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PROJECT NO: 9467 SHEET NO: 12

REV:

DESIGNED: AWS

REVIEWED:

DATE: JAN 12

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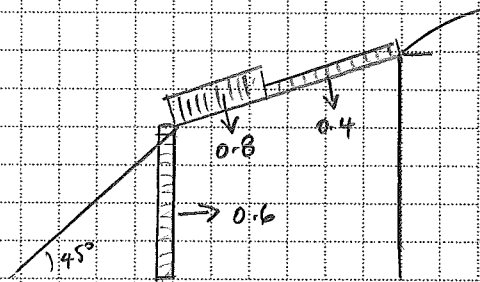
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PROJECT: TRAVELLING BARN

Aisle Guy Loading - assume guyp at 1.1m chs

Worst case side wind



Horizontal wind load at top of guyp = (1.1m chs)

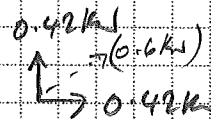
$$\text{Side} = 0.328 \times 0.6 \times 2.4/2 \times 1.1 = 0.26$$

$$\text{Roof} = \left(0.328 \times 0.8 \times 1.342 \times \frac{2.059}{2.73} + 0.328 \times 0.4 \times \frac{1.388}{2.73} \times \frac{1.388/2}{2} \right) \times 1.1 \times \sin 28.44^\circ = 0.16$$

$$\text{Total} = 0.26 + 0.16 = 0.42 \text{ kN}$$

$$\text{Tension in guyp} = \frac{0.42}{\cos 45^\circ} = 0.6 \text{ kN}$$

$$\underline{\underline{\text{Tension in guyp} = 0.6 \text{ kN}}}$$

Check suction condition

$$\text{Max uplift} = \left(0.328 \times 0.5 \times 1.342 \times \frac{2.059}{2.73} + 0.328 \times 0.2 \times \frac{1.388}{2.73} \times \frac{1.388/2}{2} \right) \times 1.1 = 0.208 \text{ kN}$$

$$\text{Vertical component} = 0.208 \times \cos 28.44^\circ = 0.183 \text{ kN}$$

$$\text{Hng component} = 0.208 \times \sin 28.44^\circ = 0.099 \text{ kN}$$

$$\text{Guy load} = \begin{matrix} 0.183 \text{ kN} \\ \uparrow \\ \leftarrow 0.26 - 0.099 = 0.161 \text{ kN} \end{matrix}$$

$$\underline{\underline{\text{Resultant tension} = 0.244 \text{ kN} \quad \text{Not critical}}}$$