Design Summary	
Connection is OK	
Maximum utility ratio for connection	0.472
Design Inputs	
Design method	ASD
Young's modulus of elasticity	200000.000 MPa
Poisson's ratio	0.300
Connection forces:	
Transfer force (TF)	13000.000 N
Shear force (SF)	34000.000 N
Bolt Details:	
Bolt Diameter	22.000 mm
Number of bolts per clip angle (n)	2.000
Bolt Gage	140.000 mm
Bolt Spacing	70.000 mm
Nominal tensile capacity of bolt	620.000 MPa
Nominal shear capacity of bolt	372.000 MPa
Weld Details:	
Weld thickness	6.000 mm
Weld tensile strength	482.000 MPa
Clip angle dimensions:	
Clip angle size (li x lo x ta)	102x102x9.53 mm
Clip angle length	140.000 mm
Yield strength of clip angle	250.000 MPa
Tensile strenght of clip angle	400.000 MPa
Connecting beam properties:	
Section size	
Depth	318.000 mm
Flange width	167.000 mm
Flange thickness	13.200 mm
Web thickness (tw)	7.620 mm
Yield strength of beam	345.000 MPa
Tensile strength of beam	450.000 MPa
Beam setback from connection member (s)	12.000 mm
Top cope depth	50.000 mm
Bottom cope depth	50.000 mm
Cope length (c)	150.000 mm
Supporting member properties:	
Support type	Beam Web
Section size	W360X51
Depth	356.000 mm
Flange width	171.000 mm
Flange thickness	11.600 mm
Web thickness	7.240 mm
Design Calculations	
Bolt Shear Check:	
Shear per bolt	
[Vb=SF/(2*n)]	8500.000 N
Nominal shear strength of bolt (Rn)	141337.680 N
ASD factor in bolt shear (omega)	2.000
Allowable shear strength of bolt	
[Ra=Rn/omega]	70668.840 N
Utility ratio in bolt shear	
[Vb/Ra]	0.120
Bolt Bearing at Clip Angle Check:	
Nominal strength in bearing at clip angle (Rn)	105211.200 N
ASD factor in bolt bearing (omega)	2.000
Allowable strength in bearing at clip angle	
[Ra=Rn/omega]	52605.600 N
Utility ratio in bearing at clip angle	
[Vb/Ra]	0.162
Bolt Bearing at Support Check:	
Nominal strength in bearing at support (Rn)	181051.200 N
ASD factor in bolt bearing (omega)	2.000
Allowable strength in bearing at support	
[Ra=Rn/omega]	90525.600 N
Strength reduction factor to account for backing beam (r)	0.500
Utility ratio in bearing at support	
[Vb/(Ra*r)]	0.188

Bolt Tension Check (without prying:	
Tension per bolt without prying	
[Tb=TF/(2*n)]	3250.000 N
Nominal bolt strength in tension (Rn)	235562.800 N
ASD factor in bolt tension (omega)	2.000
Allowable bolt strength in tension	
[B=Rn/omega]	117781.400 N
Utility ratio in bolt tension	
[Tb/B]	0.028
Clip angle prying action check:	
Bolt strength reduction factor due to clip prying (Q)	0.106
Interaction ratio in clip prying	
[Tb/(Q*B)]	0.260
Weld Check:	
Maximum stress in weld group (fw)	142.514 N/mm
Nominal strength of weld (Rn)	1226.786 N/mm
ASD factor for weld (omega)	2.000
Allowable weld strength	
[Ra=Rn/omega]	613.393 N/mm
Utility ratio for weld	
[fw/Ra]	0.232
Web Rupture at Weld Check:	
Minimum thickness of web at weld (tw`)	2.111 mm
Utility ratio in rupture at weld	
[tw`/tw]	0.277
Clip Angle Shear Yielding Check:	
Shear in clip angle	
[Va=sqrt(TF^2+SF^2)/2]	18200.275 N
Nominal shear yeilding strength of clip angle (Rn)	200130.000 N
ASD factor for shear yielding (omega)	1.500
Allowable shear yielding strength of clip angle	
[Ra=Rn/omega]	133420.000 N
Utility ratio in shear yielding	
[Va/Ra]	0.136
Clip Angle Shear Rupture Check:	
Nominal shear rupture strength of clip angle (Rn)	210422.400 N
ASD factor for shear rupture (omega)	2.000
Shear rupture strength of clip angle	
[Ra=Rn/omega]	105211.200 N
Utility ratio in shear rupture	
[Va/Ra]	0.173
Beam Cope Flexure Check:	
Eccetricity of applied transfer force from centroid of cope (e)	29.000 mm
Bending moment in coped section	
[M=SF*(s+c)+TF*e]	5885000.000 N mm
Section modulus of coped section about major axis (Sx)	60355.480 mm^3
Critical stress in coped section (Fcr)	345.000 MPa
Nominal flexural strength of coped section	
[Mn=Fcr*Sx]	20822640.600 N mm
ASD factor in flexure (omega)	1.670
Allowable flexural strength of coped section	
[Ma=Mn/omega]	12468647.066 N mm
Utility ratio in coped section flexure	
[M/Ma]	0.472
Beam Cope Compression Check:	
Cross section area of coped section (Ac)	1661.160 mm^2
Critical compressive stress in coped section (fcr)	232.009 MPa
Nominal strength of coped section in compression (Pn)	
[Pn=fcr*Ac]	385403.550 N
ASD factor in compression (omega)	1.670
Allowable compression strength of coped section	
[Pa=Pn/omega]	230780.569 N
Utility ratio in coped section compression	
[TF/Pa]	0.056
Beam Cope Shear Check:	
Nominal strength of cope in shear (Rn)	343860.120 N
ASD factor in shear (omega)	1.500
Allowable shear strength of coped section	
[Ra=Rn/omega]	229240.080 N
Utility ratio in coped section shear	
[SF/Ra]	0.148