Assignment #11
-Shallow foundation, Deep foundation, Slope stability, Retaining wall -

Due 12/9/2003 at 8:00 AM

Any late assignment will receive a grade of zero. Not turning in an assignment before the end of the course will result in a failing grade in the course.

1. Develop an equation giving the ultimate bearing capacity for the footing on figure 1.

![Figure 1. Strip footing](image1)

2. Calculate the safe load that can be carried by the pile on figure 2 in compression and in tension if the undrained shear strength of the clay is 40 kPa.

![Figure 2. Pile](image2)

3. Calculate the factor of safety for the slope shown on figure 3.
   1) Slope alone
   2) Slope + Building
   3) Slope + Building + Earthquake

![Figure 3. Slope](image3)
4. For the wall shown figure 4. Determine the following:

1) Pressure distribution \((\sigma_0, u_0, \sigma_{0V}', \sigma_{AH}', \sigma_{AH})\)

2) Resultant push and its location.

Repeat the problem for the case where the water rises to the top of the backfill.