

FOUNDATION RECOMMENDATIONS

PROJECT: BP6.R013

TIP NO.:

COUNTY: COLUMBUS

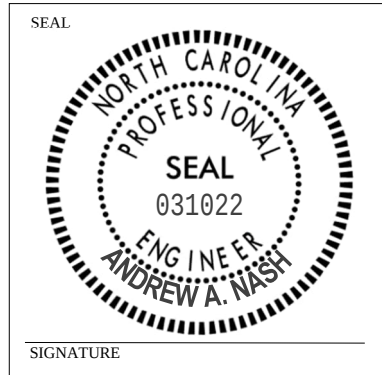
STATION: 27+79.50 -L-

DESCRIPTION: BRIDGE #325 OVER MONIE

SWAMP ON SR 1158 (CHAIR FACTORY ROAD)

BETWEEN SR 1141 AND NC 905

	INITIALS	DATE
DESIGN:	KRP	6/19/2024
CHECKED:	AAN	7/5/2024
FINAL:		
REVISED:	PA	1/23/2026



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	STATION	FOUNDATION TYPE	FACTORED RESISTANCE	MISCELLANEOUS DETAILS
END BENT 1	27+30.81 -L-	Cap on HP 12 x 53 Steel Piles	135 kips/pile	Bottom of Cap Elevation = 43.50 ± ft Point of Fixity Elev. = 26 ft Tip No Higher Than Elev. = 20 ft Estimated Pile Length = 110 ft Number of Piles = 7 Pile Spacing = 6'-0"
BENT 1	27+77.00 -L-	Cap on HP 14 x 73 Steel Piles	235 kips/pile	Bottom of Cap Elevation = 42.80 ± ft Point of Fixity Elev. = 18 ft Tip No Higher Than Elev. = 14 ft Estimated Pile Length = 115 ft Number of Piles = 8 Pile Spacing = 4'-6"
END BENT 2	28+28.19 -L-	Cap on HP 12 x 53 Steel Piles	135 kips/pile	Bottom of Cap Elevation = 43.42 ± ft Point of Fixity Elev. = 26 ft Tip No Higher Than Elev. = 21.0 ft Estimated Pile Length = 95 ft Number of Piles = 7 Pile Spacing = 6'-0"

COMMENTS & NOTES (See Following Page)

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DESCRIPTION: BRIDGE #325 OVER MONIE SWAMP ON SR 1158 (CHAIR FACTORY RD.)

FOUNDATION RECOMMENDATION NOTE ON PLANS:

1. FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
2. IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 31,000 TO 45,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENTS NO. 1 AND 2, AND INTERIOR BENT NO. 1. 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.

FOUNDATION RECOMMENDATION COMMENTS:

1. USE 1.5 : 1 (H:V) END BENT SLOPES WITH CLASS II RIP-RAP SLOPE PROTECTION.
2. USE TYPE 1 BRIDGE APPROACH FILLS, SEE STANDARD DRAWING 423.01 OF THE ROADWAY STANDARD DRAWINGS (JANUARY 2024).
3. A WAITING PERIOD IS NOT REQUIRED PRIOR TO THE CONSTRUCTION OF END BENT NO.1 AND END BENT NO.2.
4. THE MAXIMUM AXIAL LOAD FOR END BENT NO. 1 AND END BENT NO.2 IS 135 KIPS PER PILE, AND BENT NO.1 IS 235 KIPS PER PILE.
5. DRIVE PILES AT END BENTS 1 AND 2 TO A REQUIRED DRIVING RESISTANCE OF 195 KIPS PER PILE RESPECTIVELY. DRIVE PILES AT BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 340 KIPS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR SCOUR.
6. USE VERTICAL PLIES AT THE END BENTS AND INTERIOR BENT ACCORDING TO THE STRUCTURAL PLANS.
7. STEEL PILES AT END BENTS AND INTERIOR BENT SHOULD BE PROTECTED FROM CORROSION ACCORDINGLY TO THE STRUCTURAL DESIGN MANUAL
8. THE DESIGN SCOUR ELEVATIONS AT END BENT NO. 1 AND END BENT NO.2 IS ELEVATIONS 41.5 FT AND 39.2 FT RESPECTIVELY. THE DESIGN SCOUR ELEVATION AT BENT NO.1 IS 30.9 FT.

(Blank entries indicate item is not applicable to structure)

$$* RDR = \frac{\text{Factored Resistance} + \text{Factored Drag Load} + \text{Factored Dead Load}}{\text{Dynamic Resistance Factor}} + \text{Nominal Drag Load Resistance} + \text{Nominal Resistance from Scourable Material}$$

(Blank entries indicate item is not applicable to structure)

* Factored Dead Load is factored weight of pile above the ground line.

(Blank entries indicate item is not applicable to structure)

EST = Pile order lengths from estimated pile lengths; DPT = Pile order lengths based on Dynamic Pile Testing. For groups of end bents/bents with pile order lengths based on DPT testing, the first end bent/bent no. listed for each group is the representative end bent/bent with the DPT.

STATION: 27+79.50 -L-

1. The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Andrew A. Nash, #031022) on 01-27-2026.
2. Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, i.e., the number of piles with a Required Driving Resistance.
3. The Engineer may adjust the quantity for DPT Testing and Pipe Pile Plates when necessary.

	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH PILE FOUNDATION TABLES																										
SIGNATURE _____ DATE _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="6" style="text-align: center;">REVISIONS</th> <th style="text-align: center;">SHEET NO.</th> </tr> <tr> <th style="width: 10%;">NO.</th> <th style="width: 10%;">BY:</th> <th style="width: 10%;">DATE:</th> <th style="width: 10%;">NO.</th> <th style="width: 10%;">BY:</th> <th style="width: 10%;">DATE:</th> <th rowspan="3" style="text-align: center; vertical-align: middle; font-weight: bold;">TOTAL SHEETS</th> </tr> <tr> <td style="text-align: center;">1</td> <td></td> <td></td> <td style="text-align: center;">3</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">2</td> <td></td> <td></td> <td style="text-align: center;">4</td> <td></td> <td></td> </tr> </table>	REVISIONS						SHEET NO.	NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS	1			3			2			4		
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