POSITIVE MOMENT

CHORD MEMBER #7 Consists of 2 - 3"x 2"x 0.37" angles

Area = 3.66 sq. in.

$D_t$ = 29.5 in. $f_y$ = 36,000 psi

$B_{eff}$ = 64.0 in. $f_s$ = 22,000 psi

t = 4.00 in. $f_{sc}$ = — psi

$y_1$ = 2.00 in.

$y_2$ = 5.96 in. $d_3$ = 22.25 in.

$y_3$ = 28.94 in. $c_3$ = 6.69 in.

$c_1$ = 4.69 in. $c_2$ = 22.81 in.

$d_2$ = 0.73 in.

$$I_B = (I_c + A_c d_1^2) + (I_{TCA} + A_{TCA} d_2^2) + I_{BCA} + A_{BCA} d_3)$$

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

$\bar{y}$ = 6.69 in.

$I_s$ = 2,214 $in.^4$ ( C 28 T 9 )

Resisting moment = $f_s \times \frac{I_s}{c_2}$ = 2,133,000 in. lbs.

Composite Design Top Chord Check

Applicable Moment = 2,133,000 in. lbs. $f_c$ = 3,000 psi

$f'_c$ = 1,350 psi

$f'_{cc} = \frac{Mc_1}{15I_s}$ = 430 psi

Maximum Positive Moment = 2,133,000 in. lbs.

Design of Web $f_y$ = 36,000 psi

Use 0.92" DIA. Area = 0.67 sq. in.