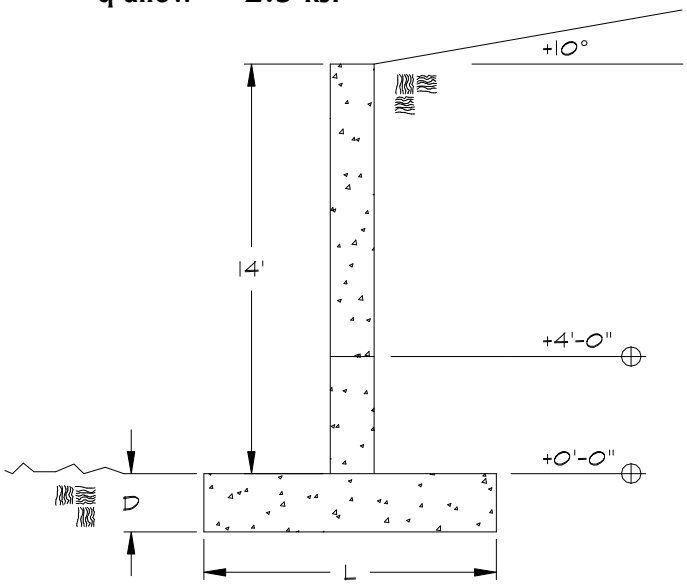
CIVL 551 Foundation Engineering Fall 2009

PS #9 Due: 12/2/09

Objectives

1. To determine the required footing proportions (OTM, sliding and soil pressure) for a retaining wall assuming that the wall is centered on the footing. Use both Rankine and Coulomb active pressures. Correct answers can include a key or not!

2. Determine the required wall thickness and vertical reinforcing for the stem at both the 0'-0" and 4'-0" elevations.

The Problem

α = 90°
c = 0
δ = 21°
ϕ = 30°
γ = 118pcf
f'c = 2,500 psi
fy = 60,000 psi
q-allow = 2.5 ksf