

Determine Embedment of Socket for Summa Totem Pole

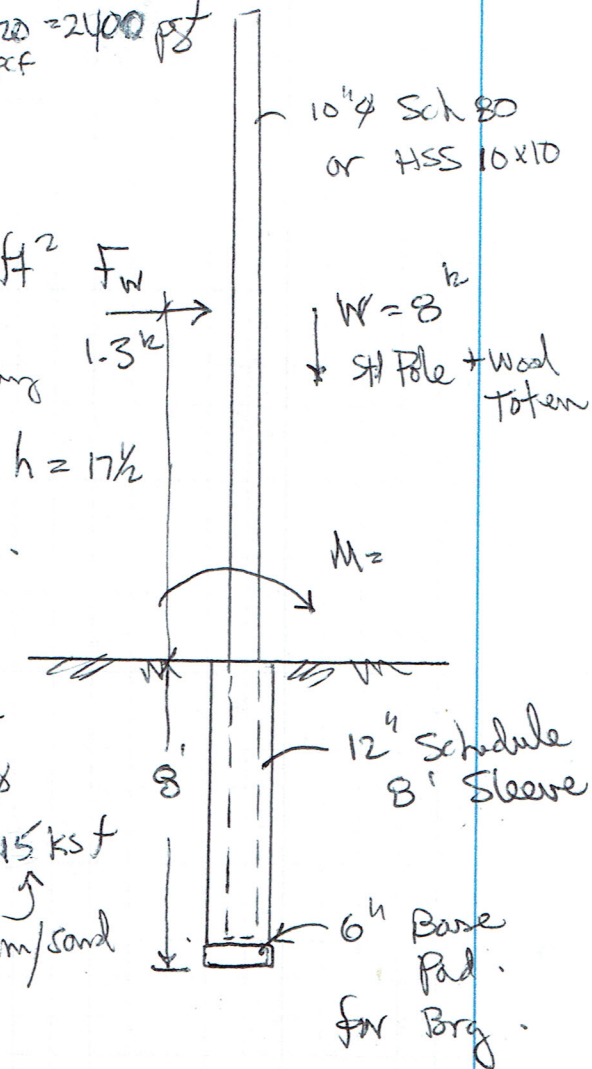
Check Brg for weight on Base Pad.

Allowable @ 12' Depth (est) =  $1000 + 12 \times 120 = 2400 \text{ psf}$   
Base                      RF

Area Req'd =  $\frac{B^h}{2.4 \text{ w/ft}^2} = 3.33 \text{ ft}^2$

Try 2'  $\phi$  Hole Area =  $\frac{2^2 \pi}{4} = 3.14 \text{ ft}^2$

Assume friction will account for Remaining



Check Embedment w/ unconstrained base formula.

$d = \frac{A}{2} \left( 1 + \sqrt{1 + \frac{4.36h}{A}} \right)$

Where  $A = \frac{2.34(P)}{S_3 b}$  with  $P = 1.3 \text{ k}$   
 $b = 2' \phi$   
 $S_3 = \frac{d}{3} \times 15 \text{ ksf}$   
silt/loam/sand

So  $A = \frac{2.34(1.3)}{.6 \times 2} = 2.5$

$d = \frac{2.5}{2} \left( 1 + \sqrt{1 + \frac{4.36(17.5)}{2.5}} \right) = 8.3'$

Revise to 10'

$A = \frac{2.34(1.3^h)}{\frac{10}{3} \times 15 \times 2} = 3.05$

Iterate  $d = \frac{3.05}{2} \left( 1 + \sqrt{1 + \frac{4.36 \times 17.5}{3.05}} \right) = 9.3 \text{ ft}$

Say 10 ft for Embedment in 24"  $\phi$  hole - includes 6" pad @ Base Backfill w/ concrete.