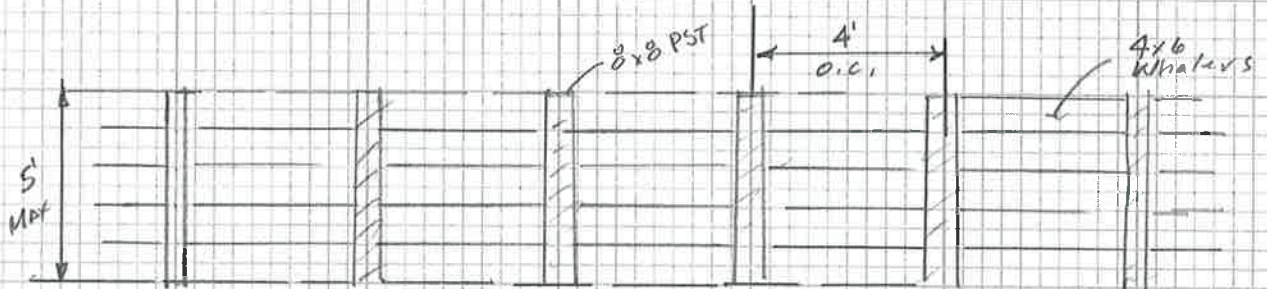


- All wood to be pretreated
- Structural grade lumber
- Place drainage mat behind horizontal members



1. Soil wt. = 105#/cu (sandy material)
2. No wt.
3. C = 0

325 John Knox Rd
 Building 20D
 Tall, FL 30203
 850-656-1212



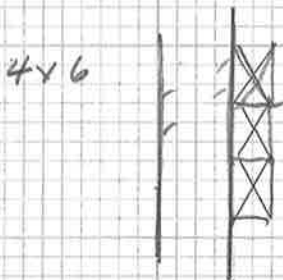
Project Chaires Park Date 3.1.13
 Subject Wood Retaining Wall By COO
 Job # 509 Scale NA Sheet 1

1. Wraiser (4x6) Pt

$$\frac{105 \text{ PCF} (5)}{2} = 262.5 \text{ PLF}$$

$$M_{\text{max}} = \frac{262.5 (4)^2}{8} = 525 \text{ Ft-lbs} = 6.3 \text{ IN-k}$$

$$V_{\text{max}} = 262.5 (2) = 525 \text{ lbs (both ends)}$$



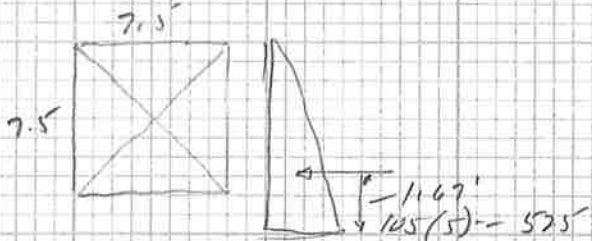
$$S_y = \frac{3.5 (5.5)^2}{6} = 17.64 \text{ IN}^3$$

Allowables
 $E_v = 95 \text{ PSI}$
 $F_b = 1350 \text{ PSI}$

$$f_b = \frac{6.3 \text{ IN-k}}{17.6} = .358 \text{ ksi } 350 \text{ PSI } \text{ ok}$$

$$f_v = \frac{525}{(3.5)(5.5)} = 27.27 \text{ PSI } \text{ ok}$$

2.) Post (8x8 Pt)



$$P_c = \frac{(0.4)(105)(5)^2}{2}$$

$$= 525 (4) = 2100$$

$$M_{\text{max}} = 2100 (1.67) = 3507 \text{ Ft-lbs}$$

$$= 42.08 \text{ IN-k}$$

$$f_b = \frac{42.08}{140.63} = 299 \text{ PSI } \text{ ok}$$

$$f_v = \frac{2100}{7.5^2} = 37.33 \text{ ksi } \text{ ok}$$

$$S_y = \frac{d^3}{3}$$

$$= \frac{7.5^3}{3} = 140.63 \text{ IN}^3$$

$$575(4) = 2100 \text{ lbs}$$

3. Bury Depth

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

$$h = 5$$

$$A = \frac{2.34P}{S_1 B}$$

$$P = 2100 \text{ psf} \quad \text{Good Sand}$$

$$S = 2500 \text{ PSF}$$

$$P = 2100 \text{ lbs}$$

$$B = 7.5''$$

$$= \frac{2.34(2100)}{2500(7.5)}$$

$$= \frac{4914}{1562.5}$$

$$= 3.145$$

$$= 3.145$$

$$d = \frac{3.145}{2} \left(1 + \sqrt{1 + \frac{4.36(5)}{3.145}} \right)$$

$$= (1.57)(1 + 7.58)$$

$$= 10.2'$$

$$d_{\text{Const.}} = \sqrt{\frac{4.75 Ph}{S_1 B}}$$

$$= 6'-9'' \quad \text{ok}$$