

The figure shows the free-body diagram of a connecting-link portion having stress concentration at three sections. The dimensions are  $r = 0.25$  in,  $d = 0.40$  in,  $h = 0.50$  in,  $w_1 = 3.50$  in, and  $w_2 = 3.0$  in. The forces  $F$  fluctuate between a tension of 5 kip and a compression of 16 kip. Neglect column action and find the least factor of safety if the material is cold-drawn AISI 1018 steel.

