

ICC-ES Evaluation Report

ESR-5196

Issued July 2024

Revised July 26, 2024

Subject to renewal July 2025


This report also contains:

- CBC_CRC Supplement

- FBC Supplement

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<p>DIVISION: 05 00 00 — METALS</p> <p>Section: 05 40 00 — Cold-Formed Metal Framing</p> <p>DIVISION: 09 00 00 — FINISHES</p> <p>Section: 09 22 16.13 — Non-Structural Metal Stud Framing</p>	<p>REPORT HOLDER:</p> <p>TRACKS S.A</p>	<p>EVALUATION SUBJECT:</p> <p>TRACKS COLD-FORMED METAL FRAMING</p>	
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1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2024 and 2021 [International Building Code® \(IBC\)](#)
- 2024 and 2021 [International Residential Code® \(IRC\)](#)

Property evaluated:

- Structural

2.0 USES

Tracks Cold-Formed Metal Framing members are used as structural members as defined by the North American Standard for Cold-Formed Steel Structural Framing (AISI S240).

The framing members may also be used as nonstructural members as defined by the North American Standard for Cold-Formed Steel Nonstructural Framing (AISI S220).

3.0 DESCRIPTION

3.1 General:

Tracks Cold-Formed Metal Framing members described in this report are factory-formed with and without web punch-outs from coils of steel at the facilities listed in [Table 1](#). The cold-formed framing members include studs (S-sections), tracks (T-sections), U-channels (U-sections) and hat furring channels (F-sections). See [Tables 2](#) to 5 and [Figure 1](#) for descriptions and properties of the framing members.

When provided, the punch-outs measure from 1.5 inches (38.1 mm) wide by 4 inches (101.6 mm) long and are located along the centerline of the webs of the stud sections and have a minimum 24 inches (610 mm) clear distance between punch-outs. The minimum distance between the end of the stud and the near edge of the web punch-out is 12 inches (305 mm). See [Figure 2](#) for detailed punch-outs dimensions.

3.2 Material: The framing members are cold-formed from steel coils complying with ASTM A653 SS Grade 33 or ASTM A653 SS Grade 50 Class 1. Framing members with minimum G40 coating are used only as nonstructural members as defined by AISI S220. Framing members with minimum G60 coating are used as structural members as defined by AISI S240.

4.0 DESIGN AND INSTALLATION

4.1 Design: Tracks Cold-Formed Metal Framing members and their connections must be designed and installed in accordance with IBC Section 2210 using the material thickness, yield strength and section properties provided in [Table 2](#), [Table 3](#), [Table 4](#) and [Table 5](#).

4.1.1 IBC Method: The section properties for the cold-formed steel framing members recognized in this report have been determined in accordance with the applicable edition of the North American Specification for Design of Cold-Formed Steel Structural Members (AISI S100). The moments listed in this report are allowable moments and are used with Allowable Strength Design (ASD) for flexural members with the compression flange fully braced. For other conditions of compression flange bracing, the allowable moment must be determined in accordance with the applicable edition of AISI S100. The design of flexural members must address combined bending and web crippling, and combined bending and shear, as applicable in accordance with the applicable edition of AISI S100.

4.1.2 IRC Method: The S-sections evaluated in this report and the T-sections with flange width of 1.25 inches (31.75 mm) or greater evaluated in this report, qualify for use with prescriptive requirements IRC Sections R505.1, R603.1 and R804.1.1. For use of all other sections under the IRC, the cold-formed steel framing members must be limited to engineered structures, in accordance with IRC Section R301.1.3.

4.2 Installation: The framing members must be installed in accordance with the applicable code, the approved plans and this report. If there is conflict between the plans submitted for approval and this report, this report governs. The approved plans must be available at the jobsite at all times during installation.

5.0 CONDITIONS OF USE:

Tracks Cold-Formed Metal Framing members described in this report comply with, or are a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1** Tracks Cold-Formed Metal framing members must be installed in accordance with the applicable code, the approved plans and this report.
- 5.2** Minimum uncoated base-metal thickness of the framing members as delivered to the jobsite must be at least 95 percent of the design base-metal thickness.
- 5.3** Complete plans and calculations verifying compliance with this report must be submitted to the code official for each project at the time of permit application. 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 to be constructed.

6.0 EVIDENCE SUBMITTED

Data in accordance with [ICC-ES Acceptance Criteria for Cold-formed Steel Framing Members \(AC46\)](#), dated June 2019 (editorially revised February 2024).

7.0 IDENTIFICATION

- 7.1** The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-5196) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.
- 7.2** Each member must have a legible label, stamp or embossment, at a maximum of 96 inches (2440 mm) on center, indicating the report holder's name or initials; member designation; minimum base-metal thickness (uncoated) in decimal thickness or mils; the minimum yield strength; designation for the coating (minimum G40 for nonstructural members or G60 for structural members); in addition to the following:
 - For non-structural members, each member must have the designation "NS".
- 7.3** The report holder's contact information is the following:

TRACKS S.A.
CARRETERA DUARTE (MOCA-LICEY) KM 5 1/2
SANTIAGO, 51000
DOMINICAN REPUBLIC
(809) 970-5656
www.trackssa.com

TABLE 1—MANUFACTURING LOCATIONS

<p>TRACKS S.A. Carretera Duarte (Moca-Licey) KM 5 ½ Santiago, 51000 Dominican Republic</p>	<p>TRACKS S.A. Parque Industrial Disdo, Ave. Sección Palave Santa Domingo Dominican Republic</p>
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Studs
Leg 1 ¼"
Precision +/- 0.5

Tracks
Leg 1 ¼"
Precision +/- 1.0

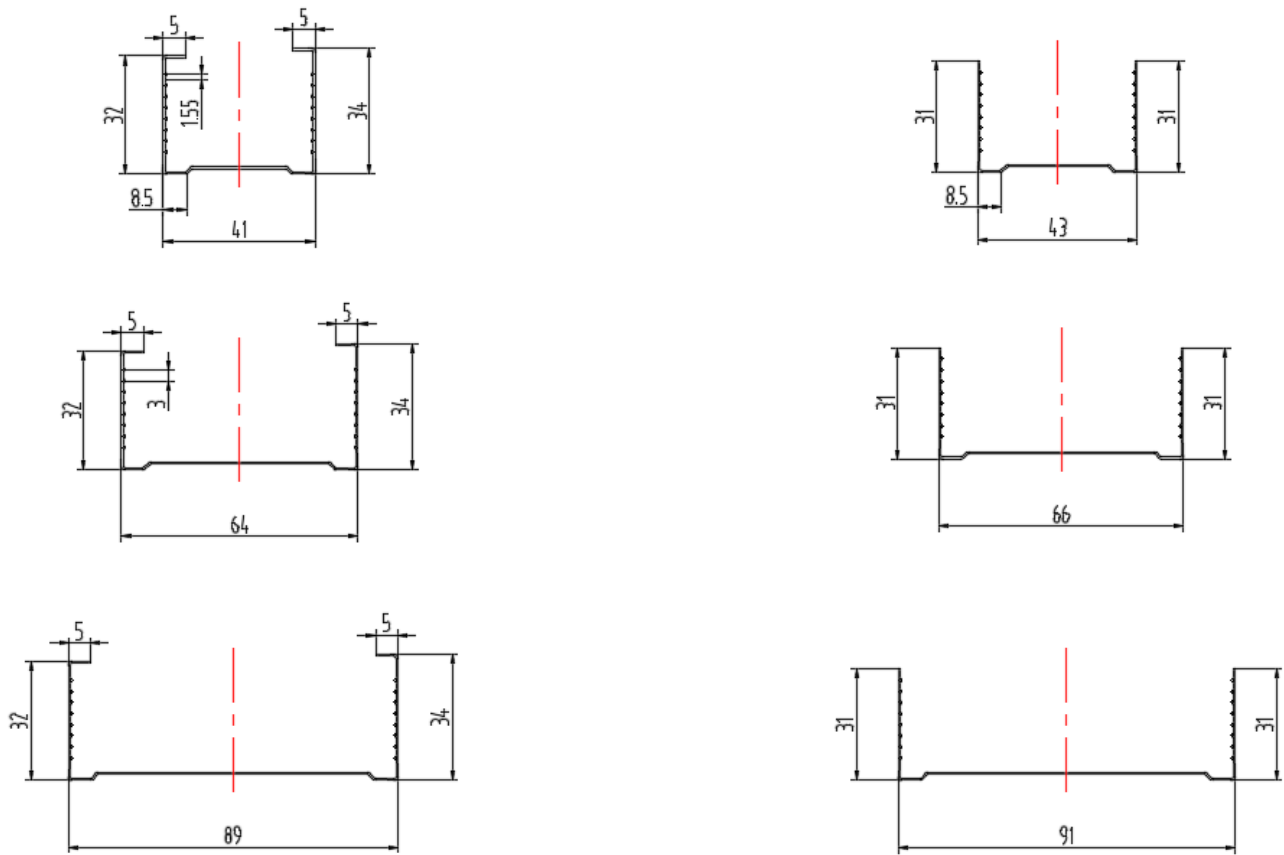


FIGURE 1A – TRACKS S.A. STUDS AND TRACKS DIMENSION AND PROFILES

Studs
 Leg $1\frac{1}{4}$ "
 Precision +/- 0.5

Tracks
 Leg $1\frac{1}{4}$ "
 Precision +/- 1.0

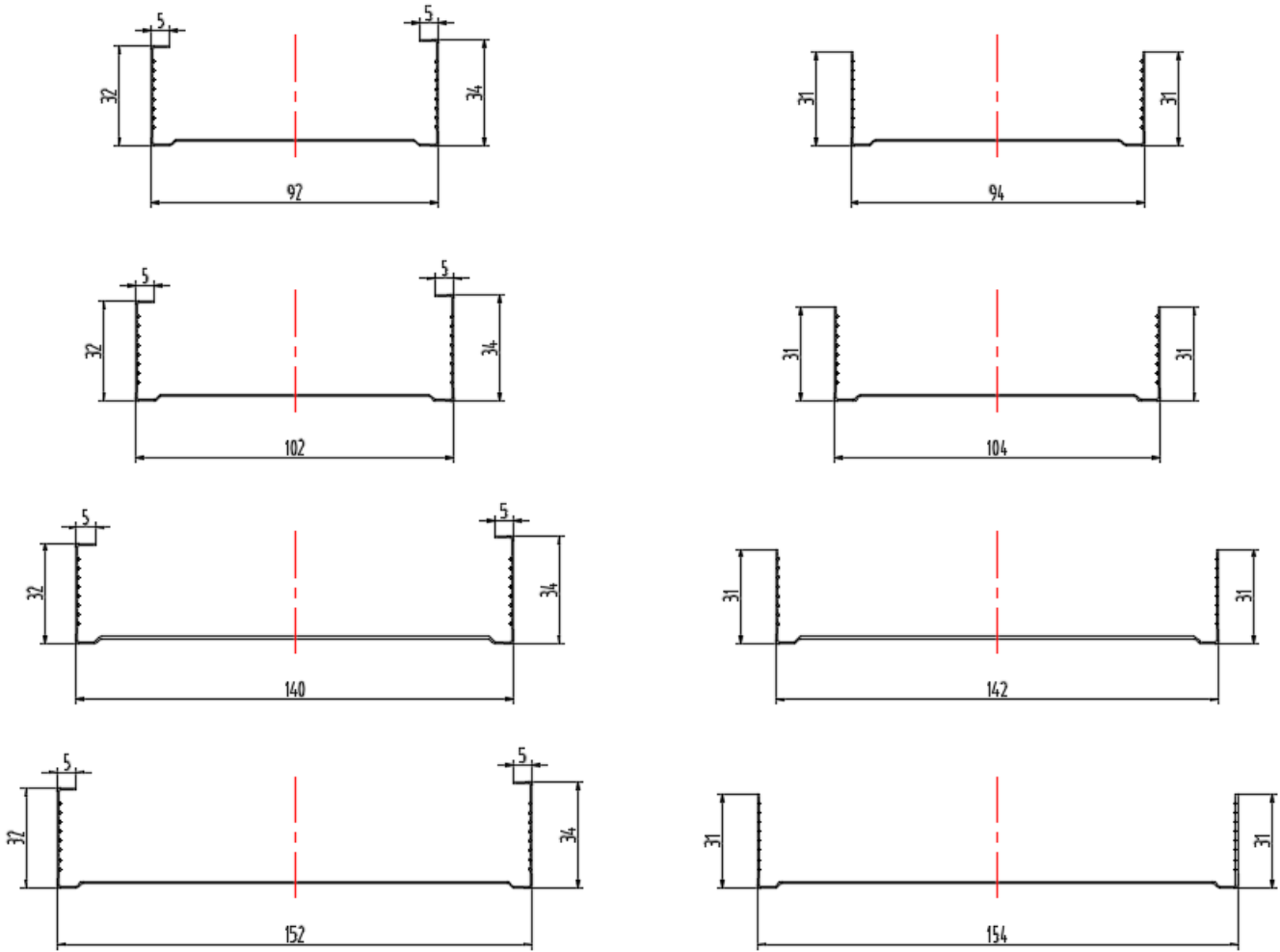
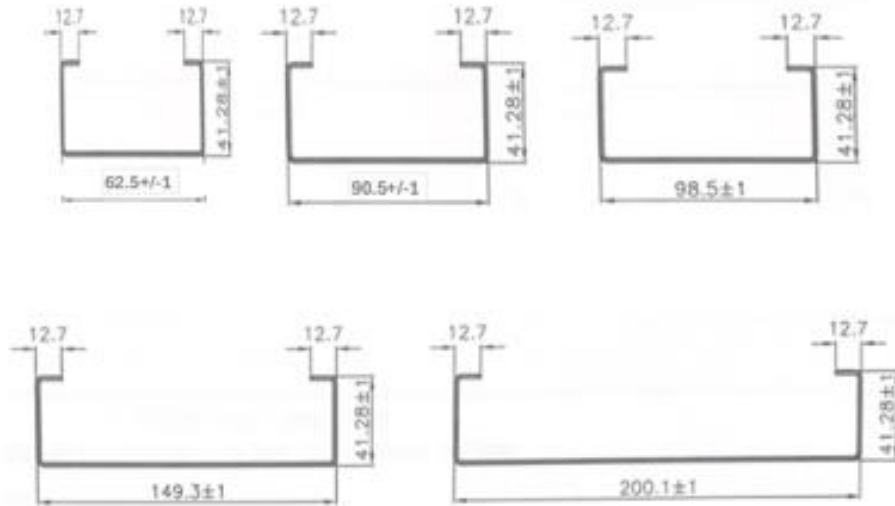
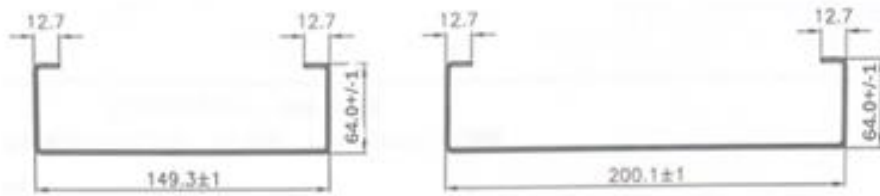


FIGURE 1A - TRACKS S.A. STUDS AND TRACKS DIMENSIONS AND PROFILES (continued)

Studs
Legs 15/8"
Precision +/- 1.0



Studs
Legs 2 1/2"
Precision +/- 1.0



Tracks
Legs 1 1/2"
Precision +/- 1.0

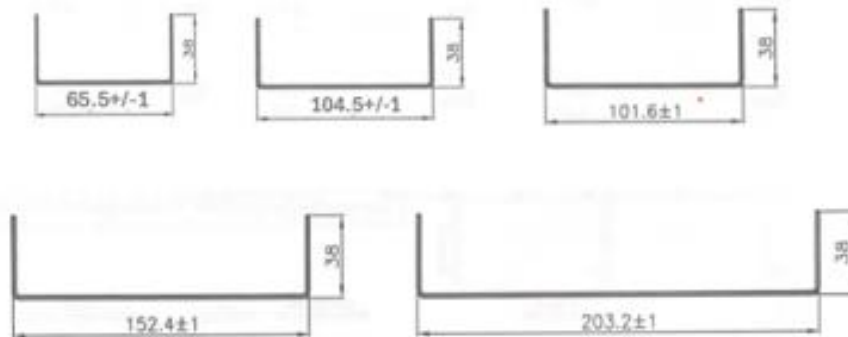


FIGURE 1A - TRACKS S.A. STUDS AND TRACKS DIMENSIONS/PROFILES (continued)

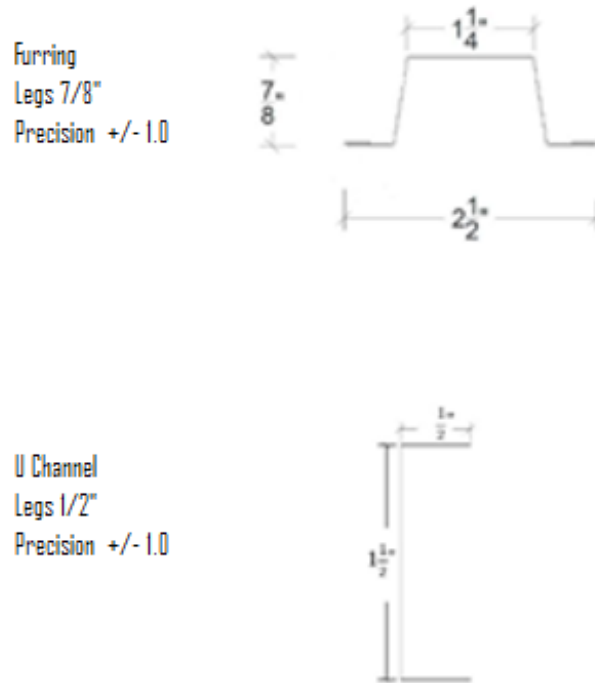


FIGURE 1B - TRACKS S.A. FURRINGS AND U CHANNEL DIMENSIONS AND PROFILES

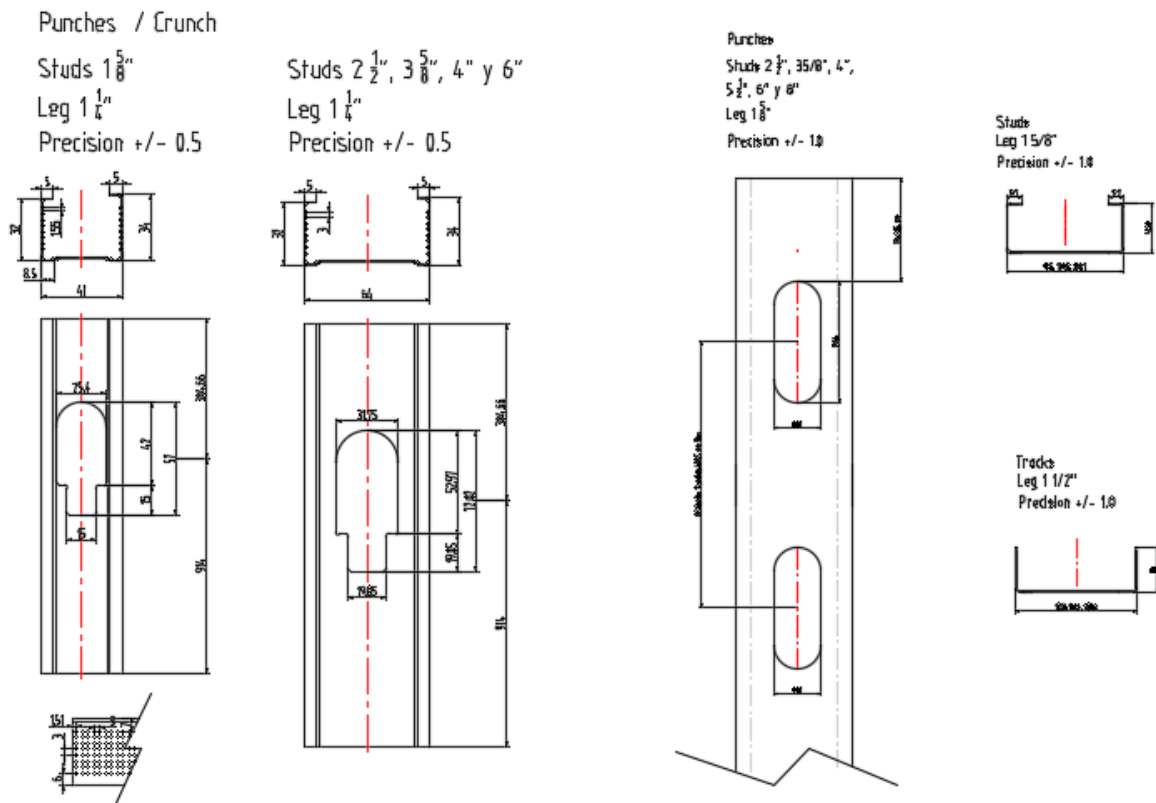


FIGURE 2 – PUNCHES/CRUNCH DETAILS

TABLE 2—SECTION DIMENSIONS¹

MEMBER DESIGNATION ⁴	DEPTH (in.)	FLANGE (in.)	LENGTH (in.)	LIP (in.)	THICKNESS (mils)	MINIMUM BASE-METAL THICKNESS ³ (in.)	DESIGN THICKNESS (in.)
C-SHAPES (S-SECTIONS)							
162S125-18	1.625	1.25	---	0.1875	18	0.0179	0.0188
162S125-27					27	0.0269	0.0283
162S125-30					30	0.0296	0.0312
162S125-33					33	0.0329	0.0346
250S125-18	2.5	1.25	---	0.1875	18	0.0179	0.0188
250S125-27					27	0.0269	0.0283
250S125-30					30	0.0296	0.0312
250S125-33					33	0.0329	0.0346
250S162-33	2.5	1.625	---	0.5	33	0.0329	0.0346
250S162-43					43	0.0428	0.0451
250S162-54					54	0.0538	0.0566
362S125-18	3.625	1.25	---	0.1875	18	0.0179	0.0188
362S125-27					27	0.0269	0.0283
362S125-30					30	0.0296	0.0312
362S125-33					33	0.0329	0.0346
362S162-33	3.625	1.625	---	0.5	33	0.0329	0.0346
362S162-43					43	0.0428	0.0451
362S162-54					54	0.0538	0.0566
400S125-18	4	1.25	---	0.1875	18	0.0179	0.0188
400S125-27					27	0.0269	0.0283
400S125-30					30	0.0296	0.0312
400S125-33					33	0.0329	0.0346
400S162-33	4	1.625	---	0.5	33	0.0329	0.0346
400S162-43					43	0.0428	0.0451
400S162-54					54	0.0538	0.0566
550S125-18	5.5	1.25	---	0.1875	18	0.0179	0.0188
550S125-27					27	0.0269	0.0283
550S125-30					30	0.0296	0.0312
550S125-33					33	0.0329	0.0346
550S162-33	5.5	1.625	---	0.1875	33	0.0329	0.0346
550S162-43					43	0.0428	0.0451
550S162-54					54	0.0538	0.0566
600S125-18	6	1.25	---	0.1875	18	0.0179	0.0188
600S125-27					27	0.0269	0.0283
600S125-30					30	0.0296	0.0312
600S125-33					33	0.0329	0.0346
600S162-33	6	1.625	---	0.5	33	0.0329	0.0346
600S162-43					43	0.0428	0.0451
600S162-54					54	0.0538	0.0566
600S250-68	6	2.5	---	0.625	68	0.0677	0.0677
600S250-97					97	0.0966	0.1017
800S162-33	8	1.625	---	0.5	33	0.0329	0.0346
800S162-43					43	0.0428	0.0451
800S162-54					54	0.0428	0.0451
800S250-33	8	2.5	---	0.625	33	0.0329	0.0346
800S250-43					43	0.0428	0.0451
800S250-54					54	0.0538	0.0566
800S250-68					68	0.0677	0.0677
800S250-97					97	0.0966	0.1017
U-CHANNELS (U-SECTIONS)							
150U050-27	1.5	0.5	---	---	27	0.0269	0.0283
150U050-30					30	0.0296	0.0312
150U050-33					33	0.0329	0.0346
150U050-54					54	0.0538	0.0566
TRACKS (T-SECTIONS)							
162T125-18	1.625	1.25	---	---	18	0.0179	0.0188
162T125-27					27	0.0269	0.0283
162T125-30					30	0.0296	0.0312
162T125-33					33	0.0329	0.0346
250T125-18	2.5	1.25	---	---	18	0.0179	0.0188
250T125-27					27	0.0269	0.0283
250T125-30					30	0.0296	0.0312
250T125-33					33	0.0329	0.0346
250T150-33	2.5	1.50	---	---	33	0.0329	0.0346
250T150-43					43	0.0428	0.0451
250T150-54					54	0.0538	0.0566

362T125-18	3.625	1.25	---	---	18	0.0179	0.0188
362T125-27					27	0.0269	0.0283
362T125-30					30	0.0296	0.0312
362T125-33					33	0.0329	0.0346
362T150-33	3.625	1.50	---	---	33	0.0329	0.0346
362T150-43					43	0.0428	0.0451
362T150-54					54	0.0538	0.0566
400T125-18	4	1.25	---	---	18	0.0179	0.0188
400T125-27					27	0.0269	0.0283
400T125-30					30	0.0296	0.0312
400T150-33					33	0.0329	0.0346
400T150-43	4	1.50	---	---	43	0.0428	0.0451
400T150-54					54	0.0538	0.0566
550T125-18	5.5	1.25	---	---	18	0.0179	0.0188
550T125-27					27	0.0269	0.0283
550T125-30					30	0.0296	0.0312
550T150-18					5.5	1.50	---
550T150-27	27	0.0269	0.0283				
550T150-30	30	0.0296	0.0312				
550T150-33	33	0.0329	0.0346				
550T150-43	5.5	1.50	---	---	43	0.0428	0.0451
550T150-54					54	0.0538	0.0566
600T125-18	6	1.25	---	---	18	0.0179	0.0188
600T125-27					27	0.0269	0.0283
600T125-30					30	0.0296	0.0312
600T125-33					33	0.0329	0.0346
600T150-33	6	1.50	---	---	33	0.0329	0.0346
600T150-43					43	0.0428	0.0451
600T150-54					54	0.0538	0.0566
600T200-68					68	0.0677	0.0713
600T200-97	6	2			97	0.0966	0.1017
800T200-33	8	2	---	---	33	0.0329	0.0346
800T200-43					43	0.0428	0.0451
800T200-54					54	0.0538	0.0566
800T200-68					68	0.0677	0.0713
800T200-97					97	0.0966	0.1017
HAT FURRING CHANNEL (F-SECTIONS)							
087F125-18	0.875	1.25	2.5	0.25	18	0.0188	0.0188
087F125-27					27	0.0269	0.0283
087F125-30					30	0.0296	0.0312
087F125-33					33	0.0329	0.0346
087F125-43					43	0.0428	0.0451
087F125-54					54	0.0538	0.0566

For SI: 1 inch = 25.4 mm

¹See [Figure 1](#) for Section Profiles

Definition of Symbols

Effective Properties

- I_{xe} - moment of inertia of the cross section about the x-axis
- S_{xe} - section modulus about the x-axis
- M_{al} - allowable moment based on local buckling
- M_{ad} - allowable moment based on distortional buckling, assuming $K\phi = 0$
- V_{ay} - allowable shear

Gross Properties

- I_x - moment of inertia of the cross section about the x-axis
- S_x - section modulus about the x-axis
- r_x - radius of gyration of cross section about the x-axis
- I_y - moment of inertia of the cross section about the y-axis
- r_y - radius of gyration of cross section about the x-axis

Torsional and Other Properties

- J - St. Venant torsion constant.
- C_w - Warping constant.
- X_o - Distance from shear center to neutral axis.
- R_o - Polar radius of gyration of cross section about the shear center
- β - Torsional flexural constant. $1 - (X_o/R_o)^2$
- L_u - Critical unbraced length for lateral-torsional buckling.

TABLE 3—TRACKS S.A. STUD (S-SECTIONS) PROPERTIES^{1,2,3}

MEMBER	F _y (ksi)	GROSS PROPERTIES							EFFECTIVE PROPERTIES					TORSIONAL PROPERTIES					L _u (in.)
		Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	r _x (in.)	I _y (in ⁴)	r _y (in.)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _{al} (in-k)	M _{ad} (in-k)	V _{ay} (kip)	Jx1000 (in ⁴)	C _w (in ⁶)	x _o (in.)	r _o (in.)	β	
162S125-18	33	0.0801	0.2728	0.0375	0.0463	0.684	0.0160	0.447	0.0306	0.0332	0.656	0.651	0.302	0.0094	0.0092	-1.029	1.315	0.3867	27.9
162S125-27	33	0.1195	0.4071	0.0553	0.0683	0.680	0.0234	0.443	0.0487	0.0552	1.091	1.133	0.492	0.0319	0.0132	-1.017	1.302	0.3886	27.7
162S125-30	33	0.1313	0.4476	0.0606	0.0748	0.679	0.0256	0.441	0.0545	0.0626	1.237	1.289	0.541	0.0427	0.0144	-1.014	1.298	0.3892	27.6
162S125-33	33	0.1454	0.4955	0.0671	0.0826	0.680	0.0282	0.440	0.0619	0.0720	1.422	1.482	0.601	0.0580	0.0157	-1.010	1.294	0.3909	27.5
162S125-33	50	0.1454	0.4955	0.0671	0.0826	0.680	0.0282	0.440	0.0580	0.0649	1.944	1.955	0.910	0.0580	0.0157	-1.010	1.294	0.3909	22.4
250S125-18	33	0.0966	0.3293	0.0993	0.0795	1.014	0.0186	0.439	0.0827	0.0595	1.176	1.028	0.258	0.0114	0.0233	-0.904	1.427	0.5991	29.0
250S125-27	33	0.1443	0.4920	0.1471	0.1177	1.009	0.0272	0.434	0.1310	0.0976	1.928	1.824	0.685	0.0385	0.0338	-0.893	1.416	0.6024	28.9
250S125-30	33	0.1588	0.5411	0.1614	0.1291	1.008	0.0298	0.433	0.1464	0.1102	2.178	2.087	0.832	0.0515	0.0369	-0.889	1.412	0.6034	28.9
250S125-33	33	0.1757	0.5986	0.1780	0.1424	1.007	0.0327	0.432	0.1649	0.1258	2.485	2.408	0.975	0.0701	0.0404	-0.886	1.408	0.6044	28.8
250S125-33	50	0.1757	0.5986	0.1780	0.1424	1.007	0.0327	0.432	0.1558	0.1151	3.447	3.151	1.260	0.0701	0.0404	-0.886	1.408	0.6044	23.3
250S162-33	33	0.2232	0.7606	0.2353	0.1882	1.027	0.0870	0.624	0.2289	0.1797	3.552	3.563	0.975	0.0891	0.1461	-1.470	1.898	0.4007	40.9
250S162-33	50	0.2232	0.7606	0.2353	0.1882	1.027	0.0870	0.624	0.2159	0.1632	4.887	4.742	1.260	0.0891	0.1461	-1.470	1.898	0.4007	33.2
250S162-43	33	0.2890	0.9850	0.3021	0.2416	1.022	0.1110	0.620	0.3023	0.2420	4.783	4.775	1.265	0.1960	0.1843	-1.457	1.885	0.4023	40.7
250S162-43	50	0.2890	0.9850	0.3021	0.2416	1.022	0.1110	0.620	0.2829	0.2158	6.462	6.680	1.917	0.1960	0.1843	-1.457	1.885	0.4023	33.0
250S162-54	33	0.3582	1.2209	0.3698	0.2959	1.016	0.1348	0.613	0.3703	0.2966	5.862	5.846	1.553	0.3825	0.2229	-1.443	1.868	0.4035	40.1
250S162-54	50	0.3582	1.2209	0.3698	0.2959	1.016	0.1348	0.613	0.3639	0.2871	8.596	8.791	2.353	0.3825	0.2229	-1.443	1.868	0.4035	32.5
362S125-18	33	0.1177	0.4010	0.2329	0.1287	1.407	0.0209	0.421	0.1867	0.0902	1.782	1.520	0.173	0.0139	0.0539	-0.786	1.667	0.7771	28.8
362S125-27	33	0.1761	0.6000	0.3461	0.1912	1.402	0.0305	0.416	0.3119	0.1625	3.211	2.749	0.592	0.0470	0.0783	-0.776	1.656	0.7802	28.6
362S125-30	33	0.1937	0.6602	0.3800	0.2099	1.400	0.0334	0.415	0.3481	0.1829	3.614	3.162	0.795	0.0629	0.0854	-0.773	1.654	0.7811	28.6
362S125-33	33	0.2146	0.7313	0.4209	0.2322	1.401	0.0367	0.414	0.3929	0.2083	4.116	3.674	1.024	0.0856	0.0940	-0.770	1.651	0.7826	28.5
362S125-33	50	0.2146	0.7313	0.4209	0.2322	1.401	0.0367	0.414	0.3740	0.1933	5.786	4.773	1.083	0.0856	0.0940	-0.770	1.651	0.7826	23.1
362S162-33	33	0.2621	0.8933	0.5513	0.3042	1.450	0.0993	0.616	0.5374	0.2917	5.763	5.430	1.024	0.1046	0.2969	-1.308	2.048	0.5918	42.0
362S162-33	50	0.2621	0.8933	0.5513	0.3042	1.450	0.0993	0.616	0.5093	0.2675	8.008	7.156	1.083	0.1046	0.2969	-1.308	2.048	0.5918	34.1
362S162-43	33	0.3398	1.1579	0.7099	0.3917	1.445	0.1268	0.611	0.7102	0.3920	7.746	7.620	1.740	0.2304	0.3759	-1.297	2.036	0.5943	41.8
362S162-43	50	0.3398	1.1579	0.7099	0.3917	1.445	0.1268	0.611	0.6656	0.3519	10.535	10.197	2.141	0.2304	0.3759	-1.297	2.036	0.5943	33.9
362S162-54	33	0.4219	1.4379	0.8729	0.4816	1.438	0.1542	0.605	0.8735	0.4823	9.530	9.517	2.341	0.4505	0.4569	-1.283	2.020	0.5968	41.2
362S162-54	50	0.4219	1.4379	0.8729	0.4816	1.438	0.1542	0.605	0.8571	0.4666	13.970	13.596	3.372	0.4505	0.4569	-1.283	2.020	0.5968	33.5
400S125-18	33	0.1248	0.4254	0.2944	0.1472	1.536	0.0214	0.415	0.2309	0.0994	1.963	1.684	0.156	0.0147	0.0675	-0.754	1.760	0.8165	28.7
400S125-27	33	0.1868	0.6357	0.4376	0.2188	1.531	0.0314	0.410	0.3959	0.1873	3.701	3.064	0.533	0.0499	0.0984	-0.744	1.751	0.8193	28.5
400S125-30	33	0.2056	0.7006	0.4807	0.2403	1.529	0.0343	0.409	0.4416	0.2106	4.161	3.531	0.715	0.0667	0.1074	-0.741	1.748	0.8201	28.5
400S125-33	33	0.2276	0.7755	0.5309	0.2654	1.527	0.0377	0.407	0.4966	0.2391	4.725	4.105	0.976	0.0908	0.1178	-0.738	1.745	0.8210	28.4
400S125-33	50	0.2276	0.7755	0.5309	0.2654	1.527	0.0377	0.407	0.4737	0.2226	6.666	5.322	0.976	0.0908	0.1178	-0.738	1.745	0.8210	23.0
400S162-33	33	0.2751	0.9375	0.6923	0.3461	1.586	0.1027	0.611	0.6752	0.3323	6.567	6.067	0.976	0.1098	0.3628	-1.263	2.118	0.6442	42.2

MEMBER	F _y (ksi)	GROSS PROPERTIES							EFFECTIVE PROPERTIES					TORSIONAL PROPERTIES					L _u (in.)
		Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	r _x (in.)	I _y (in ⁴)	r _y (in.)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _{al} (in-k)	M _{ad} (in-k)	V _{ay} (kip)	Jx1000 (in ⁴)	C _w (in ⁶)	x _o (in.)	r _o (in.)	β	
400S162-33	50	0.2751	0.9375	0.6923	0.3461	1.586	0.1027	0.611	0.6408	0.3056	9.151	7.975	0.976	0.1098	0.3628	-1.263	2.118	0.6442	34.3
400S162-43	33	0.3567	1.2156	0.8921	0.4460	1.581	0.1311	0.606	0.8923	0.4463	8.820	8.545	1.740	0.2418	0.4598	-1.252	2.106	0.6468	41.9
400S162-43	50	0.3567	1.2156	0.8921	0.4460	1.581	0.1311	0.606	0.8371	0.4017	12.026	11.399	2.141	0.2418	0.4598	-1.252	2.106	0.6468	34.1
400S162-54	33	0.4431	1.5102	1.0980	0.5490	1.574	0.1594	0.600	1.0985	0.5496	10.861	10.848	2.603	0.4732	0.5595	-1.238	2.090	0.6494	41.4
400S162-54	50	0.4431	1.5102	1.0980	0.5490	1.574	0.1594	0.600	1.0779	0.5319	15.926	15.251	3.372	0.4732	0.5595	-1.238	2.090	0.6494	33.6
550S125-18	33	0.1530	0.5215	0.6298	0.2290	2.029	0.0232	0.390	0.4514	0.1322	2.612	2.293	0.112	0.0180	0.1404	-0.651	2.166	0.9098	28.2
550S125-27	33	0.2293	0.7813	0.9386	0.3413	2.023	0.0340	0.385	0.7757	0.2463	4.867	4.266	0.382	0.0612	0.2050	-0.641	2.157	0.9116	27.9
550S125-30	33	0.2524	0.8601	1.0313	0.3750	2.021	0.0372	0.384	0.8817	0.2860	5.652	4.946	0.512	0.0819	0.2238	-0.639	2.154	0.9121	27.9
550S125-33	33	0.2795	0.9524	1.1399	0.4145	2.020	0.0409	0.382	1.0100	0.3355	6.630	5.791	0.698	0.1115	0.2457	-0.636	2.152	0.9127	27.8
550S125-33	50	0.2795	0.9524	1.1399	0.4145	2.020	0.0409	0.382	0.9257	0.2915	8.727	7.447	0.698	0.1115	0.2457	-0.636	2.152	0.9127	22.6
550S162-33	33	0.3270	1.1144	1.4589	0.5305	2.112	0.1134	0.589	1.4258	0.5116	10.109	8.629	0.698	0.1305	0.7125	-1.114	2.459	0.7949	41.4
550S162-33	50	0.3270	1.1144	1.4589	0.5305	2.112	0.1134	0.589	1.3074	0.4421	13.237	11.242	0.698	0.1305	0.7125	-1.114	2.459	0.7949	33.6
550S162-43	33	0.4243	1.4461	1.8835	0.6849	2.107	0.1448	0.584	1.8836	0.6851	13.538	12.311	1.550	0.2877	0.9054	-1.103	2.449	0.7972	41.2
550S162-43	50	0.4243	1.4461	1.8835	0.6849	2.107	0.1448	0.584	1.7743	0.6226	18.641	16.241	1.550	0.2877	0.9054	-1.103	2.449	0.7972	33.4
550S162-54	33	0.5280	1.7995	2.3248	0.8454	2.098	0.1761	0.577	2.3253	0.8459	16.715	16.437	2.740	0.5639	1.1048	-1.090	2.434	0.7996	41.0
550S162-54	50	0.5280	1.7995	2.3248	0.8454	2.098	0.1761	0.577	2.2823	0.8203	24.559	21.992	3.093	0.5639	1.1048	-1.090	2.434	0.7996	33.2
600S125-18	33	0.1624	0.5535	0.7786	0.2595	2.189	0.0237	0.382	0.5455	0.1448	2.861	2.475	0.102	0.0191	0.1715	-0.623	2.308	0.9272	27.9
600S125-27	33	0.2434	0.8295	1.1605	0.3867	2.183	0.0347	0.378	0.9420	0.2708	5.351	4.639	0.349	0.0650	0.2505	-0.614	2.299	0.9287	27.7
600S125-30	33	0.2680	0.9133	1.2756	0.4251	2.181	0.0379	0.376	1.0723	0.3149	6.223	5.390	0.467	0.0870	0.2736	-0.611	2.296	0.9292	27.6
600S125-33	33	0.2968	1.0113	1.4099	0.4700	2.180	0.0417	0.375	1.2302	0.3700	7.312	6.322	0.638	0.1184	0.3004	-0.608	2.294	0.9297	27.6
600S125-33	50	0.2968	1.0113	1.4099	0.4700	2.180	0.0417	0.375	1.1242	0.3206	9.598	8.110	0.638	0.1184	0.3004	-0.608	2.294	0.9297	22.4
600S162-33	50	0.3443	1.1734	1.7933	0.5978	2.282	0.1162	0.581	1.5748	0.4803	14.381	12.303	0.638	0.1374	0.8615	-1.072	2.588	0.8283	33.4
600S162-43	33	0.4469	1.5230	2.3164	0.7721	2.277	0.1484	0.576	2.3164	0.7723	15.261	13.562	1.415	0.3030	1.0952	-1.062	2.577	0.8303	40.9
600S162-43	50	0.4469	1.5230	2.3164	0.7721	2.277	0.1484	0.576	2.1849	0.7039	21.076	17.832	1.415	0.3030	1.0952	-1.062	2.577	0.8303	33.2
600S162-54	33	0.5563	1.8960	2.8611	0.9537	2.268	0.1805	0.570	2.8615	0.9542	18.855	18.186	2.740	0.5941	1.3372	-1.049	2.563	0.8325	40.7
600S162-54	50	0.5563	1.8960	2.8611	0.9537	2.268	0.1805	0.570	2.8092	0.9259	27.723	24.235	2.822	0.5941	1.3372	-1.049	2.563	0.8325	33.0
600S250-68	33	0.8356	2.8479	4.7281	1.5760	2.379	0.6884	0.908	4.6277	1.5196	30.028	29.437	4.348	1.4160	5.1455	-1.842	3.142	0.6565	62.2
600S250-68	50	0.8356	2.8479	4.7281	1.5760	2.379	0.6884	0.908	4.3684	1.3847	41.459	39.079	5.352	1.4160	5.1455	-1.842	3.142	0.6565	50.4
600S250-97	33	1.1689	3.9838	6.4981	2.1660	2.358	0.9234	0.890	6.5039	2.1700	42.880	42.802	6.911	4.0300	6.9469	-1.803	3.098	0.6612	61.0
600S250-97	50	1.1689	3.9838	6.4981	2.1660	2.358	0.9234	0.890	6.3444	2.0798	62.271	61.583	10.472	4.0300	6.9469	-1.803	3.098	0.6612	49.5
800S162-33	33	0.4135	1.4092	3.5832	0.8958	2.944	0.1252	0.550	3.1680	0.7097	14.025	12.612	0.474	0.1650	1.6304	-0.936	3.138	0.9110	40.1
800S162-33	50	0.4135	1.4092	3.5832	0.8958	2.944	0.1252	0.550	2.8855	0.6135	18.359	16.228	0.474	0.1650	1.6304	-0.936	3.138	0.9110	32.5
800S162-43	33	0.5371	1.8304	4.6349	1.1587	2.938	0.1599	0.546	4.3531	1.0197	20.149	18.334	1.051	0.3641	2.0758	-0.926	3.128	0.9123	39.8
800S162-43	50	0.5371	1.8304	4.6349	1.1587	2.938	0.1599	0.546	3.9342	0.8644	25.882	23.820	1.051	0.3641	2.0758	-0.926	3.128	0.9123	32.3

MEMBER	F _y (ksi)	GROSS PROPERTIES							EFFECTIVE PROPERTIES					TORSIONAL PROPERTIES					L _u (in.)
		Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	r _x (in.)	I _y (in ⁴)	r _y (in.)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _{al} (in-k)	M _{ad} (in-k)	V _{ay} (kip)	Jx1000 (in ⁴)	C _w (in ⁶)	x _o (in.)	r _o (in.)	β	
800S162-54	33	0.6695	2.2818	5.7375	1.4344	2.927	0.1945	0.539	5.5411	1.3345	26.371	24.989	2.091	0.7150	2.5386	-0.914	3.114	0.9138	39.6
800S162-54	50	0.6695	2.2818	5.7375	1.4344	2.927	0.1945	0.539	5.2898	1.2276	36.753	32.822	2.091	0.7150	2.5386	-0.914	3.114	0.9138	32.1
800S250-33	33	0.4827	1.6450	4.6459	1.1615	3.102	0.3887	0.897	3.8751	0.8578	16.951	15.218	0.474	0.1926	4.9743	-1.686	3.643	0.7859	61.7
800S250-33	50	0.4827	1.6450	4.6459	1.1615	3.102	0.3887	0.897	3.4878	0.7285	21.811	19.490	0.474	0.1926	4.9743	-1.686	3.643	0.7859	50.1
800S250-43	33	0.6273	2.1378	6.0167	1.5042	3.097	0.4998	0.893	5.5333	1.3112	25.909	22.063	1.051	0.4253	6.3738	-1.675	3.632	0.7874	61.5
800S250-43	50	0.6273	2.1378	6.0167	1.5042	3.097	0.4998	0.893	4.9161	1.0766	32.232	28.476	1.051	0.4253	6.3738	-1.675	3.632	0.7874	49.9
800S250-54	33	0.7827	2.6676	7.4672	1.8668	3.089	0.6142	0.886	7.0650	1.7085	33.761	30.071	2.091	0.8358	7.8500	-1.661	3.617	0.7891	61.3
800S250-54	50	0.7827	2.6676	7.4672	1.8668	3.089	0.6142	0.886	6.5818	1.5221	45.571	39.139	2.091	0.8358	7.8500	-1.661	3.617	0.7891	49.8
800S250-68	33	0.9782	3.3338	9.2634	2.3158	3.077	0.7520	0.877	9.0697	2.2372	44.209	40.866	4.220	1.6577	9.6525	-1.644	3.597	0.7912	61.1
800S250-68	50	0.9782	3.3338	9.2634	2.3158	3.077	0.7520	0.877	8.6002	2.0579	61.615	53.768	4.220	1.6577	9.6525	-1.644	3.597	0.7912	49.6
800S250-97	33	1.3723	4.6770	12.7930	3.1983	3.053	1.009	0.858	12.7988	3.2016	63.266	63.198	8.846	4.7313	13.0908	-1.607	3.555	0.7956	60.8
800S250-97	50	1.3723	4.6770	12.7930	3.1983	3.053	1.009	0.858	12.4913	3.0763	92.106	86.337	10.888	4.7313	13.0908	-1.607	3.555	0.7956	49.2

For SI: 1 inch = 25.4 mm, 1 lb/ft = 1.49 kg/m, 1 ksi = 6.89 MPa

¹Properties are based on the full, unreduced cross-section away from any web punch-outs.

²Use the effective moment of inertia for deflection calculation.

³S_x and effective properties are given as the minimum value for positive or negative bending.

TABLE 4—TRACKS S.A. U-CHANNELS (U-SECTIONS) AND TRACKS (T-SECTIONS) PROPERTIES^{1,2,3}

MEMBER	F _y (ksi)	GROSS PROPERTIES							EFFECTIVE PROPERTIES					TORSIONAL PROPERTIES				
		Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	r _x (in.)	I _y (in ⁴)	r _y (in.)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _{al} (in-k)	V _{ay} (kip)	Jx1000 (in ⁴)	C _w (in ⁶)	x _o (in.)	r _o (in.)	β	
150U050-27	33	0.0669	0.2279	0.0211	0.0282	0.562	0.0015	0.149	0.0208	0.0275	0.545	0.450	0.0179	0.0006	-0.262	0.638	0.8315	
150U050-27	50	0.0669	0.2279	0.0211	0.0282	0.562	0.0015	0.149	0.0201	0.0261	0.782	0.681	0.0179	0.0006	-0.262	0.638	0.8315	
150U050-30	33	0.0735	0.2506	0.0231	0.0309	0.561	0.0016	0.149	0.0231	0.0310	0.612	0.495	0.0239	0.0006	-0.261	0.636	0.8317	
150U050-30	50	0.0735	0.2506	0.0231	0.0308	0.561	0.0016	0.149	0.0224	0.0294	0.880	0.750	0.0239	0.0006	-0.261	0.636	0.8318	
150U050-33	33	0.0813	0.2771	0.0255	0.0339	0.559	0.0018	0.148	0.0255	0.0341	0.673	0.547	0.0325	0.0007	-0.260	0.634	0.8322	
150U050-33	50	0.0813	0.2771	0.0255	0.0339	0.559	0.0018	0.148	0.0251	0.0333	0.997	0.829	0.0325	0.0007	-0.260	0.634	0.8322	
150U050-54	33	0.1296	0.4417	0.0390	0.0520	0.549	0.0027	0.145	0.0393	0.0525	1.037	0.852	0.1384	0.0010	-0.254	0.622	0.8329	
162T125-18	33	0.0753	0.2567	0.0356	0.0438	0.687	0.0128	0.412	0.0231	0.0227	0.448	0.302	0.0090	0.0059	-0.895	1.201	0.4451	
162T125-27	33	0.1129	0.3846	0.0527	0.0648	0.683	0.0190	0.411	0.0383	0.0393	0.777	0.494	0.0301	0.0087	-0.892	1.196	0.4442	
162T125-30	33	0.1242	0.4234	0.0578	0.0711	0.682	0.0209	0.410	0.0432	0.0450	0.889	0.543	0.0403	0.0095	-0.891	1.195	0.4439	
162T125-33	33	0.1376	0.4688	0.0637	0.0784	0.681	0.0231	0.410	0.0491	0.0519	1.026	0.601	0.0549	0.0105	-0.890	1.193	0.4435	
162T125-33	50	0.1376	0.4688	0.0637	0.0784	0.681	0.0231	0.410	0.0462	0.0476	1.424	0.910	0.0549	0.0105	-0.890	1.193	0.4435	

MEMBER	F _y (ksi)	GROSS PROPERTIES							EFFECTIVE PROPERTIES				TORSIONAL PROPERTIES				
		Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	r _x (in.)	I _y (in ⁴)	r _y (in.)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _{al} (in-k)	V _{ay} (kip)	Jx1000 (in ⁴)	C _w (in ⁶)	x _o (in.)	r _o (in.)	β
250T125-18	33	0.0918	0.3128	0.0933	0.0747	1.008	0.0148	0.402	0.0639	0.0422	0.834	0.258	0.0108	0.0161	-0.781	1.337	0.6591
250T125-27	33	0.1376	0.4690	0.1389	0.1111	1.005	0.0220	0.400	0.1055	0.0729	1.441	0.685	0.0367	0.0238	-0.778	1.332	0.6590
250T125-30	33	0.1515	0.5165	0.1526	0.1221	1.004	0.0242	0.400	0.1186	0.0829	1.637	0.833	0.0492	0.0261	-0.777	1.330	0.6590
250T125-33	33	0.1678	0.5719	0.1685	0.1348	1.002	0.0267	0.399	0.1344	0.0950	1.876	0.975	0.0670	0.0287	-0.776	1.329	0.6590
250T125-33	50	0.1678	0.5719	0.1685	0.1348	1.002	0.0267	0.399	0.1279	0.0884	2.647	1.260	0.0670	0.0287	-0.776	1.329	0.6590
250T150-33	33	0.1851	0.6309	0.1948	0.1558	1.026	0.0439	0.487	0.1447	0.0985	1.947	0.975	0.0739	0.0472	-0.992	1.508	0.5674
250T150-33	50	0.1851	0.6309	0.1948	0.1558	1.026	0.0439	0.487	0.1374	0.0915	2.739	1.260	0.0739	0.0472	-0.992	1.508	0.5674
250T150-43	33	0.2404	0.8191	0.2508	0.2007	1.022	0.0566	0.485	0.2002	0.1409	2.784	1.265	0.1630	0.0603	-0.988	1.502	0.5670
250T150-43	50	0.2404	0.8191	0.2508	0.2007	1.022	0.0566	0.485	0.1894	0.1299	3.889	1.917	0.1630	0.0603	-0.988	1.502	0.5670
250T150-54	33	0.2994	1.0203	0.3090	0.2472	1.016	0.0700	0.484	0.2645	0.1928	3.809	1.553	0.3197	0.0741	-0.986	1.496	0.5656
250T150-54	50	0.2994	1.0203	0.3090	0.2472	1.016	0.0700	0.484	0.2501	0.1772	5.306	2.353	0.3197	0.0741	-0.986	1.496	0.5656
362T125-18	33	0.1129	0.3849	0.2201	0.1215	1.396	0.0165	0.382	0.1410	0.0616	1.217	0.173	0.0133	0.0385	-0.674	1.597	0.8217
362T125-27	33	0.1695	0.5775	0.3285	0.1812	1.392	0.0246	0.381	0.2597	0.1274	2.518	0.592	0.0452	0.0570	-0.671	1.592	0.8222
362T125-30	33	0.1866	0.6361	0.3612	0.1993	1.391	0.0270	0.380	0.2910	0.1440	2.845	0.793	0.0606	0.0625	-0.670	1.590	0.8223
362T125-33	33	0.2068	0.7046	0.3993	0.2203	1.390	0.0298	0.380	0.3285	0.1640	3.241	1.024	0.0825	0.0689	-0.669	1.589	0.8224
362T125-33	50	0.2068	0.7046	0.3993	0.2203	1.390	0.0298	0.380	0.3155	0.1548	4.635	1.083	0.0825	0.0689	-0.669	1.589	0.8224
362T150-33	33	0.2240	0.7636	0.4551	0.2511	1.425	0.0493	0.469	0.3519	0.1701	3.362	1.024	0.0894	0.1128	-0.868	1.733	0.7493
362T150-33	50	0.2240	0.7636	0.4551	0.2511	1.425	0.0493	0.469	0.3373	0.1602	4.798	1.083	0.0894	0.1128	-0.868	1.733	0.7493
362T150-43	33	0.2911	0.9920	0.5877	0.3242	1.421	0.0636	0.468	0.4825	0.2395	4.733	1.740	0.1974	0.1447	-0.865	1.728	0.7496
362T150-43	50	0.2911	0.9920	0.5877	0.3242	1.421	0.0636	0.468	0.4606	0.2240	6.707	2.141	0.1974	0.1447	-0.865	1.728	0.7496
362T150-54	33	0.3631	1.2373	0.7269	0.4011	1.415	0.0788	0.466	0.6331	0.3235	6.392	2.341	0.3877	0.1784	-0.862	1.721	0.7492
362T150-54	50	0.3631	1.2373	0.7269	0.4011	1.415	0.0788	0.466	0.6063	0.3014	9.024	3.372	0.3877	0.1784	-0.862	1.721	0.7492
400T125-18	33	0.1200	0.4089	0.2776	0.1388	1.521	0.0170	0.376	0.1740	0.0681	1.345	0.156	0.0141	0.0485	-0.645	1.695	0.8549
400T125-27	33	0.1801	0.6137	0.4145	0.2073	1.517	0.0252	0.374	0.3313	0.1484	2.932	0.533	0.0481	0.0718	-0.643	1.690	0.8554
400T125-30	33	0.1983	0.6760	0.4559	0.2279	1.516	0.0277	0.374	0.3709	0.1674	3.308	0.715	0.0644	0.0788	-0.642	1.688	0.8555
400T150-33	33	0.2370	0.8078	0.5721	0.2861	1.554	0.0508	0.463	0.4473	0.1974	3.901	0.976	0.0946	0.1422	-0.834	1.823	0.7908
400T150-33	50	0.2370	0.8078	0.5721	0.2861	1.554	0.0508	0.463	0.4215	0.1808	5.414	0.976	0.0946	0.1422	-0.834	1.823	0.7908
400T150-43	33	0.3080	1.0497	0.7393	0.3697	1.549	0.0655	0.461	0.6116	0.2768	5.470	1.740	0.2088	0.1825	-0.831	1.817	0.7911
400T150-43	50	0.3080	1.0497	0.7393	0.3697	1.549	0.0655	0.461	0.5854	0.2599	7.780	2.141	0.2088	0.1825	-0.831	1.817	0.7911
400T150-54	33	0.3843	1.3097	0.9153	0.4577	1.543	0.0811	0.459	0.8011	0.3725	7.361	2.603	0.4104	0.2252	-0.828	1.811	0.7909
400T150-54	50	0.3843	1.3097	0.9153	0.4577	1.543	0.0811	0.459	0.7655	0.3483	10.430	3.372	0.4104	0.2252	-0.828	1.811	0.7909
550T125-18	33	0.1482	0.5050	0.5969	0.2170	2.007	0.0183	0.351	0.3409	0.0921	1.819	0.112	0.0175	0.1021	-0.553	2.111	0.9315
550T125-27	33	0.2225	0.7584	0.8929	0.3246	2.003	0.0272	0.350	0.6286	0.1865	3.686	0.382	0.0594	0.1515	-0.550	2.107	0.9318
550T125-30	33	0.2451	0.8354	0.9825	0.3572	2.002	0.0299	0.349	0.7240	0.2201	4.349	0.512	0.0795	0.1663	-0.549	2.105	0.9320

MEMBER	F _y (ksi)	GROSS PROPERTIES							EFFECTIVE PROPERTIES				TORSIONAL PROPERTIES				
		Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	r _x (in.)	I _y (in ⁴)	r _y (in.)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _{al} (in-k)	V _{ay} (kip)	Jx1000 (in ⁴)	C _w (in ⁶)	x _o (in.)	r _o (in.)	β
550T150-18	50	0.1576	0.5370	0.6677	0.2428	2.058	0.0304	0.439	0.3167	0.0803	2.404	0.112	0.0186	0.1668	-0.727	2.227	0.8933
550T150-27	50	0.2367	0.8066	0.9989	0.3632	2.054	0.0454	0.438	0.6022	0.1682	5.036	0.382	0.0632	0.2479	-0.725	2.222	0.8937
550T150-30	50	0.2607	0.8886	1.0992	0.3997	2.053	0.0499	0.437	0.7024	0.2018	3.043	0.512	0.0846	0.2723	-0.724	2.220	0.8938
550T150-33	33	0.2889	0.9846	1.2162	0.4423	2.052	0.0551	0.437	0.9456	0.3027	5.982	0.698	0.1153	0.3006	-0.723	2.219	0.8939
550T150-33	50	0.2889	0.9846	1.2162	0.4423	2.052	0.0551	0.437	0.8279	0.2459	7.362	0.698	0.1153	0.3006	-0.723	2.219	0.8939
550T150-43	33	0.3757	1.2802	1.5745	0.5726	2.047	0.0711	0.435	1.3358	0.4479	8.850	1.550	0.2547	0.3864	-0.720	2.213	0.8943
550T150-43	50	0.3757	1.2802	1.5745	0.5726	2.047	0.0711	0.435	1.2769	0.4192	12.550	1.550	0.2547	0.3864	-0.720	2.213	0.8943
550T150-54	33	0.4692	1.5990	1.9541	0.7106	2.041	0.0882	0.434	1.7389	0.5959	11.775	2.740	0.5010	0.4776	-0.717	2.206	0.8944
550T150-54	50	0.4692	1.5990	1.9541	0.7106	2.041	0.0882	0.434	1.6731	0.5634	16.869	3.093	0.5010	0.4776	-0.717	2.206	0.8944
600T125-18	33	0.1576	0.5370	0.7390	0.2463	2.165	0.0186	0.344	0.4118	0.1010	1.996	0.102	0.0186	0.1250	-0.528	2.255	0.9453
600T125-27	33	0.2367	0.8066	1.1057	0.3685	2.161	0.0277	0.342	0.7635	0.2054	4.060	0.349	0.0632	0.1856	-0.525	2.250	0.9456
600T125-30	33	0.2607	0.8886	1.2168	0.4055	2.160	0.0305	0.342	0.8808	0.2427	4.796	0.468	0.0846	0.2037	-0.524	2.249	0.9457
600T125-33	33	0.2889	0.9846	1.3464	0.4488	2.159	0.0336	0.341	1.0226	0.2891	5.713	0.638	0.1153	0.2248	-0.523	2.247	0.9458
600T150-33	33	0.3062	1.0436	1.5003	0.5001	2.213	0.0563	0.429	1.1358	0.3276	6.474	0.638	0.1222	0.3686	-0.692	2.358	0.9138
600T150-33	50	0.3062	1.0436	1.5003	0.5001	2.213	0.0563	0.429	0.9972	0.2678	8.017	0.638	0.1222	0.3686	-0.692	2.358	0.9138
600T150-43	33	0.3982	1.3571	1.9431	0.6477	2.209	0.0726	0.427	1.6599	0.5126	10.129	1.415	0.2700	0.4740	-0.689	2.353	0.9142
600T150-43	50	0.3982	1.3571	1.9431	0.6477	2.209	0.0726	0.427	1.5321	0.4526	13.552	1.415	0.2700	0.4740	-0.689	2.353	0.9142
600T150-54	33	0.4975	1.6955	2.4130	0.8043	2.202	0.0900	0.425	2.1571	0.6800	13.436	2.740	0.5312	0.5860	-0.686	2.346	0.9144
600T150-54	50	0.4975	1.6955	2.4130	0.8043	2.202	0.0900	0.425	2.0794	0.6448	19.304	2.822	0.5312	0.5860	-0.686	2.346	0.9144
600T200-68	33	0.6941	2.3655	3.6227	1.2076	2.284	0.2511	0.602	3.1465	0.9739	19.244	4.348	1.1762	1.5862	-1.050	2.585	0.8350
600T200-68	50	0.6941	2.3655	3.6227	1.2076	2.284	0.2511	0.602	3.0152	0.9151	27.400	5.352	1.1762	1.5862	-1.050	2.585	0.8350
600T200-97	33	0.9786	3.3349	5.0305	1.6769	2.267	0.3491	0.598	4.7575	1.5376	30.383	6.911	3.3737	2.1897	-1.043	2.566	0.8347
600T200-97	50	0.9786	3.3349	5.0305	1.6769	2.267	0.3491	0.598	4.5633	1.4434	43.216	10.472	3.3737	2.1897	-1.043	2.566	0.8347
800T200-33	33	0.4100	1.3974	3.5901	0.8975	2.959	0.1346	0.573	2.2239	0.4329	8.554	0.474	0.1636	1.5707	-0.926	3.153	0.9138
800T200-33	50	0.4100	1.3974	3.5901	0.8975	2.959	0.1346	0.573	1.9581	0.3603	10.786	0.474	0.1636	1.5707	-0.926	3.153	0.9138
800T200-43	33	0.5335	1.8182	4.6572	1.1643	2.955	0.1742	0.571	3.4195	0.7276	14.377	1.051	0.3617	2.0267	-0.923	3.148	0.9141
800T200-43	50	0.5335	1.8182	4.6572	1.1643	2.955	0.1742	0.571	2.9942	0.5936	17.773	1.051	0.3617	2.0267	-0.923	3.148	0.9141
800T200-54	33	0.6673	2.2741	5.7990	1.4497	2.948	0.2166	0.570	4.8913	1.1266	22.261	2.091	0.7126	2.5152	-0.920	3.140	0.9142
800T200-54	50	0.6673	2.2741	5.7990	1.4497	2.948	0.2166	0.570	4.3635	0.9411	28.177	2.091	0.7126	2.5152	-0.920	3.140	0.9142
800T200-68	33	0.8367	2.8515	7.2272	1.8068	2.939	0.2697	0.568	6.3852	1.5013	29.667	4.220	1.4179	3.1235	-0.916	3.130	0.9143
800T200-68	50	0.8367	2.8515	7.2272	1.8068	2.939	0.2697	0.568	6.1574	1.4247	42.656	4.220	1.4179	3.1235	-0.916	3.130	0.9143
800T200-97	33	1.1820	4.0281	10.0802	2.5201	2.920	0.3754	0.564	9.5897	2.3365	46.170	8.846	4.0750	4.3249	-0.909	3.110	0.9146
800T200-97	50	1.1820	4.0281	10.0802	2.5201	2.920	0.3754	0.564	9.2466	2.2133	66.265	10.888	4.0750	4.3249	-0.909	3.110	0.9146

For SI: 1 inch = 25.4 mm, 1 lb/ft = 1.49 kg/m, 1 ksi = 6.89 MPa

¹Properties are based on the full, unreduced cross-section away from any web punch-outs.

²Use the effective moment of inertia for deflection calculation.

³Allowable moment is lesser of M_{al} and M_{ad} . Distortional buckling is based on an assumed $K\Phi = 0$.

TABLE 5—TRACKS S.A. HAT FURRING CHANNEL (F-SECTIONS) SECTION PROPERTIES^{1,2,3}

MEMBER	F _y (ksi)	GROSS PROPERTIES							EFFECTIVE PROPERTIES			
		Area (in ²)	Weight (lb/ft)	I _x (in ⁴)	S _x (in ³)	r _x (in.)	I _y (in ⁴)	r _y (in.)	I _{xe} (in ⁴)	S _{xe} (in ³)	M _{al} (in-k)	V _{ay} (kip)
087F125-18	33	0.0702	0.2394	0.0090	0.0195	0.358	0.0376	0.732	0.0080	0.0159	0.314	0.317
087F125-27	33	0.1047	0.3567	0.0132	0.0283	0.354	0.0561	0.732	0.0126	0.0269	0.531	0.471
087F125-30	33	0.1150	0.3920	0.0143	0.0309	0.353	0.0616	0.732	0.0141	0.0303	0.598	0.517
087F125-33	33	0.1271	0.4331	0.0157	0.0339	0.352	0.0681	0.732	0.0154	0.0332	0.657	0.571
087F125-33	50	0.1271	0.4331	0.0157	0.0339	0.352	0.0681	0.732	0.0152	0.0322	0.965	0.864
087F125-43	33	0.1637	0.5581	0.0199	0.0427	0.348	0.0878	0.732	0.0195	0.0419	0.828	0.732
087F125-43	50	0.1637	0.5581	0.0199	0.0427	0.348	0.0878	0.732	0.0195	0.0419	1.255	1.109
087F125-54	33	0.2004	0.6831	0.0238	0.0514	0.345	0.1075	0.732	0.0232	0.0499	0.986	0.848
087F125-54	50	0.2004	0.6831	0.0238	0.0514	0.345	0.1075	0.732	0.0232	0.0499	1.494	1.286

For SI: 1 inch = 25.4 mm, 1 lb/ft = 1.49 kg/m, 1 ksi = 6.89 MPa

¹Properties are based on the full, unreduced cross-section away from any web punch-outs.

²Use the effective moment of inertia for deflection calculation.

³S_x and effective properties are given as the minimum value for positive or negative bending.

DIVISION: 05 00 00—METALS

Section: 05 40 00—Cold-Formed Metal Framing

DIVISION: 09 00 00—FINISHES

Section: 09 22 16.13—Non-Structural Metal Stud Framing

REPORT HOLDER:

TRACKS S.A

EVALUATION SUBJECT:

TRACKS COLD-FORMED METAL FRAMING

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that Tracks Cold-Formed Metal Framing, described in ICC-ES evaluation report ESR-5196, has also been evaluated for compliance with the code(s) noted below.

Applicable code edition(s):

- 2022 California Building Code (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 California Residential Code (CRC)

2.0 CONCLUSIONS**2.1 CBC:**

The Tracks Cold-Formed Metal Framing, described in Sections 2.0 through 7.0 of the evaluation report ESR-5196, complies with CBC Chapter 22, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of 16, 17 and 22, as applicable.

The use of the Tracks Cold-Formed Metal Framing in construction of new buildings located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland–Urban Interface Area requires installation in accordance with the main report and the additional requirements of CBC Chapter 7A, as applicable.

2.1.1 OSHPD: The Tracks Cold-Formed Metal Framing, described in Sections 2.0 through 7.0 of the evaluation report ESR-5196, complies with CBC amended sections in Chapters 16, 17 and 22, and Chapters 16A, 17A and 22A, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions, as applicable, noted in the evaluation report, and the additional requirements in Sections 2.1.1.1 and 2.1.1.2 of this supplement.

2.1.1.1 Conditions of Use:

1. All loads applied to the cold-formed steel members shall be determined by a registered design professional and shall comply with applicable loads from CBC Chapter 16 and amendments [OSHPD 1R, 2, 3 and 5] and Chapter 16A [OSHPD 1 and 4].
2. Cold-formed steel members shall not be part of the lateral resisting elements in light-framed wall with shear panels of all other materials and cold-formed steel special bolted moment frames, unless allowed by the exceptions, in accordance with CBC Section 1617A1.4 [OSHPD 1 & 4].
3. Prescriptive framing is not permitted in accordance with CBC Section 2211A.1.2 [OSHPD 1 & 4].
4. Cold-formed steel structures shall be designed and detailed in accordance with the requirements of AISI S100 and AISI S400 [OSHPD 1R, 2 & 5].

5. In accordance with CBC Section 2211A.1.1.1, the design of cold-formed steel light-frame construction to resist seismic forces in Seismic Design Categories B and C is not permitted [OSHPD 1 & 4].
6. In accordance with CBC Sections 2211.1.1.2 and 2211A.1.1.2, the design of cold-formed steel light-frame construction to resist seismic forces in Seismic Design Categories D through F, shall be designed and detailed in accordance with AISI S400 and comply with the following requirements [OSHPD 1, 1R, 2, 4 & 5]:
 - Cold-formed steel stud foundation plates or sills shall be bolted or fastened to the foundation or foundation wall in accordance with CBC Section 2304.3.4, Item 2.
 - Shear wall assemblies in accordance with Sections E5, E6 and E7 of AISI S400 are not permitted within the seismic force-resisting system of the buildings.
7. In accordance with CBC Sections 2211.2 and 2211A.2, for cold-formed steel light-frame construction, the design and installation of nonstructural members and connections shall be in accordance with AISI S220 for noncomposite assembly design. Where nonstructural members do not qualify for design under AISI S220, the design and installation of nonstructural members and connections, shall be in accordance with AISI S240 or S100 [OSHPD 1, 1R, 2, 4 & 5].

2.1.1.2 Verification Test Requirements:

In accordance with CBC Sections 2213A.2 and 2213.2, end-welded studs shall be tested in accordance with the requirements of AWS D1.1 Sections 7.7 and 7.8 [OSHPD 1, 1R, 2, 4 & 5], as applicable.

2.1.1.3 Special Inspection Requirements:

1. In accordance with CBC Section 1704.2 Exception 3, special inspection is required for portions of structures designed and constructed in accordance with the cold-formed steel light-frame construction provisions of CBC Section 2211.1.2 [OSHPD 1R, 2 & 5].
2. Periodic special inspections shall be required in accordance with CBC Section 1705 and amendments [OSHPD 1R, 2, 3 and 5] and CBC Section 1705A [OSHPD 1 & 4].

2.1.2 DSA: The Tracks Cold-Formed Metal Framing, described in Section 2.0 through 7.0 of the evaluation report ESR-5196, complies with CBC amended sections in Chapters 16 and 22, and Chapters 16A, 17A and 22A, provided the design and installations are in accordance with the 2021 *International Building Code*[®] (IBC) provisions noted in the evaluation report, and the additional requirements in Sections 2.1.2.1 and 2.1.2.2 of this supplement:

2.1.2.1 Conditions of Use:

1. All loads applied to the cold-formed steel members shall be determined by a registered design professional and shall comply with applicable loads from CBC Chapter 16 and amendments [DSA-SS/CC] and Chapter 16A [DSA-SS].
2. Cold-formed steel members shall not be part of the lateral resisting elements in light-framed wall with shear panels of all other materials and cold-formed steel special bolted moment frames, unless allowed by the exceptions, in accordance with CBC Sections 1617.11.3 [DSA-SS/CC] and 1617A1.4 [DSA-SS].
3. In accordance with CBC Section 2212.5.2 [DSA-SS/CC], cold-formed steel stud foundation plates or sills shall be bolted or fastened to the foundation or foundation wall in accordance with Section 2304.3.4, Item 2.
4. In accordance with CBC Section 2212.5.3, cold-formed steel stud shear wall assemblies in accordance with Sections E5, E6 and E7 of AISI S400 are not permitted within the seismic force-resisting system of buildings or structures assigned to Occupancy Categories II, III, IV, or buildings designed to be relocatable [DSA-SS/CC].
5. In accordance with CBC Section 2211A.1.1.1, the design of cold-formed steel light-frame construction to resist seismic forces in Seismic Design Categories B and C is not permitted [DSA-SS].
6. In accordance with CBC Section 2211A.1.1.2, the design of cold-formed steel light-frame construction to resist seismic forces in Seismic Design Categories D through F, shall be designed and detailed in accordance with AISI S400 and comply with the following requirements [DSA-SS]:
 - Cold-formed steel stud foundation plates or sills shall be bolted or fastened to the foundation or foundation wall in accordance with CBC Section 2304.3.4, Item 2.
 - Shear wall assemblies in accordance with Sections E5, E6 and E7 of AISI S400 are not permitted within the seismic force-resisting system of the buildings.
7. Prescriptive framing is not permitted in accordance with CBC Section 2211A.1.2 [DSA-SS].
8. In accordance with CBC Section 2211A.2, for cold-formed steel light-frame construction, the design and installation of nonstructural members and connections shall be in accordance with AISI S220 for noncomposite assembly design. Where nonstructural members do not qualify for design under AISI S220, the design and installation of nonstructural members and connections, shall be in accordance with AISI S240 or S100 [DSA-SS].

2.1.2.2 Verification Test Requirements:

In accordance with CBC Sections 2212.6.2 [DSA-SS/CC] or 2213A.2 [DSA-SS], end-welded studs shall be tested in accordance with the requirements of AWS D1.1 Sections 7.7 and 7.8 [DSA-SS/C or DSA-SS], as applicable.

2.1.2.3 Special Inspection Requirements:

Periodic special inspections shall be required in accordance with CBC Section 1705A [DSA-SS/CC and DSA-SS], as applicable.

2.2 CRC:

The Tracks Cold-Formed Metal Framing, described in Sections 2.0 through 7.0 of the evaluation report ESR-5196, complies with CRC Chapters 5, 6 and 8, provided the design and installation are in accordance with the 2021 *International Residential Code*[®] (IRC) provisions noted in the evaluation report.

DIVISION: 05 00 00—METALS

Section: 03 20 00—Cold-Formed Metal Framing

DIVISION: 09 00 00—FINISHES

Section: 09 22 16.13—Non-Structural Metal Stud Framing

REPORT HOLDER:

TRACKS S.A

EVALUATION SUBJECT:

TRACKS COLD-FORMED METAL FRAMING

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that Tracks Cold-Formed Metal Framing, described in ICC-ES evaluation report ESR-5196, has also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2023 *Florida Building Code—Building*
- 2023 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The Tracks Cold-Formed Metal Framing, described in Sections 2.0 through 7.0 of ICC-ES evaluation report ESR-5196, complies with the *Florida Building Code—Building* or the *Florida Building Code—Residential*. The design requirements must be determined in accordance with the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable. The installation requirements noted in ICC-ES evaluation report ESR-5196 for the 2021 *International Building Code*® meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable.

Use of the Tracks Cold-Formed Metal Framing for compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* or the *Florida Building Code—Residential* has not been evaluated, and is outside the scope of this supplemental report.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report, issued July 2024 and revised July 26, 2024.