1.051 Structural Engineering Design

Problem Set 1

Assigned: Sept 15 2003
Due: Sept 29 2003

Q1) Compute, according to the International Building Code (IBC-2000) or ASCE-7, the wind pressure profile for the building shown in Figure 1. The building descriptions are as follow.

Location of Building	:	Southern Hawaii
Type	:	Hospital
Soil Type	:	Stiff soil (195 ft)
Structural System	:	Concrete moment frame

Q2) Compute, according to the IBC, the base shear (due to an earthquake in the region) of the same building using the Equivalent Lateral Force Procedure and distribute the forces that act on each story. Discuss the procedural and quantitative differences between UBC-91 and IBC. Please clearly state any assumptions you may make when applying the IBC 2000 procedures.

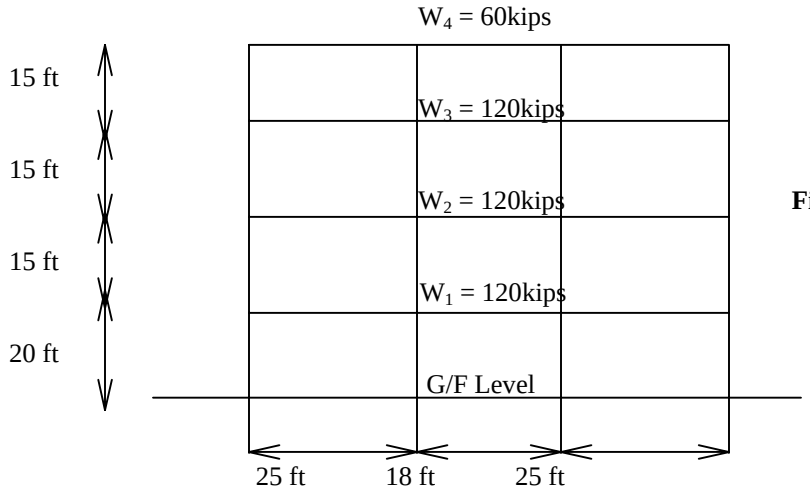

Figure 1