

DESIGN OF RETAINING WALL @ 10, FERNFIELD, BAGLAN

- The proposed construction is to be reinforced blockwork. The design will be to BS 8002 and BS 5268.
- The maximum retained height will be 2.4m.
- The existing ground material is glacial boulder clay. The proposed backfill material to be 40mm clean stone to BS 882. A land drain to be provided to the rear of the wall to prevent the potential accumulation of water pressure.

For the purposes of this design the following criteria will be used:

$$\rho_{\text{seil}} = 18 \text{ kN/m}^3 \quad \phi = 35^\circ \text{ giving } K_a = 0.271$$

$$\gamma_f = 1.4 \text{ GU and 1.2 GU} \quad \gamma_{\text{mm}} = 2.0 \quad \text{surcharge} = \text{nil}$$

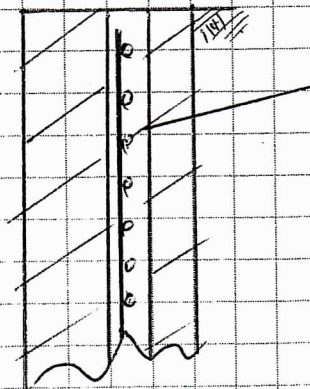
$$P = 0.271 \times 18 \times 2.4 = 11.7 \text{ kN/m}^2$$

$$F = \frac{1}{2} \times 11.71 \times 2.4 \times 1.4 = 19.67 \text{ kN (per m run)}$$

$$\text{Max}^m \text{ Moment (Design ult Mom)} = \frac{19.67 \times 2.4}{3} = \underline{15.73 \text{ kNm}}$$

Bending Check

Assumed Construction:



Grouted cavity with C25 concrete.

Try B503 Mesh.

Main steel T8 @ 100 c/c $A_s = 503 \text{ mm}^2/\text{m}$

Cross steel T8 @ 200 c/c $A_s = 252 \text{ mm}^2/\text{m}$

215 100 100

$\frac{a}{x}$

$d = 265 \text{ mm}$

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