CHORD MEMBER #7 (CONTD.)

Applicable Moment = 5,630,000 in lbs. f_y = 36,000 psi

D_t = 32.31 in. f_s = 22,000 psi

B_{eff} = 64.00 in. f_{ec} = ——— psi

t = 4.00 in. y_4 = 33.16 in.

y_1 = 2.00 in. d_4 = 21.67 in.

y_2 = 4.46 in. d_2 = 7.03 in.

y_3 = 32.54 in. c_3 = 21.05 in.

d_1 = 9.49 in. c_1 = 11.49 in.

c_2 = 21.82 in.

$$I_s = \sum [(I_c + A_c d_1^2) + (I_{TCA} + A_{TCA} d_2^2) + I_{BCA} + A_{BCA} d_3]$$

$$\bar{y} = \frac{\sum (A_c y_1 + A_{TCA} y_2 + A_{BCA} y_3)}{\sum (A_c + A_{TCA} + A_{BCA})}$$

$\bar{y}$ = 11.49 in.

I_s = 5,877 in.^{4} (2 C32T2 + PLATE)

Resisting Moment = $f_s \times \frac{I_s}{c_2}$ = 5,920,000 in. lbs.

Use 4-2"x1½"x0.31" ∠'s + 15"x⅝" PL Area = 8.99 sq. in.

Composite Design Top Chord Check

Total Load Design f_c = 3,000 psi

Applicable Moment = 5,630,000 in. lbs. f'_c = 1,350 psi

$$f'_{cc} = \frac{M_{cl}}{15 I_c} = 733 \text{ psi}$$

CHORD MEMBER #8 Consists of 4-2"x1½"x0.31" Angles

Area = 4.30 sq. in.

(SAME AS MEMBER 6)