Texas Transportation Institute

Project #: **TF-13 Website**

Sponsor: **TF-13**

Subject: **SBB28d - New York 4-Tube Bridge Rail Weight Per Foot Calculations**

8'-3" Post Spacing

1.) Input Information

$L_{span} := 8ft + 3in$ Post Spacing

Post Size W6x25

$BP_{thk} := 1.25in$

$BP_{area} := 10in \cdot 14in$

$L_{post} := 42in - 1.25in$

$Post_{unitwt} := 25 \frac{lbf}{ft}$

$\gamma_{steel} := 490 \frac{lbf}{ft^3}$

$Rail_{unitwt1} := 14.53 \frac{lbf}{ft}$ HSS6x6x3/16

$Rail_{unitwtlow} := 12.21 \frac{lbf}{ft}$ HSS5x3x1/4

$Post_{wt} := L_{post} \cdot Post_{unitwt} + \left(BP_{thk} \cdot BP_{area} \cdot \gamma_{steel}\right)$

$$Rail_{wtperfoot} := \frac{Rail_{unitwt1} \cdot L_{span} \cdot 2 + \left(Post_{wt}\right) + 30lbf + \left(Rail_{unitwtlow} \cdot L_{span} \cdot 2\right)}{L_{span}}$$

$Rail_{wtperfoot} = 73.422 \cdot \frac{lbf}{ft}$ Say 75 lb/ft

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