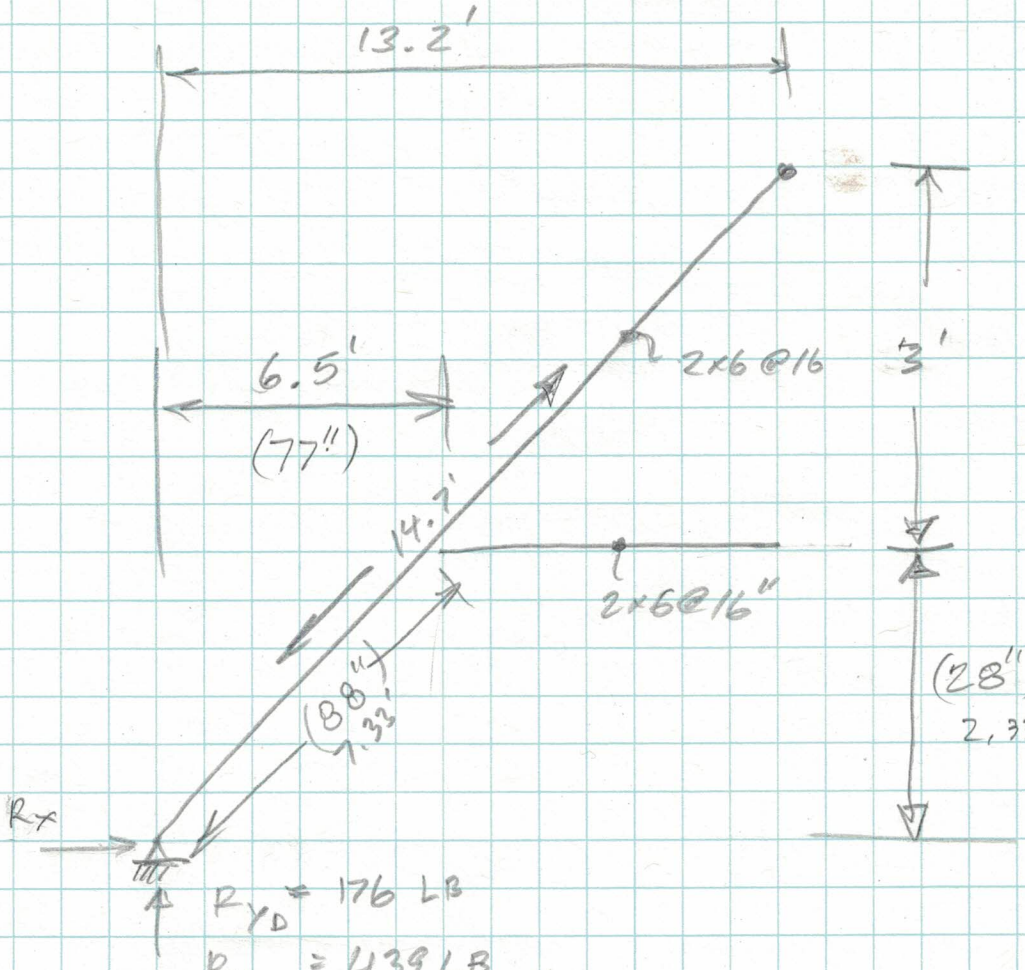


DL = 10 PSF

L_S = 25 PSF

$\underline{w}$

$w_{DL} = 10 \times 1.33 = 13.3$

$w_S = 25 \times 1.33 = 33.25$

$R_{YD} = 176$ LB

$R_{YS} = 439$ LB

RAFTER TIE FORCE (ΣM @ RIDGE):

$$D = \frac{176 \text{ LB } (13.2')}{3'} = 775 \text{ LB} / 2 \text{ connections} = 387.5 \text{ LB}$$

$$L_S = \frac{439 \text{ LB } (13.2')}{3'} = \frac{1,932}{2} = 966 \text{ LB}$$

$\underline{\text{thrust}}$

$$R_{x_D} = \frac{176 \text{ LB} \times 6.5'}{2.33'} = 491 \text{ LB}$$

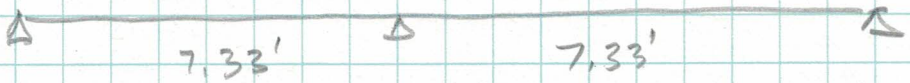
$$R_{x_{L_S}} = \frac{439 \text{ LB} \times 6.5'}{2.33'} = 1,225 \text{ LB}$$

Design (tension) collar tie for:

$T = (387.5 + 966) \times 2$

$= 2,707$ LB

Design 2x6 Rafter



$\frac{wl^2}{8}$ @ collar tie $= \frac{46.55 \text{ PLF} \times (14.7')^2}{8}$

$M = 1,258$ LB·FT

↑ Design 2x6 for this moment.