where $T_{ub}$ is the nominal tensile strength of bolts from the T flanges to the column flange which should be taken as the quantity $90A_{bolt}$ for A325 bolts and $113A_{bolt}$ for A490 bolts.

**Step 9:** Determine the moment $M_{fail}$ at the face of the column at net section fracture of the beam flange, in accordance with Equation 3-65 and check for adequacy to meet the criteria of equation 3-54 in Step 4:

$$M_{fail} = \left( F_{ult} \left( Z_{fb} - 2(d_{bt} + 0.062)\frac{d_{fb}}{2} (d_{hb} - t_{fb}) \right) \right) L_{TF3}$$

(3-65)

where:

$L_{TF3}$ is a length ratio to transfer moment from the bolt hole farthest from the column face, to the column face, given by Equation 3-66:

$$L_{TF3} = \frac{L - d_{c}}{L - d_{c} - 2(S_{x} + S_{y})}$$

(3-66)

**Step 10:** Determine the moment $M_{fail}$ at the face of the column at initiation of block shear failure and pull-through patterns of the stem of the tee (See Figure 3-19), according to the methods in *AISC-LRFD*.

**Step 11:** Calculate the adequacy of column flange thickness for beam flange tension, in accordance with the equation:

$$t_{cf} \geq 1.5t_{f-t}$$

(3-67)

If the column flange thickness is less than that calculated in accordance with Equation 3-67, continuity plates are required. Continuity plates should be designed as described in Section 3.3.3.1.

**Step 12:** Calculate the adequacy of column web thickness for the beam flange compression forces, in accordance with the equation:

$$t_{wc} \geq \frac{M_{f}}{(d_{b} - t_{stem})(6k + c)F_{yc}}$$

(3-68)

where $k$ is the dimension of the column-flange-to-web fillet, as indicated in *AISC Manual*.

If the column web thickness does not meet the criteria of Equation 3-68, then provide continuity plates in accordance with the criteria of Section 3.3.3.1.

**Step 13:** If continuity plates are required, the column flange thickness must be equal to or larger than the flange thickness, $t_{f}$, of the T. If the column flange thickness is less than this amount, a column with a thicker flange must be selected.