NAME # SHAHKAR SALEEM

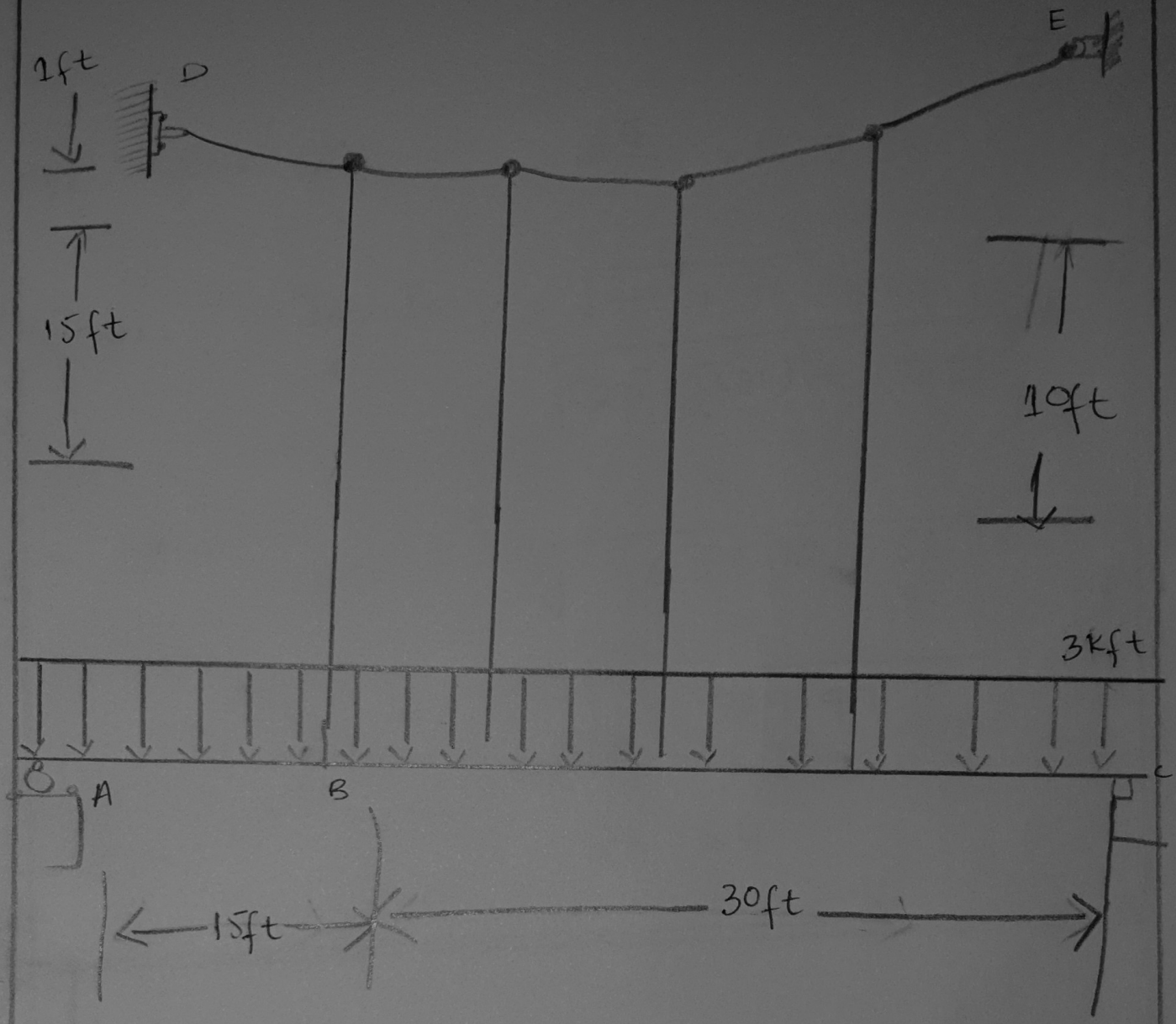
ID # 7943

SECTION # "B"

SUBJECT # STRUCTURAL ANALYSIS I

ASSIGNMENT # 04

(1)



$$H = \frac{wL^2}{8 \cdot f}$$

$$H = (1)(15)^2 / 8 \cdot 8$$

$$H = 25.5681$$

(2)

$$V_A = V_B = \frac{WL}{2} = \frac{15}{2} = 7.5K$$

$$T_{max} = T_A = T_B = \sqrt{H^2 + V^2}$$

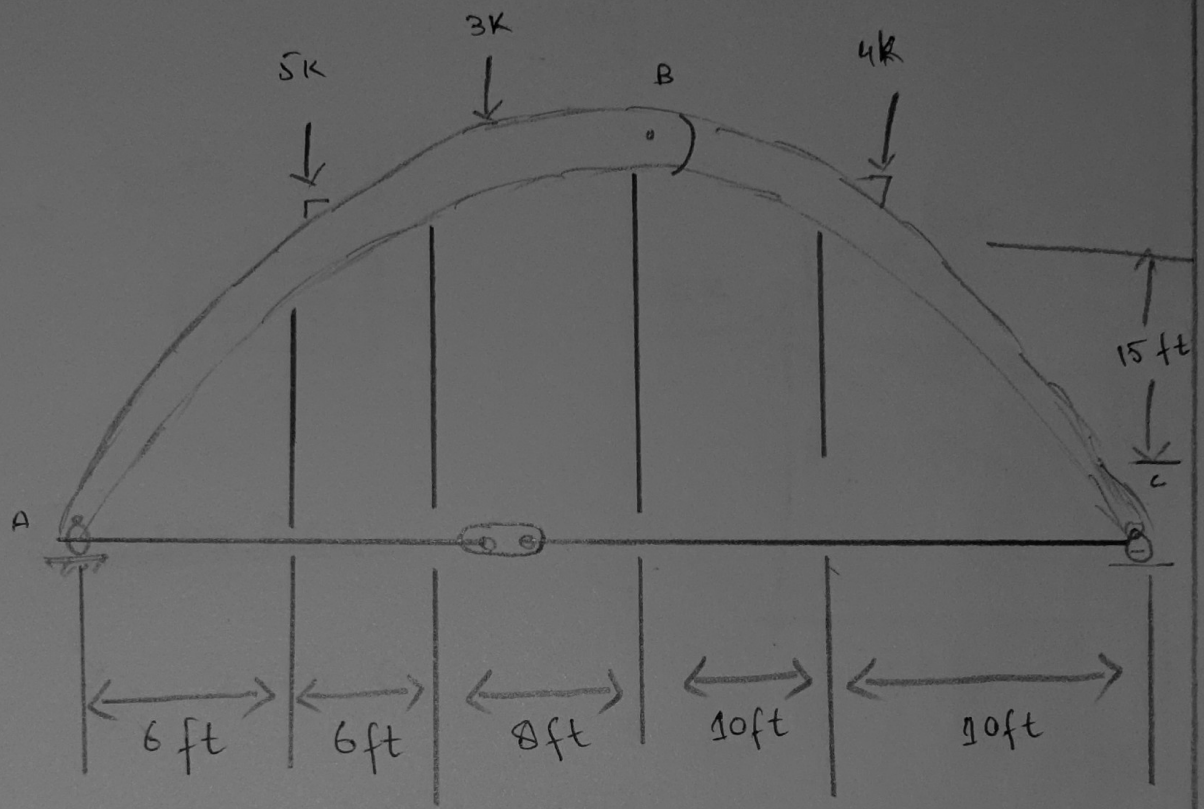
$$= \sqrt{(25.5681)^2 + (7.5)^2}$$

$$= \sqrt{653.72 + 56.25}$$

$$= \sqrt{709.97}$$

$$26.64$$

Q2:-



Entire Arch:

$$\circlearrowleft + \Sigma M_A = 0;$$

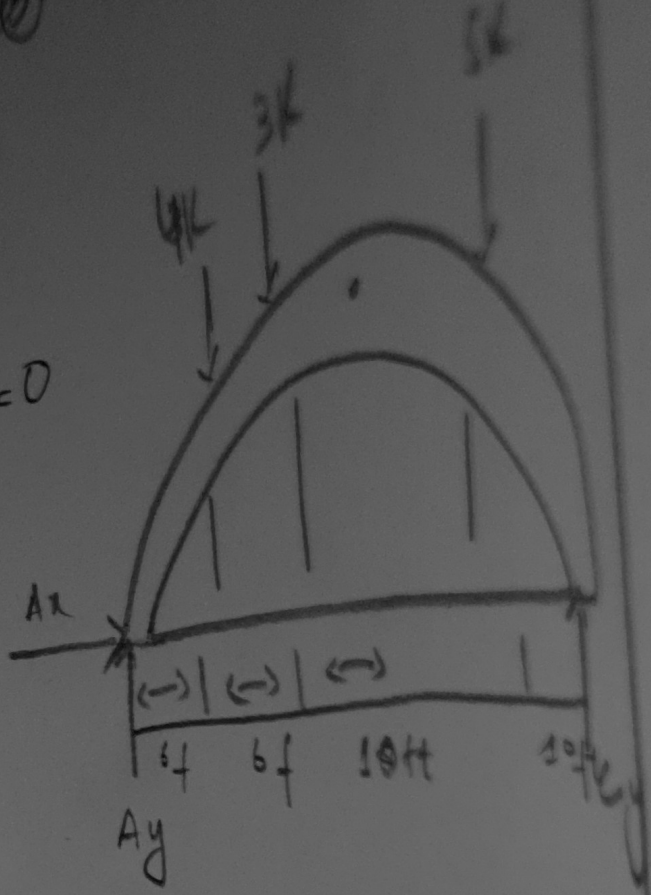
$$-4(6) - 3(12) - 5(30) + C_y(40) = 0$$

$$\boxed{C_y = 5.25\,K}$$

$+\uparrow \sum F_y = 0;$

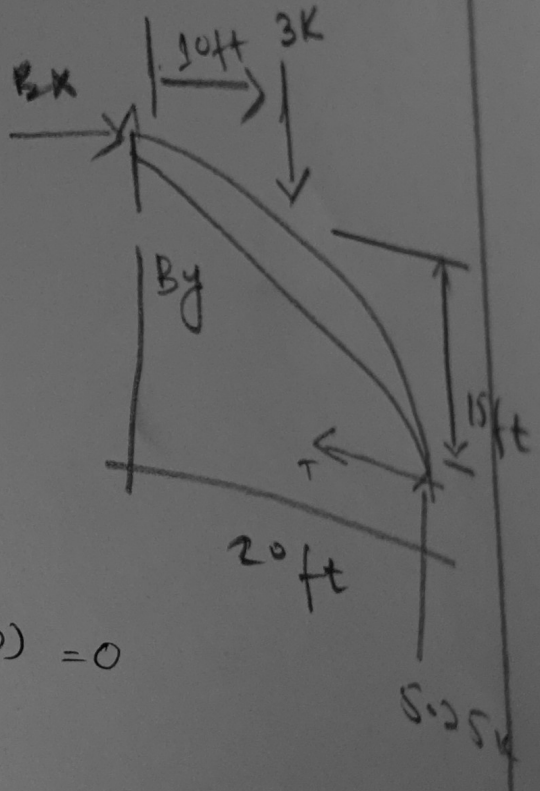
$A_y + 5.25 - 4 - 3 - 5 = 0$

$\boxed{A_y = 6.75K}$



$\xrightarrow{+} \sum F_x = 0;$

$\boxed{A_x = 0}$



SECTION BC:

$\curvearrowright + \sum M_B = 0;$

$-5(10) - 7(15) + 5.25(20) = 0$

$T = 3.67K.$