HSS (4 tubes forming a square and two diagonal members

Plate (welded at corners)

Possible Load Scenario #1

Possible Load scenario #2

RED FRAME WORK IS WELDED AND CONNECTED TO STIFFNER VIA BOLTS

Reference

2a. Point Bracing

About the longitudinal axis of the beam, the required flexural strength of the brace is:

$$M_{br} = 0.02M_r \tag{A-6-9}$$

and, the required flexural stiffness of the brace is:

$$\beta_{br} = \frac{\beta_T}{\left(1 - \dfrac{\beta_T}{\beta_{sec}}\right)} \tag{A-6-10}$$

where

$$\beta_T = \frac{1}{\phi}\frac{2.4L}{nEI_{yeff}}\left(\frac{M_r}{C_b}\right)^2 \quad \text{(LRFD)} \tag{A-6-11a}$$

$$\beta_T = \Omega\frac{2.4L}{nEI_{yeff}}\left(\frac{M_r}{C_b}\right)^2 \quad \text{(ASD)} \tag{A-6-11b}$$

$$\beta_{sec} = \frac{3.3E}{h_o}\left(\frac{1.5h_o t_w^3}{12} + \frac{t_{st}b_s^3}{12}\right) \tag{A-6-12}$$

and

$$\phi = 0.75 \text{ (LRFD)}; \ \Omega = 3.00 \text{ (ASD)}$$