4. REPEAT PROB 1 ASSUMING SINGLE CURVATURE

a) LRFD

THE CHANGE IS IN THE C_m term, thus

$$C_m = 0.6 - 0.4\left(\frac{-74}{148}\right) = 0.8$$

Thus $$B_1 = \frac{0.8}{1 - \frac{600}{12,700}} = 0.840 < 1.0 \therefore B_1 = 1.0$$

SINCE B_1 remains 1.0, THERE IS NO CHANGE FROM THE RESULTS OF PROB 1.

THE column is OK.

b) ASD

$$B_1 = \frac{0.8}{1 - \frac{1.6(400)}{12,700}} = 0.842 < 1.0 \therefore B_1 = 1$$

SAME AS PROB 1.

5. REPEAT PROB 2 Assuming reverse curvature

a) LRFD $C_m = 0.6 - 0.4\left(\frac{104}{104}\right) = 0.2$

Thus $$B_1 = \frac{0.2}{1 - \frac{300}{4820}} = 0.213 < 1.0 \therefore B_1 = 1.0$$

and $$M_u = 1.0(104) = 104 \text{ ft-kips}$$

Eq H1-1a yields

$$0.542 + \frac{8}{9}\left(\frac{104}{296}\right) = 0.542 + 0.312 = 0.854 < 1.0$$

$\therefore$ OK