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FOUNDATION RECOMMENDATIONS

WBS NO. BP8.R026
T.I.P. NO. BP8.R026
COUNTY RANDOLPH

DESCRIPTION BRIDGE 750176 ON SR 2207 (FAITH ROCK ROAD) OVER UNNAMED CREEK BETWEEN US-64/NC-49 AND SR 2235

STATION 14+55.00 -L-

P.E. SEAL

NORTH CAROLINA PROFESSIONAL SEAL 047389 ENGINEER CHIEN-TING TANG

DocuSigned by: Chien-Ting Tang 2/18/2025
4071910370EE41F...
SIGNATURE

	INITIALS	DATE
DESIGN	CTT	5/3/2024
CHECK	BL	5/4/2024
APPROVAL		

BENT	STATION	FOUNDATION TYPE	FACTORED RESISTANCE	MISCELLANEOUS DETAILS	
END BENT 1	14+23.84 -L-	CAP ON HP 12x53 STEEL PILES	150 KIPS/PILE	BOTTOM OF CAP ELEV. AVG. ESTIMATED PILE LENGTH NUMBER OF PILES/CAP	= 475.85 FT (±) = 15 FT = 7
END BENT 2	14+86.16 -L-	CAP ON HP 12x53 STEEL PILES	150 KIPS/PILE	BOTTOM OF CAP ELEV. AVG. ESTIMATED PILE LENGTH NUMBER OF PILES/CAP	= 474.16 FT (±) = 15 FT = 7

(SEE NOTES ON PLANS AND COMMENTS ON FOLLOWING PAGES.)

Prepared for NCDOT by WSP

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FOUNDATION RECOMMENDATIONS AND COMMENTS

FOUNDATION RECOMMENDATION NOTES ON PLANS

1. FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
2. FILL HOLES FOR PILE EXCAVATION AT END BENT NO. 1 AND END BENT NO. 2 WITH CONCRETE OR GROUT.

FOUNDATION RECOMMENDATION COMMENTS

1. A SINGLE ROW WITH 7 DRILLED-IN PLUMB PILES IS PLANNED FOR END BENT NO. 1 AND END BENT NO. 2.
2. USE TYPE I BRIDGE APPROACH FILLS [2024 ROADWAY STANDARD DRAWING 423.01] UNDER APPROACH SLABS.
3. BRIDGE END BENT SLOPES OF 1.5:1 (H:V) ARE ACCEPTABLE WITH CLASS II RIP RAP SLOPE PROTECTION.
4. BASED ON REVIEW OF PROJECT BSR, SCOUR IMPACT IS NOT ANTICIPATED IN THIS SITE.
5. ESTIMATED SETTLEMENTS OF EMBANKMENT AT END BENT NO. 1 AND END BENT NO. 2 LOCATIONS ARE BOTH LESS THAN 1.5 INCHES.

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SUMMARY OF PILE INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Number of Piles per Line	Factored Resistance per Pile KIPS	Pile Cut-Off (Top of Pile) Elevation FT	Estimated Pile Length per Pile FT	Scour Critical Elevation FT	Driven Piles			Predrilling for Piles **			Drilled-In Piles		
						Minimum Pile Tip (Tip No Higher Than) Elevation FT	Required Driving Resistance (RDR)* per pile KIPS	Pile Redrives Quantity EACH	Predrilling Length per Pile LIN FT	Predrilling Elevation (Elevation Not To Predrill Below) FT	Maximum Predrilling Diameter INCHES	Pile Excavation (Bottom of Hole) Elevation FT	Pile Excavation Not In Soil per Pile LIN FT	Pile Excavation In Soil per Pile LIN FT
End Bent No. 1, Piles 1-7	7	150	478.10	15								465.85	2	8
End Bent No. 2, Piles 1-7	7	150	476.40	15								462.16	3	9
TOTAL QUANTITY:													35	119

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

** Predrilling for Piles is required for end bents/bents with a predrilling length and at the Contractor's option for end bents/bents with predrilling information but no predrilling length.

PILE DESIGN INFORMATION

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Factored Axial Load per Pile KIPS	Factored Drag Load per Pile KIPS	Factored Dead Load * per Pile KIPS	Dynamic Resistance Factor	Nominal Drag Resistance per Pile KIPS	Nominal Scour Resistance per Pile KIPS
End Bent No. 1, Piles 1-7	150					
End Bent No. 2, Piles 1-7	150					

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

SUMMARY OF PILE ACCESSORIES

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Pipe Pile Plates EACH	Steel Pile Points		
		Pipe Pile Cutting Shoes EACH	Pipe Pile Conical Points EACH	H-Pile Points EACH
End Bent No. 1, Piles 1-7				
End Bent No. 2, Piles 1-7				
TOTAL QUANTITY:				

SUMMARY OF DPT/PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

Dynamic Pile Testing (DPT)		
End Bent / Bent No (e.g., "Bent 1 - Bent 3")	DPT Test Pile Length FT	DPT Testing Quantity EACH
End Bent No. 1, Piles 1-7		
End Bent No. 2, Piles 1-7		
TOTAL QUANTITY:		

Pile Order Lengths for Concrete Piles	
End Bent / Bent No (e.g., "Bent 1 - Bent 3")	Pile Order Length Basis* EST or DPT

* 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.

NOTES:

1. The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Chien-Ting Tang, #047389) on 02/18/2025.
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.

PROJECT NO. BP8.R026

RANDOLPH COUNTY

STATION: 14+55.00 -L-

NORTH CAROLINA PROFESSIONAL SEAL PE # ENGINEER PE SEAL NAME

SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PILE FOUNDATION TABLES

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