

HONEYCUTT ENGINEERING

16127 Spiveys Corner Hwy
Dunn, NC 28334
910-237-0734

Job: Holly Springs Baptist Church -- Harnett County

Sheet: 1 of 2

Calculated By: Jason M. Honeycutt

Date: 6/24/25

Sign Foundation Design For:

Location =	Harnett County	Height of Sign Face, ft =	5
Design Wind Velocity (V), mph =	120	Width of Sign Face, ft =	7.5
Height of Structure (Z), ft =	6.5	Height of Flashing Face, ft =	0
Kz =	0.37	Width of Flashing Face, ft =	0
Exposure =	B	Length of Pole, ft =	0
Structural Classification =	I	Width of Pole, ft =	0
Importance Factor (I) =	1	Area of Sign Face, ft ² =	37.5
Gust Response Factor (Gh & Gz) =	1.65	Area of Flashing Face, ft ² =	0
Geometry Force Coefficient (Cf) =		Area of Pole, ft ² =	0
Round = 0.75, Square/Rect = 1.2	1.2	Moment Arm of Sign Face, ft =	4
Max Allow. Stress, ksi =	23	Moment Arm of Flashing Face, ft =	0
Number of Poles =	1	Moment Arm of Pole, ft =	0

Determine Velocity Pressure:

$$Q_z = 0.00256 * K_z * (1 * V)^2 \quad Q_z = 13.6$$

Determine Wind Force:

$$F = Q_z * (G_h \& G_z) * C_f * A$$

Sign:	Fs =	1.01
Flashing:	Ff =	0.00
Pole:	Fp =	0.00
	Ftotal (kips) =	1.01

Moment Calculations:

$$M = F * \text{Moment Arm}$$

Sign:	Ms =	4.05
Flashing:	Mf =	0.00
Pole:	Mp =	0.00
	Mtotal (kips-ft)	4.05

Section Requirement Calculation:

$$S_{req} = M_{total} / \text{max allowable stress} \quad S_{req} (\text{in}^3) = 2.114$$

Embedment Depth Required:

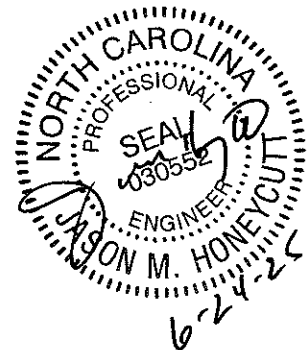
USE: 4" x 4" x 3/16" Steel Tubing

Force on Pole (P), lbs =	1013
Height Above Ground the Load Is Applied (H), ft =	4.00
Diameter of Foundation or Pole (B), ft =	1.5
Passive Soil Allowable Pressure (p), psi =	
Ranges from 100 - 400	400
Assumed depth (d), ft =	4.76
Soil pressure, (psi)	2000
Steel Specification:	A500 Grade B, 50 ksi
Concrete pressure, (psi)	3000

$$S_i = p * d / 3 \quad S_i = 634.67$$

$$A = 2.34 * P / (S_i * B) \quad A = 2.49$$

$$d = (A / 2) * (1 + (1 + (4.36 * H / A))^{0.5}) \quad d = 4.77$$



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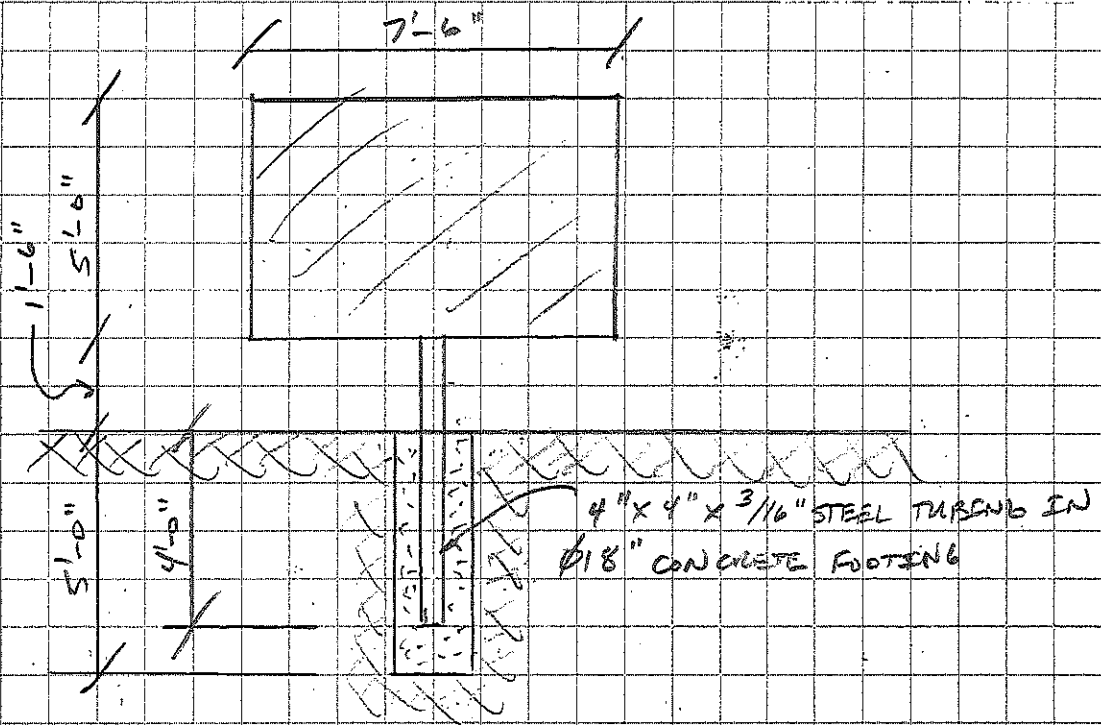
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POLE & FOOTING DETAILS

SCALE: 1/4" → 1'-0"

SIGN BY OTHERS

