E1	76°-02'-43"	E2	76°-02'-43"
SPAN F	F1	77°-54'-21"	F2	77°-54'-21"
SPAN G	G1	79°-45'-59"	G2	79°-45'-59"
SPAN H	H1	81°-37'-38"	H2	81°-37'-38"
SPAN I	I1	83°-29'-16"	I2	83°-29'-16"
SPAN J	J1	85°-20'-54"	J2	85°-20'-54"
SPAN K	K1	87°-12'-32"	K2	87°-12'-33"
SPAN L	L1	89°-04'-11"	L2	89°-04'-11"

* THIS PILE TO BE DRIVEN IN STAGE I FOR STAGE II.

FOUNDATION NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT #1 AND END BENT #2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 75 TONS PER PILE.

PILES AT BENT #1 AND BENT #4 THROUGH BENT #11 ARE DESIGNED FOR A FACTORED RESISTANCE OF 115 TONS PER PILE.

PILES AT BENT #2 AND BENT #3 ARE DESIGNED FOR A FACTORED RESISTANCE OF 120 TONS PER PILE.

DRIVE PILES AT END BENT #1 TO A REQUIRED DRIVING RESISTANCE OF 125 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

DRIVE PILES AT BENT #1 THRU BENT #3 TO A REQUIRED DRIVING RESISTANCE OF 175 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

DRIVE PILES AT BENT #4 THROUGH BENT #11 TO A REQUIRED DRIVING RESISTANCE OF 160 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

FOUNDATION LAYOUT

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

DRIVE PILES AT END BENT #2 TO A REQUIRED DRIVING RESISTANCE OF 100 TONS PER PILE.

INSTALL PILES AT BENT #1 THROUGH BENT #11 TO A TIP ELEVATION NO HIGHER THAN -50.000, -40.000, -35.000, -35.000, -35.000, -35.000, -35.000, -35.000, -35.000, -30.000, AND - 30.000 RESPECTIVELY.

THE SCOUR CRITICAL ELEVATIONS FOR BENT #1 THROUGH BENT #11 ARE ELEVATION -19.000, -12.000 -3.000, -3.000, -4.000, -4.000, -4.000, -4.000, -4.000, -4.000, -4.000, -3.000 RESPECTIVELY. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

TESTING PILES WITH THE PILE DRIVING ANALYZER (PDA) DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED. ONE PDA TEST FOR END BENTS, ONE PDA TEST FOR BENT #1 THROUGH BENT #3, ONE PDA TEST FOR BENT #4 THROUGH BENT #7 AND ONE PDA TEST FOR BENT #8 THROUGH BENT #11 ARE RECOMMENDED. THE ENGINEER WILL DETERMINE THE LOCATIONS FOR PDA TESTS. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

NO WAITING PERIOD IS REQUIRED BEFORE BEGINNING ANY WORK FOR END BENT CONSTRUCTION AFTER COMPLETION OF THE EMBANKMENT AT EACH BENT.

DRAWN BY : KEITH D. LAYNE DATE : 9-21-11
CHECKED BY : H. DIEU DATE : 10-20-11

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NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

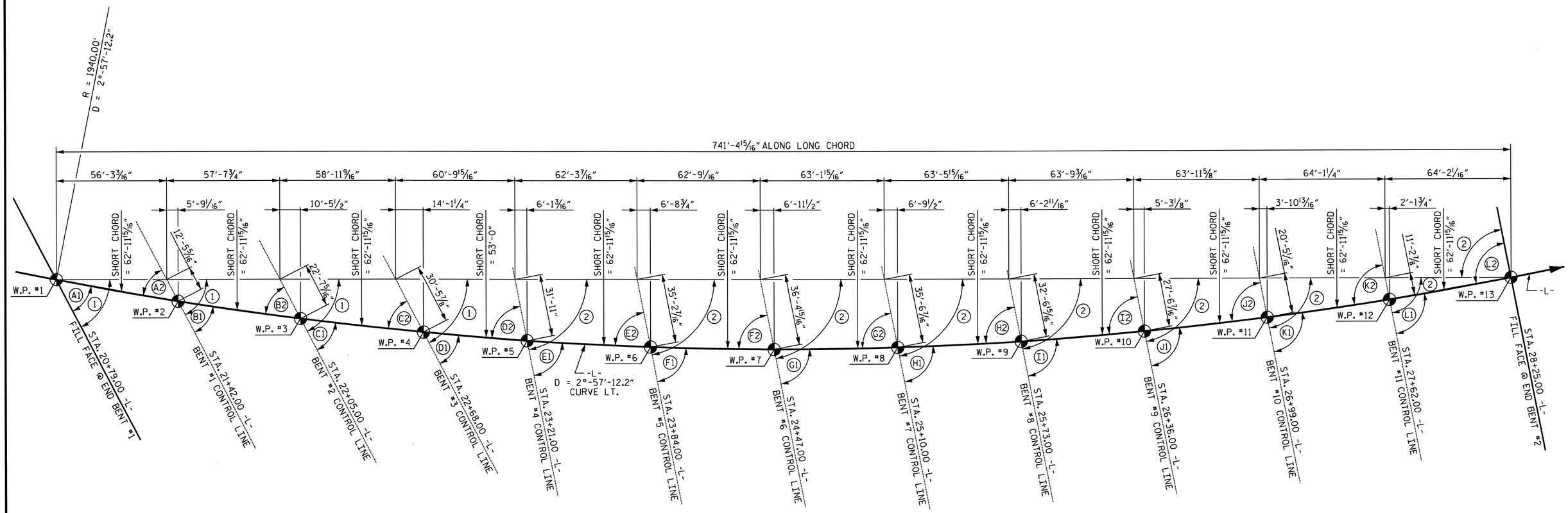
SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE ON US 17/158 OVER KNOBBS CREEK BETWEEN SR 1327 AND SR 1387

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			125



LONG CHORD LAYOUT

ANGLES TO SHORT CHORD				
SPAN A	A1	52°-21'-26"	A2	52°-21'-26"
SPAN B	B1	54°-13'-04"	B2	54°-13'-04"
SPAN C	C1	56°-04'-42"	C2	56°-04'-42"
SPAN D	D1	57°-47'-29"	D2	74°-19'-56"
SPAN E	E1	76°-02'-43"	E2	76°-02'-43"
SPAN F	F1	77°-54'-21"	F2	77°-54'-21"
SPAN G	G1	79°-45'-59"	G2	79°-45'-59"
SPAN H	H1	81°-37'-38"	H2	81°-37'-38"
SPAN I	I1	83°-29'-16"	I2	83°-29'-16"
SPAN J	J1	85°-20'-54"	J2	85°-20'-54"
SPAN K	K1	87°-12'-32"	K2	87°-12'-32"
SPAN L	L1	89°-04'-11"	L2	89°-04'-11"

ANGLES TO LONG CHORD	
1	62°-26'-35"
2	78°-59'-02"

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE ON US 17/158
OVER KNOBBS CREEK BETWEEN
SR 1327 AND SR 1387

NORTH CAROLINA PROFESSIONAL SEAL 20879 ENGINEER KEVIN FISCHER
4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : KEITH D. LAYNE DATE : 9-14-11
CHECKED BY : H. DIEU DATE : 10-20-11

18-APR-2012 10:00
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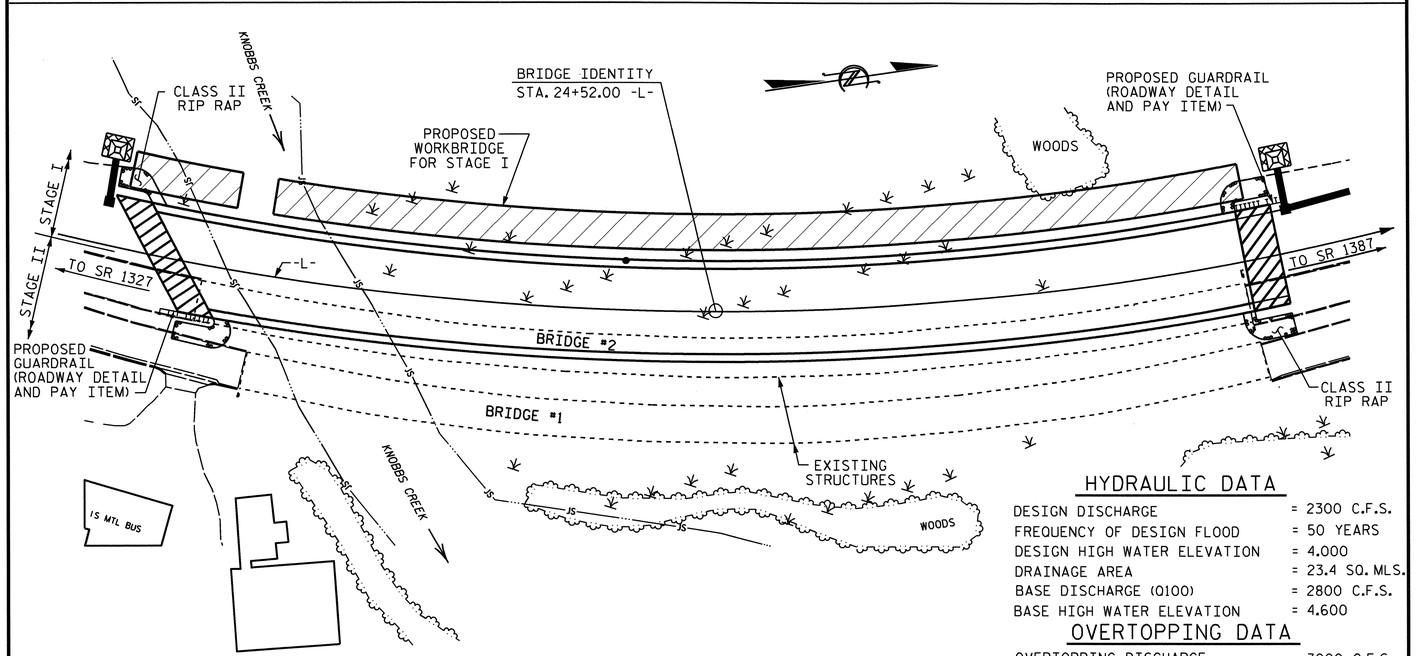
B.M. #10 : RR SPIKE SET IN BASE OF 10" WHITE OAK, 102' RT. OF STA. 15+96.00 -BL-, EL. 3.100



LOCATION SKETCH

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

HYDRAULIC DATA

DESIGN DISCHARGE	= 2300 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 50 YEARS
DESIGN HIGH WATER ELEVATION	= 4.000
DRAINAGE AREA	= 23.4 SQ. MLS.
BASE DISCHARGE (0100)	= 2800 C.F.S.
BASE HIGH WATER ELEVATION	= 4.600

OVERTOPPING DATA

OVERTOPPING DISCHARGE	= 3000 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 100+ YEARS
OVERTOPPING FLOOD ELEVATION	= 4.800

NOTES:

ASSUMED LIVE LOAD = HL 93 OR ALTERNATE LOADING.

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

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

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

PRESTRESSED CONCRETE DECK PANELS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

THE EXISTING STRUCTURES CONSISTING OF 60 SPANS @ 12 FT. CTS. (STR. 1) AND 37 SPANS @ 20 FT. (STR. 2) WITH ASPHALT WEARING SURFACE ON REINFORCED CONCRETE MONOLITHIC DECK (CONTINUOUS) WITH A CLEAR ROADWAY WIDTH OF 26.1 FT. ON REINFORCED CONCRETE CAPS ON TIMBER PILES AT BENTS AND END BENTS AND LOCATED AT PROPOSED SITE SHALL BE REMOVED.

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

THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY ACCESS AT STA. 24+52.00 -L- FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS, SEE SPECIAL PROVISIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 50 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

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 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. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR INTERIOR BENTS #1 THRU #11, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEETS FOR REQUIRED GALVANIZED LENGTHS. PAYMENT FOR PARTIALLY GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.

FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMPORARY ACCESS	REMOVAL OF EXISTING STRUCTURES	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CONCRETE CLASS A	BRIDGE APPROACH SLABS	REINFORCING STEEL	36" PRESTRESSED CONCRETE GIRDERS	HP 12x53 STEEL PILES		HP 12x53 GALVANIZED STEEL PILES		HP 14x73 GALVANIZED STEEL PILES		PILE REDRIVES	THREE BAR METAL RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	EXPANSION JOINT SEALS	ELECTRICAL CONDUIT SYSTEM
	LUMP SUM	LUMP SUM	EACH	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	LIN. FT.	NO.	LIN. FT.	NO.	LIN. FT.	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	LUMP SUM	LUMP SUM
SUPERSTRUCTURE					54,719	44,942		LUMP SUM		8,067.46								1,443.28			LUMP SUM	LUMP SUM	LUMP SUM
END BENT #1							59.8		8,015		13	975					13		155	170			
BENT #1							42.3		5,876						14	1,120	14						
BENT #2							41.0		5,655						14	1,120	14						
BENT #3							39.1		5,662				14	1,190			14						
BENT #4							31.8		4,983				14	1,190			14						
BENT #5							31.6		4,886				14	1,190			14						
BENT #6							31.3		4,869				14	1,120			14						
BENT #7							31.1		4,846				14	1,120			14						
BENT #8							31.0		4,836				14	1,120			14						
BENT #9							30.9		4,828				14	1,120			14						
BENT #10							30.8		4,815				14	1,120			14						
BENT #11							30.7		4,805				14	1,120			14						
END BENT #2							40.5		6,694		11	825					11		155	170			
TOTAL	LUMP SUM	LUMP SUM	4	LUMP SUM	54,719	44,942	471.9	LUMP SUM	70,770	8,067.46	24	1,800	126	10,290	28	2,240	178	1,443.28	310	340	LUMP SUM	LUMP SUM	LUMP SUM

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE ON US 17/158 OVER KNOBBS CREEK BETWEEN SR 1327 AND SR 1387

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : KEITH D. LAYNE DATE : 9-21-11
CHECKED BY : H. DIEU DATE : 10-20-11

18-APR-2012 12:45
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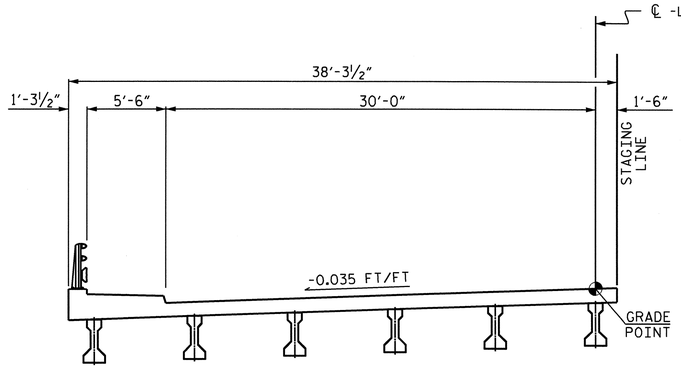
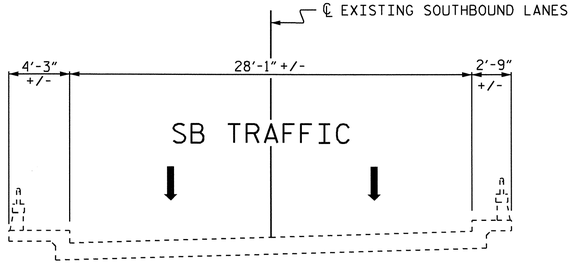
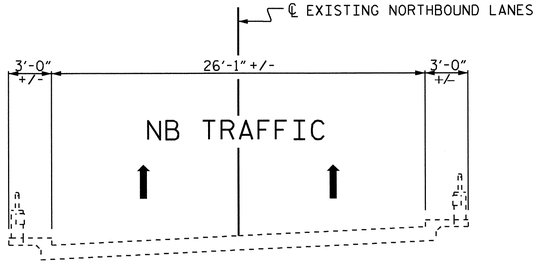
chunt

NOTE:
SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMITS OF THE TEMPORARY PRECAST CONCRETE BARRIER RAIL.

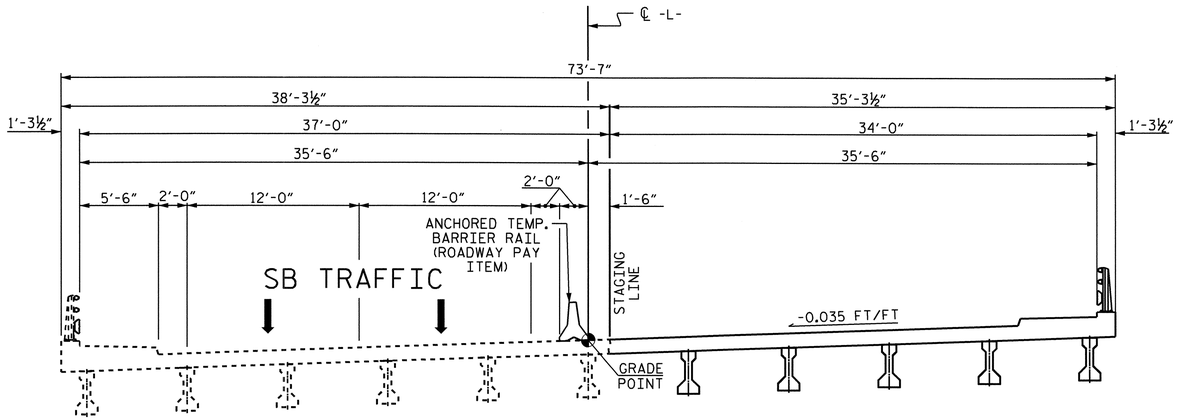


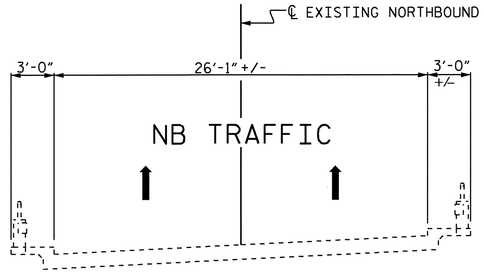




PROPOSED STAGE I

EXISTING STRUCTURES

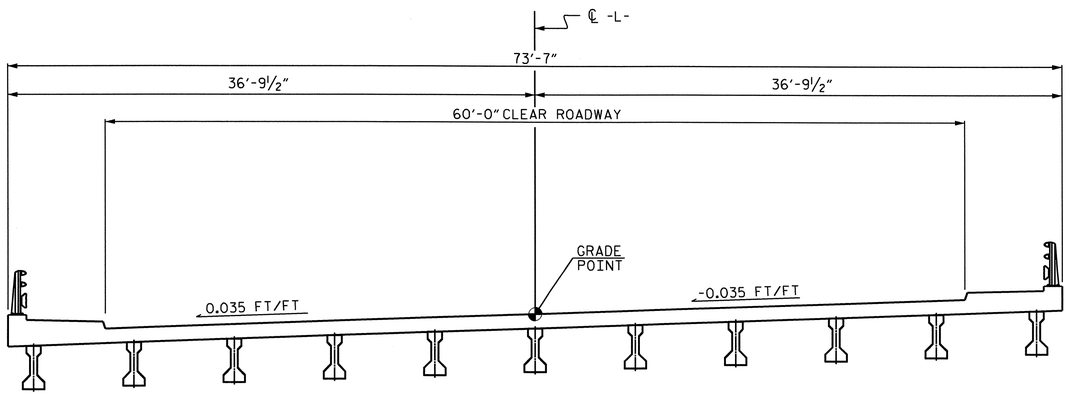




EXISTING STAGE I

PROPOSED STAGE II

EXISTING STRUCTURE



FINAL TYPICAL SECTION

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONSTRUCTION SEQUENCE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : J. C. KHARVA DATE : 01-04-11
CHECKED BY : K. D. LAYNE DATE : 11-09-11

02-FEB-2012 11:44
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kbeard

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

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER
								MOMENT					SHEAR					MOMENT						
							LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93(Inv)	N/A	1	1.016	--	1.75	0.615	1.96	E	I	30.443	0.828	2.48	B	I	24.522	0.80	0.763	1.02	E	I	30.443	1, 2
		HL-93(Opr)	N/A	--	2.539	--	1.35	0.615	2.54	E	I	30.443	0.828	3.21	B	I	24.522	N/A	--	--	--	--	--	1, 2
		HS-20(Inv)	36.000	2	1.294	46.584	1.75	0.615	2.49	E	I	30.443	0.828	2.86	B	I	24.522	0.80	0.615	1.29	E	I	30.443	1, 2
		HS-20(Opr)	36.000	--	3.234	116.408	1.35	0.615	3.23	E	I	30.443	0.828	3.71	B	I	24.522	N/A	--	--	--	--	--	1, 2
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.808	37.911	1.4	0.615	6.77	E	I	30.443	0.828	7.66	B	I	24.522	0.80	0.615	2.81	E	I	30.443	1, 2
		SNGARBS2	20.000	--	2.14	42.802	1.4	0.615	5.16	E	I	30.443	0.828	5.7	B	I	24.522	0.80	0.615	2.14	E	I	30.443	1, 2
		SNAGRIS2	22.000	--	2.047	45.039	1.4	0.615	4.93	E	I	30.443	0.828	5.4	B	I	24.522	0.80	0.615	2.05	E	I	30.443	1, 2
		SNCOTTS3	27.250	--	1.399	38.117	1.4	0.615	3.37	E	I	30.443	0.828	3.85	B	I	24.522	0.80	0.615	1.40	E	I	30.443	1, 2
		SNAGGRS4	34.925	--	1.187	41.455	1.4	0.615	2.86	E	I	30.443	0.828	3.38	B	I	24.522	0.80	0.615	1.19	E	I	30.443	1, 2
		SNS5A	35.550	--	1.16	41.221	1.4	0.615	2.79	E	I	30.443	0.828	3.52	B	I	24.522	0.80	0.615	1.16	E	I	30.443	1, 2
		SNS6A	39.950	--	1.072	42.808	1.4	0.615	2.58	E	I	30.443	0.828	3.3	B	I	24.522	0.80	0.615	1.07	E	I	30.443	1, 2
		SNS7B	42.000	--	1.021	42.871	1.4	0.615	2.46	E	I	30.443	0.828	3.36	B	I	24.522	0.80	0.615	1.02	E	I	30.443	1, 2
	TTST	TNAGRIT3	33.000	--	1.309	43.196	1.4	0.615	3.15	E	I	30.443	0.828	3.86	B	I	24.522	0.80	0.615	1.31	E	I	30.443	1, 2
		TNT4A	33.075	--	1.317	43.556	1.4	0.615	3.17	E	I	30.443	0.828	3.67	B	I	24.522	0.80	0.615	1.32	E	I	30.443	1, 2
		TNT6A	41.600	--	1.084	45.104	1.4	0.615	2.61	E	I	30.443	0.828	3.82	B	I	24.522	0.80	0.615	1.08	E	I	30.443	1, 2
		TNT7A	42.000	--	1.094	45.934	1.4	0.615	2.64	E	I	30.443	0.828	3.53	B	I	24.522	0.80	0.615	1.09	E	I	30.443	1, 2
		TNT7B	42.000	--	1.142	47.946	1.4	0.615	2.75	E	I	30.443	0.828	3.19	B	I	24.522	0.80	0.615	1.14	E	I	30.443	1, 2
		TNAGRIT4	43.000	--	1.078	46.373	1.4	0.615	2.6	E	I	30.443	0.828	3.06	B	I	24.522	0.80	0.615	1.08	E	I	30.443	1, 2
		TNAGT5A	45.000	--	1.013	45.601	1.4	0.615	2.44	E	I	30.443	0.828	3.18	B	I	24.522	0.80	0.615	1.01	E	I	30.443	1, 2
		TNAGT5B	45.000	3	1.000	45.000	1.4	0.615	2.4	E	I	30.443	0.828	2.9	B	I	24.522	0.80	0.615	1.00	E	I	30.443	1, 2

LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

1. SPANS A, B & C ARE SIMILAR
2. SPANS E, F, G, H, I, J, K & L ARE SIMILAR
3.
4.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

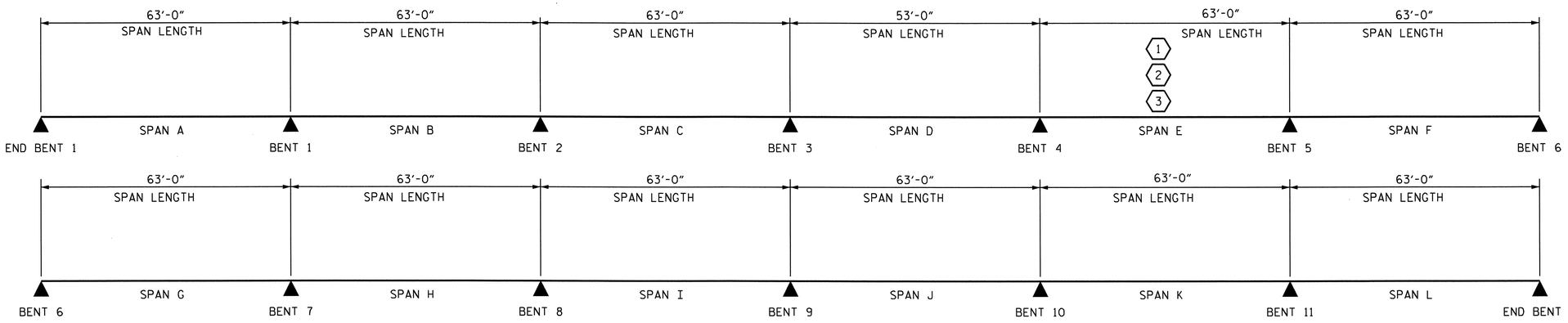
(2) DESIGN LOAD RATING (HS-20)

(3) LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

LRFR SUMMARY FOR PRESTRESSED CONCRETE GIRDERS
(NON-INTERSTATE TRAFFIC)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHESSEN
3/9/12

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

SHEET NO. S-8

TOTAL SHEETS 125

ASSEMBLED BY : R. L. CHESSON DATE : 2011 JAN 27
CHECKED BY : D. E. HENNESSEE DATE : 4 / 4 / 11

DRAWN BY : MAA 1/08
CHECKED BY : GM/DI 2/08

REV. 11/12/08R MAA/GM
REV. 10I/1/11R MAA/GM

27-JAN-2012 14:01
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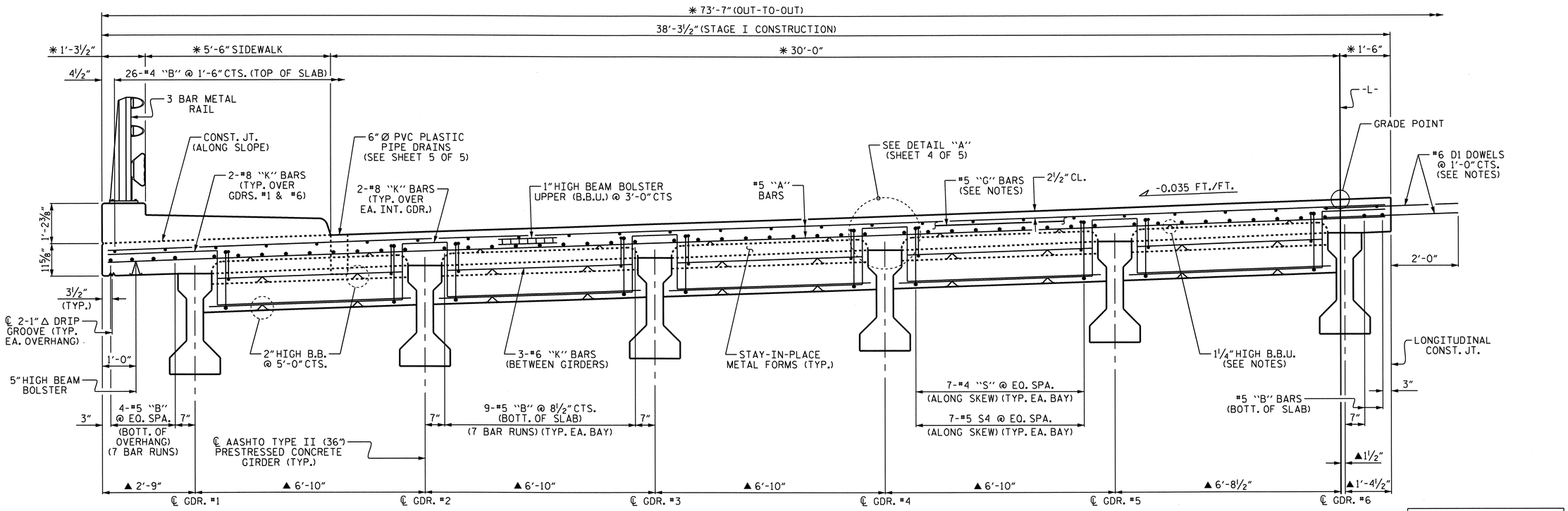
STD. NO. LRFR1

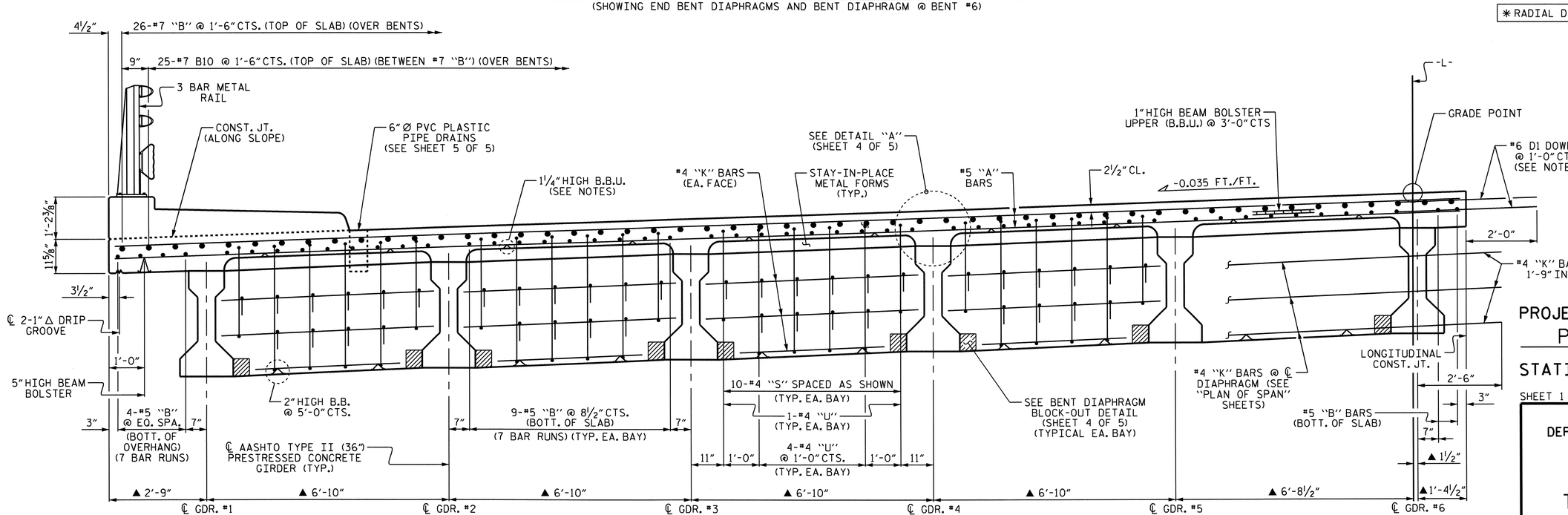


PART SECTION

(SHOWING END BENT DIAPHRAGMS AND BENT DIAPHRAGM @ BENT #6)

▲ RADIAL THRU WORKPOINT

✱ RADIAL DIMENSIONS



PART SECTION

(SHOWING CONTINUOUS BENT DIAPHRAGMS @ BENTS #1 THRU #5 & #7 THRU #11)

TYPICAL SECTION

(STAGE I CONSTRUCTION)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION
STAGE I

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

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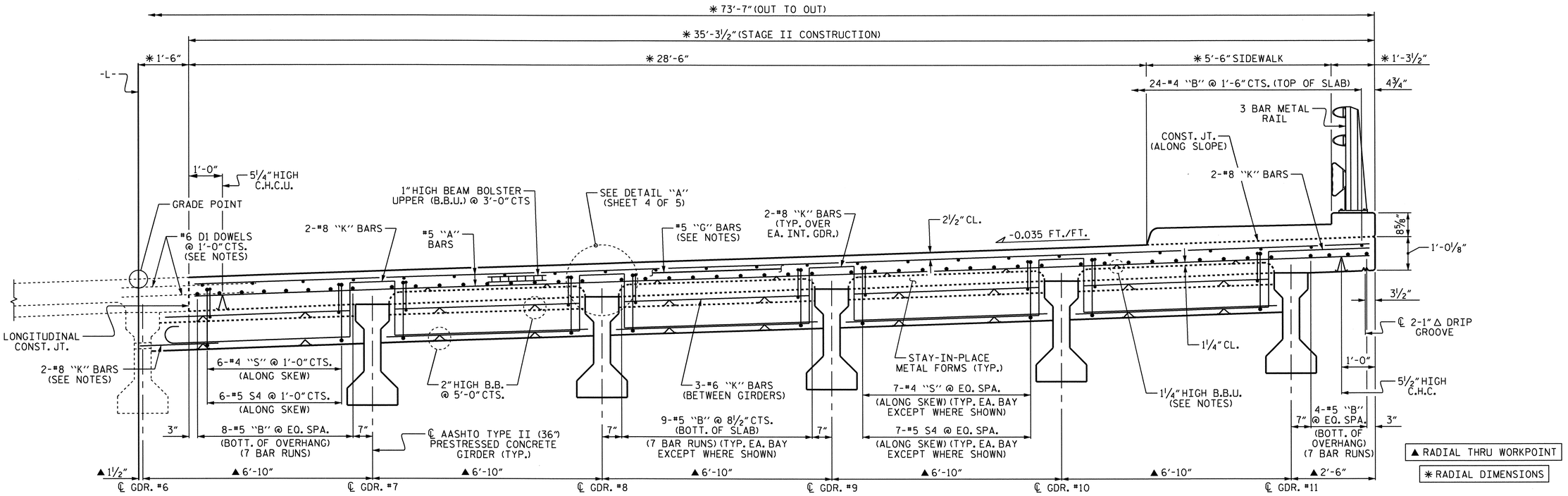
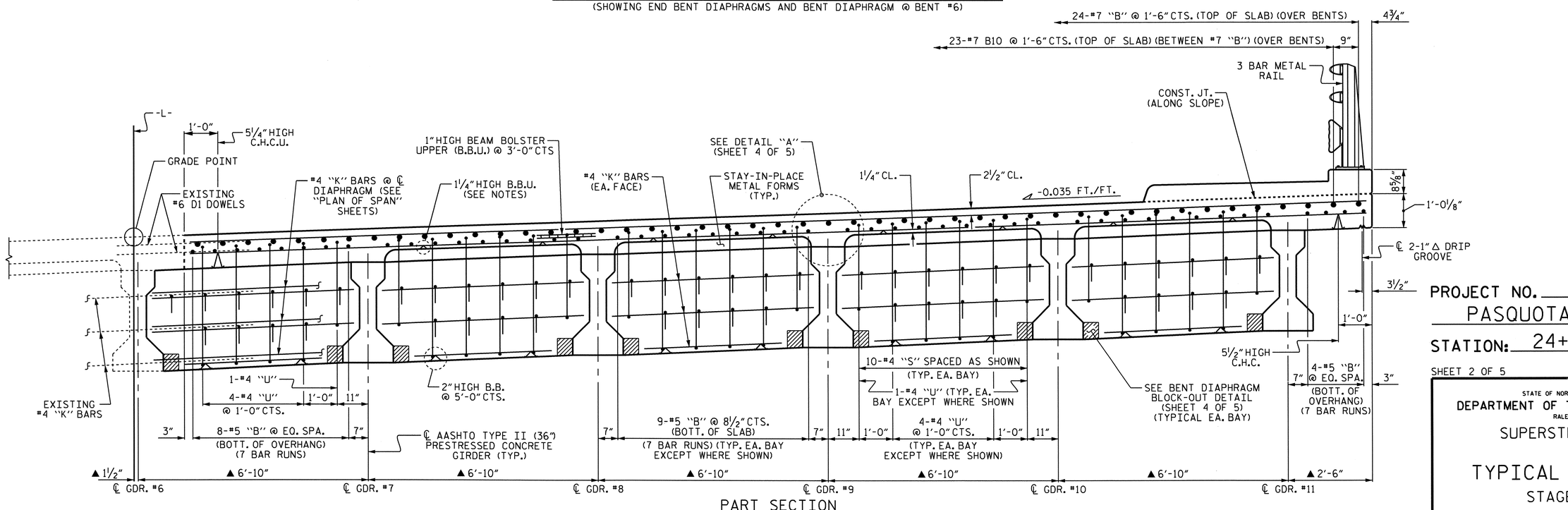
chunt



PART SECTION
(SHOWING END BENT DIAPHRAGMS AND BENT DIAPHRAGM @ BENT #6)



PART SECTION
(SHOWING CONTINUOUS BENT DIAPHRAGMS @ BENTS #1 THRU #5 & #7 THRU #11)

TYPICAL SECTION
(STAGE II CONSTRUCTION)

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER KEVIN FISCHER 3/9/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION
STAGE II

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:01
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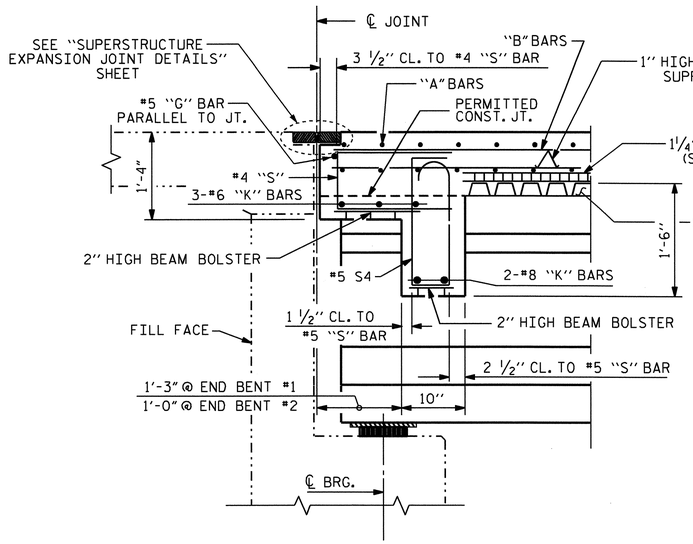
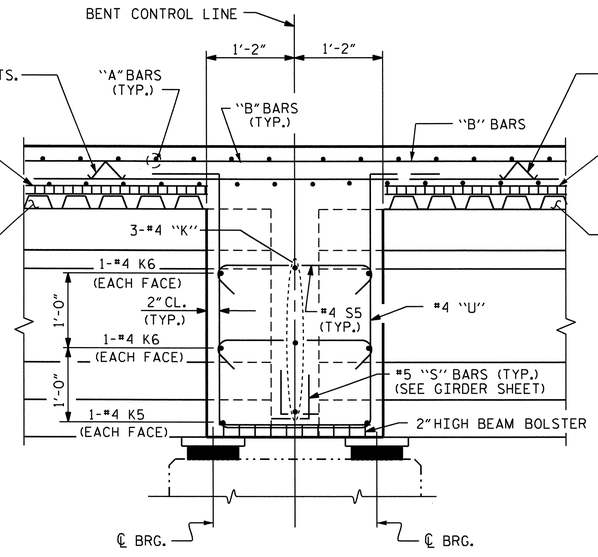


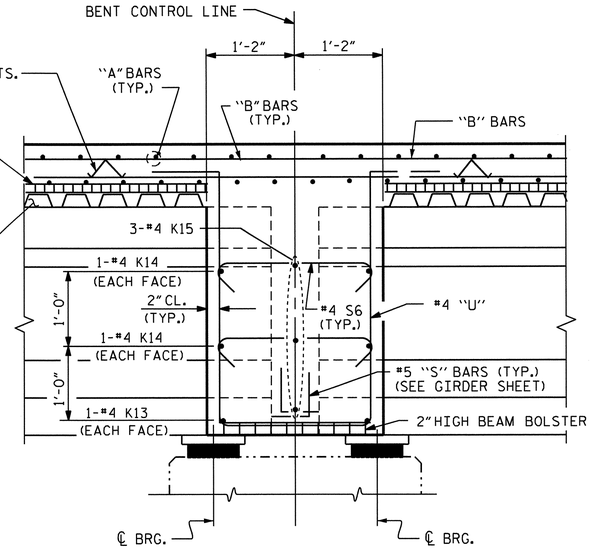
SECTION A-A

END BENT #1 SHOWN, END BENT #2 SIMILAR (EXCEPT OMIT #5 "G" BAR)



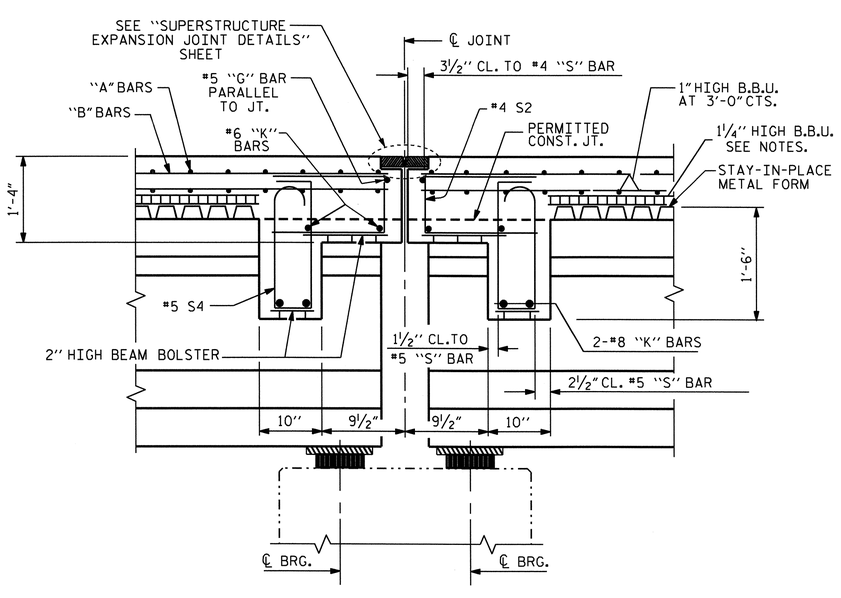
SECTION B-B

TYP. BENTS #1 THRU #3



SECTION C-C

TYP. BENT #4, #5 & #7 THRU #11



SECTION D-D

BENT #6

NOTES:

PROVIDE 1¼" 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 2½" ABOVE THE TOP OF THE REMOVABLE FORM.

LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.

FOR EACH STAGE, PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

FOR EACH STAGE, SIDEWALK IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

#6 DI DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM SLAB REINFORCING STEEL

SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMITS OF THE ANCHORED PORTABLE CONCRETE BARRIER.

FOR SIDEWALK REINFORCING STEEL AND DETAILS SEE "SIDEWALK DETAILS" SHEETS.

#5 "G" BAR MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR REINFORCING STEEL AND STIRRUPS.

REINFORCING STEEL MAY BE SHIFTED SLIGHTLY TO AVOID THE 6"Ø PVC PLASTIC PIPE DRAINS.

#8 "K" BARS TO BE GROUTED INTO FORMED HOLES IN SIDE OF STAGE I GIRDER #6 DURING STAGE II CONSTRUCTION FOR STAGE II BENT DIAPHRAGM.

FOR ELECTRICAL CONDUIT, SEE THE SHEET ENTITLED "ELECTRICAL CONDUIT SYSTEM".

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:01
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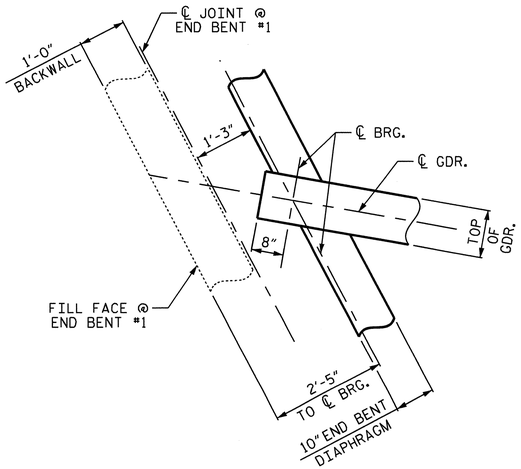
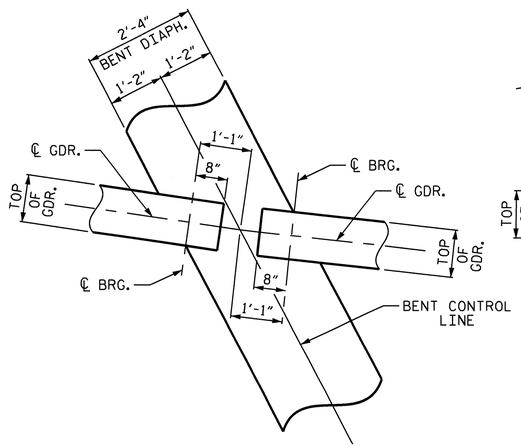
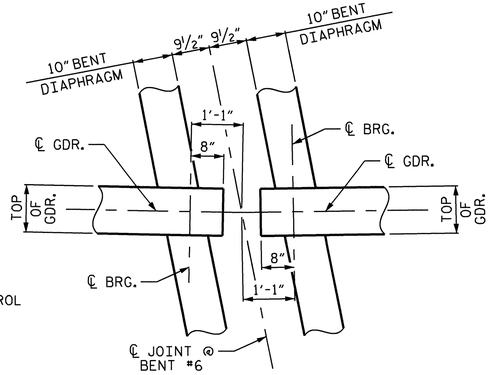


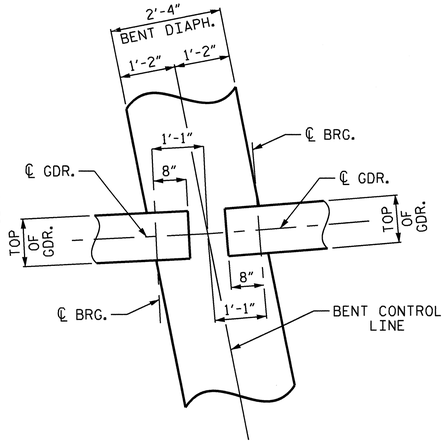
END BENT #1



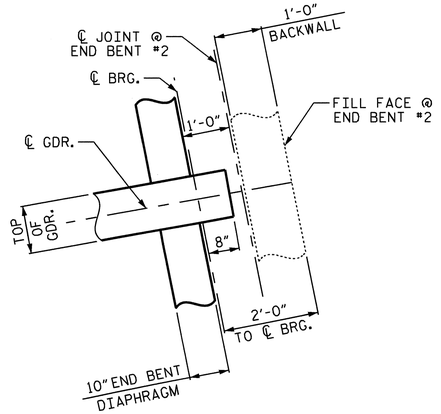
CONTINUOUS BENT DIAPHRAGM
TYP. BENTS #1 THRU #3



BENT #6

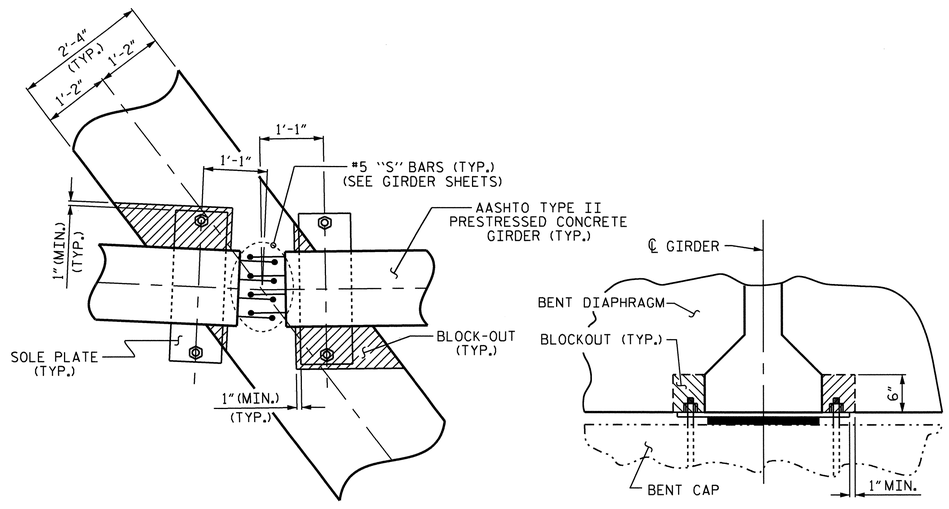


CONTINUOUS BENT DIAPHRAGM
TYP. BENT #4, #5 & #7 THRU #11



END BENT #2

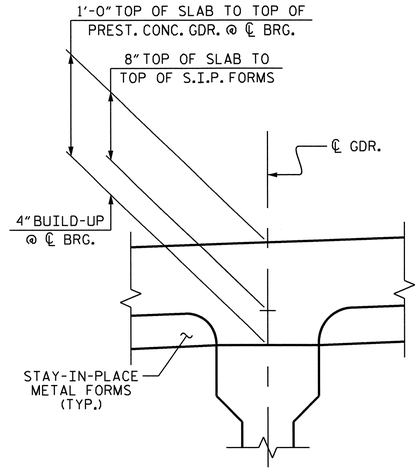
PLAN OF DIAPHRAGMS



PLAN ELEVATION

BENT DIAPHRAGM BLOCK-OUT DETAIL

(SIMILAR BENTS #1 THRU #5 & #7 THRU #11)



DETAIL "A"
(TYP. EA. GIRDER)

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 4 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

TYPICAL SECTION DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:01
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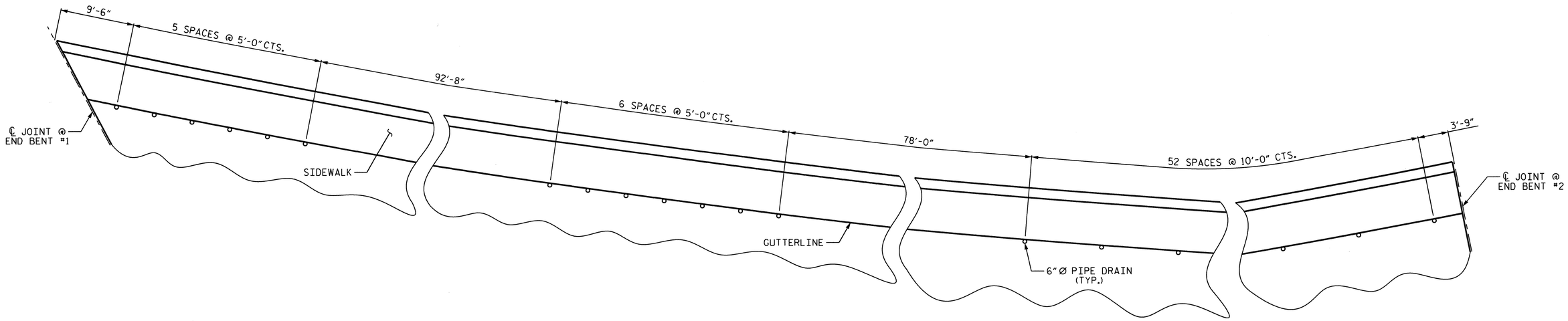
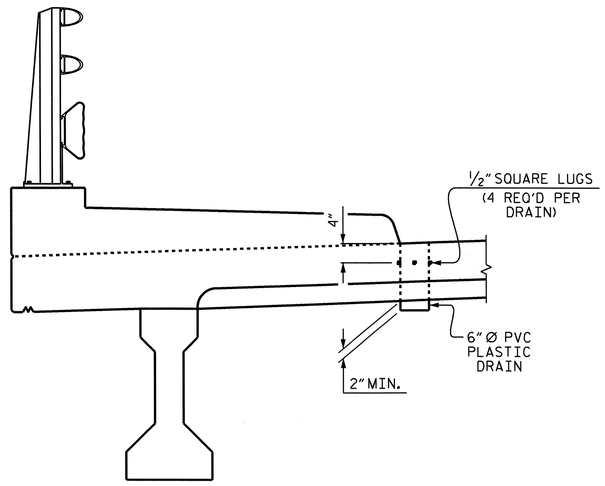
kbeard

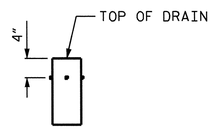


PIPE DRAIN LOCATION DETAIL

ALL DIMENSIONS ARE MEASURED ALONG LEFT OUTSIDE OF SUPERSTRUCTURE



ELEVATION



PIPE DETAIL

(66 DRAINS REQUIRED)

NOTES:

TOP OF FLOOR DRAIN TO BE SET ⅜" BELOW SURFACE OF SLAB.

4-½" SQUARE LUGS TO BE GLUED TO THE PVC PLASITC PIPE AT EQUAL SPACES AROUND THE PIPE DRAIN APPROXIMATELY 4" FROM THE TOP OF THE PIPE.

THE 6" Ø PVC PLASTIC PIPE AND FITTINGS SHALL BE SCHEDULE 40 AND CONFORM TO ASTM D1785.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 030878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:01
V:\Structures\Plans\B4599_SD_TS.dgn
kbeard

NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

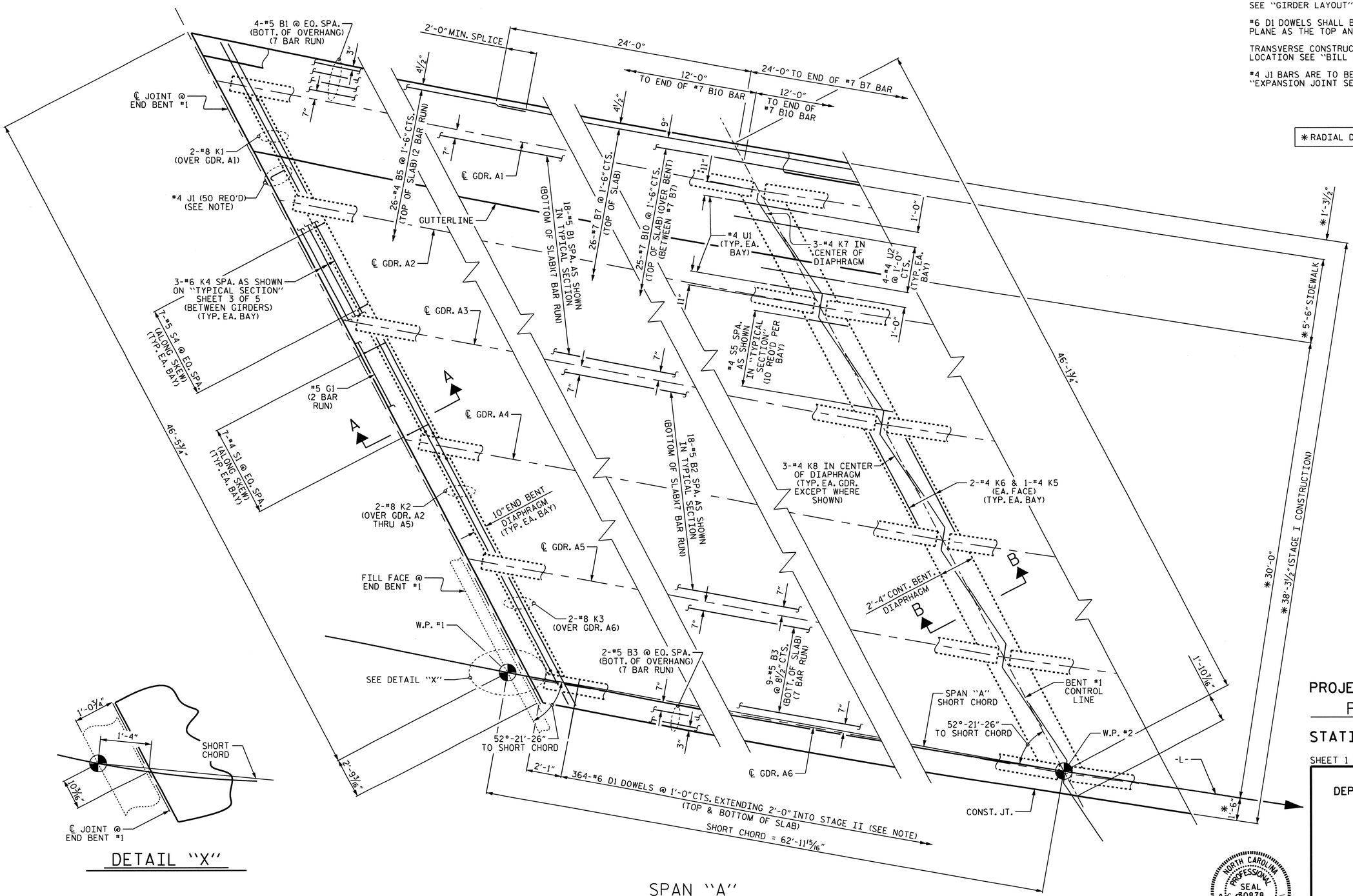
FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

#6 D1 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM REINFORCING STEEL.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

#4 J1 BARS ARE TO BE PLACED AS SPECIFIED ON THE "EXPANSION JOINT SEAL DETAILS" SHEET.

* RADIAL DIMENSIONS



DETAIL "X"

SPAN "A"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN A
(STAGE I)

NORTH CAROLINA PROFESSIONAL SEAL 20818 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:00
V:\Structures\Plans\B-4599_SD_PS.dgn
kbeard

NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

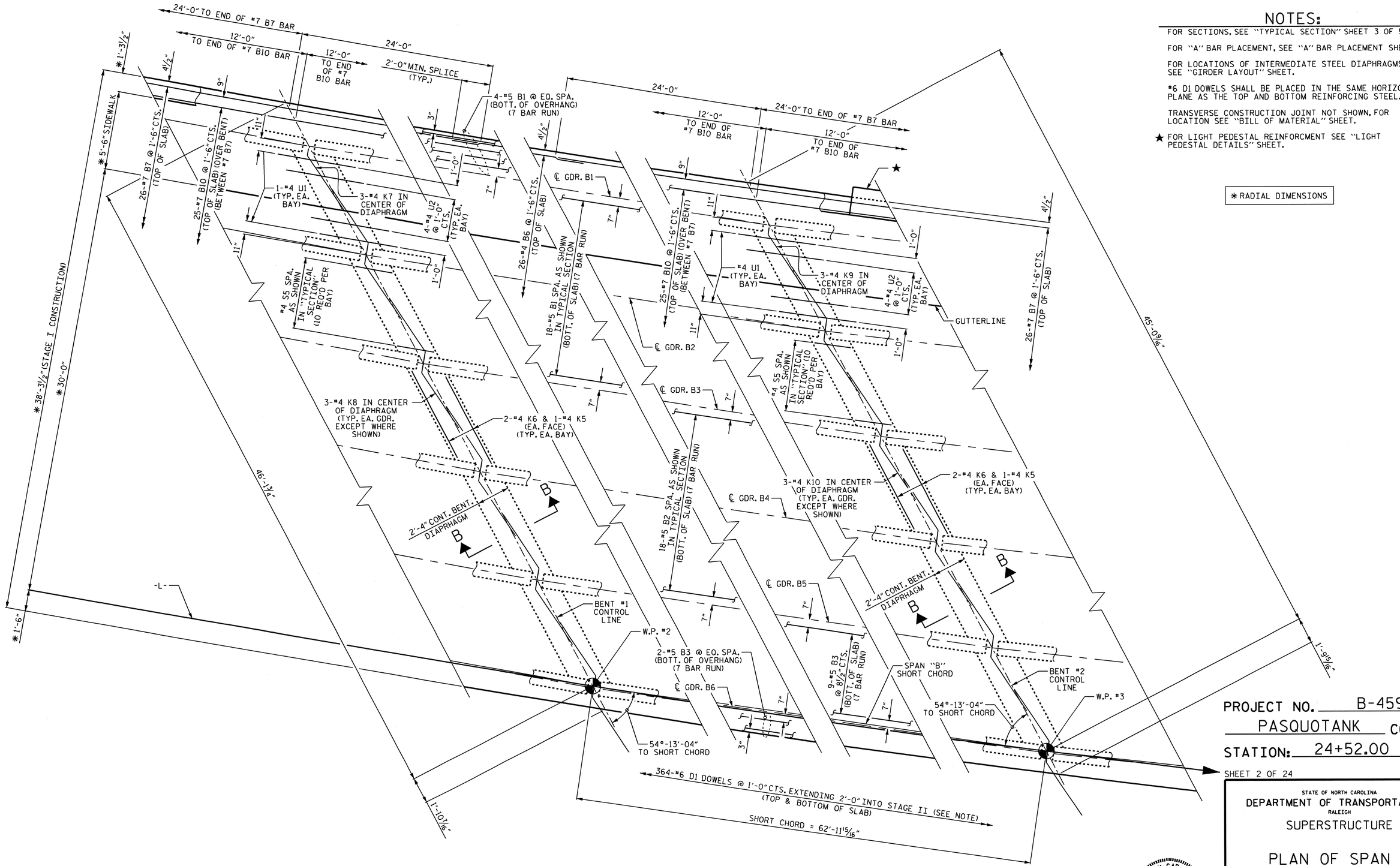
FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

#6 D1 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM REINFORCING STEEL.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN. FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

★ FOR LIGHT PEDESTAL REINFORCMENT SEE "LIGHT PEDESTAL DETAILS" SHEET.

✱ RADIAL DIMENSIONS



SPAN "B"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN B
(STAGE I)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:00
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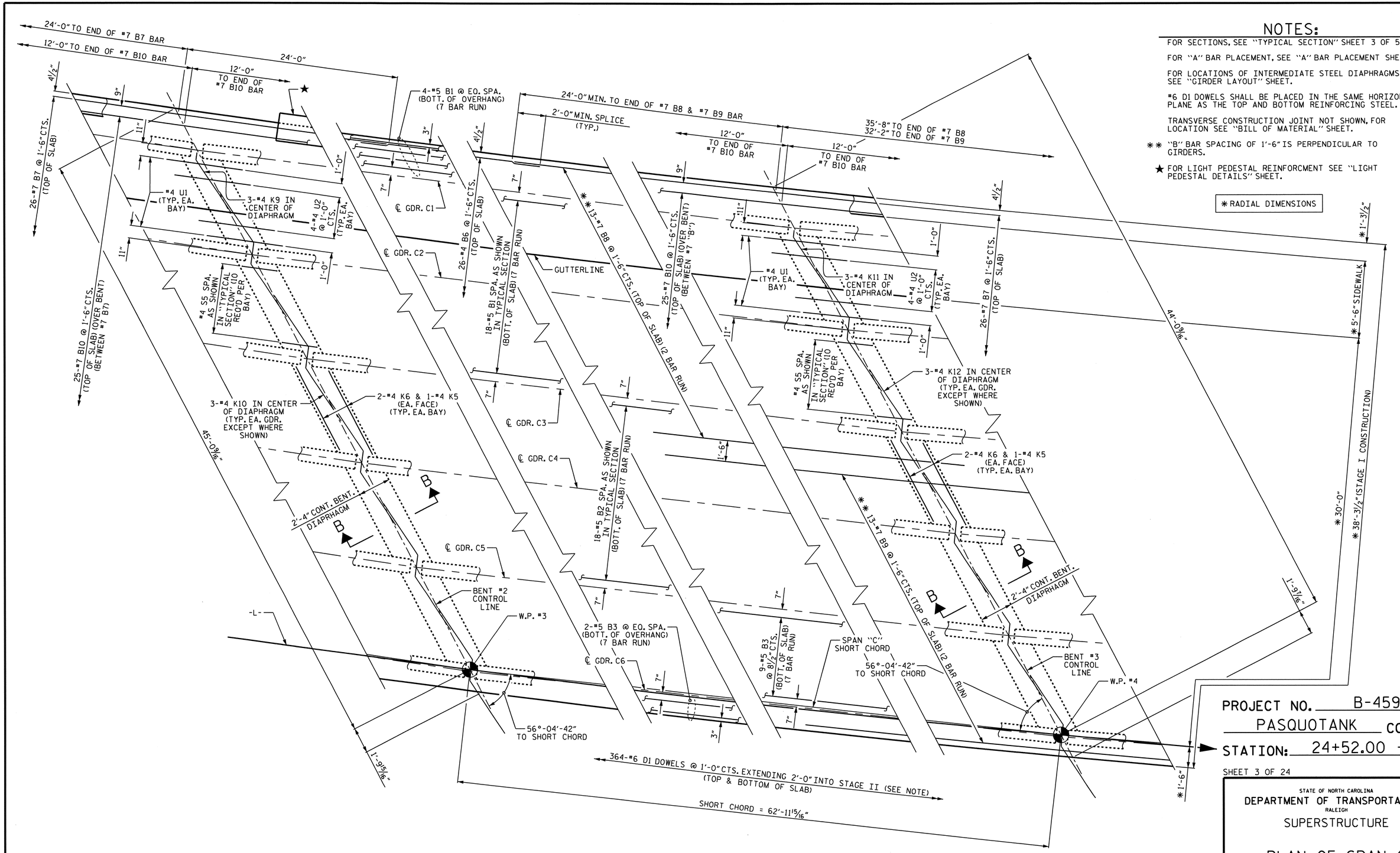
kbeard



NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

#6 D1 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM REINFORCING STEEL.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

** "B" BAR SPACING OF 1'-6" IS PERPENDICULAR TO GIRDERS.

★ FOR LIGHT PEDESTAL REINFORCMENT SEE "LIGHT PEDESTAL DETAILS" SHEET.

* RADIAL DIMENSIONS

SPAN "C"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 3 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN C
(STAGE I)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

02-FEB-2012 11:42
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kbeard

NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

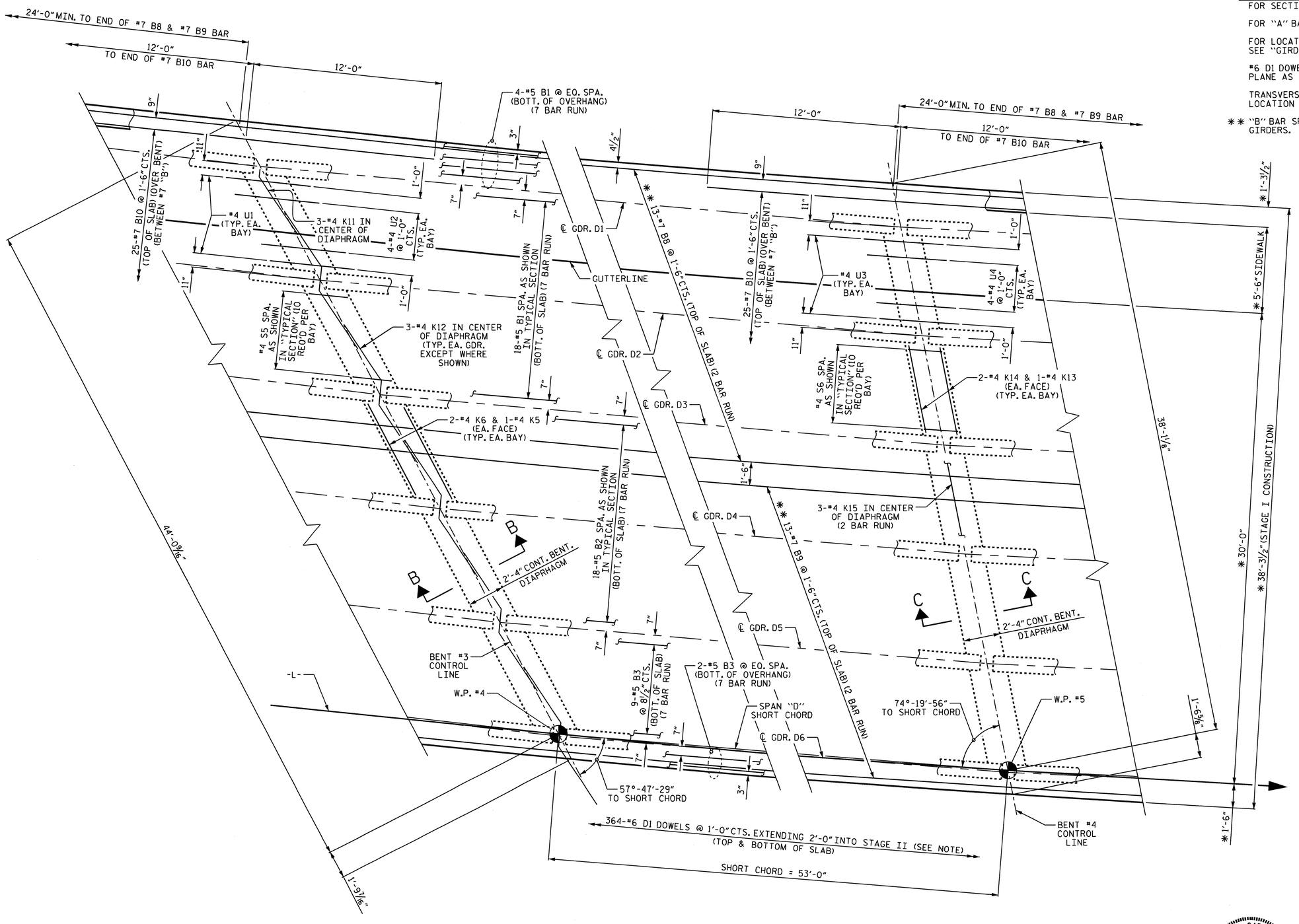
FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

#6 D1 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM REINFORCING STEEL.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

** "B" BAR SPACING OF 1'-6" IS PERPENDICULAR TO GIRDERS.

* RADIAL DIMENSIONS



SPAN "D"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 4 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN D
(STAGE I)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

02-FEB-2012 11:42
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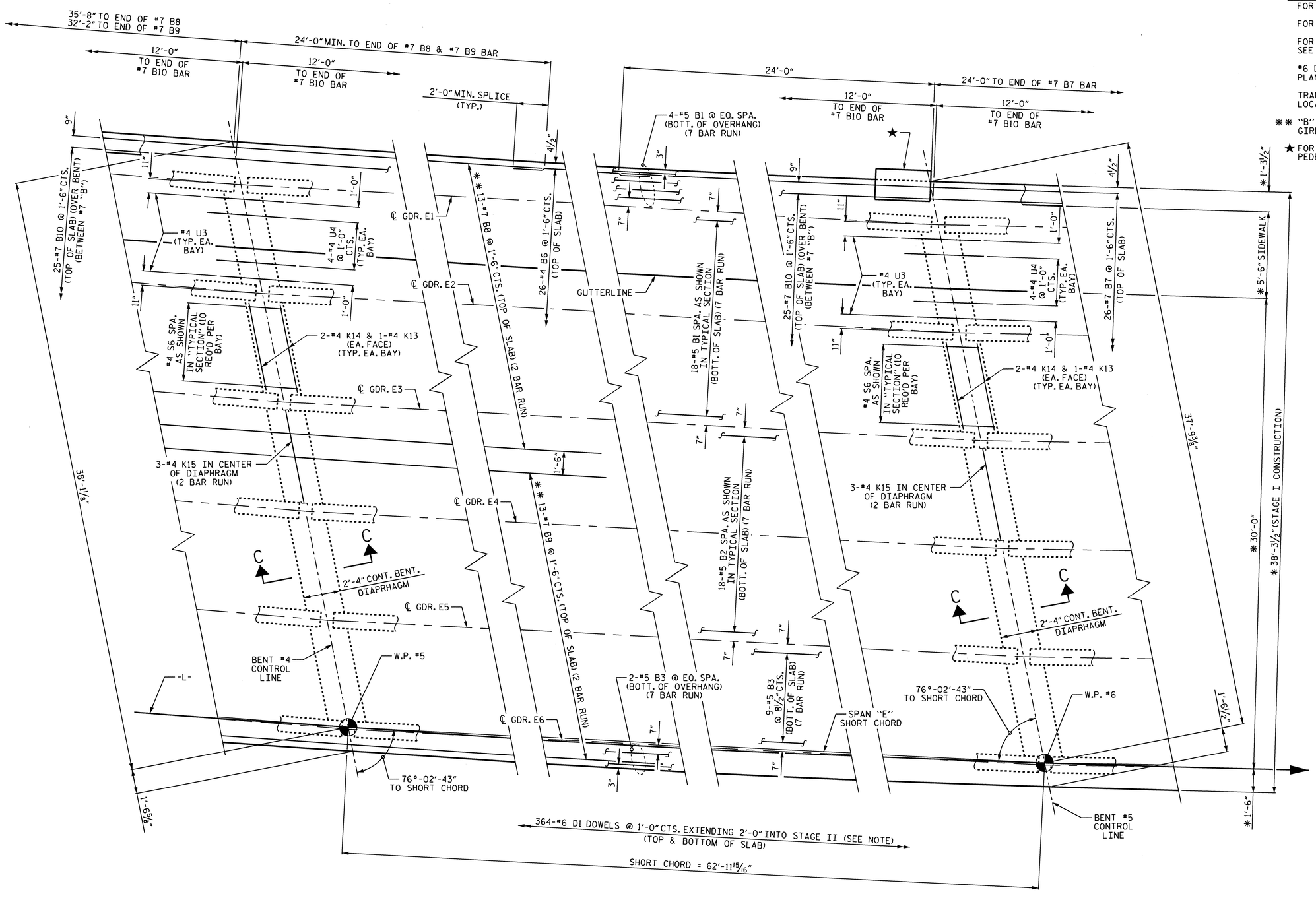
kbeard



NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

#6 D1 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM REINFORCING STEEL.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

** "B" BARS SPACING OF 1'-6" IS PERPENDICULAR TO GIRDERS.

★ FOR LIGHT PEDESTAL REINFORCMENT SEE "LIGHT PEDESTAL DETAILS" SHEET.

* RADIAL DIMENSIONS

SPAN "E"

PARTIAL PLAN OF SPAN

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

02-FEB-2012 11:42
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NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 5 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

PLAN OF SPAN E
(STAGE I)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			125

NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

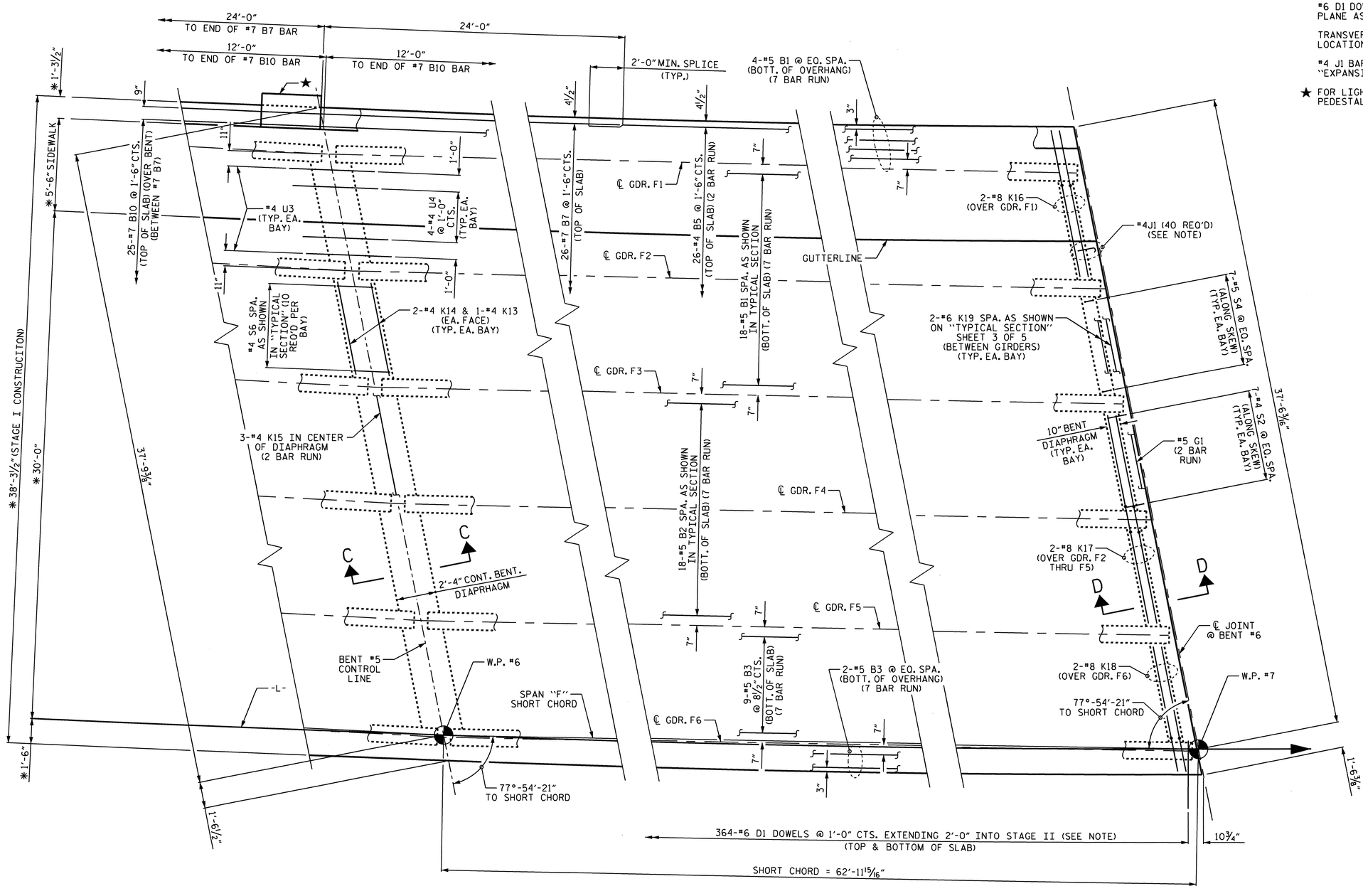
#6 D1 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM REINFORCING STEEL.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

#4 J1 BARS ARE TO BE PLACED AS SPECIFIED ON THE "EXPANSION JOINT SEAL DETAILS" SHEET.

★ FOR LIGHT PEDESTAL REINFORCMENT SEE "LIGHT PEDESTAL DETAILS" SHEET.

∗ RADIAL DIMENSIONS



SPAN "F"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 6 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN F
(STAGE I)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:00
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kbeard

NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

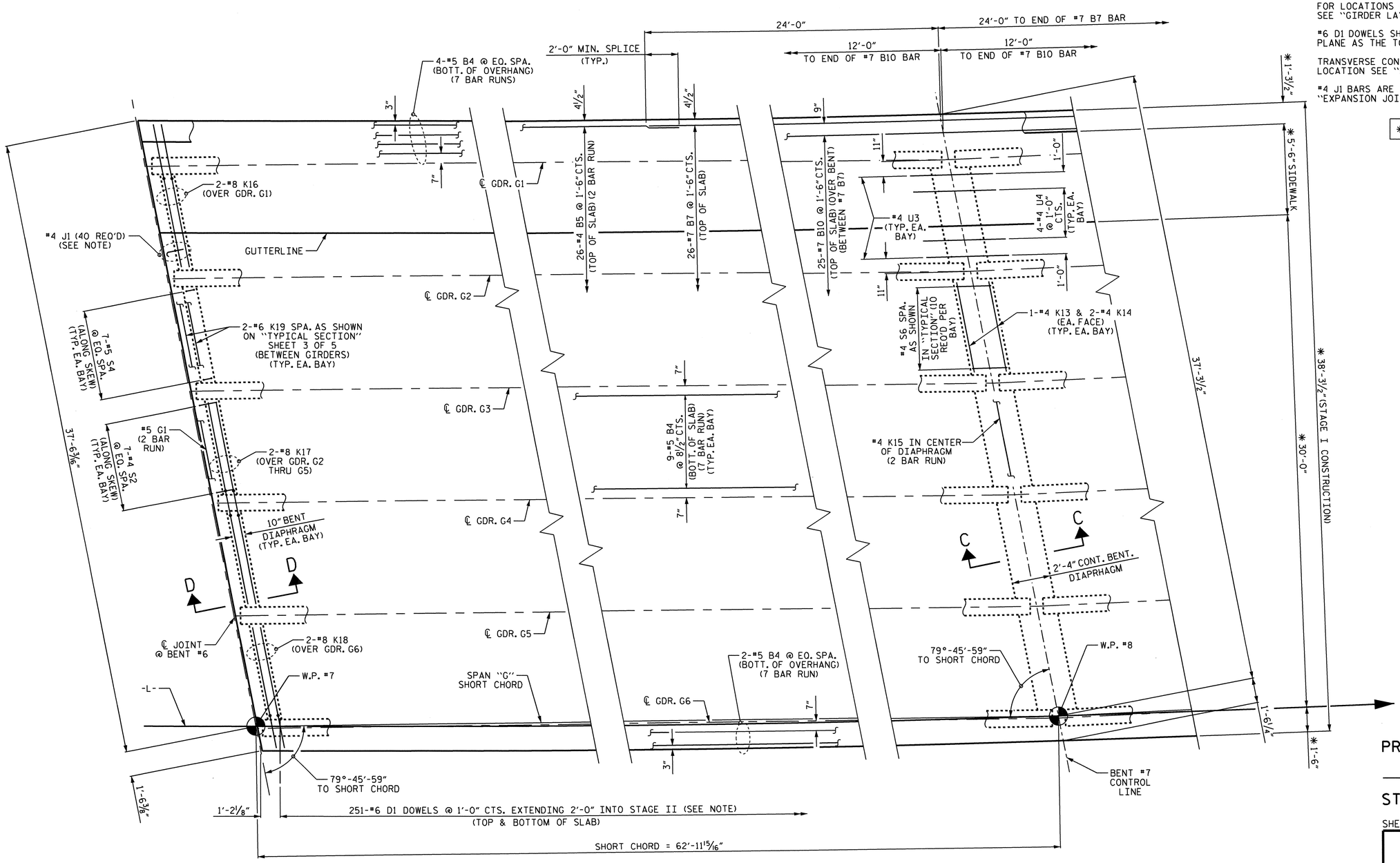
FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

#6 D1 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM REINFORCING STEEL.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

#4 J1 BARS ARE TO BE PLACED AS SPECIFIED ON THE "EXPANSION JOINT SEAL DETAILS" SHEET.

✱ RADIAL DIMENSIONS



SPAN "G"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 7 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN G
(STAGE I)

NORTH CAROLINA PROFESSIONAL SEAL 030878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:00
V:\Structures\Plans\B-4599_SD_PS.dgn
kbeard

NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

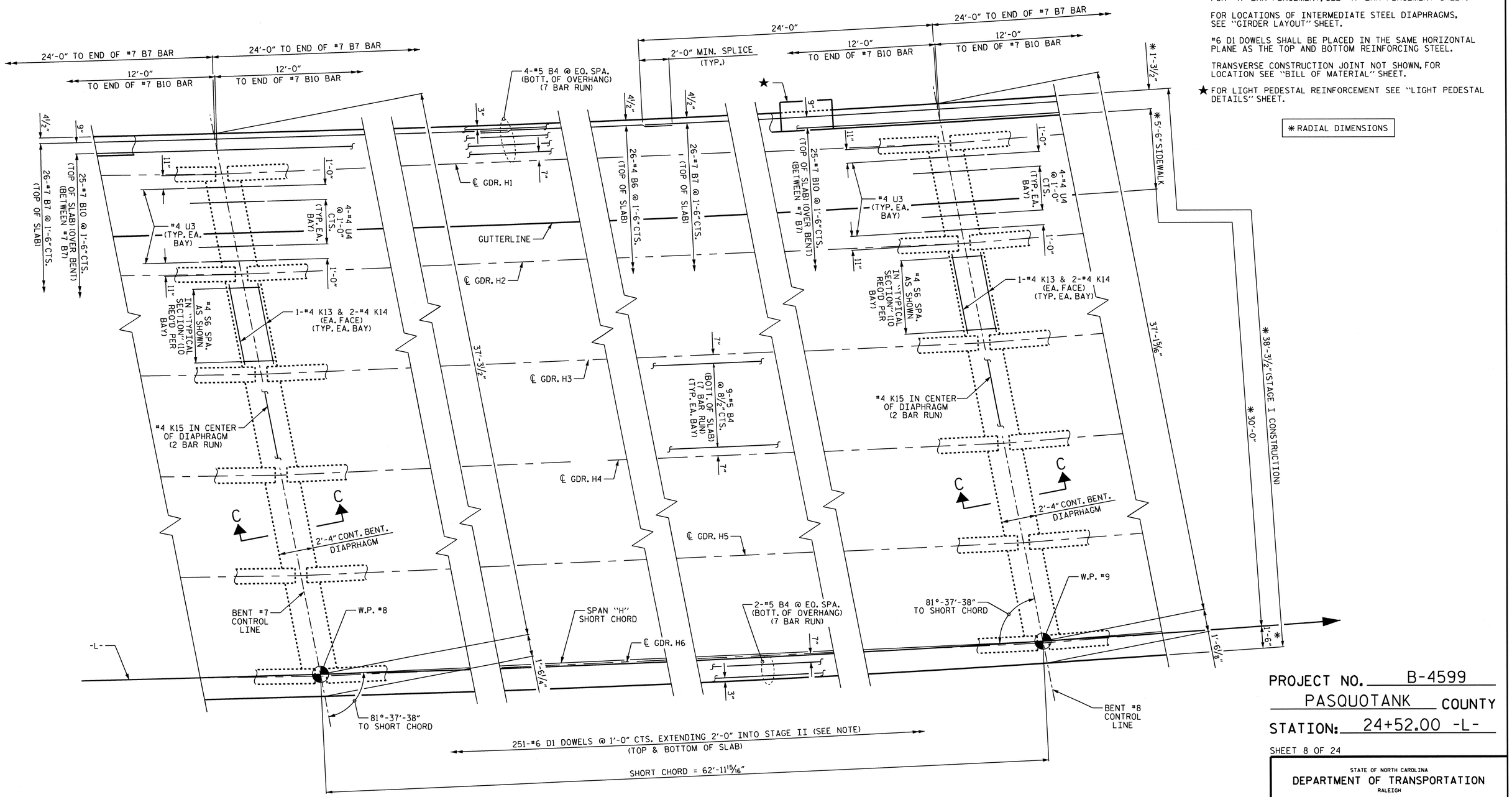
FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

#6 D1 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM REINFORCING STEEL.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

★ FOR LIGHT PEDESTAL REINFORCEMENT SEE "LIGHT PEDESTAL DETAILS" SHEET.

✱ RADIAL DIMENSIONS



SPAN "H"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 8 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

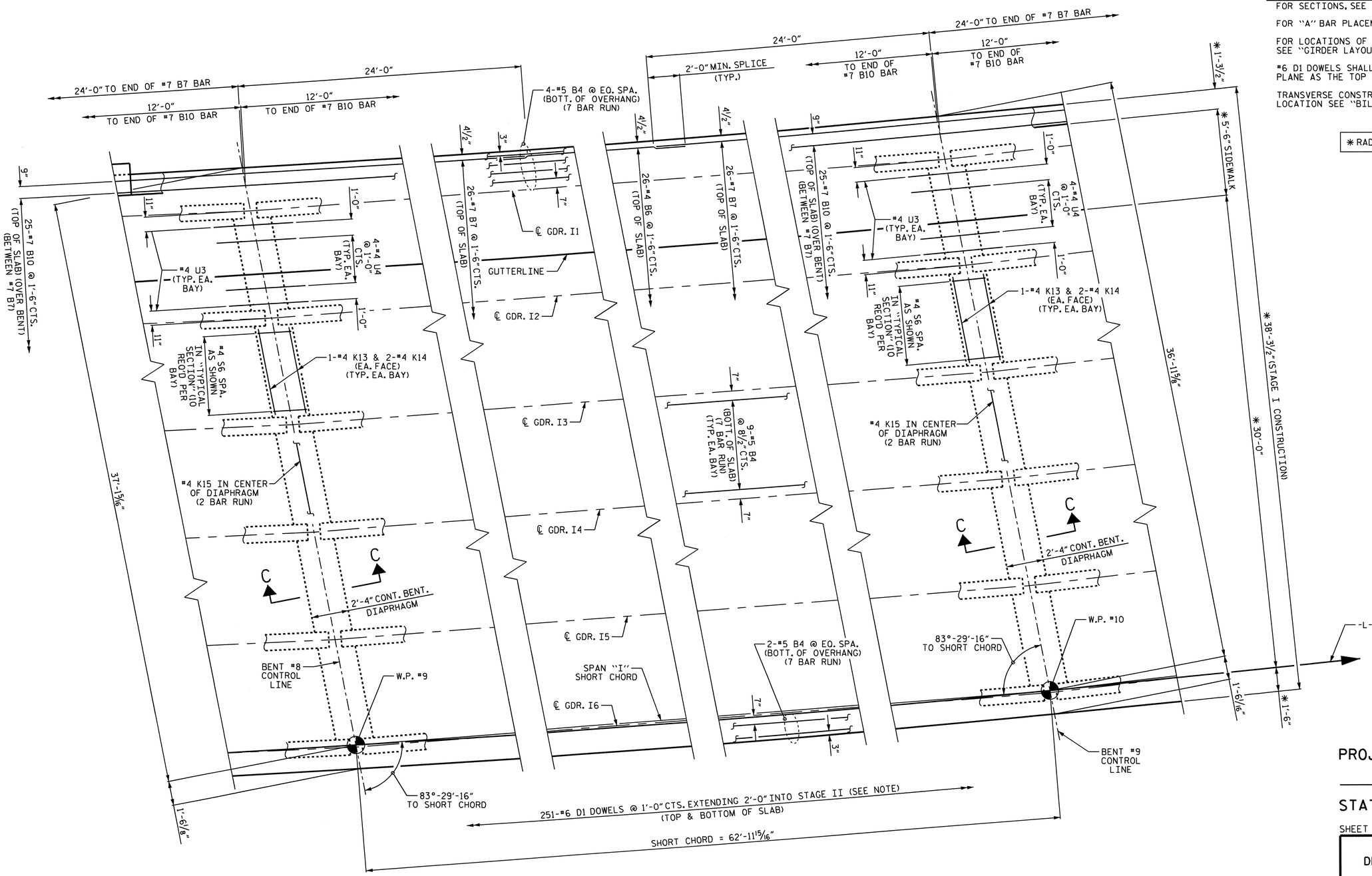
PLAN OF SPAN H
(STAGE I)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:00
V:\Structures\Plans\B-4599_SD_PS.dgn
kbeard



NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

#6 DI DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM REINFORCING STEEL.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

*RADIAL DIMENSIONS

SPAN "I"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 9 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

PLAN OF SPAN I
(STAGE I)

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:00
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NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

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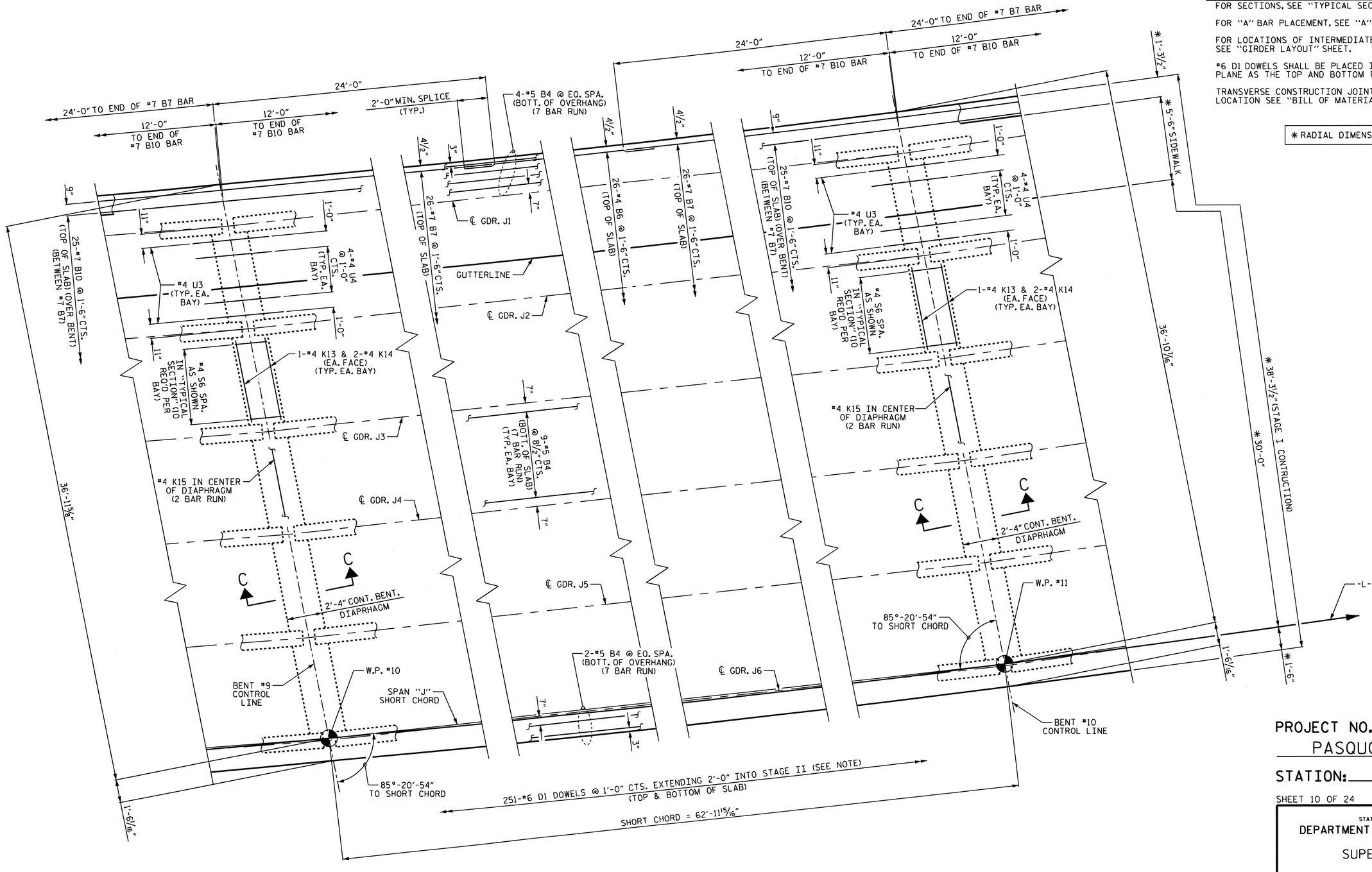
✱RADIAL DIMENSIONS



SPAN "J"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 10 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN J
(STAGE I)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:00
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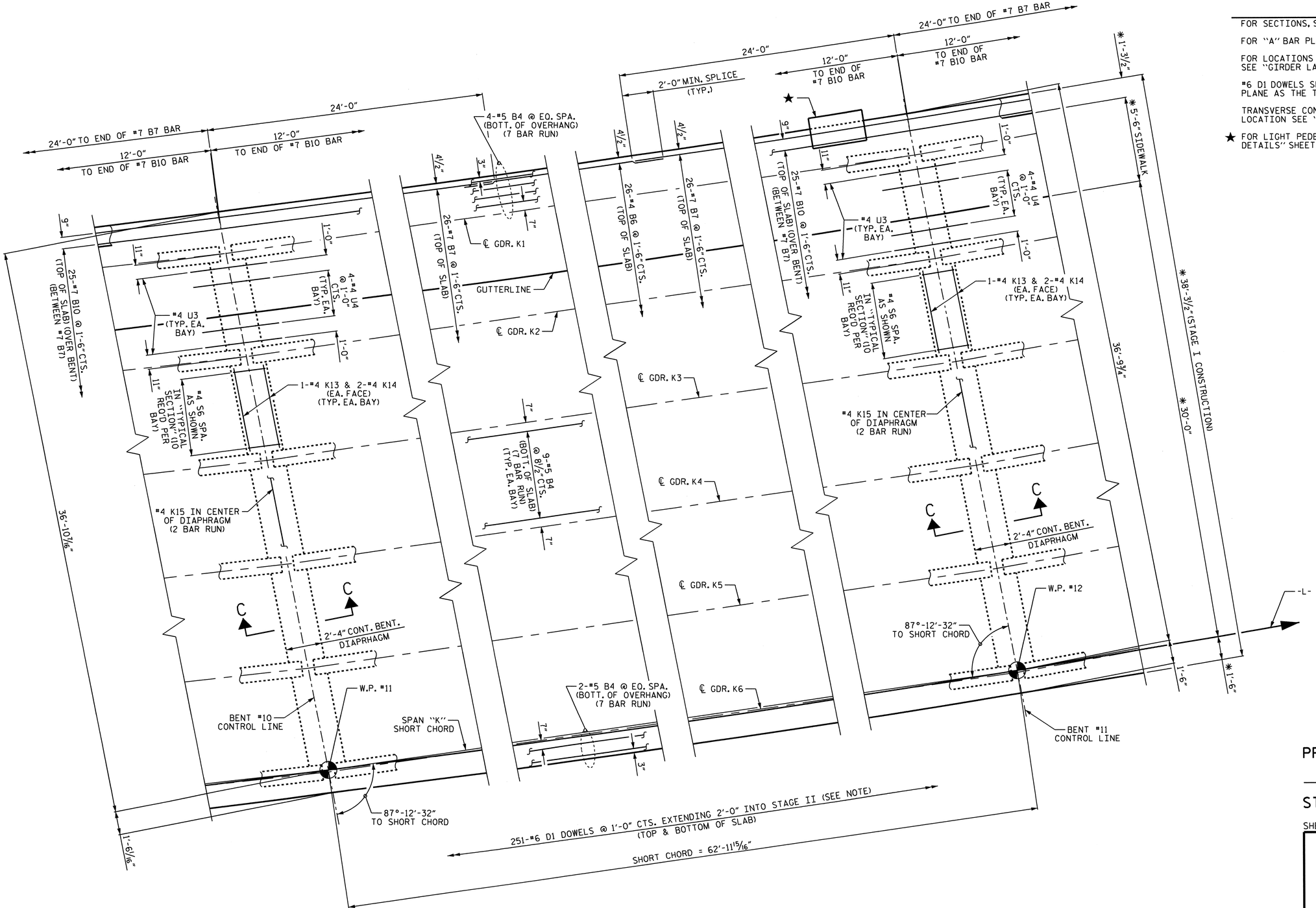
kbeard



NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

#6 D1 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM REINFORCING STEEL.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

★ FOR LIGHT PEDESTAL REINFORCMENT SEE "LIGHT PEDESTAL DETAILS" SHEET.

* RADIAL DIMENSIONS

SPAN "K"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 11 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN K
(STAGE I)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:00
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kbeard

NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

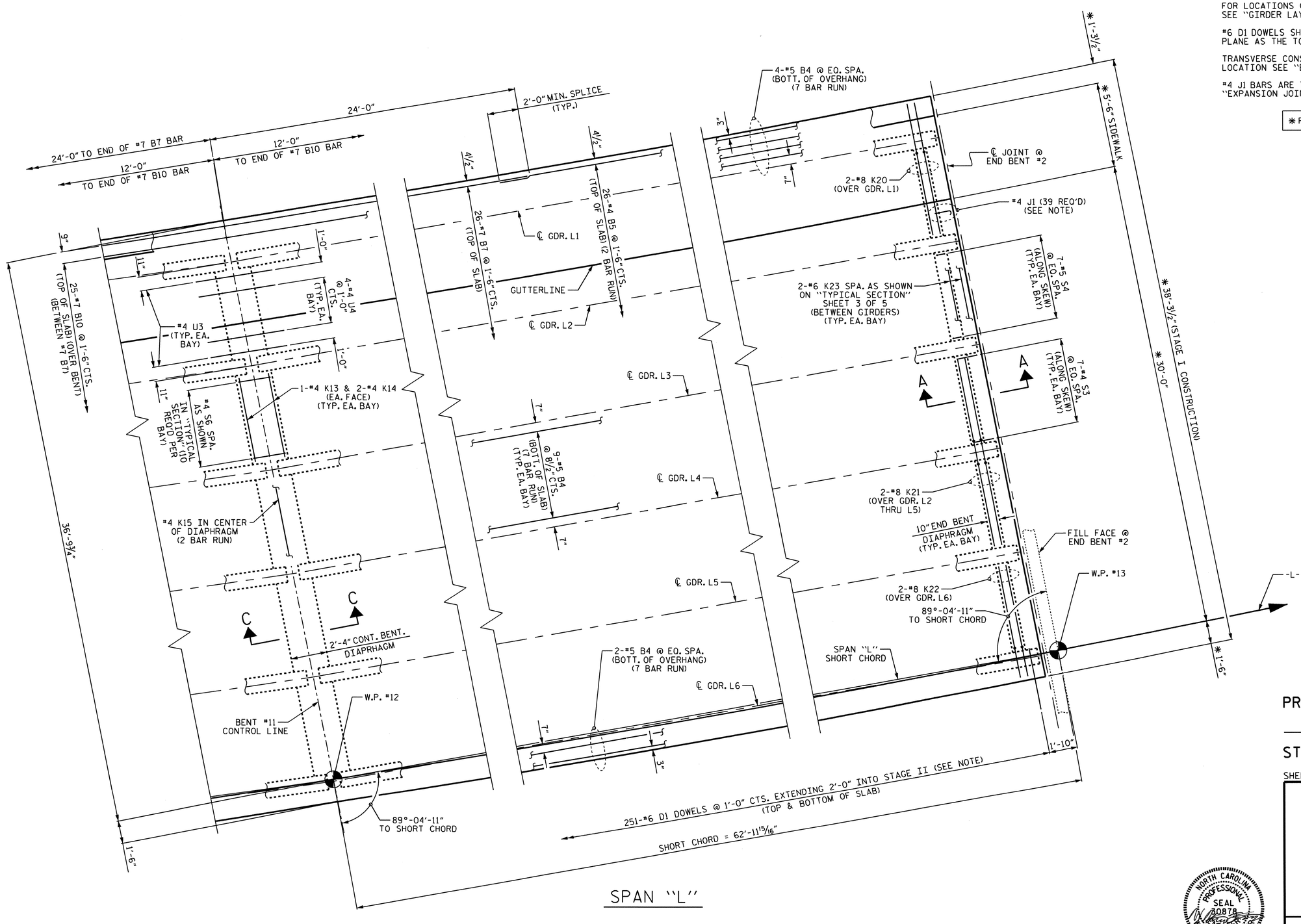
FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

#6 D1 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM REINFORCING STEEL.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

#4 J1 BARS ARE TO BE PLACED AS SPECIFIED ON THE "EXPANSION JOINT SEAL DETAILS" SHEET.

* RADIAL DIMENSIONS



SPAN "L"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 12 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

PLAN OF SPAN L
(STAGE I)

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:00
V:\Structures\Plans\B-4599_SD_PS.dgn
kbeard

NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

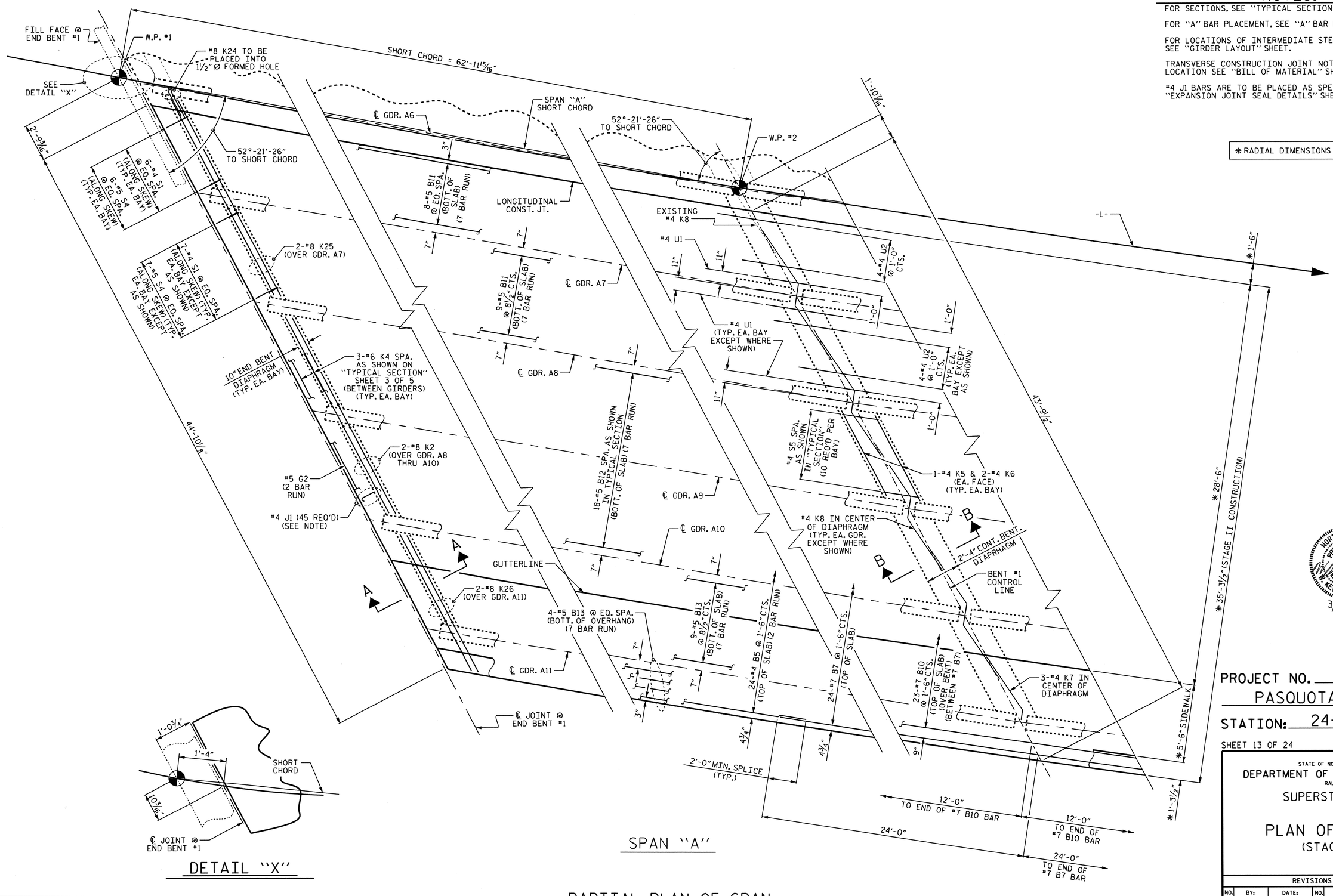
FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

#4 J1 BARS ARE TO BE PLACED AS SPECIFIED ON THE "EXPANSION JOINT SEAL DETAILS" SHEET.

* RADIAL DIMENSIONS



DETAIL "X"

SPAN "A"

PARTIAL PLAN OF SPAN

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 3/9/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 13 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN A
(STAGE II)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-26
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:00
V:\Structures\Plans\B-4599_SD_PS.dgn
kbeard

NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

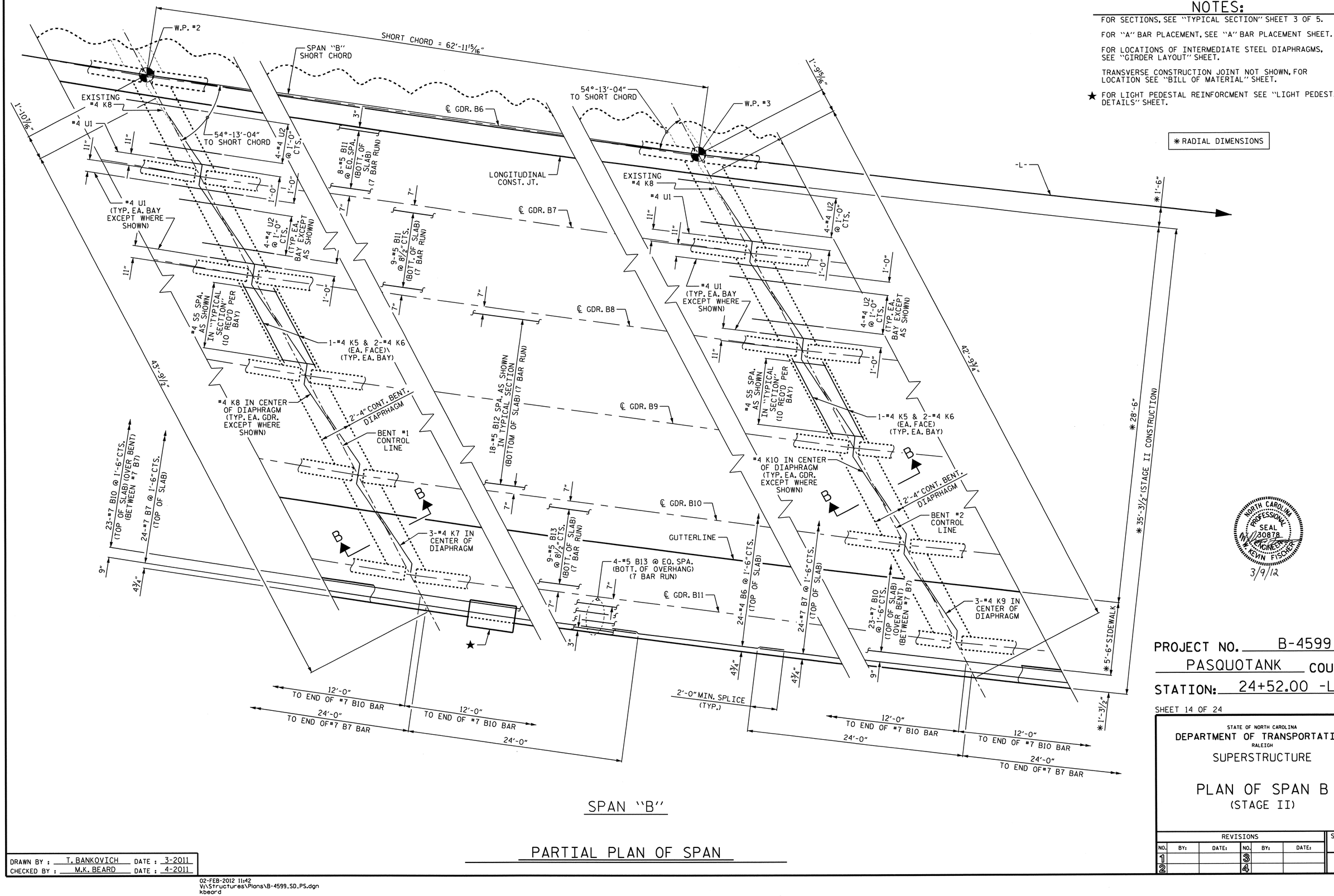
FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

★ FOR LIGHT PEDESTAL REINFORCMENT SEE "LIGHT PEDESTAL DETAILS" SHEET.

✱ RADIAL DIMENSIONS



SPAN "B"

PARTIAL PLAN OF SPAN

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 14 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

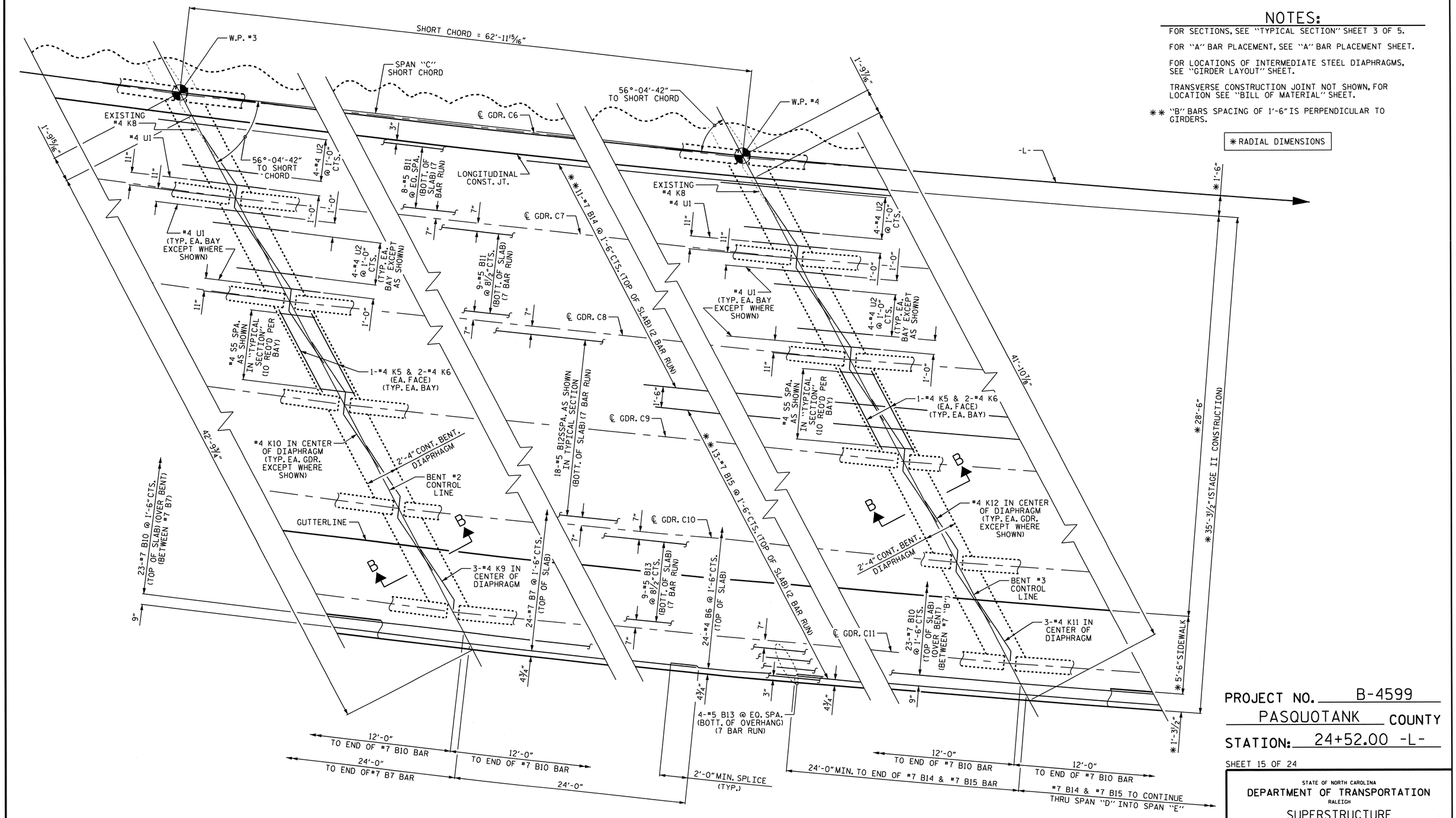
SUPERSTRUCTURE

PLAN OF SPAN B
(STAGE II)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-27
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

02-FEB-2012 11:42
V:\Structures\Plans\B-4599_SD_PS.dgn
kbeard



NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

** "B" BARS SPACING OF 1'-6" IS PERPENDICULAR TO GIRDERS.

* RADIAL DIMENSIONS

SPAN "C"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 15 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN C
(STAGE II)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-28
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

02-FEB-2012 11:42
V:\Structures\Plans\B-4599_SD_PS.dgn
kbeard

NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

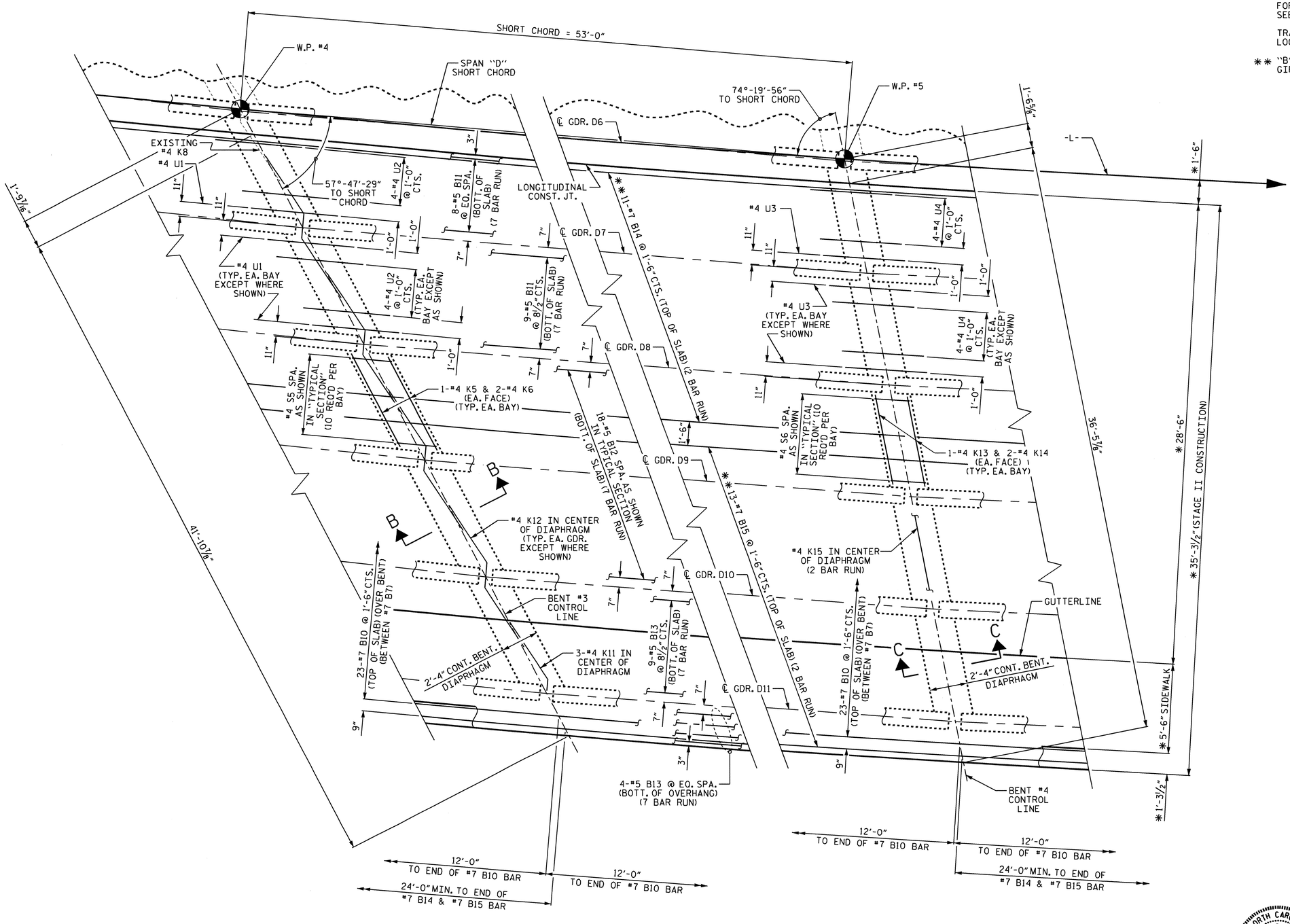
FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

** "B" BARS SPACING OF 1'-6" IS PERPENDICULAR TO GIRDERS.

* RADIAL DIMENSIONS



SPAN "D"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 16 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN D
(STAGE II)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

02-FEB-2012 11:42
V:\Structures\Plans\B-4599_SD_PS.dgn
kbeard

NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

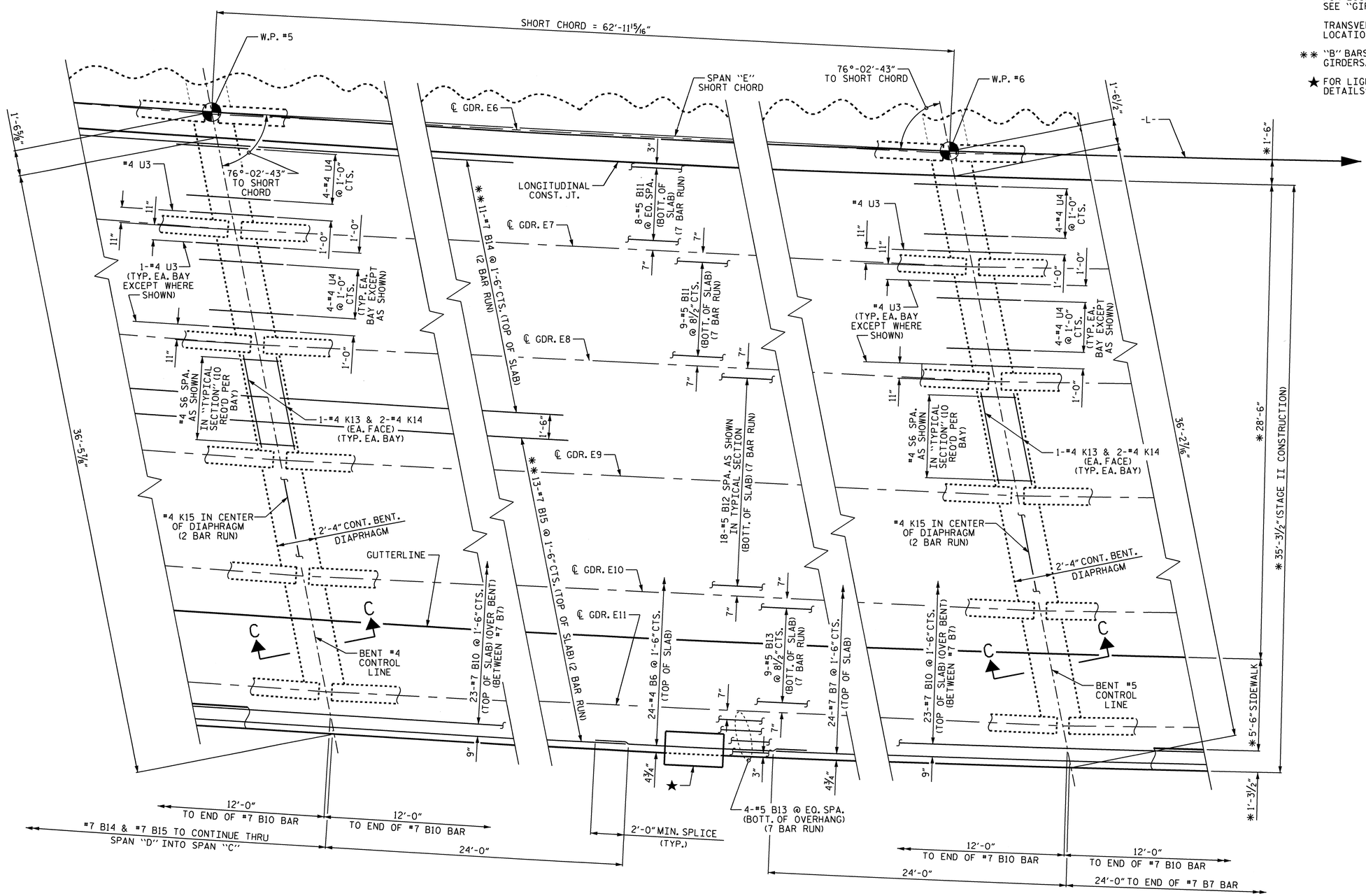
FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

** "B" BARS SPACING OF 1'-6" IS PERPENDICULAR TO GIRDERS.

★ FOR LIGHT PEDESTAL REINFORCMENT SEE "LIGHT PEDESTAL DETAILS" SHEET.

* RADIAL DIMENSIONS



SPAN "E"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 17 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN E
(STAGE II)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-30
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

02-FEB-2012 11:42
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kbeard

NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

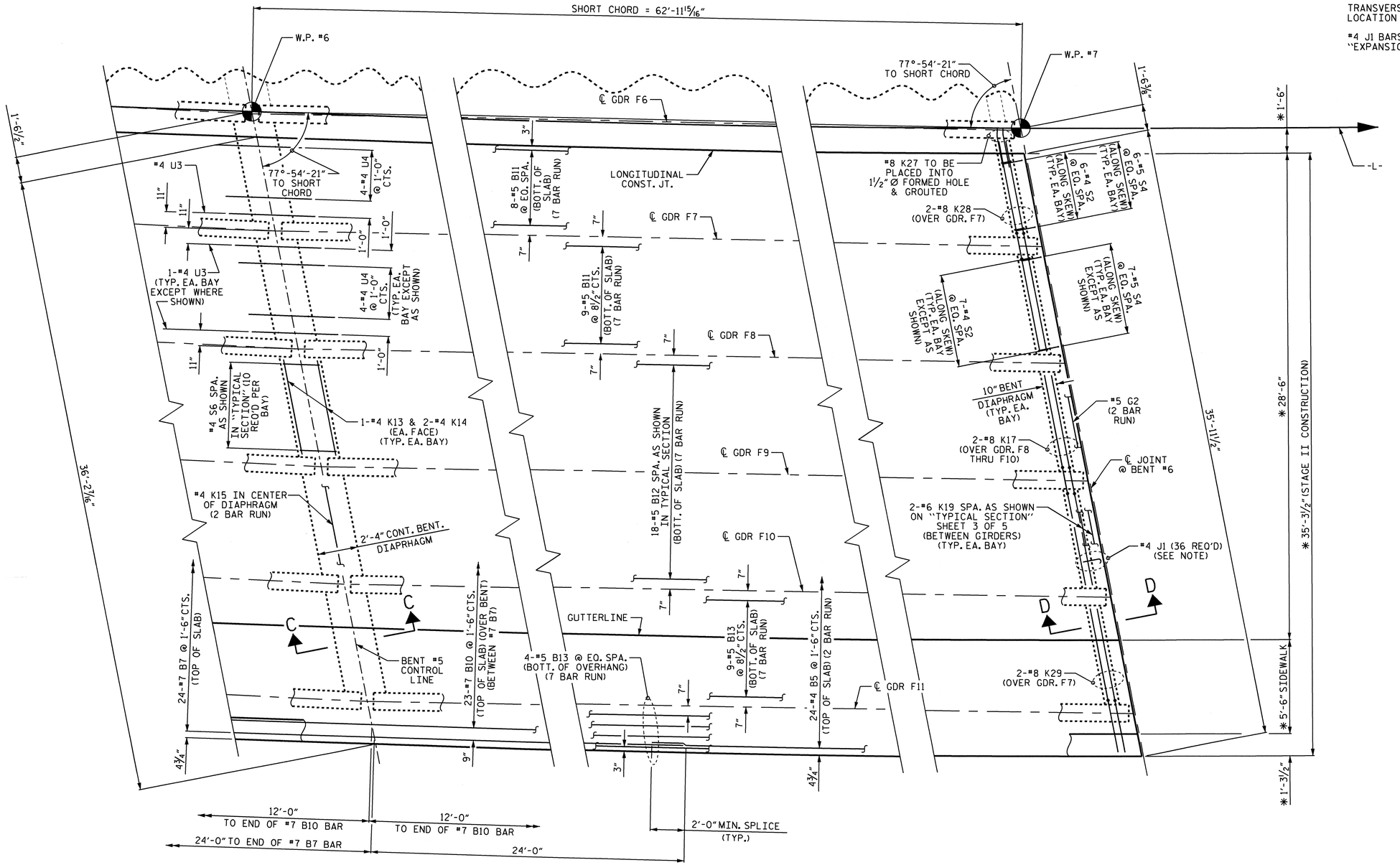
FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

#4 J1 BARS ARE TO BE PLACED AS SPECIFIED ON THE "EXPANSION JOINT SEAL DETAILS" SHEET.

* RADIAL DIMENSIONS



SPAN "F"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 18 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

PLAN OF SPAN F
(STAGE II)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-31
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:00
V:\Structures\Plans\B-4599_SD_PS.dgn
kbeard

NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

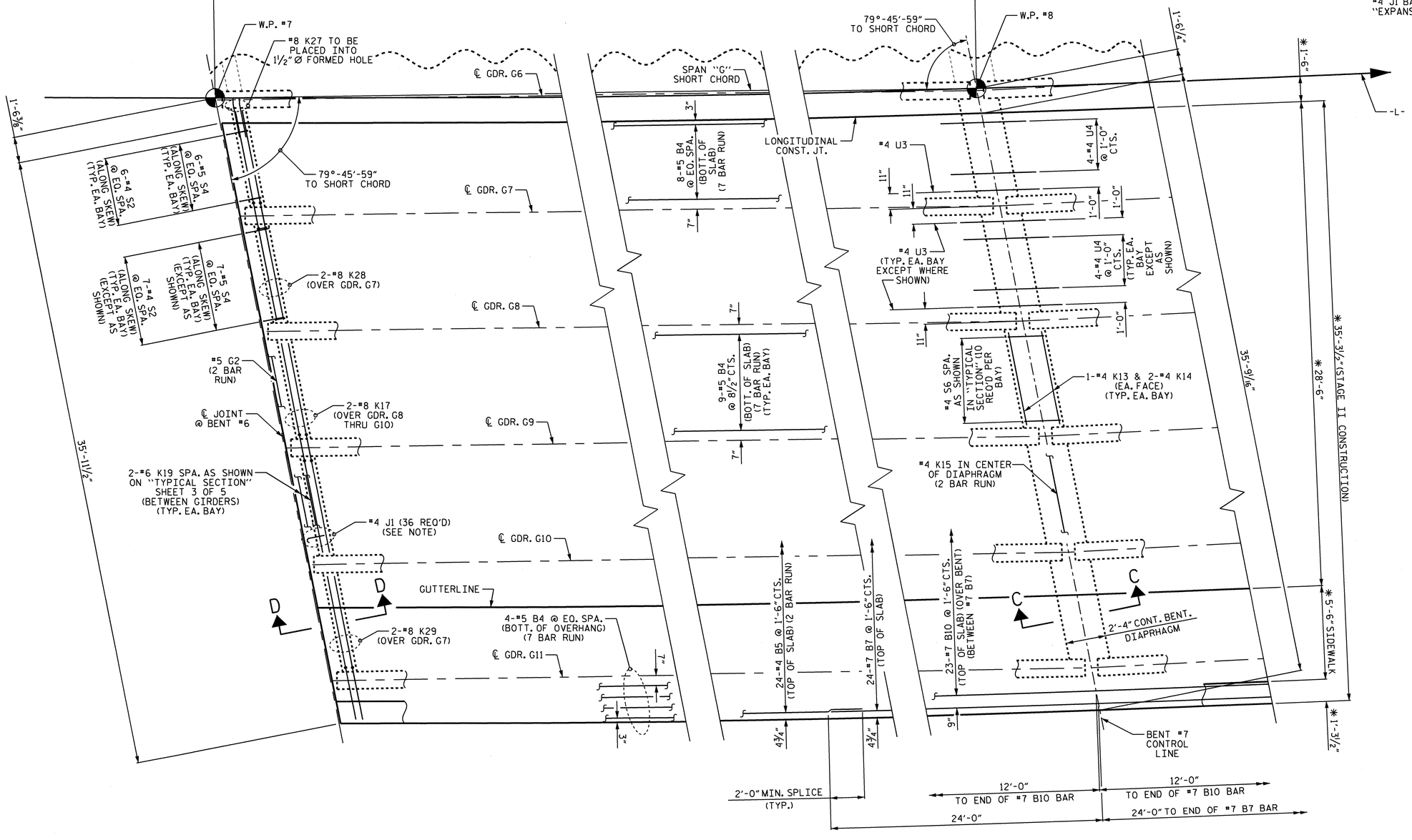
FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

#4 J1 BARS ARE TO BE PLACED AS SPECIFIED ON THE "EXPANSION JOINT SEAL DETAILS" SHEET.

* RADIAL DIMENSIONS



SPAN "G"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 19 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN G
(STAGE II)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-32
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:00
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NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

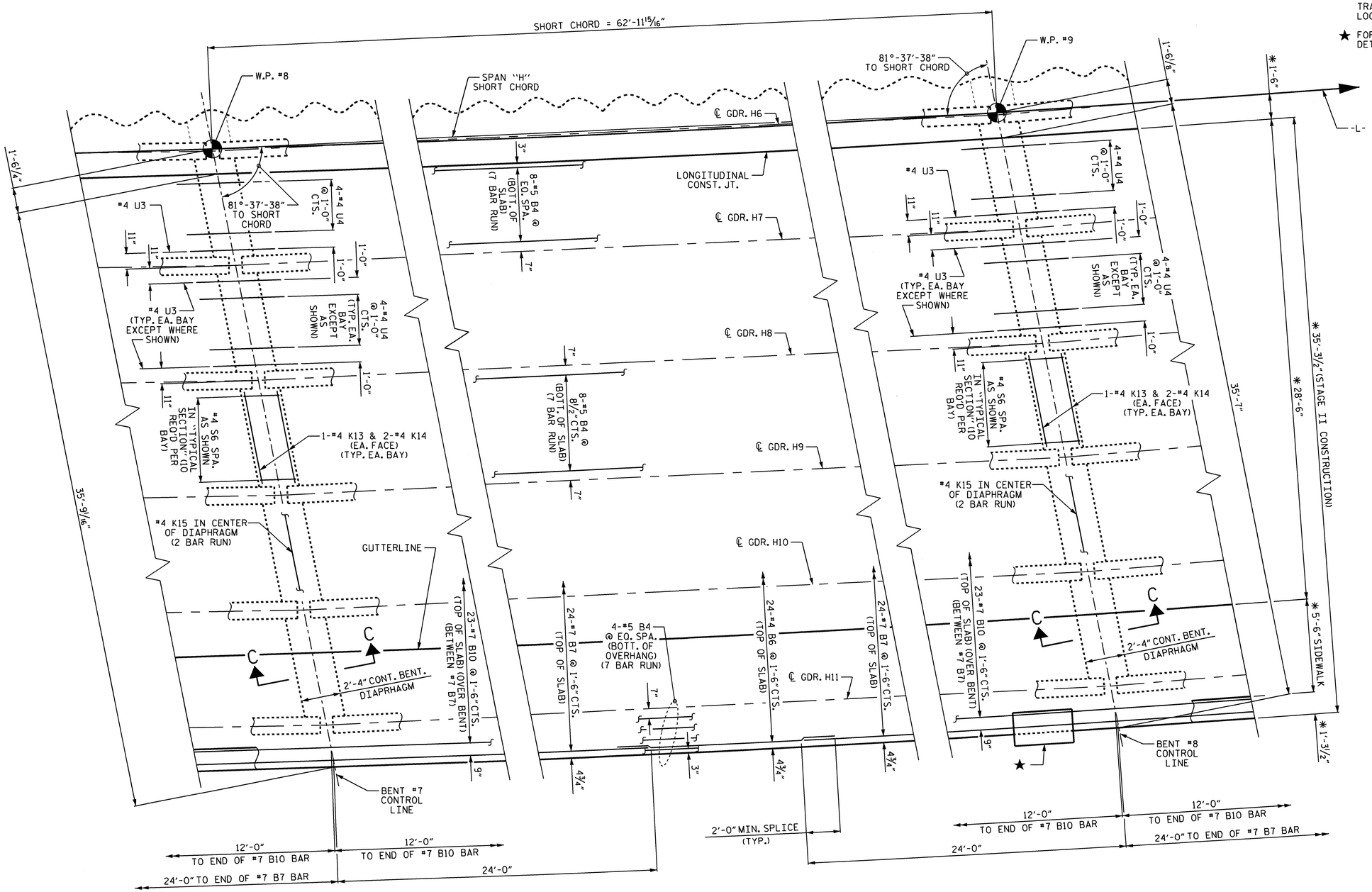
FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

★ FOR LIGHT PEDESTAL REINFORCMENT SEE "LIGHT PEDESTAL DETAILS" SHEET.

✱ RADIAL DIMENSIONS



SPAN "H"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 20 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN H
(STAGE II)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-33
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

02-FEB-2012 11:42
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kbeard

NOTES:

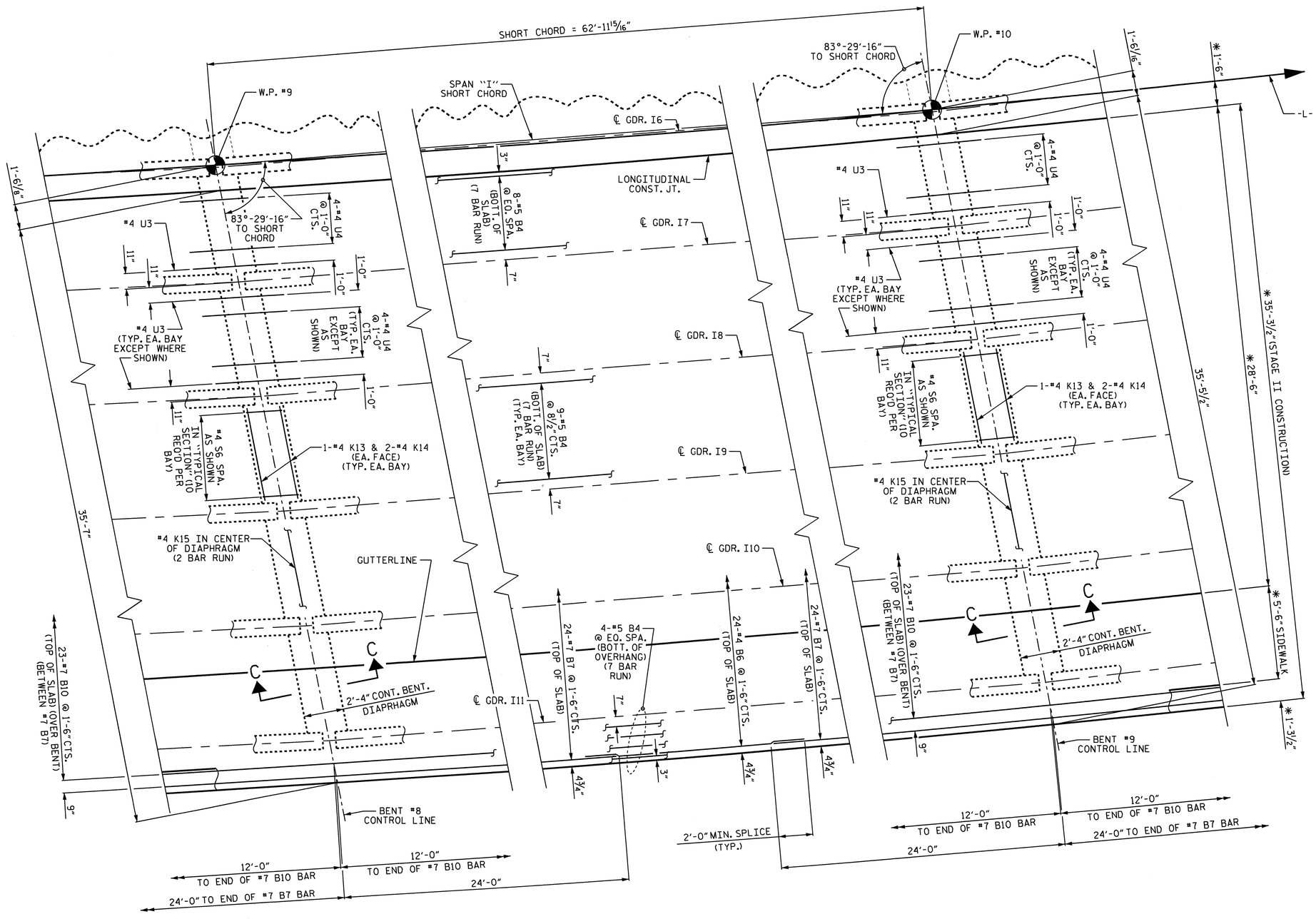
FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

✱ RADIAL DIMENSIONS



SPAN "I"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 21 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN I
(STAGE II)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-34
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

02-FEB-2012 11:42
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kbeard

NOTES:

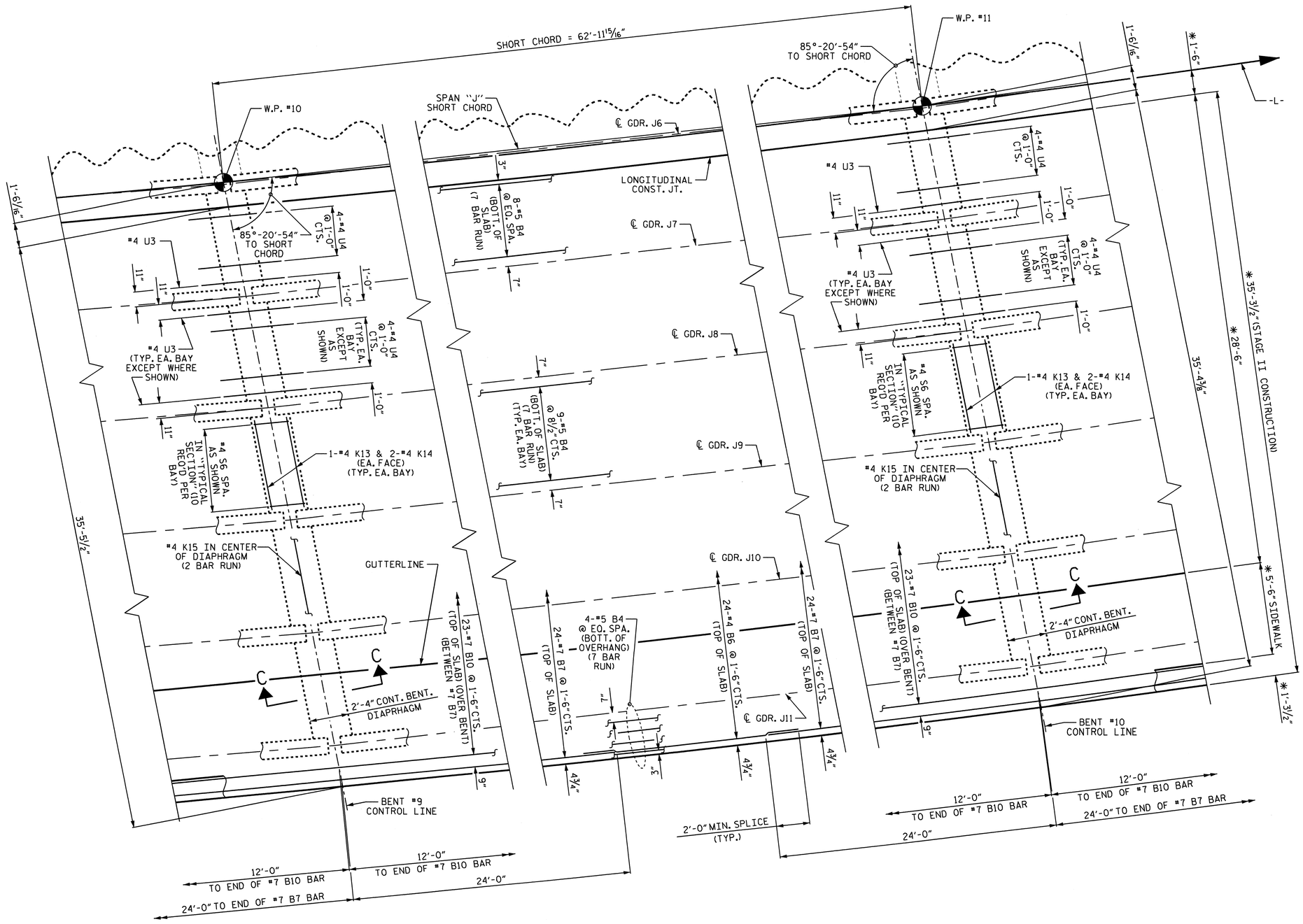
FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

✱ RADIAL DIMENSIONS



SPAN "J"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 22 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN J
(STAGE II)

NORTH CAROLINA PROFESSIONAL SEAL 030178 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-35
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

02-FEB-2012 11:43
V:\Structures\Plans\B-4599_SD_PS.dgn
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NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

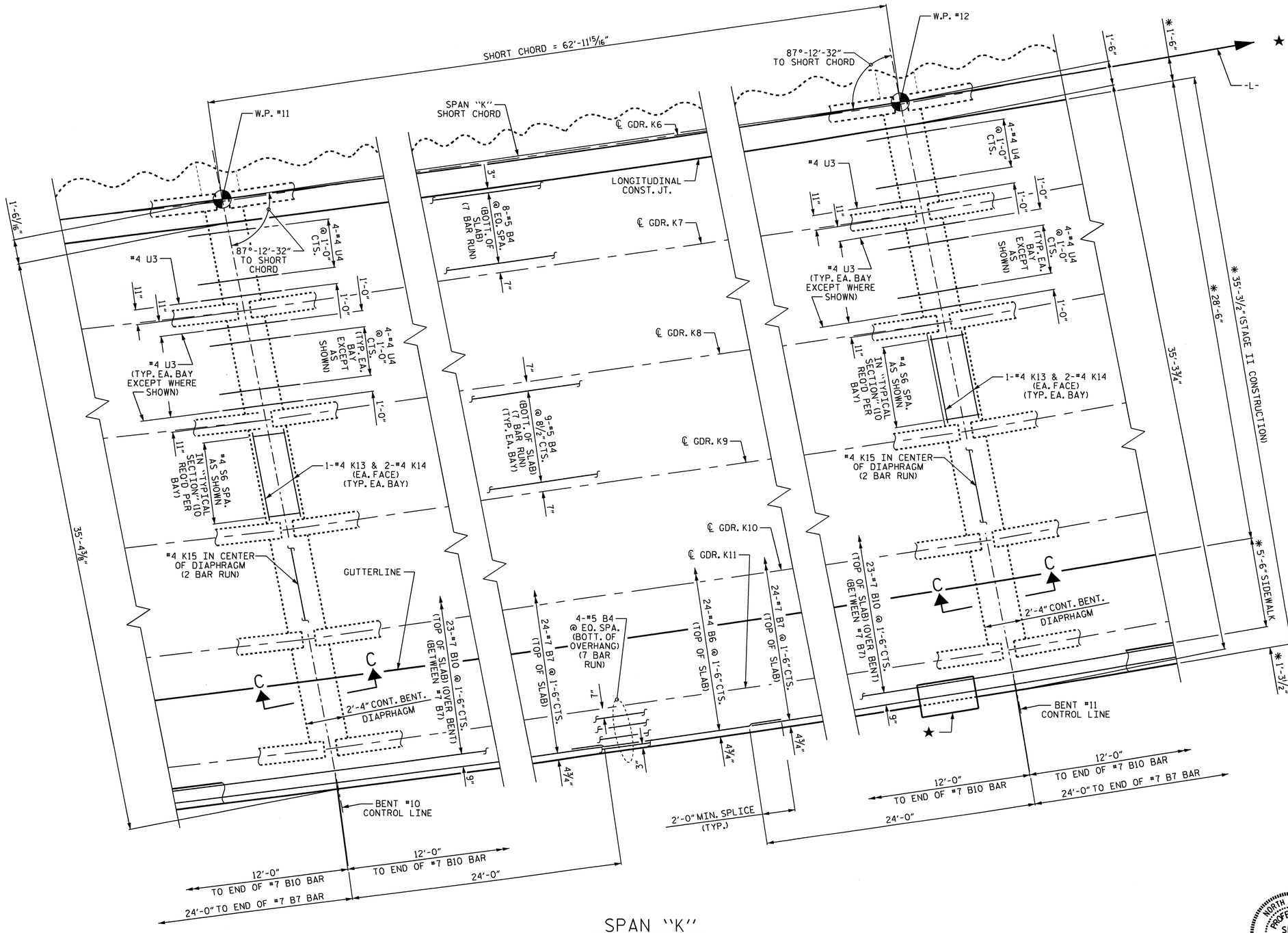
FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN. FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

★ FOR LIGHT PEDESTAL REINFORCMENT SEE "LIGHT PEDESTAL DETAILS" SHEET.

✱ RADIAL DIMENSIONS



SPAN "K"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 23 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

PLAN OF SPAN K
(STAGE II)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-36
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:00
V:\Structures\Plans\B-4599_SD_PS.dgn
kbeard

NOTES:

FOR SECTIONS, SEE "TYPICAL SECTION" SHEET 3 OF 5.

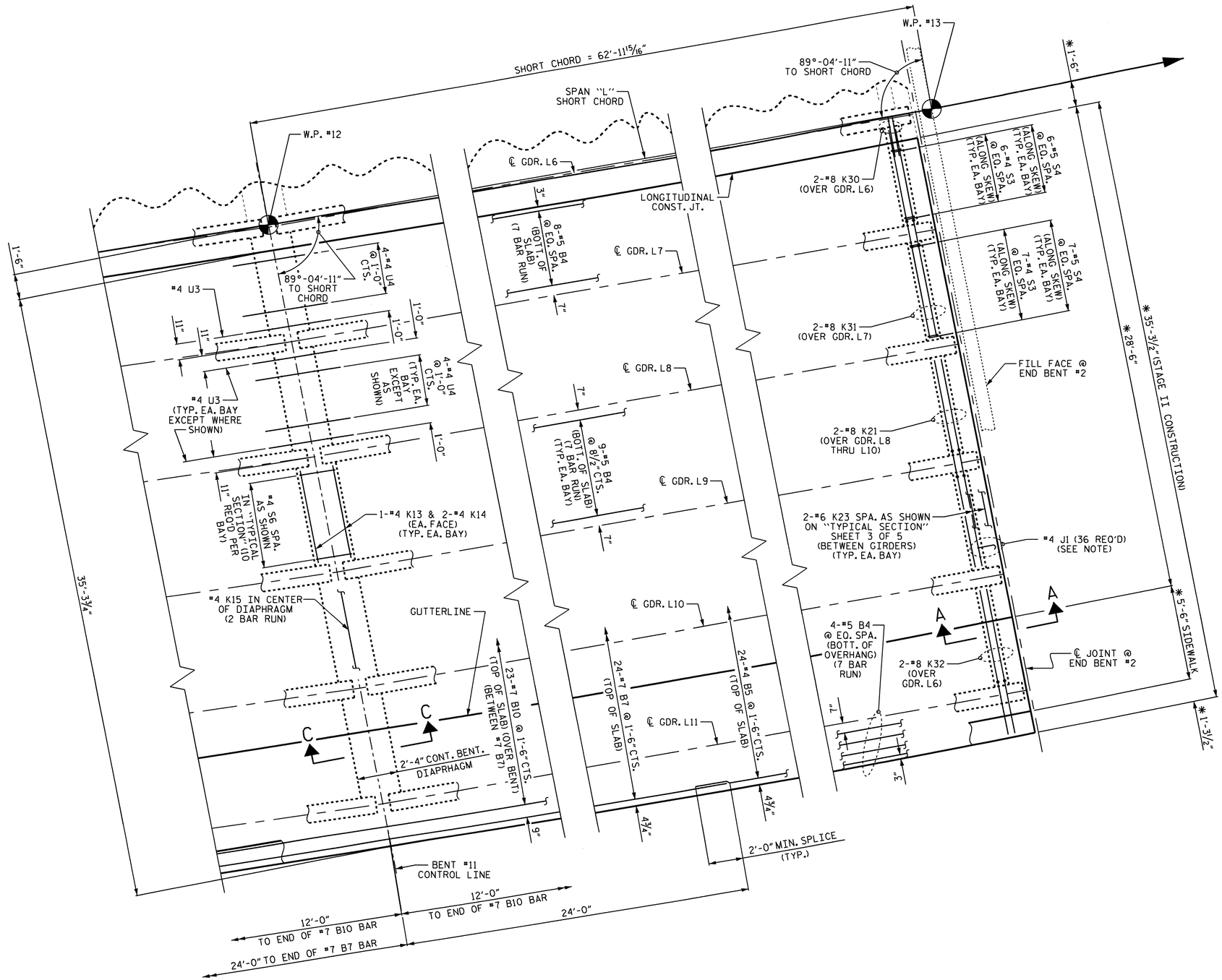
FOR "A" BAR PLACEMENT, SEE "A" BAR PLACEMENT SHEET.

FOR LOCATIONS OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET.

TRANSVERSE CONSTRUCTION JOINT NOT SHOWN, FOR LOCATION SEE "BILL OF MATERIAL" SHEET.

#4 J1 BARS ARE TO BE PLACED AS SPECIFIED ON THE "EXPANSION JOINT SEAL DETAILS" SHEET.

✱ RADIAL DIMENSIONS



SPAN "L"

PARTIAL PLAN OF SPAN

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 24 OF 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

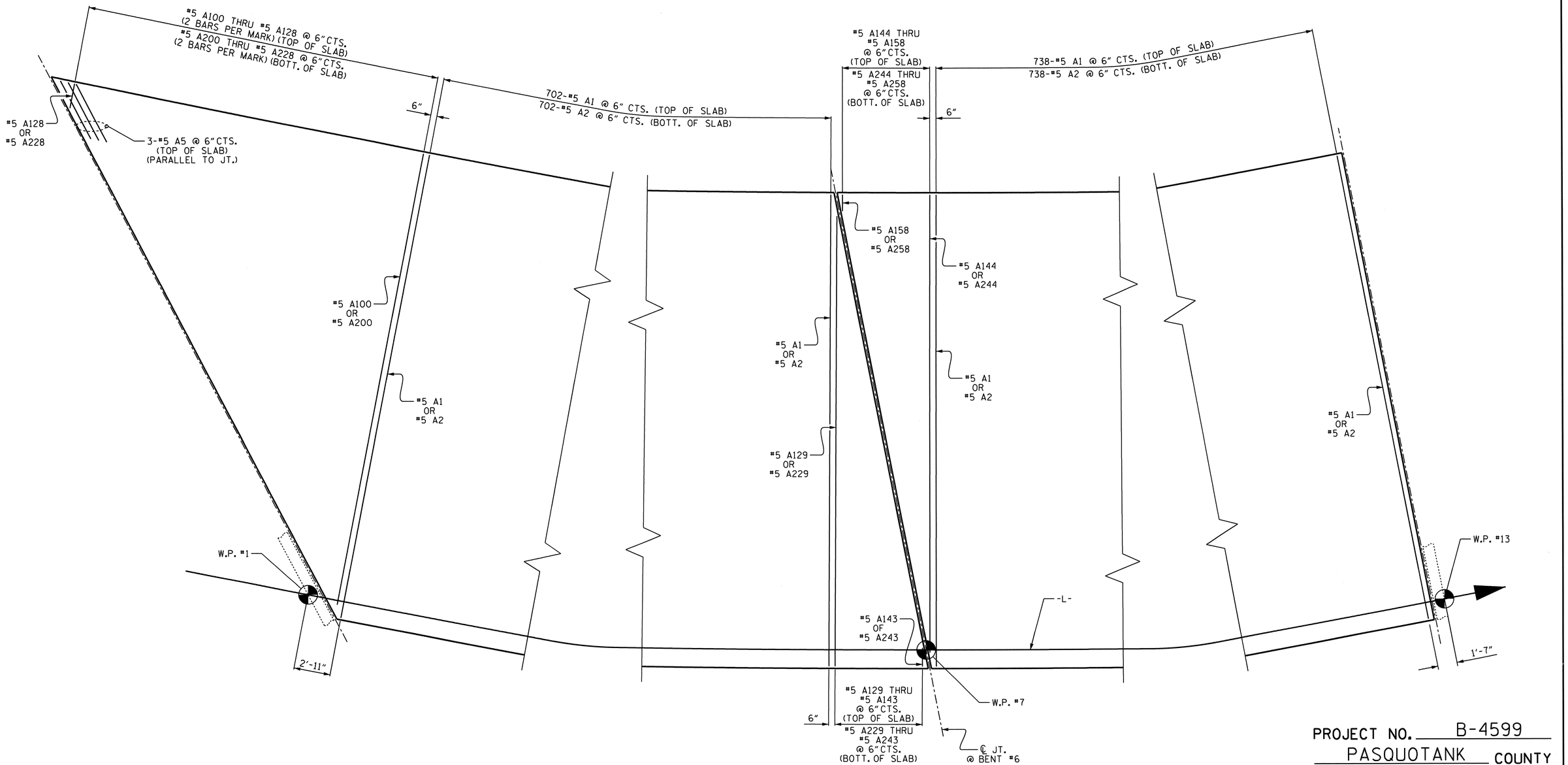
PLAN OF SPAN L
(STAGE II)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-37
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : T. BANKOVICH DATE : 3-2011
CHECKED BY : M.K. BEARD DATE : 4-2011

27-JAN-2012 14:00
V:\Structures\Plans\B-4599_SD_PS.dgn
kbeard



"A" BAR PLACEMENT

#5 "A" BARS TO BE PLACED RADIALLY ALONG LEFT OUTSIDE EDGE OF SUPERSTRUCTURE.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

"A" BAR PLACEMENT
(STAGE I)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-38
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 4-2011
CHECKED BY : M.K. BEARD DATE : 5-2011

18-APR-2012 12:47
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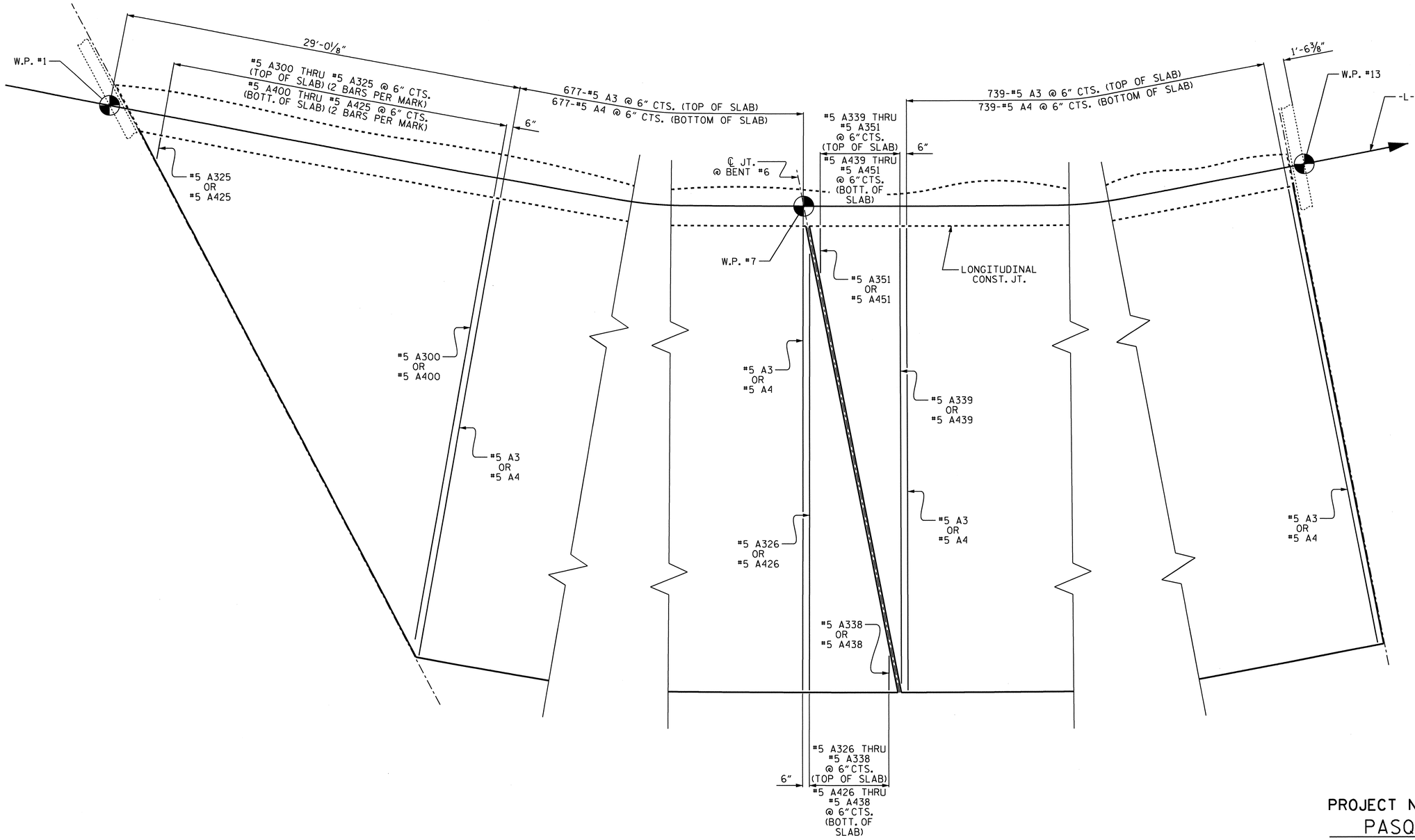
chunt



"A" BAR PLACEMENT

#5 "A" BARS TO BE PLACED RADIALLY ALONG LEFT OUTSIDE EDGE OF SUPERSTRUCTURE.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

"A" BAR PLACEMENT
(STAGE II)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-39
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : T. BANKOVICH DATE : 4-2011
CHECKED BY : M.K. BEARD DATE : 5-2011

02-FEB-2012 11:43
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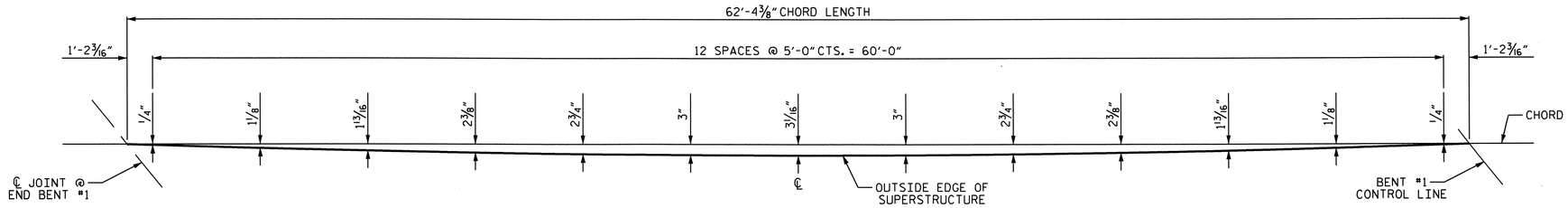
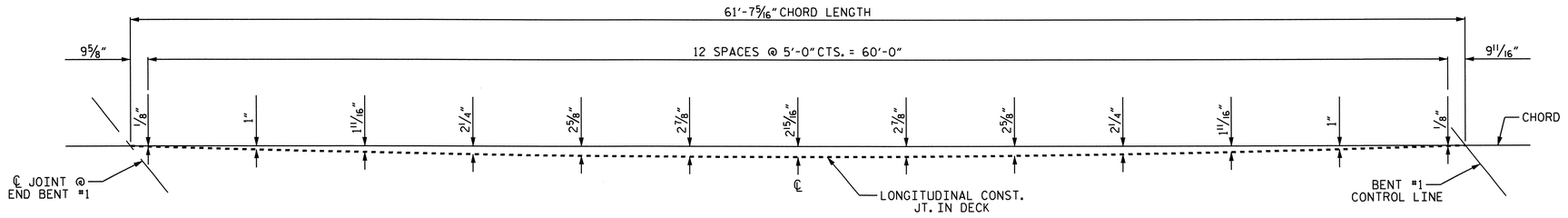
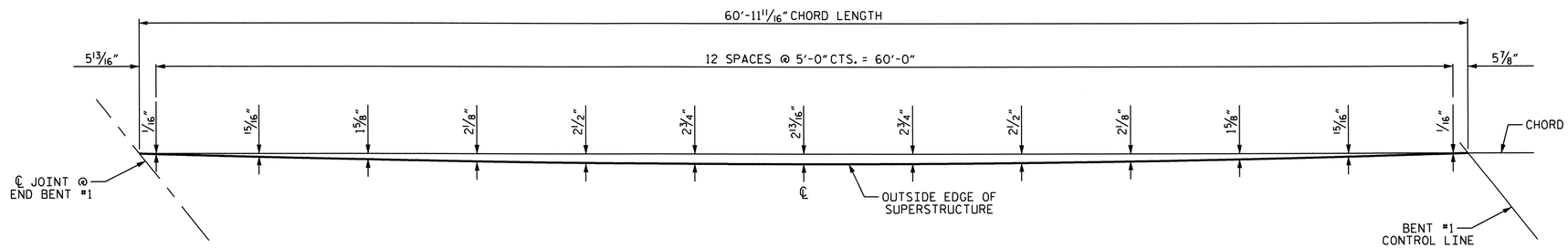
kbeard



SPAN "A" OUTSIDE LEFT OVERHANG ARC OFFSETS



SPAN "A" LONGITUDINAL CONST. JOINT ARC OFFSETS



SPAN "A" OUTSIDE RIGHT OVERHANG ARC OFFSETS

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

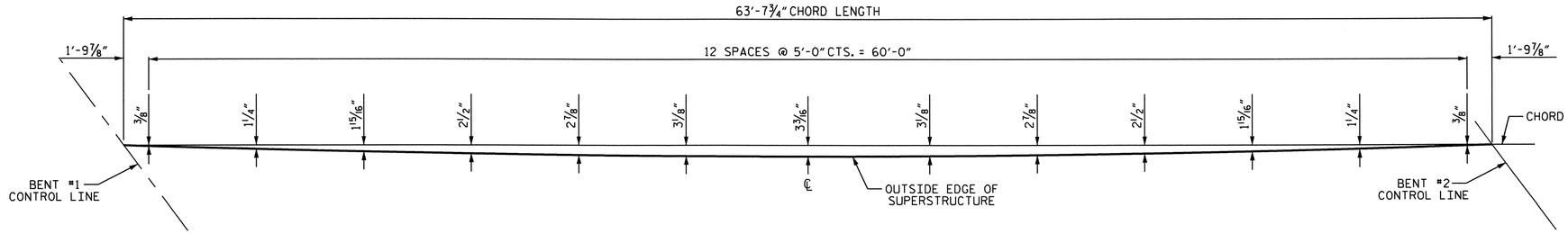
ARC OFFSETS
(SPAN A)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-40
1			3			TOTAL SHEETS
2			4			125

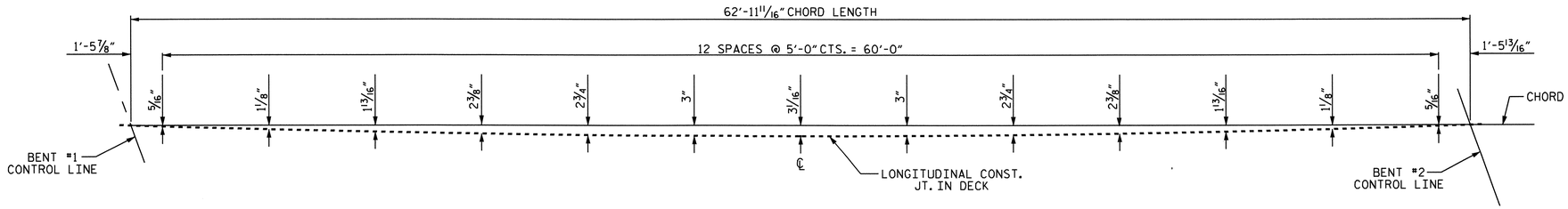
NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : R. G. EMERSON DATE : 06/11
CHECKED BY : M. K. BEARD DATE : 07/11

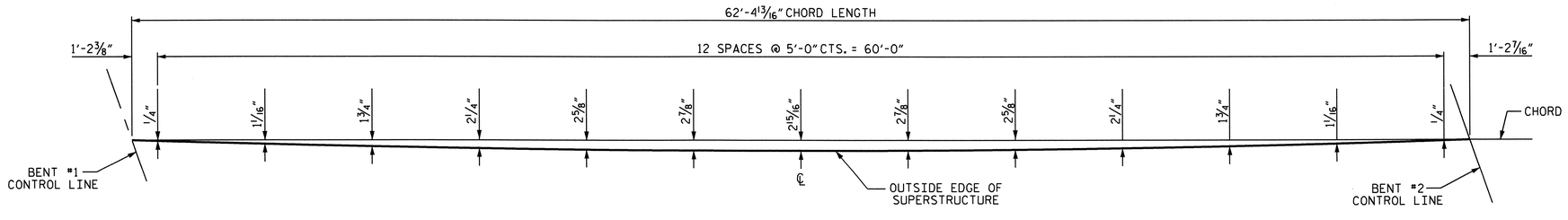
27-JAN-2012 13:58
V:\Structures\Plans\B-4599_SD_ARC.dgn
kbeard



SPAN "B" OUTSIDE LEFT OVERHANG ARC OFFSETS



SPAN "B" LONGITUDINAL CONST. JOINT ARC OFFSETS



SPAN "B" OUTSIDE RIGHT OVERHANG ARC OFFSETS

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

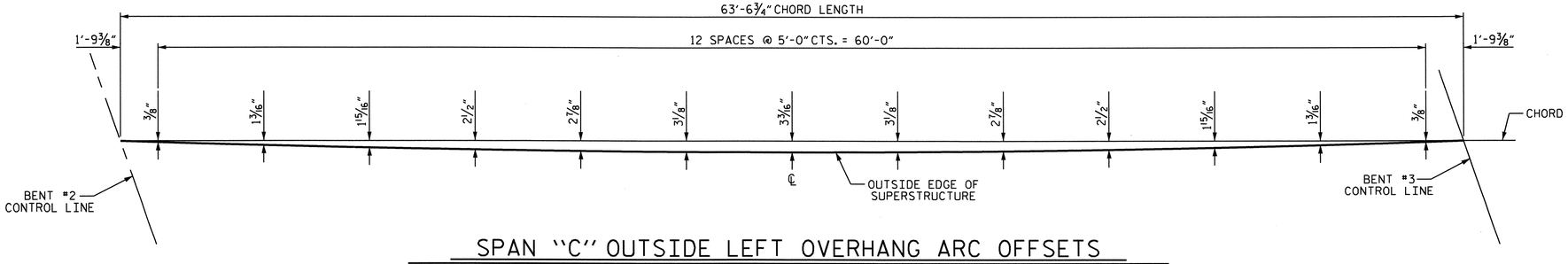
ARC OFFSETS
(SPAN B)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-41
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : R. G. EMERSON DATE : 06/11
CHECKED BY : M. K. BEARD DATE : 07/11

27-JAN-2012 13:58
V:\Structures\Plans\B-4599_SD_ARC.dgn
kbeard



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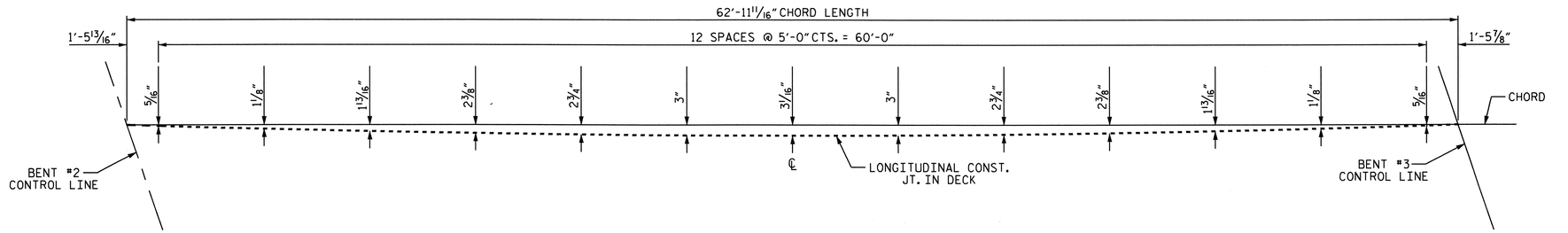

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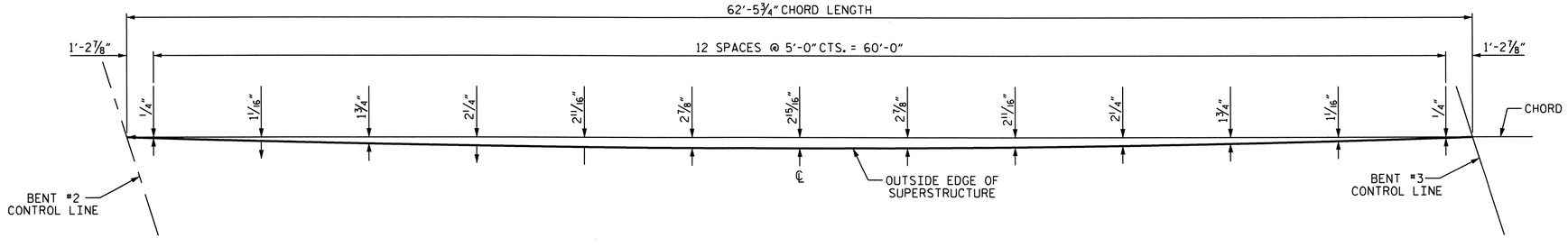


SPAN "C" OUTSIDE RIGHT OVERHANG ARC OFFSETS

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 3 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

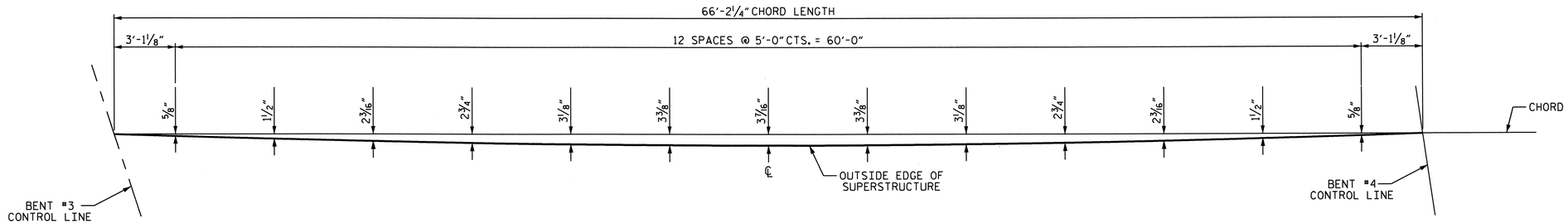
ARC OFFSETS
(SPAN C)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-42
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : R. G. EMERSON DATE : 06/11
CHECKED BY : M. K. BEARD DATE : 07/11

27-JAN-2012 13:58
V:\Structures\Plans\B-4599_SD_ARC.dgn
kbeard



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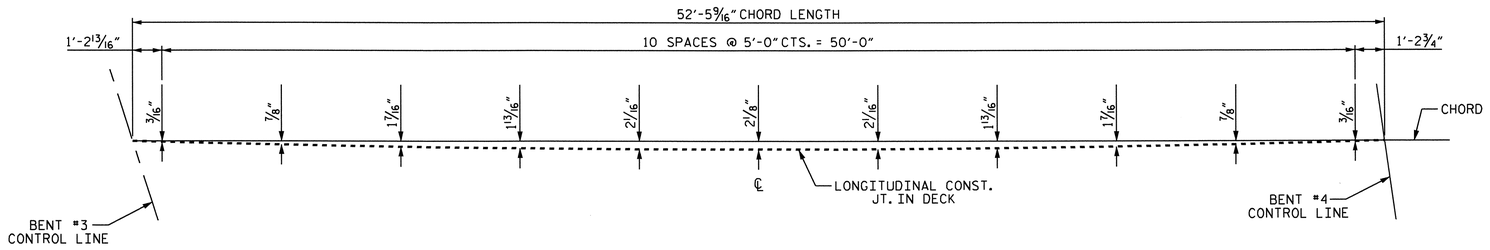

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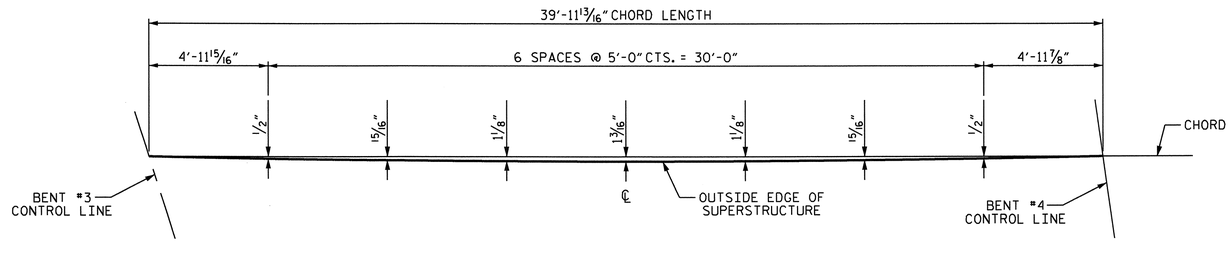


SPAN "D" OUTSIDE RIGHT OVERHANG ARC OFFSETS

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 4 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

ARC OFFSETS
(SPAN D)

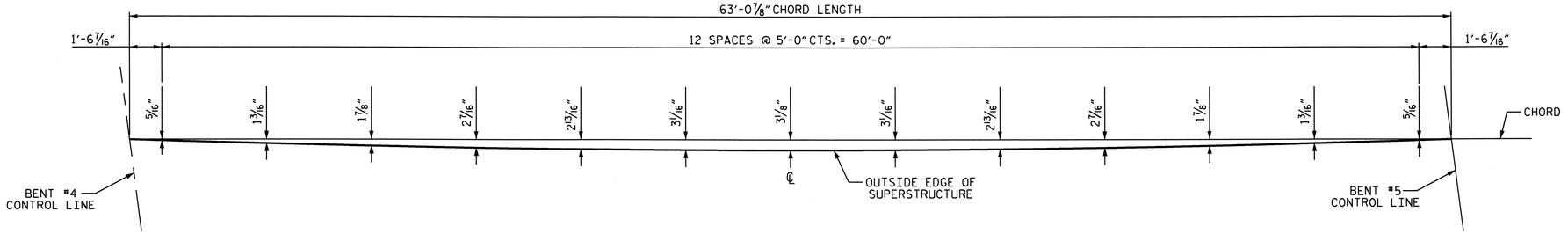
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-43
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER

3/9/12

DRAWN BY : R. G. EMERSON DATE : 06/11
CHECKED BY : M. K. BEARD DATE : 07/11

27-JAN-2012 13:58
V:\Structures\Plans\B-4599_SD_ARC.dgn
kbeard



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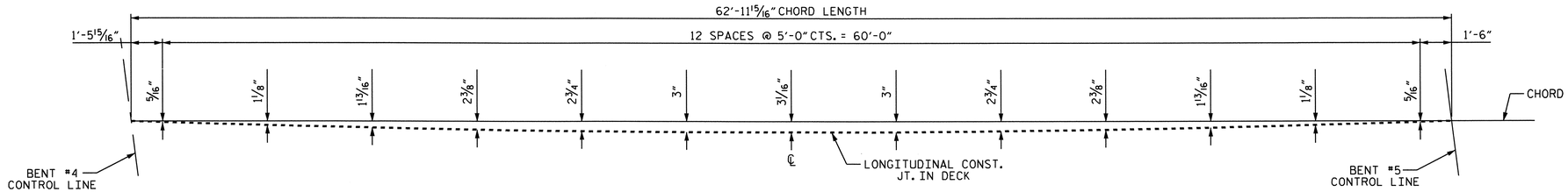

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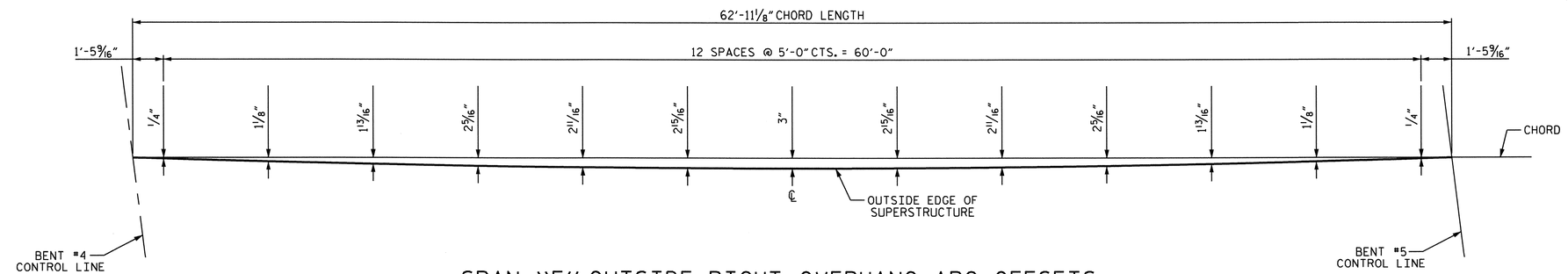


SPAN "E" OUTSIDE RIGHT OVERHANG ARC OFFSETS

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 5 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

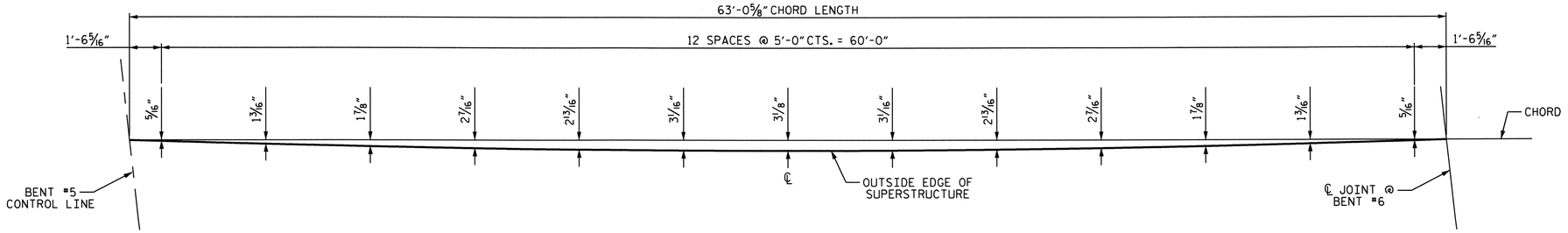
ARC OFFSETS
(SPAN E)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-44
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : R. G. EMERSON DATE : 06/11
CHECKED BY : M. K. BEARD DATE : 07/11

27-JAN-2012 13:58
V:\Structures\Plans\B-4599_SD_ARC.dgn
kbeard



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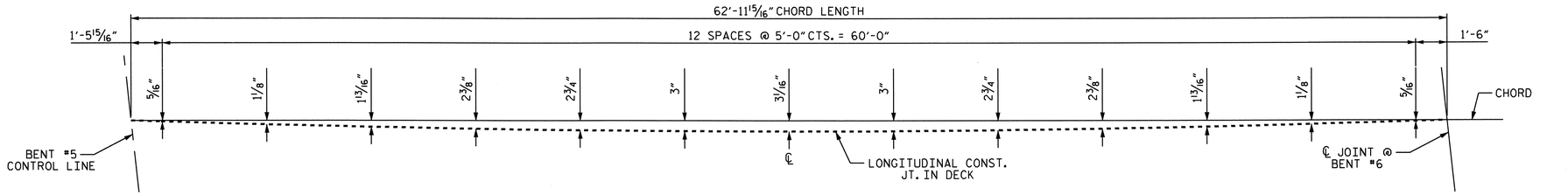

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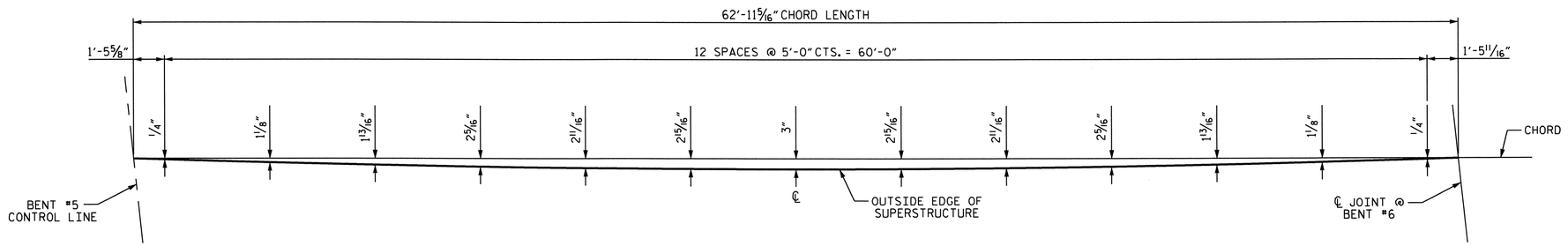

SPAN "F" OUTSIDE RIGHT OVERHANG ARC OFFSETS

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 6 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

ARC OFFSETS
(SPAN F)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-45
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 030879 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : R. G. EMERSON DATE : 06/11
CHECKED BY : M. K. BEARD DATE : 07/11

27-JAN-2012 13:58
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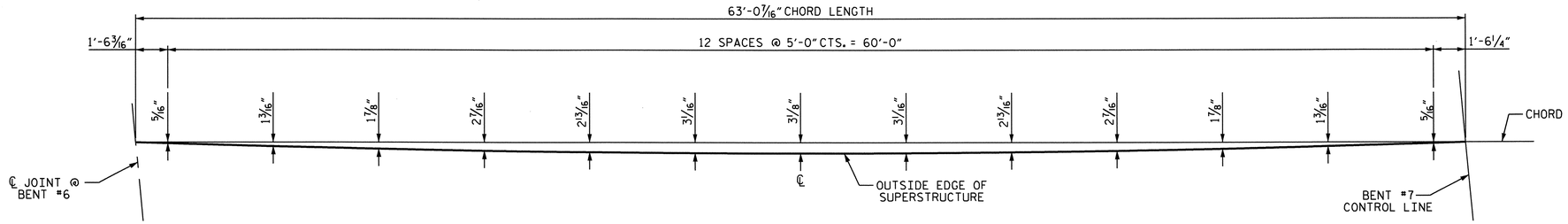
kbeard



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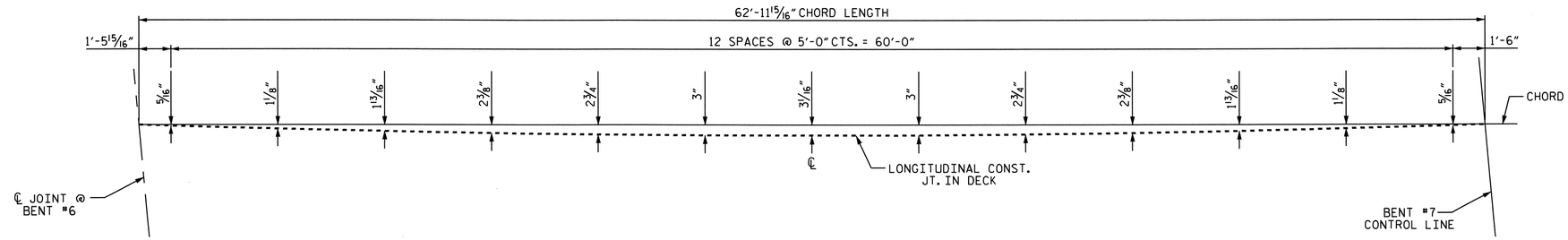
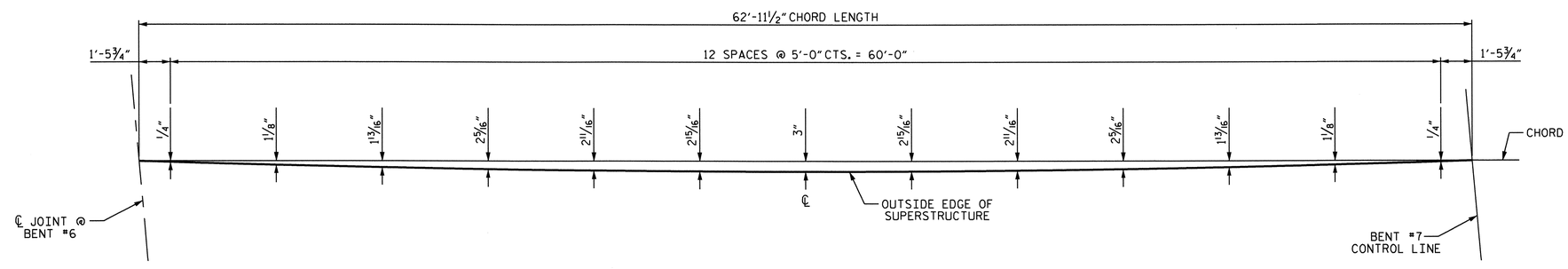


SPAN "G" LONGITUDINAL CONST. JOINT ARC OFFSETS



SPAN "G" OUTSIDE RIGHT OVERHANG ARC OFFSETS

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 7 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

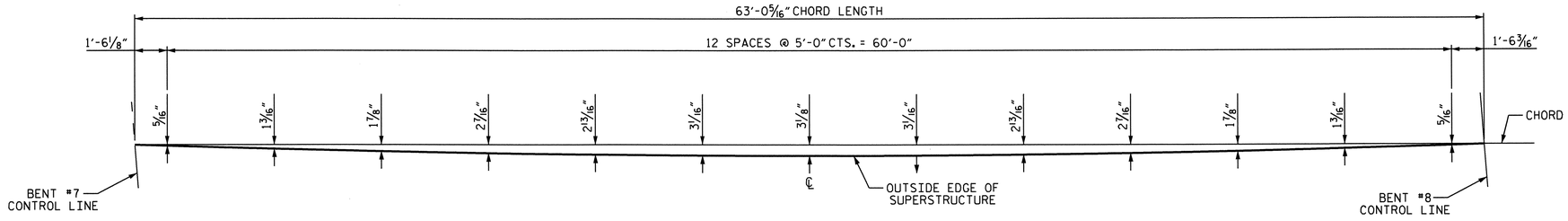
ARC OFFSETS
(SPAN G)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-46
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 030878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : R. G. EMERSON DATE : 06/11
CHECKED BY : M. K. BEARD DATE : 07/11

27-JAN-2012 13:58
V:\Structures\Plans\B-4599_SD_ARC.dgn
kbeard



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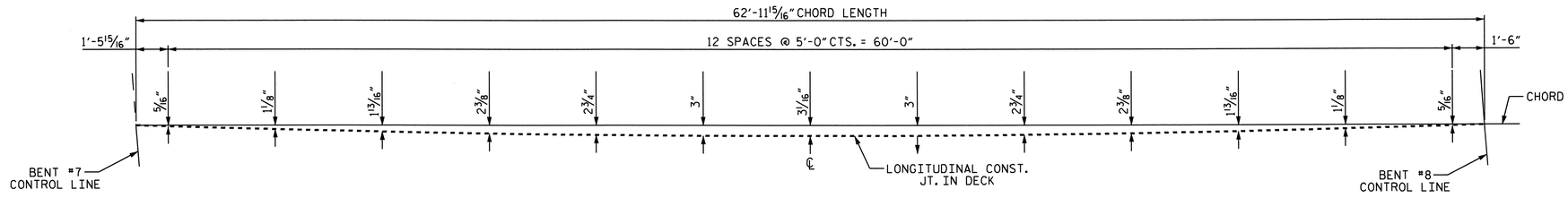

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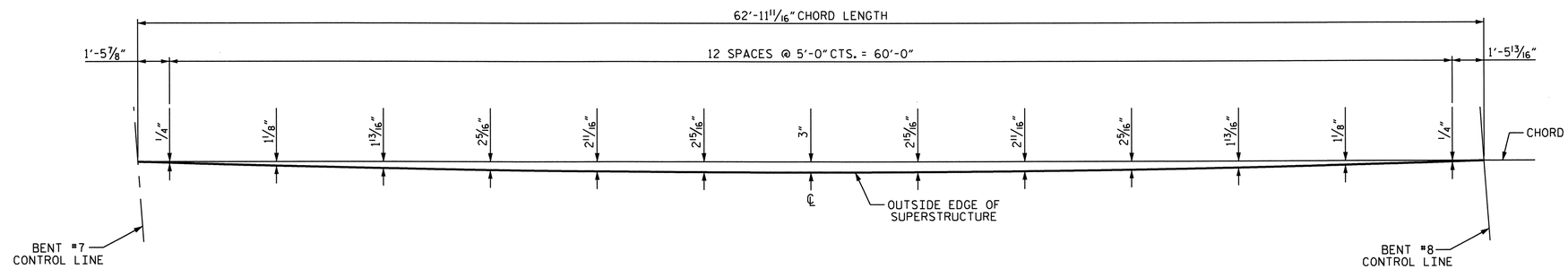

SPAN "H" OUTSIDE RIGHT OVERHANG ARC OFFSETS

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 8 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

ARC OFFSETS
(SPAN H)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-47
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : R. G. EMERSON DATE : 06/11
CHECKED BY : M. K. BEARD DATE : 07/11

27-JAN-2012 13:58
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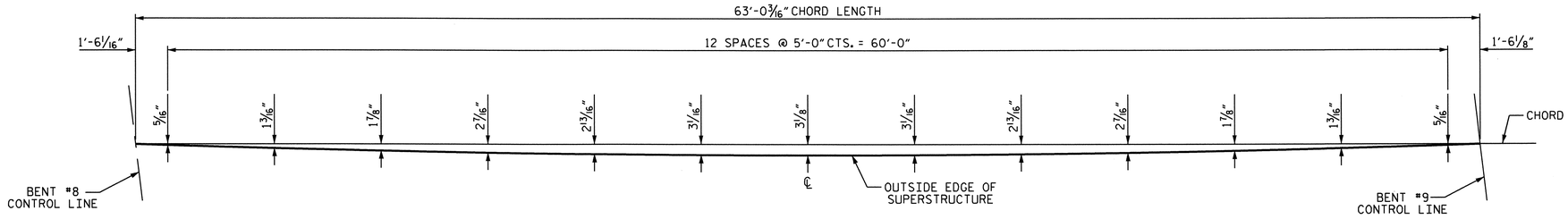
kbeard



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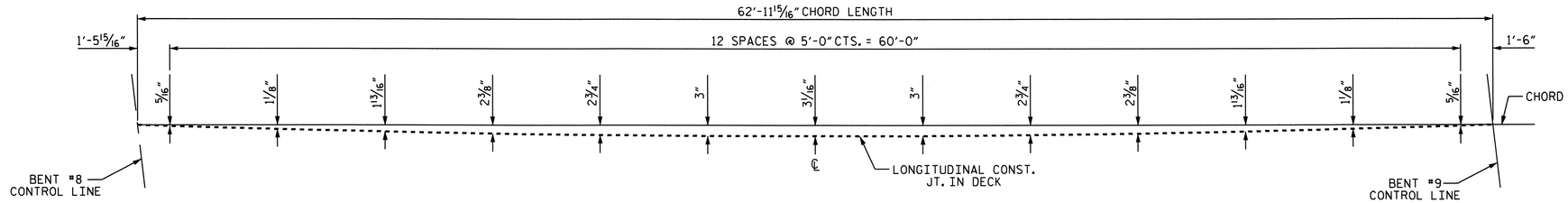

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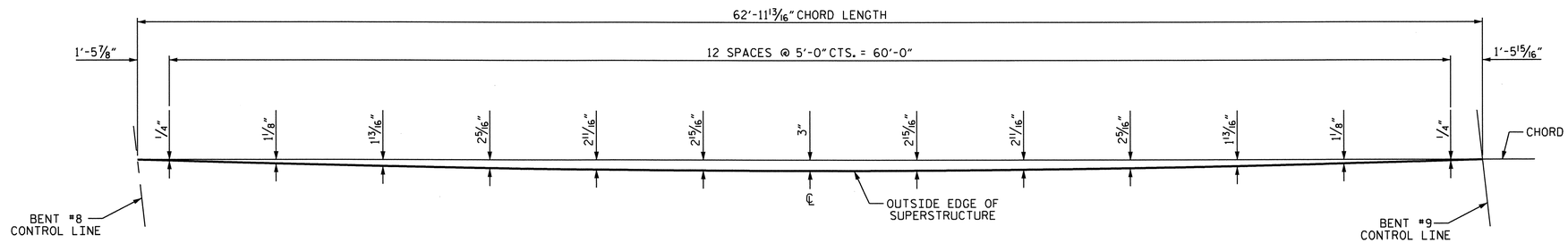

SPAN "I" OUTSIDE RIGHT OVERHANG ARC OFFSETS

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 9 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

ARC OFFSETS
(SPAN I)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-48
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : R. G. EMERSON DATE : 06/11
CHECKED BY : M. K. BEARD DATE : 07/11

27-JAN-2012 13:58
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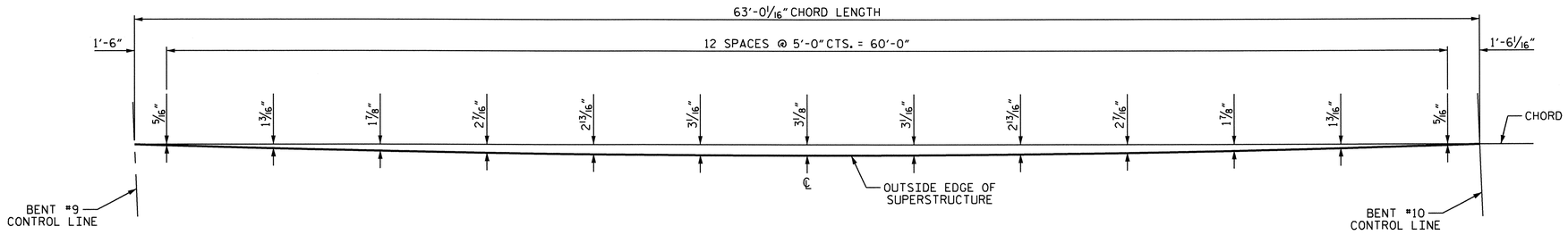
kbeard



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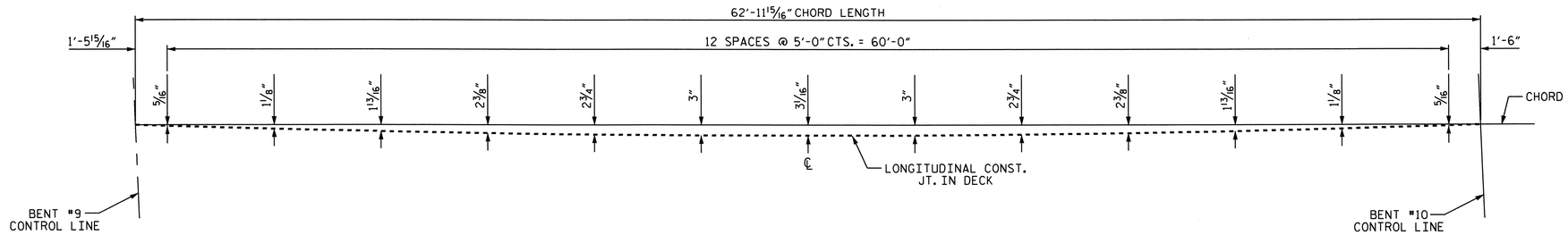
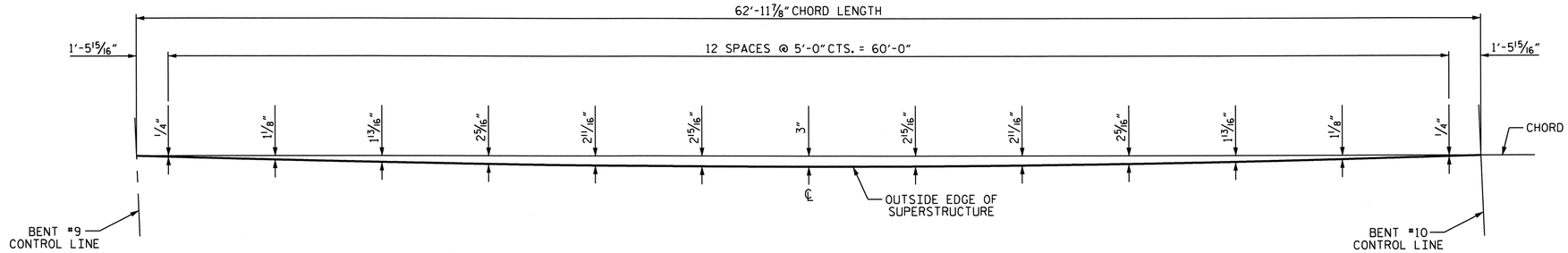


SPAN "J" LONGITUDINAL CONST. JOINT ARC OFFSETS



SPAN "J" OUTSIDE RIGHT OVERHANG ARC OFFSETS

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 10 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

ARC OFFSETS
(SPAN J)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-49
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : R. G. EMERSON DATE : 06/11
CHECKED BY : M. K. BEARD DATE : 07/11

27-JAN-2012 13:58
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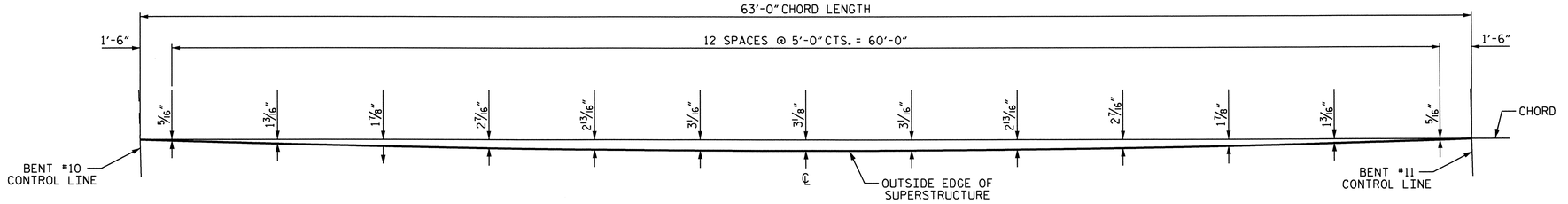

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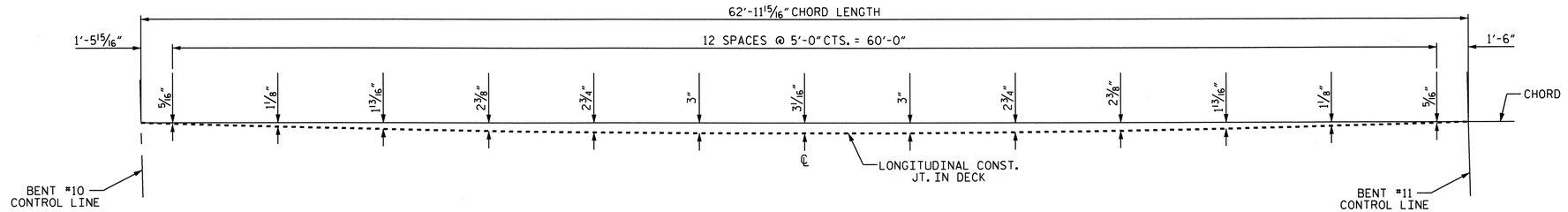

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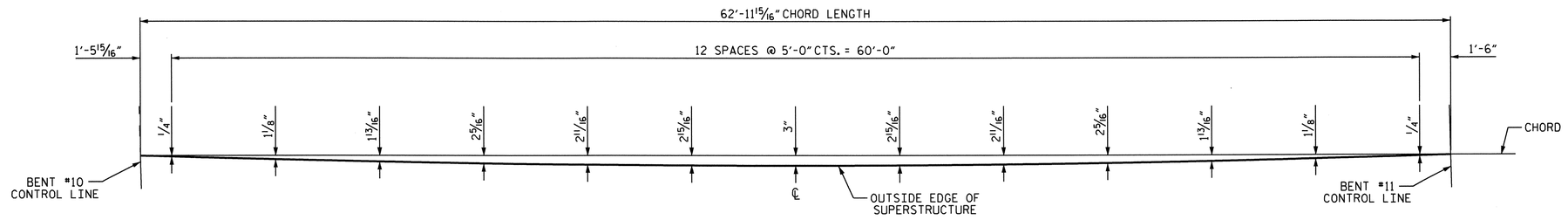

SPAN "K" OUTSIDE RIGHT OVERHANG ARC OFFSETS

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 11 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

ARC OFFSETS
(SPAN K)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-50
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : R. G. EMERSON DATE : 06/11
CHECKED BY : M. K. BEARD DATE : 07/11

27-JAN-2012 13:58
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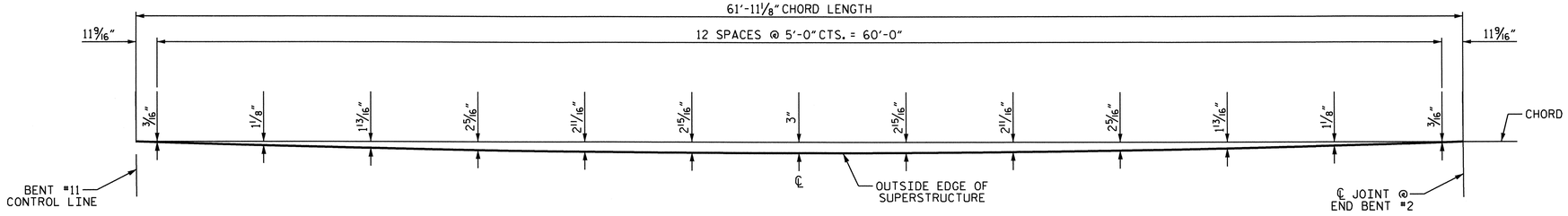

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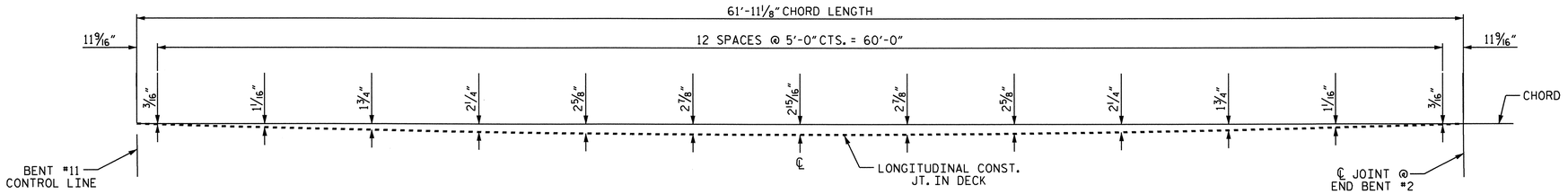
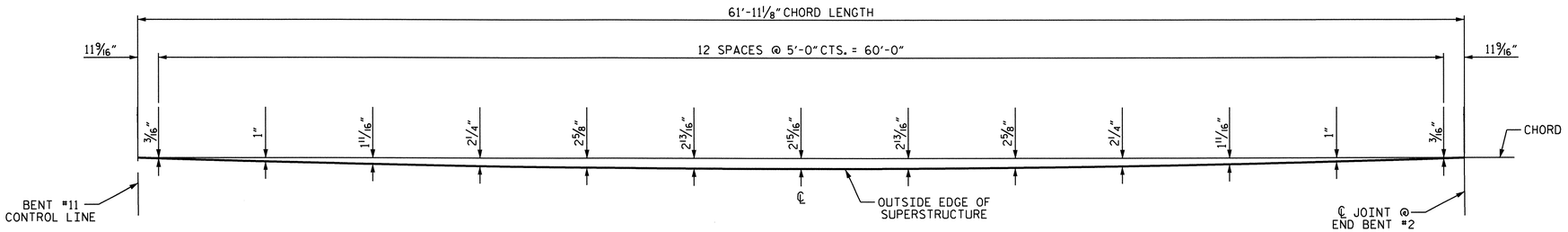


SPAN "L" LONGITUDINAL CONST. JOINT ARC OFFSETS



SPAN "L" OUTSIDE RIGHT OVERHANG ARC OFFSETS

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 12 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

ARC OFFSETS
(SPAN L)

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER M. KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-51
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : R. G. EMERSON DATE : 06/11
CHECKED BY : M. K. BEARD DATE : 07/11

27-JAN-2012 13:58
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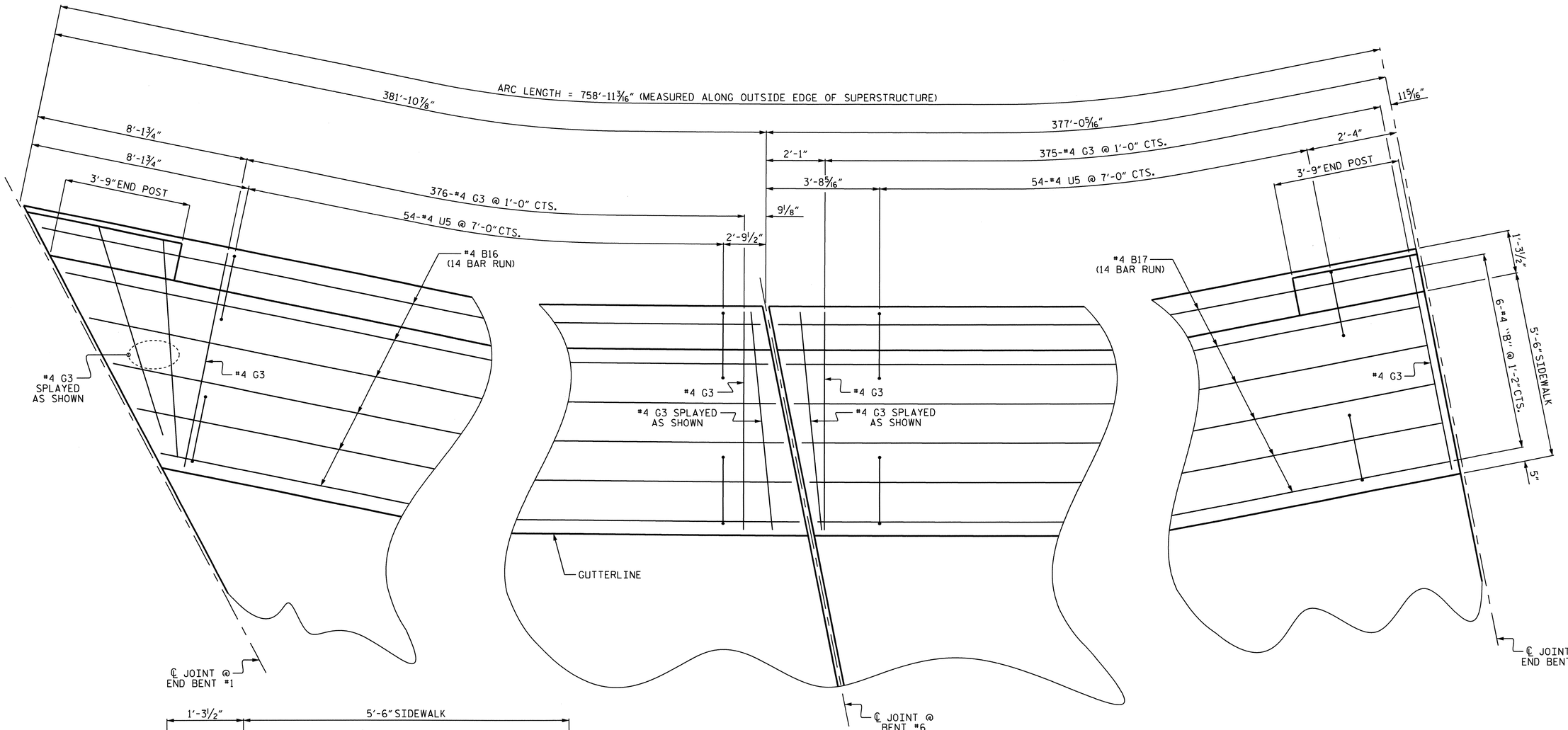
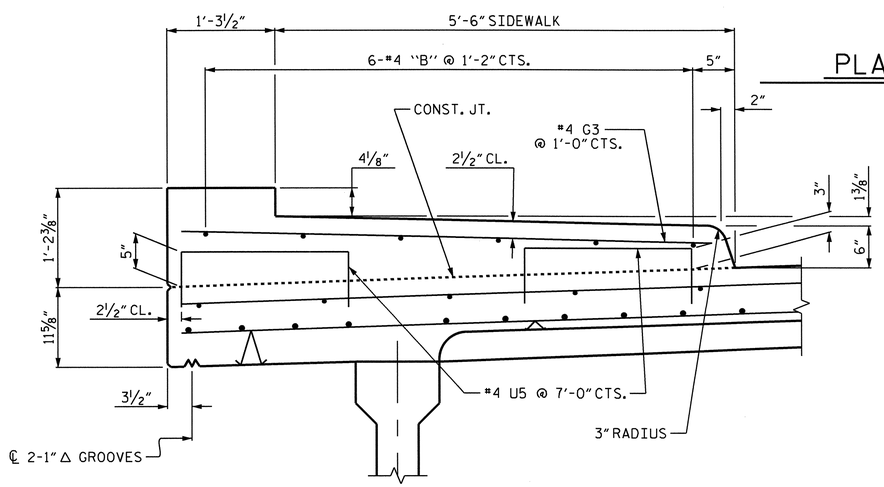
kbeard



PLAN OF SIDEWALK



SECTION THRU SIDEWALK

NOTES:

THE U5 BARS MAY BE PUSHED INTO GREEN CONCRETE AFTER SPAN HAS BEEN SCREEDED OFF.

SIDEWALK IN A CONTINUOUS UNIT SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THE UNIT HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.

ALL REINFORCING STEEL IN SIDEWALK SHALL BE EPOXY COATED.

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

#4 G3 AND #4 U5 ARE TO BE PLACED RADIALLY ALONG OUTSIDE EDGE OF SUPERSTRUCTURE.

LOWER PART OF LIGHT PEDESTAL TO BE POURED WITH SIDEWALK.

FOR LOCATIONS OF LIGHT PEDESTALS SEE "RAIL POST SPACING AND LIGHT PEDESTAL SPACING" SHEET.

FOR LIGHT PEDESTAL DETAILS, SEE "LIGHT PEDESTAL DETAILS" SHEET.

CONCRETE AND REINFORCING STEEL FOR THE SIDEWALK IS INCLUDED IN THE SUPERSTRUCTURE BILL OF MATERIAL. PAYMENT FOR THE SIDEWALK SHALL BE INCLUDED IN THE PAY ITEM "REINFORCED CONCRETE DECK SLAB".

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

SIDEWALK DETAILS
(STAGE I)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-52
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 6-2011
CHECKED BY : M.K. BEARD DATE : 7-2011

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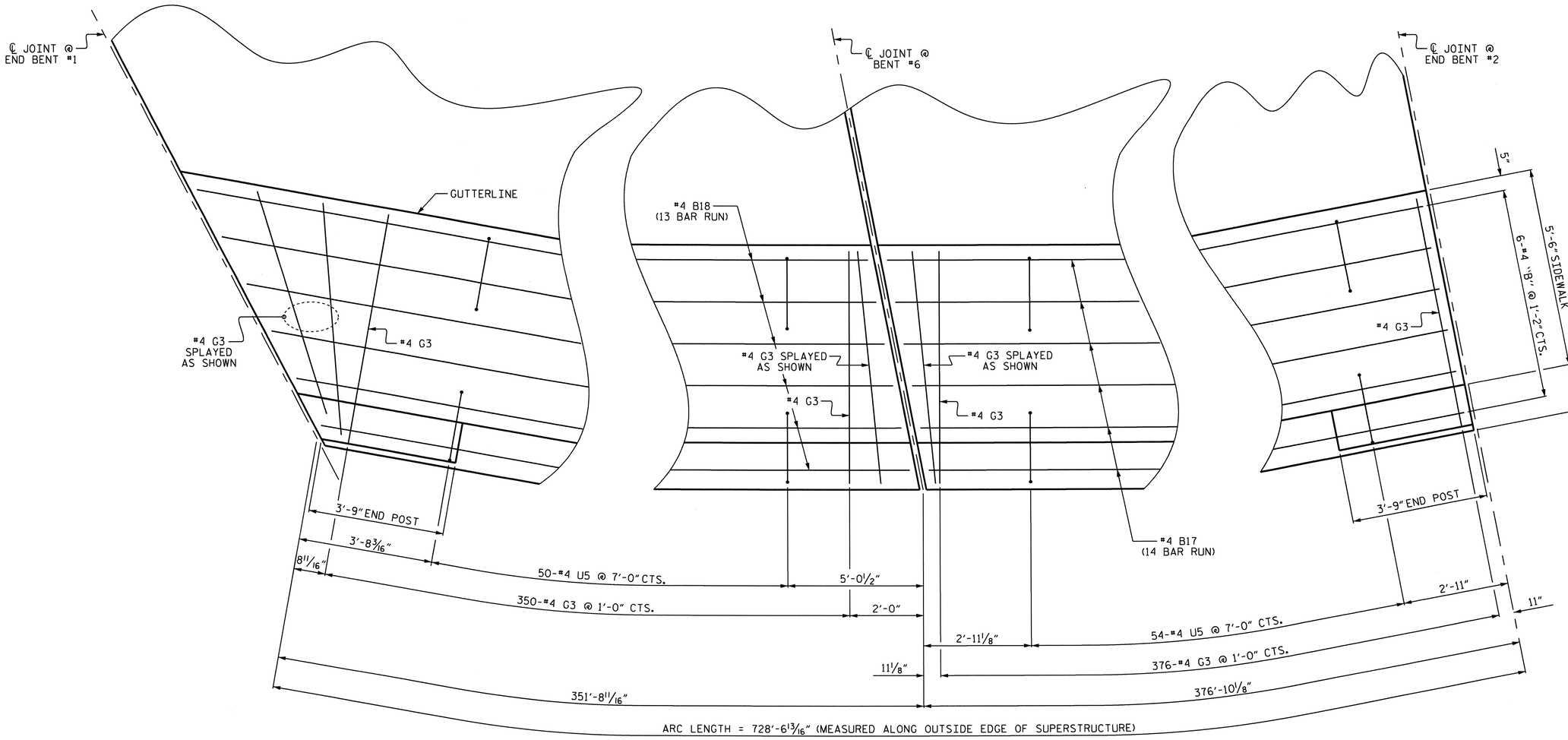
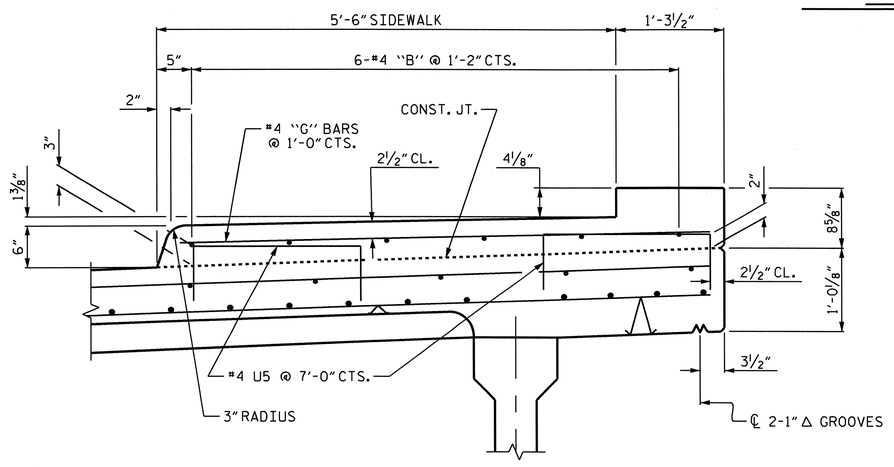


PLAN OF SIDEWALK



SECTION THRU SIDEWALK

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

SIDEWALK DETAILS
(STAGE II)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-53
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 6-2011
CHECKED BY : M.K. BEARD DATE : 7-2011

27-JAN-2012 14:01
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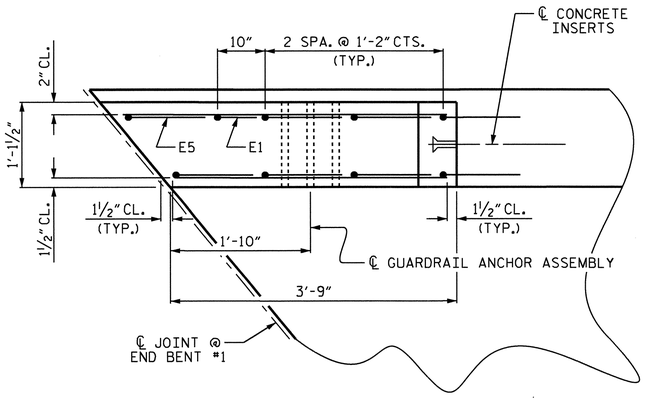
kbeard



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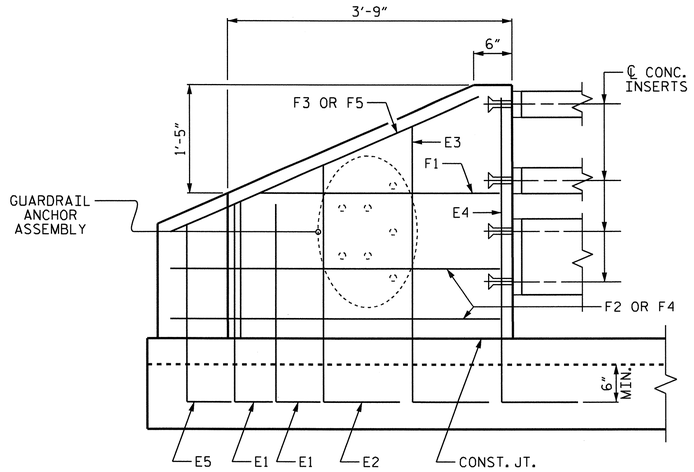

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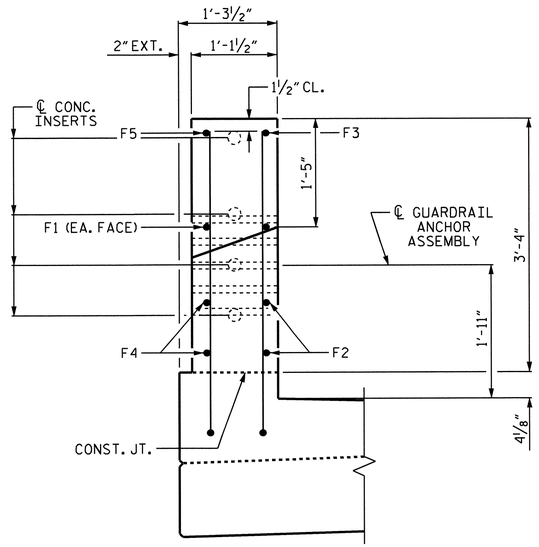
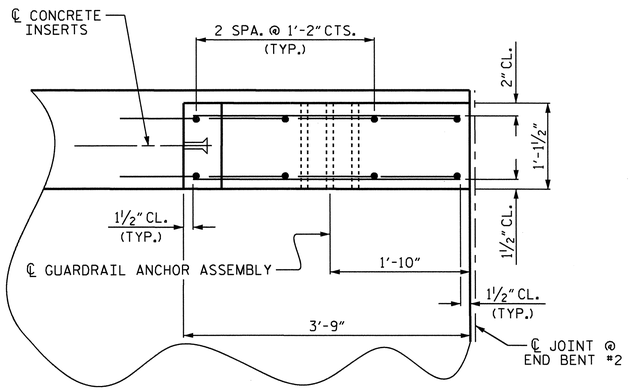


END VIEW

END POST DETAILS

FOR END BENT #1 ONLY



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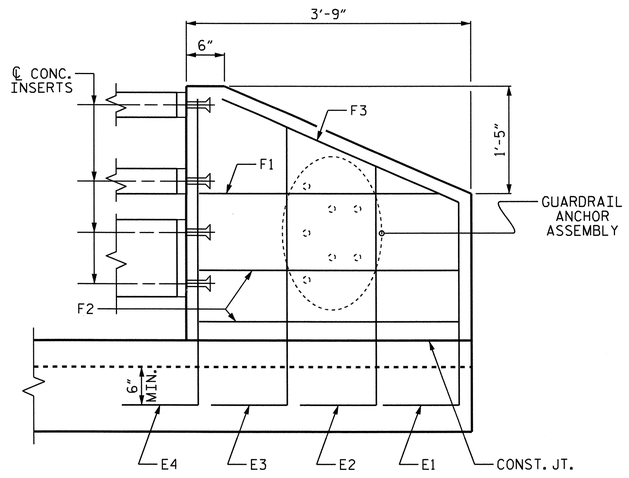

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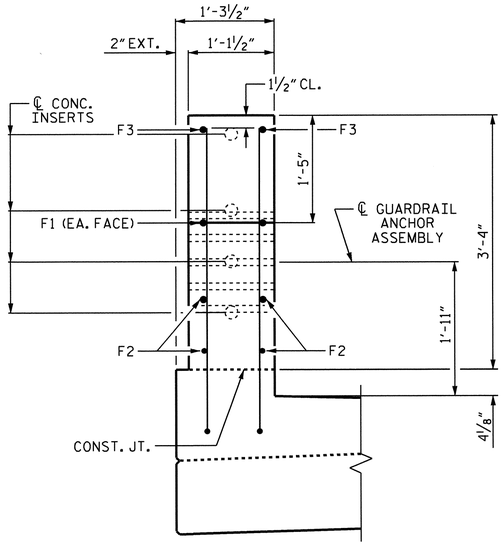

END VIEW

END POST DETAILS

FOR END BENT #2 ONLY

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

END POST DETAILS
(STAGE I)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-54
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : T. BANKOVICH DATE : 6-2011
CHECKED BY : M.K. BEARD DATE : 7-2011

27-JAN-2012 13:58
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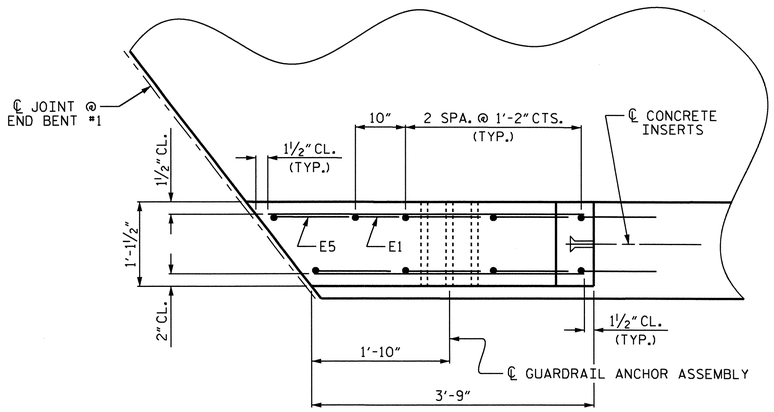
kbeard



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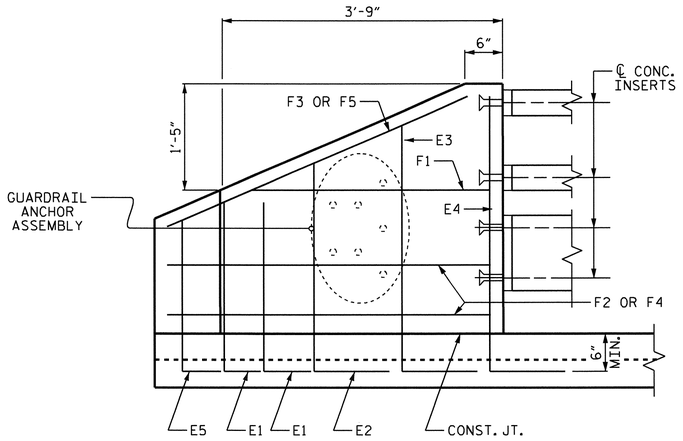

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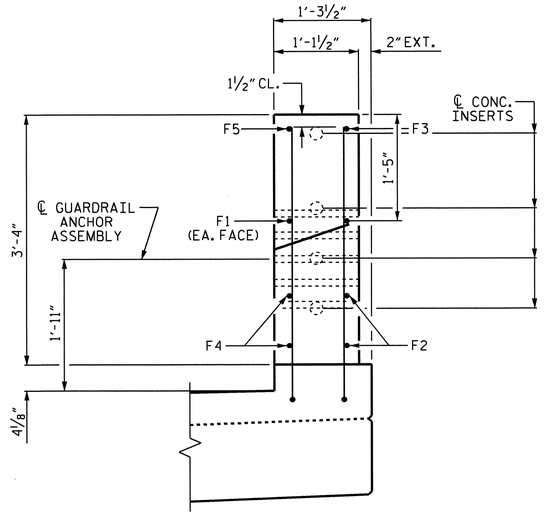
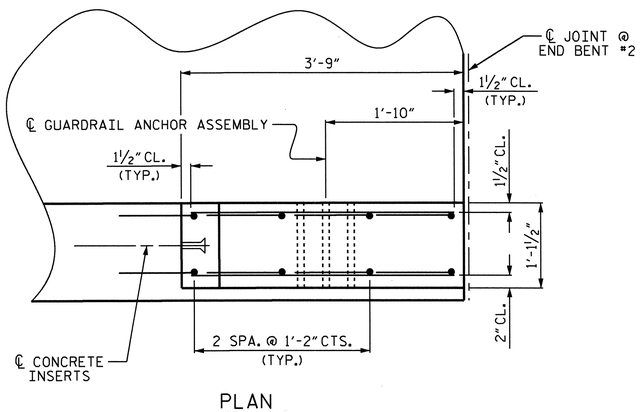


END VIEW

END POST DETAILS

FOR END BENT #1 ONLY



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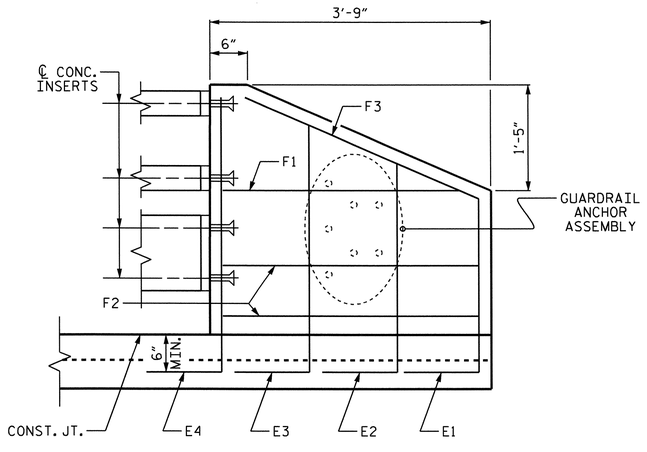

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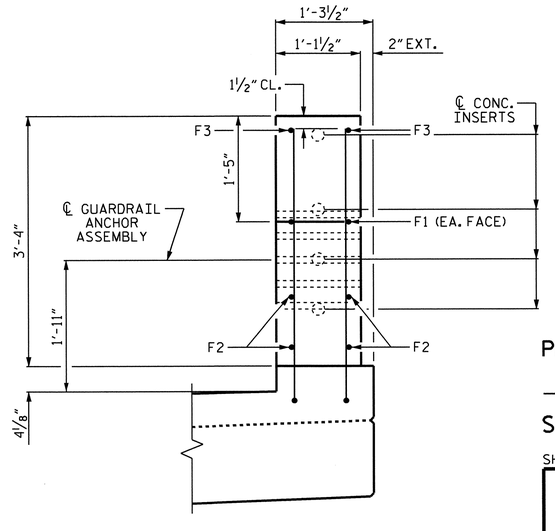

END VIEW

END POST DETAILS

FOR END BENT #2 ONLY

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

END POST DETAILS
(STAGE II)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-55
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : T. BANKOVICH DATE : 6-2011
CHECKED BY : M.K. BEARD DATE : 7-2011

30-JAN-2012 09:48
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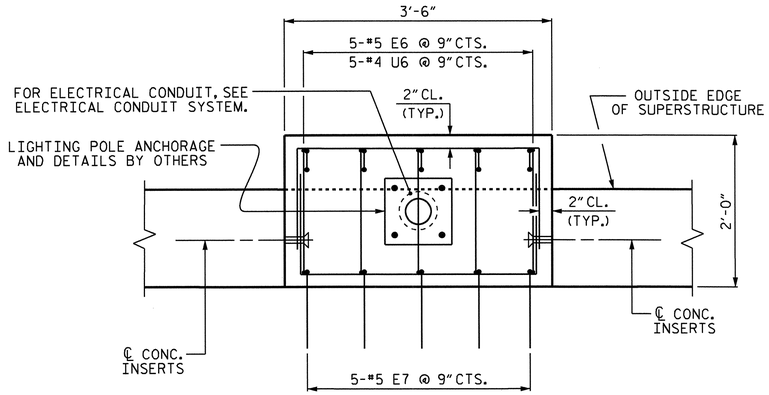
kbeard

CONCRETE AND REINFORCING STEEL FOR THE LIGHT POST PEDESTALS IS INCLUDED IN THE SUPERSTRUCTURE BILL OF MATERIAL. PAYMENT FOR THE LIGHT POST PEDESTALS SHALL BE INCLUDED IN THE PAY ITEM "REINFORCED CONCRETE DECK SLAB".



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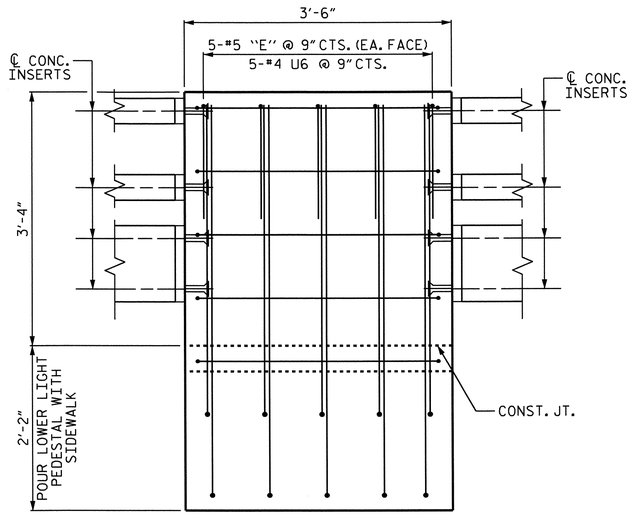

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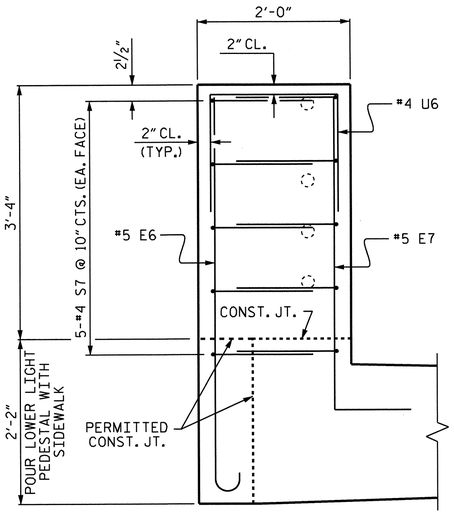
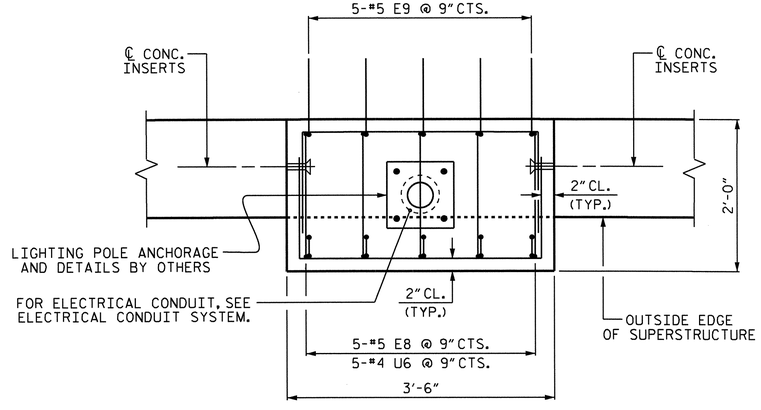
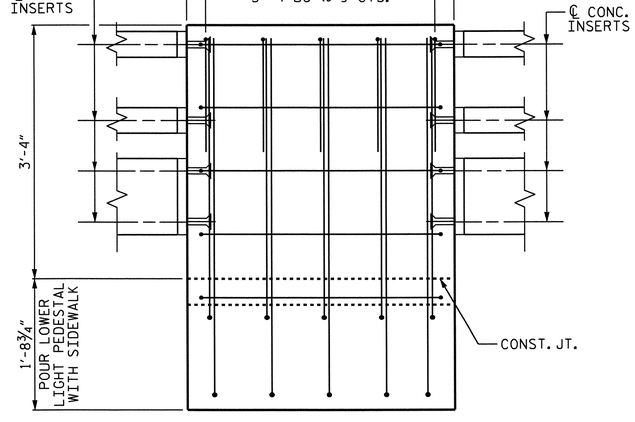


END VIEW

LEFT SIDE LIGHT PEDESTALS



PLAN



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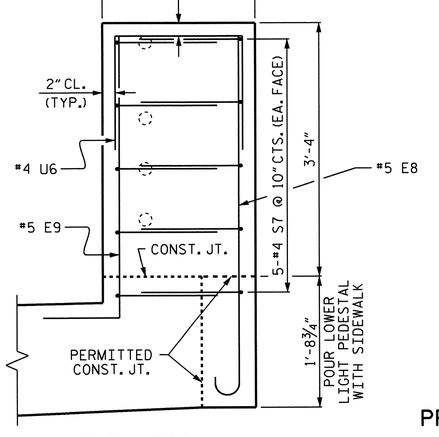

END VIEW

RIGHT SIDE LIGHT PEDESTALS

NOTES:

#4 U6 BARS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR ANCHOR BOLTS.

NORTH CAROLINA PROFESSIONAL SEAL 030878 ENGINEER KEVIN FISCHER 4/20/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

LIGHT POST PEDESTALS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-56
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 6-2011
CHECKED BY : M.K. BEARD DATE : 7-2011

19-APR-2012 08:12
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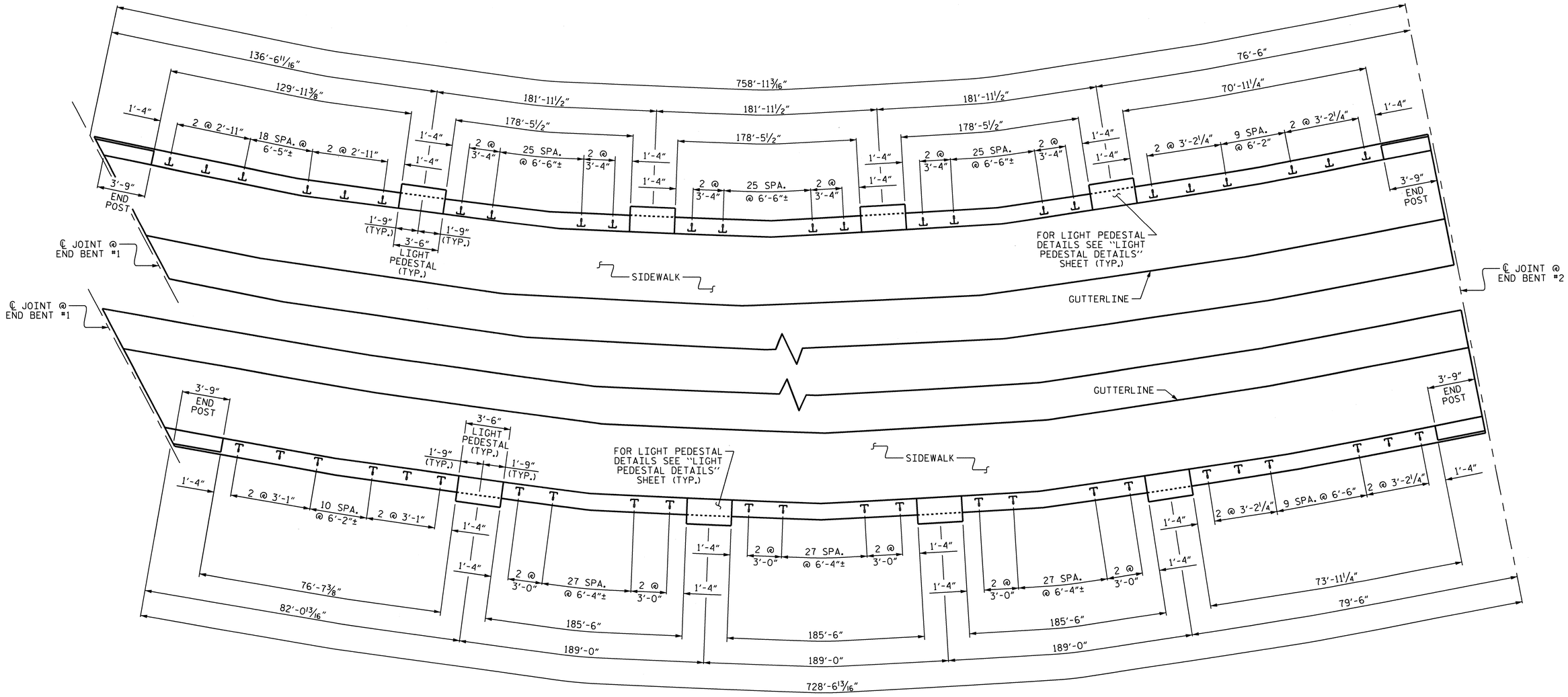
chunt



PLAN

DIMENSIONS ARE MEASURED ALONG THE ARC
AT THE OUTSIDE EDGE OF THE SUPERSTRUCTURE

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

RAIL POST SPACING AND LIGHT PEDESTAL SPACING

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-57
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 6-2011
CHECKED BY : M.K. BEARD DATE : 7-2011

27-JAN-2012 13:58
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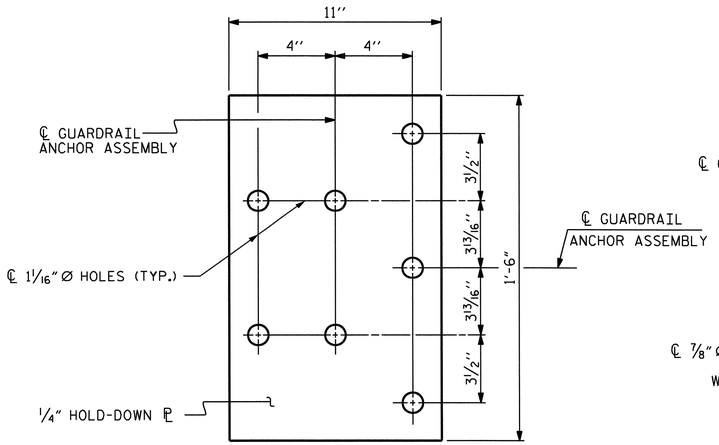
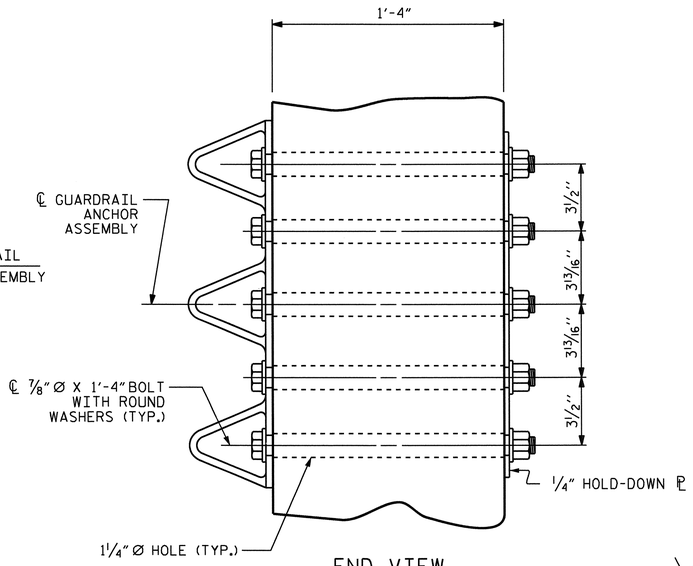
kbeard



PLAN



END VIEW

GUARDRAIL ANCHOR ASSEMBLY DETAILS

NOTES

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

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

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

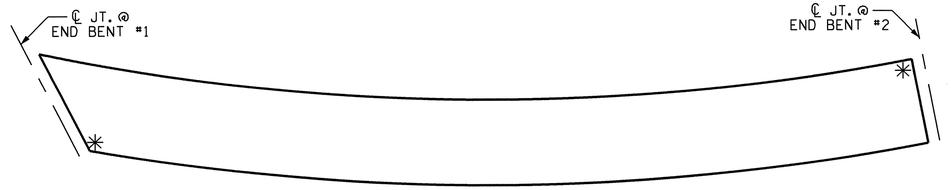
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF THE PARAPET. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

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

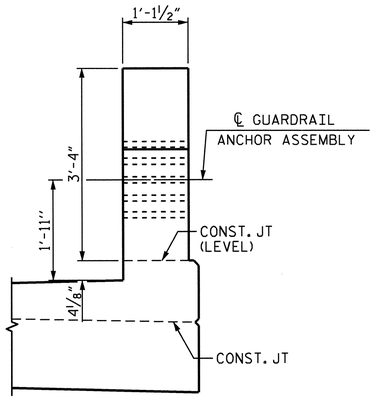
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE END POST TO CLEAR ASSEMBLY BOLTS.

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

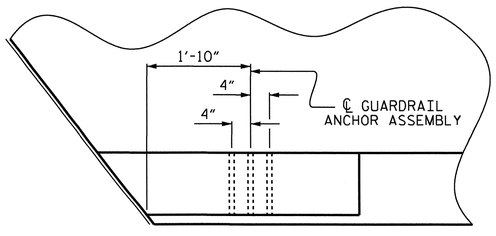


SKETCH SHOWING POINTS OF ATTACHMENT

* LOCATION OF GUARDRAIL ATTACHMENT



END VIEW



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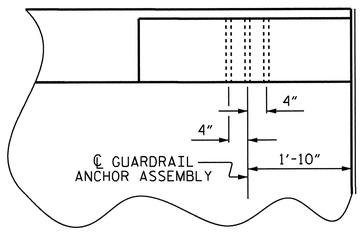

@ END BENT 2

LOCATION OF GUARDRAIL ANCHOR AT END POST

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
GUARDRAIL ANCHORAGE DETAILS
FOR METAL RAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-58
1			3			TOTAL SHEETS
2			4			125

STD. NO. GRA3

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

ASSEMBLED BY : T. BANKOVICH	DATE : 2-2011
CHECKED BY : M.K. BEARD	DATE : 3-2011
DRAWN BY : MAA 5/10	ADDED 5/6/10
CHECKED BY : GM 5/10	

18-APR-2012 10:59
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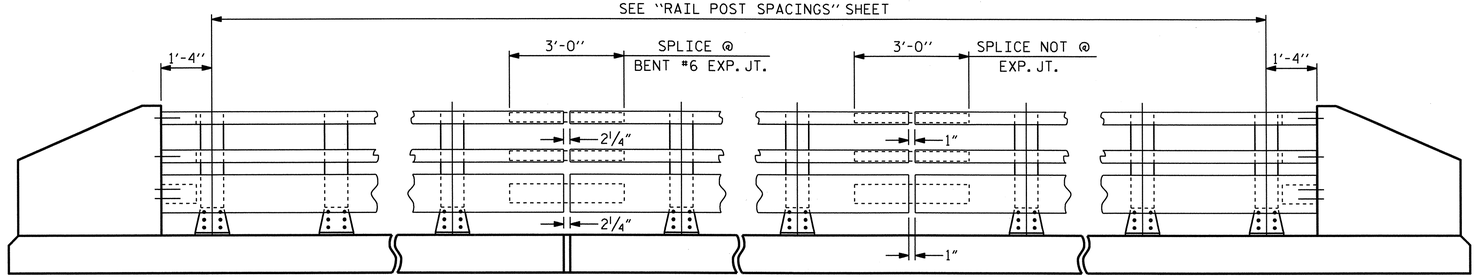
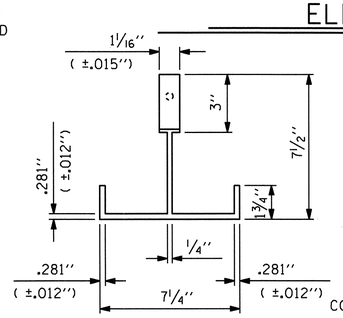
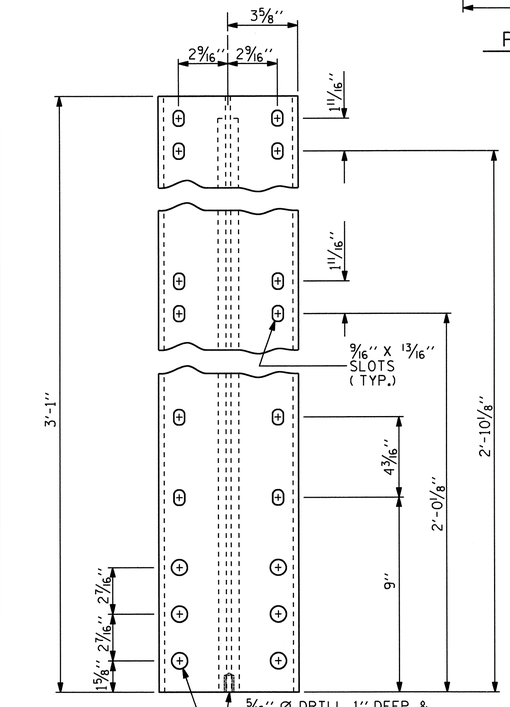


ELEVATION

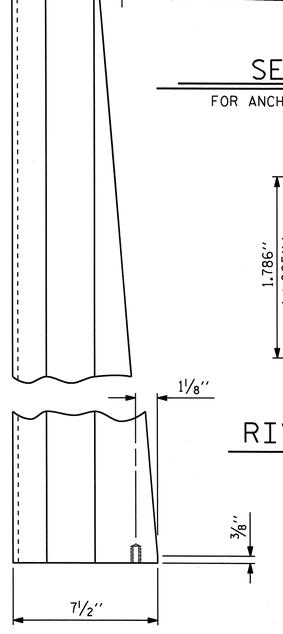
NOTE:
FOR ATTACHMENT OF METAL RAIL TO END POST AND LIGHT PEDESTAL, SEE STANDARD NO. BMR7.



PLAN

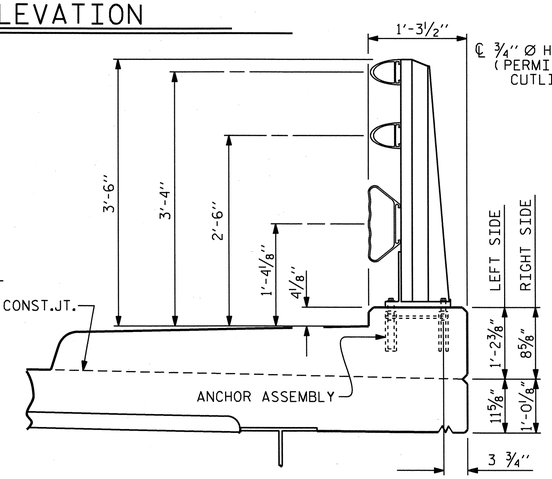


FRONT ELEVATION



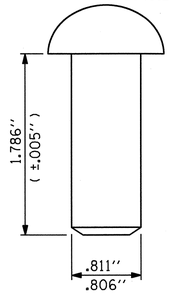
SIDE ELEVATION

DETAILS OF POST

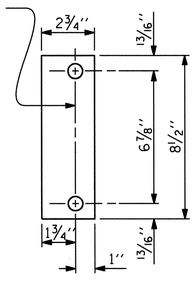


SECTION THRU RAIL

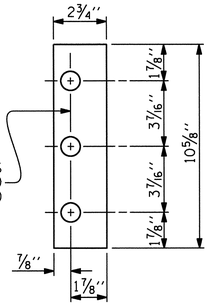
FOR ANCHOR ASSEMBLY, SEE "3 BAR METAL RAIL" STD.No.BMR6



RIVET DETAIL



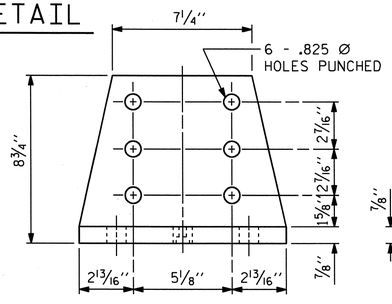
REAR PLATE



FRONT PLATE

SHIM DETAILS

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



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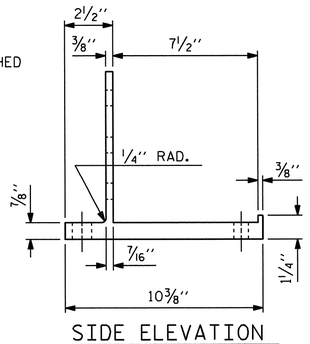
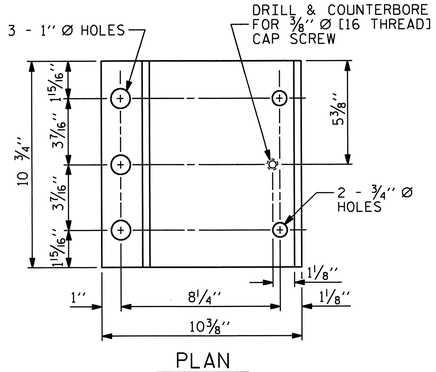


SIDE ELEVATION



PLAN

POST BASE DETAILS

NOTES

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

ALUMINUM RAILS

MATERIAL FOR POSTS, BASES AND RAILS, EXPANSION BARS AND CLAMP BARS SHALL BE ASTM B221 ALLOY 6061-T6.

MATERIAL FOR RIVETS SHALL BE ASTM B316 ALLOY 6061-T6. RIVETS SHALL BE STANDARD BUTTON HEAD AND CONE POINT COLD DRIVEN AS PER DRAWING.

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

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

GALVANIZED STEEL RAILS

MATERIAL AND GALVANIZING ARE TO CONFORM TO THE FOLLOWING SPECIFICATIONS:

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

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

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

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

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

GENERAL NOTES

RAILING SHALL BE CONTINUOUS FROM END POST TO END POST OF BRIDGE. EACH JOINT IN RAIL LENGTH SHALL BE SPLICED AS DETAILED. PANEL LENGTHS OF RAIL SHALL BE ATTACHED TO A MINIMUM OF THREE POSTS. PLACE ONE JOINT SPLICE JUST BEYOND THE 3RD RAIL POST FROM EACH END, TYPICALLY 14' FROM THE END. PLACE OTHER JOINTS AS NEEDED.

FOR END OF RAIL TO CLEAR FACE OF CONCRETE END POST DIMENSION, SEE STANDARD NO. BMR7.

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

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

METAL RAIL POSTS SHALL BE SET NORMAL TO CURB GRADE.

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

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

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

SHIMS SHALL BE USED AS NECESSARY FOR POST ALIGNMENT.

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

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

PAY LENGTH = 1443.28 LIN.FT.

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

3 BAR METAL RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-59
1			3			TOTAL SHEETS
2			4			125

STD. NO. BMR5

ASSEMBLED BY : T. BANKOVICH		DATE : 6-2011	
CHECKED BY : M.K. BEARD		DATE : 7-2011	
DRAWN BY : JMB 1/88	REV. 10/17/00	RWW/LES	
CHECKED BY : GGH 1/88	REV. 5/7/03	RWW/JTE	
	REV. 5/1/06	TLA/GM	

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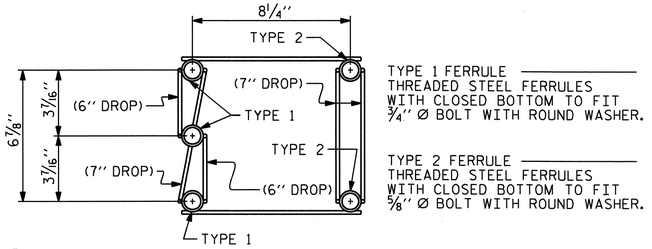
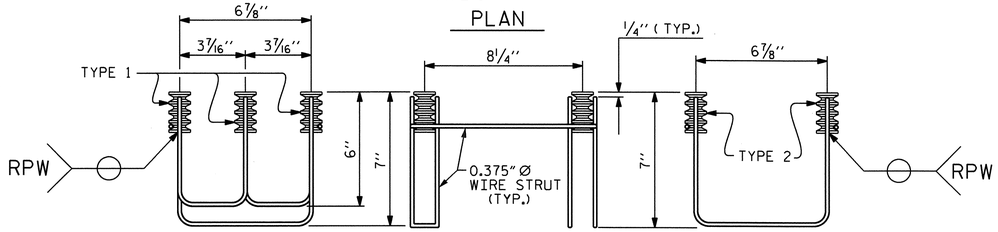
kbeard



TYPE 1 FERRULE ——— THREADED STEEL FERRULES WITH CLOSED BOTTOM TO FIT ¾'' Ø BOLT WITH ROUND WASHER.

TYPE 2 FERRULE ——— THREADED STEEL FERRULES WITH CLOSED BOTTOM TO FIT ⅝'' Ø BOLT WITH ROUND WASHER.

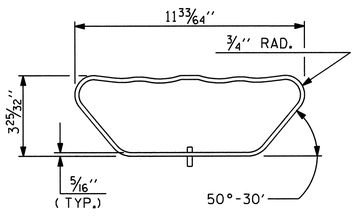
PLAN



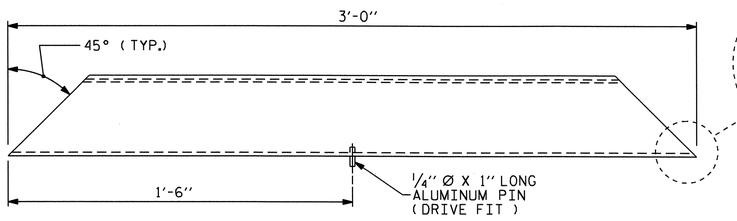
LEFT SIDE VIEW ELEVATION RIGHT SIDE VIEW

5-BOLT METAL RAIL ANCHOR ASSEMBLY

(252 ASSEMBLIES REQUIRED)

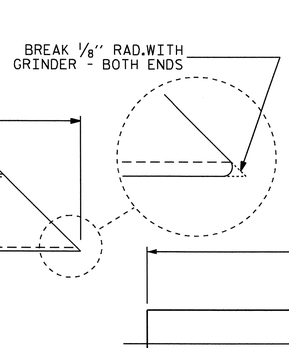


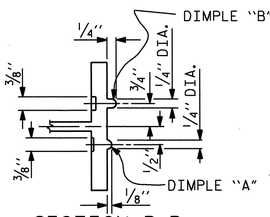
END VIEW



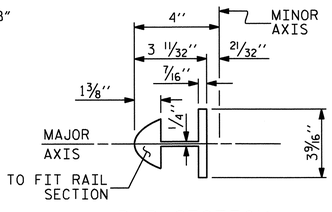
PLAN VIEW

BOTTOM RAIL EXPANSION BAR

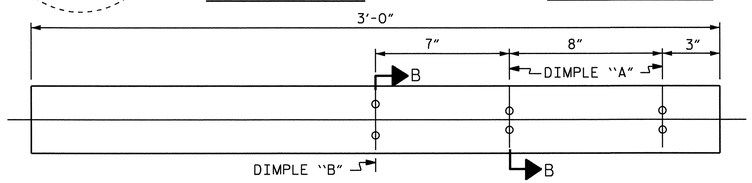




SECTION B-B

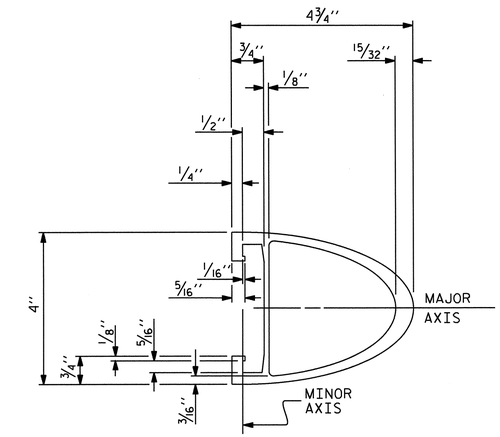


BAR SECTION

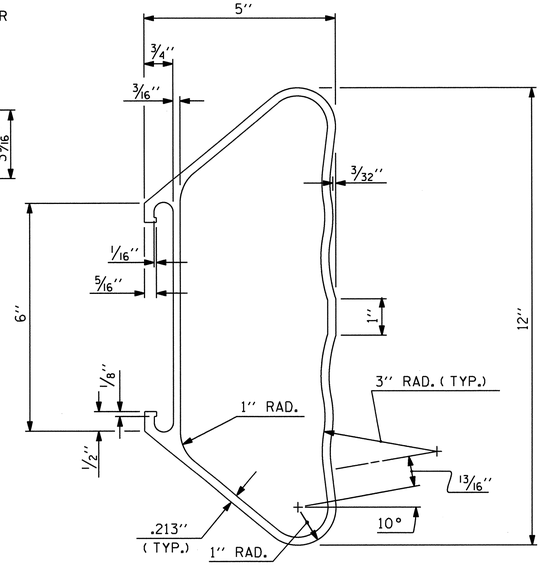


BACK ELEVATION

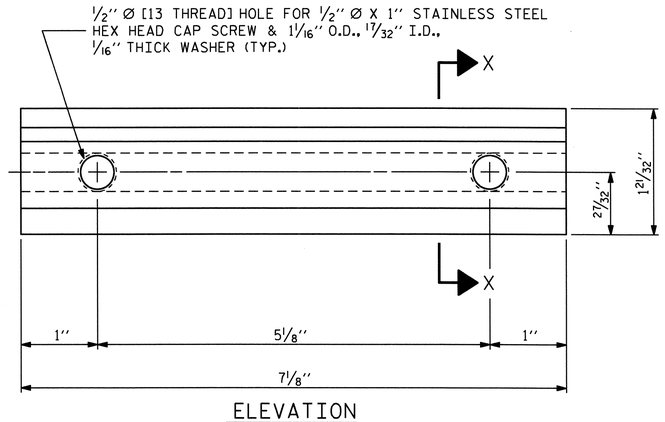
TOP & MIDDLE RAIL EXPANSION BAR



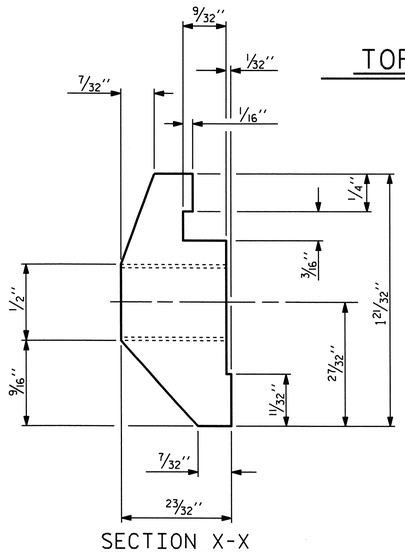
TOP & MIDDLE RAIL SECTION



BOTTOM RAIL SECTION



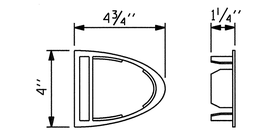
ELEVATION



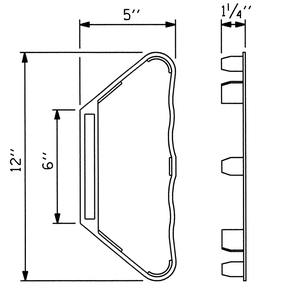
SECTION X-X

CLAMP BAR DETAIL

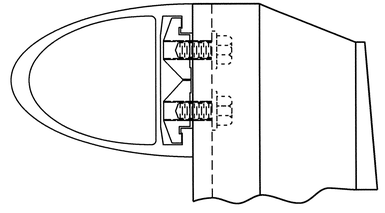
(6 REQUIRED PER POST)



TOP & MIDDLE RAIL CAP



BOTTOM RAIL CAP



CLAMP ASSEMBLY

TOP RAIL SHOWN
(MIDDLE & BOTTOM RAIL ARE SIMILAR)

NOTES

STRUCTURAL CONCRETE ANCHOR ASSEMBLY

THE STRUCTURAL CONCRETE ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:

A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2'' FOR ¾'' FERRULES AND 1¾'' FOR ⅝'' FERRULES.

B. 3 - ¾'' Ø X 2½'' BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE ¾'' Ø X 2½'' GALVANIZED BOLTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.

C. 2 - ⅝'' Ø X 2¼'' BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE ⅝'' Ø X 2¼'' GALVANIZED BOLTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.

D. WIRE STRUT SHOWN IN THE CONCRETE ANCHOR ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 7/16'' Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.

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

F. THE COST OF THE METAL RAIL ANCHOR ASSEMBLY WITH BOLTS AND WASHERS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF METAL RAIL.

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

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

3 BAR METAL RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-60
1			3			TOTAL SHEETS
2			4			125

STD. NO. BMR6

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER KEVIN FISCHER
3/9/12

ASSEMBLED BY : T. BANKOVICH	DATE : 6-2011		
CHECKED BY : M.K. BEARD	DATE : 7-2011		
DRAWN BY : JMB 1/88	REV. 7/10/01	RWW/LES	
CHECKED BY : GGH 1/88	REV. 5/7/03	RWW/JTE	
	REV. 5/1/06	TLA/GM	

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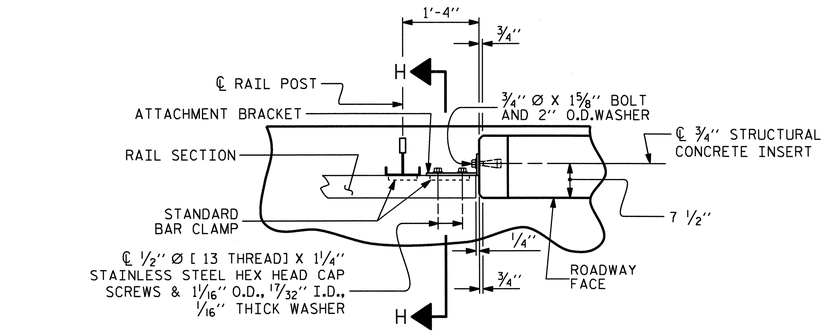
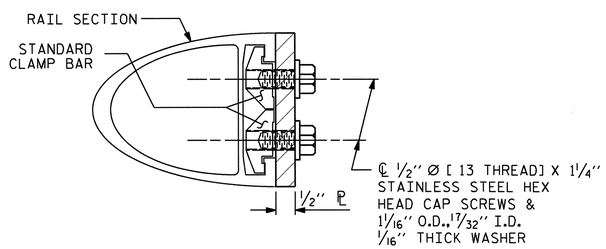
kbeard



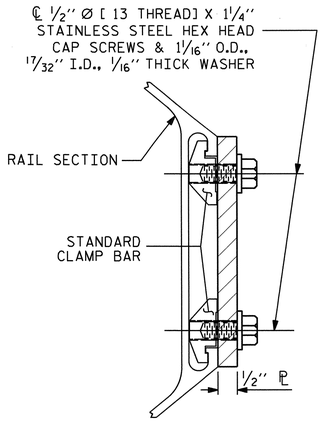
PLAN OF RAIL AND END POST OR LIGHT PEDESTAL

(STIFFENER ON 1/2" ℙ NOT SHOWN FOR CLARITY)



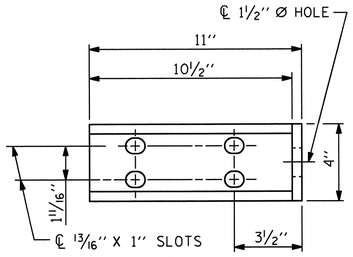
SECTION H-H

(FOR TOP & MIDDLE RAIL)

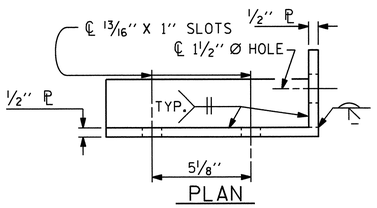


SECTION H-H

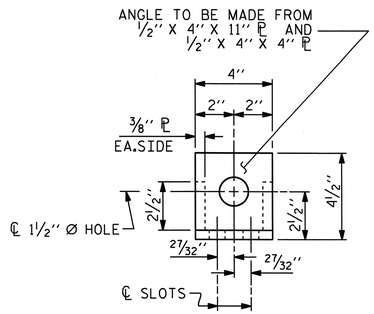
(FOR BOTTOM RAIL)



ELEVATION



PLAN

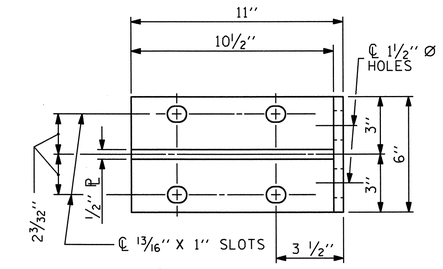


END VIEW

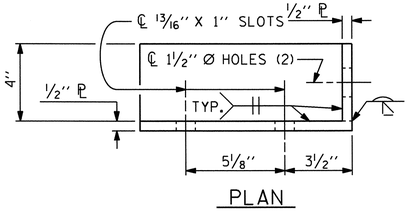
(FIX. AND EXP.)

DETAILS FOR ATTACHMENT BRACKET

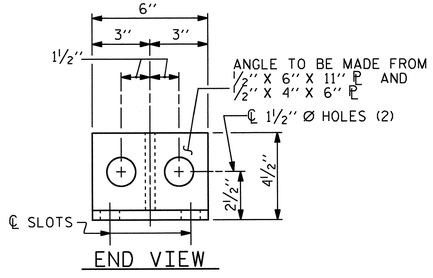
(TOP & MIDDLE RAIL ONLY)



ELEVATION



PLAN



END VIEW

DETAILS FOR ATTACHMENT BRACKET

(BOTTOM RAIL ONLY)

NOTES

METAL RAIL TO END POST CONNECTION

THE METAL RAIL TO END POST\LIGHT PEDESTAL CONNECTION SHALL CONSIST OF THE FOLLOWING COMPONENTS:

A. 1/2" PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 AND SHALL BE GALVANIZED AFTER FABRICATION.

B. 3/4" STRUCTURAL CONCRETE INSERT SHALL HAVE A WORKING LOAD SHEAR CAPACITY OF 4800 LBS. THE FERRULES SHALL ENGAGE A 3/4" Ø X 1 5/8" BOLT WITH 2" O.D. WASHER IN PLACE. THE 3/4" Ø X 1 5/8" BOLT SHALL HAVE N. C. THREADS.

C. CAP SCREWS FOR RAIL ATTACHMENT TO ANGLE SHALL CONFORM TO THE REQUIREMENTS OF ASTM F593 ALLOY 305 STAINLESS STEEL. CAP SCREWS TO BE CENTERED IN SLOTS AT 60°F. WASHERS FOR RAIL ATTACHMENT SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

D. STANDARD CLAMP BARS (STD. No. BMR6).

THE COST OF THE STANDARD CLAMP BARS AND CAP SCREWS USED IN THE METAL RAIL TO END POST CONNECTION SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR LINEAR FEET OF 3 BAR METAL RAIL.

THE 3/4" STRUCTURAL CONCRETE INSERT WITH BOLT SHALL BE ASSEMBLED IN THE SHOP.

THE COST OF THE 3/4" STRUCTURAL CONCRETE INSERT ASSEMBLY, AND THE 1/2" PLATES COMPLETE IN PLACE SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

THE CONTRACTOR, AT HIS OPTION, MAY USE AN ADHESIVE BONDING SYSTEM IN LIEU OF THE STRUCTURAL CONCRETE INSERT EMBEDDED IN THE END POST. IF THE ADHESIVE BONDING SYSTEM IS USED, THE 3/4" Ø X 1 5/8" BOLT WITH WASHER SHALL BE REPLACED WITH A 3/4" Ø X 6 1/2" BOLT AND 2" O.D.WASHER. ALL SPECIFICATIONS THAT APPLY TO THE 3/4" Ø X 1 5/8" BOLT SHALL APPLY TO THE 3/4" Ø X 6 1/2" BOLT. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

NOTES

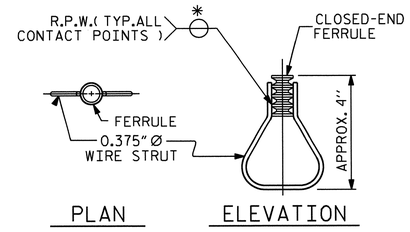
STRUCTURAL CONCRETE INSERT

THE STRUCTURAL CONCRETE INSERT ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:

A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 1 1/2".

B. 1 - 3/4" Ø X 1 5/8" BOLT WITH WASHER. BOLT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLT AND WASHER SHALL BE GALVANIZED. AT THE CONTRACTORS OPTION, STAINLESS STEEL BOLT AND WASHER MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø X 1 5/8" GALVANIZED BOLT AND WASHER. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.

C. WIRE STRUT SHOWN IN THE CONCRETE INSERT ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 7/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.



STRUCTURAL CONCRETE INSERT

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

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

3 BAR METAL RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-61
1			3			TOTAL SHEETS
2			4			125

STD. NO. BMR7

NORTH CAROLINA PROFESSIONAL SEAL 30818 ENGINEER KEVIN FISCHER
3/9/12

ASSEMBLED BY : T. BANKOVICH	DATE : 6-2011
CHECKED BY : M.K. BEARD	DATE : 7-2011
DRAWN BY : JMB 1/88	REV. 7/10/01 RWW/LES
CHECKED BY : GGH 1/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM

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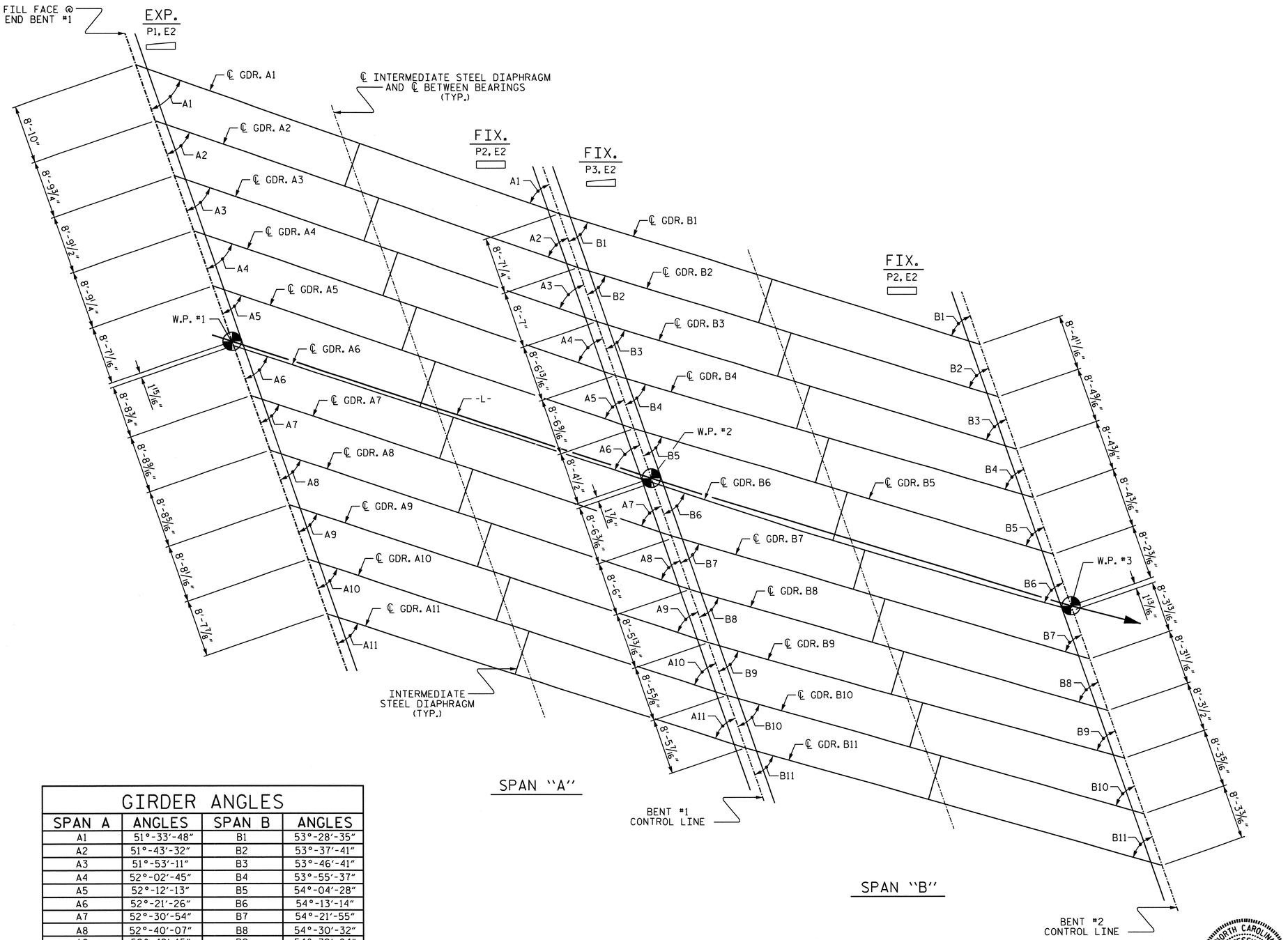
kbeard



GIRDER ANGLES			
SPAN A	ANGLES	SPAN B	ANGLES
A1	51°-33'-48"	B1	53°-28'-35"
A2	51°-43'-32"	B2	53°-37'-41"
A3	51°-53'-11"	B3	53°-46'-41"
A4	52°-02'-45"	B4	53°-55'-37"
A5	52°-12'-13"	B5	54°-04'-28"
A6	52°-21'-26"	B6	54°-13'-14"
A7	52°-30'-54"	B7	54°-21'-55"
A8	52°-40'-07"	B8	54°-30'-32"
A9	52°-49'-15"	B9	54°-39'-04"
A10	52°-58'-18"	B10	54°-47'-32"
A11	53°-07'-16"	B11	54°-55'-56"

GIRDER LAYOUT SPANS A & B

FOR INTERMEDIATE STEEL DIAPHRAGMS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR PRESTRESSED GIRDERS" SHEET

NORTH CAROLINA PROFESSIONAL SEAL 030878 ENGINEER W. KEVIN FISCHER
3/9/12

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

GIRDER LAYOUT
(SPAN A & B)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-62
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : R. G. EMERSON DATE : 03/11
CHECKED BY : M. K. BEARD DATE : 05/11

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kbeard

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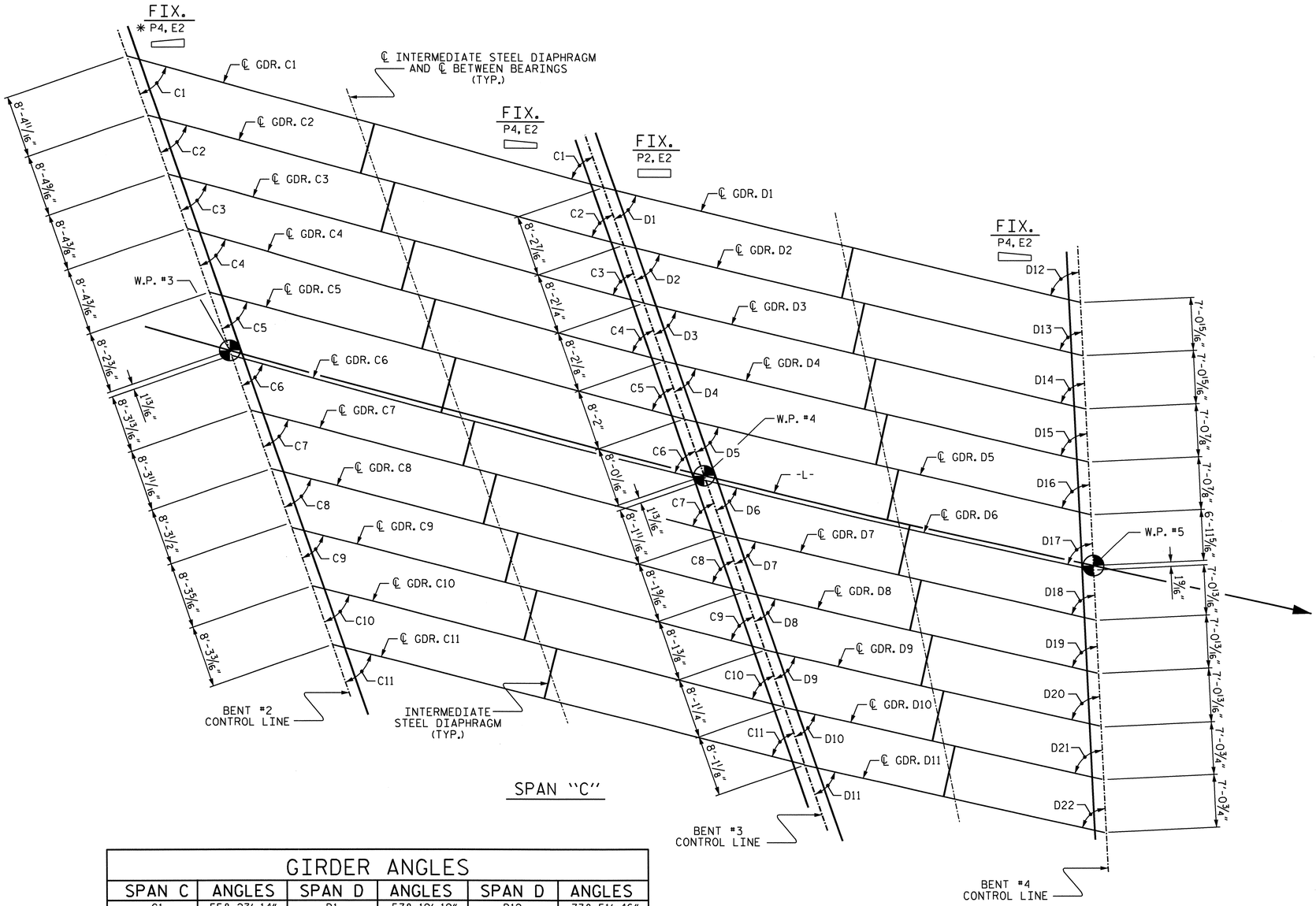

SPAN "C"

SPAN "D"

GIRDER ANGLES

SPAN C	ANGLES	SPAN D	ANGLES	SPAN D	ANGLES
C1	55°-23'-14"	D1	57°-19'-19"	D12	73°-51'-46"
C2	55°-31'-42"	D2	57°-25'-04"	D13	73°-57'-31"
C3	55°-40'-06"	D3	57°-30'-46"	D14	74°-03'-13"
C4	55°-48'-25"	D4	57°-36'-25"	D15	74°-08'-52"
C5	55°-56'-40"	D5	57°-42'-01"	D16	74°-14'-26"
C6	56°-04'-51"	D6	57°-47'-35"	D17	74°-20'-02"
C7	56°-12'-58"	D7	57°-53'-06"	D18	74°-25'-33"
C8	56°-21'-00"	D8	57°-58'-34"	D19	74°-31'-01"
C9	56°-28'-59"	D9	58°-04'-00"	D20	74°-36'-27"
C10	56°-36'-53"	D10	58°-09'-23"	D21	74°-41'-50"
C11	56°-44'-43"	D11	58°-14'-44"	D22	74°-47'-11"

GIRDER LAYOUT SPANS C & D

FOR INTERMEDIATE STEEL DIAPHRAGMS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR PRESTRESSED GIRDERS" SHEET

* SPAN C NEAR SOLE PLATES TO BE INSTALLED WITH BEVEL OPPOSITE THAT SHOWN ON "ELASTOMERIC BEARING DETAILS" SHEET

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

GIRDER LAYOUT
(SPAN C & D)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-63
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : R. G. EMERSON DATE : 03/11
CHECKED BY : M. K. BEARD DATE : 05/11

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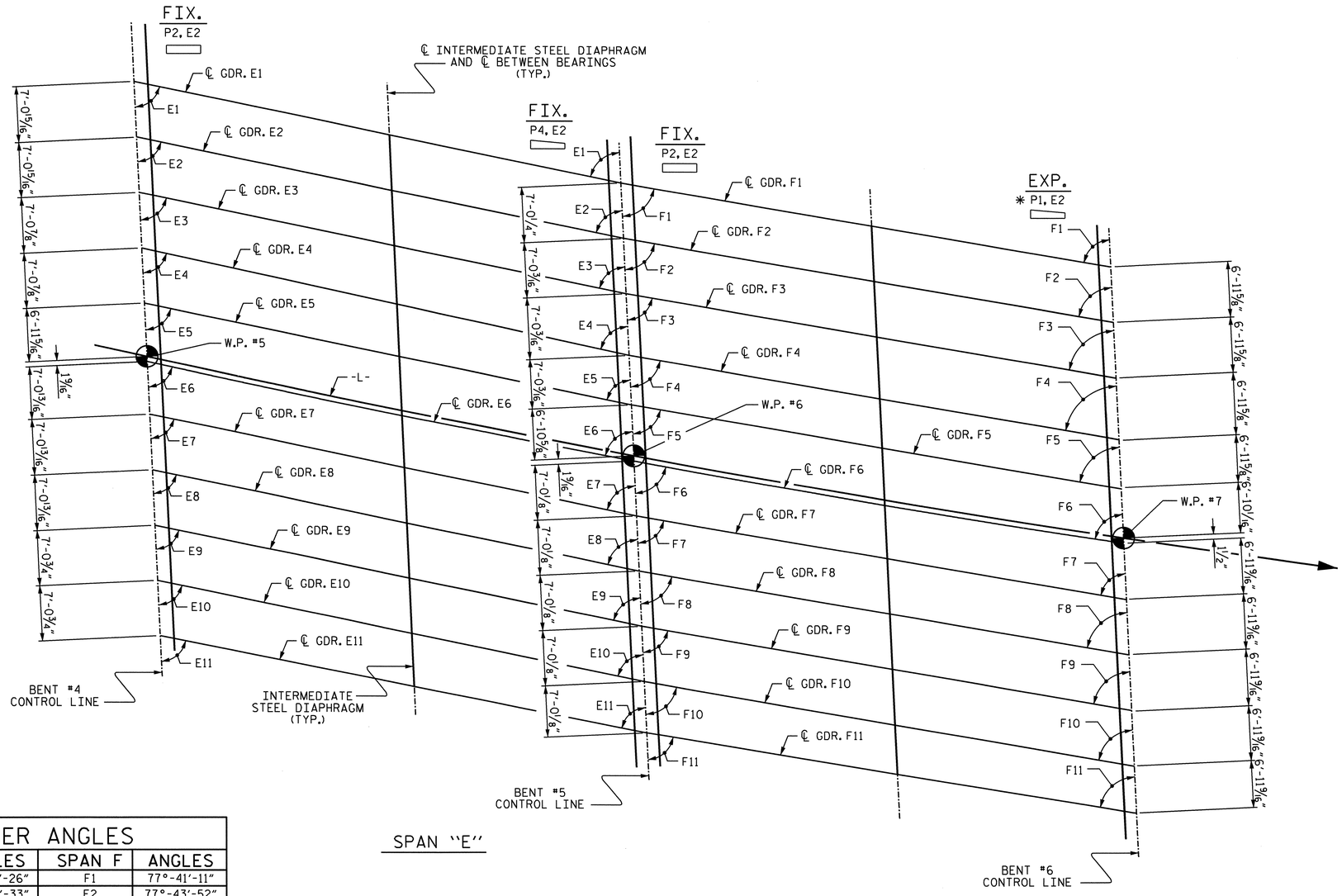
kbeard

NCDOT



GIRDER ANGLES

SPAN E	ANGLES	SPAN F	ANGLES
E1	75°-47′-26″	F1	77°-41′-11″
E2	75°-50′-33″	F2	77°-43′-52″
E3	75°-53′-38″	F3	77°-46′-32″
E4	75°-56′-42″	F4	77°-49′-10″
E5	75°-59′-45″	F5	77°-51′-48″
E6	76°-02′-46″	F6	77°-54′-24″
E7	76°-05′-46″	F7	77°-56′-59″
E8	76°-08′-45″	F8	77°-59′-33″
E9	76°-11′-42″	F9	78°-02′-06″
E10	76°-14′-38″	F10	78°-04′-38″
E11	76°-17′-33″	F11	78°-07′-09″

GIRDER LAYOUT SPANS E & F

FOR INTERMEDIATE STEEL DIAPHRAGMS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR PRESTRESSED GIRDERS" SHEET

* SPAN F FAR SOLE PLATES TO BE INSTALLED WITH BEVEL OPPOSITE THAT SHOWN ON "ELASTOMERIC BEARING DETAILS" SHEET

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

GIRDER LAYOUT
(SPAN E & F)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-64
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : R. G. EMERSON DATE : 03/11
CHECKED BY : M. K. BEARD DATE : 05/11

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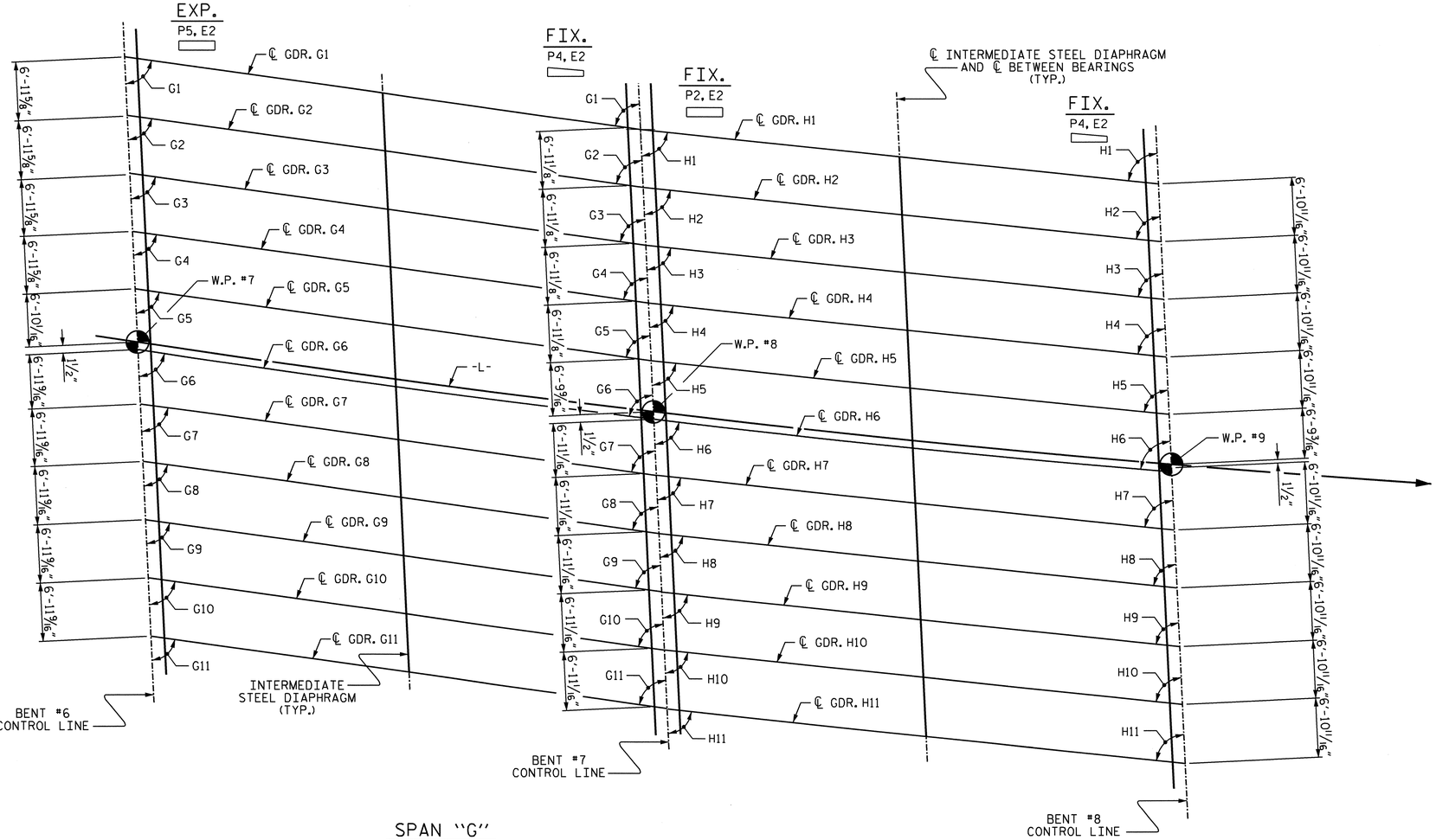

SPAN "G"

SPAN "H"

GIRDER ANGLES

SPAN G	ANGLES	SPAN H	ANGLES
G1	79°-34′-54″	H1	81°-28′-35″
G2	79°-37′-09″	H2	81°-30′-26″
G3	79°-39′-24″	H3	81°-32′-15″
G4	79°-41′-38″	H4	81°-34′-04″
G5	79°-43′-50″	H5	81°-35′-52″
G6	79°-46′-02″	H6	81°-37′-40″
G7	79°-48′-13″	H7	81°-39′-26″
G8	79°-50′-22″	H8	81°-41′-12″
G9	79°-52′-31″	H9	81°-42′-57″
G10	79°-54′-39″	H10	81°-44′-41″
G11	79°-56′-46″	H11	81°-46′-25″

GIRDER LAYOUT SPANS G & H

FOR INTERMEDIATE STEEL DIAPHRAGMS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR PRESTRESSED GIRDERS" SHEET

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 4 OF 6

NORTH CAROLINA PROFESSIONAL SEAL 20818 ENGINEER KEVIN FISCHER
3/9/12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

GIRDER LAYOUT

(SPAN G & H)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-65
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : R. G. EMERSON DATE : 03/11
CHECKED BY : M. K. BEARD DATE : 05/11

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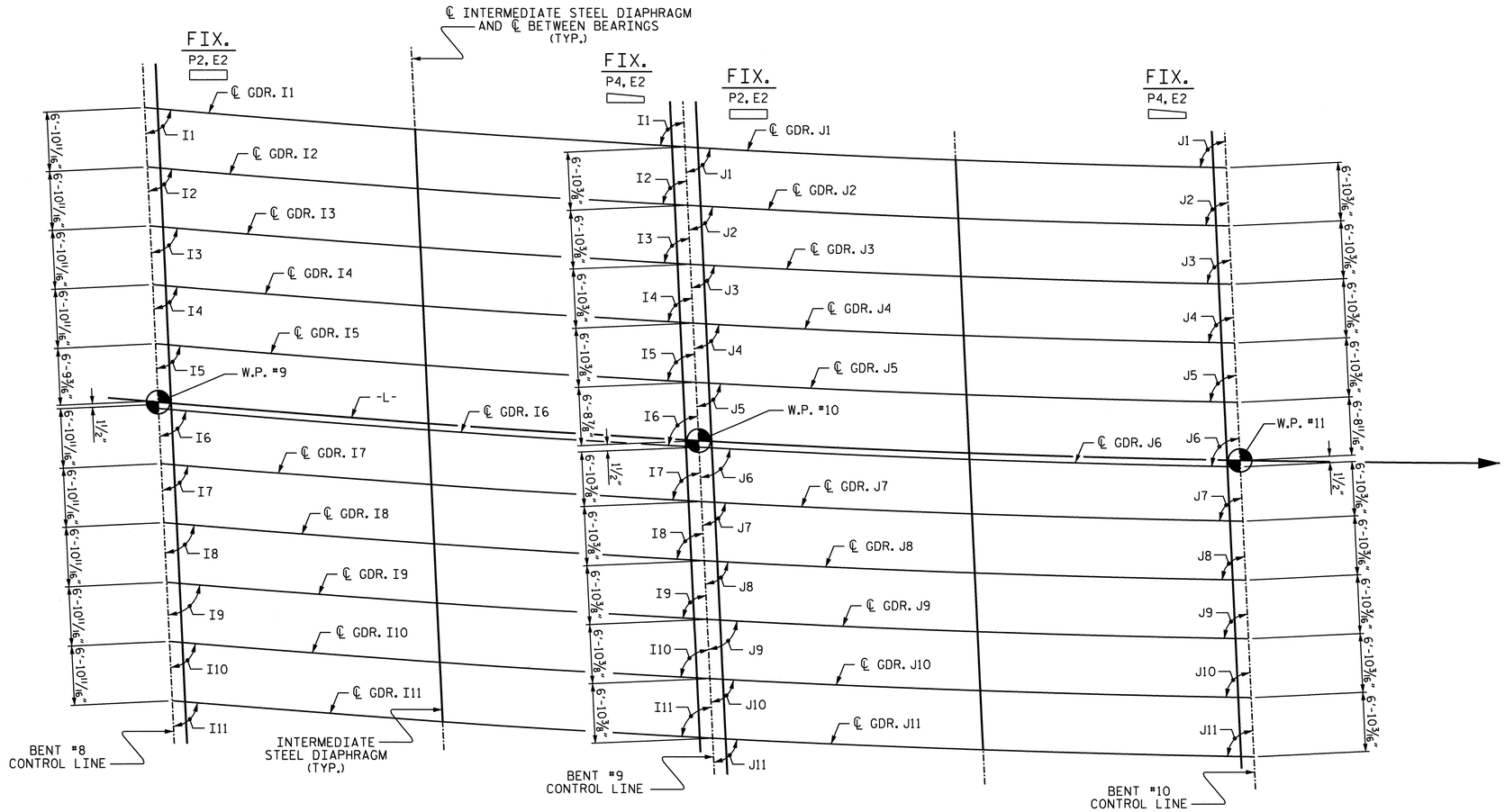

SPAN "I"

SPAN "J"

GIRDER LAYOUT SPANS I & J

FOR INTERMEDIATE STEEL DIAPHRAGMS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR PRESTRESSED GIRDERS" SHEET

GIRDER ANGLES			
SPAN I	ANGLES	SPAN J	ANGLES
I1	83°-22'-15"	J1	85°-15'-54"
I2	83°-23'-41"	J2	85°-16'-55"
I3	83°-25'-06"	J3	85°-17'-56"
I4	83°-26'-30"	J4	85°-18'-56"
I5	83°-27'-54"	J5	85°-19'-56"
I6	83°-29'-18"	J6	85°-20'-55"
I7	83°-30'-40"	J7	85°-21'-54"
I8	83°-32'-02"	J8	85°-22'-53"
I9	83°-33'-24"	J9	85°-23'-51"
I10	83°-34'-45"	J10	85°-24'-49"
I11	83°-36'-05"	J11	85°-25'-46"

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

GIRDER LAYOUT
(SPAN I & J)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER

3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-66
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : R. G. EMERSON DATE : 03/11
CHECKED BY : M. K. BEARD DATE : 05/11

27-JAN-2012 13:59
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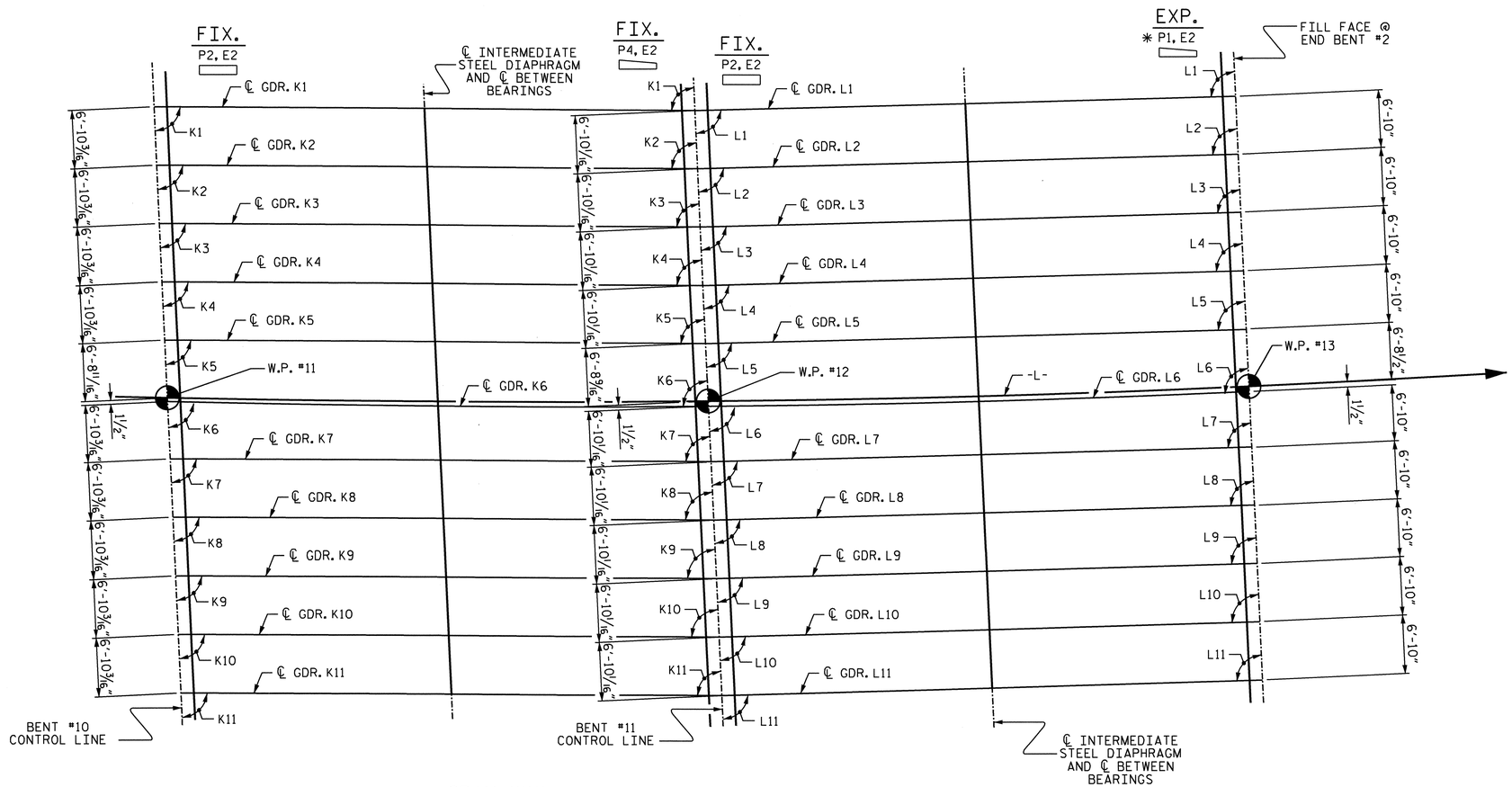
NC005



SPAN "K"

SPAN "L"

GIRDER ANGLES			
SPAN K	ANGLES	SPAN L	ANGLES
K1	87°-09'-33"	L1	89°-03'-11"
K2	87°-10'-09"	L2	89°-03'-23"
K3	87°-10'-46"	L3	89°-03'-35"
K4	87°-11'-22"	L4	89°-03'-47"
K5	87°-11'-58"	L5	89°-03'-59"
K6	87°-12'-33"	L6	89°-04'-11"
K7	87°-13'-08"	L7	89°-04'-23"
K8	87°-13'-43"	L8	89°-04'-34"
K9	87°-14'-18"	L9	89°-04'-46"
K10	87°-14'-53"	L10	89°-04'-58"
K11	87°-15'-27"	L11	89°-05'-09"

GIRDER LAYOUT SPANS K & L

FOR INTERMEDIATE STEEL DIAPHRAGMS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR PRESTRESSED GIRDERS" SHEET

* SPAN L FAR SOLE PLATES TO BE INSTALLED WITH BEVEL OPPOSITE THAT SHOWN ON "ELASTOMERIC BEARING DETAILS" SHEET

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 6 OF 6

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER

3/9/12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

GIRDER LAYOUT
(SPAN K & L)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-67
1			3			TOTAL SHEETS
2			4			125

NCDOT

DRAWN BY : R. G. EMERSON DATE : 03/11
CHECKED BY : M. K. BEARD DATE : 05/11

27-JAN-2012 13:59
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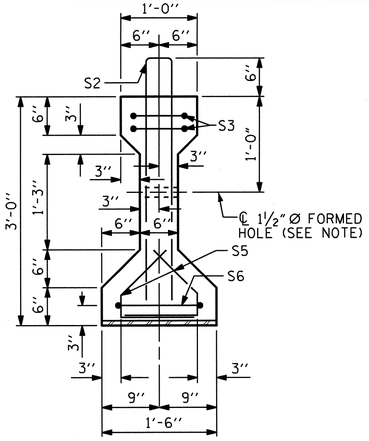
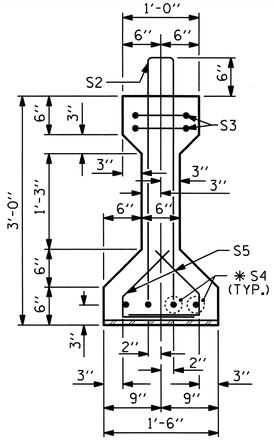
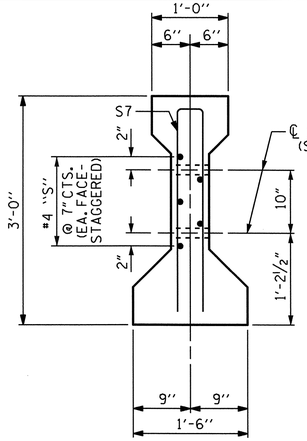


SECTION A-A



SECTION B-B

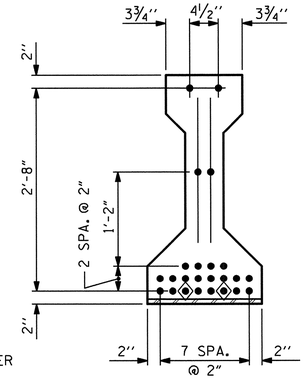


SECTION C-C

(S1 BARS NOT SHOWN)

DEBONDING LEGEND

- ● FULLY BONDED STRANDS
- ◈ STRANDS DEBONDED FOR 10'-0" FROM END OF GIRDER



AT END OF GIRDER

0.6" Ø L. R. GRADE 270 STRANDS

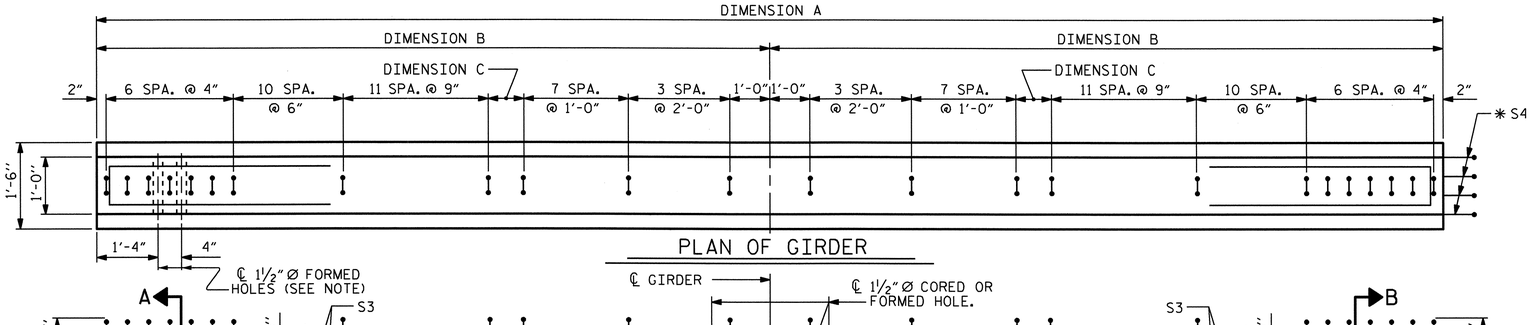
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

REINFORCING STEEL FOR ONE GIRDER

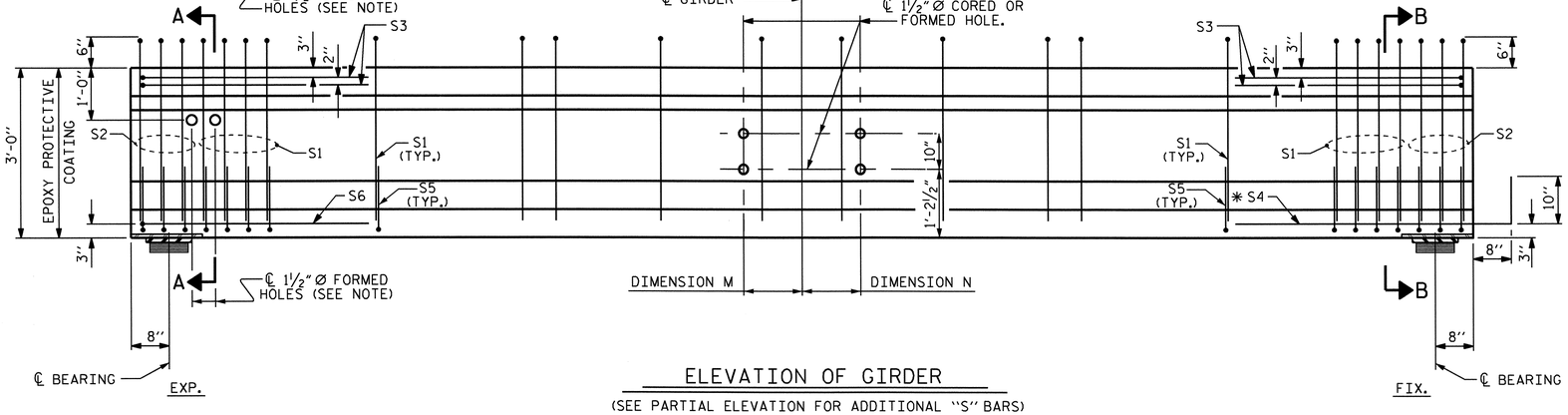
	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
	S1	72	#5	1	6'-10"	513
	S2	6	#6	1	6'-10"	62
	S3	4	#4	3	8'-8"	23
	✱S4	4	#5	STR	3'-8"	15
	S5	68	#4	2	2'-4"	106
	S6	1	#4	3	9'-2"	6
EXTERIOR GDR.	S7	2	#5	3	5'-8"	12
INTERIOR GDR.	S7	4	#5	3	5'-8"	24
EXTERIOR GDR.	S8	5	#4	STR	7'-0"	23
INTERIOR GDR.	S9	5	#4	STR	12'-5"	41

✱NOTE: S4 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

0.6" Ø LOW RELAXATION STRAND LAYOUT

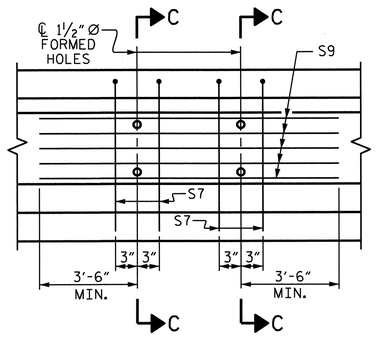


PLAN OF GIRDER



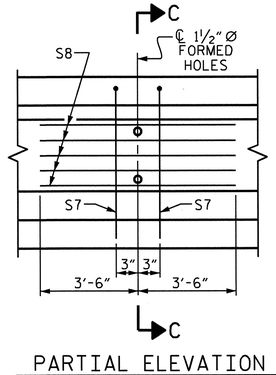
ELEVATION OF GIRDER

(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. A2 THRU A10

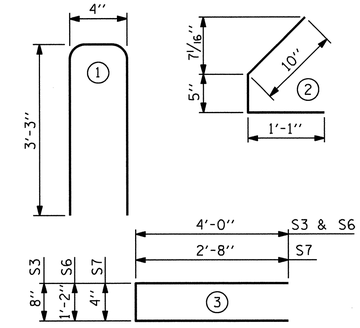


PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. A1 & A11

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	8,500 PSI CONCRETE C.Y.	0.6" Ø L.R. STRANDS No.
EXT. GDR.	760	5.7	24
INT. GDR.	790	5.7	24

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
11	SEE "GIRDER DETAILS"	662.22

GIRDER DETAILS

	DIMENSION A	DIMENSION B	DIMENSION C	DIMENSION M	DIMENSION N
GIRDER A1	60'-10¼"	30'-5⅛"	1'-0⅛"	------	2'-8½"
GIRDER A2	60'-8½"	30'-4¼"	11¼"	2'-8½"	2'-8¼"
GIRDER A3	60'-7"	30'-3½"	10½"	2'-8¼"	2'-8⅛"
GIRDER A4	60'-5⅜"	30'-2 11/16"	9 11/16"	2'-8⅛"	2'-8"
GIRDER A5	60'-3¾"	30'-1⅞"	8⅞"	2'-8"	2'-7¾"
GIRDER A6	60'-2¼"	30'-1⅛"	8⅛"	2'-7¾"	2'-7½"
GIRDER A7	60'-0¾"	30'-0⅜"	7⅜"	2'-7½"	2'-7⅜"
GIRDER A8	59'-11⅜"	29'-11 11/16"	6 11/16"	2'-7⅜"	2'-7¼"
GIRDER A9	59'-9⅞"	29'-10 15/16"	5 15/16"	2'-7¼"	2'-7"
GIRDER A10	59'-8½"	29'-10¼"	5¼"	2'-7"	2'-6⅞"
GIRDER A11	59'-7"	29'-9½"	4½"	2'-6⅞"	-----

NOTE:

½" Ø FORMED HOLE TO BE PLACED ONLY IN END SHOWN OF GIRDER A6.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

AASHTO TYPE II PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD (SPAN A)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-68
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

ASSEMBLED BY: R. G. EMERSON	DATE: 01/11
CHECKED BY: M. K. BEARD	DATE: 05/11
DRAWN BY : ELR 8/91	REV. 8/16/99 RWW/LES
CHECKED BY : GRP 8/91	REV. 10/17/00R RWW/LES
	REV. 5/1/06R TLA/GM

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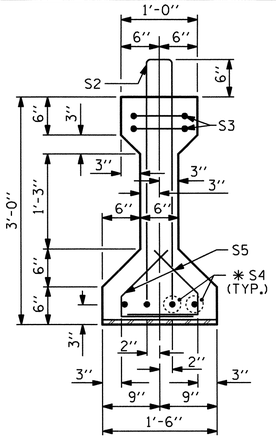
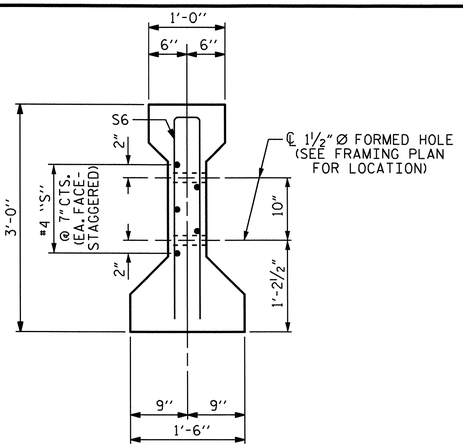
kbeard

STD. NO. PCG4 (Sht. 1)



SECTION B-B

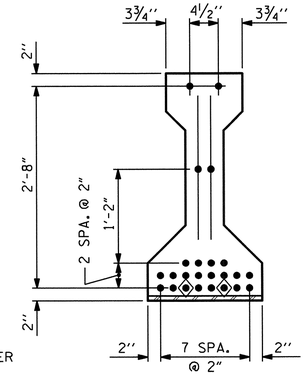


SECTION C-C

(S1 BARS NOT SHOWN)

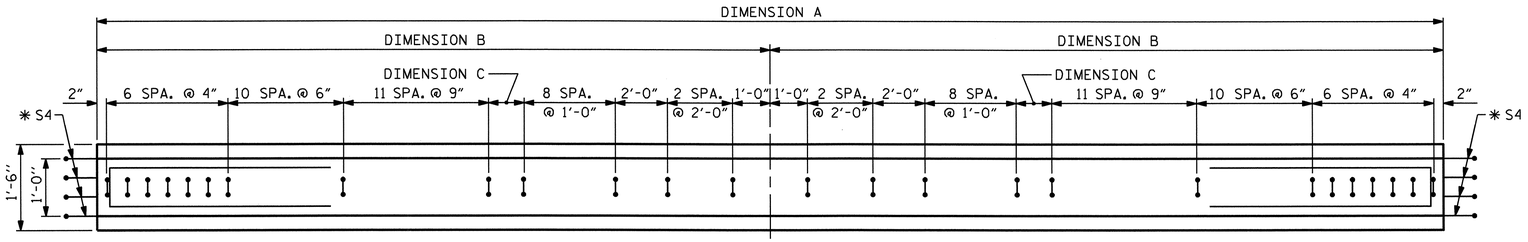
DEBONDING LEGEND

- ● FULLY BONDED STRANDS
- ◈ STRANDS DEBONDED FOR 10'-0" FROM END OF GIRDER

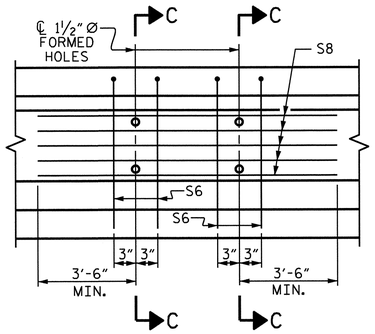


AT END OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT

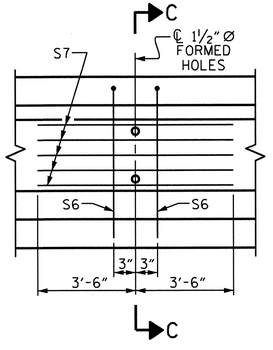


PLAN OF GIRDER



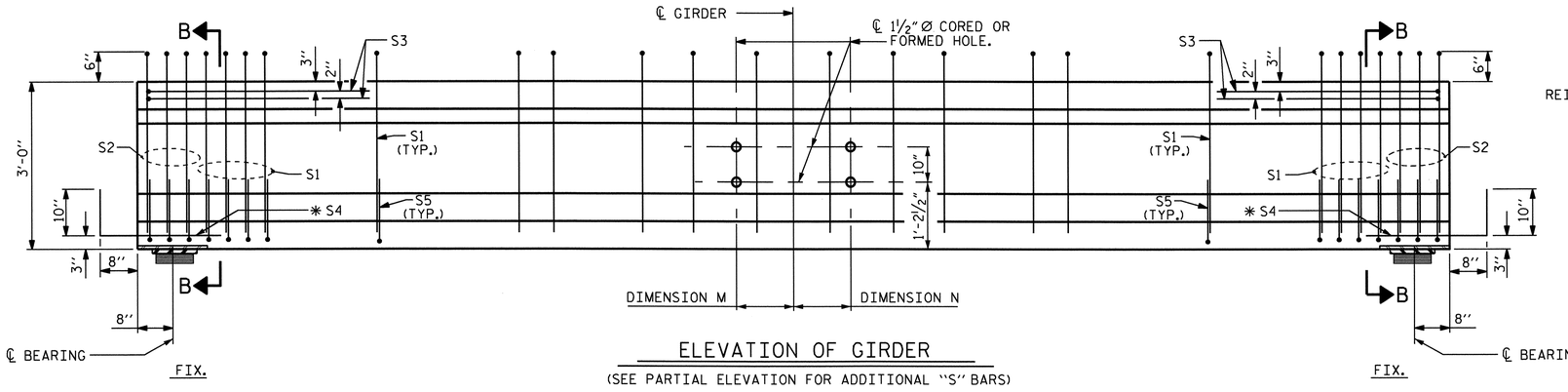
PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. B2 THRU B10



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. B1 & B11



ELEVATION OF GIRDER

(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)

GIRDER DETAILS

	DIMENSION A	DIMENSION B	DIMENSION C	DIMENSION M	DIMENSION N
GIRDER B1	62'-9 1/8"	31'-4 9/16"	11 9/16"	------	2'-6 3/4"
GIRDER B2	62'-7 3/4"	31'-3 7/8"	10 7/8"	2'-6 3/4"	2'-6 1/2"
GIRDER B3	62'-6 1/4"	31'-3 1/8"	10 1/8"	2'-6 1/2"	2'-6 3/8"
GIRDER B4	62'-4 3/4"	31'-2 3/8"	9 3/8"	2'-6 3/8"	2'-6 1/4"
GIRDER B5	62'-3 1/4"	31'-1 5/8"	8 5/8"	2'-6 1/4"	2'-6"
GIRDER B6	62'-2"	31'-1"	8"	2'-6"	2'-5 7/8"
GIRDER B7	62'-0 5/8"	31'-0 5/16"	7 5/16"	2'-5 7/8"	2'-5 3/4"
GIRDER B8	61'-11 1/4"	30'-11 5/8"	6 5/8"	2'-5 3/4"	2'-5 5/8"
GIRDER B9	61'-9 7/8"	30'-10 15/16"	5 15/16"	2'-5 5/8"	2'-5 3/8"
GIRDER B10	61'-8 5/8"	30'-10 5/16"	5 5/16"	2'-5 3/8"	2'-5 1/4"
GIRDER B11	61'-7 1/4"	30'-9 5/8"	4 5/8"	2'-5 1/4"	-----

ASSEMBLED BY: R. G. EMERSON	DATE: 01/11
CHECKED BY: M. K. BEARD	DATE: 05/11
DRAWN BY : ELR 8/91	REV. 8/16/99 RWW/LES
CHECKED BY : GRP 8/91	REV. 10/17/00R RWW/LES
	REV. 5/1/06R TLA/GM

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kbeard

0.6" Ø L. R. GRADE 270 STRANDS

AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

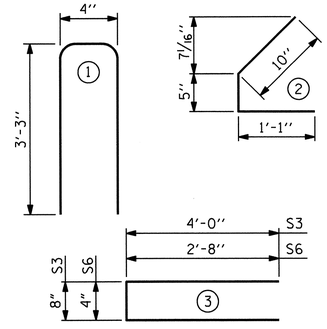
REINFORCING STEEL FOR ONE GIRDER

	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
	S1	74	#5	1	6'-10"	527
	S2	6	#6	1	6'-10"	62
	S3	4	#4	3	8'-8"	23
	✱S4	8	#5	STR	3'-8"	31
	S5	68	#4	2	2'-4"	106
EXTERIOR GDR.	S6	2	#5	3	5'-8"	12
INTERIOR GDR.	S6	4	#5	3	5'-8"	24
EXTERIOR GDR.	S7	5	#4	STR	7'-0"	23
INTERIOR GDR.	S8	5	#4	STR	12'-2"	41

✱NOTE: S4 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	8,500 PSI CONCRETE C.Y.	0.6" Ø L. R. STRANDS No.
EXT. GDR.	784	5.9	24
INT. GDR.	814	5.9	24

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
11	SEE "GIRDER DETAILS"	683.90

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

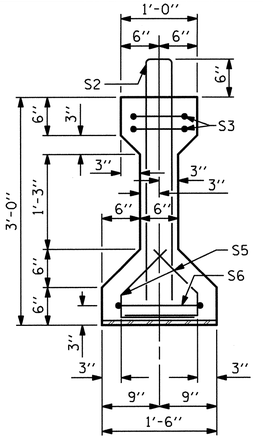
STANDARD

AASHTO TYPE II
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
(SPAN B)

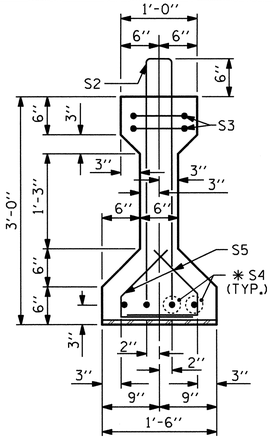
NORTH CAROLINA PROFESSIONAL SEAL 20819 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-69
1			3			TOTAL SHEETS
2			4			125

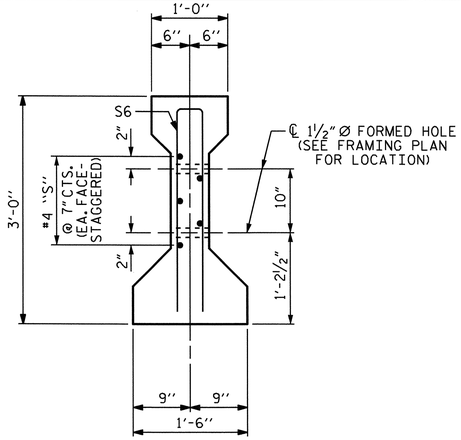
STD. NO. PCG4 (Sht. 1)



SECTION A-A



SECTION B-B

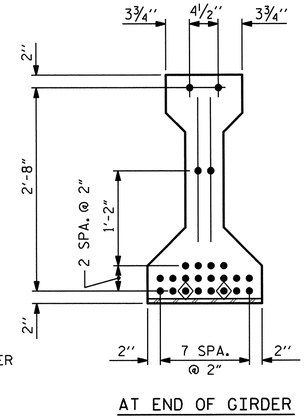


SECTION C-C

(S1 BARS NOT SHOWN)

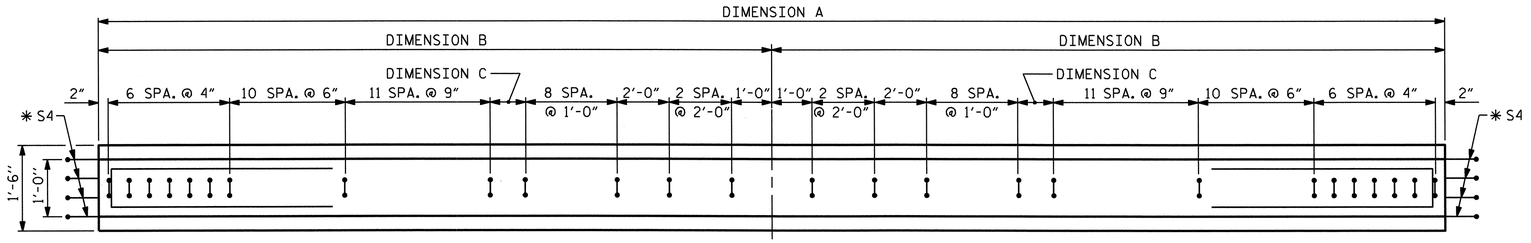
DEBONDING LEGEND

- ● FULLY BONDED STRANDS
- ◈ STRANDS DEBONDED FOR 10'-0" FROM END OF GIRDER

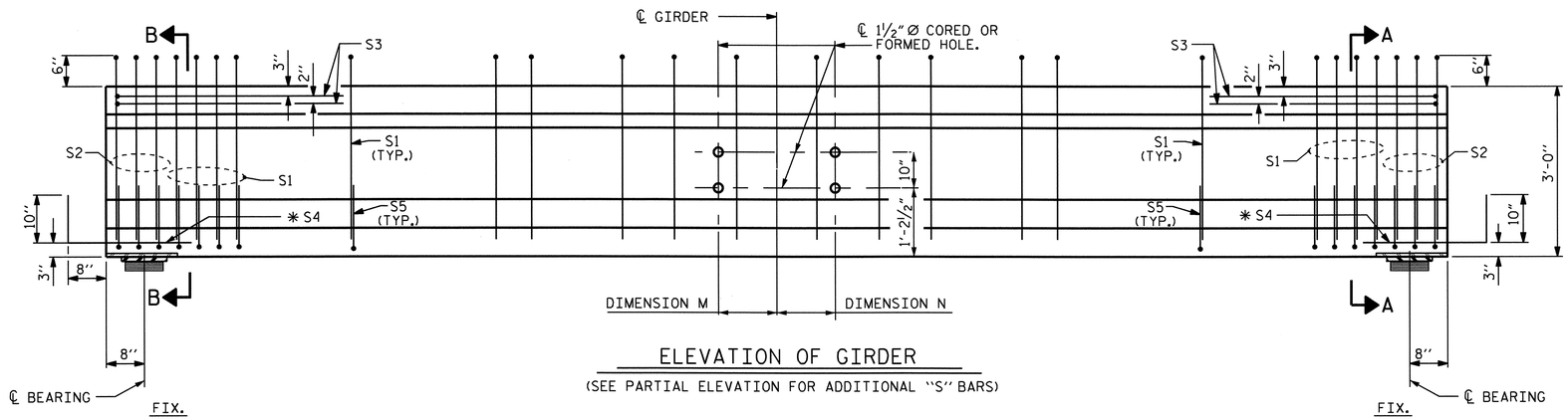


AT END OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT

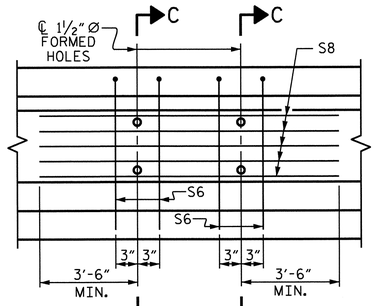


PLAN OF GIRDER



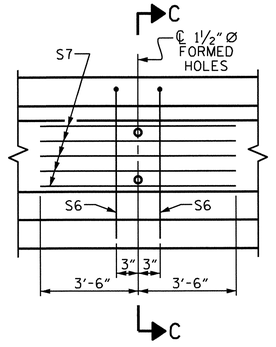
ELEVATION OF GIRDER

(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. C2 THRU C10



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. C1 & C11

0.6" Ø L. R. GRADE 270 STRANDS		
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

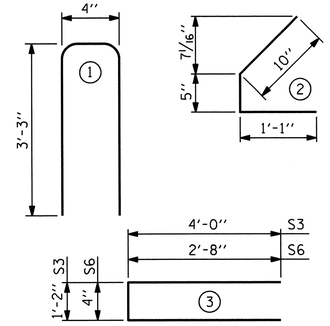
REINFORCING STEEL FOR ONE GIRDER

	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
	S1	74	#5	1	6'-10"	527
	S2	6	#6	1	6'-10"	62
	S3	4	#4	3	8'-8"	23
	* S4	8	#5	STR	3'-8"	31
	S5	68	#4	2	2'-4"	106
EXTERIOR GDR.	S6	2	#5	3	5'-8"	12
INTERIOR GDR.	S6	4	#5	3	5'-8"	24
EXTERIOR GDR.	S7	5	#4	STR	7'-0"	23
INTERIOR GDR.	S8	5	#4	STR	11'-4"	39

* NOTE: S4 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	8,500 PSI CONCRETE C.Y.	0.6" Ø L. R. STRANDS No.
EXT. GDR.	784	5.9	24
INT. GDR.	812	5.9	24

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
11	SEE "GIRDER DETAILS"	683.89

GIRDER DETAILS

	DIMENSION A	DIMENSION B	DIMENSION C	DIMENSION M	DIMENSION N
GIRDER C1	62'-8¼"	31'-4⅛"	11⅛"	------	2'-4¼"
GIRDER C2	62'-7"	31'-3½"	10½"	2'-4¼"	2'-4⅛"
GIRDER C3	62'-5⅝"	31'-2 13/16"	9 13/16"	2'-4⅛"	2'-4"
GIRDER C4	62'-4⅜"	31'-2 13/16"	9 13/16"	2'-4"	2'-3¾"
GIRDER C5	62'-3¼"	31'-1⅝"	8⅝"	2'-3¾"	2'-3⅝"
GIRDER C6	62'-2"	31'-1"	8"	2'-3⅝"	2'-3½"
GIRDER C7	62'-0¾"	31'-0⅜"	7⅜"	2'-3½"	2'-3⅜"
GIRDER C8	61'-11½"	30'-11¾"	6¾"	2'-3⅜"	2'-3¼"
GIRDER C9	61'-10½"	30'-11¼"	6¼"	2'-3¼"	2'-3⅛"
GIRDER C10	61'-9¼"	30'-10⅝"	5⅝"	2'-3⅛"	2'-3"
GIRDER C11	61'-8⅛"	30'-10 1/16"	5 1/16"	2'-3"	-----

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 3 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

AASHTO TYPE II
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD

(SPAN C)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-70
1			3			TOTAL SHEETS
2			4			125

ASSEMBLED BY: R. G. EMERSON DATE: 01/11
CHECKED BY: M. K. BEARD DATE: 05/11

DRAWN BY : ELR 8/91
CHECKED BY : GRP 8/91

REV. 8/16/99 RWW/LES
REV. 10/17/00R RWW/LES
REV. 5/1/06R TLA/GM

02-FEB-2012 11:36
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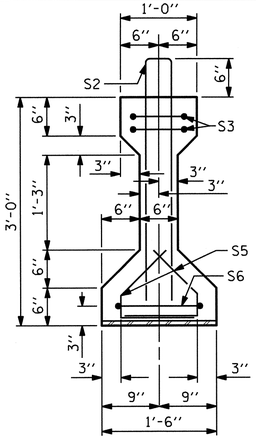
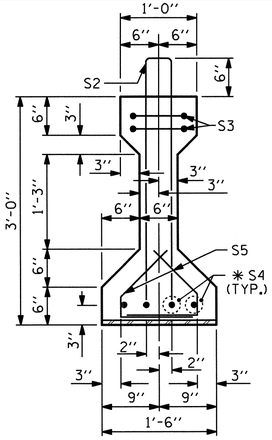
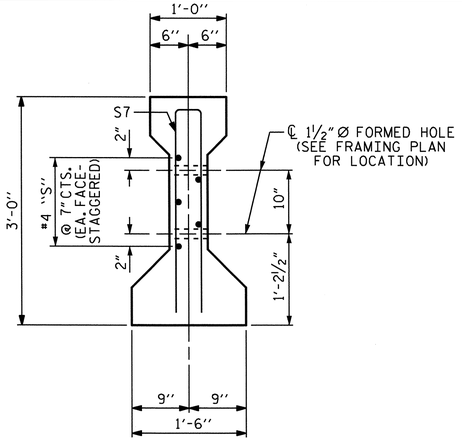
STD. NO. PCG4 (Sht. 1)



SECTION A-A



SECTION B-B

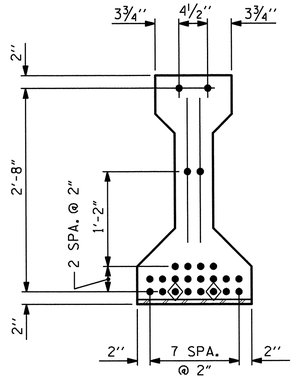


SECTION C-C

(S1 BARS NOT SHOWN)

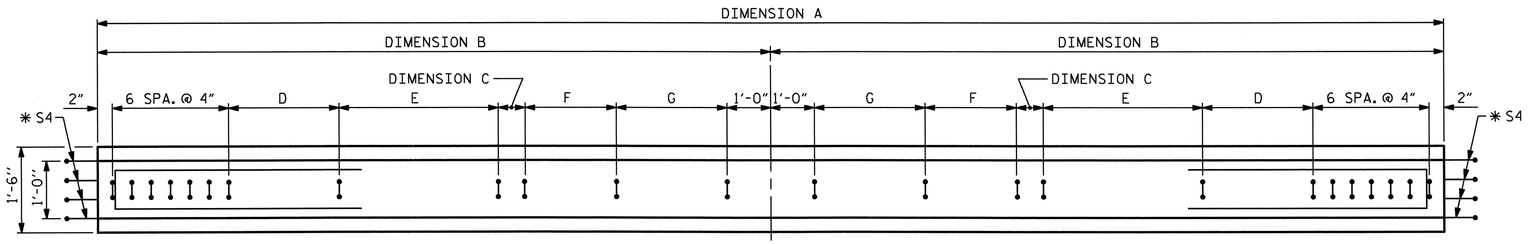
DEBONDING LEGEND

- ● FULLY BONDED STRANDS
- ◈ STRANDS DEBONDED FOR 10'-0" FROM END OF GIRDER

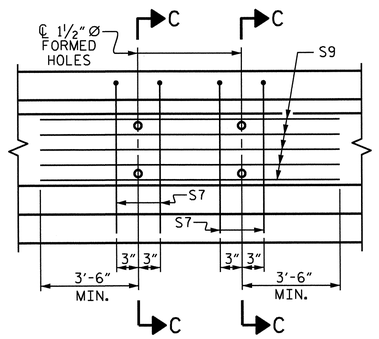


AT END OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT

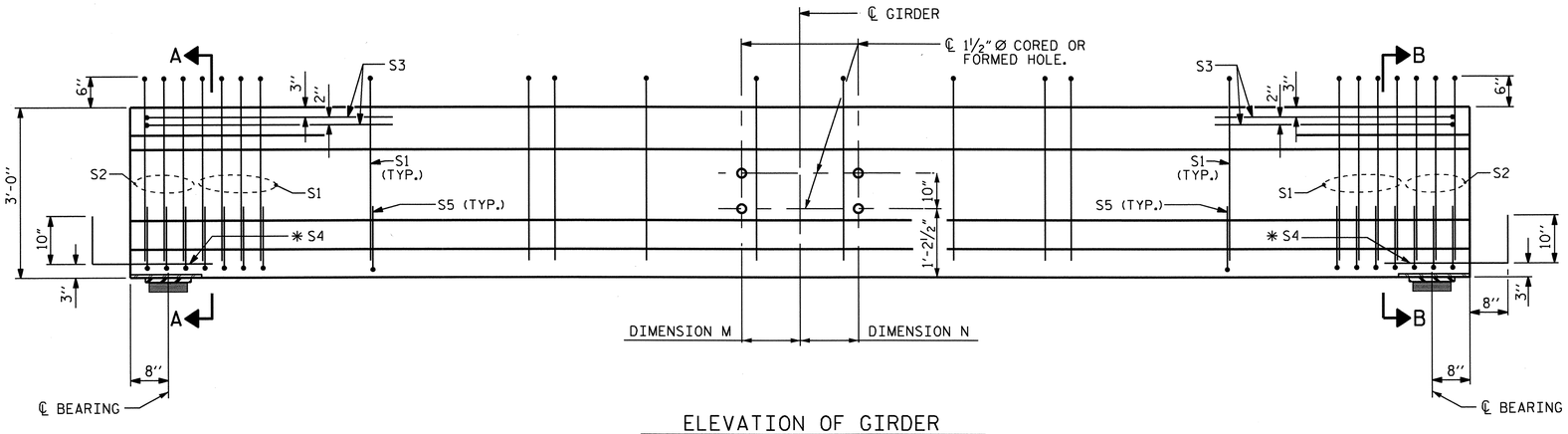


PLAN OF GIRDER



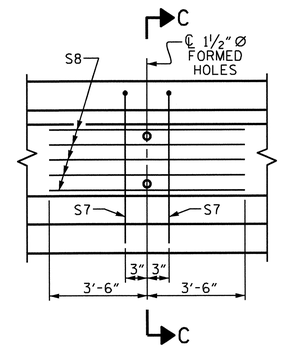
PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. D2 THRU D3



ELEVATION OF GIRDER

(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER No. D1

GIRDER DETAILS

	DIMENSION A	DIMENSION B	DIMENSION C	D	E	F	G	DIMENSION M	DIMENSION N
GIRDER D1	64'-4⅜"	32'-2³⁄₁₆"	1'-0³⁄₁₆"	4 SPA. @ 6"	14 SPA. @ 9"	6 SPA. @ 1'-3"	4 SPA. @ 2'-0"	------	1'-7¼"
GIRDER D2	61'-10⅞"	30'-11⅞₁₆"	9⅞₁₆"	10 SPA. @ 6"	13 SPA. @ 9"	5 SPA. @ 1'-3"	3 SPA. @ 2'-0"	1'-7⅛"	1'-7"
GIRDER D3	59'-5⅜"	29'-8¹¹⁄₁₆"	9¹¹⁄₁₆"	10 SPA. @ 6"	14 SPA. @ 9"	4 SPA. @ 1'-3"	3 SPA. @ 2'-0"	1'-7"	1'-7"

0.6" Ø L. R. GRADE 270 STRANDS

AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

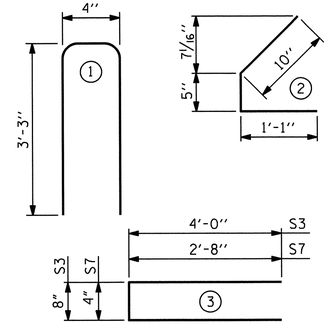
REINFORCING STEEL FOR ONE GIRDER

	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
D1	S1	66	#5	1	6'-10"	470
D2 & D3	S1	72	#5	1	6'-10"	513
	S2	6	#6	1	6'-10"	62
	S3	4	#4	3	8'-8"	23
	*S4	8	#5	STR	3'-8"	31
D1	S5	44	#4	2	2'-4"	69
D2 & D3	S5	68	#4	2	2'-4"	106
D1	S7	2	#5	3	5'-8"	12
D2 & D3	S7	4	#5	STR	5'-8"	24
D1	S8	5	#4	STR	7'-0"	23
D2 & D3	S9	5	#4	STR	14'-5"	48

*NOTE: S4 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	8,500 PSI CONCRETE C.Y.	0.6" Ø L. R. STRANDS No.
D1	690	6.1	24
D2	793	5.9	24
D3	793	5.6	24

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
3	SEE "GIRDER DETAILS"	185.72

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 4 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
AASHTO TYPE II
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
(SPAN D)
(FOR GIRDERS D1-D3)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-71
1			3			TOTAL SHEETS
2			4			125

ASSEMBLED BY: R. G. EMERSON DATE: 01/11
CHECKED BY: M. K. BEARD DATE: 05/11

DRAWN BY : ELR 8/91
CHECKED BY : GRP 8/91

REV. 8/16/99 RWW/LES
REV. 10/17/00R RWW/LES
REV. 5/1/06R TLA/GM

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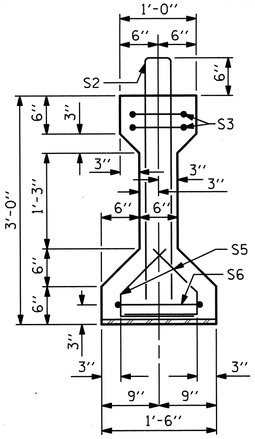
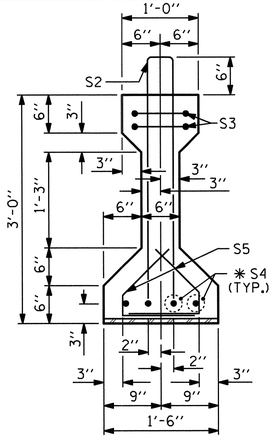
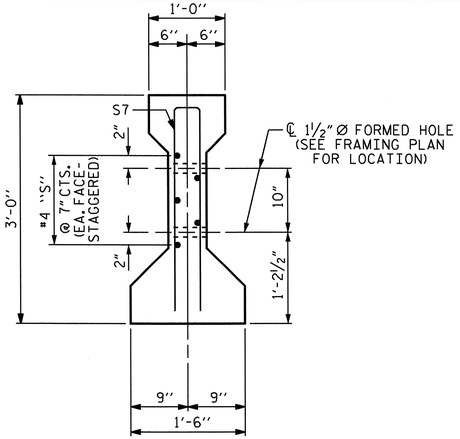
STD. NO. PCG4 (Sht. 1)



SECTION A-A



SECTION B-B

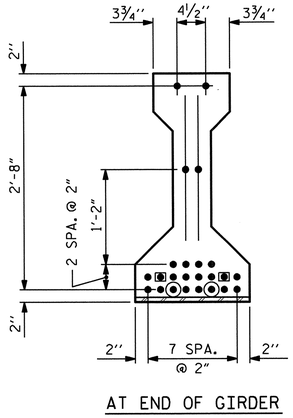


SECTION C-C

(S1 BARS NOT SHOWN)

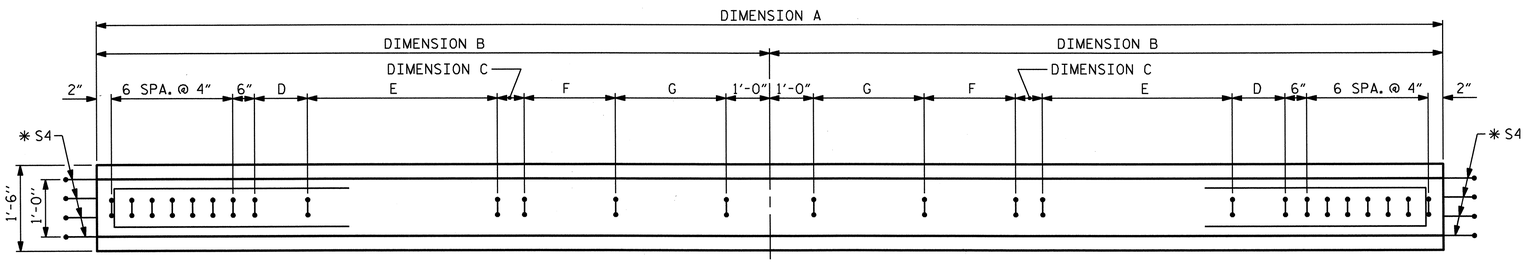
DEBONDING LEGEND

- ● FULLY BONDED STRANDS
- ⦿ STRANDS DEBONDED FOR 2'-0" FROM END OF GIRDER
- ▣ OPTIONAL FULL LENGTH DEBONDED STRANDS

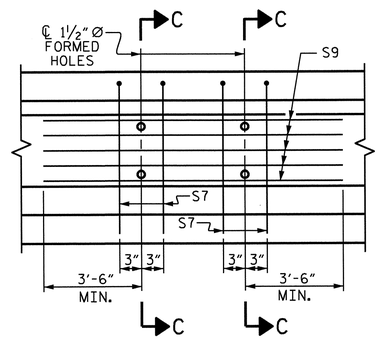


AT END OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT

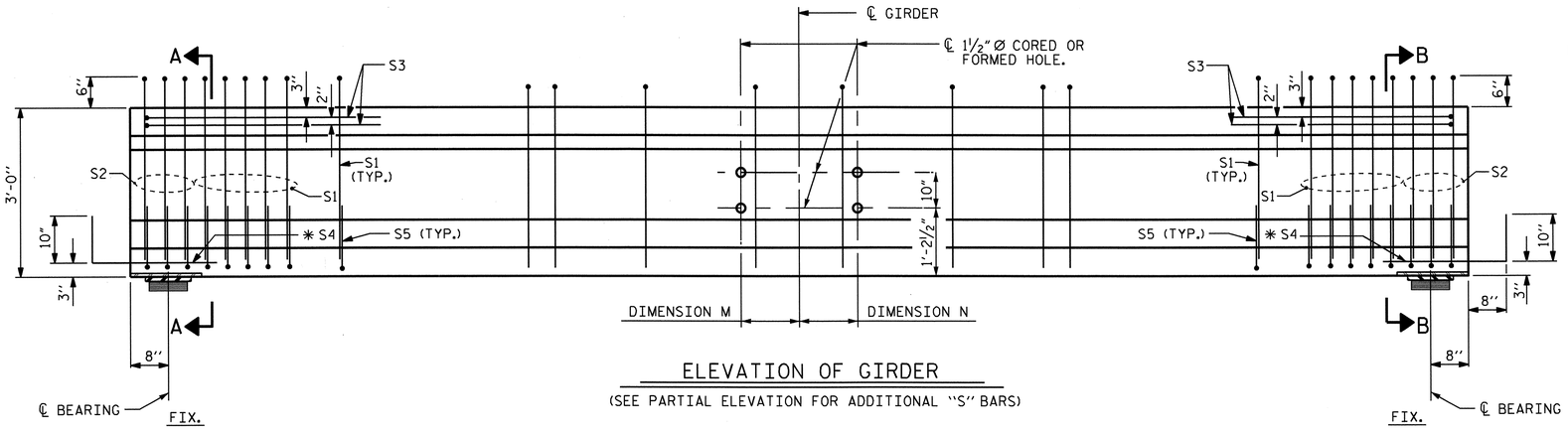


PLAN OF GIRDER



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. D4 THRU D7



ELEVATION OF GIRDER

(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)

GIRDER DETAILS

	DIMENSION A	DIMENSION B	DIMENSION C	D	E	F	G	DIMENSION M	DIMENSION N
GIRDER D4	57'-0"	28'-6"	1'-1"	4 SPA. @ 6"	15 SPA. @ 9"	4 SPA. @ 1'-3"	3 SPA. @ 2'-0"	1'-7"	1'-6⅞"
GIRDER D5	54'-6⅝"	27'-3⅜16"	7⅝16"	7 SPA. @ 6"	12 SPA. @ 9"	4 SPA. @ 1'-3"	3 SPA. @ 2'-0"	1'-6⅞"	1'-6¾"
GIRDER D6	52'-1½"	26'-0¾"	10¾"	4 SPA. @ 6"	12 SPA. @ 9"	4 SPA. @ 1'-3"	3 SPA. @ 2'-0"	1'-6¾"	1'-6¾"
GIRDER D7	49'-8¼"	24'-10⅛"	1'-2⅛"	4 SPA. @ 6"	10 SPA. @ 9"	4 SPA. @ 1'-3"	3 SPA. @ 2'-0"	1'-6¾"	1'-6⅝"

0.6" Ø L. R. GRADE 270 STRANDS

AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

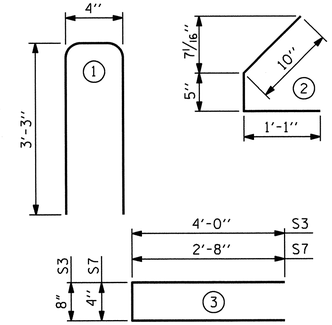
REINFORCING STEEL FOR ONE GIRDER

	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
D4 & D5	S1	66	#5	1	6'-10"	470
D6	S1	58	#5	1	6'-10"	413
D7	S1	54	#5	1	6'-10"	385
	S2	6	#6	1	6'-10"	62
	S3	4	#4	3	8'-8"	23
	✱S4	4	#5	STR	3'-8"	15
D4, D6 & D7	S5	66	#4	2	2'-4"	103
D5	S5	60	#4	2	2'-4"	94
	S7	4	#5	STR	5'-8"	24
	S9	5	#4	STR	14'-5"	48

✱NOTE: S4 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	8,500 PSI CONCRETE C.Y.	0.6" Ø L.R. STRANDS No.
D4	705	5.4	22
D5	724	5.2	22
D6	662	4.9	22
D7	634	4.7	22

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
4	SEE "GIRDER DETAILS"	213.36

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 5 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
AASHTO TYPE II
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
(SPAN D)
(FOR GIRDERS D4-D7)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-72
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 030878 ENGINEER KEVIN FISCHER
3/9/12

ASSEMBLED BY: R. G. EMERSON	DATE: 01/11
CHECKED BY: M. K. BEARD	DATE: 05/11
DRAWN BY : ELR 8/91	REV. 8/16/99 RWW/LES
CHECKED BY : GRP 8/91	REV. 10/17/00R RWW/LES
	REV. 5/1/06R TLA/GM

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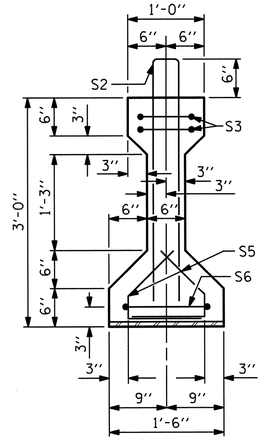
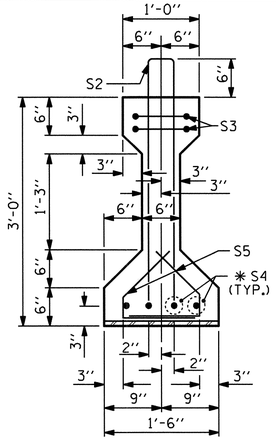
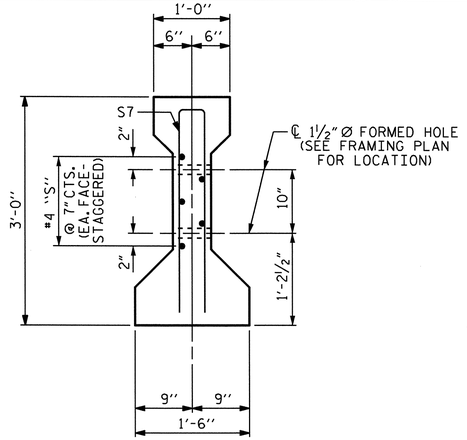
STD. NO. PCG4 (Sht. 1)



SECTION A-A



SECTION B-B

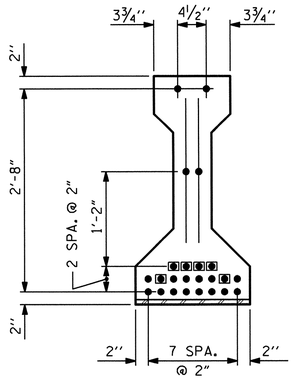


SECTION C-C

(S1 BARS NOT SHOWN)

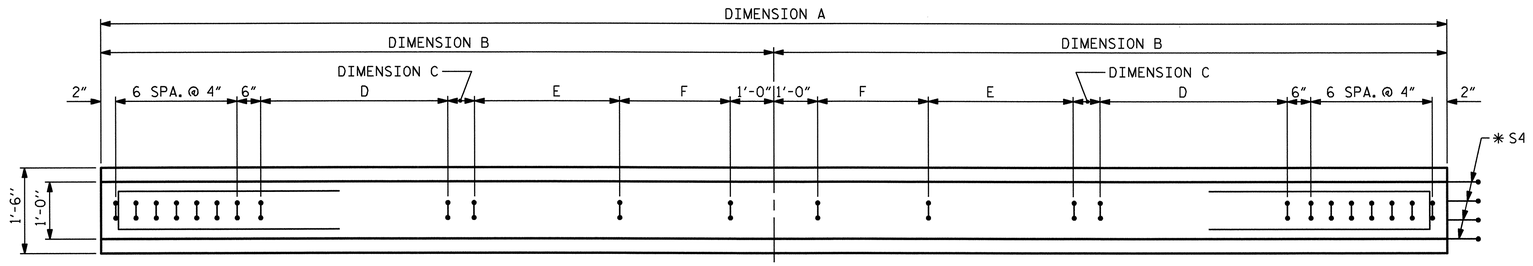
DEBONDING LEGEND

- ● FULLY BONDED STRANDS
- ◉ OPTIONAL FULL LENGTH DEBONDED STRANDS

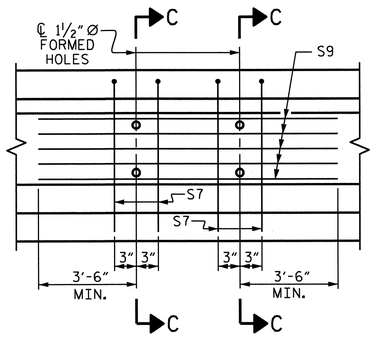


AT END OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT

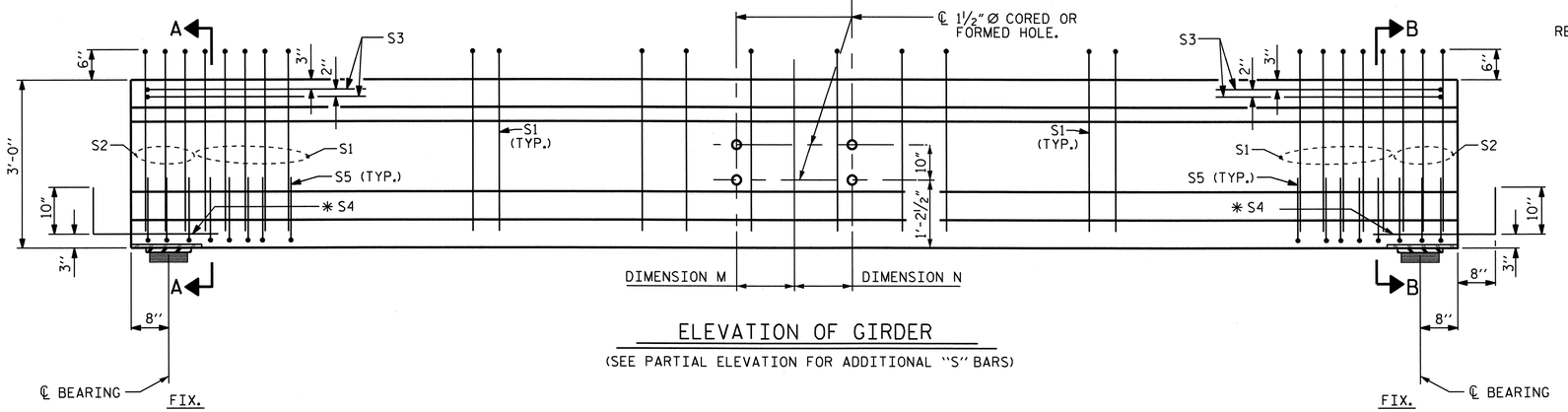


PLAN OF GIRDER



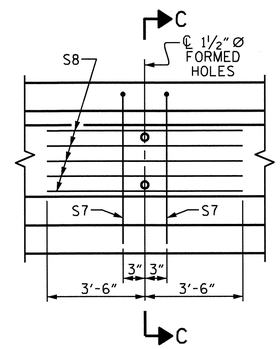
PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. D8 THRU D10



ELEVATION OF GIRDER

(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER No. D11

GIRDER DETAILS

	DIMENSION A	DIMENSION B	DIMENSION C	D	E	F	DIMENSION M	DIMENSION N
GIRDER D8	47'-3¼"	23'-7⅝"	7⅝"	7 SPA. @ 10"	6 SPA. @ 1'-3"	3 SPA. @ 2'-0"	1'-6⅝"	1'-6½"
GIRDER D9	44'-10¼"	22'-5⅛"	8⅛"	7 SPA. @ 10"	5 SPA. @ 1'-3"	3 SPA. @ 2'-0"	1'-6½"	1'-6½"
GIRDER D10	42'-5¼"	21'-2⅝"	8⅝"	4 SPA. @ 10"	6 SPA. @ 1'-3"	3 SPA. @ 2'-0"	1'-6½"	1'-6⅜"
GIRDER D11	40'-0⅜"	20'-0³⁄₁₆"	11³⁄₁₆"	2 SPA. @ 10"	3 SPA. @ 1'-3"	5 SPA. @ 2'-0"	1'-6⅜"	-----

0.6" Ø L. R. GRADE 270 STRANDS

AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

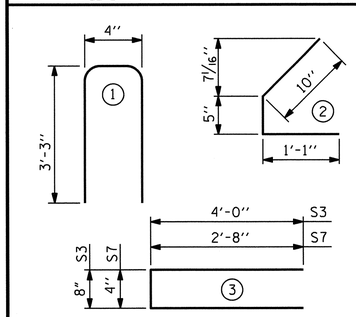
REINFORCING STEEL FOR ONE GIRDER

	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
D8	S1	44	#5	1	6'-10"	314
D9	S1	42	#5	1	6'-10"	299
D10	S1	38	#5	1	6'-10"	271
D11	S1	32	#5	1	6'-10"	228
	S2	6	#6	1	6'-10"	62
	S3	4	#4	3	8'-8"	23
	✱S4	8	#5	STR	3'-8"	31
D8 & D9	S5	60	#4	2	2'-4"	94
D10	S5	48	#4	2	2'-4"	75
D11	S5	40	#4	2	2'-4"	62
D8, D9, & D10	S7	4	#5	3	5'-8"	24
D11	S7	2	#5	3	5'-8"	12
D11	S8	5	#4	STR	7'-0"	23
D8, D9, & D10	S9	5	#4	STR	10'-1"	34

✱NOTE: S4 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	8,500 PSI CONCRETE C.Y.	0.6" Ø L.R. STRANDS No.
D8	582	4.5	18
D9	567	4.3	18
D10	520	4.0	18
D11	441	3.8	18

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
4	SEE "GIRDER DETAILS"	174.59

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 6 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
AASHTO TYPE II
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
(SPAN D)
(FOR GIRDERS D8-D11)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-73
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER KEVIN FISCHER
3/9/12

ASSEMBLED BY: R. G. EMERSON DATE: 01/11
CHECKED BY: M. K. BEARD DATE: 05/11

DRAWN BY : ELR 8/91
CHECKED BY : GRP 8/91

REV. 8/16/99 RWW/LES
REV. 10/17/00R RWW/LES
REV. 5/1/06R TLA/GM

27-JAN-2012 14:00
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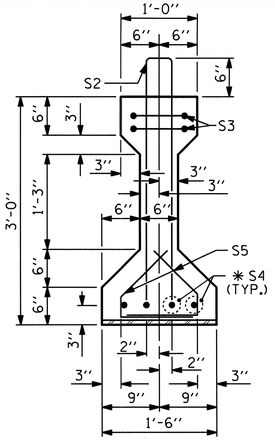
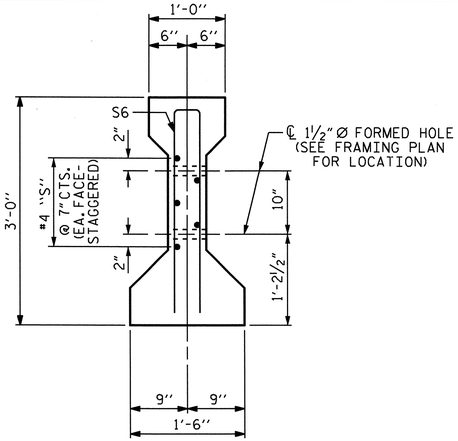
STD. NO. PCG4 (Sht. 1)



SECTION B-B

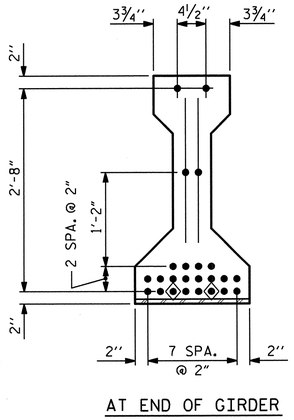


SECTION C-C

(S1 BARS NOT SHOWN)

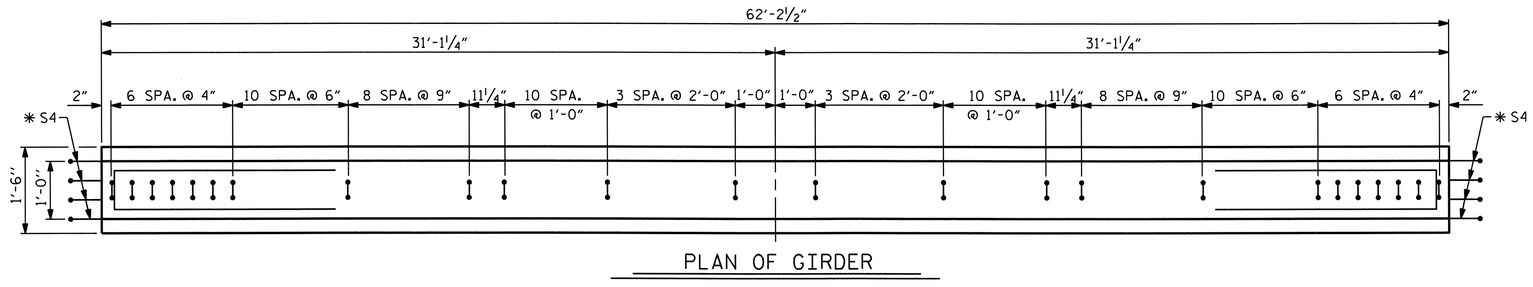
DEBONDING LEGEND

- ● FULLY BONDED STRANDS
- ◈ STRANDS DEBONDED FOR 10'-0" FROM END OF GIRDER

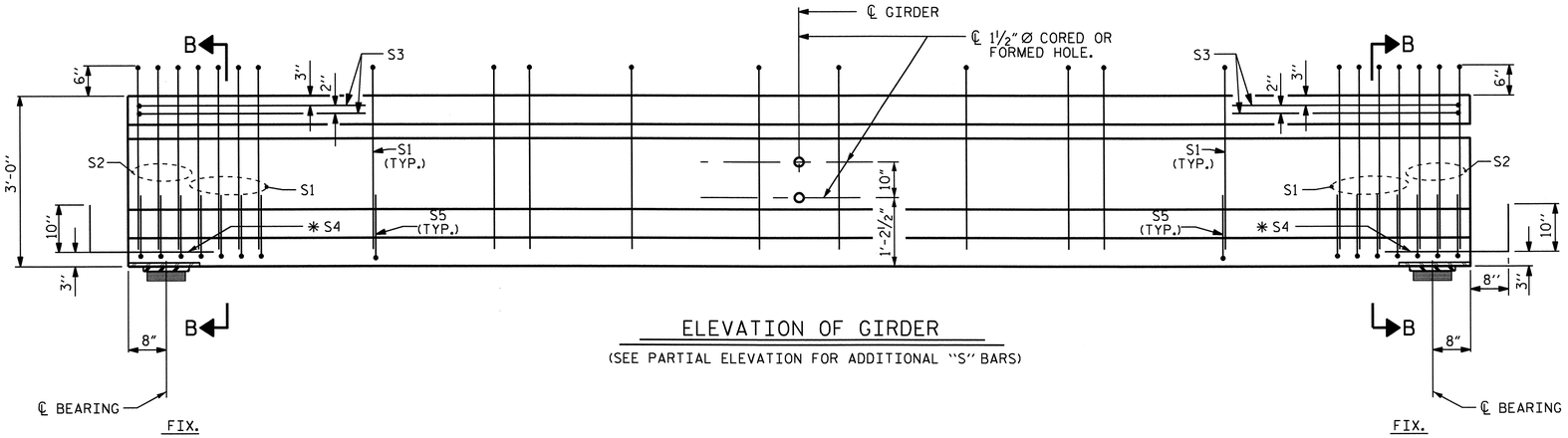


AT END OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT

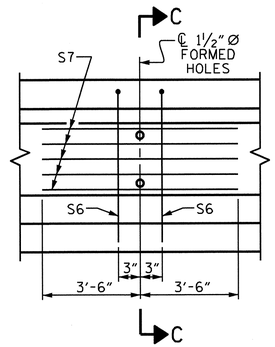


PLAN OF GIRDER



ELEVATION OF GIRDER

(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 1 & 11

0.6" Ø L. R. GRADE 270 STRANDS

AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

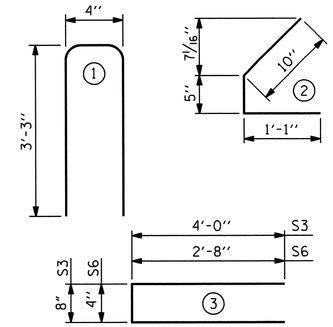
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	72	#5	1	6'-10"	513
S2	6	#6	1	6'-10"	62
S3	4	#4	3	8'-8"	23
* S4	8	#5	STR	3'-8"	31
S5	68	#4	2	2'-4"	106
S6	2	#4	3	5'-8"	8
S7	5	#5	STR	7'-0"	37

* NOTE: S4 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	8,500 PSI CONCRETE C.Y.	0.6" Ø L.R. STRANDS No.
EXT. GDR.	780	5.9	24

GIRDERS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
SPAN E	11	62'-2½"	684.29
SPAN H	11	62'-2½"	684.29
SPAN I	11	62'-2½"	684.29
SPAN J	11	62'-2½"	684.29
SPAN K	11	62'-2½"	684.29

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 7 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

AASHTO TYPE II
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
(FOR SPANS E & H-K)

NORTH CAROLINA PROFESSIONAL SEAL 030878 ENGINEER KEVIN FISCHER 4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-74
1			3			TOTAL SHEETS
2			4			125

ASSEMBLED BY: R. G. EMERSON	DATE: 01/11
CHECKED BY: M. K. BEARD	DATE: 05/11
DRAWN BY : ELR 8/91	REV. 8/16/99 RWW/LES
CHECKED BY : GRP 8/91	REV. 10/17/00R RWW/LES
	REV. 5/1/06R TLA/GM

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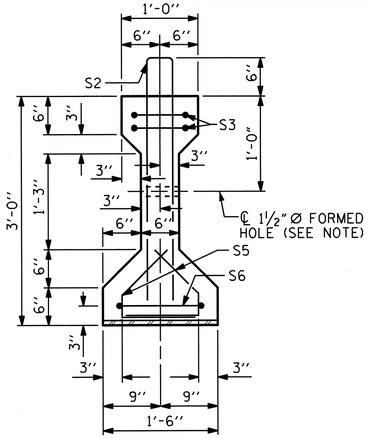
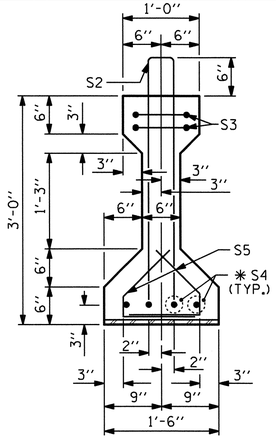
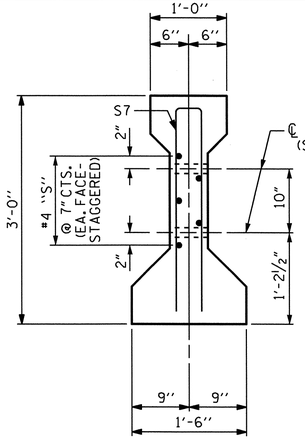
STD. NO. PCG4 (Sht. 1)



SECTION A-A



SECTION B-B

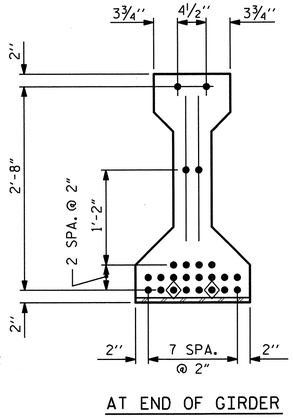


SECTION C-C

(S1 BARS NOT SHOWN)

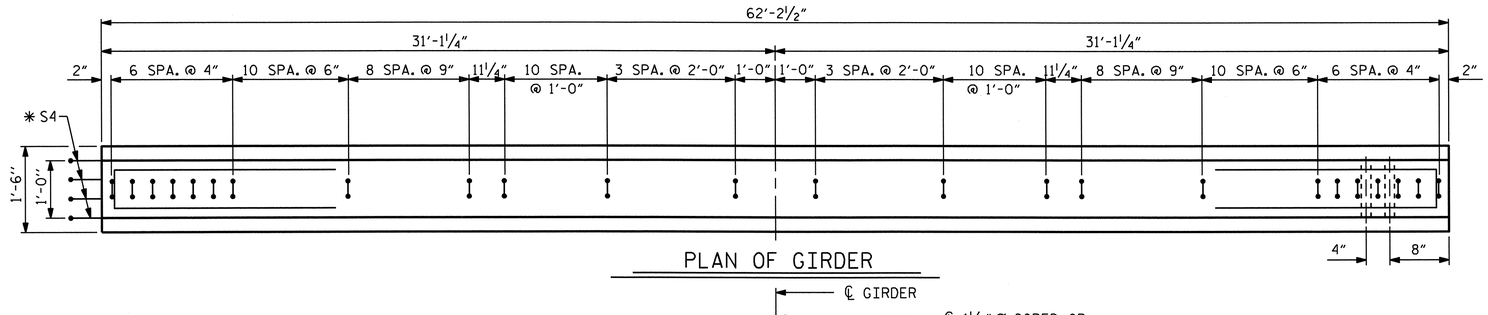
DEBONDING LEGEND

- ● FULLY BONDED STRANDS
- ◈ STRANDS DEBONDED FOR 10'-0" FROM END OF GIRDER

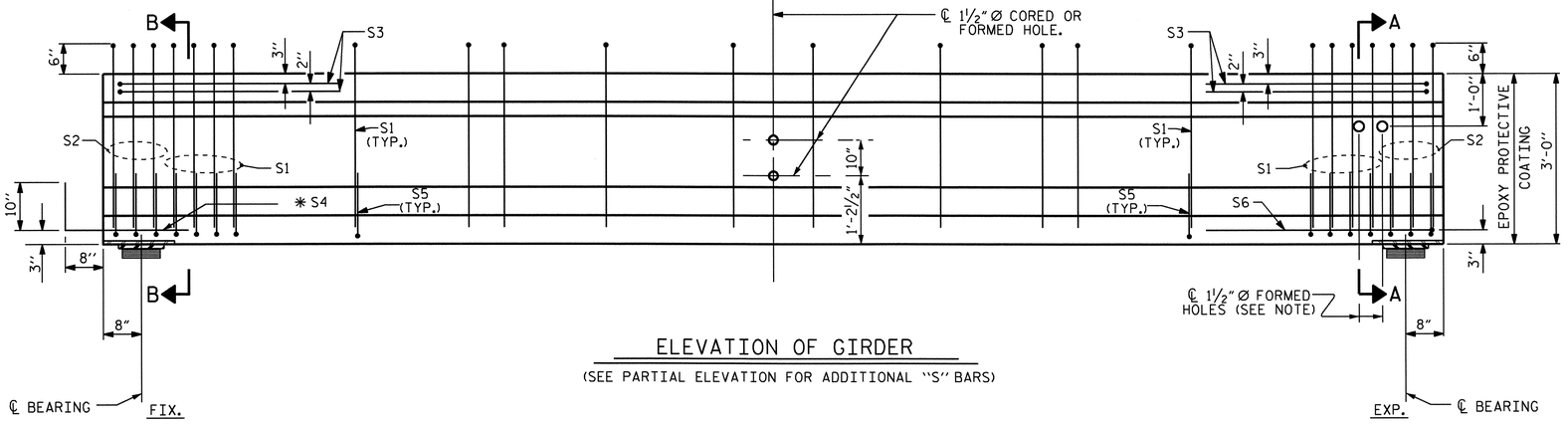


AT END OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT



PLAN OF GIRDER

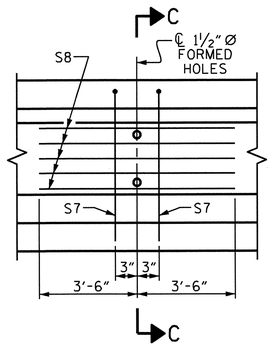


ELEVATION OF GIRDER

(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)

NOTE:

1½" Ø FORMED HOLE TO BE PLACED ONLY IN END SHOWN OF GIRDER F6.



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. F1 & F11

0.6" Ø L. R. GRADE 270 STRANDS

AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

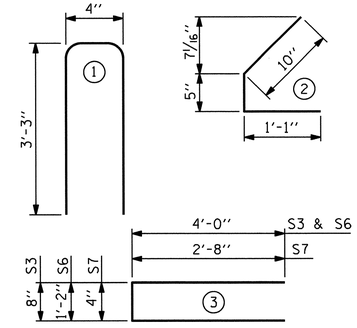
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	72	#5	1	6'-10"	513
S2	6	#6	1	6'-10"	62
S3	4	#4	3	8'-8"	23
✱S4	4	#5	STR	3'-8"	15
S5	68	#4	2	2'-4"	106
S6	1	#4	3	9'-2"	6
S7	2	#4	3	5'-8"	8
S8	5	#5	STR	7'-0"	37

✱NOTE: S4 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	8,500 PSI CONCRETE C.Y.	0.6" Ø L.R. STRANDS No.
EXT. GDR.	770	5.9	24

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
11	62'-2½"	684.29

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 8 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

AASHTO TYPE II
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
(SPAN F)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-75
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 030878 ENGINEER KEVIN FISCHER 4/30/12

ASSEMBLED BY: R. G. EMERSON	DATE: 01/11
CHECKED BY: M. K. BEARD	DATE: 05/11
DRAWN BY : ELR 8/91	REV. 8/16/99 RWW/LES
CHECKED BY : GRP 8/91	REV. 10/17/00R RWW/LES
	REV. 5/1/06R TLA/GM

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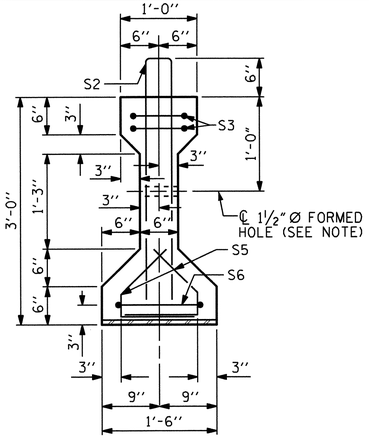
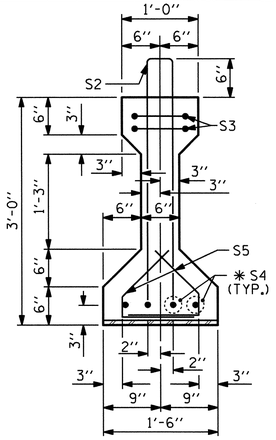
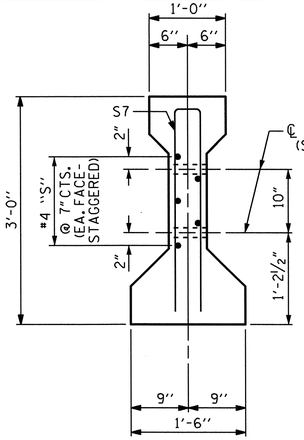
STD. NO. PCG4 (Sht. 1)



SECTION A-A



SECTION B-B

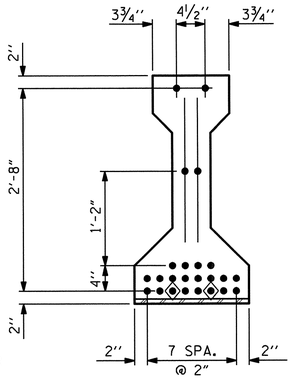


SECTION C-C

(S1 BARS NOT SHOWN)

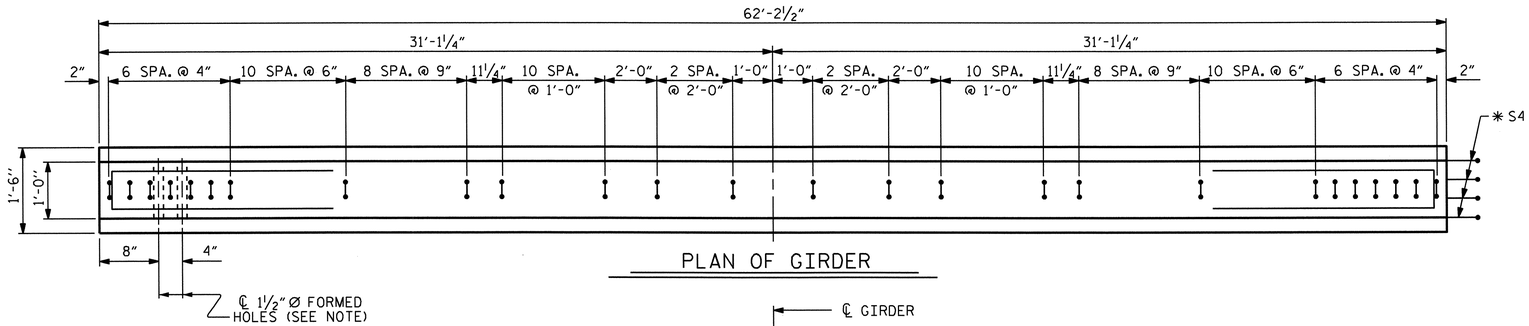
DEBONDING LEGEND

- FULLY BONDED STRANDS
- STRANDS DEBONDED FOR 10'-0" FROM END OF GIRDER

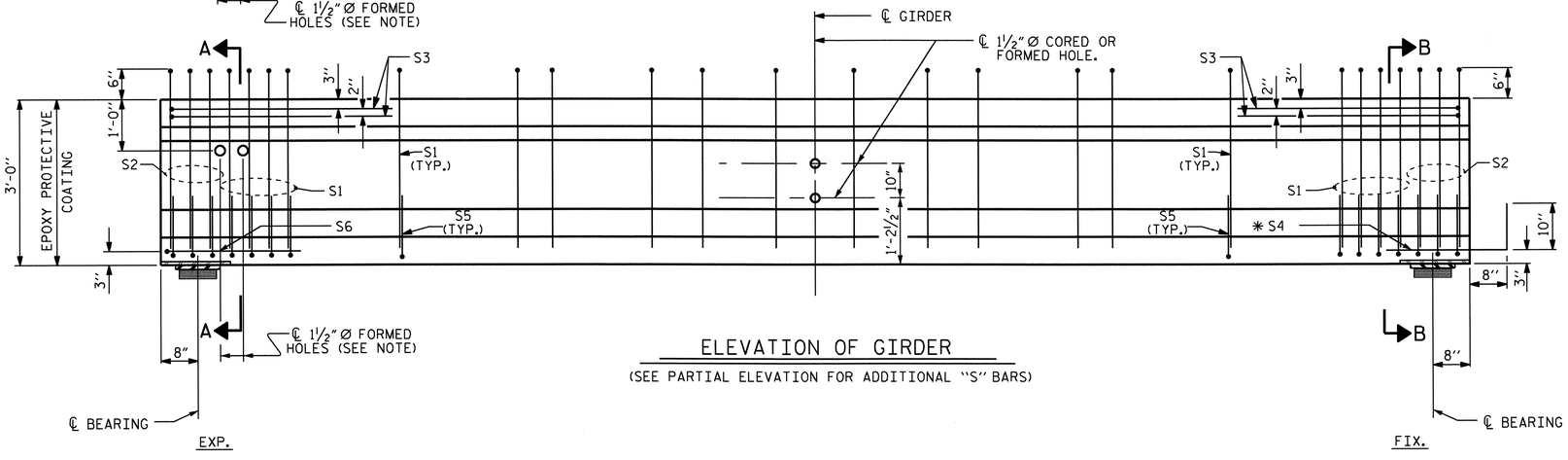


AT END OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT



PLAN OF GIRDER

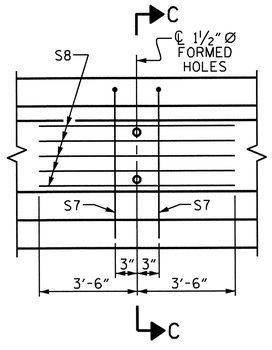


ELEVATION OF GIRDER

(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)

NOTE:

1½" Ø FORMED HOLE TO BE PLACED ONLY IN END SHOWN OF GIRDER G6.



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. G1 & G11

0.6" Ø L. R. GRADE 270 STRANDS

AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

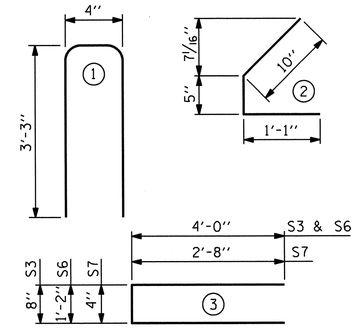
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	72	#5	1	6'-10"	513
S2	6	#6	1	6'-10"	62
S3	4	#4	3	8'-8"	23
✱S4	4	#5	STR	3'-8"	15
S5	68	#4	2	2'-4"	106
S6	1	#4	3	9'-2"	6
S7	2	#4	3	5'-8"	8
S8	5	#5	STR	7'-0"	37

✱NOTE: S4 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	8,500 PSI CONCRETE C.Y.	0.6" Ø L.R. STRANDS No.
EXT. GDR.	770	5.9	24

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
11	62'-2½"	684.29

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

AASHTO TYPE II
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
(SPAN G)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-76
1			3			TOTAL SHEETS
2			4			125

STD. NO. PCG4 (Sht. 1)

ASSEMBLED BY: R. G. EMERSON	DATE: 01/11
CHECKED BY: M. K. BEARD	DATE: 05/11
DRAWN BY : ELR 8/91	REV. 8/16/99 RWW/LES
CHECKED BY : GRP 8/91	REV. 10/17/00R RWW/LES
	REV. 5/1/06R TLA/GM

18-APR-2012 11:07
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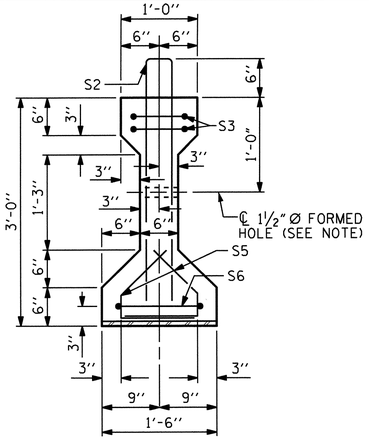
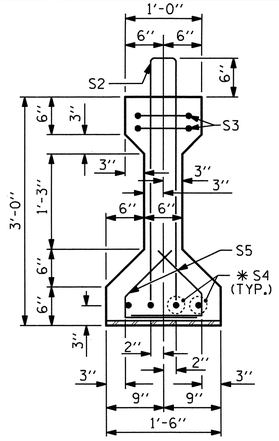
chunt

NORTH CAROLINA PROFESSIONAL SEAL 17078 ENGINEER KEVIN FISCHER 4/20/12



SECTION A-A



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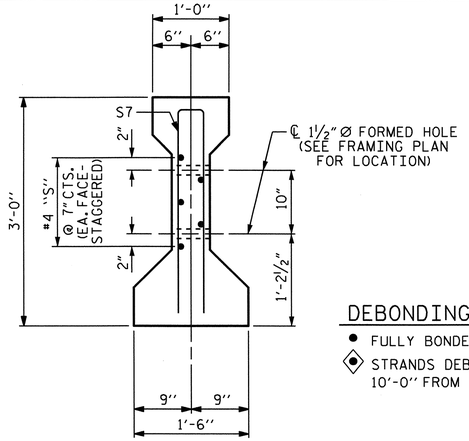
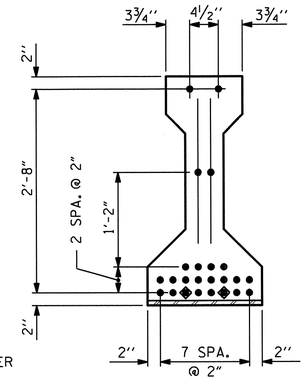


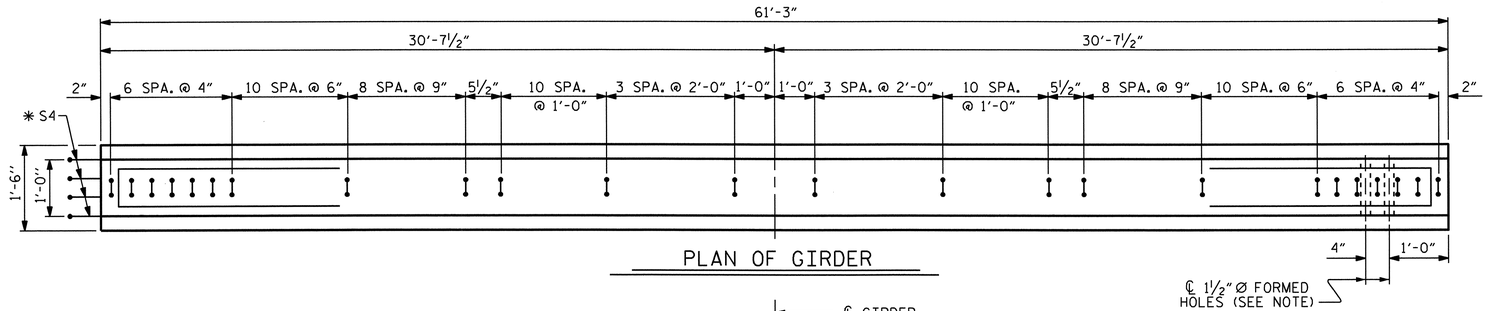
SECTION C-C
(S1 BARS NOT SHOWN)

DEBONDING LEGEND
- FULLY BONDED STRANDS
- STRANDS DEBONDED FOR 10'-0" FROM END OF GIRDER

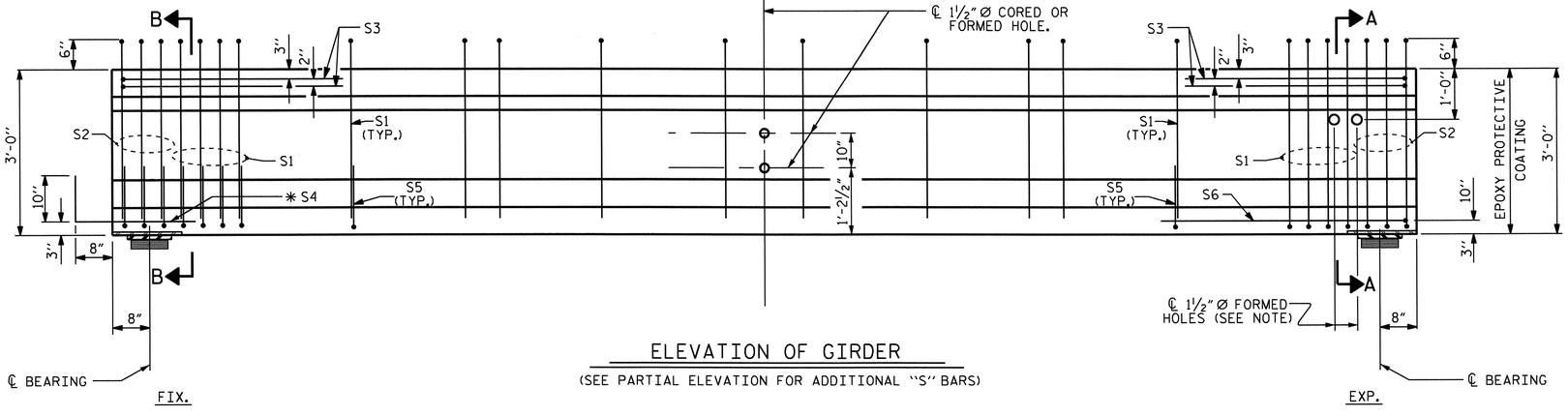


AT END OF GIRDER

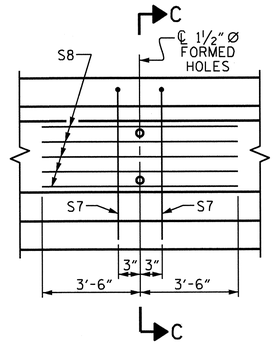
0.6" Ø LOW RELAXATION STRAND LAYOUT



PLAN OF GIRDER



ELEVATION OF GIRDER
(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)



PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. L1 & L11

NOTE:
1½" Ø FORMED HOLE TO BE PLACED ONLY IN END SHOWN OF GIRDER L6.

0.6" Ø L. R. GRADE 270 STRANDS

AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

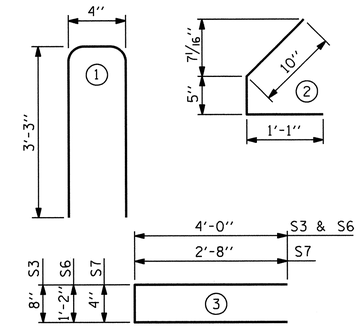
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	72	#5	1	6'-10"	513
S2	6	#6	1	6'-10"	62
S3	4	#4	3	8'-8"	23
✱S4	4	#5	STR	3'-8"	15
S5	68	#4	2	2'-4"	106
S6	1	#4	3	9'-2"	6
S7	2	#4	3	5'-8"	8
S8	5	#5	STR	7'-0"	37

✱NOTE: S4 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	8,500 PSI CONCRETE C.Y.	0.6" Ø L. R. STRANDS No.
GDR.	770	5.8	24

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
11	61'-3"	673.75

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 10 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

AASHTO TYPE II
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
(SPAN L)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-77
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

ASSEMBLED BY: R. G. EMERSON	DATE: 01/11
CHECKED BY: M. K. BEARD	DATE: 05/11
DRAWN BY : ELR 8/91	REV. 8/16/99 RWW/LES
CHECKED BY : GRP 8/91	REV. 10/17/00R RWW/LES
	REV. 5/1/06R TLA/GM

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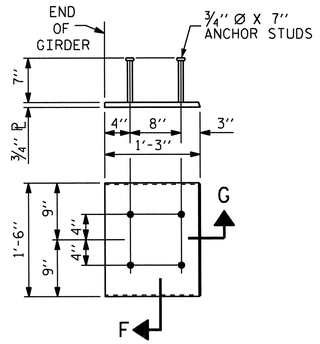
STD. NO. PCG4 (Sht. 1)



EMBEDDED PLATE "B-1" DETAILS FOR AASHTO TYPE II GIRDER

(2 REQ'D PER GIRDER)

NOTES

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

ALL REINFORCING STEEL SHALL BE GRADE 60.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES INDICATED IN ELEVATION VIEW.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. BEVEL EDGES OF PLATE "B-1" TO GIVE CLOSE FIT BUT NOT TIGHT FIT TO STEEL CASTING FORM.

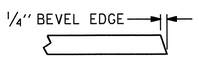
ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THROUGH 1020 OR APPROVED EQUAL, AND SHALL MEET THE TYPE "B" REQUIREMENTS OF SUBSECTION 7.3 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

AT ENDS OF GIRDERS TO BE EMBEDDED IN CONCRETE DIAPHRAGMS OR END WALLS, PRESTRESSING STRANDS MAY EXTEND A MAXIMUM OF 2" BEYOND THE GIRDER ENDS. OTHERWISE, PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

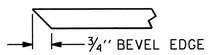
THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 7600 PSI.

DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

THE TOP SURFACE OF THE GIRDER, EXCLUDING THE OUTSIDE 4", SHALL BE RAKED TO A DEPTH OF 1/4".



SECTION "G"



SECTION "F"

(SEE NOTES)

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 11 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-78
1			3			TOTAL SHEETS
2			4			125

ASSEMBLED BY : R.G. EMERSON	DATE : 01/11
CHECKED BY : M.K. BEARD	DATE : 10/6/11
DRAWN BY : ELR 11/91	REV. 7/10/01RR LES/RDR
CHECKED BY : GRP 11/91	REV. 5/1/06 TLA/GM
	REV. 10/1/11 MAA/GM

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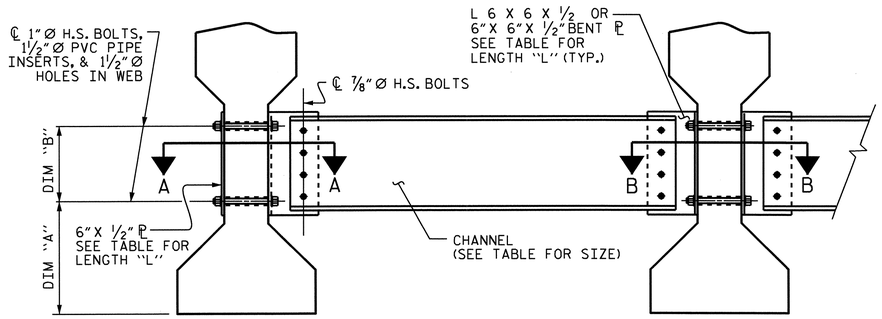
STD. NO. PCG9 (Sht. 1)

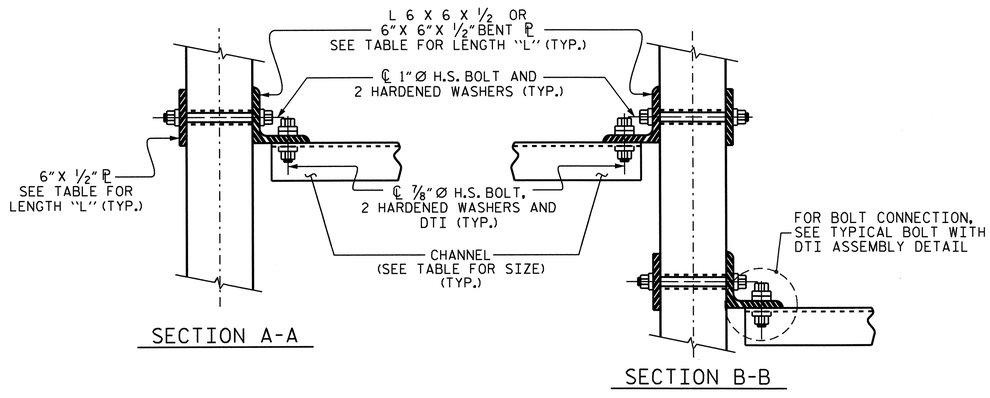


EXTERIOR GIRDER

INTERIOR GIRDER

PART SECTION AT INTERMEDIATE DIAPHRAGM

(TYPE III OR TYPE IV GIRDER SHOWN)

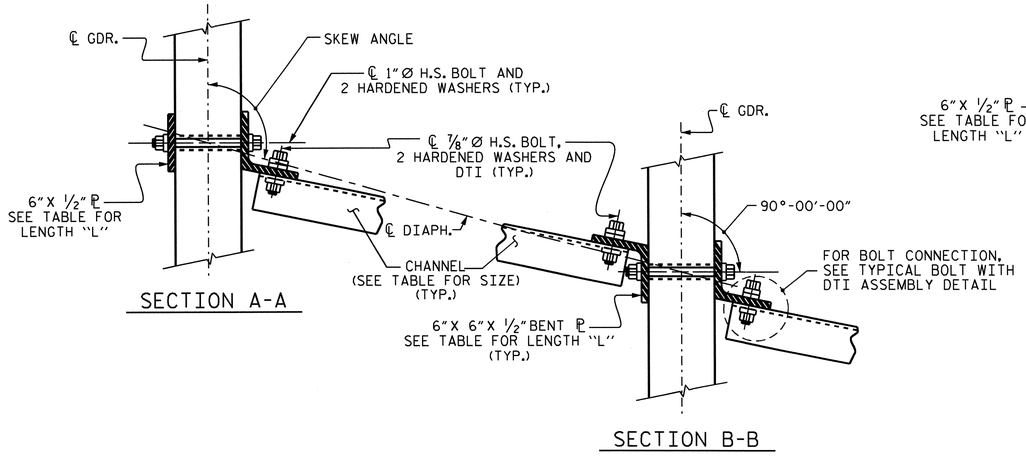


SECTION A-A

SECTION B-B

CONNECTION DETAILS

(FOR SKEW < 70° OR SKEW > 110°)

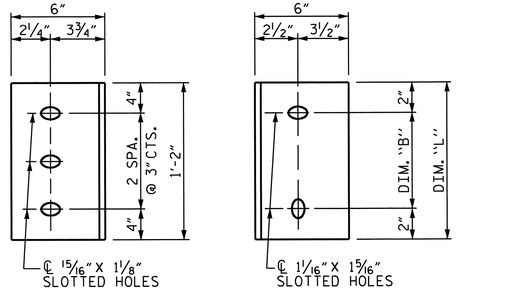


SECTION A-A

SECTION B-B

CONNECTION DETAILS

(FOR 70°≤ SKEW < 90° OR 90°< SKEW ≤ 110°)



DIAPHRAGM FACE (TYPE II GDR.)

WEB FACE

CONNECTION PLATE DETAILS

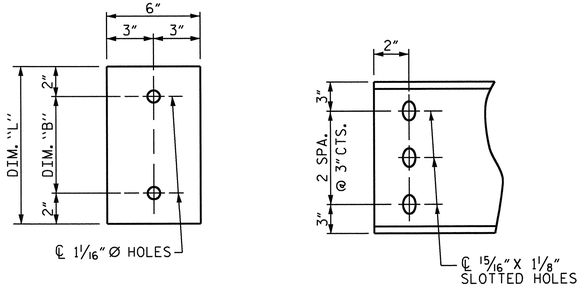
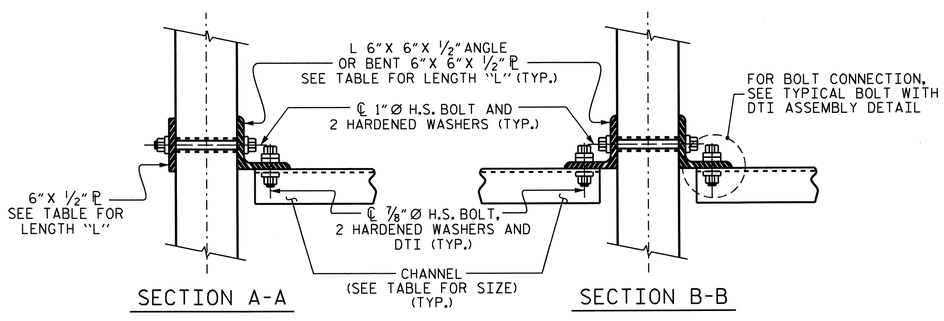


PLATE DETAILS

CHANNEL END (TYPE II GDR.)

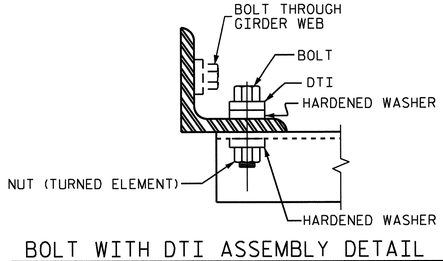


SECTION A-A

SECTION B-B

CONNECTION DETAILS

(FOR SKEW = 90°)



BOLT WITH DTI ASSEMBLY DETAIL

STRUCTURAL STEEL NOTES

ALL INTERMEDIATE DIAPHRAGM STEEL AND CONNECTOR PLATES SHALL BE AASHTO M270 GRADE 50 OR APPROVED EQUAL.

TENSION ON THE ASTM A325 BOLTS THROUGH THE CHANNEL MEMBER SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TENSION ON THE ASTM A449 BOLTS THROUGH THE GIRDER WEB SHALL BE SNUG TIGHTENED FOLLOWED BY AN ADDITIONAL ¼ TURN.

THE PLATES, BENT PLATES, CHANNELS, AND ANGLES SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

FOR METALLIZATION, APPLY AN 8 MIL THICK 99.99 PERCENT ZINC (W-Zn-1) THERMAL SPRAYED COATING WITH A 0.5 MIL THICK SEAL COAT TO ALL STEEL DIAPHRAGM SURFACES IN ACCORDANCE WITH THE THERMAL SPRAYED COATINGS SPECIAL PROVISION AND SECTION 442 OF THE STANDARD SPECIFICATIONS.

GALVANIZE THE HIGH STRENGTH BOLTS, NUTS, WASHERS AND DIRECT TENSION INDICATORS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

USE AN ASTM F436 HARDENED WASHER WITH STANDARD AND SLOTTED HOLES UNDER EACH BOLT HEAD AND NUT.

FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST ¼" PROJECTION BEYOND THE NUT.

INTERMEDIATE DIAPHRAGM ASSEMBLY SHALL COMPLY WITH SECTION 1072 OF THE STANDARD SPECIFICATIONS.

SUBMIT TWO SETS OF WORKING DRAWINGS FOR THE INTERMEDIATE DIAPHRAGM ASSEMBLY FOR REVIEW, COMMENTS AND ACCEPTANCE. AFTER REVIEW, COMMENTS, AND ACCEPTANCE, SUBMIT SEVEN SETS FOR DISTRIBUTION.

IN THE EXTERIOR BAYS, PLACE TEMPORARY STRUTS BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE STEEL DIAPHRAGMS. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED.

THE COST OF THE STEEL DIAPHRAGMS AND ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS.

TABLE

GIRDER TYPE	CHANNEL SIZE	DIM "A"	DIM "B"	DIM "L"
II	MC 12 x 31	1'-2½"	10"	1'-2"

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 12 OF 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE II, III, & IV PRESTRESSED CONCRETE GIRDERS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-79
1			3			TOTAL SHEETS
2			4			125

STD. NO. PCG10

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER

3/9/12

ASSEMBLED BY : R.G. EMERSON	DATE : 04/11
CHECKED BY : M.K. BEARD	DATE : 10/6/11
DRAWN BY : TLA 6/05	ADDED 10/21/05
CHECKED BY : VC 6/05	REV. 5/1/06RRR KMM/GM
	REV. 10/1/11 MAA/GM

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DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPAN A

0.6"Ø LOW RELAXATION	GIRDER 1											GIRDER 2 THRU 10											GIRDER 11										
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.084	0.159	0.217	0.254	0.267	0.254	0.217	0.159	0.084	0	0	0.084	0.158	0.216	0.253	0.266	0.253	0.216	0.158	0.084	0	0	0.081	0.154	0.210	0.246	0.259	0.246	0.210	0.154	0.081	0
✱DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.024	0.045	0.062	0.072	0.076	0.072	0.062	0.045	0.024	0	0	0.025	0.048	0.065	0.076	0.080	0.076	0.065	0.048	0.025	0	0	0.023	0.043	0.059	0.069	0.072	0.069	0.059	0.043	0.023	0
FINAL CAMBER ↑	0	3/4"	1 3/8"	1 7/8"	2 3/16"	2 5/16"	2 3/16"	1 7/8"	1 3/8"	3/4"	0	0	11/16"	1 5/16"	1 13/16"	2 1/8"	2 1/4"	2 1/8"	1 13/16"	1 5/16"	11/16"	0	0	11/16"	1 5/16"	1 13/16"	2 1/8"	2 1/4"	2 1/8"	1 13/16"	1 5/16"	11/16"	0

SPAN B & C

0.6"Ø LOW RELAXATION	GIRDER 1											GIRDERS 2 THRU 10											GIRDER 11										
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.088	0.166	0.227	0.266	0.280	0.266	0.227	0.166	0.088	0	0	0.088	0.166	0.227	0.266	0.279	0.266	0.227	0.166	0.088	0	0	0.085	0.162	0.221	0.259	0.272	0.259	0.221	0.162	0.085	0
✱DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.027	0.051	0.070	0.082	0.086	0.082	0.070	0.051	0.027	0	0	0.029	0.054	0.074	0.087	0.091	0.087	0.074	0.054	0.029	0	0	0.026	0.049	0.068	0.079	0.083	0.079	0.068	0.049	0.026	0
FINAL CAMBER ↑	0	3/4"	1 3/8"	1 7/8"	2 3/16"	2 5/16"	2 3/16"	1 7/8"	1 3/8"	3/4"	0	0	11/16"	1 5/16"	1 13/16"	2 1/8"	2 1/4"	2 1/8"	1 13/16"	1 5/16"	11/16"	0	0	11/16"	1 3/8"	1 13/16"	2 3/16"	2 1/4"	2 3/16"	1 13/16"	1 3/8"	11/16"	0

SPAN D

0.6"Ø LOW RELAXATION	GIRDER 1											GIRDER 2											GIRDER 3										
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	.091	0.172	0.236	0.277	0.290	0.277	0.236	0.172	.091	0	0	0.086	0.163	0.223	0.261	0.274	0.261	0.223	0.163	0.086	0	0	0.081	0.153	0.210	0.246	0.258	0.246	0.210	0.153	0.081	0
✱DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	.030	0.057	0.078	0.091	0.095	0.091	0.078	0.057	.030	0	0	0.027	0.052	0.071	0.083	0.087	0.083	0.071	0.052	0.027	0	0	0.023	0.044	0.060	0.070	0.074	0.070	0.060	0.044	0.023	0
FINAL CAMBER ↑	0	3/4"	1 3/8"	1 7/8"	2 1/4"	2 5/16"	2 1/4"	1 7/8"	1 3/8"	3/4"	0	0	11/16"	1 5/16"	1 13/16"	2 1/8"	2 1/4"	2 1/8"	1 13/16"	1 5/16"	11/16"	0	0	11/16"	1 5/16"	1 13/16"	2 1/8"	2 3/16"	2 1/8"	1 13/16"	1 5/16"	11/16"	0

0.6"Ø LOW RELAXATION	GIRDER 4											GIRDER 5											GIRDER 6										
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.066	0.124	0.170	0.199	0.209	0.199	0.170	0.124	0.066	0	0	0.061	0.116	0.159	0.186	0.195	0.186	0.159	0.116	0.061	0	0	0.057	0.108	0.148	0.173	0.181	0.173	0.148	0.108	0.057	0
✱DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.018	0.034	0.046	0.054	0.057	0.054	0.046	0.034	0.018	0	0	0.016	0.030	0.041	0.048	0.051	0.048	0.041	0.030	0.016	0	0	0.013	0.025	0.034	0.040	0.042	0.040	0.034	0.025	0.013	0
FINAL CAMBER ↑	0	9/16"	1 1/16"	1 1/2"	1 3/4"	1 13/16"	1 3/4"	1 1/2"	1 1/16"	9/16"	0	0	9/16"	1"	1 7/16"	1 5/8"	1 3/4"	1 5/8"	1 7/16"	1"	9/16"	0	0	1/2"	1"	1 3/8"	1 5/8"	1 11/16"	1 5/8"	1 3/8"	1"	1/2"	0

0.6"Ø LOW RELAXATION	GIRDER 7											GIRDER 8											GIRDER 9										
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.053	0.100	0.136	0.160	0.168	0.160	0.136	0.100	0.053	0	0	0.037	0.069	0.095	0.111	0.117	0.111	0.095	0.069	0.037	0	0	0.034	0.064	0.087	0.102	0.107	0.102	0.087	0.064	0.034	0
✱DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.010	0.019	0.026	0.031	0.032	0.031	0.026	0.019	0.010	0	0	0.008	0.016	0.022	0.025	0.026	0.025	0.022	0.016	0.008	0	0	0.007	0.014	0.019	0.022	0.023	0.022	0.019	0.014	0.007	0
FINAL CAMBER ↑	0	1/2"	15/16"	1 5/16"	1 9/16"	1 5/8"	1 9/16"	1 5/16"	15/16"	1/2"	0	0	5/16"	5/8"	7/8"	1"	1 1/16"	1"	7/8"	5/8"	5/16"	0	0	5/16"	5/8"	13/16"	15/16"	1"	15/16"	13/16"	5/8"	5/16"	0

0.6"Ø LOW RELAXATION	GIRDER 10											GIRDER 11											
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.031	0.058	0.079	0.093	0.097	0.093	0.079	0.058	0.031	0	0	0.028	0.052	0.071	0.084	0.088	0.084	0.071	0.052	0.028	0	
✱DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.006	0.011	0.015	0.017	0.018	0.017	0.015	0.011	0.006	0	0	0.005	0.009	0.012	0.014	0.014	0.014	0.012	0.009	0.005	0	
FINAL CAMBER ↑	0	1/4"	9/16"	3/4"	7/8"	15/16"	7/8"	3/4"	9/16"	1/4"	0	0	1/4"	1/2"	11/16"	13/16"	7/8"	13/16"	11/16"	1/2"	1/4"	0	

✱ INCLUDES FUTURE WEARING SURFACE
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DEAD LOAD DEFLECTION TABLES

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-80
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : R. G. EMERSON DATE : 03/11
CHECKED BY : M. K. BEARD DATE : 05/11

27-JAN-2012 13:59
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kbeard

NCDOS

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

0.6" Ø LOW RELAXATION	SPAN E, F, G, H, I, J & K																																
	GIRDER 1											GIRDERS 2 THRU 10											GIRDER 11										
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.087	0.164	0.225	0.263	0.276	0.263	0.225	0.164	0.087	0	0	0.087	0.164	0.224	0.263	0.276	0.263	0.224	0.164	0.087	0	0	0.086	0.164	0.224	0.262	0.275	0.262	0.224	0.164	0.086	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.026	0.049	0.067	0.079	0.083	0.079	0.067	0.049	0.026	0	0	0.028	0.053	0.072	0.084	0.089	0.084	0.072	0.053	0.028	0	0	0.027	0.051	0.070	0.082	0.086	0.082	0.070	0.051	0.027	0
FINAL CAMBER ↑	0	3/4"	1 3/8"	1 7/8"	2 3/16"	2 5/16"	2 3/16"	1 7/8"	1 3/8"	3/4"	0	0	11/16"	1 5/16"	1 13/16"	2 1/8"	2 1/4"	2 1/8"	1 13/16"	1 5/16"	11/16"	0	0	11/16"	1 3/8"	1 7/8"	2 3/16"	2 1/4"	2 3/16"	1 7/8"	1 3/8"	11/16"	0

* INCLUDES FUTURE WEARING SURFACE
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

0.6" Ø LOW RELAXATION	SPAN L																																
	GIRDER 1											GIRDER 2 THRU 10											GIRDER 11										
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.085	0.160	0.219	0.257	0.270	0.257	0.219	0.160	0.085	0	0	0.085	0.160	0.219	0.257	0.270	0.257	0.219	0.160	0.085	0	0	0.085	0.160	0.219	0.257	0.270	0.257	0.219	0.160	0.085	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.024	0.046	0.063	0.074	0.078	0.074	0.063	0.046	0.024	0	0	0.026	0.049	0.068	0.079	0.083	0.079	0.068	0.049	0.026	0	0	0.025	0.048	0.066	0.077	0.081	0.077	0.066	0.048	0.025	0
FINAL CAMBER ↑	0	3/4"	1 3/8"	1 7/8"	2 3/16"	2 5/16"	2 3/16"	1 7/8"	1 3/8"	3/4"	0	0	11/16"	1 5/16"	1 13/16"	2 1/8"	2 1/4"	2 1/8"	1 13/16"	1 5/16"	11/16"	0	0	11/16"	1 5/16"	1 13/16"	2 1/8"	2 1/4"	2 1/8"	1 13/16"	1 5/16"	11/16"	0

* INCLUDES FUTURE WEARING SURFACE
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DEAD LOAD DEFLECTION TABLES

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-81
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : R. G. EMERSON DATE : 03/11
CHECKED BY : M. K. BEARD DATE : 05/11

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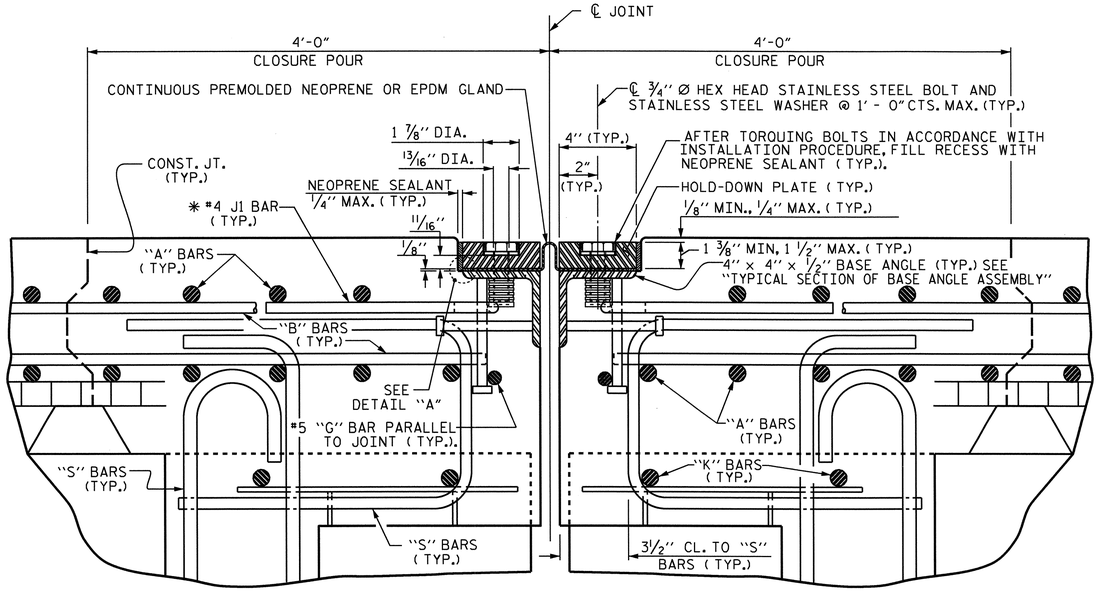
kbeard

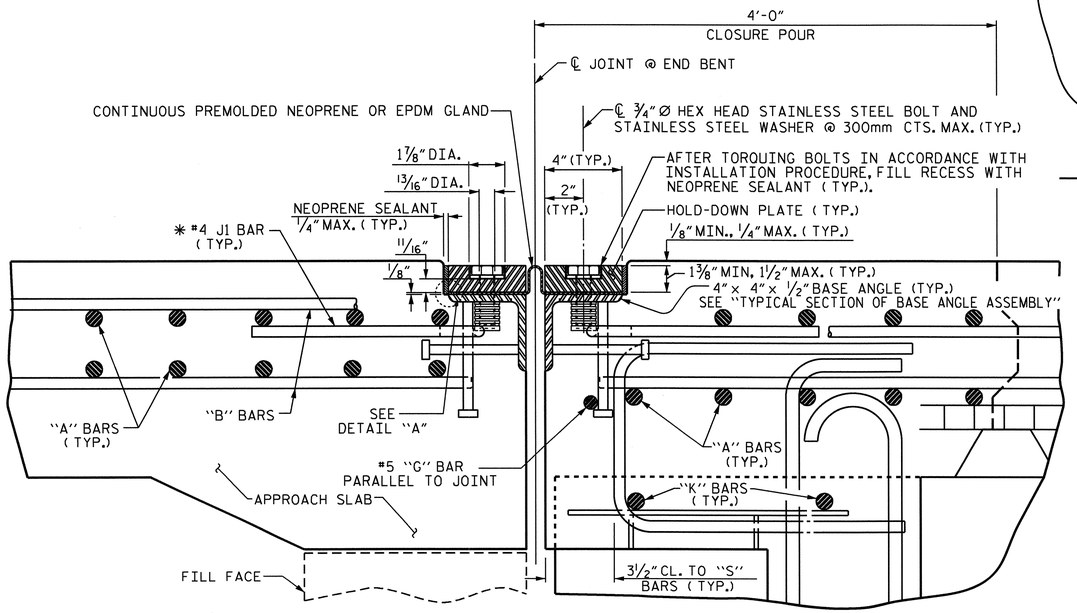
NCDOT



EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT -- PRESTRESSED GIRDER SUPERSTRUCTURE

* THE QUANTITY OF #4 J1 BARS ON THE BILL OF MATERIAL IS BASED ON 1'-0" CENTERS. J1 BARS SHALL BE PLACED AT EACH VERTICAL STUD ANCHOR BOLT. IN THE EVENT THAT THE NUMBER OF VERTICAL STUD ANCHORS EXCEEDS THE NUMBER OF J1 BARS SPECIFIED, ADDITIONAL J1 BARS WILL NOT BE REQUIRED.



EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT -- PRESTRESSED GIRDER SUPERSTRUCTURE

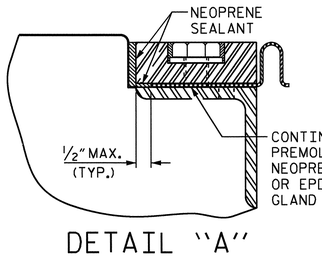
* THE QUANTITY OF #4 J1 BARS ON THE BILL OF MATERIAL IS BASED ON 1'-0" CENTERS. J1 BARS SHALL BE PLACED AT EACH VERTICAL STUD ANCHOR BOLT. IN THE EVENT THAT THE NUMBER OF VERTICAL STUD ANCHORS EXCEEDS THE NUMBER OF J1 BARS SPECIFIED, ADDITIONAL J1 BARS WILL NOT BE REQUIRED.

INSTALLATION PROCEDURE

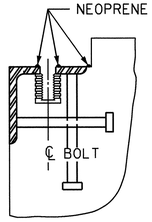
1. A TEMPLATE OR OTHER SUITABLE DEVICE SHALL BE USED TO FORM THE TOP OF THE EXPANSION JOINT SEAL BLOCKOUT TO THE PROPER DEPTH AND WIDTH. THE TEMPLATE SHALL BE 4 1/8" TO 4 1/4" WIDE AND OF SUCH THICKNESS AS TO PROVIDE FOR CORRECT FINAL ELEVATION OF TOP OF HOLD-DOWN PLATES. THE TEMPLATE SHALL BE ATTACHED TO THE BASE ANGLE ASSEMBLY WITH THE ¾" Ø HEX HEAD BOLTS PROVIDED FOR THE HOLD-DOWN PLATES. A 1" Ø HOLE SHALL BE PROVIDED IN THE TEMPLATE CENTERED OVER EACH WEEP HOLE IN THE 4" X 4" X ½" BASE ANGLE. OTHER METHODS OF INSURING DRAINAGE THROUGH WEEP HOLES MAY BE EMPLOYED SUBJECT TO ENGINEER'S APPROVAL.
2. AFTER THE CONCRETE HAS BEEN CAST ON BOTH SIDES OF THE JOINT, REMOVE THE TEMPLATE. THOROUGHLY CLEAN THE BOLT HOLES AND THE ANGLE PLATE. REMOVE ANY EXCESS CONCRETE THAT COMES OUT OF THE WEEP HOLES. ANY DAMAGED STEEL SHALL BE COATED WITH A MINIMUM THICKNESS OF 4 DRY MILS OF ZINC-RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
3. LAY THE GLAND ON THE BASE ANGLE AND FIELD MARK THE GLAND FOR THE BOLT HOLES. HOLES IN THE GLAND SHALL BE PUNCHED ⅛" IN DIAMETER WITH A HAND PUNCH.
4. IN ORDER TO CHECK FOR PROPER ALIGNMENT, PLACE THE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. DO NOT APPLY NEOPRENE SEALANT. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE BUT DO NOT TIGHTEN. THE ENGINEER SHALL INSPECT THE JOINT SEAL DEVICE FOR PROPER ALIGNMENT.
5. AFTER INSPECTION, REMOVE THE HOLD-DOWN PLATES AND GLAND. APPLY NEOPRENE SEALANT TO THE BASE ANGLE IN ACCORDANCE WITH THE "INSTALLATION SKETCH". PLACE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE ASSEMBLY AND TORQUE THE BOLTS TO 88 FT-LBS WITH A TORQUE WRENCH. THE TORQUE WRENCH SHALL BE CALIBRATED IN ACCORDANCE WITH SECTION 440-10 (D) OF THE STANDARD SPECIFICATIONS. CHECK THE TORQUE AFTER THREE (3) HOURS AND, IF NECESSARY, RETIGHTEN TO 88 FT-LBS. A FINAL CHECK SHALL BE MADE AT SEVEN (7) DAYS. TORQUE SHALL NOT BE LESS THAN 80 FT-LBS AFTER SEVEN (7) DAYS.
6. AFTER PROPER TORQUING, CLEAN THE BOLT HOLE RECESSES AND THE RECESS BETWEEN THE JOINT SEAL DEVICE AND CONCRETE, COMPLETELY FILL THESE RECESSES WITH NEOPRENE SEALANT.

GENERAL NOTES

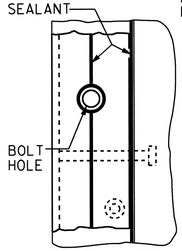
1. FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.
2. ALL PLATES AND ANGLES SHALL CONFORM TO AASHTO M270 GRADE 36 STEEL OR APPROVED EQUAL. ALL HOLD-DOWN BOLTS SHALL CONFORM TO ASTM F593 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL CONFORM TO ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL. ALL STUD ANCHORS SHALL CONFORM TO AASHTO M169, GRADES 1010 THRU 1020 OR APPROVED EQUAL. ALL CONCRETE INSERTS SHALL BE CLOSED END AND SHALL CONFORM TO AASHTO M169, GRADE 12L14. TENSILE CAPACITY SHALL BE 3000 LBS. MIN.
3. A PREMOLDED CORRUGATED OR NON-CORRUGATED GLAND SHALL BE USED FOR JOINTS SKEWED BETWEEN 50° THRU 130°. FOR JOINTS SKEWED LESS THAN 50° OR MORE THAN 130°, ONLY A CORRUGATED GLAND SHALL BE USED.
4. CLOSED END FERRULES AND STUD ANCHORS SHALL BE SHOP WELDED AND ALL HOLES SHALL BE SHOP DRILLED AS SHOWN ON PLANS. STUD ANCHORS SHALL BE ELECTRIC ARC END WELDED WITH COMPLETE FUSION.
5. SURFACES COMING IN CONTACT WITH NEOPRENE SHALL BE GROUND SMOOTH PRIOR TO METALLIZING.
6. UPON COMPLETION OF SHOP FABRICATION, THE HOLD DOWN PLATE AND BASE ANGLE ASSEMBLY, AS SHOWN IN THE "TYPICAL SECTION OF BASE ANGLE ASSEMBLY", SHALL BE METALLIZED. SEE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).
7. BASE ANGLE ASSEMBLY SHALL BE CONTINUOUS FOR THE LENGTH OF THE JOINT. AT CROWN BREAKS, THE ENDS OF THE BASE ANGLE ASSEMBLY SHALL BE CUT PARALLEL TO THE BRIDGE CENTERLINE FOR SKEWS LESS THAN 80° AND GREATER THAN 100°. FINISHED WELD SHALL BE GROUND SMOOTH AND COATED WITH A MINIMUM THICKNESS OF 4 DRY MILS OF ZINC-RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
8. FIELD SPLICES OF HOLD-DOWN PLATES SHALL BE KEPT TO A MINIMUM. CONTRACTOR SHALL FURNISH DETAILED PLANS SHOWING PROPOSED SPLICE LOCATIONS FOR APPROVAL. HOLD-DOWN PLATES SHALL NOT EXCEED 20' LENGTHS UNLESS APPROVED BY THE ENGINEER.
9. NO ALTERNATE JOINT DETAILS SHALL BE PERMITTED IN LIEU OF THOSE SHOWN ON THESE PLANS.
10. THE CONTRACTOR MAY, AT HIS OPTION, USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF CONCRETE INSERTS FOR COVER PLATES. THE YIELD LOAD OF THE ¾" Ø BOLT IS 10 KIPS. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.



DETAIL "A"

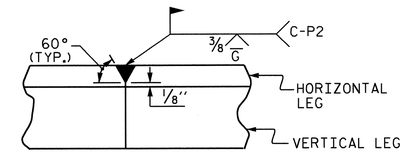


CROSS SECTION



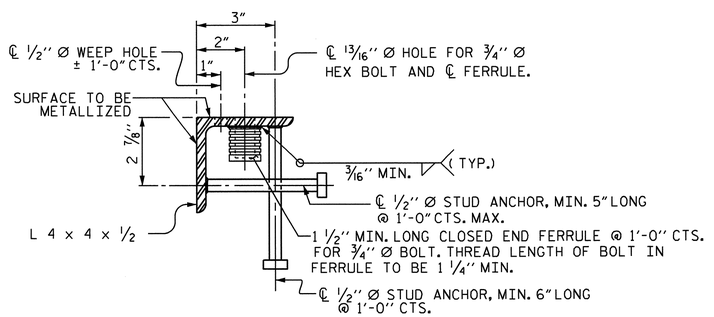
PLAN VIEW

INSTALLATION SKETCH



DETAIL- FIELD WELD SPLICE OF BASE ANGLE

MOVEMENT AND SETTING AT JOINT					
BENT NO.	SKEW ANGLE	TOTAL MOVEMENT (ALONG ℄ RDWY)	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
EB #1	51°-25'-37"	1 3/16"	1 5/8"	1 1/2"	1 3/16"
BT #6	78°-50'-10"	2 1/4"	2 9/16"	2 3/16"	1 3/8"
EB #2	90°-00-00"	1 3/16"	1 13/16"	1 5/8"	1 3/16"



TYPICAL SECTION OF BASE ANGLE ASSEMBLY

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

EXPANSION JOINT SEAL DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-82
1			3			TOTAL SHEETS
2			4			125

STD. NO. EJS1

ASSEMBLED BY: R. G. EMERSON	DATE: 08/11	
CHECKED BY: M. K. BEARD	DATE: 10/04/11	
DRAWN BY: REK 9/87	REV. 10/17/00	RWW/LES
CHECKED BY: CRK 10/87	REV. 5/7/03R	RWW/JTE
	REV. 5/1/06	TLA/GM

27-JAN-2012 14:00
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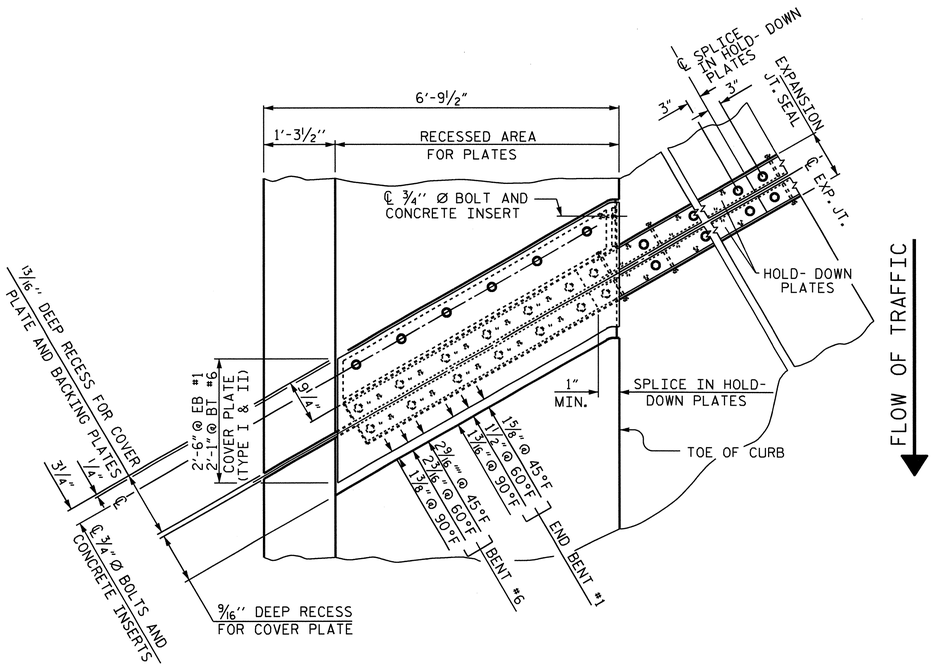
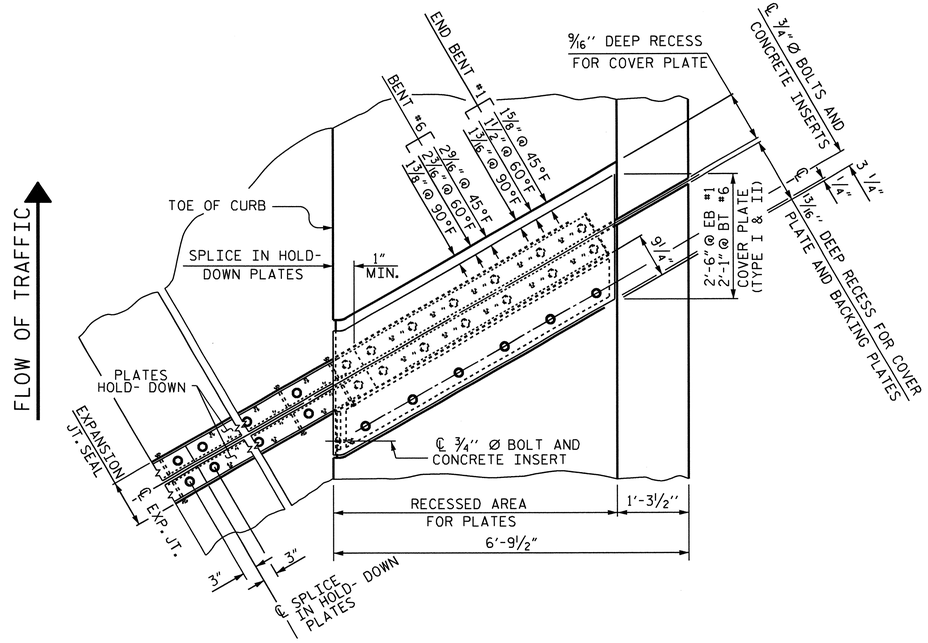
kbeard



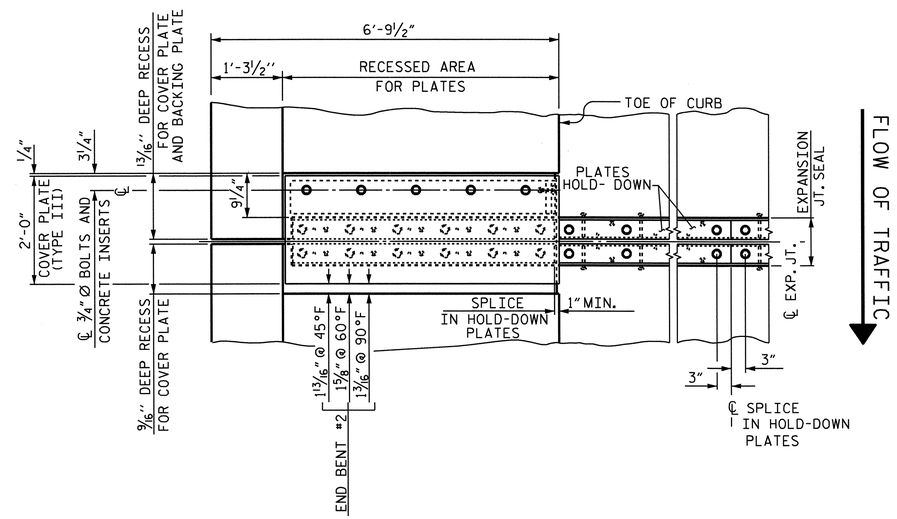
PLAN OF EXPANSION JOINT SEAL - LEFT SIDE

FOR END BENT #1 & BENT #6



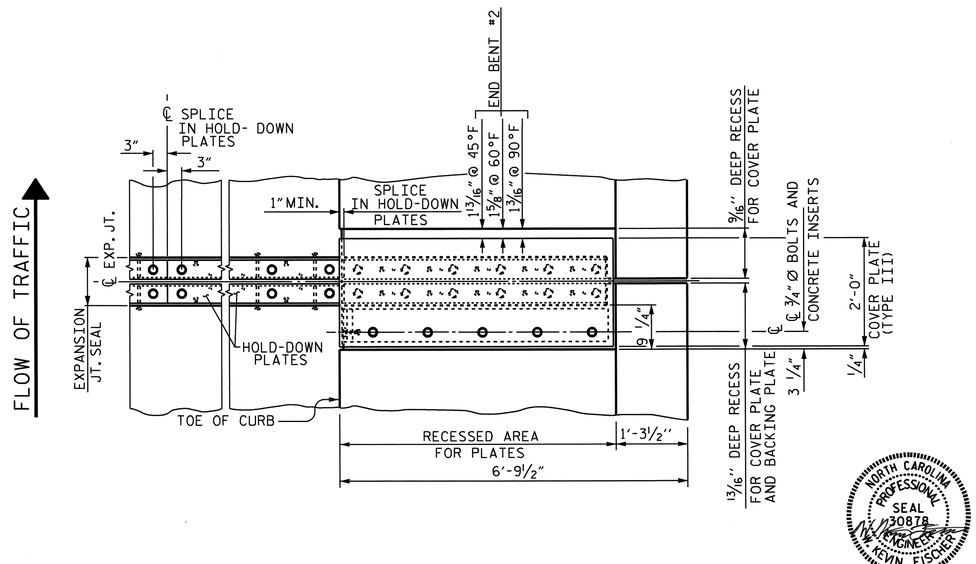
PLAN OF EXPANSION JOINT SEAL - RIGHT SIDE

FOR END BENT #1 & BENT #6



PLAN OF EXPANSION JOINT SEAL - LEFT SIDE

FOR END BENT #2



PLAN OF EXPANSION JOINT SEAL - RIGHT SIDE

FOR END BENT #2

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER

3/9/12

DRAWN BY : R. G. EMERSON DATE : 08/11
CHECKED BY : M. K. BEARD DATE : 10/04/11

27-JAN-2012 14:00
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kbeard

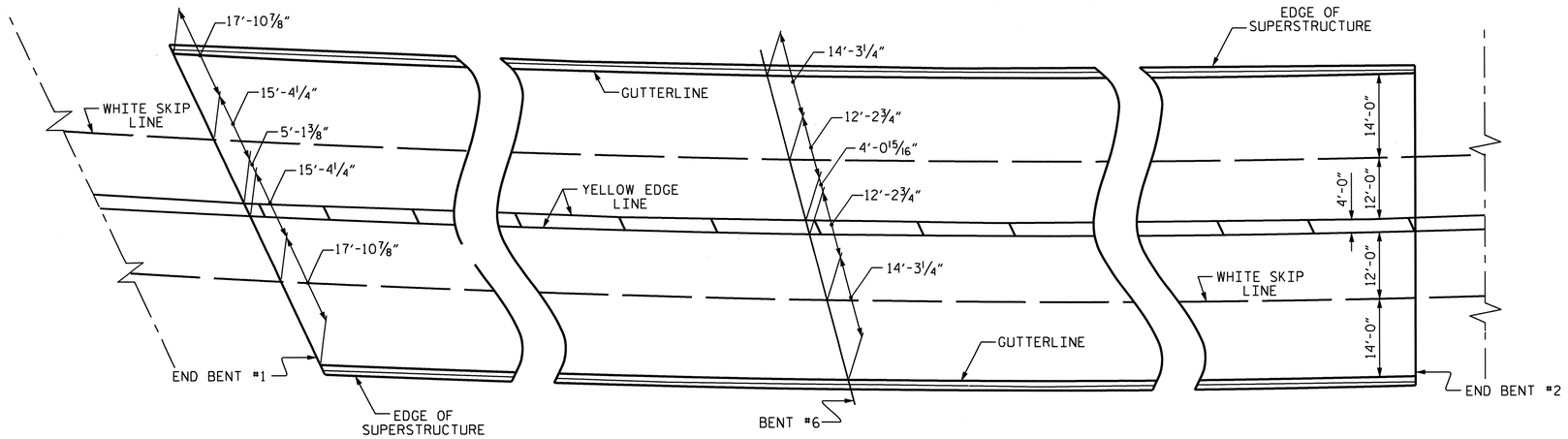
PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 2 OF 4

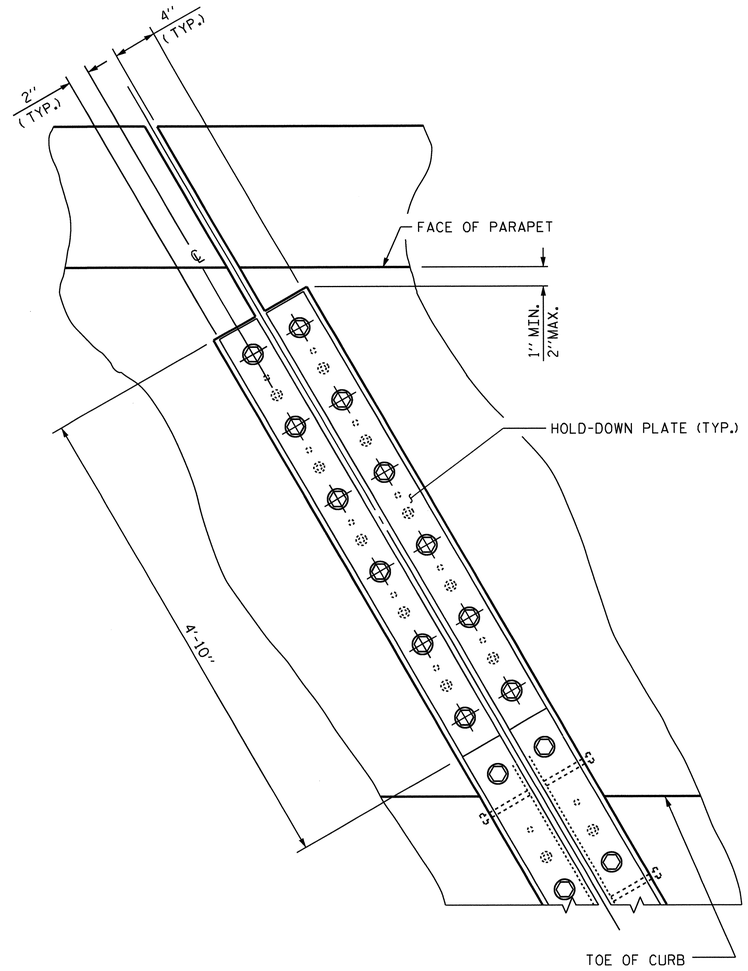
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXPANSION JOINT SEAL DETAILS

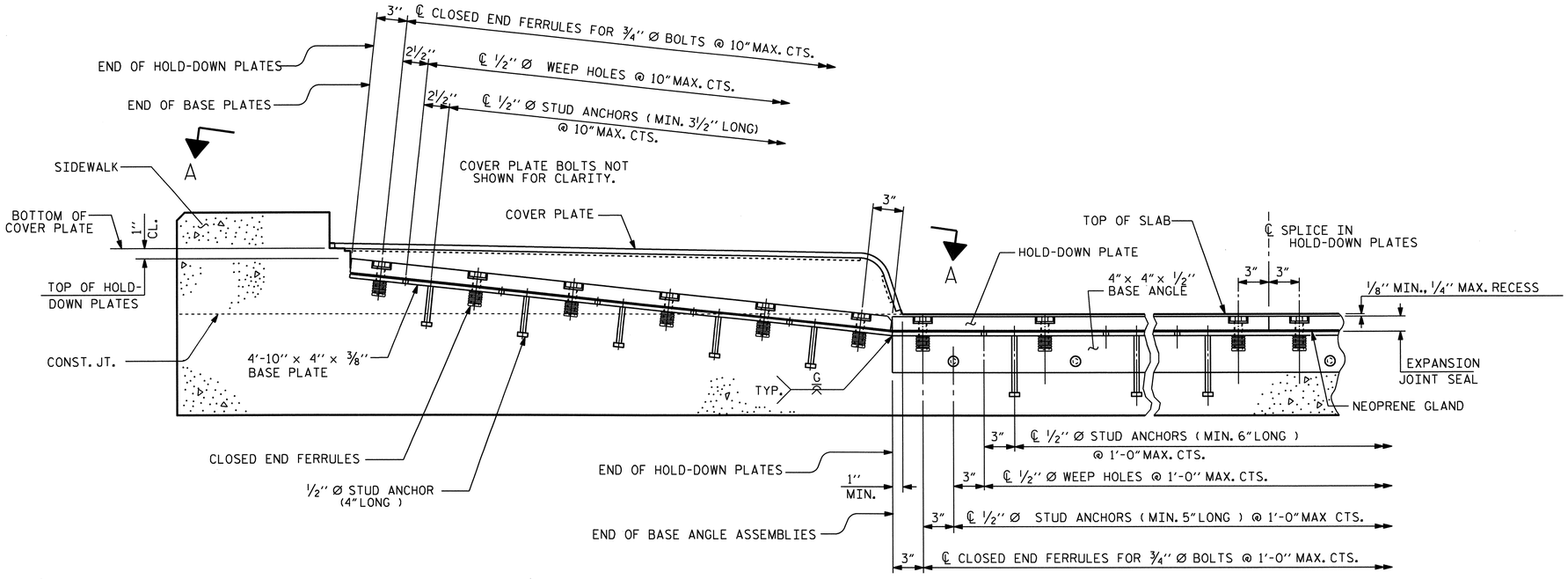
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-83
1			3			TOTAL SHEETS
2			4			125



PAVEMENT MARKING ALIGNMENT



SECTION A - A



SECTION THRU SIDEWALK NORMAL TO JOINT

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-
SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
EXPANSION JOINT SEAL DETAILS FOR SIDEWALK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-84
1			3			TOTAL SHEETS
2			4			125

STD. NO. EJS3

ASSEMBLED BY : R. G. EMERSON	DATE: 08/11
CHECKED BY: M. K. BEARD	DATE: 10/04/11
DRAWN BY : REK 10/87	REV. 6/1/94 EEM/GRP
CHECKED BY : CRK 1/88	REV. 2/6/97 EEM/RGW
	REV. 5/1/06 TLA/GM

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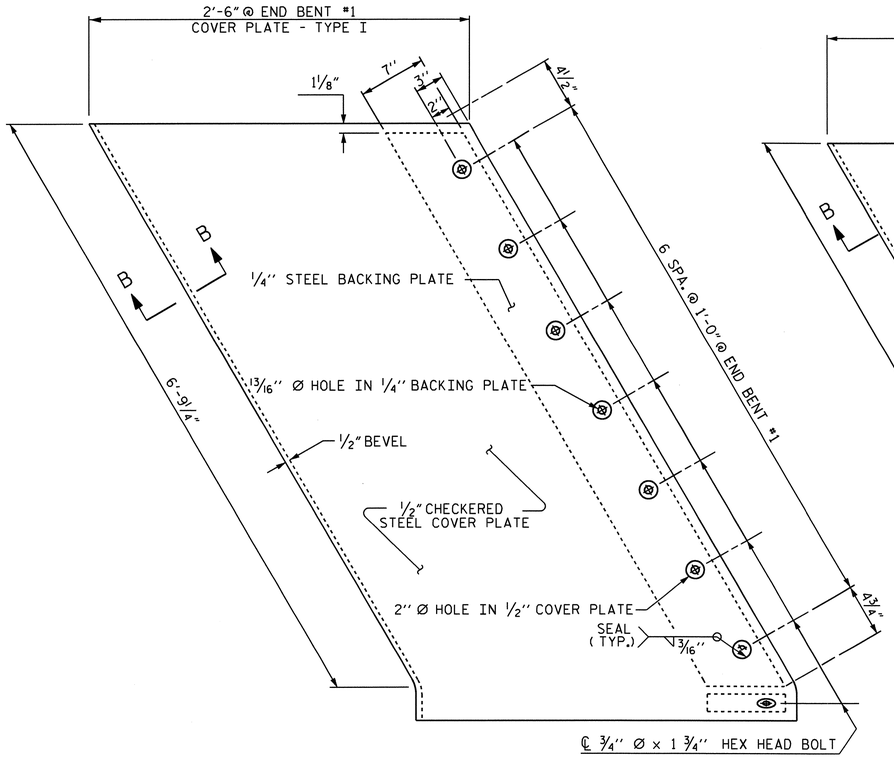
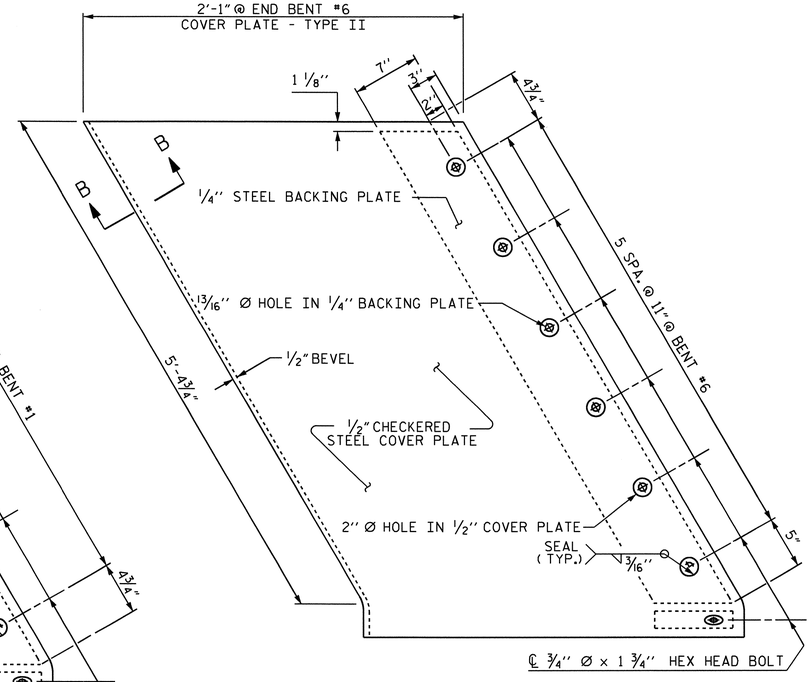
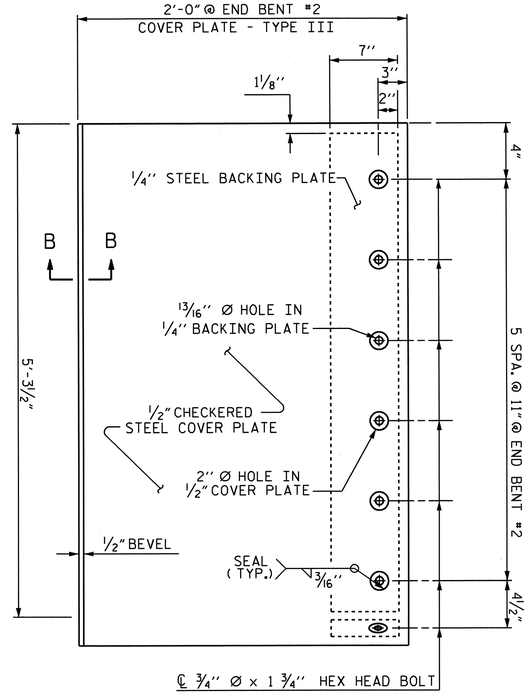


SIDEWALK COVERPLATE DETAIL
TYPE I - PLAN VIEW

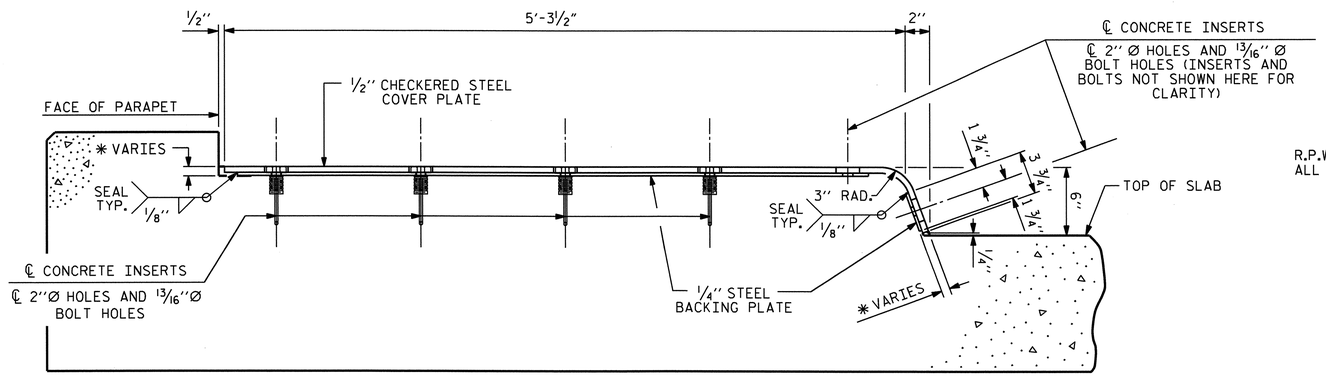


SIDEWALK COVERPLATE DETAIL
TYPE II - PLAN VIEW

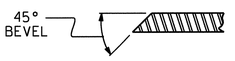


SIDEWALK COVERPLATE DETAIL
TYPE III - PLAN VIEW

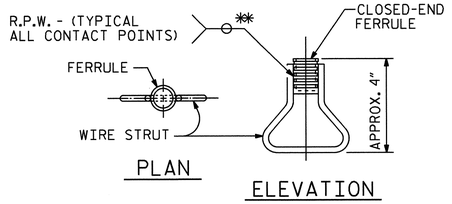
COVER PLATE DETAILS



END VIEW
(NORMAL TO SIDEWALK)



SECTION B - B



PLAN ELEVATION

CONCRETE INSERT

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

* CONCRETE RECESS DIMENSIONS:
13/16" FOR THE SIDE OF THE JOINT HAVING THE 1/2" COVER PLATE WITH A 1/4" BACKING PLATE.
9/16" FOR THE SIDE OF THE JOINT HAVING ONLY THE 1/2" COVER PLATE.

ASSEMBLED BY: R. G. EMERSON	DATE: 08/11
CHECKED BY: M. K. BEARD	DATE: 10/04/11
DRAWN BY : REK 10/87	REV. 7/17/98 RWW/LES
CHECKED BY : CRK 1/88	REV. 10/17/00 RWW/LES
	REV. 5/1/06 TLA/GM

27-JAN-2012 14:00
V:\Structures\Plans\B4599_SD_JS.dgn
kbeard

NORTH CAROLINA PROFESSIONAL SEAL 30818 ENGINEER W. KEVIN FISCHER
3/9/12

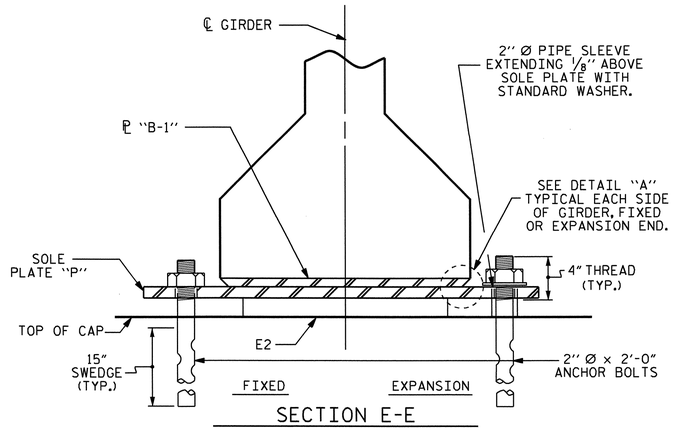
PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 4 OF 4

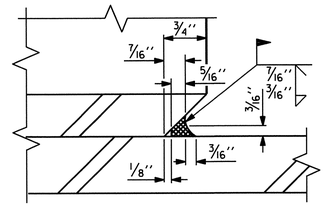
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
EXPANSION JOINT SEAL DETAILS FOR SIDEWALK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-85
1			3			TOTAL SHEETS
2			4			125

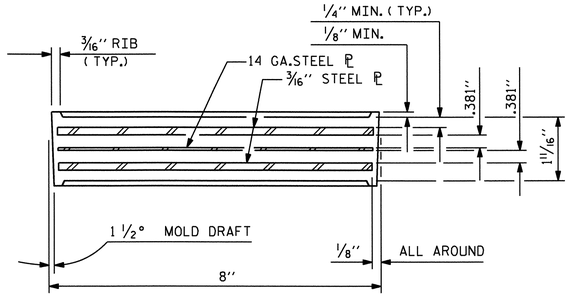
STD. NO. EJS4



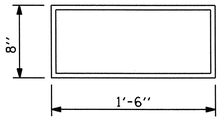
SECTION E-E



DETAIL "A"



TYPICAL SECTION OF ELASTOMERIC BEARINGS



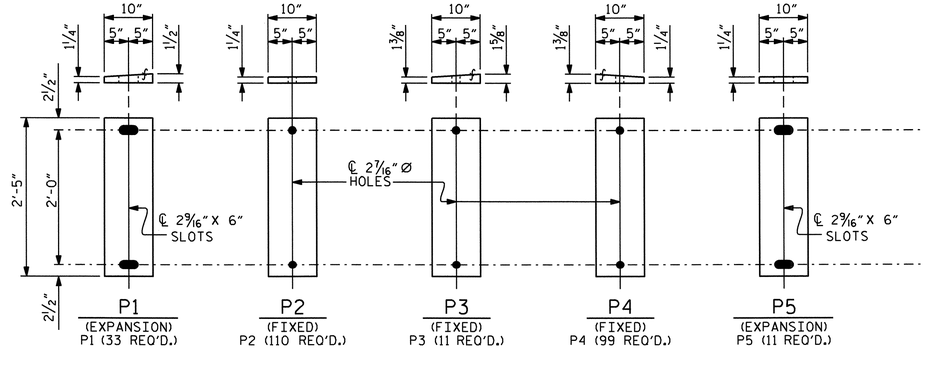
E2 (264 REQ'D.)

PLAN VIEW OF ELASTOMERIC BEARING

TYPE III

60 DUROMETER HARDNESS

— LOAD RATINGS —	
	MAX.D.L.+L.L.
36"PCG -TYPE II	82 K



SOLE PLATE DETAILS ("P")

NOTES

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

THE 2" Ø PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.

STEEL SOLE PLATES, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

PRIOR TO WELDING, GRIND THE GALVANIZED SURFACE OF THE PORTION OF THE EMBEDDED PLATE AND SOLE PLATE THAT ARE TO BE WELDED. AFTER WELDING, DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

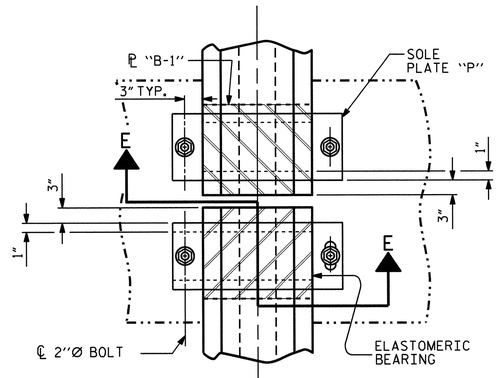
WHEN WELDING THE SOLE PLATE TO THE EMBEDDED PLATE IN THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

SOLE PLATE "P", BOLTS, NUTS, WASHERS, AND PIPE SLEEVE SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.

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 BOLT, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.



TYPICAL HALF-PLAN (SHOWING CONTINUOUS BENT)

TYPICAL HALF-PLAN (SHOWING SIMPLE SPAN BENT)

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

NORTH CAROLINA PROFESSIONAL SEAL 030878 ENGINEER KEVIN FISCHER 4/20/12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

ELASTOMERIC BEARING DETAILS

PRESTRESSED CONCRETE GIRDER SUPERSTRUCTURE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-86
1			3			TOTAL SHEETS
2			4			125

STD. NO. EB3

ASSEMBLED BY: R. G. EMERSON	DATE: 03/11
CHECKED BY: M. K. BEARD	DATE: 05/11
DRAWN BY : WJH 8/89	REV. 10/17/00 RWW/LES
CHECKED BY : CRK 8/89	REV. 7/10/01 RWW/LES
	REV. 5/1/06 TLA/GM

18-APR-2012 11:11
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chunt

BILL OF MATERIAL

STAGE I

SPANS "A"-"F"

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱ A1	702	#5	STR	37'-11"	27762
A2	702	#5	STR	37'-11"	27762
✱ A5	3	#5	STR	5'-3"	16
✱ A100	2	#5	STR	36'-11"	77
✱ A101	2	#5	STR	35'-8"	74
✱ A102	2	#5	STR	34'-5"	72
✱ A103	2	#5	STR	33'-2"	69
✱ A104	2	#5	STR	31'-11"	67
✱ A105	2	#5	STR	30'-8"	64
✱ A106	2	#5	STR	29'-5"	61
✱ A107	2	#5	STR	28'-2"	59
✱ A108	2	#5	STR	26'-11"	56
✱ A109	2	#5	STR	25'-8"	54
✱ A110	2	#5	STR	24'-5"	51
✱ A111	2	#5	STR	23'-2"	48
✱ A112	2	#5	STR	21'-11"	46
✱ A113	2	#5	STR	20'-8"	43
✱ A114	2	#5	STR	19'-5"	41
✱ A115	2	#5	STR	18'-2"	38
✱ A116	2	#5	STR	16'-11"	35
✱ A117	2	#5	STR	15'-8"	33
✱ A118	2	#5	STR	14'-5"	30
✱ A119	2	#5	STR	13'-2"	27
✱ A120	2	#5	STR	11'-11"	25
✱ A121	2	#5	STR	10'-8"	22
✱ A122	2	#5	STR	9'-5"	20
✱ A123	2	#5	STR	8'-2"	17
✱ A124	2	#5	STR	6'-11"	14
✱ A125	2	#5	STR	5'-8"	12
✱ A126	2	#5	STR	4'-5"	9
✱ A127	2	#5	STR	3'-2"	7
✱ A128	2	#5	STR	1'-11"	4
✱ A129	1	#5	STR	36'-3"	38
✱ A130	1	#5	STR	33'-9"	35
✱ A131	1	#5	STR	31'-3"	33
✱ A132	1	#5	STR	28'-9"	30
✱ A133	1	#5	STR	26'-3"	27
✱ A134	1	#5	STR	23'-10"	25
✱ A135	1	#5	STR	21'-4"	22
✱ A136	1	#5	STR	18'-10"	20
✱ A137	1	#5	STR	16'-4"	17
✱ A138	1	#5	STR	13'-10"	14
✱ A139	1	#5	STR	11'-5"	12
✱ A140	1	#5	STR	8'-11"	9
✱ A141	1	#5	STR	6'-5"	7
✱ A142	1	#5	STR	3'-11"	4
✱ A143	1	#5	STR	1'-6"	2
A200	2	#5	STR	36'-11"	77
A201	2	#5	STR	35'-8"	74
A202	2	#5	STR	34'-5"	72
A203	2	#5	STR	33'-2"	69
A204	2	#5	STR	31'-11"	67
A205	2	#5	STR	30'-8"	64
A206	2	#5	STR	29'-5"	61
A207	2	#5	STR	28'-2"	59
A208	2	#5	STR	26'-11"	56
A209	2	#5	STR	25'-8"	54
A210	2	#5	STR	24'-5"	51
A211	2	#5	STR	23'-2"	48
A212	2	#5	STR	21'-11"	46
A213	2	#5	STR	20'-8"	43
A214	2	#5	STR	19'-5"	41
A215	2	#5	STR	18'-2"	38
A216	2	#5	STR	16'-11"	35
A217	2	#5	STR	15'-8"	33
A218	2	#5	STR	14'-5"	30
A219	2	#5	STR	13'-2"	27
A220	2	#5	STR	11'-11"	25
A221	2	#5	STR	10'-8"	22
A222	2	#5	STR	9'-5"	20
A223	2	#5	STR	8'-2"	17
A224	2	#5	STR	6'-11"	14
A225	2	#5	STR	5'-8"	12
A226	2	#5	STR	4'-5"	9
A227	2	#5	STR	3'-2"	7
A228	2	#5	STR	1'-11"	4
A229	1	#5	STR	36'-3"	38
A230	1	#5	STR	33'-9"	35
A231	1	#5	STR	31'-3"	33
A232	1	#5	STR	28'-9"	30
A233	1	#5	STR	26'-3"	27
A234	1	#5	STR	23'-10"	25
A235	1	#5	STR	21'-4"	22
A236	1	#5	STR	18'-10"	20
A237	1	#5	STR	16'-4"	17
A238	1	#5	STR	13'-10"	14
A239	1	#5	STR	11'-5"	12
A240	1	#5	STR	8'-11"	9
A241	1	#5	STR	6'-5"	7
A242	1	#5	STR	3'-11"	4
A243	1	#5	STR	1'-6"	2
B1	154	#5	STR	56'-2"	9022
B2	126	#5	STR	55'-5"	7283
B3	77	#5	STR	54'-7"	4384
✱ B5	104	#4	STR	21'-1"	1465
✱ B6	78	#4	STR	19'-8"	1025
✱ B7	78	#7	STR	48'-0"	7653
✱ B8	78	#7	STR	59'-8"	9512
✱ B9	78	#7	STR	56'-2"	8955
✱ B10	125	#7	STR	24'-0"	6132
✱ B16	84	#4	STR	29'-10"	1674
✱ D1	728	#6	STR	4'-0"	4374
✱ E1	2	#7	1	3'-5"	14
✱ E2	2	#7	1	4'-0"	16
✱ E3	2	#7	1	4'-7"	19
✱ E4	2	#7	1	5'-1"	21
✱ E5	1	#7	1	3'-4"	7
✱ E6	10	#5	2	5'-9"	60
✱ E7	10	#5	1	5'-1"	53
✱ F1	2	#6	STR	3'-1"	9
✱ F2	2	#6	STR	3'-6"	11
✱ F3	1	#6	STR	3'-11"	6
✱ F4	2	#6	STR	3'-10"	12
✱ F5	1	#6	STR	4'-6"	7
✱ G1	4	#5	STR	25'-8"	107
✱ G3	379	#4	STR	6'-5"	1625
✱ J1	90	#4	3	1'-5"	85
✱ K1	2	#8	4	12'-8"	68
✱ K2	8	#8	5	18'-11"	404
✱ K3	2	#8	4	11'-0"	59
✱ K4	15	#6	STR	6'-11"	156
K5	30	#4	STR	6'-4"	127
K6	60	#4	STR	7'-4"	294
K7	3	#4	6	5'-5"	11
K8	15	#4	7	10'-8"	107
K9	3	#4	6	5'-4"	11
K10	15	#4	7	10'-6"	105
K11	3	#4	6	5'-2"	10
K12	15	#4	7	10'-2"	102
K13	20	#4	STR	4'-0"	53
K14	40	#4	STR	6'-0"	160
K15	12	#4	STR	20'-3"	162
✱ K16	2	#8	4	10'-5"	56
✱ K17	8	#8	5	15'-9"	336
✱ K18	2	#8	4	9'-1"	49
✱ K19	10	#6	STR	5'-7"	84
✱ S1	35	#4	8	3'-9"	88
✱ S2	35	#4	8	2'-11"	68
✱ S4	70	#5	9	4'-8"	341
S5	150	#4	10	3'-3"	326
S6	100	#4	10	2'-9"	184
✱ S7	20	#4	11	5'-10"	78
U1	30	#4	12	11'-6"	230
U2	60	#4	12	13'-6"	541
U3	20	#4	12	11'-0"	147
U4	40	#4	12	13'-0"	347
✱ U5	109	#4	11	3'-4"	240
✱ U6	10	#4	11	4'-8"	31

REINFORCING STEEL 52,854 LBS.

✱ EPOXY COATED

REINFORCING STEEL 74,148 LBS.

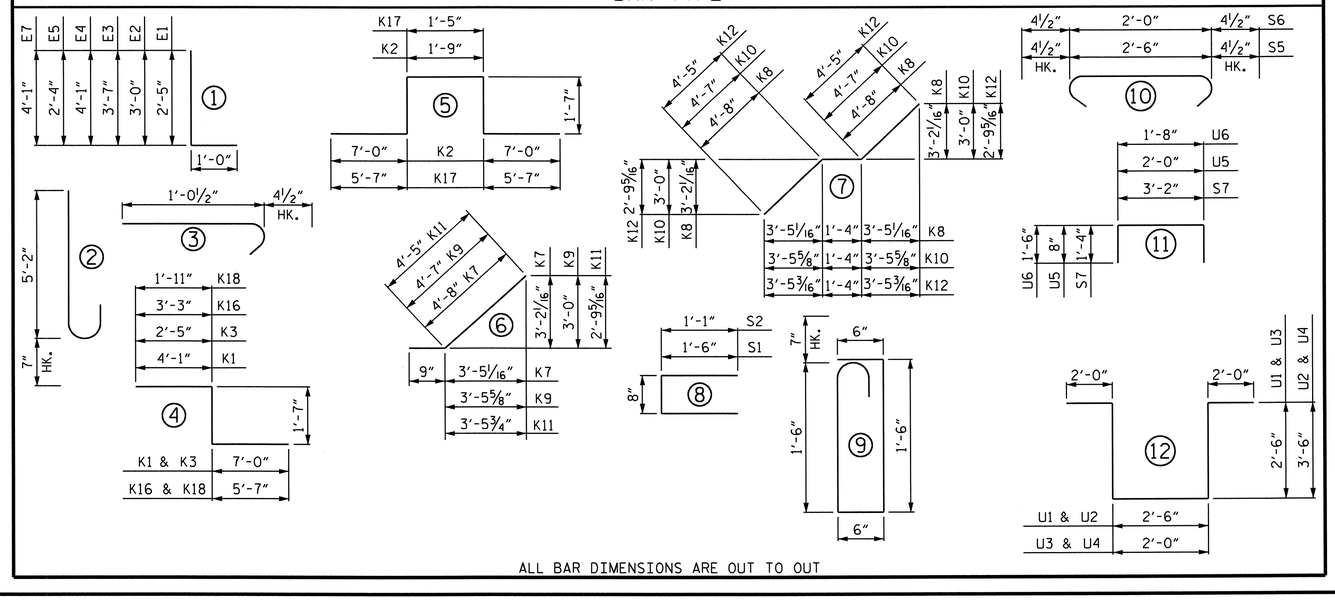
SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND SIDEWALK		APPROACH SLABS		PARAPET AND SIDEWALK
	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"			

GROOVING BRIDGE FLOOR SPANS "A"-"F"

APPROACH SLAB @ END BENT #1	708 SQ. FT.
BRIDGE DECK SPANS "A"-"F"	11,127 SQ. FT.
TOTAL	11,835 SQ. FT.

BAR TYPE



ALL BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BILL OF MATERIAL
STAGE I
SPANS "A"-"F"

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-87
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 6-2011
CHECKED BY : M.K. BEARD DATE : 7-2011

18-APR-2012 11:13
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BILL OF MATERIAL

STAGE I

SPANS "G"-"L"

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	738	#5	STR	37'-11"	29186
A2	738	#5	STR	37'-11"	29186
* A144	1	#5	STR	36'-10"	38
* A145	1	#5	STR	34'-3"	36
* A146	1	#5	STR	31'-9"	33
* A147	1	#5	STR	29'-2"	30
* A148	1	#5	STR	26'-8"	28
* A149	1	#5	STR	24'-1"	25
* A150	1	#5	STR	21'-7"	23
* A151	1	#5	STR	19'-0"	20
* A152	1	#5	STR	16'-6"	17
* A153	1	#5	STR	13'-11"	15
* A154	1	#5	STR	11'-5"	12
* A155	1	#5	STR	8'-11"	9
* A156	1	#5	STR	6'-4"	7
* A157	1	#5	STR	3'-10"	4
* A158	1	#5	STR	1'-3"	1
A244	1	#5	STR	36'-10"	38
A245	1	#5	STR	34'-3"	36
A246	1	#5	STR	31'-9"	33
A247	1	#5	STR	29'-2"	30
A248	1	#5	STR	26'-8"	28
A249	1	#5	STR	24'-1"	25
A250	1	#5	STR	21'-7"	23
A251	1	#5	STR	19'-0"	20
A252	1	#5	STR	16'-6"	17
A253	1	#5	STR	13'-11"	15
A254	1	#5	STR	11'-5"	12
A255	1	#5	STR	8'-11"	9
A256	1	#5	STR	6'-4"	7
A257	1	#5	STR	3'-10"	4
A258	1	#5	STR	1'-3"	1
B4	357	#5	STR	55'-8"	20728
* B5	104	#4	STR	21'-5"	1488
* B6	104	#4	STR	19'-0"	1320
* B7	130	#7	STR	48'-0"	12755
* B10	125	#7	STR	24'-0"	6132
* B17	84	#4	STR	29'-6"	1655
* D1	502	#6	STR	4'-0"	3016
* E1	2	#7	1	3'-5"	14
* E2	2	#7	1	4'-0"	16
* E3	2	#7	1	4'-7"	19
* E4	2	#7	1	5'-1"	21
* E6	10	#5	2	5'-9"	60
* E7	10	#5	1	5'-1"	53
* F1	2	#6	STR	3'-1"	9
* F2	4	#6	STR	3'-5"	21
* F3	2	#6	STR	3'-10"	12
* G1	2	#5	STR	25'-8"	54
* G3	376	#4	STR	6'-5"	1612
* J1	79	#4	3	1'-5"	75
K13	50	#4	STR	4'-0"	134
K14	100	#4	STR	6'-0"	401
K15	30	#4	STR	20'-3"	406
* K16	2	#8	4	10'-5"	56
* K17	8	#8	5	15'-9"	336
* K18	2	#8	4	9'-1"	49
* K19	10	#6	STR	5'-7"	84
* K20	2	#8	4	10'-3"	55
* K21	8	#8	5	15'-6"	331
* K22	2	#8	4	8'-11"	48
* K23	10	#6	STR	5'-6"	83
* S2	35	#4	6	2'-11"	68
* S3	35	#4	6	2'-11"	68
* S4	70	#5	7	4'-8"	341
S6	250	#4	8	2'-9"	459
* S7	20	#4	9	5'-10"	78
U3	50	#4	10	11'-0"	367
U4	100	#4	10	13'-0"	868
* U5	108	#4	9	3'-4"	240
* U6	10	#4	9	4'-8"	31

REINFORCING STEEL 52,847 LBS.

* EPOXY COATED REINFORCING STEEL 59,684 LBS.

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND SIDEWALK		APPROACH SLABS		PARAPET AND SIDEWALK
	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"			

SUPERSTRUCTURE BILL OF MATERIAL

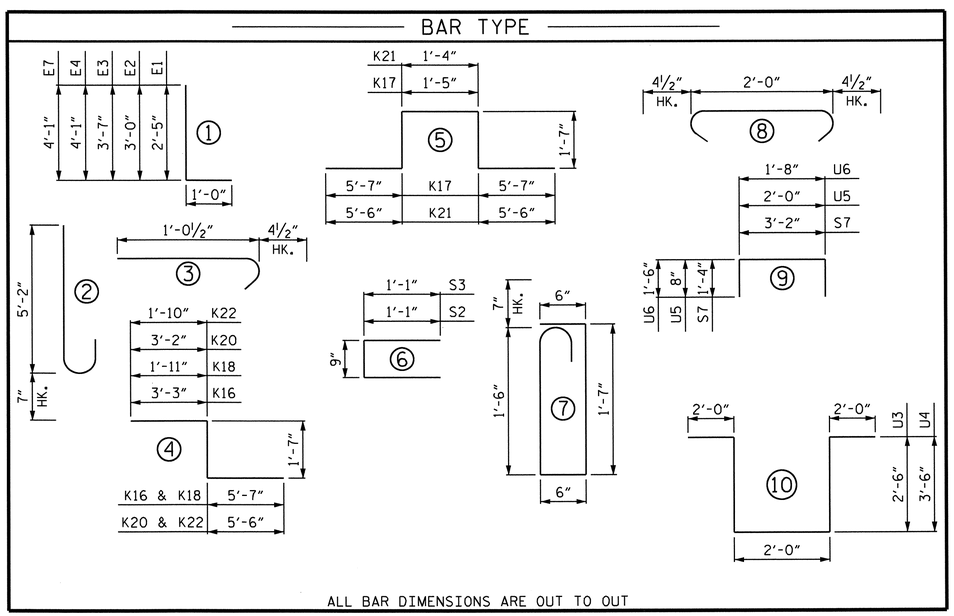
		CLASS AA CONCRETE	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
		(CU. YDS.)	(LBS.)	(LBS.)
STAGE I	SPANS "A"-"F"	571.1	52,854	61,837
	SPANS "G"-"L"	567.2	52,847	59,684
	TOTAL	1,138.3	105,701	121,521

CONCRETE AND REINFORCING STEEL FOR THE SIDEWALKS AND LIGHT PEDESTALS IS INCLUDED IN THE SUPERSTRUCTURE BILL OF MATERIAL

GROOVING BRIDGE FLOOR SPANS "G"-"L"

APPROACH SLAB @ END BENT #2	715 SQ. FT.
BRIDGE DECK SPANS "G"-"L"	11,274 SQ. FT.
TOTAL	11,989 SQ. FT.

BAR TYPE



ALL BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BILL OF MATERIAL

STAGE I
SPANS "G"-"L"

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-88
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 6-2011
CHECKED BY : M.K. BEARD DATE : 7-2011

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BILL OF MATERIAL

STAGE II

SPANS ''A''-''F''

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A3	677	#5	STR	34'-11"	24655
A4	677	#5	STR	34'-11"	24655
* A300	2	#5	STR	33'-9"	70
* A301	2	#5	STR	32'-6"	68
* A302	2	#5	STR	31'-2"	65
* A303	2	#5	STR	29'-11"	62
* A304	2	#5	STR	28'-7"	60
* A305	2	#5	STR	27'-4"	57
* A306	2	#5	STR	26'-0"	54
* A307	2	#5	STR	24'-9"	52
* A308	2	#5	STR	23'-5"	49
* A309	2	#5	STR	22'-2"	46
* A310	2	#5	STR	20'-10"	43
* A311	2	#5	STR	19'-7"	41
* A312	2	#5	STR	18'-3"	38
* A313	2	#5	STR	17'-0"	35
* A314	2	#5	STR	15'-8"	33
* A315	2	#5	STR	14'-5"	30
* A316	2	#5	STR	13'-2"	27
* A317	2	#5	STR	11'-10"	25
* A318	2	#5	STR	10'-7"	22
* A319	2	#5	STR	9'-3"	19
* A320	2	#5	STR	8'-0"	17
* A321	2	#5	STR	6'-9"	14
* A322	2	#5	STR	5'-5"	11
* A323	2	#5	STR	4'-2"	9
* A324	2	#5	STR	2'-10"	6
* A325	2	#5	STR	1'-7"	3
* A326	1	#5	STR	33'-0"	34
* A327	1	#5	STR	30'-5"	32
* A328	1	#5	STR	27'-11"	29
* A329	1	#5	STR	25'-4"	26
* A330	1	#5	STR	22'-10"	24
* A331	1	#5	STR	20'-4"	21
* A332	1	#5	STR	17'-9"	19
* A333	1	#5	STR	15'-3"	16
* A334	1	#5	STR	12'-8"	13
* A335	1	#5	STR	10'-2"	11
* A336	1	#5	STR	7'-8"	8
* A337	1	#5	STR	5'-1"	5
* A338	1	#5	STR	2'-7"	3
A400	2	#5	STR	33'-9"	70
A401	2	#5	STR	32'-6"	68
A402	2	#5	STR	31'-2"	65
A403	2	#5	STR	29'-11"	62

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A404	2	#5	STR	28'-7"	60
A405	2	#5	STR	27'-4"	57
A406	2	#5	STR	26'-0"	54
A407	2	#5	STR	24'-9"	52
A408	2	#5	STR	23'-5"	49
A409	2	#5	STR	22'-2"	46
A410	2	#5	STR	20'-10"	43
A411	2	#5	STR	19'-7"	41
A412	2	#5	STR	18'-3"	38
A413	2	#5	STR	17'-0"	35
A414	2	#5	STR	15'-8"	33
A415	2	#5	STR	14'-5"	30
A416	2	#5	STR	13'-2"	27
A417	2	#5	STR	11'-10"	25
A418	2	#5	STR	10'-7"	22
A419	2	#5	STR	9'-3"	19
A420	2	#5	STR	8'-0"	17
A421	2	#5	STR	6'-9"	14
A422	2	#5	STR	5'-5"	11
A423	2	#5	STR	4'-2"	9
A424	2	#5	STR	2'-10"	6
A425	2	#5	STR	1'-7"	3
A426	1	#5	STR	33'-0"	34
A427	1	#5	STR	30'-5"	32
A428	1	#5	STR	27'-11"	29
A429	1	#5	STR	25'-4"	26
A430	1	#5	STR	22'-10"	24
A431	1	#5	STR	20'-4"	21
A432	1	#5	STR	17'-9"	19
A433	1	#5	STR	15'-3"	16
A434	1	#5	STR	12'-8"	13
A435	1	#5	STR	10'-2"	11
A436	1	#5	STR	7'-8"	8
A437	1	#5	STR	5'-1"	5
A438	1	#5	STR	2'-7"	3
* B5	96	#4	STR	21'-1"	1352
* B6	72	#4	STR	19'-0"	914
* B7	72	#7	STR	48'-0"	7064
* B10	115	#7	STR	24'-0"	5641
B11	119	#5	STR	54'-1"	6713
B12	126	#5	STR	53'-5"	7020
B13	91	#5	STR	52'-7"	4991
* B14	22	#7	STR	52'-9"	2372
* B15	26	#7	STR	49'-11"	2653

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B18	78	#4	STR	29'-10"	1554
* E1	2	#7	1	3'-5"	14
* E2	2	#7	1	4'-0"	16
* E3	2	#7	1	4'-7"	19
* E4	2	#7	1	5'-1"	21
* E5	1	#7	1	3'-4"	7
* E8	10	#5	2	5'-3"	55
* E9	10	#5	1	4'-8"	49
* F1	2	#6	STR	3'-1"	9
* F2	2	#6	STR	3'-6"	11
* F3	1	#6	STR	3'-11"	6
* F4	2	#6	STR	3'-10"	12
* F5	1	#6	STR	4'-6"	7
* G2	4	#5	STR	23'-4"	97
* G3	353	#4	STR	6'-5"	1513
* J1	81	#4	3	1'-5"	77
* K2	6	#8	5	18'-11"	303
* K4	15	#6	STR	6'-11"	156
K5	30	#4	STR	6'-4"	127
K6	60	#4	STR	7'-4"	294
K7	3	#4	6	5'-5"	11
K8	12	#4	7	10'-8"	86
K9	3	#4	6	5'-4"	11
K10	12	#4	7	10'-6"	84
K11	3	#4	6	5'-2"	10
K12	12	#4	7	10'-2"	81
K13	10	#4	STR	4'-0"	27
K14	20	#4	STR	6'-0"	80
K15	6	#4	STR	20'-3"	81
* K17	6	#8	5	15'-9"	252
* K19	10	#6	STR	5'-7"	84
* K24	2	#8	6	2'-4"	12
* K25	2	#8	13	19'-10"	106
* K26	2	#8	4	12'-5"	66
* K27	2	#8	6	2'-4"	12
* K28	2	#8	13	16'-8"	89
* K29	2	#8	4	10'-2"	54
* S1	34	#4	8	3'-9"	85
* S2	34	#4	8	2'-11"	66

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* S4	68	#5	9	4'-8"	331
S5	150	#4	10	3'-3"	326
S6	100	#4	10	2'-9"	184
* S7	20	#4	11	5'-10"	78
U1	30	#4	12	11'-6"	230
U2	60	#4	12	13'-6"	541
U3	20	#4	12	11'-0"	147
U4	40	#4	12	13'-0"	347
* U5	102	#4	11	3'-4"	227
* U6	10	#4	11	4'-8"	31

REINFORCING STEEL 47,243 LBS.

* EPOXY COATED REINFORCING STEEL 51,267 LBS.

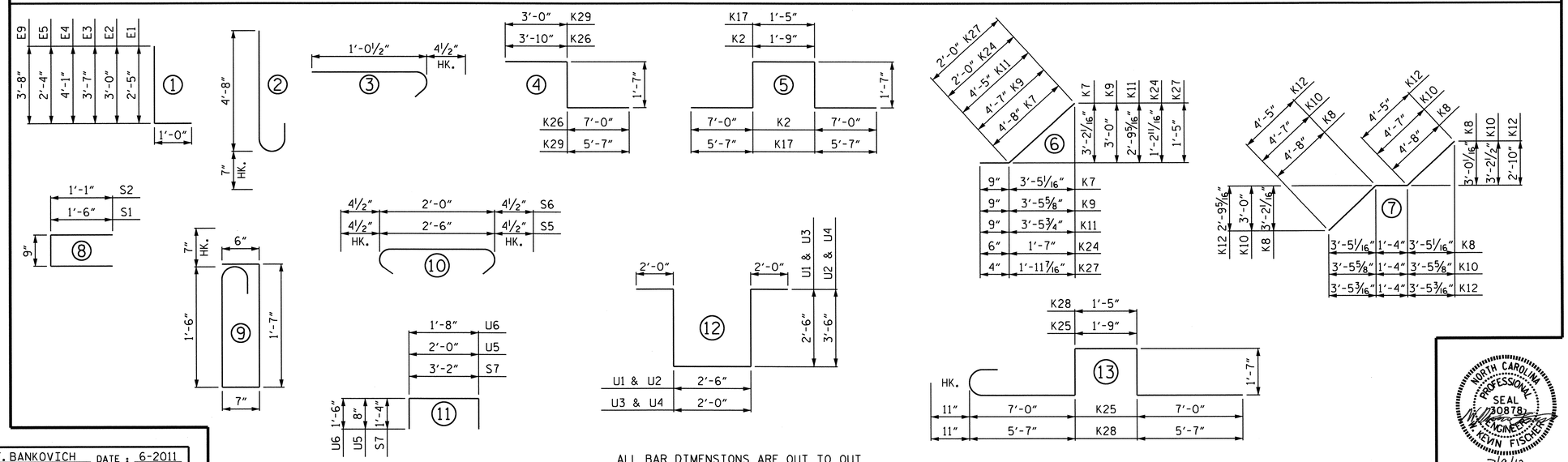
SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND SIDEWALK		APPROACH SLABS		PARAPET AND SIDEWALK
	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"			

GROOVING BRIDGE FLOOR SPANS ''A''-''F''

APPROACH SLAB @ END BENT #1	631 SQ. FT.
BRIDGE DECK SPANS ''A''-''F''	9,699 SQ. FT.
TOTAL	10,330 SQ. FT.

BAR TYPE



ALL BAR DIMENSIONS ARE OUT TO OUT

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : T. BANKOVICH DATE : 6-2011
CHECKED BY : M.K. BEARD DATE : 7-2011

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PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BILL OF MATERIAL
STAGE II
SPANS ''A''-''F''

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-89
1			3			TOTAL SHEETS
2			4			125

BILL OF MATERIAL

STAGE II

SPANS "G"-"L"

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A3	739	#5	STR	34'-11"	26913
A4	739	#5	STR	34'-11"	26913
* A339	1	#5	STR	34'-5"	36
* A340	1	#5	STR	31'-10"	33
* A341	1	#5	STR	29'-3"	31
* A342	1	#5	STR	26'-8"	28
* A343	1	#5	STR	24'-1"	25
* A344	1	#5	STR	21'-6"	22
* A345	1	#5	STR	18'-11"	20
* A346	1	#5	STR	16'-4"	17
* A347	1	#5	STR	13'-9"	14
* A348	1	#5	STR	11'-2"	12
* A349	1	#5	STR	8'-7"	9
* A350	1	#5	STR	6'-0"	6
* A351	1	#5	STR	3'-4"	3
A439	1	#5	STR	34'-5"	36
A440	1	#5	STR	31'-10"	33
A441	1	#5	STR	29'-3"	31
A442	1	#5	STR	26'-8"	28
A443	1	#5	STR	24'-1"	25
A444	1	#5	STR	21'-6"	22
A445	1	#5	STR	18'-11"	20
A446	1	#5	STR	16'-4"	17
A447	1	#5	STR	13'-9"	14
A448	1	#5	STR	11'-2"	12
A449	1	#5	STR	8'-7"	9
A450	1	#5	STR	6'-0"	6
A451	1	#5	STR	3'-4"	3
B4	336	#5	STR	55'-8"	19508
* B5	96	#4	STR	21'-5"	1374
* B6	96	#4	STR	19'-0"	1218
* B7	120	#7	STR	48'-0"	11773
* B10	115	#7	STR	24'-0"	5641
* B17	84	#4	STR	29'-6"	1655
* E1	2	#7	1	3'-5"	14
* E2	2	#7	1	4'-0"	16
* E3	2	#7	1	4'-7"	19
* E4	2	#7	1	5'-1"	21
* E8	10	#5	2	5'-3"	55
* E9	10	#5	1	4'-8"	49
* F1	2	#6	STR	3'-1"	9
* F2	4	#6	STR	3'-5"	21

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* F3	2	#6	STR	3'-10"	12
* G2	2	#5	STR	23'-4"	49
* G3	376	#4	STR	6'-5"	1612
* J1	72	#4	3	1'-5"	68
K13	50	#4	STR	4'-0"	134
K14	100	#4	STR	6'-0"	401
K15	30	#4	STR	20'-3"	406
* K17	6	#8	4	15'-9"	252
* K19	10	#6	STR	5'-7"	84
* K21	6	#8	4	15'-6"	248
* K23	10	#6	STR	5'-6"	83
* K27	2	#8	5	2'-4"	12
* K28	2	#8	6	16'-8"	89
* K29	2	#8	7	10'-2"	54
* K30	2	#8	STR	2'-4"	12
* K31	2	#8	6	16'-5"	88
* K32	2	#8	7	10'-1"	54
* S2	34	#4	8	2'-11"	66
* S3	34	#4	8	2'-11"	66
* S4	68	#5	9	4'-8"	331
S6	250	#4	10	2'-9"	459
* S7	20	#4	11	5'-10"	78
U3	45	#4	12	11'-0"	331
U4	100	#4	12	13'-0"	868
* U5	108	#4	11	3'-4"	240
* U6	10	#4	11	4'-8"	31

REINFORCING STEEL 49,276 LBS.

* EPOXY COATED REINFORCING STEEL 52,563 LBS.

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND SIDEWALK		APPROACH SLABS		PARAPET AND SIDEWALK
	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"			

SUPERSTRUCTURE BILL OF MATERIAL

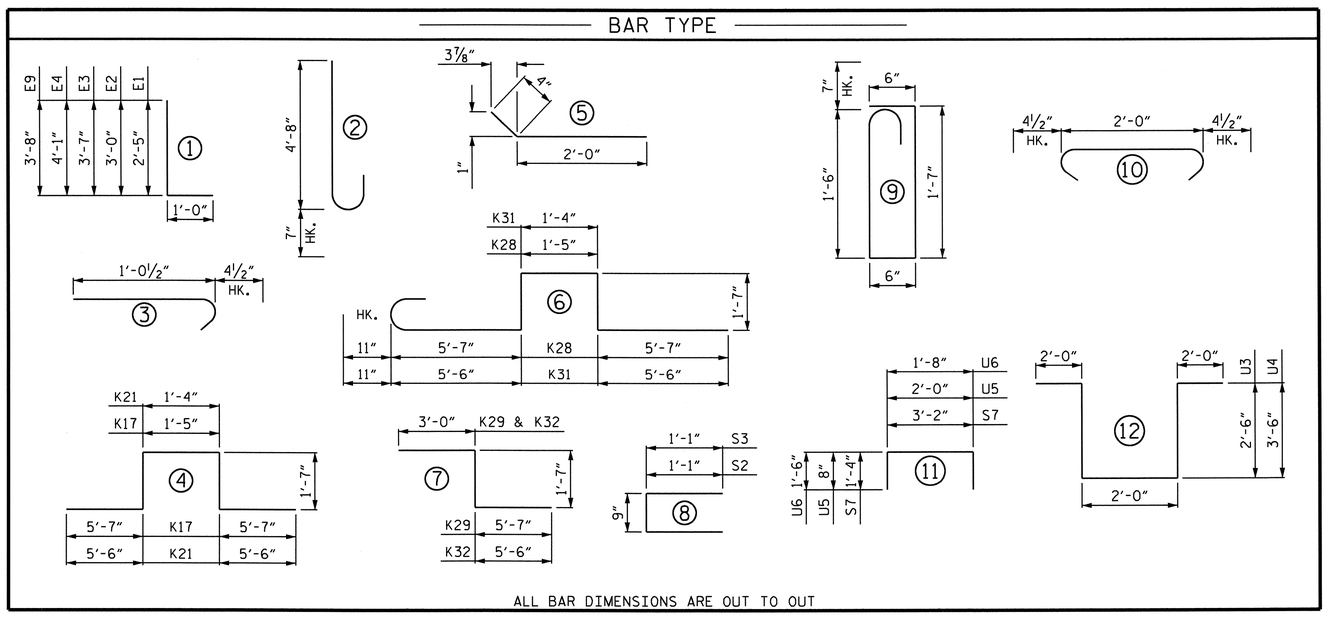
		CLASS AA CONCRETE	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
		(CU. YDS.)	(LBS.)	(LBS.)
STAGE II	SPANS "A"-"F"	500.2	47,243	51,267
	SPANS "G"-"L"	505.2	49,276	52,563
	TOTAL	1005.4	96,519	103,830

CONCRETE AND REINFORCING STEEL FOR THE SIDEWALKS AND LIGHT PEDESTALS IS INCLUDED IN THE SUPERSTRUCTURE BILL OF MATERIAL

GROOVING BRIDGE FLOOR SPANS "G"-"L"

APPROACH SLAB @ END BENT #2	643 SQ.FT.
BRIDGE DECK SPANS "G"-"L"	10,145 SQ.FT.
TOTAL	10,788 SQ.FT.

BAR TYPE



ALL BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BILL OF MATERIAL

STAGE II
SPANS "G"-"L"

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER KEVIN FISCHER
4/20/12

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

SHEET NO. S-90

TOTAL SHEETS 125

DRAWN BY : T. BANKOVICH DATE : 6-2011
CHECKED BY : M.K. BEARD DATE : 7-2011

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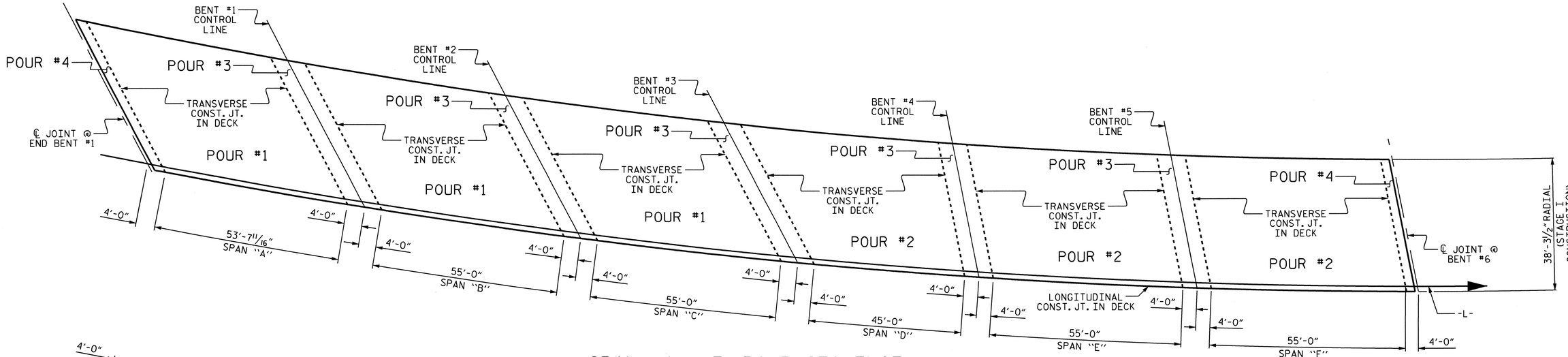
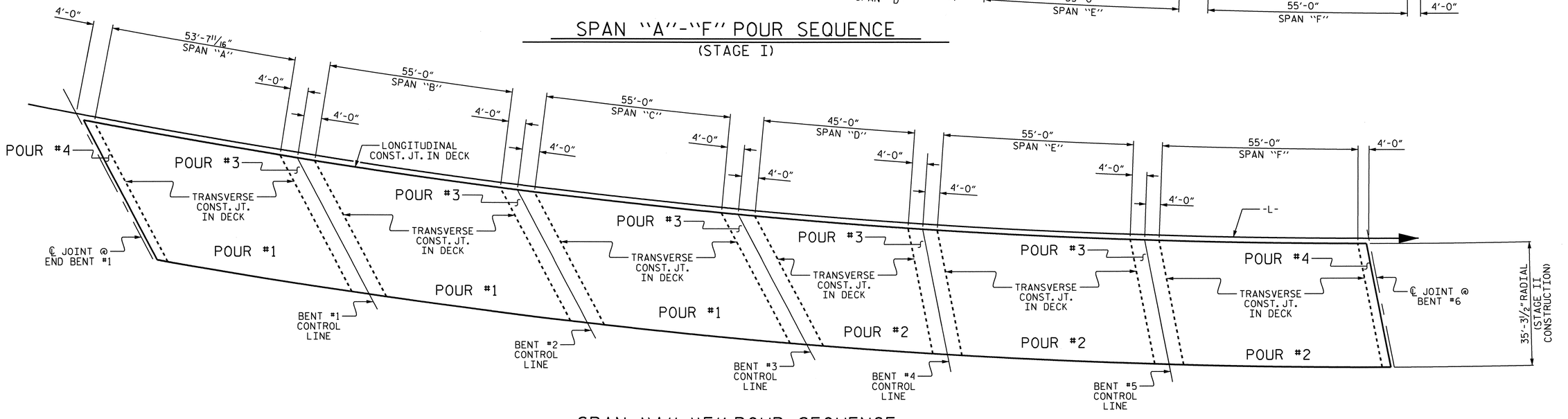


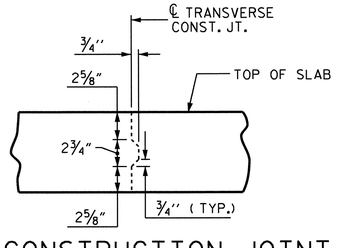
SPAN "A"-"F" POUR SEQUENCE
(STAGE I)



SPAN "A"-"F" POUR SEQUENCE
(STAGE II)

NOTE:
POUR #3 OR POUR #4 SHALL NOT BE STARTED UNTIL BOTH ADJACENT POUR #1 OR POUR #2 REACH A MINIMUM OF 3000 PSI.

CLASS AA CONCRETE BREAKDOWN			
STAGE I		STAGE II	
SPANS "A"-"F"		SPANS "A"-"F"	
POUR #1	189.9 C.Y.	POUR #1	172.3 C.Y.
POUR #2	196.6 C.Y.	POUR #2	164.2 C.Y.
POUR #3	99.3 C.Y.	POUR #3	106.0 C.Y.
POUR #4	11.4 C.Y.	POUR #4	10.6 C.Y.
SIDEWALK/LOWER LIGHT PEDESTAL	71.8 C.Y.	SIDEWALK/LOWER LIGHT PEDESTAL	45.0 C.Y.
LIGHT PEDESTAL	1.7 C.Y.	LIGHT PEDESTAL	1.7 C.Y.
END POST	0.4 C.Y.	END POST	0.4 C.Y.
TOTAL	571.1 C.Y.	TOTAL	500.2 C.Y.



TRANSVERSE CONSTRUCTION JOINT DETAIL

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

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

CONCRETE DECK POUR DETAILS

SPANS "A"-"F"

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-91
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 6-2011
CHECKED BY : M.K BEARD DATE : 7-2011

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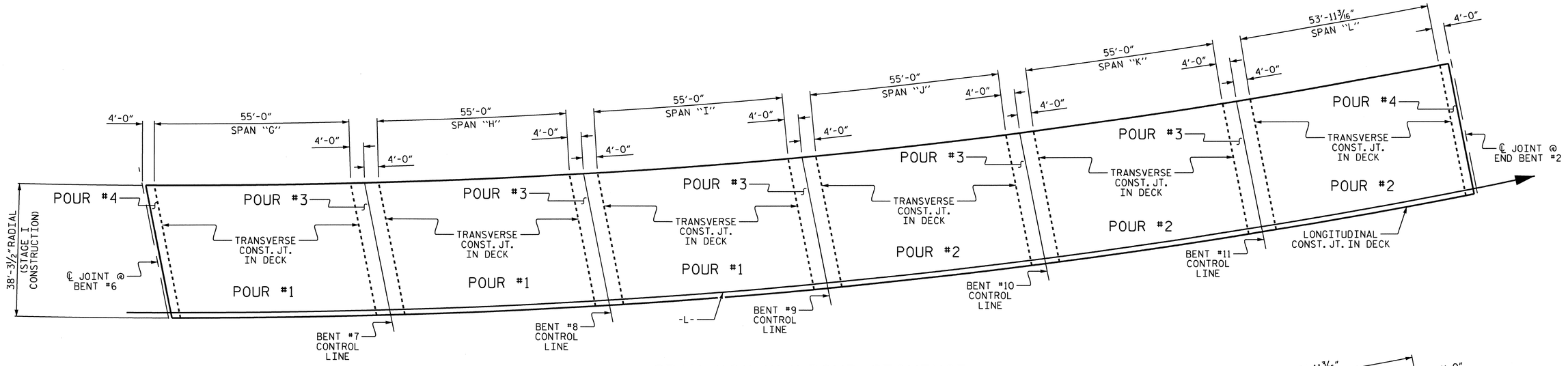
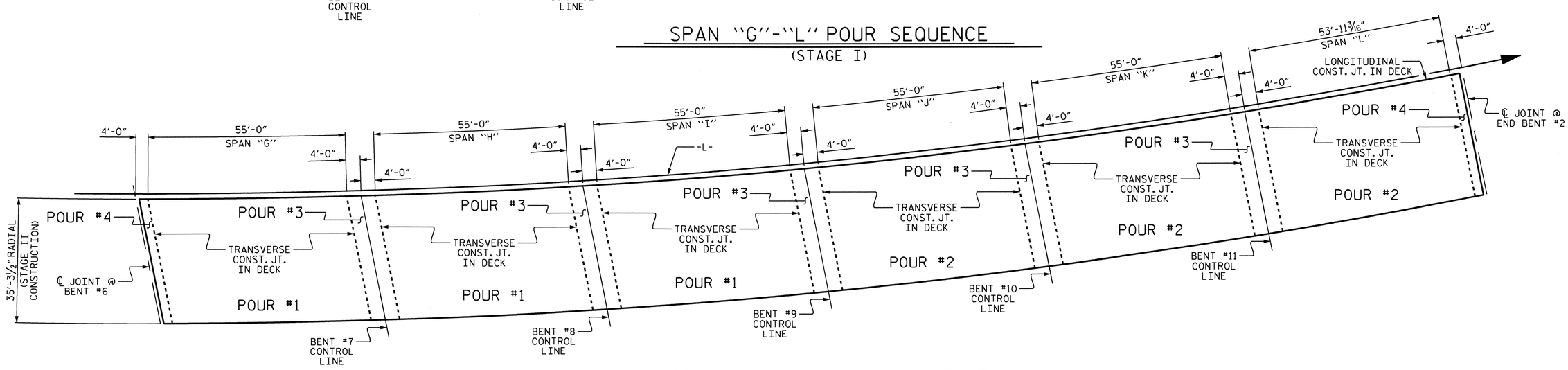


SPAN "G"-"L" POUR SEQUENCE
(STAGE I)



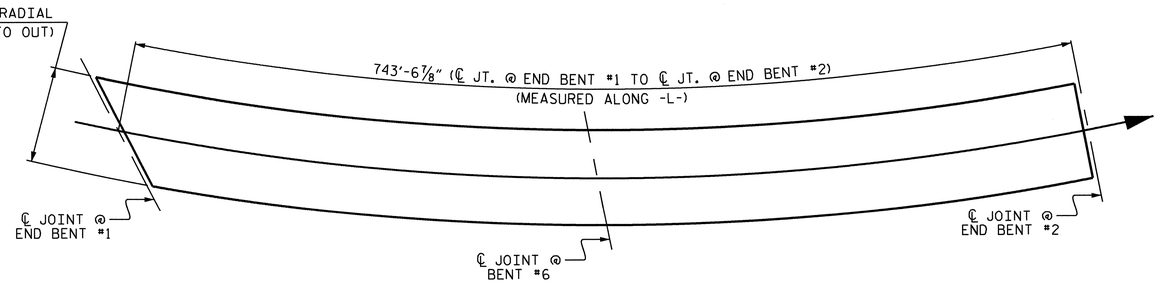
SPAN "G"-"L" POUR SEQUENCE
(STAGE II)

NOTES:

POUR #3 OR POUR #4 SHALL NOT BE STARTED UNTIL BOTH ADJACENT POUR #1 OR POUR #2 REACH A MINIMUM OF 3000 PSI.

FOR "TRANSVERSE CONSTRUCTION JOINT DETAIL", SEE SHEET 1 OF 2.

CLASS AA CONCRETE BREAKDOWN			
STAGE I		STAGE II	
SPANS "G"-"L"		SPANS "G"-"L"	
POUR #1	191.5 C.Y.	POUR #1	173.7 C.Y.
POUR #2	190.2 C.Y.	POUR #2	174.0 C.Y.
POUR #3	102.0 C.Y.	POUR #3	97.8 C.Y.
POUR #4	10.5 C.Y.	POUR #4	9.6 C.Y.
SIDEWALK/LOWER LIGHT PEDESTAL	70.9 C.Y.	SIDEWALK/LOWER LIGHT PEDESTAL	48.0 C.Y.
LIGHT PEDESTAL	1.7 C.Y.	LIGHT PEDESTAL	1.7 C.Y.
END POST	0.4 C.Y.	END POST	0.4 C.Y.
TOTAL	567.2 C.Y.	TOTAL	505.2 C.Y.



LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB
(SQ. FT. = 54,719)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

CONCRETE DECK POUR DETAILS

SPANS "G"-"L"

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-92
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. BANKOVICH DATE : 6-2011
CHECKED BY : M.K. BEARD DATE : 7-2011

27-JAN-2012 14:01
R:\Structures\Plans\B-4599_SD_BM.dgn
kbeard

NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

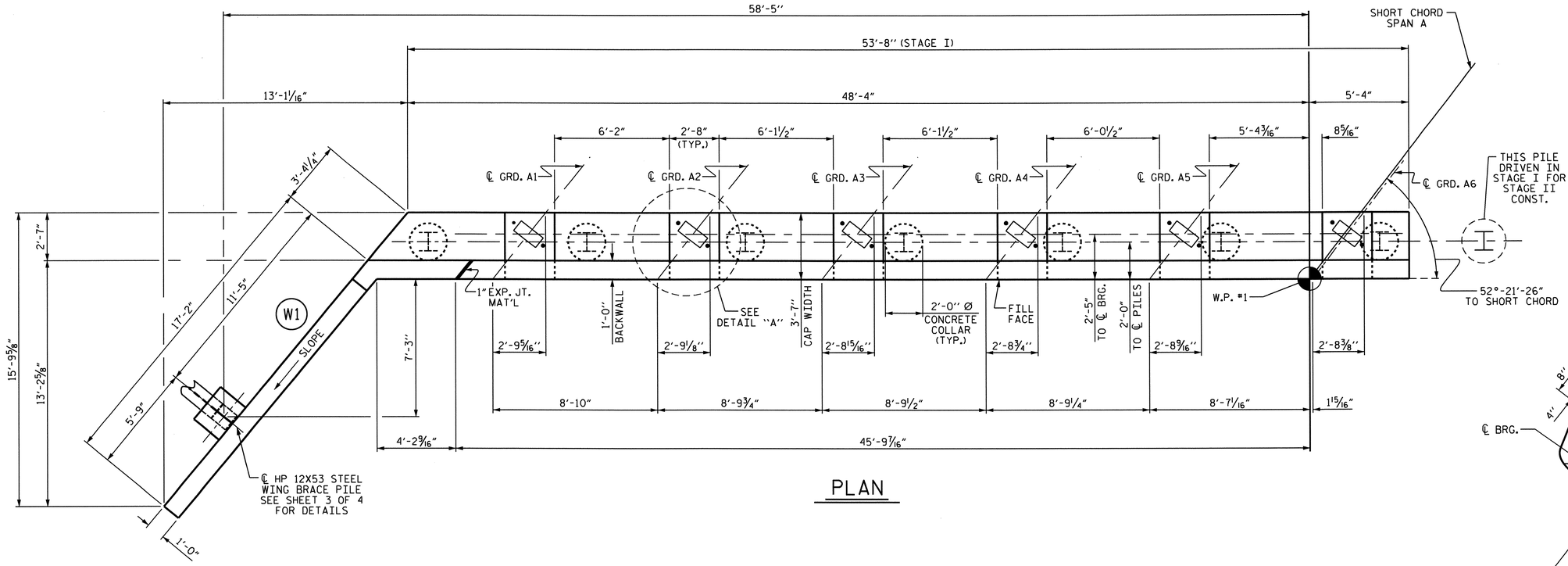
BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

THE TOP SURFACE AREAS OF THE CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

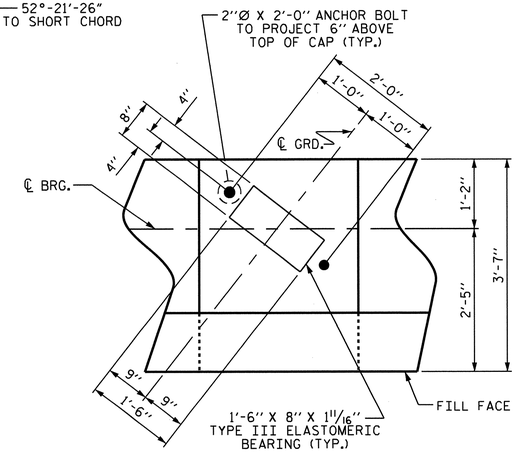
THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

"B" BARS & "K" BARS MAY BE FIELD BENT AS NECESSARY FOR STAGE II CONSTRUCTION.

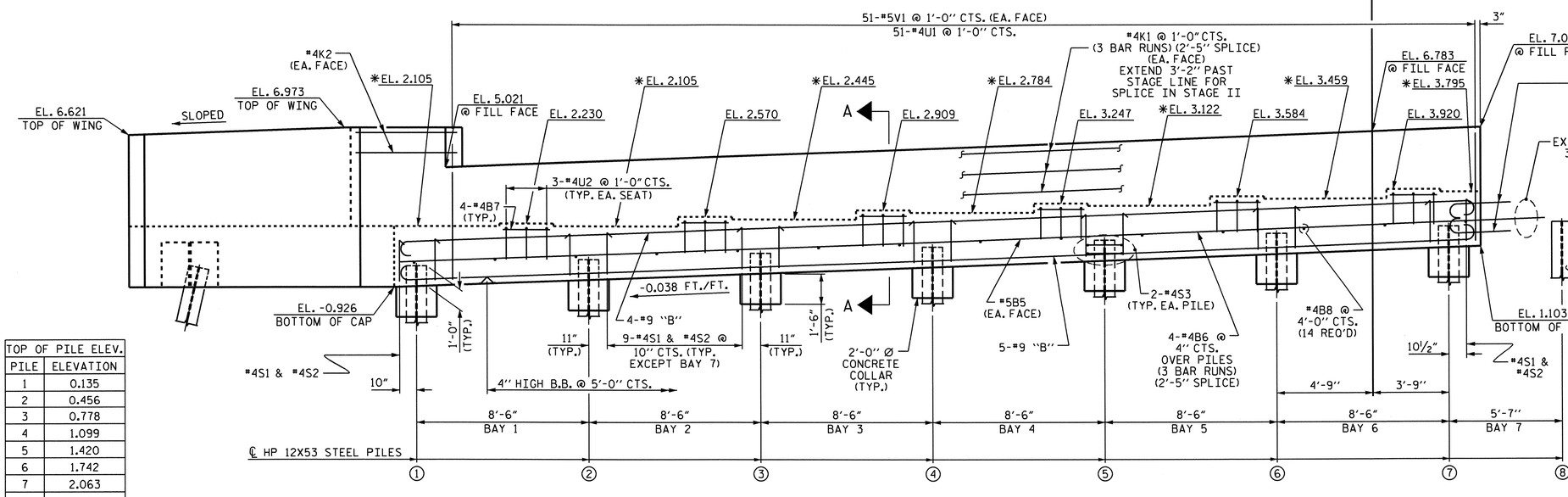
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4"DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



PLAN



DETAIL "A"



ELEVATION

* SEE SHEET 4 OF 4 FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEAT BUILDUPS.

TOP OF PILE ELEV.	
PILE	ELEVATION
1	0.135
2	0.456
3	0.778
4	1.099
5	1.420
6	1.742
7	2.063
8	2.274

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT #1

(STAGE I)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-93
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : B. L. GREEN DATE : 8/31/11
CHECKED BY : H. A. LOCKLEAR DATE : 9/11

18-APR-2012 12:27
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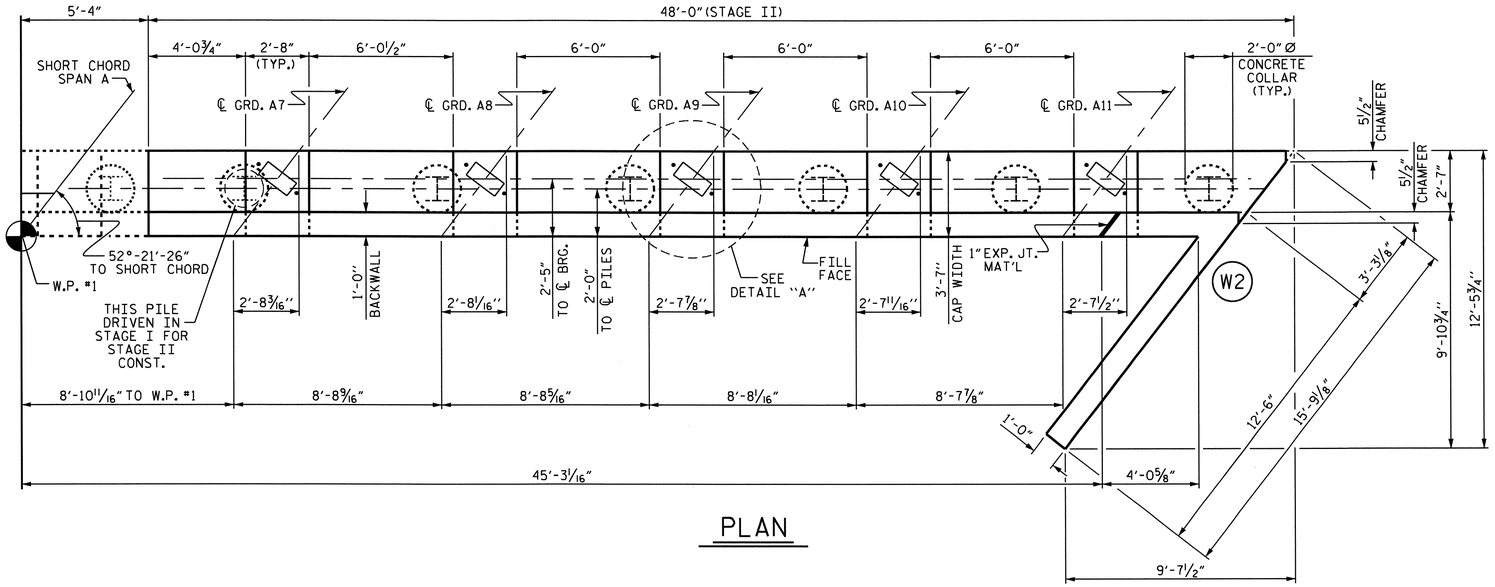
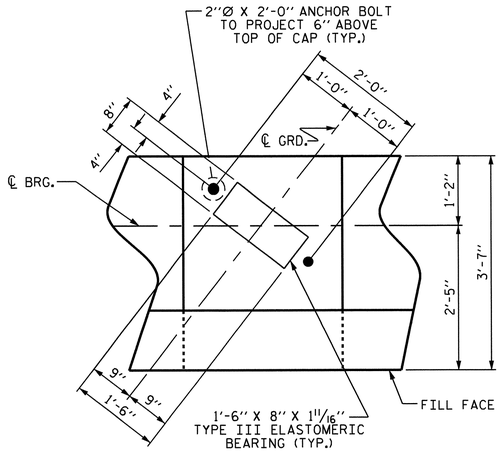
jpadams



PLAN



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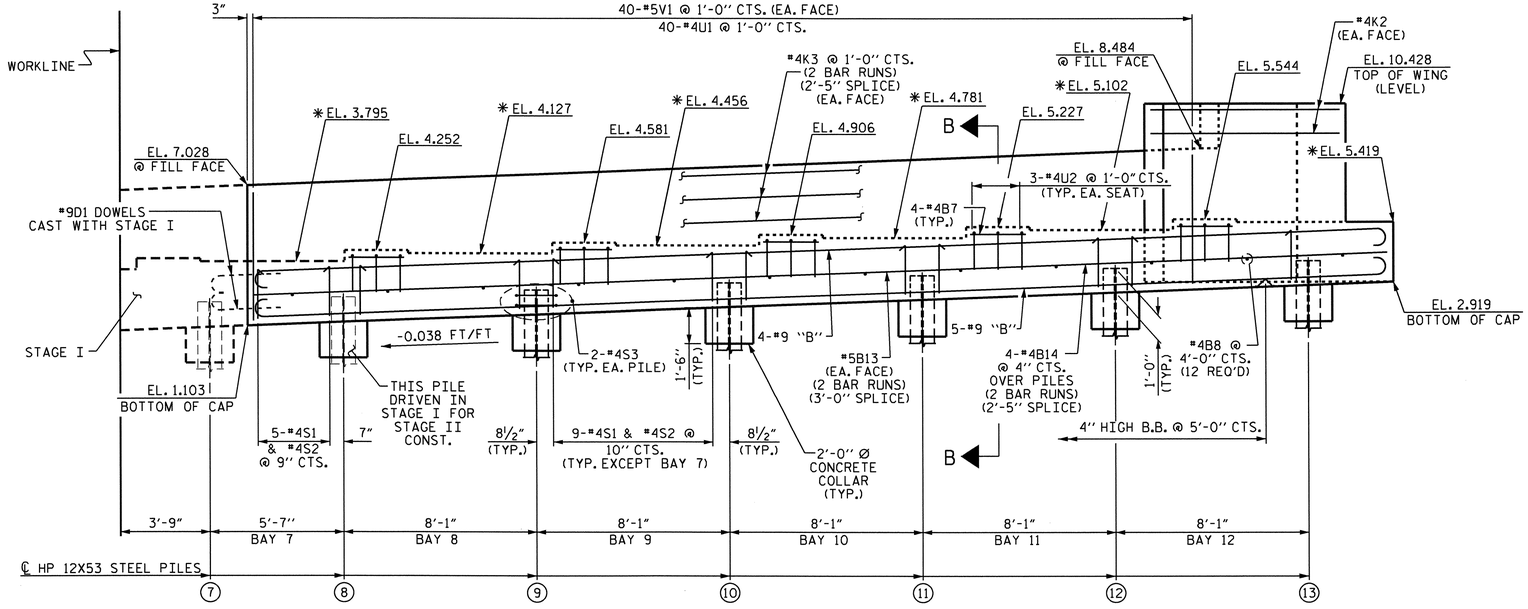

ELEVATION

TOP OF PILE ELEV.	
PILE	ELEVATION
9	2.580
10	2.886
11	3.191
12	3.497
13	3.803

* SEE SHEET 4 OF 4 FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEAT BUILDUPS.

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-
SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT #1

(STAGE II)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-94
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : B. L. GREEN DATE : 8/31/11
CHECKED BY : H. A. LOCKLEAR DATE : 9/11

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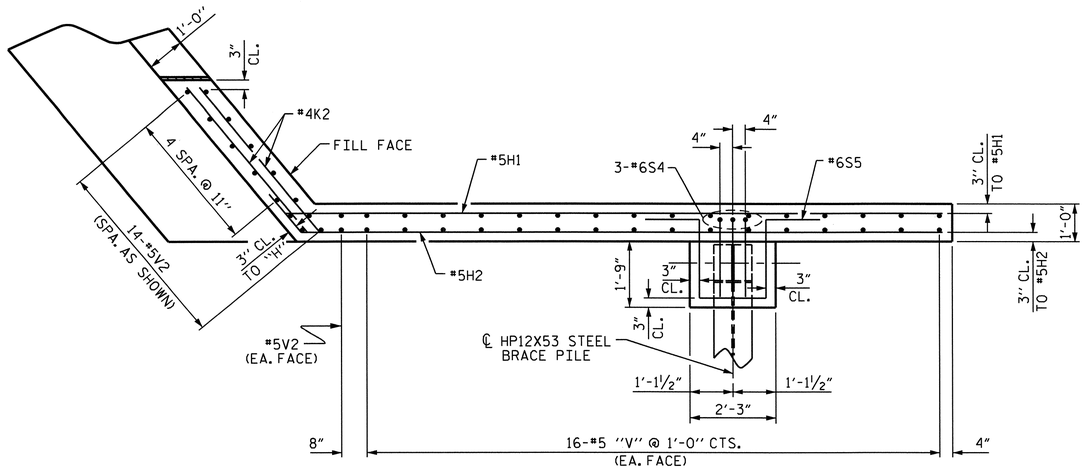
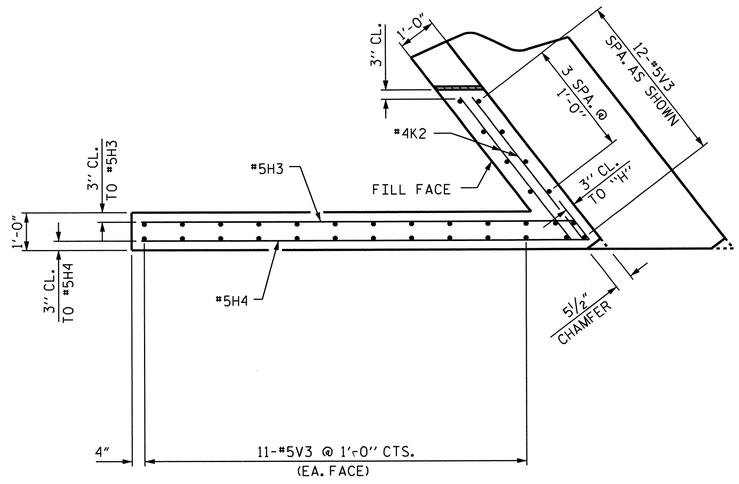


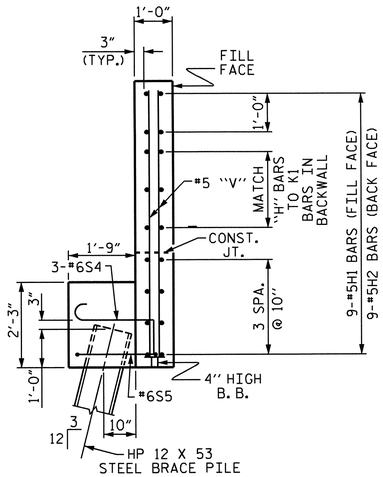
PLAN OF WING - W1

STAGE I

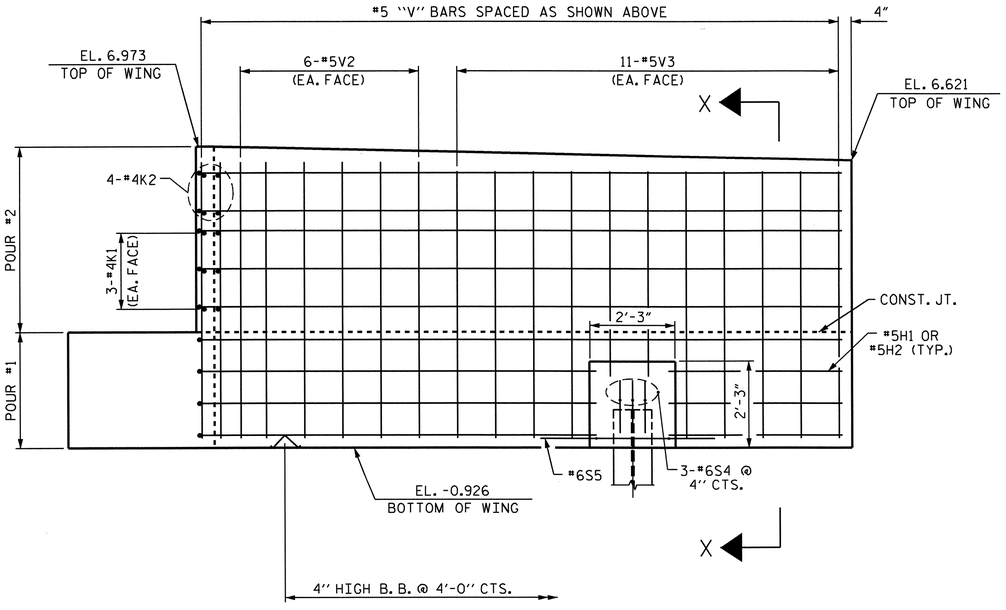


PLAN OF WING - W2

STAGE II

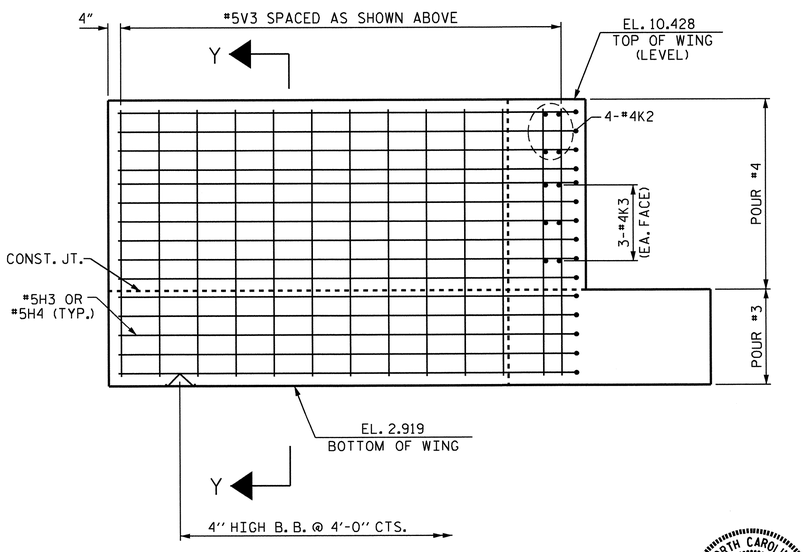


SECTION X-X



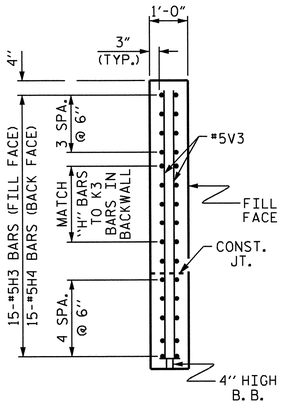
ELEVATION OF WING - W1

STAGE I



ELEVATION OF WING - W2

STAGE II



SECTION Y-Y

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT #1

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER KEVIN F. LOCKLEAR
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-95
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : B. L. GREEN DATE : 8/31/11
CHECKED BY : H. A. LOCKLEAR DATE : 9/11

27-JAN-2012 13:59
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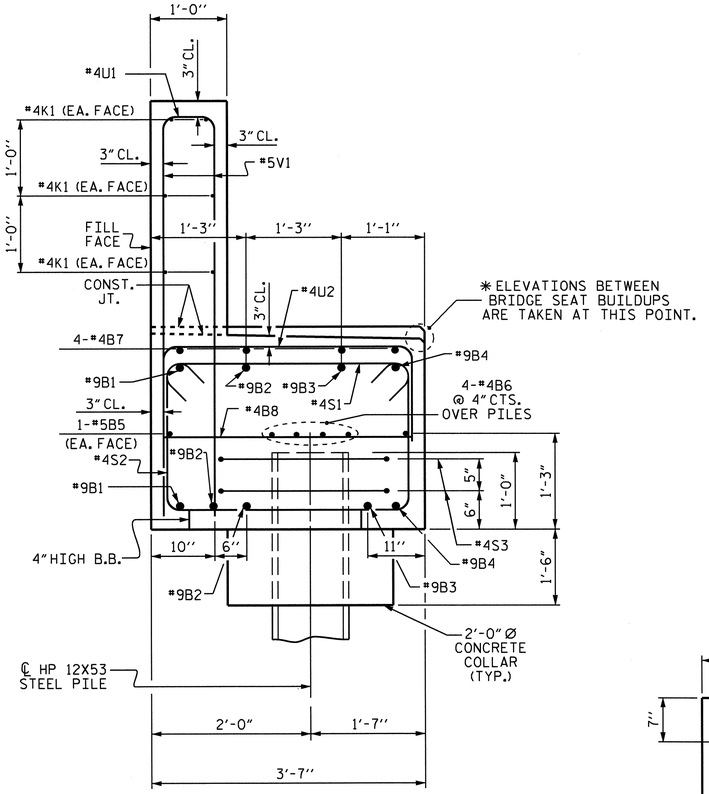
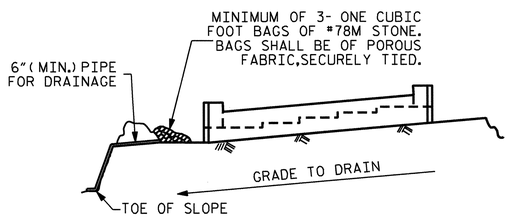
kbeard



SECTION A-A

STAGE I



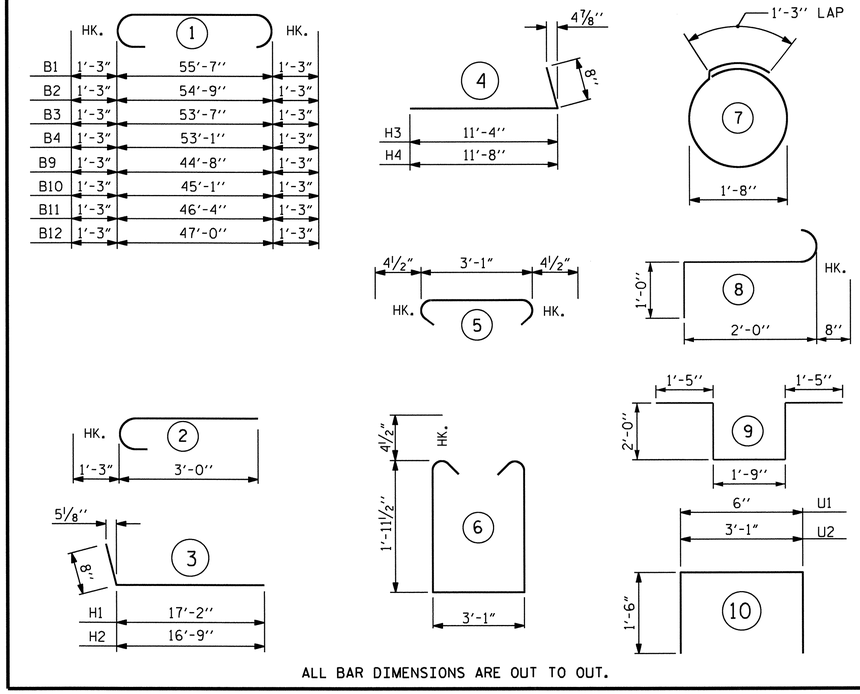
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

TEMPORARY DRAINAGE AT END BENT

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT #1

STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	2	#9	1	58'-1"	395
B2	3	#9	1	57'-3"	584
B3	2	#9	1	56'-1"	381
B4	2	#9	1	55'-7"	378
B5	2	#5	STR.	59'-2"	123
B6	12	#4	STR.	21'-0"	168
B7	24	#4	STR.	2'-2"	35
B8	14	#4	STR.	3'-1"	29
D1	4	#9	2	4'-3"	58
H1	9	#5	3	17'-10"	167
H2	9	#5	3	17'-5"	163
K1	18	#4	STR.	21'-5"	258
K2	4	#4	STR.	4'-9"	13
S1	56	#4	5	3'-10"	143
S2	56	#4	6	7'-9"	290
S3	14	#4	7	6'-6"	61
S4	3	#6	8	3'-8"	17
S5	1	#6	9	8'-7"	13
U1	51	#4	10	3'-6"	119
U2	18	#4	10	6'-1"	73
V1	102	#5	STR.	5'-3"	559
V2	26	#5	STR.	7'-3"	197
V3	22	#5	STR.	7'-0"	161

REINFORCING STEEL LBS. 4385

CLASS "A" CONCRETE BREAKDOWN

POUR #1 CAP, LOWER WING & COLLARS LEFT END 23.4 CY.

POUR #2 UPPER WING & BACKWALL LEFT END 9.7 CY.

CLASS "A" CONCRETE TOTAL 33.1 CY.

HP 12X53 STEEL PILES No. 8 LIN. FT. 600

PILES REDRIVES EA. 8

STAGE II

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B7	20	#4	STR.	2'-2"	29
B8	12	#4	STR.	3'-1"	25
B9	2	#9	1	47'-2"	321
B10	3	#9	1	47'-7"	485
B11	2	#9	1	48'-10"	332
B12	2	#9	1	49'-6"	337
B13	4	#5	STR.	25'-1"	105
B14	8	#4	STR.	24'-5"	130
H3	15	#5	4	12'-0"	188
H4	15	#5	4	12'-4"	193
K2	4	#4	STR.	4'-9"	13
K3	12	#4	STR.	23'-11"	192
S1	50	#4	5	3'-10"	128
S2	50	#4	6	7'-9"	259
S3	12	#4	7	6'-6"	52
U1	40	#4	10	3'-6"	94
U2	15	#4	10	6'-1"	61
V1	80	#5	STR.	5'-3"	438
V3	34	#5	STR.	7'-0"	248

REINFORCING STEEL LBS. 3630

CLASS "A" CONCRETE BREAKDOWN

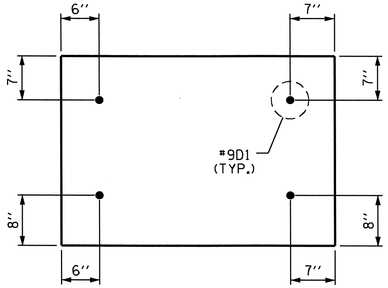
POUR #3 CAP, LOWER WING & COLLARS RIGHT END 18.9 CY.

POUR #4 UPPER WING & BACKWALL RIGHT END 7.8 CY.

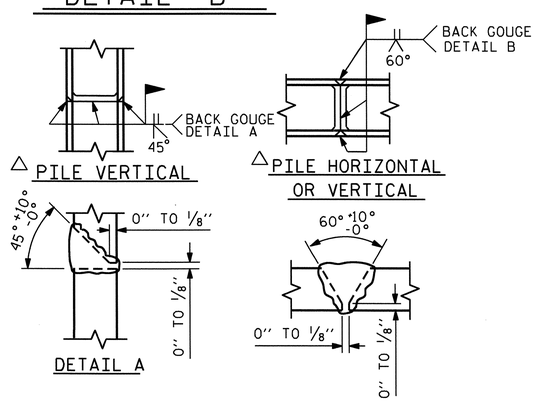
CLASS "A" CONCRETE TOTAL 26.7 CY.

HP 12X53 STEEL PILES No. 5 LIN. FT. 375

PILES REDRIVES EA. 5

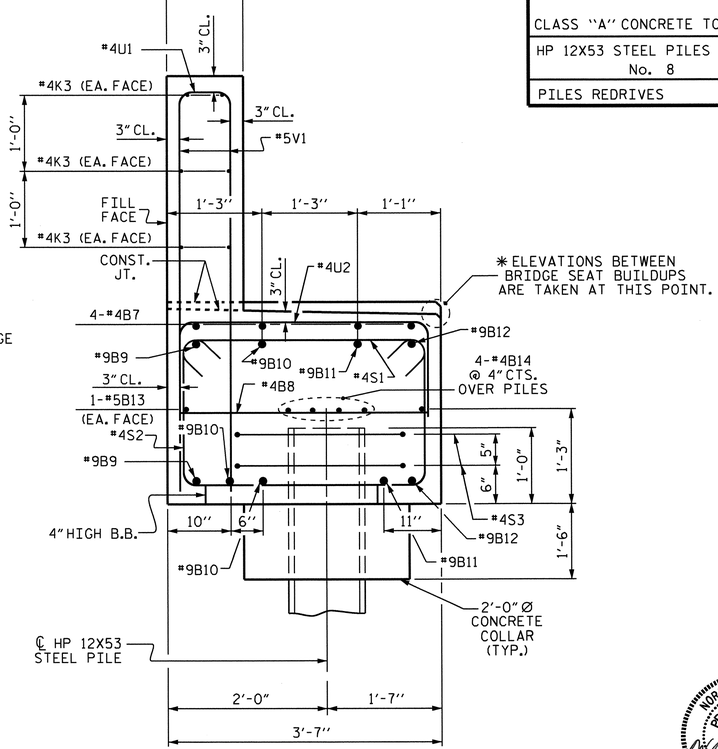


DETAIL "B"



△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



SECTION B-B

STAGE II

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT #1

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-96
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : B. L. GREEN DATE : 8/31/11

CHECKED BY : H. A. LOCKLEAR DATE : 9/11

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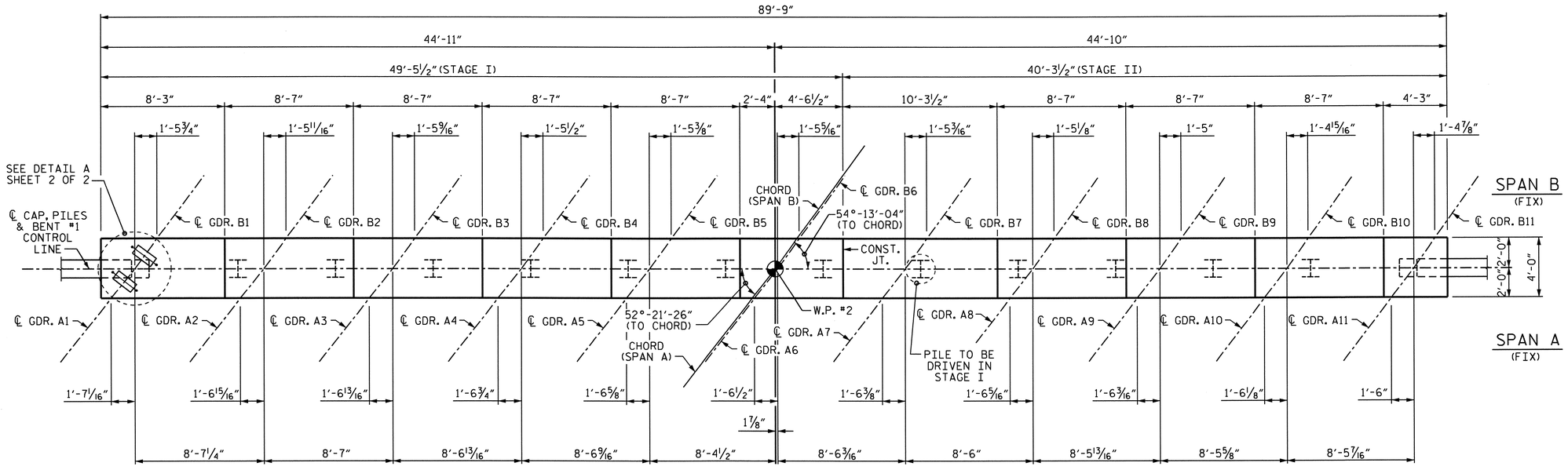
NOTES:

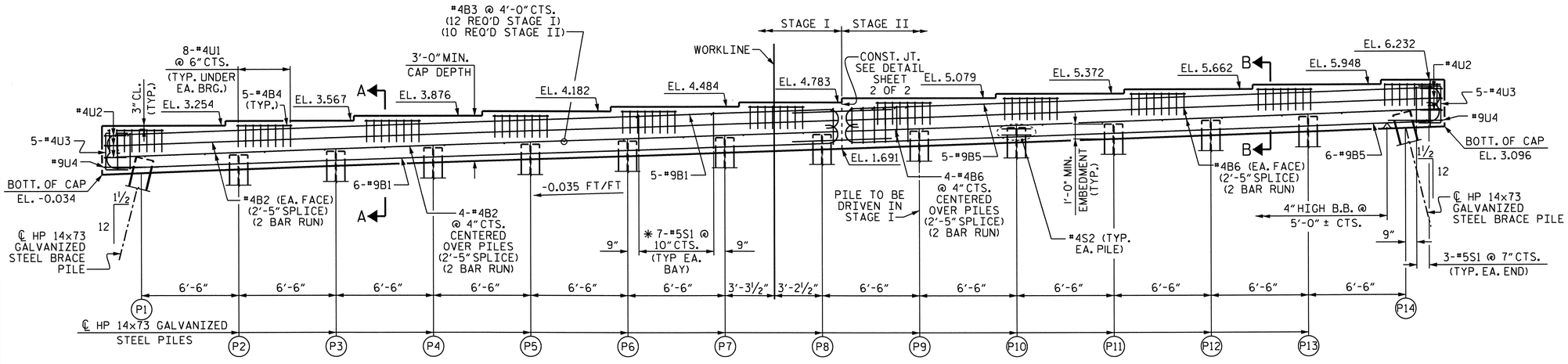
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 35 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR PILE SPLICE DETAILS, SEE END BENT #1.



PLAN



* INVERT ALTERNATE STIRRUPS

ELEVATION

PLACE *4U1 & *4B4 CENTERED UNDER EACH LINE OF GIRDERS

FOR *5S1 BARS IN CONST. JT. BAY SEE "DETAIL @ CONST. JT." SHEET 2 OF 2.

TOP OF PILE ELEVATIONS			
PILE	ELEVATION	PILE	ELEVATION
P1	1.079	P8	2.665
P2	1.305	P9	2.892
P3	1.532	P10	3.119
P4	1.759	P11	3.345
P5	1.985	P12	3.572
P6	2.212	P13	3.799
P7	2.439	P14	4.025

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/30/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-97
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-9-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:26
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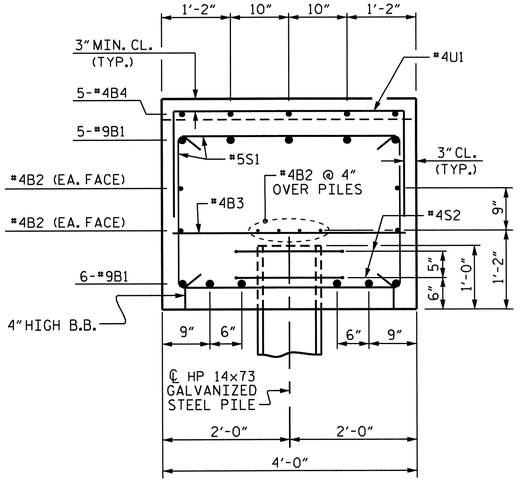
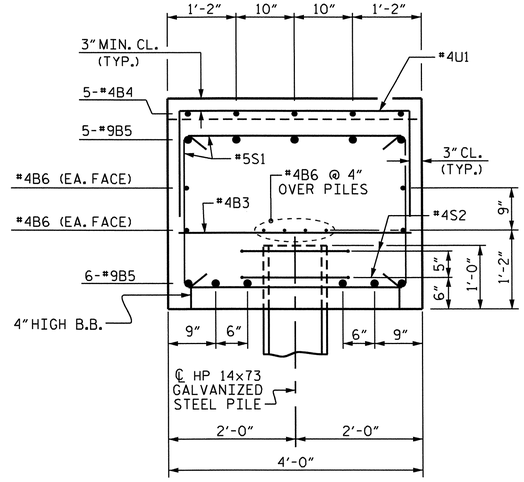
jpadams

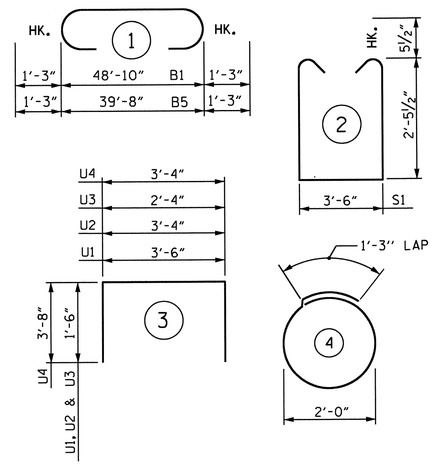


SECTION A-A



SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
BENT #1 STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	11	#9	1	51'-4"	1,920
B2	16	#4	STR	25'-9"	275
B3	12	#4	STR	3'-6"	28
B4	30	#4	STR	3'-8"	73
D1	4	#9	STR.	6'-8"	91
S1	53	#5	2	9'-4"	516
S2	16	#4	4	7'-7"	81
U1	48	#4	3	6'-6"	208
U2	3	#4	3	6'-4"	13
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-8"	36

REINFORCING STEEL 3,259 LBS.

CLASS A CONCRETE CAP = 23.3 C.Y.

HP 14x73 GALVANIZED STEEL PILES
No. 9 720 LIN. FT.

PILE REDRIVES EA. 9

BILL OF MATERIAL
BENT #1 STAGE II

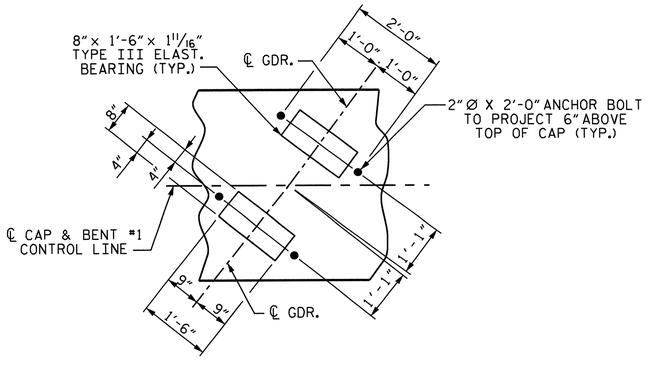
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	10	#4	STR	3'-6"	23
B4	25	#4	STR	3'-8"	61
B5	11	#9	1	42'-2"	1,577
B6	16	#4	STR	21'-2"	226
S1	44	#5	2	9'-4"	428
S2	12	#4	4	7'-7"	61
U1	40	#4	3	6'-6"	174
U2	3	#4	3	6'-4"	13
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-8"	36

REINFORCING STEEL 2,617 LBS.

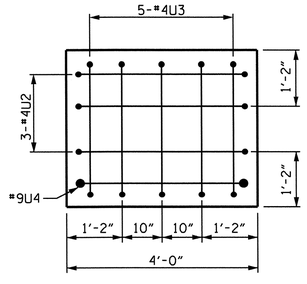
CLASS A CONCRETE CAP = 19.0 C.Y.

HP 14x73 GALVANIZED STEEL PILES
No. 5 400 LIN. FT.

PILE REDRIVES EA. 5



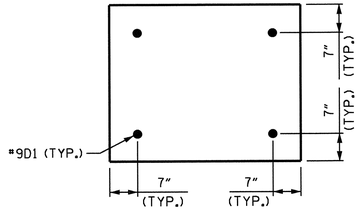
DETAIL "A"
TYPICAL AT EACH BEARING



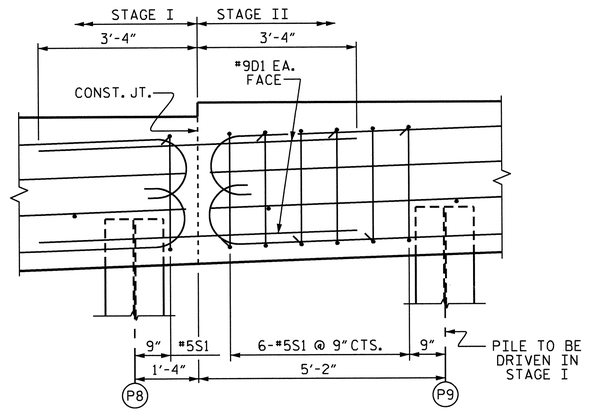
END VIEW

3" MIN. CONCRETE COVER FROM END OF CAP REQUIRED FOR ALL #4U2, #4U3 & #9U4.

#4U2, #4U3 & #9U4 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS.



SECTION AT CONST. JT.



DETAIL AT CONST. JT.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #1

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/30/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-98
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-09-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

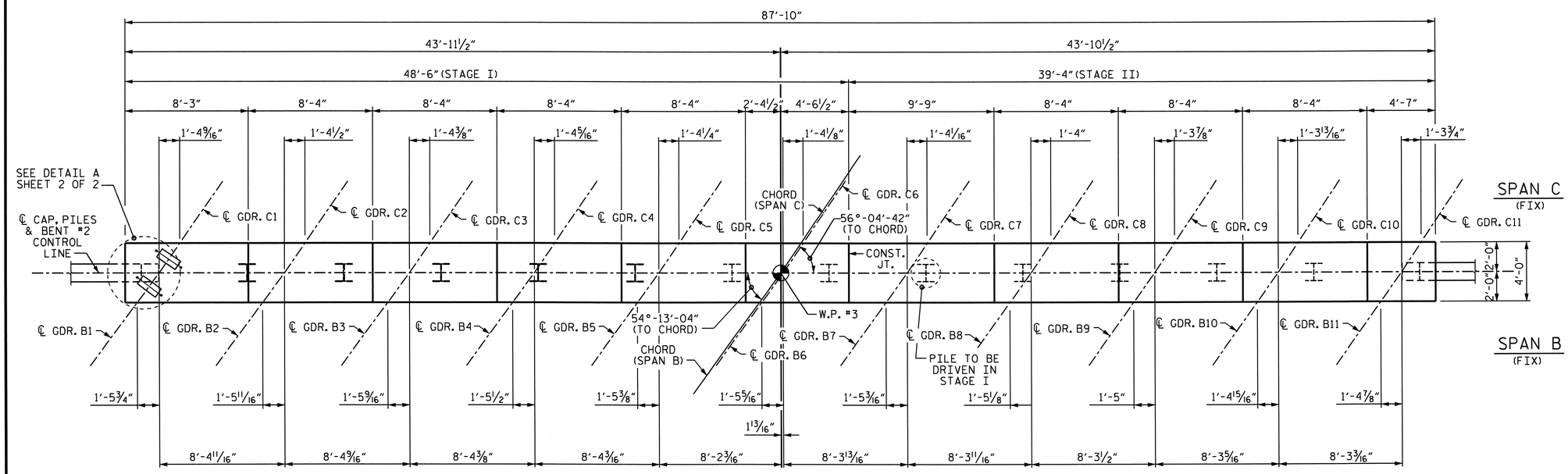
18-APR-2012 12:26
R:\Structures\Plans\B4599_SD_Bts.dgn
jpadams

NOTES:

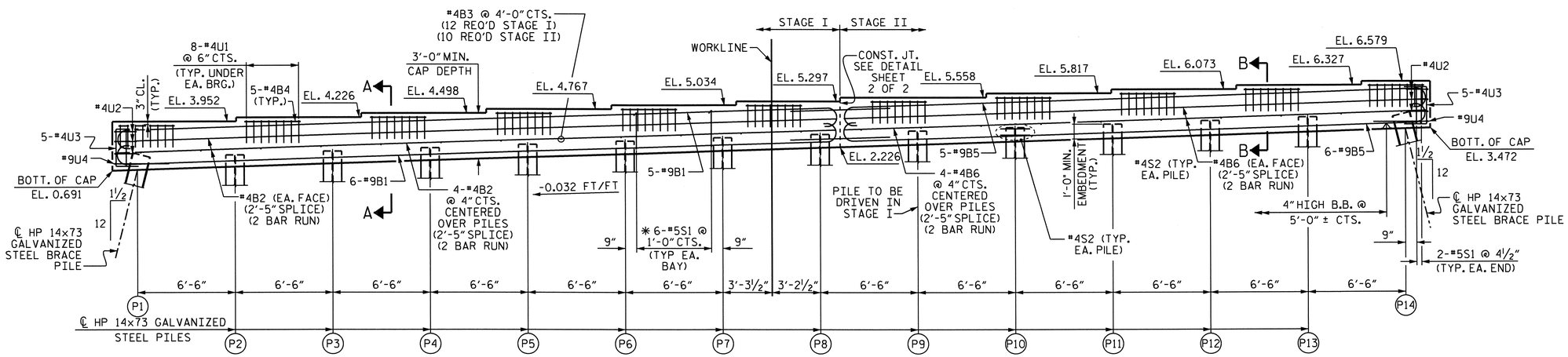
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 35 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR PILE SPLICE DETAILS, SEE END BENT #1.



PLAN



ELEVATION

PLACE *4U1 & *4B4 CENTERED UNDER EACH LINE OF GIRDERS

FOR *5S1 BARS IN CONST. JT. BAY SEE "DETAIL @ CONST. JT." SHEET 2 OF 2.

* INVERT ALTERNATE STIRRUPS

TOP OF PILE ELEVATIONS

PILE	ELEVATION	PILE	ELEVATION
P1	1.763	P8	3.204
P2	1.969	P9	3.409
P3	2.175	P10	3.615
P4	2.380	P11	3.821
P5	2.586	P12	4.027
P6	2.792	P13	4.232
P7	2.998	P14	4.438

DRAWN BY : Keith D. Layne DATE : 6-9-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:26
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jpadams

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

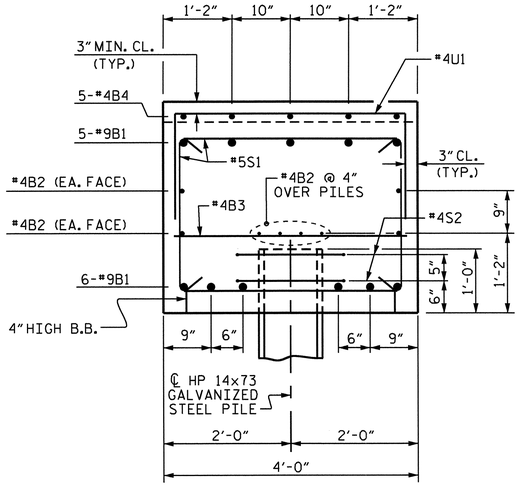
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

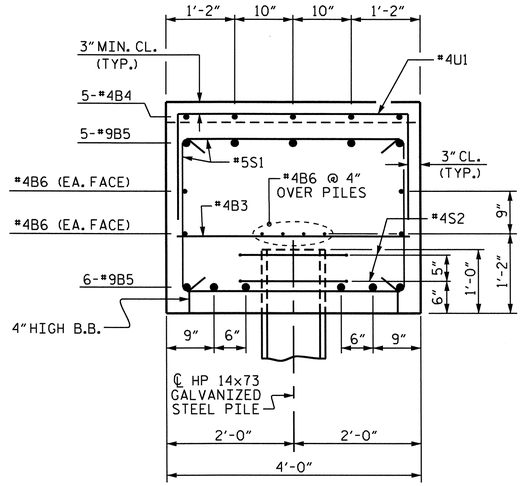
SUBSTRUCTURE
BENT #2

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-99
1			3			TOTAL SHEETS
2			4			125

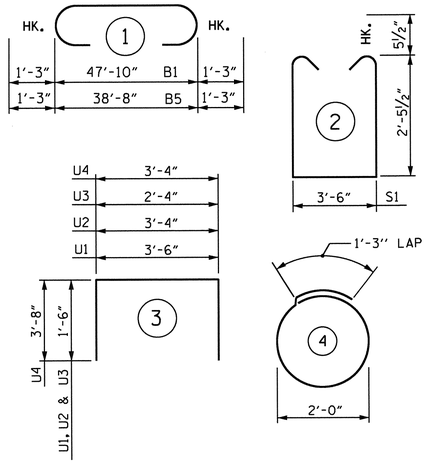


SECTION A-A



SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
BENT #2 STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	11	#9	1	50'-4"	1,882
B2	16	#4	STR	25'-3"	270
B3	12	#4	STR	3'-6"	28
B4	30	#4	STR	3'-8"	73
D1	4	#9	STR.	6'-8"	91
S1	45	#5	2	9'-4"	438
S2	16	#4	4	7'-7"	81
U1	48	#4	3	6'-6"	208
U2	3	#4	3	6'-4"	13
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-8"	36

REINFORCING STEEL 3,138 LBS.

CLASS A CONCRETE CAP = 22.6 C.Y.

HP 14x73 GALVANIZED STEEL PILES
No. 9 720 LIN. FT.

PILE REDRIVES EA. 9

BILL OF MATERIAL
BENT #2 STAGE II

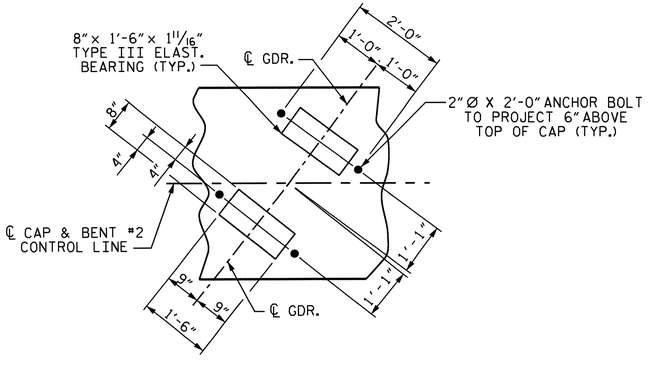
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	10	#4	STR	3'-6"	28
B4	25	#4	STR	3'-8"	61
B5	11	#9	1	41'-2"	1,540
B6	16	#4	STR	20'-8"	221
S1	38	#5	2	9'-4"	370
S2	12	#4	4	7'-7"	61
U1	40	#4	3	6'-6"	174
U2	3	#4	3	6'-4"	13
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-8"	36

REINFORCING STEEL 2,517 LBS.

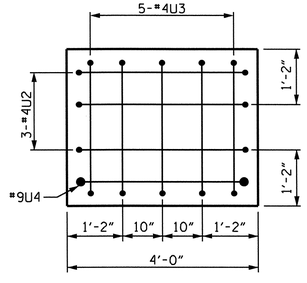
CLASS A CONCRETE CAP = 18.4 C.Y.

HP 14x73 GALVANIZED STEEL PILES
No. 5 400 LIN. FT.

PILE REDRIVES EA. 5



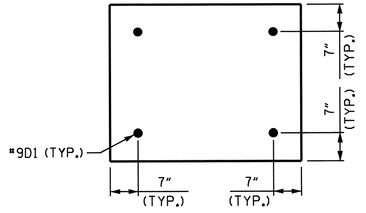
DETAIL "A"
TYPICAL AT EACH BEARING



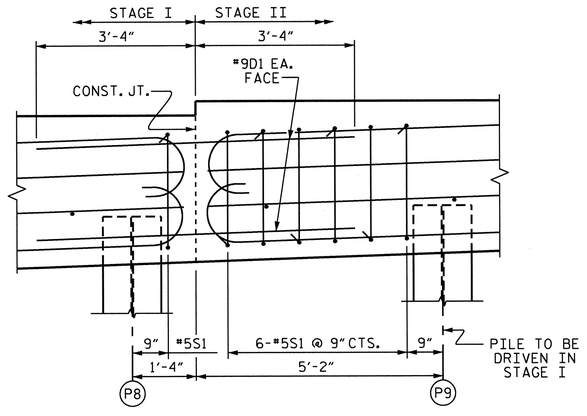
END VIEW

3" MIN. CONCRETE COVER FROM END OF CAP REQUIRED FOR ALL #4U2, #4U3 & #9U4.

#4U2, #4U3 & #9U4 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS.



SECTION AT CONST. JT.



DETAIL AT CONST. JT.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #2

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-100
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-09-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

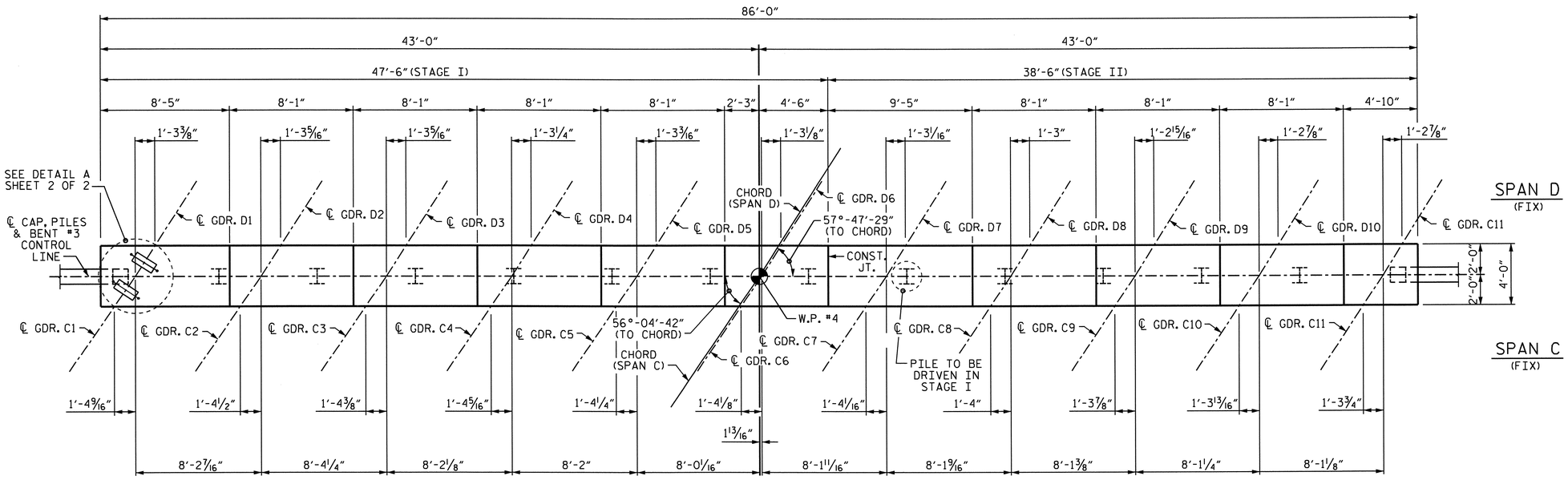
18-APR-2012 12:26
R:\Structures\Plans\B4599_SD_Bts.dgn
jpadams

NOTES:

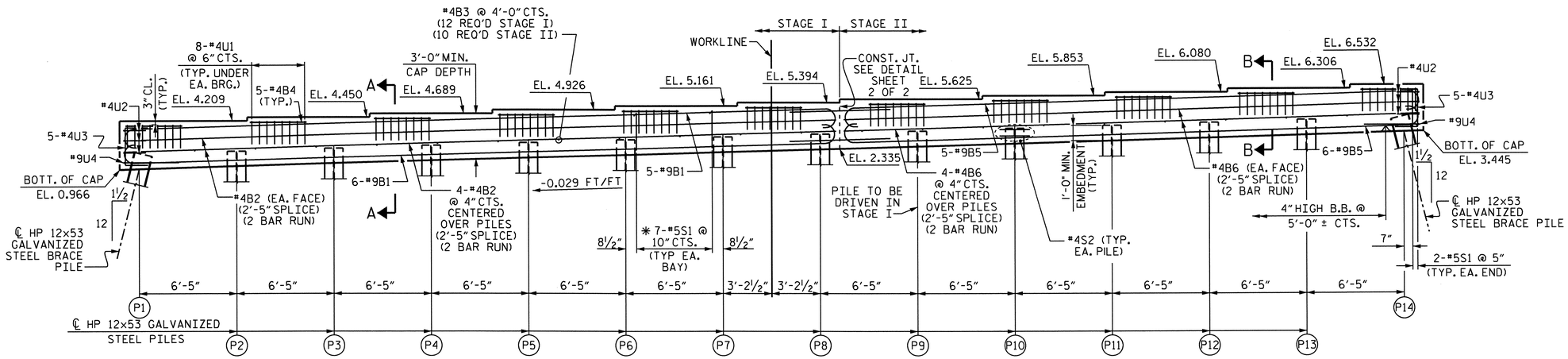
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 35 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR PILE SPLICE DETAILS, SEE END BENT #1.



PLAN



* INVERT ALTERNATE STIRRUPS

ELEVATION

PLACE #4U1 & #4B4 CENTERED UNDER EACH LINE OF GIRDERS

FOR #5S1 BARS IN CONST. JT. BAY SEE "DETAIL @ CONST. JT." SHEET 2 OF 2.

TOP OF PILE ELEVATIONS			
PILE	ELEVATION	PILE	ELEVATION
P1	2.018	P8	3.312
P2	2.203	P9	3.497
P3	2.388	P10	3.682
P4	2.572	P11	3.867
P5	2.757	P12	4.052
P6	2.942	P13	4.237
P7	3.127	P14	4.422

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

DRAWN BY : Keith D. Layne DATE : 6-9-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

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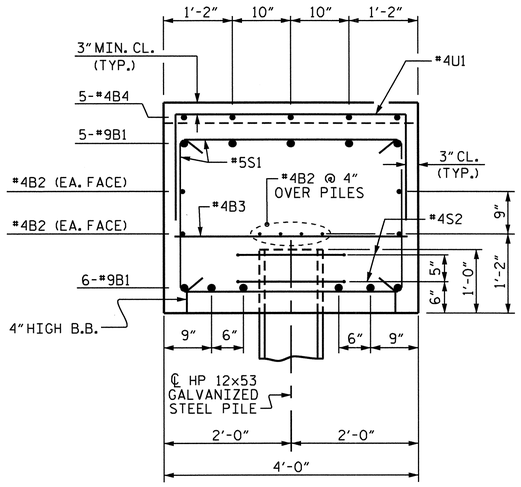
PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 1 OF 2

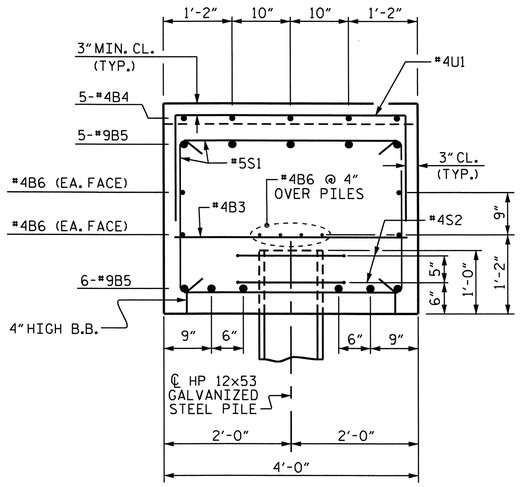
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #3

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-101
1			3			TOTAL SHEETS
2			4			125

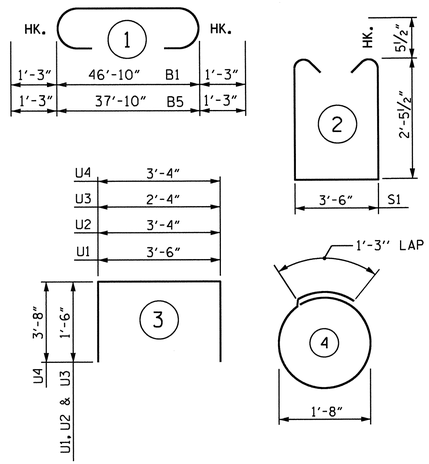


SECTION A-A



SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
BENT #3 STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	11	#9	1	49'-4"	1,845
B2	16	#4	STR	24'-9"	265
B3	12	#4	STR	3'-6"	28
B4	30	#4	STR	3'-8"	73
D1	4	#9	STR.	6'-8"	91
S1	52	#5	2	9'-4"	506
S2	16	#4	4	6'-6"	69
U1	48	#4	3	6'-6"	208
U2	3	#4	3	6'-4"	13
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-8"	36

REINFORCING STEEL 3,152 LBS.

CLASS A CONCRETE CAP = 21.4 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 9 765 LIN. FT.

PILE REDRIVES EA. 9

BILL OF MATERIAL
BENT #3 STAGE II

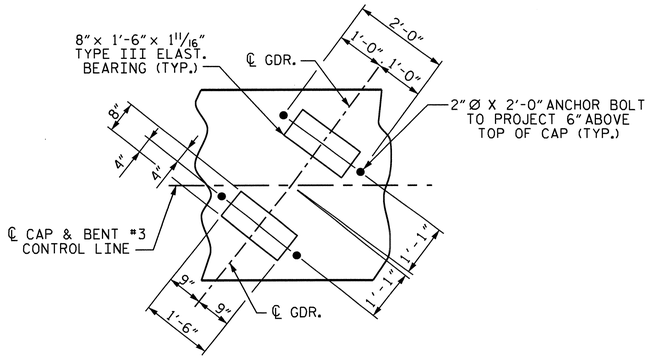
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	10	#4	STR	3'-6"	23
B4	25	#4	STR	3'-8"	61
B5	11	#9	1	40'-4"	1,508
B6	16	#4	STR	20'-3"	216
S1	42	#5	2	9'-4"	409
S2	12	#4	4	6'-6"	52
U1	40	#4	3	6'-6"	174
U2	3	#4	3	6'-4"	13
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-8"	36

REINFORCING STEEL 2,510 LBS.

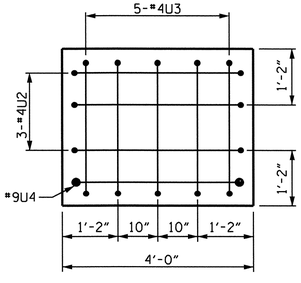
CLASS A CONCRETE CAP = 17.7 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 5 425 LIN. FT.

PILE REDRIVES EA. 5



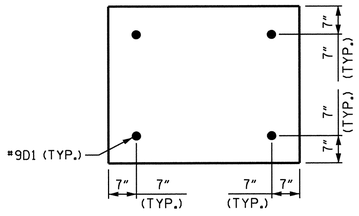
DETAIL "A"
TYPICAL AT EACH BEARING



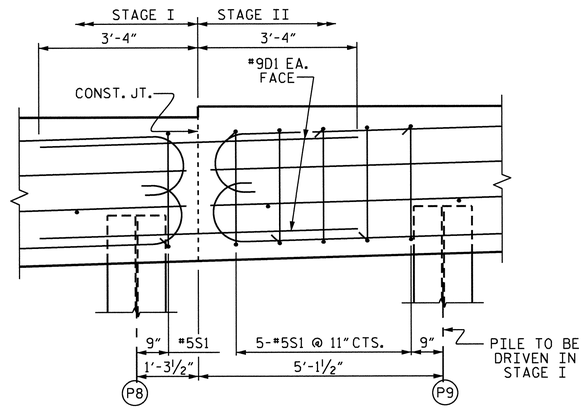
END VIEW

3" MIN. CONCRETE COVER FROM END OF CAP REQUIRED FOR ALL #4U2, #4U3 & #9U4.

#4U2, #4U3 & #9U4 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS.



SECTION AT CONST. JT.



DETAIL AT CONST. JT.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #3

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-102
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-09-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:26
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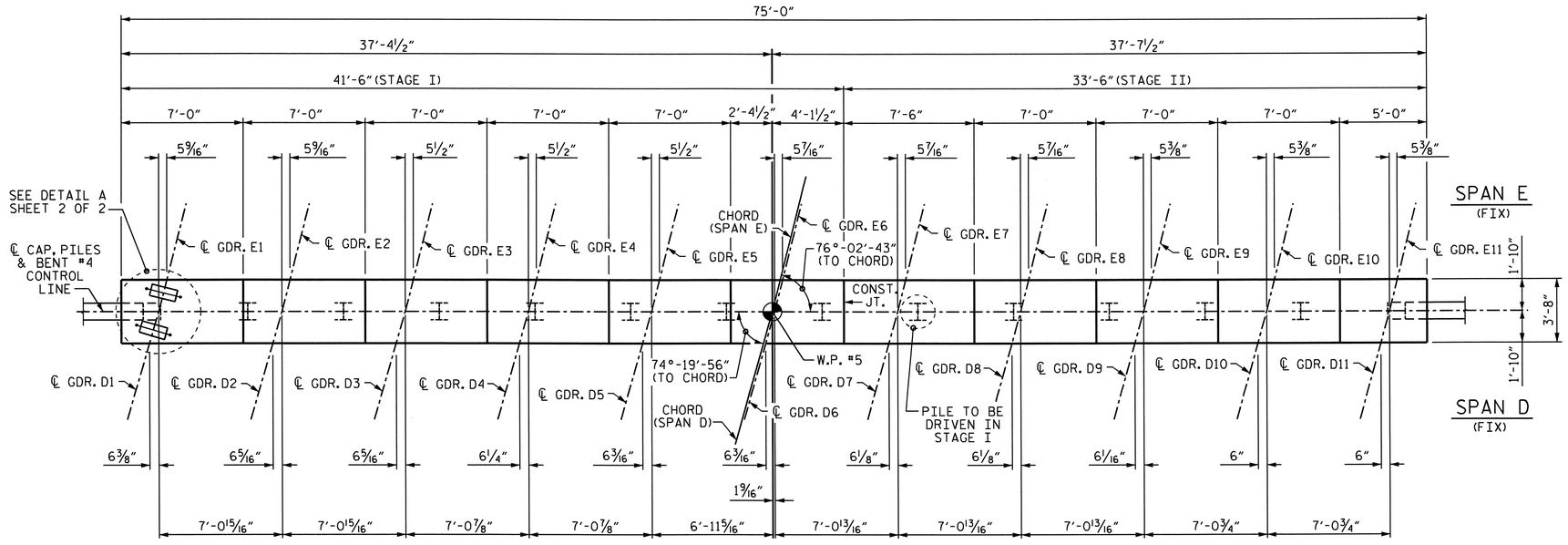
jpadams

NOTES:

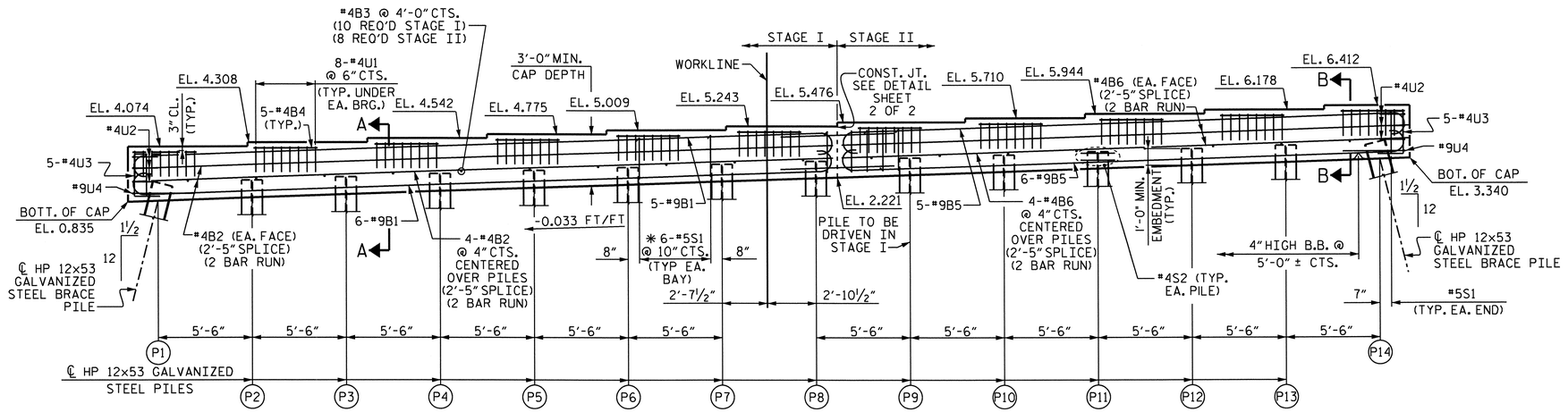
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 35 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR PILE SPLICE DETAILS, SEE END BENT #1.



PLAN



✳ INVERT ALTERNATE STIRRUPS

ELEVATION

PLACE #4U1 & #4B4 CENTERED UNDER EACH LINE OF GIRDERS

FOR #5S1 BARS IN CONST. JT. BAY SEE "DETAIL @ CONST. JT." SHEET 2 OF 2.

TOP OF PILE ELEVATIONS

PILE	ELEVATION	PILE	ELEVATION
P1	1.910	P8	3.196
P2	2.094	P9	3.380
P3	2.278	P10	3.564
P4	2.461	P11	3.747
P5	2.645	P12	3.931
P6	2.829	P13	4.115
P7	3.012	P14	4.298

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/30/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

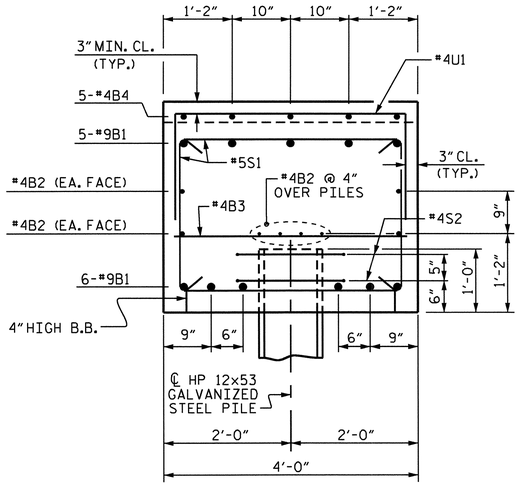
SUBSTRUCTURE

BENT #4

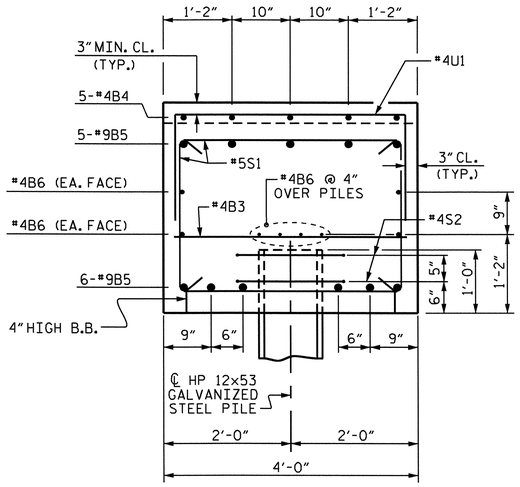
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-103
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-9-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:26
R:\Structures\Plans\B4599_SD_Bts.dgn
jpadams

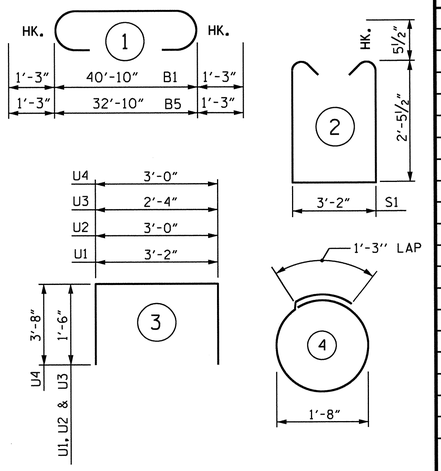


SECTION A-A



SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
BENT #4 STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	11	#9	1	43'-4"	1,621
B2	16	#4	STR	21'-9"	232
B3	10	#4	STR	3'-2"	21
B4	30	#4	STR	3'-8"	73
D1	4	#9	STR.	6'-8"	91
S1	44	#5	2	9'-0"	413
S2	16	#4	4	6'-6"	69
U1	48	#4	3	6'-2"	198
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,783 LBS.

CLASS A CONCRETE CAP = 17.6 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 9 765 LIN. FT.

PILE REDRIVES EA. 9

BILL OF MATERIAL
BENT #4 STAGE II

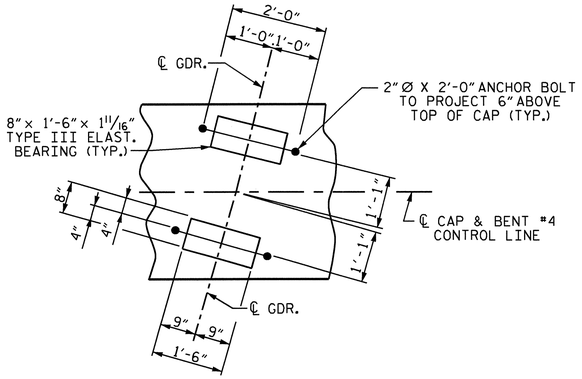
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	8	#4	STR	3'-2"	17
B4	25	#4	STR	3'-8"	61
B5	11	#9	1	35'-4"	1,321
B6	16	#4	STR	17'-9"	190
S1	35	#5	2	9'-0"	329
S2	12	#4	4	6'-6"	52
U1	40	#4	3	6'-2"	165
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,200 LBS.

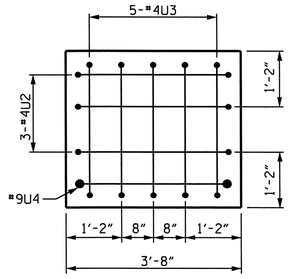
CLASS A CONCRETE CAP = 14.2 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 5 425 LIN. FT.

PILE REDRIVES EA. 5



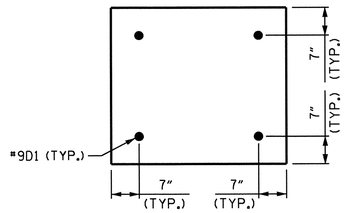
DETAIL "A"
TYPICAL AT EACH BEARING



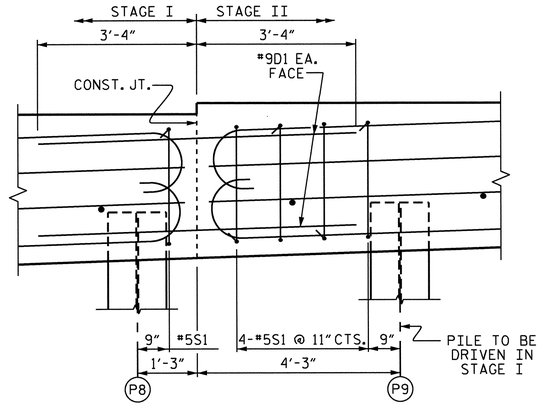
END VIEW

3" MIN. CONCRETE COVER FROM END OF CAP REQUIRED FOR ALL #4U2, #4U3 & #9U4.

#4U2, #4U3 & #9U4 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS.



SECTION AT CONST. JT.



DETAIL AT CONST. JT.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #4

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-104
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-09-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

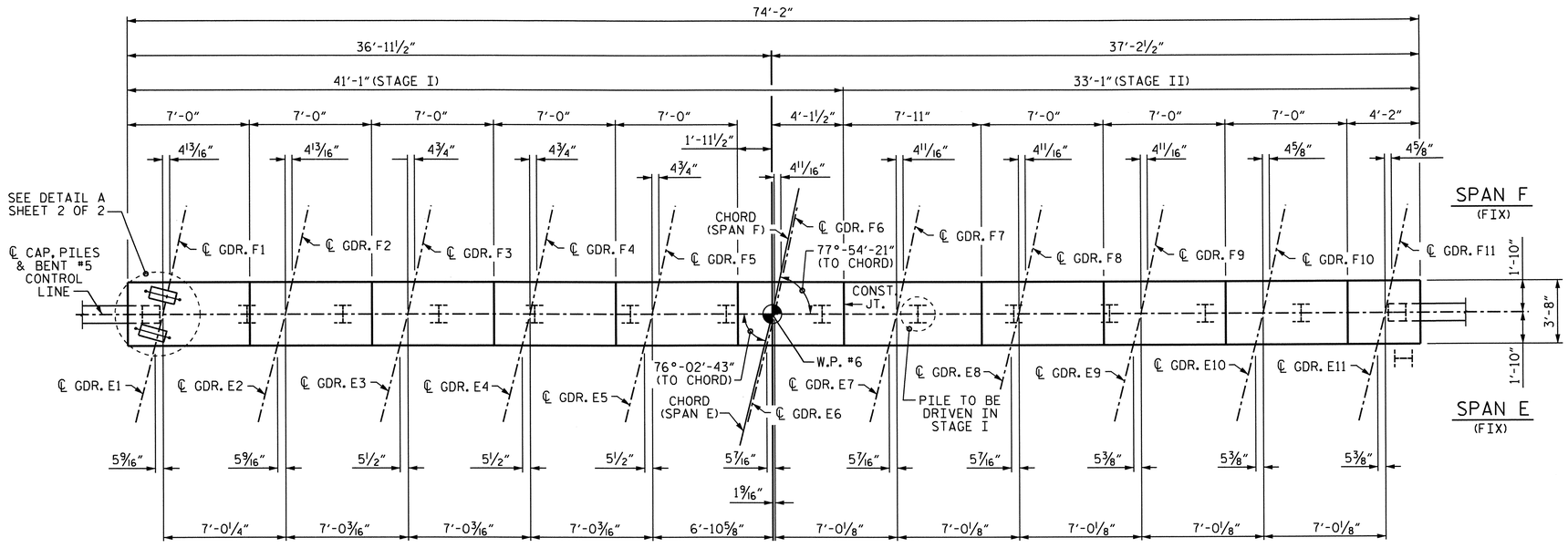
18-APR-2012 12:26
R:\Structures\Plans\B4599_SD_Bts.dgn
jpadams

NOTES:

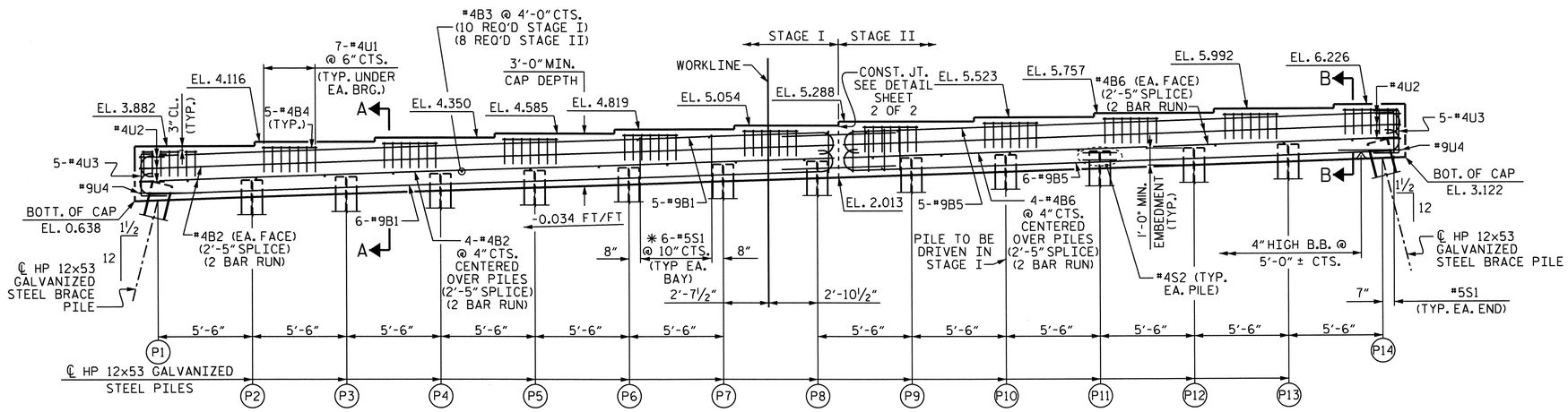
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 35 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR PILE SPLICE DETAILS, SEE END BENT #1.



PLAN



✳ INVERT ALTERNATE STIRRUPS

ELEVATION

PLACE #4U1 & #4B4 CENTERED UNDER EACH LINE OF GIRDERS

FOR #5S1 BARS IN CONST. JT. BAY SEE "DETAIL @ CONST. JT." SHEET 2 OF 2.

TOP OF PILE ELEVATIONS			
PILE	ELEVATION	PILE	ELEVATION
P1	1.699	P8	2.989
P2	1.884	P9	3.173
P3	2.068	P10	3.357
P4	2.252	P11	3.541
P5	2.436	P12	3.726
P6	2.620	P13	3.910
P7	2.805	P14	4.094

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER KEVIN FISCHER 4/20/12

DRAWN BY : Keith D. Layne DATE : 6-9-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:26
R:\Structures\Plans\B4599_SD_Bts.dgn
jpadams

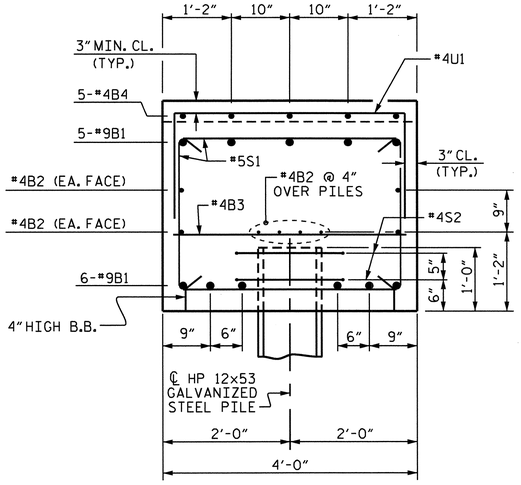
PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 1 OF 2

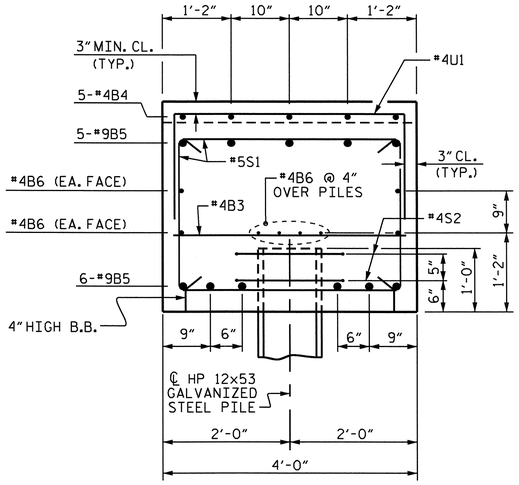
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #5

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-105
1			3			TOTAL SHEETS
2			4			125

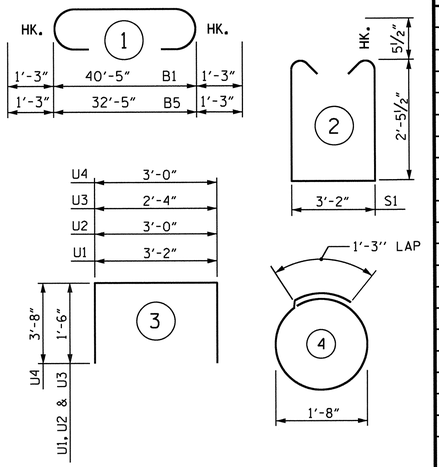


SECTION A-A



SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
BENT #5 STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	11	#9	1	42'-11"	1,605
B2	16	#4	STR	21'-6"	230
B3	10	#4	STR	3'-2"	21
B4	30	#4	STR	3'-3"	65
D1	4	#9	STR.	6'-8"	91
S1	44	#5	2	9'-0"	413
S2	16	#4	4	6'-6"	69
U1	42	#4	3	6'-2"	173
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,732 LBS.

CLASS A CONCRETE CAP = 17.5 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 9 765 LIN. FT.

PILE REDRIVES EA. 9

BILL OF MATERIAL
BENT #5 STAGE II

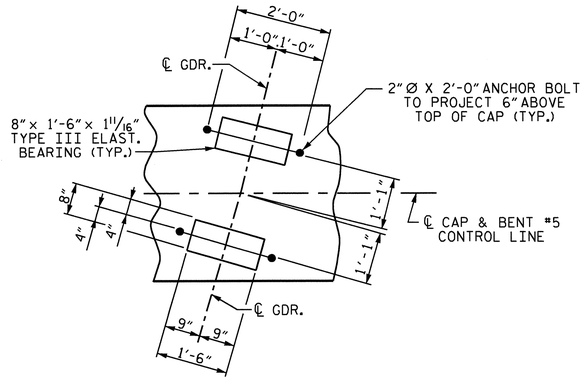
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	8	#4	STR	3'-2"	17
B4	25	#4	STR	3'-3"	54
B5	11	#9	1	34'-11"	1,306
B6	16	#4	STR	17'-6"	187
S1	35	#5	2	9'-0"	329
S2	12	#4	4	6'-6"	52
U1	35	#4	3	6'-2"	144
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,154 LBS.

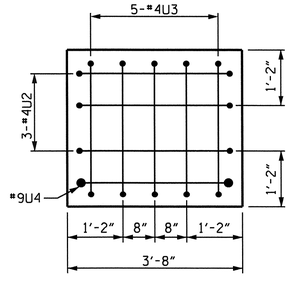
CLASS A CONCRETE CAP = 14.1 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 5 425 LIN. FT.

PILE REDRIVES EA. 5



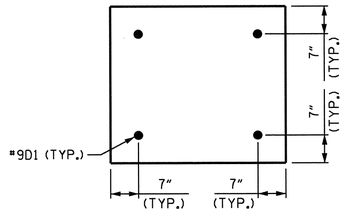
DETAIL "A"
TYPICAL AT EACH BEARING



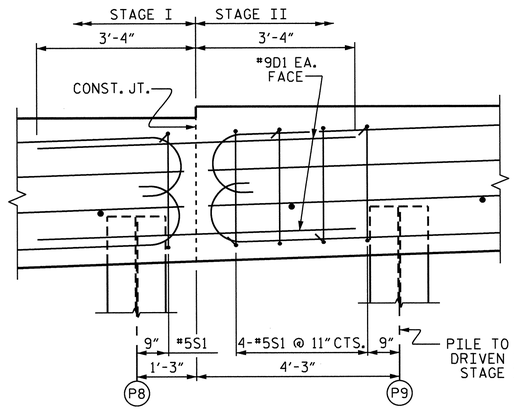
END VIEW

3" MIN. CONCRETE COVER FROM END OF CAP REQUIRED FOR ALL #4U2, #4U3 & #9U4.

#4U2, #4U3 & #9U4 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS.



SECTION AT CONST. JT.



DETAIL AT CONST. JT.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

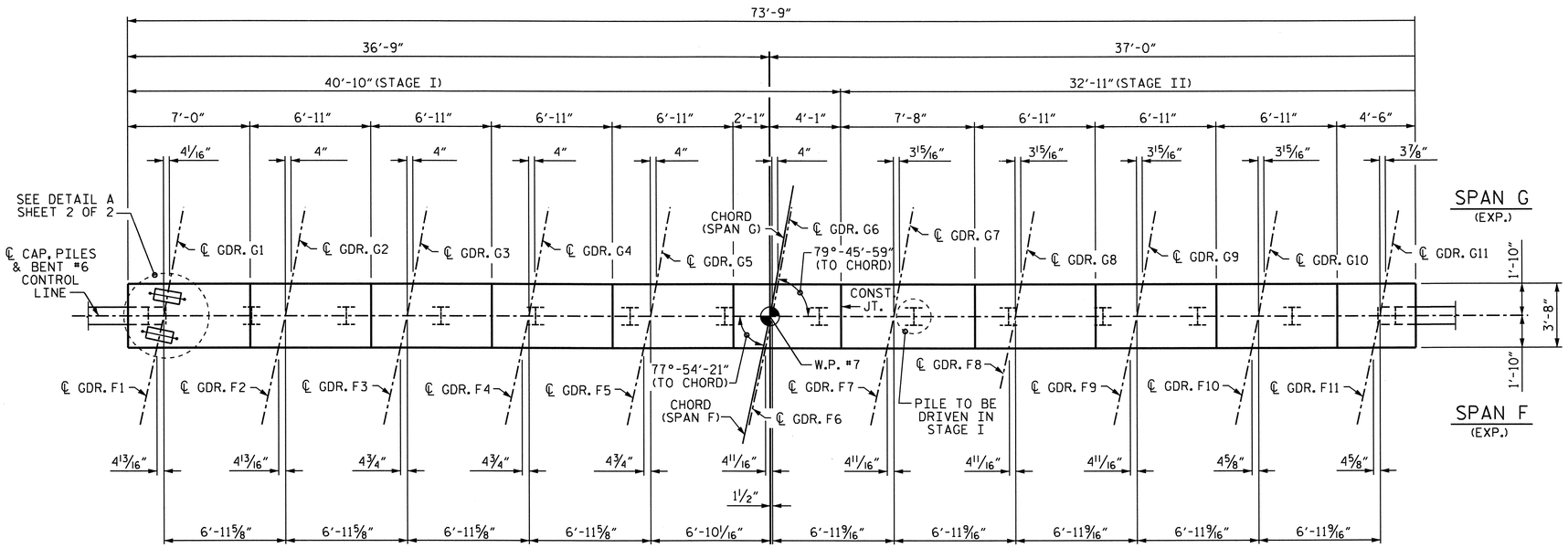
BENT #5

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER W. KEVIN FISCHER 1/30/12

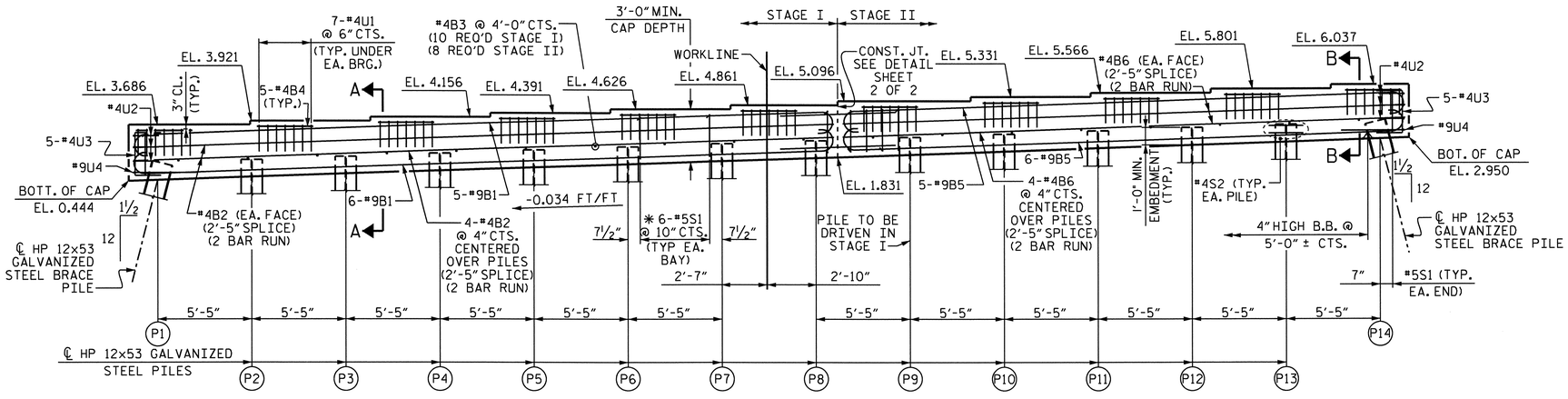
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-106
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-09-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:26
R:\Structures\Plans\B4599_SD_Bts.dgn
jpadams



PLAN



ELEVATION

* INVERT ALTERNATE STIRRUPS

PLACE #4U1 & #4B4 CENTERED UNDER EACH LINE OF GIRDERS

FOR #5S1 BARS IN CONST. JT. BAY SEE "DETAIL @ CONST. JT." SHEET 2 OF 2.

TOP OF PILE ELEVATIONS			
PILE	ELEVATION	PILE	ELEVATION
P1	1.518	P8	2.806
P2	1.702	P9	2.990
P3	1.886	P10	3.174
P4	2.070	P11	3.358
P5	2.254	P12	3.542
P6	2.438	P13	3.726
P7	2.622	P14	3.910

NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

THE TOP SURFACE AREAS OF THE BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 35 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR PILE SPLICE DETAILS, SEE END BENT #1.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #6

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-107
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-9-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:26
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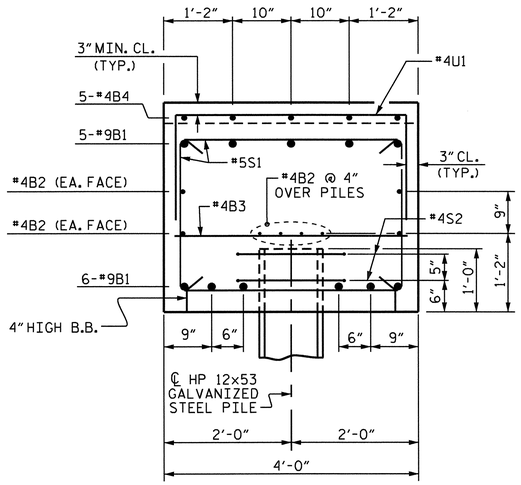
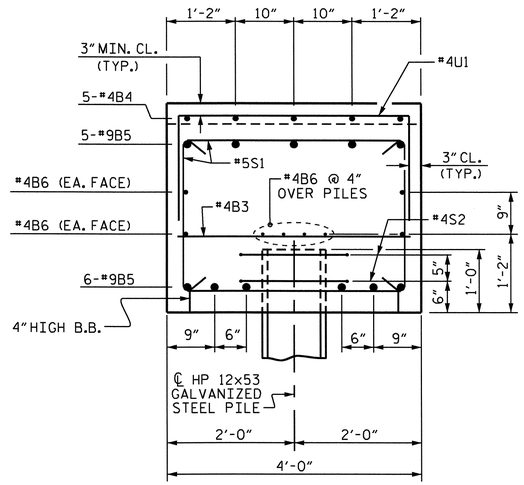
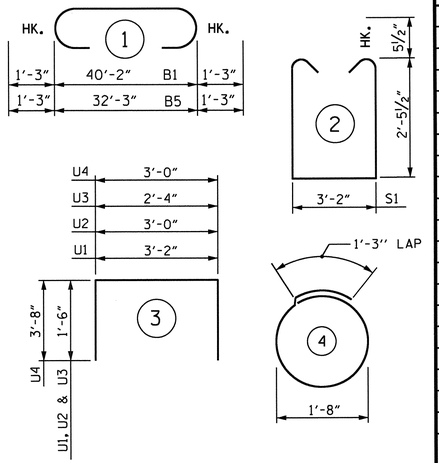


SECTION A-A



SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
BENT #6 STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	11	#9	1	42'-8"	1,596
B2	16	#4	STR	21'-5"	229
B3	10	#4	STR	3'-2"	21
B4	30	#4	STR	3'-3"	65
D1	4	#9	STR.	6'-8"	91
S1	44	#5	2	9'-0"	413
S2	16	#4	4	6'-6"	69
U1	42	#4	3	6'-2"	173
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,722 LBS.

CLASS A CONCRETE CAP = 17.3 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 9 720 LIN. FT.

PILE REDRIVES EA. 9

BILL OF MATERIAL
BENT #6 STAGE II

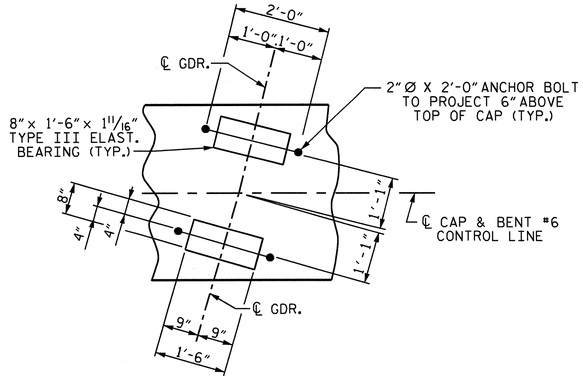
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	8	#4	STR	3'-2"	17
B4	25	#4	STR	3'-3"	54
B5	11	#9	1	34'-9"	1,300
B6	16	#4	STR	17'-5"	186
S1	35	#5	2	9'-0"	329
S2	12	#4	4	6'-6"	52
U1	35	#4	3	6'-2"	144
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,147 LBS.

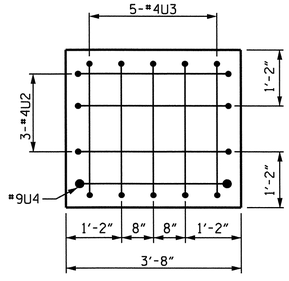
CLASS A CONCRETE CAP = 14.0 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 5 400 LIN. FT.

PILE REDRIVES EA. 5



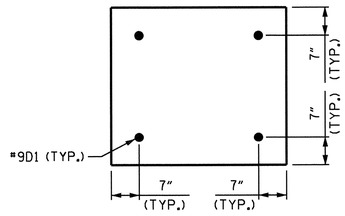
DETAIL "A"
TYPICAL AT EACH BEARING



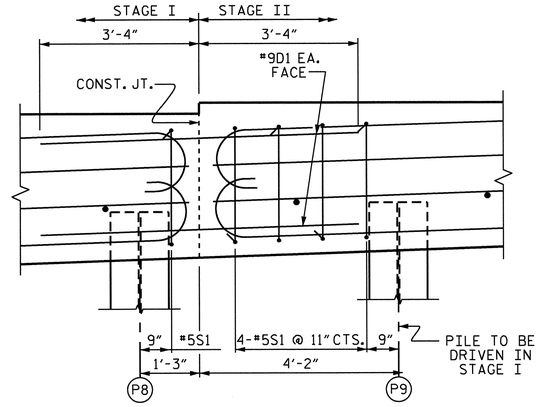
END VIEW

3" MIN. CONCRETE COVER FROM END OF CAP REQUIRED FOR ALL #4U2, #4U3 & #9U4.

#4U2, #4U3 & #9U4 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS.



SECTION AT CONST. JT.



DETAIL AT CONST. JT.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #6

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 11/30/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-108
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-09-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:27
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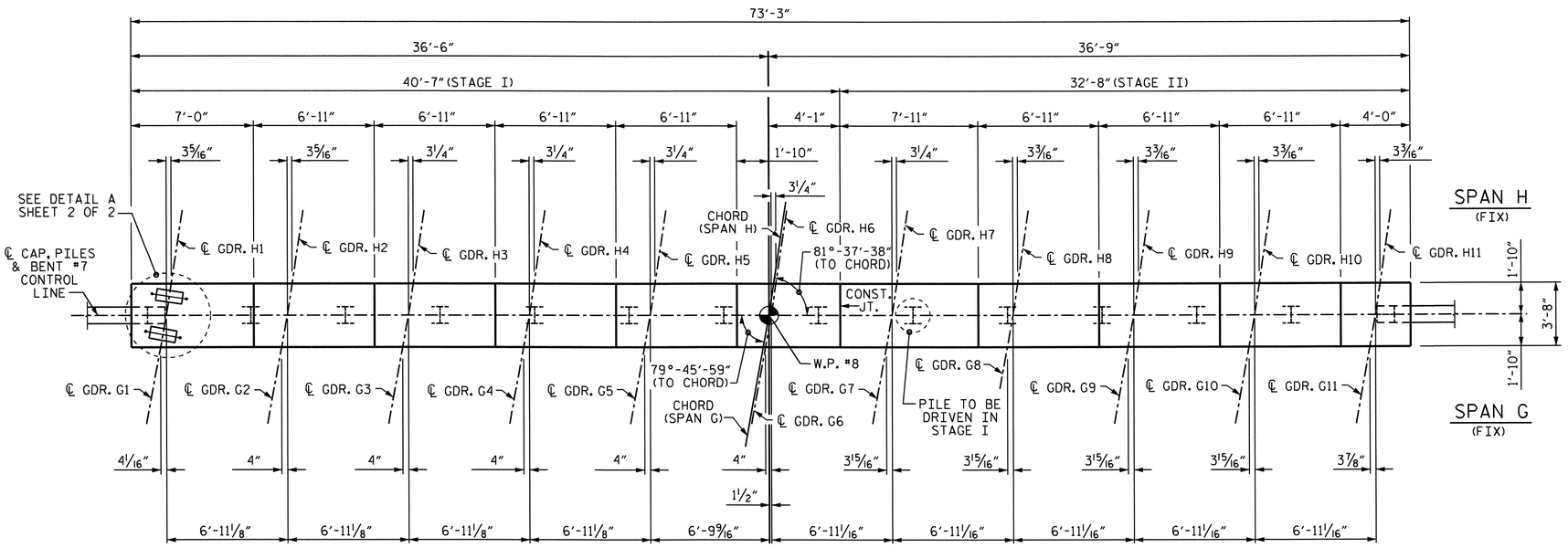
NOTES:

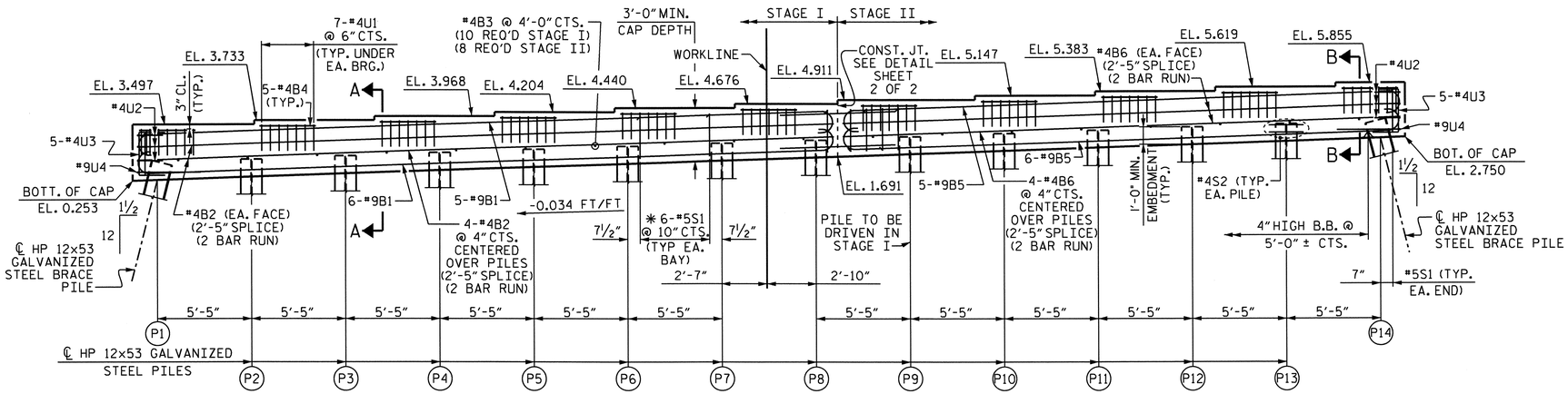
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 35 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR PILE SPLICE DETAILS, SEE END BENT #1.



PLAN



✱ INVERT ALTERNATE STIRRUPS

ELEVATION

PLACE #4U1 & #4B4 CENTERED UNDER EACH LINE OF GIRDERS

FOR #5S1 BARS IN CONST. JT. BAY SEE "DETAIL @ CONST. JT." SHEET 2 OF 2.

TOP OF PILE ELEVATIONS

PILE	ELEVATION	PILE	ELEVATION
P1	1.318	P8	2.611
P2	1.503	P9	2.795
P3	1.688	P10	2.980
P4	1.872	P11	3.164
P5	2.057	P12	3.349
P6	2.241	P13	3.534
P7	2.426	P14	3.718

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

DRAWN BY : Keith D. Layne DATE : 6-9-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:27
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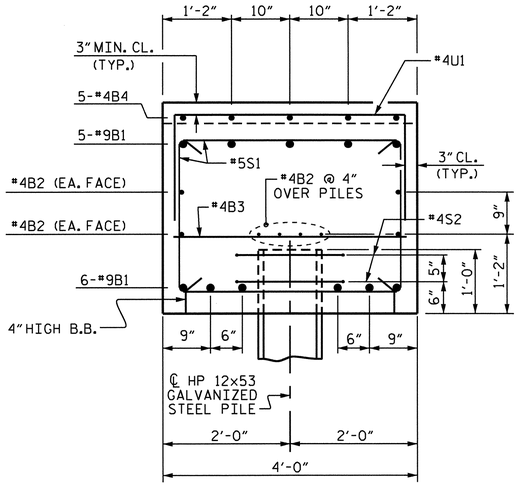
PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 1 OF 2

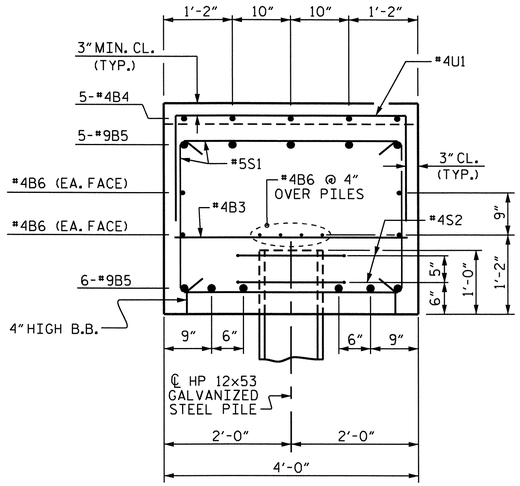
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #7

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-109
1			3			TOTAL SHEETS
2			4			125

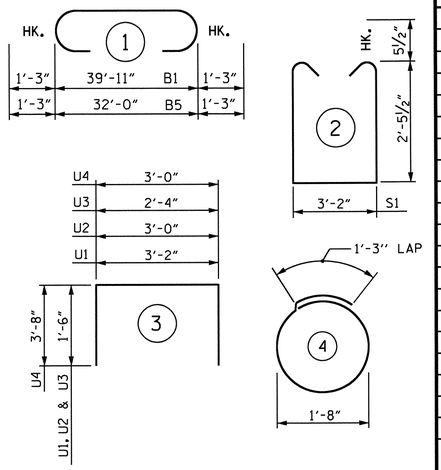


SECTION A-A



SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
BENT #7 STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	11	#9	1	42'-5"	1,586
B2	16	#4	STR	21'-3"	227
B3	10	#4	STR	3'-2"	21
B4	30	#4	STR	3'-3"	65
D1	4	#9	STR.	6'-8"	91
S1	44	#5	2	9'-0"	413
S2	16	#4	4	6'-6"	69
U1	42	#4	3	6'-2"	173
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,710 LBS.

CLASS A CONCRETE CAP = 17.2 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 9 720 LIN. FT.

PILE REDRIVES EA. 9

BILL OF MATERIAL
BENT #7 STAGE II

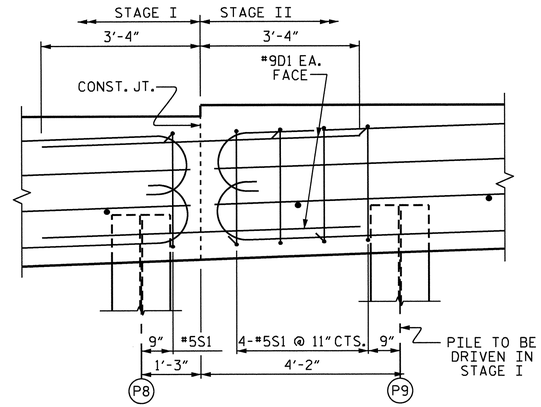
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	8	#4	STR	3'-2"	17
B4	25	#4	STR	3'-3"	54
B5	11	#9	1	34'-6"	1,290
B6	16	#4	STR	17'-4"	185
S1	35	#5	2	9'-0"	329
S2	12	#4	4	6'-6"	52
U1	35	#4	3	6'-2"	144
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,136 LBS.

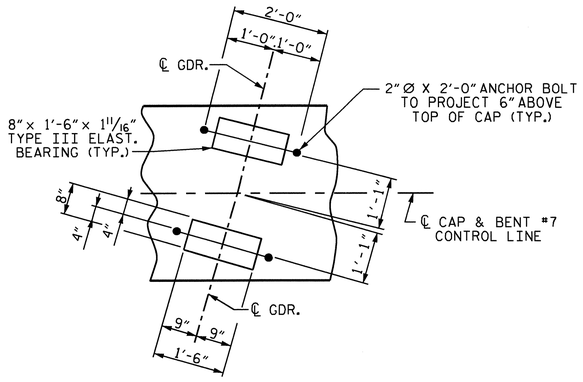
CLASS A CONCRETE CAP = 13.9 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 5 400 LIN. FT.

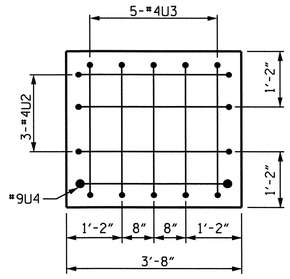
PILE REDRIVES EA. 5



DETAIL AT CONST. JT.



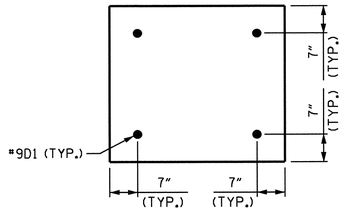
DETAIL "A"
TYPICAL AT EACH BEARING



END VIEW

3" MIN. CONCRETE COVER FROM END OF CAP REQUIRED FOR ALL #4U2, #4U3 & #9U4.

#4U2, #4U3 & #9U4 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS.



SECTION AT CONST. JT.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #7

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER KEVIN FISCHER 4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-110
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-09-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:27
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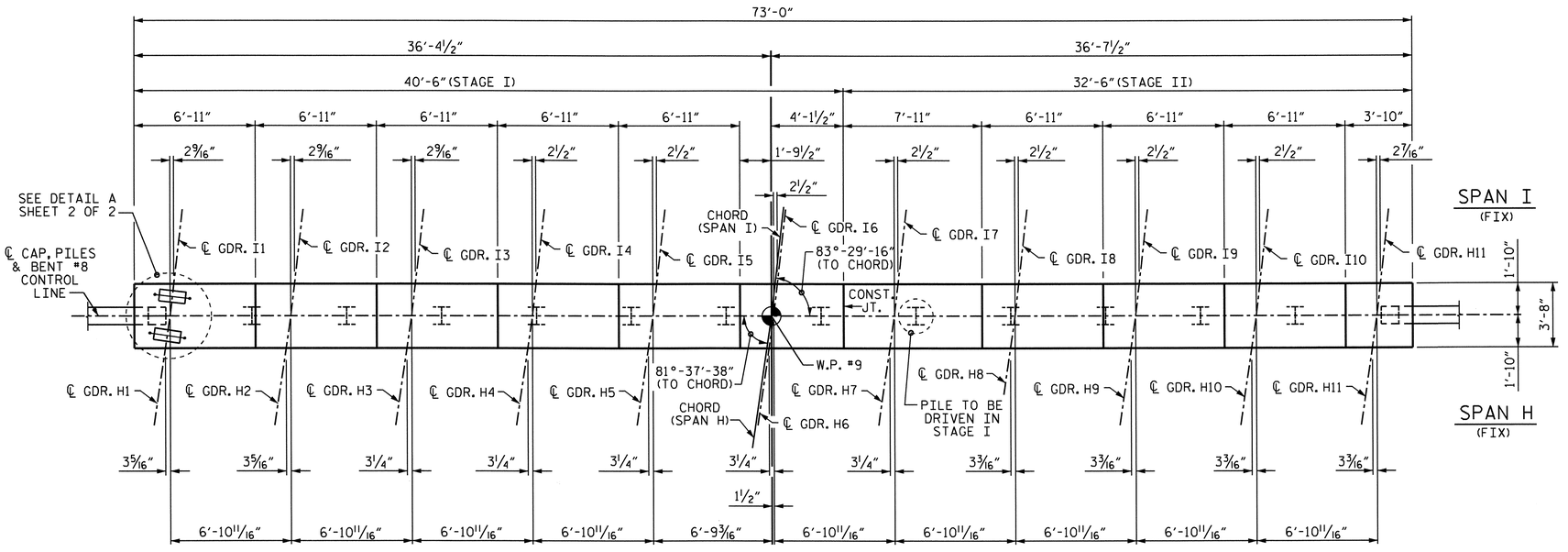
jpadams

NOTES:

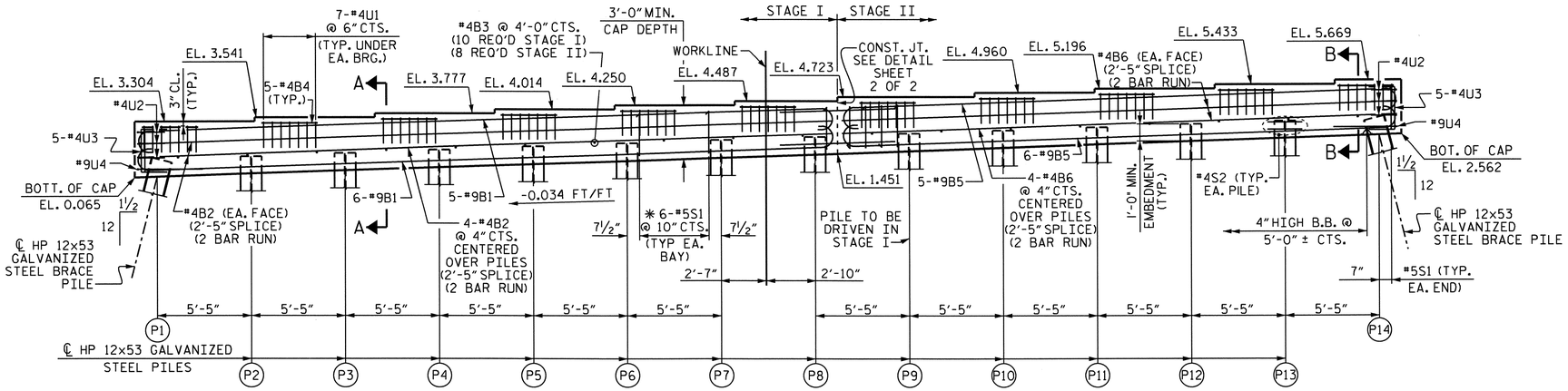
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 35 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR PILE SPLICE DETAILS, SEE END BENT #1.



PLAN



✳ INVERT ALTERNATE STIRRUPS

ELEVATION

PLACE #4U1 & #4B4 CENTERED UNDER EACH LINE OF GIRDERS

FOR #5S1 BARS IN CONST. JT. BAY SEE "DETAIL @ CONST. JT." SHEET 2 OF 2.

TOP OF PILE ELEVATIONS			
PILE	ELEVATION	PILE	ELEVATION
P1	1.126	P8	2.423
P2	1.312	P9	2.608
P3	1.497	P10	2.794
P4	1.682	P11	2.979
P5	1.867	P12	3.164
P6	2.053	P13	3.349
P7	2.238	P14	3.535

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

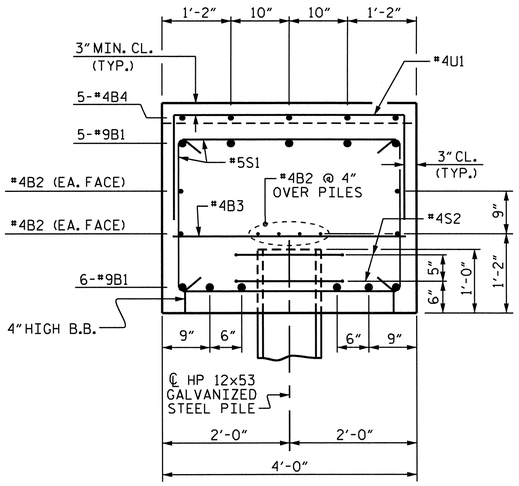
SUBSTRUCTURE

BENT #8

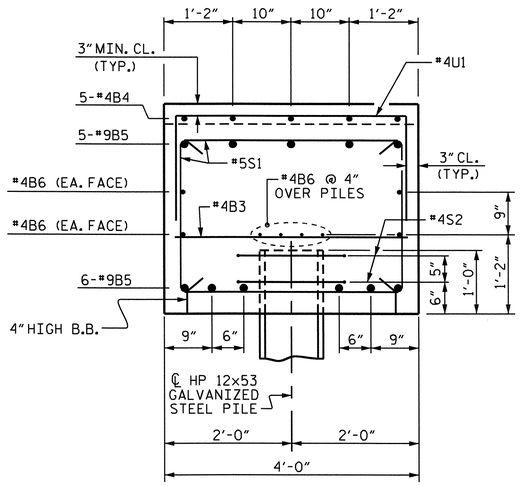
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-111
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-9-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:27
R:\Structures\Plans\B4599_SD_Bts.dgn
jpadams

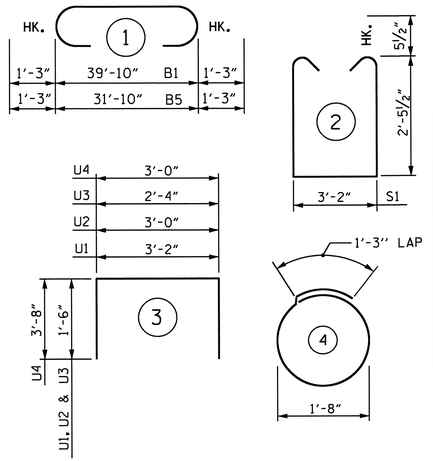


SECTION A-A



SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
BENT #8 STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	11	#9	1	42'-4"	1,583
B2	16	#4	STR	21'-3"	227
B3	10	#4	STR	3'-2"	21
B4	30	#4	STR	3'-3"	65
D1	4	#9	STR.	6'-8"	91
S1	44	#5	2	9'-0"	413
S2	16	#4	4	6'-6"	69
U1	42	#4	3	6'-2"	173
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,707 LBS.

CLASS A CONCRETE CAP = 17.2 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 9 720 LIN. FT.

PILE REDRIVES EA. 9

BILL OF MATERIAL
BENT #8 STAGE II

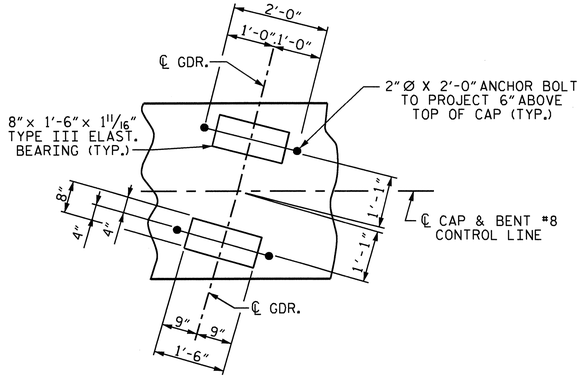
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	8	#4	STR	3'-2"	17
B4	25	#4	STR	3'-3"	54
B5	11	#9	1	34'-4"	1,284
B6	16	#4	STR	17'-3"	184
S1	35	#5	2	9'-0"	329
S2	12	#4	4	6'-6"	52
U1	35	#4	3	6'-2"	144
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,129 LBS.

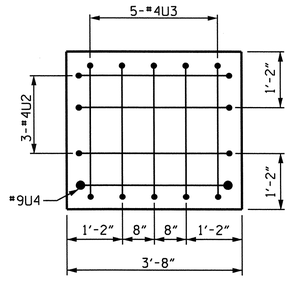
CLASS A CONCRETE CAP = 13.8 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 5 400 LIN. FT.

PILE REDRIVES EA. 5



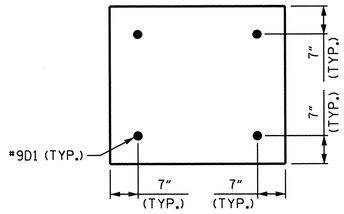
DETAIL "A"
TYPICAL AT EACH BEARING



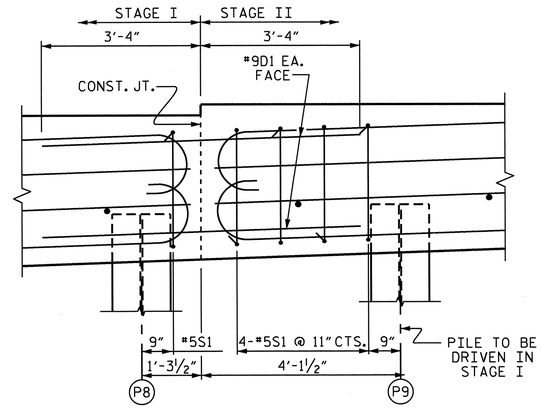
END VIEW

3" MIN. CONCRETE COVER FROM END OF CAP REQUIRED FOR ALL #4U2, #4U3 & #9U4.

#4U2, #4U3 & #9U4 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS.



SECTION AT CONST. JT.



DETAIL AT CONST. JT.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #8

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER W. KEVIN FISCHER 4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-112
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-09-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:27
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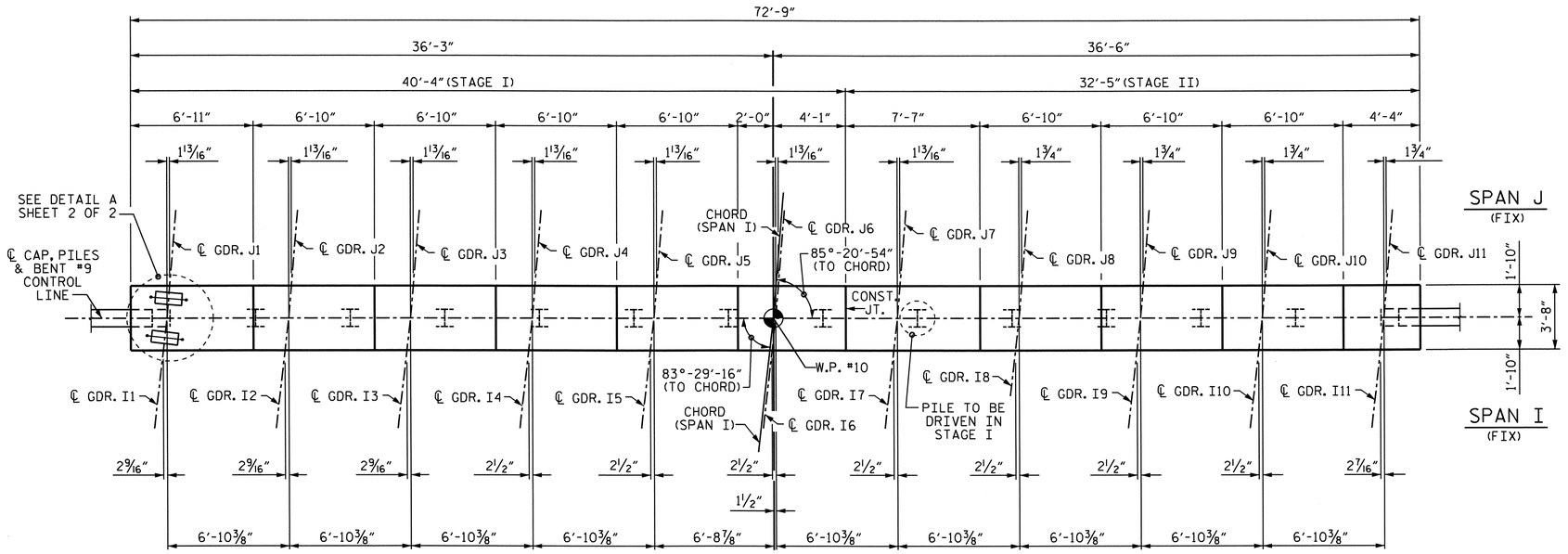
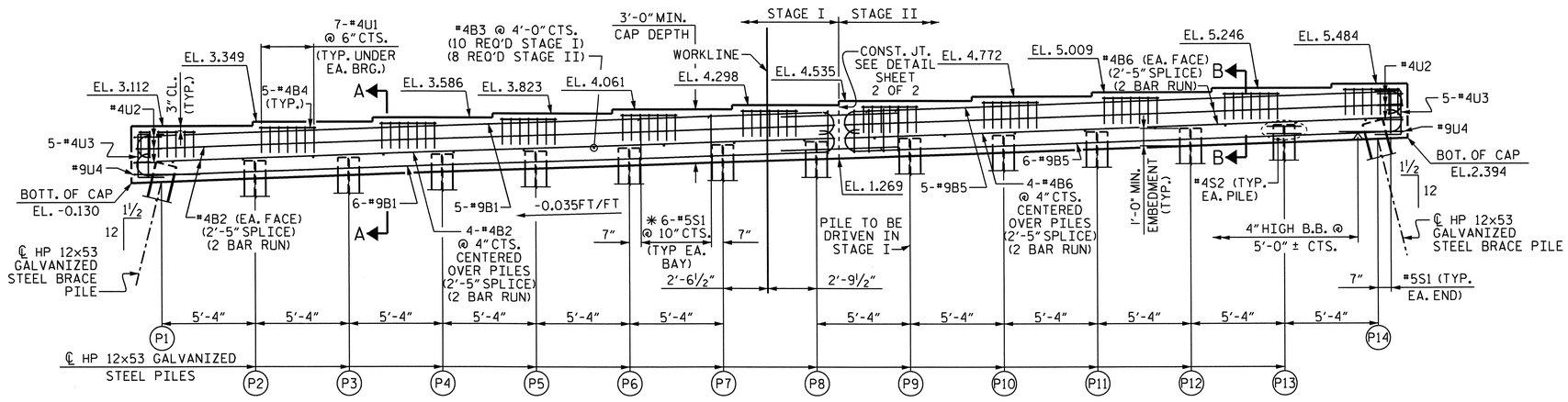
jpadams



PLAN



* INVERT ALTERNATE STIRRUPS

ELEVATION

PLACE #4U1 & #4B4 CENTERED UNDER EACH LINE OF GIRDERS

FOR #5S1 BARS IN CONST. JT. BAY SEE "DETAIL @ CONST. JT." SHEET 2 OF 2.

TOP OF PILE ELEVATIONS			
PILE	ELEVATION	PILE	ELEVATION
P1	0.947	P8	2.242
P2	1.132	P9	2.427
P3	1.317	P10	2.612
P4	1.502	P11	2.797
P5	1.687	P12	2.982
P6	1.872	P13	3.167
P7	2.057	P14	3.352

NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 35 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR PILE SPLICE DETAILS, SEE END BENT #1.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #9

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-113
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-9-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:27
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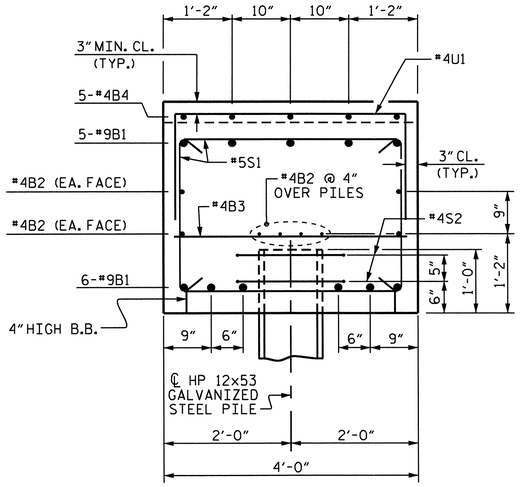
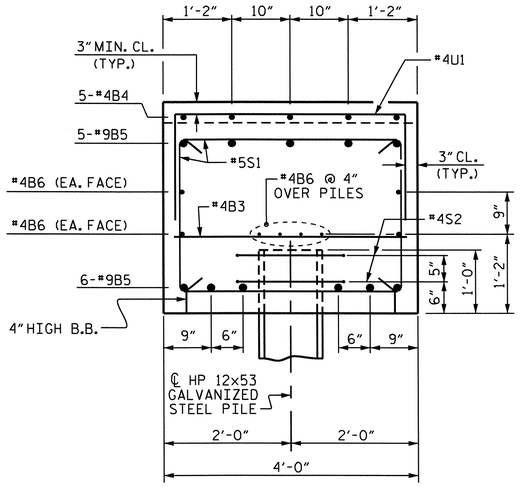
jpadams

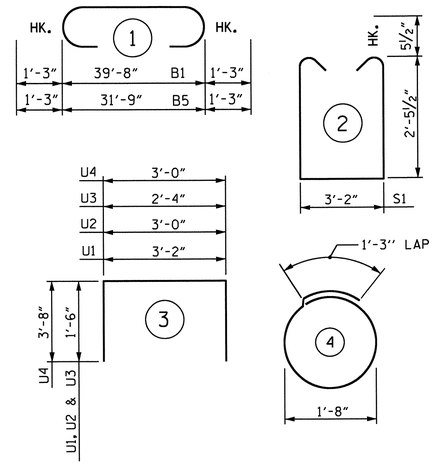


SECTION A-A



SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
BENT #9 STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	11	#9	1	42'-2"	1,577
B2	16	#4	STR	21'-2"	226
B3	10	#4	STR	3'-2"	21
B4	30	#4	STR	3'-3"	65
D1	4	#9	STR.	6'-8"	91
S1	44	#5	2	9'-0"	413
S2	16	#4	4	6'-6"	69
U1	42	#4	3	6'-2"	173
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,700 LBS.

CLASS A CONCRETE CAP = 17.1 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 9 720 LIN. FT.

PILE REDRIVES EA. 9

BILL OF MATERIAL
BENT #9 STAGE II

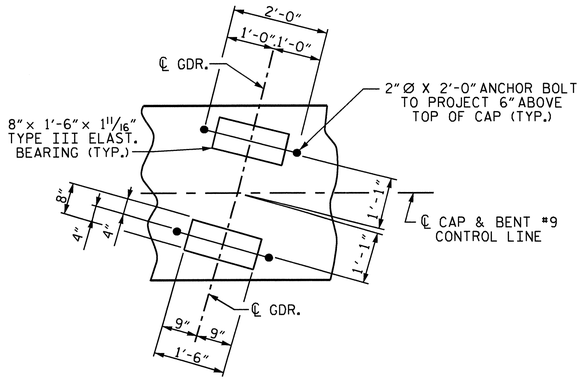
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	8	#4	STR	3'-2"	17
B4	25	#4	STR	3'-3"	54
B5	11	#9	1	34'-4"	1,284
B6	16	#4	STR	17'-2"	183
S1	35	#5	2	9'-0"	329
S2	12	#4	4	6'-6"	52
U1	35	#4	3	6'-2"	144
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,128 LBS.

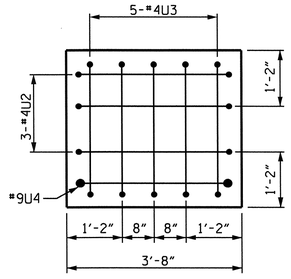
CLASS A CONCRETE CAP = 13.8 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 5 400 LIN. FT.

PILE REDRIVES EA. 5



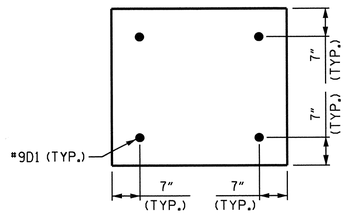
DETAIL "A"
TYPICAL AT EACH BEARING



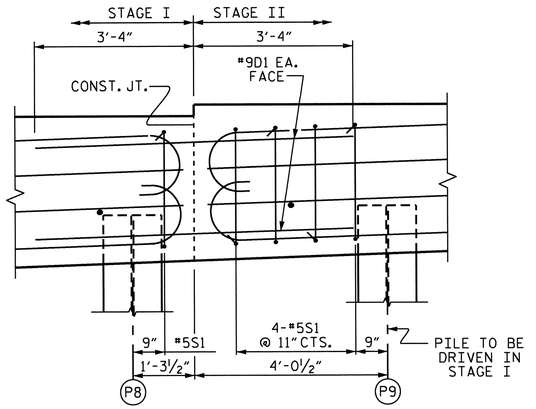
END VIEW

3" MIN. CONCRETE COVER FROM END OF CAP REQUIRED FOR ALL #4U2, #4U3 & #9U4.

#4U2, #4U3 & #9U4 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS.



SECTION AT CONST. JT.



DETAIL AT CONST. JT.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #9

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-114
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-09-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

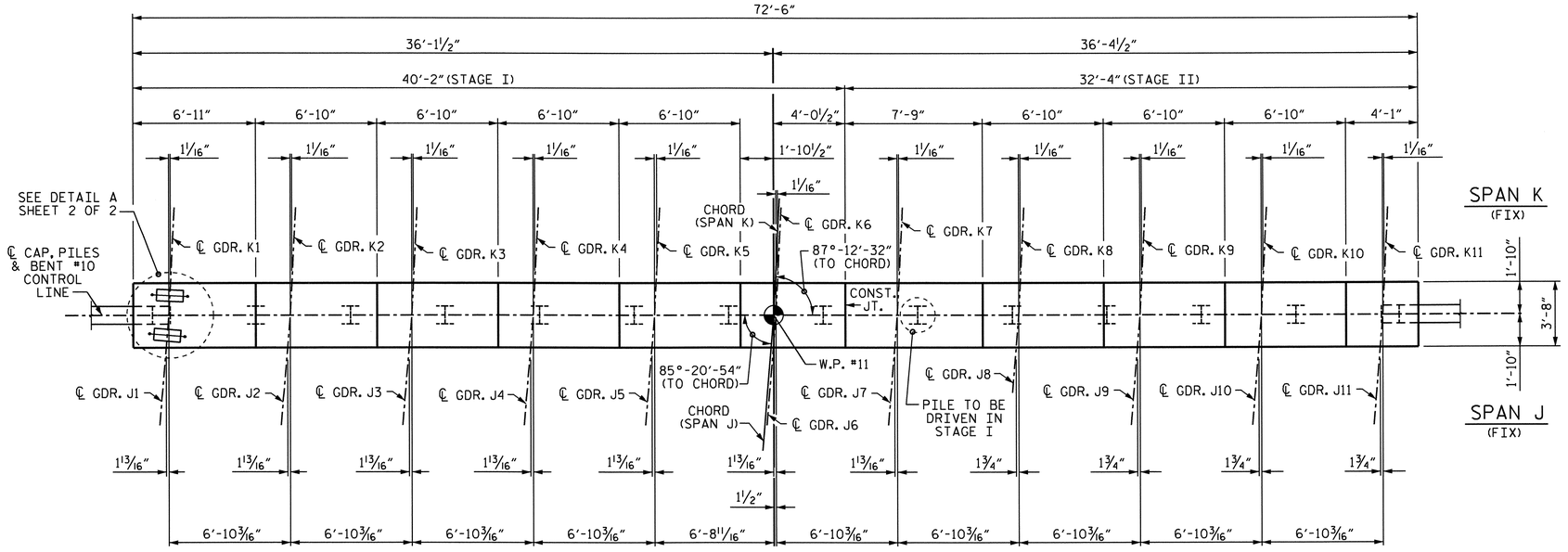
18-APR-2012 12:27
R:\Structures\Plans\B4599_SD_Bts.dgn
jpadams

NOTES:

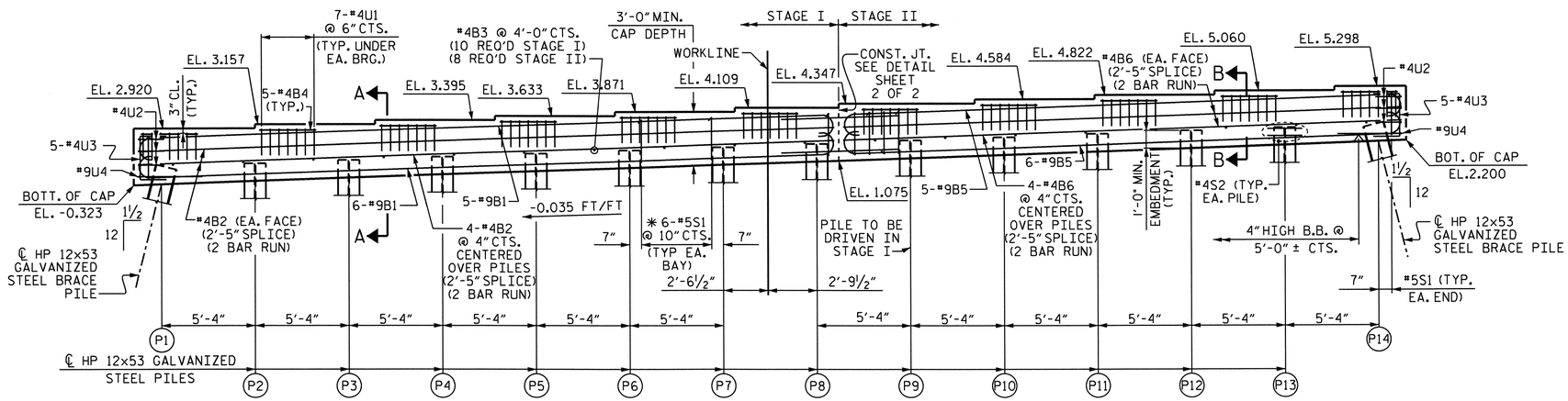
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 35 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR PILE SPLICE DETAILS, SEE END BENT #1.



PLAN



✱ INVERT ALTERNATE STIRRUPS

ELEVATION

PLACE #4U1 & #4B4 CENTERED UNDER EACH LINE OF GIRDERS

FOR #5S1 BARS IN CONST. JT. BAY SEE "DETAIL @ CONST. JT." SHEET 2 OF 2.

TOP OF PILE ELEVATIONS

PILE	ELEVATION	PILE	ELEVATION
P1	0.750	P8	2.049
P2	0.935	P9	2.234
P3	1.121	P10	2.420
P4	1.306	P11	2.606
P5	1.492	P12	2.791
P6	1.678	P13	2.977
P7	1.863	P14	3.162

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER KEVIN FISCHER 4/20/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #10

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-115
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-9-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:27
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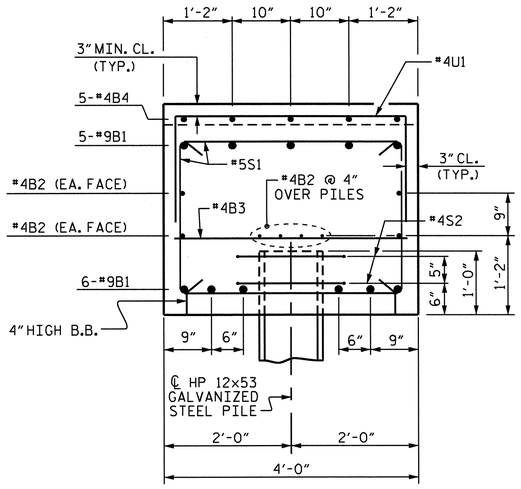
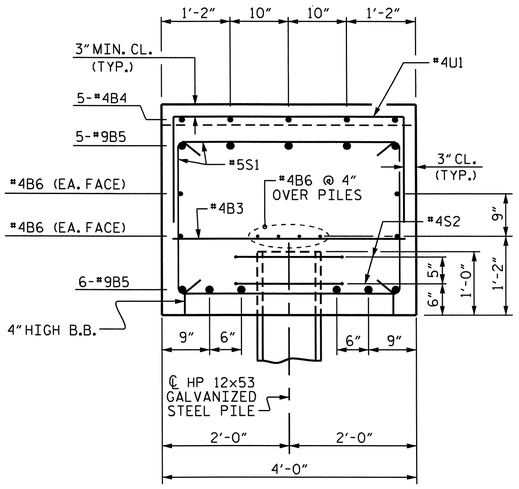
jpadams

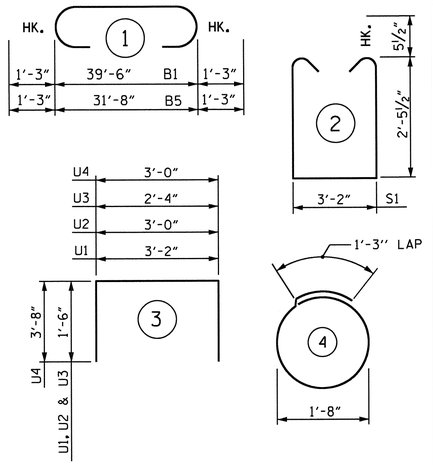


SECTION A-A



SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
BENT #10 STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	11	#9	1	42'-0"	1,571
B2	16	#4	STR	21'-1"	225
B3	10	#4	STR	3'-2"	21
B4	30	#4	STR	3'-3"	65
D1	4	#9	STR.	6'-8"	91
S1	44	#5	2	9'-0"	413
S2	16	#4	4	6'-6"	69
U1	42	#4	3	6'-2"	173
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,693 LBS.

CLASS A CONCRETE CAP = 17.0 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 9 720 LIN. FT.

PILE REDRIVES EA. 9

BILL OF MATERIAL
BENT #10 STAGE II

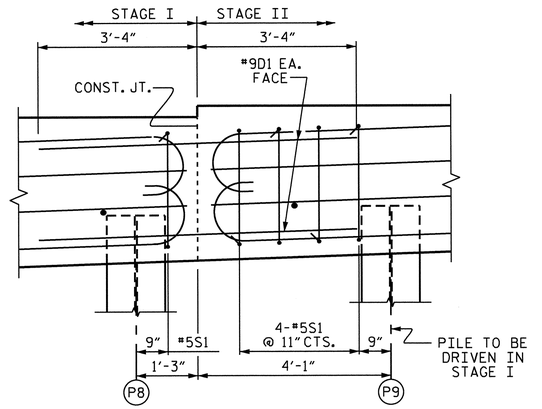
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	8	#4	STR	3'-2"	17
B4	25	#4	STR	3'-3"	54
B5	11	#9	1	34'-2"	1,278
B6	16	#4	STR	17'-2"	183
S1	35	#5	2	9'-0"	329
S2	12	#4	4	6'-6"	52
U1	35	#4	3	6'-2"	144
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,122 LBS.

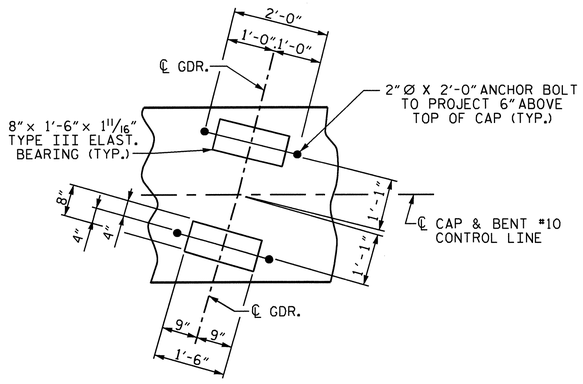
CLASS A CONCRETE CAP = 13.8 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 5 400 LIN. FT.

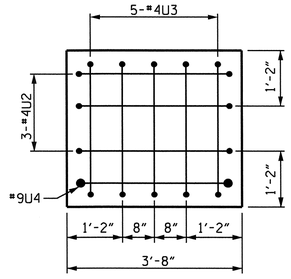
PILE REDRIVES EA. 5



DETAIL AT CONST. JT.



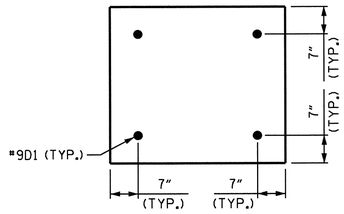
DETAIL "A"
TYPICAL AT EACH BEARING



END VIEW

3" MIN. CONCRETE COVER FROM END OF CAP REQUIRED FOR ALL #4U2, #4U3 & #9U4.

#4U2, #4U3 & #9U4 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS.



SECTION AT CONST. JT.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #10

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-116
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-09-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

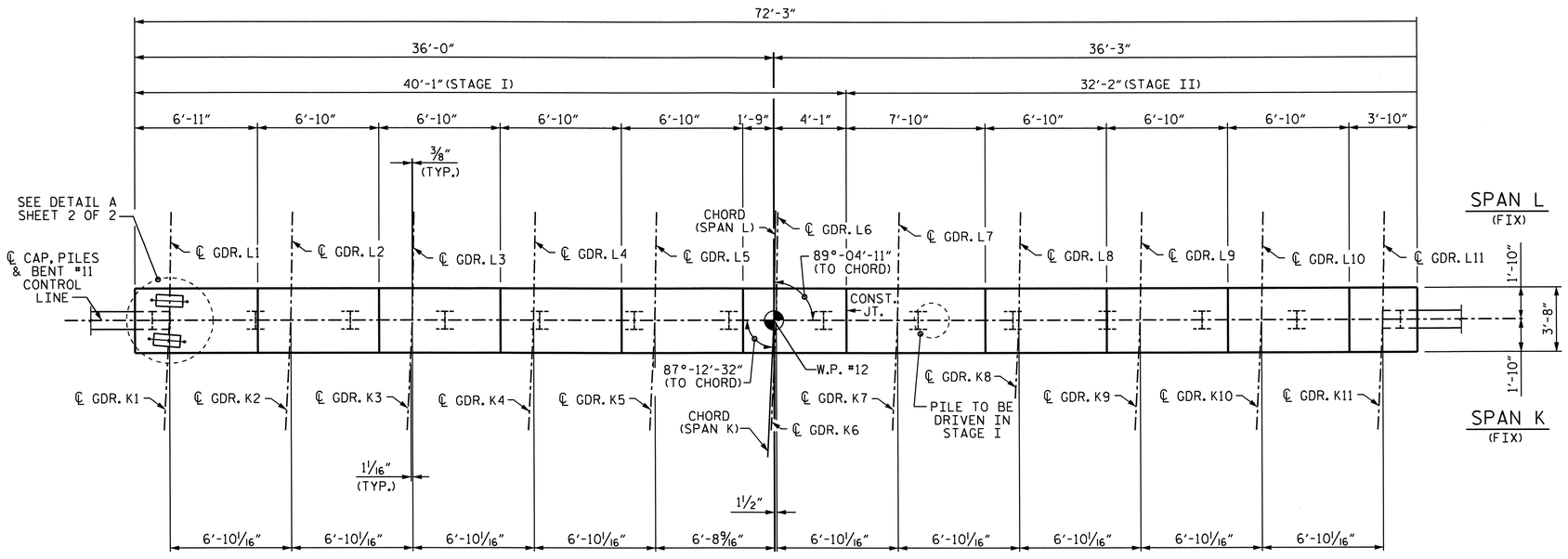
18-APR-2012 12:27
R:\Structures\Plans\B4599_SD_Bts.dgn
jpadams

NOTES:

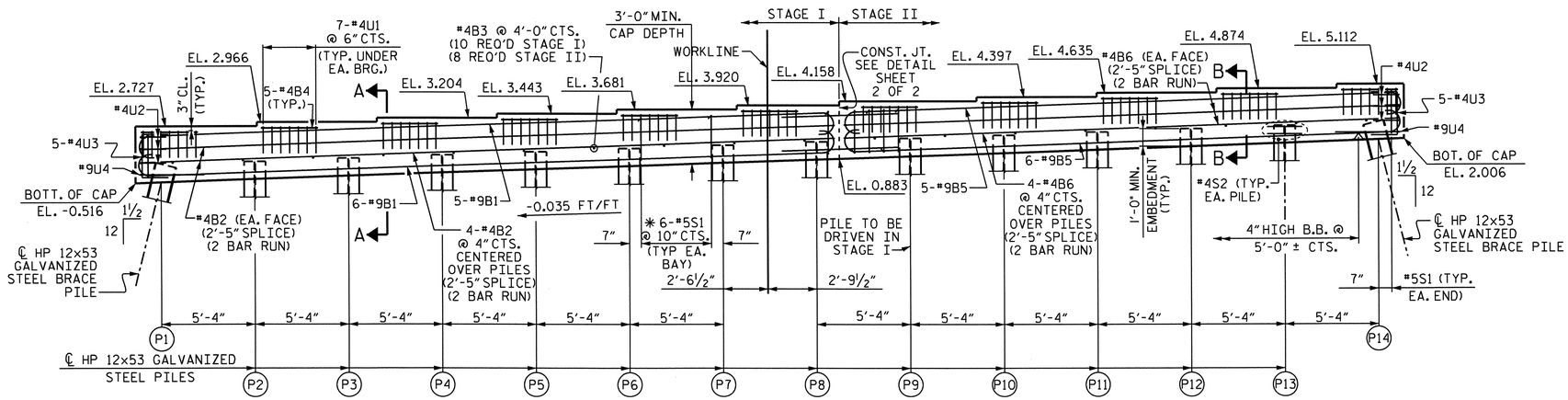
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 35 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR PILE SPLICE DETAILS, SEE END BENT #1.



PLAN



* INVERT ALTERNATE STIRRUPS

ELEVATION

PLACE #4U1 & #4B4 CENTERED UNDER EACH LINE OF GIRDERS

FOR #5S1 BARS IN CONST. JT. BAY SEE "DETAIL @ CONST. JT." SHEET 2 OF 2.

TOP OF PILE ELEVATIONS			
PILE	ELEVATION	PILE	ELEVATION
P1	0.552	P8	1.855
P2	0.739	P9	2.041
P3	0.925	P10	2.228
P4	1.111	P11	2.414
P5	1.297	P12	2.600
P6	1.483	P13	2.786
P7	1.669	P14	2.972

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER KEVIN FISCHER 4/20/12

DRAWN BY : Keith D. Layne DATE : 6-9-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:27
R:\Structures\Plans\B4599_SD_Bts.dgn
jpadams

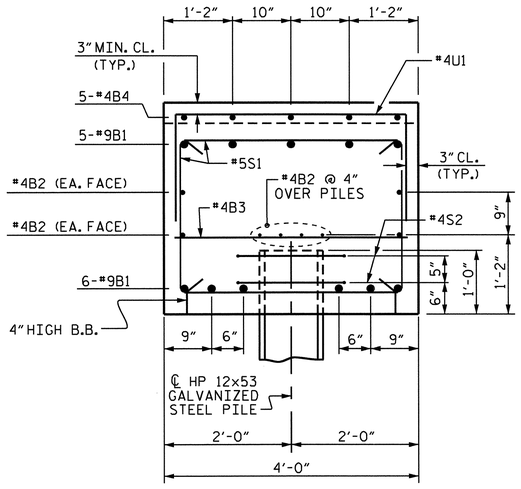
PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 1 OF 2

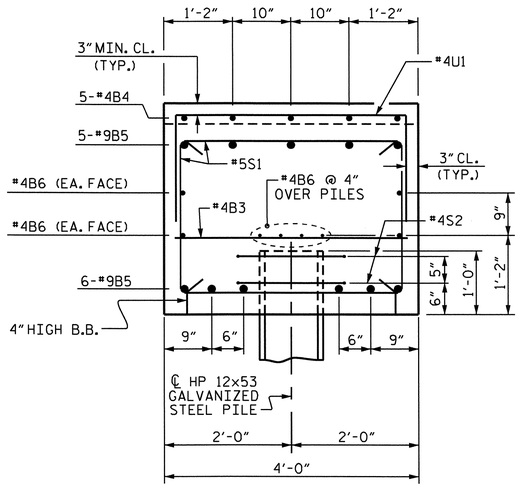
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #11

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-117
1			3			TOTAL SHEETS
2			4			125

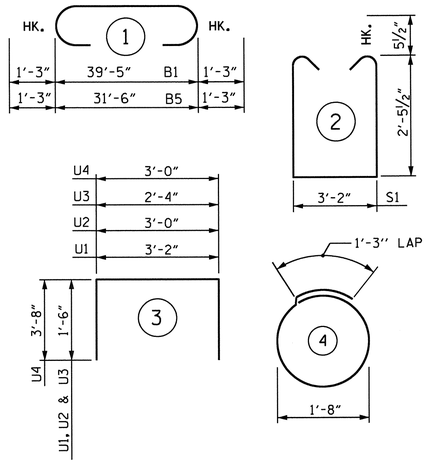


SECTION A-A



SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
BENT #11 STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	11	#9	1	41'-11"	1,568
B2	16	#4	STR	21'-0"	224
B3	10	#4	STR	3'-2"	21
B4	30	#4	STR	3'-3"	65
D1	4	#9	STR.	6'-8"	91
S1	44	#5	2	9'-0"	413
S2	16	#4	4	6'-6"	69
U1	42	#4	3	6'-2"	173
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,689 LBS.

CLASS A CONCRETE CAP = 17.0 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 9 720 LIN. FT.

PILE REDRIVES EA. 9

BILL OF MATERIAL
BENT #11 STAGE II

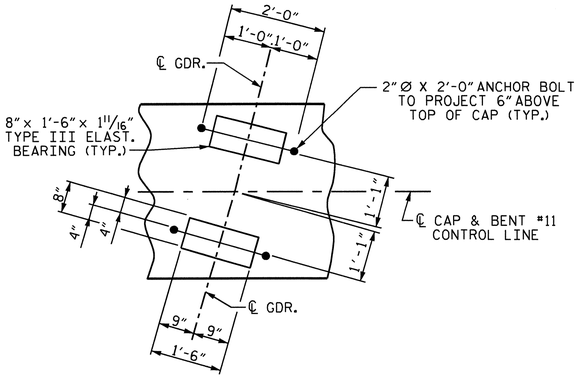
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	8	#4	STR	3'-2"	17
B4	25	#4	STR	3'-3"	54
B5	11	#9	1	34'-0"	1,272
B6	16	#4	STR	17'-1"	183
S1	35	#5	2	9'-0"	329
S2	12	#4	4	6'-6"	52
U1	35	#4	3	6'-2"	144
U2	3	#4	3	6'-0"	12
U3	5	#4	3	5'-4"	18
U4	1	#9	3	10'-4"	35

REINFORCING STEEL 2,116 LBS.

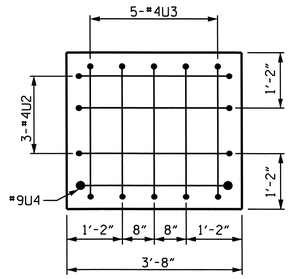
CLASS A CONCRETE CAP = 13.7 C.Y.

HP 12x53 GALVANIZED STEEL PILES
No. 5 400 LIN. FT.

PILE REDRIVES EA. 5



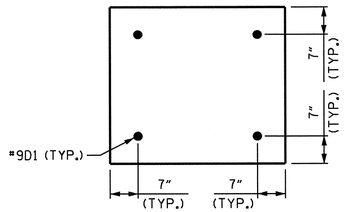
DETAIL "A"
TYPICAL AT EACH BEARING



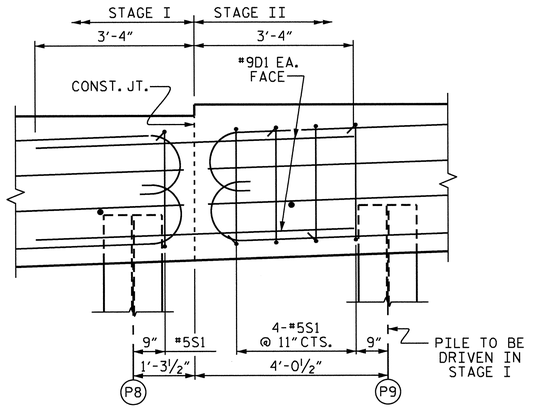
END VIEW

3" MIN. CONCRETE COVER FROM END OF CAP REQUIRED FOR ALL #4U2, #4U3 & #9U4.

#4U2, #4U3 & #9U4 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS.



SECTION AT CONST. JT.



DETAIL AT CONST. JT.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT #11

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-118
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : Keith D. Layne DATE : 6-09-11
CHECKED BY : J. P. ADAMS DATE : 5-13-11

18-APR-2012 12:27
R:\Structures\Plans\B4599_SD_Bts.dgn
jpadams

NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

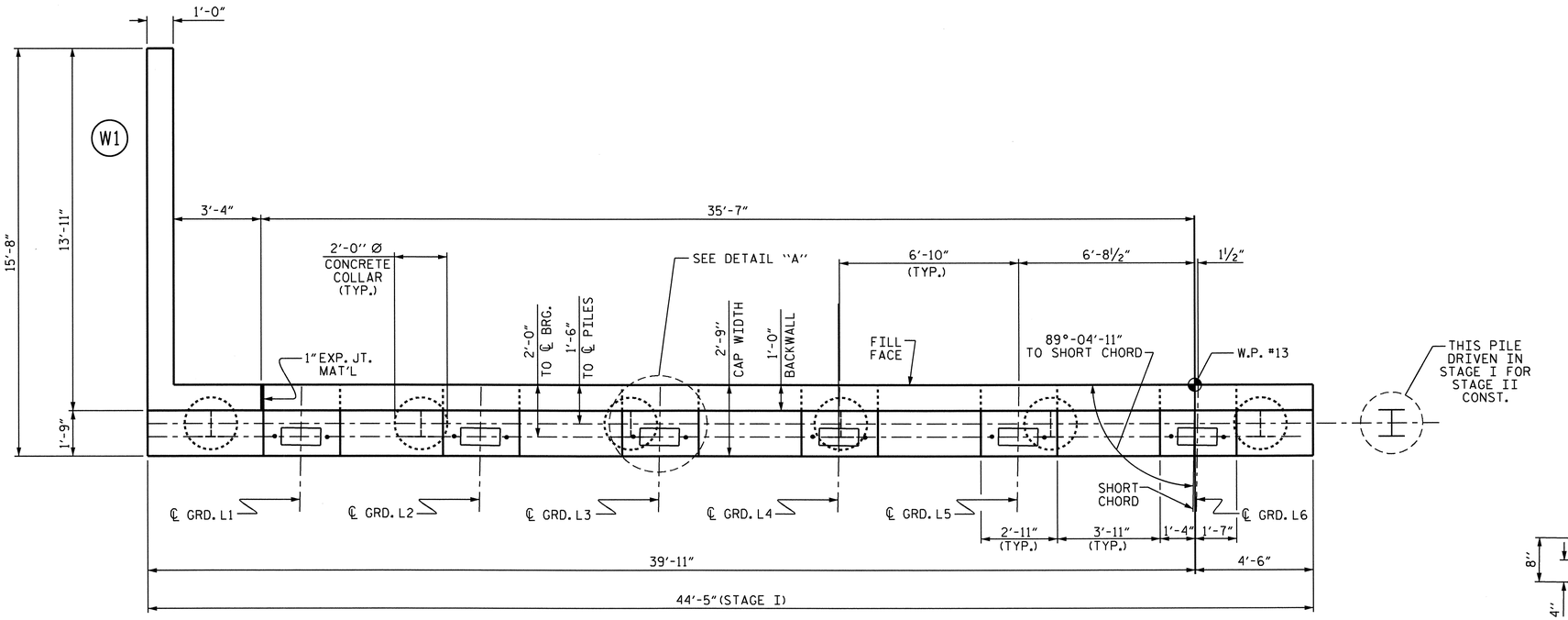
BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

THE TOP SURFACE AREAS OF THE CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

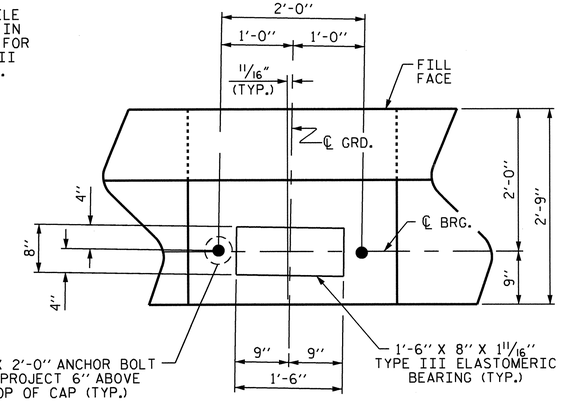
THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

"B" BARS & "K" BARS MAY BE FIELD BENT AS NECESSARY FOR STAGE II CONSTRUCTION.

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.

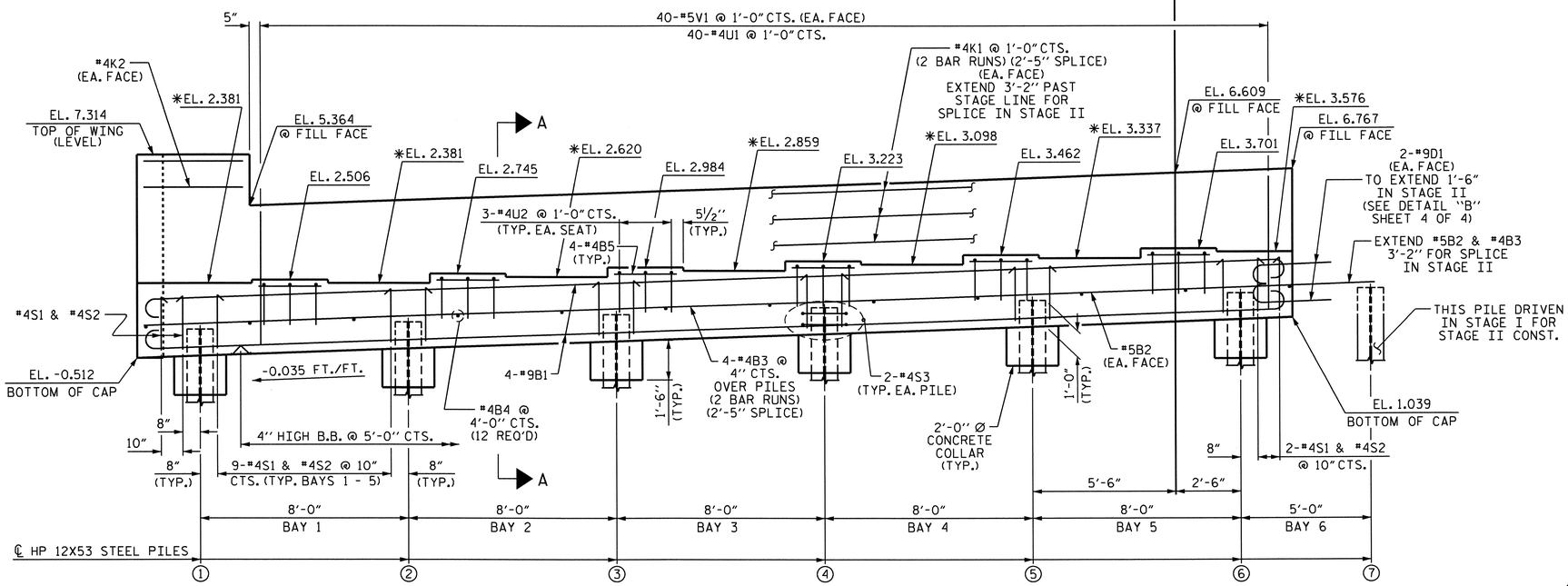


PLAN



DETAIL "A"

TOP OF PILE ELEV.	
PILE	ELEVATION
1	0.590
2	0.869
3	1.149
4	1.428
5	1.707
6	1.882
7	2.143



ELEVATION

* SEE SHEET 4 OF 4 FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEAT BUILDUPS.

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT #2
STAGE I

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-119
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 4/20/12

DRAWN BY : B. L. GREEN DATE : 9/5/11
CHECKED BY : H. A. LOCKLEAR DATE : 9/11

18-APR-2012 12:27
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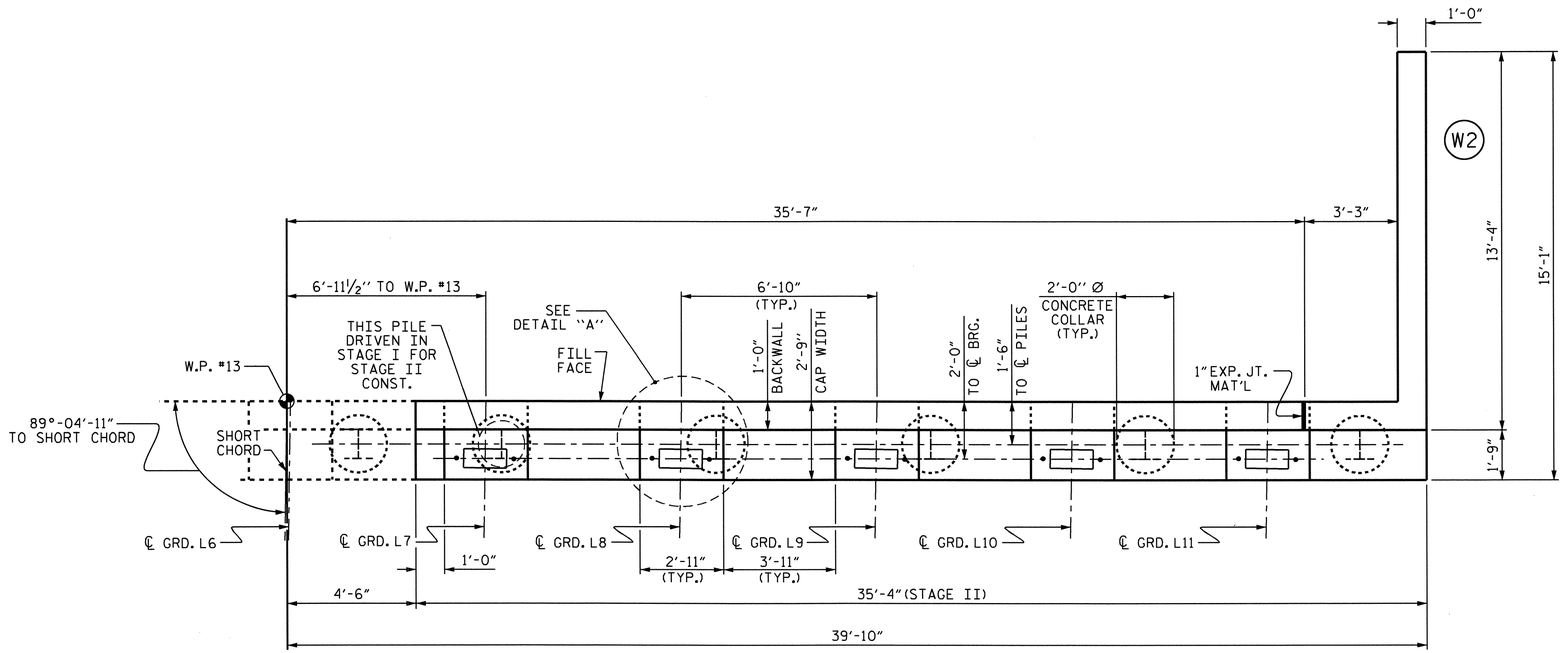
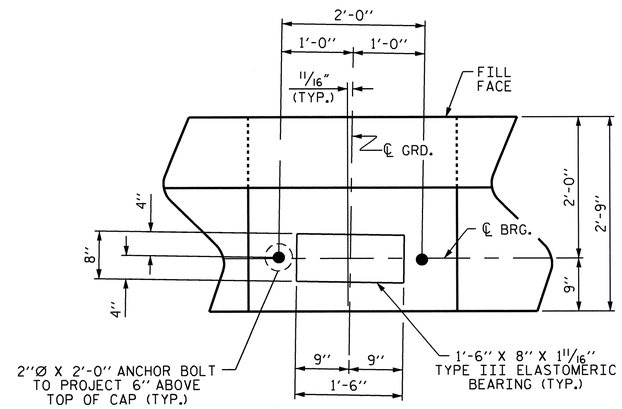
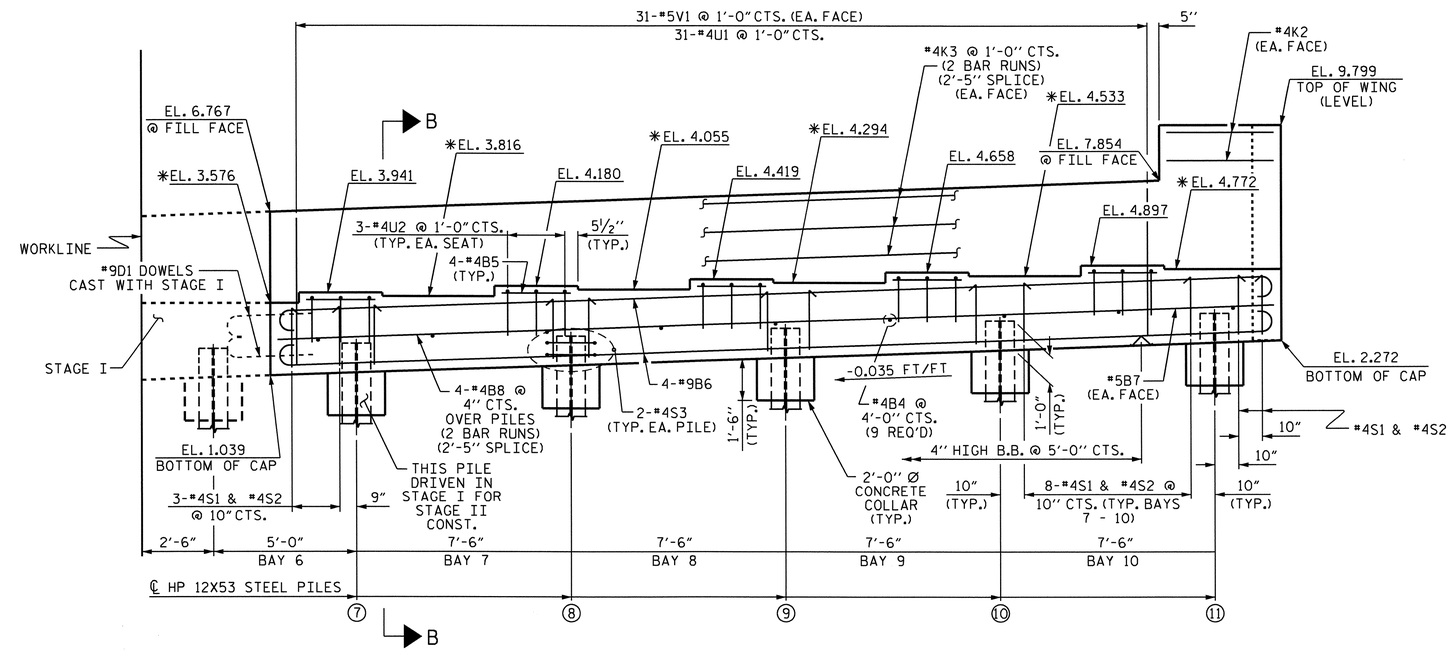
jpadams



PLAN



DETAIL "A"



ELEVATION

* SEE SHEET 4 OF 4 FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEAT BUILDUPS.

TOP OF PILE ELEV.	
PILE	ELEVATION
8	2.405
9	2.667
10	2.929
11	3.191

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT #2
STAGE II

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-120
1			3			TOTAL SHEETS
2			4			125

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

DRAWN BY : B. L. GREEN DATE : 9/5/11
CHECKED BY : H. A. LOCKLEAR DATE : 9/11

08-MAR-2012 11:23
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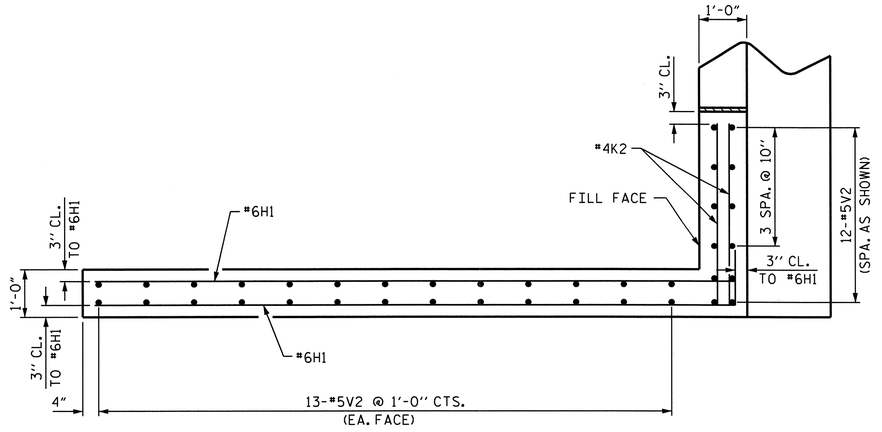
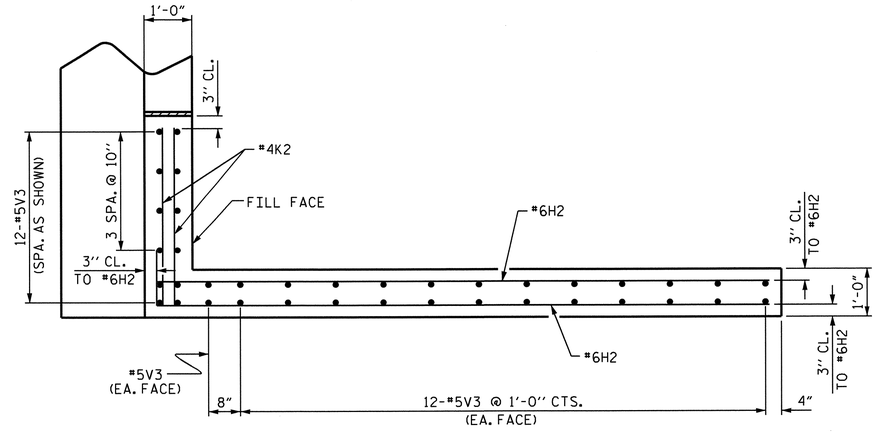


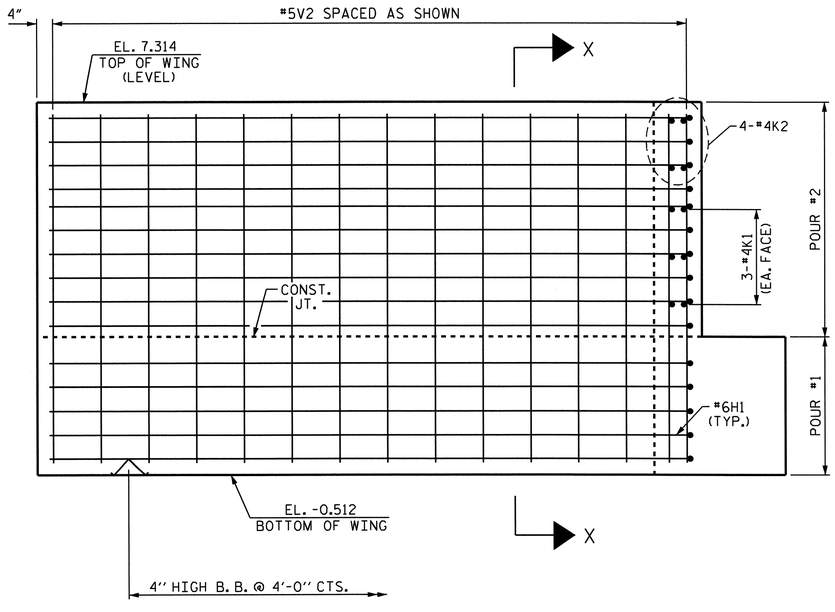
PLAN OF WING - W1

STAGE I



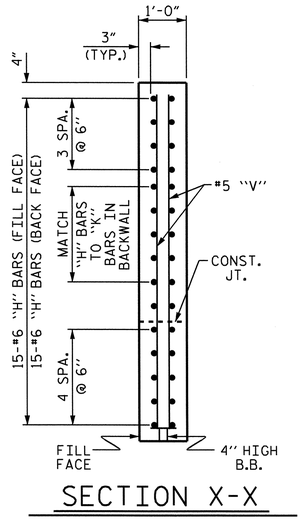
PLAN OF WING - W2

STAGE II

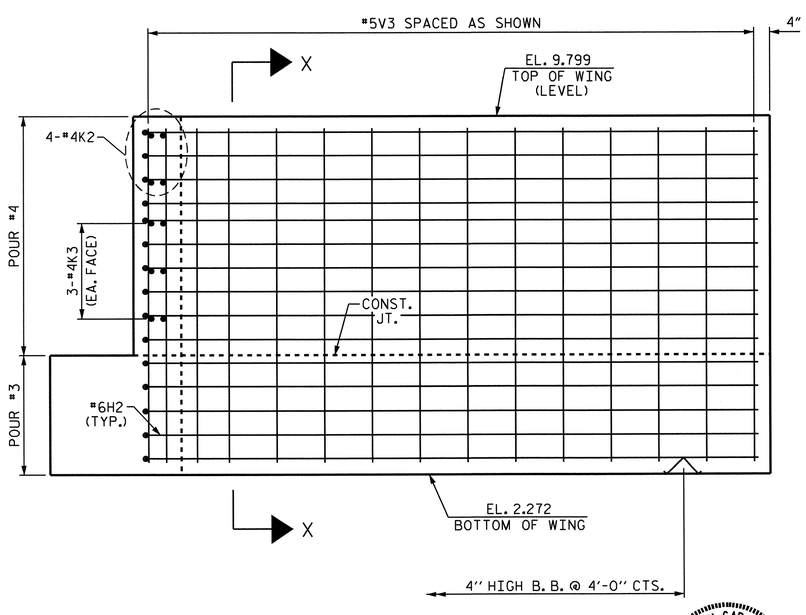


ELEVATION OF WING - W1

STAGE I



SECTION X-X



ELEVATION OF WING - W2

STAGE II

DRAWN BY : B. L. GREEN DATE : 9/11

CHECKED BY : H. A. LOCKLEAR DATE : 9/11

27-JAN-2012 13:59
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kbeard

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 3 OF 4

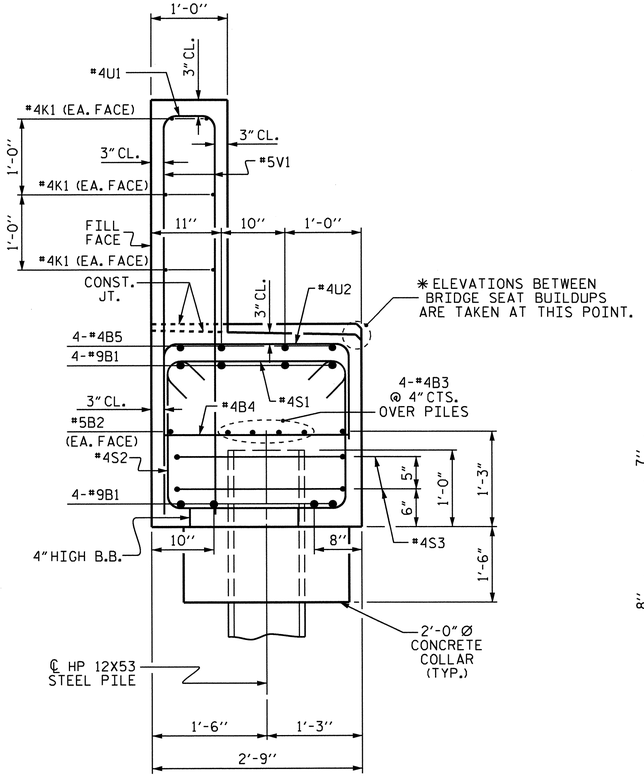
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

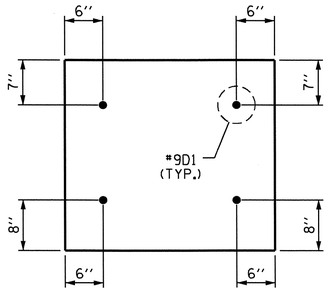
END BENT #2

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER 3/9/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-121
1			3			TOTAL SHEETS
2			4			125

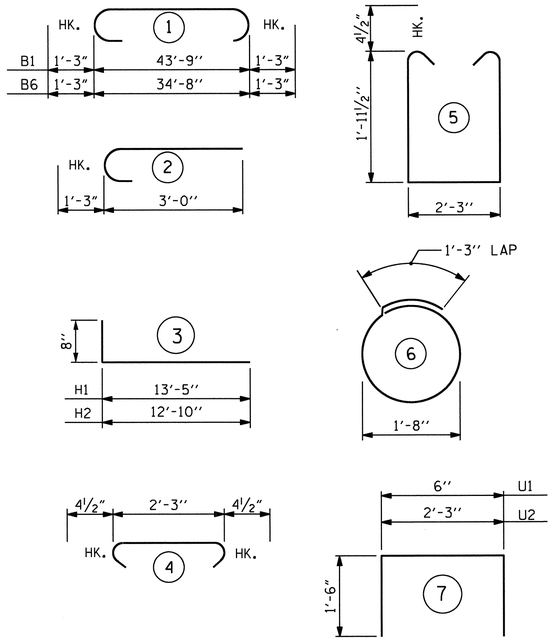


SECTION A-A



DETAIL "B"

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT #2

STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	46'-3"	1258
B2	2	#5	STR.	47'-5"	99
B3	8	#4	STR.	24'-11"	133
B4	12	#4	STR.	2'-3"	18
B5	24	#4	STR.	2'-5"	39
D1	4	#9	2	4'-3"	58
H1	30	#6	3	14'-1"	635
K1	12	#4	STR.	24'-11"	200
K2	4	#4	STR.	3'-9"	10
S1	49	#4	4	3'-0"	98
S2	49	#4	5	6'-11"	226
S3	12	#4	6	6'-6"	52
U1	40	#4	7	3'-6"	94
U2	18	#4	7	5'-3"	63
V1	80	#5	STR.	5'-1"	424
V2	38	#5	STR.	7'-2"	284

REINFORCING STEEL LBS. 3691

CLASS "A" CONCRETE BREAKDOWN

POUR #1 CAP, LOWER WING & COLLARS LEFT END 14.6 CY.

POUR #2 UPPER WING & BACKWALL LEFT END 7.7 CY.

CLASS "A" CONCRETE TOTAL 22.3 CY.

HP12X53 STEEL PILES No. 7 LIN. FT. 525

PILES REDRIVES EA. 7

STAGE II

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B4	9	#4	STR.	2'-3"	14
B5	20	#4	STR.	2'-5"	32
B6	8	#9	1	37'-2"	1011
B7	2	#5	STR.	34'-10"	73
B8	8	#4	STR.	18'-8"	100
H2	30	#6	3	13'-6"	608
K2	4	#4	STR.	3'-9"	10
K3	12	#4	STR.	18'-8"	150
S1	37	#4	4	3'-0"	74
S2	37	#4	5	6'-11"	171
S3	10	#4	6	6'-6"	43
U1	31	#4	7	3'-6"	72
U2	15	#4	7	5'-3"	53
V1	62	#5	STR.	5'-1"	329
V3	36	#5	STR.	7'-0"	263

REINFORCING STEEL LBS. 3003

CLASS "A" CONCRETE BREAKDOWN

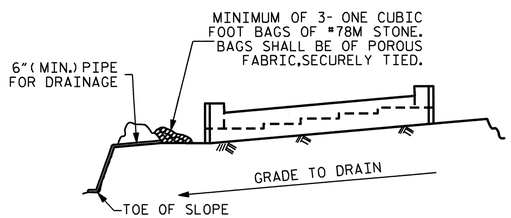
POUR #3 CAP, LOWER WING & COLLARS RIGHT END 11.6 CY.

POUR #4 UPPER WING & BACKWALL RIGHT END 6.6 CY.

CLASS "A" CONCRETE TOTAL 18.2 CY.

HP12X53 STEEL PILES No. 4 LIN. FT. 300

PILES REDRIVES EA. 4

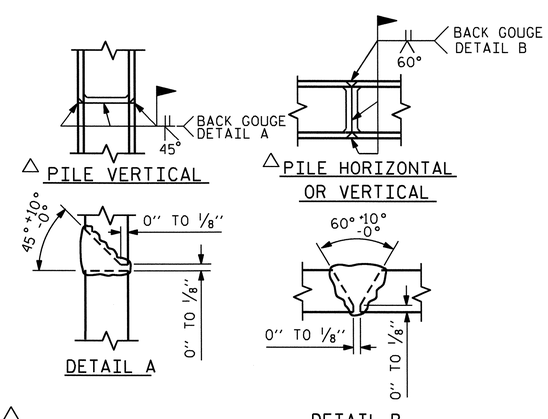


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

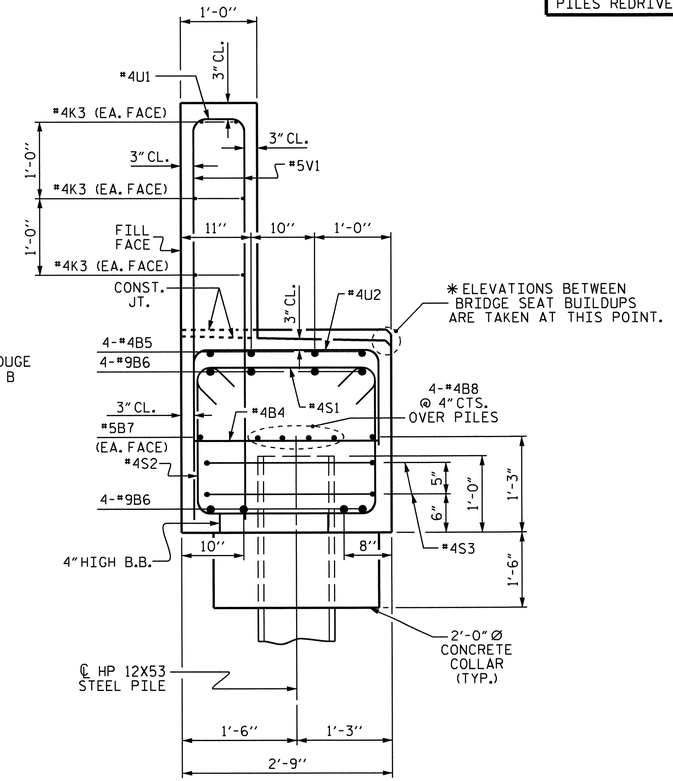
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



SECTION B-B

NORTH CAROLINA PROFESSIONAL SEAL 20878 ENGINEER KEVIN F. FISCHER
3/9/12

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT #2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-122
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : B. L. GREEN DATE : 8/31/11
CHECKED BY : H. A. LOCKLEAR DATE : 9/11

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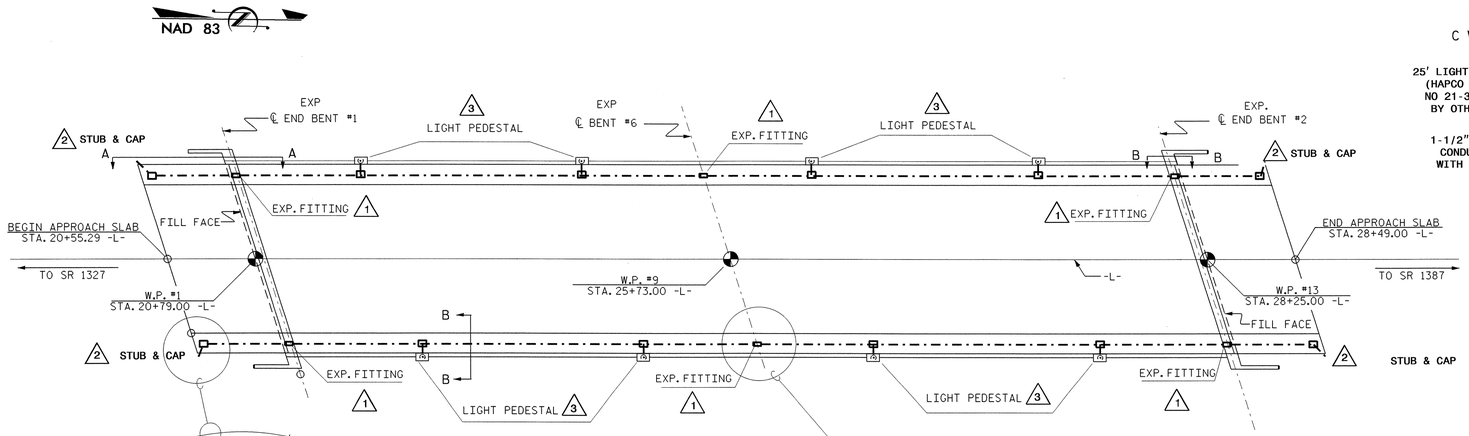
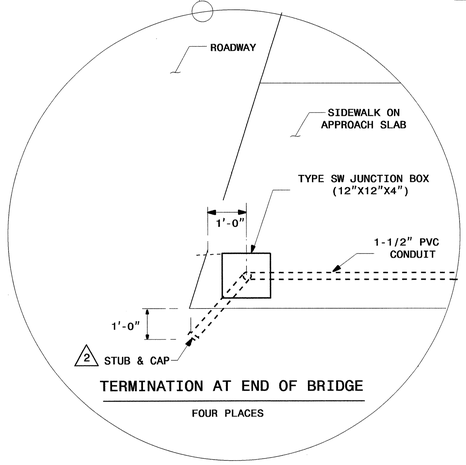
02/03/98

USE FOR LIGHTING CONSTRUCTION ONLY

NAD 83

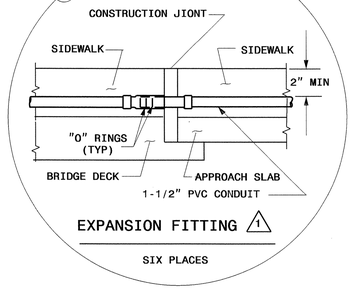


CONDUIT SYSTEM LAYOUT



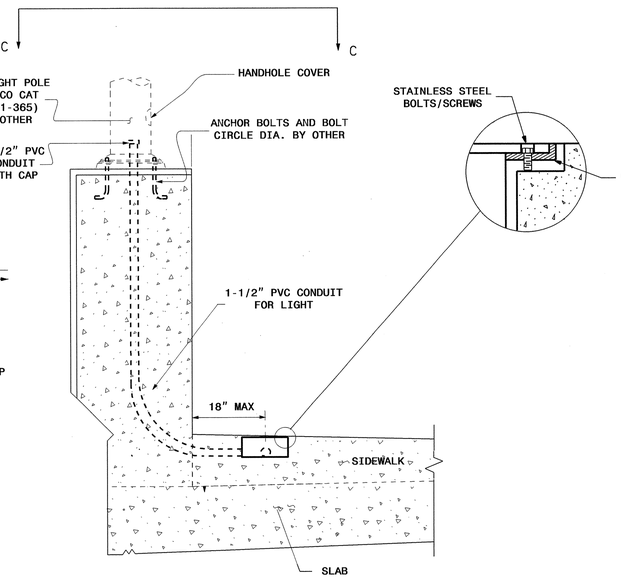
TERMINATION AT END OF BRIDGE

FOUR PLACES



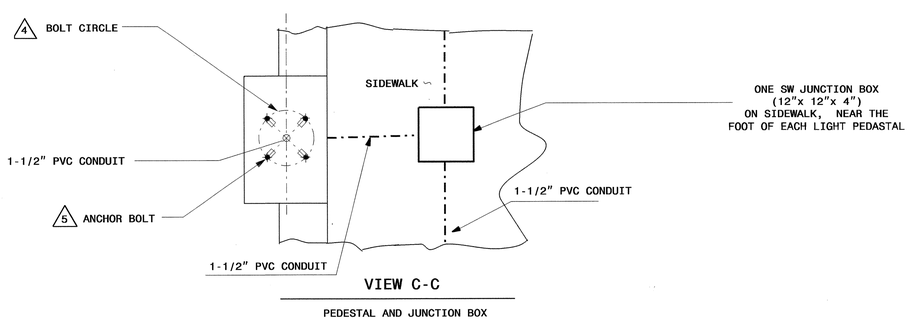
EXPANSION FITTING 1

SIX PLACES



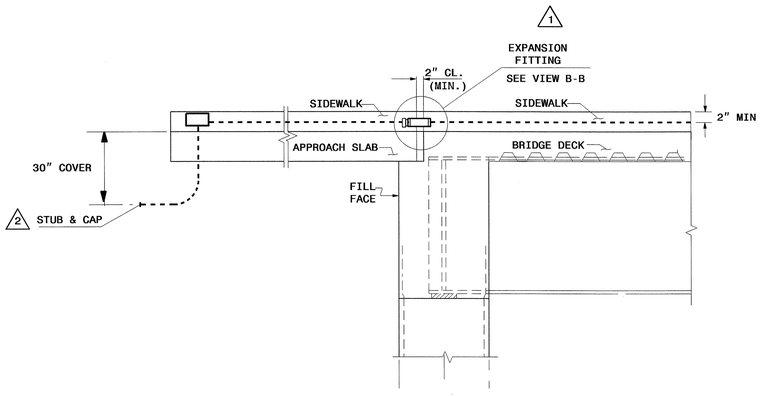
3 VIEW B-B

PEDESTAL FOR LIGHT POLE AND JUNCTION BOX



VIEW C-C

PEDESTAL AND JUNCTION BOX



VIEW A-A

SECTION THRU END BENT (PARAPET REMOVED)

NOTES

1. PROVIDE EXPANSION FITTING AT ALL EXPANSION JOINTS.
2. COORDINATE ELECTRICAL CONNECTION WORK WITH OTHERS.
3. SEE STRUCTURE PLANS FOR LOCATION OF LIGHT PEDESTALS.
4. INSTALL ANCHOR BOLTS ACCORDING TO MANUFACURER'S RECOMMENDATION.
5. ANCHOR BOLTS SHALL BE SUPPLIED BY THE POLE MANUFACTURER.

ESTIMATED BILL OF MATERIAL
LIGHTING CONDUIT SYSTEM

UNIT	ITEMS	LIGHTING QTY
EA.	TYPE SW JN. BOX (12" X 12" X 4")	12
EA.	1-1/2" PVC 90° BEND	12
FT.	1-1/2" PVC CONDUIT	1700
EA.	1-1/2" PVC EXPANSION JOINT	6
FT.	POLYETHYLENE PULL LINE	2000
LOT	MASTIC	1

PROJECT NO. B-4599

PASQUOTANK COUNTY

STATION: 24+52.00 -L-

SHEET 1 OF 1

Rev.	Date	Description	Approved
2			
1			

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN LIGHTING/ELECTRICAL SECTION

ELECTRICAL CONDUIT SYSTEM

REPLACE BRIDGES 1 & 2 OVER KNOBBS CREEK ON US 17-158

SEE PROJECT SPECIAL PROVISIONS TITLED "ELECTRICAL CONDUIT SYSTEM" FOR MATERIALS CONSTRUCTION METHODS AND PAYMENT.

Drawn By:	Approved By:	Dwg No.:
		S-122A of 125

DRAWN BY : S. K. SAHA DATE : 01/06/12
CHECKED BY : DATE :

09-JAN-2012 10:07
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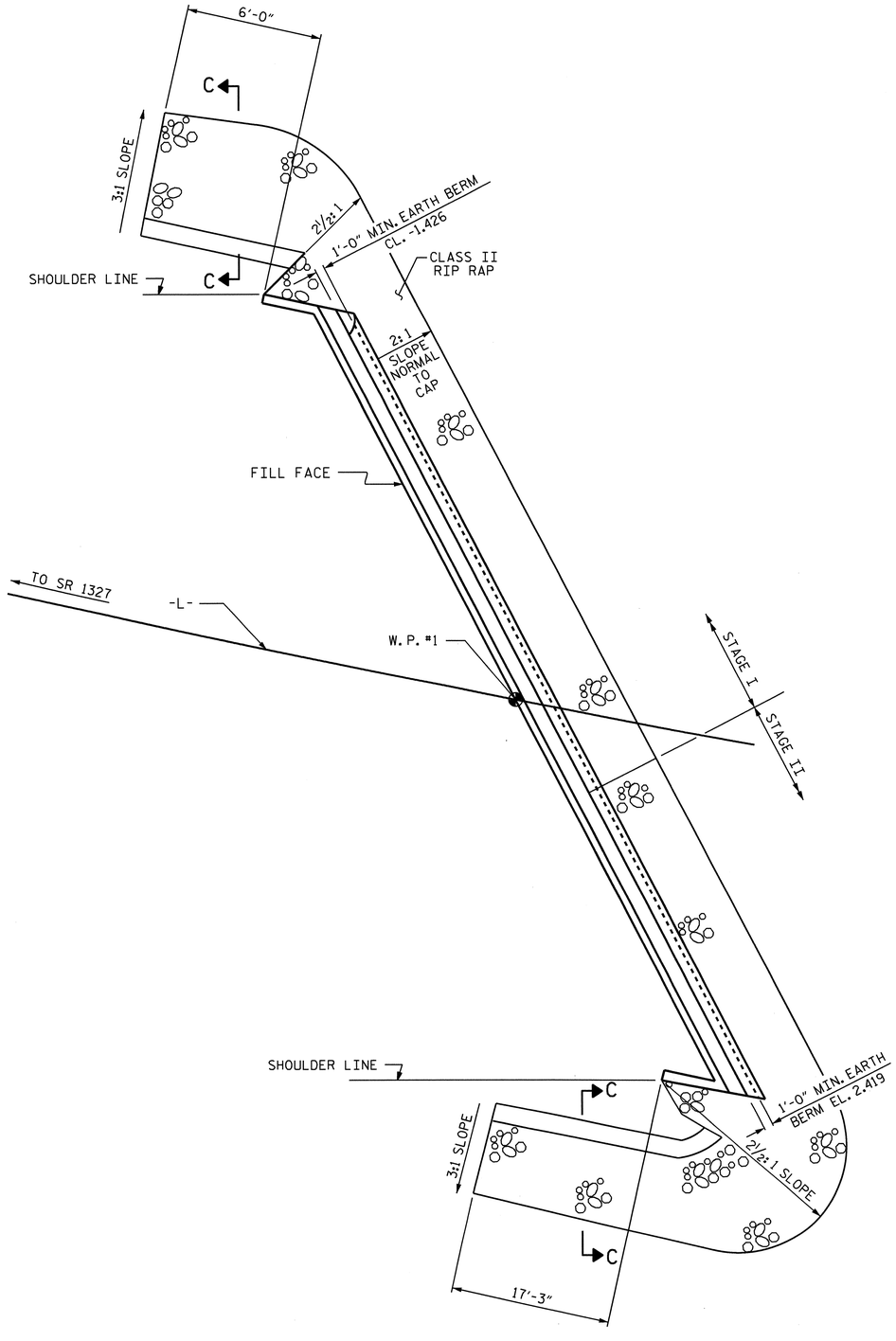
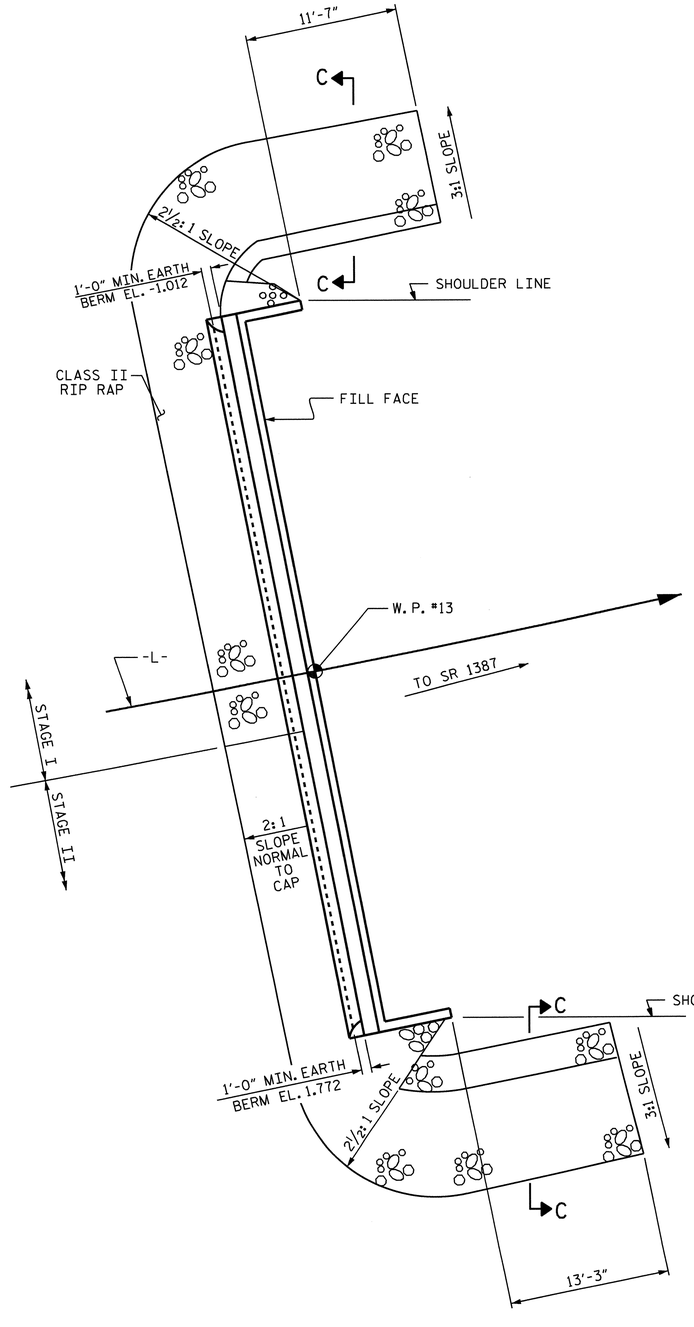
$$$$USERNAME$$$$

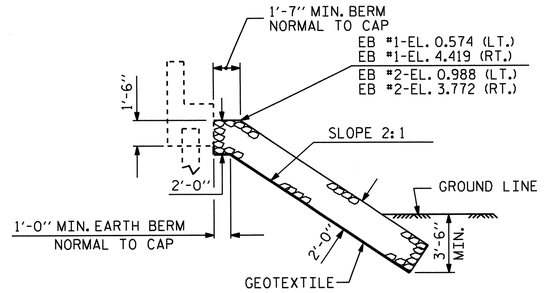


END BENT #1

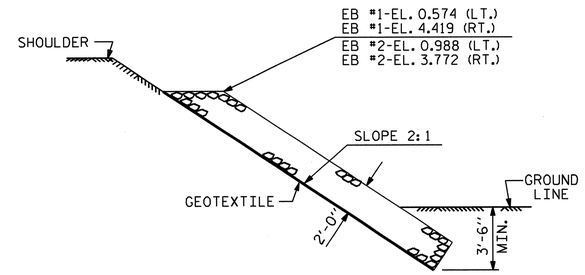


END BENT #2

PLAN OF RIP RAP



℄ SECTION
BERM RIP RAPPED



SECTION C-C

ESTIMATED QUANTITIES		
BRIDGE @ STA. 24+52.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT #1	155	170
END BENT #2	155	170

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RIP RAP DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-123
1			3			TOTAL SHEETS
2			4			125

ASSEMBLED BY: R. G. EMERSON	DATE: 03/11	
CHECKED BY: M. K. BEARD	DATE: 05/11	
DRAWN BY : REK 1/84	REV. 8/16/99	RWW/LES
CHECKED BY : RDU 1/84	REV. 10/17/00	RWW/LES
	REV. 5/1/06R	TLA/GM

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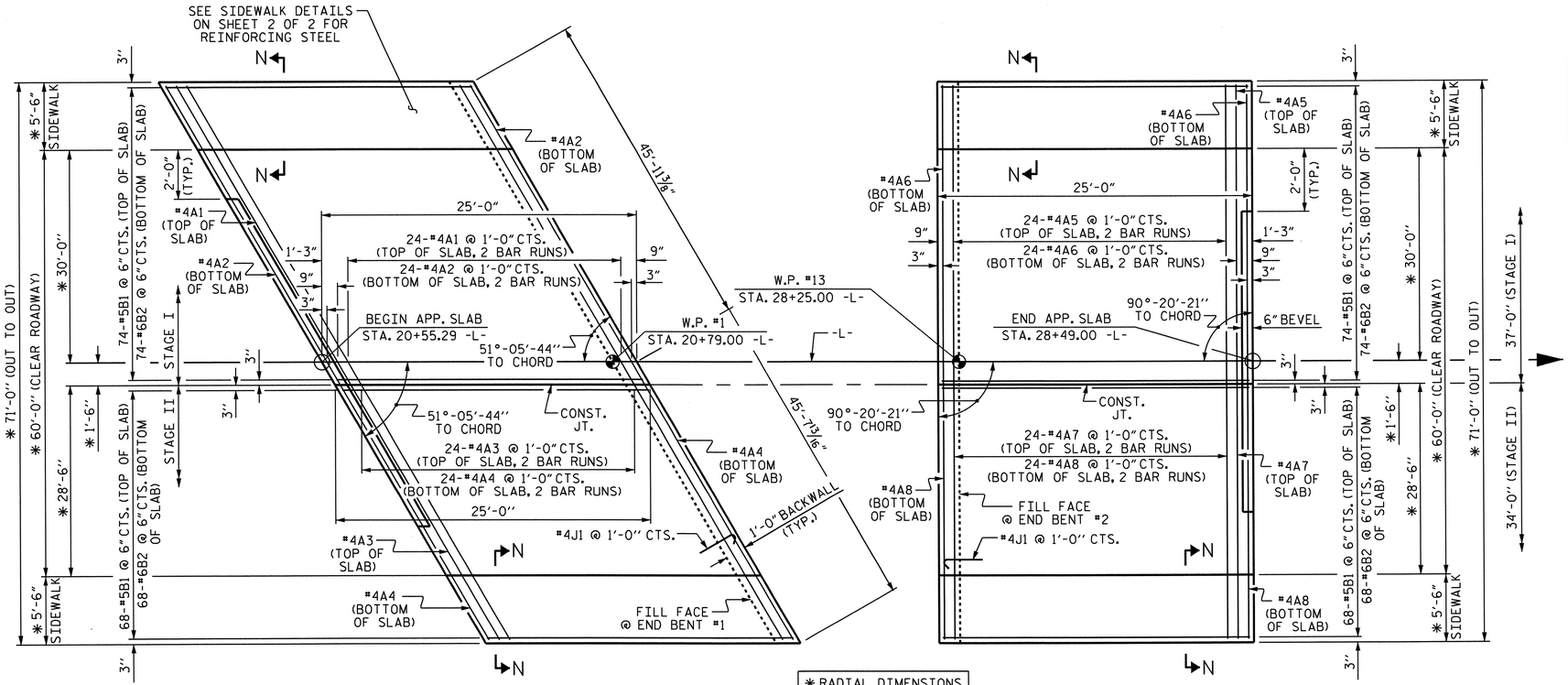
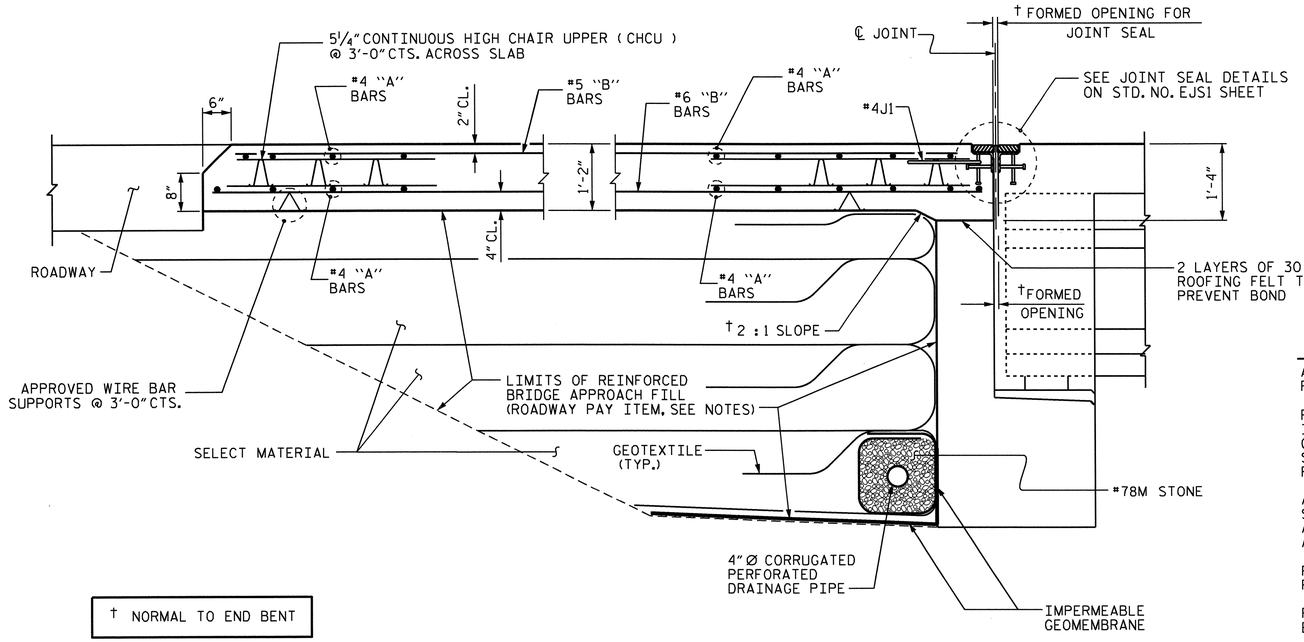
jpadams

SKEW < 90°

STD. NO. RR1



NOTE: EXTEND *4A1 & *4A5 2'-2" BEYOND CONST. JT. FOR SPLICE
EXTEND *4A2 & *4A6 1'-11" BEYOND CONST. JT. FOR SPLICE



† NORMAL TO END BENT

SECTION THRU SLAB

NOTES

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

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, IMPERMEABLE GEOMEMEBRANE, 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.

FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR SIDEWALK COVERPLATE DETAILS, SEE EXPANSION JOINT DETAIL SHEETS.

BILL OF MATERIAL — APPROACH SLAB AT EB #1

STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	50	#4	STR	25'-7"	854
A2	52	#4	STR	25'-4"	880
* B1	74	#5	STR	24'-0"	1852
B2	74	#6	STR	24'-6"	2723
* B3	4	#4	STR	24'-6"	65
* G1	25	#4	STR	6'-3"	104
* J1	50	#4	1	1'-4"	45
* U1	8	#4	2	3'-4"	18
REINFORCING STEEL				LBS.	3603
* EPOXY COATED REINFORCING STEEL				LBS.	2938

CLASS AA CONCRETE BREAKDOWN

POUR #1 APP. SLAB =	C.Y.	40.1
POUR #2 SIDEWALK =	C.Y.	3.3
TOTAL =	C.Y.	43.4

STAGE II

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A3	50	#4	STR	22'-8"	757
A4	52	#4	STR	22'-6"	782
* B1	68	#5	STR	24'-0"	1702
B2	68	#6	STR	24'-6"	2502
* B3	4	#4	STR	24'-6"	65
* G1	25	#4	STR	6'-3"	104
* J1	45	#4	1	1'-4"	40
* U1	8	#4	2	3'-4"	18
REINFORCING STEEL				LBS.	3284
* EPOXY COATED REINFORCING STEEL				LBS.	2686

CLASS AA CONCRETE BREAKDOWN

POUR #1 APP. SLAB =	C.Y.	36.8
POUR #2 SIDEWALKS =	C.Y.	2.3
TOTAL =	C.Y.	39.1

BILL OF MATERIAL — APPROACH SLAB AT EB #2

STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A5	50	#4	STR	20'-5"	682
A6	52	#4	STR	20'-3"	703
* B1	74	#5	STR	24'-0"	1852
B2	74	#6	STR	24'-6"	2723
* B3	4	#4	STR	24'-6"	65
* G2	25	#4	STR	4'-10"	81
* J1	39	#4	1	1'-4"	35
* U1	8	#4	2	3'-4"	18
REINFORCING STEEL				LBS.	3426
* EPOXY COATED REINFORCING STEEL				LBS.	2733

CLASS AA CONCRETE BREAKDOWN

POUR #1 APP. SLAB =	C.Y.	40.1
POUR #2 SIDEWALK =	C.Y.	3.3
TOTAL =	C.Y.	43.4

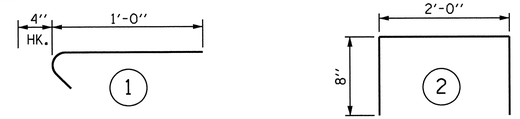
STAGE II

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A7	50	#4	STR	17'-11"	598
A8	52	#4	STR	17'-9"	617
* B1	68	#5	STR	24'-0"	1702
B2	68	#6	STR	24'-6"	2502
* B3	4	#4	STR	24'-6"	65
* G2	25	#4	STR	4'-10"	81
* J1	36	#4	1	1'-4"	32
* U1	8	#4	2	3'-4"	18
REINFORCING STEEL				LBS.	3119
* EPOXY COATED REINFORCING STEEL				LBS.	2496

CLASS AA CONCRETE BREAKDOWN

POUR #1 APP. SLAB =	C.Y.	36.8
POUR #2 SIDEWALKS =	C.Y.	2.3
TOTAL =	C.Y.	39.1

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

SPLICE CHART	
*4A1	2'-0"
*4A2	1'-9"

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
4/20/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-124
1			3			TOTAL SHEETS
2			4			125

ASSEMBLED BY : B. L. GREEN DATE : 6/11
CHECKED BY : M. K. BEARD DATE : 10/11
DRAWN BY : LES 8/01 REV. 5/7/03R RWW/JTE
CHECKED BY : RDR 8/01 REV. 5/1/06R KMM/GM

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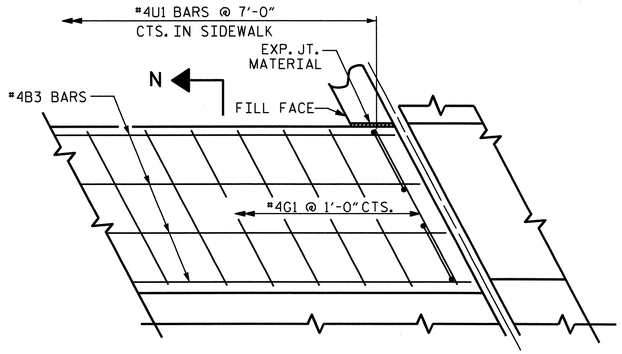
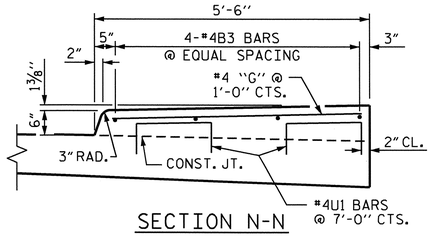
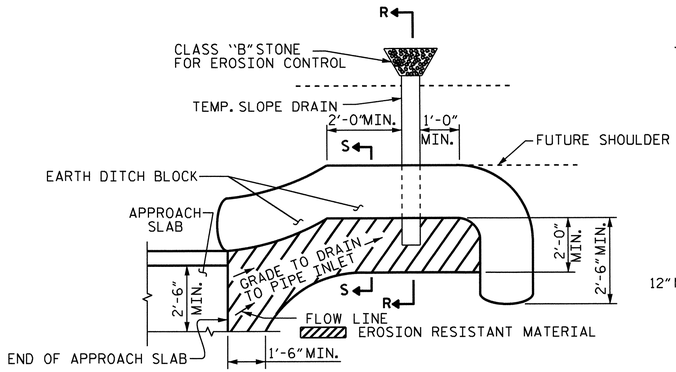




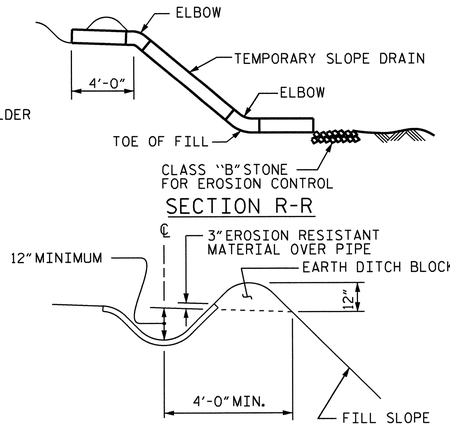
SECTION N-N

SIDEWALK DETAILS



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

PLAN VIEW

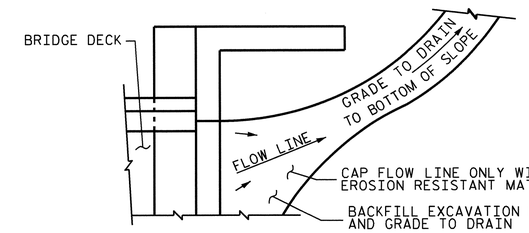


SECTION R-R

SECTION S-S

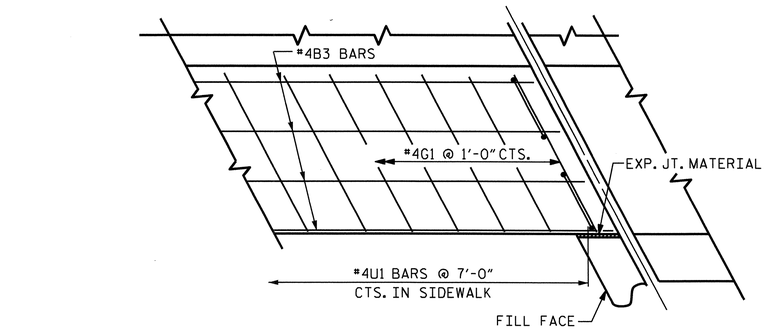
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



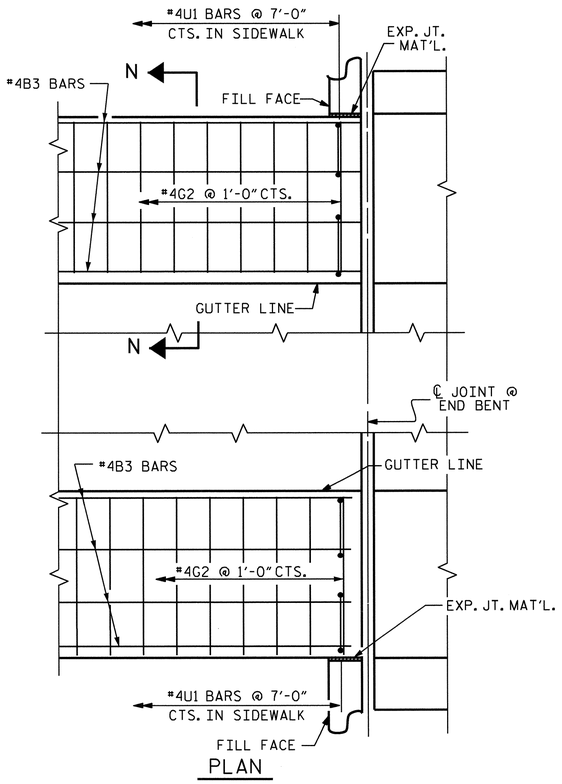
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

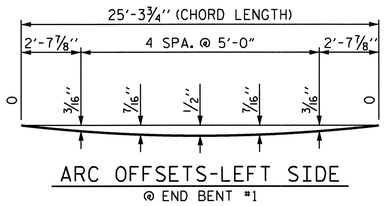


PLAN

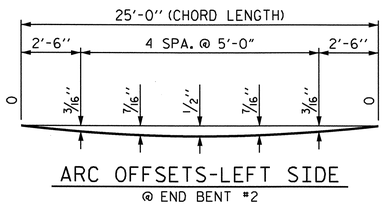
DETAILS OF SIDEWALK ON APPROACH SLAB @ END BENT #1



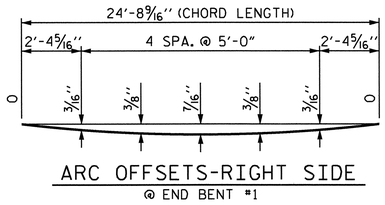
PLAN



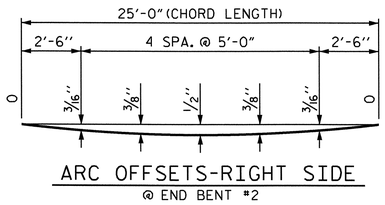
ARC OFFSETS-LEFT SIDE
@ END BENT #1



ARC OFFSETS-LEFT SIDE
@ END BENT #2



ARC OFFSETS-RIGHT SIDE
@ END BENT #1



ARC OFFSETS-RIGHT SIDE
@ END BENT #2

DETAILS OF SIDEWALK ON APPROACH SLAB @ END BENT #2

PROJECT NO. B-4599
PASQUOTANK COUNTY
STATION: 24+52.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

BRIDGE APPROACH
SLAB DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-125
1			3			TOTAL SHEETS
2			4			125

STD. NO. BAS10 (SHT 11)

NORTH CAROLINA PROFESSIONAL SEAL 30878 ENGINEER KEVIN FISCHER
3/9/12

ASSEMBLED BY :	B. L. GREEN	DATE :	6/11
CHECKED BY :	M. K. BEARD	DATE :	10/11
DRAWN BY : FCJ	11/88	REV. 10/17/00	RWW/LES
CHECKED BY : ARB	11/88	REV. 5/7/03	RWW/JTE
		REV. 5/1/06RR	MAA/KMM

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STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2006 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

ENGLISH

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