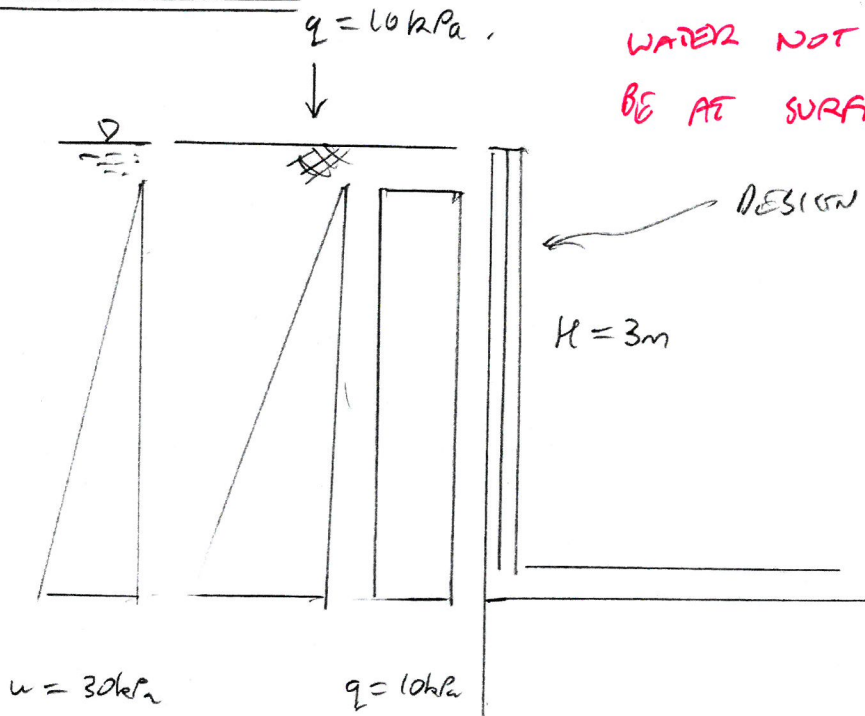


RETAINING WALL



CONSERVATIVE ESTIMATE.
WATER NOT REQUIRED TO
BE AT SURFACE LEVEL.

DESIGN AS CANTILEVER

H = 3m

$u = 30 \text{ kPa}$

$q = 10 \text{ kPa}$

$\sigma_v = 3 \times 18$
 $= 54 \text{ kPa}$

Moment on wall = $K_0 \frac{\sigma_v \cdot H \cdot H}{2} \cdot \frac{H}{3} + \frac{uH}{2} \cdot \frac{H}{3} + qH \cdot \frac{H}{2} K_0$

$= 0.66 \times \frac{54}{2} \times \frac{9}{3} + \frac{30}{2} \times \frac{9}{3} + 10 \times \frac{9}{2} \times 0.66$

$= \frac{128}{98} \text{ kNm/m SLS.}$

$1.4 \times 98 = \frac{179}{137} \text{ kNm/m ULS.}$

still $\ll M_{ult}$

$M_{ult} = \frac{0.156 \times 30 \times 1000 \times 225^2}{10^6} = 240 \text{ kNm/m}$

\Rightarrow OK

\Rightarrow 300 RL RETAINING WALL OK AS TEMPORARY CANTILEVER. PROPPED AT HEAD IN PERMANENT CASE.