



FOUNDATION LAYOUT

PILES ARE DIMENSIONED FROM W.P. TO C OF PILE AT BOTTOM OF CAP

FOUNDATION NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENTS 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 133 TONS PER PILE.

DRIVE PILES AT END BENTS 1 AND 2 TO A REQUIRED DRIVING RESISTANCE OF 177 TONS PER PILE.

TESTING THE FIRST PRODUCTION PILES WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT END BENT 1 AND 2. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

DRILLED PIERS AT BENT 1, 2, 3, 4, 5, 6, AND 7 ARE DESIGNED FOR A FACTORED RESISTANCE OF 935, 995, 963, 1008, 963, 1005, AND 1006 TONS PER PIER, RESPECTIVELY.

PERMANENT STEEL CASINGS ARE REQUIRED FOR DRILLED PIERS AT BENTS 1 TO 7. DO NOT EXTEND PERMANENT CASINGS BELOW ELEVATION 5 FT, 5 FT, -10 FT, -25 FT, -25 FT, 0 FT, AND 0 FT AT BENTS 1, 2, 3, 4, 5, 6, AND 7, RESPECTIVELY, WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

INSTALL PERMANENT STEEL CASINGS AT BENTS 1 TO 7 BY VIBRATING, SCREWING OR DRIVING PERMANENT CASINGS BEFORE EXCAVATING OR DISTURBING ANY MATERIAL BELOW ELEVATION 25 FT, 20 FT, 20 FT, -5 FT, -12 FT, 25 FT, AND 30 FT AT BENTS 1, 2, 3, 4, 5, 6, AND 7, RESPECTIVELY.

INSTALL DRILLED PIERS AT BENTS 1 AND 7 TO A TIP ELEVATION NO HIGHER THAN -90 FT WITH THE REQUIRED FACTORED RESISTANCE.

INSTALL DRILLED PIERS AT BENTS 2 AND 6 TO A TIP ELEVATION NO HIGHER THAN -105 FT WITH THE REQUIRED FACTORED RESISTANCE.

INSTALL DRILLED PIERS AT BENTS 3, 4, AND 5 TO A TIP ELEVATION NO HIGHER THAN -120 FT WITH THE REQUIRED FACTORED RESISTANCE.

THE SCOUR CRITICAL ELEVATION FOR BENTS 1, 2, 3, 4, 5, 6, AND 7 IS AT APPROXIMATE ELEVATIONS OF 27 FT, 21 FT, -11, -8 FT, -15 FT, 25 FT, AND 31 FT, RESPECTIVELY. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

SLURRY IS REQUIRED FOR DRILLED PIERS AT BENTS 1 TO 7.

SID INSPECTIONS ARE REQUIRED FOR DRILLED PIERS. FOR SID INSPECTIONS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

CSL TUBES AND TESTING ARE REQUIRED FOR DRILLED PIERS AT BENT 1 TO 7. FOR CSL TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

THE LOAD TEST PIER SHALL BE TESTED USING ASTM D8169/D8169M-18 "STANDARD TEST METHODS FOR DEEP FOUNDATIONS UNDER BI-DIRECTIONAL STATIC AXIAL COMPRESSIVE LOAD". THE LOAD TEST PIER SHALL BE LOCATED AT APPROXIMATE STATION 117+00 OFFSET 15 LEFT. FOR ADDITIONAL DETAILS REFERENCE THE PLAN SHEET FOR THE LOAD TEST PIER AND THE PROJECT SPECIFICATIONS.

SID INSPECTION, CSL TUBES, CSL TESTING, AND SHAFT SHAPE PROFILING WILL BE REQUIRED FOR THE LOAD TEST PIER. FOR ADDITIONAL DETAILS PLEASE REFERENCE THE PLAN SHEET FOR THE LOAD TEST PIER AND THE PROJECT SPECIFICATIONS.

THE DEPARTMENT RESERVES THE RIGHT TO ADJUST THE PLAN TIP ELEVATIONS FOR THE PRODUCTION PIERS BASED ON THE RESULTS FROM THE LOAD TEST PIER UP TO +/- 15 FEET WITHOUT RENEGOTIATION OF THE CONTRACT RATE FOR 72 INCH DIAMETER DRILLED PIER (LINEAR FOOT).

SELECTION OF SLURRY TYPE SHALL BE DETERMINED BY THE CONTRACTOR BASED ON SITE CONDITIONS. THE SLURRY TYPE UTILIZED FOR THE LOAD TEST PIER SHALL BE USED FOR THE PRODUCTION PIERS UNLESS WRITTEN PERMISSION FROM THE ENGINEER IS GRANTED. SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

ARTESIAN WATER CONDITIONS WERE ENCOUNTERED AT THE SITE DURING DRILLING OF SOIL BORING B5-A TO APPROXIMATE ELEVATION 26 FT. THE CONTRACTOR SHALL BE EQUIPPED TO MANAGE POTENTIAL ARTESIAN CONDITIONS TO ELEVATION 40 FT, 35 FT, 35 FT, 27 FT, 27 FT, 35 FT, AND 40 FT AT BENTS 1, 2, 3, 4, 5, 6, AND 7, RESPECTIVELY. MAINTAINING SLURRY IN CASINGS AT LEAST FIVE FEET ABOVE ANY ARTESIAN CONDITIONS WILL BE REQUIRED.

LEGEND	
	HP 14X73 VERTICAL STEEL PILES
	HP 14X73 BRACED STEEL PILES (BATTERED 3:12)
	INDICATES DIRECTION OF BATTER
	6'-0" Ø DRILLED PIER

PROJECT NO. 48793.3.1
BLADEN COUNTY
 STATION: 118+81.78 -L-

SHEET 4 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER CAPE FEAR
 ON US 701 (N. POPLAR ST.)
 BETWEEN NC 87 (BUS) AND NC 53

DocuSigned by:
Paul Holsouser
 BE6A048516A143E

8/12/2020

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

TOTAL SHEETS: 107

DRAWN BY : B. J. MANTEI DATE : 5-14-20
 CHECKED BY : K. C. SAMUDRALA DATE : 7-14-20
 DESIGN E.O.R. : P. R. HOLSHOUSER DATE : 7-23-20

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

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