DEMISING WALL SUPPORT COLUMN

ASSUME HSS 6x6x1/4 TUBE FOR COLUMN, $F_y = 36$ KSI (A501)

$A = 5.59\ IN^2$, $I = 30.3\ IN^4$, $S = 10.1\ IN^3$

$L = 18.75'$, $l = 225''$

$$M_{MAX} = \frac{Pl}{4} = \frac{1 \times 225}{4} = 56.25\ IN\text{-}K$$

$$F_b = 0.6F_y = 0.6 \times 36 = 21.6\ KSI$$

$$S_y = \frac{M}{F_b} = \frac{56.25\ IN\cdot K}{21.6\ KSI} = 2.6\ IN^3 < 10.1\ IN^3 \therefore OK$$

$$\Delta = \frac{l}{240} = \frac{225}{240} = 0.94''$$

$$P = \frac{4M}{l} = \frac{4 \times 56.25}{225} = 1K$$

$$I = \frac{Pl^3}{48E\Delta} = \frac{1K \times 225^3}{48 \times 29000 \times 0.94''} = \frac{11\ 390\ 625}{1\ 308\ 480} = 8.70\ IN^4$$

$$8.70\ IN^4 < 30.3\ IN^4 \therefore OK$$

CITY OF PORTLAND, MAINE
RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
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