ROCSCIENCE

RSPile

Driven Pile

Verification Manual

April 5, 2022

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1. Example 1

Table 1.0

	Cohesionless		Cohesive	General Properties	
Depth (ft)	**Friction Angle (Skin Friction, deg)**	**Friction Angle (End Bearing, deg)**	**Cu (psf)**	**Unit Weight (pcf)**	**Driving Loss (%)**
0-25	33	38	--	120	10
25-50	--	--	2800	110	40

Table 2.0

Water Table Levels	Pile Type	Other Design Considerations
Drilling = 10ft Restrike / Driving = 10ft Ultimate = 0ft	Precast Concrete Side = 12in	5ft local scour

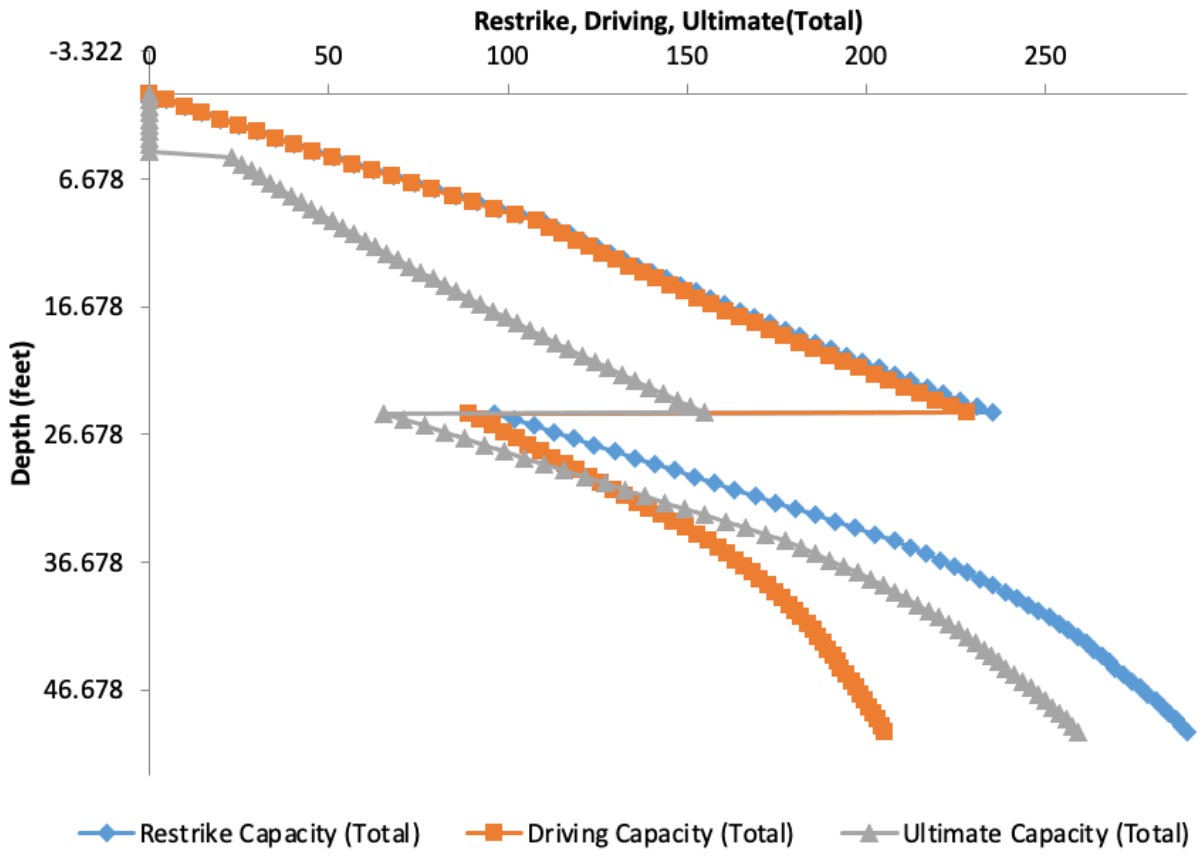

Figure 1.0: Adhesion Type = Piles Driven Through Overlying Sands or Sandy Gravels (Tomlinson, 1980)

2. Example 2

Table 3.0

	Cohesionless		General Properties	
Depth (m)	**Friction Angle (Skin Friction, deg)**	**Friction Angle (End Bearing, deg)**	**Unit Weight (kN/m^3)**	**Driving Loss(%)**
0-5	30	30	18	20
5-10	35	35	20	10

Table 4.0

Water Table Levels	Pile Type	Other Design Considerations
Drilling = 0m Restrike / Driving = 3m Ultimate = 1m	Closed end pipe Diameter = 508mm	2m long term scour

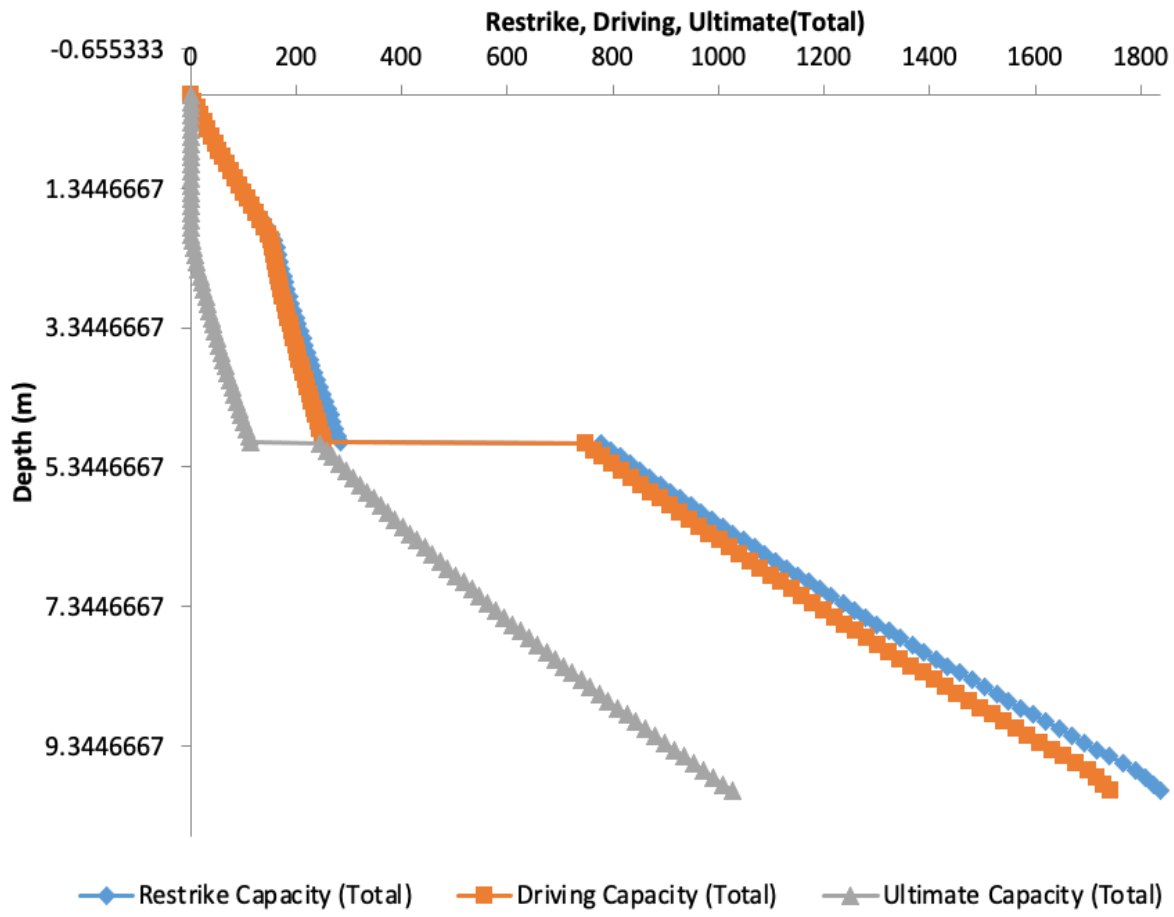

Figure 2.0

3. Example 3

Table 5.0

Cohesionless			Cohesive	General Properties	
Depth (ft)	**Depth (ft)**	**N Value**	**Cu (psf)**	**Unit Weight (pcf)**	**Driving Loss (%)**
2-15	--	--	900	110	40
15-45	20	22	--	118	10
--	25	14	--	--	--
--	30	18	--	--	--
--	35	23	--	--	--
--	45	26	--	--	--

Table 6.0

Water Table Levels	Pile Type	Other Design Considerations
Drilling = 5ft Restrike / Driving = 10ft Ultimate = 1ft	H Pile HP 12x63 Top of pile = 2ft	8ft soft soil – downdrag condition Soil Layer 2: N values corrected for effective overburden pressure

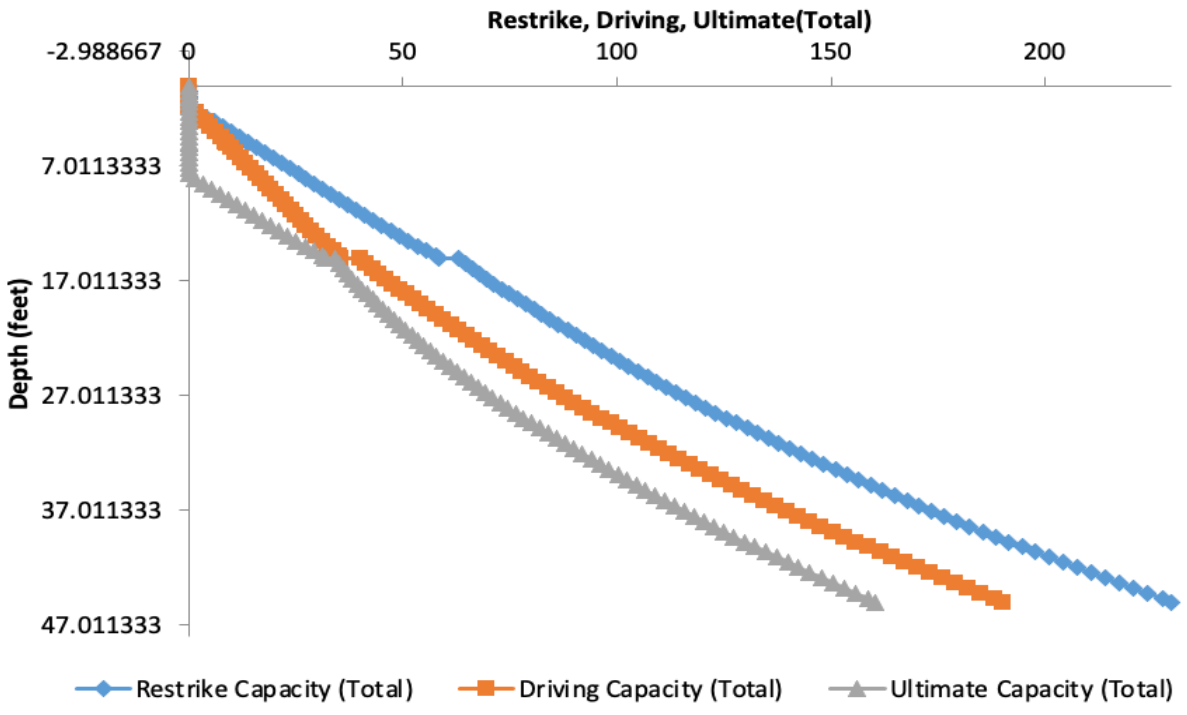

Figure 3.0

4. Example 4

Table 7.0

	Cohesionless		Cohesive	General Properties	
Depth (m)	**Friction Angle (Skin Friction, deg)**	**Friction Angle (End Bearing, deg)**	**Cu (kPa)**	**Unit Weight (kN/m^3)**	**Driving Loss (%)**
0-25	--	--	50	14	40
25-40	33	33	--	18	10

Table 8.0

Water Table Levels	Pile Type	Other Design Considerations
Drilling = 0m Restrike / Driving = 3m Ultimate = 0m	Square concrete Side = 610mm	4m soft soil 4m negative skin friction

*slight difference in results due to different calculation method of Ca in DRIVEN

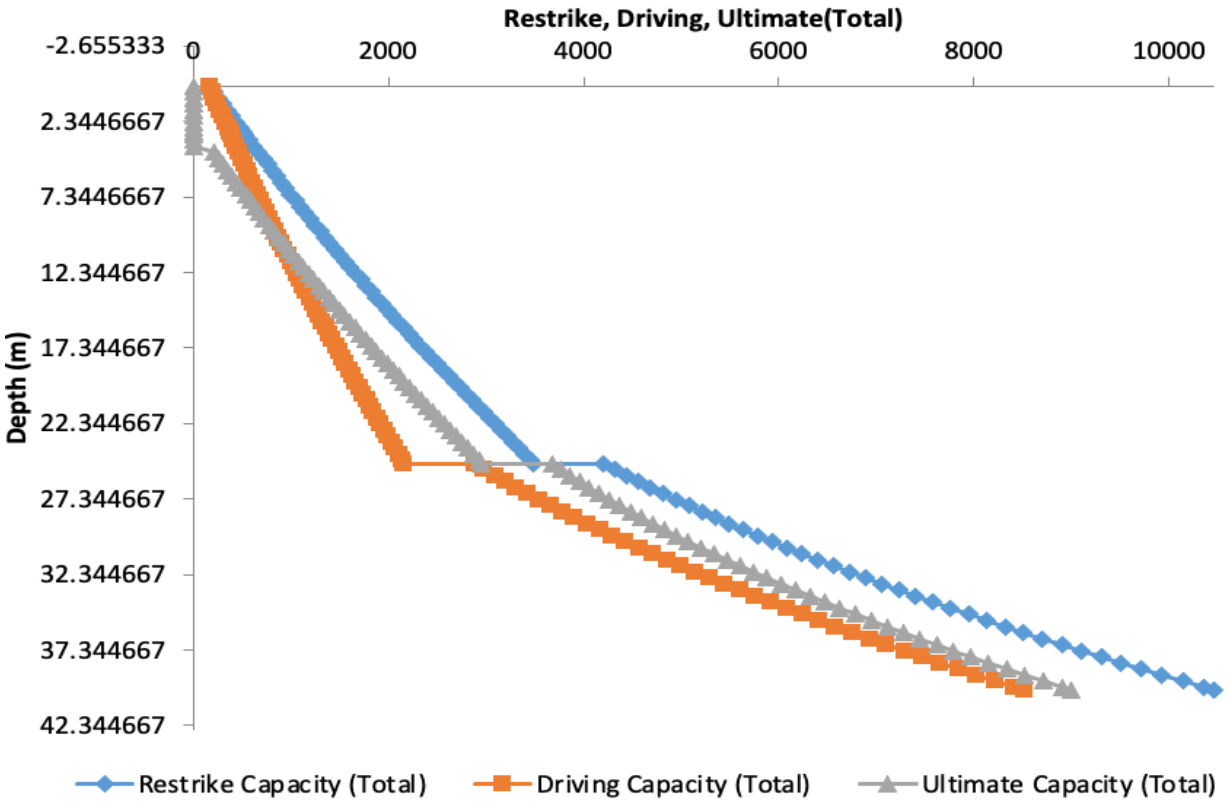

Figure 4.0

5. Example 5

Table 9.0

	Cohesionless		Cohesive	General Properties	
Depth (m)	**Friction Angle (Skin Friction, deg)**	**Friction Angle (End Bearing, deg)**	**Cu (kPa)**	**Unit Weight (kN/m^3)**	**Driving Loss (%)**
1-10	--	--	100	18	17
10-17	32	32	--	18.5	8
17-24	36	36	--	18.5	8
24-31	38	38	--	19	5

Table 10.0

Water Table Levels	Pile Type	Other Design Considerations
Drilling = 2m Restrike / Driving = 2m Ultimate = 0m	Opened end pipe Diameter = 508mm Shell thickness = 6.35mm	1.5m soft soil

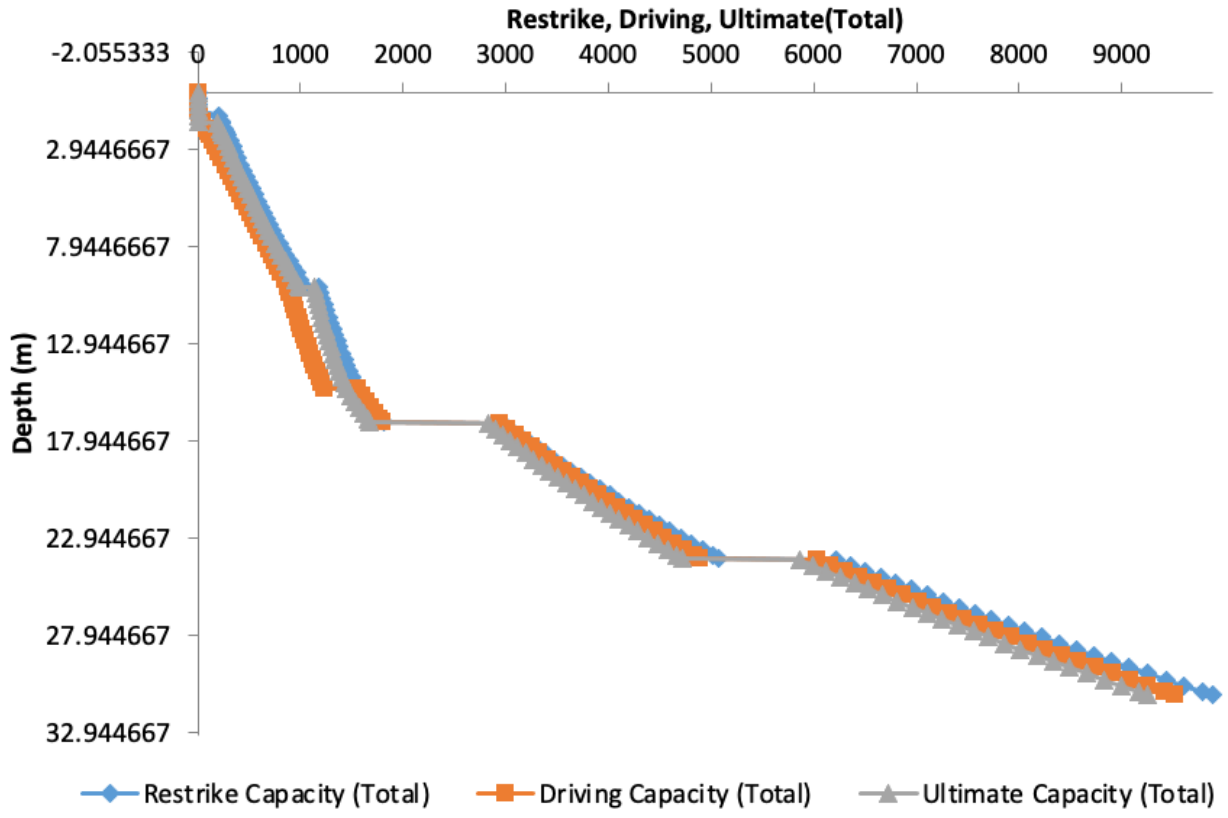

Figure 5.0

6. Example 6

Table 11.0

	Cohesionless		Cohesive	General Properties	
Depth (ft)	**Depth (ft)**	**N Value**	**Cu (psf)**	**Unit Weight (pcf)**	**Driving Loss (%)**
0-15	5	12	--	120	15
--	10	17	--	--	--
15-35	15	14	--	120	10
--	20	21	--	--	--
--	25	27	--	--	--
--	30	28	--	--	--
--	35	31	--	--	--
35-70	--	--	2500	120	40

Table 12.0

Water Table Levels	Pile Type	Other Design Considerations
Drilling = 6ft Restrike / Driving = 3ft Ultimate = 1ft	Open ended pipe Diameter = 36in Wall thickness = 0.5in	1ft local scour 3ft long term scour

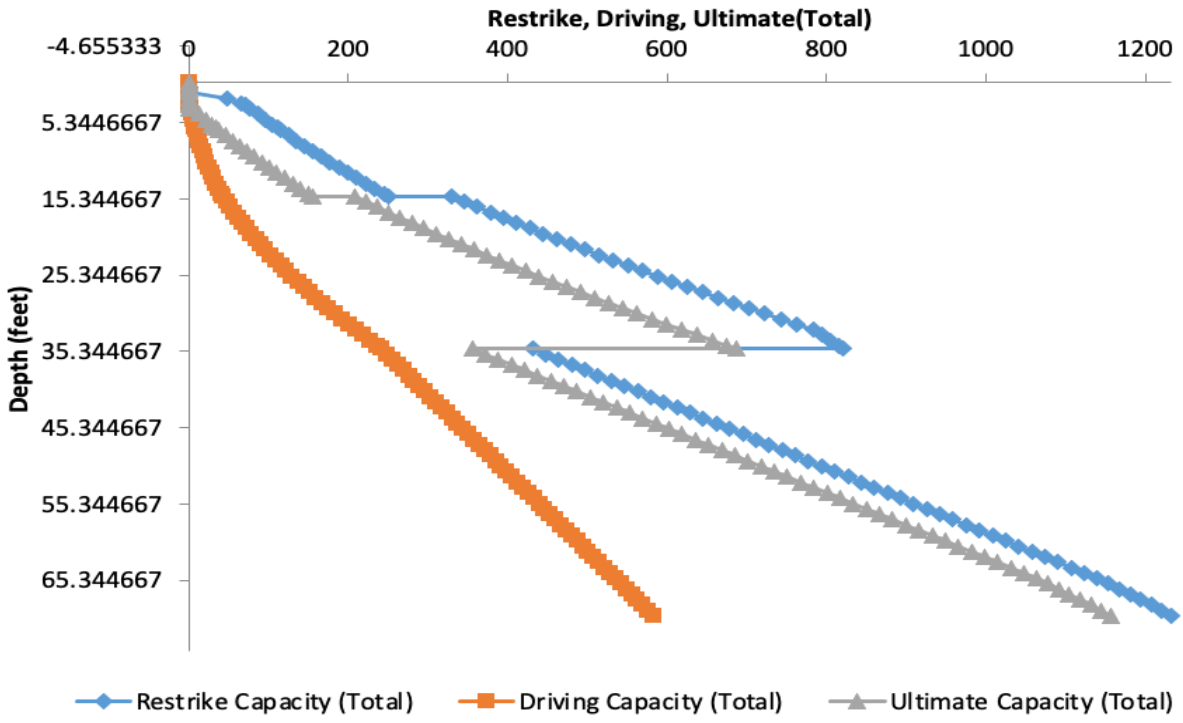

Figure 6.0