



Section forces from finite element model

$$\text{Rung \# 5 bar} \quad F_y := 60 \quad z := \frac{.625^3}{6} \quad z = 0.041$$

$$M_z := .05 \quad \text{k-ft}$$

$$M_n := \frac{z \cdot F_y}{12} \quad M_n = 0.203 \quad \frac{\Omega}{\Omega_{min}} := 1.67$$

$$\frac{M_n}{\Omega} = 0.122 \quad > .062 \quad \# 5 \text{ is acceptable}$$

$$\text{Bar } 1 \frac{1}{2} \times \frac{1}{4} \quad F_{yb} := 45 \quad z_b := \frac{1.5 \cdot .25^2}{4} \quad z_b = 0.023$$

$$M_{zb} := .05 \quad \text{k-ft}$$

$$M_{nb} := \frac{z_b \cdot F_{yb}}{12} \quad M_{nb} = 0.088$$

$$\frac{M_{nb}}{\Omega} = 0.053 \quad > .05 \quad \text{bar is acceptable}$$