



DIVISION: 05 00 00—METALS

Section: 05 40 00—Cold-Formed Metal Framing

Section: 05 41 00—Structural Metal Stud Framing

Section: 05 42 00—Cold-Formed Metal Joist Framing

REPORT HOLDER:

STEELER, INC.

EVALUATION SUBJECT:

COLD-FORMED STEEL FRAMING

1.0 EVALUATION SCOPE

Compliance with the following code:

2006 *International Building Code*® (IBC)

Property evaluated:

Structural

2.0 USES

2.1 S-Members:

S-members are used as load-bearing and nonload-bearing studs and joists in light-framed steel construction. S-members with a galvanized coating of G40 are limited to use in interior nonload-bearing walls with lateral loads of 5 psf or less.

2.2 T-Members:

T-members are used as tracks in load-bearing and nonload-bearing walls of light-framed steel construction. T-members with a galvanized coating of G40 are limited to use in interior nonload-bearing walls with lateral loads of 5 psf or less.

2.3 U-, F-, and Z-, and A-Members:

U-members are used in applications such as bridging and bracing and as main runners of suspended ceilings. F- and Z-members are used in applications such as furring for gypsum board and other sheathing materials. Z-members are also used as secondary framing members, such as purlins and girts. A-members are used for angle clips, struts, bridging and other miscellaneous framing.

3.0 DESCRIPTION

3.1 General:

The Steeler, Inc., cold-formed framing members are cold-formed from coils of steel at the Steeler facilities in Seattle, Washington, and Newark, California. Framing members include S-members (C-sections), T-members (tracks), U-members (channels), F-members (hat-sections), Z-members (Z-shapes) and A-members (angles).

3.2 Materials:

Framing members having thickness designations of 30 mils or less are cold-formed from steel coils conforming to ASTM A 653 SS Grade 33 or Grade 50, Class 1, galvanized with a minimum G40 coating; or ASTM A 1003 Nonstructural Grade 33 (NS33). Framing members having thickness designations of 33 mils or more are cold-formed from steel coils conforming to ASTM A 653 SS Grade 33 or Grade 50, Class 1, galvanized with a minimum G60 coating; ASTM A 1003 Structural Grade 33 Type H (ST33H); or ASTM A 1003 Structural Grade 50 Type H (ST50H). The framing members have uncoated minimum base-metal thicknesses ranging from 18 to 118 mils [0.0179 to 0.118 inch (0.46 to 3.15 mm)], with design thicknesses as shown in the tables in this report.

3.3 S-Members:

S-members have depths ranging from 1.62 inches to 16 inches (41 to 406 mm) and widths ranging from 1.25 inches to 3.5 inches (32 to 89 mm). Dimensional details and available punch-outs are shown in Figures 1 and 2. Section properties of S-members are given in Table 1. The value for the coefficient β is determined as follows:

$$\beta = 1 - (x_o/r_o)^2$$

where x_o and r_o are as shown in Table 1.

3.4 T-Members:

T-members (tracks) are available in depths to match available S-members. See Figure 2 and Table 2 for dimensions and section properties.

3.5 U-Members:

U-members are channels with a flange width of 0.5 inch (12.7 mm) and depths ranging from 0.75 inch to 2.5 inches (19.1 to 64 mm). Dimensions and section properties of U-members are given in Table 3.

3.6 F-Members:

F-members are single hat sections, available in depths ranging from 0.50 inch to 1.50 inches (12.7 to 38 mm). Dimensions and section properties of F-members are given in Table 4.

3.7 Z-Members:

Z-members are available in depths ranging from 1 inch to 16 inches (25.4 to 406 mm). Dimensions and section properties of Z-members are given in Table 5.

3.8 A-Members:

A-members are equal-leg angle sections available in depths ranging from 1 inch to 7¹/₂ inches (25 to 191 mm).

Dimensions and section properties of A-members are given in Table 6.

4.0 DESIGN AND INSTALLATION

4.1 General:

Steeler, Inc., cold-formed steel members and their connections must be designed and installed in accordance with IBC Section 2210 using the section properties referenced in Section 3.

4.2 Design:

Nominal strength must be determined using the section properties shown in Tables 1 through 6. The allowable moments (M_{axo}) given in the section property tables are for use with Allowable Strength Design (ASD), and are for flexural members installed with the compression flange continuously braced. For other conditions of compression flange bracing, the allowable moment must be determined in accordance with the AISI North American Specification for the Design of Cold-formed Structural Steel, including 2004 Supplement (AISI-NAS).

4.3 Installation:

The Steeler, Inc., cold-formed steel members must be installed in accordance with the approved plans, the general requirements of Section C of AISI-General, and this report. The approved plans must be available at the jobsite at all times during installation.

S-members used as wall studs must be fastened to the top and bottom tracks with one screw at each flange. Where Sheathing Braced Design is used, the sheathing must be fastened to the top and bottom tracks in accordance with Section C3(b) of AISI-WSD. S-members used as floor or ceiling joists must be fastened to the supporting construction.

4.4 Fire-resistance-rated Construction:

Steeler cold formed steel framing may be used in fire-resistance-rated construction where noncombustible steel studs or joists of comparable size, shape and thickness are indicated in IBC Tables 720.1(2) and 720.1(3).

5.0 CONDITIONS OF USE

The Steeler cold-formed framing members described in this report comply with, or are suitable alternatives to what is specified in, the code indicated in Section 1.0 of this report, subject to the following conditions:

- 5.1 The Steeler, Inc., cold formed steel framing must be installed in accordance with this report, the IBC and the approved plans. In the case of conflict between this report and the submitted plans, this report governs.
- 5.2 Uncoated minimum steel thickness of cold-formed members, as delivered to the jobsite, must not be less than 95 percent of the design thickness stated in this report.
- 5.3 Complete plans and calculations verifying compliance with this report and the IBC must be submitted to the code official for each project. The calculations and drawings must be prepared and sealed by a registered design professional where required by the statutes of the jurisdiction in which the project is constructed.
- 5.4 Products with a G40 coating are limited to use in interior, nonstructural, nonload-bearing walls, with a maximum transverse load of 5 psf (239 Pa).

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Cold-formed Steel Framing Members (AC46), dated February 2011.

7.0 IDENTIFICATION

- 7.1 Each Steeler, Inc., member recognized in this report must have a legible label, stamp or embossment, at a maximum of 48 inches (1219 mm) on center, indicating the manufacturer's name (Steeler, Inc.); the evaluation report number (ESR-2054); the acronym "ICC-ES"; the minimum base-metal thickness (uncoated) in decimal inches or mils; minimum specified yield strength [if greater than 33 ksi (228 MPa)]; and coating grade (if G60 or greater).
- 7.2 The report holder's contact information is the following:

STEELER, INC.
10023 MARTIN LUTHER KING JR. WAY SOUTH
SEATTLE, WASHINGTON 98178
(206) 725-2500
www.steeler.com

TABLE 1—S-MEMBER (C-SHAPE) SECTION PROPERTIES^{1,2,3,4} (Continued)

MEMBER ID DESIGNATION	FULL PROPERTIES								TORSIONAL PROPERTIES				33 KSI EFFECTIVE PROPERTIES						50 KSI EFFECTIVE PROPERTIES					
	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	r _x (in)	S _x (in ³)	I _y (in ⁴)	r _y (in)	S _y (in ³)	J (10 ⁻³ in ⁴)	C _w (in ⁶)	r _o (in)	X _o (in)	Maxo (k-in)	I _{eff} (in ⁴)	I _{xe} (in ⁴)	S _{xe} (t) (in ³)	V _{ay} (kips)	A _e (in ²)	Maxo (k-in)	I _{eff} (in ⁴)	I _{xe} (in ⁴)	S _{xe} (t) (in ³)	V _{ay} (kips)	A _e (in ²)
600S350-054	0.8026	2.7287	4.9230	2.4768	1.6410	1.3790	1.3109	0.6038	0.8570	10.5600	4.0206	-2.8831	27.150	4.8786	4.4359	1.3740	1.890	0.4775	36.901	4.6475	4.1498	1.2325	1.947	0.4002
600S350-068	1.0032	3.4109	6.1120	2.4683	2.0373	1.7010	1.3023	0.7442	1.7000	12.9150	3.9983	-2.8632	34.737	6.1118	5.6150	1.7579	2.339	0.6419	47.593	5.8420	5.2808	1.5896	2.879	0.5498
600S350-097	1.4079	4.7870	8.4550	2.4505	2.8183	2.3220	1.2841	1.0138	4.8540	17.3000	3.9514	-2.8212	58.135	8.4549	8.1988	2.6657	2.512	1.1180	72.569	8.3826	7.7536	2.4238	3.806	0.9635
600S350-118	1.6987	5.7754	10.0900	2.4373	3.3633	2.7420	1.2705	1.1958	8.7340	20.1380	3.9161	-2.7895	71.837	10.0900	9.8639	3.2297	2.391	1.4369	95.023	10.0900	9.7591	3.1671	3.622	1.3287
800S125-030*	0.3312	1.1260	2.6172	2.8112	0.6543	0.0410	0.3520	0.0387	0.1075	0.5044	2.8805	-0.5201	8.426	2.3814	2.0539	0.4264	0.347	0.1049	---	---	---	---	---	---
800S125-033*	0.3668	1.2471	2.8939	2.8089	0.7235	0.0451	0.3505	0.0425	0.1464	0.5533	2.8776	-0.5173	9.895	2.6777	2.3636	0.5008	0.474	0.1244	---	---	---	---	---	---
800S125-043	0.4762	1.6191	3.7379	2.8017	0.9345	0.0570	0.3458	0.0538	0.3229	0.6973	2.8684	-0.5085	14.858	3.6235	3.3469	0.7519	1.051	0.1902	---	---	---	---	---	---
800S125-054	0.5931	2.0166	4.6140	2.7891	1.1535	0.0680	0.3386	0.0643	0.6334	0.8286	2.8530	-0.4956	20.162	4.5931	4.3359	1.0203	2.091	0.2611	27.982	4.4827	4.1433	0.9346	2.091	0.2376
800S125-068	0.7394	2.5139	5.6799	2.7716	1.4200	0.0799	0.3287	0.0756	1.2529	0.9664	2.8317	-0.4783	27.211	5.6799	5.5892	1.3771	3.367	0.3659	38.492	5.6718	5.4052	1.2856	3.367	0.3334
800S125-097	1.0439	3.5491	7.8872	2.7488	1.9718	0.1098	0.3244	0.1053	3.5988	1.3126	2.8083	-0.4747	49.406	7.8872	7.8586	1.9647	4.824	0.6138	67.083	7.8872	7.8586	1.9647	5.938	0.5597
800S125-118	1.2838	4.3650	9.6880	2.7471	2.4220	0.1480	0.3394	0.1451	6.6013	1.7698	2.8147	-0.5110	63.240	9.6881	9.6532	2.4133	4.971	0.9315	92.565	9.6881	9.6532	2.4133	7.115	0.8516
800S137-030*	0.3458	1.1758	2.8373	2.8643	0.7093	0.0616	0.4221	0.0543	0.1122	0.7581	2.9691	-0.6582	9.539	2.6398	2.2946	0.4827	0.347	0.1198	---	---	---	---	---	---
800S137-033*	0.3830	1.3024	3.1378	2.8621	0.7845	0.0678	0.4206	0.0597	0.1529	0.8329	2.9661	-0.6552	11.225	2.9539	2.6425	0.5681	0.474	0.1423	---	---	---	---	---	---
800S137-043	0.5019	1.7065	4.1160	2.8637	1.0290	0.0916	0.4271	0.0816	0.3403	1.1305	2.9725	-0.6726	17.079	3.9923	3.7826	0.8643	1.051	0.2204	---	---	---	---	---	---
800S137-054	0.6311	2.1456	5.1618	2.8600	1.2905	0.1172	0.4310	0.1054	0.6739	1.4530	2.9725	-0.6858	23.247	5.1331	4.9394	1.1764	2.091	0.3048	32.857	5.0256	4.7735	1.0974	2.091	0.2821
800S137-068	0.7929	2.6957	6.4417	2.8504	1.6104	0.1468	0.4303	0.1330	1.3436	1.8214	2.9640	-0.6894	30.966	6.4417	6.3521	1.5671	3.367	0.4193	44.488	6.4278	6.1991	1.4859	3.367	0.3899
800S137-097	1.1140	3.7877	8.8736	2.8223	2.2184	0.1948	0.4181	0.1776	3.8408	2.3922	2.9305	-0.6692	54.618	8.8736	8.8450	2.2113	4.824	0.6840	75.511	8.8736	8.8450	2.2113	5.938	0.6299
800S137-118	1.3646	4.6395	10.7850	2.8114	2.6963	0.2450	0.4241	0.2279	7.0164	3.0375	2.9265	-0.6932	69.017	10.7850	10.7500	2.6876	4.971	1.0123	101.240	10.7850	10.7500	2.6876	7.115	0.9323
800S162-030*	0.3633	1.2352	3.1102	2.9259	0.7776	0.0973	0.5176	0.0741	0.1179	1.1815	3.0888	-0.8437	10.081	2.9079	2.4538	0.5101	0.347	0.1264	---	---	---	---	---	---
800S162-033*	0.4024	1.3682	3.4403	2.9239	0.8601	0.1072	0.5161	0.0816	0.1606	1.2997	3.0858	-0.8406	11.671	3.2732	2.7958	0.5906	0.474	0.1472	---	---	---	---	---	---
800S162-043	0.5371	1.8261	4.6337	2.9373	1.1584	0.1600	0.5458	0.1253	0.3641	1.9944	3.1263	-0.9209	19.780	4.5056	4.3281	1.0010	1.051	0.2581	---	---	---	---	---	---
800S162-054	0.6695	2.2764	5.7363	2.9270	1.4341	0.1947	0.5392	0.1525	0.7150	2.4153	3.1116	-0.9076	26.073	5.7055	5.5176	1.3194	2.091	0.3433	36.074	5.6071	5.2649	1.2049	2.091	0.3095
800S162-068	0.8371	2.8460	7.1080	2.9140	1.7770	0.2373	0.5324	0.1862	1.4185	2.9310	3.0946	-0.8953	34.250	7.1080	7.0191	1.7333	3.367	0.4635	49.451	7.0920	6.8689	1.6517	3.367	0.4341
800S162-097	1.1852	4.0297	9.9120	2.8918	2.4780	0.3300	0.5280	0.2623	4.0862	4.0854	3.0733	-0.8966	59.290	9.9116	9.8830	2.4708	4.824	0.7552	84.387	9.9116	9.8830	2.4708	5.938	0.7011
800S162-118	1.4391	4.8929	11.8920	2.8746	2.9730	0.3950	0.5242	0.3166	7.3995	4.8862	3.0563	-0.8962	73.661	11.8920	11.8570	2.9642	4.971	1.0868	108.450	11.8920	11.8570	2.9642	7.115	1.0069
800S200-030*	0.3880	1.3190	3.4983	3.0029	0.8746	0.1676	0.6573	0.1063	0.1259	1.9985	3.2735	-1.1253	10.533	3.4500	2.6251	0.5330	0.347	0.1312	---	---	---	---	---	---
800S200-033*	0.4298	1.4612	3.8704	3.0010	0.9676	0.1848	0.6557	0.1172	0.1715	2.2011	3.2703	-1.1219	12.479	3.8181	3.0256	0.6315	0.474	0.1532	---	---	---	---	---	---
800S200-043	0.5709	1.9411	5.1688	3.0089	1.2922	0.2663	0.6829	0.1728	0.3871	3.2533	3.3101	-1.1985	22.527	5.1688	4.8026	1.1400	1.051	0.2569	---	---	---	---	---	---
800S200-054	0.7120	2.4208	6.4059	2.9995	1.6015	0.3255	0.6761	0.2112	0.7603	3.9577	3.2950	-1.1844	33.342	6.4059	6.2349	1.5324	2.091	0.3666	41.048	6.4059	5.8386	1.3710	2.091	0.3083
800S200-068	0.8977	3.0521	8.0341	2.9916	2.0085	0.4147	0.6797	0.2716	1.5212	5.0821	3.2950	-1.2021	44.584	8.0341	8.0140	2.0035	3.367	0.5241	63.327	8.0341	7.7854	1.9077	3.367	0.4650
800S200-097	1.2798	4.3513	11.3100	2.9727	2.8275	0.5970	0.6832	0.3976	4.4123	7.4237	3.2886	-1.2293	65.575	11.3100	11.2810	2.8203	4.824	0.8498	97.297	11.3100	11.2810	2.8203	5.938	0.7957
800S200-118	1.5620	5.3109	13.6630	2.9575	3.4158	0.7320	0.6848	0.4933	8.0318	9.2023	3.2821	-1.2477	81.653	13.6630	13.6280	3.4070	4.971	1.2097	120.720	13.6630	13.6280	3.4070	7.115	1.1298
800S250-043	0.6160	2.0944	5.8823	3.0902	1.4706	0.4618	0.8658	0.2458	0.4177	5.5369	3.5804	-1.5877	22.641	5.8106	5.0790	1.1458	1.051	0.2644	---	---	---	---	---	---
800S250-054	0.7720	2.6247	7.3400	3.0835	1.8350	0.5785	0.8656	0.3091	0.8244	6.9515	3.5770	-1.5930	32.107	7.3238	6.8155	1.6248	2.091	0.3780	41.976	7.1786	6.2544	1.4020	2.091	0.3237
800S250-068	0.9761	3.3187	9.2380	3.0764	2.3095	0.7450	0.8739	0.4026	1.6541	9.0826	3.5880	-1.6268	47.933	9.2378	8.9784	2.2016	3.367	0.5708	60.941	9.1983	8.5553	2.0354	3.367	0.4823
800S250-097	1.3978	4.7524	13.0720	3.0581	3.2680	1.0920	0.8837	0.6007	4.8190	13.6430	3.5985	-1.6782	73.655	13.0720	13.0430	3.2609	4.824	0.9677	106.640	13.0720	12.8390	3.1708	5.938	0.9015
800S250-118	1.6862	5.7332	15.5890	3.0405	3.8973	1.2770	0.8702	0.7020	8.6700	15.7730	3.5664	-1.6484	90.119	15.5890	15.5540	3.8885	4.971	1.3339	133.770	15.5890	15.5540	3.8885	7.115	1.2540

TABLE 1—S-MEMBER (C-SHAPE) SECTION PROPERTIES^{1,2,3,4} (Continued)

MEMBER ID DESIGNATION	FULL PROPERTIES								TORSIONAL PROPERTIES				33 KSI EFFECTIVE PROPERTIES					50 KSI EFFECTIVE PROPERTIES						
	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	I _y (in ⁴)	S _x (in ³)	S _y (in ³)	r _x (in)	r _y (in)	Sy(r) (in ³)	J (10 ³ in ⁴)	Cw (in ⁶)	r _o (in)	X _o (in)	Maxo (k-in)	I _{eff} (in ⁴)	I _{xe} (in ⁴)	S _{xe} (t) (in ³)	V _{ay} (kips)	A _e (in ²)	Maxo (k-in)	I _{eff} (in ⁴)	I _{xe} (in ⁴)	S _{xe} (t) (in ³)	V _{ay} (kips)
800S300-054	0.8331	2.8326	8.2870	3.1538	2.0718	0.9310	1.0572	0.4260	0.8896	11.1600	3.8962	-2.0288	33.934	8.1321	7.3923	1.7173	2.091	0.3963	42.724	7.7462	6.6335	1.4270	2.091	0.3361
800S300-068	1.0545	3.5854	10.4390	3.1463	2.6098	1.2020	1.0678	0.5563	1.7870	14.6670	3.9161	-2.0728	46.368	10.4390	9.7993	2.3465	3.367	0.5931	64.553	10.2070	9.2955	2.1561	3.367	0.5069
800S300-097	1.4995	5.0982	14.6580	3.1266	3.6645	1.7100	1.0679	0.7995	5.1700	21.1110	3.9121	-2.0948	78.615	14.6580	14.3920	3.5515	4.824	1.0488	103.220	14.6580	14.1470	3.4474	5.938	0.9334
800S300-118	1.8104	6.1555	17.5150	3.1104	4.3788	2.0110	1.0540	0.9394	9.3090	24.5480	3.8788	-2.0639	98.917	17.5150	17.4800	4.3700	4.971	1.4581	140.350	17.5150	17.0130	4.1653	7.115	1.3113
800S350-054	0.9158	3.1135	9.4660	3.2151	2.3665	1.5190	1.2880	0.6249	0.9780	19.2860	4.3436	-2.6213	39.848	9.3696	8.5997	2.0165	2.091	0.4817	50.406	9.0570	7.7435	1.6836	2.091	0.4030
800S350-068	1.1458	3.8957	11.7730	3.2055	2.9433	1.8750	1.2791	0.7706	1.9420	23.6430	4.3219	-2.6015	50.797	11.7730	10.8690	2.5707	3.367	0.6506	70.396	11.2230	10.2810	2.3512	3.367	0.5555
800S350-097	1.6113	5.4786	16.3500	3.1854	4.0875	2.5610	1.2606	1.0510	5.5550	31.8350	4.2766	-2.5599	84.539	16.3500	15.8640	3.8764	4.824	1.1122	106.470	16.1750	15.0590	3.5561	5.938	0.9484
800S350-118	1.9471	6.6200	19.5700	3.1704	4.8925	3.0260	1.2467	1.2408	10.0120	37.2060	4.2425	-2.5285	104.680	19.5700	19.1410	4.7065	4.971	1.5458	138.280	19.5700	18.9350	4.6185	7.115	1.4087
1000S125-043*	0.5664	1.9257	6.6023	3.4142	1.3205	0.0591	0.3231	0.0545	0.3840	1.1636	3.4580	-0.4432	18.947	6.1409	5.5708	0.9588	0.836	0.1913	---	---	---	---	---	---
1000S125-054	0.7063	2.4015	8.1670	3.4004	1.6334	0.0706	0.3161	0.0651	0.7543	1.3841	3.4422	-0.4314	25.957	7.8811	7.2964	1.3136	1.660	0.2633	35.674	7.6369	6.9072	1.1915	1.660	0.2390
1000S125-068	0.8820	2.9988	10.0840	3.3813	2.0168	0.0830	0.3066	0.0766	1.4946	1.6168	3.4205	-0.4156	35.769	10.0330	9.5534	1.8101	3.345	0.3703	49.771	9.7719	9.1366	1.6623	3.345	0.3363
1000S125-097	1.2473	4.2407	14.0610	3.3576	2.8122	0.1140	0.3025	0.1068	4.3001	2.2001	3.3962	-0.4118	58.882	14.0610	14.0320	2.8064	6.434	0.6273	80.082	14.0610	13.7090	2.6747	7.175	0.5686
1000S125-118	1.5322	5.2096	17.2860	3.3588	3.4572	0.1540	0.3171	0.1472	7.8785	2.9616	3.4028	-0.4438	90.410	17.2860	17.2510	3.4502	7.747	0.8680	111.920	17.2860	17.2510	3.4502	9.536	0.7854
1000S137-043*	0.5921	2.0131	7.2032	3.4879	1.4406	0.0956	0.4018	0.0826	0.4014	1.8793	3.5604	-0.5913	21.673	6.7246	6.2705	1.0968	0.836	0.2215	---	---	---	---	---	---
1000S137-054	0.7443	2.5304	9.0408	3.4853	1.8082	0.1225	0.4057	0.1068	0.7947	2.4124	3.5603	-0.6029	29.896	8.7354	8.2794	1.5129	1.660	0.3069	41.800	8.4835	7.9315	1.3961	1.660	0.2835
1000S137-068	0.9355	3.1806	11.3020	3.4759	2.2604	0.1540	0.4052	0.1347	1.5852	3.0224	3.5515	-0.6057	40.554	11.2450	10.7820	2.0523	3.345	0.4238	57.441	10.9740	10.4270	1.9185	3.345	0.3928
1000S137-097	1.3174	4.4793	15.6430	3.4459	3.1286	0.2040	0.3934	0.1801	4.5420	3.9774	3.5175	-0.5866	65.566	15.6430	15.6140	3.1229	6.434	0.6974	89.524	15.6430	15.2970	2.9901	7.175	0.6388
1000S137-118	1.6130	5.4840	19.0580	3.4374	3.8116	0.2570	0.3995	0.2313	8.2936	5.0354	3.5135	-0.6077	97.701	19.0580	19.0230	3.8046	7.747	0.9487	123.450	19.0580	19.0230	3.8046	9.536	0.8661
1000S162-043*	0.6273	2.1328	8.0256	3.5769	1.6051	0.1682	0.5178	0.1271	0.4253	3.2986	3.7055	-0.8175	25.114	7.5387	7.1552	1.2709	0.836	0.2592	---	---	---	---	---	---
1000S162-054	0.7827	2.6613	9.9510	3.5655	1.9902	0.2050	0.5113	0.1547	0.8358	3.9997	3.6908	-0.8050	33.467	9.6406	9.2052	1.6936	1.660	0.3454	45.830	9.4120	8.7059	1.5307	1.660	0.3110
1000S162-068	0.9797	3.3309	12.3560	3.5514	2.4712	0.2490	0.5046	0.1889	1.6601	4.8586	3.6737	-0.7933	44.687	12.2930	11.8430	2.2614	3.345	0.4680	63.698	12.0220	11.4960	2.1275	3.345	0.4370
1000S162-097	1.3886	4.7213	17.2950	3.5291	3.4590	0.3480	0.5005	0.2664	4.7875	6.7664	3.6517	-0.7935	72.467	17.2950	17.2660	3.4533	6.434	0.7686	99.371	17.2950	16.9530	3.3190	7.175	0.7100
1000S162-118	1.6875	5.7374	20.8120	3.5119	4.1624	0.4170	0.4969	0.3216	8.6768	8.0889	3.6343	-0.7923	103.260	20.8120	20.7770	4.1554	7.747	1.0232	134.880	20.8120	20.7770	4.1554	9.536	0.9407
1000S200-043*	0.6611	2.2478	8.8636	3.6616	1.7727	0.2811	0.6521	0.1757	0.4482	5.3929	3.8710	-1.0733	25.382	8.4422	7.4643	1.2845	0.836	0.2580	---	---	---	---	---	---
1000S200-054	0.8252	2.8056	11.0000	3.6511	2.2000	0.3440	0.6453	0.2148	0.8812	6.5686	3.8562	-1.0599	36.032	10.7140	10.0120	1.8234	1.660	0.3688	46.224	10.5420	9.0624	1.5439	1.660	0.3097
1000S200-068	1.0403	3.5369	13.8160	3.6443	2.7632	0.4380	0.6491	0.2762	1.7628	8.4157	3.8548	-1.0756	50.418	13.7480	13.3120	2.5515	3.345	0.5286	68.800	13.5180	12.5840	2.2979	3.345	0.4679
1000S200-097	1.4832	5.0429	19.5140	3.6272	3.9028	0.6330	0.6531	0.4046	5.1135	12.2410	3.8460	-1.0993	81.790	19.5140	19.4850	3.8970	6.434	0.8632	112.600	19.5140	19.1760	3.7609	7.175	0.8046
1000S200-118	1.8104	6.1555	23.6370	3.6133	4.7274	0.7770	0.6550	0.5022	9.3090	15.1220	3.8378	-1.1152	113.130	23.6370	23.6020	4.7205	7.747	1.1462	153.180	23.6370	23.6020	4.7205	9.536	1.0636
1000S250-043*	0.7062	2.4011	9.9810	3.7594	1.9962	0.4900	0.8330	0.2506	0.4788	9.1924	4.1095	-1.4356	27.669	9.9438	8.1325	1.4002	0.836	0.2654	---	---	---	---	---	---
1000S250-054	0.8852	3.0096	12.4670	3.7529	2.4934	0.6140	0.8329	0.3152	0.9452	11.5330	4.1051	-1.4400	42.041	12.4670	11.3430	2.1275	1.660	0.3802	51.345	12.2760	10.0190	1.7149	1.660	0.3251
1000S250-068	1.1187	3.8036	15.7120	3.7476	3.1424	0.7920	0.8415	0.4106	1.8957	15.0100	4.1129	-1.4706	65.483	15.7120	15.2970	3.0076	3.345	0.5752	81.398	15.6770	14.3970	2.7187	3.345	0.4852
1000S250-097	1.6012	5.4440	22.3040	3.7323	4.4608	1.1630	0.8521	0.6128	5.5200	22.3830	4.1179	-1.5168	100.630	22.3040	22.2760	4.4552	6.434	0.9812	145.870	22.3040	21.9260	4.3371	7.175	0.9104
1000S250-118	1.9346	6.5777	26.6660	3.7126	5.3332	1.3600	0.8385	0.7165	9.9480	25.9470	4.0866	-1.4880	123.440	26.6660	26.6310	5.3262	7.747	1.2704	183.220	26.6660	26.6310	5.3262	9.536	1.1878
1000S300-054	0.9463	3.2175	13.9560	3.8403	2.7912	0.9930	1.0242	0.4354	1.0105	18.4730	4.3837	-1.8492	43.212	13.7460	12.0680	2.1868	1.660	0.3984	52.708	13.2820	10.6220	1.7604	1.660	0.3375
1000S300-068	1.1971	4.0702	17.6050	3.8348	3.5210	1.2830	1.0354	0.5686	2.0290	24.1600	4.3986	-1.8894	63.107	17.6050	16.5880	3.1936	3.345	0.5976	83.746	17.2580	15.3350	2.7971	3.345	0.5099
1000S300-097	1.7029	5.7898	24.7960	3.8159	4.9592	1.8280	1.0360	0.8176	5.8710	34.6480	4.3904	-1.9083	106.590	24.7960	24.3630	4.8151	6.434	1.0622	140.190	24.7960	23.9590	4.6824	7.175	0.9422
1000S300-118	2.0588	7.0000	29.6940	3.7977	5.9388	2.1500	1.0220	0.9611	10.5860	40.3990	4.3584	-1.8783	134.270	29.6940	29.6590	5.9319	7.747	1.3946	190.980	29.6940	28.8770	5.6680	9.536	1.2451

TABLE 1—S-MEMBER (C-SHAPE) SECTION PROPERTIES^{1,2,3,4} (Continued)

MEMBER ID DESIGNATION	FULL PROPERTIES									TORSIONAL PROPERTIES				33 KSI EFFECTIVE PROPERTIES					50 KSI EFFECTIVE PROPERTIES					
	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	r _x (in)	S _x (in ³)	I _y (in ⁴)	r _y (in)	S _y (r) (in ³)	J (10 ⁻⁹ in ⁴)	C _w (in ⁶)	r _o (in)	X _o (in)	Maxo (k-in)	I _{eff} (in ⁴)	I _{xe} (in ⁴)	S _{xe} (t) (in ³)	V _{ay} (kips)	A _e (in ²)	Maxo (k-in)	I _{eff} (in ⁴)	I _{xe} (in ⁴)	S _{xe} (t) (in ³)	V _{ay} (kips)	A _e (in ²)
1000S350-054	1.0289	3.4984	15.8400	3.9236	3.1680	1.6280	1.2579	0.6396	10.9900	31.3650	4.7727	-2.4086	51.230	15.7440	14.0810	2.5925	1.660	0.4839	62.425	15.3830	12.4050	2.0850	1.660	0.4044
1000S350-068	1.2884	4.3805	19.7260	3.9129	3.9452	2.0100	1.2489	0.7891	21.8300	38.5120	4.7517	-2.3891	68.802	19.7260	18.2910	3.4818	3.345	0.6550	90.036	19.0100	16.7790	3.0072	3.345	0.5584
1000S350-097	1.8147	6.1701	27.4680	3.8905	5.4936	2.7460	1.2301	1.0770	6.2570	52.0310	4.7078	-2.3482	113.950	27.4680	26.6720	5.2247	6.434	1.1256	144.580	27.1400	25.4060	4.8290	7.175	0.9573
1000S350-118	2.1955	7.4645	32.9450	3.8737	6.5890	3.2460	1.2160	1.2721	11.2890	60.9690	4.6750	-2.3176	141.260	32.9450	32.2410	6.3508	7.747	1.4822	186.720	32.9450	31.8950	6.2364	9.536	1.3425
1200S125-054*	0.8195	2.7864	13.1330	4.0030	2.1888	0.0720	0.2970	0.0657	0.8751	2.0961	4.0320	-0.3820	31.678	12.2240	11.1100	1.6031	1.377	0.2646	43.956	11.7290	10.5050	1.4681	1.377	0.2399
1200S125-068	1.0246	3.4836	16.2510	3.9830	2.7085	0.0850	0.2880	0.0773	1.7362	2.4506	4.0100	-0.3680	44.239	15.7370	14.7240	2.2388	2.770	0.3730	60.905	15.2000	13.9560	2.0342	2.770	0.3381
1200S125-097	1.4507	4.9322	22.7290	3.9580	3.7882	0.1170	0.2840	0.1079	5.0013	3.3392	3.9850	-0.3640	71.298	22.7290	22.1680	3.6081	7.410	0.6353	100.470	22.5430	21.3610	3.3556	7.410	0.5739
1200S125-118	1.7806	6.0541	27.9480	3.9620	4.6580	0.1590	0.2990	0.1488	9.1558	4.4934	3.9920	-0.3930	101.410	27.9480	27.9130	4.6521	9.714	0.8831	133.340	27.9480	27.3150	4.4536	11.034	0.7953
1200S137-054*	0.8575	2.9153	14.4080	4.0990	2.4013	0.1260	0.3840	0.1077	0.9156	3.6464	4.1520	-0.5390	36.459	13.4600	12.5750	1.8450	1.377	0.3083	51.164	12.9680	12.0110	1.7089	1.377	0.2844
1200S137-068	1.0781	3.6654	18.0340	4.0900	3.0057	0.1590	0.3840	0.1360	1.8268	4.5679	4.1430	-0.5410	50.063	17.5030	16.5420	2.5335	2.770	0.4264	70.228	16.9510	15.8750	2.3456	2.770	0.3946
1200S137-097	1.5208	5.1708	25.0470	4.0580	4.1745	0.2110	0.3720	0.1819	5.2433	6.0189	4.1090	-0.5230	78.902	25.0470	24.4950	3.9929	7.410	0.7055	111.930	24.8460	23.7030	3.7385	7.410	0.6441
1200S137-118	1.8614	6.3286	30.5570	4.0520	5.0928	0.2660	0.3780	0.2337	9.5709	7.6101	4.1050	-0.5420	110.870	30.5570	30.5220	5.0869	9.714	0.9638	146.290	30.5570	29.9300	4.8862	11.034	0.8761
1200S162-054*	0.8959	3.0462	15.7310	4.1902	2.6218	0.2120	0.4865	0.1562	0.9567	6.0447	4.2801	-0.7242	40.774	14.7760	13.9380	2.0634	1.377	0.3467	55.995	14.3340	13.1350	1.8702	1.377	0.3118
1200S162-068	1.1223	3.8157	19.5630	4.1751	3.2605	0.2590	0.4799	0.1909	1.9018	7.3477	4.2627	-0.7131	55.042	19.0220	18.0960	2.7855	2.770	0.4706	77.790	18.4710	17.4490	2.5982	2.770	0.4388
1200S162-097	1.5920	5.4129	27.4560	4.1528	4.5760	0.3610	0.4760	0.2692	5.4887	10.2310	4.2403	-0.7126	86.791	27.4560	26.9080	4.3921	7.410	0.7767	123.840	27.2420	26.1310	4.1362	7.410	0.7153
1200S162-118	1.9359	6.5820	33.1080	4.1355	5.5180	0.4320	0.4726	0.3252	9.9540	12.2300	4.2227	-0.7110	120.210	33.1080	33.0730	5.5121	9.714	1.0383	158.960	33.1080	32.4860	5.3091	11.034	0.9506
1200S200-054*	0.9384	3.1905	17.2450	4.2868	2.8742	0.3570	0.6172	0.2173	1.0021	9.9526	4.4363	-0.9605	43.797	16.3410	15.0820	2.2164	1.377	0.3701	56.584	15.9990	13.6160	1.8899	1.377	0.3106
1200S200-068	1.1829	4.0218	21.6780	4.2810	3.6130	0.4560	0.6211	0.2795	2.0045	12.7370	4.4342	-0.9747	61.936	21.1270	20.2400	3.1343	2.770	0.5313	83.800	20.6630	18.9910	2.7989	2.770	0.4697
1200S200-097	1.6866	5.7344	30.6840	4.2653	5.1140	0.6590	0.6252	0.4095	5.8148	18.4860	4.4244	-0.9957	97.373	30.6840	30.1430	4.9276	7.410	0.8713	139.810	30.4570	29.3830	4.6698	7.410	0.8099
1200S200-118	2.0588	7.0000	37.2330	4.2526	6.2055	0.8100	0.6274	0.5084	10.5860	22.7980	4.4156	-1.0098	135.140	37.2330	37.1980	6.1996	9.714	1.1613	179.450	37.2330	36.6180	5.9936	11.034	1.0735
1200S250-054*	0.9984	3.3945	19.3650	4.4042	3.2275	0.6420	0.8016	0.3196	1.0661	17.4910	4.6659	-1.3159	45.384	18.5920	16.0790	2.2967	1.377	0.3815	59.746	17.8060	14.6550	1.9955	1.377	0.3260
1200S250-068	1.2613	4.2884	24.4230	4.4004	4.0705	0.8290	0.8105	0.4163	2.1370	22.7160	4.6719	-1.3439	67.864	23.9250	22.4140	3.4343	2.770	0.5779	87.385	23.5580	20.3550	2.9187	2.770	0.4870
1200S250-097	1.8046	6.1356	34.7390	4.3875	5.7898	1.2180	0.8215	0.6215	6.2220	33.7410	4.6740	-1.3859	110.670	34.7390	34.2050	5.6006	7.410	0.9892	158.580	34.5130	33.2980	5.2967	7.410	0.9157
1200S250-118	2.1830	7.4223	41.6120	4.3660	6.9353	1.4250	0.8078	0.7269	11.2250	39.1860	4.6432	-1.3583	151.070	41.6120	41.5770	6.9295	9.714	1.2855	201.210	41.6120	41.0040	6.7203	11.034	1.1977
1200S300-054*	1.0595	3.6023	21.5180	4.5066	3.5863	1.0410	0.9913	0.4423	1.1310	28.0030	4.9180	-1.7014	50.857	21.3230	17.7200	2.5737	1.377	0.3998	62.740	20.8730	15.6390	2.0955	1.377	0.3384
1200S300-068	1.3397	4.5551	27.1650	4.5029	4.5275	1.3470	1.0028	0.5776	2.2700	36.5220	4.9300	-1.7386	81.204	27.1650	25.5900	4.1094	2.770	0.6003	98.570	26.8010	22.5280	3.2922	2.770	0.5116
1200S300-097	1.9063	6.4813	38.3390	4.4846	6.3898	1.9200	1.0037	0.8307	6.5720	52.2800	4.9193	-1.7551	137.580	38.3390	37.6960	6.2150	7.410	1.0703	181.270	38.3390	37.0940	6.0544	7.410	0.9476
1200S300-118	2.3072	7.8446	45.9910	4.4647	7.6652	2.2590	0.9896	0.9770	11.8640	61.0700	4.8880	-1.7261	173.370	45.9910	45.9560	7.6594	9.714	1.4097	247.240	45.9910	44.7790	7.3376	11.034	1.2550
1200S350-054*	1.1421	3.8833	24.2720	4.6099	4.0453	1.7160	1.2256	0.6506	1.2200	47.0680	5.2662	-2.2313	60.570	24.2720	20.7000	3.0652	1.377	0.4852	74.455	23.8330	18.2600	2.4868	1.377	0.4053
1200S350-068	1.4310	4.8654	30.2560	4.5982	5.0427	2.1180	1.2165	0.8027	2.4250	57.8560	5.2457	-2.2122	87.045	30.2560	27.8820	4.4050	2.770	0.6577	106.570	29.7800	24.6560	3.5594	2.770	0.5602
1200S350-097	2.0181	6.8617	42.2160	4.5736	7.0360	2.8940	1.1975	1.0961	6.9580	78.3470	5.2030	-2.1723	146.340	42.2160	41.0320	6.7102	7.410	1.1337	186.850	41.6810	39.2020	6.2407	7.410	0.9626
1200S350-118	2.4439	8.3091	50.7100	4.5552	8.4517	3.4220	1.1833	1.2951	12.5660	91.9710	5.1711	-2.1425	181.540	50.7100	49.6590	8.1620	9.714	1.4973	240.180	50.7100	49.1390	8.0220	11.034	1.3524
1400S125-054*	0.9327	3.1713	19.7370	4.6000	2.8196	0.0740	0.2810	0.0661	0.9960	2.9679	4.6210	-0.3430	37.614	17.6570	15.8430	1.9035	1.176	0.2655	52.373	16.8080	14.9440	1.7493	1.176	0.2405
1400S125-068	1.1672	3.9684	24.4680	4.5790	3.4954	0.0870	0.2730	0.0778	1.9779	3.4714	4.5990	-0.3300	52.635	22.9700	21.1410	2.6636	2.364	0.3748	72.120	22.0180	19.9140	2.4088	2.364	0.3393
1400S125-097	1.6541	5.6238	34.2980	4.5540	4.8997	0.1200	0.2690	0.1087	5.7026	4.7347	4.5730	-0.3260	86.745	34.2110	32.3880	4.3898	6.938	0.6407	120.690	33.1780	30.9330	4.0310	6.938	0.5775
1400S125-118	2.0290	6.8987	42.1710	4.5590	6.0244	0.1620	0.2830	0.1500	10.4330	6.3722	4.5810	-0.3520	115.100	42.1710	41.4390	5.8250	11.285	0.8930	162.420	42.0800	39.9400	5.4250	11.285	0.8019
1400S137-054*	0.9707	3.3002	21.4910	4.7050	3.0701	0.1290	0.3650	0.1084	1.0365	5.1624	4.7450	-0.4870	43.043	19.3590	17.8650	2.1782	1.176	0.3091	60.784	18.5150	17.0440	2.0302	1.176	0.2850
1400S137-068	1.2207	4.1502	26.9210	4.6960	3.8459	0.1620	0.3650	0.1369	2.0685	6.4670	4.7360	-0.4890	59.479	25.3950	23.6740	3.0100	2.364	0.4282	82.906	24.4310	22.5810	2.7691	2.364	0.3958
1400S137-097	1.7242	5.8624	37.4930	4.6630	5.3561	0.2160	0.3540	0.1832	5.9445	8.5286	4.7000	-0.4720	95.669	37.3800	35.6100	4.8414	6.938	0.7108	134.210	36.3450	34.1950	4.4826	6.938	0.6476
1400S137-118	2.1098	7.1732	45.7780	4.6580	6.5397	0.2730	0.3600	0.2355	10.8480	10.7770	4.6980	-0.4890	125.240	45.7780	45.0510	6.3379	11.285	0.9738	177.700	45.6640	43.5760	5.9352	11.285	0.8827

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TABLE 1—S-MEMBER (C-SHAPE) SECTION PROPERTIES^{1,2,3,4} (Continued)

MEMBER ID DESIGNATION	FULL PROPERTIES								TORSIONAL PROPERTIES				33 KSI EFFECTIVE PROPERTIES						50 KSI EFFECTIVE PROPERTIES					
	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	I _y (in ⁴)	S _x (in ³)	S _y (in ³)	r _x (in)	r _y (in)	Sy(r) (in ³)	J (10 ⁻³ in ⁴)	C _w (in ⁶)	r _o (in)	X _o (in)	Max _o (k-in)	I _{eff} (in ⁴)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	V _{ay} (kips)	A _e (in ²)	Max _o (k-in)	I _{eff} (in ⁴)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	V _{ay} (kips)
1400S162-054*	1.0091	3.4311	23.3030	4.8050	3.3290	0.2180	0.4650	0.1574	1.0776	8.5657	4.8730	-0.6590	48.022	21.1680	19.7470	2.4302	1.176	0.3476	66.398	20.4080	18.5840	2.2177	1.176	0.3124
1400S162-068	1.2649	4.3005	29.0140	4.7890	4.1449	0.2660	0.4580	0.1923	2.1434	10.4170	4.8550	-0.6480	65.306	27.4720	25.8240	3.3049	2.364	0.4724	91.741	26.5140	24.7620	3.0641	2.364	0.4400
1400S162-097	1.7954	6.1044	40.8000	4.7670	5.8286	0.3710	0.4540	0.2714	6.1899	14.5050	4.8320	-0.6470	104.910	40.6680	38.9420	5.3091	6.938	0.7820	148.170	39.6270	37.5580	4.9490	6.938	0.7188
1400S162-118	2.1843	7.4265	49.2750	4.7500	7.0393	0.4450	0.4510	0.3280	11.2310	17.3400	4.8140	-0.6450	135.070	49.2750	48.5530	6.8352	11.285	1.0483	192.500	49.1430	47.0970	6.4295	11.285	0.9572
1400S200-054*	1.0516	3.5754	25.3660	4.9110	3.6237	0.3680	0.5920	0.2192	1.1229	14.1400	5.0240	-0.8790	51.511	23.3280	21.2890	2.6068	1.176	0.3710	67.058	22.7310	19.1910	2.2397	1.176	0.3112
1400S200-068	1.3255	4.5066	31.9060	4.9060	4.5580	0.4700	0.5960	0.2819	2.2461	18.0840	5.0220	-0.8920	73.371	30.3490	28.7860	3.7130	2.364	0.5331	98.658	29.5490	26.8370	3.2952	2.364	0.4709
1400S200-097	1.8900	6.4260	45.2280	4.8920	6.4611	0.6800	0.6000	0.4132	6.5160	26.2180	5.0120	-0.9110	117.290	45.0760	43.3970	5.9357	6.938	0.8766	166.890	44.0290	42.0500	5.5740	6.938	0.8134
1400S200-118	2.3072	7.8446	54.9460	4.8800	7.8494	0.8370	0.6020	0.5132	11.8640	32.3030	5.0030	-0.9240	151.010	54.9460	54.2310	7.6421	11.285	1.1712	216.540	54.7850	52.8030	7.2325	11.285	1.0801
1400S250-054*	1.1116	3.7794	28.2600	5.0421	4.0371	0.6630	0.7726	0.3229	1.1870	24.8920	5.2431	-1.2126	53.632	26.4360	22.6420	2.7141	1.176	0.3824	70.753	25.1910	20.5810	2.3632	1.176	0.3266
1400S250-068	1.4039	4.7733	35.6580	5.0397	5.0940	0.8570	0.7815	0.4207	2.3790	32.2870	5.2482	-1.2386	80.201	34.2020	31.7200	4.0586	2.364	0.5797	103.170	33.5540	28.6730	3.4457	2.364	0.4882
1400S250-097	2.0080	6.8271	50.7830	5.0290	7.2547	1.2620	0.7927	0.6280	6.9230	47.8460	5.2489	-1.2773	132.840	50.6110	48.9820	6.7227	6.938	0.9946	188.730	49.5910	47.4180	6.3036	6.938	0.9193
1400S250-118	2.4314	8.2669	60.9240	5.0057	8.7034	1.4760	0.7791	0.7348	12.5020	55.6380	5.2181	-1.2508	167.820	60.9240	60.2160	8.4929	11.285	1.2954	241.880	60.7430	58.8110	8.0789	11.285	1.2043
1400S300-054*	1.1727	3.9872	31.1990	5.1579	4.4570	1.0800	0.9597	0.4476	1.2520	39.8680	5.4784	-1.5771	56.445	29.1340	24.1920	2.8565	1.176	0.4006	73.829	26.7220	21.8400	2.4659	1.176	0.3390
1400S300-068	1.4823	5.0399	39.4050	5.1559	5.6293	1.3990	0.9714	0.5845	2.5120	51.9090	5.4886	-1.6118	83.714	38.1240	33.7930	4.2364	2.364	0.6021	108.820	36.8120	30.6940	3.6346	2.364	0.5128
1400S300-097	2.1097	7.1729	55.6940	5.1380	7.9563	1.9950	0.9725	0.8408	7.2730	74.2300	5.4764	-1.6265	144.610	55.5470	53.4760	7.3180	6.938	1.0757	197.460	54.6690	50.5070	6.5950	6.938	0.9511
1400S300-118	2.5556	8.6891	66.9030	5.1165	9.5576	2.3470	0.9584	0.9890	13.1410	86.8220	5.4454	-1.5984	184.640	66.9030	66.2000	9.3441	11.285	1.4196	256.540	66.8280	63.2280	8.5683	11.285	1.2616
1400S350-054*	1.2553	4.2682	34.9890	5.2794	4.9984	1.7870	1.1933	0.6590	1.3410	66.6100	5.7987	-2.0807	69.978	34.9890	28.7360	3.5413	1.176	0.4861	86.981	33.9830	25.3950	2.9052	1.176	0.4058
1400S350-068	1.5736	5.3502	43.6480	5.2667	6.2354	2.2060	1.1841	0.8132	2.6670	81.9410	5.7786	-2.0621	99.497	43.6480	38.5440	5.0351	2.364	0.6595	123.210	43.2220	34.2110	4.1152	2.364	0.5614
1400S350-097	2.2215	7.5532	61.0000	5.2401	8.7143	3.0150	1.1650	1.1108	7.6590	111.1500	5.7366	-2.0232	181.720	61.0000	59.3490	8.3324	6.938	1.1390	229.610	60.2910	56.3720	7.6690	6.938	0.9661
1400S350-118	2.6923	9.1537	73.3620	5.2201	10.4803	3.5650	1.1507	1.3130	13.8430	130.6400	5.7053	-1.9941	225.530	73.3620	71.8940	10.1400	11.285	1.5073	298.640	73.3620	71.1640	9.9750	11.285	1.3590
1600S125-068*	1.3098	4.4533	35.0200	5.1710	4.3775	0.0880	0.2590	0.0783	2.2195	4.6813	5.1860	-0.2990	60.967	31.8060	28.8320	3.0853	2.062	0.3761	84.285	30.2290	27.1570	2.8151	2.062	0.3401
1600S125-097	1.8575	6.3154	49.1760	5.1450	6.1470	0.1220	0.2560	0.1094	6.4038	6.3896	5.1600	-0.2960	102.1200	48.0450	44.8120	5.1678	6.042	0.6445	140.7800	46.2690	42.4820	4.7020	6.042	0.5800
1600S125-118	2.2774	7.7432	60.4530	5.1520	7.5566	0.1650	0.2690	0.1510	11.7100	8.6025	5.1690	-0.3190	137.2600	60.4530	57.8350	6.9463	11.086	0.9001	191.4300	59.1080	55.3030	6.3937	11.086	0.8066
1600S137-068*	1.3633	4.6351	38.2500	5.2970	4.7813	0.1650	0.3480	0.1376	2.3101	8.7261	5.3270	-0.4460	68.837	34.9940	32.2150	3.4836	2.062	0.4295	96.493	33.4240	30.6930	3.2229	2.062	0.3966
1600S137-097	1.9276	6.5539	53.3880	5.2630	6.6735	0.2200	0.3380	0.1843	6.6458	11.5150	5.2910	-0.4300	112.390	52.2120	49.0970	5.6878	6.042	0.7147	156.310	50.4260	46.8270	5.2207	6.042	0.6502
1600S137-118	2.3582	8.0177	65.2190	5.2590	8.1524	0.2790	0.3440	0.2369	12.1250	14.5480	5.2890	-0.4460	148.920	65.2190	62.6280	7.5363	11.086	0.9809	209.020	63.8280	60.1440	6.9814	11.086	0.8873
1600S162-068*	1.4075	4.7854	40.9960	5.3970	5.1245	0.2710	0.4390	0.1934	2.3850	14.0790	5.4470	-0.5950	75.508	37.7180	35.0680	3.8212	2.062	0.4737	106.360	36.1780	33.5590	3.5524	2.062	0.4409
1600S162-097	1.9988	6.7960	57.7360	5.3740	7.2170	0.3790	0.4350	0.2730	6.8912	19.6060	5.4250	-0.5930	122.980	56.5240	53.5070	6.2236	6.042	0.7859	172.330	54.7350	51.2940	5.7559	6.042	0.7214
1600S162-118	2.4327	8.2711	69.8110	5.3570	8.7264	0.4550	0.4320	0.3301	12.5090	23.4420	5.4070	-0.5910	160.150	69.8110	67.2440	8.1046	11.086	1.0554	225.960	68.3840	64.7980	7.5470	11.086	0.9619
1600S200-068*	1.4681	4.9914	44.7850	5.5230	5.5981	0.4820	0.5730	0.2839	2.4877	24.4880	5.6130	-0.8230	84.719	41.4950	38.9880	4.2873	2.062	0.5343	114.350	40.1980	36.2670	3.8194	2.062	0.4717
1600S200-097	2.0934	7.1176	63.5520	5.5100	7.9440	0.6970	0.5770	0.4161	7.2170	35.4790	5.6030	-0.8400	137.1600	62.3020	59.3950	6.9410	6.042	0.8805	193.8100	60.5140	57.2500	6.4733	6.042	0.8159
1600S200-118	2.5556	8.6891	77.2730	5.4990	9.6591	0.8580	0.5800	0.5168	13.1410	43.6910	5.5940	-0.8520	178.4300	77.2730	74.7400	9.0294	11.086	1.1783	253.5400	75.8000	72.3510	8.4681	11.086	1.0848

For SI: 1 inch = 25.4 mm, 1 in² = 645 mm², 1 in³ = 1.64x10⁴ mm³, 1 in⁴ = 4.16x10⁵ mm⁴, 1 in⁶ = 2.69x10⁸ mm⁶, 1 kip-in = 113.3 N-m, 1 kip = 4.4 kN

Notes:

1. Effective properties include punchouts with the exception of I_{eff}.
2. Use effective moment of inertia (I_{eff}) without punchouts for deflection calculations.
3. Members marked with * indicate (h/t) web height to thickness ratios exceeding 200 and less than 260 which require web stiffeners. No holes/punchouts in the web are permitted.
4. Member identification provides nominal dimensions as shown in the example below:
 Example: 1400S350-068, 1400=14 inch depth (Depth measured from outside face to outside face of flanges), S=C-Section, 350=3.50 inch flange width, 068=thickness 68 mils or 0.0677".

TABLE 2—T MEMBER (TRACK) SECTION PROPERTIES^{1,2}

MEMBER ID DESIGNATION	FULL PROPERTIES						TORSIONAL PROPERTIES				33 KSI EFFECTIVE PROPERTIES				50 KSI EFFECTIVE PROPERTIES			
	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	I _y (in ⁴)	r _x (in)	r _y (in)	J 10 ⁻³ in ⁴	C _w (in ⁶)	r _o (in)	X _o (in)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)
162T100-018	0.0682	0.2320	0.0347	0.7135	0.0072	0.3245	0.0080	0.0036	1.0275	-0.6644	0.479	0.0251	0.0243	0.0346	---	---	---	---
162T100-024	0.0897	0.3050	0.0458	0.7144	0.0094	0.3234	0.0183	0.0047	1.0259	-0.6614	0.693	0.0354	0.0351	0.0553	0.977	0.0337	0.0326	0.0478
162T100-027	0.1026	0.3487	0.0524	0.7148	0.0107	0.3228	0.0274	0.0054	1.0248	-0.6596	0.833	0.0420	0.0421	0.0694	---	---	---	---
162T100-030	0.1130	0.3843	0.0578	0.7152	0.0117	0.3223	0.0367	0.0059	1.0240	-0.6582	0.952	0.0476	0.0482	0.0816	---	---	---	---
162T100-033	0.1253	0.4260	0.0642	0.7157	0.0130	0.3217	0.0500	0.0065	1.0230	-0.6565	1.099	0.0543	0.0556	0.0967	---	---	---	---
162T100-043	0.1631	0.5544	0.0839	0.7172	0.0167	0.3199	0.1106	0.0085	1.0201	-0.6512	1.587	0.0761	0.0803	0.1433	---	---	---	---
162T100-054	0.2045	0.6952	0.1074	0.7248	0.0206	0.3177	0.2184	0.0107	1.0215	-0.6459	2.200	0.1038	0.1113	0.1944	3.090	0.0989	0.1032	0.1830
162T125-024	0.1021	0.3471	0.0551	0.7343	0.0172	0.4103	0.0208	0.0087	1.2204	-0.8842	0.723	0.0388	0.0366	0.0559	1.016	0.0368	0.0339	0.0482
162T125-027	0.1167	0.3968	0.0630	0.7349	0.0196	0.4096	0.0312	0.0100	1.2192	-0.8824	0.871	0.0462	0.0441	0.0703	---	---	---	---
162T125-030	0.1286	0.4373	0.0696	0.7353	0.0215	0.4091	0.0417	0.0110	1.2182	-0.8808	0.999	0.0524	0.0505	0.0828	---	---	---	---
162T125-033	0.1426	0.4848	0.0772	0.7358	0.0238	0.4086	0.0569	0.0121	1.2170	-0.8790	1.156	0.0599	0.0585	0.0983	---	---	---	---
162T125-043	0.1856	0.6311	0.1010	0.7375	0.0307	0.4068	0.1259	0.0157	1.2134	-0.8735	1.688	0.0848	0.0854	0.1468	---	---	---	---
162T125-054	0.2328	0.7915	0.1295	0.7459	0.0381	0.4047	0.2486	0.0199	1.2138	-0.8679	2.377	0.1170	0.1203	0.2017	3.296	0.1105	0.1101	0.1878
162T150-024	0.1145	0.3891	0.0643	0.7497	0.0281	0.4954	0.0234	0.0144	1.4306	-1.1132	0.746	0.0417	0.0377	0.0563	1.046	0.0395	0.0350	0.0484
162T150-027	0.1309	0.4449	0.0737	0.7502	0.0320	0.4948	0.0349	0.0165	1.4292	-1.1113	0.900	0.0497	0.0455	0.0708	---	---	---	---
162T150-030	0.1442	0.4904	0.0813	0.7507	0.0352	0.4943	0.0468	0.0182	1.4281	-1.1097	1.033	0.0565	0.0523	0.0835	---	---	---	---
162T150-033	0.1599	0.5436	0.0902	0.7513	0.0390	0.4937	0.0638	0.0201	1.4267	-1.1078	1.198	0.0648	0.0606	0.0993	---	---	---	---
162T150-043	0.2082	0.7078	0.1181	0.7531	0.0504	0.4920	0.1411	0.0262	1.4226	-1.1021	1.760	0.0923	0.0891	0.1490	---	---	---	---
162T150-054	0.2611	0.8877	0.1516	0.7620	0.0627	0.4900	0.2788	0.0332	1.4222	-1.0963	2.503	0.1283	0.1267	0.2063	3.445	0.1204	0.1151	0.1908
162T200-033	0.1945	0.6613	0.1163	0.7733	0.0846	0.6596	0.0776	0.0450	1.8764	-1.5772	1.257	0.0727	0.0636	0.1005	---	---	---	---
162T200-043	0.2533	0.8611	0.1523	0.7754	0.1097	0.6580	0.1717	0.0586	1.8716	-1.5712	1.861	0.1045	0.0942	0.1517	---	---	---	---
162T200-054	0.3177	1.0801	0.1958	0.7850	0.1368	0.6561	0.3392	0.0747	1.8698	-1.5651	2.673	0.1469	0.1353	0.2118	3.649	0.1367	0.1219	0.1945
250T100-018	0.0847	0.2879	0.0881	1.0201	0.0082	0.3104	0.0100	0.0095	1.2097	-0.5712	0.883	0.0671	0.0447	0.0357	---	---	---	---
250T100-024	0.1114	0.3786	0.1160	1.0208	0.0107	0.3093	0.0227	0.0124	1.2087	-0.5686	1.252	0.0933	0.0633	0.0579	1.790	0.0896	0.0598	0.0494
250T100-027	0.1273	0.4329	0.1328	1.0211	0.0121	0.3086	0.0340	0.0141	1.2080	-0.5670	1.490	0.1098	0.0754	0.0732	---	---	---	---
250T100-030	0.1403	0.4771	0.1464	1.0214	0.0133	0.3081	0.0455	0.0156	1.2076	-0.5657	1.692	0.1237	0.0856	0.0867	---	---	---	---
250T100-033	0.1556	0.5289	0.1624	1.0217	0.0147	0.3075	0.0621	0.0172	1.2070	-0.5642	1.939	0.1404	0.0981	0.1036	---	---	---	---
250T100-043	0.2025	0.6886	0.2119	1.0228	0.0189	0.3056	0.1373	0.0222	1.2052	-0.5595	2.751	0.1944	0.1392	0.1620	---	---	---	---
250T100-054	0.2540	0.8636	0.2691	1.0292	0.0234	0.3034	0.2712	0.0277	1.2080	-0.5550	3.748	0.2606	0.1897	0.2360	5.325	0.2500	0.1779	0.2086
250T125-024	0.1237	0.4207	0.1370	1.0524	0.0197	0.3985	0.0252	0.0227	1.3660	-0.7743	1.307	0.1016	0.0662	0.0584	1.862	0.0972	0.0622	0.0498
250T125-027	0.1415	0.4810	0.1568	1.0528	0.0224	0.3978	0.0378	0.0259	1.3652	-0.7726	1.559	0.1198	0.0789	0.0740	---	---	---	---
250T125-030	0.1559	0.5302	0.1730	1.0532	0.0246	0.3973	0.0506	0.0286	1.3645	-0.7713	1.775	0.1352	0.0898	0.0878	---	---	---	---
250T125-033	0.1729	0.5877	0.1919	1.0536	0.0272	0.3967	0.0690	0.0316	1.3637	-0.7696	2.038	0.1538	0.1031	0.1052	---	---	---	---
250T125-043	0.2251	0.7653	0.2505	1.0549	0.0351	0.3948	0.1526	0.0409	1.3614	-0.7646	2.918	0.2145	0.1477	0.1655	---	---	---	---
250T125-054	0.2823	0.9598	0.3184	1.0621	0.0435	0.3926	0.3015	0.0513	1.3636	-0.7599	4.030	0.2904	0.2039	0.2433	5.663	0.2765	0.1891	0.2134
250T125-068	0.3554	1.2084	0.4087	1.0724	0.0540	0.3898	0.6022	0.0647	1.3676	-0.7538	5.583	0.3960	0.2825	0.3404	7.887	0.3787	0.2634	0.3155
250T150-024	0.1361	0.4627	0.1580	1.0776	0.0323	0.4868	0.0278	0.0373	1.5415	-0.9889	1.351	0.1089	0.0684	0.0588	1.837	0.1011	0.0614	0.0501
250T150-027	0.1556	0.5291	0.1809	1.0781	0.0368	0.4862	0.0416	0.0426	1.5405	-0.9871	1.613	0.1286	0.0816	0.0746	---	---	---	---
250T150-030	0.1715	0.5832	0.1995	1.0785	0.0405	0.4857	0.0557	0.0469	1.5397	-0.9857	1.838	0.1454	0.0930	0.0886	---	---	---	---
250T150-033	0.1902	0.6466	0.2214	1.0789	0.0447	0.4851	0.0759	0.0520	1.5387	-0.9840	2.114	0.1656	0.1070	0.1062	---	---	---	---
250T150-043	0.2476	0.8420	0.2891	1.0804	0.0578	0.4832	0.1679	0.0674	1.5358	-0.9787	3.044	0.2321	0.1540	0.1677	---	---	---	---
250T150-054	0.3106	1.0561	0.3678	1.0882	0.0719	0.4811	0.3317	0.0849	1.5374	-0.9737	4.237	0.3162	0.2144	0.2479	5.916	0.2995	0.1976	0.2164
250T150-068	0.3911	1.3296	0.4727	1.0994	0.0895	0.4783	0.6627	0.1074	1.5405	-0.9673	5.948	0.4353	0.3010	0.3502	8.316	0.4133	0.2778	0.3219
250T150-097	0.5571	1.8942	0.7015	1.1221	0.1244	0.4725	1.9207	0.1538	1.5465	-0.9535	10.556	0.7016	0.4913	0.5571	13.963	0.6794	0.4664	0.5318

TABLE 2—T MEMBER (TRACK) SECTION PROPERTIES^{1,2} (Continued)

MEMBER ID DESIGNATION	FULL PROPERTIES						TORSIONAL PROPERTIES				33 KSI EFFECTIVE PROPERTIES				50 KSI EFFECTIVE PROPERTIES			
	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	r _x (in)	I _y (in ⁴)	R _y (in)	J 10 ⁻⁴ in ⁴	C _w (in ⁶)	r _o (in)	X _o (in)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)
250T200-033	0.2248	0.7642	0.2803	1.1168	0.0974	0.6584	0.0897	0.1144	1.9303	-1.4302	2.226	0.1854	0.1127	0.1074	---	---	---	---
250T200-043	0.2927	0.9953	0.3662	1.1185	0.1262	0.6566	0.1985	0.1487	1.9266	-1.4246	3.224	0.2617	0.1632	0.1704	---	---	---	---
250T200-054	0.3672	1.2485	0.4665	1.1272	0.1573	0.6546	0.3921	0.1878	1.9270	-1.4193	4.527	0.3596	0.2291	0.2534	6.277	0.3383	0.2096	0.2200
250T200-068	0.4624	1.5720	0.6005	1.1397	0.1965	0.6519	0.7835	0.2389	1.9284	-1.4125	6.446	0.5009	0.3262	0.3617	8.914	0.4714	0.2977	0.3295
250T200-097	0.6588	2.2399	0.8944	1.1652	0.2752	0.6464	2.2713	0.3465	1.9310	-1.3976	11.086	0.8368	0.5610	0.5972	15.402	0.7924	0.5144	0.5561
350T100-018	0.1035	0.3518	0.1892	1.3522	0.0089	0.2931	0.0122	0.0205	1.4691	-0.4941	1.217	0.1340	0.0616	0.0363	---	---	---	---
350T100-024	0.1361	0.4627	0.2490	1.3526	0.0116	0.2920	0.0278	0.0268	1.4686	-0.4917	2.049	0.2063	0.1037	0.0592	2.582	0.1837	0.0862	0.0503
350T100-027	0.1556	0.5291	0.2848	1.3528	0.0132	0.2914	0.0416	0.0305	1.4681	-0.4903	2.422	0.2417	0.1226	0.0751	---	---	---	---
350T100-030	0.1715	0.5832	0.3140	1.3530	0.0145	0.2909	0.0557	0.0335	1.4679	-0.4891	2.737	0.2713	0.1385	0.0893	---	---	---	---
350T100-033	0.1902	0.6466	0.3482	1.3533	0.0160	0.2902	0.0759	0.0370	1.4675	-0.4878	3.118	0.3067	0.1578	0.1071	---	---	---	---
350T100-043	0.2476	0.8420	0.4540	1.3540	0.0206	0.2884	0.1679	0.0478	1.4664	-0.4836	4.366	0.4208	0.2209	0.1698	---	---	---	---
350T100-054	0.3106	1.0561	0.5740	1.3593	0.0255	0.2863	0.3317	0.0595	1.4697	-0.4797	5.869	0.5577	0.2970	0.2516	8.417	0.5378	0.2811	0.2189
350T125-024	0.1485	0.5048	0.2892	1.3957	0.0216	0.3813	0.0303	0.0489	1.5989	-0.6804	2.076	0.2192	0.1051	0.0597	2.574	0.1928	0.0860	0.0507
350T125-027	0.1698	0.5772	0.3309	1.3960	0.0246	0.3806	0.0453	0.0558	1.5983	-0.6788	2.531	0.2618	0.1281	0.0760	---	---	---	---
350T125-030	0.1871	0.6362	0.3648	1.3963	0.0270	0.3801	0.0607	0.0614	1.5979	-0.6776	2.865	0.2942	0.1450	0.0904	---	---	---	---
350T125-033	0.2075	0.7054	0.4046	1.3966	0.0299	0.3795	0.0828	0.0679	1.5974	-0.6761	3.271	0.3333	0.1655	0.1087	---	---	---	---
350T125-043	0.2702	0.9186	0.5277	1.3976	0.0385	0.3776	0.1832	0.0878	1.5959	-0.6716	4.615	0.4599	0.2335	0.1733	---	---	---	---
350T125-054	0.3389	1.1523	0.6678	1.4037	0.0478	0.3754	0.3619	0.1098	1.5990	-0.6674	6.278	0.6147	0.3177	0.2589	8.917	0.5888	0.2978	0.2237
350T125-068	0.4267	1.4508	0.8514	1.4126	0.0593	0.3727	0.7231	0.1377	1.6040	-0.6622	8.574	0.8270	0.4339	0.3828	12.222	0.7948	0.4082	0.3364
350T150-024	0.1608	0.5468	0.3294	1.4312	0.0357	0.4708	0.0328	0.0800	1.7447	-0.8797	2.053	0.2277	0.1039	0.0601	2.567	0.2008	0.0858	0.0509
350T150-027	0.1839	0.6254	0.3769	1.4315	0.0407	0.4701	0.0491	0.0914	1.7440	-0.8781	2.620	0.2798	0.1326	0.0765	---	---	---	---
350T150-030	0.2027	0.6893	0.4156	1.4319	0.0447	0.4696	0.0658	0.1006	1.7434	-0.8768	2.968	0.3148	0.1502	0.0912	---	---	---	---
350T150-033	0.2248	0.7642	0.4611	1.4323	0.0494	0.4690	0.0897	0.1113	1.7428	-0.8752	3.393	0.3570	0.1717	0.1097	---	---	---	---
350T150-043	0.2927	0.9953	0.6015	1.4334	0.0639	0.4671	0.1985	0.1442	1.7408	-0.8705	4.808	0.4946	0.2433	0.1756	---	---	---	---
350T150-054	0.3672	1.2485	0.7616	1.4402	0.0794	0.4649	0.3921	0.1808	1.7436	-0.8660	6.585	0.6646	0.3333	0.2635	9.302	0.6339	0.3107	0.2267
350T150-068	0.4624	1.5720	0.9721	1.4500	0.0987	0.4621	0.7835	0.2276	1.7482	-0.8605	9.099	0.9015	0.4604	0.3926	12.854	0.8610	0.4293	0.3429
350T150-097	0.6588	2.2400	1.4232	1.4698	0.1372	0.4563	2.2714	0.3229	1.7574	-0.8485	15.710	1.4232	0.7382	0.6588	21.075	1.3811	0.7039	0.6232
350T200-033	0.2594	0.8818	0.5738	1.4874	0.1084	0.6466	0.1035	0.2428	2.0760	-1.2959	3.578	0.3980	0.1811	0.1109	---	---	---	---
350T200-043	0.3378	1.1486	0.7489	1.4889	0.1404	0.6447	0.2291	0.3153	2.0733	-1.2907	5.096	0.5543	0.2579	0.1783	---	---	---	---
350T200-054	0.4238	1.4409	0.9492	1.4966	0.1750	0.6425	0.4526	0.3967	2.0752	-1.2860	7.033	0.7500	0.3559	0.2690	9.874	0.7114	0.3298	0.2303
350T200-068	0.5337	1.8144	1.2132	1.5078	0.2184	0.6398	0.9043	0.5017	2.0787	-1.2799	9.837	1.0275	0.4978	0.4041	13.762	0.9738	0.4597	0.3504
350T200-097	0.7605	2.5857	1.7816	1.5306	0.3057	0.6340	2.6219	0.7195	2.0856	-1.2670	16.502	1.6734	0.8351	0.6989	23.139	1.5924	0.7729	0.6476
350T225-043	0.3604	1.2253	0.8226	1.5109	0.1933	0.7324	0.2443	0.4348	2.2575	-1.5090	5.208	0.5804	0.2636	0.1791	---	---	---	---
350T225-054	0.4521	1.5372	1.0431	1.5189	0.2411	0.7303	0.4828	0.5476	2.2589	-1.5041	7.204	0.7873	0.3645	0.2708	10.095	0.7454	0.3372	0.2315
350T225-068	0.5693	1.9356	1.3338	1.5306	0.3013	0.7275	0.9647	0.6936	2.2618	-1.4979	10.112	1.0823	0.5117	0.4077	14.107	1.0231	0.4712	0.3529
350T225-097	0.8114	2.7586	1.9608	1.5546	0.4228	0.7219	2.7973	0.9982	2.2675	-1.4845	17.137	1.7768	0.8672	0.7104	23.892	1.6836	0.7980	0.6552
350T250-043	0.3829	1.3020	0.8964	1.5300	0.2571	0.8193	0.2596	0.5799	2.4514	-1.7312	5.305	0.6046	0.2685	0.1798	---	---	---	---
350T250-054	0.4804	1.6334	1.1369	1.5384	0.3208	0.8172	0.5130	0.7309	2.4524	-1.7262	7.350	0.8218	0.3720	0.2721	10.286	0.7767	0.3436	0.2324
350T250-068	0.6050	2.0568	1.4544	1.5505	0.4014	0.8145	1.0251	0.9270	2.4547	-1.7199	10.347	1.1329	0.5236	0.4106	14.403	1.0686	0.4811	0.3548
350T250-097	0.8622	2.9315	2.1400	1.5754	0.5642	0.8089	2.9726	1.3381	2.4591	-1.7062	17.667	1.8719	0.8941	0.7194	24.526	1.7677	0.8192	0.6611
362T100-018	0.1058	0.3598	0.2053	1.3927	0.0090	0.2910	0.0125	0.0222	1.5035	-0.4860	1.258	0.1441	0.0637	0.0363	---	---	---	---
362T100-024	0.1392	0.4732	0.2702	1.3932	0.0117	0.2899	0.0284	0.0290	1.5030	-0.4836	2.161	0.2245	0.1093	0.0593	2.667	0.1974	0.0891	0.0504
362T100-027	0.1592	0.5412	0.3090	1.3934	0.0133	0.2893	0.0425	0.0330	1.5026	-0.4822	2.552	0.2629	0.1291	0.0753	---	---	---	---
362T100-030	0.1754	0.5965	0.3407	1.3936	0.0146	0.2888	0.0569	0.0363	1.5023	-0.4811	2.882	0.2950	0.1459	0.0895	---	---	---	---
362T100-033	0.1945	0.6613	0.3778	1.3938	0.0162	0.2882	0.0776	0.0401	1.5019	-0.4798	3.282	0.3334	0.1661	0.1074	---	---	---	---
362T100-043	0.2533	0.8611	0.4925	1.3945	0.0208	0.2863	0.1717	0.0517	1.5009	-0.4756	4.589	0.4570	0.2322	0.1705	---	---	---	---
362T100-054	0.3177	1.0801	0.6224	1.3997	0.0257	0.2842	0.3392	0.0644	1.5042	-0.4718	6.161	0.6050	0.3118	0.2530	8.844	0.5837	0.2954	0.2197

TABLE 2—T MEMBER (TRACK) SECTION PROPERTIES^{1,2} (Continued)

MEMBER ID DESIGNATION	FULL PROPERTIES						TORSIONAL PROPERTIES				33 KSI EFFECTIVE PROPERTIES				50 KSI EFFECTIVE PROPERTIES			
	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	r _x (in)	I _y (in ⁴)	r _y (in)	J 10 ⁻³ in ⁴	C _w (in ⁶)	r _o (in)	X _o (in)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)
362T125-024	0.1516	0.5153	0.3132	1.4376	0.0218	0.3791	0.0309	0.0530	1.6308	-0.6703	2.143	0.2354	0.1084	0.0598	2.663	0.2073	0.0890	0.0507
362T125-027	0.1733	0.5893	0.3583	1.4378	0.0248	0.3785	0.0463	0.0605	1.6303	-0.6688	2.666	0.2845	0.1349	0.0761	---	---	---	---
362T125-030	0.1910	0.6495	0.3951	1.4381	0.0273	0.3779	0.0620	0.0665	1.6299	-0.6676	3.016	0.3197	0.1527	0.0907	---	---	---	---
362T125-033	0.2118	0.7201	0.4382	1.4384	0.0302	0.3773	0.0845	0.0736	1.6294	-0.6661	3.442	0.3619	0.1742	0.1090	---	---	---	---
362T125-043	0.2758	0.9378	0.5714	1.4393	0.0389	0.3754	0.1870	0.0951	1.6280	-0.6617	4.848	0.4989	0.2453	0.1740	---	---	---	---
362T125-054	0.3460	1.1763	0.7228	1.4454	0.0482	0.3733	0.3695	0.1190	1.6312	-0.6575	6.585	0.6660	0.3333	0.2602	9.364	0.6384	0.3128	0.2245
362T125-068	0.4356	1.4811	0.9210	1.4541	0.0598	0.3705	0.7382	0.1491	1.6362	-0.6523	8.981	0.8949	0.45450 i	0.3855	12.815	0.8605	0.4280	0.3382
362T150-024	0.1639	0.5574	0.3563	1.4742	0.0360	0.4686	0.0334	0.0867	1.7738	-0.8679	2.123	0.2446	0.1074	0.0602	2.658	0.2158	0.0888	0.0510
362T150-027	0.1875	0.6374	0.4076	1.4745	0.0411	0.4680	0.0501	0.0990	1.7731	-0.8663	2.759	0.3040	0.1396	0.0767	---	---	---	---
362T150-030	0.2066	0.7025	0.4495	1.4749	0.0452	0.4674	0.0671	0.1090	1.7726	-0.8650	3.125	0.3418	0.1581	0.0914	---	---	---	---
362T150-033	0.2291	0.7789	0.4985	1.4752	0.0499	0.4668	0.0914	0.1206	1.7719	-0.8635	3.569	0.3874	0.1806	0.1100	---	---	---	---
362T150-043	0.2984	1.0145	0.6503	1.4764	0.0645	0.4649	0.2023	0.1562	1.7701	-0.8587	5.050	0.5361	0.2556	0.1762	---	---	---	---
362T150-054	0.3743	1.2726	0.8232	1.4830	0.0801	0.4627	0.3997	0.1958	1.7730	-0.8544	6.906	0.7195	0.3495	0.2648	9.767	0.6867	0.3262	0.2276
362T150-068	0.4713	1.6023	1.0499	1.4926	0.0997	0.4599	0.7986	0.2463	1.7777	-0.8489	9.526	0.9745	0.4821	0.3952	13.472	0.9313	0.4500	0.3446
362T150-097	0.6715	2.2832	1.5355	1.5121	0.1385	0.4541	2.3152	0.3493	1.7871	-0.8372	16.404	1.5356	0.7715	0.6715	22.035	1.4904	0.7360	0.6285
362T200-033	0.2637	0.8965	0.6193	1.5325	0.1096	0.6447	0.1052	0.2629	2.0989	-1.2811	3.765	0.4317	0.1905	0.1112	---	---	---	---
362T200-043	0.3435	1.1678	0.8082	1.5339	0.1419	0.6428	0.2329	0.3414	2.0962	-1.2760	5.353	0.6004	0.2709	0.1789	---	---	---	---
362T200-054	0.4309	1.4650	1.0239	1.5415	0.1768	0.6407	0.4601	0.4293	2.0983	-1.2712	7.374	0.8112	0.3732	0.2703	10.367	0.7701	0.3462	0.2312
362T200-068	0.5426	1.8447	1.3078	1.5526	0.2208	0.6379	0.9194	0.5427	2.1020	-1.2653	10.296	1.1095	0.5210	0.4068	14.422	1.0524	0.4817	0.3522
362T200-097	0.7732	2.6289	1.9182	1.5750	0.3089	0.6321	2.6658	0.7775	2.1093	-1.2525	17.227	1.8026	0.8718	0.7116	24.181	1.7163	0.8076	0.6529
362T225-043	0.3660	1.2445	0.8871	1.5568	0.1955	0.7308	0.2482	0.4705	2.2773	-1.4929	5.471	0.6286	0.2769	0.1798	---	---	---	---
362T225-054	0.4592	1.5612	1.1243	1.5648	0.2438	0.7286	0.4903	0.5924	2.2790	-1.4880	7.553	0.8513	0.3823	0.2721	10.599	0.8067	0.3540	0.2324
362T225-068	0.5782	1.9659	1.4367	1.5763	0.3047	0.7259	0.9798	0.7499	2.2821	-1.4819	10.584	1.1684	0.5356	0.4104	14.784	1.1054	0.4938	0.3547
362T225-097	0.8241	2.8018	2.1095	1.6000	0.4274	0.7202	2.8411	1.0783	2.2882	-1.4687	17.887	1.9131	0.9052	0.7231	24.965	1.8139	0.8338	0.6605
362T250-043	0.3886	1.3211	0.9660	1.5767	0.2600	0.8179	0.2635	0.6273	2.4683	-1.7139	5.573	0.6547	0.2820	0.1805	---	---	---	---
362T250-054	0.4875	1.6574	1.2247	1.5850	0.3245	0.8158	0.5206	0.7905	2.4695	-1.7090	7.708	0.8884	0.3901	0.2735	10.801	0.8405	0.3608	0.2333
362T250-068	0.6139	2.0871	1.5657	1.5970	0.4059	0.8131	1.0402	1.0020	2.4720	-1.7027	10.829	1.2227	0.5480	0.4133	15.094	1.1543	0.5041	0.3566
362T250-097	0.8749	2.9747	2.3008	1.6217	0.5705	0.8075	3.0164	1.4448	2.4769	-1.6892	18.439	2.0147	0.9331	0.7321	25.626	1.9038	0.8559	0.6664
400T100-018*	0.1129	0.3838	0.2586	1.5135	0.0092	0.2849	0.0133	0.0278	1.6082	-0.4632	1.309	0.1720	0.0662	0.0365	---	---	---	---
400T100-024	0.1485	0.5048	0.3402	1.5138	0.0120	0.2839	0.0303	0.0363	1.6077	-0.4610	2.079	0.2566	0.1052	0.0596	2.734	0.2339	0.0913	0.0506
400T100-027	0.1698	0.5772	0.3892	1.5140	0.0136	0.2832	0.0453	0.0414	1.6074	-0.4597	2.595	0.3104	0.1313	0.0757	---	---	---	---
400T100-030	0.1871	0.6362	0.4290	1.5142	0.0150	0.2827	0.0607	0.0455	1.6071	-0.4586	3.040	0.3556	0.1538	0.0901	---	---	---	---
400T100-033	0.2075	0.7054	0.4757	1.5143	0.0165	0.2821	0.0828	0.0503	1.6068	-0.4573	3.582	0.4095	0.1813	0.1082	---	---	---	---
400T100-043	0.2702	0.9186	0.6201	1.5149	0.0212	0.2803	0.1832	0.0648	1.6059	-0.4533	5.285	0.5772	0.2675	0.1723	---	---	---	---
400T100-054	0.3389	1.1523	0.7829	1.5199	0.0262	0.2782	0.3619	0.0806	1.6092	-0.4497	7.070	0.7618	0.3578	0.2564	10.177	0.7361	0.3399	0.2220
400T125-024	0.1608	0.5468	0.3924	1.5619	0.0223	0.3726	0.0328	0.0665	1.7294	-0.6420	2.345	0.2877	0.1187	0.0601	2.930	0.2541	0.0979	0.0509
400T125-027	0.1839	0.6254	0.4488	1.5622	0.0255	0.3720	0.0491	0.0758	1.7289	-0.6406	3.084	0.3597	0.1560	0.0766	---	---	---	---
400T125-030	0.2027	0.6893	0.4949	1.5624	0.0280	0.3714	0.0658	0.0834	1.7286	-0.6394	3.490	0.4042	0.1766	0.0912	---	---	---	---
400T125-033	0.2248	0.7642	0.5488	1.5627	0.0309	0.3708	0.0897	0.0922	1.7281	-0.6380	3.976	0.4570	0.2012	0.1098	---	---	---	---
400T125-043	0.2927	0.9953	0.7156	1.5635	0.0398	0.3689	0.1985	0.1192	1.7269	-0.6337	5.577	0.6282	0.2822	0.1758	---	---	---	---
400T125-054	0.3672	1.2485	0.9042	1.5692	0.0494	0.3668	0.3921	0.1489	1.7302	-0.6297	7.544	0.8357	0.3818	0.2637	10.761	0.8025	0.3594	0.2269
400T125-068	0.4624	1.5720	1.1505	1.5775	0.0613	0.3640	0.7835	0.1864	1.7353	-0.6247	10.247	1.1189	0.5186	0.3925	14.661	1.0775	0.4897	0.3428

TABLE 2—T MEMBER (TRACK) SECTION PROPERTIES^{1,2} (Continued)

MEMBER ID DESIGNATION	FULL PROPERTIES						TORSIONAL PROPERTIES				33 KSI EFFECTIVE PROPERTIES				50 KSI EFFECTIVE PROPERTIES			
	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	r _x (in)	I _y (in ⁴)	R _y (in)	J 10 ⁻³ in ⁴	C _w (in ⁶)	r _o (in)	X _o (in)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)
400T150-024	0.1732	0.5889	0.4445	1.6020	0.0370	0.4621	0.0353	0.1087	1.8645	-0.8345	2.332	0.2992	0.1180	0.0605	2.932	0.2644	0.0979	0.0512
400T150-027	0.1981	0.6735	0.5085	1.6023	0.0422	0.4614	0.0529	0.1240	1.8639	-0.8329	3.047	0.3730	0.1542	0.0771	---	---	---	---
400T150-030	0.2183	0.7423	0.5607	1.6026	0.0464	0.4609	0.0708	0.1365	1.8635	-0.8317	3.614	0.4314	0.1829	0.0920	---	---	---	---
400T150-033	0.2421	0.8230	0.6219	1.6029	0.0513	0.4603	0.0966	0.1511	1.8629	-0.8302	4.122	0.4884	0.2086	0.1108	---	---	---	---
400T150-043	0.3153	1.0720	0.8111	1.6040	0.0662	0.4583	0.2138	0.1956	1.8613	-0.8256	5.806	0.6736	0.2938	0.1780	---	---	---	---
400T150-054	0.3955	1.3447	1.0256	1.6103	0.0823	0.4562	0.4223	0.2450	1.8644	-0.8214	7.904	0.9006	0.4000	0.2683	11.216	0.8614	0.3746	0.2299
400T150-068	0.4980	1.6932	1.3061	1.6195	0.1024	0.4534	0.8439	0.3079	1.8693	-0.8161	10.854	1.2151	0.5493	0.4023	15.397	1.1633	0.5143	0.3493
400T150-097	0.7097	2.4128	1.9043	1.6381	0.1422	0.4476	2.4466	0.4356	1.8793	-0.8049	18.552	1.9044	0.8744	0.7097	25.014	1.8498	0.8355	0.6424
400T200-033	0.2767	0.9407	0.7681	1.6663	0.1129	0.6388	0.1104	0.3289	2.1724	-1.2388	4.348	0.5431	0.2200	0.1120	---	---	---	---
400T200-043	0.3604	1.2253	1.0022	1.6676	0.1462	0.6369	0.2443	0.4269	2.1700	-1.2338	6.153	0.7527	0.3114	0.1807	---	---	---	---
400T200-054	0.4521	1.5372	1.2683	1.6749	0.1821	0.6347	0.4828	0.5363	2.1724	-1.2292	8.436	1.0126	0.4269	0.2738	11.902	0.9637	0.3975	0.2335
400T200-068	0.5693	1.9356	1.6173	1.6855	0.2273	0.6319	0.9647	0.6771	2.1765	-1.2235	11.718	1.3789	0.5930	0.4138	16.472	1.3108	0.5502	0.3569
400T200-097	0.8114	2.7586	2.3646	1.7071	0.3181	0.6261	2.7973	0.9677	2.1848	-1.2112	19.467	2.2253	0.9852	0.7497	27.404	2.1220	0.9153	0.6668
400T225-043	0.3829	1.3020	1.0977	1.6931	0.2015	0.7254	0.2596	0.5878	2.3422	-1.4468	6.290	0.7876	0.3183	0.1816	---	---	---	---
400T225-054	0.4804	1.6334	1.3897	1.7008	0.2513	0.7233	0.5130	0.7393	2.3442	-1.4421	8.641	1.0619	0.4373	0.2756	12.171	1.0089	0.4065	0.2347
400T225-068	0.6050	2.0568	1.7730	1.7119	0.3140	0.7205	1.0251	0.9347	2.3479	-1.4362	12.045	1.4506	0.6095	0.4175	16.885	1.3756	0.5640	0.3593
400T225-097	0.8622	2.9315	2.5947	1.7347	0.4404	0.7147	2.9726	1.3405	2.3551	-1.4235	20.203	2.3585	1.0224	0.7612	28.284	2.2401	0.9447	0.6744
400T250-043	0.4055	1.3786	1.1932	1.7154	0.2682	0.8133	0.2749	0.7829	2.5247	-1.6643	6.409	0.8199	0.3243	0.1822	---	---	---	---
400T250-054	0.5087	1.7296	1.5110	1.7235	0.3347	0.8111	0.5432	0.9856	2.5263	-1.6595	8.819	1.1076	0.4463	0.2770	12.405	1.0507	0.4143	0.2356
400T250-068	0.6406	2.1780	1.9286	1.7351	0.4186	0.8084	1.0855	1.2476	2.5294	-1.6534	12.324	1.5170	0.6237	0.4204	17.241	1.4357	0.5759	0.3612
400T250-097	0.9131	3.1044	2.8248	1.7589	0.5883	0.8027	3.1479	1.7941	2.5356	-1.6404	20.821	2.4813	1.0537	0.7702	29.030	2.3491	0.9696	0.6803
400T300-054	0.5653	1.9220	1.7537	1.7613	0.5482	0.9848	0.6037	1.6233	2.9158	-2.1047	9.112	1.1900	0.4611	0.2790	12.795	1.1261	0.4273	0.2370
400T300-068	0.7119	2.4205	2.2398	1.7738	0.6866	0.9821	1.2064	2.0587	2.9178	-2.0984	12.781	1.6367	0.6468	0.4246	17.830	1.5439	0.5955	0.3640
400T300-097	1.0148	3.4502	3.2850	1.7992	0.9677	0.9765	3.4985	2.9729	2.9219	-2.0848	21.810	2.7020	1.1037	1.4162	30.236	2.5454	1.0099	0.6889
550T100-024*	0.1856	0.6310	0.7314	1.9853	0.0128	0.2621	0.0379	0.0753	2.0400	-0.3891	2.943	0.5157	0.1489	0.0603	3.838	0.4652	0.1282	0.0511
550T100-027	0.2122	0.7216	0.8365	1.9854	0.0145	0.2615	0.0567	0.0858	2.0398	-0.3879	3.700	0.6284	0.1872	0.0769	---	---	---	---
550T100-030	0.2339	0.7954	0.9222	1.9855	0.0159	0.2610	0.0759	0.0943	2.0396	-0.3869	4.361	0.7237	0.2207	0.0916	---	---	---	---
550T100-033	0.2594	0.8818	1.0225	1.9855	0.0176	0.2605	0.1035	0.1042	2.0394	-0.3858	5.178	0.8384	0.2620	0.1103	---	---	---	---
550T100-043	0.3378	1.1486	1.3322	1.9858	0.0226	0.2587	0.2291	0.1341	2.0388	-0.3824	7.921	1.2076	0.4009	0.1768	---	---	---	---
550T100-054	0.4238	1.4409	1.6779	1.9898	0.0279	0.2568	0.4526	0.1665	2.0418	-0.3792	11.216	1.6372	0.5676	0.2656	15.377	1.5433	0.5136	0.2281
550T125-024*	0.1979	0.6730	0.8286	2.0460	0.0240	0.3483	0.0404	0.1382	2.1472	-0.5504	3.004	0.5433	0.1520	0.0609	3.903	0.4880	0.1304	0.0514
550T125-027	0.2264	0.7697	0.9478	2.0462	0.0274	0.3476	0.0604	0.1576	2.1469	-0.5491	3.789	0.6640	0.1917	0.0777	---	---	---	---
550T125-030	0.2495	0.8484	1.0449	2.0463	0.0301	0.3471	0.0810	0.1733	2.1467	-0.5481	4.476	0.7666	0.2265	0.0928	---	---	---	---
550T125-033	0.2767	0.9407	1.1587	2.0465	0.0332	0.3465	0.1104	0.1916	2.1464	-0.5469	5.331	0.8907	0.2698	0.1119	---	---	---	---
550T125-043	0.3604	1.2253	1.5100	2.0470	0.0428	0.3447	0.2443	0.2474	2.1457	-0.5430	8.240	1.2935	0.4170	0.1803	---	---	---	---
550T125-054	0.4521	1.5372	1.9031	2.0517	0.0531	0.3426	0.4828	0.3084	2.1489	-0.5396	11.822	1.7700	0.5982	0.2728	16.031	1.6559	0.5354	0.2329
550T125-068	0.5693	1.9356	2.4125	2.0586	0.0658	0.3400	0.9647	0.3851	2.1540	-0.5352	15.973	2.3534	0.8083	0.4109	23.053	2.2777	0.7700	0.3550

TABLE 2—T MEMBER (TRACK) SECTION PROPERTIES^{1,2} (Continued)

MEMBER ID DESIGNATION	FULL PROPERTIES						TORSIONAL PROPERTIES				33 KSI EFFECTIVE PROPERTIES				50 KSI EFFECTIVE PROPERTIES			
	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	Ma (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)	C _w (in ⁶)	r _o (in)	X _o (in)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)
550T150-027	0.2405	0.8178	1.0590	2.0983	0.0457	0.4357	0.0642	0.2580	2.2618	-0.7232	4.104	0.7184	0.2077	0.0783	---	---	---	---
550T150-030	0.2651	0.9014	1.1676	2.0985	0.0502	0.4352	0.0860	0.2839	2.2615	-0.7220	4.970	0.8420	0.2515	0.0935	---	---	---	---
550T150-033	0.2940	0.9995	1.2948	2.0988	0.0555	0.4345	0.1173	0.3141	2.2612	-0.7207	6.127	0.9993	0.3101	0.1129	---	---	---	---
550T150-043	0.3829	1.3020	1.6879	2.0995	0.0717	0.4327	0.2596	0.4064	2.2602	-0.7166	9.260	1.4362	0.4686	0.1826	---	---	---	---
550T150-054	0.4804	1.6334	2.1283	2.1048	0.0890	0.4305	0.5130	0.5078	2.2636	-0.7129	12.432	1.8989	0.6291	0.2774	17.828	1.8283	0.5955	0.2359
550T150-068	0.6050	2.0568	2.6999	2.1126	0.1107	0.4278	1.0251	0.6362	2.2688	-0.7082	16.832	2.5321	0.8518	0.4207	24.115	2.4382	0.8055	0.3614
550T150-097	0.8622	2.9315	3.9055	2.1283	0.1537	0.4223	2.9726	0.8951	2.2794	-0.6984	28.129	3.9057	1.3339	0.7665	38.366	3.8042	1.2814	0.6783
550T150-118	1.0524	3.5780	4.8176	2.1396	0.1841	0.4182	5.4111	1.0799	2.2870	-0.6911	36.749	4.8176	1.6235	1.0129	54.705	4.8176	1.6235	0.9356
550T200-033	0.3286	1.1171	1.5672	2.1840	0.1235	0.6130	0.1311	0.6824	2.5195	-1.0965	6.067	1.0599	0.3070	0.1141	---	---	---	---
550T200-043	0.4280	1.4553	2.0435	2.1850	0.1598	0.6111	0.2902	0.8851	2.5180	-1.0920	9.797	1.5904	0.4958	0.1853	---	---	---	---
550T200-054	0.5370	1.8258	2.5787	2.1913	0.1991	0.6089	0.5734	1.1093	2.5211	-1.0879	13.231	2.1133	0.6696	0.2829	18.883	2.0267	0.6307	0.2395
550T200-068	0.6763	2.2992	3.2746	2.2005	0.2484	0.6061	1.1459	1.3957	2.5263	-1.0828	18.093	2.8397	0.9156	0.4322	25.717	2.7182	0.8590	0.3690
550T200-097	0.9639	3.2773	4.7475	2.2193	0.3474	0.6003	3.3232	1.9822	2.5367	-1.0720	29.386	4.4915	1.4871	0.8065	41.760	4.3059	1.3948	0.7027
550T200-118	1.1766	4.0003	5.8661	2.2329	0.4180	0.5961	6.0497	2.4093	2.5442	-1.0638	38.372	5.7998	1.9418	1.1191	54.851	5.5862	1.8320	0.9928
550T225-043	0.4506	1.5320	2.2214	2.2204	0.2212	0.7006	0.3055	1.2165	2.6619	-1.2903	10.016	1.6597	0.5069	0.1861	---	---	---	---
550T225-054	0.5653	1.9220	2.8038	2.2271	0.2757	0.6984	0.6037	1.5262	2.6649	-1.2861	13.550	2.2092	0.6857	0.2847	19.310	2.1158	0.6450	0.2407
550T225-068	0.7119	2.4205	3.5620	2.2369	0.3444	0.6956	1.2064	1.9228	2.6698	-1.2808	18.583	2.9762	0.9404	0.4359	26.352	2.8432	0.8802	0.3715
550T225-097	1.0148	3.4502	5.1684	2.2568	0.4828	0.6898	3.4985	2.7392	2.6797	-1.2696	30.436	4.7373	1.5403	0.8180	43.043	4.5258	1.4376	0.7103
550T225-118	1.2387	4.2114	6.3903	2.2714	0.5820	0.6855	6.3690	3.3377	2.6869	-1.2611	40.086	6.1532	2.0286	1.1415	56.874	5.8971	1.8996	1.0076
550T250-043	0.4731	1.6086	2.3992	2.2519	0.2952	0.7899	0.3208	1.6168	2.8156	-1.4942	10.210	1.7248	0.5167	0.1868	---	---	---	---
550T250-054	0.5936	2.0183	3.0290	2.2589	0.3684	0.7878	0.6339	2.0300	2.8183	-1.4899	13.830	2.2991	0.6999	0.2861	19.689	2.1994	0.6576	0.2416
550T250-068	0.7476	2.5417	3.8494	2.2692	0.4606	0.7849	1.2668	2.5605	2.8229	-1.4844	19.010	3.1037	0.9620	0.4388	26.910	2.9603	0.8988	0.3734
550T250-097	1.0656	3.6231	5.5894	2.2903	0.6469	0.7791	3.6738	3.6567	2.8323	-1.4729	31.330	4.9652	1.5855	0.8270	44.148	4.7305	1.4746	0.7163
550T250-118	1.3008	4.4226	6.9150	2.3056	0.7810	0.7748	6.6883	4.4645	2.8390	-1.4641	41.522	6.4779	2.1013	1.1587	58.590	6.1847	1.9569	1.0190
550T300-054	0.6502	2.2107	3.4794	2.3133	0.6060	0.9654	0.6943	3.3274	3.1518	-1.9107	14.305	2.4634	0.7239	0.2881	19.880	2.3193	0.6640	0.2430
550T300-068	0.8189	2.7841	4.4241	2.3244	0.7587	0.9626	1.3876	4.2039	3.1557	-1.9050	19.723	3.3364	0.9981	0.4430	27.851	3.1743	0.9302	0.3761
550T300-097	1.1673	3.9688	6.4310	2.3472	1.0690	0.9568	4.0244	6.0262	3.1636	-1.8929	32.788	5.3785	1.6593	0.8400	45.973	5.1031	1.5355	0.7249
550T300-118	1.4250	4.8448	7.9630	2.3640	1.2930	0.9526	7.3269	7.3793	3.1692	-1.8836	43.822	7.0628	2.2177	1.1836	61.378	6.7057	2.0500	1.0354
550T400-068	0.9615	3.2689	5.5740	2.4078	1.6550	1.3121	1.6292	9.2176	3.9077	-2.7841	20.778	3.7322	1.0515	0.4481	29.263	3.5385	0.9774	0.3795
550T400-097	1.3707	4.6604	8.1150	2.4332	2.3400	1.3066	4.7257	13.2760	3.9124	-2.7712	34.879	6.0794	1.7651	0.8557	48.636	5.7363	1.6244	0.7352
550T400-118	1.6734	5.6894	10.0600	2.4519	2.8390	1.3025	8.6040	16.3180	3.9157	-2.7613	47.047	8.0494	2.3809	1.2131	65.361	7.5879	2.1831	1.0548
600T100-024*	0.1979	0.6730	0.9062	2.1396	0.0130	0.2558	0.0404	0.0919	2.1864	-0.3700	3.231	0.6239	0.1635	0.0605	4.205	0.5613	0.1405	0.0512
600T100-027*	0.2264	0.7697	1.0364	2.1396	0.0147	0.2552	0.0604	0.1046	2.1862	-0.3689	4.068	0.7617	0.2059	0.0771	---	---	---	---
600T100-030	0.2495	0.8484	1.1424	2.1397	0.0162	0.2547	0.0810	0.1150	2.1860	-0.3680	4.801	0.8785	0.2430	0.0920	---	---	---	---
600T100-033	0.2767	0.9407	1.2667	2.1397	0.0179	0.2541	0.1104	0.1270	2.1858	-0.3669	5.710	1.0196	0.2890	0.1108	---	---	---	---
600T100-043	0.3604	1.2253	1.6503	2.1399	0.0230	0.2524	0.2443	0.1635	2.1852	-0.3636	8.786	1.4752	0.4447	0.1779	---	---	---	---
600T100-054	0.4521	1.5372	2.0775	2.1436	0.0284	0.2505	0.4828	0.2029	2.1881	-0.3605	12.526	2.0077	0.6339	0.2676	17.067	1.8853	0.5700	0.2294

TABLE 2—T MEMBER (TRACK) SECTION PROPERTIES^{1,2} (Continued)

MEMBER ID DESIGNATION	FULL PROPERTIES						TORSIONAL PROPERTIES				33 KSI EFFECTIVE PROPERTIES				50 KSI EFFECTIVE PROPERTIES			
	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	r _x (in)	I _y (in ⁴)	R _y (in)	J 10 ⁻³ in ⁴	C _w (in ⁶)	r _o (in)	X _o (in)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)
600T125-024*	0.2103	0.7151	1.0215	2.2038	0.0244	0.3409	0.0429	0.1687	2.2912	-0.5257	3.296	0.6556	0.1668	0.0611	4.276	0.5875	0.1428	0.0516
600T125-027*	0.2405	0.8178	1.1683	2.2040	0.0278	0.3402	0.0642	0.1924	2.2909	-0.5245	4.162	0.8028	0.2106	0.0780	---	---	---	---
600T125-030	0.2651	0.9014	1.2880	2.2041	0.0306	0.3397	0.0860	0.2115	2.2907	-0.5235	4.924	0.9281	0.2492	0.0931	---	---	---	---
600T125-033	0.2940	0.9995	1.4282	2.2042	0.0338	0.3392	0.1173	0.2339	2.2905	-0.5223	5.873	1.0800	0.2972	0.1123	---	---	---	---
600T125-043	0.3829	1.3020	1.8612	2.2046	0.0436	0.3373	0.2596	0.3020	2.2898	-0.5186	9.123	1.5748	0.4617	0.1814	---	---	---	---
600T125-054	0.4804	1.6334	2.3444	2.2091	0.0540	0.3353	0.5130	0.3762	2.2930	-0.5152	13.168	2.1625	0.6664	0.2749	17.760	2.0160	0.5932	0.2342
600T125-068	0.6050	2.0568	2.9696	2.2156	0.0670	0.3328	1.0251	0.4695	2.2980	-0.5111	18.117	2.8994	0.9168	0.4150	25.735	2.7840	0.8595	0.3577
600T150-030	0.2807	0.9545	1.4336	2.2598	0.0512	0.4270	0.0911	0.3468	2.4016	-0.6920	5.012	0.9713	0.2536	0.0938	---	---	---	---
600T150-033	0.3113	1.0583	1.5897	2.2600	0.0566	0.4264	0.1242	0.3837	2.4013	-0.6907	5.990	1.1327	0.3032	0.1133	---	---	---	---
600T150-043	0.4055	1.3786	2.0721	2.2606	0.0731	0.4246	0.2749	0.4964	2.4004	-0.6868	9.370	1.6619	0.4742	0.1836	---	---	---	---
600T150-054	0.5087	1.7296	2.6113	2.2656	0.0908	0.4225	0.5432	0.6199	2.4038	-0.6831	13.641	2.2975	0.6903	0.2795	18.264	2.1299	0.6100	0.2372
600T150-068	0.6406	2.1780	3.3098	2.2730	0.1129	0.4198	1.0855	0.7762	2.4090	-0.6787	19.062	3.1112	0.9647	0.4248	26.721	2.9630	0.8925	0.3641
600T150-097	0.9131	3.1044	4.7797	2.2880	0.1567	0.4143	3.1479	1.0907	2.4196	-0.6693	31.675	4.7799	1.5040	0.7784	43.326	4.6596	1.4471	0.6862
600T150-118	1.1145	3.7891	5.8888	2.2987	0.1877	0.4104	5.7304	1.3149	2.4271	-0.6622	41.430	5.8888	1.8303	1.0350	61.673	5.8888	1.8303	0.9501
600T200-033	0.3459	1.1759	1.9128	2.3517	0.1263	0.6043	0.1380	0.8339	2.6480	-1.0567	6.592	1.2685	0.3336	0.1145	---	---	---	---
600T200-043	0.4506	1.5320	2.4939	2.3526	0.1635	0.6023	0.3055	1.0814	2.6467	-1.0522	11.167	1.9600	0.5651	0.1863	---	---	---	---
600T200-054	0.5653	1.9220	3.1450	2.3587	0.2036	0.6002	0.6037	1.3547	2.6500	-1.0483	15.023	2.5963	0.7602	0.2849	21.504	2.4949	0.7183	0.2409
600T200-068	0.7119	2.4205	3.9902	2.3675	0.2540	0.5974	1.2064	1.7031	2.6552	-1.0433	20.460	3.4770	1.0354	0.4363	29.167	3.3345	0.9742	0.3717
600T200-097	1.0148	3.4502	5.7743	2.3854	0.3552	0.5916	3.4985	2.4154	2.6659	-1.0329	33.031	5.4717	1.6716	0.8185	47.063	5.2534	1.5719	0.7106
600T200-118	1.2387	4.2114	7.1255	2.3985	0.4274	0.5874	6.3690	2.9332	2.6736	-1.0250	43.007	7.0463	2.1764	1.1412	61.612	6.7949	2.0578	1.0074
600T225-043	0.4731	1.6086	2.7048	2.3910	0.2265	0.6918	0.3208	1.4860	2.7836	-1.2461	11.239	2.0242	0.5688	0.1872	---	---	---	---
600T225-054	0.5936	2.0183	3.4118	2.3974	0.2823	0.6897	0.6339	1.8633	2.7867	-1.2420	15.382	2.7114	0.7784	0.2867	21.988	2.6022	0.7344	0.2420
600T225-068	0.7476	2.5417	4.3304	2.4068	0.3527	0.6868	1.2668	2.3458	2.7918	-1.2369	21.007	3.6398	1.0631	0.4399	29.881	3.4842	0.9980	0.3741
600T225-097	1.0656	3.6231	6.2715	2.4260	0.4943	0.6810	3.6738	3.3369	2.8022	-1.2260	34.189	5.7628	1.7302	0.8300	48.486	5.5144	1.6194	0.7182
600T225-118	1.3008	4.4226	7.7440	2.4399	0.5960	0.6768	6.6883	4.0620	2.8097	-1.2178	44.885	7.4632	2.2714	1.1635	63.839	7.1622	2.1322	1.0221
600T250-043	0.4957	1.6853	2.9157	2.4253	0.3026	0.7813	0.3361	1.9744	2.9297	-1.4458	11.144	2.0663	0.5639	0.1878	---	---	---	---
600T250-054	0.6219	2.1145	3.6787	2.4321	0.3775	0.7791	0.6641	2.4776	2.9326	-1.4415	15.699	2.8195	0.7945	0.2881	21.961	2.6690	0.7335	0.2429
600T250-068	0.7832	2.6629	4.6706	2.4420	0.4720	0.7763	1.3272	3.1226	2.9375	-1.4362	21.486	3.7924	1.0873	0.4428	30.511	3.6248	1.0191	0.3760
600T250-097	1.1165	3.7960	6.7688	2.4623	0.6628	0.7705	3.8491	4.4527	2.9474	-1.4251	35.179	6.0330	1.7803	0.8390	49.717	5.7579	1.6605	0.7242
600T250-118	1.3629	4.6337	8.3620	2.4770	0.8000	0.7662	7.0076	5.4307	2.9546	-1.4166	46.463	7.8467	2.3513	1.1807	65.736	7.5027	2.1956	1.0335
600T300-054	0.6785	2.3069	4.2124	2.4917	0.6220	0.9575	0.7245	4.0573	3.2503	-1.8546	16.240	3.0180	0.8218	0.2902	21.650	2.7693	0.7231	0.2443
600T300-068	0.8545	2.9053	5.3510	2.5024	0.7788	0.9547	1.4480	5.1219	3.2546	-1.8491	22.291	4.0717	1.1280	0.4470	31.580	3.8826	1.0548	0.3788
600T300-097	1.2182	4.1417	7.7630	2.5245	1.0970	0.9489	4.1998	7.3303	3.2633	-1.8373	36.801	6.5244	1.8624	0.8520	51.761	6.2024	1.7288	0.7328
600T300-118	1.4871	5.0560	9.5990	2.5406	1.3270	0.9446	7.6463	8.9663	3.2696	-1.8284	49.003	8.5387	2.4798	1.2056	68.832	8.1208	2.2990	1.0499
600T350-054	0.7351	2.4994	4.7462	2.5410	0.9458	1.1343	0.7850	6.1615	3.5989	-2.2823	16.685	3.1964	0.8444	0.2916	21.424	2.8595	0.7156	0.2453
600T350-068	0.9258	3.1477	6.0310	2.5524	1.1850	1.1315	1.5688	7.7876	3.6025	-2.2766	22.946	4.3225	1.1612	0.4500	32.460	4.1144	1.0842	0.3808
600T350-097	1.3199	4.4875	8.7580	2.5760	1.6730	1.1258	4.5504	11.1750	3.6098	-2.2644	38.091	6.9640	1.9276	0.8610	53.407	6.6010	1.7838	0.7387
600T350-118	1.6113	5.4783	10.8350	2.5932	2.0270	1.1215	8.2850	13.6970	3.6150	-2.2551	50.986	9.1544	2.5802	1.2227	71.286	8.6730	2.3810	1.0612

TABLE 2—T MEMBER (TRACK) SECTION PROPERTIES^{1,2} (Continued)

MEMBER ID DESIGNATION	FULL PROPERTIES						TORSIONAL PROPERTIES				33 KSI EFFECTIVE PROPERTIES				50 KSI EFFECTIVE PROPERTIES			
	Area (in ²)	Wt. (lb/ft)	Ix (in ⁴)	rx (in)	Iy (in ⁴)	Ry (in)	J 10 ⁻³ in ⁴	Cw (in ⁶)	ro (in)	Xo (in)	Maxo (k-in)	Ixe (in ⁴)	Sxe(t) (in ³)	Ae (in ²)	Maxo (k-in)	Ixe (in ⁴)	Sxe(t) (in ³)	Ae (in ²)
600T400-068	0.9971	3.3901	6.7120	2.5945	1.7020	1.3065	1.6896	11.2050	3.9763	-2.7153	23.494	4.5498	1.1890	0.4522	33.200	4.3244	1.1089	0.3822
600T400-097	1.4216	4.8333	9.7530	2.6193	2.4060	1.3009	4.9010	16.1110	3.9821	-2.7027	39.150	7.3619	1.9812	0.8676	54.772	6.9620	1.8294	0.7431
600T400-118	1.7355	5.9005	12.0720	2.6374	2.9180	1.2967	8.9240	19.7780	3.9863	-2.6931	52.594	9.7108	2.6616	1.2351	73.299	9.1728	2.4482	1.0694
800T100-030*	0.3119	1.0606	2.3549	2.7476	0.0169	0.2329	0.1012	0.2205	2.7746	-0.3080	6.562	1.6652	0.3321	0.0929	---	---	---	---
800T100-033*	0.3459	1.1759	2.6110	2.7476	0.0187	0.2324	0.1380	0.2435	2.7745	-0.3071	7.841	1.9431	0.3968	0.1120	---	---	---	---
800T100-043	0.4506	1.5320	3.4013	2.7475	0.0240	0.2309	0.3055	0.3132	2.7739	-0.3042	12.253	2.8537	0.6201	0.1806	---	---	---	---
800T100-054	0.5653	1.9220	4.2764	2.7504	0.0297	0.2291	0.6037	0.3883	2.7764	-0.3016	17.809	3.9363	0.9013	0.2731	23.846	3.6484	0.7965	0.2330
800T125-030*	0.3275	1.1136	2.6114	2.8236	0.0322	0.3137	0.1063	0.4082	2.8756	-0.4444	6.712	1.7443	0.3397	0.0940	---	---	---	---
800T125-033*	0.3632	1.2348	2.8956	2.8237	0.0356	0.3132	0.1449	0.4512	2.8754	-0.4433	8.039	2.0399	0.4068	0.1136	---	---	---	---
800T125-043	0.4731	1.6086	3.7727	2.8238	0.0459	0.3115	0.3208	0.5822	2.8748	-0.4401	12.662	3.0158	0.6408	0.1841	---	---	---	---
800T125-054	0.5936	2.0183	4.7454	2.8274	0.0569	0.3096	0.6339	0.7243	2.8777	-0.4372	18.597	4.1929	0.9411	0.2804	24.686	3.8613	0.8245	0.2378
800T125-068	0.7476	2.5417	5.9985	2.8327	0.0705	0.3072	1.2668	0.9022	2.8821	-0.4335	26.835	5.7613	1.3580	0.4261	36.437	5.3974	1.2170	0.3650
800T150-030*	0.3431	1.1666	2.8678	2.8910	0.0543	0.3977	0.1113	0.6716	2.9781	-0.5943	6.820	1.8131	0.3451	0.0947	---	---	---	---
800T150-033*	0.3805	1.2936	3.1801	2.8911	0.0600	0.3971	0.1518	0.7428	2.9779	-0.5932	8.182	2.1241	0.4141	0.1146	---	---	---	---
800T150-043	0.4957	1.6853	4.1440	2.8914	0.0775	0.3953	0.3361	0.9605	2.9773	-0.5897	12.958	3.1565	0.6558	0.1864	---	---	---	---
800T150-054	0.6219	2.1145	5.2143	2.8956	0.0962	0.3933	0.6641	1.1978	2.9805	-0.5865	19.167	4.4140	0.9700	0.2850	25.291	4.0455	0.8447	0.2409
800T150-068	0.7832	2.6629	6.5946	2.9017	0.1196	0.3908	1.3272	1.4969	2.9853	-0.5825	27.942	6.1105	1.4140	0.4358	37.631	5.6912	1.2569	0.3714
800T150-097	1.1165	3.7960	9.4810	2.9141	0.1660	0.3857	3.8491	2.0966	2.9951	-0.5742	47.602	9.4814	2.2694	0.8110	65.712	9.2702	2.1948	0.7077
800T150-118	1.3629	4.6337	11.6440	2.9230	0.1990	0.3820	7.0076	2.5223	3.0021	-0.5681	62.497	11.6440	2.7611	1.0949	93.033	11.6440	2.7611	0.9897
800T200-033*	0.4151	1.4112	3.7492	3.0055	0.1352	0.5708	0.1656	1.6197	3.1957	-0.9241	8.375	2.2667	0.4238	0.1158	---	---	---	---
800T200-043	0.5408	1.8387	4.8868	3.0061	0.1750	0.5689	0.3667	2.0994	3.1948	-0.9202	13.364	3.3961	0.6763	0.1891	---	---	---	---
800T200-054	0.6785	2.3069	6.1523	3.0112	0.2180	0.5668	0.7245	2.6259	3.1982	-0.9166	19.953	4.7906	1.0098	0.2904	26.120	4.3589	0.8724	0.2445
800T200-068	0.8545	2.9053	7.7868	3.0187	0.2719	0.5641	1.4480	3.2947	3.2036	-0.9121	29.487	6.7032	1.4922	0.4473	39.276	6.1903	1.3118	0.3790
800T200-097	1.2182	4.1417	11.2130	3.0340	0.3800	0.5585	4.1998	4.6549	3.2144	-0.9028	49.301	10.6860	2.4949	0.8510	70.404	10.2780	2.3515	0.7321
800T200-118	1.4871	5.0560	13.7890	3.0451	0.4570	0.5545	7.6463	5.6386	3.2222	-0.8959	63.599	13.6470	3.2185	1.2011	91.778	13.2130	3.0654	1.0470
800T225-043	0.5633	1.9153	5.2581	3.0552	0.2434	0.6574	0.3819	2.8857	3.3123	-1.0977	14.635	3.6544	0.7406	0.1899	---	---	---	---
800T225-054	0.7068	2.4031	6.6212	3.0607	0.3034	0.6552	0.7548	3.6129	3.3157	-1.0940	23.674	5.4137	1.1980	0.2922	28.790	4.7086	0.9616	0.2457
800T225-068	0.8902	3.0265	8.3829	3.0688	0.3789	0.6525	1.5084	4.5390	3.3211	-1.0894	31.908	7.1898	1.6147	0.4510	45.831	6.9265	1.5308	0.3814
800T225-097	1.2690	4.3146	12.0800	3.0853	0.5310	0.6468	4.3751	6.4313	3.3321	-1.0797	50.901	11.1970	2.5759	0.8626	72.848	10.7730	2.4331	0.7397
800T225-118	1.5492	5.2671	14.8610	3.0973	0.6400	0.6426	7.9656	7.8080	3.3401	-1.0724	66.140	14.3710	3.3471	1.2235	94.840	13.8540	3.1676	1.0617
800T250-043	0.5859	1.9920	5.6295	3.0998	0.3264	0.7464	0.3972	3.8332	3.4364	-1.2819	14.617	3.7346	0.7397	0.1906	---	---	---	---
800T250-054	0.7351	2.4994	7.0902	3.1057	0.4072	0.7443	0.7850	4.8029	3.4398	-1.2780	23.609	5.5361	1.1948	0.2936	28.745	4.8125	0.9601	0.2466
800T250-068	0.9258	3.1477	8.9790	3.1143	0.5090	0.7415	1.5688	6.0403	3.4452	-1.2733	32.606	7.4658	1.6501	0.4539	46.767	7.1837	1.5620	0.3833
800T250-097	1.3199	4.4875	12.9460	3.1319	0.7140	0.7357	4.5504	8.5780	3.4562	-1.2632	52.286	11.6730	2.6460	0.8715	74.603	11.2060	2.4917	0.7457
800T250-118	1.6113	5.4783	15.9340	3.1447	0.8620	0.7315	8.2849	10.4330	3.4642	-1.2557	68.300	15.0390	3.4564	1.2407	97.480	14.4520	3.2558	1.0731
800T300-054	0.7917	2.6918	8.0280	3.1844	0.6750	0.9232	0.8454	7.8531	3.7090	-1.6625	23.320	5.7354	1.1802	0.2957	28.655	5.0010	0.9571	0.2479
800T300-068	0.9971	3.3901	10.1710	3.1939	0.8450	0.9203	1.6896	9.8918	3.7141	-1.6574	33.804	7.9769	1.7107	0.4581	46.439	7.4706	1.5511	0.3861
800T300-097	1.4216	4.8333	14.6780	3.2133	1.1890	0.9145	4.9010	14.0950	3.7247	-1.6468	54.596	12.5470	2.7629	0.8846	77.574	12.0050	2.5910	0.7543
800T300-118	1.7355	5.9005	18.0780	3.2275	1.4380	0.9102	8.9240	17.1890	3.7325	-1.6388	71.830	16.2510	3.6350	1.2656	101.870	15.5440	3.4024	1.0895
800T350-054	0.8483	2.8842	8.9660	3.2511	1.0300	1.1021	0.9059	11.8980	4.0057	-2.0643	23.102	5.9176	1.1691	0.2971	28.572	5.1672	0.9543	0.2489
800T350-068	1.0684	3.6326	11.3630	3.2613	1.2910	1.0992	1.8105	15.0030	4.0105	-2.0591	34.804	8.4426	1.7613	0.4611	45.964	7.7084	1.5352	0.3881
800T350-097	1.5233	5.1791	16.4100	3.2823	1.8210	1.0934	5.2520	21.4310	4.0203	-2.0480	56.474	13.3380	2.8579	0.8936	80.025	12.7310	2.6728	0.7602
800T350-118	1.8597	6.3228	20.2230	3.2976	2.2060	1.0891	9.5620	26.1850	4.0275	-2.0396	74.642	17.3400	3.7773	1.2826	105.420	16.5320	3.5212	1.1007

TABLE 2—T MEMBER (TRACK) SECTION PROPERTIES^{1,2} (Continued)

MEMBER ID DESIGNATION	FULL PROPERTIES						TORSIONAL PROPERTIES				33 KSI EFFECTIVE PROPERTIES				50 KSI EFFECTIVE PROPERTIES			
	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	r _x (in)	I _y (in ⁴)	R _y (in)	J 10 ⁻³ in ⁴	C _w (in ⁶)	r _o (in)	X _o (in)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)
800T400-068	1.1397	3.8750	12.5560	3.3191	1.8600	1.2774	1.9310	21.5270	4.3325	-2.4744	35.657	8.8701	1.8045	0.4633	45.591	7.9256	1.5228	0.3895
800T400-097	1.6250	5.5249	18.1430	3.3414	2.6280	1.2716	5.6020	30.8060	4.3414	-2.4629	58.048	14.0610	2.9376	0.9002	82.099	13.3970	2.7421	0.7646
800T400-118	1.9839	6.7451	22.3670	3.3578	3.1860	1.2673	10.2010	37.6940	4.3479	-2.4542	76.966	18.3330	3.8949	1.2951	108.400	17.4350	3.6205	1.1090
1000T100-043*	0.5408	1.8387	6.0535	3.3460	0.0247	0.2140	0.3667	0.5161	3.3630	-0.2620	15.721	4.7455	0.7956	0.1823	---	---	---	---
1000T100-054	0.6785	2.3069	7.6059	3.3480	0.0306	0.2120	0.7245	0.6392	3.3650	-0.2590	23.115	6.6156	1.1698	0.2764	30.627	6.0704	1.0229	0.2352
1000T125-043*	0.5633	1.9153	6.6304	3.4310	0.0475	0.2900	0.3819	0.9646	3.4640	-0.3830	16.201	4.9816	0.8199	0.1858	---	---	---	---
1000T125-054	0.7068	2.4031	8.3336	3.4340	0.0588	0.2890	0.7548	1.1990	3.4670	-0.3800	24.043	6.9944	1.2167	0.2836	31.614	6.3808	1.0559	0.2400
1000T125-068	0.8902	3.0265	10.5220	3.4380	0.0730	0.2860	1.5084	1.4919	3.4710	-0.3770	35.215	9.7132	1.7821	0.4327	47.186	9.0080	1.5760	0.3693
1000T150-043*	0.5859	1.9920	7.2073	3.5074	0.0805	0.3706	0.3972	1.5977	3.5647	-0.5174	16.547	5.1849	0.8374	0.1880	---	---	---	---
1000T150-054	0.7351	2.4994	9.0612	3.5109	0.1000	0.3688	0.7850	1.9907	3.5675	-0.5145	24.706	7.3172	1.2503	0.2882	32.320	6.6470	1.0795	0.2430
1000T150-068	0.9258	3.1477	11.4460	3.5161	0.1240	0.3664	1.5688	2.4850	3.5719	-0.5109	36.517	10.2310	1.8480	0.4424	48.575	9.4371	1.6224	0.3758
1000T150-097	1.3199	4.4875	16.4150	3.5267	0.1730	0.3616	4.5504	3.4734	3.5807	-0.5035	62.551	16.4030	3.1654	0.8304	86.995	15.6130	2.9056	0.7205
1000T150-118	1.6113	5.4783	20.1260	3.5342	0.2070	0.3581	8.2849	4.1732	3.5871	-0.4980	87.314	20.1260	3.8574	1.1304	115.340	20.1120	3.8524	1.0131
100T200-043*	0.6310	2.1453	8.3612	3.6402	0.1833	0.5389	0.4278	3.5087	3.7699	-0.8190	17.021	5.5302	0.8614	0.1907	---	---	---	---
1000T200-054	0.7917	2.6918	10.5170	3.6446	0.2280	0.5369	0.8454	4.3847	3.7732	-0.8157	25.618	7.8640	1.2964	0.2937	33.286	7.0984	1.1117	0.2467
1000T200-068	0.9971	3.3901	13.2920	3.6512	0.2850	0.5343	1.6896	5.4948	3.7783	-0.8116	38.304	11.1000	1.9384	0.4539	50.472	10.1610	1.6858	0.3834
1000T200-097	1.4216	4.8333	19.0890	3.6645	0.3980	0.5290	4.9010	7.7457	3.7885	-0.8032	67.809	18.2120	3.4315	0.8704	92.378	17.0950	3.0854	0.7449
1000T200-118	1.7355	5.9005	23.4270	3.6741	0.4790	0.5251	8.9235	9.3684	3.7960	-0.7969	87.469	23.2040	4.4265	1.2366	126.190	22.4730	4.2149	1.0704
1000T225-043*	0.6535	2.2220	8.9382	3.6982	0.2557	0.6255	0.4431	4.8290	3.8773	-0.9827	17.191	5.6807	0.8700	0.1916	---	---	---	---
1000T225-054	0.8200	2.7880	11.2440	3.7030	0.3190	0.6234	0.8756	6.0404	3.8807	-0.9793	25.949	8.1030	1.3132	0.2955	33.632	7.2951	1.1233	0.2478
1000T225-068	1.0327	3.5113	14.2160	3.7101	0.3980	0.6208	1.7501	7.5794	3.8860	-0.9750	38.957	11.4800	1.9715	0.4576	51.159	10.4770	1.7087	0.3858
1000T225-097	1.4724	5.0062	20.4260	3.7246	0.5570	0.6153	5.0763	10.7140	3.8967	-0.9662	69.627	18.9710	3.5235	0.8819	94.337	17.7380	3.1508	0.7525
1000T225-118	1.7976	6.1117	25.0770	3.7351	0.6720	0.6113	9.2428	12.9870	3.9045	-0.9596	90.685	24.3190	4.5892	1.2590	129.690	23.4240	4.3316	1.0851
1000T250-043*	0.6761	2.2987	9.5150	3.7515	0.3440	0.7132	0.4584	6.4194	3.9891	-1.1535	17.331	5.8195	0.8771	0.1923	---	---	---	---
1000T250-054	0.8483	2.8842	11.9720	3.7567	0.4290	0.7111	0.9059	8.0359	3.9926	-1.1500	26.224	8.3244	1.3271	0.2969	33.918	7.4767	1.1329	0.2487
1000T250-068	1.0684	3.6326	15.1390	3.7643	0.5360	0.7084	1.8105	10.0940	3.9980	-1.1455	39.499	11.8320	1.9989	0.4605	51.731	10.7700	1.7278	0.3877
1000T250-097	1.5233	5.1791	21.7620	3.7798	0.7520	0.7028	5.2516	14.2990	4.0090	-1.1363	71.157	19.6740	3.6010	0.8909	95.985	18.3350	3.2059	0.7584
1000T250-118	1.8597	6.3228	26.7280	3.7911	0.9080	0.6987	9.5620	17.3620	4.0170	-1.1295	93.440	25.3500	4.7286	1.2762	132.620	24.3040	4.4295	1.0965
1000T300-054	0.9049	3.0767	13.4270	3.8521	0.7140	0.8884	0.9663	13.1450	4.2314	-1.5091	28.722	9.0820	1.4535	0.2989	35.687	7.9552	1.1919	0.2501
1000T300-068	1.1397	3.8750	16.9860	3.8605	0.8940	0.8856	1.9313	16.5360	4.2369	-1.5044	47.035	13.5980	2.3802	0.4647	57.088	11.8060	1.9067	0.3905
1000T300-097	1.6250	5.5249	24.4360	3.8779	1.2580	0.8799	5.6020	23.5020	4.2481	-1.4946	75.148	21.1790	3.8029	0.9039	107.590	20.3630	3.5935	0.7670
1000T300-118	1.9839	6.7451	30.0290	3.8906	1.5210	0.8757	10.2010	28.6100	4.2562	-1.4873	97.997	27.2310	4.9592	1.3011	140.000	26.1630	4.6759	1.1129
1000T350-054	0.9615	3.2691	14.8830	3.9343	1.0950	1.0671	1.0267	19.9050	4.4923	-1.8876	28.658	9.3775	1.4502	0.3004	35.745	8.2138	1.1939	0.2511
1000T350-068	1.2110	4.1174	18.8320	3.9435	1.3720	1.0643	2.0520	25.0660	4.4976	-1.8827	46.520	14.0020	2.3542	0.4677	56.933	12.1930	1.9016	0.3924
1000T350-097	1.7267	5.8706	27.1090	3.9624	1.9350	1.0585	5.9530	35.7100	4.5086	-1.8725	77.657	22.4280	3.9299	0.9129	110.910	21.5200	3.7045	0.7730
1000T350-118	2.1081	7.1674	33.3300	3.9762	2.3430	1.0542	10.8390	43.5500	4.5166	-1.8648	101.680	28.9310	5.1459	1.3181	144.730	27.7170	4.8341	1.1242
1000T400-068	1.2823	4.3598	20.6790	4.0158	1.9820	1.2434	2.1730	35.9260	4.7807	-2.2765	46.114	14.3790	2.3337	0.4699	56.785	12.5430	1.8966	0.3939
1000T400-097	1.8284	6.2164	29.7830	4.0360	2.8000	1.2375	6.3030	51.2700	4.7911	-2.2658	79.792	23.5810	4.0380	0.9196	113.770	22.5920	3.8000	0.7774
1000T400-118	2.2323	7.5897	36.6300	4.0509	3.3950	1.2332	11.4780	62.6110	4.7988	-2.2578	104.780	30.4920	5.3023	1.3306	148.760	29.1510	4.9685	1.1324
1200T125-054*	0.8200	2.7880	13.3350	4.0330	0.0600	0.2710	0.8756	1.8037	4.0560	-0.3370	29.489	10.6030	1.4923	0.2858	38.534	9.5997	1.2870	0.2414
1200T125-068	1.0328	3.5114	16.8270	4.0370	0.0750	0.2690	1.7501	2.2428	4.0590	-0.3340	43.632	14.8550	2.2081	0.4370	57.941	13.6630	1.9352	0.3722

TABLE 2—T MEMBER (TRACK) SECTION PROPERTIES^{1,2} (Continued)

MEMBER ID DESIGNATION	FULL PROPERTIES						TORSIONAL PROPERTIES				33 KSI EFFECTIVE PROPERTIES				50 KSI EFFECTIVE PROPERTIES			
	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	r _x (in)	I _y (in ⁴)	R _y (in)	J 10 ⁻³ in ⁴	C _w (in ⁶)	r _o (in)	X _o (in)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)	Max _o (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)
1200T150-054*	0.8483	2.8842	14.3780	4.1170	0.1030	0.3480	0.9059	3.0061	4.1570	-0.4590	30.246	11.0420	1.5306	0.2904	39.341	9.9591	1.3140	0.2445
1200T150-068	1.0684	3.6326	18.1490	4.1210	0.1280	0.3460	1.8105	3.7496	4.1610	-0.4550	45.113	15.5670	2.2830	0.4468	59.524	14.2470	1.9881	0.3787
1200T150-097	1.5233	5.1791	25.9900	4.1310	0.1770	0.3410	5.2516	5.2333	4.1690	-0.4490	78.988	25.3060	3.9973	0.8432	108.370	23.8760	3.6196	0.7290
1200T150-118	1.8597	6.3228	31.8290	4.1370	0.2120	0.3380	9.5621	6.2822	4.1750	-0.4440	103.350	31.8290	5.1194	1.1539	145.710	31.0000	4.8666	1.0286
1200T200-054*	0.9049	3.0767	16.4640	4.2655	0.2360	0.5106	0.9663	6.6542	4.3585	-0.7356	31.281	11.7810	1.5830	0.2959	40.444	10.5660	1.3508	0.2481
1200T200-068	1.1397	3.8750	20.7920	4.2710	0.2940	0.5080	1.9313	8.3321	4.3630	-0.7320	47.133	16.7510	2.3852	0.4583	61.674	15.2260	2.0599	0.3863
1200T200-097	1.6250	5.5249	29.8080	4.2830	0.4110	0.5030	5.6022	11.7270	4.3730	-0.7240	85.018	27.8200	4.3024	0.8832	114.490	25.9090	3.8238	0.7534
1200T200-118	1.9839	6.7451	36.5350	4.2910	0.4950	0.4990	10.2010	14.1690	4.3800	-0.7180	114.610	36.2140	5.8002	1.2601	158.220	34.2880	5.2845	1.0859
1200T225-054*	0.9332	3.1729	17.5070	4.3313	0.3300	0.5949	0.9965	9.1815	4.4611	-0.8873	31.656	12.1030	1.6020	0.2977	40.841	10.8300	1.3641	0.2493
1200T225-068	1.1753	3.9962	22.1140	4.3376	0.4120	0.5923	1.9917	11.5110	4.4661	-0.8834	47.867	17.2660	2.4224	0.4620	62.450	15.6520	2.0858	0.3887
1200T225-097	1.6758	5.6977	31.7170	4.3504	0.5780	0.5871	5.7776	16.2460	4.4762	-0.8751	87.073	28.8640	4.4064	0.8947	116.690	26.7860	3.8973	0.7610
1200T225-118	2.0460	6.9562	38.8880	4.3597	0.6960	0.5832	10.5200	19.6710	4.4836	-0.8691	118.400	37.7870	5.9919	1.2825	162.170	35.5960	5.4164	1.1006
1200T250-054*	0.9615	3.2691	18.5500	4.3924	0.4460	0.6807	1.0267	12.2290	4.5663	-1.0464	31.969	12.4020	1.6178	0.2991	41.170	11.0740	1.3751	0.2502
1200T250-068	1.2110	4.1174	23.4360	4.3991	0.5570	0.6781	2.0521	15.3470	4.5715	-1.0423	48.482	17.7440	2.4535	0.4649	63.098	16.0460	2.1075	0.3906
1200T250-097	1.7267	5.8706	33.6260	4.4130	0.7810	0.6727	5.9530	21.7060	4.5821	-1.0337	88.804	29.8300	4.4940	0.9037	118.530	27.5980	3.9590	0.7669
1200T250-118	2.1081	7.1674	41.2410	4.4231	0.9430	0.6687	10.8390	26.3270	4.5898	-1.0274	121.450	39.2100	6.1462	1.2997	165.480	36.8030	5.5271	1.1120
1200T300-054*	1.0181	3.4616	20.6360	4.5021	0.7450	0.8554	1.0872	20.0310	4.7869	-1.3833	32.460	12.9410	1.6426	0.3011	41.681	11.5130	1.3922	0.2515
1200T300-068	1.2823	4.3598	26.0790	4.5098	0.9320	0.8527	2.1730	25.1760	4.7923	-1.3789	49.458	18.6100	2.5029	0.4691	64.115	16.7600	2.1414	0.3934
1200T300-097	1.8284	6.2164	37.4440	4.5254	1.3120	0.8471	6.3030	35.7210	4.8035	-1.3698	91.584	31.5850	4.6347	0.9167	121.450	29.0690	4.0565	0.7755
1200T300-118	2.2323	7.5897	45.9470	4.5369	1.5860	0.8429	11.4780	43.4340	4.8116	-1.3629	126.380	41.7890	6.3957	1.3246	170.780	38.9930	5.7041	1.1284
1200T350-054*	1.0747	3.6540	22.7220	4.5981	1.1460	1.0326	1.1480	30.3450	5.0239	-1.7409	34.247	13.7150	1.7331	0.3026	42.944	12.0210	1.4343	0.2525
1200T350-068	1.3536	4.6022	28.7230	4.6065	1.4360	1.0298	2.2940	38.1800	5.0294	-1.7363	54.942	20.3580	2.7804	0.4721	67.957	17.8130	2.2698	0.3953
1200T350-097	1.9301	6.5622	41.2620	4.6237	2.0240	1.0241	6.6540	54.2970	5.0407	-1.7267	101.600	34.6430	5.1417	0.9258	142.880	32.9440	4.7722	0.7815
1200T350-118	2.3565	8.0119	50.6520	4.6363	2.4510	1.0199	12.1170	66.1360	5.0489	-1.7194	132.080	44.4260	6.6839	1.3416	189.150	42.7290	6.3175	1.1397
1200T400-068	1.4249	4.8447	31.3670	4.6918	2.0800	1.2083	2.4150	54.7120	5.2846	-2.1104	54.776	20.9240	2.7720	0.4742	68.015	18.3160	2.2717	0.3968
1200T400-097	2.0318	6.9080	45.0800	4.7104	2.9380	1.2025	7.0050	77.9390	5.2958	-2.1004	104.330	36.3300	5.2799	0.9324	141.720	33.8060	4.7334	0.7858
1200T400-118	2.4807	8.4342	55.3580	4.7240	3.5620	1.1982	12.7550	95.0580	5.3039	-2.0928	135.980	46.6900	6.8812	1.3541	194.280	44.8220	6.4890	1.1479
1400T125-054*	0.9332	3.1729	19.9770	4.6270	0.0610	0.2560	0.9965	2.5407	4.6440	-0.3020	34.931	15.0420	1.7677	0.2874	45.447	13.5370	1.5179	0.2425
1400T125-068	1.1754	3.9962	25.1970	4.6300	0.0760	0.2540	1.9917	3.1573	4.6470	-0.2990	52.040	21.2300	2.6335	0.4402	68.684	19.3940	2.2940	0.3743
1400T150-054*	0.9615	3.2691	21.3920	4.7170	0.1050	0.3300	1.0267	4.2487	4.7460	-0.4140	35.781	15.6120	1.8107	0.2920	46.355	14.0010	1.5482	0.2455
1400T150-068	1.2110	4.1174	26.9880	4.7210	0.1300	0.3280	2.0521	5.2964	4.7500	-0.4110	53.715	22.1650	2.7183	0.4499	70.463	20.1540	2.3535	0.3807
1400T150-097	1.7267	5.8707	38.6110	4.7290	0.1810	0.3240	5.9529	7.3844	4.7570	-0.4050	95.535	36.4640	4.8347	0.8523	129.810	34.1510	4.3356	0.7350
1400T150-118	2.1081	7.1674	47.2520	4.7340	0.2170	0.3210	10.8390	8.8586	4.7620	-0.4000	124.330	46.2690	6.2920	1.1706	176.280	44.6370	5.8876	1.0397
1400T200-054*	1.0181	3.4616	24.2220	4.8780	0.2420	0.4870	1.0872	9.4502	4.9480	-0.6700	36.939	16.5640	1.8693	0.2975	47.594	14.7780	1.5896	0.2491
1400T200-068	1.2823	4.3598	30.5720	4.8830	0.3020	0.4850	2.1729	11.8260	4.9520	-0.6670	55.969	23.7010	2.8324	0.4614	72.866	21.4150	2.4337	0.3883
1400T200-097	1.8284	6.2164	43.7760	4.8930	0.4220	0.4800	6.3035	16.6250	4.9610	-0.6590	102.340	39.7870	5.1789	0.8923	136.610	36.8020	4.5628	0.7594
1400T200-118	2.2323	7.5897	53.6110	4.9010	0.5070	0.4770	11.4780	20.0730	4.9600	-0.6540	139.680	52.1520	7.0687	1.2768	190.450	48.9990	6.3609	1.0969
1400T225-054*	1.0464	3.5578	25.6370	4.9500	0.3390	0.5690	1.1174	13.0610	5.0480	-0.8120	37.358	16.9780	1.8906	0.2992	48.041	15.1160	1.6046	0.2503
1400T225-068	1.3180	4.4810	32.3640	4.9550	0.4240	0.5670	2.2334	16.3660	5.0530	-0.8080	56.783	24.3660	2.8736	0.4651	73.732	21.9630	2.4627	0.3907
1400T225-097	1.8792	6.3893	46.3590	4.9670	0.5930	0.5620	6.4788	23.0700	5.0620	-0.8000	104.620	41.1520	5.2946	0.9039	139.050	37.9380	4.6442	0.7670
1400T225-118	2.2944	7.8008	56.7910	4.9750	0.7150	0.5580	11.7970	27.9120	5.0690	-0.7950	143.750	54.1920	7.2744	1.2992	194.840	50.7070	6.5076	1.1117

TABLE 2—T MEMBER (TRACK) SECTION PROPERTIES^{1,2} (Continued)

MEMBER ID DESIGNATION	FULL PROPERTIES						TORSIONAL PROPERTIES				33 KSI EFFECTIVE PROPERTIES				50 KSI EFFECTIVE PROPERTIES			
	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	r _x (in)	I _y (in ⁴)	R _y (in)	J 10 ⁻³ in ⁴	C _w (in ⁶)	r _o (in)	X _o (in)	Maxo (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)	Maxo (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	A _e (in ²)
1400T250-054*	1.0747	3.6540	27.0520	5.0170	0.4590	0.6530	1.1476	17.4190	5.1500	-0.9610	37.709	17.3620	1.9083	0.3006	48.414	15.4290	1.6170	0.2512
1400T250-068	1.3536	4.6022	34.1550	5.0230	0.5730	0.6510	2.2938	21.8480	5.1550	-0.9570	57.466	24.9820	2.9081	0.4680	74.456	22.4690	2.4868	0.3926
1400T250-097	1.9301	6.5622	48.9430	5.0360	0.8040	0.6460	6.6540	30.8640	5.1650	-0.9490	106.540	42.4110	5.3915	0.9128	141.090	38.9880	4.7123	0.7729
1400T250-118	2.3565	8.0119	59.9700	5.0450	0.9700	0.6420	12.1170	37.4040	5.1720	-0.9430	147.160	56.0640	7.4470	1.3164	198.510	52.2790	6.6301	1.1230
1400T300-054*	1.1313	3.8464	29.8810	5.1394	0.7700	0.8248	1.2081	28.5830	5.3597	-1.2779	38.261	18.0550	1.9362	0.3027	48.996	15.9930	1.6365	0.2526
1400T300-068	1.4249	4.8448	37.7410	5.1465	0.9630	0.8221	2.4150	35.9060	5.3651	-1.2738	58.549	26.0990	2.9629	0.4722	75.599	23.3880	2.5250	0.3954
1400T300-097	2.0318	6.9080	54.1090	5.1606	1.3550	0.8166	7.0050	50.8810	5.3758	-1.2651	109.600	44.6920	5.5466	0.9259	144.330	40.8900	4.8205	0.7815
1400T300-118	2.4807	8.4342	66.3290	5.1709	1.6380	0.8126	12.7550	61.8130	5.3836	-1.2587	152.610	59.4400	7.7230	1.3413	204.350	55.1230	6.8252	1.1394
1400T350-054*	1.1879	4.0389	32.7110	5.2476	1.1870	0.9997	1.2690	43.3440	5.5812	-1.6167	38.673	18.6690	1.9571	0.3041	49.425	16.4880	1.6508	0.2535
1400T350-068	1.4962	5.0872	41.3250	5.2554	1.4870	0.9970	2.5350	54.5050	5.5868	-1.6123	59.369	27.0940	3.0044	0.4752	76.452	24.2000	2.5535	0.3974
1400T350-097	2.1335	7.2538	59.2750	5.2710	2.0970	0.9913	7.3550	77.4110	5.5979	-1.6032	111.960	46.7340	5.6660	0.9349	146.790	42.5870	4.9029	0.7875
1400T350-118	2.6049	8.8565	72.6880	5.2825	2.5390	0.9872	13.3940	94.2060	5.6061	-1.5964	156.840	62.4580	7.9370	1.3583	208.830	57.6630	6.9749	1.1507
1400T400-068	1.5675	5.3296	44.9080	5.3525	2.1610	1.1741	2.6560	78.1380	5.8226	-1.9685	63.488	28.8310	3.2129	0.4774	79.328	25.2830	2.6496	0.3988
1400T400-097	2.2352	7.5996	64.4410	5.3694	3.0510	1.1683	7.7060	111.1600	5.8338	-1.9590	131.640	52.7190	6.6617	0.9415	163.020	46.3720	5.4450	0.7918
1400T400-118	2.7291	9.2788	79.0470	5.3819	3.6980	1.1641	14.0320	135.4500	5.8421	-1.9519	170.530	67.4230	8.6300	1.3708	244.920	64.9470	8.1803	1.1589
1600T125-068*	1.3180	4.4810	35.9180	5.2200	0.0770	0.2420	2.2334	4.2372	5.2330	-0.2710	60.449	28.8760	3.0591	0.4425	79.416	26.2290	2.6525	0.3758
1600T150-068*	1.3536	4.6023	38.2500	5.3160	0.1320	0.3130	2.2938	7.1296	5.3380	-0.3750	62.311	30.0600	3.1533	0.4523	81.392	27.1840	2.7185	0.3823
1600T150-097	1.9301	6.5622	54.6850	5.3230	0.1840	0.3090	6.6542	9.9319	5.3450	-0.3690	112.150	49.9690	5.6754	0.8591	151.210	46.4940	5.0505	0.7395
1600T150-118	2.3565	8.0119	66.8920	5.3280	0.2210	0.3060	12.1170	11.9080	5.3490	-0.3650	147.430	63.8100	7.4610	1.1831	206.970	61.1390	6.9127	1.0479
1600T200-068*	1.4249	4.8447	42.9160	5.4880	0.3080	0.4650	2.4146	15.9910	5.5420	-0.6130	64.798	31.9860	3.2792	0.4638	84.046	28.7550	2.8071	0.3899
1600T200-097	2.0318	6.9080	61.4020	5.4970	0.4300	0.4600	7.0048	22.4610	5.5500	-0.6060	119.700	54.2030	6.0578	0.8991	158.750	49.8400	5.3023	0.7639
1600T200-118	2.4807	8.4342	75.1520	5.5040	0.5170	0.4570	12.7550	27.1020	5.5560	-0.6010	164.760	71.4440	8.3377	1.2893	222.760	66.7130	7.4402	1.1051
1600T225-068*	1.4606	4.9659	45.2490	5.5660	0.4330	0.5440	2.4750	22.1650	5.6420	-0.7450	65.694	32.8140	3.3245	0.4674	85.003	29.4340	2.8391	0.3923
1600T225-097	2.0826	7.0809	64.7610	5.5760	0.6060	0.5400	7.1801	31.2170	5.6510	-0.7380	122.220	55.9220	6.1849	0.9107	161.430	51.2610	5.3917	0.7715
1600T225-118	2.5428	8.6454	79.2820	5.5840	0.7300	0.5360	13.0750	37.7470	5.6570	-0.7320	169.270	74.0380	8.5659	1.3116	227.590	68.8650	7.6015	1.1199
1600T250-068*	1.4962	5.0871	47.5810	5.6390	0.5860	0.6260	2.5354	29.6300	5.7420	-0.8850	66.444	33.5810	3.3625	0.4703	85.803	30.0630	2.8658	0.3942
1600T250-097	2.1335	7.2538	68.1200	5.6510	0.8230	0.6210	7.3550	41.8200	5.7520	-0.8770	124.310	57.5030	6.2911	0.9196	163.660	52.5710	5.4662	0.7774
1600T250-118	2.6049	8.8565	83.4130	5.6590	0.9930	0.6170	13.3940	50.6490	5.7590	-0.8720	173.020	76.4060	8.7556	1.3289	231.610	70.8390	7.7356	1.1313
1600T300-068*	1.5675	5.3295	52.2470	5.7730	0.9880	0.7940	2.6560	48.7880	5.9470	-1.1840	67.635	34.9700	3.4227	0.4745	87.067	31.1990	2.9080	0.3970
1600T300-097	2.2352	7.5996	74.8370	5.7860	1.3900	0.7890	7.7060	69.0760	5.9570	-1.1760	127.630	60.3540	6.4589	0.9327	167.200	54.9400	5.5844	0.7860
1600T300-118	2.7291	9.2788	91.6730	5.7960	1.6810	0.7850	14.0320	83.8640	5.9650	-1.1700	178.980	80.6610	9.0580	1.3537	237.930	74.3900	7.9470	1.1477
1600T350-068*	1.6388	5.5719	56.9120	5.8930	1.5300	0.9660	2.7770	74.1520	6.1590	-1.5060	68.539	36.2070	3.4685	0.4775	88.017	32.2080	2.9398	0.3989
1600T350-097	2.3369	7.9453	81.5550	5.9080	2.1570	0.9610	8.0570	105.2200	6.1700	-1.4970	130.200	62.9050	6.5887	0.9417	169.900	57.0530	5.6745	0.7920
1600T350-118	2.8533	9.7011	99.9300	5.9180	2.6100	0.9570	14.6710	127.9700	6.1770	-1.4910	183.580	84.4540	9.2900	1.3708	242.800	77.5620	8.1090	1.1589
1600T400-068*	1.7101	5.8144	61.5780	6.0010	2.2280	1.1410	2.8980	106.3800	6.3810	-1.8460	69.245	37.3240	3.5042	0.4797	88.752	33.1130	2.9643	0.4004
1600T400-097	2.4386	8.2911	88.2720	6.0170	3.1450	1.1360	8.4070	151.2000	6.3920	-1.8370	132.240	65.2230	6.6919	0.9483	172.020	58.9660	5.7455	0.7963
1600T400-118	2.9775	10.1230	108.1900	6.0280	3.8100	1.1320	15.3100	184.1200	6.4000	-1.8300	187.270	87.9040	9.4770	1.3832	246.660	80.4410	8.2380	1.1672

For S_t: 1 inch = 25.4 mm, 1 in² = 645 mm², 1 in³ = 1.64x10⁴ mm³, 1 in⁴ = 4.16x10⁵ mm⁴, 1 in⁶ = 2.69x10⁸ mm⁶, 1 kip-in = 113.3 N-m, 1 kip = 4.4 kN

- Notes:
 1. Members marked with * indicate (h/t) web height to thickness ratios exceeding 200 and less than 260 which require web stiffeners.
 2. Member Identification provides nominal dimensions as shown in the example below:
 Example: 1400T350-068
 1400=14.00 inch depth: (Depth measured from inside face to inside face of flanges.)
 T=Track.
 350=3.50 inch flange width.
 068=thickness in mils, 68 mils or 0.0677".

TABLE 3—U-MEMBER (COLD ROLLED CHANNEL) SECTION PROPERTIES¹

MEMBER ID	DIMENSIONS		FULL PROPERTIES						TORSIONAL PROPERTIES				33 ksi EFFECTIVE PROPERTIES				50 ksi EFFECTIVE PROPERTIES			
	A (in)	B (in)	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	R _x (in)	I _y (in ⁴)	R _y (in)	J (10 ⁻³ in ⁴)	C _w (in ⁶)	r _o (in)	X _o (in)	Maxo (k-in)	I _{xe} (in ⁴)	S _{xe} (in ³)	A _e (in ²)	Maxo (k-in)	I _{xe} (in ⁴)	S _{xe} (in ³)	A _e (in ²)
075U050-030	0.75	0.50	0.0501	0.1705	0.0045	0.3004	0.0013	0.160	0.0163	0.00010	0.4869	-0.3481	0.250	0.0045	0.0121	0.0501	---	---	---	---
075U050-033	0.75	0.50	0.0554	0.1883	0.0050	0.2991	0.0014	0.160	0.0221	0.00011	0.4852	-0.3470	0.295	0.0050	0.0132	0.0554	---	---	---	---
075U050-043	0.75	0.50	0.0712	0.242	0.006	0.295	0.002	0.158	0.048	0.00014	0.480	-0.344	0.378	0.0062	0.0165	0.0712	---	---	---	---
075U050-054	0.75	0.50	0.0871	0.296	0.007	0.289	0.002	0.156	0.093	0.00015	0.474	-0.342	0.459	0.0073	0.0195	0.0871	0.680	0.0073	0.0195	0.0871
150U050-030	1.50	0.50	0.0735	0.2500	0.0231	0.5609	0.0016	0.149	0.0239	0.00058	0.6393	-0.2680	0.625	0.0231	0.0309	0.0720	---	---	---	---
150U050-033	1.50	0.50	0.0813	0.2765	0.0255	0.5596	0.0018	0.149	0.0325	0.00064	0.6375	-0.2670	0.758	0.0255	0.0340	0.0813	---	---	---	---
150U050-043	1.50	0.50	0.1051	0.357	0.032	0.555	0.002	0.147	0.071	0.00079	0.632	-0.264	0.989	0.0324	0.0432	0.1051	---	---	---	---
150U050-054	1.50	0.50	0.1296	0.441	0.039	0.549	0.003	0.146	0.138	0.0009	0.625	-0.262	1.230	0.0390	0.0521	0.1296	1.821	0.0390	0.0521	0.1296
200U050-030	2.00	0.50	0.0891	0.3031	0.0466	0.7233	0.0018	0.141	0.0289	0.00118	0.7728	-0.2331	0.940	0.0466	0.0466	0.0768	---	---	---	---
200U050-033	2.00	0.50	0.0986	0.3353	0.0514	0.7219	0.0019	0.140	0.0394	0.00129	0.7711	-0.2321	1.148	0.0514	0.0514	0.0886	---	---	---	---
200U050-043	2.00	0.50	0.1276	0.434	0.066	0.718	0.002	0.139	0.087	0.0016	0.766	-0.229	1.504	0.0657	0.0657	0.1266	---	---	---	---
200U050-054	2.00	0.50	0.1579	0.537	0.080	0.711	0.003	0.137	0.169	0.0019	0.759	-0.227	1.883	0.0797	0.0797	0.1579	2.789	0.0797	0.0797	0.1579
250U050-030	2.50	0.50	0.1047	0.3561	0.0813	0.8809	0.0019	0.133	0.0340	0.00203	0.9145	-0.2065	1.307	0.0813	0.0650	0.0794	---	---	---	---
250U050-033	2.50	0.50	0.1159	0.3941	0.0897	0.8794	0.0020	0.133	0.0463	0.00222	0.9128	-0.2055	1.602	0.0897	0.0717	0.0922	---	---	---	---
250U050-043	2.50	0.50	0.1502	0.511	0.115	0.875	0.003	0.131	0.102	0.0028	0.908	-0.203	2.106	0.1149	0.0919	0.1348	---	---	---	---
250U050-054	2.50	0.50	0.1862	0.633	0.140	0.868	0.003	0.130	0.199	0.0033	0.900	-0.201	2.648	0.1401	0.1121	0.1847	3.921	0.1401	0.1121	0.1703

For S_i: 1 inch = 25.4 mm, 1 in² = 645 mm², 1 in³ = 1.64x10⁴ mm³, 1 in⁴ = 4.16x10⁶ mm⁴, 1 in⁶ = 2.69x10⁸ mm⁶, 1 kip-in = 113.3 N-m, 1 kip = 4.4 Kn

1. The last three digits of the Member ID is the member thickness in mils. For member thickness (T) in inches and inside bend radius (R), see table in Figure 1. See Figure 3 for member illustration.

TABLE 4—F-MEMBERS (HAT CHANNEL) SECTION PROPERTIES^{1,3}

MEMBER ID	DIMENSIONS			FULL PROPERTIES						TORSIONAL PROPERTIES			33 ksi EFFECTIVE PROPERTIES					50 ksi EFFECTIVE PROPERTIES					
	A (in)	B (in)	C (in)	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	R _x (in)	I _y (in ⁴)	R _y (in)	J (10 ⁻³ in ⁴)	C _w (in ⁶)	r _o (in)	Maxo(+) (k-in)	Maxo(-) (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	S _{xe(b)} (in ³)	Maxo (+) (k-in)	Maxo (-) (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	S _{xe(b)} (in ³)	
125F050-030	0.50	1.25	0.45	0.0954	0.3244	0.0040	0.2049	0.0490	0.7166	0.0310	0.0005	0.8333	0.314	0.314	0.0040	0.0179	0.0145	---	---	---	---	---	---
125F050-033	0.50	1.25	0.45	0.1054	0.3584	0.0044	0.2035	0.0538	0.7145	0.0421	0.5040	0.8300	0.346	0.346	0.0044	0.0196	0.0158	---	---	---	---	---	---
125F050-043	0.50	1.25	0.45	0.1357	0.4615	0.0054	0.1994	0.0681	0.7082	0.0920	0.0006	0.8198	0.437	0.437	0.0054	0.0241	0.0195	---	---	---	---	---	---
125F050-054	0.50	1.25	0.45	0.1674	0.5690	0.0063	0.1945	0.0823	0.7012	0.1778	0.0007	0.8082	0.526	0.526	0.0063	0.0283	0.0229	0.782	0.782	0.0063	0.0283	0.0229	0.0229
125F087-018	0.875	1.25	0.45	0.0735	0.2500	0.0091	0.3518	0.0481	0.8087	0.0087	0.0011	1.1137	0.367	0.325	0.0084	0.0197	0.0165	---	---	---	---	---	---
125F087-024	0.875	1.25	0.45	0.0962	0.3272	0.0118	0.3495	0.0624	0.8051	0.0196	0.0014	1.1075	0.486	0.462	0.0116	0.0289	0.0246	0.724	0.654	0.0110	0.0263	0.0218	0.0218
125F087-027	0.875	1.25	0.45	0.1097	0.3731	0.0133	0.3482	0.0708	0.8030	0.0293	0.0016	1.1038	0.604	0.545	0.0133	0.0332	0.0276	---	---	---	---	---	---
125F087-030	0.875	1.25	0.45	0.1207	0.4102	0.0145	0.3470	0.0775	0.8013	0.0392	0.0017	1.1008	0.664	0.664	0.0145	0.0364	0.0305	---	---	---	---	---	---
125F087-033	0.875	1.25	0.45	0.1334	0.4535	0.0160	0.3457	0.0852	0.7992	0.0532	0.0019	1.0973	0.734	0.734	0.0159	0.0399	0.0335	---	---	---	---	---	---
125F087-043	0.875	1.25	0.45	0.1722	0.5855	0.0201	0.3418	0.1083	0.7929	0.1168	0.0024	1.0864	0.946	0.946	0.0201	0.0504	0.0423	---	---	---	---	---	---
125F087-054	0.875	1.25	0.45	0.2131	0.7246	0.0242	0.3369	0.1317	0.7860	0.2276	0.0028	1.0738	1.168	1.168	0.0242	0.0606	0.0509	1.736	1.736	0.0242	0.0606	0.0509	0.0509
125F087-068	0.875	1.25	0.45	0.2635	0.8957	0.0288	0.3306	0.1592	0.7772	0.4464	0.0032	1.0574	1.435	1.435	0.0288	0.0721	0.0605	2.125	2.125	0.0288	0.0721	0.0605	0.0605
125F150-024	1.50	1.25	0.45	0.1296	0.4406	0.0416	0.5665	0.1160	0.9459	0.0264	0.0048	1.5906	1.022	0.983	0.0410	0.0579	0.0517	1.518	1.412	0.0392	0.0538	0.0472	0.0472
125F150-027	1.50	1.25	0.45	0.1479	0.5028	0.0472	0.5651	0.1317	0.9438	0.0395	0.0054	1.5869	1.276	1.154	0.0469	0.0672	0.0584	---	---	---	---	---	---
125F150-030	1.50	1.25	0.45	0.1627	0.5533	0.0518	0.5640	0.1444	0.9421	0.0528	0.0059	1.5838	1.408	1.408	0.0518	0.0739	0.0648	---	---	---	---	---	---
125F150-033	1.50	1.25	0.45	0.1800	0.6121	0.0570	0.5627	0.1591	0.9401	0.0718	0.0065	1.5803	1.563	1.563	0.0570	0.0814	0.0713	---	---	---	---	---	---
125F150-043	1.50	1.25	0.45	0.2330	0.7923	0.0728	0.5588	0.2032	0.9338	0.1580	0.0082	1.5694	2.036	2.036	0.0728	0.1038	0.0910	---	---	---	---	---	---
125F150-054	1.50	1.25	0.45	0.2894	0.9841	0.0888	0.5538	0.2487	0.9269	0.3091	0.0098	1.5564	2.550	2.550	0.0888	0.1267	0.1111	3.789	3.789	0.0888	0.1267	0.1111	0.1111
125F150-068	1.50	1.25	0.45	0.3596	1.2226	0.1077	0.5473	0.3032	0.9182	0.6093	0.0115	1.5395	3.193	3.193	0.1077	0.1538	0.1347	4.727	4.727	0.1077	0.1538	0.1347	0.1347

For S_i: 1 inch = 25.4 mm, 1 in² = 645 mm², 1 in³ = 1.64x10⁴ mm³, 1 in⁴ = 4.16x10⁶ mm⁴, 1 in⁶ = 2.69x10⁸ mm⁶, 1 kip-in = 113.3 N-m, 1 kip = 4.4 kN

1. X_o = 0.0 for symmetrical sections. See Figure 4 for member illustration.

2. The last three digits of the Member ID is the member thickness in mils. For member thickness (T) in inches and inside bend radius (R), see table in Figure 1.

TABLE 5—Z-MEMBER SECTION PROPERTIES^{1,2}

MEMBER IDENTIFICATION	DIMENSIONS			FULL PROPERTIES						TORSIONAL PROPERTIES			33 ksi EFFECTIVE PROPERTIES					50 ksi EFFECTIVE PROPERTIES				
	A (in)	B (in)	C (in)	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	r _x (in)	I _y (in ⁴)	r _y (in)	J (10 ⁻³ in ⁴)	C _w (in ⁶)	r _o (in)	Maxo (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	V _{ay} (kips)	A _e (in ²)	Maxo (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	V _{ay} (kips)	A _e (in ²)
100Z100-018	1.00	1.00	0	0.0542	0.1842	0.0101	0.4309	0.0122	0.4742	0.0064	0.0014	0.6408	0.216	0.0068	0.0110	0.1847	0.0317	---	---	---	---	---
100Z100-024	1.00	1.00	0	0.0710	0.2414	0.0130	0.4285	0.0159	0.4731	0.0145	0.0018	0.6383	0.318	0.0096	0.0161	0.2412	0.0470	0.439	0.0090	0.0147	0.3654	0.0434
100Z100-027	1.00	1.00	0	0.0810	0.2755	0.0148	0.4270	0.0181	0.4724	0.0216	0.0020	0.6368	0.385	0.0114	0.0195	0.2746	0.0565	---	---	---	---	---
100Z100-030	1.00	1.00	0	0.0891	0.3031	0.0162	0.4258	0.0198	0.4718	0.0289	0.0022	0.6356	0.442	0.0129	0.0224	0.3016	0.0646	---	---	---	---	---
100Z100-033	1.00	1.00	0	0.0986	0.3353	0.0178	0.4244	0.0219	0.4712	0.0394	0.0024	0.6341	0.512	0.0146	0.0259	0.3331	0.0746	---	---	---	---	---
100Z100-043	1.00	1.00	0	0.1276	0.4339	0.0225	0.4201	0.0281	0.4692	0.0865	0.0030	0.6298	0.742	0.0202	0.0376	0.4283	0.1078	---	---	---	---	---
125Z125-024	1.25	1.25	0	0.0896	0.3045	0.0260	0.5388	0.0313	0.5909	0.0183	0.0057	0.7996	0.449	0.0176	0.0227	0.3177	0.0525	0.622	0.0166	0.0208	0.4814	0.0459
125Z125-027	1.25	1.25	0	0.1023	0.3476	0.0295	0.5373	0.0356	0.5902	0.0273	0.0064	0.7981	0.542	0.0209	0.0274	0.3622	0.0644	---	---	---	---	---
125Z125-030	1.25	1.25	0	0.1125	0.3826	0.0323	0.5361	0.0391	0.5896	0.0365	0.0070	0.7969	0.623	0.0237	0.0315	0.3981	0.0736	---	---	---	---	---
125Z125-033	1.25	1.25	0	0.1246	0.4236	0.0356	0.5347	0.0432	0.5890	0.0497	0.0077	0.7955	0.722	0.0270	0.0365	0.4402	0.0848	---	---	---	---	---
125Z125-043	1.25	1.25	0	0.1614	0.5489	0.0454	0.5304	0.0556	0.5869	0.1095	0.0097	0.7911	1.053	0.0376	0.0533	0.5678	0.1226	---	---	---	---	---
150Z125-024	1.25	1.25	0	0.0957	0.3255	0.0388	0.6367	0.0313	0.5715	0.0195	0.0088	0.8556	0.578	0.0269	0.0293	0.3942	0.0545	0.808	0.0254	0.0270	0.5973	0.0472
150Z125-027	1.50	1.25	0	0.1093	0.3717	0.0441	0.6353	0.0356	0.5708	0.0292	0.0099	0.8540	0.696	0.0318	0.0352	0.4497	0.0681	---	---	---	---	---
150Z125-030	1.50	1.25	0	0.1203	0.4092	0.0484	0.6341	0.0391	0.5702	0.0391	0.0109	0.8528	0.797	0.0359	0.0404	0.4947	0.0799	---	---	---	---	---
150Z125-033	1.50	1.25	0	0.1332	0.4530	0.0533	0.6327	0.0432	0.5695	0.0532	0.0119	0.8513	0.922	0.0409	0.0466	0.5472	0.0935	---	---	---	---	---
150Z125-043	1.50	1.25	0	0.1727	0.5872	0.0682	0.6284	0.0556	0.5675	0.1171	0.0151	0.8467	1.337	0.0569	0.0677	0.7074	0.1339	---	---	---	---	---
200Z150-024	2.00	1.50	0	0.1205	0.4097	0.0857	0.8433	0.0543	0.6713	0.0246	0.0285	1.0779	0.900	0.0567	0.0456	0.5233	0.0572	1.270	0.0538	0.0424	0.6442	0.0490
200Z150-027	2.00	1.50	0	0.1376	0.4679	0.0975	0.8419	0.0619	0.6706	0.0367	0.0324	1.0764	1.079	0.0669	0.0546	0.6248	0.0722	---	---	---	---	---
200Z150-030	2.00	1.50	0	0.1515	0.5152	0.1071	0.8407	0.0680	0.6701	0.0492	0.0355	1.0751	1.232	0.0755	0.0623	0.6877	0.0854	---	---	---	---	---
200Z150-033	2.00	1.50	0	0.1678	0.5706	0.1182	0.8393	0.0752	0.6694	0.0670	0.0391	1.0736	1.420	0.0859	0.0718	0.7613	0.1017	---	---	---	---	---
200Z150-043	2.00	1.50	0	0.2178	0.7405	0.1519	0.8351	0.0970	0.6673	0.1477	0.0498	1.0689	2.051	0.1195	0.1038	0.9864	0.1577	---	---	---	---	---
200Z150-054	2.00	1.50	0	0.2711	0.9217	0.1866	0.8297	0.1203	0.6662	0.2895	0.0606	1.0641	2.829	0.1585	0.1432	1.2026	0.2163	3.907	0.1491	0.1305	1.8222	0.2009
250Z150-024	2.50	1.50	0	0.1329	0.4517	0.1409	1.0298	0.0543	0.6393	0.0271	0.0483	1.2121	1.252	0.0963	0.0633	0.5233	0.0585	1.740	0.0907	0.0581	0.5890	0.0499
250Z150-027	2.50	1.50	0	0.1518	0.5160	0.1605	1.0284	0.0619	0.6386	0.0405	0.0549	1.2105	1.492	0.1134	0.0755	0.6848	0.0742	---	---	---	---	---
250Z150-030	2.50	1.50	0	0.1671	0.5683	0.1764	1.0272	0.0680	0.6380	0.0542	0.0602	1.2092	1.697	0.1277	0.0859	0.8323	0.0880	---	---	---	---	---
250Z150-033	2.50	1.50	0	0.1851	0.6294	0.1948	1.0258	0.0752	0.6373	0.0739	0.0664	1.2077	1.949	0.1448	0.0986	0.9754	0.1054	---	---	---	---	---
250Z150-043	2.50	1.50	0	0.2404	0.8172	0.2508	1.0216	0.0970	0.6352	0.1630	0.0849	1.2030	2.789	0.2005	0.1411	1.2655	0.1658	---	---	---	---	---
250Z150-054	2.50	1.50	0	0.2994	1.0179	0.3091	1.0161	0.1203	0.6339	0.3197	0.1037	1.1976	3.818	0.2649	0.1932	1.5528	0.2431	5.315	0.2504	0.1775	2.3528	0.2132
350Z150-024	3.50	1.50	0	0.1576	0.5358	0.3027	1.3859	0.0543	0.5870	0.0322	0.1061	1.5051	1.979	0.2107	0.1002	0.4098	0.0600	2.472	0.1857	0.0826	0.4098	0.0508
350Z150-027	3.50	1.50	0	0.1801	0.6122	0.3451	1.3844	0.0619	0.5863	0.0481	0.1207	1.5034	2.471	0.2549	0.1250	0.6141	0.0763	---	---	---	---	---
350Z150-030	3.50	1.50	0	0.1983	0.6744	0.3795	1.3832	0.0680	0.5857	0.0644	0.1324	1.5021	2.796	0.2861	0.1415	0.8237	0.0909	---	---	---	---	---
350Z150-033	3.50	1.50	0	0.2197	0.7471	0.4196	1.3819	0.0752	0.5850	0.0877	0.1461	1.5006	3.191	0.3234	0.1615	1.0236	0.1093	---	---	---	---	---
350Z150-043	3.50	1.50	0	0.2855	0.9705	0.5417	1.3776	0.0970	0.5829	0.1935	0.1872	1.4958	4.502	0.4439	0.2278	1.7391	0.1746	---	---	---	---	---
350Z150-054	3.50	1.50	0	0.3560	1.2104	0.6699	1.3718	0.1203	0.5814	0.3801	0.2300	1.4899	6.089	0.5830	0.3082	2.2533	0.2612	8.584	0.5553	0.2867	3.3720	0.2252
350Z150-068	3.50	1.50	0	0.4446	1.5115	0.8272	1.3641	0.1494	0.5796	0.7533	0.2813	1.4821	8.267	0.7658	0.4184	2.7737	0.3865	11.653	0.7305	0.3892	4.2030	0.3389
350Z150-097	3.50	1.50	0	0.6226	2.1169	1.1312	1.3479	0.2066	0.5761	2.1465	0.3763	1.4659	13.799	1.1312	0.6464	3.7650	0.6226	18.425	1.0969	0.6154	5.7050	0.5973
400Z150-024	4.00	1.50	0	0.1700	0.5779	0.4123	1.5576	0.0543	0.5653	0.0347	0.1443	1.6570	2.259	0.2794	0.1143	0.3557	0.0604	2.836	0.2468	0.0947	0.3557	0.0511
400Z150-027	4.00	1.50	0	0.1942	0.6604	0.4703	1.5561	0.0619	0.5645	0.0519	0.1642	1.6554	2.951	0.3476	0.1493	0.5330	0.0770	---	---	---	---	---
400Z150-030	4.00	1.50	0	0.2139	0.7274	0.5173	1.5549	0.0680	0.5640	0.0694	0.1802	1.6540	3.427	0.3963	0.1734	0.7148	0.0918	---	---	---	---	---
400Z150-033	4.00	1.50	0	0.2370	0.8059	0.5721	1.5535	0.0752	0.5633	0.0946	0.1989	1.6525	3.903	0.4475	0.1975	0.9756	0.1105	---	---	---	---	---
400Z150-043	4.00	1.50	0	0.3080	1.0472	0.7393	1.5493	0.0970	0.5612	0.2088	0.2552	1.6478	5.476	0.6121	0.2771	1.7391	0.1773	---	---	---	---	---
400Z150-054	4.00	1.50	0	0.3843	1.3066	0.9153	1.5433	0.1203	0.5596	0.4104	0.3138	1.6416	7.370	0.8018	0.3730	2.6035	0.2666	10.440	0.7661	0.3487	3.3720	0.2287
400Z150-068	4.00	1.50	0	0.4802	1.6327	1.1319	1.5353	0.1494	0.5577	0.8137	0.3846	1.6335	9.963	1.0514	0.5042	3.2149	0.3978	14.105	1.0054	0.4711	4.8710	0.3463
400Z150-097	4.00	1.50	0	0.6735	2.2898	1.5531	1.5186	0.2067	0.5540	2.3218	0.5169	1.6165	16.512	1.5531	0.7766	4.3940	0.6735	22.183	1.5075	0.7409	6.6580	0.6293

TABLE 5—Z-MEMBER SECTION PROPERTIES^{1,2} (Continued)

MEMBER IDENTIFICATION	DIMENSIONS			FULL PROPERTIES						TORSIONAL PROPERTIES			33 ksi EFFECTIVE PROPERTIES					50 ksi EFFECTIVE PROPERTIES				
	A (in)	B (in)	C (in)	Area (in ²)	Wt. (lb/ft)	I _x (in ⁴)	R _x (in)	I _y (in ⁴)	r _y (in)	J (10 ⁻³ in ⁴)	C _w (in ⁶)	r _o (in)	Maxo (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	V _{ay} (kips)	A _e (in ²)	Maxo (k-in)	I _{xe} (in ⁴)	S _{xe(t)} (in ³)	V _{ay} (kips)	A _e (in ²)
350Z200-033	3.50	2.00	0.75	0.3050	1.0368	0.6334	1.4412	0.4354	1.1950	0.1217	0.8481	1.8721	6.099	0.5757	0.3086	1.0236	0.2063	---	---	---	---	---
350Z200-043	3.50	2.00	0.75	0.3962	1.3469	0.8177	1.4367	0.5616	1.1906	0.2686	1.0873	1.8659	8.767	0.7930	0.4437	1.7391	0.3215	---	---	---	---	---
350Z200-054	3.50	2.00	0.75	0.4943	1.6806	1.0123	1.4311	0.6962	1.1868	0.5278	1.3363	1.8592	12.010	1.0123	0.5785	2.2530	0.4542	15.540	0.9511	0.5190	3.3720	0.3764
350Z200-068	3.50	2.00	0.75	0.6177	2.1003	1.2521	1.4237	0.8632	1.1821	1.0468	1.6372	1.8505	15.033	1.2521	0.7155	2.7740	0.6006	22.201	1.2409	0.7032	4.2030	0.5667
350Z200-097	3.50	2.00	0.75	0.8665	2.9461	1.7187	1.4084	1.1913	1.1726	2.9874	2.2004	1.8326	21.130	1.7187	0.9821	3.7650	0.8665	31.655	1.7187	0.9821	5.7050	0.8665
400Z200-033	4.00	2.00	0.75	0.3223	1.0957	0.8583	1.6320	0.4354	1.1624	0.1286	1.1305	2.0037	7.258	0.7812	0.3673	0.9756	0.2075	---	---	---	---	---
400Z200-043	4.00	2.00	0.75	0.4187	1.4236	1.1091	1.6275	0.5616	1.1581	0.2839	1.4505	1.9975	10.407	1.0755	0.5267	1.7391	0.3242	---	---	---	---	---
400Z200-054	4.00	2.00	0.75	0.5226	1.7768	1.3745	1.6218	0.6962	1.1542	0.5580	1.7848	1.9906	14.268	1.3745	0.6872	2.6030	0.4596	18.466	1.2903	0.6168	3.3720	0.3800
400Z200-068	4.00	2.00	0.75	0.6534	2.2215	1.7025	1.6142	0.8632	1.1494	1.1072	2.1901	1.9816	17.886	1.7025	0.8512	3.2150	0.6118	26.381	1.6856	0.8355	4.8710	0.5742
400Z200-097	4.00	2.00	0.75	0.9174	3.1190	2.3440	1.5985	1.1914	1.1396	3.1627	2.9537	1.9631	25.215	2.3440	1.1720	4.3940	0.9174	37.774	2.3440	1.1720	6.6580	0.8986
600Z200-033	6.00	2.00	0.75	0.3915	1.3309	2.1823	2.3611	0.4355	1.0547	0.1562	2.7403	2.5860	12.119	1.9669	0.6133	0.6379	0.2102	---	---	---	---	---
600Z200-043	6.00	2.00	0.75	0.5089	1.7303	2.8260	2.3565	0.5616	1.0505	0.3450	3.5229	2.5800	17.729	2.7427	0.8972	1.4150	0.3302	---	---	---	---	---
600Z200-054	6.00	2.00	0.75	0.6358	2.1617	3.5117	2.3502	0.6962	1.0465	0.6789	4.3468	2.5726	24.303	3.5117	1.1706	2.7390	0.4718	31.643	3.2994	1.0569	2.8220	0.3880
600Z200-068	6.00	2.00	0.75	0.7960	2.7063	4.3652	2.3418	0.8633	1.0414	1.3488	5.3545	2.5630	30.573	4.3652	1.4551	4.3470	0.6369	45.016	4.3141	1.4257	5.3500	0.5907
600Z200-097	6.00	2.00	0.75	1.1208	3.8106	6.0552	2.3244	1.1916	1.0311	3.8640	7.2824	2.5428	43.425	6.0552	2.0184	6.9110	1.0140	65.055	6.0552	2.0184	10.4720	0.9500
600Z200-118	6.00	2.00	0.75	1.3555	4.6088	7.2417	2.3114	1.4200	1.0235	6.9700	8.5758	2.5278	52.808	7.2417	2.4139	8.2670	1.3111	78.944	7.2417	2.4139	12.5260	1.2327
800Z200-043	8.00	2.00	0.75	0.5991	2.0370	5.5607	3.0466	0.5616	0.9682	0.4062	6.6310	3.1967	25.932	5.3687	1.3123	1.0510	0.3331	---	---	---	---	---
800Z200-054	8.00	2.00	0.75	0.7490	2.5466	6.9205	3.0397	0.6963	0.9642	0.7998	8.1935	3.1890	35.921	6.9205	1.7301	2.0910	0.4776	46.235	6.4533	1.5442	2.0910	0.3918
800Z200-068	8.00	2.00	0.75	0.9386	3.1911	8.6199	3.0305	0.8634	0.9591	1.5900	10.1120	3.1787	45.279	8.6199	2.1550	4.2200	0.6488	66.688	8.5157	2.1121	4.2200	0.5986
800Z200-097	8.00	2.00	0.75	1.3242	4.5022	12.0080	3.0114	1.1920	0.9487	4.5650	13.8110	3.1573	64.587	12.0080	3.0020	8.8430	1.0504	96.758	12.0080	3.0020	10.8850	0.9740
800Z200-118	8.00	2.00	0.75	1.6039	5.4534	14.4070	2.9971	1.4200	0.9410	8.2470	16.3190	3.1413	78.794	14.4070	3.6018	11.3410	1.3797	117.790	14.4070	3.6018	16.2350	1.2780
1000Z250-054	10.00	2.50	0.75	0.9188	3.1239	13.2260	3.7941	1.1790	1.1329	0.9810	21.6340	3.9597	46.933	12.3850	2.3751	1.6600	0.4804	58.001	10.9690	1.9372	1.6600	0.4036
1000Z250-068	10.00	2.50	0.75	1.1525	3.9184	16.5090	3.7848	1.4660	1.1278	1.9530	26.7960	3.9493	66.327	16.1730	3.1935	3.3450	0.7020	84.323	14.9510	2.8164	3.3450	0.5712
1000Z250-097	10.00	2.50	0.75	1.6293	5.5395	23.1000	3.7654	2.0340	1.1173	5.6170	36.8820	3.9277	97.852	23.1000	4.6200	8.8430	1.1731	140.690	22.4900	4.4249	9.8620	1.0426
1000Z250-118	10.00	2.50	0.75	1.9765	6.7202	27.8090	3.7509	2.4330	1.1095	10.1630	43.8410	3.9116	119.450	27.8090	5.5618	13.1890	1.5433	178.990	27.8090	5.5618	16.2350	1.4282
1200Z300-068	12.00	3.00	0.75	1.3664	4.6457	28.1190	4.5364	2.2950	1.2960	2.3150	60.4120	4.7179	82.085	26.0610	4.1540	2.7700	0.6932	101.850	23.1260	3.4018	2.7700	0.5891
1200Z300-097	12.00	3.00	0.75	1.9344	6.5768	39.4640	4.5168	3.1960	1.2854	6.6690	83.5950	4.6962	132.690	38.5430	6.3330	8.1450	1.2405	180.540	37.3440	6.0300	8.1450	1.0706
1200Z300-118	12.00	3.00	0.75	2.3491	7.9870	47.6170	4.5022	3.8340	1.2776	12.0790	99.7770	4.6800	168.280	47.6170	7.9361	13.1890	1.6930	238.460	45.9250	7.4928	14.9820	1.4706
1400Z350-068	14.00	3.50	0.75	1.5803	5.3729	44.1620	5.2864	3.3860	1.4638	2.6780	121.4000	5.4853	95.505	37.5350	4.8331	2.3640	0.7096	119.320	33.3060	3.9854	2.3640	0.5979
1400Z350-097	14.00	3.50	0.75	2.2390	7.6142	62.1170	5.2666	4.7290	1.4532	7.7210	168.6500	5.4635	165.400	59.8640	8.3701	6.9380	1.2966	222.730	55.5360	7.4393	6.9380	1.0729
1400Z350-118	14.00	3.50	0.75	2.7217	9.2539	75.0730	5.2519	5.6860	1.4453	13.9950	201.9000	5.4472	215.180	72.9330	10.2440	12.7430	1.7473	295.610	71.2100	9.8730	12.7430	1.5342
1600Z350-097	16.00	3.50	0.75	2.4429	8.3057	85.6500	5.9212	4.7290	1.3914	8.4220	226.9800	6.0825	179.100	78.2140	9.0630	6.0420	1.3037	229.330	70.4510	7.6600	6.0420	1.0776
1600Z350-118	16.00	3.50	0.75	2.9701	10.0980	103.5900	5.9058	5.6900	1.3836	15.2720	271.9100	6.0657	232.920	98.3990	11.7870	11.0860	1.7605	319.460	92.9230	10.6700	11.0860	1.5429

For S_I: 1 inch = 25.4 mm, 1 in² = 645 mm², 1 in³ = 1.64x10⁴ mm³, 1 in⁴ = 4.16x10⁵ mm⁴, 1 in⁶ = 2.69x10⁸ mm⁶, 1 kip-in = 113.3 N-m, 1 kip = 4.4 kN

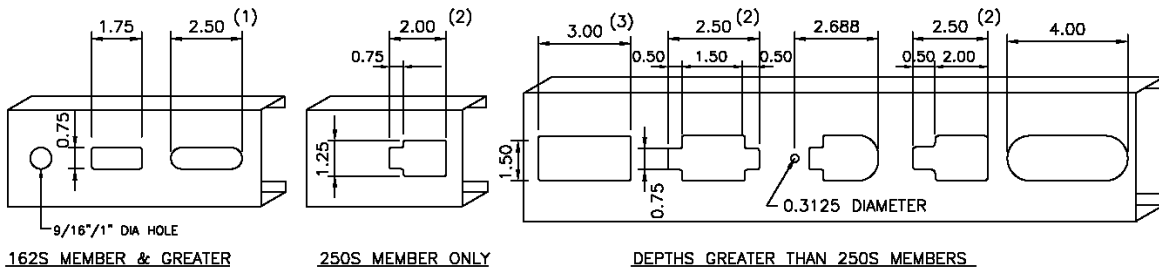
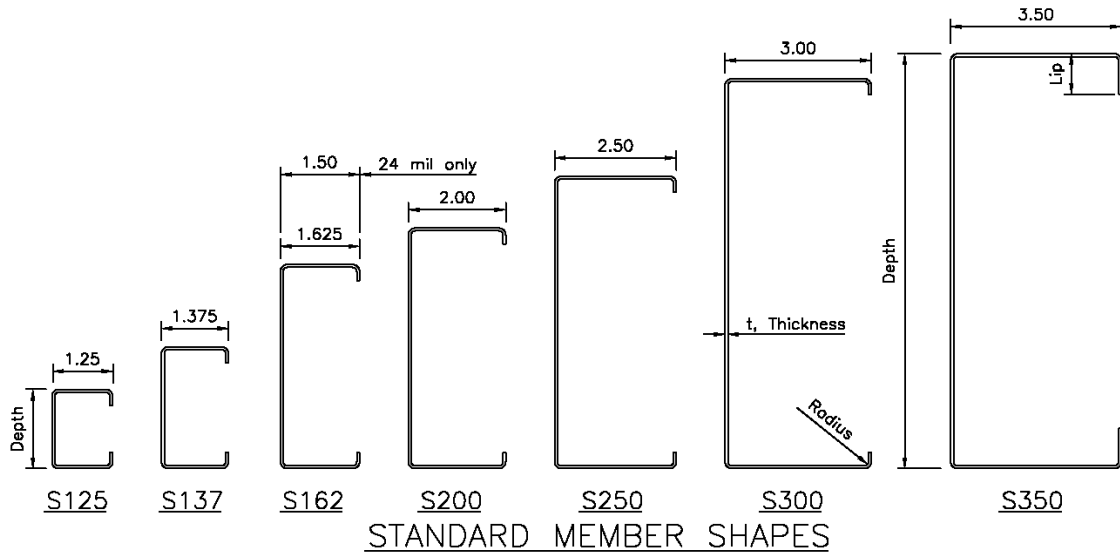
1. Xo = 0 in.
2. The last three digits of the Member ID is the member thickness in mils. For member thickness (T) in inches and inside bend radius (R), see table in Figure 1. See Figure 5 for member illustration.

TABLE 6—EQUAL LEG ANGLE SECTION PROPERTIES (Continued)

MEMBER IDENTIFICATION ^{2,3}	FULL PROPERTIES							TORSIONAL PROPERTIES				33 ksi EFFECTIVE PROPERTIES					50 ksi EFFECTIVE PROPERTIES				
	Area (in ²)	Wt. (lb/ft)	lx, ly (in ⁴)	rx, ry (in)	Sx(t),Sy(r) (in ³)	Sx(b),Sy(l) (in ³)	Rz ¹ (in)	J (10 ⁻³ in ⁴)	Cw (10 ⁻⁶ in ⁶)	ro (in)	Xo (in)	Maxo (k-in)	Ixe (in ⁴)	Sxe(t) (in ³)	Vay (k)	Ae (in ²)	Maxo (k-in)	Ixe (in ⁴)	Sxe(t) (in ³)	Vay (k)	Ae (in ²)
400A400-068	0.5610	1.9072	0.9211	1.2814	0.3106	0.8904	0.8027	0.9506	2.500	2.2964	-0.9973	0.383	0.0724	0.0194	3.3720	0.1910	0.338	0.0429	0.0113	5.1090	0.1603
400A400-097	0.7944	2.7009	1.2961	1.2773	0.4393	1.2351	0.7966	2.7387	14.000	2.2900	-0.9952	1.492	0.2677	0.0755	4.7140	0.3751	1.301	0.1587	0.0435	7.1430	0.3174
400A400-118	0.9649	3.2808	1.5669	1.2743	0.5331	1.4776	0.7920	4.9616	37.000	2.2850	-0.9933	3.224	0.5523	0.1631	5.6710	0.5441	2.786	0.3286	0.0931	8.5920	0.4632
450A450-097	0.8961	3.0467	1.8548	1.4387	0.5577	1.5794	0.8987	3.0894	16.000	2.5790	-1.1206	1.351	0.2785	0.0684	5.3430	0.3801	1.184	0.1651	0.0395	8.0960	0.3207
450A450-118	1.0891	3.7031	2.2450	1.4357	0.6773	1.8938	0.8941	5.6002	42.000	2.5741	-1.1188	2.915	0.5783	0.1475	6.4390	0.5535	2.532	0.3432	0.0846	9.7560	0.4694
500A500-097	0.9978	3.3925	2.5547	1.6001	0.6903	1.9661	1.0008	3.4400	18.000	2.8679	-1.2458	1.238	0.2880	0.0626	5.9730	0.3841	1.088	0.1706	0.0363	9.0500	0.3233
500A500-118	1.2133	4.1253	3.0948	1.5971	0.8388	2.3618	0.9963	6.2388	47.000	2.8631	-1.2442	2.665	0.6003	0.1349	7.2080	0.5610	2.326	0.3559	0.0777	10.9210	0.4744
550A550-097	1.0995	3.7382	3.4120	1.7615	0.8370	2.3952	1.1029	3.7906	20.000	3.1568	-1.3710	1.144	0.2965	0.0579	6.6020	0.3874	1.009	0.1755	0.0337	10.0030	0.3255
550A550-118	1.3375	4.5476	4.1360	1.7585	1.0175	2.8815	1.0984	6.8774	53.000	3.1521	-1.3696	2.459	0.6197	0.1245	7.9760	0.5670	2.155	0.3673	0.0720	12.0850	0.4783
600A600-097	1.2012	4.0840	4.4410	1.9229	0.9979	2.8666	1.2050	4.1412	22.000	3.4456	-1.4962	1.066	0.3041	0.0539	7.2310	0.3900	0.941	0.1799	0.0314	10.8850	0.3272
600A600-118	1.4617	4.9699	5.3880	1.9198	1.2135	3.4530	1.2005	7.5161	58.000	3.4410	-1.4948	2.288	0.6372	0.1158	8.7450	0.5720	2.010	0.3774	0.0671	13.2490	0.4816
650A650-118	1.5859	5.3922	6.8690	2.0812	1.4267	4.0762	1.3027	8.1547	60.000	3.7299	-1.6201	2.141	0.6531	0.1084	9.5130	0.5761	1.886	0.3867	0.0630	14.4140	0.4844
700A700-118	1.7101	5.8145	8.6010	2.2426	1.6572	4.7511	1.4048	8.7933	70.000	4.0188	-1.7453	2.015	0.6675	0.1020	10.2820	0.5797	1.778	0.3951	0.0594	15.5780	0.4867
750A750-118	1.8343	6.2367	10.6010	2.4040	1.9050	5.4778	1.5069	9.4319	70.000	4.3076	-1.8704	1.905	0.6809	0.0964	11.0500	0.5827	1.682	0.4028	0.0562	16.2350	0.4887

For SI: 1 inch = 25.4 mm, 1 in² = 645 mm², 1 in³ = 1.64x10⁴ mm³, 1 in⁴ = 4.16x10⁶ mm⁴, 1 in⁶ = 2.69x10⁸ mm⁶, 1 kip-in = 113.3 N-m, 1 kip = 4.4 kN

- Radius of gyration, r_z, is minimum about the axis rotation of 45 degrees.
- Member identification provides dimensions as shown the example below (See Figure 6):
 Example: 150A150-054
 First number: 150 = length of 1½ inches.
 Second letter: A = Angle.
 Third number: 150 = Other leg length of 1½ inches.
 Last number: 054 = minimum thickness in mils, 54 mil = 0.054 inches.
- The last three digits of the Member ID is the member thickness in mils. For member thickness (T) in inches and inside bend radius (R), see table in Figure 1.



VARIOUS CENTERLINE PUNCHOUTS AVAILABLE

PUNCHOUT NOTES:
 (1) 18-54 mils 162S Only
 (2) 18-68 mils Only
 (3) 30-68 mils Only

Note: 2.50" Diameter Punchout available on special order for depths 5.5" & greater

DESIGNATED MEMBER THICKNESS (mils=0.001")	T DESIGN THICKNESS (in.)	t ON-SITE THICKNESS (in.)	Ri INSIDE RADIUS (in.)	LIP LENGTH SCHEDULE, INCHES							
				MEMBER TYPE							
				S125	S137	S150	S162	S200	S250	S300	S350
18	0.0188	0.0179	0.0843	0.20	-	-	-	-	-	-	-
24	0.0247	0.0235	0.0814	0.25	0.31	0.34	0.34	-	-	-	-
27	0.0283	0.0269	0.0796	0.20	0.31	-	0.34	-	-	-	-
30	0.0312	0.0296	0.0782	0.20	0.31	-	0.34	0.36	-	-	-
33	0.0346	0.0329	0.0764	0.20	0.31	-	0.34	0.36	-	-	-
43	0.0451	0.0428	0.0712	0.20	0.36	-	0.50	0.50	0.50	-	-
54	0.0566	0.0538	0.0849	0.20	0.41	-	0.50	0.50	0.53	0.57	0.80
68	0.0713	0.0677	0.1069	0.20	0.45	-	0.51	0.56	0.61	0.66	0.80
97	0.1017	0.0966	0.1525	0.26	0.48	-	0.58	0.67	0.75	0.75	0.80
118	0.1242	0.1180	0.1863	0.38	0.58	-	0.63	0.75	0.75	0.75	0.80

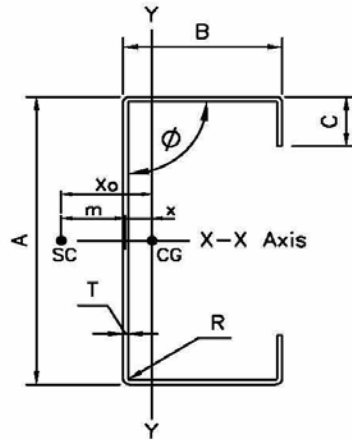
- NOTES:**
 1. ALL THICKNESSES ARE UNCOATED BASE METAL THICKNESS.
 2. MINIMUM ON-SITE THICKNESS EQUALS 95% DESIGN THICKNESS PER AISI SPECIFICATIONS.
 3. INSIDE RADIUS IS THE LARGER OF: (Ri = 3/32-T/2) or (Ri = 2T-T/2 = 1.5T)
 4. ALL PUNCHOUTS @ 24" OC AND NO CLOSER THAN 10" FROM END OF MEMBER.
 5. ALL DIMENSIONS SHOWN ARE INCHES.

S-Member Details

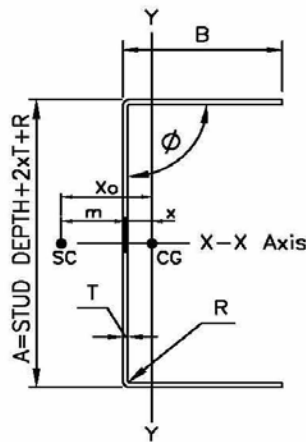
Steeler Slotted Studs have the same properties and details as S-Member

Note: Steeler Slotted Studs must be limited to nonload-bearing wall applications.

FIGURE 1—S-MEMBER (C-SHAPE) DETAILS



STEELER S-Member & N-Member Property Dimensions



STEELER T-Member Property Dimensions

SC = SHEAR CENTER
 CG = CENTER OF GRAVITY
 * Negative sign indicates X₀ is measured in negative x direction.

FIGURE 2—S-MEMBER (C-SHAPE) AND T-MEMBER (TRACK) DIMENSIONS

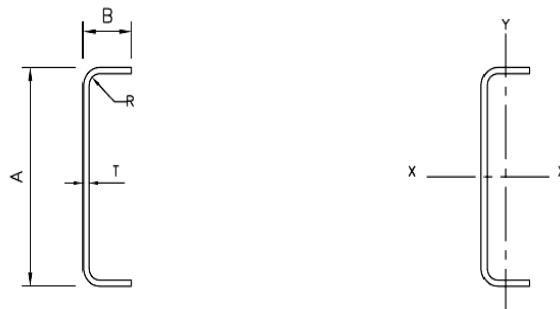


FIGURE 3—STEELER U-MEMBER (COLD ROLLED CHANNEL)

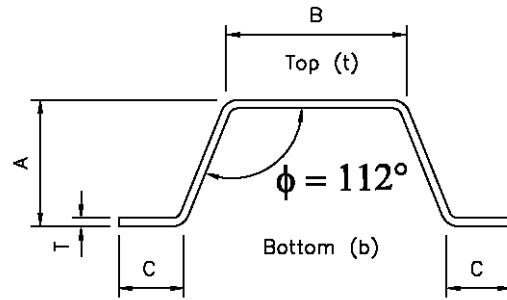
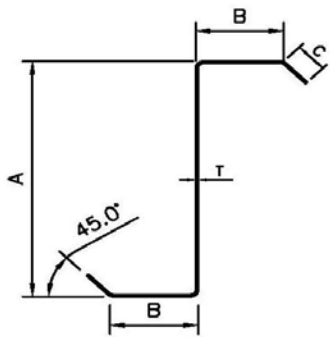


FIGURE 4—STEELER F-MEMBER



Z-Members with Lips

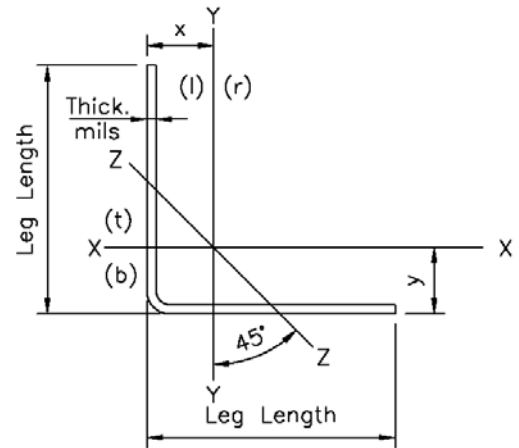
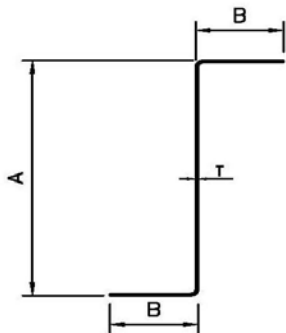


FIGURE 6—STEELER A-MEMBERS



Z-Members without Lips

FIGURE 5—STEELER Z-MEMBERS