

A500 RECTANGULAR TUBING  
TENSILE STRENGTH 58000PSI  
YIELD STRENGTH 46000PSI  
YIELD STRENGTH WITH SAFETY FACTOR 3 15333PSI

$$P = -575.103 - 508.986 = 1084.09 \#$$

$$M = -31636.3 \#$$

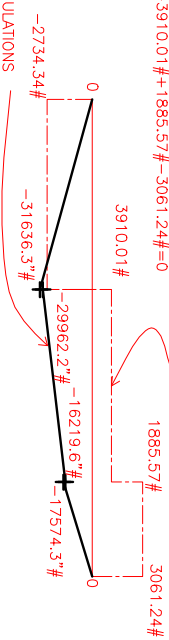
$$\frac{P}{A} \pm \frac{M}{S} = S_t$$

$$\frac{1084.09 \#}{2.06 \text{ in}^2} \pm \frac{-31636.3 \#}{2.15 \text{ in}^3} = S_t$$

$$558 \text{ PSI} + 14715 \text{ PSI} = 15273 \text{ PSI}$$

A 4X2-1/2X3/16" RECTANGULAR  
TUBE WILL BE NEEDED.

SHEAR DIAGRAM CALCULATIONS  
 $F_g + F_{gx} + F_{vy} + F_{Ez} = 0$   
 $-2734.34 \# + 3910.01 \# + 1885.57 \# - 3061.24 \# = 0$



MOMENT CALCULATIONS  
 $M_{1,5700} = -2734.34 \# \times 11.5700' = -31636.3 \#$   
 $M_{1,5700} + = -2734.34 \# \times 11.5700' + (508.986 \# \times 3.28913') = -29962.2 \#$   
 $M_{2,2592} = -2734.34 \# \times 23.2592' + (508.986 \# \times 3.28913') + 3910.01 \# \times 11.6892' = -16219.6 \#$   
 $M_{2,2592} + = -2734.34 \# \times 23.2592' + (508.986 \# \times 3.28913') + 3910.01 \# \times 11.6892' - (1074.94 \# \times 1.26030) = -17574.3 \#$   
 $M_{29,0000} = -2734.34 \# \times 29.0000' + (508.986 \# \times 3.28913') + 3910.01 \# \times 17.4300' - (1074.94 \# \times 1.26030) + 1885.57 \# \times 5.74084' = -255781 \#$