

DESIGN AND DRAWING OF WATER TANKS

HINT: It is important to note that the following calculations will be out of 15 marks on the overall 100 semester grade. Take your time and calculate for the minimum depth of the foundation, the width of the base slab, the width of the toe slab, then check for the stability and the pressure distribution. All the above count as part of the solution as a whole. Good luck!

Question

1) Design a counterfort type retaining wall by using the following data

Height of the backfill above groundlevel = 6m

SBC of soil (q_0) = 160 KN/m²

Angle of repose of soil (Φ) = 30°

Unit weight of Soil (γ) = 16 KN/m³

Friction coefficient between counterfort and soil $\mu = 0.5$

Use M20 grade concrete and Fe 415 Steel