ICC
EVALUATION
SERVICE

## DIVISION: 0500 00-METALS <br> Section: 0540 00-Cold-Formed Metal Framing

DIVISION: 0900 00—FINISHES
Section: 0922 16.13-Non-Structural Metal Stud Framing

## REPORT HOLDER:

## CLARKDIETRICH ${ }^{\circledR}$ BUILDING SYSTEMS

## EVALUATION SUBJECT:

## TRAKLOC ${ }^{\circledR}$ NONLOAD-BEARING WALL STUD FRAMING SYSTEM

### 1.0 EVALUATION SCOPE

Compliance with the following codes:
2015 and 2012 International Building Code ${ }^{\circledR}$ (IBC)

## Property evaluated:

Structural

### 2.0 USES

The TRAKLOC nonload-bearing wall steel framing system is used for framing of interior nonload-bearing walls.

### 3.0 DESCRIPTION

### 3.1 General:

The TRAKLOC nonload-bearing wall steel framing system is constructed from the TRAKLOC studs and tracks which are available in four depths and four material thicknesses as noted in Table 2. The studs and tracks have a twist and lock system that permits stud installation into the top and bottom tracks without the use of fasteners. The TRAKLOC studs are available as single-unit fixed-length studs and as two-part adjustable-length studs.
3.1.1 TRAKLOC Fixed Length Stud: The TRAKLOC Fixed Length Stud (TLF) is not adjustable and is a single piece component. It is swaged at each end to interlock with TRAKLOC Track. The TLF is provided to job specific fixed lengths. The single-unit fixed-length studs (TLF) have the designation xxxTLFxxx-xx.
3.1.2 TRAKLOC Adjustable Stud: The TRAKLOC Adjustable Stud (TLA) is a two-piece stud that is adjustable in length at the top of the stud. It is used where small
allowances for live-load and/or seismic-induced inter-floor vertical deflection is not needed. The adjustable-length studs are made up of two parts, the outer stud base (TSO) and the short inner stud TRAKLOC extension piece (TSE). See Figure 3. The TSE is fitted into the TSO, allowing the length of the TRAKLOC stud to be adjusted in the field. The TRAKLOC Adjustable Studs (TLA) have the designation xxxTLAxxx-xx.
3.1.3 TRAKLOC Deflection Stud: The TRAKLOC Deflection Stud (TLD) is a two-piece stud that is adjustable in length to accommodate small allowances for live-load and/or seismic-induced inter-floor vertical deflection. The short inner stud TRAKLOC extension insert (TSE) has slots cut out of the flanges to allow the drywall screw to penetrate through the drywall and the outer portion of the stud (TSO) while passing through the slot. The slot allows the drywall to be attached while still allowing for deflection at the head-of-wall joint. See Figure 3. The TSE is fitted into the TSO, allowing the length of the TRAKLOC stud to be adjusted in the field. The TRAKLOC Deflection Studs (TLD) have the designation xxxTLDxxx-xx.
3.1.4 TRAKLOC Extension Insert: The TRAKLOC extension insert (TSE) is used with the TLA and TLD to allow for small amounts of vertical deflection. It has a base metal thickness of 33 mils. The minimum overall length of the TSE is 12 inches ( 305 mm ) with a required minimum overlap length of 8 inches ( 204 mm ) and a maximum unlapped length of 4 inches ( 102 mm ). It is manufactured without web punch-outs, and with and without flange punch-outs. The flange punch-outs, when present, are $3 / 4$-inch by 3.0 inch ( 19 mm by 76 mm ). The TSE without flange punch-outs is used with the TSO for the adjustable length studs (TLA). The TSE with flange punch-outs is used with the TSO for the deflection stud (TLD). See Figure 3.
3.1.5 TRAKLOC Elevator Stud: The TRAKLOC Elevator Stud (TLE) is comprised of two approximately equal length TSO \& TSE parts of like thicknesses and is supplied in collapsed or retracted position to accommodate transport in a building elevator. It is then extended (telescoped) to the required fully extended length at the point of installation. The minimum overlap length for the elevator studs (TLE) is 11 inches ( 280 mm ). The TSE and TSO components for use with the elevator stud are manufactured with web punch-outs. Each component is approximately 6 inches ( 152 mm ) longer than one-half of the required span (telescoped) length. The TRAKLOC Elevator Studs (TLE) have the designation xxxTLExxx-xx.

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3.1.6 TRAKLOC Track: The TRAKLOC Track has a V-groove rolled into the flanges of the track to match the swaged ends of the TRAKLOC stud and dimples pressed into the center of the web. The TRAKLOC Track is typically provided in 10 foot ( 3048 mm ) lengths. Custom lengths are available. The tracks are channel-shaped with an inward ridge to twist and lock the studs to the track and have the designation xxxTTSxxx-xx. See Figure 1 for stud and track configurations. See Figure 2 for punch-out configurations.
3.1.7 TRAKLOC Punch-outs: The TLF fixed length stud and the TSO for the adjustable length studs (TLA) and the deflection studs (TLD) are manufactured with web punchouts. The punch-outs are $3 / 4$-inch by 4.0 inches $(19 \mathrm{~mm}$ by 102 mm ) for TSOs with web depth of less than 3 inches ( 76 mm ). For all other TSO web depths the punch-outs are $11 / 2$-inches by 4.0 inches ( 38 mm by 102 mm ). Punch-outs are spaced a minimum of 24 inches $(610 \mathrm{~mm})$ on center along the centerline of the TSO, with a minimum distance of 10 inches ( 254 mm ) from the end of the member to the near edge of the punch-out.

### 3.2 Material:

3.2.1 Steel: The 24 mil studs and tracks are formed from coils of steel complying with ASTM A1003, NS57. All other studs and tracks are formed from coils of steel complying with ASTM A1003, NS33. The uncoated minimum base-metal thickness is specified in Table 2. The coating on the steel is a metallic coating conforming to ASTM A653/A653M with a minimum G40 (Z120) coating.
3.2.2 Gypsum Wallboard: Gypsum wallboard must be a minimum of $5 / 8$-inch ( 15.9 mm ) thick and Type X, complying with ASTM C1396 and manufactured by of the following companies: American Gypsum; CertainTeed; Georgia Pacific; Continental; National Gypsum; or United States Gypsum.
3.2.3 Fasteners: Fasteners attaching the gypsum wallboard to the studs and tracks must be No. 6, Type S, fine thread drywall bugle head screws conforming to ASTM C1002.

### 4.0 DESIGN AND INSTALLATION

### 4.1 Design:

The allowable values and tabulated limiting heights for both non-composite and composite designs are for use with the Allowable Strength Design (ASD).
4.1.1 Section Properties: The properties in Tables 3, 4, and 5 have been determined in accordance with the applicable edition of the North American Specification for Design of Cold-Formed Steel Structural Members (AISI S100).
4.1.2 Non-Composite: The limiting wall heights provided in Table 6, 7, 8, 9, 10, 11, 12, and 13 were determined by an all steel based design using the section properties in Tables 3 and 4 for simple spans.
4.1.3 Composite: The limiting wall heights provided in Tables 14, 15, and 16 were determined based on the composite action between the gypsum board and the steel studs.

### 4.2 Installation:

Installation of the TRAKLOC nonload-bearing wall steel framing system must be in accordance with the applicable
code, the approved construction documents and this report. If there is a conflict between this report and the documents submitted for approval, this report governs. The approved plans must be available on the jobsite at all times during installation.

### 5.0 CONDITIONS OF USE

The TRAKLOC nonload-bearing wall steel framing system described in this report complies with, or is 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 TRAKLOC nonload-bearing wall steel framing system is manufactured, identified and installed in accordance with this report, the approved plans, and the manufacturer's published installation instructions.
5.2 The composite wall assemblies are limited to interior nonload-bearing installations where the superimposed axial load is zero pounds (zero newtons).
5.3 Design of the attachment of the wall to the surrounding structure is outside the scope of this report.
5.4 Calculations and drawings demonstrating compliance with this report must be submitted to the code official for each project. The calculations and construction documents 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.
5.5 Installation of the gypsum wallboard must meet the requirements of ASTM C840 or GA-216.
5.6 TRAKLOC studs and tracks are manufactured at the facilities listed in Table 1.

### 6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC Acceptance Criteria for Cold-formed Steel Framing Members (AC46), Approved June 2012 (editorially revised April 2015).
6.2 Data in accordance with the ICC Acceptance Criteria for Cold-formed Steel Framing Members-Interior Nonload-Bearing Wall Assemblies (AC86), Approved May 2012 (editorially revised August 2015).

### 7.0 IDENTIFICATION

7.1 Each TRAKLOC stud and track must have a legible label or stamp, at a maximum spacing of 96 inches (2413 mm) on center, indicating the member designation; manufacturer's name or initials (CD); the minimum yield strength if other than $33 \mathrm{ksi}(230 \mathrm{MPa})$; the designation "NS"; and the evaluation report number (ESR-1464). The TRAKLOC extension insert must have a legible label or stamp indicating the member designation (TSE); the manufacturer's name or initials (CD); and the evaluation report number (ESR-1464).
7.2 The report holder's contact information is:

CLARKDIETRICH ${ }^{\circledR}$ BUILDING SYSTEMS 9050 CENTRE POINTE DRIVE, SUITE 400 WEST CHESTER, OHIO 45069 (513) 870-1100 www.clarkdietrich.com

TABLE 1-MANUFACTURING LOCATIONS

| ClarkDietrichBuilding Systems - Woodland <br> 1685 Tide Court <br> Woodland, CA 95776 | ClarkDietrich ${ }^{\circledR}$ Building Systems - Vienna <br> 1455 Ridge Road <br> Vienna Township, OH 44473 |
| :---: | :---: |

TABLE 2-TRAKLOC STUDS AND TRACKS

| STUDS ${ }^{1,2}$ |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MEMBER DESIGNATION ${ }^{4}$ | WEIGHT <br> (lb./ft.) | DEPTH <br> (in.) | FLANGE <br> (in.) | $\begin{aligned} & \text { LIP } \\ & \text { (in.) } \end{aligned}$ | $\underset{\text { (mils) }}{\text { THICKNESS }}$ | MINIMUM BASE-METAL THICKNESS ${ }^{3}$ (in.) | DESIGN THICKNESS (in.) |
| 250__ 125-18 | 0.346 | 2.5 | 1.25 | 0.3125 | 18 | 0.0179 | 0.0188 |
| 250_125-24 | 0.456 |  |  |  | 24 | 0.0238 | 0.0250 |
| 250 _ 125-30 | 0.569 |  |  |  | 30 | 0.0296 | 0.0312 |
| 250__125-33 | 0.629 |  |  |  | 33 | 0.0329 | 0.0346 |
|  |  |  |  |  |  |  |  |
| 362_125-18 | 0.418 | 3.625 | 1.25 | 0.3125 | 18 | 0.0179 | 0.0188 |
| 362_125-24 | 0.552 |  |  |  | 24 | 0.0238 | 0.0250 |
| 362 125-30 | 0.688 |  |  |  | 30 | 0.0296 | 0.0312 |
| 362 125-33 | 0.762 |  |  |  | 33 | 0.0329 | 0.0346 |
|  |  |  |  |  |  |  |  |
| 400__125-18 | 0.437 | 4 | 1.25 | 0.3125 | 18 | 0.0179 | 0.0188 |
| 400 - 125-24 | 0.583 |  |  |  | 24 | 0.0238 | 0.0250 |
| 400 _ $125-30$ | 0.728 |  |  |  | 30 | 0.0296 | 0.0312 |
| 400 125-33 | 0.804 |  |  |  | 33 | 0.0329 | 0.0346 |
|  |  |  |  |  |  |  |  |
| 600 _ $125-18$ | 0.570 | 6 | 1.25 | 0.3125 | 18 | 0.0179 | 0.0188 |
| 600 _ 125-24 | 0.753 |  |  |  | 24 | 0.0238 | 0.0250 |
| 600 _ 125-30 | 0.940 |  |  |  | 30 | 0.0296 | 0.0312 |
| 600 _125-33 | 1.040 |  |  |  | 33 | 0.0329 | 0.0346 |
| TRACKS |  |  |  |  |  |  |  |
| 250TTS137-18 | 0.350 | 2.5 | 1.375 | --- | 18 | 0.0179 | 0.0188 |
| 250TTS137-24 | 0.466 |  |  |  | 24 | 0.0238 | 0.0250 |
| 250TTS137-30 | 0.581 |  |  |  | 30 | 0.0296 | 0.0312 |
| 250TTS137-33 | 0.645 |  |  |  | 33 | 0.0329 | 0.0346 |
|  |  |  |  |  |  |  |  |
| 362TTS137-18 | 0.423 | 3.625 | 1.375 | --- | 18 | 0.0179 | 0.0188 |
| 362TTS137-24 | 0.562 |  |  |  | 24 | 0.0238 | 0.0250 |
| 362TTS137-30 | 0.701 |  |  |  | 30 | 0.0296 | 0.0312 |
| 362TTS137-33 | 0.778 |  |  |  | 33 | 0.0329 | 0.0346 |
|  |  |  |  |  |  |  |  |
| 400TTS137-18 | 0.446 | 4 | 1.375 | --- | 18 | 0.0179 | 0.0188 |
| 400TTS137-24 | 0.593 |  |  |  | 24 | 0.0238 | 0.0250 |
| 400TTS137-30 | 0.740 |  |  |  | 30 | 0.0296 | 0.0312 |
| 400TTS137-33 | 0.820 |  |  |  | 33 | 0.0329 | 0.0346 |
|  |  |  |  |  |  |  |  |
| 600TTS137-18 | 0.574 | 6 | 1.375 | --- | 18 | 0.0179 | 0.0188 |
| 600TTS137-24 | 0.763 |  |  |  | 24 | 0.0238 | 0.0250 |
| 600TTS137-30 | 0.953 |  |  |  | 30 | 0.0296 | 0.0312 |
| 600TTS137-33 | 1.056 |  |  |  | 33 | 0.0329 | 0.0346 |

For SI: 1 inch = $25.4 \mathrm{~mm}, 1 \mathrm{lb} / \mathrm{ft}=1.488 \mathrm{~kg} / \mathrm{m}$.
1 Values based on stud base (TSO).
${ }^{2}$ Depth of studs measured from outside face to outside face of flanges of TSO. Depth of track measured from inside face to inside face of flanges.
${ }^{3}$ Minimum base metal thickness permitted for framing members delivered to the project site.
4 For member designations containing " $\qquad$ , the " " is TLF, TLA, TLD, or TLE, as applicable.

TABLE 3-TRAKLOC FIXED/ ADJUSTABLE / DEFLECTION (TLF/TLA/TLD) PROPERTIES ${ }^{3,4,5,6,7,8}$

| Member Designation | $\begin{gathered} \mathrm{F}_{\mathrm{y}} \\ (\mathbf{k s i}) \end{gathered}$ | Gross Section Properties |  |  |  |  |  | Effective Section Properties at $\mathrm{F}_{\mathrm{y}}$ |  |  |  |  |  |  | Stud/Trak End Reaction ( $\mathrm{R}_{\mathrm{x}}$ ) |  |  | Torsional Properties |  |  |  |  |  | $\begin{gathered} \mathrm{L}_{u} \\ \text { (in) } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Area <br> (in ${ }^{2}$ ) | $\begin{gathered} I_{x} \\ \left(\text { in }^{4}\right) \end{gathered}$ | $\begin{gathered} \mathrm{S}_{\mathrm{x}} \\ \left(\mathrm{in}^{3}\right) \end{gathered}$ | $\begin{gathered} r_{x} \\ \text { (in) } \end{gathered}$ | $\begin{gathered} \mathrm{I}_{\mathrm{y}} \\ \left(\mathrm{in}^{4}\right) \end{gathered}$ | $\begin{gathered} r_{y} \\ \text { (in) } \end{gathered}$ | $\begin{gathered} \mathrm{A}_{\mathrm{e}} \\ \left(\mathrm{in}^{2}\right) \end{gathered}$ | $\begin{gathered} \mathrm{I}_{\mathrm{xe}} \\ \left(\mathrm{in}^{4}\right) \end{gathered}$ | $\begin{aligned} & \mathrm{S}_{\mathrm{xe}} \\ & \left(\mathrm{in}^{3}\right) \end{aligned}$ | $\underset{\text { (in-lbs) }}{\substack{\mathrm{m}_{\mathrm{al}} \\ \text { (in) }}}$ | $\begin{gathered} \mathrm{M}_{\mathrm{ad}} \\ \text { (in-lbs) } \end{gathered}$ | $\begin{gathered} \mathrm{Va}_{\mathrm{g}} \\ \text { (lbs) } \end{gathered}$ | $V a_{\text {net }}$ (lbs) | $\begin{gathered} \text { TLF } \\ \text { (lbs) } \end{gathered}$ | TLA <br> (lbs) | $\begin{aligned} & \text { TLD } \\ & \text { (lbs) } \end{aligned}$ | $\begin{gathered} \mathrm{Jx} 1000 \\ \left(\mathrm{in}^{4}\right) \\ \hline \end{gathered}$ | $\begin{gathered} C_{w} \\ \left(\mathrm{in}^{6}\right) \end{gathered}$ | $\begin{gathered} \mathbf{x}_{\circ} \\ \text { (in) } \end{gathered}$ | $\begin{gathered} \mathrm{m} \\ \text { (in) } \end{gathered}$ | $\begin{aligned} & \mathbf{R}_{\mathbf{o}} \\ & \text { (in) } \end{aligned}$ | $\beta$ |  |
| 250TLF/TLA/TLD125-18 | 33 | 0.102 | 0.106 | 0.084 | 1.017 | 0.022 | 0.467 | 0.056 | 0.102 | 0.070 | 1387 | 1289 | 252 | 198 | 38 | 40 | 42 | 0.0120 | 0.031 | -1.000 | 0.598 | 1.501 | 0.556 | 31.5 |
| 362TLF/TLA/TLD125-18 | 33 | 0.123 | 0.248 | 0.137 | 1.419 | 0.025 | 0.451 | 0.056 | 0.243 | 0.091 | 1797 | 1914 | 170 | 165 | 38 | 53 | 53 | 0.0145 | 0.068 | -0.873 | 0.540 | 1.726 | 0.744 | 31.0 |
| 400TLF/TLA/TLD125-18 ${ }^{1}$ | 33 | 0.130 | 0.312 | 0.156 | 1.549 | 0.026 | 0.445 | 0.056 | 0.268 | 0.101 | 1881 | 1794 | 154 |  | 39 | 58 | 44 | 0.0153 | 0.084 | -0.839 | 0.524 | 1.817 | 0.787 | 30.8 |
| 600TLF/TLA/TLD125-18 ${ }^{2}$ | 33 | 0.168 | 0.821 | 0.274 | 2.212 | 0.029 | 0.414 | 0.057 | 0.692 | 0.156 | 2915 | 2744 | 101 |  | 31 | 75 | 74 | 0.0198 | 0.208 | -0.696 | 0.452 | 2.356 | 0.913 | 30.0 |
| 250TLF/TLA/TLD125-24 | 57 | 0.135 | 0.139 | 0.111 | 1.014 | 0.029 | 0.464 | 0.067 | 0.128 | 0.086 | 2921 | 2680 | 596 | 349 | 111 | 96 | 99 | 0.0281 | 0.040 | -0.992 | 0.594 | 1.49 | 0.558 | 24.3 |
| 362TLF/TLA/TLD125-24 | 57 | 0.163 | 0.327 | 0.180 | 1.416 | 0.033 | 0.448 | 0.067 | 0.306 | 0.109 | 3710 | 3986 | 402 | 292 | 102 | 115 | 107 | 0.0339 | 0.088 | -0.866 | 0.536 | 1.719 | 0.746 | 23.9 |
| 400TLF/TLA/TLD125-24 | 57 | 0.172 | 0.411 | 0.206 | 1.545 | 0.034 | 0.442 | 0.067 | 0.388 | 0.121 | 4114 | 4416 | 363 | 313 | 125 | 131 | 126 | 0.0359 | 0.110 | -0.832 | 0.520 | 1.810 | 0.789 | 23.8 |
| 600TLF/TLA/TLD125-24 ${ }^{1}$ | 57 | 0.222 | 1.084 | 0.361 | 2.208 | 0.037 | 0.410 | 0.068 | 0.927 | 0.208 | 7114 | 6523 | 238 |  | 87 | 116 | 118 | 0.0463 | 0.272 | -0.690 | 0.448 | 2.350 | 0.91 | 23.1 |
| 250TLF/TLA/TLD125-30 | 33 | 0.167 | 0.171 | 0.137 | 1.011 | 0.035 | 0.461 | 0.113 | 0.170 | 0.125 | 2475 | 2515 | 832 | 388 | 147 | 106 | 108 | 0.0543 | 0.049 | -0.984 | 0.590 | 1.485 | 0.560 | 31.4 |
| 362TLF/TLA/TLD125-30 | 33 | 0.202 | 0.404 | 0.223 | 1.413 | 0.040 | 0.445 | 0.114 | 0.401 | 0.179 | 3531 | 3822 | 785 | 453 | 158 | 137 | 134 | 0.0657 | 0.108 | -0.859 | 0.532 | 1.712 | 0.748 | 30.8 |
| 400TLF/TLA/TLD125-30 | 33 | 0.214 | 0.509 | 0.254 | 1.542 | 0.041 | 0.439 | 0.114 | 0.505 | 0.199 | 3930 | 4261 | 708 | 487 | 161 | 162 | 135 | 0.0695 | 0.134 | -0.825 | 0.516 | 1.802 | 0.791 | 30.6 |
| 600TLF/TLA/TLD125-30 | 33 | 0.276 | 1.343 | 0.448 | 2.204 | 0.046 | 0.407 | 0.116 | 1.291 | 0.352 | 6960 | 6491 | 464 | 464 | 114 | 121 | 114 | 0.0897 | 0.333 | -0.683 | 0.445 | 2.34 | 0.915 | 29.7 |
| 250TLF/TLA/TLD125-33 | 33 | 0.185 | 0.188 | 0.151 | 1.010 | 0.039 | 0.459 | 0.116 | 0.187 | 0.143 | 2824 | 3072 | 990 | 414 | 166 | 103 | 112 | 0.0738 | 0.053 | -0.980 | 0.587 | 1.480 | 0.561 | 29.9 |
| 362TLF/TLA/TLD125-33 | 33 | 0.224 | 0.445 | 0.246 | 1.411 | 0.044 | 0.443 | 0.118 | 0.442 | 0.208 | 4116 | 4682 | 1024 | 531 | 149 | 134 | 125 | 0.0893 | 0.118 | -0.855 | 0.530 | 1.708 | 0.749 | 29.3 |
| 400TLF/TLA/TLD125-33 | 33 | 0.237 | 0.561 | 0.281 | 1.540 | 0.045 | 0.437 | 0.118 | 0.557 | 0.232 | 4587 | 5225 | 967 | 598 | 154 | 151 | 145 | 0.0945 | 0.147 | -0.821 | 0.514 | 1.79 | 0.792 | 29.1 |
| 600TLF/TLA/TLD125-33 | 33 | 0.306 | 1.483 | 0.494 | 2.202 | 0.050 | 0.405 | 0.120 | 1.438 | 0.413 | 8164 | 7997 | 634 | 634 | 124 | 108 | 106 | 0.1221 | 0.366 | -0.680 | 0.443 | 2.340 | 0.916 | 28.2 |

For SI Units: 1 inch $=25.4 \mathrm{~mm}, 1 \mathrm{lb}=4.45 \mathrm{~N}, 1 \mathrm{ksi}=6.89 \mathrm{~N} / \mathrm{m}^{2}$.

1. Web height-to-thickness ratio exceeds 200 . Webs must have bearing stiffeners. See AISI S100 Section B1.2
2. Web height-to-thickness ratio exceeds 260 but less than 300 . Webs must have bearing and intermediate stiffeners. See AISI S100 Section B1.2.
3. Gross and torsional properties are based on full-unreduced cross section of the studs, away from punch-outs.
4. The allowable moment based on local buckling (Mal) is based on the compression flange continuously braced.
5. The distortional buckling moment $(\mathrm{Mac})$ does not consider the beneficial effect of sheathing to rotational stiffness, $\mathrm{K} \phi=0$.
. For deflection calculations, use the effective moment of inertia.
6. Rx is the maximum end reaction (web crippling) capacity based on a minimum bearing length of 1 inch.
7. For TLA and TLD members, the minimum overlap of the TSO and TSE must be 8 inches and the maximum un-lapped length of the TSE must be 4 inches.

## Gross Properties

> moment of inertia of the cross section about the $x$-axis section modulus about the $x$ axis radius of gyration of cross section about the $x$-axis moment of inertia of the cross section about the $y$-axis radius of gyration of cross section about the $x$-axis

| Ae | Effective area |
| :---: | :---: |
| $\mathrm{I}_{\mathrm{x}}$ | - moment of inertia of the cross section about the $x$-axis |
| $\mathrm{Sxe}^{\text {e }}$ | section modulus about the $x$-axis |
| Mal | - allowable moment based on local buckling |
| $\mathrm{Mad}^{\text {d }}$ | - allowable moment based on distortional buckling, assuming K $\mathrm{K}=0$ |
| $\mathrm{V}_{\mathrm{ag}}$ | - allowable strong axis shear away from punch-out |
| $V_{\text {anet }}$ | Allowable strong axis shear at the punch-out |

## Torsional and Other Properties

[^1]TABLE 4-TRAKLOC ELEVATOR (TLE) PROPERTIES ${ }^{3,4,5,5,7}$

| Member Designation | $\begin{gathered} \mathrm{F}_{\mathrm{y}} \\ (\mathbf{k s i}) \end{gathered}$ | Gross Section Properties |  |  |  |  |  | Effective Section Properties at $\mathrm{F}_{\mathrm{y}}$ |  |  |  |  |  |  | $\mathbf{R}_{\mathrm{x}}$ <br> TLE <br> (lbs) | Torsional Properties |  |  |  |  |  | $\begin{gathered} \mathrm{L}_{u} \\ \text { (in) } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Area $\left(\mathrm{in}^{2}\right)$ | $\begin{gathered} \mathrm{I}_{\mathrm{x}} \\ \left(\mathrm{in}^{4}\right) \end{gathered}$ | $\begin{gathered} \mathrm{S}_{\mathrm{x}} \\ \left(\mathrm{in}^{3}\right) \end{gathered}$ | $\mathbf{R}_{\mathrm{x}}$ <br> (in) | $\begin{gathered} \mathrm{I}_{\mathrm{y}} \\ \left(\mathrm{in}^{4}\right) \end{gathered}$ | $\begin{gathered} \mathbf{R}_{\mathrm{y}} \\ \text { (in) } \end{gathered}$ | $\begin{gathered} \mathrm{A}_{\mathrm{e}} \\ \left(\mathrm{in}^{2}\right) \end{gathered}$ | $\begin{gathered} \mathrm{I}_{\mathrm{xe}} \\ \left(\mathrm{in}^{4}\right) \end{gathered}$ | $\begin{aligned} & \mathrm{S}_{\mathrm{xe}} \\ & \left(\mathrm{in}^{3}\right) \end{aligned}$ | $\begin{gathered} \mathrm{M}_{\mathrm{al}} \\ \text { (in-lbs) } \end{gathered}$ | $\begin{gathered} \mathrm{M}_{\mathrm{ad}} \\ \text { (in-lbs) } \end{gathered}$ | $\begin{gathered} \mathrm{Va}_{\mathrm{g}} \\ \text { (lbs) } \end{gathered}$ | $\begin{aligned} & \mathrm{Va}_{\text {net }} \\ & \text { ( } \mathrm{lbs} \text { ) } \end{aligned}$ |  | $\begin{gathered} \mathrm{Jx} 1000 \\ \left(\mathrm{in}^{4}\right) \\ \hline \end{gathered}$ | $\begin{gathered} C_{w} \\ \left(\text { in }^{6}\right) \end{gathered}$ | $\begin{gathered} X_{0} \\ \text { (in) } \end{gathered}$ | $\begin{gathered} \mathrm{m} \\ \text { (in) } \end{gathered}$ | $\mathbf{R}_{\mathrm{o}}$ <br> (in) | $\beta$ |  |
| 250TLE125-18 | 33 | 0.099 | 0.098 | 0.080 | 0.997 | 0.019 | 0.444 | 0.056 | 0.082 | 0.059 | 1165 | 1123 | 256 | 197 | 39 | 0.0116 | 0.026 | -0.946 | 0.568 | 1.445 | 0.571 | 30.1 |
| 362TLE125-18 | 33 | 0.120 | 0.234 | 0.131 | 1.398 | 0.022 | 0.428 | 0.056 | 0.204 | 0.084 | 1661 | 1687 | 172 | 164 | 47 | 0.0141 | 0.058 | -0.823 | 0.511 | 1.677 | 0.759 | 29.6 |
| 400TLE125-18 ${ }^{1}$ | 33 | 0.127 | 0.296 | 0.149 | 1.526 | 0.023 | 0.422 | 0.056 | 0.242 | 0.093 | 1843 | 1825 | 155 |  | 38 | 0.0150 | 0.073 | -0.789 | 0.495 | 1.769 | 0.801 | 29.4 |
| 600TLE125-18 ${ }^{2}$ | 33 | 0.165 | 0.787 | 0.264 | 2.187 | 0.025 | 0.391 | 0.057 | 0.609 | 0.148 | 2915 | 2744 | 102 |  | 31 | 0.0194 | 0.181 | -0.652 | 0.425 | 2.315 | 0.921 | 28.5 |
| 250TLE125-24 | 57 | 0.130 | 0.128 | 0.104 | 0.990 | 0.025 | 0.441 | 0.067 | 0.115 | 0.071 | 2423 | 2297 | 609 | 346 | 108 | 0.0271 | 0.034 | -0.940 | 0.564 | 1.435 | 0.570 | 22.8 |
| 362TLE125-24 | 57 | 0.158 | 0.306 | 0.171 | 1.390 | 0.029 | 0.425 | 0.067 | 0.281 | 0.104 | 3562 | 3520 | 408 | 288 | 107 | 0.0330 | 0.076 | -0.817 | 0.508 | 1.667 | 0.760 | 22.4 |
| 400TLE125-24 | 57 | 0.168 | 0.387 | 0.196 | 1.518 | 0.029 | 0.419 | 0.067 | 0.356 | 0.120 | 4094 | 3957 | 368 | 311 | 119 | 0.0350 | 0.094 | -0.783 | 0.492 | 1.759 | 0.802 | 22.3 |
| 600TLE125-24 ${ }^{1}$ | 57 | 0.218 | 1.034 | 0.347 | 2.178 | 0.033 | 0.388 | 0.068 | 0.911 | 0.188 | 6427 | 5847 | 241 |  | 85 | 0.0454 | 0.235 | -0.646 | 0.422 | 2.305 | 0.921 | 21.6 |
| 250TLE125-30 | 33 | 0.161 | 0.156 | 0.128 | 0.982 | 0.031 | 0.438 | 0.113 | 0.163 | 0.125 | 2475 | 2515 | 832 | 372 | 137 | 0.0523 | 0.041 | -0.934 | 0.561 | 1.425 | 0.570 | 30.0 |
| 362TLE125-30 | 33 | 0.196 | 0.375 | 0.211 | 1.382 | 0.035 | 0.422 | 0.114 | 0.372 | 0.179 | 3531 | 3822 | 799 | 446 | 138 | 0.0637 | 0.092 | -0.811 | 0.504 | 1.657 | 0.760 | 29.4 |
| 400TLE125-30 | 33 | 0.208 | 0.475 | 0.241 | 1.511 | 0.036 | 0.416 | 0.114 | 0.471 | 0.199 | 3930 | 4261 | 719 | 482 | 152 | 0.0675 | 0.114 | -0.778 | 0.488 | 1.749 | 0.802 | 29.2 |
| 600TLE125-30 | 33 | 0.270 | 1.274 | 0.429 | 2.170 | 0.040 | 0.384 | 0.116 | 1.195 | 0.352 | 6960 | 6491 | 470 | 470 | 110 | 0.0878 | 0.287 | -0.641 | 0.419 | 2.295 | 0.922 | 28.2 |
| 250TLE125-33 | 33 | 0.178 | 0.170 | 0.140 | 0.978 | 0.034 | 0.436 | 0.116 | 0.171 | 0.143 | 2824 | 3047 | 961 | 384 | 149 | 0.0710 | 0.044 | -0.931 | 0.559 | 1.419 | 0.570 | 28.5 |
| 362TLE125-33 | 33 | 0.217 | 0.412 | 0.232 | 1.378 | 0.038 | 0.420 | 0.118 | 0.394 | 0.208 | 4116 | 4404 | 1024 | 512 | 133 | 0.0866 | 0.100 | -0.808 | 0.503 | 1.651 | 0.761 | 27.9 |
| 400TLE125-33 | 33 | 0.230 | 0.522 | 0.265 | 1.506 | 0.039 | 0.414 | 0.118 | 0.481 | 0.232 | 4587 | 5195 | 985 | 591 | 153 | 0.0917 | 0.125 | -0.774 | 0.487 | 1.744 | 0.803 | 27.7 |
| 600TLE125-33 | 33 | 0.299 | 1.403 | 0.473 | 2.166 | 0.044 | 0.383 | 0.120 | 1.244 | 0.413 | 8164 | 7987 | 642 | 642 | 113 | 0.1194 | 0.314 | -0.638 | 0.417 | 2.290 | 0.922 | 26.7 |

For SI Units: 1 inch $=25.4 \mathrm{~mm}, 1 \mathrm{lb}=4.45 \mathrm{~N}, 1 \mathrm{ksi}=6.89 \mathrm{~N} / \mathrm{m}^{2}$.

1. Web height-to-thickness ratio exceeds 200. Webs must have bearing stiffeners. See AISI S100 Section B1.2.
2. Web height-to-thickness ratio exceeds 260 but less than 300 . Webs must have bearing and intermediate stiffeners. See AISI S100 Section B1.2.
3. Gross and torsional properties are based the full-unreduced cross section of the studs, away from punch-outs.
4. The distortional buckling moment $\left(\mathrm{Mad}^{\prime}\right)$ does not consider the beneficial effect of sheathing to rotational stiffness.
5. For deflection calculations use, the effective moment of inertia.
6. Rx is the maximum end reaction (web crippling) capacity based on a minimum bearing length of 1 inch.


TABLE 5-TRAKLOC TRACK PROPERTIES ${ }^{3,4}$

| Member Designation | $\begin{gathered} \mathrm{F}_{\mathrm{y}} \\ (\mathbf{k s i}) \\ \hline \end{gathered}$ | Gross Section Properties |  |  |  |  |  | Effective Section Properties at $\mathrm{F}_{\mathrm{y}}$ |  |  |  |  | Torsional Properties |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Area $\left(\mathrm{in}^{2}\right)$ | $\begin{gathered} \mathrm{I}_{\mathrm{x}} \\ \left(\mathrm{in}^{4}\right) \end{gathered}$ | $\begin{gathered} \mathrm{S}_{\mathrm{x}} \\ \left(\mathrm{in}^{3}\right) \end{gathered}$ | $\begin{gathered} \mathbf{R}_{\mathrm{x}} \\ (\mathrm{in}) \end{gathered}$ | $\begin{gathered} \mathrm{I}_{\mathrm{y}} \\ \left(\mathrm{in}^{4}\right) \end{gathered}$ | $\begin{gathered} \mathbf{R}_{\mathbf{y}} \\ \text { (in) } \end{gathered}$ | $\begin{gathered} \mathrm{A}_{\mathrm{e}} \\ \left(\mathrm{in}^{2}\right) \end{gathered}$ | $\begin{gathered} \mathrm{I}_{\mathrm{xe}} \\ \left(\mathrm{in}^{4}\right) \end{gathered}$ | $\begin{aligned} & \mathrm{S}_{\mathrm{xe}} \\ & \left(\mathrm{in}^{3}\right) \\ & \hline \end{aligned}$ | $\begin{gathered} \mathrm{M}_{\mathrm{al}} \\ \text { (in-lbs) } \end{gathered}$ | $\begin{gathered} \mathrm{Va}_{\mathrm{g}} \\ \text { (lbs) } \\ \hline \end{gathered}$ | Jx1000 <br> (in ${ }^{4}$ ) | $\begin{gathered} \mathrm{C}_{\mathrm{w}} \\ \left(\mathrm{in}^{6}\right) \end{gathered}$ | $\begin{gathered} \mathrm{X}_{\mathrm{o}} \\ \text { (in) } \end{gathered}$ | $\begin{gathered} \mathrm{m} \\ \text { (in) } \end{gathered}$ | $\mathbf{R}_{\mathrm{o}}$ <br> (in) | $\beta$ |
| 250TTS $137-18^{2}$ | 33 | 0.099 | 0.110 | 0.085 | 1.057 | 0.019 | 0.444 |  |  |  |  |  | 0.0116 | 0.023 | -0.875 | 0.519 | 1.442 | 0.632 |
| 362TTS $137-18^{2}$ | 33 | 0.120 | 0.252 | 0.135 | 1.449 | 0.022 | 0.425 |  |  |  |  | - | 0.0141 | 0.053 | -0.763 | 0.470 | 1.692 | 0.797 |
| 400TTS $137-18^{2}$ | 33 | 0.127 | 0.315 | 0.154 | 1.576 | 0.022 | 0.418 | - |  |  |  | - | 0.0150 | 0.066 | -0.732 | 0.456 | 1.787 | 0.832 |
| 600TTS137-18 ${ }^{2}$ | 33 | 0.165 | 0.816 | 0.268 | 2.227 | 0.024 | 0.385 |  |  |  |  |  | 0.0194 | 0.168 | -0.605 | 0.392 | 2.340 | 0.933 |
| 250TTS137-24 | 57 | 0.131 | 0.147 | 0.113 | 1.059 | 0.026 | 0.443 | 0.047 | 0.106 | 0.057 | 1946 | 570 | 0.0273 | 0.030 | -0.872 | 0.518 | 1.441 | 0.634 |
| 362TTS137-24 | 57 | 0.159 | 0.335 | 0.180 | 1.451 | 0.029 | 0.424 | 0.048 | 0.258 | 0.082 | 2813 | 390 | 0.0332 | 0.070 | -0.760 | 0.469 | 1.692 | 0.798 |
| 400TTS137-24 | 57 | 0.169 | 0.420 | 0.204 | 1.577 | 0.029 | 0.417 | 0.048 | 0.328 | 0.091 | 3103 | 353 | 0.0351 | 0.088 | -0.730 | 0.454 | 1.787 | 0.833 |
| 600TTS $137-24^{1}$ | 57 | 0.219 | 1.086 | 0.355 | 2.228 | 0.032 | 0.384 | 0.048 | 0.718 | 0.134 | 4587 | 234 | 0.0456 | 0.222 | -0.603 | 0.391 | 2.340 | 0.934 |
| 250TTS137-30 | 33 | 0.164 | 0.184 | 0.140 | 1.061 | 0.032 | 0.442 | 0.086 | 0.149 | 0.090 | 1775 | 832 | 0.0531 | 0.038 | -0.868 | 0.516 | 1.440 | 0.636 |
| 362TTS137-30 | 33 | 0.199 | 0.419 | 0.224 | 1.452 | 0.036 | 0.423 | 0.089 | 0.347 | 0.153 | 3031 | 758 | 0.0645 | 0.087 | -0.757 | 0.467 | 1.691 | 0.800 |
| 400TTS 137-30 | 33 | 0.210 | 0.524 | 0.254 | 1.579 | 0.036 | 0.416 | 0.090 | 0.437 | 0.178 | 3510 | 686 | 0.0683 | 0.109 | -0.727 | 0.453 | 1.787 | 0.835 |
| 600TTS137-30 | 33 | 0.273 | 1.356 | 0.443 | 2.229 | 0.040 | 0.383 | 0.092 | 1.117 | 0.247 | 4874 | 455 | 0.0885 | 0.276 | -0.601 | 0.389 | 2.340 | 0.934 |
| 250TTS137-33 | 33 | 0.181 | 0.204 | 0.156 | 1.062 | 0.035 | 0.441 | 0.104 | 0.170 | 0.103 | 2043 | 1024 | 0.0724 | 0.042 | -0.867 | 0.515 | 1.440 | 0.638 |
| 362TTS137-33 | 33 | 0.220 | 0.465 | 0.248 | 1.453 | 0.039 | 0.422 | 0.108 | 0.395 | 0.175 | 3465 | 1024 | 0.0879 | 0.097 | -0.756 | 0.466 | 1.691 | 0.800 |
| 400TTS137-33 | 33 | 0.233 | 0.582 | 0.282 | 1.579 | 0.040 | 0.415 | 0.109 | 0.497 | 0.203 | 4006 | 935 | 0.0931 | 0.121 | $-0.725$ | 0.452 | 1.787 | 0.835 |
| 600TTS137-33 | 33 | 0.303 | 1.504 | 0.491 | 2.230 | 0.044 | 0.383 | 0.111 | 1.287 | 0.296 | 5840 | 621 | 0.1207 | 0.306 | -0.599 | 0.388 | 2.340 | 0.934 |

[^2]1 Web-height to thickness ratio exceeds 200. Webs must have bearing stiffeners. See AISI S100 Section B1.2.
${ }^{2}$ Web-height to thickness ratio exceeds 260 . Webs must have bearing and intermediate stiffeners. See AISI S100 Section B1.2. Flange width to thickness ratio exceeds 60 . See AISI S100 Section B1.1.
Tabulated gross properties including torsional properties are based on full-unreduced cross section of the studs, away from punch-outs.
4 For deflection calculations use the effective moment of inertia.

TABLE 6-NON-COMPOSITE LIMITING HEIGHTS (feet-inches)
FULLY BRACED TRAKLOC FIXED LENGTH STUDS (TLF) ${ }^{3,4,}$

| MEMBER DESIGNATION | Spacing o/c (in) | Lateral Load (psf) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 5 PSF |  |  | 7.5 PSF |  |  | 10 PSF |  |  | 15 PSF |  |  |
|  |  | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 |
| 250TLF125-18 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 13^{\prime} 1^{\prime \prime} \\ 11^{\prime} 4^{\prime \prime} \mathrm{e} \\ 9^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 11^{\prime} 0 " \\ 10^{\prime} 0^{\prime \prime} \\ 8^{\prime} 99^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { 9' 8" } \\ \text { 8' } 9 " \\ \text { 7' } 8 \text { " }-\mathrm{e} \end{array}$ |  | $\begin{gathered} 10^{\prime} 88^{\prime \prime} \mathrm{e} \\ \text { 9' } 3^{\prime \prime} \mathrm{e} \\ 7^{\prime} 7^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 9^{\prime} 6 " \\ 8^{\prime \prime} 7 " \mathrm{e} \\ 7^{\prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{aligned} & 9^{\prime} 3^{\prime \prime} \mathrm{e} \\ & \text { 8' }^{\prime \prime} 0^{\prime \prime} \mathrm{e} \\ & 6^{\prime} 7 \text { "' e e } \end{aligned}$ | $\begin{aligned} & \text { 9' 3" e } \\ & \text { 8' 0" e } \\ & \text { 6' 7" e e } \end{aligned}$ | $\begin{gathered} 8^{\prime \prime} 7{ }^{\prime \prime} \text { e } \\ 77^{\prime} 10 " \mathrm{e} \\ 6^{\prime} 77^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{aligned} & \text { 7' 7" e } \\ & \text { 6' } 7^{\prime \prime} \mathrm{e} \\ & 5^{\prime} 4^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{aligned} & 7^{\prime \prime} 7^{\prime \prime} \mathrm{e} \\ & \text { 6' } 7^{\prime \prime} \mathrm{e} \\ & 5^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{aligned} & \text { 7' 6" e } \\ & \text { 6' 7" e } \\ & 5^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{aligned}$ |
| 362TLF125-18 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 15^{\prime} 6^{\prime \prime} \mathrm{e} \\ 13^{\prime} 5^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 14^{\prime} 9 " \\ 13^{\prime \prime} 4^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 10 " \\ 11^{\prime} 8^{\prime \prime} \mathrm{e} \\ 10^{\prime} 2 " \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime \prime} 8^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 8^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 8^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 11 " \mathrm{e} \\ \text { 9' 6" e } \\ \text { 7'9" e } \end{gathered}$ | $\begin{gathered} 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 9^{\prime} 6^{\prime \prime} \mathrm{e} \\ \text { 7'9" e } \end{gathered}$ | $\begin{gathered} 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 9^{\prime} 6 " \mathrm{e} \\ 7 \text { 7' }{ }^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ \text { 7' } 9^{\prime \prime} \mathrm{e} \\ 6^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ \text { 7' } 9^{\prime \prime} \mathrm{e} \\ 6^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ \text { 7' } 9^{\prime \prime} \mathrm{e} \\ 6^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 400TLF125-18 ${ }^{1}$ | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 15^{\prime} 6 "^{\prime \prime} \\ 13^{\prime} 5^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 15^{\prime} 2 " \\ 13^{\prime \prime} 5^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 13^{\prime} 3^{\prime \prime} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ 10^{\prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 8^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 8^{\prime \prime} \text { e } \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 8{ }^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 9 \mathrm{c} \text { " } \mathrm{e} \\ 7{ }^{\prime} 9 " \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 9^{\prime} 6^{\prime \prime} \mathrm{e} \\ \text { 7' } 9 " \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 9^{\prime} 6 " \mathrm{e} \\ \text { 7' } 9^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ \text { 7' } 9 \text { " e } \\ \text { 6' 4" e } \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ 7^{\prime} 9{ }^{\prime \prime} \mathrm{e} \\ 6^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ 7^{\prime} 99^{\prime \prime} \mathrm{e} \\ 6^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 600TLF125-18 ${ }^{2}$ | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{aligned} & 19{ }^{\prime} 2 " \mathrm{e} \\ & 16^{\prime} 7 " \mathrm{e} \\ & 13^{\prime} 6 " \mathrm{e} \end{aligned}$ | $\begin{gathered} 19^{\prime} 2 " '_{\prime \prime}^{e} \\ 16^{\prime} 7 " \mathrm{e} \\ 13^{\prime} 6{ }^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 18^{\prime} 3^{\prime \prime} \mathrm{e} \\ 16^{\prime} 7 " \mathrm{e} \\ 13^{\prime} 6^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{array}{r} 15^{\prime} 7^{\prime \prime} \mathrm{e} \\ 13^{\prime} 6^{\prime \prime} \mathrm{e} \\ 11^{\prime \prime} 1^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 15 ' 7 " \mathrm{e} \\ 13^{\prime} 6 " \mathrm{e} \\ 11^{\prime} 1 " \mathrm{e} \\ \hline \end{gathered}$ | $\begin{aligned} & 15^{\prime} 7 " \mathrm{l"} \\ & 13^{\prime} 6^{\prime \prime} \mathrm{e} \\ & 11^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{aligned}$ |  | $\begin{gathered} 13^{\prime} 6 " \mathrm{e} \\ 11^{\prime} 9 " \mathrm{e} \\ 9^{\prime} 7 " \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 13 ' 6 " \mathrm{e} \\ 11^{\prime} 9 " \mathrm{e} \\ 9{ }^{\prime \prime} 7 \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 11^{\prime} 1 " \mathrm{e} \\ 9{ }^{\prime \prime} 7 \mathrm{l"} \mathrm{e} \\ \text { 6' } 9 \text { " e } \\ \hline \end{gathered}$ | $\begin{gathered} 11^{\prime} 1^{\prime \prime} \mathrm{e} \\ 9^{\prime} 7{ }^{\prime \prime} \mathrm{e} \\ \text { 6' } 9^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 11^{\prime} 1^{\prime \prime} \mathrm{e} \\ 9^{\prime} 7^{\prime \prime} \mathrm{e} \\ \text { 6' } 9^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ |
| 250TLF125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 15^{\prime} 0^{\prime \prime} \\ 13^{\prime} 7 " \\ 11^{\prime} 11^{\prime \prime} \\ ---1-2 \end{gathered}$ | $\begin{gathered} 11^{\prime} 11^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 5^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ 8^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 9{ }^{\prime \prime} \\ 13^{\prime} 4^{\prime \prime} \\ 10^{\prime} 11^{\prime \prime} \\ ---2--1 \end{gathered}$ | $\begin{gathered} \hline 11^{\prime} 8 " \\ 10^{\prime} 8 " \\ 9^{\prime \prime} 3^{\prime \prime} \\ \hline--{ }^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 3^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 4 " \\ 11^{\prime} 7 " \\ 9^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 8^{\prime \prime} \\ 9^{\prime} 8^{\prime \prime} \\ 8^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 5^{\prime \prime} \\ 7^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 11 " \\ \text { 9' 5" } \\ \text { 7' 9" e } \end{gathered}$ | $\begin{gathered} 9^{\prime} 3^{\prime \prime} \\ 8^{\prime \prime} 5^{\prime \prime} \\ 7^{\prime \prime} 4^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 8^{\prime} 1^{\prime \prime} \\ & 7^{\prime \prime} 4^{\prime \prime} \\ & 6^{\prime} 5^{\prime \prime} \end{aligned}$ |
| 362TLF125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 20^{\prime} 0^{\prime} \\ 18^{\prime} 2 \\ 15^{\prime} 9 \\ \hline 9^{\prime \prime} \end{gathered}$ | $\begin{gathered} 15^{\prime} 11^{\prime \prime} \\ 14^{\prime} 5^{\prime \prime} \\ 12^{\prime} 7^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \\ 12^{\prime} 7 " \\ 11^{\prime} 0 " \end{gathered}$ | $\begin{gathered} 18^{\prime} 2 " \\ 15^{\prime} 9 " \\ 12^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 15^{\prime} 8^{\prime} \\ & 14^{\prime} 3^{\prime \prime} \\ & 12^{\prime} 5 \end{aligned}$ | $\begin{gathered} 13^{\prime} 8 " \\ 12^{\prime} 5^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 15^{\prime} 9 " \\ 13^{\prime} 7 " \\ 11^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 14^{\prime} 3^{\prime \prime} \\ 12^{\prime} 11^{\prime \prime} \\ 11^{\prime} 1^{\prime \prime} \text { e } \end{gathered}$ | $\begin{aligned} & 12^{\prime} 5^{\prime \prime} \\ & 11^{\prime} 3^{\prime \prime} \\ & 9^{\prime} 10^{\prime \prime} \end{aligned}$ | $\begin{gathered} 12^{\prime} 10 " \\ 11^{\prime} 1^{\prime \prime} \mathrm{e} \\ 9^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 5^{\prime \prime} \\ 11^{\prime \prime} 1^{\prime \prime} \mathrm{e} \\ 9^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 10 " \\ 9^{\prime} 10 " \\ 8^{\prime} 7^{\prime \prime} \text { e } \end{gathered}$ |
| 400TLF125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 21^{\prime} 8^{\prime} \\ 19^{\prime} 8^{\prime \prime} \\ 16^{\prime} 7 \end{gathered}$ | $\begin{gathered} 17^{\prime} 2^{\prime} \\ 15^{\prime} 8^{\prime \prime} \\ 13^{\prime} 8 \end{gathered}$ | $\begin{gathered} 15^{\prime} 0 " \\ 13^{\prime} 8^{\prime \prime} \\ 11^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 19^{\prime} 1 " \\ 16^{\prime} 7 \\ 13^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 16^{\prime} 11^{\prime \prime} \\ 15^{\prime} 5 " \\ 13^{\prime \prime} 5 \end{gathered}$ | $\begin{aligned} & 14^{\prime} 9 " \\ & 13^{\prime} 5 " \\ & 11^{\prime \prime} 9 \end{aligned}$ | $\begin{gathered} 16^{\prime} 7 " \\ 14^{\prime} 4^{\prime \prime} \\ 11^{\prime} 9 \end{gathered}$ | $\begin{gathered} 15^{\prime} 5 \\ 14^{\prime} 0 \\ 11^{\prime} 9 \end{gathered}$ | $\begin{aligned} & 13^{\prime} 5 " \\ & 12^{\prime} 2 " \\ & 10^{\prime \prime} 8 \\ & \hline \mathbf{n}^{\prime \prime} \end{aligned}$ | $\begin{gathered} 13^{\prime} \text { 6" } \\ 11^{\prime} 9 " \\ 9^{\prime} 7 \text { 7" } \mathrm{e} \end{gathered}$ | $\begin{gathered} 13^{\prime} 5^{\prime \prime} \\ 11^{\prime} 9 " \\ 9^{\prime} 7 " \mathrm{e} \end{gathered}$ | $\begin{gathered} 11^{\prime} 9 " \\ 10^{\prime} 8^{\prime \prime} \\ 9^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 600TLF125-241 | $\begin{aligned} & 12 \\ & 16 \\ & 24 \\ & \hline \end{aligned}$ | $\begin{gathered} 27 \text { ' }^{\prime \prime} \\ 24^{\prime \prime} 1 " \\ 19^{\prime \prime} 8^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 23^{\prime} 0 " \\ 20^{\prime} 11^{\prime \prime} \\ 18^{\prime} 3^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 20^{\prime} 1 " \\ 18^{\prime} 3^{\prime \prime} \\ 15^{\prime} 11^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{gathered} 22^{\prime} 8 " \\ 19^{\prime} 8^{\prime \prime} \mathrm{e} \\ 16^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 22^{\prime} 7 " \\ 19^{\prime \prime} 8 " \mathrm{e} \\ 16^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 199^{\prime \prime} 9 \\ 17^{\prime} 11^{\prime \prime} \mathrm{e} \\ 15^{\prime} 8{ }^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 19^{\prime} 8^{\prime \prime} \mathrm{e} \\ 17^{\prime} 0^{\prime \prime} \mathrm{e} \\ 13^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 199^{\prime \prime} \mathrm{e} \\ 17^{\prime \prime} 0 \mathrm{e} \\ 13^{\prime \prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 17^{\prime} 11^{\prime \prime} \mathrm{e} \\ 16^{\prime} 4^{\prime \prime} \mathrm{e} \\ 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 16^{\prime} 1^{\prime \prime} \mathrm{e} \\ 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ 11^{\prime} 4^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 16^{\prime} 1 "^{\prime \prime} \mathrm{e} \\ 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ 11^{\prime} 4^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 15^{\prime} 8^{\prime \prime} \mathrm{e} \\ 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ 11^{\prime} 4^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ |
| 250TLF125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 16^{\prime} 5^{\prime \prime} \\ 14^{\prime} 11^{\prime \prime} \\ 12^{\prime} 10^{\prime \prime} \\ .----2 \end{gathered}$ | $\begin{gathered} 13^{\prime} 1 " \\ 11^{\prime} 10^{\prime \prime} \\ 10^{\prime} 4^{\prime \prime} \\ ---- \end{gathered}$ | $\begin{gathered} 11^{\prime} 5 \\ 10^{\prime} 4^{\prime \prime} \\ 9^{\prime} 1 \text { 1" } \end{gathered}$ | $\begin{gathered} 14^{\prime} 10 " \\ 12^{\prime} 10 " \\ 10^{\prime} 6^{\prime \prime} \end{gathered}$ |  | $\begin{aligned} & 11^{\prime} 3 " \\ & 10^{\prime} 2 " \\ & 8^{\prime} 11^{\prime \prime} \end{aligned}$ | $\begin{gathered} 12^{\prime} 10 " \\ 11^{\prime \prime} 1 " \\ 9^{\prime} 1 \text { "'- } \end{gathered}$ | $\begin{gathered} 11^{\prime} 8^{\prime \prime} \\ 10^{\prime} 7 \\ 9^{\prime} 1^{\prime \prime} \\ \mathbf{n}^{-} \end{gathered}$ | $\begin{gathered} 10^{\prime} 2^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \\ -7--2 \end{gathered}$ | $\begin{gathered} 1^{\prime} 6^{\prime \prime} \\ 9^{\prime} 1^{\prime \prime} \\ 7^{\prime} 5 \end{gathered}$ | $\begin{gathered} 10^{\prime} 2^{\prime \prime} \\ 9^{\prime} 1^{\prime \prime} \\ 7^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \\ 7^{\prime} 11^{\prime \prime} \end{gathered}$ |
| 362TLF125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 21^{\prime} 8^{\prime \prime} \\ 18^{\prime} 10 " \\ 15^{\prime} \mathbf{n}^{\prime \prime} \\ --.--. . \end{gathered}$ | $\begin{gathered} 17^{\prime} 5^{\prime \prime} \\ 15^{\prime} 10^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \\ -\ldots--. . . \end{gathered}$ | $\begin{gathered} 15^{\prime} 2 " \\ 13^{\prime} 10^{\prime \prime} \\ 12^{\prime} 11^{\prime \prime} \\ --. . . . \end{gathered}$ | $\begin{gathered} 17^{\prime} 9 " \\ 15^{\prime} 4^{\prime \prime} \\ 12^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 17^{\prime} 1 " \\ 15^{\prime} 4^{\prime \prime} \\ 12^{\prime} 6^{\prime \prime} \\ --2- \end{gathered}$ | $\begin{gathered} 14^{\prime} 11^{\prime \prime} \\ 13^{\prime} 7 " \\ 11^{\prime} 10^{\prime \prime} \\ ---1 \end{gathered}$ | $\begin{gathered} 15^{\prime} 4^{\prime \prime} \\ 13^{\prime} 3^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \\ ---.-. \end{gathered}$ | $\begin{gathered} 15^{\prime} 4^{\prime \prime} \\ 13^{\prime} 3^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \\ -\ldots--.-- \end{gathered}$ | $\begin{gathered} 13^{\prime} 7 " \\ 12^{\prime} 4^{\prime \prime} \\ 10^{\prime} 9 \end{gathered}$ | $\begin{gathered} 12^{\prime} 6 " \\ 10^{\prime} 10 " \\ 8^{\prime} 10^{\prime \prime} \\ --.-1 \end{gathered}$ | $\begin{gathered} 12^{\prime} 6^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \\ 8^{\prime} 10^{\prime \prime} \\ ---1 \end{gathered}$ | $\begin{gathered} 11^{\prime} 10^{\prime \prime} \\ 10^{\prime} 99^{\prime \prime} \\ 8^{\prime} 10^{\prime \prime} \\ \hline-----2 \end{gathered}$ |
| 400TLF125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 22^{\prime} 11^{\prime \prime} \\ 19^{\prime} 10 " \\ 16^{\prime} 2 " \end{gathered}$ | $\begin{gathered} 18^{\prime} 9 \prime \\ 17^{\prime \prime} 1^{\prime \prime} \\ 14^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 16^{\prime} 5^{\prime \prime} \\ 14^{\prime} 11^{\prime \prime} \\ 13^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 18^{\prime} 8 \\ & 16^{\prime} 2 " \\ & 13^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 18^{\prime} 6 " \\ & 16^{\prime} 2 " \\ & 13^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{gathered} 16^{\prime} 2 " \\ 14^{\prime} 8 " \\ 12^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 16^{\prime} 2 " \\ & 14^{\prime} 0 \\ & 11^{\prime} 5^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 16^{\prime} 2 " \\ & 14^{\prime} 0 \\ & 11^{\prime} 5 \end{aligned}$ | $\begin{aligned} & 14^{\prime} 8 \\ & 13^{\prime} 4^{\prime \prime} \\ & 11^{\prime} 5 \end{aligned}$ | $\begin{gathered} 13^{\prime} 3^{\prime \prime} \\ 11^{\prime} 5^{\prime \prime} \\ 9^{\prime \prime} 4^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 13^{\prime} 3^{\prime \prime} \\ 11^{\prime} 5^{\prime \prime} \\ 9^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 10 " \\ 11^{\prime} 5 " \\ 9^{\prime} 4 \text { " } \end{gathered}$ |
| 600TLF125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 29^{\prime} 5 " \\ 25^{\prime \prime} 6 " \\ 20^{\prime} 10^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{aligned} & 25^{\prime} 8 " \\ & 23^{\prime} 4 " \\ & 20^{\prime} 5 " \\ & \hline \end{aligned}$ | $\begin{gathered} 22^{\prime} 5^{\prime \prime} \\ 20^{\prime} 5^{\prime \prime} \\ 17^{\prime} 10^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{gathered} 24^{\prime} 0 " \\ 20^{\prime} 10^{\prime \prime} \\ 17^{\prime} 0^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 24^{\prime} 0 " \\ 20^{\prime} 10^{\prime \prime} \\ 17^{\prime} 0^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 22^{\prime} 1^{\prime \prime} \\ 20^{\prime} 1^{\prime \prime} \\ 170^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 20^{\prime} 10 " \\ 18^{\prime} 0 " \mathrm{e} \\ 14^{\prime} 9 " \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 20^{\prime} 10 " \\ 18^{\prime} 0 " \mathrm{e} \\ 14^{\prime} 9 " \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 20^{\prime} 1 " \\ 18^{\prime \prime} 0^{\prime \prime} \mathrm{e} \\ 14^{\prime} 9{ }^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{aligned} & 17^{\prime} 0 " \mathrm{e} \\ & 14^{\prime} 9 " \mathrm{e} \\ & 12^{\prime} 0^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{aligned} & 17^{\prime} 0 " \mathrm{e} \\ & 14^{\prime} 9 " \mathrm{e} \\ & 12^{\prime} 0^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{gathered} 170^{\prime \prime} \mathrm{e} \\ 14^{\prime} 9^{\prime \prime} \mathrm{e} \\ 12^{\prime} 0^{\prime \prime} \mathrm{e} \end{gathered}$ |
|  | 12 | 17' 0" | 13' 6" | 11'9" | 15' 10" | $13^{\prime \prime}{ }^{\prime \prime}$ | 11'7" | 13' ${ }^{\prime \prime}$ | 12'1" | 10' 6" | 11' 2 " | 10' 6" | 9' 2 " |
| 250TLF125-33 | $16$ $24$ | $\begin{aligned} & 15^{\prime} 5 " \\ & 13^{\prime} 6 " \end{aligned}$ | $\begin{aligned} & 12^{\prime} 3^{\prime \prime} \\ & 10^{\prime} 8 " \end{aligned}$ | $\begin{gathered} 10^{\prime} 8 " \\ 9^{\prime} 4 " \end{gathered}$ | $\begin{aligned} & 13^{\prime} 9 " \\ & 11^{\prime} 2^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 12^{\prime} 1 " \\ & 10^{\prime} 6 \text { " } \end{aligned}$ | $\begin{gathered} 10^{\prime} 6 " \\ 9^{\prime} 2^{\prime \prime} \end{gathered}$ | 11' $11^{\prime \prime}$ 9' 8" | 10'11" 9' 7" | $\begin{aligned} & 9^{\prime} 7 " \\ & 8^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{gathered} 9^{\prime} 8 " \\ 7^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 9^{\prime} 7 " \\ 7^{\prime} 11^{\prime \prime} \\ \hline-2 . \end{gathered}$ | $\begin{aligned} & 8^{\prime} 4^{\prime \prime} \\ & 7^{\prime} 4^{\prime \prime} \\ & ----. \end{aligned}$ |
|  | 12 | $22^{\prime \prime}$ | $18^{\prime} 0$ | 15' 8" | 19' ${ }^{\prime \prime}$ | $17{ }^{\prime \prime}$ | 15' 5" | 16' 7 " | $16^{\prime \prime}$ | 14'0" | $13^{\prime} 6$ | $13^{\prime} 6^{\prime \prime}$ | $12^{\prime} 3^{\prime \prime}$ |
| 362TLF125-33 | $\begin{aligned} & 16 \\ & 24 \end{aligned}$ | $\begin{aligned} & 20^{\prime} 3^{\prime \prime} \\ & 16^{\prime \prime} 7 \end{aligned}$ | $\begin{aligned} & 16^{\prime} 4^{\prime \prime} \\ & 14^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 3^{\prime \prime} \\ & 12^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 16^{\prime} 7 " \\ & 13^{\prime} 6 \end{aligned}$ | $\begin{aligned} & 16^{\prime \prime} 1 \\ & 13^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 0 " \\ & 12^{\prime \prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 4 " \\ & 11^{\prime \prime} 9 \end{aligned}$ | $\begin{aligned} & 14^{\prime} 4 \\ & 11^{\prime \prime} 9 \end{aligned}$ | $\begin{aligned} & 12^{\prime} 9 " \\ & 11^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 111^{\prime} \\ & 9^{\prime} 7 \end{aligned}$ | $\begin{gathered} 111^{\prime} \\ 9^{\prime} 7 \\ \hline-2 \end{gathered}$ | $\begin{aligned} & 11^{\prime} 2 " \\ & 9^{\prime} 7 \end{aligned}$ |
| 400TLF125-33 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{aligned} & 24^{\prime} 5^{\prime \prime} \\ & 21^{\prime} 5^{\prime \prime} \\ & 17^{\prime} 6^{\prime \prime} \end{aligned}$ | $\begin{gathered} 19^{\prime} 5^{\prime} \\ 17^{\prime} 8^{\prime \prime} \\ 15^{\prime} 5 \end{gathered}$ | $\begin{gathered} 16^{\prime} 11^{\prime \prime} \\ 15^{\prime} 5^{\prime \prime} \\ 13^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 20^{\prime} 2^{\prime \prime} \\ & 17^{\prime} 6^{\prime \prime} \\ & 14^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 19^{\prime} 1^{\prime \prime} \\ & 17^{\prime} 4^{\prime \prime} \\ & 14^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 16^{\prime} 8 \\ & 15^{\prime \prime} 2 " \\ & 13^{\prime} 3^{\prime \prime} \\ & -1 \end{aligned}$ | $\begin{aligned} & 17^{\prime} 6^{\prime \prime} \\ & 15^{\prime \prime} 2 \\ & 12^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{gathered} 17^{\prime} 4^{\prime \prime} \\ 15^{\prime} 2 " \\ 12^{\prime \prime} 4 \end{gathered}$ | $\begin{aligned} & 15^{\prime} 2^{\prime \prime} \\ & 13^{\prime} 9 \\ & 12^{\prime} 0^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 3^{\prime \prime} \\ & 12^{\prime} 4^{\prime \prime} \\ & 10^{\prime} 1^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 3^{\prime \prime} \\ & 12^{\prime} 4^{\prime \prime} \\ & 10^{\prime} 1 \end{aligned}$ | $\begin{aligned} & 13^{\prime} 3^{\prime \prime} \\ & 12^{\prime} 0^{\prime \prime} \\ & 10^{\prime} 1 " \end{aligned}$ |
| 600TLF125-33 | $\begin{aligned} & 12 \\ & 16 \\ & 24 \\ & \hline \end{aligned}$ | $\begin{aligned} & 32^{\prime} 8^{\prime \prime} \\ & 28^{\prime \prime} 3^{\prime \prime} \\ & 23^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 26^{\prime} 7 " \\ & 24^{\prime} 2 " \\ & 21^{\prime} 2 " \end{aligned}$ | $\begin{aligned} & 23^{\prime} 3^{\prime \prime} \\ & 21^{\prime} 2 "^{\prime \prime} \\ & 18^{\prime}{ }^{\prime \prime} \end{aligned}$ | $\begin{gathered} 26^{\prime} 8^{\prime \prime} \\ 23^{\prime} 1^{\prime \prime} \\ 18^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 26^{\prime} 2^{\prime \prime} \\ 23^{\prime} 1 " \\ 18^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 22^{\prime} 11^{\prime \prime} \\ 20^{\prime} 9 " \\ 18^{\prime} 2 " \text { e } \\ \hline \end{gathered}$ | $\begin{gathered} 23^{\prime} 1^{\prime \prime} \\ 20^{\prime \prime} 0 " e \\ 16^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 23^{\prime} 1 " \\ 20^{\prime \prime} 0 " e \\ 16^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 20^{\prime} 9 " \\ 18^{\prime \prime} 11^{\prime \prime} \mathrm{e} \\ 16^{\prime} 4{ }^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 18^{\prime} 10^{\prime \prime} \text { e } \\ 16^{\prime} 4^{\prime \prime} \mathrm{e} \\ 13^{\prime} 4^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 18^{\prime} 10^{\prime \prime} \mathrm{e} \\ 16^{\prime} 4^{\prime \prime} \mathrm{e} \\ 13^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{aligned} & 18{ }^{\prime} 2 " \mathrm{e} \\ & 16^{\prime} 4^{\prime \prime} \mathrm{e} \\ & 13^{\prime} 4^{\prime \prime} \mathrm{e} \end{aligned}$ |

For SI: 1 inch = $25.4 \mathrm{~mm}, 1 \mathrm{ft}=0.3048 \mathrm{~m}, 1 \mathrm{psf}=47.88 \mathrm{~Pa}$.

1. Web height-to-thickness ratio exceeds 200. Webs must have bearing stiffeners. See AISI S100 Section B1.2.
2. Web height-to-thickness ratio exceeds 260 but less than 300. Webs must have bearing and intermediate stiffeners. See AISI S100 Section B1.2.
3. Web stiffeners are required at the stud/track connection when denoted with an "e".
4. Compression flanges must be continuously braced.
5. End bearing must be 1 -inch.

TABLE 7-NON-COMPOSITE LIMITING HEIGHTS (feet-inches) 48" o.c. BRACING TRAKLOC FIXED LENGTH STUDS (TLF) ${ }^{3,4,5}$

| MEMBER DESIGNATION | Spacing o/c (in) | Lateral Load (psf) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 5 PSF |  |  | 7.5 PSF |  |  | 10 PSF |  |  | 15 PSF |  |  |
|  |  | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 |
| 250TLF125-18 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 12^{\prime} 7 " \\ 10^{\prime} 11^{\prime \prime} \\ 8^{\prime} 11^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 111^{\prime} 0^{\prime} \\ 10^{\prime} 0 " \\ 8^{\prime} 9 "-\mathrm{e} \end{gathered}$ | $\begin{gathered} 9^{\prime} 8 " \\ 8^{\prime \prime} 9 " \\ 7^{\prime \prime} 8^{\prime \prime} \text { e e } \end{gathered}$ | $\begin{gathered} 10^{\prime} 3^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ 7^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime \prime} 3^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ 7^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 9^{\prime} \text { 6" } \\ \text { 8' 7" e } \\ \text { 7' 3" }{ }^{\prime \prime} \text { e. } \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \text { e } \\ \text { 7' } 8^{\prime \prime} \text { e } \\ 6^{\prime} 3^{\prime \prime} \text { e } \end{gathered}$ |  | $\begin{aligned} & 8^{\prime \prime} 7^{\prime \prime} \text { e } \\ & \text { 7' 8" e } \\ & \text { 6' } 3^{\prime \prime} \text { e } \end{aligned}$ | $\begin{aligned} & \text { 7' 3" e } \\ & \text { 6' 3" e } \\ & \text { 5' 2" e } \end{aligned}$ | $\begin{aligned} & \text { 7' 3" e } \\ & \text { 6' 3" e } \\ & \text { 5' 2" e e } \end{aligned}$ | $\begin{aligned} & \text { 7' 3" e } \\ & \text { 6' 3" e } \\ & 5^{\prime \prime} 2^{\prime \prime} \text { e e } \end{aligned}$ |
| 362TLF125-18 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 14^{\prime} 3^{\prime \prime} \\ 12^{\prime} 4^{\prime \prime} \mathrm{e} \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 14^{\prime} 3^{\prime \prime} \\ 12^{\prime \prime} 4^{\prime \prime} \mathrm{e} \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 10^{\prime \prime} \\ 11^{\prime} 8^{\prime \prime} \mathrm{e} \\ 10^{\prime} 1 " \mathrm{e} \end{gathered}$ | $\begin{gathered} 11^{\prime} 7^{\prime \prime} \mathrm{e} \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \\ 8^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 11^{\prime} 7 " \mathrm{e} \\ 10^{\prime} 1 " \mathrm{e} \\ 8^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 11^{\prime} 7^{\prime \prime} \mathrm{e} \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \\ 8^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 1^{\prime \prime} \mathrm{e} \\ \text { 8' }^{\prime \prime} 9^{\prime \prime} \mathrm{e} \\ 7^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{aligned} & 10^{\prime \prime} 1 " \mathrm{e} \\ & \text { 8' } 9^{\prime \prime} \mathrm{e} \\ & 7^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{gathered} 10^{\prime \prime} 1^{\prime \prime} \mathrm{e} \\ 8^{\prime \prime} 9^{\prime \prime} \mathrm{e} \\ 7^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 3^{\prime \prime} \mathrm{e} \\ 7^{\prime} 1^{\prime \prime} \mathrm{e} \\ 5^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime \prime} 3^{\prime \prime} \mathrm{e} \\ 7^{\prime} 1^{\prime \prime} \mathrm{e} \\ 5^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 3^{\prime \prime} \mathrm{e} \\ \text { 7' 1" e } \\ 5^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 400TLF125-18 ${ }^{1}$ | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 15^{\prime} 0^{\prime \prime} \\ 12^{\prime} 11^{\prime \prime} \mathrm{e} \\ 10^{\prime} 7^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 15^{\prime} 0^{\prime \prime} \\ 12^{\prime} 11^{\prime \prime} \mathrm{e} \\ 10^{\prime} 7^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 13^{\prime} 3^{\prime \prime} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ 10^{\prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 3^{\prime \prime} \mathrm{e} \\ 10^{\prime} 7 " \mathrm{e} \\ 8^{\prime} 8^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 3^{\prime \prime} \mathrm{e} \\ 10^{\prime} 7 " \mathrm{e} \\ 8^{\prime} 8^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 3 " \mathrm{e} \\ 10^{\prime} 7{ }^{\prime \prime} \mathrm{e} \\ 8^{\prime} 8^{\prime \prime} \mathrm{e} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 7 " \mathrm{e} \\ 9^{\prime} 2^{\prime \prime} \mathrm{e} \\ 7^{\prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 7 " \mathrm{e} \\ 9^{\prime} 2^{\prime \prime} \mathrm{e} \\ 7^{\prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 7 " \mathrm{e} \\ 9^{\prime} 2 " \mathrm{e} \\ 7^{\prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{aligned} & 8^{\prime \prime} 8^{\prime \prime} \mathrm{e} \\ & \text { 7' 6" e } \\ & 6^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{aligned} & 8^{\prime} 8^{\prime \prime} \mathrm{e} \\ & 7^{\prime \prime} 6^{\prime \prime} \mathrm{e} \\ & 6^{\prime} 1^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{gathered} 8^{\prime} 8 " \mathrm{e} \\ 77^{\prime \prime} \mathrm{e} \\ 6^{\prime} 11 \mathrm{e} \end{gathered}$ |
| 600TLF125-18 ${ }^{2}$ | $\begin{aligned} & 12 \\ & 16 \\ & 24 \\ & \hline \end{aligned}$ | $\begin{aligned} & 19^{\prime} 2^{\prime \prime} \mathrm{e} \\ & 16^{\prime} 7 " \mathrm{e} \\ & 13^{\prime} 66^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{aligned} & 19 ' 2 " \mathrm{e} \\ & 16^{\prime} 7 " \mathrm{e} \\ & 13^{\prime} 6 " \mathrm{e} \\ & \hline \end{aligned}$ | $\begin{gathered} 18^{\prime} 3^{\prime \prime} \mathrm{e} \\ 16^{\prime} 77^{\prime \prime} \mathrm{e} \\ 13^{\prime} 6^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{aligned} & 15{ }^{\prime} 7 \mathrm{l} \text { e } \\ & 13^{\prime} 6 " \mathrm{e} \\ & 11^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{aligned}$ |  | $\begin{aligned} & 15^{\prime} 7^{\prime \prime} \mathrm{e} \\ & 13^{\prime} 6^{\prime \prime} \mathrm{e} \\ & 11^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{gathered} 13^{\prime} 6^{\prime \prime} \mathrm{e} \\ 11^{\prime} 9^{\prime \prime} \mathrm{e} \\ 9^{\prime} 7^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 13^{\prime} 6 " \mathrm{e} \\ 11^{\prime} 9 " \mathrm{e} \\ 9^{\prime} 77^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 13 ' 6 " \mathrm{e} \\ 11^{\prime} 9 " \mathrm{e} \\ 9^{\prime} 7{ }^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 111^{\prime \prime} \text { " e } \\ \text { 9' 7" e } \\ \text { 6' 9" e } \\ \hline \end{gathered}$ | $\begin{gathered} 11^{\prime} 1 " \mathrm{e} \\ 9^{\prime} 77^{\prime \prime} \mathrm{e} \\ \text { 6' } 9^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 11 ' 1 " \mathrm{e} \\ \text { 9' 7" e } \\ \text { 6' } 9^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ |
| 250TLF125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 15^{\prime} 0 \\ 13^{\prime} 7 \\ 11^{\prime} 5 \end{gathered}$ | $\begin{gathered} 11^{\prime} 11^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 5^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ 8^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 2^{\prime \prime} \\ 11^{\prime} 5^{\prime \prime} \\ 9^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 8 " \\ 10^{\prime} 8 \\ 9^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 3^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \\ -y^{\prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 5 " \\ 9^{\prime} 11^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 8{ }^{\prime \prime} \\ 9^{\prime} 8^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 9^{\prime} 3^{\prime \prime} \\ & 8^{\prime} 5^{\prime \prime} \\ & 7^{\prime} 4^{\prime \prime} \end{aligned}$ | 9' $\mathbf{4 "}^{\prime \prime}$ <br> 8'1" <br> 6' 7 " | $\begin{aligned} & 9^{\prime} 3^{\prime \prime} \\ & 8^{\prime} 1^{\prime \prime} \\ & 6^{\prime} 7^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 8^{\prime} 1^{\prime \prime} \\ & 7^{\prime \prime} 4^{\prime \prime} \\ & 6^{\prime} 5^{\prime \prime} \end{aligned}$ |
| 362TLF125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 17^{\prime} 11^{\prime \prime} \\ 15^{\prime} 7 " \\ 12^{\prime} 8 " \end{gathered}$ | $\begin{gathered} 15^{\prime} 11^{\prime \prime} \\ 14^{\prime} 5 " \\ 12^{\prime \prime} 7^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \\ 12^{\prime} 7 " \\ 11^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 8^{\prime \prime} \\ 12^{\prime} 8^{\prime \prime} \\ 10^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 14^{\prime} 8 \\ & 12^{\prime} 8 \\ & 10^{\prime} 4^{\prime \prime} \\ & -10 \end{aligned}$ | $\begin{aligned} & 13^{\prime} 8 \\ & 12^{\prime} 5^{\prime \prime} \\ & 10^{\prime} 4 \end{aligned}$ | $\begin{gathered} 12^{\prime} 8 \\ 11^{\prime} 0 \\ 9^{\prime} 0 \\ 9^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 8^{\prime \prime} \\ 11^{\prime} 0 \\ 9^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 5^{\prime \prime} \\ 11^{\prime} 0 \\ 9^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 4^{\prime \prime} \\ 9^{\prime} 0 " \\ 7^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 4^{\prime \prime} \\ 9^{\prime} 0^{\prime \prime} \\ 7^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 4^{\prime \prime} \\ 9^{\prime} 0^{\prime \prime} \\ 7^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 400TLF125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 18^{\prime} 10 " \\ 16^{\prime} 4^{\prime \prime} \\ 13^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 17^{\prime} 2^{\prime \prime} \\ & 15^{\prime} 8^{\prime \prime} \\ & 13^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{gathered} 15^{\prime} 0^{\prime \prime} \\ 13^{\prime} 8^{\prime \prime} \\ 11^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 15^{\prime} 4^{\prime \prime} \\ 13^{\prime} 4^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 15^{\prime} 4^{\prime \prime} \\ 13^{\prime} 4^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \\ \hline-2 \end{gathered}$ | $\begin{gathered} 14^{\prime} 9 " \\ 13^{\prime \prime} 4^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 4^{\prime \prime} \\ 11^{\prime} 6^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 4 " \\ 11^{\prime} 6 " \\ 9^{\prime} 55^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 4^{\prime \prime} \\ 11^{\prime} 6 " \\ 9^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 10^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ 7^{\prime} 8^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 10^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ 7^{\prime} 8^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 10^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ 7^{\prime} 8^{\prime \prime} \end{gathered}$ |
| 600TLF125-24¹ | $\begin{aligned} & 12 \\ & 16 \\ & 24 \end{aligned}$ | $\begin{gathered} 24^{\prime} 2 " \\ 20^{\prime \prime} 11^{\prime \prime} \\ 17^{\prime} 1^{\prime \prime} \end{gathered}$ | $\begin{gathered} 23^{\prime} 0^{\prime \prime} \\ 20^{\prime} 11^{\prime \prime} \\ 17^{\prime} 1^{\prime \prime} \end{gathered}$ | $\begin{gathered} 20^{\prime} 1^{\prime \prime} \\ 18^{\prime} 3^{\prime \prime} \\ 15^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{array}{r} 19 ' 9 " \\ 17{ }^{\prime \prime} 1 " \\ 13^{\prime} 11^{\prime \prime} \end{array}$ | $\begin{gathered} 19^{\prime} 9 " \\ 17^{\prime} 1^{\prime \prime} \\ 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 19^{\prime} 9 " \\ 17^{\prime} 1^{\prime \prime} \\ 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 17^{\prime} 1^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \mathrm{e} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 17^{\prime} 1 "^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \mathrm{e} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 17^{\prime} 1^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \mathrm{e} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime \prime} 1^{\prime \prime} \mathrm{e} \\ 9^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime \prime} 1^{\prime \prime} \mathrm{e} \\ 9^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ 9^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 250TLF125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 16^{\prime} 5^{\prime \prime} \\ 14^{\prime} 7^{\prime \prime} \\ 11^{\prime} 11^{\prime \prime} \\ \hdashline---1 \end{gathered}$ | $\begin{gathered} 13^{\prime} 1 " \\ 11^{\prime} 10^{\prime \prime} \\ 10^{\prime} 4^{\prime \prime} \\ ----. . . \end{gathered}$ | $\begin{gathered} 11^{\prime} 5 " \\ 10^{\prime} 4 " \\ 9^{\prime} 1 \text { 1" } \end{gathered}$ | $\begin{gathered} 13^{\prime} 9 " \\ 11^{\prime} 11^{\prime \prime} \\ 9^{\prime} 99^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 10 " \\ 11^{\prime} 8 " \\ 9^{\prime} 99^{\prime \prime} \\ ----2 \end{gathered}$ | $\begin{aligned} & 11^{\prime} 3 \\ & 10^{\prime} 2 \\ & 8^{\prime} 11^{\prime \prime} \\ & -3-11 \end{aligned}$ | $\begin{gathered} 11^{\prime} 11^{\prime \prime} \\ 10^{\prime} 4^{\prime \prime} \\ 8^{\prime} 55^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 88^{\prime \prime} \\ 10^{\prime \prime} 4^{\prime \prime} \\ 8^{\prime} 5 \mathbf{-}^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 2^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \\ -z_{-}^{-} \end{gathered}$ | $\begin{gathered} 9^{\prime} 9 " \\ 8^{\prime} 5^{\prime \prime} \\ 6^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 9^{\prime} 9 " \\ 8^{\prime} 5^{\prime \prime} \\ 6^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \\ 8^{\prime} 1 " \\ 6^{\prime} 10^{\prime \prime} \end{gathered}$ |
| 362TLF125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 19^{\prime} 11^{\prime \prime} \\ 17^{\prime} 3^{\prime \prime} \\ 14^{\prime} 1 " \end{gathered}$ | $\begin{gathered} 17^{\prime} 5^{\prime \prime} \\ 15^{\prime} 10^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 15^{\prime} 2^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \\ 12^{\prime} 1 \text { " } \end{gathered}$ | $\begin{gathered} 16^{\prime} 3^{\prime \prime} \\ 14^{\prime} 1^{\prime \prime} \\ 11^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 16^{\prime} 3^{\prime \prime} \\ 14^{\prime} 1 " \\ 11^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 11^{\prime \prime} \\ 13^{\prime} 7 " \\ 11^{\prime} 6 \text { " } \end{gathered}$ | $\begin{aligned} & 14^{\prime} 1 " \\ & 12^{\prime} 3^{\prime \prime} \\ & 10^{\prime} 0 \end{aligned}$ | $\begin{aligned} & 14^{\prime} 1^{\prime \prime} \\ & 12^{\prime} 3^{\prime \prime} \\ & 10^{\prime} 0^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 13^{\prime} 7 \\ & 12^{\prime} 3^{\prime \prime} \\ & 10^{\prime} 0^{\prime \prime} \end{aligned}$ | $\begin{gathered} 11^{\prime} 6 \\ 10^{\prime \prime} 0 \\ 8^{\prime} 2^{\prime \prime} \\ -2^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 6^{\prime \prime} \\ 10^{\prime} 0^{\prime \prime} \\ 8^{\prime} 2^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 6 \\ 10^{\prime} 0^{\prime \prime} \\ 8^{\prime} 2^{\prime \prime} \end{gathered}$ |
| 400TLF125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 21^{\prime} 0 " \\ 18^{\prime} 2 " \\ 14^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 18^{\prime} 9 " \\ 17^{\prime \prime} 1 " \\ 14^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 16^{\prime} 5^{\prime \prime} \\ 14^{\prime} 11^{\prime \prime} \\ 13^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 17^{\prime} 2 " \\ 14^{\prime} 10 " \\ 12^{\prime} 1 " \end{gathered}$ | $\begin{gathered} 17^{\prime} 2^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \\ 12^{\prime \prime} 1^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 16^{\prime} 2 " \\ & 14^{\prime} 8^{\prime \prime} \\ & 12^{\prime} 1 " \end{aligned}$ | $\begin{gathered} 14^{\prime} 10 " \\ 12^{\prime} 10^{\prime \prime} \\ 10^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 10 " \\ 12^{\prime} 10 " \\ 10^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 8^{\prime \prime} \\ 12^{\prime} 10^{\prime \prime} \\ 10^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 1^{\prime \prime} \\ 10^{\prime} 6^{\prime \prime} \\ 8^{\prime} 7^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 1^{\prime \prime} \\ 10^{\prime} 6 " \\ 8^{\prime} 7 \text { 7" } \end{gathered}$ | $\begin{gathered} 12^{\prime} 1 " \\ 10^{\prime} 6^{\prime \prime} \\ 8^{\prime} 77^{\prime \prime} \end{gathered}$ |
| 600TLF125-30 | $\begin{aligned} & 12 \\ & 16 \\ & 24 \\ & \hline \end{aligned}$ | $\begin{gathered} 27^{\prime} 7 " \\ 23^{\prime \prime} 11^{\prime \prime} \\ 19^{\prime} 6 " \\ \hline \end{gathered}$ | $\begin{aligned} & 25^{\prime} 8^{\prime \prime} \\ & 23^{\prime \prime} 4^{\prime \prime} \\ & 19^{\prime \prime} \\ & \hline \end{aligned}$ | $\begin{gathered} 22^{\prime} 5^{\prime \prime} \\ 20^{\prime} 5^{\prime \prime} \\ 17^{\prime} 10^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{array}{r} 22^{\prime \prime} 7^{\prime \prime} \\ 19^{\prime} 6^{\prime \prime} \\ 15^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{array}{r} 22^{\prime} 7^{\prime \prime} \\ 19^{\prime} 6^{\prime \prime} \\ 15^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 22^{\prime \prime} 1 " \\ 19^{\prime} 6 " \\ 15^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 19^{\prime} 6^{\prime \prime} \\ 16^{\prime} 11^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 19^{\prime} 6^{\prime \prime} \\ 16^{\prime} 11^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 19^{\prime} 6 " \\ 16^{\prime \prime} 11^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{array}{\|c\|c} \hline 15^{\prime} 11^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \\ 11^{\prime} 3 \\ \hline \end{array}$ | $\begin{gathered} 15^{\prime} 11^{\prime \prime} \mathrm{e} \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ 11^{\prime} 3^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 15^{\prime} 11^{\prime \prime} \mathrm{e} \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ 11^{\prime} 3^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ |
|  | 12 | 17' 0 " | $13^{\prime} 6$ | 11'9" | 14'8' | $13^{\prime \prime}{ }^{\prime \prime}$ | 11'7" | 12' 9" | $12^{\prime \prime} 1$ | 10' 6" | 10' $5^{\prime \prime}$ | 10' 5" | 9'2" |
| 250TLF125-33 | $\begin{array}{r} 16 \\ 24 \\ \hline \end{array}$ | $\begin{aligned} & 15^{\prime} 5 " \\ & 12^{\prime} 9 " \end{aligned}$ | $\begin{aligned} & 12^{\prime} 3^{\prime \prime} \\ & 10^{\prime \prime} 8 \end{aligned}$ | $\begin{gathered} 10^{\prime} 8 " \\ 9^{\prime} 4 " \end{gathered}$ | $\begin{aligned} & 12^{\prime} 9 " \\ & 10^{\prime} 5 \\ & \hline \end{aligned}$ | $\begin{aligned} & 12^{\prime} 1 " \\ & 10^{\prime} 5 \end{aligned}$ | $\begin{aligned} & 10^{\prime} 6 " \\ & 9^{\prime} 2^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 11^{\prime} 0 \\ & 9^{\prime} 0 \\ & 9^{\prime \prime} \end{aligned}$ | $\begin{gathered} 10^{\prime} 11^{\prime \prime} \\ 9^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 9^{\prime} 7 " \\ & 8^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 9^{\prime} 0 " \\ & 7^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 9^{\prime} 0 " \\ & 7^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 8^{\prime} 4^{\prime \prime} \\ & 7^{\prime} 4^{\prime \prime} \\ & \hline-2 \end{aligned}$ |
|  | 12 | 21' 6 " | 18' $0^{\prime \prime}$ | $15^{\prime \prime} 8$ | 17' 7 | 17' 7 " | 15' 5" | $15^{\prime} 3^{\prime \prime}$ | $15^{\prime} 3^{\prime \prime}$ | $14^{\prime} 0$ | $12^{\prime \prime}$ | 12' 5" | $12^{\prime \prime}$ |
| 362TLF125-33 | $\begin{array}{r} 16 \\ 24 \\ \hline \end{array}$ | $\begin{aligned} & 18^{\prime} 8^{\prime} \\ & 15^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 16^{\prime} 4^{\prime \prime} \\ & 14^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 3^{\prime \prime} \\ & 12^{\prime} 5 \end{aligned}$ | $\begin{aligned} & 15^{\prime} 3^{\prime \prime} \\ & 12^{\prime \prime} 5 " \end{aligned}$ | $\begin{aligned} & 15^{\prime} 3^{\prime \prime} \\ & 12^{\prime} 5^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 0 \\ & 12^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 13^{\prime} 2 " \\ & 10^{\prime} 9 \end{aligned}$ | $\begin{aligned} & 13^{\prime} 2 " \\ & 10^{\prime} 9 \end{aligned}$ | $\begin{aligned} & 12^{\prime} 9 " \\ & 10^{\prime} 9 \end{aligned}$ | $\begin{gathered} 10^{\prime} 9 " \\ 8^{\prime} 9 \end{gathered}$ | $\begin{aligned} & 10 ' 9 " 9 \\ & 8^{\prime} 9 \end{aligned}$ | $\begin{gathered} 10^{\prime} 9 " \\ 8^{\prime} 9 \end{gathered}$ |
|  | 12 | 22' ${ }^{\prime \prime}$ | 19' 5" | 16' 11" | 18' ${ }^{\prime \prime}$ | 18' ${ }^{\prime \prime}$ | 16' ${ }^{\prime \prime}$ | $16^{\prime} 0$ | $16^{\prime} 0$ | 15' 2 " | $13^{\prime \prime}$ | $13^{\prime \prime}$ | $13^{17}$ |
| 400TLF125-33 | $\begin{array}{r} 16 \\ 24 \\ \hline \end{array}$ | $\begin{aligned} & 19^{\prime} 8^{\prime \prime} \\ & 16^{\prime} 0 " \\ & \end{aligned}$ | $\begin{aligned} & 17^{\prime} 8^{\prime \prime} \\ & 15^{\prime} 5 \end{aligned}$ | $\begin{aligned} & 15^{\prime} 5 " \\ & 13^{\prime \prime} 5 \end{aligned}$ | $\begin{aligned} & 16^{\prime} 0 " \\ & 13^{\prime} 1 " \\ & -1{ }^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 16^{\prime} 0^{\prime \prime} \\ & 13^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 15^{\prime} 2 " \\ & 13^{\prime} 1 \\ & \hline-1 \end{aligned}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \\ 11^{\prime} 4 " \end{gathered}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \\ 11^{\prime} 4 " \end{gathered}$ | $\begin{aligned} & 13^{\prime} 9 " \\ & 11^{\prime \prime} 4^{\prime \prime} \end{aligned}$ | $\begin{gathered} 11^{\prime} 4 " \\ 9^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 11^{\prime} 4 " \\ & 9^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{gathered} 11^{\prime} 4 " \\ 9^{\prime} 3 " \end{gathered}$ |
|  | 12 | 29'11" | 26' 7 " | 23'3" | 24'5" | 24' 5" | 22'11" | 21' 2 | 21'2" | 20'9" | 17' 3" e | 17'3" e | 17' $3^{\prime \prime}$ e |
| 600TLF125-33 | $\begin{aligned} & 16 \\ & 24 \\ & \hline \end{aligned}$ | $\begin{gathered} 25^{\prime} 11 " \\ 21^{\prime} 2 " \\ \hline \end{gathered}$ | $\begin{aligned} & 24^{\prime} 2 " \\ & 21^{\prime \prime} 2^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 21^{\prime} 2 " \\ & 18^{\prime} 5{ }^{\prime \prime} \end{aligned}$ | $\begin{gathered} 21 ' 2 " \\ 17^{\prime \prime} 3^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 21 ' 2 " \\ 177^{\prime \prime} 3^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 20^{\prime} 9 " \\ 17^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 18^{\prime} 4 " \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 18^{\prime} 4^{\prime \prime} \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 18^{\prime} 4^{\prime \prime} \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | 14' 11" <br> 12' 2" | $\begin{gathered} 14^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime} 2^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 14^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime} 2^{\prime \prime} \mathrm{e} \end{gathered}$ |

For SI: 1 inch $=25.4 \mathrm{~mm}, 1 \mathrm{ft}=0.3048 \mathrm{~m}, 1 \mathrm{psf}=47.88 \mathrm{~Pa}$.

1. Web height-to-thickness ratio exceeds 200. Webs must have bearing stiffeners. See AISI S100 Section B1.2.
2. Web height-to-thickness ratio exceeds 260 but less than 300 . Webs must have bearing and intermediate stiffeners. See AISI S100 Section B1.2.
3. Web stiffeners are required at the stud/track connection when denoted with an "e".
4. Based on an unbraced length (Lu) of $48^{\prime \prime}$ o.c.
5. End bearing must be 1 -inch.

TABLE 8-NON-COMPOSITE LIMITING HEIGHTS (feet-inches)
FULLY BRACED TRAKLOC ADJUSTABLE STUDS (TLA) ${ }^{3,4,5,6}$

| MEMBER DESIGNATION | Spacing o/c (in) | Lateral Load (psf) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 5 PSF |  |  | 7.5 PSF |  |  | 10 PSF |  |  | 15 PSF |  |  |
|  |  | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 |
| 250TLA125-18 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 13^{\prime \prime} 1^{\prime \prime} \\ 11^{\prime} 4^{\prime \prime} \mathrm{e} \\ 9^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 11^{\prime} 0^{\prime \prime} \\ 10^{\prime} 0^{\prime \prime} \\ 8^{\prime} 9^{\prime \prime}-\mathrm{e} \end{gathered}$ | $\begin{gathered} 9^{\prime} 8^{\prime \prime} \\ 8^{\prime} 9 " \\ 77^{\prime \prime} 8^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 8 " \mathrm{e} \\ \text { 9' } 3^{\prime \prime} \mathrm{e} \\ 7^{\prime} 7 \text { " } \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 8 " \mathrm{e} \\ \text { 9' } 3^{\prime \prime} \mathrm{e} \\ \text { 7' 7" } \mathrm{e} \end{gathered}$ |  | $\begin{aligned} & 9^{\prime} 3^{\prime \prime} \\ & 8^{\prime} 0 " \\ & 6^{\prime} 7 \\ & -7 \end{aligned}$ | $\begin{aligned} & 9^{\prime} 3 " \\ & 8^{\prime} 0 \\ & 6^{\prime} 0^{\prime \prime} \\ & \hline-7 \end{aligned}$ | $\begin{gathered} 8^{\prime \prime} 7^{\prime \prime} \mathrm{e} \\ 7^{\prime} 10^{\prime \prime} \mathrm{e} \\ 6^{\prime} 7^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{aligned} & 7^{\prime} 77^{\prime \prime} \text { e } \\ & \text { 6' } 7^{\prime \prime} \text { e } \\ & 5^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{aligned} & 7^{\prime \prime} 7^{\prime \prime} \text { e } \\ & \text { 6' } 7^{\prime \prime} \text { e } \\ & 5^{\prime \prime} 4^{\prime \prime} \text { e } \end{aligned}$ | $\begin{aligned} & \text { 7' 6" e } \\ & \text { 6' 7" e } \\ & 5^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{aligned}$ |
| 362TLA125-18 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 15^{\prime} 6^{\prime \prime} \mathrm{e} \\ 13^{\prime} 5{ }^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 14^{\prime} 9^{\prime \prime} \\ 13^{\prime \prime} 4^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 10 " \\ 11^{\prime \prime} 8 " \mathrm{e} \\ 10^{\prime} 2^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 8^{\prime \prime} \text { e } \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 8^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 8^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ |  |  | $\begin{gathered} 10^{\prime} 11 " \mathrm{e} \\ \text { 9' 6" e } \\ \text { 7' 9" e } \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ \text { 7' } 9^{\prime \prime} \mathrm{e} \\ 6^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ \text { 7' } 9 \text { " e } \\ \text { 6' 4" e } \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ \text { 7' } 9^{\prime \prime} \mathrm{e} \\ \text { 6' 4" e } \end{gathered}$ |
| 400TLA125-18 ${ }^{1}$ | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 15^{\prime} 6^{\prime \prime} \\ 13^{\prime} 5 " \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 15^{\prime} 2 "^{\prime \prime} \\ 13^{\prime} 5^{\prime \prime} \text { e } \\ 10^{\prime} 11^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 13^{\prime} 3^{\prime \prime} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ 10^{\prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ |  |  |  |  |  |  | $\begin{array}{cc} 8^{\prime} 11^{\prime \prime} \mathrm{e} & 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ \text { 7'9" e } & 7^{\prime} 9^{\prime \prime} \mathrm{e} \\ 6^{\prime} 44^{\prime \prime} \mathrm{e} & 6^{\prime} 4^{\prime \prime} \mathrm{e} \end{array}$ |  | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ \text { 7' } 9 \text { " e } \\ \text { 6' 4" e } \end{gathered}$ |
| 600TLA125-18 ${ }^{2}$ | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ |  |  |  |  |  |  | $\begin{array}{ccc} 13^{\prime} 6 " \mathrm{e} & 13^{\prime} 6 " \mathrm{e} & 13^{\prime} 6 " \mathrm{e} \\ 11^{\prime \prime} 9 \mathrm{e} & 11^{\prime \prime} 9 \mathrm{e} & 11^{\prime \prime} 9 \mathrm{e} \\ 9^{\prime} 7{ }^{\prime \prime} \mathrm{e} & 9^{\prime \prime} \mathrm{e} & { }^{\prime} 7{ }^{\prime \prime} \\ \hline \end{array}$ |  |  |  |  | $\begin{gathered} 111^{\prime \prime} 1^{\prime \prime} \mathrm{e} \\ \text { 9' } 7 " \mathrm{e} \\ \text { 6' } 9 \text { " e } \\ \hline \end{gathered}$ |
| 250TLA125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 15^{\prime} 0^{\prime \prime} \\ 13^{\prime} 7^{\prime \prime} \\ 11^{\prime} 11^{\prime \prime} \\ \hdashline--1 \mathbf{n}^{\prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 11^{\prime \prime} \\ 10^{\prime} 10 " \\ 9^{\prime} 5 " \end{gathered}$ | $\begin{gathered} 10^{\prime} 5^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ 8^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 9 " \\ 13^{\prime \prime} 4^{\prime \prime} \\ 10^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 8 \\ 10^{\prime} 8 \\ 9^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 3^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 4^{\prime \prime} \\ 11^{\prime} 7 " \\ 9^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 8^{\prime \prime} \\ 9^{\prime} 8^{\prime \prime} \\ 8^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 5^{\prime \prime} \\ 7^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 11^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ 7^{\prime} 99^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 5^{\prime \prime} \\ 7^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 1^{\prime \prime} \\ 7^{\prime \prime} 4^{\prime \prime} \\ 6^{\prime} 5^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 362TLA125-24 | $\begin{aligned} & 12 \\ & 16 \\ & 24 \end{aligned}$ | $\begin{gathered} 20^{\prime} 0 \\ 18^{\prime} 2 " \\ 15^{\prime} 9 \end{gathered}$ | $\begin{gathered} 15^{\prime} 11^{\prime \prime} \\ 14^{\prime} 5^{\prime \prime} \\ 12^{\prime} 7^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \\ 12^{\prime} 7 " \\ 11^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{array}{r} 18^{\prime} 2 " \\ 15^{\prime \prime} 9 \\ 12^{\prime} 10^{\prime \prime} \end{array}$ | $\begin{aligned} & 15^{\prime} 8^{\prime \prime} \\ & 14^{\prime} 3^{\prime \prime} \\ & 12^{\prime} 5 \end{aligned}$ | $\begin{gathered} 13^{\prime} 8^{\prime \prime} \\ 12^{\prime} 5^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 15^{\prime} 9 " \\ 13^{\prime} 7 " \\ 11^{\prime} 1^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 14^{\prime} 3^{\prime \prime} \\ 12^{\prime} 11^{\prime \prime} \\ 11^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{aligned} & 12^{\prime} 5^{\prime \prime} \\ & 11^{\prime} 3^{\prime \prime} \\ & 9^{\prime} 10^{\prime \prime} \end{aligned}$ | $12^{\prime} 10^{\prime \prime}$ $12^{\prime} 5^{\prime \prime}$ $10^{\prime} 10 "$ <br> $11^{\prime} 1 " \mathrm{e}$ $11^{\prime} 1 " \mathrm{e}$ $9^{\prime} 10^{\prime \prime}$ <br> $9^{\prime} 1^{\prime \prime} \mathrm{e}$ $9^{\prime} 1^{\prime \prime} \mathrm{e}$ $8^{\prime} 7^{\prime \prime} \mathrm{e}$ |  |  |
| 400TLA125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{aligned} & 21^{\prime} 8 " \\ & 19^{\prime} 8^{\prime} \\ & 16^{\prime} 7 \end{aligned}$ | $\begin{aligned} & 17^{\prime} 2^{\prime \prime} \\ & 15^{\prime} 8^{\prime \prime} \\ & 13^{\prime} 8^{\prime \prime} \end{aligned}$ | $\begin{gathered} 15^{\prime} 0^{\prime \prime} \\ 13^{\prime \prime} 8^{\prime \prime} \\ 11^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 19^{\prime} 1 " \\ 16^{\prime} 7 \\ 13^{\prime} 6^{\prime \prime} \\ --3 \end{gathered}$ | $\begin{gathered} 16^{\prime} 11^{\prime \prime} \\ 15^{\prime} 5^{\prime \prime} \\ 13^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 9 " \\ 13^{\prime} 5 " \\ 11^{\prime} 9 \\ -12 \end{gathered}$ | $\begin{gathered} 16^{\prime} 7^{\prime} \\ 14^{\prime} 4^{\prime \prime} \\ 11^{\prime} 9 \end{gathered}$ | $\begin{gathered} 15^{\prime} 5^{\prime} \\ 14^{\prime} 0 \\ 11^{\prime} 9 \\ \hline 1 \end{gathered}$ | $\begin{aligned} & 13^{\prime} 5^{\prime \prime} \\ & 12^{\prime} 2 " \\ & 10^{\prime} 8^{\prime \prime} \\ & \hline-2 \end{aligned}$ | $13^{\prime} 6 "$ $13^{\prime \prime} 5 "$ $11^{\prime \prime} 9 "$ <br> $11^{\prime \prime} 9{ }^{\prime \prime}$ $11^{\prime \prime} 9{ }^{\prime \prime}$ $10^{\prime \prime} 8^{\prime \prime}$ <br> $9^{\prime} 7^{\prime \prime}$ e $9^{\prime} 77^{\prime \prime}$ e $9^{\prime} 4^{\prime \prime}$ e |  |  |
| 600TLA125-241 | $\begin{aligned} & 12 \\ & 16 \\ & 24 \\ & \hline \end{aligned}$ | $\begin{gathered} 22^{\prime} 9 " \\ 2 \text { ' }^{\prime \prime} 1 " \\ 19^{\prime} 8 " \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 23^{\prime} 0 " \\ 20^{\prime \prime} 11^{\prime \prime} \\ 18^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 20^{\prime} 1^{\prime \prime} \\ 18^{\prime} 3^{\prime \prime} \\ 15^{\prime} 11^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{gathered} 22^{\prime} 8^{\prime \prime} \\ 19^{\prime} 8^{\prime \prime} \mathrm{e} \\ 16^{\prime} 1^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 22^{\prime} 7^{\prime \prime} \\ 19^{\prime} 8^{\prime \prime} \text { e } \\ 16^{\prime} 1^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 199^{\prime \prime} 9 \\ 17^{\prime \prime} 11^{\prime \prime} \mathrm{e} \\ 15^{\prime} 8{ }^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ |  |  |  |  |  |  |
| 250TLA125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 16^{\prime} 5^{\prime \prime} \\ 14^{\prime} 11^{\prime \prime} \\ 12^{\prime} 10^{\prime \prime} \\ ----1 \end{gathered}$ | $\begin{gathered} 13^{\prime} 1 " \\ 11^{\prime} 10^{\prime \prime} \\ 10^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 5 " \\ 10^{\prime} 4^{\prime \prime} \\ 9^{\prime} 1^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 10 " \\ 12^{\prime} 10^{\prime \prime} \\ 10^{\prime} 6^{\prime \prime} \\ ----2-- \end{gathered}$ | $\begin{gathered} 12^{\prime} 10^{\prime \prime} \\ 11^{\prime} 8^{\prime \prime} \\ 10^{\prime} 2^{\prime \prime} \\ ------2 \end{gathered}$ | $\begin{aligned} & 11^{\prime} 3 " \\ & 10^{\prime} 2 " \\ & 8^{\prime} 11^{\prime \prime} \end{aligned}$ | $\begin{gathered} 12^{\prime} 10^{\prime \prime} \\ 11^{\prime} 1^{\prime \prime} \\ 9^{\prime} 1^{\prime \prime} \end{gathered}$ |  | $\begin{gathered} 10^{\prime} 2^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 6 " \\ 9^{\prime} 1^{\prime \prime} \\ 7^{\prime} 5^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 2 " \\ 9^{\prime} 1^{\prime \prime} \\ 7^{\prime} 5^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime \prime} 11^{\prime \prime} \\ 8^{\prime \prime} 1^{\prime \prime} \\ 7^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 362TLA125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 21^{\prime} 8 " \\ 18^{\prime \prime} 10^{\prime \prime} \\ 15^{\prime} 4^{\prime \prime} \\ ----2 \end{gathered}$ | $\begin{gathered} 17^{\prime} 5 " \\ 15^{\prime} 10^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \\ -2-1 \end{gathered}$ | $\begin{gathered} 15^{\prime} 2 " \\ 13^{\prime} 10 " \\ 12^{\prime} 1 \\ --1 "- \end{gathered}$ | $\begin{gathered} 17^{\prime} 9 " \\ 15^{\prime} 4^{\prime \prime} \\ 12^{\prime} 6^{6} \end{gathered}$ | $\begin{gathered} 17^{\prime} 1^{\prime \prime} \\ 15^{\prime} 4^{\prime \prime} \\ 12^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 11^{\prime \prime} \\ 13^{\prime} 7^{\prime \prime} \\ 11^{\prime} 10^{\prime \prime} \end{gathered}$ | $15^{\prime} 4 "$ $15^{\prime} 4 "$ $13^{\prime \prime} 7$ <br> $13^{\prime} 3 "$ $13^{\prime \prime} 3 \prime$ $12^{\prime \prime} 4 \prime$ <br> $10^{\prime} 10^{\prime \prime}$ $10^{\prime \prime} 10^{\prime \prime}$ $--0^{\prime \prime} 9{ }^{\prime \prime}$ |  |  | $\begin{gathered} 12^{\prime} 6 " \\ 10^{\prime} 10^{\prime \prime} \\ 8^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 6^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \\ 8^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 10 " \\ 10^{\prime} 9 " \\ 8^{\prime} 10^{\prime \prime} \\ \hline---------1 \end{gathered}$ |
| 400TLA125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 22^{\prime} 11^{\prime \prime} \\ 19^{\prime} 10 " \\ 16^{\prime} 2 " \end{gathered}$ | $\begin{gathered} 18^{\prime} 9 " \\ 17^{\prime \prime} 1^{\prime \prime} \\ 14^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 16^{\prime} 5^{\prime \prime} \\ 14^{\prime} 11^{\prime \prime} \\ 13^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 18^{\prime} 8^{\prime \prime} \\ 16^{\prime} 2^{\prime \prime} \\ 13^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 18^{\prime} 6 " \\ & 16^{\prime} 2 " \\ & 13^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{gathered} 16^{\prime} 2^{\prime \prime} \\ 14^{\prime} 8^{\prime \prime} \\ 12^{\prime} 10^{\prime \prime} \end{gathered}$ |  |  |  | $\begin{gathered} 13^{\prime} 3^{\prime \prime} \\ 11^{\prime} 5^{\prime \prime} \\ 9^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 13^{\prime} 3^{\prime \prime} \\ 11^{\prime} 5^{\prime \prime} \\ 9^{\prime} 4^{\prime \prime}- \end{gathered}$ | $\begin{gathered} 12^{\prime} 10 " \\ 11^{\prime} 5 " \\ 9^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 600TLA125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 29^{\prime} 5 " \\ 25^{\prime \prime} 6 " \\ 20^{\prime} 10 " \\ \hline \end{gathered}$ | $\begin{aligned} & 25^{\prime} 8^{\prime \prime \prime} \\ & 23^{\prime \prime} 4 \\ & 20^{\prime \prime} 5 \end{aligned}$ | $\begin{gathered} 22^{\prime} 5^{\prime \prime} \\ 20^{\prime} 5^{\prime \prime} \\ 17^{\prime} 10^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{gathered} 24^{\prime} 0 " \\ 20^{\prime} 10 " \\ 17^{\prime} 0^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 24^{\prime} 0^{\prime \prime} \\ 20^{\prime} 10^{\prime \prime} \\ 17^{\prime} 0^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 22^{\prime} 1^{\prime \prime} \\ 20^{\prime \prime} 1^{\prime \prime} \\ 17^{\prime} 0^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{array}{\|ccc} 20^{\prime} 10^{\prime \prime} & 20^{\prime} 10^{\prime \prime} & 20^{\prime \prime} 1{ }^{\prime \prime} \\ 18^{\prime} 00^{\prime \prime} \mathrm{e} & 18^{\prime} 0{ }^{\prime \prime} \mathrm{e} & 18^{\prime} 0{ }^{\prime \prime} \mathrm{e} \\ 14^{\prime} 9{ }^{\prime \prime} \mathrm{e} & 1 \mathbf{c}^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ |  |  | $\begin{array}{cc} 17^{\prime} 0 " \mathrm{e} & 17^{\prime} 0 " \mathrm{e} \\ 14^{\prime \prime} 9{ }^{\prime \prime} \mathrm{e} & 14^{\prime \prime} 9^{\prime \prime} \mathrm{e} \\ 12^{\prime \prime} \mathrm{e} & 12^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ |  | $\begin{aligned} & 17^{\prime} 0 " \mathrm{e} \\ & 14^{\prime} 9{ }^{\prime \prime} \mathrm{e} \\ & 12^{\prime} 00^{\prime \prime} \mathrm{e} \\ & \hline \end{aligned}$ |
| 250TLA125-33 | 12 | 17' 0 " | $13^{\prime} 6$ | 11'9" | 15'10" | $13^{\prime \prime}{ }^{\prime \prime}$ | 11'7" | $\begin{gathered} 13^{\prime} 9 " \\ 11^{\prime} 11^{\prime \prime} \\ 9^{\prime} 8 " \\ ----2 \end{gathered}$ | $\begin{gathered} 12^{\prime} 1 " \\ 10^{\prime} 11^{\prime \prime} \\ 9^{\prime} 7^{\prime \prime} \end{gathered}$ | 10'6" | 11'2" | 10'6" | $9^{\prime}{ }^{\prime \prime}$ |
|  | 16 $24$ | $\begin{aligned} & 15^{\prime} 5^{\prime \prime} \\ & 13^{\prime} 6^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 12^{\prime} 3^{\prime \prime} \\ & 10^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 10^{\prime} 8^{\prime \prime} \\ & 9^{\prime} 4 \end{aligned}$ | $\begin{aligned} & 13^{\prime} 9 " \\ & 11^{\prime \prime} 2 \end{aligned}$ | $\begin{aligned} & 12^{\prime} 1 " \\ & 10^{\prime} 6 \end{aligned}$ | $\begin{aligned} & 10^{\prime} 6 " \\ & 9^{\prime} 2 " \end{aligned}$ |  |  | $\begin{aligned} & 9^{\prime} 7 " \\ & 8^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{gathered} 9^{\prime \prime} 8 " \\ 7^{\prime} 11^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 9^{\prime} 7 " \\ 7^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 4 " \\ 7^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 362TLA125-33 | 12 | 22' ${ }^{\prime \prime}$ | 18'0' | 15' 8" | 19' ${ }^{\prime \prime}$ | $17^{\prime \prime} 8^{\prime \prime}$ | 15' 5" | 16' 7 " | 16'1" | 14'0" | 13' 6 | 13' 6" | $12^{\prime \prime}{ }^{\prime \prime}$ |
|  | $\begin{array}{r} 16 \\ 24 \\ \hline \end{array}$ | $\begin{aligned} & 20^{\prime} 3^{\prime \prime} \\ & 16^{\prime} 7 \end{aligned}$ | $\begin{aligned} & 16^{\prime} 4^{\prime \prime} \\ & 14^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 3^{\prime \prime} \\ & 12^{\prime \prime} 5^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 16^{\prime} 7 " \\ & 13^{\prime} 6 \text { 6" } \end{aligned}$ | $\begin{aligned} & 16^{\prime} 1 " \\ & 13^{\prime} 6^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 0 \\ & 12^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{gathered} 14^{\prime} 4^{\prime \prime} \\ 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 4 \\ 11^{\prime \prime} 9 \end{gathered}$ | $\begin{aligned} & 12^{\prime} 9 " \\ & 11^{\prime} 2 \end{aligned}$ | $\begin{gathered} 11^{\prime} 9 " \\ 9^{\prime \prime} 7 " \text { e } \end{gathered}$ | $\begin{gathered} 11^{\prime} 9 " \\ 9^{\prime} 7 " \text { e } \end{gathered}$ | $\begin{aligned} & 11^{\prime} 2 " \\ & 9^{\prime} 77^{\prime \prime} \mathrm{e} \end{aligned}$ |
| 400TLA125-33 | 12 | 24'5" | 19'5" | $16^{\prime} 11^{\prime \prime}$ | 20' 2 " | 19'1" | 16' ${ }^{\prime \prime}$ | 17' 6" | 17' ${ }^{\prime \prime}$ | 15' ${ }^{\prime \prime}$ | 14'3 | 14'3" | $13^{\prime \prime}{ }^{\prime \prime}$ |
|  | $\begin{array}{r} 16 \\ 24 \\ \hline \end{array}$ | $\begin{aligned} & 21^{\prime} 5 " \\ & 17^{\prime} 6 " \end{aligned}$ | $\begin{aligned} & 17^{\prime} 8 " \\ & 15^{\prime} 5 " \end{aligned}$ | $\begin{aligned} & 15^{\prime} 5^{\prime \prime} \\ & 13^{\prime} 5 \end{aligned}$ | $\begin{aligned} & 17^{\prime} 6 " \\ & 14^{\prime \prime} 3 \end{aligned}$ | $\begin{aligned} & 17^{\prime} 4^{\prime \prime} \\ & 14^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 15^{\prime} 2^{\prime \prime} \\ & 13^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 15^{\prime} 2^{\prime \prime} \\ & 12^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 15^{\prime} 2 " \\ & 12^{\prime \prime} 4^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 13^{\prime} 9 \\ & 12^{\prime} 0 \end{aligned}$ | $\begin{gathered} 12^{\prime} 4^{\prime \prime} \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 4^{\prime \prime} \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 0^{\prime \prime} \\ 10^{\prime} 1^{\prime \prime} \text { e } \end{gathered}$ |
|  | 12 | 32' ${ }^{\prime \prime}$ | 26' 7 " | 23' ${ }^{\prime \prime}$ | $26^{\prime \prime}{ }^{\prime \prime}$ | 26' 2 " | 22' 11" | 23'1" e | 23'1" e | 20'9" | 18'10" e 18'10" e 18' ${ }^{\prime \prime}$ " e |  |  |
| 600TLA125-33 | 16 24 | $\begin{gathered} 28^{\prime} 3 " \\ 23^{\prime} 1 " \text { " e } \end{gathered}$ | $\begin{aligned} & 24^{\prime} 2 " \\ & 21^{\prime} 2 " \end{aligned}$ | $\begin{aligned} & 21^{\prime} 2 " \\ & 18^{\prime \prime} 5 " \end{aligned}$ | $\begin{gathered} 23^{\prime \prime} 1 "^{\prime \prime} \mathrm{e} \\ 18^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 23^{\prime} 1 "_{" ~ e} \\ 18^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 20^{\prime} 9 " \\ 18^{\prime} 2 " \mathrm{e} \end{gathered}$ | $\begin{gathered} 20^{\prime} 0^{\prime \prime} \mathrm{e} \\ 16^{\prime \prime} 4^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 20^{\prime} 0^{\prime \prime} \mathrm{e} \\ & 16^{\prime \prime} 4^{\prime \prime} \end{aligned}$ | $\begin{gathered} 18^{\prime} 11^{\prime \prime} \mathrm{e} \\ 16^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{aligned} & 16^{\prime} 4 " \\ & 13^{\prime \prime} 4 \end{aligned}$ | $\begin{aligned} & 16^{\prime} 4^{\prime \prime} \mathrm{e} \\ & 13^{\prime} 4^{\prime \prime} \mathrm{e} \\ & \hline \end{aligned}$ | $\begin{aligned} & 16^{\prime} 4^{\prime \prime} \mathrm{e} \\ & 13^{\prime} 4^{\prime \prime} \mathrm{e} \end{aligned}$ |

For SI: 1 inch $=25.4 \mathrm{~mm}, 1 \mathrm{ft}=0.3048 \mathrm{~m}, 1 \mathrm{psf}=47.88 \mathrm{~Pa}$.

1. Web height-to-thickness ratio exceeds 200. Webs must have bearing stiffeners. See AISI S100 Section B1.2
2. Web height-to-thickness ratio exceeds 260 but less than 300. Webs must have bearing and intermediate stiffeners. See AISI S100 Section B1.2.
3. Web stiffeners are required at the stud/track connection when denoted with an "e".
4. Compression flanges must be continuously braced.
5. End bearing must be 1 -inch.
6. The minimum overlap of the TSO and TSE must be 8 inches and the maximum un-lapped length of the TSE must be 4 inches.

TABLE 9-NON-COMPOSITE LIMITING HEIGHTS (feet-inches) 48" o.c. BRACING TRAKLOC ADJUSTABLE STUDS (TLA) ${ }^{3,4,5,6}$

| MEMBER DESIGNATION | Spacing o/c (in) | Lateral Load (psf) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 5 PSF |  |  | 7.5 PSF |  |  | 10 PSF |  |  | 15 PSF |  |  |
|  |  | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 |
| 250TLA125-18 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{array}{\|c\|} \hline 12^{\prime} 7 " \\ 10^{\prime} 11^{\prime \prime} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 11^{\prime} 0 " \\ 10^{\prime} 0 " \\ 8^{\prime} 9 " \mathrm{~g} \\ \hline-\mathrm{e} \end{gathered}$ | $\begin{gathered} 9^{\prime} 8 " \\ 8^{\prime \prime} 9 " \\ 7^{\prime} 8^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 10^{\prime} 3^{\prime \prime} \text { e } \\ 8^{\prime} 11^{\prime \prime} \text { e } \\ 7^{\prime} 3^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 10^{\prime} 3^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ 7^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 9^{\prime} \text { 6" } \\ 8^{\prime} 77^{\prime \prime} \text { e } \\ 7^{\prime} 3^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ \text { 7' 8" e } \\ 6^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \text { e } \\ \text { 7' } 8^{\prime \prime} \text { e } \\ 6^{\prime} 3^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 8^{\prime} 77^{\prime \prime} \text { e } \\ \text { 7' 8" e } \\ 6^{\prime \prime} 3^{\prime \prime} \text { e } \end{gathered}$ | $\begin{aligned} & 7^{\prime} 3^{\prime \prime} \mathrm{e} \\ & \text { 6' } 3^{\prime \prime} \mathrm{e} \\ & 5^{\prime} 2^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{aligned} & \text { 7' 3" e } \\ & \text { 6' 3" e } \\ & 5^{\prime \prime} 2^{\prime \prime \prime} \text { e } \end{aligned}$ | $\begin{aligned} & \text { 7' 3" e } \\ & \text { 6' 3" e } \\ & 5^{\prime} \mathbf{n}^{\prime \prime \prime} \text { e e } \end{aligned}$ |
| 362TLA125-18 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\left[\begin{array}{c} 14^{\prime} 3 " \\ 12^{\prime \prime} 4 " \mathrm{e} \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \end{array}\right.$ | $\begin{gathered} 14^{\prime} 3^{\prime \prime} \\ 12^{\prime \prime} 4^{\prime \prime} \mathrm{e} \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 10 " \\ 11^{\prime} 8 " \mathrm{e} \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 11^{\prime} 7^{\prime \prime} \mathrm{e} \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \\ 8^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 11^{\prime} 7 " \mathrm{e} \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \\ 8^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 11^{\prime} 7^{\prime \prime} \mathrm{e} \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \\ 8^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 1^{\prime \prime} \mathrm{e} \\ 8^{\prime} 9^{\prime \prime} \mathrm{e} \\ 7^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 1^{\prime \prime} \mathrm{e} \\ 8^{\prime \prime} 9^{\prime \prime} \mathrm{e} \\ 7^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 1^{\prime \prime} \mathrm{e} \\ 8^{\prime} 9^{\prime \prime} \mathrm{e} \\ 7^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\left[\begin{array}{c} 8^{\prime} 3^{\prime \prime} \mathrm{e} \\ 7^{\prime} 1^{\prime \prime} \mathrm{e} \\ 5^{\prime} 10^{\prime \prime} \mathrm{e} \end{array}\right.$ | $\begin{gathered} 8^{\prime} 3^{\prime \prime} \mathrm{e} \\ 7^{\prime \prime} 1^{\prime \prime} \mathrm{e} \\ 5^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 3^{\prime \prime} \mathrm{e} \\ 7^{\prime} 1^{\prime \prime} \mathrm{e} \\ 5^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 400TLA125-18 ${ }^{1}$ | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 15^{\prime} 0^{\prime \prime} \\ 12^{\prime} 11^{\prime \prime} \mathrm{e} \\ 10^{\prime} 7^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 15^{\prime} 0^{\prime \prime} \\ 12^{\prime} 11^{\prime \prime} \mathrm{e} \\ 10^{\prime} 7^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 13^{\prime} 3^{\prime \prime} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ 10^{\prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 3^{\prime \prime} \mathrm{e} \\ 10^{\prime} 7^{\prime \prime} \mathrm{e} \\ 8^{\prime} 8^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 3^{\prime \prime} \mathrm{e} \\ 10^{\prime} 7 " \mathrm{e} \\ 8^{\prime} 8^{\prime \prime} \mathrm{e} \mathrm{e} \end{gathered}$ | $\begin{aligned} & 12^{\prime} 3^{\prime \prime} \mathrm{e} \\ & 10^{\prime} 7 " \mathrm{e} \\ & 8^{\prime} 8^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{gathered} 10^{\prime} 7 " \mathrm{e} \\ 9^{\prime} 2^{\prime \prime} \mathrm{e} \\ 7^{\prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 7^{\prime \prime} \mathrm{e} \\ 9^{\prime} 2^{\prime \prime} \mathrm{e} \\ 7^{\prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 7^{\prime \prime} \mathrm{e} \\ \text { 9' 2" e } \\ 7^{\prime} 6^{\prime \prime} \text { e } \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime \prime} 8^{\prime \prime} \mathrm{e} \\ 7^{\prime \prime} 6^{\prime \prime} \mathrm{e} \\ 6^{\prime} 1^{\prime \prime} \mathrm{e} \\ -2 \end{gathered}$ | $\begin{gathered} 8^{\prime} 88^{\prime \prime} \text { e } \\ \text { 7' 6" e } \\ 6^{\prime \prime} 1^{\prime \prime} \text { e } \end{gathered}$ | $\begin{aligned} & 8^{\prime} 8^{\prime \prime} \mathrm{e} \\ & 7^{\prime} 6^{\prime \prime} \mathrm{e} \\ & 6^{\prime} 1^{\prime \prime} \mathrm{e} \end{aligned}$ |
| 600TLA125-18 ${ }^{2}$ | $\begin{aligned} & 12 \\ & 16 \\ & 24 \\ & \hline \end{aligned}$ | $\begin{aligned} & 19^{\prime} 2^{\prime \prime} \mathrm{e} \\ & 16^{\prime} 7{ }^{\prime \prime} \mathrm{e} \\ & 13^{\prime} 6^{\prime \prime} \mathrm{e} \\ & \hline \end{aligned}$ | $\begin{aligned} & 19{ }^{\prime} \text { 2" e } \\ & 16^{\prime} 7 " \mathrm{e} \\ & 13^{\prime} 6 " \mathrm{e} \\ & \hline \end{aligned}$ | $\begin{gathered} 18^{\prime} 3^{\prime \prime} \mathrm{e} \\ 16^{\prime} 7^{\prime \prime} \mathrm{e} \\ 13^{\prime} 6^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 15 ' 7 " \mathrm{e} \\ 13^{\prime} 6 " \mathrm{e} \\ 11^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 15^{\prime} 7^{\prime \prime} \mathrm{e} \\ 13^{\prime} 6 \mathrm{e} \mathrm{e} \\ 11^{\prime} 1^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{aligned} & 15^{\prime} 7 " \mathrm{e} \\ & 13^{\prime} 6 " \mathrm{e} \\ & 11^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{gathered} 13^{\prime} 6 " \mathrm{e} \\ 11^{\prime} 9 " \mathrm{e} \\ 9^{\prime} 7{ }^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 13 ' 6 " \mathrm{e} \\ 11^{\prime} 9 " \mathrm{e} \\ 9^{\prime \prime} 7{ }^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 13^{\prime} 6 " \mathrm{e} \\ 11^{\prime} 9 " \mathrm{e} \\ 9^{\prime} 7 " \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 11^{\prime} 1 " \mathrm{e} \\ 9^{\prime} 77^{\prime \prime} \mathrm{e} \\ \text { 6' } 9^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 111^{\prime \prime} \text { " e } \\ 9^{\prime} 77^{\prime \prime} \mathrm{e} \\ \text { 6' } 9 \text { " e } \\ \hline \end{gathered}$ | $\begin{gathered} 11^{\prime} 1 "_{\prime \prime}^{e} \\ 9^{\prime} 77^{\prime \prime} \mathrm{e} \\ \text { 6' } 9^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ |
| 250TLA125-24 | $\begin{aligned} & 12 \\ & 16 \\ & 24 \\ & \hline \end{aligned}$ | $\begin{aligned} & 15^{\prime} 0 \\ & 13^{\prime} 7 \\ & 11^{\prime} 5^{\prime \prime} \end{aligned}$ | $\begin{gathered} 11^{\prime} 11^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 1^{\prime} 5^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ 8^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 2 " \\ 11^{\prime} 5 \\ 9^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 8 " \\ 10^{\prime} 8 " \\ 9^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 3^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 1^{\prime} 5 \\ & 9^{\prime} 11^{\prime \prime} \\ & 8^{\prime} 1^{\prime \prime} \end{aligned}$ |  | $\begin{gathered} 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 5^{\prime \prime} \\ 7^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{array}{r} 9^{\prime} 4^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \\ 6^{\prime} 7^{\prime \prime} \mathrm{e} \end{array}$ | $\begin{gathered} 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \\ 6^{\prime} 77^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 8^{\prime \prime} 1^{\prime \prime} \\ 7^{\prime \prime} 4^{\prime \prime} \\ 6^{\prime \prime} 5^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 362TLA125-24 | $\begin{aligned} & 12 \\ & 16 \\ & 24 \end{aligned}$ | $\begin{gathered} 17^{\prime} 11^{\prime \prime} \\ 15^{\prime} 7^{\prime \prime} \\ 12^{\prime} 8^{\prime \prime} \end{gathered}$ | $\begin{gathered} 15^{\prime} 11^{\prime \prime} \\ 14^{\prime} 5^{\prime \prime} \\ 12^{\prime} 7 \end{gathered}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \\ 12^{\prime} 7 " \\ 11^{\prime} 0 " \end{gathered}$ | $\begin{aligned} & 14^{\prime} 8 " \\ & 12^{\prime} 8^{\prime \prime} \\ & 10^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 8^{\prime \prime} \\ & 12^{\prime} 8^{\prime \prime} \\ & 10^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 13^{\prime} 8^{\prime \prime} \\ & 12^{\prime} 5^{\prime \prime} \\ & 10^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{gathered} 12^{\prime} 8 " \\ 11^{\prime} 0 \\ 9^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 8 " \\ 11^{\prime} 0 " \\ 9^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 5 " \\ 11^{\prime} 0 \\ 9^{\prime} 0 \end{gathered}$ | $\begin{gathered} 10^{\prime} 4^{\prime \prime} \\ 9^{\prime} 0 " \\ 7^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 4^{\prime \prime} \\ 9^{\prime} 0^{\prime \prime} \\ 7^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 4^{\prime \prime} \\ 9^{\prime} 0 " \\ 7^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 400TLA125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 18^{\prime} 10^{\prime \prime} \\ 16^{\prime} 4^{\prime \prime} \\ 13^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 17^{\prime} 2^{\prime \prime} \\ & 15^{\prime \prime} 8^{\prime \prime} \\ & 13^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{gathered} 15^{\prime} 0^{\prime \prime} \\ 13^{\prime} 8^{\prime \prime} \\ 11^{\prime} 11^{\prime \prime} \\ -1-2 \end{gathered}$ | $\begin{gathered} 15^{\prime} 4^{\prime \prime} \\ 13^{\prime} 4^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 15^{\prime} 4^{\prime \prime} \\ 13^{\prime} 4^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \\ --2 \end{gathered}$ | $\begin{gathered} 14^{\prime} 9 " \\ 13^{\prime} 4^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 4^{\prime \prime} \\ 11^{\prime} 6 " \\ 9^{\prime} 5^{\prime \prime} \end{gathered}$ |  | $\begin{gathered} 13^{\prime} 4 " \\ 11^{\prime} 6 \\ 9^{\prime} 5 \\ 9^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 10^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ 7^{\prime} 8^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 10^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ 7^{\prime} 8^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 10 " \\ 9^{\prime} 5 " \\ \text { 7' } 8 \text { " } \end{gathered}$ |
| 600TLA125-24 ${ }^{1}$ | $\begin{aligned} & 12 \\ & 16 \\ & 24 \\ & \hline \end{aligned}$ | $\begin{gathered} 24^{\prime} 2 " \\ 20^{\prime} 11^{\prime \prime} \\ 17^{\prime \prime} 1^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{gathered} 23^{\prime} 0^{\prime \prime} \\ 20^{\prime} 11^{\prime \prime} \\ 17^{\prime} 1^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{gathered} 20^{\prime} 1 " \\ 18^{\prime} 3^{\prime \prime} \\ 15^{\prime} 11^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{gathered} 19^{\prime} 9^{\prime \prime} \\ 17^{\prime} 1^{\prime \prime} \\ 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 19^{\prime} 9^{\prime \prime} \\ 17^{\prime} 1^{\prime \prime} \\ 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 19^{\prime} 9^{\prime \prime} \\ 17^{\prime} 1^{\prime \prime} \\ 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{array}{\|c} \hline 171^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \mathrm{e} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 17^{\prime} 1^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \mathrm{e} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 17^{\prime} 1^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \mathrm{e} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{array}{\|c} \hline 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ 9^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ 9^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime \prime} 1^{\prime \prime} \mathrm{e} \\ 9^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ |
| 250TLA125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 16^{\prime} 5^{\prime \prime} \\ 14^{\prime} 7^{\prime \prime} \\ 11^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 1 " \\ 11^{\prime} 10^{\prime \prime} \\ 10^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 5 " \\ 10^{\prime} 4^{\prime \prime} \\ 9^{\prime} 1 \text { "' } \end{gathered}$ | $\begin{gathered} 13^{\prime} 9 " \\ 11^{\prime} 11^{\prime \prime} \\ 9^{\prime} 99^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 10 " \\ 11^{\prime} 8 " \\ 9^{\prime} 9 \\ \hline-9 \end{gathered}$ | $\begin{aligned} & 11^{\prime} 3 " \\ & 10^{\prime} 2 " \\ & 8^{\prime} 11^{\prime \prime} \end{aligned}$ | $\begin{gathered} 11^{\prime} 11^{\prime \prime} \\ 10^{\prime} 4^{\prime \prime} \\ 8^{\prime} 55^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 8 " \\ 10^{\prime} 4^{\prime \prime} \\ 8^{\prime} 5 \end{gathered}$ | $\begin{gathered} 10^{\prime} 2^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \end{gathered}$ | $\begin{gathered} 9^{\prime} 9 " \\ 8^{\prime} 5^{\prime \prime} \\ 6^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 9^{\prime} 9 " \\ 8^{\prime} 5 " \\ 6^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \\ 8^{\prime} 11^{\prime \prime} \\ 6^{\prime} 10^{\prime \prime} \end{gathered}$ |
| 362TLA125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 19^{\prime} 11^{\prime \prime} \\ 17^{\prime} 3^{\prime \prime} \\ 14^{\prime} 1^{\prime \prime} \\ --.--. .-. ~ \end{gathered}$ | $\begin{gathered} 17^{\prime} 5^{\prime \prime} \\ 15^{\prime} 10^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \\ ---.-. \end{gathered}$ | $\begin{gathered} 15^{\prime} 2^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \\ 12^{\prime} 1 " \end{gathered}$ | $\begin{gathered} 16^{\prime} 3^{\prime \prime} \\ 14^{\prime} 1^{\prime \prime} \\ 11^{\prime} 6^{\prime} \end{gathered}$ | $\begin{gathered} 16^{\prime} 3^{\prime \prime} \\ 14^{\prime} 1^{\prime \prime} \\ 11^{\prime} 6^{\prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 11^{\prime \prime} \\ 13^{\prime} 7^{\prime \prime} \\ 11^{\prime} 6^{\prime \prime} \\ --------2 \end{gathered}$ | $\begin{gathered} 14^{\prime} 1^{\prime \prime} \\ 12^{\prime} 3^{\prime \prime} \\ 10^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 14^{\prime} 1^{\prime \prime} \\ & 12^{\prime} 3^{\prime \prime} \\ & 10^{\prime} 0^{\prime \prime} \end{aligned}$ | $\begin{gathered} 13^{\prime} 7 \\ 12^{\prime} 3^{\prime \prime} \\ 10^{\prime} 0^{\prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 6 \\ 10^{\prime} 0^{\prime \prime} \\ 8^{\prime} 2^{\prime \prime} \end{gathered}$ |  | $\begin{gathered} 11^{\prime} 6 \\ 10^{\prime} 0^{\prime \prime} \\ 8^{\prime} 2^{\prime \prime} \end{gathered}$ |
| 400TLA125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 21^{\prime} 0^{\prime \prime} \\ 18^{\prime \prime} 2^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 18^{\prime} 9^{\prime \prime} \\ 17^{\prime \prime} 1^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 16^{\prime} 5^{\prime \prime} \\ 14^{\prime} 11^{\prime \prime} \\ 13^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 17^{\prime} 2^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \\ 12^{\prime} 1 " \end{gathered}$ | $\begin{gathered} 17^{\prime} 2^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \\ 12^{\prime} 1 " \end{gathered}$ | $\begin{aligned} & 16^{\prime} 2^{\prime} \\ & 14^{\prime} 8^{\prime \prime} \\ & 12^{\prime} 1 \end{aligned}$ | $\begin{gathered} 14^{\prime} 10^{\prime \prime} \\ 12^{\prime} 10 " \\ 10^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 10 " \\ 12^{\prime} 10 " \\ 10^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 8^{\prime \prime} \\ 12^{\prime} 10 " \\ 10^{\prime} 6^{\prime \prime} \\ \hline---2 \end{gathered}$ | $\begin{gathered} 12^{\prime} 1^{\prime \prime} \\ 10^{\prime} 6 " \\ 8^{\prime} 77^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 1^{\prime \prime} \\ 10^{\prime} 6^{\prime \prime} \\ 8^{\prime} 7^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{gathered} 12^{\prime} 1 " \\ 10^{\prime} 6 \\ 8^{\prime} 7 \\ \hline \end{gathered}$ |
| 600TLA125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 27^{\prime} 77^{\prime \prime} \\ 23^{\prime} 11^{\prime \prime} \\ 19^{\prime \prime} 6 \\ \hline \end{gathered}$ | $\begin{aligned} & 25^{\prime} 8^{\prime \prime} \\ & 23^{\prime \prime} 4^{\prime \prime} \\ & 19^{\prime \prime} \end{aligned}$ | $\begin{gathered} 22^{\prime} 5^{\prime \prime} \\ 20^{\prime \prime} 5^{\prime \prime} \\ 17^{\prime} 10^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{array}{\|c} 22^{\prime} 7^{\prime \prime} \\ 19^{\prime} 6^{\prime \prime} \\ 15^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 22^{\prime} 7^{\prime \prime} \\ 19^{\prime} 6^{\prime \prime} \\ 15^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 22^{\prime} 1^{\prime \prime} \\ 19^{\prime} 6^{\prime \prime} \\ 15^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{array}{\|c} 19^{\prime} 6^{\prime \prime} \\ 16^{\prime} 11^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 19^{\prime} 6 " \\ 16^{\prime} 11 " \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 19^{\prime} 6^{\prime \prime} \\ 16^{\prime} 11^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{array}{\|c} \hline 15 ' 11^{\prime \prime} \mathrm{e} \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ 11^{\prime} 3 " \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 15 ' 11 " ~ e \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ 11^{\prime} 3^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 15 ' 11 " ~ e \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ 11^{\prime} 3^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ |
|  | 12 | 17' 0" | 13' ${ }^{\prime \prime}$ | 11'9" | 14' 8" | 13' 3' | 11'7" | 12' 9" | $12^{\prime \prime}$ | 10' 6" | 10'5" | 10'5" | 9' 2 " |
| 250TLA125-33 | $\begin{array}{r} 16 \\ 24 \\ \hline \end{array}$ | $\begin{aligned} & 15^{\prime} 5 " \\ & 12^{\prime} 9 " \end{aligned}$ | $\begin{aligned} & 12^{\prime} 3^{\prime \prime} \\ & 10^{\prime \prime} \\ & \hline-2 \end{aligned}$ | $\begin{aligned} & 10^{\prime} 8^{\prime \prime} \\ & 9^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 12^{\prime} 9 " \\ & 10^{\prime} 5 " \end{aligned}$ | $\begin{aligned} & 12^{\prime} 1^{\prime \prime} \\ & 10^{\prime \prime}{ }^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 10^{\prime} 6 " \text { " } \\ & 9^{\prime \prime} \\ & \hline .2 \end{aligned}$ | $\begin{gathered} 11^{\prime} 0 " \\ 9^{\prime} 0 \end{gathered}$ | $\begin{gathered} 10^{\prime} 11^{\prime \prime} \\ 9^{\prime} 0 " \end{gathered}$ | $\begin{aligned} & 9^{\prime} 7 " \\ & 8^{\prime} 4^{\prime \prime} \\ & \hline \end{aligned}$ | $\begin{gathered} 9^{\prime} 0 " \\ 7^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 9^{\prime} 0 " \\ 7^{\prime \prime} 4 " \text { e } \end{gathered}$ | $\begin{gathered} 8^{\prime \prime} 4 " \\ 7^{\prime \prime} 4 " \mathrm{e} \end{gathered}$ |
|  | 12 | 21' 6 " | $18^{\prime} 0$ | $15^{\prime \prime}{ }^{\prime \prime}$ | 17' 7 " | 17' 7 " | 15' ${ }^{\prime \prime}$ | $15^{\prime \prime}{ }^{\prime \prime}$ | $15^{\prime \prime}{ }^{\prime \prime}$ | 14'0" | 12'5" | $12^{\prime \prime}$ | $12^{\prime \prime}{ }^{\prime \prime}$ |
| 362TLA125-33 | $\begin{array}{r} 16 \\ 24 \\ \hline \end{array}$ | $\begin{aligned} & 18^{\prime} 8 " \\ & 15^{\prime} 3 " \end{aligned}$ | $\begin{aligned} & 16^{\prime} 4^{\prime \prime} \\ & 14^{\prime} 3 \end{aligned}$ | $\begin{aligned} & 14^{\prime} 3^{\prime \prime} \\ & 12^{\prime} 5 \end{aligned}$ | $\begin{aligned} & 15^{\prime} 3^{\prime \prime} \\ & 12^{\prime \prime} 5 \end{aligned}$ | $\begin{aligned} & 15^{\prime} 3^{\prime \prime} \\ & 12^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 0 " \\ & 12^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 13^{\prime} 2 " \\ & 10^{\prime} 9 " \end{aligned}$ | $\begin{aligned} & 13^{\prime} 2 " \\ & 10^{\prime} 9 \end{aligned}$ | $\begin{aligned} & 12^{\prime} 9 " \\ & 10^{\prime} 9 \end{aligned}$ | $\begin{gathered} 10^{\prime} 9 " \\ 8^{\prime} 9 \end{gathered}$ | $\begin{gathered} 10^{\prime} 9 " \\ 8^{\prime} 9 \end{gathered}$ | $\begin{gathered} 10^{\prime} 9 " \\ 8^{\prime} 9 " \end{gathered}$ |
| 400TLA125-33 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{aligned} & 22^{\prime} 8^{\prime \prime} \\ & 19^{\prime} 8^{\prime \prime} \\ & 16^{\prime} 0 \end{aligned}$ | $\begin{aligned} & 19^{\prime} 5^{\prime \prime} \\ & 17^{\prime \prime} 8^{\prime \prime} \\ & 15^{\prime} 5 \\ & -1 .-2 \end{aligned}$ | $\begin{gathered} 16^{\prime} 11^{\prime \prime} \\ 15^{\prime} 5^{\prime \prime} \\ 13^{\prime} 5^{\prime \prime} \\ \hline-. .--. . \end{gathered}$ | $\begin{aligned} & 18^{\prime} 6^{\prime \prime} \\ & 16^{\prime} 0 \\ & 13^{\prime} 1 \\ & 11^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 18^{\prime} 6^{\prime} \\ & 16^{\prime} 0^{\prime \prime} \\ & 13^{\prime} 1 \\ & -12 \end{aligned}$ | $\begin{aligned} & 16^{\prime} 8^{\prime \prime} \\ & 15^{\prime \prime} 2^{\prime \prime} \\ & 13^{\prime} 1^{\prime \prime} \end{aligned}$ | $\begin{gathered} 16^{\prime} 0^{\prime \prime} \\ 13^{\prime} 11^{\prime \prime} \\ 11^{\prime \prime} 4^{\prime \prime} \\ \hline--.--.--~ \end{gathered}$ | $\begin{gathered} 16^{\prime} 0^{\prime \prime} \\ 13^{\prime} 11^{\prime \prime} \\ 11^{\prime} 4^{\prime \prime} \\ \hline--.-. .-2 \end{gathered}$ | $\begin{gathered} 15^{\prime} 2^{\prime \prime} \\ 13^{\prime} 9 \\ 11^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 1^{\prime \prime} \\ 11^{\prime} 4^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 1^{\prime \prime} \\ 11^{\prime} 4^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 1 " \\ 11^{\prime} 4^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \end{gathered}$ |
| 600TLA125-33 | $\begin{aligned} & 12 \\ & 16 \\ & 24 \\ & \hline \end{aligned}$ | $\begin{gathered} 29^{\prime} 11^{\prime \prime} \\ 25^{\prime} 11^{\prime \prime} \\ 21^{\prime} 2 " \\ \hline \end{gathered}$ | $\begin{aligned} & 26^{\prime} 7 " \\ & 24^{\prime} 2 " \\ & 21^{\prime} 2 " \end{aligned}$ | $\begin{aligned} & 23^{\prime} 3^{\prime \prime} \\ & 21^{\prime} 2 " \\ & 18^{\prime} 5^{\prime \prime} \end{aligned}$ | $\begin{gathered} 24^{\prime} 5 " \\ 21^{\prime} 2^{\prime \prime} \\ 17^{\prime} 3^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 24^{\prime} 5 " \\ 21^{\prime \prime} 2 " \\ 17^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 22^{\prime} 11^{\prime \prime} \\ 20^{\prime \prime} 9 " \\ 17^{\prime} 3^{\prime \prime} \text { e } \end{gathered}$ | $\begin{array}{\|c} 21^{\prime} 2 "^{\prime \prime} \\ 18^{\prime \prime} 4^{\prime \prime} \mathrm{e} \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 21^{\prime} 2 "^{\prime \prime} \\ 18^{\prime} 4^{\prime \prime} \mathrm{e} \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 20^{\prime} 9^{\prime \prime} \\ 18^{\prime} 4^{\prime \prime} \mathrm{e} \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 17^{\prime} 3^{\prime \prime} \mathrm{e} \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime} 2^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 17^{\prime} 3^{\prime \prime} \mathrm{e} \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime} 2^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 17^{\prime} 3^{\prime \prime} \mathrm{e} \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime} 2^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ |

For SI: 1 inch $=25.4 \mathrm{~mm}, 1 \mathrm{ft}=0.3048 \mathrm{~m}, 1 \mathrm{psf}=47.88 \mathrm{~Pa}$.

1. Web height-to-thickness ratio exceeds 200. Webs must have bearing stiffeners. See AISI S100 Section B1.2
2. Web height-to-thickness ratio exceeds 260 but less than 300. Webs must have bearing and intermediate stiffeners. See AISI S100 Section B1.2.
3. Web stiffeners are required at the stud/track connection when denoted with an "e".
4. Based on an unbraced length (Lu) of 48 " o.c.
5. End bearing must be 1 -inch.
6. The minimum overlap of the TSO and TSE must 8 inches and the maximum un-lapped length of the TSE must be 4 inches.

TABLE 10-NON-COMPOSITE LIMITING HEIGHTS (feet-inches)
FULLY BRACED TRAKLOC DEFLECTION STUDS (TLD) ${ }^{3,4,5,6}$

| MEMBER DESIGNATION | Spacing o/c (in) | Lateral Load (psf) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 5 PSF |  |  | 7.5 PSF |  |  | 10 PSF |  |  | 15 PSF |  |  |
|  |  | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 |
| 250TLD125-18 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 13^{\prime \prime} 1^{\prime \prime} \\ 11^{\prime} 4^{\prime \prime} \mathrm{e} \\ 9^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 11^{\prime} 0 " \\ 10^{\prime} 0^{\prime \prime} \\ 8^{\prime} 9^{\prime \prime}-\mathrm{e} \end{gathered}$ | $\begin{gathered} 9^{\prime} 8 " \\ 8^{\prime \prime} 9 " \\ 7^{\prime} 8^{\prime \prime} \text { e e } \end{gathered}$ |  | $\begin{gathered} 10^{\prime} 8^{\prime \prime} \mathrm{e} \\ \text { 9' } \mathrm{3}^{\prime \prime} \mathrm{e} \\ 7^{\prime} 7^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} \text { 9' 6" } \\ \text { 8' 7" e } \\ \text { 7' 6" e } \end{gathered}$ | $\begin{aligned} & 9^{\prime} 3^{\prime \prime} \text { e } \\ & \text { 8' }^{\prime \prime} \text { e e } \\ & 6^{\prime} 7^{\prime \prime} \text { e e } \end{aligned}$ | $\begin{aligned} & 9^{\prime} 3^{\prime \prime} \\ & 8^{\prime} 0^{\prime \prime} \\ & 6^{\prime} 77^{\prime \prime} \end{aligned}$ | $\begin{gathered} 8^{\prime} 7^{\prime \prime} \text { e } \\ 77^{\prime} 10^{\prime \prime} \mathrm{e} \\ 6^{\prime} 7^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{aligned} & \text { 7' 7" e } \\ & \text { 6' } 7 \text { " e } \\ & 5^{\prime} 4 \text { " } \mathrm{e} \end{aligned}$ |  | $\begin{aligned} & \text { 7' 6" e } \\ & \text { 6' } 7 \text { " e } \\ & 5^{\prime} 4 \text { " } \mathrm{e} \end{aligned}$ |
| 362TLD125-18 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 15^{\prime} 6^{\prime \prime} \mathrm{e} \\ 13^{\prime} 5^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 14^{\prime} 9 " \\ 13^{\prime \prime} 4{ }^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 10 " \\ 11^{\prime \prime} 8^{\prime \prime} \text { e } \\ 10^{\prime} 2^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 12^{\prime} 8^{\prime \prime} \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 8 \text { " e }^{\prime \prime} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 8 " \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 9^{\prime} 6 " \mathrm{e} \\ \text { 7' 9" e } \end{gathered}$ | $\begin{gathered} 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 9^{\prime} 6^{\prime \prime} \mathrm{e} \\ 7^{\prime} 9^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 11^{\prime \prime} \mathrm{e} \\ 9^{\prime} 6 " \mathrm{e} \\ \mathbf{7}^{\prime \prime} 9 \mathrm{g"} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ 7^{\prime} 9^{\prime \prime} \mathrm{e} \\ 6^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ \text { 7' } 9^{\prime \prime} \mathrm{e} \\ \text { 6' }^{\prime \prime} \mathrm{e} \text { e } \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ \text { 7' } 9^{\prime \prime} \mathrm{e} \\ 6^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 400TLD125-18 ${ }^{1}$ | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 15^{\prime} 6 " \\ 13^{\prime} 5 " \mathrm{e} \\ 10^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 15^{\prime} 2 "^{\prime \prime} \\ 13^{\prime} 5^{\prime \prime} \text { e } \\ 10^{\prime}-11^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 13^{\prime} 3^{\prime \prime} \\ 12^{\prime \prime} 1 " \text { e } \\ 10^{\prime} 6^{\prime \prime \prime} \text { e } \end{gathered}$ |  |  |  |  |  |  |  |  | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ \text { 7' } 9^{\prime \prime} \mathrm{e} \\ \text { 6' }^{\prime \prime} \text { " e } \end{gathered}$ |
| 600TLD125-18 ${ }^{2}$ | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{array}{ccc} 19^{\prime} 2 " & \text { e } & 19^{\prime} 2^{\prime \prime} \text { e } \\ 16^{\prime} 78^{\prime \prime} 3^{\prime \prime} \text { e } & 16^{\prime} 7^{\prime \prime} \text { e } & 16^{\prime} 7^{\prime \prime} \text { e } \\ 13^{\prime} 6 " \text { e } & 13^{\prime \prime} \text { e } & 16^{\prime \prime} \text { en } \\ \hline \end{array}$ |  |  |  |  |  |  |  |  | $\begin{array}{cc} 11^{\prime \prime} 1^{\prime \prime} \mathrm{e} & 11^{\prime \prime} 1^{\prime \prime} \mathrm{e} \\ 9^{\prime} 7{ }^{\prime \prime} \mathrm{e} & 9^{\prime} 7{ }^{\prime \prime} \mathrm{e} \\ 6^{\prime \prime} 9{ }^{\prime \prime} \mathrm{e} & \mathbf{c}^{\prime \prime} \\ \hline \end{array}$ |  | $\begin{gathered} 11^{\prime} 1 " \mathrm{e} \\ 9^{\prime} 7{ }^{\prime \prime} \mathrm{e} \\ 6{ }^{\prime \prime} 9 \mathrm{e} \\ \hline \end{gathered}$ |
| 250TLD125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 15^{\prime} 0^{\prime \prime} \\ 13^{\prime} 7 " \\ 11^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 11^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 5^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ 8^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 9 " \\ 13^{\prime \prime} 4^{\prime \prime} \\ 10^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 8 \\ 10^{\prime} 8 \\ 9^{\prime} 3^{\prime \prime} \\ 9^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 3^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 4 " \\ 11^{\prime} 7 \\ 9^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 8 " \\ 9^{\prime} 88^{\prime \prime} \\ 8^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 9^{\prime} 3^{\prime \prime} \\ & 8^{\prime \prime} 5^{\prime \prime} \\ & 7^{\prime \prime} 4^{\prime \prime} \end{aligned}$ | $\begin{gathered} 10^{\prime} 11^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ 7^{\prime} 99^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 9^{\prime} 3 " \\ 8^{\prime \prime} 5^{\prime \prime} \\ 7^{\prime} 4^{\prime \prime} \text { " } \end{gathered}$ | $\begin{aligned} & 8^{\prime} 1^{\prime \prime} \\ & 7^{\prime \prime} 4^{\prime \prime} \\ & 6^{\prime} 5^{\prime \prime} \end{aligned}$ |
| 362TLD125-24 | $\begin{aligned} & 12 \\ & 16 \\ & 24 \end{aligned}$ | $\begin{aligned} & 20^{\prime} 0 \\ & 18^{\prime} 2 \\ & 15^{\prime} 9 \\ & -9 \end{aligned}$ | $\begin{gathered} 15^{\prime} 11^{\prime \prime} \\ 14^{\prime} 5^{\prime \prime} \\ 12^{\prime} 7 \\ \hline-\quad . \end{gathered}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \\ 12^{\prime} 7 " \\ 11^{\prime} 0^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{array}{r} 18^{\prime} 2 " \\ 15^{\prime \prime} 9 " \\ 12^{\prime} 10^{\prime \prime} \end{array}$ | $\begin{aligned} & 15^{\prime} 8^{\prime \prime} \\ & 14^{\prime} 3^{\prime \prime} \\ & 12^{\prime} 5 \end{aligned}$ | $\begin{gathered} 13^{\prime} 8^{\prime \prime} \\ 12^{\prime} 5^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 15^{\prime} 9 " \\ 13^{\prime \prime} 7^{\prime \prime} \\ 11^{\prime \prime} 1^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 14^{\prime} 3^{\prime \prime} \\ 12^{\prime} 11^{\prime \prime} \\ 11^{\prime} 1^{\prime \prime} \text { e } \end{gathered}$ | $\begin{aligned} & 12^{\prime} 5 " \\ & 11^{\prime} 3 \\ & 9^{\prime} 10^{\prime \prime} \end{aligned}$ | $12^{\prime} 10^{\prime \prime}$ $12^{\prime} 5^{\prime \prime}$ $10^{\prime} 10^{\prime \prime}$ <br> $11^{\prime} 1^{\prime \prime}$ e $11^{\prime} 1^{\prime \prime}$ e $9^{\prime} 10^{\prime \prime}$ <br> $9^{\prime} 1^{\prime \prime}$ e $9^{\prime} 1^{\prime \prime}$ e $8^{\prime} 77^{\prime \prime}$ e |  |  |
| 400TLD125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{aligned} & 21^{\prime} 8^{\prime \prime} \\ & 19^{\prime} 8 \\ & 16^{\prime} 7 \end{aligned}$ | $\begin{aligned} & 17^{\prime} 2^{\prime} \\ & 15^{\prime} 8^{\prime \prime} \\ & 13^{\prime} 8 \\ & \hline-2 \end{aligned}$ | $\begin{gathered} 15^{\prime} 0^{\prime \prime} \\ 13^{\prime} 8^{\prime \prime} \\ 11^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 19^{\prime} 1 " \\ 16^{\prime} 7 \\ 13^{\prime} 6 \\ -2 \end{gathered}$ | $\begin{gathered} 16^{\prime} 11^{\prime \prime} \\ 15^{\prime} 5^{\prime \prime} \\ 13^{\prime} 5^{\prime \prime} \\ .--2 \end{gathered}$ | $\begin{gathered} 14^{\prime} 9 " \\ 13^{\prime} 5 " \\ 11^{\prime} 9 \\ \hline-2 \end{gathered}$ | $\begin{gathered} 16^{\prime} 7 " \\ 14^{\prime} 4^{\prime \prime} \\ 11^{\prime} 9 \end{gathered}$ | $\begin{gathered} 15^{\prime} 5 " \\ 14^{\prime} 0 " \\ 11^{\prime \prime} 9 \end{gathered}$ | $\begin{gathered} 13^{\prime} 5^{\prime} \\ 12^{\prime} 2 " \\ 10^{\prime} 8 \\ \hline-2 \end{gathered}$ | $13^{\prime} 6 "$ $13^{\prime} 5{ }^{\prime \prime}$ $11^{\prime \prime} 9{ }^{\prime \prime}$ <br> $11^{\prime} 9 "$ $11^{\prime \prime} 9{ }^{\prime \prime}$ $10^{\prime \prime} 8^{\prime \prime}$ <br> $9^{\prime} 7^{\prime \prime}$ e $9^{\prime} 7^{\prime \prime}$ e $9^{\prime \prime} 4^{\prime \prime}$ e |  |  |
| 600TLD125-24 ${ }^{1}$ | $\begin{aligned} & 12 \\ & 16 \\ & 24 \\ & \hline \end{aligned}$ | $\begin{gathered} 27 ' 9 " \\ 24^{\prime} 1 " \\ 19^{\prime} 8^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 23^{\prime} 0 " \\ 20^{\prime \prime} 11^{\prime \prime} \\ 18^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 20^{\prime} 1^{\prime \prime} \\ 18^{\prime} 3^{\prime \prime} \\ 15^{\prime} 11^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{gathered} 22^{\prime} 8 " \\ 19^{\prime \prime} 8 " \mathrm{e} \\ 16^{\prime \prime} 1^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 22^{\prime} 7 " \\ 19^{\prime \prime} 8^{\prime \prime} \mathrm{e} \\ 16^{\prime} 1^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 19^{\prime} 9 " \\ 17^{\prime \prime} 11^{\prime \prime} \mathrm{e} \\ 15^{\prime} 8^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ |  |  |  | $\begin{array}{\|ccc} 16^{\prime} 1^{\prime \prime} \text { e } & 16^{\prime \prime} 1^{\prime \prime} \text { e } & 15^{\prime} 8{ }^{\prime \prime} \text { e } \\ 13^{\prime} 11^{\prime \prime} \text { e } & 13^{\prime} 11^{\prime \prime} \text { e } & 13^{\prime \prime} 11^{\prime \prime} \text { e } \\ 11^{\prime \prime} 4^{\prime \prime} \text { e } & 1^{\prime \prime} \text { e } \\ \hline \end{array}$ |  |  |
| 250TLD125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 16^{\prime} 5^{\prime \prime} \\ 14^{\prime} 11^{\prime \prime} \\ 12^{\prime} 10^{\prime \prime} \\ ----- \end{gathered}$ | $\begin{gathered} 13^{\prime} 1 " \\ 11^{\prime} 10^{\prime \prime} \\ 10^{\prime} 4^{\prime \prime} \\ ----. \end{gathered}$ | $\begin{gathered} 11^{\prime} 5 " \\ 10^{\prime} 4^{\prime \prime} \\ 9^{\prime} 1^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 10 " \\ 12^{\prime} 10 " \\ 10^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 10^{\prime \prime} \\ 11^{\prime} 8^{\prime \prime} \\ 10^{\prime} 2^{\prime \prime} \\ --)^{2} \end{gathered}$ | $\begin{gathered} 11^{\prime} 3 " \\ 10^{\prime} 2 " \\ 8^{\prime} 11^{\prime \prime} \end{gathered}$ |  |  |  | $\begin{array}{cc} 10^{\prime} 6^{\prime \prime} & 10^{\prime} 2^{\prime \prime} \\ 9^{\prime} 1^{\prime \prime} & 9^{\prime} 1^{\prime \prime} \\ 7^{\prime} 5^{\prime \prime} \mathrm{e} & 7^{\prime} 55^{\prime \prime} \mathrm{e} \end{array}$ |  | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \\ 7^{\prime \prime} 1^{\prime \prime} \end{gathered}$ |
| 362TLD125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 21^{\prime} 8^{\prime \prime} \\ 18^{\prime} 10^{\prime \prime} \\ 15^{\prime} 4^{\prime \prime} \\ \hline-.---2 \end{gathered}$ | $\begin{gathered} 17^{\prime} 5 " \\ 15^{\prime} 10^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \\ -2-2 \end{gathered}$ | $\begin{gathered} 15^{\prime} 2^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \\ 12^{\prime} 1 \text { 1"------ } \end{gathered}$ | $\begin{gathered} 177^{\prime \prime} \\ 15^{\prime} 4^{\prime \prime} \\ 12^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 17^{\prime} 1^{\prime \prime} \\ 15^{\prime} 4^{\prime \prime} \\ 12^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 11^{\prime \prime} \\ 13^{\prime} 7^{\prime \prime} \\ 11^{\prime} 10^{\prime \prime} \end{gathered}$ | $15^{\prime} 4^{\prime \prime}$ $15^{\prime} 4^{\prime \prime}$ $13^{\prime} 7^{\prime \prime}$ <br> $13^{\prime} 3^{\prime \prime}$ $13^{\prime} 3^{\prime \prime}$ $12^{\prime} 4^{\prime \prime}$ <br> $10^{\prime} 10^{\prime \prime}$ $10^{\prime} 10^{\prime \prime}$ $10^{\prime} 9^{\prime \prime}$ |  |  | $\begin{gathered} 12^{\prime} 6^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \\ 8^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 6 " \\ 10^{\prime} 10 " \\ 8^{\prime} 10^{\prime \prime} \\ ---1--.--~ \end{gathered}$ |  |
| 400TLD125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 22^{\prime} 11^{\prime \prime} \\ 19^{\prime} 10^{\prime \prime} \\ 16^{\prime} 2^{\prime \prime} \end{gathered}$ | $\begin{gathered} 18^{\prime} 9^{\prime \prime} \\ 17^{\prime \prime} 1^{\prime \prime} \\ 14^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 16^{\prime} 5^{\prime \prime} \\ 14^{\prime} 11^{\prime \prime} \\ 13^{\prime} 0^{\prime \prime} \\ ----2 \end{gathered}$ | $\begin{aligned} & 18^{\prime} 8^{\prime \prime} \\ & 16^{\prime} 2 " \\ & 13^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 18^{\prime} 6 \\ & 16^{\prime} 2 \\ & 13^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{gathered} 16^{\prime} 2 " \\ 14^{\prime} 8 " \\ 12^{\prime \prime} 10^{\prime \prime} \end{gathered}$ | $16^{\prime} 2 "$ $16^{\prime} 2 "$ $14^{\prime} 8 "$ <br> $14^{\prime} 0 "$ $14^{\prime} 0 "$ $13^{\prime} 4 "$ <br> $11^{\prime} 5 "$ $11^{\prime \prime} 5^{\prime \prime}$ $11^{\prime \prime} 5^{\prime \prime}$ |  |  | $\begin{gathered} 13^{\prime} 3^{\prime \prime} \\ 11^{\prime} 5^{\prime \prime} \\ 9^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 13^{\prime} 3^{\prime \prime} \\ 11^{\prime} 5^{\prime \prime} \\ 9^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 10^{\prime \prime} \\ 11^{\prime} 5 " \\ 9^{\prime \prime} 4^{\prime \prime} \text { e } \end{gathered}$ |
| 600TLD125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 29^{\prime} 5 " \\ 25^{\prime \prime} 6 " \\ 20^{\prime} 10 " \\ \hline \end{gathered}$ | $\begin{aligned} & 25^{\prime} 8^{\prime \prime} \\ & 23^{\prime \prime} 4^{\prime \prime} \\ & 20^{\prime \prime} \end{aligned}$ | $\begin{gathered} 22^{\prime} 5^{\prime \prime} \\ 20^{\prime} 5^{\prime \prime} \\ 17^{\prime} 10 \prime \\ \hline \end{gathered}$ | $\begin{gathered} 24^{\prime} 0 " \\ 20^{\prime} 10 " \\ 17^{\prime} 0^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 22^{\prime} 0^{\prime \prime} \\ 20^{\prime} 10^{\prime \prime} \\ 17^{\prime} 0^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 22^{\prime} 1^{\prime \prime} \\ 20^{\prime} 1^{\prime \prime} \\ 17^{\prime} 0^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\left[\begin{array}{ccc} 20^{\prime} 10^{\prime \prime} & 20^{\prime} 10^{\prime \prime} & 20^{\prime \prime} 1 " \\ 18^{\prime} 0 " \mathrm{e} & 18^{\prime} 0 " \mathrm{e} & 18^{\prime} 0 " \mathrm{e} \\ 14^{\prime} 9{ }^{\prime \prime} \mathrm{e} & 14^{\prime \prime} \mathrm{e} & 14^{\prime \prime} \mathrm{e} \\ \hline \end{array}\right.$ |  |  | $\begin{gathered} 17 \text { ' }^{\prime \prime} \text { e } \\ 14^{\prime} 9 " \mathrm{e} \\ 12^{\prime} 0^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 17^{\prime} 0 " \mathrm{e} \\ 14^{\prime} 9{ }^{\prime \prime} \mathrm{e} \\ 12^{\prime} 0^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{aligned} & 17{ }^{\prime} 0 " \mathrm{e} \\ & 14^{\prime} 9{ }^{\prime \prime} \mathrm{e} \\ & 12^{\prime} 0^{\prime \prime} \mathrm{e} \\ & \hline \end{aligned}$ |
| 250TLD125-33 | 12 | $17^{\prime \prime} 0$ | 13' 6" | 11'9" | 15'10" | $13^{\prime \prime}{ }^{\prime \prime}$ | 11'7" | $\begin{gathered} 13^{\prime} 9 " \\ 11^{\prime} 11^{\prime \prime} \\ 9^{\prime} 8^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 1 " \\ 10^{\prime} 11^{\prime \prime} \\ 9^{\prime} 77^{\prime \prime} \\ --.-- \end{gathered}$ | 10'6" | 11'2" | 10'6" | 9'2" |
|  | 16 $24$ | $\begin{aligned} & 15^{\prime} 5^{\prime \prime} \\ & 13^{\prime \prime} 6^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 12^{\prime} 3^{\prime \prime} \\ & 10^{\prime \prime} 8 \\ & \hline \end{aligned}$ | $\begin{gathered} 10^{\prime} 8^{\prime \prime} \\ 9^{\prime \prime} 4 \\ \hline-2 \end{gathered}$ | $\begin{aligned} & 13^{\prime} 9 " \\ & 11^{\prime \prime} 2 \end{aligned}$ | $\begin{aligned} & 12^{\prime} 11^{\prime \prime} \\ & 10^{\prime} 6^{\prime \prime} \end{aligned}$ | $\begin{gathered} 10^{\prime} 6 " \\ 9^{\prime} 2^{\prime \prime} \end{gathered}$ |  |  | $\begin{aligned} & 9^{\prime} 7 " \\ & 8^{\prime} 4^{\prime \prime} \\ & \hline . \end{aligned}$ | $\begin{gathered} 9^{\prime \prime} 8^{\prime \prime} \\ 7^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 9^{\prime} 7 " \\ 7^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{aligned} & 8^{\prime} 4 " \text { " } \\ & 7^{\prime} \mathbf{n}^{\prime} \end{aligned}$ |
| 362TLD125-33 | 12 | 22' ${ }^{\prime \prime}$ | 18'0' | $15^{\prime} 8{ }^{\prime \prime}$ | 19' ${ }^{\prime \prime}$ | $17^{\prime \prime} 8^{\prime \prime}$ | 15' ${ }^{\prime \prime}$ | 16' 7 " | 16'1" | 14'0" | 13' 6 " | 13' 6 " | 12'3" |
|  | 16 24 | $\begin{aligned} & 20^{\prime} 3^{\prime \prime} \\ & 16^{\prime \prime} 7 \end{aligned}$ | $\begin{aligned} & 16^{\prime} 4^{\prime \prime} \\ & 14^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 3^{\prime \prime} \\ & 12^{\prime} 5 " \end{aligned}$ | $\begin{aligned} & 16^{\prime} 7 " \\ & 13^{\prime} 6^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 16^{\prime} 1 " \\ & 13^{\prime} 6 \end{aligned}$ | $\begin{aligned} & 14^{\prime} 0 " \\ & 12^{\prime \prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 4^{\prime \prime} \\ & 11^{\prime \prime} 9 \end{aligned}$ | $\begin{gathered} 14^{\prime} 4^{\prime \prime} \\ 11^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 12^{\prime} 9 " \\ & 11^{\prime \prime} 2 \end{aligned}$ | $\begin{gathered} 11 \text { 1' } 9 " \\ \text { 9'7" e } \end{gathered}$ | $\begin{gathered} 11^{\prime} 9 " \\ 9^{\prime} 7 " \text { e } \end{gathered}$ | $\begin{gathered} 11^{\prime} 2 " \\ 9^{\prime} 7 " \text { e } \end{gathered}$ |
| 400TLD125-33 | 12 | $24^{\prime \prime}{ }^{\prime \prime}$ | 19' 5" | $16^{\prime} 11^{\prime \prime}$ | 20' 2 " | 19'1" | 16' 8" | 17' 6" | 17'4" | 15' 2 " | 14'3' | 14'3" | $13^{\prime \prime}{ }^{\prime \prime}$ |
|  | $\begin{array}{r} 16 \\ 24 \end{array}$ | $\begin{aligned} & 21^{\prime} 5 " \\ & 17^{\prime} 6^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 17^{\prime} 8^{\prime \prime} \\ & 15^{\prime} 5 " \end{aligned}$ | $\begin{aligned} & 15^{\prime} 5 " \\ & 13^{\prime} 5 " \end{aligned}$ | $\begin{aligned} & 17^{\prime} 6^{\prime \prime} \\ & 14^{\prime \prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 17^{\prime} 4^{\prime \prime} \\ & 14^{\prime} 3 \end{aligned}$ | $\begin{aligned} & 15^{\prime} 2^{\prime \prime} \\ & 13^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 1^{\prime} 2 " \\ & 1^{\prime \prime} 4^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 15^{\prime} 2 " \\ & 12^{\prime \prime} 4 \end{aligned}$ | $\begin{aligned} & 13^{\prime} 9 " \\ & 12^{\prime} 0^{\prime \prime} \\ & \hline \end{aligned}$ | $\begin{gathered} 12^{\prime} 4 " \\ 10^{\prime \prime} 1 " \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 4 " \\ 10^{\prime \prime} 1^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 12^{\prime} 0 " \\ 10^{\prime} 1^{\prime \prime} \text { e } \end{gathered}$ |
|  | 12 | 32' ${ }^{\prime \prime}$ | 26' 7 | $23^{\prime \prime}$ | $26^{\prime \prime}{ }^{\prime \prime}$ | 26' ${ }^{\prime \prime}$ | 22' 11" | 23'1" e | 23'1" e | 20'9" | 18'10" e 18'10" e 18'2" e |  |  |
| 600TLD125-33 | 16 24 | $\begin{gathered} 28^{\prime} 3 " \\ 23^{\prime} 1 " \text { " e } \end{gathered}$ | $\begin{aligned} & 24^{\prime} 2^{\prime \prime} \\ & 21^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 21^{\prime} 2 " \\ & 18^{\prime \prime} 5 \end{aligned}$ | $\begin{gathered} 23^{\prime} 1^{\prime \prime} \mathrm{e} \\ 18^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 23^{\prime \prime} 1 " \mathrm{e} \\ 18^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 20^{\prime \prime} 9 " \\ 18^{\prime} 2 " \mathrm{e} \end{gathered}$ | 20' 0" e <br> 16' 4" e | $20^{\prime} 0 " \text { e }$ $16^{\prime} 4^{\prime \prime} \mathrm{e}$ | $\begin{gathered} 18^{\prime} 11^{\prime \prime} \mathrm{e} \\ 16^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{array}{cc} 16^{\prime} 4 \text { " e } & 16^{\prime} 4{ }^{\prime \prime} \mathrm{e} \\ 13^{\prime} 4{ }^{\prime \prime} \mathrm{e} & 13^{\prime} 4^{\prime \prime} \mathrm{e} \end{array}$ |  | $\begin{aligned} & 16^{\prime} 4^{\prime \prime} \mathrm{e} \\ & 13^{\prime} 4^{\prime \prime} \mathrm{e} \end{aligned}$ |

For SI: 1 inch $=25.4 \mathrm{~mm}, 1 \mathrm{ft}=0.3048 \mathrm{~m}, 1 \mathrm{psf}=47.88 \mathrm{~Pa}$.

1. Web height-to-thickness ratio exceeds 200. Webs must have bearing stiffeners. See AISI S100 Section B1.2
2. Web height-to-thickness ratio exceeds 260 but less than 300. Webs must have bearing and intermediate stiffeners. See AISI S100 Section B1.2.
3. Web stiffeners are required at the stud/track connection when denoted with an "e".
4. Compression flanges must be continuously braced.
5. End bearing must be 1 -inch.
6. The minimum overlap of the TSO and TSE must be 8 inches and the maximum un-lapped length of the TSE must be 4 inches.

TABLE 11-NON-COMPOSITE LIMITING HEIGHTS (feet-inches) 48" o.c. BRACING TRAKLOC DEFLECTION STUDS (TLD) ${ }^{3,4,5,6}$

| MEMBER DESIGNATION | Spacing o/c (in) | Lateral Load (psf) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 5 PSF |  |  | 7.5 PSF |  |  | 10 PSF |  |  | 15 PSF |  |  |
|  |  | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 |
| 250TLD125-18 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline-2 \end{array}$ | $\begin{gathered} 12^{\prime} 7^{\prime \prime} \\ 10^{\prime} 11^{\prime \prime} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 111^{\prime} 0^{\prime \prime} \\ 10^{\prime} 0 " \\ 8^{\prime} 9 "-\mathrm{e} \end{gathered}$ | $\begin{gathered} 9^{\prime} 8^{\prime \prime} \\ 8^{\prime} 9 " \\ 7^{\prime \prime} 8^{\prime \prime} \text { e } \end{gathered}$ | $\begin{gathered} 10^{\prime} 3^{\prime \prime} \mathrm{e} \\ 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ 7^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 3^{\prime \prime} \mathrm{e} \\ \text { 8' 11" e } \\ \text { 7' } 3^{\prime \prime} \text { " e } \end{gathered}$ | $\begin{gathered} \text { 9' 6" } \\ \text { 8' 7" e } \\ \text { 7' 3" e } \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ 7^{\prime} 8^{\prime \prime} \mathrm{e} \\ 6^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \mathrm{e} \\ 7^{\prime} 8^{\prime \prime} \mathrm{e} \\ 6^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{aligned} & 8^{\prime \prime} 7^{\prime \prime} \text { e } \\ & \text { 7' 8" e } \\ & 6^{\prime} 3^{\prime \prime} \text { e } \end{aligned}$ | $\begin{aligned} & \text { 7' 3" e } \\ & \text { 6' 3" e } \\ & 5^{\prime} \mathbf{n}^{\prime \prime} \text { " e } \end{aligned}$ | $\begin{aligned} & \text { 7' 3" e } \\ & \text { 6' } 3^{\prime \prime} \text { e } \\ & 5^{\prime} 2^{\prime \prime} \text { e e } \end{aligned}$ |  |
| 362TLD125-18 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 14^{\prime} 3^{\prime \prime} \\ 12^{\prime} 4^{\prime \prime} \mathrm{e} \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 14^{\prime} 3^{\prime \prime} \\ 12^{\prime \prime} 4^{\prime \prime} \mathrm{e} \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 10 " \\ 11^{\prime} 8{ }^{\prime \prime} \text { e } \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 11^{\prime} 7 \mathrm{l} \mathrm{e} \\ 10^{\prime} 1^{\prime \prime} \mathrm{e} \\ 8^{\prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 11^{\prime} 7 " \mathrm{e} \\ 10^{\prime \prime} 1 " \mathrm{e} \\ 8^{\prime \prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{aligned} & 11^{\prime} 7^{\prime \prime} \mathrm{e} \\ & 10^{\prime} 1^{\prime \prime} \mathrm{e} \\ & 8^{\prime} 3^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{gathered} 10^{\prime} 1^{\prime \prime} \mathrm{e} \\ 8^{\prime \prime} 9^{\prime \prime} \mathrm{e} \\ 7^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 1^{\prime \prime} \mathrm{e} \\ 8^{\prime} 9^{\prime \prime} \mathrm{e} \\ 7^{\prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 1^{\prime \prime} \mathrm{e} \\ 8^{\prime} 9^{\prime \prime} \mathrm{e} \\ 7^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 3^{\prime \prime} \mathrm{e} \\ 7^{\prime} 1^{\prime \prime} \mathrm{e} \\ 5^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 3^{\prime \prime} \mathrm{e} \\ 7^{\prime} 1^{\prime \prime} \mathrm{e} \\ 5^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 3^{\prime \prime} \text { e } \\ 7^{\prime \prime} 1^{\prime \prime} \text { e } \\ 5^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 400TLD125-18 ${ }^{1}$ | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 15^{\prime} 0^{\prime \prime} \\ 12^{\prime} 11^{\prime \prime} \mathrm{e} \\ 10^{\prime} 7^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 15^{\prime} 0^{\prime \prime} \\ 12^{\prime} 11^{\prime \prime} \mathrm{e} \\ 10^{\prime} 7^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 13^{\prime} 3^{\prime \prime} \\ 12^{\prime} 1 " \mathrm{e} \\ 10^{\prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 3^{\prime \prime} \mathrm{e} \\ 10^{\prime} 7 " \mathrm{e} \\ 8^{\prime} 8^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 3^{\prime \prime} \mathrm{e} \\ 10^{\prime} 7 \mathrm{l} \mathrm{e} \\ 8^{\prime} 8^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 3^{\prime \prime} \mathrm{e} \\ 10^{\prime} 7 " \mathrm{e} \\ 8^{\prime} 8^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 7^{\prime \prime} \mathrm{e} \\ \text { 9' 2" e } \\ 7^{\prime \prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 7 " \mathrm{e} \\ \text { 9' 2" e } \\ 7^{\prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 7 " \mathrm{e} \\ 9^{\prime} 2^{\prime \prime} \mathrm{e} \\ 7^{\prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{aligned} & 8^{\prime} 8^{\prime \prime} \text { e } \\ & 7^{\prime \prime} 6^{\prime \prime} \text { e } \\ & 6^{\prime \prime} 1^{\prime \prime} \text { e } \end{aligned}$ | $\begin{gathered} 8^{\prime} 8^{\prime \prime} \text { e } \\ \text { 7' 6" e } \\ 6^{\prime \prime} 1^{\prime \prime} \text { e } \end{gathered}$ | $\begin{aligned} & 8^{\prime} 8^{\prime \prime} \text { e } \\ & \text { 7' 6" e } \\ & 6^{\prime \prime} 1^{\prime \prime} \text { e } \end{aligned}$ |
| 600TLD125-18 ${ }^{2}$ | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 19 ' 2 " \mathrm{e} \\ 16 \mathrm{k} 7 \mathrm{e} \\ 13^{\prime} 6 \mathrm{k} \\ \hline \end{gathered}$ | $\begin{aligned} & 19{ }^{\prime} 2 " \mathrm{e} \\ & 16{ }^{\prime} 7 " \mathrm{e} \\ & 13^{\prime} 6 " \mathrm{e} \end{aligned}$ | $\begin{gathered} 18^{\prime} 3^{\prime \prime} \mathrm{e} \\ 16^{\prime} 7 " \mathrm{e} \\ 13^{\prime} 6^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{aligned} & 15^{\prime} 7 " \mathrm{e} \\ & 13^{\prime} 6 " \mathrm{e} \\ & 11^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{gathered} 15^{\prime} 7 " \mathrm{e} \\ 13^{\prime} 6^{\prime \prime} \mathrm{e} \\ 11^{\prime} 1^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{aligned} & 15^{\prime} 7^{\prime \prime} \mathrm{e} \\ & 13^{\prime} 6^{\prime \prime} \mathrm{e} \\ & 11^{\prime} 1^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{gathered} 13^{\prime} 6 "^{\prime \prime} \mathrm{e} \\ 11^{\prime} 9^{\prime \prime} \mathrm{e} \\ 9^{\prime} 7^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 13 ' 6 " e \\ 11{ }^{\prime \prime} 9 " \mathrm{e} \\ 9{ }^{\prime \prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 13 ' 6 " \mathrm{e} \\ 11 \text { '9" e } \\ 9 \text { ' } 7 \text { " } \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} \text { 11' 1" e } \\ \text { 9' 7" e } \\ \text { 6' 9" e } \\ \hline \end{gathered}$ | $\begin{gathered} \text { 11' 1" e } \\ \text { 9' 7" e } \\ \text { 6' 9" e } \\ \hline \end{gathered}$ | $\begin{gathered} 11 \text { '1" e } \\ \text { 9' 7" e } \\ \text { 6' 9" e } \\ \hline \end{gathered}$ |
| 250TLD125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 15^{\prime} 0 \\ 13^{\prime} 7 \\ 11^{\prime} 5 \end{gathered}$ | $\begin{gathered} 11^{\prime} 11^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \\ 9^{\prime} 55^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 5^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ 8^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 2^{\prime \prime} \\ 11^{\prime} 5^{\prime \prime} \\ 9^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 8^{\prime \prime} \\ 10^{\prime} 8^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 3^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 5 \\ 9^{\prime} 11^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 8^{\prime \prime} \\ 9^{\prime} 8^{\prime \prime} \\ 8^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 9^{\prime} 3^{\prime \prime} \\ & 8^{\prime} 5^{\prime \prime} \\ & 7^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{gathered} 9^{\prime} 4^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \\ 6^{\prime} 77^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \\ 6^{\prime} 7^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{aligned} & 8^{\prime} 1^{\prime \prime} \\ & 7^{\prime \prime} 4^{\prime \prime} \\ & 6^{\prime \prime} 5^{\prime \prime} \end{aligned}$ |
| 362TLD125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 17^{\prime} 11^{\prime \prime} \\ 15^{\prime} 7 " \\ 12^{\prime} 8 \\ \hline-2 \end{gathered}$ | $\begin{gathered} 15^{\prime} 11^{\prime \prime} \\ 14^{\prime} 5^{\prime \prime} \\ 12^{\prime} 7^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \\ 12^{\prime} 7 " \\ 11^{\prime} 0^{\prime \prime} \\ --1)^{\prime} \end{gathered}$ | $\begin{aligned} & 14^{\prime} 8^{\prime \prime} \\ & 12^{\prime} 8^{\prime \prime} \\ & 10^{\prime \prime} \end{aligned}$ | $\begin{gathered} 14^{\prime} 8^{\prime \prime} \\ 12^{\prime} 8^{\prime \prime} \\ 10^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 13^{\prime} 8^{\prime \prime} \\ & 12^{\prime} 5^{\prime \prime} \\ & 10^{\prime} 4 \end{aligned}$ | $\begin{gathered} 12^{\prime} 8 \\ 11^{\prime} 0 \\ 9^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 8^{\prime \prime} \\ 11^{\prime} 0 " \\ 9^{\prime} 0^{\prime \prime} \\ \hline---2 \end{gathered}$ | $\begin{gathered} 12^{\prime} 5^{\prime \prime} \\ 11^{\prime} 0^{\prime \prime} \\ 9^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 4^{\prime \prime} \\ 9^{\prime} 0 " \\ 7^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 4^{\prime \prime} \\ 9^{\prime} 0^{\prime \prime} \\ 7^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 4^{\prime \prime} \\ 9^{\prime} 0^{\prime \prime} \\ 7^{\prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 400TLD125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 18^{\prime} 10^{\prime \prime} \\ 16^{\prime} 4^{\prime \prime} \\ 13^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 17^{\prime} 2 " \\ & 15^{\prime} 8^{\prime \prime} \\ & 13^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{gathered} 15^{\prime} 0^{\prime \prime} \\ 13^{\prime} 8^{\prime \prime} \\ 11^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 15^{\prime} 4^{\prime \prime} \\ 13^{\prime} 4^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 15^{\prime} 4^{\prime \prime} \\ 13^{\prime} 4^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 9 " \\ 13^{\prime} 4^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 4^{\prime \prime} \\ 11^{\prime} 6 \\ 9^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 13^{\prime} 4^{\prime \prime} \\ & 11^{\prime} 6^{\prime \prime} \\ & 9^{\prime} 5^{\prime \prime} \end{aligned}$ | $\begin{gathered} 13^{\prime} 4^{\prime \prime} \\ 11^{\prime} 6 \\ 9^{\prime} 5 \end{gathered}$ | $\begin{gathered} 10^{\prime} 10 " \\ 9^{\prime} 5 " \\ 7^{\prime \prime} 8^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 10^{\prime \prime} \\ 9^{\prime} 5 " \\ 7^{\prime} 8^{\prime \prime} \end{gathered}$ |  |
| 600TLD125-241 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 24^{\prime} 2 " \\ 20^{\prime} 11^{\prime \prime} \\ 17^{\prime} 1^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{gathered} 23^{\prime} 0 " \\ 20^{\prime \prime} 11^{\prime \prime} \\ 17^{\prime} 1 " \\ \hline \end{gathered}$ | $\begin{gathered} 20^{\prime} 1^{\prime \prime} \\ 18^{\prime} 3^{\prime \prime} \\ 15^{\prime} 11^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{array}{\|c} 19^{\prime} 9 " \\ 17^{\prime} 1^{\prime \prime} \\ 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 19^{\prime} 9 " \\ 17^{\prime \prime} 1^{\prime \prime} \\ 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 19^{\prime} 9 " \\ 17^{\prime} 1 " \\ 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{array}{\|c} 17^{\prime} 1 "^{\prime \prime} \\ 14^{\prime} 10 " \mathrm{e} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 17^{\prime} 1^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \mathrm{e} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 17^{\prime} 1 " \\ 14^{\prime} 10^{\prime \prime} \mathrm{e} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{array}{\|c} 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ 9^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ 9^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime} 1^{\prime \prime} \mathrm{e} \\ 9^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ |
| 250TLD125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 16^{\prime} 5^{\prime \prime} \\ 14^{\prime} 7^{\prime \prime} \\ 11^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 1^{\prime \prime} \\ 11^{\prime} 10^{\prime \prime} \\ 10^{\prime} 4^{\prime \prime} \\ \hline------1 \end{gathered}$ | $\begin{gathered} 11^{\prime} 5 " \\ 10^{\prime} 4^{\prime \prime} \\ 9^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 9 " \\ 11^{\prime} 11^{\prime \prime} \\ 9^{\prime} 9 " \end{gathered}$ | $\begin{gathered} 12^{\prime} 10 " \\ 11^{\prime} 8 " \\ 9^{\prime} 9 " \end{gathered}$ | $\begin{aligned} & 11^{\prime} 3 \\ & 10^{\prime} \\ & 8^{\prime} 2 \\ & 8^{\prime} 11 \end{aligned}$ | $\begin{gathered} 11^{\prime} 11^{\prime \prime} \\ 10^{\prime} 4^{\prime \prime} \\ 8^{\prime} 5 " \\ ----2 \end{gathered}$ | $\begin{gathered} 11^{\prime} 8 " \\ 10^{\prime} 4 " \\ 8^{\prime} 5 \end{gathered}$ | $\begin{gathered} 10^{\prime} 2^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \end{gathered}$ | $\begin{gathered} 9^{\prime} 9 " \\ 8^{\prime} 5^{\prime \prime} \\ 6^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 9^{\prime} 9 " \\ \text { 8' }^{\prime} 5 " \\ 6^{\prime} 10^{\prime \prime} \\ \hline--2 \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \\ 8^{\prime} 11^{\prime \prime} \\ 6^{\prime} 10^{\prime \prime} \end{gathered}$ |
| 362TLD125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 19^{\prime} 11^{\prime \prime} \\ 17^{\prime} 3^{\prime \prime} \\ 14^{\prime} 1{ }^{\prime \prime} \\ --.-. .-. \end{gathered}$ | $\begin{gathered} 17^{\prime} 5^{\prime \prime} \\ 15^{\prime} 10^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \\ .-. .-. . . . ~ \end{gathered}$ | $\begin{gathered} 15^{\prime} 2^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \\ 12^{\prime}-1 " \end{gathered}$ | $\begin{aligned} & 16^{\prime} 3 " \\ & 14^{\prime} 1 " \\ & 11^{\prime} 6 \\ & -2 " \end{aligned}$ | $\begin{gathered} 16^{\prime} 3^{\prime \prime} \\ 14^{\prime} 1 " \\ 11^{\prime} 6^{\prime \prime} \\ --.--. . . \end{gathered}$ | $\begin{gathered} 14^{\prime} 11^{\prime \prime} \\ 13^{\prime} 7 " \\ 11^{\prime} 6^{\prime \prime} \\ ---1-2 \end{gathered}$ | $\begin{gathered} 14^{\prime} 1^{\prime \prime} \\ 12^{\prime} 3^{\prime \prime} \\ 10^{\prime} \end{gathered}$ | $\begin{aligned} & 14^{\prime} 1^{\prime \prime} \\ & 12^{\prime} 3^{\prime \prime} \\ & 10^{\prime} \\ & --2 \end{aligned}$ | $\begin{aligned} & 13^{\prime} 7^{\prime \prime} \\ & 12^{\prime} 3^{\prime \prime} \\ & 10^{\prime} 0^{\prime-} \end{aligned}$ | $\begin{gathered} 11^{\prime} 6 " \\ 10^{\prime} 0 \\ 8^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 6^{\prime \prime} \\ 10^{\prime} 0^{\prime \prime} \\ 8^{\prime} 2^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 6 " \\ 10^{\prime} 0 \\ 8^{\prime} 0^{\prime \prime} \end{gathered}$ |
| 400TLD125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 21^{\prime} 0^{\prime \prime} \\ 18^{\prime} 2 " \\ 14^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 18^{\prime} 9^{\prime \prime} \\ 17^{\prime} 1^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 16^{\prime} 5^{\prime \prime} \\ 14^{\prime} 11^{\prime \prime} \\ 13^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 17^{\prime} 2^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \\ 12^{\prime} 1 " \end{gathered}$ | $\begin{gathered} 17^{\prime} 2^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \\ 12^{\prime} 1 " \end{gathered}$ | $\begin{aligned} & 16^{\prime} 2 \\ & 14^{\prime} 8^{\prime \prime} \\ & 12^{\prime} 1 \end{aligned}$ | $\begin{gathered} 14^{\prime} 10 " \\ 12^{\prime} 10 " \\ 10^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 10^{\prime \prime} \\ 12^{\prime} 10^{\prime \prime} \\ 10^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 8^{\prime \prime} \\ 12^{\prime} 10^{\prime \prime} \\ 10^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 1^{\prime \prime} \\ 10^{\prime} 6^{\prime \prime} \\ 8^{\prime} 7 \end{gathered}$ | $\begin{gathered} 12^{\prime} 1 " \\ 10^{\prime} 6^{\prime \prime} \\ 8^{\prime} 77^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 1 " \\ 10^{\prime} 6 \\ 8^{\prime} 7 \end{gathered}$ |
| 600TLD125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 27^{\prime} 7 " \\ 23^{\prime \prime} 11^{\prime \prime} \\ 19^{\prime} 6^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{aligned} & 25^{\prime} 8^{\prime \prime} \\ & 23^{\prime \prime} 4^{\prime \prime} \\ & 19^{\prime \prime} \end{aligned}$ | $\begin{gathered} 22^{\prime} 5^{\prime \prime} \\ 20^{\prime} 5^{\prime \prime} \\ 17^{\prime} 10^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{array}{\|c} 22^{\prime} 7^{\prime \prime} \\ 19^{\prime} 6^{\prime \prime} \\ 15^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 22^{\prime} 7 " \\ 19^{\prime} 6 " \\ 15^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 22^{\prime} 1 " \\ 19^{\prime} 6 " \\ 15 ' 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{array}{\|c} 19 '^{\prime \prime} 6 \\ 16^{\prime} 11 " \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 19^{\prime} 6^{\prime \prime} \\ 16^{\prime} 11^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 19^{\prime} 6 "^{\prime \prime} \\ 16^{\prime} 11^{\prime \prime} \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{array}{\|c} \hline 15^{\prime} 11^{\prime \prime} \mathrm{e} \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ 11^{\prime} 3^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 15^{\prime} 11^{\prime \prime} \mathrm{e} \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ 11^{\prime} 3^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 15 ' 11 " ~ e \\ 13^{\prime} 10^{\prime \prime} \mathrm{e} \\ 11^{\prime} 3^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ |
|  | 12 | 17'0" | 13' ${ }^{\prime \prime}$ | 11'9" | 14' ${ }^{\prime \prime}$ | 13' 3" | 11'7" | 12' 9" | 12'1" | 10'6" | 10' ${ }^{\prime \prime}$ | 10' 5" | $9^{\prime}{ }^{\prime \prime}$ |
| 250TLD125-33 | $\begin{array}{r} 16 \\ 24 \\ \hline \end{array}$ | $\begin{aligned} & 15^{\prime} 5 " \\ & 1^{\prime \prime} 9 " \end{aligned}$ | $\begin{aligned} & 12^{\prime} 3 " \\ & 10^{\prime} 8 \text { " } \end{aligned}$ | $\begin{gathered} 10^{\prime} 8^{\prime \prime} \\ 9^{\prime \prime} 4 \end{gathered}$ | $\begin{aligned} & 12^{\prime} 9 " \\ & 10^{\prime} 5 \\ & \hline-10 \end{aligned}$ | $\begin{aligned} & 12^{\prime} 1 " \\ & 10^{\prime \prime} 5 \\ & \hline-1 \end{aligned}$ | $\begin{aligned} & 10^{\prime} 6 " \\ & 9^{\prime} 2^{\prime \prime} \\ & \hline \end{aligned}$ | $\begin{aligned} & 11^{\prime} 0 \\ & 9^{\prime} 0 \end{aligned}$ | $\begin{gathered} 10^{\prime} 11^{\prime \prime} \\ 9^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 9^{\prime} 7 " \\ & 8^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 9^{\prime} 0 " \\ & 7^{\prime} 44^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 9^{\prime} 0 " \\ & 7^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 8^{\prime} 4 " 4 \\ & 7^{\prime} 4 \end{aligned}$ |
| 362TLD125-33 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 21^{\prime} 6^{\prime \prime} \\ 18^{\prime} 8^{\prime \prime} \\ 15^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 18^{\prime} 0^{\prime \prime} \\ & 16^{\prime} 4^{\prime \prime} \\ & 14^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 15^{\prime} 8^{\prime \prime} \\ & 14^{\prime} 3^{\prime \prime} \\ & 12^{\prime} 5 \end{aligned}$ | $\begin{aligned} & 17^{\prime} 7^{\prime \prime} \\ & 15^{\prime} 3^{\prime \prime} \\ & 12^{\prime} 5^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 17^{\prime} 7^{\prime \prime} \\ & 15^{\prime} 3^{\prime \prime} \\ & 12^{\prime} 5^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 15^{\prime} 5^{\prime} \\ & 14^{\prime} 0 \\ & 12^{\prime} 3^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 15^{\prime} 3^{\prime \prime} \\ & 13^{\prime} 2^{\prime \prime} \\ & 10^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 15^{\prime} 3^{\prime \prime} \\ & 13^{\prime} 2 \\ & 10^{\prime} 9 \end{aligned}$ | $\begin{gathered} 14^{\prime} 0 \\ 12^{\prime} 9 \\ 10^{\prime \prime} \\ -19^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 5 " \\ 10^{\prime} 9 " \\ 8^{\prime} 9 " \text { "' e } \end{gathered}$ | $\begin{gathered} 12^{\prime} 5^{\prime \prime} \\ \text { 10' } 9^{\prime \prime} \\ 8^{\prime} 9 " \mathrm{e} \end{gathered}$ | $\begin{gathered} 12^{\prime} 3^{\prime \prime} \\ 10^{\prime} 9 " \\ 8^{\prime \prime} 9 " \mathrm{e} \end{gathered}$ |
| 400TLD125-33 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 22^{\prime} 8^{\prime \prime} \\ 19^{\prime \prime} \\ 16^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 19^{\prime} 5^{\prime} \\ & 17^{\prime} 8^{\prime \prime} \\ & 15^{\prime} 5 \end{aligned}$ | $\begin{gathered} 16^{\prime} 11^{\prime \prime} \\ 15^{\prime} 5^{\prime \prime} \\ 13^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 18^{\prime} 6 " \\ 16^{\prime} 0 \\ 10^{\prime} \\ -13^{\prime} \end{gathered}$ | $\begin{gathered} 18^{\prime} 6 \\ 16^{\prime} 0^{\prime \prime} \\ 13^{\prime} 1 \end{gathered}$ | $\begin{aligned} & 16^{\prime} 8^{\prime \prime} \\ & 15^{\prime} 2^{\prime \prime} \\ & 13^{\prime} 1 \end{aligned}$ | $\begin{gathered} 16^{\prime} 0^{\prime \prime} \\ 13^{\prime} 11^{\prime \prime} \\ 11^{\prime} 4^{\prime \prime} \\ --\mathbf{-}^{-} \end{gathered}$ | $\begin{gathered} 16^{\prime} 0^{\prime \prime} \\ 13^{\prime} 11^{\prime \prime} \\ 11^{\prime} 4^{\prime \prime} \\ \hline-.--.--~ \end{gathered}$ | $\begin{gathered} 15^{\prime} 2^{\prime \prime} \\ 13^{\prime} 9 \\ 11^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 1^{\prime \prime} \\ 11^{\prime} 4^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 1 " \\ 11^{\prime} 4 " \\ 9^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 1 " \\ 11^{\prime} 4 " \\ 9^{\prime} 3^{\prime \prime} \end{gathered}$ |
| 600TLD125-33 | $\begin{aligned} & 12 \\ & 16 \\ & 24 \\ & \hline \end{aligned}$ | $\begin{gathered} 29^{\prime} 11^{\prime \prime} \\ 25^{\prime} 11^{\prime \prime} \\ 21^{\prime} 2 \prime \prime \\ \hline \end{gathered}$ | $\begin{aligned} & 26^{\prime} 7 " \\ & 24^{\prime} 2 " \\ & 21^{\prime} 2^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 23^{\prime} 3^{\prime \prime} \\ & 21^{\prime} 2 "^{\prime \prime} \\ & 18^{\prime} 5^{\prime \prime} \end{aligned}$ | $\begin{gathered} 24^{\prime} 5 " \\ 21^{\prime \prime} 2 " \\ 17^{\prime} 33^{\prime \prime} \text { e } \\ \hline \end{gathered}$ | $\begin{gathered} 24^{\prime} 5 " \\ 21^{\prime \prime} 2 " \\ 17^{\prime} 3 " \text { " e } \\ \hline \end{gathered}$ | $\begin{gathered} 22^{\prime} 11^{\prime \prime} \\ 20^{\prime} 9 " \\ 17^{\prime \prime} 3^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 21^{\prime} 2 " '_{\prime \prime} \\ 18^{\prime \prime} 4^{\prime \prime} \mathrm{e} \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 21^{\prime} 2^{\prime \prime} \\ 18^{\prime} 4^{\prime \prime} \mathrm{e} \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 20^{\prime} 9 " \\ 18^{\prime \prime} 4^{\prime \prime} \mathrm{e} \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 17^{\prime} 3^{\prime \prime} \mathrm{e} \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime} 2^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 17^{\prime} 3^{\prime \prime} \mathrm{e} \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime} 2^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 17^{\prime} 3^{\prime \prime} \mathrm{e} \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \\ 12^{\prime} 2^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ |

For SI: 1 inch $=25.4 \mathrm{~mm}, 1 \mathrm{ft}=0.3048 \mathrm{~m}, 1 \mathrm{psf}=47.88 \mathrm{~Pa}$.

1. Web height-to-thickness ratio exceeds 200. Webs must have bearing stiffeners. See AISI S100 Section B1.2
2. Web height-to-thickness ratio exceeds 260 but less than 300. Webs must have bearing and intermediate stiffeners. See AISI S100 Section B1.2.
3. Web stiffeners are required at the stud/track connection when denoted with an "e".
4. Based on an unbraced length (Lu) of 48" o.c.
5. End bearing must be 1 -inch.
6. The minimum overlap of the TSO and TSE must 8 inches and the maximum un-lapped length of the TSE must be 4 inches.

TABLE 12-NON-COMPOSITE LIMITING HEIGHTS (feet-inches)
FULLY BRACED TRAKLOC ELEVATOR STUDS (TLE) ${ }^{3,4,5,6}$


For SI: 1 inch $=25.4 \mathrm{~mm}, 1 \mathrm{ft}=0.3048 \mathrm{~m}, 1 \mathrm{psf}=47.88 \mathrm{~Pa}$.

1. Web height-to-thickness ratio exceeds 200. Webs must have bearing stiffeners. See AISI S100 Section B1.2.
2. Web height-to-thickness ratio exceeds 260 but less than 300. Webs must have bearing and intermediate stiffeners. See AISI S100 Section B1.2.
3. Web stiffeners are required at the stud/track connection when denoted with an "e".
4. Compression flanges must be continuously braced.
5. End bearing must be 1 -inch.
6. The minimum overlap of the TSO and TSE must be 11 inches and must be connected with a minimum of (4) \#8 x $9 / 16$ " long wafer head screws complying with ASTM C1513

TABLE 13-NON-COMPOSITE LIMITING HEIGHTS (feet-inches)
48" o.c. BRACING TRAKLOC ELEVATOR STUDS (TLE) ${ }^{3,4,5,6}$

| Member | Spacing o/c (in) | Lateral Load (psf) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 5 PSF |  |  | 7.5 PSF |  |  | 10 PSF |  |  | 15 PSF |  |  |
|  |  | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 |
| 250TLE125-18 | $\begin{aligned} & 12 \\ & 16 \\ & 24 \\ & \hline \end{aligned}$ | $\begin{gathered} 12^{\prime} 3^{\prime \prime \prime} \\ 10^{\prime \prime} 7^{\prime \prime} \\ 8^{\prime} 8^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{array}{r} 10^{\prime} 3^{\prime \prime} \\ 9^{\prime \prime} 4^{\prime \prime} \\ 8^{\prime \prime} 2^{\prime \prime} \mathrm{e} \end{array}$ | $\begin{gathered} 9^{\prime \prime} 0^{\prime \prime} \\ 8^{\prime \prime} 2^{\prime \prime} \\ 7^{\prime \prime} \mathbf{1 ' 口}^{\prime} \end{gathered}$ | $\begin{gathered} 10^{\prime \prime} 0 \\ 8^{\prime} 8^{\prime \prime} \mathrm{e} \\ 7^{\prime} 1 " \mathrm{e} \end{gathered}$ |  | $\begin{gathered} 8^{\prime \prime} 10^{\prime \prime} \\ 8^{\prime} 0 " \mathrm{e} \\ 7^{\prime} 0^{\prime \prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{aligned} & 8^{\prime \prime} 8^{\prime \prime} \mathrm{e} \\ & 7^{\prime \prime} 6^{\prime \prime} \mathrm{e} \\ & 6^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{aligned} & 8^{\prime \prime} 8^{\prime \prime} \mathrm{e} \\ & 7^{\prime \prime} 6^{\prime \prime} \mathrm{e} \\ & 6^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{aligned} & 8^{\prime \prime} 0 \mathrm{e} \\ & 7^{\prime \prime} 3^{\prime \prime} \mathrm{e} \\ & 6^{\prime \prime} 1^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{aligned} & 7^{\prime \prime} 1 \mathrm{e} \\ & 6^{\prime \prime} 1^{\mathrm{e}} \\ & 5^{\prime} \mathbf{n}^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 7^{\prime \prime} 1 "^{\mathrm{e}} \\ & 6^{\prime \prime} 1^{\mathrm{e}} \\ & 5^{\prime} \mathrm{n}^{\prime \prime} \end{aligned}$ | $\begin{aligned} & \hline 7^{\prime} 0^{\prime \prime} \mathrm{e} \\ & 6^{\prime} 1^{\prime \prime} \mathrm{e} \\ & 5^{\prime} 0^{\prime \prime} \mathrm{e} \end{aligned}$ |
| 362TLE125-18 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ |  | $13^{\prime} 10^{\prime \prime}$ 12' 4" e 10'1" e | $\begin{gathered} 12^{\prime \prime \prime} 1 " \\ 11^{\prime \prime} 0 " \\ 9^{\prime \prime} 77^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 11^{\prime} 77^{\prime \prime} \mathrm{e} \\ 10^{\prime} 1 " \mathrm{e} \\ 8^{8} 3^{\prime \prime} \mathrm{e} \text { e } \end{gathered}$ | 11'7" e 10' 1" e 8'3" - | 11'7" e $10^{\prime \prime} 1^{\prime \prime}$ e <br> 8'3" e | $10^{\prime \prime} 1^{\prime \prime}$ e 8' 9" e <br> 711" | 10'1" e 8' 9" e <br> 7'1" e |  | $\begin{gathered} 8^{8 \prime \prime} 3^{\prime \prime} \mathrm{e} \\ 7^{\prime} 11^{\prime \prime} \mathrm{e} \\ 5^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 3^{\prime \prime} \mathrm{e} \\ 7^{\prime} 1{ }^{\prime \prime} \mathrm{e} \\ 5^{\prime} 10^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 8^{\prime} 3^{\prime \prime} \mathrm{e} \\ 7^{\prime} 11^{\prime \prime} \text { e } \\ 5^{\prime} 10^{\prime \prime} \text { e } \end{gathered}$ |
| 400TLE125-181 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline-24 \end{array}$ | $\begin{gathered} 15^{\prime} 0^{\prime \prime} \\ 12^{\prime} 11^{\prime \prime} \mathrm{e} \\ 10^{\prime} 7^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 14^{\prime} 8 " \\ 12^{\prime} 11^{\prime \prime} \mathrm{e} \\ 10^{\prime \prime} 7 \text { " e } \end{gathered}$ | $\begin{gathered} 12^{\prime} 10^{\prime \prime} \\ 11^{\prime \prime} \mathrm{e} \\ 10^{\prime} 2 " \mathrm{e} \end{gathered}$ | $\begin{gathered} 122^{\prime \prime} \mathrm{e} \\ 10^{\prime \prime} 7^{\prime \prime} \mathrm{e} \\ 8^{\prime} 8^{\prime \prime} \mathrm{I} \text { e } \end{gathered}$ | $\begin{gathered} 12^{\prime} 3^{\prime \prime} \mathrm{e} \\ 10^{\prime} 7 " \mathrm{e} \\ 8^{\prime} 8^{\prime \prime} \mathrm{e} \\ \hline \end{gathered}$ | $\begin{gathered} 12^{\prime} 3^{\prime \prime} \text { e } \\ 10^{\prime} 7^{\prime \prime} \mathrm{e} \\ 8^{\prime \prime} 8^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 77 "^{\prime \prime} \mathrm{e} \\ 9^{\prime \prime} 2^{\prime \prime} \mathrm{e} \\ 7^{\prime \prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 77^{\prime \prime} \mathrm{e} \\ 9^{\prime 2} \mathrm{e} \mathrm{e} \\ 7^{\prime} 6^{\prime \prime} \mathrm{e} \end{gathered}$ |  | $\begin{aligned} & 8^{\prime} 8^{\prime \prime} \mathrm{e} \\ & 7^{\prime} 6^{\prime \prime} \mathrm{e} \\ & 6^{\prime} \mathbf{n}^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{aligned} & 8^{\prime} 8^{\prime \prime} \mathrm{e} \\ & 7^{\prime} 6^{\prime \prime} \mathrm{e} \\ & 6^{\prime} 1^{\prime \prime} \mathrm{e} \end{aligned}$ | $\begin{gathered} 8^{8} 8^{\prime \prime} \mathrm{e} \\ 7^{\prime \prime} 6^{\prime \prime} \mathrm{e} \\ 6^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ |
| 600TLE125-18 ${ }^{2}$ | $\begin{aligned} & 12 \\ & 16 \\ & 24 \\ & \hline \end{aligned}$ | 19'2"e 16' 7" e $13^{\prime} 7^{\prime \prime}$ e | 19' 2" e $16^{\prime} 7 "$ e $13^{\prime} 7^{\prime \prime}$ e | 17' 6" e 15' 10" e 13' 7" e | 15' 8" e <br> $13^{\prime} 7{ }^{\prime \prime}$ e <br> 11'1" e | $15^{\prime \prime} 8$ e $13^{\prime} 7$ " e 11' $1^{\prime \prime}$ e | $15^{\prime \prime} 8^{\prime \prime}$ e $13^{\prime} 7{ }^{\prime \prime}$ e 11'1" e | $13^{\prime \prime} 7^{\prime \prime}$ e <br> 11'9" e <br> 9' 7" e | $13^{\prime} 7 "$ e <br> 11' 9" e <br> 9' 7 " e | $13^{\prime} 7 "$ e <br> 11' 9" e 9' 7" e | $\begin{gathered} 11^{\prime} 1 " \mathrm{e} \\ 9^{\prime} 7 \mathrm{e} \\ \text { 6' } \mathrm{e} \\ \hline \end{gathered}$ | $\begin{aligned} & 11^{\prime} 1 " \mathrm{e} \\ & 9^{\prime} 7 " \mathrm{e} \\ & \text { 6' } \mathrm{g}^{\prime \prime} \mathrm{e} \\ & \hline \end{aligned}$ |  |
| 250TLE125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{aligned} & 14^{\prime} 5^{\prime \prime} \\ & 13^{\prime \prime} 1^{\prime \prime} \\ & 1_{1}^{\prime \prime} 5^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 11^{\prime} 6^{\prime \prime} \\ & 10^{\prime} 5^{\prime \prime} \\ & 9^{\prime \prime} 1^{\prime \prime} \end{aligned}$ | $\begin{gathered} 10^{\prime} 0^{\prime \prime} \\ 9^{\prime} 1^{\prime \prime} \\ 7^{\prime} 11^{\prime \prime} \\ \hline y^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 2^{\prime \prime} \\ 11^{\prime \prime} 5^{\prime \prime} \\ 9^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 11^{\prime} 3^{\prime \prime} \\ & 10^{\prime \prime} 3^{\prime \prime} \\ & 8^{\prime} 11^{\prime \prime} \end{aligned}$ | $\begin{aligned} & \hline 9^{\prime} 10^{\prime \prime} \\ & 8^{\prime} 11^{\prime \prime} \\ & 7^{\prime} 10^{\prime \prime} \\ & \hline y^{\prime} \end{aligned}$ | $\begin{aligned} & 1_{1}^{\prime \prime} 5^{\prime \prime} \\ & 9^{\prime} 11^{\prime \prime} \\ & 8^{\prime} 1^{\prime \prime} \end{aligned}$ | $\begin{gathered} 10^{\prime} 3^{\prime \prime} \\ 9^{\prime} 4^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \\ 8^{\prime} 2^{\prime \prime} \\ 7^{\prime} 1^{\prime \prime} \\ \hline . y^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 9^{\prime} 4^{\prime \prime} \\ & 8^{\prime} 1^{\prime \prime} \\ & 6^{\prime \prime} 7^{\prime \prime} \end{aligned}$ | $\begin{gathered} 8^{\prime} 11^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \\ 6^{\prime} 7^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{aligned} & 7^{\prime} 10^{\prime \prime} \\ & 7^{\prime} 1^{\prime \prime} \\ & 6^{\prime} 2^{\prime \prime} \end{aligned}$ |
| 362TLE125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline-2 \end{array}$ | $\begin{gathered} 17^{\prime} 11^{\prime \prime} \\ 15^{\prime} 7 " \\ -12^{\prime} 8 " \end{gathered}$ | $\begin{gathered} 15^{\prime} 5^{\prime \prime} \\ 14^{\prime \prime} 0^{\prime \prime} \\ 12^{\prime \prime} 3^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 13^{\prime} 6^{\prime \prime \prime} \\ & 12^{\prime \prime} 3^{\prime \prime} \\ & 10^{\prime \prime} 8^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 8^{\prime \prime} \\ & 12^{\prime \prime} 8^{\prime \prime} \\ & 10^{\prime \prime} 4^{\prime \prime} \end{aligned}$ | $\begin{gathered} 14^{\prime} 8 " \\ 12^{\prime \prime} 8^{\prime \prime} \\ -10^{\prime \prime} 4^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 3^{\prime \prime} \\ 12^{\prime \prime} 1 " \\ 10^{\prime \prime} 4^{\prime \prime} \\ \hline y^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 8^{\prime \prime} \\ 11^{\prime \prime} 0^{\prime \prime} \\ 9^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 8^{\prime \prime} \\ 11^{\prime \prime} 0^{\prime \prime} \\ 9^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 1 " \\ 10^{\prime \prime} 11^{\prime \prime} \\ 9^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 4 \\ 9^{\prime \prime} 0 \\ 7^{\prime \prime} 4^{\prime \prime} \mathrm{e} \\ \hline-2 \end{gathered}$ | $\begin{gathered} 10^{\prime} 4 " \\ 9^{\prime} 0 " \\ 7^{\prime \prime} 4^{\prime \prime} \mathrm{e} \end{gathered}$ | $\begin{gathered} 10^{\prime} 4^{\prime \prime} \\ 9^{\prime} 0^{\prime \prime} \\ 7^{\prime \prime} 4^{\prime \prime} \text { e } \end{gathered}$ |
| 400TLE125-24 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 18^{\prime} 10^{\prime \prime} \\ 16^{\prime} 4^{\prime \prime} \\ -13^{\prime} 4^{\prime \prime} \end{gathered}$ | $\begin{gathered} 16^{\prime} 99^{\prime \prime} \\ 15^{\prime \prime} 2^{\prime \prime} \\ 13^{\prime \prime} 3^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 14^{\prime} 7 " \\ & 13^{\prime \prime} 3^{\prime \prime} \\ & 11^{\prime \prime} 7^{\prime \prime} \\ & \hline y^{\prime} \end{aligned}$ | $\begin{array}{r} 15^{\prime} 4^{\prime \prime} \\ 13^{\prime \prime} 4^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \end{array}$ | $\begin{gathered} 15^{\prime} 4^{\prime \prime} \\ 13^{\prime \prime} 4^{\prime \prime} \\ 10^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 4^{\prime \prime} \\ 13^{\prime \prime} \\ 10^{\prime \prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 4 " \\ 11^{\prime \prime} 6^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ -y^{\prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 4^{\prime \prime} \\ 11^{\prime \prime} 6^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime \prime} 1 " \\ 11^{\prime \prime} 6^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 100^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ 7^{\prime} 8^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 10^{\prime \prime} \\ 9^{\prime} 5^{\prime \prime} \\ \mathbf{7}^{\prime \prime} 8^{\prime \prime} \end{gathered}$ | $\begin{gathered} 10^{\prime} 10 " \\ 9^{\prime} 5^{\prime \prime} \\ 7^{\prime \prime} 8^{\prime \prime} \end{gathered}$ |
| 600TLE125-24 ${ }^{1}$ | 12 <br> 16 <br> 24 | 24' 2" 20'11" <br> 17' 1" e | "22' 10" 20' 9" <br> 17' $1^{\prime \prime}$ e | $\begin{gathered} 20^{\prime \prime} 0^{\prime \prime} \\ 18^{\prime \prime} \\ 15^{\prime \prime} 10^{\prime \prime} \end{gathered}$ |  |  |  | 17' 1" e 14' 10" e 12'1" e | 17' $1^{\prime \prime}$ e 14'10" e $121^{\prime \prime}$ e | 17' 1" e $14^{\prime} 10^{\prime \prime}$ e 12' 1" e | 13' 11 " e <br> 12' 1" e <br> 9' 10" | $13^{\prime \prime} 11^{\prime \prime}$ e <br> $12^{\prime \prime} 1^{\prime \prime}$ e <br> 9' 10 " | $13^{\prime} 11^{\prime \prime}$ e <br> $12^{\prime \prime} 1^{\prime \prime}$ e <br> 9' 10 " e |
| 250TLE125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ -\quad 2 \end{array}$ | $\begin{gathered} 16^{\prime} 3^{\prime \prime} \\ 14^{\prime} 7 \\ 11^{\prime \prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 10^{\prime \prime} \\ 11^{\prime \prime} 8^{\prime \prime} \\ 10^{\prime \prime} 3^{\prime \prime} \end{gathered}$ | $\begin{aligned} & \hline 11^{\prime} 3^{\prime \prime} \\ & 10^{\prime \prime} 3^{\prime \prime} \\ & 8^{\prime} 11^{\prime \prime} \\ & \hline y^{\prime} \end{aligned}$ | $\begin{gathered} \hline 13^{\prime} 9 " \\ 11^{\prime \prime} 11^{\prime \prime} \\ 9^{\prime} 99^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{gathered} \hline 12^{\prime} 8^{\prime \prime} \\ 11^{\prime} 6^{\prime \prime} \\ 9^{\prime \prime} 9^{\prime \prime} \end{gathered}$ | $\begin{aligned} & \hline 11^{\prime} 1 " \\ & 10^{\prime \prime} 1^{\prime \prime} \\ & 8^{\prime} 9^{\prime \prime} \end{aligned}$ |  | $\begin{gathered} 11^{\prime} 6^{\prime \prime} \\ 10^{\prime \prime} 4^{\prime \prime} \\ 8^{\prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} \hline 10^{\prime} 1 " 1 \\ 9^{\prime} 2^{\prime \prime \prime} \\ 8^{\prime} 0^{\prime \prime} \\ \hline-2 \end{gathered}$ | $\begin{gathered} 9^{\prime} 9^{\prime \prime} \\ 8^{\prime} 5^{\prime \prime} \\ 6^{\prime} 10^{\prime \prime} \\ \hline . \end{gathered}$ | $\begin{gathered} \hline 9^{\prime} 9 " \\ 8^{\prime \prime} 5^{\prime \prime} \\ 6^{\prime} 10^{\prime \prime} \\ \hline-2 \end{gathered}$ | $\begin{gathered} \hline 8^{\prime} 9 " \\ 8^{\prime \prime} 0^{\prime \prime} \\ 6^{\prime} 10^{\prime \prime} \\ \hline \end{gathered}$ |
| 362TLE125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 19^{\prime} 11^{\prime \prime} \\ 17^{\prime \prime} 3^{\prime \prime} \\ -14^{\prime} 1 " \end{gathered}$ | $\begin{aligned} & 17^{\prime} 0^{\prime \prime} \\ & 15^{\prime} 5^{\prime \prime} \\ & 13^{\prime \prime} 6^{\prime \prime} \end{aligned}$ | $\begin{gathered} 1^{1} \text { ' } 10^{\prime \prime} \\ 13^{\prime} 6^{\prime \prime} \\ 11^{\prime \prime} 9 \end{gathered}$ | $\begin{gathered} 16^{\prime} 3^{\prime \prime} \\ 14^{\prime \prime} 1 \\ 11^{\prime \prime} 6^{\prime \prime} \\ . y^{\prime \prime} \end{gathered}$ | $\begin{gathered} 16^{\prime} 3^{\prime \prime} \\ 14^{\prime} 1 " \\ -11^{\prime \prime} 6^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 14^{\prime} 7 " \\ & 13^{\prime \prime} 3^{\prime \prime} \\ & 11^{\prime \prime} 6^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 11^{\prime \prime} \\ & 12^{\prime \prime} 3^{\prime \prime} \\ & 10^{\prime \prime} 0^{\prime \prime} \end{aligned}$ | $\begin{gathered} 14^{\prime} 11^{\prime \prime} \\ 12^{\prime \prime} 3^{\prime \prime} \\ 10^{\prime \prime} 0^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 13^{\prime} 3^{\prime \prime \prime} \\ & 12^{\prime} 0^{\prime \prime} \\ & 10^{\prime \prime} 0^{\prime \prime} \end{aligned}$ | $\begin{gathered} 11^{\prime} 6^{\prime \prime} \\ 10^{\prime \prime} 0^{\prime \prime} \\ 8^{\prime} 2^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 6^{\prime \prime} \\ 10^{\prime \prime} 0^{\prime \prime} \\ 8^{\prime} 2^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 6^{\prime \prime} \\ 10^{\prime \prime} 0^{\prime \prime} \\ 8^{\prime} 2^{\prime \prime} \end{gathered}$ |
| 400TLE125-30 | $\begin{array}{r} 12 \\ 16 \\ 24 \end{array}$ | $\begin{gathered} 21^{\prime} 0 \\ 18^{\prime \prime} 2^{\prime \prime} \\ 4^{\prime} 10^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 18^{\prime} 4^{\prime \prime} \\ & 16^{\prime} 8^{\prime \prime} \\ & 14^{\prime} 7 \end{aligned}$ | $\begin{aligned} & 16^{\prime} 0^{\prime \prime} \\ & 14^{\prime \prime} \\ & 12^{\prime \prime} 9 \end{aligned}$ | $\begin{gathered} 17^{\prime} 2 " \\ 14^{\prime} 10^{\prime \prime} \\ 12^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{gathered} 17^{\prime} 2^{\prime \prime} \\ 14^{\prime} 10^{\prime \prime} \\ 12^{\prime} 11^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 15^{\prime} 99^{\prime \prime} \\ & 14^{\prime \prime} \\ & 12^{\prime \prime} 1^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 10^{\prime \prime} \\ & 12^{\prime} 10^{\prime \prime} \\ & 10^{\prime} 6^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 10^{\prime \prime} \\ & 12^{\prime} 10^{\prime \prime} \\ & 10^{\prime} 6^{\prime \prime} \end{aligned}$ | $\begin{gathered} 14^{\prime} 44^{\prime \prime} \\ 12^{\prime} 10^{\prime \prime} \\ 10^{\prime} 6^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 11^{\prime \prime} \\ 10^{\prime \prime} 6^{\prime \prime} \\ 8^{\prime} 77^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 11^{\prime \prime} \\ 10^{\prime \prime} 6^{\prime \prime} \\ 8^{\prime} 77^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 11^{\prime \prime} \\ 10^{\prime \prime} 6^{\prime \prime} \\ 8^{\prime} 7^{\prime \prime} \end{gathered}$ |
| 600TLE125-30 | $\begin{aligned} & 12 \\ & 16 \\ & 24 \\ & \hline \end{aligned}$ | $\begin{gathered} 27^{\prime} 7 " \\ 23^{\prime \prime} 11^{\prime \prime} \\ 19^{\prime \prime} 6^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 25^{\prime} 0 " \\ & 22^{\prime \prime} 9 \\ & 19^{\prime \prime} 6^{\prime \prime} \\ & \hline \end{aligned}$ | $\begin{aligned} & 21^{\prime} 10^{\prime \prime} \\ & 19^{\prime} 10^{\prime \prime} \\ & 17^{\prime \prime} 4^{\prime \prime} \end{aligned}$ |  | $\begin{array}{r} 22^{\prime} 7 " \\ 19^{\prime} 6^{\prime \prime} \\ 15^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{array}{r} 21^{\prime} 6 "^{\prime \prime} \\ 19^{\prime 6} \\ 15^{\prime} 11^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $19^{\prime} 6^{\prime \prime}$ 16' 11" e $13{ }^{\prime} 10$ " e | $19{ }^{\prime} 6$ 16' 11" e $13^{\prime} 10^{\prime \prime}$ e | $19{ }^{\prime} 6^{\prime \prime}$ $16^{\prime} 11^{\prime \prime}$ e $13^{\prime} 10^{\prime \prime}$ e |  | $15^{\prime \prime 11 " e}$ 13 ' 10 " e 11' ${ }^{\prime \prime}$ e | 15' 11" e <br> 13' 10" e <br> 11' 3" e |
| 250TLE125-33 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{aligned} & 16^{\prime} 6^{\prime \prime} \\ & 15^{\prime} 0^{\prime \prime} \\ & 12^{\prime} 9 \end{aligned}$ | $\begin{gathered} 13^{\prime} 1 " \\ 11^{\prime \prime} 11^{\prime \prime} \\ 10^{\prime} 55^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 11^{\prime} 5 " \\ & 10^{\prime} 5 \\ & 9^{\prime \prime} \mathbf{n}^{\prime \prime} \\ & 9^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 14^{\prime} 8^{\prime \prime} \\ & 12^{\prime \prime} 9^{\prime \prime} \\ & 10^{\prime \prime} 5^{\prime \prime} \end{aligned}$ |  | $\begin{aligned} & 11^{\prime} 3^{\prime \prime} \\ & 10^{\prime \prime} 3^{\prime \prime} \\ & 8^{\prime} 11^{\prime \prime} \end{aligned}$ | $\begin{gathered} 12^{\prime} 99^{\prime \prime} \\ 11^{\prime \prime} 0^{\prime \prime} \\ 9^{\prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 11^{\prime} 8^{\prime \prime} \\ 10^{\prime \prime} \\ 9^{\prime \prime} 0^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{gathered} 10^{\prime} 3^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \\ 8^{\prime} 1^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{aligned} & 10^{\prime} 5^{\prime \prime} \\ & 9^{\prime} 0^{\prime \prime} \\ & 7^{\prime} 4^{\prime \prime} \end{aligned}$ | $\begin{gathered} 10^{\prime} 3^{\prime \prime} \\ 9^{\prime} 0^{\prime \prime} \\ 7^{\prime} 4^{\prime \prime} \\ \hline y^{\prime} \end{gathered}$ | $\begin{aligned} & 8^{\prime} 11^{\prime \prime} \\ & 8^{\prime} 1^{\prime \prime} \\ & 7^{\prime} 1^{\prime \prime} \\ & \hline \end{aligned}$ |
| 362TLE125-33 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{aligned} & 21^{\prime} 6^{\prime \prime} \\ & 18^{\prime \prime} 8^{\prime \prime} \\ & 15^{\prime \prime} 3^{\prime \prime} \end{aligned}$ | $\begin{gathered} 17^{\prime} 3^{\prime \prime} \\ 15^{\prime \prime} 8^{\prime \prime} \\ 13^{\prime \prime} 9 \end{gathered}$ | $\begin{aligned} & 15^{\prime} 1^{\prime \prime} \\ & 13^{\prime \prime} 9^{\prime \prime} \\ & 12^{\prime \prime} 0^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 17^{\prime} 77^{\prime \prime} \\ & 15^{\prime \prime} 3^{\prime \prime} \\ & 12^{\prime} 5^{\prime \prime} \end{aligned}$ | $\begin{gathered} 17^{\prime} 0^{\prime \prime} \\ 15^{\prime \prime} 3^{\prime \prime} \\ 12^{\prime \prime} 5^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 10^{\prime \prime} \\ 13^{\prime \prime} 6^{\prime \prime} \\ 11^{\prime \prime} 9^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 15^{\prime} 3^{\prime \prime} \\ & 13^{\prime \prime} 2^{\prime \prime} \\ & 10^{\prime \prime} 9 \end{aligned}$ | $\begin{gathered} 15^{\prime} 3^{\prime \prime} \\ 13^{\prime \prime} 2^{\prime \prime} \\ 10^{\prime \prime} 9 \end{gathered}$ | $\begin{aligned} & 13^{\prime} 6^{\prime \prime \prime} \\ & 12^{\prime \prime} 3^{\prime \prime} \\ & 10^{\prime \prime} 9 \end{aligned}$ | $\begin{gathered} 12^{\prime} 5^{\prime \prime} \\ 10^{\prime \prime} 9 \\ 8^{\prime \prime} 9^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 5^{\prime \prime} \\ 10^{\prime \prime} 9 \\ 8^{\prime} 9^{\prime \prime} \\ \hline \end{gathered}$ | $\begin{gathered} 11^{\prime} 9{ }^{\prime \prime} \\ 10^{\prime} 9 \\ 8^{\prime} 9^{\prime \prime} \\ \hline \end{gathered}$ |
| 400TLE125-33 | $\begin{array}{r} 12 \\ 16 \\ 24 \\ \hline \end{array}$ | $\begin{gathered} 22^{\prime} 8^{\prime \prime} \\ 19^{\prime \prime} \\ 16^{\prime \prime} 0^{\prime \prime} \end{gathered}$ | $\begin{gathered} 18^{\prime} 6^{\prime \prime} \\ 16^{\prime \prime} 9 \\ 14^{\prime \prime} 8^{\prime \prime} \end{gathered}$ | $\begin{gathered} 16^{\prime} 2^{\prime \prime} \\ 14^{\prime \prime} \\ 2^{\prime \prime} 10^{\prime \prime} \end{gathered}$ | $\begin{gathered} 18^{\prime} 6^{\prime \prime} \\ 16^{\prime} 0^{\prime \prime} \\ 13^{\prime} 1{ }^{\prime \prime} \end{gathered}$ | $\begin{aligned} & 18^{\prime} 2^{\prime \prime} \\ & 16^{\prime \prime} 0^{\prime \prime} \\ & 13^{\prime \prime} 1{ }^{\prime \prime} \end{aligned}$ | $\begin{gathered} 15^{\prime} 11^{\prime \prime} \\ 14^{\prime \prime} \\ 12^{\prime \prime} 7^{\prime \prime} \end{gathered}$ | $\begin{gathered} 16^{\prime} 0^{\prime \prime} \\ 13^{\prime} 11^{\prime \prime} \\ 11^{\prime \prime} 4^{\prime \prime} \end{gathered}$ | $\begin{gathered} 16^{\prime} 0 " \\ 13^{\prime} 11^{\prime \prime} \\ 11^{\prime \prime} \\ -y^{\prime \prime} \end{gathered}$ | $\begin{gathered} 14^{\prime} 5^{\prime \prime} \\ 13^{\prime \prime} \\ 11^{\prime \prime} 4^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 11^{\prime \prime} \\ 11^{\prime \prime} \\ 9^{\prime \prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 13^{\prime} 1^{\prime \prime} \\ 11^{\prime \prime} 4^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \end{gathered}$ | $\begin{gathered} 12^{\prime} 7 " \\ 11^{\prime \prime} 4^{\prime \prime} \\ 9^{\prime} 3^{\prime \prime} \end{gathered}$ |
| 600TLE125-33 | $\begin{aligned} & 12 \\ & 16 \\ & 24 \\ & \hline \end{aligned}$ | $\begin{aligned} & 29^{\prime} 11^{\prime \prime} \\ & 25^{\prime} 11 "^{\prime \prime} \\ & 21^{\prime \prime} 2 \end{aligned}$ | $\begin{aligned} & 25^{\prime} 4^{\prime \prime} \\ & 23^{1 "} \\ & 20^{\prime \prime} 2 \end{aligned}$ | $\begin{aligned} & 22^{\prime} 2^{\prime \prime \prime} \\ & 20^{\prime \prime} 2^{\prime \prime} \\ & 17^{\prime} 7^{\prime \prime} \end{aligned}$ | $\begin{array}{r} 24^{\prime} 5^{\prime \prime} \\ 21^{\prime \prime} 2 " \\ 17^{\prime} 3^{\prime \prime} \mathrm{e} \\ \hline \end{array}$ | $\begin{gathered} 24^{\prime} 5 " \\ 21^{\prime \prime} 2^{\prime \prime} \\ 17^{\prime} 3^{\prime \prime} \text { e } \end{gathered}$ |  |  |  | $\begin{gathered} 19^{\prime} 10^{\prime \prime} \\ 18^{\prime} 0^{\prime \prime} \mathrm{e} \\ 14^{\prime} 11^{\prime \prime} \mathrm{e} \end{gathered}$ |  | $17^{\prime \prime} 3^{\prime \prime}$ e <br> $14^{\prime} 11^{\prime \prime}$ e <br> $122^{\prime \prime}$ e | $17^{\prime} 3^{\prime \prime}$ e $14^{\prime} 11^{\prime \prime}$ e 12' 2" e |

For SI: 1 inch $=25.4 \mathrm{~mm}, 1 \mathrm{ft}=0.3048 \mathrm{~m}, 1 \mathrm{psf}=47.88 \mathrm{~Pa}$.

1. Web height-to-thickness ratio exceeds 200. Webs must have bearing stiffeners. See AISI S100 Section B1.2
2. Web height-to-thickness ratio exceeds 260 but less than 300. Webs must have bearing and intermediate stiffeners. See AISI S100 Section B1.2.
3. Web stiffeners are required at the stud/track connection when denoted with an "e".
4. Based on an unbraced length (Lu) of 48" o.c.
5. End bearing must be 1 -inch.
6. The minimum overlap of the TSO and TSE must be 11 inches and must be connected with a minimum of (4) \#8 $\times 9 / 16$ " long wafer head screws complying with ASTM C1513.

TABLE 14-COMPOSITE LIMITING HEIGHTS ${ }^{1,2}$ (feet-inches)
TRAKLOC ADJUSTABLE STUDS (TLA) AND TRAKLOC FIXED LENGTH STUDS (TLF)

| MEMBERDESIGNATIONTLA(TLF) | STUD SPACING <br> (in) | TRANSVERSE LOAD |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 5 psf |  |  | 7.5 psf |  |  | 10 psf |  |  | 15 psf |  |  |
|  |  | Deflection Limit |  |  |  |  |  |  |  |  |  |  |  |
|  |  | L/120 | $\mathrm{L}_{240}$ | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 |
| 250TLA125-18(250TLF125-18) | 12 | 17-2 | 14-5 | 12-7 | 14-6 | 12-8 | 11-0 | 12-7 | 11-6 | 10-0 | 8-3 | 8-3 | 8-3 |
|  | 16 | 15-10 | 13-7 | 11-10 | 13-0 | 11-10 | 10-4 | 11-3 | 10-9 | 9-3 | --- | --- | --- |
|  | 24 | 13-4 | 12-3 | 10-8 | 10-11 | 10-8 | 9-1 | 9-5 | 9-5 | 7-11 | --- | --- | --- |
| 362TLA125-18(362TLF125-18) | 12 | 21-7 | 17-11 | 15-8 | 18-10 | 15-8 | 13-8 | 16-4 | 14-3 | 12-5 | 10-9 | 10-9 | 10-8 |
|  | 16 | 20-0 | 16-8 | 14-7 | 16-4 | 14-7 | 12-8 | 14-1 | 13-3 | 11-6 | 9-3 | 9-3 | 9-3 |
|  | 24 | 16-4 | 14-10 | 13-0 | 13-4 | 13-0 | 11-2 | 11-6 | 11-6 | 9-10 | --- | --- | --- |
| 400TLA125-18 <br> (400TLF125-18) | 12 | 23-4 | 18-6 | 16-4 | 19-5 | 16-2 | 14-3 | 16-10 | 14-8 | 12-11 | 11-1 | 11-1 | 11-1 |
|  | 16 | 20-7 | 17-5 | 15-4 | 16-10 | 15-3 | 13-5 | 14-7 | 13-10 | 12-2 | 9-7 | 9-7 | 9-7 |
|  | 24 | 16-10 | 15-9 | 13-10 | 13-9 | 13-9 | 12-1 | 11-11 | 11-11 | 10-9 | 7-10 | 7-10 | 7-10 |
| 600TLA125-18(600TLF125-18) | 12 | 30-5 | 25-3 | 22-5 | 24-10 | 22-0 | 19-7 | 21-6 | 20-0 | 17-9 | 14-1 | 14-1 | 14-1 |
|  | 16 | 26-4 | 23-4 | 20-9 | 21-6 | 20-5 | 18-2 | 18-7 | 18-7 | 16-6 | 12-3 | 12-3 | 12-3 |
|  | 24 | 21-6 | 20-9 | 18-5 | 17-7 | 17-7 | 16-1 | 15-2 | 15-2 | 14-5 | --- | --- | --- |
| 250TLA125-24(250TLF125-24) | 12 | 16-10 | 14-10 | 13-1 | 15-0 | 13-0 | 11-5 | 13-9 | 11-10 | 10-4 | 10-8 | 10-4 | 9-0 |
|  | 16 | 16-8 | 13-9 | 12-1 | 14-7 | 12-0 | 10-7 | 13-3 | 10-11 | 9-7 | 9-7 | 9-6 | 8-1 |
|  | 24 | 14-10 | 12-3 | 10-9 | 13-0 | 10-8 | 9-3 | 11-9 | 9-8 | 8-2 | 8-1 | 8-1 | --- |
| 362TLA125-24 (362TLF125-24) | 12 | 24-1 | 19-1 | 16-8 | 21-0 | 16-8 | 14-7 | 19-1 | 15-2 | 13-3 | 12-7 | 12-7 | 11-6 |
|  | 16 | 21-10 | 17-4 | 15-2 | 19-1 | 15-2 | 13-3 | 17-4 | 13-9 | 12-0 | 11-6 | 11-6 | 10-4 |
|  | 24 | 19-1 | 15-2 | 13-3 | 16-8 | 13-3 | 11-6 | 15-0 | 12-0 | 10-4 | 9-10 | 9-10 | 8-11 |
| 400TLA125-24 <br> (400TLF125-24) | 12 | 24-4 | 19-4 | 16-11 | 21-3 | 16-11 | 14-9 | 19-4 | 15-4 | 13-5 | 14-0 | 13-5 | 11-8 |
|  | 16 | 23-1 | 18-4 | 16-0 | 20-2 | 16-0 | 14-0 | 18-4 | 14-7 | 12-9 | 12-6 | 12-6 | 11-0 |
|  | 24 | 21-0 | 16-8 | 14-7 | 18-4 | 14-7 | 12-9 | 16-0 | 13-3 | 11-6 | 10-6 | 10-6 | 9-10 |
| 600TLA125-24(600TLF125-24) | 12 | 33-5 | 27-4 | 24-2 | 29-2 | 23-11 | 21-1 | 26-6 | 21-8 | 19-2 | 18-8 | 18-8 | 16-9 |
|  | 16 | 30-4 | 24-10 | 21-11 | 26-6 | 21-8 | 19-2 | 24-1 | 19-9 | 17-5 | 16-2 | 16-2 | 15-2 |
|  | 24 | 26-6 | 21-8 | 19-2 | 23-2 | 18-11 | 16-9 | 20-1 | 17-3 | 15-2 | 13-3 | 13-3 | 13-1 |
| $\begin{aligned} & \text { 250TLA125-30 } \\ & \text { (250TLF125-30) } \end{aligned}$ | 12 | 18-5 | 16-0 | 14-0 | 16-2 | 14-0 | 12-3 | 14-9 | 12-8 | 11-2 | 12-1 | 11-1 | 9-9 |
|  | 16 | 17-6 | 15-0 | 13-2 | 15-4 | 13-1 | 11-6 | 13-11 | 11-11 | 10-6 | 10-10 | 10-5 | 9-1 |
|  | 24 | 15-9 | 13-5 | 11-10 | 13-9 | 11-9 | 10-4 | 12-6 | 10-8 | 9-3 | 9-2 | 9-2 | - |
| $\begin{aligned} & \text { 362TLA125-30 } \\ & \text { (362TLF125-30) } \end{aligned}$ | 12 | 24-7 | 20-2 | 17-10 | 21-6 | 17-8 | 15-7 | 19-6 | 16-0 | 14-2 | 14-2 | 14-0 | 12-4 |
|  | 16 | 22-8 | 18-8 | 16-6 | 19-10 | 16-4 | 14-5 | 18-0 | 14-10 | 13-1 | 12-11 | 12-11 | 11-4 |
|  | 24 | 20-1 | 16-7 | 14-7 | 17-7 | 14-6 | 12-9 | 16-0 | 13-2 | 11-7 | 11-1 | 11-1 | 10-2 |
| $\begin{array}{\|c\|} \hline \text { 400TLA125-30 } \\ \text { (400TLF125-30) } \end{array}$ | 12 | 26-3 | 20-11 | 18-4 | 23-0 | 18-5 | 16-3 | 20-10 | 16-10 | 14-11 | 16-6 | 14-10 | 13-2 |
|  | 16 | 24-3 | 19-11 | 17-5 | 21-2 | 17-5 | 15-3 | 19-3 | 15-10 | 13-11 | 14-3 | 13-10 | 12-2 |
|  | 24 | 21-6 | 17-8 | 15-7 | 18-9 | 15-5 | 13-7 | 17-1 | 14-0 | 12-4 | 11-8 | 11-8 | 10-9 |
| 600TLA125-30(600TLF125-30) | 12 | 35-5 | 28-1 | 24-6 | 30-11 | 24-6 | 21-5 | 28-1 | 22-4 | 19-6 | 20-9 | 19-6 | 17-0 |
|  | 16 | 33-3 | 26-4 | 23-0 | 29-0 | 23-0 | 20-1 | 26-4 | 20-11 | 18-3 | 18-0 | 18-0 | 15-11 |
|  | 24 | 29-11 | 23-9 | 20-9 | 25-10 | 20-9 | 18-1 | 22-4 | 18-10 | 16-5 | --- | --- | --- |
| $\begin{aligned} & \text { 250TLA125-33 } \\ & \text { (250TLF125-33) } \end{aligned}$ | 12 | 20-11 | 16-7 | 14-6 | 18-3 | 14-6 | 12-8 | 16-7 | 13-2 | 11-6 | 12-7 | 11-6 | 10-1 |
|  | 16 | 19-0 | 15-1 | 13-2 | 16-7 | 13-2 | 11-6 | 15-1 | 12-0 | 10-6 | 11-2 | 10-6 | 9-0 |
|  | 24 | 16-7 | 13-2 | 11-6 | 14-6 | 11-6 | 10-1 | 13-2 | 10-6 | 9-0 | 9-4 | 9-0 | --- |
| $\begin{aligned} & \text { 362TLA125-33 } \\ & \text { (362TLF125-33) } \end{aligned}$ | 12 | 25-5 | 20-2 | 17-7 | 22-2 | 17-7 | 15-4 | 20-2 | 16-0 | 14-0 | 15-10 | 14-0 | 12-2 |
|  | 16 | 23-9 | 18-10 | 16-6 | 20-9 | 16-6 | 14-5 | 18-10 | 15-0 | 13-1 | 13-8 | 13-1 | 11-4 |
|  | 24 | 21-4 | 16-11 | 14-10 | 18-8 | 14-10 | 12-11 | 16-11 | 13-5 | 11-8 | 11-2 | 11-2 | 10-1 |
| 400TLA125-33(400TLF125-33) | 12 | 27-7 | 22-9 | 19-11 | 24-1 | 19-10 | 17-6 | 21-10 | 18-1 | 15-11 | 16-7 | 15-9 | 13-11 |
|  | 16 | 25-0 | 20-8 | 18-2 | 21-10 | 18-1 | 15-11 | 19-10 | 16-5 | 14-5 | 14-4 | 14-4 | 12-8 |
|  | 24 | 21-10 | 18-1 | 15-11 | 19-1 | 15-9 | 13-11 | 17-4 | 14-4 | 12-8 | 11-9 | 11-9 | 11-1 |
| $\begin{aligned} & \text { 600TLA125-33 } \\ & \text { (600TLF125-33) } \end{aligned}$ | 12 | 36-0 | 28-7 | 25-0 | 31-5 | 25-0 | 21-10 | 28-7 | 22-8 | 19-10 | 20-10 | 19-10 | 17-3 |
|  | 16 | 33-9 | 26-9 | 23-5 | 29-5 | 23-5 | 20-5 | 26-9 | 21-3 | 18-7 | 18-1 | 18-1 | 16-1 |
|  | 24 | 30-3 | 24-0 | 21-0 | 25-11 | 21-0 | 18-4 | 22-5 | 19-1 | 16-7 | --- | --- | --- |

For SI: 1 inch $=25.4 \mathrm{~mm}, 1 \mathrm{ft}=0.3048 \mathrm{~m}, 1 \mathrm{psf}=47.88 \mathrm{~Pa}$.
${ }^{1}$ The gypsum board must be applied full height in the vertical orientation to each stud flange using minimum No. 6 Type S Drywall screws spaced as listed below:

- Screws spaced maximum 16 inches on-center to studs spaced at 12 inches on-center.
- Screws spaced maximum 12 inches on-center to studs spaced at 16 inches or 24 inches on-center.
- Screws spaced 16 inches on-center to the top and bottom track.
${ }^{2}$ The minimum overlap of the TSO and TSE must be 8 inches and the maximum un-lapped length of the TSE must be 4 inches.

TABLE 15-COMPOSITE LIMITING HEIGHTS ${ }^{1,2}$ (feet-inches) TRAKLOC DEFLECTION STUDS (TLD)

| $\begin{gathered} \text { MEMBER } \\ \text { DESIGNATION } \end{gathered}$ | $\begin{aligned} & \text { STUD } \\ & \text { SPACING } \\ & \text { (in) } \end{aligned}$ | TRANSVERSE LOAD |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 5 psf |  |  | 7.5 psf |  |  | 10 psf |  |  | 15 psf |  |  |
|  |  | Deflection Limit |  |  |  |  |  |  |  |  |  |  |  |
|  |  | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 |
| 250TLD125-18 | 12 | 17-2 | 14-5 | 12-7 | 14-6 | 12-8 | 11-0 | 12-7 | 11-6 | 10-0 | --- | --- | --- |
|  | 16 | 15-10 | 13-7 | 11-10 | 13-0 | 11-10 | 10-4 | 11-2 | 10-9 | 9-3 | --- | --- | --- |
|  | 24 | 13-4 | 12-3 | 10-8 | 9-11 | 9-11 | 9-1 | --- | --- | --- | --- | --- | --- |
| 362TLD125-18 | 12 | 21-7 | 17-11 | 15-8 | 15-10 | 15-8 | 13-8 | 11-10 | 11-10 | 11-10 | --- | --- | --- |
|  | 16 | 17-9 | 16-8 | 14-7 | 11-10 | 11-10 | 11-10 | 8-11 | 8-11 | 8-11 | --- | --- | --- |
|  | 24 | 11-10 | 11-10 | 11-10 | 7-11 | 7-11 | 7-11 | --- | --- | --- | --- | --- | --- |
| 400TLD125-18 | 12 | 23-4 | 18-6 | 16-4 | 19-5 | 16-2 | 14-3 | 16-10 | 14-8 | 12-11 | --- | --- | --- |
|  | 16 | 20-7 | 17-5 | 15-4 | 16-10 | 15-3 | 13-5 | 12-9 | 12-9 | 12-2 | --- | --- | --- |
|  | 24 | 16-10 | 15-9 | 13-10 | 11-4 | 11-4 | 11-4 | 8-6 | 8-6 | 8-6 | --- | --- | --- |
| 600TLD125-18 | 12 | 20-8 | 20-8 | 20-8 | 13-10 | 13-10 | 13-10 | --- | --- | --- | --- | --- | --- |
|  | 16 | 15-6 | 15-6 | 15-6 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 24 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 250TLD125-24 | 12 | 16-10 | 14-10 | 13-1 | 15-0 | 13-0 | 11-5 | 13-9 | 11-10 | 10-4 | 10-8 | 10-4 | 9-0 |
|  | 16 | 16-8 | 13-9 | 12-1 | 14-7 | 12-0 | 10-7 | 13-3 | 10-11 | 9-7 | 9-7 | 9-6 | 8-1 |
|  | 24 | 14-10 | 12-3 | 10-9 | 13-0 | 10-8 | 9-3 | 11-9 | 9-8 | 8-2 | --- | --- | --- |
| 362TLD125-24 | 12 | 24-1 | 19-1 | 16-8 | 21-0 | 16-8 | 14-7 | 19-1 | 15-2 | 13-3 | 12-7 | 12-7 | 11-6 |
|  | 16 | 21-10 | 17-4 | 15-2 | 19-1 | 15-2 | 13-3 | 17-4 | 13-9 | 12-0 | 9-8 | 9-8 | 9-8 |
|  | 24 | 19-1 | 15-2 | 13-3 | 16-8 | 13-3 | 11-6 | 14-11 | 12-0 | 10-4 | --- | --- | --- |
| 400TLD125-24 | 12 | 24-4 | 19-4 | 16-11 | 21-3 | 16-11 | 14-9 | 19-4 | 15-4 | 13-5 | 14-0 | 13-5 | 11-8 |
|  | 16 | 23-1 | 18-4 | 16-0 | 20-2 | 16-0 | 14-0 | 18-4 | 14-7 | 12-9 | 12-6 | 12-6 | 11-0 |
|  | 24 | 21-0 | 16-8 | 14-7 | 18-4 | 14-7 | 12-9 | 16-0 | 13-3 | 11-6 | 9-3 | 9-3 | 9-3 |
| 600TLD125-24 | 12 | 33-5 | 27-4 | 24-2 | 29-2 | 23-11 | 21-1 | 24-2 | 21-8 | 19-2 | --- | --- | --- |
|  | 16 | 30-4 | 24-10 | 21-11 | 24-2 | 21-8 | 19-2 | 18-1 | 18-1 | 17-5 | --- | --- | --- |
|  | 24 | 24-2 | 21-8 | 19-2 | 16-1 | 16-1 | 16-1 | 12-1 | 12-1 | 12-1 | --- | --- | --- |
| 250TLD125-30 | 12 | 18-5 | 16-0 | 14-0 | 16-2 | 14-0 | 12-3 | 14-9 | 12-8 | 11-2 | 12-1 | 11-1 | 9-9 |
|  | 16 | 17-6 | 15-0 | 13-2 | 15-4 | 13-1 | 11-6 | 13-11 | 11-11 | 10-6 | 10-10 | 10-5 | 9-1 |
|  | 24 | 15-9 | 13-5 | 11-10 | 13-9 | 11-9 | 10-4 | 12-6 | 10-8 | 9-3 | 9-2 | 9-2 | ---- |
| 362TLD125-30 | 12 | 24-7 | 20-2 | 17-10 | 21-6 | 17-8 | 15-7 | 19-6 | 16-0 | 14-2 | 14-2 | 14-0 | 12-4 |
|  | 16 | 22-8 | 18-8 | 16-6 | 19-10 | 16-4 | 14-5 | 18-0 | 14-10 | 13-1 | 12-11 | 12-11 | 11-4 |
|  | 24 | 20-1 | 16-7 | 14-7 | 17-7 | 14-6 | 12-9 | 16-0 | 13-2 | 11-7 | --- | --- | --- |
| 400TLD125-30 | 12 | 26-3 | 20-11 | 18-4 | 23-0 | 18-5 | 16-3 | 20-10 | 16-10 | 14-11 | 16-6 | 14-10 | 13-2 |
|  | 16 | 24-3 | 19-11 | 17-5 | 21-2 | 17-5 | 15-3 | 19-3 | 15-10 | 13-11 | 14-3 | 13-10 | 12-2 |
|  | 24 | 21-6 | 17-8 | 15-7 | 18-9 | 15-5 | 13-7 | 17-1 | 14-0 | 12-4 | 10-6 | 10-6 | 10-6 |
| 600TLD125-30 | 12 | 35-5 | 28-1 | 24-6 | 30-11 | 24-6 | 21-5 | 28-1 | 22-4 | 19-6 | --- | --- | --- |
|  | 16 | 33-3 | 26-4 | 23-0 | 29-0 | 23-0 | 20-1 | 26-4 | 20-11 | 18-3 | --- | --- | --- |
|  | 24 | 29-11 | 23-9 | 20-9 | 23-7 | 20-9 | 18-1 | 17-8 | 17-8 | 16-5 | --- | --- | --- |
| 250TLD125-33 | 12 | 20-11 | 16-7 | 14-6 | 18-3 | 14-6 | 12-8 | 16-7 | 13-2 | 11-6 | 12-7 | 11-6 | 10-1 |
|  | 16 | 19-0 | 15-1 | 13-2 | 16-7 | 13-2 | 11-6 | 15-1 | 12-0 | 10-6 | 11-2 | 10-6 | 9-0 |
|  | 24 | 16-7 | 13-2 | 11-6 | 14-6 | 11-6 | 10-1 | 13-2 | 10-6 | 9-0 | 9-4 | 9-0 | ---- |
| 362TLD125-33 | 12 | 25-5 | 20-2 | 17-7 | 22-2 | 17-7 | 15-4 | 20-2 | 16-0 | 14-0 | 15-10 | 14-0 | 12-2 |
|  | 16 | 23-9 | 18-10 | 16-6 | 20-9 | 16-6 | 14-5 | 18-10 | 15-0 | 13-1 | 13-8 | 13-1 | 11-4 |
|  | 24 | 21-4 | 16-11 | 14-10 | 18-8 | 14-10 | 12-11 | 16-11 | 13-5 | 11-8 | --- | --- | --- |
| 400TLD125-33 | 12 | 27-7 | 22-9 | 19-11 | 24-1 | 19-10 | 17-6 | 21-10 | 18-1 | 15-11 | 16-7 | 15-9 | 13-11 |
|  | 16 | 25-0 | 20-8 | 18-2 | 21-10 | 18-1 | 15-11 | 19-10 | 16-5 | 14-5 | 14-4 | 14-4 | 12-8 |
|  | 24 | 21-10 | 18-1 | 15-11 | 19-1 | 15-9 | 13-11 | 17-4 | 14-4 | 12-8 | 11-0 | 11-0 | 11-0 |
| 600TLD125-33 | 12 | 36-0 | 28-7 | 25-0 | 31-5 | 25-0 | 21-10 | 28-7 | 22-8 | 19-10 | 15-9 | 15-9 | 15-9 |
|  | 16 | 33-9 | 26-9 | 23-5 | 29-5 | 23-5 | 20-5 | 26-9 | 21-3 | 18-7 | --- | --- | --- |
|  | 24 | 30-3 | 24-0 | 21-0 | 24-8 | 21-0 | 18-4 | 18-6 | 18-6 | 16-7 | --- | --- | --- |

For SI: $1 \mathrm{inch}=25.4 \mathrm{~mm}, 1 \mathrm{ft}=0.3048 \mathrm{~m}, 1 \mathrm{psf}=47.88 \mathrm{~Pa}$.
${ }^{1}$ The gypsum board must be applied full height in the vertical orientation to each stud flange using minimum No. 6 Type S Drywall screws spaced as listed below:

- Screws spaced maximum 16 inches on-center to studs spaced at 12 inches on-center.
- Screws spaced maximum 12 inches on-center to studs spaced at 16 inches or 24 inches on-center.
- Screws spaced 16 inches on-center to the bottom track only.
${ }^{2}$ The minimum overlap of the TSO and TSE must be 8 inches and the maximum un-lapped length of the TSE must be 4 inches.

TABLE 16-COMPOSITE LIMITING HEIGHTS ${ }^{1,2}$ (feet-inches)
TRAKLOC ELEVATOR STUDS (TLE)

| MEMBER DESIGNATION | STUD SPACING (in) | TRANSVERSE LOAD |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 5 psf |  |  | 7.5 psf |  |  | 10 psf |  |  | 15 psf |  |  |
|  |  | Deflection Limit |  |  |  |  |  |  |  |  |  |  |  |
|  |  | L/120 | L/240 | L/360 | L/120 | L/240 | L/360 | L/120 | $\mathrm{L}_{240}$ | L/360 | L/120 | L/240 | L/360 |
| 250TLE125-18 | 12 | 17-0 | 15-1 | 12-11 | 14-11 | 13-2 | 11-4 | 13-6 | 12-0 | 10-3 | 9-1 | 9-1 | 8-6 |
|  | 16 | 15-6 | 13-9 | 11-9 | 13-6 | 12-0 | 10-3 | 12-0 | 10-11 | 9-0 | 7-11 | 7-11 | --- |
|  | 24 | 13-6 | 12-0 | 10-3 | 11-4 | 10-6 | 8-6 | 9-10 | 9-5 | --- | --- | --- | --- |
| 362TLE125-18 | 12 | 20-7 | 17-2 | 14-6 | 18-0 | 15-0 | 12-8 | 16-1 | 13-7 | 11-5 | 10-7 | 10-7 | 9-8 |
|  | 16 | 18-9 | 15-7 | 13-2 | 16-1 | 13-7 | 11-5 | 13-11 | 12-4 | 10-2 | 9-2 | 9-2 | 8-7 |
|  | 24 | 16-1 | 13-7 | 11-5 | 13-2 | 11-11 | 9-8 | 11-5 | 10-8 | 8-7 | --- | --- | --- |
| 400TLE125-18 | 12 | 21-1 | 18-3 | 15-4 | 18-5 | 15-11 | 13-5 | 16-8 | 14-6 | 12-2 | 11-2 | 11-2 | 10-3 |
|  | 16 | 19-1 | 16-7 | 13-11 | 16-8 | 14-6 | 12-2 | 14-8 | 13-2 | 10-10 | 9-8 | 9-8 | 9-1 |
|  | 24 | 16-8 | 14-6 | 12-2 | 13-10 | 12-8 | 10-3 | 12-0 | 11-5 | 9-1 | 7-11 | 7-11 | --- |
| 600TLE125-18 | 12 | --- | 22-7 | 20-7 | --- | 19-8 | 17-11 | --- | 17-1 | 16-4 | --- | --- | --- |
|  | 16 | --- | 20-8 | 18-8 | --- | 17-1 | 16-4 | --- | 14-9 | 14-9 | --- | --- | --- |
|  | 24 | --- | 17-1 | 16-3 | --- | 13-11 | 13-11 | --- | 12-1 | 12-1 | --- | --- | --- |
| 250TLE125-24 | 12 | 18-9 | 15-9 | 13-8 | 16-5 | 13-9 | 12-0 | 14-11 | 12-6 | 10-11 | 11-5 | 10-11 | 9-4 |
|  | 16 | 17-1 | 14-4 | 12-5 | 14-11 | 12-6 | 10-11 | 13-6 | 11-4 | 9-11 | 9-10 | 9-10 | 7-10 |
|  | 24 | 14-11 | 12-6 | 10-11 | 13-0 | 10-11 | 9-4 | 11-10 | 9-11 | 7-10 | 8-1 | 7-10 | ---- |
| 362TLE125-24 | 12 | 22-6 | 17-10 | 15-7 | 19-8 | 15-7 | 13-7 | 17-10 | 14-2 | 12-5 | 13-8 | 12-5 | 10-7 |
|  | 16 | 20-5 | 16-3 | 14-2 | 17-10 | 14-2 | 12-5 | 16-3 | 12-10 | 11-1 | 11-10 | 11-1 | 9-5 |
|  | 24 | 17-10 | 14-2 | 12-5 | 15-7 | 12-5 | 10-7 | 14-2 | 11-1 | 9-5 | 9-8 | 9-5 | 8-0 |
| 400TLE125-24 | 12 | 24-9 | 19-8 | 17-2 | 21-8 | 17-2 | 15-0 | 19-8 | 15-7 | 13-8 | 13-4 | 13-4 | 11-11 |
|  | 16 | 22-6 | 17-10 | 15-7 | 19-8 | 15-7 | 13-8 | 17-8-f | 14-2 | 12-5 | 11-6 | 11-6 | 10-6 |
|  | 24 | 19-8 | 15-7 | 13-8 | 16-8-f | 13-8 | 11-11 | 14-5-f | 12-5 | 10-6 | 9-5 | 9-5 | 8-10 |
| 600TLE125-24 | 12 | 28-9 | 25-11 | 21-8 | 23-6 | 22-8 | 19-1 | 20-4 | 20-4 | 17-5 | 13-4 | 13-4 | 13-4 |
|  | 16 | 24-11 | 23-6 | 19-10 | 20-4 | 20-4 | 17-5 | 17-7 | 17-7 | 15-11 | ---- | -- | ---- |
|  | 24 | 20-4 | 20-4 | 17-5 | 16-7 | 16-7 | 15-4 | 14-4 | 14-4 | 13-11 | --- | ---- | ---- |
| 250TLE125-30 | 12 | 20-0 | 16-9 | 14-7 | 17-6 | 14-7 | 12-8 | 15-11 | 13-3 | 11-7 | 12-8 | 11-7 | 10-1 |
|  | 16 | 18-2 | 15-2 | 13-3 | 15-11 | 13-3 | 11-7 | 14-5 | 12-1 | 10-6 | 10-11 | 10-6 | 8-9 |
|  | 24 | 15-11 | 13-3 | 11-7 | 13-11 | 11-7 | 10-1 | 12-7 | 10-6 | 8-9 | 8-11 | 8-9 | ---- |
| 362TLE125-30 | 12 | 24-5 | 19-5 | 16-11 | 21-4 | 16-11 | 14-10 | 19-5 | 15-5 | 13-5 | 15-9 | 13-5 | 11-7 |
|  | 16 | 22-3 | 17-8 | 15-5 | 19-5 | 15-5 | 13-5 | 17-8 | 14-0 | 12-1 | 13-8 | 12-1 | 10-4 |
|  | 24 | 19-5 | 15-5 | 13-5 | 16-11 | 13-5 | 11-7 | 15-5 | 12-1 | 10-4 | 11-2 | 10-4 | ---- |
| 400TLE125-30 | 12 | 27-3 | 21-7 | 18-10 | 23-9 | 18-10 | 16-6 | 21-7 | 17-2 | 15-0 | 16-6 | 15-0 | 13-1 |
|  | 16 | 24-9 | 19-8 | 17-2 | 21-7 | 17-2 | 15-0 | 19-8 | 15-7 | 13-7 | 14-3 | 13-7 | 11-9 |
|  | 24 | 21-7 | 17-2 | 15-0 | 18-10 | 15-0 | 13-1 | 17-2 | 13-7 | 11-9 | 11-8 | 11-8 | 10-2- |
| 600TLE125-30 | 12 | 33-3 | 27-0 | 23-11 | 27-6 | 23-11 | 21-1 | 23-10 | 21-10 | 19-3 | --- | --- | --- |
|  | 16 | 29-2 | 24-9 | 21-10 | 23-10 | 21-10 | 19-3 | 20-8 | 20-0 | 17-7 | --- | --- | --- |
|  | 24 | 23-10 | 21-10 | 19-3 | 19-6 | 19-3 | 16-11 | 16-10 | 16-10 | --- | --- | --- | --- |
| 250TLE125-33 | 12 | 20-0 | 16-9 | 14-7 | 17-6 | 14-7 | 12-8 | 15-11 | 13-3 | 11-7 | 12-8 | 11-7 | 10-1 |
|  | 16 | 18-2 | 15-2 | 13-3 | 15-11 | 13-3 | 11-7 | 14-5 | 12-1 | 10-6 | 10-11 | 10-6 | 8-9 |
|  | 24 | 15-11 | 13-3 | 11-7 | 13-11 | 11-7 | 10-1 | 12-7 | 10-6 | 8-9 | 8-11 | 8-9 |  |
| 362TLE125-33 | 12 | 25-4 | 20-1 | 17-7 | 22-2 | 17-7 | 15-4 | 20-1 | 15-11 | 13-11 | 15-9 | 13-11 | 12-1 |
|  | 16 | 23-0 | 18-3 | 15-11 | 20-1 | 15-11 | 13-11 | 18-3 | 14-6 | 12-8 | 13-8 | 12-8 | 10-11 |
|  | 24 | 20-1 | 15-11 | 13-11 | 17-7 | 13-11 | 12-1 | 15-11 | 12-8 | 10-11 | 11-2 | 10-11 | ---- |
| 400TLE125-33 | 12 | 27-1 | 21-6 | 18-10 | 23-8 | 18-10 | 16-5 | 21-6 | 17-1 | 14-11 | 16-3 | 14-11 | 13-0 |
|  | 16 | 24-8 | 19-7 | 17-1 | 21-6 | 17-1 | 14-11 | 19-7 | 15-6 | 13-7 | 14-1 | 13-7 | 11-9 |
|  | 24 | 21-6 | 17-1 | 14-11 | 18-10 | 14-11 | 13-0 | 17-1 | 13-7 | 11-9 | 11-6 | 11-6 | 10-2 |
| 600TLE125-33 | 12 | 33-3 | 27-0 | 23-11 | 27-6 | 23-11 | 21-1 | 23-10 | 21-10 | 19-3 | --- | --- | --- |
|  | 16 | 29-2 | 24-9 | 21-10 | 23-10 | 21-10 | 19-3 | 20-8 | 20-0 | 17-7 | --- | --- | --- |
|  | 24 | 23-10 | 21-10 | 19-3 | 19-6 | 19-3 | 16-11 | 16-10 | 16-10 | --- | --- | --- | --- |

For SI: 1 inch $=25.4 \mathrm{~mm}, 1 \mathrm{ft}=0.3048 \mathrm{~m}, 1 \mathrm{psf}=47.88 \mathrm{~Pa}$.
${ }^{1}$ The gypsum board must be applied full height in the vertical orientation to each stud flange using minimum No. 6 Type S Drywall screws spaced as listed below:

- Screws spaced maximum 12 inches on-center to studs.
- Screws spaced 16 inches on-center to the top and bottom track.

7. ${ }^{2}$ The minimum overlap of the TSO and TSE must be 11 inches.



TSE


TSO

FIGURE 1-TRAKLOC MEMBERS


4 inch x 1-1/2 inch (102 mm x 38 mm) web holes @ 24 inch ( 610 mm ) minimum for stud depths greater than 3 inch ( 76 mm)

4 inch x 3/4 inch (102 mm x 19 mm )web holes @ 24 inch (610 mm ) minimum for stud depths less than 3 inch ( 76 mm )

FIGURE 2-HOLE CONFIGURATION


FIGURE 3-SHORT TSE CONFIGURATIONS

DIVISION: 0500 00—METALS
Section: 0540 00-Cold-Formed Metal Framing
DIVISION:09 00 00—FINISHES
Section: 0922 16.13—Non-Structural Metal Stud Framing

## REPORT HOLDER:

## CLARKDIETRICH ${ }^{\circledR}$ BUILDING SYSTEMS

## EVALUATION SUBJECT:

TRAKLOC ${ }^{\circledR}$ NONLOAD-BEARING WALL STUD FRAMING SYSTEM

### 1.0 REPORT PURPOSE AND SCOPE

## Purpose:

The purpose of this evaluation report supplement is to indicate that the TRAKLOC ${ }^{\circledR}$ Nonload Bearing Wall Stud Framing System, recognized in ICC-ES evaluation report ESR-1464, has also been evaluated for compliance with the code noted below.

Applicable code edition:

- 2016 California Building Code (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) and Division of State Architect (DSA), see Sections 2.1 and 2.2 below.

### 2.0 CONCLUSIONS

The TRAKLOC ${ }^{\circledR}$ nonload-bearing wall stud framing system, described in Sections 2.0 through 7.0 of the evaluation report ESR-1464, complies with CBC Chapter 22, provided the design and installation are in accordance with the 2015 International Building Code ${ }^{\circledR}$ provisions noted in the evaluation report and the additional requirements of CBC Chapters 16, 17 and 22, as applicable.
2.1 OSHPD: The applicable OSHPD Sections of the CBC are beyond the scope of this supplement.
2.2 DSA: The applicable DSA Sections of the CBC are beyond the scope of this supplement.

This supplement expires concurrently with the evaluation report, reissued January 2020 and revised April 2020.

[^3]DIVISION: 0500 00-METALS
Section: 0540 00-Cold-Formed Metal Framing
DIVISION: 0900 00—FINISHES
Section: 0922 16.13—Non-Structural Metal Stud Framing

## REPORT HOLDER:

## CLARKDIETRICH ${ }^{\circledR}$ BUILDING SYSTEMS

## EVALUATION SUBJECT:

## TRAKLOC ${ }^{\circledR}$ NONLOAD-BEARING WALL STUD FRAMING SYSTEM

### 1.0 REPORT PURPOSE AND SCOPE

## Purpose:

The purpose of this evaluation report supplement is to indicate that the TRAKLOC nonload-bearing wall stud framing system, recognized in ICC-ES evaluation report ESR-1464, has also been evaluated for compliance with the code noted below.

## Applicable code edition:

2017 Florida Building Code—Building

### 2.0 CONCLUSIONS

The TRAKLOC nonload-bearing wall stud framing system, described in Sections 2.0 through 7.0 of the evaluation report ESR-1464, complies with the Florida Building Code-Building, provided the design and installation are in accordance with the 2015 International Building Code ${ }^{\circledR}$ (IBC) provisions noted in the evaluation report.

Use of the TRAKLOC nonload-bearing wall stud framing system for compliance with the High-Velocity Hurricane Zone provisions of the Florida Building Code-Building has not been evaluated and is outside the scope of this supplemental report.

For products falling under Florida Rule 9N-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 January 2020 and revised April 2020.

[^4]
[^0]:    ICC-ES Evaluation Reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, LLC, express or implied, as to any finding or other matter in this report, or as to any product covered by the report.

[^1]:    

    ## Warping constant

    Distance from shear center to neutral axis.
    olar radius of gyration of cross section about the shear center Torsional flexural constant. 1-(Xo/Ro) ${ }^{2}$
    fully braced when unbraced length is less than Lu. Members are considered Rotational stiffness.

[^2]:    For SI Units: 1 inch $=25.4 \mathrm{~mm}, 1 \mathrm{lb}=4.45 \mathrm{~N}, 1 \mathrm{ksi}=6.89 \mathrm{~N} / \mathrm{m}^{2}$.

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