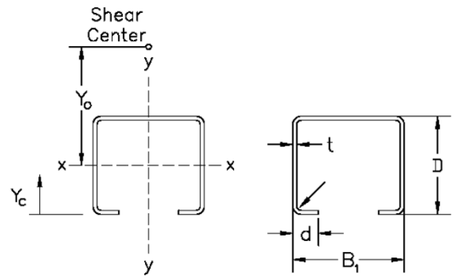
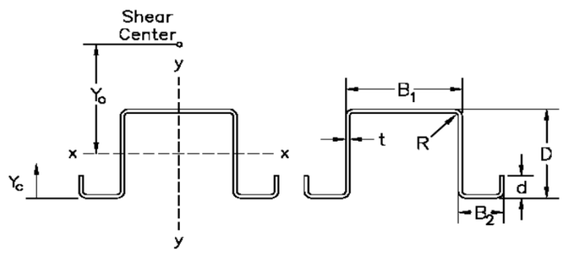
Gross Section Properties: Channel, Hats, Mac Girts

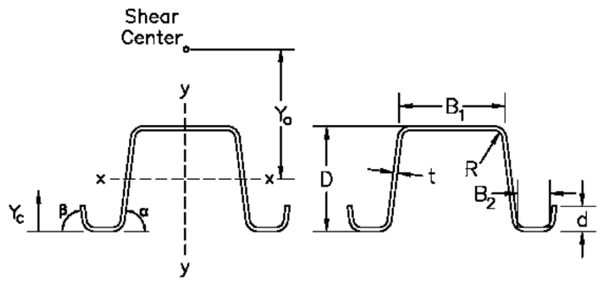
Channel



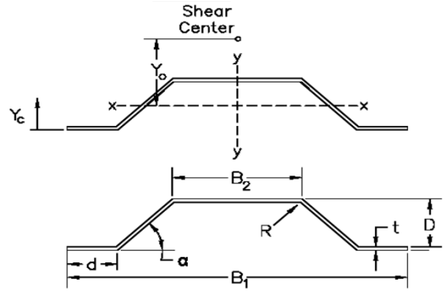
Hat



Mac-Girt



Sub-Girt



Member			Ga.	Dimensions								Gross Section Properties												
												Area	Weight	Axis X-X				Axis Y-Y			Centroid	Shear Center	Torsional Propeties		
				D	B_1	B_2	d	t	R	α	β	A		I_x	$S_{x\ TOP}$	$S_{x\ BOT}$	r_x	I_y	$S_{y\ LEFT\ \&\ RIGHT}$	r_y	Y_c	Y_o	J	C_w	j
				(in)	(in)	(in)	(in)	(in)	(in)	(deg)	(deg)	(in^2)	(lb/ft)	(in^4)	(in^3)	(in^3)	(in)	(in^4)	(in^3)	(in)	(in)	(in)	(in^4)	(in^6)	(in)
Channel	1.4375 x	1.625	16	1.4375	1.625	-	0.3750	0.0590	0.062	-	-	0.287	0.97	0.080	0.135	0.095	0.529	0.128	0.158	0.670	0.843	1.317	0.00033	0.056	-1.486
Channel	1.4375 x	1.625	18	1.4375	1.625	-	0.3571	0.0475	0.062	-	-	0.232	0.79	0.065	0.111	0.077	0.531	0.106	0.130	0.676	0.849	1.316	0.00017	0.045	-1.493
Hat	1.75 x	1.5	16	1.5	1.75	0.6840	0.3508	0.0590	0.062	-	-	0.368	1.25	0.124	0.166	0.165	0.582	0.312	0.208	0.921	0.752	1.190	0.00043	0.056	-1.559
Hat	1.75 x	1.5	18	1.5	1.75	0.6708	0.3159	0.0475	0.062	-	-	0.295	1.00	0.102	0.137	0.135	0.588	0.249	0.166	0.919	0.757	1.212	0.00022	0.044	-1.580
Hat	1.75 x	1.5	20	1.5	1.75	0.6606	0.2890	0.0367	0.062	-	-	0.228	0.78	0.080	0.109	0.106	0.593	0.192	0.128	0.918	0.761	1.230	0.00010	0.034	-1.597
Mac-Girt	1.5 x	1.5	16	1.511	1.5	0.5	0.4252	0.0590	0.125	83	83	0.353	1.20	0.114	0.147	0.154	0.567	0.305	0.199	0.929	0.739	1.104	0.00041	0.048	-1.513
Mac-Girt	1.5 x	1.5	18	1.500	1.5	0.5	0.4198	0.0475	0.125	83	83	0.284	0.97	0.091	0.120	0.124	0.567	0.245	0.161	0.929	0.736	1.111	0.00021	0.038	-1.520
Mac-Girt	1.5 x	1.5	20	1.489	1.5	0.5	0.4146	0.0367	0.125	83	83	0.220	0.75	0.071	0.094	0.096	0.567	0.190	0.125	0.929	0.734	1.117	0.00010	0.029	-1.527
Sub-Girt	MSG 1		18	0.62	5.461	2	1.1300	0.0475	0.062	45	-	0.283	0.96	0.022	0.063	0.068	0.278	0.685	0.251	1.556	0.320	0.455	0.00021	0.010	-3.800
Sub-Girt	MSG 1		20	0.62	5.4696	2	1.1300	0.0367	0.062	45	-	0.219	0.74	0.017	0.049	0.054	0.278	0.532	0.195	1.559	0.315	0.455	0.00010	0.008	-3.814
Sub-Girt	MSG 2		18	0.88	5.2284	2	0.7500	0.0475	0.062	45	-	0.282	0.96	0.039	0.092	0.078	0.373	0.638	0.244	1.503	0.503	0.664	0.00021	0.011	-3.104
Sub-Girt	MSG 2		20	0.88	5.2374	2	0.7500	0.0367	0.062	45	-	0.219	0.74	0.030	0.072	0.061	0.373	0.495	0.189	1.505	0.497	0.664	0.00010	0.008	-3.113
Sub-Girt	MSG 3		18	1.24	5.9355	2	0.7500	0.0475	0.062	45	-	0.330	1.12	0.083	0.139	0.121	0.502	0.958	0.323	1.704	0.687	0.908	0.00025	0.022	-3.263
Sub-Girt	MSG 3		20	1.24	5.9445	2	0.7500	0.0367	0.062	45	-	0.255	0.87	0.065	0.109	0.095	0.503	0.743	0.250	1.707	0.682	0.908	0.00011	0.017	-3.269

1. Section properties are calculated in accordance with the 2007 AISI North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Material: 16 Gauge: A653 SS Grade 55 Steel, 18-20 Gauge: A653 SS Grade 80
3. Strength Increase due to Cold Working has been applied where applicable
4. Web Crippling values are based on a 2 inch bearing length, one flange fastened to support
5. Appropriate factors of safety have been applied for Allowable Stress Design (ASD)
6. Strength calculations based on a fully braced condition
7. Consult with an engineering professional before using the above design aids

Revised Mar-13