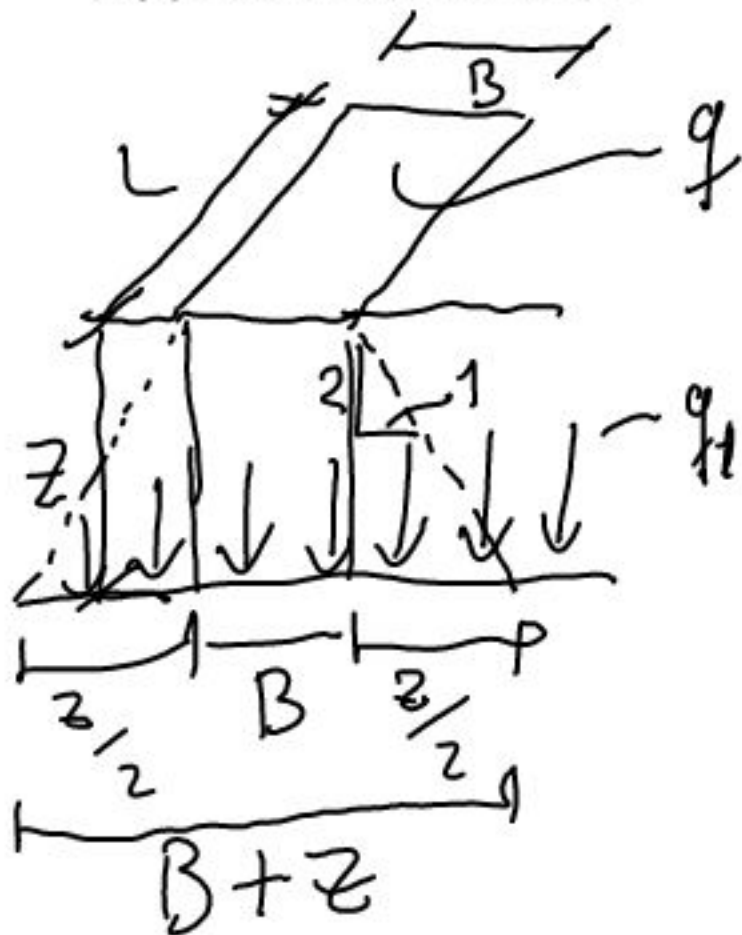


Stress Increase Approximate Method



Method 1: $\left(\frac{2\Delta}{1} \right)$

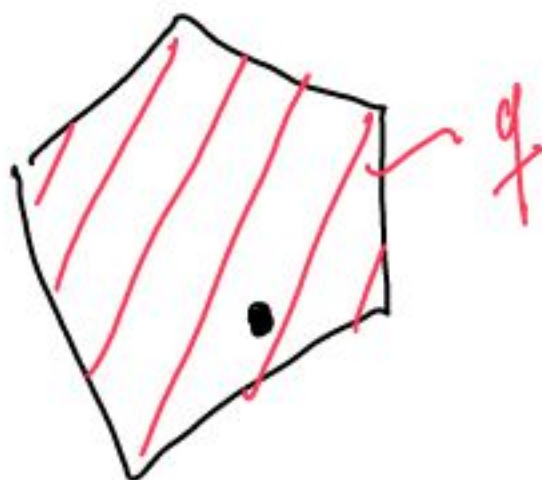
$$q_1 = \frac{\text{Load}}{\text{Area}} = \frac{q(B \times L)}{(B+z)(L+z)}$$

Method 2: $\left(A^{30^\circ} \right)$

$$q_1 = \frac{q(B \times L)}{(B+2z \tan 30^\circ)(L+2z \tan 30^\circ)}$$

stress increase.

Newmark's Influence Chart: figure 1.7



* Irregular Shape * Uniform pressure q

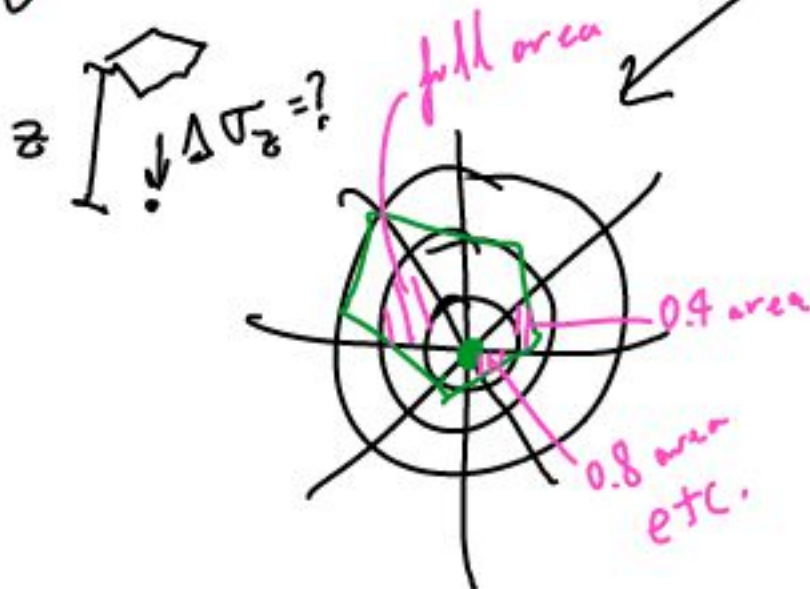
z = Scale Line

The point under which the stress increase is placed in center.

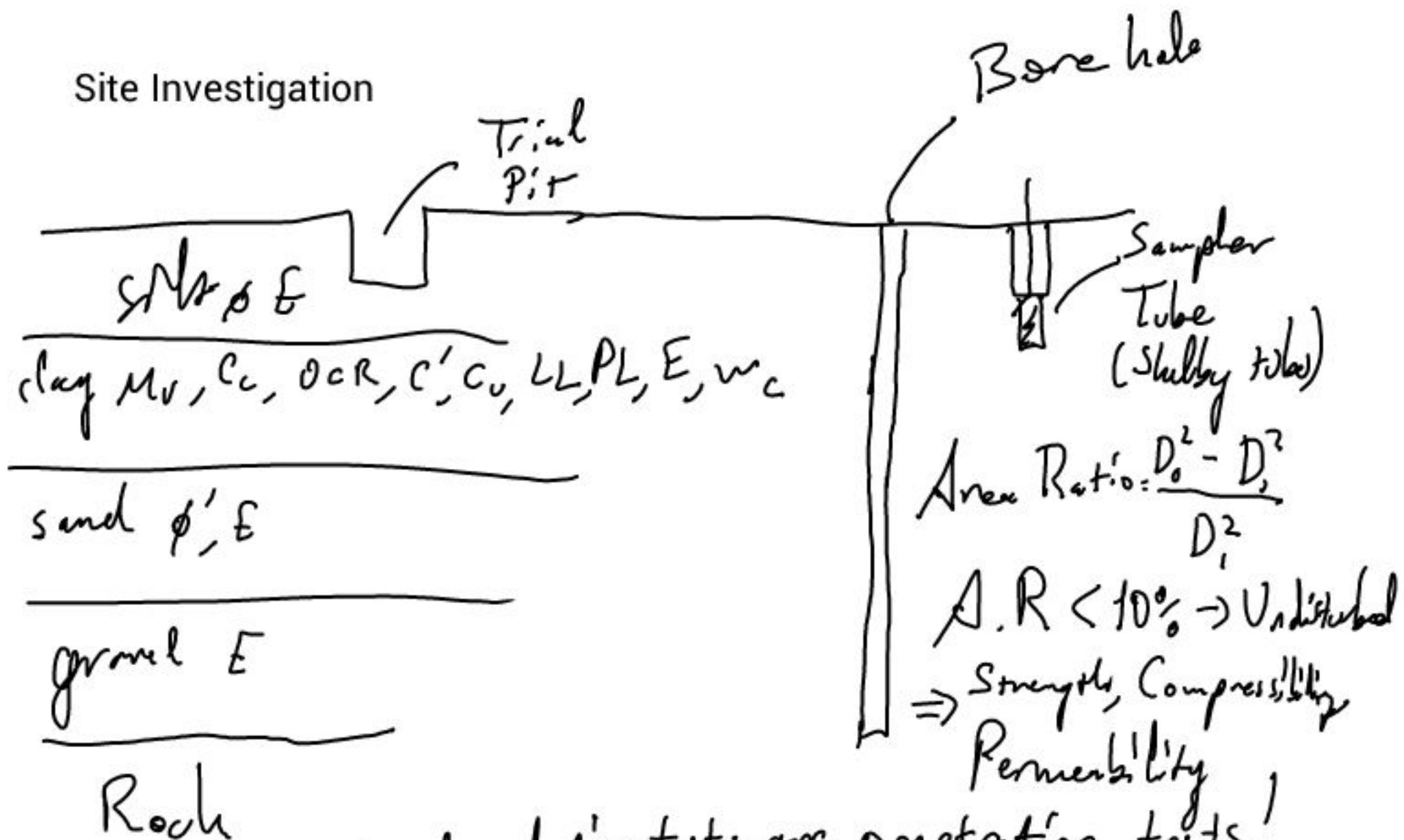
Count the numbers of influence areas covered by the area

Influence value per unit pressure = 0.005 (given)

$$\Delta \sigma_v = N(0.005)q$$



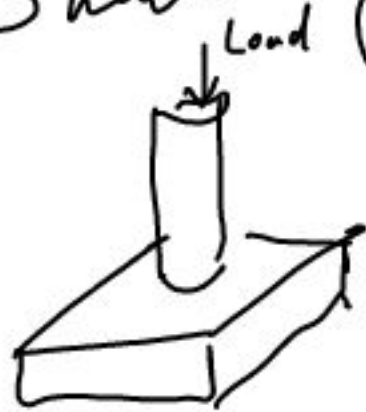
Site Investigation



★ 80-90% foundation tests are penetration tests!

★ Site Investigation slideshow!

Shallow foundation



C, ϕ

$q_{all} =$ allowable bearing capacity

m_v
 E

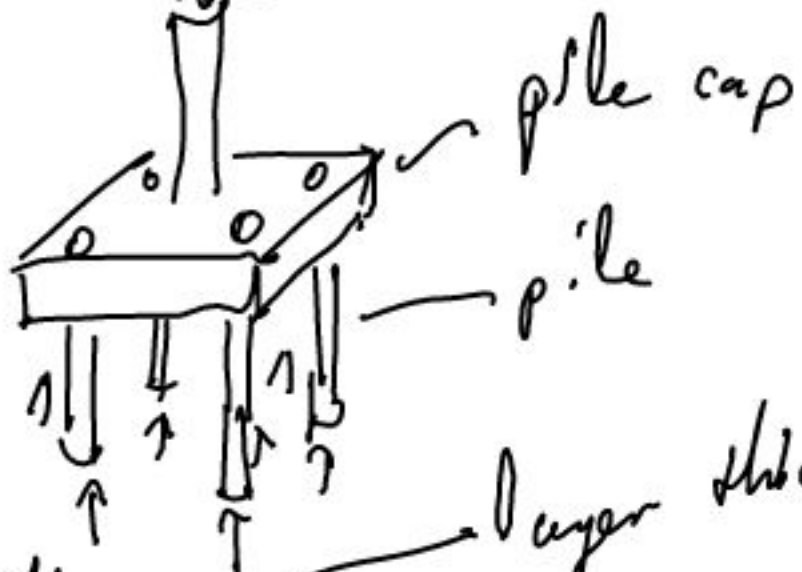
\rightarrow settlements

$$S_c = m_v H \Delta \sigma'$$

\rightarrow oedometer test

Pile foundations

Load



layer thickness

stress increase

Boring depth, density and so on in lecture notes/
sketches

De Beer's Rule for depth of exploration

