

SUMMARY OF PILE INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No(s)	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 - CFRP PCP's		
					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 Exc 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	125	10.19	60			235	3						
Bent 1	256	15.75	90	-13	-47.0	360	3						
Bent 2	256	21.76	90	-19	-42.0	360	3						
Bent 3	179	6.10	90	-22	-64.0	250	5					-55.0	51.5
Bent 4	216	6.10	95	-29	-67.0	300	5					-55.0	46.8
Bent 5	216	6.10	95	-29	-67.0	300	5					-55.0	47.1
Bent 6	216	6.10	95	-30	-67.0	300	5					-55.0	46.0
Bent 7	168	6.35	100	-32	-69.0	240	8					-55.0	42.1
Bent 8	168	6.35	100	-33	-69.0	240	8					-55.0	42.7
Bent 9	216	6.10	95	-36	-69.0	305	5					-55.0	38.7
Bent 10	216	6.10	95	-35	-69.0	305	5					-55.0	40.6
Bent 11	216	6.10	95	-24	-65.0	305	5					-55.0	45.1
Bent 12	216	6.10	95	-20	-65.0	305	5					-55.0	49.4
Bent 13	335	21.14	120	-13	-65.0	465	3					-55.0	51.2
Bent 14	335	17.38	115	-15	-65.0	465	3					-55.0	50.5
Bent 15	335	15.34	115	-13	-62.0	465	3					-53.0	50.3
Bent 16	335	14.77	115	-14	-62.0	465	3					-53.0	51.2
Bent 17	267	14.37	100	-17	-62.0	370	3					-53.0	50.7
Bent 18	256	15.45	100	-16	-62.0	370	3					-53.0	51.2
Bent 19	256	14.95	100	-18	-62.0	370	3					-53.0	51.4
Bent 20	256	14.45	100	-20	-62.0	370	3					-53.0	50.0
Bent 21	256	13.95	105	-29	-72.0	370	3						
Bent 22	256	13.45	105	-33	-72.0	370	3						
Bent 23	256	12.94	105	-25	-72.0	370	3						
Bent 24	256	12.27	105	-24	-67.0	370	3						
Bent 25	256	10.09	100	-23	-50.0	370	3						
Bent 26	256	7.52	95	-21	-55.0	370	3						
Bent 27	256	4.94	95	-19	-50.0	370	3						
End Bent 2	125	2.29	85			170	3						

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

PILE DESIGN INFORMATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No(s)	Factored Axial Load per Pile TONS	Factored Downdrag Load per Pile TONS	Factored Dead Load* per Pile TONS	Dynamic Resistance Factor	Nominal Downdrag Resistance per Pile TONS	Nominal Scour Resistance per Pile TONS	Scour Resistance Factor (Default = 1.00)
End Bent 1	125	32	0.0	0.75	25	0.0	1.00
Bent 1	256	0	4.4	0.75	0	7.0	1.00
Bent 2	256	0	6.6	0.75	0	12.0	1.00
Bent 3	179	0	11.2	0.75	0	0.0	1.00
Bent 4	216	0	11.2	0.75	0	0.0	1.00
Bent 5	216	0	11.2	0.75	0	0.0	1.00
Bent 6	216	0	11.2	0.75	0	0.0	1.00
Bent 7	168	0	11.2	0.75	0	0.0	1.00
Bent 8	168	0	11.2	0.75	0	0.0	1.00
Bent 9	216	0	11.2	0.75	0	0.0	1.00
Bent 10	216	0	11.2	0.75	0	0.0	1.00
Bent 11	216	0	11.2	0.75	0	0.0	1.00
Bent 12	216	0	11.2	0.75	0	0.0	1.00
Bent 13	335	0	15.7	0.75	0	0.0	1.00
Bent 14	335	0	14.5	0.75	0	0.0	1.00
Bent 15	335	0	13.8	0.75	0	0.0	1.00
Bent 16	335	0	13.5	0.75	0	0.0	1.00
Bent 17	267	0	13.2	0.75	0	0.0	1.00
Bent 18	256	0	4.9	0.75	0	9.0	1.00
Bent 19	256	0	4.6	0.75	0	8.0	1.00
Bent 20	256	0	4.7	0.75	0	14.0	1.00
Bent 21	256	0	6.0	0.75	0	16.0	1.00
Bent 22	256	0	6.7	0.75	0	16.0	1.00
Bent 23	256	0	5.0	0.75	0	14.0	1.00
Bent 24	256	0	4.9	0.75	0	14.0	1.00
Bent 25	256	0	3.6	0.75	0	16.0	1.00
Bent 26	256	0	2.6	0.75	0	16.0	1.00
Bent 27	256	0	1.5	0.75	0	13.0	1.00
End Bent 2	125	0	0.0	0.75	0	0.0	1.00

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

SUMMARY OF PDA/PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

Pile Driving Analyzer (PDA)				Pile Order Lengths	
End Bent/ Bent No(s)	PDA Testing Required? YES or MAYBE	PDA Test Pile Length FT	Total PDA Testing Quantity EACH	End Bent/ Bent No(s)	Pile Order Length Basis* EST or PDA
End Bent 1	Yes	75	1	End Bent 1	PDA
Bent 1 - 2	Yes	105	1	Bent 1 - 2	PDA
Bent 3 - 4	Yes	105	1	Bent 3 - 4	PDA
Bent 5 - 6	Yes	110	1	Bent 5 - 6	PDA
Bent 7 - 8	Yes	115	1	Bent 7 - 8	PDA
Bent 9 - 10	Yes	110	1	Bent 9 - 10	PDA
Bent 11 - 13	Yes	110	1	Bent 11 - 13	PDA
Bent 14 - 16	Yes	130	1	Bent 14 - 16	PDA
Bent 17 - 19	Yes	115	1	Bent 17 - 19	PDA
Bent 20	Yes	115	1	Bent 20	PDA
Bent 21 - 22	Yes	120	1	Bent 21 - 22	PDA
Bent 23 - 25	Yes	120	1	Bent 23 - 25	PDA
Bent 26 - 27	Yes	110	1	Bent 26 - 27	PDA
End Bent 2	Yes	100	1	End Bent 2	PDA

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

Foundation Notes

- FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS AND "PILES" PROJECT SPECIAL PROVISION.
- IT HAS BEEN ESTIMATED A HAMMER WITH AN EQUIVALENT RATED ENERGY OF 50,000 TO 80,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT 1 AND END BENT 2.
- IT HAS BEEN ESTIMATED A HAMMER WITH AN EQUIVALENT RATED ENERGY OF 90,000 TO 120,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT 1 THROUGH BENT 27.
- OBSERVE A 1 MONTH WAITING PERIOD AFTER CONSTRUCTING THE RETAINING WALLS, REINFORCED RETAINING WALL BACKFILL, EMBANKMENT, AND END BENT BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NO. 1 AND END BENT NO. 2.
- FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.
- TEMPORARY STEEL CASINGS ARE REQUIRED FOR PILE EXCAVATION AT BENT 3 THROUGH BENT 14. CASING TIP ELEVATIONS MUST EXTEND TO ELEVATION -55 FEET.
- TEMPORARY STEEL CASINGS ARE REQUIRED FOR PILE EXCAVATION AT BENT 15 THROUGH BENT 20. CASING TIP ELEVATIONS MUST EXTEND TO ELEVATION -53 FEET.
- PILE EXCAVATION IS REQUIRED TO INSTALL PILES AT BENT 3 THROUGH BENT 20. SEE PILE EXCAVATION SPECIAL PROVISION FOR ADDITIONAL DETAILS.
- CLASS VI SELECT MATERIAL IS REQUIRED TO FILL HOLES FOR PILE EXCAVATION AT BENT 3 THROUGH BENT 20.

NOTES:


- The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Aaron D. Goldberg #39671) on 03-06-2020.
- 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.

PROJECT NO. B-4863

CARTERET COUNTY

STATION: 34+75.00 -L-

SHEET 11 OF 16

 DocuSigned by: Jeffrey H. Carroll, PE 4/16/2021 SIGNATURE DATE		STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH GENERAL DRAWING PILE FOUNDATION TABLES																			
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