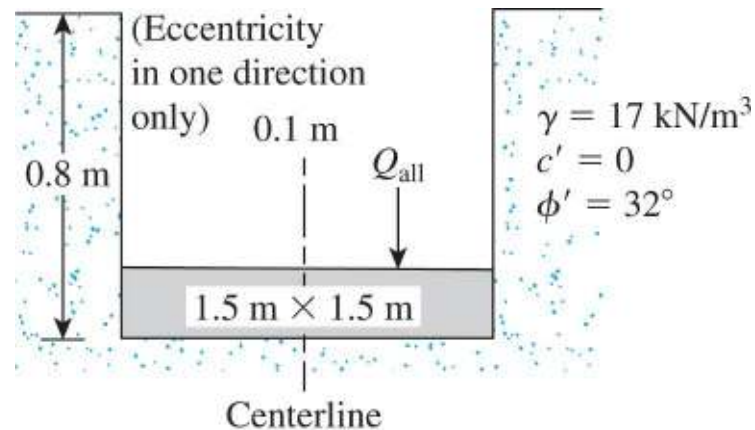


## ENCE 4340 Foundation Engineering Fall 2011 Homework # 1 (due: 9-19-2011)

Problem 1 : A square column foundation has to carry a gross allowable load of 1805 kN (F.S. = 3). Given  $D_f = 1.5\text{m}$ ;  $\gamma = 15.9\text{ kN/m}^3$ ;  $\phi' = 34^\circ$ ; and  $c' = 0$ . Use Terzaghi's equation to determine the size of the foundation (B). Assume general shear failure.

Problem 2 : An eccentrically loaded foundation is shown in Figure P3.8. Use F.S. of 4 and determine the maximum allowable load that the foundation can carry. Use Meyerhof's effective area method.



**Figure P3.8**