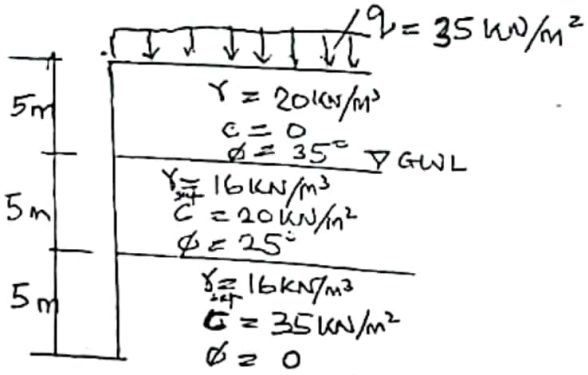
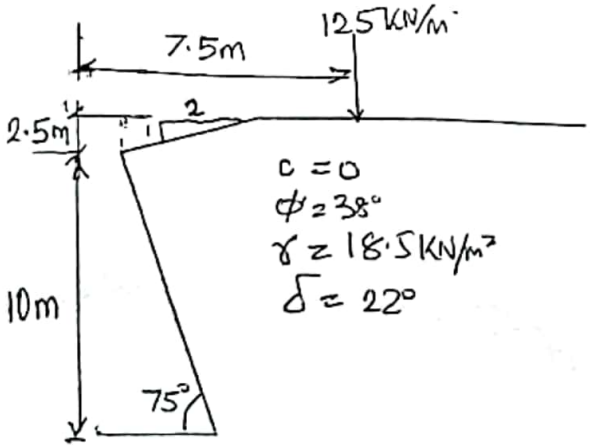
CEG 414/405 ASSIGNMENT

Q1. The figure below shows a 3-layered backfill behind a 15m high retaining wall with a smooth vertical back. Draw the active earth pressure distribution and determine the resultant active pressure and the point of application



Q2. The retaining wall shown in fig Q2 retains a backfill with the following properties as in fig. Determine the active thrust on the wall by Culmann's graphical construction when a line load of 125KN/m is acting parallel to the back of the wall on the soil surface as shown in Fig Q2.



Assume 5 failure surfaces at 5.0m intervals.

Q3. The subsoil profile at a proposed site of construction is shown in fig Q3. A footing ~~2m x 2m~~ square, carries a total load of 1000 kN and is laid with its base at 1.0 m depth below ground surface, determine the consolidation settlement of the layer on account of the construction. The clay is normally consolidated. Use the approximate 2 to 1 load spread to estimate the stress increase in the clay layer.