

# DAMMON ENGINEERING, INC.

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Connection Design for Casey Civil 7-1-11 per AISC

LOADS: DL = 105 lb (material)

LL = 32.6 psf (wind) = 3,260 lbf @ connection

Welds: 1/4" fillet, 2 locations per conn., min 4" weld, E70 elec.

$A_w = 0.707(0.25")4" = 0.71 \text{ in}^2$  on 1/4 weld =  $4 \times \frac{1}{16}$  units

$$\frac{r_n}{\Omega} = 4 \text{ in}(4 \text{ units})(0.928 \text{ k}) = 14.8 \text{ k} \quad \frac{R_n}{\Omega} = 2(14.8) = 29.6 \text{ k}$$

$$R_u = 3.26 \text{ k} \quad \frac{R_n}{\Omega} > R_u \quad \underline{\underline{\text{OK}}}$$

Bolts:  $S_{min} = 2 \frac{2}{3}(d) = 1.67"$

ASTM 325 std. high. str. bolts  $d = 5/8 \text{ in}$   
w/ threads excluded from shear plane  
single shear plane

Shear -  $F_u = 120 \text{ ksi}$

$$F_{nv} = 0.4 F_u = 48 \text{ ksi}$$

$$A_b = \pi \left(\frac{5/8}{2}\right)^2 = 0.307 \text{ in}^2$$

$$\frac{r_{nv}}{\Omega} = \frac{48(0.307)}{2} = 7.37 \text{ k/bolt}$$

$$\frac{R_{nv}}{\Omega} = 29.5 \text{ k}$$

$$\frac{R_{nv}}{\Omega} > R_u \quad \underline{\underline{\text{OK}}}$$

