



PACIFIC LUMBER INSPECTION BUREAU

Technical Report No. 8

Span Tables for Headers and Girders for
Domestic Species Published in
Standard Grading Rules No. 17

July 1, 2021



INTRODUCTION

The International Residential Code (IRC) and state building codes include prescriptive sections that specify construction requirements according to particular materials and construction methods rather than to performance criteria. Many designers take this path to demonstrate compliance with the code's safety and performance standards. Prescriptive provisions in the building codes that cover wood-frame construction are primarily based on four major North American commercial species combinations: Douglas Fir-Larch, Hem-Fir, Southern pine, all from the U.S., and Spruce-Pine-Fir (SPF) from Canada. Those prescriptive provisions provide either species, grade, and size-specific span tables for common loading conditions for the four major North American species combinations or the requirements are based on the minimum properties for certain grades and sizes of the four major North American species combinations. However, the building code allows alternate species to be used with the prescriptive code if their design properties are equal or greater to the lowest value of these four major North American species or by using other methods, such as span tables, to show the species meets the design requirements.

A variety of engineering design tools are available when alternate species are used. The prescriptive sections of the IRC and many state codes allow the use American Wood Council's (AWC) *Span Tables for Joists and Rafters* (STJR) (4) for other grades and species of lumber and for other loading conditions. These span tables can be used with the published design values to determine appropriate spans for any species. Published design values appear in PLIB's *Standard No. 17(1)*, AWC's *National Design Specification Supplement* (3) and AWC's *Design Values for STJR* (6) publication. PLIB's website also includes a span calculator that can be used with North American and European species.

In areas where the basic wind speeds are 130 mph or less (in some locations less than 140 mph), prescriptive provisions in the building codes that address wall studs and connection requirements have been considered to be independent of the lumber species. However, in areas where the basic wind speeds are greater than 130 mph, the prescriptive provisions of the building codes don't typically apply and the user is directed to use the pre-engineered wood-frame construction provisions in AWC's *Wood-Frame Construction Manual for One- and Two-Family Dwellings* (WFCM) (3) or ICC's *Standard for Residential Construction in High-Wind Regions* (ICC 600) (9) or to design the structure in accordance with the loads shown in *ASCE 7-16 Minimum Design Loads for Buildings and Other Structures* (ASCE 7) (2). When designing to the wind loads in ASCE 7 (2), AWC's *National Design Specification for Wood Construction* (NDS) (7) is used, which includes design values for all North American and non-North American species approved by the American Lumber Standards Committee. PLIB publishes Technical Report No. 5 *Maximum Allowable Stud Length Tables for European Species and Countries in High Wind Zones*.

This technical report provides span tables for girders and headers as well as design criteria for jack studs for individual domestic species listed in *Standard No. 17(1)* for use with the prescriptive code. A companion report, Technical Report No. 7, covers European species. The design criteria, calculations, and tabulated values shown below are consistent with AWC's *Wood Frame Construction Manual* (3) *Table 2.11, Tables 3.22A2-3.22E2, Table 3.22F, Tables 3.24A2-3.24B2, and Table 3.24C* and ICC's *2018 International Residential Code* (8) *R602.7(1)* and *R602.7(2)*.

DESIGN CRITERIA

Dead Loads

- Roof Dead Load – 20 psf
- Wall Dead Load – 121 plf
- Floor Dead Load – 10 psf

Live Loads

- Roof Live Load – 20 psf
- Floor Live Load – 40 psf

Snow Loads

- Ground Snow Loads – 30 psf, 50 psf and 70 psf

Balanced

- Exposure Factor (C_e)
- Thermal Factor (C_t)
- Importance Factor (I_s)

Unbalanced

- 1.0 Importance Factor (I_s)

Header/Girder Deflection Limit

- $\Delta_{LL}=L/240$ (Supporting only Roof and Ceiling Loads)
- $\Delta_{LL}=L/360$

Load Combinations Utilized

- Combination 1 – Dead Load + Roof Live Load, ($C_D = 1.25$)
- Combination 2 – Dead Load + Floor Live Load, ($C_D = 1.0$)
- Combination 3 – Dead Load + Snow Load, ($C_D = 1.15$)
- Combination 4 – Dead Load + 0.75 Floor Live Load + 0.75 Roof Live Load, ($C_D = 1.25$)
- Combination 5 – Dead Load + 0.75 Floor Live Load + 0.75 Snow Load, ($C_D = 1.15$)

Building Width

- 20 ft, 28 ft, and 36 ft

Material Sizes

- 1 ply – 2x6, 2x8, 2x10, 2x12 ($C_r = 1.0$)
- 2 ply – 2x4, 2x8, 2x10, 2x12 ($C_r = 1.1$)
- 3 ply – 2x8, 2x10, 2x12 ($C_r = 1.15$)
- 4 ply – 2x8, 2x10, 2x12 ($C_r = 1.15$)

Header/Girder Type

- Raised

REFERENCES

1. Pacific Lumber Inspection Bureau. 2018. Standard No. 17 Grading Rules for West Coast Lumber. 1010 S. 336th St. Suite 210, Federal Way, WA, 98003.
2. American Society of Civil Engineers. 2016. Minimum Design Loads and Associated Criteria for Buildings and Other Structures. 1801 Alexander Bell Drive, Reston, VA, 20191
3. American Wood Council. 2018. Wood Frame Construction Manual for One and Two-Family Dwellings. 222 Catoctin Circle SE, Suite 201, Leesburg, VA, 20175.
4. American Wood Council. 2018. NDS Supplement. 222 Catoctin Circle SE, Suite 201, Leesburg, VA, 20175.
5. American Wood Council. 2021. Span Tables for Joists and Rafters. 222 Catoctin Circle SE, Leesburg, VA, 20175.
6. American Wood Council. 2021. Design Values for Joists and Rafters. 222 Catoctin Circle SE. Leesburg, VA, 20175.
7. American Wood Council. 2018. NDS National Design Specification for Wood Construction. 222 Catoctin Circle SE. Leesburg, VA, 20175.
8. International Code Council, Inc. 2018. International Residential Code. 500 New Jersey Ave. NW, Washington, DC, 20001
9. International Code Council, Inc. 2014 ICC 600 Standard for Residential Construction in High-Wind Regions. 500 New Jersey Ave. NW, Washington, DC 20001

TABLE 1 - GIRDER SPANS^a AND HEADER SPANS^a FOR EXTERIOR BEARING WALLS
 (Maximum spans and required number of jack studs for No. 2 Alaska Cedar)

GIRDERS AND HEADERS SUPPORTING	SIZE	GROUND SNOW LOAD (psf) ^d																	
		30						50						70					
		Building width ^b (feet)																	
		20		28		36		20		28		36		20		28		36	
Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c		
Roof and ceiling	1-2x6	3-5	1	2-11	1	2-8	1	2-11	1	2-6	2	2-3	2	2-7	1	2-3	2	2-0	2
	1-2x8	4-3	1	3-9	2	3-4	2	3-8	2	3-2	2	2-10	2	3-3	2	2-10	2	2-7	2
	1-2x10	5-3	2	4-7	2	4-1	2	4-6	2	3-11	2	3-6	2	4-0	2	3-6	2	3-1	2
	1-2x12	6-1	2	5-3	2	4-9	2	5-2	2	4-6	2	4-1	3	4-7	2	4-0	3	3-7	3
	2-2x4	3-5	1	3-0	1	2-8	1	2-11	1	2-7	1	2-4	1	2-7	1	2-3	1	2-0	1
	2-2x6	5-0	1	4-4	1	3-11	1	4-4	1	3-9	1	3-4	1	3-10	1	3-4	1	3-0	1
	2-2x8	6-4	1	5-6	1	4-11	1	5-5	1	4-9	1	4-3	2	4-10	1	4-3	2	3-9	2
	2-2x10	7-9	1	6-9	1	6-1	2	6-8	2	5-9	2	5-2	2	5-11	2	5-2	2	4-7	2
	2-2x12	9-0	2	7-10	2	7-0	2	7-8	2	6-9	2	6-0	2	6-10	2	6-0	2	5-4	2
	3-2x8	7-11	1	6-11	1	6-2	1	6-10	1	5-11	1	5-4	1	6-1	1	5-3	1	4-9	1
	3-2x10	9-9	1	8-5	1	7-7	1	8-4	1	7-3	1	6-6	2	7-5	1	6-5	2	5-9	2
	3-2x12	11-3	1	9-10	1	8-9	2	9-8	1	8-5	2	7-6	2	8-7	2	7-6	2	6-8	2
	4-2x8	9-2	1	8-0	1	7-2	1	7-10	1	6-10	1	6-2	1	7-0	1	6-1	1	5-6	1
4-2x10	11-3	1	9-9	1	8-9	1	9-7	1	8-4	1	7-6	1	8-6	1	7-5	1	6-8	2	
4-2x12	13-0	1	11-4	1	10-2	1	11-2	1	9-8	1	8-8	2	9-11	1	8-7	2	7-9	2	
Roof, ceiling and one center-bearing floor	1-2x6	2-9	1	2-5	2	2-3	2	2-7	1	2-3	2	2-0	2	2-4	2	2-1	2	1-11	2
	1-2x8	3-6	2	3-1	2	2-10	2	3-3	2	2-10	2	2-7	2	3-0	2	2-8	2	2-5	2
	1-2x10	4-4	2	3-9	2	3-5	2	4-0	2	3-6	2	3-2	2	3-8	2	3-3	2	2-11	3
	1-2x12	5-0	2	4-5	2	4-0	3	4-7	2	4-0	3	3-8	3	4-3	2	3-9	3	3-5	3
	2-2x4	2-10	1	2-6	1	2-3	1	2-7	1	2-3	1	2-1	1	2-5	1	2-1	1	1-11	1
	2-2x6	4-2	1	3-8	1	3-3	1	3-10	1	3-4	1	3-0	1	3-6	1	3-1	1	2-10	2
	2-2x8	5-3	1	4-7	1	4-2	2	4-10	1	4-3	2	3-10	2	4-5	2	3-11	2	3-6	2
	2-2x10	6-5	2	5-7	2	5-1	2	5-10	2	5-2	2	4-8	2	5-5	2	4-9	2	4-4	2
	2-2x12	7-5	2	6-6	2	5-11	2	6-10	2	6-0	2	5-5	2	6-3	2	5-6	2	5-0	2
	3-2x8	6-7	1	5-9	1	5-2	1	6-0	1	5-3	1	4-9	1	5-7	1	4-11	1	4-5	2
	3-2x10	8-0	1	7-1	1	6-4	2	7-4	1	6-6	2	5-10	2	6-9	2	6-0	2	5-5	2
	3-2x12	9-3	2	8-2	2	7-4	2	8-6	2	7-6	2	6-9	2	7-10	2	6-11	2	6-3	2
	4-2x8	7-7	1	6-8	1	6-0	1	6-11	1	6-1	1	5-6	1	6-5	1	5-8	1	5-1	1
4-2x10	9-3	1	8-2	1	7-4	1	8-6	1	7-6	1	6-9	2	7-10	1	6-11	2	6-3	2	
4-2x12	10-9	1	9-5	2	8-6	2	9-10	1	8-8	2	7-10	2	9-1	2	8-0	2	7-3	2	
Roof, ceiling and one clear span floor	1-2x6	2-6	2	2-2	2	1-11	2	2-4	2	2-0	2	1-10	2	2-2	2	1-11	2	1-9	2
	1-2x8	3-2	2	2-9	2	2-5	2	2-11	2	2-7	2	2-4	2	2-9	2	2-5	2	2-2	2
	1-2x10	3-10	2	3-4	2	3-0	3	3-7	2	3-2	2	2-10	3	3-5	2	2-11	3	2-8	3
	1-2x12	4-5	2	3-10	3	3-5	3	4-2	2	3-8	3	3-3	3	3-11	3	3-5	3	3-1	3
	2-2x4	2-6	1	2-2	1	1-11	1	2-4	1	2-1	1	1-10	1	2-3	1	1-11	1	1-9	1
	2-2x6	3-8	1	3-2	1	2-10	1	3-5	1	3-0	1	2-8	2	3-3	1	2-10	1	2-6	2

	2-2x8	4 - 8	1	4 - 0	2	3 - 7	2	4 - 4	2	3 - 10	2	3 - 5	2	4 - 1	2	3 - 7	2	3 - 3	2
	2-2x10	5 - 8	2	4 - 11	2	4 - 5	2	5 - 4	2	4 - 8	2	4 - 2	2	5 - 0	2	4 - 4	2	3 - 11	2
	2-2x12	6 - 7	2	5 - 8	2	5 - 1	2	6 - 2	2	5 - 5	2	4 - 10	2	5 - 10	2	5 - 1	2	4 - 7	2
	3-2x8	5 - 10	1	5 - 1	1	4 - 6	2	5 - 5	1	4 - 9	1	4 - 3	2	5 - 2	1	4 - 6	2	4 - 0	2
	3-2x10	7 - 1	1	6 - 2	2	5 - 6	2	6 - 8	2	5 - 10	2	5 - 3	2	6 - 3	2	5 - 6	2	4 - 11	2
	3-2x12	8 - 3	2	7 - 2	2	6 - 5	2	7 - 9	2	6 - 9	2	6 - 1	2	7 - 3	2	6 - 4	2	5 - 8	2
	4-2x8	6 - 8	1	5 - 10	1	5 - 3	1	6 - 4	1	5 - 6	1	4 - 11	1	5 - 11	1	5 - 2	1	4 - 8	2
	4-2x10	8 - 2	1	7 - 1	1	6 - 4	2	7 - 8	1	6 - 9	2	6 - 0	2	7 - 3	1	6 - 4	2	5 - 8	2
4-2x12	9 - 6	1	8 - 3	2	7 - 5	2	8 - 11	2	7 - 9	2	7 - 0	2	8 - 5	2	7 - 4	2	6 - 7	2	
Roof, ceiling and two center-bearing floors	1-2x6	2 - 4	2	2 - 0	2	1 - 10	2	2 - 2	2	1 - 11	2	1 - 9	2	2 - 1	2	1 - 10	2	1 - 8	2
	1-2x8	2 - 11	2	2 - 7	2	2 - 4	2	2 - 9	2	2 - 6	2	2 - 3	2	2 - 8	2	2 - 4	2	2 - 1	2
	1-2x10	3 - 7	2	3 - 2	2	2 - 10	3	3 - 5	2	3 - 0	3	2 - 9	3	3 - 3	2	2 - 10	3	2 - 7	3
	1-2x12	4 - 2	2	3 - 8	3	3 - 4	3	3 - 11	3	3 - 6	3	3 - 2	3	3 - 9	3	3 - 4	3	3 - 0	3
	2-2x4	2 - 4	1	2 - 1	1	1 - 10	1	2 - 3	1	2 - 0	1	1 - 9	1	2 - 1	1	1 - 10	1	1 - 8	1
	2-2x6	3 - 5	1	3 - 0	1	2 - 9	1	3 - 3	1	2 - 11	1	2 - 7	2	3 - 1	1	2 - 9	2	2 - 6	2
	2-2x8	4 - 4	2	3 - 10	2	3 - 6	2	4 - 2	2	3 - 8	2	3 - 4	2	3 - 11	2	3 - 5	2	3 - 2	2
	2-2x10	5 - 4	2	4 - 8	2	4 - 3	2	5 - 1	2	4 - 6	2	4 - 0	2	4 - 9	2	4 - 3	2	3 - 10	2
	2-2x12	6 - 2	2	5 - 5	2	4 - 11	2	5 - 10	2	5 - 2	2	4 - 8	2	5 - 7	2	4 - 11	2	4 - 5	3
	3-2x8	5 - 5	1	4 - 10	1	4 - 4	2	5 - 2	1	4 - 7	2	4 - 2	2	4 - 11	1	4 - 4	2	3 - 11	2
	3-2x10	6 - 8	2	5 - 10	2	5 - 4	2	6 - 4	2	5 - 7	2	5 - 1	2	6 - 0	2	5 - 3	2	4 - 9	2
	3-2x12	7 - 8	2	6 - 10	2	6 - 2	2	7 - 4	2	6 - 6	2	5 - 10	2	6 - 11	2	6 - 2	2	5 - 7	2
4-2x8	6 - 3	1	5 - 6	1	5 - 0	1	6 - 0	1	5 - 3	1	4 - 9	1	5 - 8	1	5 - 0	1	4 - 6	2	
4-2x10	7 - 8	1	6 - 9	2	6 - 1	2	7 - 4	1	6 - 5	2	5 - 10	2	6 - 11	2	6 - 1	2	5 - 6	2	
4-2x12	8 - 11	2	7 - 10	2	7 - 1	2	8 - 6	2	7 - 6	2	6 - 9	2	8 - 0	2	7 - 1	2	6 - 5	2	
Roof, ceiling and two clear-span floors	1-2x6	1 - 11	2	1 - 8	2	1 - 6	2	1 - 11	2	1 - 8	2	1 - 6	2	1 - 10	2	1 - 7	2	1 - 5	2
	1-2x8	2 - 5	2	2 - 1	2	1 - 10	2	2 - 5	2	2 - 1	2	1 - 10	3	2 - 4	2	2 - 0	3	1 - 10	3
	1-2x10	2 - 11	2	2 - 6	3	2 - 3	3	2 - 11	3	2 - 6	3	2 - 3	3	2 - 10	3	2 - 6	3	2 - 3	3
	1-2x12	3 - 4	3	2 - 11	3	2 - 8	3	3 - 4	3	2 - 11	3	2 - 8	3	3 - 4	3	2 - 11	3	2 - 7	4
	2-2x4	1 - 11	1	1 - 8	1	1 - 6	1	1 - 11	1	1 - 8	1	1 - 6	1	1 - 10	1	1 - 8	1	1 - 6	1
	2-2x6	2 - 9	1	2 - 5	2	2 - 2	2	2 - 9	1	2 - 5	2	2 - 2	2	2 - 9	2	2 - 5	2	2 - 2	2
	2-2x8	3 - 6	2	3 - 1	2	2 - 9	2	3 - 6	2	3 - 1	2	2 - 9	2	3 - 5	2	3 - 0	2	2 - 9	2
	2-2x10	4 - 4	2	3 - 9	2	3 - 4	2	4 - 4	2	3 - 9	2	3 - 4	2	4 - 3	2	3 - 8	2	3 - 4	3
	2-2x12	5 - 0	2	4 - 4	2	3 - 11	3	5 - 0	2	4 - 4	2	3 - 11	3	4 - 11	2	4 - 3	3	3 - 10	3
	3-2x8	4 - 5	1	3 - 10	2	3 - 5	2	4 - 5	2	3 - 10	2	3 - 5	2	4 - 4	2	3 - 9	2	3 - 5	2
	3-2x10	5 - 5	2	4 - 8	2	4 - 3	2	5 - 5	2	4 - 8	2	4 - 3	2	5 - 3	2	4 - 7	2	4 - 2	2
	3-2x12	6 - 3	2	5 - 5	2	4 - 11	2	6 - 3	2	5 - 5	2	4 - 11	2	6 - 1	2	5 - 4	2	4 - 10	2
4-2x8	5 - 1	1	4 - 5	1	4 - 0	2	5 - 1	1	4 - 5	2	4 - 0	2	5 - 0	1	4 - 4	2	3 - 11	2	
4-2x10	6 - 3	1	5 - 5	2	4 - 10	2	6 - 3	2	5 - 5	2	4 - 10	2	6 - 1	2	5 - 4	2	4 - 9	2	
4-2x12	7 - 3	2	6 - 3	2	5 - 8	2	7 - 3	2	6 - 3	2	5 - 8	2	7 - 1	2	6 - 2	2	5 - 7	2	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- Spans are given in feet and inches.
- Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- Use 30 psf ground snow load for cases in which ground snow load is less than 30 psf and the roof live load is equal to or less than 20 psf.
- Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (for example, cripple studs bearing on the header), tabulated spans for header consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

TABLE 2 - GIRDER SPANS^a AND HEADER SPANS^a FOR EXTERIOR BEARING WALLS
 (Maximum spans and required number of jack studs for No. 2 Douglas Fir-Larch)

GIRDERS AND HEADERS SUPPORTING	SIZE	GROUND SNOW LOAD (psf) ^d																	
		30						50						70					
		Building width ^b (feet)																	
		20		28		36		20		28		36		20		28		36	
Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c		
Roof and ceiling	1-2x6	3-7	1	3-1	1	2-10	1	3-1	1	2-8	2	2-5	2	2-9	2	2-5	2	2-2	2
	1-2x8	4-6	1	3-11	2	3-7	2	3-11	2	3-5	2	3-0	2	3-5	2	3-0	2	2-8	2
	1-2x10	5-7	2	4-10	2	4-4	2	4-9	2	4-2	2	3-9	2	4-3	2	3-8	2	3-4	3
	1-2x12	6-5	2	5-7	2	5-0	2	5-6	2	4-10	2	4-4	3	4-11	2	4-3	3	3-10	3
	2-2x4	3-8	1	3-2	1	2-10	1	3-1	1	2-9	1	2-5	1	2-9	1	2-5	1	2-2	1
	2-2x6	5-4	1	4-8	1	4-2	1	4-7	1	4-0	1	3-7	1	4-1	1	3-6	1	3-2	1
	2-2x8	6-9	1	5-10	1	5-3	1	5-9	1	5-0	1	4-6	2	5-1	1	4-6	2	4-0	2
	2-2x10	8-3	1	7-2	2	6-5	2	7-1	2	6-2	2	5-6	2	6-3	2	5-5	2	4-11	2
	2-2x12	9-6	2	8-4	2	7-5	2	8-2	2	7-1	2	6-5	2	7-3	2	6-4	2	5-8	2
	3-2x8	8-5	1	7-4	1	6-7	1	7-3	1	6-3	1	5-8	1	6-5	1	5-7	1	5-0	2
	3-2x10	10-4	1	9-0	1	8-0	1	8-10	1	7-8	1	6-11	2	7-10	1	6-10	2	6-2	2
	3-2x12	11-11	1	10-5	1	9-4	2	10-3	2	8-11	2	8-0	2	9-1	2	7-11	2	7-1	2
	4-2x8	9-9	1	8-6	1	7-7	1	8-4	1	7-3	1	6-6	1	7-5	1	6-5	1	5-10	1
4-2x10	11-11	1	10-4	1	9-3	1	10-2	1	8-10	1	8-0	1	9-1	1	7-11	1	7-1	2	
4-2x12	13-9	1	12-0	1	10-9	1	11-10	1	10-3	2	9-3	2	10-6	1	9-2	2	8-3	2	
Roof, ceiling and one center-bearing floor	1-2x6	2-11	1	2-7	2	2-4	2	2-9	2	2-5	2	2-2	2	2-6	2	2-3	2	2-0	2
	1-2x8	3-9	2	3-4	2	3-0	2	3-5	2	3-0	2	2-9	2	3-2	2	2-10	2	2-6	2
	1-2x10	4-7	2	4-0	2	3-8	2	4-2	2	3-8	2	3-4	3	3-10	2	3-5	2	3-1	3
	1-2x12	5-4	2	4-8	2	4-3	3	4-10	2	4-3	3	3-10	3	4-6	2	4-0	3	3-7	3
	2-2x4	3-0	1	2-8	1	2-5	1	2-9	1	2-5	1	2-2	1	2-6	1	2-3	1	2-0	1
	2-2x6	4-5	1	3-10	1	3-6	1	4-0	1	3-6	1	3-2	1	3-9	1	3-3	1	3-0	2
	2-2x8	5-7	1	4-11	2	4-5	2	5-1	1	4-6	2	4-1	2	4-8	2	4-2	2	3-9	2
	2-2x10	6-9	2	6-0	2	5-5	2	6-3	2	5-6	2	4-11	2	5-9	2	5-1	2	4-7	2
	2-2x12	7-10	2	6-11	2	6-3	2	7-3	2	6-4	2	5-9	2	6-8	2	5-11	2	5-4	2
	3-2x8	6-11	1	6-1	1	5-6	1	6-5	1	5-7	1	5-1	2	5-11	1	5-2	1	4-8	2
	3-2x10	8-6	1	7-6	2	6-9	2	7-10	1	6-10	2	6-2	2	7-2	2	6-4	2	5-9	2
	3-2x12	9-10	2	8-8	2	7-10	2	9-1	2	7-11	2	7-2	2	8-4	2	7-4	2	6-8	2
	4-2x8	8-0	1	7-1	1	6-5	1	7-4	1	6-6	1	5-10	1	6-10	1	6-0	1	5-5	1
4-2x10	9-10	1	8-8	1	7-9	1	9-0	1	7-11	1	7-2	2	8-4	1	7-4	2	6-8	2	
4-2x12	11-4	1	10-0	2	9-0	2	10-5	1	9-2	2	8-3	2	9-8	2	8-6	2	7-8	2	
Roof, ceiling and one clear span floor	1-2x6	2-7	2	2-3	2	2-0	2	2-6	2	2-2	2	1-11	2	2-4	2	2-0	2	1-10	2
	1-2x8	3-4	2	2-11	2	2-7	2	3-1	2	2-9	2	2-5	2	2-11	2	2-7	2	2-4	2
	1-2x10	4-1	2	3-6	2	3-2	3	3-10	2	3-4	3	3-0	3	3-7	2	3-2	3	2-10	3
	1-2x12	4-8	2	4-1	3	3-8	3	4-5	3	3-10	3	3-6	3	4-2	3	3-8	3	3-3	3
	2-2x4	2-8	1	2-4	1	2-1	1	2-6	1	2-2	1	1-11	1	2-4	1	2-1	1	1-10	1
	2-2x6	3-11	1	3-4	1	3-0	1	3-8	1	3-2	1	2-10	2	3-5	1	3-0	2	2-8	2

	2-2x8	4-11	1	4-3	2	3-10	2	4-7	2	4-0	2	3-7	2	4-4	2	3-10	2	3-5	2
	2-2x10	6-0	2	5-3	2	4-8	2	5-8	2	4-11	2	4-5	2	5-4	2	4-8	2	4-2	2
	2-2x12	7-0	2	6-1	2	5-5	2	6-7	2	5-9	2	5-2	2	6-2	2	5-5	2	4-10	3
	3-2x8	6-2	1	5-4	1	4-10	2	5-9	1	5-1	2	4-6	2	5-5	1	4-9	2	4-3	2
	3-2x10	7-6	2	6-6	2	5-10	2	7-1	2	6-2	2	5-6	2	6-8	2	5-10	2	5-3	2
	3-2x12	8-9	2	7-7	2	6-9	2	8-2	2	7-2	2	6-5	2	7-9	2	6-9	2	6-1	2
	4-2x8	7-1	1	6-2	1	5-6	1	6-8	1	5-10	1	5-3	1	6-3	1	5-6	1	4-11	2
	4-2x10	8-8	1	7-7	1	6-9	2	8-2	1	7-1	2	6-5	2	7-8	1	6-8	2	6-0	2
	4-2x12	10-1	2	8-9	2	7-10	2	9-6	2	8-3	2	7-5	2	8-11	2	7-9	2	7-0	2
Roof, ceiling and two center-bearing floors	1-2x6	2-5	2	2-2	2	1-11	2	2-4	2	2-1	2	1-10	2	2-3	2	1-11	2	1-9	2
	1-2x8	3-1	2	2-9	2	2-6	2	3-0	2	2-7	2	2-4	2	2-10	2	2-6	2	2-3	3
	1-2x10	3-9	2	3-4	2	3-0	3	3-7	2	3-2	3	2-11	3	3-5	2	3-0	3	2-9	3
	1-2x12	4-5	2	3-11	3	3-6	3	4-2	3	3-8	3	3-4	3	4-0	3	3-6	3	3-2	3
	2-2x4	2-6	1	2-2	1	2-0	1	2-4	1	2-1	1	1-11	1	2-3	1	2-0	1	1-9	1
	2-2x6	3-8	1	3-2	1	2-11	2	3-6	1	3-1	2	2-9	2	3-3	1	2-11	2	2-7	2
	2-2x8	4-7	2	4-1	2	3-8	2	4-5	2	3-11	2	3-6	2	4-2	2	3-8	2	3-4	2
	2-2x10	5-7	2	5-0	2	4-6	2	5-4	2	4-9	2	4-3	2	5-1	2	4-6	2	4-1	2
	2-2x12	6-6	2	5-9	2	5-2	2	6-3	2	5-6	2	5-0	2	5-11	2	5-2	2	4-8	3
	3-2x8	5-9	1	5-1	1	4-7	2	5-6	1	4-10	2	4-5	2	5-2	1	4-7	2	4-2	2
	3-2x10	7-1	2	6-3	2	5-7	2	6-9	2	5-11	2	5-4	2	6-4	2	5-7	2	5-1	2
	3-2x12	8-2	2	7-2	2	6-6	2	7-9	2	6-11	2	6-3	2	7-4	2	6-6	2	5-11	2
	4-2x8	6-8	1	5-10	1	5-4	1	6-4	1	5-7	1	5-1	2	6-0	1	5-4	1	4-10	2
	4-2x10	8-2	1	7-2	2	6-6	2	7-9	1	6-10	2	6-2	2	7-4	2	6-6	2	5-10	2
4-2x12	9-5	2	8-4	2	7-6	2	9-0	2	7-11	2	7-2	2	8-6	2	7-6	2	6-9	2	
Roof, ceiling and two clear-span floors	1-2x6	2-0	2	1-9	2	1-7	2	2-0	2	1-9	2	1-7	2	1-11	2	1-8	2	1-6	2
	1-2x8	2-6	2	2-2	2	2-0	2	2-6	2	2-2	2	2-0	3	2-6	2	2-2	3	1-11	3
	1-2x10	3-1	2	2-8	3	2-5	3	3-1	3	2-8	3	2-5	3	3-0	3	2-8	3	2-4	3
	1-2x12	3-7	3	3-1	3	2-9	3	3-7	3	3-1	3	2-9	4	3-6	3	3-1	3	2-9	4
	2-2x4	2-0	1	1-9	1	1-7	1	2-0	1	1-9	1	1-7	1	2-0	1	1-9	1	1-7	1
	2-2x6	3-0	1	2-7	2	2-4	2	3-0	1	2-7	2	2-4	2	2-11	2	2-6	2	2-3	2
	2-2x8	3-9	2	3-3	2	2-11	2	3-9	2	3-3	2	2-11	2	3-8	2	3-2	2	2-10	2
	2-2x10	4-7	2	4-0	2	3-7	2	4-7	2	4-0	2	3-7	2	4-6	2	3-11	2	3-6	3
	2-2x12	5-4	2	4-7	2	4-2	3	5-4	2	4-7	3	4-2	3	5-2	2	4-6	3	4-1	3
	3-2x8	4-8	1	4-1	2	3-8	2	4-8	2	4-1	2	3-8	2	4-7	2	4-0	2	3-7	2
	3-2x10	5-9	2	5-0	2	4-6	2	5-9	2	5-0	2	4-6	2	5-7	2	4-11	2	4-5	2
	3-2x12	6-8	2	5-9	2	5-2	2	6-8	2	5-9	2	5-2	2	6-6	2	5-8	2	5-1	3
	4-2x8	5-5	1	4-9	1	4-3	2	5-5	1	4-9	2	4-3	2	5-4	1	4-7	2	4-2	2
	4-2x10	6-7	2	5-9	2	5-2	2	6-7	2	5-9	2	5-2	2	6-6	2	5-8	2	5-1	2
4-2x12	7-8	2	6-8	2	6-0	2	7-8	2	6-8	2	6-0	2	7-6	2	6-7	2	5-11	2	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- Spans are given in feet and inches.
- Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- Use 30 psf ground snow load for cases in which ground snow load is less than 30 psf and the roof live load is equal to or less than 20 psf.
- Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (for example, cripple studs bearing on the header), tabulated spans for header consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

TABLE 3 - GIRDER SPANS^a AND HEADER SPANS^a FOR EXTERIOR BEARING WALLS
 (Maximum spans and required number of jack studs for No. 2 Hem-Fir)

GIRDERS AND HEADERS SUPPORTING	SIZE	GROUND SNOW LOAD (psf) ^d																	
		30						50						70					
		Building width ^b (feet)																	
		20		28		36		20		28		36		20		28		36	
Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c		
Roof and ceiling	1-2x6	3-6	1	3-0	1	2-9	1	3-0	1	2-7	2	2-4	2	2-8	2	2-4	2	2-1	2
	1-2x8	4-5	1	3-10	2	3-5	2	3-9	2	3-3	2	2-11	2	3-4	2	2-11	2	2-8	2
	1-2x10	5-5	2	4-8	2	4-2	2	4-7	2	4-0	2	3-7	2	4-1	2	3-7	2	3-3	3
	1-2x12	6-3	2	5-5	2	4-11	2	5-4	2	4-8	2	4-2	3	4-9	2	4-2	3	3-9	3
	2-2x4	3-6	1	3-1	1	2-9	1	3-0	1	2-8	1	2-4	1	2-8	1	2-4	1	2-1	1
	2-2x6	5-2	1	4-6	1	4-0	1	4-5	1	3-10	1	3-6	1	3-11	1	3-5	1	3-1	1
	2-2x8	6-7	1	5-8	1	5-1	1	5-7	1	4-11	1	4-5	2	5-0	1	4-4	2	3-11	2
	2-2x10	8-0	1	6-11	2	6-3	2	6-10	2	6-0	2	5-4	2	6-1	2	5-4	2	4-9	2
	2-2x12	9-3	2	8-1	2	7-3	2	7-11	2	6-11	2	6-2	2	7-1	2	6-2	2	5-6	2
	3-2x8	8-2	1	7-2	1	6-5	1	7-0	1	6-1	1	5-6	1	6-3	1	5-5	1	4-11	2
	3-2x10	10-0	1	8-9	1	7-10	1	8-7	1	7-6	1	6-8	2	7-7	1	6-8	2	6-0	2
	3-2x12	11-7	1	10-1	1	9-1	2	9-11	2	8-8	2	7-9	2	8-10	2	7-8	2	6-11	2
	4-2x8	9-6	1	8-3	1	7-5	1	8-1	1	7-1	1	6-4	1	7-2	1	6-3	1	5-8	1
4-2x10	11-7	1	10-1	1	9-0	1	9-11	1	8-7	1	7-9	1	8-10	1	7-8	1	6-11	2	
4-2x12	13-5	1	11-8	1	10-6	1	11-6	1	10-0	2	9-0	2	10-2	1	8-11	2	8-0	2	
Roof, ceiling and one center-bearing floor	1-2x6	2-10	1	2-6	2	2-3	2	2-8	2	2-4	2	2-1	2	2-5	2	2-2	2	1-11	2
	1-2x8	3-8	2	3-2	2	2-11	2	3-4	2	2-11	2	2-8	2	3-1	2	2-9	2	2-6	2
	1-2x10	4-5	2	3-11	2	3-6	2	4-1	2	3-7	2	3-3	3	3-9	2	3-4	2	3-0	3
	1-2x12	5-2	2	4-6	2	4-1	3	4-9	2	4-2	3	3-9	3	4-4	2	3-10	3	3-6	3
	2-2x4	2-11	1	2-7	1	2-4	1	2-8	1	2-4	1	2-1	1	2-6	1	2-2	1	2-0	1
	2-2x6	4-3	1	3-9	1	3-5	1	3-11	1	3-5	1	3-1	1	3-7	1	3-2	1	2-11	2
	2-2x8	5-5	1	4-9	2	4-3	2	4-11	1	4-4	2	3-11	2	4-7	2	4-0	2	3-8	2
	2-2x10	6-7	2	5-10	2	5-3	2	6-1	2	5-4	2	4-10	2	5-7	2	4-11	2	4-5	2
	2-2x12	7-8	2	6-9	2	6-1	2	7-0	2	6-2	2	5-7	2	6-6	2	5-9	2	5-2	2
	3-2x8	6-9	1	5-11	1	5-4	1	6-2	1	5-5	1	4-11	2	5-9	1	5-1	1	4-7	2
	3-2x10	8-3	1	7-3	2	6-7	2	7-7	1	6-8	2	6-0	2	7-0	2	6-2	2	5-7	2
	3-2x12	9-7	2	8-5	2	7-7	2	8-9	2	7-9	2	7-0	2	8-1	2	7-2	2	6-6	2
	4-2x8	7-10	1	6-10	1	6-2	1	7-2	1	6-4	1	5-8	1	6-7	1	5-10	1	5-3	1
4-2x10	9-6	1	8-5	1	7-7	1	8-9	1	7-8	1	6-11	2	8-1	1	7-1	2	6-5	2	
4-2x12	11-1	1	9-9	2	8-9	2	10-2	1	8-11	2	8-1	2	9-4	2	8-3	2	7-6	2	
Roof, ceiling and one clear span floor	1-2x6	2-7	2	2-3	2	2-0	2	2-5	2	2-1	2	1-10	2	2-3	2	2-0	2	1-9	2
	1-2x8	3-3	2	2-10	2	2-6	2	3-0	2	2-8	2	2-4	2	2-10	2	2-6	2	2-3	2
	1-2x10	3-11	2	3-5	2	3-1	3	3-8	2	3-3	3	2-11	3	3-6	2	3-0	3	2-9	3
	1-2x12	4-7	2	4-0	3	3-7	3	4-3	3	3-9	3	3-4	3	4-0	3	3-6	3	3-2	3
	2-2x4	2-7	1	2-3	1	2-0	1	2-5	1	2-1	1	1-11	1	2-3	1	2-0	1	1-9	1
2-2x6	3-9	1	3-3	1	2-11	1	3-7	1	3-1	1	2-9	2	3-4	1	2-11	2	2-7	2	

	2-2x8	4-9	1	4-2	2	3-9	2	4-6	2	3-11	2	3-6	2	4-3	2	3-8	2	3-4	2
	2-2x10	5-10	2	5-1	2	4-7	2	5-6	2	4-9	2	4-4	2	5-2	2	4-6	2	4-1	2
	2-2x12	6-9	2	5-11	2	5-3	2	6-4	2	5-7	2	5-0	2	6-0	2	5-3	2	4-8	3
	3-2x8	6-0	1	5-2	1	4-8	2	5-7	1	4-11	2	4-5	2	5-4	1	4-7	2	4-2	2
	3-2x10	7-4	2	6-4	2	5-8	2	6-10	2	6-0	2	5-5	2	6-6	2	5-8	2	5-1	2
	3-2x12	8-6	2	7-4	2	6-7	2	8-0	2	6-11	2	6-3	2	7-6	2	6-7	2	5-11	2
	4-2x8	6-11	1	6-0	1	5-5	1	6-6	1	5-8	1	5-1	1	6-1	1	5-4	1	4-10	2
	4-2x10	8-5	1	7-4	1	6-7	2	7-11	1	6-11	2	6-3	2	7-6	1	6-6	2	5-10	2
	4-2x12	9-9	2	8-6	2	7-7	2	9-2	2	8-0	2	7-3	2	8-8	2	7-7	2	6-9	2
Roof, ceiling and two center-bearing floors	1-2x6	2-5	2	2-1	2	1-11	2	2-3	2	2-0	2	1-10	2	2-2	2	1-11	2	1-9	2
	1-2x8	3-0	2	2-8	2	2-5	2	2-11	2	2-6	2	2-4	2	2-9	2	2-5	2	2-2	3
	1-2x10	3-8	2	3-3	2	2-11	3	3-6	2	3-1	3	2-10	3	3-4	2	2-11	3	2-8	3
	1-2x12	4-3	2	3-9	3	3-5	3	4-1	3	3-7	3	3-3	3	3-10	3	3-5	3	3-1	3
	2-2x4	2-5	1	2-2	1	1-11	1	2-4	1	2-0	1	1-10	1	2-2	1	1-11	1	1-9	1
	2-2x6	3-6	1	3-1	1	2-10	2	3-4	1	3-0	2	2-8	2	3-2	1	2-10	2	2-7	2
	2-2x8	4-6	2	3-11	2	3-7	2	4-3	2	3-9	2	3-5	2	4-0	2	3-7	2	3-3	2
	2-2x10	5-6	2	4-10	2	4-4	2	5-3	2	4-7	2	4-2	2	4-11	2	4-4	2	3-11	2
	2-2x12	6-4	2	5-7	2	5-1	2	6-1	2	5-4	2	4-10	2	5-9	2	5-1	2	4-7	3
	3-2x8	5-7	1	4-11	1	4-6	2	5-4	1	4-9	2	4-3	2	5-1	1	4-6	2	4-0	2
	3-2x10	6-10	2	6-0	2	5-6	2	6-6	2	5-9	2	5-3	2	6-2	2	5-5	2	4-11	2
	3-2x12	7-11	2	7-0	2	6-4	2	7-7	2	6-8	2	6-1	2	7-2	2	6-4	2	5-9	2
	4-2x8	6-6	1	5-8	1	5-2	1	6-2	1	5-5	1	4-11	2	5-10	1	5-2	1	4-8	2
	4-2x10	7-11	1	7-0	2	6-4	2	7-6	1	6-8	2	6-0	2	7-2	2	6-3	2	5-8	2
4-2x12	9-2	2	8-1	2	7-4	2	8-9	2	7-9	2	7-0	2	8-3	2	7-4	2	6-7	2	
Roof, ceiling and two clear-span floors	1-2x6	1-11	2	1-8	2	1-6	2	1-11	2	1-8	2	1-6	2	1-11	2	1-8	2	1-6	2
	1-2x8	2-5	2	2-2	2	1-11	2	2-5	2	2-2	2	1-11	3	2-5	2	2-1	3	1-11	3
	1-2x10	3-0	2	2-7	3	2-4	3	3-0	3	2-7	3	2-4	3	2-11	3	2-7	3	2-4	3
	1-2x12	3-6	3	3-0	3	2-9	3	3-6	3	3-0	3	2-9	4	3-5	3	3-0	3	2-8	4
	2-2x4	2-0	1	1-9	1	1-6	1	2-0	1	1-9	1	1-6	1	1-11	1	1-8	1	1-6	1
	2-2x6	2-11	1	2-6	2	2-3	2	2-11	1	2-6	2	2-3	2	2-10	2	2-5	2	2-2	2
	2-2x8	3-8	2	3-2	2	2-10	2	3-8	2	3-2	2	2-10	2	3-7	2	3-1	2	2-10	2
	2-2x10	4-5	2	3-10	2	3-6	2	4-5	2	3-10	2	3-6	2	4-4	2	3-10	2	3-5	3
	2-2x12	5-2	2	4-6	2	4-0	3	5-2	2	4-6	3	4-0	3	5-0	2	4-5	3	3-11	3
	3-2x8	4-7	1	4-0	2	3-7	2	4-7	2	4-0	2	3-7	2	4-5	2	3-11	2	3-6	2
	3-2x10	5-7	2	4-10	2	4-4	2	5-7	2	4-10	2	4-4	2	5-5	2	4-9	2	4-3	2
	3-2x12	6-6	2	5-7	2	5-0	2	6-6	2	5-7	2	5-0	2	6-4	2	5-6	2	4-11	3
	4-2x8	5-3	1	4-7	1	4-1	2	5-3	1	4-7	2	4-1	2	5-2	1	4-6	2	4-0	2
	4-2x10	6-5	2	5-7	2	5-0	2	6-5	2	5-7	2	5-0	2	6-3	2	5-6	2	4-11	2
4-2x12	7-6	2	6-6	2	5-10	2	7-6	2	6-6	2	5-10	2	7-3	2	6-4	2	5-9	2	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- Spans are given in feet and inches.
- Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- Use 30 psf ground snow load for cases in which ground snow load is less than 30 psf and the roof live load is equal to or less than 20 psf.
- Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (for example, cripple studs bearing on the header), tabulated spans for header consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

TABLE 4 - GIRDER SPANS^a AND HEADER SPANS^a FOR EXTERIOR BEARING WALLS
 (Maximum spans and required number of jack studs for No. 2 Port Orford Cedar)

GIRDERS AND HEADERS SUPPORTING	SIZE	GROUND SNOW LOAD (psf) ^d																	
		30						50						70					
		Building width ^b (feet)																	
		20		28		36		20		28		36		20		28		36	
Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c		
Roof and ceiling	1-2x6	3-6	1	3-1	2	2-9	2	3-0	2	2-8	2	2-4	2	2-8	2	2-4	2	2-1	2
	1-2x8	4-6	2	3-11	2	3-6	2	3-10	2	3-4	2	3-0	2	3-5	2	3-0	2	2-8	2
	1-2x10	5-6	2	4-9	2	4-3	2	4-8	2	4-1	2	3-8	3	4-2	2	3-8	3	3-3	3
	1-2x12	6-4	2	5-6	2	4-11	3	5-5	2	4-9	3	4-3	3	4-10	3	4-2	3	3-9	3
	2-2x4	3-7	1	3-1	1	2-10	1	3-1	1	2-8	1	2-5	1	2-9	1	2-5	1	2-2	1
	2-2x6	5-3	1	4-7	1	4-1	1	4-6	1	3-11	1	3-6	1	4-0	1	3-6	1	3-1	2
	2-2x8	6-8	1	5-9	1	5-2	2	5-8	1	4-11	2	4-5	2	5-1	2	4-5	2	3-11	2
	2-2x10	8-1	2	7-1	2	6-4	2	6-11	2	6-1	2	5-5	2	6-2	2	5-5	2	4-10	2
	2-2x12	9-5	2	8-2	2	7-4	2	8-1	2	7-0	2	6-4	2	7-2	2	6-3	2	5-7	2
	3-2x8	8-4	1	7-3	1	6-6	1	7-1	1	6-2	1	5-7	2	6-4	1	5-6	2	4-11	2
	3-2x10	10-2	1	8-10	1	7-11	2	8-8	1	7-7	2	6-10	2	7-9	2	6-9	2	6-1	2
	3-2x12	11-9	1	10-3	2	9-2	2	10-1	2	8-9	2	7-11	2	9-0	2	7-10	2	7-0	2
	4-2x8	9-7	1	8-4	1	7-6	1	8-3	1	7-2	1	6-5	1	7-4	1	6-4	1	5-9	2
4-2x10	11-9	1	10-2	1	9-2	1	10-1	1	8-9	1	7-10	2	8-11	1	7-9	2	7-0	2	
4-2x12	13-7	1	11-10	1	10-7	2	11-8	1	10-2	2	9-1	2	10-4	2	9-0	2	8-1	2	
Roof, ceiling and one center-bearing floor	1-2x6	2-11	2	2-7	2	2-4	2	2-8	2	2-4	2	2-1	2	2-6	2	2-2	2	2-0	2
	1-2x8	3-8	2	3-3	2	2-11	2	3-5	2	3-0	2	2-8	2	3-2	2	2-9	2	2-6	3
	1-2x10	4-6	2	4-0	2	3-7	3	4-2	2	3-8	3	3-3	3	3-10	2	3-4	3	3-1	3
	1-2x12	5-3	2	4-7	3	4-2	3	4-10	3	4-3	3	3-10	3	4-5	3	3-11	3	3-6	3
	2-2x4	2-11	1	2-7	1	2-4	1	2-9	1	2-5	1	2-2	1	2-6	1	2-2	1	2-0	1
	2-2x6	4-4	1	3-10	1	3-5	1	4-0	1	3-6	1	3-2	2	3-8	1	3-3	2	2-11	2
	2-2x8	5-6	2	4-10	2	4-4	2	5-0	2	4-5	2	4-0	2	4-8	2	4-1	2	3-8	2
	2-2x10	6-8	2	5-11	2	5-4	2	6-2	2	5-5	2	4-10	2	5-8	2	5-0	2	4-6	2
	2-2x12	7-9	2	6-10	2	6-2	2	7-1	2	6-3	2	5-8	2	6-7	2	5-10	2	5-3	3
	3-2x8	6-10	1	6-0	1	5-5	2	6-4	1	5-6	2	5-0	2	5-10	1	5-1	2	4-8	2
	3-2x10	8-4	2	7-4	2	6-8	2	7-8	2	6-9	2	6-1	2	7-1	2	6-3	2	5-8	2
	3-2x12	9-8	2	8-6	2	7-9	2	8-11	2	7-10	2	7-1	2	8-3	2	7-3	2	6-7	2
	4-2x8	7-11	1	7-0	1	6-3	1	7-3	1	6-5	1	5-9	1	6-8	1	5-11	1	5-4	2
4-2x10	9-8	1	8-6	2	7-8	2	8-11	1	7-10	2	7-0	2	8-2	2	7-3	2	6-6	2	
4-2x12	11-3	2	9-10	2	8-11	2	10-4	2	9-1	2	8-2	2	9-6	2	8-5	2	7-7	2	
Roof, ceiling and one clear span floor	1-2x6	2-7	2	2-3	2	2-0	2	2-5	2	2-1	2	1-11	2	2-3	2	2-0	2	1-9	2
	1-2x8	3-3	2	2-10	2	2-7	2	3-1	2	2-8	2	2-5	3	2-11	2	2-6	2	2-3	3
	1-2x10	4-0	2	3-6	3	3-1	3	3-9	2	3-3	3	2-11	3	3-6	3	3-1	3	2-9	3
	1-2x12	4-8	3	4-0	3	3-7	3	4-4	3	3-10	3	3-5	3	4-1	3	3-7	3	3-3	4
	2-2x4	2-7	1	2-3	1	2-0	1	2-6	1	2-2	1	1-11	1	2-4	1	2-0	1	1-10	1
	2-2x6	3-10	1	3-4	2	3-0	2	3-7	1	3-2	2	2-10	2	3-5	2	2-11	2	2-8	2

	2-2x8	4 - 10	2	4 - 3	2	3 - 9	2	4 - 7	2	4 - 0	2	3 - 7	2	4 - 3	2	3 - 9	2	3 - 4	2
	2-2x10	5 - 11	2	5 - 2	2	4 - 7	2	5 - 7	2	4 - 10	2	4 - 4	2	5 - 3	2	4 - 7	2	4 - 1	2
	2-2x12	6 - 10	2	6 - 0	2	5 - 4	3	6 - 5	2	5 - 8	2	5 - 1	3	6 - 1	2	5 - 4	3	4 - 9	3
	3-2x8	6 - 1	1	5 - 3	2	4 - 9	2	5 - 8	2	5 - 0	2	4 - 6	2	5 - 4	2	4 - 8	2	4 - 3	2
	3-2x10	7 - 5	2	6 - 5	2	5 - 9	2	7 - 0	2	6 - 1	2	5 - 6	2	6 - 7	2	5 - 9	2	5 - 2	2
	3-2x12	8 - 7	2	7 - 6	2	6 - 8	2	8 - 1	2	7 - 1	2	6 - 4	2	7 - 7	2	6 - 8	2	6 - 0	2
	4-2x8	7 - 0	1	6 - 1	1	5 - 5	2	6 - 7	1	5 - 9	2	5 - 2	2	6 - 2	1	5 - 5	2	4 - 10	2
	4-2x10	8 - 7	1	7 - 5	2	6 - 8	2	8 - 1	2	7 - 0	2	6 - 4	2	7 - 7	2	6 - 7	2	5 - 11	2
	4-2x12	9 - 11	2	8 - 8	2	7 - 9	2	9 - 4	2	8 - 2	2	7 - 4	2	8 - 9	2	7 - 8	2	6 - 11	2
Roof, ceiling and two center-bearing floors	1-2x6	2 - 5	2	2 - 2	2	1 - 11	2	2 - 4	2	2 - 0	2	1 - 10	2	2 - 2	2	1 - 11	2	1 - 9	2
	1-2x8	3 - 1	2	2 - 8	2	2 - 5	2	2 - 11	2	2 - 7	2	2 - 4	3	2 - 9	2	2 - 5	3	2 - 2	3
	1-2x10	3 - 9	2	3 - 4	3	3 - 0	3	3 - 7	3	3 - 2	3	2 - 10	3	3 - 4	3	3 - 0	3	2 - 8	3
	1-2x12	4 - 4	3	3 - 10	3	3 - 6	3	4 - 2	3	3 - 8	3	3 - 4	4	3 - 11	3	3 - 5	3	3 - 1	4
	2-2x4	2 - 5	1	2 - 2	1	1 - 11	1	2 - 4	1	2 - 1	1	1 - 10	1	2 - 3	1	1 - 11	1	1 - 9	1
	2-2x6	3 - 7	1	3 - 2	2	2 - 10	2	3 - 5	2	3 - 0	2	2 - 9	2	3 - 3	2	2 - 10	2	2 - 7	2
	2-2x8	4 - 6	2	4 - 0	2	3 - 7	2	4 - 4	2	3 - 10	2	3 - 6	2	4 - 1	2	3 - 7	2	3 - 3	2
	2-2x10	5 - 7	2	4 - 11	2	4 - 5	2	5 - 3	2	4 - 8	2	4 - 3	2	5 - 0	2	4 - 5	2	4 - 0	3
	2-2x12	6 - 5	2	5 - 8	2	5 - 2	3	6 - 2	2	5 - 5	3	4 - 11	3	5 - 10	2	5 - 1	3	4 - 8	3
	3-2x8	5 - 8	1	5 - 0	2	4 - 6	2	5 - 5	2	4 - 9	2	4 - 4	2	5 - 2	2	4 - 6	2	4 - 1	2
	3-2x10	6 - 11	2	6 - 2	2	5 - 6	2	6 - 7	2	5 - 10	2	5 - 3	2	6 - 3	2	5 - 6	2	5 - 0	2
	3-2x12	8 - 1	2	7 - 1	2	6 - 5	2	7 - 8	2	6 - 9	2	6 - 2	2	7 - 3	2	6 - 5	2	5 - 10	2
	4-2x8	6 - 7	1	5 - 9	1	5 - 3	2	6 - 3	1	5 - 6	2	5 - 0	2	5 - 11	1	5 - 3	2	4 - 9	2
	4-2x10	8 - 0	2	7 - 1	2	6 - 5	2	7 - 8	2	6 - 9	2	6 - 1	2	7 - 3	2	6 - 5	2	5 - 9	2
4-2x12	9 - 4	2	8 - 2	2	7 - 5	2	8 - 10	2	7 - 10	2	7 - 1	2	8 - 5	2	7 - 5	2	6 - 8	2	
Roof, ceiling and two clear-span floors	1-2x6	2 - 0	2	1 - 9	2	1 - 6	2	2 - 0	2	1 - 9	2	1 - 6	2	1 - 11	2	1 - 8	2	1 - 6	3
	1-2x8	2 - 6	2	2 - 2	3	1 - 11	3	2 - 6	2	2 - 2	3	1 - 11	3	2 - 5	3	2 - 2	3	1 - 11	3
	1-2x10	3 - 1	3	2 - 8	3	2 - 4	3	3 - 1	3	2 - 8	3	2 - 4	3	3 - 0	3	2 - 7	3	2 - 4	4
	1-2x12	3 - 6	3	3 - 1	3	2 - 9	4	3 - 6	3	3 - 1	4	2 - 9	4	3 - 5	3	3 - 0	4	2 - 8	4
	2-2x4	2 - 0	1	1 - 9	1	1 - 7	1	2 - 0	1	1 - 9	1	1 - 7	1	1 - 11	1	1 - 8	1	1 - 6	2
	2-2x6	2 - 11	2	2 - 6	2	2 - 3	2	2 - 11	2	2 - 6	2	2 - 3	2	2 - 10	2	2 - 6	2	2 - 3	2
	2-2x8	3 - 8	2	3 - 3	2	2 - 11	2	3 - 8	2	3 - 3	2	2 - 11	2	3 - 7	2	3 - 2	2	2 - 10	2
	2-2x10	4 - 6	2	3 - 11	2	3 - 6	3	4 - 6	2	3 - 11	2	3 - 6	3	4 - 5	2	3 - 10	3	3 - 6	3
	2-2x12	5 - 3	2	4 - 7	3	4 - 1	3	5 - 3	3	4 - 7	3	4 - 1	3	5 - 1	3	4 - 6	3	4 - 0	3
	3-2x8	4 - 8	2	4 - 0	2	3 - 7	2	4 - 8	2	4 - 0	2	3 - 7	2	4 - 6	2	3 - 11	2	3 - 7	2
	3-2x10	5 - 8	2	4 - 11	2	4 - 5	2	5 - 8	2	4 - 11	2	4 - 5	2	5 - 6	2	4 - 10	2	4 - 4	2
	3-2x12	6 - 7	2	5 - 8	2	5 - 1	2	6 - 7	2	5 - 8	2	5 - 1	3	6 - 5	2	5 - 7	3	5 - 0	3
	4-2x8	5 - 4	1	4 - 8	2	4 - 2	2	5 - 4	2	4 - 8	2	4 - 2	2	5 - 3	2	4 - 7	2	4 - 1	2
	4-2x10	6 - 6	2	5 - 8	2	5 - 1	2	6 - 6	2	5 - 8	2	5 - 1	2	6 - 5	2	5 - 7	2	5 - 0	2
4-2x12	7 - 7	2	6 - 7	2	5 - 11	2	7 - 7	2	6 - 7	2	5 - 11	2	7 - 5	2	6 - 5	2	5 - 10	2	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- a. Spans are given in feet and inches.
- b. Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- c. NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- d. Use 30 psf ground snow load for cases in which ground snow load is less than 30 psf and the roof live load is equal to or less than 20 psf.
- e. Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (for example, cripple studs bearing on the header), tabulated spans for header consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

**TABLE 5 - GIRDER SPANS^a AND HEADER SPANS^a FOR EXTERIOR BEARING WALLS
(Maximum spans and required number of jack studs for No. 2 Spruce-Pine-Fir South)**

GIRDERS AND HEADERS SUPPORTING	SIZE	GROUND SNOW LOAD (psf) ^d																	
		30						50						70					
		Building width ^b (feet)																	
		20		28		36		20		28		36		20		28		36	
Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c		
Roof and ceiling	1-2x6	3-4	1	2-11	1	2-7	1	2-10	1	2-6	2	2-3	2	2-6	2	2-2	2	2-0	2
	1-2x8	4-3	1	3-8	2	3-3	2	3-7	2	3-2	2	2-10	2	3-2	2	2-10	2	2-6	2
	1-2x10	5-2	2	4-6	2	4-0	2	4-5	2	3-10	2	3-5	2	3-11	2	3-5	2	3-1	3
	1-2x12	6-0	2	5-2	2	4-8	2	5-1	2	4-5	2	4-0	3	4-6	2	3-11	3	3-7	3
	2-2x4	3-4	1	2-11	1	2-8	1	2-11	1	2-6	1	2-3	1	2-7	1	2-3	1	2-0	1
	2-2x6	4-11	1	4-4	1	3-10	1	4-3	1	3-8	1	3-4	1	3-9	1	3-3	1	2-11	1
	2-2x8	6-3	1	5-5	1	4-11	1	5-4	1	4-8	1	4-2	2	4-9	1	4-2	2	3-9	2
	2-2x10	7-8	1	6-8	2	5-11	2	6-6	2	5-8	2	5-1	2	5-10	2	5-1	2	4-7	2
	2-2x12	8-10	2	7-8	2	6-11	2	7-7	2	6-7	2	5-11	2	6-9	2	5-10	2	5-3	2
	3-2x8	7-10	1	6-10	1	6-1	1	6-8	1	5-10	1	5-3	1	5-11	1	5-2	1	4-8	2
	3-2x10	9-7	1	8-4	1	7-6	1	8-2	1	7-2	1	6-5	2	7-3	1	6-4	2	5-8	2
	3-2x12	11-1	1	9-8	1	8-8	2	9-6	2	8-3	2	7-5	2	8-5	2	7-4	2	6-7	2
	4-2x8	9-0	1	7-10	1	7-1	1	7-9	1	6-9	1	6-1	1	6-10	1	6-0	1	5-5	1
4-2x10	11-0	1	9-7	1	8-7	1	9-5	1	8-3	1	7-5	1	8-5	1	7-4	1	6-7	2	
4-2x12	12-10	1	11-2	1	10-0	1	11-0	1	9-7	2	8-7	2	9-9	1	8-6	2	7-7	2	
Roof, ceiling and one center-bearing floor	1-2x6	2-9	1	2-5	2	2-2	2	2-6	2	2-3	2	2-0	2	2-4	2	2-1	2	1-10	2
	1-2x8	3-6	2	3-1	2	2-9	2	3-2	2	2-10	2	2-6	2	2-11	2	2-7	2	2-4	2
	1-2x10	4-3	2	3-9	2	3-4	2	3-11	2	3-5	2	3-1	3	3-7	2	3-2	2	2-10	3
	1-2x12	4-11	2	4-4	2	3-11	3	4-6	2	4-0	3	3-7	3	4-2	2	3-8	3	3-4	3
	2-2x4	2-9	1	2-5	1	2-3	1	2-7	1	2-3	1	2-0	1	2-4	1	2-1	1	1-11	1
	2-2x6	4-1	1	3-7	1	3-3	1	3-9	1	3-3	1	3-0	1	3-5	1	3-0	1	2-9	2
	2-2x8	5-2	1	4-6	2	4-1	2	4-9	1	4-2	2	3-9	2	4-4	2	3-10	2	3-6	2
	2-2x10	6-3	2	5-6	2	5-0	2	5-9	2	5-1	2	4-7	2	5-4	2	4-8	2	4-3	2
	2-2x12	7-4	2	6-5	2	5-10	2	6-8	2	5-11	2	5-4	2	6-2	2	5-5	2	4-11	2
	3-2x8	6-5	1	5-8	1	5-1	1	5-11	1	5-2	1	4-8	2	5-6	1	4-10	1	4-4	2
	3-2x10	7-11	1	6-11	2	6-3	2	7-3	1	6-4	2	5-9	2	6-8	2	5-11	2	5-4	2
	3-2x12	9-2	2	8-0	2	7-3	2	8-5	2	7-5	2	6-8	2	7-9	2	6-10	2	6-2	2
	4-2x8	7-5	1	6-7	1	5-11	1	6-10	1	6-0	1	5-5	1	6-4	1	5-7	1	5-0	1
4-2x10	9-1	1	8-0	1	7-3	1	8-4	1	7-4	1	6-8	2	7-8	1	6-10	2	6-2	2	
4-2x12	10-7	1	9-3	2	8-5	2	9-8	1	8-6	2	7-8	2	8-11	2	7-11	2	7-2	2	
Roof, ceiling and one clear span floor	1-2x6	2-5	2	2-1	2	1-11	2	2-3	2	2-0	2	1-9	2	2-2	2	1-11	2	1-8	2
	1-2x8	3-1	2	2-8	2	2-5	2	2-11	2	2-6	2	2-3	2	2-9	2	2-5	2	2-2	2
	1-2x10	3-9	2	3-3	2	2-11	3	3-6	2	3-1	3	2-9	3	3-4	2	2-11	3	2-7	3
	1-2x12	4-4	2	3-9	3	3-5	3	4-1	3	3-7	3	3-3	3	3-10	3	3-4	3	3-0	3
	2-2x4	2-6	1	2-2	1	1-11	1	2-4	1	2-0	1	1-10	1	2-2	1	1-11	1	1-8	1
	2-2x6	3-7	1	3-2	1	2-10	1	3-5	1	2-11	1	2-8	2	3-2	1	2-9	2	2-6	2

	2-2x8	4-7	1	4-0	2	3-7	2	4-3	2	3-9	2	3-4	2	4-0	2	3-6	2	3-2	2
	2-2x10	5-7	2	4-10	2	4-4	2	5-3	2	4-7	2	4-1	2	4-11	2	4-4	2	3-10	2
	2-2x12	6-6	2	5-7	2	5-0	2	6-1	2	5-4	2	4-9	2	5-9	2	5-0	2	4-6	3
	3-2x8	5-9	1	5-0	1	4-5	2	5-4	1	4-8	2	4-3	2	5-1	1	4-5	2	4-0	2
	3-2x10	7-0	2	6-1	2	5-5	2	6-7	2	5-9	2	5-2	2	6-2	2	5-5	2	4-10	2
	3-2x12	8-1	2	7-0	2	6-4	2	7-7	2	6-8	2	6-0	2	7-2	2	6-3	2	5-7	2
	4-2x8	6-7	1	5-9	1	5-2	1	6-2	1	5-5	1	4-10	1	5-10	1	5-1	1	4-7	2
	4-2x10	8-1	1	7-0	1	6-3	2	7-7	1	6-7	2	5-11	2	7-2	1	6-3	2	5-7	2
4-2x12	9-4	2	8-1	2	7-3	2	8-9	2	7-8	2	6-11	2	8-3	2	7-3	2	6-6	2	
Roof, ceiling and two center-bearing floors	1-2x6	2-3	2	2-0	2	1-10	2	2-2	2	1-11	2	1-9	2	2-1	2	1-10	2	1-8	2
	1-2x8	2-11	2	2-6	2	2-4	2	2-9	2	2-5	2	2-2	2	2-7	2	2-4	2	2-1	3
	1-2x10	3-6	2	3-1	2	2-10	3	3-4	2	3-0	3	2-8	3	3-2	2	2-10	3	2-6	3
	1-2x12	4-1	2	3-7	3	3-3	3	3-11	3	3-5	3	3-1	3	3-8	3	3-3	3	2-11	3
	2-2x4	2-4	1	2-0	1	1-10	1	2-2	1	1-11	1	1-9	1	2-1	1	1-10	1	1-8	1
	2-2x6	3-4	1	3-0	1	2-8	2	3-3	1	2-10	2	2-7	2	3-1	1	2-8	2	2-5	2
	2-2x8	4-3	2	3-9	2	3-5	2	4-1	2	3-7	2	3-3	2	3-10	2	3-5	2	3-1	2
	2-2x10	5-3	2	4-7	2	4-2	2	5-0	2	4-5	2	4-0	2	4-9	2	4-2	2	3-9	2
	2-2x12	6-1	2	5-4	2	4-10	2	5-9	2	5-1	2	4-7	2	5-6	2	4-10	2	4-4	3
	3-2x8	5-4	1	4-9	1	4-3	2	5-1	1	4-6	2	4-1	2	4-10	1	4-3	2	3-10	2
	3-2x10	6-6	2	5-9	2	5-3	2	6-3	2	5-6	2	5-0	2	5-11	2	5-2	2	4-8	2
	3-2x12	7-7	2	6-8	2	6-1	2	7-3	2	6-5	2	5-9	2	6-10	2	6-0	2	5-5	2
	4-2x8	6-2	1	5-5	1	4-11	1	5-11	1	5-2	1	4-8	2	5-7	1	4-11	1	4-5	2
4-2x10	7-7	1	6-8	2	6-0	2	7-2	1	6-4	2	5-9	2	6-10	2	6-0	2	5-5	2	
4-2x12	8-9	2	7-9	2	7-0	2	8-4	2	7-4	2	6-8	2	7-11	2	7-0	2	6-4	2	
Roof, ceiling and two clear-span floors	1-2x6	1-10	2	1-7	2	1-5	2	1-10	2	1-7	2	1-5	2	1-10	2	1-7	2	1-5	2
	1-2x8	2-4	2	2-0	2	1-10	2	2-4	2	2-0	2	1-10	3	2-3	2	2-0	3	1-10	3
	1-2x10	2-10	2	2-6	3	2-3	3	2-10	3	2-6	3	2-3	3	2-10	3	2-5	3	2-2	3
	1-2x12	3-4	3	2-11	3	2-7	3	3-4	3	2-11	3	2-7	4	3-3	3	2-10	3	2-7	4
	2-2x4	1-11	1	1-8	1	1-6	1	1-11	1	1-8	1	1-6	1	1-10	1	1-7	1	1-5	1
	2-2x6	2-9	1	2-5	2	2-2	2	2-9	1	2-5	2	2-2	2	2-8	2	2-4	2	2-1	2
	2-2x8	3-6	2	3-0	2	2-9	2	3-6	2	3-0	2	2-9	2	3-5	2	3-0	2	2-8	2
	2-2x10	4-3	2	3-8	2	3-4	2	4-3	2	3-8	2	3-4	2	4-2	2	3-7	2	3-3	3
	2-2x12	4-11	2	4-3	2	3-10	3	4-11	2	4-3	3	3-10	3	4-10	2	4-2	3	3-9	3
	3-2x8	4-4	1	3-9	2	3-5	2	4-4	2	3-9	2	3-5	2	4-3	2	3-9	2	3-4	2
	3-2x10	5-4	2	4-7	2	4-2	2	5-4	2	4-7	2	4-2	2	5-2	2	4-6	2	4-1	2
	3-2x12	6-2	2	5-4	2	4-10	2	6-2	2	5-4	2	4-10	2	6-0	2	5-3	2	4-9	3
	4-2x8	5-0	1	4-4	1	3-11	2	5-0	1	4-4	2	3-11	2	4-11	1	4-3	2	3-10	2
4-2x10	6-2	2	5-4	2	4-9	2	6-2	2	5-4	2	4-9	2	6-0	2	5-3	2	4-9	2	
4-2x12	7-1	2	6-2	2	5-7	2	7-1	2	6-2	2	5-7	2	7-0	2	6-1	2	5-6	2	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- Spans are given in feet and inches.
- Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- Use 30 psf ground snow load for cases in which ground snow load is less than 30 psf and the roof live load is equal to or less than 20 psf.
- Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (for example, cripple studs bearing on the header), tabulated spans for header consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

**TABLE 6 - GIRDER SPANS^a AND HEADER SPANS^a FOR EXTERIOR BEARING WALLS
(Maximum spans and required number of jack studs for No. 2 Western Cedars)**

GIRDERS AND HEADERS SUPPORTING	SIZE	GROUND SNOW LOAD (psf) ^d																	
		30						50						70					
		Building width ^b (feet)																	
		20		28		36		20		28		36		20		28		36	
Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c		
Roof and ceiling	1-2x6	3-2	1	2-9	1	2-6	1	2-8	1	2-4	2	2-1	2	2-5	2	2-1	2	1-11	2
	1-2x8	4-0	1	3-6	2	3-1	2	3-5	2	3-0	2	2-8	2	3-1	2	2-8	2	2-5	2
	1-2x10	4-11	2	4-3	2	3-10	2	4-2	2	3-8	2	3-3	2	3-9	2	3-3	2	2-11	3
	1-2x12	5-8	2	4-11	2	4-5	2	4-10	2	4-3	2	3-10	3	4-4	2	3-9	3	3-5	3
	2-2x4	3-2	1	2-9	1	2-6	1	2-9	1	2-5	1	2-2	1	2-5	1	2-2	1	1-11	1
	2-2x6	4-8	1	4-1	1	3-8	1	4-0	1	3-6	1	3-2	1	3-7	1	3-1	1	2-10	1
	2-2x8	5-11	1	5-2	1	4-8	1	5-1	1	4-5	1	4-0	2	4-6	1	3-11	2	3-6	2
	2-2x10	7-3	1	6-4	2	5-8	2	6-3	2	5-5	2	4-10	2	5-6	2	4-10	2	4-4	2
	2-2x12	8-5	2	7-4	2	6-7	2	7-2	2	6-3	2	5-8	2	6-5	2	5-7	2	5-0	2
	3-2x8	7-5	1	6-6	1	5-10	1	6-4	1	5-7	1	5-0	1	5-8	1	4-11	1	4-5	2
	3-2x10	9-1	1	7-11	1	7-1	1	7-9	1	6-9	1	6-1	2	6-11	1	6-0	2	5-5	2
	3-2x12	10-6	1	9-2	1	8-3	2	9-0	2	7-10	2	7-1	2	8-0	2	7-0	2	6-3	2
	4-2x8	8-7	1	7-6	1	6-8	1	7-4	1	6-5	1	5-9	1	6-6	1	5-8	1	5-1	1
4-2x10	10-6	1	9-2	1	8-2	1	9-0	1	7-10	1	7-0	1	8-0	1	6-11	1	6-3	2	
4-2x12	12-2	1	10-7	1	9-6	1	10-5	1	9-1	2	8-2	2	9-3	1	8-1	2	7-3	2	
Roof, ceiling and one center-bearing floor	1-2x6	2-7	1	2-4	2	2-1	2	2-5	2	2-1	2	1-11	2	2-2	2	1-11	2	1-9	2
	1-2x8	3-4	2	2-11	2	2-7	2	3-0	2	2-8	2	2-5	2	2-10	2	2-6	2	2-3	2
	1-2x10	4-0	2	3-7	2	3-2	2	3-8	2	3-3	2	2-11	3	3-5	2	3-0	2	2-9	3
	1-2x12	4-8	2	4-1	2	3-9	3	4-4	2	3-9	3	3-5	3	4-0	2	3-6	3	3-2	3
	2-2x4	2-8	1	2-4	1	2-1	1	2-5	1	2-2	1	1-11	1	2-3	1	2-0	1	1-9	1
	2-2x6	3-10	1	3-5	1	3-1	1	3-7	1	3-1	1	2-10	1	3-3	1	2-11	1	2-7	2
	2-2x8	4-11	1	4-4	2	3-11	2	4-6	1	3-11	2	3-7	2	4-2	2	3-8	2	3-4	2
	2-2x10	6-0	2	5-3	2	4-9	2	5-6	2	4-10	2	4-4	2	5-1	2	4-6	2	4-1	2
	2-2x12	6-11	2	6-1	2	5-6	2	6-4	2	5-7	2	5-1	2	5-10	2	5-2	2	4-8	2
	3-2x8	6-2	1	5-5	1	4-10	1	5-8	1	4-11	1	4-6	2	5-2	1	4-7	1	4-2	2
	3-2x10	7-6	1	6-7	2	5-11	2	6-11	1	6-1	2	5-5	2	6-4	2	5-7	2	5-1	2
	3-2x12	8-8	2	7-8	2	6-11	2	8-0	2	7-0	2	6-4	2	7-4	2	6-6	2	5-10	2
	4-2x8	7-1	1	6-3	1	5-7	1	6-6	1	5-9	1	5-2	1	6-0	1	5-3	1	4-9	1
4-2x10	8-8	1	7-7	1	6-10	1	7-11	1	7-0	1	6-4	2	7-4	1	6-6	2	5-10	2	
4-2x12	10-0	1	8-10	2	8-0	2	9-3	1	8-1	2	7-4	2	8-6	2	7-6	2	6-9	2	
Roof, ceiling and one clear span floor	1-2x6	2-4	2	2-0	2	1-10	2	2-2	2	1-11	2	1-8	2	2-1	2	1-9	2	1-7	2
	1-2x8	2-11	2	2-6	2	2-3	2	2-9	2	2-5	2	2-2	2	2-7	2	2-3	2	2-0	2
	1-2x10	3-7	2	3-1	2	2-9	3	3-4	2	2-11	3	2-8	3	3-2	2	2-9	3	2-6	3
	1-2x12	4-2	2	3-7	3	3-3	3	3-11	3	3-5	3	3-1	3	3-8	3	3-2	3	2-10	3
	2-2x4	2-4	1	2-0	1	1-10	1	2-2	1	1-11	1	1-9	1	2-1	1	1-10	1	1-7	1
	2-2x6	3-5	1	3-0	1	2-8	1	3-3	1	2-10	1	2-6	2	3-0	1	2-8	2	2-5	2

	2-2x8	4-4	1	3-9	2	3-5	2	4-1	2	3-7	2	3-2	2	3-10	2	3-4	2	3-0	2
	2-2x10	5-4	2	4-7	2	4-1	2	5-0	2	4-4	2	3-11	2	4-8	2	4-1	2	3-8	2
	2-2x12	6-2	2	5-4	2	4-9	2	5-9	2	5-0	2	4-6	2	5-5	2	4-9	2	4-3	3
	3-2x8	5-5	1	4-9	1	4-3	2	5-1	1	4-5	2	4-0	2	4-10	1	4-2	2	3-9	2
	3-2x10	6-8	2	5-9	2	5-2	2	6-3	2	5-5	2	4-11	2	5-10	2	5-1	2	4-7	2
	3-2x12	7-8	2	6-8	2	6-0	2	7-3	2	6-4	2	5-8	2	6-10	2	5-11	2	5-4	2
	4-2x8	6-3	1	5-5	1	4-11	1	5-11	1	5-2	1	4-7	1	5-7	1	4-10	1	4-4	2
	4-2x10	7-8	1	6-8	1	6-0	2	7-2	1	6-3	2	5-8	2	6-9	1	5-11	2	5-4	2
	4-2x12	8-11	2	7-9	2	6-11	2	8-4	2	7-3	2	6-7	2	7-10	2	6-10	2	6-2	2
Roof, ceiling and two center-bearing floors	1-2x6	2-2	2	1-11	2	1-9	2	2-1	2	1-10	2	1-8	2	1-11	2	1-9	2	1-7	2
	1-2x8	2-9	2	2-5	2	2-2	2	2-7	2	2-4	2	2-1	2	2-6	2	2-2	2	2-0	3
	1-2x10	3-4	2	2-11	2	2-8	3	3-2	2	2-10	3	2-7	3	3-0	2	2-8	3	2-5	3
	1-2x12	3-11	2	3-5	3	3-1	3	3-8	3	3-3	3	2-11	3	3-6	3	3-1	3	2-10	3
	2-2x4	2-2	1	1-11	1	1-9	1	2-1	1	1-10	1	1-8	1	2-0	1	1-9	1	1-7	1
	2-2x6	3-2	1	2-10	1	2-7	2	3-1	1	2-8	2	2-5	2	2-11	1	2-7	2	2-4	2
	2-2x8	4-1	2	3-7	2	3-3	2	3-10	2	3-5	2	3-1	2	3-8	2	3-3	2	2-11	2
	2-2x10	5-0	2	4-5	2	3-11	2	4-9	2	4-2	2	3-9	2	4-6	2	3-11	2	3-7	2
	2-2x12	5-9	2	5-1	2	4-7	2	5-6	2	4-10	2	4-5	2	5-2	2	4-7	2	4-2	3
	3-2x8	5-1	1	4-6	1	4-1	2	4-10	1	4-3	2	3-10	2	4-7	1	4-1	2	3-8	2
	3-2x10	6-3	2	5-6	2	4-11	2	5-11	2	5-3	2	4-9	2	5-7	2	4-11	2	4-6	2
	3-2x12	7-2	2	6-4	2	5-9	2	6-10	2	6-1	2	5-6	2	6-6	2	5-9	2	5-2	2
	4-2x8	5-10	1	5-2	1	4-8	1	5-7	1	4-11	1	4-6	2	5-4	1	4-8	1	4-3	2
	4-2x10	7-2	1	6-4	2	5-9	2	6-10	1	6-0	2	5-6	2	6-6	2	5-9	2	5-2	2
4-2x12	8-4	2	7-4	2	6-8	2	7-11	2	7-0	2	6-4	2	7-6	2	6-7	2	6-0	2	
Roof, ceiling and two clear-span floors	1-2x6	1-9	2	1-6	2	1-4	2	1-9	2	1-6	2	1-4	2	1-9	2	1-6	2	1-4	2
	1-2x8	2-3	2	1-11	2	1-9	2	2-3	2	1-11	2	1-9	3	2-2	2	1-11	3	1-9	3
	1-2x10	2-9	2	2-4	3	2-1	3	2-9	3	2-4	3	2-1	3	2-8	3	2-4	3	2-1	3
	1-2x12	3-2	3	2-9	3	2-6	3	3-2	3	2-9	3	2-6	4	3-1	3	2-8	3	2-5	4
	2-2x4	1-9	1	1-7	1	1-5	1	1-9	1	1-7	1	1-5	1	1-9	1	1-6	1	1-4	1
	2-2x6	2-7	1	2-3	2	2-0	2	2-7	1	2-3	2	2-0	2	2-7	2	2-3	2	2-0	2
	2-2x8	3-4	2	2-10	2	2-7	2	3-4	2	2-10	2	2-7	2	3-3	2	2-10	2	2-6	2
	2-2x10	4-0	2	3-6	2	3-2	2	4-0	2	3-6	2	3-2	2	3-11	2	3-5	2	3-1	3
	2-2x12	4-8	2	4-1	2	3-8	3	4-8	2	4-1	3	3-8	3	4-7	2	4-0	3	3-7	3
	3-2x8	4-2	1	3-7	2	3-3	2	4-2	2	3-7	2	3-3	2	4-1	2	3-6	2	3-2	2
	3-2x10	5-1	2	4-5	2	3-11	2	5-1	2	4-5	2	3-11	2	4-11	2	4-4	2	3-11	2
	3-2x12	5-10	2	5-1	2	4-7	2	5-10	2	5-1	2	4-7	2	5-9	2	5-0	2	4-6	3
	4-2x8	4-9	1	4-2	1	3-9	2	4-9	1	4-2	2	3-9	2	4-8	1	4-1	2	3-8	2
	4-2x10	5-10	2	5-1	2	4-7	2	5-10	2	5-1	2	4-7	2	5-8	2	5-0	2	4-6	2
4-2x12	6-9	2	5-11	2	5-3	2	6-9	2	5-11	2	5-3	2	6-7	2	5-9	2	5-2	2	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- Spans are given in feet and inches.
- Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- Use 30 psf ground snow load for cases in which ground snow load is less than 30 psf and the roof live load is equal to or less than 20 psf.
- Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (for example, cripple studs bearing on the header), tabulated spans for header consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

**TABLE 7 - GIRDER SPANS^a AND HEADER SPANS^a FOR EXTERIOR BEARING WALLS
(Maximum spans and required number of jack studs for No.2 Western Woods)**

GIRDERS AND HEADERS SUPPORTING	SIZE	GROUND SNOW LOAD (psf) ^d																	
		30						50						70					
		Building width ^b (feet)																	
		20		28		36		20		28		36		20		28		36	
Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c	Span ^e	NJ ^c		
Roof and ceiling	1-2x6	3 - 1	1	2 - 8	1	2 - 5	1	2 - 8	1	2 - 4	2	2 - 1	2	2 - 4	2	2 - 1	2	1 - 10	2
	1-2x8	3 - 11	1	3 - 5	2	3 - 1	2	3 - 4	2	2 - 11	2	2 - 8	2	3 - 0	2	2 - 7	2	2 - 4	2
	1-2x10	4 - 10	2	4 - 2	2	3 - 9	2	4 - 1	2	3 - 7	2	3 - 3	2	3 - 8	2	3 - 2	2	2 - 10	3
	1-2x12	5 - 7	2	4 - 10	2	4 - 4	2	4 - 9	2	4 - 2	2	3 - 9	3	4 - 3	2	3 - 8	3	3 - 4	3
	2-2x4	3 - 2	1	2 - 9	1	2 - 5	1	2 - 8	1	2 - 4	1	2 - 1	1	2 - 5	1	2 - 1	1	1 - 10	1
	2-2x6	4 - 7	1	4 - 0	1	3 - 7	1	3 - 11	1	3 - 5	1	3 - 1	1	3 - 6	1	3 - 1	1	2 - 9	1
	2-2x8	5 - 10	1	5 - 1	1	4 - 7	1	5 - 0	1	4 - 4	1	3 - 11	2	4 - 5	1	3 - 10	2	3 - 6	2
	2-2x10	7 - 1	1	6 - 2	2	5 - 7	2	6 - 1	2	5 - 4	2	4 - 9	2	5 - 5	2	4 - 9	2	4 - 3	2
	2-2x12	8 - 3	2	7 - 2	2	6 - 5	2	7 - 1	2	6 - 2	2	5 - 6	2	6 - 3	2	5 - 6	2	4 - 11	2
	3-2x8	7 - 4	1	6 - 4	1	5 - 8	1	6 - 3	1	5 - 5	1	4 - 11	1	5 - 7	1	4 - 10	1	4 - 4	2
	3-2x10	8 - 11	1	7 - 9	1	7 - 0	1	7 - 8	1	6 - 8	1	6 - 0	2	6 - 9	1	5 - 11	2	5 - 4	2
	3-2x12	10 - 4	1	9 - 0	1	8 - 1	2	8 - 10	2	7 - 9	2	6 - 11	2	7 - 10	2	6 - 10	2	6 - 2	2
	4-2x8	8 - 5	1	7 - 4	1	6 - 7	1	7 - 3	1	6 - 3	1	5 - 8	1	6 - 5	1	5 - 7	1	5 - 0	1
	4-2x10	10 - 4	1	9 - 0	1	8 - 0	1	8 - 10	1	7 - 8	1	6 - 11	1	7 - 10	1	6 - 10	1	6 - 2	2
4-2x12	11 - 11	1	10 - 5	1	9 - 4	1	10 - 3	1	8 - 11	2	8 - 0	2	9 - 1	1	7 - 11	2	7 - 1	2	
Roof, ceiling and one center-bearing floor	1-2x6	2 - 7	1	2 - 3	2	2 - 0	2	2 - 4	2	2 - 1	2	1 - 10	2	2 - 2	2	1 - 11	2	1 - 9	2
	1-2x8	3 - 3	2	2 - 10	2	2 - 7	2	3 - 0	2	2 - 7	2	2 - 4	2	2 - 9	2	2 - 5	2	2 - 2	2
	1-2x10	4 - 0	2	3 - 6	2	3 - 2	2	3 - 8	2	3 - 2	2	2 - 11	3	3 - 4	2	3 - 0	2	2 - 8	3
	1-2x12	4 - 7	2	4 - 0	2	3 - 8	3	4 - 3	2	3 - 8	3	3 - 4	3	3 - 11	2	3 - 5	3	3 - 1	3
	2-2x4	2 - 7	1	2 - 3	1	2 - 1	1	2 - 5	1	2 - 1	1	1 - 11	1	2 - 2	1	1 - 11	1	1 - 9	1
	2-2x6	3 - 10	1	3 - 4	1	3 - 0	1	3 - 6	1	3 - 1	1	2 - 9	1	3 - 3	1	2 - 10	1	2 - 7	2
	2-2x8	4 - 10	1	4 - 3	2	3 - 10	2	4 - 5	1	3 - 11	2	3 - 6	2	4 - 1	2	3 - 7	2	3 - 3	2
	2-2x10	5 - 10	2	5 - 2	2	4 - 8	2	5 - 5	2	4 - 9	2	4 - 3	2	5 - 0	2	4 - 5	2	4 - 0	2
	2-2x12	6 - 10	2	6 - 0	2	5 - 5	2	6 - 3	2	5 - 6	2	5 - 0	2	5 - 9	2	5 - 1	2	4 - 7	2
	3-2x8	6 - 0	1	5 - 4	1	4 - 9	1	5 - 6	1	4 - 10	1	4 - 5	2	5 - 1	1	4 - 6	1	4 - 1	2
	3-2x10	7 - 4	1	6 - 6	2	5 - 10	2	6 - 9	1	5 - 11	2	5 - 4	2	6 - 3	2	5 - 6	2	5 - 0	2
	3-2x12	8 - 6	2	7 - 6	2	6 - 9	2	7 - 10	2	6 - 11	2	6 - 3	2	7 - 3	2	6 - 4	2	5 - 9	2
	4-2x8	6 - 11	1	6 - 1	1	5 - 6	1	6 - 5	1	5 - 7	1	5 - 1	1	5 - 11	1	5 - 2	1	4 - 8	1
	4-2x10	8 - 6	1	7 - 6	1	6 - 9	1	7 - 10	1	6 - 10	1	6 - 2	2	7 - 2	1	6 - 4	2	5 - 9	2
4-2x12	9 - 10	1	8 - 8	2	7 - 10	2	9 - 1	1	7 - 11	2	7 - 2	2	8 - 4	2	7 - 4	2	6 - 8	2	
Roof, ceiling and one clear span floor	1-2x6	2 - 3	2	2 - 0	2	1 - 9	2	2 - 2	2	1 - 10	2	1 - 8	2	2 - 0	2	1 - 9	2	1 - 7	2
	1-2x8	2 - 10	2	2 - 6	2	2 - 3	2	2 - 8	2	2 - 4	2	2 - 1	2	2 - 6	2	2 - 3	2	2 - 0	2
	1-2x10	3 - 6	2	3 - 1	2	2 - 9	3	3 - 4	2	2 - 11	3	2 - 7	3	3 - 1	2	2 - 8	3	2 - 5	3
	1-2x12	4 - 1	2	3 - 6	3	3 - 2	3	3 - 10	3	3 - 4	3	3 - 0	3	3 - 7	3	3 - 2	3	2 - 10	3
	2-2x4	2 - 4	1	2 - 0	1	1 - 9	1	2 - 2	1	1 - 11	1	1 - 8	1	2 - 0	1	1 - 9	1	1 - 7	1
	2-2x6	3 - 4	1	2 - 11	1	2 - 7	1	3 - 2	1	2 - 9	1	2 - 6	2	3 - 0	1	2 - 7	2	2 - 4	2

	2-2x8	4-3	1	3-8	2	3-4	2	4-0	2	3-6	2	3-2	2	3-9	2	3-3	2	2-11	2
	2-2x10	5-2	2	4-6	2	4-1	2	4-11	2	4-3	2	3-10	2	4-7	2	4-0	2	3-7	2
	2-2x12	6-0	2	5-3	2	4-8	2	5-8	2	4-11	2	4-5	2	5-4	2	4-8	2	4-2	3
	3-2x8	5-4	1	4-8	1	4-2	2	5-0	1	4-4	2	3-11	2	4-9	1	4-1	2	3-8	2
	3-2x10	6-6	2	5-8	2	5-1	2	6-1	2	5-4	2	4-10	2	5-9	2	5-0	2	4-6	2
	3-2x12	7-7	2	6-7	2	5-11	2	7-1	2	6-2	2	5-7	2	6-8	2	5-10	2	5-3	2
	4-2x8	6-2	1	5-4	1	4-10	1	5-9	1	5-1	1	4-6	1	5-5	1	4-9	1	4-3	2
	4-2x10	7-6	1	6-6	1	5-10	2	7-1	1	6-2	2	5-6	2	6-8	1	5-10	2	5-3	2
	4-2x12	8-9	2	7-7	2	6-9	2	8-2	2	7-2	2	6-5	2	7-9	2	6-9	2	6-1	2
Roof, ceiling and two center-bearing floors	1-2x6	2-1	2	1-10	2	1-8	2	2-0	2	1-9	2	1-7	2	1-11	2	1-8	2	1-6	2
	1-2x8	2-8	2	2-4	2	2-2	2	2-7	2	2-3	2	2-1	2	2-5	2	2-2	2	1-11	3
	1-2x10	3-3	2	2-11	2	2-7	3	3-2	2	2-9	3	2-6	3	3-0	2	2-7	3	2-4	3
	1-2x12	3-10	2	3-4	3	3-0	3	3-8	3	3-2	3	2-11	3	3-5	3	3-0	3	2-9	3
	2-2x4	2-2	1	1-11	1	1-9	1	2-1	1	1-10	1	1-8	1	1-11	1	1-9	1	1-7	1
	2-2x6	3-2	1	2-9	1	2-6	2	3-0	1	2-8	2	2-5	2	2-10	1	2-6	2	2-3	2
	2-2x8	4-0	2	3-6	2	3-2	2	3-10	2	3-4	2	3-0	2	3-7	2	3-2	2	2-10	2
	2-2x10	4-10	2	4-4	2	3-11	2	4-8	2	4-1	2	3-9	2	4-5	2	3-11	2	3-6	2
	2-2x12	5-8	2	5-0	2	4-6	2	5-5	2	4-9	2	4-4	2	5-1	2	4-6	2	4-1	3
	3-2x8	5-0	1	4-5	1	4-0	2	4-9	1	4-2	2	3-10	2	4-6	1	4-0	2	3-7	2
	3-2x10	6-1	2	5-5	2	4-10	2	5-10	2	5-2	2	4-8	2	5-6	2	4-10	2	4-5	2
	3-2x12	7-1	2	6-3	2	5-8	2	6-9	2	5-11	2	5-5	2	6-5	2	5-8	2	5-1	2
	4-2x8	5-9	1	5-1	1	4-7	1	5-6	1	4-10	1	4-5	2	5-2	1	4-7	1	4-2	2
4-2x10	7-1	1	6-3	2	5-7	2	6-9	1	5-11	2	5-4	2	6-4	2	5-7	2	5-1	2	
4-2x12	8-2	2	7-2	2	6-6	2	7-9	2	6-11	2	6-3	2	7-4	2	6-6	2	5-11	2	
Roof, ceiling and two clear-span floors	1-2x6	1-9	2	1-6	2	1-4	2	1-9	2	1-6	2	1-4	2	1-8	2	1-6	2	1-4	2
	1-2x8	2-2	2	1-11	2	1-8	2	2-2	2	1-11	2	1-8	3	2-2	2	1-10	3	1-8	3
	1-2x10	2-8	2	2-4	3	2-1	3	2-8	3	2-4	3	2-1	3	2-7	3	2-3	3	2-1	3
	1-2x12	3-1	3	2-8	3	2-5	3	3-1	3	2-8	3	2-5	4	3-0	3	2-8	3	2-5	4
	2-2x4	1-9	1	1-6	1	1-4	1	1-9	1	1-6	1	1-4	1	1-9	1	1-6	1	1-4	1
	2-2x6	2-7	1	2-3	2	2-0	2	2-7	1	2-3	2	2-0	2	2-6	2	2-2	2	2-0	2
	2-2x8	3-3	2	2-10	2	2-6	2	3-3	2	2-10	2	2-6	2	3-2	2	2-9	2	2-6	2
	2-2x10	4-0	2	3-5	2	3-1	2	4-0	2	3-5	2	3-1	2	3-10	2	3-5	2	3-0	3
	2-2x12	4-7	2	4-0	2	3-7	3	4-7	2	4-0	3	3-7	3	4-6	2	3-11	3	3-6	3
	3-2x8	4-1	1	3-6	2	3-2	2	4-1	2	3-6	2	3-2	2	4-0	2	3-6	2	3-1	2
	3-2x10	5-0	2	4-4	2	3-10	2	5-0	2	4-4	2	3-10	2	4-10	2	4-3	2	3-10	2
	3-2x12	5-9	2	5-0	2	4-6	2	5-9	2	5-0	2	4-6	2	5-7	2	4-11	2	4-5	3
	4-2x8	4-8	1	4-1	1	3-8	2	4-8	1	4-1	2	3-8	2	4-7	1	4-0	2	3-7	2
4-2x10	5-9	2	5-0	2	4-6	2	5-9	2	5-0	2	4-6	2	5-7	2	4-11	2	4-5	2	
4-2x12	6-8	2	5-9	2	5-2	2	6-8	2	5-9	2	5-2	2	6-6	2	5-8	2	5-1	2	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- Spans are given in feet and inches.
- Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- Use 30 psf ground snow load for cases in which ground snow load is less than 30 psf and the roof live load is equal to or less than 20 psf.
- Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (for example, cripple studs bearing on the header), tabulated spans for header consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

**TABLE 8 - GIRDER SPANS^a AND HEADER SPANS^a FOR INTERIOR BEARING WALLS
(Maximum spans and required number of jack studs for No.2 Alaska Cedar)**

HEADERS AND GIRDERS SUPPORTING	SIZE	Building width ^b (feet)					
		20		28		36	
		Span ^d	NJ ^c	Span ^d	NJ ^c	Span ^d	NJ ^c
One floor only	2-2x4	3 - 3	1	2 - 9	1	2 - 5	1
	2-2x6	4 - 10	1	4 - 1	1	3 - 7	1
	2-2x8	6 - 1	1	5 - 2	1	4 - 6	1
	2-2x10	7 - 5	1	6 - 3	1	5 - 6	2
	2-2x12	8 - 7	1	7 - 3	2	6 - 5	2
	3-2x8	7 - 7	1	6 - 5	1	5 - 8	1
	3-2x10	9 - 4	1	7 - 10	1	6 - 11	1
	3-2x12	10 - 9	1	9 - 1	1	8 - 1	2
	4-2x8	8 - 10	1	7 - 5	1	6 - 7	1
	4-2x10	10 - 9	1	9 - 1	1	8 - 0	1
4-2x12	12 - 6	1	10 - 6	1	9 - 3	1	
Two floors	2-2x4	2 - 2	1	1 - 11	1	1 - 8	1
	2-2x6	3 - 2	1	2 - 9	1	2 - 5	1
	2-2x8	4 - 1	1	3 - 6	2	3 - 1	2
	2-2x10	5 - 0	2	4 - 3	2	3 - 9	2
	2-2x12	5 - 9	2	4 - 11	2	4 - 5	2
	3-2x8	5 - 1	1	4 - 4	1	3 - 11	2
	3-2x10	6 - 3	1	5 - 4	2	4 - 9	2
	3-2x12	7 - 2	2	6 - 2	2	5 - 6	2
	4-2x8	5 - 10	1	5 - 1	1	4 - 6	1
	4-2x10	7 - 2	1	6 - 2	1	5 - 6	2
4-2x12	8 - 4	1	7 - 2	2	6 - 4	2	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- a. Spans are given in feet and inches.
- b. Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- c. NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- d. Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (for example, cripple studs bearing on the header), tabulated spans for header consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

**TABLE 9 - GIRDER SPANS^a AND HEADER SPANS^a FOR INTERIOR BEARING WALLS
(Maximum spans and required number of jack studs for No.2 Douglas Fir-Larch)**

HEADERS AND GIRDERS SUPPORTING	SIZE	Building width ^b (feet)					
		20		28		36	
		Span	NJ ^d	Span	NJ ^d	Span	NJ ^d
One floor only	2-2x4	3 - 6	1	2 - 11	1	2 - 7	1
	2-2x6	5 - 1	1	4 - 4	1	3 - 10	1
	2-2x8	6 - 5	1	5 - 5	1	4 - 10	1
	2-2x10	7 - 11	1	6 - 8	1	5 - 10	1
	2-2x12	9 - 2	1	7 - 9	1	6 - 10	2
	3-2x8	8 - 1	1	6 - 10	1	6 - 0	1
	3-2x10	9 - 10	1	8 - 4	1	7 - 4	1
	3-2x12	11 - 5	1	9 - 8	1	8 - 6	1
	4-2x8	9 - 4	1	7 - 11	1	6 - 11	1
	4-2x10	11 - 5	1	9 - 8	1	8 - 6	1
4-2x12	13 - 3	1	11 - 2	1	9 - 10	1	
Two floors	2-2x4	2 - 4	1	2 - 0	1	1 - 9	1
	2-2x6	3 - 5	1	2 - 11	1	2 - 7	1
	2-2x8	4 - 4	1	3 - 8	2	3 - 4	2
	2-2x10	5 - 3	2	4 - 6	2	4 - 0	2
	2-2x12	6 - 1	2	5 - 3	2	4 - 8	2
	3-2x8	5 - 5	1	4 - 8	1	4 - 1	1
	3-2x10	6 - 7	1	5 - 8	2	5 - 0	2
	3-2x12	7 - 8	2	6 - 7	2	5 - 10	2
	4-2x8	6 - 3	1	5 - 4	1	4 - 9	1
	4-2x10	7 - 7	1	6 - 6	1	5 - 10	1
4-2x12	8 - 10	1	7 - 7	2	6 - 9	2	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- a. Spans are given in feet and inches.
- b. Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- c. NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- d. Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (for example, cripple studs bearing on the header), tabulated spans for header consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

**TABLE 10 - GIRDER SPANS^a AND HEADER SPANS^a FOR INTERIOR BEARING WALLS
(Maximum spans and required number of jack studs for No.2 Hem-Fir)**

HEADERS AND GIRDERS SUPPORTING	SIZE	Building width ^b (feet)					
		20		28		36	
		Span ^d	NJ ^c	Span ^d	NJ ^c	Span ^d	NJ ^c
One floor only	2-2x4	3 - 5	1	2 - 10	1	2 - 6	1
	2-2x6	4 - 11	1	4 - 2	1	3 - 8	1
	2-2x8	6 - 3	1	5 - 4	2	4 - 8	2
	2-2x10	7 - 8	2	6 - 6	2	5 - 9	2
	2-2x12	8 - 11	2	7 - 6	2	6 - 7	2
	3-2x8	7 - 10	1	6 - 8	1	5 - 10	1
	3-2x10	9 - 7	1	8 - 1	2	7 - 2	2
	3-2x12	11 - 1	2	9 - 5	2	8 - 3	2
	4-2x8	9 - 1	1	7 - 8	1	6 - 9	1
	4-2x10	11 - 1	1	9 - 4	1	8 - 3	2
4-2x12	12 - 10	1	10 - 10	2	9 - 7	2	
Two floors	2-2x4	2 - 3	1	1 - 11	1	1 - 9	1
	2-2x6	3 - 4	2	2 - 10	2	2 - 6	2
	2-2x8	4 - 2	2	3 - 7	2	3 - 2	2
	2-2x10	5 - 1	2	4 - 5	2	3 - 11	3
	2-2x12	5 - 11	2	5 - 1	3	4 - 6	3
	3-2x8	5 - 3	2	4 - 6	2	4 - 0	2
	3-2x10	6 - 5	2	5 - 6	2	4 - 11	2
	3-2x12	7 - 5	2	6 - 5	2	5 - 8	2
	4-2x8	6 - 1	1	5 - 2	2	4 - 8	2
	4-2x10	7 - 5	2	6 - 4	2	5 - 8	2
4-2x12	8 - 7	2	7 - 4	2	6 - 7	2	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- a. Spans are given in feet and inches.
- b. Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- c. NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- d. Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (for example, cripple studs bearing on the header), tabulated spans for header consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

**TABLE 11 - GIRDER SPANS^a AND HEADER SPANS^a FOR INTERIOR BEARING WALLS
(Maximum spans and required number of jack studs for No.2 Port Orford Cedar)**

HEADERS AND GIRDERS SUPPORTING	SIZE	Building width ^b (feet)					
		20		28		36	
		Span ^d	NJ ^c	Span ^d	NJ ^c	Span ^d	NJ ^c
One floor only	2-2x4	3 - 5	1	2 - 11	1	2 - 7	1
	2-2x6	5 - 0	1	4 - 3	1	3 - 9	1
	2-2x8	6 - 4	1	5 - 5	1	4 - 9	2
	2-2x10	7 - 9	1	6 - 7	2	5 - 10	2
	2-2x12	9 - 0	2	7 - 7	2	6 - 9	2
	3-2x8	8 - 0	1	6 - 9	1	5 - 11	1
	3-2x10	9 - 9	1	8 - 3	1	7 - 3	2
	3-2x12	11 - 3	1	9 - 6	2	8 - 5	2
	4-2x8	9 - 2	1	7 - 9	1	6 - 10	1
	4-2x10	11 - 3	1	9 - 6	1	8 - 5	1
4-2x12	13 - 0	1	11 - 0	1	9 - 9	2	
Two floors	2-2x4	2 - 4	1	2 - 0	1	1 - 9	1
	2-2x6	3 - 4	1	2 - 11	2	2 - 7	2
	2-2x8	4 - 3	2	3 - 8	2	3 - 3	2
	2-2x10	5 - 2	2	4 - 5	2	4 - 0	2
	2-2x12	6 - 0	2	5 - 2	2	4 - 7	3
	3-2x8	5 - 4	1	4 - 7	2	4 - 1	2
	3-2x10	6 - 6	2	5 - 7	2	5 - 0	2
	3-2x12	7 - 6	2	6 - 6	2	5 - 9	2
	4-2x8	6 - 2	1	5 - 3	1	4 - 8	2
	4-2x10	7 - 6	1	6 - 5	2	5 - 9	2
4-2x12	8 - 8	2	7 - 6	2	6 - 8	2	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- a. Spans are given in feet and inches.
- b. Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- c. NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- d. Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (for example, cripple studs bearing on the header), tabulated spans for header consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

**TABLE 12 - GIRDER SPANS^a AND HEADER SPANS^a FOR INTERIOR BEARING WALLS
(Maximum spans and required number of jack studs for No.2 Spruce-Pine-Fir South)**

HEADERS AND GIRDERS SUPPORTING	SIZE	Building width ^b (feet)					
		20		28		36	
		Span ^d	NJ ^c	Span ^c	NJ ^d	Span ^d	NJ ^c
One floor only	2-2x4	3 - 3	1	2 - 9	1	2 - 5	1
	2-2x6	4 - 9	1	4 - 0	1	3 - 6	2
	2-2x8	6 - 0	1	5 - 1	2	4 - 6	2
	2-2x10	7 - 4	2	6 - 2	2	5 - 5	2
	2-2x12	8 - 6	2	7 - 2	2	6 - 4	2
	3-2x8	7 - 6	1	6 - 4	1	5 - 7	2
	3-2x10	9 - 2	2	7 - 9	2	6 - 10	2
	3-2x12	10 - 7	2	9 - 0	2	7 - 11	2
	4-2x8	8 - 8	1	7 - 4	1	6 - 5	1
	4-2x10	10 - 7	1	8 - 11	2	7 - 11	2
4-2x12	12 - 3	2	10 - 4	2	9 - 2	2	
Two floors	2-2x4	2 - 2	1	1 - 10	1	1 - 8	2
	2-2x6	3 - 2	2	2 - 9	2	2 - 5	2
	2-2x8	4 - 0	2	3 - 5	2	3 - 1	2
	2-2x10	4 - 11	2	4 - 2	3	3 - 9	3
	2-2x12	5 - 8	3	4 - 10	3	4 - 4	3
	3-2x8	5 - 0	2	4 - 4	2	3 - 10	2
	3-2x10	6 - 1	2	5 - 3	2	4 - 8	2
	3-2x12	7 - 1	2	6 - 1	3	5 - 5	3
	4-2x8	5 - 9	2	5 - 0	2	4 - 5	2
	4-2x10	7 - 1	2	6 - 1	2	5 - 5	2
4-2x12	8 - 2	2	7 - 0	2	6 - 3	2	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- a. Spans are given in feet and inches.
- b. Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- c. NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- d. Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (for example, cripple studs bearing on the header), tabulated spans for header consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

**TABLE 13 - GIRDER SPANS^a AND HEADER SPANS^a FOR INTERIOR BEARING WALLS
(Maximum spans and required number of jack studs for No.2 Western Cedars)**

HEADERS AND GIRDERS SUPPORTING	SIZE	Building width ^b (feet)					
		20		28		36	
		Span ^d	NJ ^c	Span ^d	NJ ^c	Span ^d	NJ ^c
One floor only	2-2x4	3 - 1	1	2 - 7	1	2 - 3	1
	2-2x6	4 - 6	1	3 - 10	1	3 - 4	1
	2-2x8	5 - 8	1	4 - 10	1	4 - 3	1
	2-2x10	6 - 11	1	5 - 10	2	5 - 2	2
	2-2x12	8 - 1	2	6 - 10	2	6 - 0	2
	3-2x8	7 - 2	1	6 - 0	1	5 - 4	1
	3-2x10	8 - 8	1	7 - 4	1	6 - 6	2
	3-2x12	10 - 1	1	8 - 6	2	7 - 6	2
	4-2x8	8 - 3	1	6 - 11	1	6 - 2	1
	4-2x10	10 - 1	1	8 - 6	1	7 - 6	1
4-2x12	11 - 8	1	9 - 10	1	8 - 8	2	
Two floors	2-2x4	2 - 1	1	1 - 9	1	1 - 7	1
	2-2x6	3 - 0	1	2 - 7	2	2 - 4	2
	2-2x8	3 - 10	2	3 - 3	2	2 - 11	2
	2-2x10	4 - 8	2	4 - 0	2	3 - 7	2
	2-2x12	5 - 5	2	4 - 7	2	4 - 1	3
	3-2x8	4 - 9	1	4 - 1	2	3 - 8	2
	3-2x10	5 - 10	2	5 - 0	2	4 - 5	2
	3-2x12	6 - 9	2	5 - 9	2	5 - 2	2
	4-2x8	5 - 6	1	4 - 9	1	4 - 2	2
	4-2x10	6 - 9	1	5 - 9	2	5 - 2	2
4-2x12	7 - 9	2	6 - 8	2	5 - 11	2	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- a. Spans are given in feet and inches.
- b. Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- c. NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- d. Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (for example, cripple studs bearing on the header), tabulated spans for header consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

**TABLE 14 - GIRDER SPANS^a AND HEADER SPANS^a FOR INTERIOR BEARING WALLS
(Maximum spans and required number of jack studs for No.2 Western Woods)**

HEADERS AND GIRDERS SUPPORTING	SIZE	Building width ^b (feet)					
		20		28		36	
		Span ^d	NJ ^c	Span ^d	NJ ^c	Span ^d	NJ ^c
One floor only	2-2x4	3 - 0	1	2 - 7	1	2 - 3	1
	2-2x6	4 - 5	1	3 - 9	1	3 - 3	1
	2-2x8	5 - 7	1	4 - 9	2	4 - 2	2
	2-2x10	6 - 10	2	5 - 9	2	5 - 1	2
	2-2x12	7 - 11	2	6 - 8	2	5 - 11	2
	3-2x8	7 - 0	1	5 - 11	1	5 - 3	2
	3-2x10	8 - 7	1	7 - 3	2	6 - 4	2
	3-2x12	9 - 11	2	8 - 5	2	7 - 5	2
	4-2x8	8 - 1	1	6 - 10	1	6 - 0	1
	4-2x10	9 - 10	1	8 - 4	1	7 - 4	2
4-2x12	11 - 5	1	9 - 8	2	8 - 6	2	
Two floors	2-2x4	2 - 0	1	1 - 9	1	1 - 6	1
	2-2x6	2 - 11	2	2 - 6	2	2 - 3	2
	2-2x8	3 - 9	2	3 - 2	2	2 - 10	2
	2-2x10	4 - 7	2	3 - 11	2	3 - 6	3
	2-2x12	5 - 3	2	4 - 6	3	4 - 0	3
	3-2x8	4 - 8	2	4 - 0	2	3 - 7	2
	3-2x10	5 - 9	2	4 - 11	2	4 - 4	2
	3-2x12	6 - 7	2	5 - 8	2	5 - 1	3
	4-2x8	5 - 5	2	4 - 8	2	4 - 1	2
	4-2x10	6 - 7	2	5 - 8	2	5 - 0	2
4-2x12	7 - 8	2	6 - 7	2	5 - 10	2	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- a. Spans are given in feet and inches.
- b. Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- c. NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- d. Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (for example, cripple studs bearing on the header), tabulated spans for header consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

ABOUT PLIB

Founded in 1903, Pacific Lumber Inspection Bureau (PLIB) is a non-profit, accredited lumber and wood products inspection and certification agency. PLIB provides lumber-grading and grade-stamping services to the lumber industry along with a wide range of other inspection and certification services for related wood-products manufacturers including Heat Treatment, Wood Packaging, CE Marking, WUI, Glulam, Cross-Laminated Timber, and Wood Trusses.

In January 2019, PLIB merged operations with the West Coast Lumber Inspection Bureau (WCLIB) and with it, the American Institute of Timber Construction (AITC), retaining both the WCLIB and AITC trademarks. With the merger, PLIB added Glulam and Cross-Laminated Timber quality-control certification to its list of signature services and expanded coverage into the southern United States and Europe.

PLIB is accredited by the American Lumber Standards Committee (ALSC), the Canadian Lumber Standards Accreditation Board (CLSAB), North America's only lumber grading accreditation bodies, and by the International Accreditation Service (IAS), a nonprofit, public-benefit corporation, and a subsidiary of the International Code Council (ICC), the governing body that develops the International Building Code (IBC).

For more information, visit our website at www.plib.org.