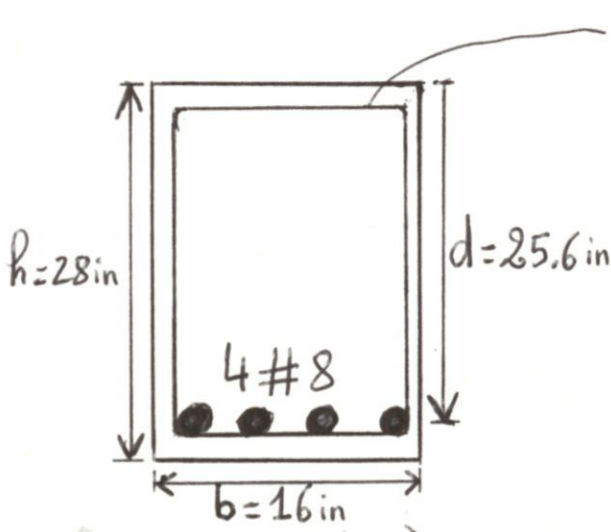
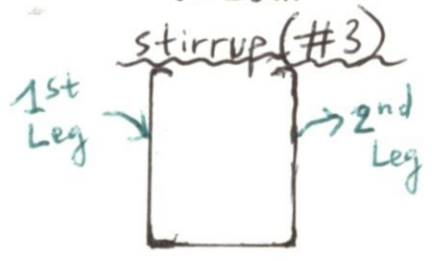


Date: 21st December 2018



#3 stirrup
 $S = 13 \text{ in}$
 cover = 1.5 in

$f'_c = 3,000 \text{ psi} = 3 \text{ ksi}$
 $f_y = 60,000 \text{ psi} = 60 \text{ ksi}$



$A_{\text{stirrup}} = 0.11 \text{ in}^2 / \text{Leg}$
 $A_v = (2 \text{ Legs}) \left(\frac{0.11 \text{ in}^2}{\text{Leg}} \right) = 0.22 \text{ in}^2$

Shear Carried by the Concrete (V_c)

$$V_c = 2 \sqrt{f'_c} b w d = 2 \sqrt{3,000 \text{ psi}} (16 \text{ in}) (25.6 \text{ in}) = 44,913.24 \text{ lbs} = 44.9 \text{ kips}$$

Shear carried by the Steel (V_s)

$$V_s = \frac{A_v f_y d}{S} = \frac{(0.22 \text{ in}^2) (60 \text{ ksi}) (25.6 \text{ in})}{13 \text{ in}} = 26.019 \text{ kips}$$

Nominal shear (V_N)

$$V_N = V_c + V_s = (44.9 \text{ kips}) + (26.019 \text{ kips}) = 70.9 \text{ kips}$$

$$\phi V_N = (0.75) (70.919 \text{ kips}) = 53.2 \text{ kips}$$