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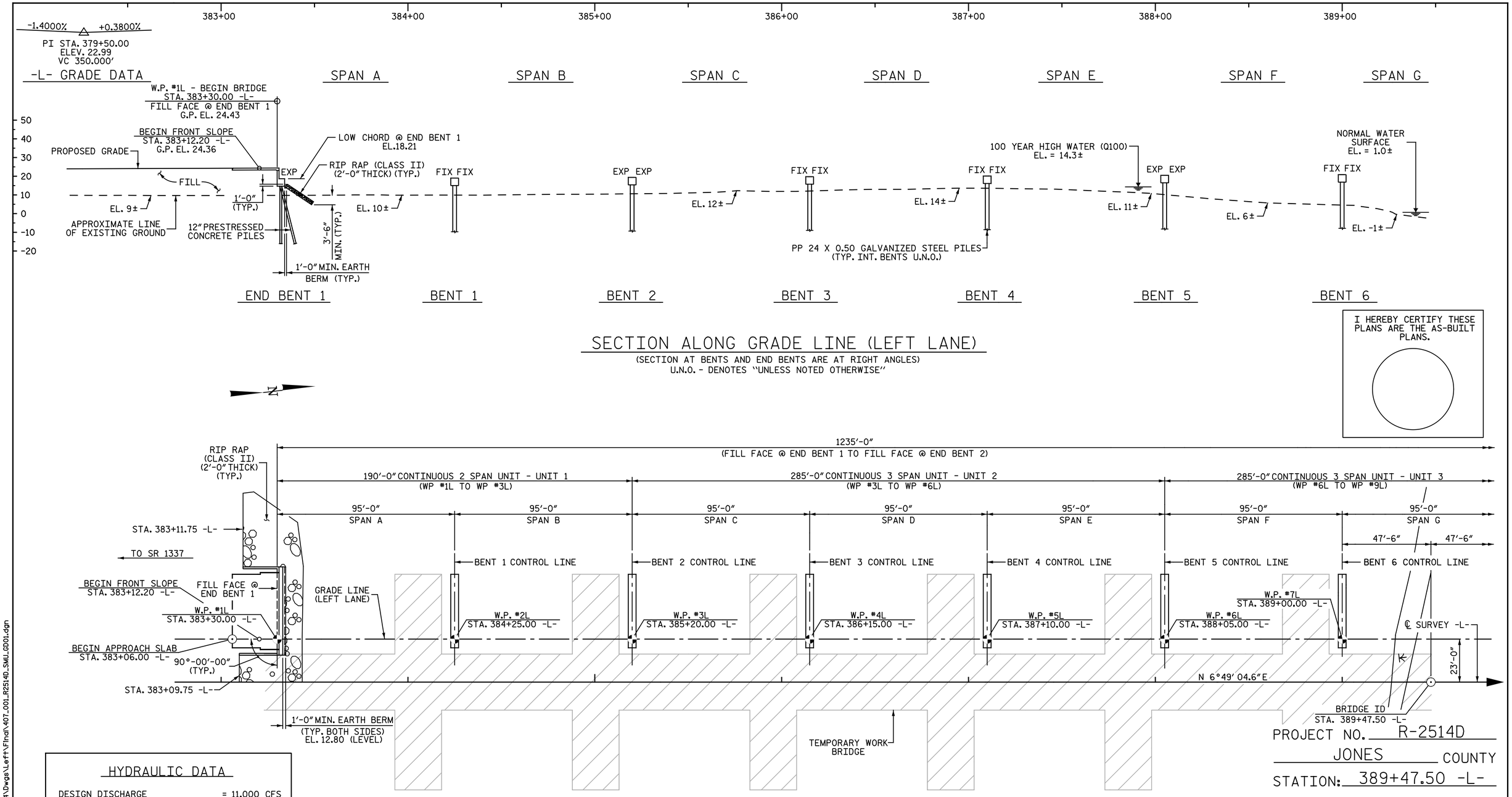

SECTION ALONG GRADE LINE (LEFT LANE)

(SECTION AT BENTS AND END BENTS ARE AT RIGHT ANGLES)
U.N.O. - DENOTES "UNLESS NOTED OTHERWISE"

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS.

PLAN

PILES NOT SHOWN IN PLAN VIEW FOR CLARITY

HYDRAULIC DATA

DESIGN DISCHARGE	= 11,000 CFS
FREQUENCY OF DESIGN DISCHARGE	= 50 YEAR
DESIGN HIGH WATER ELEVATION	= 13 FT
DRAINAGE AREA	= 369 SQ MI
BASE DISCHARGE (Q100)	= 13,000 CFS
BASE HIGH WATER ELEVATION	= 14.3 FT

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= N/A
FREQUENCY OF OVERTOPPING DISCHARGE	= 500+YEAR
OVERTOPPING ELEVATION	= 19.7 FT

DRAWN BY : N. B. SPEAKS DATE : 7-11-13
CHECKED BY : A. L. PHILLIPS DATE : 7-15-13

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 1 OF 5 BRIDGE NO. 101

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER TRENT RIVER ON US17 BETWEEN SR 1337 & SR 1121
LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-1
1			3			TOTAL SHEETS
2			4			68

DWG. 1 OF 68

SITE 4

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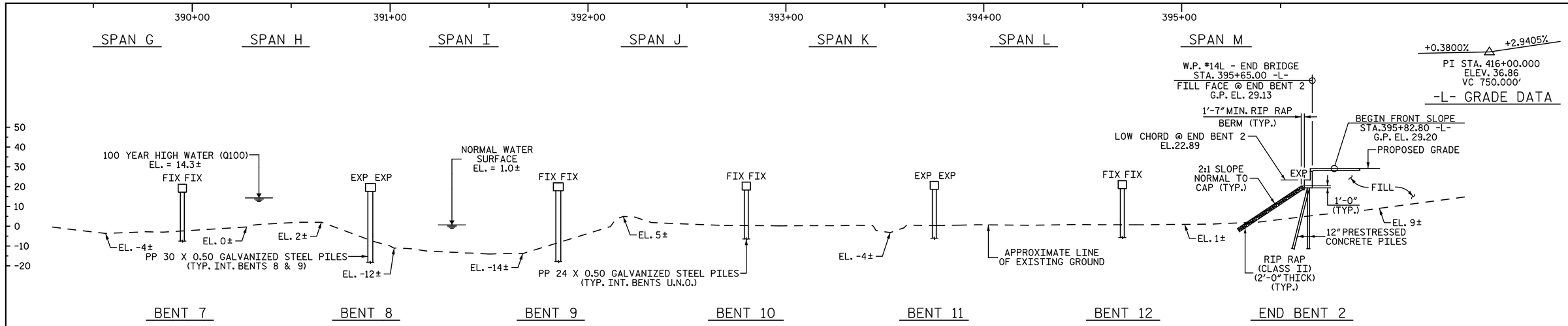
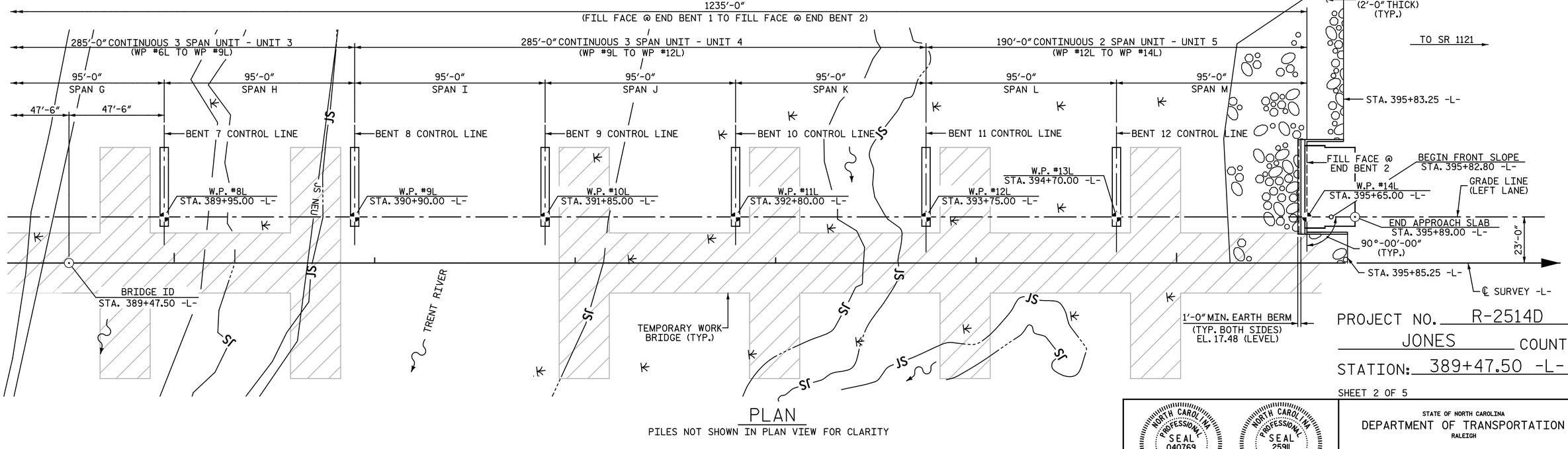


SECTION ALONG GRADE LINE (LEFT LANE)

(SECTION AT BENTS AND END BENTS ARE AT RIGHT ANGLES)
U.N.O. - DENOTES "UNLESS NOTED OTHERWISE"



PLAN

PILES NOT SHOWN IN PLAN VIEW FOR CLARITY

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER TRENT RIVER ON US17 BETWEEN SR 1337 & SR 1121
LEFT LANE

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752B68F5084459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-2
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 7-11-13
CHECKED BY : A. L. PHILLIPS DATE : 7-15-13

DWG. 2 OF 68

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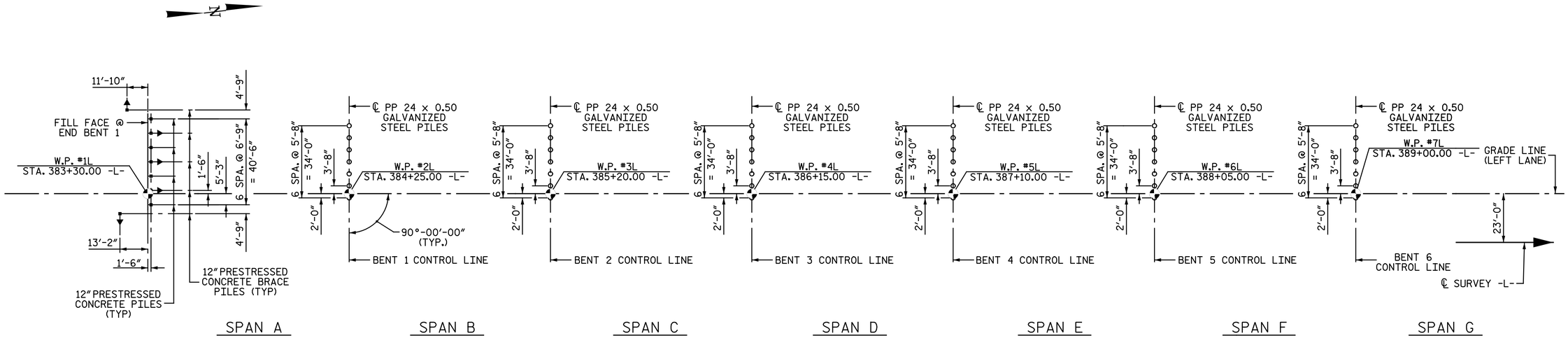
SITE 4

NOTES:

▲ INDICATES BATTER DIRECTION FOR BATTERED PILES.

ALL BATTERED PILES SHALL BE BATTERED AT 3 :12 RATIO AT END BENTS.

FOR INTERIOR BENTS, 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.



FOUNDATION LAYOUT

ALL BENTS ARE PARALLEL

PILES ARE DIMENSIONED FROM WORK POINT TO ℄ OF PILE AT BOTTOM OF CONCRETE CAP.

FOUNDATION NOTES:

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO. 1 AND END BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 110 TONS PER PILE.

DRIVE PILES AT END BENT NO. 1 AND END BENT NO. 2 TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

PILES AT BENT NO. 1 THROUGH BENT NO. 7 AND AT BENT NO. 10 THROUGH BENT NO. 12 ARE DESIGNED FOR A FACTORED RESISTANCE OF 225 TONS PER PILE.

DRIVE PILES AT BENT NO. 1 THROUGH BENT NO. 7 AND AT BENT NO. 10 THROUGH BENT NO. 12 TO A REQUIRED DRIVING RESISTANCE OF 300 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

PILES AT BENT NO. 8 AND BENT NO. 9 ARE DESIGNED FOR A FACTORED RESISTANCE OF 265 TONS PER PILE.

DRIVE PILES AT BENT NO. 8 AND BENT NO. 9 TO A REQUIRED DRIVING RESISTANCE OF 360 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

INSTALL PILES AT BENT NO. 1 THROUGH BENT NO. 5 TO A TIP ELEVATION NO HIGHER THAN -21.0 FT.

INSTALL PILES AT BENT NO.6 AND BENT NO. 7 TO TIP ELEVATIONS NO HIGHER THAN -26.0 FT AND -34.0 FT, RESPECTIVELY.

INSTALL PILES AT BENT NO. 8 AND BENT NO. 9 TO A TIP ELEVATION NO HIGHER THAN -43.0 FT.

INSTALL PILES AT BENT NO. 10 THROUGH BENT NO. 12 TO A TIP ELEVATION NO HIGHER THAN -38.0 FT.

PIPE PILE PLATES ARE REQUIRED FOR STEEL PIPE PILES AT BENT NO. 1 THROUGH BENT NO. 12. USE PIPE PILE PLATES WITH A DIAMETER EQUAL TO THE PIPE PILE DIAMETER. FOR STEEL PIPE PILE PLATES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

SCOUR CRITICAL ELEVATIONS FOR BENT NO. 1 THROUGH BENT NO. 12 ARE ELEVATIONS 4 FT, 4 FT, 4 FT, 4 FT, 4 FT, -1 FT, -6 FT, -14 FT, -14 FT, -3 FT, -3 FT, AND -3 FT, RESPECTIVELY. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 80-135 KIPS-FT PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT NO. 1 THROUGH BENT NO. 7 AND AT BENT NO. 10 THROUGH BENT NO. 12. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 120-170 KIPS-FT PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT NO. 8 AND BENT NO. 9. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

TESTING THE FIRST PRODUCTION PILE WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT END BENT NO. 1 OR END BENT NO. 2. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

TESTING THE FIRST 24" DIA. PRODUCTION STEEL PIPE PILE WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

TESTING THE FIRST 30" DIA. PRODUCTION STEEL PIPE PILE WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

TEMPORARY STEEL CASINGS ARE REQUIRED FOR PREDRILLING (AND SPUDDING) AT BENT NO. 7, BENT NO. 8 AND BENT NO. 9.

SPUDDING MAY BE USED INSTEAD OF PREDRILLING AT BENT NO. 1 THROUGH BENT NO. 12.

IF NECESSARY, PREDRILL PILE LOCATIONS AT BENT NO. 1 THROUGH BENT NO. 5 TO AN ELEVATION NO LOWER THAN ELEVATION -21 FT WITH EQUIPMENT THAT WILL RESULT IN A MAXIMUM PREDRILLING DIAMETER OF 24". FOR PREDRILLING FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

IF NECESSARY, PREDRILL PILE LOCATIONS AT BENT NO. 6 AND BENT NO 7 TO AN ELEVATION NO LOWER THAN ELEVATIONS -26 FT AND -34 FT, RESPECTIVELY, WITH EQUIPMENT THAT WILL RESULT IN A MAXIMUM PREDRILLING DIAMETER OF 24". FOR PREDRILLING FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

IF NECESSARY, PREDRILL PILE LOCATIONS AT BENT NO. 8 AND BENT NO. 9 TO AN ELEVATION NO LOWER THAN ELEVATION -43 FT WITH EQUIPMENT THAT WILL RESULT IN A MAXIMUM PREDRILLING DIAMETER OF 30". FOR PREDRILLING FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

IF NECESSARY, PREDRILL PILE LOCATIONS AT BENT NO. 10 THROUGH BENT NO. 12 TO AN ELEVATION NO LOWER THAN ELEVATION -38 FT WITH EQUIPMENT THAT WILL RESULT IN A MAXIMUM PREDRILLING DIAMETER OF 24". FOR PREDRILLING FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 3 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F50645B... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER TRENT RIVER ON US17 BETWEEN SR 1337 & SR 1121 LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-3
1			3			TOTAL SHEETS
2			4			68

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

DRAWN BY : N. B. SPEAKS DATE : 6-20-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 3 OF 68

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SITE 4

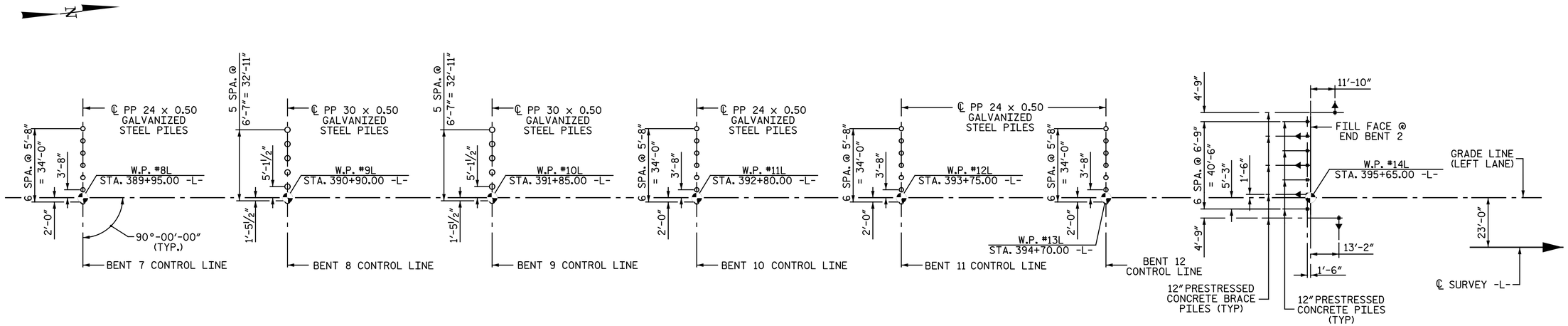
NOTES:

▲ INDICATES BATTER DIRECTION FOR BATTERED PILES.

ALL BATTERED PILES SHALL BE BATTERED AT 3 :12 RATIO AT END BENTS.

FOR INTERIOR BENTS, 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 FOUNDATION NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 5.



SPAN G | SPAN H | SPAN I | SPAN J | SPAN K | SPAN L | SPAN M

FOUNDATION LAYOUT

ALL BENTS ARE PARALLEL
PILES ARE DIMENSIONED FROM WORK POINT TO ℄ OF PILE AT BOTTOM OF CONCRETE CAP.

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 4 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F50644591...
3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN C. HATHAWAY
DocuSigned by: Dwain Hathaway 283786071DA0460...
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER TRENT RIVER ON US17 BETWEEN SR 1337 & SR 1121 LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-4
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-20-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 4 OF 68

SITE 4

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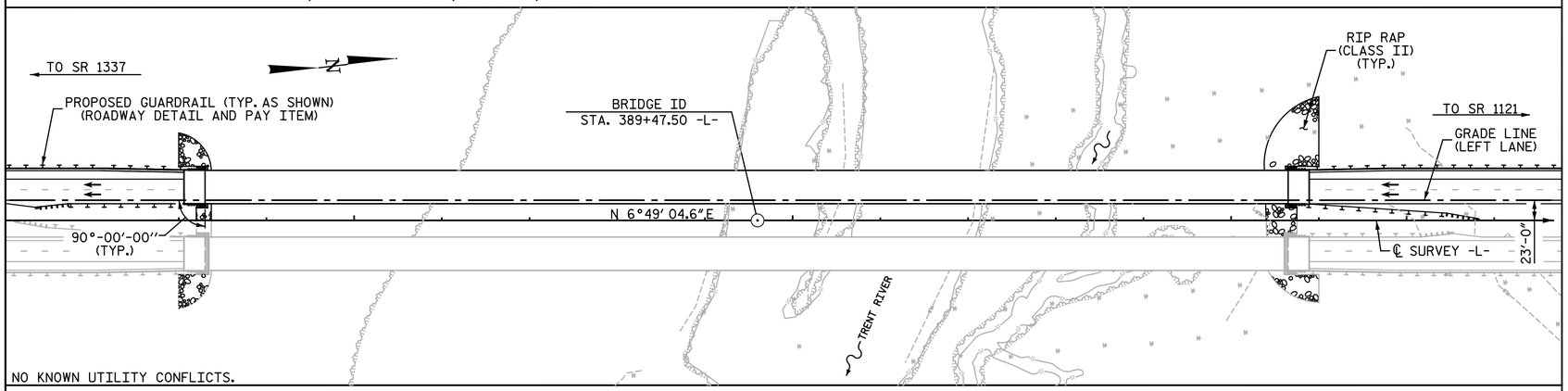
BM #20 - RR SPIKE SET IN 16"HARDWOOD, -L- STA. 394+12.00, 243.00' RT., ELEV. 3.92



NO KNOWN UTILITY CONFLICTS.

LOCATION SKETCH

TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMP. ACCESS AT STA. 389+47.50 -L-	PDA TESTING	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS STA. 389+47.50	REINFORCING STEEL	54" PRESTRESSED CONCRETE GIRDERS		12" PRESTRESSED CONCRETE PILES		PP 24 x 0.50 GALVANIZED STEEL PILES		PP 30 x 0.50 GALVANIZED STEEL PILES		PIPE PILE PLATES	PREDRILLING FOR PILES	PILE REDRIVES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	EXPANSION JOINT SEALS
	LUMP SUM	EA.	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	NO.	LIN. FT.	NO.	LIN. FT.	EA.	LIN. FT.	EA.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	LUMP SUM
SUPERSTRUCTURE			50,857	44,691				65	6112.1										2,505.8				
END BENT 1					48.2		7,311			9	450							4		330	367		
BENT 1					26.6		4,839					7	315			7		4					
BENT 2					26.6		4,839					7	315			7		4					
BENT 3					26.6		4,839					7	315			7		4					
BENT 4					26.6		4,839					7	315			7		4					
BENT 5					26.6		4,839					7	315			7		4					
BENT 6					26.6		4,839					7	350			7		4					
BENT 7					26.6		4,839					7	420			7		4					
BENT 8					31.9		4,836							6	390	6		4					
BENT 9					31.9		4,836							6	390	6		4					
BENT 10					26.6		4,839					7	455			7		4					
BENT 11					26.6		4,839					7	455			7		4					
BENT 12					26.6		4,839					7	455			7		4					
END BENT 2					48.2		7,311			9	450							4		845	939		
CONTINGENCY																	2580						
TOTAL	LUMP SUM	5	50,857	44,691	426.2	LUMP SUM	72,684	65	6112.1	18	900	70	3,710	12	780	82	2580	56	2,505.8	1175	1306	LUMP SUM	LUMP SUM

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING

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

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

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

FOR INTERIOR BENTS 1 THRU 12, 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 SECURING OF VESSELS, SEE SPECIAL PROVISIONS.

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

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

FOR PLACING LOAD ON STRUCTURE MEMBERS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY STRUCTURE AT STATION 389+47.50 -L- FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 5 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER TRENT RIVER ON US17 BETWEEN SR 1337 & SR 1121 LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-5
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 7-12-13
CHECKED BY : A. M. HOUSTON DATE : 7-18-13

DWG. 5 OF 68

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SITE 4

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

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W × RF	STRENGTH I LIMIT STATE											SERVICE III LIMIT STATE						COMMENT NUMBER
								MOMENT					SHEAR						MOMENT						
							LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93 (INVENTORY)	N/A	1	1.19	--	1.75	0.72	1.62	D	EL	46.40	0.88	1.19	D	I	8.70	0.80	0.72	1.35	D	I	46.40	1
		HL-93 (OPERATING)	N/A		1.58	--	1.35	0.72	2.10	D	EL	46.40	0.88	1.58	D	I	84.00	N/A	--	--	--	--	--	1,2
		HS-20 (INVENTORY)	36.000	2	1.61	57.96	1.75	0.72	2.22	D	EL	46.40	0.88	1.61	D	I	84.00	0.80	0.72	1.86	D	I	46.40	1
		HS-20 (OPERATING)	36.000		2.12	76.32	1.35	0.72	2.88	D	EL	46.40	0.88	2.12	D	I	84.00	N/A	--	--	--	--	--	1,2
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		4.37	59.00	1.40	0.72	6.52	D	EL	46.40	0.88	5.17	D	I	84.00	0.80	0.72	4.37	D	I	46.40	1
		SNGARBS2	20.000		3.18	63.60	1.40	0.72	4.75	D	EL	46.40	0.88	3.59	D	I	84.00	0.80	0.72	3.18	D	I	46.40	1
		SNAGRIS2	22.000		2.98	65.56	1.40	0.72	4.45	D	EL	46.40	0.88	3.31	D	I	84.00	0.80	0.72	2.98	D	I	46.40	1
		SNCOTTS3	27.250		2.17	59.13	1.40	0.72	3.24	D	EL	46.40	0.88	2.51	D	I	84.00	0.80	0.72	2.17	D	I	46.40	1
		SNAGGRS4	34.925		1.78	62.17	1.40	0.72	2.67	D	EL	46.40	0.88	2.04	D	I	84.00	0.80	0.72	1.78	D	I	46.40	1
		SNS5A	35.550		1.75	62.21	1.40	0.72	2.61	D	EL	46.40	0.88	2.05	D	I	84.00	0.80	0.72	1.75	D	I	46.40	1
		SNS6A	39.950		1.59	63.52	1.40	0.72	2.38	D	EL	46.40	0.88	1.85	D	I	8.70	0.80	0.72	1.59	D	I	46.40	1
		SNS7B	42.000		1.51	63.42	1.40	0.72	2.26	D	EL	46.40	0.88	1.80	D	I	84.00	0.80	0.72	1.51	D	I	46.40	1
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.94	64.02	1.40	0.72	2.89	D	EL	46.40	0.88	2.23	D	I	8.70	0.80	0.72	1.94	D	I	46.40	1
		TNT4A	33.075		1.94	64.17	1.40	0.72	2.90	D	EL	46.40	0.88	2.18	D	I	8.70	0.80	0.72	1.94	D	I	46.40	1
		TNT6A	41.600		1.58	65.73	1.40	0.72	2.36	D	EL	46.40	0.88	1.89	D	I	84.00	0.80	0.72	1.58	D	I	46.40	1
		TNT7A	42.000		1.58	66.36	1.40	0.72	2.36	D	EL	46.40	0.88	1.86	D	I	8.70	0.80	0.72	1.58	D	I	46.40	1
		TNT7B	42.000		1.62	68.04	1.40	0.72	2.42	D	EL	46.40	0.88	1.76	D	I	84.00	0.80	0.72	1.62	D	I	46.40	1
		TNAGRIT4	43.000		1.55	66.65	1.40	0.72	2.32	D	EL	46.40	0.88	1.71	D	I	84.00	0.80	0.72	1.55	D	I	46.40	1
		TNAGT5A	45.000		1.47	66.15	1.40	0.72	2.19	D	EL	46.40	0.88	1.68	D	I	8.70	0.80	0.72	1.47	D	I	46.40	1
		TNAGT5B	45.000	3	1.45	65.25	1.40	0.72	2.17	D	EL	46.40	0.88	1.62	D	I	84.00	0.80	0.72	1.45	D	I	46.40	1

LOAD FACTORS:

	LIMIT STATE	γ_{DC}	γ_{DW}
DESIGN LOAD RATING FACTORS	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. ALL DISTANCES ARE MEASURED FROM THE CENTERLINE OF BEARING AT THE LEFT END OF THE SPAN.
2. SERVICE III LIMIT STATE NOT APPLICABLE AT THE OPERATIONAL LEVEL.
3. SPANS A & M ARE SIMILAR.
4. SPANS B, C, D, E, F, G, H, I, J, K & L ARE SIMILAR.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

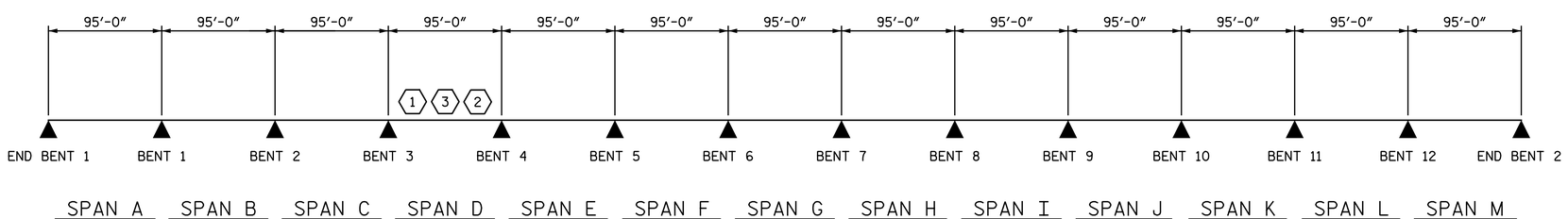
(2) DESIGN LOAD RATING (HS-20)

(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. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459... 5/8/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DUAIN G. HATHAWAY
DocuSigned by: Duain Hathaway 283780710A0460... 5/8/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

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

SHEET NO. S07-6

TOTAL SHEETS 68

DRAWN BY : M. D. MAYHEW DATE : 8-7-13
CHECKED BY : A. L. PHILLIPS DATE : 8-7-13

DWG. 6 OF 68

SITE 4

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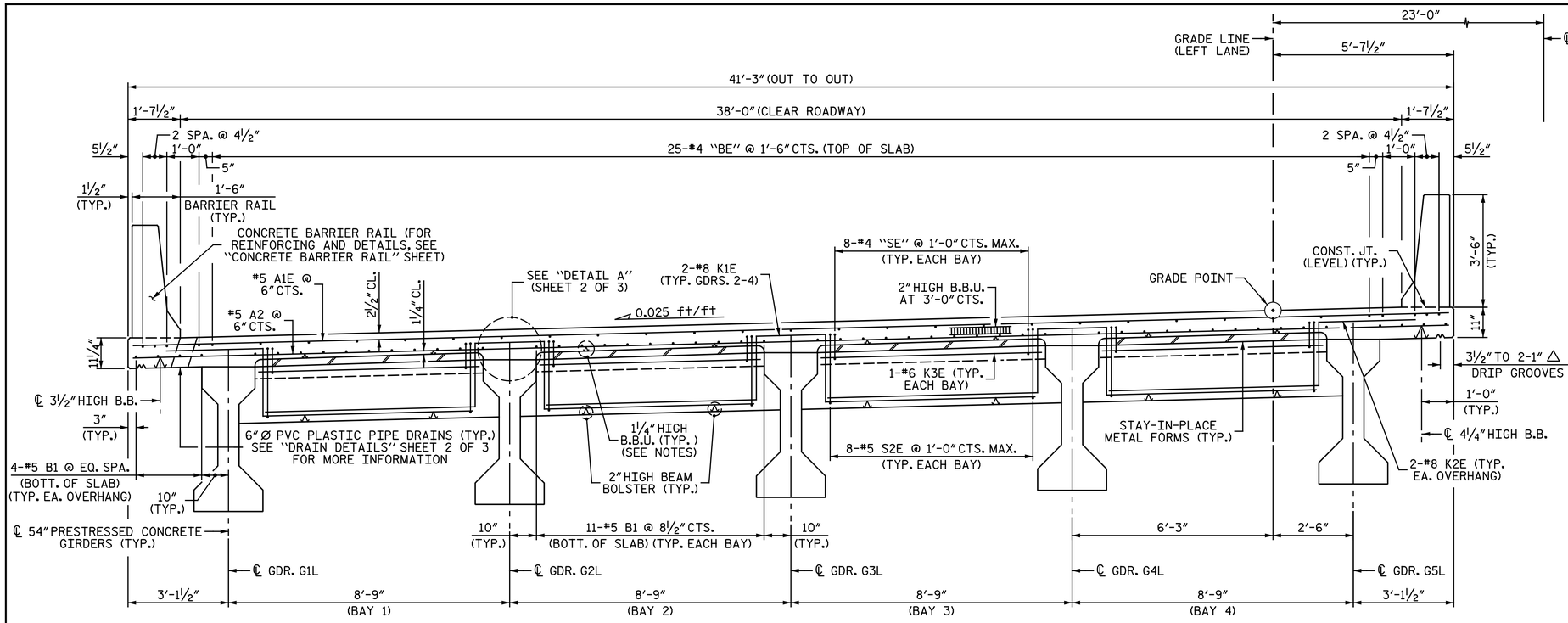
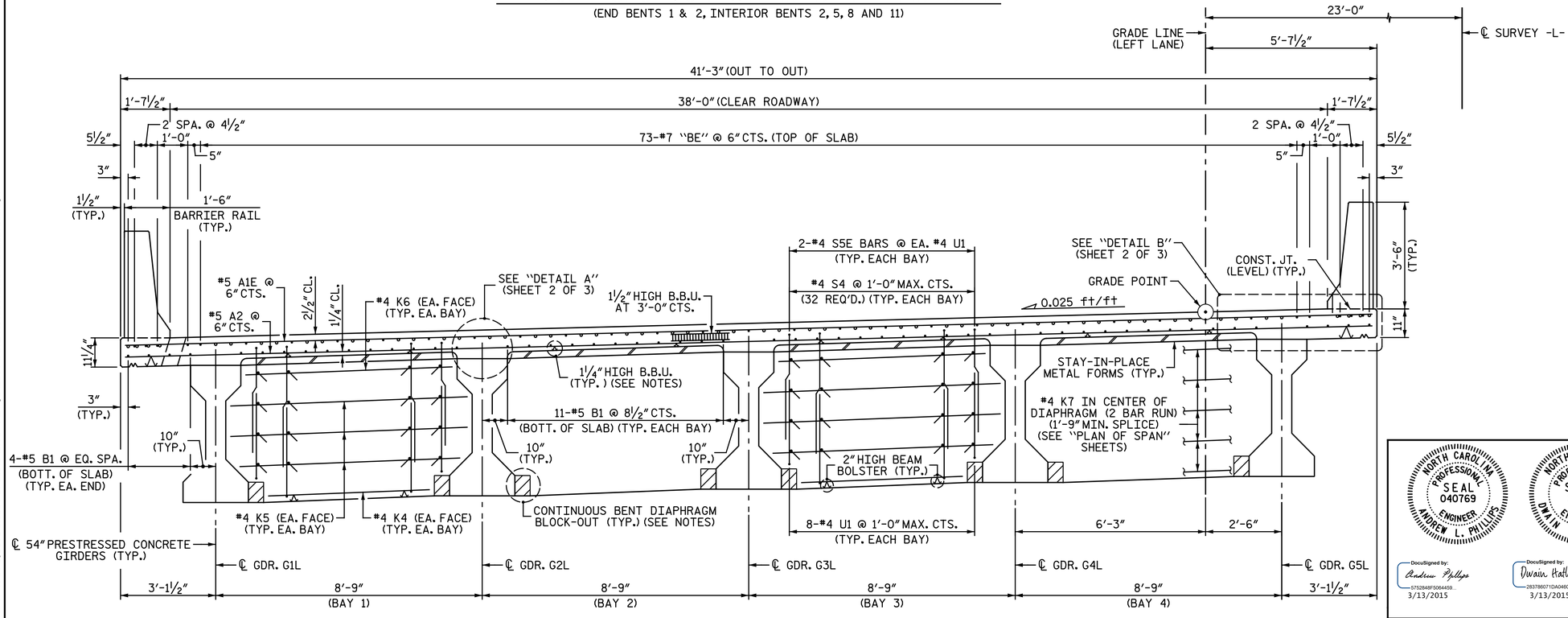


TYPICAL SECTION @ END BENT AND BENT

(END BENTS 1 & 2, INTERIOR BENTS 2, 5, 8 AND 11)



TYPICAL SECTION @ CONTINUOUS BENT

(INTERIOR BENTS 1, 3, 4, 6, 7, 9, 10 AND 12)

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 ABOVE THE TOP OF THE REMOVABLE FORM.

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

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 ADDITIONAL INFORMATION ON DECK SLAB REINFORCING, SEE "PLAN OF SPAN" SHEETS.

FOR "SECTION THRU END BENT DIAPHRAGM" SEE "TYPICAL SECTION DETAILS" SHEET 3 OF 3.

FOR "SECTION THRU INTERIOR BENT DIAPHRAGM" AT BENTS 2, 5, 8 AND 11 SEE "TYPICAL SECTION DETAILS" SHEET 3 OF 3.

FOR "SECTION THRU CONTINUOUS BENT DIAPHRAGM" AT BENTS 1, 3, 4, 6, 7, 9, 10 AND 12 SEE "TYPICAL SECTION DETAILS" SHEET 3 OF 3.

FOR PLAN DETAIL OF END BENT AND BENT DIAPHRAGM, SEE "TYPICAL SECTION DETAILS" SHEET 3 OF 3.

FOR "CONTINUOUS BENT DIAPHRAGM BLOCKOUT DETAIL", SEE "TYPICAL SECTION" SHEET 2 OF 3.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 572D68F5084459...

3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460...

3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-7
1			3			TOTAL SHEETS
2			4			68

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DRAWN BY : M. D. MAYHEW DATE : 7-25-13

CHECKED BY : A. L. PHILLIPS DATE : 7-31-13

DWG. 7 OF 68

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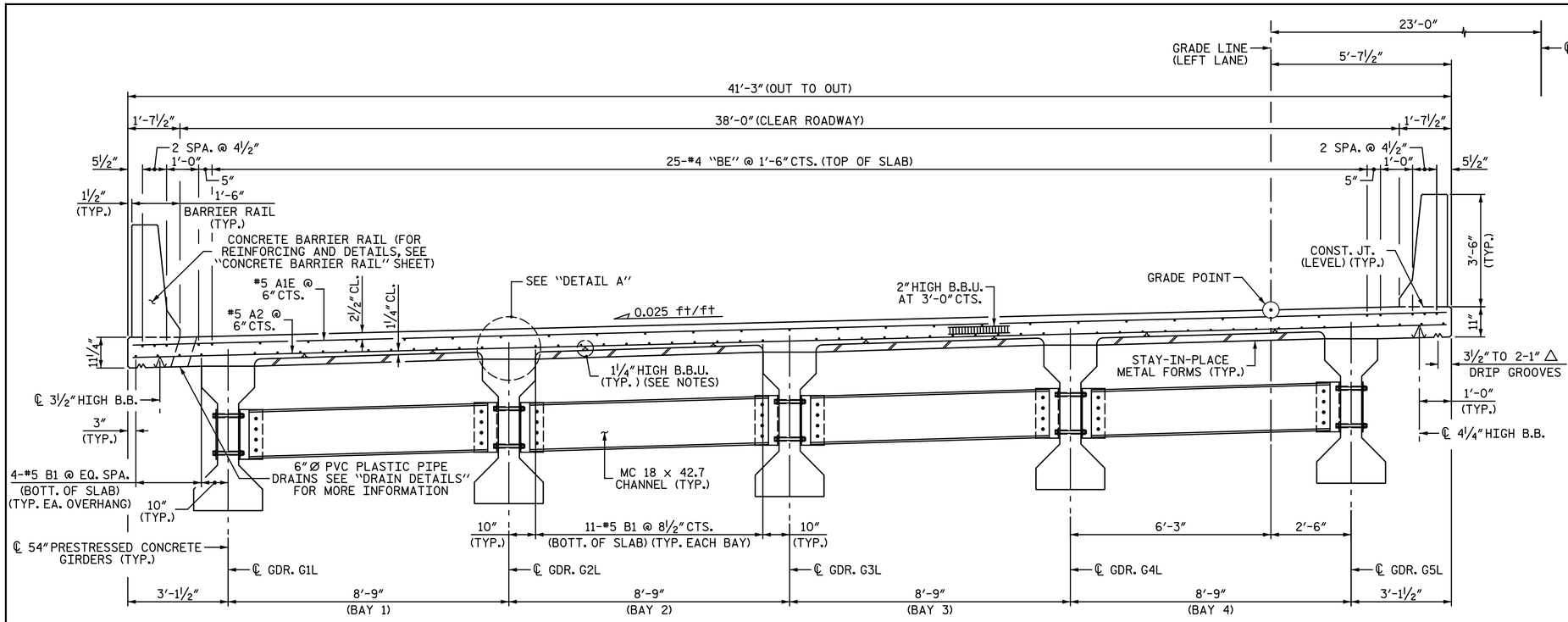
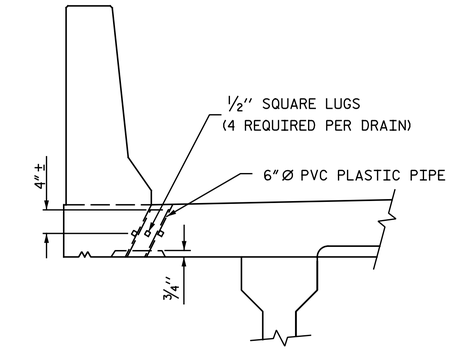


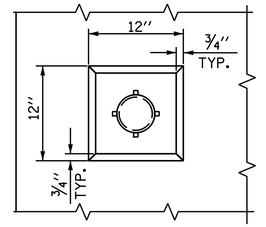
TYPICAL SECTION @ INTERMEDIATE DIAPHRAGM

NOTES:

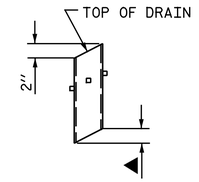
FOR SUPERSTRUCTURE NOTES, SEE "TYPICAL SECTION" SHEET 1 OF 3.



ELEVATION



PLAN OF RECESS



PIPE DETAIL

▲ TO BE SET TO MATCH SLOPE OF BOTTOM OF OVERHANG (61 DRAINS REQUIRED)

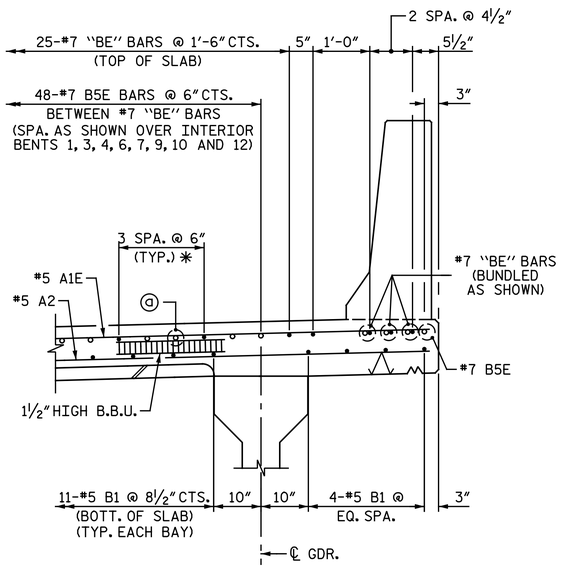
DRAIN DETAILS

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

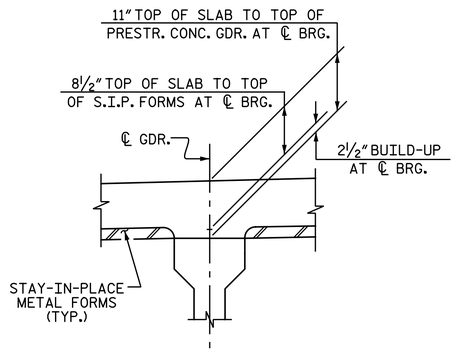
4 - ½" SQUARE LUGS TO BE GLUED TO THE P.V.C. PLASTIC PIPE AT EQUAL SPACES AROUND THE PIPE DRAIN APPROXIMATELY 4" FROM THE TOP OF THE PIPE.

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

SEE "PLAN OF SPAN" FOR DRAIN LOCATIONS AND SPACING



DETAIL B



DETAIL A

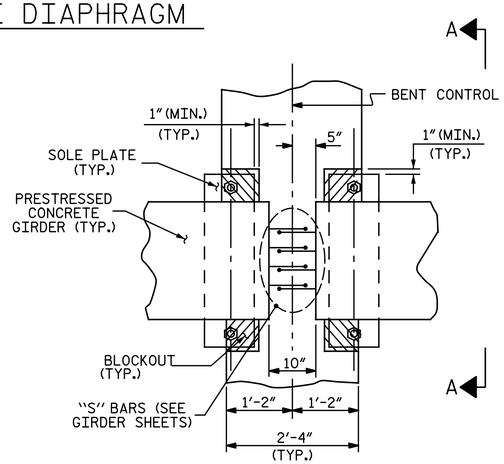
(TYP. EA. GDR. @ EA. BENT)

ⓓ 2-#7 "BE" NON-CONTINUOUS REINFORCING BARS BETWEEN CONTINUOUS REINFORCING OVER INTERIOR BENTS 1, 3, 4, 6, 7, 9, 10 AND 12 (SPA. AS SHOWN)

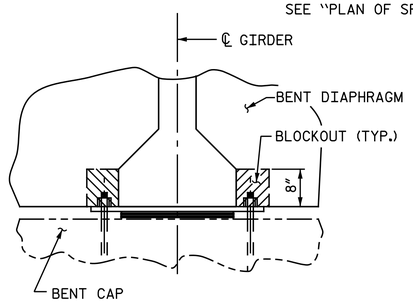
* TYP. SPACING OF NON-CONTINUOUS "BE" BARS BETWEEN CONTINUOUS "BE" BARS.

○ INDICATES NON-CONTINUOUS REINFORCING STEEL OVER BENT.

• INDICATES CONTINUOUS REINFORCING STEEL FOR END BENT 1, INTERIOR BENTS 2, 5, 8, 11 AND END BENT 2.



PLAN



SECTION A-A

BENT DIAPHRAGM BLOCKOUT DETAIL

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-8
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : M. D. MAYHEW DATE : 7-29-13

CHECKED BY : A. L. PHILLIPS DATE : 7-31-13

DWG. 8 OF 68

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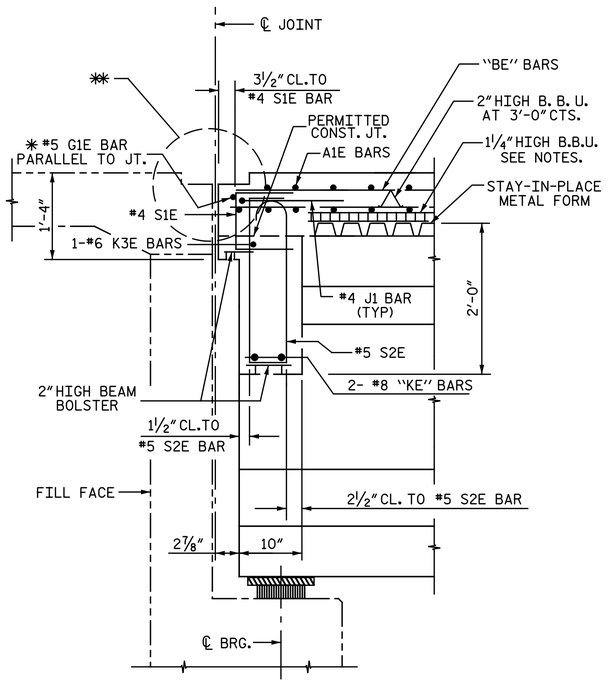
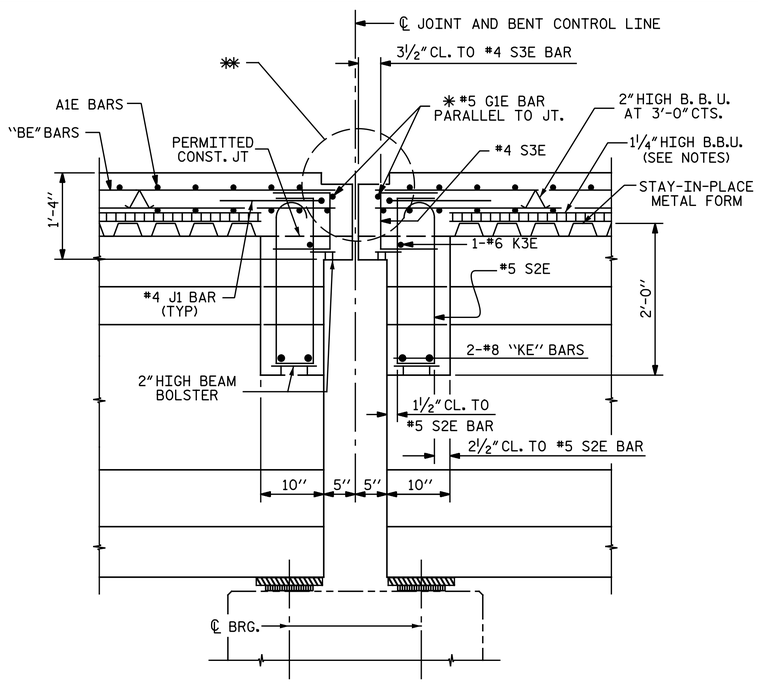
SITE 4



SECTION THRU END BENT DIAPHRAGM

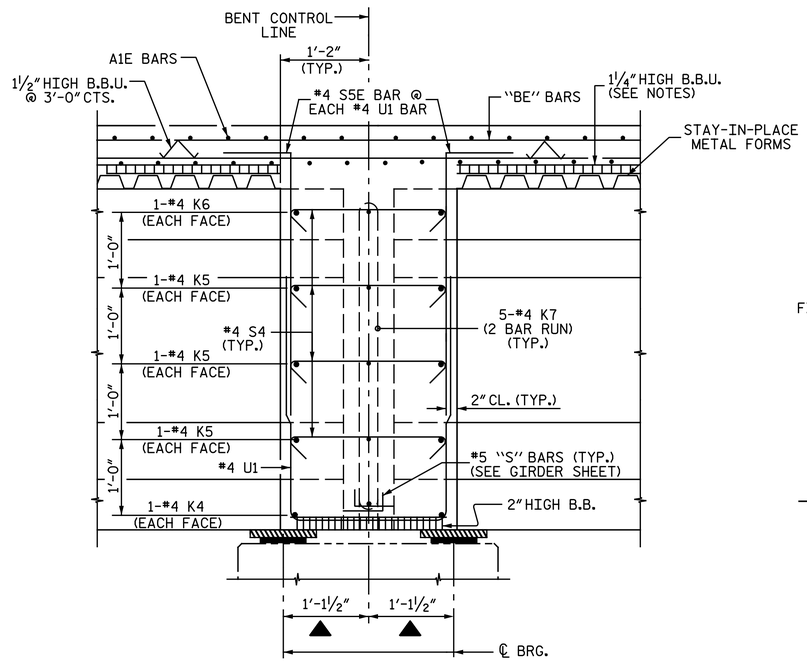
✳ #5 G1E BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL AND STIRRUPS.



SECTION THRU BENT DIAPHRAGM

(INTERIOR BENTS 2, 5, 8 AND 11)

✳ #5 G1E BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL AND STIRRUPS.

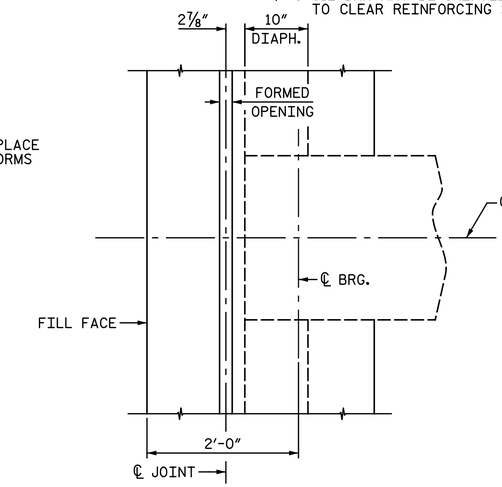


SECTION THRU CONTINUOUS BENT DIAPHRAGM

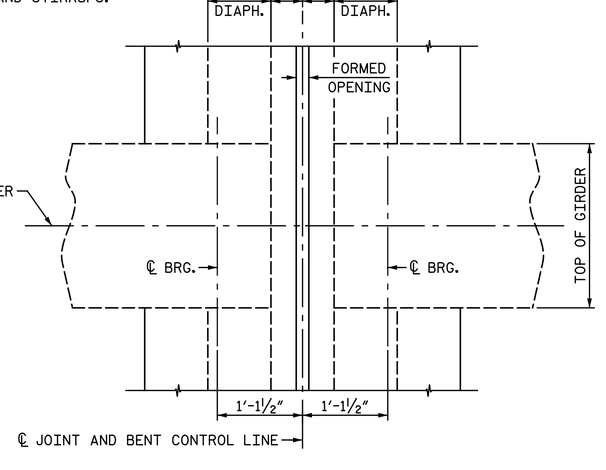
(INTERIOR BENTS 1, 3, 4, 6, 7, 9, 10 AND 12)

▲ DIMENSION MEASURED ALONG ℄ GIRDER

✳ #5 G1E BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL AND STIRRUPS.



END BENT DIAPHRAGM PLAN



INTERIOR BENT DIAPHRAGM PLAN

(INTERIOR BENTS 2, 5, 8 AND 11)

NOTES:

FOR SUPERSTRUCTURE NOTES, SEE "TYPICAL SECTION" SHEET 1 OF 3.

✳✳ EXPANSION JOINT SEAL IS REQUIRED BUT NOT SHOWN. SEE "EXPANSION JOINT SEAL DETAILS" SHEET.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 3 OF 3

DRAWN BY : MDM/NBS DATE : 7-29-13

CHECKED BY : A. L. PHILLIPS DATE : 7-31-13

DWG. 9 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5006459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

Baker

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION DETAILS

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-9
1			3			TOTAL SHEETS
2			4			68

SITE 4

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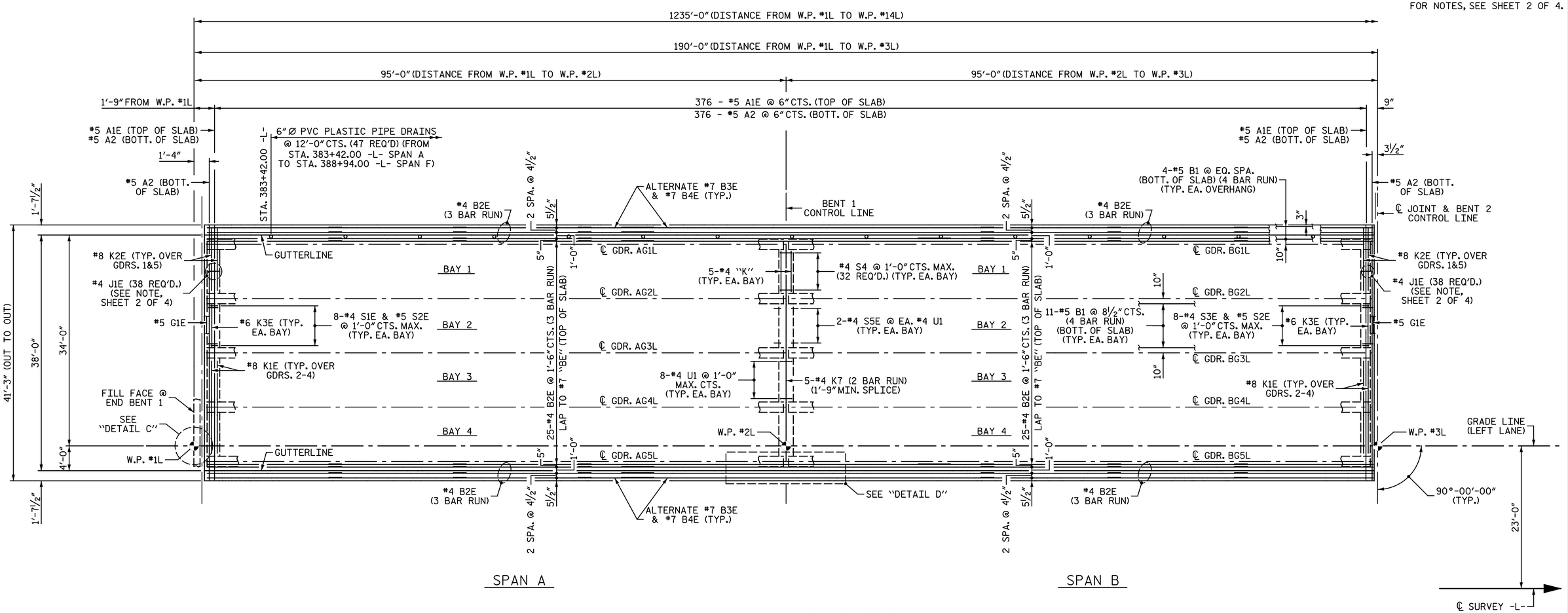
NOTES:

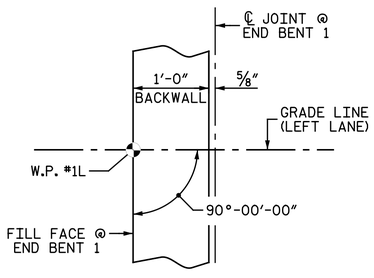
FOR NOTES, SEE SHEET 2 OF 4.



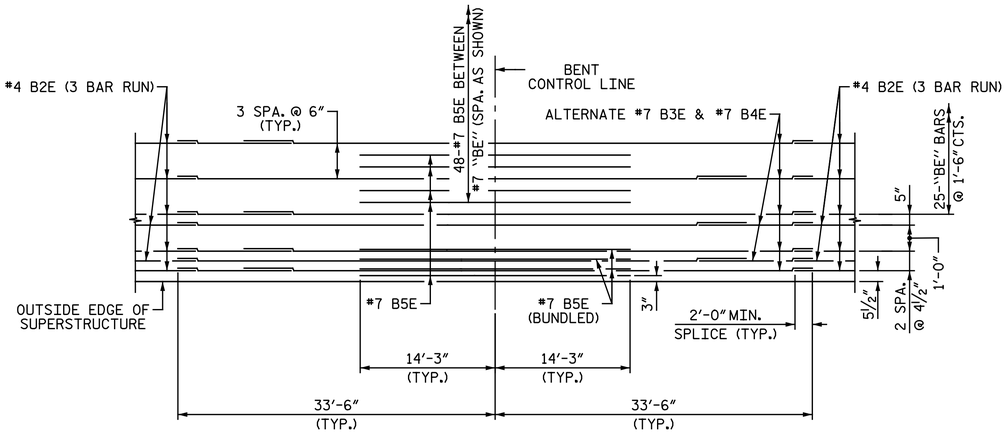
SPAN A

SPAN B

PART PLAN OF SPANS



DETAIL C



DETAIL D

LONGITUDINAL REINFORCING TOP OF SLAB
REINFORCING IS SYMMETRICAL ABOUT BRIDGE ℄

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 4

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN C. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN
UNIT 1

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-10
1			3			TOTAL SHEETS
2			4			68

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CHECKED BY : A. L. PHILLIPS DATE : 8-5-13

DWG. 10 OF 68

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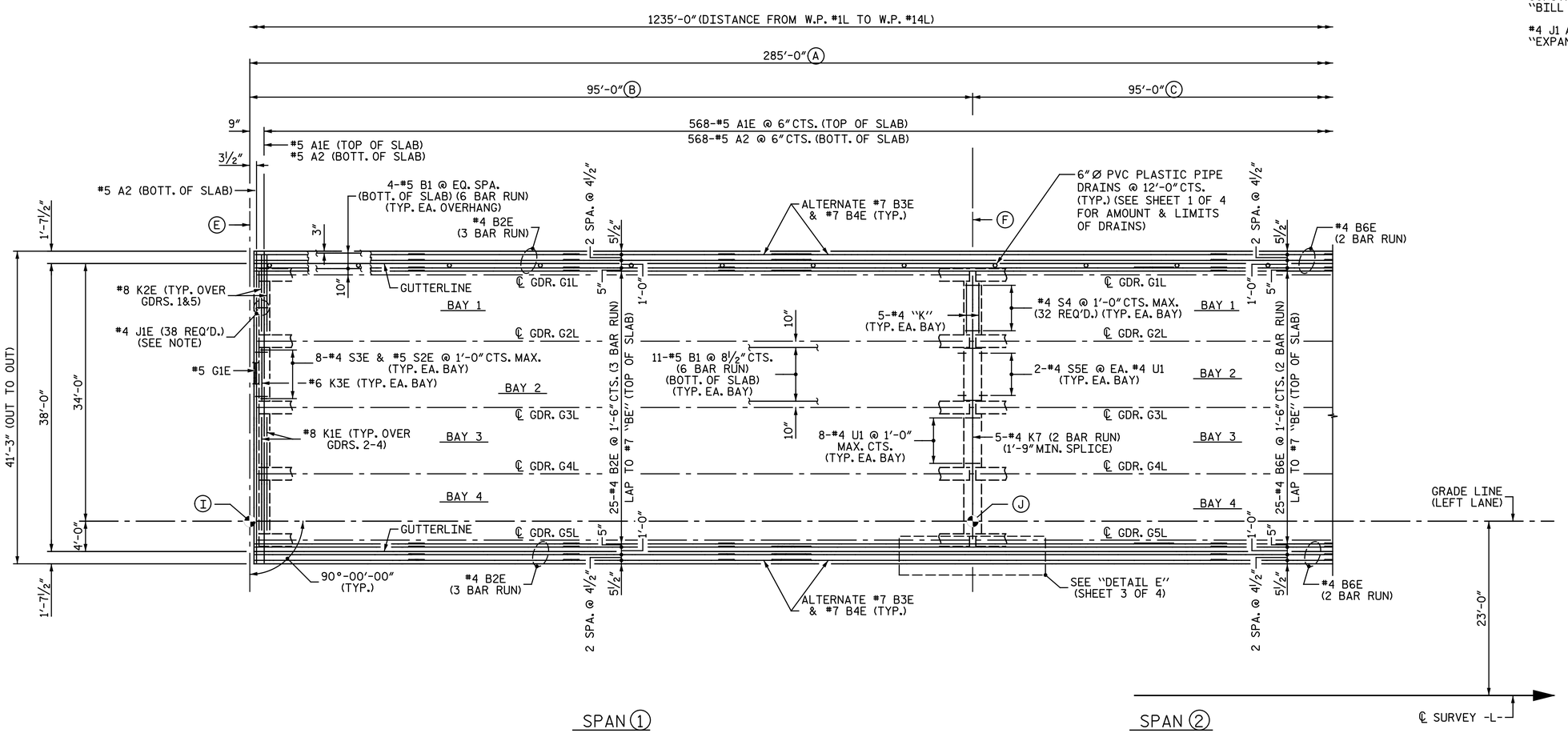
NOTES:

FOR POUR SEQUENCE AND LOCATION OF CONSTRUCTION JOINT, SEE SUPERSTRUCTURE "BILL OF MATERIAL" SHEET.

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



PART PLAN OF SPANS

TABLE OF VARIABLES

		UNIT 2	UNIT 3	UNIT 4
SPAN LENGTH	Ⓐ	DISTANCE FROM W.P. #3L TO W.P. #6L	DISTANCE FROM W.P. #6L TO W.P. #9L	DISTANCE FROM W.P. #9L TO W.P. #12L
	Ⓑ	DISTANCE FROM W.P. #3L TO W.P. #4L	DISTANCE FROM W.P. #6L TO W.P. #7L	DISTANCE FROM W.P. #9L TO W.P. #10L
	Ⓒ	DISTANCE FROM W.P. #4L TO W.P. #5L	DISTANCE FROM W.P. #7L TO W.P. #8L	DISTANCE FROM W.P. #10L TO W.P. #11L
	Ⓓ	DISTANCE FROM W.P. #5L TO W.P. #6L	DISTANCE FROM W.P. #8L TO W.P. #9L	DISTANCE FROM W.P. #11L TO W.P. #12L
BENT CONTROL LINE	Ⓔ	℄ JOINT & BENT 2 CONTROL LINE	℄ JOINT & BENT 5 CONTROL LINE	℄ JOINT & BENT 8 CONTROL LINE
	Ⓕ	BENT 3 CONTROL LINE	BENT 6 CONTROL LINE	BENT 9 CONTROL LINE
	Ⓖ	BENT 4 CONTROL LINE	BENT 7 CONTROL LINE	BENT 10 CONTROL LINE
	Ⓗ	℄ JOINT & BENT 5 CONTROL LINE	℄ JOINT & BENT 8 CONTROL LINE	℄ JOINT & BENT 11 CONTROL LINE
WORK POINT NUMBER	Ⓘ	W.P. #3L	W.P. #6L	W.P. #9L
	Ⓙ	W.P. #4L	W.P. #7L	W.P. #10L
	Ⓚ	W.P. #5L	W.P. #8L	W.P. #11L
	Ⓛ	W.P. #6L	W.P. #9L	W.P. #12L
SPAN DESIGNATION	①	SPAN C	SPAN F	SPAN I
	②	SPAN D	SPAN G	SPAN J
	③	SPAN E	SPAN H	SPAN K

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 4

DRAWN BY : M. D. MAYHEW DATE : 8-1-13

CHECKED BY : A. L. PHILLIPS DATE : 8-5-13

DWG. 11 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN UNITS 2-4

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-11
1			3			TOTAL SHEETS
2			4			68

SITE 4

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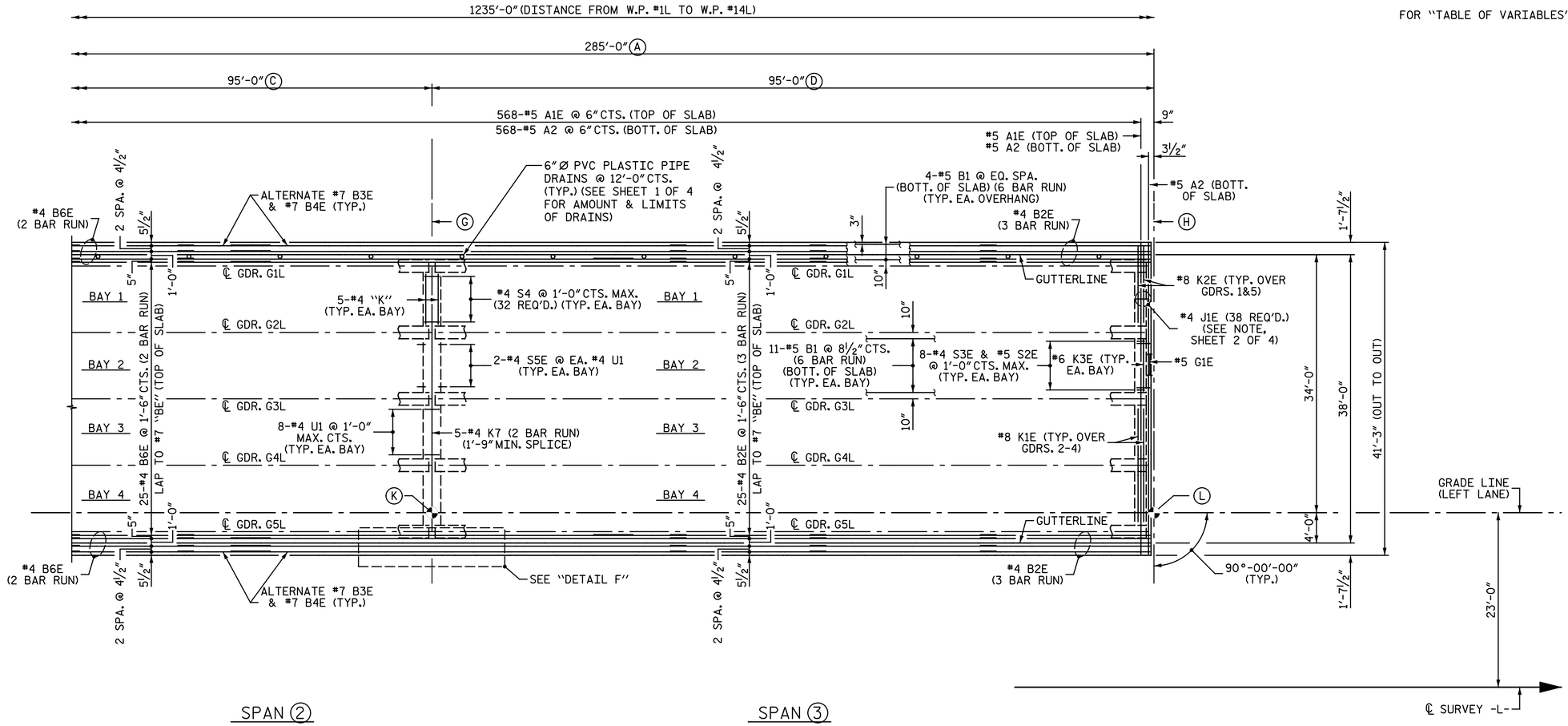
NOTES:

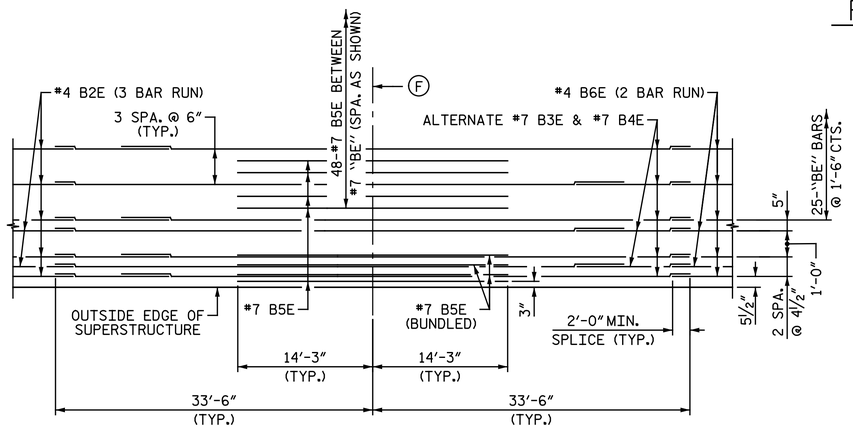
FOR NOTES, SEE SHEET 2 OF 4.

FOR "TABLE OF VARIABLES", SEE SHEET 2 OF 4.



PART PLAN OF SPANS

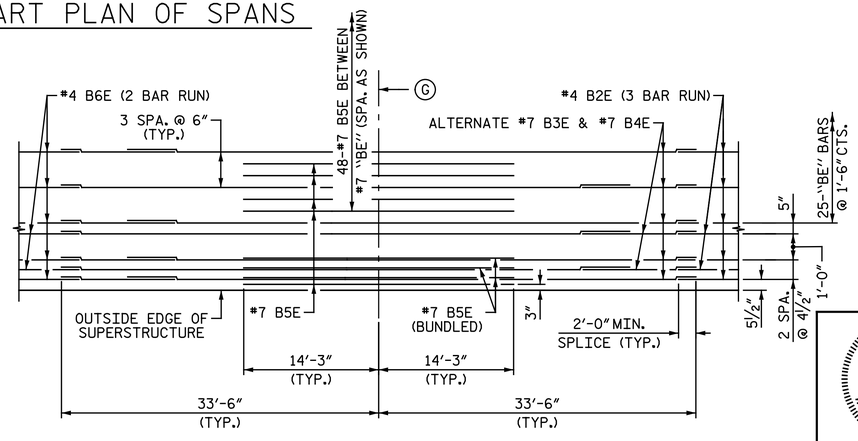
SPAN ②



DETAIL E

LONGITUDINAL REINFORCING TOP OF SLAB
REINFORCING IS SYMMETRICAL ABOUT BRIDGE ℄

SPAN ③



DETAIL F

LONGITUDINAL REINFORCING TOP OF SLAB
REINFORCING IS SYMMETRICAL ABOUT BRIDGE ℄

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 3 OF 4

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN C. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN UNITS 2-4

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-12
1			3			TOTAL SHEETS
2			4			68

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No.: F-1084

DRAWN BY : M. D. MAYHEW DATE : 8-1-13
CHECKED BY : A. L. PHILLIPS DATE : 8-5-13

DWG. 12 OF 68

SITE 4

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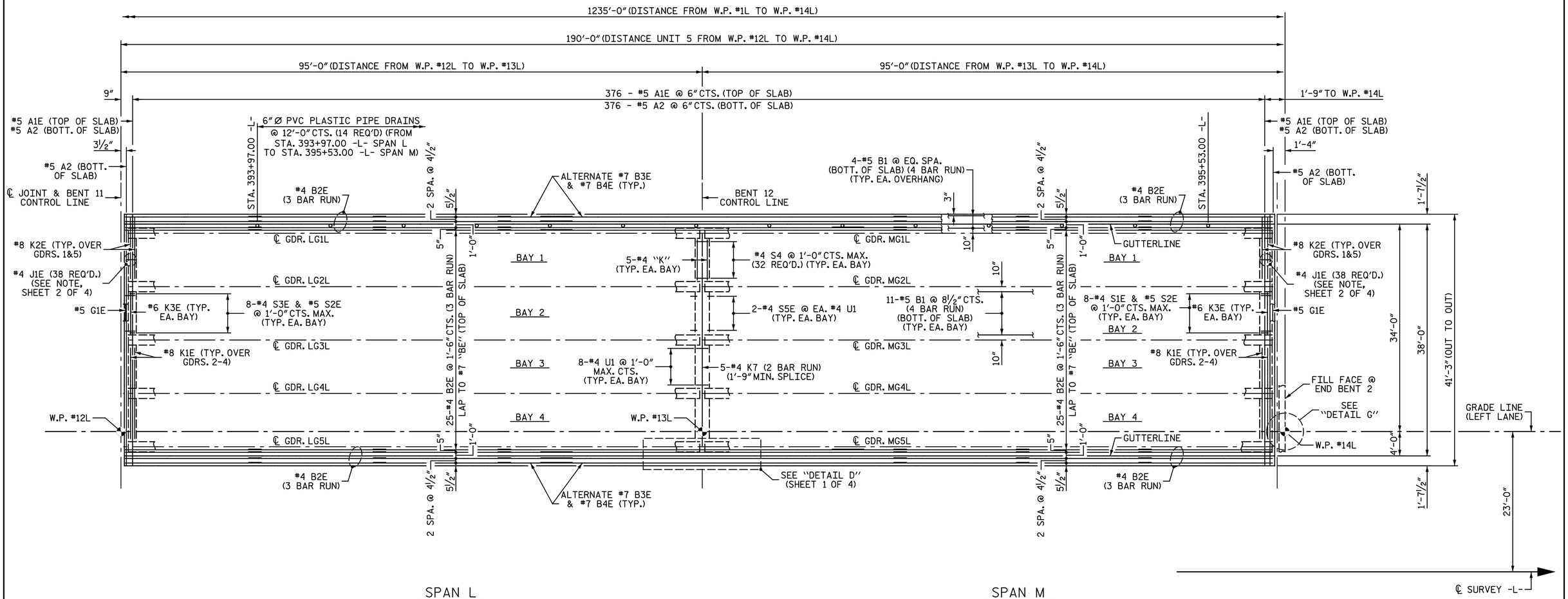
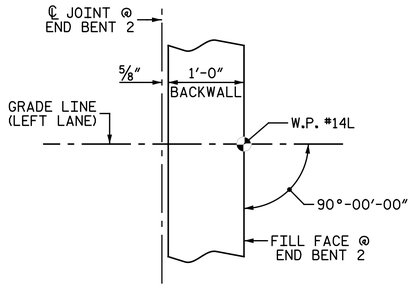
NOTES:

FOR NOTES, SEE SHEET 2 OF 4.



PART PLAN OF SPANS



DETAIL G

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 4 OF 4

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN
UNIT 5

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-13
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : M. D. MAYHEW DATE : 8-1-13

CHECKED BY : A. L. PHILLIPS DATE : 8-5-13

DWG. 13 OF 68

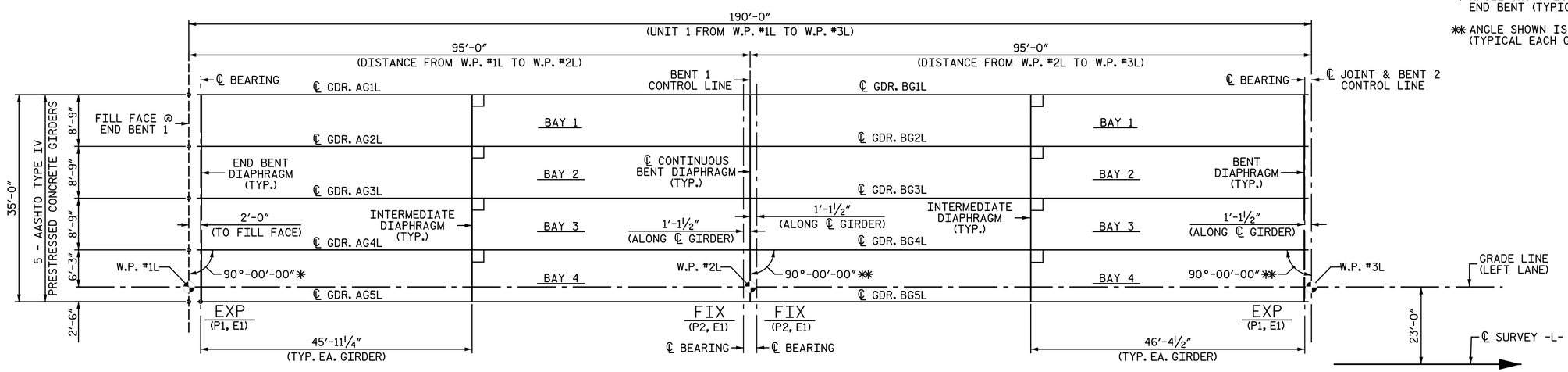
SITE 4

NOTES:

FOR STEEL DIAPHRAGM DETAILS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET.

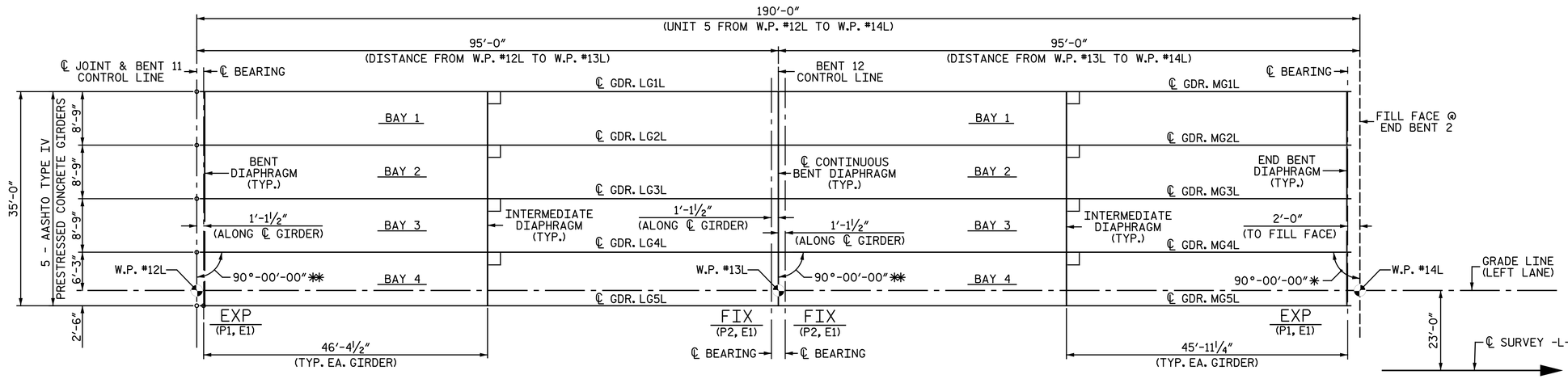
✳ ANGLE SHOWN IS FROM ℄ GIRDER TO FILL FACE AT END BENT (TYPICAL EACH GIRDER)

✳✳ ANGLE SHOWN IS FROM ℄ GIRDER TO BENT CONTROL LINE (TYPICAL EACH GIRDER)



FRAMING PLAN - UNIT 1

END BENTS AND BENTS ARE PARALLEL



FRAMING PLAN - UNIT 5

END BENTS AND BENTS ARE PARALLEL

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064450... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DUAIN G. HATHAWAY

DocuSigned by: Duain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

FRAMING PLAN

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-14
1			3			TOTAL SHEETS
2			4			68

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

DRAWN BY : N. B. SPEAKS DATE : 7-29-13
CHECKED BY : A. L. PHILLIPS DATE : 7-31-13

DWG. 14 OF 68

SITE 4

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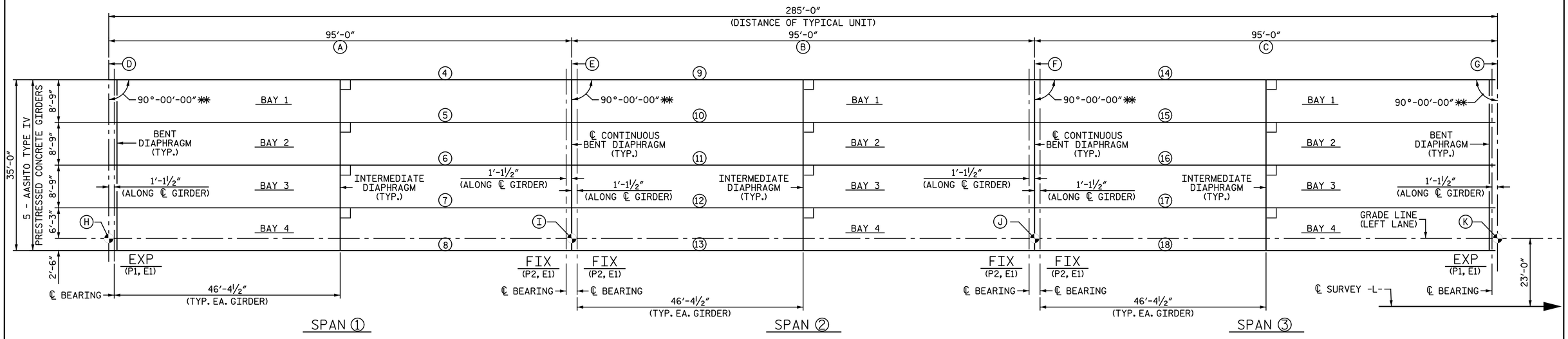
NOTES:

FOR STEEL DIAPHRAGM DETAILS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET.

✱✱ANGLE SHOWN IS FROM ℄ GIRDER TO BENT CONTROL LINE (TYPICAL EACH GIRDER)



FRAMING PLAN - UNITS 2 THRU 4

BENTS ARE PARALLEL

TABLE OF VARIABLES

		UNIT 2	UNIT 3	UNIT 4
SPAN LENGTH	Ⓐ	DISTANCE FROM W.P. #3L TO W.P. #4L	DISTANCE FROM W.P. #6L TO W.P. #7L	DISTANCE FROM W.P. #9L TO W.P. #10L
	Ⓑ	DISTANCE FROM W.P. #4L TO W.P. #5L	DISTANCE FROM W.P. #7L TO W.P. #8L	DISTANCE FROM W.P. #10L TO W.P. #11L
	Ⓒ	DISTANCE FROM W.P. #5L TO W.P. #6L	DISTANCE FROM W.P. #8L TO W.P. #9L	DISTANCE FROM W.P. #11L TO W.P. #12L
BENT CONTROL LINE	Ⓓ	℄ JOINT & BENT 2 CONTROL LINE	℄ JOINT & BENT 5 CONTROL LINE	℄ JOINT & BENT 8 CONTROL LINE
	Ⓔ	BENT 3 CONTROL LINE	BENT 6 CONTROL LINE	BENT 9 CONTROL LINE
	Ⓕ	BENT 4 CONTROL LINE	BENT 7 CONTROL LINE	BENT 10 CONTROL LINE
	Ⓖ	℄ JOINT & BENT 5 CONTROL LINE	℄ JOINT & BENT 8 CONTROL LINE	℄ JOINT & BENT 11 CONTROL LINE
WORK POINT NUMBER	Ⓗ	W.P. #3L	W.P. #6L	W.P. #9L
	Ⓘ	W.P. #4L	W.P. #7L	W.P. #10L
	Ⓙ	W.P. #5L	W.P. #8L	W.P. #11L
	Ⓚ	W.P. #6L	W.P. #9L	W.P. #12L
SPAN DESIGNATION	①	SPAN C	SPAN F	SPAN I
	②	SPAN D	SPAN G	SPAN J
	③	SPAN E	SPAN H	SPAN K
GIRDER DESIGNATION	④	℄ GDR. CG1L	℄ GDR. FG1L	℄ GDR. IG1L
	⑤	℄ GDR. CG2L	℄ GDR. FG2L	℄ GDR. IG2L
	⑥	℄ GDR. CG3L	℄ GDR. FG3L	℄ GDR. IG3L
	⑦	℄ GDR. CG4L	℄ GDR. FG4L	℄ GDR. IG4L
	⑧	℄ GDR. CG5L	℄ GDR. FG5L	℄ GDR. IG5L
	⑨	℄ GDR. DG1L	℄ GDR. GG1L	℄ GDR. JG1L
	⑩	℄ GDR. DG2L	℄ GDR. GG2L	℄ GDR. JG2L
	⑪	℄ GDR. DG3L	℄ GDR. GG3L	℄ GDR. JG3L
	⑫	℄ GDR. DG4L	℄ GDR. GG4L	℄ GDR. JG4L
	⑬	℄ GDR. DG5L	℄ GDR. GG5L	℄ GDR. JG5L
	⑭	℄ GDR. EG1L	℄ GDR. HG1L	℄ GDR. KG1L
	⑮	℄ GDR. EG2L	℄ GDR. HG2L	℄ GDR. KG2L
	⑯	℄ GDR. EG3L	℄ GDR. HG3L	℄ GDR. KG3L
	⑰	℄ GDR. EG4L	℄ GDR. HG4L	℄ GDR. KG4L
	⑱	℄ GDR. EG5L	℄ GDR. HG5L	℄ GDR. KG5L

DRAWN BY : N. B. SPEAKS DATE : 7-29-13
CHECKED BY : A. L. PHILLIPS DATE : 7-31-13

DWG. 15 OF 68

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-
SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459...
3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283786071D40400...
3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

FRAMING PLAN

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-15
1			3			TOTAL SHEETS
2			4			68

SITE 4

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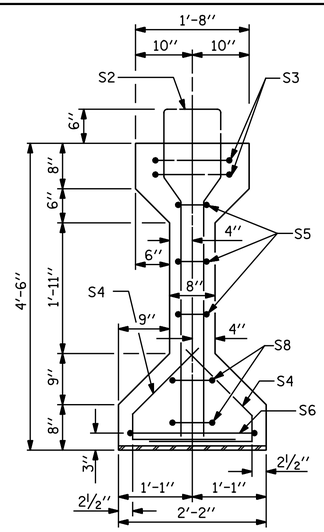
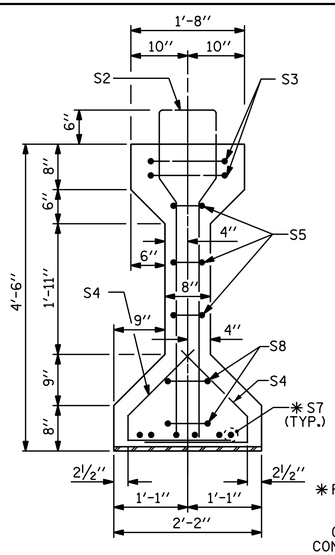
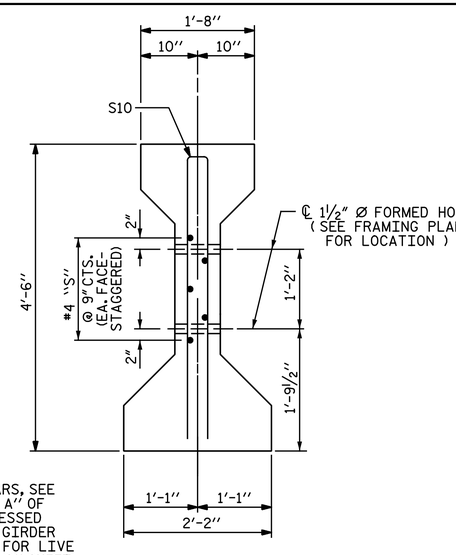


SECTION A-A

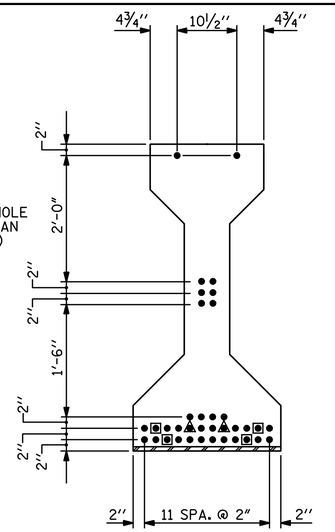


SECTION B-B

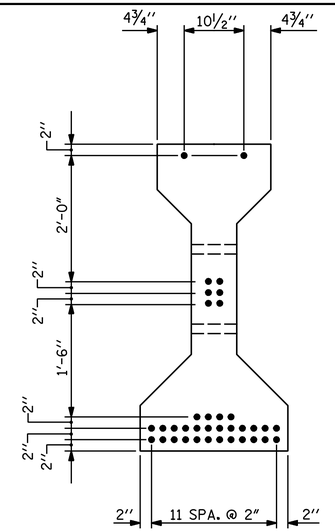
✱FOR S7 BARS, SEE "DETAIL A" OF "PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD DETAILS" SHEET 4 OF 5.



SECTION C-C
(S1 BARS NOT SHOWN)



AT END OF GIRDER

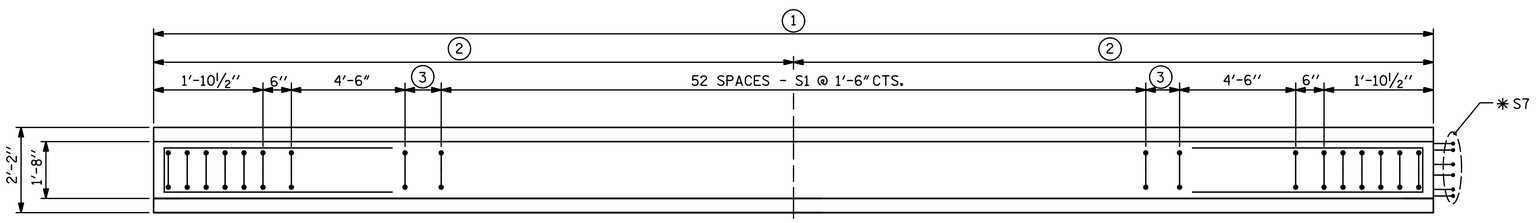


AT ℄ OF GIRDER

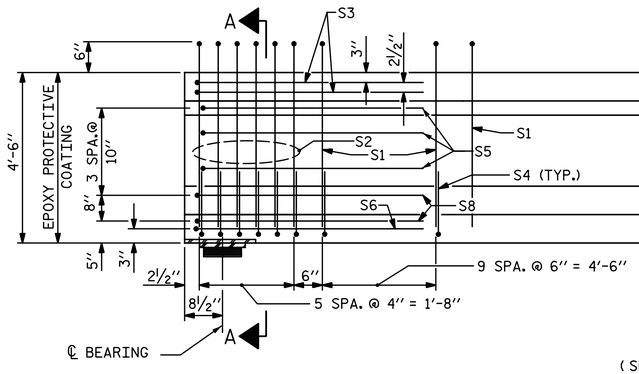
0.6" Ø LOW RELAXATION STRAND LAYOUT

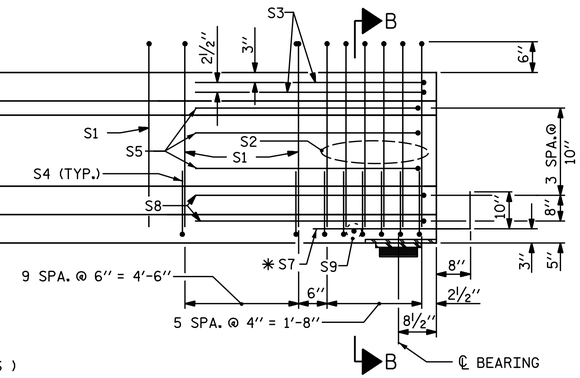
● STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
▲ STRANDS DEBONDED FOR 6'-0" FROM END OF GIRDER

SPAN	①	②	③
A	93'-3½"	46'-7¾"	9¼"
C	94'-2"	47'-1"	1'-2½"
F	94'-2"	47'-1"	1'-2½"
I	94'-2"	47'-1"	1'-2½"
L	94'-2"	47'-1"	1'-2½"

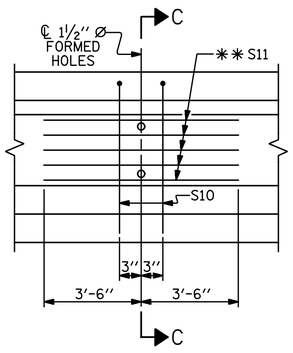


PLAN OF GIRDER





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



PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 1-5
✱✱S11 BARS MAY BE SHIFTED SLIGHTLY AS NEEDED TO AVOID STRANDS.

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

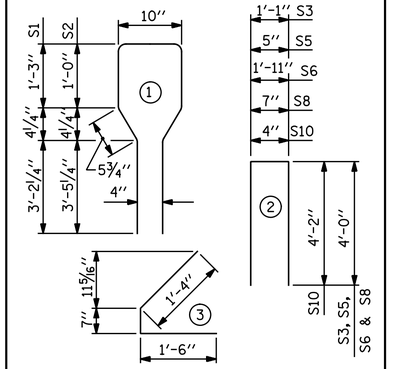
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	73	#4	1	10'-8"	520
S2	12	#6	1	10'-8"	192
S3	4	#4	2	9'-1"	24
S4	64	#4	3	3'-5"	146
S5	6	#4	2	8'-5"	34
S6	1	#4	2	9'-11"	7
✱S7	6	#5	STR	3'-8"	23
S8	4	#4	2	8'-7"	23
S9	1	#3	STR	1'-10"	1
S10	2	#5	2	8'-8"	18
S11	5	#4	STR	7'-0"	23

✱NOTE: S7 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.	8,000 PSI CONCRETE C.Y.	0.6" Ø L. R. STRANDS No.
SPAN A	1011	18.9	36
SPANS C,F,I & L	1011	19.1	36

GIRDERS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
SPAN A	5	93'-3½"	466'-5½"
SPANS C, F, I & L	20	94'-2"	1883'-4"

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 1 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459... 5/8/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 DRAWN ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460... 5/8/2015

Baker
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8000 Regency Parkway, Suite 600
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
AASHTO TYPE IV
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPANS A, C, F, I & L
LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-16
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 7-31-13
CHECKED BY : A. L. PHILLIPS DATE : 8-7-13

DWG. 16 OF 68

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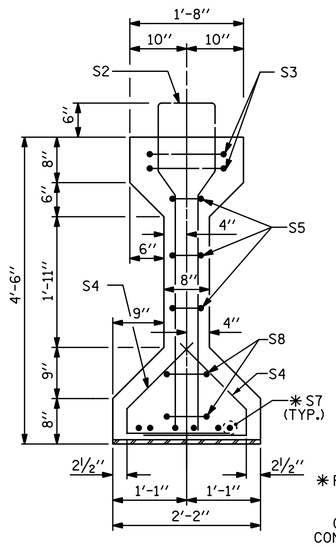
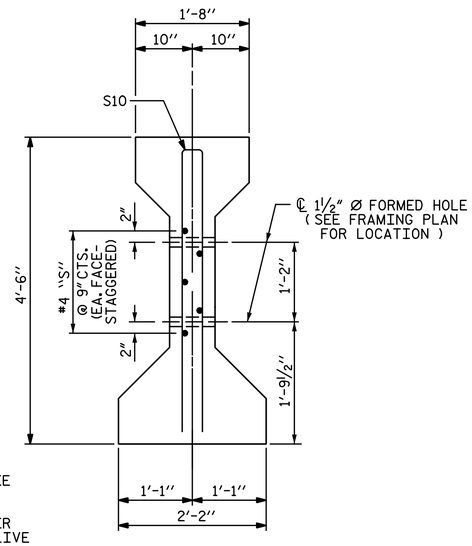
SITE 4



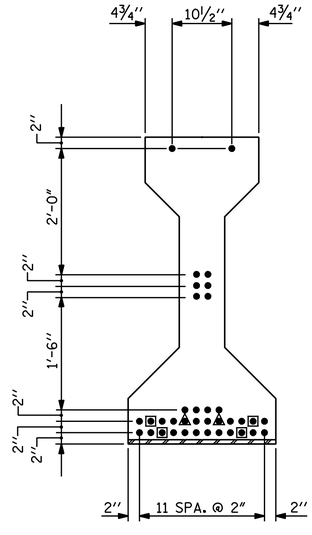
✳FOR S7 BARS, SEE "DETAIL A" OF "PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD DETAILS" SHEET 4 OF 5.

SECTION A-A

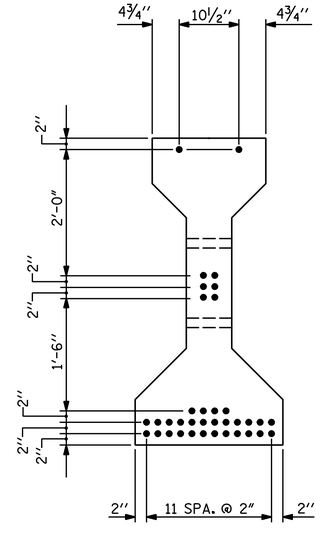


SECTION C-C

(S1 BARS NOT SHOWN)



AT END OF GIRDER

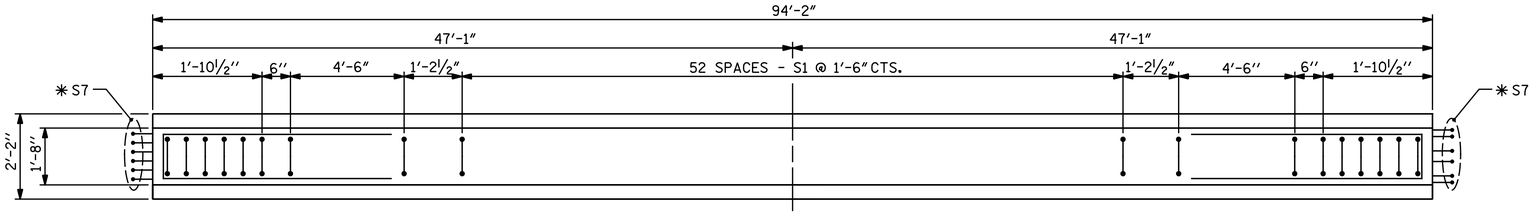


AT ℄ OF GIRDER

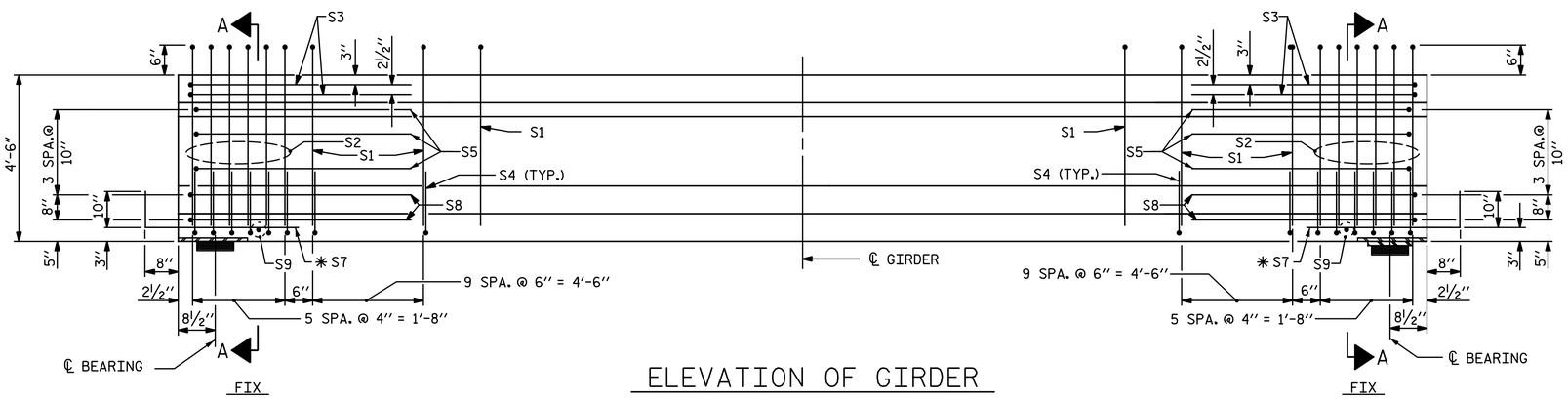
0.6" Ø LOW RELAXATION STRAND LAYOUT

● STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER

▲ STRANDS DEBONDED FOR 6'-0" FROM END OF GIRDER

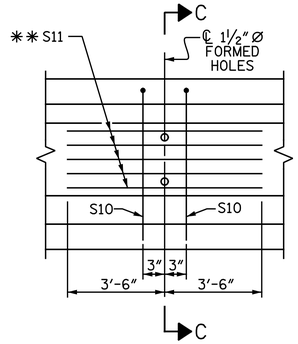


PLAN OF GIRDER



ELEVATION OF GIRDER

(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 1-5

✳✳S11 BARS MAY BE SHIFTED SLIGHTLY AS NEEDED TO AVOID STRANDS.

0.6" Ø L. R. GRADE 270 STRANDS

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REINFORCING STEEL FOR ONE GIRDER

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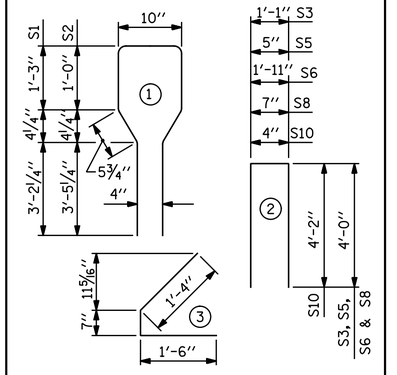
S5	6	#4	2	8'-5"	34
✳S7	12	#5	STR	3'-8"	46
S8	4	#4	2	8'-7"	23
S9	2	#3	STR	1'-10"	1
S10	2	#5	2	8'-8"	18
S11	5	#4	STR	7'-0"	23

✳NOTE: S7 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.	8,000 PSI CONCRETE C.Y.	0.6" Ø L.R. STRANDS No.
SPANS D, G & J	1027	19.1	36

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
15	94'-2"	1412'-6"

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 5/8/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283788071DA0460... 5/8/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

AASHTO TYPE IV

PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD SPANS D, G & J

LEFT LANE

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

SHEET NO. S07-17

TOTAL SHEETS 68

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
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DRAWN BY : N. B. SPEAKS DATE : 8-6-13

CHECKED BY : A. L. PHILLIPS DATE : 8-7-13

DWG. 17 OF 68

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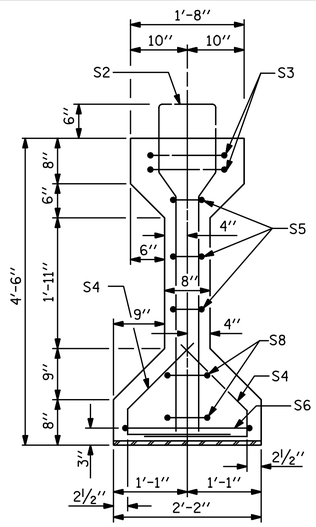
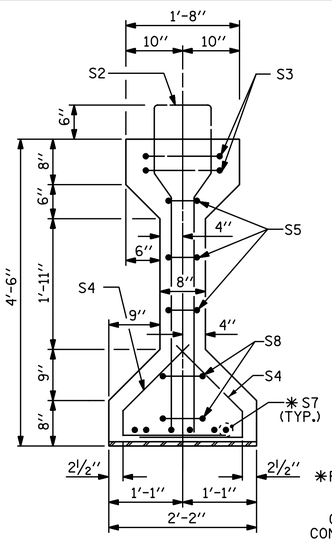
SITE 4

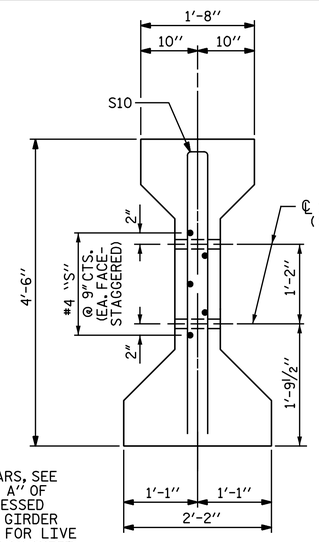


SECTION A-A

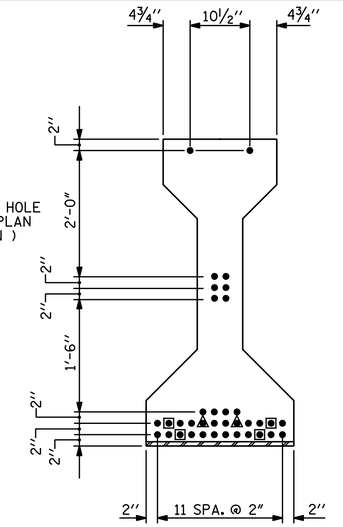


SECTION B-B

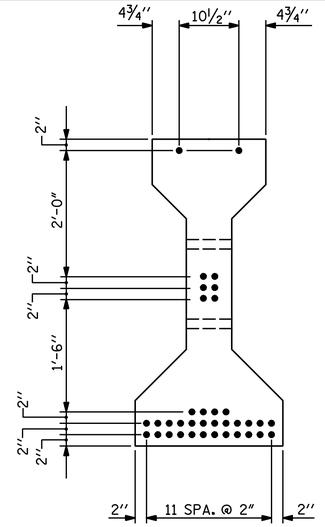
✱FOR S7 BARS, SEE "DETAIL A" OF "PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD DETAILS" SHEET 4 OF 5.



SECTION B-B
(S1 BARS NOT SHOWN)



AT END OF GIRDER

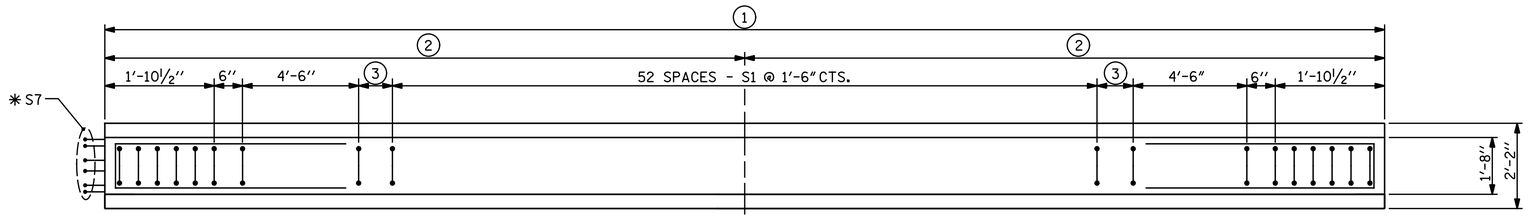


AT ℄ OF GIRDER

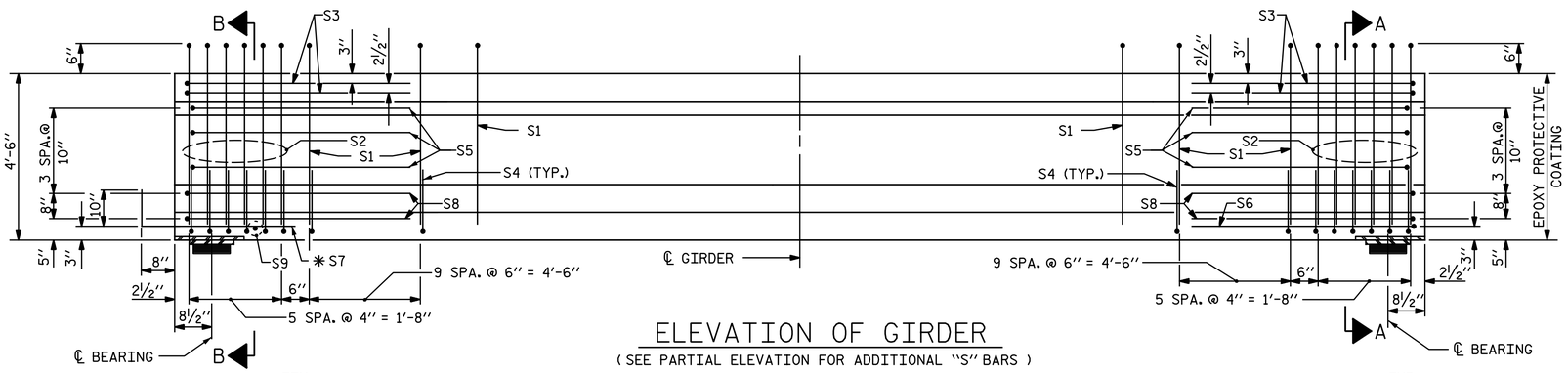
0.6" Ø LOW RELAXATION STRAND LAYOUT

● STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
▲ STRANDS DEBONDED FOR 6'-0" FROM END OF GIRDER

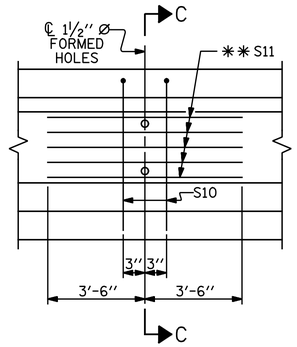
SPAN	①	②	③
B	94'-2"	47'-1"	1'-2½"
E	94'-2"	47'-1"	1'-2½"
H	94'-2"	47'-1"	1'-2½"
K	94'-2"	47'-1"	1'-2½"
M	93'-3½"	46'-7¾"	9¼"



PLAN OF GIRDER



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



PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 1-5

✱✱S11 BARS MAY BE SHIFTED SLIGHTLY AS NEEDED TO AVOID STRANDS.

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

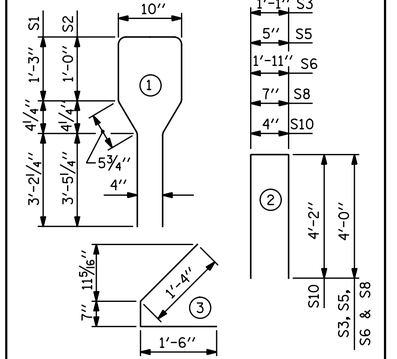
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	73	#4	1	10'-8"	520
S2	12	#6	1	10'-8"	192
S3	4	#4	2	9'-1"	24
S4	64	#4	3	3'-5"	146
S5	6	#4	2	8'-5"	34
S6	1	#4	2	9'-11"	7
✱S7	6	#5	STR	3'-8"	23
S8	4	#4	2	8'-7"	23
S9	1	#3	STR	1'-10"	1
S10	2	#5	2	8'-8"	18
S11	5	#4	STR	7'-0"	23

✱NOTE: S7 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	8,000 PSI CONCRETE	0.6" Ø L. R. STRANDS
	LB.	C.Y.	No.
SPANS B, E, H & K	1011	19.1	36
SPAN M	1011	18.9	36

GIRDERS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
SPANS B, E, H & K	20	94'-2"	1883'-4"
SPAN M	5	93'-3½"	466'-5½"

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
AASHTO TYPE IV
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPANS B, E, H, K & M
LEFT LANE

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459...
5/8/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DUWAIN G. HATHAWAY
DocuSigned by: Duwain Hathaway 283788D710A0460...
5/8/2015

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CHECKED BY : A. L. PHILLIPS DATE : 8-7-13

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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.

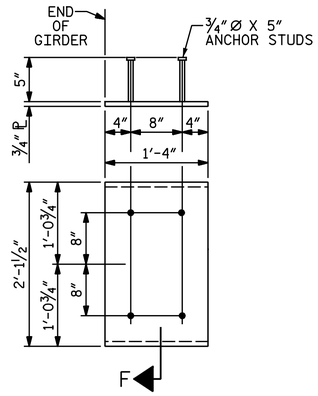
ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THROUGH 1020 OR APPROVED EQUAL, AND SHALL MEET THE TYPE "B" REQUIREMENTS OF SUBSECTION 7.3 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

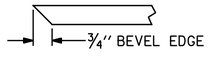
AT ENDS OF GIRDERS TO BE EMBEDDED IN CONCRETE DIAPHRAGMS OR END WALLS, PRESTRESSING STRANDS MAY EXTEND A MAXIMUM OF 2" BEYOND THE GIRDER ENDS. OTHERWISE, PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6,000 PSI.

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

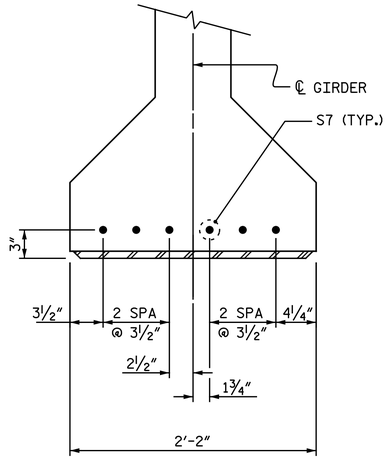
THE TOP SURFACE OF THE GIRDER, EXCLUDING THE OUTSIDE 4", SHALL BE RAKED TO A DEPTH OF 1/4".





SECTION F
(SEE NOTES)

EMBEDDED PLATE "B-1" DETAILS
FOR AASHTO TYPE IV GIRDER
(2 REQ'D PER GIRDER)



DETAIL A

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-
SHEET 4 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
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NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283786071DA0460... 5/11/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

AASHTO TYPE IV
PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD DETAILS LEFT LANE

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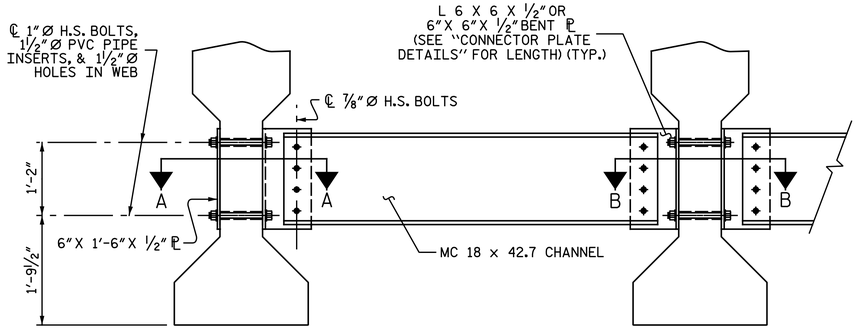
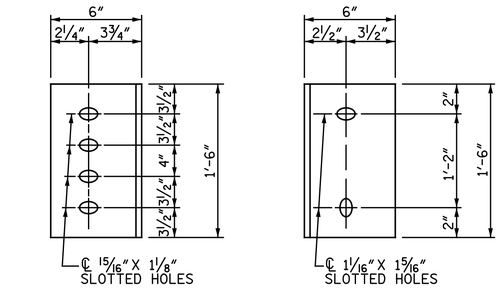


EXTERIOR GIRDER INTERIOR GIRDER

PART SECTION AT INTERMEDIATE DIAPHRAGM



DIAPHRAGM FACE WEB FACE

CONNECTOR PLATE DETAILS

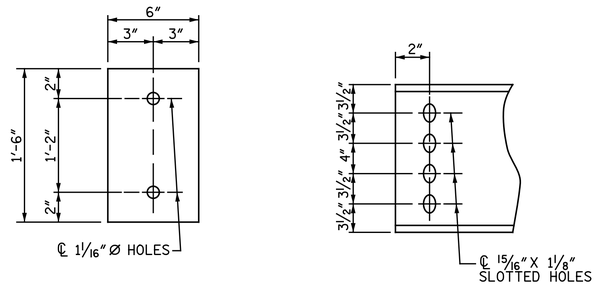


PLATE DETAILS CHANNEL END

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.

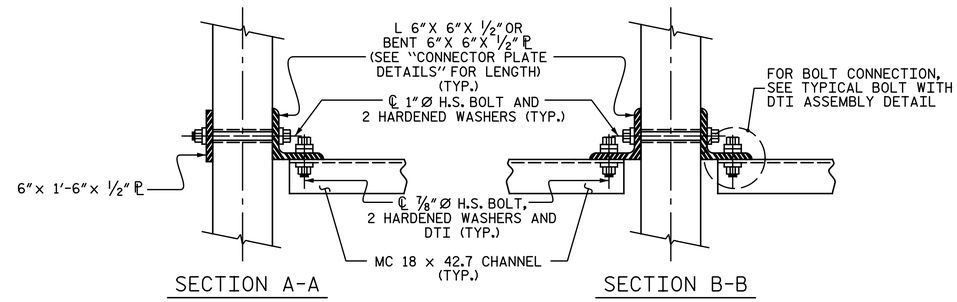
FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST ¼″PROJECTION BEYOND THE NUT.

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.

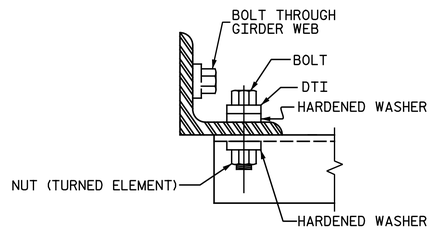
IN THE EXTERIOR BAYS, PLACE TEMPORARY STRUTS BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE STEEL DIAPHRAGMS. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED.

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



SECTION A-A SECTION B-B

CONNECTION DETAILS



BOLT WITH DTI ASSEMBLY DETAIL

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 5 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS
LEFT LANE

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			68

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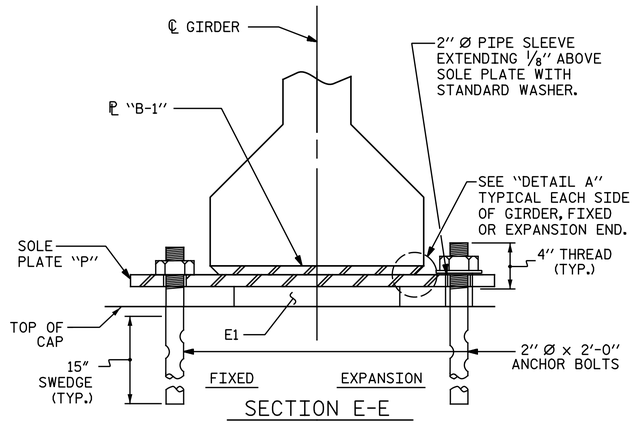
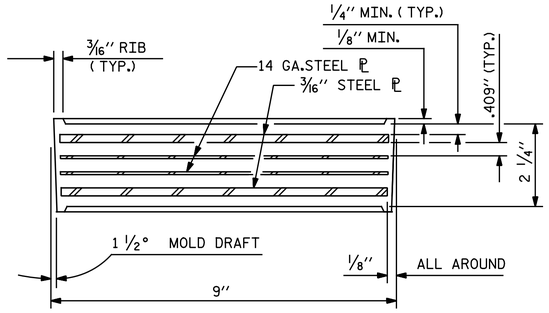
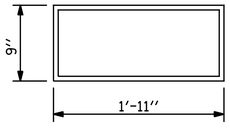
SITE 4



SECTION E-E



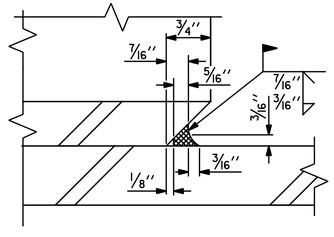
TYPICAL SECTION OF ELASTOMERIC BEARINGS



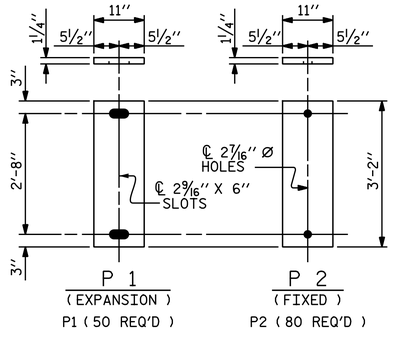
E1 (130 REQ'D)

PLAN VIEW OF ELASTOMERIC BEARING

TYPE V



DETAIL A



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.

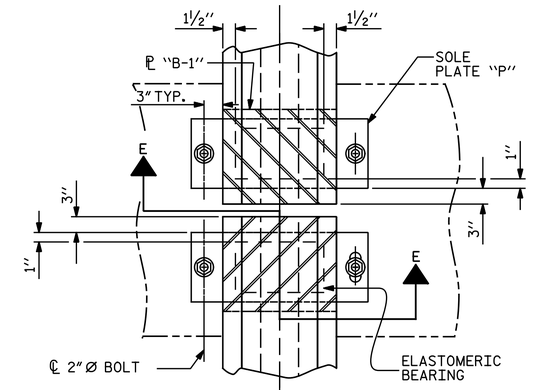
SOLE PLATE "P", BOLTS, NUTS, WASHERS, AND PIPE SLEEVE SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.

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. NO SHOP DRAWINGS ARE REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.



TYPICAL HALF-PLAN (SHOWING CONTINUOUS BENT)

TYPICAL HALF-PLAN (SHOWING SIMPLE SPAN BENT)

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE V	320 k

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

ELASTOMERIC BEARING DETAILS

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-21
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : M. D. MAYHEW DATE : 8-2-13
CHECKED BY : A. L. PHILLIPS DATE : 8-6-13

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DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPAN A

0.6'' Ø LOW RELAXATION STRANDS	GIRDER AG1 & AG5										
TENTH POINTS BETWEEN BRGS.	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE) (FT.) ↑	0.000	0.055	0.104	0.143	0.167	0.175	0.167	0.143	0.104	0.055	0.000
✳DEFLECTION DUE TO SUPERIMPOSED D.L. (FT.) ↓	0.000	0.034	0.067	0.093	0.110	0.115	0.110	0.093	0.067	0.034	0.000
FINAL CAMBER (IN.) ↑	0	1/4"	7/16"	5/8"	11/16"	11/16"	11/16"	5/8"	7/16"	1/4"	0

0.6'' Ø LOW RELAXATION STRANDS	GIRDER AG2 THRU AG4										
TENTH POINTS BETWEEN BRGS.	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE) (FT.) ↑	0.000	0.055	0.104	0.143	0.167	0.175	0.167	0.143	0.104	0.055	0.000
✳DEFLECTION DUE TO SUPERIMPOSED D.L. (FT.) ↓	0.000	0.037	0.073	0.101	0.119	0.125	0.119	0.101	0.073	0.037	0.000
FINAL CAMBER (IN.) ↑	0	3/16"	3/8"	1/2"	9/16"	5/8"	9/16"	1/2"	3/8"	3/16"	0

✳INCLUDES WEIGHT OF DECK SLAB, BUILD-UPS, DIAPHRAGMS, BARRIERS, AND FUTURE WEARING SURFACE.

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPANS B THRU L

0.6'' Ø LOW RELAXATION STRANDS	GIRDER G1 & G5										
TENTH POINTS BETWEEN BRGS.	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE) (FT.) ↑	0.000	0.055	0.105	0.143	0.168	0.176	0.168	0.143	0.105	0.055	0.000
✳DEFLECTION DUE TO SUPERIMPOSED D.L. (FT.) ↓	0.000	0.034	0.067	0.093	0.110	0.115	0.110	0.093	0.067	0.034	0.000
FINAL CAMBER (IN.) ↑	0	1/4"	7/16"	5/8"	11/16"	3/4"	11/16"	5/8"	7/16"	1/4"	0

0.6'' Ø LOW RELAXATION STRANDS	GIRDER G2 THRU G4										
TENTH POINTS BETWEEN BRGS.	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE) (FT.) ↑	0.000	0.055	0.105	0.143	0.168	0.176	0.168	0.143	0.105	0.055	0.000
✳DEFLECTION DUE TO SUPERIMPOSED D.L. (FT.) ↓	0.000	0.037	0.073	0.101	0.119	0.125	0.119	0.101	0.073	0.037	0.000
FINAL CAMBER (IN.) ↑	0	3/16"	3/8"	1/2"	9/16"	5/8"	9/16"	1/2"	3/8"	3/16"	0

✳INCLUDES WEIGHT OF DECK SLAB, BUILD-UPS, DIAPHRAGMS, BARRIERS, AND FUTURE WEARING SURFACE.

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPAN M

0.6'' Ø LOW RELAXATION STRANDS	GIRDER MG1 & MG5										
TENTH POINTS BETWEEN BRGS.	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE) (FT.) ↑	0.000	0.055	0.104	0.143	0.167	0.175	0.167	0.143	0.104	0.055	0.000
✳DEFLECTION DUE TO SUPERIMPOSED D.L. (FT.) ↓	0.000	0.034	0.067	0.093	0.110	0.115	0.110	0.093	0.067	0.034	0.000
FINAL CAMBER (IN.) ↑	0	1/4"	7/16"	5/8"	11/16"	11/16"	11/16"	5/8"	7/16"	1/4"	0

0.6'' Ø LOW RELAXATION STRANDS	GIRDER MG2 THRU MG4										
TENTH POINTS BETWEEN BRGS.	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE) (FT.) ↑	0.000	0.055	0.104	0.143	0.167	0.175	0.167	0.143	0.104	0.055	0.000
✳DEFLECTION DUE TO SUPERIMPOSED D.L. (FT.) ↓	0.000	0.037	0.073	0.101	0.119	0.125	0.119	0.101	0.073	0.037	0.000
FINAL CAMBER (IN.) ↑	0	3/16"	3/8"	1/2"	9/16"	5/8"	9/16"	1/2"	3/8"	3/16"	0

✳INCLUDES WEIGHT OF DECK SLAB, BUILD-UPS, DIAPHRAGMS, BARRIERS, AND FUTURE WEARING SURFACE.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752B48F5D664459... 5/8/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 2837B607710A0460... 5/8/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

GIRDER DEFLECTIONS AND CAMBER

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-22
1			3			TOTAL SHEETS
2			4			68

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

DRAWN BY : N. B. SPEAKS DATE : 8-7-13
CHECKED BY : A. L. PHILLIPS DATE : 8-8-13

DWG. 22 OF 68

SITE 4

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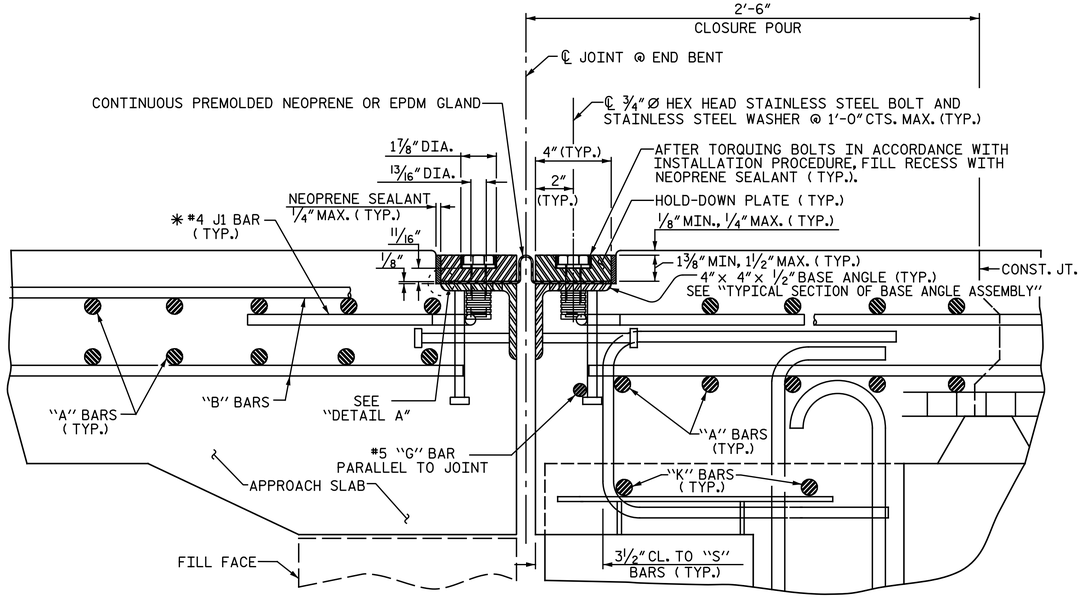


EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT AT END BENT 1 & 2

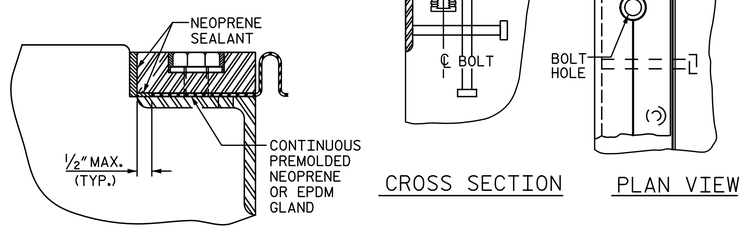
* THE QUANTITY OF #4 J1 BARS ON THE BILL OF MATERIAL IS BASED ON 1'-0"CENTERS. J1 BARS SHALL BE PLACED AT EACH VERTICAL STUD ANCHOR BOLT. IN THE EVENT THAT THE NUMBER OF VERTICAL STUD ANCHORS EXCEEDS THE NUMBER OF J1 BARS SPECIFIED, ADDITIONAL J1 BARS WILL NOT BE REQUIRED.

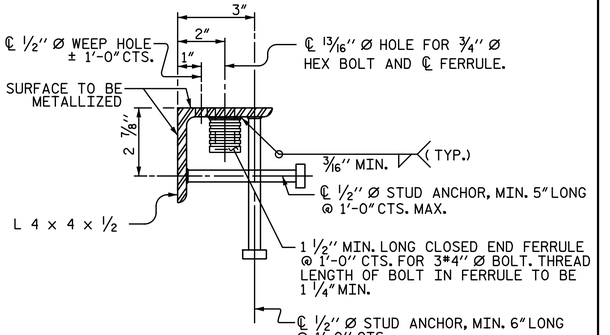
INSTALLATION PROCEDURE:

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 4⅛" TO 4¼" 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 ⅞" 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. 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.





TYPICAL SECTION OF BASE ANGLE ASSEMBLY

DETAIL A

INSTALLATION SKETCH

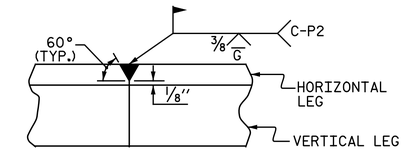
MOVEMENT AND SETTING AT JOINT					
	SKEW ANGLE	TOTAL MOVEMENT (ALONG ℄ RDWY)	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
END BENT 1 & 2	90°-00'-00"	9/16"	1 7/16"	1 5/16"	1 1/8"
BENTS 2 & 11	90°-00'-00"	1 7/16"	2"	1 3/4"	1 1/4"
BENTS 5 & 8	90°-00'-00"	1 3/4"	2 1/4"	1 15/16"	1 5/16"

PROJECT NO. R-2514D

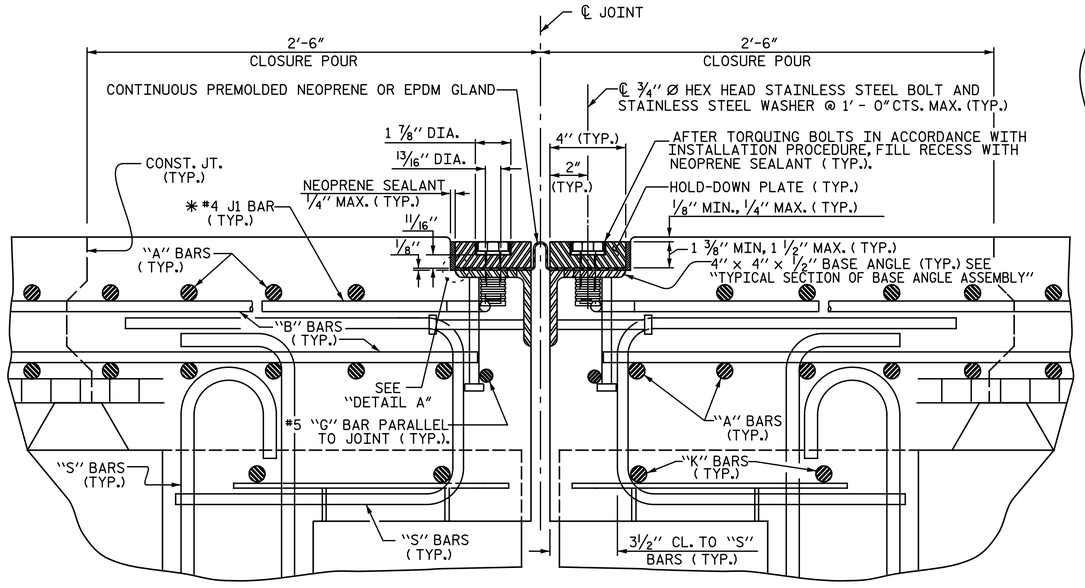
JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2



DETAIL- FIELD WELD SPLICE OF BASE ANGLE



EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT AT BENTS 2, 5, 8 & 11

* 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.

DRAWN BY : M. D. MAYHEW DATE : 8-2-13

CHECKED BY : A. L. PHILLIPS DATE : 8-6-13

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780071DA0460... 3/13/2015

Baker

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8000 Regency Parkway, Suite 600
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

EXPANSION JOINT SEAL DETAILS

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-23
1			3			TOTAL SHEETS
2			4			68

DWG. 23 OF 68

SITE 4

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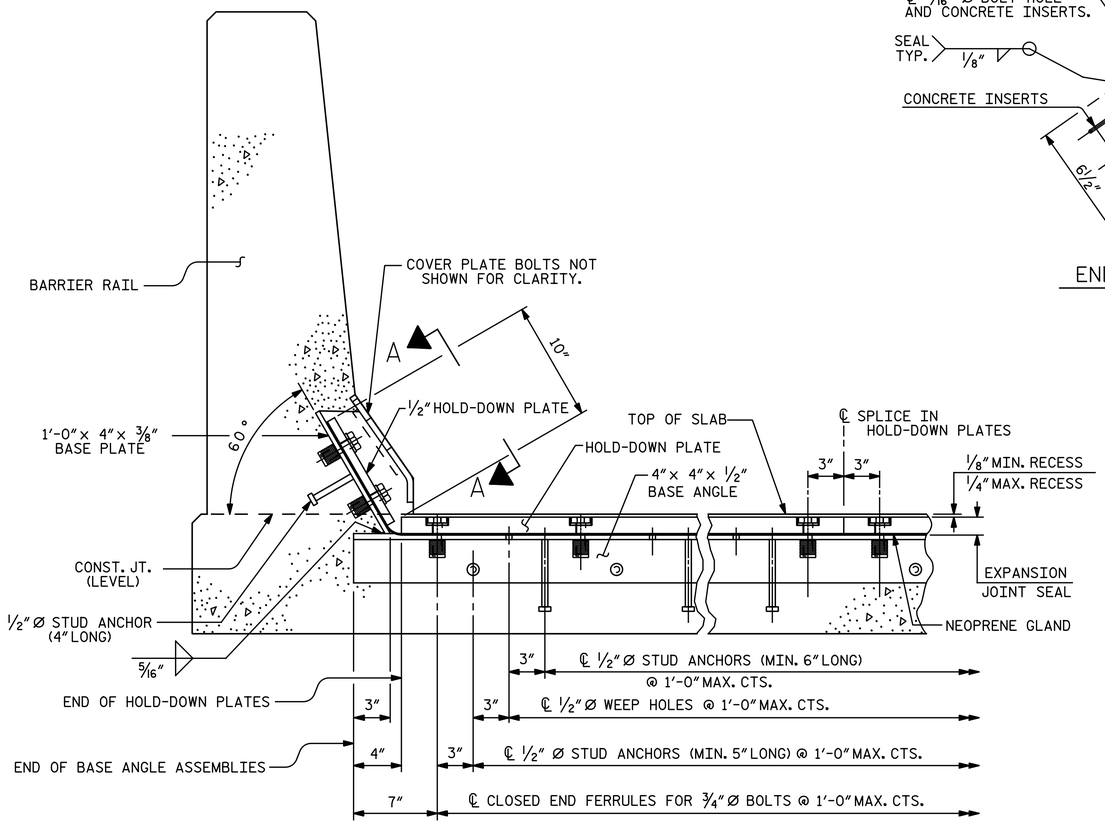
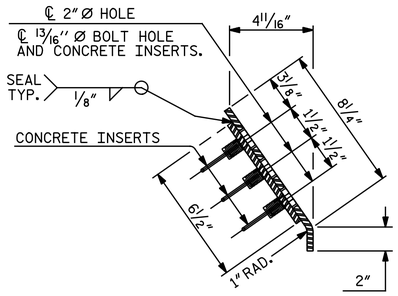
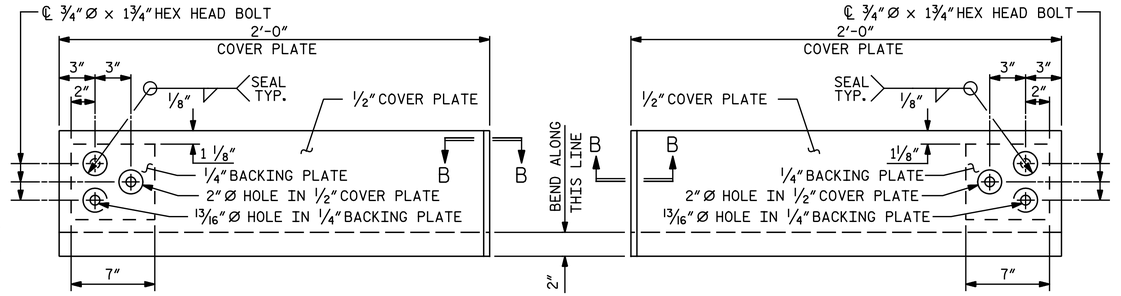


SECTION THRU RAIL NORMAL TO JOINT



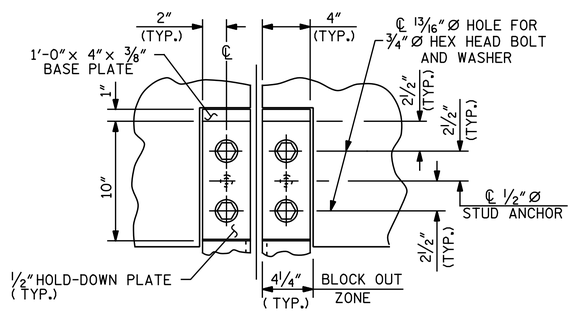
END VIEW



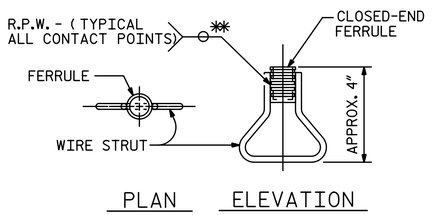
TYPE I - ELEVATION VIEW

TYPE II - ELEVATION VIEW

COVER PLATE DETAILS



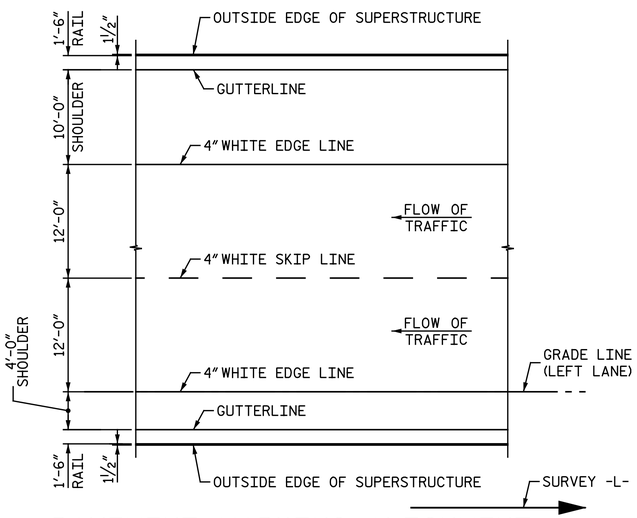
SECTION A - A



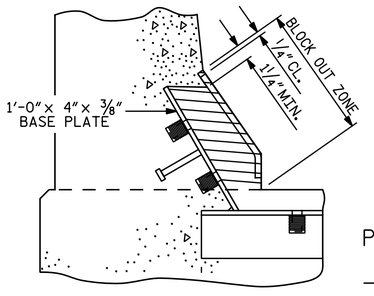
PLAN ELEVATION

CONCRETE INSERT

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

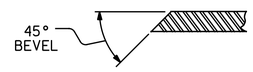


PAVEMENT MARKING ALIGNMENT

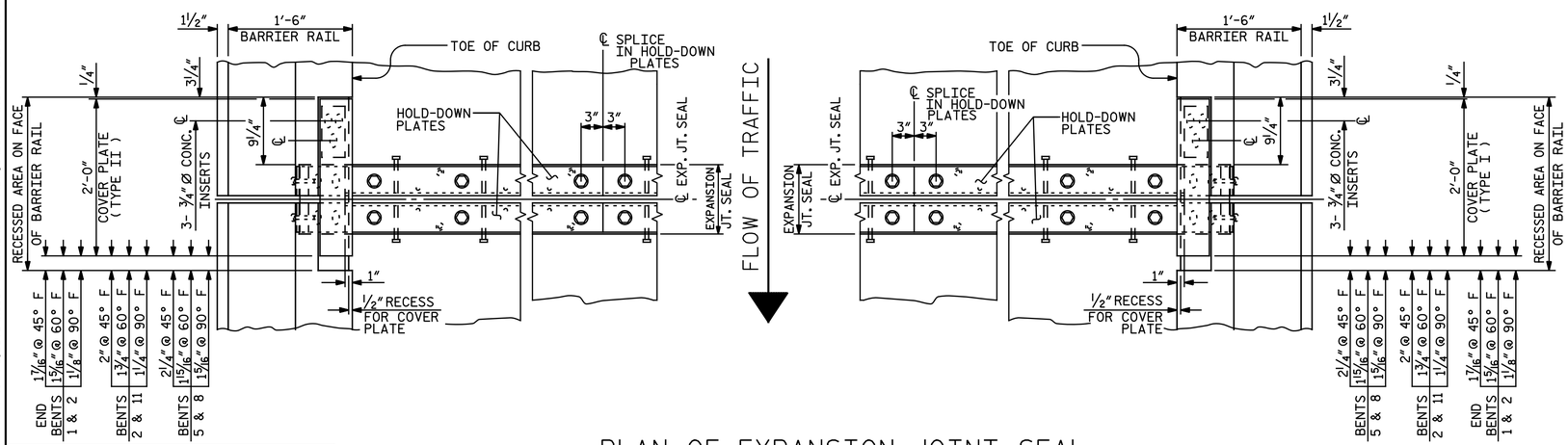


BLOCK OUT DETAIL

SEE " SECTION A - A " FOR OTHER DETAILS.



SECTION B - B



PLAN OF EXPANSION JOINT SEAL

DRAWN BY : M. D. MAYHEW DATE : 8-2-13
CHECKED BY : A. L. PHILLIPS DATE : 8-6-13

DWG. 24 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 3/13/2015
NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 3/13/2015

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8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

EXPANSION JOINT SEAL DETAILS FOR BARRIER RAIL

LEFT LANE

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 2 OF 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-24
1			3			TOTAL SHEETS
2			4			68

SITE 4

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3/5/2015 4:10:02 PM
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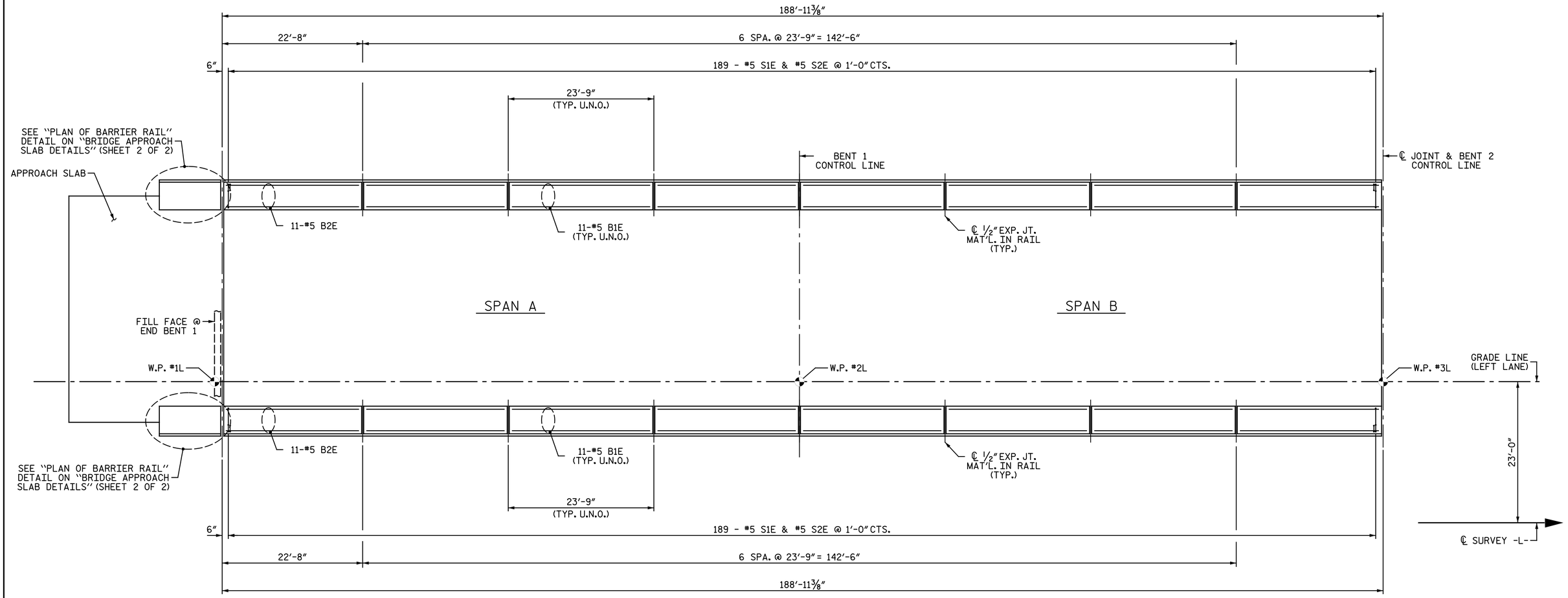

PLAN OF BARRIER RAIL - UNIT 1

U.N.O. - DENOTES "UNLESS NOTED OTHERWISE"

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

CONCRETE BARRIER RAIL UNIT 1

LEFT LANE

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283788071DA0460... 3/13/2015

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-25
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : M. D. MAYHEW DATE : 8-5-13
CHECKED BY : A. L. PHILLIPS DATE : 8-6-13

DWG. 25 OF 68

SITE 4

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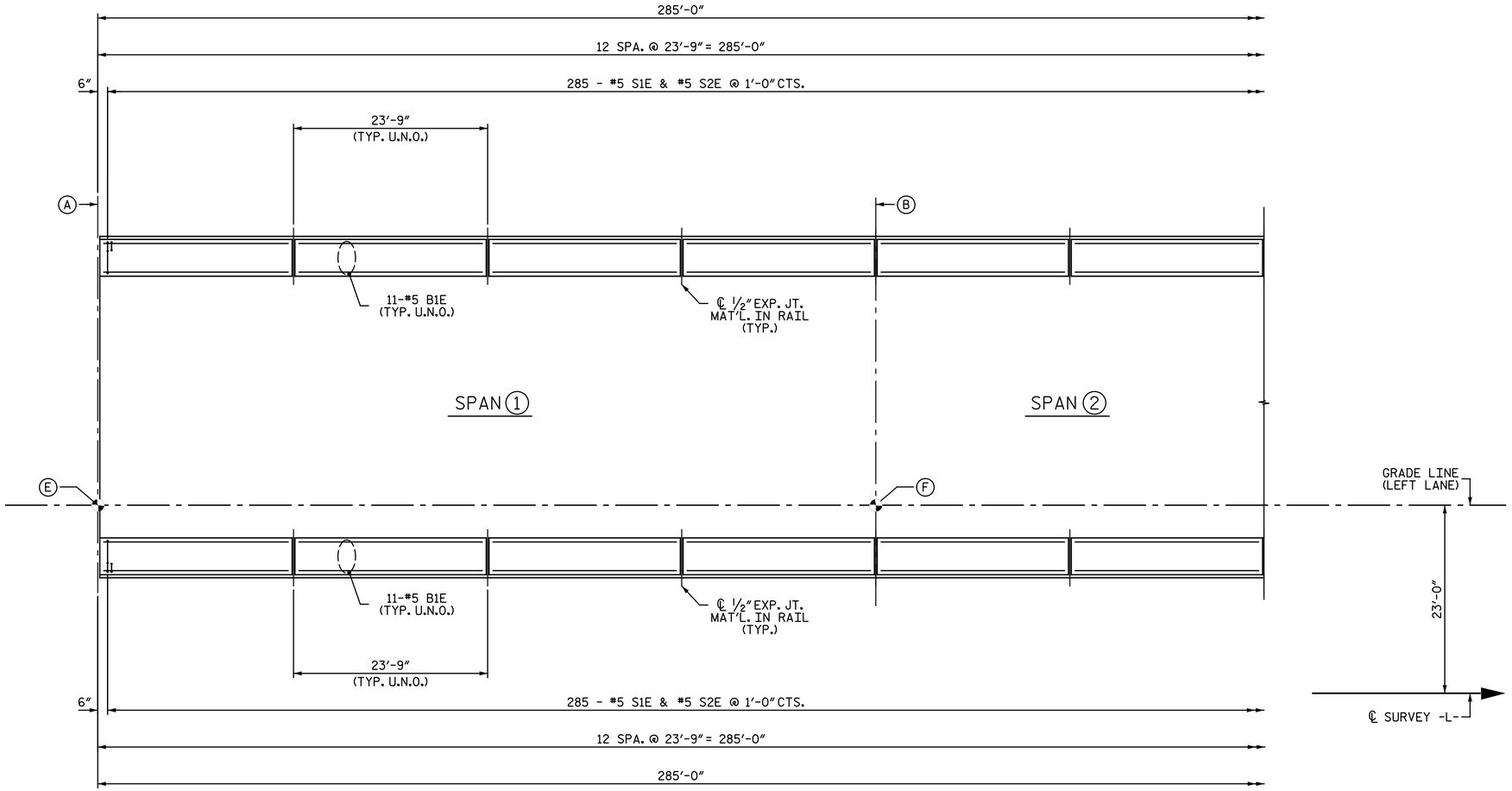

PLAN OF BARRIER RAIL - UNITS 2 THRU 4

U.N.O. - DENOTES "UNLESS NOTED OTHERWISE"

TABLE OF VARIABLES

		UNIT 2	UNIT 3	UNIT 4
BENT CONTROL LINE	Ⓐ	℄ JOINT & BENT 2 CONTROL LINE	℄ JOINT & BENT 5 CONTROL LINE	℄ JOINT & BENT 8 CONTROL LINE
	Ⓑ	BENT 3 CONTROL LINE	BENT 6 CONTROL LINE	BENT 9 CONTROL LINE
	Ⓒ	BENT 4 CONTROL LINE	BENT 7 CONTROL LINE	BENT 10 CONTROL LINE
	Ⓓ	℄ JOINT & BENT 5 CONTROL LINE	℄ JOINT & BENT 8 CONTROL LINE	℄ JOINT & BENT 11 CONTROL LINE
WORK POINT NUMBER	Ⓔ	W.P. #3L	W.P. #6L	W.P. #9L
	Ⓕ	W.P. #4L	W.P. #7L	W.P. #10L
	Ⓖ	W.P. #5L	W.P. #8L	W.P. #11L
	Ⓗ	W.P. #6L	W.P. #9L	W.P. #12L
SPAN DESIGNATION	①	SPAN C	SPAN F	SPAN I
	②	SPAN D	SPAN G	SPAN J
	③	SPAN E	SPAN H	SPAN K

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Filename: Y:\Projects\NCDOT\R-2514D\Site 4\Dwgs\Left\Final\407_026_R2514D_SMU_BR02.dgn

DRAWN BY : M. D. MAYHEW DATE : 8-6-13
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DWG. 26 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459...
3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283788071DA0460...
3/13/2015

Baker
Michael Baker Engineering
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NC License No. : F-1084

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

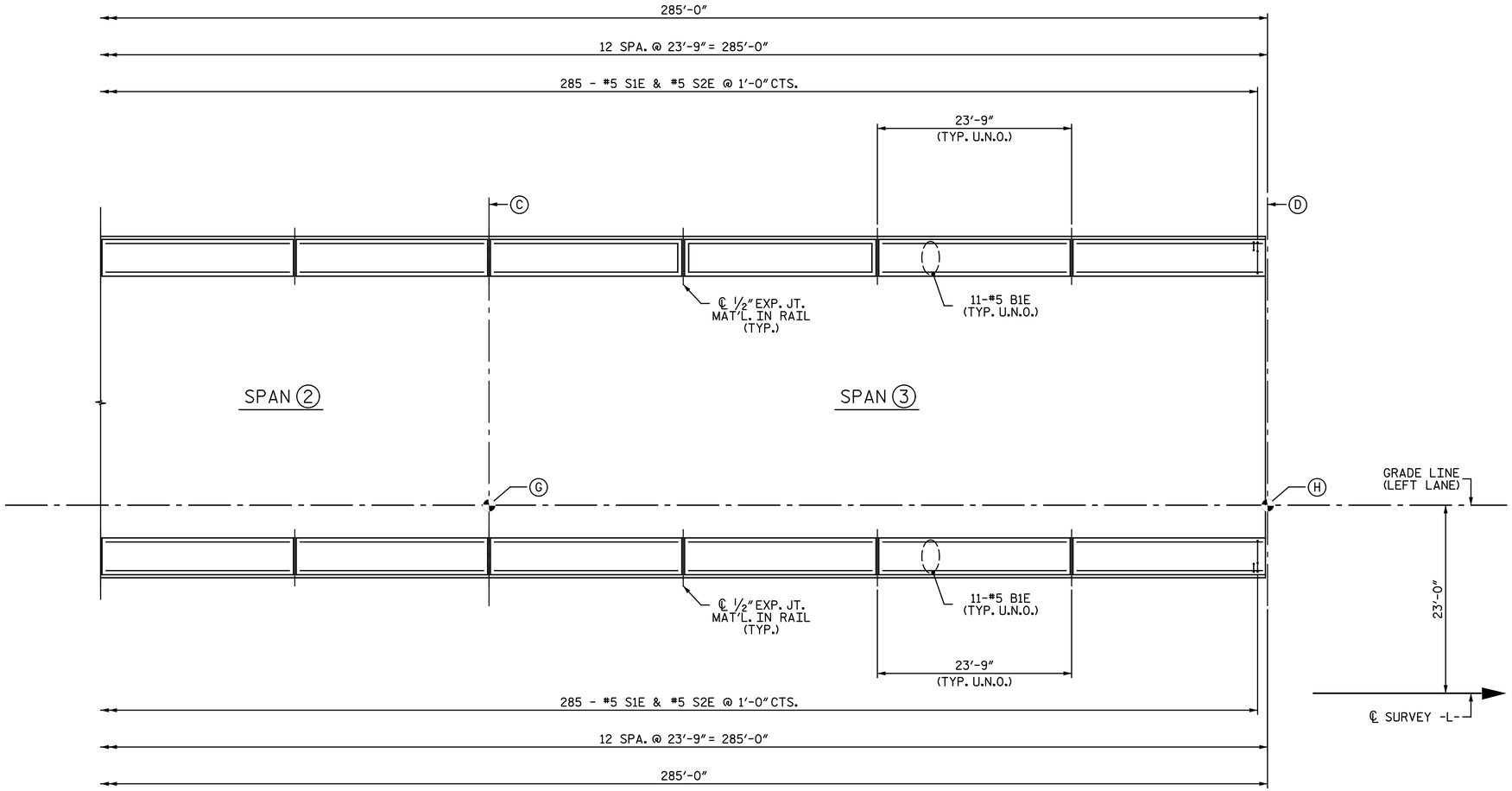
CONCRETE BARRIER RAIL
UNITS 2 THRU 4

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-26
1			3			TOTAL SHEETS
2			4			68

SITE 4

NOTE:
FOR "TABLE OF VARIABLES", SEE SHEET 2 OF 5.



PLAN OF BARRIER RAIL - UNITS 2 THRU 4

U.N.O. - DENOTES "UNLESS NOTED OTHERWISE"

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-
SHEET 3 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
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DocuSigned by: Dwain Hathaway 283780771DA0460... 3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

CONCRETE BARRIER RAIL
UNITS 2 THRU 4

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-27
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : M. D. MAYHEW DATE : 8-6-13
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DWG. 27 OF 68

SITE 4

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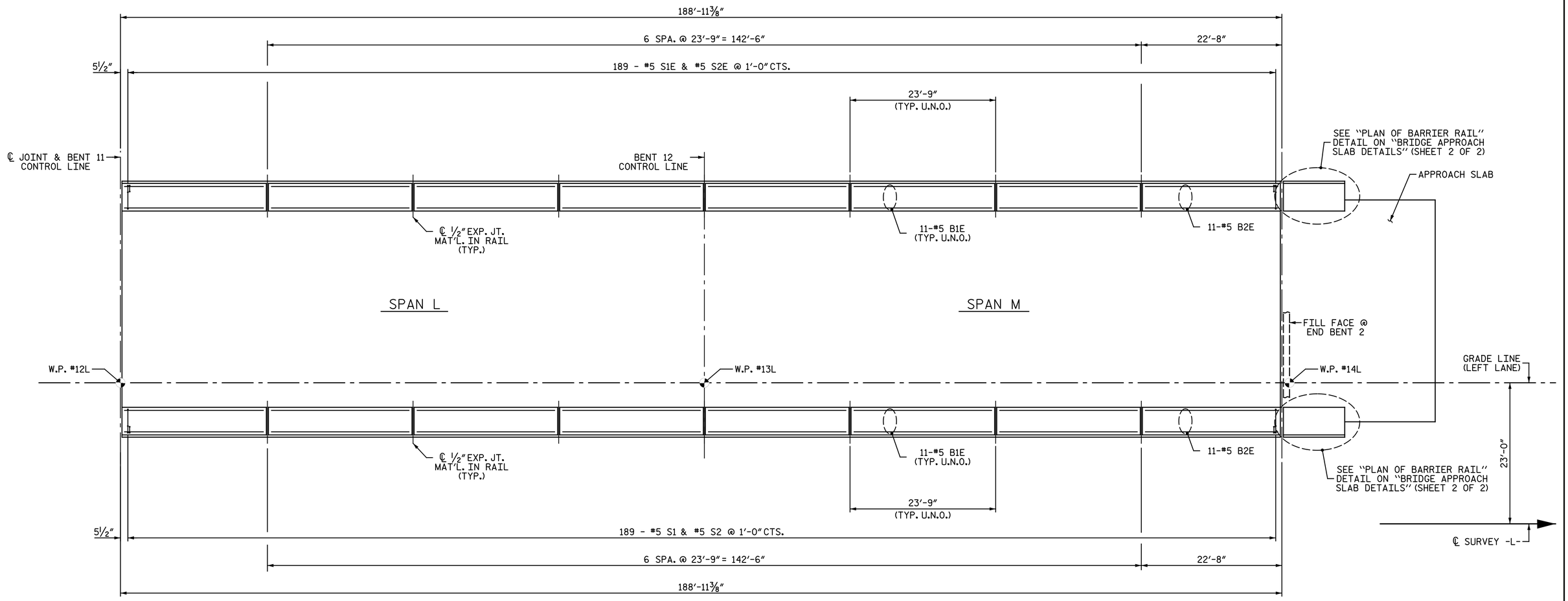

PLAN OF BARRIER RAIL - UNIT 5

U.N.O. - DENOTES "UNLESS NOTED OTHERWISE"

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 4 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

CONCRETE BARRIER RAIL UNIT 5

LEFT LANE

Baker

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-28
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : M. D. MAYHEW DATE : 8-6-13
CHECKED BY : A. L. PHILLIPS DATE : 8-6-13

DWG. 28 OF 68

SITE 4

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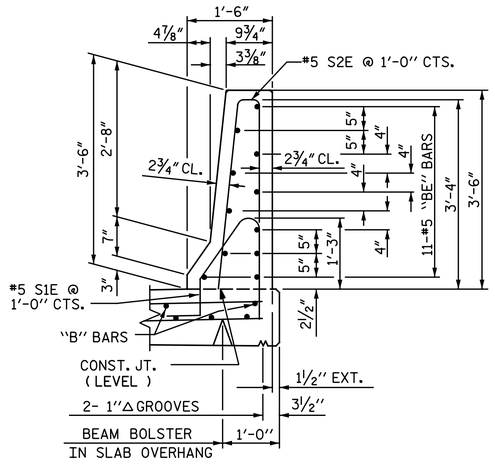


SECTION THRU RAIL

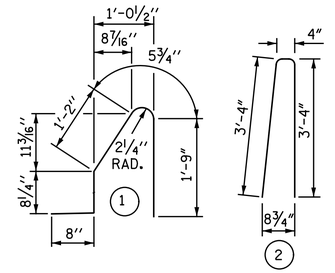
NOTES:

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

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

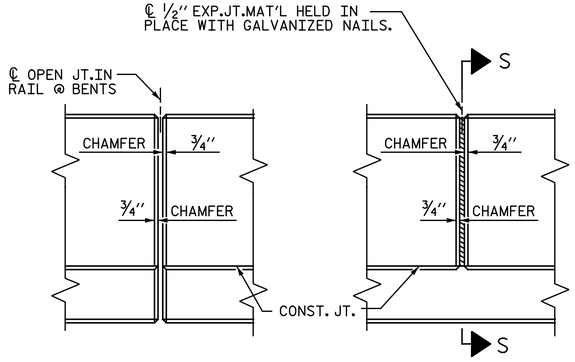
FOR CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1E	1100	5	STR	23' - 4"	26,770
B2E	44	5	STR	22' - 3"	1,021
S1E	2466	5	1	4' - 9"	12,217
S2E	2466	5	2	7' - 0"	18,004

EPOXY COATED REINFORCING STEEL	58,012	LBS.
CLASS AA CONCRETE	335.2	CU. YDS.
▲CONCRETE BARRIER RAIL	2,505.8	LIN. FT.

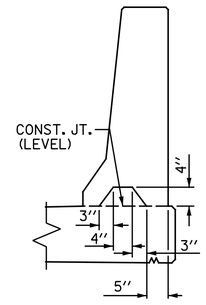
"E" SUFFIX DENOTES EPOXY COATED REINFORCING STEEL

▲ LENGTH OF VERTICAL CONCRETE BARRIER RAIL ON APPROACH SLABS ARE INCLUDED IN THIS LENGTH.



ELEVATION AT EXPANSION JOINTS

(NOTE: OMIT EXPANSION JOINT MATERIAL WHEN SLIP FORM IS USED.)



SECTION S-S

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

BARRIER RAIL DETAILS

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 5 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN C. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

CONCRETE BARRIER RAIL

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-29
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : M. D. MAYHEW DATE : 8-5-13
CHECKED BY : A. L. PHILLIPS DATE : 8-6-13

DWG. 29 OF 68

SITE 4

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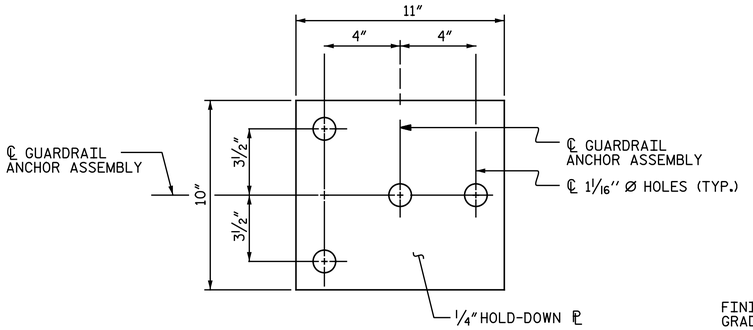
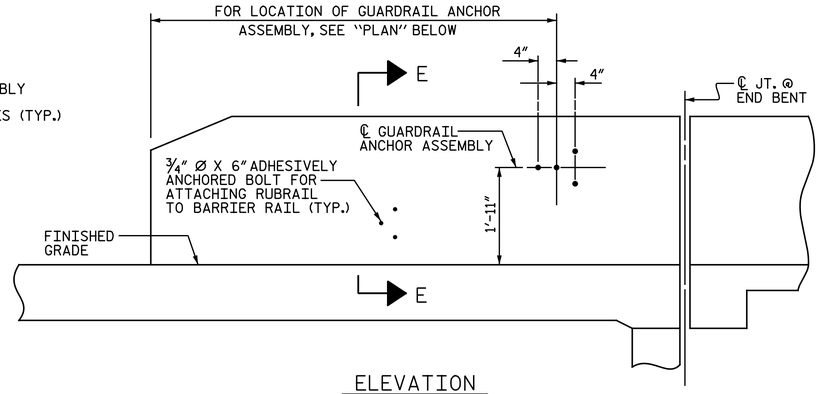
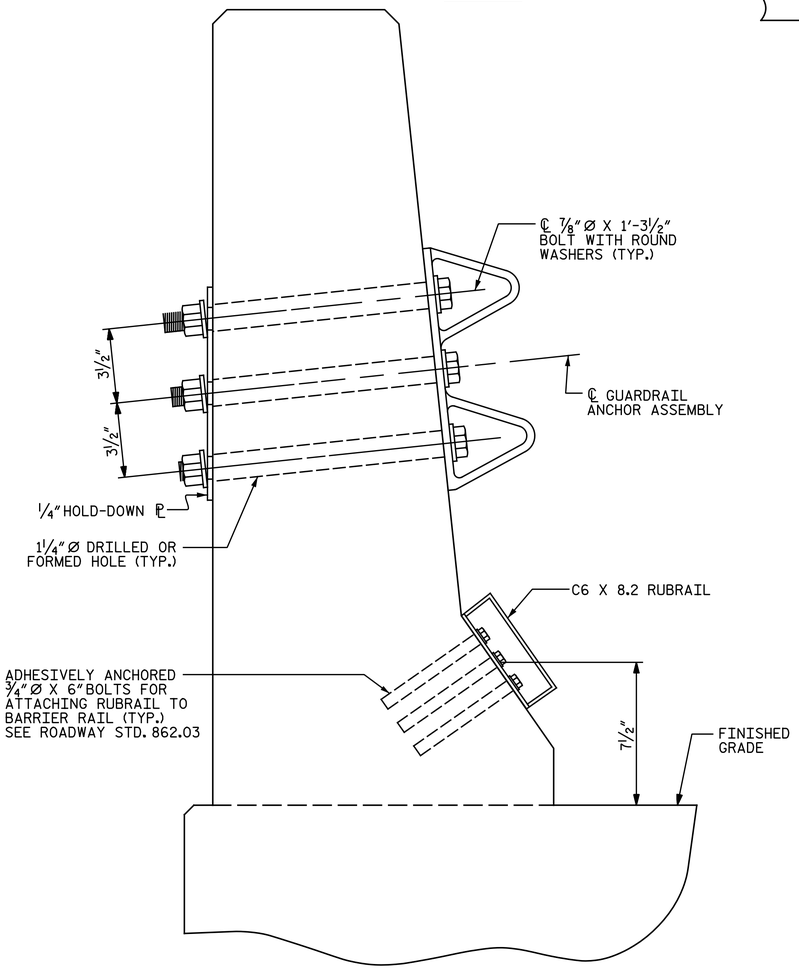


PLAN

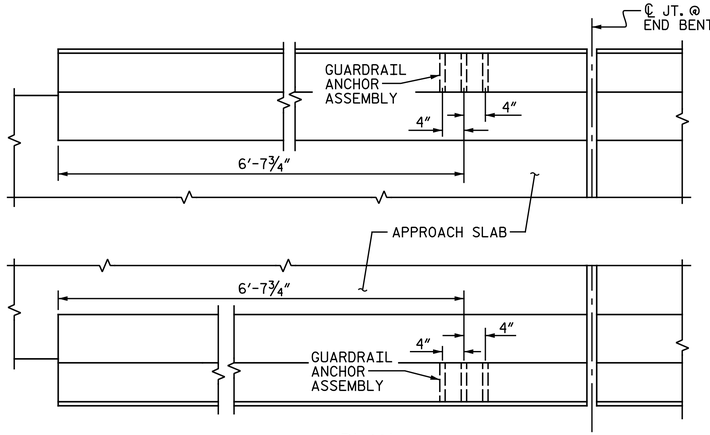


ELEVATION



SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR

NOTES:

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A ¼″ HOLD-DOWN PLATE AND 4 - ⅞″ Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

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 ⅞″ 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.)

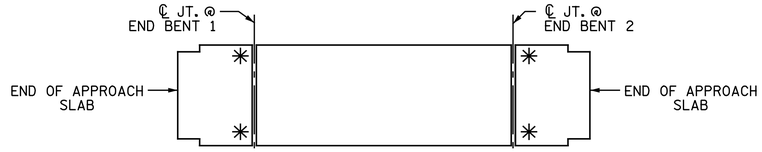
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE 1 ¼″ Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE ¾″ Ø X 6″ BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE ¾″ Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



SKETCH SHOWING POINTS OF ATTACHMENTS

✳ DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

DRAWN BY : N. B. SPEAKS DATE : 8-16-13

CHECKED BY : A. L. PHILLIPS DATE : 8-19-13

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

GUARDRAIL ANCHORAGE FOR BARRIER RAIL

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-30
1			3			TOTAL SHEETS
2			4			68

DWG. 30 OF 68

SITE 4

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REINFORCING STEEL SCHEDULE

UNIT 1 (UNIT 5 SIMILAR)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1E	376	5	STR	40′ - 11″	16,046
A2	378	5	STR	40′ - 11″	16,132
B1	208	5	STR	49′ - 3″	10,684
B2E	198	4	STR	22′ - 6″	2,976
B3E	33	7	STR	60′ - 0″	4,047
B4E	33	7	STR	12′ - 3″	826
B5E	56	7	STR	28′ - 6″	3,262
G1E	2	5	STR	40′ - 11″	85
J1E	84	4	6	1′ - 5″	79
K1E	12	8	2	19′ - 6″	625
K2E	8	8	1	12′ - 8″	271
K3E	8	6	STR	6′ - 9″	81
K4	8	4	STR	5′ - 1″	27
K5	24	4	STR	7′ - 2″	115
K6	8	4	STR	6′ - 9″	36
K7	10	4	STR	18′ - 7″	124
S1E	32	4	7	2′ - 0″	43
S2E	64	5	3	5′ - 11″	395
S3E	32	4	7	2′ - 4″	50
S4	128	4	4	2′ - 9″	235
S5E	64	4	5	5′ - 5″	232
U1	32	4	8	8′ - 10″	189

EPOXY COATED REINFORCING STEEL	LBS.	29,018
REINFORCING STEEL	LBS.	27,542
CLASS AA CONCRETE	C.Y.	240.7

UNIT 2 (UNITS 3 & 4 SIMILAR)

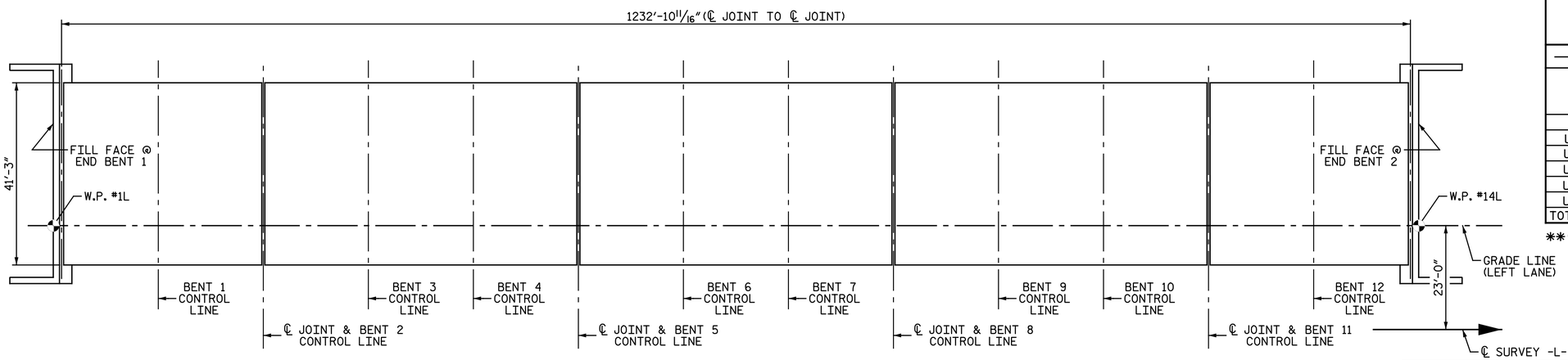
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1E	568	5	STR	40′ - 11″	24,240
A2	570	5	STR	40′ - 11″	24,325
B1	312	5	STR	49′ - 3″	16,027
B2E	198	4	STR	22′ - 6″	2,976
B3E	66	7	STR	60′ - 0″	8,094
B4E	66	7	STR	12′ - 3″	1,653
B5E	112	7	STR	28′ - 6″	6,524
B6E	66	4	STR	17′ - 0″	749
G1E	2	5	STR	40′ - 11″	85
J1E	84	4	6	1′ - 5″	79
K1E	12	8	2	19′ - 6″	625
K2E	8	8	1	12′ - 8″	271
K3E	8	6	STR	6′ - 9″	81
K4	16	4	STR	5′ - 1″	54
K5	48	4	STR	7′ - 2″	230
K6	16	4	STR	6′ - 9″	72
K7	20	4	STR	18′ - 7″	248
S1E	32	4	7	2′ - 0″	43
S2E	64	5	3	5′ - 11″	395
S3E	64	4	7	2′ - 4″	100
S4	256	4	4	2′ - 9″	470
S5E	128	4	5	5′ - 5″	463
U1	64	4	8	8′ - 10″	378

EPOXY COATED REINFORCING STEEL	LBS.	46,378
REINFORCING STEEL	LBS.	41,804
CLASS AA CONCRETE	C.Y.	367.5

"E" SUFFIX DENOTES EPOXY COATED REINFORCING STEEL

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

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	2′-0″	1′-9″	2′-0″	1′-9″	2′-9″
#5	2′-6″	2′-2″	2′-6″	2′-2″	3′-5″
#6	3′-0″	2′-7″	3′-10″	2′-7″	4′-4″
#7	5′-3″	3′-6″			
#8	6′-10″	4′-7″			



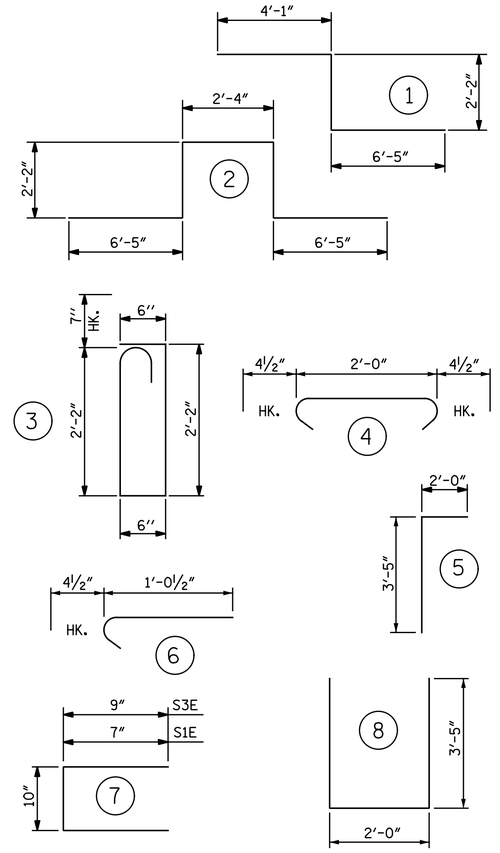
LAYOUT FOR COMPUTING AREA REINFORCED CONCRETE DECK SLAB

(SQ. FT. = 50,857)

GROOVING BRIDGE FLOORS

APPROACH SLABS	1,739	SQ.FT.
BRIDGE DECK	42,952	SQ.FT.
TOTAL	44,691	SQ.FT.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

SUPERSTRUCTURE BILL OF MATERIAL

	CLASS AA CONCRETE	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
	(CU. YDS.)	(LBS.)	(LBS.)
UNIT 1	240.7	27,542	29,018
UNIT 2	367.5	41,804	46,378
UNIT 3	367.5	41,804	46,378
UNIT 4	367.5	41,804	46,378
UNIT 5	240.7	27,542	29,018
TOTALS**	1,583.9	180,496	197,170

**QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5006459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BILL OF MATERIAL

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-31
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : M. D. MAYHEW DATE : 8-15-13
CHECKED BY : A. L. PHILLIPS DATE : 8-19-13

DWG. 31 OF 68

SITE 4

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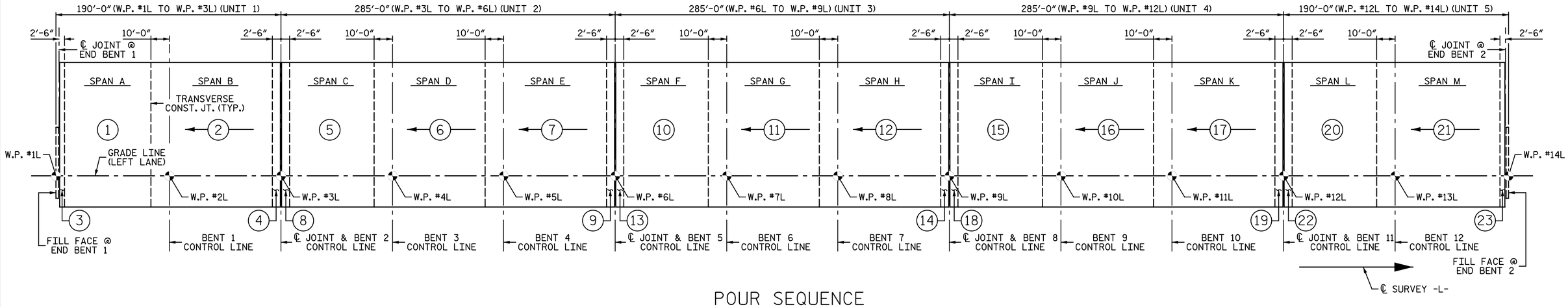
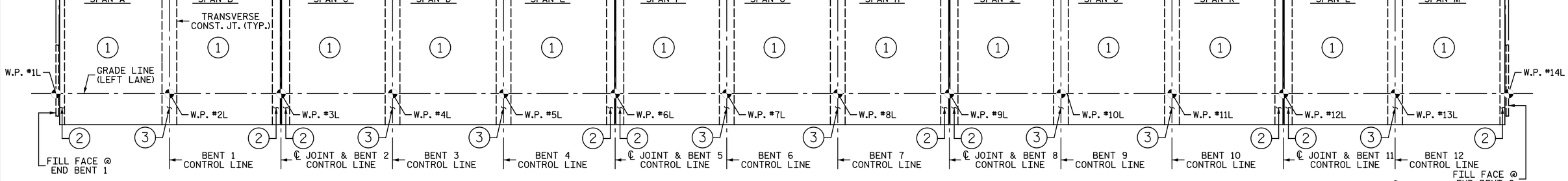


POUR SEQUENCE

(#) DENOTES POUR NUMBER AND DIRECTION

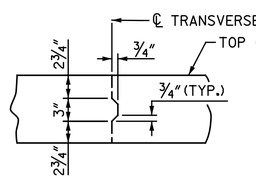
SEE "CLASS AA CONCRETE BREAKDOWN" TABLE FOR POUR QUANTITIES



OPTIONAL POUR SEQUENCE

(#) DENOTES POUR NUMBER

POUR (2) OR POUR (3) SHALL NOT BE STARTED UNTIL BOTH ADJACENT (1) POURS REACH A MINIMUM OF 3,000 PSI.



TRANSVERSE CONST. JOINT DETAIL

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

CLASS AA CONCRETE BREAKDOWN (CU. YDS.)

DECK POUR QUANTITIES						CLOSURE POUR QUANTITIES					
	UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5		UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5
POUR 1	96.4					POUR 3	4.9				
POUR 2	134.4					POUR 4	5.0				
POUR 5		97.6				POUR 8		5.0			
POUR 6		125.5				POUR 9		5.0			
POUR 7		134.4				POUR 13			5.0		
POUR 10			97.6			POUR 14			5.0		
POUR 11			125.5			POUR 18				5.0	
POUR 12			134.4			POUR 19				5.0	
POUR 15				97.6		POUR 22					5.0
POUR 16				125.5		POUR 23					4.9
POUR 17				134.4							
POUR 20					97.6						
POUR 21					133.1						
TOTALS	230.8	357.5	357.5	357.5	230.7	TOTALS	9.9	10.0	10.0	10.0	9.9

DRAWN BY : M. D. MAYHEW DATE : 8-15-13
CHECKED BY : A. M. HOUSTON DATE : 2-18-14

DWG. 32 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
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3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DUAIN C. HATHAWAY
DocuSigned by: Duain Hathaway 283786071DA0460...
3/13/2015

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No.: F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

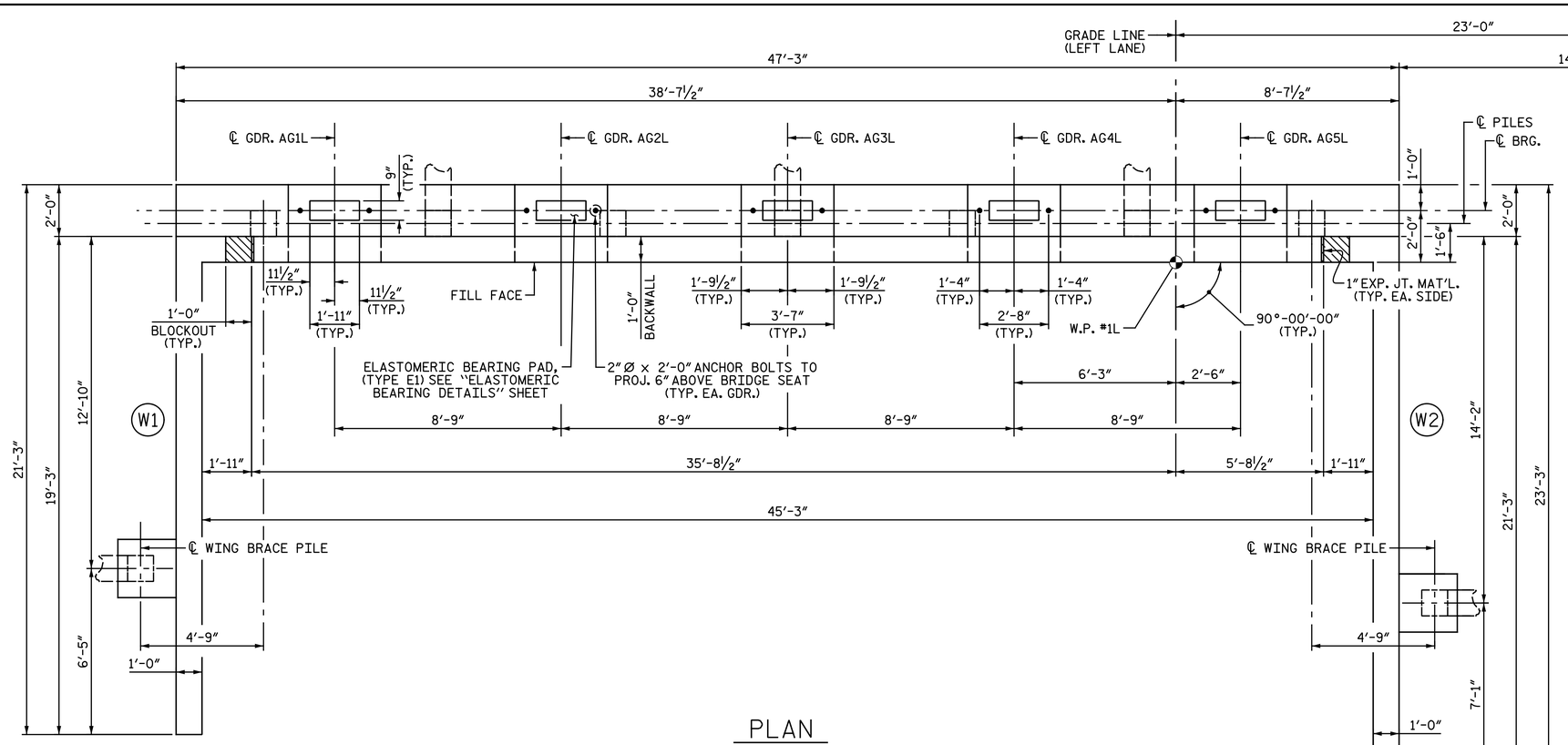
BILL OF MATERIAL

LEFT LANE

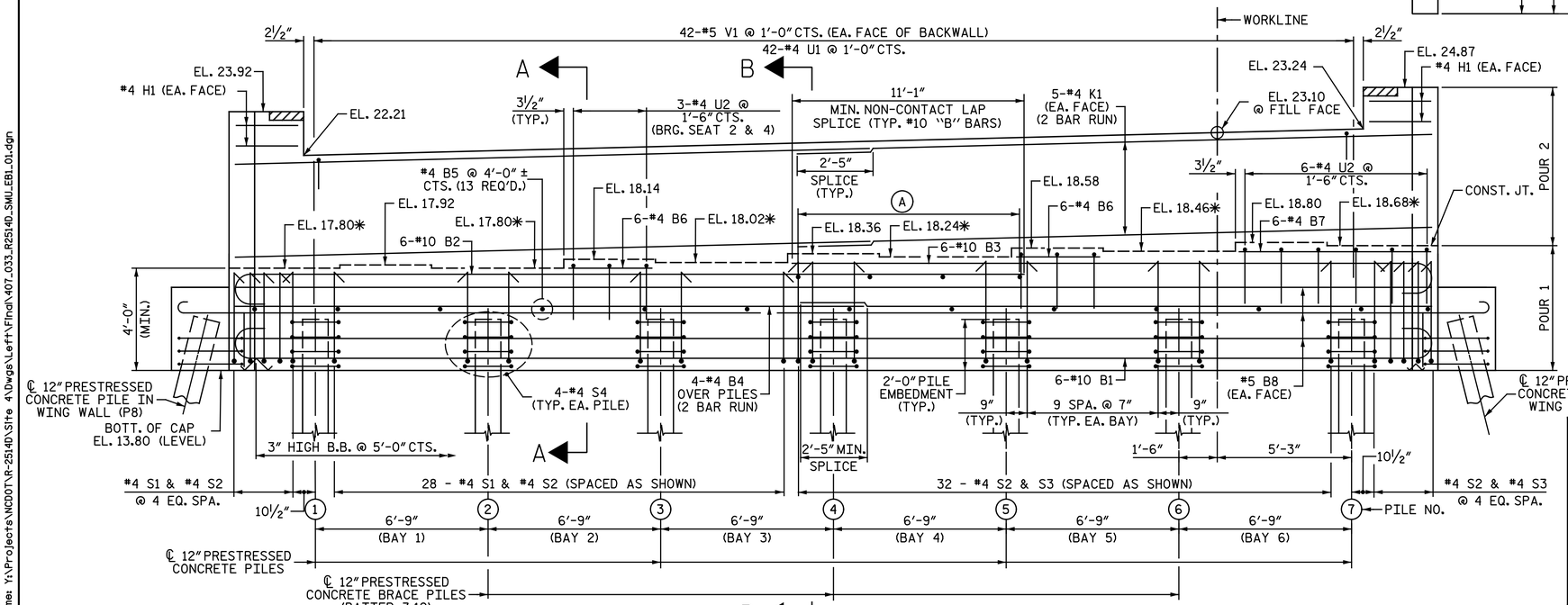
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-32
1			3			TOTAL SHEETS
2			4			68

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-
SHEET 2 OF 2

SITE 4



PLAN



ELEVATION

*FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEATS, SEE ″SECTION A-A″, SHEET 3 OF 3

NOTES:

FOR ″SECTION A-A″ AND ″SECTION B-B″, SEE SHEET 3 OF 3.

(A) #4 B5 @ 4′-0″± CTS. (4 REQUIRED UNDER #10 B2 BARS)

FOR ADDITIONAL INFORMATION AND NOTES, SEE ″GENERAL DRAWING″ SHEET 3 OF 5.

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 END BENT 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%.

INSTALL THE 4″Ø 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.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780D71DA0460... 3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-33
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : MDM/NBS DATE : 1-24-14

CHECKED BY : A. M. HOUSTON DATE : 2-14-14

DWG. 33 OF 68

SITE 4

nbspeeks 4:11:54 PM 3/5/2015
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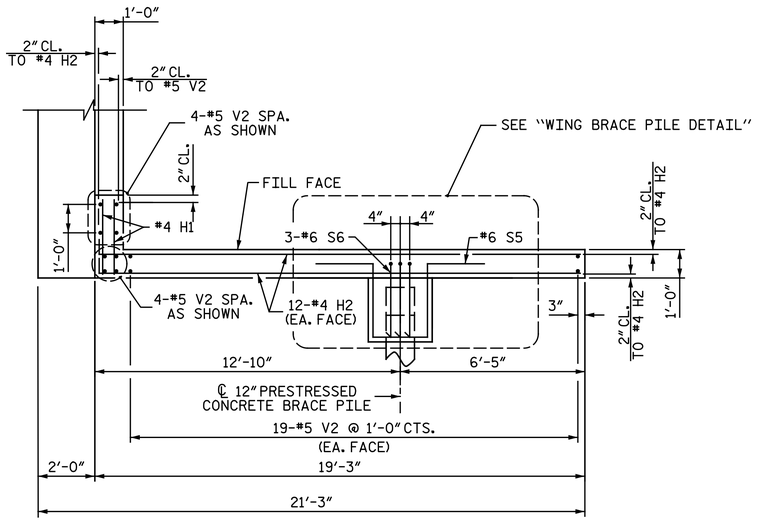
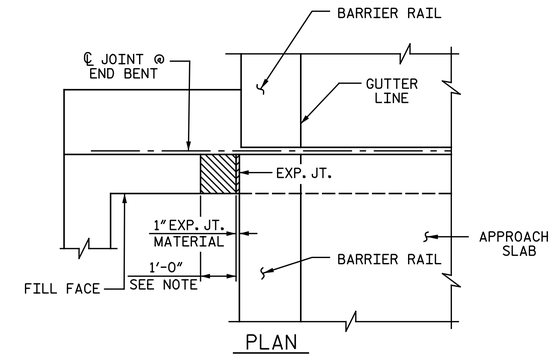
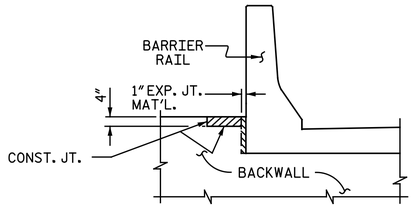


PLAN OF LEFT WING WALL (W1)



PLAN

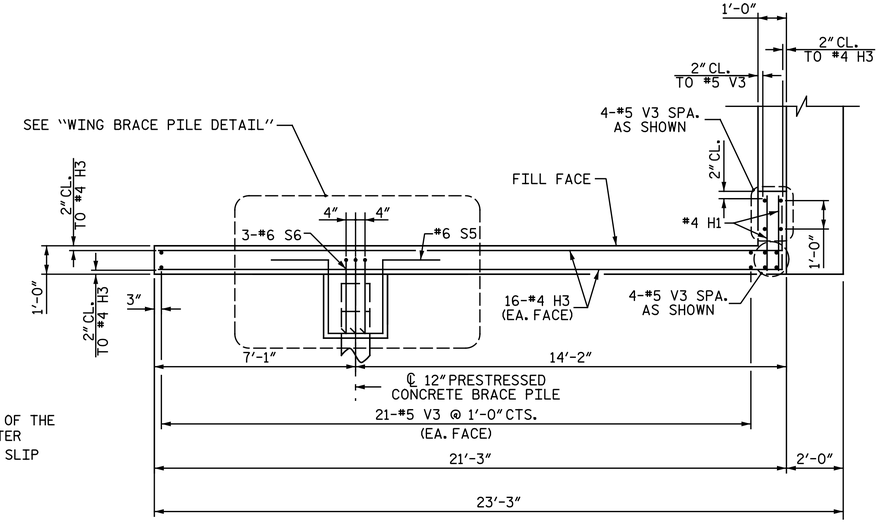


ELEVATION

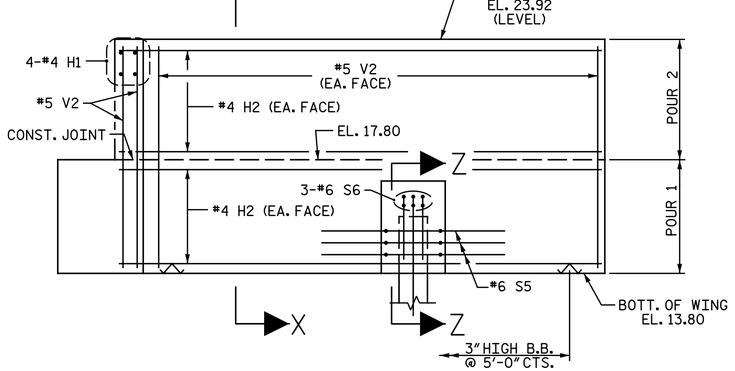
WING WALL DETAIL

NOTE:

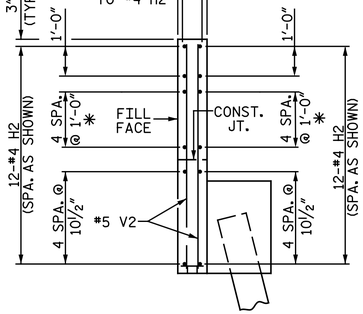
THE CONCRETE IN SHADED AREA OF THE WINGWALL SHALL BE POURED AFTER THE BARRIER RAIL IS CAST, IF SLIP FORMING IS USED.



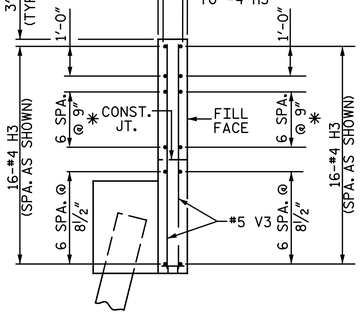
PLAN OF RIGHT WING WALL (W2)



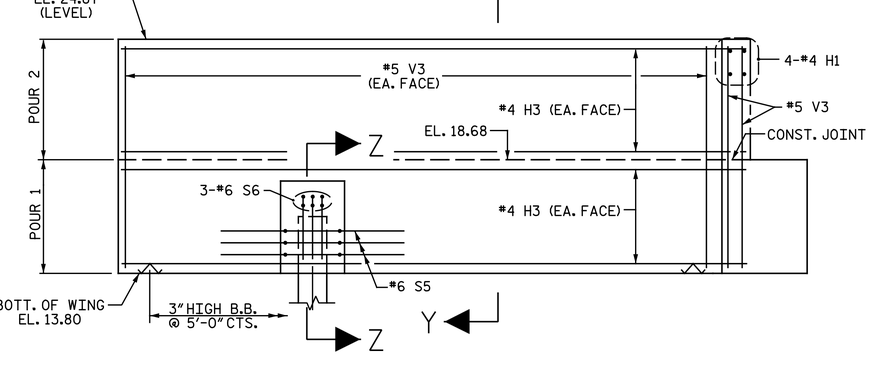
ELEVATION OF LEFT WING WALL (W1)



SECTION X-X

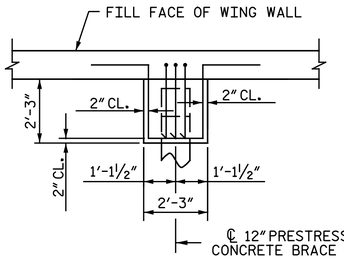


SECTION Y-Y

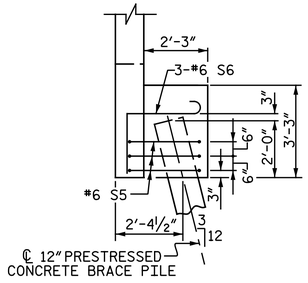


ELEVATION OF RIGHT WING WALL (W2)

✱ MATCH "H" BARS TO K1 BARS IN BACKWALL



WING BRACE PILE DETAIL



SECTION Z-Z

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1
WING WALL DETAILS

LEFT LANE

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-34
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 2-4-14
CHECKED BY : A. M. HOUSTON DATE : 2-14-14

DWG. 34 OF 68

SITE 4

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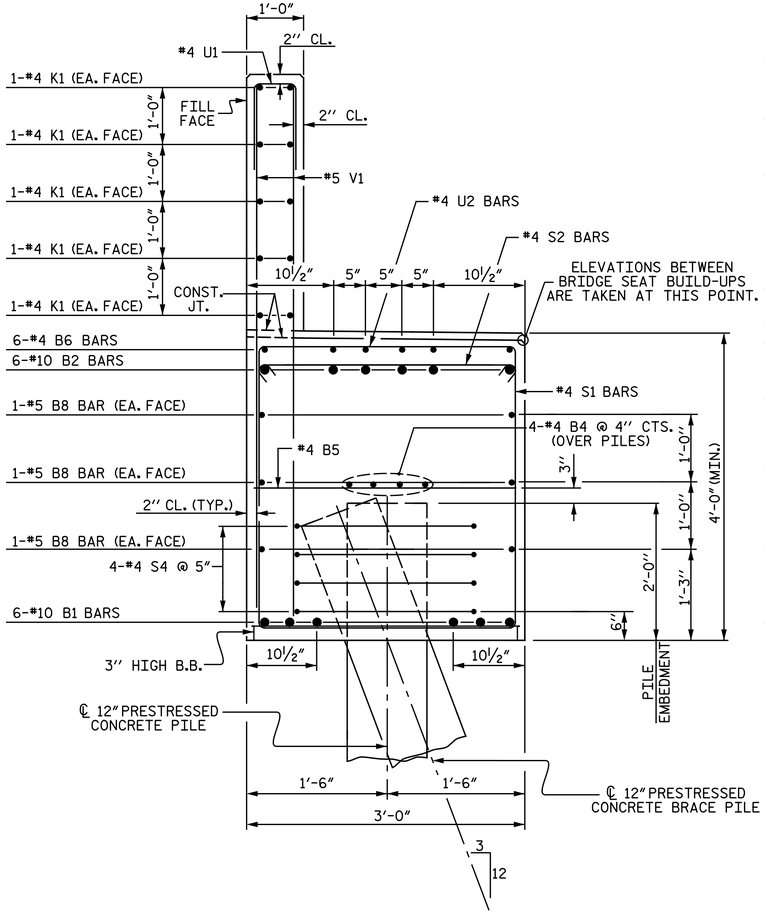
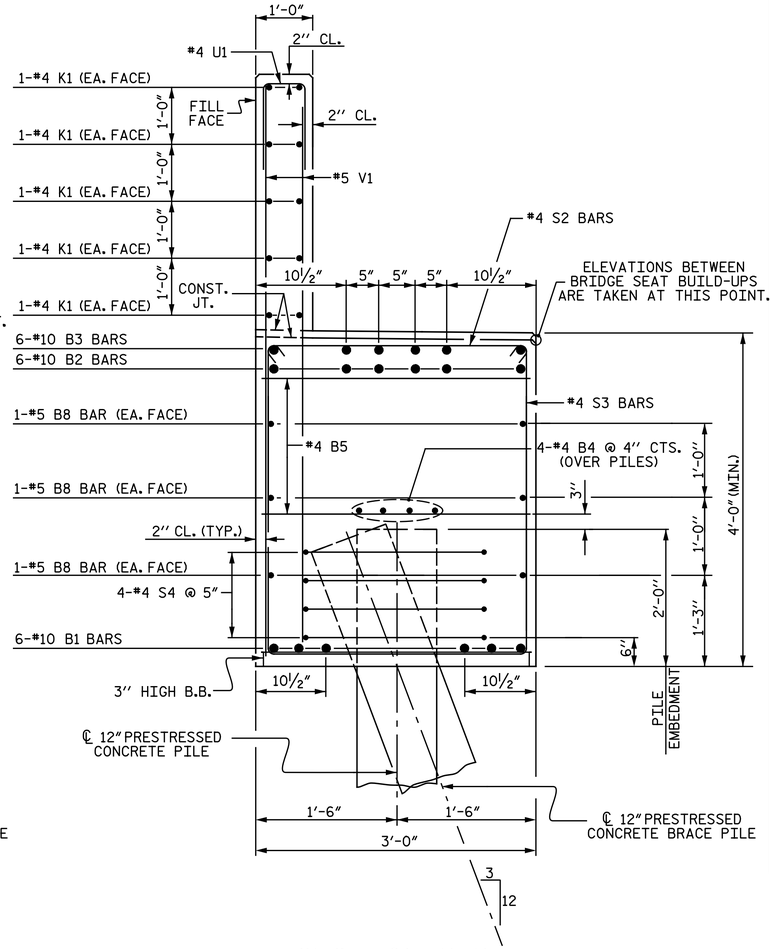
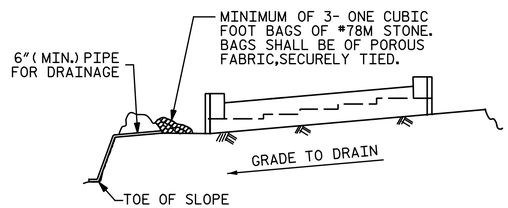


SECTION A-A



SECTION B-B



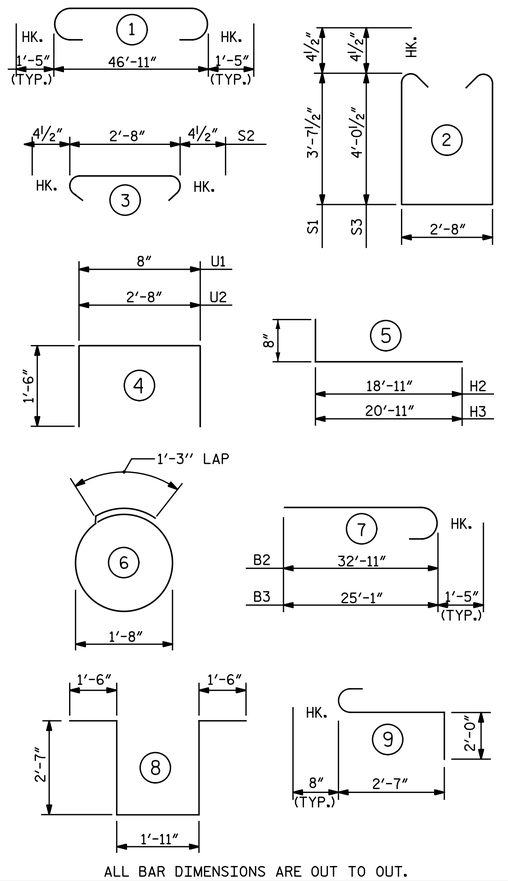
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

TEMPORARY DRAINAGE AT END BENT

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	10	1	49' - 9"	1,284
B2	6	10	7	34' - 4"	886
B3	6	10	7	26' - 6"	684
B4	8	4	STR	24' - 8"	132
B5	17	4	STR	2' - 8"	30
B6	12	4	STR	3' - 3"	26
B7	6	4	STR	7' - 7"	30
B8	6	5	STR	46' - 11"	294
H1	8	4	STR	2' - 7"	14
H2	24	4	5	19' - 7"	314
H3	32	4	5	21' - 7"	461
K1	20	4	STR	24' - 8"	330
S1	33	4	2	10' - 8"	235
S2	70	4	3	3' - 5"	160
S3	37	4	2	11' - 6"	284
S4	28	4	6	6' - 6"	122
S5	6	6	8	10' - 1"	91
S6	6	6	9	5' - 3"	47
U1	42	4	4	3' - 8"	103
U2	12	4	4	5' - 8"	45
V1	84	5	STR	8' - 3"	723
V2	46	5	STR	9' - 8"	464
V3	50	5	STR	10' - 7"	552

REINFORCING STEEL	LBS.	7,311
CLASS "A" CONCRETE BREAKDOWN		
POUR #1 - CAP & LOWER WING WALLS	C.Y.	30.1
POUR #2 - BACKWALL & UPPER WING WALLS	C.Y.	18.1
TOTAL CLASS "A" CONCRETE	C.Y.	48.2
12" PRESTRESSED CONCRETE PILES NO. 9	LIN. FT.	450
PILE REDRIVES	EA.	4

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 3 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

END BENT 1 DETAILS

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-35
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 2-12-14
CHECKED BY : A. M. HOUSTON DATE : 2-14-14

DWG. 35 OF 68

SITE 4

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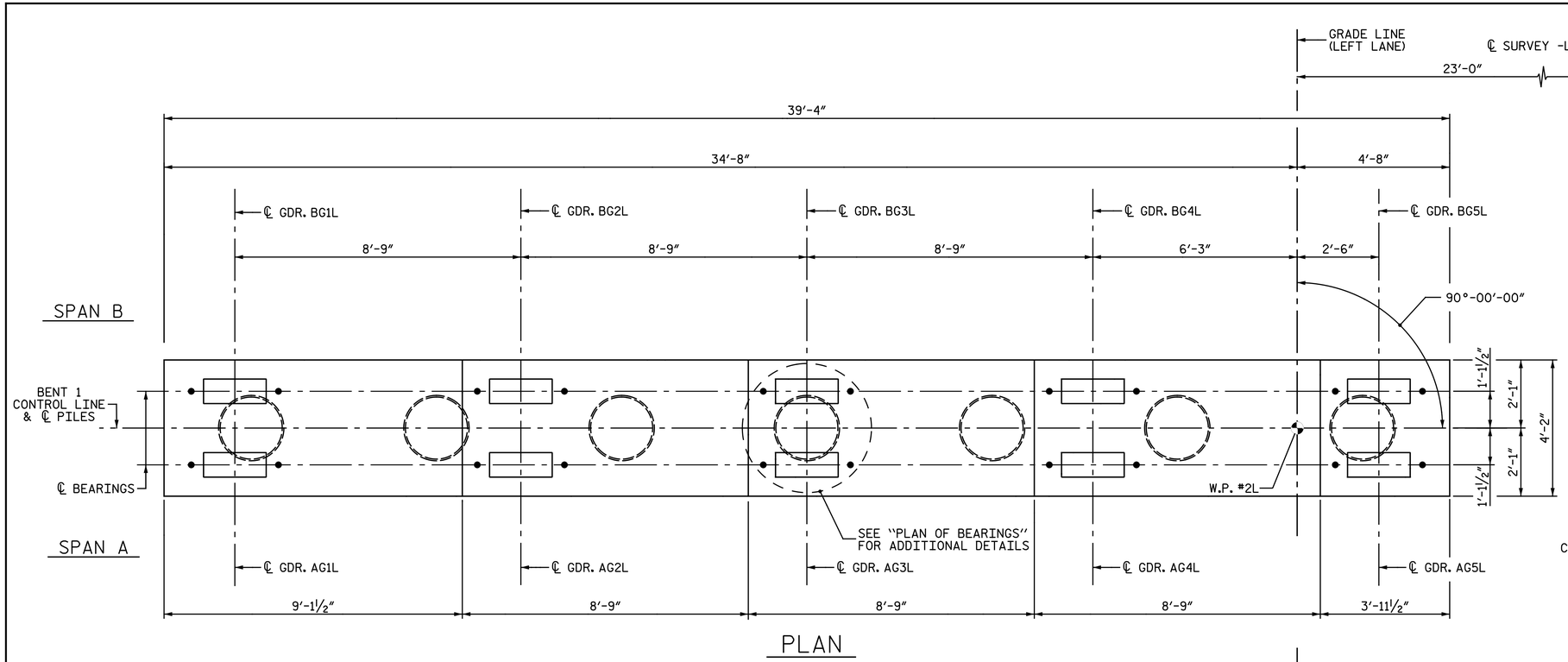
NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

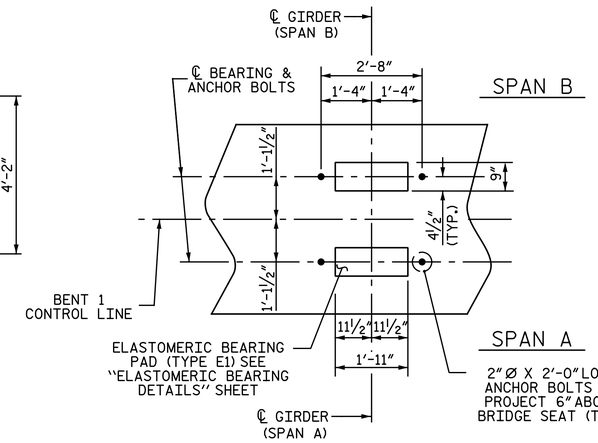
FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

GALVANIZE THE TOP A MINIMUM OF 24 FEET OF EACH INTERIOR BENT PILE . GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 5.

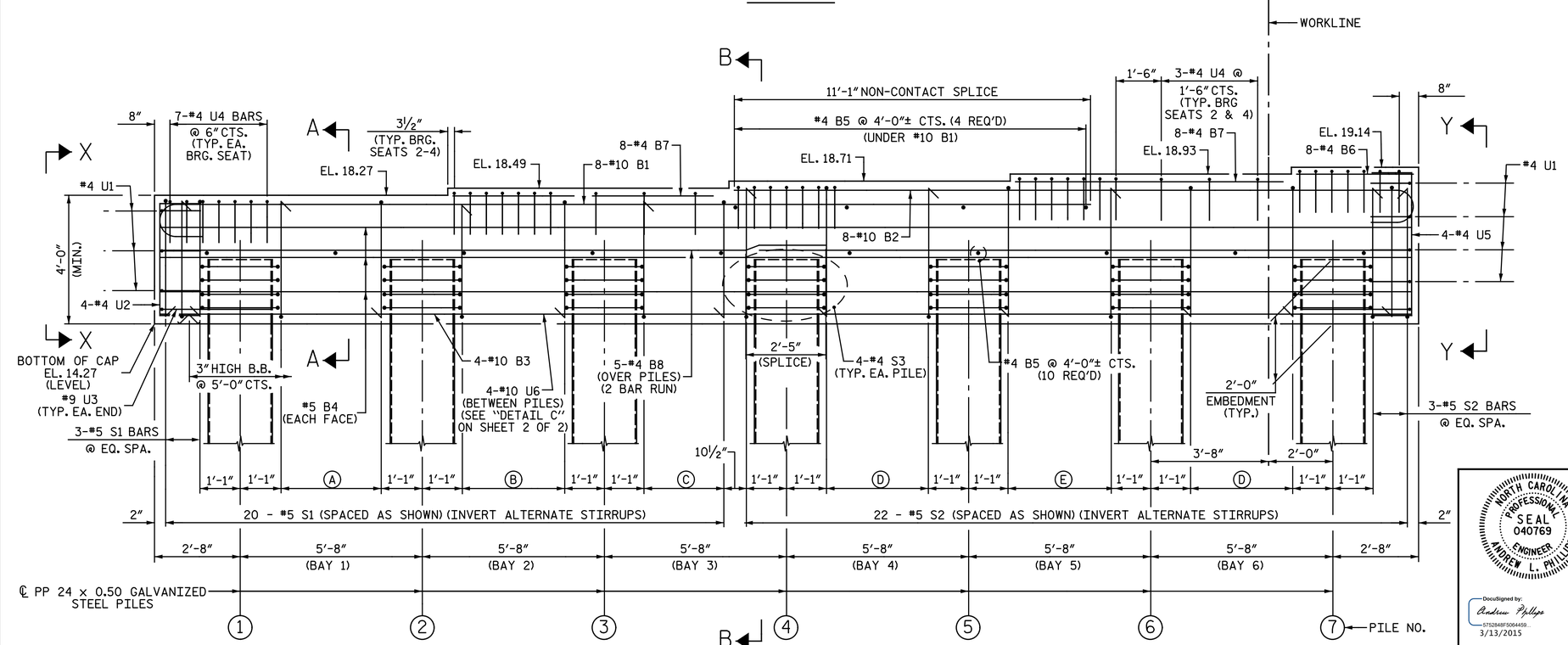


PLAN



PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

Ⓐ 5-#5 S1 BARS @ 10½" SPACES
Ⓑ 8-#5 S1 BARS @ 6" SPACES
Ⓒ 4-#5 S1 BARS @ 10½" SPACES
Ⓓ 5-#5 S2 BARS @ 10½" SPACES
Ⓔ 8-#5 S2 BARS @ 6" SPACES

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 1 OF 2

DRAWN BY : N. B. SPEAKS DATE : 6-12-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 36 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 1

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-36
1			3			TOTAL SHEETS
2			4			68

SITE 4

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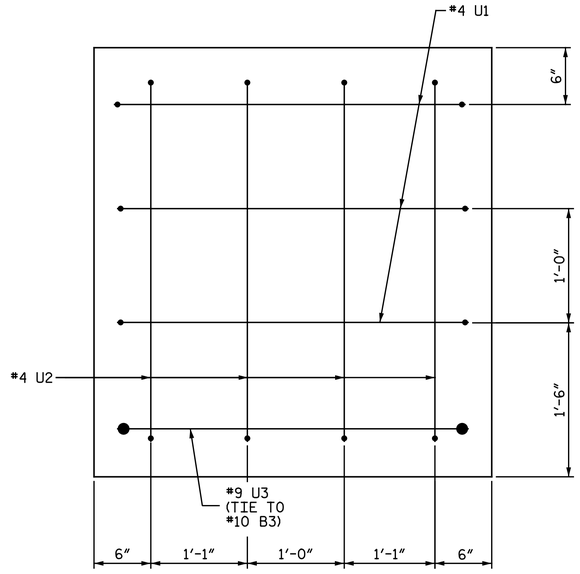
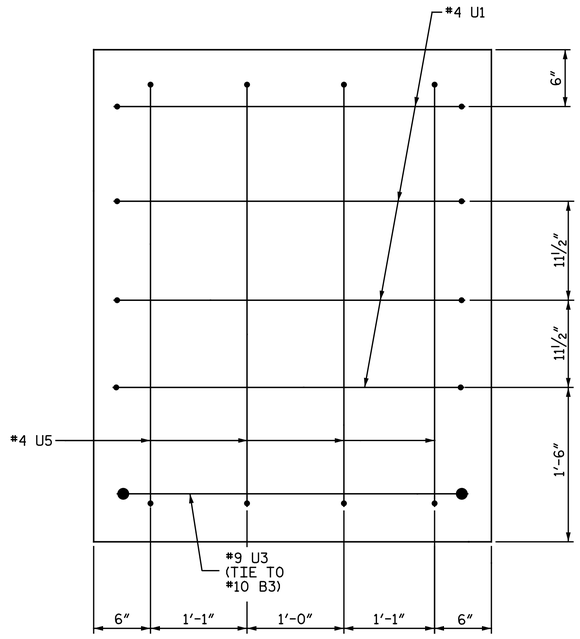
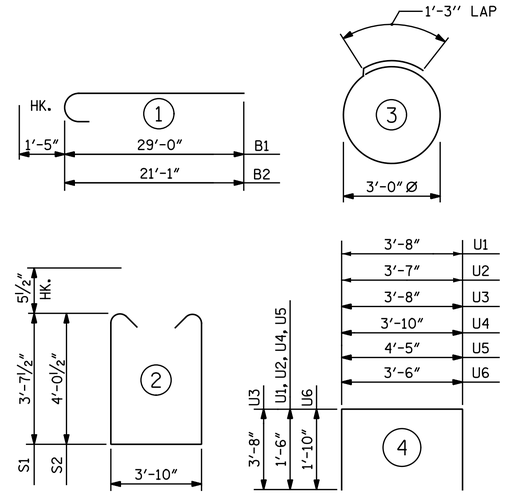


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS "A" CONCRETE BREAKDOWN

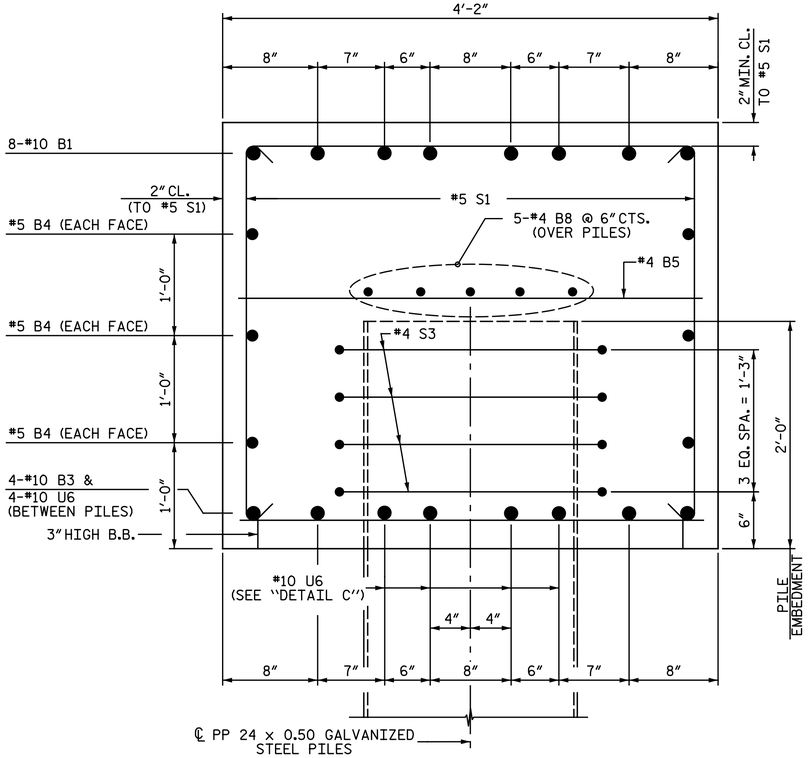
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

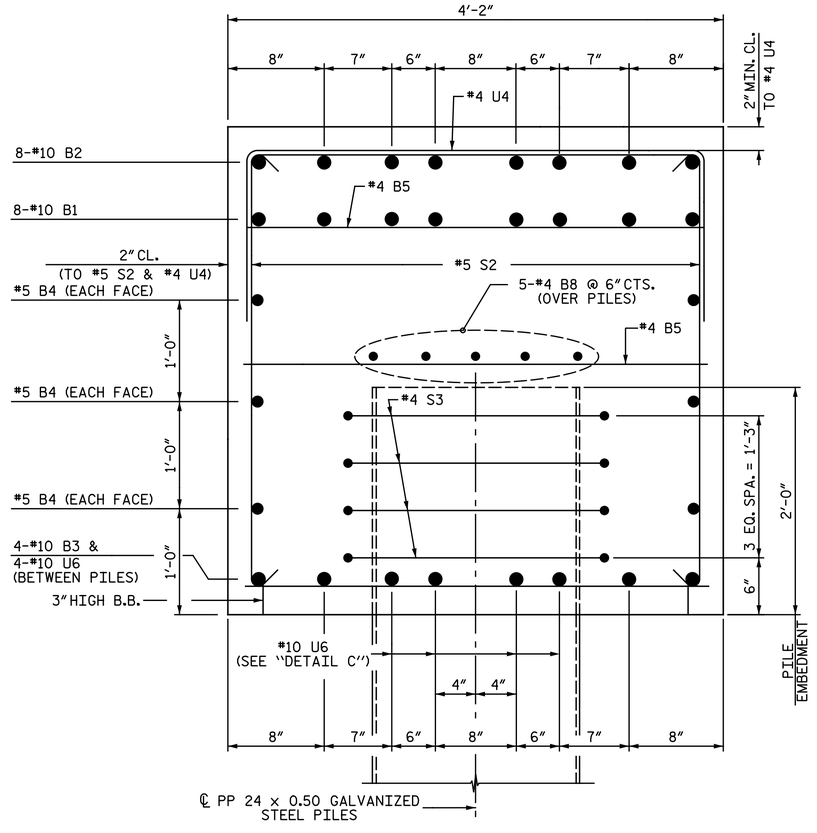
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

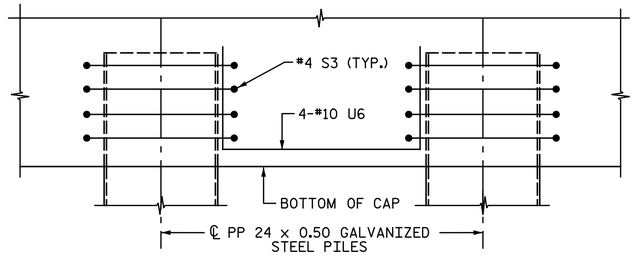
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 1 DETAILS

LEFT LANE

Baker

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NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-37
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-12-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 37 OF 68

SITE 4

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3/5/2015 4:12:09 PM
Filename: Y:\Projects\NCDOT\R-2514D\Site 4\Dwgs\Left\Final\407_037_R2514D_SMU_B1_02.dgn

NOTES:

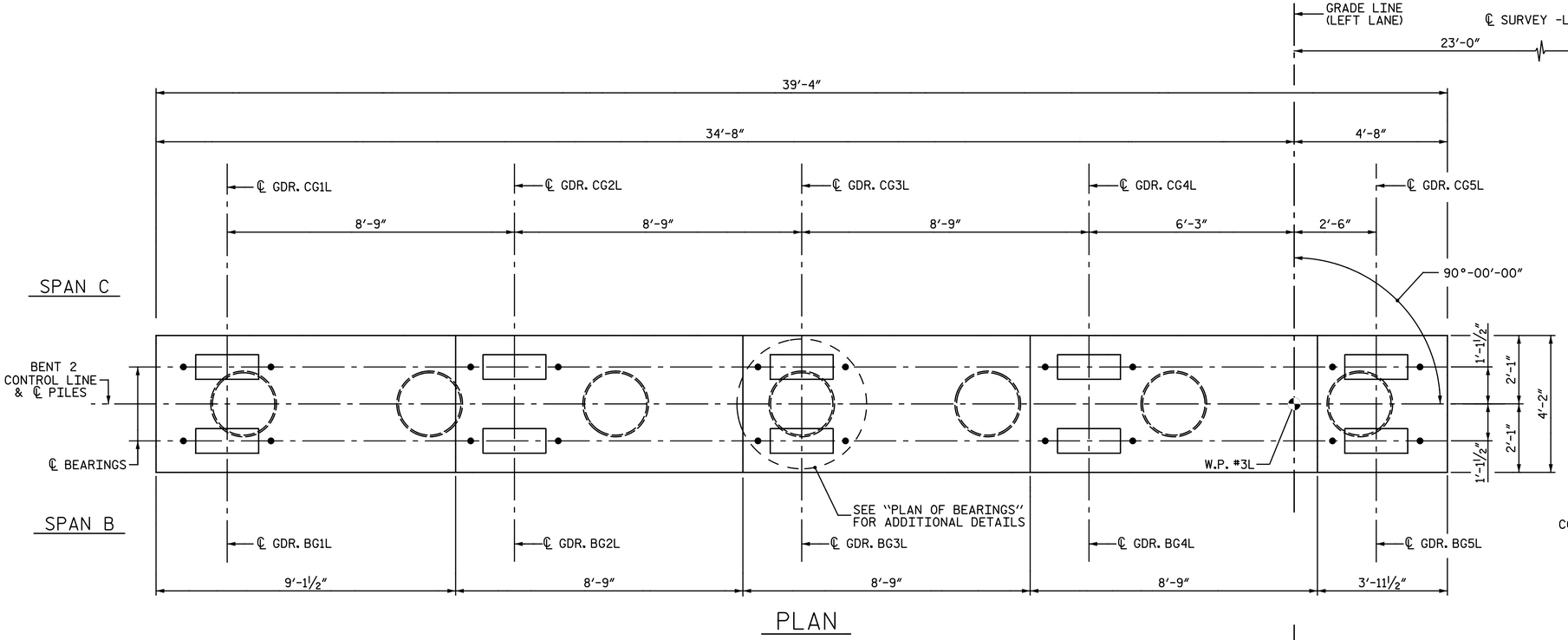
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

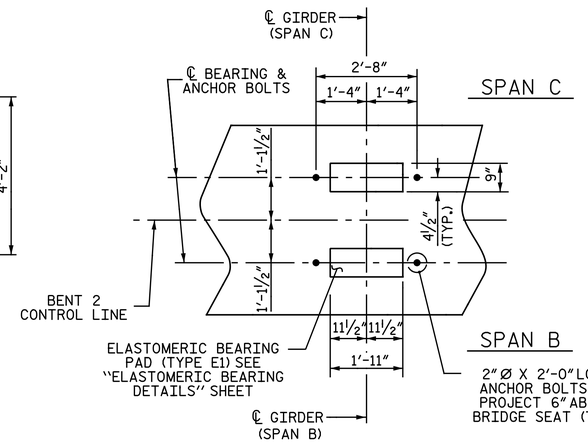
THE TOP SURFACE AREAS OF THE BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

GALVANIZE THE TOP A MINIMUM OF 24 FEET OF EACH INTERIOR BENT PILE . GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 5.

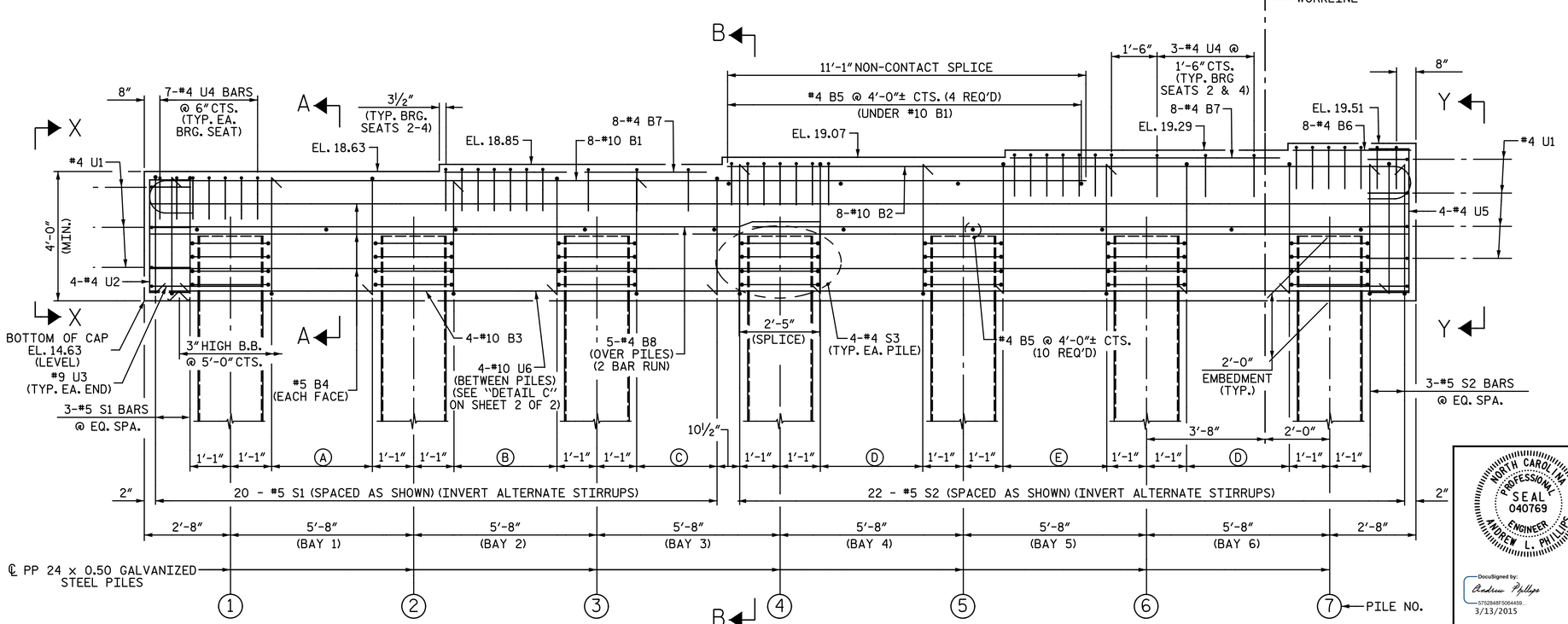


PLAN



PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

- (A) 5-#5 S1 BARS @ 10½" SPACES
- (B) 8-#5 S1 BARS @ 6" SPACES
- (C) 4-#5 S1 BARS @ 10½" SPACES
- (D) 5-#5 S2 BARS @ 10½" SPACES
- (E) 8-#5 S2 BARS @ 6" SPACES

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 2

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-38
1			3			TOTAL SHEETS
2			4			68

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

DRAWN BY : N. B. SPEAKS DATE : 5-12-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 38 OF 68

nbspeaks
3/5/2015 4:12:10 PM
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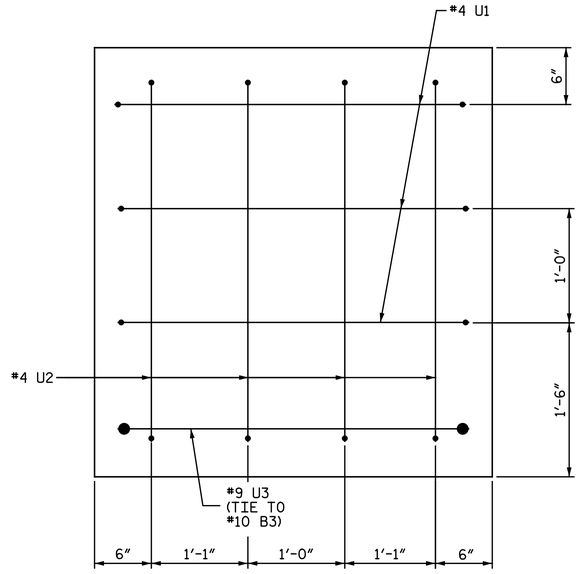
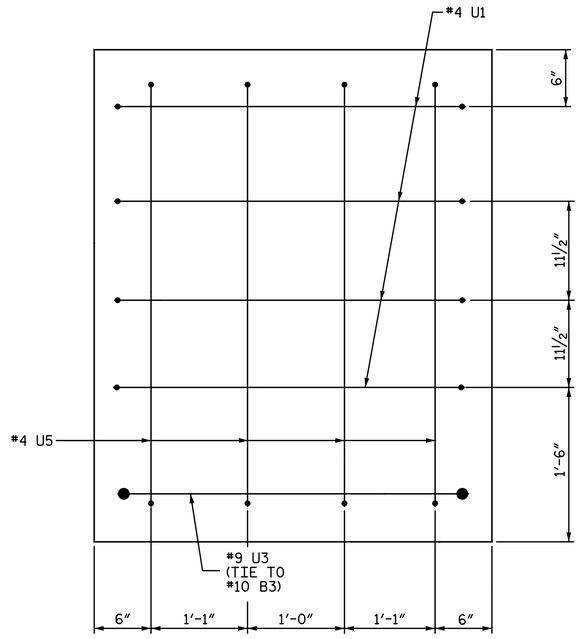
SITE 4

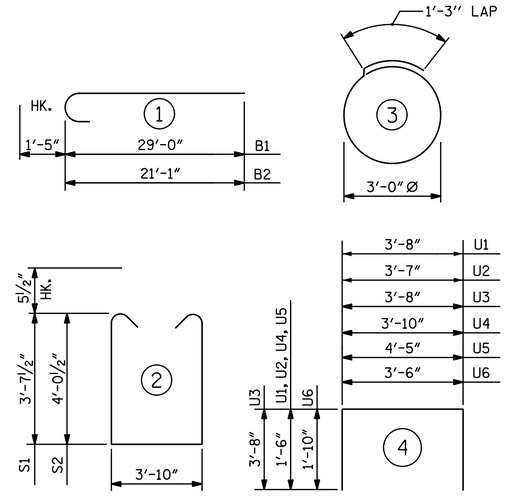


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS "A" CONCRETE BREAKDOWN

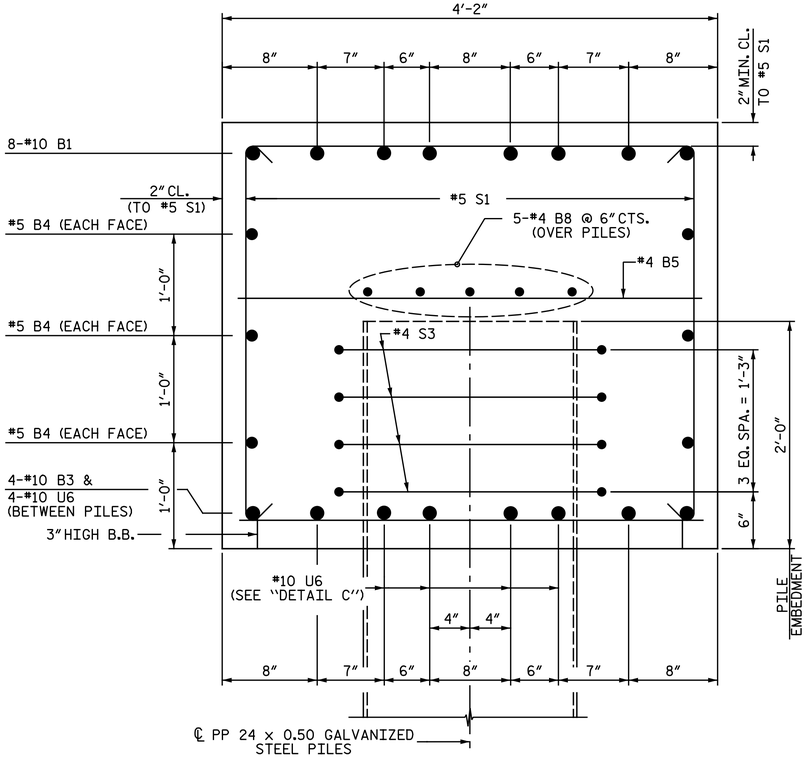
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

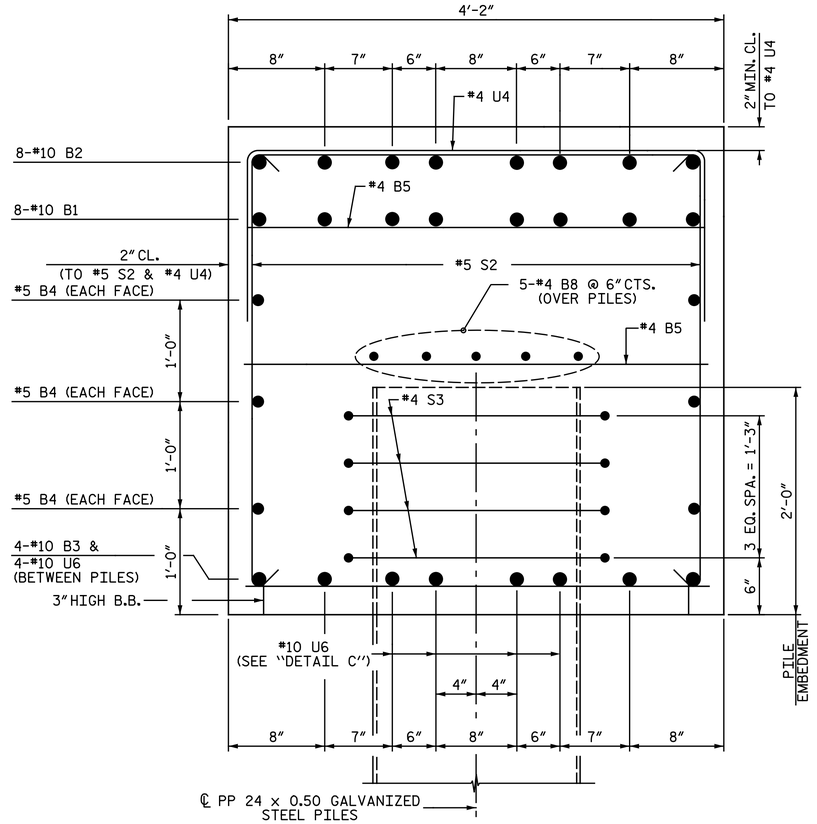
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

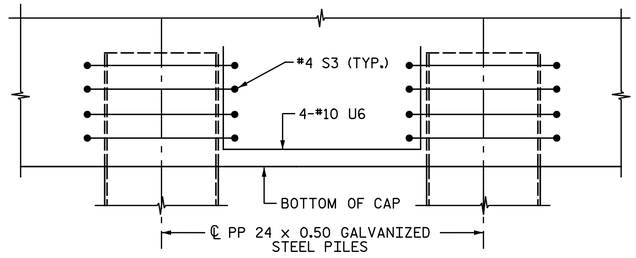
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DUAIN C. HATHAWAY

DocuSigned by: Duain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 2 DETAILS

LEFT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-39
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 5-12-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 39 OF 68

nbspeaks
3/5/2015 4:12:11 PM
Filename: Y:\Projects\NCDOT\R-2514D\Site 4\Dwgs\Left\Final\407_039_R2514D_SMU_B2_02.dgn

SITE 4

NOTES:

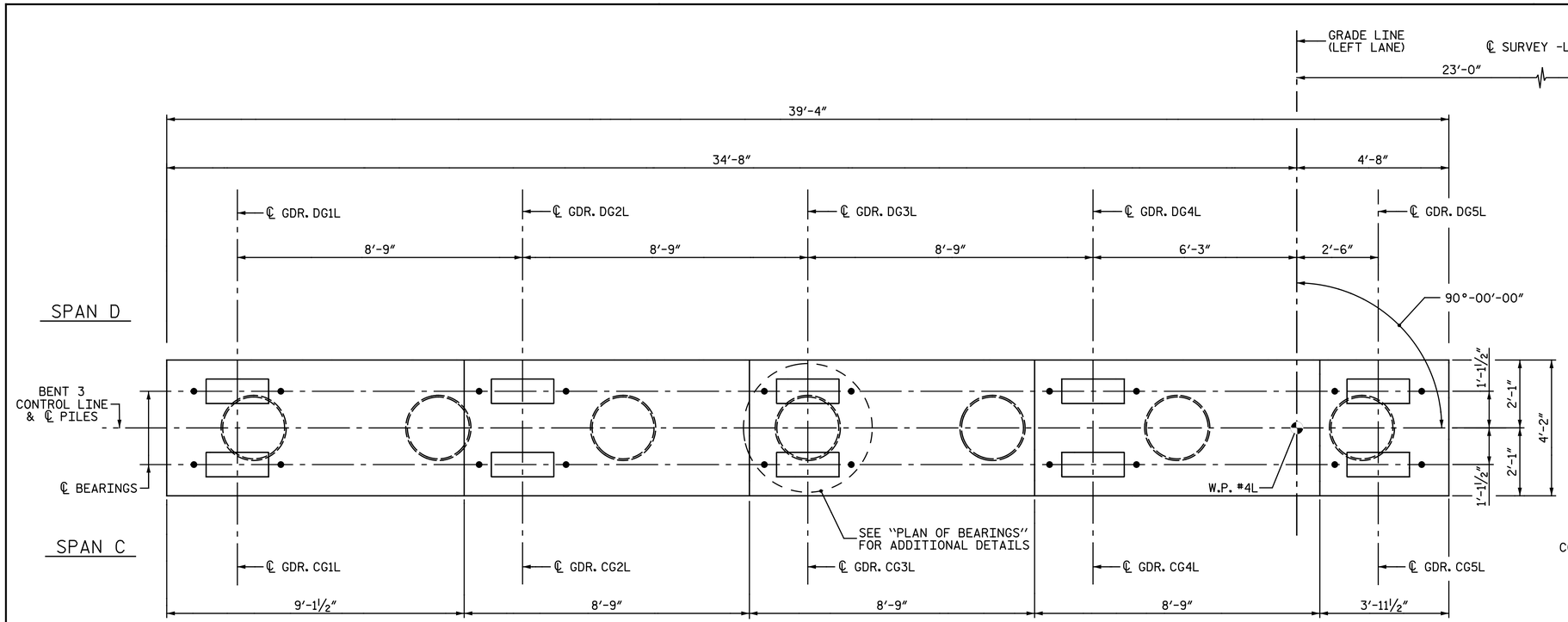
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

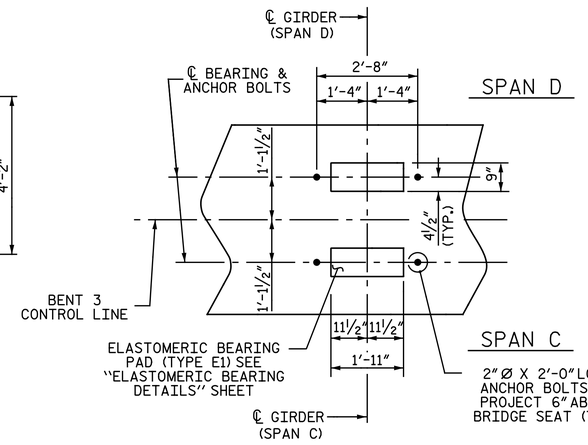
THE TOP SURFACE AREAS OF THE BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL STILL BE USED.

GALVANIZE THE TOP A MINIMUM OF 23 FEET OF EACH INTERIOR BENT PILE . GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 5.

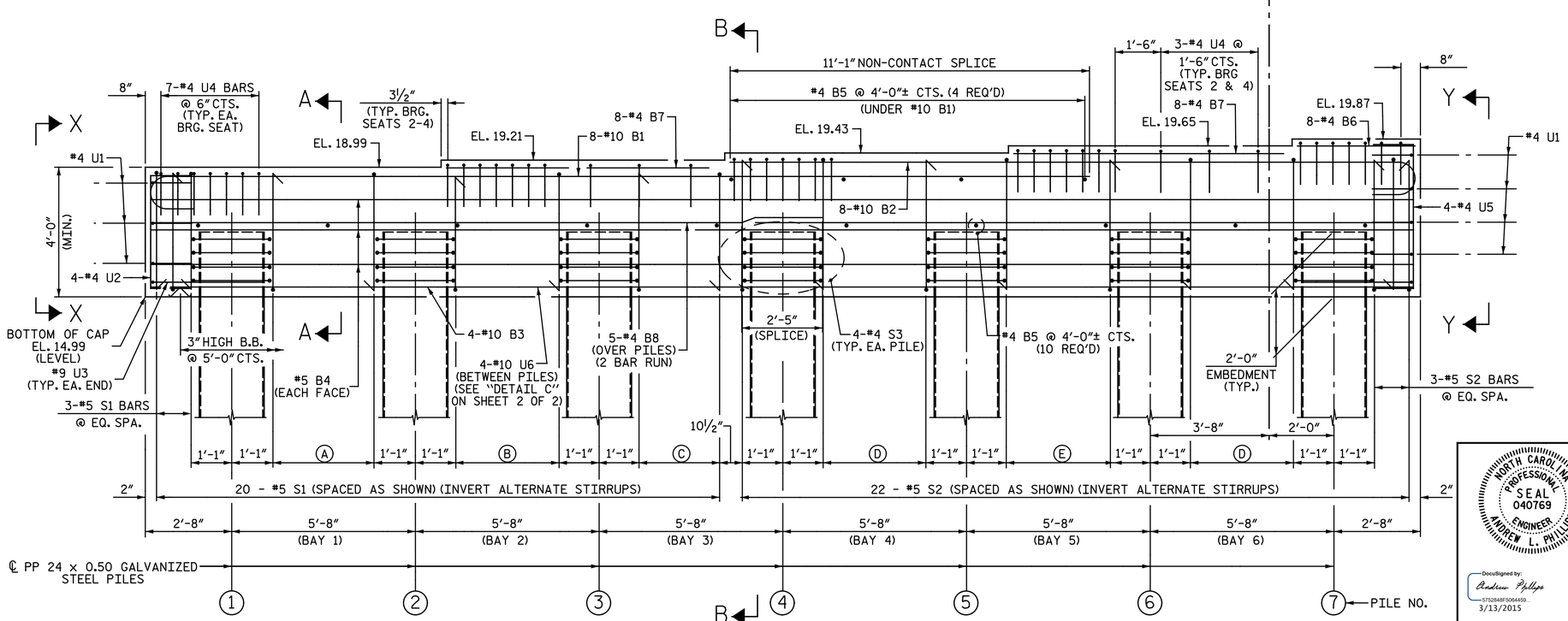


PLAN



PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

Ⓐ 5-#5 S1 BARS @ 10½" SPACES
Ⓑ 8-#5 S1 BARS @ 6" SPACES
Ⓒ 4-#5 S1 BARS @ 10½" SPACES
Ⓓ 5-#5 S2 BARS @ 10½" SPACES
Ⓔ 8-#5 S2 BARS @ 6" SPACES

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

Baker
Michael Baker Engineering
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Cary, North Carolina 27518
NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 3

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-40
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-12-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 40 OF 68

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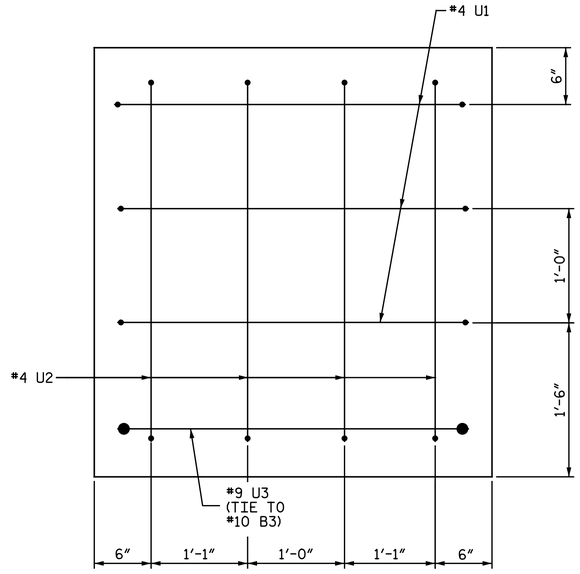
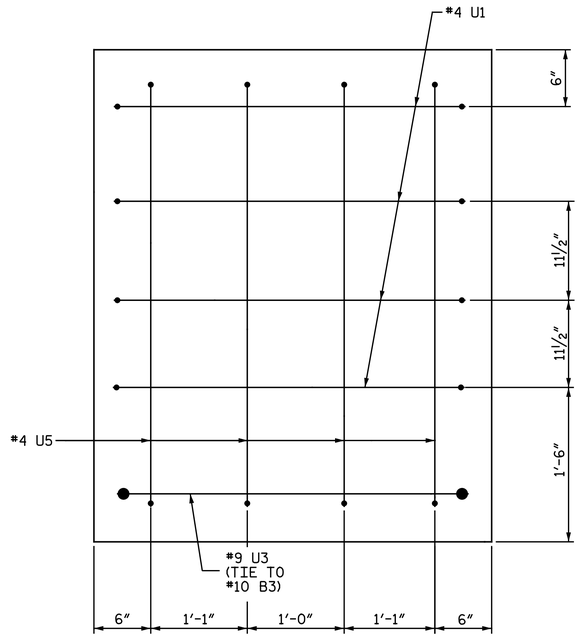
SITE 4

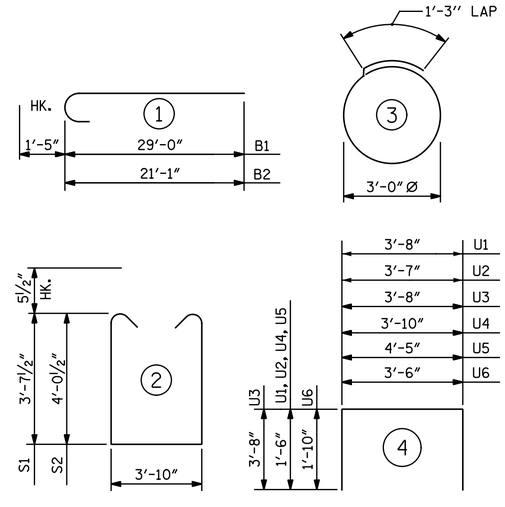


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 3

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS "A" CONCRETE BREAKDOWN

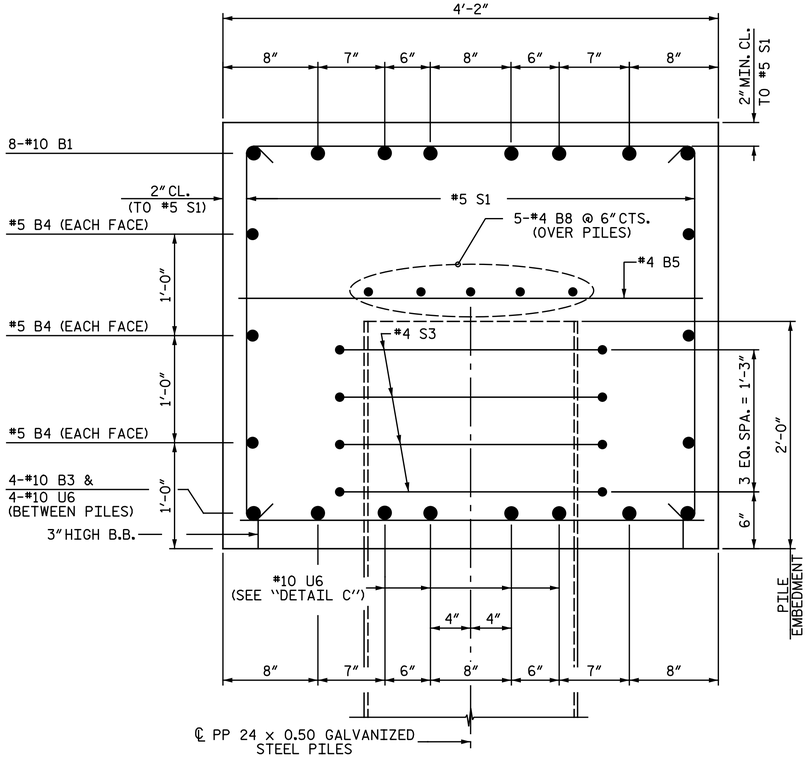
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

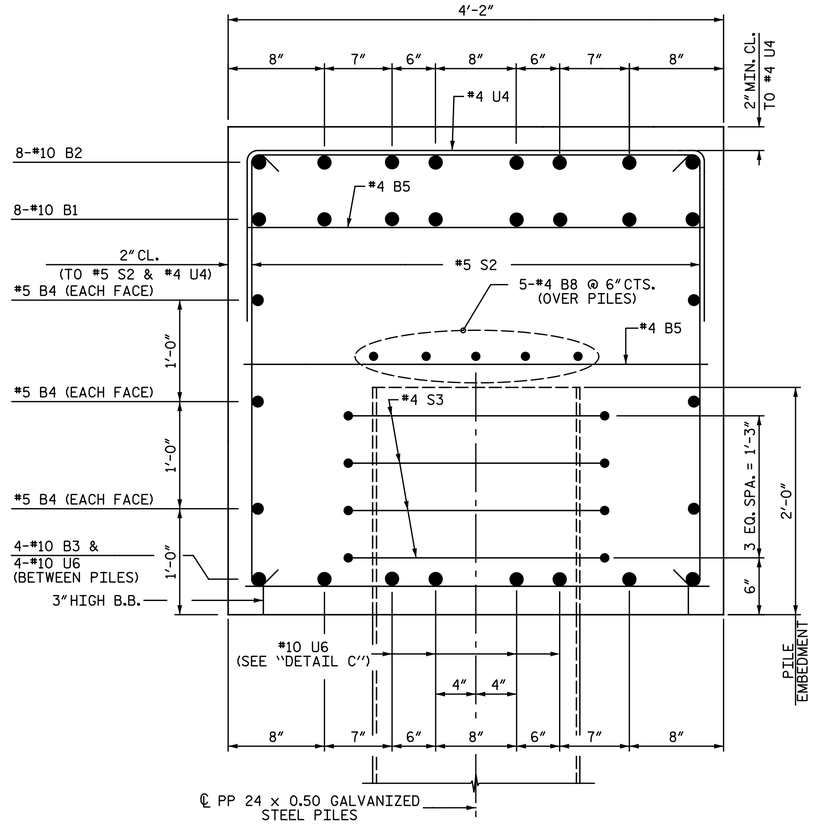
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

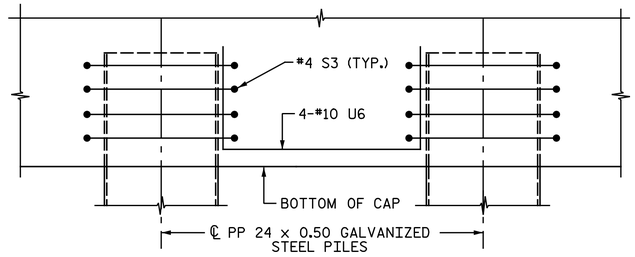
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN C. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 3 DETAILS

LEFT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-41
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-12-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 41 OF 68

SITE 4

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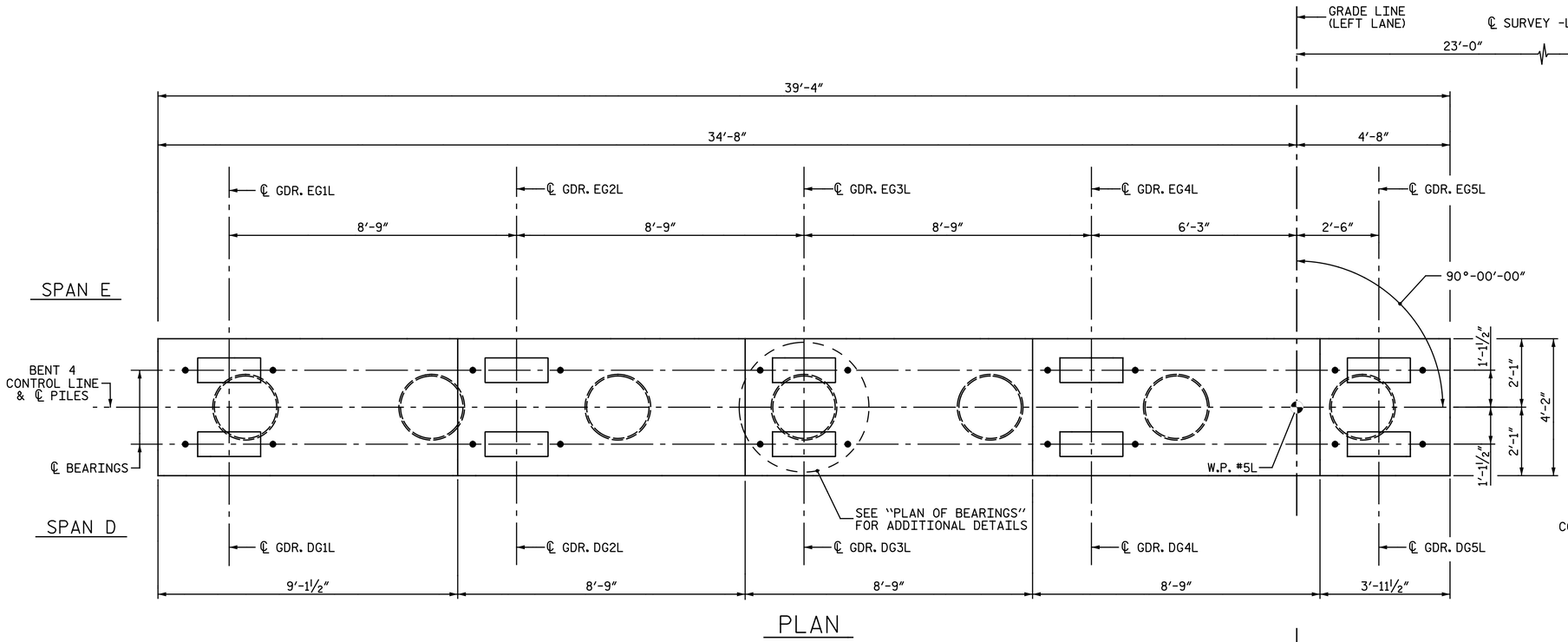
NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

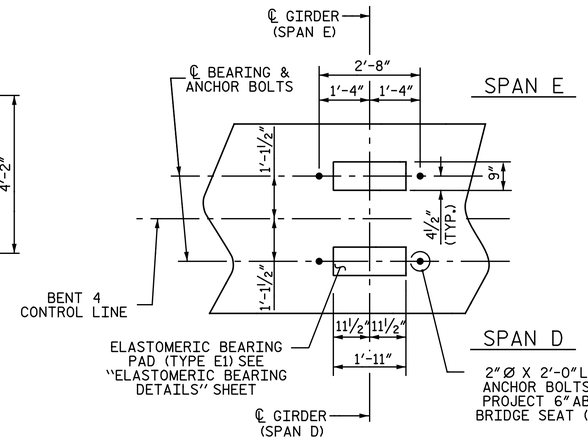
FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

GALVANIZE THE TOP A MINIMUM OF 22 FEET OF EACH INTERIOR BENT PILE . GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 5.

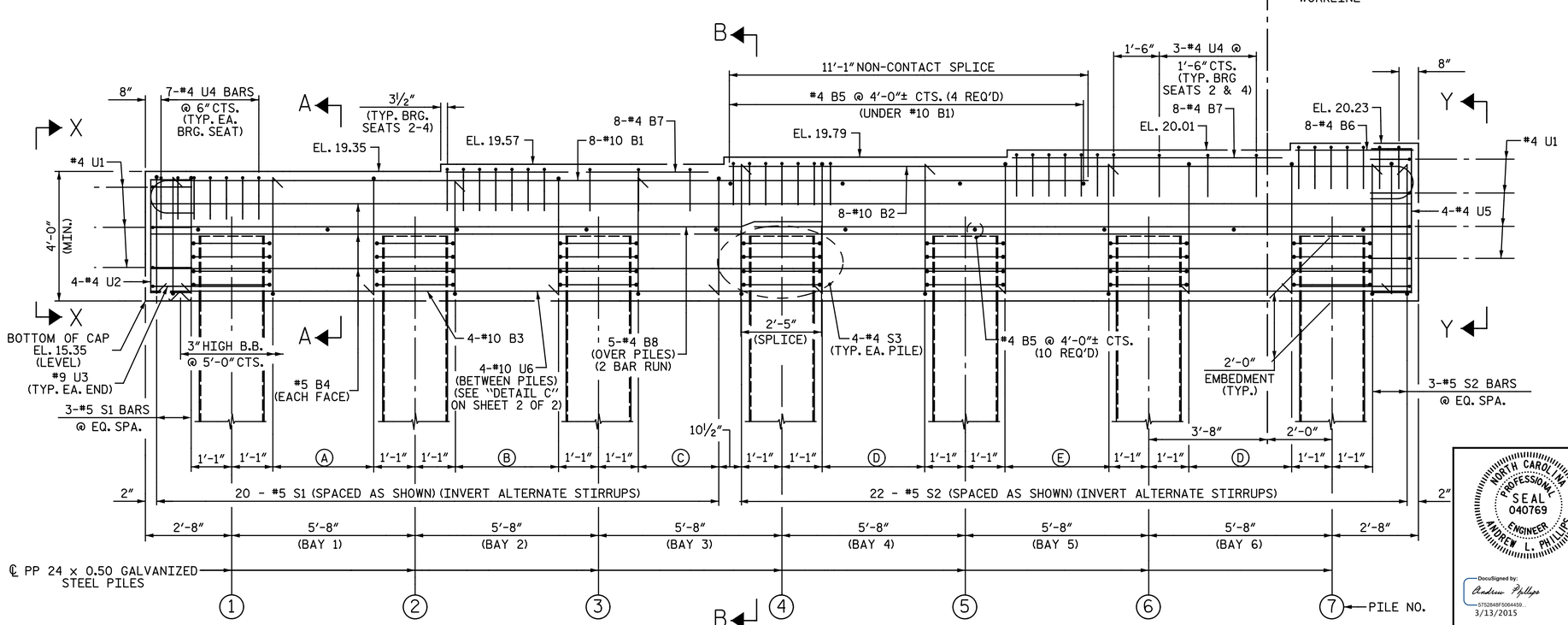


PLAN



PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

Ⓐ 5-#5 S1 BARS @ 10½" SPACES
Ⓑ 8-#5 S1 BARS @ 6" SPACES
Ⓒ 4-#5 S1 BARS @ 10½" SPACES
Ⓓ 5-#5 S2 BARS @ 10½" SPACES
Ⓔ 8-#5 S2 BARS @ 6" SPACES

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459...
3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460...
3/13/2015

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 4

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-42
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-13-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 42 OF 68

SITE 4

nbspeaks
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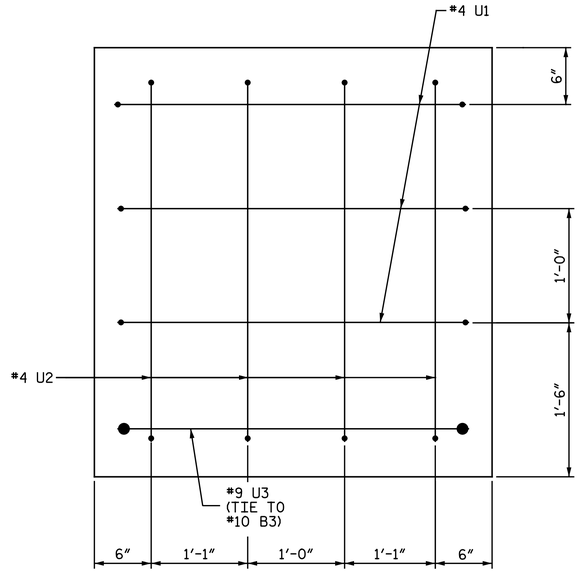
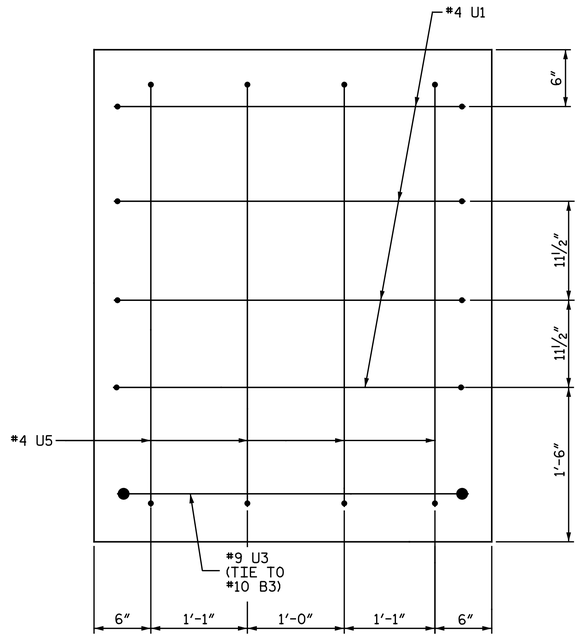
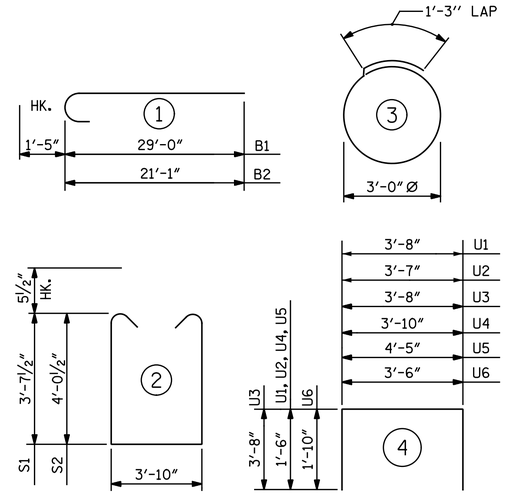


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 4

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
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U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS "A" CONCRETE BREAKDOWN

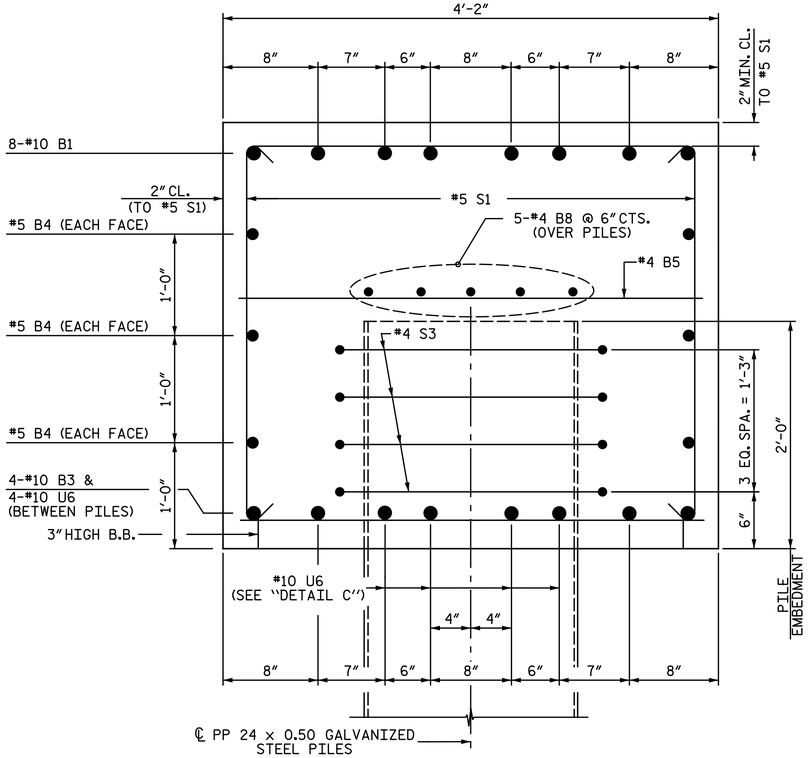
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

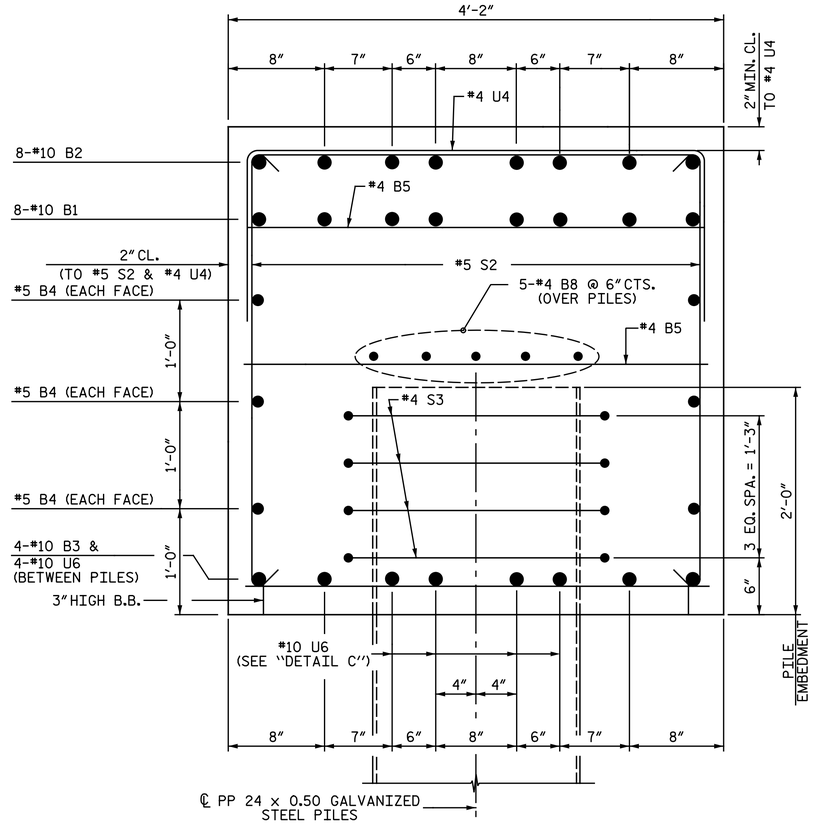
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

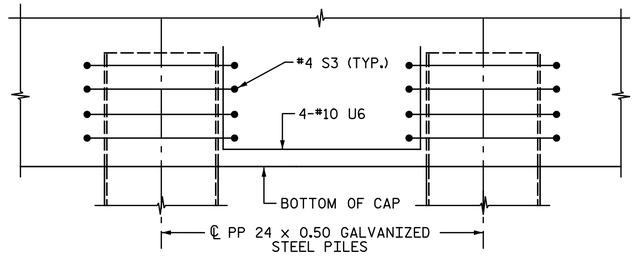
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 4 DETAILS

LEFT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-43
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-13-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 43 OF 68

SITE 4

nbspeaks
3/5/2015 4:12:14 PM
Filename: Y:\Projects\NCDOT\R-2514D\Site 4\Dwgs\Left\Final\407_043_R2514D_SMU_B4_02.dgn

NOTES:

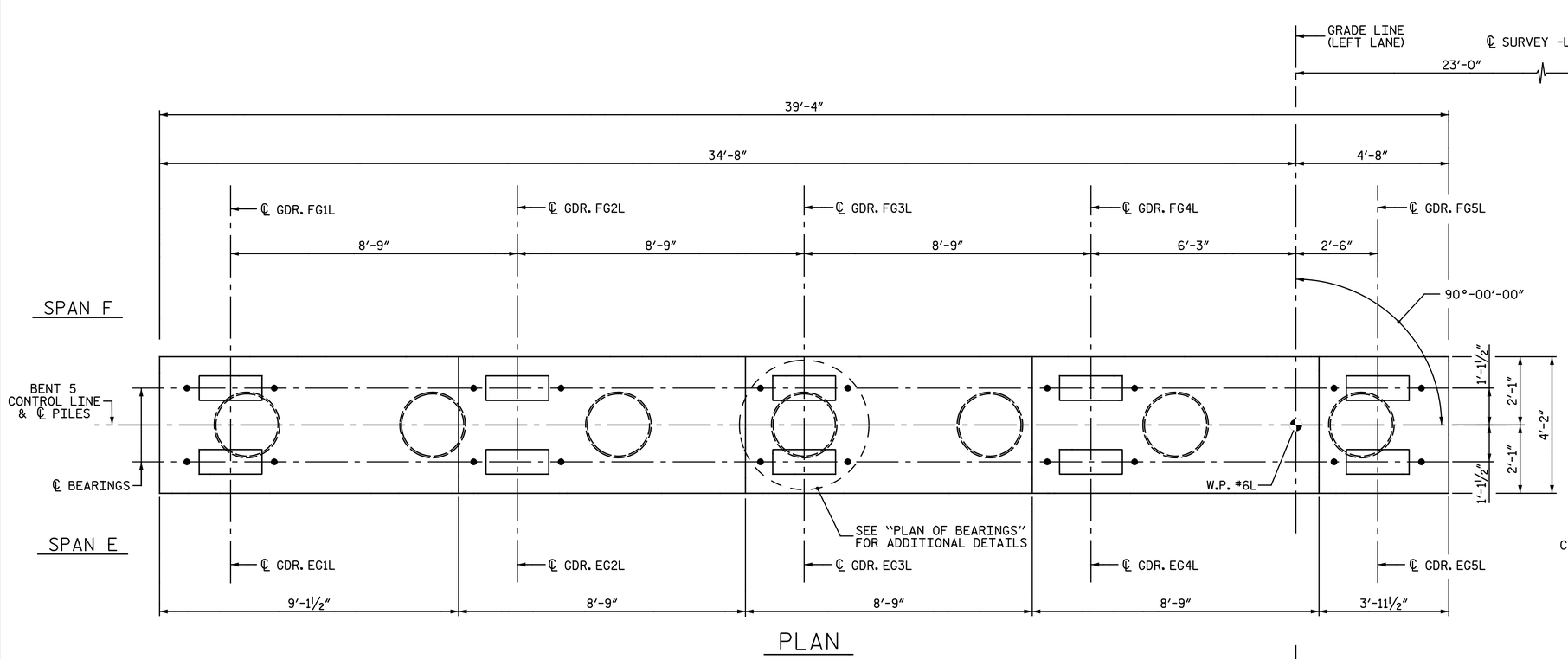
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

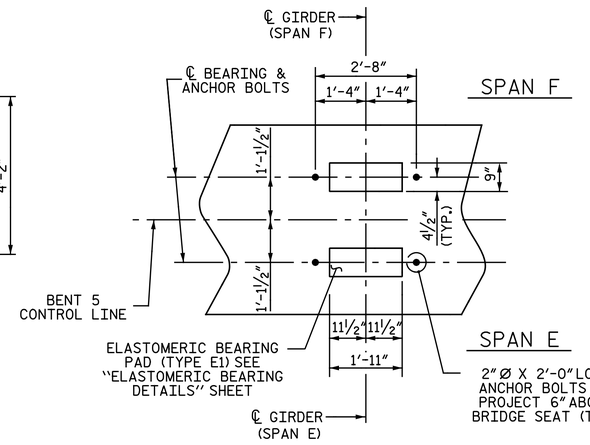
THE TOP SURFACE AREAS OF THE BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

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

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 5.

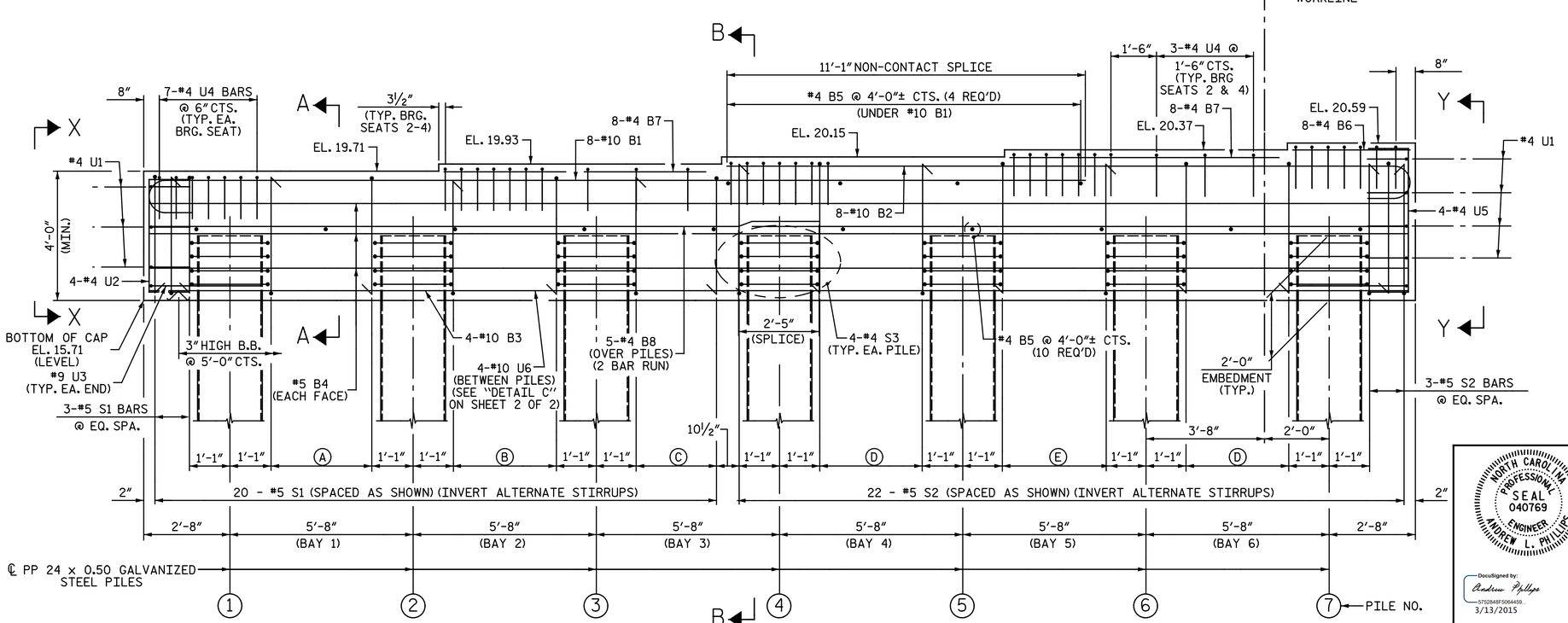


PLAN



PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

Ⓐ 5-#5 S1 BARS @ 10½" SPACES
Ⓑ 8-#5 S1 BARS @ 6" SPACES
Ⓒ 4-#5 S1 BARS @ 10½" SPACES
Ⓓ 5-#5 S2 BARS @ 10½" SPACES
Ⓔ 8-#5 S2 BARS @ 6" SPACES

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F50664459...
3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460...
3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 5

LEFT LANE

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-44
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-13-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 44 OF 68

SITE 4

nbspeaks
3/5/2015 4:12:15 PM
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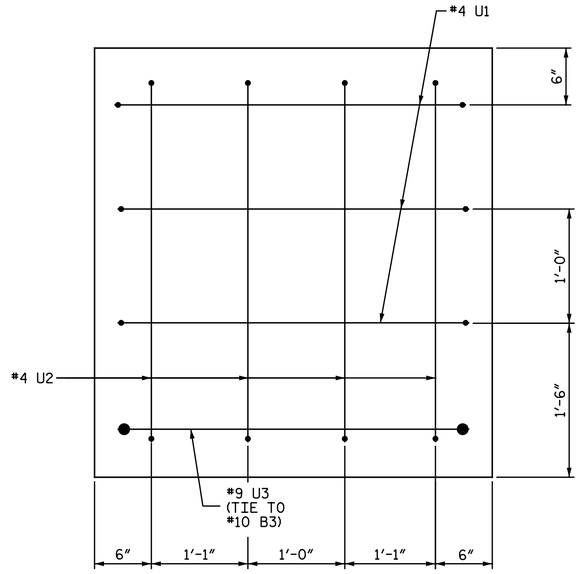
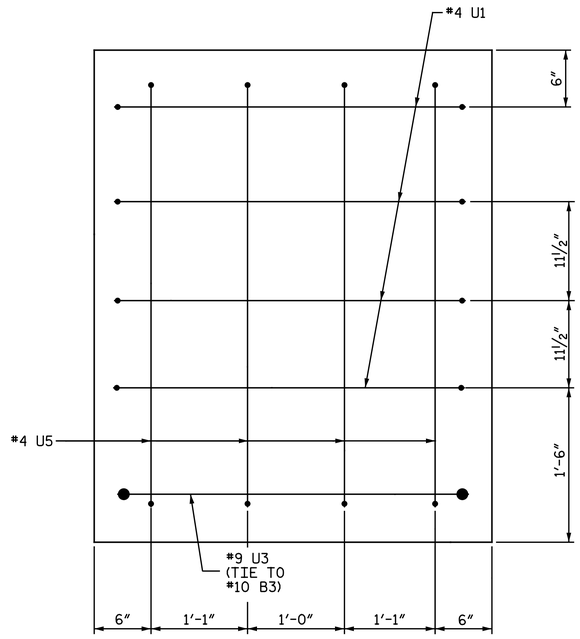
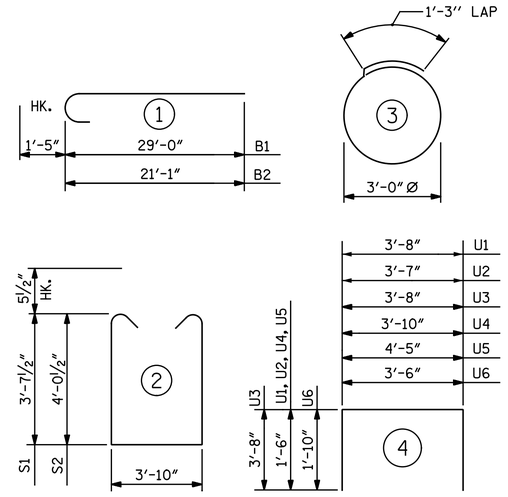


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 5

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS "A" CONCRETE BREAKDOWN

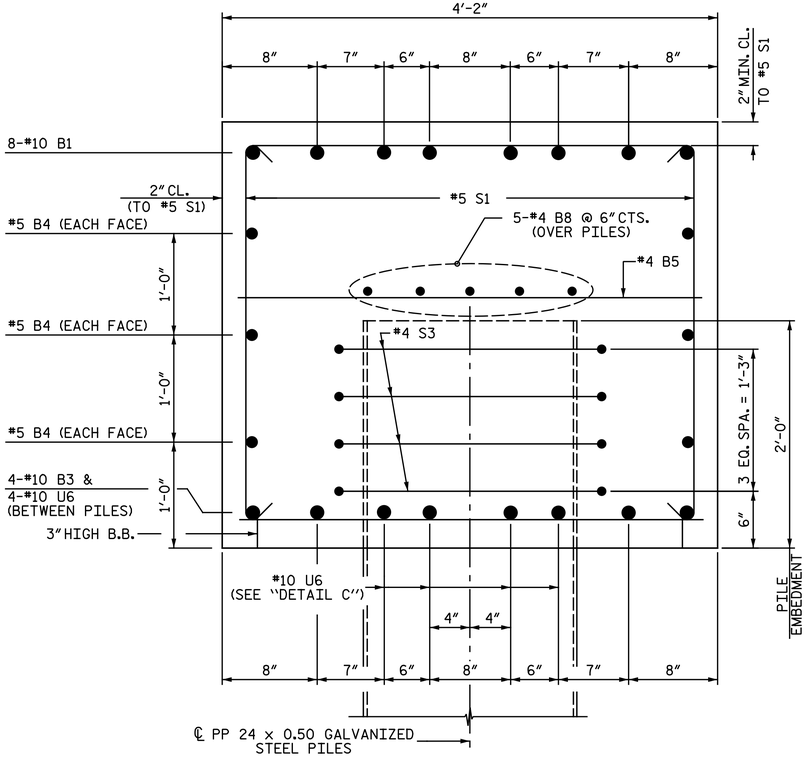
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

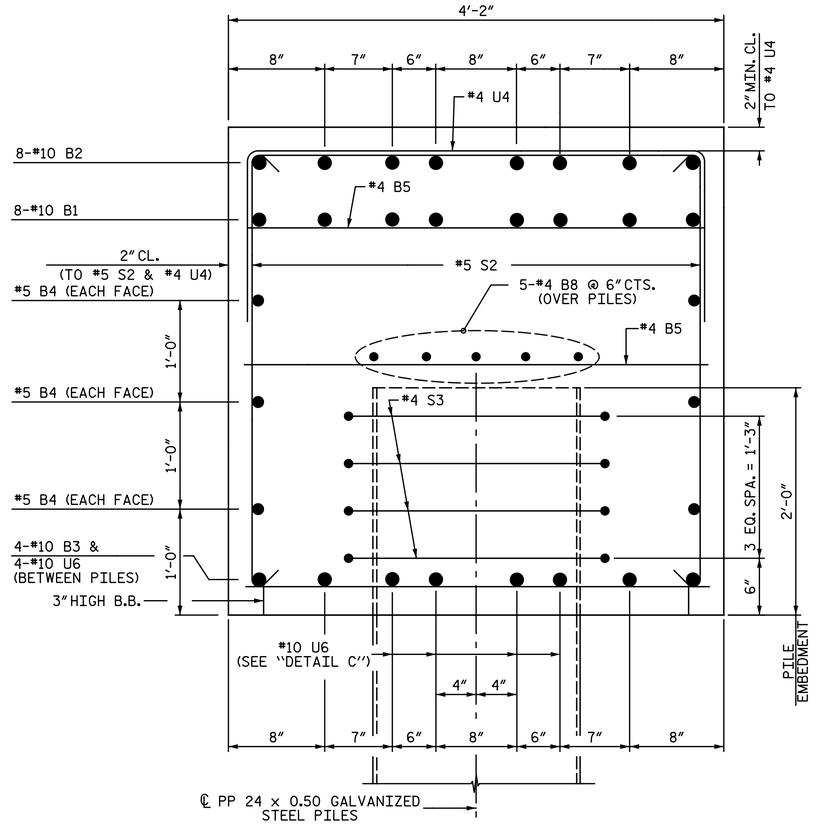
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

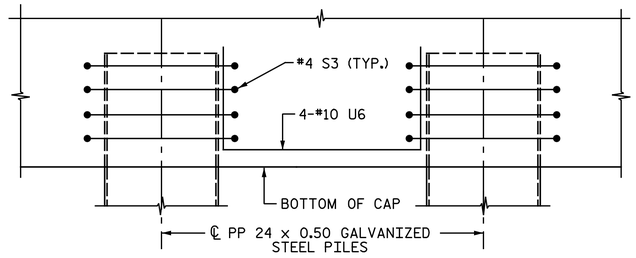
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 5 DETAILS

LEFT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-45
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-13-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 45 OF 68

SITE 4

nbspeaks
3/5/2015 4:12:16 PM
Filename: Y:\Projects\NCDOT\R-2514D\Site 4\Dwgs\Left\Final\407_045_R2514D_SMU_B5_02.dgn

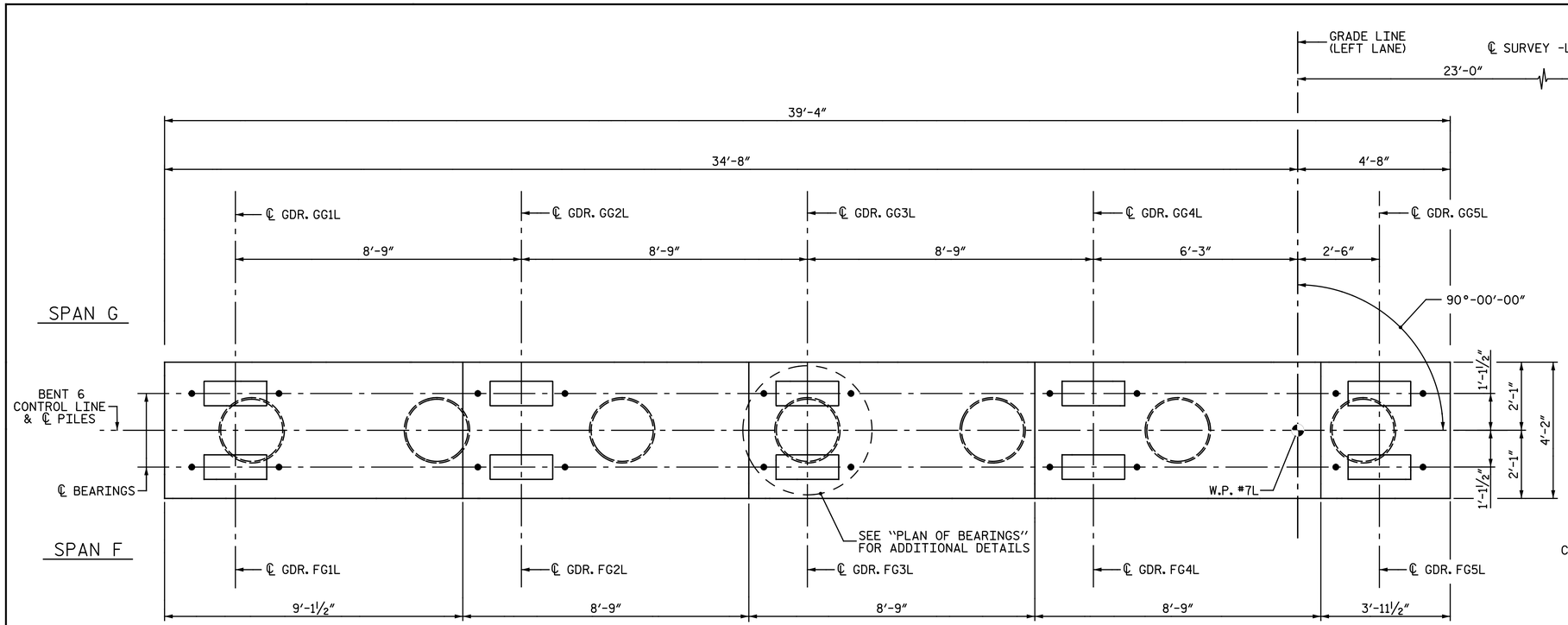
NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

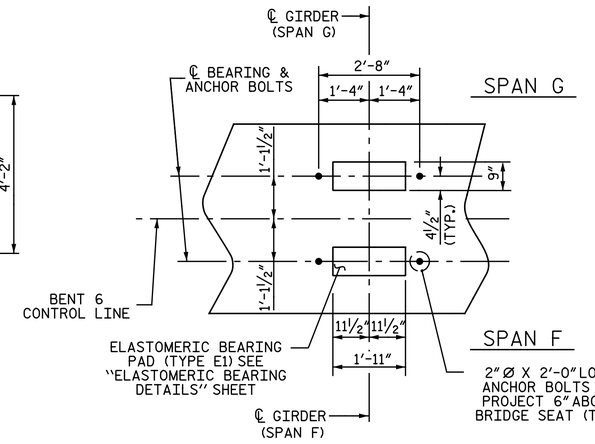
FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

GALVANIZE THE TOP A MINIMUM OF 35 FEET OF EACH INTERIOR BENT PILE . GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 5.

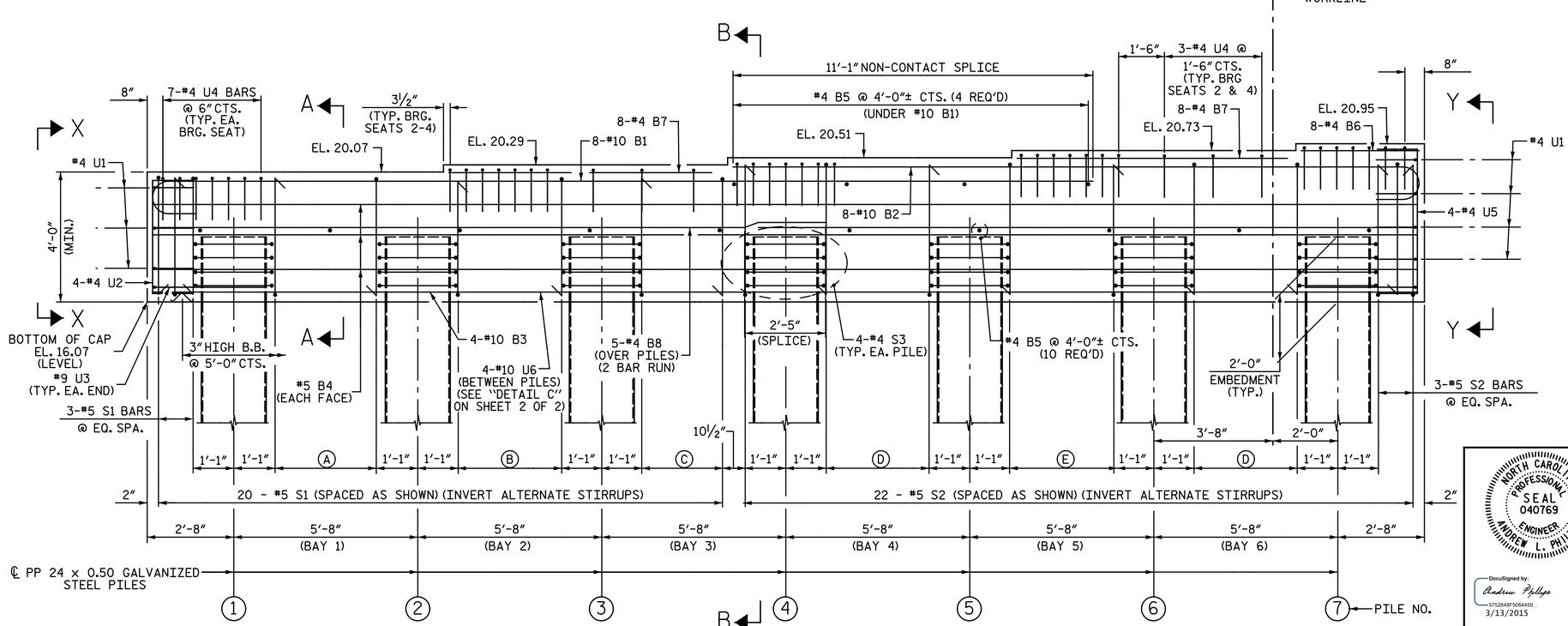


PLAN



PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

Ⓐ 5-#5 S1 BARS @ 10½" SPACES
Ⓑ 8-#5 S1 BARS @ 6" SPACES
Ⓒ 4-#5 S1 BARS @ 10½" SPACES
Ⓓ 5-#5 S2 BARS @ 10½" SPACES
Ⓔ 8-#5 S2 BARS @ 6" SPACES

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 6

LEFT LANE

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F50064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-46
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-13-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 46 OF 68

SITE 4

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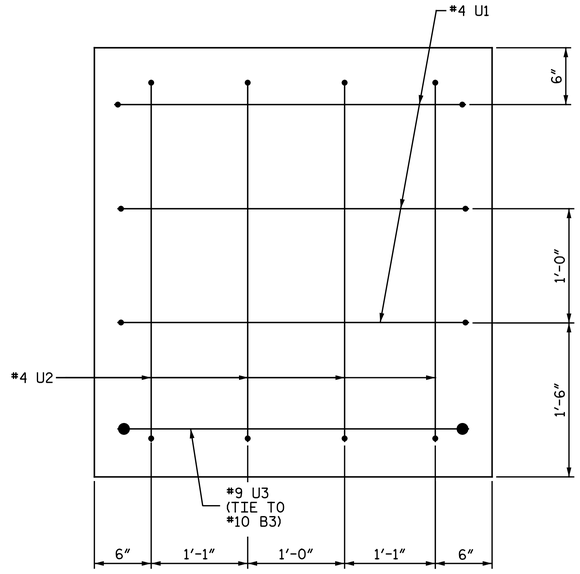
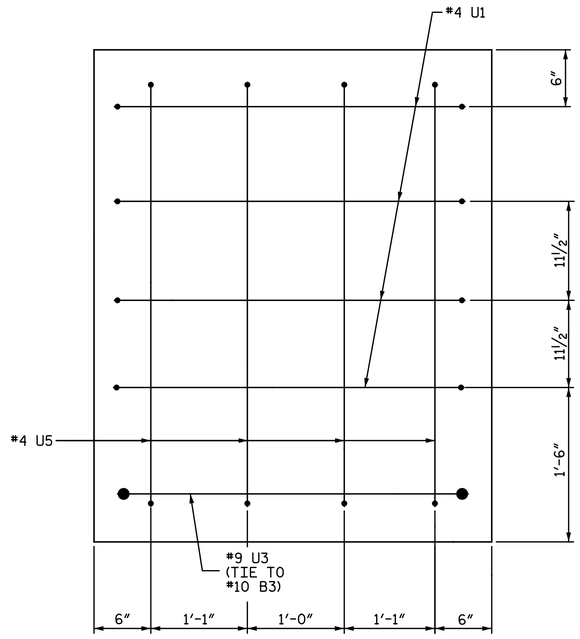
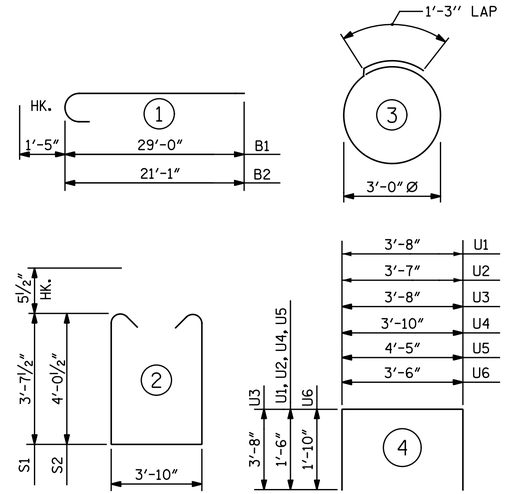


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 6

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS "A" CONCRETE BREAKDOWN

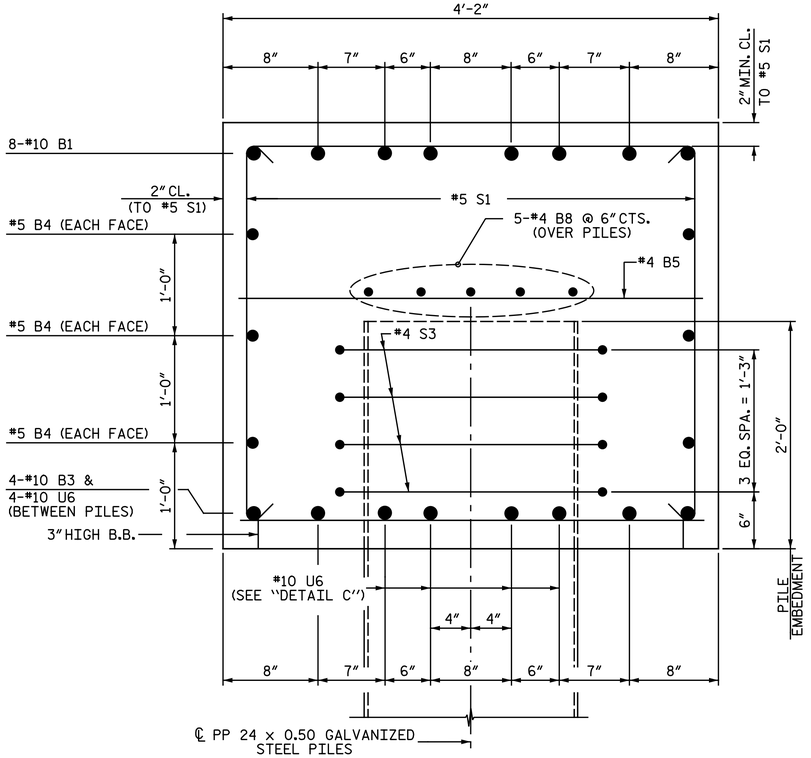
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

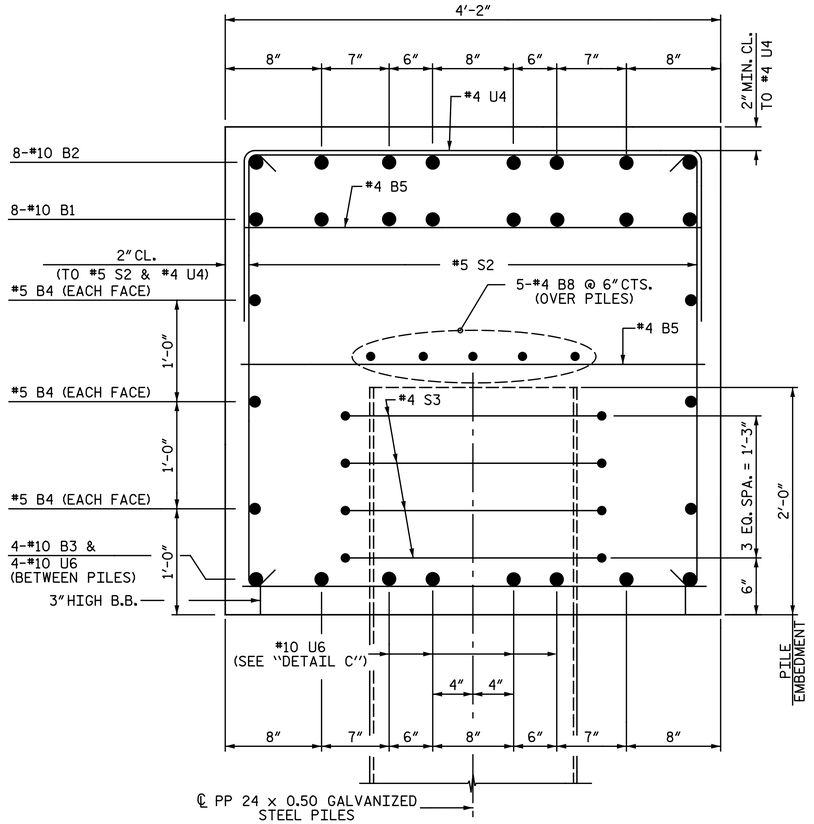
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

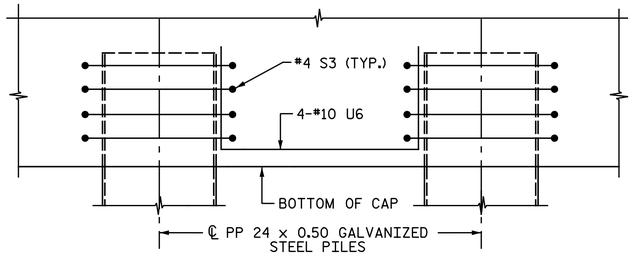
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN C. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 6 DETAILS

LEFT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-47
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-13-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 47 OF 68

SITE 4

nbspeaks
3/5/2015 4:12:17 PM
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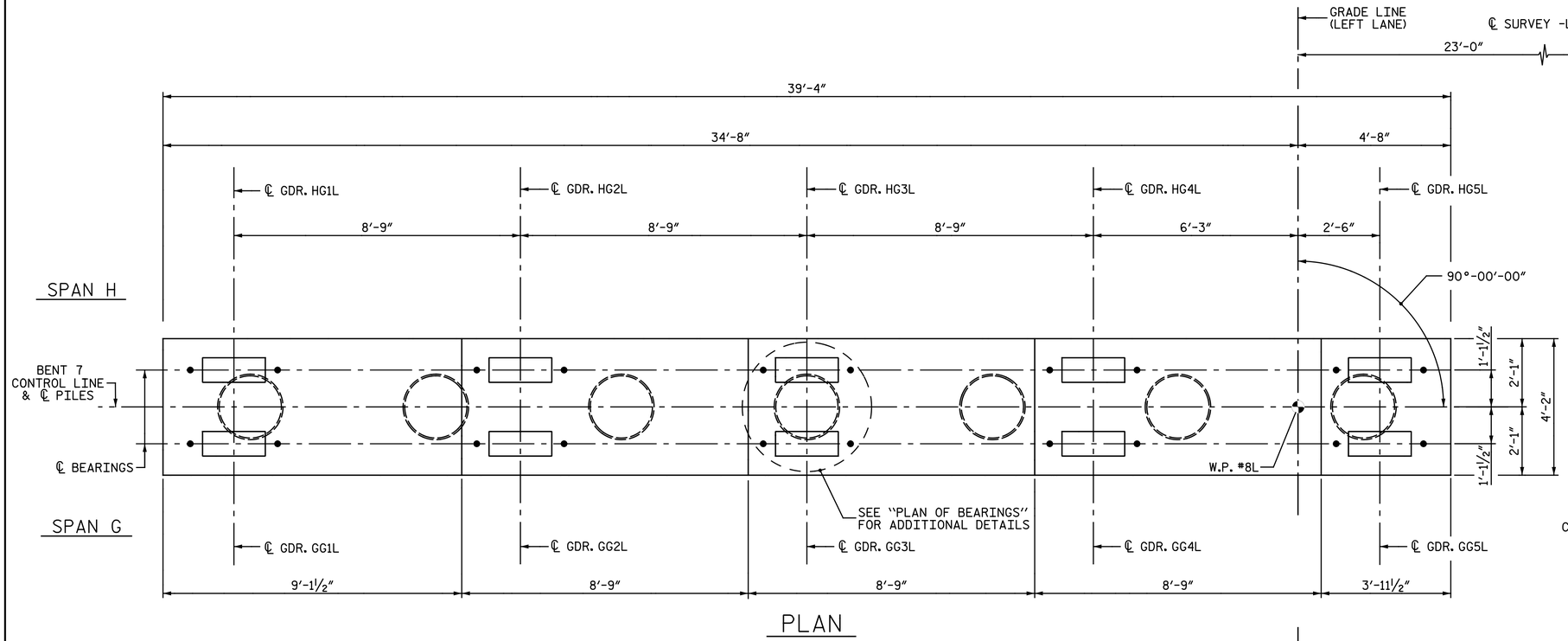
NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

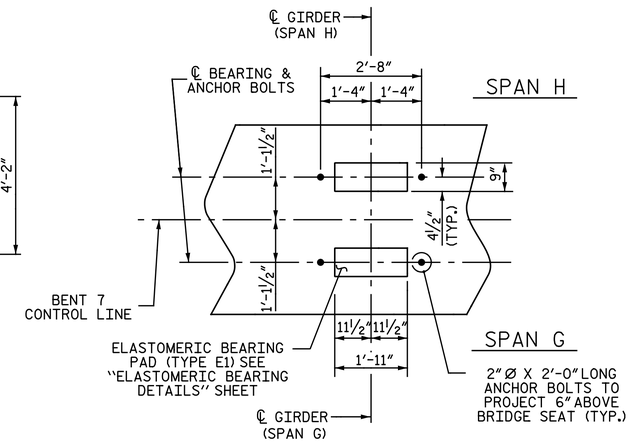
FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

GALVANIZE THE TOP A MINIMUM OF 39 FEET OF EACH INTERIOR BENT PILE . GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 4 OF 5.

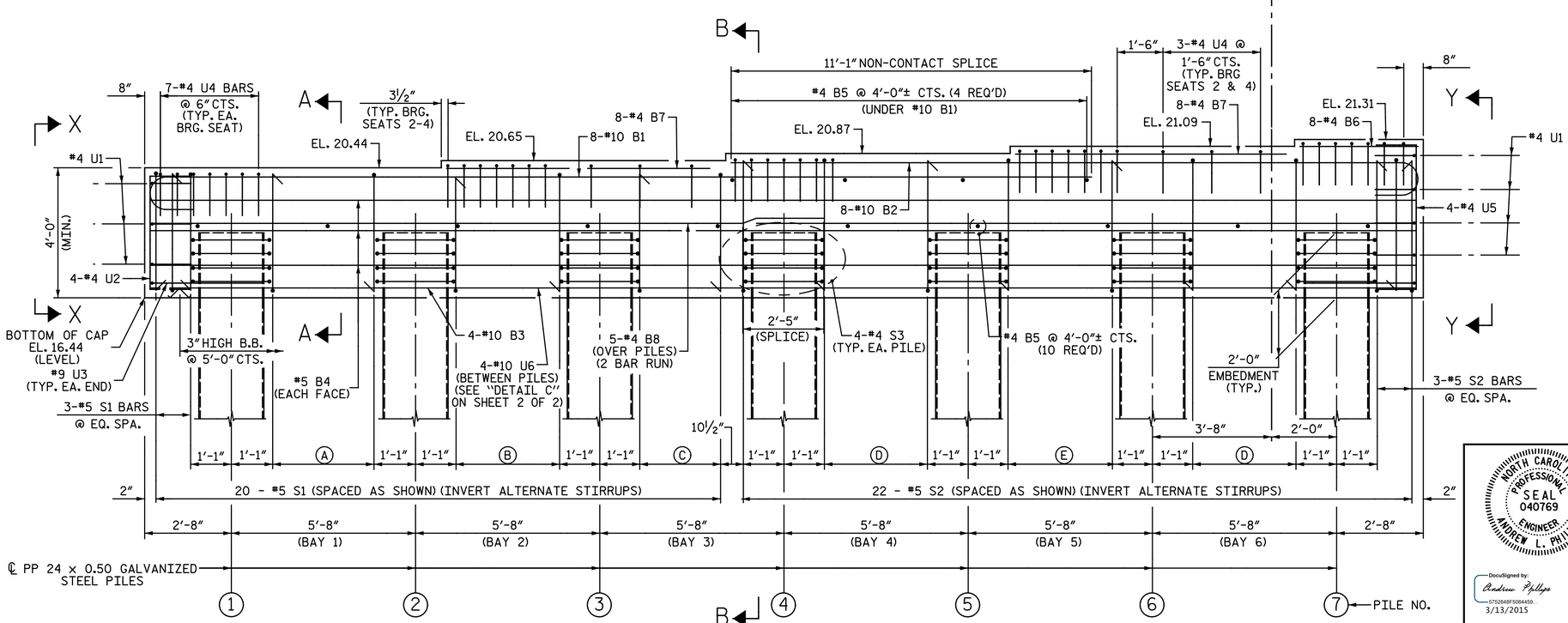


PLAN



PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

Ⓐ 5-#5 S1 BARS @ 10½" SPACES
Ⓑ 8-#5 S1 BARS @ 6" SPACES
Ⓒ 4-#5 S1 BARS @ 10½" SPACES
Ⓓ 5-#5 S2 BARS @ 10½" SPACES
Ⓔ 8-#5 S2 BARS @ 6" SPACES

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 1 OF 2

DRAWN BY : N. B. SPEAKS DATE : 6-13-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 48 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 7

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-48
1			3			TOTAL SHEETS
2			4			68

SITE 4

nbspeaks
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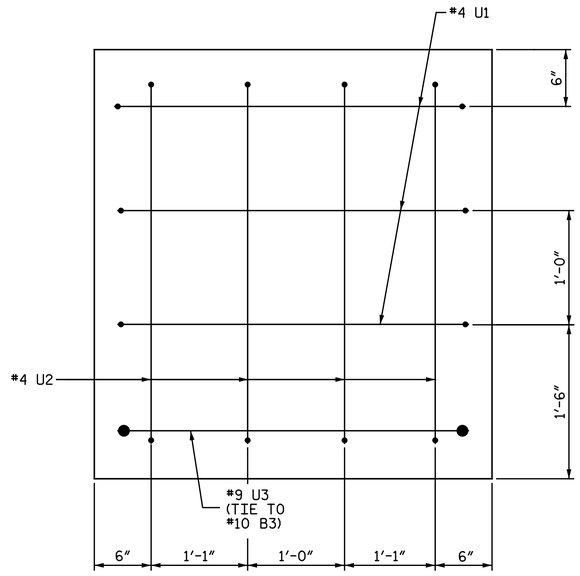
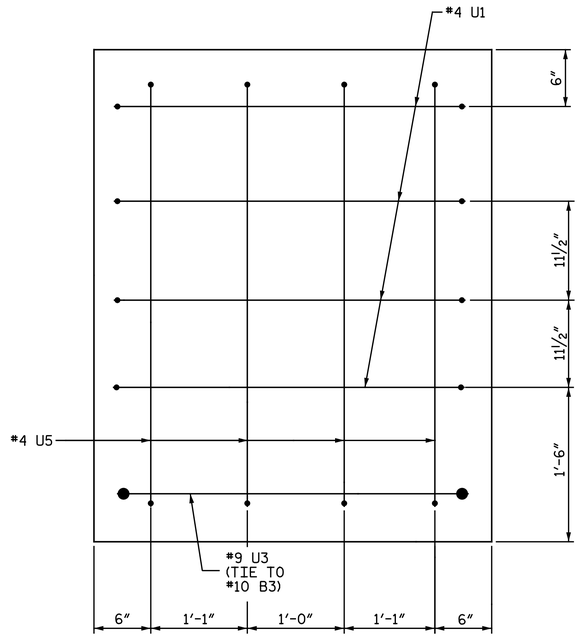
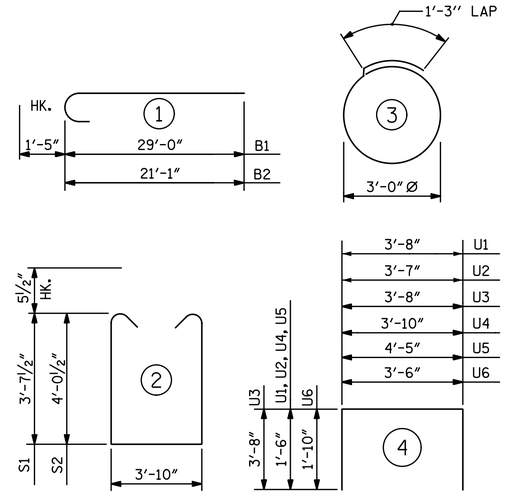


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 7

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS "A" CONCRETE BREAKDOWN

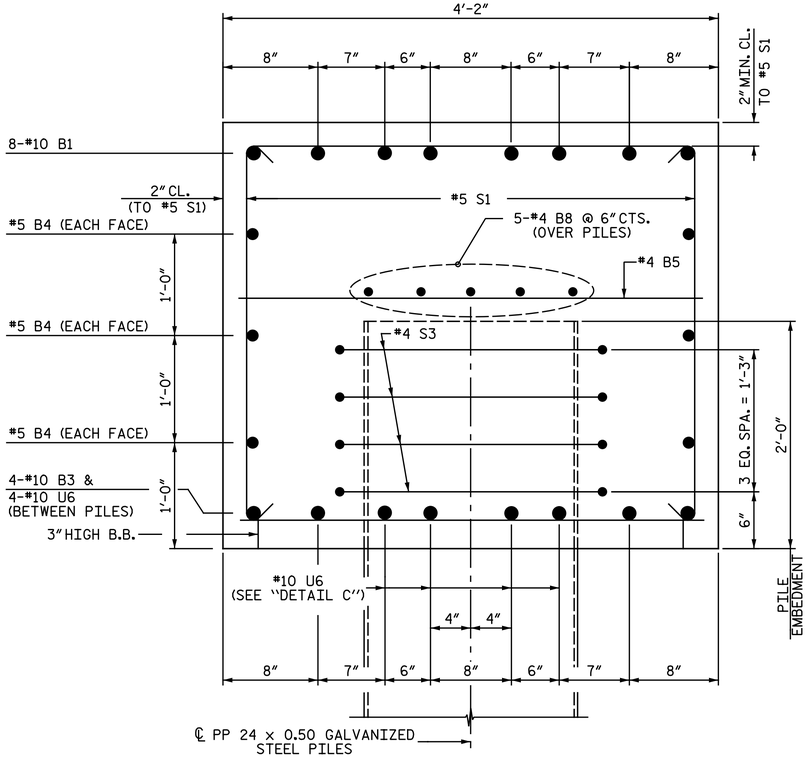
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

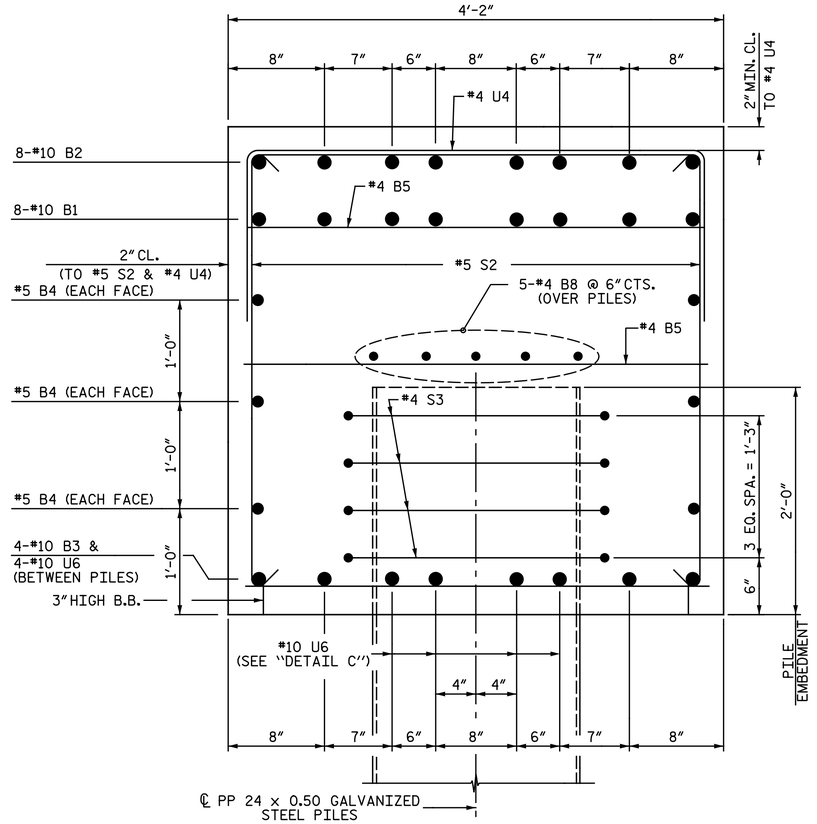
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

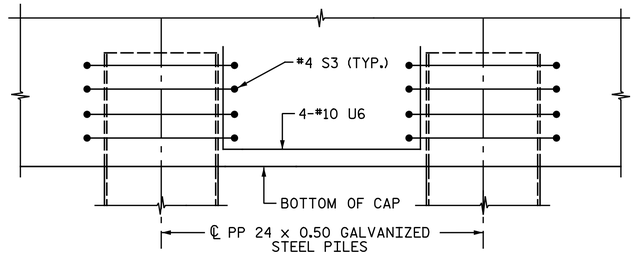
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN C. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 7 DETAILS

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-49
1			3			TOTAL SHEETS
2			4			68

SITE 4

DRAWN BY : N. B. SPEAKS DATE : 6-13-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 49 OF 68

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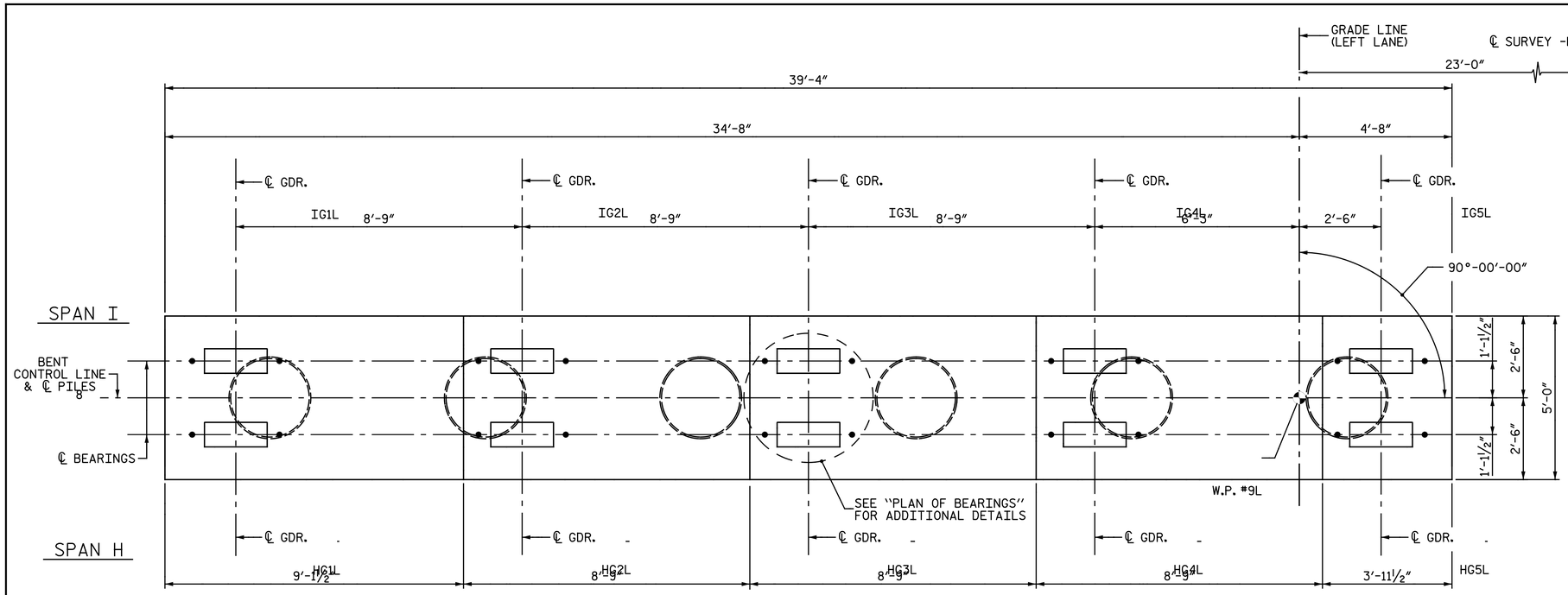


PLAN

NOTES:

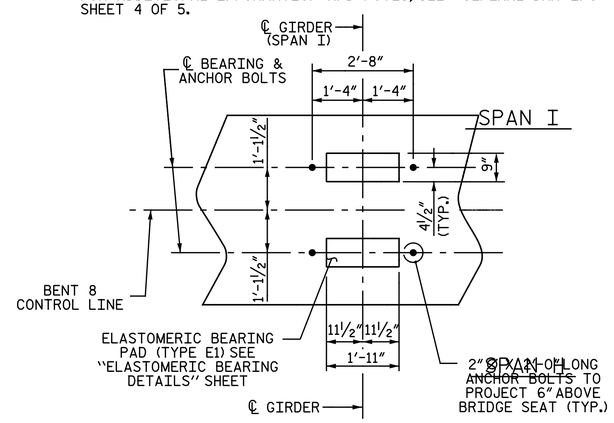
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

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.

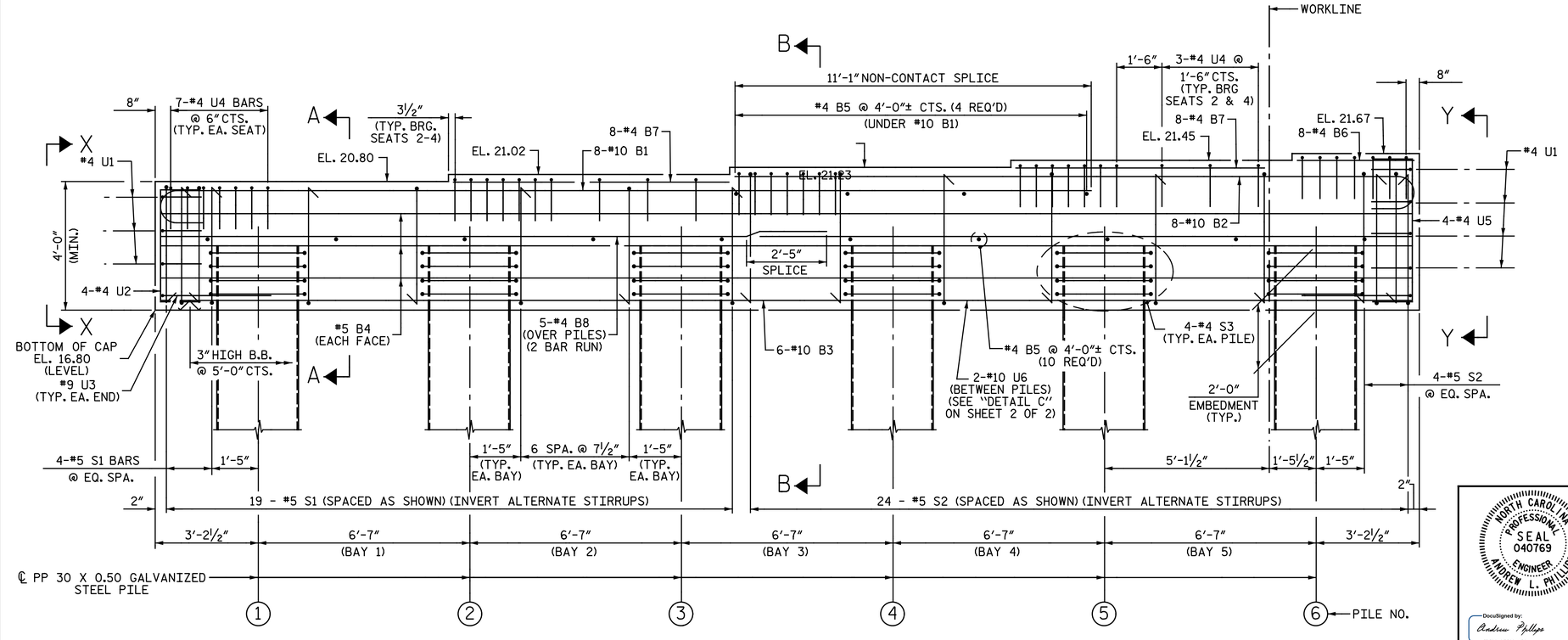
GALVANIZE THE TOP A MINIMUM OF 46 FEET OF EACH INTERIOR BENT PILE . GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 4 OF 5.



PLAN OF BEARINGS (SPAN H)

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 8

LEFT LANE

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 3/13/2015

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-50
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-4-14
CHECKED BY : A. M. HOUSTON DATE : 6-5-14

DWG. 50 OF 68

nbspeaks 3/12/2015 10:42:36 AM
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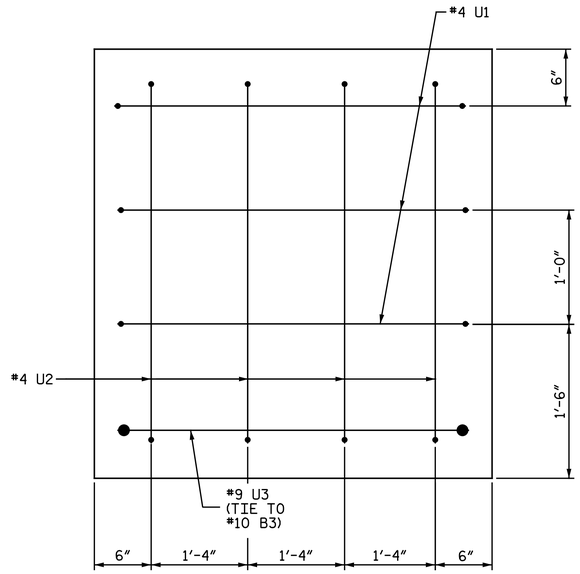
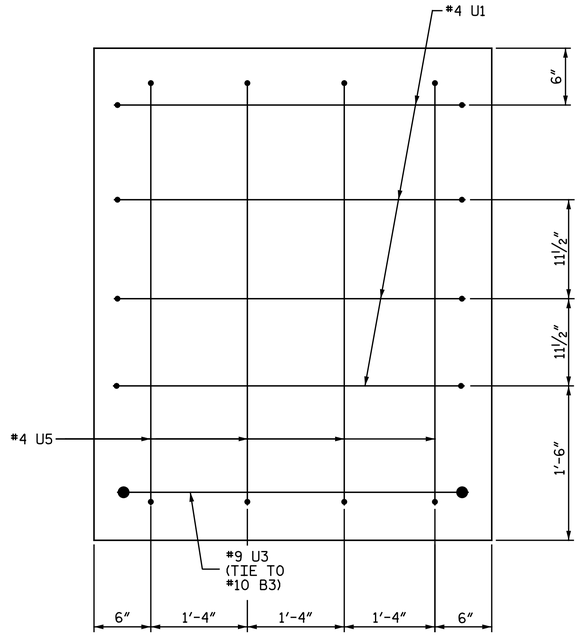
SITE 4

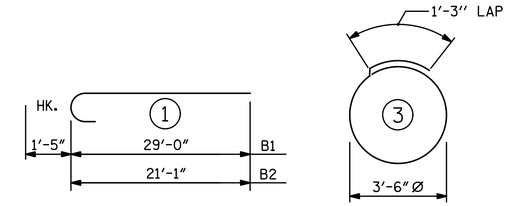


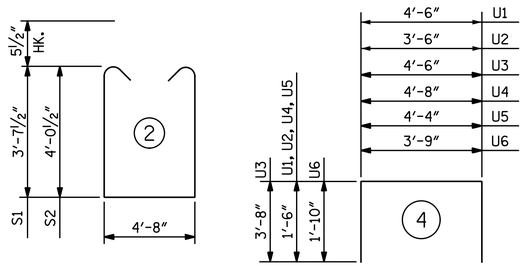
VIEW X-X



VIEW Y-Y

BAR TYPES





ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 8

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	6	10	STR	39′ - 0″	1,007
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	4′ - 8″	44
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	19	5	2	12′ - 10″	254
S2	24	5	2	13′ - 8″	342
S3	24	4	3	12′ - 3″	196
U1	7	4	4	7′ - 4″	34
U2	4	4	4	5′ - 11″	16
U3	2	9	4	11′ - 10″	80
U4	41	4	4	7′ - 8″	210
U5	4	4	4	6′ - 9″	18
U6	10	10	4	7′ - 5″	319

REINFORCING STEEL LBS. 4,836

CLASS ''A'' CONCRETE BREAKDOWN

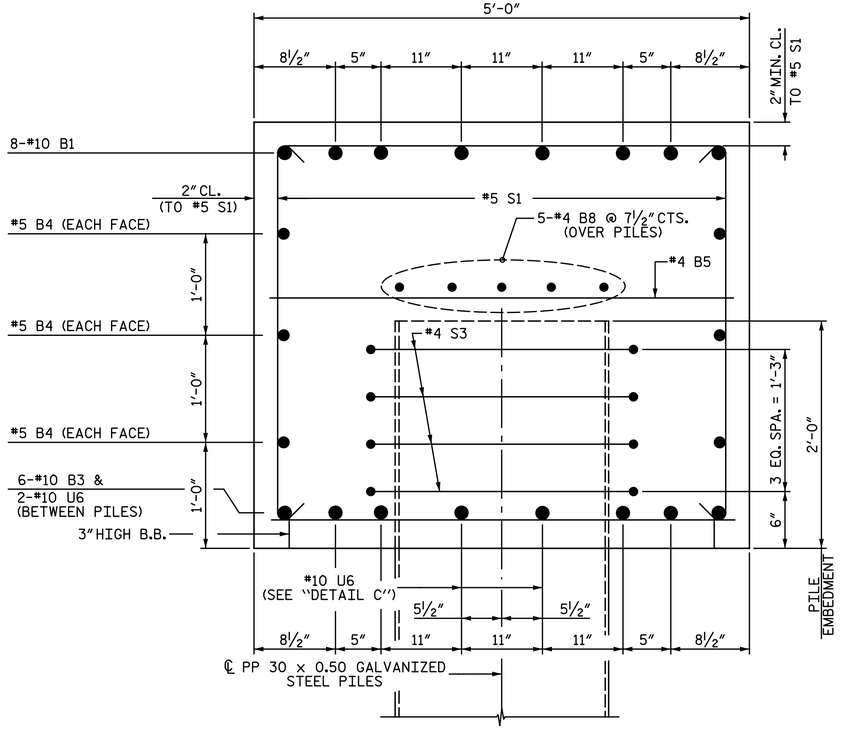
POUR #1 - CAP C.Y. 31.9

PP 30 x 0.50 GALVANIZED STEEL PILES

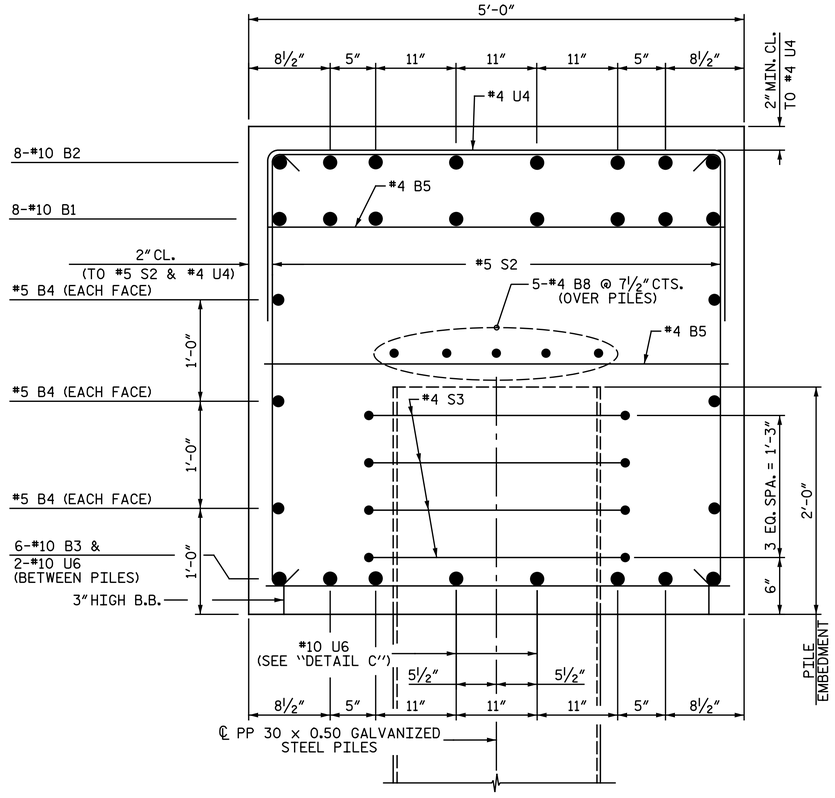
No. 6 LIN. FT. 390

PIPE PILE PLATES EA. 6

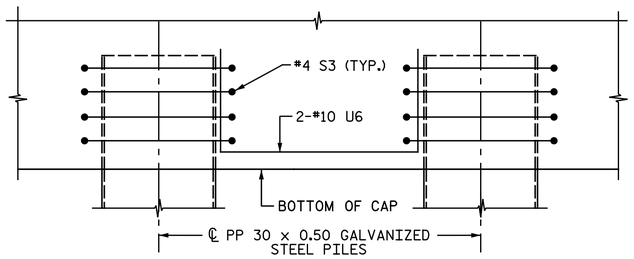
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C

(TYP. EA. BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DUAIN G. HATHAWAY

DocuSigned by: Duain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 8 DETAILS

LEFT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-51
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-4-14

CHECKED BY : A. M. HOUSTON DATE : 6-5-14

DWG. 51 OF 68

SITE 4

nbspeaks
3/5/2015 4:12:20 PM
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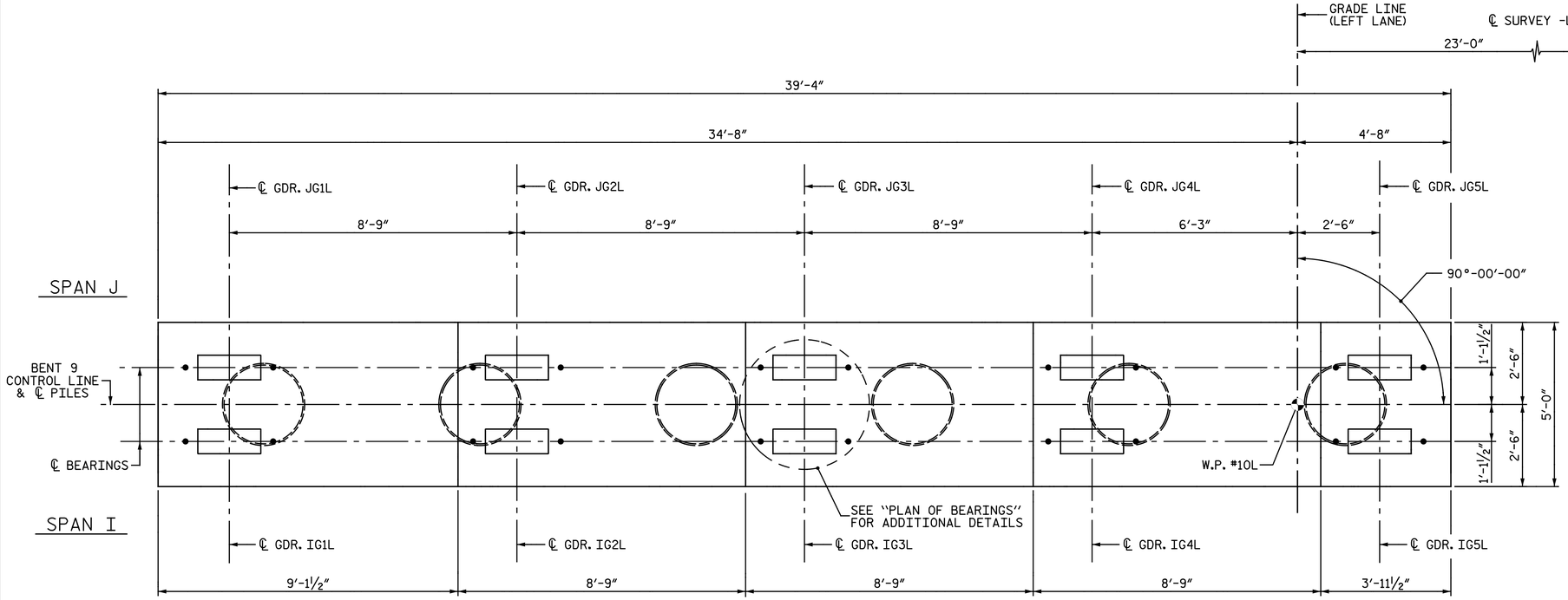


PLAN

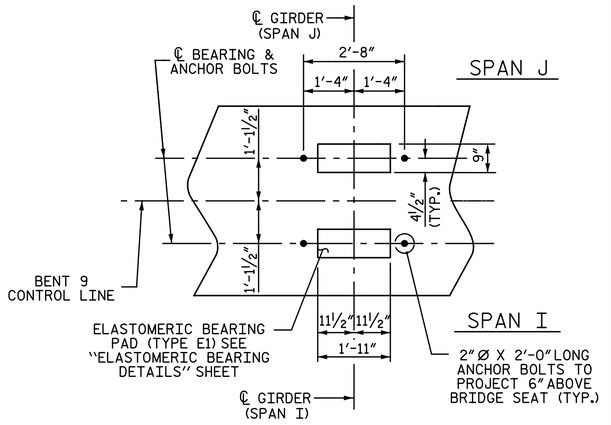
NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

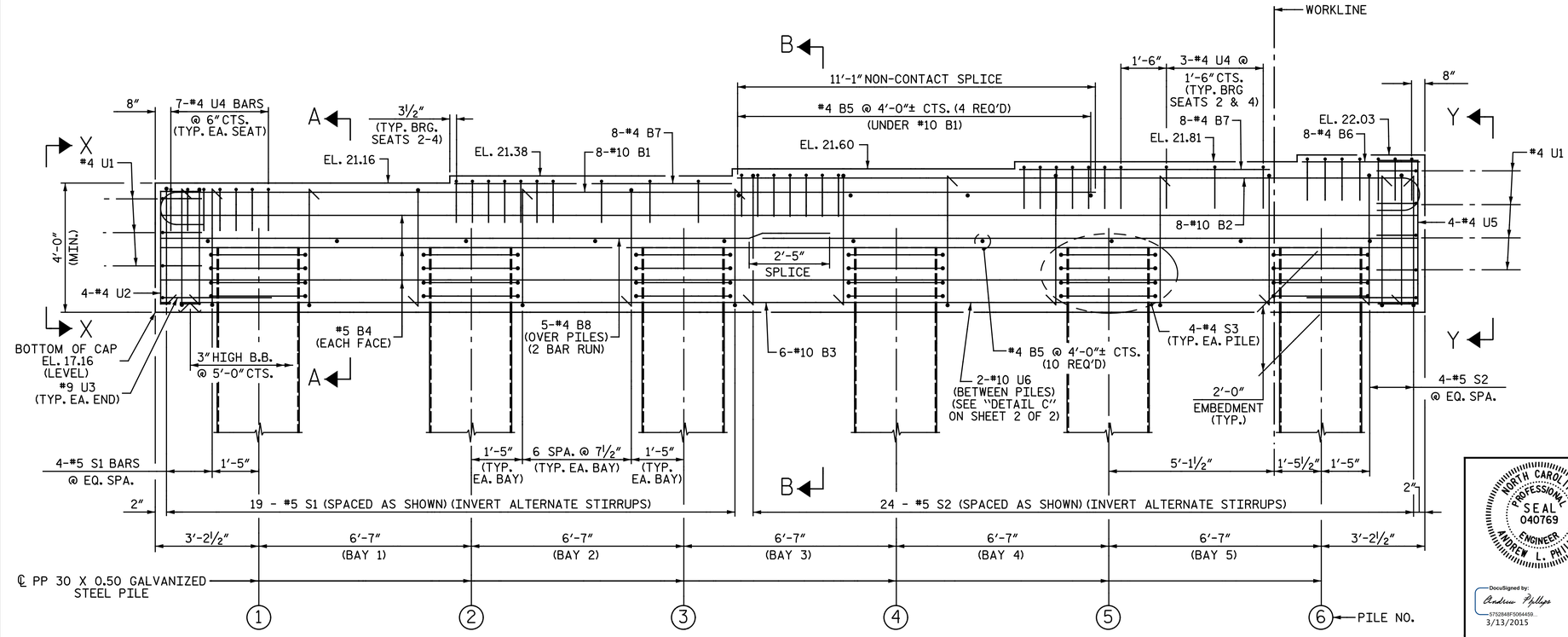
GALVANIZE THE TOP A MINIMUM OF 46 FEET OF EACH INTERIOR BENT PILE . GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 4 OF 5.



PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780771DA0460... 3/13/2015

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 9

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-52
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-16-14

CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 52 OF 68

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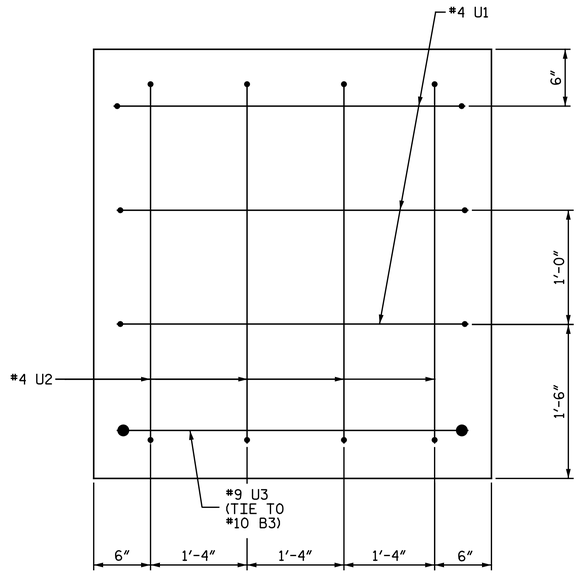
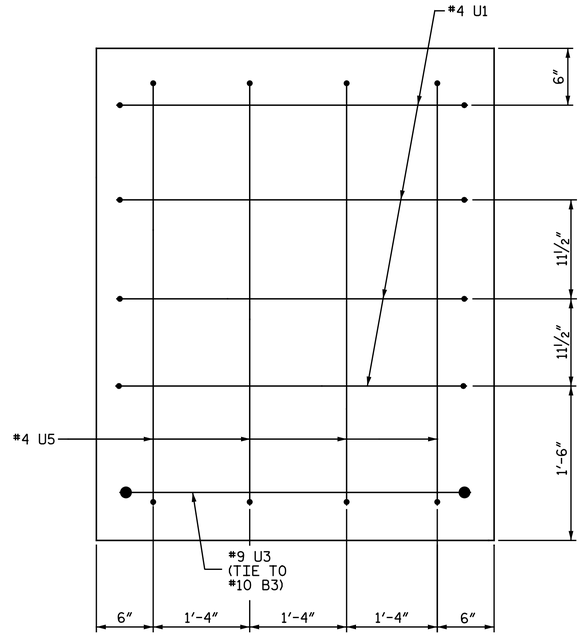
SITE 4

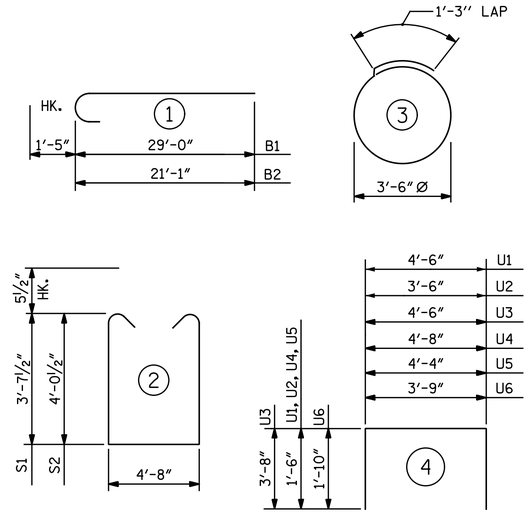


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 9

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	6	10	STR	39′ - 0″	1,007
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	4′ - 8″	44
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	19	5	2	12′ - 10″	254
S2	24	5	2	13′ - 8″	342
S3	24	4	3	12′ - 3″	196
U1	7	4	4	7′ - 4″	34
U2	4	4	4	5′ - 11″	16
U3	2	9	4	11′ - 10″	80
U4	41	4	4	7′ - 8″	210
U5	4	4	4	6′ - 9″	18
U6	10	10	4	7′ - 5″	319

REINFORCING STEEL LBS. 4,836

CLASS "A" CONCRETE BREAKDOWN

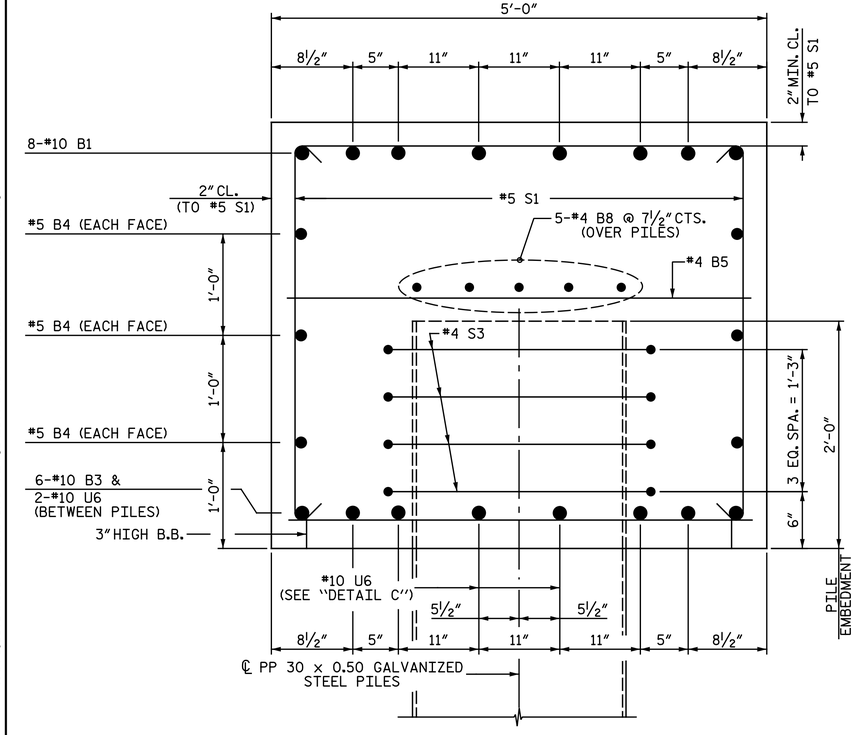
POUR #1 - CAP C.Y. 31.9

PP 30 x 0.50 GALVANIZED STEEL PILES

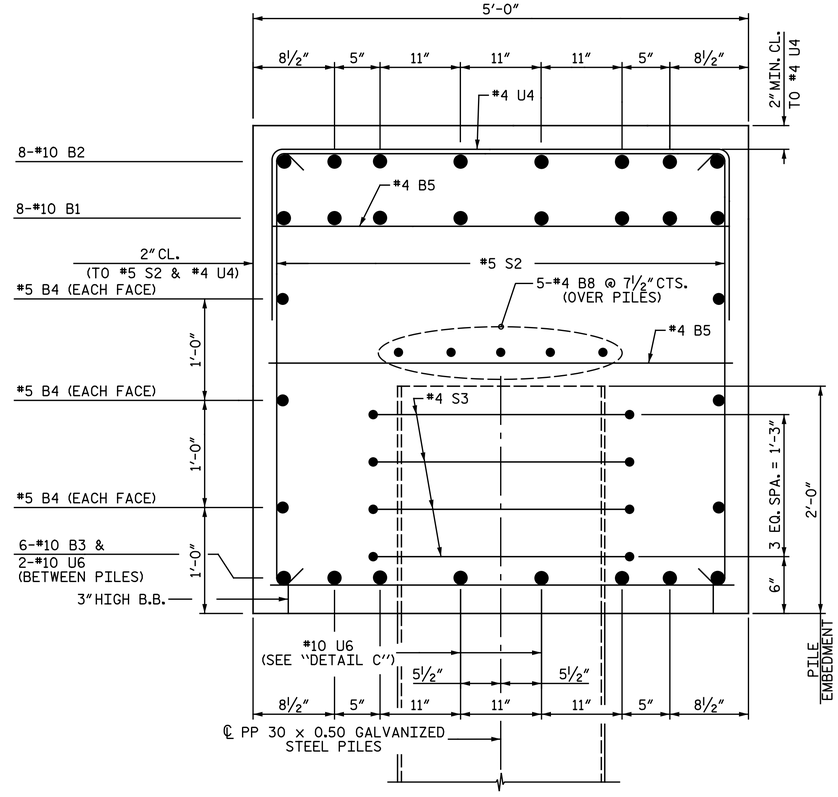
No. 6 LIN. FT. 390

PIPE PILE PLATES EA. 6

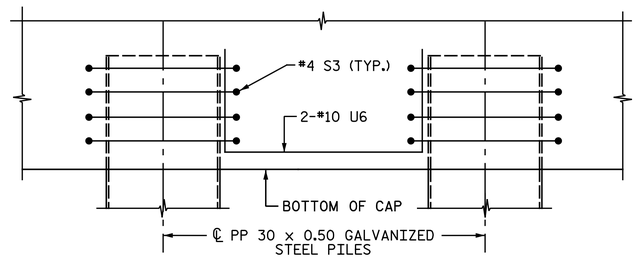
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EA. BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 9 DETAILS

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-53
1			3			TOTAL SHEETS
2			4			68

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

DRAWN BY : N. B. SPEAKS DATE : 6-16-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 53 OF 68

nbspeaks
3/5/2015 4:12:22 PM
Filename: Y:\Projects\NCDOT\R-2514D\Site 4\Dwgs\Left\Final\407_053_R2514D_SMU_B9_02.dgn

SITE 4

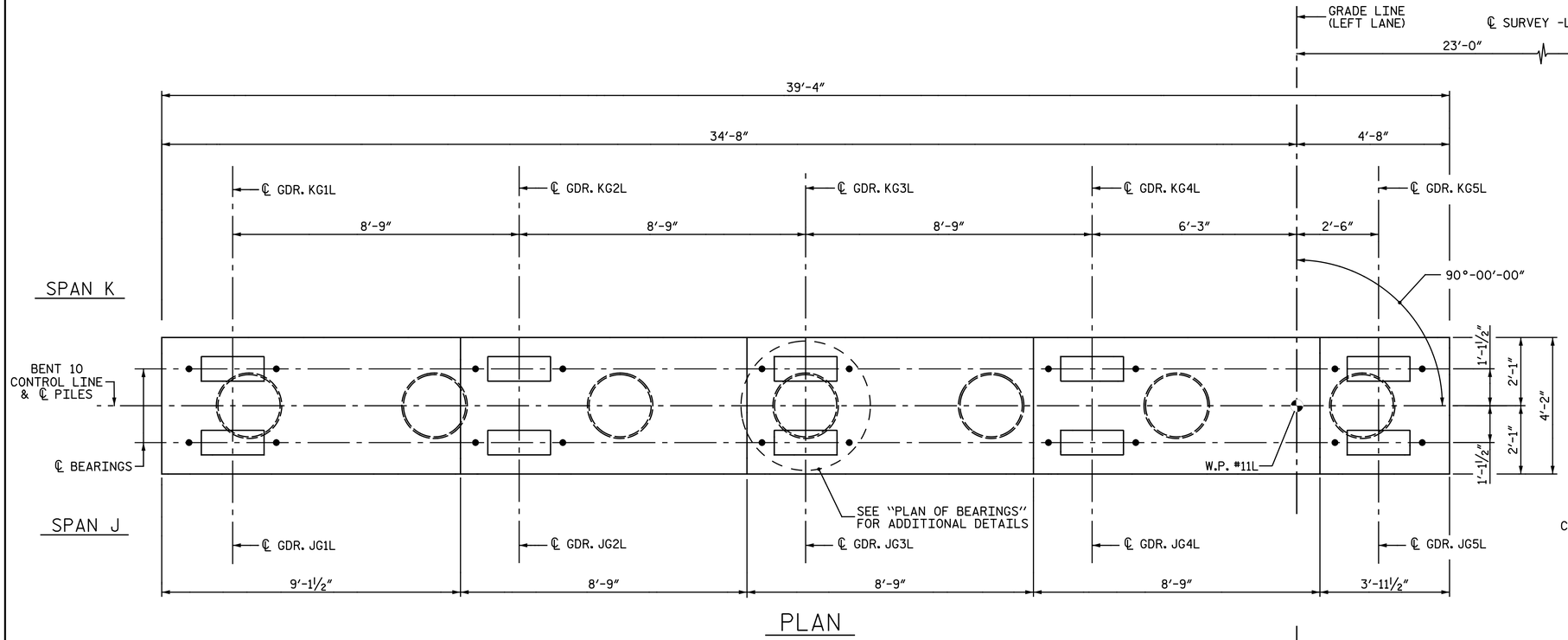
NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

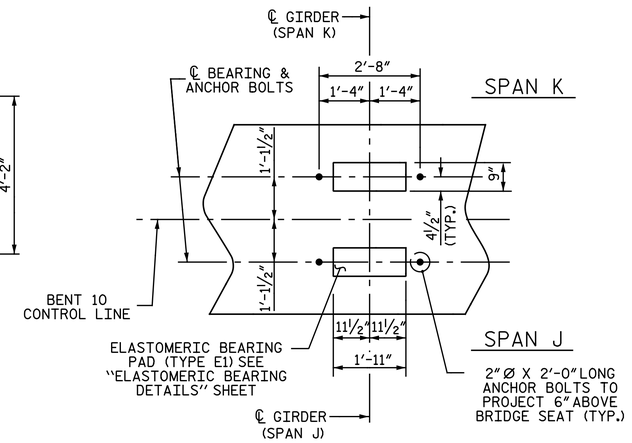
FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

GALVANIZE THE TOP A MINIMUM OF 37 FEET OF EACH INTERIOR BENT PILE . GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 4 OF 5.

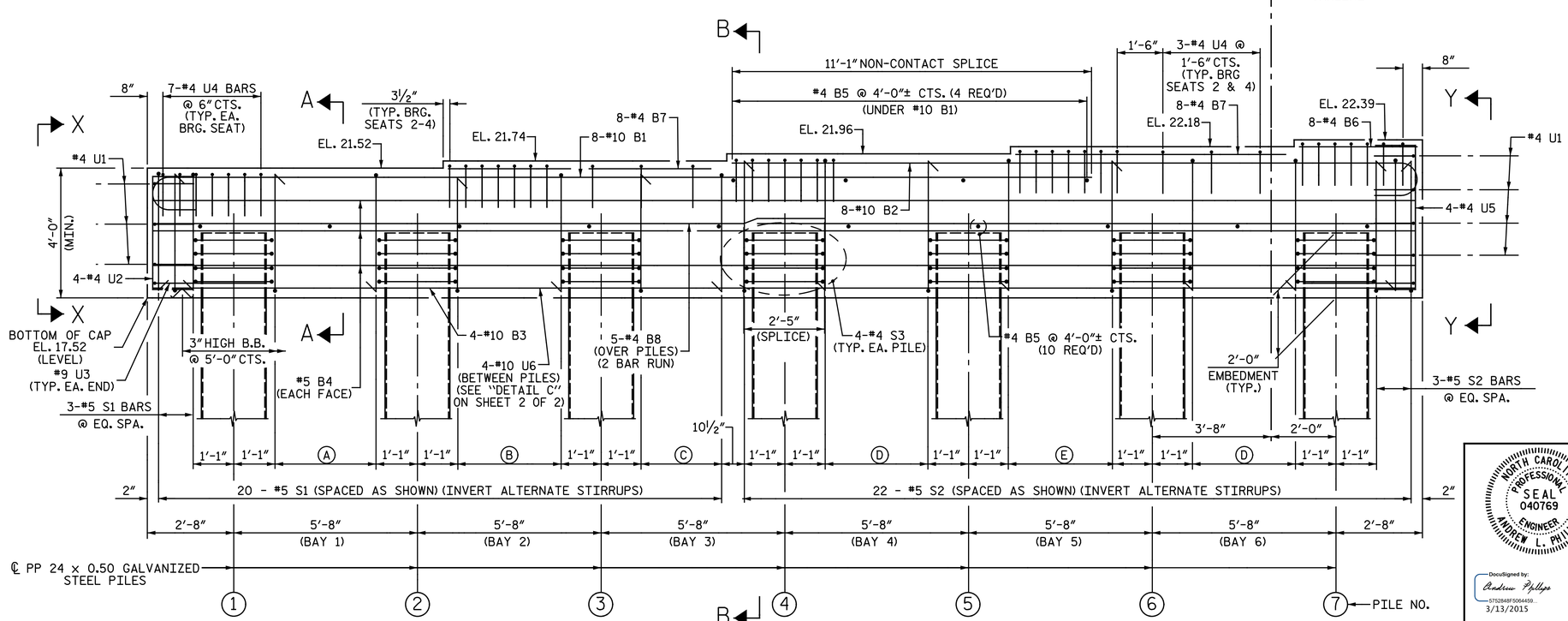


PLAN



PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

Ⓐ 5-#5 S1 BARS @ 10½" SPACES
Ⓑ 8-#5 S1 BARS @ 6" SPACES
Ⓒ 4-#5 S1 BARS @ 10½" SPACES
Ⓓ 5-#5 S2 BARS @ 10½" SPACES
Ⓔ 8-#5 S2 BARS @ 6" SPACES

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459...
3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460...
3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 10

LEFT LANE

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-54
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-16-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 54 OF 68

SITE 4

nbspeaks
3/5/2015 4:12:23 PM
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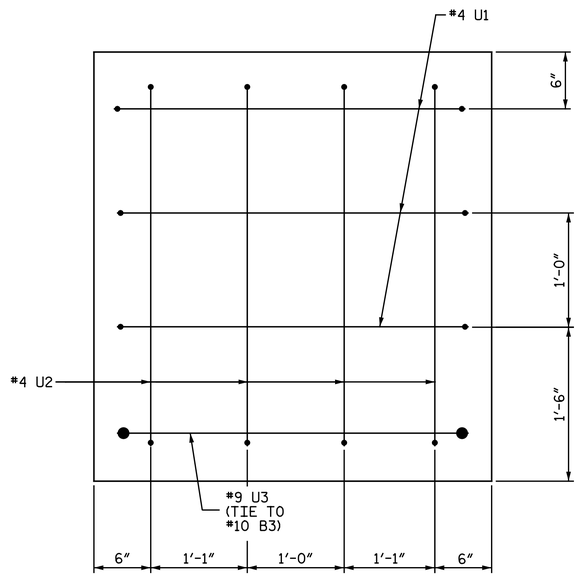
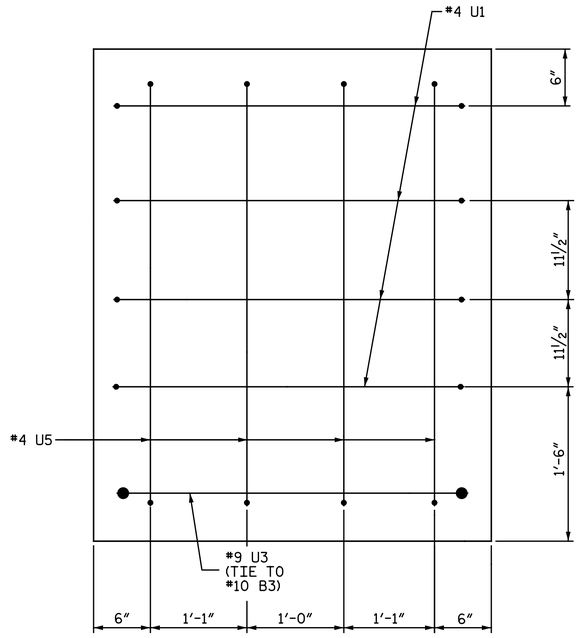
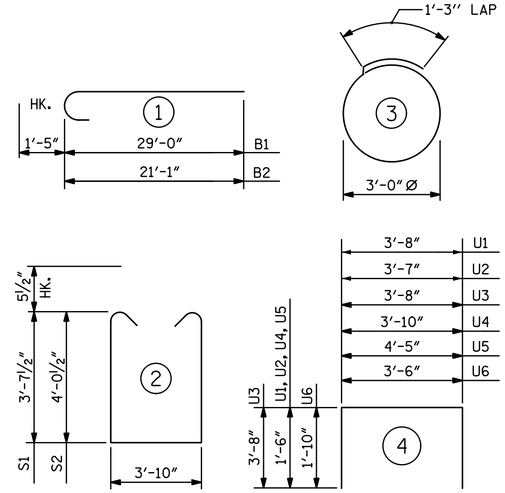


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 10

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS "A" CONCRETE BREAKDOWN

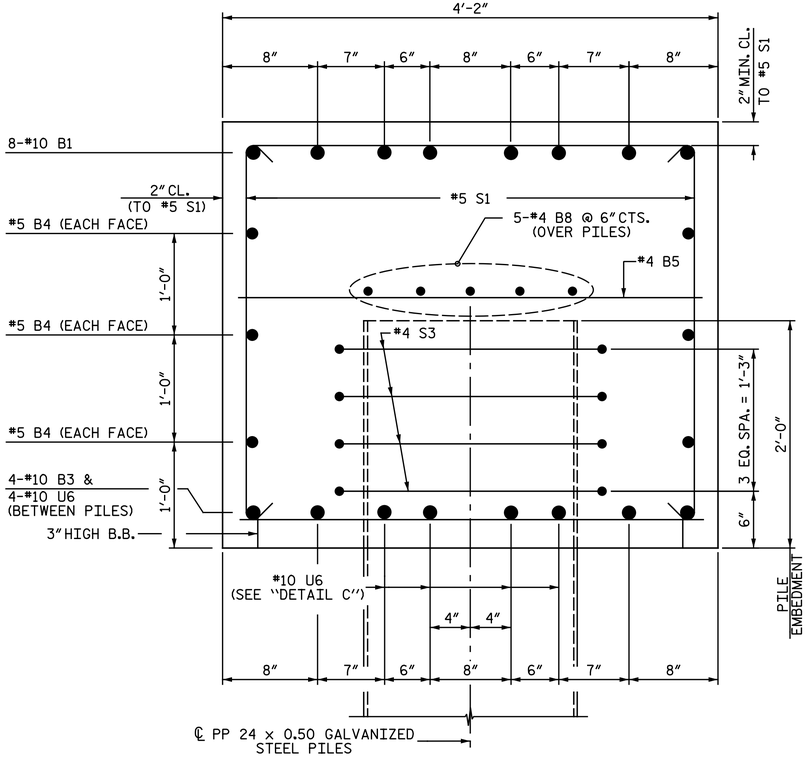
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

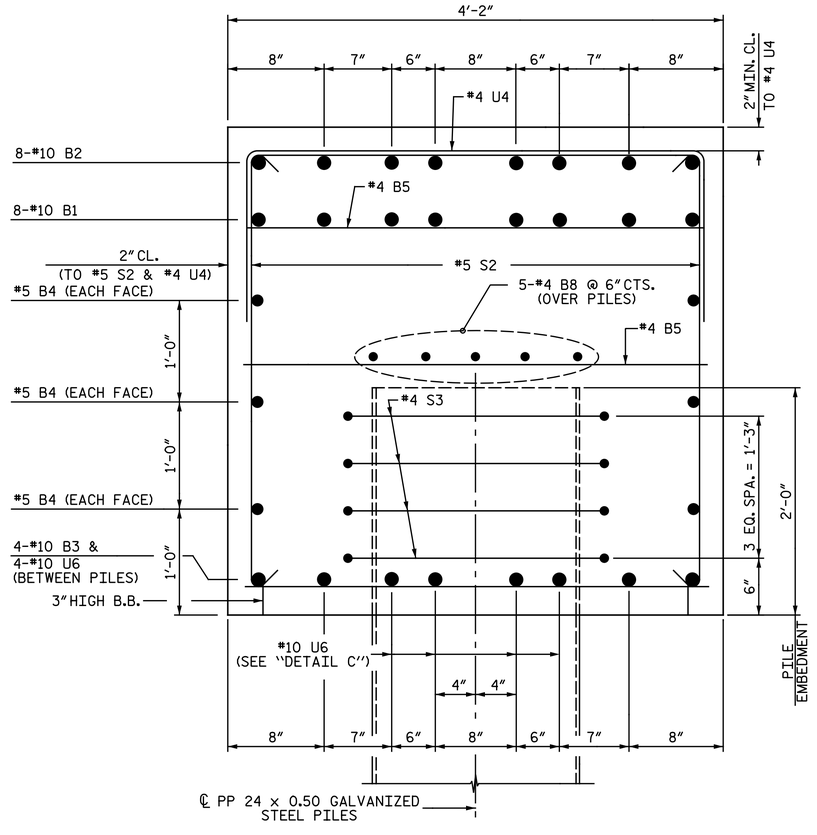
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

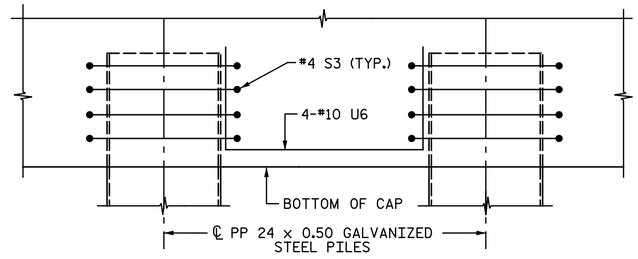
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F50644... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN C. HATTAWAY

DocuSigned by: Dwain Hattaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 10 DETAILS

LEFT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-55
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-16-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 55 OF 68

SITE 4

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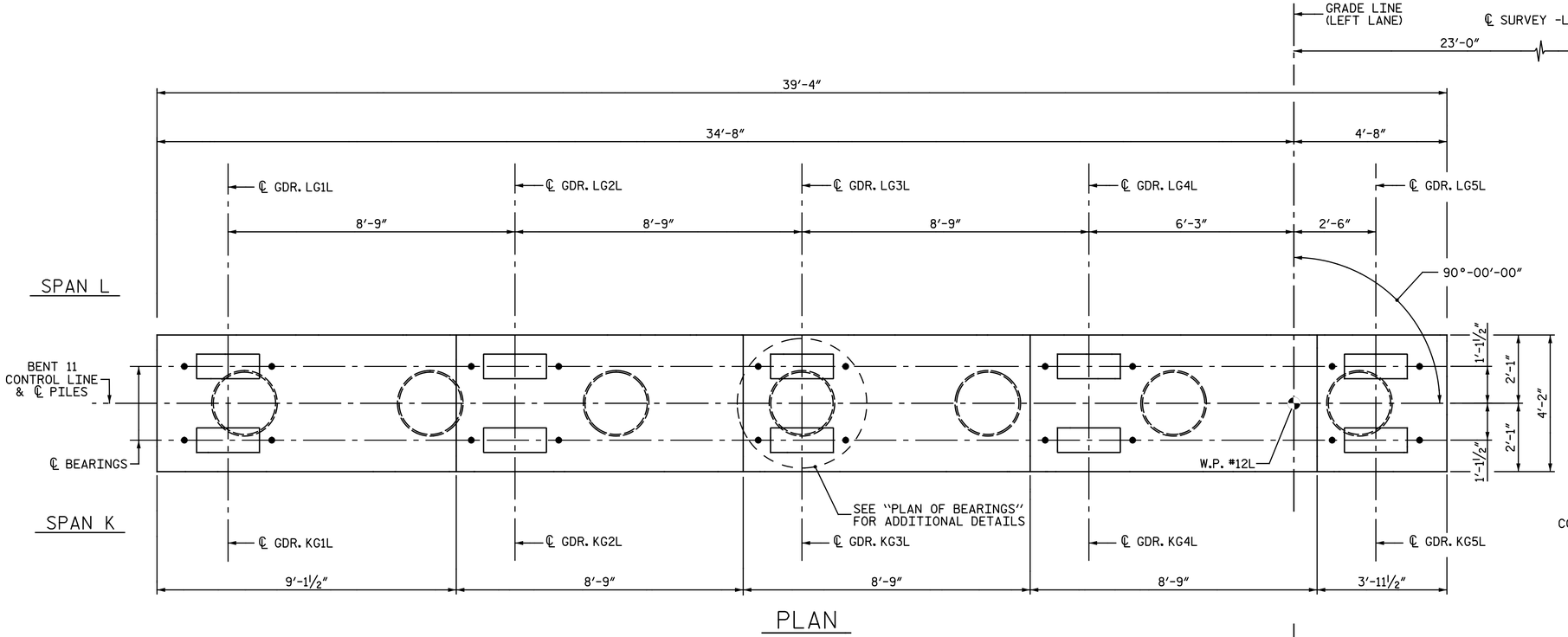


PLAN

NOTES:

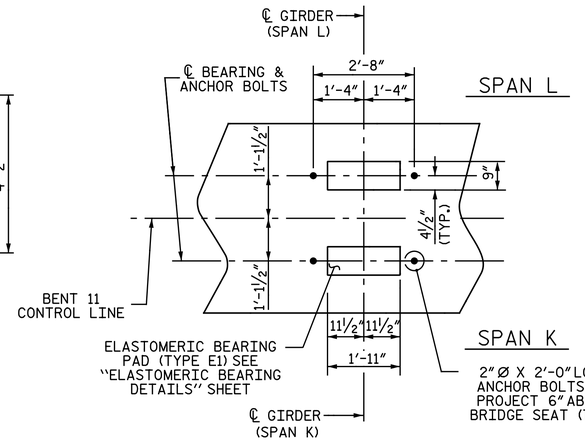
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

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.

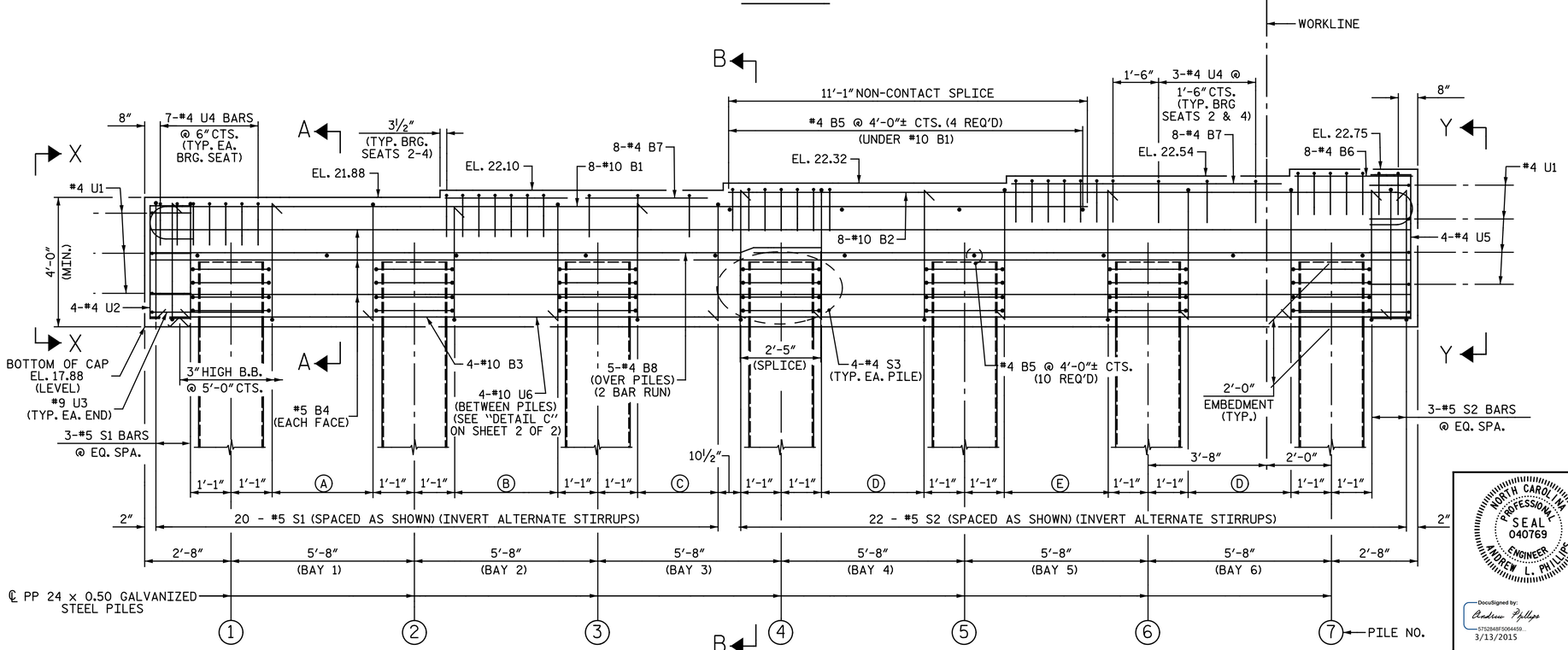
GALVANIZE THE TOP A MINIMUM OF 37 FEET OF EACH INTERIOR BENT PILE . GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 4 OF 5.



PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

Ⓐ 5-#5 S1 BARS @ 10½″ SPACES
Ⓑ 8-#5 S1 BARS @ 6″ SPACES
Ⓒ 4-#5 S1 BARS @ 10½″ SPACES
Ⓓ 5-#5 S2 BARS @ 10½″ SPACES
Ⓔ 8-#5 S2 BARS @ 6″ SPACES

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

DRAWN BY : N. B. SPEAKS DATE : 6-16-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 56 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
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NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 11

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-56
1			3			TOTAL SHEETS
2			4			68

SITE 4

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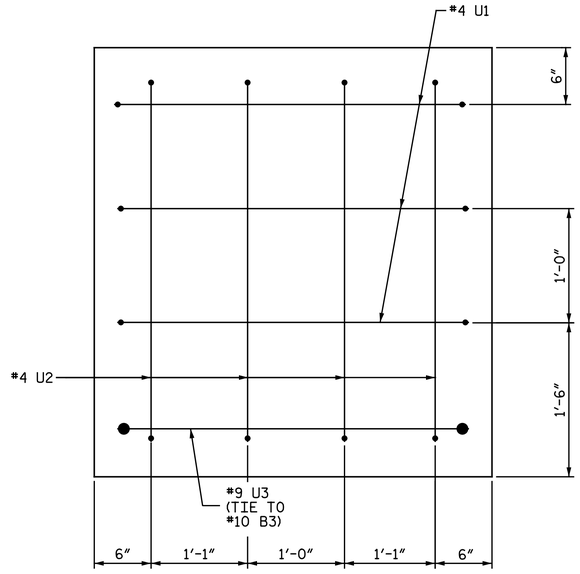
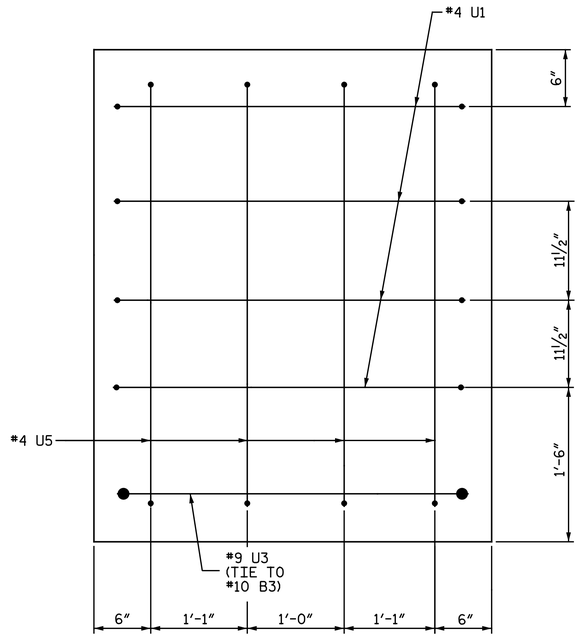
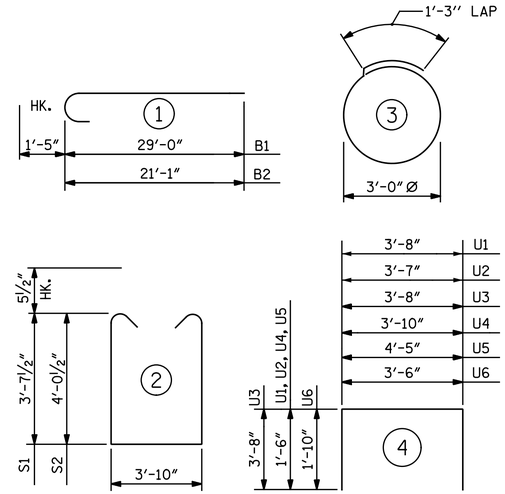


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 11

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS "A" CONCRETE BREAKDOWN

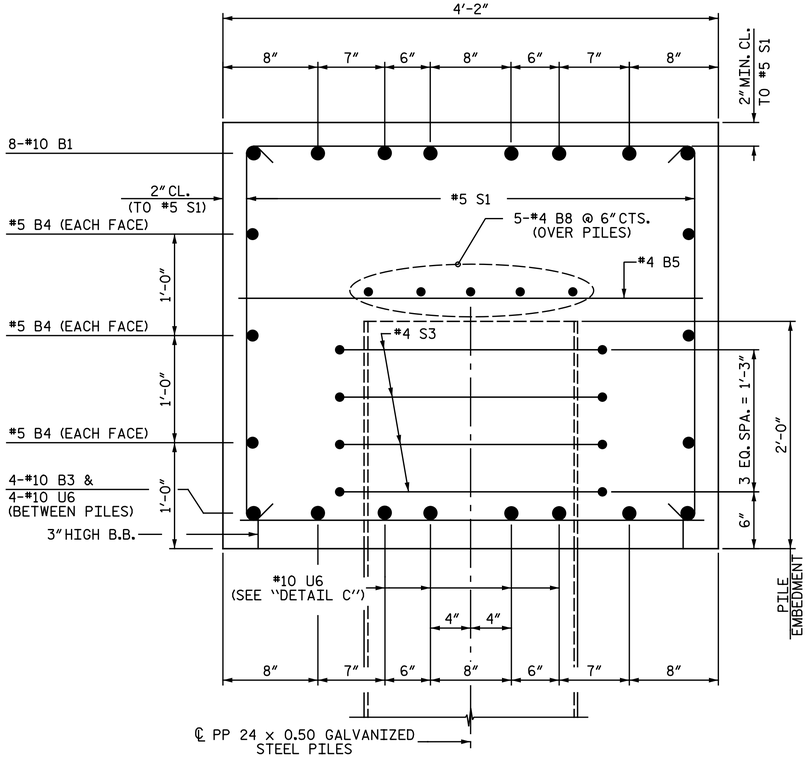
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

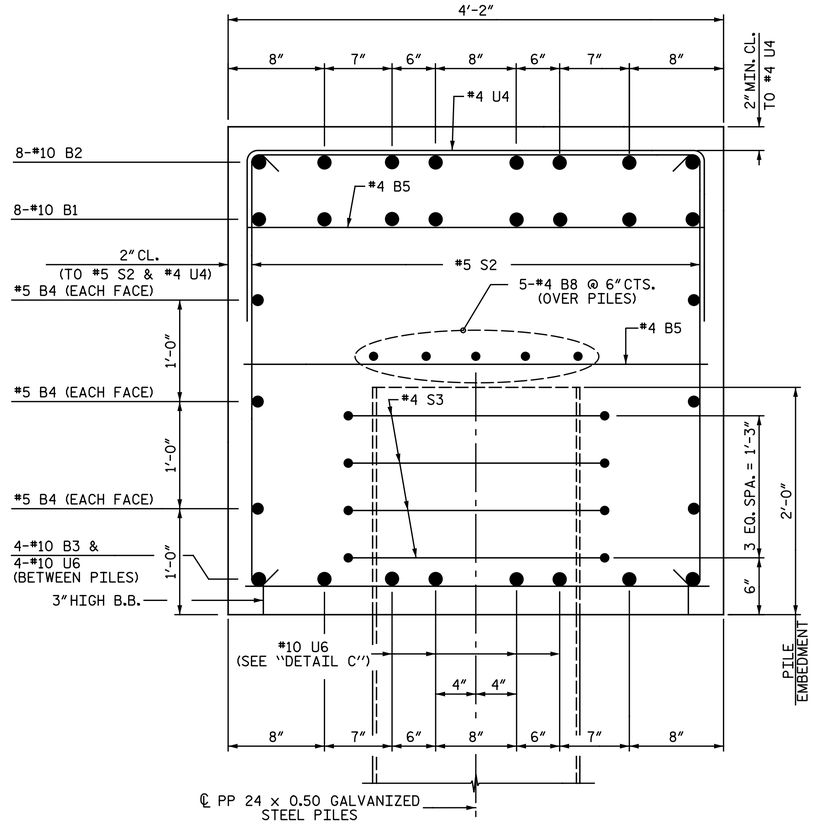
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

PILE REDRIVES EA. 4



SECTION A-A



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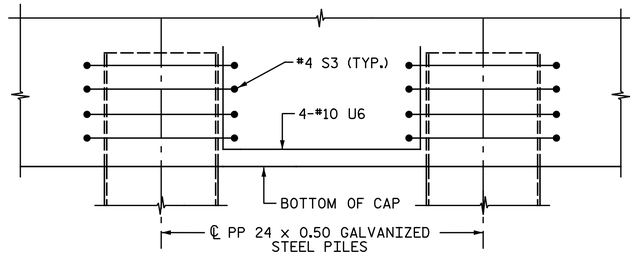

DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN C. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 11 DETAILS

LEFT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-57
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-17-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 57 OF 68

SITE 4

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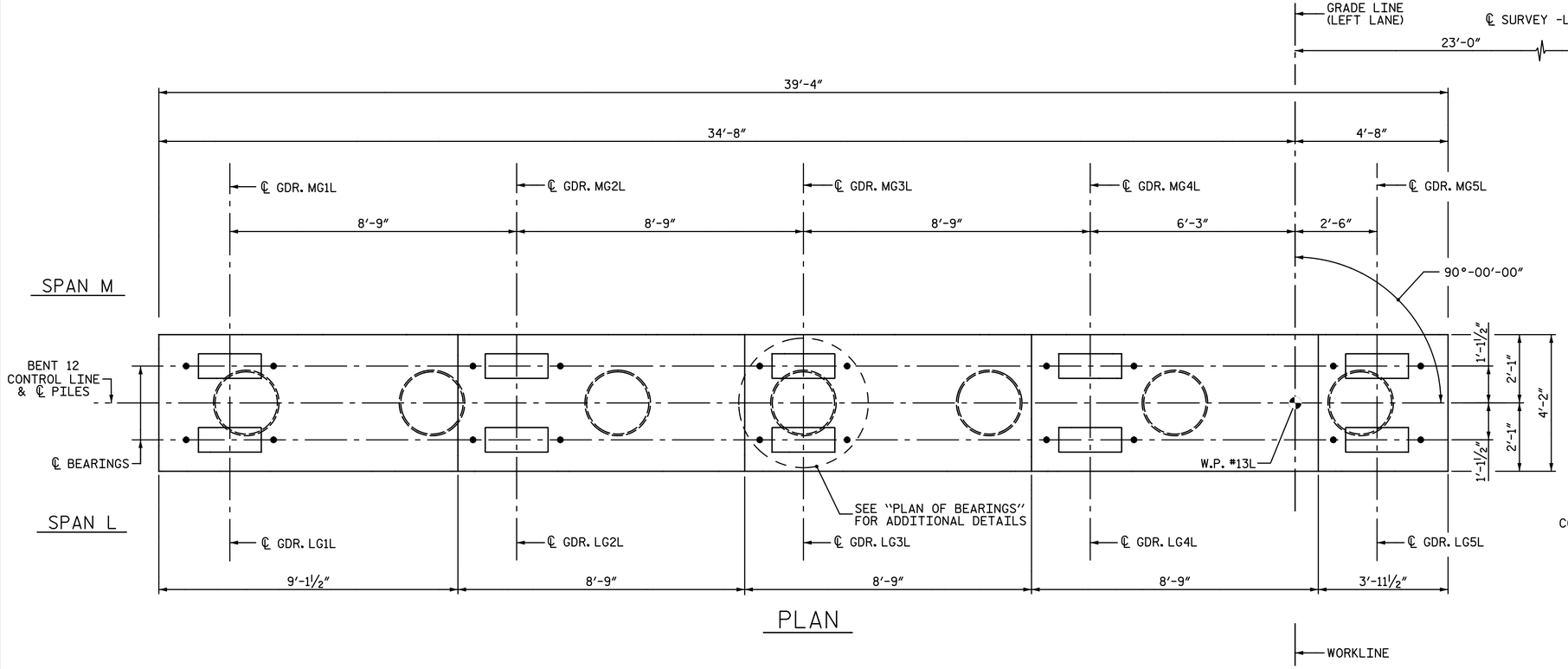
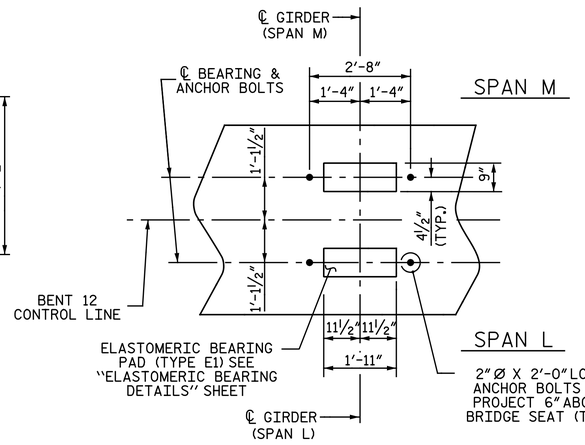


PLAN



PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.

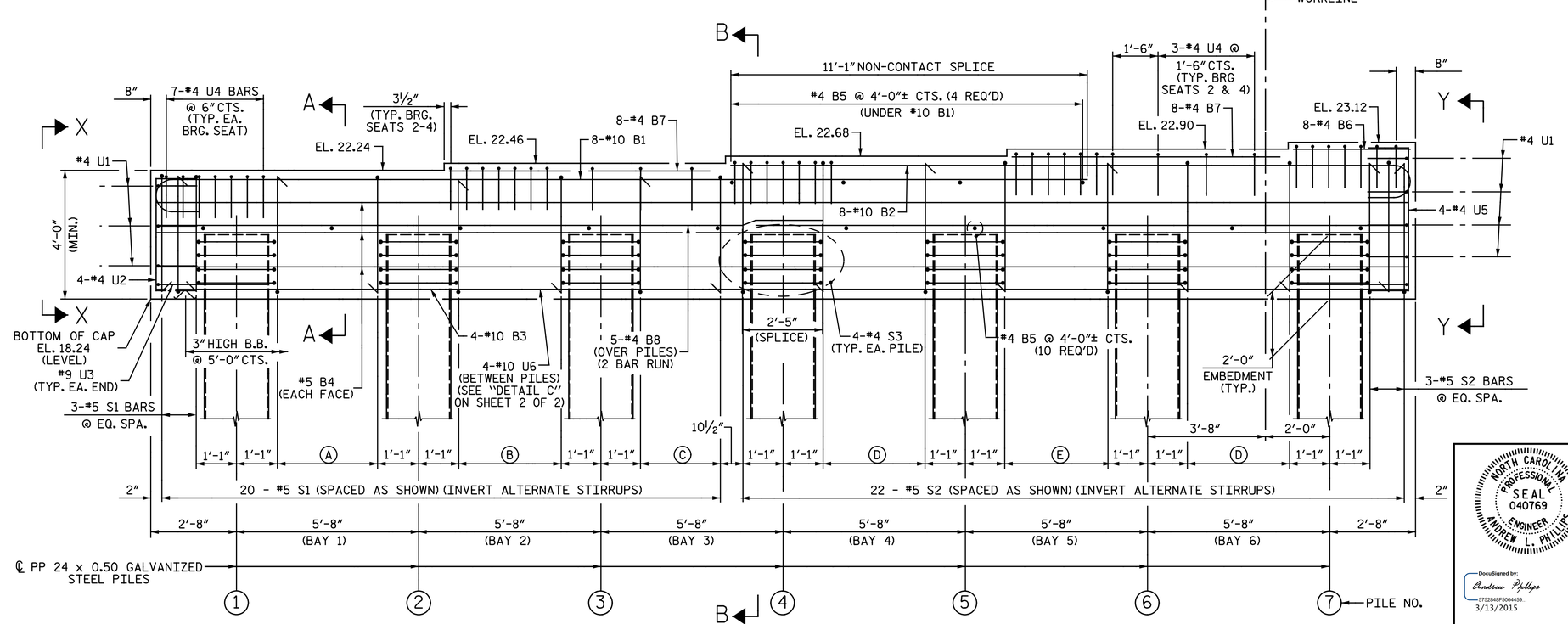
NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

GALVANIZE THE TOP A MINIMUM OF 38 FEET OF EACH INTERIOR BENT PILE . GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 4 OF 5.



ELEVATION

(A) 5-#5 S1 BARS @ 10½″ SPACES
(B) 8-#5 S1 BARS @ 6″ SPACES
(C) 4-#5 S1 BARS @ 10½″ SPACES
(D) 5-#5 S2 BARS @ 10½″ SPACES
(E) 8-#5 S2 BARS @ 6″ SPACES

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

Baker
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Cary, North Carolina 27518
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 12

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-58
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-17-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 58 OF 68

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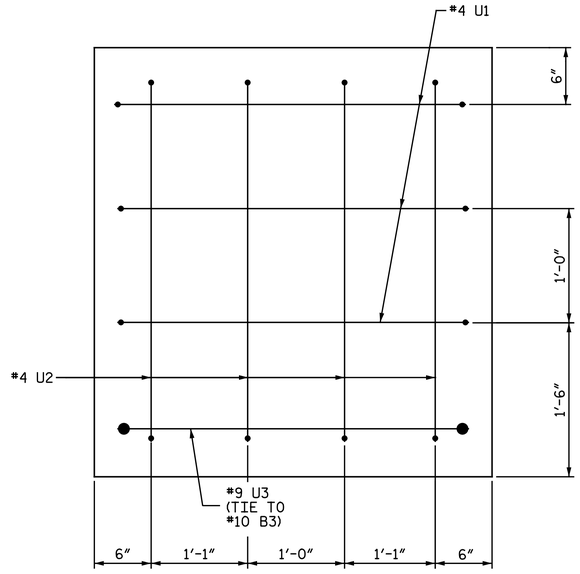
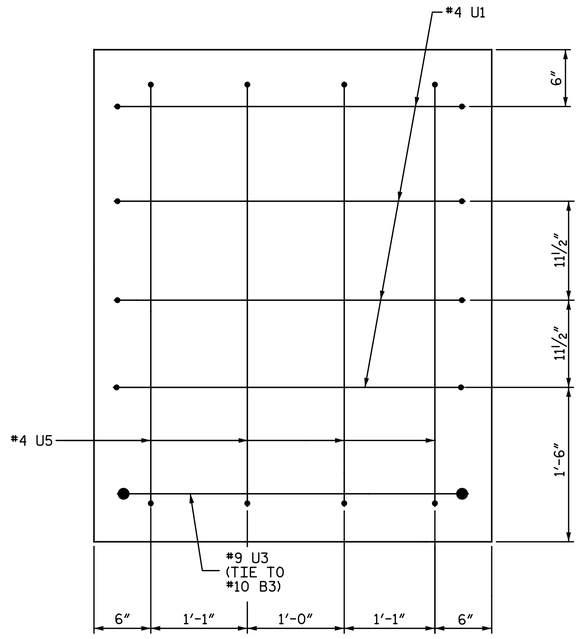
SITE 4

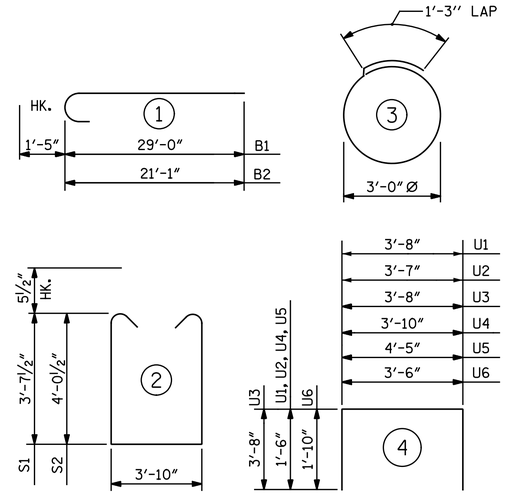


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 12

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
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S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
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U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS ''A'' CONCRETE BREAKDOWN

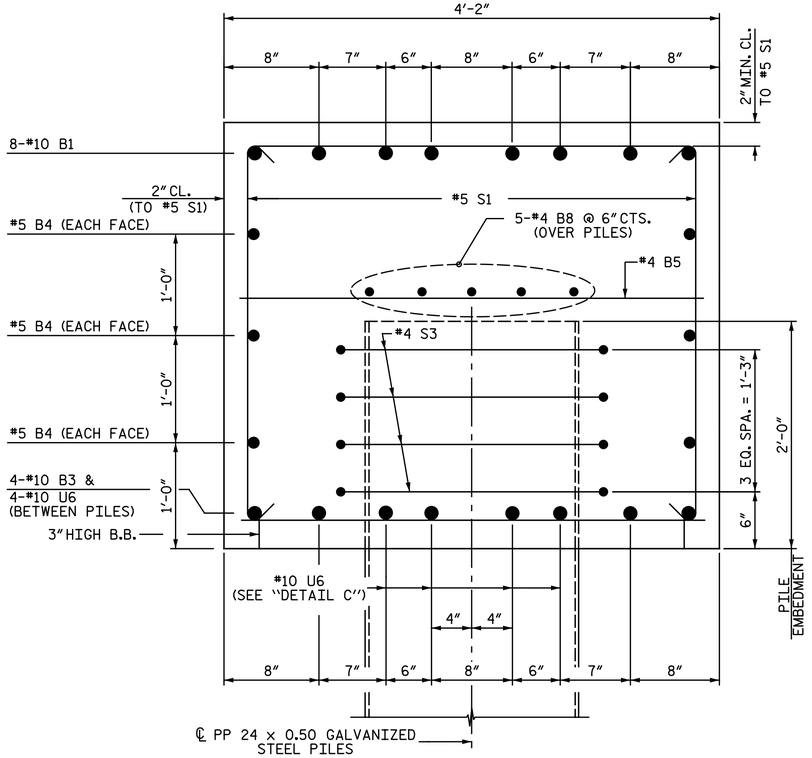
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

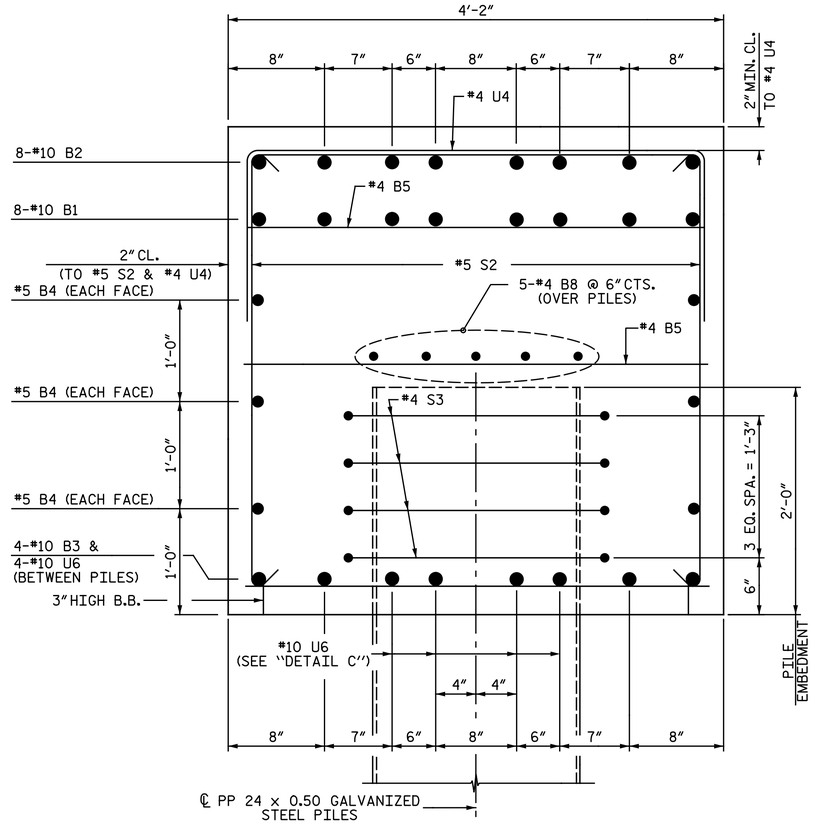
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

PILE REDRIVES EA. 4



SECTION A-A



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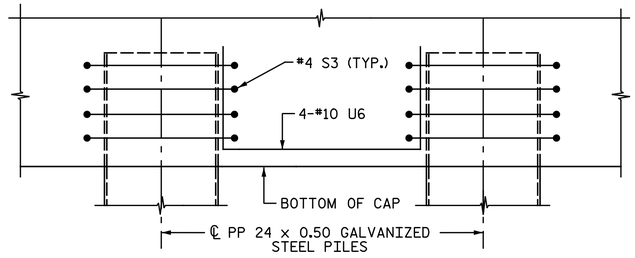

DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 12 DETAILS

LEFT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-59
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-23-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 59 OF 68

SITE 4

nbspeaks
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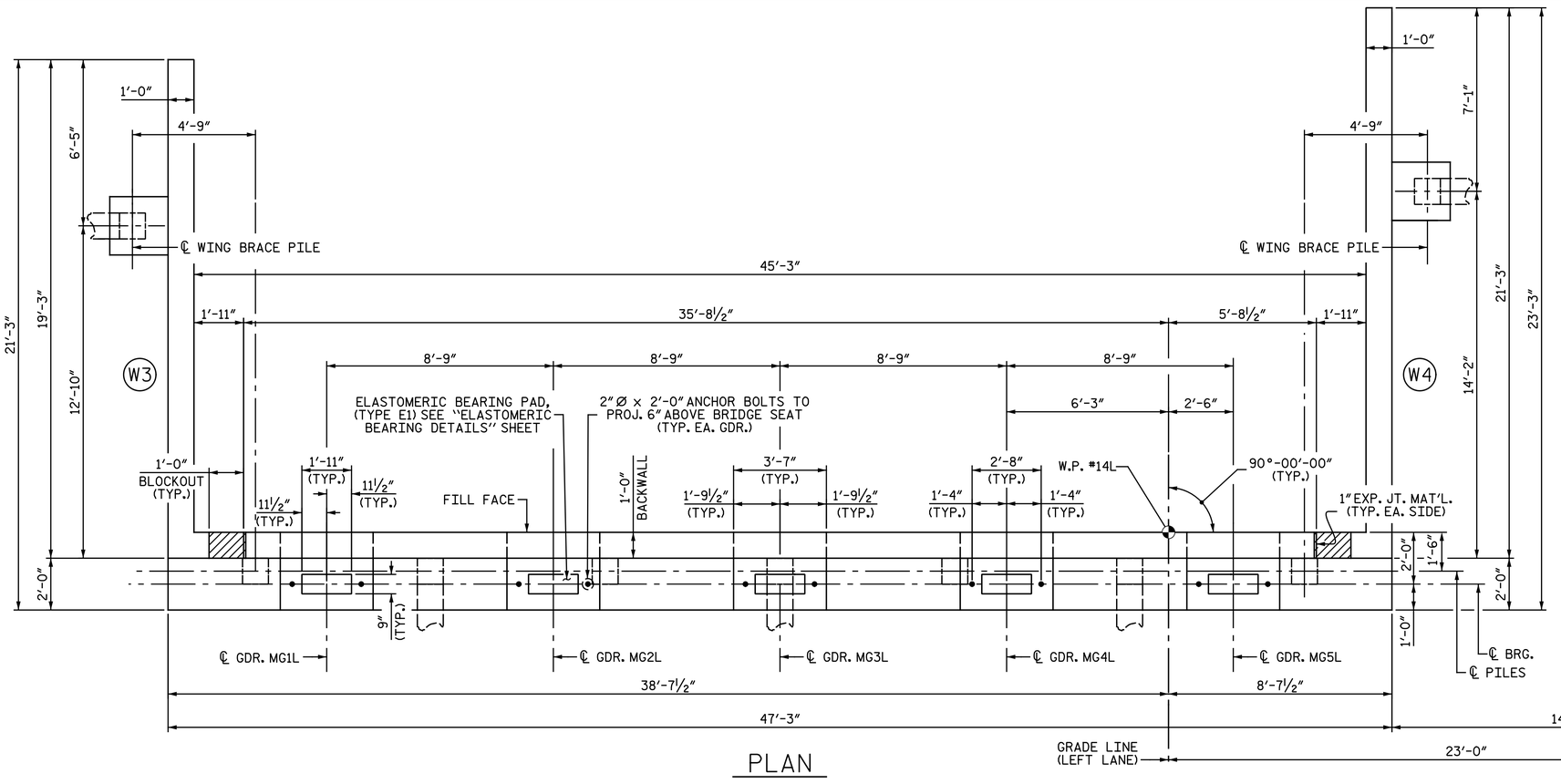
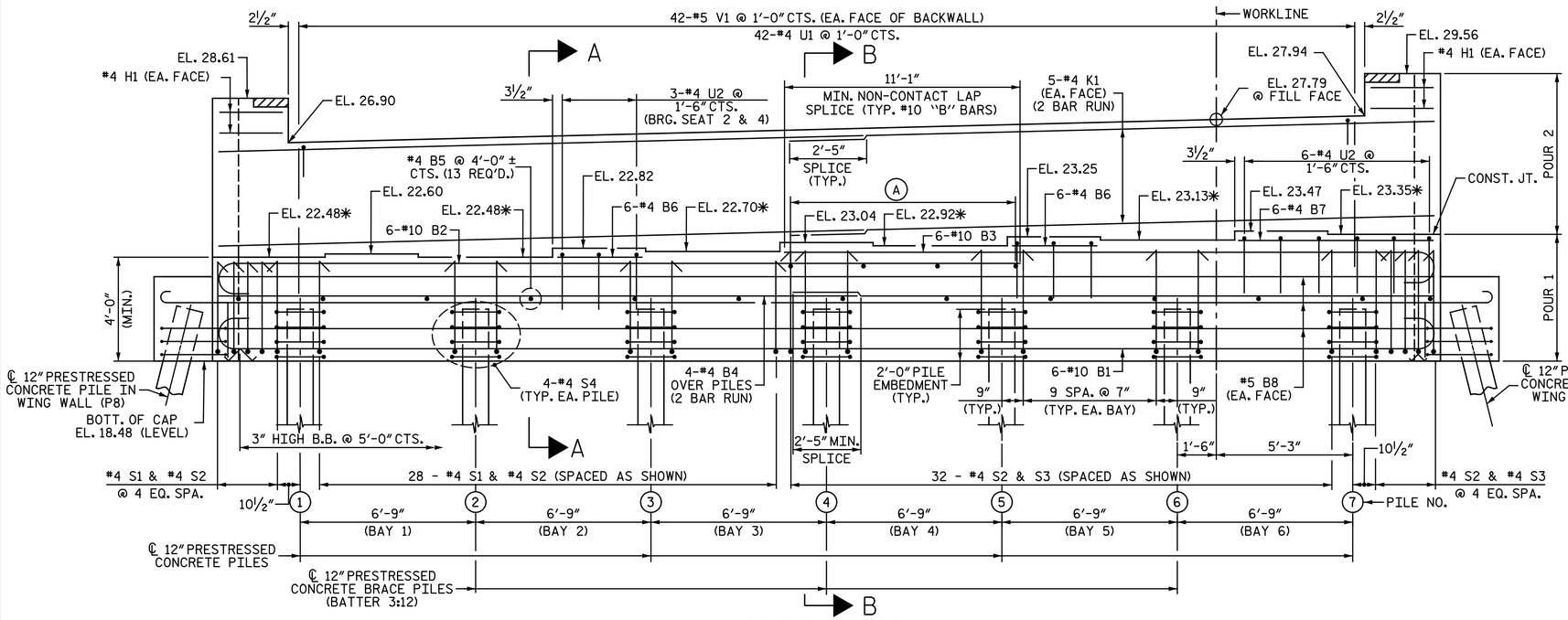


PLAN



ELEVATION

✱FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEATS, SEE "SECTION A-A", SHEET 3 OF 3

NOTES:

FOR "SECTION A-A" AND "SECTION B-B", SEE SHEET 3 OF 3.

(A) #4 B5 @ 4'-0"± CTS. (4 REQUIRED UNDER #10 B2 BARS)

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 4 OF 5.

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 END BENT 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%.

INSTALL THE 4"Ø 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.

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DRAWN BY : MDM/NBS DATE : 1-24-14
CHECKED BY : A. M. HOUSTON DATE : 2-14-14

DWG. 60 OF 68

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 1 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064450...
3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 2837B0710A04490...
3/13/2015

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No.: F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

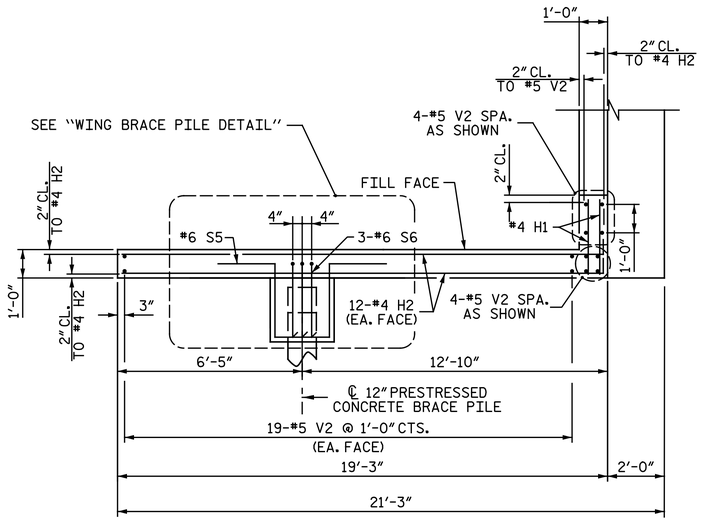
SUBSTRUCTURE

END BENT 2

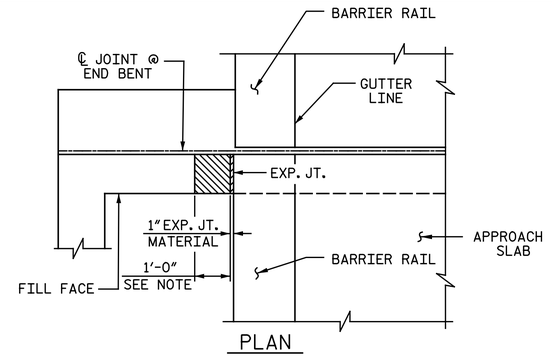
LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-60
1			3			TOTAL SHEETS
2			4			68

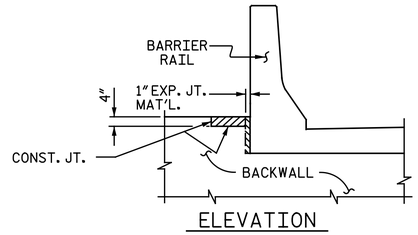
SITE 4



PLAN OF LEFT WING WALL (W3)



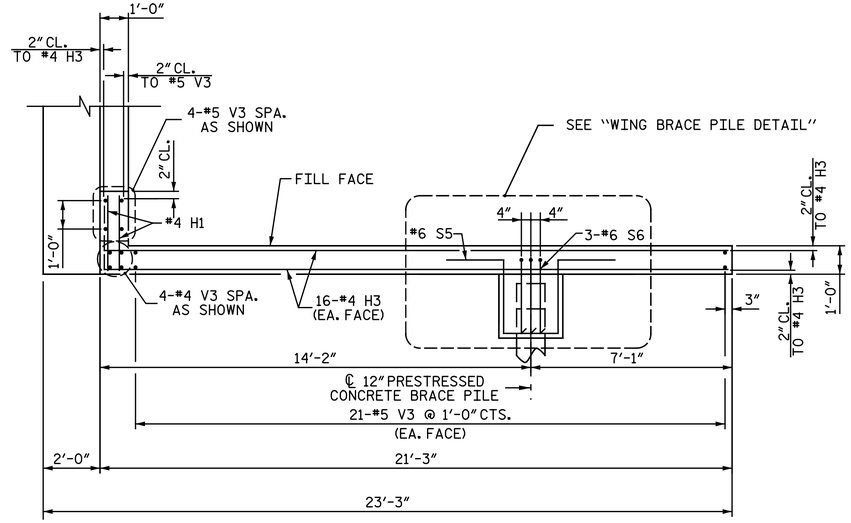
PLAN



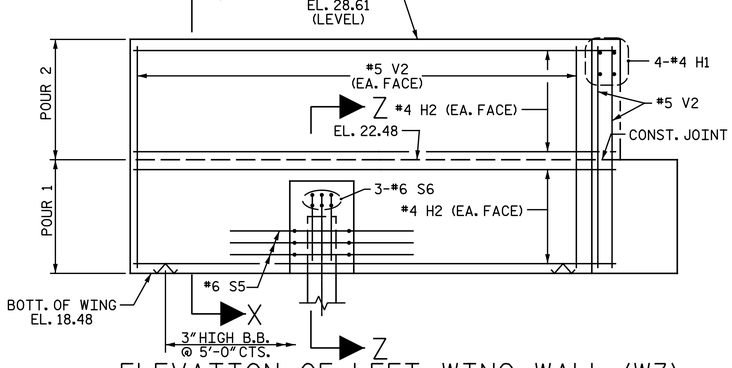
ELEVATION

NOTE:
THE CONCRETE IN SHADED AREA OF THE WINGWALL SHALL BE POURED AFTER THE BARRIER RAIL IS CAST, IF SLIP FORMING IS USED.

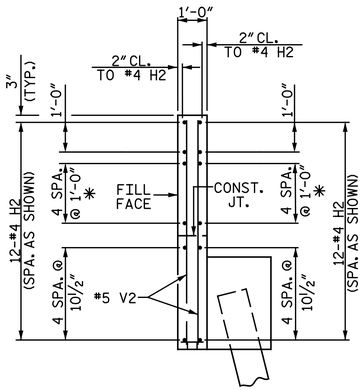
WING WALL DETAIL



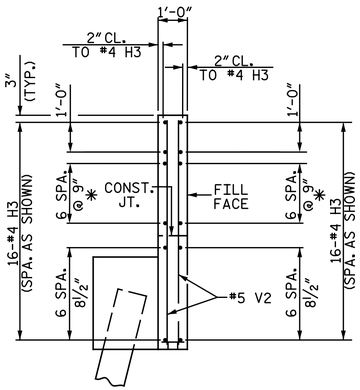
PLAN OF RIGHT WING WALL (W4)



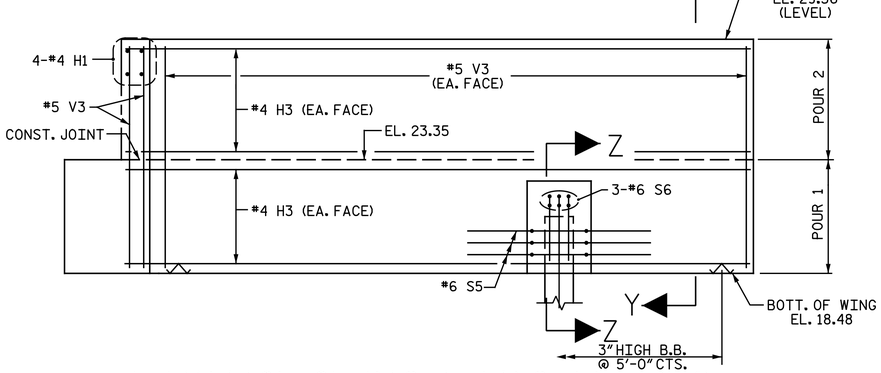
ELEVATION OF LEFT WING WALL (W3)



SECTION X-X

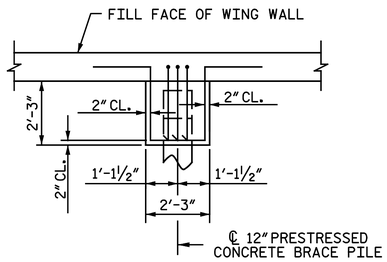


SECTION Y-Y

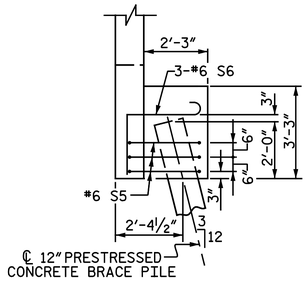


ELEVATION OF RIGHT WING WALL (W4)

✱MATCH "H" BARS TO K1 BARS IN BACKWALL



WING BRACE PILE DETAIL



SECTION Z-Z

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2
WING WALL DETAILS

LEFT LANE

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-61
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 2-4-14
CHECKED BY : A. M. HOUSTON DATE : 2-14-14

DWG. 61 OF 68

nbspeaks
3/5/2015 4:12:28 PM
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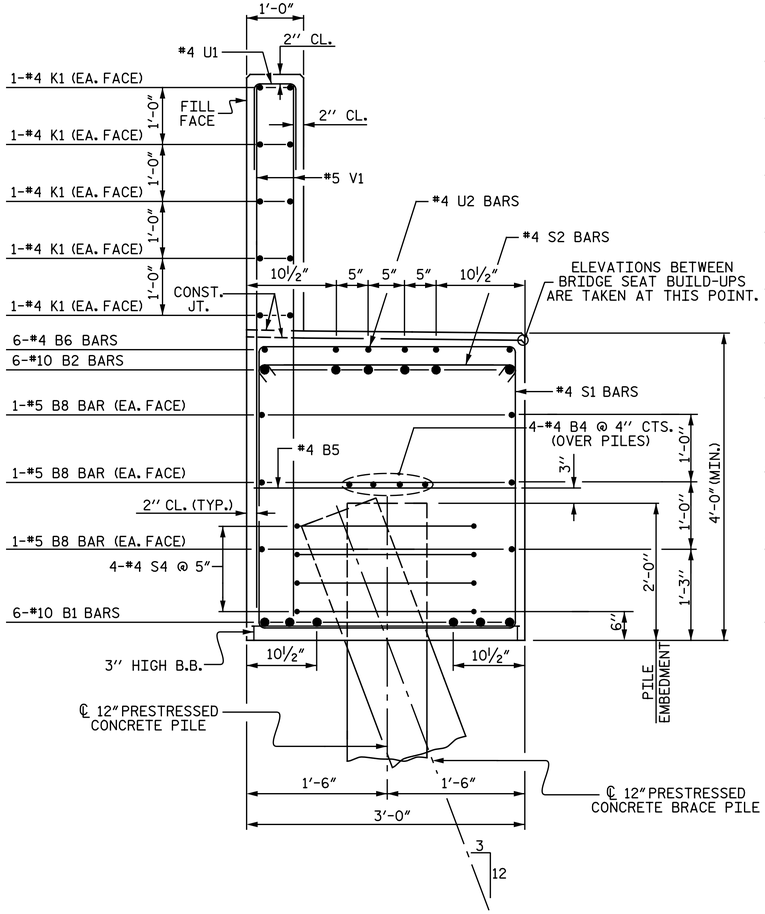
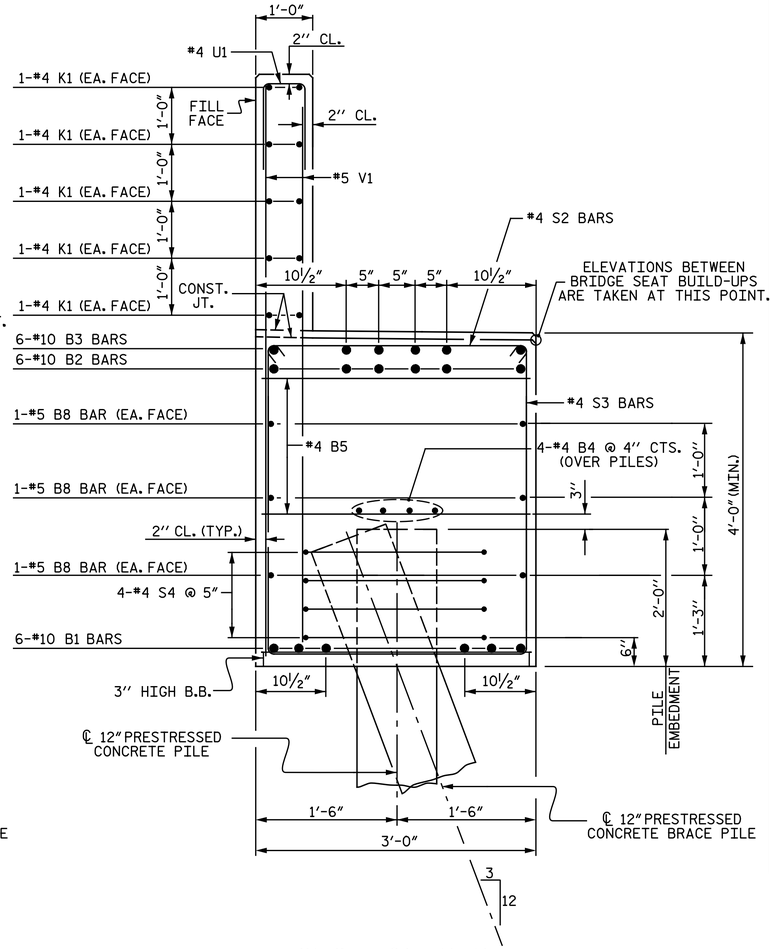
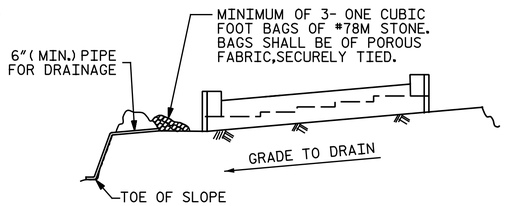
SITE 4



SECTION A-A



SECTION B-B



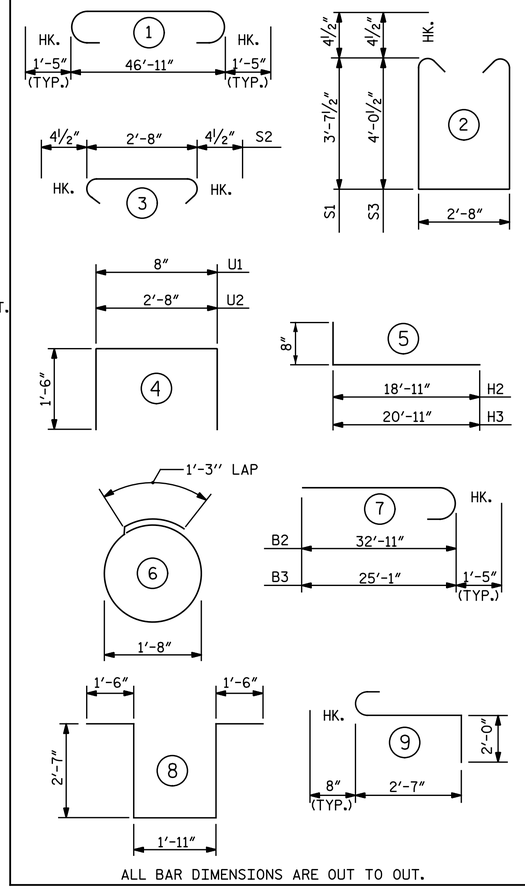
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

TEMPORARY DRAINAGE AT END BENT

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	10	1	49' - 9"	1,284
B2	6	10	7	34' - 4"	886
B3	6	10	7	26' - 6"	684
B4	8	4	STR	24' - 8"	132
B5	17	4	STR	2' - 8"	30
B6	12	4	STR	3' - 3"	26
B7	6	4	STR	7' - 7"	30
B8	6	5	STR	46' - 11"	294
H1	8	4	STR	2' - 7"	14
H2	24	4	5	19' - 7"	314
H3	32	4	5	21' - 7"	461
K1	20	4	STR	24' - 8"	330
S1	33	4	2	10' - 8"	235
S2	70	4	3	3' - 5"	160
S3	37	4	2	11' - 6"	284
S4	28	4	6	6' - 6"	122
S5	6	6	8	10' - 1"	91
S6	6	6	9	5' - 3"	47
U1	42	4	4	3' - 8"	103
U2	12	4	4	5' - 8"	45
V1	84	5	STR	8' - 3"	723
V2	46	5	STR	9' - 8"	464
V3	50	5	STR	10' - 7"	552

REINFORCING STEEL	LBS.	7,311
CLASS "A" CONCRETE BREAKDOWN		
POUR #1 - CAP & LOWER WING WALLS	C.Y.	30.1
POUR #2 - BACKWALL & UPPER WING WALLS	C.Y.	18.1
TOTAL CLASS "A" CONCRETE	C.Y.	48.2
12" PRESTRESSED CONCRETE PILES NO. 9	LIN. FT.	450
PILE REDRIVES	EA.	4

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 3 OF 3

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2 DETAILS

LEFT LANE

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CHECKED BY : A. M. HOUSTON DATE : 2-14-14

DWG. 62 OF 68

SITE 4

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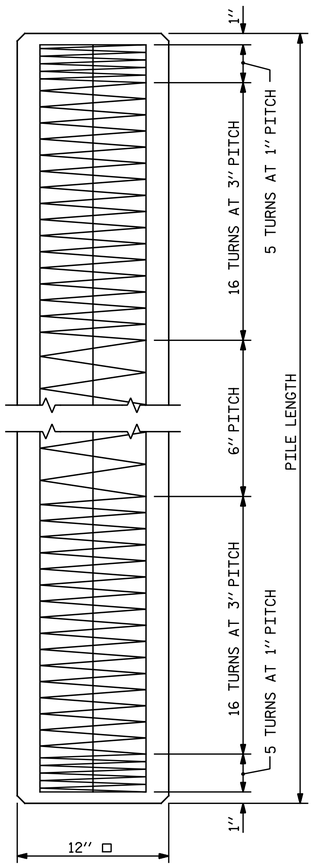

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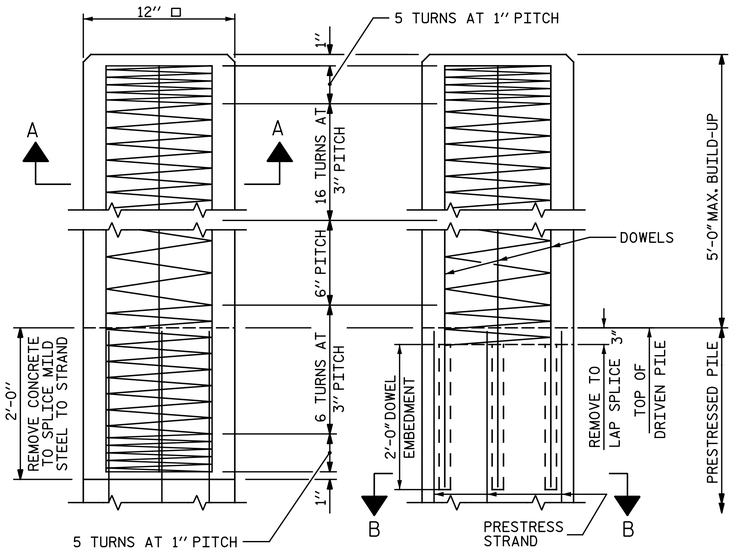
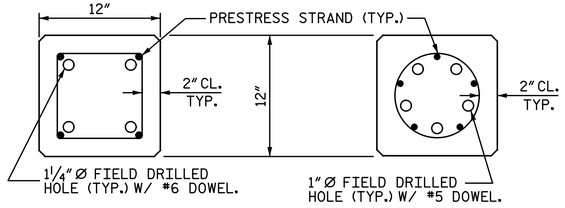


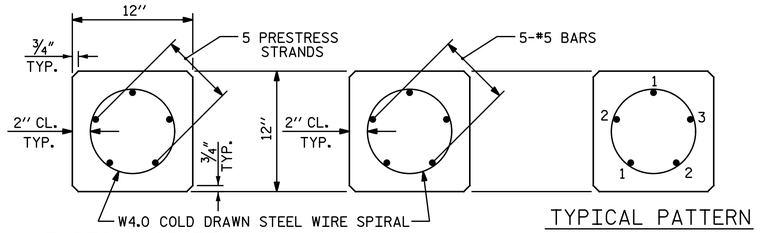
BUILD-UP AND SPIRAL REINFORCING

OPTIONAL BUILD-UP WITH DOWELS



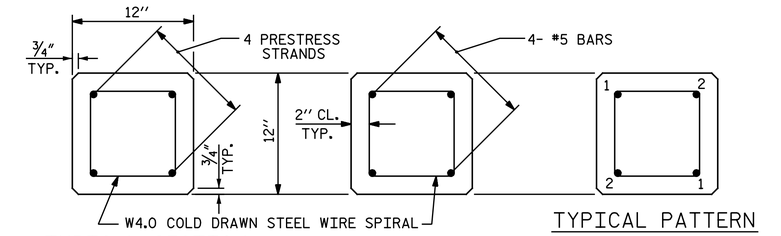
SECTION ''B-B''

(AT THE CONTRACTOR'S OPTION, PILE BUILD-UP MAY BE CONSTRUCTED WITH DOWELS.)



TYPICAL SECTION SECTION ''A-A'' TYPICAL PATTERN FOR BURNING STRANDS

½'' OR 0.6''Ø GRADE 270 L.R. PRESTRESS STRANDS



TYPICAL SECTION SECTION ''A-A'' TYPICAL PATTERN FOR BURNING STRANDS

½'' OR 0.6''Ø GRADE 270 L.R. PRESTRESS STRANDS

NOTES

PRESTRESSED CONCRETE STRENGTH : f'c= 7,500 PSI

BUILD-UP CONCRETE STRENGTH : f'c= 7,500 PSI

STRAND DATA:

SIZE	GRADE	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS FORCE
½''	270 L.R.	0.153	41,300# PER STRAND	30,980# PER STRAND
0.6''	270 L.R.	0.217	58,600# PER STRAND	43,940# PER STRAND

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS CONFORMING TO AASHTO M203. STRAND SAMPLING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

AT THE CONTRACTOR'S OPTION, ½'' OR 0.6'' STRANDS MAY BE USED IN EITHER THE 4 OR 5 STRAND CONFIGURATION SHOWN IN THE TYPICAL SECTION DETAIL. MIXING OF STRAND SIZE IS NOT ALLOWED.

THE SLIP-FORM METHOD OF CASTING PILES WILL NOT BE PERMITTED.

TRANSFER THE LOAD FROM THE ANCHORAGES TO THE PILE AFTER THE CONCRETE HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI.

IF STRAND STRESS IS RELIEVED BY BURNING, THE STRANDS SHALL BE BURNED IN PAIRS, EXCEPT WHERE 5 STRANDS ARE USED, THE LAST STRAND MAY BE BURNED SINGLY ACCORDING TO BURNING PATTERNS SHOWN. NOT MORE THAN 4 STRANDS MAY BE BURNED AT ANY ONE SECTION BEFORE THE SAME STRANDS ARE BURNED AT BOTH ENDS OF THE BED AND BETWEEN EACH PAIR OF PILES IN THE BED.

PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

WHERE CAST-IN-PLACE LIFTING DEVICES ARE NOT USED, PICK-UP POINTS ARE TO BE INDICATED WITH A 2'' WIDE BLACK MARK.

DRIVE PILES USING A METHOD APPROVED BY THE ENGINEER, WHEREBY THE HEAD OF THE PILE IS NOT DAMAGED.

DRIVING OF THE BUILT-UP PILE WILL NOT BE PERMITTED UNTIL THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 5,000 PSI AND UNTIL A PERIOD OF SEVEN DAYS HAS ELAPSED SINCE CASTING OF THE BUILD-UP.

DOWEL INSTALLATION FOR OPTIONAL BUILD-UP

GROUT COMPRESSIVE STRENGTH: f'c= 5,000 PSI

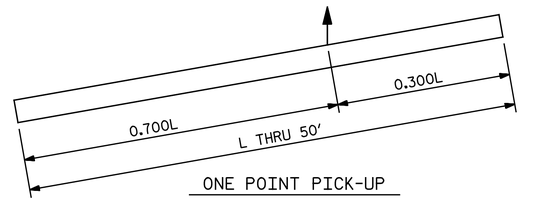
BEFORE DRILLING DOWEL HOLES, REMOVE THE UPPER 3'' OF CONCRETE FROM THE TOP OF THE PILE WITHOUT DAMAGE TO THE REINFORCING STEEL. THE REMOVAL PLANE SHOULD BE NORMAL TO THE EDGE OF THE PILE.

DOWEL HOLES SHALL BE POSITIONED TO MAINTAIN ½'' CLEAR TO ALL EXISTING PRESTRESSING STRANDS IN THE CONCRETE PILE.

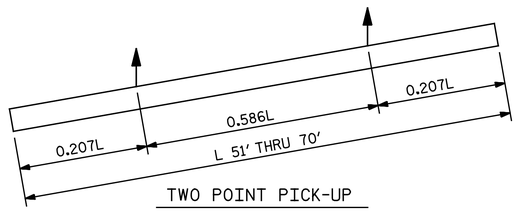
FIELD DRILLED HOLES SHALL BE CLEAN AND FREE OF ANY OBSTRUCTIONS BEFORE GROUTING OF DOWELS. DOWEL BARS SHALL BE INSTALLED AND GROUTED WITH AN APPROVED NON-SHRINK GROUT.

THE SPIRAL REINFORCING IN ALL BUILD-UPS SHALL BE W4.0 COLD DRAWN WIRE WHICH SHALL BE SECURED TO THE LONGITUDINAL REINFORCEMENT TO MAINTAIN PITCH.

THE SPIRAL REINFORCING IN THE BUILD-UP AND THE PRESTRESSED CONCRETE PILE SHALL BE SPLICED BY OVERLAPPING A MIN. OF ONE TURN.



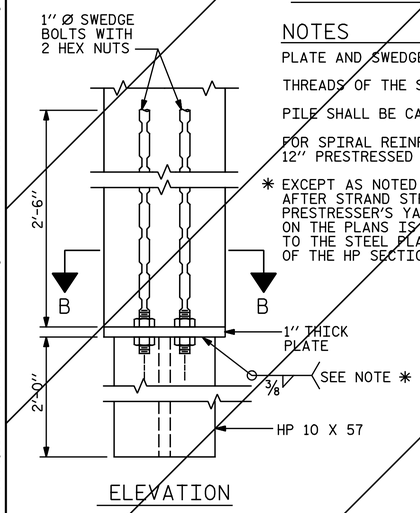
ONE POINT PICK-UP



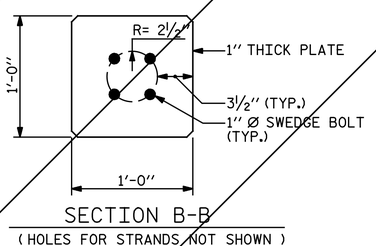
TWO POINT PICK-UP

PICK-UP POINTS

STEEL PILE TIP DETAILS



ELEVATION



SECTION B-B

(HOLES FOR STRANDS NOT SHOWN)

NOTES

PLATE AND SWEDGE BOLTS SHALL MEET THE REQUIREMENTS OF AASHTO M270 GRADE 36.

THREADS OF THE SWEDGE BOLTS SHALL BE BURRED AT THE FACE OF THE NUT.

PILE SHALL BE CAST WITH SWEDGE BOLTS AND PLATE IN PLACE.

FOR SPIRAL REINFORCING AND PRESTRESSING STRAND DETAILS, SEE STANDARD 12'' PRESTRESSED CONCRETE PILE ELEVATION AND TYPICAL SECTION.

* EXCEPT AS NOTED BELOW, THE HP 10 X 57 SECTION SHALL BE WELDED TO THE STEEL PLATE AFTER STRAND STRESS IS RELIEVED. THE HP 10 X 57 SECTION MAY BE WELDED IN THE PRESTRESSER'S YARD OR IN THE FIELD. WHEN A CIRCULAR STRAND PATTERN AS SHOWN ON THE PLANS IS USED, THE CONTRACTOR, AT HIS OPTION, MAY WELD THE HP 10 X 57 SECTION TO THE STEEL PLATE AT THE FABRICATION PLANT PRIOR TO PLACING THE CONCRETE. THE FLANGES OF THE HP SECTION SHALL BE PARALLEL TO THE EDGES OF THE STEEL PLATE AND CONCRETE PILE.

QUANTITIES FOR ONE 12'' PRESTRESSED PILE

LENGTH	CONCRETE CU. YDS.	PILE WT. TONS	ONE POINT PICK-UP 0.300L	ONE POINT PICK-UP 0.700L	TWO POINT PICK-UP 0.207L	TWO POINT PICK-UP 0.586L
25'-0''	0.91	1.85	7'-6''	17'-6''		
30'-0''	1.10	2.22	9'-0''	21'-0''		
35'-0''	1.28	2.59	10'-6''	24'-6''		
40'-0''	1.46	2.96	12'-0''	28'-0''		
45'-0''	1.64	3.33	13'-6''	31'-6''		
50'-0''	1.83	3.72	15'-0''	35'-0''		
55'-0''	2.01	4.09			11'-4½''	32'-3''
60'-0''	2.19	4.46			12'-5''	35'-2''
65'-0''	2.38	4.81			13'-5½''	38'-1''
70'-0''	2.57	5.18			14'-6''	41'-0''

PROJECT NO. R-2514D

JONES COUNTY

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

12'' PRESTRESSED CONCRETE PILE

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-63
1			3			TOTAL SHEETS
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DRAWN BY : N. B. SPEAKS DATE : 6-18-14

CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 63 OF 68

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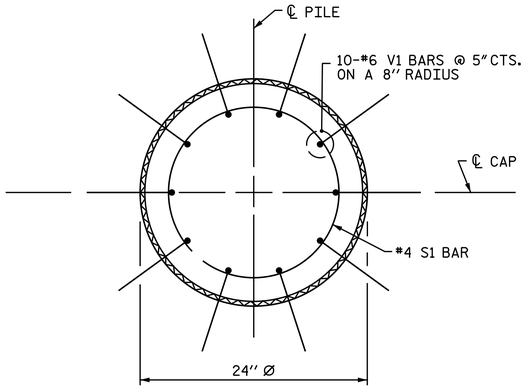
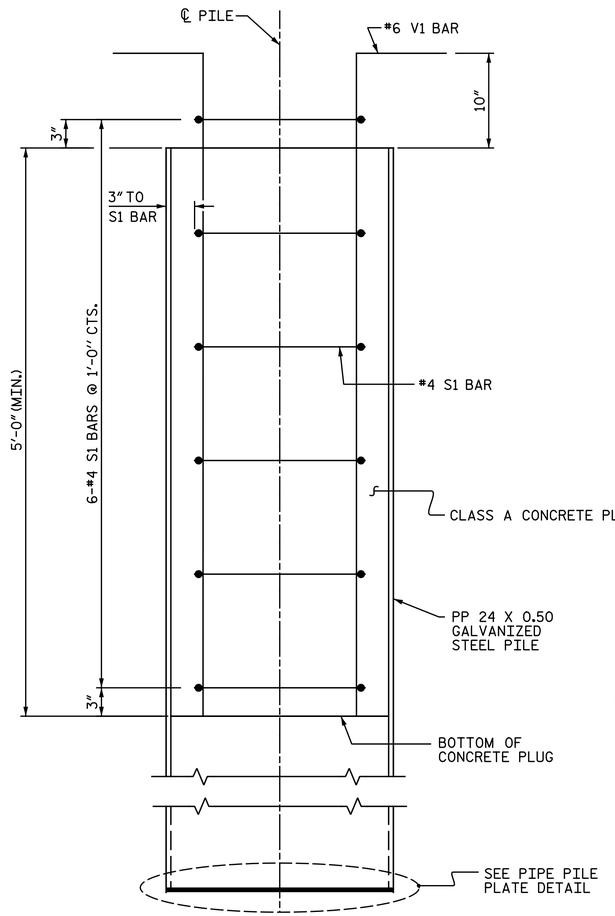
SITE 4



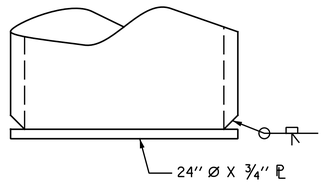
PLAN



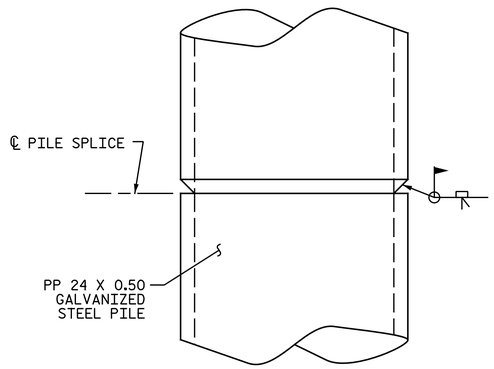
ELEVATION

PP 24 X 0.50 GALVANIZED STEEL PILE

(CLOSED END)



PIPE PILE PLATE DETAIL



PIPE PILE SPLICE DETAIL

NOTES:

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

GALVANIZE STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED. GALVANIZING OR METALLIZING PIPE PILE PLATES IS NOT REQUIRED.

PIPE PILE PLATES, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

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

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

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

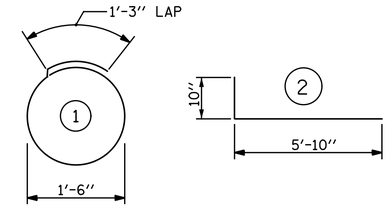
FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE BENT CAP UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF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

THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 24 X 0.50 GALVANIZED STEEL PILES.

BILL OF MATERIAL FOR ONE PP 24 X 0.50 GALVANIZED STEEL PILE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	6′-0″	24
V1	10	#6	2	6′-8″	100
REINFORCING STEEL =				124	lbs
CLASS A CONCRETE					
5′-0″ MINIMUM PLUG					0.5 CY

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

24″ STEEL PIPE PILE

LEFT LANE

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
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3/13/2015

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SITE 4

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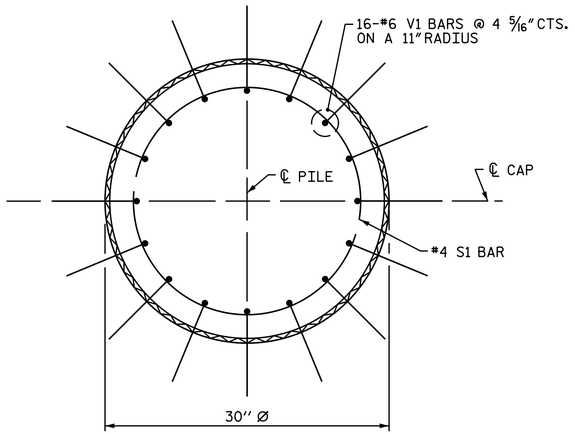

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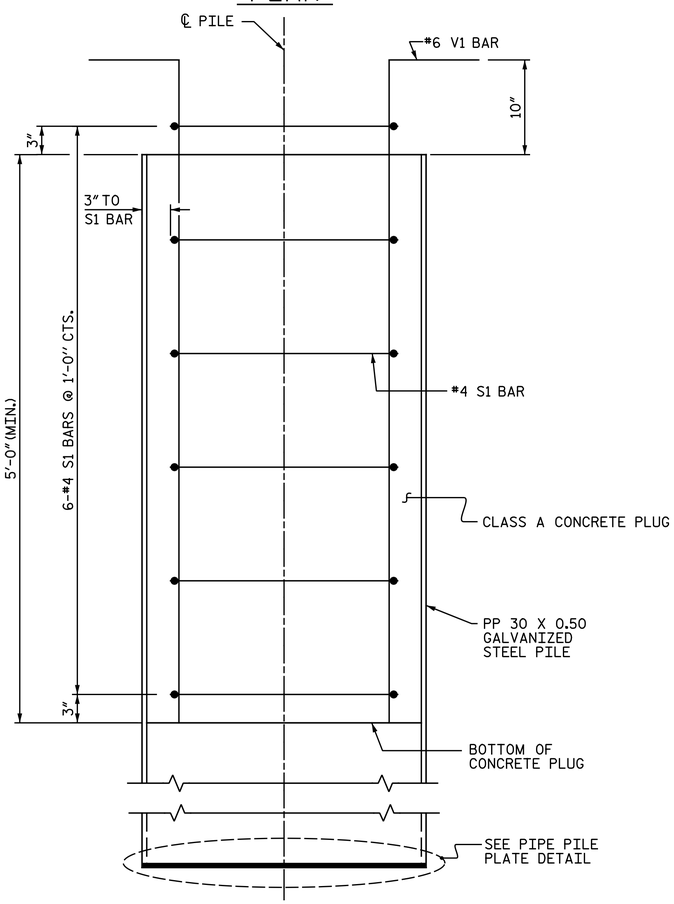
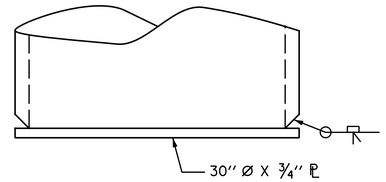


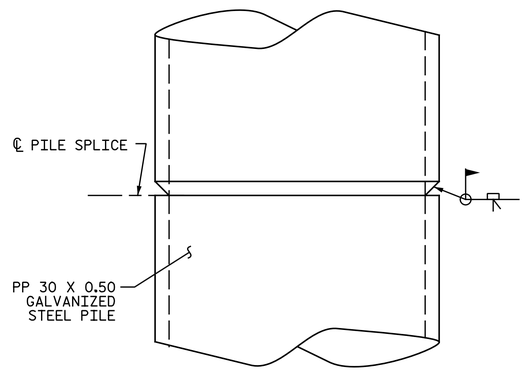
ELEVATION

PP 30 X 0.50 GALVANIZED STEEL PILE

(CLOSED END)



PIPE PILE PLATE DETAIL



PIPE PILE SPLICE DETAIL

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GALVANIZE STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED. GALVANIZING OR METALLIZING PIPE PILE PLATES IS NOT REQUIRED.

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

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

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

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

THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 30 X 0.50 GALVANIZED STEEL PILES.

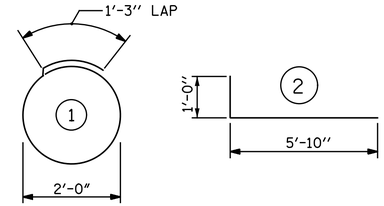
BILL OF MATERIAL FOR ONE PP 30 X 0.50 GALVANIZED STEEL PILE

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

CLASS A CONCRETE

5'-0" MINIMUM PLUG 0.8 CY

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 57329A6F5084459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

Baker

Michael Baker Engineering
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Cary, North Carolina 27518
NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

30" STEEL PIPE PILE

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-65
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 5-27-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 65 OF 68

SITE 4

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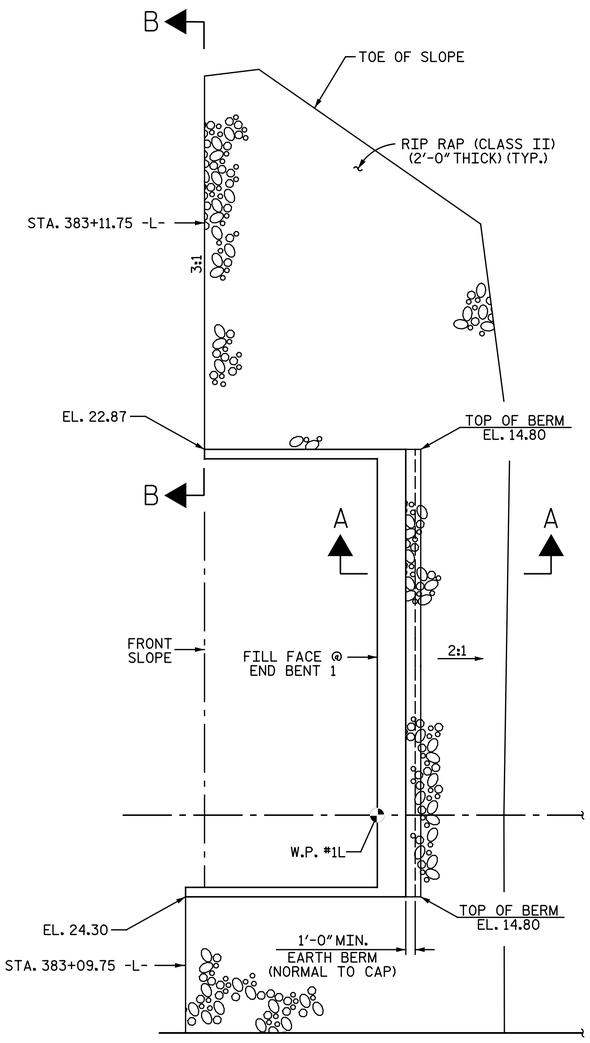
NOTES:
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

ESTIMATED QUANTITIES		
BRIDGE @ STA. 389+47.50 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	330	367
END BENT 2	845	939



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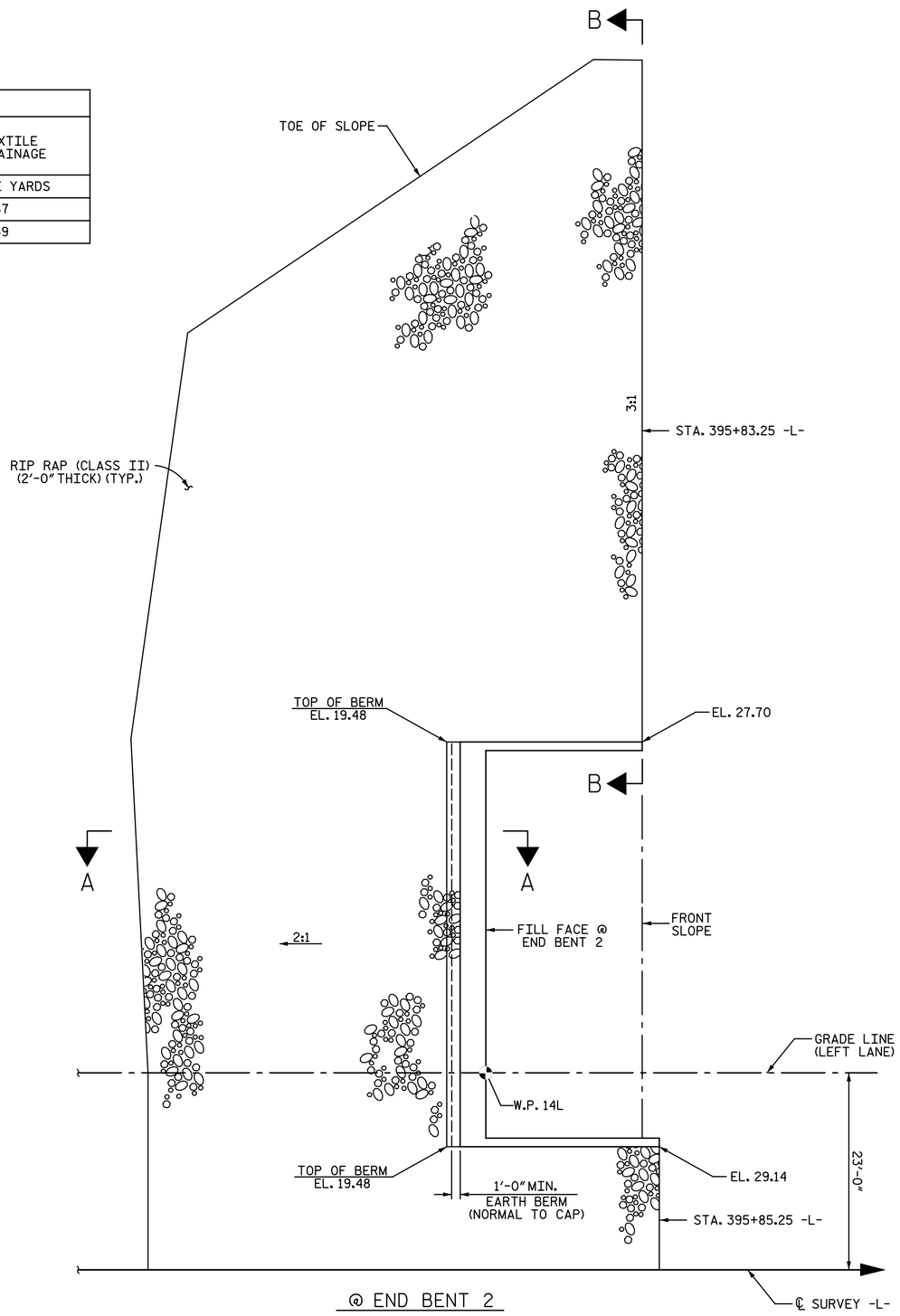

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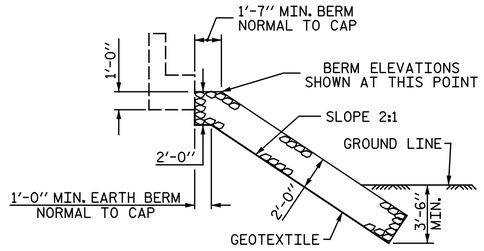
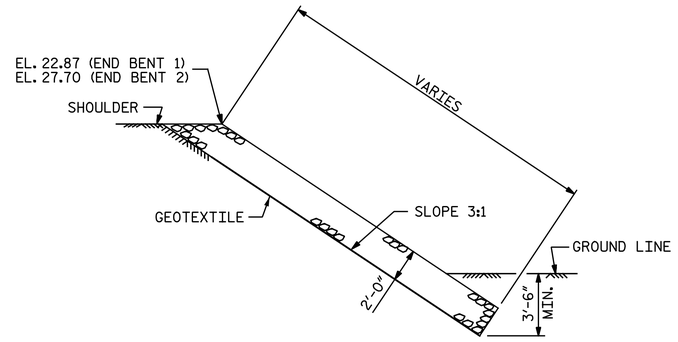
PLAN



SECTION A-A



SECTION B-B

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RIP RAP DETAILS

LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-66
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 8-5-14
CHECKED BY : A. M. HOUSTON DATE : 8-5-14

DWG. 66 OF 68

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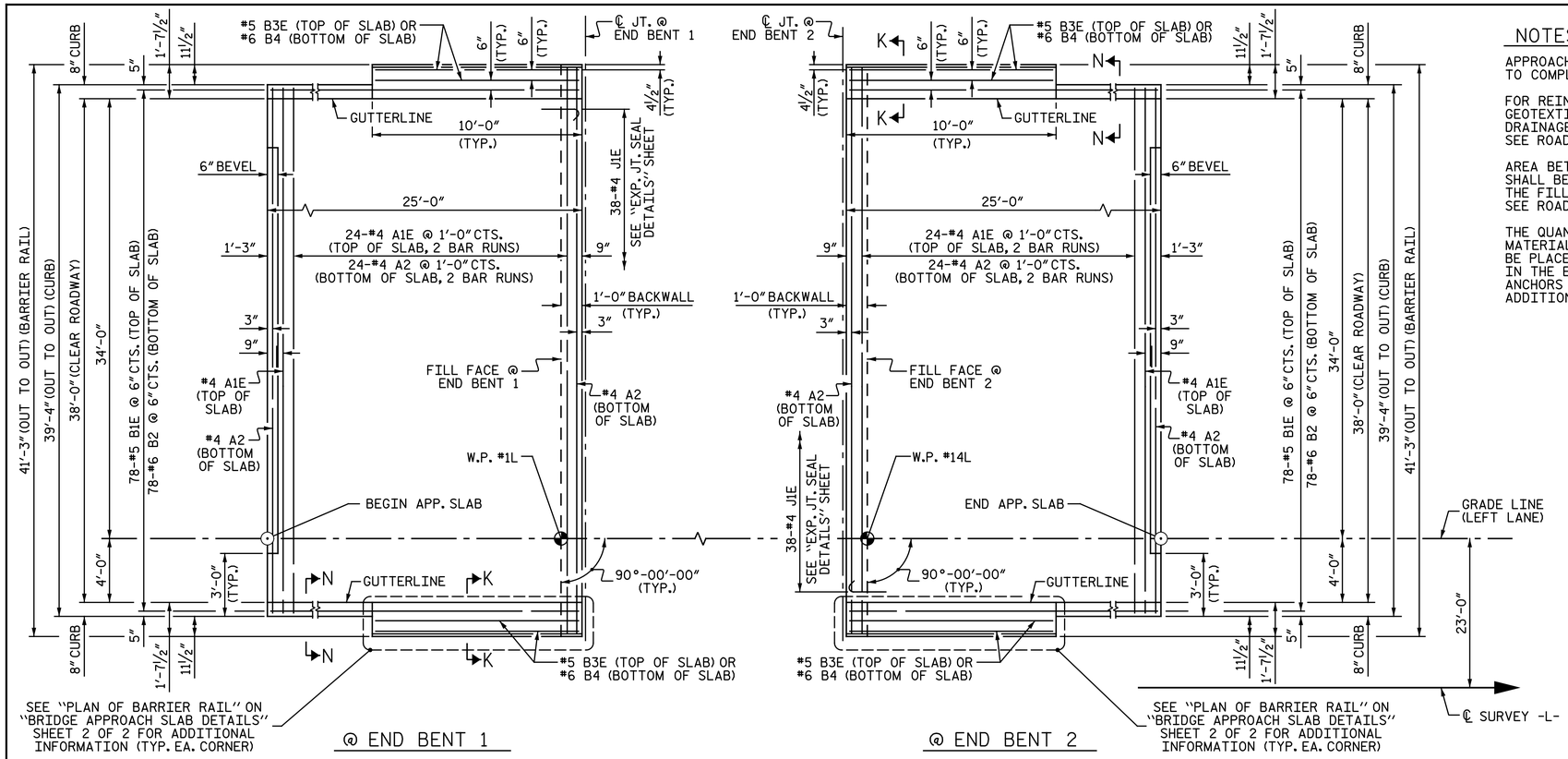
SITE 4



@ END BENT 1 @ END BENT 2

NOTES:

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

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

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

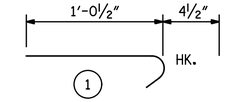
THE QUANTITY OF #4 J1E BARS ON THE BILL OF MATERIAL IS BASED ON 1'-0" CENTERS. J1 BARS SHALL BE PLACED AT EACH VERTICAL STUD ANCHOR BOLT. IN THE EVENT THAT THE NUMBER OF VERTICAL STUD ANCHORS EXCEEDS THE NUMBER OF J1 BARS SPECIFIED, ADDITIONAL J1E BARS WILL NOT BE REQUIRED.

BILL OF MATERIAL

APPROACH SLAB AT END BENT 1 OR END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1E	50	4	STR	21' - 4"	718
A2	52	4	STR	21' - 4"	741
B1E	78	5	STR	23' - 11"	1,946
B2	78	6	STR	24' - 8"	2,890
B3E	4	5	STR	9' - 8"	40
B4	4	6	STR	9' - 8"	58
J1E	38	4	1	1' - 5"	36
EPOXY COATED REINFORCING STEEL				LBS.	2,740
REINFORCING STEEL				LBS.	3,689
CLASS AA CONCRETE				C.Y.	43.6

BAR TYPE



ALL BAR DIMENSIONS ARE OUT TO OUT

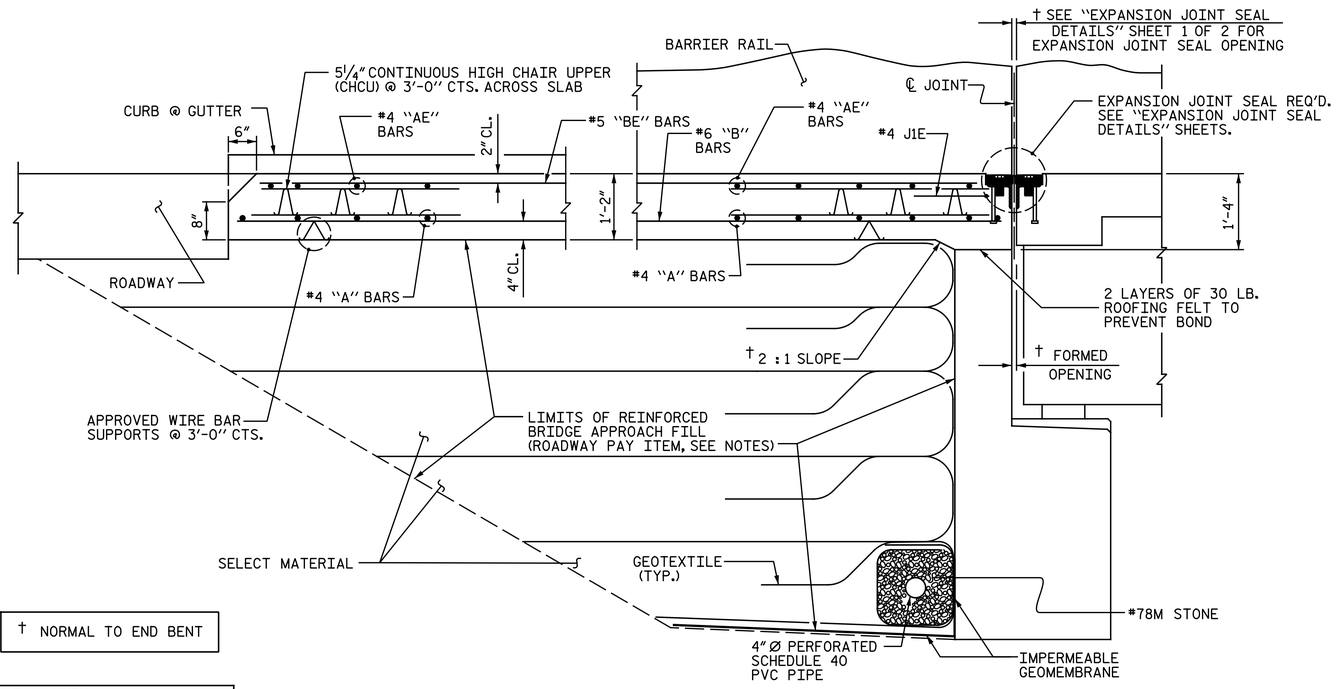
SPLICE LENGTHS

BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"

** QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED. SEE SHEET 2 OF 2.

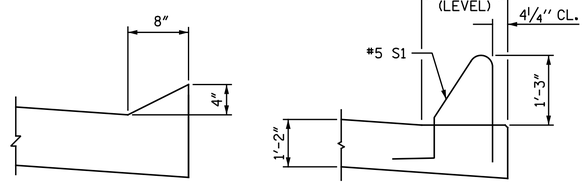
"E" SUFFIX DENOTES EPOXY COATED REINFORCING STEEL.

PLAN OF APPROACH SLABS



† NORMAL TO END BENT

SECTION THRU SLAB



SECTION N-N SECTION K-K

CURB DETAILS

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT

LEFT LANE

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 575284BF5004459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

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2			4			68

DRAWN BY : M. D. MAYHEW DATE : 8-7-13
CHECKED BY : A. L. PHILLIPS DATE : 8-9-13

DWG. 67 OF 68

SITE 4

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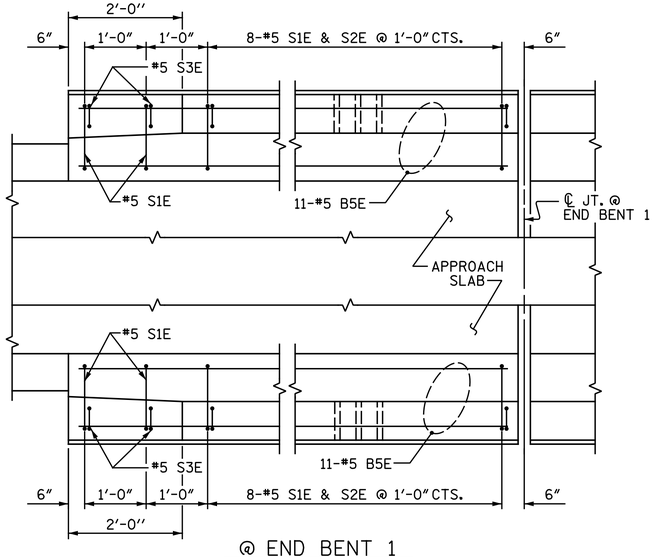
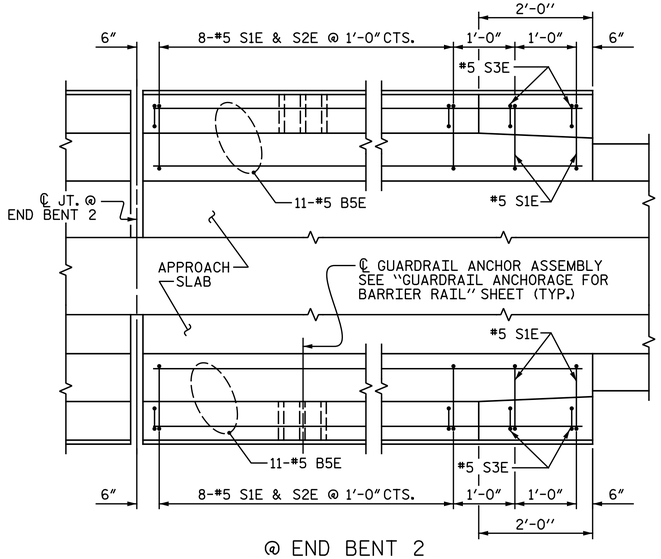


@ END BENT 1



@ END BENT 2

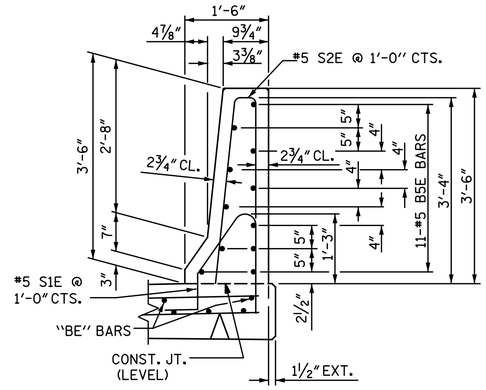
PLAN OF BARRIER RAIL

NOTES:

THE COST OF THE BARRIER RAIL ON THE APPROACH SLAB SHALL BE INCLUDED IN THE LINEAR FOOT CONTRACT PRICE BID FOR "CONCRETE BARRIER RAIL".

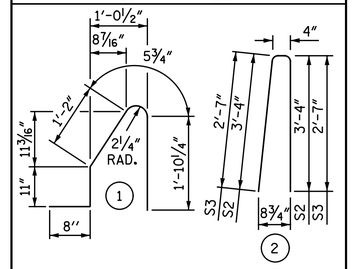
THE BARRIER RAIL ON EACH APPROACH SLAB SHALL NOT BE CAST UNTIL ALL APPROACH SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.



SECTION THRU RAIL

BAR TYPES



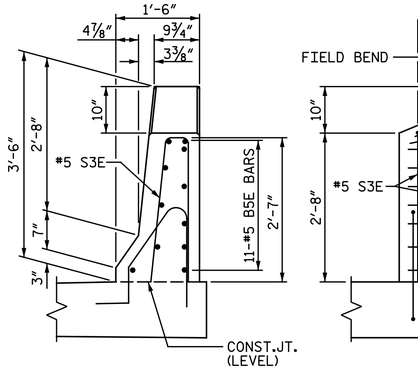
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

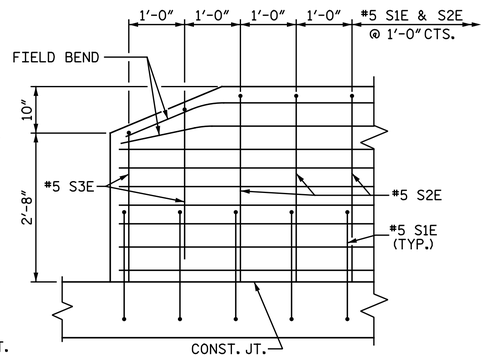
BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B5E	44	5	STR	9' - 8"	444
S1E	40	5	1	5' - 1"	212
S2E	32	5	2	7' - 0"	234
S3E	8	5	2	5' - 6"	46
EPOXY COATED REINFORCING STEEL				LBS.	936
CLASS AA CONCRETE				C.Y.	5.4

"E" SUFFIX DENOTES EPOXY COATED REINFORCING STEEL.

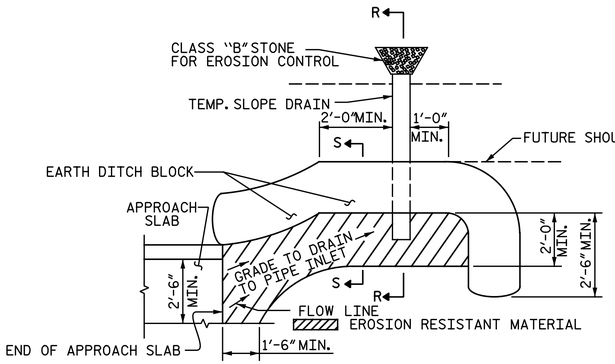


END VIEW



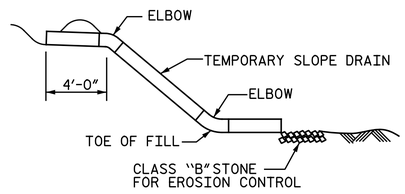
SIDE VIEW

END OF RAIL DETAILS

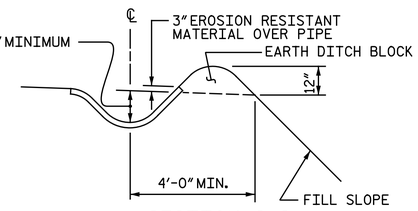


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

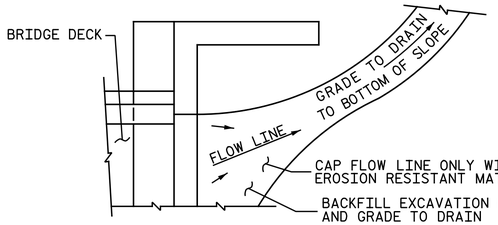
PLAN VIEW



SECTION R-R



SECTION S-S



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

TEMPORARY DRAINAGE DETAIL

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB DETAILS

LEFT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No.: F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-68
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2			4			68

DRAWN BY : M. D. MAYHEW DATE : 8-7-13
CHECKED BY : A. L. PHILLIPS DATE : 8-9-13

DWG. 68 OF 68

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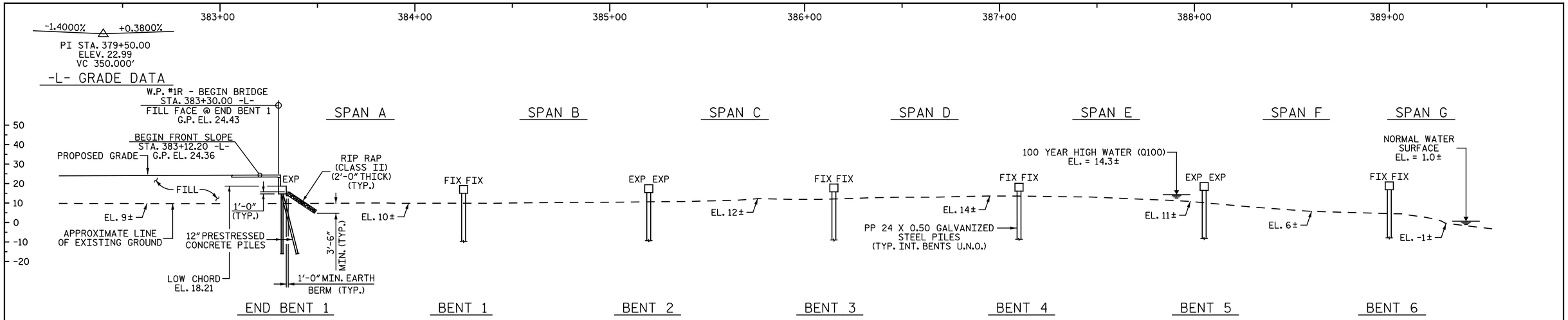
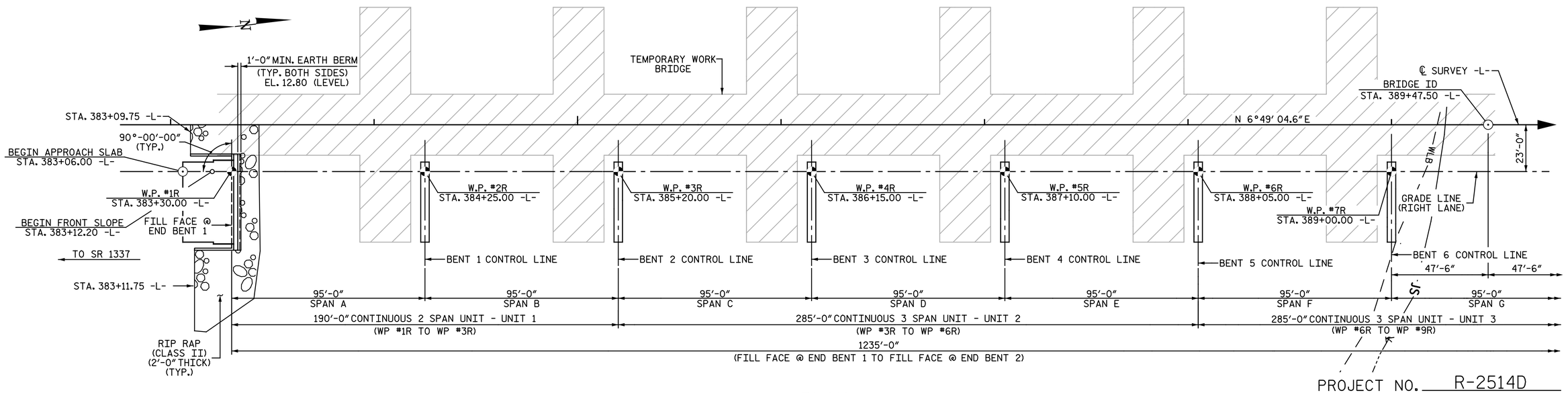
SITE 4



SECTION ALONG GRADE LINE (RIGHT LANE)

(SECTION AT BENTS AND END BENTS ARE AT RIGHT ANGLES)
U.N.O. - DENOTES "UNLESS NOTED OTHERWISE"



PLAN

PILES NOT SHOWN IN PLAN VIEW FOR CLARITY

HYDRAULIC DATA

DESIGN DISCHARGE	= 11,000 CFS
FREQUENCY OF DESIGN DISCHARGE	= 50 YEAR
DESIGN HIGH WATER ELEVATION	= 13 FT
DRAINAGE AREA	= 369 SQ MI
BASE DISCHARGE (Q100)	= 13,000 CFS
BASE HIGH WATER ELEVATION	= 14.3 FT

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= N/A
FREQUENCY OF OVERTOPPING DISCHARGE	= 500+YEAR
OVERTOPPING FLOOD ELEVATION	= 19.7 FT

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS.

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459...
3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
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3/13/2015

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NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER TRENT RIVER ON US17 BETWEEN SR 1337 & SR 1121
RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-1
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 7-11-13
CHECKED BY : A. L. PHILLIPS DATE : 7-19-13

DWG. 1 OF 68

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 1 OF 5 BRIDGE NO. 102

SITE 4

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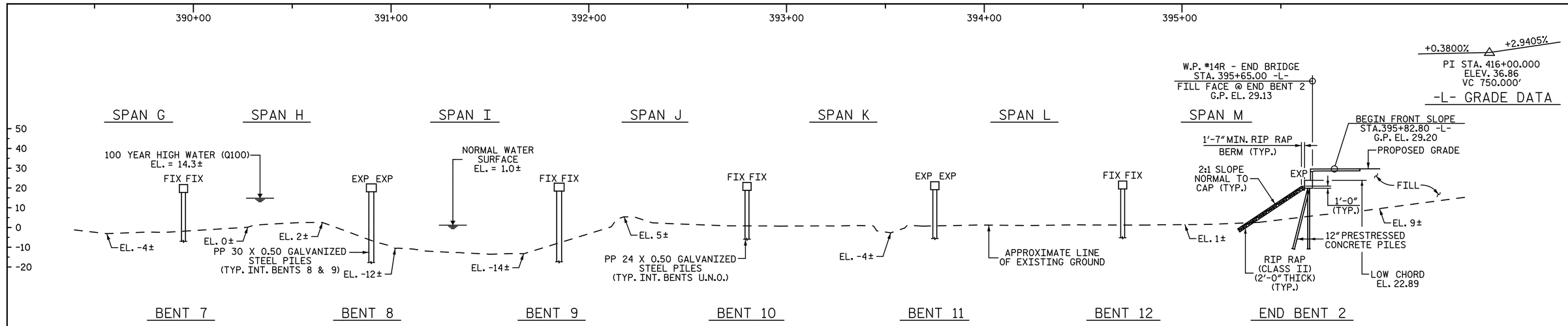
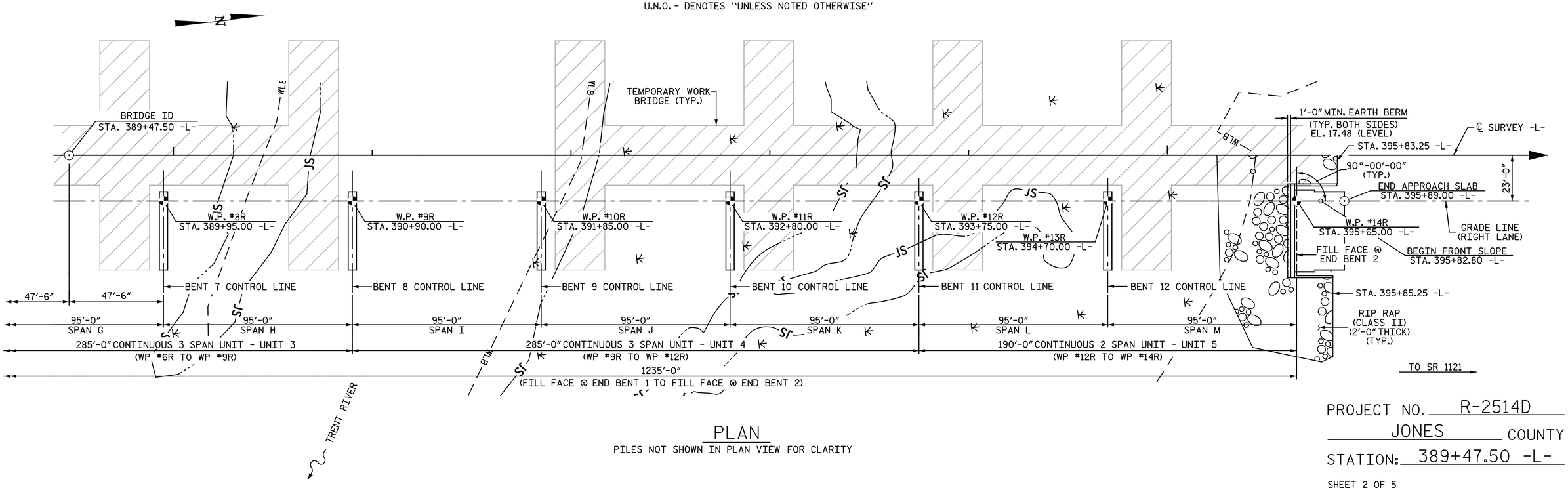


SECTION ALONG GRADE LINE (RIGHT LANE)

(SECTION AT BENTS AND END BENTS ARE AT RIGHT ANGLES)
U.N.O. - DENOTES "UNLESS NOTED OTHERWISE"



PLAN

PILES NOT SHOWN IN PLAN VIEW FOR CLARITY

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER TRENT RIVER ON
US17 BETWEEN SR 1337 & SR 1121
RIGHT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No.: F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-2
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 7-11-13
CHECKED BY : A. L. PHILLIPS DATE : 7-19-13

DWG. 2 OF 68

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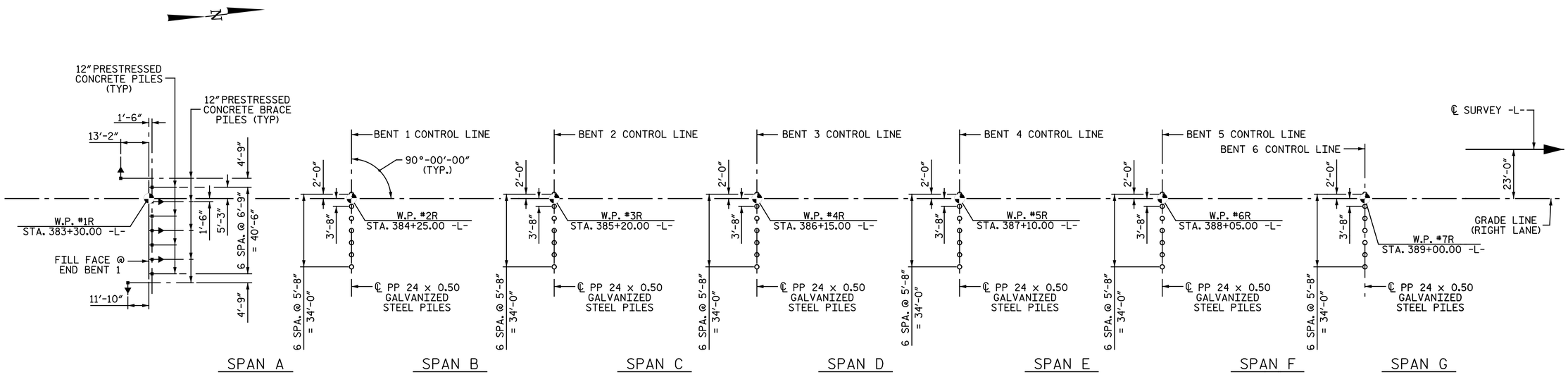
SITE 4

NOTES:

▲ INDICATES BATTER DIRECTION FOR BATTERED PILES.

ALL BATTERED PILES SHALL BE BATTERED AT 3 :12 RATIO AT END BENTS.

FOR INTERIOR BENTS, 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.



FOUNDATION LAYOUT

ALL BENTS ARE PARALLEL

PILES ARE DIMENSIONED FROM WORK POINT TO ℄ OF PILE AT BOTTOM OF CONCRETE CAP.

FOUNDATION NOTES:

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO. 1 AND END BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 110 TONS PER PILE.

DRIVE PILES AT END BENT NO. 1 AND END BENT NO. 2 TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

PILES AT BENT NO. 1 THROUGH BENT NO. 7 AND AT BENT NO. 10 THROUGH BENT NO. 12 ARE DESIGNED FOR A FACTORED RESISTANCE OF 225 TONS PER PILE.

DRIVE PILES AT BENT NO. 1 THROUGH BENT NO. 7 AND AT BENT NO. 10 THROUGH BENT NO. 12 TO A REQUIRED DRIVING RESISTANCE OF 300 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

PILES AT BENT NO. 8 AND BENT NO. 9 ARE DESIGNED FOR A FACTORED RESISTANCE OF 265 TONS PER PILE.

DRIVE PILES AT BENT NO. 8 AND BENT NO. 9 TO A REQUIRED DRIVING RESISTANCE OF 360 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

INSTALL PILES AT BENT NO. 1 THROUGH BENT NO. 5 TO A TIP ELEVATION NO HIGHER THAN -21.0 FT.

INSTALL PILES AT BENT NO.6 AND BENT NO. 7 TO TIP ELEVATIONS NO HIGHER THAN -26.0 FT AND -34.0 FT, RESPECTIVELY.

INSTALL PILES AT BENT NO. 8 AND BENT NO. 9 TO A TIP ELEVATION NO HIGHER THAN -43.0 FT.

INSTALL PILES AT BENT NO. 10 THROUGH BENT NO. 12 TO A TIP ELEVATION NO HIGHER THAN -38.0 FT.

PIPE PILE PLATES ARE REQUIRED FOR STEEL PIPE PILES AT BENT NO. 1 THROUGH BENT NO. 12. USE PIPE PILE PLATES WITH A DIAMETER EQUAL TO THE PIPE PILE DIAMETER. FOR STEEL PIPE PILE PLATES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

SCOUR CRITICAL ELEVATIONS FOR BENT NO. 1 THROUGH BENT NO. 12 ARE ELEVATIONS 4 FT, 4 FT, 4 FT, 4 FT, 4 FT, -1 FT, -6 FT, -14 FT, -14 FT, -3 FT, -3 FT, AND -3 FT, RESPECTIVELY. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 80-135 KIPS-FT PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT NO. 1 THROUGH BENT NO. 7 AND AT BENT NO. 10 THROUGH BENT NO. 12. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 120-170 KIPS-FT PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT NO. 8 AND BENT NO. 9. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

TESTING THE FIRST PRODUCTION PILE WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT END BENT NO. 1 OR END BENT NO. 2. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

TESTING THE FIRST 24" DIA. PRODUCTION STEEL PIPE PILE WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

TESTING THE FIRST 30" DIA. PRODUCTION STEEL PIPE PILE WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

TEMPORARY STEEL CASINGS ARE REQUIRED FOR PREDRILLING (AND SPUDDING) AT BENT NO. 7, BENT NO. 8 AND BENT NO. 9.

SPUDDING MAY BE USED INSTEAD OF PREDRILLING AT BENT NO. 1 THROUGH BENT NO. 12.

IF NECESSARY, PREDRILL PILE LOCATIONS AT BENT NO. 1 THROUGH BENT NO. 5 TO AN ELEVATION NO LOWER THAN ELEVATION -21 FT WITH EQUIPMENT THAT WILL RESULT IN A MAXIMUM PREDRILLING DIAMETER OF 24". FOR PREDRILLING FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

IF NECESSARY, PREDRILL PILE LOCATIONS AT BENT NO. 6 AND BENT NO. 7 TO AN ELEVATION NO LOWER THAN ELEVATIONS -26 FT AND -34 FT, RESPECTIVELY, WITH EQUIPMENT THAT WILL RESULT IN A MAXIMUM PREDRILLING DIAMETER OF 24". FOR PREDRILLING FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

IF NECESSARY, PREDRILL PILE LOCATIONS AT BENT NO. 8 AND BENT NO. 9 TO AN ELEVATION NO LOWER THAN ELEVATION -43 FT WITH EQUIPMENT THAT WILL RESULT IN A MAXIMUM PREDRILLING DIAMETER OF 30". FOR PREDRILLING FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

IF NECESSARY, PREDRILL PILE LOCATIONS AT BENT NO. 10 THROUGH BENT NO. 12 TO AN ELEVATION NO LOWER THAN ELEVATION -38 FT WITH EQUIPMENT THAT WILL RESULT IN A MAXIMUM PREDRILLING DIAMETER OF 24". FOR PREDRILLING FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 3 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780771DA0460... 3/13/2015

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER TRENT RIVER ON US17 BETWEEN SR 1337 & SR 1121
RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-3
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-20-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 3 OF 68

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SITE 4

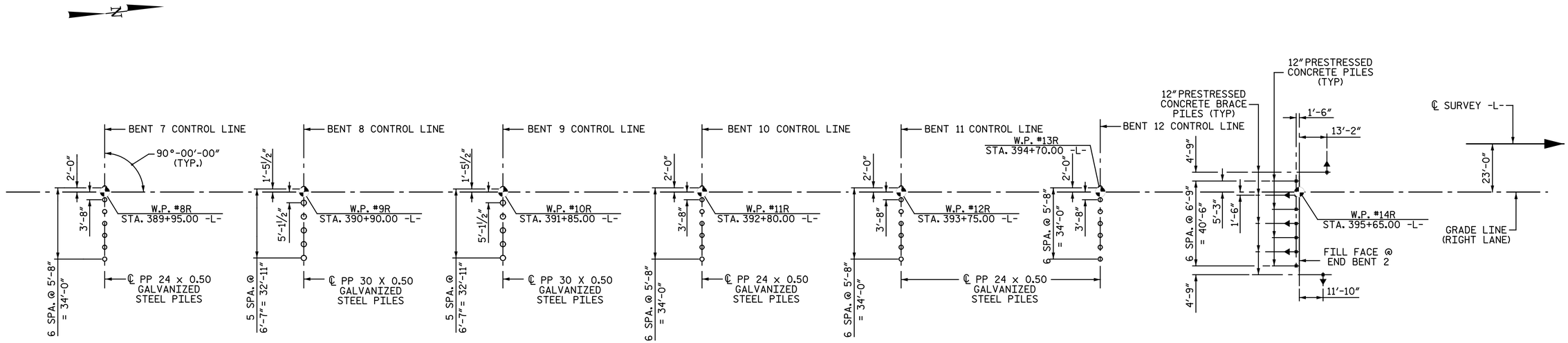
NOTES:

▲ INDICATES BATTER DIRECTION FOR BATTERED PILES.

ALL BATTERED PILES SHALL BE BATTERED AT 3 :12 RATIO AT END BENTS.

FOR INTERIOR BENTS, 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 FOUNDATION NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 5.



FOUNDATION LAYOUT

ALL BENTS ARE PARALLEL
PILES ARE DIMENSIONED FROM WORK POINT TO ℄ OF PILE AT BOTTOM OF CONCRETE CAP.

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-
SHEET 4 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459...
3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460...
3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER TRENT RIVER ON US17 BETWEEN SR 1337 & SR 1121
RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-4
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-20-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 4 OF 68

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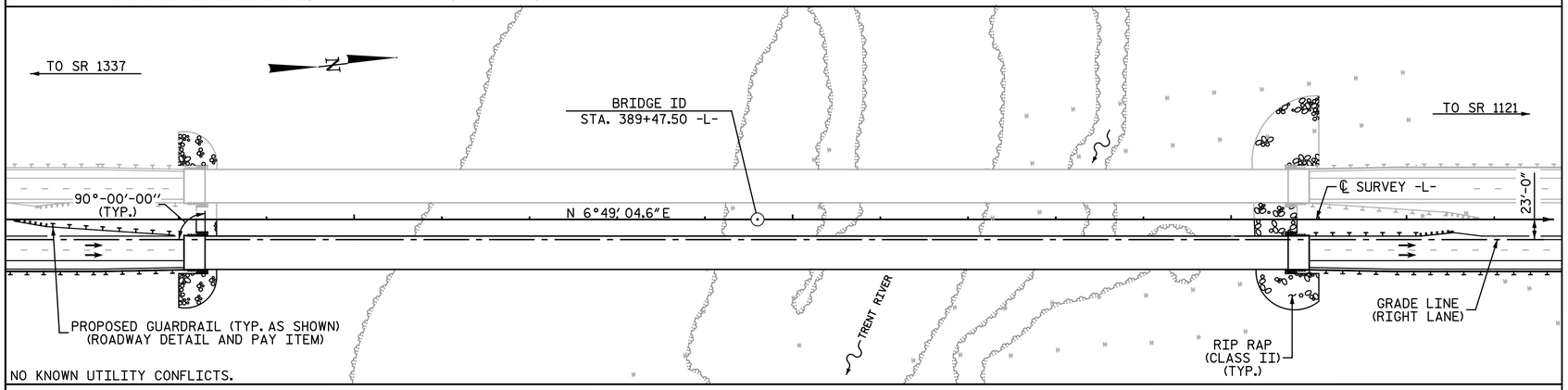
SITE 4

BM #20 - RR SPIKE SET IN 16"HARDWOOD, -L- STA. 394+12.00, 243.00' RT., ELEV. 3.92



NO KNOWN UTILITY CONFLICTS.

LOCATION SKETCH

TOTAL BILL OF MATERIAL

	PDA TESTING	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS STA. 389+47.50	REINFORCING STEEL	54" PRESTRESSED CONCRETE GIRDERS		12" PRESTRESSED CONCRETE PILES		PP 24 x 0.50 GALVANIZED STEEL PILES		PP 30 x 0.50 GALVANIZED STEEL PILES		PIPE PILE PLATES	PREDRILLING FOR PILES	PILE REDRIVES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0"THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	EXPANSION JOINT SEALS
	EA.	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	NO.	LIN. FT.	NO.	LIN. FT.	EA.	LIN. FT.	EA.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	LUMP SUM
SUPERSTRUCTURE		50,857	44,691				65	6112.1										2,505.8				
END BENT 1				48.2		7,311			9	360							4		331	367		
BENT 1				26.6		4,839					7	315			7		4					
BENT 2				26.6		4,839					7	315			7		4					
BENT 3				26.6		4,839					7	315			7		4					
BENT 4				26.6		4,839					7	315			7		4					
BENT 5				26.6		4,839					7	315			7		4					
BENT 6				26.6		4,839					7	350			7		4					
BENT 7				26.6		4,839					7	420			7		4					
BENT 8				31.9		4,836							6	390	6		4					
BENT 9				31.9		4,836							6	390	6		4					
BENT 10				26.6		4,839					7	455			7		4					
BENT 11				26.6		4,839					7	455			7		4					
BENT 12				26.6		4,839					7	455			7		4					
END BENT 2				48.2		7,311			9	450							4		620	688		
CONTINGENCY																2580						
TOTAL	5	50,857	44,691	426.2	LUMP SUM	72,684	65	6112.1	18	810	70	3,710	12	780	82	2580	56	2,505.8	951	1055	LUMP SUM	LUMP SUM

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING

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

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

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

FOR INTERIOR BENTS 1 THRU 12, 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 SECURING OF VESSELS, SEE SPECIAL PROVISIONS.

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

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

FOR PLACING LOAD ON STRUCTURE MEMBERS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY STRUCTURE AT STATION 389+47.50 -L- FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS. TEMPORARY STRUCTURE SHALL BE PAID FOR WITH THE LEFT LANE BRIDGE PAY ITEMS.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 5 OF 5

DRAWN BY : N. B. SPEAKS DATE : 7-12-13

CHECKED BY : A. M. HOUSTON DATE : 7-18-13

DWG. 5 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

Baker

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER TRENT RIVER ON US17 BETWEEN SR 1337 & SR 1121 RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-5
1			3			TOTAL SHEETS
2			4			68

SITE 4

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

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W × RF	STRENGTH I LIMIT STATE											SERVICE III LIMIT STATE						COMMENT NUMBER
								MOMENT					SHEAR						MOMENT						
							LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93 (INVENTORY)	N/A	1	1.19	--	1.75	0.72	1.62	D	EL	46.40	0.88	1.19	D	I	8.70	0.80	0.72	1.35	D	I	46.40	1
		HL-93 (OPERATING)	N/A		1.58	--	1.35	0.72	2.10	D	EL	46.40	0.88	1.58	D	I	84.00	N/A	--	--	--	--	--	1,2
		HS-20 (INVENTORY)	36.000	2	1.61	57.96	1.75	0.72	2.22	D	EL	46.40	0.88	1.61	D	I	84.00	0.80	0.72	1.86	D	I	46.40	1
		HS-20 (OPERATING)	36.000		2.12	76.32	1.35	0.72	2.88	D	EL	46.40	0.88	2.12	D	I	84.00	N/A	--	--	--	--	--	1,2
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		4.37	59.00	1.40	0.72	6.52	D	EL	46.40	0.88	5.17	D	I	84.00	0.80	0.72	4.37	D	I	46.40	1
		SNGARBS2	20.000		3.18	63.60	1.40	0.72	4.75	D	EL	46.40	0.88	3.59	D	I	84.00	0.80	0.72	3.18	D	I	46.40	1
		SNAGRIS2	22.000		2.98	65.56	1.40	0.72	4.45	D	EL	46.40	0.88	3.31	D	I	84.00	0.80	0.72	2.98	D	I	46.40	1
		SNCOTTS3	27.250		2.17	59.13	1.40	0.72	3.24	D	EL	46.40	0.88	2.51	D	I	84.00	0.80	0.72	2.17	D	I	46.40	1
		SNAGGRS4	34.925		1.78	62.17	1.40	0.72	2.67	D	EL	46.40	0.88	2.04	D	I	84.00	0.80	0.72	1.78	D	I	46.40	1
		SNS5A	35.550		1.75	62.21	1.40	0.72	2.61	D	EL	46.40	0.88	2.05	D	I	84.00	0.80	0.72	1.75	D	I	46.40	1
		SNS6A	39.950		1.59	63.52	1.40	0.72	2.38	D	EL	46.40	0.88	1.85	D	I	8.70	0.80	0.72	1.59	D	I	46.40	1
		SNS7B	42.000		1.51	63.42	1.40	0.72	2.26	D	EL	46.40	0.88	1.80	D	I	84.00	0.80	0.72	1.51	D	I	46.40	1
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.94	64.02	1.40	0.72	2.89	D	EL	46.40	0.88	2.23	D	I	8.70	0.80	0.72	1.94	D	I	46.40	1
		TNT4A	33.075		1.94	64.17	1.40	0.72	2.90	D	EL	46.40	0.88	2.18	D	I	8.70	0.80	0.72	1.94	D	I	46.40	1
		TNT6A	41.600		1.58	65.73	1.40	0.72	2.36	D	EL	46.40	0.88	1.89	D	I	84.00	0.80	0.72	1.58	D	I	46.40	1
		TNT7A	42.000		1.58	66.36	1.40	0.72	2.36	D	EL	46.40	0.88	1.86	D	I	8.70	0.80	0.72	1.58	D	I	46.40	1
		TNT7B	42.000		1.62	68.04	1.40	0.72	2.42	D	EL	46.40	0.88	1.76	D	I	84.00	0.80	0.72	1.62	D	I	46.40	1
		TNAGRIT4	43.000		1.55	66.65	1.40	0.72	2.32	D	EL	46.40	0.88	1.71	D	I	84.00	0.80	0.72	1.55	D	I	46.40	1
		TNAGT5A	45.000		1.47	66.15	1.40	0.72	2.19	D	EL	46.40	0.88	1.68	D	I	8.70	0.80	0.72	1.47	D	I	46.40	1
		TNAGT5B	45.000	3	1.45	65.25	1.40	0.72	2.17	D	EL	46.40	0.88	1.62	D	I	84.00	0.80	0.72	1.45	D	I	46.40	1

LOAD FACTORS:

	LIMIT STATE	γ_{DC}	γ_{DW}
DESIGN LOAD RATING FACTORS	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. ALL DISTANCES ARE MEASURED FROM THE CENTERLINE OF BEARING AT THE LEFT END OF THE SPAN.
2. SERVICE III LIMIT STATE NOT APPLICABLE AT THE OPERATIONAL LEVEL.
3. SPANS A & M ARE SIMILAR.
4. SPANS B, C, D, E, F, G, H, I, J, K & L ARE SIMILAR.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

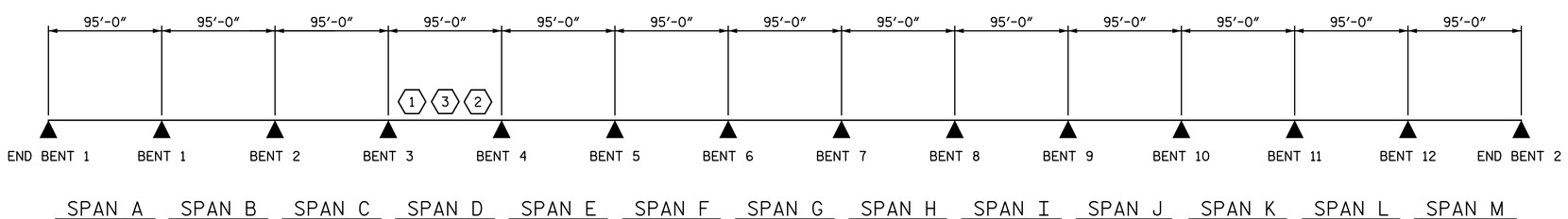
(2) DESIGN LOAD RATING (HS-20)

(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. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 5/8/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 5/8/2015

Baker

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NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-6
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : M. D. MAYHEW DATE : 8-13-13
CHECKED BY : A. L. PHILLIPS DATE : 8-26-13

DWG. 6 OF 68

SITE 4

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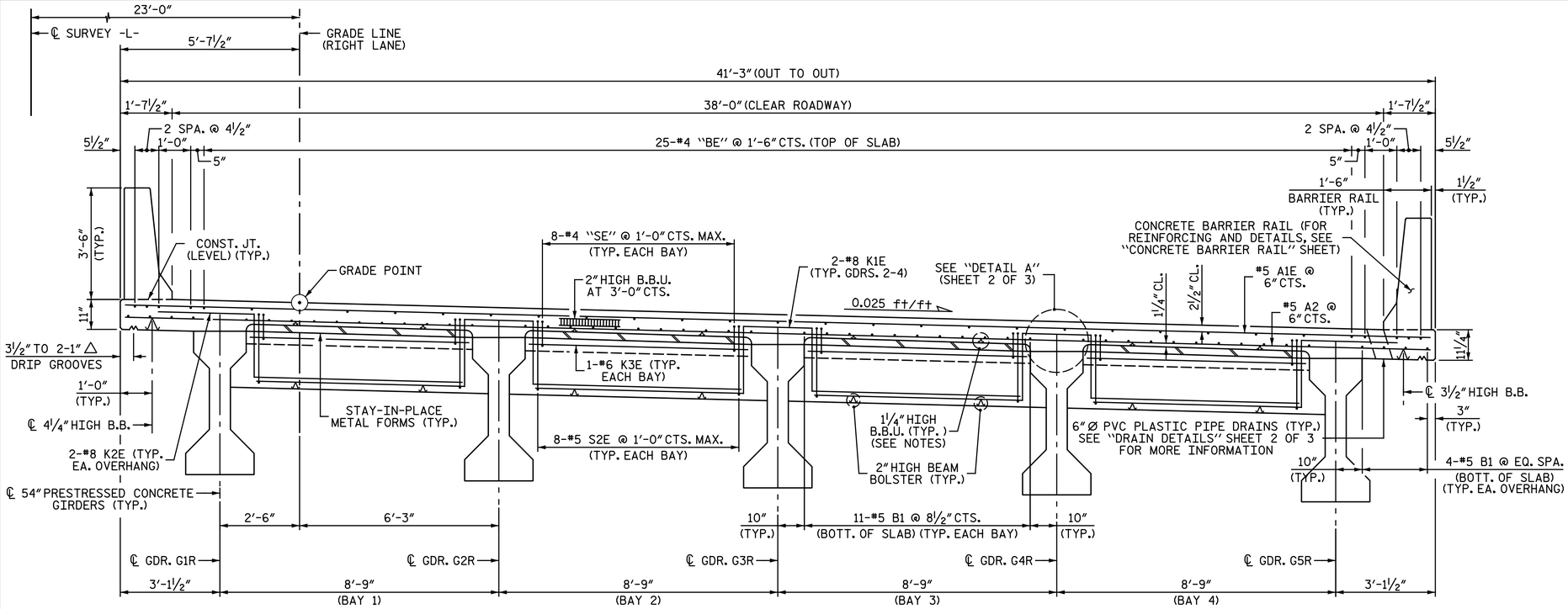
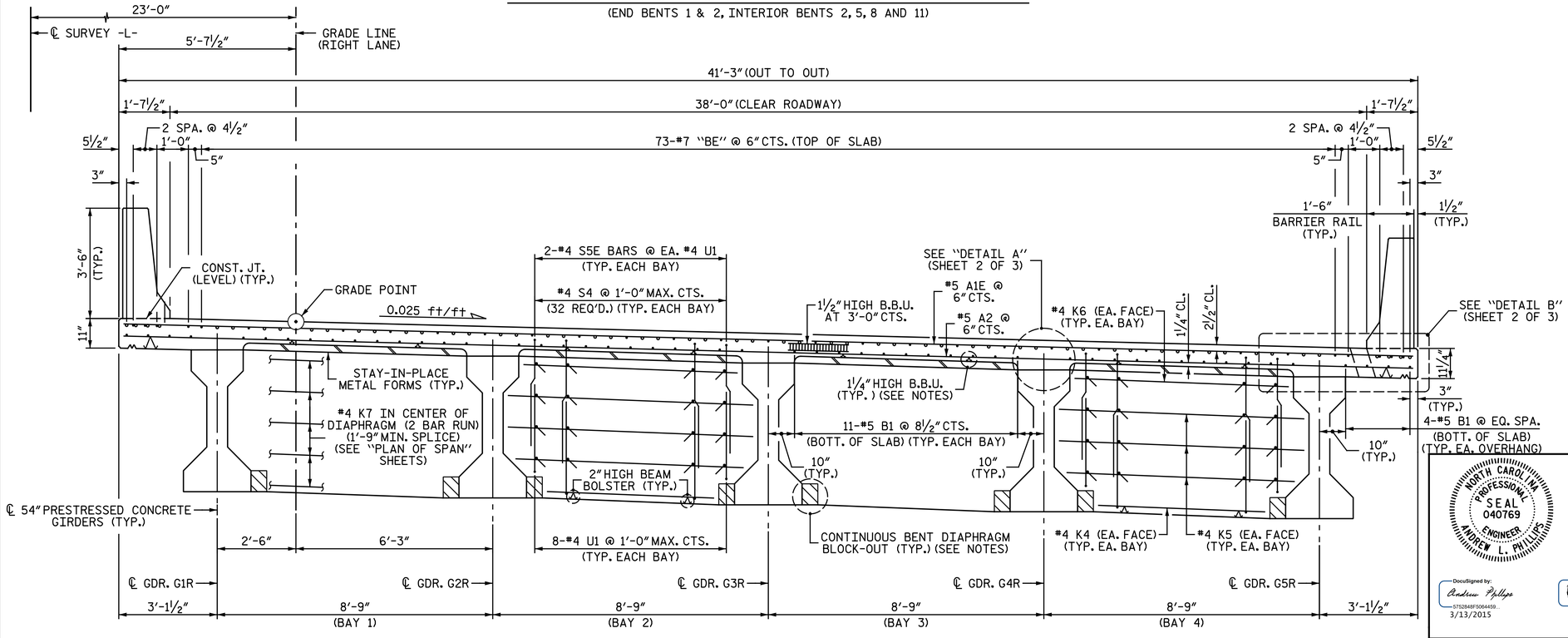


TYPICAL SECTION @ END BENT AND BENT

(END BENTS 1 & 2, INTERIOR BENTS 2, 5, 8 AND 11)



TYPICAL SECTION @ CONTINUOUS BENT

(INTERIOR BENTS 1, 3, 4, 6, 7, 9, 10 AND 12)

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 ABOVE THE TOP OF THE REMOVABLE FORM.

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

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 ADDITIONAL INFORMATION ON DECK SLAB REINFORCING, SEE "PLAN OF SPAN" SHEETS.

FOR "SECTION THRU END BENT DIAPHRAGM" SEE "TYPICAL SECTION DETAILS" SHEET 3 OF 3.

FOR "SECTION THRU INTERIOR BENT DIAPHRAGM" AT BENTS 2, 5, 8 AND 11 SEE "TYPICAL SECTION DETAILS" SHEET 3 OF 3.

FOR "SECTION THRU CONTINUOUS BENT DIAPHRAGM" AT BENTS 1, 3, 4, 6, 7, 9, 10 AND 12 SEE "TYPICAL SECTION DETAILS" SHEET 3 OF 3.

FOR PLAN DETAIL OF END BENT AND BENT DIAPHRAGM, SEE "TYPICAL SECTION DETAILS" SHEET 3 OF 3.

FOR "CONTINUOUS BENT DIAPHRAGM BLOCKOUT DETAIL", SEE "TYPICAL SECTION" SHEET 2 OF 3.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5729A6F5084459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-7
1			3			TOTAL SHEETS
2			4			68

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Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

DRAWN BY : M. D. MAYHEW DATE : 8-12-13
CHECKED BY : A. L. PHILLIPS DATE : 8-22-13

DWG. 7 OF 68

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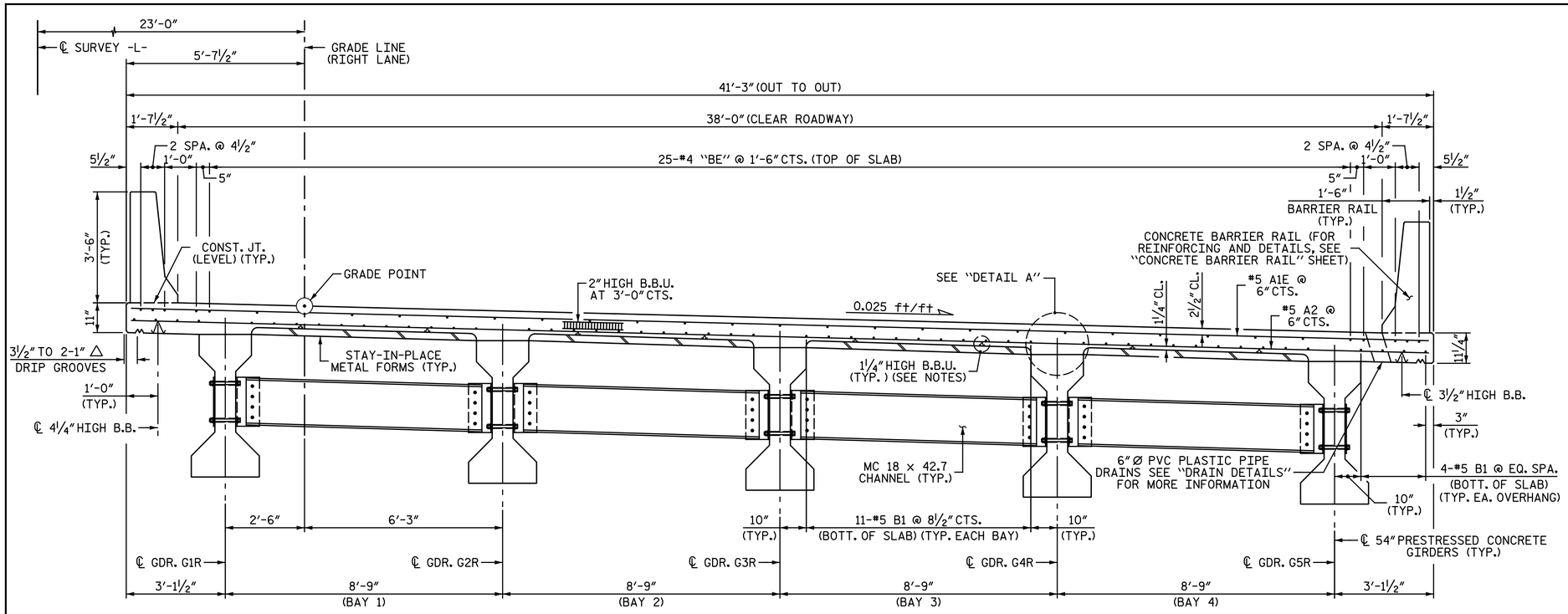
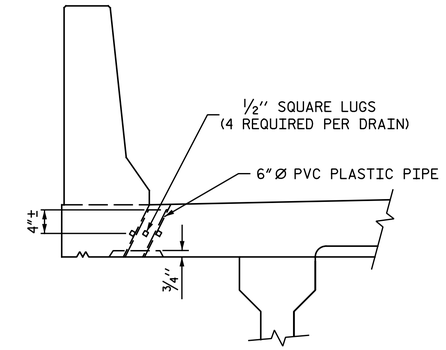
SITE 4



TYPICAL SECTION @ INTERMEDIATE DIAPHRAGM

NOTES:

FOR SUPERSTRUCTURE NOTES, SEE "TYPICAL SECTION" SHEET 1 OF 3.



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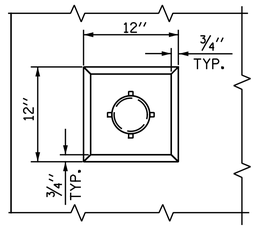
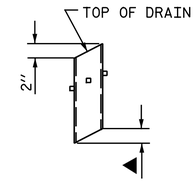


PLAN OF RECESS



PIPE DETAIL

▲ TO BE SET TO MATCH SLOPE OF BOTTOM OF OVERHANG (61 DRAINS REQUIRED)

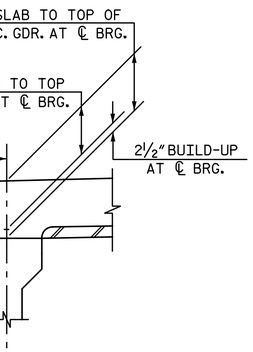
DRAIN DETAILS

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

4 - ½" SQUARE LUGS TO BE GLUED TO THE P.V.C. PLASTIC PIPE AT EQUAL SPACES AROUND THE PIPE DRAIN APPROXIMATELY 4" FROM THE TOP OF THE PIPE.

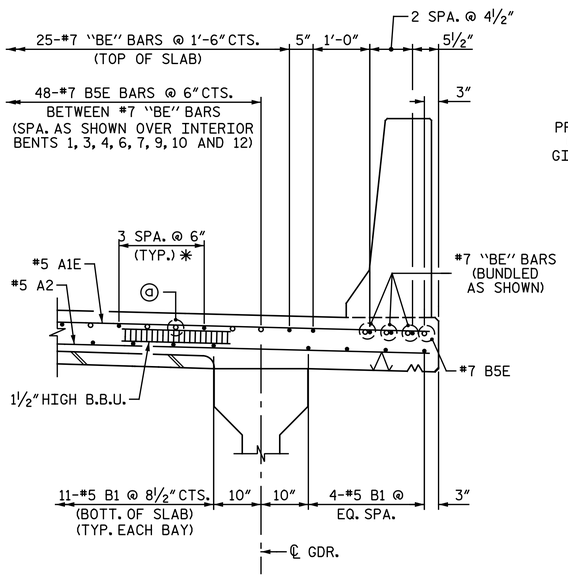
THE 6" Ø PVC PLASTIC PIPE AND FITTINGS SHALL BE SCHEDULE 40 AND CONFORM TO ASTM D1785.

SEE "PLAN OF SPAN" FOR DRAIN LOCATIONS AND SPACING



DETAIL A

(TYP. EA. GDR. @ EA. BENT)



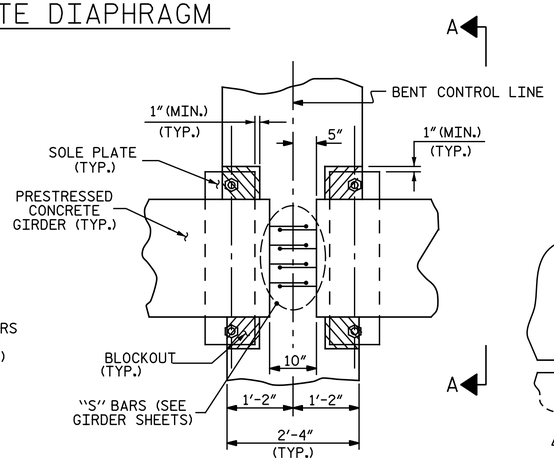
DETAIL B

ⓓ 2-#7 "BE" NON-CONTINUOUS REINFORCING BARS BETWEEN CONTINUOUS REINFORCING OVER INTERIOR BENTS 1, 3, 4, 6, 7, 9, 10 AND 12 (SPA. AS SHOWN)

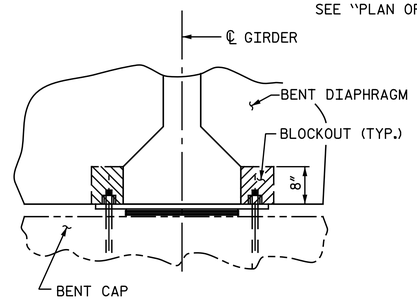
✳ TYP. SPACING OF NON-CONTINUOUS "BE" BARS BETWEEN CONTINUOUS "BE" BARS.

○ INDICATES NON-CONTINUOUS REINFORCING STEEL OVER BENT.

• INDICATES CONTINUOUS REINFORCING STEEL FOR END BENT 1, INTERIOR BENTS 2, 5, 8, 11 AND END BENT 2.



PLAN



SECTION A-A

BENT DIAPHRAGM BLOCKOUT DETAIL

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

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RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION

RIGHT LANE

REVISIONS						SHEET NO.
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2			4			68

DRAWN BY : M. D. MAYHEW DATE : 8-12-13

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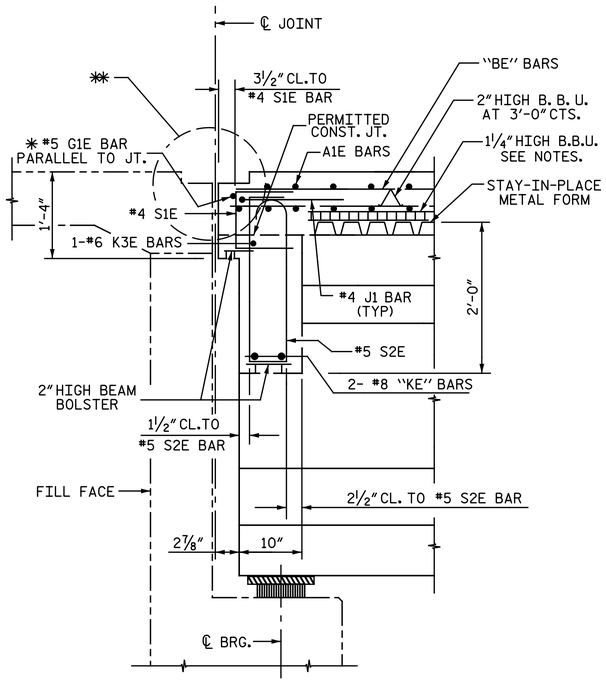
DWG. 8 OF 68

SITE 4



SECTION THRU END BENT DIAPHRAGM

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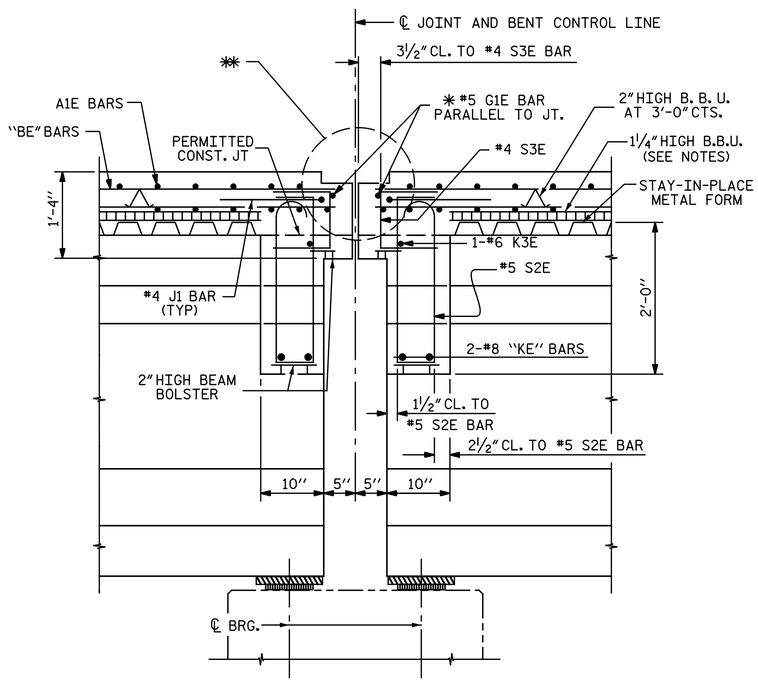
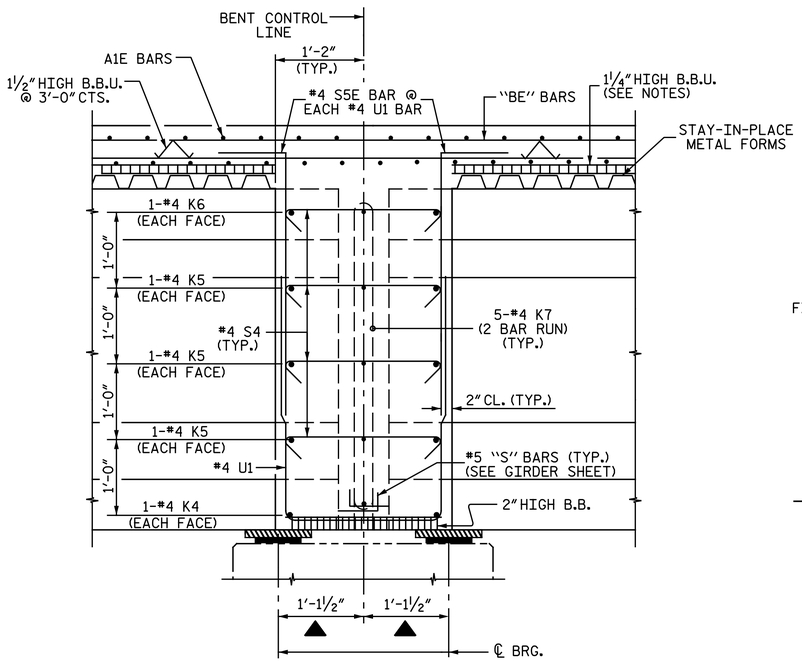


SECTION THRU BENT DIAPHRAGM

(INTERIOR BENTS 2, 5, 8 AND 11)

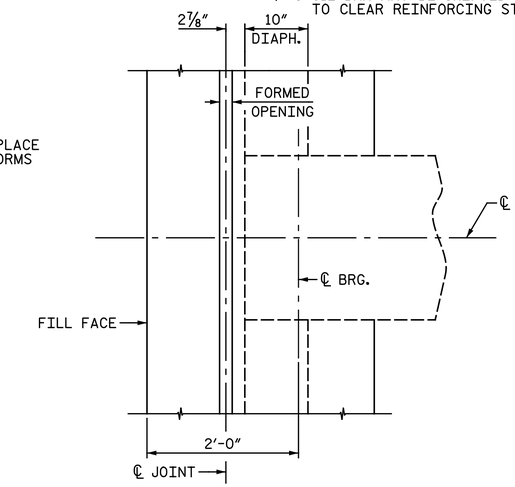
✱#5 G1E BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL AND STIRRUPS.



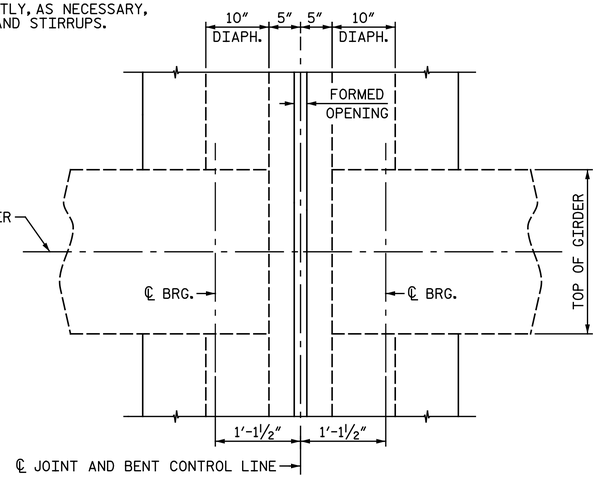
SECTION THRU CONTINUOUS BENT DIAPHRAGM

(INTERIOR BENTS 1, 3, 4, 6, 7, 9, 10 AND 12)

▲ DIMENSION MEASURED ALONG ℄ GIRDER



END BENT DIAPHRAGM PLAN



INTERIOR BENT DIAPHRAGM PLAN

(INTERIOR BENTS 2, 5, 8 AND 11)

NOTES:

FOR SUPERSTRUCTURE NOTES, SEE "TYPICAL SECTION" SHEET 1 OF 3.

✱✱ EXPANSION JOINT SEAL IS REQUIRED BUT NOT SHOWN. SEE "EXPANSION JOINT SEAL DETAILS" SHEET.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 3 OF 3

DRAWN BY : M. D. MAYHEW DATE : 8-12-13

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DWG. 9 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

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DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION DETAILS

RIGHT LANE

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1			3			TOTAL SHEETS
2			4			68

SITE 4

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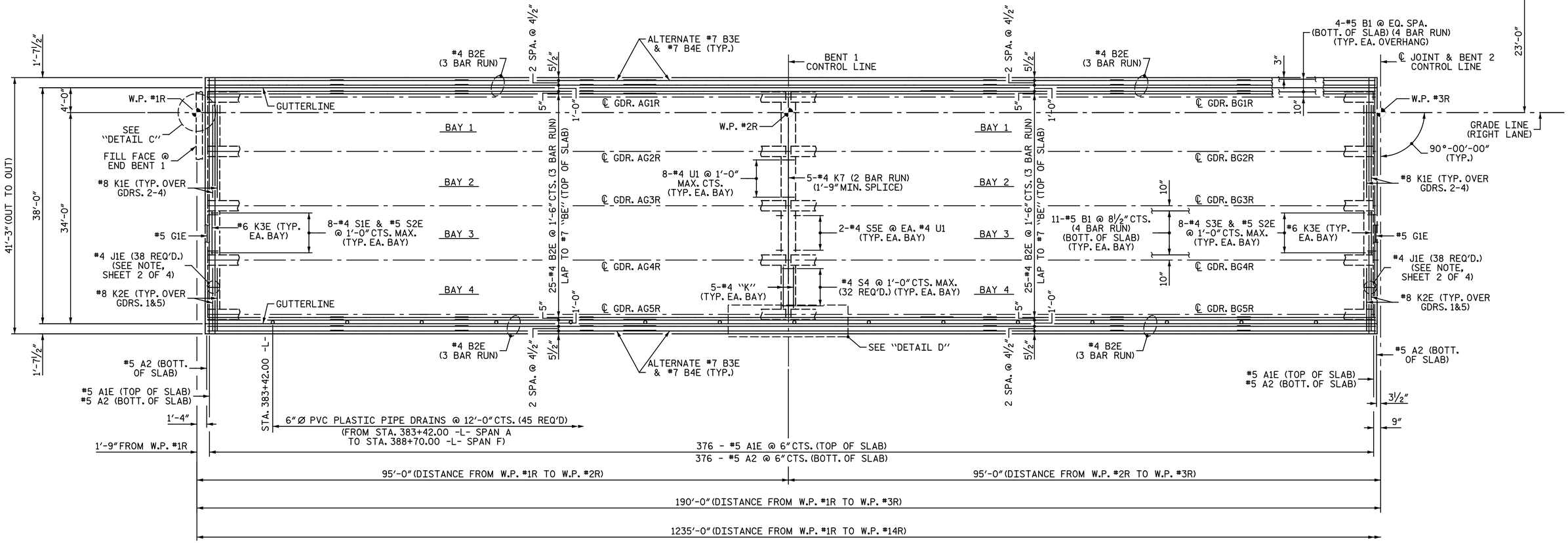
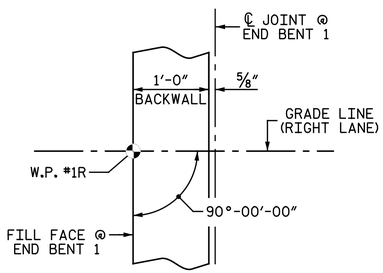
NOTES:

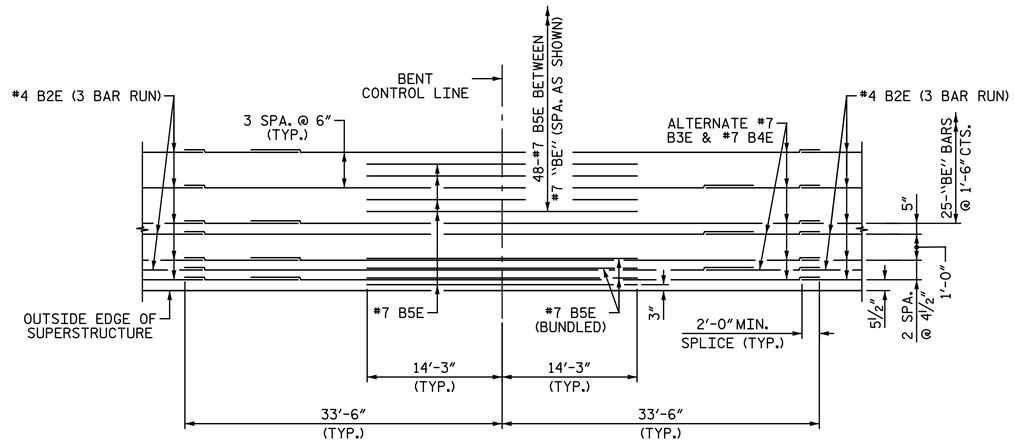
FOR NOTES, SEE SHEET 2 OF 4.



PART PLAN OF SPANS



DETAIL C



DETAIL D

LONGITUDINAL REINFORCING TOP OF SLAB
REINFORCING IS SYMMETRICAL ABOUT BRIDGE ℄

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 4

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN
UNIT 1

RIGHT LANE

REVISIONS						SHEET NO.
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2			4			68

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DWG. 10 OF 68

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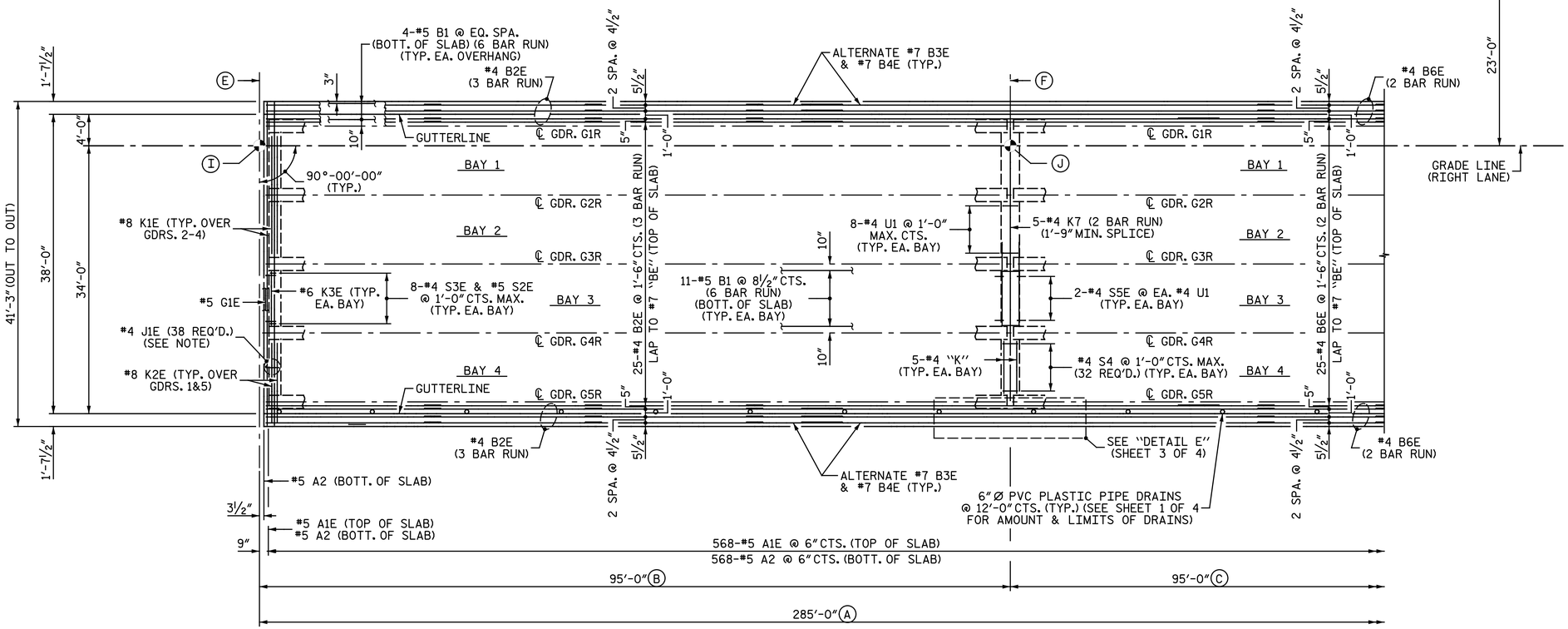
SITE 4

℄ SURVEY -L-

NOTES:

FOR POUR SEQUENCE AND LOCATION OF CONSTRUCTION JOINT, SEE SUPERSTRUCTURE "BILL OF MATERIAL" SHEET.

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



PART PLAN OF SPANS

TABLE OF VARIABLES

		UNIT 2	UNIT 3	UNIT 4
SPAN LENGTH	Ⓐ	DISTANCE FROM W.P. #3R TO W.P. #6R	DISTANCE FROM W.P. #6R TO W.P. #9R	DISTANCE FROM W.P. #9R TO W.P. #12R
	Ⓑ	DISTANCE FROM W.P. #3R TO W.P. #4R	DISTANCE FROM W.P. #6R TO W.P. #7R	DISTANCE FROM W.P. #9R TO W.P. #10R
	Ⓒ	DISTANCE FROM W.P. #4R TO W.P. #5R	DISTANCE FROM W.P. #7R TO W.P. #8R	DISTANCE FROM W.P. #10R TO W.P. #11R
	Ⓓ	DISTANCE FROM W.P. #5R TO W.P. #6R	DISTANCE FROM W.P. #8R TO W.P. #9R	DISTANCE FROM W.P. #11R TO W.P. #12R
BENT CONTROL LINE	Ⓔ	℄ JOINT & BENT 2 CONTROL LINE	℄ JOINT & BENT 5 CONTROL LINE	℄ JOINT & BENT 8 CONTROL LINE
	Ⓕ	BENT 3 CONTROL LINE	BENT 6 CONTROL LINE	BENT 9 CONTROL LINE
	Ⓖ	BENT 4 CONTROL LINE	BENT 7 CONTROL LINE	BENT 10 CONTROL LINE
	Ⓗ	℄ JOINT & BENT 5 CONTROL LINE	℄ JOINT & BENT 8 CONTROL LINE	℄ JOINT & BENT 11 CONTROL LINE
WORK POINT NUMBER	Ⓘ	W.P. #3R	W.P. #6R	W.P. #9R
	Ⓙ	W.P. #4R	W.P. #7R	W.P. #10R
	Ⓚ	W.P. #5R	W.P. #8R	W.P. #11R
	Ⓛ	W.P. #6R	W.P. #9R	W.P. #12R
SPAN DESIGNATION	①	SPAN C	SPAN F	SPAN I
	②	SPAN D	SPAN G	SPAN J
	③	SPAN E	SPAN H	SPAN K

DRAWN BY : M. D. MAYHEW DATE : 8-9-13
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DWG. 11 OF 68

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-
SHEET 2 OF 4

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
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RALEIGH
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PLAN OF SPAN UNITS 2-4

RIGHT LANE

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2			4			68

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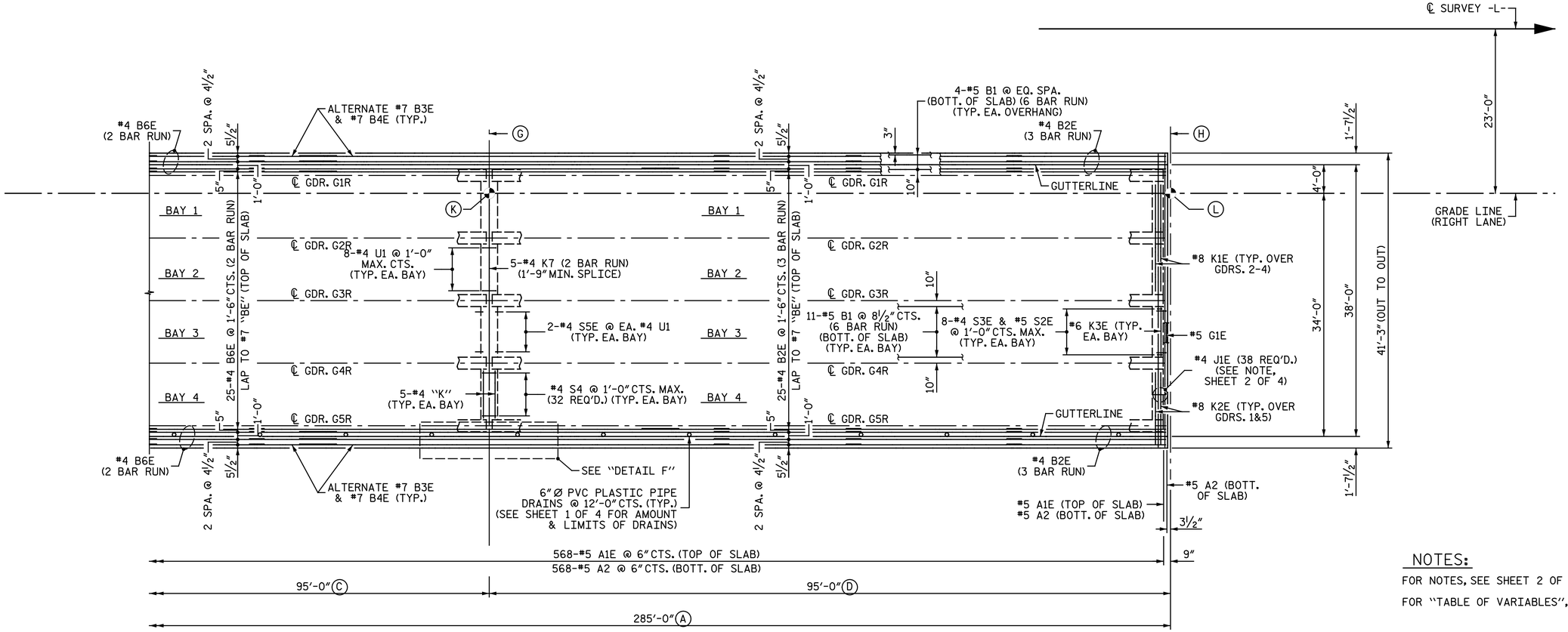
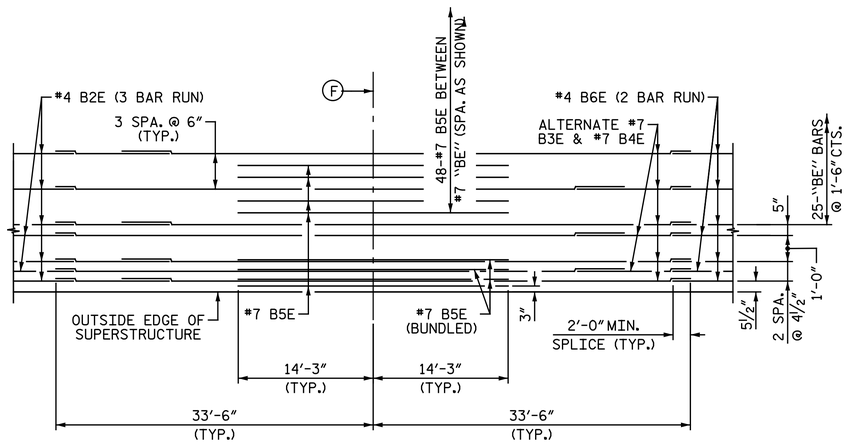
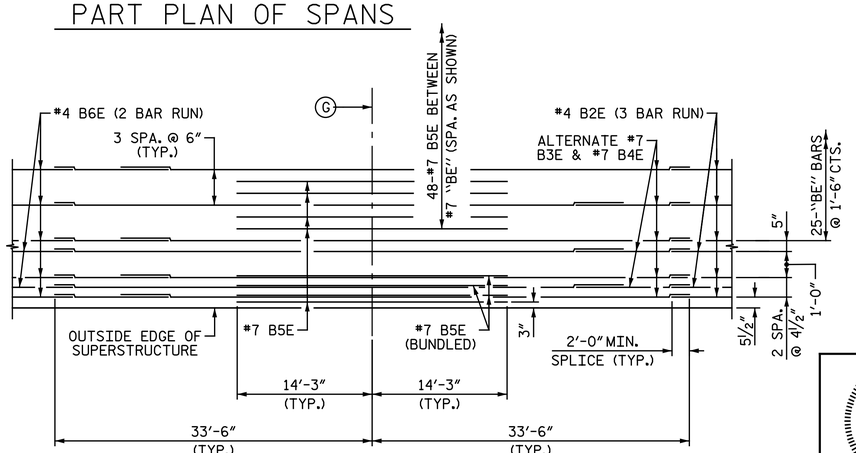


PART PLAN OF SPANS



DETAIL E

LONGITUDINAL REINFORCING TOP OF SLAB
REINFORCING IS SYMMETRICAL ABOUT BRIDGE ℄



DETAIL F

LONGITUDINAL REINFORCING TOP OF SLAB
REINFORCING IS SYMMETRICAL ABOUT BRIDGE ℄

NOTES:

FOR NOTES, SEE SHEET 4 OF 4.

FOR "TABLE OF VARIABLES", SEE SHEET 2 OF 4.

DRAWN BY : M. D. MAYHEW DATE : 8-9-13
CHECKED BY : A. L. PHILLIPS DATE : 8-23-13

DWG. 12 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
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3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

PLAN OF SPAN
UNITS 2-4

RIGHT LANE

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			68

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-
SHEET 3 OF 4

SITE 4

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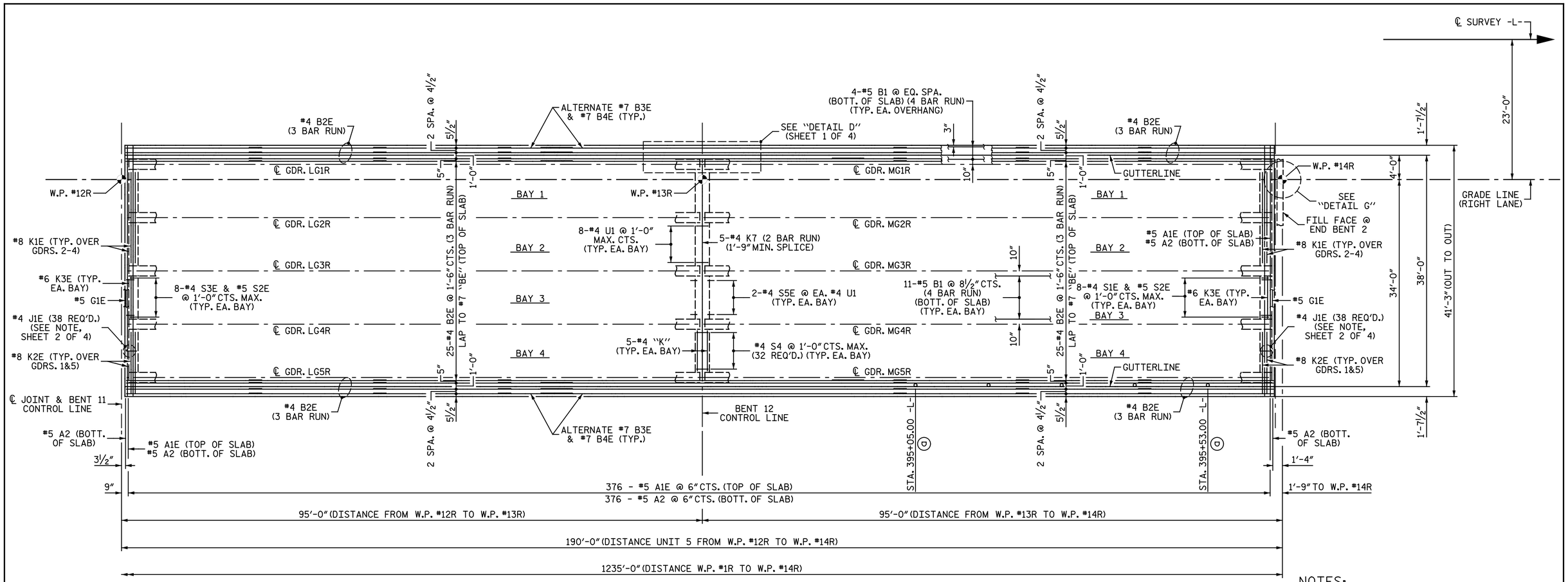
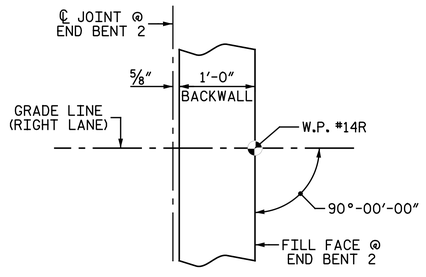


PART PLAN OF SPANS

NOTES:

FOR NOTES, SEE SHEET 2 OF 4.

ⓐ 6" Ø PVC PLASTIC PIPE DRAINS @ 12'-0" CTS. (5 REQ'D)(FROM STA. 395+05.00 -L- SPAN M TO STA. 395+53.00 -L- SPAN M)



DETAIL G

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN UNIT 5

RIGHT LANE

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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3/13/2015

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DocuSigned by: Dwain Hathaway 283786071DA0460...
3/13/2015

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2			4			68

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DWG. 13 OF 68

SITE 4

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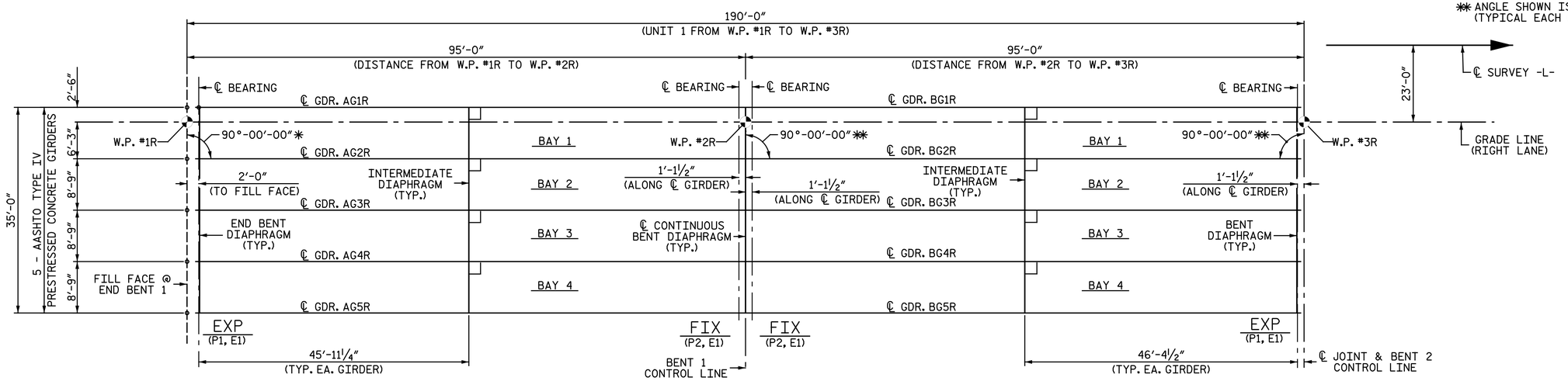
NOTES:

FOR STEEL DIAPHRAGM DETAILS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET.

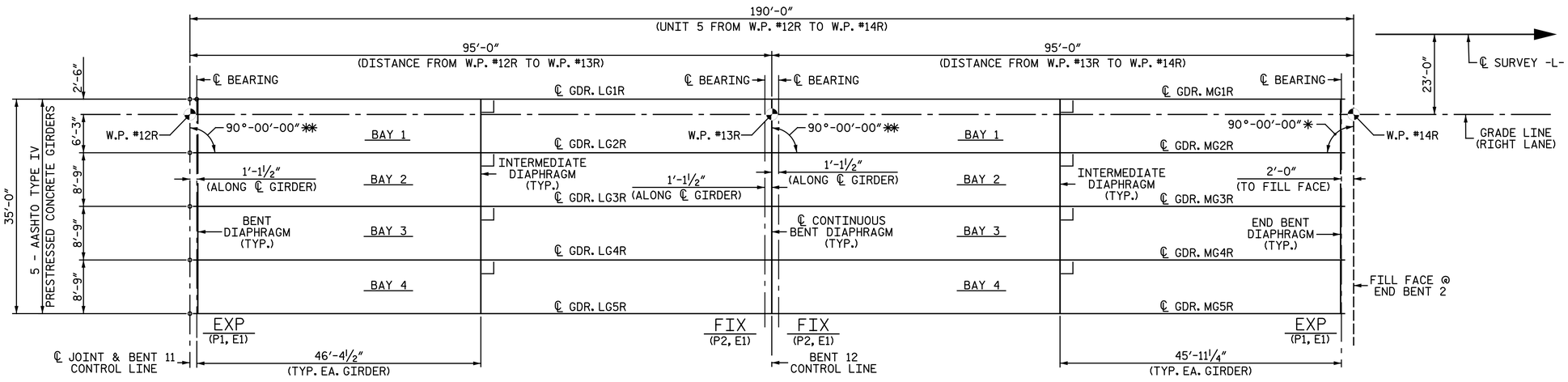
✳ ANGLE SHOWN IS FROM ℄ GIRDER TO FILL FACE AT END BENT (TYPICAL EACH GIRDER)

✳✳ ANGLE SHOWN IS FROM ℄ GIRDER TO BENT CONTROL LINE (TYPICAL EACH GIRDER)



FRAMING PLAN - UNIT 1

END BENTS AND BENTS ARE PARALLEL



FRAMING PLAN - UNIT 5

END BENTS AND BENTS ARE PARALLEL

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

FRAMING PLAN

RIGHT LANE

Baker

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NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-14
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 8-8-13

CHECKED BY : A. L. PHILLIPS DATE : 8-12-13

DWG. 14 OF 68

SITE 4

nbspeaks
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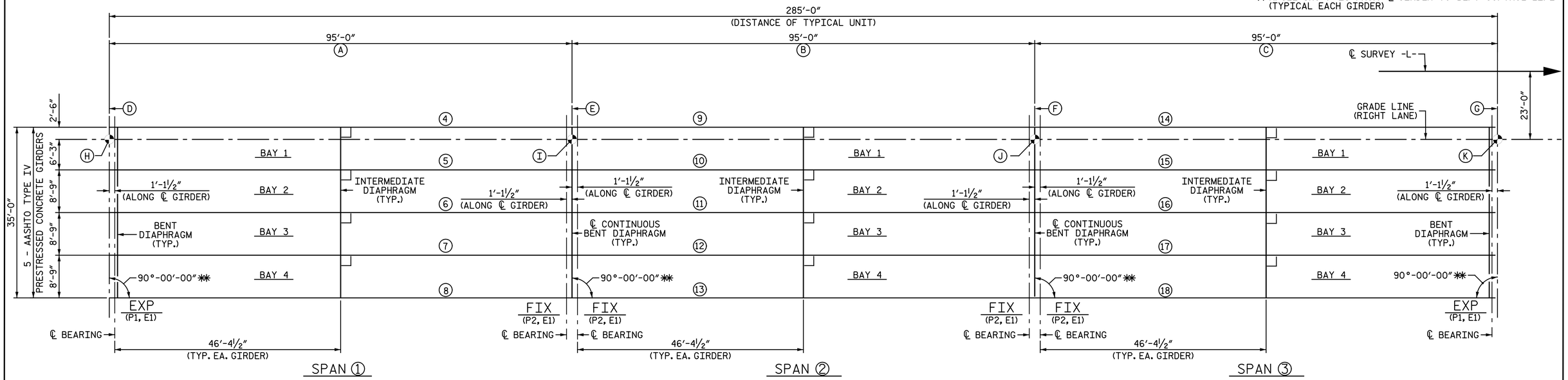
NOTES:

FOR STEEL DIAPHRAGM DETAILS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET.

** ANGLE SHOWN IS FROM ℄ GIRDER TO BENT CONTROL LINE (TYPICAL EACH GIRDER)



FRAMING PLAN - UNITS 2 THRU 4

BENTS ARE PARALLEL

TABLE OF VARIABLES

		UNIT 2	UNIT 3	UNIT 4
SPAN LENGTH	Ⓐ	DISTANCE FROM W.P. #3R TO W.P. #4R	DISTANCE FROM W.P. #6R TO W.P. #7R	DISTANCE FROM W.P. #9R TO W.P. #10R
	Ⓑ	DISTANCE FROM W.P. #4R TO W.P. #5R	DISTANCE FROM W.P. #7R TO W.P. #8R	DISTANCE FROM W.P. #10R TO W.P. #11R
	Ⓒ	DISTANCE FROM W.P. #5R TO W.P. #6R	DISTANCE FROM W.P. #8R TO W.P. #9R	DISTANCE FROM W.P. #11R TO W.P. #12R
BENT CONTROL LINE	Ⓓ	℄ JOINT & BENT 2 CONTROL LINE	℄ JOINT & BENT 5 CONTROL LINE	℄ JOINT & BENT 8 CONTROL LINE
	Ⓔ	BENT 3 CONTROL LINE	BENT 6 CONTROL LINE	BENT 9 CONTROL LINE
	Ⓕ	BENT 4 CONTROL LINE	BENT 7 CONTROL LINE	BENT 10 CONTROL LINE
	Ⓖ	℄ JOINT & BENT 5 CONTROL LINE	℄ JOINT & BENT 8 CONTROL LINE	℄ JOINT & BENT 11 CONTROL LINE
WORK POINT NUMBER	Ⓗ	W.P. #3R	W.P. #6R	W.P. #9R
	Ⓘ	W.P. #4R	W.P. #7R	W.P. #10R
	Ⓙ	W.P. #5R	W.P. #8R	W.P. #11R
	Ⓚ	W.P. #6R	W.P. #9R	W.P. #12R
SPAN DESIGNATION	①	SPAN C	SPAN F	SPAN I
	②	SPAN D	SPAN G	SPAN J
	③	SPAN E	SPAN H	SPAN K
GIRDER DESIGNATION	④	℄ GDR. CG1R	℄ GDR. FG1R	℄ GDR. IG1R
	⑤	℄ GDR. CG2R	℄ GDR. FG2R	℄ GDR. IG2R
	⑥	℄ GDR. CG3R	℄ GDR. FG3R	℄ GDR. IG3R
	⑦	℄ GDR. CG4R	℄ GDR. FG4R	℄ GDR. IG4R
	⑧	℄ GDR. CG5R	℄ GDR. FG5R	℄ GDR. IG5R
	⑨	℄ GDR. DG1R	℄ GDR. GG1R	℄ GDR. JG1R
	⑩	℄ GDR. DG2R	℄ GDR. GG2R	℄ GDR. JG2R
	⑪	℄ GDR. DG3R	℄ GDR. GG3R	℄ GDR. JG3R
	⑫	℄ GDR. DG4R	℄ GDR. GG4R	℄ GDR. JG4R
	⑬	℄ GDR. DG5R	℄ GDR. GG5R	℄ GDR. JG5R
	⑭	℄ GDR. EG1R	℄ GDR. HG1R	℄ GDR. KG1R
	⑮	℄ GDR. EG2R	℄ GDR. HG2R	℄ GDR. KG2R
	⑯	℄ GDR. EG3R	℄ GDR. HG3R	℄ GDR. KG3R
	⑰	℄ GDR. EG4R	℄ GDR. HG4R	℄ GDR. KG4R
	⑱	℄ GDR. EG5R	℄ GDR. HG5R	℄ GDR. KG5R

DRAWN BY : N. B. SPEAKS DATE : 7-29-13
CHECKED BY : A. L. PHILLIPS DATE : 8-12-13

DWG. 15 OF 68

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-
SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459...
3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283786071D40460...
3/13/2015

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

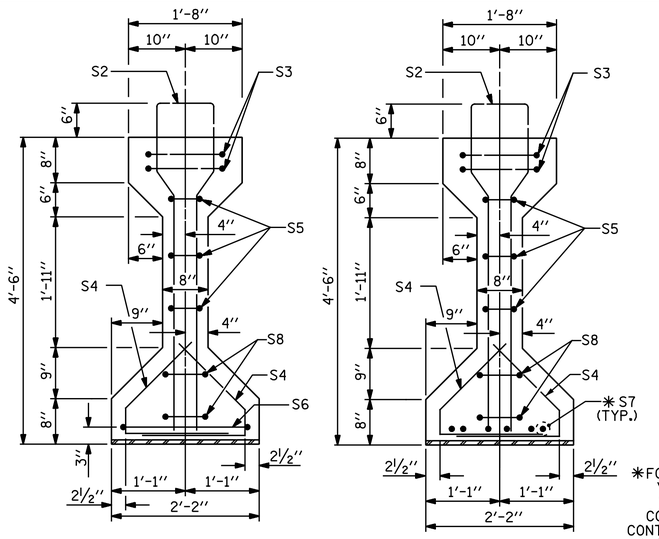
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

FRAMING PLAN

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-15
1			3			TOTAL SHEETS
2			4			68

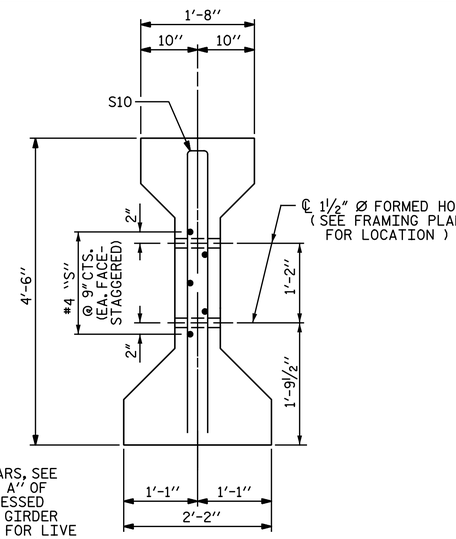
SITE 4



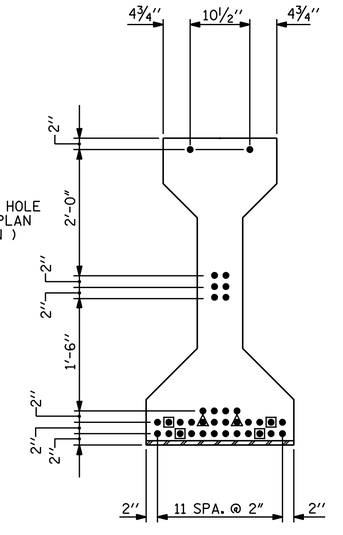
SECTION A-A

SECTION B-B

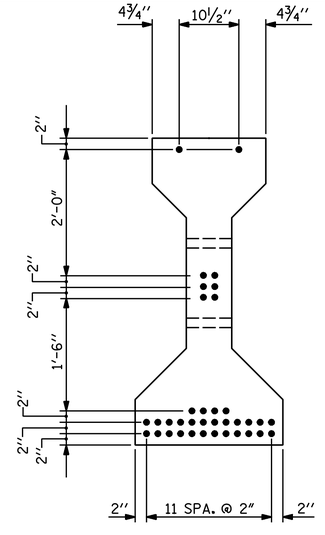
✱FOR S7 BARS, SEE "DETAIL A" OF "PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD DETAILS" SHEET 4 OF 5.



SECTION C-C
(S1 BARS NOT SHOWN)



AT END OF GIRDER



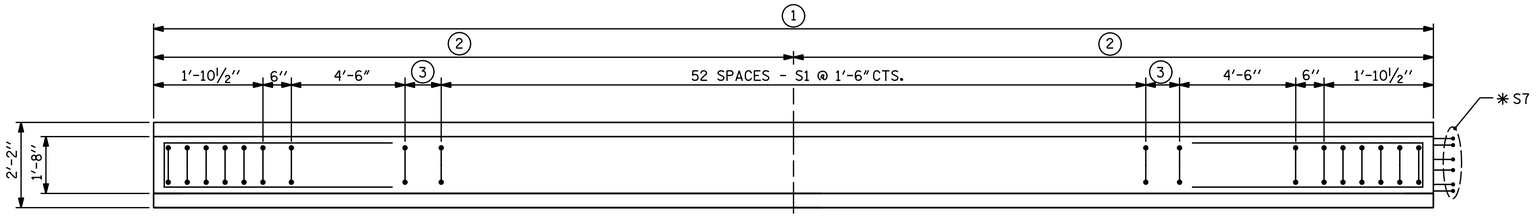
AT ℄ OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT

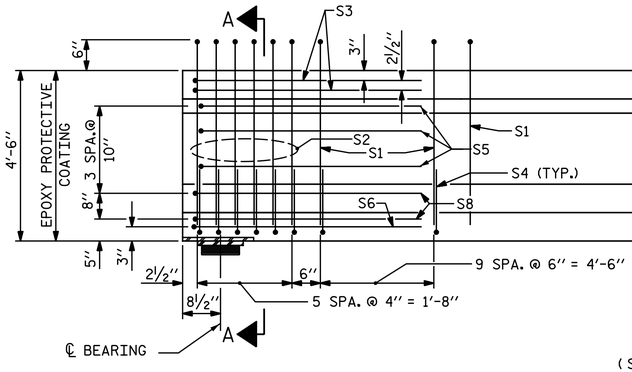
● STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER

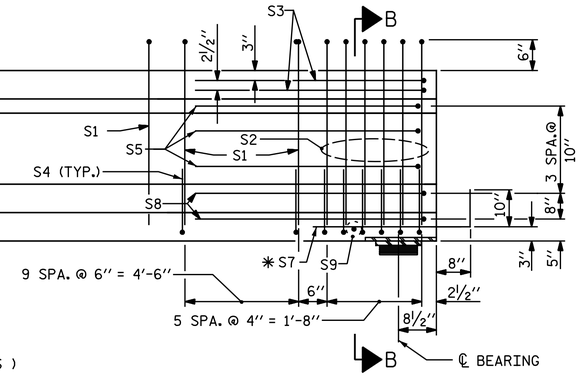
▲ STRANDS DEBONDED FOR 6'-0" FROM END OF GIRDER

SPAN	①	②	③
A	93'-3½"	46'-7¾"	9¼"
C	94'-2"	47'-1"	1'-2½"
F	94'-2"	47'-1"	1'-2½"
I	94'-2"	47'-1"	1'-2½"
L	94'-2"	47'-1"	1'-2½"

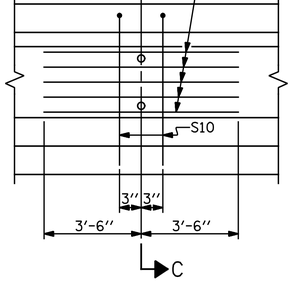


PLAN OF GIRDER





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



PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 1-5

✱✱S11 BARS MAY BE SHIFTED SLIGHTLY AS NEEDED TO AVOID STRANDS.

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

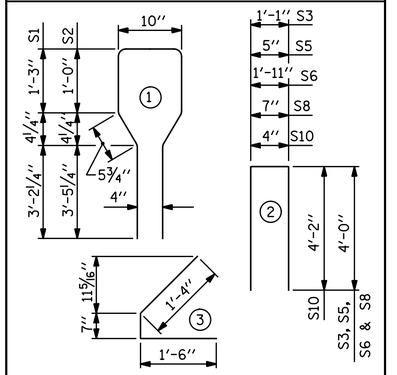
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	73	#4	1	10'-8"	520
S2	12	#6	1	10'-8"	192
S3	4	#4	2	9'-1"	24
S4	64	#4	3	3'-5"	146
S5	6	#4	2	8'-5"	34
S6	1	#4	2	9'-11"	7
✱S7	6	#5	STR	3'-8"	23
S8	4	#4	2	8'-7"	23
S9	1	#3	STR	1'-10"	1
S10	2	#5	2	8'-8"	18
S11	5	#4	STR	7'-0"	23

✱NOTE: S7 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.	8,000 PSI CONCRETE C.Y.	0.6" Ø L.R. STRANDS No.
SPAN A	1011	18.9	36
SPANS C,F,I & L	1011	19.1	36

GIRDERS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
SPAN A	5	93'-3½"	466'-5½"
SPANS C, F, I & L	20	94'-2"	1883'-4"

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 5/8/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 DRAFTSMAN DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 5/8/2015

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

AASHTO TYPE IV
PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD SPANS A, C, F, I & L
RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-16
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 7-31-13

CHECKED BY : A. L. PHILLIPS DATE : 8-23-13

DWG. 16 OF 68

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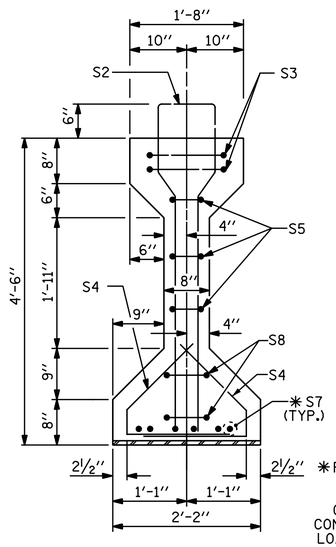
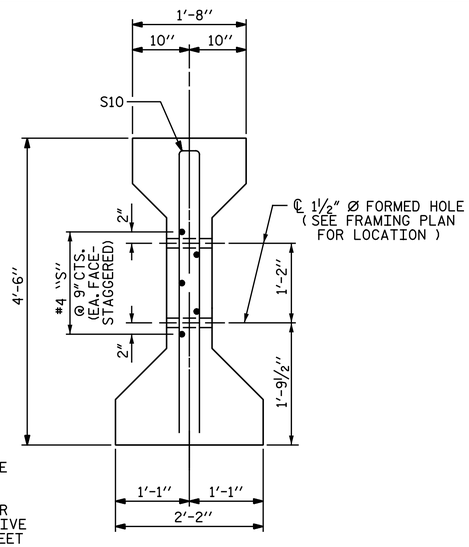
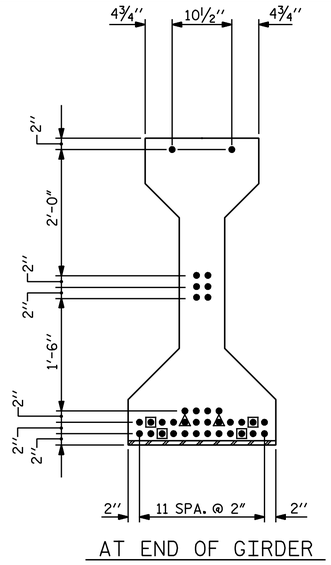


SECTION A-A

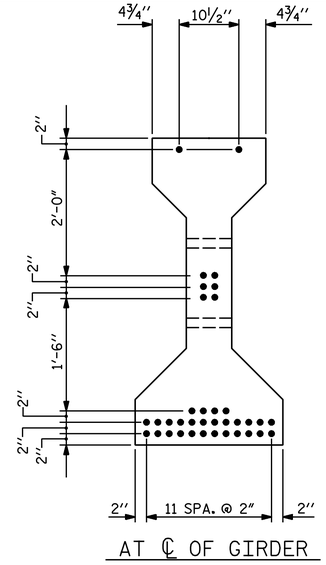
✳FOR S7 BARS, SEE "DETAIL A" OF "PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD DETAILS" SHEET 4 OF 5.



SECTION C-C
(S1 BARS NOT SHOWN)



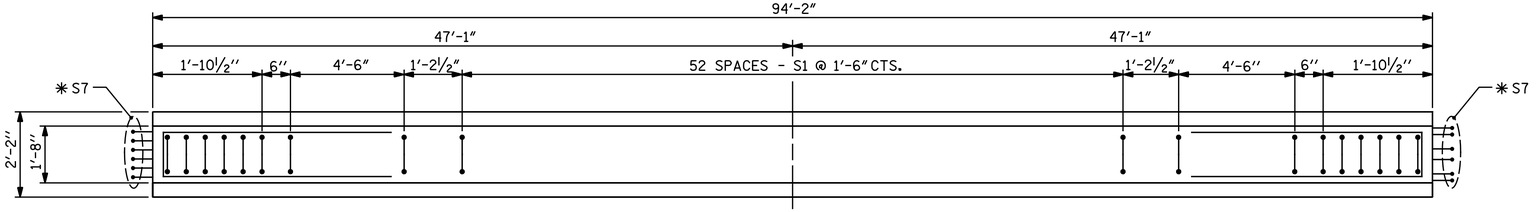
AT END OF GIRDER



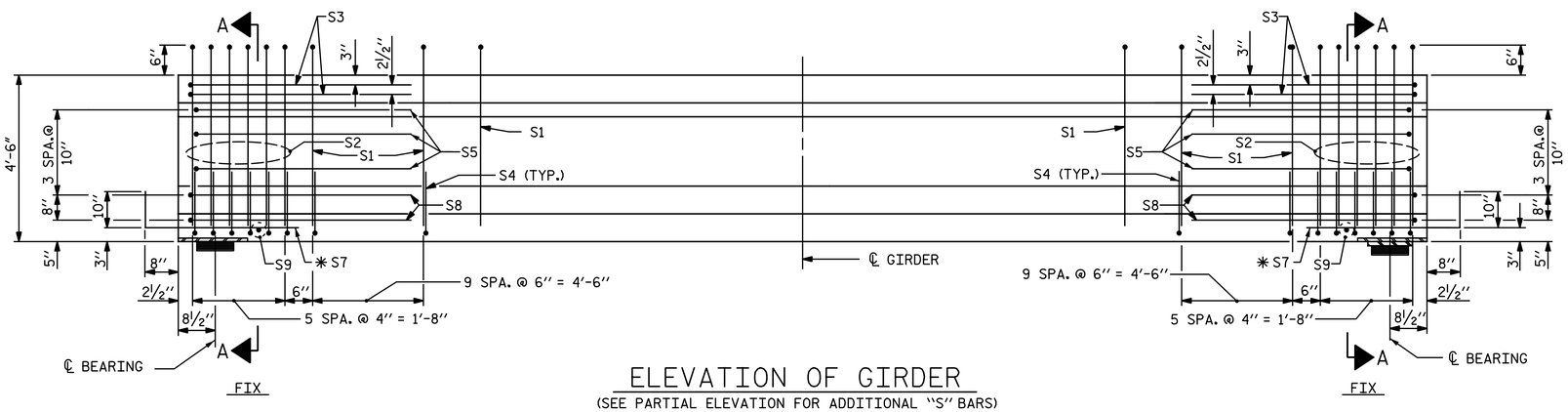
AT ℄ OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT

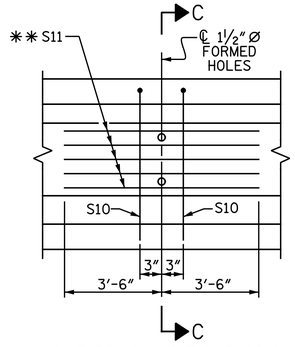
● STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
▲ STRANDS DEBONDED FOR 6'-0" FROM END OF GIRDER



PLAN OF GIRDER



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



PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 1-5

✳✳S11 BARS MAY BE SHIFTED SLIGHTLY AS NEEDED TO AVOID STRANDS.

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

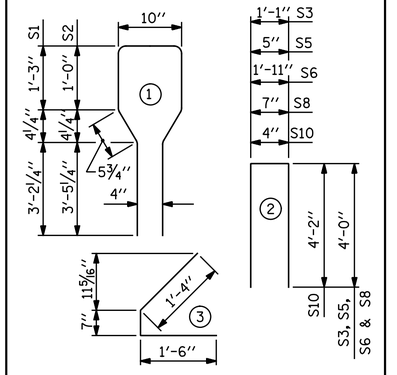
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	73	#4	1	10'-8"	520
S2	12	#6	1	10'-8"	192
S3	4	#4	2	9'-1"	24
S4	64	#4	3	3'-5"	146
S5	6	#4	2	8'-5"	34
✳S7	12	#5	STR	3'-8"	46
S8	4	#4	2	8'-7"	23
S9	2	#3	STR	1'-10"	1
S10	2	#5	2	8'-8"	18
S11	5	#4	STR	7'-0"	23

✳NOTE: S7 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	8,000 PSI CONCRETE	0.6" Ø L. R. STRANDS
	LB.	C.Y.	No.
SPANS D, G AND J	1027	19.1	36

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
15	94'-2"	1412'-6"

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 2 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 5/8/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 5/8/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
AASHTO TYPE IV
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPANS D, G & J
RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-17
1			3			TOTAL SHEETS
2			4			68

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

DRAWN BY : N. B. SPEAKS DATE : 8-6-13
CHECKED BY : A. L. PHILLIPS DATE : 8-12-13

DWG. 17 OF 68

SITE 4

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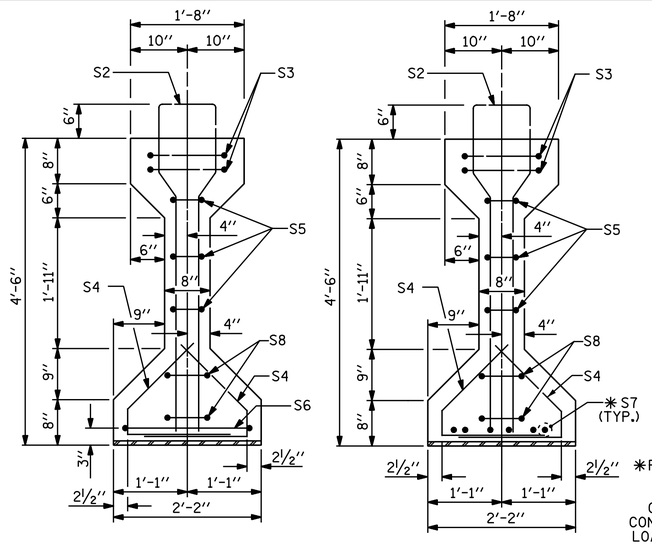
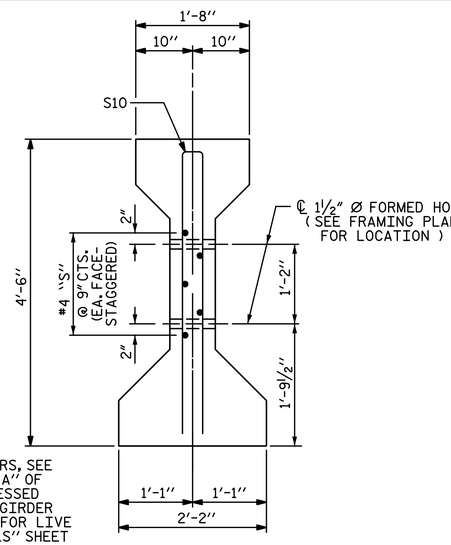


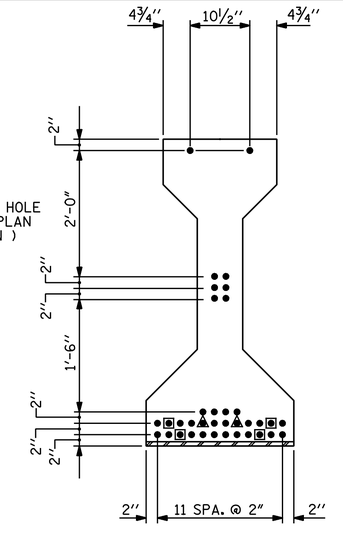
SECTION A-A

SECTION B-B

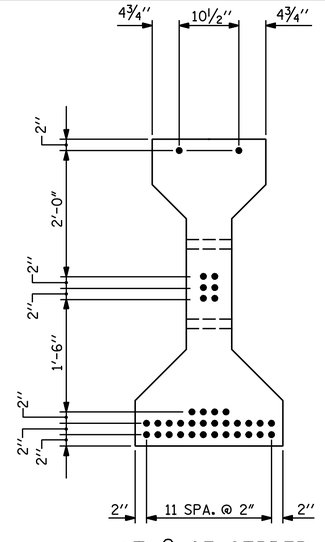
✱FOR S7 BARS, SEE "DETAIL A" OF "PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD DETAILS" SHEET 4 OF 5.



SECTION C-C
(S1 BARS NOT SHOWN)



AT END OF GIRDER

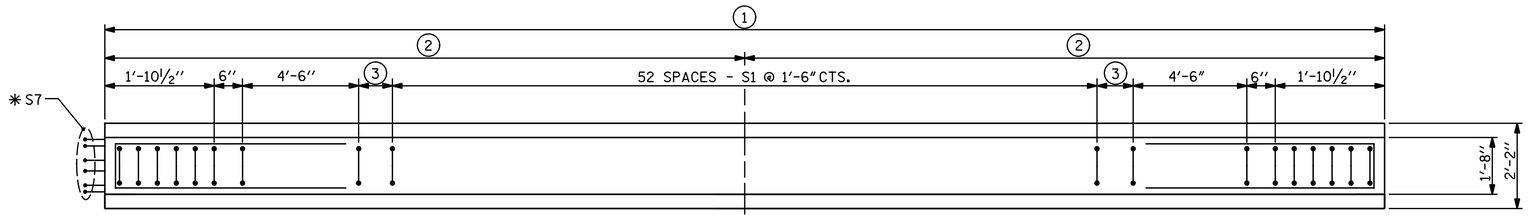


AT ℄ OF GIRDER

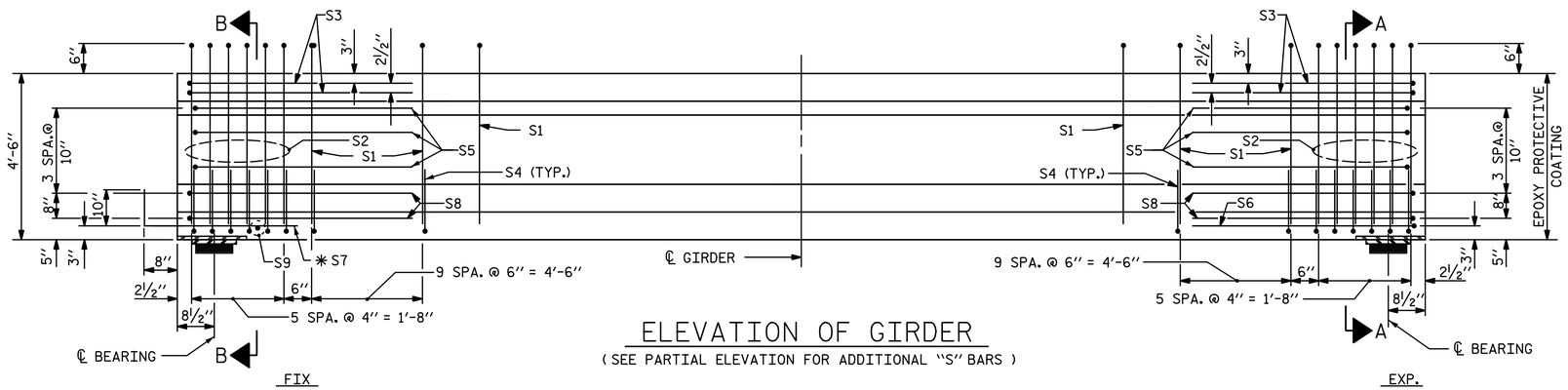
0.6" Ø LOW RELAXATION STRAND LAYOUT

● STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
▲ STRANDS DEBONDED FOR 6'-0" FROM END OF GIRDER

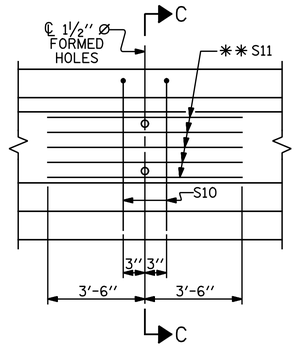
SPAN	①	②	③
B	94'-2"	47'-1"	1'-2½"
E	94'-2"	47'-1"	1'-2½"
H	94'-2"	47'-1"	1'-2½"
K	94'-2"	47'-1"	1'-2½"
M	93'-3½"	46'-7¾"	9¼"



PLAN OF GIRDER



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



PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 1-5

✱✱S11 BARS MAY BE SHIFTED SLIGHTLY AS NEEDED TO AVOID STRANDS.

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
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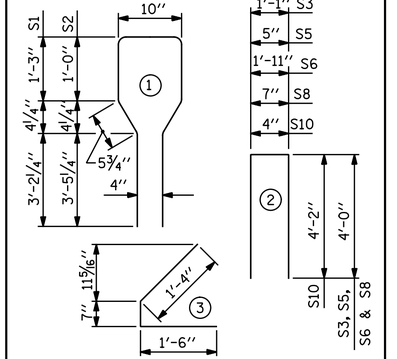
S5	6	#4	2	8'-5"	34
S6	1	#4	2	9'-11"	7
✱S7	6	#5	STR	3'-8"	23
S8	4	#4	2	8'-7"	23
S9	1	#3	STR	1'-10"	1
S10	2	#5	2	8'-8"	18
S11	5	#4	STR	7'-0"	23

✱NOTE: S7 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	8,000 PSI CONCRETE	0.6" Ø L. R. STRANDS
	LB.	C.Y.	No.
SPANS B, E, H & K	1011	19.1	36
SPAN M	1011	18.9	36

GIRDERS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
SPANS B, E, H & K	20	94'-2"	1883'-4"
SPAN M	5	93'-3½"	466'-5½"

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 3 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459...
5/8/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283788D710A0460...
5/8/2015

Baker
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

AASHTO TYPE IV
PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD SPANS B, E, H, K & M
RIGHT LANE

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1			3			TOTAL SHEETS
2			4			68

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CHECKED BY : A. L. PHILLIPS DATE : 8-12-13

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SITE 4

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.

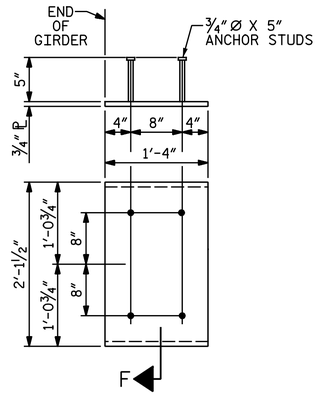
ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THROUGH 1020 OR APPROVED EQUAL, AND SHALL MEET THE TYPE "B" REQUIREMENTS OF SUBSECTION 7.3 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

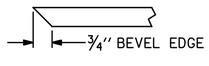
AT ENDS OF GIRDERS TO BE EMBEDDED IN CONCRETE DIAPHRAGMS OR END WALLS, PRESTRESSING STRANDS MAY EXTEND A MAXIMUM OF 2" BEYOND THE GIRDER ENDS. OTHERWISE, PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6,000 PSI.

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

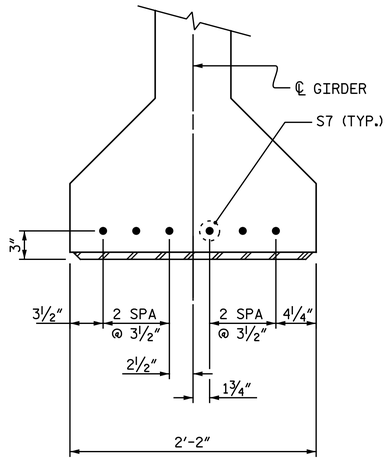
THE TOP SURFACE OF THE GIRDER, EXCLUDING THE OUTSIDE 4", SHALL BE RAKED TO A DEPTH OF 1/4".





SECTION F
(SEE NOTES)

EMBEDDED PLATE "B-1" DETAILS
FOR AASHTO TYPE IV GIRDER
(2 REQ'D PER GIRDER)



DETAIL A

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-
SHEET 4 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
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NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
AASHTO TYPE IV
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD DETAILS
RIGHT LANE

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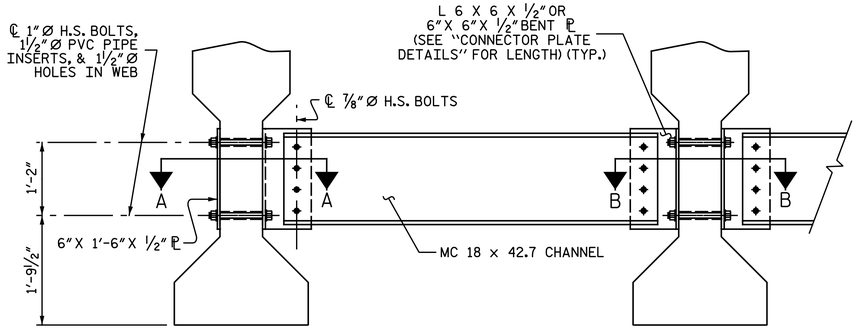
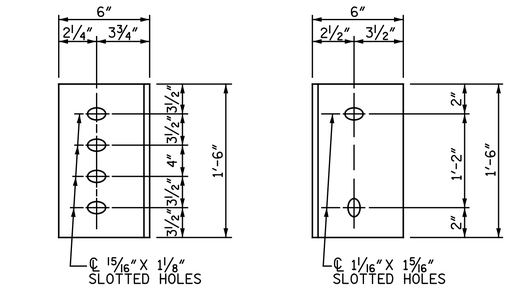


EXTERIOR GIRDER INTERIOR GIRDER

PART SECTION AT INTERMEDIATE DIAPHRAGM



DIAPHRAGM FACE WEB FACE

CONNECTOR PLATE DETAILS

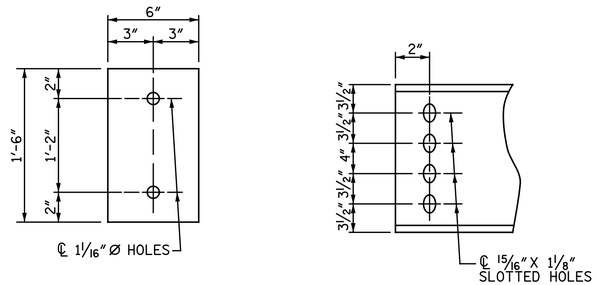


PLATE DETAILS CHANNEL END

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.

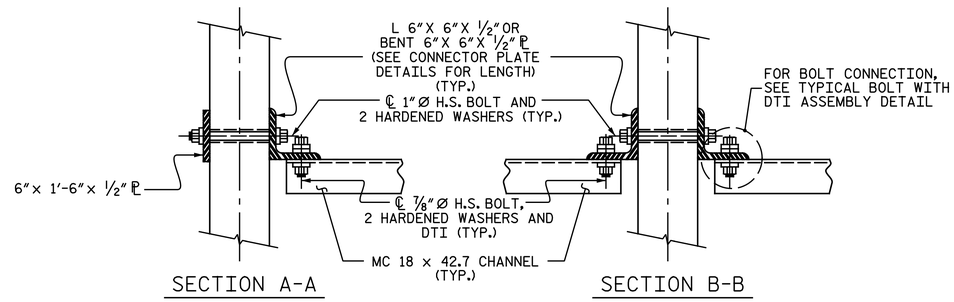
FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST ¼″PROJECTION BEYOND THE NUT.

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.

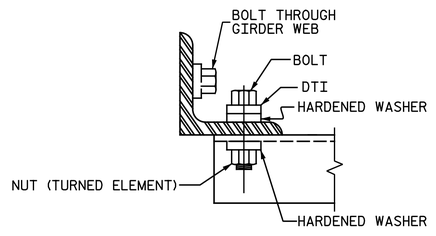
IN THE EXTERIOR BAYS, PLACE TEMPORARY STRUTS BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE STEEL DIAPHRAGMS. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED.

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



SECTION A-A SECTION B-B

CONNECTION DETAILS



BOLT WITH DTI ASSEMBLY DETAIL

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 5 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS
RIGHT LANE

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CHECKED BY : A. L. PHILLIPS DATE : 8-12-13

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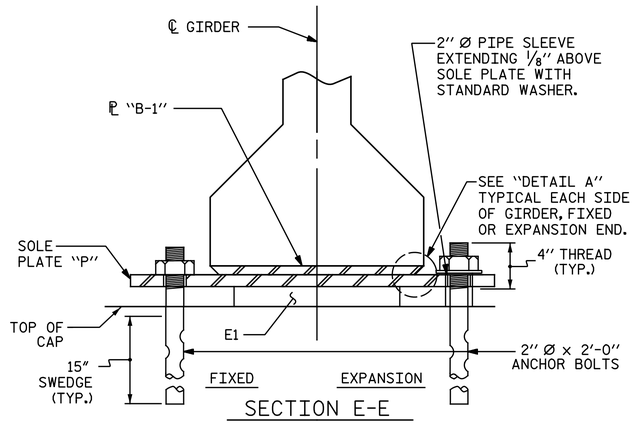
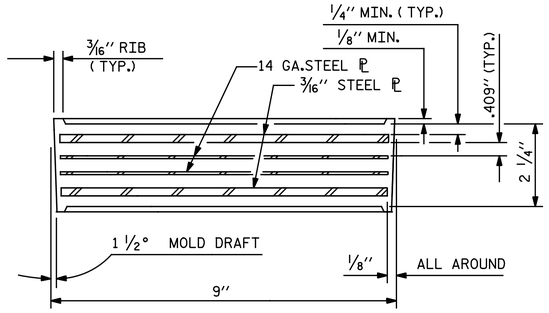
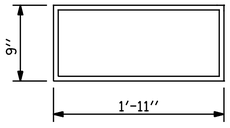


SECTION E-E



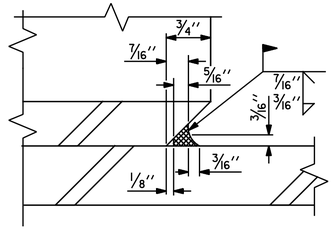
TYPICAL SECTION OF ELASTOMERIC BEARINGS



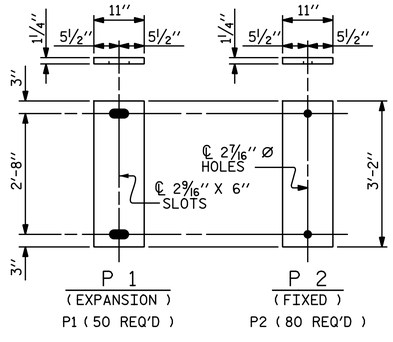
E1 (130 REQ'D)

PLAN VIEW OF ELASTOMERIC BEARING

TYPE V



DETAIL A



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.

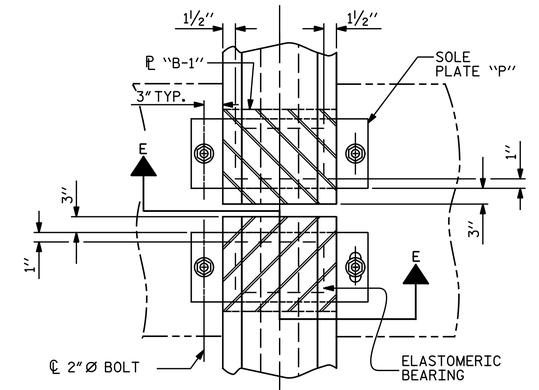
SOLE PLATE "P", BOLTS, NUTS, WASHERS, AND PIPE SLEEVE SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.

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. NO SHOP DRAWINGS ARE REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.



TYPICAL HALF-PLAN (SHOWING CONTINUOUS BENT)

TYPICAL HALF-PLAN (SHOWING SIMPLE SPAN BENT)

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L.(NO IMPACT)	
TYPE V	320 k

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

DRAWN BY : M. D. MAYHEW DATE : 8-13-13

CHECKED BY : A. L. PHILLIPS DATE : 8-23-13

DWG. 21 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

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DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ELASTOMERIC BEARING DETAILS

PRESTRESSED CONCRETE GIRDER SUPERSTRUCTURE

RIGHT LANE

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2			4			68

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DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPAN A

0.6'' Ø LOW RELAXATION STRANDS	GIRDER AG1 & AG5										
TENTH POINTS BETWEEN BRGS.	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE) (FT.) ↑	0.000	0.055	0.104	0.143	0.167	0.175	0.167	0.143	0.104	0.055	0.000
✳DEFLECTION DUE TO SUPERIMPOSED D.L. (FT.) ↓	0.000	0.034	0.067	0.093	0.110	0.115	0.110	0.093	0.067	0.034	0.000
FINAL CAMBER (IN.) ↑	0	1/4"	7/16"	5/8"	11/16"	11/16"	11/16"	5/8"	7/16"	1/4"	0

0.6'' Ø LOW RELAXATION STRANDS	GIRDER AG2 THRU AG4										
TENTH POINTS BETWEEN BRGS.	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE) (FT.) ↑	0.000	0.055	0.104	0.143	0.167	0.175	0.167	0.143	0.104	0.055	0.000
✳DEFLECTION DUE TO SUPERIMPOSED D.L. (FT.) ↓	0.000	0.037	0.073	0.101	0.119	0.125	0.119	0.101	0.073	0.037	0.000
FINAL CAMBER (IN.) ↑	0	3/16"	3/8"	1/2"	9/16"	5/8"	9/16"	1/2"	3/8"	3/16"	0

✳INCLUDES WEIGHT OF DECK SLAB, BUILD-UPS, DIAPHRAGMS, BARRIERS, AND FUTURE WEARING SURFACE.

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPANS B THRU L

0.6'' Ø LOW RELAXATION STRANDS	GIRDER G1 & G5										
TENTH POINTS BETWEEN BRGS.	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE) (FT.) ↑	0.000	0.055	0.105	0.143	0.168	0.176	0.168	0.143	0.105	0.055	0.000
✳DEFLECTION DUE TO SUPERIMPOSED D.L. (FT.) ↓	0.000	0.034	0.067	0.093	0.110	0.115	0.110	0.093	0.067	0.034	0.000
FINAL CAMBER (IN.) ↑	0	1/4"	7/16"	5/8"	11/16"	3/4"	11/16"	5/8"	7/16"	1/4"	0

0.6'' Ø LOW RELAXATION STRANDS	GIRDER G2 THRU G4										
TENTH POINTS BETWEEN BRGS.	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE) (FT.) ↑	0.000	0.055	0.105	0.143	0.168	0.176	0.168	0.143	0.105	0.055	0.000
✳DEFLECTION DUE TO SUPERIMPOSED D.L. (FT.) ↓	0.000	0.037	0.073	0.101	0.119	0.125	0.119	0.101	0.073	0.037	0.000
FINAL CAMBER (IN.) ↑	0	3/16"	3/8"	1/2"	9/16"	5/8"	9/16"	1/2"	3/8"	3/16"	0

✳INCLUDES WEIGHT OF DECK SLAB, BUILD-UPS, DIAPHRAGMS, BARRIERS, AND FUTURE WEARING SURFACE.

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPAN M

0.6'' Ø LOW RELAXATION STRANDS	GIRDER MG1 & MG5										
TENTH POINTS BETWEEN BRGS.	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE) (FT.) ↑	0.000	0.055	0.104	0.143	0.167	0.175	0.167	0.143	0.104	0.055	0.000
✳DEFLECTION DUE TO SUPERIMPOSED D.L. (FT.) ↓	0.000	0.034	0.067	0.093	0.110	0.115	0.110	0.093	0.067	0.034	0.000
FINAL CAMBER (IN.) ↑	0	1/4"	7/16"	5/8"	11/16"	11/16"	11/16"	5/8"	7/16"	1/4"	0

0.6'' Ø LOW RELAXATION STRANDS	GIRDER MG2 THRU MG4										
TENTH POINTS BETWEEN BRGS.	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE) (FT.) ↑	0.000	0.055	0.104	0.143	0.167	0.175	0.167	0.143	0.104	0.055	0.000
✳DEFLECTION DUE TO SUPERIMPOSED D.L. (FT.) ↓	0.000	0.037	0.073	0.101	0.119	0.125	0.119	0.101	0.073	0.037	0.000
FINAL CAMBER (IN.) ↑	0	3/16"	3/8"	1/2"	9/16"	5/8"	9/16"	1/2"	3/8"	3/16"	0

✳INCLUDES WEIGHT OF DECK SLAB, BUILD-UPS, DIAPHRAGMS, BARRIERS, AND FUTURE WEARING SURFACE.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 28378607 1DA0460... 5/8/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

GIRDER DEFLECTIONS AND CAMBER

RIGHT LANE

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1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 8-8-13
CHECKED BY : A. L. PHILLIPS DATE : 8-12-13

DWG. 22 OF 68

SITE 4

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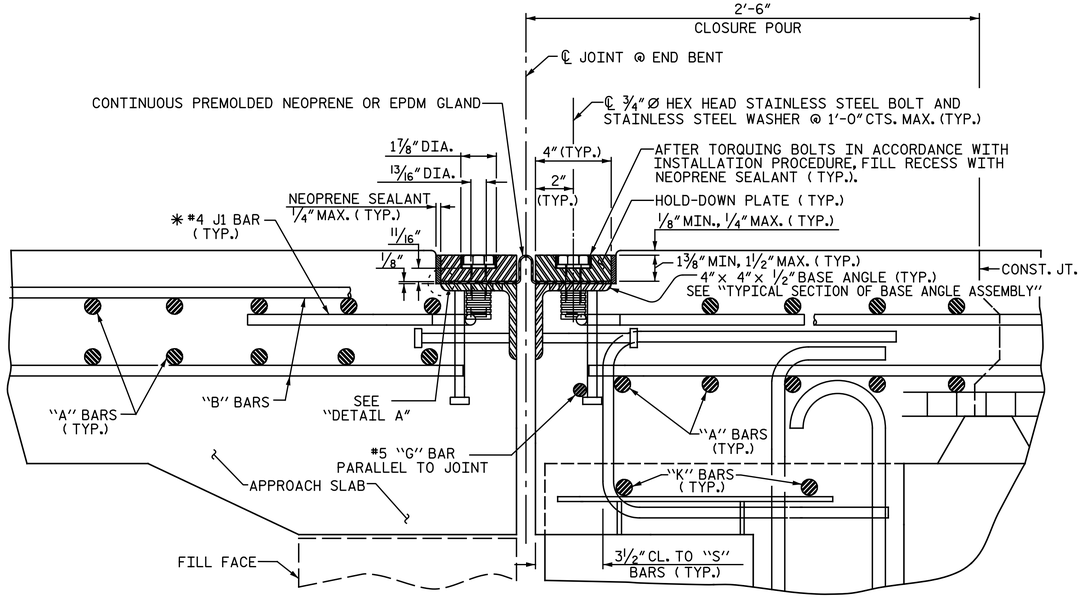


EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT AT END BENT 1 & 2

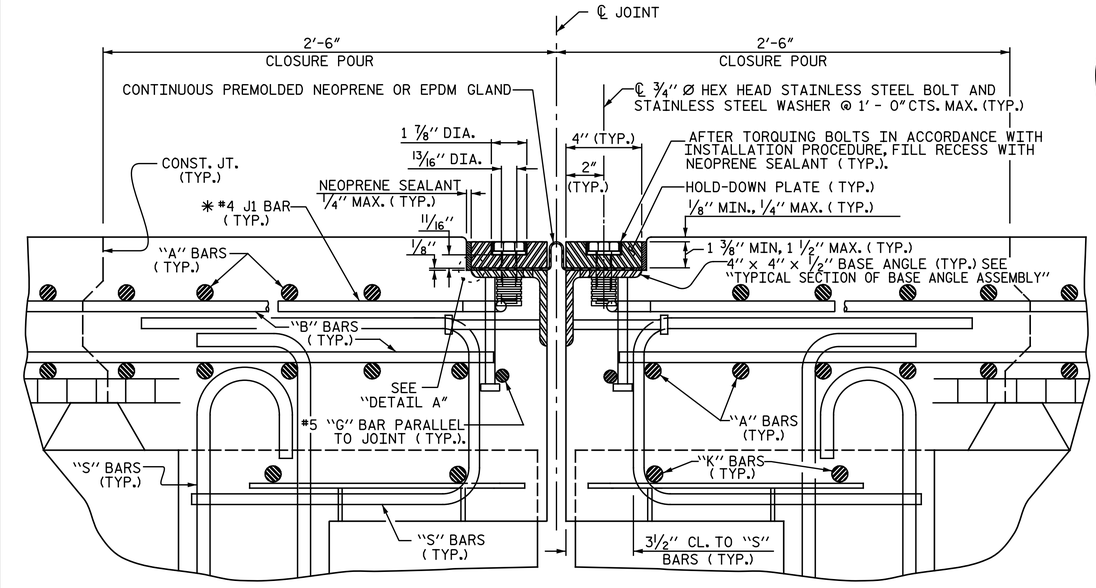
* THE QUANTITY OF #4 J1 BARS ON THE BILL OF MATERIAL IS BASED ON 1'-0" CENTERS. J1 BARS SHALL BE PLACED AT EACH VERTICAL STUD ANCHOR BOLT. IN THE EVENT THAT THE NUMBER OF VERTICAL STUD ANCHORS EXCEEDS THE NUMBER OF J1 BARS SPECIFIED, ADDITIONAL J1 BARS WILL NOT BE REQUIRED.

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 4⅛" TO 4¼" 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. 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:

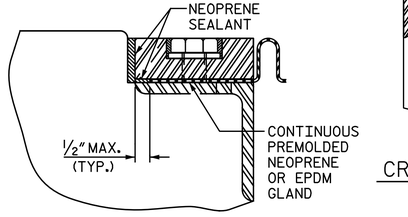
1. FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.
2. ALL PLATES AND ANGLES SHALL CONFORM TO AASHTO M270 GRADE 36 STEEL OR APPROVED EQUAL. ALL HOLD-DOWN BOLTS SHALL CONFORM TO ASTM F593 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL CONFORM TO ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS 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.



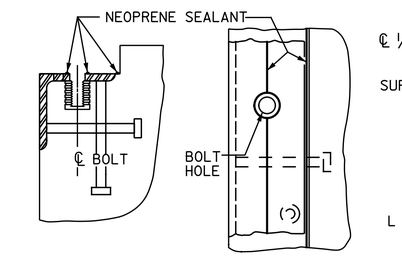
EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT AT BENTS 2, 5, 8 & 11

* 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.

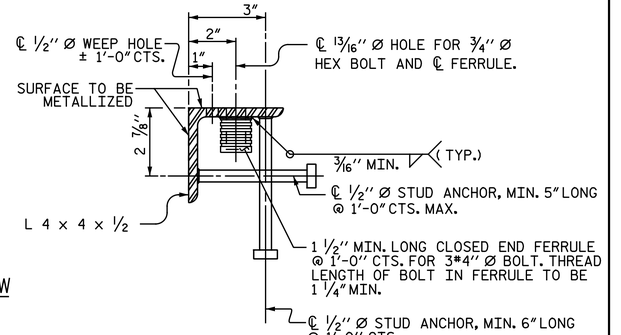


DETAIL A



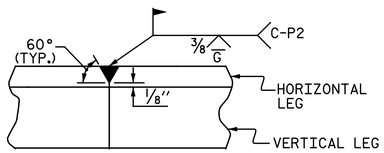
CROSS SECTION PLAN VIEW

INSTALLATION SKETCH



TYPICAL SECTION OF BASE ANGLE ASSEMBLY

MOVEMENT AND SETTING AT JOINT					
	SKEW ANGLE	TOTAL MOVEMENT (ALONG ℄ RDWY)	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
END BENT 1 & 2	90°-00'-00"	9⁄16"	1 7⁄16"	1 5⁄16"	1 1⁄8"
BENTS 2 & 11	90°-00'-00"	1 7⁄16"	2"	1 3⁄4"	1 1⁄4"
BENTS 5 & 8	90°-00'-00"	1 3⁄4"	2 1⁄4"	1 15⁄16"	1 5⁄16"



DETAIL- FIELD WELD SPLICE OF BASE ANGLE

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

EXPANSION JOINT SEAL DETAILS

RIGHT LANE

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780071DA0460... 3/13/2015

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-23
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : M. D. MAYHEW DATE : 8-13-13
CHECKED BY : A. L. PHILLIPS DATE : 8-23-13

DWG. 23 OF 68

SITE 4

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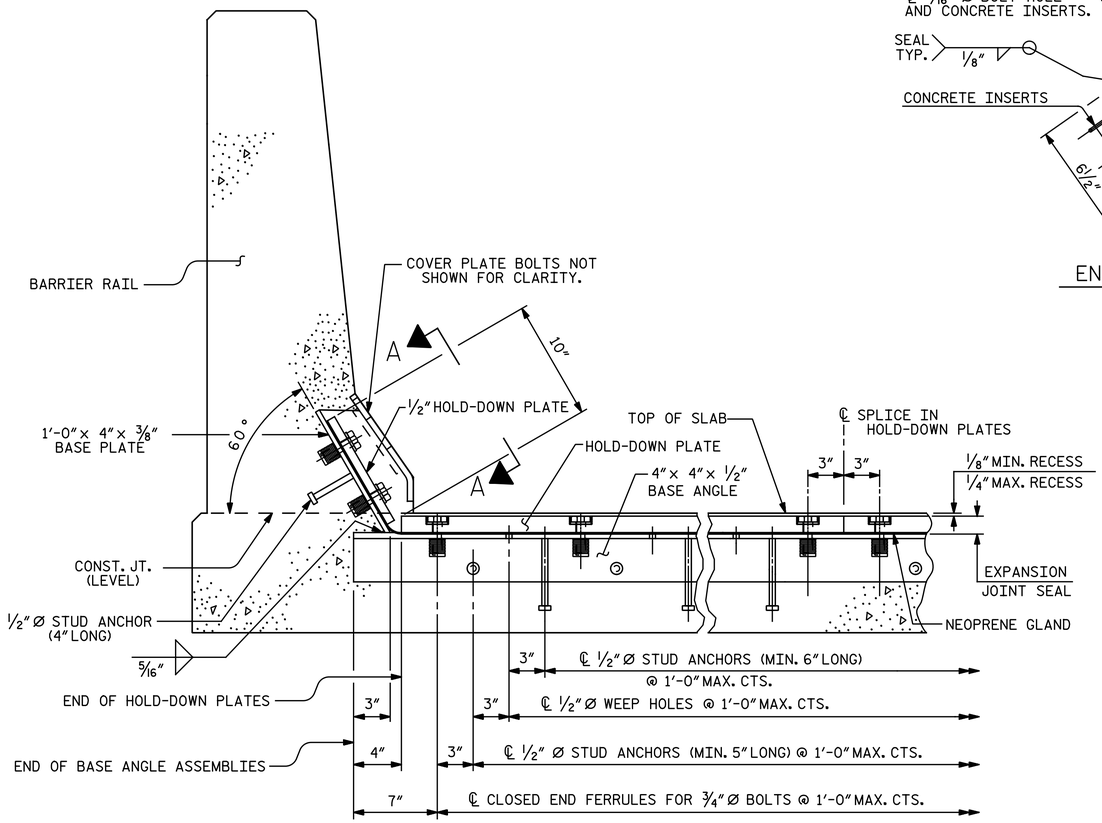
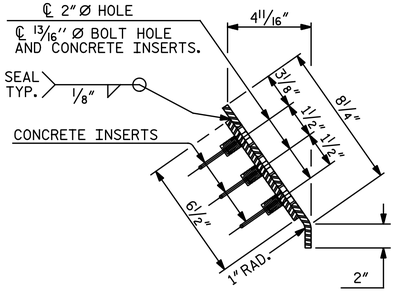
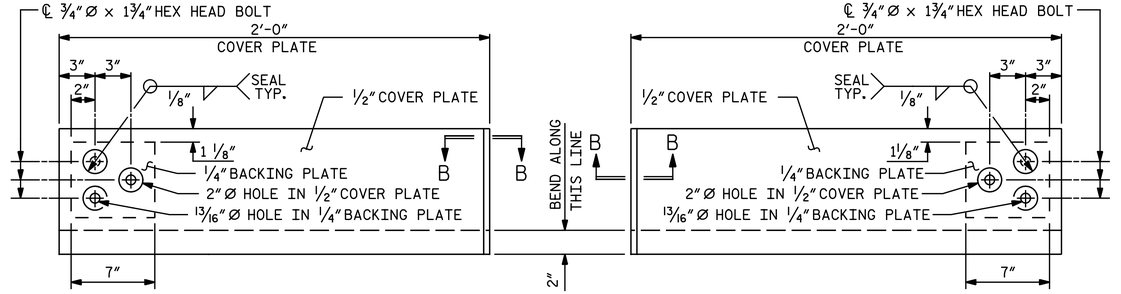


SECTION THRU RAIL NORMAL TO JOINT



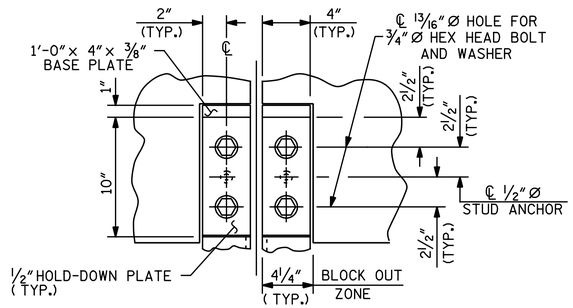
END VIEW



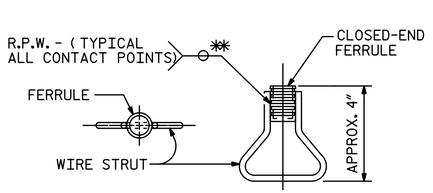
TYPE I - ELEVATION VIEW

TYPE II - ELEVATION VIEW

COVER PLATE DETAILS



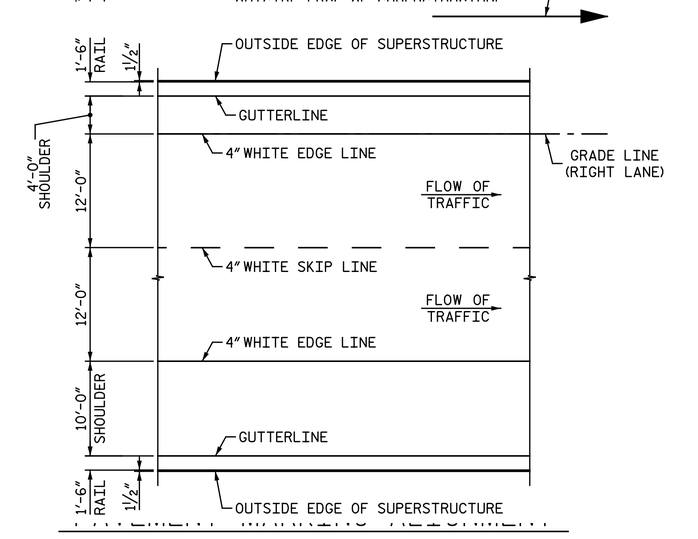
SECTION A - A



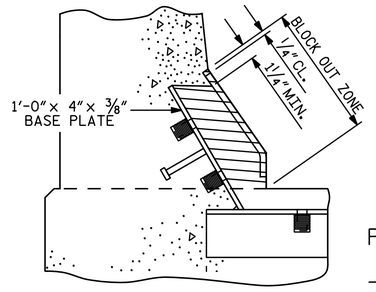
PLAN ELEVATION

CONCRETE INSERT

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

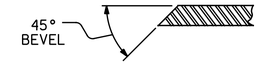


PAVEMENT MARKING ALIGNMENT

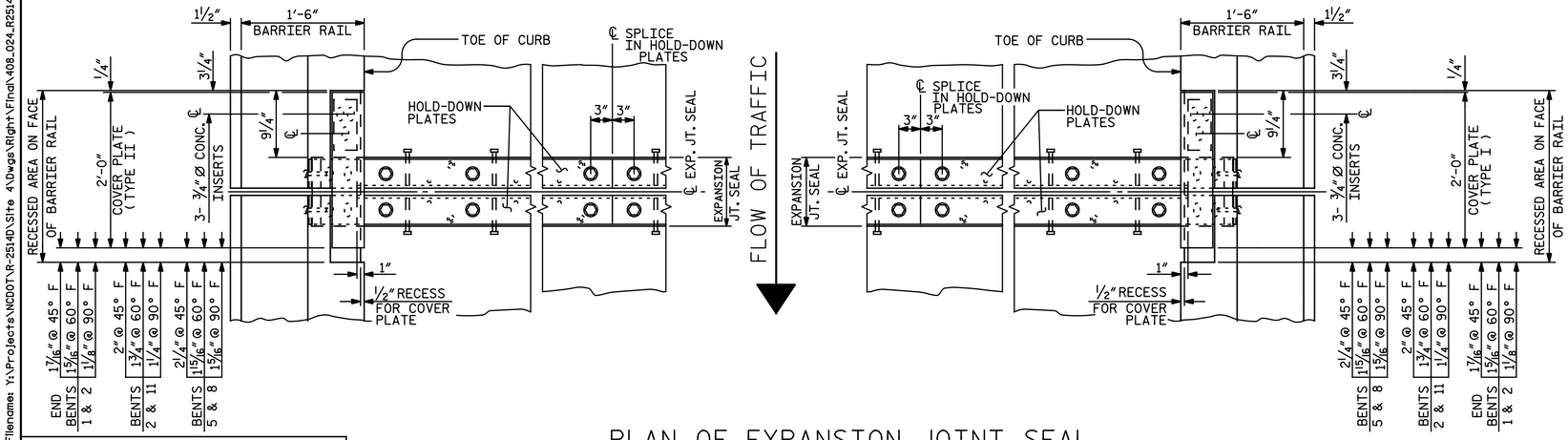


BLOCK OUT DETAIL

SEE " SECTION A - A " FOR OTHER DETAILS.



SECTION B - B



PLAN OF EXPANSION JOINT SEAL

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

DRAWN BY : M. D. MAYHEW DATE : 8-13-13

CHECKED BY : A. L. PHILLIPS DATE : 8-23-13

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

EXPANSION JOINT SEAL DETAILS FOR BARRIER RAIL

RIGHT LANE

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NO.	BY:	DATE:	NO.	BY:	DATE:	S08-24
1			3			TOTAL SHEETS
2			4			68

DWG. 24 OF 68

SITE 4

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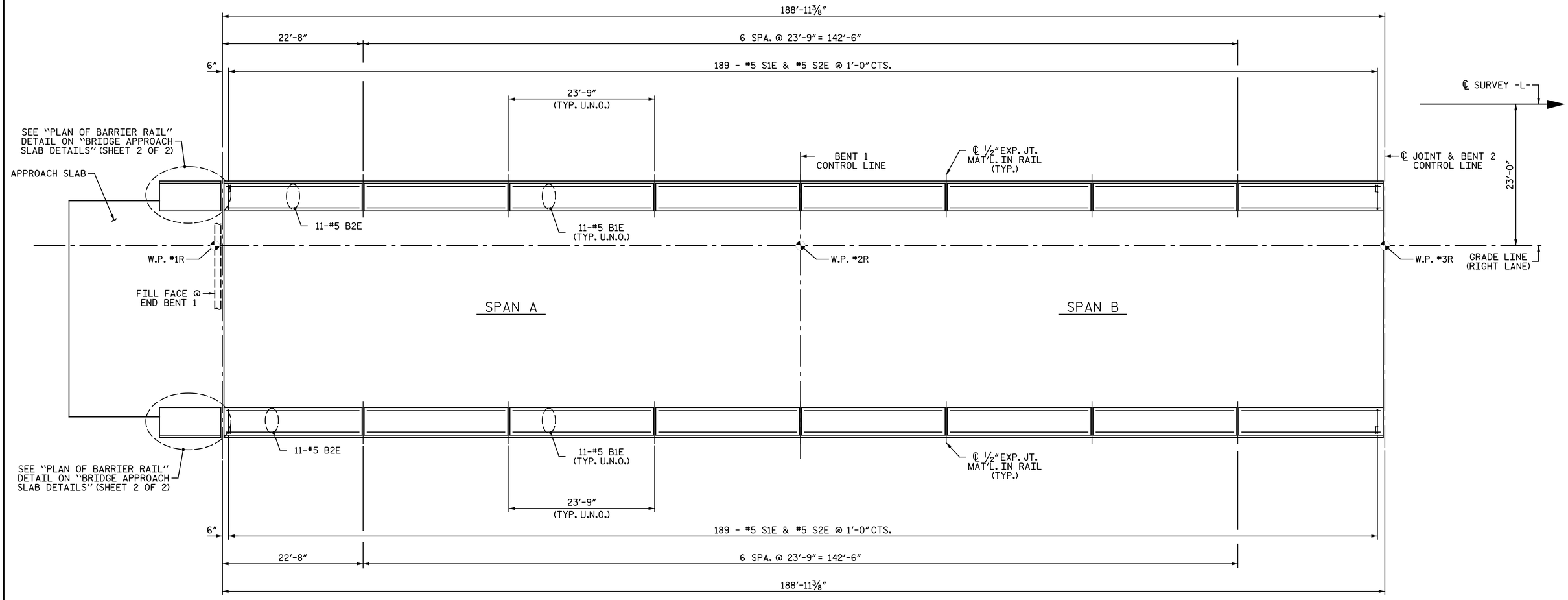

PLAN OF BARRIER RAIL - UNIT 1

U.N.O.-DENOTES "UNLESS NOTED OTHERWISE"

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

CONCRETE BARRIER RAIL UNIT 1

RIGHT LANE

Baker

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-25
1			3			TOTAL SHEETS
2			4			68

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DWG. 25 OF 68

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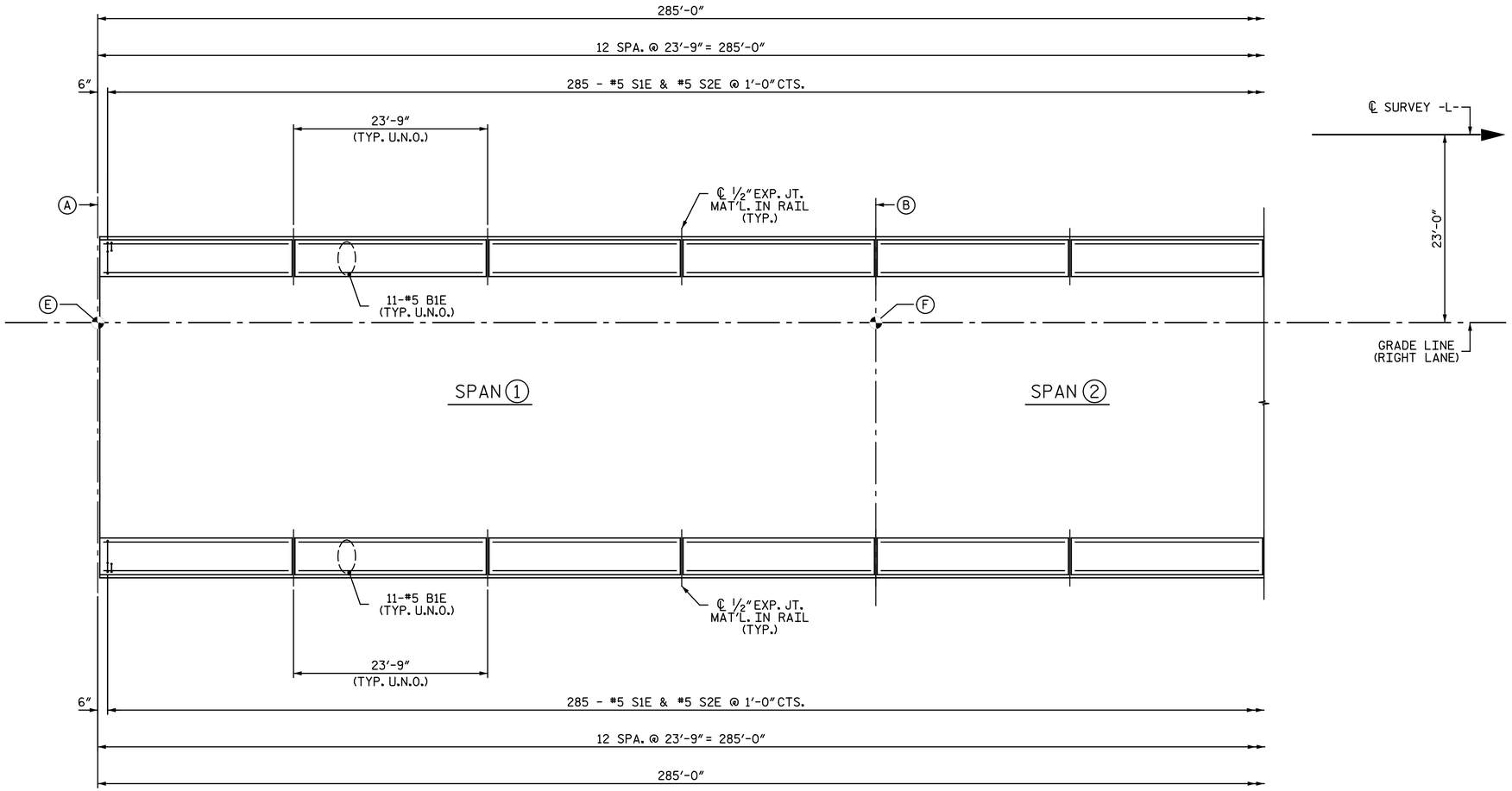
SITE 4



PLAN OF BARRIER RAIL - UNITS 2 THRU 4

U.N.O.-DENOTES "UNLESS NOTED OTHERWISE"

TABLE OF VARIABLES

		UNIT 2	UNIT 3	UNIT 4
BENT CONTROL LINE	Ⓐ	℄ JOINT & BENT 2 CONTROL LINE	℄ JOINT & BENT 5 CONTROL LINE	℄ JOINT & BENT 8 CONTROL LINE
	Ⓑ	BENT 3 CONTROL LINE	BENT 6 CONTROL LINE	BENT 9 CONTROL LINE
	Ⓒ	BENT 4 CONTROL LINE	BENT 7 CONTROL LINE	BENT 10 CONTROL LINE
	Ⓓ	℄ JOINT & BENT 5 CONTROL LINE	℄ JOINT & BENT 8 CONTROL LINE	℄ JOINT & BENT 11 CONTROL LINE
WORK POINT NUMBER	Ⓔ	W.P. #3R	W.P. #6R	W.P. #9R
	Ⓕ	W.P. #4R	W.P. #7R	W.P. #10R
	Ⓖ	W.P. #5R	W.P. #8R	W.P. #11R
	Ⓗ	W.P. #6R	W.P. #9R	W.P. #12R
SPAN DESIGNATION	①	SPAN C	SPAN F	SPAN I
	②	SPAN D	SPAN G	SPAN J
	③	SPAN E	SPAN H	SPAN K

DRAWN BY : M. D. MAYHEW DATE : 8-13-13
CHECKED BY : A. L. PHILLIPS DATE : 8-23-13

DWG. 26 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
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3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283786071DA0460...
3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

CONCRETE BARRIER RAIL UNITS 2 THRU 4

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-26
1			3			TOTAL SHEETS
2			4			68

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-
SHEET 2 OF 5

SITE 4

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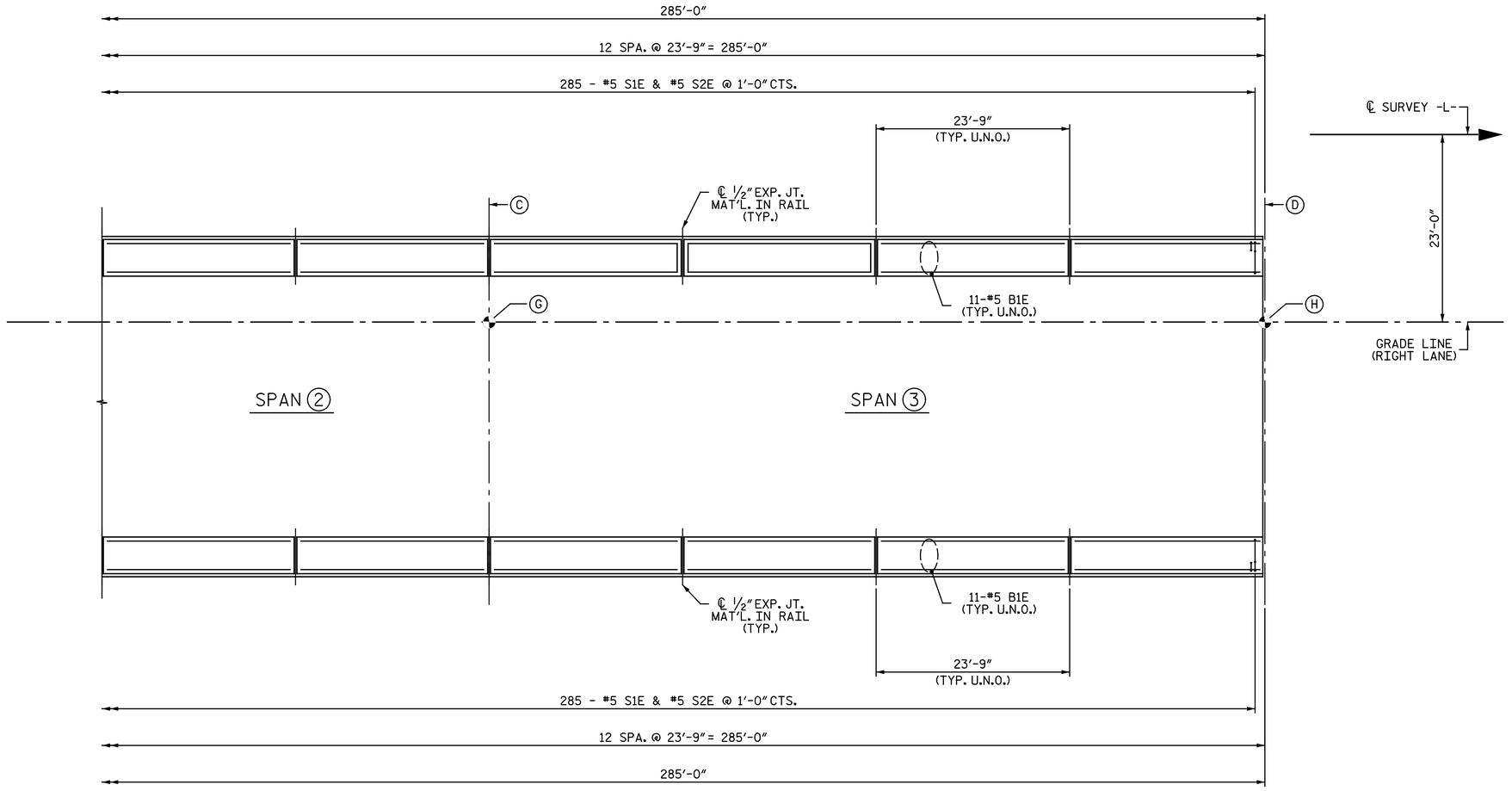

NOTE:
FOR "TABLE OF VARIABLES", SEE SHEET 2 OF 5.

PLAN OF BARRIER RAIL - UNITS 2 THRU 4

U.N.O.-DENOTES "UNLESS NOTED OTHERWISE"

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-
SHEET 3 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
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NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

CONCRETE BARRIER RAIL
UNITS 2 THRU 4

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-27
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : M. D. MAYHEW DATE : 8-13-13
CHECKED BY : A. L. PHILLIPS DATE : 8-23-13

DWG. 27 OF 68

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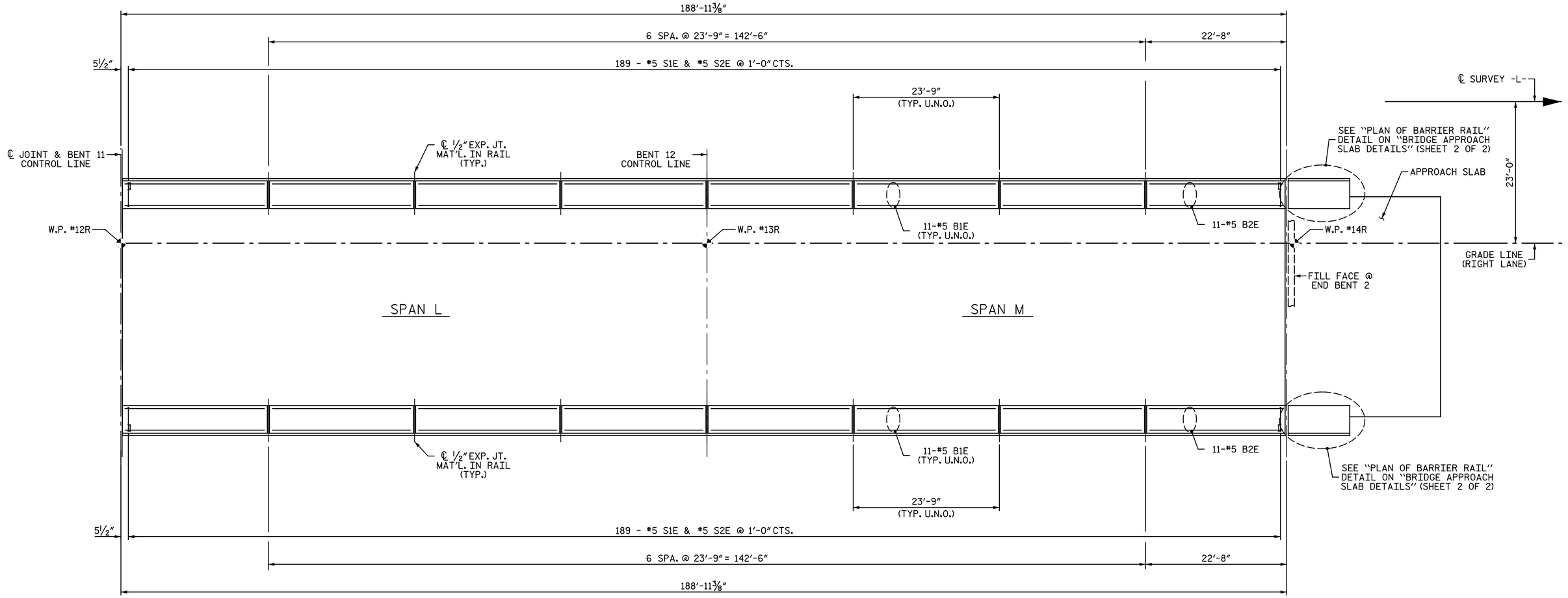

PLAN OF BARRIER RAIL - UNIT 5

U.N.O.-DENOTES "UNLESS NOTED OTHERWISE"

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 4 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460...
3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

CONCRETE BARRIER RAIL
UNIT 5

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-28
1			3			TOTAL SHEETS
2			4			68

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CHECKED BY : A. L. PHILLIPS DATE : 8-23-13

DWG. 28 OF 68

SITE 4

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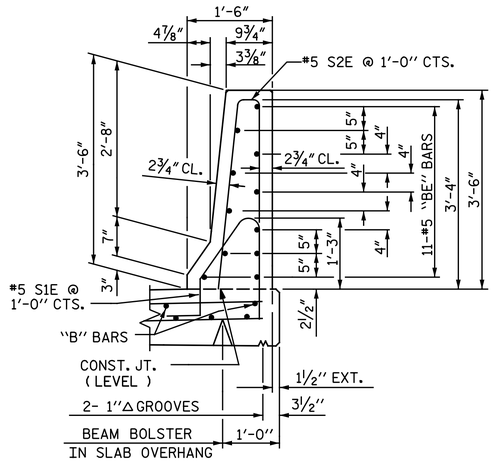


SECTION THRU RAIL

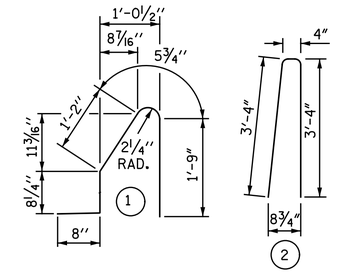
NOTES:

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

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

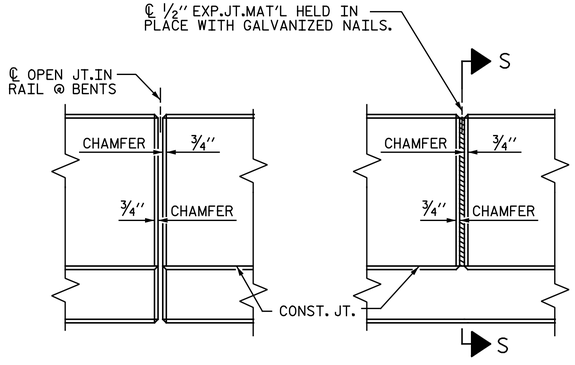
FOR CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1E	1100	5	STR	23' - 4"	26,770
B2E	44	5	STR	22' - 3"	1,021
S1E	2466	5	1	4' - 9"	12,217
S2E	2466	5	2	7' - 0"	18,004

EPOXY COATED REINFORCING STEEL	58,012	LBS.
CLASS AA CONCRETE	335.2	CU. YDS.
▲CONCRETE BARRIER RAIL	2,505.8	LIN. FT.

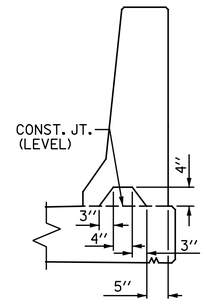
"E" SUFFIX DENOTES EPOXY COATED REINFORCING STEEL

▲ LENGTH OF VERTICAL CONCRETE BARRIER RAIL ON APPROACH SLABS ARE INCLUDED IN THIS LENGTH.



ELEVATION AT EXPANSION JOINTS

(NOTE: OMIT EXPANSION JOINT MATERIAL WHEN SLIP FORM IS USED.)



SECTION S-S

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

BARRIER RAIL DETAILS

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 5 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN C. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

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STATE OF NORTH CAROLINA
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RALEIGH
SUPERSTRUCTURE

CONCRETE BARRIER RAIL

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-29
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : M. D. MAYHEW DATE : 8-13-13
CHECKED BY : A. L. PHILLIPS DATE : 8-23-13

DWG. 29 OF 68

SITE 4

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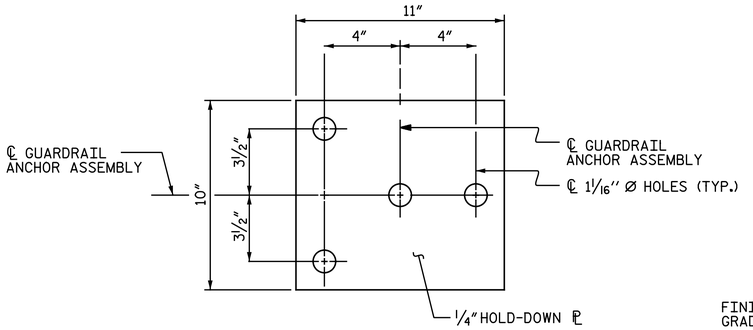
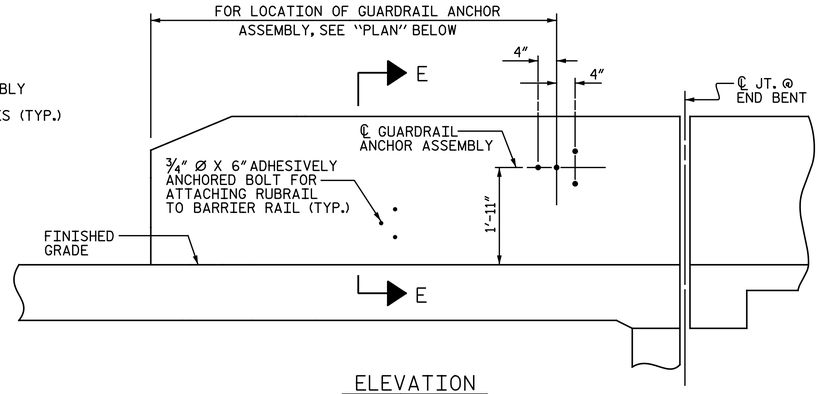
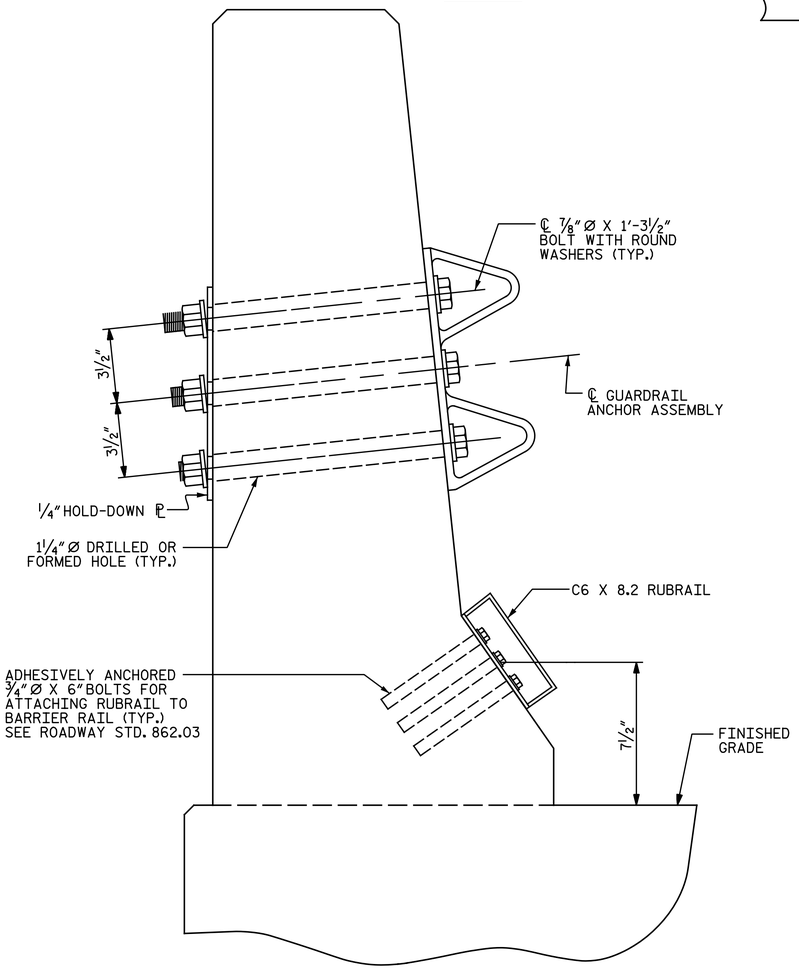


PLAN

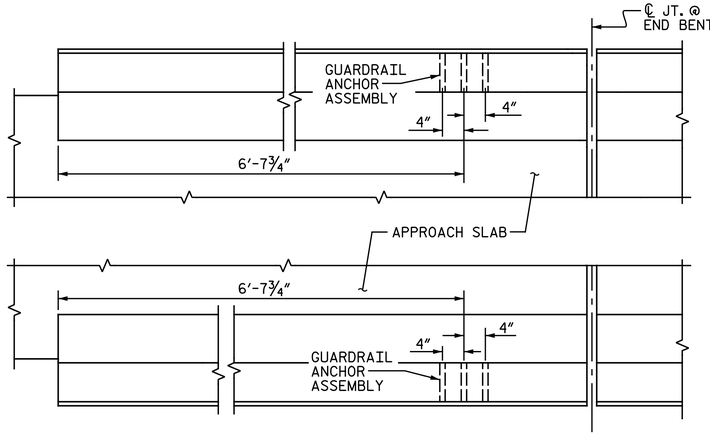


ELEVATION



SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR

NOTES:

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

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.)

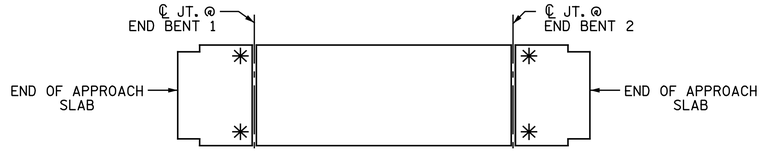
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

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

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4″Ø X 6″ BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4″Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



SKETCH SHOWING POINTS OF ATTACHMENTS

✳ DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

GUARDRAIL ANCHORAGE FOR BARRIER RAIL

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-30
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 9-13-13
CHECKED BY : A. L. PHILLIPS DATE : 9-13-13

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SITE 4

REINFORCING STEEL SCHEDULE

UNIT 1 (UNIT 5 SIMILAR)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1E	376	5	STR	40′ - 11″	16,046
A2	378	5	STR	40′ - 11″	16,132
B1	208	5	STR	49′ - 3″	10,684
B2E	198	4	STR	22′ - 6″	2,976
B3E	33	7	STR	60′ - 0″	4,047
B4E	33	7	STR	12′ - 3″	826
B5E	56	7	STR	28′ - 6″	3,262
G1E	2	5	STR	40′ - 11″	85
J1E	84	4	6	1′ - 5″	79
K1E	12	8	2	19′ - 6″	625
K2E	8	8	1	12′ - 8″	271
K3E	8	6	STR	6′ - 9″	81
K4	8	4	STR	5′ - 1″	27
K5	24	4	STR	7′ - 2″	115
K6	8	4	STR	6′ - 9″	36
K7	10	4	STR	18′ - 7″	124
S1E	32	4	7	2′ - 0″	43
S2E	64	5	3	5′ - 11″	395
S3E	32	4	7	2′ - 4″	50
S4	128	4	4	2′ - 9″	235
S5E	64	4	5	5′ - 5″	232
U1	32	4	8	8′ - 10″	189

EPOXY COATED REINFORCING STEEL	LBS.	29,018
REINFORCING STEEL	LBS.	27,542
CLASS AA CONCRETE	C.Y.	240.7

UNIT 2 (UNITS 3 & 4 SIMILAR)

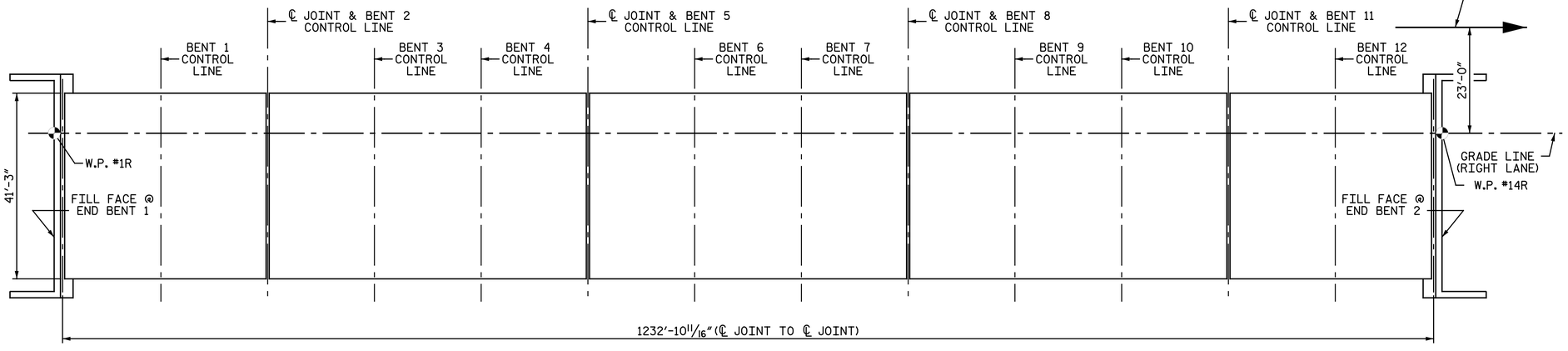
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1E	568	5	STR	40′ - 11″	24,240
A2	570	5	STR	40′ - 11″	24,325
B1	312	5	STR	49′ - 3″	16,027
B2E	198	4	STR	22′ - 6″	2,976
B3E	66	7	STR	60′ - 0″	8,094
B4E	66	7	STR	12′ - 3″	1,653
B5E	112	7	STR	28′ - 6″	6,524
B6E	66	4	STR	17′ - 0″	749
G1E	2	5	STR	40′ - 11″	85
J1E	84	4	6	1′ - 5″	79
K1E	12	8	2	19′ - 6″	625
K2E	8	8	1	12′ - 8″	271
K3E	8	6	STR	6′ - 9″	81
K4	16	4	STR	5′ - 1″	54
K5	48	4	STR	7′ - 2″	230
K6	16	4	STR	6′ - 9″	72
K7	20	4	STR	18′ - 7″	248
S1E	32	4	7	2′ - 0″	43
S2E	64	5	3	5′ - 11″	395
S3E	64	4	7	2′ - 4″	100
S4	256	4	4	2′ - 9″	470
S5E	128	4	5	5′ - 5″	463
U1	64	4	8	8′ - 10″	378

EPOXY COATED REINFORCING STEEL	LBS.	46,378
REINFORCING STEEL	LBS.	41,804
CLASS AA CONCRETE	C.Y.	367.5

"E" SUFFIX DENOTES EPOXY COATED REINFORCING STEEL

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

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	2′-0″	1′-9″	2′-0″	1′-9″	2′-9″
#5	2′-6″	2′-2″	2′-6″	2′-2″	3′-5″
#6	3′-0″	2′-7″	3′-10″	2′-7″	4′-4″
#7	5′-3″	3′-6″			
#8	6′-10″	4′-7″			



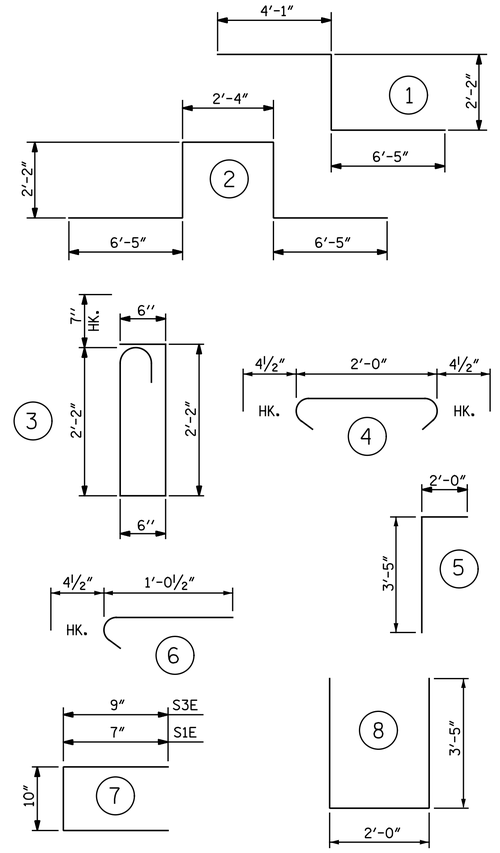
LAYOUT FOR COMPUTING AREA REINFORCED CONCRETE DECK SLAB

(SQ. FT. = 50,857)

GROOVING BRIDGE FLOORS

APPROACH SLABS	1,739	SQ.FT.
BRIDGE DECK	42,952	SQ.FT.
TOTAL	44,691	SQ.FT.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

SUPERSTRUCTURE BILL OF MATERIAL

	CLASS AA CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EPOXY COATED REINFORCING STEEL (LBS.)
UNIT 1	240.7	27,542	29,018
UNIT 2	367.5	41,804	46,378
UNIT 3	367.5	41,804	46,378
UNIT 4	367.5	41,804	46,378
UNIT 5	240.7	27,542	29,018
TOTALS**	1,583.9	180,496	197,170

**QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BILL OF MATERIAL

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-31
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 9-13-13
CHECKED BY : A. L. PHILLIPS DATE : 9-17-13

DWG. 31 OF 68

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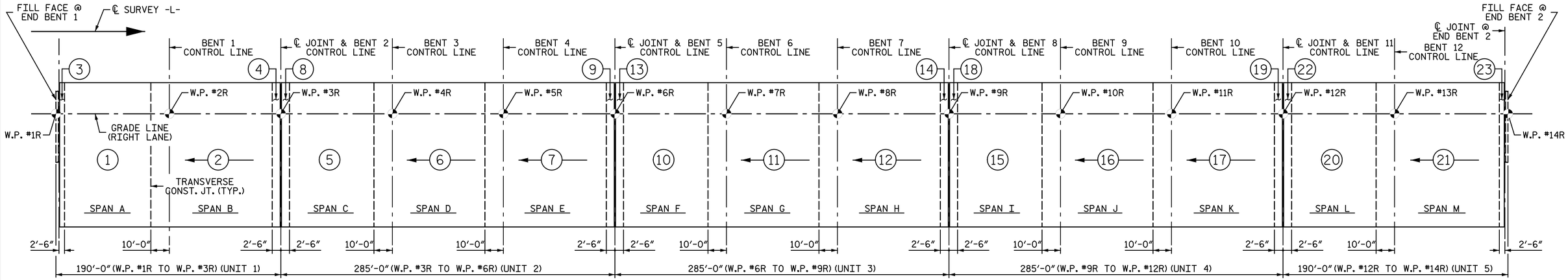
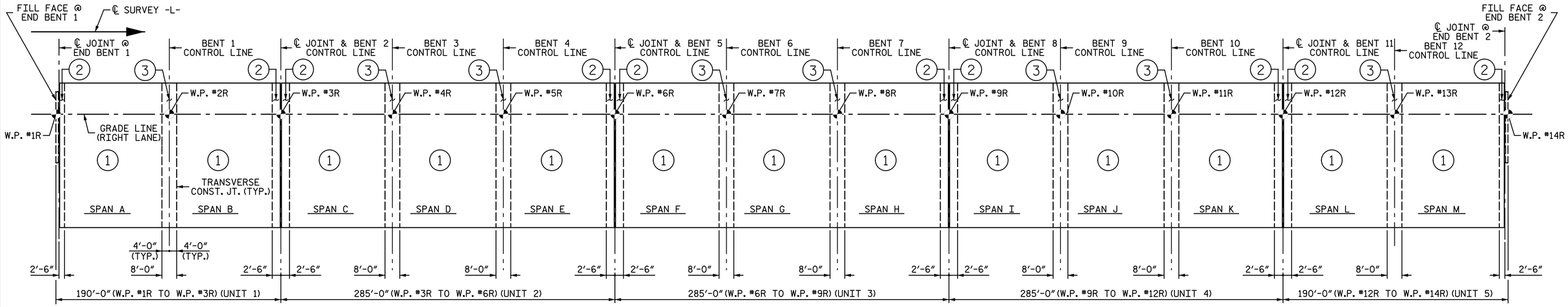
SITE 4



POUR SEQUENCE

(#) DENOTES POUR NUMBER AND DIRECTION

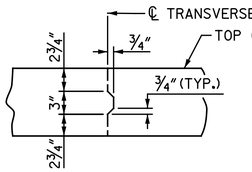
SEE "CLASS AA CONCRETE BREAKDOWN" TABLE FOR POUR QUANTITIES



OPTIONAL POUR SEQUENCE

(#) DENOTES POUR NUMBER

POUR (2) OR POUR (3) SHALL NOT BE STARTED UNTIL BOTH ADJACENT (1) POURS REACH A MINIMUM OF 3,000 PSI.



TRANSVERSE CONST. JOINT DETAIL

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

DRAWN BY : N. B. SPEAKS DATE : 9-13-13
CHECKED BY : A. M. HOUSTON DATE : 2-18-14

CLASS AA CONCRETE BREAKDOWN (CU. YDS.)

	DECK POUR QUANTITIES						CLOSURE POUR QUANTITIES					
	UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5		UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5
POUR 1	96.4					POUR 3	4.9				
POUR 2	134.4					POUR 4	5.0				
POUR 5		97.6				POUR 8		5.0			
POUR 6		125.5				POUR 9		5.0			
POUR 7		134.4				POUR 13			5.0		
POUR 10			97.6			POUR 14			5.0		
POUR 11			125.5			POUR 18				5.0	
POUR 12			134.4			POUR 19				5.0	
POUR 15				97.6		POUR 22					5.0
POUR 16				125.5		POUR 23					4.9
POUR 17				134.4							
POUR 20					97.6						
POUR 21					133.1						
TOTALS	230.8	357.5	357.5	357.5	230.7	TOTALS	9.9	10.0	10.0	10.0	9.9

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PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
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DocuSigned by: Dwain Hathaway 283780771DA0460... 3/13/2015

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STATE OF NORTH CAROLINA
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RALEIGH

SUPERSTRUCTURE

BILL OF MATERIAL

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-32
1			3			TOTAL SHEETS
2			4			68

SITE 4

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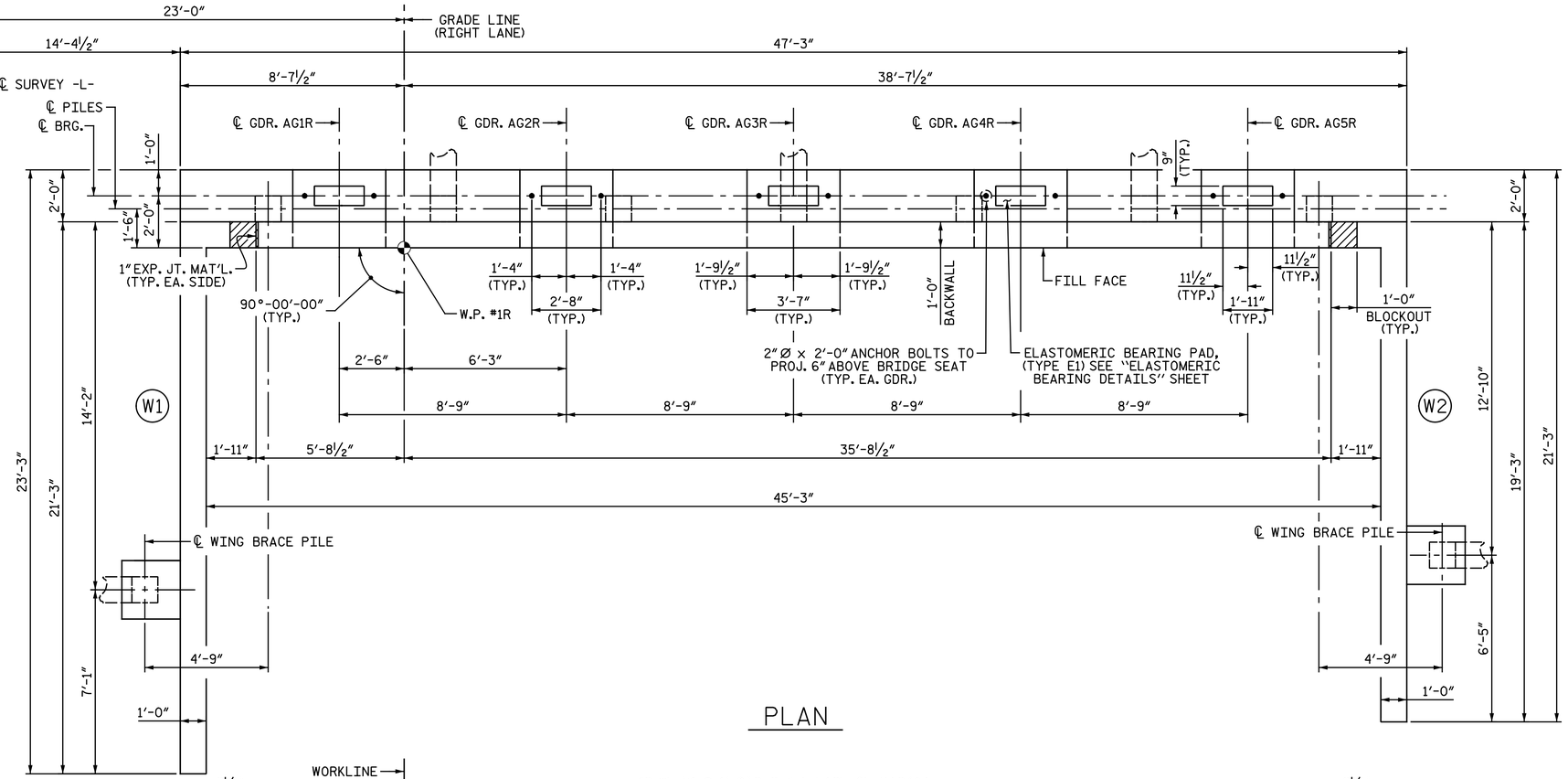

✱FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEATS, SEE "SECTION A-A", SHEET 3 OF 3

NOTES:

FOR "SECTION A-A" AND "SECTION B-B", SEE SHEET 3 OF 3.

(A) #4 B5 @ 4'-0"± CTS. (4 REQUIRED UNDER #10 B2 BARS)

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 5.

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 END BENT 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%.

INSTALL THE 4"Ø 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.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 3

DRAWN BY : N. B. SPEAKS DATE : 3-18-14

CHECKED BY : A. M. HOUSTON DATE : 3-18-14

DWG. 33 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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RALEIGH

SUBSTRUCTURE

END BENT 1

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-33
1			3			TOTAL SHEETS
2			4			68

SITE 4

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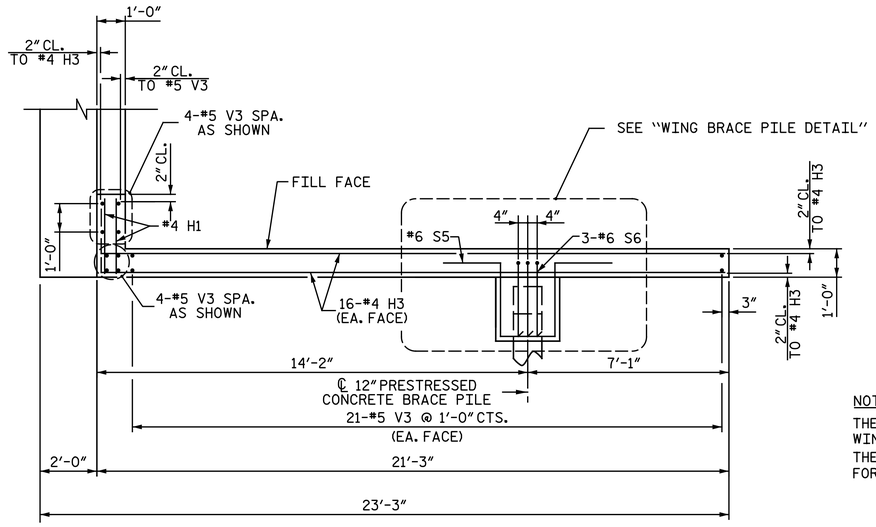
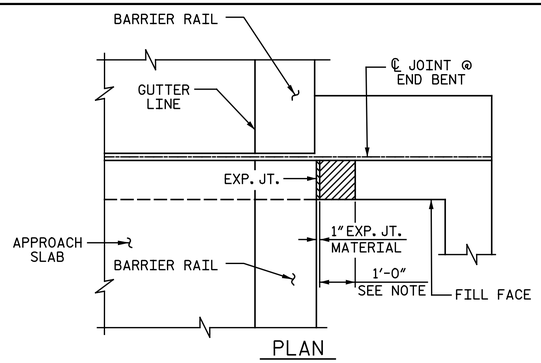


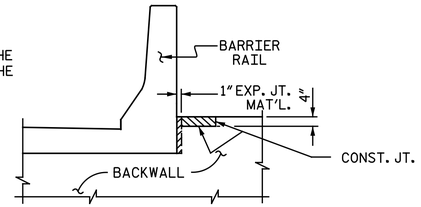
PLAN OF LEFT WING WALL (W1)



PLAN

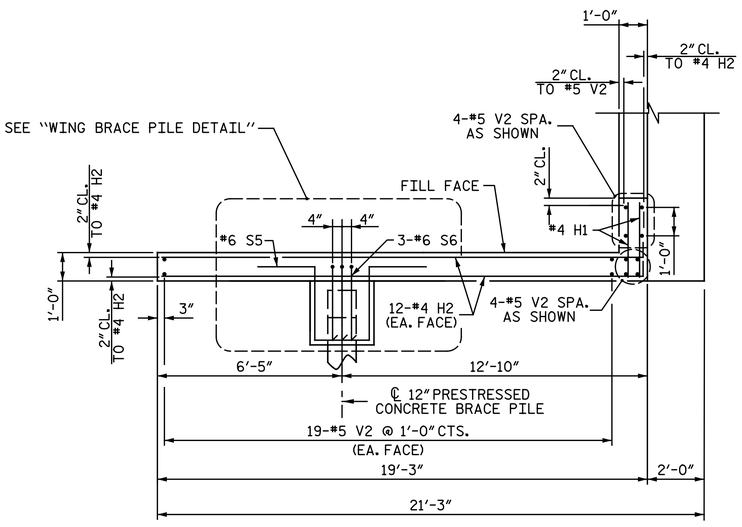
NOTE:

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

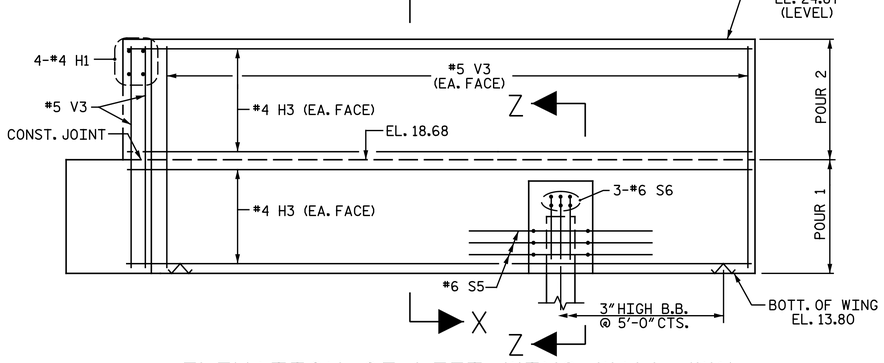


ELEVATION

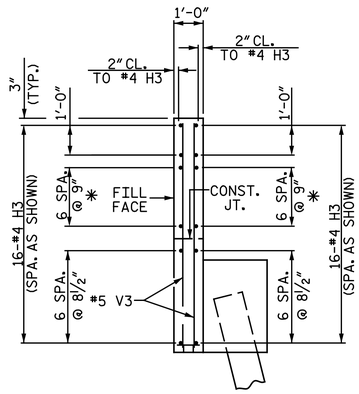
WING WALL DETAIL



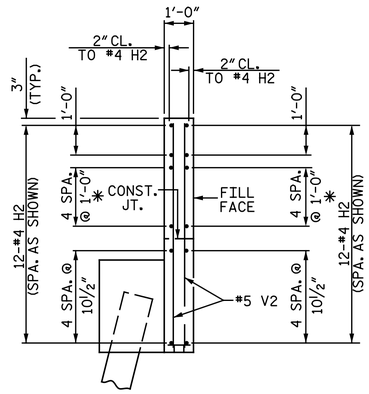
PLAN OF RIGHT WING WALL (W2)



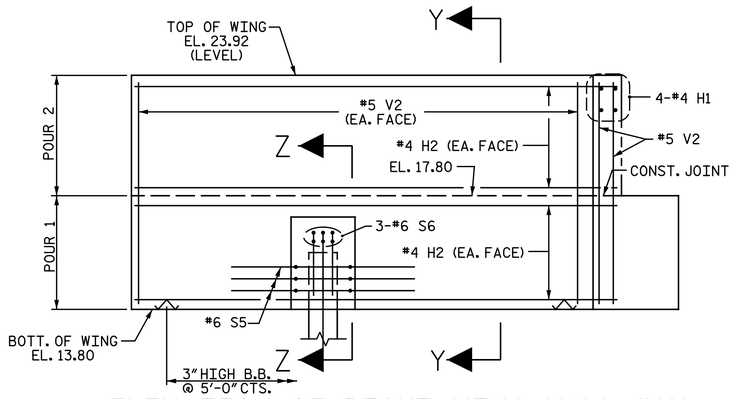
ELEVATION OF LEFT WING WALL (W1)



SECTION X-X

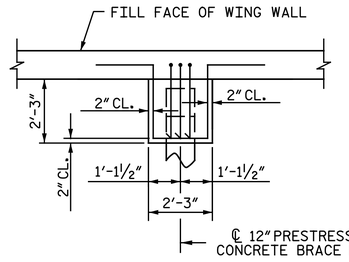


SECTION Y-Y

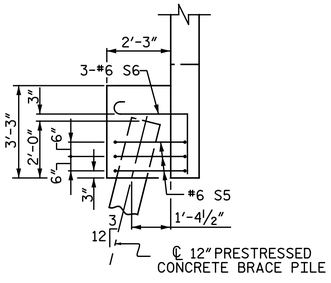


ELEVATION OF RIGHT WING WALL (W2)

✱MATCH "H" BARS TO K1 BARS IN BACKWALL



WING BRACE PILE DETAIL



SECTION Z-Z

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

Baker

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Cary, North Carolina 27518
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1
WING WALL DETAILS

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-34
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 3-18-14
CHECKED BY : A. M. HOUSTON DATE : 3-18-14

DWG. 34 OF 68

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3/5/2015 4:14:46 PM
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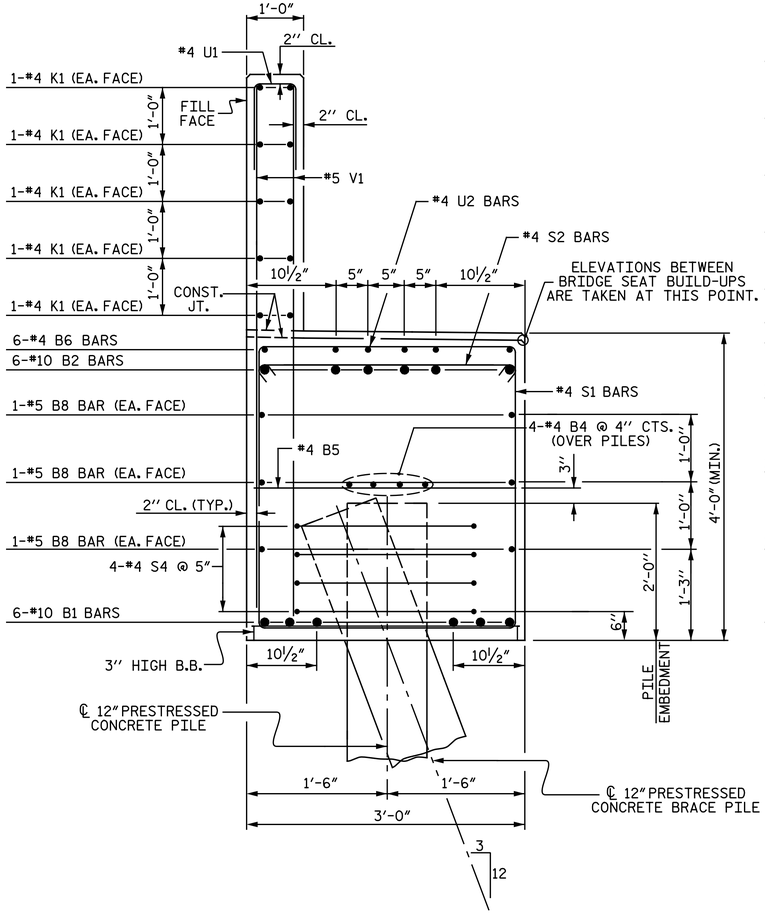
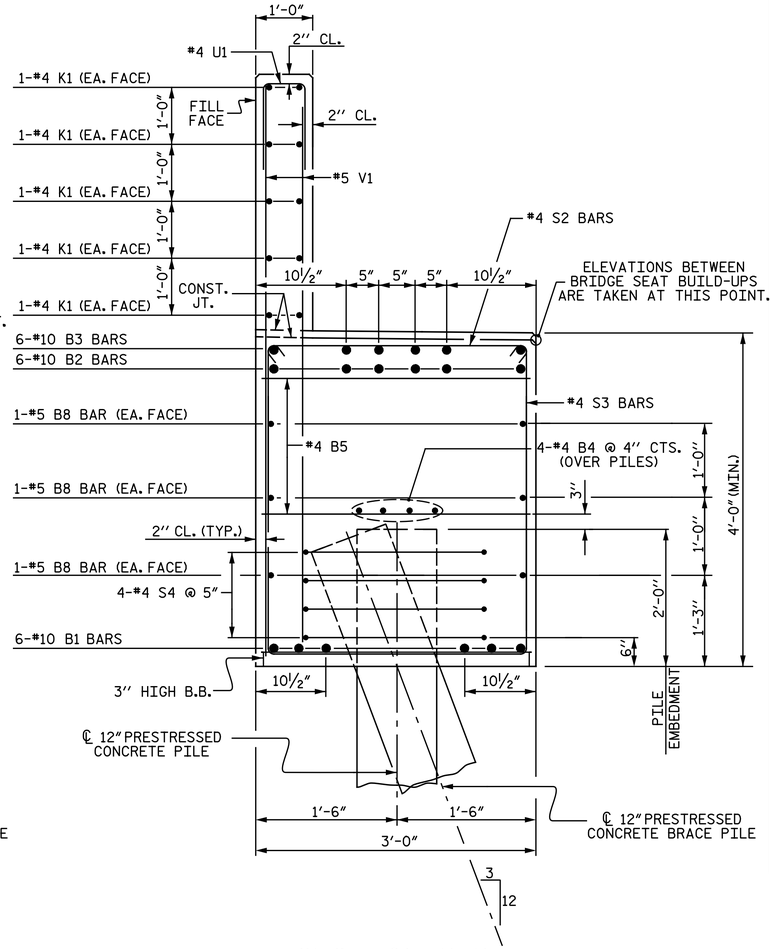
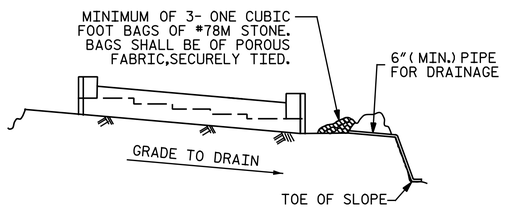
SITE 4



SECTION A-A



SECTION B-B



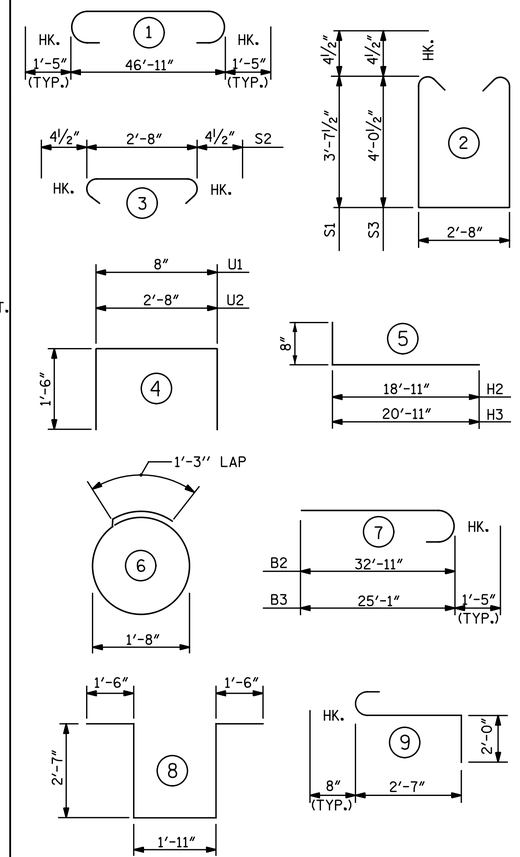
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

TEMPORARY DRAINAGE AT END BENT

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	10	1	49' - 9"	1,284
B2	6	10	7	34' - 4"	886
B3	6	10	7	26' - 6"	684
B4	8	4	STR	24' - 8"	132
B5	17	4	STR	2' - 8"	30
B6	12	4	STR	3' - 3"	26
B7	6	4	STR	7' - 7"	30
B8	6	5	STR	46' - 11"	294
H1	8	4	STR	2' - 7"	14
H2	24	4	5	19' - 7"	314
H3	32	4	5	21' - 7"	461
K1	20	4	STR	24' - 8"	330
S1	33	4	2	10' - 8"	235
S2	70	4	3	3' - 5"	160
S3	37	4	2	11' - 6"	284
S4	28	4	6	6' - 6"	122
S5	6	6	8	10' - 1"	91
S6	6	6	9	5' - 3"	47
U1	42	4	4	3' - 8"	103
U2	12	4	4	5' - 8"	45
V1	84	5	STR	8' - 3"	723
V2	46	5	STR	9' - 8"	464
V3	50	5	STR	10' - 7"	552

REINFORCING STEEL LBS. 7,311

CLASS "A" CONCRETE BREAKDOWN

POUR #1 - CAP & LOWER WING WALLS C.Y. 30.1

POUR #2 - BACKWALL & UPPER WING WALLS C.Y. 18.1

TOTAL CLASS "A" CONCRETE C.Y. 48.2

12" PRESTRESSED CONCRETE PILES NO. 9 LIN. FT. 360

PILE REDRIVES EA. 4

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 3 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

END BENT 1 DETAILS

RIGHT LANE

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-35
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 3-18-14
CHECKED BY : A. M. HOUSTON DATE : 3-18-14

DWG. 35 OF 68

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3/5/2015 4:14:46 PM
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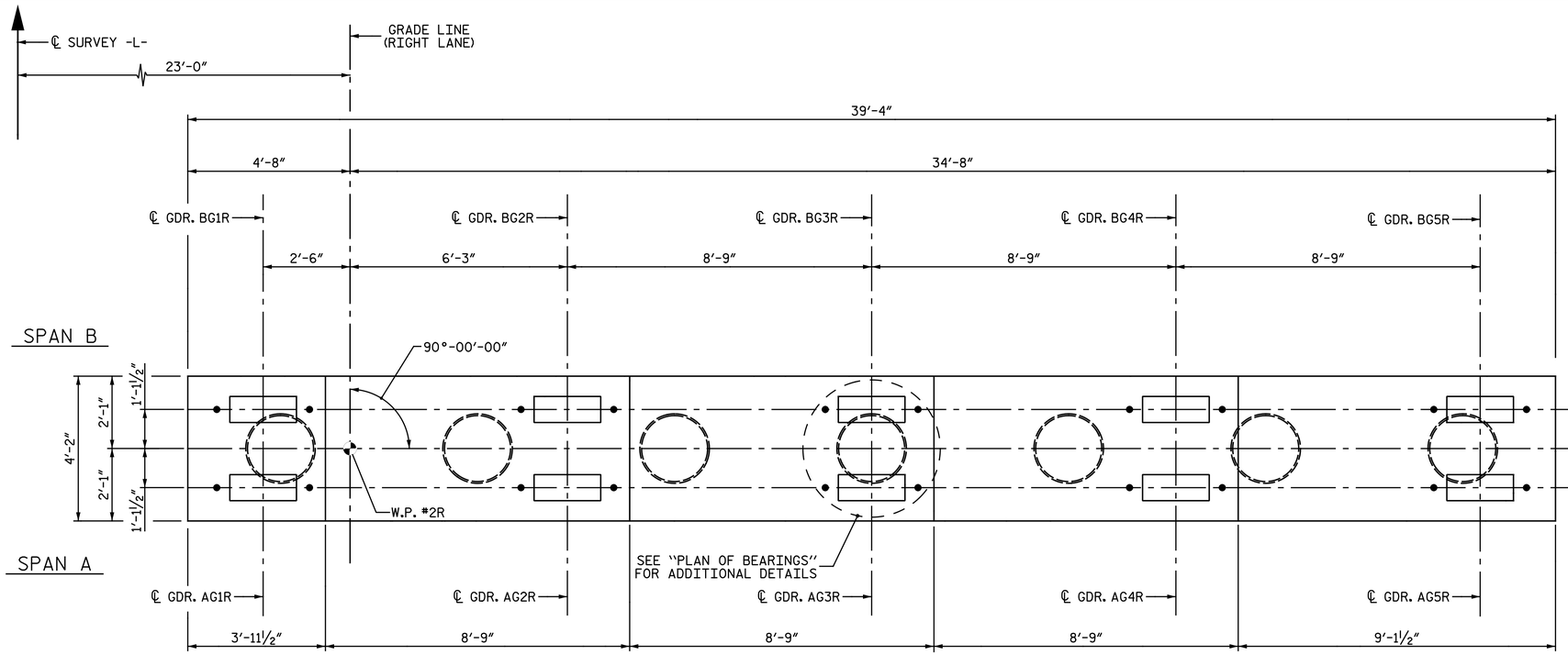
SITE 4



PLAN

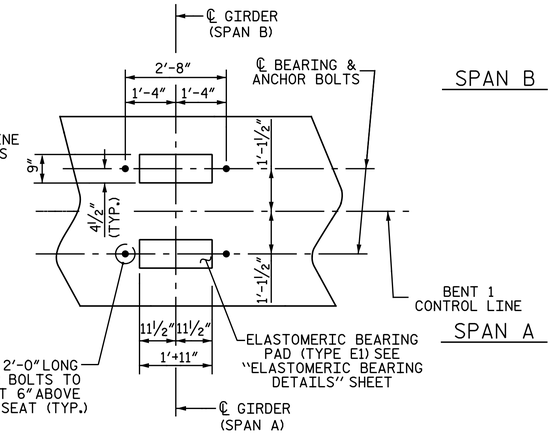
NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

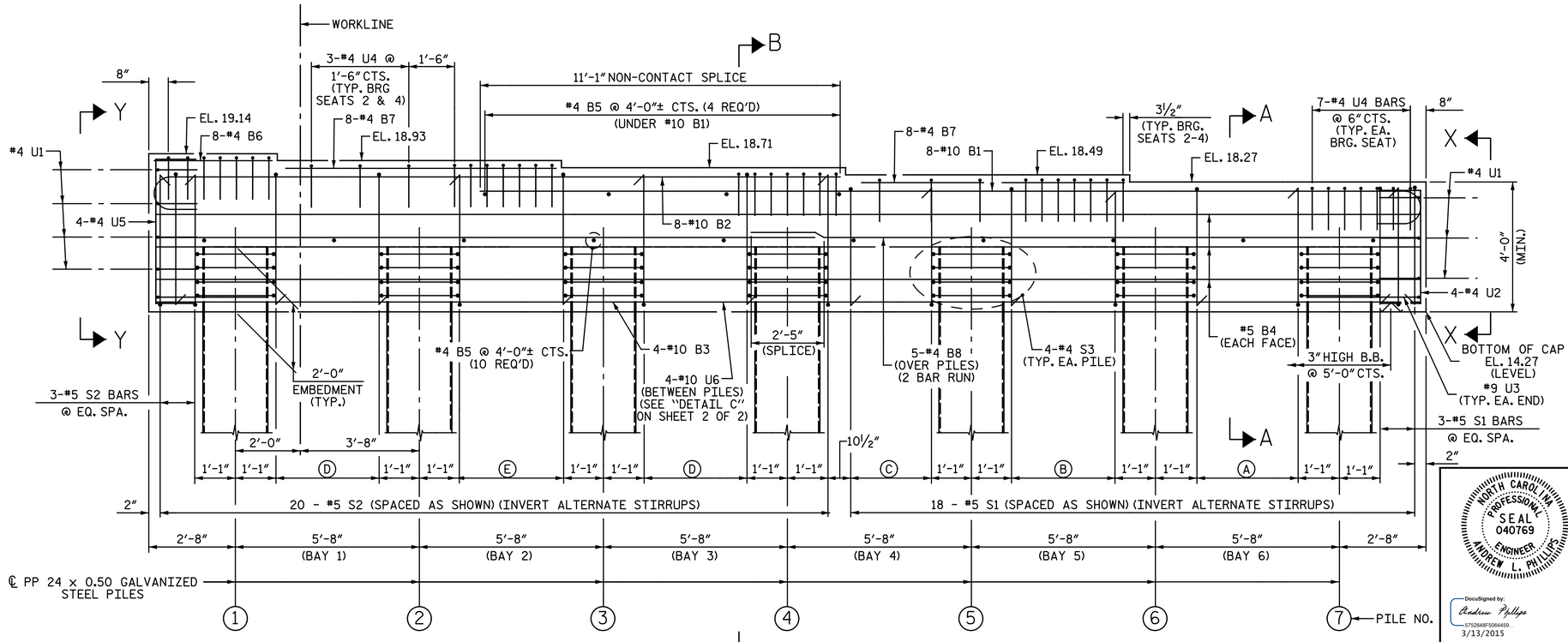
GALVANIZE THE TOP A MINIMUM OF 24 FEET OF EACH INTERIOR BENT PILE. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 5.



PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

(A) 5-#5 S1 BARS @ 1′-0″ SPACES
(B) 8-#5 S1 BARS @ 6″ SPACES
(C) 4-#5 S1 BARS @ 1′-0″ SPACES
(D) 5-#5 S2 BARS @ 1′-0″ SPACES
(E) 8-#5 S2 BARS @ 6″ SPACES

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 1

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-36
1			3			TOTAL SHEETS
2			4			68

Baker

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DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 36 OF 68

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3/5/2015 4:14:47 PM
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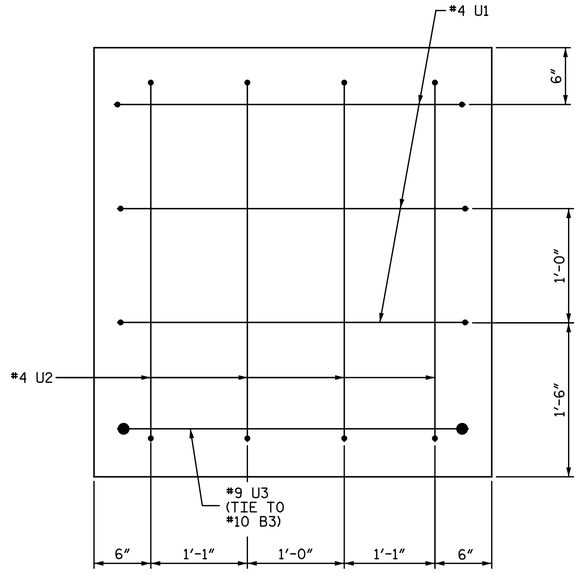
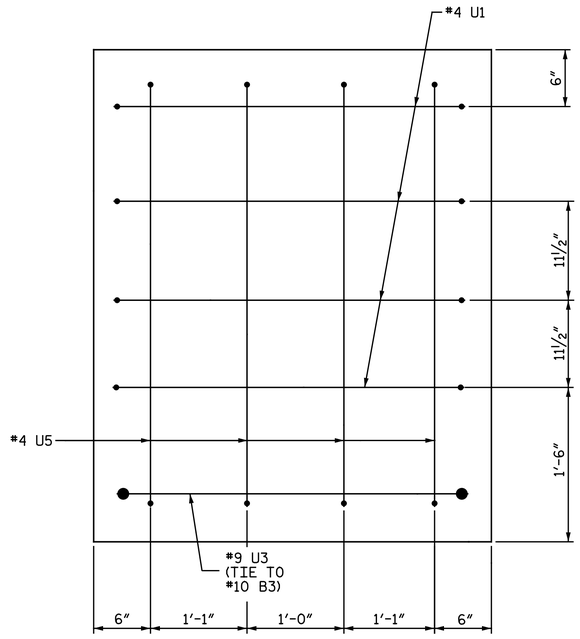
SITE 4

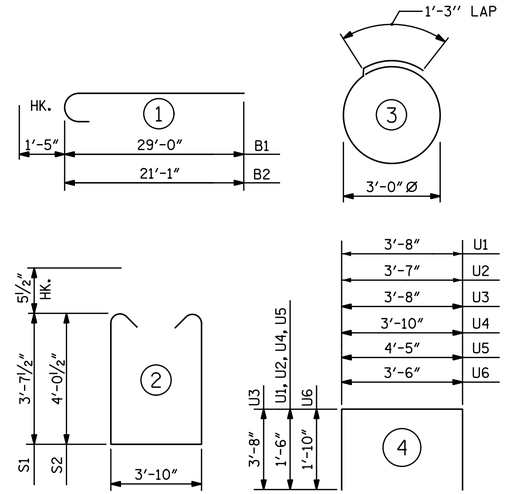


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS "A" CONCRETE BREAKDOWN

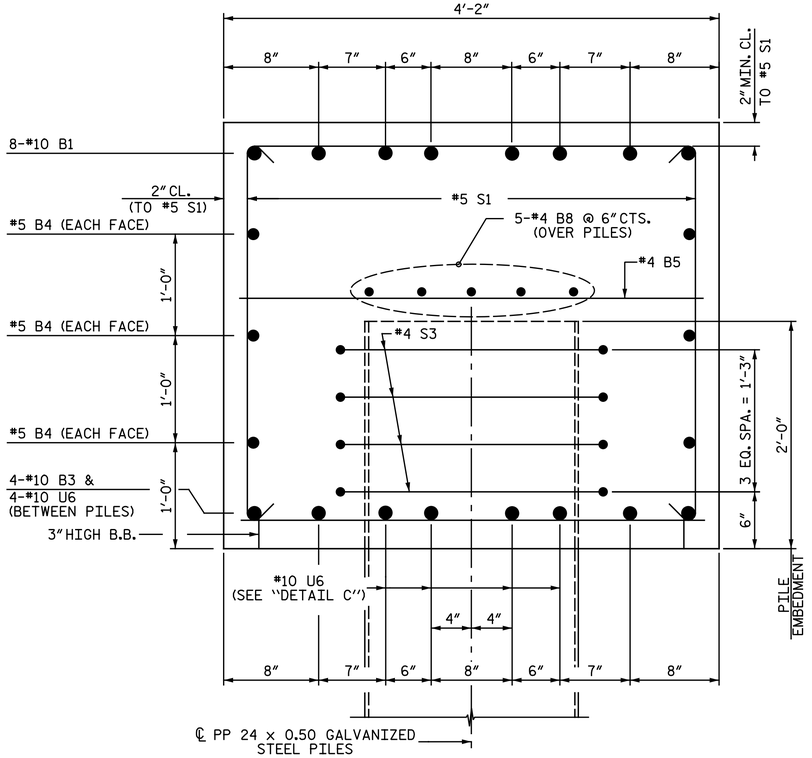
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

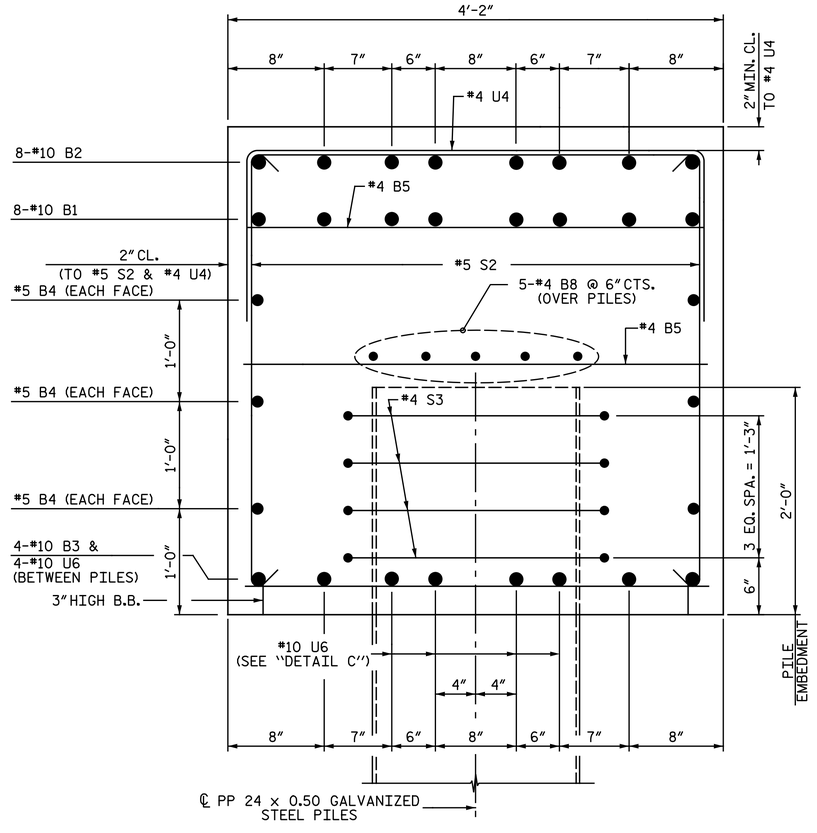
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

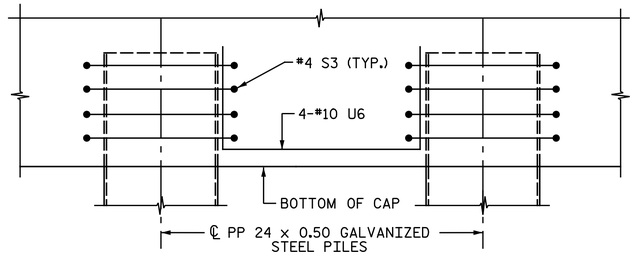
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 1 DETAILS

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-37
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 37 OF 68

SITE 4

nbspeaks
3/5/2015 4:14:48 PM
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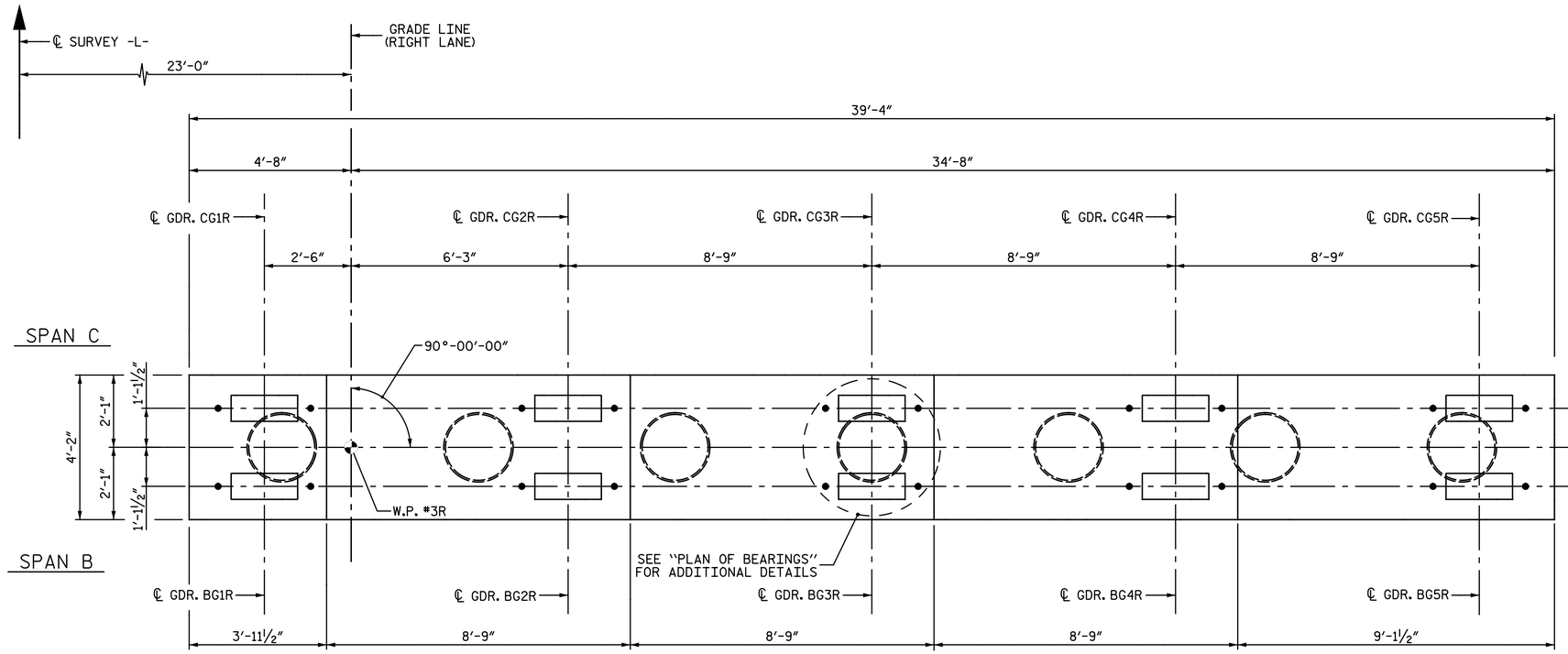
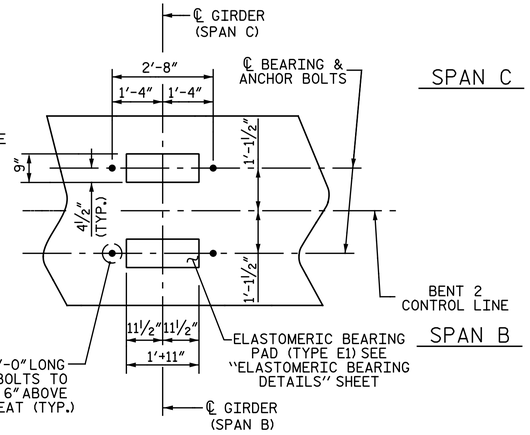


PLAN



NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

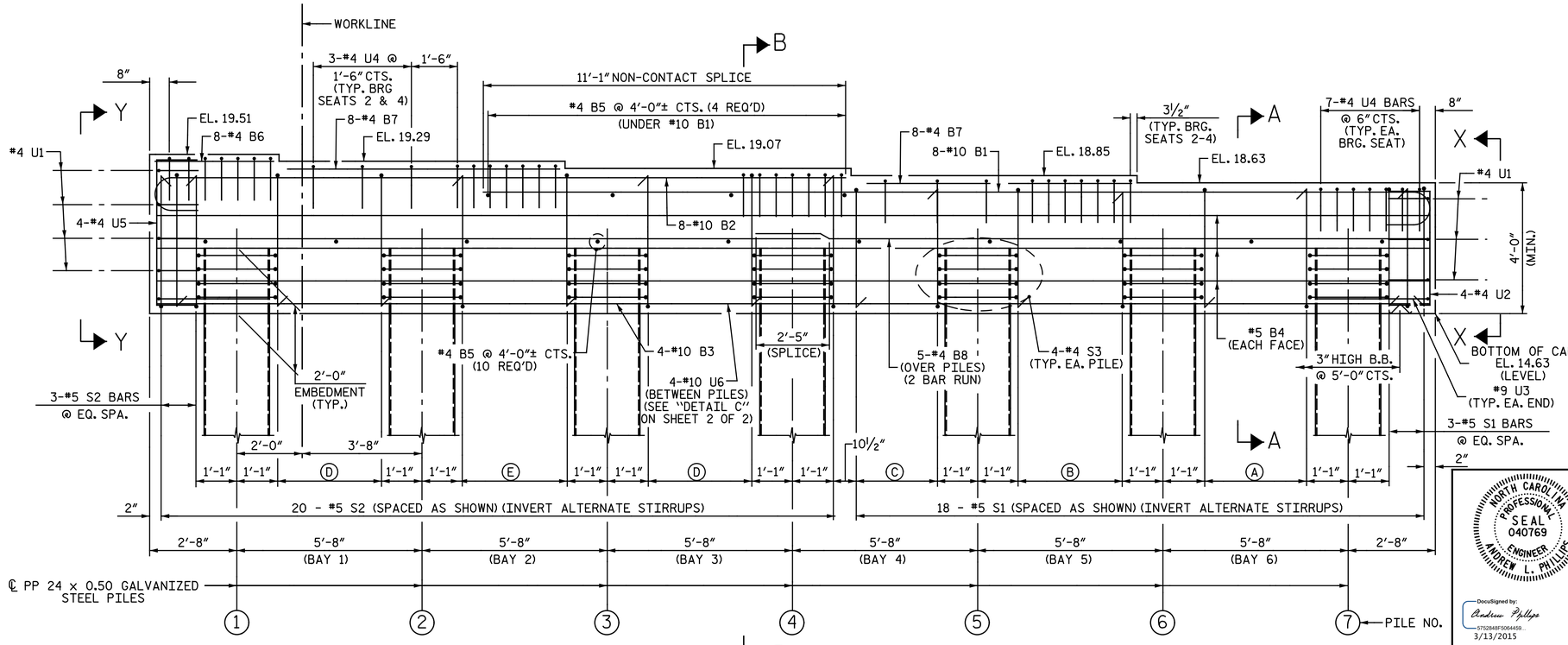
THE TOP SURFACE AREAS OF THE BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

GALVANIZE THE TOP A MINIMUM OF 24 FEET OF EACH INTERIOR BENT PILE. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 5.

PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

(A) 5-#5 S1 BARS @ 1′-0″ SPACES
(B) 8-#5 S1 BARS @ 6″ SPACES
(C) 4-#5 S1 BARS @ 1′-0″ SPACES
(D) 5-#5 S2 BARS @ 1′-0″ SPACES
(E) 8-#5 S2 BARS @ 6″ SPACES

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 3/13/2015
NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 2

RIGHT LANE

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Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-38
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 38 OF 68

nbspeaks
3/5/2015 4:14:49 PM
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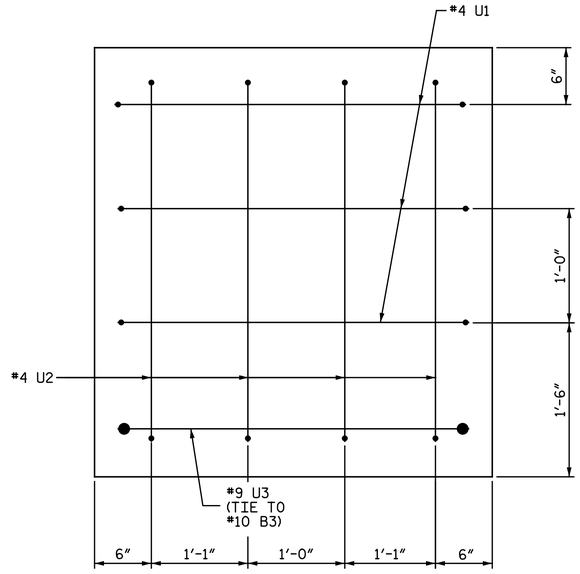
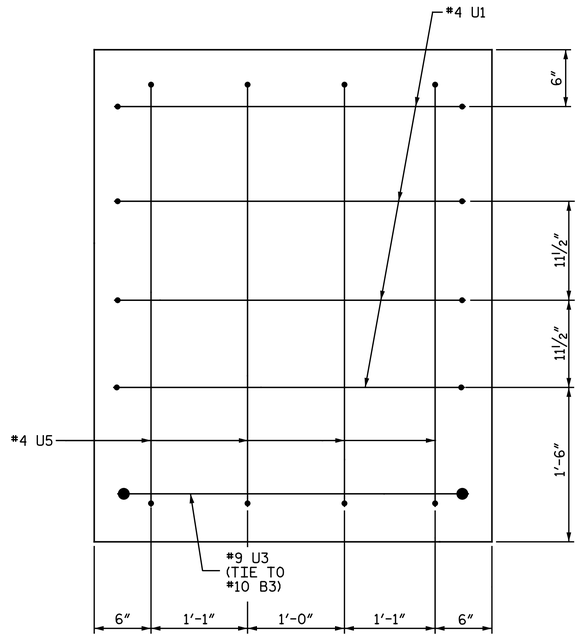
SITE 4

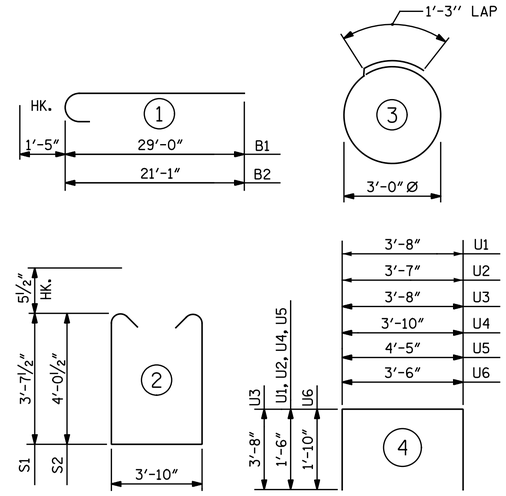


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
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U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS "A" CONCRETE BREAKDOWN

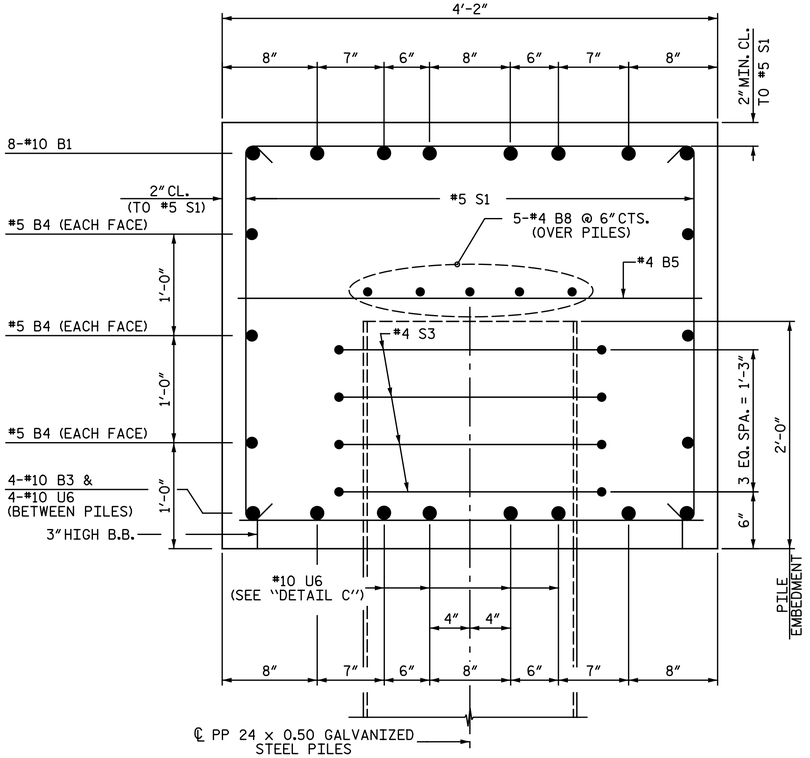
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

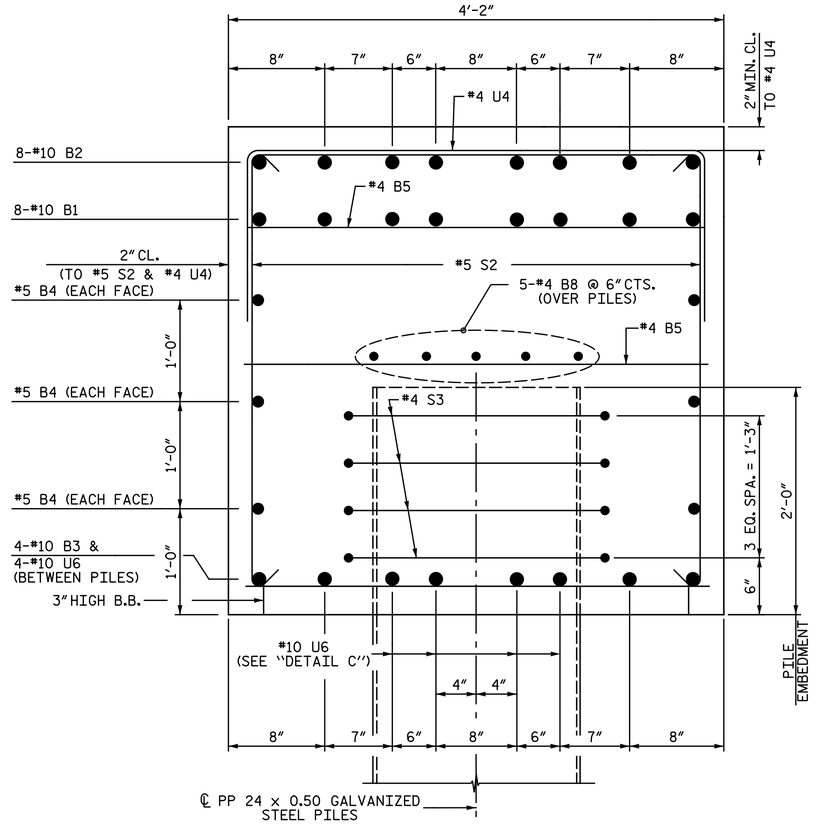
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

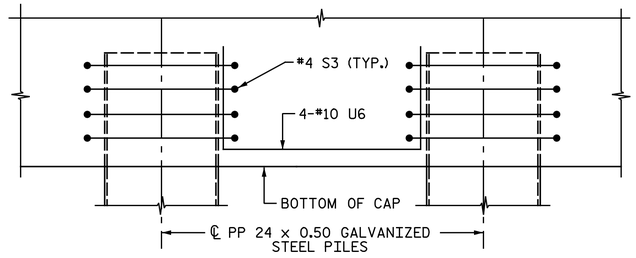
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DUAIN C. HATHAWAY

DocuSigned by: Duain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 2 DETAILS

RIGHT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-39
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 39 OF 68

nbspeaks
3/5/2015 4:14:50 PM
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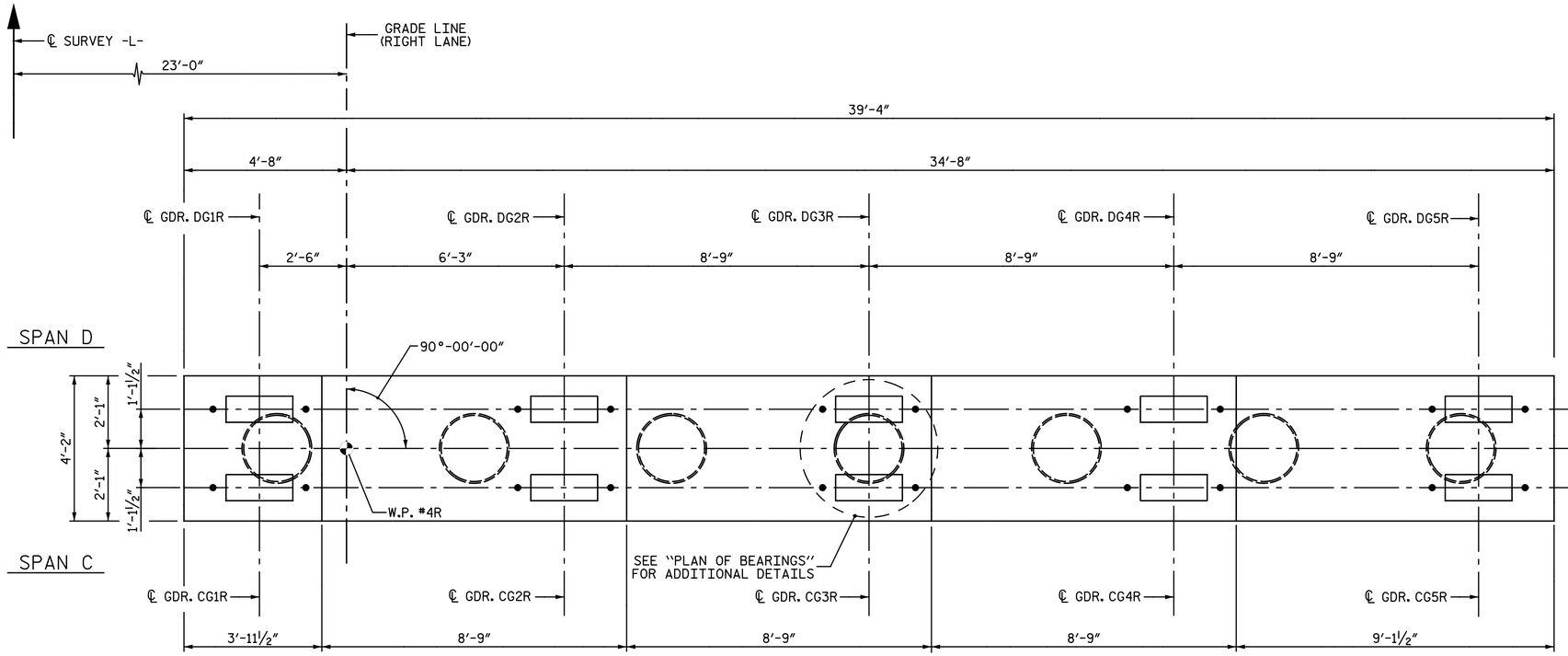
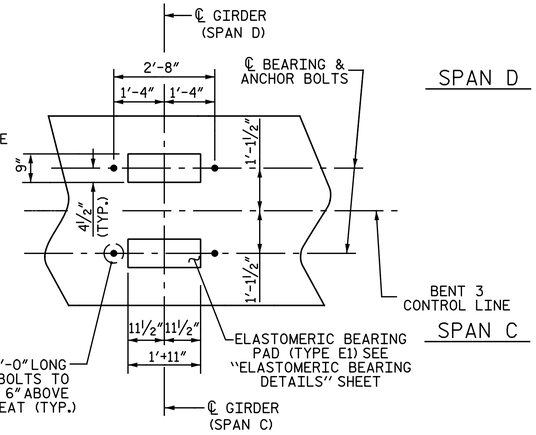
SITE 4



PLAN



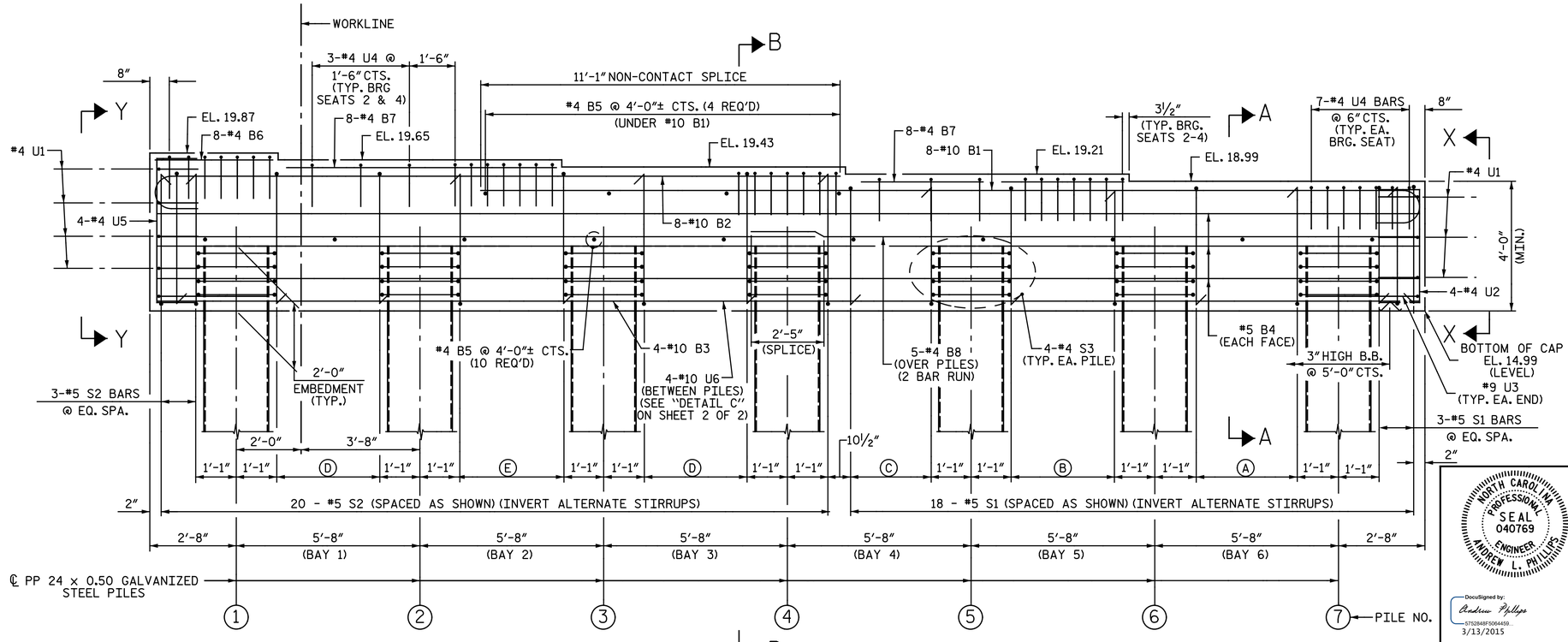
NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

GALVANIZE THE TOP A MINIMUM OF 23 FEET OF EACH INTERIOR BENT PILE. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 5.



ELEVATION

PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.

- (A) 5-#5 S1 BARS @ 1′-0″ SPACES
- (B) 8-#5 S1 BARS @ 6″ SPACES
- (C) 4-#5 S1 BARS @ 1′-0″ SPACES
- (D) 5-#5 S2 BARS @ 1′-0″ SPACES
- (E) 8-#5 S2 BARS @ 6″ SPACES

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752B48F5064450... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 2837B6D71DA0480... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 3

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-40
1			3			TOTAL SHEETS
2			4			68

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 40 OF 68

nbspeaks
3/5/2015 4:14:50 PM
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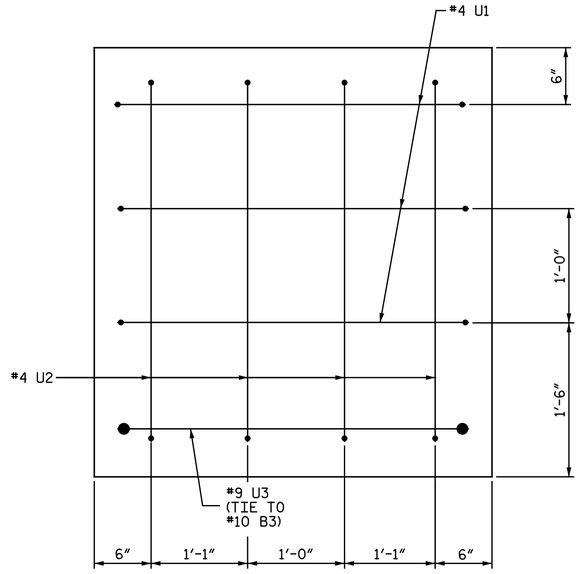
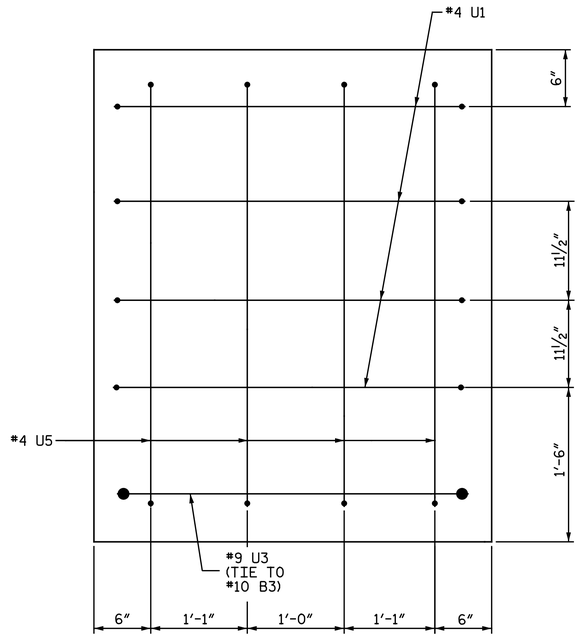
SITE 4

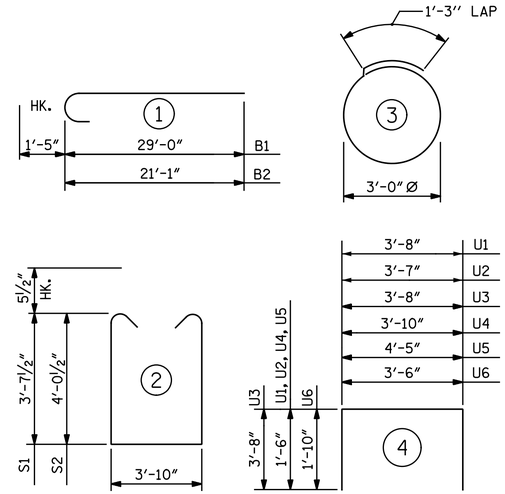


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 3

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS ''A'' CONCRETE BREAKDOWN

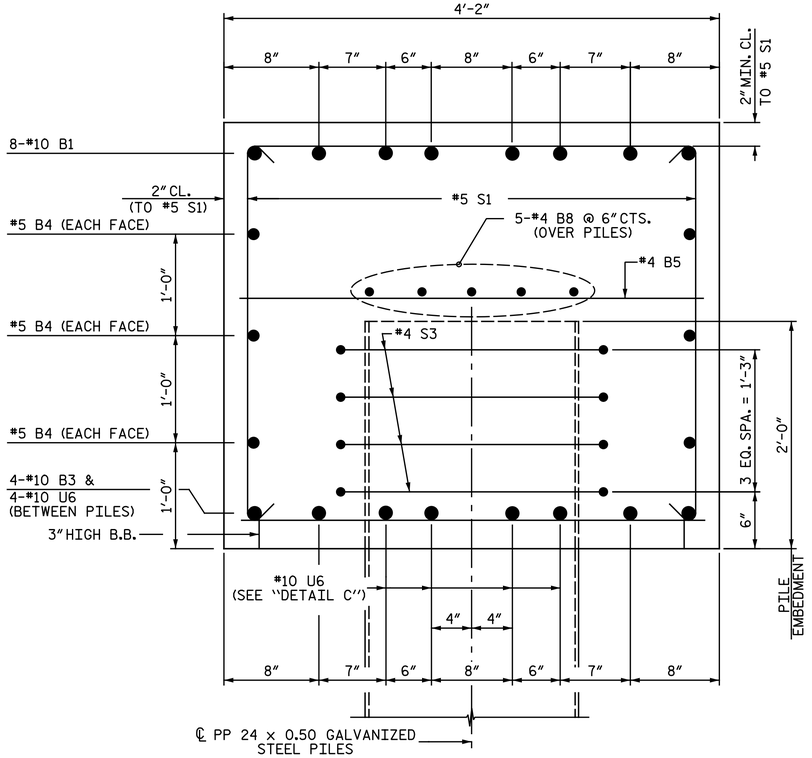
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

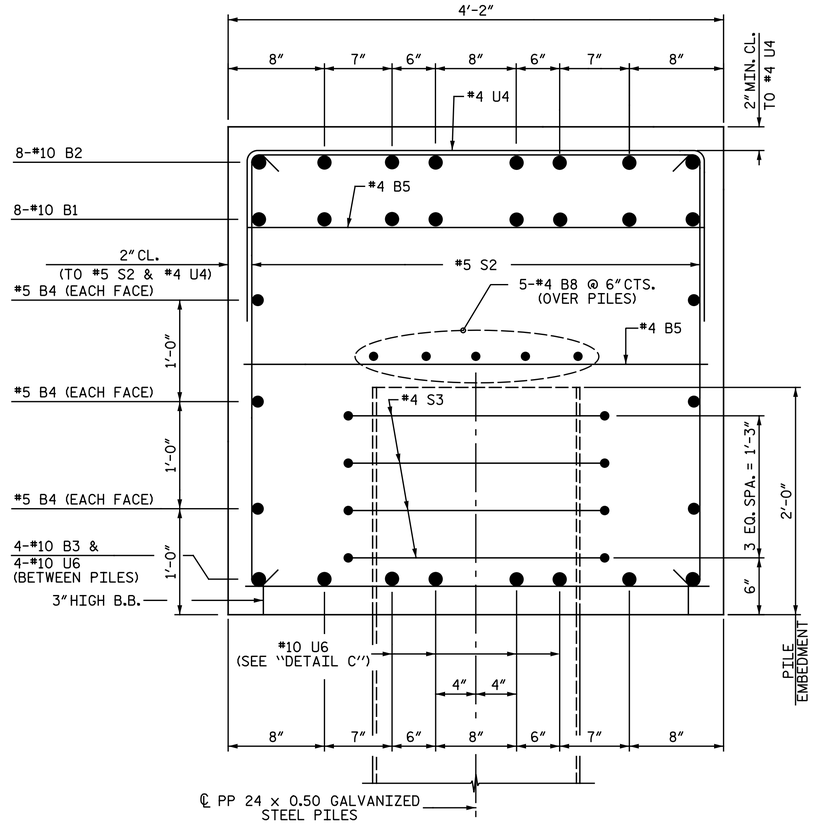
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

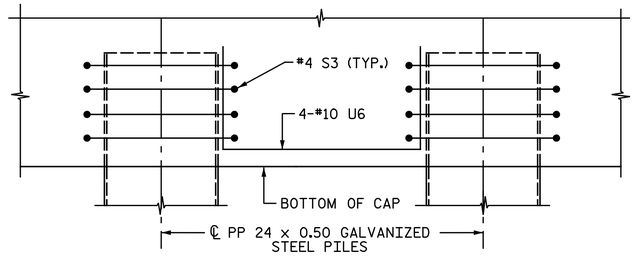
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DUAIN C. HATHAWAY

DocuSigned by: Duain Hathaway 283786071DA0460... 3/13/2015

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 3 DETAILS

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-41
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 41 OF 68

SITE 4

nbspeaks
3/5/2015 4:14:51 PM
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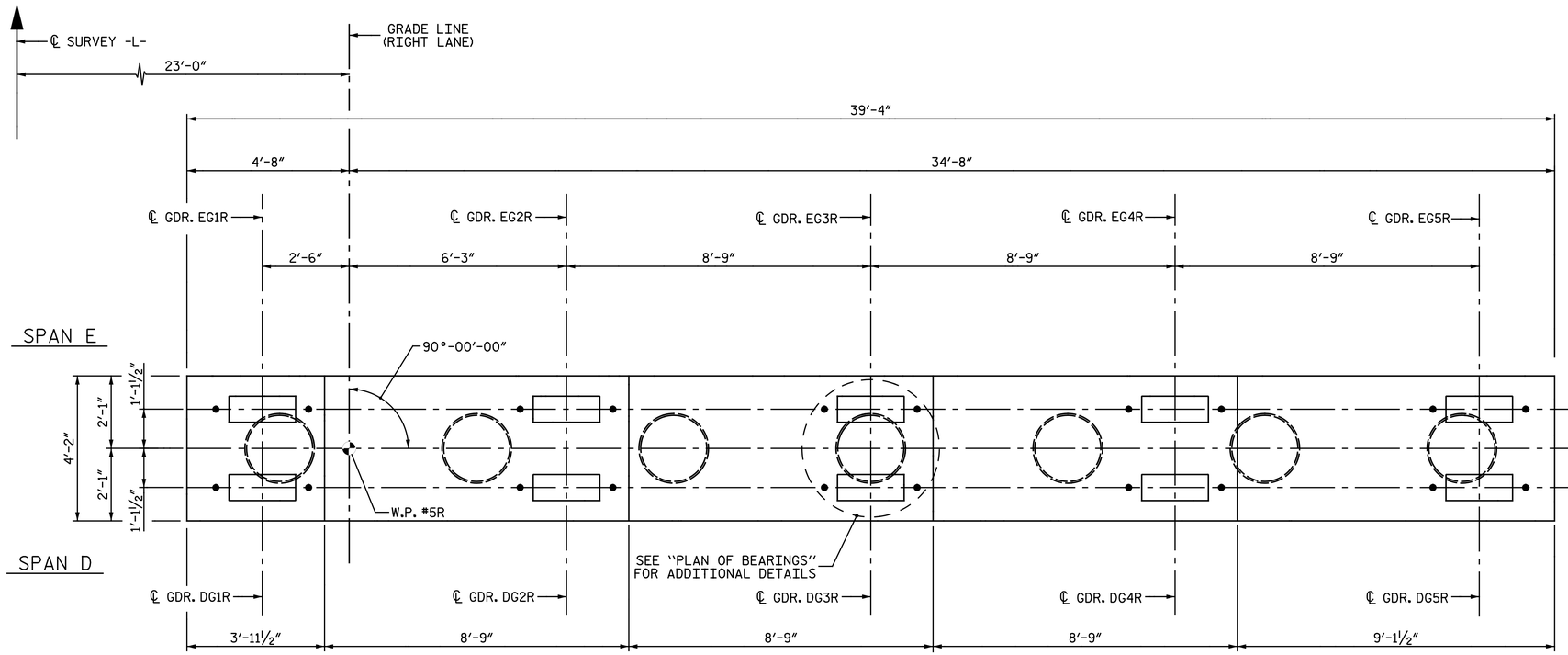
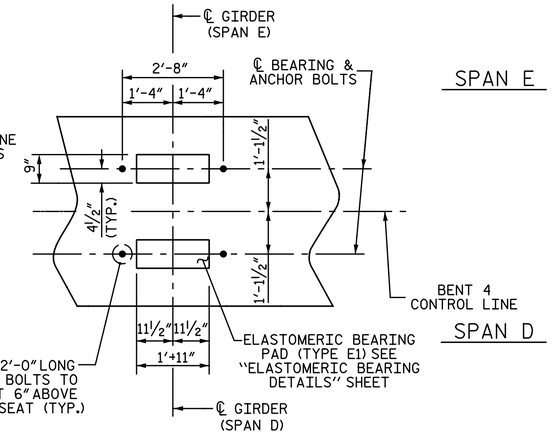


PLAN



NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

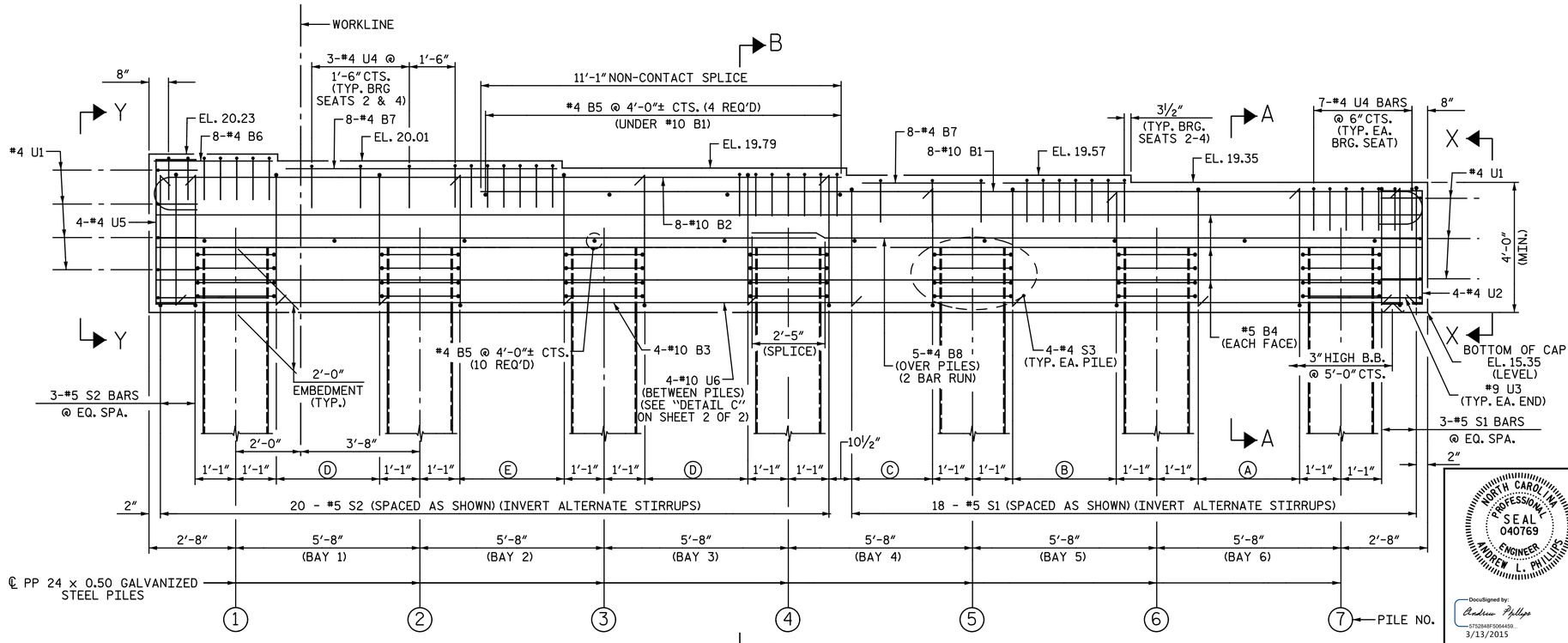
GALVANIZE THE TOP A MINIMUM OF 22 FEET OF EACH INTERIOR BENT PILE. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 5.

PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.

Ⓐ 5-#5 S1 BARS @ 1′-0″ SPACES
Ⓑ 8-#5 S1 BARS @ 6″ SPACES
Ⓒ 4-#5 S1 BARS @ 1′-0″ SPACES
Ⓓ 5-#5 S2 BARS @ 1′-0″ SPACES
Ⓔ 8-#5 S2 BARS @ 6″ SPACES



ELEVATION

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752B48F5064459...
3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780D1DA0A49...
3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 4

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-42
1			3			TOTAL SHEETS
2			4			68

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 42 OF 68

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3/5/2015 4:14:52 PM
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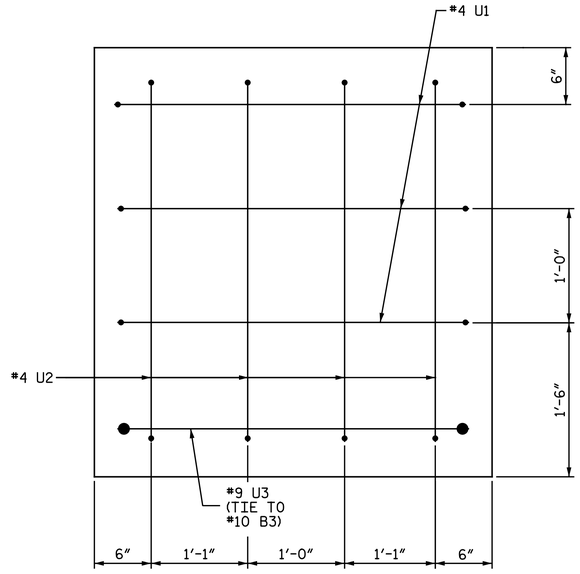
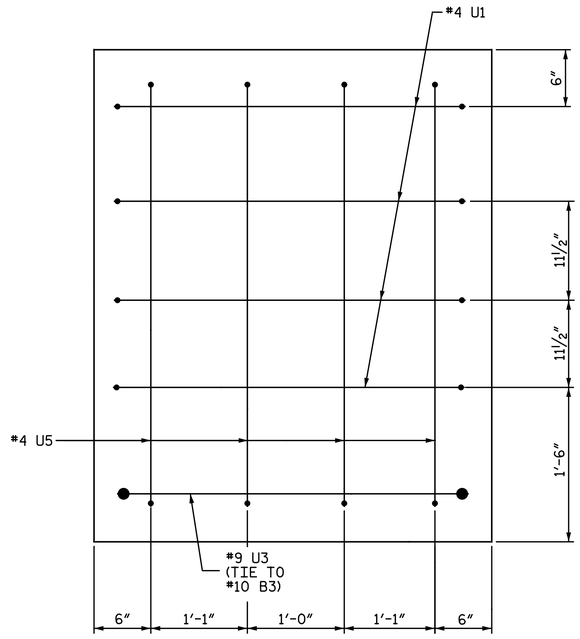
SITE 4

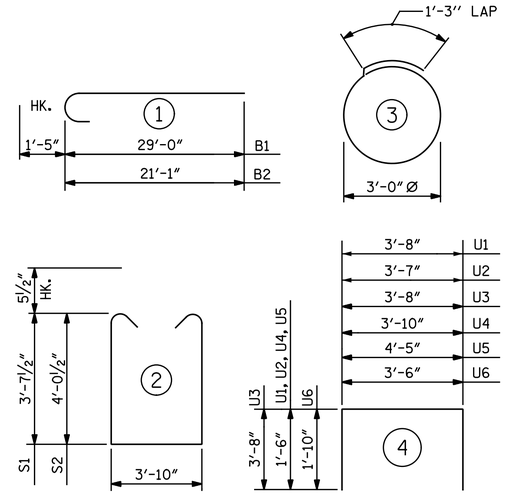


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 4

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS "A" CONCRETE BREAKDOWN

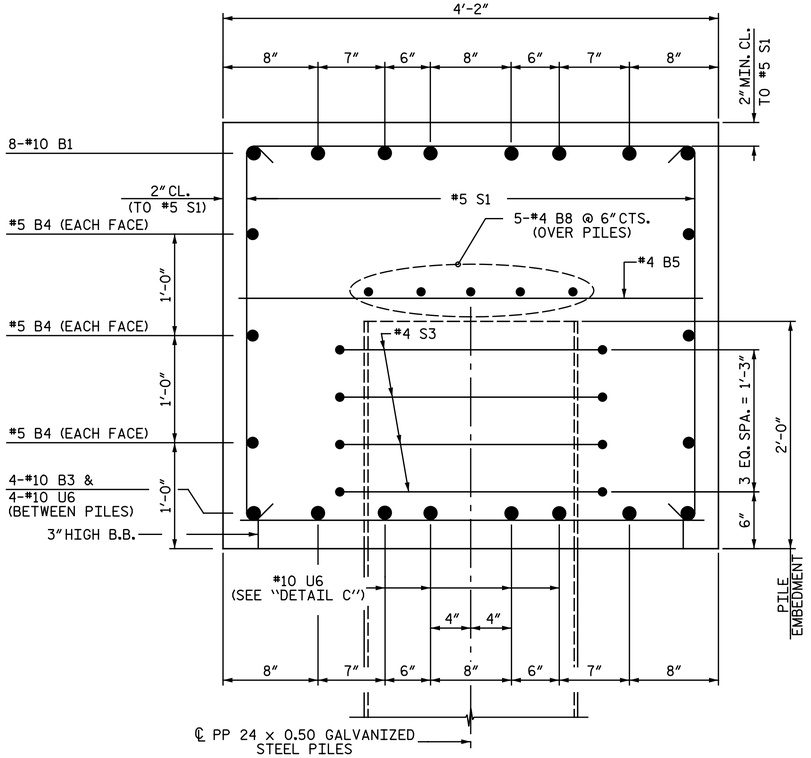
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

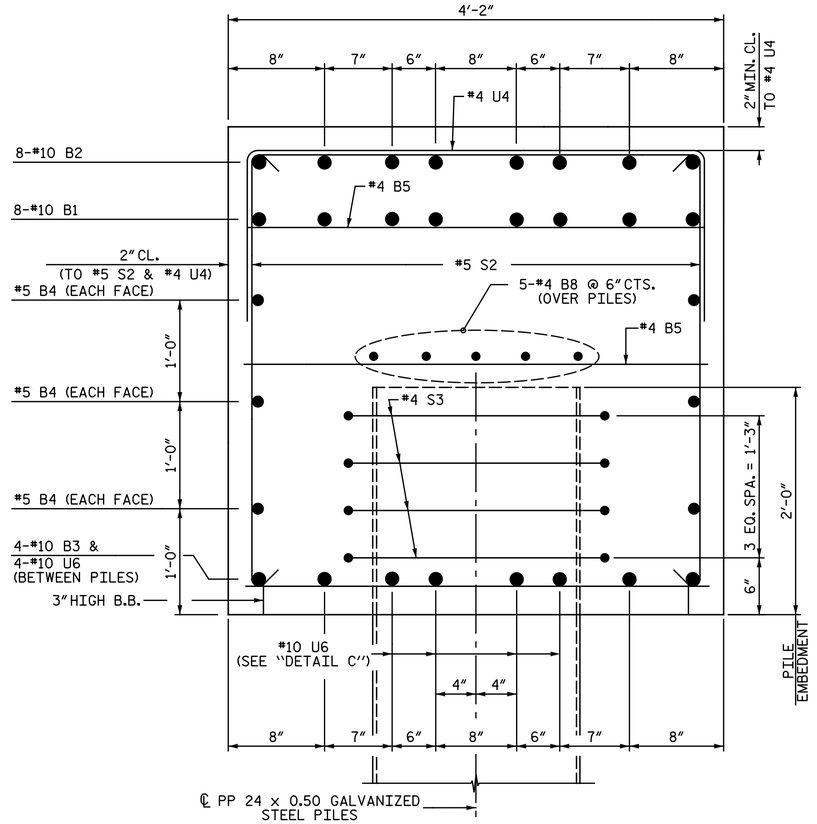
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

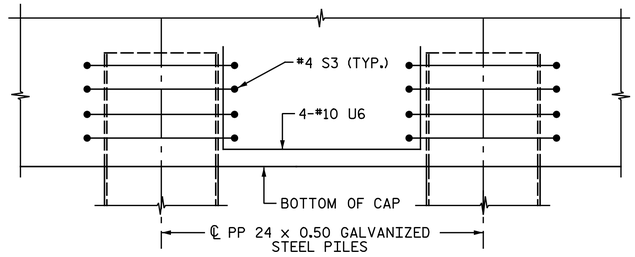
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DUAIN C. HATHAWAY

DocuSigned by: Duain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 4 DETAILS

RIGHT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-43
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 43 OF 68

nbspeaks
3/5/2015 4:14:53 PM
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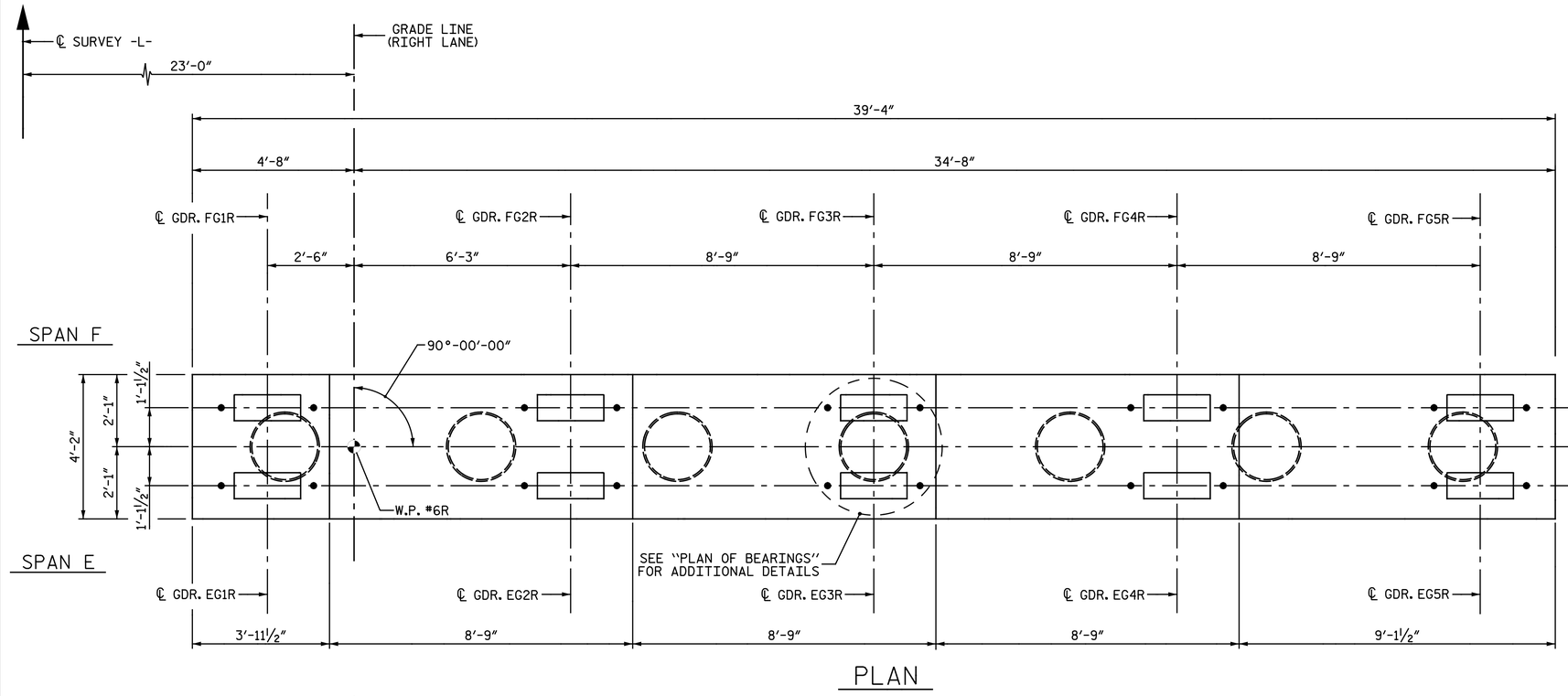
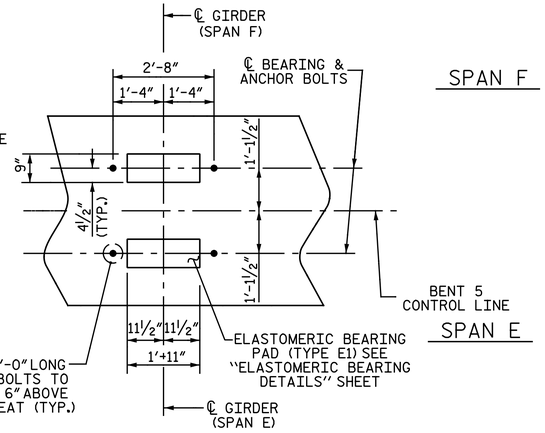
SITE 4



PLAN



NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

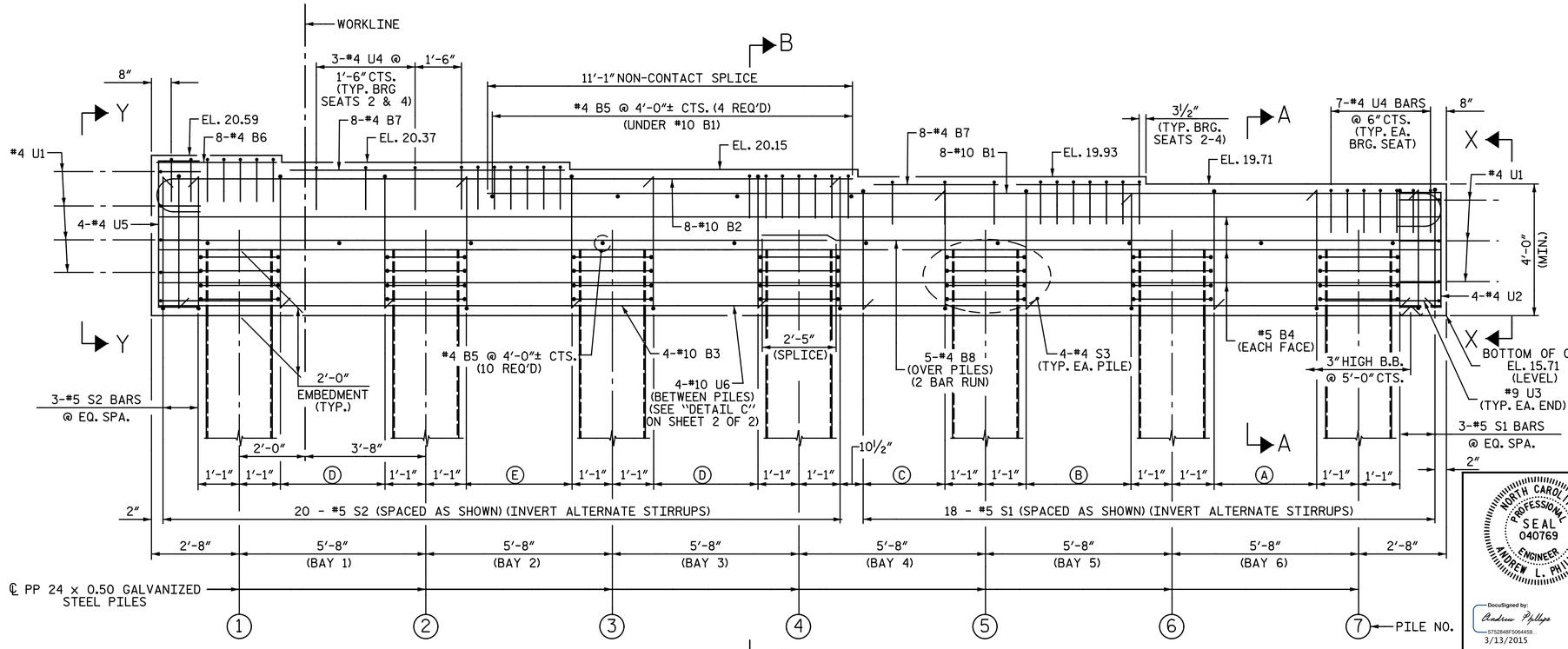
THE TOP SURFACE AREAS OF THE BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

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

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 5.

PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

- (A) 5-#5 S1 BARS @ 1′-0″ SPACES
- (B) 8-#5 S1 BARS @ 6″ SPACES
- (C) 4-#5 S1 BARS @ 1′-0″ SPACES
- (D) 5-#5 S2 BARS @ 1′-0″ SPACES
- (E) 8-#5 S2 BARS @ 6″ SPACES

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 572D8481509445... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 5

RIGHT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-44
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 44 OF 68

nbspeaks
3/5/2015 4:14:54 PM
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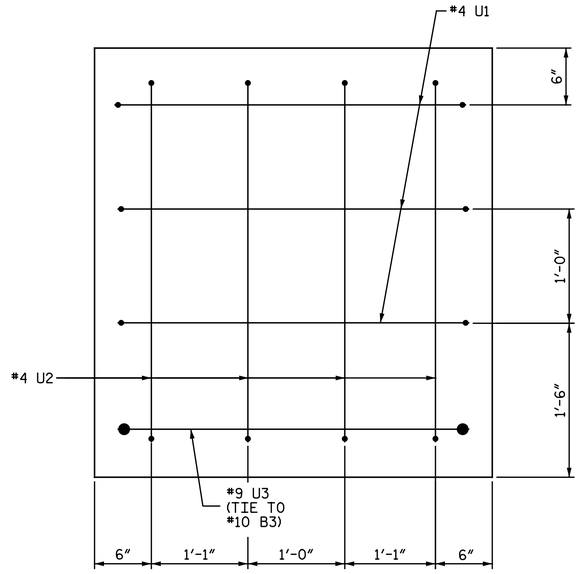
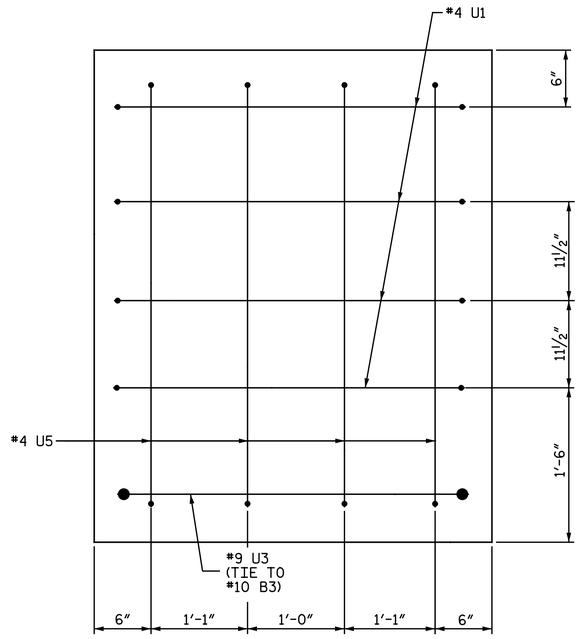
SITE 4

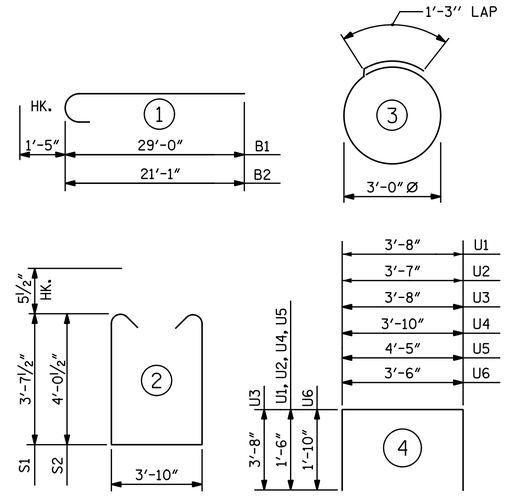


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 5

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30' - 5"	1,047
B2	8	10	1	22' - 6"	775
B3	4	10	STR	39' - 0"	671
B4	6	5	STR	39' - 0"	244
B5	14	4	STR	3' - 10"	36
B6	8	4	STR	3' - 7"	19
B7	16	4	STR	8' - 7"	92
B8	10	4	STR	20' - 9"	139
S1	20	5	2	12' - 0"	250
S2	22	5	2	12' - 10"	294
S3	28	4	3	10' - 9"	201
U1	7	4	4	6' - 8"	31
U2	4	4	4	6' - 7"	18
U3	2	9	4	11' - 0"	75
U4	41	4	4	6' - 10"	187
U5	4	4	4	7' - 5"	20
U6	24	10	4	7' - 2"	740

REINFORCING STEEL LBS. 4,839

CLASS "A" CONCRETE BREAKDOWN

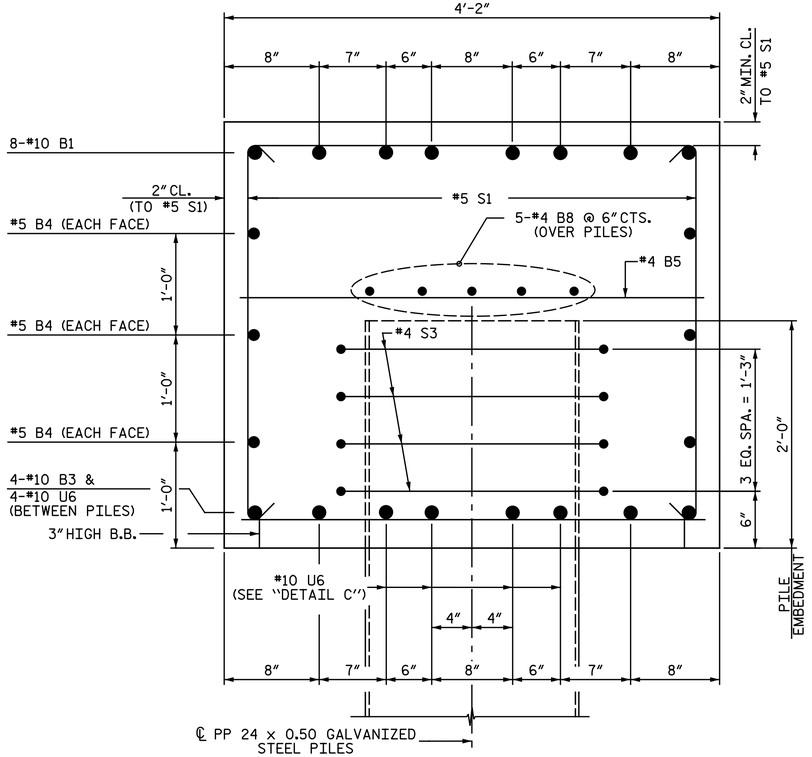
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

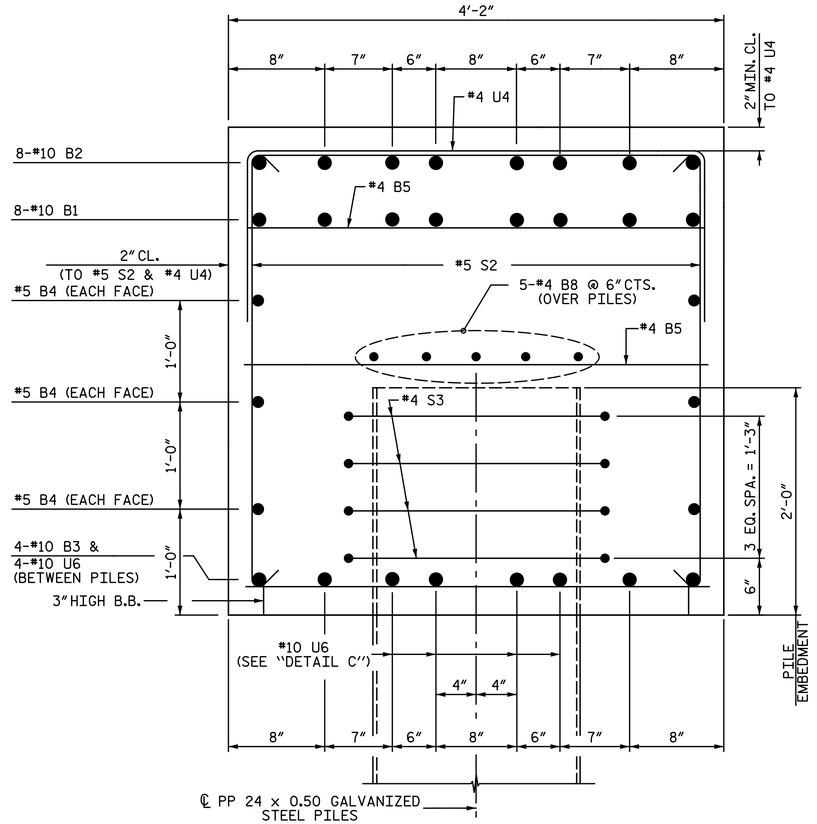
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

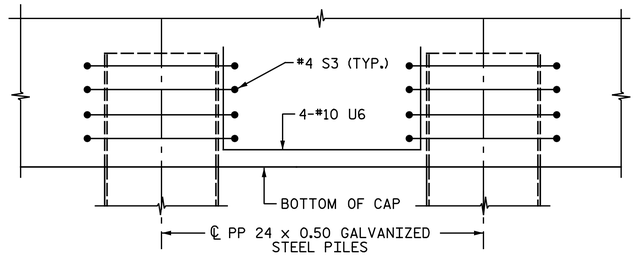
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DUAIN C. HATHAWAY

DocuSigned by: Duain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 5 DETAILS

RIGHT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-45
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 45 OF 68

SITE 4

nbspeaks
3/5/2015 4:14:54 PM
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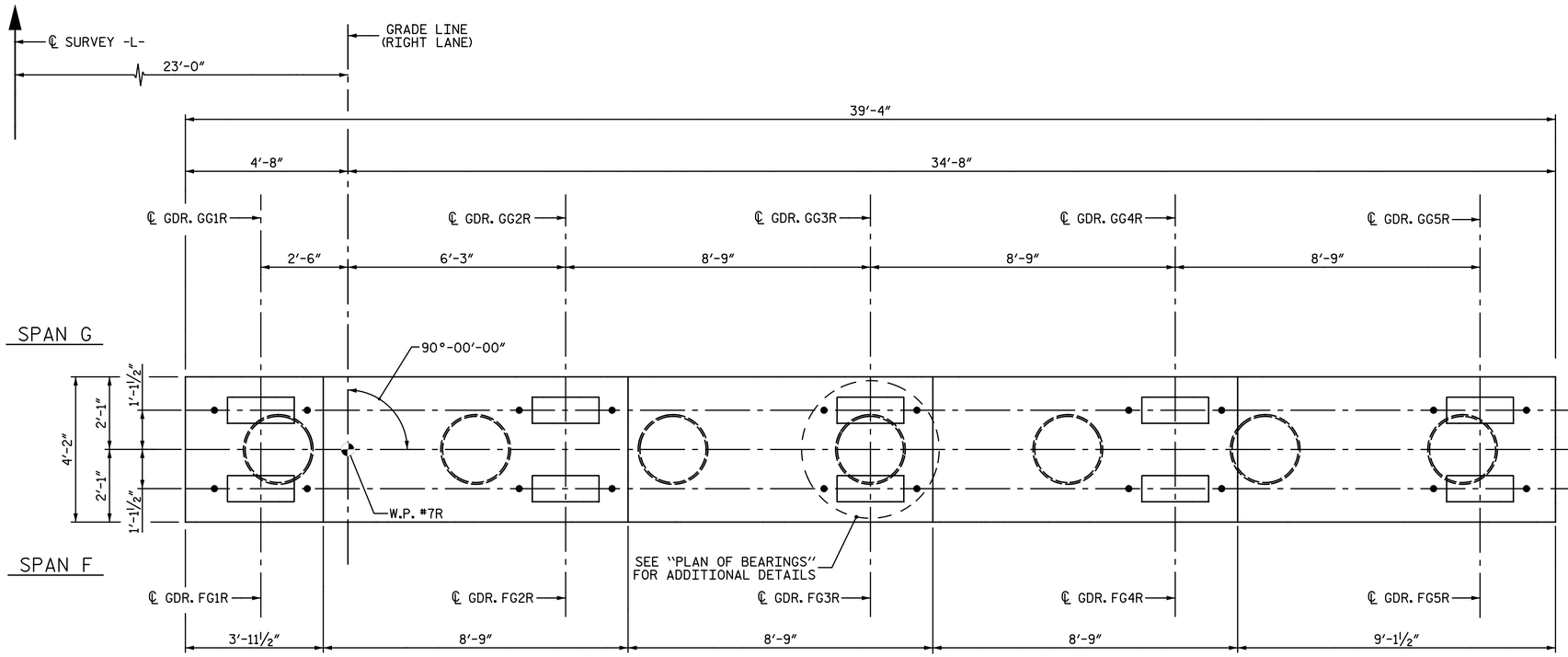
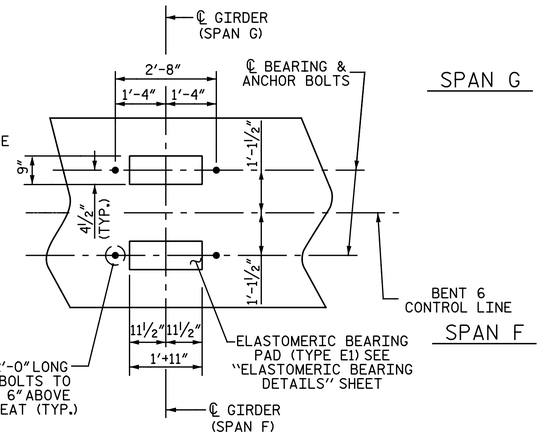


PLAN



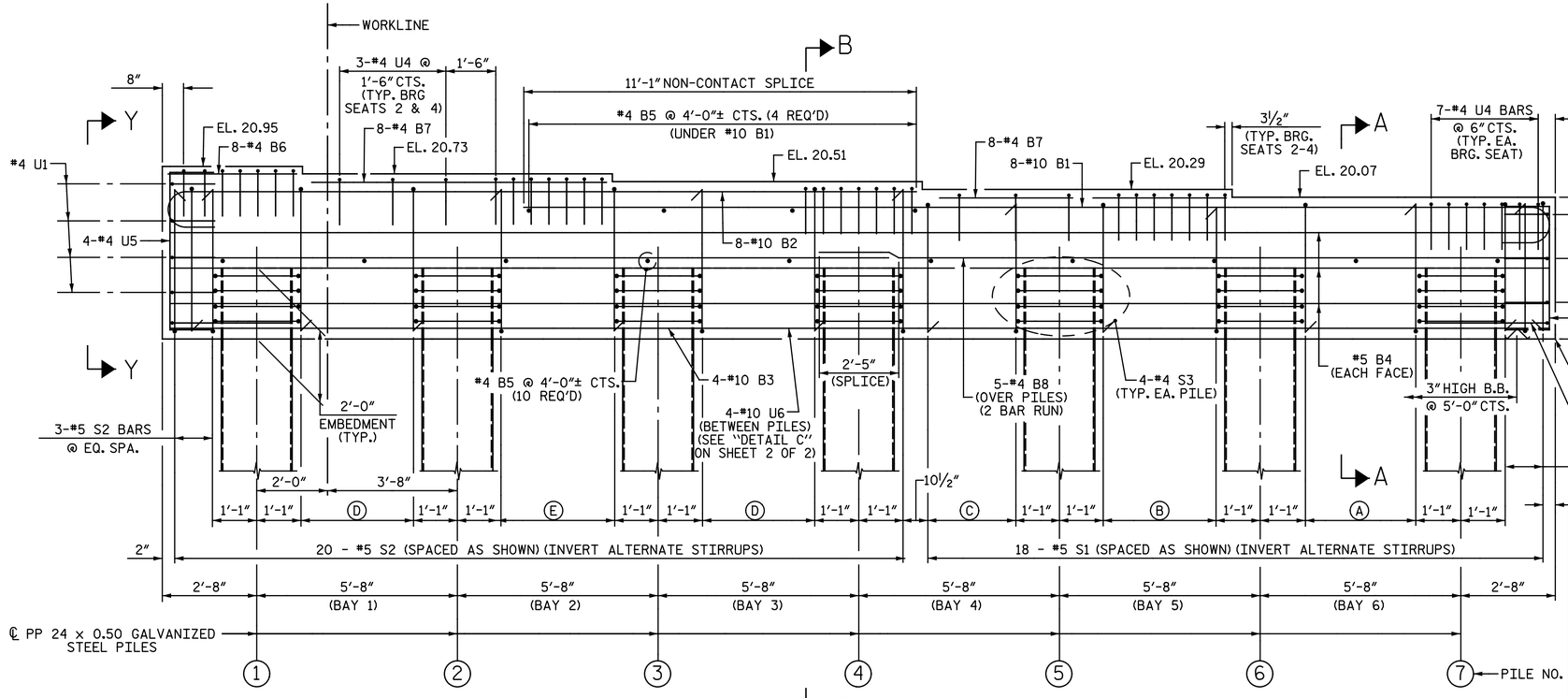
NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

GALVANIZE THE TOP A MINIMUM OF 35 FEET OF EACH INTERIOR BENT PILE. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 3 OF 5.



ELEVATION

PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.

- (A) 5-#5 S1 BARS @ 1′-0″ SPACES
- (B) 8-#5 S1 BARS @ 6″ SPACES
- (C) 4-#5 S1 BARS @ 1′-0″ SPACES
- (D) 5-#5 S2 BARS @ 1′-0″ SPACES
- (E) 8-#5 S2 BARS @ 6″ SPACES

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 57329A6F5084459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 6

RIGHT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-46
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 46 OF 68

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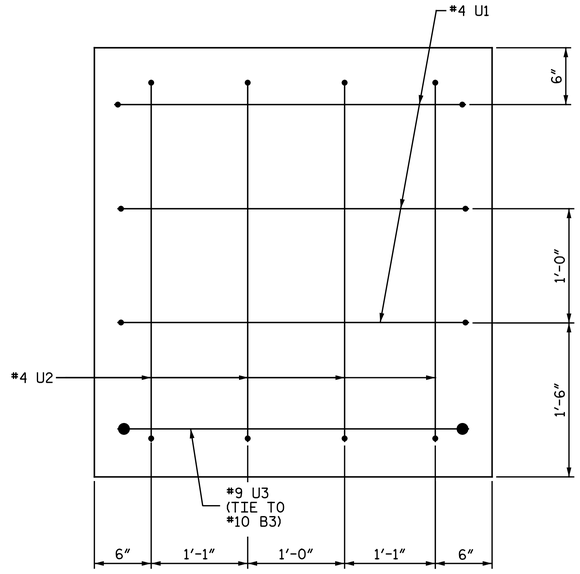
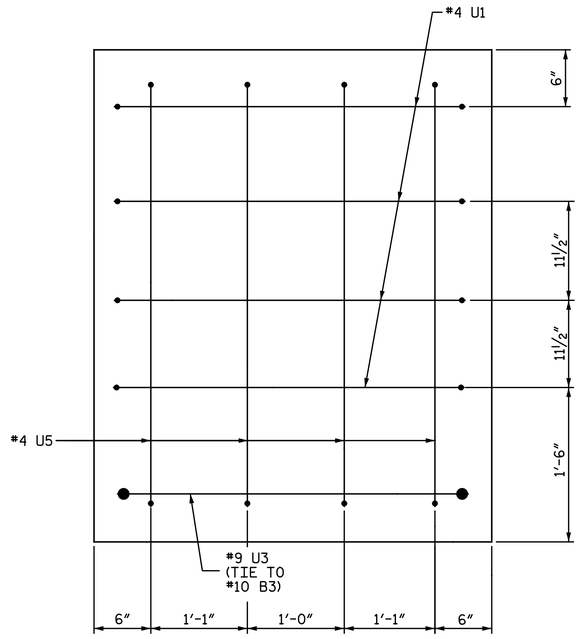
SITE 4

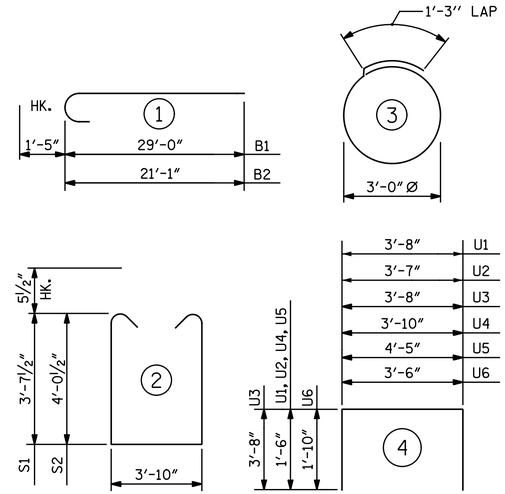


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 6

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS "A" CONCRETE BREAKDOWN

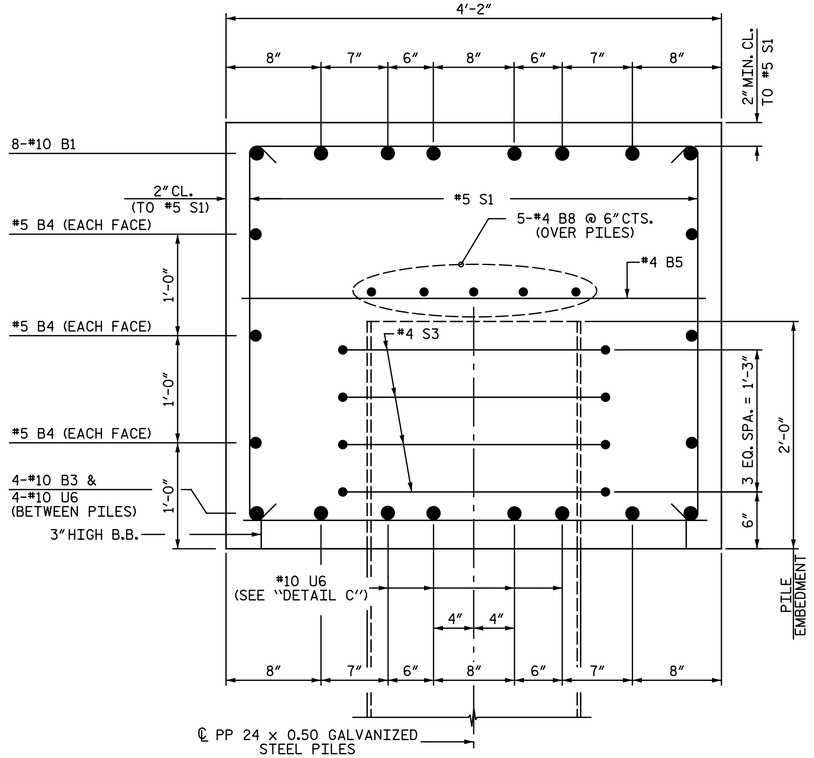
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

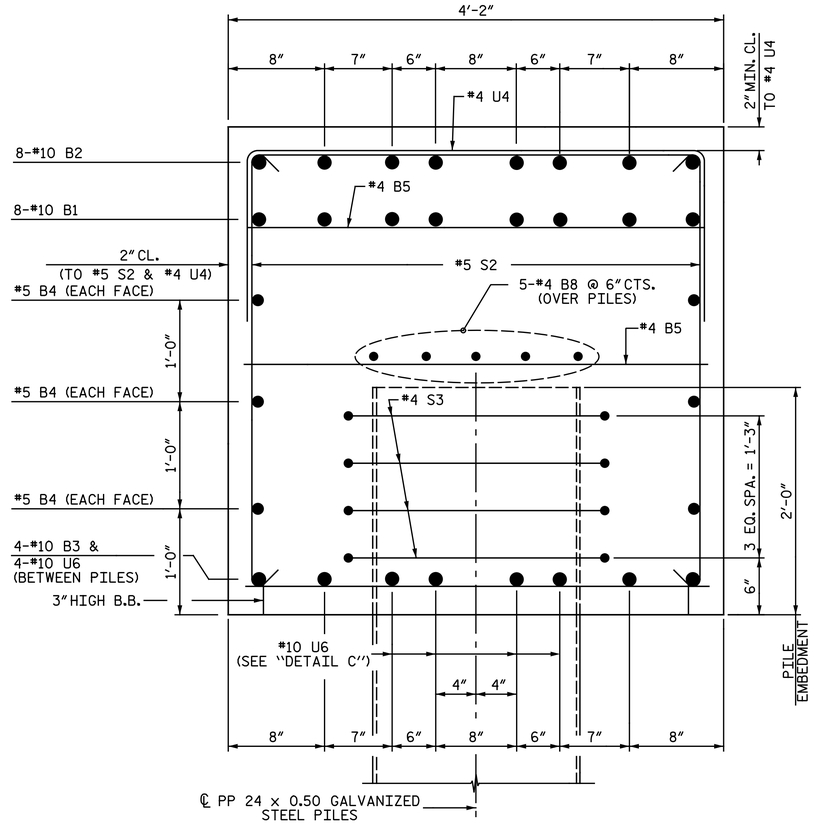
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

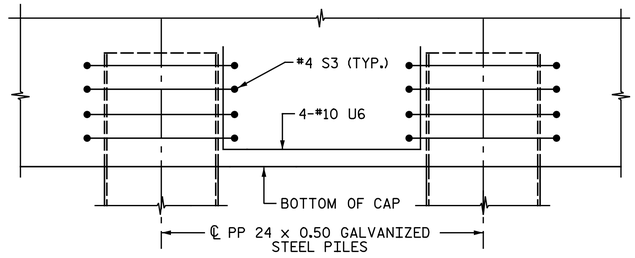
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN C. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 6 DETAILS

RIGHT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-47
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 47 OF 68

SITE 4

nbspeaks
3/5/2015 4:14:56 PM
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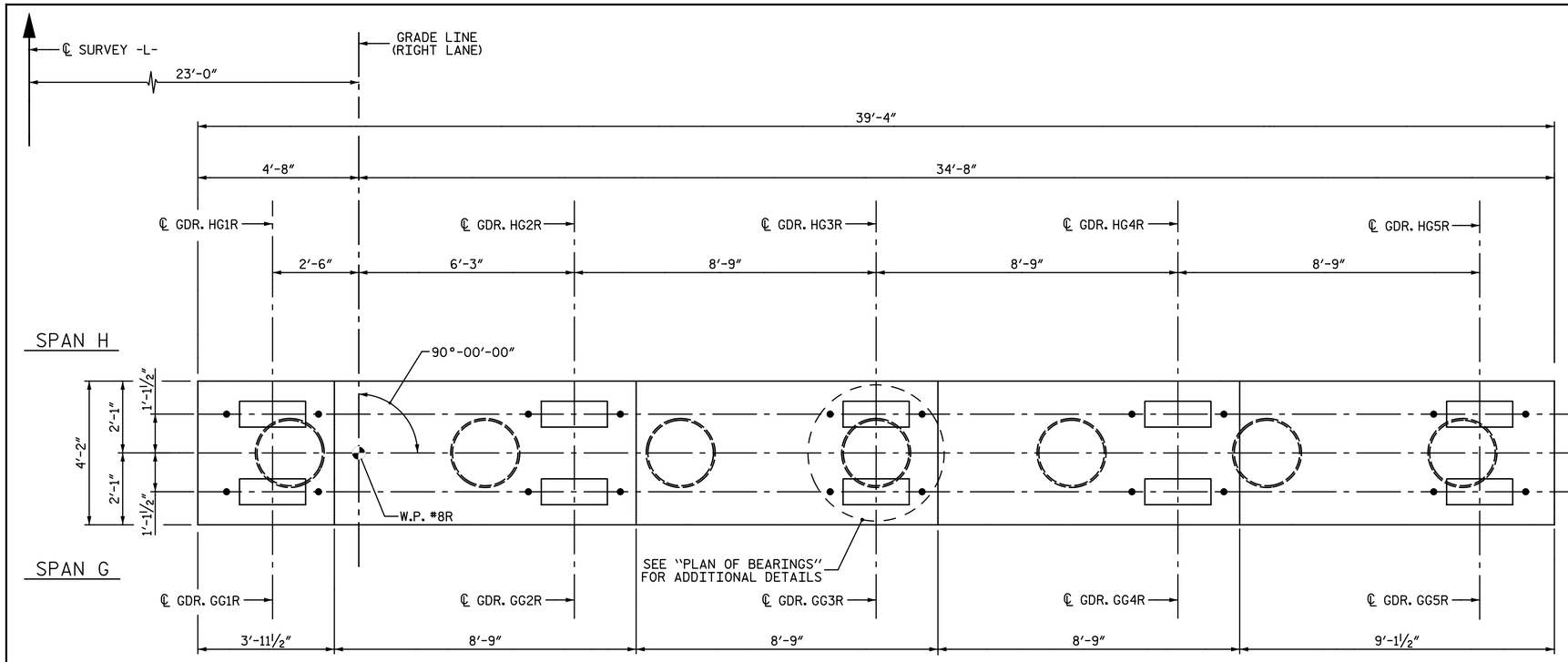
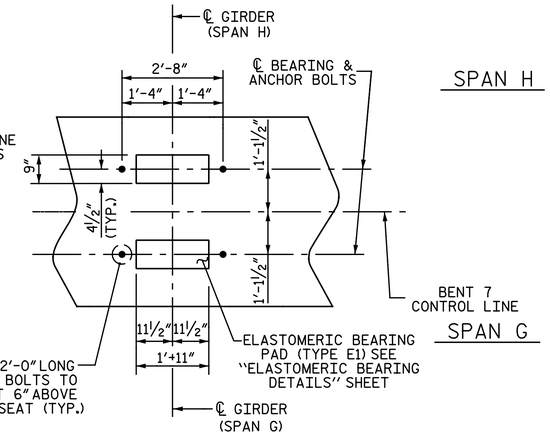


PLAN



NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

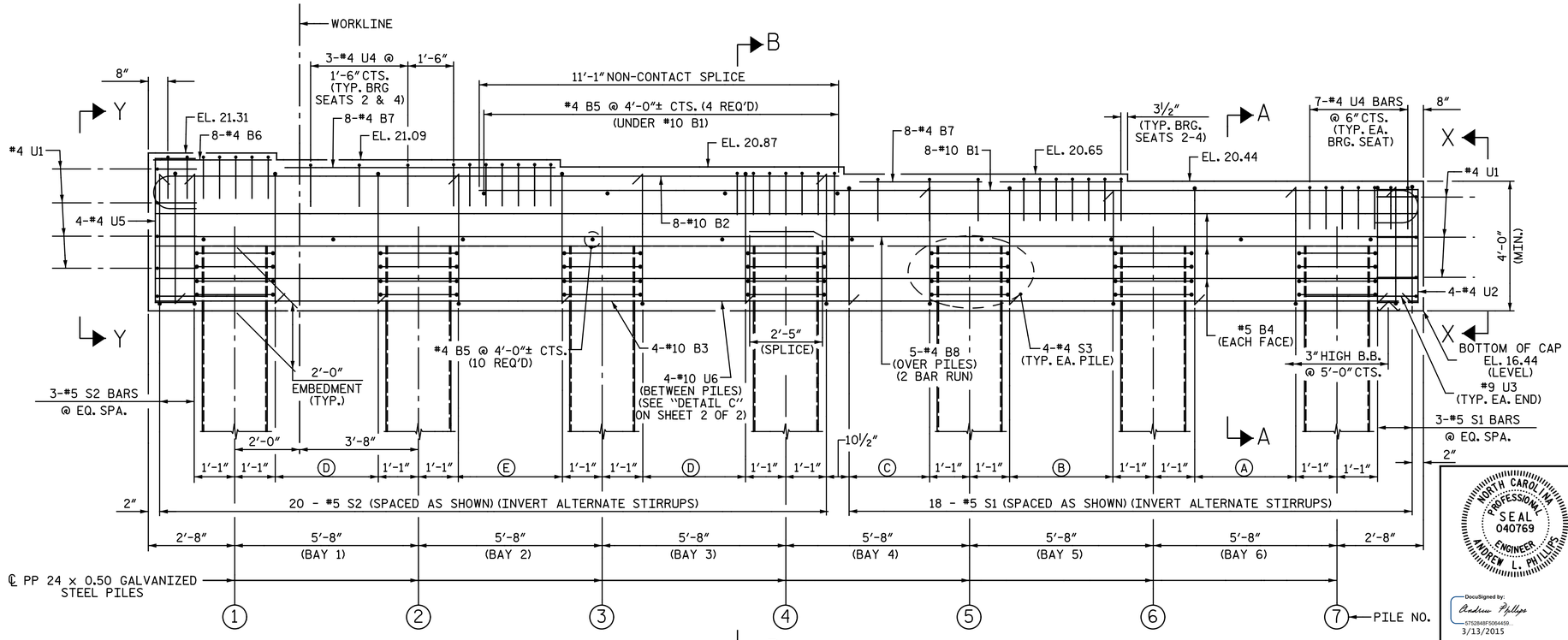
GALVANIZE THE TOP A MINIMUM OF 39 FEET OF EACH INTERIOR BENT PILE. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 4 OF 5.

PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.

Ⓐ 5-#5 S1 BARS @ 1′-0″ SPACES
Ⓑ 8-#5 S1 BARS @ 6″ SPACES
Ⓒ 4-#5 S1 BARS @ 1′-0″ SPACES
Ⓓ 5-#5 S2 BARS @ 1′-0″ SPACES
Ⓔ 8-#5 S2 BARS @ 6″ SPACES



ELEVATION

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752B48F5064450...
3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 2837B6D710A0465...
3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 7

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-48
1			3			TOTAL SHEETS
2			4			68

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 48 OF 68

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3/5/2015 4:14:57 PM
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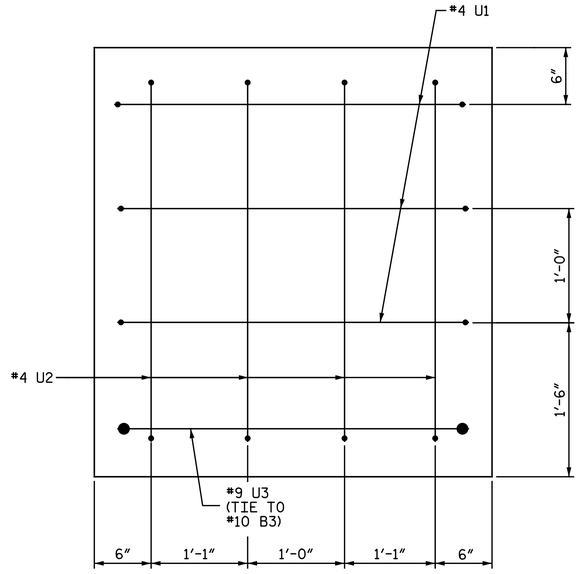
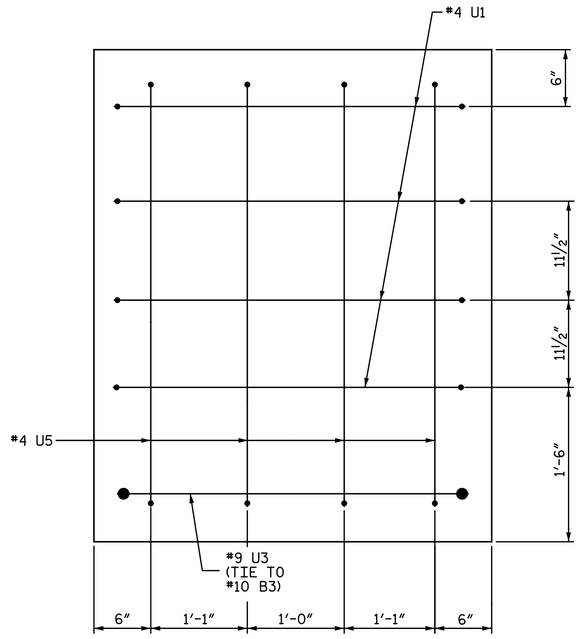
SITE 4

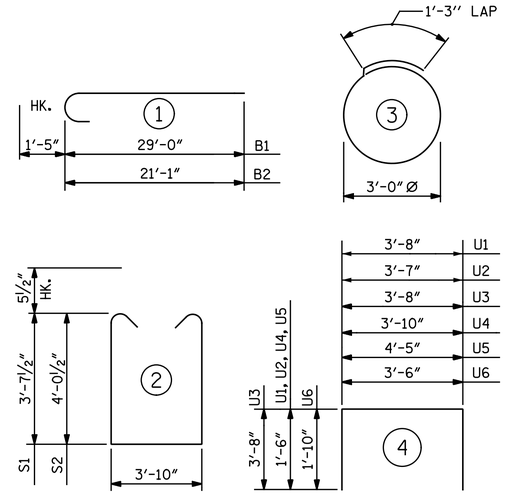


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 7

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS ''A'' CONCRETE BREAKDOWN

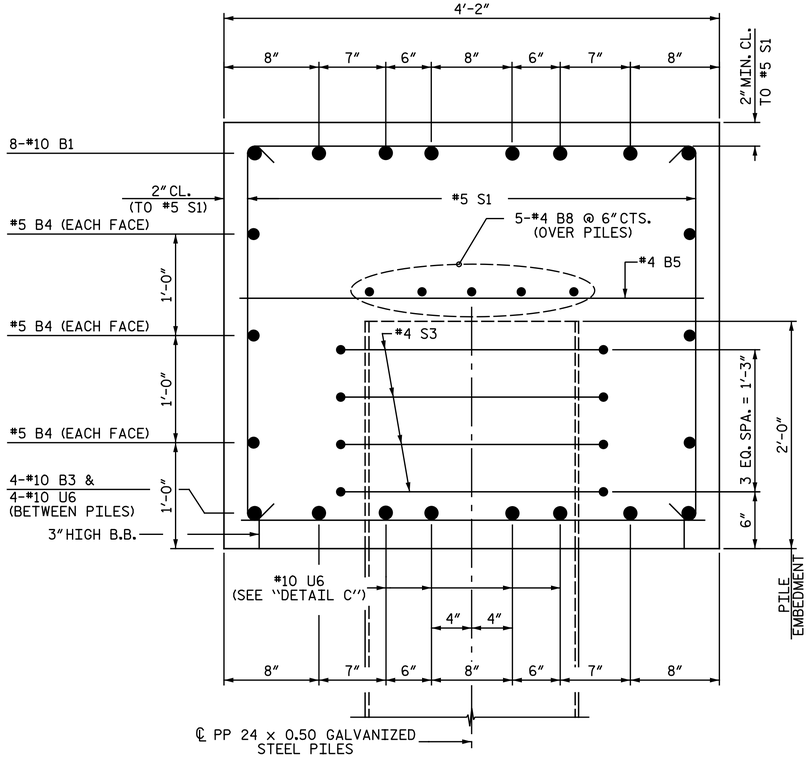
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

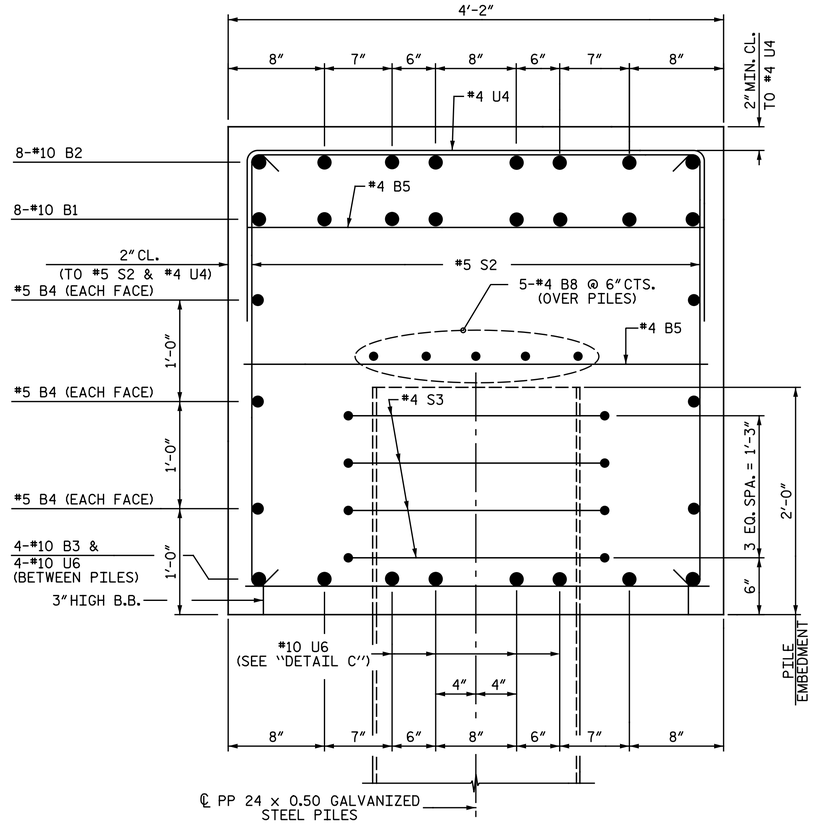
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

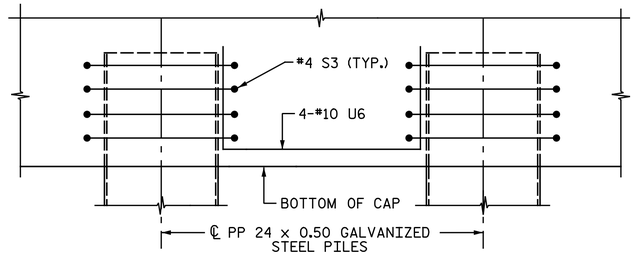
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN C. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 7 DETAILS

RIGHT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-49
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 49 OF 68

SITE 4

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NOTES:

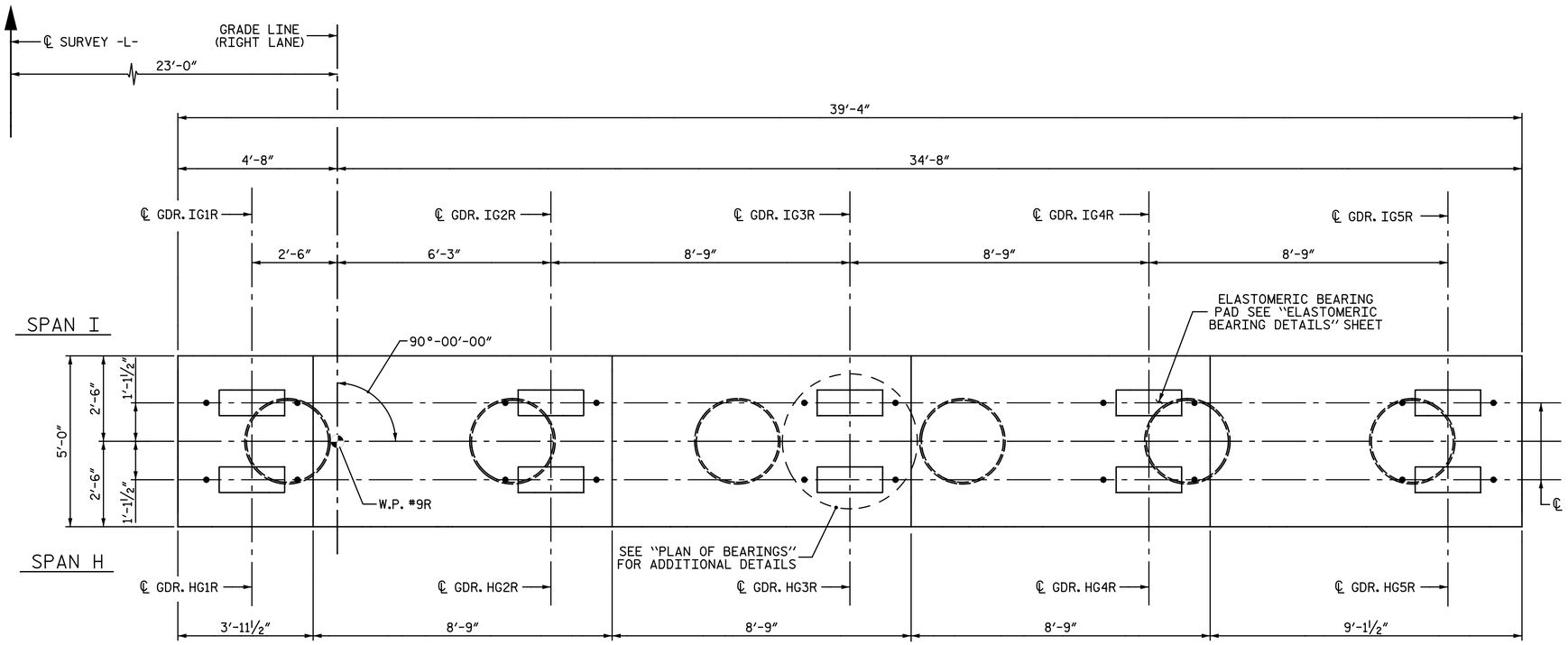
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

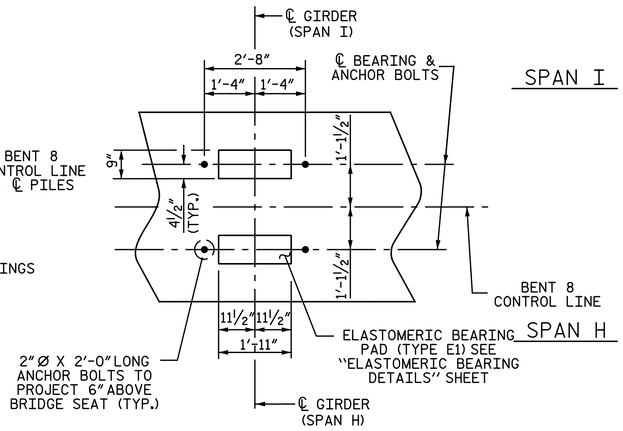
GALVANIZE THE TOP A MINIMUM OF 46 FEET OF EACH INTERIOR BENT PILE. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

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.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 4 OF 5.

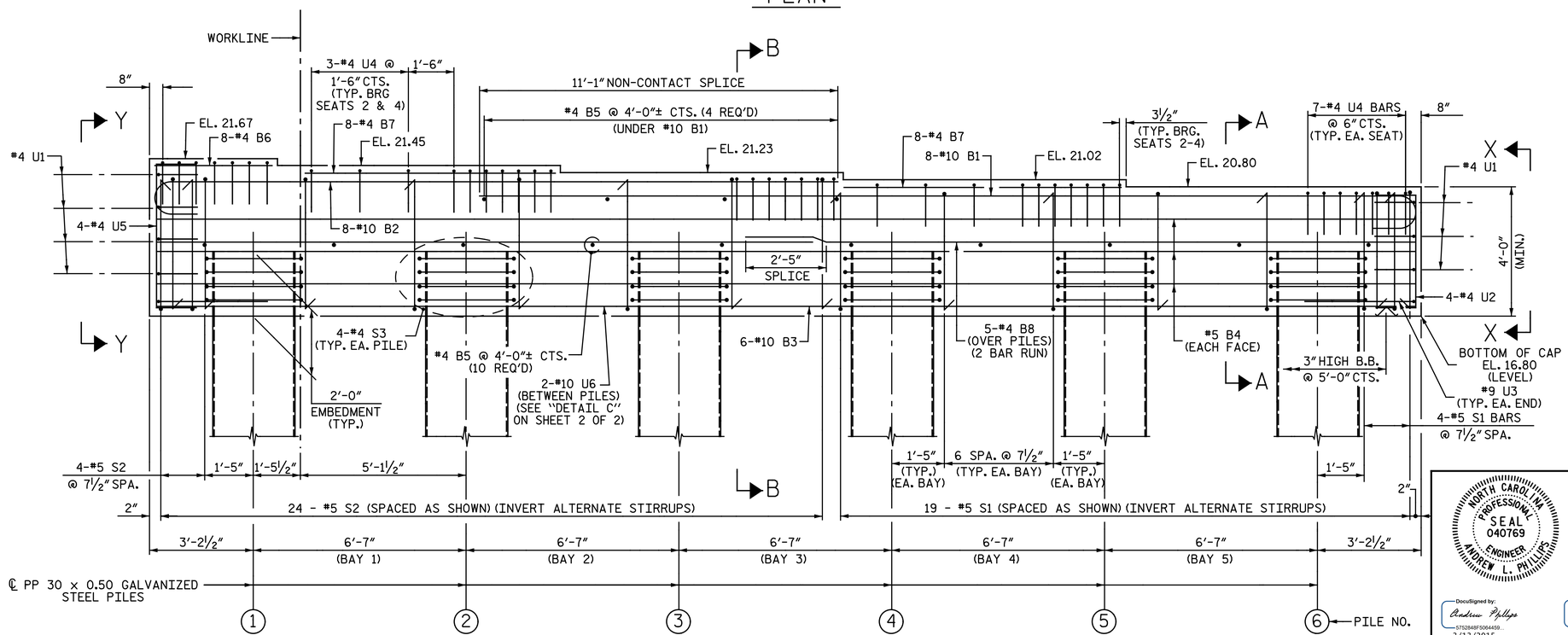


PLAN



PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 8

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-50
1			3			TOTAL SHEETS
2			4			68

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No.: F-1084

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 6-5-14

DWG. 50 OF 68

nbspeaks
3/5/2015 4:14:58 PM
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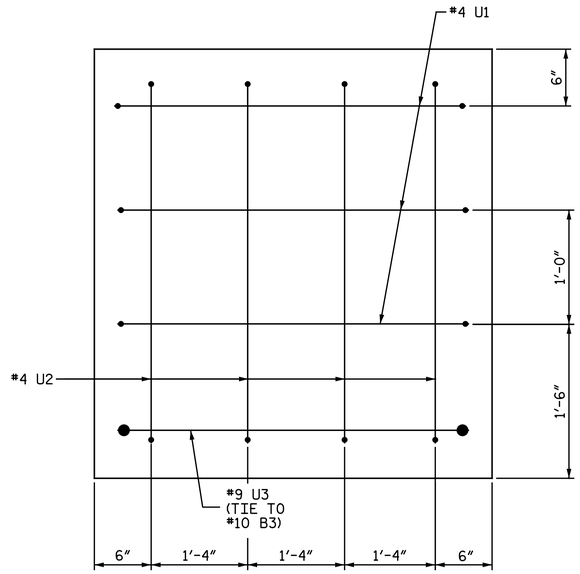
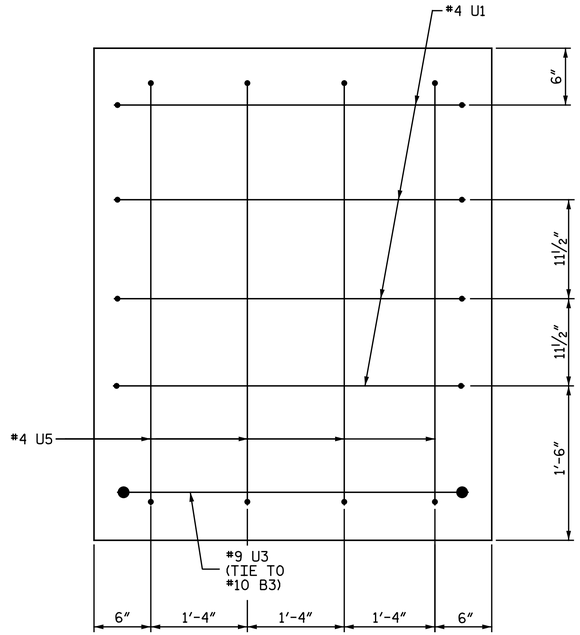
SITE 4

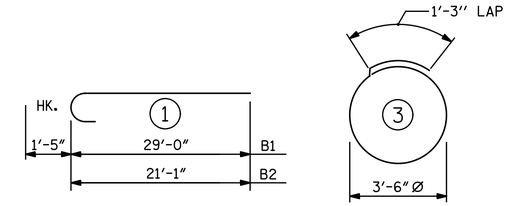


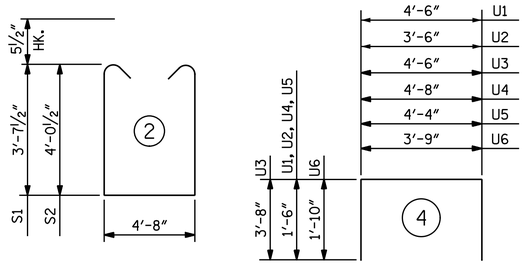
VIEW X-X



VIEW Y-Y

BAR TYPES





ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 8

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	6	10	STR	39′ - 0″	1,007
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	4′ - 8″	44
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	19	5	2	12′ - 10″	254
S2	24	5	2	13′ - 8″	342
S3	24	4	3	12′ - 3″	196
U1	7	4	4	7′ - 4″	34
U2	4	4	4	5′ - 11″	16
U3	2	9	4	11′ - 10″	80
U4	41	4	4	7′ - 8″	210
U5	4	4	4	6′ - 9″	18
U6	10	10	4	7′ - 5″	319

REINFORCING STEEL LBS. 4,836

CLASS ''A'' CONCRETE BREAKDOWN

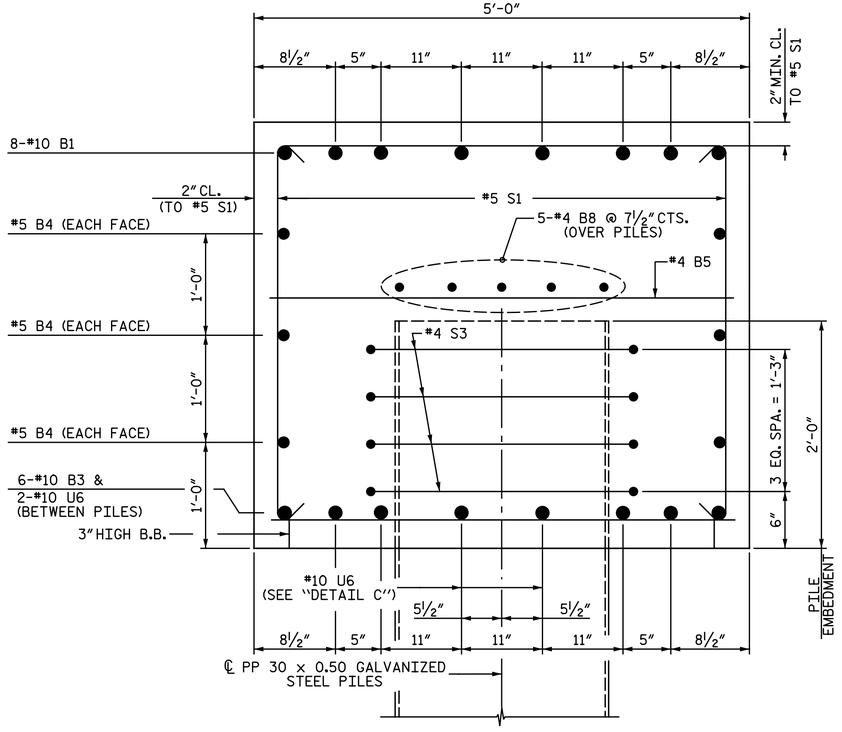
POUR #1 - CAP C.Y. 31.9

PP 30 x 0.50 GALVANIZED STEEL PILES

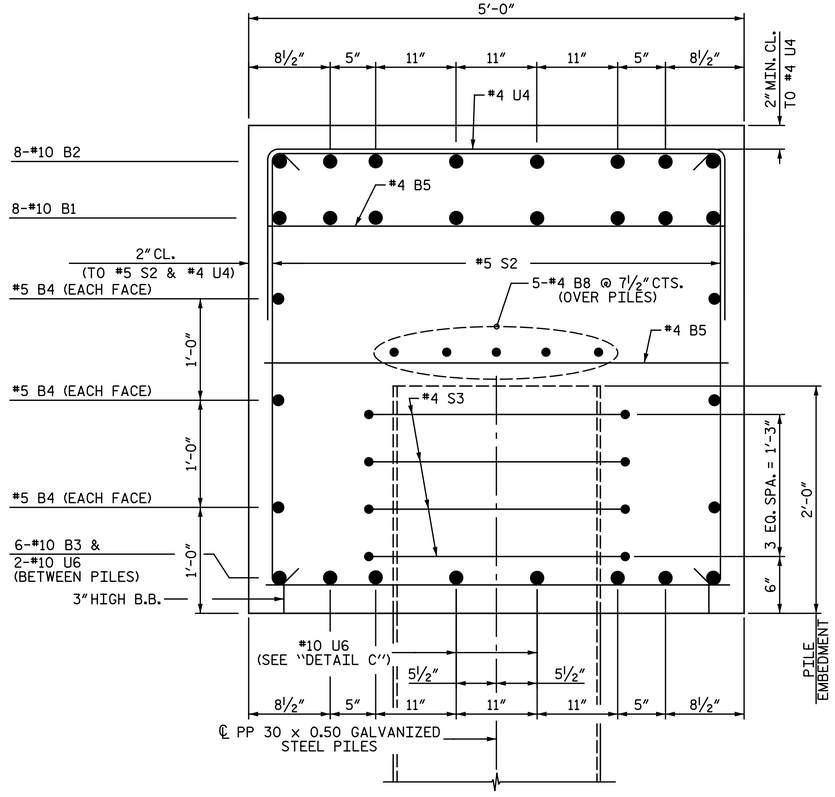
No. 6 LIN. FT. 390

PIPE PILE PLATES EA. 6

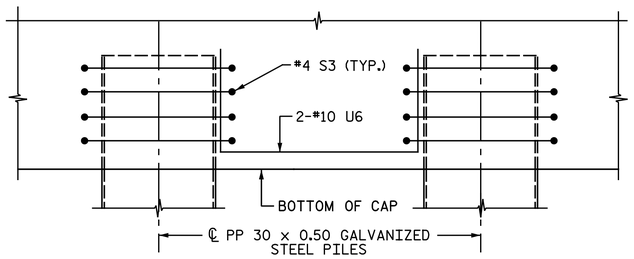
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C

(TYP. EA. BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 DRAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 8 DETAILS

RIGHT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-51
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 51 OF 68

nbspeaks
3/5/2015 4:14:59 PM
Filename: Y:\Projects\NCDOT\R-2514D\Site 4\Dwgs\Right\Find\408_051_R2514D_SMU_B8_02.dgn

SITE 4

NOTES:

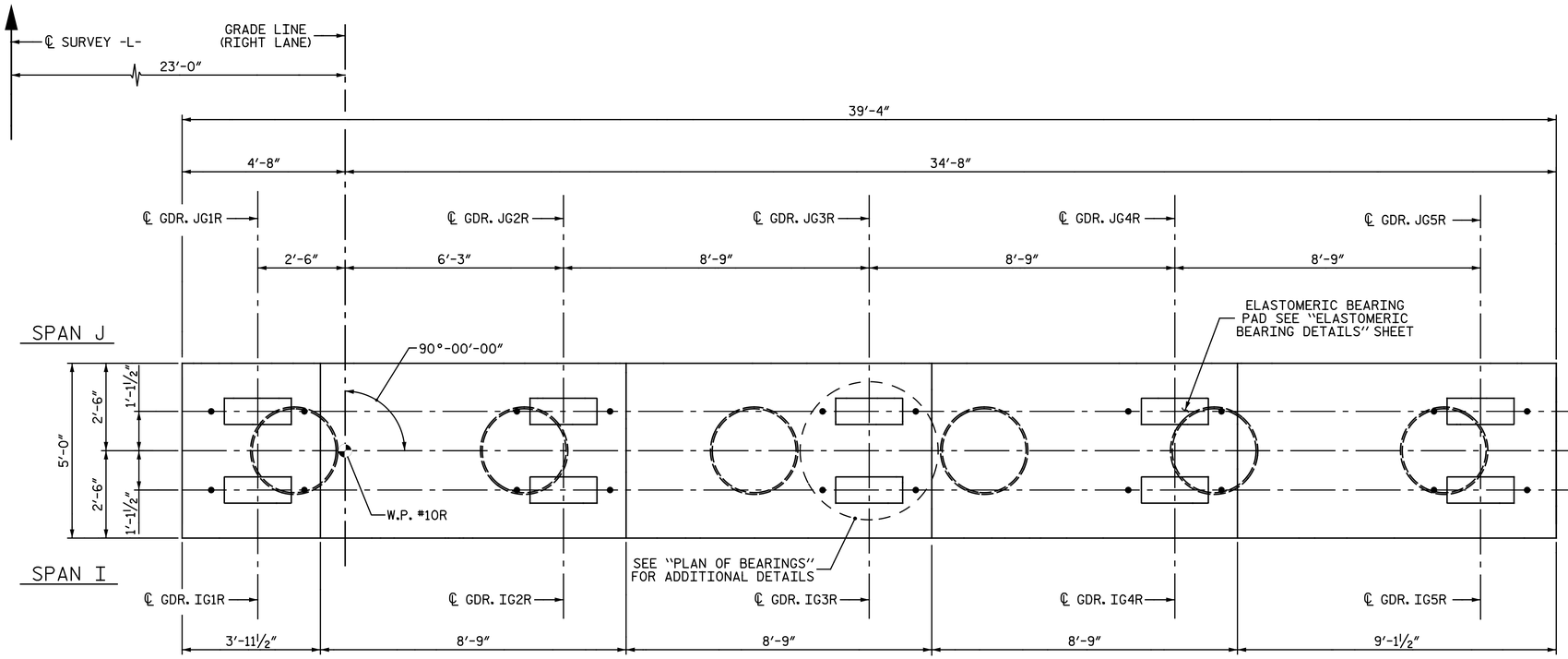
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

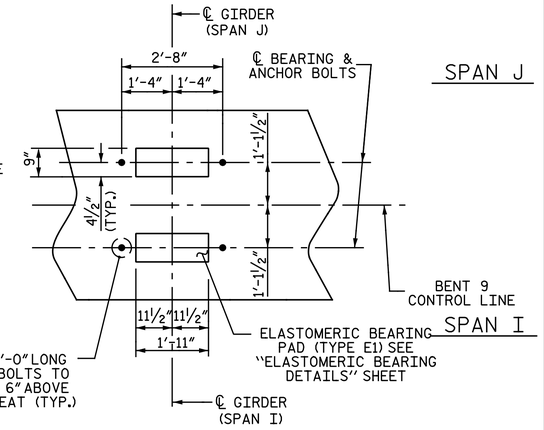
GALVANIZE THE TOP A MINIMUM OF 48 FEET OF EACH INTERIOR BENT PILE . GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

THE TOP SURFACE AREAS OF THE BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL STILL BE USED.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 4 OF 5.



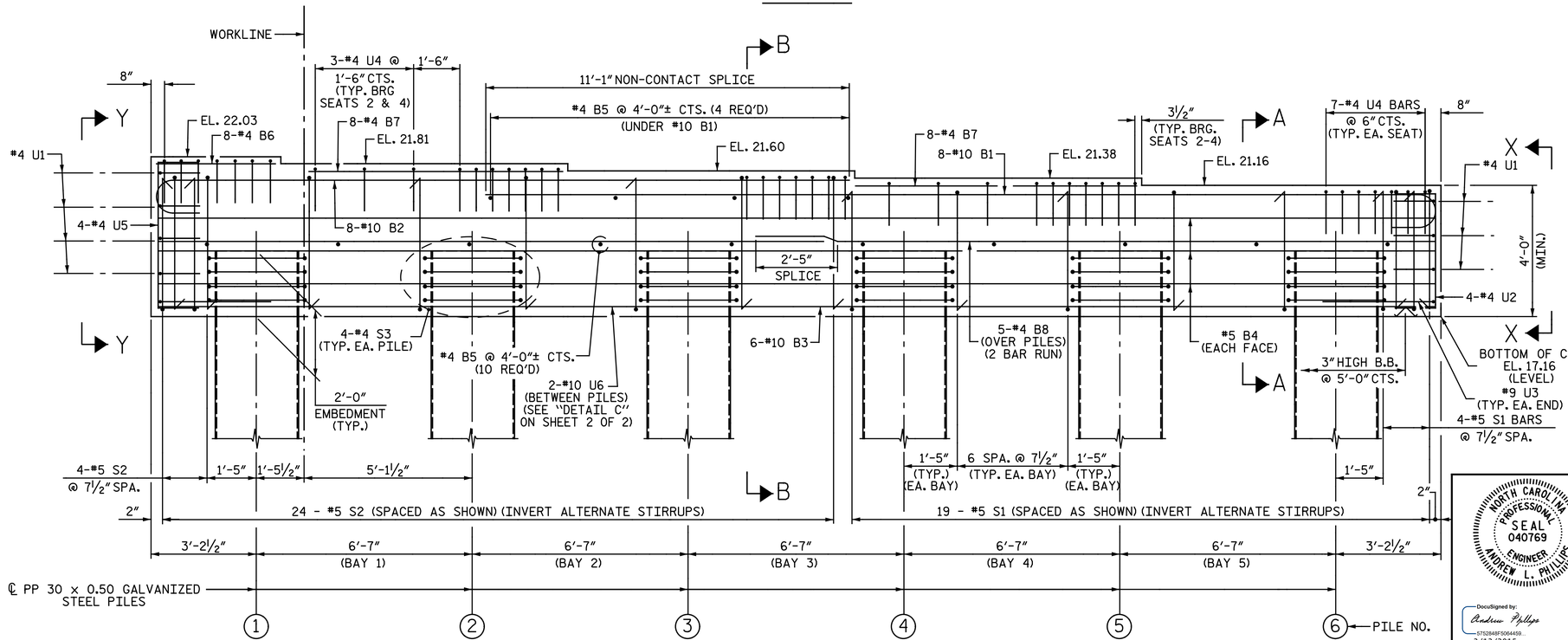
PLAN



PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.

PLAN



ELEVATION

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 9

RIGHT LANE

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 575284BF5004459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-52
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 52 OF 68

nbspeaks
3/5/2015 4:15:00 PM
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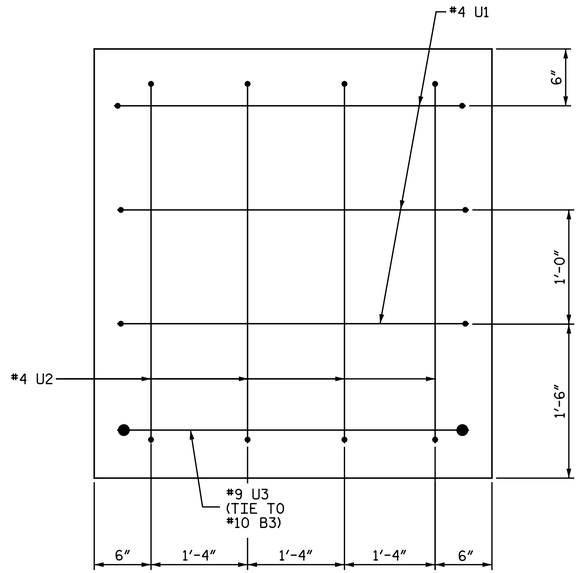
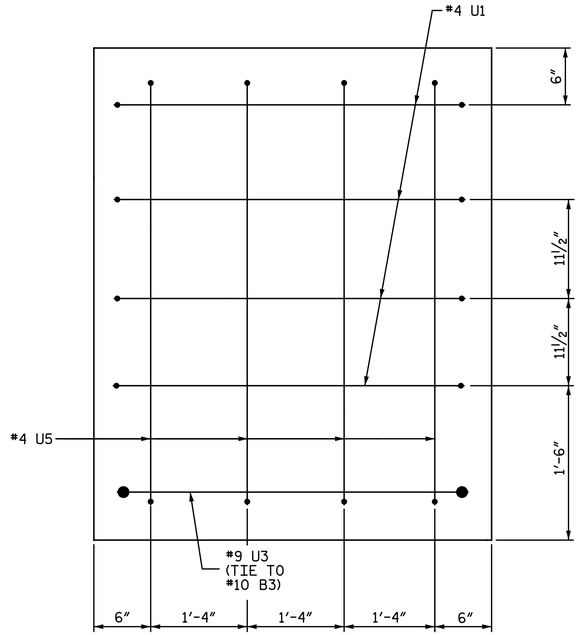
SITE 4

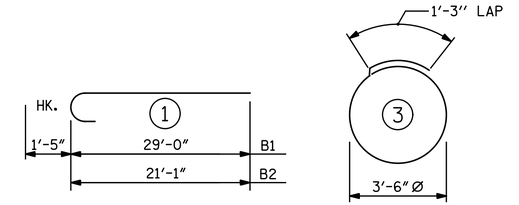


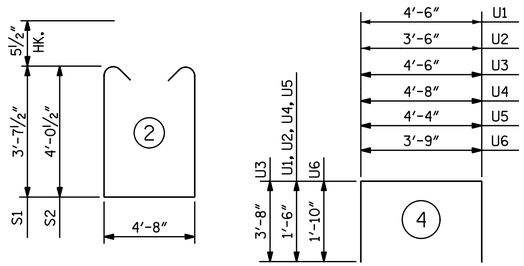
VIEW X-X



VIEW Y-Y

BAR TYPES





ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 9

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	6	10	STR	39′ - 0″	1,007
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	4′ - 8″	44
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	19	5	2	12′ - 10″	254
S2	24	5	2	13′ - 8″	342
S3	24	4	3	12′ - 3″	196
U1	7	4	4	7′ - 4″	34
U2	4	4	4	5′ - 11″	16
U3	2	9	4	11′ - 10″	80
U4	41	4	4	7′ - 8″	210
U5	4	4	4	6′ - 9″	18
U6	10	10	4	7′ - 5″	319

REINFORCING STEEL LBS. 4,836

CLASS ''A'' CONCRETE BREAKDOWN

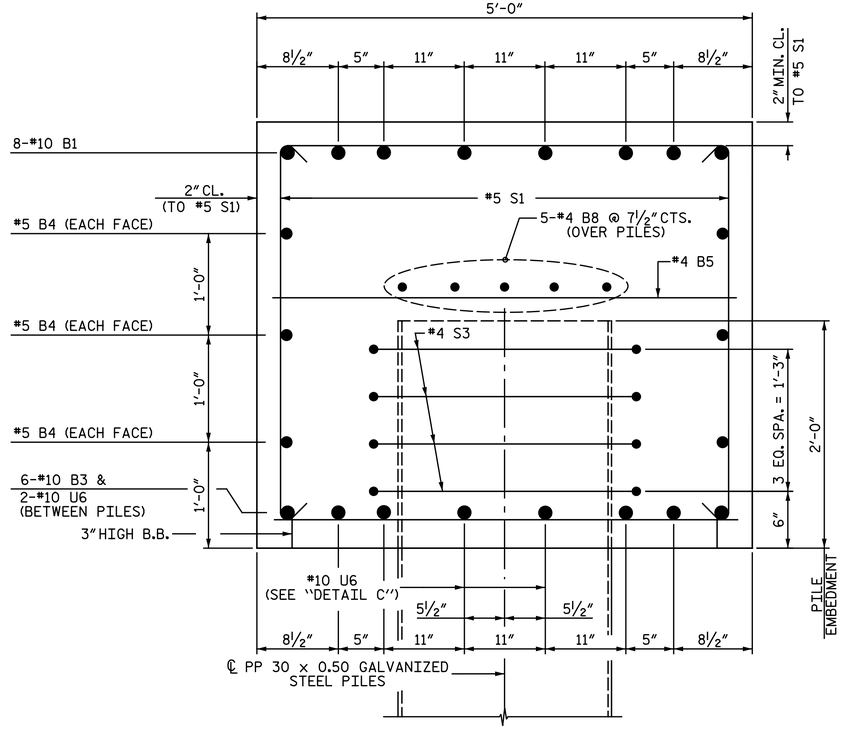
POUR #1 - CAP C.Y. 31.9

PP 30 x 0.50 GALVANIZED STEEL PILES

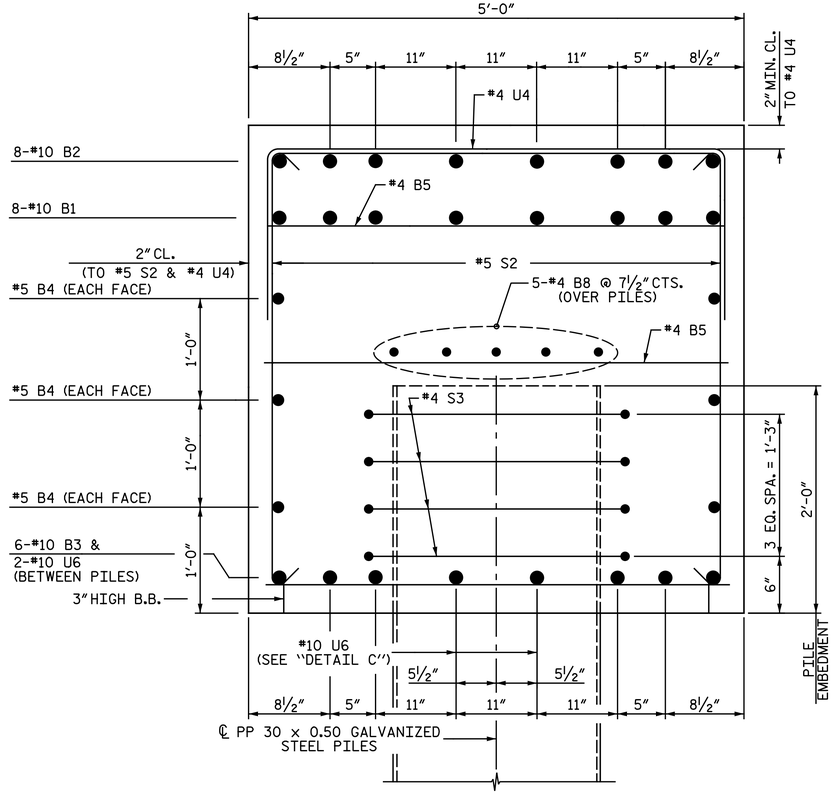
No. 6 LIN. FT. 390

PIPE PILE PLATES EA. 6

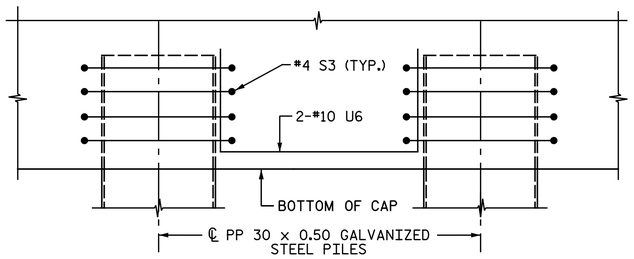
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C

(TYP. EA. BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DUAIN G. HATHAWAY

DocuSigned by: Duain Hathaway 283786071DA0460... 3/13/2015

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 9 DETAILS

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-53
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 53 OF 68

nbspeaks
3/5/2015 4:15:01 PM
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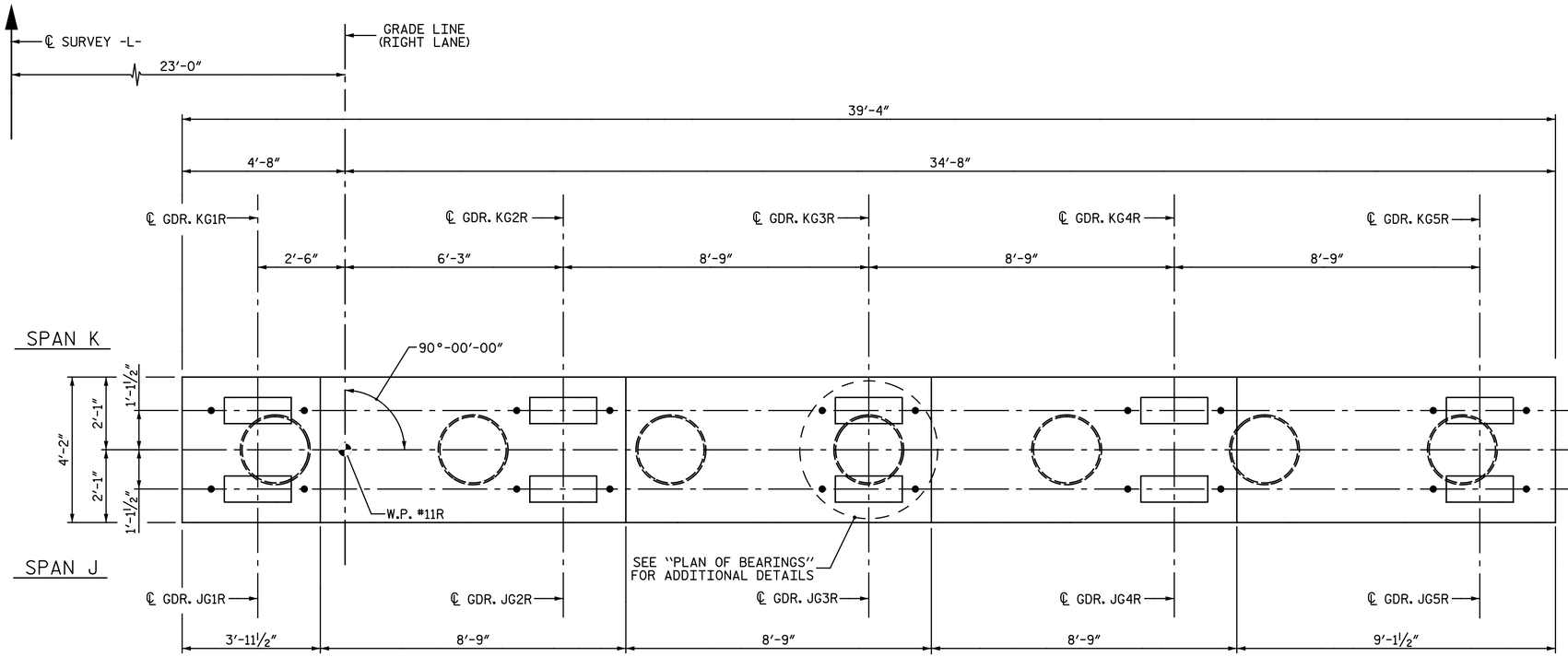
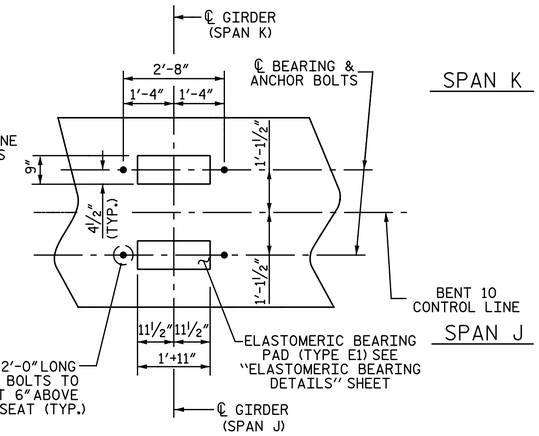
SITE 4



PLAN



NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

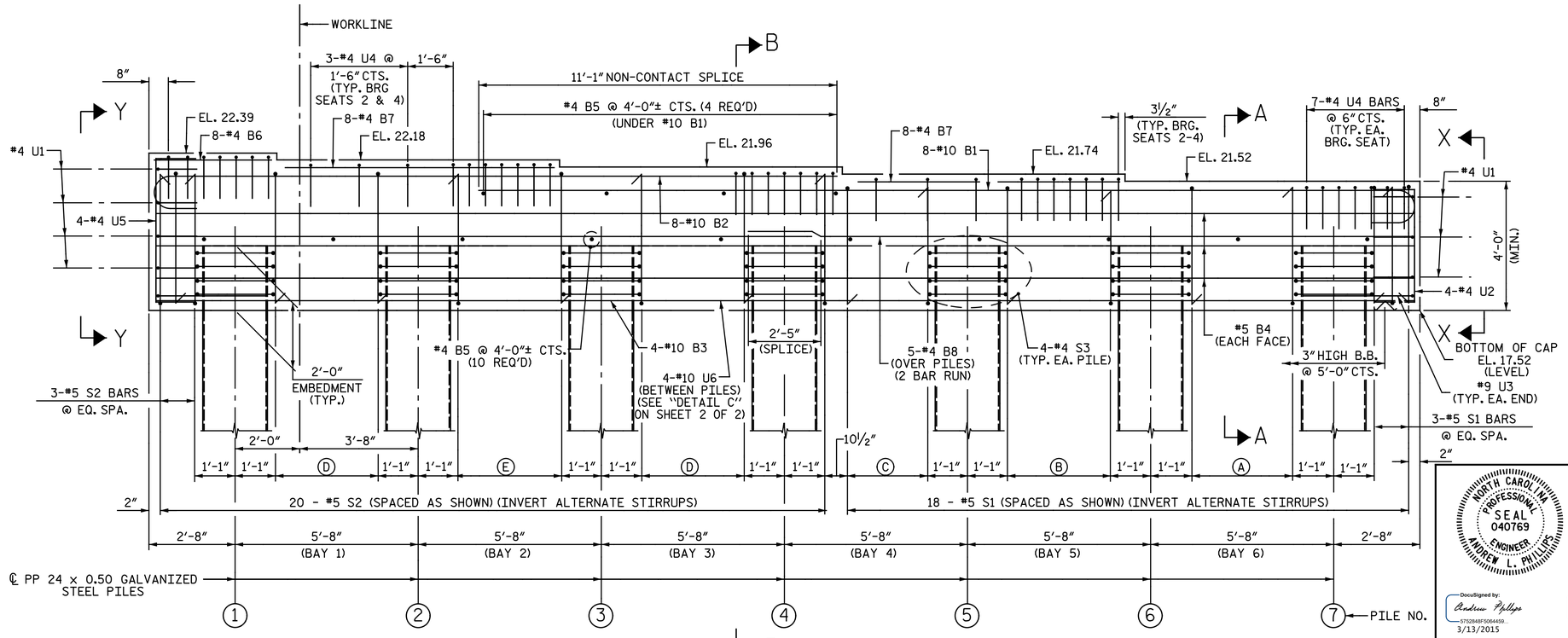
FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

GALVANIZE THE TOP A MINIMUM OF 37 FEET OF EACH INTERIOR BENT PILE. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 4 OF 5.

PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.



ELEVATION

(A) 5-#5 S1 BARS @ 1′-0″ SPACES
(B) 8-#5 S1 BARS @ 6″ SPACES
(C) 4-#5 S1 BARS @ 1′-0″ SPACES
(D) 5-#5 S2 BARS @ 1′-0″ SPACES
(E) 8-#5 S2 BARS @ 6″ SPACES

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 572D9A6F5D84459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 10

RIGHT LANE

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-54
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 54 OF 68

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3/5/2015 4:15:01 PM
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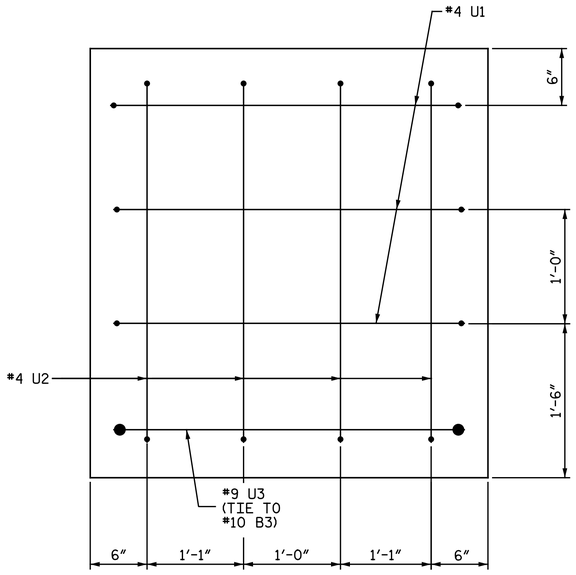
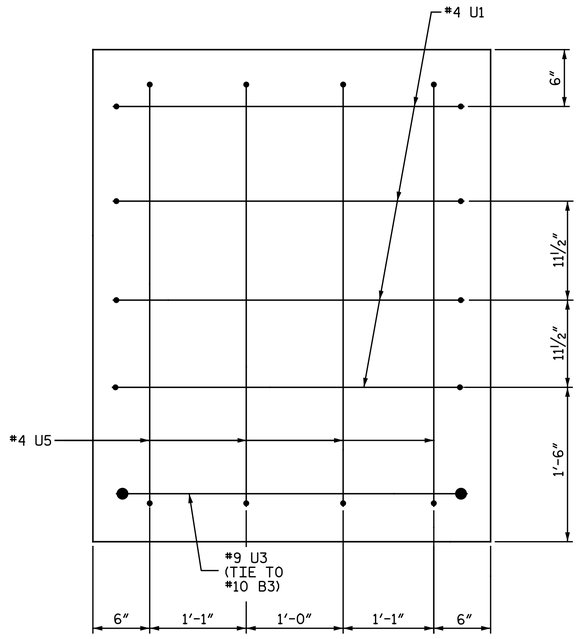
SITE 4

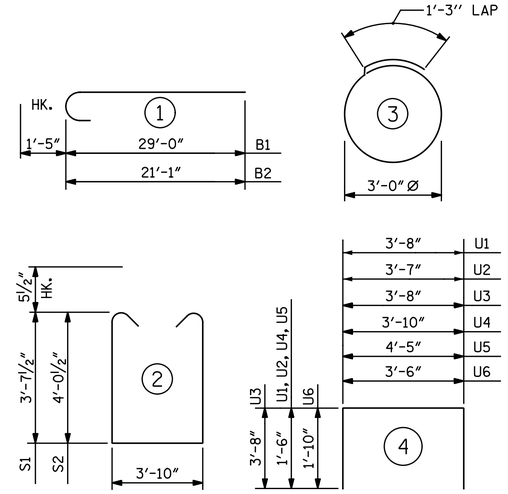


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 10

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS ''A'' CONCRETE BREAKDOWN

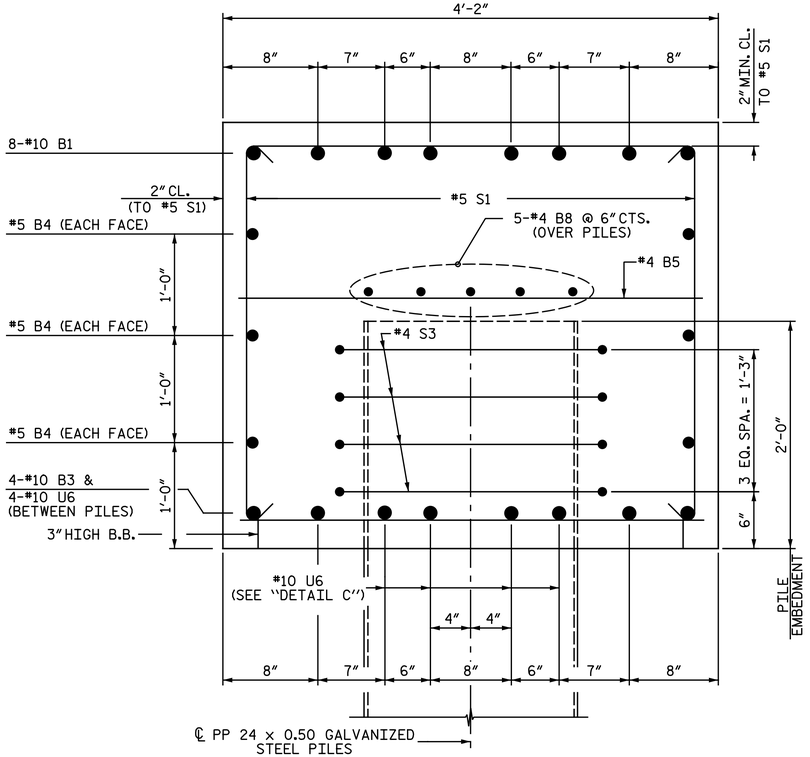
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

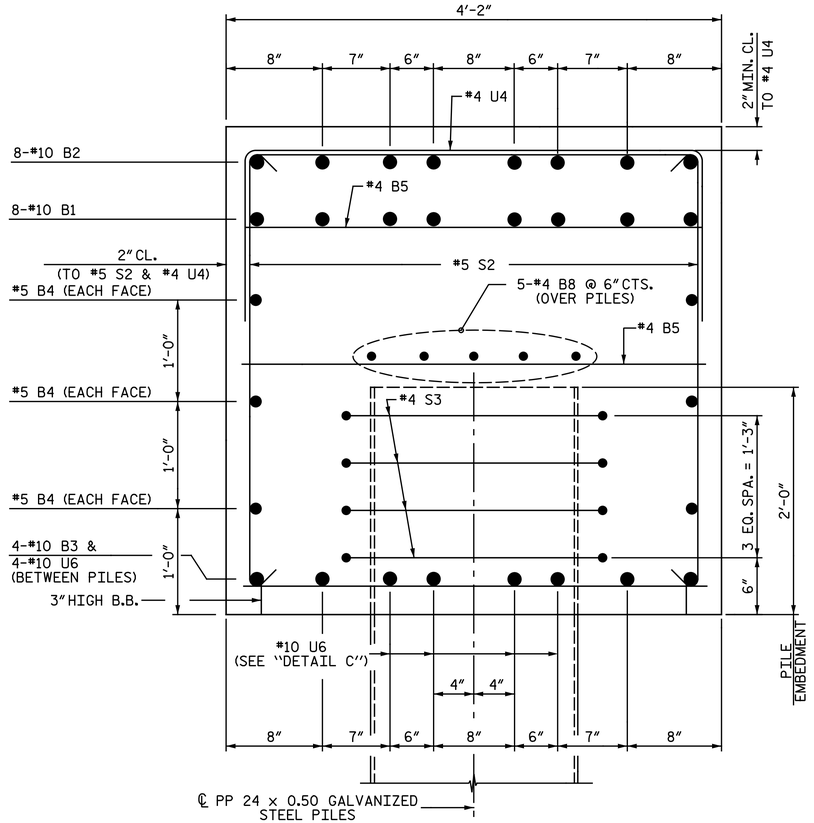
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

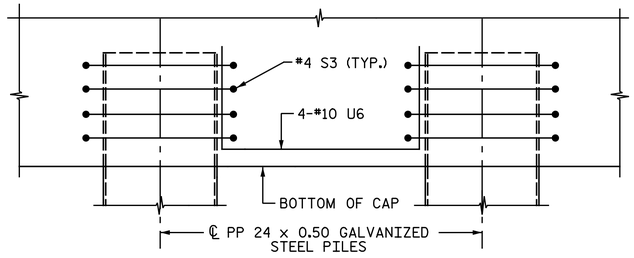
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN C. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 10 DETAILS

RIGHT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-55
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 55 OF 68

SITE 4

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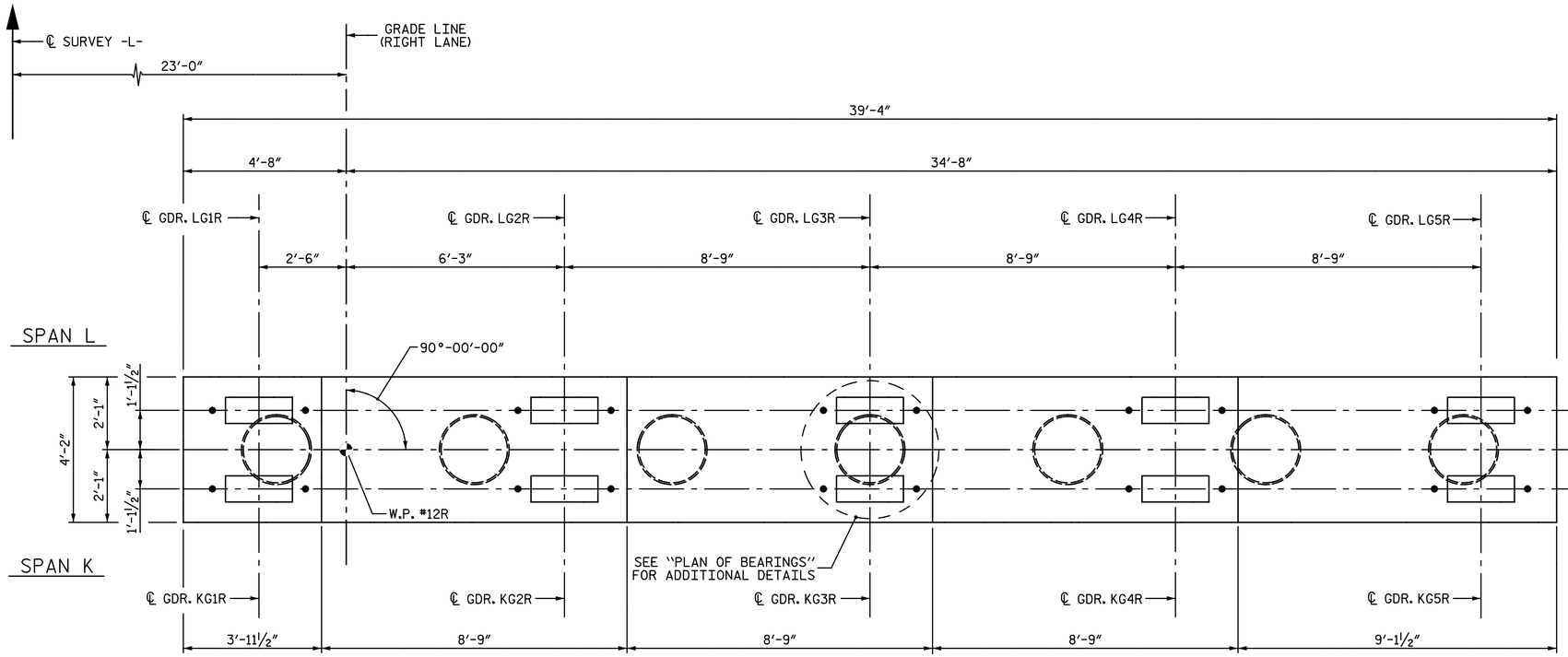
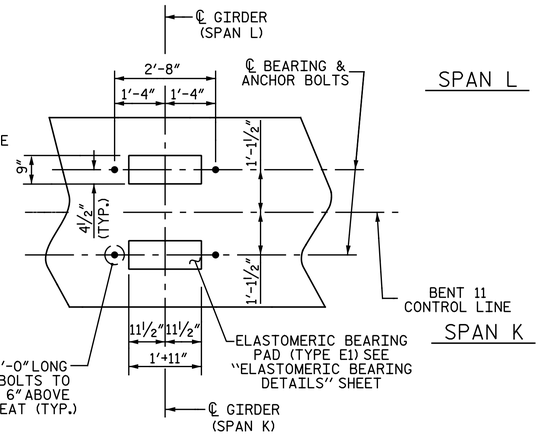


PLAN



NOTES:

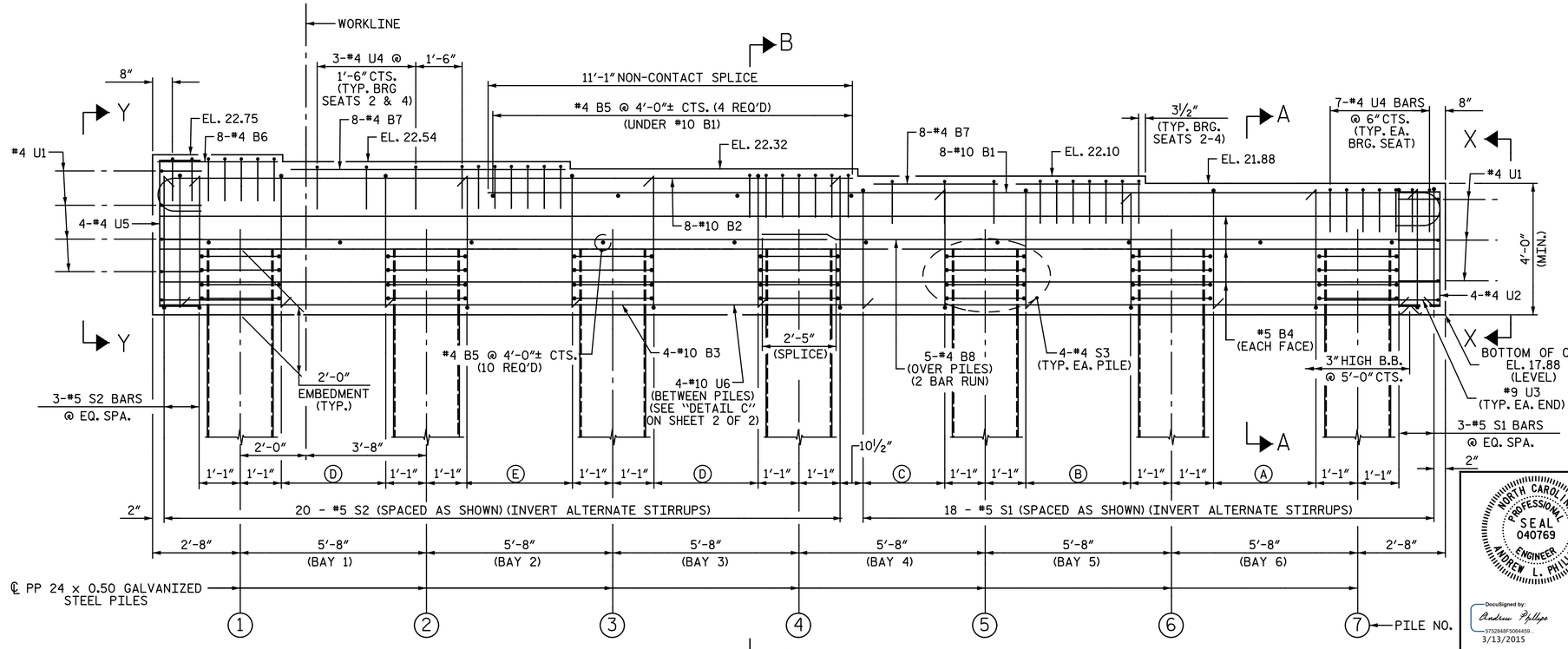
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

GALVANIZE THE TOP A MINIMUM OF 37 FEET OF EACH INTERIOR BENT PILE. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

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.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 4 OF 5.



ELEVATION

PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.

- (A) 5-#5 S1 BARS @ 1′-0″ SPACES
- (B) 8-#5 S1 BARS @ 6″ SPACES
- (C) 4-#5 S1 BARS @ 1′-0″ SPACES
- (D) 5-#5 S2 BARS @ 1′-0″ SPACES
- (E) 8-#5 S2 BARS @ 6″ SPACES

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 57D2B48F5084459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 11

RIGHT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-56
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 56 OF 68

nbspeaks
3/5/2015 4:15:03 PM
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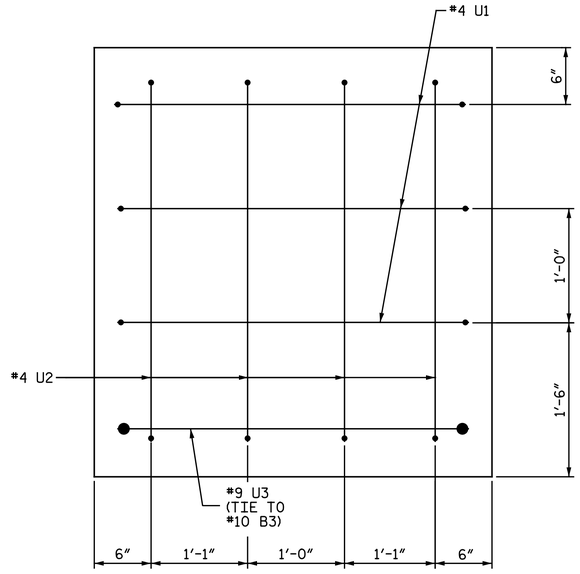
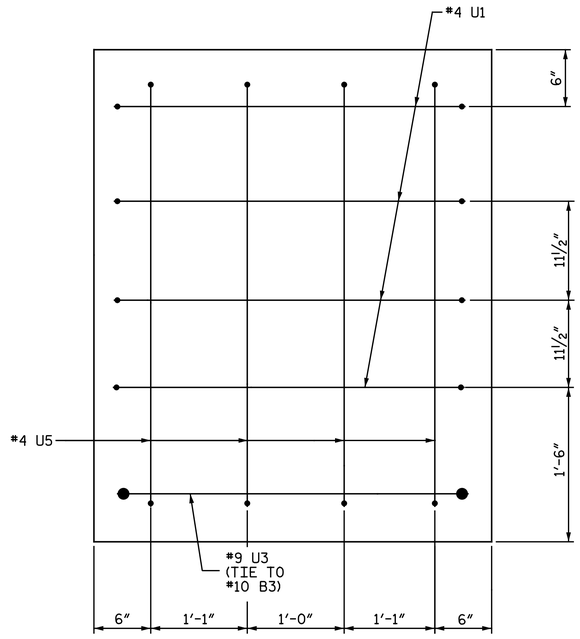
SITE 4

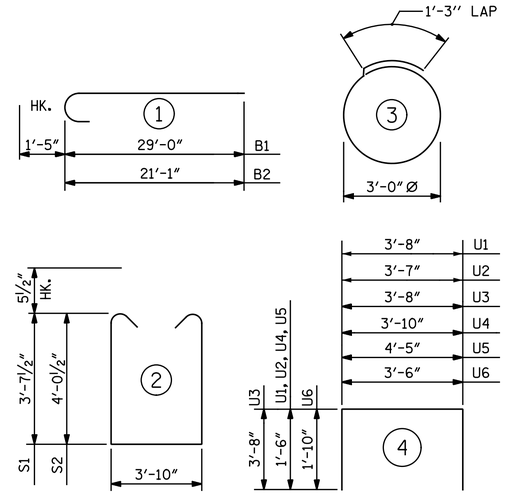


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 11

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS ''A'' CONCRETE BREAKDOWN

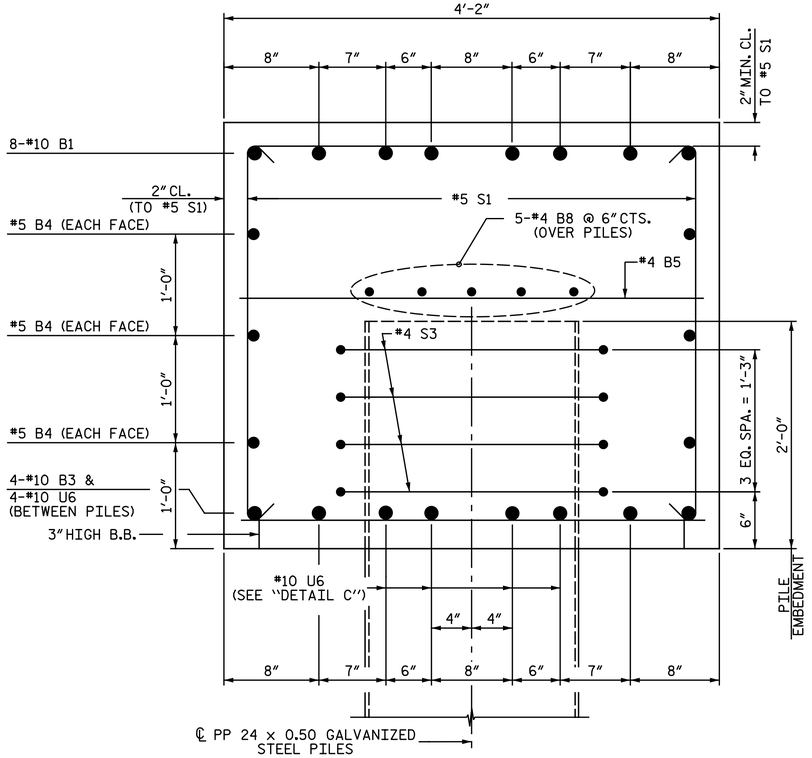
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

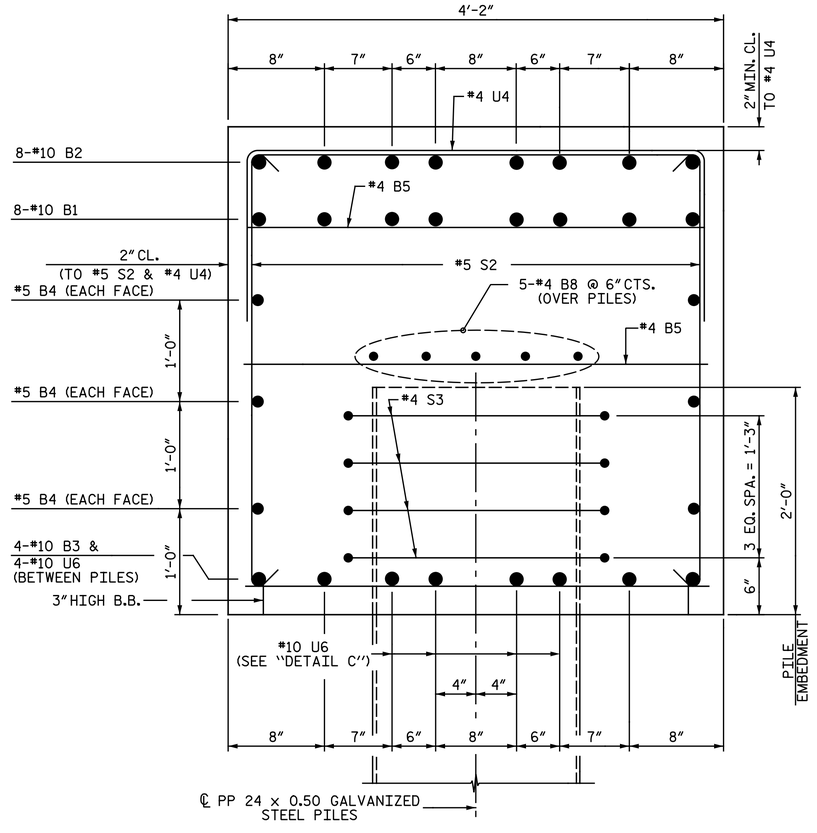
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

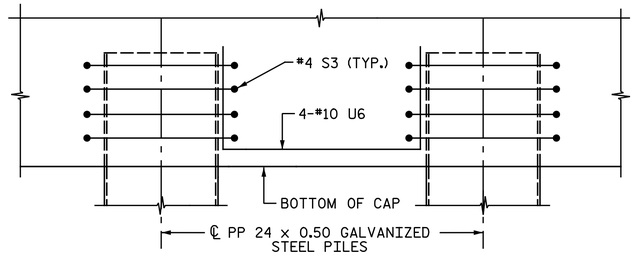
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN C. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 11 DETAILS

RIGHT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-57
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 57 OF 68

SITE 4

nbspeaks
3/5/2015 4:15:04 PM
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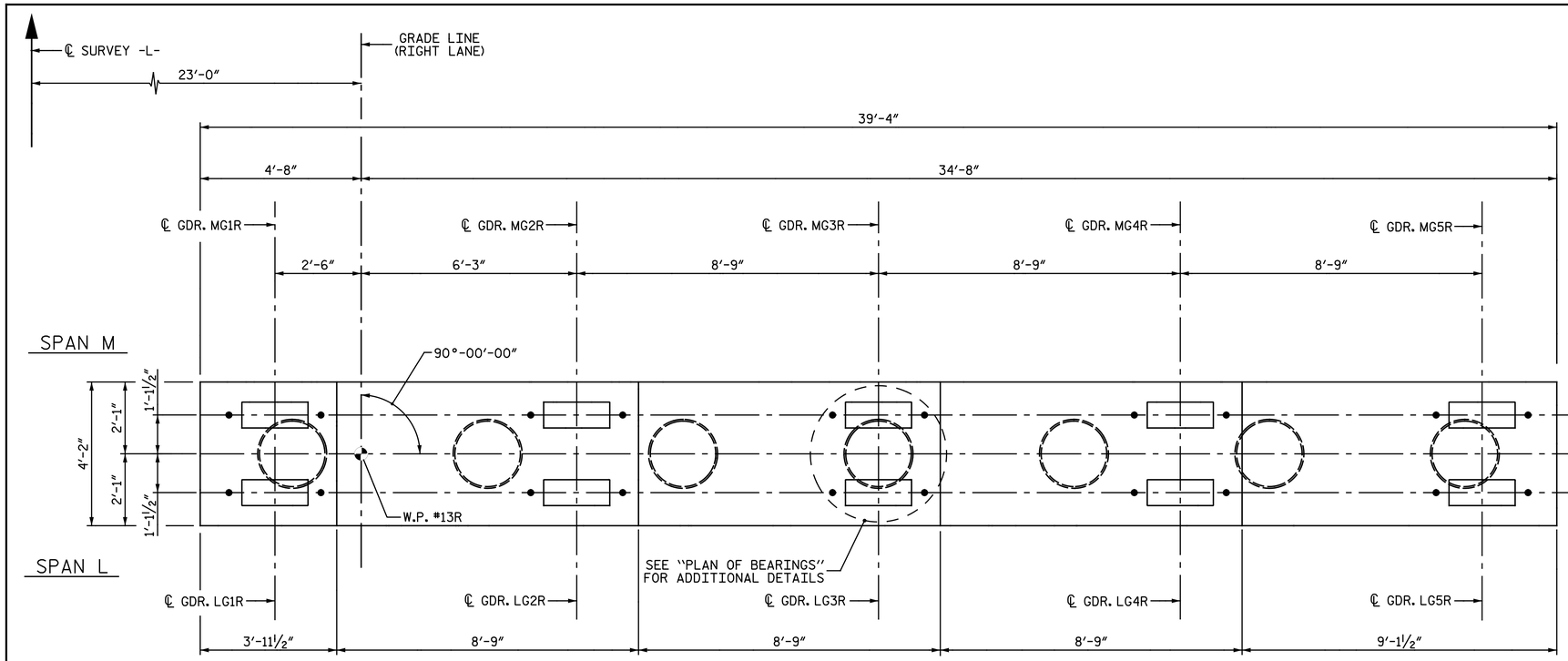
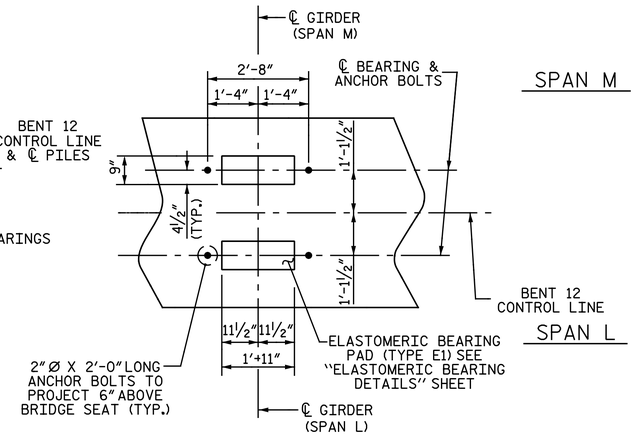


PLAN



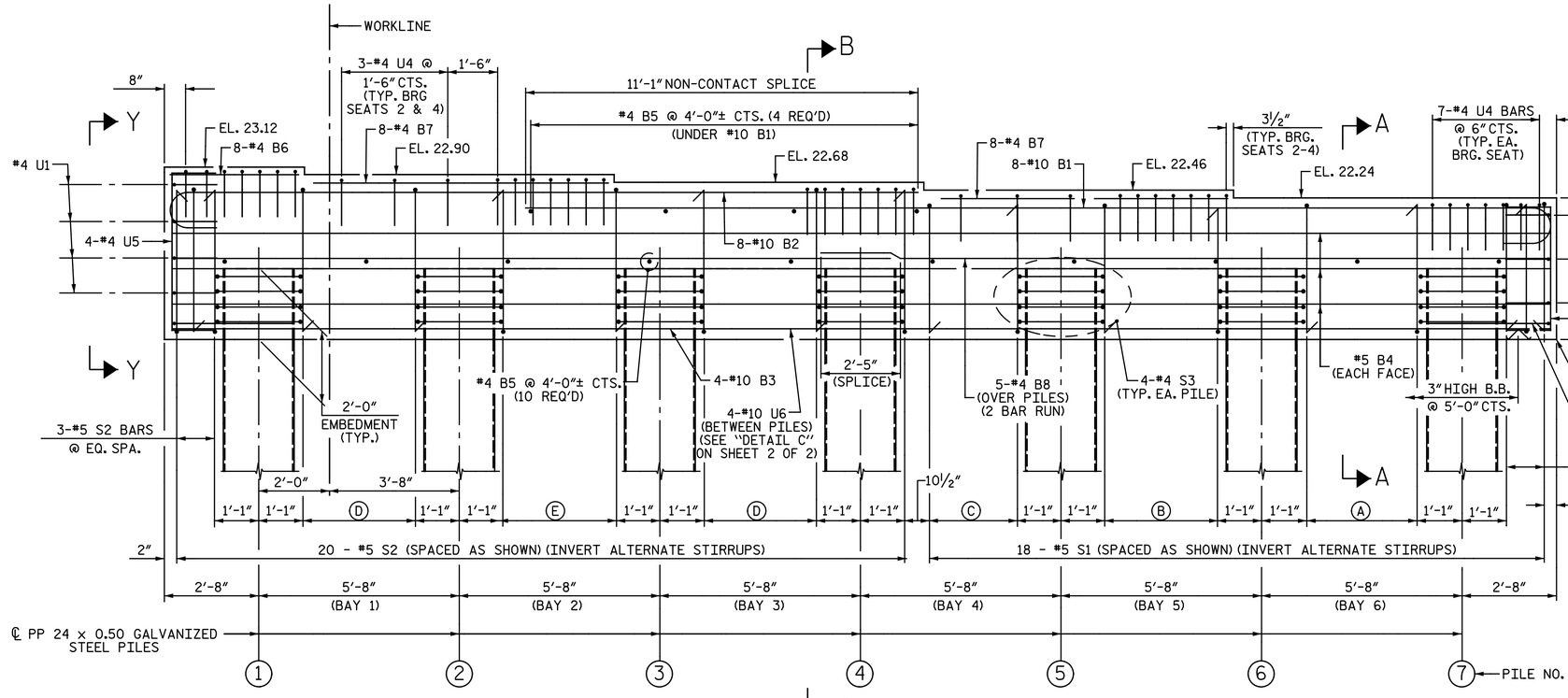
NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOR "SECTION A-A", "SECTION B-B", "VIEW X-X" & "VIEW Y-Y", SEE SHEET 2 OF 2.

GALVANIZE THE TOP A MINIMUM OF 38 FEET OF EACH INTERIOR BENT PILE. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 4 OF 5.



ELEVATION

PLAN OF BEARINGS

ALL DIMENSIONS AND DETAILS SHOWN ARE TYPICAL FOR ALL BEARINGS @ EACH BRIDGE SEAT LOCATION.

- (A) 5-#5 S1 BARS @ 1′-0″ SPACES
- (B) 8-#5 S1 BARS @ 6″ SPACES
- (C) 4-#5 S1 BARS @ 1′-0″ SPACES
- (D) 5-#5 S2 BARS @ 1′-0″ SPACES
- (E) 8-#5 S2 BARS @ 6″ SPACES

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 57D2B48F5084459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 12

RIGHT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-58
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 58 OF 68

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3/5/2015 4:15:04 PM
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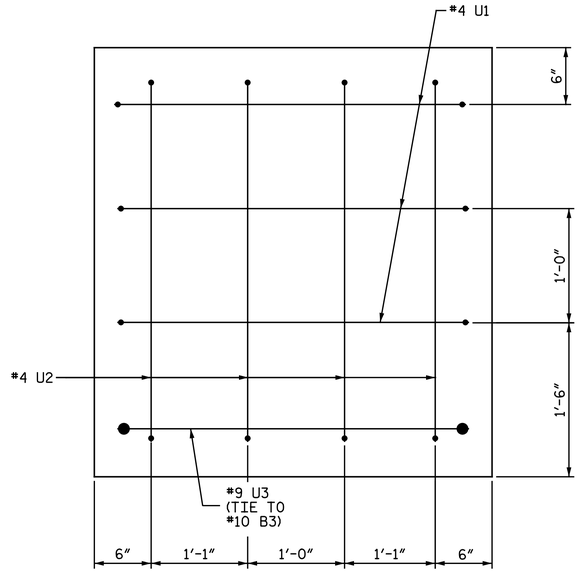
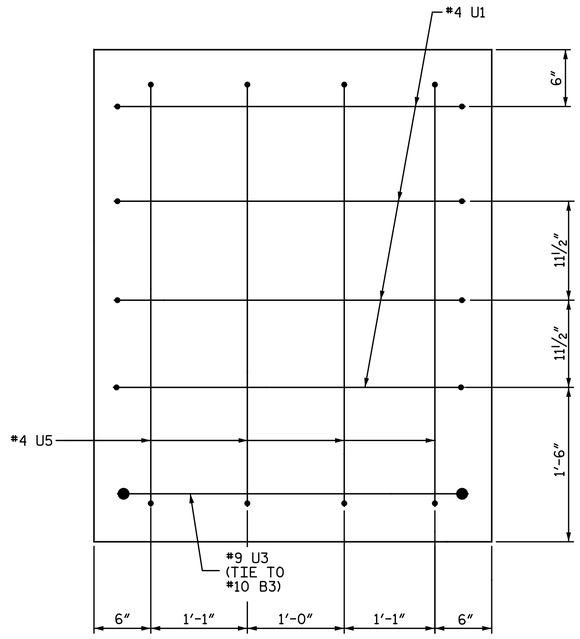
SITE 4

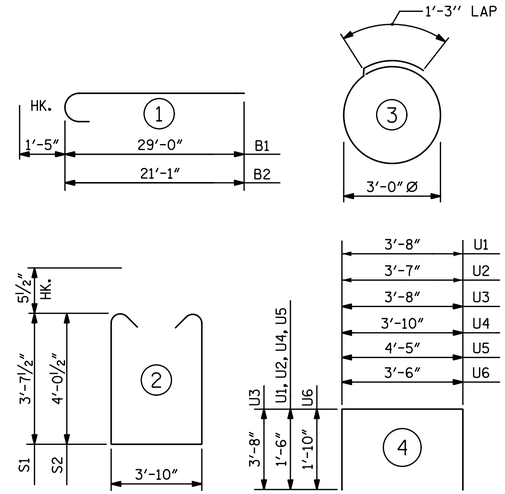


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 12

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	10	1	30′ - 5″	1,047
B2	8	10	1	22′ - 6″	775
B3	4	10	STR	39′ - 0″	671
B4	6	5	STR	39′ - 0″	244
B5	14	4	STR	3′ - 10″	36
B6	8	4	STR	3′ - 7″	19
B7	16	4	STR	8′ - 7″	92
B8	10	4	STR	20′ - 9″	139
S1	20	5	2	12′ - 0″	250
S2	22	5	2	12′ - 10″	294
S3	28	4	3	10′ - 9″	201
U1	7	4	4	6′ - 8″	31
U2	4	4	4	6′ - 7″	18
U3	2	9	4	11′ - 0″	75
U4	41	4	4	6′ - 10″	187
U5	4	4	4	7′ - 5″	20
U6	24	10	4	7′ - 2″	740

REINFORCING STEEL LBS. 4,839

CLASS ''A'' CONCRETE BREAKDOWN

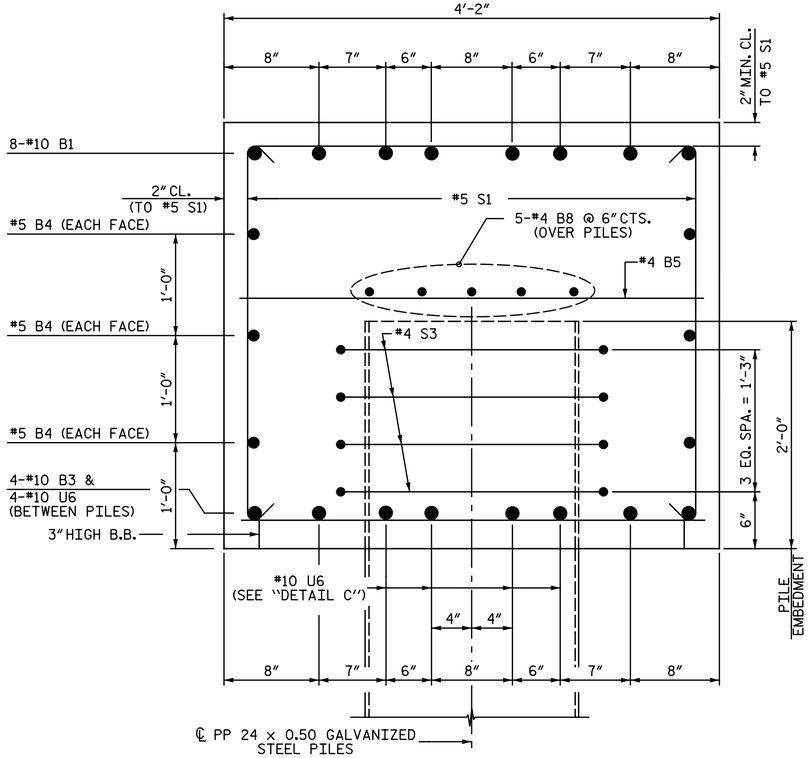
POUR #1 - CAP C.Y. 26.6

PP 24 x 0.50 GALVANIZED STEEL PILES

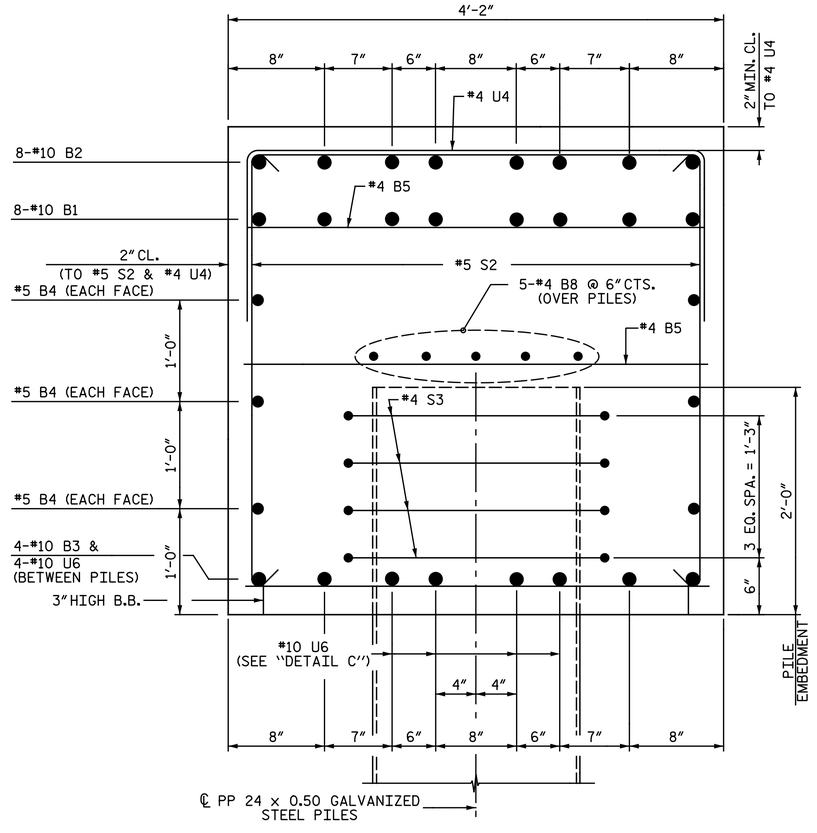
No. 7 LIN. FT. 315

PIPE PILE PLATES EA. 7

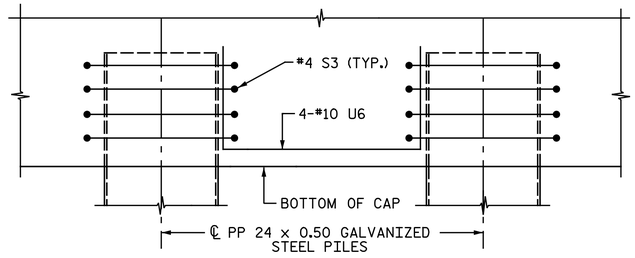
PILE REDRIVES EA. 4



SECTION A-A



SECTION B-B



DETAIL C
(TYP. EACH BAY)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 12 DETAILS

RIGHT LANE

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-59
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 6-25-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 59 OF 68

SITE 4

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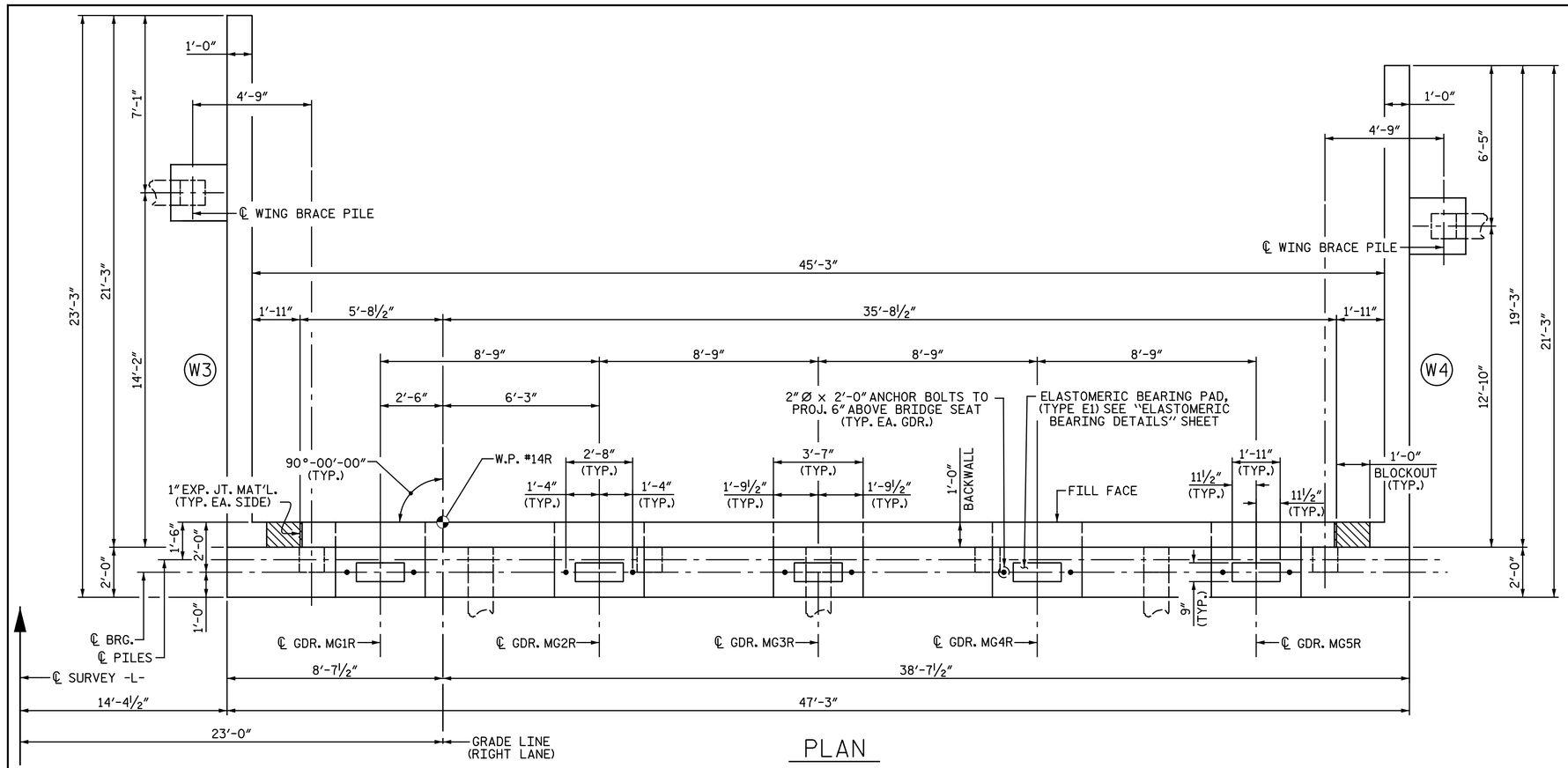
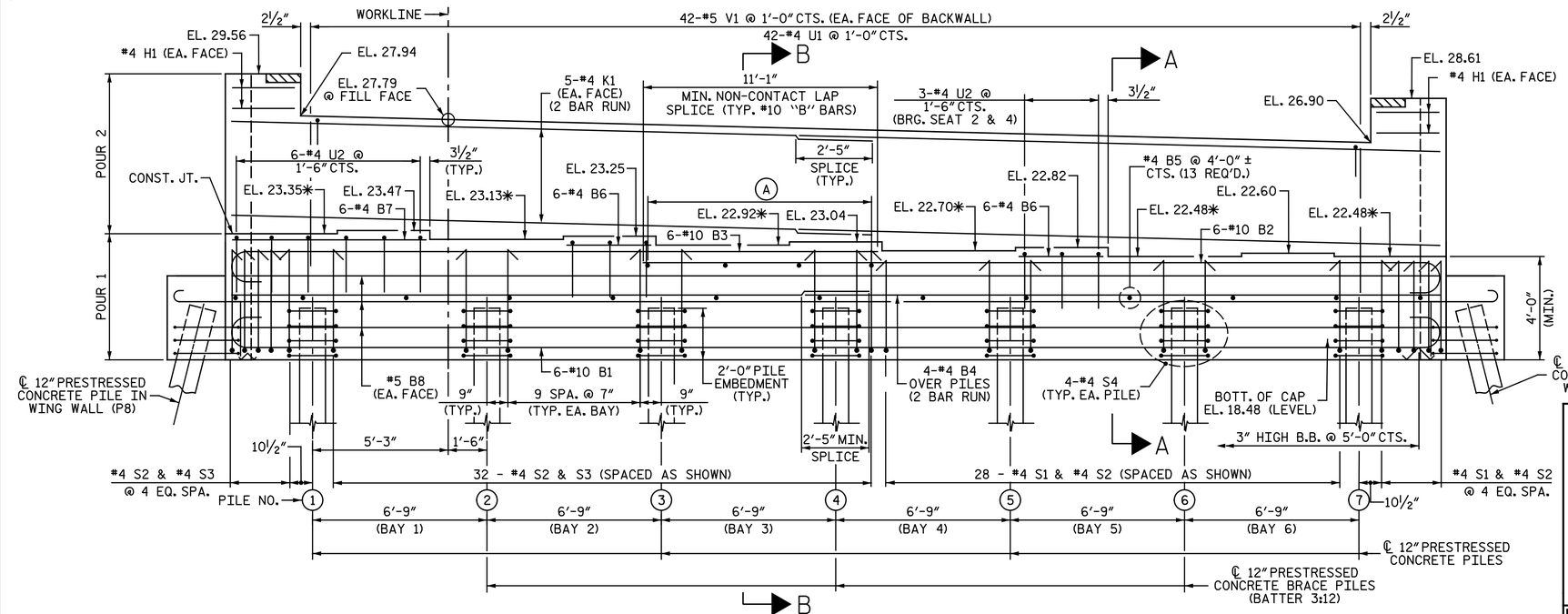


PLAN



ELEVATION

✳FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEATS, SEE "SECTION A-A", SHEET 3 OF 3

NOTES:

FOR "SECTION A-A" AND "SECTION B-B", SEE SHEET 3 OF 3.

(A) #4 B5 @ 4'-0"± CTS. (4 REQUIRED UNDER #10 B2 BARS)

FOR ADDITIONAL INFORMATION AND NOTES, SEE "GENERAL DRAWING" SHEET 4 OF 5.

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 END BENT 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%.

INSTALL THE 4"Ø 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.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 3

DRAWN BY : N. B. SPEAKS DATE : 3-18-14

CHECKED BY : A. M. HOUSTON DATE : 3-18-14

DWG. 60 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752B48F5064450... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0480... 3/13/2015

Baker

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-60
1			3			TOTAL SHEETS
2			4			68

SITE 4

nbspeaks 3/5/2015 4:15:06 PM
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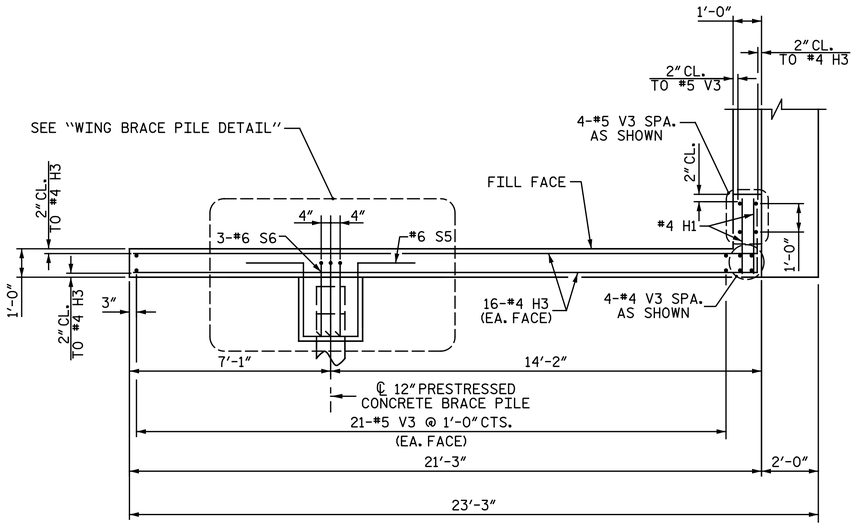
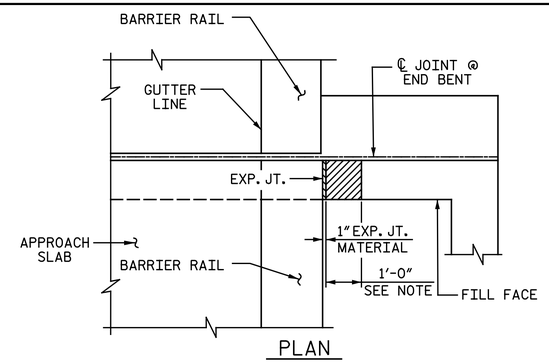


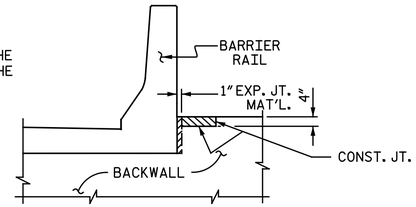
PLAN OF LEFT WING WALL (W3)



PLAN

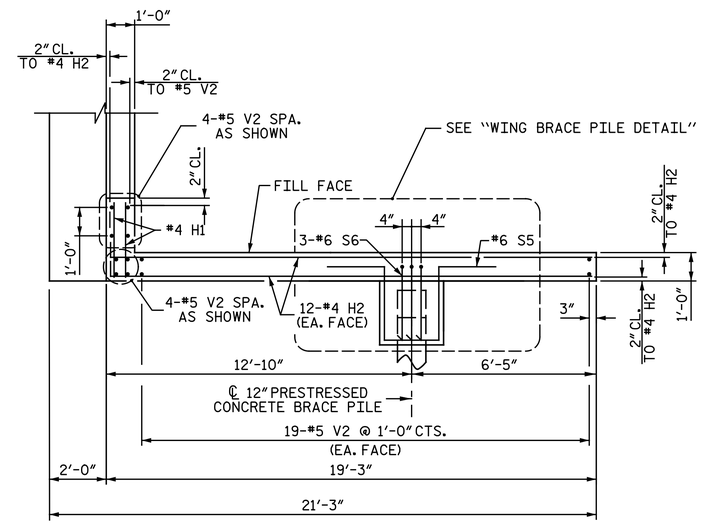
NOTE:

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

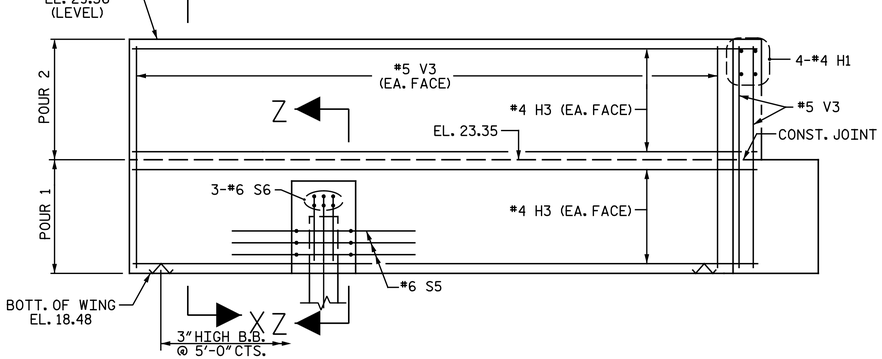


ELEVATION

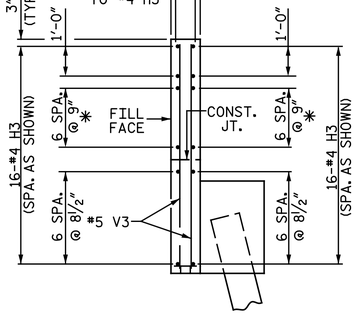
WING WALL DETAIL



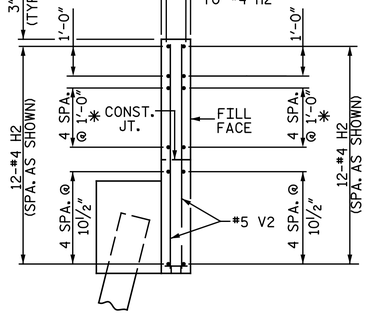
PLAN OF RIGHT WING WALL (W4)



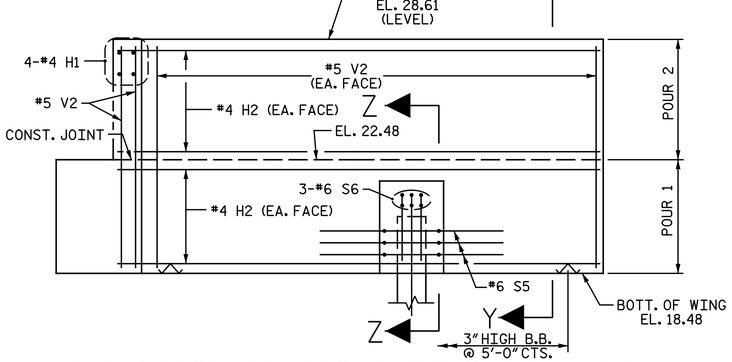
ELEVATION OF LEFT WING WALL (W3)



SECTION X-X

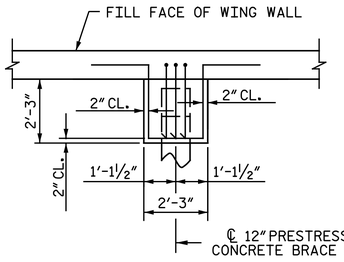


SECTION Y-Y

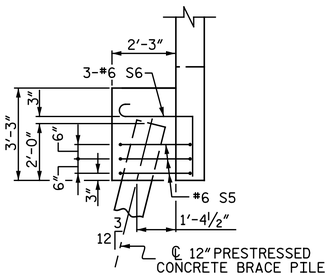


ELEVATION OF RIGHT WING WALL (W4)

✱MATCH "H" BARS TO K1 BARS IN BACKWALL



WING BRACE PILE DETAIL



SECTION Z-Z

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2
WING WALL DETAILS

RIGHT LANE

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN C. HATHAWAY
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Baker
Michael Baker Engineering
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NC License No. : F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-61
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 3-18-14
CHECKED BY : A. M. HOUSTON DATE : 3-18-14

DWG. 61 OF 68

nbspeaks
3/5/2015 4:15:07 PM
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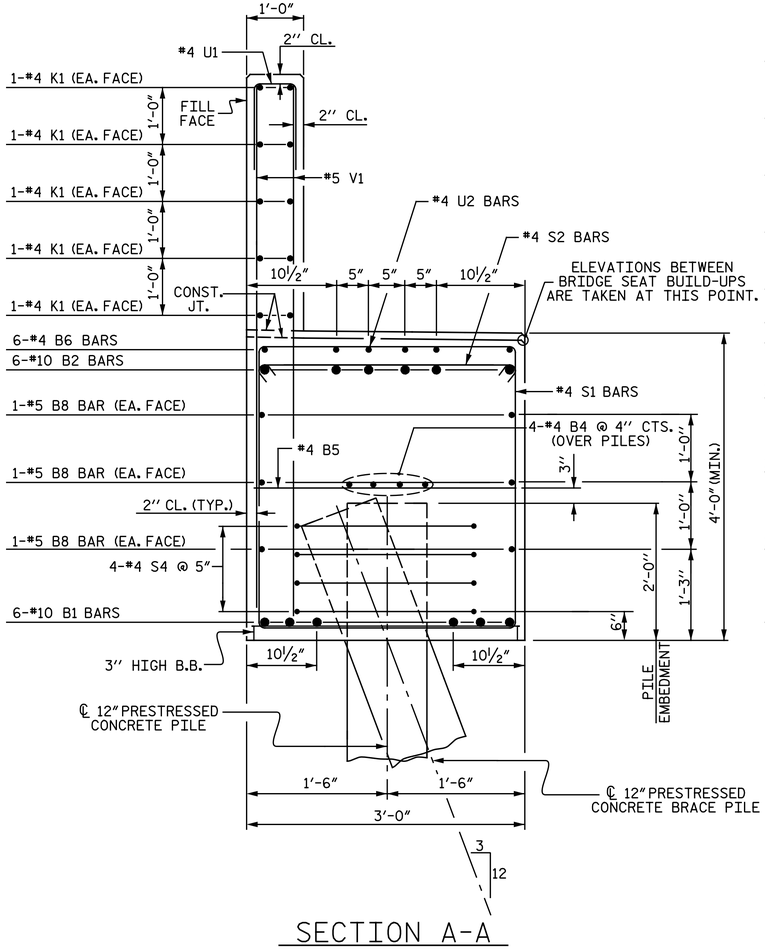
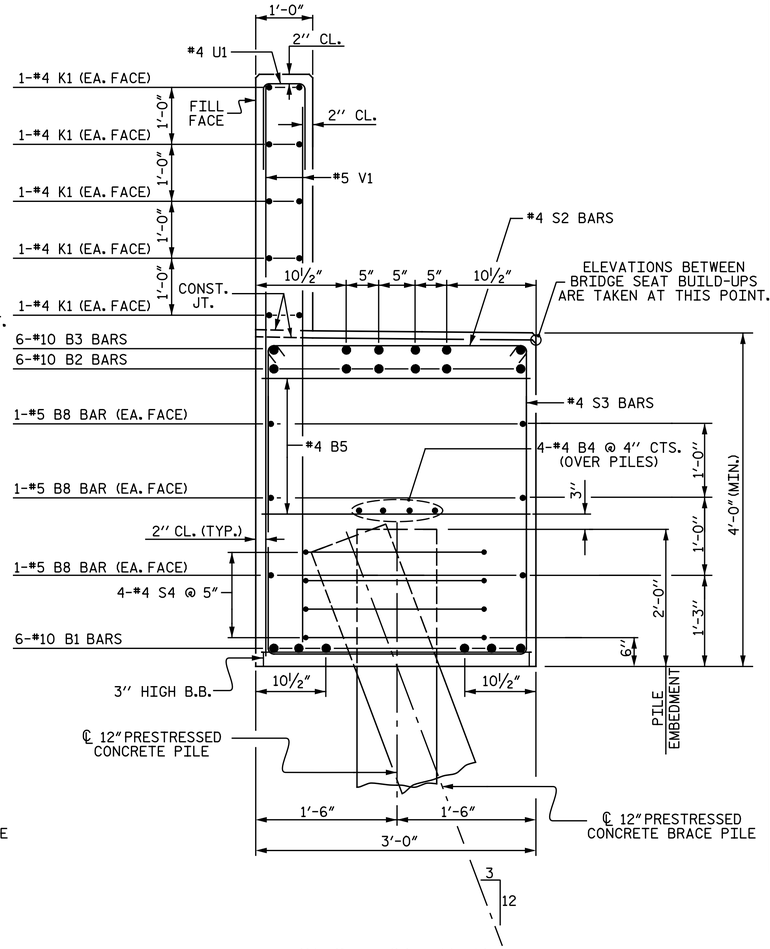
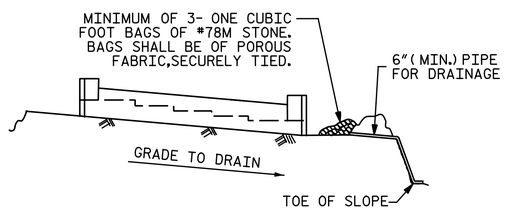
SITE 4



SECTION A-A



SECTION B-B



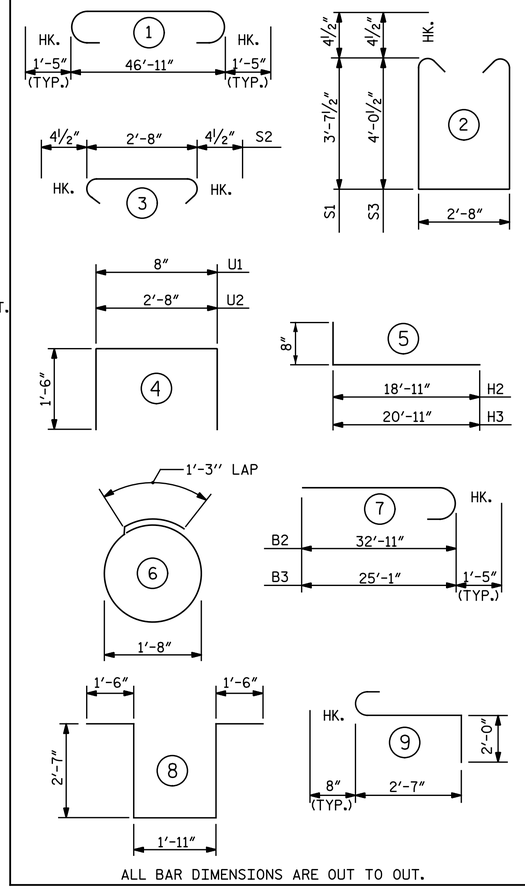
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

TEMPORARY DRAINAGE AT END BENT

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	10	1	49' - 9"	1,284
B2	6	10	7	34' - 4"	886
B3	6	10	7	26' - 6"	684
B4	8	4	STR	24' - 8"	132
B5	17	4	STR	2' - 8"	30
B6	12	4	STR	3' - 3"	26
B7	6	4	STR	7' - 7"	30
B8	6	5	STR	46' - 11"	294
H1	8	4	STR	2' - 7"	14
H2	24	4	5	19' - 7"	314
H3	32	4	5	21' - 7"	461
K1	20	4	STR	24' - 8"	330
S1	33	4	2	10' - 8"	235
S2	70	4	3	3' - 5"	160
S3	37	4	2	11' - 6"	284
S4	28	4	6	6' - 6"	122
S5	6	6	8	10' - 1"	91
S6	6	6	9	5' - 3"	47
U1	42	4	4	3' - 8"	103
U2	12	4	4	5' - 8"	45
V1	84	5	STR	8' - 3"	723
V2	46	5	STR	9' - 8"	464
V3	50	5	STR	10' - 7"	552

REINFORCING STEEL	LBS.	7,311
CLASS "A" CONCRETE BREAKDOWN		
POUR #1 - CAP & LOWER WING WALLS	C.Y.	30.1
POUR #2 - BACKWALL & UPPER WING WALLS	C.Y.	18.1
TOTAL CLASS "A" CONCRETE	C.Y.	48.2
12" PRESTRESSED CONCRETE PILES NO. 9	LIN. FT.	450
PILE REDRIVES	EA.	4

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 3 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2 DETAILS

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-62
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 2-12-14
CHECKED BY : A. M. HOUSTON DATE : 2-14-14

DWG. 62 OF 68

SITE 4

nbspeaks
3/5/2015 4:15:08 PM
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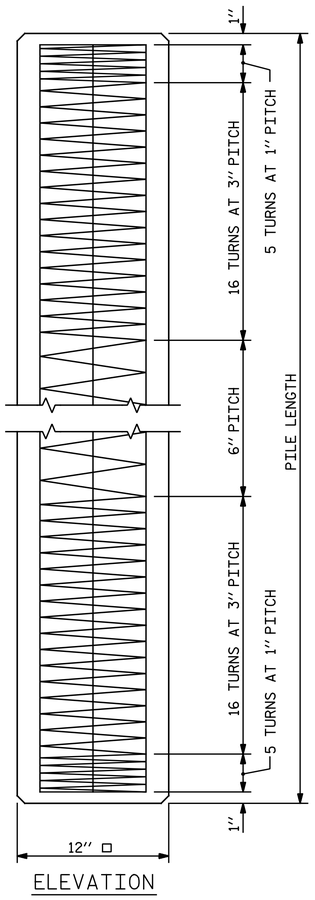
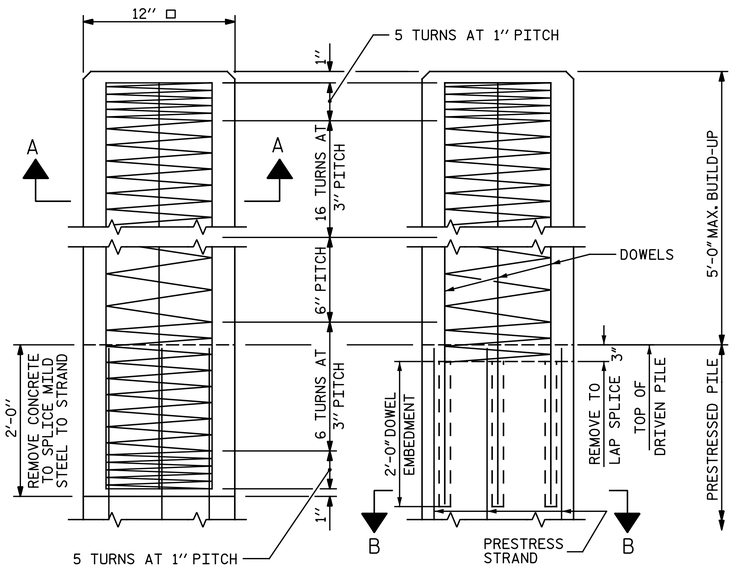
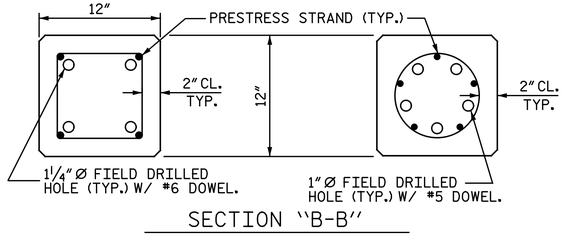


ELEVATION



BUILD-UP AND SPIRAL REINFORCING

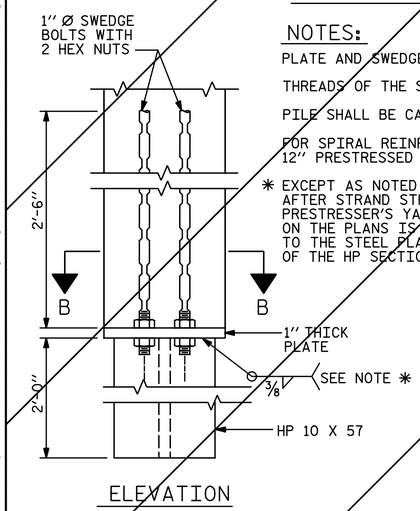
OPTIONAL BUILD-UP WITH DOWELS



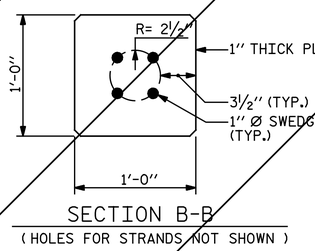
SECTION ''B-B''

(AT THE CONTRACTOR'S OPTION, PILE BUILD-UP MAY BE CONSTRUCTED WITH DOWELS.)

STEEL PILE TIP DETAILS



ELEVATION



SECTION B-B

(HOLES FOR STRANDS NOT SHOWN)

NOTES:

PLATE AND SWEDGE BOLTS SHALL MEET THE REQUIREMENTS OF AASHTO M270 GRADE 36.

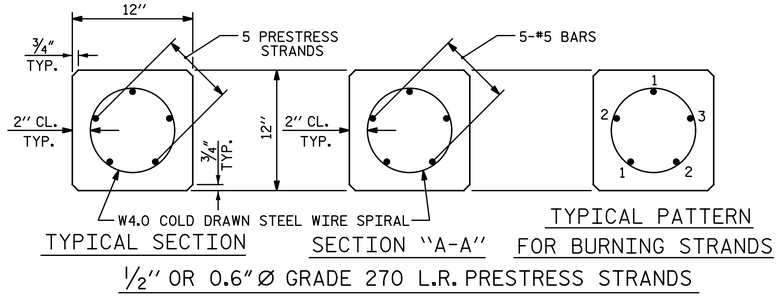
THREADS OF THE SWEDGE BOLTS SHALL BE BURRED AT THE FACE OF THE NUT.

PILE SHALL BE CAST WITH SWEDGE BOLTS AND PLATE IN PLACE.

FOR SPIRAL REINFORCING AND PRESTRESSING STRAND DETAILS, SEE STANDARD 12'' PRESTRESSED CONCRETE PILE ELEVATION AND TYPICAL SECTION.

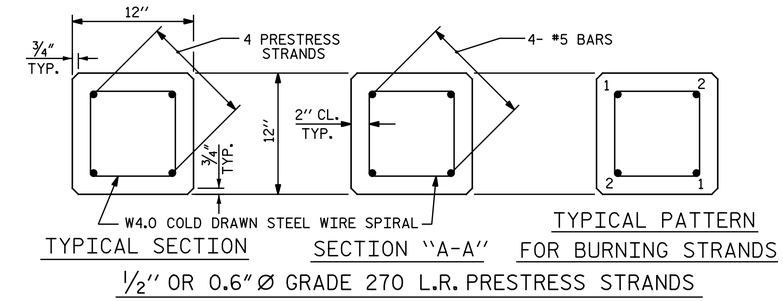
* EXCEPT AS NOTED BELOW, THE HP 10 X 57 SECTION SHALL BE WELDED TO THE STEEL PLATE AFTER STRAND STRESS IS RELIEVED. THE HP 10 X 57 SECTION MAY BE WELDED IN THE PRESTRESSER'S YARD OR IN THE FIELD. WHEN A CIRCULAR STRAND PATTERN AS SHOWN ON THE PLANS IS USED, THE CONTRACTOR, AT HIS OPTION, MAY WELD THE HP 10 X 57 SECTION TO THE STEEL PLATE AT THE FABRICATION PLANT PRIOR TO PLACING THE CONCRETE. THE FLANGES OF THE HP SECTION SHALL BE PARALLEL TO THE EDGES OF THE STEEL PLATE AND CONCRETE PILE.

DRAWN BY : N. B. SPEAKS DATE : 6-18-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14



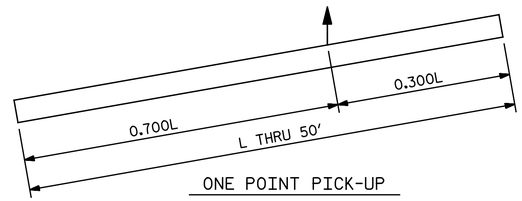
TYPICAL SECTION — SECTION ''A-A'' — TYPICAL PATTERN FOR BURNING STRANDS

½'' OR 0.6''Ø GRADE 270 L.R. PRESTRESS STRANDS

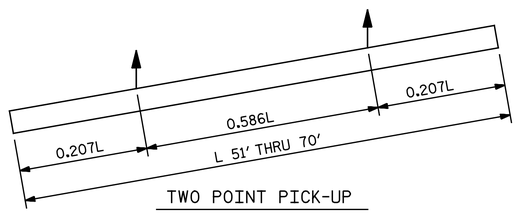


TYPICAL SECTION — SECTION ''A-A'' — TYPICAL PATTERN FOR BURNING STRANDS

½'' OR 0.6''Ø GRADE 270 L.R. PRESTRESS STRANDS



ONE POINT PICK-UP



TWO POINT PICK-UP

PICK-UP POINTS

QUANTITIES FOR ONE 12'' PRESTRESSED PILE

LENGTH	CONCRETE CU. YDS.	PILE WT. TONS	ONE POINT PICK-UP 0.300L	ONE POINT PICK-UP 0.700L	TWO POINT PICK-UP 0.207L	TWO POINT PICK-UP 0.586L
25'-0''	0.91	1.85	7'-6''	17'-6''		
30'-0''	1.10	2.22	9'-0''	21'-0''		
35'-0''	1.28	2.59	10'-6''	24'-6''		
40'-0''	1.46	2.96	12'-0''	28'-0''		
45'-0''	1.64	3.33	13'-6''	31'-6''		
50'-0''	1.83	3.72	15'-0''	35'-0''		
55'-0''	2.01	4.09			11'-4½''	32'-3''
60'-0''	2.19	4.46			12'-5''	35'-2''
65'-0''	2.38	4.81			13'-5½''	38'-1''
70'-0''	2.57	5.18			14'-6''	41'-0''

DWG. 63 OF 68

NOTES:

PRESTRESSED CONCRETE STRENGTH : f'c= 7,500 PSI

BUILD-UP CONCRETE STRENGTH : f'c= 7,500 PSI

STRAND DATA:

SIZE	GRADE	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS FORCE
½''	270 L.R.	0.153	41,300# PER STRAND	30,980# PER STRAND
0.6''	270 L.R.	0.217	58,600# PER STRAND	43,940# PER STRAND

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS CONFORMING TO AASHTO M203. STRAND SAMPLING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

AT THE CONTRACTOR'S OPTION, ½'' OR 0.6'' STRANDS MAY BE USED IN EITHER THE 4 OR 5 STRAND CONFIGURATION SHOWN IN THE TYPICAL SECTION DETAIL. MIXING OF STRAND SIZE IS NOT ALLOWED.

THE SLIP-FORM METHOD OF CASTING PILES WILL NOT BE PERMITTED.

TRANSFER THE LOAD FROM THE ANCHORAGES TO THE PILE AFTER THE CONCRETE HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI.

IF STRAND STRESS IS RELIEVED BY BURNING, THE STRANDS SHALL BE BURNED IN PAIRS, EXCEPT WHERE 5 STRANDS ARE USED, THE LAST STRAND MAY BE BURNED SINGLY ACCORDING TO BURNING PATTERNS SHOWN. NOT MORE THAN 4 STRANDS MAY BE BURNED AT ANY ONE SECTION BEFORE THE SAME STRANDS ARE BURNED AT BOTH ENDS OF THE BED AND BETWEEN EACH PAIR OF PILES IN THE BED.

PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

WHERE CAST-IN-PLACE LIFTING DEVICES ARE NOT USED, PICK-UP POINTS ARE TO BE INDICATED WITH A 2'' WIDE BLACK MARK.

DRIVE PILES USING A METHOD APPROVED BY THE ENGINEER, WHEREBY THE HEAD OF THE PILE IS NOT DAMAGED.

DRIVING OF THE BUILT-UP PILE WILL NOT BE PERMITTED UNTIL THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 5,000 PSI AND UNTIL A PERIOD OF SEVEN DAYS HAS ELAPSED SINCE CASTING OF THE BUILD-UP.

DOWEL INSTALLATION FOR OPTIONAL BUILD-UP

GROUT COMPRESSIVE STRENGTH: f'c= 5,000 PSI

BEFORE DRILLING DOWEL HOLES, REMOVE THE UPPER 3'' OF CONCRETE FROM THE TOP OF THE PILE WITHOUT DAMAGE TO THE REINFORCING STEEL. THE REMOVAL PLANE SHOULD BE NORMAL TO THE EDGE OF THE PILE.

DOWEL HOLES SHALL BE POSITIONED TO MAINTAIN ½'' CLEAR TO ALL EXISTING PRESTRESSING STRANDS IN THE CONCRETE PILE.

FIELD DRILLED HOLES SHALL BE CLEAN AND FREE OF ANY OBSTRUCTIONS BEFORE GROUTING OF DOWELS. DOWEL BARS SHALL BE INSTALLED AND GROUTED WITH AN APPROVED NON-SHRINK GROUT.

THE SPIRAL REINFORCING IN ALL BUILD-UPS SHALL BE W4.0 COLD DRAWN WIRE WHICH SHALL BE SECURED TO THE LONGITUDINAL REINFORCEMENT TO MAINTAIN PITCH.

THE SPIRAL REINFORCING IN THE BUILD-UP AND THE PRESTRESSED CONCRETE PILE SHALL BE SPLICED BY OVERLAPPING A MIN. OF ONE TURN.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780271DA0460... 3/13/2015

Baker

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

12'' PRESTRESSED CONCRETE PILE

RIGHT LANE

REVISIONS NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S08-63
2			4			TOTAL SHEETS 68

SITE 4

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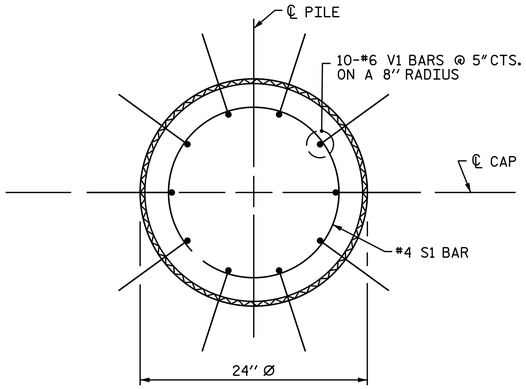
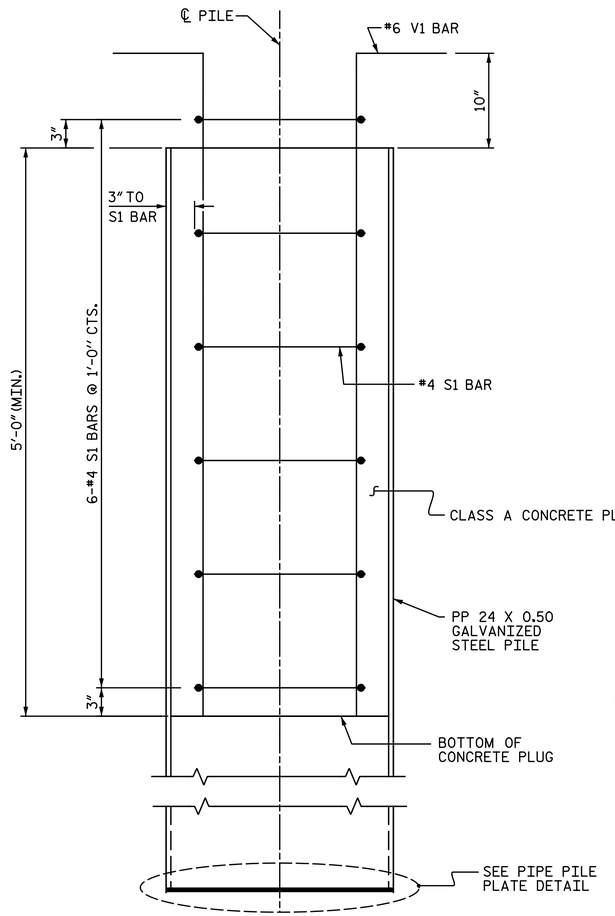


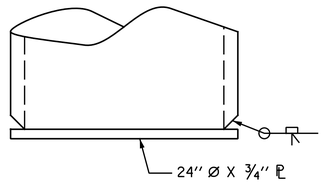
PLAN



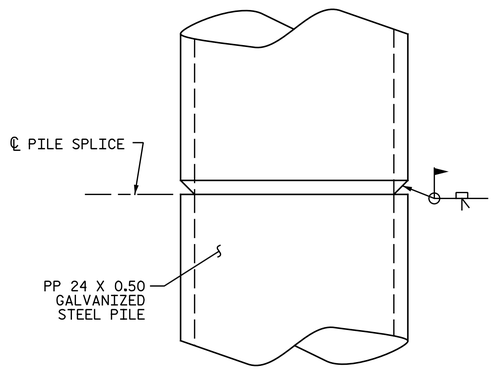
ELEVATION

PP 24 X 0.50 GALVANIZED STEEL PILE

(CLOSED END)



PIPE PILE PLATE DETAIL



PIPE PILE SPLICE DETAIL

NOTES:

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

GALVANIZE STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED. GALVANIZING OR METALLIZING PIPE PILE PLATES IS NOT REQUIRED.

PIPE PILE PLATES, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

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

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

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

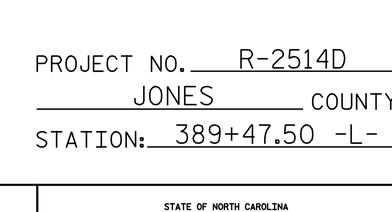
FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE BENT CAP UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF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

THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 24 X 0.50 GALVANIZED STEEL PILES.

BILL OF MATERIAL FOR ONE PP 24 X 0.50 GALVANIZED STEEL PILE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	6′-0″	24
V1	10	#6	2	6′-8″	100
REINFORCING STEEL =				124	lbs
CLASS A CONCRETE					
5′-0″ MINIMUM PLUG					0.5 CY

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

DRAWN BY : N. B. SPEAKS DATE : 5-28-14

CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 64 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 575284BF5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 2837B0710A04490... 3/13/2015

Baker

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8000 Regency Parkway, Suite 600
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NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

24″ STEEL PIPE PILE

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-64
1			3			TOTAL SHEETS
2			4			68

SITE 4

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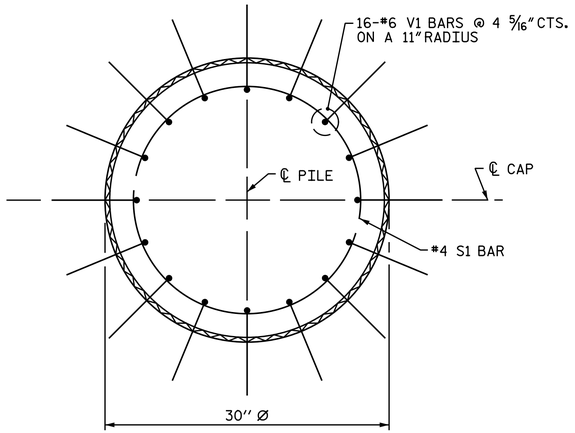

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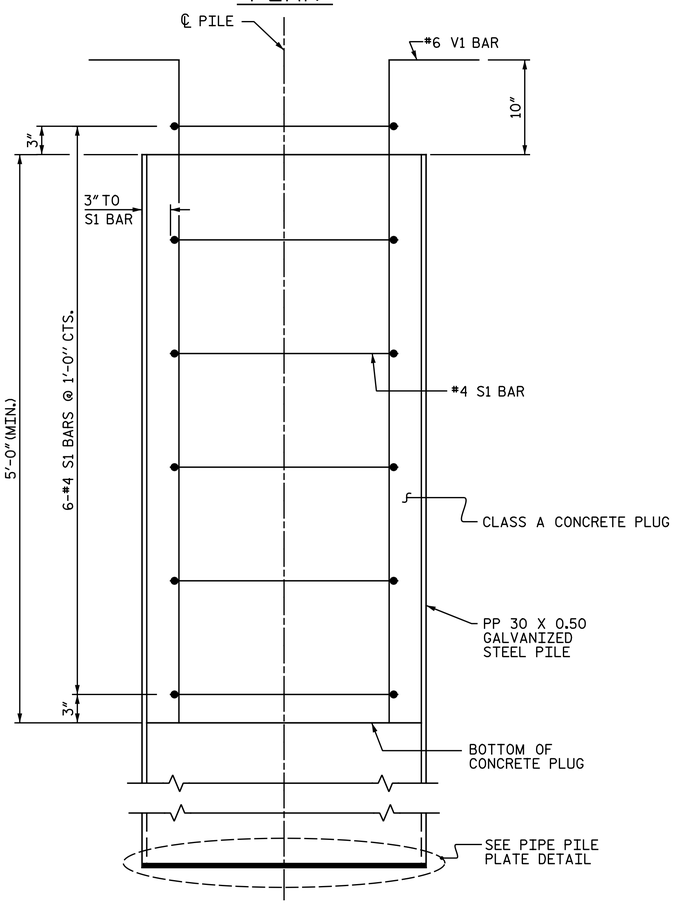
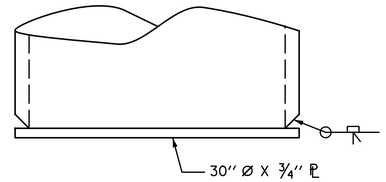


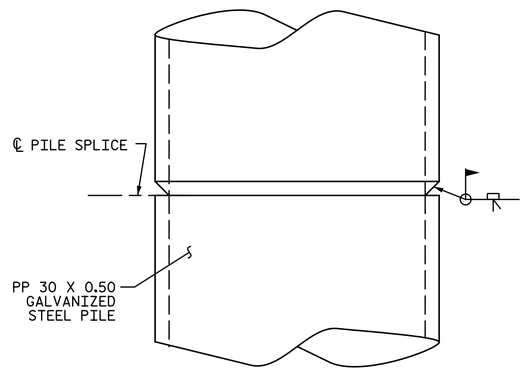
ELEVATION

PP 30 X 0.50 GALVANIZED STEEL PILE

(CLOSED END)



PIPE PILE PLATE DETAIL



PIPE PILE SPLICE DETAIL

NOTES

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

GALVANIZE STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED. GALVANIZING OR METALLIZING PIPE PILE PLATES IS NOT REQUIRED.

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THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 30 X 0.50 GALVANIZED STEEL PILES.

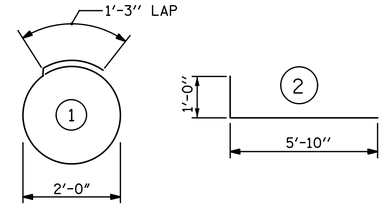
BILL OF MATERIAL FOR ONE PP 30 X 0.50 GALVANIZED STEEL PILE

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

CLASS A CONCRETE

5'-0" MINIMUM PLUG 0.8 CY

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 57129A6F5084459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283786071DA0460... 3/13/2015

Baker

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

30" STEEL PIPE PILE

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-65
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : N. B. SPEAKS DATE : 5-27-14
CHECKED BY : A. M. HOUSTON DATE : 7-14-14

DWG. 65 OF 68

SITE 4

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3/5/2015 4:16:57 PM
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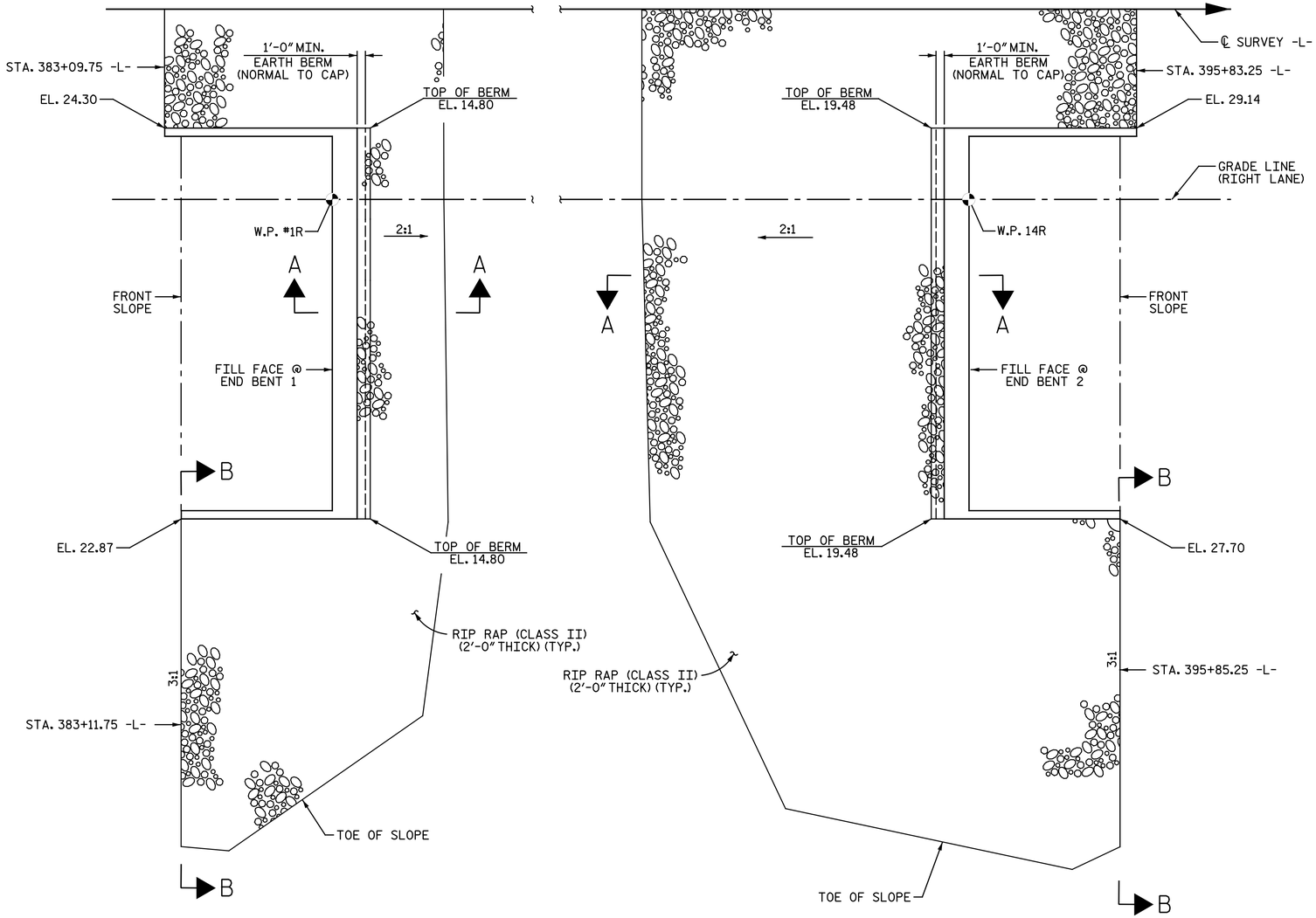
NOTES:
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

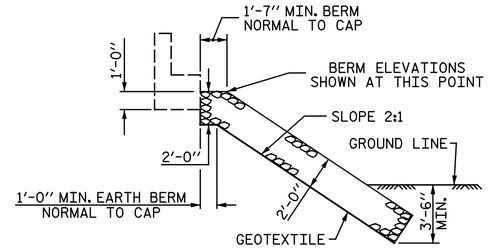
ESTIMATED QUANTITIES		
BRIDGE @ STA. 389+47.50 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	331	367
END BENT 2	620	688



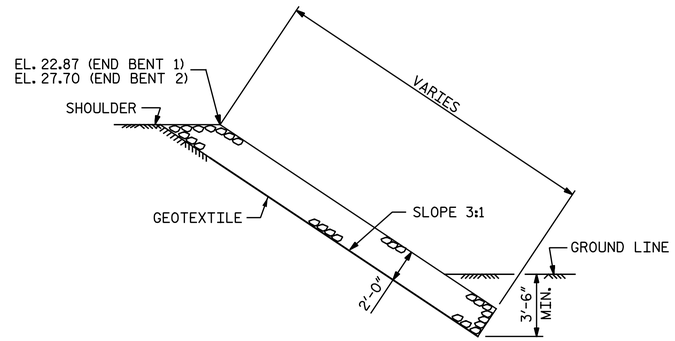
@ END BENT 1

PLAN

@ END BENT 2



SECTION A-A



SECTION B-B

PROJECT NO. R-2514D
JONES COUNTY
STATION: 389+47.50 -L-

nbspeaks
3/5/2015 4:16:57 PM
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DRAWN BY : N. B. SPEAKS DATE : 8-13-13
CHECKED BY : A. L. PHILLIPS DATE : 8-19-13

DWG. 66 OF 68

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS
DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY
DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

Baker
Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

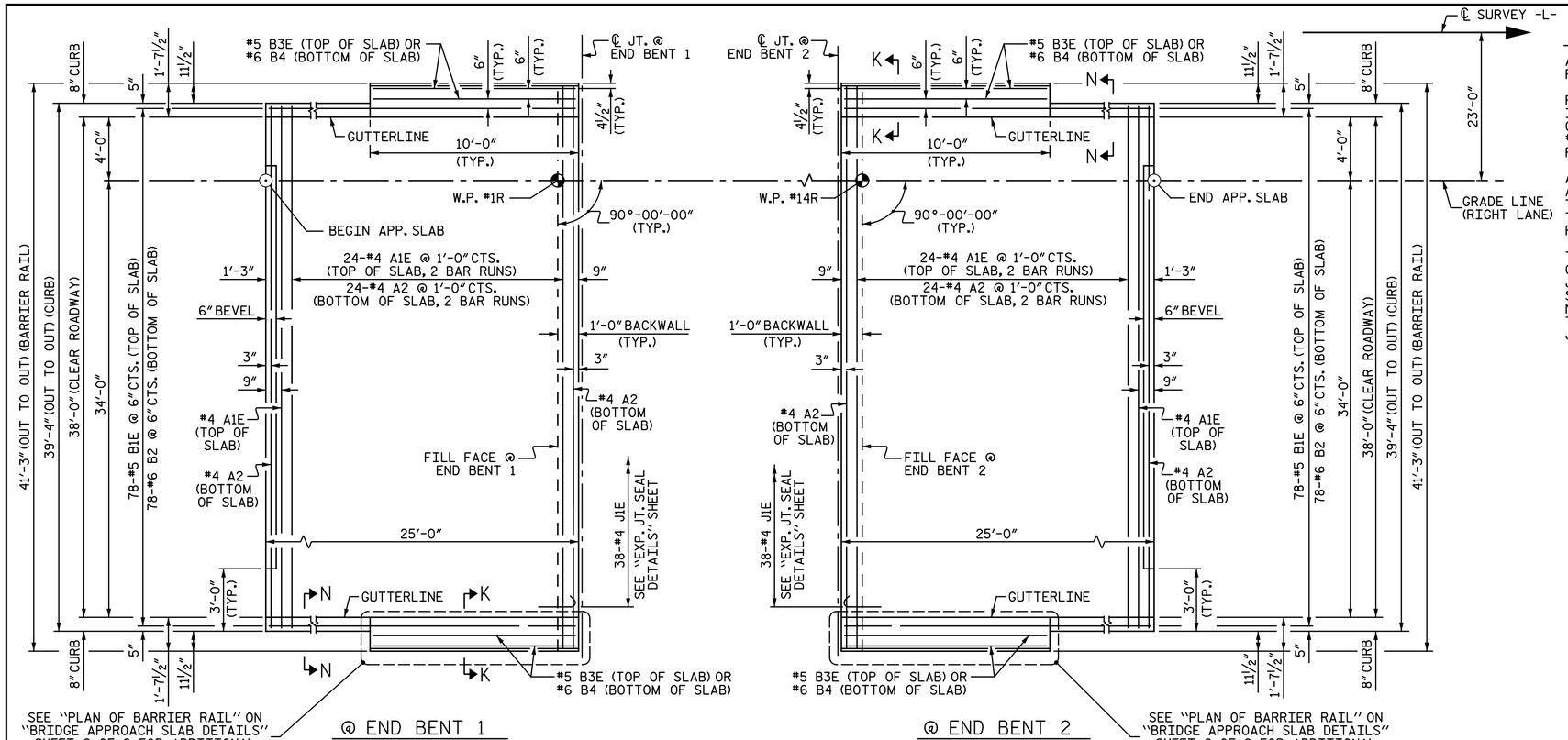
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RIP RAP DETAILS

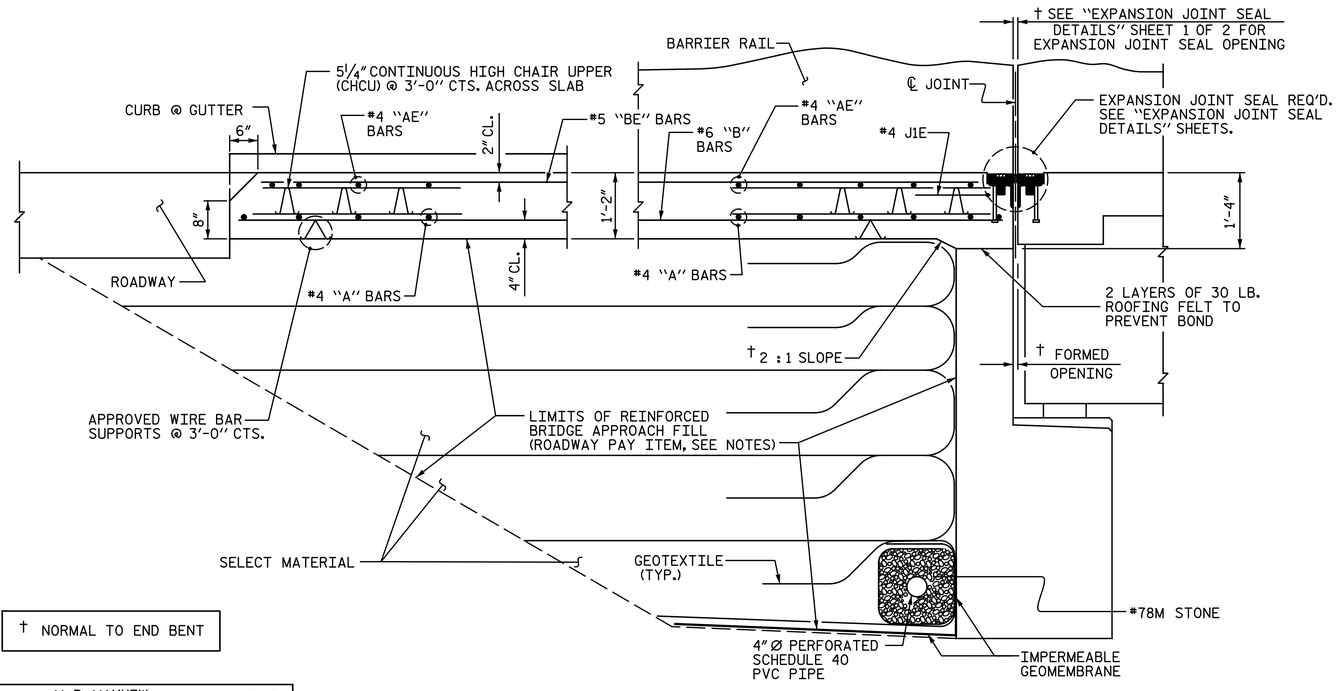
RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-66
1			3			TOTAL SHEETS
2			4			68

SITE 4

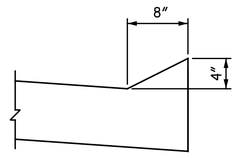


PLAN OF APPROACH SLABS

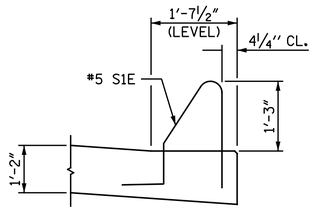


† NORMAL TO END BENT

SECTION THRU SLAB



SECTION N-N



SECTION K-K

CURB DETAILS

NOTES:

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

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

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

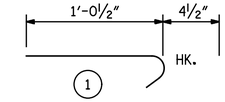
THE QUANTITY OF #4 J1E BARS ON THE BILL OF MATERIAL IS BASED ON 1'-0" CENTERS. J1 BARS SHALL BE PLACED AT EACH VERTICAL STUD ANCHOR BOLT. IN THE EVENT THAT THE NUMBER OF VERTICAL STUD ANCHORS EXCEEDS THE NUMBER OF J1 BARS SPECIFIED, ADDITIONAL J1E BARS WILL NOT BE REQUIRED.

BILL OF MATERIAL

APPROACH SLAB AT END BENT 1 OR END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1E	50	4	STR	21' - 6"	718
A2	52	4	STR	21' - 4"	741
B1E	78	5	STR	23' - 11"	1,946
B2	78	6	STR	24' - 8"	2,890
B3E	4	5	STR	9' - 8"	40
B4	4	6	STR	9' - 8"	58
J1E	38	4	1	1' - 5"	36
EPOXY COATED REINFORCING STEEL				LBS.	2,740
REINFORCING STEEL				LBS.	3,689
CLASS AA CONCRETE				C.Y.	43.6

BAR TYPE



ALL BAR DIMENSIONS ARE OUT TO OUT

SPLICE LENGTHS

BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"

** QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED. SEE SHEET 2 OF 2.

"E" SUFFIX DENOTES EPOXY COATED REINFORCING STEEL.

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No. : F-1084

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-67
1			3			TOTAL SHEETS
2			4			68

DRAWN BY : M. D. MAYHEW DATE : 8-7-13
CHECKED BY : A. L. PHILLIPS DATE : 8-26-13

DWG. 67 OF 68

SITE 4

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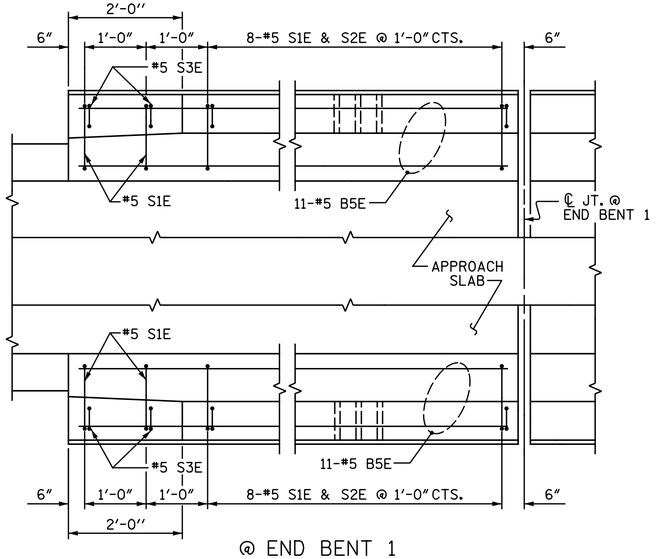
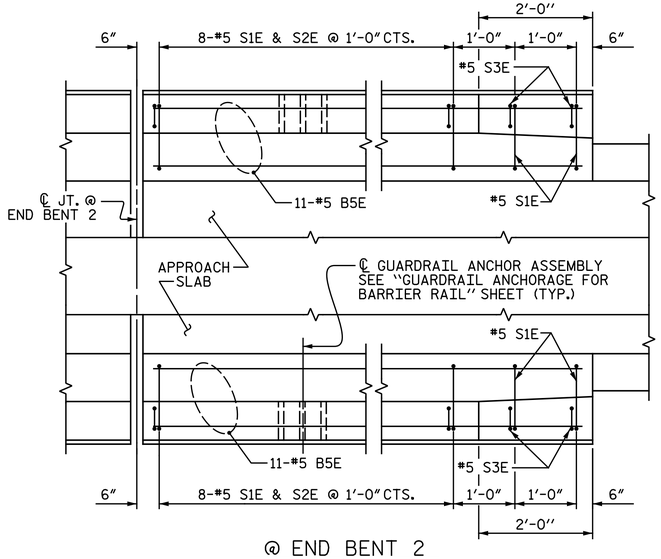


@ END BENT 1



@ END BENT 2

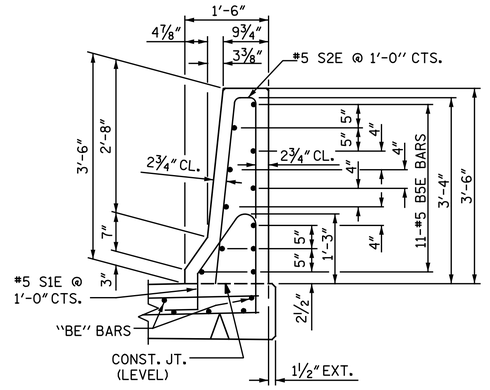
PLAN OF BARRIER RAIL

NOTES:

THE COST OF THE BARRIER RAIL ON THE APPROACH SLAB SHALL BE INCLUDED IN THE LINEAR FOOT CONTRACT PRICE BID FOR "CONCRETE BARRIER RAIL".

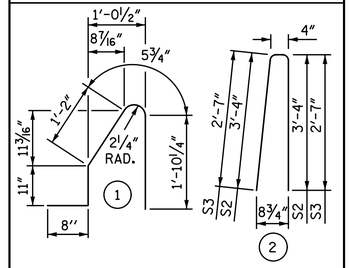
THE BARRIER RAIL ON EACH APPROACH SLAB SHALL NOT BE CAST UNTIL ALL APPROACH SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.



SECTION THRU RAIL

BAR TYPES



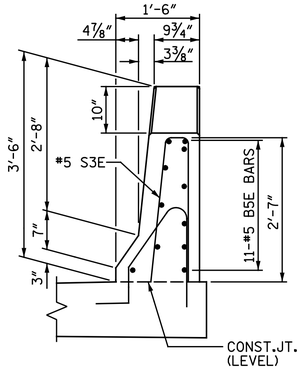
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

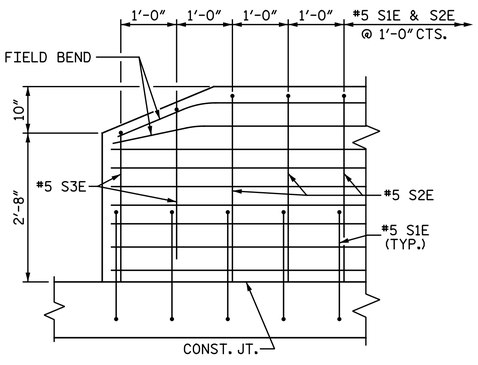
BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B5E	44	5	STR	9' - 8"	444
S1E	40	5	1	5' - 1"	212
S2E	32	5	2	7' - 0"	234
S3E	8	5	2	5' - 6"	46
EPOXY COATED REINFORCING STEEL				LBS.	936
CLASS AA CONCRETE				C.Y.	5.4

"E" SUFFIX DENOTES EPOXY COATED REINFORCING STEEL.

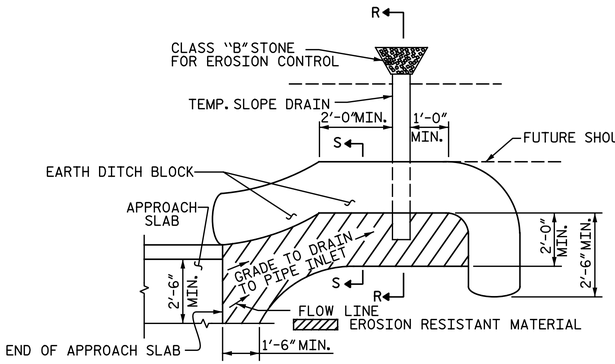


END VIEW



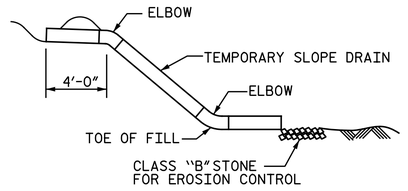
SIDE VIEW

END OF RAIL DETAILS

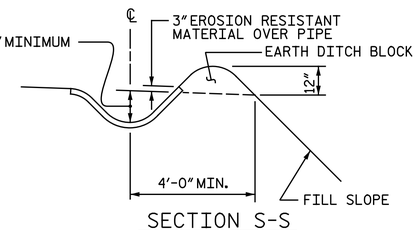


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

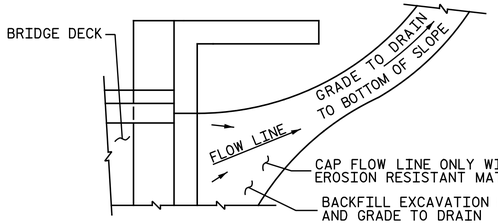
PLAN VIEW



SECTION R-R



SECTION S-S



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

TEMPORARY DRAINAGE DETAIL

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

PROJECT NO. R-2514D

JONES COUNTY

STATION: 389+47.50 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 040769 ENGINEER ANDREW L. PHILLIPS

DocuSigned by: Andrew Phillips 5752848F5064459... 3/13/2015

NORTH CAROLINA PROFESSIONAL SEAL 25911 ENGINEER DWAIN G. HATHAWAY

DocuSigned by: Dwain Hathaway 283780710A0460... 3/13/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB DETAILS

RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S08-68
1			3			TOTAL SHEETS
2			4			68

Baker

Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, North Carolina 27518
NC License No.: F-1084

DRAWN BY : M. D. MAYHEW DATE : 8-7-13
CHECKED BY : A. L. PHILLIPS DATE : 8-26-13

DWG. 68 OF 68

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SITE 4

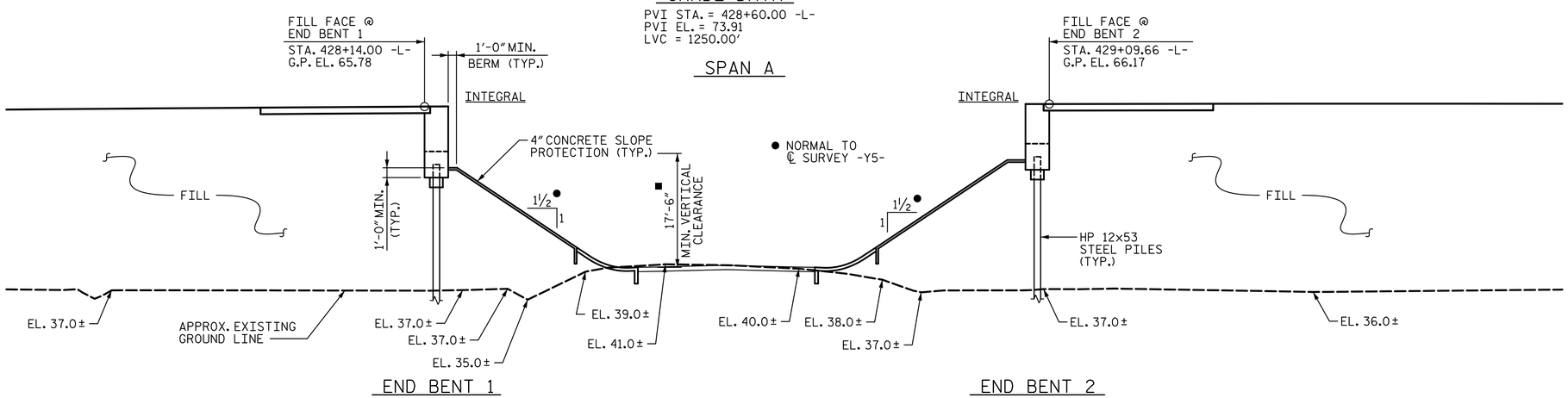
428+00 429+00 430+00

+ 2.9405% - 2.1154%

GRADE DATA

PVI STA. = 428+60.00 -L-
PVI EL. = 73.91
LVC = 1250.00'

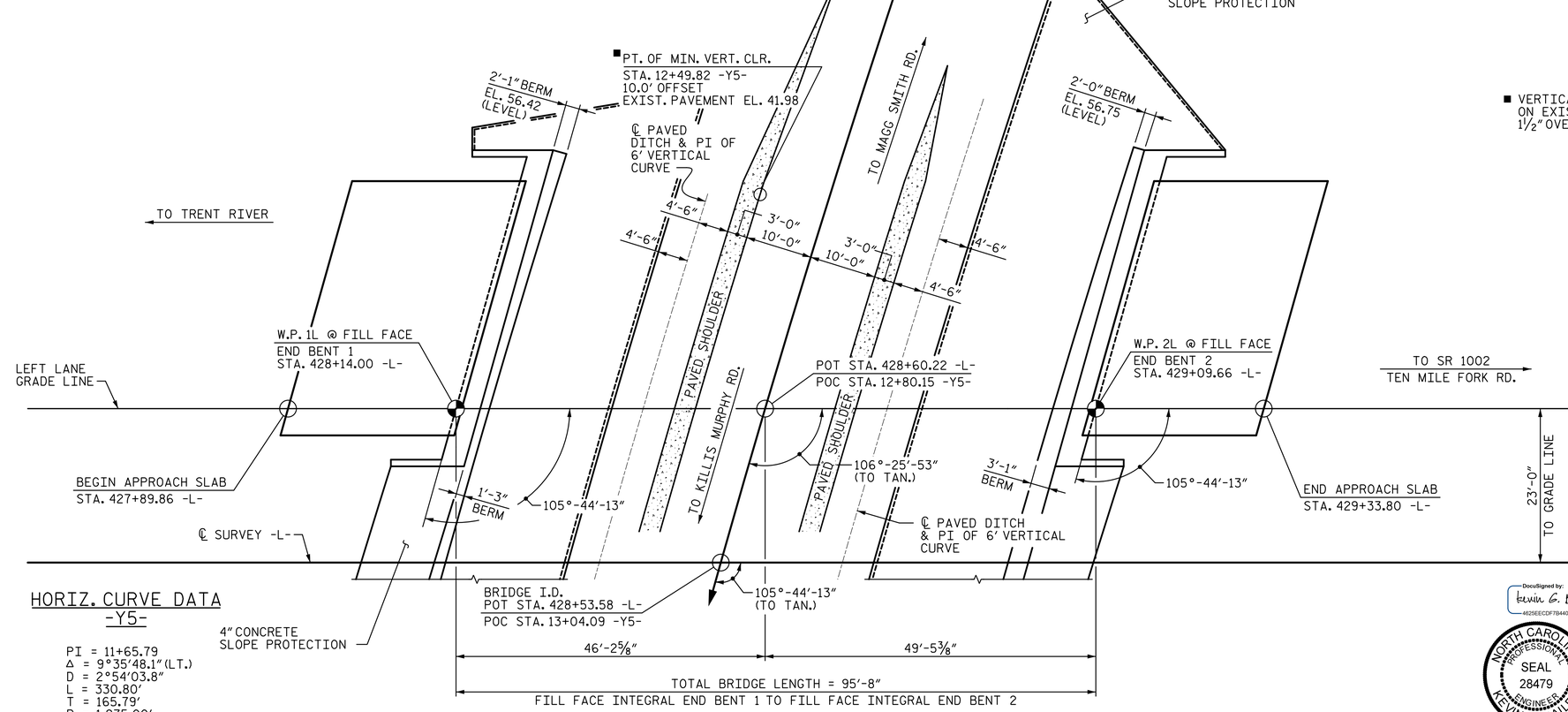
SPAN A



END BENT 1 END BENT 2

SECTION ALONG LEFT LANE GRADE LINE

(SECTIONS AT RIGHT ANGLES TO END BENTS)



■ VERTICAL CLEARANCE IS CALCULATED BASED ON EXISITNG PAVEMENT ELEVATIONS AND 1½" OVERLAY

HORIZ. CURVE DATA -Y5-

PI = 11+65.79
Δ = 9°35'48.1" (LT.)
D = 2°54'03.8"
L = 330.80'
T = 165.79'
R = 1,975.00'

PLAN

(PILES NOT SHOWN FOR CLARITY)

PROJECT NO. R-2514D
JONES & CRAVEN COUNTY
STATION: 428+53.58 -L-
= 13+04.09 -Y5-
SHEET 1 OF 3 BRIDGE NO. 103

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE ON US 17 OVER OAK GROVE RD. (SR 1121) BETWEEN TRENT RIVER AND SR 1002
-LEFT LANE-

DocuSigned by: Kevin G. Bailey 4625EECDF7B4401...
NORTH CAROLINA PROFESSIONAL SEAL 28479 ENGINEER KEVIN G. BAILEY
3/10/2015

DocuSigned by: Adam J. Peter E3F6AF8D9B4742A...
NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER
3/10/2015

DRAWN BY : VMW DATE : 5-14
CHECKED BY : MLO DATE : 5-14
DESIGN ENGINEER OF RECORD: A. PETER DATE : 6-14

STV / Ralph Whitehead Associates, Inc.
900 West Trade Street, Suite 715
Charlotte, NC 28202
NC License Number F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S09-1
1			3			TOTAL SHEETS
2			4			24

STR. #9

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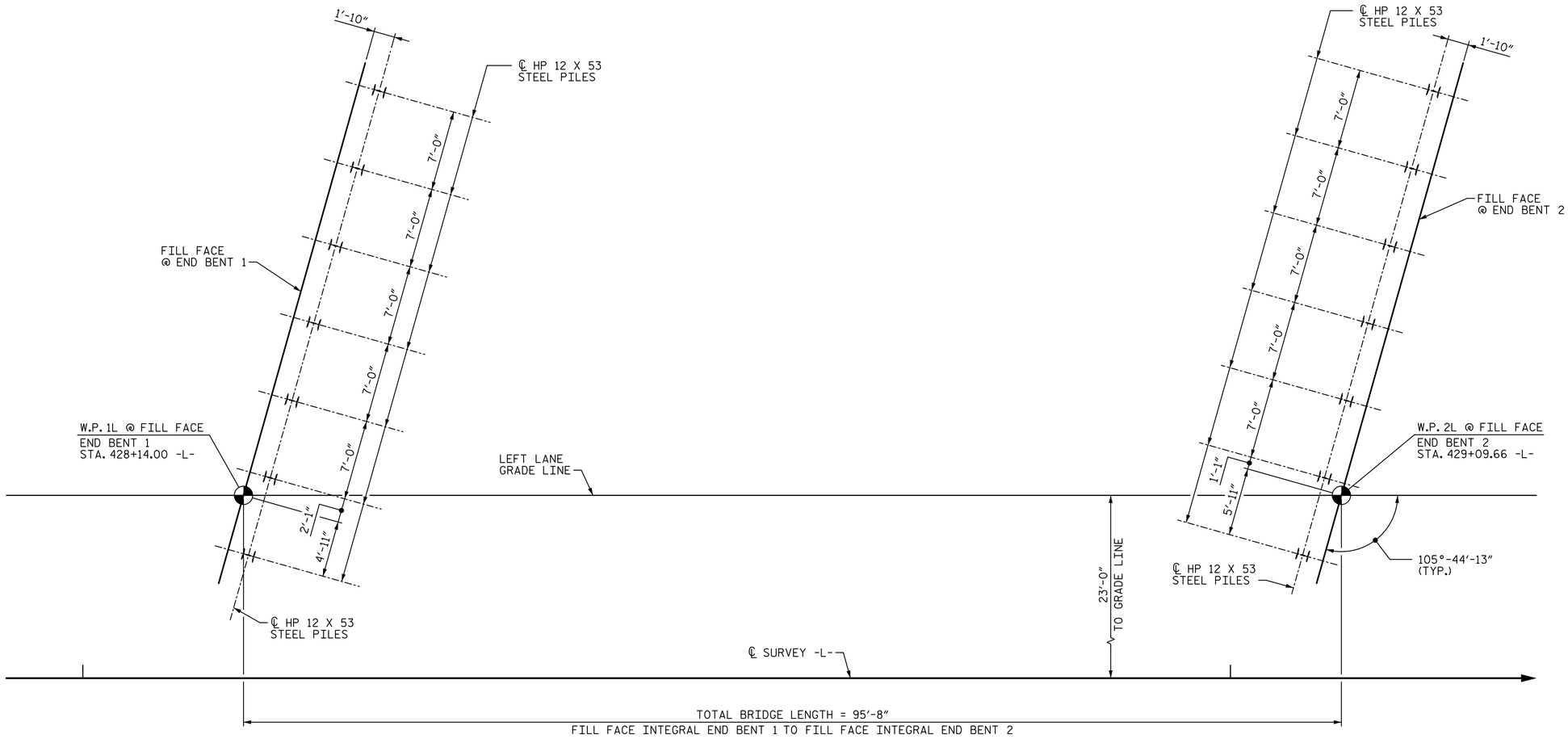

FOUNDATION LAYOUT

(DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE.)

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 120 TONS PER PILE.

DRIVE PILES AT END BENT 1 AND END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 160 TONS PER PILE.

STEEL H-PILE POINTS ARE REQUIRED FOR STEEL H-PILES AT END BENT 1 AND END BENT 2. FOR STEEL PILE POINTS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 48,500 FT-LBS PER BLOW TO 83,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT 1 AND END BENT 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

TESTING THE FIRST PRODUCTION PILE WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
= 13+04.09 -Y5-

SHEET 2 OF 3

DocuSigned by: Kevin G. Bailey 4625EECDF7B4401...

NORTH CAROLINA PROFESSIONAL SEAL 28479 ENGINEER KEVIN G. BAILEY

3/10/2015

DocuSigned by: Adam J. Peter E3F8AF8D9B4742A...

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER

3/10/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOUNDATION LAYOUT

-LEFT LANE-

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S09-2
1			3			TOTAL SHEETS
2			4			24

STV / Ralph Whitehead Associates, Inc.
900 West Trade Street, Suite 715
Charlotte, NC 28202
NC License Number F-0991

DRAWN BY : VMW DATE : 5-14
CHECKED BY : MLO DATE : 5-14

DESIGN ENGINEER OF RECORD: A. PETER DATE : 6-14

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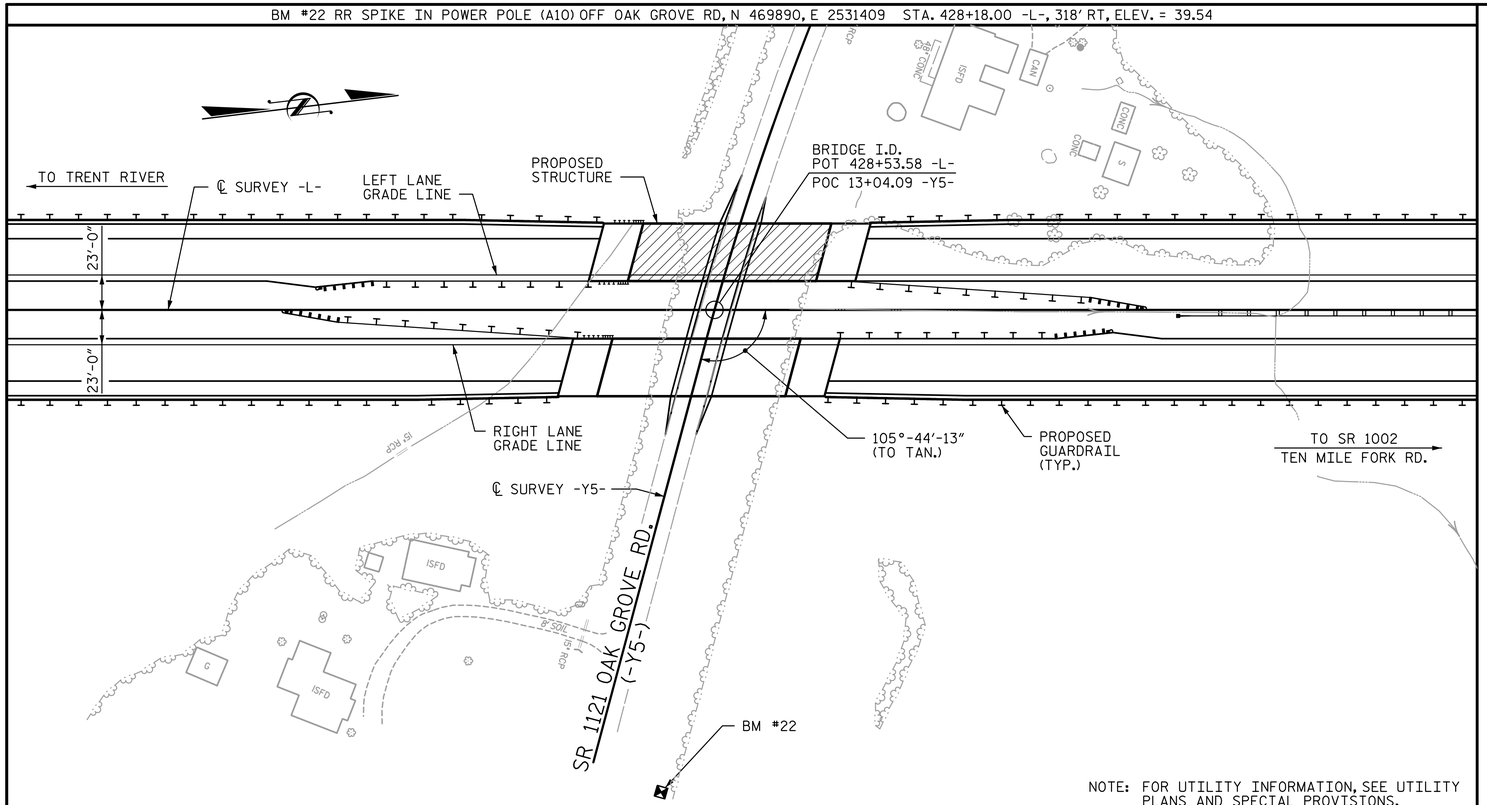

LOCATION SKETCH

GENERAL NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

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

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

FOR FOUNDATION NOTES, SEE "FOUNDATION LAYOUT" SHEET.

FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.

FOR PLACING LOAD ON STRUCTURE MEMBERS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE ELEVATION AND CLEARANCE SHOWN ON THE PLANS AT THE POINT OF MINIMUM VERTICAL CLEARANCE ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE ELEVATION(S) ON THE EXISTING PAVEMENT AND CHECK THE CLEARANCE. REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM VERTICAL CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.

TOTAL BILL OF MATERIAL

	PDA TESTING	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	54" PRESTRESSED CONCRETE GIRDERS		HP 12x53 STEEL PILES		STEEL PILE POINTS	PILE REDRIVES	CONCRETE BARRIER RAIL	4" SLOPE PROTECTION	ELASTOMERIC BEARINGS
	EA.	SQ. FT.	SQ. FT.	CU. YD.	LUMP SUM	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	EA.	EA.	LIN. FT.	SQ. YDS.	LUMP SUM
SUPERSTRUCTURE		3,946	4,966		LUMP SUM		5	466.35					187.88		LUMP SUM
END BENT 1				30.1		4,665			7	490	7	4		245	
END BENT 2				30.1		4,563			7	455	7	4		300	
TOTAL	1	3,946	4,966	60.2	LUMP SUM	9,228	5	466.35	14	945	14	8	187.88	545	LUMP SUM

DocuSigned by: Kevin G. Bailey 4625EECDF7B440I...
3/10/2015

NORTH CAROLINA PROFESSIONAL SEAL 28479 ENGINEER KEVIN G. BAILEY

DocuSigned by: Adam J. Peter E3F8AFBD9B4742A...

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER
3/10/2015

PROJECT NO. R-2514D
JONES & CRAVEN COUNTY
STATION: 428+53.58 -L-
= 13+04.09 -Y5-
SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

LOCATION SKETCH, GENERAL NOTES AND TOTAL BILL OF MATERIAL
-LEFT LANE-

DRAWN BY : VMW DATE : 6-14
CHECKED BY : MLO DATE : 6-14
DESIGN ENGINEER OF RECORD: A. PETER DATE : 6-14

STV / Ralph Whitehead Associates, Inc.
900 West Trade Street, Suite 715
Charlotte, NC 28202
NC License Number F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S09-3
1			3			TOTAL SHEETS
2			4			24

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

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER
								MOMENT					SHEAR						MOMENT					
							LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93 (INVENTORY)	N/A	1	1.15	--	1.75	0.78	1.56	A	EL	45.9	0.90	1.15	A	I	8.6	0.80	0.78	1.30	A	EL	45.9	
		HL-93 (OPERATING)	N/A		1.52	--	1.35	0.78	2.02	A	EL	45.9	0.90	1.52	A	I	8.6	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	2	1.54	55.44	1.75	0.78	2.14	A	EL	45.9	0.90	1.54	A	I	8.6	0.80	0.78	1.78	A	EL	45.9	
		HS-20 (OPERATING)	36.000		2.04	73.44	1.35	0.78	2.77	A	EL	45.9	0.90	2.04	A	I	8.6	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		4.19	56.57	1.40	0.78	6.27	A	EL	45.9	0.90	5.00	A	I	8.6	0.80	0.78	4.19	A	EL	45.9	
		SNGARBS2	20.000		3.05	61.00	1.40	0.78	4.57	A	EL	45.9	0.90	3.47	A	I	8.6	0.80	0.78	3.05	A	EL	45.9	
		SNAGRIS2	22.000		2.86	62.92	1.40	0.78	4.29	A	EL	45.9	0.90	3.20	A	I	8.6	0.80	0.78	2.86	A	EL	45.9	
		SNCOTTS3	27.250		2.08	56.68	1.40	0.78	3.12	A	EL	45.9	0.90	2.43	A	I	8.6	0.80	0.78	2.08	A	EL	45.9	
		SNAGGRS4	34.925		1.71	59.72	1.40	0.78	2.57	A	EL	45.9	0.90	1.96	A	I	8.6	0.80	0.78	1.71	A	EL	45.9	
		SNS5A	35.550		1.68	59.72	1.40	0.78	2.51	A	EL	45.9	0.90	1.97	A	I	8.6	0.80	0.78	1.68	A	EL	45.9	
		SNS6A	39.950		1.53	61.12	1.40	0.78	2.29	A	EL	45.9	0.90	1.78	A	I	8.6	0.80	0.78	1.53	A	EL	45.9	
		SNS7B	42.000		1.45	60.90	1.40	0.78	2.18	A	EL	45.9	0.90	1.73	A	I	8.6	0.80	0.78	1.45	A	EL	45.9	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.86	61.38	1.40	0.78	2.79	A	EL	45.9	0.90	2.15	A	I	8.6	0.80	0.78	1.86	A	EL	45.9	
		TNT4A	33.075		1.86	61.52	1.40	0.78	2.79	A	EL	45.9	0.90	2.10	A	I	8.6	0.80	0.78	1.86	A	EL	45.9	
		TNT6A	41.600		1.51	62.82	1.40	0.78	2.27	A	EL	45.9	0.90	1.83	A	I	8.6	0.80	0.78	1.51	A	EL	45.9	
		TNT7A	42.000		1.52	63.84	1.40	0.78	2.27	A	EL	45.9	0.90	1.79	A	I	8.6	0.80	0.78	1.52	A	EL	45.9	
		TNT7B	42.000		1.56	65.52	1.40	0.78	2.33	A	EL	45.9	0.90	1.70	A	I	8.6	0.80	0.78	1.56	A	EL	45.9	
		TNAGRIT4	43.000		1.49	64.07	1.40	0.78	2.23	A	EL	45.9	0.90	1.64	A	I	8.6	0.80	0.78	1.49	A	EL	45.9	
		TNAGT5A	45.000		1.41	63.45	1.40	0.78	2.11	A	EL	45.9	0.90	1.62	A	I	8.6	0.80	0.78	1.41	A	EL	45.9	
		TNAGT5B	45.000	3	1.40	63.00	1.40	0.78	2.09	A	EL	45.9	0.90	1.56	A	I	8.6	0.80	0.78	1.40	A	EL	45.9	

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.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

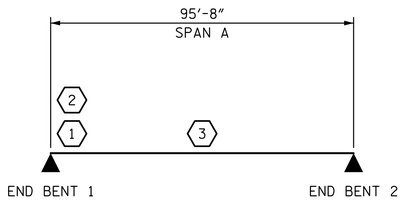
(2) DESIGN LOAD RATING (HS-20)

(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. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
= 13+04.09 -Y5-

DocuSigned by: Adam J. Peter E3F6AF8D9B4742A...

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER

4/17/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY FOR PRESTRESSED CONCRETE GIRDERS (NON-INERSTATE TRAFFIC)
-LEFT LANE-

DRAWN BY : VMW	DATE : 5-14	DESIGN ENGINEER OF RECORD: A. PETER	DATE : 6-14
CHECKED BY : AJP	DATE : 5-14		

⚠ REVISED PER NCDOT COMMENTS

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900 West Trade Street, Suite 715
Charlotte, NC 28202
NC License Number F-0991

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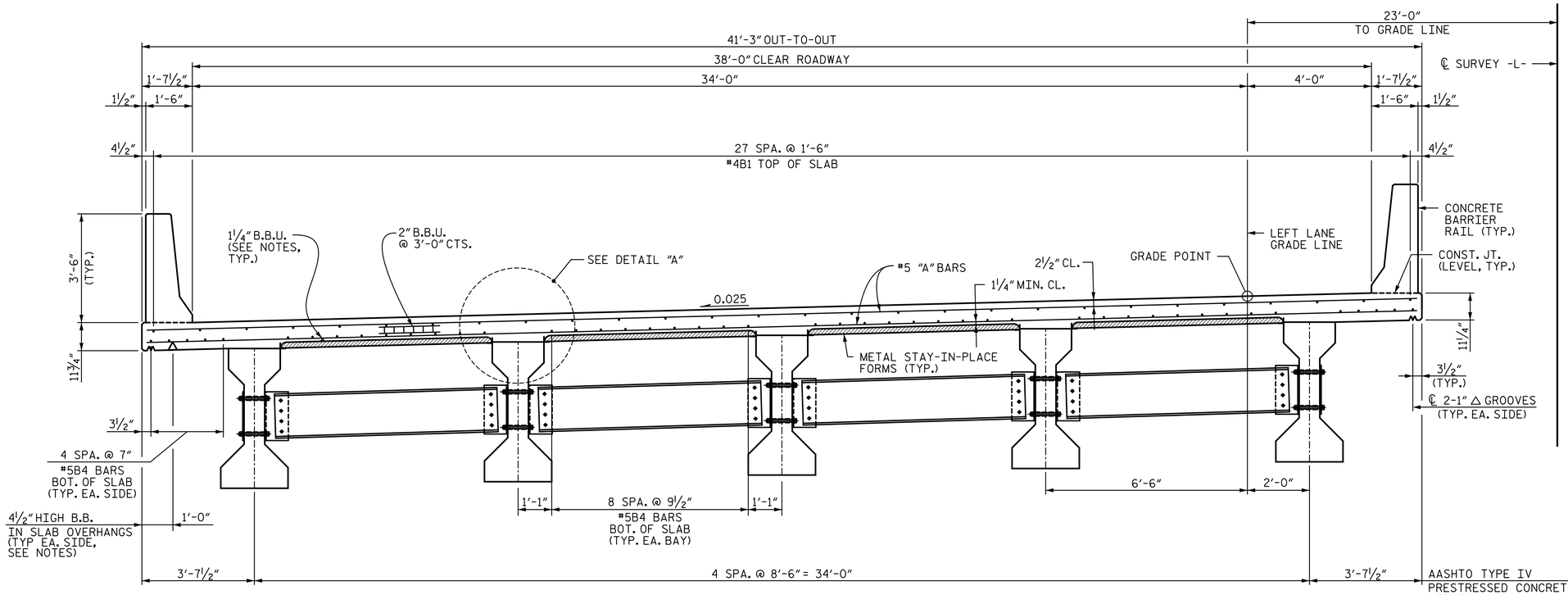
2			4		

SHEET NO. S09-4

TOTAL SHEETS 24



TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS

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.

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

BARRIER RAIL SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

FOR INTERMEDIATE DIAPHRAGM DETAILS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET.

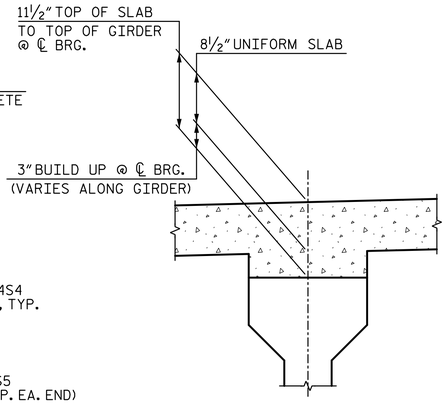
FOR BARRIER RAIL DETAILS, SEE "CONCRETE BARRIER RAIL" SHEET.

F.F. DENOTES FILL FACE
O.F. DENOTES OUTSIDE FACE

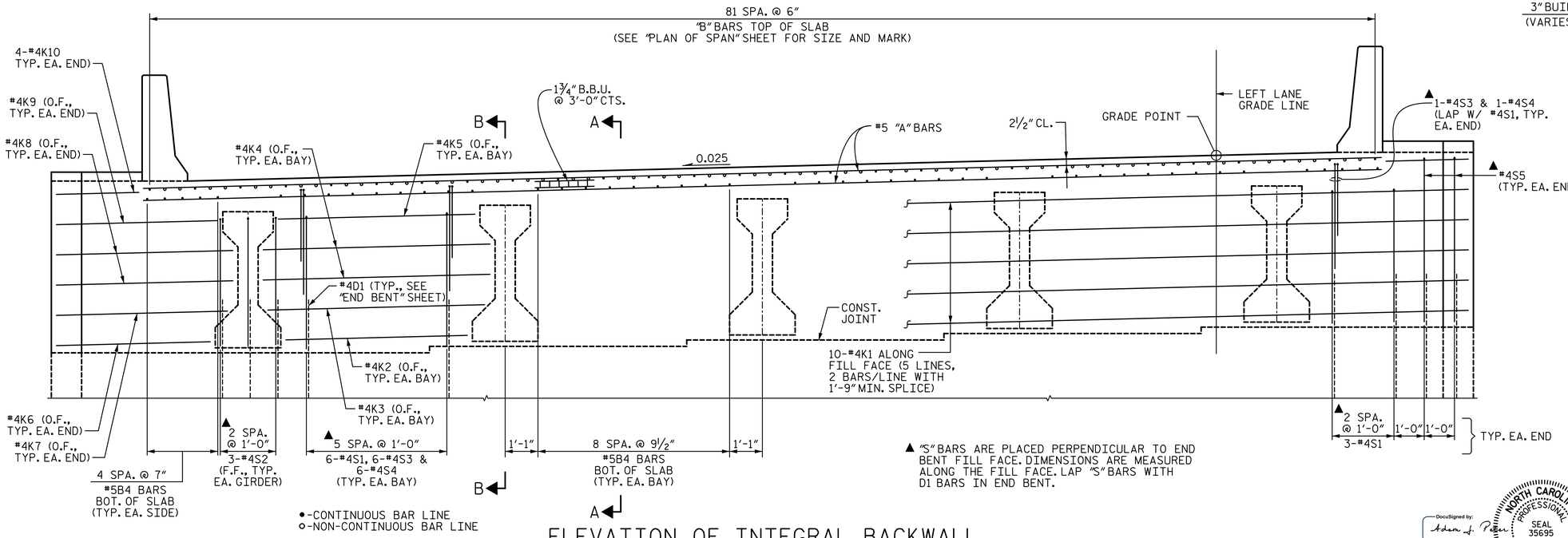
FOR INTEGRAL BACKWALL DIMENSIONS, DETAILS AND ELEVATIONS, SEE "PLAN OF SPANS DETAILS" SHEETS.

FOR SECTIONS A-A AND B-B, SEE "SUPERSTRUCTURE DETAILS" SHEET.

HEIGHT OF BEAM BOLSTER IS CALCULATED @ ℄ BENT. CONTRACTOR SHALL ADJUST HEIGHTS, AS NECESSARY TO MAINTAIN PROPER CLEARANCE, DUE TO GIRDER CAMBER.



DETAIL "A"
(TYP. EA. GIRDER)



●-CONTINUOUS BAR LINE
○-NON-CONTINUOUS BAR LINE

▲ "S" BARS ARE PLACED PERPENDICULAR TO END BENT FILL FACE. DIMENSIONS ARE MEASURED ALONG THE FILL FACE. LAP "S" BARS WITH D1 BARS IN END BENT.

ELEVATION OF INTEGRAL BACKWALL

(END BENT 1 SHOWN, END BENT 2 SIMILAR)
(LOOKING IN DIRECTION OF STATIONING,
WING REINFORCEMENT NOT SHOWN FOR CLARITY.)

PROJECT NO. R-2514D
JONES & CRAVEN COUNTY
STATION: 428+53.58 -L-
= 13+04.09 -Y5-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION & INTEGRAL BACKWALL

-LEFT LANE-

DocuSigned by: Adam J. Peter E3F6AF8D98474A...
3/10/2015

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER

DRAWN BY : JWJ	DATE : 5-14	DESIGN ENGINEER OF RECORD: A. PETER	DATE : 6-14
CHECKED BY : MLO	DATE : 5-14		

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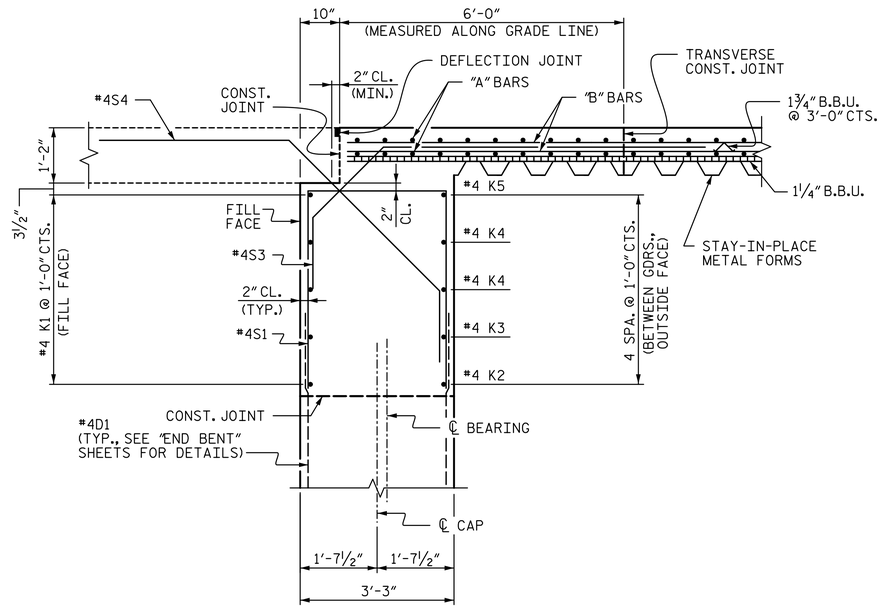
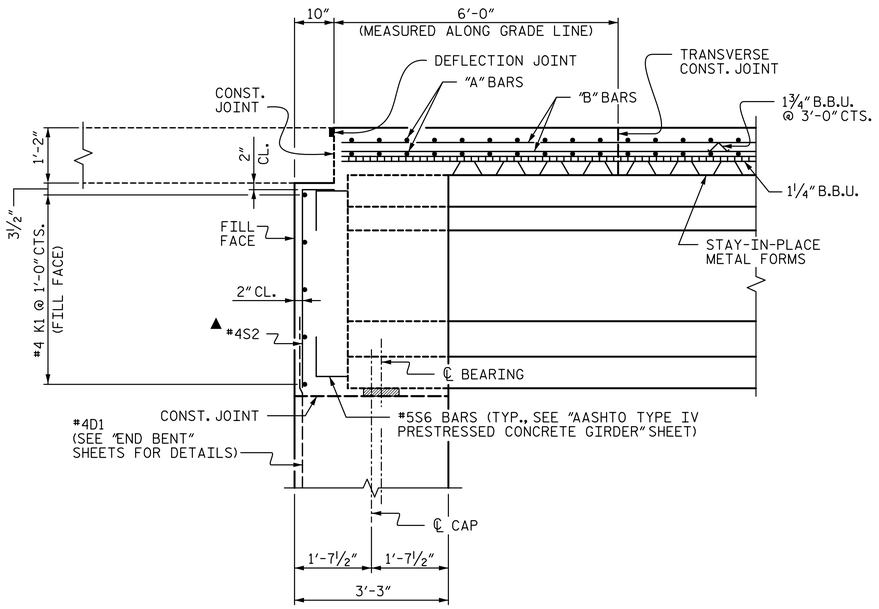
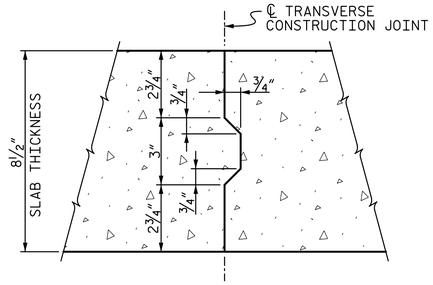


SECTION A-A



SECTION B-B

▲ HOOKS ON S2 BARS MAY BE TURNED AS NECESSARY TO CLEAR GIRDER.



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

TRANSVERSE CONSTRUCTION JOINT IN DECK SLAB

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
= 13+04.09 -Y5-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

SUPERSTRUCTURE DETAILS

-LEFT LANE-

DocuSigned by: Adam J. Peter E3F6AF8D98A742A...

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER

3/10/2015

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SHEET NO. S09-6

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CHECKED BY : MLO DATE : 5-14

DESIGN ENGINEER OF RECORD: A. PETER DATE : 6-14

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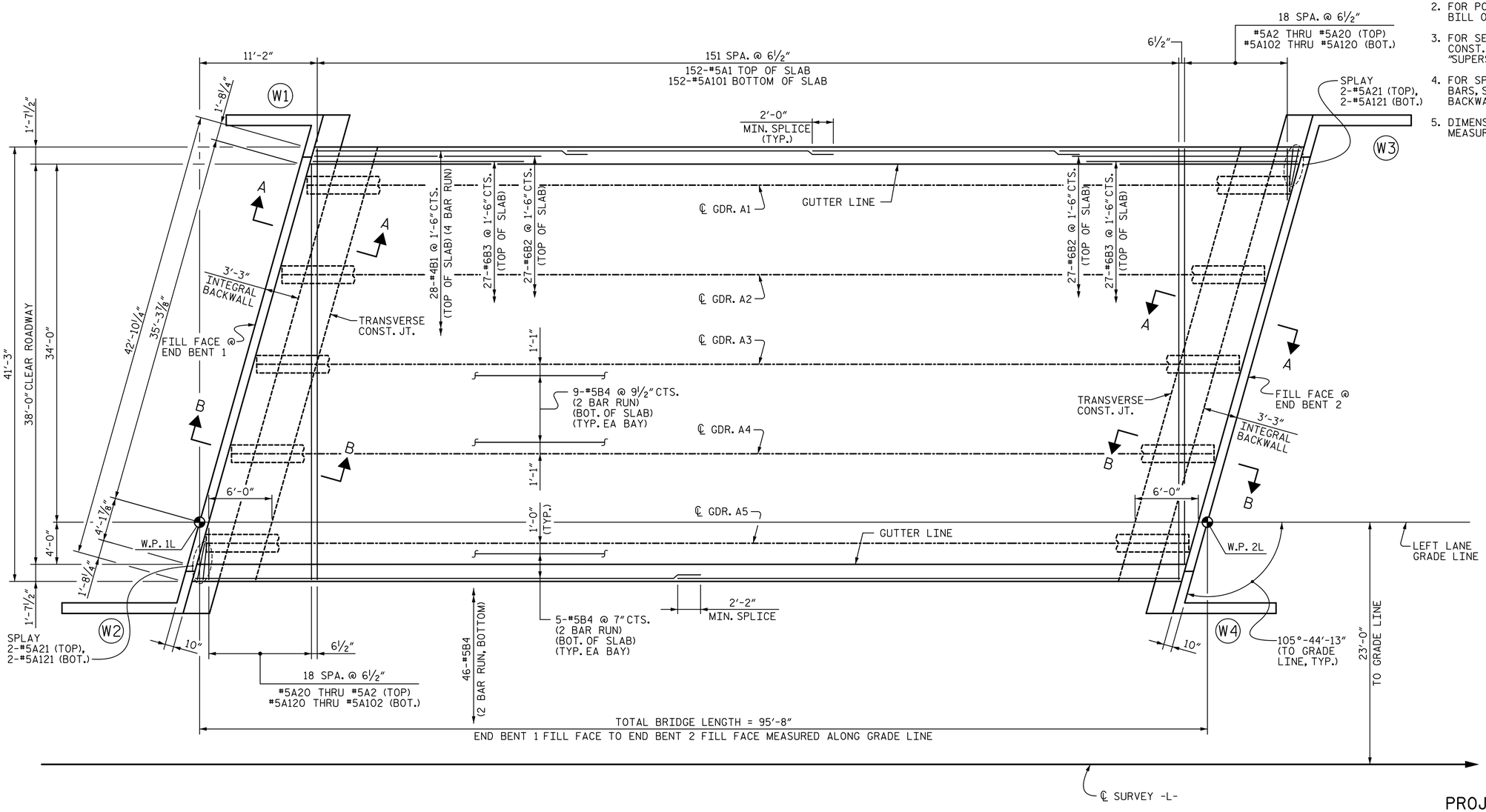

NOTES:

1. FOR CONCRETE BARRIER RAIL DIMENSIONS, REINFORCEMENT AND JOINT SPACING, SEE "CONCRETE BARRIER RAIL" SHEET.
2. FOR POURING SEQUENCE, SEE "SUPERSTRUCTURE BILL OF MATERIAL" SHEET.
3. FOR SECTION A-A, B-B, & TRANSVERSE CONST. JOINT IN DECK SLAB, SEE "SUPERSTRUCTURE DETAILS" SHEET.
4. FOR SPACING OF TOP AND BOTTOM "B" BARS, SEE "TYPICAL SECTION AND INTEGRAL BACKWALL" SHEET.
5. DIMENSIONS TO CONSTRUCTION JOINTS ARE MEASURED ALONG THE GRADE LINE.

SPAN A

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
= 13+04.09 -Y5-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN

-LEFT LANE-

DocuSigned by: Adam J. Peter E3F6AF8D9B4742A...

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER

4/10/2015

DRAWN BY : JWJ	DATE : 4-14	DESIGN ENGINEER OF RECORD: A. PETER	DATE : 6-14
CHECKED BY : MLO	DATE : 5-14		

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NC License Number F-0991

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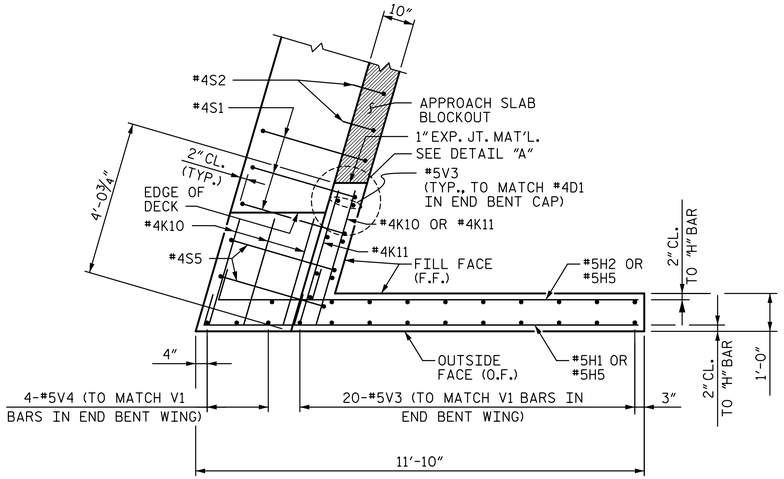
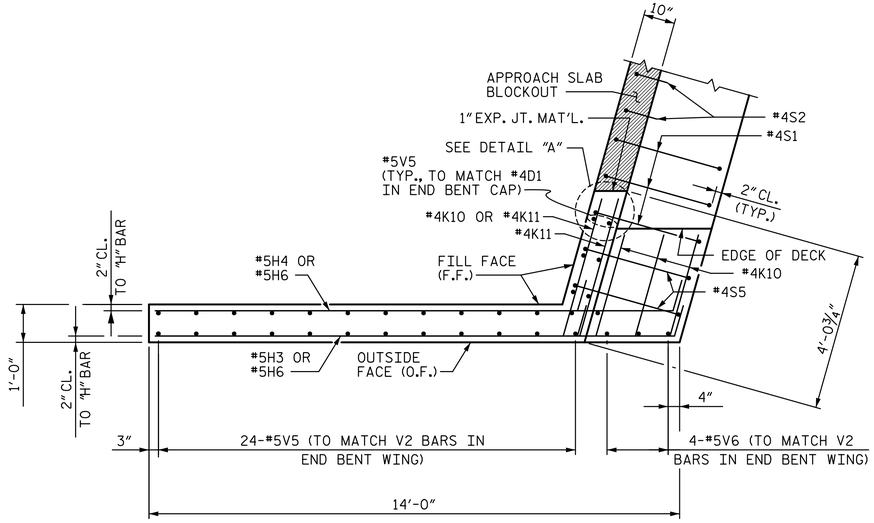
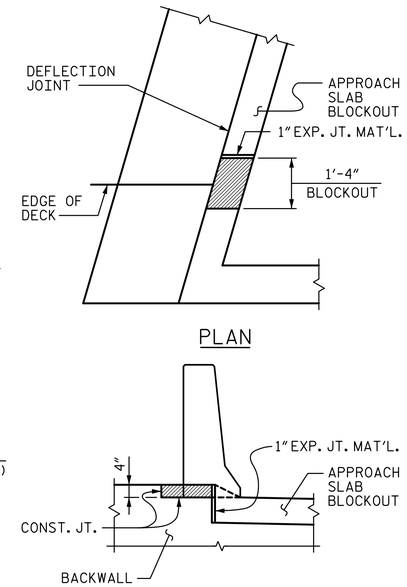


WING WALL PLAN (W1)



WING WALL PLAN (W2)



PLAN

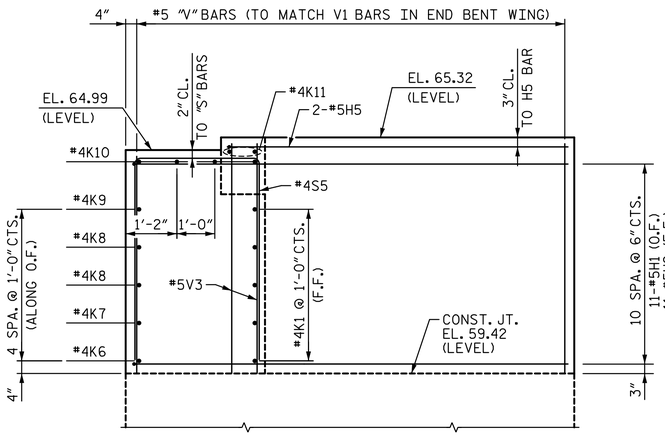
ELEVATION

DETAIL "A"

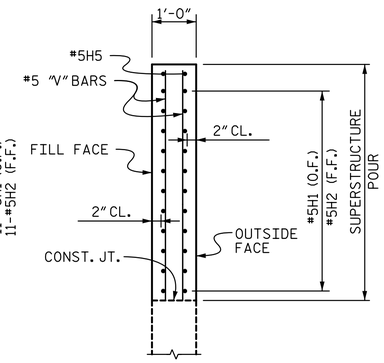
(WINGWALL (W1) SHOWN, WINGWALL (W2) SIMILAR.)

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE DEFLECTION JOINT HAS BEEN SAWED AND THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

A



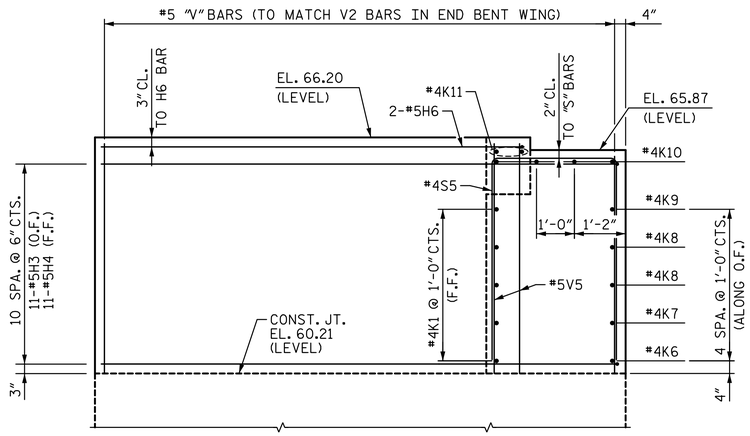
WING WALL ELEVATION (W1)



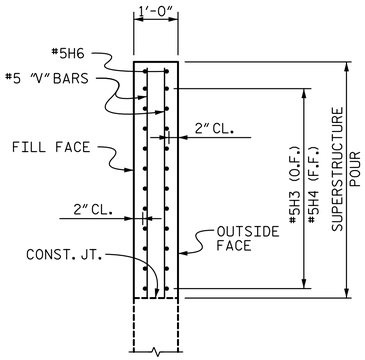
SECTION A-A

A

B



WING WALL ELEVATION (W2)



SECTION B-B

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
= 13+04.09 -Y5-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPANS DETAILS

-LEFT LANE-

DocuSigned by: Adam J. Peter E3F6AF8D9B4742A...

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER

3/10/2015

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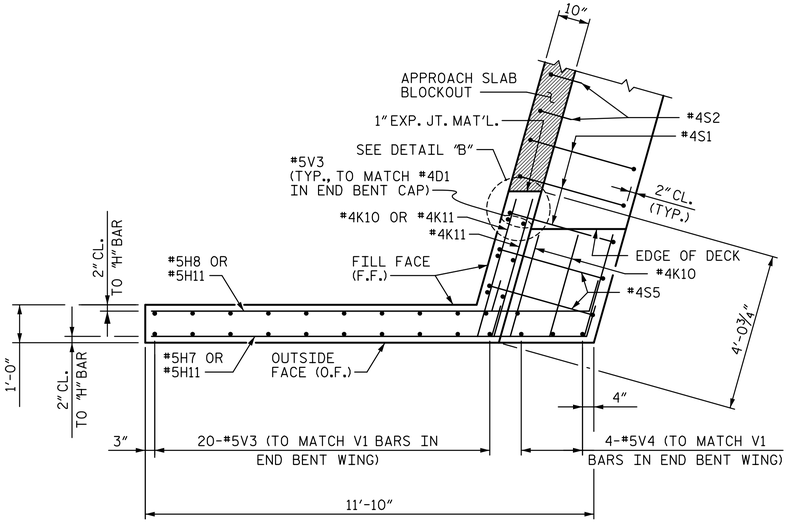
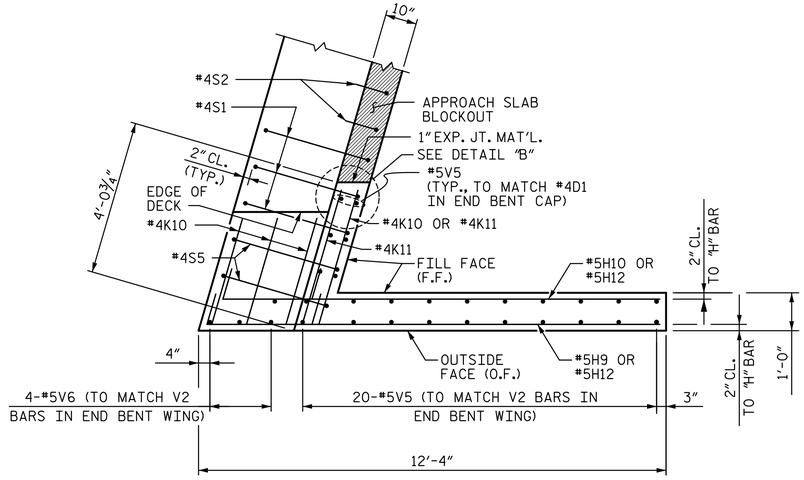
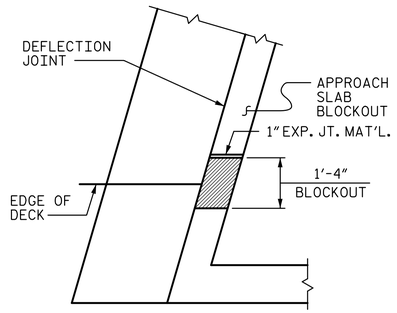


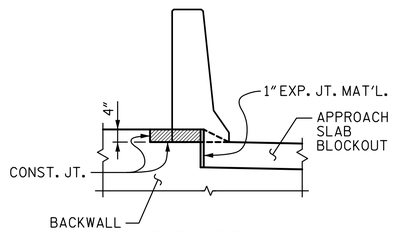
WING WALL PLAN (W3)



WING WALL PLAN (W4)



PLAN



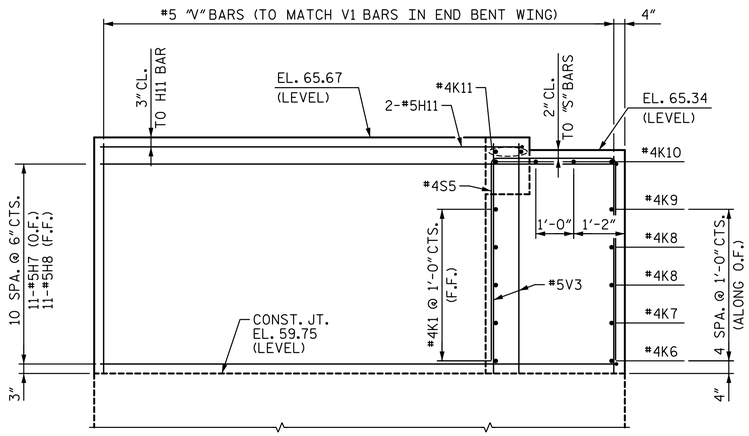
ELEVATION

DETAIL "B"

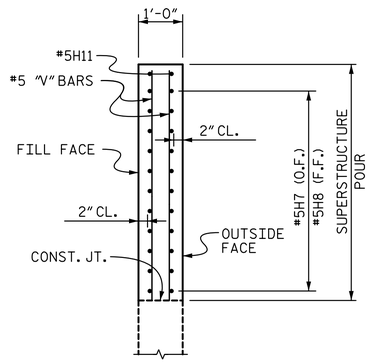
(WINGWALL (W4) SHOWN, WINGWALL (W3) SIMILAR.)

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE DEFLECTION JOINT HAS BEEN SAWED AND THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

C



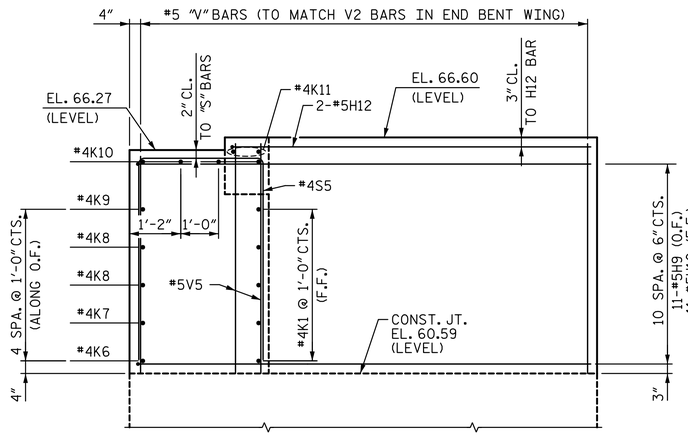
WING WALL ELEVATION (W3)



SECTION C-C

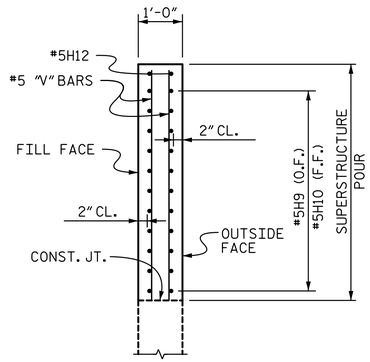
C

D



WING WALL ELEVATION (W4)

D



SECTION D-D

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
= 13+04.09 -Y5-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPANS DETAILS

-LEFT LANE-

DocuSigned by: Adam J. Peter E3F6AF8D9B4742A...

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER
3/10/2015

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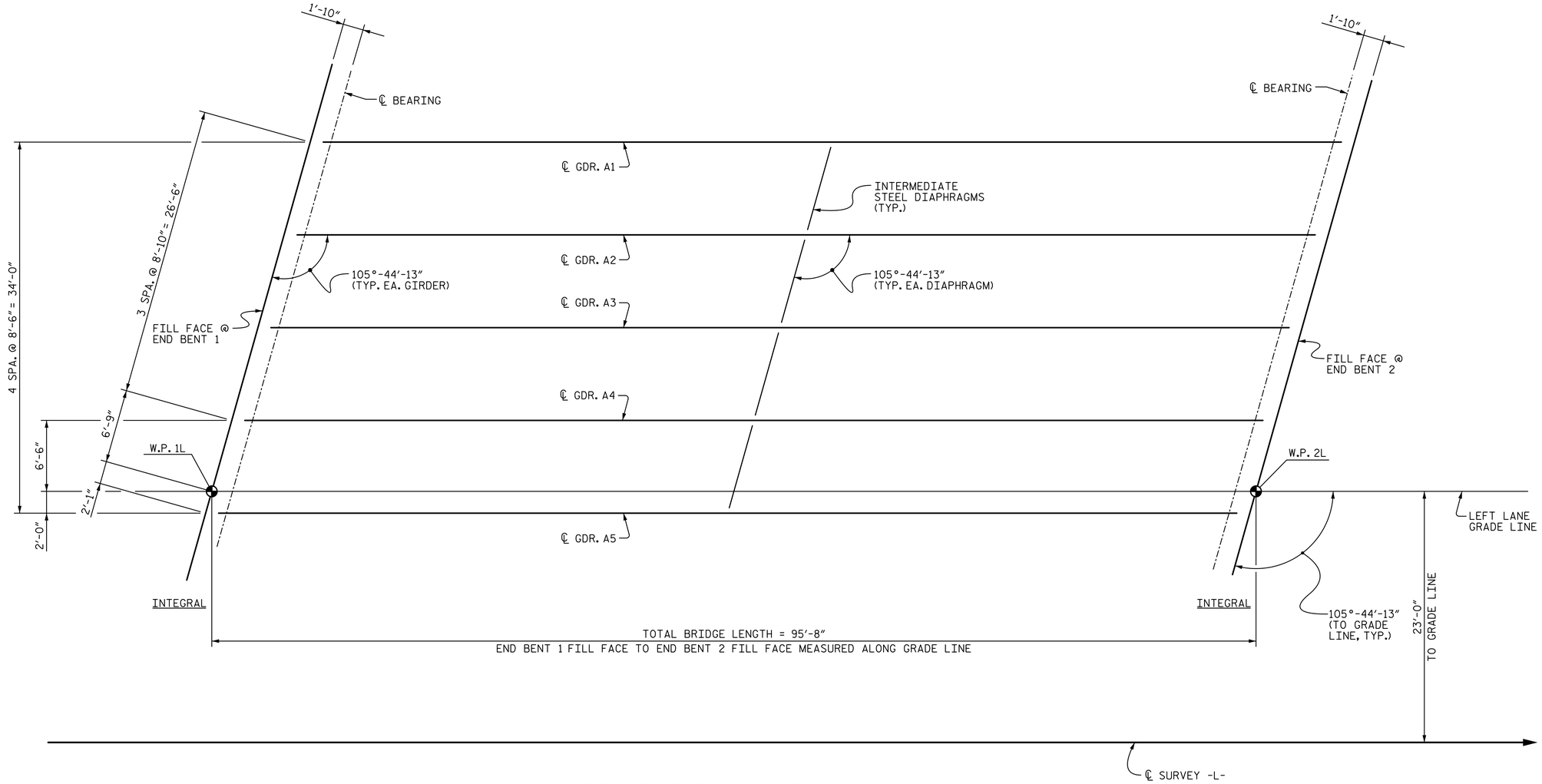


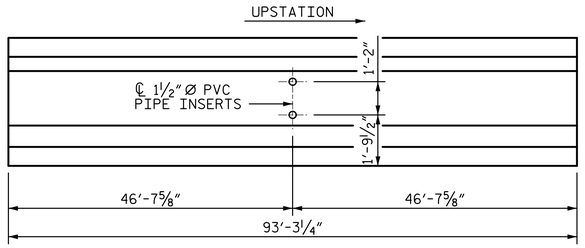
FRAMING PLAN - SPAN A

⚠1 DEAD LOAD DEFLECTION TABLE

	SPAN A					GIRDERS 1 & 5					
TENTH POINTS	0.0	0.1	0.2	0.3	0.4	0.5	0.4	0.3	0.2	0.1	1.0
CAMBER (GIRDER ALONE IN PLACE) ↑	0.000	0.096	0.166	0.212	0.238	0.247	0.238	0.212	0.166	0.096	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. ▲ ↓	0.000	0.033	0.064	0.089	0.105	0.110	0.105	0.089	0.064	0.033	0.000
FINAL CAMBER ↑	0"	¾"	1 3/16"	1 1/2"	1 5/8"	1 5/8"	1 5/8"	1 1/2"	1 3/16"	¾"	0"

⚠1 DEAD LOAD DEFLECTION TABLE

	SPAN A					GIRDERS 2-4					
TENTH POINTS	0.0	0.1	0.2	0.3	0.4	0.5	0.4	0.3	0.2	0.1	1.0
CAMBER (GIRDER ALONE IN PLACE) ↑	0.000	0.096	0.166	0.212	0.238	0.247	0.238	0.212	0.166	0.096	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. ▲ ↓	0.000	0.034	0.068	0.094	0.111	0.117	0.111	0.094	0.068	0.034	0.000
FINAL CAMBER ↑	0"	¾"	1 3/16"	1 7/16"	1 1/2"	1 9/16"	1 1/2"	1 7/16"	1 3/16"	¾"	0"



GIRDER INSERTS

NOTES:

ALL GIRDER ALONE IN PLACE CAMBERS AND DEFLECTIONS ARE SHOWN IN DECIMAL FEET.

▲ DOES NOT INCLUDE FUTURE WEARING SURFACE.

DocuSigned by: Adam J. Peter E3F6AF8D9B4742A...

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER

4/17/2015

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
= 13+04.09 -Y5-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

FRAMING PLAN & DEAD LOAD DEFLECTIONS

-LEFT LANE-

DRAWN BY : JWJ	DATE : 4-14	DESIGN ENGINEER OF RECORD: A. PETER	DATE : 6-14
CHECKED BY : MLO	DATE : 5-14		

⚠1 REVISED PER NCDOT COMMENTS

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Charlotte, NC 28202
NC License Number F-0991

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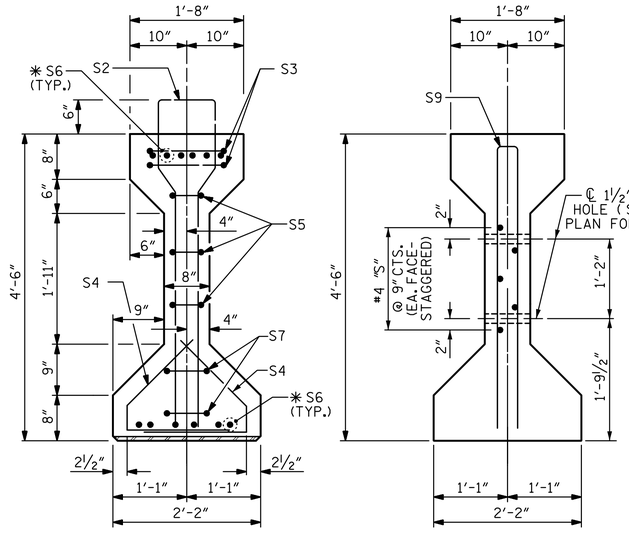
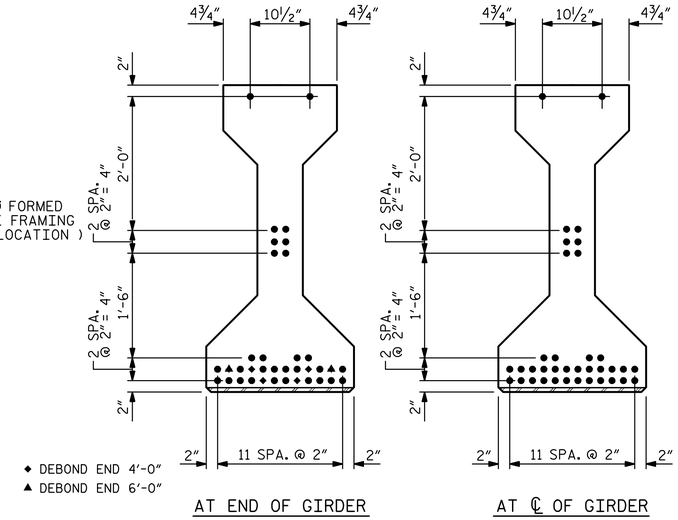


SECTION A-A

✳ FOR S6 BARS, SEE DETAIL "A"

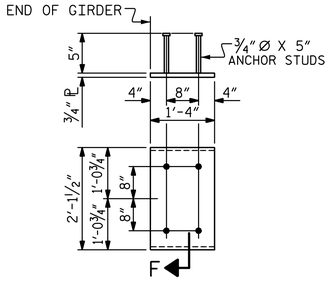
SECTION C-C

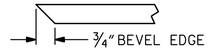
(S1 BARS NOT SHOWN)



AT END OF GIRDER AT ℄ OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT



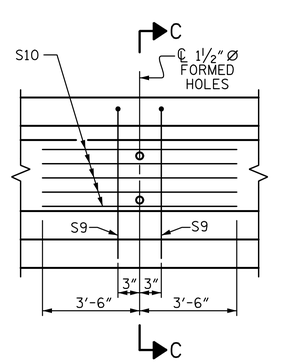


SECTION "F"

(SEE NOTES)

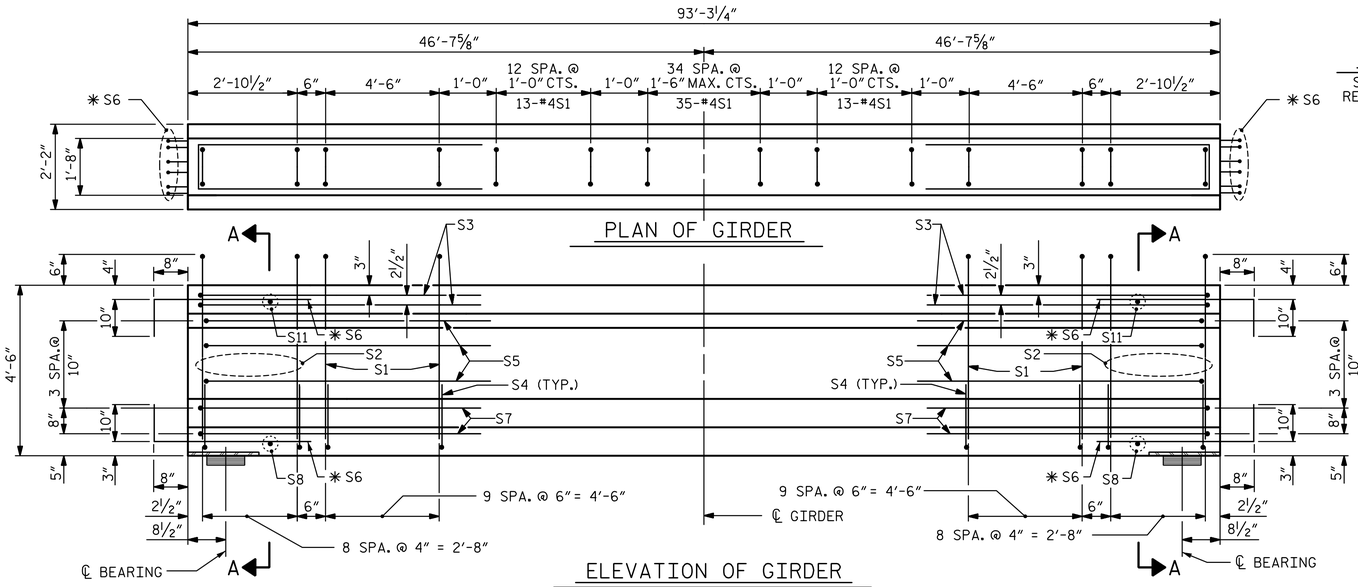
EMBEDDED PLATE "B-1" DETAILS

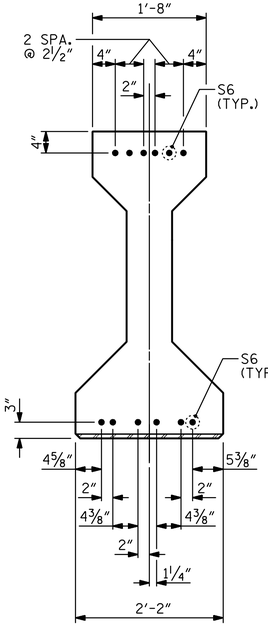
TWO EMBEDDED PLATES "B-1" ARE REQUIRED FOR EACH GIRDER.



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR ALL GIRDERS





DETAIL "A"

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.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.

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 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 CONTRACTOR HAS THE OPTION TO PROVIDE, AT NO ADDITIONAL COST TO THE DEPARTMENT, 2 ADDITIONAL STRANDS AT THE TOP OF THE GIRDER TO FACILITATE TYING OF THE REINFORCING STEEL. THESE STRANDS SHALL BE PULLED TO A LOAD OF 4500 LBS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6,000 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 SHALL BE RAKED TO A DEPTH OF ¼" EXCEPT IN THE AREA BETWEEN THE STIRRUP AND THE EDGE OF THE 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

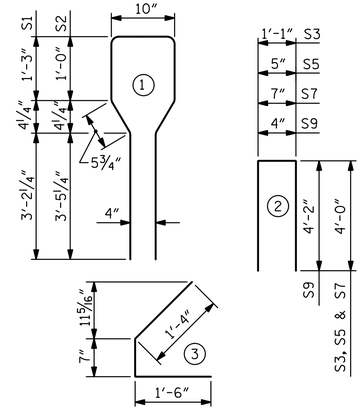
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	81	#4	1	10'-8"	577
S2	18	#6	1	10'-8"	288
S3	4	#4	2	9'-1"	24
S4	76	#4	3	3'-5"	173
S5	6	#4	2	8'-5"	34
✳ S6	24	#5	STR	3'-8"	92
S7	4	#4	2	8'-7"	23
S8	2	#3	STR	1'-10"	1
S9	2	#5	2	8'-8"	18
S10	5	#4	STR	7'-0"	23
S11	2	#3	STR	1'-4"	1

✳ NOTE: S6 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.	8,000 PSI CONCRETE C.Y.	0.6" Ø L.R. STRANDS No.
1,254	18.9	36

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
5	93'-3¼"	466'-4¼"

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

AASHTO TYPE IV PRESTRESSED CONCRETE GIRDER

-LEFT LANE-

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NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER

4/10/2015

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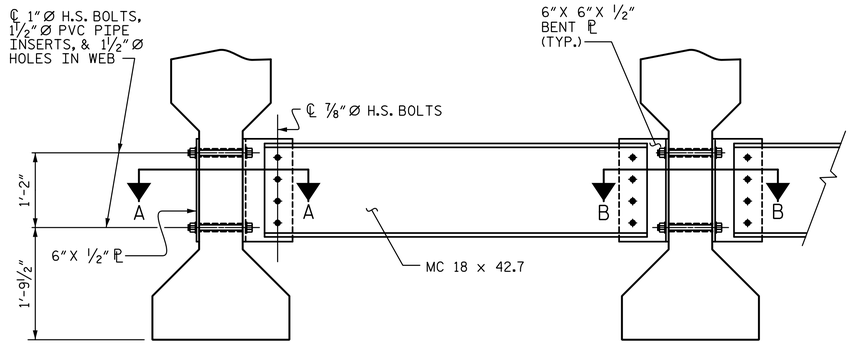
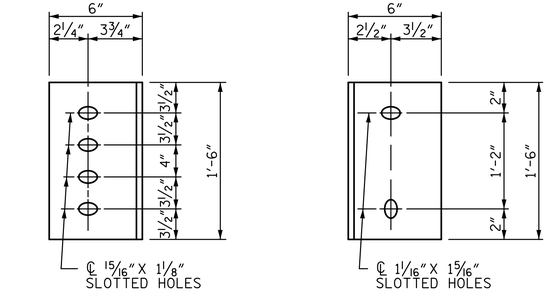
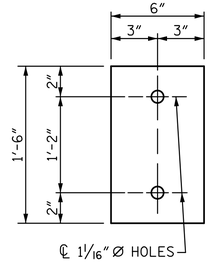
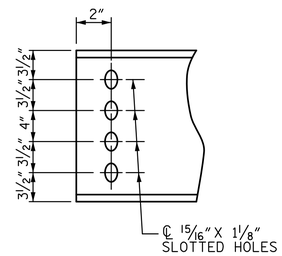


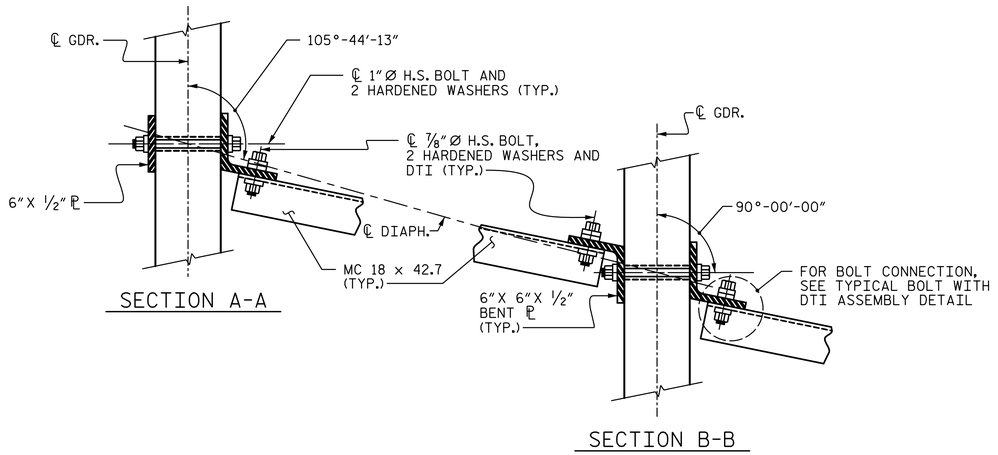
PART SECTION AT INTERMEDIATE DIAPHRAGM



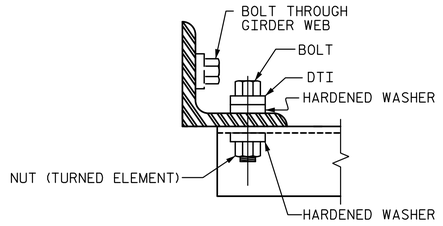
CONNECTOR PLATE DETAILS







CONNECTION DETAILS



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, AND CHANNELS 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.

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
= 13+04.09 -Y5-

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NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER
3/10/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS
-LEFT LANE-

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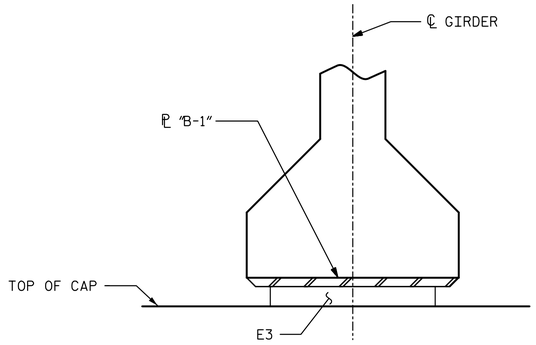
NOTES

THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

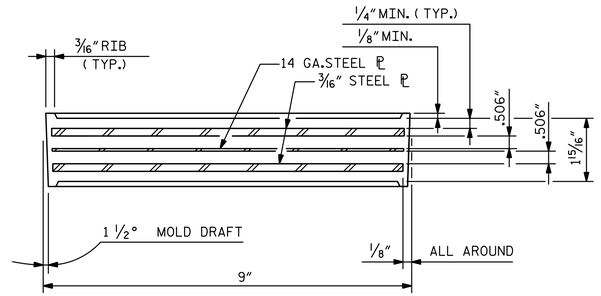
FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.



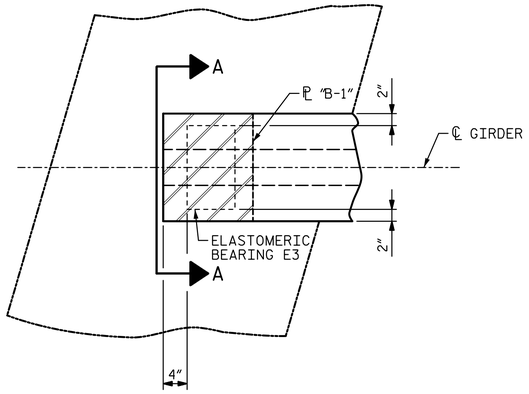
FIXED

— LOAD RATINGS —	
	MAX. D.L.+L.L.
E3	225 k

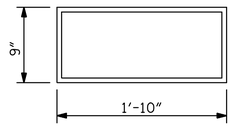
SECTION A-A



TYPICAL SECTION OF ELASTOMERIC BEARINGS



PLAN VIEW
(END BENT 1 SHOWN, END BENT 2 SIMILAR)



E3 (10 REQ'D)

PLAN VIEW OF ELASTOMERIC BEARING

TYPE IV

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
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STATE OF NORTH CAROLINA
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RALEIGH

SUPERSTRUCTURE

ELASTOMERIC BEARING DETAILS

-LEFT LANE-

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NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER
3/10/2015

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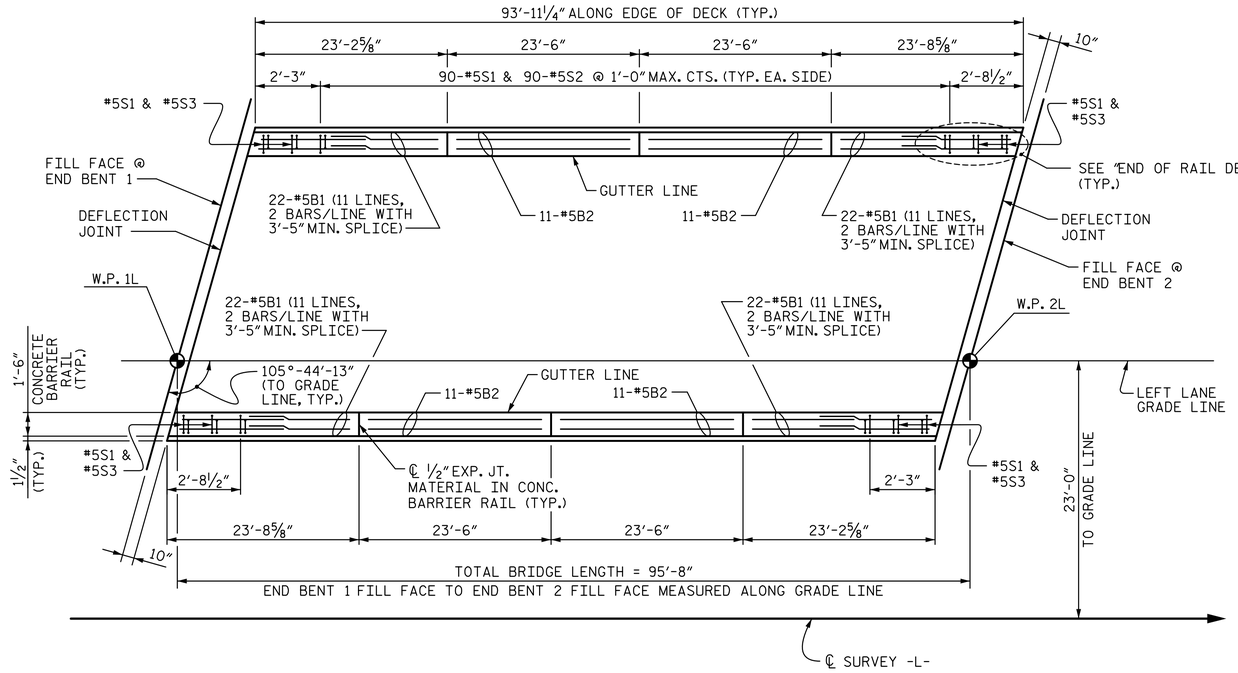
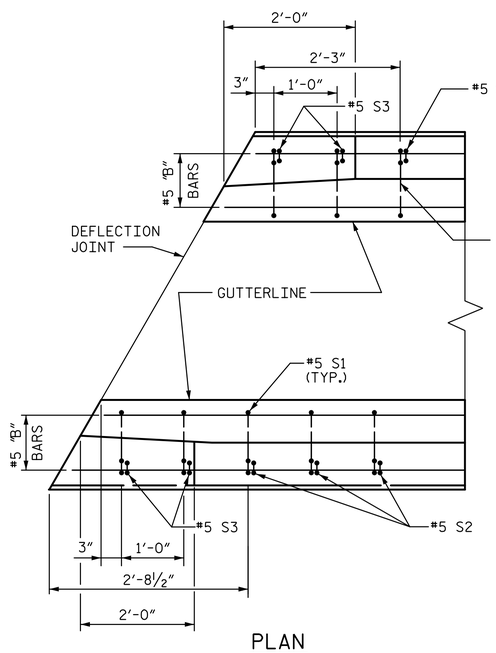
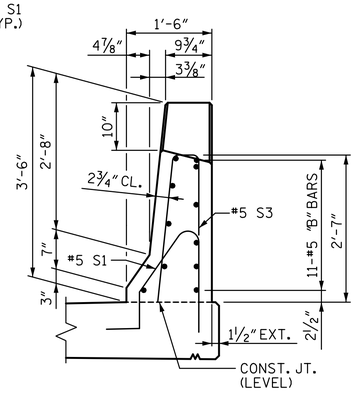


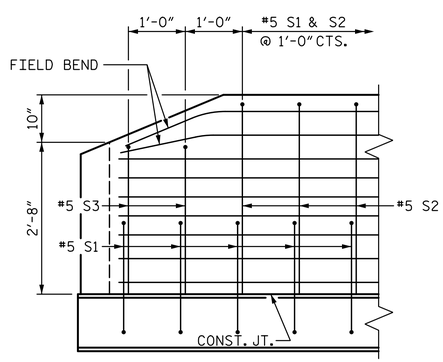
PLAN OF BARRIER RAIL



PLAN



END VIEW



SIDE VIEW

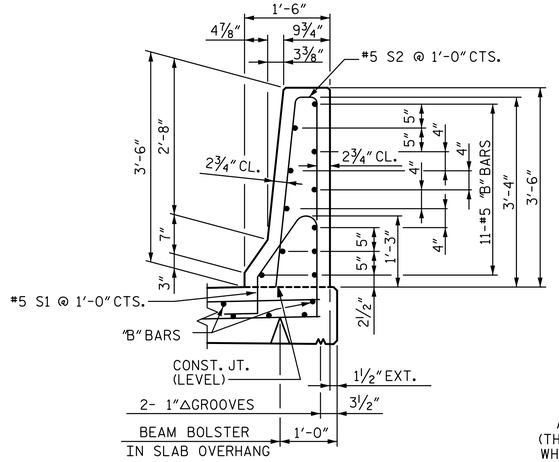
END OF RAIL DETAILS

NOTES

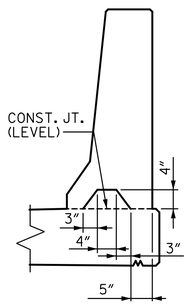
THE BARRIER RAIL IN THE SPAN SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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



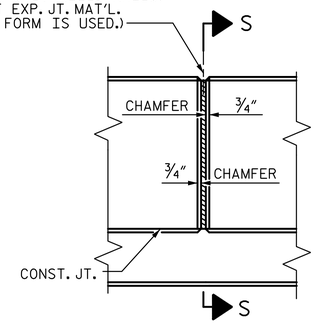
SECTION THRU RAIL



SECTION S-S

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

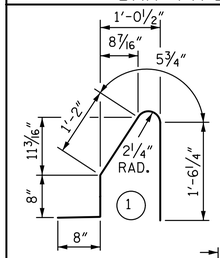
℄ ½" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS. (NOTE: OMIT EXP. JT. MAT'L. WHEN SLIP FORM IS USED.)

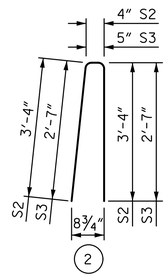


ELEVATION AT EXPANSION JOINTS

BARRIER RAIL DETAILS

BAR TYPES





ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* S1	188	#5	1	4'-6"	882
* S2	180	#5	2	7'-0"	1,314
* S3	8	#5	2	5'-7"	47
* B1	88	#5	STR	13'-5"	1,231
* B2	44	#5	STR	23'-1"	1,059
* EPOXY COATED REINFORCING STEEL					4,533 LBS.
CLASS AA CONCRETE					25.6 CU. YDS.
CONCRETE BARRIER RAIL					187.88 LIN. FT.

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

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NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER
3/10/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

CONCRETE BARRIER RAIL

-LEFT LANE-

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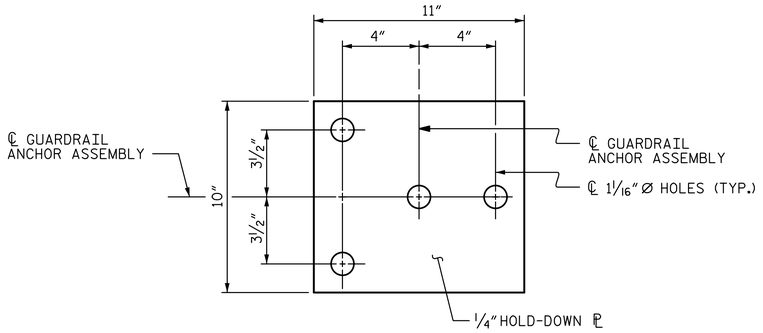
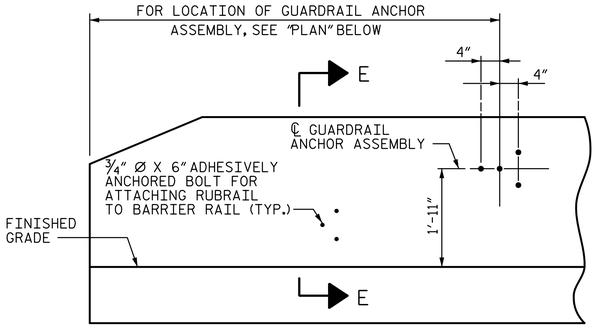
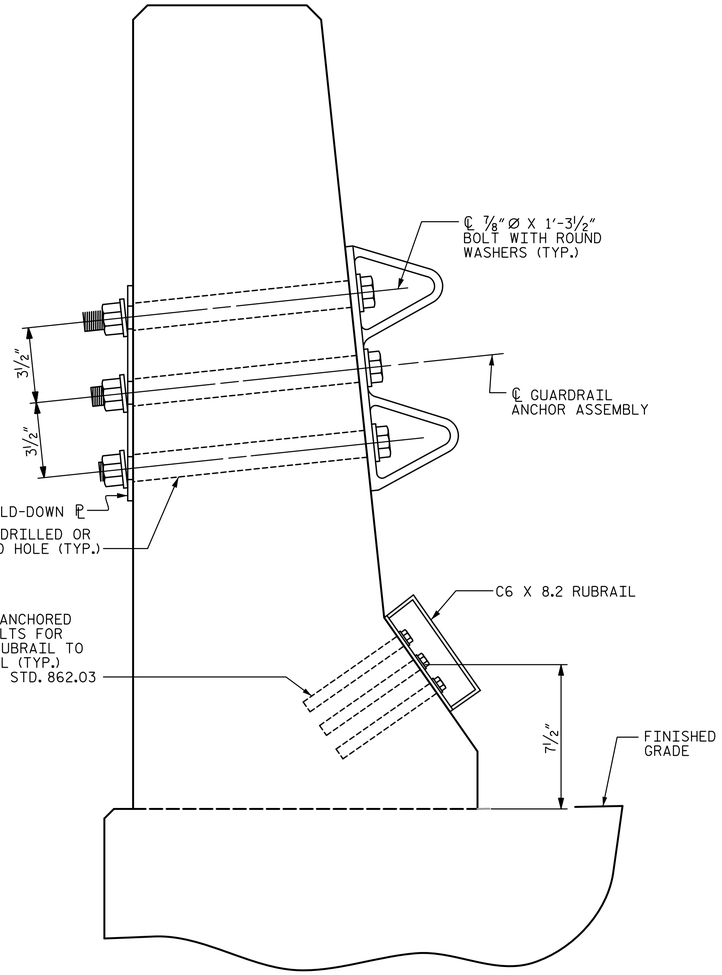


PLAN

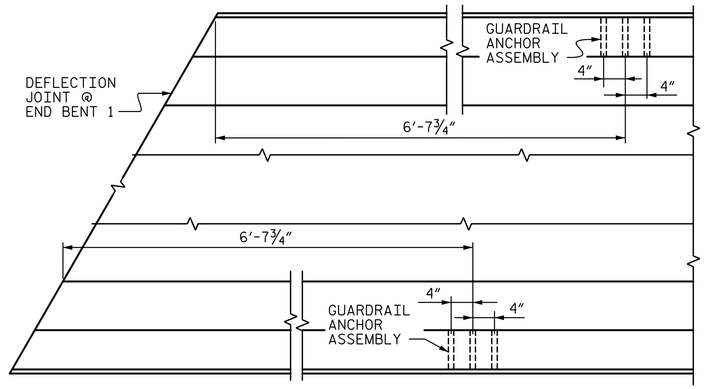


ELEVATION



SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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

NOTES

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

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.)

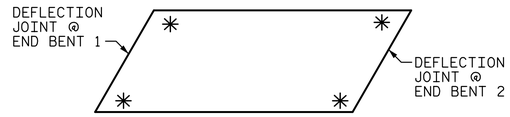
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

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

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4″ Ø X 6″ BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4″ Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



SKETCH SHOWING POINTS OF ATTACHMENTS

✳ DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
= 13+04.09 -Y5-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

GUARDRAIL ANCHORAGE FOR BARRIER RAIL

-LEFT LANE-

DocuSigned by: Adam J. Peter E3F6AF8D9B4742A...

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER

3/10/2015

DRAWN BY : JWJ	DATE : 5-14	DESIGN ENGINEER OF RECORD: A. PETER	DATE : 6-14
CHECKED BY : MLO	DATE : 5-14		

STV / Ralph Whitehead Associates, Inc.
900 West Trade Street, Suite 715
Charlotte, NC 28202
NC License Number F-0991

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SHEET NO. S09-15

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REINFORCING BAR SCHEDULE

MARK	NO.	SIZE	TYPE	LENGTH	WEIGHT	MARK	NO.	SIZE	TYPE	LENGTH	WEIGHT
✳A1	152	#5	STR	40′-10″	6,474	✳B1	112	#4	STR	24′-11″	1,864
✳A2	2	#5	STR	39′-3″	82	✳B2	54	#6	STR	23′-0″	1,865
✳A3	2	#5	STR	37′-4″	78	✳B3	54	#6	STR	20′-0″	1,622
✳A4	2	#5	STR	35′-5″	74	B4	92	#5	STR	47′-10″	4,590
✳A5	2	#5	STR	33′-6″	70						
✳A6	2	#5	STR	31′-7″	66	K1	20	#4	STR	25′-3″	337
✳A7	2	#5	STR	29′-8″	62	K2	8	#4	STR	6′-1″	33
✳A8	2	#5	STR	27′-8″	58	K3	8	#4	STR	7′-1″	38
✳A9	2	#5	STR	25′-9″	54	K4	16	#4	STR	7′-8″	82
✳A10	2	#5	STR	23′-11″	50	K5	8	#4	STR	6′-8″	36
✳A11	2	#5	STR	21′-11″	46	K6	4	#4	STR	5′-4″	14
✳A12	2	#5	STR	20′-0″	42	K7	4	#4	STR	5′-9″	15
✳A13	2	#5	STR	18′-1″	38	K8	8	#4	STR	6′-1″	33
✳A14	2	#5	STR	16′-2″	34	K9	4	#4	STR	5′-7″	15
✳A15	2	#5	STR	14′-3″	30	K10	16	#4	STR	2′-9″	29
✳A16	2	#5	STR	12′-4″	26	K11	8	#4	STR	3′-9″	20
✳A17	2	#5	STR	10′-5″	22						
✳A18	2	#5	STR	8′-6″	18	H1	11	#5	①	12′-3″	141
✳A19	2	#5	STR	6′-7″	14	H2	11	#5	①	11′-11″	137
✳A20	2	#5	STR	4′-8″	10	H3	11	#5	②	14′-6″	166
✳A21	4	#5	STR	3′-4″	14	H4	11	#5	②	14′-7″	167
						H5	2	#5	①	9′-7″	20
A101	152	#5	STR	40′-10″	6,474	H6	2	#5	②	12′-0″	25
A102	2	#5	STR	39′-3″	82	H7	11	#5	②	12′-4″	142
A103	2	#5	STR	37′-4″	78	H8	11	#5	②	12′-5″	142
A104	2	#5	STR	35′-5″	74	H9	11	#5	①	12′-9″	146
A105	2	#5	STR	33′-6″	70	H10	11	#5	①	12′-5″	142
A106	2	#5	STR	31′-7″	66	H11	2	#5	②	9′-10″	21
A107	2	#5	STR	29′-8″	62	H12	2	#5	①	10′-0″	21
A108	2	#5	STR	27′-8″	58						
A109	2	#5	STR	25′-9″	54	S1	60	#4	③	11′-3″	451
A110	2	#5	STR	23′-11″	50	S2	30	#4	④	5′-0″	100
A111	2	#5	STR	21′-11″	46	✳S3	52	#4	⑤	11′-11″	414
A112	2	#5	STR	20′-0″	42	✳S4	52	#4	⑤	10′-0″	347
A113	2	#5	STR	18′-1″	38	✳S5	8	#4	③	13′-5″	72
A114	2	#5	STR	16′-2″	34						
A115	2	#5	STR	14′-3″	30	V3	40	#5	STR	5′-8″	236
A116	2	#5	STR	12′-4″	26	V4	8	#5	STR	5′-4″	45
A117	2	#5	STR	10′-5″	22	V5	44	#5	STR	5′-9″	264
A118	2	#5	STR	8′-6″	18	V6	8	#5	STR	5′-5″	45
A119	2	#5	STR	6′-7″	14						
A120	2	#5	STR	4′-8″	10						
A121	4	#5	STR	3′-4″	14						
						✳EPOXY COATED REINF. STEEL (LBS.)					13,546
						REINF. STEEL (LBS.)					15,015

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

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	2′-0″	1′-9″	2′-0″	1′-9″	2′-9″
#5	2′-6″	2′-2″	2′-6″	2′-2″	3′-5″
#6	3′-0″	2′-7″	3′-10″	2′-7″	4′-4″
#7	5′-3″	3′-6″			
#8	6′-10″	4′-7″			

SUPERSTRUCTURE BILL OF MATERIAL

	CLASS AA CONCRETE	✳EPOXY COATED STEEL REINFORCING	STEEL REINFORCING
SPAN A	(CU. YDS.)	(LBS.)	(LBS.)
POUR 1	104.7	--	--
POUR 2●	71.4	--	--
TOTAL✳✳	176.1	13,546	14,952

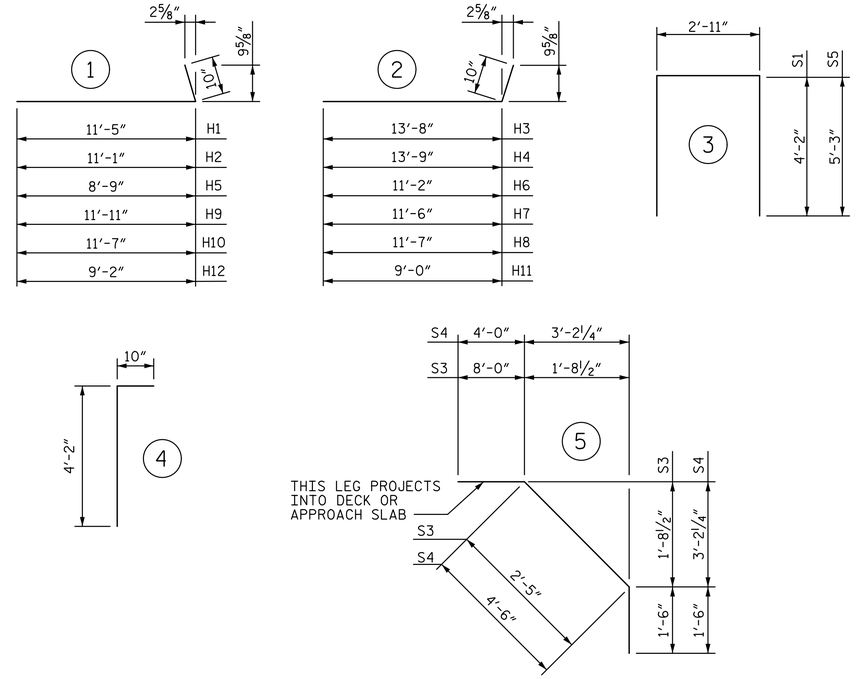
✳✳ QUANTITIES FOR CONCRETE BARRIER RAIL ARE NOT INCLUDED

● POUR 2 INCLUDES CONCRETE FOR SUPERSTRUCTURE PORTION OF INTEGRAL END BENT AND WING WALL. ALL COSTS ASSOCIATED WITH THE SUPERSTRUCTURE PORTION OF THE INTEGRAL END BENT AND WING WALL, INCLUDING BUT NOT LIMITED TO, MATERIALS, LABOR AND ALL INCIDENTALS SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR REINFORCED CONCRETE DECK SLAB. NO ADDITIONAL PAYMENT WILL BE MADE.

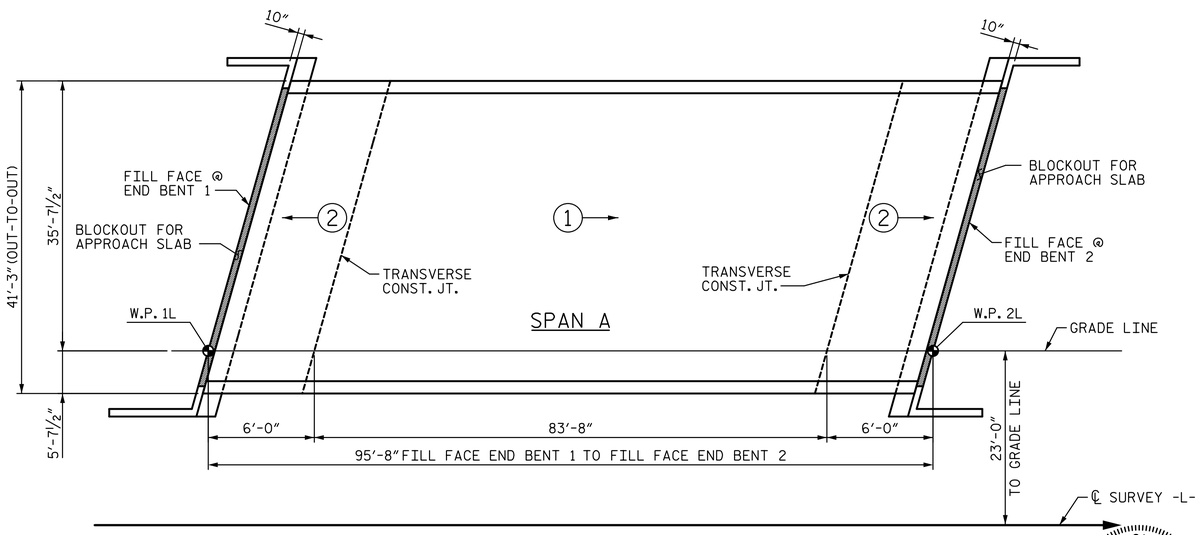
GROOVING BRIDGE FLOORS

APPROACH SLABS	1,690 SQ.FT.
BRIDGE DECK	3,276 SQ.FT.
TOTAL	4,966 SQ.FT.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.



POURING DIAGRAM AND LAYOUT FOR COMPUTING AREA REINFORCED CONCRETE DECK SLAB (SQ. FT. = 3,946)

← (#) = INDICATES POUR NUMBER AND DIRECTION OF POUR

DocuSigned by: Adam J. Peter E3F8AF8D9B4742A...

4/10/2015

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
= 13+04.09 -Y5-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BILL OF MATERIAL

-LEFT LANE-

DRAWN BY : VMW DATE : 6-14
CHECKED BY : MLO DATE : 6-14

DESIGN ENGINEER OF RECORD: A. PETER DATE : 6-14

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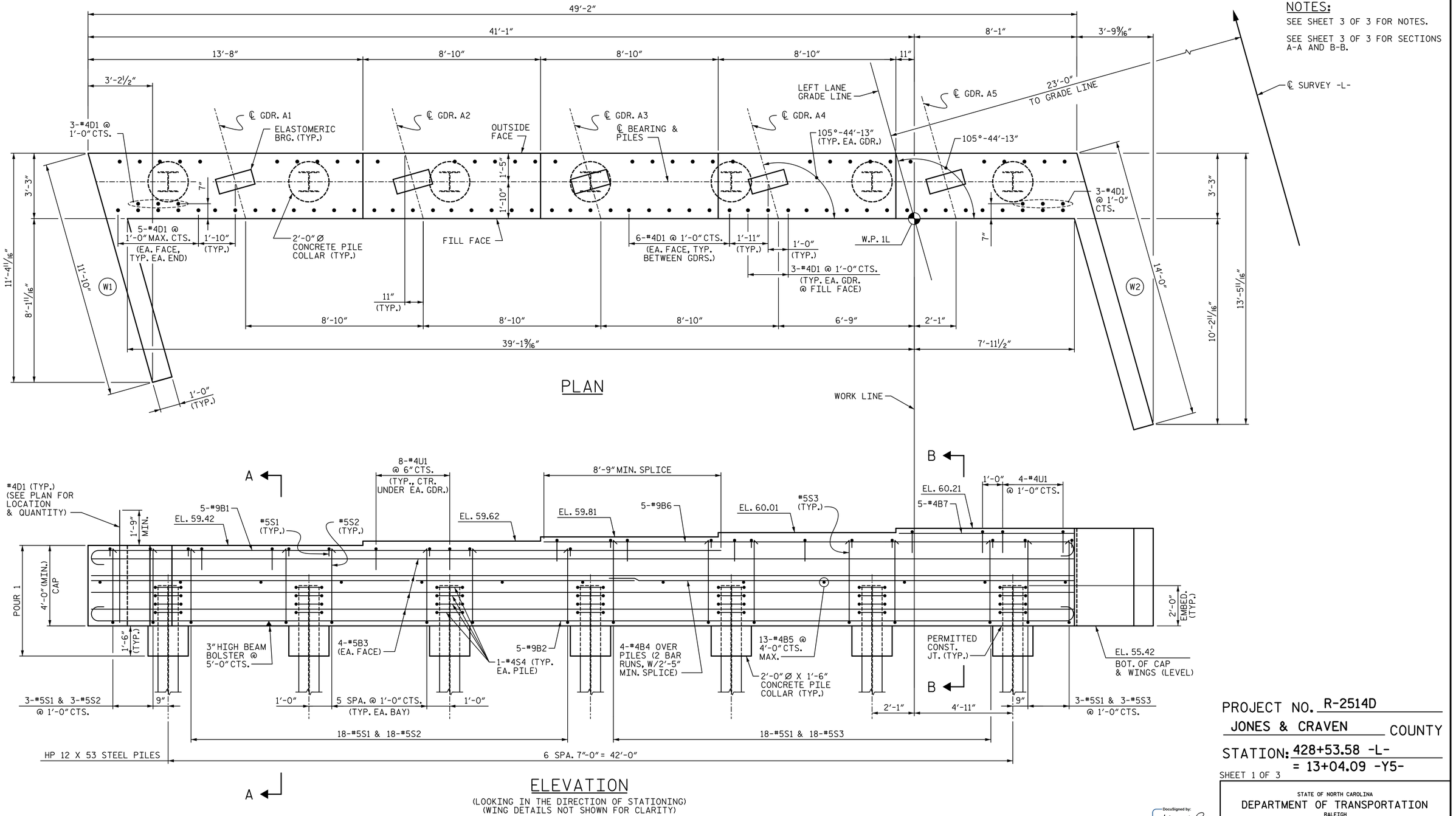

PLAN

ELEVATION

(LOOKING IN THE DIRECTION OF STATIONING)
(WING DETAILS NOT SHOWN FOR CLARITY)

NOTES:

SEE SHEET 3 OF 3 FOR NOTES.

SEE SHEET 3 OF 3 FOR SECTIONS A-A AND B-B.

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
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SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1 (INTEGRAL)

-LEFT LANE-

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NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER
3/10/2015

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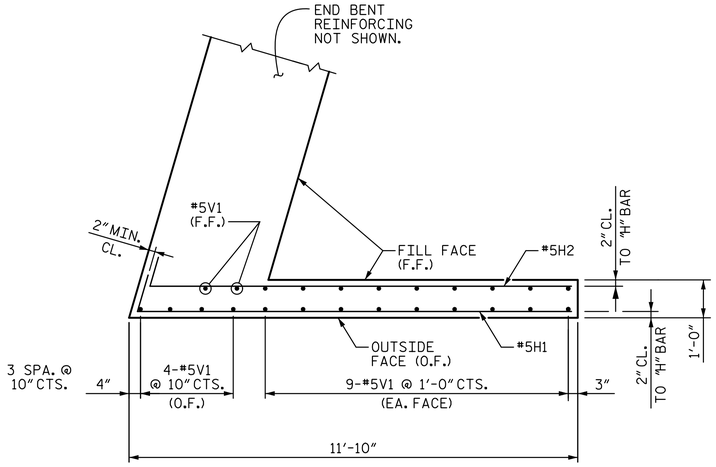
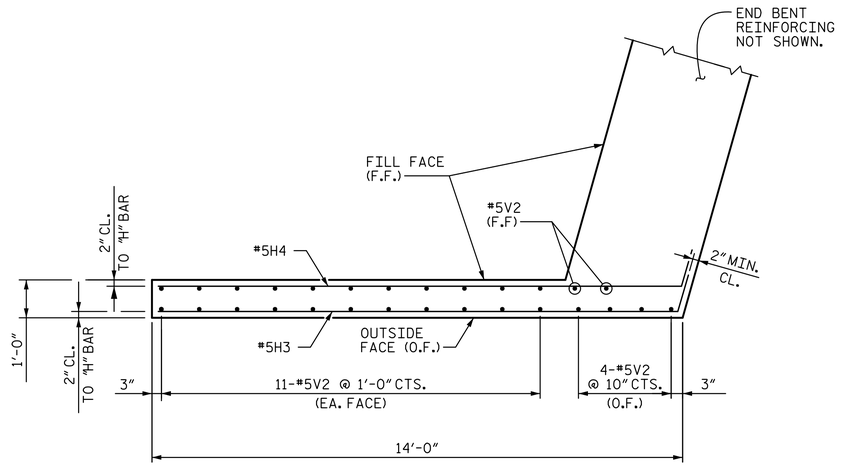
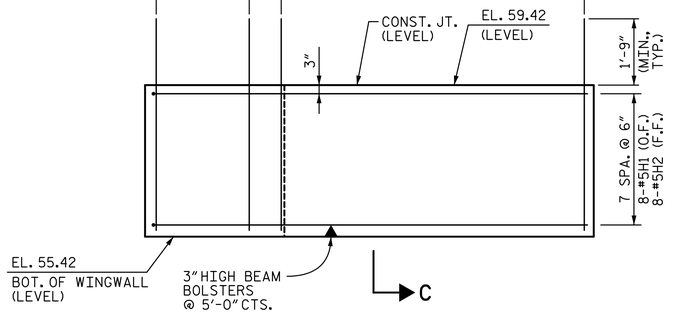


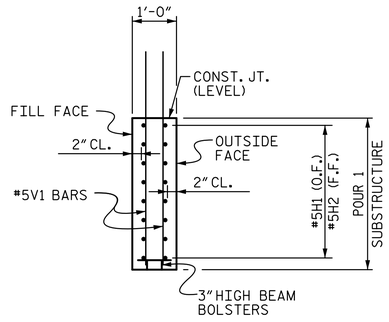
WING WALL PLAN (W1)



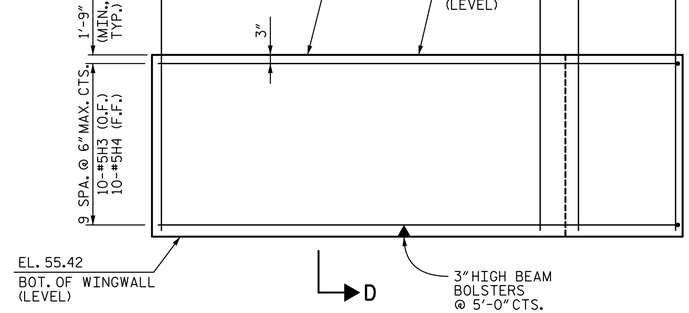
WING WALL PLAN (W2)



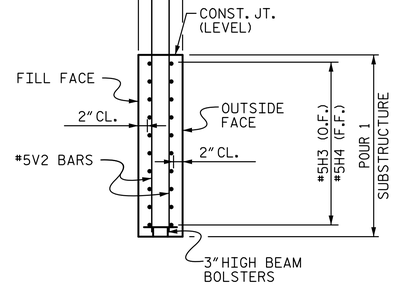
WING WALL ELEVATION (W1)



SECTION C-C



WING WALL ELEVATION (W2)



SECTION D-D

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
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SHEET 2 OF 3

DocuSigned by:
Adam J. Peter
E3F6AF8D9B4742A...

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER
3/10/2015

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1
(INTEGRAL)

-LEFT LANE-

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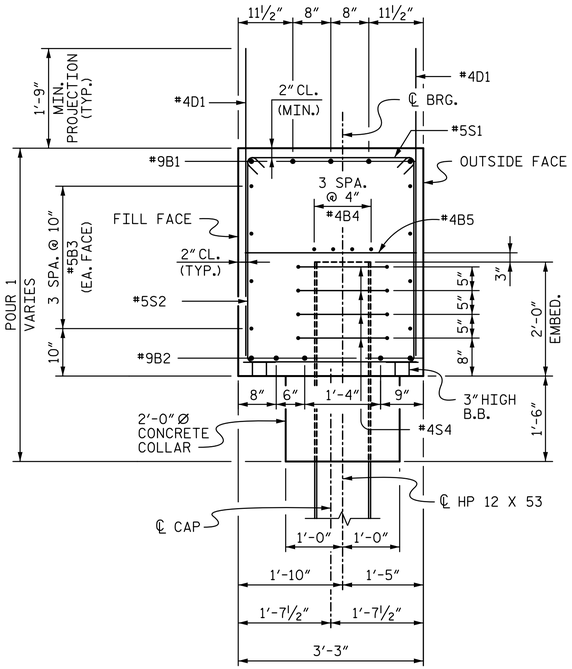
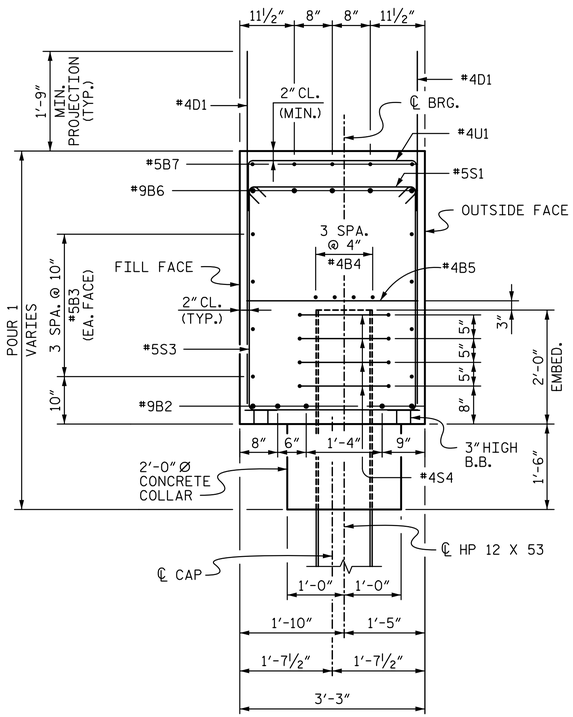
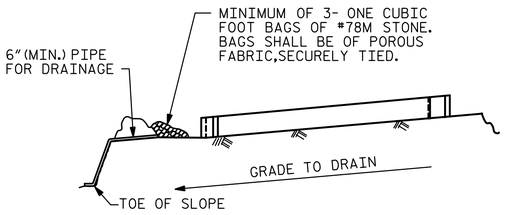


SECTION A-A



SECTION B-B

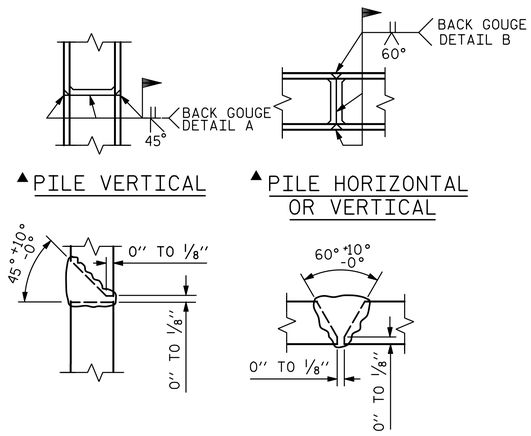


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

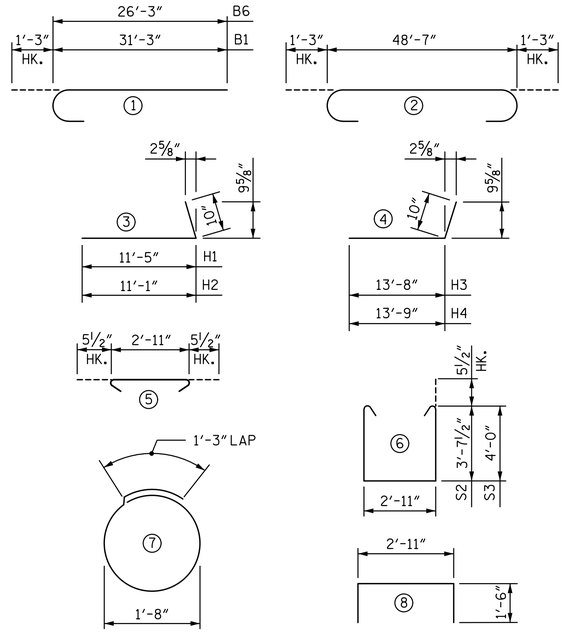
TEMPORARY DRAINAGE AT END BENT



▲ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF REINFORCING

MARK	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	5	#9	①	32′-6″	553
B2	5	#9	②	51′-1″	868
B3	8	#5	STR	48′-10″	407
B4	8	#4	STR	25′-8″	137
B5	13	#4	STR	2′-11″	25
B6	5	#9	①	27′-6″	468
B7	5	#4	STR	8′-8″	29
D1	89	#4	STR	6′-5″	381
H1	8	#5	③	12′-3″	102
H2	8	#5	③	11′-11″	99
H3	10	#5	④	14′-6″	151
H4	10	#5	④	14′-7″	152
S1	42	#5	⑤	3′-10″	168
S2	21	#5	⑥	11′-1″	243
S3	21	#5	⑥	11′-10″	259
S4	28	#4	⑦	6′-6″	122
U1	44	#4	⑧	5′-11″	174
V1	24	#5	STR	5′-7″	140
V2	28	#5	STR	6′-5″	187

NOTES:

FOR INTEGRAL BACKWALL REINFORCEMENT, SEE "TYPICAL SECTION AND INTEGRAL BACKWALL" AND "PLAN OF SPANS DETAILS" SHEETS.

FOR FOUNDATION NOTES, SEE SHEET TITLED "FOUNDATION LAYOUT".

THE TOP SURFACE OF THE END BENT CAP AND WINGS, EXCLUDING THE BEARING AREA, SHALL BE RAKED TO A DEPTH OF ¼".

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.

QUANTITIES

		END BENT 1
REINFORCING STEEL	LBS.	4,665
CLASS A CONCRETE		
POUR 1 (CAP, COLLARS & LOWER WING):	CU. YARDS	30.1
TOTAL :	CU. YARDS	30.1
HP 12 X 53 STEEL PILES	(NO.)	7
	LIN. FEET	490
STEEL PILE POINTS	EA.	7
PILE REDRIVES	EA.	4

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
= 13+04.09 -Y5-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1
(INTEGRAL)

-LEFT LANE-

DocuSigned by: Adam J. Peter E9F6AF8D9B4742A...

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER
3/10/2015

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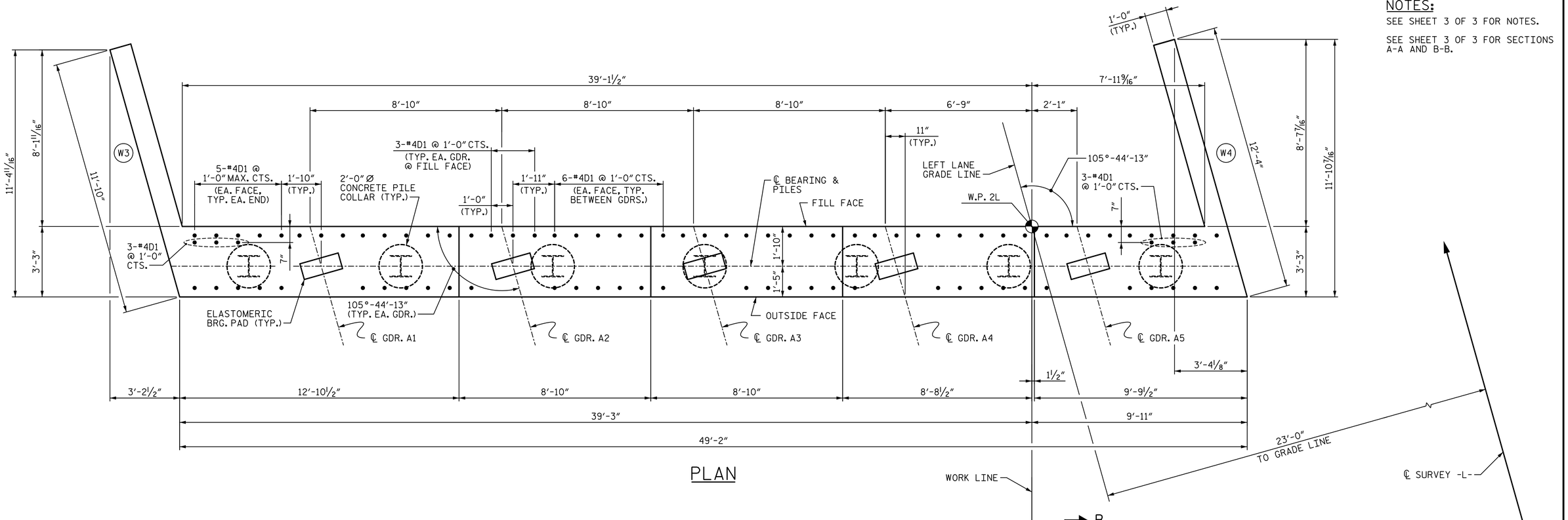
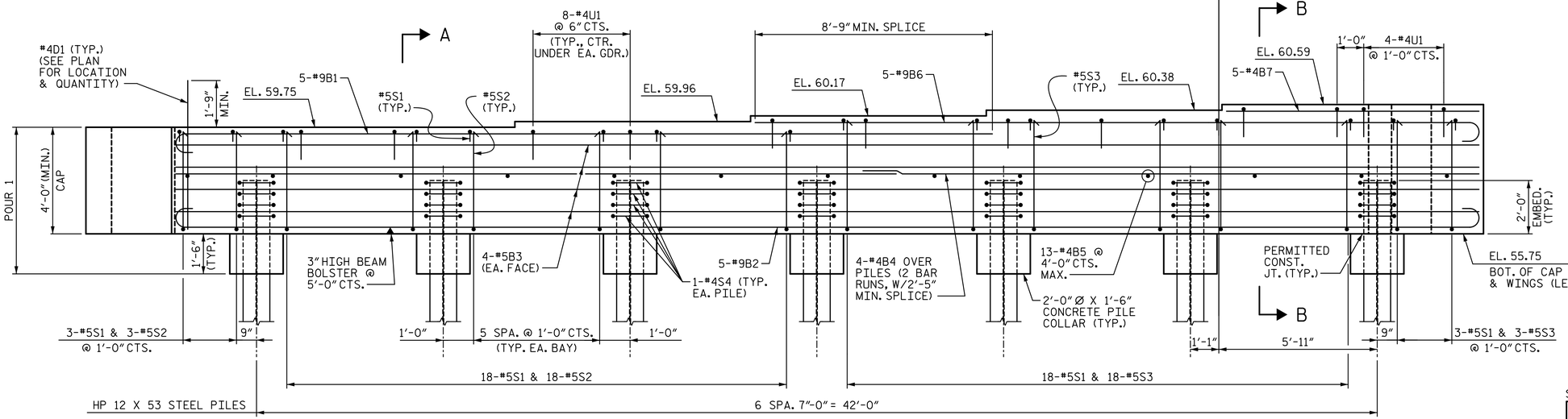
NOTES:

SEE SHEET 3 OF 3 FOR NOTES.

SEE SHEET 3 OF 3 FOR SECTIONS A-A AND B-B.



PLAN



ELEVATION

(LOOKING IN THE DIRECTION OF STATIONING)
(WING DETAILS NOT SHOWN FOR CLARILTY)

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
= 13+04.09 -Y5-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2 (INTEGRAL)

-LEFT LANE-

DocuSigned by: Adam J. Peter E3F6AF8D984742A...

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER
3/10/2015

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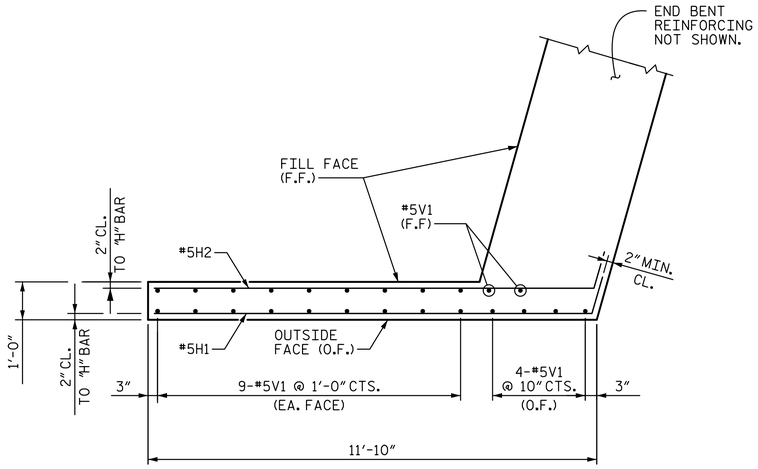
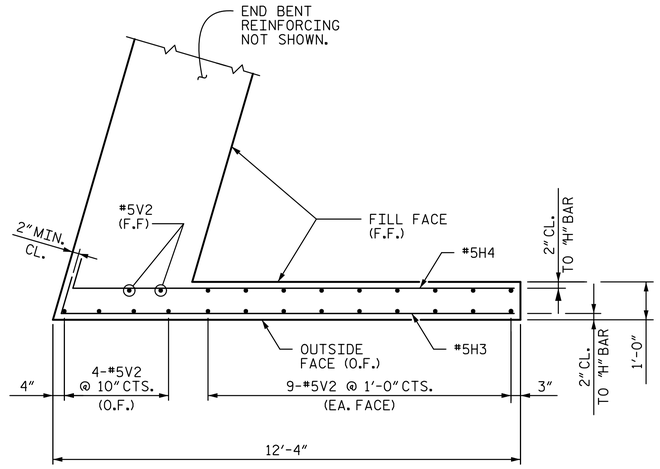
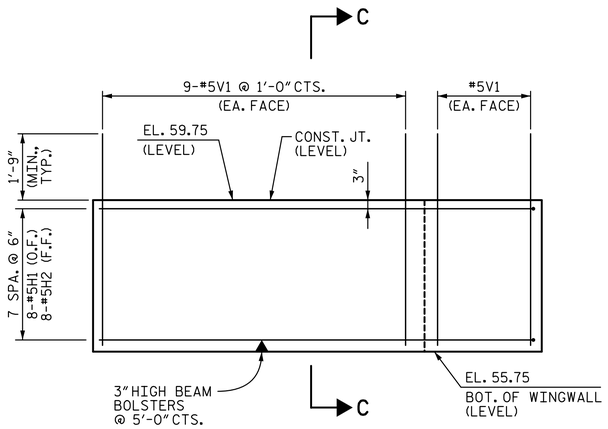


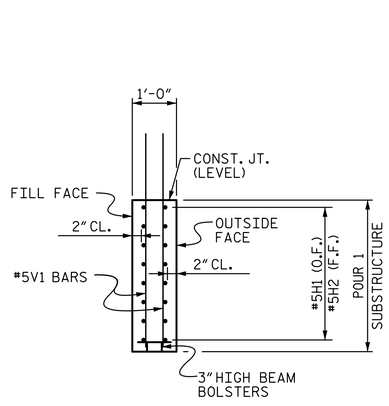
WING WALL PLAN (W3)



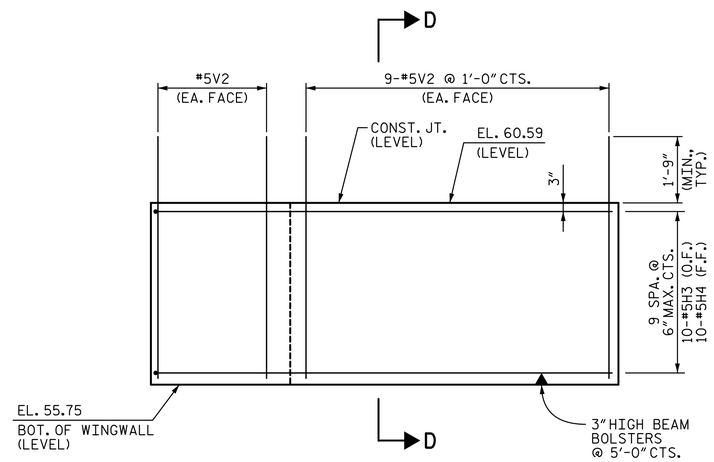
WING WALL PLAN (W4)



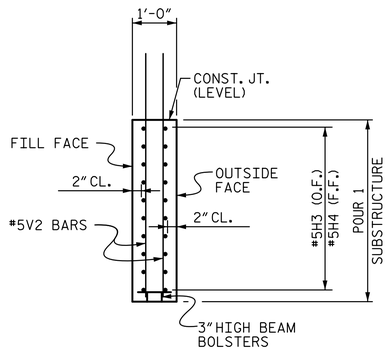
WING WALL ELEVATION (W3)



SECTION C-C



WING WALL ELEVATION (W4)



SECTION D-D

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
= 13+04.09 -Y5-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2
(INTEGRAL)

-LEFT LANE-

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NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER
3/10/2015

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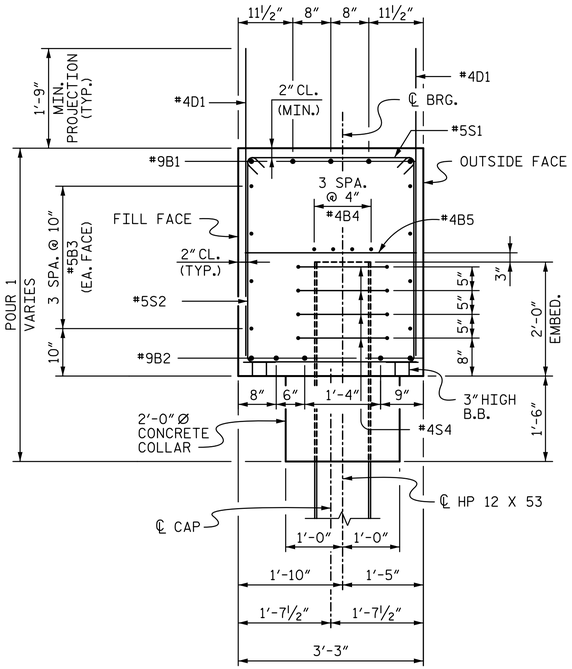
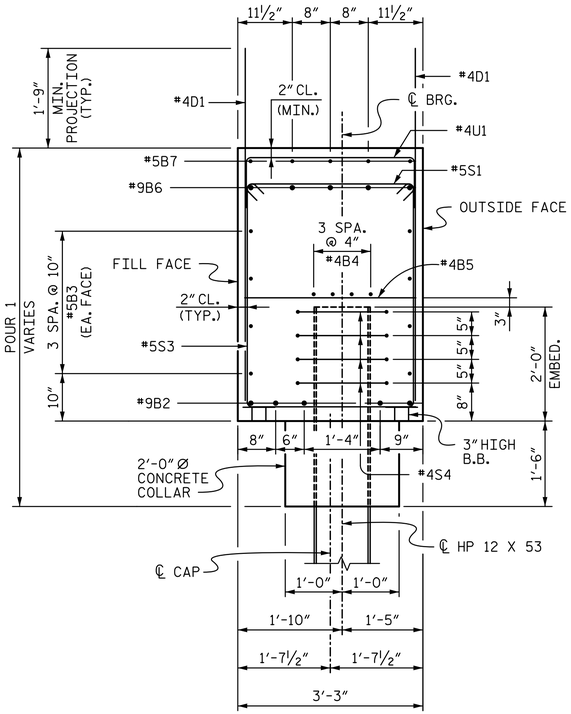
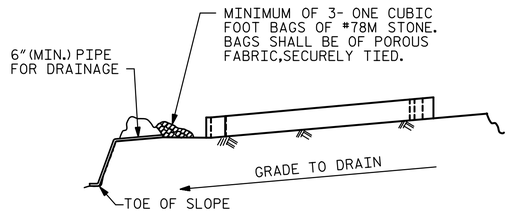


SECTION A-A



SECTION B-B

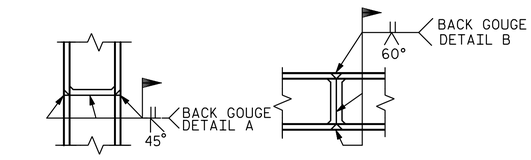


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

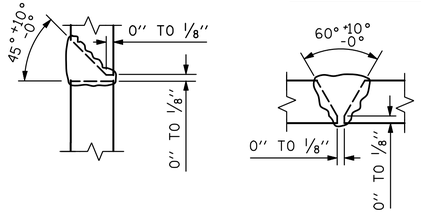
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



▲PILE VERTICAL

▲PILE HORIZONTAL OR VERTICAL



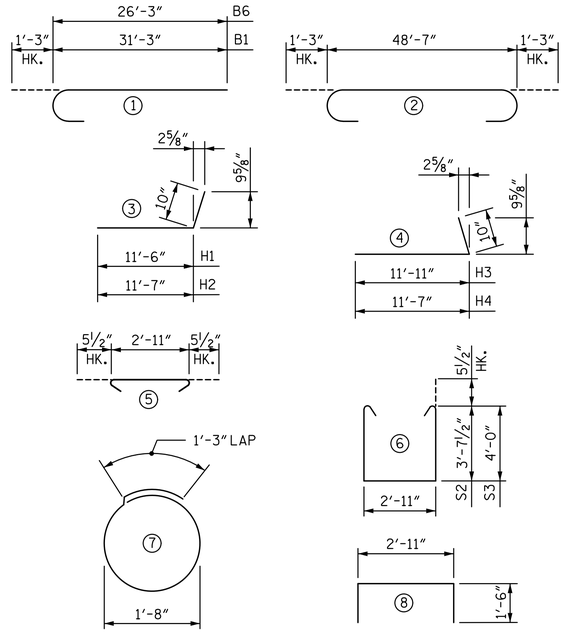
DETAIL A

DETAIL B

▲POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF REINFORCING

MARK	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	5	#9	①	32′-6″	553
B2	5	#9	②	51′-1″	868
B3	8	#5	STR	48′-10″	407
B4	8	#4	STR	25′-8″	137
B5	13	#4	STR	2′-11″	25
B6	5	#9	①	27′-6″	468
B7	5	#4	STR	8′-8″	29
D1	89	#4	STR	6′-5″	381
H1	8	#5	③	12′-4″	103
H2	8	#5	③	12′-5″	104
H3	10	#5	④	12′-9″	133
H4	10	#5	④	12′-5″	130
S1	42	#5	⑤	3′-10″	168
S2	21	#5	⑥	11′-1″	243
S3	21	#5	⑥	11′-10″	259
S4	28	#4	⑦	6′-6″	122
U1	44	#4	⑧	5′-11″	174
V1	24	#5	STR	5′-7″	140
V2	24	#5	STR	6′-5″	161

NOTES:

FOR INTEGRAL BACKWALL REINFORCEMENT, SEE "TYPICAL SECTION AND INTEGRAL BACKWALL" AND "PLAN OF SPANS DETAILS" SHEETS.

FOR FOUNDATION NOTES, SEE SHEET TITLED "FOUNDATION LAYOUT".

THE TOP SURFACE OF THE END BENT CAP AND WINGS, EXCLUDING THE BEARING AREA, SHALL BE RAKED TO A DEPTH OF ¼".

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.

QUANTITIES

		END BENT 2
REINFORCING STEEL	LBS.	4,563
CLASS A CONCRETE		
POUR 1 (CAP, COLLARS & LOWER WING):	CU. YARDS	30.1
TOTAL :	CU. YARDS	30.1
HP 12 X 53 STEEL PILES	(NO.)	7
	LIN. FEET	455
STEEL PILE POINTS	EA.	7
PILE REDRIVES	EA.	4

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
= 13+04.09 -Y5-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2
(INTEGRAL)

-LEFT LANE-

DocuSigned by: Adam J. Peter E3F6AF8D9B4742A...

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER
3/10/2015

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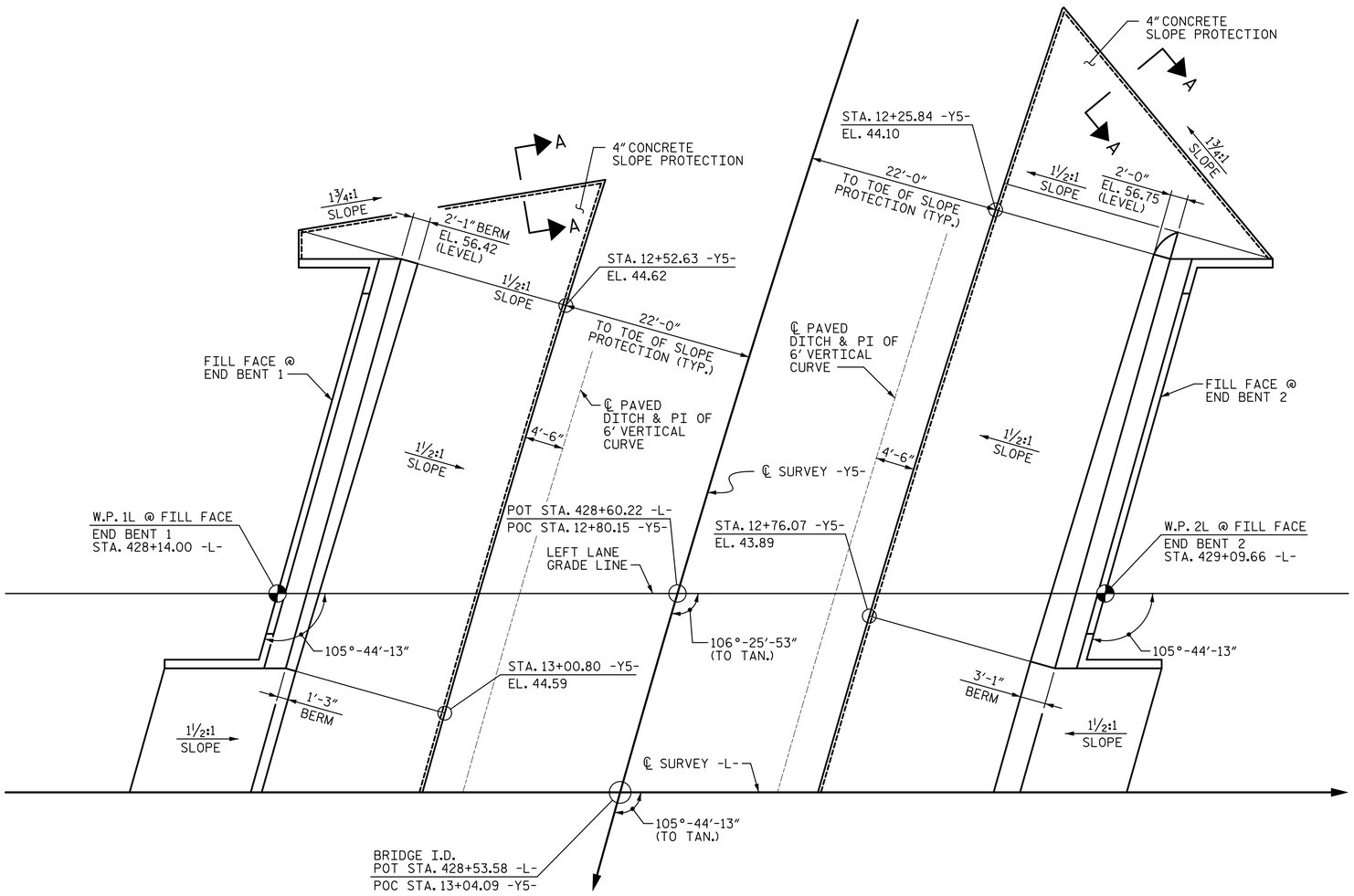


PLAN

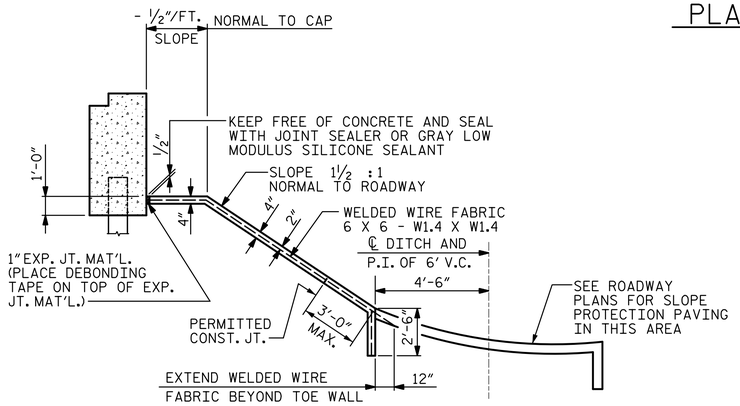
NOTES:

SLOPE PROTECTION SHALL BE PLACED UNDER THE ENDS OF THE BRIDGE AS SHOWN IN THE DETAILS. MEASUREMENT AND PAYMENT SHALL BE AS PRESCRIBED IN SECTION 462 OF THE STANDARD SPECIFICATIONS.

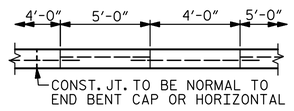
SLOPE PROTECTION SHALL CONSIST OF 4" POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS "B". THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W1.4 X W1.4, 60" WIDE. SLOPE PROTECTION SHALL BE POURED IN 5' STRIPS AS SHOWN IN THE "POURING DETAIL" WITH 2'-0" LONG #4 BARS PLACED ALONG THE SLOPE BETWEEN STRIPS AT 1'-6" MAXIMUM SPACING. SLOPE PROTECTION MAY BE POURED IN ALTERNATE 4' AND 5' STRIPS AS SHOWN IN THE "OPTIONAL POURING DETAIL" WITH ADJACENT RUNS OF WELDED WIRE FABRIC LAPPING AT LEAST 6". THE COST OF THE WELDED WIRE FABRIC AND #4 BARS, IF USED, SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR SLOPE PROTECTION.

BRIDGE @ STA. 428+53.58 -L-	4 INCH SLOPE PROTECTION	✳ WELDED WIRE FABRIC 60 INCHES WIDE
	SQUARE YARDS	APPROX. L.F.
END BENT 1	245	475
END BENT 2	300	565

✳ QUANTITY SHOWN IS BASED ON 5' POURS.

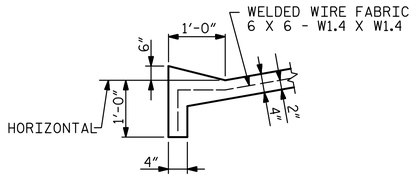


SECTION ALONG ℄ ROADWAY

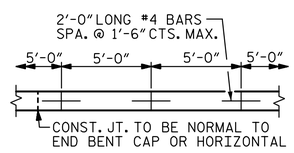


POUR A 4'-0" STRIP FIRST. STRIP WIDTHS MAY VARY IN CURVED PORTION.

OPTIONAL POURING DETAIL



SECTION A-A



STRIP WIDTHS MAY VARY IN CURVED PORTION.

POURING DETAIL

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SLOPE PROTECTION DETAILS

-LEFT LANE-

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NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER
3/10/2015

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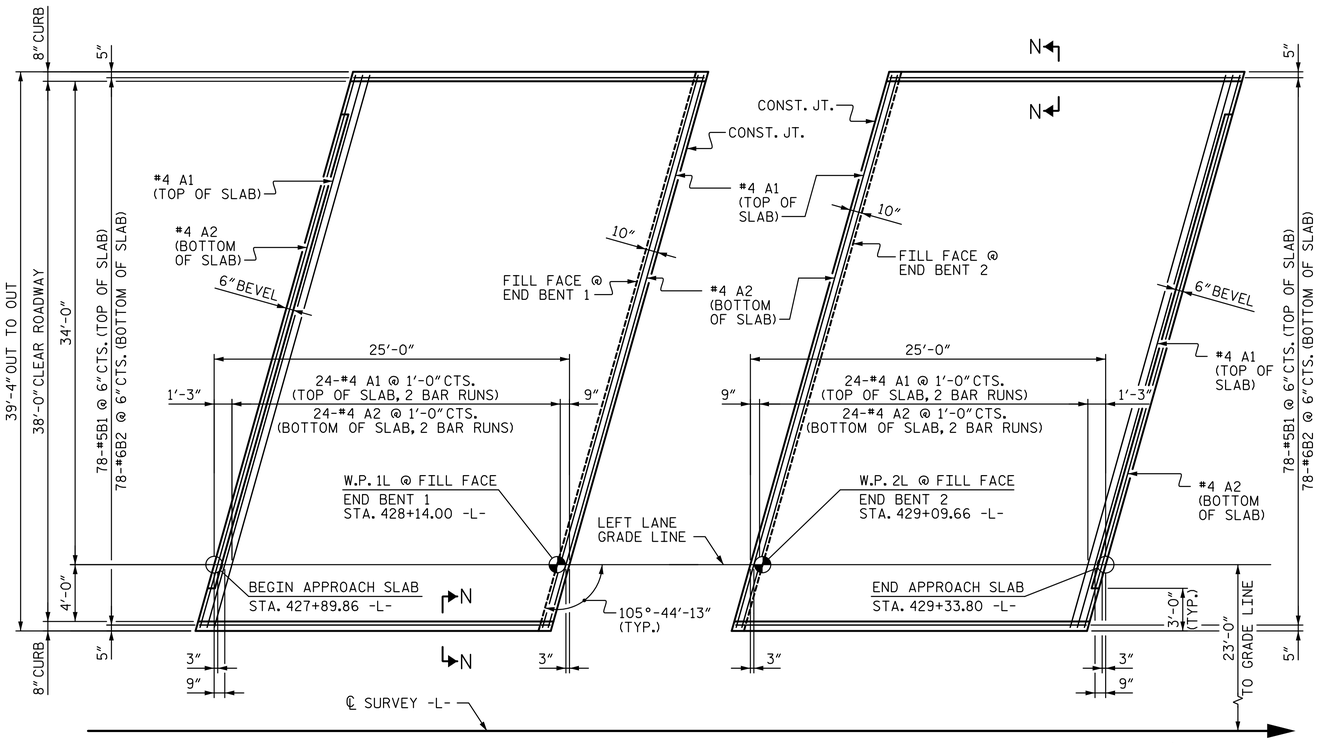
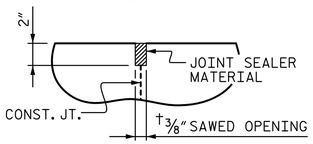
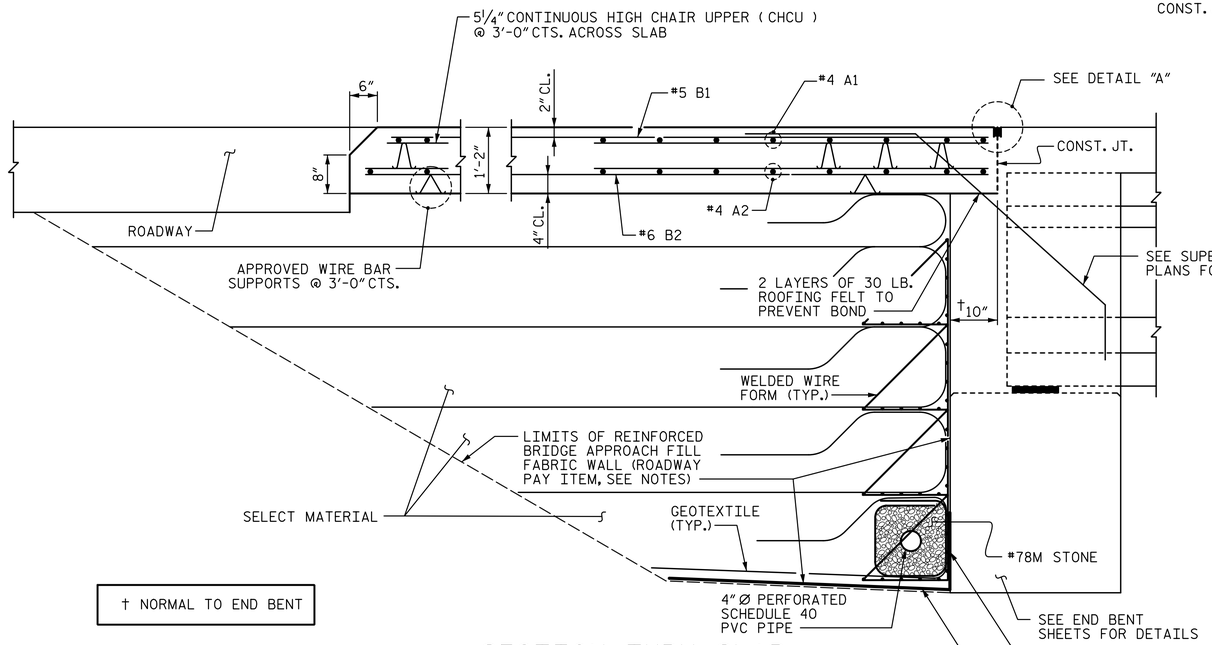


PLAN @ END BENT 1 PLAN @ END BENT 2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

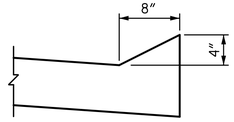


DETAIL "A"

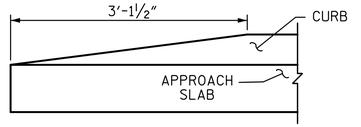


† NORMAL TO END BENT

SECTION THRU SLAB



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

NOTES

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

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

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

THE JOINT OPENING AT THE APPROACH SLAB/DECK INTERFACE SHALL BE SAWED NO MORE THAN 12 HOURS AFTER THE APPROACH SLAB IS CAST. THE JOINT SHALL BE CLEANED OF ALL DEBRIS BEFORE THE SEALANT IS APPLIED. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1028-3 OF THE STANDARD SPECIFICATIONS.

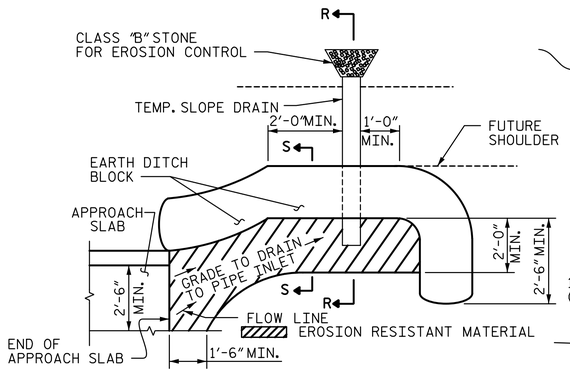
BILL OF MATERIAL

FOR ONE APPROACH SLAB (2 REQ'D)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✳ A1	52	#4	STR	21'-3"	738
A2	52	#4	STR	21'-2"	735
✳ B1	78	#5	STR	24'-1"	1,959
B2	78	#6	STR	24'-7"	2,880
REINFORCING STEEL				LBS.	3,615
✳ EPOXY COATED REINFORCING STEEL				LBS.	2,697
CLASS AA CONCRETE				C.Y.	42.5

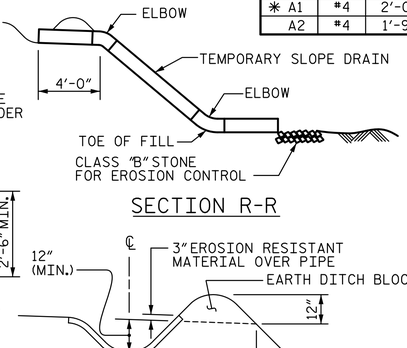
SPLICE CHART

BAR	SIZE	SPLICE
✳ A1	#4	2'-0"
A2	#4	1'-9"



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

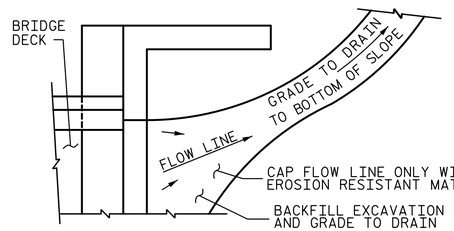


SECTION R-R

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

DocuSigned by: Adam J. Peter E3F6AF8D9B4742A...

NORTH CAROLINA PROFESSIONAL SEAL 35695 ENGINEER ADAM J. PETER

3/10/2015

PROJECT NO. R-2514D

JONES & CRAVEN COUNTY

STATION: 428+53.58 -L-
= 13+04.09 -Y5-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APROACH SLAB FOR INTEGRAL ABUTMENT

-LEFT LANE-

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