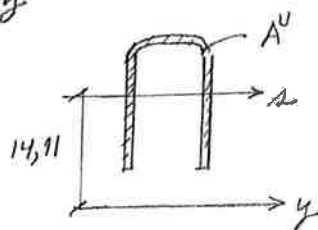
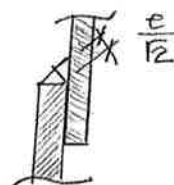


$$I_y = 2 \left[I_2 + A^U (22,5 - t_f)^2 + \frac{0,5 \times 15^3}{12} \right]$$

$$= 2 \left[979,28 + 23,96 \times 14,11^2 + 140,63 \right] = \underline{11780,3 \text{ cm}^4}$$



$$\bar{S}_y = 23,96 \times 14,11 = 339,07 \text{ cm}^3$$



Em um trecho de comprimento a , a resultante longitudinal no perfil U deve ser resistida pelas filetes de solda e por duas seções de parafuso

$$q \cdot a = \bar{\sigma}_{\text{solda}} \cdot 2 \times \frac{e}{12} \cdot a + \bar{\sigma}_{\text{par}} \times 2A_{\text{par}}$$

$$\left(\frac{V_S}{I_y} - \bar{\sigma}_{\text{solda}} \frac{e}{12} \right) a = 2 \bar{\sigma}_{\text{par}} A_{\text{par}}$$

$$\left(\frac{270 \times 339,07}{11780,3} - 6 \times 0,5 \frac{12}{12} \right) = 2 \times 8 \times 1,25 \Rightarrow (7,748 - 4,243) a = 20$$

$$\underline{a = 5,71 \text{ cm}}$$

Obs: Parcela da força cortante resistida pela solda:

$$q_{\text{solda}} \cdot a = \bar{\sigma}_{\text{solda}} \cdot 2 \left(\frac{e}{12} \right) \cdot a \Rightarrow \frac{V_S \times 339,07}{11780,3} = 6 \times 0,5 \times 12$$

$$V_S = 147,8 \text{ kN.}$$