

Murphy LVL Marriage Beam



MURPHY
Engineered Wood

1-1/2" Murphy LVL - Marriage Ridge Beam

Simple or Two Span Condition (HUD Code Minimum L/180)

Roof Load (PSF)	Beam Depth	Span and Bearing ⁽¹⁾	Wind Zone	Unit Width								
				10'-0"	11'-8"	12'-0"	13'-0"	13'-4"	13'-8"	14'-6"	15'-0"	15'-6"
				120"	140"	144"	156"	160"	164"	174"	180"	186"
Non-Snow Area 125% 20LL + 10DL	7 1/4"	Span	I	13' - 11"	13' - 2"	13' - 1"	12' - 9"	12' - 7"	12' - 6"	12' - 3"	12' - 1"	11' - 12"
			II	13' - 5"	12' - 8"	12' - 7"	12' - 2"	12' - 1"	11' - 12"	11' - 9"	11' - 7"	11' - 6"
			III	12' - 5"	11' - 9"	11' - 7"	11' - 4"	11' - 2"	11' - 1"	10' - 10"	10' - 9"	10' - 7"
		Brg	All	1.6" / 4.1"	1.8" / 4.6"	1.8" / 4.6"	1.9" / 4.9"	2" / 5"	2" / 5.1"	2.1" / 5.2"	2.1" / 5.4"	2.2" / 5.5"
	9 1/4"	Span	I	17' - 8"	16' - 10"	16' - 8"	16' - 2"	16' - 1"	15' - 11"	15' - 7"	15' - 5"	15' - 3"
			II	17' - 1"	16' - 2"	16' - 0"	15' - 7"	15' - 5"	15' - 4"	15' - 0"	14' - 10"	14' - 8"
			III	15' - 10"	14' - 12"	14' - 10"	14' - 5"	14' - 4"	14' - 2"	13' - 11"	13' - 9"	13' - 7"
		Brg	All	2.1" / 5.3"	2.3" / 5.8"	2.4" / 6"	2.5" / 6.3"	2.5" / 6.4"	2.6" / 6.5"	2.7" / 6.7"	2.7" / 6.9"	2.8" / 7"
	9 1/2"	Span	I	18' - 2"	17' - 3"	17' - 1"	16' - 8"	16' - 6"	16' - 4"	16' - 0"	15' - 10"	15' - 8"
			II	17' - 7"	16' - 8"	16' - 6"	16' - 0"	15' - 10"	15' - 9"	15' - 5"	15' - 3"	15' - 1"
			III	16' - 3"	15' - 5"	15' - 3"	14' - 10"	14' - 8"	14' - 7"	14' - 3"	14' - 1"	13' - 11"
		Brg	All	2.1" / 5.4"	2.4" / 6"	2.4" / 6.1"	2.5" / 6.4"	2.6" / 6.6"	2.6" / 6.7"	2.7" / 6.9"	2.8" / 7.1"	2.9" / 7.2"
	11 1/4"	Span	I	21' - 6"	20' - 5"	20' - 2"	19' - 8"	19' - 6"	19' - 4"	18' - 11"	18' - 8"	18' - 4"
			II	20' - 10"	19' - 9"	19' - 6"	18' - 12"	18' - 10"	18' - 8"	18' - 3"	18' - 1"	17' - 10"
			III	19' - 3"	18' - 3"	18' - 1"	17' - 7"	17' - 5"	17' - 3"	16' - 11"	16' - 8"	16' - 6"
		Brg	All	2.6" / 6.5"	2.8" / 7.1"	2.9" / 7.3"	3" / 7.7"	3.1" / 7.8"	3.1" / 7.9"	3.3" / 8.2"	3.3" / 8.4"	3.4" / 8.5"
	11 7/8"	Span	I	22' - 8"	21' - 6"	21' - 4"	20' - 9"	20' - 7"	20' - 5"	19' - 11"	19' - 7"	19' - 4"
			II	22' - 0"	20' - 10"	20' - 8"	20' - 1"	19' - 11"	19' - 8"	19' - 4"	19' - 1"	18' - 10"
			III	20' - 4"	19' - 3"	19' - 1"	18' - 7"	18' - 5"	18' - 3"	17' - 10"	17' - 8"	17' - 5"
		Brg	All	2.7" / 6.8"	3" / 7.6"	3" / 7.7"	3.2" / 8.1"	3.3" / 8.2"	3.3" / 8.4"	3.4" / 8.7"	3.5" / 8.8"	3.5" / 8.9"
	14"	Span	I	26' - 8"	25' - 4"	25' - 1"	24' - 5"	24' - 1"	23' - 10"	23' - 1"	22' - 9"	22' - 4"
			II	25' - 12"	24' - 7"	24' - 4"	23' - 8"	23' - 5"	23' - 3"	22' - 9"	22' - 6"	22' - 3"
			III	24' - 0"	22' - 9"	22' - 6"	21' - 11"	21' - 8"	21' - 6"	21' - 1"	20' - 10"	20' - 7"
		Brg	All	3.2" / 8.1"	3.5" / 8.9"	3.6" / 9.1"	3.8" / 9.6"	3.8" / 9.7"	3.9" / 9.8"	4" / 10.1"	4.1" / 10.3"	4.1" / 10.4"
16"	Span	I	30' - 5"	28' - 11"	28' - 7"	27' - 6"	27' - 2"	26' - 10"	26' - 1"	25' - 7"	25' - 2"	
		II	29' - 9"	28' - 2"	27' - 10"	27' - 1"	26' - 10"	26' - 7"	26' - 1"	25' - 7"	25' - 2"	
		III	27' - 6"	26' - 0"	25' - 9"	25' - 5"	24' - 10"	24' - 7"	24' - 1"	23' - 10"	23' - 6"	
	Brg	All	3.7" / 9.3"	4.1" / 10.3"	4.1" / 10.4"	4.3" / 10.8"	4.4" / 11"	4.4" / 11.1"	4.5" / 11.4"	4.6" / 11.6"	4.7" / 11.8"	
18"	Span	I	34' - 2"	32' - 3"	31' - 9"	30' - 7"	30' - 2"	29' - 10"	28' - 11"	28' - 6"	28' - 0"	
		II	33' - 6"	31' - 9"	31' - 5"	30' - 6"	30' - 2"	29' - 10"	28' - 11"	28' - 6"	28' - 0"	
		III	30' - 11"	29' - 4"	29' - 0"	28' - 2"	27' - 11"	27' - 8"	27' - 1"	26' - 10"	26' - 6"	
	Brg	All	4.2" / 10.5"	4.6" / 11.5"	4.6" / 11.7"	4.8" / 12.1"	4.9" / 12.2"	4.9" / 12.4"	5.1" / 12.7"	5.1" / 12.9"	5.2" / 13.1"	
20"	Span	I	37' - 10"	35' - 5"	34' - 11"	33' - 7"	33' - 2"	32' - 9"	31' - 10"	31' - 3"	30' - 9"	
		II	37' - 4"	35' - 3"	34' - 11"	33' - 7"	33' - 2"	32' - 9"	31' - 10"	31' - 3"	30' - 9"	
		III	34' - 5"	32' - 7"	32' - 3"	31' - 4"	31' - 1"	30' - 10"	30' - 2"	29' - 10"	29' - 5"	
	Brg	All	4.7" / 11.7"	5" / 12.7"	5.1" / 12.9"	5.3" / 13.4"	5.4" / 13.5"	5.4" / 13.7"	5.6" / 14.1"	5.7" / 14.3"	5.8" / 14.5"	
24"	Span	I	44' - 9"	41' - 7"	41' - 0"	39' - 5"	38' - 11"	38' - 6"	37' - 5"	36' - 9"	36' - 2"	
		II	44' - 9"	41' - 7"	41' - 0"	39' - 5"	38' - 11"	38' - 6"	37' - 5"	36' - 9"	36' - 2"	
		III	41' - 5"	39' - 2"	38' - 10"	37' - 8"	37' - 4"	37' - 0"	36' - 3"	35' - 10"	35' - 5"	
	Brg	All	5.6" / 14"	6" / 15.1"	6.1" / 15.3"	6.3" / 15.8"	6.4" / 16"	6.5" / 16.2"	6.6" / 16.7"	6.7" / 16.9"	6.8" / 17.2"	

(1) Bearing requirements are minimum end/intermediate bearing length

General Notes

1-1/2" wide members

Uniform loads; Unit Width = Dead, Snow and Wind load tributary width Clear distance between supports

Worst case of simple or two-span conditions

Deflection criteria of L/180 live load and L/120 total load

F_b = 3100 psi F_v = 290 psi E = 2.0 x 10⁶ psi F_c perp = 750 psi

These tables reflect the specific design information and product determination for 2.0E 3100F laminated veneer lumber beams as manufactured by Murphy when used as a marriage beam. They confirm the products are designed to carry the loads shown for the spans indicated. Design loads have been assembled in accordance with ASCE7-10 and the HUD Manufactured Home Construction and Safety Standards. These calculations reflect the structural adequacy of the member when installed in accordance with Murphy and APA recommendations and as required by local building codes. Neither the engineer nor Murphy is responsible for the design or manufacture of these products if altered or used in any other manner not described specifically in these tables. Nor are they responsible for any other portion of the supporting structure or the connections between this beam and the supporting structure. The products are intended for interior use, untreated applications and normal temperatures. Lateral loads are not considered. The calculations assume the above products are laterally braced at 24" on-center along the compression side for the full depth of the member.

Why Murphy Marriage Beam?

A complete modular home is simply too wide for a single traffic lane. Most modular homes are built in two "modules," or halves, for ease of transport. The point at which the two halves mate, or come together during assembly, must be flat and straight. Both halves have a beam running along their length for fastening to each other to create a complete unit.

This beam is called a "marriage beam" and Murphy LVL is a perfect material for such a use. By virtue of its Douglas fir construction, Murphy LVL is stronger, straighter and more durable than dimensional lumber and less likely to warp, split or twist.

1-1/2" Murphy LVL - Marriage Ridge Beam

Simple or Two Span Condition (HUD Code Minimum L/180)

Roof Load (PSF)	Beam Depth	Span and Bearing (1)	Wind Zone	Unit Width								
				10'-0"	11'-8"	12'-0"	13'-0"	13'-4"	13'-8"	14'-6"	15'-0"	15'-6"
Snow Area 115% 30LL + 10DL	7 1/4"	Span	All	12' - 2"	11' - 7"	11' - 5"	11' - 1"	11' - 0"	10' - 11"	10' - 7"	10' - 5"	10' - 3"
		Brg	All	1.9" / 4.8"	2.1" / 5.3"	2.1" / 5.4"	2.2" / 5.7"	2.3" / 5.8"	2.3" / 5.9"	2.4" / 6"	2.4" / 6.1"	2.5" / 6.2"
	9 1/4"	Span	All	15' - 7"	14' - 9"	14' - 6"	13' - 12"	13' - 9"	13' - 7"	13' - 2"	12' - 12"	12' - 9"
		Brg	All	2.4" / 6.2"	2.7" / 6.8"	2.7" / 6.9"	2.8" / 7.2"	2.9" / 7.3"	2.9" / 7.4"	3" / 7.6"	3" / 7.7"	3.1" / 7.8"
	9 1/2"	Span	All	15' - 12"	15' - 1"	14' - 11"	14' - 4"	14' - 1"	13' - 11"	13' - 6"	13' - 3"	13' - 1"
		Brg	All	2.5" / 6.3"	2.8" / 7"	2.8" / 7.1"	2.9" / 7.4"	2.9" / 7.4"	3" / 7.5"	3.1" / 7.8"	3.1" / 7.9"	3.2" / 8"
	11 1/4"	Span	All	18' - 11"	17' - 7"	17' - 4"	16' - 8"	16' - 5"	16' - 3"	15' - 9"	15' - 6"	15' - 3"
		Brg	All	3" / 7.5"	3.2" / 8.2"	3.3" / 8.3"	3.4" / 8.6"	3.5" / 8.7"	3.5" / 8.8"	3.6" / 9.1"	3.7" / 9.2"	3.7" / 9.4"
	11 7/8"	Span	All	19' - 12"	18' - 6"	18' - 3"	17' - 6"	17' - 3"	17' - 1"	16' - 7"	16' - 3"	15' - 12"
		Brg	All	3.2" / 8"	3.4" / 8.6"	3.5" / 8.7"	3.6" / 9"	3.6" / 9.2"	3.7" / 9.3"	3.8" / 9.5"	3.8" / 9.7"	3.9" / 9.8"
	14"	Span	All	23' - 2"	21' - 5"	21' - 1"	20' - 3"	20' - 0"	19' - 9"	19' - 2"	18' - 10"	18' - 6"
		Brg	All	3.7" / 9.3"	4" / 10"	4" / 10.1"	4.2" / 10.5"	4.2" / 10.7"	4.3" / 10.8"	4.4" / 11.1"	4.5" / 11.3"	4.5" / 11.4"
	16"	Span	All	26' - 1"	24' - 2"	23' - 9"	22' - 10"	22' - 7"	22' - 3"	21' - 7"	21' - 3"	20' - 11"
		Brg	All	4.2" / 10.5"	4.5" / 11.3"	4.6" / 11.5"	4.7" / 11.9"	4.8" / 12.1"	4.8" / 12.2"	5" / 12.5"	5.1" / 12.7"	5.1" / 12.9"
	18"	Span	All	28' - 11"	26' - 10"	26' - 5"	25' - 5"	25' - 1"	24' - 9"	24' - 0"	23' - 7"	23' - 3"
		Brg	All	4.7" / 11.7"	5" / 12.6"	5.1" / 12.8"	5.3" / 13.3"	5.3" / 13.4"	5.4" / 13.6"	5.6" / 14"	5.7" / 14.2"	5.7" / 14.4"
	20"	Span	All	31' - 9"	29' - 5"	29' - 0"	27' - 11"	27' - 7"	27' - 3"	26' - 5"	25' - 12"	25' - 6"
		Brg	All	5.2" / 13"	5.5" / 13.9"	5.6" / 14.1"	5.8" / 14.7"	5.9" / 14.8"	6" / 15"	6.1" / 15.4"	6.2" / 15.7"	6.3" / 15.9"
	24"	Span	All	37' - 4"	34' - 8"	34' - 2"	32' - 10"	32' - 5"	32' - 0"	31' - 1"	30' - 7"	30' - 1"
		Brg	All	6.1" / 15.4"	6.6" / 16.5"	6.7" / 16.7"	6.9" / 17.4"	7" / 17.6"	7.1" / 17.8"	7.3" / 18.3"	7.4" / 18.6"	7.5" / 18.8"
Snow Area 115% 40LL + 10DL	7 1/4"	Span	All	11' - 0"	10' - 5"	10' - 4"	9' - 12"	9' - 10"	9' - 5"	9' - 3"	9' - 1"	
		Brg	All	2.1" / 5.4"	2.4" / 6"	2.4" / 6.1"	2.5" / 6.4"	2.6" / 6.5"	2.6" / 6.5"	2.7" / 6.7"	2.7" / 6.8"	2.7" / 6.9"
	9 1/4"	Span	All	14' - 1"	13' - 2"	12' - 12"	12' - 5"	12' - 3"	12' - 2"	11' - 9"	11' - 7"	11' - 4"
		Brg	All	2.8" / 7"	3" / 7.6"	3" / 7.7"	3.2" / 8"	3.2" / 8.1"	3.2" / 8.2"	3.3" / 8.4"	3.4" / 8.5"	3.4" / 8.7"
	9 1/2"	Span	All	14' - 5"	13' - 6"	13' - 3"	12' - 9"	12' - 7"	12' - 5"	12' - 1"	11' - 10"	11' - 8"
		Brg	All	2.8" / 7.2"	3.1" / 7.8"	3.1" / 7.9"	3.2" / 8.2"	3.3" / 8.3"	3.3" / 8.4"	3.4" / 8.6"	3.5" / 8.8"	3.5" / 8.9"
	11 1/4"	Span	All	16' - 12"	15' - 8"	15' - 6"	14' - 10"	14' - 8"	14' - 6"	14' - 1"	13' - 10"	13' - 7"
		Brg	All	3.3" / 8.4"	3.6" / 9.1"	3.7" / 9.2"	3.8" / 9.6"	3.8" / 9.7"	3.9" / 9.8"	4" / 10.1"	4.1" / 10.2"	4.1" / 10.4"
	11 7/8"	Span	All	17' - 10"	16' - 6"	16' - 3"	15' - 7"	15' - 5"	15' - 3"	14' - 9"	14' - 6"	14' - 3"
		Brg	All	3.5" / 8.9"	3.8" / 9.6"	3.8" / 9.7"	4" / 10.1"	4" / 10.2"	4.1" / 10.3"	4.2" / 10.6"	4.3" / 10.8"	4.3" / 10.9"
	14"	Span	All	20' - 8"	19' - 1"	18' - 10"	18' - 1"	17' - 10"	17' - 8"	17' - 1"	16' - 10"	16' - 6"
		Brg	All	4.1" / 10.3"	4.4" / 11.1"	4.5" / 11.3"	4.6" / 11.7"	4.7" / 11.8"	4.8" / 12"	4.9" / 12.3"	5" / 12.5"	5.1" / 12.7"
	16"	Span	All	23' - 4"	21' - 7"	21' - 3"	20' - 5"	20' - 2"	19' - 11"	19' - 4"	18' - 12"	18' - 8"
		Brg	All	4.6" / 11.7"	5" / 12.6"	5.1" / 12.7"	5.3" / 13.2"	5.3" / 13.4"	5.4" / 13.5"	5.5" / 13.9"	5.6" / 14.2"	5.7" / 14.4"
	18"	Span	All	25' - 11"	23' - 12"	23' - 7"	22' - 8"	22' - 5"	22' - 1"	21' - 5"	21' - 1"	20' - 9"
		Brg	All	5.2" / 13"	5.6" / 14"	5.7" / 14.2"	5.9" / 14.8"	5.9" / 14.9"	6" / 15.1"	6.2" / 15.5"	6.3" / 15.8"	6.4" / 16"
	20"	Span	All	28' - 5"	26' - 4"	25' - 12"	24' - 11"	24' - 7"	24' - 4"	23' - 7"	23' - 2"	22' - 9"
		Brg	All	5.7" / 14.4"	6.2" / 15.5"	6.2" / 15.7"	6.5" / 16.3"	6.6" / 16.5"	6.6" / 16.6"	6.8" / 17.1"	6.9" / 17.4"	7" / 17.7"
	24"	Span	All	33' - 6"	30' - 12"	30' - 7"	29' - 4"	28' - 12"	28' - 7"	27' - 9"	27' - 3"	26' - 10"
		Brg	All	6.8" / 17"	7.3" / 18.3"	7.4" / 18.6"	7.7" / 19.3"	7.8" / 19.5"	7.9" / 19.7"	8.1" / 20.3"	8.2" / 20.6"	8.3" / 20.9"

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