

## 53:134 Structural Design II, Spring 2005

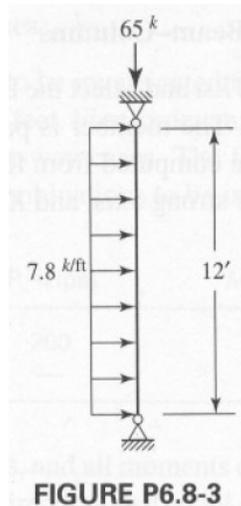
### HW4 Beam-Column Design

Assigned: 02/09/2005

Due: 02/11/2005

A member is subjected to factored loads as shown in Figure P6.8-3. Bending is about the strong axis, and  $K_x = K_y = 1.0$ . Use A572 Grade 50 steel and select a W10-shape.

“*LRFD Steel Design, Third Edition*” by W.T.Segui, Page 279-280, 6.8-3.



Hints:

a. Use Tables 6-1 and 6-2 of the manual, and the following equations:

$$bP_u + mM_{ux} + nM_{uy} \leq 1.0 \quad (1)$$

$$0.5bP_u + \frac{9}{8}(mM_{ux} + nM_{uy}) \leq 1.0 \quad (2)$$

b. No need to check shear failure.