

CNST 241 Fall 2017, Assignment 5, Due: 11/16/2017

For the column and foundation shown below, determine:

- a- Shear stress at the bottom of the foundation
- b- Shear stress at an arbitrary cross section of the column
- c- Shear strain of the column
- d- Axial stress at an arbitrary cross section of the column
- e- Axial stress at the bottom of the foundation
- f- Axial strain of the column

Lateral load, P : 150 kip

Axial load, F : 80 kip

Column cross sectional size: 1.5 ft x 1.5 ft

Column height: 11 ft

Foundation cross sectional size: 4 ft x 6 ft

Foundation height: 3 ft

Lateral deformation of the column at top measured by instrumentation: 0.03 inch

Axial length reduction of the column measured by instrumentation: 0.0015 inch

