PROJECT: STEEL BUILDING DESIGN CASE STUDY				
SUBJECT: Girder-to-column flange connection		SHEET 118 of 131		
All-bolted double connection for interior floor girder W24x68 to a W10x49 interior column flange				
$\phi$ t = resistance factor relating to tensile strength				
Rn = strength				
Ru = Factored beam end reaction				
q1= workable gage of angle				
H2 = maximum shank extension				
C1 = clearance for tighening				
a1 = workable gage 2				
$a^2$ = distance from bolt to the tip of the angle leg attached to girder web				
$a_2 = a_1 a_2 a_3 a_4 a_5 a_5 a_5 a_5 a_5 a_5 a_5 a_5 a_5 a_5$				
ad = distance from bolt to the tip of the angle leg attached to column flange				
$d^2$ = distance from both to the up of the angle leg attached to column hange $d^2$ = distance between holts				
$u_1 - u_1$ statute between boilts				
Lev - venical edge distance				
Len = nonzontal edge distance				
ry = specified (ASTM) minimum tensile strength				
Fu = specified (ASTM) minimum tensile strength				
d = diameter of the bolt				
tt = tiange tnickness				
tw = web thickness				
t1 = one half decimal web thickness rounded to the next higher 1/16 in.				
t = thickness of the angles				
U = reduction coefficient				
An = net area				
Ag = gross cross-sectional area				
Ae = U*An				
Agv = gross area acted upon by shear				
Agt = gross area acted upon by tension				
Anv = net area acted upon by shear				
Ant = net area acted upon by tension				
Use A325-N bolts in standard holes. Assume ASTM A36 angle material with Fy=36ksi and Fu=58ksi.				
Factored Load - Wu (sheet 23)= 5.2 (k/ft)				
Girder length = 30 ft				
		Ru =	78	Kips
	Girder:	W24x68		
	tw =	0.415	in	
Wu	Fy =	50	ksi	
	Fu =	65	ksi	
W 24X08	Column:	W10x49		
	tf =	0.56	in	
	Fy =	50	ksi	
	Fu =	65	ksi	
Red font indicates user input				





