

COLD-FORMED FRAMING PRODUCT DATA

Stud Track

1. Members shall comply with manufacturing tolerances listed in Table A5-1 of AISI S220-20 for 18-30mil members.
2. Members shall comply with manufacturing tolerances listed in Table A5-3 of AISI S240-20 for 33-68mil members.
3. Reference AISI S100 for Design of Cold Formed Structural Steel Members.

1. Physical properties have been calculated in accordance with AISI S100.
2. CRC punches for 3-5/8" & wider members is 1.5" x 4" punch (see following page).
3. CRC punches for 1-5/8" & 2-1/2" members is 0.75" x 4" punch (see following page).

Diagram illustrating the calculation of the number of tracks (N) for a given web width (S) and flange width (N).

The formula shown is:
$$N = \frac{S - 33}{162}$$

Legend:

- (S) = Standard
- (N) = Narrow

Table 1: Web Widths (S) and Flange Widths (N)

Web	Flange
162 = 1-5/8"	125 = 1-1/4"
250 = 2-1/2"	150 = 1-1/2"
350 = 3-1/2"	162 = 1-5/8"
362 = 3-5/8"	200 = 2"
400 = 4"	250 = 2-1/2"
550 = 5-1/2"	
600 = 6"	
800 = 8"	

Table 2: Track Profile (S) and Thickness (mil)

Track Profile (S)	Thickness (mil)
18 = 25ga	
30 = 20ga (Int)	
33 = 20ga (Str)	
43 = 18ga	
54 = 16ga	
68 = 14ga	

Designation (mils)	Gauge	Minimum Thickness (in.)	Design Thickness (in.)	Design Inside Corner Radii (in.)
18	25	0.0179	0.0188	0.0843
27	22	0.0269	0.0283	0.0796
30	20-INT	0.0296	0.0312	0.0781
33	20-STR	0.0329	0.0346	0.0764
43	18	0.0428	0.0451	0.0712
54	16	0.0538	0.0566	0.0849
68	14	0.0677	0.0713	0.1069

² Section properties calculated based on inside corner radii above (per AISI S220-20 for 18-30mil & AISI S240-20 for 33-68mil)

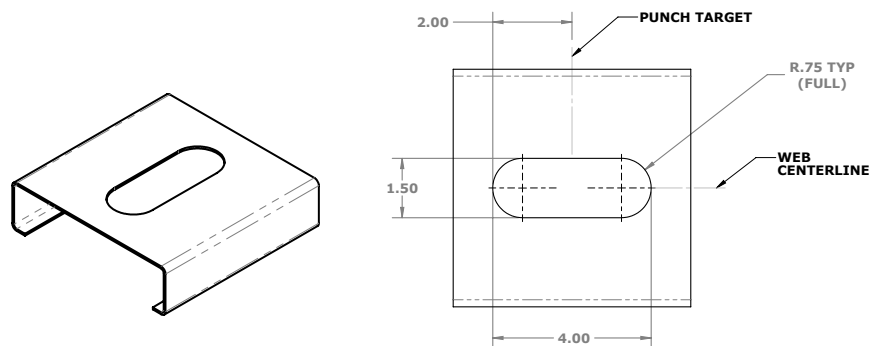
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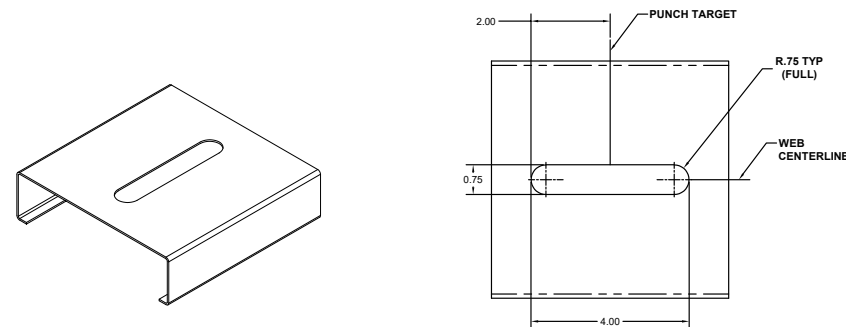
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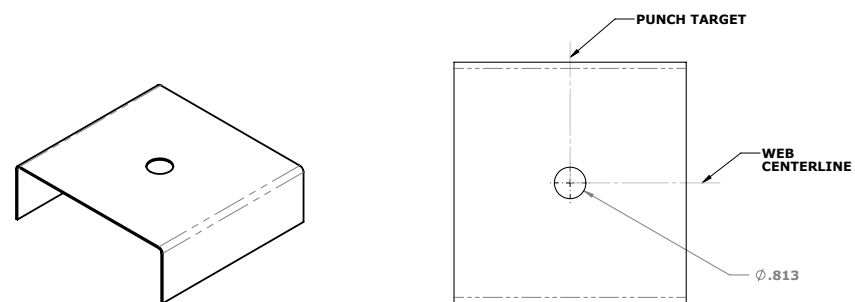
PUNCHES & POST ROLLING TREATMENTS:



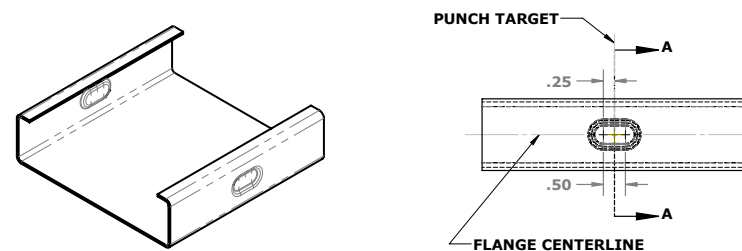
CRC Service Hole



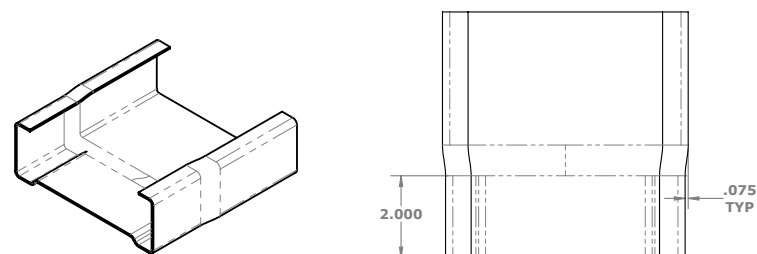
Service Hole



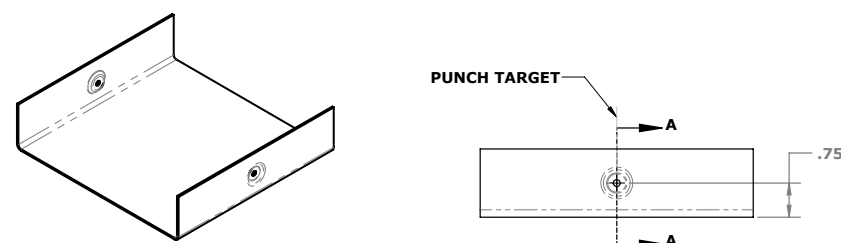
Round Web Punch



Boss Flange Stamp



Swage



Flange Dimple

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

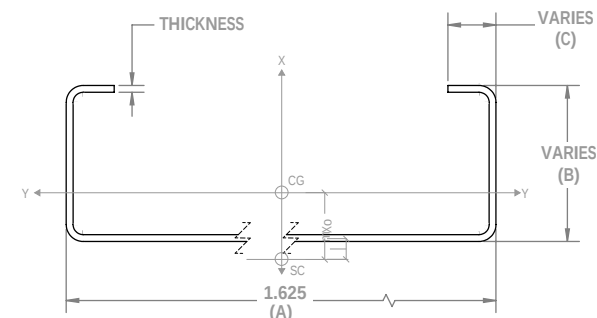
* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

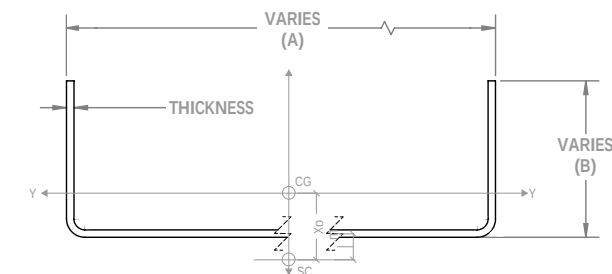
Notes:

CRC punchouts are min. 12" from leading edge
 CRC punchouts are min. 24" o.c.
 Use the effective moment of inertia for deflection calculations



1-5/8" STUD PROPERTIES

1-5/8" STUD PROPERTIES							Gross Properties							Effective Properties						Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Lip Width (C) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _s (in-k)	M _{da} (in-k)	V _{ag} (lb)	V _{anet} (lb)	Jx1000 (in ⁴)	C _w (in ⁶)	X _o (in)	R _o (in ⁶)	β
162S125-18	1.625	1.250	0.188	0.0188	33	33	0.080	0.27	0.038	0.047	0.686	0.016	0.447	0.034	0.031	0.607	0.585	302.190	99.530	0.009	0.009	-1.029	1.315	0.388
162S125-27	1.625	1.250	0.188	0.0283	33	33	0.120	0.41	0.056	0.069	0.682	0.023	0.443	0.055	0.053	1.046	1.004	493.520	106.440	0.032	0.013	-1.017	1.302	0.390
162S125-30	1.625	1.250	0.188	0.0312	33	33	0.132	0.45	0.061	0.075	0.681	0.026	0.441	0.060	0.060	1.190	1.140	542.970	105.760	0.043	0.014	-1.014	1.298	0.390
162S125-33	1.625	1.250	0.188	0.0346	33	33	0.145	0.49	0.067	0.083	0.679	0.028	0.440	0.066	0.069	1.367	1.302	600.690	104.950	0.058	0.016	-1.010	1.294	0.391



Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations

1-5/8" TRACK PROPERTIES

1-5/8" TRACK PROPERTIES						Gross Properties							Effective Properties				Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	V _{ag} (lb)	Jx1000 (in ⁴)	C _w (in ⁴)	X _o (in ⁴)	R _o (in ⁴)	β
162T125-18(S) ³	1.747	1.250	0.0188	33	33	0.753	0.26	0.036	0.044	0.687	0.013	0.412	-	-	-	-	0.009	0.006	-0.906	1.209	-
162T125-27(S)	1.761	1.250	0.0283	33	33	0.117	0.40	0.063	0.072	0.735	0.020	0.410	0.051	0.044	0.868	541.220	0.031	0.011	-0.872	1.211	0.482
162T125-30(S)	1.766	1.250	0.0312	33	33	0.129	0.44	0.070	0.079	0.735	0.022	0.409	0.057	0.050	0.995	597.240	0.042	0.012	-0.870	1.210	0.483
162T125-33(S)	1.771	1.250	0.0346	33	45	0.143	0.49	0.077	0.087	0.736	0.024	0.408	0.066	0.058	1.151	663.050	0.057	0.013	-0.868	1.209	0.484
162T150-18(S) ³	1.747	1.500	0.0188	33	33	0.087	0.30	0.049	0.056	0.749	0.021	0.496	-	-	-	-	0.010	0.011	-1.117	1.433	-
162T150-27(S)	1.761	1.500	0.0283	33	33	0.131	0.45	0.074	0.084	0.750	0.032	0.495	0.055	0.045	0.897	541.220	0.035	0.017	-1.099	1.420	0.400
162T150-30(S)	1.766	1.500	0.0312	33	33	0.144	0.49	0.081	0.092	0.751	0.035	0.494	0.062	0.052	1.030	597.240	0.047	0.019	-1.098	1.419	0.401
162T150-33(S)	1.771	1.500	0.0346	33	45	0.160	0.54	0.090	0.102	0.751	0.039	0.494	0.072	0.060	1.193	663.050	0.064	0.021	-1.096	1.418	0.402

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

IRENE STEEL

2-1/2" STUD PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

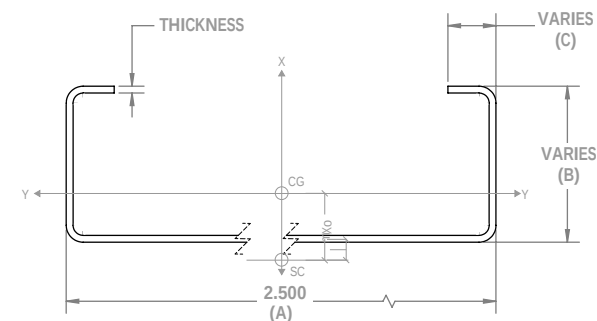
* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

CRC punchouts are min. 12" from leading edge
 CRC punchouts are min. 24" o.c.
 Use the effective moment of inertia for deflection calculations



Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 M_{da} = Allowable Distortional Buckling Moment at $K\phi = 0$
 V_{ag} = Allowable Shear Force in Web (Unpunched)
 V_{anet} = Allowable Shear Force in Web (Punched)

* Effective properties are for the members without punchouts. Allowable moment is the lesser of M_a and M_{da} .

* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

2-1/2" NON-STRUCTURAL STUD PROPERTIES

2-1/2" NON-STRUCTURAL STUD PROPERTIES							Gross Properties							Effective Properties						Torsional Properties					
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Lip Width (C) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _s (in-k)	M _{da} (in-k)	V _{ag} (lb)	V _{anet} (lb)	Jx1000 (in ⁴)	C _w (in ⁶)	X _o (in)	R _o (in ⁶)	β	
250S125-18	2.500	1.250	0.188	0.0188	33	33	0.097	0.33	0.099	0.079	1.014	0.019	0.439	0.089	0.060	1.175	1.028	257.840	196.030	0.011	0.023	-0.904	1.427	0.599	
250S125-27	2.500	1.250	0.188	0.0283	33	33	0.144	0.49	0.147	0.118	1.009	0.027	0.434	0.144	0.097	1.925	1.824	684.770	343.730	0.039	0.034	-0.893	1.416	0.602	
250S125-30	2.500	1.250	0.188	0.0312	33	33	0.159	0.54	0.161	0.129	1.008	0.030	0.433	0.159	0.110	2.174	2.087	832.300	378.230	0.052	0.037	-0.889	1.412	0.603	
250S125-33	2.500	1.250	0.188	0.0346	33	33	0.176	0.60	0.178	0.142	1.006	0.033	0.431	0.175	0.125	2.478	2.405	975.340	398.800	0.070	0.040	-0.886	1.408	0.605	

2-1/2" STRUCTURAL STUD PROPERTIES

2-1/2" STRUCTURAL STUD PROPERTIES							Gross Properties							Effective Properties							Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Lip Width (C) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	M _{da} (in-k)	V _{ag} (lb)	V _{anet} (lb)	Jx1000 (in ⁴)	C _w (in ⁶)	X _o (in)	R _o (in ⁶)	β	
250S162-33	2.500	1.625	0.500	0.0346	33	45	0.223	0.76	0.235	0.188	1.027	0.087	0.624	0.235	0.180	3.553	3.563	975.340	398.800	0.089	0.146	-1.470	1.898	0.401	
250S162-43	2.500	1.625	0.500	0.0451	33	45	0.289	0.98	0.302	0.242	1.022	0.111	0.620	0.302	0.242	4.774	4.774	1265.460	394.230	0.196	0.184	-1.457	1.885	0.402	
250S162-54	2.500	1.625	0.500	0.0566	50	65	0.358	1.22	0.370	0.296	1.016	0.135	0.613	0.370	0.288	8.625	8.789	2352.790	564.640	0.383	0.223	-1.443	1.868	0.404	
250S162-68	2.500	1.625	0.500	0.0713	50	65	0.444	1.51	0.450	0.360	1.007	0.162	0.605	0.450	0.360	10.780	10.780	2865.590	518.570	0.752	0.268	-1.424	1.846	0.405	

2-1/2" NON-STRUCTURAL TRACK PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

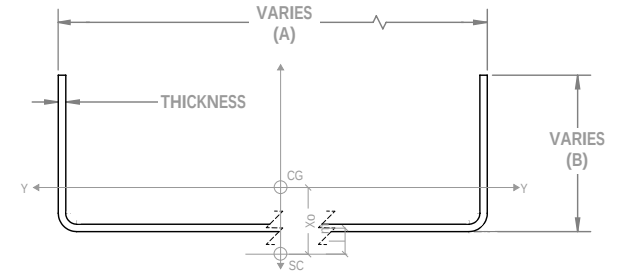
* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



2-1/2" NON-STRUCTURAL TRACK PROPERTIES

Member	Gross Properties												Effective Properties				Torsional Properties				
	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength F_y (ksi)	Ult Strength F_u (ksi)	Area (in ²)	Weight (lb/ft)	I_x (in ⁴)	S_x (in ³)	R_x (in)	I_y (in ⁴)	R_y (in)	I_{xe} (in ⁴)	S_{xe} (in ³)	M_a (in-k)	V_{ag} (lb)	$J \times 1000$ (in ⁴)	C_w (in ⁴)	X_o (in ⁴)	R_o (in ⁴)	β
250T125-18(S) ³	2.622	1.250	0.0188	33	33	0.092	0.31	0.093	0.075	1.009	0.015	0.402	-	-	-	-	0.011	0.015	-0.791	1.343	-
250T125-27(S)	2.636	1.250	0.0283	33	33	0.142	0.48	0.157	0.119	1.053	0.022	0.398	0.129	0.079	1.557	684.770	0.038	0.027	-0.762	1.360	0.685
250T125-30(S)	2.641	1.250	0.0312	33	33	0.156	0.53	0.173	0.131	1.053	0.025	0.397	0.146	0.090	1.771	832.300	0.051	0.030	-0.762	1.359	0.686
250T150-18(S) ³	2.622	1.500	0.0188	33	33	0.101	0.34	0.108	0.086	1.032	0.024	0.490	-	-	-	-	0.012	0.025	-1.007	1.523	-
250T150-27(S)	2.636	1.500	0.0283	33	33	0.156	0.53	0.181	0.137	1.078	0.037	0.486	0.139	0.082	1.611	684.770	0.042	0.044	-0.977	1.534	0.595
250T150-30(S)	2.641	1.500	0.0312	33	33	0.172	0.58	0.200	0.151	1.078	0.040	0.486	0.157	0.093	1.835	832.300	0.056	0.049	-0.975	1.533	0.595
250T200-18(S) ³	2.622	2.000	0.0188	33	33	0.122	0.42	0.152	0.116	1.114	0.053	0.661	-	-	-	-	0.014	0.062	-1.439	1.936	-
250T200-27(S) ³	2.636	2.000	0.0283	33	33	0.184	0.63	0.229	0.174	1.116	0.080	0.660	-	-	-	-	0.049	0.094	-1.434	1.933	-
250T200-30(S) ³	2.641	2.000	0.0312	33	33	0.203	0.69	0.253	0.191	1.117	0.088	0.659	-	-	-	-	0.066	0.103	-1.432	1.932	-
250T250-18(S) ³	2.622	2.500	0.0188	33	33	0.141	0.48	0.184	0.140	1.141	0.097	0.830	-	-	-	-	0.017	0.115	-1.900	2.367	-
250T250-27(S) ³	2.636	2.500	0.0283	33	33	0.212	0.72	0.277	0.210	1.143	0.146	0.829	-	-	-	-	0.057	0.173	-1.895	2.363	-
250T250-30(S) ³	2.641	2.500	0.0312	33	33	0.234	0.80	0.306	0.232	1.143	0.160	0.828	-	-	-	-	0.076	0.191	-1.893	2.362	-
250T300-18(S) ³	2.622	3.000	0.0188	33	33	0.160	0.54	0.216	0.164	1.161	0.158	0.995	-	-	-	-	0.019	0.191	-2.371	2.822	-
250T300-27(S) ³	2.636	3.000	0.0283	33	33	0.241	0.82	0.325	0.247	1.163	0.238	0.994	-	-	-	-	0.064	0.288	-2.366	2.817	-
250T300-30(S) ³	2.641	3.000	0.0312	33	33	0.265	0.90	0.359	0.272	1.164	0.262	0.993	-	-	-	-	0.086	0.317	-2.364	2.816	-

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2-1/2" STRUCTURAL TRACK PROPERTIES

Gross Properties:

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 S_x = Section Modulus about the x-axis
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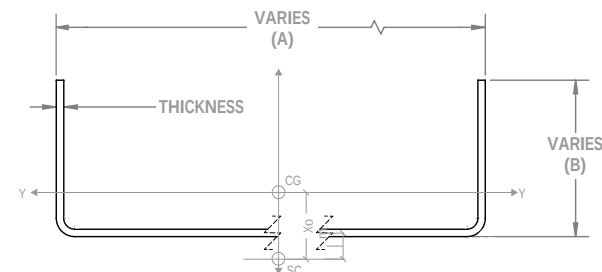
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2-1/2" STRUCTURAL TRACK PROPERTIES

2-1/2" STRUCTURAL TRACK PROPERTIES						Gross Properties							Effective Properties				Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	V _{ag} (lb)	Jx1000 (in ⁴)	C _w (in ⁴)	X _o (in ⁴)	R _o (in ⁴)	β
250T125-33(S)	2.646	1.250	0.0346	33	45	0.173	0.59	0.192	0.145	1.054	0.027	0.397	0.166	0.103	2.033	1023.500	0.069	0.033	-0.760	1.358	0.687
250T125-43(S)	2.661	1.250	0.0451	33	45	0.225	0.77	0.250	0.188	1.055	0.035	0.395	0.231	0.147	2.909	1355.540	0.153	0.043	-0.755	1.356	0.690
250T125-54(S)	2.698	1.250	0.0566	50	65	0.282	0.96	0.318	0.236	1.062	0.043	0.392	0.297	0.188	5.640	2563.000	0.302	0.054	-0.749	1.357	0.696
250T125-68(S)	2.750	1.250	0.0713	50	65	0.355	1.21	0.408	0.297	1.072	0.054	0.389	0.403	0.262	7.847	3199.200	0.602	0.069	-0.740	1.360	0.704
250T150-33(S)	2.646	1.500	0.0346	33	45	0.190	0.65	0.221	0.167	1.079	0.045	0.485	0.180	0.107	2.110	1023.580	0.076	0.054	-0.973	1.532	0.596
250T150-43(S)	2.661	1.500	0.0451	33	45	0.248	0.84	0.289	0.217	1.080	0.058	0.483	0.252	0.154	3.034	1355.540	0.168	0.070	-0.968	1.529	0.599
250T150-54(S)	2.698	1.500	0.0566	50	65	0.311	1.06	0.368	0.273	1.088	0.072	0.481	0.325	0.197	5.891	2563.020	0.332	0.089	-0.961	1.529	0.605
250T150-68(S)	2.750	1.500	0.0713	50	65	0.391	1.33	0.472	0.344	1.099	0.089	0.478	0.445	0.276	8.271	3199.210	0.663	0.114	-0.953	1.531	0.613
250T200-33(S)	2.646	2.000	0.0346	33	45	0.225	0.76	0.280	0.212	1.117	0.097	0.658	0.203	0.112	2.221	1023.580	0.090	0.118	-1.418	1.922	0.455
250T200-43(S)	2.661	2.000	0.0451	33	45	0.293	1.00	0.366	0.275	1.118	0.126	0.657	0.288	0.163	3.214	1355.540	0.199	0.153	-1.413	1.918	0.457
250T200-54(S)	2.698	2.000	0.0566	50	65	0.367	1.25	0.466	0.346	1.127	0.157	0.654	0.372	0.209	6.251	2563.020	0.392	0.195	-1.405	1.917	0.462
250T200-68(S)	2.750	2.000	0.0713	50	65	0.462	1.57	0.600	0.437	1.139	0.196	0.652	0.517	0.296	8.864	3199.210	0.784	0.251	-1.396	1.916	0.469
250T250-33(S) ³	2.646	2.500	0.0346	33	45	0.259	0.88	0.339	0.257	1.144	0.178	0.827	-	-	-	-	0.104	0.212	-1.891	2.360	-
250T250-43(S)	2.661	2.500	0.0451	33	45	0.338	1.15	0.443	0.333	1.146	0.230	0.826	0.318	0.169	3.339	1355.540	0.229	0.283	-1.873	2.346	0.362
250T250-54(S)	2.698	2.500	0.0566	50	65	0.424	1.44	0.565	0.419	1.155	0.288	0.824	0.410	0.217	6.501	2563.020	0.453	0.361	-1.865	2.343	0.366
250T250-68(S)	2.750	2.500	0.0713	50	65	0.534	1.82	0.728	0.530	1.168	0.360	0.821	0.576	0.310	9.267	3199.210	0.904	0.466	-1.855	2.341	0.372
250T300-33(S) ³	2.646	3.000	0.0346	33	45	0.294	1.00	0.398	0.301	1.164	0.290	0.993	-	-	-	-	0.117	0.352	-2.362	2.814	-
250T300-43(S) ³	2.661	3.000	0.0451	33	45	0.383	0.13	0.521	0.391	1.166	0.376	0.991	-	-	-	-	0.260	0.458	-2.356	2.810	-
250T300-54(S)	2.698	3.000	0.0566	50	65	0.480	1.63	0.664	0.492	1.176	0.470	0.989	0.443	0.223	6.685	2563.020	0.513	0.599	-2.335	2.795	0.302
250T300-68(S)	2.750	3.000	0.0713	50	65	0.605	2.06	0.856	0.623	1.190	0.589	0.987	0.626	0.319	9.563	3199.210	1.025	0.773	-2.324	2.791	0.307

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

IRENE STEEL

3-1/2" STUD PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

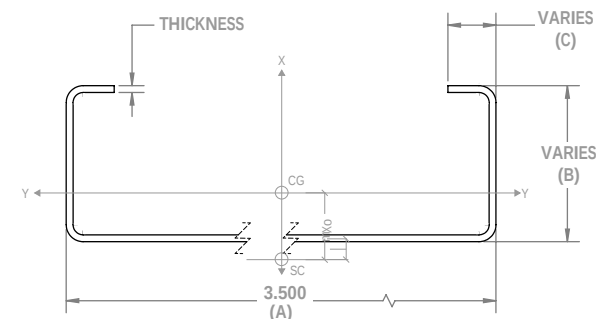
* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

CRC punchouts are min. 12" from leading edge
 CRC punchouts are min. 24" o.c.
 Use the effective moment of inertia for deflection calculations



Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 M_{da} = Allowable Distortional Buckling Moment at $K\phi = 0$
 V_{ag} = Allowable Shear Force in Web (Unpunched)
 V_{anet} = Allowable Shear Force in Web (Punched)

* Effective properties are for the members without punchouts. Allowable moment is the lesser of M_a and M_{da} .

* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

3-1/2" NON-STRUCTURAL STUD PROPERTIES

3-1/2" NON-STRUCTURAL STUD PROPERTIES							Gross Properties							Effective Properties						Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Lip Width (C) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	M _{da} (in-k)	V _{ag} (lb)	V _{anet} (lb)	Jx1000 (in ⁴)	C _w (in ⁶)	X _o (in)	R _o (in ⁶)	β
350S125-18	3.500	1.250	0.188	0.0188	33	33	0.115	0.39	0.215	0.123	1.366	0.021	0.423	0.197	0.087	1.723	1.467	179.560	158.620	0.014	0.050	-0.797	1.637	0.763
350S125-27	3.500	1.250	0.188	0.0283	33	33	0.173	0.59	0.320	0.183	1.361	0.030	0.418	0.313	0.155	3.059	2.648	614.240	358.570	0.046	0.073	-0.787	1.627	0.766
350S125-30	3.500	1.250	0.188	0.0312	33	33	0.190	0.65	0.351	0.201	1.359	0.033	0.417	0.346	0.174	3.444	3.045	823.810	435.500	0.062	0.079	-0.784	1.624	0.767

3-1/2" STRUCTURAL STUD PROPERTIES

3-1/2" STRUCTURAL STUD PROPERTIES							Gross Properties							Effective Properties							Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Lip Width (C) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	M _{da} (in-k)	V _{ag} (lb)	V _{anet} (lb)	Jx1000 (in ⁴)	C _w (in ⁶)	X _o (in)	R _o (in ⁶)	β	
350S162-33	3.500	1.625	0.500	0.0346	33	45	0.258	0.88	0.508	0.291	1.404	0.098	0.617	0.508	0.279	5.505	5.218	1023.580	487.000	0.103	0.277	-1.324	2.026	0.573	
350S162-43	3.500	1.625	0.500	0.0451	33	45	0.334	1.14	0.654	0.374	1.400	0.125	0.612	0.654	0.374	7.390	7.313	1739.090	631.040	0.227	0.350	-1.312	2.014	0.575	
350S162-54	3.500	1.625	0.500	0.0566	50	65	0.415	1.41	0.804	0.460	1.393	0.152	0.606	0.804	0.447	13.370	13.047	3371.560	947.020	0.443	0.426	-1.298	1.998	0.578	
350S162-68	3.500	1.625	0.500	0.0713	50	65	0.515	1.75	0.985	0.563	1.383	0.184	0.597	0.985	0.563	16.844	16.844	4202.470	896.930	0.872	0.514	-1.280	1.977	0.581	
350S200-33	3.500	2.000	0.625	0.0346	33	45	0.292	0.99	0.598	0.342	1.431	0.175	0.773	0.593	0.306	6.051	5.948	1023.580	487.000	0.117	0.541	-1.760	2.396	0.461	
350S200-43	3.500	2.000	0.625	0.0451	33	45	0.379	1.29	0.771	0.441	1.426	0.224	0.768	0.771	0.428	8.459	8.360	1739.090	631.040	0.257	0.687	-1.748	2.383	0.462	
350S200-54	3.500	2.000	0.625	0.0566	50	65	0.471	1.60	0.950	0.543	1.420	0.274	0.762	0.950	0.494	14.800	14.863	3371.560	947.020	0.503	0.838	-1.733	2.367	0.464	
350S200-68	3.500	2.000	0.625	0.0713	50	65	0.586	1.99	1.167	0.667	1.411	0.333	0.754	1.167	0.653	19.551	19.678	4202.470	896.930	0.993	1.018	-1.715	2.345	0.465	
350S250-43	3.500	2.500	0.625	0.0451	33	45	0.424	1.44	0.906	0.518	1.461	0.380	0.946	0.906	0.455	8.981	9.004	1739.090	631.040	0.288	1.151	-2.220	2.821	0.381	
350S250-54	3.500	2.500	0.625	0.0566	50	65	0.528	1.80	1.118	0.639	1.455	0.467	0.940	1.107	0.524	15.676	15.918	3371.560	947.020	0.564	1.409	-2.205	2.804	0.382	
350S250-68	3.500	2.500	0.625	0.0713	50	65	0.657	2.24	1.376	0.787	1.447	0.570	0.931	1.376	0.683	20.443	21.311	4202.470	896.930	1.114	1.718	-2.186	2.782	0.383	

3-1/2" NON-STRUCTURAL TRACK PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

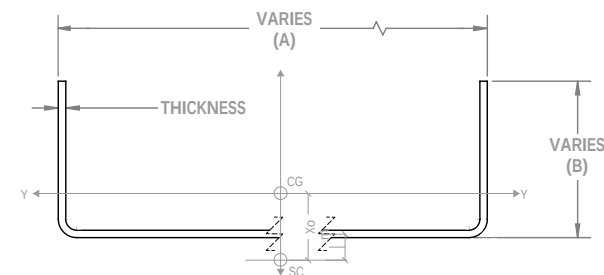
* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



3-1/2" NON-STRUCTURAL TRACK PROPERTIES

Member	Gross Properties												Effective Properties				Torsional Properties				
	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I_x (in ⁴)	S_x (in ³)	R_x (in)	I_y (in ⁴)	R_y (in)	I_{xe} (in ⁴)	S_{xe} (in ³)	M_a (in-k)	V_{ag} (lb)	$J \times 1000$ (in ⁴)	C_w (in ⁴)	X_o (in ⁴)	R_o (in ⁴)	β
350T125-18(S) ³	3.622	1.250	0.0188	33	33	0.113	0.38	0.220	0.121	1.395	0.017	0.382	-	-	-	-	0.013	0.037	-0.683	1.600	-
350T125-27(S)	3.636	1.250	0.0283	33	33	0.170	0.58	0.331	0.182	1.396	0.025	0.381	0.278	0.128	2.529	589.790	0.045	0.057	-0.671	1.595	0.823
350T125-30(S)	3.641	1.250	0.0312	33	33	0.187	0.64	0.365	0.200	1.396	0.027	0.380	0.313	0.145	2.862	789.980	0.061	0.063	-0.669	1.594	0.824
350T150-18(S) ³	3.622	1.500	0.0188	33	33	0.122	0.42	0.250	0.138	1.431	0.027	0.472	-	-	-	-	0.014	0.061	-0.883	1.746	-
350T150-27(S)	3.636	1.500	0.0283	33	33	0.184	0.63	0.377	0.207	1.432	0.041	0.470	0.298	0.132	2.617	589.790	0.049	0.094	-0.869	1.739	0.751
350T150-30(S)	3.641	1.500	0.0312	33	33	0.203	0.69	0.416	0.228	1.432	0.045	0.470	0.336	0.150	2.964	789.980	0.066	0.103	-0.868	1.739	0.751
350T200-18(S) ³	3.622	2.000	0.0188	33	33	0.141	0.48	0.311	0.172	1.485	0.060	0.649	-	-	-	-	0.017	0.133	-1.304	2.080	-
350T200-27(S) ³	3.636	2.000	0.0283	33	33	0.212	0.72	0.469	0.258	1.487	0.089	0.648	-	-	-	-	0.057	0.199	-1.299	2.078	-
350T200-30(S) ³	3.641	2.000	0.0312	33	33	0.234	0.80	0.517	0.284	1.487	0.098	0.647	-	-	-	-	0.076	0.219	-1.298	2.077	-
350T250-18(S) ³	3.622	2.500	0.0188	33	33	0.160	0.54	0.372	0.206	1.526	0.109	0.824	-	-	-	-	0.019	0.243	-1.745	2.460	-
350T250-27(S) ³	3.636	2.500	0.0283	33	33	0.241	0.82	0.561	0.309	1.527	0.163	0.822	-	-	-	-	0.064	0.365	-1.740	2.457	-
350T250-30(S) ³	3.641	2.500	0.0312	33	33	0.265	0.90	0.619	0.340	1.528	0.179	0.822	-	-	-	-	0.086	0.403	-1.738	2.456	-
350T300-18(S) ³	3.622	3.000	0.0188	33	33	0.179	0.61	0.433	0.239	1.557	0.177	0.995	-	-	-	-	0.021	0.400	-2.199	2.873	-
350T300-27(S) ³	3.636	3.000	0.0283	33	33	0.269	0.91	0.653	0.359	1.559	0.265	0.994	-	-	-	-	0.072	0.601	-2.194	2.869	-
350T300-30(S) ³	3.641	3.000	0.0312	33	33	0.296	1.01	0.721	0.396	1.560	0.292	0.993	-	-	-	-	0.096	0.663	-2.192	2.868	-

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

3-1/2" STRUCTURAL TRACK PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

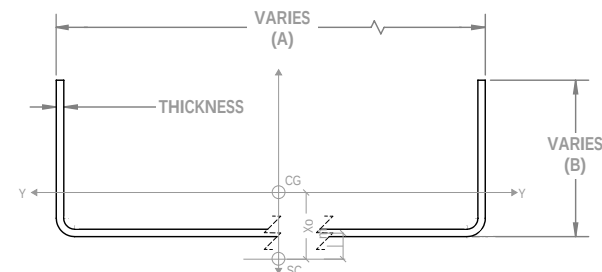
* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

3-1/2" STRUCTURAL TRACK PROPERTIES

Member	Gross Properties											Effective Properties					Torsional Properties				
	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength F _y (ksi)	Ult Strength F _u (ksi)	Area (in ²)	Weight (lb/ft)	I_x (in ⁴)	S_x (in ³)	R_x (in)	I_y (in ⁴)	R_y (in)	I_{xe} (in ⁴)	S_{xe} (in ³)	M_a (in-k)	V_{ag} (lb)	$J \times 1000$ (in ⁴)	C_w (in ⁴)	X_o (in ⁴)	R_o (in ⁴)	β
350T125-33(S)	3.646	1.250	0.0346	33	45	0.208	0.71	0.405	0.222	1.397	0.030	0.379	0.355	0.165	3.267	1023.580	0.083	0.070	-0.668	1.594	0.824
350T125-43(S)	3.661	1.250	0.0451	33	45	0.270	0.92	0.528	0.288	1.398	0.039	0.377	0.490	0.233	4.605	1739.090	0.183	0.090	-0.663	1.592	0.827
350T125-54(S)	3.698	1.250	0.0566	50	65	0.339	1.15	0.668	0.361	1.404	0.048	0.375	0.626	0.297	8.895	3371.560	0.362	0.114	-0.658	1.595	0.830
350T125-68(S)	3.750	1.250	0.0713	50	65	0.427	1.45	0.851	0.454	1.412	0.059	0.372	0.839	0.407	12.184	4536.080	0.723	0.144	-0.650	1.599	0.835
350T150-33(S)	3.646	1.500	0.0346	33	45	0.225	0.76	0.461	0.253	1.432	0.049	0.469	0.382	0.172	3.388	1023.580	0.090	0.114	-0.866	1.738	0.752
350T150-43(S)	3.661	1.500	0.0451	33	45	0.293	1.00	0.601	0.329	1.433	0.064	0.467	0.531	0.243	4.798	1739.090	0.199	0.148	-0.861	1.736	0.754
350T150-54(S)	3.698	1.500	0.0566	50	65	0.367	1.25	0.761	0.412	1.440	0.079	0.465	0.679	0.310	9.278	3371.560	0.392	0.187	-0.855	1.738	0.758
350T150-68(S)	3.750	1.500	0.0713	50	65	0.462	1.57	0.972	0.518	1.450	0.099	0.462	0.919	0.428	12.810	4536.080	0.784	0.238	-0.847	1.741	0.763
350T200-33(S)	3.646	2.000	0.0346	33	45	0.259	0.88	0.574	0.315	1.487	0.108	0.647	0.428	0.181	3.573	1023.580	0.104	0.249	-1.285	2.069	0.614
350T200-43(S)	3.661	2.000	0.0451	33	45	0.338	1.15	0.749	0.409	1.489	0.140	0.645	0.601	0.257	5.086	1739.090	0.229	0.323	-1.280	2.067	0.616
350T200-54(S)	3.698	2.000	0.0566	50	65	0.424	1.44	0.949	0.513	1.497	0.175	0.642	0.770	0.329	9.848	3371.560	0.453	0.409	-1.273	2.067	0.621
350T200-68(S)	3.750	2.000	0.0713	50	65	0.534	1.82	1.213	0.647	1.508	0.218	0.639	1.054	0.458	13.714	4536.080	0.904	0.522	-1.265	2.069	0.627
350T250-33(S) ³	3.646	2.500	0.0346	33	45	0.294	1.00	0.687	0.377	1.529	0.198	0.821	-	-	-	-	0.117	0.446	-1.737	2.455	-
350T250-43(S)	3.661	2.500	0.0451	33	45	0.383	1.30	0.896	0.490	1.530	0.257	0.819	0.659	0.268	5.294	1739.090	0.260	0.593	-1.719	2.443	0.505
350T250-54(S)	3.698	2.500	0.0566	50	65	0.480	1.63	1.137	0.615	1.538	0.321	0.817	0.846	0.343	10.260	3371.560	0.513	0.752	-1.712	2.442	0.509
350T250-68(S)	3.750	2.500	0.0713	50	65	0.605	2.06	1.454	0.776	1.550	0.401	0.814	1.168	0.479	14.352	4536.080	1.025	0.961	-1.703	2.443	0.514
350T300-33(S) ³	3.646	3.000	0.0346	33	45	0.329	1.12	0.800	0.439	1.560	0.324	0.993	-	-	-	-	0.131	0.735	-2.191	2.867	-
350T300-43(S) ³	3.661	3.000	0.0451	33	45	0.428	1.45	1.044	0.570	1.562	0.420	0.991	-	-	-	-	0.290	0.956	-2.185	2.863	-
350T300-54(S)	3.698	3.000	0.0566	50	65	0.537	1.83	1.324	0.716	1.570	0.525	0.989	0.912	0.353	10.575	3371.560	0.573	1.238	-2.165	2.851	0.424
350T300-68(S)	3.750	3.000	0.0713	50	65	0.676	2.30	1.695	0.904	1.583	0.657	0.986	1.265	0.496	14.834	4536.080	1.146	1.585	-2.155	2.850	0.428

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

IRENE STEEL

3-5/8" STUD PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

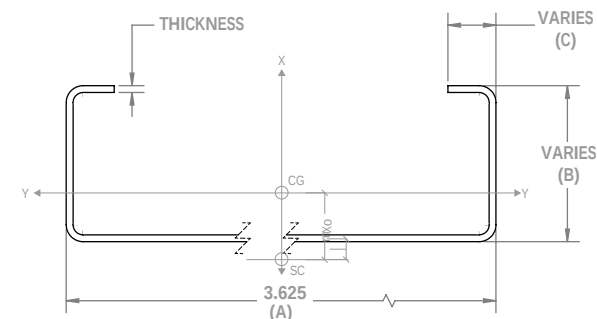
* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

CRC punchouts are min. 12" from leading edge
 CRC punchouts are min. 24" o.c.
 Use the effective moment of inertia for deflection calculations



Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 M_{da} = Allowable Distortional Buckling Moment at $K\phi = 0$
 V_{ag} = Allowable Shear Force in Web (Unpunched)
 V_{anet} = Allowable Shear Force in Web (Punched)

* Effective properties are for the members without punchouts. Allowable moment is the lesser of M_a and M_{da} .

* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

3-5/8" NON-STRUCTURAL STUD PROPERTIES

3-5/8" NON-STRUCTURAL STUD PROPERTIES							Gross Properties							Effective Properties						Torsional Properties					
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Lip Width (C) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _s (in-k)	M _{da} (in-k)	V _{ag} (lb)	V _{anet} (lb)	Jx1000 (in ⁴)	C _w (in ⁶)	X _o (in)	R _o (in ⁶)	β	
362S125-18	3.625	1.250	0.188	0.0188	33	33	0.118	0.40	0.234	0.129	1.409	0.021	0.421	0.215	0.090	1.782	1.522	172.990	163.470	0.014	0.539	-0.786	1.667	0.777	
362S125-27	3.625	1.250	0.188	0.0283	33	33	0.176	0.60	0.347	0.192	1.404	0.031	0.416	0.340	0.163	3.214	2.752	591.720	369.620	0.047	0.079	-0.776	1.657	0.781	
362S125-30	3.625	1.250	0.188	0.0312	33	33	0.194	0.66	0.381	0.210	1.402	0.033	0.415	0.375	0.183	3.618	3.166	793.580	448.960	0.063	0.086	-0.773	1.654	0.782	

3-5/8" STRUCTURAL STUD PROPERTIES

3-5/8" STRUCTURAL STUD PROPERTIES							Gross Properties							Effective Properties						Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Lip Width (C) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	M _{da} (in-k)	V _{ag} (lb)	V _{anet} (lb)	Jx1000 (in ⁴)	C _w (in ⁶)	X _o (in)	R _o (in ⁶)	β
362S162-33	3.625	1.625	0.5	0.0346	33	45	0.262	0.89	0.551	0.304	1.450	0.099	0.616	0.551	0.292	5.766	5.429	1023.580	521.240	0.105	0.297	-1.308	2.048	0.592
362S162-43	3.625	1.625	0.5	0.0451	33	45	0.340	1.16	0.710	0.392	1.445	0.127	0.611	0.710	0.392	7.738	7.619	1739.090	675.670	0.230	0.376	-1.297	2.036	0.594
362S162-54	3.625	1.625	0.5	0.0566	50	65	0.422	1.44	0.873	0.482	1.438	0.154	0.604	0.873	0.468	14.004	13.593	3371.560	1015.970	0.451	0.457	-1.283	2.020	0.597
362S162-68	3.625	1.625	0.5	0.0713	50	65	0.524	1.78	1.069	0.590	1.429	0.186	0.596	1.069	0.590	17.653	17.653	4369.580	1003.530	0.887	0.552	-1.264	1.998	0.600
362S200-33	3.625	2.000	0.625	0.0346	33	45	0.297	1.01	0.648	0.358	1.478	0.177	0.772	0.642	0.321	6.336	6.185	1023.580	521.240	0.118	0.577	-1.741	2.411	0.479
362S200-43	3.625	2.000	0.625	0.0451	33	45	0.385	1.31	0.836	0.461	1.474	0.227	0.767	0.836	0.448	8.853	8.702	1739.090	675.670	0.261	0.734	-1.729	2.398	0.480
362S200-54	3.625	2.000	0.625	0.0566	50	65	0.479	1.63	1.030	0.568	1.467	0.277	0.761	1.030	0.517	15.492	15.472	3371.560	1015.970	0.511	0.896	-1.715	2.382	0.482
362S200-68	3.625	2.000	0.625	0.0713	50	65	0.595	2.02	1.265	0.698	1.458	0.337	0.753	1.265	0.684	20.466	20.510	4369.580	1003.530	1.008	1.089	-1.696	2.360	0.484
362S250-43	3.625	2.500	0.625	0.0451	33	45	0.430	1.46	0.980	0.541	1.510	0.385	0.946	0.980	0.475	9.392	9.355	1739.090	675.670	0.292	1.230	-2.199	2.830	0.396
362S250-54	3.625	2.500	0.625	0.0566	50	65	0.535	1.82	1.210	0.668	1.504	0.473	0.940	1.198	0.548	16.402	16.541	3371.560	1015.970	0.571	1.506	-2.184	2.813	0.397
362S250-68	3.625	2.500	0.625	0.0713	50	65	0.666	2.27	1.491	0.822	1.496	0.578	0.931	1.491	0.714	21.384	22.168	4369.580	1003.530	1.129	1.837	-2.165	2.791	0.398
362S300-54	3.625	3.000	0.625	0.0566	50	65	0.592	2.01	1.390	0.767	1.533	0.734	1.114	1.295	0.568	16.999	17.341	3371.560	1015.970	0.632	2.316	-2.659	3.265	0.337
362S300-68	3.625	3.000	0.625	0.0713	50	65	0.738	2.51	1.716	0.947	1.525	0.900	1.105	1.681	0.747	22.368	23.418	4369.580	1003.530	1.250	2.833	-2.640	3.243	0.337

3-5/8" NON-STRUCTURAL TRACK PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

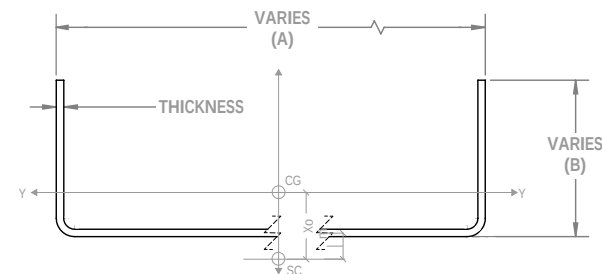
* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



3-5/8" NON-STRUCTURAL TRACK PROPERTIES

Member	Gross Properties												Effective Properties				Torsional Properties				
	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength F _y (ksi)	Ult Strength F _u (ksi)	Area (in ²)	Weight (lb/ft)	I_x (in ⁴)	S_x (in ³)	R_x (in)	I_y (in ⁴)	R_y (in)	I_{xe} (in ⁴)	S_{xe} (in ³)	M_a (in-k)	V_{ag} (lb)	$J \times 1000$ (in ⁴)	C_w (in ⁴)	X_o (in ⁴)	R_o (in ⁴)	β
362T125-18(S) ³	3.747	1.250	0.0188	33	33	0.115	0.39	0.238	0.127	1.437	0.017	0.380	-	-	-	-	0.014	0.040	-0.673	1.632	-
362T125-27(S)	3.761	1.250	0.0283	33	33	0.173	0.59	0.358	0.191	1.438	0.025	0.378	0.301	0.135	2.664	568.990	0.046	0.062	-0.661	1.627	0.835
362T125-30(S)	3.766	1.250	0.0312	33	33	0.191	0.65	0.395	0.210	1.438	0.027	0.378	0.339	0.153	3.013	762.140	0.062	0.068	-0.659	1.627	0.836
362T150-18(S) ³	3.747	1.500	0.0188	33	33	0.125	0.42	0.271	0.144	1.474	0.028	0.470	-	-	-	-	0.015	0.066	-0.871	1.775	-
362T150-27(S)	3.761	1.500	0.0283	33	33	0.188	0.64	0.408	0.217	1.475	0.041	0.468	0.323	0.140	2.757	568.990	0.050	0.102	-0.857	1.769	0.765
362T150-30(S)	3.766	1.500	0.0312	33	33	0.207	0.70	0.449	0.239	1.475	0.045	0.467	0.364	0.158	3.121	762.140	0.067	0.112	-0.856	1.768	0.766
362T200-18(S) ³	3.747	2.000	0.0188	33	33	0.143	0.49	0.336	0.179	1.530	0.060	0.648	-	-	-	-	0.017	0.144	-1.289	2.103	-
362T200-27(S) ³	3.761	2.000	0.0283	33	33	0.216	0.73	0.506	0.269	1.532	0.090	0.646	-	-	-	-	0.058	0.216	-1.284	2.101	-
362T200-30(S) ³	3.766	2.000	0.0312	33	33	0.238	0.81	0.558	0.297	1.532	0.099	0.645	-	-	-	-	0.077	0.237	-1.283	2.100	-
362T250-18(S) ³	3.747	2.500	0.0188	33	33	0.162	0.55	0.401	0.214	1.573	0.110	0.823	-	-	-	-	0.019	0.263	-1.728	2.477	-
362T250-27(S) ³	3.761	2.500	0.0283	33	33	0.244	0.83	0.605	0.322	1.574	0.165	0.821	-	-	-	-	0.065	0.395	-1.723	2.474	-
362T250-30(S) ³	3.766	2.500	0.0312	33	33	0.269	0.91	0.667	0.354	1.575	0.181	0.820	-	-	-	-	0.087	0.436	-1.721	2.473	-
362T300-18(S) ³	3.747	3.000	0.0188	33	33	0.181	0.62	0.467	0.249	1.606	0.179	0.994	-	-	-	-	0.021	0.433	-2.180	2.884	-
362T300-27(S) ³	3.761	3.000	0.0283	33	33	0.272	0.93	0.703	0.374	1.607	0.268	0.993	-	-	-	-	0.073	0.650	-2.175	2.880	-
362T300-30(S) ³	3.766	3.000	0.0312	33	33	0.300	1.02	0.776	0.412	1.608	0.296	0.992	-	-	-	-	0.097	0.717	-2.173	2.879	-

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

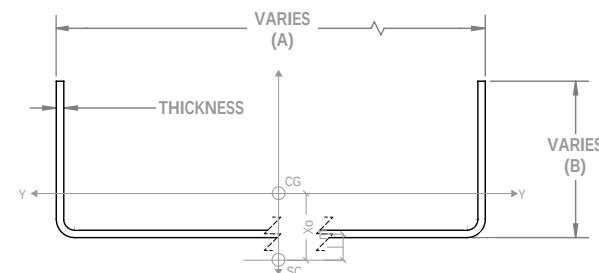
Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



3-5/8" STANDARD STRUCTURAL TRACK PROPERTIES

3-5/8" STANDARD STRUCTURAL TRACK PROPERTIES						Gross Properties						Effective Properties				Torsional Properties					
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	V _{ag} (lb)	Jx1000 (in ⁴)	C _w (in ⁴)	X _o (in ⁴)	R _o (in ⁴)	β
362T125-33(S)	3.771	1.250	0.0346	33	45	0.212	0.72	0.438	0.232	1.438	0.030	0.377	0.385	0.174	3.437	1023.580	0.085	0.076	-0.658	1.626	0.836
362T125-43(S)	3.786	1.250	0.0451	33	45	0.276	0.94	0.571	0.302	1.439	0.039	0.375	0.531	0.245	4.839	1739.090	0.187	0.098	-0.654	1.625	0.838
362T125-54(S)	3.823	1.250	0.0566	50	65	0.346	1.18	0.723	0.378	1.445	0.048	0.373	0.678	0.312	9.342	3371.560	0.370	0.123	-0.648	1.627	0.841
362T125-68(S)	3.875	1.250	0.0713	50	65	0.436	1.48	0.921	0.475	1.454	0.060	0.370	0.907	0.427	12.777	4703.190	0.738	0.156	-0.641	1.631	0.846
362T150-33(S)	3.771	1.500	0.0346	33	45	0.229	0.78	0.499	0.264	1.475	0.050	0.467	0.414	0.180	3.565	1023.580	0.091	0.124	-0.854	1.767	0.766
362T150-43(S)	3.786	1.500	0.0451	33	45	0.298	1.02	0.650	0.344	1.476	0.064	0.465	0.574	0.255	5.041	1739.090	0.202	0.160	-0.850	1.766	0.768
362T150-54(S)	3.823	1.500	0.0566	50	65	0.374	1.27	0.823	0.431	1.483	0.080	0.462	0.735	0.325	9.743	3371.560	0.400	0.202	-0.844	1.768	0.772
362T150-68(S)	3.875	1.500	0.0713	50	65	0.471	1.60	1.050	0.542	1.492	0.100	0.459	0.993	0.449	13.429	4703.190	0.799	0.257	-0.836	1.771	0.777
362T189-33(S)	3.771	1.890	0.0346	33	45	0.256	0.87	0.593	0.314	1.521	0.094	0.606	0.454	0.188	3.722	1023.580	0.102	0.231	-1.177	2.017	0.660
362T189-43(S)	3.786	1.890	0.0451	33	45	0.334	1.14	0.773	0.409	1.523	0.122	0.604	0.634	0.267	5.285	1739.090	0.226	0.300	-1.172	2.014	0.662
362T189-54(S)	3.823	1.890	0.0566	50	65	0.418	1.42	0.980	0.512	1.530	0.151	0.602	0.812	0.342	10.227	3371.560	0.447	0.379	-1.165	2.015	0.666
362T189-68(S)	3.875	1.890	0.0713	50	65	0.527	1.79	1.251	0.646	1.541	0.189	0.599	1.108	0.474	14.195	4703.130	0.893	0.483	-1.157	2.017	0.671
362T200-33(S)	3.771	2.000	0.0346	33	45	0.264	0.90	0.619	0.329	1.533	0.110	0.645	0.464	0.190	3.760	1023.580	0.105	0.269	-1.270	2.092	0.631
362T200-43(S)	3.786	2.000	0.0451	33	45	0.344	1.17	0.808	0.427	1.534	0.142	0.643	0.649	0.270	5.343	1739.090	0.233	0.350	-1.265	2.090	0.633
362T200-54(S)	3.823	2.000	0.0566	50	65	0.431	1.47	1.024	0.536	1.541	0.177	0.641	0.832	0.345	10.341	3371.560	0.460	0.442	-1.259	2.091	0.638
362T200-68(S)	3.875	2.000	0.0713	50	65	0.543	1.85	1.307	0.675	1.552	0.221	0.638	1.138	0.480	14.374	4703.190	0.919	0.564	-1.250	2.093	0.643
362T239-33(S) ³	3.771	2.390	0.0346	33	45	0.291	0.99	0.714	0.378	1.567	0.178	0.782	-	-	-	-	0.116	0.427	-1.622	2.386	-
362T239-43(S)	3.786	2.390	0.0451	33	45	0.379	1.29	0.931	0.492	1.568	0.230	0.780	0.700	0.279	5.519	1739.090	0.257	0.567	-1.605	2.375	0.544
362T239-54(S)	3.823	2.390	0.0566	50	65	0.475	1.62	1.180	0.618	1.576	0.287	0.777	0.897	0.357	10.690	3371.560	0.507	0.718	-1.598	2.375	0.548
362T239-68(S)	3.875	2.390	0.0713	50	65	0.598	2.04	1.509	0.779	1.588	0.359	0.775	1.234	0.498	14.913	4703.130	1.014	0.918	-1.589	2.376	0.553
362T250-33(S) ³	3.771	2.500	0.0346	33	45	0.298	1.01	0.740	0.393	1.575	0.201	0.820	-	-	-	-	0.119	0.483	-1.719	2.472	-
362T250-43(S)	3.786	2.500	0.0451	33	45	0.389	1.32	0.966	0.510	1.577	0.260	0.818	0.713	0.282	5.562	1739.090	0.264	0.641	-1.702	2.460	0.521
362T250-54(S)	3.823	2.500	0.0566	50	65	0.488	1.66	1.225	0.641	1.585	0.324	0.816	0.914	0.360	10.775	3371.560	0.521	0.812	-1.695	2.460	0.525
362T250-68(S)	3.875	2.500	0.0713	50	65	0.614	2.09	1.565	0.808	1.597	0.406	0.813	1.259	0.503	15.044	4703.190	1.040	1.038	-1.686	2.460	0.531
362T289-33(S) ³	3.771	2.890	0.0346	33	45	0.325	1.11	0.834	0.443	1.602	0.296	0.954	-	-	-	-	0.130	0.717	-2.071	2.786	-
362T289-43(S) ³	3.786	2.890	0.0451	33	45	0.424	1.44	1.089	0.575	1.603	0.384	0.952	-	-	-	-	0.287	0.933	-2.065	2.783	-
362T289-54(S)	3.823	2.890	0.0566	50	65	0.532	1.81	1.381	0.723	1.612	0.480	0.950	0.970	0.369	11.041	3371.560	0.568	1.207	-2.046	2.772	0.456
362T289-68(S)	3.875	2.890	0.0713	50	65	0.670	2.28	1.766	0.912	1.624	0.601	0.947	1.342	0.516	15.450	4703.130	1.135	1.544	-2.036	2.771	0.460
362T300-33(S) ³	3.771	3.000	0.0346	33	45	0.333	1.13	0.861	0.457	1.608	0.327	0.992	-	-	-	-	0.133	0.795	-2.171	2.878	-
362T300-43(S) ³	3.786	3.000	0.0451	33	45	0.434	1.47	1.124	0.594	1.610	0.425	0.990	-	-	-	-	0.294	1.034	-2.166	2.874	-
362T300-54(S)	3.823	3.000	0.0566	50	65	0.544	1.85	1.425	0.746	1.619	0.531	0.988	0.985	0.371	11.108	3371.560	0.581	1.337	-2.146	2.863	0.439
362T300-68(S)	3.875	3.000	0.0713	50	65	0.685	2.33	1.823	0.941	1.631	0.665	0.985	1.364	0.519	15.551	4703.190	1.161	1.711	-2.136	2.862	0.443

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

3-5/8" NARROW STRUCTURAL TRACK PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

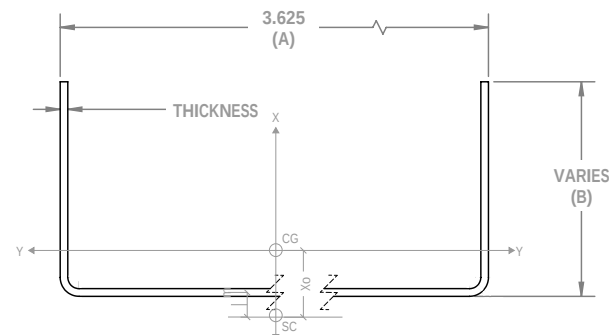
* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



3-5/8" NARROW STRUCTURAL TRACK PROPERTIES

Member	Gross Properties											Effective Properties				Torsional Properties					
	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I_x (in ⁴)	S_x (in ³)	R_x (in)	I_y (in ⁴)	R_y (in)	I_{xe} (in ⁴)	S_{xe} (in ³)	M_a (in-k)	V_{ag} (lb)	$J \times 1000$ (in ⁴)	C_w (in ⁴)	X_o (in ⁴)	R_o (in ⁴)	β
362T125-33(N)	3.625	1.250	0.0346	33	45	0.207	0.70	0.399	0.220	1.390	0.030	0.380	0.350	0.164	3.238	1023.500	0.083	0.069	-0.670	1.588	0.822
362T125-43(N)	3.625	1.250	0.0451	33	45	0.269	0.91	0.516	0.284	1.385	0.038	0.378	0.478	0.230	4.539	1739.090	0.182	0.088	-0.666	1.583	0.823
362T125-54(N)	3.625	1.250	0.0566	50	65	0.335	1.14	0.637	0.351	1.379	0.047	0.376	0.597	0.289	8.637	3371.560	0.358	0.109	-0.664	1.576	0.823
362T125-68(N)	3.625	1.250	0.0713	50	65	0.418	1.42	0.785	0.433	1.371	0.059	0.374	0.773	0.388	11.602	4368.910	0.708	0.133	-0.660	1.567	0.822
362T150-33(N)	3.625	1.500	0.0346	33	45	0.224	0.76	0.455	0.251	1.425	0.049	0.469	0.376	0.170	3.359	1023.580	0.089	0.113	-0.868	1.733	0.749
362T150-43(N)	3.625	1.500	0.0451	33	45	0.291	0.99	0.588	0.324	1.421	0.064	0.468	0.518	0.239	4.729	1739.090	0.197	0.145	-0.865	1.728	0.750
362T150-54(N)	3.625	1.500	0.0566	50	65	0.363	1.24	0.727	0.401	1.415	0.079	0.466	0.648	0.301	9.011	3371.560	0.388	0.178	-0.862	1.721	0.749
362T150-68(N)	3.625	1.500	0.0713	50	65	0.453	1.54	0.897	0.495	1.407	0.098	0.464	0.848	0.408	12.203	4368.910	0.768	0.220	-0.859	1.712	0.748
362T199-33(N)	3.625	1.990	0.0346	33	45	0.258	0.88	0.564	0.311	1.479	0.107	0.643	0.422	0.179	3.539	1023.580	0.103	0.242	-1.279	2.058	0.614
362T199-43(N)	3.625	1.990	0.0451	33	45	0.335	1.14	0.729	0.402	1.475	0.138	0.642	0.586	0.253	5.008	1739.090	0.227	0.312	-1.276	2.053	0.614
362T199-54(N)	3.625	1.990	0.0566	50	65	0.419	1.42	0.903	0.498	1.469	0.171	0.640	0.733	0.319	9.556	3371.560	0.447	0.385	-1.273	2.047	0.613
362T199-68(N)	3.625	1.990	0.0713	50	65	0.523	1.78	1.118	0.617	1.462	0.213	0.638	0.972	0.436	13.052	4368.910	0.887	0.475	-1.271	2.039	0.612
362T249-33(N) ³	3.625	2.490	0.0346	33	45	0.293	0.99	0.676	0.373	1.520	0.196	0.818	-	-	-	-	0.117	0.435	-1.731	2.444	-
362T249-43(N)	3.625	2.490	0.0451	33	45	0.380	1.29	0.874	0.482	1.516	0.253	0.816	0.643	0.264	5.214	1739.090	0.258	0.573	-1.715	2.430	0.502
362T249-54(N)	3.625	2.490	0.0566	50	65	0.475	1.62	1.084	0.598	1.510	0.315	0.814	0.806	0.333	9.957	3371.560	0.507	0.710	-1.713	2.425	0.501
362T249-68(N)	3.625	2.490	0.0713	50	65	0.595	2.02	1.343	0.741	1.503	0.392	0.812	1.078	0.456	13.662	4368.910	1.008	0.878	-1.711	2.418	0.499
362T299-33(N) ³	3.625	2.990	0.0346	33	45	0.327	1.11	0.787	0.434	1.551	0.320	0.989	-	-	-	-	0.131	0.719	-2.185	2.856	-
362T299-43(N) ³	3.625	2.990	0.0451	33	45	0.425	1.45	1.018	0.562	1.547	0.415	0.988	-	-	-	-	0.289	0.926	-2.182	2.851	-
362T299-54(N)	3.625	2.990	0.0566	50	65	0.532	1.81	1.264	0.697	1.542	0.517	0.986	0.869	0.343	10.263	3371.560	0.568	1.172	-2.167	2.836	0.416
362T299-68(N)	3.625	2.990	0.0713	50	65	0.666	2.27	1.568	0.865	1.535	0.644	0.983	1.169	0.472	14.122	4368.910	1.128	1.452	-2.165	2.830	0.415

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

IRENE STEEL

4" STUD PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

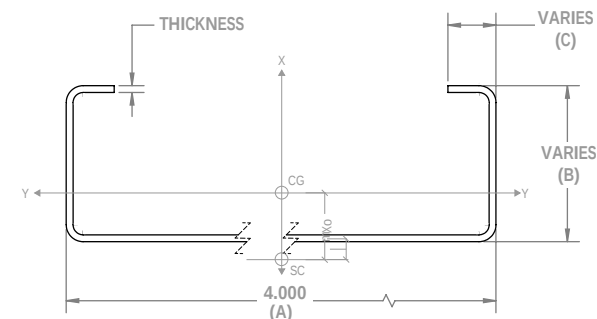
* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

CRC punchouts are min. 12" from leading edge
 CRC punchouts are min. 24" o.c.
 Use the effective moment of inertia for deflection calculations



Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 M_{da} = Allowable Distortional Buckling Moment at $K\phi = 0$
 V_{ag} = Allowable Shear Force in Web (Unpunched)
 V_{anet} = Allowable Shear Force in Web (Punched)

* Effective properties are for the members without punchouts. Allowable moment is the lesser of M_a and M_{da} .

* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

4" NON-STRUCTURAL STUD PROPERTIES

4" NON-STRUCTURAL STUD PROPERTIES							Gross Properties							Effective Properties						Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Lip Width (C) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	M _{da} (in-k)	V _{ag} (lb)	V _{anet} (lb)	Jx1000 (in ⁴)	C _w (in ⁶)	X _o (in)	R _o (in ⁶)	β
400S125-18 ¹	4.000	1.250	0.188	0.0188	33	33	0.125	0.42	0.294	0.147	1.536	0.021	0.414	0.273	0.099	1.961	1.684	155.890	155.890	0.015	0.068	-0.754	1.760	0.817
400S125-27	4.000	1.250	0.188	0.0283	33	33	0.187	0.64	0.438	0.219	1.531	0.031	0.410	0.428	0.187	3.698	3.064	533.090	398.400	0.050	0.098	-0.744	1.751	0.819
400S125-30	4.000	1.250	0.188	0.0312	33	33	0.206	0.70	0.481	0.240	1.529	0.034	0.409	0.473	0.210	4.158	3.531	714.880	483.990	0.067	0.107	-0.741	1.748	0.820

¹ WEB HEIGHT-TO-THICKNESS RATIO (h/t) EXCEEDS 200 BUT IS LESS THAN 260. WEB MUST HAVE BEARING STIFFENERS AT ALL SUPPORT POINTS AND CONCENTRATED LOADS IN ACCORDANCE WITH AISI 100. NO HOLES OR POST ROLL TREATMENTS ARE PERMITTED IN THE WEB AT THESE LOCATIONS.

4" STRUCTURAL STUD PROPERTIES

4" STRUCTURAL STUD PROPERTIES							Gross Properties							Effective Properties						Torsional Properties					
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Lip Width (C) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	M _{da} (in-k)	V _{ag} (lb)	V _{anet} (lb)	Jx1000 (in ⁴)	C _w (in ⁶)	X _o (in)	R _o (in ⁶)	β	
400S162-33	4.000	1.625	0.5	0.0346	33	45	0.275	0.94	0.692	0.346	1.586	0.103	0.611	0.692	0.333	6.569	6.066	975.860	594.870	0.110	0.363	-1.263	2.118	0.644	
400S162-43	4.000	1.625	0.5	0.0451	33	45	0.357	1.21	0.892	0.446	1.581	0.131	0.606	0.892	0.446	8.812	8.544	1739.090	809.560	0.242	0.460	-1.252	2.106	0.647	
400S162-54	4.000	1.625	0.5	0.0566	50	65	0.443	1.51	1.098	0.549	1.574	0.159	0.600	1.097	0.533	15.961	15.248	3371.560	1222.800	0.473	0.560	-1.238	2.090	0.649	
400S162-68	4.000	1.625	0.5	0.0713	50	65	0.550	1.87	1.346	0.673	1.564	0.192	0.591	1.346	0.673	20.150	20.150	4870.900	1355.880	0.933	0.677	-1.220	2.069	0.653	
400S200-33	4.000	2.000	0.625	0.0346	33	45	0.310	1.05	0.812	0.406	1.619	0.183	0.769	0.804	0.365	7.212	6.899	975.860	594.870	0.124	0.697	-1.688	2.462	0.530	
400S200-43	4.000	2.000	0.625	0.0451	33	45	0.402	1.37	1.048	0.524	1.615	0.235	0.764	1.048	0.509	10.063	9.736	1739.090	809.560	0.272	0.886	-1.676	2.450	0.532	
400S200-54	4.000	2.000	0.625	0.0566	50	65	0.500	1.70	1.292	0.646	1.608	0.287	0.758	1.292	0.589	17.625	17.313	3371.560	1222.800	0.534	1.083	-1.662	2.433	0.534	
400S200-68	4.000	2.000	0.625	0.0713	50	65	0.622	2.12	1.589	0.795	1.599	0.349	0.750	1.589	0.778	23.282	23.034	4870.900	1355.880	1.054	1.318	-1.643	2.412	0.536	
400S250-43	4.000	2.500	0.625	0.0451	33	45	0.447	1.52	1.224	0.612	1.655	0.399	0.945	1.224	0.539	10.656	10.415	1739.090	809.560	0.303	1.486	-2.139	2.865	0.443	
400S250-54	4.000	2.500	0.625	0.0566	50	65	0.556	1.89	1.512	0.756	1.649	0.490	0.938	1.496	0.623	18.639	18.422	3371.560	1222.800	0.594	1.821	-2.124	2.848	0.444	
400S250-68	4.000	2.500	0.625	0.0713	50	65	0.693	2.36	1.864	0.932	1.640	0.599	0.929	1.864	0.811	24.278	24.763	4870.900	1355.880	1.174	2.225	-2.105	2.826	0.445	
400S300-54	4.000	3.000	0.625	0.0566	50	65	0.613	2.09	1.732	0.866	1.681	0.760	1.114	1.612	0.645	19.313	19.244	3371.560	1222.800	0.655	2.802	-2.594	3.285	0.377	
400S300-68	4.000	3.000	0.625	0.0713	50	65	0.764	2.60	2.140	1.070	1.673	0.933	1.105	2.093	0.848	25.384	26.055	4870.900	1355.880	1.295	3.433	-2.574	3.263	0.378	

4" NON-STRUCTURAL TRACK PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

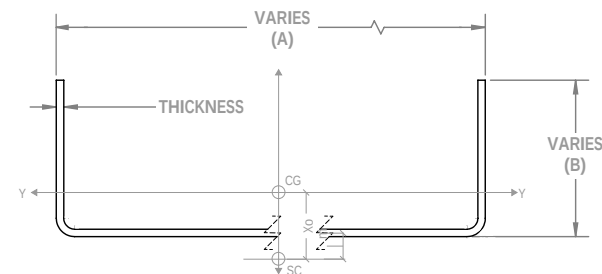
* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



4" NON-STRUCTURAL TRACK PROPERTIES

Member	Gross Properties												Effective Properties				Torsional Properties				
	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength F_y (ksi)	Ult Strength F_u (ksi)	Area (in ²)	Weight (lb/ft)	I_x (in ⁴)	S_x (in ³)	R_x (in)	I_y (in ⁴)	R_y (in)	I_{xe} (in ⁴)	S_{xe} (in ³)	M_a (in-k)	V_{ag} (lb)	$J \times 1000$ (in ⁴)	C_w (in ⁴)	X_o (in ⁴)	R_o (in ⁴)	β
400T125-18(S) ^{1,3}	4.122	1.250	0.0188	33	33	0.122	0.42	0.298	0.145	1.561	0.017	0.374	-	-	-	-	0.014	0.051	-0.645	1.730	-
400T125-27(S)	4.136	1.250	0.0283	33	33	0.184	0.63	0.449	0.217	1.562	0.025	0.372	0.380	0.156	3.079	514.570	0.049	0.078	-0.633	1.726	0.866
400T125-30(S)	4.141	1.250	0.0312	33	33	0.203	0.69	0.495	0.239	1.562	0.028	0.371	0.427	0.177	3.487	689.260	0.066	0.086	-0.631	1.726	0.866
400T150-18(S) ^{1,3}	4.122	1.500	0.0188	33	33	0.132	0.45	0.338	0.164	1.601	0.028	0.463	-	-	-	-	0.016	0.083	-0.837	1.865	-
400T150-27(S)	4.136	1.500	0.0283	33	33	0.198	0.67	0.509	0.246	1.602	0.042	0.461	0.409	0.154	3.042	514.570	0.053	0.127	-0.824	1.860	0.804
400T150-30(S)	4.141	1.500	0.0312	33	33	0.218	0.74	0.561	0.271	1.603	0.046	0.461	0.458	0.183	3.611	689.260	0.071	0.140	-0.822	1.860	0.804
400T200-18(S) ^{1,3}	4.122	2.000	0.0188	33	33	0.150	0.51	0.417	0.202	1.664	0.062	0.642	-	-	-	-	0.018	0.180	-1.246	2.176	-
400T200-27(S) ³	4.136	2.000	0.0283	33	33	0.226	0.77	0.628	0.304	1.665	0.093	0.640	-	-	-	-	0.060	0.270	-1.242	2.174	-
400T200-30(S) ³	4.141	2.000	0.0312	33	33	0.250	0.85	0.693	0.335	1.666	0.102	0.639	-	-	-	-	0.081	0.297	-1.240	2.173	-
400T250-18(S) ^{1,3}	4.122	2.500	0.0188	33	33	0.169	0.58	0.496	0.241	1.712	0.113	0.818	-	-	-	-	0.020	0.329	-1.678	2.532	-
400T250-27(S) ³	4.136	2.500	0.0283	33	33	0.255	0.87	0.747	0.361	1.713	0.170	0.816	-	-	-	-	0.068	0.493	-1.673	2.530	-
400T250-30(S) ³	4.141	2.500	0.0312	33	33	0.281	0.95	0.824	0.398	1.714	0.187	0.816	-	-	-	-	0.091	0.544	-1.671	2.529	-
400T300-18(S) ^{1,3}	4.122	3.000	0.0188	33	33	0.188	0.64	0.575	0.279	1.749	0.185	0.991	-	-	-	-	0.022	0.539	-2.124	2.924	-
400T300-27(S) ³	4.136	3.000	0.0283	33	33	0.283	0.96	0.867	0.419	1.750	0.277	0.990	-	-	-	-	0.076	0.810	-2.119	2.921	-
400T300-30(S) ³	4.141	3.000	0.0312	33	33	0.312	1.06	0.956	0.462	1.751	0.305	0.989	-	-	-	-	0.101	0.893	-2.117	2.920	-

¹ WEB HEIGHT-TO-THICKNESS RATIO (h/t) EXCEEDS 200 BUT IS LESS THAN 260. WEB MUST HAVE BEARING STIFFENERS AT ALL SUPPORT POINTS AND CONCENTRATED LOADS IN ACCORDANCE WITH AISI 100. NO HOLES OR POST ROLL TREATMENTS ARE PERMITTED IN THE WEB AT THESE LOCATIONS.

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

4" STANDARD STRUCTURAL TRACK PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

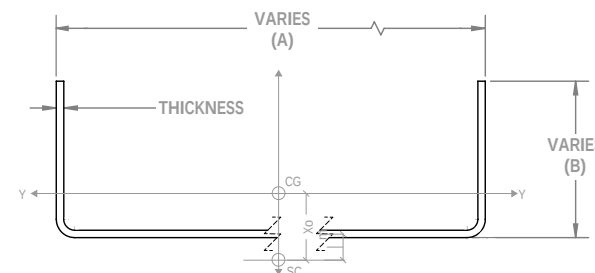
Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



4" STANDARD STRUCTURAL TRACK PROPERTIES

4" STANDARD STRUCTURAL TRACK PROPERTIES						Gross Properties							Effective Properties				Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	V _{ag} (lb)	Jx1000 (in ⁴)	C _w (in ⁴)	X _o (in ⁴)	R _o (in ⁴)	β
400T125-33(S)	4.146	1.250	0.0346	33	45	0.225	0.76	0.549	0.265	1.563	0.031	0.371	0.484	0.201	3.972	939.640	0.090	0.095	-0.630	1.725	0.867
400T125-43(S)	4.161	1.250	0.0451	33	45	0.293	1.00	0.716	0.344	1.563	0.040	0.369	0.666	0.282	5.568	1739.090	0.199	0.122	-0.626	1.724	0.868
400T125-54(S)	4.198	1.250	0.0566	50	65	0.367	1.25	0.904	0.431	1.569	0.049	0.366	0.849	0.359	10.739	3371.560	0.392	0.154	-0.621	1.727	0.871
400T125-68(S)	4.250	1.250	0.0713	50	65	0.462	1.57	1.150	0.541	1.577	0.061	0.363	1.134	0.488	14.623	5204.520	0.784	0.194	-0.614	1.731	0.874
400T150-33(S)	4.146	1.500	0.0346	33	45	0.242	0.82	0.622	0.300	1.603	0.051	0.460	0.519	0.208	4.117	939.640	0.097	0.155	-0.822	1.859	0.805
400T150-43(S)	4.161	1.500	0.0451	33	45	0.315	1.07	0.811	0.390	1.604	0.066	0.458	0.719	0.293	5.797	1739.090	0.214	0.200	-0.817	1.857	0.807
400T150-54(S)	4.198	1.500	0.0566	50	65	0.396	1.35	1.025	0.489	1.610	0.082	0.456	0.918	0.374	11.193	3371.560	0.422	0.252	-0.811	1.860	0.810
400T150-68(S)	4.250	1.500	0.0713	50	65	0.498	1.69	1.306	0.615	1.619	0.102	0.453	1.237	0.513	15.354	5204.520	0.844	0.320	-0.804	1.864	0.814
400T189-33(S)	4.146	1.890	0.0346	33	45	0.269	0.92	0.736	0.355	1.654	0.097	0.600	0.568	0.218	4.299	939.650	0.107	0.289	-1.137	2.095	0.706
400T189-43(S)	4.161	1.890	0.0451	33	45	0.351	1.19	0.960	0.461	1.655	0.125	0.598	0.792	0.308	6.076	1739.090	0.238	0.375	-1.132	2.092	0.707
400T189-54(S)	4.198	1.890	0.0566	50	65	0.440	1.50	1.215	0.579	1.662	0.156	0.595	1.013	0.392	11.745	3371.560	0.470	0.473	-1.126	2.094	0.711
400T189-68(S)	4.250	1.890	0.0713	50	65	0.554	1.88	1.549	0.729	1.673	0.194	0.592	1.376	0.542	16.221	5204.450	0.938	0.602	-1.117	2.097	0.716
400T200-33(S)	4.146	2.000	0.0346	33	45	0.277	0.94	0.768	0.371	1.666	0.113	0.639	0.581	0.220	4.343	939.640	0.110	0.336	-1.229	2.167	0.678
400T200-43(S)	4.161	2.000	0.0451	33	45	0.360	1.23	1.002	0.482	1.668	0.146	0.637	0.811	0.311	6.143	1739.090	0.244	0.437	-1.224	2.164	0.680
400T200-54(S)	4.198	2.000	0.0566	50	65	0.452	1.54	1.268	0.604	1.675	0.182	0.635	1.037	0.397	11.877	3371.560	0.483	0.551	-1.217	2.165	0.684
400T200-68(S)	4.250	2.000	0.0713	50	65	0.569	1.94	1.617	0.761	1.685	0.227	0.632	1.412	0.549	16.424	5204.520	0.965	0.702	-1.209	2.168	0.689
400T239-33(S) ³	4.146	2.390	0.0346	33	45	0.304	1.03	0.882	0.426	1.705	0.183	0.777	-	-	-	-	0.121	0.533	-1.573	2.446	-
400T239-43(S)	4.161	2.390	0.0451	33	45	0.396	1.35	1.151	0.553	1.706	0.237	0.775	0.872	0.321	6.348	1739.090	0.268	0.707	-1.557	2.436	0.592
400T239-54(S)	4.198	2.390	0.0566	50	65	0.496	1.69	1.457	0.694	1.714	0.296	0.772	1.116	0.410	12.280	3371.560	0.530	0.894	-1.550	2.437	0.595
400T239-68(S)	4.250	2.390	0.0713	50	65	0.625	2.13	1.860	0.875	1.725	0.370	0.770	1.529	0.569	17.041	5204.450	1.059	1.140	-1.541	2.438	0.600
400T250-33(S) ³	4.146	2.500	0.0346	33	45	0.311	1.06	0.915	0.441	1.714	0.207	0.815	-	-	-	-	0.124	0.602	-1.670	2.528	-
400T250-43(S)	4.161	2.500	0.0451	33	45	0.406	1.38	1.193	0.573	1.715	0.268	0.813	0.888	0.324	6.398	1739.090	0.275	0.799	-1.653	2.517	0.569
400T250-54(S)	4.198	2.500	0.0566	50	65	0.509	1.73	1.511	0.720	1.723	0.335	0.811	1.137	0.414	12.379	3371.560	0.543	1.011	-1.646	2.517	0.573
400T250-68(S)	4.250	2.500	0.0713	50	65	0.641	2.18	1.928	0.908	1.735	0.418	0.808	1.559	0.574	17.191	5204.520	1.086	1.289	-1.637	2.519	0.578
400T289-33(S) ³	4.146	2.890	0.0346	33	45	0.338	1.15	1.029	0.496	1.744	0.306	0.951	-	-	-	-	0.135	0.894	-2.016	2.830	-
400T289-43(S) ³	4.161	2.890	0.0451	33	45	0.441	1.50	1.342	0.645	1.745	0.397	0.949	-	-	-	-	0.299	1.163	-2.011	2.827	-
400T289-54(S)	4.198	2.890	0.0566	50	65	0.553	1.88	1.700	0.810	1.754	0.496	0.947	1.206	0.424	12.690	3371.56	0.590	1.501	-1.991	2.817	0.500
400T289-68(S)	4.250	2.890	0.0713	50	65	0.696	2.37	2.171	1.022	1.766	0.620	0.944	1.661	0.590	17.661	5204.450	1.180	1.916	-1.982	2.817	0.505
400T300-33(S) ³	4.146	3.000	0.0346	33	45	0.346	1.18	1.061	0.512	1.751	0.338	0.989	-	-	-	-	0.138	0.990	-2.115	2.919	-
400T300-43(S) ³	4.161	3.000	0.0451	33	45	0.451	1.53	1.384	0.665	1.753	0.439	0.987	-	-	-	-	0.306	1.288	-2.110	2.915	-
400T300-54(S)	4.198	3.000	0.0566	50	65	0.565	1.92	1.754	0.835	1.761	0.548	0.985	1.224	0.427	12.768	3371.560	0.604	1.662	-2.090	2.905	0.482
400T300-68(S)	4.250	3.000	0.0713	50	65	0.712	2.42	2.239	1.054	1.774	0.686	0.982	1.687	0.594	17.778	5204.520	1.206	2.122	-2.081	2.905	0.487

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

4" NARROW STRUCTURAL TRACK PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

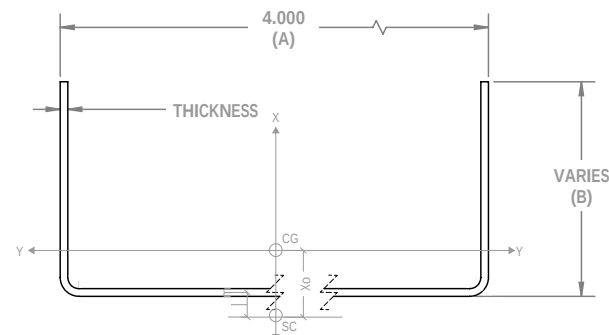
* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



4" NARROW STRUCTURAL TRACK PROPERTIES

4" NARROW STRUCTURAL TRACK PROPERTIES						Gross Properties							Effective Properties				Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	V _{ag} (lb)	Jx1000 (in ⁴)	C _w (in ⁴)	X _o (in ⁴)	R _o (in ⁴)	β
400T125-33(N)	4.000	1.250	0.0346	33	45	0.220	0.75	0.504	0.252	1.515	0.031	0.373	0.444	0.190	3.760	975.860	0.088	0.087	-0.641	1.686	0.856
400T125-43(N)	4.000	1.250	0.0451	33	45	0.286	0.97	0.651	0.326	1.510	0.039	0.372	0.606	0.266	5.249	1739.090	0.194	0.111	-0.638	1.681	0.856
400T125-54(N)	4.000	1.250	0.0566	50	65	0.356	1.21	0.805	0.403	1.504	0.049	0.370	0.756	0.334	9.991	3371.560	0.380	0.137	-0.635	1.674	0.856
400T125-68(N)	4.000	1.250	0.0713	50	65	0.445	1.51	0.994	0.497	1.495	0.060	0.368	0.980	0.447	13.383	4870.900	0.753	0.168	-0.631	1.664	0.856
400T150-33(N)	4.000	1.500	0.0346	33	45	0.237	0.81	0.572	0.286	1.554	0.051	0.463	0.477	0.197	3.899	975.860	0.095	0.142	-0.834	1.823	0.791
400T150-43(N)	4.000	1.500	0.0451	33	45	0.308	1.05	0.739	0.370	1.549	0.066	0.461	0.654	0.277	5.466	1739.090	0.209	0.183	-0.831	1.817	0.791
400T150-54(N)	4.000	1.500	0.0566	50	65	0.384	1.31	0.915	0.458	1.543	0.081	0.459	0.818	0.348	10.417	3371.560	0.410	0.225	-0.828	1.810	0.791
400T150-68(N)	4.000	1.500	0.0713	50	65	0.480	1.63	1.132	0.566	1.535	0.100	0.457	1.071	0.470	14.062	4870.900	0.814	0.278	-0.825	1.802	0.790
400T199-33(N)	4.000	1.990	0.0346	33	45	0.271	0.92	0.705	0.353	1.614	0.110	0.638	0.532	0.208	4.109	975.860	0.108	0.305	-1.236	2.130	0.663
400T199-43(N)	4.000	1.990	0.0451	33	45	0.352	1.20	0.912	0.456	1.609	0.142	0.636	0.737	0.293	5.787	1739.090	0.239	0.392	-1.233	2.124	0.663
400T199-54(N)	4.000	1.990	0.0566	50	65	0.440	1.50	1.131	0.565	1.604	0.177	0.634	0.923	0.369	11.044	3371.560	0.470	0.485	-1.230	2.118	0.663
400T199-68(N)	4.000	1.990	0.0713	50	65	0.550	1.87	1.401	0.701	1.596	0.220	0.632	1.223	0.502	15.031	4870.900	0.932	0.600	-1.227	2.110	0.662
400T249-33(N) ³	4.000	2.490	0.0346	33	45	0.306	1.04	0.841	0.421	1.660	0.202	0.814	-	-	-	-	0.122	0.548	-1.680	2.497	-
400T249-43(N)	4.000	2.490	0.0451	33	45	0.397	1.35	1.088	0.544	1.655	0.262	0.812	0.808	0.305	6.029	1739.090	0.269	0.721	-1.665	2.484	0.551
400T249-54(N)	4.000	2.490	0.0566	50	65	0.496	1.69	1.351	0.675	1.650	0.326	0.810	1.014	0.385	11.512	3371.560	0.530	0.893	-1.663	2.478	0.550
400T249-68(N)	4.000	2.490	0.0713	50	65	0.621	2.11	1.676	0.838	1.643	0.406	0.808	1.353	0.526	15.738	4870.900	1.053	1.106	-1.660	2.471	0.549
400T299-33(N) ³	4.000	2.990	0.0346	33	45	0.340	1.16	0.977	0.489	1.695	0.331	0.987	-	-	-	-	0.136	0.903	-2.128	2.894	-
400T299-43(N) ³	4.000	2.990	0.0451	33	45	0.442	1.50	1.265	0.632	1.691	0.429	0.985	-	-	-	-	0.300	1.164	-2.124	2.888	-
400T299-54(N)	4.000	2.990	0.0566	50	65	0.553	1.88	1.571	0.785	1.685	0.534	0.983	1.092	0.397	11.873	3371.560	0.591	1.472	-2.110	2.874	0.461
400T299-68(N)	4.000	2.990	0.0713	50	65	0.693	2.36	1.952	0.976	1.679	0.666	0.981	1.466	0.544	16.275	4870.900	1.174	1.826	-2.108	2.867	0.460

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

5-1/2" STUD PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

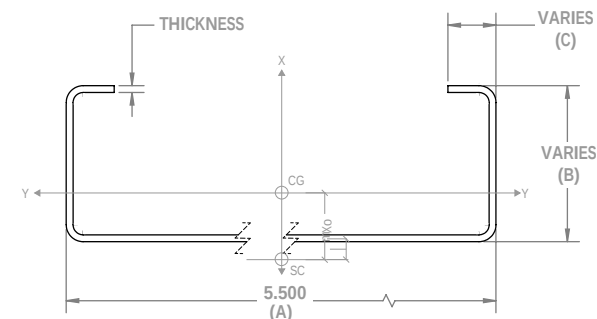
* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

CRC punchouts are min. 12" from leading edge
 CRC punchouts are min. 24" o.c.
 Use the effective moment of inertia for deflection calculations



Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 M_{da} = Allowable Distortional Buckling Moment at $K\phi = 0$
 V_{ag} = Allowable Shear Force in Web (Unpunched)
 V_{anet} = Allowable Shear Force in Web (Punched)

* Effective properties are for the members without punchouts. Allowable moment is the lesser of M_a and M_{da} .

* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

5-1/2" NON-STRUCTURAL STUD PROPERTIES

5-1/2" NON-STRUCTURAL STUD PROPERTIES							Gross Properties							Effective Properties						Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Lip Width (C) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _s (in-k)	M _{da} (in-k)	V _{ag} (lb)	V _{anet} (lb)	Jx1000 (in ⁴)	C _w (in ⁶)	X _o (in)	R _o (in ⁶)	β
550S125-27	5.500	1.250	0.188	0.0283	33	33	0.229	0.78	0.938	0.341	2.023	0.034	0.385	0.898	0.246	4.863	4.265	381.760	381.760	0.061	0.205	-0.642	2.157	0.912
550S125-30	5.500	1.250	0.188	0.0312	33	33	0.252	0.86	1.031	0.375	2.021	0.037	0.384	0.996	0.286	5.648	4.946	511.840	511.840	0.082	0.224	-0.639	2.154	0.912

5-1/2" STRUCTURAL STUD PROPERTIES

5-1/2" STRUCTURAL STUD PROPERTIES							Gross Properties							Effective Properties						Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Lip Width (C) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	M _{da} (in-k)	V _{ag} (lb)	V _{anet} (lb)	Jx1000 (in ⁴)	C _w (in ⁶)	X _o (in)	R _o (in ⁶)	β
550S162-33	5.500	1.625	0.500	0.0346	33	45	0.327	1.11	1.459	0.530	2.112	0.113	0.589	1.459	0.512	10.111	8.627	698.520	698.520	0.131	0.713	-1.114	2.459	0.795
550S162-43	5.500	1.625	0.500	0.0451	33	45	0.424	1.44	1.883	0.685	2.107	0.145	0.584	1.883	0.685	13.531	12.308	1550.050	1198.910	0.288	0.905	-1.103	2.449	0.797
550S162-54	5.500	1.625	0.500	0.0566	50	65	0.528	1.80	2.324	0.845	2.098	0.176	0.577	2.324	0.822	24.596	21.987	3093.430	1881.020	0.564	1.105	-1.090	2.434	0.800
550S162-68	5.500	1.625	0.500	0.0713	50	65	0.657	2.24	2.861	1.040	2.086	0.212	0.568	2.861	1.040	31.151	29.581	5350.290	2531.530	1.114	1.342	-1.072	2.414	0.803
550S200-33	5.500	2.000	0.625	0.0346	33	45	0.362	1.23	1.694	0.616	2.164	0.204	0.751	1.678	0.559	11.050	9.796	698.520	698.520	0.144	1.326	-1.508	2.742	0.698
550S200-43	5.500	2.000	0.625	0.0451	33	45	0.469	1.60	2.189	0.796	2.159	0.261	0.746	2.189	0.776	15.335	13.964	1550.050	1198.910	0.318	1.691	-1.496	2.731	0.700
550S200-54	5.500	2.000	0.625	0.0566	50	65	0.585	1.99	2.706	0.984	2.152	0.320	0.739	2.706	0.901	26.985	24.845	3093.430	1881.020	0.624	2.072	-1.483	2.716	0.702
550S200-68	5.500	2.000	0.625	0.0713	50	65	0.729	2.48	3.341	1.215	2.141	0.389	0.731	3.341	1.188	35.571	33.449	5350.290	2531.530	1.235	2.531	-1.465	2.695	0.705

5-1/2" NON-STRUCTURAL TRACK PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

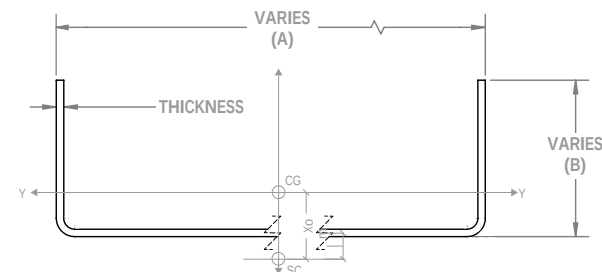
* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



5-1/2" NON-STRUCTURAL TRACK PROPERTIES

Member	Gross Properties												Effective Properties				Torsional Properties				
	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength F _y (ksi)	Ult Strength F _u (ksi)	Area (in ²)	Weight (lb/ft)	I_x (in ⁴)	S_x (in ³)	R_x (in)	I_y (in ⁴)	R_y (in)	I_{xe} (in ⁴)	S_{xe} (in ³)	M_a (in-k)	V_{ag} (lb)	$J \times 1000$ (in ⁴)	C_w (in ⁴)	X_o (in ⁴)	R_o (in ⁴)	β
550T125-18(S) ^{2,3}	5.622	1.250	0.0188	33	33	0.150	0.51	0.630	0.224	2.046	0.018	0.349	-	-	-	-	0.018	0.106	-0.553	2.148	-
550T125-27(S)	5.636	1.250	0.0283	33	33	0.226	0.77	0.948	0.336	2.046	0.027	0.348	0.786	0.192	3.786	372.170	0.060	0.160	-0.543	2.145	0.936
550T125-30(S)	5.641	1.250	0.0312	33	33	0.250	0.85	1.045	0.371	2.046	0.030	0.347	0.897	0.226	4.472	498.570	0.081	0.176	-0.542	2.145	0.936
550T150-18(S) ^{2,3}	5.622	1.500	0.0188	33	33	0.160	0.54	0.704	0.250	2.098	0.031	0.437	-	-	-	-	0.019	0.173	-0.727	2.263	-
550T150-27(S)	5.636	1.500	0.0283	33	33	0.241	0.82	1.059	0.376	2.098	0.046	0.436	0.893	0.208	4.100	372.170	0.064	0.263	-0.716	2.260	0.900
550T150-30(S)	5.641	1.500	0.0312	33	33	0.265	0.90	1.168	0.414	2.099	0.050	0.435	0.995	0.251	4.964	498.570	0.086	0.289	-0.715	2.259	0.900
550T200-18(S) ^{2,3}	5.622	2.000	0.0188	33	33	0.179	0.61	0.851	0.303	2.183	0.068	0.616	-	-	-	-	0.021	0.374	-1.103	2.522	-
550T200-27(S) ³	5.636	2.000	0.0283	33	33	0.269	0.91	1.281	0.455	2.183	0.101	0.614	-	-	-	-	0.072	0.560	-1.099	2.520	-
550T200-30(S) ³	5.641	2.000	0.0312	33	33	0.296	1.01	1.413	0.501	2.184	0.112	0.614	-	-	-	-	0.096	0.616	-1.098	2.520	-
550T250-18(S) ^{2,3}	5.622	2.500	0.0188	33	33	0.197	0.67	0.999	0.355	2.249	0.125	0.795	-	-	-	-	0.023	0.680	-1.506	2.821	-
550T250-27(S) ³	5.636	2.500	0.0283	33	33	0.297	1.01	1.504	0.534	2.250	0.187	0.793	-	-	-	-	0.079	1.020	-1.502	2.819	-
550T250-30(S) ³	5.641	2.500	0.0312	33	33	0.328	1.11	1.659	0.588	2.250	0.206	0.793	-	-	-	-	0.106	1.124	-1.501	2.819	-
550T300-18(S) ^{2,3}	5.622	3.000	0.0188	33	33	0.216	0.74	1.146	0.408	2.302	0.205	0.972	-	-	-	-	0.026	1.110	-1.928	3.156	-
550T300-27(S) ³	5.636	3.000	0.0283	33	33	0.325	1.11	1.726	0.613	2.303	0.307	0.971	-	-	-	-	0.087	1.668	-1.924	3.154	-
550T300-30(S) ³	5.641	3.000	0.0312	33	33	0.359	1.22	1.904	0.675	2.304	0.338	0.970	-	-	-	-	0.116	1.838	-1.922	3.153	-

² WEB HEIGHT-TO-THICKNESS RATIO (h/t) EXCEEDS 260 BUT IS LESS THAN 300. BEARING AND INTERMEDIATE STIFFENERS MUST BE PROVIDED IN ACCORDANCE WITH AISI S100.

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

5-1/2" STRUCTURAL TRACK PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

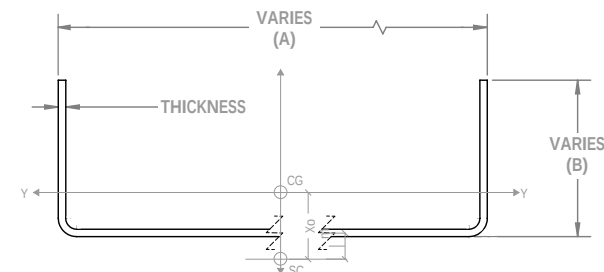
* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



5-1/2" STRUCTURAL TRACK PROPERTIES

Member	Gross Properties												Effective Properties				Torsional Properties				
	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength F _y (ksi)	Ult Strength F _u (ksi)	Area (in ²)	Weight (lb/ft)	I_x (in ⁴)	S_x (in ³)	R_x (in)	I_y (in ⁴)	R_y (in)	I_{xe} (in ⁴)	S_{xe} (in ³)	M_a (in-k)	V_{ag} (lb)	$J \times 1000$ (in ⁴)	C_w (in ⁶)	X_o (in ⁴)	R_o (in ⁴)	β
550T125-33(S)	5.646	1.250	0.0346	33	45	0.277	0.94	1.159	0.410	2.046	0.033	0.346	1.029	0.270	5.327	679.760	0.110	0.195	-0.541	2.145	0.937
550T125-43(S)	5.661	1.250	0.0451	33	45	0.360	1.23	1.510	0.533	2.047	0.043	0.345	1.428	0.417	8.230	1503.960	0.244	0.252	-0.537	2.144	0.937
550T125-54(S)	5.698	1.250	0.0566	50	65	0.452	1.54	1.903	0.668	2.052	0.053	0.342	1.811	0.535	16.007	2980.260	0.483	0.315	-0.532	2.147	0.939
550T125-68(S)	5.750	1.250	0.0713	50	65	0.569	1.94	2.412	0.839	2.058	0.066	0.339	2.379	0.769	23.016	5350.290	0.965	0.397	-0.526	2.152	0.940
550T150-33(S)	5.646	1.500	0.0346	33	45	0.294	1.00	1.295	0.459	2.099	0.056	0.434	1.115	0.310	6.120	679.760	0.117	0.320	-0.714	2.259	0.900
550T150-43(S)	5.661	1.500	0.0451	33	45	0.383	1.30	1.688	0.596	2.099	0.072	0.433	1.516	0.468	9.251	1503.960	0.260	0.414	-0.710	2.258	0.901
550T150-54(S)	5.698	1.500	0.0566	50	65	0.480	1.63	2.128	0.747	2.105	0.089	0.430	1.928	0.595	17.805	2980.260	0.513	0.519	-0.704	2.261	0.903
550T150-68(S)	5.750	1.500	0.0713	50	65	0.605	2.06	2.699	0.939	2.112	0.111	0.427	2.569	0.804	24.073	5350.290	1.025	0.655	-0.698	2.265	0.905
550T200-33(S)	5.646	2.000	0.0346	33	45	0.329	1.12	1.567	0.555	2.184	0.123	0.613	1.246	0.307	6.060	679.760	0.131	0.694	-1.088	2.516	0.813
550T200-43(S)	5.661	2.000	0.0451	33	45	0.428	1.46	2.043	0.722	2.185	0.160	0.611	1.690	0.495	9.787	1503.960	0.290	0.900	-1.083	2.514	0.814
550T200-54(S)	5.698	2.000	0.0566	50	65	0.537	1.83	2.578	0.905	2.191	0.199	0.609	2.153	0.630	18.858	2980.260	0.573	1.133	-1.078	2.517	0.817
550T200-68(S)	5.750	2.000	0.0713	50	65	0.676	2.30	3.274	1.139	2.200	0.248	0.606	2.894	0.857	25.670	5350.290	1.146	1.434	-1.070	2.521	0.820
550T250-33(S) ³	5.646	2.500	0.0346	33	45	0.363	1.23	1.840	0.652	2.251	0.228	0.792	-	-	-	-	0.145	1.245	-1.499	2.818	-
550T250-43(S)	5.661	2.500	0.0451	33	45	0.473	1.61	2.399	0.848	2.252	0.295	0.790	1.841	0.516	10.199	1503.960	0.321	1.643	-1.484	2.810	0.721
550T250-54(S)	5.698	2.500	0.0566	50	65	0.594	2.02	3.029	1.063	2.259	0.368	0.788	2.346	0.657	19.663	2980.260	0.634	2.070	-1.478	2.812	0.724
550T250-68(S)	5.750	2.500	0.0713	50	65	0.748	2.54	3.849	1.339	2.269	0.460	0.785	3.173	0.897	26.860	5350.290	1.267	2.627	-1.470	2.815	0.727
550T300-33(S) ³	5.646	3.000	0.0346	33	45	0.398	1.35	2.112	0.748	2.304	0.374	0.970	-	-	-	-	0.159	2.036	-1.920	3.152	-
550T300-43(S) ³	5.661	3.000	0.0451	33	45	0.518	1.76	2.754	0.973	2.306	0.485	0.968	-	-	-	-	0.351	2.646	-1.915	3.150	-
550T300-54(S)	5.698	3.000	0.0566	50	65	0.650	2.21	3.479	1.221	2.313	0.606	0.965	2.526	0.663	19.840	2980.260	0.694	3.390	-1.898	3.144	0.636
550T300-68(S)	5.750	3.000	0.0713	50	65	0.819	2.79	4.424	1.539	2.324	0.758	0.962	3.417	0.929	27.800	5350.290	1.388	4.307	-1.889	3.146	0.640

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

IRENE STEEL

6" STUD PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

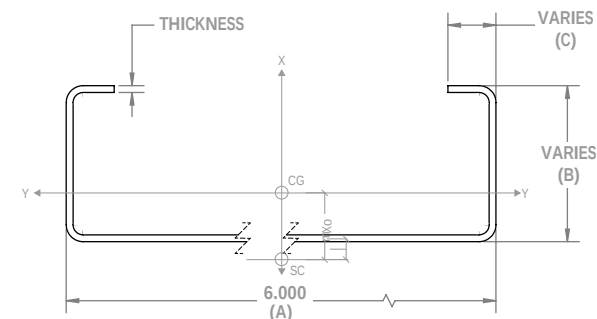
* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

CRC punchouts are min. 12" from leading edge
 CRC punchouts are min. 24" o.c.
 Use the effective moment of inertia for deflection calculations



Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 M_{da} = Allowable Distortional Buckling Moment at $K\phi = 0$
 V_{ag} = Allowable Shear Force in Web (Unpunched)
 V_{anet} = Allowable Shear Force in Web (Punched)

* Effective properties are for the members without punchouts. Allowable moment is the lesser of M_a and M_{da} .

* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

6" NON-STRUCTURAL STUD PROPERTIES

6" NON-STRUCTURAL STUD PROPERTIES							Gross Properties							Effective Properties						Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Lip Width (C) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	M _{da} (in-k)	V _{ag} (lb)	V _{anet} (lb)	Jx1000 (in ⁴)	C _w (in ⁶)	X _o (in)	R _o (in ⁶)	β
600S125-18 ⁴	6.000	1.250	0.188	0.0188	33	33	0.162	0.55	0.778	0.259	2.189	0.024	0.382	0.543	0.142	2.350	1.920	102.000	82.000	0.019	0.172	-0.623	2.308	0.927
600S125-27 ¹	6.000	1.250	0.188	0.0283	33	33	0.243	0.83	1.160	0.387	2.183	0.035	0.378	1.097	0.271	5.348	4.640	348.760	348.760	0.065	0.251	-0.614	2.299	0.929
600S125-30	6.000	1.250	0.188	0.0312	33	33	0.268	0.91	1.275	0.425	2.181	0.038	0.376	1.218	0.315	6.219	5.388	467.570	467.570	0.087	0.274	-0.611	2.296	0.929

¹ WEB HEIGHT-TO-THICKNESS RATIO (h/t) EXCEEDS 200 BUT IS LESS THAN 260. WEB MUST HAVE BEARING STIFFENERS AT ALL SUPPORT POINTS AND CONCENTRATED LOADS IN ACCORDANCE WITH AISI 100. NO HOLES OR POST ROLL TREATMENTS ARE PERMITTED IN THE WEB AT THESE LOCATIONS.

⁴ WEB HEIGHT-TO-THICKNESS RATIO (h/t) EXCEEDS 300. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

6" STRUCTURAL STUD PROPERTIES

6" STRUCTURAL STUD PROPERTIES							Gross Properties							Effective Properties						Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Lip Width (C) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	M _{da} (in-k)	V _{ag} (lb)	V _{anet} (lb)	Jx1000 (in ⁴)	C _w (in ⁶)	X _o (in)	R _o (in ⁶)	β
600S162-33	6.000	1.625	0.5	0.0346	33	45	0.344	1.17	1.793	0.598	2.282	0.116	0.581	1.793	0.577	11.408	9.466	638.070	638.070	0.137	0.862	-1.072	2.587	0.828
600S162-43	6.000	1.625	0.5	0.0451	33	45	0.447	1.52	2.316	0.772	2.276	0.148	0.576	2.316	0.772	15.254	13.558	1415.670	1240.290	0.303	1.095	-1.062	2.577	0.830
600S162-54	6.000	1.625	0.5	0.0566	50	65	0.556	1.89	2.860	0.954	2.268	0.181	0.570	2.860	0.927	27.760	23.790	2822.880	1947.400	0.594	1.337	-1.049	2.562	0.833
600S162-68	6.000	1.625	0.5	0.0713	50	65	0.693	2.36	3.525	1.175	2.255	0.218	0.561	3.525	1.175	35.176	32.746	5350.290	2878.930	1.174	1.626	-1.032	2.543	0.835
600S200-33	6.000	2.000	0.625	0.0346	33	45	0.379	1.29	2.075	0.692	2.340	0.209	0.743	2.058	0.621	12.277	10.764	638.070	638.070	0.151	1.593	-1.457	2.855	0.740
600S200-43	6.000	2.000	0.625	0.0451	33	45	0.492	1.67	2.683	0.894	2.335	0.268	0.739	2.683	0.873	17.243	15.388	1415.670	1240.290	0.334	2.033	-1.446	2.844	0.742
600S200-54	6.000	2.000	0.625	0.0566	50	65	0.613	2.09	3.319	1.106	2.327	0.329	0.732	3.319	1.015	30.395	27.383	2822.880	1947.400	0.655	2.493	-1.433	2.829	0.744
600S200-68	6.000	2.000	0.625	0.0713	50	65	0.764	2.60	4.101	1.367	2.316	0.400	0.723	4.101	1.337	40.029	36.992	5350.290	2878.930	1.295	3.047	-1.415	2.809	0.746
600S250-43	6.000	2.500	0.625	0.0451	33	45	0.537	1.83	3.083	1.028	2.396	0.458	0.923	3.083	0.918	18.139	16.208	1415.670	1240.290	0.364	3.411	-1.874	3.179	0.652
600S250-54	6.000	2.500	0.625	0.0566	50	65	0.670	2.28	3.819	1.273	2.388	0.562	0.917	3.766	1.069	32.001	28.713	2822.880	1947.400	0.715	4.194	-1.860	3.163	0.654
600S250-68	6.000	2.500	0.625	0.0713	50	65	0.836	2.84	4.727	1.576	2.378	0.688	0.908	4.723	1.386	41.491	39.070	5350.290	2878.930	1.416	5.146	-1.842	3.142	0.657
600S300-54	6.000	3.000	0.625	0.0566	50	65	0.726	2.47	4.319	1.440	2.439	0.875	1.098	4.014	1.106	33.126	29.623	2822.880	1947.400	0.775	6.452	-2.299	3.527	0.575
600S300-68	6.000	3.000	0.625	0.0713	50	65	0.907	3.09	5.354	1.785	2.430	1.075	1.089	5.221	1.446	43.296	40.528	5350.290	2878.930	1.537	7.937	-2.280	3.506	0.577

6" NON-STRUCTURAL TRACK PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

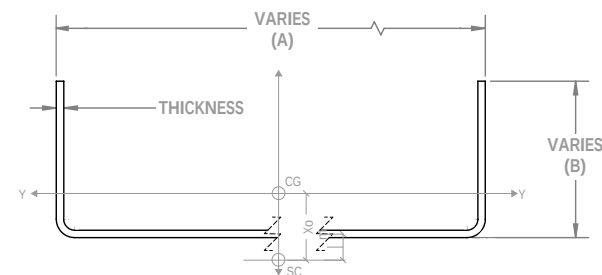
* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



6" NON-STRUCTURAL TRACK PROPERTIES

Member	Gross Properties												Effective Properties				Torsional Properties				
	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength F _y (ksi)	Ult Strength F _u (ksi)	Area (in ²)	Weight (lb/ft)	I_x (in ⁴)	S_x (in ³)	R_x (in)	I_y (in ⁴)	R_y (in)	I_{xe} (in ⁴)	S_{xe} (in ³)	M_a (in-k)	V_{ag} (lb)	$J \times 1000$ (in ⁴)	C_w (in ⁶)	X_o (in ⁴)	R_o (in ⁴)	β
600T125-18(S) ^{3,4}	6.122	1.250	0.0188	33	33	0.160	0.54	0.776	0.254	2.204	0.019	0.342	-	-	-	-	0.019	0.129	-0.528	2.292	-
600T125-27(S) ¹	6.136	1.250	0.0283	33	33	0.241	0.82	1.168	0.381	2.204	0.028	0.340	0.958	0.211	4.159	340.740	0.064	0.196	-0.519	2.290	0.949
600T125-30(S)	6.141	1.250	0.0312	33	33	0.265	0.90	1.288	0.420	2.204	0.031	0.340	1.095	0.249	4.920	456.480	0.086	0.215	-0.518	2.289	0.949
600T150-18(S) ^{3,4}	6.122	1.500	0.0188	33	33	0.169	0.58	0.864	0.282	2.259	0.031	0.429	-	-	-	-	0.020	0.211	-0.697	2.403	-
600T150-27(S) ¹	6.136	1.500	0.0283	33	33	0.255	0.87	1.300	0.424	2.260	0.047	0.428	1.011	0.214	4.226	340.740	0.068	0.320	-0.686	2.400	0.918
600T150-30(S)	6.141	1.500	0.0312	33	33	0.281	0.96	1.434	0.467	2.260	0.051	0.427	1.159	0.253	5.007	456.480	0.091	0.352	-0.685	2.400	0.919
600T200-18(S) ^{3,4}	6.122	2.000	0.0188	33	33	0.188	0.64	1.039	0.339	2.350	0.069	0.607	-	-	-	-	0.022	0.457	-1.063	2.650	-
600T200-27(S) ^{1,3}	6.136	2.000	0.0283	33	33	0.283	0.96	1.564	0.510	2.351	0.104	0.605	-	-	-	-	0.076	0.684	-1.059	2.649	-
600T200-30(S) ³	6.141	2.000	0.0312	33	33	0.312	1.06	1.725	0.562	2.352	0.114	0.605	-	-	-	-	0.101	0.753	-1.058	2.649	-
600T250-18(S) ^{3,4}	6.122	2.500	0.0188	33	33	0.207	0.70	1.214	0.397	2.423	0.128	0.786	-	-	-	-	0.024	0.831	-1.458	2.935	-
600T250-27(S) ^{1,3}	6.136	2.500	0.0283	33	33	0.311	1.06	1.828	0.596	2.423	0.192	0.784	-	-	-	-	0.083	1.246	-1.453	2.933	-
600T250-30(S) ³	6.141	2.500	0.0312	33	33	0.343	1.17	2.016	0.657	2.424	0.211	0.784	-	-	-	-	0.111	1.373	-1.452	2.932	-
600T300-18(S) ^{3,4}	6.122	3.000	0.0188	33	33	0.226	0.77	1.389	0.454	2.481	0.210	0.965	-	-	-	-	0.027	1.355	-1.872	3.254	-
600T300-27(S) ^{1,3}	6.136	3.000	0.0283	33	33	0.340	1.15	2.092	0.682	2.482	0.315	0.963	-	-	-	-	0.091	2.035	-1.867	3.252	-
600T300-30(S) ³	6.141	3.000	0.0312	33	33	0.374	1.27	2.307	0.751	2.483	0.347	0.962	-	-	-	-	0.122	2.243	-1.866	3.251	-

¹ WEB HEIGHT-TO-THICKNESS RATIO (h/t) EXCEEDS 200 BUT IS LESS THAN 260. WEB MUST HAVE BEARING STIFFENERS AT ALL SUPPORT POINTS AND CONCENTRATED LOADS IN ACCORDANCE WITH AISI 100. NO HOLES OR POST ROLL TREATMENTS ARE PERMITTED IN THE WEB AT THESE LOCATIONS.

² WEB HEIGHT-TO-THICKNESS RATIO (h/t) EXCEEDS 260 BUT IS LESS THAN 300. BEARING AND INTERMEDIATE STIFFENERS MUST BE PROVIDED IN ACCORDANCE WITH AISI 100.

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

⁴ WEB HEIGHT-TO-THICKNESS RATIO (h/t) EXCEEDS 300. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

6" STANDARD STRUCTURAL TRACK PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

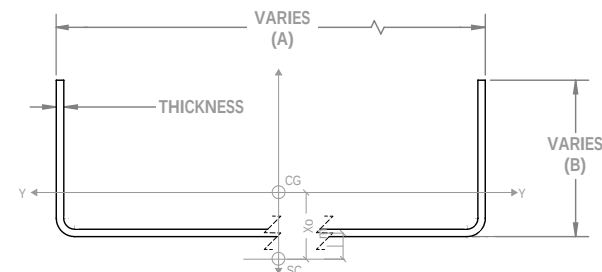
Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



6" STANDARD STRUCTURAL TRACK PROPERTIES

Member	Gross Properties												Effective Properties				Torsional Properties				
	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength F_y (ksi)	Ult Strength F_u (ksi)	Area (in ²)	Weight (lb/ft)	I_x (in ⁴)	S_x (in ³)	R_x (in)	I_y (in ⁴)	R_y (in)	I_{xe} (in ⁴)	S_{xe} (in ³)	M_a (in-k)	V_{ag} (lb)	$J \times 1000$ (in ⁴)	C_w (in ⁶)	X_o (in ⁴)	R_o (in ⁴)	β
600T125-33(S)	6.146	1.250	0.0346	33	45	0.294	1.00	1.428	0.465	2.204	0.034	0.339	1.258	0.297	5.868	622.380	0.117	0.238	-0.517	2.289	0.949
600T125-43(S)	6.161	1.250	0.0451	33	45	0.383	1.30	1.861	0.604	2.205	0.044	0.337	1.768	0.461	9.113	1377.130	0.260	0.307	-0.513	2.288	0.950
600T125-54(S)	6.198	1.250	0.0566	50	65	0.480	1.63	2.344	0.756	2.209	0.054	0.335	2.241	0.592	17.735	2728.340	0.513	0.384	-0.508	2.291	0.951
600T125-68(S)	6.250	1.250	0.0713	50	65	0.605	2.06	2.969	0.950	2.215	0.067	0.332	2.934	0.858	25.692	5350.290	1.025	0.483	-0.503	2.296	0.952
600T150-33(S)	6.146	1.500	0.0346	33	45	0.311	1.06	1.590	0.517	2.260	0.057	0.426	1.334	0.303	5.985	622.380	0.124	0.390	-0.684	2.399	0.919
600T150-43(S)	6.161	1.500	0.0451	33	45	0.406	1.38	2.072	0.673	2.261	0.073	0.424	1.890	0.474	9.358	1377.130	0.275	0.504	-0.680	2.398	0.920
600T150-54(S)	6.198	1.500	0.0566	50	65	0.509	1.73	2.611	0.843	2.266	0.091	0.422	2.400	0.609	18.237	2728.340	0.543	0.633	-0.675	2.401	0.921
600T150-68(S)	6.250	1.500	0.0713	50	65	0.641	2.18	3.309	1.059	2.273	0.113	0.419	3.162	0.891	26.675	5350.290	1.086	0.797	-0.669	2.406	0.923
600T189-33(S)	6.146	1.890	0.0346	33	45	0.338	1.15	1.842	0.599	2.333	0.108	0.565	1.509	0.334	6.592	622.390	0.135	0.727	-0.965	2.588	0.861
600T189-43(S)	6.161	1.890	0.0451	33	45	0.441	1.50	2.401	0.779	2.334	0.140	0.563	2.033	0.559	11.038	1377.130	0.299	0.943	-0.961	2.586	0.862
600T189-54(S)	6.198	1.890	0.0566	50	65	0.553	1.88	3.027	0.977	2.340	0.174	0.561	2.586	0.710	21.247	2728.340	0.590	1.185	-0.956	2.589	0.864
600T189-68(S)	6.250	1.890	0.0713	50	65	0.696	2.37	3.840	1.229	2.349	0.217	0.558	3.461	0.961	28.775	5350.290	1.180	1.498	-0.949	2.594	0.866
600T200-33(S)	6.146	2.000	0.0346	33	45	0.346	1.18	1.913	0.623	2.352	0.126	0.604	1.542	0.333	6.585	622.380	0.138	0.847	-1.048	2.645	0.843
600T200-43(S)	6.161	2.000	0.0451	33	45	0.451	1.53	2.494	0.810	2.353	0.163	0.602	2.076	0.565	11.157	1377.130	0.306	1.098	-1.044	2.643	0.844
600T200-54(S)	6.198	2.000	0.0566	50	65	0.565	1.92	3.145	1.015	2.359	0.204	0.600	2.641	0.717	21.479	2728.340	0.604	1.381	-1.038	2.646	0.846
600T200-68(S)	6.250	2.000	0.0713	50	65	0.712	2.42	3.990	1.277	2.367	0.254	0.597	3.540	0.973	29.120	5350.290	1.206	1.746	-1.031	2.650	0.849
600T239-33(S) ³	6.146	2.390	0.0346	33	45	0.373	1.27	2.165	0.705	2.410	0.206	0.744	-	-	-	-	0.149	1.347	-1.362	2.866	-
600T239-43(S)	6.161	2.390	0.0451	33	45	0.486	1.65	2.823	0.916	2.411	0.267	0.742	2.228	0.565	11.166	1377.130	0.329	1.775	-1.348	2.860	0.778
600T239-54(S)	6.198	2.390	0.0566	50	65	0.610	2.07	3.561	1.149	2.417	0.333	0.740	2.828	0.735	22.001	2728.340	0.651	2.235	-1.342	2.862	0.780
600T239-68(S)	6.250	2.390	0.0713	50	65	0.768	2.61	4.520	1.447	2.427	0.417	0.737	3.802	1.009	30.194	5350.290	1.301	2.831	-1.334	2.866	0.783
600T250-33(S) ³	6.146	2.500	0.0346	33	45	0.380	1.29	2.236	0.728	2.424	0.233	0.783	-	-	-	-	0.152	1.520	-1.451	2.932	-
600T250-43(S)	6.161	2.500	0.0451	33	45	0.496	1.69	2.916	0.946	2.425	0.303	0.781	2.269	0.563	11.127	1377.130	0.336	2.004	-1.436	2.925	0.759
600T250-54(S)	6.198	2.500	0.0566	50	65	0.622	2.12	3.678	1.187	2.432	0.377	0.779	2.881	0.732	21.918	2728.340	0.664	2.523	-1.430	2.927	0.761
600T250-68(S)	6.250	2.500	0.0713	50	65	0.783	2.67	4.670	1.495	2.442	0.472	0.776	3.871	1.017	30.461	5350.290	1.327	3.198	-1.422	2.931	0.765
600T289-33(S) ³	6.146	2.890	0.0346	33	45	0.407	1.39	2.488	0.810	2.471	0.347	0.923	-	-	-	-	0.163	2.247	-1.772	3.177	-
600T289-43(S) ³	6.161	2.890	0.0451	33	45	0.531	1.80	3.244	1.053	2.472	0.450	0.921	-	-	-	-	0.360	2.919	-1.767	3.175	-
600T289-54(S)	6.198	2.890	0.0566	50	65	0.666	2.27	4.095	1.321	2.480	0.562	0.918	3.060	0.724	21.669	2728.340	0.711	3.732	-1.750	3.171	0.695
600T289-68(S)	6.250	2.890	0.0713	50	65	0.839	2.85	5.201	1.664	2.490	0.703	0.915	4.102	1.046	31.313	5350.290	1.421	4.735	-1.742	3.174	0.699
600T300-33(S) ³	6.146	3.000	0.0346	33	45	0.415	1.41	2.559	0.833	2.483	0.384	0.962	-	-	-	-	0.166	2.485	-1.864	3.250	-
600T300-43(S) ³	6.161	3.000	0.0451	33	45	0.541	1.84	3.337	1.083	2.484	0.498	0.960	-	-	-	-	0.367	3.229	-1.859	3.248	-
600T300-54(S)	6.198	3.000	0.0566	50	65	0.679	2.31	4.212	1.359	2.492	0.622	0.957	3.108	0.722	21.610	2728.340	0.725	4.129	-1.842	3.243	0.677
600T300-68(S)	6.250	3.000	0.0713	50	65	0.855	2.91	5.351	1.712	2.502	0.778	0.955	4.164	1.053	31.529	5350.290	1.448	5.239	-1.834	3.246	0.681

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

6" NARROW STRUCTURAL TRACK PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

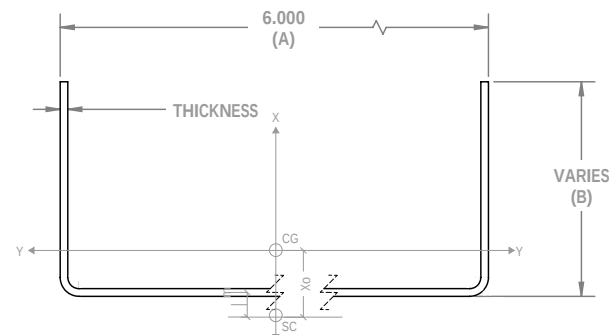
* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

6" NARROW STRUCTURAL TRACK PROPERTIES

6" NARROW STRUCTURAL TRACK PROPERTIES						Gross Properties							Effective Properties				Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	V _{ag} (lb)	Jx1000 (in ⁴)	C _w (in ⁴)	X _o (in ⁴)	R _o (in ⁴)	β
600T125-33(N)	6.000	1.25	0.0346	33	45	0.289	0.98	1.346	0.449	2.158	0.034	0.341	1.188	0.289	5.711	638.070	0.115	0.225	-0.523	2.247	0.946
600T125-43(N)	6.000	1.25	0.0451	33	45	0.376	1.28	1.743	0.581	2.154	0.043	0.339	1.653	0.447	8.828	1415.670	0.255	0.289	-0.520	2.242	0.946
600T125-54(N)	6.000	1.25	0.0566	50	65	0.469	1.60	2.162	0.721	2.147	0.054	0.338	2.064	0.570	17.050	2822.880	0.501	0.356	-0.518	2.234	0.946
600T125-68(N)	6.000	1.25	0.0713	50	65	0.587	2.00	2.682	0.894	2.137	0.066	0.336	2.648	0.814	24.366	5350.290	0.995	0.439	-0.514	2.224	0.947
600T150-33(N)	6.000	1.5	0.0346	33	45	0.306	1.04	1.500	0.500	2.213	0.056	0.429	1.262	0.295	5.826	638.070	0.122	0.369	-0.692	2.358	0.914
600T150-43(N)	6.000	1.5	0.0451	33	45	0.398	1.36	1.943	0.648	2.209	0.073	0.427	1.750	0.512	10.125	1415.670	0.270	0.474	-0.689	2.353	0.914
600T150-54(N)	6.000	1.5	0.0566	50	65	0.498	1.69	2.412	0.804	2.202	0.090	0.425	2.190	0.644	19.293	2822.880	0.531	0.586	-0.686	2.345	0.914
600T150-68(N)	6.000	1.5	0.0713	50	65	0.623	2.12	2.995	0.998	2.193	0.112	0.423	2.857	0.846	25.323	5350.290	1.055	0.724	-0.683	2.336	0.915
600T199-33(N)	6.000	1.99	0.0346	33	45	0.340	1.16	1.802	0.601	2.302	0.124	0.603	1.449	0.326	6.433	638.070	0.136	0.790	-1.052	2.601	0.837
600T199-43(N)	6.000	1.99	0.0451	33	45	0.442	1.51	2.334	0.778	2.297	0.160	0.602	1.942	0.541	10.696	1415.670	0.300	1.018	-1.049	2.596	0.837
600T199-54(N)	6.000	1.99	0.0566	50	65	0.553	1.88	2.902	0.967	2.291	0.199	0.600	2.435	0.682	20.403	2822.880	0.591	1.262	-1.046	2.589	0.837
600T199-68(N)	6.000	1.99	0.0713	50	65	0.693	2.36	3.609	1.203	2.283	0.248	0.598	3.201	0.913	27.347	5350.290	1.174	1.565	-1.043	2.580	0.837
600T249-33(N) ³	6.000	2.49	0.0346	33	45	0.375	1.27	2.109	0.703	2.373	0.229	0.782	-	-	-	-	0.150	1.421	-1.456	2.892	-
600T249-43(N)	6.000	2.49	0.0451	33	45	0.488	1.66	2.734	0.911	2.368	0.297	0.781	2.121	0.549	10.848	1415.670	0.331	1.863	-1.443	2.881	0.749
600T249-54(N)	6.000	2.49	0.0566	50	65	0.610	2.07	3.402	1.134	2.362	0.370	0.779	2.653	0.710	21.247	2822.880	0.651	2.313	-1.441	2.875	0.749
600T249-68(N)	6.000	2.49	0.0713	50	65	0.764	2.60	4.236	1.412	2.355	0.461	0.777	3.506	0.956	28.619	5350.290	1.295	2.873	-1.437	2.866	0.749
600T299-33(N) ³	6.000	2.99	0.0346	33	45	0.409	1.39	2.417	0.806	2.430	0.378	0.960	-	-	-	-	0.163	2.327	-1.872	3.214	-
600T299-43(N) ³	6.000	2.99	0.0451	33	45	0.533	1.81	3.134	1.045	2.426	0.490	0.959	-	-	-	-	0.361	3.007	-1.868	3.209	-
600T299-54(N)	6.000	2.99	0.0566	50	65	0.666	2.27	3.902	1.301	2.420	0.610	0.957	2.864	0.699	20.916	2822.880	0.711	3.792	-1.855	3.196	0.663
600T299-68(N)	6.000	2.99	0.0713	50	65	0.835	2.84	4.862	1.621	2.413	0.762	0.955	3.775	0.990	29.627	5350.290	1.415	4.718	-1.852	3.188	0.663

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 M_{da} = Allowable Distortional Buckling Moment at $K\phi = 0$
 V_{ag} = Allowable Shear Force in Web (Unpunched)
 V_{anet} = Allowable Shear Force in Web (Punched)

* Effective properties are for the members without punchouts. Allowable moment is the lesser of M_a and M_{da} .

* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

Torsional Properties:

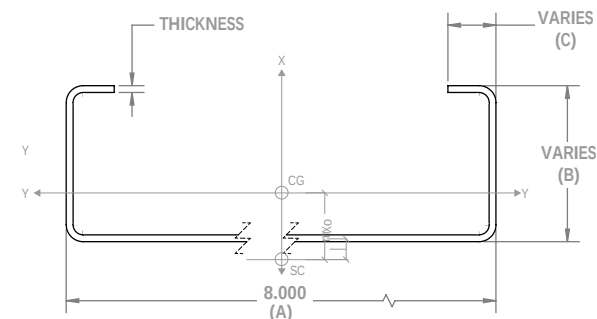
J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

CRC punchouts are min. 12" from leading edge

CRC punchouts are min. 24" o.c.

Use the effective moment of inertia for deflection calculations



8" STUD PROPERTIES

8" STUD PROPERTIES							Gross Properties							Effective Properties						Torsional Properties				
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Lip Width (C) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	M _{da} (in-k)	V _{ag} (lb)	V _{anet} (lb)	Jx1000 (in ⁴)	C _w (in ⁶)	X _o (in)	R _o (in ⁶)	β
800S162-33 ¹	8.000	1.625	0.5	0.0346	33	45	0.414	1.41	3.582	0.896	2.943	0.125	0.550	3.384	0.710	14.027	12.608	474.000	474.000	0.165	1.630	-0.936	3.137	0.911
800S162-43	8.000	1.625	0.5	0.0451	33	45	0.537	1.83	4.633	1.158	2.937	0.160	0.546	4.500	1.019	20.141	18.328	1051.150	1051.150	0.364	2.076	-0.926	3.128	0.912
800S162-54	8.000	1.625	0.5	0.0566	50	65	0.670	2.28	5.736	1.434	2.927	0.194	0.539	5.600	1.229	36.791	32.812	2091.280	2091.280	0.715	2.539	-0.914	3.113	0.914
800S162-68	8.000	1.625	0.5	0.0713	50	65	0.836	2.84	7.089	1.772	2.913	0.235	0.530	7.070	1.663	49.803	45.109	4220.730	3367.370	1.416	3.093	-0.899	3.094	0.916
800S200-33 ¹	8.000	2.000	0.625	0.0346	33	45	0.448	1.52	4.096	1.024	3.023	0.227	0.712	4.096	0.816	16.120	14.523	474.000	474.000	0.179	2.971	-1.288	3.363	0.853
800S200-43	8.000	2.000	0.625	0.0451	33	45	0.582	1.98	5.302	1.325	3.018	0.292	0.708	5.302	1.293	25.541	20.986	1051.150	1051.150	0.395	3.797	-1.278	3.353	0.855
800S200-54	8.000	2.000	0.625	0.0566	50	65	0.726	2.47	6.573	1.643	3.009	0.357	0.701	6.573	1.499	44.867	37.371	2091.280	2091.280	0.775	4.663	-1.265	3.338	0.856
800S200-68	8.000	2.000	0.625	0.0713	50	65	0.907	3.09	8.141	2.035	2.996	0.435	0.692	8.141	1.993	59.661	51.118	4220.730	3367.370	1.537	5.712	-1.248	3.319	0.859
800S250-43	8.000	2.500	0.625	0.0451	33	45	0.627	2.13	6.015	1.504	3.097	0.500	0.893	6.015	1.313	25.953	22.058	1051.150	1051.150	0.425	6.374	-1.675	3.632	0.787
800S250-54	8.000	2.500	0.625	0.0566	50	65	0.783	2.66	7.465	1.866	3.088	0.614	0.886	7.378	1.525	45.658	39.129	2091.280	2091.280	0.836	7.850	-1.661	3.617	0.789
800S250-68	8.000	2.500	0.625	0.0713	50	65	0.978	3.33	9.261	2.315	3.077	0.752	0.877	9.240	2.059	61.650	53.754	4220.730	3367.370	1.658	9.653	-1.644	3.597	0.791
800S300-54	8.000	2.000	0.625	0.0566	50	65	0.839	2.86	8.358	2.090	3.156	0.960	1.069	7.862	1.535	45.960	40.224	2091.280	2091.280	0.896	12.076	-2.073	3.924	0.721
800S300-68	8.000	2.000	0.625	0.0713	50	65	1.050	3.57	10.382	2.595	3.145	1.179	1.060	10.082	2.145	64.213	55.467	4220.730	3367.370	1.779	14.888	-2.055	3.904	0.723

¹ WEB HEIGHT-TO-THICKNESS RATIO (h/t) EXCEEDS 200 BUT IS LESS THAN 260. WEB MUST HAVE BEARING STIFFENERS AT ALL SUPPORT POINTS AND CONCENTRATED LOADS IN ACCORDANCE WITH AISI 100. NO HOLES OR POST ROLL TREATMENTS ARE PERMITTED IN THE WEB AT THESE LOCATIONS.

8" STANDARD STRUCTURAL TRACK PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

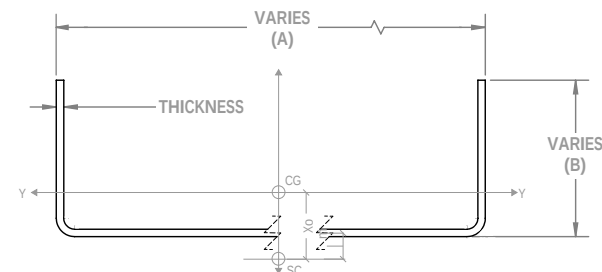
Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



8" STANDARD STRUCTURAL TRACK PROPERTIES

8" STANDARD STRUCTURAL TRACK PROPERTIES						Gross Properties						Effective Properties				Torsional Properties					
Member	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength Fy (ksi)	Ult Strength Fu (ksi)	Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	R _x (in)	I _y (in ⁴)	R _y (in)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _a (in-k)	V _{ag} (lb)	Jx1000 (in ⁴)	C _w (in ⁴)	X _o (in ⁴)	R _o (in ⁴)	β
800T125-33(S) ¹	8.146	1.250	0.0346	33	45	0.363	1.24	2.896	0.711	2.824	0.036	0.313	2.441	0.407	8.034	465.290	0.145	0.456	-0.439	2.875	0.977
800T125-43(S)	8.161	1.250	0.0451	33	45	0.473	1.61	3.773	0.925	2.824	0.046	0.311	3.484	0.640	12.652	1029.750	0.321	0.589	-0.436	2.874	0.977
800T125-54(S)	8.198	1.250	0.0566	50	65	0.594	2.02	4.745	1.158	2.827	0.057	0.309	4.426	0.824	24.662	2038.940	0.634	0.735	-0.432	2.877	0.978
800T125-68(S)	8.250	1.250	0.0713	50	65	0.748	2.54	5.998	1.454	2.833	0.070	0.307	5.956	1.216	36.395	4087.290	1.267	0.920	-0.427	2.881	0.978
800T150-33(S) ¹	8.146	1.500	0.0346	33	45	0.381	1.29	3.180	0.781	2.891	0.060	0.397	2.569	0.414	8.177	465.290	0.152	0.752	-0.588	2.977	0.961
800T150-43(S)	8.161	1.500	0.0451	33	45	0.496	1.69	4.144	1.016	2.891	0.077	0.395	3.689	0.655	12.947	1029.750	0.336	0.972	-0.584	2.976	0.961
800T150-54(S)	8.198	1.500	0.0566	50	65	0.622	2.12	5.214	1.272	2.896	0.096	0.393	4.692	0.844	25.266	2038.940	0.664	1.215	-0.580	2.979	0.962
800T150-68(S)	8.250	1.500	0.0713	50	65	0.783	2.67	6.594	1.599	2.902	0.119	0.390	6.361	1.255	37.582	4087.290	1.327	1.526	-0.575	2.984	0.963
800T189-33(S) ¹	8.146	1.890	0.0346	33	45	0.407	1.39	3.624	0.890	2.982	0.115	0.532	2.744	0.422	8.335	465.290	0.163	1.406	-0.842	3.144	0.928
800T189-43(S)	8.161	1.890	0.0451	33	45	0.531	1.81	4.723	1.158	2.983	0.149	0.530	3.970	0.672	13.278	1029.750	0.360	1.822	-0.838	3.143	0.929
800T189-54(S)	8.198	1.890	0.0566	50	65	0.666	2.27	5.946	1.451	2.988	0.186	0.528	5.056	0.866	25.941	2038.940	0.711	2.284	-0.833	3.146	0.930
800T189-68(S)	8.250	1.890	0.0713	50	65	0.839	2.85	7.524	1.824	2.995	0.231	0.525	6.910	1.300	38.920	4087.320	1.421	2.877	-0.827	3.151	0.931
800T200-33(S) ¹	8.146	2.000	0.0346	33	45	0.415	1.41	3.749	0.921	3.005	0.135	0.571	2.789	0.424	8.370	465.290	0.166	1.638	-0.917	3.194	0.918
800T200-43(S)	8.161	2.000	0.0451	33	45	0.541	1.84	4.887	1.198	3.006	0.175	0.569	4.043	0.676	13.352	1029.750	0.367	2.124	-0.913	3.193	0.918
800T200-54(S)	8.198	2.000	0.0566	50	65	0.679	2.31	6.152	1.501	3.011	0.218	0.567	5.149	0.872	26.092	2038.940	0.725	2.664	-0.908	3.196	0.919
800T200-68(S)	8.250	2.000	0.0713	50	65	0.855	2.91	7.786	1.888	3.019	0.272	0.564	7.052	1.310	39.220	4087.290	1.448	3.357	-0.902	3.201	0.921
800T239-33(S) ^{1,3}	8.146	2.390	0.0346	33	45	0.442	1.50	4.194	1.030	3.080	0.222	0.709	-	-	-	-	0.176	2.617	-1.204	3.382	-
800T239-43(S)	8.161	2.390	0.0451	33	45	0.576	1.96	5.466	1.340	3.081	0.288	0.707	4.517	0.739	14.608	1029.750	0.391	3.434	-1.192	3.378	0.875
800T239-54(S)	8.198	2.390	0.0566	50	65	0.723	2.46	6.884	1.679	3.086	0.359	0.705	5.718	0.959	28.725	2038.940	0.772	4.313	-1.187	3.381	0.877
800T239-68(S)	8.250	2.390	0.0713	50	65	0.910	3.10	8.716	2.113	3.095	0.449	0.702	7.464	1.547	46.319	4087.320	1.542	5.446	-1.180	3.386	0.879
800T250-33(S) ^{1,3}	8.146	2.500	0.0346	33	45	0.450	1.53	4.319	1.060	3.099	0.252	0.748	-	-	-	-	0.179	2.953	-1.286	3.438	-
800T250-43(S)	8.161	2.500	0.0451	33	45	0.586	1.99	5.629	1.380	3.100	0.326	0.746	4.593	0.739	14.600	1029.750	0.397	3.877	-1.274	3.433	0.862
800T250-54(S)	8.198	2.500	0.0566	50	65	0.735	2.50	7.090	1.730	3.106	0.407	0.744	5.816	0.959	28.706	2038.940	0.785	4.870	-1.268	3.436	0.864
800T250-68(S)	8.250	2.500	0.0713	50	65	0.926	3.15	8.978	2.177	3.114	0.509	0.741	7.588	1.560	46.718	4087.290	1.569	6.151	-1.261	3.441	0.866
800T289-33(S) ^{1,3}	8.146	2.890	0.0346	33	45	0.477	1.62	4.763	1.169	3.161	0.376	0.888	-	-	-	-	0.190	4.359	-1.585	3.646	-
800T289-43(S) ³	8.161	2.890	0.0451	33	45	0.621	2.11	6.208	1.521	3.162	0.488	0.886	-	-	-	-	0.421	5.661	-1.580	3.644	-
800T289-54(S)	8.198	2.890	0.0566	50	65	0.779	2.65	7.822	1.908	3.168	0.608	0.884	6.148	0.957	28.638	2038.940	0.832	7.198	-1.566	3.643	0.815
800T289-68(S)	8.250	2.890	0.0713	50	65	0.981	3.34	9.908	2.402	3.177	0.761	0.881	8.038	1.553	46.483	4087.320	1.663	9.101	-1.558	3.647	0.818
800T300-33(S) ^{1,3}	8.146	3.000	0.0346	33	45	0.484	1.65	4.888	1.200	3.177	0.416	0.927	-	-	-	-	0.193	4.819	-1.671	3.708	-
800T300-43(S) ³	8.161	3.000	0.0451	33	45	0.631	2.15	6.372	1.562	3.178	0.540	0.925	-	-	-	-	0.428	6.260	-1.667	3.706	-
800T300-54(S)	8.198	3.000	0.0566	50	65	0.792	2.69	8.028	1.959	3.184	0.675	0.923	6.237	0.956	28.619	2038.940	0.845	7.960	-1.652	3.704	0.801
800T300-68(S)	8.250	3.000	0.0713	50	65	0.997	3.39	10.171	2.466	3.194	0.844	0.920	8.160	1.548	46.358	4087.290	1.690	10.067	-1.644	3.708	0.804

¹ WEB HEIGHT-TO-THICKNESS RATIO (h/t) EXCEEDS 200 BUT IS LESS THAN 260. WEB MUST HAVE BEARING STIFFENERS AT ALL SUPPORT POINTS AND CONCENTRATED LOADS IN ACCORDANCE WITH AISI 100. NO HOLES OR POST ROLL TREATMENTS ARE PERMITTED IN THE WEB AT THESE LOCATIONS.

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.

8" NARROW STRUCTURAL TRACK PROPERTIES

Gross Properties:

I_x = Moment of Inertia of cross-section about the x-axis
 S_x = Section Modulus about the x-axis
 R_x = Radius of Gyration of cross-section about the x-axis
 I_y = Moment of Inertia of cross-section about the y-axis
 R_y = Radius of Gyration of cross-section about the y-axis

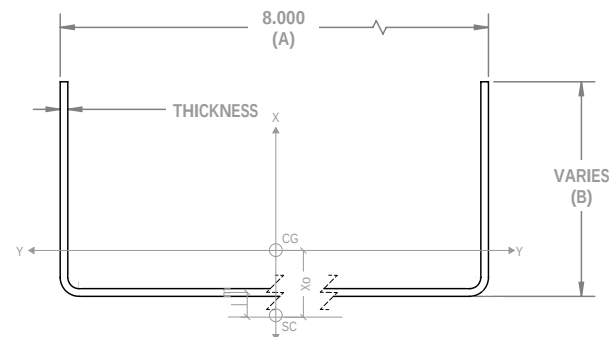
* Gross properties are based on the full, unreduced cross section, away from post roll treatments.

Torsional Properties:

J = St Vincent Torsional Constant ($J \times 1000$)
 C_w = Warping Constant
 X_o = Dist. From Shear Center to Neutral Axis
 R_o = Radii of Gyration
 β = Torsional Flexural Constant

Notes:

Track width = stud web + (design thickness x 2) + design inside corner radius
 Use the effective moment of inertia for deflection calculations



Effective Properties:

I_{xe} = Effective Moment of Inertia of cross-section about the x-axis
 S_{xe} = Effective Section Modulus about the x-axis
 M_a = Allowable Bending Moment
 V_{ag} = Allowable Shear Force in Web (Unpunched)

* Stress increase due to cold work of forming was incorporated in the provided effective section properties and allowable moment capacities.

8" NARROW STRUCTURAL TRACK PROPERTIES

Member	Gross Properties											Effective Properties				Torsional Properties					
	Web Depth (A) (in.)	Flange Width (B) (in.)	Design Thickness (in.)	Yield Strength F_y (ksi)	Ult Strength F_u (ksi)	Area (in ²)	Weight (lb/ft)	I_x (in ⁴)	S_x (in ³)	R_x (in)	I_y (in ⁴)	R_y (in)	I_{xe} (in ⁴)	S_{xe} (in ³)	M_a (in-k)	V_{ag} (lb)	$J \times 1000$ (in ⁴)	C_w (in ⁴)	X_o (in ⁴)	R_o (in ⁴)	β
800T125-33(N) ¹	8.000	1.25	0.0346	33	45	0.358	1.22	2.766	0.691	2.779	0.036	0.315	2.340	0.399	7.877	474.000	0.143	0.438	-0.444	2.832	0.976
800T125-43(N)	8.000	1.25	0.0451	33	45	0.466	1.59	3.586	0.896	2.774	0.046	0.313	3.321	0.626	12.366	1051.150	0.316	0.563	-0.441	2.827	0.976
800T125-54(N)	8.000	1.25	0.0566	50	65	0.582	1.98	4.458	1.115	2.767	0.057	0.312	4.172	0.801	23.976	2091.280	0.622	0.695	-0.438	2.819	0.976
800T125-68(N)	8.000	1.25	0.0713	50	65	0.730	2.48	5.544	1.386	2.756	0.070	0.309	5.511	1.171	35.056	4220.730	1.237	0.857	-0.435	2.808	0.976
800T150-33(N) ¹	8.000	1.5	0.0346	33	45	0.375	1.28	3.040	0.760	2.846	0.060	0.399	2.464	0.406	8.018	474.000	0.150	0.721	-0.594	2.934	0.959
800T150-43(N)	8.000	1.5	0.0451	33	45	0.488	1.66	3.942	0.986	2.841	0.077	0.397	3.518	0.641	12.657	1051.150	0.331	0.928	-0.591	2.929	0.959
800T150-54(N)	8.000	1.5	0.0566	50	65	0.611	2.08	4.904	1.226	2.834	0.096	0.396	4.427	0.821	24.569	2091.280	0.652	1.148	-0.588	2.921	0.959
800T150-68(N)	8.000	1.5	0.0713	50	65	0.765	2.60	6.105	1.526	2.824	0.119	0.394	5.896	1.210	36.219	4220.730	1.297	1.421	-0.585	2.911	0.960
800T199-33(N) ¹	8.000	1.99	0.0346	33	45	0.409	1.39	3.578	0.895	2.957	0.133	0.570	2.673	0.415	8.205	474.000	0.163	1.550	-0.919	3.148	0.915
800T199-43(N)	8.000	1.99	0.0451	33	45	0.533	1.81	4.642	1.160	2.952	0.172	0.568	3.853	0.660	13.051	1051.150	0.361	1.999	-0.916	3.143	0.915
800T199-54(N)	8.000	1.99	0.0566	50	65	0.666	2.27	5.779	1.445	2.945	0.214	0.566	4.856	0.847	25.369	2091.280	0.711	2.481	-0.913	3.135	0.915
800T199-68(N)	8.000	1.99	0.0713	50	65	0.835	2.84	7.203	1.801	2.937	0.266	0.564	6.542	1.263	37.799	4220.730	1.415	3.081	-0.909	3.125	0.915
800T249-33(N) ^{1,3}	8.000	2.49	0.0346	33	45	0.444	1.51	4.127	1.032	3.049	0.248	0.747	-	-	-	-	0.177	2.800	-1.289	3.394	-
800T249-43(N)	8.000	2.49	0.0451	33	45	0.578	1.97	5.355	1.339	3.045	0.321	0.746	4.361	0.725	14.320	1051.150	0.392	3.660	-1.278	3.385	0.858
800T249-54(N)	8.000	2.49	0.0566	50	65	0.723	2.46	6.672	1.668	3.038	0.400	0.744	5.458	0.936	28.035	2091.280	0.772	4.549	-1.275	3.378	0.858
800T249-68(N)	8.000	2.49	0.0713	50	65	0.907	3.08	8.323	2.081	3.030	0.499	0.742	7.028	1.486	44.496	4220.730	1.536	5.660	-1.272	3.369	0.858
800T299-33(N) ^{1,3}	8.000	2.99	0.0346	33	45	0.479	1.63	4.676	1.169	3.126	0.411	0.926	-	-	-	-	0.191	4.577	-1.676	3.666	-
800T299-43(N) ³	8.000	2.99	0.0451	33	45	0.623	2.12	6.069	1.517	3.122	0.532	0.925	-	-	-	-	0.422	5.919	-1.673	3.660	-
800T299-54(N)	8.000	2.99	0.0566	50	65	0.779	2.65	7.565	1.891	3.116	0.664	0.923	5.859	0.933	27.927	2091.280	0.832	7.449	-1.661	3.649	0.793
800T299-68(N)	8.000	2.99	0.0713	50	65	0.978	3.33	9.444	2.361	3.108	0.829	0.921	7.546	1.504	45.038	4220.730	1.657	9.281	-1.657	3.640	0.793

¹ WEB HEIGHT-TO-THICKNESS RATIO (h/t) EXCEEDS 200 BUT IS LESS THAN 260. WEB MUST HAVE BEARING STIFFENERS AT ALL SUPPORT POINTS AND CONCENTRATED LOADS IN ACCORDANCE WITH AISI 100. NO HOLES OR POST ROLL TREATMENTS ARE PERMITTED IN THE WEB AT THESE LOCATIONS.

³ FLANGE WIDTH-TO-THICKNESS RATIO (b/t) EXCEEDS 60. ALLOWABLE DESIGN VALUES FOR THESE MEMBERS ARE OUTSIDE THE SCOPE OF THIS REPORT AND MAY BE DETERMINED IN ACCORDANCE WITH SECTION B4.2 OF AISI 100.