

ASTM-A847 RECTANGULAR TUBING
 TENSILE STRENGTH 70000PSI
 YIELD STRENGTH 50000PSI
 YIELD STRENGTH WITH SAFETY FACTOR 3 16667PSI
 YIELD STRENGTH (50000*.557)/3 9283PSI

$$P=2870.73\#-3496.46\#=-625.73\#$$

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

$$\frac{-625.73\#}{4.10\text{IN}^2} \pm \frac{-45350.3''\#}{5.03\text{IN}^3} = S_s$$

$$-153\text{PSI} + -9016\text{PSI} = S_s = 9169\text{PSI}$$

$$\frac{-625.73\#}{4.10\text{IN}^2} \pm \frac{-45350.3''\#}{5.03\text{IN}^3} = S_T$$

$$-153\text{PSI} + -9016\text{PSI} = S_T = 9169\text{PSI}$$

$$\frac{-625.73\#}{4.10\text{IN}^2} \pm \frac{-45350.3''\#}{5.03\text{IN}^3} = S_c$$

$$-153\text{PSI} + 9016\text{PSI} = S_c = 8863\text{PSI}$$

BEAM 1 WILL BE A 5X3X5/16
 RECTANGULAR TUBING.

IF CUTTING FORCES IN HALF A 3-1/2 X
 2-1/2 X 5/16 RECTANGULAR TUBE WILL
 WORK.