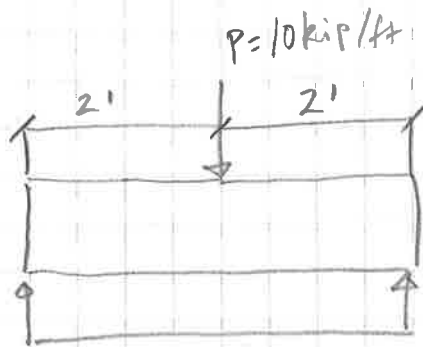
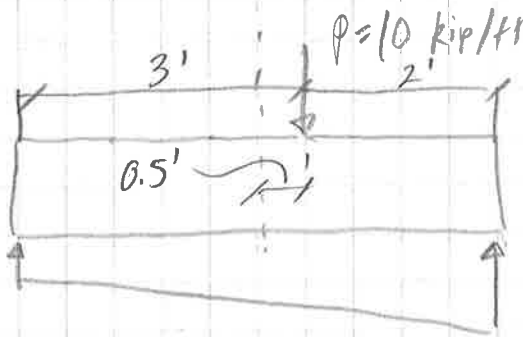


①



$$q_{avg} = \frac{10,000 \text{ lb/ft}}{4 \text{ ft}} = 2500 \text{ psf}$$

②



$$q_{avg} = \frac{10,000 \text{ lb/ft}}{5 \text{ ft}} = 2000 \text{ psf}$$

$$q_{max} = q_{avg} + M_c/I$$

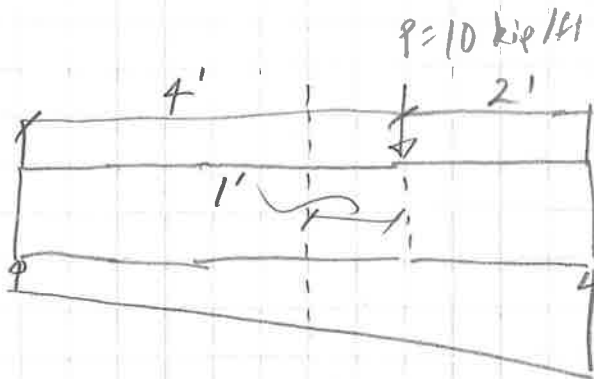
$$M = 10,000 \text{ lb} (0.5') = 5000 \text{ lb-ft}$$

$$I = \left(\frac{1}{12}\right) (1') (5')^3 = 10.4 \text{ ft}^4$$

$$c = 2.5'$$

$$q_{max} = 2000 \text{ psf} + \frac{5000 \text{ lb-ft} (2.5 \text{ ft})}{10.4 \text{ ft}^4} = 2000 \text{ psf} + 1202 \text{ psf} = 3202 \text{ psf}$$

③



$$q_{avg} = \frac{10,000 \text{ lb/ft}}{6'} = 1667 \text{ psf}$$

$$M = 10,000 \text{ lb-ft}$$

$$I = \left(\frac{1}{12}\right) (1') (6')^3 = 18 \text{ ft}^4$$

$$c = 3'$$

$$q_{max} = 1667 \text{ psf} + \frac{10,000 (3)}{18} = 1667 \text{ psf} + 1667 \text{ psf} = 3334 \text{ psf}$$