



ICC-ES Evaluation Report

ESR-4738

Reissued June 2022

This report is subject to renewal May 2023.

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

DIVISION: 09 00 00—FINISHES

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

REPORT HOLDER:

STALO FRAMES

EVALUATION SUBJECT:

COLD-FORMED STEEL STUDS, TRACKS, AND JOISTS

1.0 EVALUATION SCOPE

Compliance with the following codes:

2021, 2018 and 2015 *International Building Code* (IBC)

Property evaluated:

Structural

2.0 USES

The cold-formed steel members with a minimum G40 coating are used only as nonstructural members as defined by AISI S220.

The cold-formed steel members with a minimum G60, A60, AZ50, or GF30 coating are used as structural members as defined by AISI S240 and may also be used as nonstructural members.

3.0 DESCRIPTION

The cold-formed steel members designations and dimensions are provided in Table 1 for structural studs and tracks and in Table 2 for non-structural studs. Figure 1 includes profiles of the members. The members are manufactured with and without web punch-outs. When provided, the punch-outs have a width of 1½ inches (38 mm) and a length of 4 inches (102 mm) in members with a depth greater than 2½ inches (63.5 mm). In members with a depth of 2½ inches (63.5 mm) and smaller, punch-outs have a width of ¾ inch (19 mm) and a length of 4 inches (102 mm). The punch-outs are spaced a minimum of 24

inches (610 mm) on center and have a minimum distance between the end of the member and the near edge of the punch-out of 10 inches (254 mm). Studs ends are swaged to fit inside the track as shown in Figure 1. The effective height of swage, hsw, equals to the track’s total flange width plus ¾ inch (9.5 mm). The swaged depth of the stud’s end equals to the stud’s total web depth minus two times the design base metal thickness

The members are cold-formed from steel coils conforming to ASTM A653 SS Grade 50 Class 1 with a minimum G40 or G60 coating or ASTM A1003 Structural Grade 50 Type H (ST50H) with a minimum G60, A60, AZ50, or GF30 coating.

4.0 DESIGN AND INSTALLATION

4.1 General:

The cold-formed steel members and their connections must be designed and installed in accordance with IBC Section 2210 and 2211 using the section properties referenced in Section 3.0.

4.2 Design:

All section properties and allowable capacities in Tables 3, 4, and 5, except for V_{anet} , are for cold-formed steel sections away from punch-outs. The web crippling capacities are provided in Table 6. All values have been determined in accordance with the North American Specification for Design of Cold-Formed Steel Structural Members (AISI S100) based on the Allowable Strength Design (ASD) method. However, additional design considerations per AISI S100 must be considered, such as the design of flexural members must address combined bending and web crippling, and combined bending and shear, as applicable.

The allowable moment capacities, M_{al} , in Table 3, 4, and 5 are for flexural members installed with the compression flange continuously braced. For other conditions of compression flange bracing, the allowable moment capacities, M_{al} , must be determined in accordance with AISI S100.

4.3 Installation:

The cold-formed steel members must be installed in accordance with the applicable code, the approved plans, and this report. If there is a 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

The cold-formed steel 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 The cold-formed steel 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 cold-formed steel 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.
- 5.4 Framing members with a height-to-thickness (h/t) ratio of more than 200 must be provided with web stiffeners in accordance with Sections B4.1 and F5 of AISI S100-16 (2020) w/S2-20. Holes or punch-outs in the web of framing members with a height-to-thickness (h/t) ratio of more than 200 are outside the scope of this report.
- 5.5 Effective section properties and allowable capacities, except V_{anet} , are for cold-formed steel sections away from punch-outs.

- 5.6 The cold-formed steel members are manufactured in Miami, Florida under an approved quality control program by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Cold-formed Steel Framing Members (AC46), dated October 2019 and editorially revised December 2020.

7.0 IDENTIFICATION

- 7.1 At a spacing not exceeding 96 inches (2440 mm) on center, each cold-formed steel member is stamped, stenciled or embossed with the company name or initials; the acronym "ICC-ES"; the evaluation report number (ESR-4738); the minimum uncoated base-metal thickness in mils or decimal inches; in addition to the following:
 - For nonstructural members, each member must have the designation "NS", the minimum specified yield strength, and a designation for the metallic coating if other than G40.
 - For structural members, the minimum specified yield strength and a designation for the metallic coating (minimum G60, A60, AZ50, or GF30).

- 7.2 The report holder's contact information is the following:
 - For nonstructural members, each member must have the designation "NS", the minimum specified yield strength, and a designation for the metallic coating if other than G40.
 - For structural members, the minimum specified yield strength and a designation for the metallic coating (minimum G60, A60, AZ50, or GF30).

- 7.2 The report holder's contact information is the following:

STALO FRAMES
5400 NORTHWEST 32ND AVENUE, BAY B
MIAMI, FLORIDA 33132
(786) 713-2410
info@stalo-us.com

Definitions of symbols for use with Tables 1 through 3:

- F_y : Yield Strength
 L_u : Critical Unbraced Length for lateral-torsional buckling. Members are considered fully braced when unbraced length is less than L_u .
 K_ϕ : Distortional buckling moment (M_{ad}) is calculated without the beneficial effect of sheathing to rotational stiffness, $K_\phi = 0$.

Gross Properties (based on full cross section away from punch-outs)

- A_g : Gross area: cross-sectional area of the full unreduced cross-section of the studs, away from the punch-outs.
 I_x : Moment of inertia of the gross section about the strong axis (X-X).
 r_x : Radius of gyration of the gross section about the X-X axis.
 S_x : Gross section-modulus about the strong axis (X-X).
 I_y : Moment of inertia of the gross section about the weak axis (Y-Y).
 r_y : Radius of gyration of the gross section about the Y-Y axis.

Effective Properties (based on full cross section away from punch-outs, except for V_{anet})

- I_{xe} : Effective moment of inertia about the strong axis (X-X).
 S_{xe} : Effective section-modulus about the strong axis (X-X).
 M_{al} : Allowable bending moment based on local buckling.
 M_{ad} : Allowable bending moment based on distortional buckling, assuming $K_\phi = 0$.
 V_{ag} : Allowable strong axis shear.
 V_{anet} : Allowable strong axis shear at punch-out.

Torsional Properties (based on full cross section away from punch-outs)

- J : St. Venant torsional constant.
 C_w : Torsional warping constant.
 m_c : Distance from shear center to mid-plane of web.
 x_o : Distance from the shear center to the centroid along the principal X-axis.
 r_o : Polar radius of gyration about the centroidal principal axis.
 β : Torsional flexural constant: $1 - (x_o / R_o)^2$

TABLE 1—STRUCTURAL STUDS AND TRACKS SECTION DIMENSIONS¹

| STUD DESIGNATION | TRACK DESIGNATION ² | MILS | F _y (ksi) | DESIGN BASE STEEL THICKNESS (in.) | UNCOATED MIN. BASE STEEL THICKNESS (in.) | TOTAL WEB DEPTH ⁴ (in.) | FLANGE (in.) | LIP ² (in.) | CORNER INTERIOR RADIUS (in.) |
|------------------|--------------------------------|------|----------------------|-----------------------------------|--|------------------------------------|--------------|------------------------|------------------------------|
| 250S162-33 | 250T162-33 | 33 | 50 | 0.0346 | 0.0329 | 2.5 | 1.625 | 0.5 | 0.09 |
| 250S162-43 | 250T162-43 | 43 | 50 | 0.0451 | 0.0428 | 2.5 | 1.625 | 0.5 | 0.09 |
| 250S162-54 | 250T162-54 | 54 | 50 | 0.0566 | 0.0538 | 2.5 | 1.625 | 0.5 | 0.09 |
| 300S162-33 | 300T162-33 | 33 | 50 | 0.0346 | 0.0329 | 3.0 | 1.625 | 0.5 | 0.09 |
| 300S162-43 | 300T162-43 | 43 | 50 | 0.0451 | 0.0428 | 3.0 | 1.625 | 0.5 | 0.09 |
| 300S162-54 | 300T162-54 | 54 | 50 | 0.0566 | 0.0538 | 3.0 | 1.625 | 0.5 | 0.09 |
| 300S200-33 | 300T200-33 | 33 | 50 | 0.0346 | 0.0329 | 3.0 | 2.0 | 0.625 | 0.11 |
| 300S200-43 | 300T200-43 | 43 | 50 | 0.0451 | 0.0428 | 3.0 | 2.0 | 0.625 | 0.11 |
| 300S200-54 | 300T200-54 | 54 | 50 | 0.0566 | 0.0538 | 3.0 | 2.0 | 0.625 | 0.11 |
| 350S162-33 | 350T162-33 | 33 | 50 | 0.0346 | 0.0329 | 3.5 | 1.625 | 0.5 | 0.09 |
| 350S162-43 | 350T162-43 | 43 | 50 | 0.0451 | 0.0428 | 3.5 | 1.625 | 0.5 | 0.09 |
| 350S162-54 | 350T162-54 | 54 | 50 | 0.0566 | 0.0538 | 3.5 | 1.625 | 0.5 | 0.09 |
| 350S200-33 | 350T200-33 | 33 | 50 | 0.0346 | 0.0329 | 3.5 | 2.0 | 0.625 | 0.11 |
| 350S200-43 | 350T200-43 | 43 | 50 | 0.0451 | 0.0428 | 3.5 | 2.0 | 0.625 | 0.11 |
| 350S200-54 | 350T200-54 | 54 | 50 | 0.0566 | 0.0538 | 3.5 | 2.0 | 0.625 | 0.11 |
| 350S200-68 | 350T200-68 | 68 | 50 | 0.0713 | 0.0677 | 3.5 | 2.0 | 0.625 | 0.11 |
| 362S162-33 | 362T162-33 | 33 | 50 | 0.0346 | 0.0329 | 3.625 | 1.625 | 0.5 | 0.09 |
| 362S162-43 | 362T162-43 | 43 | 50 | 0.0451 | 0.0428 | 3.625 | 1.625 | 0.5 | 0.09 |
| 362S162-54 | 362T162-54 | 54 | 50 | 0.0566 | 0.0538 | 3.625 | 1.625 | 0.5 | 0.09 |
| 362S200-33 | 362T200-33 | 33 | 50 | 0.0346 | 0.0329 | 3.625 | 2.0 | 0.625 | 0.11 |
| 362S200-43 | 362T200-43 | 43 | 50 | 0.0451 | 0.0428 | 3.625 | 2.0 | 0.625 | 0.11 |
| 362S200-54 | 362T200-54 | 54 | 50 | 0.0566 | 0.0538 | 3.625 | 2.0 | 0.625 | 0.11 |
| 362S200-68 | 362T200-68 | 68 | 50 | 0.0713 | 0.0677 | 3.625 | 2.0 | 0.625 | 0.11 |
| 400S162-33 | 400T162-33 | 33 | 50 | 0.0346 | 0.0329 | 4.0 | 1.625 | 0.500 | 0.090 |
| 400S162-43 | 400T162-43 | 43 | 50 | 0.0451 | 0.0428 | 4.0 | 1.625 | 0.500 | 0.090 |
| 400S162-54 | 400T162-54 | 54 | 50 | 0.0566 | 0.0538 | 4.0 | 1.625 | 0.500 | 0.090 |
| 400S200-33 | 400T200-33 | 33 | 50 | 0.0346 | 0.0329 | 4.0 | 2.0 | 0.625 | 0.110 |
| 400S200-43 | 400T200-43 | 43 | 50 | 0.0451 | 0.0428 | 4.0 | 2.0 | 0.625 | 0.110 |
| 400S200-54 | 400T200-54 | 54 | 50 | 0.0566 | 0.0538 | 4.0 | 2.0 | 0.625 | 0.110 |
| 400S200-68 | 400T200-68 | 68 | 50 | 0.0713 | 0.0677 | 4.0 | 2.0 | 0.625 | 0.110 |
| 550S162-33 | 550T162-33 | 33 | 50 | 0.0346 | 0.0329 | 5.5 | 1.625 | 0.5 | 0.09 |
| 550S162-43 | 550T162-43 | 43 | 50 | 0.0451 | 0.0428 | 5.5 | 1.625 | 0.5 | 0.09 |
| 550S162-54 | 550T162-54 | 54 | 50 | 0.0566 | 0.0538 | 5.5 | 1.625 | 0.5 | 0.09 |
| 550S200-33 | 550T200-33 | 33 | 50 | 0.0346 | 0.0329 | 5.5 | 2.0 | 0.625 | 0.11 |
| 550S200-43 | 550T200-43 | 43 | 50 | 0.0451 | 0.0428 | 5.5 | 2.0 | 0.625 | 0.11 |
| 550S200-54 | 550T200-54 | 54 | 50 | 0.0566 | 0.0538 | 5.5 | 2.0 | 0.625 | 0.11 |
| 550S200-68 | 550T200-68 | 68 | 50 | 0.0713 | 0.0677 | 5.5 | 2.0 | 0.625 | 0.11 |
| 600S162-33 | 600T162-33 | 33 | 50 | 0.0346 | 0.0329 | 6.0 | 1.625 | 0.5 | 0.09 |
| 600S162-43 | 600T162-43 | 43 | 50 | 0.0451 | 0.0428 | 6.0 | 1.625 | 0.5 | 0.09 |
| 600S162-54 | 600T162-54 | 54 | 50 | 0.0566 | 0.0538 | 6.0 | 1.625 | 0.5 | 0.09 |
| 600S200-33 | 600T200-33 | 33 | 50 | 0.0346 | 0.0329 | 6.0 | 2.0 | 0.625 | 0.11 |
| 600S200-43 | 600T200-43 | 43 | 50 | 0.0451 | 0.0428 | 6.0 | 2.0 | 0.625 | 0.11 |
| 600S200-54 | 600T200-54 | 54 | 50 | 0.0566 | 0.0538 | 6.0 | 2.0 | 0.625 | 0.11 |
| 600S200-68 | 600T200-68 | 68 | 50 | 0.0713 | 0.0677 | 6.0 | 2.0 | 0.625 | 0.11 |

(Continued)

TABLE 1—STRUCTURAL STUDS AND TRACKS SECTION DIMENSIONS¹ (CONTINUED)

| STUD DESIGNATION | TRACK DESIGNATION ² | MILS | F _y (ksi) | DESIGN BASE STEEL THICKNESS (in.) | UNCOATED MIN. BASE STEEL THICKNESS (in.) | TOTAL WEB DEPTH ⁴ (in.) | FLANGE (in.) | LIP ² (in.) | CORNER INTERIOR RADIUS (in.) |
|--------------------------|--------------------------------|------|----------------------|-----------------------------------|--|------------------------------------|--------------|------------------------|------------------------------|
| 600S200-97 | 600T200-97 | 97 | 50 | 0.1017 | 0.0966 | 6.0 | 2.0 | 0.625 | 0.11 |
| 800S162-33 ³ | 800T162-33 ³ | 33 | 50 | 0.0346 | 0.0329 | 8.0 | 1.625 | 0.5 | 0.09 |
| 800S162-43 | 800T162-43 | 43 | 50 | 0.0451 | 0.0428 | 8.0 | 1.625 | 0.5 | 0.09 |
| 800S162-54 | 800T162-54 | 54 | 50 | 0.0566 | 0.0538 | 8.0 | 1.625 | 0.5 | 0.09 |
| 800S200-33 ³ | 800T200-33 ³ | 33 | 50 | 0.0346 | 0.0329 | 8.0 | 2.0 | 0.625 | 0.11 |
| 800S200-43 | 800T200-43 | 43 | 50 | 0.0451 | 0.0428 | 8.0 | 2.0 | 0.625 | 0.11 |
| 800S200-54 | 800T200-54 | 54 | 50 | 0.0566 | 0.0538 | 8.0 | 2.0 | 0.625 | 0.11 |
| 800S200-68 | 800T200-68 | 68 | 50 | 0.0713 | 0.0677 | 8.0 | 2.0 | 0.625 | 0.11 |
| 800S200-97 | 800T200-97 | 97 | 50 | 0.1017 | 0.0966 | 8.0 | 2.0 | 0.625 | 0.11 |
| 1000S200-54 | 1000T200-54 | 54 | 50 | 0.0566 | 0.0538 | 10.0 | 2.0 | 0.625 | 0.11 |
| 1000S200-68 | 1000T200-68 | 68 | 50 | 0.0713 | 0.0677 | 10.0 | 2.0 | 0.625 | 0.11 |
| 1000S200-97 | 1000T200-97 | 97 | 50 | 0.1017 | 0.0966 | 10.0 | 2.0 | 0.625 | 0.11 |
| 1200S200-54 ³ | 1200T200-54 ³ | 54 | 50 | 0.0566 | 0.0538 | 12.0 | 2.0 | 0.625 | 0.11 |
| 1200S200-68 | 1200T200-68 | 68 | 50 | 0.0713 | 0.0677 | 12.0 | 2.0 | 0.625 | 0.11 |
| 1200S200-97 | 1200T200-97 | 97 | 50 | 0.1017 | 0.0966 | 12.0 | 2.0 | 0.625 | 0.11 |
| 1400S200-54 ³ | 1400T200-54 | 54 | 50 | 0.0566 | 0.0538 | 14.0 | 2.0 | 0.625 | 0.11 |
| 1400S200-68 | 1400T200-68 | 68 | 50 | 0.0713 | 0.0677 | 14.0 | 2.0 | 0.625 | 0.11 |
| 1400S200-97 | 1400T200-97 | 97 | 50 | 0.1017 | 0.0966 | 14.0 | 2.0 | 0.625 | 0.11 |

For **SI**: 1 inch = 25.4 mm 1 kip = 4448 N, 1 ksi = 6.895 MPa

¹ See Figure 1 for Section Profiles.

² For Tracks at location 2 (Figure 1), there are no lips.

³ Web height-to-thickness ratio exceeds 200 but is less than 260. Web must have bearing stiffeners at all support points and concentrated loads in accordance with AISI S100. No holes or punch-outs are permitted in the web at these locations.

⁴ Depth measured from outside face to outside face of flanges.

TABLE 2—NON-STRUCTURAL STUDS SECTION DIMENSIONS¹

| STUD DESIGNATION | MILS | F _y (ksi) | DESIGN BASE STEEL THICKNESS, in. | UNCOATED MIN. BASE STEEL THICKNESS, in. | TOTAL WEB DEPTH ³ , in. | FLANGE, in. | LIP, in. | CORNER INTERIOR RADIUS, in. |
|-------------------------|------|----------------------|----------------------------------|---|------------------------------------|-------------|----------|-----------------------------|
| 250S162-27 | 27 | 50 | 0.0283 | 0.0269 | 2.5 | 1.625 | 0.500 | 0.090 |
| 300S162-27 | 27 | 50 | 0.0283 | 0.0269 | 3.0 | 1.625 | 0.500 | 0.090 |
| 300S200-27 | 27 | 50 | 0.0283 | 0.0269 | 3.0 | 2.0 | 0.625 | 0.110 |
| 350S162-27 | 27 | 50 | 0.0283 | 0.0269 | 3.5 | 1.625 | 0.500 | 0.090 |
| 350S200-27 | 27 | 50 | 0.0283 | 0.0269 | 3.5 | 2.0 | 0.625 | 0.110 |
| 362S162-27 | 27 | 50 | 0.0283 | 0.0269 | 3.625 | 1.625 | 0.500 | 0.090 |
| 362S200-27 | 27 | 50 | 0.0283 | 0.0269 | 3.625 | 2.0 | 0.625 | 0.110 |
| 400S162-27 | 27 | 50 | 0.0283 | 0.0269 | 4.0 | 1.625 | 0.500 | 0.090 |
| 400S200-27 | 27 | 50 | 0.0283 | 0.0269 | 4.0 | 2.0 | 0.625 | 0.110 |
| 550S162-27 | 27 | 50 | 0.0283 | 0.0269 | 5.5 | 1.625 | 0.500 | 0.090 |
| 550S200-27 | 27 | 50 | 0.0283 | 0.0269 | 5.5 | 2.0 | 0.625 | 0.110 |
| 600S162-27 ² | 27 | 50 | 0.0283 | 0.0269 | 6.0 | 1.625 | 0.500 | 0.090 |
| 600S200-27 ² | 27 | 50 | 0.0283 | 0.0269 | 6.0 | 2.0 | 0.625 | 0.110 |

For **SI**: 1 inch = 25.4 mm, 1 kip = 4448 N, 1 ksi = 6.895 MPa

¹ See Figure 1 for Section Profiles.

² Web height-to-thickness ratio exceeds 200 but is less than 260. Web must have bearing stiffeners at all support points and concentrated loads in accordance with AISI S100. No holes or punch-outs are permitted in the web at these locations.

³ Depth measured from outside face to outside face of flanges.

TABLE 3—SECTION PROPERTIES @ STRUCTURAL STUD AND TRACK LOCATION 1 ^{2,7}

| STUD SECTION | TRACK SECTION | Weight (lb/ft) | GROSS SECTION PROPERTIES | | | | | EFFECTIVE PROPERTIES (Based on F _y = 50 ksi) | | | | | | TORSIONAL SECTION PROPERTIES | | | | | | |
|-------------------------|-------------------------|----------------|-----------------------------------|-----------------------------------|---------------------|-----------------------------------|---------------------|---|---|---------------------------------------|---------------------------------------|----------------------|------------------------|------------------------------|---------------------------|-----------------------------------|----------------------|---------------------|-------|----------------------|
| | | | A _g (in ²) | I _x (in ⁴) | r _x (in) | I _y (in ⁴) | r _y (in) | I _{xe} ³ (in ⁴) | S _{xe} ⁴ (in ³) | M _{al} ⁵ (in.kip) | M _{ad} ⁶ (in.kip) | V _{ag} (lb) | V _{anet} (lb) | x _o (in) | JX1000 (in ⁴) | C _w (in ⁶) | m _c (in.) | r _o (in) | β | L _u (in.) |
| 250S162-33 | 250T162-33 | 0.757 | 0.222 | 0.234 | 1.026 | 0.086 | 0.623 | 0.23 | 0.163 | 4.87 | 4.905 | 1260 | 506 | -1.469 | 0.089 | 0.146 | 0.859 | 1.897 | 0.400 | 35.7 |
| 250S162-43 | 250T162-43 | 0.979 | 0.288 | 0.300 | 1.021 | 0.110 | 0.618 | 0.3 | 0.217 | 6.503 | 6.529 | 1886 | 573 | -1.456 | 0.195 | 0.184 | 0.852 | 1.883 | 0.402 | 35.7 |
| 250S162-54 ⁸ | 250T162-54 ⁸ | 1.217 | 0.358 | 0.369 | 1.016 | 0.134 | 0.613 | 0.369 | 0.288 | 8.614 | 8.839 | 2342 | 558 | -1.443 | 0.382 | 0.223 | 0.845 | 1.868 | 0.403 | 35.8 |
| 300S162-33 | 300T162-33 | 0.816 | 0.240 | 0.355 | 1.217 | 0.092 | 0.621 | 0.349 | 0.207 | 6.19 | 6.036 | 1260 | 422 | -1.392 | 0.096 | 0.205 | 0.826 | 1.950 | 0.491 | 35.1 |
| 300S162-43 | 300T162-43 | 1.055 | 0.310 | 0.456 | 1.212 | 0.118 | 0.616 | 0.456 | 0.275 | 8.241 | 8.484 | 2141 | 541 | -1.379 | 0.210 | 0.259 | 0.819 | 1.937 | 0.493 | 35.0 |
| 300S162-54 ⁸ | 300T162-54 ⁸ | 1.314 | 0.386 | 0.562 | 1.206 | 0.144 | 0.610 | 0.562 | 0.364 | 10.91 | 11.215 | 2873 | 567 | -1.366 | 0.412 | 0.314 | 0.812 | 1.922 | 0.495 | 35.0 |
| 300S200-33 | 300T200-33 | 0.929 | 0.273 | 0.417 | 1.236 | 0.163 | 0.772 | 0.396 | 0.233 | 6.973 | 6.838 | 1260 | 408 | -1.837 | 0.109 | 0.409 | 1.072 | 2.345 | 0.386 | 44.3 |
| 300S200-43 | 300T200-43 | 1.204 | 0.354 | 0.536 | 1.231 | 0.208 | 0.768 | 0.535 | 0.314 | 9.394 | 9.627 | 2141 | 523 | -1.825 | 0.240 | 0.519 | 1.065 | 2.331 | 0.387 | 44.3 |
| 300S200-54 | 300T200-54 | 1.500 | 0.441 | 0.662 | 1.225 | 0.256 | 0.762 | 0.662 | 0.405 | 12.123 | 12.852 | 2830 | 540 | -1.811 | 0.471 | 0.633 | 1.058 | 2.316 | 0.388 | 44.3 |
| 350S162-33 | 350T162-33 | 0.875 | 0.257 | 0.506 | 1.403 | 0.098 | 0.616 | 0.498 | 0.254 | 7.601 | 7.196 | 1134 | 531 | -1.323 | 0.103 | 0.277 | 0.796 | 2.025 | 0.573 | 34.6 |
| 350S162-43 | 350T162-43 | 1.132 | 0.333 | 0.650 | 1.398 | 0.124 | 0.611 | 0.65 | 0.337 | 10.097 | 10.133 | 2141 | 760 | -1.311 | 0.226 | 0.350 | 0.789 | 2.012 | 0.575 | 34.5 |
| 350S162-54 ⁸ | 350T162-54 ⁸ | 1.410 | 0.414 | 0.803 | 1.392 | 0.152 | 0.606 | 0.803 | 0.446 | 15.083 | 15.241 | 3372 | 942 | -1.298 | 0.442 | 0.426 | 0.782 | 1.997 | 0.578 | 34.5 |
| 350S200-33 | 350T200-33 | 0.990 | 0.290 | 0.592 | 1.428 | 0.172 | 0.771 | 0.563 | 0.286 | 8.548 | 8.123 | 1148 | 526 | -1.758 | 0.116 | 0.541 | 1.039 | 2.392 | 0.460 | 43.6 |
| 350S200-43 | 350T200-43 | 1.280 | 0.376 | 0.762 | 1.423 | 0.221 | 0.766 | 0.762 | 0.384 | 11.491 | 11.463 | 2141 | 743 | -1.745 | 0.255 | 0.687 | 1.032 | 2.379 | 0.462 | 43.6 |
| 350S200-54 | 350T200-54 | 1.596 | 0.469 | 0.943 | 1.418 | 0.271 | 0.760 | 0.943 | 0.494 | 14.798 | 15.398 | 3361 | 916 | -1.732 | 0.501 | 0.838 | 1.024 | 2.364 | 0.463 | 43.5 |
| 350S200-68 ⁸ | 350T200-68 ⁸ | 1.933 | 0.586 | 1.166 | 1.411 | 0.333 | 0.753 | 1.166 | 0.653 | 19.545 | 19.948 | 4194 | 892 | -1.715 | 0.993 | 1.018 | 1.014 | 2.345 | 0.465 | 43.5 |
| 362S162-33 | 362T162-33 | 0.889 | 0.261 | 0.549 | 1.449 | 0.099 | 0.615 | 0.54 | 0.266 | 7.968 | 7.491 | 1092 | 548 | -1.308 | 0.104 | 0.297 | 0.789 | 2.046 | 0.592 | 34.6 |
| 362S162-43 | 362T162-43 | 1.151 | 0.338 | 0.705 | 1.444 | 0.126 | 0.610 | 0.705 | 0.353 | 10.58 | 10.55 | 2141 | 815 | -1.295 | 0.229 | 0.376 | 0.782 | 2.033 | 0.594 | 34.4 |
| 362S162-54 ⁸ | 362T162-54 ⁸ | 1.434 | 0.421 | 0.871 | 1.438 | 0.154 | 0.604 | 0.871 | 0.467 | 15.799 | 15.881 | 3372 | 1011 | -1.282 | 0.450 | 0.457 | 0.774 | 2.019 | 0.597 | 34.4 |
| 362S200-33 | 362T200-33 | 1.003 | 0.295 | 0.642 | 1.476 | 0.175 | 0.770 | 0.611 | 0.299 | 8.956 | 8.470 | 1105 | 543 | -1.739 | 0.118 | 0.577 | 1.030 | 2.407 | 0.478 | 43.5 |
| 362S200-43 | 362T200-43 | 1.299 | 0.382 | 0.826 | 1.471 | 0.223 | 0.765 | 0.824 | 0.402 | 12.035 | 11.94 | 2141 | 798 | -1.727 | 0.259 | 0.734 | 1.024 | 2.394 | 0.480 | 43.4 |
| 362S200-54 | 362T200-54 | 1.620 | 0.476 | 1.022 | 1.465 | 0.275 | 0.759 | 1.022 | 0.517 | 15.49 | 16.042 | 3372 | 989 | -1.713 | 0.508 | 0.896 | 1.016 | 2.379 | 0.481 | 43.4 |
| 362S200-68 ⁸ | 362T200-68 ⁸ | 2.023 | 0.595 | 1.264 | 1.458 | 0.337 | 0.753 | 1.265 | 0.683 | 20.46 | 20.887 | 4361 | 998 | -1.696 | 1.008 | 1.089 | 1.006 | 2.360 | 0.484 | 43.3 |
| 400S162-33 | 400T162-33 | 0.93 | 0.274 | 0.689 | 1.585 | 0.102 | 0.610 | 0.678 | 0.304 | 9.103 | 8.374 | 983 | 592 | -1.262 | 0.109 | 0.363 | 0.768 | 2.116 | 0.644 | 34.3 |
| 400S162-43 | 400T162-43 | 1.21 | 0.355 | 0.886 | 1.579 | 0.130 | 0.605 | 0.886 | 0.403 | 12.071 | 11.82 | 2141 | 980 | -1.250 | 0.241 | 0.460 | 0.761 | 2.103 | 0.647 | 34.2 |
| 400S162-54 ⁸ | 400T162-54 ⁸ | 1.51 | 0.443 | 1.096 | 1.574 | 0.159 | 0.599 | 1.096 | 0.532 | 18.007 | 17.852 | 3372 | 1218 | -1.237 | 0.473 | 0.560 | 0.754 | 2.090 | 0.649 | 34.1 |
| 400S200-33 | 400T200-33 | 1.05 | 0.308 | 0.804 | 1.616 | 0.181 | 0.767 | 0.766 | 0.341 | 10.215 | 9.422 | 993 | 588 | -1.686 | 0.123 | 0.697 | 1.007 | 2.458 | 0.530 | 43.2 |
| 400S200-43 | 400T200-43 | 1.36 | 0.399 | 1.035 | 1.611 | 0.231 | 0.762 | 1.035 | 0.458 | 13.71 | 13.308 | 2141 | 963 | -1.674 | 0.270 | 0.886 | 1.000 | 2.445 | 0.531 | 43.0 |
| 400S200-54 | 400T200-54 | 1.69 | 0.497 | 1.282 | 1.606 | 0.284 | 0.756 | 1.282 | 0.589 | 17.623 | 16.481 | 3372 | 1195 | -1.660 | 0.531 | 1.083 | 0.993 | 2.430 | 0.533 | 43.0 |
| 400S200-68 ⁸ | 400T200-68 ⁸ | 2.11 | 0.621 | 1.588 | 1.599 | 0.349 | 0.749 | 1.588 | 0.777 | 23.273 | 23.773 | 4863 | 1350 | -1.643 | 1.053 | 1.318 | 0.983 | 2.412 | 0.536 | 42.9 |
| 550S162-33 | 550T162-33 | 1.110 | 0.326 | 1.453 | 2.110 | 0.113 | 0.588 | 1.432 | 0.446 | 13.208 | 11.873 | 702 | 702 | -1.113 | 0.130 | 0.713 | 0.697 | 2.457 | 0.795 | 33.6 |
| 550S162-43 | 550T162-43 | 1.439 | 0.423 | 1.872 | 2.104 | 0.144 | 0.583 | 1.872 | 0.624 | 18.687 | 16.852 | 1561 | 1195 | -1.102 | 0.287 | 0.905 | 0.691 | 2.446 | 0.797 | 33.4 |
| 550S162-54 ⁸ | 550T162-54 ⁸ | 1.795 | 0.528 | 2.321 | 2.098 | 0.176 | 0.577 | 2.321 | 0.821 | 24.567 | 22.798 | 3099 | 1879 | -1.089 | 0.563 | 1.105 | 0.684 | 2.433 | 0.800 | 33.3 |
| 550S200-33 | 550T200-33 | 1.224 | 0.360 | 1.679 | 2.161 | 0.201 | 0.748 | 1.607 | 0.473 | 14.711 | 13.491 | 707 | 702 | -1.506 | 0.143 | 1.326 | 0.925 | 2.738 | 0.698 | 42.2 |
| 550S200-43 | 550T200-43 | 1.587 | 0.466 | 2.166 | 2.155 | 0.258 | 0.743 | 2.162 | 0.704 | 21.073 | 19.028 | 1573 | 1192 | -1.494 | 0.316 | 1.691 | 0.918 | 2.725 | 0.700 | 42.0 |

(Continued)

TABLE 3—SECTION PROPERTIES @ STRUCTURAL STUD AND TRACK LOCATION 1 ^{2,7} (CONTINUED)

| STUD SECTION | TRACK SECTION | Weight (lb/ft) | GROSS SECTION PROPERTIES | | | | | EFFECTIVE PROPERTIES (Based on F _y = 50 ksi) | | | | | | TORSIONAL SECTION PROPERTIES | | | | | | |
|--------------------------|--------------------------|----------------|-----------------------------------|-----------------------------------|---------------------|-----------------------------------|---------------------|---|---|---------------------------------------|---------------------------------------|----------------------|------------------------|------------------------------|---------------------------|-----------------------------------|----------------------|---------------------|-------|----------------------|
| | | | A _g (in ²) | I _x (in ⁴) | r _x (in) | I _y (in ⁴) | r _y (in) | I _{xe} ³ (in ⁴) | S _{xe} ⁴ (in ³) | M _{al} ⁵ (in.kip) | M _{ad} ⁶ (in.kip) | V _{ag} (lb) | V _{anet} (lb) | x _o (in) | JX1000 (in ⁴) | C _w (in ⁶) | m _c (in.) | r _o (in) | β | L _u (in.) |
| 550S200-54 | 550T200-54 | 1.981 | 0.582 | 2.688 | 2.149 | 0.317 | 0.738 | 2.688 | 0.901 | 26.98 | 25.908 | 3123 | 1873 | -1.481 | 0.622 | 2.072 | 0.911 | 2.712 | 0.702 | 41.9 |
| 550S200-68 ⁸ | 550T200-68 ⁸ | 2.478 | 0.728 | 3.338 | 2.141 | 0.389 | 0.731 | 3.339 | 1.188 | 40.25 | 39.279 | 5352 | 2528 | -1.465 | 1.234 | 2.531 | 0.902 | 2.695 | 0.705 | 41.7 |
| 600S162-33 | 600T162-33 | 1.169 | 0.343 | 1.786 | 2.280 | 0.116 | 0.580 | 1.761 | 0.488 | 14.359 | 12.925 | 641 | 641 | -1.071 | 0.137 | 0.861 | 0.677 | 2.585 | 0.828 | 33.4 |
| 600S162-43 | 600T162-43 | 1.516 | 0.445 | 2.303 | 2.274 | 0.147 | 0.575 | 2.303 | 0.705 | 21.122 | 16.668 | 1425 | 1237 | -1.060 | 0.302 | 1.095 | 0.670 | 2.574 | 0.830 | 33.2 |
| 600S162-54 ⁸ | 600T162-54 ⁸ | 1.891 | 0.556 | 2.857 | 2.267 | 0.180 | 0.569 | 2.856 | 0.926 | 27.728 | 25.123 | 2827 | 1946 | -1.048 | 0.594 | 1.337 | 0.663 | 2.562 | 0.833 | 33.0 |
| 600S200-33 | 600T200-33 | 1.283 | 0.377 | 2.057 | 2.336 | 0.207 | 0.741 | 1.972 | 0.518 | 16.039 | 14.82 | 645 | 645 | -1.455 | 0.150 | 1.593 | 0.901 | 2.850 | 0.739 | 41.9 |
| 600S200-43 | 600T200-43 | 1.664 | 0.489 | 2.656 | 2.331 | 0.265 | 0.736 | 2.651 | 0.794 | 23.76 | 20.967 | 1435 | 1234 | -1.443 | 0.332 | 2.033 | 0.894 | 2.838 | 0.741 | 41.8 |
| 600S200-54 | 600T200-54 | 2.077 | 0.610 | 3.298 | 2.324 | 0.326 | 0.730 | 3.298 | 1.015 | 30.389 | 28.536 | 2847 | 1941 | -1.431 | 0.652 | 2.493 | 0.887 | 2.825 | 0.744 | 41.6 |
| 600S200-68 ⁸ | 600T200-68 ⁸ | 2.600 | 0.764 | 4.098 | 2.316 | 0.400 | 0.723 | 4.098 | 1.336 | 40.01 | 38.423 | 5352 | 2875 | -1.415 | 1.295 | 3.047 | 0.878 | 2.809 | 0.746 | 41.4 |
| 600S200-97 ⁸ | 600T200-97 ⁸ | 3.657 | 1.075 | 5.681 | 2.299 | 0.539 | 0.708 | 5.681 | 1.894 | 56.706 | 56.694 | 10634 | 3947 | -1.381 | 3.705 | 4.080 | 0.859 | 2.774 | 0.752 | 41.1 |
| 800S162-33 ¹ | 800T162-33 ¹ | 1.404 | 0.413 | 3.570 | 2.941 | 0.125 | 0.549 | 3.237 | 0.628 | 18.716 | 16.705 | 476 | 476 | -0.935 | 0.165 | 1.630 | 0.607 | 3.135 | 0.911 | 32.5 |
| 800S162-43 | 800T162-43 | 1.823 | 0.536 | 4.611 | 2.934 | 0.159 | 0.544 | 4.371 | 0.917 | 26.325 | 24.197 | 1056 | 1056 | -0.925 | 0.363 | 2.076 | 0.601 | 3.124 | 0.912 | 32.3 |
| 800S162-54 | 800T162-54 | 2.277 | 0.669 | 5.730 | 2.926 | 0.194 | 0.539 | 5.565 | 1.232 | 36.89 | 33.923 | 2094 | 2094 | -0.914 | 0.714 | 2.539 | 0.594 | 3.113 | 0.914 | 32.1 |
| 800S200-33 ¹ | 800T200-33 ¹ | 1.508 | 0.446 | 4.065 | 3.019 | 0.225 | 0.710 | 3.695 | 0.701 | 21.491 | 19.932 | 478 | 478 | -1.286 | 0.178 | 2.971 | 0.817 | 3.357 | 0.853 | 41.1 |
| 800S200-43 | 800T200-43 | 1.958 | 0.579 | 5.255 | 3.012 | 0.288 | 0.705 | 5.246 | 1.082 | 31.623 | 28.257 | 1062 | 1062 | -1.275 | 0.393 | 3.797 | 0.811 | 3.346 | 0.855 | 40.9 |
| 800S200-54 | 800T200-54 | 2.446 | 0.724 | 6.535 | 3.005 | 0.354 | 0.699 | 6.534 | 1.519 | 45.466 | 38.692 | 2105 | 2105 | -1.263 | 0.773 | 4.663 | 0.804 | 3.334 | 0.856 | 40.7 |
| 800S200-68 ⁸ | 800T200-68 ⁸ | 3.064 | 0.907 | 8.137 | 2.996 | 0.434 | 0.692 | 8.137 | 1.992 | 59.632 | 53.055 | 4223 | 3366 | -1.248 | 1.536 | 5.712 | 0.796 | 3.318 | 0.859 | 40.4 |
| 800S200-97 ⁸ | 800T200-97 ⁸ | 4.319 | 1.278 | 11.326 | 2.977 | 0.586 | 0.677 | 11.326 | 2.832 | 100.274 | 99.355 | 10888 | 6024 | -1.217 | 4.406 | 7.684 | 0.777 | 3.286 | 0.863 | 40.0 |
| 1000S200-54 | 1000T200-54 | 2.848 | 0.837 | 11.220 | 3.662 | 0.374 | 0.669 | 10.633 | 1.761 | 51.821 | 47.339 | 1669 | 1669 | -1.134 | 0.894 | 7.665 | 0.737 | 3.891 | 0.915 | 39.8 |
| 1000S200-68 | 1000T200-68 | 3.570 | 1.049 | 13.989 | 3.652 | 0.459 | 0.662 | 13.594 | 2.427 | 72.658 | 65.804 | 3347 | 3347 | -1.119 | 1.778 | 9.401 | 0.729 | 3.876 | 0.917 | 39.6 |
| 1000S200-97 | 1000T200-97 | 5.041 | 1.481 | 19.529 | 3.631 | 0.620 | 0.647 | 19.527 | 3.766 | 112.749 | 106.755 | 9774 | 7187 | -1.090 | 5.108 | 12.679 | 0.711 | 3.846 | 0.920 | 39.0 |
| 1200S200-54 ¹ | 1200T200-54 ¹ | 3.233 | 0.950 | 17.580 | 4.302 | 0.390 | 0.641 | 16.157 | 2.163 | 63.667 | 47.762 | 1383 | 1383 | -1.030 | 1.015 | 11.550 | 0.681 | 4.469 | 0.947 | 39.0 |
| 1200S200-68 | 1200T200-68 | 4.055 | 1.192 | 21.941 | 4.291 | 0.479 | 0.634 | 20.742 | 2.986 | 89.399 | 71.728 | 2772 | 2772 | -1.017 | 2.020 | 14.176 | 0.673 | 4.455 | 0.948 | 38.7 |
| 1200S200-97 | 1200T200-97 | 5.733 | 1.685 | 30.696 | 4.268 | 0.646 | 0.619 | 30.297 | 4.688 | 140.359 | 125.883 | 8085 | 7418 | -0.989 | 5.809 | 19.150 | 0.656 | 4.425 | 0.950 | 38.1 |
| 1400S200-54 ¹ | 1400T200-54 ¹ | 3.618 | 1.063 | 25.841 | 4.930 | 0.402 | 0.615 | 23.054 | 2.580 | 75.946 | 52.469 | 1181 | 1181 | -0.945 | 1.135 | 16.355 | 0.633 | 5.057 | 0.965 | 38.2 |
| 1400S200-68 | 1400T200-68 | 4.541 | 1.334 | 32.278 | 4.918 | 0.494 | 0.608 | 29.664 | 3.559 | 106.549 | 79.665 | 2365 | 2365 | -0.932 | 2.261 | 20.083 | 0.625 | 5.043 | 0.966 | 37.9 |
| 1400S200-97 | 1400T200-97 | 6.425 | 1.888 | 45.235 | 4.894 | 0.666 | 0.594 | 43.675 | 5.620 | 168.278 | 142.197 | 6894 | 6894 | -0.907 | 6.510 | 27.156 | 0.609 | 5.013 | 0.967 | 37.2 |

For SI: 1 lbf = 4.448 N, 1 kip = 4448 N, 1 inch = 25.4 mm, 1 lb/ft = 14.5939 N/m, 1 inch-kip = 112.984 N-m

¹ Web height-to-thickness ratio, h/t, exceeds 200. Web must have bearing stiffeners at all support points and concentrated loads.

² All properties are based on the full-unreduced cross section, away from web punch-outs, except for V_{anet}.

³ I_{xe} is for deflection calculation (the calculated deflection is for member without punch-outs)

⁴ S_{xe} is for strength calculations.

⁵ M_{al} is based on the compression flange fully braced. For other conditions of compression flange bracing, the allowable moment must be determined in accordance with AISI S100.

⁶ M_{ad} is calculated without the beneficial effect of sheathing to rotational stiffness. K_o = 0.

⁷ For definition of symbols, see page 2.

⁸ The calculated M_{al} and M_{ad} include the effect of cold work of forming.

TABLE 4—SECTION PROPERTIES OF NON-STRUCTURAL STUDS^{2,7}

| STUD SECTION | Weight (lb/ft) | GROSS SECTION PROPERTIES | | | | | EFFECTIVE PROPERTIES (Based on F _y = 50 ksi) | | | | | | TORSIONAL SECTION PROPERTIES | | | | | | |
|-------------------------|----------------|-----------------------------------|-----------------------------------|---------------------|-----------------------------------|---------------------|---|---|---------------------------------------|---------------------------------------|----------------------|------------------------|------------------------------|---------------------------|-----------------------------------|----------------------|---------------------|-------|----------------------|
| | | A _g (in ²) | I _x (in ⁴) | r _x (in) | I _y (in ⁴) | r _y (in) | I _{xe} ³ (in ⁴) | S _{xe} ⁴ (in ³) | M _{al} ⁵ (in.kip) | M _{ad} ⁶ (in.kip) | V _{ag} (lb) | V _{anet} (lb) | x _o (in) | JX1000 (in ⁴) | C _w (in ⁶) | m _c (in.) | r _o (in) | β | L _u (in.) |
| 250S162-27 | 0.62 | 0.18 | 0.193 | 1.029 | 0.072 | 0.626 | 0.184 | 0.130 | 3.91 | 3.8 | 843 | 420 | -1.476 | 0.049 | 0.122 | 0.863 | 1.905 | 0.400 | 35.7 |
| 300S162-27 | 0.67 | 0.20 | 0.293 | 1.220 | 0.077 | 0.624 | 0.279 | 0.166 | 4.97 | 4.64 | 730 | 302 | -1.399 | 0.053 | 0.171 | 0.830 | 1.958 | 0.490 | 35.1 |
| 300S200-27 | 0.76 | 0.22 | 0.344 | 1.238 | 0.135 | 0.775 | 0.312 | 0.177 | 5.30 | 5.15 | 741 | 296 | -1.845 | 0.060 | 0.340 | 1.077 | 2.353 | 0.385 | 44.4 |
| 350S162-27 | 0.72 | 0.21 | 0.417 | 1.406 | 0.081 | 0.619 | 0.399 | 0.204 | 6.11 | 5.51 | 618 | 357 | -1.331 | 0.056 | 0.230 | 0.800 | 2.033 | 0.571 | 34.7 |
| 350S200-27 | 0.81 | 0.24 | 0.488 | 1.431 | 0.143 | 0.773 | 0.444 | 0.217 | 6.51 | 6.27 | 626 | 353 | -1.765 | 0.064 | 0.449 | 1.043 | 2.401 | 0.459 | 43.7 |
| 362S162-27 | 0.73 | 0.22 | 0.452 | 1.452 | 0.082 | 0.618 | 0.433 | 0.214 | 6.41 | 5.72 | 595 | 368 | -1.315 | 0.057 | 0.247 | 0.793 | 2.054 | 0.590 | 34.6 |
| 362S200-27 | 0.82 | 0.24 | 0.529 | 1.479 | 0.144 | 0.773 | 0.482 | 0.228 | 6.83 | 6.53 | 602 | 364 | -1.747 | 0.065 | 0.479 | 1.035 | 2.415 | 0.477 | 43.6 |
| 400S162-27 | 0.77 | 0.23 | 0.568 | 1.588 | 0.085 | 0.613 | 0.544 | 0.245 | 7.33 | 6.36 | 536 | 397 | -1.270 | 0.060 | 0.302 | 0.772 | 2.124 | 0.643 | 34.4 |
| 400S200-27 | 0.86 | 0.25 | 0.662 | 1.620 | 0.150 | 0.770 | 0.605 | 0.261 | 7.80 | 7.26 | 542 | 394 | -1.693 | 0.067 | 0.578 | 1.011 | 2.466 | 0.529 | 43.2 |
| 550S162-27 | 0.91 | 0.27 | 1.196 | 2.114 | 0.093 | 0.591 | 1.134 | 0.328 | 9.83 | 8.89 | 383 | 383 | -1.120 | 0.071 | 0.592 | 0.701 | 2.464 | 0.794 | 33.7 |
| 550S200-27 | 1.00 | 0.30 | 1.381 | 2.164 | 0.166 | 0.751 | 1.270 | 0.348 | 10.36 | 10.21 | 386 | 386 | -1.513 | 0.079 | 1.099 | 0.929 | 2.745 | 0.696 | 33.7 |
| 600S162-27 ¹ | 0.96 | 0.28 | 1.470 | 2.284 | 0.096 | 0.583 | 1.366 | 0.359 | 10.74 | 9.67 | 350 | 350 | -1.078 | 0.075 | 0.715 | 0.681 | 2.592 | 0.827 | 33.5 |
| 600S200-27 ¹ | 1.05 | 0.31 | 1.692 | 2.340 | 0.171 | 0.744 | 1.493 | 0.379 | 11.35 | 11.14 | 352 | 352 | -1.462 | 0.083 | 1.320 | 0.905 | 2.857 | 0.738 | 42.1 |

For SI: 1 lbf = 4.448 N, 1 kip = 4448 N, 1 inch = 25.4 mm, 1 lb/ft = 14.5939 N/m, 1 inch-kip = 112.984 N-m

¹ Web height-to-thickness ratio, h/t, exceeds 200. Web must have bearing stiffeners at all support points and concentrated loads.

² All properties are based on the full-unreduced cross section, away from web punch-outs, except for V_{anet}.

³ I_{xe} is for deflection calculation (the calculated deflection is for member without punch-outs) and

⁴ S_{xe} is for strength calculations.

⁵ M_{al} is based on the compression flange fully braced. For other conditions of compression flange bracing, the allowable moment must be determined in accordance with AISI S100.

⁶ M_{ad} is calculated without the beneficial effect of sheathing to rotational stiffness. K_o = 0.

⁷ For definition of symbols, see page 2.

TABLE 5—SECTION PROPERTIES @ TRACK LOCATION 2 ^{2,6}

| SECTION | GROSS SECTION PROPERTIES | | | | | EFFECTIVE PROPERTIES (Based on $F_y = 50$ ksi) | | | | | TORSIONAL SECTION PROPERTIES | | | | | |
|------------|-----------------------------|-----------------------------|---------------|-----------------------------|---------------|--|----------------------------------|------------------------|------------------|--------------------|------------------------------|------------------------------|-----------------------------|----------------|---------------|---------|
| | A_g (in ²) | I_x (in ⁴) | r_x (in) | I_y (in ⁴) | r_y (in) | I_{xe}^3 (in ⁴) | S_{xe}^4 (in ³) | M_{al}^5 (in.kip) | V_{ag} (lb) | V_{anet} (lb) | x_o (in) | JX1000 (in ⁴) | C_w (in ⁶) | m_c (in.) | r_o (in) | β |
| 250T162-33 | 0.185 | 0.194 | 1.025 | 0.044 | 0.487 | 0.147 | 0.092 | 2.749 | 1260 | 506 | -0.993 | 0.074 | 0.047 | 0.581 | 1.508 | 0.567 |
| 250T162-43 | 0.239 | 0.248 | 1.020 | 0.055 | 0.482 | 0.202 | 0.130 | 3.900 | 1886 | 573 | -0.981 | 0.162 | 0.059 | 0.574 | 1.495 | 0.569 |
| 250T162-54 | 0.297 | 0.305 | 1.014 | 0.067 | 0.476 | 0.266 | 0.176 | 5.282 | 2342 | 558 | -0.968 | 0.317 | 0.071 | 0.566 | 1.480 | 0.573 |
| 300T162-33 | 0.202 | 0.294 | 1.206 | 0.047 | 0.480 | 0.226 | 0.121 | 3.608 | 1260 | 422 | -0.933 | 0.081 | 0.072 | 0.556 | 1.598 | 0.659 |
| 300T162-43 | 0.261 | 0.376 | 1.200 | 0.059 | 0.475 | 0.310 | 0.170 | 5.080 | 2141 | 541 | -0.921 | 0.177 | 0.091 | 0.549 | 1.586 | 0.662 |
| 300T162-54 | 0.325 | 0.463 | 1.194 | 0.071 | 0.469 | 0.406 | 0.23 | 6.839 | 2873 | 567 | -0.908 | 0.347 | 0.110 | 0.542 | 1.572 | 0.666 |
| 300T200-33 | 0.226 | 0.346 | 1.238 | 0.083 | 0.605 | 0.246 | 0.126 | 3.771 | 1260 | 408 | -1.242 | 0.090 | 0.129 | 0.724 | 1.855 | 0.552 |
| 300T200-43 | 0.293 | 0.444 | 1.232 | 0.105 | 0.600 | 0.340 | 0.178 | 5.323 | 2141 | 523 | -1.230 | 0.198 | 0.163 | 0.717 | 1.841 | 0.554 |
| 300T200-54 | 0.364 | 0.548 | 1.227 | 0.128 | 0.594 | 0.448 | 0.240 | 7.196 | 2830 | 540 | -1.216 | 0.389 | 0.197 | 0.710 | 1.827 | 0.557 |
| 350T162-33 | 0.219 | 0.418 | 1.381 | 0.049 | 0.472 | 0.327 | 0.152 | 4.561 | 1134 | 531 | -0.881 | 0.088 | 0.104 | 0.534 | 1.705 | 0.733 |
| 350T162-43 | 0.284 | 0.537 | 1.375 | 0.062 | 0.466 | 0.448 | 0.213 | 6.380 | 2141 | 760 | -0.869 | 0.192 | 0.131 | 0.527 | 1.692 | 0.736 |
| 350T162-54 | 0.353 | 0.662 | 1.369 | 0.075 | 0.460 | 0.585 | 0.285 | 8.544 | 3372 | 942 | -0.857 | 0.377 | 0.158 | 0.519 | 1.679 | 0.740 |
| 350T200-33 | 0.243 | 0.490 | 1.420 | 0.087 | 0.598 | 0.356 | 0.159 | 4.766 | 1148 | 526 | -1.180 | 0.097 | 0.185 | 0.699 | 1.940 | 0.630 |
| 350T200-43 | 0.315 | 0.630 | 1.414 | 0.111 | 0.593 | 0.489 | 0.223 | 6.684 | 2141 | 743 | -1.168 | 0.214 | 0.234 | 0.692 | 1.927 | 0.633 |
| 350T200-54 | 0.393 | 0.778 | 1.408 | 0.135 | 0.587 | 0.643 | 0.300 | 8.985 | 3361 | 916 | -1.155 | 0.419 | 0.283 | 0.685 | 1.913 | 0.636 |
| 350T200-68 | 0.490 | 0.960 | 1.400 | 0.164 | 0.579 | 0.846 | 0.407 | 12.181 | 4194 | 892 | -1.138 | 0.830 | 0.342 | 0.675 | 1.895 | 0.639 |
| 362T162-33 | 0.224 | 0.454 | 1.424 | 0.049 | 0.470 | 0.356 | 0.161 | 4.813 | 1092 | 548 | -0.869 | 0.089 | 0.113 | 0.528 | 1.733 | 0.749 |
| 362T162-43 | 0.289 | 0.582 | 1.418 | 0.062 | 0.464 | 0.487 | 0.225 | 6.723 | 2141 | 815 | -0.857 | 0.196 | 0.142 | 0.522 | 1.721 | 0.752 |
| 362T162-54 | 0.360 | 0.718 | 1.412 | 0.076 | 0.458 | 0.636 | 0.300 | 8.993 | 3372 | 1011 | -0.845 | 0.385 | 0.171 | 0.514 | 1.708 | 0.755 |
| 362T200-33 | 0.248 | 0.531 | 1.464 | 0.088 | 0.596 | 0.387 | 0.168 | 5.029 | 1105 | 543 | -1.166 | 0.099 | 0.200 | 0.693 | 1.964 | 0.648 |
| 362T200-43 | 0.321 | 0.682 | 1.459 | 0.112 | 0.591 | 0.532 | 0.235 | 7.043 | 2141 | 798 | -1.154 | 0.217 | 0.254 | 0.686 | 1.951 | 0.650 |
| 362T200-54 | 0.400 | 0.843 | 1.452 | 0.137 | 0.585 | 0.698 | 0.316 | 9.456 | 3372 | 1011 | -1.141 | 0.427 | 0.308 | 0.679 | 1.937 | 0.653 |
| 362T200-68 | 0.503 | 1.054 | 1.448 | 0.172 | 0.584 | 0.923 | 0.427 | 12.789 | 4415 | 1033 | -1.140 | 0.852 | 0.383 | 0.679 | 1.933 | 0.652 |
| 400T162-33 | 0.237 | 0.571 | 1.553 | 0.051 | 0.463 | 0.452 | 0.183 | 5.478 | 983 | 592 | -0.835 | 0.094 | 0.142 | 0.513 | 1.823 | 0.790 |
| 400T162-43 | 0.306 | 0.733 | 1.547 | 0.064 | 0.458 | 0.617 | 0.260 | 7.798 | 2141 | 980 | -0.823 | 0.208 | 0.179 | 0.506 | 1.811 | 0.793 |
| 400T162-54 | 0.382 | 0.905 | 1.540 | 0.078 | 0.452 | 0.804 | 0.347 | 10.395 | 3372 | 1218 | -0.811 | 0.407 | 0.216 | 0.499 | 1.798 | 0.797 |
| 400T200-33 | 0.261 | 0.665 | 1.597 | 0.091 | 0.590 | 0.491 | 0.184 | 5.499 | 993 | 588 | -1.125 | 0.104 | 0.252 | 0.676 | 2.041 | 0.696 |
| 400T200-43 | 0.338 | 0.855 | 1.591 | 0.115 | 0.585 | 0.672 | 0.273 | 8.166 | 2141 | 963 | -1.113 | 0.229 | 0.320 | 0.669 | 2.028 | 0.699 |
| 400T200-54 | 0.421 | 1.057 | 1.585 | 0.141 | 0.579 | 0.881 | 0.365 | 10.925 | 3372 | 1195 | -1.100 | 0.449 | 0.388 | 0.662 | 2.014 | 0.702 |
| 400T162-33 | 0.525 | 1.306 | 1.577 | 0.171 | 0.571 | 1.157 | 0.492 | 14.744 | 4863 | 1350 | -1.084 | 0.890 | 0.469 | 0.652 | 1.997 | 0.705 |
| 550T162-33 | 0.289 | 1.213 | 2.051 | 0.055 | 0.437 | 0.982 | 0.250 | 7.485 | 702 | 702 | -0.723 | 0.115 | 0.301 | 0.459 | 2.218 | 0.894 |
| 550T162-43 | 0.374 | 1.562 | 2.044 | 0.070 | 0.432 | 1.345 | 0.425 | 12.726 | 1561 | 1195 | -0.713 | 0.254 | 0.379 | 0.453 | 2.207 | 0.896 |
| 550T162-54 | 0.467 | 1.934 | 2.036 | 0.085 | 0.426 | 1.745 | 0.562 | 16.822 | 3099 | 1879 | -0.701 | 0.498 | 0.459 | 0.446 | 2.195 | 0.898 |
| 550T200-33 | 0.313 | 1.392 | 2.111 | 0.099 | 0.564 | 1.033 | 0.255 | 7.639 | 707 | 702 | -0.989 | 0.125 | 0.533 | 0.615 | 2.398 | 0.830 |

(Continued)

TABLE 5—SECTION PROPERTIES @ TRACK LOCATION 2 ^{2,6} (CONTINUED)

| SECTION | GROSS SECTION PROPERTIES | | | | | EFFECTIVE PROPERTIES (Based on F _y = 50 ksi) | | | | | TORSIONAL SECTION PROPERTIES | | | | | |
|--------------------------|--------------------------------------|--------------------------------------|------------------------|--------------------------------------|------------------------|---|--|--|-------------------------|---------------------------|------------------------------|------------------------------|--------------------------------------|-------------------------|------------------------|-------|
| | A _g (in ²) | I _x (in ⁴) | r _x (in) | I _y (in ⁴) | r _y (in) | I _{xe} ³ (in ⁴) | S _{xe} ⁴ (in ³) | M _{al} ⁵ (in.kip) | V _{ag} (lb) | V _{anet} (lb) | x _o (in) | JX1000 (in ⁴) | C _w (in ⁶) | m _c (in.) | r _o (in) | β |
| 550T200-43 | 0.405 | 1.794 | 2.104 | 0.127 | 0.559 | 1.455 | 0.426 | 12.748 | 1573 | 1192 | -0.978 | 0.275 | 0.676 | 0.608 | 2.387 | 0.832 |
| 550T200-54 | 0.506 | 2.224 | 2.097 | 0.155 | 0.553 | 1.895 | 0.589 | 17.635 | 3123 | 1873 | -0.966 | 0.540 | 0.823 | 0.601 | 2.374 | 0.835 |
| 550T200-68 | 0.632 | 2.758 | 2.088 | 0.188 | 0.545 | 2.476 | 0.786 | 23.541 | 5352 | 2528 | -0.950 | 1.072 | 0.998 | 0.591 | 2.358 | 0.838 |
| 600T162-33 | 0.306 | 1.497 | 2.212 | 0.056 | 0.429 | 1.179 | 0.273 | 8.182 | 641 | 641 | -0.693 | 0.122 | 0.369 | 0.444 | 2.358 | 0.914 |
| 600T162-43 | 0.397 | 1.928 | 2.205 | 0.071 | 0.424 | 1.596 | 0.401 | 12.001 | 1425 | 1237 | -0.683 | 0.269 | 0.465 | 0.438 | 2.347 | 0.915 |
| 600T162-54 | 0.495 | 2.389 | 2.197 | 0.086 | 0.418 | 2.150 | 0.587 | 17.561 | 2827 | 1946 | -0.672 | 0.528 | 0.563 | 0.431 | 2.335 | 0.917 |
| 600T200-33 | 0.330 | 1.710 | 2.277 | 0.102 | 0.555 | 1.242 | 0.280 | 8.381 | 645 | 645 | -0.951 | 0.132 | 0.654 | 0.596 | 2.529 | 0.859 |
| 600T200-43 | 0.428 | 2.205 | 2.270 | 0.129 | 0.550 | 1.934 | 0.462 | 13.847 | 1435 | 1234 | -0.940 | 0.290 | 0.830 | 0.590 | 2.518 | 0.861 |
| 600T200-54 | 0.534 | 2.735 | 2.263 | 0.158 | 0.544 | 2.344 | 0.673 | 20.164 | 2847 | 1941 | -0.928 | 0.570 | 1.011 | 0.583 | 2.506 | 0.863 |
| 600T200-68 | 0.668 | 3.394 | 2.254 | 0.192 | 0.537 | 3.059 | 0.896 | 26.840 | 5352 | 2875 | -0.913 | 1.132 | 1.225 | 0.574 | 2.490 | 0.866 |
| 600T200-97 | 0.939 | 4.690 | 2.235 | 0.255 | 0.521 | 4.564 | 1.393 | 41.721 | 10634 | 3947 | -0.882 | 3.238 | 1.611 | 0.555 | 2.458 | 0.871 |
| 800T162-33 ¹ | 0.375 | 3.035 | 2.845 | 0.060 | 0.399 | 2.152 | 0.370 | 11.091 | 476 | 476 | -0.594 | 0.150 | 0.721 | 0.391 | 2.934 | 0.959 |
| 800T162-43 | 0.487 | 3.918 | 2.837 | 0.076 | 0.394 | 3.110 | 0.570 | 17.056 | 1056 | 1056 | -0.585 | 0.330 | 0.911 | 0.385 | 2.923 | 0.960 |
| 800T162-54 | 0.608 | 4.864 | 2.828 | 0.092 | 0.388 | 4.233 | 0.827 | 24.760 | 2094 | 2094 | -0.575 | 0.649 | 1.103 | 0.379 | 2.912 | 0.961 |
| 800T200-33 ¹ | 0.399 | 3.415 | 2.926 | 0.109 | 0.523 | 2.285 | 0.384 | 11.488 | 478 | 478 | -0.827 | 0.159 | 1.283 | 0.534 | 3.085 | 0.928 |
| 800T200-43 | 0.518 | 4.412 | 2.918 | 0.139 | 0.517 | 3.312 | 0.590 | 17.657 | 1062 | 1062 | -0.817 | 0.351 | 1.629 | 0.527 | 3.074 | 0.929 |
| 800T200-54 | 0.647 | 5.482 | 2.910 | 0.169 | 0.511 | 4.527 | 0.858 | 25.678 | 2105 | 2105 | -0.806 | 0.691 | 1.986 | 0.521 | 3.063 | 0.931 |
| 800T200-68 | 0.811 | 6.818 | 2.900 | 0.206 | 0.504 | 6.140 | 1.250 | 37.419 | 4223 | 3366 | -0.792 | 1.374 | 2.411 | 0.512 | 3.048 | 0.933 |
| 800T200-97 | 1.143 | 9.468 | 2.879 | 0.273 | 0.489 | 9.242 | 2.144 | 64.203 | 10888 | 6024 | -0.763 | 3.939 | 3.179 | 0.494 | 3.018 | 0.936 |
| 1000T200-54 | 0.760 | 9.524 | 3.539 | 0.177 | 0.483 | 7.599 | 1.117 | 33.432 | 1669 | 1669 | -0.713 | 0.812 | 3.341 | 0.471 | 3.642 | 0.962 |
| 1000T200-68 | 0.953 | 11.864 | 3.528 | 0.215 | 0.475 | 10.390 | 1.631 | 48.828 | 3347 | 3347 | -0.700 | 1.615 | 4.058 | 0.462 | 3.628 | 0.963 |
| 1000T200-97 | 1.346 | 16.534 | 3.505 | 0.285 | 0.460 | 16.177 | 2.863 | 85.722 | 9774 | 7187 | -0.674 | 4.641 | 5.329 | 0.446 | 3.599 | 0.965 |
| 1200T200-54 ¹ | 0.874 | 15.087 | 4.156 | 0.183 | 0.458 | 11.631 | 1.391 | 41.635 | 1383 | 1383 | -0.641 | 0.933 | 5.092 | 0.429 | 4.230 | 0.977 |
| 1200T200-68 | 1.096 | 18.818 | 4.144 | 0.222 | 0.451 | 15.959 | 2.025 | 60.638 | 2772 | 2772 | -0.629 | 1.857 | 6.186 | 0.422 | 4.215 | 0.978 |
| 1200T200-97 | 1.549 | 26.292 | 4.119 | 0.295 | 0.436 | 25.324 | 3.587 | 107.393 | 8085 | 7418 | -0.604 | 5.342 | 8.178 | 0.406 | 4.186 | 0.979 |
| 1400T200-54 ¹ | 0.987 | 22.399 | 4.764 | 0.187 | 0.436 | 16.725 | 1.682 | 50.372 | 1181 | 1181 | -0.582 | 1.054 | 7.250 | 0.395 | 4.819 | 0.985 |
| 1400T200-68 | 1.238 | 27.965 | 4.752 | 0.228 | 0.429 | 22.963 | 2.437 | 72.971 | 2365 | 2365 | -0.570 | 2.099 | 8.811 | 0.387 | 4.805 | 0.986 |
| 1400T200-97 | 1.753 | 39.152 | 4.726 | 0.302 | 0.415 | 36.753 | 4.324 | 129.454 | 6894 | 6894 | -0.548 | 6.043 | 11.652 | 0.372 | 4.776 | 0.987 |

For SI: 1 lbf = 4.448 N, 1 kip = 4448 N, 1 inch = 25.4 mm, 1 lb/ft = 14.5939 N/m, 1 inch-kip = 112.984 N-m

¹ Web height-to-thickness ratio, h/t, exceeds 200. Web must have bearing stiffeners at all support points and concentrated loads.

² All properties are based on the full-unreduced cross section, away from web punch-outs, except for V_{anet}

³ I_{xe} is for deflection calculation (the calculated deflection is for member without punch-outs)

⁴ S_{xe} is for strength calculations.

⁵ M_{al} is based on the compression flange fully braced. For other conditions of compression flange bracing, the allowable moment must be determined in accordance with AISI S100.

⁶ For definition of symbols, see page 2.

TABLE 6—ALLOWABLE WEB CRIPPLING LOADS FOR STRUCTURAL STUDS (lbs)^{1,3,4}

| MEMBER DESIGNATION | Condition 1 | Condition 2 | Condition 3 | Condition 4 |
|--------------------------|-----------------------------|---------------------------------|-----------------------------|---------------------------------|
| | End One Flange Loading | Interior One Flange Loading | End Two Flange Loading | Interior Two Flange Loading |
| | Min. Bearing Length = 2 in. | Min. Bearing Length = 3.625 in. | Min. Bearing Length = 2 in. | Min. Bearing Length = 3.625 in. |
| 250S162-33 | 325 | 664 | 262 | 783 |
| 250S162-43 | 534 | 1134 | 461 | 1340 |
| 250S162-54 | 813 | 1781 | 741 | 2116 |
| 300S162-33 | 319 | 657 | 244 | 755 |
| 300S162-43 | 524 | 1125 | 436 | 1301 |
| 300S162-54 | 800 | 1768 | 706 | 2061 |
| 300S200-33 | 309 | 617 | 242 | 742 |
| 300S200-43 | 512 | 1068 | 432 | 1281 |
| 300S200-54 | 783 | 1693 | 701 | 2034 |
| 350S162-33 | 313 | 652 | 228 | 730 |
| 350S162-43 | 516 | 1117 | 413 | 1264 |
| 350S162-54 | 789 | 1757 | 675 | 2012 |
| 350S200-33 | 303 | 612 | 226 | 717 |
| 350S200-43 | 503 | 1061 | 409 | 1245 |
| 350S200-54 | 772 | 1682 | 670 | 1985 |
| 350S200-68 | 1188 | 2669 | 1094 | 3174 |
| 362S162-33 | 311 | 650 | 225 | 724 |
| 362S162-43 | 514 | 1115 | 408 | 1256 |
| 362S162-54 | 786 | 1754 | 668 | 2000 |
| 362S200-33 | 302 | 610 | 222 | 711 |
| 362S200-43 | 501 | 1059 | 404 | 1237 |
| 362S200-54 | 769 | 1679 | 662 | 1973 |
| 362S200-68 | 1184 | 2665 | 1084 | 3158 |
| 400S162-33 | 307 | 647 | 214 | 707 |
| 400S162-43 | 508 | 1109 | 392 | 1231 |
| 400S162-54 | 778 | 1746 | 647 | 1966 |
| 400S200-33 | 298 | 607 | 212 | 694 |
| 400S200-43 | 496 | 1053 | 388 | 1212 |
| 400S200-54 | 762 | 1672 | 641 | 1939 |
| 400S200-68 | 1174 | 2654 | 1055 | 3111 |
| 550S162-33 | 292 | 633 | 175 | 645 |
| 550S162-43 | 487 | 1089 | 336 | 1142 |
| 550S162-54 | 751 | 1718 | 571 | 1844 |
| 550S200-33 | 284 | 594 | 173 | 633 |
| 550S200-43 | 475 | 1034 | 333 | 1124 |
| 550S200-54 | 734 | 1644 | 566 | 1819 |
| 550S200-68 | 1137 | 2616 | 951 | 2944 |
| 600S162-33 | 288 | 629 | 163 | 627 |
| 600S162-43 | 481 | 1082 | 319 | 1115 |
| 600S162-54 | 742 | 1709 | 548 | 1807 |
| 600S200-33 | 279 | 590 | 161 | 615 |
| 600S200-43 | 469 | 1028 | 316 | 1098 |
| 600S200-54 | 726 | 1636 | 543 | 1782 |
| 600S200-68 | 1126 | 2604 | 920 | 2894 |
| 600S200-97 | 2196 | 5269 | 2007 | 6029 |
| 800S162-33 ² | --- | --- | --- | --- |
| 800S162-43 | 458 | 1060 | 258 | 1018 |
| 800S162-54 | 712 | 1678 | 465 | 1675 |
| 800S200-33 ² | --- | --- | --- | --- |
| 800S200-43 | 447 | 1007 | 256 | 1002 |
| 800S200-54 | 696 | 1606 | 461 | 1652 |
| 800S200-68 | 1086 | 2563 | 807 | 2714 |
| 800S200-97 | 2133 | 5200 | 1823 | 5731 |
| 1000S200-54 | 670 | 1580 | 389 | 1537 |
| 1000S200-68 | 1051 | 2526 | 709 | 2555 |
| 1000S200-97 | 2077 | 5139 | 1663 | 5471 |
| 1200S200-54 ² | --- | --- | --- | --- |
| 1200S200-68 | 1020 | 2493 | 621 | 2413 |
| 1200S200-97 | 2027 | 5084 | 1519 | 5237 |
| 1400S200-54 ² | --- | --- | --- | --- |
| 1400S200-68 | 991 | 2463 | 539 | 2282 |
| 1400S200-97 | 1982 | 5033 | 1387 | 5022 |

For SI: 1 inch = 25.4 mm, 1 pound = 4.4482 N

¹ Values are based on full-unreduced cross section of the member away from punch-outs, where the clear distance between the edge of the bearing and the edge of the punch-out is larger than 2 times the full-depth of the web.

² Web depth-to-thickness ratio exceeds 200. Web must have bearing stiffeners at all support points and concentrated loads.

³ Flanges are fastened to the support and are stiffened or partially stiffened.

⁴ See Figure 2 for web crippling conditions.

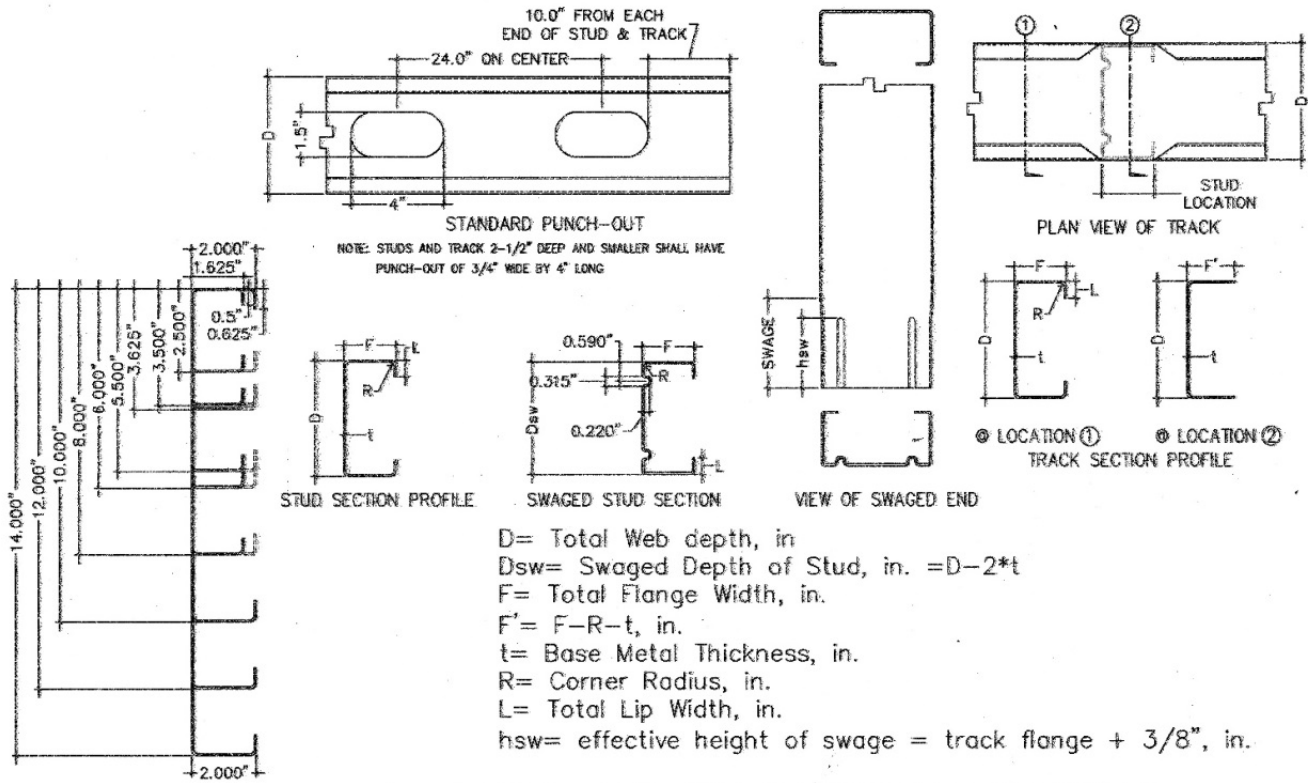
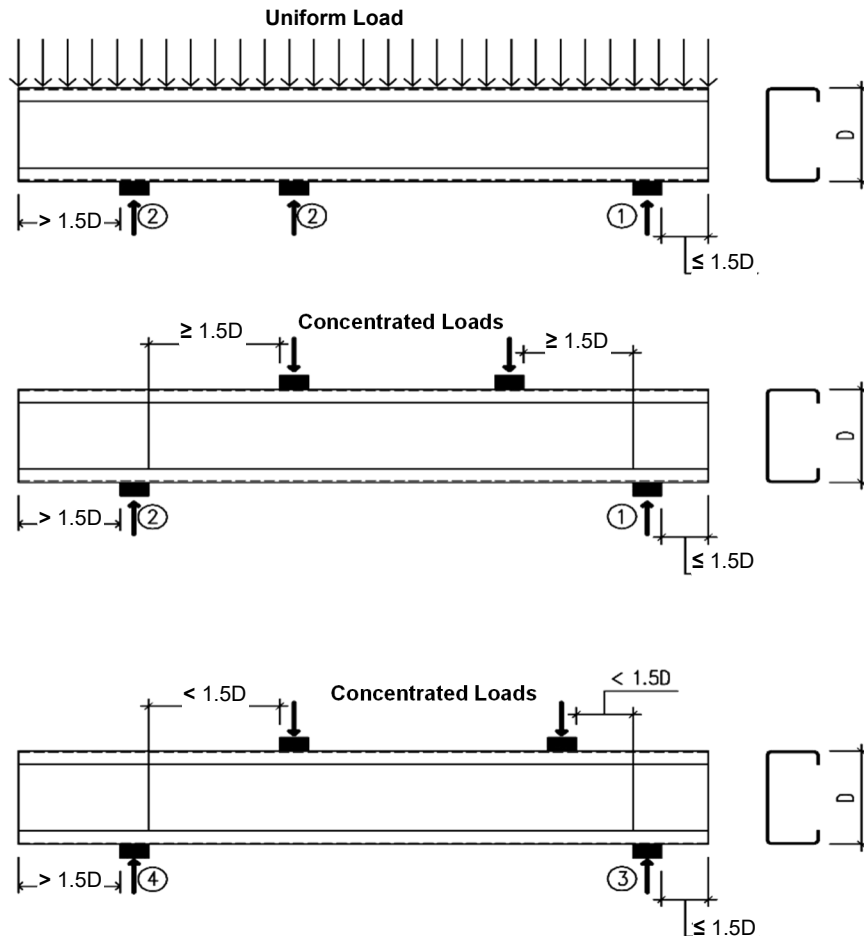


FIGURE 1—STUD AND TRACK SECTION PROFILES



① is the web crippling condition number

FIGURE 2—WEB CRIPPLING CONDITIONS

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****DIVISION: 09 00 00—FINISHES****Section: 09 22 16.13—Non-Structural Metal Stud Framing****REPORT HOLDER:****STALO FRAMES****EVALUATION SUBJECT:****COLD-FORMED STEEL STUDS, TRACKS, AND JOISTS****1.0 REPORT PURPOSE AND SCOPE****Purpose:**

The purpose of this evaluation report supplement is to indicate that Cold-Formed Steel Studs, Tracks, and Joists, described in ICC-ES evaluation report ESR-4738, has also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2020 *Florida Building Code—Building*

2.0 CONCLUSIONS

The Cold-Formed Steel Studs, Tracks, and Joists, described in Sections 2.0 through 7.0 of ICC-ES evaluation report ESR-4738, comply with the 2020 *Florida Building Code—Building*. The design requirements shall be determined in accordance with the *Florida Building Code—Building*. The installation requirements noted in ICC-ES evaluation report ESR-4738 for the 2018 *International Building Code*® meet the requirements of the *Florida Building Code—Building*.

Use of the Cold-Formed Steel Studs, Tracks, and Joists has also been found to be in compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* with the following exceptions:

- Cold-formed steel members of base metal thickness thinner than 20 gauge shall be galvanized in accordance with ASTM A1003 with a minimum metallic coating of G90 as specified in Section 2222.6 of the *Florida Building Code—Building*.
- The allowable moment values, M_{al} and M_{ad} , for the members in Table 3 of the evaluation report ESR-4738 with Footnote 8 include the effect of cold-work of forming. These members are outside the scope of this supplemental report for High-Velocity Hurricane Zones according to Section 2222.3.5 of the *Florida Building Code—Building*.

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, reissued June 2022.