Step 6 Determine the moment M_{fail} at the face of the column at net section fracture of the T stem in accordance with Equation 3-57 and check for adequacy to meet the criteria of Equation 3-54 in Step 4:

$$M_{fail} = F_{uT} \left(w - 2\left(d_{bt} + .125\right)\right) t_{stem} \left[d_b + t_{stem}\right] L_{TF2} \tag{3-57}$$

where, d_{bt} is the bolt diameter and:

w is taken as the lesser of the flange length of the T, the width of the T at the first line of bolts, as defined in Figure 3-22, or the quantity given by the equation:

$$w \leq g + S_3 \tan q_{eff} \tag{3-58}$$

$$15^o \leq q_{eff} = 60t_{stem} \leq 30^o \tag{3-59}$$

L_{TF2} is a ratio to transfer moment from the center line of the bolts closest to the column flange to the face of the column, and is given by the equation:

$$L_{TF2} = \frac{L - d_c}{L - d_c - 2S_1} \tag{3-60}$$

Step 7: Determine the moment M_{fail} at the face of the column at initiation of plastic bending of the tee flanges in accordance with Equation 3-61 and check for adequacy to meet the criteria of equation 3-54 in Step 4:

$$M_{fail} = \frac{\left(2a' - \dfrac{d_{bt}}{4}\right) w F_{yT} t_{ft}^2 \left(d_b - t_{stem}\right)}{4a'b' - d_{bT}\left(a' + b'\right)} \tag{3-61}$$

where:

$$a' = a + \frac{d_{bt}}{2} \tag{3-62}$$

$$b' = b - \frac{d_{bt}}{2} \tag{3-63}$$

Step 8: Determine the moment M_{fail} at the face of the column at the initiation of tensile failure of the bolts at the tee flange, considering prying action, in accordance with Equation 3-64 and check for adequacy to meet the criteria of equation 3-54 in Step 4:

$$M_{fail} = N_{tb}\left(d_b + t_{stem}\right)\left[T_{ub} + \frac{w F_{yt} t_{ft}^2}{16a'}\right]\frac{a'}{a' + b'} \tag{3-64}$$