CHORD MEMBER #7 (CONTD.)

Applicable Moment = 500,000 in lbs. f_y = 36000 psi

f_s = 22000 psi

D_c = 23.375 in. f_{sc} = psi

B_{eff} = 64.0 in.

t = 4.0 in.

y_1 = 2.0 in. d_2 = .43 in.

y_2 = 4.44 in. d_3 = 27.69 in.

y_3 = 32.56 in. c_1 = 4.87 in.

d_1 = 2.87 in. c_2 = 25.13 in.

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

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

$\bar{y}$ = 4.87 in.

I_s = 1540 in.^{4} (C327#)

Resisting Moment = $f_s \times \frac{I_s}{c_2}$ = 1,205,000 in. lbs.

Use 2L's 2x1½x.25" Area = 1.80 sq. in.

Composite Design Top Chord Check

Total Load Design f_c = 3,000 psi

Applicable Moment = 500,000 in. lbs. f'_c = 1,850 psi

$$f'_{co} = \frac{Mc_1}{15I_s} = 105 \text{ psi}$$

CHORD MEMBER #8 Consists of 2L's 2x1½x.25" Angles

Area = 1.80 sq. in.

(SAME AS MEMBER 6)