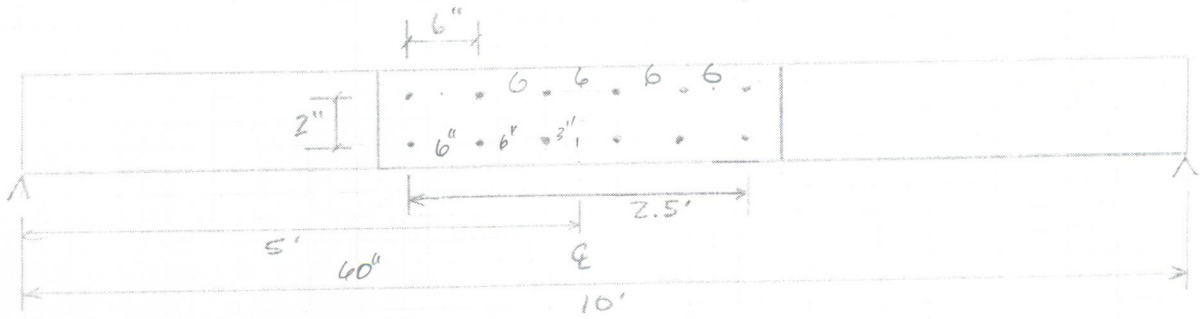
$w = 80$ PLF



$\sigma = \frac{M c}{I}$

$\frac{\#}{in^4}$

$\#/in^2$

$$M = \frac{80\ PLF\ (10')^2}{8} \times 12\ in/ft = 12000\ IN\cdot LB$$

$$I_x = 2(3)^2 + 2(9)^2 + 2(15)^2 = 630\ IN^2$$

$$I_y = 2(1)^2 = 2\ IN^2 \longrightarrow (\Sigma?\ \therefore\ 2\times 3 = 6\ ?)$$

$$I_p = 630 + 2 = 632\ IN^2$$

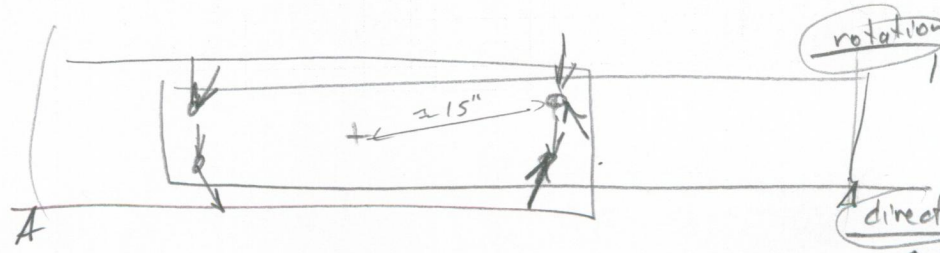
$$r_{my} = \frac{12000\ IN\cdot LB\ (15")}{632\ IN^2} = 285\ LB$$

$$P = 80\ PLF\ (10') = 800\ LB$$

$$r_{py} = \frac{P}{n} = \frac{800\ LB}{12\ NAILS} = 67\ LB \quad (?)$$

$$r_{mx} = \frac{12000\ (1)}{632} = 19\ LB$$

$$r = \sqrt{(285 + 67)^2 + 19} = 352\ LB$$



$M = 12000\ "\#$

rotation

$12{,}000"\# = F\cdot 15 + F15 + F15 + F15$

$F = 200\ \#$

direct shear

splice length

$80\ \#/1(3') = 240\ \#$

$F = 800$

$F = \frac{240\#}{4} = 60\ \#$

$260\ \#/Nail$