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")	Factored Resistance per Pile TONS	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		
					Min. Pile Tip (Tip No Higher Than) Elev. FT	Required Driving Resistance (RDR)** per Pile TONS	Total Pile Redrives Quantity EACH	Predrilling Length per Pile LIN FT	Predrilling Elevation (Elev Not To Predrill Below) FT	Maximum Predrilling Dia INCHES	Pile Excavation (Bottom of Hole) Elev FT	Pile Exc Not In Soil per Pile LIN FT	Pile Exc In Soil per Pile LIN FT
End Bent 1, Piles 1-5	115	683.65	35			195							
End Bent 1, Piles 6-9	115	683.65	25			195							
End Bent 2, Piles 1-4	115	687.09	15			195							
End Bent 2, Piles 5-9	115	687.09	20			195							

* 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.

$$**RDR = \frac{\text{Factored Resistance + Factored Downdrag Load + Factored Dead Load}}{\text{Dynamic Resistance Factor}} + \text{Nominal Downdrag Resistance} + \frac{\text{Nominal Scour Resistance}}{\text{Scour Resistance Factor}}$$

SUMMARY OF DRILLED PIER INFORMATION/INSTALLATION

(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)

End Bent/ Bent No. Piers) *-* (e.g., "Bent 1, Piers 1-3")	Factored Resistance per Pier TONS	Minimum Pier Tip (Tip No Higher Than) Elevation FT	Required Tip Resistance Per Pier TSF	Scour Critical Elevation FT	Minimum Drilled Pier Penetration Into Rock per Pier LIN FT	Drilled Pier Length per Pier LIN FT	Drilled Pier Length Not In Soil per Pier LIN FT	Drilled Pier Length In Soil per Pier LIN FT	Permanent Steel Casing Required? YES or MAYBE	Permanent Steel Casing Tip Elevation (Elev Not To Extend Casing Below) FT	Permanent Steel Casing Length * per Pier LIN FT
Bent 1, Pier 1	555	628.00	15	637.0	11.00		11.00	13.08	YES	639.00	13.03
Bent 1, Piers 2-3	550	618.00	25	637.0	19.00		22.90	11.18	YES	639.00	13.03

* Permanent Steel Casing Length equals the difference between the ground line or top of drilled pier elevation, whichever is higher, and the permanent casing tip elevation.

NOTES:

1. The Pile and Drilled Pier Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Robert E. Kral, 042642) on 11/23/2022.
2. Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, ie., the number of piles with a Required Driving Resistance.
3. The Engineer will determine the need for Dynamic Pile Testing, Pipe Pile Plates, Permanent Steel Casings, SPTs, CSL Testing, SID Inspections and PITs when these items may be required.
4. For Piles, see Section 450 ot the Standard Specifications.
5. It has been estimated that a pile driving hammer with a maximum energy range of 30,000 ft-lbs to 40,000 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.
6. For Drilled Piers, see Section 411 of the Standard Specifications.
7. Install Permanent Steel Casing at Bent 1 by Vibrating, Screwing or Driving Permanent Cascing before excavating or disturbing any material below Elevation 639.0 ft.
8. At the Contractor's option "Type A - Alternate Approach Fill" in lieu of the "Type 1 - Standard Approach Fill" may be constructed at no additional cost to the Department.

SUMMARY OF DPT / PILE ORDER LENGTHS

(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)

Dynamic Pile Testing (DPT)				Pile Order Lengths	
End Bent/ Bent No.	DPT Required? YES or MAYBE	DPT Pile Length FT	Total DPT Quantity EACH	End Bent/ Bent No(s)	Pile Order Length Basis * EST or DPT
End Bent 1, Piles 1-9	MAYBE		1		
End Bent 2, Piles 1-9	MAYBE				

* 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 Dynamic Pile Testing, the first end bent/bent no. listed for each group is the representive end bent/bent with the DPT.

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 Required? YES or MAYBE	Steel Pile Points			Steel Pile Tips Required? YES
		Pipe Pile Cutting Shoes Required? YES	Pipe Pile Conical Points Required? YES	H-Pile Points Required? YES	
End Bent 2, Piles 1-9				YES	
TOTAL QUANTITY:				9	

SUMMARY OF DRILLED PIER TESTING

(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)

End Bent/ Bent No. PIER(s) *-* (e.g., "Bent 1, Piers 1-3")	Standard Penetration Test (SPT) Required? YES or MAYBE	Crosshole Sonic Logging (CSL) Required? * YES or MAYBE	Total CSL Tube Length (For All Tubes) per Pier LIN FT	Shaft Inspection Device (SID) Required? YES or MAYBE	Pile Integrity Test (PIT) Required? MAYBE
Bent 1, Pier 1		MAYBE	102.00		
Bent 1, Piers 2-3		MAYBE	142.00		
TOTAL QUANTITY:		1	386.00		

* CSL Tubes are required if CSL Testing is or may be required. The number of CSL Tubes per drilled pier is equal to one tube per foot of design pier diameter with at least 4 tubes per pier. The length of each CSL Tube is equal to the drilled pier length plus 1.5 ft.

PROJECT NO. B-5845

CLEVELAND COUNTY

STATION: 22+56.00-L-

SHEET 3 OF 5

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 20125 Marshall G. Cheek Jr. ENGINEER

6/27/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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CORP. LICENSE NO.: C-0275

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PILE AND DRILLED PIER FOUNDATION TABLES

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

DRAWN BY :	NMW	DATE : 11/22
CHECKED BY :	MGC	DATE : 12/22