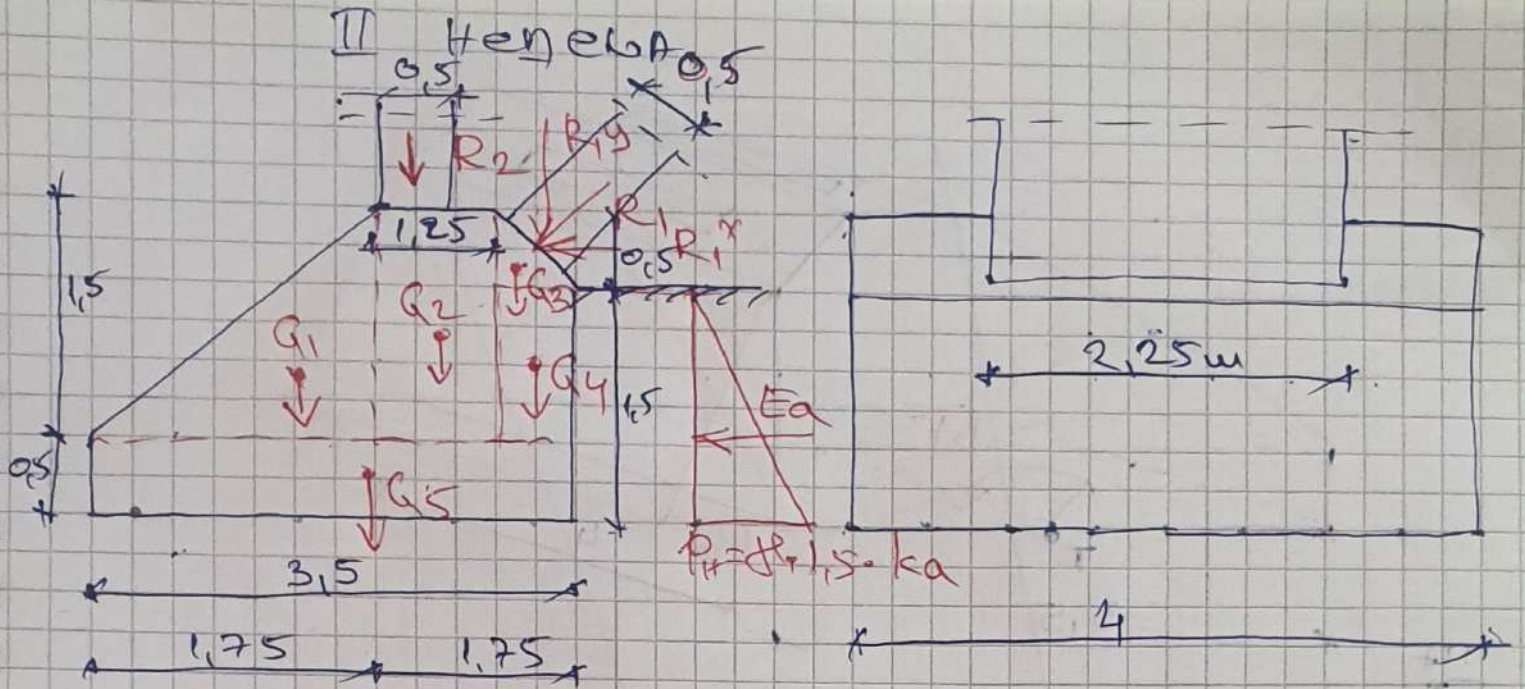




$$R_1' = 650 \text{ kN/m}$$

$$R_2' = 350 \text{ kN/m}$$

$$\gamma = 19 \text{ kN/m}^3, \quad \gamma_{\text{sat}} = 23 \text{ kN/m}^3$$

$$\varphi = 30^\circ$$

$$G_1 = 1.5 \cdot 1.75 \cdot \frac{1}{2} \cdot 4 \cdot 23 = 120.75 \text{ kN}$$

$$G_2 = 1.25 \cdot 1.5 \cdot 4 \cdot 23 = 172.5 \text{ kN}$$

$$G_3 = 0.5 \cdot 0.5 \cdot \frac{1}{2} \cdot 4 \cdot 23 = 11.5 \text{ kN}$$

$$G_4 = 1 \cdot 0.5 \cdot 4 \cdot 23 = 46 \text{ kN}$$

$$G_5 = 0.5 \cdot 3.5 \cdot 4 \cdot 23 = 161 \text{ kN}$$

$$R_2 = R_2' \cdot 2.25 = 350 \cdot 2.25 = 787.5 \text{ kN}$$

$$R_{1x} = R_1' \cdot \sin 45^\circ \cdot 2.25 = 1034.14 \text{ kN}$$

$$R_{1y} = R_1' \cdot \cos 45^\circ \cdot 2.25 = 1034.14 \text{ kN}$$

$$p_H = \gamma \cdot h \cdot k_a =$$

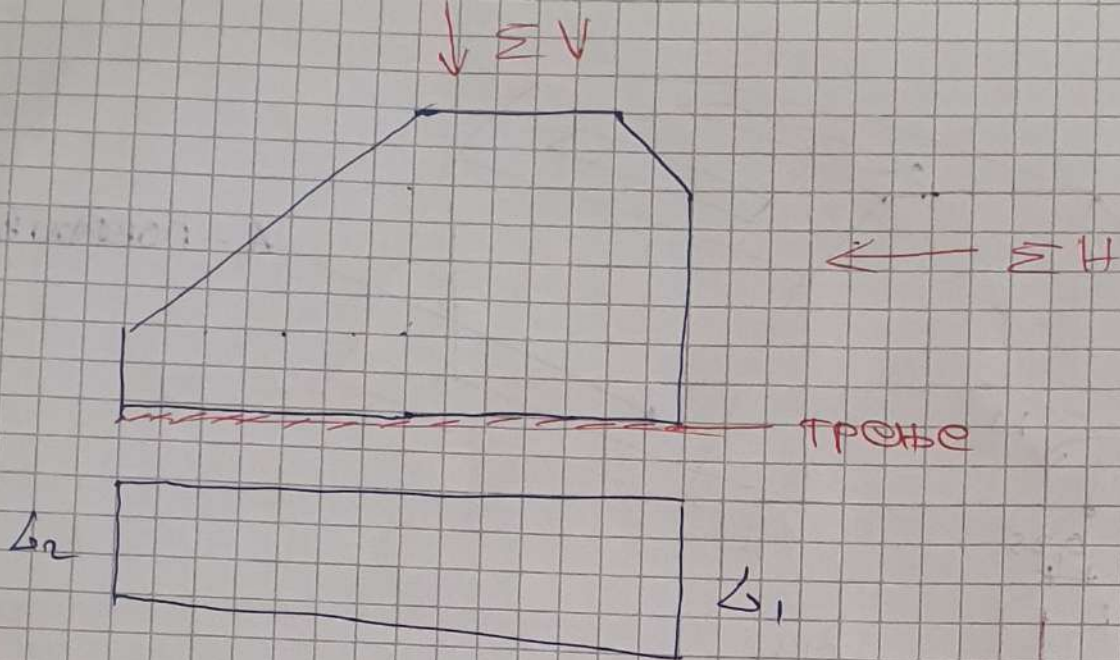
$$k_a = \tan^2 \left(45^\circ - \frac{\varphi}{2} \right) = \tan^2 \left(45^\circ - \frac{30^\circ}{2} \right) = 0.333$$

$$p_H = 19 \cdot 1.5 \cdot 0.333 = 9.5 \text{ kN/m}^2$$

$$E_a = p_H \cdot 1.5 \cdot \frac{1}{2} \cdot 4 = 28.5 \text{ kN}$$

$$\sum V = G_1 + G_2 + G_3 + G_4 + G_5 + R_2 + R_{1y} = 2333.39 \text{ kN}$$

$$\sum H = E_a + R_{1x} = 1062.64 \text{ kN}$$



F_s - фактор сигурности

$$F_s = \frac{T}{\Sigma H} > 1,5$$

$$F_s = \frac{T}{\Sigma H} \quad \text{tg } \varphi = \text{tg } 30^\circ = 0,57735$$

$$T = \Sigma V \cdot \text{tg } \varphi = 2333,39 \cdot 0,57735 = 1347,18 \text{ N}$$

$$F_s = \frac{T}{\Sigma H} = \frac{1347,18}{1082,64} = 1,27 < 1,5$$

Телото не задоволжава условие стабилности на кулаба