



Requirements for Use of Size Selection Tables

1. These tables are for gravity loads only. Consult a registered design professional for wind and seismic load analysis and design.
2. All tables are based on uniformly distributed loads only. Other loads, such as concentrated or unbalanced snow loads, have not been considered and must be analyzed separately.
3. These tables are only applicable to members used under dry-service conditions where the moisture content in use is a maximum of 19% for lumber and less than 16% for glued laminated timber.
4. The compression edge of the header or beam must be laterally supported at intervals of 24" or less. In addition, lateral support must be provided at bearing points.
5. Design loads used to select a header or beam must be equal to or greater than the actual applied loads.
6. Multiple-member headers and beams must be properly connected together. See page 5 for connection guidelines.
7. These tables assume unbalanced glued laminated timber combinations used in simple-span applications. Balanced beam combinations with equal or greater design values may be substituted and used in either simple-span or continuous-span applications.
8. These tables are only applicable to members used under ordinary ranges of temperature and occasionally heated in use up to 150° F.

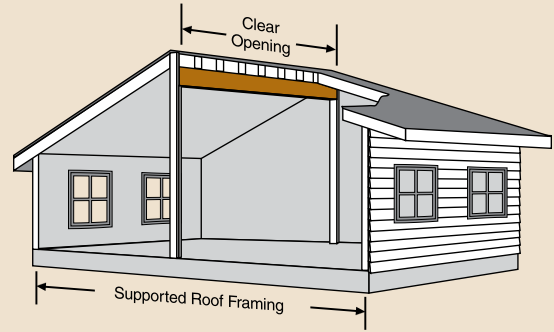
Southern Forest Products Association does not develop design values for either lumber or glued laminated timber. Accordingly, SFPA does not warrant the design values on which these tables are based, and assumes no liability for damage caused or contributed to by the use of such design values. In addition, SFPA and its members have no knowledge of the loads, spans, materials used, quality of workmanship, professional competence of the users, and other factors involved in specifying headers or beams for any given project; and accordingly, cannot, and do not, represent or warrant the performance in use of headers or beams incorporated into any particular construction project, and disclaim liability for injury or damage caused by the failure of a header or beam in use.

Key

Southern Pine lumber sizes for No.1, No.2 and No.3 grades are shown in regular type with the required number of plies in parentheses. Southern Pine glued laminated timber sizes for a 24F-1.7E (V4) stress class are provided in italics when (4) 2x12s no longer meet design parameters. A 3.0" bearing length is assumed, except for the sizes marked with an asterisk (*) which require a 4.5" bearing length. For other bearing lengths, use the appropriate *Allowable Roof Load Table* (Tables 27-38).

Steps in Using Tables 15-20:

1. Select the table with loading conditions and load duration factor satisfying the intended application.
2. Find the span of supported roof framing (i.e., sum of the spans of the rafters or trusses that frame into the beam) that equals or exceeds the intended application.
3. Find the clear opening.
4. Select product size for the appropriate grade, clear opening and span of supported roof framing.



Beam size is based on the load transferred from 1/2 the span of the supported roof framing.

Table 15 – 30 psf Ground Snow Load **, 10 psf Dead Load, 1.15 Load Duration Factor								
**Equivalent to a 21 psf Design Roof Snow Load								
Grade	Clear Opening	Span of Supported Roof Framing (sum of rafter spans from both sides of beam)						
		16'	20'	24'	28'	32'	36'	40'
No. 1	10'	(2) 2 x 10s	(2) 2 x 10s	(2) 2 x 12s	(2) 2 x 12s	(3) 2 x 10s	(3) 2 x 10s	(3) 2 x 12s
	12'	(2) 2 x 12s	(2) 2 x 12s	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s
	14'	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-1/4
	16'	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 11-7/8	3-1/2 x 14
	18'	(3) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14
	20'	(4) 2 x 12s	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	5-1/2 x 14
	22'	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16
	24'	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16
No. 2	10'	(2) 2 x 10s	(2) 2 x 12s	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s
	12'	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 9-1/4	3-1/2 x 9-1/2
	14'	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4
	16'	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 11-7/8	3-1/2 x 14
	18'	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14
	20'	3-1/2 x 11-1/4	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	5-1/2 x 14
	22'	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16
	24'	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16
No. 3	10'	(3) 2 x 10s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
	12'	(3) 2 x 12s	(4) 2 x 12s	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/2
	14'	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4
	16'	3-1/2 x 9-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 11-7/8	3-1/2 x 14
	18'	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14
	20'	3-1/2 x 11-1/4	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	5-1/2 x 14
	22'	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16
	24'	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16

(See Requirements for Use on page 7, Key and Notes on this page, and Example on page 22)

Notes for Tables 15 - 20: Roof Ridge Beams

- Tables 15-20 apply to beams carrying only uniformly distributed roof loads.
- See Assumptions for Table Development beginning on page 2 for details on design assumptions made to generate these tables.
- Beam size is based on the load transferred from 1/2 the span of the supported roof framing. Calculations assume the worst case of simple- or continuous-span glued laminated timber, but only simple-span Southern Pine lumber beams.
- Deflection is limited to $L/180$ for total load and $L/240$ for live load.
- Design Roof Snow Loads have been derived by reducing Ground Snow Loads in accordance with ASCE 7-10, Section 7.3. This results in an equivalent balanced Design Roof Snow Load of 0.70 times the Ground Snow Load, with a required minimum of 20 psf (pounds per square foot). Unbalanced snow loads, drifting or rain-on-snow surcharges have not been considered. Roof live load reductions have not been taken.
- For loading conditions other than those provided in Tables 15-20, use another table in this section with higher loading conditions than required, or use the Allowable Roof Load Table with the corresponding load duration factor (Tables 27-38). For clear openings other than those provided, use the next larger clear opening shown, or use the appropriate Allowable Roof Load Table.
- All (1) ply lumber headers may be replaced with (2) 2x8s of the same or better grade.
- Tabulated glued laminated timber sizes may be replaced with other glued laminated timber sizes and/or stress classes with equal or greater load capacity (plf); refer to the appropriate Allowable Roof Load Tables (Tables 30-32 or 36-38) to determine acceptable options.

Table 16 – 40 psf Ground Snow Load **, 10 psf Dead Load, 1.15 Load Duration Factor
**Equivalent to a 28 psf Design Roof Snow Load

Grade	Clear Opening	Span of Supported Roof Framing (sum of rafter spans from both sides of beam)						
		16'	20'	24'	28'	32'	36'	40'
No. 1	10'	(2) 2 x 10s	(2) 2 x 12s	(2) 2 x 12s	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(3) 2 x 12s
	12'	(2) 2 x 12s	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4
	14'	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14
	16'	(3) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14
	18'	(4) 2 x 12s	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14
	20'	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	5-1/2 x 14	5-1/2 x 16
	22'	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	3-1/2 x 16	5-1/2 x 16	5-1/2 x 16	5-1/2 x 16
	24'	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 18
No. 2	10'	(2) 2 x 12s	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s
	12'	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 9-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4
	14'	(3) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14
	16'	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14
	18'	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14
	20'	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	5-1/2 x 14	5-1/2 x 16
	22'	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	3-1/2 x 16	5-1/2 x 16	5-1/2 x 16	5-1/2 x 16
	24'	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 18
No. 3	10'	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
	12'	(4) 2 x 12s	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4
	14'	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14
	16'	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14
	18'	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14
	20'	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	5-1/2 x 14	5-1/2 x 16
	22'	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	3-1/2 x 16	5-1/2 x 16	5-1/2 x 16	5-1/2 x 16
	24'	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 18

Table 17 – 50 psf Ground Snow Load **, 10 psf Dead Load, 1.15 Load Duration Factor
**Equivalent to a 35 psf Design Roof Snow Load

Grade	Clear Opening	Span of Supported Roof Framing (sum of rafter spans from both sides of beam)						
		16'	20'	24'	28'	32'	36'	40'
No. 1	10'	(2) 2 x 12s	(2) 2 x 12s	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s
	12'	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 14
	14'	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	5-1/2 x 11-7/8
	16'	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14
	18'	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16
	20'	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16	5-1/2 x 18
	22'	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4 *
	24'	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4 *	5-1/2 x 20-5/8*
No. 2	10'	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 9-1/4	3-1/2 x 11-1/4
	12'	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 14
	14'	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	5-1/2 x 11-7/8
	16'	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14
	18'	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16
	20'	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16	5-1/2 x 18
	22'	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4 *
	24'	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4 *	5-1/2 x 20-5/8*
No. 3	10'	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 11-1/4
	12'	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 14
	14'	3-1/2 x 9-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	5-1/2 x 11-7/8
	16'	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14
	18'	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16
	20'	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16	5-1/2 x 18
	22'	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4 *
	24'	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4 *	5-1/2 x 20-5/8*

(See Requirements for Use on page 7, Key (*) and Notes on page 19, and Example on page 22)

Table 18 – 70 psf Ground Snow Load **, 10 psf Dead Load, 1.15 Load Duration Factor
**Equivalent to a 49 psf Design Roof Snow Load

Grade	Clear Opening	Span of Supported Roof Framing (sum of rafter spans from both sides of beam)						
		16'	20'	24'	28'	32'	36'	40'
No. 1	10'	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 14
	12'	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 14	5-1/2 x 11-7/8	5-1/2 x 14
	14'	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16
	16'	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16	5-1/2 x 18
	18'	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4*
	20'	3-1/2 x 16	3-1/2 x 16	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4*	5-1/2 x 22*
	22'	3-1/2 x 16	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4*	5-1/2 x 22*	5-1/2 x 23-3/8*
	24'	3-1/2 x 18	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4*	5-1/2 x 20-5/8*	5-1/2 x 23-3/8*	----
No. 2	10'	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14
	12'	(4) 2 x 12s	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 14	5-1/2 x 11-7/8	5-1/2 x 14
	14'	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16
	16'	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16	5-1/2 x 18
	18'	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4*
	20'	3-1/2 x 16	3-1/2 x 16	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4*	5-1/2 x 22*
	22'	3-1/2 x 16	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4*	5-1/2 x 22*	5-1/2 x 23-3/8*
	24'	3-1/2 x 18	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4*	5-1/2 x 20-5/8*	5-1/2 x 23-3/8*	----
No. 3	10'	(4) 2 x 12s	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14
	12'	3-1/2 x 9-1/4	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 14	5-1/2 x 11-7/8	5-1/2 x 14
	14'	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16
	16'	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16	5-1/2 x 18
	18'	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4*
	20'	3-1/2 x 16	3-1/2 x 16	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4*	5-1/2 x 22*
	22'	3-1/2 x 16	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4*	5-1/2 x 22*	5-1/2 x 23-3/8*
	24'	3-1/2 x 18	5-1/2 x 16	5-1/2 x 18	5-1/2 x 19-1/4*	5-1/2 x 20-5/8*	5-1/2 x 23-3/8*	----

Table 19 – 20 psf Live Load, 10 psf Dead Load, 1.25 Load Duration Factor

Grade	Clear Opening	Span of Supported Roof Framing (sum of rafter spans from both sides of beam)						
		16'	20'	24'	28'	32'	36'	40'
No. 1	10'	(1) 2 x 12	(2) 2 x 10s	(2) 2 x 12s	(2) 2 x 12s	(2) 2 x 12s	(3) 2 x 10s	(3) 2 x 10s
	12'	(2) 2 x 10s	(2) 2 x 12s	(3) 2 x 10s	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(3) 2 x 12s
	14'	(2) 2 x 12s	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4
	16'	(3) 2 x 10s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14
	18'	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14
	20'	(4) 2 x 12s	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16
	22'	(4) 2 x 12s	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	3-1/2 x 16	5-1/2 x 16
	24'	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16
No. 2	10'	(2) 2 x 10s	(2) 2 x 12s	(2) 2 x 12s	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(3) 2 x 12s
	12'	(2) 2 x 12s	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s
	14'	(3) 2 x 10s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4
	16'	(3) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14
	18'	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14
	20'	3-1/2 x 11-1/4	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16
	22'	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	3-1/2 x 16	5-1/2 x 16
	24'	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16
No. 3	10'	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 9-1/4	3-1/2 x 9-1/4
	12'	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
	14'	(4) 2 x 12s	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4
	16'	3-1/2 x 9-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14
	18'	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14
	20'	3-1/2 x 11-1/4	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16
	22'	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	3-1/2 x 16	5-1/2 x 16
	24'	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16

(See Requirements for Use on page 7, Key (*) and Notes on page 19, and Example on page 22)

Table 20 – 20 psf Live Load, 20 psf Dead Load, 1.25 Load Duration Factor								
Grade	Clear Opening	Span of Supported Roof Framing (sum of rafter spans from both sides of beam)						
		16'	20'	24'	28'	32'	36'	40'
No. 1	10'	(2) 2 x 10s	(2) 2 x 12s	(2) 2 x 12s	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(3) 2 x 12s
	12'	(2) 2 x 12s	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s
	14'	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8
	16'	(3) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	5-1/2 x 11-7/8
	18'	(4) 2 x 12s	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14
	20'	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16
	22'	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	5-1/2 x 14	5-1/2 x 16	5-1/2 x 16	5-1/2 x 16
	24'	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 18
No. 2	10'	(2) 2 x 12s	(3) 2 x 10s	(3) 2 x 12s	(3) 2 x 12s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s
	12'	(3) 2 x 10s	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-1/4
	14'	(3) 2 x 12s	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8
	16'	(4) 2 x 12s	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	5-1/2 x 11-7/8
	18'	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14
	20'	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16
	22'	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	5-1/2 x 14	5-1/2 x 16	5-1/2 x 16	5-1/2 x 16
	24'	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 18
No. 3	10'	(3) 2 x 12s	(4) 2 x 12s	(4) 2 x 12s	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4
	12'	(4) 2 x 12s	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 9-1/2	3-1/2 x 11-1/4	3-1/2 x 11-1/4
	14'	3-1/2 x 9-1/4	3-1/2 x 9-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8
	16'	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	5-1/2 x 11-7/8
	18'	3-1/2 x 11-1/4	3-1/2 x 11-7/8	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	5-1/2 x 14	5-1/2 x 14
	20'	3-1/2 x 14	3-1/2 x 14	3-1/2 x 14	3-1/2 x 16	5-1/2 x 14	5-1/2 x 14	5-1/2 x 16
	22'	3-1/2 x 14	3-1/2 x 16	3-1/2 x 16	5-1/2 x 14	5-1/2 x 16	5-1/2 x 16	5-1/2 x 16
	24'	3-1/2 x 16	3-1/2 x 16	3-1/2 x 18	5-1/2 x 16	5-1/2 x 16	5-1/2 x 18	5-1/2 x 18

(See Requirements for Use on page 7, Key and Notes on page 19, and Example on this page)

Example: Roof Ridge Beam
(See Table 16 on page 20)

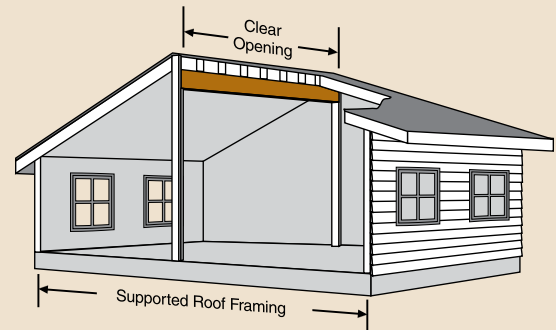
Ground Snow Load** = 40 psf
 (**Equivalent to a 28 psf Design Roof Snow Load)

Dead Load = 10 psf

Load Duration Factor = 1.15

Span of Supported Roof Framing = 14' + 14' = 28'

Clear Opening = 14'



Beam size is based on the load transferred from 1/2 the span of the supported roof framing.

Southern Pine Beam Selected: No.1 Southern Pine Lumber - (4) 2x12s or
 (from Table 16) 24F-1.7E (V4) Southern Pine Glulam - 3-1/2" x 11-1/4"