

Wood Columns

(1) 2x6 SPF #1/#2

$$\begin{aligned}
 \frac{F_c}{b} &= \frac{1500 \text{ psi}}{9 \times 12} \\
 \frac{F_c}{d} &= \frac{1500 \text{ psi}}{5.5} = 19.6 < 50 \text{ ok} \\
 E &= 1.9 \times 10^6 \text{ psi} \\
 F_{CE} &= \frac{K_{CE} E'}{(l/d)^2} = \frac{0.3 (1.4 \times 10^6)}{19.6^2} \\
 &= 1105 \text{ psi} \\
 K_{CE} &= 0.3
 \end{aligned}$$

$$F'_c = F_{c\#} \left[\frac{1 + F_{CE}/F_{c\#}}{2C} - \sqrt{\left[\frac{1 + F_{CE}/F_{c\#}}{2C} \right]^2 - \frac{F_{CE}/F_{c\#}}{C}} \right]$$

$F_{c\#} = 1150 \times 1.1 = 1265 \text{ psi}$
 $C = 0.8$

$$= 1265 \left[\frac{1 + 1105/1265}{2(0.8)} - \sqrt{\left[\frac{1 + 1105/1265}{2(0.8)} \right]^2 - \frac{1105/1265}{0.8}} \right]$$

$$= 1265 [0.64]$$

$$= 810 \text{ psi}$$

$$P_{ALLOW} = 810 (1.5 \times 5.5) = 6679\#$$

(1) 2x6 SPF #1/#2 x 8'-0" P_{ALLOW} = 6679#

(2) 2x6 SPF #1/#2 x 8'-0" P_{ALLOW} = 13358#

(3) 2x6 SPF #1/#2 x 8'-0" P_{ALLOW} = 20038#

(4) 2x6 SPF #1/#2 x 8'-0" P_{ALLOW} = 26717#

Check Bearing on SPF Plate

$$F_{c1} = 425 \text{ psi}$$

$$P_{ALLOW} = 425 (1.5 \times 5.5) = 3606\#$$

(1) 2x6 P_{ALLOW} = 3606#

(2) 2x6 P_{ALLOW} = 7013#

(3) 2x6 P_{ALLOW} = 10519#

(4) 2x6 P_{ALLOW} = 14024#

Bearing Controls

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FILE NO. _____ SHEET NO. PH.2
 DESIGNER _____ DATE _____
 CLIENT _____
 PROJECT _____