Strain Pole Foundation Chart - Tethered and Untethered Spans

Span Length (ft)	Soil Type	Soil Condition		30 ft Pole Length		Casing Length
		S_u *	N_{60} *	Diameter (in)	Foundation Depth (ft) *	
≤ 100	Low Sand	-	5≤ N_{60} < 10	36	14.0	As Shown on Plans
	Med Sand	-	10≤ N_{60} < 20	36	13.0	
	High Sand	-	N_{60} ≥ 20	36	12.5	
	Low Clay	500 ≤ S_u < 1000	-	36	18.0	
	Med Clay	1000 ≤ S_u < 2000	-	36	14.0	
	High Clay	S_u ≥2000	-	36	11.5	
101 to 120	Low Sand	-	5≤ N_{60} < 10	36	14.0	
	Med Sand	-	10≤ N_{60} < 20	36	13.0	
	High Sand	-	N_{60} ≥ 20	36	12.5	
	Low Clay	500 ≤ S_u < 1000	-	36	18.0	
	Med Clay	1000 ≤ S_u < 2000	-	36	14.0	
	High Clay	S_u ≥2000	-	36	11.5	
121 to 150	Low Sand	-	5≤ N_{60} < 10	36	14.0	
	Med Sand	-	10≤ N_{60} < 20	36	13.0	
	High Sand	-	N_{60} ≥ 20	36	12.5	
	Low Clay	500 ≤ S_u < 1000	-	36	18.0	
	Med Clay	1000 ≤ S_u < 2000	-	36	14.0	
	High Clay	S_u ≥ 2000	-	36	11.5	

*S_u = Undrained Shear Strength in Cohesive Soil (psf)
*N_{60} = Standard Penetration Resistance (Blows/Foot according to ASTM D-1586) Corrected to 60% Hammer Efficiency Utilizing the Hammer's Calibrated Energy
*Foundation length measured from the top of the shaft, and assumes 0.25 feet (3 inches) of stickup

NOTE: A Detailed Site Specific Design Is Required for any of the Following Conditions

1) If N_{60} < 5 or S_u <500 psf
2) If span lengths are greater than 150 feet
3) If groundwater is less than 3 feet below the finished ground surface
4) If a rock socket is required for the drilled shaft, if N_{60} values greater than 50 blows per foot dominate the lower half of the drilled shaft length, or if drilling refusal or split-spoon refusal is encountered above design bottom foundation elevation.

OTHER NOTES:

This chart is for use with tethered and untethered spans. See SIG-022 for details.
The upper 3.5 feet of soil modeled as soil assuming ground is disturbed to locate utilities.
Drilled shaft head lateral deflection less than or equal to 1 inch.

FINAL ROW PLAN REVISIONS SUBMITTAL DATE:							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

NO SCALE

	DATE: 05/17/24	CS:STATEWIDE	TRAFFIC SIGNAL STRAIN POLE - 36" DIA FOUNDATION	DRAWING / SHEET
	DESIGN UNIT:SIGNALS	JN:STATEWIDE	FOUNDATION DESIGN TABLE	SECT
FILE: sig-design-154-A	TSC:STATEWIDE		SIG-DESIGN-154-A	1 of 1