

TANK BURIED IN WATERLOGGED GRAVEL.

$$P_h = k_o \gamma h.$$

$$\gamma = 17.3 \text{ kN/m}^3$$

$$k_o = k_i \sin^2 \alpha_i + \cos^2 \alpha_i$$

$$\alpha = 45^\circ.$$

$$k_i = \left[\frac{1 - \sin \alpha}{1 + \cos \alpha} \right]$$

α = Angle of internal friction

α_i = Angle of buried surface

eg. $\alpha_i = 30^\circ$

$$\alpha = 45^\circ$$

$$h = 0.4.$$

$$k_i = \left[\frac{1 - \sin \alpha}{1 + \cos \alpha} \right] = \frac{0.29}{1.7} = 0.172.$$

$$k_o = 0.172 \sin^2 30 + \cos^2 30$$

$$= 0.043 + 0.75 = 0.793.$$

$$P_h = 0.81775 \times 17300 \times 0.4$$

$$= 5658.$$

$$\text{Total } P = P_h + \gamma h$$

$$= 5658 + 1000 \times 9.81 \times 0.4$$

$$= 9582 \text{ Pa.}$$