End plate

Yielding of the end plate [Kip] 170.69 200.00 DL **1.17** DG. 24 p.53

$\delta = 1.0 - d_o/p$

$= 1.0 - 1.19\ [in]\ /3.5\ [in]$

$= \mathbf{0.661}$ DG. 24 p.53

$\alpha = ((4.0*(b' - (d/2.0) + t_p)/(F_{yp}*p))*(P_r/N_{bolts}))/t_p^2 - 1$

$= ((4.0*(2.5\ [in]\ - (1\ [in]\ /2.0) + 0.581\ [in]\ )/(50000\ [lb/in2]\ *3.5\ [in]\ ))*(200\ [kip]\ /10))/1\ [in]^2 - 1$

$= \mathbf{2.16}\ [in]$ DG. 24 p.52

$R_n = \phi*(t_p^2*(1.0 + \delta*\alpha)*N_{bolts}/(4.0*(b - (d/2.0) + t_p)/(F_{yp}*p)))$

$= 0.9*(1\ [in]^2*(1.0 + 0.661*0.18)*10/(4.0*(2.5\ [in]\ - (1\ [in]\ /2.0) + 0.581\ [in]\ )/(50000\ [lb/in2]\ *3.5\ [in]\ )))$

$= \mathbf{170.69}\ [kip]$ DG. 24 p.53

Tensile strength of bolts [Kip] 170.69 200.00 DL **1.17** DG. 24 p.53

$\delta = 1.0 - d_o/p$

$= 1.0 - 1.19\ [in]\ /3.5\ [in]$

$= \mathbf{0.661}$ DG. 24 p.53

$\alpha = ((4.0*(b' - (d/2.0) + t_p)/(F_{yp}*p))*(P_r/N_{bolts}))/t_p^2 - 1$

$= ((4.0*(2.5\ [in]\ - (1\ [in]\ /2.0) + 0.581\ [in]\ )/(50000\ [lb/in2]\ *3.5\ [in]\ ))*(200\ [kip]\ /10))/1\ [in]^2 - 1$

$= \mathbf{2.16}\ [in]$ DG. 24 p.52

$R_n = \phi*(t_p^2*(1.0 + \delta*\alpha)*N_{bolts}/(4.0*(b - (d/2.0) + t_p)/(F_{yp}*p)))$

$= 0.9*(1\ [in]^2*(1.0 + 0.661*0.18)*10/(4.0*(2.5\ [in]\ - (1\ [in]\ /2.0) + 0.581\ [in]\ )/(50000\ [lb/in2]\ *3.5\ [in]\ )))$

$= \mathbf{170.69}\ [kip]$ DG. 24 p.53

Checks applied to end plate is the same as that applied to tensile strength of bolts. Please review