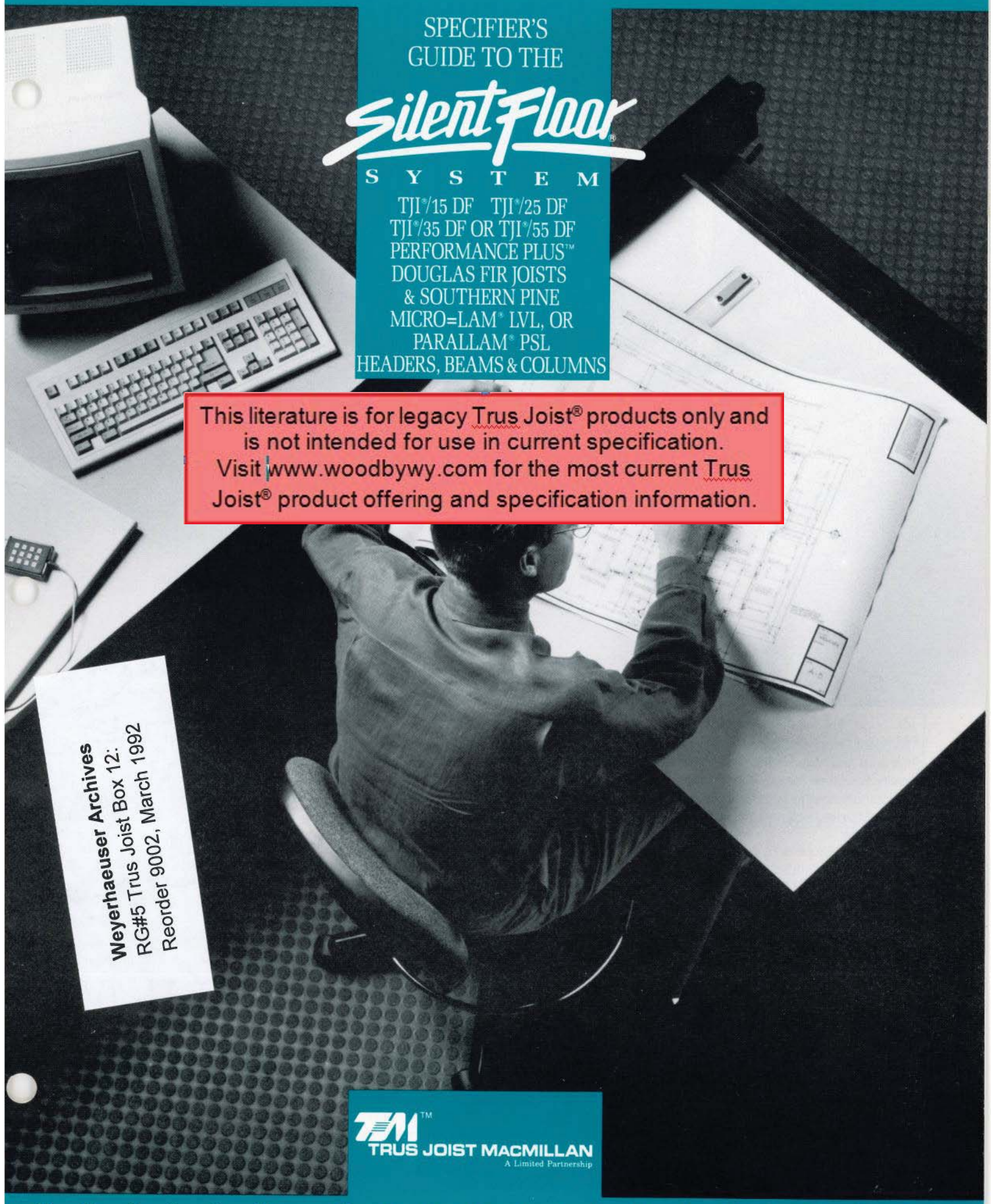
RESIDENTIAL APPLICATIONS

SPECIFIER'S GUIDE TO THE Silent Floor® SYSTEM

TJI®/15 DF TJI®/25 DF
TJI®/35 DF OR TJI®/55 DF
PERFORMANCE PLUS™
DOUGLAS FIR JOISTS
& SOUTHERN PINE
MICRO=LAM® LVL, OR
PARALLAM® PSL
HEADERS, BEAMS & COLUMNS



This literature is for legacy Trus Joist® products only and is not intended for use in current specification. Visit www.woodbywy.com for the most current Trus Joist® product offering and specification information.

TRUS JOIST MACMILLAN™
A Limited Partnership

DESIGN SPECIFICATIONS

TRUS JOIST MACMILLAN RESIDENTIAL PRODUCTS

This photo is only a partial representation of the full product line. See your local Trus Joist MacMillan Dealer or Technical Representative for a list of products available in your area.

The Silent Floor® structural system from Trus Joist MacMillan is the benchmark of quality. Structural materials engineered and manufactured to perform exactly to specification in each and every application in the home.

Trus Joist MacMillan's advanced technology rearranges valuable wood fiber into shapes which maximize the fibers' contribution to the strength of the member, producing consistently superior building materials with significantly less wood fiber than in their solid sawn counterparts.

Two new improvements to the Silent Floor® brand TJI® joists have increased significantly both its structural and economic efficiency. Trus Joist MacMillan's exclusive Performance Plus™ web combines the strength of oriented strand board with the dimensional stability of plywood to produce a stronger joist that will resist weathering as well or better than a plywood web joist. Secondly, a new enhanced MICRO=LAM® laminated veneer lumber (LVL) flange increases strength without increasing cost.

A full complement of beams and headers is now available from Trus Joist MacMillan. MICRO=LAM® LVL and Parallam® parallel strand lumber (PSL) in 1¾" thick pieces can be used individually or built up to the size required for most any job. For bigger load carrying jobs, MICRO=LAM® LVL is available in 3½" thick pieces and Parallam® PSL is available in thicknesses from 2 11/16" to 7." Also, the unique appearance of Parallam® PSL may be the right call in some applications.

The straightness and dimensional stability of Parallam® PSL make it ideal for wood columns. No deep checks, cracks or twist, common with solid wood columns — and the good looks of Parallam® PSL give columns a visually appealing quality.

Another big advantage of Trus Joist MacMillan products for residential construction is that they are all available in lengths to 60 feet.

As always, Trus Joist MacMillan backs up every product with technical support second to none. Our highly trained technical representatives have advanced computer software available to increase speed and accuracy of design. And they are backed with the best quality guarantee in the business.

When you specify Trus Joist MacMillan, you are specifying quality in every way. Quality structural products manufactured with innovative technology designed to get the most from the limited forest resource, plus the best service and guarantee in the business.

CODE EVALUATIONS:
FHA 689, FHA 925, NER 119, NER 126 and NER 292.

NOTE: NER Evaluation includes BOCA, ICBO, and SBCCI.

A WORD ABOUT FLOOR PERFORMANCE

The spans indicated in the "L/360 Live Load Deflection" charts on page 5 meet or exceed all code requirements and may provide acceptable performance to the user. But, in addition to safely supporting the loads to be imposed on it, a floor system must perform to the satisfaction of the end user. Since expectancy levels may vary from one user to another, designing a floor system becomes a subjective issue requiring judgement as to the sensitivity of the occupant.

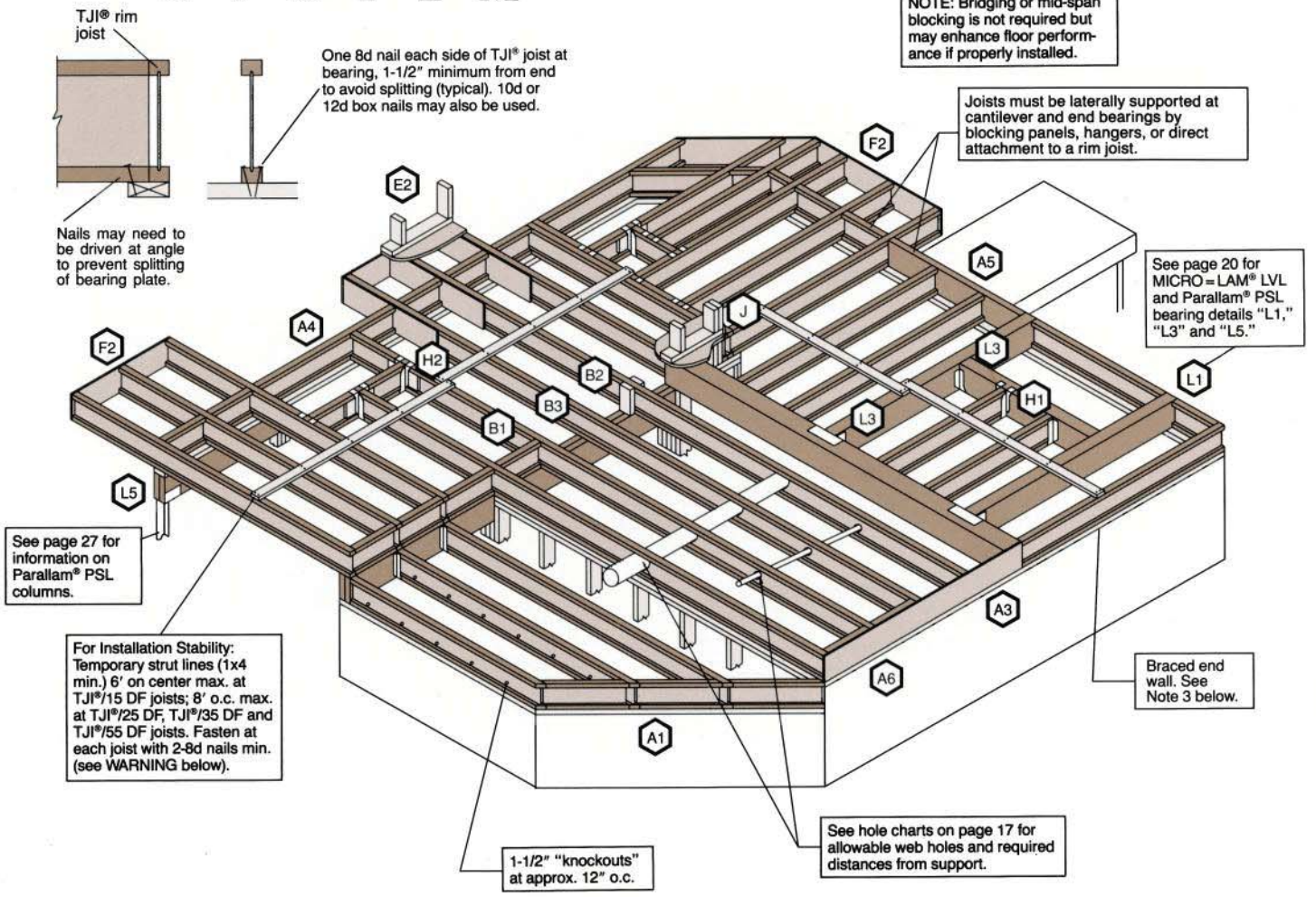
The second span charts entitled "L/480 Live Load Deflection" have been developed as a guide to help builders construct higher quality floors. Spans in these charts were developed using stricter criteria to limit deflection over longer spans.

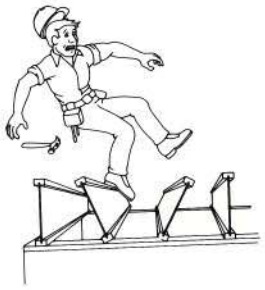
In addition to the joist deflection, several other factors may affect the performance of the floor system. A glue-nailed floor system will perform better than a nailed floor. Deflection of the sheathing material between the joists can be reduced by increasing the thickness of sheathing or decreasing the spacing of the joist. Proper installation, including adequate and level support for the joists, and care in fastening of the joists and sheathing are essential to the system performance.

In some cases where the system is stiff and very little dead load (i.e., partition walls, ceilings, furniture, etc.) exists, vibrations may occur. Vibrations are generally sufficiently dampened when a ceiling is directly attached to the bottom flange of the joists. When the joists occur in a crawl space or over an unfinished basement, the vibration can be minimized by nailing a continuous 2x4 (flat) perpendicular to the joists' bottom flanges at midspan and tying off to the end walls.

CONTENTS

TYPICAL Silent Floor SYSTEM FRAMING





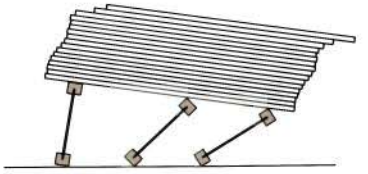
WARNING

JOISTS ARE UNSTABLE UNTIL BRACED LATERALLY

DO NOT allow workers to walk on joists until braced. INJURY MAY RESULT. See Notes 1, 2 & 3 below.

BRACING INCLUDES:

- BLOCKING
- HANGERS
- STRUT LINES
- SHEATHING



DO NOT stack building materials on unsheathed joists. Stack only over beams or walls. See Note 4 below.

WARNING NOTES:

Lack of concern for proper bracing during construction can result in serious accidents. Under normal conditions if the following guidelines are observed, accidents will be avoided.

1. All blocking, hangers and rim joists at the end supports of the TJI® joists must be completely installed and properly nailed.
2. Lateral strength, like a braced end wall or an existing deck, must be established at the ends of the bay. This can also be accomplished by a temporary or permanent deck (sheathing) nailed to the first 4 feet of joists at the end of the bay.
3. Temporary strut lines of 1 x 4 (min.) must be nailed to a braced end wall or sheathed area as in note 2 and to each joist. Without this bracing, buckling sideways or roll over is highly probable under light construction loads — like a worker and one layer of unnailed sheathing.
4. Sheathing must be totally attached to each TJI® joist before additional loads can be placed on the system.
5. Ends of cantilevers require strut lines on both the top and bottom flanges.
6. The flanges must remain straight within a tolerance of 1/2" from the true alignment.

40 PSF LIVE LOAD, 10 PSF DEAD LOAD (12 PSF DEAD LOAD AT TJI®/55 DF JOISTS)

(Example: Single layer glue-nailed wood sheathing and direct applied ceiling)

L/360 LIVE LOAD DEFLECTION (Code Minimum)

JOIST DEPTH	JOIST SERIES	O.C. SPACING			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
9½"	TJI®/15 DF	18'-9"	17'-2"	16'-3"	15'-1"
	TJI®/25 DF	19'-7"	17'-11"	16'-11"	15'-9"
11⅞"	TJI®/15 DF	22'-4"	20'-5"	18'-10"	15'-1"
	TJI®/25 DF	23'-4"	21'-4"	20'-2"	18'-4"(7)
	TJI®/35 DF	25'-3"	23'-0"	21'-8"	20'-2"(7)
	TJI®/55 DF	28'-8"	26'-1"	24'-7"	22'-10"
14"	TJI®/25 DF	26'-6"	24'-2"	22'-10"(7)	18'-4"(7)
	TJI®/35 DF	28'-8"	26'-1"	24'-7"(7)	20'-10"(7)
	TJI®/55 DF	32'-6"	29'-7"	27'-11"	25'-11"(6)
16"	TJI®/25 DF	29'-5"	26'-10"(7)	22'-11"(7)	18'-4"(7)
	TJI®/35 DF	31'-9"	28'-11"	26'-1"(7)	20'-10"(7)
	TJI®/55 DF	36'-0"	32'-9"	30'-10"(6)	26'-9"(6)

L/480 LIVE LOAD DEFLECTION

JOIST DEPTH	JOIST SERIES	O.C. SPACING			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
9½"	TJI®/15 DF	17'-0"	15'-6"	14'-8"	13'-7"
	TJI®/25 DF	17'-9"	16'-2"	15'-3"	14'-2"
11⅞"	TJI®/15 DF	20'-3"	18'-5"	17'-5"	15'-1"
	TJI®/25 DF	21'-1"	19'-3"	18'-2"	16'-11"(7)
	TJI®/35 DF	22'-10"	20'-9"	19'-7"	18'-2"
	TJI®/55 DF	25'-11"	23'-7"	22'-2"	20'-7"
14"	TJI®/25 DF	24'-0"	21'-10"	20'-7"	18'-4"(7)
	TJI®/35 DF	25'-11"	23'-7"	22'-2"	20'-8"(7)
	TJI®/55 DF	29'-5"	26'-9"	25'-2"	23'-4"(6)
16"	TJI®/25 DF	26'-7"	24'-3"	22'-10"(7)	18'-4"(7)
	TJI®/35 DF	28'-8"	26'-1"	24'-7"(7)	20'-10"(7)
	TJI®/55 DF	32'-6"	29'-7"	27'-10"	25'-10"(6)

40 PSF LIVE LOAD, 22 PSF DEAD LOAD (24 PSF DEAD LOAD AT TJI®/55 DF JOISTS)

(Example: Single layer glue-nailed wood sheathing with 1½" lightweight concrete and direct applied ceiling)

L/360 LIVE LOAD DEFLECTION (Code Minimum)

JOIST DEPTH	JOIST SERIES	O.C. SPACING			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
9½"	TJI®/15 DF	18'-7"	16'-8"	15'-2"	12'-1"
	TJI®/25 DF	19'-5"	17'-8"	16'-6"	14'-9"(7)(8)
11⅞"	TJI®/15 DF	22'-1"	18'-3"	15'-2"	12'-1"
	TJI®/25 DF	23'-1"	20'-10"(7)	18'-6"(7)	14'-9"(7)
	TJI®/35 DF	24'-11"	22'-9"	20'-0"(7)	16'-9"(7)
	TJI®/55 DF	28'-0"	25'-6"	24'-0"	21'-9"(6)
14"	TJI®/25 DF	26'-3"	22'-3"(7)	18'-6"(7)	14'-9"(7)
	TJI®/35 DF	28'-4"	25'-8"(7)	21'-0"(7)	16'-9"(7)
	TJI®/55 DF	31'-9"	28'-11"(6)	27'-2"(6)	21'-9"(6)
16"	TJI®/25 DF	28'-10"(7)	22'-3"(7)	18'-6"(7)	14'-9"(7)
	TJI®/35 DF	31'-4"(7)	25'-3"(7)	21'-0"(7)	16'-9"(7)
	TJI®/55 DF	35'-2"	32'-0"(6)	27'-2"(6)	21'-9"(6)

L/480 LIVE LOAD DEFLECTION

JOIST DEPTH	JOIST SERIES	O.C. SPACING			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
9½"	TJI®/15 DF	17'-0"	15'-6"	14'-7"	12'-1"
	TJI®/25 DF	17'-9"	16'-2"	15'-3"	14'-2"(7)(8)
11⅞"	TJI®/15 DF	20'-3"	18'-3"	15'-2"	12'-1"
	TJI®/25 DF	21'-1"	19'-3"	18'-2"(7)	14'-9"(7)
	TJI®/35 DF	22'-10"	20'-9"	19'-7"(7)	16'-9"(7)
	TJI®/55 DF	25'-11"	23'-7"	22'-2"	20'-7"(6)
14"	TJI®/25 DF	24'-0"	21'-10"(7)	18'-6"(7)	14'-9"(7)
	TJI®/35 DF	25'-11"	23'-7"(7)	21'-0"(7)	16'-9"(7)
	TJI®/55 DF	29'-5"	26'-9"	25'-2"(6)	21'-9"(6)
16"	TJI®/25 DF	26'-7"	22'-3"(7)	18'-6"(7)	14'-9"(7)
	TJI®/35 DF	28'-8"	25'-3"(7)	21'-0"(7)	16'-9"(7)
	TJI®/55 DF	32'-6"	29'-7"(6)	27'-2"(6)	21'-9"(6)

NOTE: Although the "L/480 Live Load Deflection" charts will usually provide better floor performance than the "L/360 Live Load Deflection" charts, the resulting performance still may not be adequate for your project. See page 3 for "A WORD ABOUT FLOOR PERFORMANCE," or contact your Trus Joist MacMillan representative for assistance.

GENERAL NOTES:

1. Span charts assume composite action with single layer of the appropriate span rated glue-nailed wood sheathing for deflection only. **Spans shall be reduced 5" where sheathing panels are nailed only.**
2. Spans are based on clear distance between supports, uniformly loaded joists, and include allowable increases for repetitive use members.
3. For loading conditions not shown, refer to allowable uniform load tables on page 14.
4. Spans shown reflect the most restrictive of simple span or multiple span applications.

WEB STIFFENER REQUIREMENTS

End Bearings: Web stiffeners (see detail "K" on page 7) are not required at end bearings of TJI® floor joists listed in this guide **except** in hangers when the following conditions exist:

5. **All Joists:** Web stiffeners are required in hangers when the sides of the hanger do not laterally support the TJI® joist top flange. (See detail "H1" on page 7).
6. **TJI®/55 DF Joists Only:** Web stiffeners are required in hangers when the TJI®/55 DF joist span is greater than the spans shown in the following chart:

JOIST SERIES	40 PSF LIVE LOAD, 12 PSF DEAD LOAD				40 PSF LIVE LOAD, 24 PSF DEAD LOAD			
	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
TJI®/55 DF	Not Required	Not Required	28'-8"	22'-11"	Not Required	28'-0"	23'-4"	18'-7"

7. **Intermediate Bearings:** At intermediate supports where the joists are continuous span, web stiffeners are required **only** if the intermediate bearing width is less than 5-1/4" **and** the span on either side of the intermediate bearing is greater than the spans shown in the following chart:

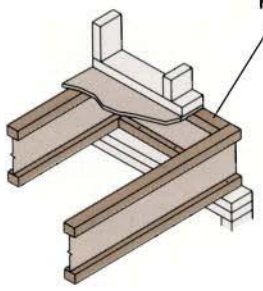
JOIST SERIES	40 PSF LIVE LOAD, 10 PSF DEAD LOAD*				40 PSF LIVE LOAD, 22 PSF DEAD LOAD**			
	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
TJI®/15 DF	WEB STIFFENERS NOT REQUIRED				WEB STIFFENERS NOT REQUIRED			
TJI®/25 DF	Not Required	25'-1"	20'-10"	16'-8"	26'-11"	20'-2"	16'-9"	13'-5"
TJI®/35 DF	Not Required	Not Required	24'-2"	19'-4"	31'-3"	23'-4"	19'-5"	15'-6"
TJI®/55 DF	WEB STIFFENERS NOT REQUIRED				WEB STIFFENERS NOT REQUIRED			

*12 PSF Dead Load at TJI®/55 DF joists.

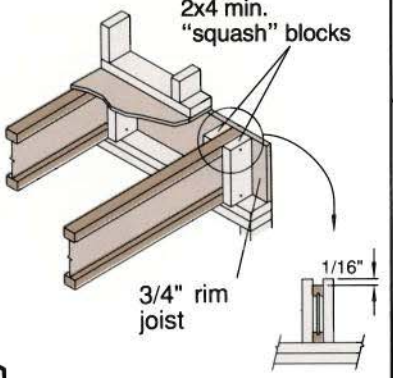
**24 PSF Dead Load at TJI®/55 DF joists.

8. When using IUT9 hangers with this load/spacing condition the maximum joist span is 13'-9".
9. Maximum spans shown within gray shading reflect long term dead load deflection of ½" or greater (including creep). If product application requires less deflection, use shorter spans, deeper joists, or closer o.c. spacing. Contact your Trus Joist MacMillan representative for additional assistance.

TJI® JOIST RESIDENTIAL FLOOR DETAILS



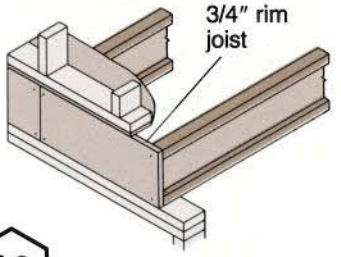
A1



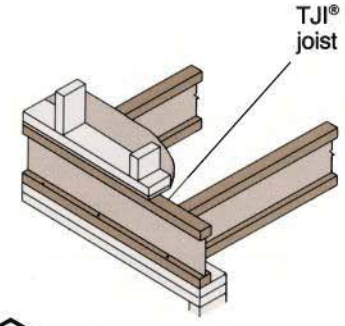
A2 See detail "A6" for additional information.

Use only for single story applications or second story of two-story applications.

9-1/2" AND 11-7/8" TJI® JOISTS ONLY

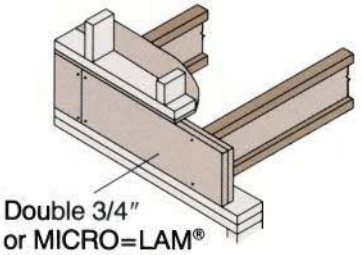


A3 See detail "A6" for additional information.

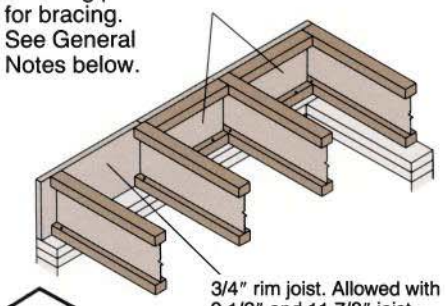


A4 **NOTE:** Must have 1-3/4" minimum joist bearing at ends.

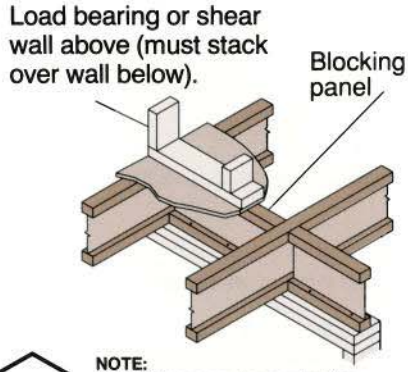
9-1/2" AND 11-7/8" TJI® JOISTS ONLY WHEN USING DOUBLE 3/4" RIM JOIST



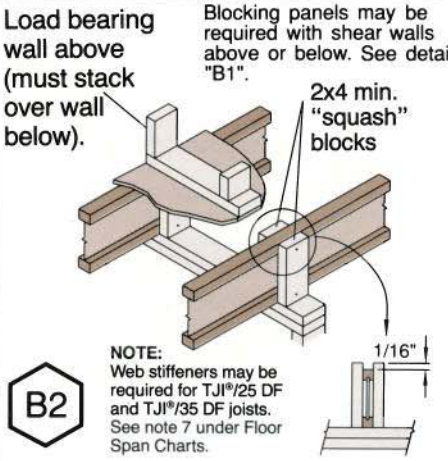
A5 See detail "A6" for additional information.



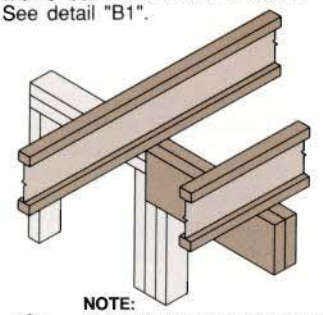
A6



B1 **NOTE:** Web stiffeners may be required for TJI®/25 DF and TJI®/35 DF joists. See note 7 under Floor Span Charts.



B2 **NOTE:** Web stiffeners may be required for TJI®/25 DF and TJI®/35 DF joists. See note 7 under Floor Span Charts.



B3 **NOTE:** Web stiffeners may be required for TJI®/25 DF and TJI®/35 DF joists. See note 7 under Floor Span Charts.
INTERMEDIATE BEARING – NO LOAD BEARING WALL ABOVE.

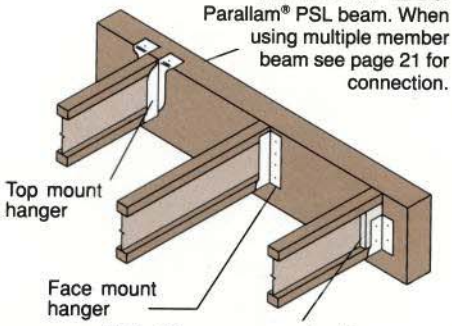
GENERAL NOTES

MINIMUM BEARING LENGTH
- 1¾" minimum bearing is required at joist ends.
- 3½" minimum bearing is required when joists are continuous over the support.

BLOCKING PANELS OR RIM JOISTS
- For single-story applications and second story of two-story applications, use details "A1," "A2," "A3," "A4," or "A5."
- For main floor rim of two-story applications, use details "A1," "A2," "A4," or "A5."
- Assumes 1000 plf vertical load transfer for each layer of ¾" rim joist.
- Assumes 2000 plf vertical load transfer for each TJI® blocking panel or rim joist.
- Assumes 5145 plf vertical load transfer for each 1¾" MICRO=LAM® LVL used as rim joist or blocking.

¾" RIM JOIST, REINFORCEMENT OR CLOSURE
- ¾" rim joist, reinforcement or closure refers to ¾" CDX plywood or other ¾" exterior grade 48/24 span rated sheathing that is cut to match the full depth of the joist. Install with face grain horizontal.
- Rim joist and cantilever reinforcement must bear fully on the wall plate.
- Bracing complying with the code shall be carried to the foundation. When ¾" rim joist is used, blocking panels cut from TJI® joists or MICRO=LAM® LVL may be installed for a minimum of 4' at each end and at least 4' every 25' of bearing wall length to carry wall bracing as required to the foundation. See detail "A6".
- Check local codes for acceptance of details "A2", "A3", "A5" and "A6". (May not be applicable in seismic zones 3 and 4.)

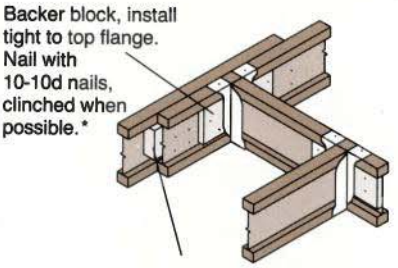
TJI® JOIST RESIDENTIAL FLOOR DETAILS



H1

Web stiffeners are required if the sides of the hanger do not laterally support the TJI® joist top flange or per note 6 under floor span charts. See detail "K."

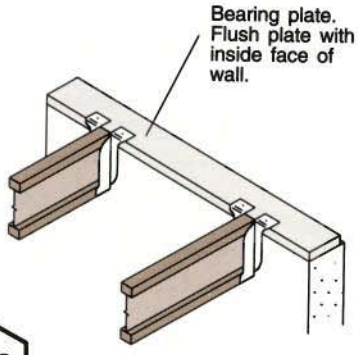
NOTE: Face mount hangers may also be used. See detail "H6" on page 13 for example.



Filler block. Nail with 10-10d nails, clinched (use 10-16d nails from each side with TJI®/55 DF joists).

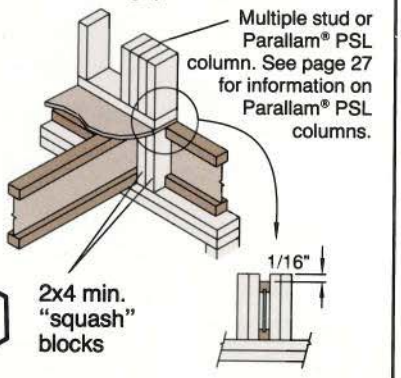
*Backer block required where hanger load exceeds 250 pounds.

H2



H3

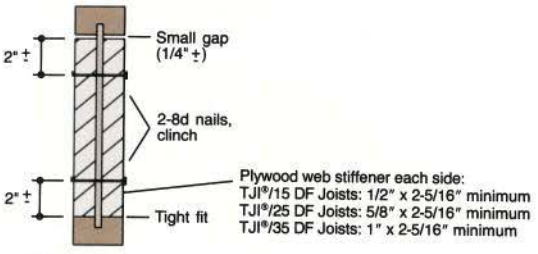
Solid block post loads from above to bearing plate below.



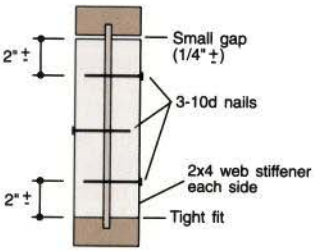
J

2x4 min. "squash" blocks

TJI®/15 DF, TJI®/25 DF, TJI®/35 DF JOISTS



TJI®/55 DF JOISTS

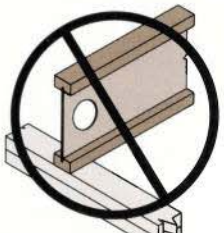


K

WEB STIFFENER ATTACHMENT

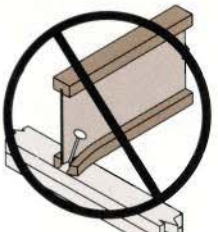
THESE CONDITIONS ARE NOT PERMITTED

DO NOT cut holes too close to supports



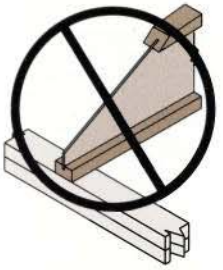
Refer to hole charts on page 17 for minimum distance from bearing wall.

DO NOT split the flange

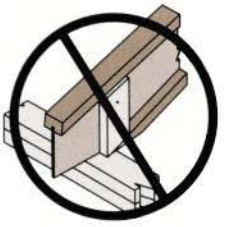


Use 8d nails, 1½" minimum from end of flange. 10d or 12d box nails may also be used.

DO NOT bevel cut joist beyond inside face of wall.



Birdsmouth cut must not overhang inside face of plate.



TJI® joist flange must bear fully on the plate. See detail "R12" on page 13.

NAILING REQUIREMENTS

- Nail joists at bearings with 2-8d (or 10d or 12d box) nails (1 each side), 1½" minimum from end to avoid splitting.
- Nail TJI® joist blocking panels or TJI® rim joist to bearing plate with 8d nails at 6" on center. When used for shear transfer, nail to bearing plate with same nailing as the decking.
- Nail TJI® rim joist, MICRO=LAM® LVL rim joist, ¾" rim joist or closure to TJI® joist with 2-8d nails, one each at top and bottom flange. Use 16d nails with TJI®/35 DF rim joists. Toenail TJI®/55 DF joist to TJI®/55 DF rim joist with one 10d nail at each side of the top flange.
- Attach 2x4 min. "squash" blocks at details "A2," "B2" and "J" to TJI® joist top and bottom flanges with 1-8d nail.

WEB STIFFENER REQUIREMENTS

- Web stiffeners are required if the sides of the hanger do not laterally support the TJI® joist top flange. Web stiffeners are also required for TJI®/25 DF and TJI®/35 DF joists per note 7 under floor span charts and are required for TJI®/55 DF joists per note 6 under the floor span charts.

FILLER AND BACKER BLOCK SIZES

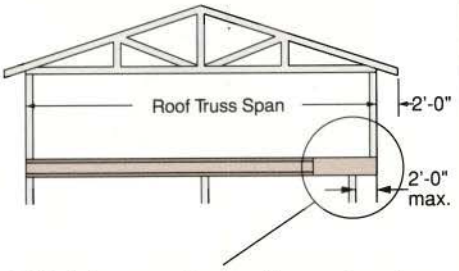
	9½" or 11⅞" TJI®/15 DF	9½" or 11⅞" TJI®/25 DF	14" or 16" TJI®/25 DF	11⅞" TJI®/35 DF	14" or 16" TJI®/35 DF	11⅞" TJI®/55 DF	14" or 16" TJI®/55 DF
Filler Block* (Detail "H2")	1⅛" net	2x6	2x8	2x6 + ½" plywood	2x8 + ½" plywood	2-2x6	2-2x8
Cantilever Filler (Detail "E4")	2x6	2x6	2x10	2x6 + ½" plywood	2x10 + ½" plywood	NOT APPLICABLE	
Backer Block* (Details "F1" or "H2")	½" or ⅝"	⅝" or ¾"	⅝" or ¾"	1" net	1" net	2x6	2x8

*Filler and backer block length should accomodate required nailing without splitting.

TJI® JOIST RESIDENTIAL FLOOR DETAILS

LOAD BEARING CANTILEVER DETAILS

Proper detail selection for each specific application must be determined from tables on page 9.

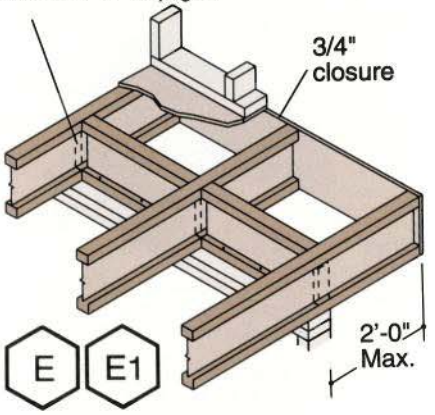


TJI® joists may be cantilevered up to a maximum of 2'-0" when supporting roof load, but may require reinforcement. **Consult tables on page 9 to determine required reinforcement** and details at right for methods of reinforcement.

NOTE:

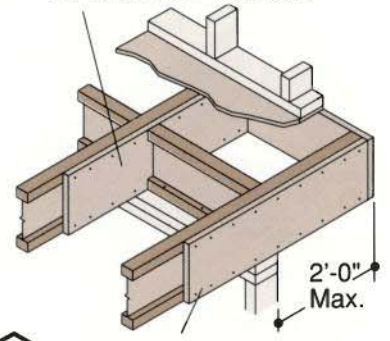
- 3/4" CDX plywood reinforcement or other 3/4" exterior grade 48/24 span rated sheathing must match the full depth of the TJI® joist. Install with face grain horizontal. Reinforcing member must bear fully on the wall plate.
- Other cantilever conditions may be possible. Contact your Trus Joist MacMillan representative for assistance.

Web stiffeners required each side at "E1." See detail "K" on page 7.



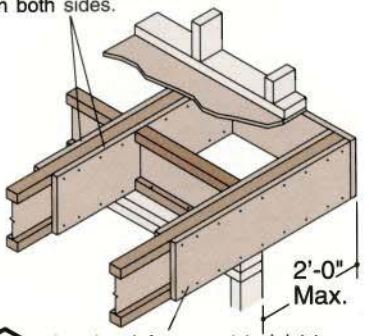
E E1

4'-0" length of 3/4" reinforcing.



E2 Attach reinforcement to joist top and bottom flanges with 8d nails at 6" o.c.

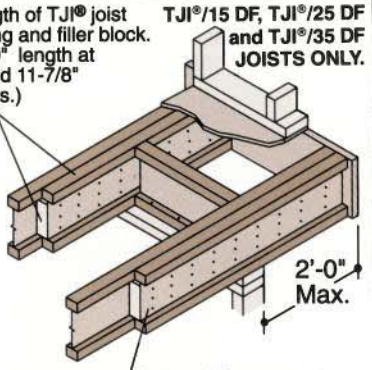
4'-0" length of 3/4" reinforcing on both sides.



E3 Attach reinforcement to joist top and bottom flanges with 8d nails at 6" o.c., stagger nails to avoid splitting.

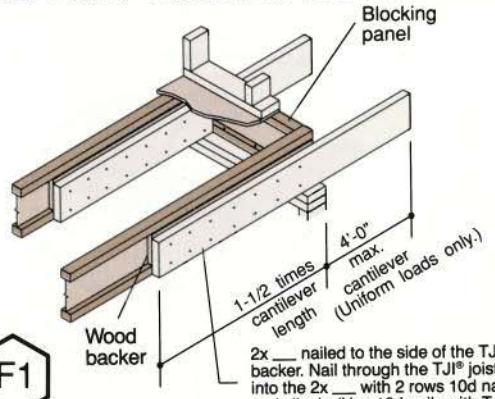
6'-0" length of TJI® joist reinforcing and filler block. (Use 4'-0" length at 9-1/2" and 11-7/8" TJI® joists.)

TJI®/15 DF, TJI®/25 DF and TJI®/35 DF JOISTS ONLY.



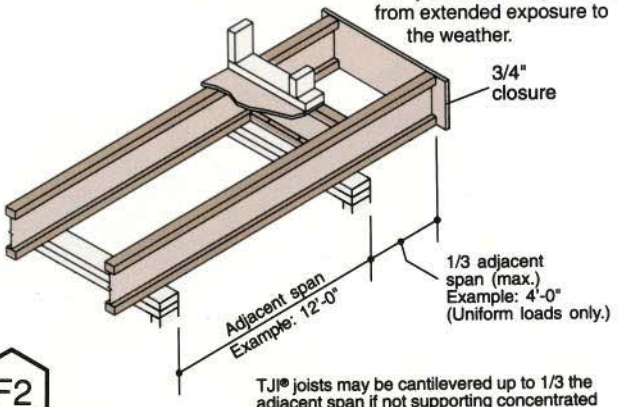
E4 Attach TJI® joist reinforcement to joist web with 3 rows 10d nails at 6" o.c. clinched. (Use 2 rows with 9-1/2" and 11-7/8" joists.)

NON-LOAD BEARING CANTILEVER DETAILS



F1 2x ___ nailed to the side of the TJI® joist with wood backer. Nail through the TJI® joist and backer into the 2x ___ with 2 rows 10d nails at 6" o.c. and clinch. (Use 16d nails with TJI®/55 DF joists.)

TJI® joists must be protected from extended exposure to the weather.



F2 TJI® joists may be cantilevered up to 1/3 the adjacent span if not supporting concentrated loads on the cantilever.

REFER TO PAGES 6 AND 7 FOR GENERAL NOTES FOR DETAILS.

NAILING OF SHEATHING TO TOP FLANGE

Nail Size	Closest O.C. Spacing Per Row	
	TJI®/15 DF	TJI®/25 DF, TJI®/35 DF, TJI®/55 DF
8d box	2½"	2"
8d common	3½"	2"
10d, 12d box	3"	2"

- Maximum spacing of nails is: 18" o.c. for TJI®/15 DF and TJI®/25 DF joists. 24" o.c. for TJI®/35 DF and TJI®/55 DF joists.
- If more than 1 row of nails is used, the rows must be offset at least 1/2."
- 14 ga. staples may be substituted for 8d nails if minimum penetration of 1" into the TJI® joists is achieved.

Joist Layout for 19.2" On Center Spacing

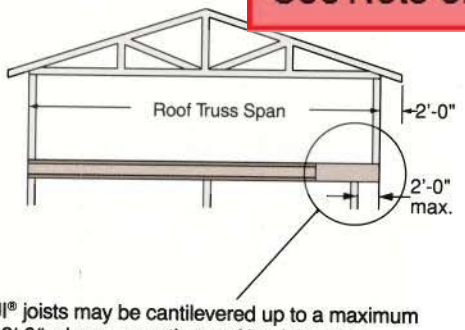
	1 — 19 3/16"
	2 — 38 3/8"
	3 — 57 5/8"
	4 — 76 13/16"
8'	5 — 96"
	6 — 115 3/16"
	7 — 134 3/8"
	8 — 153 5/8"
	9 — 172 13/16"
16'	10 — 192"
	11 — 211 3/16"
	12 — 230 3/8"
	13 — 249 5/8"
	14 — 268 13/16"
24'	15 — 288"

TJI® JOIST RESIDENTIAL LOAD BEARING CANTILEVER TABLES

TJI® JOIST LOAD BEARING 24″ CANTILEVER TABLE

Legacy Literature
See Note on Front Cover

	Roof Total Load		30 PSF			40 PSF			50 PSF		
	Joist Spacing		16″ o.c.	19.2″ o.c.	24″ o.c.	16″ o.c.	19.2″ o.c.	24″ o.c.	16″ o.c.	19.2″ o.c.	24″ o.c.
9½″ TJI®/15 DF	Roof Truss Span w/24″ Soffit Assumed	24′	0	0	0	0	0	1	0	1	X
		26′	0	0	0	0	0	1	1	1	X
		28′	0	0	1	0	1	1	1	1	X
		30′	0	0	1	0	1	1	1	1	X
		32′	0	0	1	0	1	X	1	X	X
		34′	0	0	1	1	1	X	1	X	X
		36′	0	0	1	1	1	X	1	X	X
9½″ TJI®/25 DF	Roof Truss Span w/24″ Soffit Assumed	24′	0	0	0	0	0	1	0	1	1
		26′	0	0	0	0	0	1	0	1	1
		28′	0	0	0	0	0	1	0	1	1
		30′	0	0	0	0	0	1	1	1	X
		32′	0	0	1	0	1	1	1	1	X
		34′	0	0	1	0	1	1	1	1	X
		36′	0	0	1	0	1	1	1	1	X
11⅞″ TJI®/15 DF	Roof Truss Span w/24″ Soffit Assumed	26′	0	0	1	0	1	1	1	1	1
		28′	0	0	1	0	1	1	1	1	1
		30′	0	0	1	1	1	1	1	1	1
		32′	0	0	1	1	1	1	1	1	1
		34′	0	1	1	1	1	1	1	1	X
		36′	0	1	1	1	1	1	1	1	X
		38′	0	1	1	1	1	1	1	1	X
11⅞″ TJI®/25 DF	Roof Truss Span w/24″ Soffit Assumed	26′	0	0	0	0	0	K	0	K	1
		28′	0	0	0	0	0	1	0	1	1
		30′	0	0	K	0	K	1	K	1	1
		32′	0	0	K	0	K	1	K	1	1
		34′	0	0	K	0	K	1	K	1	1
		36′	0	0	K	0	1	1	1	1	1
		38′	0	0	1	K	1	1	1	1	1
11⅞″ TJI®/35 DF	Roof Truss Span w/24″ Soffit Assumed	26′	0	0	0	0	0	0	0	0	1
		28′	0	0	0	0	0	K	0	K	1
		30′	0	0	0	0	0	K	0	K	1
		32′	0	0	0	0	0	1	0	K	1
		34′	0	0	0	0	0	1	0	1	1
		36′	0	0	0	0	K	1	K	1	1
		38′	0	0	K	0	K	1	K	1	2
11⅞″ TJI®/55 DF	Roof Truss Span w/24″ Soffit Assumed	26′	0	0	0	0	0	0	0	0	0
		28′	0	0	0	0	0	0	0	0	0
		30′	0	0	0	0	0	0	0	0	0
		32′	0	0	0	0	0	0	0	0	1
		34′	0	0	0	0	0	0	0	0	1
		36′	0	0	0	0	0	0	0	0	1
		38′	0	0	0	0	0	0	0	0	1
14″ TJI®/25 DF	Roof Truss Span w/24″ Soffit Assumed	26′	0	0	0	0	0	K	0	K	1
		28′	0	0	0	0	0	1	0	1	1
		30′	0	0	K	0	K	1	K	1	1
		32′	0	0	K	0	K	1	K	1	1
		34′	0	0	K	0	K	1	K	1	1
		36′	0	0	K	0	1	1	1	1	1
		38′	0	0	1	K	1	1	1	1	1
		40′	0	K	1	K	1	1	1	1	1
		42′	0	K	1	K	1	1	1	1	1
14″ TJI®/35 DF	Roof Truss Span w/24″ Soffit Assumed	26′	0	0	0	0	0	0	0	0	1
		28′	0	0	0	0	0	K	0	K	1
		30′	0	0	0	0	0	K	0	K	1
		32′	0	0	0	0	0	1	0	K	1
		34′	0	0	0	0	0	1	0	1	1
		36′	0	0	0	0	K	1	K	1	1
		38′	0	0	K	0	K	1	K	1	1
		40′	0	0	K	0	K	1	K	1	1
		42′	0	0	K	0	K	1	1	1	1
14″ TJI®/55 DF	Roof Truss Span w/24″ Soffit Assumed	26′	0	0	0	0	0	0	0	0	0
		28′	0	0	0	0	0	0	0	0	0
		30′	0	0	0	0	0	0	0	0	0
		32′	0	0	0	0	0	0	0	0	0
		34′	0	0	0	0	0	0	0	0	0
		36′	0	0	0	0	0	0	0	0	1
		38′	0	0	0	0	0	0	0	0	1
		40′	0	0	0	0	0	0	0	0	1
		42′	0	0	0	0	0	0	0	0	1



TJI® joists may be cantilevered up to a maximum of 2′-0″ when supporting roof load, but may require reinforcement. Consult table and refer to footnotes to determine required reinforcement. See details E1, E2, E3 and E4 on page 8 for methods of reinforcement. (Detail E4 not used with TJI®/55 DF joists.)

Numbers in charts refer to footnotes below.

0. No reinforcement required.

K. Web stiffener required each side of joist at bearing (detail E1 on page 8).

1. ¾″ x 48″ reinforcement required on one side of joist (detail E2 on page 8) or, double the joists (detail E4 on page 8). Detail E4 not used with TJI®/55 DF joists.

2. ¾″ x 48″ reinforcement required on both sides of joist (detail E3 on page 8) or, double the joists (detail E4 on page 8). Detail E4 not used with TJI®/55 DF joists.

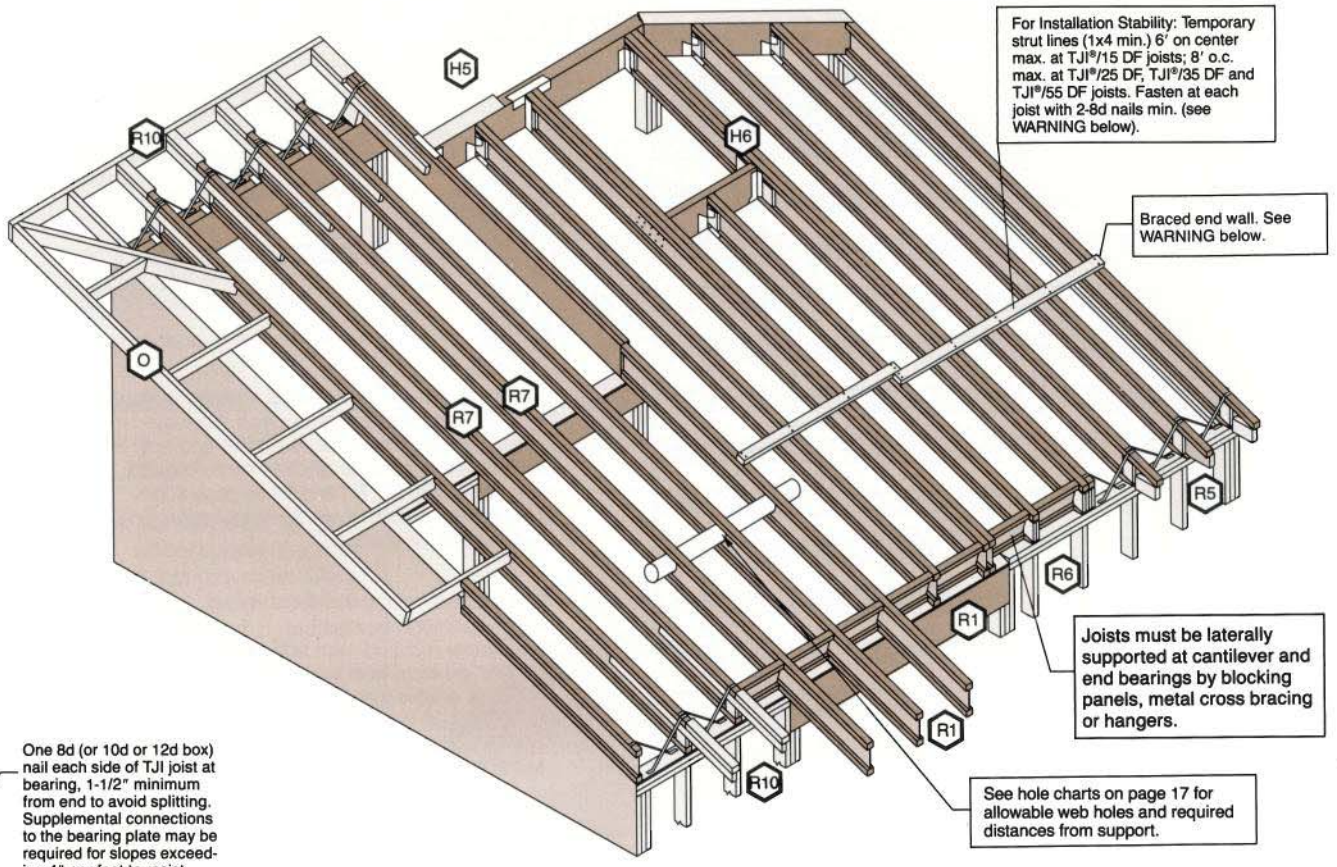
X. Will not work. Reduce spacing of joists and recheck on table.

NOTE:

- Assumes a 10 psf roof dead load and 60 plf wall load. Additional support may be required for other loadings.
- ¾″ reinforcement refers to ¾″ CDX plywood or other ¾″ exterior grade 48/24 span rated sheathing that is cut to match the full depth of the joist. Install with face grain horizontal. Reinforcing member must bear fully on the wall plate. Minimum wall plate width is 3½ inches.
- Calculations assume a bearing stress of 480 psi.

	Roof Total Load		30 PSF			40 PSF			50 PSF		
	Joist Spacing		16″ o.c.	19.2″ o.c.	24″ o.c.	16″ o.c.	19.2″ o.c.	24″ o.c.	16″ o.c.	19.2″ o.c.	24″ o.c.
16″ TJI®/25 DF	Roof Truss Span w/24″ Soffit Assumed	26′	0	0	0	0	0	K	0	K	1
		28′	0	0	0	0	0	1	0	1	1
		30′	0	0	K	0	K	1	K	1	1
		32′	0	0	K	0	K	1	K	1	1
		34′	0	0	K	0	K	1	K	1	1
		36′	0	0	K	0	1	1	1	1	1
		38′	0	0	1	K	1	1	1	1	1
		40′	0	K	1	K	1	1	1	1	1
		42′	0	K	1	K	1	1	1	1	1
16″ TJI®/35 DF	Roof Truss Span w/24″ Soffit Assumed	26′	0	0	0	0	0	0	0	0	1
		28′	0	0	0	0	0	K	0	K	1
		30′	0	0	0	0	0	K	0	K	1
		32′	0	0	0	0	0	1	0	K	1
		34′	0	0	0	0	0	1	0	1	1
		36′	0	0	0	0	K	1	K	1	1
		38′	0	0	K	0	K	1	K	1	1
		40′	0	0	K	0	K	1	K	1	1
		42′	0	0	K	0	K	1	1	1	1
16″ TJI®/55 DF	Roof Truss Span w/24″ Soffit Assumed	26′	0	0	0	0	0	0	0	0	0
		28′	0	0	0	0	0	0	0	0	0
		30′	0	0	0	0	0	0	0	0	0
		32′	0	0	0	0	0	0	0	0	0
		34′	0	0	0	0	0	0	0	0	0
		36′	0	0	0	0	0	0	0	0	0
		38′	0	0	0	0	0	0	0	0	0
		40′	0	0	0	0	0	0	0	0	1
		42′	0	0	0	0	0	0	0	0	1

TJI® JOIST RESIDENTIAL ROOF FRAMING & SPAN CHART



One 8d (or 10d or 12d box) nail each side of TJI joist at bearing, 1-1/2" minimum from end to avoid splitting. Supplemental connections to the bearing plate may be required for slopes exceeding 4" per foot to resist sliding forces (typical).

WARNING
Unbraced joists are unstable. See complete warning on page 4.

RESIDENTIAL ROOF SPAN CHART

Low Slope: 6"/12" or less.
High Slope: Over 6"/12" through 12"/12."

				DESIGN LIVE LOAD (LL) AND DEAD LOAD (DL) IN PSF													
				NON-SNOW (125%)				SNOW LOAD AREA (115%)									
O.C. SPACING	DEPTH	SERIES	SLOPE	16 LL 15 DL	16 LL 20 DL	20 LL 15 DL	20 LL 20 DL	20 LL 15 DL	20 LL 20 DL	25 LL 15 DL	25 LL 20 DL	30 LL 15 DL	30 LL 20 DL	40 LL 15 DL	40 LL 20 DL	50 LL 15 DL	50 LL 20 DL
16" o.c.	9 1/2"	TJI®/15 DF	LOW	N.A.	N.A.	20'-2"	19'-2"	20'-2"	19'-2"	19'-4"	18'-6"	18'-7"	17'-10"	17'-4"	16'-10"	16'-5"	15'-11"
			HIGH	18'-7"	17'-7"	18'-0"	17'-0"	18'-0"	17'-0"	17'-3"	16'-6"	16'-8"	16'-0"	15'-8"	15'-1"	14'-11"	14'-5"
		TJI®/25 DF	LOW	N.A.	N.A.	21'-2"	20'-2"	21'-2"	20'-2"	20'-3"	19'-5"	19'-6"	18'-9"	18'-2"	17'-7"	17'-2"	16'-9"
			HIGH	19'-6"	18'-5"	18'-10"	17'-10"	18'-10"	17'-10"	18'-2"	17'-3"	17'-6"	16'-9"	16'-6"	15'-10"	15'-7"	15'-1"
	11 7/8"	TJI®/15 DF	LOW	N.A.	N.A.	24'-4"	23'-2"	24'-4"	23'-2"	23'-3"	22'-3"	22'-4"	21'-6"	20'-11"	20'-3"	19'-9"	19'-1"
			HIGH	22'-5"	21'-2"	21'-8"	20'-6"	21'-8"	20'-6"	20'-10"	19'-10"	20'-1"	19'-3"	18'-11"	18'-3"	17'-11"	17'-4"
		TJI®/25 DF	LOW	N.A.	N.A.	25'-5"	24'-3"	25'-5"	24'-3"	24'-4"	23'-4"	23'-5"	22'-6"	21'-11"	21'-2"	20'-8"	20'-1"
			HIGH	23'-6"	22'-2"	22'-8"	21'-6"	22'-8"	21'-6"	21'-10"	20'-9"	21'-1"	20'-2"	19'-10"	19'-1"	18'-10"	18'-2"
		TJI®/35 DF	LOW	N.A.	N.A.	27'-8"	26'-4"	27'-8"	26'-4"	26'-5"	25'-4"	25'-5"	24'-6"	23'-9"	23'-0"	22'-6"	21'-10"
			HIGH	25'-7"	24'-1"	24'-8"	23'-4"	24'-8"	23'-4"	23'-9"	22'-7"	22'-11"	21'-11"	21'-6"	20'-9"	20'-5"	19'-9"
		TJI®/55 DF	LOW	N.A.	N.A.	31'-8"	30'-2"	31'-8"	30'-2"	30'-3"	29'-0"	29'-1"	28'-0"	27'-3"	26'-4"	25'-9"	25'-0"
			HIGH	29'-3"	27'-7"	28'-3"	26'-9"	28'-3"	26'-9"	27'-2"	25'-10"	26'-2"	25'-1"	24'-8"	23'-9"	23'-5"	22'-8"
	14"	TJI®/25 DF	LOW	N.A.	N.A.	29'-1"	27'-9"	29'-1"	27'-9"	27'-10"	26'-8"	26'-9"	25'-9"	25'-1"	24'-3"	23'-8"	22'-3"
			HIGH	26'-10"	25'-4"	25'-11"	24'-7"	25'-11"	24'-7"	24'-11"	23'-9"	24'-1"	23'-1"	22'-8"	21'-10"	21'-6"	20'-10"
		TJI®/35 DF	LOW	N.A.	N.A.	31'-7"	30'-1"	31'-7"	30'-1"	30'-2"	28'-11"	29'-0"	27'-11"	27'-2"	26'-3"	25'-8"	24'-11"
			HIGH	29'-2"	27'-6"	28'-2"	26'-8"	28'-2"	26'-8"	27'-1"	25'-9"	26'-2"	25'-0"	24'-7"	23'-8"	23'-4"	22'-7"
		TJI®/55 DF	LOW	N.A.	N.A.	36'-0"	34'-4"	36'-0"	34'-4"	34'-6"	33'-0"	33'-2"	31'-11"	31'-0"	30'-0"	29'-4"	28'-6"
			HIGH	33'-4"	31'-5"	32'-2"	30'-6"	32'-2"	30'-6"	30'-11"	29'-5"	29'-10"	28'-7"	28'-1"	27'-0"	26'-8"	25'-10"
	16"	TJI®/25 DF	LOW	N.A.	N.A.	32'-5"	30'-11"	32'-5"	30'-11"	31'-0"	29'-9"	29'-10"	28'-9"	27'-11"	25'-10"	24'-1"	22'-3"
			HIGH	29'-11"	28'-3"	28'-11"	27'-5"	28'-11"	27'-5"	27'-10"	26'-6"	26'-10"	25'-8"	25'-3"	24'-4"	23'-10"	21'-8"
		TJI®/35 DF	LOW	N.A.	N.A.	35'-1"	33'-5"	35'-1"	33'-5"	33'-7"	32'-2"	32'-3"	31'-1"	30'-2"	28'-11"	27'-0"	24'-11"
			HIGH	32'-5"	30'-6"	31'-4"	29'-8"	31'-4"	29'-8"	30'-1"	28'-8"	29'-1"	27'-10"	27'-4"	26'-4"	25'-3"	23'-0"
		TJI®/55 DF	LOW	N.A.	N.A.	40'-0"	38'-1"	40'-0"	38'-1"	38'-4"	36'-8"	36'-10"	35'-5"	34'-5"	33'-4"	32'-7"	31'-8"
			HIGH	37'-0"	34'-10"	35'-8"	33'-10"	35'-8"	33'-10"	34'-4"	32'-8"	33'-2"	31'-8"	31'-2"	30'-0"	29'-7"	28'-8"

See page 11 for applicable notes.

RESIDENTIAL ROOF SPAN CHART

Low Slope: 6"/12" or less.
High Slope: Over 6"/12" through 12"/12."

O.C. SPACING	DEPTH	SERIES	SLOPE	DESIGN LIVE LOAD (LL) AND DEAD LOAD (DL) IN PSF													
				NON-SNOW (125%)				SNOW LOAD AREA (115%)									
				16 LL 15 DL	16 LL 20 DL	20 LL 15 DL	20 LL 20 DL	20 LL 15 DL	20 LL 20 DL	25 LL 15 DL	25 LL 20 DL	30 LL 15 DL	30 LL 20 DL	40 LL 15 DL	40 LL 20 DL	50 LL 15 DL	50 LL 20 DL
19.2" o.c.	9½"	TJI®/15 DF	LOW	N.A.	N.A.	18'-11"	18'-0"	18'-11"	18'-0"	18'-1"	17'-4"	17'-5"	16'-9"	16'-3"	15'-9"	15'-5"	14'-11"
			HIGH	17'-6"	16'-6"	16'-11"	16'-0"	16'-11"	16'-0"	16'-3"	15'-6"	15'-8"	15'-0"	14'-9"	14'-2"	14'-0"	13'-6"
		TJI®/25 DF	LOW	N.A.	N.A.	19'-10"	18'-11"	19'-10"	18'-11"	19'-0"	18'-2"	18'-3"	17'-7"	17'-1"	16'-6"	16'-2"	15'-8"
			HIGH	18'-4"	17'-3"	17'-9"	16'-9"	17'-9"	16'-9"	17'-0"	16'-3"	16'-5"	15'-9"	15'-5"	14'-11"	14'-8"	14'-2"
	11⅞"	TJI®/15 DF	LOW	N.A.	N.A.	22'-10"	21'-9"	22'-10"	21'-9"	21'-10"	20'-11"	21'-0"	20'-2"	19'-8"	18'-9"	18'-1"	16'-9"
			HIGH	21'-1"	19'-10"	20'-4"	19'-3"	20'-4"	19'-3"	19'-7"	18'-8"	18'-11"	18'-1"	17'-9"	17'-1"	16'-10"	16'-4"
		TJI®/25 DF	LOW	N.A.	N.A.	23'-11"	22'-9"	23'-11"	22'-9"	22'-10"	21'-11"	22'-0"	21'-2"	20'-7"	19'-11"	19'-5"	18'-6"
			HIGH	22'-1"	20'-10"	21'-4"	20'-2"	21'-4"	20'-2"	20'-6"	19'-6"	19'-9"	18'-11"	18'-7"	17'-11"	17'-8"	17'-1"
		TJI®/35 DF	LOW	N.A.	N.A.	25'-11"	24'-9"	25'-11"	24'-9"	24'-10"	23'-9"	23'-11"	23'-0"	22'-4"	21'-7"	21'-1"	20'-6"
			HIGH	24'-0"	22'-7"	23'-2"	21'-11"	23'-2"	21'-11"	22'-3"	21'-2"	21'-6"	20'-7"	20'-3"	19'-6"	19'-2"	18'-7"
		TJI®/55 DF	LOW	N.A.	N.A.	29'-9"	28'-4"	29'-9"	28'-4"	28'-5"	27'-3"	27'-4"	26'-3"	25'-7"	24'-9"	24'-2"	23'-6"
			HIGH	27'-6"	25'-10"	26'-6"	25'-1"	26'-6"	25'-1"	25'-6"	24'-3"	24'-7"	23'-6"	23'-2"	22'-3"	22'-0"	21'-3"
	14"	TJI®/25 DF	LOW	N.A.	N.A.	27'-4"	26'-0"	27'-4"	26'-0"	26'-2"	25'-0"	25'-2"	24'-2"	23'-2"	21'-6"	20'-1"	18'-6"
			HIGH	25'-3"	23'-9"	24'-5"	23'-1"	24'-5"	23'-1"	23'-5"	22'-4"	22'-8"	21'-8"	21'-3"	20'-6"	19'-10"	18'-0"
		TJI®/35 DF	LOW	N.A.	N.A.	29'-7"	28'-2"	29'-7"	28'-2"	28'-4"	27'-2"	27'-3"	26'-2"	25'-6"	24'-1"	22'-6"	20'-9"
			HIGH	27'-5"	25'-10"	26'-5"	25'-0"	26'-5"	25'-0"	25'-5"	24'-2"	24'-6"	23'-6"	23'-1"	22'-0"	21'-1"	19'-2"
		TJI®/55 DF	LOW	N.A.	N.A.	33'-10"	32'-3"	33'-10"	32'-3"	32'-5"	31'-0"	31'-2"	29'-11"	29'-1"	28'-2"	27'-6"	26'-9"
			HIGH	31'-3"	29'-6"	30'-3"	28'-7"	30'-3"	28'-7"	29'-1"	27'-8"	28'-0"	26'-10"	26'-4"	25'-5"	25'-0"	24'-3"
	16"	TJI®/25 DF	LOW	N.A.	N.A.	30'-6"	29'-0"	30'-6"	29'-0"	29'-2"	27'-11"	28'-0"	25'-8"	23'-8"	21'-6"	20'-1"	18'-6"
			HIGH	28'-2"	26'-6"	27'-2"	25'-9"	27'-2"	25'-9"	26'-2"	24'-11"	25'-3"	24'-2"	23'-1"	20'-8"	19'-10"	18'-0"
		TJI®/35 DF	LOW	N.A.	N.A.	32'-11"	31'-4"	32'-11"	31'-4"	31'-6"	30'-2"	30'-4"	28'-8"	26'-5"	24'-1"	22'-6"	20'-9"
			HIGH	30'-5"	28'-8"	29'-5"	27'-10"	29'-5"	27'-10"	28'-3"	26'-11"	27'-3"	25'-9"	24'-6"	22'-0"	21'-1"	19'-2"
		TJI®/55 DF	LOW	N.A.	N.A.	37'-7"	35'-10"	37'-7"	35'-10"	36'-0"	34'-5"	34'-7"	33'-3"	32'-4"	31'-4"	30'-0"	27'-8"
			HIGH	34'-9"	32'-9"	33'-7"	31'-9"	33'-7"	31'-9"	32'-3"	30'-9"	31'-2"	29'-9"	29'-3"	28'-2"	27'-9"	25'-7"
24" o.c.	9½"	TJI®/15 DF	LOW	N.A.	N.A.	17'-6"	16'-8"	17'-6"	16'-8"	16'-9"	16'-1"	16'-1"	15'-6"	15'-1"	14'-6"	14'-0"	13'-4"
			HIGH	16'-2"	15'-3"	15'-8"	14'-10"	15'-8"	14'-10"	15'-0"	14'-4"	14'-6"	13'-10"	13'-8"	13'-2"	12'-11"	12'-6"
		TJI®/25 DF	LOW	N.A.	N.A.	18'-5"	17'-6"	18'-5"	17'-6"	17'-7"	16'-10"	16'-11"	16'-3"	15'-9"	15'-3"	14'-11"	14'-6"
			HIGH	17'-0"	16'-0"	16'-5"	15'-6"	16'-5"	15'-6"	15'-9"	15'-0"	15'-3"	14'-7"	14'-4"	13'-9"	13'-7"	13'-1"
	11⅞"	TJI®/15 DF	LOW	N.A.	N.A.	21'-1"	20'-1"	21'-1"	20'-1"	20'-2"	19'-3"	19'-4"	18'-3"	17'-1"	15'-6"	14'-6"	13'-4"
			HIGH	19'-6"	18'-5"	18'-10"	17'-10"	18'-10"	17'-10"	18'-1"	17'-3"	17'-6"	16'-9"	16'-5"	15'-8"	15'-0"	13'-8"
		TJI®/25 DF	LOW	N.A.	N.A.	22'-1"	21'-1"	22'-1"	21'-1"	21'-2"	20'-3"	20'-4"	19'-7"	18'-11"	17'-2"	16'-0"	14'-9"
			HIGH	20'-5"	19'-3"	19'-9"	18'-8"	19'-9"	18'-8"	19'-0"	18'-1"	18'-4"	17'-6"	17'-3"	16'-6"	15'-10"	14'-5"
		TJI®/35 DF	LOW	N.A.	N.A.	24'-0"	22'-10"	24'-0"	22'-10"	23'-0"	22'-0"	22'-1"	21'-3"	20'-8"	19'-3"	17'-11"	16'-6"
			HIGH	22'-3"	20'-11"	21'-5"	20'-4"	21'-5"	20'-4"	20'-7"	19'-8"	19'-11"	19'-0"	18'-8"	17'-6"	16'-10"	15'-3"
		TJI®/55 DF	LOW	N.A.	N.A.	27'-6"	26'-2"	27'-6"	26'-2"	26'-4"	25'-2"	25'-4"	24'-4"	23'-8"	22'-10"	22'-4"	21'-8"
			HIGH	25'-5"	24'-0"	24'-7"	23'-3"	24'-7"	23'-3"	23'-7"	22'-6"	22'-9"	21'-9"	21'-5"	20'-7"	20'-4"	19'-8"
	14"	TJI®/25 DF	LOW	N.A.	N.A.	25'-4"	24'-1"	25'-4"	24'-1"	24'-2"	22'-8"	22'-11"	20'-6"	18'-11"	17'-2"	16'-0"	14'-9"
			HIGH	23'-5"	22'-0"	22'-7"	21'-5"	22'-7"	21'-5"	21'-8"	20'-8"	20'-11"	19'-5"	18'-5"	16'-6"	15'-10"	14'-5"
		TJI®/35 DF	LOW	N.A.	N.A.	27'-5"	26'-1"	27'-5"	26'-1"	26'-3"	25'-1"	25'-3"	22'-11"	21'-1"	19'-3"	17'-11"	16'-6"
			HIGH	25'-4"	23'-11"	24'-6"	23'-2"	24'-6"	23'-2"	23'-6"	22'-5"	22'-9"	20'-7"	19'-7"	17'-6"	16'-10"	15'-3"
		TJI®/55 DF	LOW	N.A.	N.A.	31'-4"	29'-10"	31'-4"	29'-10"	30'-0"	28'-8"	28'-10"	27'-9"	26'-11"	25'-8"	24'-0"	22'-1"
			HIGH	29'-0"	27'-4"	28'-0"	26'-6"	28'-0"	26'-6"	26'-11"	25'-7"	26'-0"	24'-10"	24'-5"	23'-5"	22'-6"	20'-5"
	16"	TJI®/25 DF	LOW	N.A.	N.A.	28'-2"	26'-10"	28'-2"	25'-4"	25'-9"	22'-8"	22'-11"	20'-6"	18'-11"	17'-2"	16'-0"	14'-9"
			HIGH	26'-1"	24'-7"	25'-2"	23'-10"	25'-2"	23'-5"	24'-2"	21'-3"	22'-1"	19'-5"	18'-5"	16'-6"	15'-10"	14'-5"
		TJI®/35 DF	LOW	N.A.	N.A.	30'-6"	29'-0"	30'-6"	28'-4"	28'-9"	25'-4"	25'-8"	22'-11"	21'-1"	19'-3"	17'-11"	16'-6"
			HIGH	28'-2"	26'-7"	27'-3"	25'-9"	27'-3"	24'-10"	26'-0"	22'-6"	23'-5"	20'-7"	19'-6"	17'-6"	16'-10"	15'-3"
		TJI®/55 DF	LOW	N.A.	N.A.	34'-10"	33'-2"	34'-10"	33'-2"	33'-4"	31'-10"	32'-0"	30'-7"	28'-3"	25'-8"	24'-0"	22'-1"
			HIGH	32'-2"	30'-4"	31'-1"	29'-5"	31'-1"	29'-5"	29'-10"	28'-5"	28'-10"	27'-6"	26'-2"	23'-5"	22'-6"	20'-5"

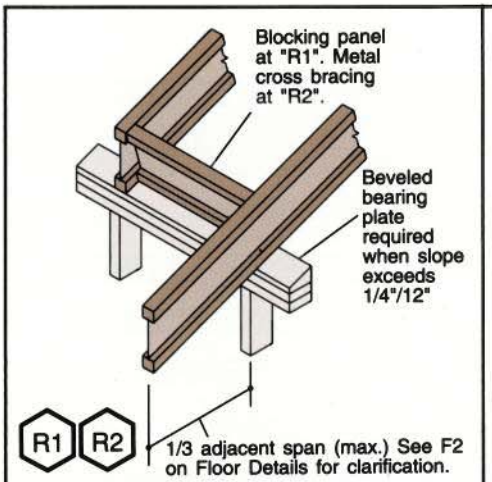
GENERAL NOTES:

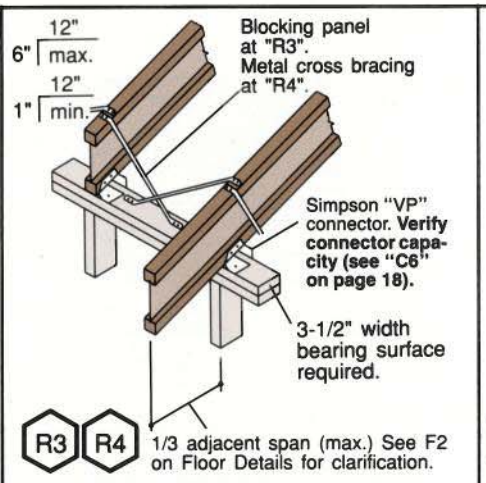
1. Roof surface must be sloped ¼" in 12" minimum to provide positive drainage.
2. Maximum deflection is limited to L/180 at total load, and L/240 at live load.
3. For loads not shown, refer to allowable uniform load tables on page 15.
4. Charts are based on a support beam or wall at the high end. Applications utilizing ridge boards are not covered by these charts.
5. Spans are based on the horizontal clear distance between supports, uniformly loaded joists, and include allowable increases for repetitive use members.
6. Spans shown are based on the most restrictive of simple span or multiple span applications.

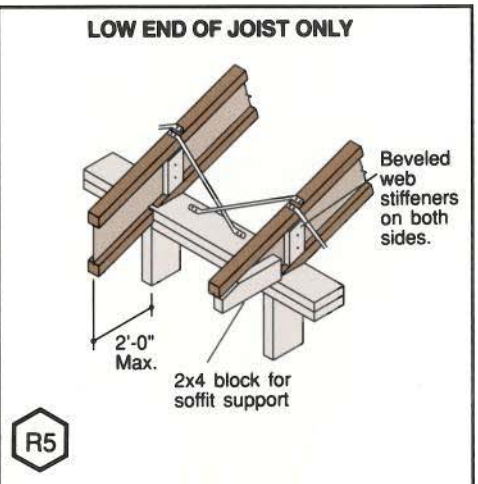
WEB STIFFENER REQUIREMENTS:

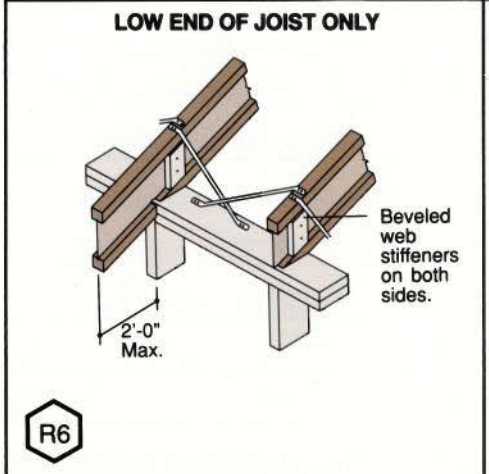
7. **TJI®/15 DF, TJI®/25 DF and TJI®/35 DF joists:** Web stiffeners are required if the sides of the hanger do not laterally support the TJI® joist top flange. Web stiffeners are also required at all sloped hanger locations and all birdsmouth cut locations.
8. **TJI®/55 DF joists:** Web stiffeners are required at all hanger locations and at all birdsmouth cut locations.

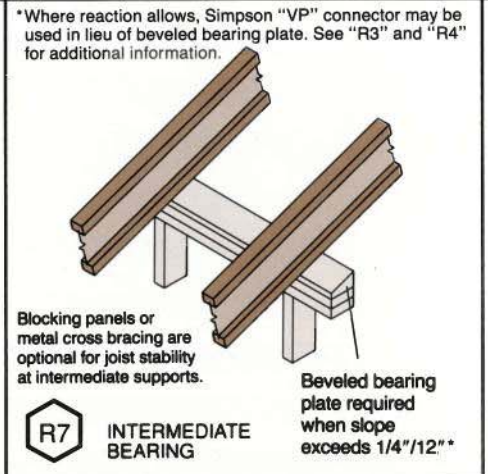
TJI® JOIST RESIDENTIAL ROOF DETAILS

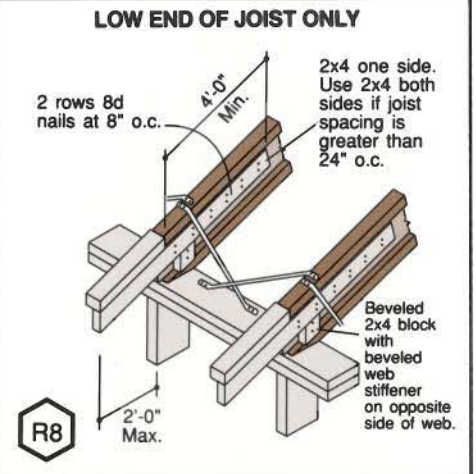


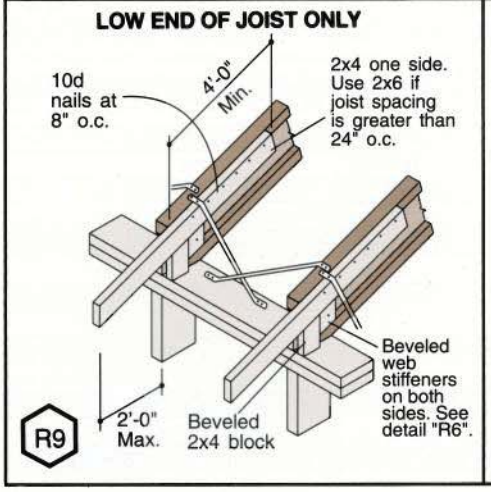


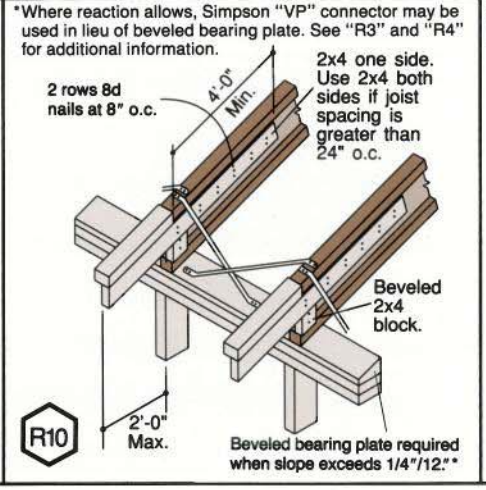


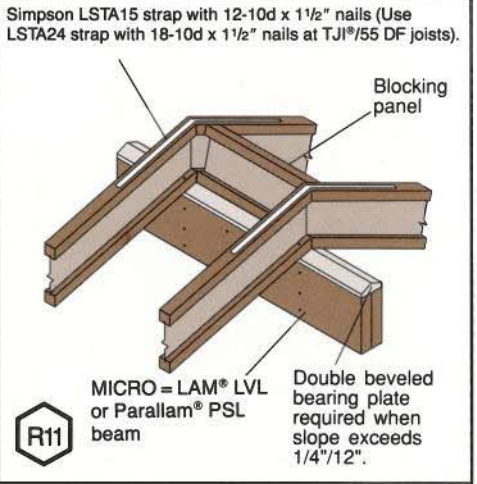












GENERAL NOTES

MINIMUM BEARING LENGTH

- 1¾" minimum bearing is required at joist ends.
- 3½" minimum bearing is required when joists are continuous over the support.

SLOPE/BEVEL PLATE CRITERIA

- Unless otherwise noted, all details are valid to maximum 12"/12" slope.
- A sloped bearing surface is required for all slopes exceeding ¼" per foot for wood bearing surfaces. At the low end of joists a birdsmouth cut may be used without a beveled bearing surface. See detail "R12."
- Slope seats for hangers are required when the roof slope exceeds ½" per foot. Beveled web stiffeners are required at sloped seat hangers. See detail "R13."
- Supplemental connections to the bearing plate may be required for sloped conditions beyond 4" per foot to resist sliding forces.

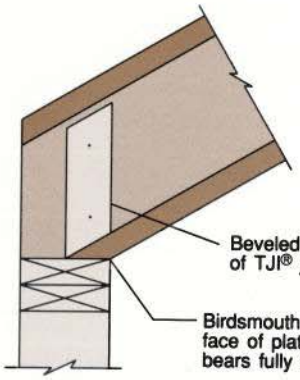
LATERAL SUPPORT TO PREVENT JOIST ROLLOVER

- All roof joists must be laterally supported at cantilever and end bearings to prevent joist rollover. Use TJI® joist blocking panels or metal cross bracing. Attach metal cross bracing with 2-10d x 1½" nails at each end.

WEB STIFFENER REQUIREMENTS

- **TJI®/15 DF, TJI®/25 DF and TJI®/35 DF joists:** Web stiffeners are required if the sides of the hanger do not laterally support the TJI® joist top flange. Web stiffeners are also required at all sloped hanger locations and at all birdsmouth cut locations.
- **TJI®/55 DF joists:** Web stiffeners are required at all hanger locations and at all birdsmouth cut locations.

TJI® JOIST RESIDENTIAL ROOF DETAILS

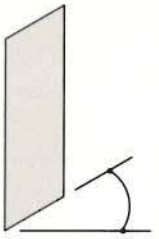


Birdsmouth cut is only allowed on low end of joist.

Beveled web stiffener each side of TJI® joist web. See detail "R13".

Birdsmouth cut must not overhang inside face of plate, so that TJI® joist flange bears fully on plate.

R12 BIRDSMOUTH CUT

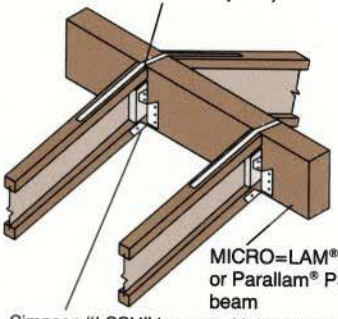


See detail "K" on Floor Details for attachment.

Bevel cut web stiffener to match roof slope.

R13 BEVELED WEB STIFFENER

Simpson LSTA15 strap with 12-10d x 1½" nails may be required with hangers other than "LSSU" when slope exceeds 7"/12" (Use LSTA24 strap with 18-10d x 1½" nails at TJI®/55 DF joists).

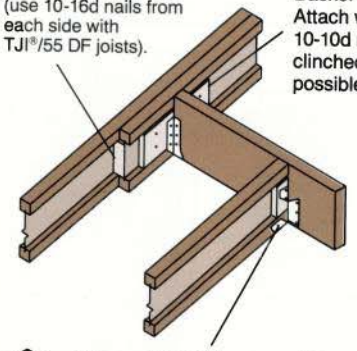


MICRO=LAM® LVL or Parallam® PSL beam

H5 Simpson "LSSU" hanger with beveled web stiffeners. "LSSU" hangers allowed with 9½," 11⅞" and 14" TJI® joists only.

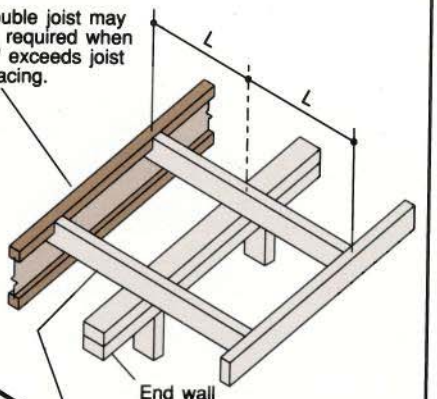
Filler block. Attach with 10-10d nails, clinched (use 10-16d nails from each side with TJI®/55 DF joists).

Backer block. Attach with 10-10d nails, clinched when possible.



H6 Simpson "LSSU" hanger with beveled web stiffeners. "LSSU" hangers allowed with 9½," 11⅞" and 14" TJI® joists only.

Double joist may be required when "L" exceeds joist spacing.

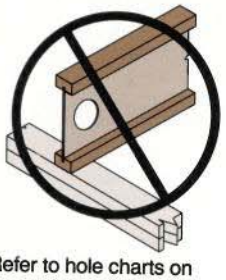


End wall

O 2x_ overhang. Notch around TJI® joist top flange.

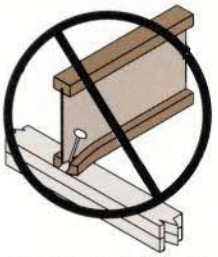
THESE CONDITIONS ARE NOT PERMITTED

DO NOT cut holes too close to supports



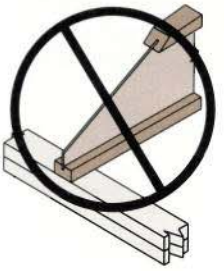
Refer to hole charts on page 17 for minimum distance from bearing wall.

DO NOT split the flange

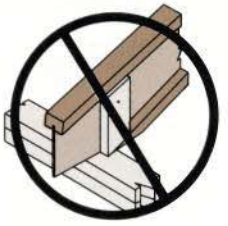


Use 8d nails, 1½" minimum from end of flange. 10d or 12d box nails may also be used.

DO NOT bevel cut joist beyond inside face of wall.



Birdsmouth cut must not overhang inside face of plate.



TJI® joist flange must bear fully on the plate. See detail "R12" above.

FILLER AND BACKER BLOCK SIZES

	9½" or 11⅞" TJI®/15 DF	9½" or 11⅞" TJI®/25 DF	14" or 16" TJI®/25 DF	11⅞" TJI®/35 DF	14" or 16" TJI®/35 DF	11⅞" TJI®/55 DF	14" or 16" TJI®/55 DF
Filler Block (Detail "H6")	1⅛" net	2x6	2x8	2x6 + ½" plywood	2x8 + ½" plywood	2-2x6	2-2x8
Backer Block (Detail "H6")	½" or ⅝"	⅝" or ¾"	⅝" or ¾"	1" net	1" net	2x6	2x8

Filler and backer block length should accomodate required nailing without splitting.

TJI®JOIST ALLOWABLE UNIFORM LOAD – FLOOR

Values shown are in pounds per lineal foot (PLF)

JOIST CLEAR SPAN (Ft.)	TJI®/15 DF				JOIST CLEAR SPAN (Ft.)
	9½" TJI®/15 DF		11⅞" TJI®/15 DF		
	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	
6		247		247	6
8		187		187	8
10	143	150		150	10
12	88	125		125	12
14	57	107	96	107	14
16	39	79	67	94	16
18	28	56	48	84	18
20			36	71	20
22			27	54	22

JOIST CLEAR SPAN (Ft.)	TJI®/25 DF								JOIST CLEAR SPAN (Ft.)
	9½" TJI®/25 DF		11⅞" TJI®/25 DF		14" TJI®/25 DF		16" TJI®/25 DF		
	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	
6		273		273		273		273	6
8		206		206		206		206	8
10	162	166		166		166		166	10
12	100	138		138		138		138	12
14	65	119	109	119		119		119	14
16	45	90	76	104		104		104	16
18	32	65	54	93	80	93		93	18
20	24	48	41	81	59	83	80	83	20
22			31	62	45	76	62	76	22
24			24	48	35	70	48	70	24
26					28	56	39	64	26
28							31	60	28
30							26	51	30

JOIST CLEAR SPAN (Ft.)	TJI®/35 DF						JOIST CLEAR SPAN (Ft.)
	11⅞" TJI®/35 DF		14" TJI®/35 DF		16" TJI®/35 DF		
	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	
6		316		316		316	6
8		239		239		239	8
10		192		192		192	10
12		160		160		160	12
14	135	137		137		137	14
16	95	120		120		120	16
18	68	107	99	107		107	18
20	51	96	74	96		96	20
22	39	78	57	88	77	88	22
24	30	61	44	81	60	81	24
26	24	49	35	71	48	74	26
28			29	57	39	69	28
30					32	64	30
32					27	53	32

JOIST CLEAR SPAN (Ft.)	TJI®/55 DF						JOIST CLEAR SPAN (Ft.)
	11⅞" TJI®/55 DF		14" TJI®/55 DF		16" TJI®/55 DF		
	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	LIVE LOAD L/480	TOTAL LOAD	
6		456*		456*		456*	6
8		344*		344*		344*	8
10		276*		276*		276*	10
12		231*		231*		231*	12
14	192*	198*		198*		198*	14
16	136	173*		173*		173*	16
18	99	154*	141*	154*		154*	18
20	74	139*	107	139*		139*	20
22	57	114*	82	126*	110*	126*	22
24	45	89	65	116*	87	116*	24
26	36	71	52	104*	69	107*	26
28	29	58	42	84	56	99*	28
30			35	69	47	93*	30
32			29	57	39	77*	32
34					33	65	34
36					28	56	36

*Joist reaction exceeds 1200 lbs., web stiffeners are required at hanger locations. Web stiffeners may be required for other conditions, see note 3 below.

NOTES:

1. Load capacity assumes no composite action provided by sheathing.
2. These values reflect the most restrictive of simple span or multiple span applications.
3. Web stiffeners are required if the sides of the hanger do not laterally support the TJI® joist top flange. Web stiffeners are also required at TJI®/55 DF joist hanger locations where joist reactions exceed 1200 pounds.

FLOOR JOIST SIZING:

4. To size a joist for use in a floor, it is necessary to check both live load and total load. When live load is not shown, total load will control.
5. Total Load column limits joist deflection to L/240. Live load column is based on joist deflection of L/480.
6. For live load deflection limits of L/360 (minimum code criteria), multiply value in live load column by 1.33. The resulting live load shall not exceed the total load shown.

PSF TO PLF CONVERSION TABLE

Load in lbs. per lineal foot (PLF)

o.c. spacing	LOAD IN LBS. PER SQUARE FOOT (PSF)								
	20	25	30	35	40	45	50	55	60
12"	20	25	30	35	40	45	50	55	60
16"	27	34	40	47	54	60	67	74	80
19.2"	32	40	48	56	64	72	80	88	96
24"	40	50	60	70	80	90	100	110	120

TJI® JOIST ALLOWABLE UNIFORM LOAD – ROOF

Values shown are in pounds per lineal foot (PLF)

JOIST CLEAR SPAN[6] (Ft.)	TJI®/15 DF					
	9½" TJI®/15 DF			11⅞" TJI®/15 DF		
	TOTAL LOAD		DEFL.	TOTAL LOAD		DEFL.
	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240
6	284	308		284	308	
8	215	233		215	233	
10	172	187		172	187	
12	143	156		143	156	
14	123	133	115	123	133	
16	98	105	79	108	117	
18	75	75	56	96	105	96
20	56	56	42	83	91	71
22	42	42	32	70	72	54
24	33	33	25	56	56	42
26	26	26	20	45	45	34
28				36	36	27
30				29	29	22

JOIST CLEAR SPAN[6] (Ft.)	TJI®/25 DF											
	9½" TJI®/25 DF			11⅞" TJI®/25 DF			14" TJI®/25 DF			16" TJI®/25 DF		
	TOTAL LOAD		DEFL.	TOTAL LOAD		DEFL.	TOTAL LOAD		DEFL.	TOTAL LOAD		DEFL.
	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240
6	313	341		313	341		313	341		313	341	
8	236	257		236	257		236	257		236	257	
10	190	207		190	207		190	207		190	207	
12	158	172		158	172		158	172		158	172	
14	136	148	131	136	148		136	148		136	148	
16	116	120	90	119	130		119	130		119	130	
18	86	86	65	106	116	109	106	116		106	116	
20	64	64	48	95	103	81	95	103		95	103	
22	48	48	36	81	82	62	87	95	91	87	95	
24	38	38	29	64	64	48	80	87	71	80	87	
26	30	30	23	51	51	38	72	75	56	73	80	77
28				41	41	31	61	61	46	68	75	62
30				34	34	26	50	50	38	63	68	51
32				28	28	21	41	41	31	56	56	42
34							35	35	26	47	47	35
36							29	29	22	40	40	30

JOIST CLEAR SPAN[6] (Ft.)	TJI®/35 DF								
	11⅞" TJI®/35 DF			14" TJI®/35 DF			16" TJI®/35 DF		
	TOTAL LOAD		DEFL.	TOTAL LOAD		DEFL.	TOTAL LOAD		DEFL.
	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240
6	363	395		363	395		363	395	
8	274	298		274	298		274	298	
10	220	240		220	240		220	240	
12	183	200		183	200		183	200	
14	157	171		157	171		157	171	
16	137	150		137	150		137	150	
18	123	133		123	133		123	133	
20	110	120	102	110	120		110	120	
22	101	104	78	101	110		101	110	
24	81	81	61	93	101	89	93	101	
26	65	65	49	85	92	71	85	92	
28	52	52	39	76	76	57	79	86	78
30	43	43	32	63	63	47	73	80	64
32	36	36	27	52	52	39	68	71	53
34	30	30	23	44	44	33	59	59	44
36				37	37	28	50	50	38

JOIST CLEAR SPAN[6] (Ft.)	TJI®/55 DF								
	11⅞" TJI®/55 DF			14" TJI®/55 DF			16" TJI®/55 DF		
	TOTAL LOAD		DEFL.	TOTAL LOAD		DEFL.	TOTAL LOAD		DEFL.
	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240
6	524*	570*		524*	570*		524*	570*	
8	395*	430*		395*	430*		395*	430*	
10	317*	345*		317*	345*		317*	345*	
12	265*	288*		265*	288*		265*	288*	
14	227*	247*		227*	247*		227*	247*	
16	198*	216*		198*	216*		198*	216*	
18	177*	192*		177*	192*		177*	192*	
20	159*	173*		159*	173*		159*	173*	
22	144*	152*	114*	144*	157*		144*	157*	
24	119*	119*	89	133*	145*	129*	133*	145*	
26	95*	95*	71	123*	133*	104	123*	133*	
28	77	77	58	112*	112*	84	113*	123*	113*
30	63	63	47	92*	92*	69	106*	116*	93*
32	53	53	40	76*	76*	57	100*	103*	77*
34	44	44	33	64	64	48	87*	87*	65
36	37	37	28	54	54	41	74*	74*	56
38	32	32	24	47	47	35	63	63	47
40	27	27	20	40	40	30	54	54	41

*Joist reaction exceeds 1200 lbs., web stiffeners are required at hanger locations. Web stiffeners may be required for other conditions, see note 3 below.

NOTES:

1. Load capacity assumes no composite action provided by sheathing.
2. These values reflect the most restrictive of simple span or multiple span applications.
3. Web stiffeners are required if the sides of the hanger do not laterally support the TJI® joist top flange. Web stiffeners are also required at all sloped hanger locations; all birdsmouth cut locations; and for TJI®/55 DF joists, at all hanger locations where joist reactions exceed 1200 pounds.

ROOF JOIST SIZING:

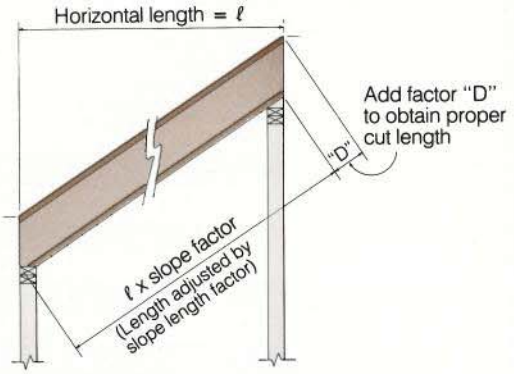
4. Roof surface must be sloped 1/4" in 12" minimum to provide positive drainage.
5. Total Load column limits joist deflection to L/180. For stiffer deflection criteria, check the L/240 column.
   Note: Some codes may require a L/240 live load deflection limit; check the L/240 column at live load. Check your local code for roof deflection criteria.
6. For roof slopes greater than 2"/12," consideration must be given to the increased dead load and deflection caused by actual sloped length. Approximate this effect by multiplying the horizontal clear span by the slope factor from the "Slope Factor Table" on page 16 to determine the joist clear span.

TJI® JOIST SLOPE FACTOR TABLES

SLOPE FACTOR TABLE

SLOPE	FACTOR
2½ in 12	1.022
3 in 12	1.031
3½ in 12	1.042
4 in 12	1.054
4½ in 12	1.068
5 in 12	1.083
6 in 12	1.118
7 in 12	1.158
8 in 12	1.202
9 in 12	1.250
10 in 12	1.302
11 in 12	1.357
12 in 12	1.414

TJI® JOIST CUT LENGTH CALCULATION



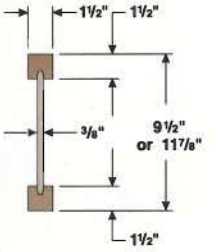
Actual cut length can be approximated by multiplying the horizontal length by the slope factor and adding the "D" factor.

SLOPE	"D" FACTOR			
	9½"	11⅞"	14"	16"
2½ in 12	2"	2½"	3"	3⅜"
3 in 12	2⅜"	3"	3½"	4"
3½ in 12	2⅞"	3½"	4⅛"	4¾"
4 in 12	3¼"	4"	4¾"	5⅜"
4½ in 12	3⅝"	4½"	5¼"	6"
5 in 12	4"	5"	5⅞"	6¾"
6 in 12	4¾"	6"	7"	8"
7 in 12	5⅝"	7"	8¼"	9⅜"
8 in 12	6⅜"	8"	9⅜"	10¾"
9 in 12	7⅛"	9"	10½"	12"
10 in 12	8"	10"	11¾"	13⅜"
11 in 12	8¾"	11"	12⅞"	14¾"
12 in 12	9½"	11⅞"	14"	16"

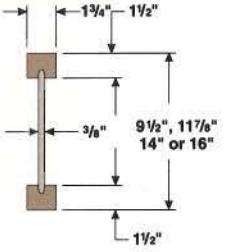
TJI® JOIST DESIGN PROPERTIES (100% Load Duration)

Joist Series	Joist Depth (Inches)	Joist Weight (Lbs./Ft.)	EI x 10⁶ (In² Lbs.)	Max. Vertical Shear (Lbs.)	Max. End Reaction (Lbs.)	Max. Intermediate Reaction (Lbs.)		Maximum Resistive Moment (Ft.-Lbs.)
						No Web Stiffeners	With Web Stiffeners	
TJI®/15 DF	9½	1.9	161	1120	940	1900	1900	2800
	11⅞	2.2	280	1420	940	1900	1900	3715
TJI®/25 DF	9½	2.1	186	1120	990	2100	2310	3290
	11⅞	2.4	322	1420	990	2100	2310	4375
	14	2.6	480	1710	990	2100	2310	5350
	16	2.9	663	1970	990	2100	2310	6270
TJI®/35 DF	11⅞	2.8	414	1420	1050	2430	2640	5820
	14	3.0	613	1710	1050	2430	2640	7120
	16	3.3	841	1970	1050	2430	2640	8350
TJI®/55 DF	11⅞	3.9	619	1750	1400	3680	3980	8925
	14	4.2	912	1935	1400	3680	3980	10920
	16	4.5	1245	2120	1400	3680	3980	12810

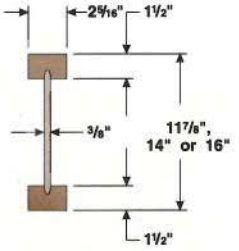
NOTE:
- Design reaction includes all loads on the joist. Design shear is computed at the face of supports including all loads on the span(s). Allowable shear may sometimes be increased at interior supports in accordance with NER-200 and these increases are reflected in span tables.
- The reaction values above are based on an assumed minimum bearing length of 1¾" at ends, 3½" at intermediate supports.



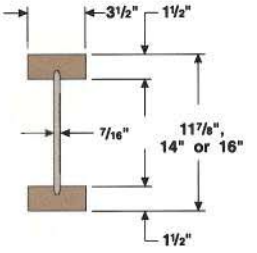
TJI®/15 DF Joists



TJI®/25 DF Joists



TJI®/35 DF Joists



TJI®/55 DF Joists

The following formula approximates the uniform load deflection of Δ (inches):

$$\Delta = \frac{22.5w\ell^4}{EI} + \frac{2.67w\ell^2}{d \times 10^5}$$ **For TJI®/15 DF, TJI®/25 DF and TJI®/35 DF**

$$\Delta = \frac{22.5w\ell^4}{EI} + \frac{2.29w\ell^2}{d \times 10^5}$$ **For TJI®/55 DF**

w = uniform load in pounds per lineal foot
ℓ = clear span in feet
d = out to out depth of the joist in inches
EI = value from table

Legacy Literature
See Note on Front Cover

MATERIAL WEIGHTS

Include TJI® joist weights in dead load calculations – see chart above for joist weights.

Douglas Fir Sheathing*
(Based on 36 pcf for plywood, 40 pcf for OSB)

½" plywood	1.5 psf
⅝" plywood	1.8 psf
¾" plywood	2.3 psf
1⅛" plywood	3.4 psf
½" OSB	1.7 psf
⅝" OSB	2.0 psf
¾" OSB	2.5 psf
1⅛" OSB	3.7 psf

*For Southern Pine weights, increase Douglas Fir weights by 10%.

Roofing Materials

Asphalt shingles	2.5 psf
Wood shingles	2.0 psf
Clay tile	9.0 to 14.0 psf
Slate (⅜" thick)	15 psf

Roll or Batt Insulation

Rock Wool	(1" thick) 0.2 psf
Glass Wool	(1" thick) 0.1 psf

Floors

Hardwood (Nominal 1")	4.0 psf
Concrete (1" thick)	
Regular	12.0 psf
Lightweight	6.0 to 10.0 psf
Sheet vinyl	0.2 psf
Carpet and pad	0.6 psf
¾" ceramic or quarry tile	10.0 psf
Gypsum concrete (¾")	6.5 psf

Ceilings

Acoustical fiber tile	1.0 psf
½" gypsum board	2.2 psf
⅝" gypsum board	2.8 psf
Plaster (1" thick)	8.0 psf

TJI® JOIST HOLE CHARTS – ROUND, SQUARE AND RECTANGULAR HOLES

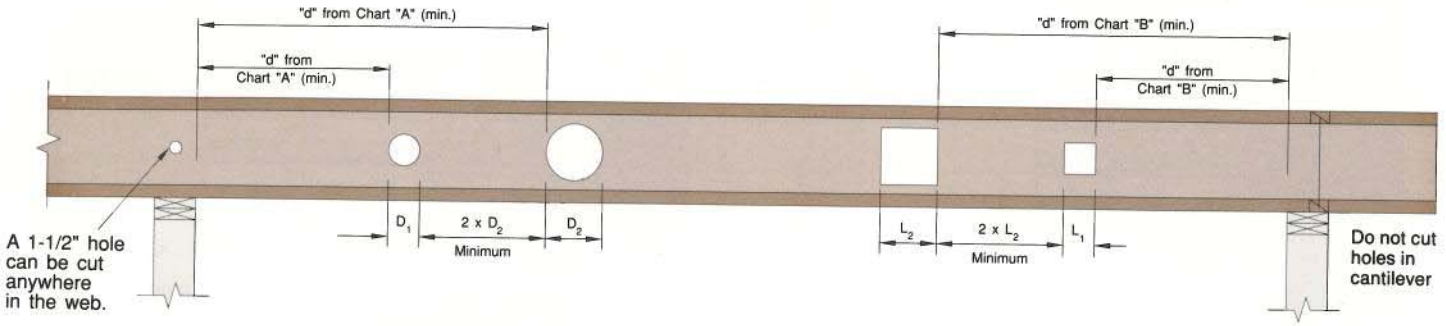


CHART A — ROUND HOLES

MINIMUM DISTANCE (d) FROM INSIDE FACE OF ANY SUPPORT TO NEAREST EDGE OF HOLE

JOIST DEPTH	JOIST SERIES	ROUND HOLE SIZE												
		2"	3"	4"	5"	6"	6¼"	7"	8"	8⅝"	9"	10"	10¾"	12"	12¾"
9½"	TJI®/15 DF	1'-0"	2'-6"	3'-6"	6'-0"	8'-0"	8'-6"	—	—	—	—	—	—	—	—
	TJI®/25 DF	2'-0"	3'-0"	4'-6"	6'-6"	8'-6"	9'-0"	—	—	—	—	—	—	—	—
11⅞"	TJI®/15 DF	1'-0"	1'-0"	1'-0"	2'-0"	4'-0"	4'-0"	6'-6"	8'-0"	9'-6"	—	—	—	—	—
	TJI®/25 DF	1'-0"	1'-0"	2'-0"	3'-6"	5'-0"	5'-0"	7'-6"	9'-0"	10'-0"	—	—	—	—	—
	TJI®/35 DF	1'-0"	2'-0"	3'-6"	5'-0"	6'-6"	7'-0"	8'-0"	9'-6"	10'-6"	—	—	—	—	—
	TJI®/55 DF	3'-0"	4'-6"	5'-6"	7'-0"	8'-0"	8'-6"	9'-6"	10'-6"	11'-6"	—	—	—	—	—
14"	TJI®/25 DF	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"	3'-0"	5'-0"	7'-0"	7'-6"	9'-6"	11'-0"	—	—
	TJI®/35 DF	1'-0"	1'-0"	1'-0"	2'-0"	3'-6"	4'-0"	5'-6"	7'-0"	8'-6"	9'-0"	11'-0"	12'-0"	—	—
	TJI®/55 DF	1'-6"	3'-0"	4'-6"	6'-0"	7'-0"	7'-6"	8'-6"	10'-0"	10'-6"	11'-6"	12'-6"	13'-6"	—	—
16"	TJI®/25 DF	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	1'-6"	1'-6"	2'-6"	3'-0"	6'-0"	7'-6"	10'-6"	12'-0"
	TJI®/35 DF	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	1'-6"	3'-6"	5'-0"	5'-6"	8'-0"	9'-6"	12'-0"	13'-6"
	TJI®/55 DF	1'-0"	1'-0"	2'-6"	4'-0"	5'-6"	6'-0"	7'-0"	8'-6"	9'-6"	10'-0"	11'-6"	12'-6"	14'-6"	15'-6"

CHART B — SQUARE OR RECTANGULAR HOLES

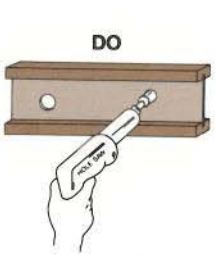
MINIMUM DISTANCE (d) FROM INSIDE FACE OF ANY SUPPORT TO NEAREST EDGE OF HOLE

JOIST DEPTH	JOIST SERIES	SQUARE OR RECTANGULAR HOLE SIZE*													
		2"	3"	4"	5"	6"	6¼"	7"	8"	8⅝"	9"	10"	10¾"	12"	12¾"
9½"	TJI®/15 DF	2'-6"	5'-0"	6'-0"	6'-6"	—	—	—	—	—	—	—	—	—	—
	TJI®/25 DF	3'-0"	5'-6"	6'-6"	7'-0"	—	—	—	—	—	—	—	—	—	—
11⅞"	TJI®/15 DF	1'-0"	2'-0"	4'-0"	6'-0"	7'-0"	7'-0"	8'-0"	9'-0"	—	—	—	—	—	—
	TJI®/25 DF	1'-0"	3'-6"	5'-0"	7'-0"	7'-6"	8'-0"	8'-6"	9'-6"	—	—	—	—	—	—
	TJI®/35 DF	2'-0"	5'-0"	7'-0"	8'-6"	9'-6"	10'-0"	10'-6"	11'-6"	—	—	—	—	—	—
	TJI®/55 DF	4'-6"	7'-0"	8'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	—	—	—	—	—
14"	TJI®/25 DF	1'-0"	1'-0"	2'-0"	5'-0"	7'-0"	7'-0"	8'-0"	9'-0"	9'-6"	10'-0"	11'-0"	12'-0"	—	—
	TJI®/35 DF	1'-0"	2'-0"	4'-0"	7'-0"	9'-0"	9'-6"	10'-0"	11'-0"	12'-0"	12'-6"	13'-6"	14'-0"	—	—
	TJI®/55 DF	3'-0"	6'-0"	7'-6"	10'-0"	11'-6"	11'-6"	12'-0"	13'-0"	13'-6"	13'-6"	14'-6"	15'-0"	—	—
16"	TJI®/25 DF	1'-0"	1'-0"	2'-0"	4'-0"	5'-0"	5'-6"	6'-6"	7'-6"	8'-6"	9'-0"	10'-0"	11'-0"	12'-6"	13'-6"
	TJI®/35 DF	1'-0"	1'-0"	2'-0"	5'-0"	8'-0"	8'-0"	9'-0"	10'-6"	11'-0"	11'-6"	12'-6"	13'-6"	15'-0"	16'-0"
	TJI®/55 DF	1'-0"	4'-0"	6'-0"	8'-6"	11'-6"	12'-0"	12'-6"	13'-6"	14'-0"	14'-0"	15'-0"	16'-0"	17'-0"	17'-6"

***NOTE:** Rectangular holes based on measurement of longest side.

NOTES:

1. If more than one hole is to be cut in the web, the length of the uncut web between holes must be twice the length of the longest dimension of the largest adjacent hole. Holes may be located vertically anywhere within the web.
2. TJI® joists are manufactured with 1½" perforated "knockouts" in the web at approximately 12" on center along the length of the joist.
3. The distances in the hole charts are based on uniformly loaded joists using maximum loads shown for any of the tables listed within this guide. **For other load conditions or hole configurations not included in these charts, contact your Trus Joist MacMillan Representative.**



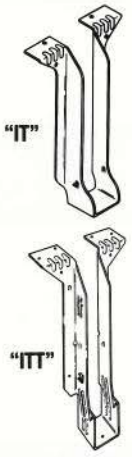
FULL DEPTH RECTANGULAR HOLES ARE ALSO POSSIBLE. CONTACT YOUR TRUS JOIST MACMILLAN REPRESENTATIVE FOR ASSISTANCE.

TJI® JOIST RESIDENTIAL FRAMING CONNECTORS

C1
TOP MOUNT SINGLE JOIST HANGER

DEPTH	JOIST	HANGER
9½"	TJI®/15 DF	IT29.5 or ITT29.5
	TJI®/25 DF	IT9 or ITT9
11⅞"	TJI®/15 DF	IT211.88 or ITT211.88
	TJI®/25 DF	IT11 or ITT11
	TJI®/35 DF	IT3511.88
	TJI®/55 DF	MIT11-2*
14"	TJI®/25 DF	IT14 or ITT14
	TJI®/35 DF	IT3514
	TJI®/55 DF	MIT414*
16"	TJI®/25 DF	IT16 or ITT16
	TJI®/35 DF	IT3516
	TJI®/55 DF	MIT416*

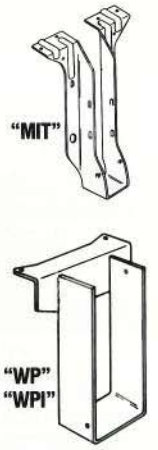
*Requires use of web stiffeners when the joist reaction exceeds 1200 pounds.



C2
TOP MOUNT DOUBLE JOIST HANGER

DEPTH	JOIST	HANGER	MAXIMUM LOAD (LBS.)
9½"	TJI®/15 DF	WP29.5-2	2525
	TJI®/25 DF	MIT9-2	1915
11⅞"	TJI®/15 DF	WP211.88-2	2525
	TJI®/25 DF	MIT11-2	1915
	TJI®/35 DF	WP3511.88-2	2525
	TJI®/55 DF	WPI411.88-2*	2525
14"	TJI®/25 DF	MIT414	2000
	TJI®/35 DF	WP3514-2	2525
	TJI®/55 DF	WPI414-2*	2525
16"	TJI®/25 DF	MIT416	2000
	TJI®/35 DF	WP3516-2	2525
	TJI®/55 DF	WPI416-2*	2525

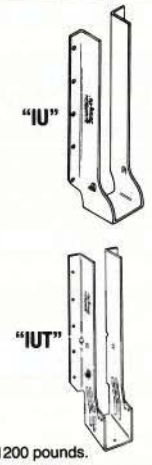
*Requires use of web stiffeners when the joist reaction exceeds 2000 pounds.



C3
FACE MOUNT SINGLE JOIST HANGER

DEPTH	JOIST	HANGER
9½"	TJI®/15 DF	IU29 or IUT29
	TJI®/25 DF	IU9 or IUT9
11⅞"	TJI®/15 DF	IU211 or IUT211
	TJI®/25 DF	IU11 or IUT11
	TJI®/35 DF	IU3512
	TJI®/55 DF	IU412**
14"	TJI®/25 DF	IU14 or IUT14
	TJI®/35 DF	IU3514
	TJI®/55 DF	IU414**
16"	TJI®/25 DF	IU14* or IUT14*
	TJI®/35 DF	IU3514*
	TJI®/55 DF	IU414*

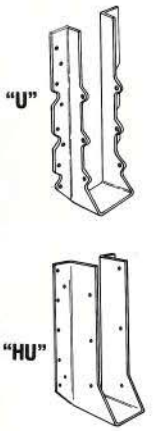
*Requires use of web stiffeners.
**Requires use of web stiffeners when the joist reaction exceeds 1200 pounds.



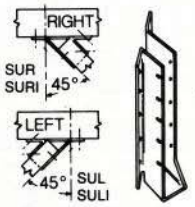
C4
FACE MOUNT DOUBLE JOIST HANGER

DEPTH	JOIST	HANGER	MAXIMUM LOAD (LBS.)
9½"	TJI®/15 DF	U210-2*	1875 (100%) - 2350 (125%)
	TJI®/25 DF	U410*	1875 (100%) - 2350 (125%)
11⅞"	TJI®/15 DF	HU212-2*	2160 (100%) - 2700 (125%)
	TJI®/25 DF	U414*	2145 (100%) - 2690 (125%)
	TJI®/35 DF	U3512-2*	2145 (100%) - 2690 (125%)
	TJI®/55 DF	HU412-2*	2145 (100%) - 2690 (125%)
14"	TJI®/25 DF	U414*	2145 (100%) - 2690 (125%)
	TJI®/35 DF	U3512-2*	2145 (100%) - 2690 (125%)
	TJI®/55 DF	HU414-2*	2680 (100%) - 3360 (125%)
16"	TJI®/25 DF	U414*	2145 (100%) - 2690 (125%)
	TJI®/35 DF	U3512-2*	2145 (100%) - 2690 (125%)
	TJI®/55 DF	HU414-2*	2680 (100%) - 3360 (125%)

*Requires use of web stiffeners.



C5
FACE MOUNT SKEWED 45° JOIST HANGER

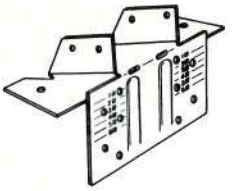


TOP VIEW

JOIST	HANGER
9½" and 11⅞" TJI®/15 DF	SUR210* or SUL210*
9½" and 11⅞" TJI®/25 DF	SURI9* or SULI9*
14" and 16" TJI®/25 DF	SURI11* or SULI11*
11⅞" and 14" TJI®/35 DF	SURI3510-12* or SULI3510-12*
16" TJI®/35 DF	SURI3514-20* or SULI3514-20*
11⅞" TJI®/55 DF	SUR410* or SUL410*
14" and 16" TJI®/55 DF	SUR414* or SUL414*

*Requires use of web stiffeners.

C6
VARIABLE SLOPE SEAT CONNECTOR



NOTE:
- Requires 3½" width bearing surface.
- May be used only on slopes of 1"/12" through 6"/12".

JOIST	CONNECTOR	MAXIMUM LOAD (LBS.)
TJI®/15 DF	VP2	1150
TJI®/25 DF	VPI/25	1085
TJI®/35 DF	VPI/35	1750
TJI®/55 DF	VP4	1850

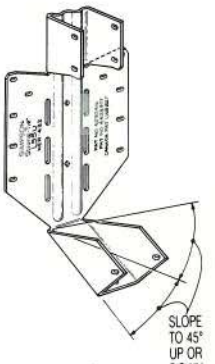
NOTES:

Some hangers shown have less capacity than the capacity of the TJI® joists. For single joist applications beyond those shown in the span charts and all double joist applications, these hangers will need to be checked to assure adequate capacity.

- Hangers can only achieve maximum capacity if all nail holes are filled with the proper nails.
- In some cases, the hangers shown may have greater capacity when used in conjunction with certain supporting member categories or support member criteria.
- Leave 1/16" clearance between end of TJI® joist and support member.
- The hangers listed above are manufactured by Simpson Strong-Tie® Company, Inc. For additional hanger information, please refer to the appropriate Simpson Strong-Tie® Company, Inc. evaluation report.

C7
VARIABLE SLOPE SEAT JOIST HANGER

NOTE:
Hanger can be field adjusted for slopes and skews of up to 45 degrees.

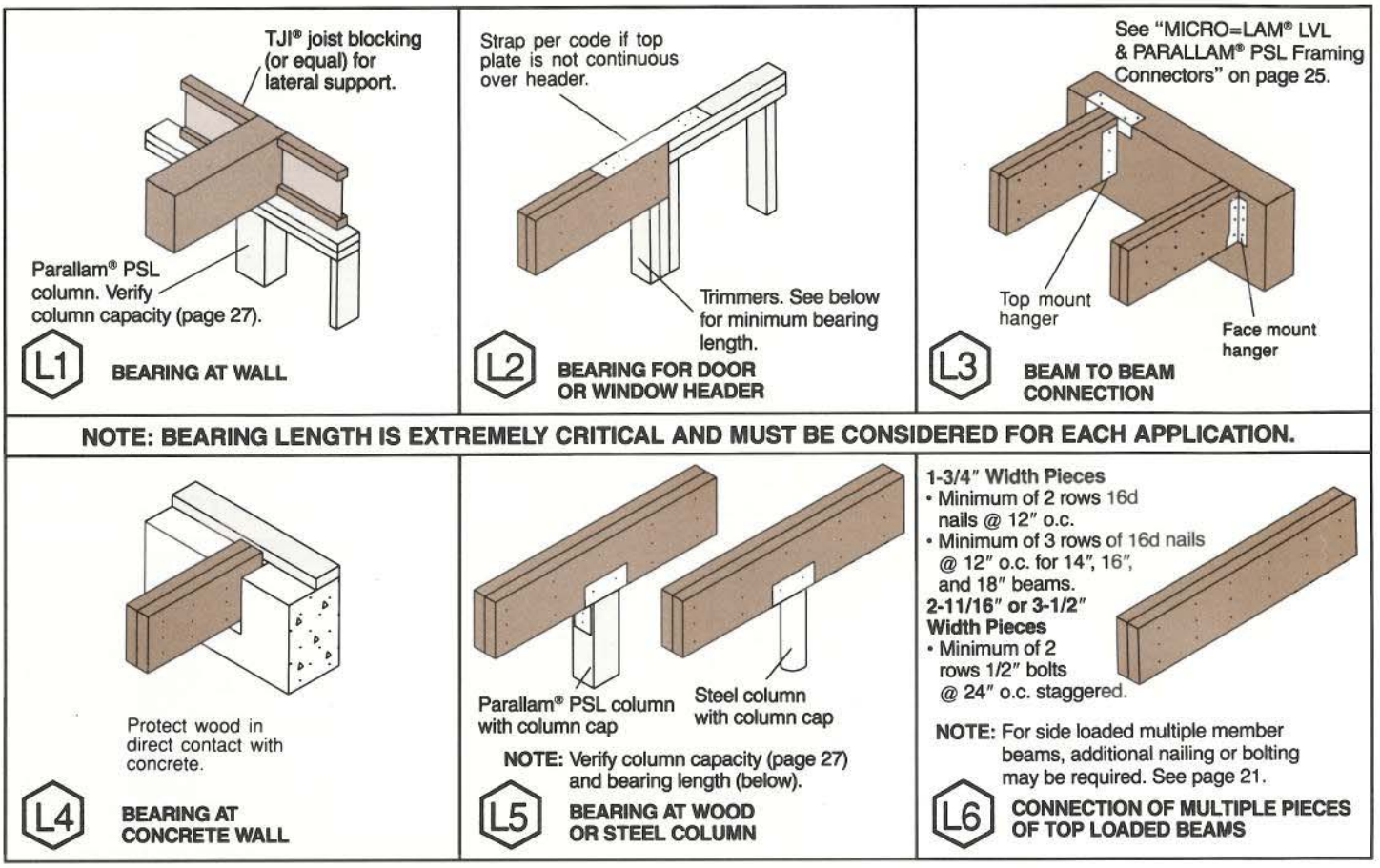


JOIST	HANGER
9½" and 11⅞" TJI®/15 DF	LSSU210*
9½"-14" TJI®/25 DF	LSSUI25*
11⅞" and 14" TJI®/35 DF	LSSUI35*
11⅞" and 14" TJI®/55 DF	LSSU410*

*Requires use of web stiffeners

NOTES:

BEARING DETAILS



BEARING LENGTH REQUIREMENTS

REACTION (POUNDS X 1,000)	BEAM WIDTH				
	1¾"	2 11/16"	3½"	5¼"	7"
1	1.5	1.5	1.5	1.5	1.5
2	1.75	1.5	1.5	1.5	1.5
3	2.5	1.5	1.5	1.5	1.5
4	3.25	2.0	1.75	1.5	1.5
5	4	2.5	2.0	1.5	1.5
6	4.75	3.0	2.5	1.75	1.5
7	5.5	3.5	2.75	2	1.5
8	6.25	4.0	3.25	2.25	1.75
9		4.5	3.5	2.5	1.75
10		5.0	4	2.75	2
11		5.5	4.25	3	2.25
12		6.0	4.75	3.25	2.5
13			5	3.5	2.5
14			5.5	3.75	2.75
15			5.75	4	3
16				4.25	3.25
17				4.5	3.25
18				4.75	3.5
19				5	3.75
20				5.25	4
21				5.5	4
22				5.75	4.25
23					4.5
24					4.75
25					5
26					5
27					5.25
28					5.5
29					5.75

Multiple pieces of MICRO=LAM® LVL or Parallam® PSL can be nailed or bolted together to form a header or beam of the required size, up to a **maximum width of 7 inches.** See detail L6 above and page 21 for connection details.

NOTES:

1. Bearing length should never be less than 1½".
2. Bearing across the full width of the beam is required.
3. Bearing lengths are based on 750 psi bearing stress for Douglas Fir MICRO=LAM® LVL and Parallam® PSL beams, 880 psi bearing stress may be used for Southern Pine MICRO=LAM® LVL and Parallam® PSL beams (bearing stresses cannot be increased for duration of load). Bearing length may need to be increased if support member's allowable bearing stress is less.
4. Beams require lateral support at bearing points.
5. Lateral support of beam compression edge is required at intervals of 24" o.c. or closer.
6. 1¾" x 16" and 1¾" x 18" beams are to be used in multiple member units only.

NAILS INSTALLED ON THE NARROW FACE

Nail Size	Closest o.c. spacing per row	
	MICRO=LAM® LVL	Parallam® PSL
8d common	3"	3"
10d or 12d common	4"	4"
16d common	8"	5"

If more than one row of nails is used the rows must be offset at least ½ inch.

SIDE-LOADED CONNECTION FOR MULTIPLE MEMBER BEAMS

ASSEMBLY "A"
2 pcs. 1¾"

ASSEMBLY "B"
3 pcs. 1¾"

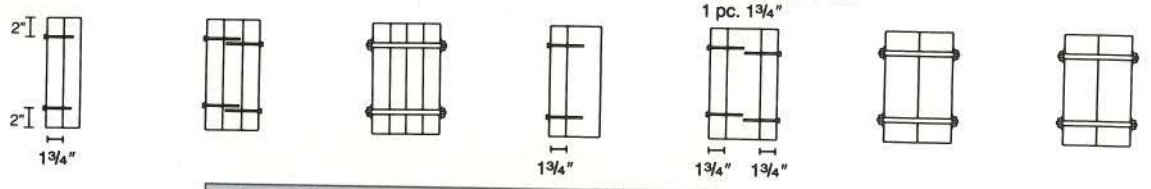
ASSEMBLY "C"
4 pcs. 1¾"

ASSEMBLY "D"
1 pc. 1¾"
1 pc. 3½" or 2 11/16"

ASSEMBLY "E"
1 pc. 1¾"
1 pc. 3½" or 2 11/16"
1 pc. 1¾"

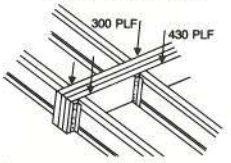
ASSEMBLY "F"
2 pcs. 2 11/16"

ASSEMBLY "G"
2 pcs. 3½"



Multiple Assembly (see pictures)	Maximum Uniform Load applied to either outside member (lbs. per lin. ft.)			
	Nailed Connection[3]		Through Bolted Connection[4]	
	2 rows 16d common wire at 12" o.c.	3 rows 16d common wire at 12" o.c.	2 rows ½" bolts at 24" o.c.	2 rows ½" bolts at 12" o.c.
A	420	630	580	1160
B[5]	320	480	440	880
C[6]	NOT APPLICABLE		390	780
D	305	460	425	850
E[5][6]	275	415	380	760
F	NOT APPLICABLE		880	1760
G[6]	NOT APPLICABLE		1120	2240

EXAMPLE PROBLEM



SOLUTION: First, check allowable load tables to verify that 3 pcs. can carry the total load of 730 plf with proper live load deflection criteria. Maximum load applied to **either** outside member is 430 plf. For a 3 pc. 1-3/4" multiple assembly, 2 rows 16d nails at 12" o.c. is good for only 320 plf. Therefore, use 3 rows 16d nails at 12" o.c. (good for 480 plf). Alternate: 2 rows 1/2" bolts at 24" o.c.

NOTES:

1. Verify adequacy of beam in uniform load tables, pages 22 and 23.
2. Values listed are for 100% stress level. Increase 15% for snow loaded roof conditions or 25% for non-snow roof conditions, where code allows.
3. "Nailed connection" values may be doubled for 6" o.c. or tripled for 4" o.c. nail spacing.
4. Bolts are to be material conforming to ASTM standard A307 (machine bolts). Bolt holes are to be the same diameter as the bolt, and located 2" from the top and bottom of the member. Washers should be used under head and nut.
5. For a three-piece member, the nailing specified is from each side.
6. 7"-wide beams should only be side-loaded when loads are applied to both sides of the members (to minimize rotation).
7. Beams wider than 7" require special consideration by the design professional.

FLOOR BEAM SIZING TABLE

GENERAL NOTES:

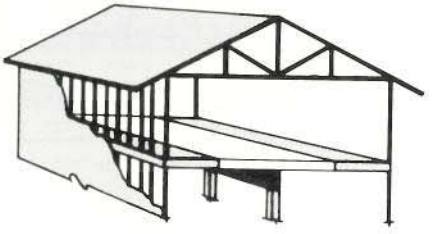
1. Table may be used to size 2.0E SP MICRO=LAM® LVL or 2.0E SP Parallam® PSL beams.
2. Table assumes a residential floor loading of 40 psf live load and 12 psf dead load with beam deflection limited to L/360 at live load. For other loading conditions refer to allowable uniform load tables on page 22 or contact your Trus Joist MacMillan representative for assistance.
3. Table assumes a continuous floor joist span and a simple or continuous beam span.
4. Reduction in live load has been applied in accordance with UBC 2306, NBC 1115.1, SBC 1203.2 and BOCA 1115.
5. Support beam ends with double trimmers (3" bearing). At intermediate supports of continuous spans use 5 trimmers (7.5" bearing). In gray shaded portion of table, use 3 trimmers (4.5" bearing) at beam ends and 7 trimmers (10.5" bearing) at intermediate supports of continuous spans. See page 27 for information on Parallam® PSL columns and posts.
6. Beam widths of 3½" and 5¼" may be one piece or multiple pieces as shown in the following chart:

BEAM DEPTH	BEAM WIDTH	
	3½"	5¼"
5½" & 7¼"	Two 1¾"	Three 1¾"
9¼"-18"	One 3½" or Two 1¾"	One 5¼" or Three 1¾" or One 3½" & One 1¾"

Multiple member beams must be properly connected together. See above and page 20 for connection details.

Column Spacing	FLOOR JOIST SPAN Use 1/2 the sum of the joist spans on both sides of the beam.								
	11'	12'	13'	14'	15'	16'	17'	18'	20'
10'	3½" x 9½"	3½" x 9½"	3½" x 9½"	5¼" x 9½" 3½" x 11⅞"	5¼" x 9½" 3½" x 11⅞"	5¼" x 9½" 3½" x 11⅞"	5¼" x 9½" 3½" x 11⅞"	5¼" x 9½" 3½" x 11⅞"	5¼" x 9½" 3½" x 11⅞"
12'	5¼" x 9½" 3½" x 11⅞"	5¼" x 9½" 3½" x 11⅞"	3½" x 11⅞"	3½" x 11⅞"	3½" x 11⅞"	5¼" x 11⅞" 3½" x 14"	5¼" x 11⅞" 3½" x 14"	5¼" x 11⅞" 3½" x 14"	5¼" x 11⅞" 3½" x 14"
14'	5¼" x 11⅞" 3½" x 14"	5¼" x 11⅞" 3½" x 14"	5¼" x 11⅞" 3½" x 14"	5¼" x 11⅞" 3½" x 14"	5¼" x 11⅞" 3½" x 14"	3½" x 14"	5¼" x 14" 3½" x 16"	5¼" x 14" 3½" x 16"	5¼" x 14" 3½" x 16"
16'	5¼" x 14" 3½" x 16"	5¼" x 14" 3½" x 16"	5¼" x 14" 3½" x 16"	5¼" x 14" 3½" x 16"	5¼" x 14" 3½" x 16"	5¼" x 14" 3½" x 16"	5¼" x 14" 3½" x 16"	5¼" x 14" 3½" x 18"	5¼" x 16" 3½" x 18"
18'	5¼" x 14" 3½" x 16"	5¼" x 14" 3½" x 18"	5¼" x 16" 3½" x 18"	5¼" x 16" 3½" x 18"	5¼" x 16" 3½" x 18"	5¼" x 16" 3½" x 18"	5¼" x 16" 3½" x 18"	5¼" x 16" 3½" x 18"	5¼" x 16"
20'	5¼" x 16" 3½" x 18"	5¼" x 16" 3½" x 18"	5¼" x 16"	5¼" x 18"	5¼" x 18"	5¼" x 18"	5¼" x 18"	5¼" x 18"	5¼" x 18"

Legacy Literature
See Note on Front Cover



Non-shaded portion indicates area of load on beam.

ALLOWABLE UNIFORM APPLIED LOAD – FLOOR (PLF)

GENERAL NOTES:

1. Values shown are the maximum uniform loads, in pounds per lineal foot (plf), that can be applied to the beam in addition to its own weight.
2. Tables are based on uniform loads and the most restrictive of simple or continuous span. Gray shaded areas represent load conditions controlled by a continuous span condition.
3. MICRO = LAM® LVL and Parallam® PSL beams are made without camber; therefore, in addition to complying with the deflection limits of the applicable Building Code, other deflection considerations, such as long term deflection under sustained loads (including creep) and aesthetics, must be evaluated.
4. Lateral support of beam compression edge is required at intervals of 24″ o.c. or closer.
5. Lateral support of beams is required at bearing points.
6. Bearing area to be calculated for specific application; see table on page 20.

FLOOR BEAM SIZING:

- To size a beam for use in a floor it is necessary to check both live load and total load. Make sure the selected beam will work in both columns. When no live load is shown, total load will control.
- Total load column limits deflection to L/240. Live load column is based on deflection of L/360. Check local code for other deflection criteria.
- For deflection limits of L/240 and L/480 multiply loads shown in live load column by 1.5 and 0.75 respectively. The resulting live load shall not exceed the total load shown.

1¾″ 2.0E SP MICRO=LAM® LVL

	One 1¾″ x 5½″		One 1¾″ x 7¼″		One 1¾″ x 9½″		One 1¾″ x 11⅞″		One 1¾″ x 14″		One 1¾″ x 16″(b)		One 1¾″ x 18″(b)	
SPAN (Ft.)	LIVE LOAD L/360	TOTAL LOAD	LIVE LOAD L/360	TOTAL LOAD	LIVE LOAD L/360	TOTAL LOAD	LIVE LOAD L/360	TOTAL LOAD	LIVE LOAD L/360	TOTAL LOAD	LIVE LOAD L/360	TOTAL LOAD	LIVE LOAD L/360	TOTAL LOAD
6	305	455	660	763		1063		1424		1795		2193		2651
8	134	198	296	440	629	746		979		1207		1443		1701
10	70	102	156	230	338	502	629	745		909		1074		1251
12	41	58	92	134	201	297	379	552	599	728		855		988
14	26	36	58	84	129	188	245	361	390	550	566	706	781	816
16	17	23	39	55	87	126	167	244	268	394	390	539	542	672
18			28	38	62	88	119	172	191	279	280	412	390	529
20			20	27	45	63	87	125	141	204	207	303	290	426
22			15	19	34	46	66	93	107	153	157	228	221	322
24					26	35	51	71	83	117	122	175	172	249
26					21	26	40	54	65	91	97	137	136	196
28					17	20	32	43	53	72	78	109	110	156
30							26	34	43	57	64	87	90	126

Table can be used for 1¾″ or 3½″ width beams. Use the following multipliers to calculate the allowable load for each width:

1¾″ width beam[a][b]: Use values in table
3½″ width beam[c] : Use values in table x 2.00

(a) Table is for one 1¾″ beam. When properly connected together, double the values for two 1¾″ beams, triple for three. See pages 20 and 21 for connection details.
(b) **1¾″ x 16″ and 1¾″ x 18″ beams are to be used in multiple member units only.**
(c) 3½″ width, one piece beams are not available in 5½″ and 7¼″ depths.

3½″ 2.0E SP PARALLAM® PSL

	One 3½″ x 9¼″		One 3½″ x 9½″		One 3½″ x 11¼″		One 3½″ x 11⅞″		One 3½″ x 14″		One 3½″ x 16″		One 3½″ x 18″	
SPAN (Ft.)	LIVE LOAD L/360	TOTAL LOAD	LIVE LOAD L/360	TOTAL LOAD	LIVE LOAD L/360	TOTAL LOAD	LIVE LOAD L/360	TOTAL LOAD	LIVE LOAD L/360	TOTAL LOAD	LIVE LOAD L/360	TOTAL LOAD	LIVE LOAD L/360	TOTAL LOAD
6		2091		2163		2694		2898		3652		4463		5394
8	1169	1470	1258	1517		1862		1991		2456		2935		3460
10	627	930	676	1003	1084	1421	1258	1515		1848		2185		2545
12	372	548	402	592	651	964	758	1093	1198	1480	1722	1738		2010
14	238	347	257	376	420	617	490	722	781	1093	1132	1409	1561	1660
16	161	232	174	251	285	416	334	488	535	788	781	1075	1084	1345
18	114	161	123	175	203	292	237	343	382	558	560	822	781	1058
20	84	115	90	125	149	211	174	249	282	407	414	604	580	850
22	63	84	68	92	112	156	132	185	213	305	315	455	442	643
24	49	63	53	69	87	118	102	140	166	233	244	349	344	496
26	38	47	42	52	69	91	81	108	131	181	194	273	273	390
28	31	36	33	40	55	70	65	84	105	143	156	216	220	310
30	25	27	27	30	45	55	53	66	86	113	127	173	180	250

Table can be used for 1¾″, 2 11/16″, 3½″, 5¼″ or 7″ width beams. Use the following multipliers to calculate the allowable load for each width:

1¾″ width beam[b][c] : Use values in table x 0.50
2 11/16″ width beam[c]: Use values in table x 0.77
3½″ width beam[a] : Use values in table
5¼″ width beam : Use values in table x 1.50
7″ width beam : Use values in table x 2.00

(a) Table is for one 3½″ beam. When properly connected together, double the values for two 3½″ beams. See pages 20 and 21 for connection details.
(b) **1¾″ x 16″ beams are to be used in multiple member units only.**
(c) 1¾″ and 2 11/16″ width beams are not available in 18″ depths.

ALLOWABLE UNIFORM APPLIED LOAD – ROOF (PLF)

GENERAL NOTES:

1. Values shown are the maximum uniform loads, in pounds per lineal foot (plf), that can be applied to the beam in addition to its own weight.
2. Tables are based on uniform loads and the most restrictive of simple or continuous span. Gray shaded areas represent load conditions controlled by a continuous span condition.
3. Total load column limits deflection to L/180. For stiffer deflection criteria check L/240 column at total load. Check local code for other deflection criteria.
4. MICRO = LAM® LVL and Parallam® PSL beams are made without camber; therefore, in addition to complying with the deflection limits of the applicable Building Code, other deflection considerations, such as ponding (positive drainage is essential), long term deflection under sustained loads (including creep) and aesthetics, must be evaluated.
5. Roof members shall either be sloped for drainage or designed to account for load and deflection as specified in the applicable Building Code.
6. Lateral support of beam compression edge is required at intervals of 24″ o.c. or closer.
7. Lateral support of beams required at bearing points.
8. Bearing area to be calculated for specific application; see table on page 20.

1¾″ 2.0E SP MICRO=LAM® LVL

	One 1¾" x 5½"			One 1¾" x 7¼"			One 1¾" x 9½"			One 1¾" x 11⅞"			One 1¾" x 14"			One 1¾" x 16"*			One 1¾" x 18"*		
	TOTAL LOAD		DEFL	TOTAL LOAD		DEFL	TOTAL LOAD		DEFL	TOTAL LOAD		DEFL	TOTAL LOAD		DEFL	TOTAL LOAD		DEFL	TOTAL LOAD		DEFL
SPAN (Ft.)	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240
6	608	608	458	878	954		1223	1330		1639	1782		2065	2245		2524	2744		3050	3316	
8	265	265	201	572	588	444	858	933		1126	1225		1389	1511		1660	1806		1957	2128	
10	137	137	104	308	308	234	605	658	507	857	932		1046	1138		1236	1344		1440	1566	
12	79	79	61	180	180	138	397	397	301	635	691	569	838	912	899	984	1070		1138	1238	
14	49	49	39	113	113	88	253	253	193	465	484	367	633	689	586	813	885	849	940	1023	
16	32	32	26	75	75	59	170	170	131	328	328	250	483	526	401	621	676	586	774	842	813
18	22	22	18	52	52	42	119	119	93	231	231	178	375	375	286	489	532	420	610	664	586
20				37	37	30	86	86	68	168	168	131	275	275	211	394	406	311	492	536	435
22				27	27	23	63	63	51	126	126	99	206	206	160	307	307	236	405	433	331
24							48	48	40	96	96	77	158	158	124	236	236	183	335	335	258
26							37	37	31	75	75	60	124	124	98	186	186	145	264	264	205
28							29	29	25	59	59	49	98	98	79	148	148	117	211	211	165
30										47	47	40	79	79	64	119	119	95	171	171	135

Table can be used for 1¾″ or 3½″ width beams. Use the following multipliers to calculate the allowable load for each width:

1¾″ width beam[a][b]: Use values in table
3½″ width beam[c] : Use values in table x 2.00

(a) Table is for one 1¾″ beam. When properly connected together, double the values for two 1¾″ beams, triple for three. See pages 20 and 21 for connection details.
(b) **1¾″ x 16″ and 1¾″ x 18″ beams are to be used in multiple member units only.**
(c) 3½″ width, one piece beams are not available in 5½″ and 7¼″ depths.

3½″ 2.0E SP PARALLAM® PSL

	One 3½" x 9¼"			One 3½" x 9½"			One 3½" x 11¼"			One 3½" x 11⅞"			One 3½" x 14"			One 3½" x 16"			One 3½" x 18"		
	TOTAL LOAD		DEFL	TOTAL LOAD		DEFL	TOTAL LOAD		DEFL	TOTAL LOAD		DEFL	TOTAL LOAD		DEFL	TOTAL LOAD		DEFL	TOTAL LOAD		DEFL
SPAN (Ft.)	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240	Snow 115%	Non-Snow 125%	L/240
6	2406	2616		2489	2706		3100	3371		3335	3626		4202	4569		5135	5583		6206	6747	
8	1692	1840	1754	1746	1899	1887	2143	2330		2291	2492		2827	3074		3378	3673		3982	4330	
10	1132	1231	940	1191	1295	1014	1636	1779	1626	1744	1896	1887	2128	2314		2515	2735		2929	3186	
12	734	734	558	793	793	603	1136	1236	977	1259	1369	1137	1705	1854	1798	2002	2177		2315	2518	
14	466	466	357	504	504	386	827	827	629	921	967	735	1260	1370	1171	1623	1766	1698	1912	2080	
16	312	312	242	338	338	262	558	558	428	654	654	501	961	1046	803	1239	1348	1171	1550	1686	1626
18	218	218	171	236	236	185	393	393	304	461	461	356	749	749	573	975	1061	840	1220	1328	1171
20	157	157	125	170	170	136	285	285	223	336	336	262	548	548	423	786	811	621	985	1072	870
22	116	116	95	126	126	102	213	213	169	251	251	198	412	412	320	612	612	472	810	864	663
24	87	87	73	95	95	79	162	162	130	191	191	153	316	316	248	471	471	367	668	668	516
26	67	67	58	73	73	62	125	125	103	148	148	121	246	246	196	370	370	290	526	526	409
28	51	51	46	56	56	50	98	98	83	116	116	97	195	195	158	294	294	234	420	420	330
30	40	40	38	44	44	41	77	77	67	92	92	79	156	156	129	237	237	191	340	340	270

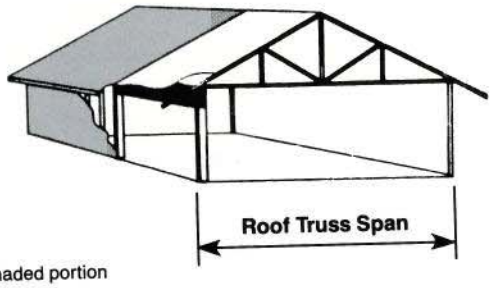
Table can be used for 1¾,″ 2 11/16,″ 3½,″ 5¼″ or 7″ width beams. Use the following multipliers to calculate the allowable load for each width:

1¾″ width beam[b][c] : Use values in table x 0.50
2 11/16″ width beam[c]: Use values in table x 0.77
3½″ width beam[a] : Use values in table
5¼″ width beam : Use values in table x 1.50
7″ width beam : Use values in table x 2.00

(a) Table is for one 3½″ beam. When properly connected together, double the values for two 3½″ beams. See pages 20 and 21 for connection details.
(b) **1¾″ x 16″ beams are to be used in multiple member units only.**
(c) 1¾″ and 2 11/16″ width beams are not available in 18″ depths.

GARAGE DOOR HEADER SIZING TABLE

For Single Story Applications



Non-shaded portion indicates area of load on header.

GENERAL NOTES:

1. Table may be used to size 2.0E SP MICRO=LAM® LVL or 2.0E SP Parallam® PSL headers.
2. Table assumes a simple span header supporting 1/2 of the total roof load.
3. Deflection limited to L/240 at live load or L/180 at total load.
4. Reduction in live load has been applied in accordance with UBC 2306, NBC 1110.2, SBC 1203.6 and BOCA 1110 for the header sizes listed in the non-snow (125%) columns.
5. Support header with double trimmers (3" bearing), except header sizes in the gray shaded areas, support with triple trimmers (4.5" bearing).
6. For loading conditions not shown refer to allowable uniform load tables on page 23 or contact your Trus Joist MacMillan representative for assistance.
7. Header widths of 3 1/2" and 5 1/4" may be one piece or multiple pieces as shown in the following chart:

	HEADER WIDTH	
HEADER DEPTH	**3 1/2"**	**5 1/4"**
5 1/2" & 7 1/4"	Two 1 3/4"	Three 1 3/4"
9 1/4"-18"	One 3 1/2" or Two 1 3/4"	One 5 1/4" or Three 1 3/4" or One 3 1/2" & One 1 3/4"

Multiple member headers must be properly connected together. See pages 20 and 21 for connection details.

Roof Load (PSF)		NON-SNOW (125%)						SNOW (115%)					
		20LL + 12DL			20LL + 25DL			25LL + 12DL			30LL + 12DL		
Rough Door Opening Size		9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"
ROOF TRUSS SPAN IN FEET WITH 24" SOFFIT ASSUMED	22'	5 1/4" x 5 1/2" 3 1/2" x 7 1/4" 2 11/16" x 7 1/4" 1 3/4" x 9 1/2"	5 1/4" x 9 1/2" 3 1/2" x 11 7/8" 2 11/16" x 11 7/8" 1 3/4" x 14"	3 1/2" x 11 7/8" 2 11/16" x 14"	3 1/2" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	3 1/2" x 11 7/8" 2 11/16" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"	5 1/4" x 5 1/2" 3 1/2" x 7 1/4" 2 11/16" x 7 1/4" 1 3/4" x 9 1/2"	3 1/2" x 11 7/8" 2 11/16" x 14" 1 3/4" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	3 1/2" x 7 1/4" 2 11/16" x 7 1/4" 1 3/4" x 9 1/2"	3 1/2" x 11 7/8" 2 11/16" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"
	24'	5 1/4" x 5 1/2" 3 1/2" x 7 1/4" 2 11/16" x 7 1/4" 1 3/4" x 9 1/2"	5 1/4" x 9 1/2" 3 1/2" x 11 7/8" 2 11/16" x 11 7/8" 1 3/4" x 14"	3 1/2" x 11 7/8" 2 11/16" x 14"	3 1/2" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"	3 1/2" x 7 1/4" 2 11/16" x 7 1/4" 1 3/4" x 9 1/2"	3 1/2" x 11 7/8" 2 11/16" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	3 1/2" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	3 1/2" x 11 7/8" 2 11/16" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"
	26'	5 1/4" x 5 1/2" 3 1/2" x 7 1/4" 2 11/16" x 7 1/4" 1 3/4" x 9 1/2"	5 1/4" x 9 1/2" 3 1/2" x 11 7/8" 2 11/16" x 11 7/8" 1 3/4" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	3 1/2" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"	3 1/2" x 7 1/4" 2 11/16" x 7 1/4" 1 3/4" x 9 1/2"	3 1/2" x 11 7/8" 2 11/16" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"	3 1/2" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"
	28'	3 1/2" x 7 1/4" 2 11/16" x 7 1/4" 1 3/4" x 9 1/2"	3 1/2" x 11 7/8" 2 11/16" x 14" 1 3/4" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	3 1/2" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	3 1/2" x 14" 2 11/16" x 16"	3 1/2" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	3 1/2" x 11 7/8" 2 11/16" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"	3 1/2" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	3 1/2" x 14" 2 11/16" x 16"
	30'	3 1/2" x 7 1/4" 2 11/16" x 7 1/4" 1 3/4" x 9 1/2"	3 1/2" x 11 7/8" 2 11/16" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	5 1/4" x 7 1/4" 3 1/2" x 9 1/2" 1 3/4" x 9 1/2"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	5 1/4" x 14" 3 1/2" x 16" 2 11/16" x 16"	3 1/2" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"	3 1/2" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	5 1/4" x 14" 3 1/2" x 16" 2 11/16" x 16"
	32'	3 1/2" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	3 1/2" x 11 7/8" 2 11/16" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	5 1/4" x 7 1/4" 3 1/2" x 9 1/2" 2 11/16" x 9 1/2" 1 3/4" x 11 7/8"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"	5 1/4" x 14" 3 1/2" x 16" 2 11/16" x 16"	3 1/2" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	3 1/2" x 14" 2 11/16" x 16"	5 1/4" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"	5 1/4" x 14" 3 1/2" x 16" 2 11/16" x 16"
	34'	3 1/2" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	3 1/2" x 11 7/8" 2 11/16" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"	5 1/4" x 7 1/4" 3 1/2" x 9 1/2" 2 11/16" x 9 1/2" 1 3/4" x 11 7/8"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"	5 1/4" x 14" 3 1/2" x 16"	3 1/2" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	3 1/2" x 14" 2 11/16" x 16"	5 1/4" x 7 1/4" 3 1/2" x 9 1/2" 2 11/16" x 9 1/2" 1 3/4" x 11 7/8"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"	5 1/4" x 14" 3 1/2" x 16"
	36'	3 1/2" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	3 1/2" x 11 7/8" 2 11/16" x 14"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"	5 1/4" x 7 1/4" 3 1/2" x 9 1/2" 2 11/16" x 9 1/2" 1 3/4" x 11 7/8"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"	5 1/4" x 14" 3 1/2" x 16"	5 1/4" x 7 1/4" 2 11/16" x 9 1/2" 1 3/4" x 9 1/2"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 14"	5 1/4" x 14" 3 1/2" x 16" 2 11/16" x 16"	5 1/4" x 7 1/4" 3 1/2" x 9 1/2" 2 11/16" x 9 1/2" 1 3/4" x 11 7/8"	5 1/4" x 11 7/8" 3 1/2" x 14" 2 11/16" x 16"	5 1/4" x 14" 3 1/2" x 16"

TOP MOUNT HANGERS

C8 – 1¾" MEMBERS

Member	Hanger	Minimum Support	Maximum Load (lbs.)
1¾" x 9¼"	WG29	All types	1600
	WPG29	All types	2525
1¾" x 9½"	W9	All types	1600
	WP9	All types	2525
1¾" x 11¼"	WG211	All types	1600
	WPG211	All types	2525
1¾" x 11⅞"	W11	All types	1600
	WP11	All types	2525
1¾" x 14"	W14	All types	1600
	WP14	All types	2525

C9 – 2 11/16" MEMBERS

Member	Hanger	Minimum Support	Maximum Load (lbs.)
2 11/16" x 9¼"	WA39	All types	1600
	WNP2.75/9.25	All types	2525
	GLTV2.75/9.25	4x4 or larger	7400(1)
2 11/16" x 9½"	WNP2.75/9.5	All types	2525
	GLTV2.75/9.5	4x4 or larger	7400(1)
2 11/16" x 11¼"	WA311	All types	1600
	WNP2.75/11.25	All types	2525
	GLTV2.75/11.25	4x4 or larger	7400(1)
2 11/16" x 11⅞"	WNP2.75/11.88	All types	2525
	GLTV2.75/11.88	4x4 or larger	7400(1)
2 11/16" x 14"	WNP2.75/14	All types	2525
	GLTV2.75/14	4x4 or larger	7400(1)
2 11/16" x 16"	WNP2.75/16	All types	2525
	GLTV2.75/16	4x4 or larger	7400(1)

(1) Maximum load is 6000 lbs. if supporting member is multiple plies of 1¾" Parallam® PSL.

C10 – 3½" MEMBERS

Member	Hanger	Minimum Support	Maximum Load (lbs.)
3½" x 9¼"	WI49.25	All types	1600
	GLTV3.5/9.25	4x4 or larger	7500(1)(2)
3½" x 9½"	WP9-2 or MIT9-2	All types	1915
	GLTV3.59	4x4 or larger	7500(1)(2)
3½" x 11¼"	WPA411.25	All types	1915
	GLTV3.5/11.25	4x4 or larger	7500(1)(2)
3½" x 11⅞"	WP11-2 or MIT11-2	All types	1915
	GLTV3.511	4x4 or larger	7500(1)(2)
3½" x 14"	WPI414 or MIT414	All types	2000
	HGLTV3.514	4x4 or larger	10500(1)(2)
3½" x 16"	HGLTV3.516	4x4 or larger	10500(1)(2)
3½" x 18"	HGLTV3.518	4x4 or larger	10500(1)(2)

(1) Maximum load is 6000 lbs. if supporting member is multiple plies of 1¾" Parallam® PSL.
(2) Maximum load is 7400 lbs. if supporting member is 2 11/16" or wider pieces of Parallam® PSL.

C11 – 5¼" MEMBERS

Member	Hanger	Minimum Support	Maximum Load (lbs.)
5¼" x 9¼"	WP5.50/9.25	All types	2525
	GLTV5.50/9.25	4x4 or larger	7500(1)(2)
5¼" x 9½"	WP5.50/9.5	All types	2525
	GLTV5.59	4x4 or larger	7500(1)(2)
5¼" x 11¼"	WP5.50/11.25	All types	2525
	HGLTV5.50/11.25	4x4 or larger	10500(1)(2)
5¼" x 11⅞"	WP5.50/11.88	All types	2525
	HGLTV5.511	4x4 or larger	10500(1)(2)
5¼" x 14"	WP5.50/14	All types	2525
	HGLTV5.514	4x4 or larger	10500(1)(2)
5¼" x 16"	HGLTV5.516	4x4 or larger	10500(1)(2)
5¼" x 18"	HGLTV5.518	4x4 or larger	10500(1)(2)

(1) Maximum load is 6000 lbs. if supporting member is multiple plies of 1¾" Parallam® PSL.
(2) Maximum load is 7400 lbs. if supporting member is 2 11/16" or wider pieces of Parallam® PSL.

FACE MOUNT HANGERS

C12 – 1¾" MEMBERS

Member	Hanger	Maximum Load (lbs.)
1¾" x 9¼" -14"	IUT9	860 (100%) - 1075 (125%)
	HHU9*	2575 (100%) - 3220 (125%)
1¾" x 11¼" -14"	IUT11	1075 (100%) - 1345 (125%)
	HHU11*	3145 (100%) - 3805 (125%)
1¾" x 14"	IUT14	1505 (100%) - 1880 (125%)
	HHU14*	3880 (100%) - 4165 (125%)

*These hangers are not suitable for attachment to TJI® joists.

C13 – 2 11/16" MEMBERS

Member	Hanger	Maximum Load (lbs.)
2 11/16" x 9¼"-16"	HHU2.75/10*	2430 (100%) - 3040 (125%)
2 11/16" x 11¼" -16"	HHU2.75/12*	2780 (100%) - 3475 (125%)

*These hangers are not suitable for attachment to TJI® joists.

C14 – 3½" MEMBERS

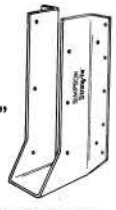
Member	Hanger	Maximum Load (lbs.)
3½" x 9¼"-16"	HHU410*	2430 (100%) - 3040 (125%)
3½" x 11¼"-18"	HHU414*	3130 (100%) - 3910 (125%)
3½" x 14"-18"	HHU416*	3475 (100%) - 4345 (125%)

*These hangers are not suitable for attachment to TJI® joists.

C15 – 5¼" MEMBERS

Member	Hanger	Maximum Load (lbs.)
5¼" x 9¼"-16"	HHU610*	2430 (100%) - 3040 (125%)
5¼" x 11¼"-18"	HHU614*	3130 (100%) - 3910 (125%)
5¼" x 14"-18"	HHU616*	3475 (100%) - 4345 (125%)

*These hangers are not suitable for attachment to TJI® joists.



This hanger is not suitable for attachment to TJI® joists.

NOTES:

- 3½" member may be two pieces 1¾" or single 3½" width beam.
- 5¼" members may be three pieces 1¾," two pieces 2 11/16," one piece 1¾" with one piece 3½" or single 5¼" width beam.
- **Hanger capacities may be less than the capacity of the MICRO=LAM® LVL or Parallam® PSL, therefore all applications need to be checked to assure adequate capacity.**
- Leave 1/16" clearance between end of MICRO=LAM® LVL or Parallam® PSL and support member.
- Hangers can only achieve their maximum capacity if all nail holes are filled with the proper nails. In some cases, these hangers have greater capacity when supported from certain member categories and with alternate nailing schedules. The minimum support of a "4x4 or larger" includes 3½" or wider MICRO=LAM® LVL, Parallam® PSL, GLULAM, 4x4 nailers, or 4x4 or larger solid sawn lumber.
- The hangers listed above are manufactured by Simpson Strong-Tie® Company, Inc. For additional application and hanger capacity information, please refer to the current Simpson Strong-Tie® Company, Inc. evaluation report.

MICRO=LAM® LVL & PARALLAM® PSL DESIGN PROPERTIES

DESIGN VALUES SHOWN ARE FOR 100% LOAD DURATION

1¾" 2.0E SP MICRO=LAM® LVL

DESIGN PROPERTY	DEPTH						
	5½"	7¼"	9½"	11⅞"	14"	16"	18"
Moment (ft. lbs.)	2,460	3,960	6,620	10,060	13,645	17,435	21,785
Shear (lbs.)	1,830	2,410	3,160	3,950	4,655	5,320	5,985
Moment of Inertia (in⁴)	25	55	125	245	400	595	850
Weight (lbs./lin. ft.)	2.8	3.7	4.9	6.1	7.1	8.1	9.1

3½" 2.0E SP MICRO=LAM® LVL

DESIGN PROPERTY	DEPTH				
	9½"	11⅞"	14"	16"	18"
Moment (ft. lbs.)	13,245	20,080	27,290	35,005	43,600
Shear (lbs.)	6,320	7,900	9,310	10,640	11,970
Moment of Inertia (in⁴)	250	488	800	1,195	1,701
Weight (lbs./lin. ft.)	9.2	11.5	13.6	15.5	17.4

2.0E SP MICRO=LAM® LVL ALLOWABLE DESIGN STRESSES

Shear modulus of elasticity	G	= 125,000 psi
Modulus of elasticity	E	= 2.0 x 10⁶ psi
Flexural stress	F_b	= 2925 psi(1)
Compression perpendicular to grain parallel to glue line	$F_{c\perp}$	= 880 psi(2)
Compression parallel to grain	$F_{c\parallel}$	= 3035 psi
Horizontal shear perpendicular to glue line	F_v	= 285 psi

(1) For 12-inch depth. For others, multiply by $\left[\frac{12}{d}\right]^{0.136}$

(2) $F_{c\perp}$ shall not be increased for duration of load.

NOTES:

- Lateral support of beam compression edge is required at intervals of 24" o.c. or closer.
- See NER-126 for additional design information.

1¾" 2.0E SP PARALLAM® PSL

DESIGN PROPERTY	DEPTH					
	9¼"	9½"	11¼"	11⅞"	14"	16"
Moment (ft. lbs.)	6,210	6,530	8,985	9,950	13,580	17,475
Shear (lbs.)	3,130	3,215	3,805	4,020	4,735	5,415
Moment of Inertia (in⁴)	115	125	210	245	400	595
Weight (lbs./lin. ft.)	5.1	5.2	6.2	6.5	7.7	8.8

2 11/16" 2.0E SP PARALLAM® PSL

DESIGN PROPERTY	DEPTH					
	9¼"	9½"	11¼"	11⅞"	14"	16"
Moment (ft. lbs.)	9,535	10,025	13,800	15,280	20,855	26,840
Shear (lbs.)	4,805	4,935	5,845	6,170	7,275	8,315
Moment of Inertia (in⁴)	175	190	320	375	615	915
Weight (lbs./lin. ft.)	7.8	8.0	9.5	10.0	11.8	13.4

3½" 2.0E SP PARALLAM® PSL

DESIGN PROPERTY	DEPTH						
	9¼"	9½"	11¼"	11⅞"	14"	16"	18"
Moment (ft. lbs.)	12,415	13,055	17,970	19,900	27,160	34,955	43,655
Shear (lbs.)	6,260	6,430	7,615	8,035	9,475	10,825	12,180
Moment of Inertia (in⁴)	230	250	415	490	800	1,195	1,700
Weight (lbs./lin. ft.)	10.1	10.4	12.3	13.0	15.3	17.5	19.7

5¼" 2.0E SP PARALLAM® PSL

DESIGN PROPERTY	DEPTH						
	9¼"	9½"	11¼"	11⅞"	14"	16"	18"
Moment (ft. lbs.)	18,625	19,585	26,955	29,855	40,740	52,430	65,495
Shear (lbs.)	9,390	9,645	11,420	12,055	14,210	16,240	18,270
Moment of Inertia (in⁴)	345	375	625	735	1,200	1,790	2,550
Weight (lbs./lin. ft.)	15.2	15.6	18.5	19.5	23.0	26.3	29.5

7" 2.0E SP PARALLAM® PSL

DESIGN PROPERTY	DEPTH						
	9¼"	9½"	11¼"	11⅞"	14"	16"	18"
Moment (ft. lbs.)	24,830	26,115	35,940	39,805	54,325	69,905	87,325
Shear (lbs.)	12,520	12,855	15,225	16,070	18,945	21,655	24,360
Moment of Inertia (in⁴)	460	500	830	975	1,600	2,390	3,400
Weight (lbs./lin. ft.)	20.2	20.8	24.6	26.0	30.6	35.0	39.4

2.0E SP PARALLAM® PSL ALLOWABLE DESIGN STRESSES

Shear modulus of elasticity	G	= 125,000 psi
Modulus of elasticity	E	= 2.0 x 10⁶ psi
Flexural stress	F_b	= 2900 psi(1)
Compression perpendicular to grain parallel to wide face of strands	$F_{c\perp}$	= 880 psi(2)
Compression parallel to grain	$F_{c\parallel}$	= 2900 psi
Horizontal shear perpendicular to wide face of strands	F_v	= 290 psi

(1) For 12-inch depth. For others, multiply by $\left[\frac{12}{d}\right]^{0.111}$

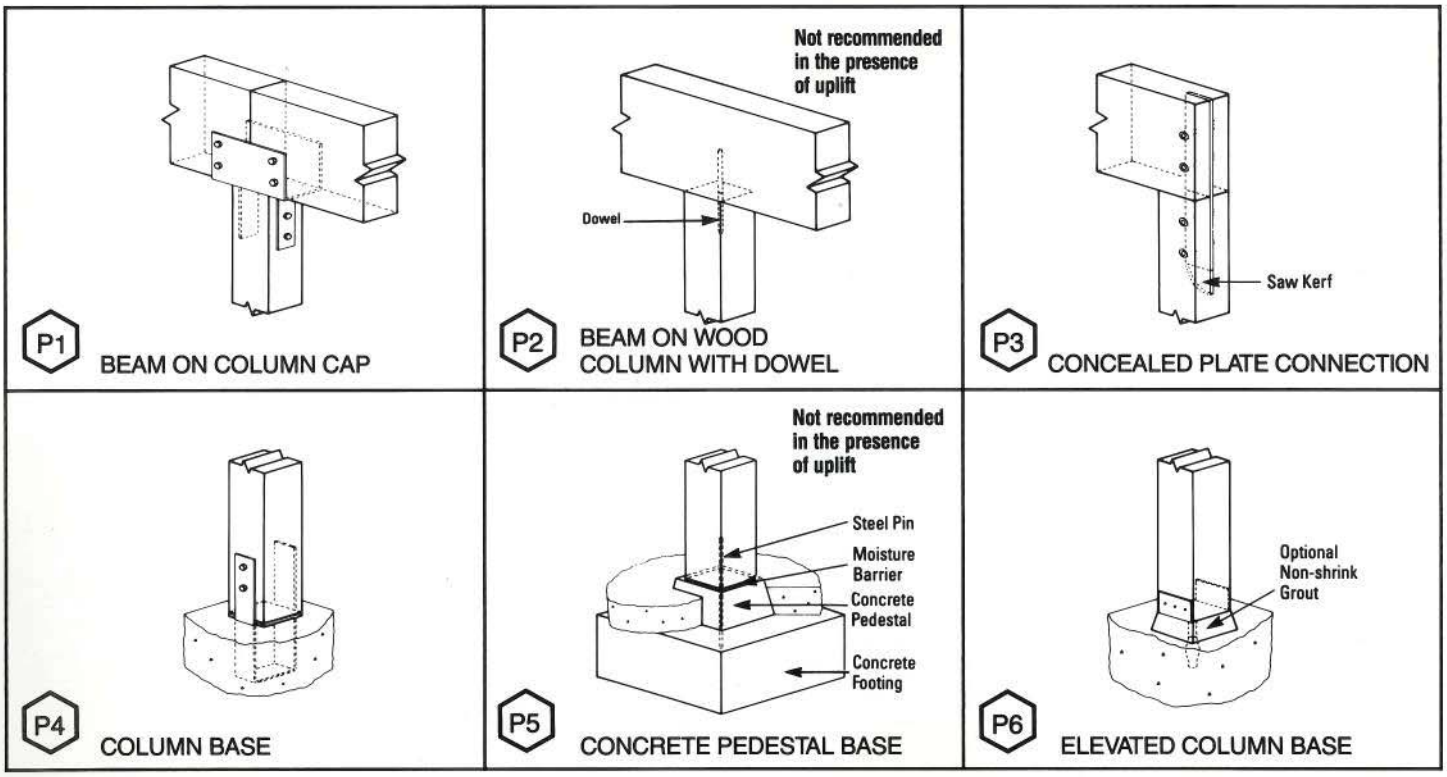
(2) $F_{c\perp}$ shall not be increased for duration of load.

NOTES:

- Lateral support of beam compression edge is required at intervals of 24" o.c. or closer.
- See NER-292 for additional design information.

Legacy Literature
See Note on Front Cover

CONNECTION DETAILS



P1 BEAM ON COLUMN CAP

P2 BEAM ON WOOD COLUMN WITH DOWEL

P3 CONCEALED PLATE CONNECTION

P4 COLUMN BASE

P5 CONCRETE PEDESTAL BASE

P6 ELEVATED COLUMN BASE

ALLOWABLE AXIAL LOADS

EFFECTIVE COLUMN LENGTH[4]	ALLOWABLE AXIAL LOAD ON PARALLAM® PSL COLUMNS (In Pounds) COLUMN SIZE																	
	3½" x 3½"			3½" x 5¼"			3½" x 7"			5¼" x 5¼"			5¼" x 7"			7" x 7"		
	100%	115%	125%	100%	115%	125%	100%	115%	125%	100%	115%	125%	100%	115%	125%	100%	115%	125%
4'-0"	17,569	19,302	20,346															
5'-0"	14,793	15,863	16,480	22,189	23,794	24,720												
6'-0"	12,146	12,807	13,188	18,219	19,211	19,781	24,292			38,807								
7'-0"	9,966	10,405	10,658	14,949	15,608	15,986	19,932	20,810	21,315	34,782	37,607	39,257						
8'-0"	8,259	8,567	8,744	12,389	12,851	13,116	16,519	17,134	17,488	30,711	32,741	33,912	40,948					
9'-0"	6,929	7,154	7,282	10,394	10,730	10,923	13,858	14,307	14,564	26,930	28,421	29,280	35,907	37,895	39,040			
10'-0"	5,883	6,052	6,148	8,825	9,078	9,222	11,766	12,103	12,297	23,614	24,744	25,396	31,486	32,993	33,861			
11'-0"	5,050	5,180	5,254	7,576	7,770	7,882	10,101	10,360	10,509	20,780	21,660	22,166	27,707	28,879	29,555			
12'-0"	4,379	4,481	4,539	6,568	6,721	6,808	8,757	8,961	9,078	18,376	19,075	19,477	24,502	25,434	25,970			
13'-0"	3,830	3,912	3,958	5,745	5,868	5,937	7,660	7,824	7,917	16,338	16,903	17,227	21,784	22,537	22,970			
14'-0"	3,377	3,443	3,481	5,065	5,165	5,222	6,754	6,887	6,962	14,603	15,066	15,332	19,471	20,088	20,443	38,996	40,772	41,796
15'-0"										13,119	13,504	13,724	17,493	18,005	18,298	35,498	36,980	37,835
16'-0"										11,843	12,165	12,350	15,791	16,221	16,467	32,405	33,656	34,376
17'-0"										10,739	11,012	11,168	14,319	14,683	14,891	29,669	30,735	31,347
18'-0"										9,779	10,012	10,146	13,039	13,350	13,528	27,245	28,160	28,686
19'-0"										8,940	9,141	9,255	11,920	12,187	12,340	25,091	25,883	26,337
20'-0"										8,202	8,376	8,475	10,936	11,168	11,300	23,173	23,862	24,258
21'-0"										7,551	7,702	7,789	10,067	10,270	10,385	21,458	22,062	22,408
22'-0"																19,921	20,453	20,758
24'-0"																17,293	17,711	17,951

GENERAL NOTES:

1. Table applies to solid, one-piece column members used in dry service conditions.
2. Loads shown have been adjusted to accommodate the worst case of the following eccentric conditions; 0.167 of column thickness (first dimension) or 0.167 of column width.
3. Loads are based on simple axial loaded columns using the design provisions of the National Design Specification® for Wood Construction (NDS), 1991 edition. For side loads or other combined bending and axial loads see provisions of NDS, 1991 edition.
4. Table assumes that the column is unbraced, except at the column ends and the effective column length is equal to the actual column length.

2.0E SP PARALLAM® PSL ALLOWABLE DESIGN STRESSES (100% Load Duration)

Shear modulus of elasticity	G	= 125,000 psi
Modulus of elasticity	E	= 2.0 x 10^6 psi
Flexural stress	F_b	= 2900 psi(1)
Compression perpendicular to grain parallel to wide face of strands	$F_{c\perp}$	= 880 psi(2)
Compression perpendicular to grain perpendicular to wide face of strands	$F_{c\perp}$	= 525 psi(2)
Compression paralled to grain	$F_{c\parallel}$	= 2900 psi
Horizontal shear perpendicular to wide face of strands	F_v	= 290 psi
Horizontal shear parallel to wide face of strands	F_v	= 210 psi

(1) For 12-inch depth. For others, multiply by $\left[\frac{12}{d}\right]^{0.111}$

(2) $F_{c\perp}$ shall not be increased for duration of load.

• See NER-292 for additional design information.

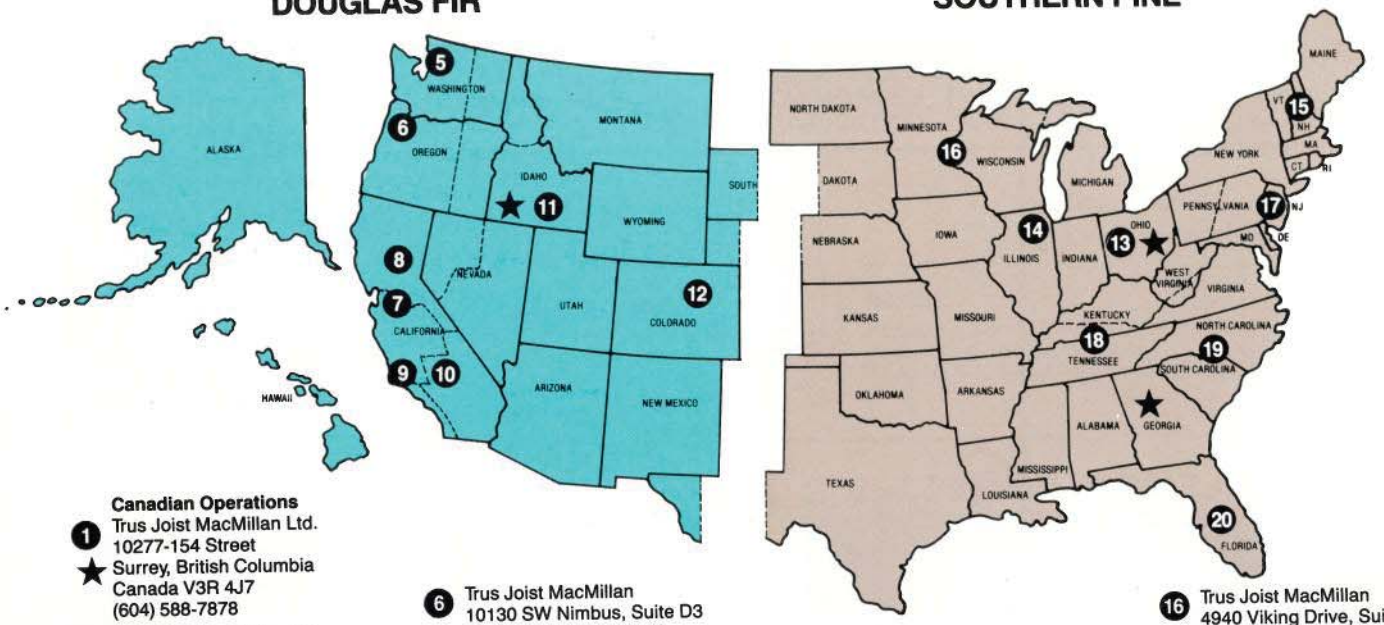
Legacy Literature
See Note on Front Cover

Trus Joist MacMillan now offers a product line that includes both Douglas Fir and Southern Pine species. Some of these products have different properties and capacities. The map below indicates the general distribution of each species, although some overlap may occur. **To be sure the product you specify is readily available in your project's location, contact your local Trus Joist MacMillan representative, or call 1-800-338-0515 for the representative near you.** The regional offices listed below represent over 175 technical representatives throughout North America.

PRODUCT DISTRIBUTION

DOUGLAS FIR

SOUTHERN PINE



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