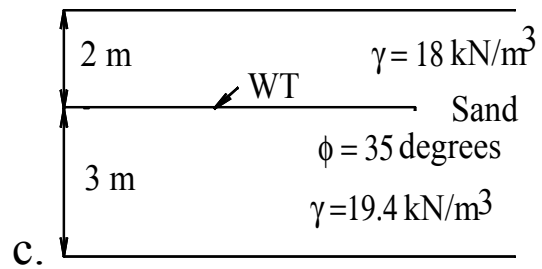


Example 1

- a. Plot effective and total horizontal stress distribution for 5m.
- b. Show resultant forces and their locations.

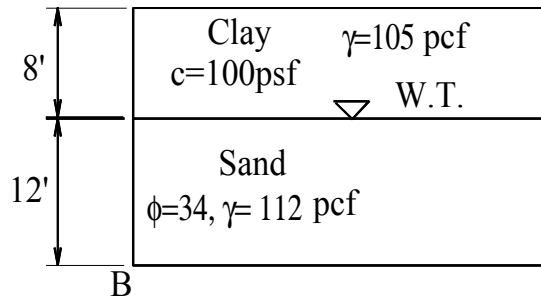


Example 2

For the soil conditions shown, draw active pressure diagrams and show the location of resultant forces.

a. Without tension cracks

b. After tension cracks have occurred.

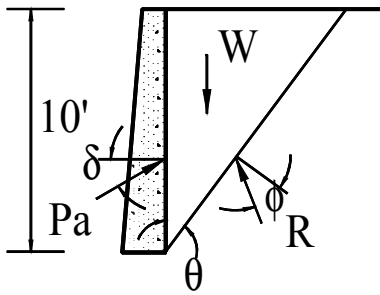


Example 3

A 4 m high vertical wall retains a sand with $\gamma = 19 \text{ kn/m}^3$, $\phi = 32^\circ$. Ground surface behind the wall slopes 3 horizontal to one vertical. Compute normal and tangential forces on the wall assuming adequate wall movement to develop Rankine state.

Example 4

Determine active pressure for the conditions shown.



Example 5

A 4 m high vertical wall retains a sand with $\gamma = 19 \text{ kn/m}^3$, $\phi = 32^\circ$. Ground surface behind the wall has a slope of 3 horizontal to one vertical. Compute normal and tangential forces on the wall assuming Coulomb condition with $\delta = 18.43^\circ$.

Example 6

Calculate the total lateral pressure from surcharge against the vertical wall when the soil behind it is in the active pressure mode of failure given the data: $a' = 6$ ft; $b' = 4$ ft ; $H = 20$ ft; $q_s = 1,000$ psf; and $\phi = 30^\circ$.

- a. Assuming strip load
- b. Assuming line load

Example 7

A 5m high wall has a granular backfill with $\phi = 36^\circ$ and $\gamma = 19.5 \text{ kN/m}^3$. Backfill slopes upwards at 15° and back of the wall slopes away from the fill at 10° . Determine horizontal and vertical components of the active pressure if wall friction $\delta = 2/3\phi$.

Example 8

Find active pressure and passive resistance for the rigid frictionless wall shown.

