$$F_{fu} = \frac{M_f}{d_b - t_{bf}} \tag{3-36}$$

and d_{bt} is the diameter of the bolt

Note that the end plate is required to be ASTM A36 steel and the stiffener plate must be at least as thick the beam web.

Step 5: Determine the minimum column flange thickness required to resist beam flange tension from the equation:

$$t_{cf} > \sqrt{\frac{a_m \, F_{fu} \, (C_3)}{0.9 \, F_{yc} \, (3.5 \, p_b + c)}} \tag{3-37}$$

where:

$$a_m = C_a \left(\frac{A_f}{A_w} \right)^{1/3} \frac{C_3}{(d_{bt})^{1/4}} \tag{3-38}$$

$$C_3 = \frac{g}{2} - \frac{d_{bt}}{4} - k_1 \tag{3-39}$$

and C_a = 1.45 for A325 bolts and 1.48 for A490 bolts when A36 end plates are used

If the column flange is thinner than required, continuity plates are required and should be provided in accordance with Section 3.3.3.1.

Step 6: Check column web thickness for adequacy for beam flange compression according to the following:

$$t_{wc} = \frac{M_f}{(d_b - t_{fb}) \, (6k + 2t_p + t_{fb}) \, F_{yc}} \tag{3-40}$$

where *k* is the *k*-distance of the column from the *AISC Manual*.

If the above relationship is not satisfied, continuity plates are required and should be provided in accordance with Section 3.3.3.1.

Step 7: If continuity plates are required, the column flanges must be at least as thick as the required end plate thickness, calculated in Step 4.

Step 8: Check the shear in the panel zone in accordance with Section 3.3.3.2. For purposes of this calculation, d_b may be taken as the distance from one end of the end plate to the center of the opposite flange.

Step 9: Detail the connection as shown is Figure 3-15.