



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL ENGINEERING UNIT

Estimated Driven Pile Axial Resistance Table for Piles in the Coastal Plain

SPT-N (bpf)	Estimated Resistance for HP 12 x 53 Steel Piles and 12" P/S Concrete Piles (kips/ft)				Weathered Rock (All Depths / All N Values)
	Sand			Clay/Silt (All Depths)	
	(< 50 ft)	(50 ft - 100 ft)	(> 100 ft)		
0	0.00	0.00	0.00	0.00	14
1	0.29	0.87	1.45	0.58	<p>Notes:</p> <ol style="list-style-type: none"> 1. Borings should be terminated at an axial resistance of 550 kips. No additional drives are required. 2. Coastal plain sedimentary rock layers less than 4 feet in thickness and/or with a SPT-N (bpf) less than 51 should be considered a sand for resistance calculations. 3. Borings at end bents may be terminated after three consecutive SPT-N Values (bpf) of 100+. 4. When SPT refusal is encountered at end bents within 10 feet of bottom of cap, the boring must be cored to evaluate bed rock versus boulder. 5. For situations not covered by these notes or the Geotechnical Investigations and Recommendations Manual, seek guidance from the geotechnical engineer.
2	0.58	1.74	2.90	1.15	
3	0.86	2.62	4.34	1.73	
4	1.15	3.49	5.79	2.30	
5	1.44	4.36	7.24	2.88	
6	1.50	4.54	7.54	3.19	
7	1.56	4.72	7.85	3.50	
8	1.62	4.90	8.15	3.82	
9	1.68	5.08	8.46	4.13	
10	1.74	5.26	8.76	4.44	
11	1.80	5.44	9.06	4.75	
12	1.86	5.62	9.37	5.06	
13	1.92	5.80	9.67	5.38	
14	1.98	5.98	9.98	5.69	
15	2.04	6.16	10.28	6.00	
16	2.06	6.22	10.38	6.16	
17	2.08	6.29	10.49	6.31	
18	2.10	6.35	10.59	6.47	
19	2.13	6.42	10.70	6.63	
20	2.15	6.48	10.80	6.79	
21	2.17	6.54	10.90	6.94	
22	2.19	6.61	11.01	7.10	
23	2.21	6.67	11.11	7.26	
24	2.23	6.74	11.22	7.42	
25	2.25	6.80	11.32	7.57	
26	2.27	6.86	11.42	7.73	
27	2.30	6.93	11.53	7.89	
28	2.32	6.99	11.63	8.05	
29	2.34	7.06	11.74	8.20	
30	2.36	7.12	11.84	8.36	
31	2.38	7.17	11.93	8.59	
32	2.40	7.22	12.02	8.82	
33	2.41	7.28	12.10	9.06	
34	2.43	7.33	12.19	9.29	
35	2.45	7.38	12.28	9.52	
36	2.47	7.43	12.37	9.75	
37	2.49	7.48	12.46	9.98	
38	2.50	7.54	12.54	10.22	
39	2.52	7.59	12.63	10.45	
40	2.54	7.64	12.72	10.68	
41	2.56	7.69	12.81	10.91	
42	2.58	7.74	12.90	11.14	
43	2.59	7.80	12.98	11.38	
44	2.61	7.85	13.07	11.61	
45	2.63	7.90	13.16	11.84	
46	2.65	7.95	13.25	12.07	
47	2.67	8.00	13.34	12.30	
48	2.68	8.06	13.42	12.54	
49	2.70	8.11	13.51	12.77	
50	2.72	8.16	13.60	13.00	
>50	2.72	8.16	13.60	13.00	

References:

1. NCDOT Geotechnical Engineering Unit Analysis, Tuttle and Santee, 2021