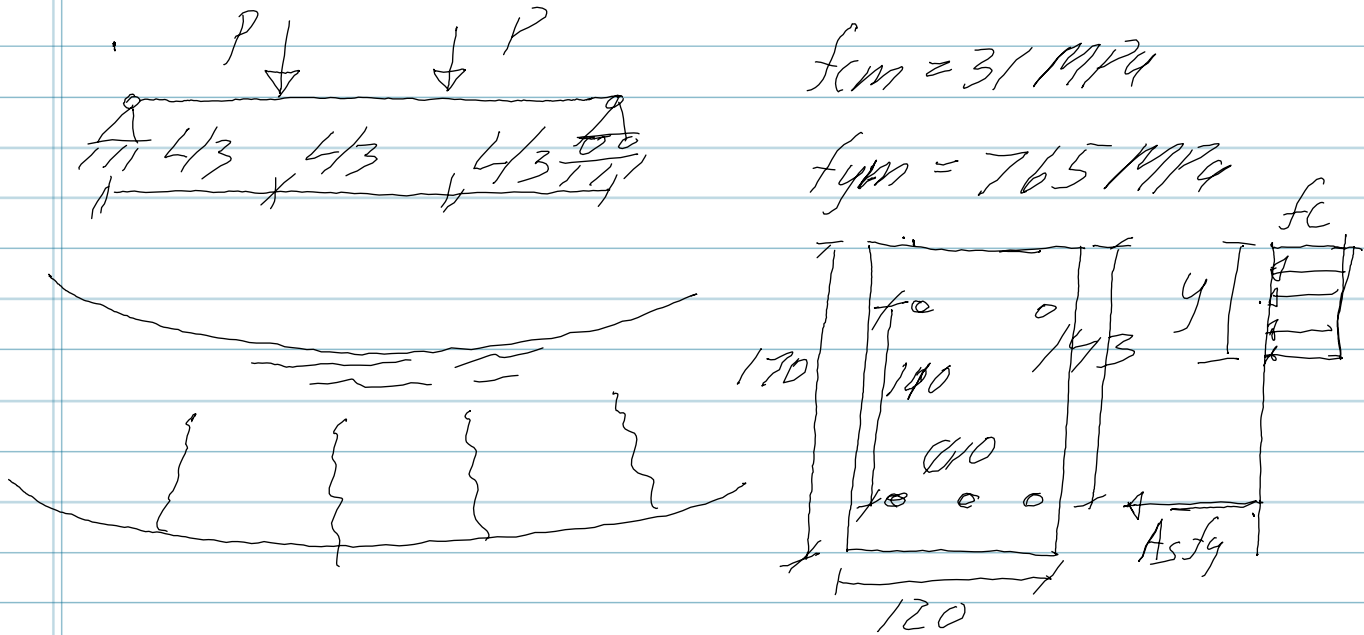


DTV: Betonkonstruktionen



Forsad

$$N = f_{cm} b \cdot y - A_s f_{ym} = 0 \Rightarrow$$

$$y = \frac{A_s f_{ym}}{f_{cm} \cdot b} = \frac{3\pi \left(\frac{10}{2}\right)^2 \cdot 765}{31 \cdot 120} = 48,5 \text{ mm}$$

$$M_R = A_s f_{ym} \left(d - \frac{y}{2}\right) = 3\pi \left(\frac{10}{2}\right)^2 \cdot 765 \left(143 - \frac{48,5}{2}\right)$$

$$= 2,4 \cdot 10^6 \text{ Nmm} = \underline{2,4 \text{ kNm}}$$

Regnmassigt

$$f_{cu} = 20 \text{ MPa} \Rightarrow f_{cd} = 20 / 1,45 = 13,8 \text{ MPa}$$

$$f_{yk} = 55 \text{ MPa} \Rightarrow f_{yd} = 55 / 1,2 = 45,8 \text{ MPa}$$

$$y = \frac{3\pi \left(\frac{10}{2}\right)^2 \cdot 45,8}{120 \cdot 13,8} = 65,24 \text{ mm}$$

$$M_{Rd} = 3\pi \left(\frac{10}{2}\right)^2 \cdot 45,8 \left(135 - \frac{65,24}{2}\right)$$

$$= 11,9 \cdot 10^6 \text{ Nmm} = \underline{11,9 \text{ kNm}}$$