



$$M = \frac{PL}{4}$$

$$= \frac{1000 \text{ LB} \times 110''}{4} = 27,500 \text{ IN. LB.}$$

$$S = \frac{27,500 \text{ IN LB}}{24,000 \text{ PSI}} = 1.15 \text{ IN.}^3$$

USE MC 3 x 7.1 $S = 1.81 \text{ IN}^3 > 1.15 \text{ IN}^3$ O.K.
 $I = 2.72 \text{ IN}^4$
3" x 2 1/4"

$$\text{DEFLECTION} = \frac{PL^3}{48 EI} = \frac{1000 \text{ LB} \times 110^3}{48 \times 29,000,000 \times 2.72 \text{ IN}^4} \approx 0.35'' \text{ IN.}$$

$$= L/314$$