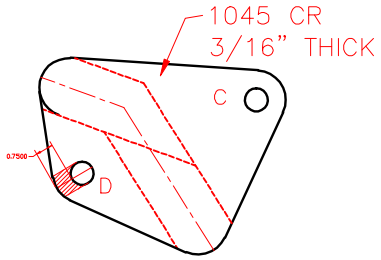

$$S_S = \frac{F}{A} \quad A = W*B*2$$

$A = 0.75" * 0.188" * 2$

$A = .282IN^2$

$$S_S = \frac{1971.5\#}{.282IN^2}$$

$S_S = 6991.13PSI$

ULTIMATE TENSILE STRENGTH 1045 STEEL IS 84000PSI X 60%=50400 PSI

$$N_Y = \frac{50400PSI}{6991.13PSI}$$

$N_Y = 7.2$

$$S_C = \frac{F}{A_C} \quad A_C = nDt$$

$A_C = 1 * .998" * .188" = .188IN$

$$S_C = \frac{1971.5\#}{.188IN^2}$$

$S_C = 10486.70PSI$

$$5 = \frac{YEILD\ STRENGTH}{10486.70PSI}$$

YEILD STRENGTH=52433.5 PSI. MUST FIND STEEL WITH MINIMIUM YEILD STRENGTH OF 52433.5 PSI=1045 STEEL WILL WORK WITH MINIMUM 73000 PSI

$$S_T = \frac{F}{A_T} \quad A_T = bT - nDt$$

NOT USING BECAUSE COMPRESSION AND TENTSION IS THE SAME FOR 1045 STEEL.