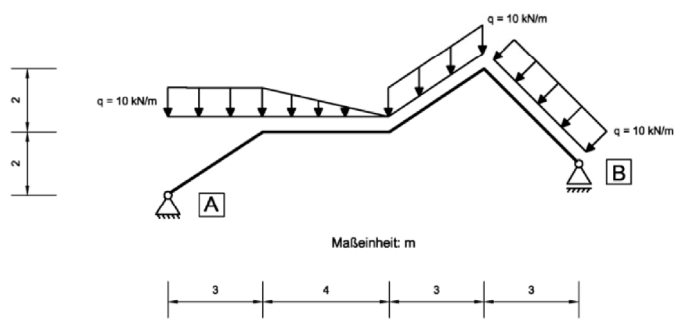
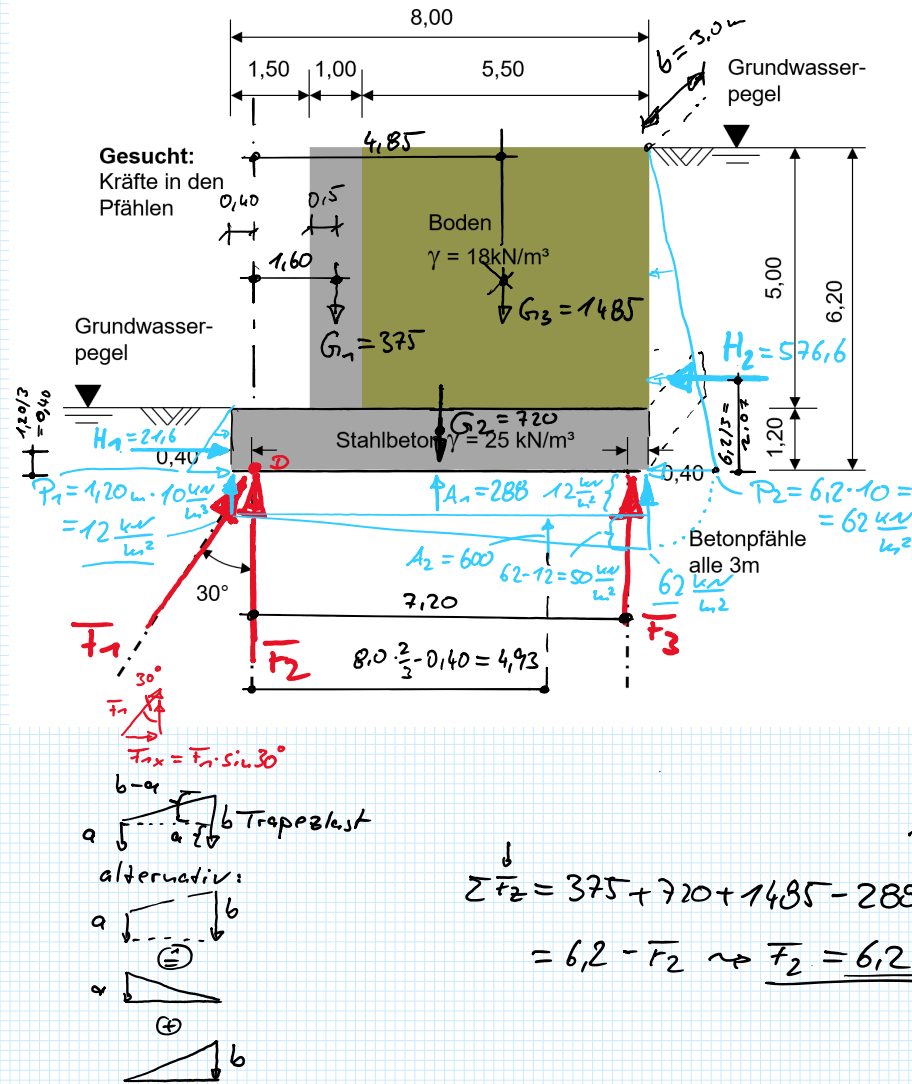


## Beispiel 4.6 – Verschiedene Lasten in einem System



## Beispiel 4.7 – Verschiedene Lasten in einem System



$$b = 3.0 \text{ m}$$

$$G_1 = 3.0 \text{ m} \cdot 5.0 \text{ m} \cdot 1.0 \text{ m} \cdot 25 \frac{\text{kN}}{\text{m}^3} = 375 \text{ kN}$$

$$G_2 = 3.0 \cdot 8.0 \cdot 1.2 \cdot 25 = 720 \text{ kN}$$

$$G_3 = 3.0 \cdot 5.50 \cdot 5.0 \cdot 18 = 1485 \text{ kN}$$

$$H_1 = 3.0 \text{ m} \cdot 12 \frac{\text{kN}}{\text{m}^2} \cdot 1.2 \text{ m} \cdot \frac{1}{2} = 21.6 \text{ kN}$$

$$H_2 = 3.0 \text{ m} \cdot 62 \cdot 6.20 \cdot \frac{1}{2} = 576.6 \text{ kN}$$

$$A_1 = 3.0 \text{ m} \cdot 12 \frac{\text{kN}}{\text{m}^2} \cdot 8.0 \text{ m} = 288 \text{ kN}$$

$$A_2 = 3.0 \text{ m} \cdot 50 \frac{\text{kN}}{\text{m}^2} \cdot 8.0 \text{ m} \cdot \frac{1}{2} = 600 \text{ kN}$$

$$\sum \vec{F}_x = 0 = 21.6 \text{ kN} - 576.6 \text{ kN} + F_1 \cdot \sin 30^\circ$$

$$\Rightarrow F_1 = \frac{576.6 - 21.6}{\sin 30^\circ} = 1110 \text{ kN}$$

$$\sum \vec{M}_D = 0 = -375 \cdot 1.60 - 720 \cdot \frac{7.20}{2} - 1485 \cdot 4.85$$

$$-21.6 \cdot 0.40 + 576.6 \cdot \frac{6.20}{3} + 288 \cdot \frac{7.20}{2} + 600 \cdot 4.93$$

$$+ F_3 \cdot 7.20 \leq -5216.5 \text{ kNm} + F_3 \cdot 7.20 \text{ m}$$

$$\Rightarrow F_3 = \frac{5216.5}{7.20} = 724.5$$

$$\sum \vec{F}_z = 375 + 720 + 1485 - 288 - 600 - 1110 \cdot \cos 30^\circ - 724.5 - F_2$$

$$= 6.2 - F_2 \Rightarrow F_2 = 6.2 \text{ kN}$$