

Mast Arm Foundation Chart

Mast Arm Type	Soil Type	Soil Condition		Diameter (in)	Foundation Depth (ft)	Casing Depth
		S_u	N_{60}			
Single Arm	Low Sand	-	$5 \leq N_{60} \leq 10$	42	19.5	As Shown on Plans
	Med Sand	-	$10 < N_{60} \leq 20$	42	13.0	
	High Sand	-	$N_{60} > 20$	42	12.5	
	Low Clay	$500 \leq S_u < 1000$	-	42	16.5	
	Med Clay	$1000 \leq S_u < 2000$	-	42	14.0	
	High Clay	$S_u \geq 2000$	-	42	11.5	
Double Arm	Low Sand	-	$5 \leq N_{60} \leq 10$	42	18.0	
	Med Sand	-	$10 < N_{60} \leq 20$	42	14.5	
	High Sand	-	$N_{60} > 20$	42	14.0	
	Low Clay	$500 \leq S_u < 1000$	-	42	17.5	
	Med Clay	$1000 \leq S_u < 2000$	-	42	15.5	
	High Clay	$S_u \geq 2000$	-	42	12.5	

* S_u = Ultimate 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

*Table based on Drilled Shaft Head Deflection ≤ 1 inch, the Ground Water Table ≥ 3 feet below the ground surface, and the first 3.5 feet of soil modeled as Disturbed Soil assuming ground is disturbed to locate utilities

Note: A Detailed Site Specific Design is Required for the Following Conditions

- 1) If $N_{60} < 5$ or $S_u < 500$ psf
- 2) If mast are lengths are greater than 50 feet
- 3) If Rock Sockets are required for the drilled shaft

File: PW:Reference Documents/Traffic Reference/Signals/Design Guides/Final/SIG-DESIGN-284A.dgn

 TRAFFIC SIGNAL DESIGN	DESCRIPTION	DATE	TRAFFIC SIGNAL MAST ARM POLE FOUNDATION DESIGN TABLE
	INITIAL POST TO WEB	02/15/11	
DRAWN BY:			SIG-DESIGN-284-A
CHECKED BY:			