

# PERMIT ISSUED

## City of Portland, Maine - Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 03-0705	Issue Date: JUN 19 2003	CBL: 297 C021001
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Location of Construction: 126 Dorothy St	Owner Name: Bouchard Diana R	Owner Address: 126 Dorothy St <b>CITY OF PORTLAND</b>	Phone:
Business Name:	Contractor Name: CPW Development	Contractor Address: PO Box 4000 Windham	Phone: 2078923527
Lessee/Buyer's Name	Phone:	Permit Type: Garages - Attached	Zone: <b>R-3</b>

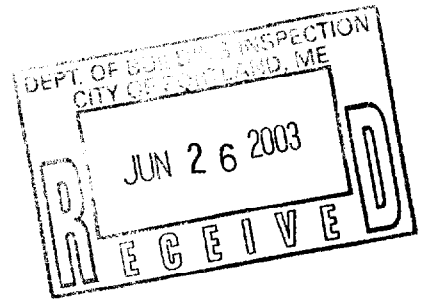
Past Use: single family - <u>ONLY</u>	Proposed Use: single family - build attached 24' x 36' garage <b>NO additional UNITS Allowed</b>	Permit Fee: \$737.00	Cost of Work: \$102,000.00	CEO District: 1	FIRE DEPT: <input type="checkbox"/> Approved <input checked="" type="checkbox"/> Denied <i>N/A</i>	INSPECTION: Use Group: <b>R-3</b> Type: <b>SB</b> <b>BOCA 99</b>	
Proposed Project Description: build attached 24' x 36' garage w/living space above <b>single family only!</b> <b>NO ADDITIONAL UNITS</b>		Signature:		Signature:		PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.) Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Signature: _____ Date: _____	

Permit Taken By: tmm	Date Applied For: 06/19/2003	<b>Zoning Approval</b>				
<ol style="list-style-type: none"> <li>This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.</li> <li>Building permits do not include plumbing, septic or electrical work.</li> <li>Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..</li> </ol>		<b>Special Zone or Reviews</b> <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: <b>6/19/03</b>	<b>Zoning Appeal</b> <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date: _____	<b>Historic Preservation</b> <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: <b>6/19/03</b>		
		<b>PERMIT ISSUED WITH REQUIREMENTS</b> <i>OK</i>				

### CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE



Attn Tracy Munson

Specs Regarding

CPW Beachhead Job / 26 Dorothy St  
Portland

9 Pages T-Fill

6/25/03

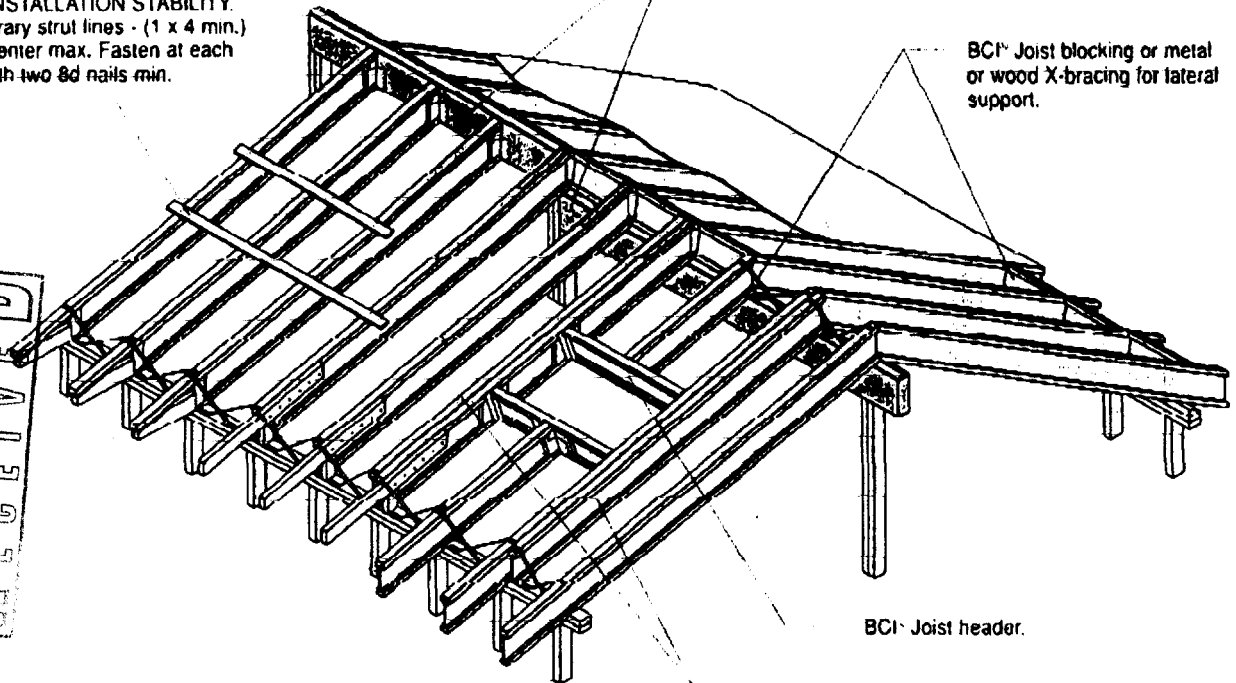
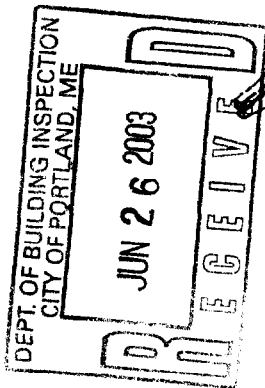
PS. Cole will be in  
in morning to pick  
up permits

## BCI® Joists

The ridge must be supported by a VERSA-LAM® LVL beam or a load-bearing wall.

FOR INSTALLATION STABILITY,  
Temporary strut lines - (1 x 4 min.)  
8' on center max. Fasten at each  
joist with two 8d nails min.

BCI® Joist blocking or metal  
or wood X-bracing for lateral  
support.



BCI® Joist header.

Multiple BCI® Joists may be required.

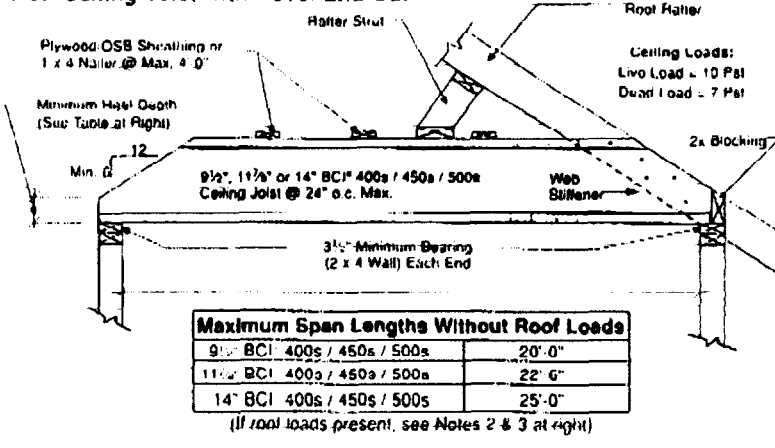
### SAFETY WARNING

DO NOT ALLOW WORKERS ON BCI® JOISTS UNTIL ALL HANGERS, BCI RIM JOISTS, RIM BOARDS, BCI® BLOCKING PANELS, X-BRACING AND TEMPORARY 1x4 STRUT LINES ARE INSTALLED AS SPECIFIED BELOW

SERIOUS ACCIDENTS CAN RESULT FROM INSUFFICIENT ATTENTION TO PROPER BRACING DURING CONSTRUCTION. ACCIDENTS CAN BE AVOIDED UNDER NORMAL CONDITIONS BY FOLLOWING THESE GUIDELINES:

- Build a braced end wall at the end of the bay, or permanently install the first eight feet of BCI® Joists and the first course of sheathing. As an alternate, temporary sheathing may be nailed to the first four feet of BCI® Joists at the end of the bay.
- All hangers, BCI® rim joists, rim boards, BCI® blocking panels, and x-bracing must be completely installed and properly nailed as each BCI® Joist is set.
- Install temporary 1x4 strut lines at no more than eight feet on center as additional BCI® Joists are set. Nail the strut lines to the sheathed area, or braced end wall, and to each BCI Joist with two 8d nails.
- The ends of cantilevers must be temporarily secured by strut lines on both the top and bottom flanges.
- Straighten the BCI® Joists to within 1/2 inch of true alignment before attaching strut lines and sheathing.
- Remove the temporary strut lines only as required to install the permanent sheathing.
- Failure to install temporary bracing may result in sideways buckling or roll-over under light construction loads.

### BCI® Ceiling Joist with Bevel End Cut



Minimum Heel Depths	Joist Depth	End Wall	
		2 x 4	2 x 6
9 1/2"	9 1/2"	2 1/2"	1 1/2"
11 1/2"	11 1/2"	3 1/2"	2 1/2"
14"	14"	4 1/2"	3 1/2"

### Notes:

- 1) Detail is to be used only for ceiling joists with no access to attic space.
- 2) Ceiling joist must be designed to carry all roof load transferred through rafter struts as shown.
- 3) BCI® ceiling joist end reaction may not exceed 550 pounds.
  - a) Minimum roof slope is 6/12.
- 4) Nail roof rafter to BCI® top flange with 1-16d sinker or box nail.
- 5) 1x4 nailers must be continuous and nailed to a braced end wall.
- 6) Install a web sillener on each side of BCI® joist at beveled ends. Nail roof rafter to BCI® Joist per building code requirements for ceiling joist to roof rafter connection.

# Roof Span Tables

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WOOD STRUCTURES INC.

287 282 2423 P.84/86

## VERSA-LAM Roof Load Tables

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### 3100F<sub>b</sub> SP and 3080F<sub>b</sub> DF (125% Load Duration) Nonsnow Load

KEY TO TABLE: Top figure = Allowable Total Load (plf) Middle figure = Allowable Live Load (plf)  
Bottom figure = Minimum Required Bearing Length (inches)

Beam Span (ft)	Single Ply 1 1/2" Width - 3100 Fb SP				Double Ply 1 1/2" Width - 3100 Fb SP or 2 1/2" Width - 3080 Fb DF						Triple Ply 1 1/2" Width - 3100 Fb SP or 2 1/2" Width - 3080 Fb DF						Quadruple Ply 1 1/2" Width - 3100 Fb SP or 2 1/2" Width - 3080 Fb DF					
	7/4"	9/4"	11/4"	14"	7/4"	9/4"	11/4"	14"	16"	18"	24"	8 1/4"	11 1/4"	14"	16"	18"	24"	11 1/4"	14"	16"	18"	24"
6	81	100	120	200	100	120	140	160	180	200	104	124	144	164	184	204	108	128	148	168	188	208
8	71	90	110	180	90	110	130	150	170	190	94	114	134	154	174	194	102	122	142	162	182	202
10	61	80	100	160	80	100	120	140	160	180	84	104	124	144	164	184	90	110	130	150	170	190
12	51	70	90	140	70	90	110	130	150	170	74	94	114	134	154	174	80	100	120	140	160	180
14	41	60	80	120	60	80	100	120	140	160	64	84	104	124	144	164	70	90	110	130	150	170
16	31	50	70	100	50	70	90	110	130	150	54	74	94	114	134	154	60	80	100	120	140	160
18	21	40	60	80	40	60	80	100	120	140	44	64	84	104	124	144	50	70	90	110	130	150
20	11	30	50	70	30	50	70	90	110	130	34	54	74	94	114	134	40	60	80	100	120	140

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## VERSA-LAM Roof Load Tables

### 3100F<sub>b</sub> SP and 3080F<sub>b</sub> DF (115% Load Duration) Snow Load

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WOOD STRUCTURES INC.

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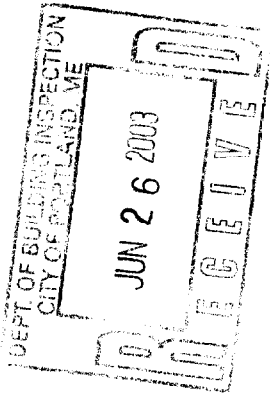
## VERSA-LAM Floor Load Tables

33

### 3100F<sub>b</sub> SP and 3080F<sub>b</sub> DF (100% Load Duration)

KEY TO TABLE: Top figure = Allowable Total Load (plf) Middle figure = Allowable Live Load (plf)  
Bottom figure = Minimum Required Bearing Length at End / Intermediate Supports (inches)

Beam Span (ft)	Single Ply 1 1/2" Width - 3100 Fb SP				Double Ply 1 1/2" Width - 3100 Fb SP or 2 1/2" Width - 3080 Fb DF						Triple Ply 1 1/2" Width - 3100 Fb SP or 2 1/2" Width - 3080 Fb DF						Quadruple Ply 1 1/2" Width - 3100 Fb SP or 2 1/2" Width - 3080 Fb DF					
	7/4"	9/4"	11/4"	14"	7/4"	9/4"	11/4"	14"	16"	18"	24"	8 1/4"	11 1/4"	14"	16"	18"	24"	11 1/4"	14"	16"	18"	24"
6	81	100	120	200	100	120	140	160	180	200	104	124	144	164	184	204	108	128	148	168	188	208
8	71	90	110	180	90	110	130	150	170	190	94	114	134	154	174	194	102	122	142	162	182	202
10	61	80	100	160	80	100	120	140	160	180	84	104	124	144	164	184	90	110	130	150	170	190
12	51	70	90	140	70	90	110	130	150	170	74	94	114	134	154	174	80	100	120	140	160	180
14	41	60	80	120	60	80	100	120	140	160	64	84	104	124	144	164	70	90	110	130	150	170
16	31	50	70	100	50	70	90	110	130	150	54	74	94	114	134	154	60	80	100	120	140	160
18	21	40	60	80	40	60	80	100	120	140	44	64	84	104	124	144	50	70	90	110	130	150
20	11	30	50	70	30	50	70	90	110	130	34	54	74	94	114	134	40	60	80	100	120	140
22	11	30	50	70	30	50	70	90	110	130	34	54	74	94	114	134	40	60	80	100	120	140
24	11	30	50	70	30	50	70	90	110	130	34	54	74	94	114	134	40	60	80	100	120	140
26	11	30	50	70	30	50	70	90	110	130	34	54	74	94	114	134	40	60	80	100	120	140
28	11	30	50	70	30	50	70	90	110	130	34	54	74	94	114	134	40	60	80	100	120	140
30	11	30	50	70	30	50	70	90	110	130	34	54	74	94	114	134	40	60	80	100	120	140



Total Load values are limited by shear, moment or deflection equal to L/240. Total Load values are the capacity of the beam in addition to its own weight.  
Live Load values are limited by deflection equal to L/240.  
Both the Total Load and Live Load values must be checked. Where a Live Load value is not shown, the Total Load value will control.  
These values apply to either simple or multiple span beams. Span is measured center to center of supports. Analyze multiple span beams with the BC CALC software if the length of any span is less than half the length of an adjacent span.  
These values assume that lateral support is provided at beam support and continuously along the compression edge of the beam.  
Table values for Minimum Required Bearing Lengths are based on the allowable compression design value perpendicular to grain for the beam and the Total Load value shown. Other design considerations, such as a weaker support material, may require longer bearing lengths. Table values assume that support is provided across the full width of the beam.  
1 1/2" members deeper than 14 inches are to be used as multiple-ply beams only.  
This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC software.

# VERSA-LAM Design Values / Allowable Nail Spacing 37

## VERSA-LAM Design Values

3100 Fb SP	1 1/4	3 1/2	1.7	1184	1058	6.9
	1 1/4	5 1/2	2.7	1861	2488	24.3
	1 1/4	7 1/4	3.6	2453	4189	55.8
	1 1/4	9 1/4	4.5	3130	6636	115.4
	1 1/4	9 1/2	4.7	3214	6979	125.0
	1 1/4	11 1/4	5.5	3808	8605	207.6
	1 1/4	11 1/2	5.8	4018	10838	244.2
	1 1/4	14	6.9	4737	14517	400.2
	1 1/4	16	7.9	5413	18882	507.3
	1 1/4	18	8.8	6000	23337	650.5
1 1/4	24	11.8	8120	40189	2018.0	
3080 Fb DF	3 1/2	5 1/2	4.9	3658	4939	48.5
	3 1/2	7 1/4	6.5	4821	8323	111.1
	3 1/2	9 1/4	8.3	6151	13187	230.8
	3 1/2	9 1/2	8.5	6318	13868	250.1
	3 1/2	11 1/4	10.1	7481	19086	415.3
	3 1/2	11 1/2	10.7	7897	21138	488.4
	3 1/2	14	12.8	9310	28847	800.3
	3 1/2	16	14.4	10640	37123	1194.7
	3 1/2	18	16.2	11970	46373	1701.0
	3 1/2	20	18.0	13300	56584	2333.3
3080 Fb DF	5 1/4	5 1/4	7.1	5237	6788	63.3
	5 1/4	5 1/2	7.4	5486	7400	72.8
	5 1/4	7 1/4	9.8	7232	12484	166.7
	5 1/4	8 1/4	12.5	9227	19780	346.3
	5 1/4	9 1/2	12.8	9478	20802	375.1
	5 1/4	11 1/4	15.2	11222	28628	622.9
	5 1/4	11 1/2	16.0	11845	31707	732.8
	5 1/4	14	18.9	13965	43271	1200.5
	5 1/4	16	21.6	15980	55885	1792.0
	5 1/4	18	24.3	17855	69580	2651.5
5 1/4	20	27.0	19950	84877	3500.0	
5 1/4	24	32.4	23940	119771	6048.0	

3080 Fb DF	7	8 1/4	16.6	12303	26373	481.7
	7	8 1/2	17.1	12635	27738	500.1
	7	11 1/4	20.2	14983	38171	830.8
	7	11 1/2	21.4	15784	42276	978.8
	7	14	25.2	18520	57894	1600.7
	7	16	28.8	21280	74248	2389.3
	7	18	32.4	23940	92748	3402.0
	7	20	36.0	26800	113169	4888.7
	7	24	43.2	31920	169895	8064.0

Design Property	3100 Fb SP	3080 Fb DF	2200 Fb DF	3100 Fb SP
Modulus of Elasticity, E (x 10 <sup>6</sup> psi) <sup>1</sup>	2.0	2.0	1.8	2.0
Bending, F <sub>b</sub> (psi) <sup>2,3</sup>	3100	3080	2200	3100
Horizontal Shear, F <sub>v</sub> (psi) <sup>4</sup>	290	265	265	290
Tension Parallel to Grain, F <sub>t</sub> (psi) <sup>5</sup>	2250	2100	1600	2250
Compression Parallel to Grain, F <sub>c  </sub> (psi) <sup>6</sup>	3000	3000	3000	3000
Compression Perpendicular to Grain, F <sub>c⊥</sub> (psi) <sup>6</sup>	850	900	900	850

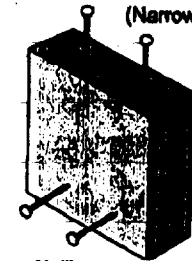
- This value cannot be adjusted for load duration.
  - This value is based on a load duration of 100% and may be adjusted for other load durations.
  - Fiber stress bending value shall be multiplied by the depth factor, (12/d)<sup>1/4</sup> where d = member depth (in).
  - Stress applied perpendicular to the glue lines.
  - Tension value shall be multiplied by a length factor, (4L)/1/8 where L = member length (ft). Use L = 4 for members less than four feet long.
  - Stress applied parallel to the glue lines.
- \* Design properties are limited to dry conditions of use where the maximum moisture content of the material will not exceed 19%.
- \* Fastener values are as provided in the National Design Specification\* for sawn lumber with a specific gravity of 0.50.

## VERSA-LAM & VERSA-RIM Allowable Nail Spacing

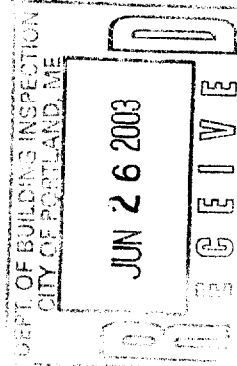
Nail Size	VERSA-RIM (1 1/2")		VERSA-LAM SP (1 1/2")		VERSA-LAM DF (3/2")		All Products		
	O.C. (inches)	End (inches)	O.C. (inches)	End (inches)	O.C. (inches)	End (inches)	O.C. (inches)	End (inches)	
8d Box	3	1 1/2	2	1	2	1/2	2	1/2	
8d Common	4	3	3	2	2	1	2	1	
10d & 12d Box	4	3	3	2	2	1	2	1	
16d Box	4	3	3	2	2	1	2	1	
2d & 12d Common	6	4	4	3	2	2	2	2	
10d Sinker	6	4	4	3	2	2	2	2	
16d Common	6	4	6	3	2	2	2	2	
Simpson A35F								Use	
Simpson LTP4								8d x 1 1/2" Nails	

\* If more than one row of nails is used, the rows must be offset at least 1/2 inch.

Nailing Parallel to Glue Lines (Narrow Face)



Nailing Perpendicular to Glue Lines (Wide Face)

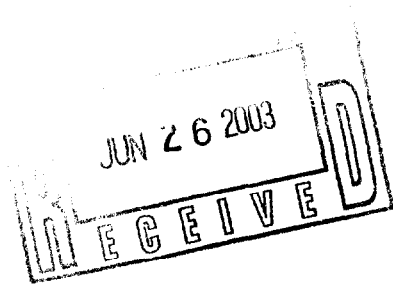


Att Tracy Minson

Spees Regarding

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9 Pages T-Film

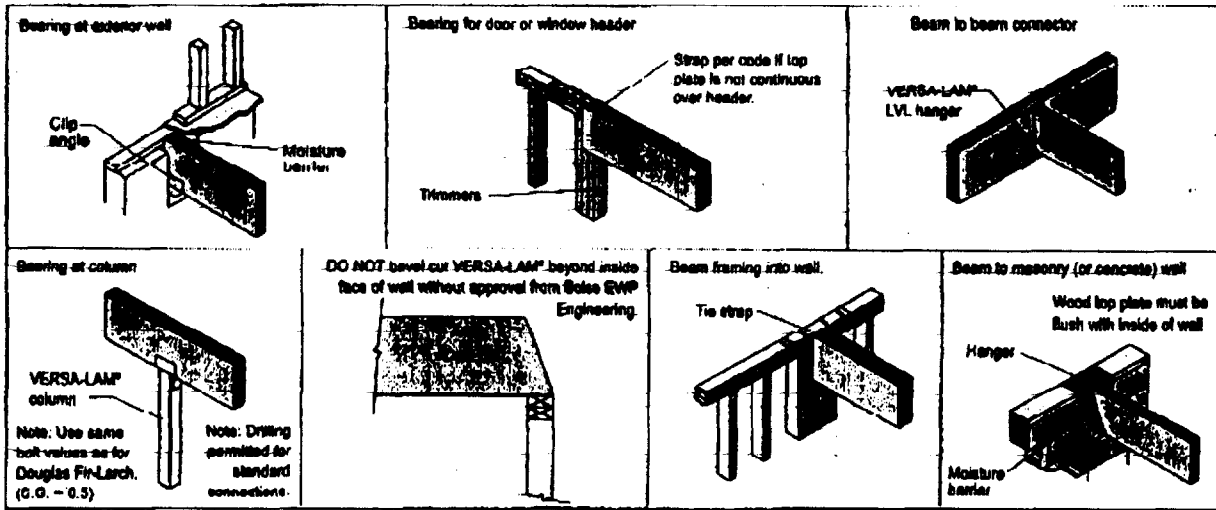


JUN 26 2003  
JUN-19-2003 5:40

WOOD STRUCTURES INC.

207 282 2423 P.03/06

# VERSA-LAM® Beam Details



## Multiple Member Connections

### SIDE-LOADED APPLICATIONS

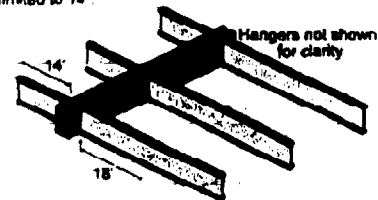
Number of Members	Nailed		1/2" Dia. Through Bolt <sup>1</sup>			3/4" Dia. Through Bolt <sup>1</sup>		
	2 rows 16d Sinks @ 12" o.c.	3 rows 16d Sinks @ 12" o.c.	2 rows @ 24" o.c. staggered	2 rows @ 12" o.c. staggered	2 rows @ 8" o.c. staggered	2 rows @ 24" o.c. staggered	2 rows @ 12" o.c. staggered	2 rows @ 8" o.c. staggered
2	470	705	605	1010	2020	650	1120	2245
3 <sup>rd</sup>	350	525	375	755	1515	420	840	1685
4 <sup>th</sup>	use bolt schedule		335	670	1245	370	745	1495
<b>1 1/2" x 14" VERSA-LAM®</b>								
2 <sup>nd</sup>	use bolt schedule		855	1715	N/A	1125	2250	N/A
<b>1 1/2" x 24" VERSA-LAM®</b>								
Number of Members	Nailed		1/2" Dia. Through Bolt <sup>1</sup>			3/4" Dia. Through Bolt <sup>1</sup>		
	3 rows 16d Sinks @ 12" o.c.	4 rows 16d Sinks @ 12" o.c.	3 rows @ 24" o.c. staggered	3 rows @ 12" o.c. staggered	3 rows @ 8" o.c. staggered	3 rows @ 24" o.c. staggered	3 rows @ 12" o.c. staggered	3 rows @ 8" o.c. staggered
2	705	940	755	1010	1515	840	1120	1685
3 <sup>rd</sup>	525	705	585	755	1135	630	840	1260
4 <sup>th</sup>	use bolt schedule		505	670	1010	580	745	1120

1. Design values apply to common bolts that conform to ANCHORAGE standard B18.21-1981 (Grade 5 or higher). A washer not less than a standard cut washer shall be between the wood and the bolt head and between the wood and the nut. The distance from the edge of the beam to the bolt holes must be at least 2" for 1/2" bolts and 2 1/2" for 3/4" bolts. Bolt holes shall be the same diameter as the bolt.  
2. The nail schedules shown apply to both sides of a three member beam.  
3. 1" wide beams must be top-loaded or loaded from both sides.

### Designing Connections for Multiple VERSA-LAM® Members

When using multiple ply VERSA-LAM® beams to create a wider member, the connection of the plies is as critical as determining the beam size. When side loaded beams are not connected properly, the inside plies do not support their share of the load and thus the load carrying capacity of the full member decreases significantly. The following is an example of how to size and connect a multiple ply VERSA-LAM® floor beam.

Given: Beam shown below is supporting residential floor load (40 psf live load, 10 psf dead load) and is spanning 16'-0". Beam depth is limited to 14".



Find: A multiple 1 1/2" ply VERSA-LAM® that is adequate to support the design loads and the member's proper connection schedule.

- Calculate the tributary width that beam is supporting:  
 $14' / 2 + 16' / 2 = 16'$ .
- Use PLF tables on pages 33-36 of EBC or BC CALC® to size beam. A Triple 1 1/2" x 14" VERSA-LAM® 3100 is found to adequately support the design loads.
- Calculate the maximum plf load from one side (the right side in this case).  
Max. Side Load =  $(16' / 2) \times (40 + 10 \text{ psf}) = 450 \text{ plf}$
- Go to the Multiple Member Connection Table, Side-Loaded Applications, 1 1/2" VERSA-LAM®, 3 members
- The proper connection schedule must have a capacity greater than the max. side load:

Nailed: 3 rows 16d sinks @ 12" o.c.  
525 plf is greater than 450 plf OK  
Bolts: 1/2" diameter 2 rows @ 12" staggered:  
755 plf is greater than 450 plf OK

### TOP-LOADED APPLICATIONS

For top-loaded beams and beams with side loads with less than those shown:

(2) 1 1/2" plies	Depth 17 1/2" & less	2 rows 16d bowsticker nails @ 12" o.c.	400 plf
	Depth 14" - 18"	3 rows 16d bowsticker nails @ 12" o.c.	600 plf
	Depth = 24"	4 rows 16d bowsticker nails @ 12" o.c.	800 plf
(3) 1 1/2" plies	Depth 11 1/2" & less	2 rows 16d bowsticker nails @ 12" o.c.	300 plf
	Depth 14" - 18"	3 rows 16d bowsticker nails @ 12" o.c.	450 plf
(4) 1 1/2" plies	Depth 16" & less	2 rows 1/2" bolts @ 24" o.c., staggered	335 plf
	Depth = 24"	3 rows 1/2" bolts @ 24" o.c., staggered every 8"	505 plf
(2) 3/2" plies	Depth 16" & less	2 rows 1/2" bolts @ 24" o.c., staggered	855 plf
	Depth 20" - 24"	3 rows 1/2" bolts @ 24" o.c., staggered every 8"	1265 plf

1. Beams wider than 7" must be designed by the engineer of record.  
2. All values in these tables may be increased by 15% for snow-load only and by 25% for non-snow-load only where the building code allows.  
3. Use allowable load tables or BC CALC® software to size beams.  
4. An equivalent specific gravity of 0.8 may be used when designing specific connections with VERSA-LAM®.  
5. Connection values are based upon the 1997 NDS.  
6. Contact Boise EWP Engineering for information on structural screw connections.

# VERSA-LAM Roof Load Tables

## 3100Fb SP and 3080Fb DF (125% Load Duration) Nonsnow Load

KEY TO TABLE: Top figure = Allowable Total Load (plf) Middle figure = Allowable Live Load (plf)  
Bottom figures = Minimum Required Bearing Length (inches)

Design Span (ft)	Single Ply 1 1/2" Width - 3100 Fb SP				Double Ply 1 1/2" Width - 3100 Fb SP or 3 1/2" Width - 3080 Fb DF								Triple Ply 1 1/2" Width - 3100 Fb SP or 5 1/2" Width - 3080 Fb DF					Quadruple Ply 1 1/2" Width - 3100 Fb SP or 7" Width - 3080 Fb DF					
	7 1/2"	9 1/2"	11 7/8"	14"	7 1/2"	9 1/2"	11 7/8"	14"	16"	18"	24"	9 1/2"	11 7/8"	14"	16"	18"	24"	11 7/8"	14"	16"	18"	24"	
	5	871	1353	1814	2285	1600	2000	2404	2891	3460	4022	4578	3596	4546	5497	6448	7399	8350	1765	2128	2491	2854	3217
6	640	959	1278	1597	1179	1467	1755	2122	2489	2856	3223	2601	3275	3949	4623	5297	5971	890	1088	1286	1484	1682	1880
10	326	503	679	856	622	777	932	1087	1242	1397	1552	1206	1513	1820	2127	2434	2741	706	875	1044	1213	1382	1551
11	244	365	487	608	448	560	672	784	896	1008	1120	866	1082	1298	1514	1730	1946	513	628	743	858	973	1088
12	187	281	375	469	348	437	526	615	704	793	882	680	853	1026	1199	1372	1545	414	503	592	681	770	859
13	146	219	292	365	274	342	410	478	546	614	682	520	656	792	928	1064	1200	311	384	457	530	603	676
14	116	174	232	290	215	270	325	380	435	490	545	414	517	620	723	826	929	236	293	350	407	464	521
15	94	141	188	235	176	221	266	311	356	401	446	342	428	514	600	686	772	194	241	288	335	382	429
16	77	115	153	191	144	181	218	255	292	329	366	280	352	424	496	568	640	161	201	241	281	321	361
17	63	94	125	156	118	153	188	223	258	293	328	250	317	384	451	518	585	148	183	223	263	303	343
18	53	79	105	131	99	131	163	195	227	259	291	218	279	340	401	462	523	130	161	197	233	269	305
19	44	65	86	107	81	107	133	159	185	211	237	182	231	280	329	378	427	110	137	168	199	230	261
20	36	53	70	87	66	87	108	129	150	171	192	146	189	232	275	318	361	93	117	144	171	198	225
22	27	40	53	66	50	66	82	98	114	130	146	110	143	176	209	242	275	70	89	112	135	158	181
24	18	26	34	42	32	42	52	62	72	82	92	69	89	109	129	149	169	45	57	70	83	96	109
26	14	20	27	34	26	34	42	50	58	66	74	56	73	89	106	123	140	36	45	56	67	78	89
28	11	15	20	25	19	25	30	36	42	48	54	41	53	64	76	87	98	27	34	42	50	58	66
30	8	11	15	19	14	19	23	28	33	38	43	32	41	50	60	70	80	21	27	33	40	47	54

- Total Load values are limited by shear, moment or deflection equal to L/400. Total Load values are the capacity of the beam in addition to its own weight.
- Live Load values are limited by deflection equal to L/240.
- Both the Total Load and Live Load values must be checked. Where a Live Load value is not shown, the Total Load value will control.
- Table values apply to either simple or multiple span beams. Span is measured center to center of supports. Analyze multiple span beams with the BC CALC software if the length of any span is less than half the length of an adjacent span.
- Table values assume that the beam is supported at each support and continuously along the compression edge of the beam.

- Table values for Minimum Required Bearing Lengths are based on the allowable compression design value perpendicular to grain for the beam and the Total Load value shown. Other design considerations, such as a weaker support material, may warrant longer bearing lengths. Table values assume that support is provided across the full width of the beam.
- 1 1/2" members deeper than 14 inches are to be used as multiple ply beams only.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of the table by analyzing a specific application with the BC CALC software.

OFFICE OF BUILDING INSPECTION  
CITY OF PORTLAND, ME

JUN 26 2003



# VERSALAM® Roof Load Tables

## 3100Fb SP and 3080Fb DF (115% Load Duration) Snow Load

KEY TO TABLE: Top figure = Allowable Total Load (plf) Middle figure = Allowable Live Load (plf) Bottom figures = Minimum Required Bearing Length at End / Intermediate Supports (ft/ins)

Design Span (ft)	Single Ply 1 1/4" Width - 3100 Fb SP			Double Ply 1 1/4" Width - 3100 Fb SP			Triple Ply 1 1/4" Width - 3100 Fb SP			Quadruple Ply 1 1/4" Width - 3100 Fb SP					
	9'6"	11'0"	14"	9'6"	11'0"	14"	9'6"	11'0"	14"	9'6"	11'0"	14"	9'6"	11'0"	14"
6	1813	2531	3042	2531	3511	4252	2531	3314	4252	2531	3314	4252	2531	3314	4252
8	1413	1943	2343	1943	2543	3143	1943	2543	3143	1943	2543	3143	1943	2543	3143
10	1213	1643	1943	1643	2143	2543	1643	2143	2543	1643	2143	2543	1643	2143	2543
11	1113	1543	1843	1543	2043	2443	1543	2043	2443	1543	2043	2443	1543	2043	2443
12	1013	1443	1743	1443	1943	2343	1443	1943	2343	1443	1943	2343	1443	1943	2343
13	913	1343	1643	1343	1843	2243	1343	1843	2243	1343	1843	2243	1343	1843	2243
14	813	1243	1543	1243	1743	2143	1243	1743	2143	1243	1743	2143	1243	1743	2143
15	713	1143	1443	1143	1643	2043	1143	1643	2043	1143	1643	2043	1143	1643	2043
16	613	1043	1343	1043	1543	1943	1043	1543	1943	1043	1543	1943	1043	1543	1943
17	513	943	1243	943	1443	1843	943	1443	1843	943	1443	1843	943	1443	1843
18	413	843	1143	843	1343	1743	843	1343	1743	843	1343	1743	843	1343	1743
19	313	743	1043	743	1243	1643	743	1243	1643	743	1243	1643	743	1243	1643
20	213	643	943	643	1143	1543	643	1143	1543	643	1143	1543	643	1143	1543
22	113	543	843	543	1043	1443	543	1043	1443	543	1043	1443	543	1043	1443
24	13	443	743	443	943	1343	443	943	1343	443	943	1343	443	943	1343
26	11	343	643	343	843	1243	343	843	1243	343	843	1243	343	843	1243
28	9	243	543	243	743	1143	243	743	1143	243	743	1143	243	743	1143
30	7	143	443	143	643	1043	143	643	1043	143	643	1043	143	643	1043

- Total Load values are limited by shear, moment or deflection equal to L/180. Total Load values are the capacity of the beam in addition to its own weight.
- Live Load values are limited by deflection equal to L/240.
- Both the Total Load and Live Load values must be checked. Where a Live Load value is not shown, the Total Load value will govern.
- Table values apply to either single or multiple span beams. Span is measured center to center of supports. Analyze multiple span beams with the BC CALC software if the length of any span is less than half the length of an adjacent span.
- Table values assume the lateral support is provided at each support and continuously along the compression edge of the beam.
- Table values for Minimum Required Bearing Lengths are based on the allowable compression design value perpendicular to grain for the beam and the Total Load value shown. Other design considerations, such as a weaker support material, may warrant longer bearing lengths.
- Table values assume that support is provided across the full width of the beam.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC software.

INSPECTION  
CENTURY 21 NORTHEAST  
JUN 26 2003

# VERSA-LAM Floor Load Tables

## 3100Fb SP and 3080Fb DF (100% Load Duration)

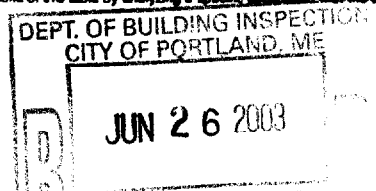
KEY TO TABLE: Top figure = Allowable Total Load (plf) Middle figure = Allowable Live Load (plf)  
Bottom figures = Minimum Required Bearing Length at End / Intermediate Supports (inches)



	Single Ply 1 1/4" Width - 3100 Fb SP				Double Ply 1 1/4" Width - 3100 Fb SP or 3 1/2" Width - 3080 Fb DF						Triple Ply 1 1/4" Width - 3100 Fb SP or 5 1/4" Width - 3080 Fb DF						Quadruple Ply 1 1/4" Width - 3100 Fb SP or 7" Width - 3080 Fb DF					
	7 1/2"	9 1/2"	11 1/2"	14"	7 1/2"	9 1/2"	11 1/2"	14"	16"	18"	24"	9 1/2"	11 1/2"	14"	16"	18"	24"	11 1/2"	14"	16"	18"	24"
10	76	102	128	157	125	158	200	240	300	360	480	310	424	536	648	760	1305	980	1180	1374	1568	1855
	18/3	22/3	28/3.7	37/4.6	15/3	22/3	29/3.6	38/4.6	44/5.6	61/6.7	82/11.6	22/3	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6
11	76	102	128	157	125	158	200	240	300	360	480	310	424	536	648	760	1305	980	1180	1374	1568	1855
	18/3	22/3	28/3.7	37/4.6	15/3	22/3	29/3.6	38/4.6	44/5.6	61/6.7	82/11.6	22/3	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6
12	76	102	128	157	125	158	200	240	300	360	480	310	424	536	648	760	1305	980	1180	1374	1568	1855
	18/3	22/3	28/3.7	37/4.6	15/3	22/3	29/3.6	38/4.6	44/5.6	61/6.7	82/11.6	22/3	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6
13	76	102	128	157	125	158	200	240	300	360	480	310	424	536	648	760	1305	980	1180	1374	1568	1855
	18/3	22/3	28/3.7	37/4.6	15/3	22/3	29/3.6	38/4.6	44/5.6	61/6.7	82/11.6	22/3	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6
14	76	102	128	157	125	158	200	240	300	360	480	310	424	536	648	760	1305	980	1180	1374	1568	1855
	18/3	22/3	28/3.7	37/4.6	15/3	22/3	29/3.6	38/4.6	44/5.6	61/6.7	82/11.6	22/3	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6
15	76	102	128	157	125	158	200	240	300	360	480	310	424	536	648	760	1305	980	1180	1374	1568	1855
	18/3	22/3	28/3.7	37/4.6	15/3	22/3	29/3.6	38/4.6	44/5.6	61/6.7	82/11.6	22/3	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6
16	76	102	128	157	125	158	200	240	300	360	480	310	424	536	648	760	1305	980	1180	1374	1568	1855
	18/3	22/3	28/3.7	37/4.6	15/3	22/3	29/3.6	38/4.6	44/5.6	61/6.7	82/11.6	22/3	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6
17	76	102	128	157	125	158	200	240	300	360	480	310	424	536	648	760	1305	980	1180	1374	1568	1855
	18/3	22/3	28/3.7	37/4.6	15/3	22/3	29/3.6	38/4.6	44/5.6	61/6.7	82/11.6	22/3	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6
18	76	102	128	157	125	158	200	240	300	360	480	310	424	536	648	760	1305	980	1180	1374	1568	1855
	18/3	22/3	28/3.7	37/4.6	15/3	22/3	29/3.6	38/4.6	44/5.6	61/6.7	82/11.6	22/3	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6
19	76	102	128	157	125	158	200	240	300	360	480	310	424	536	648	760	1305	980	1180	1374	1568	1855
	18/3	22/3	28/3.7	37/4.6	15/3	22/3	29/3.6	38/4.6	44/5.6	61/6.7	82/11.6	22/3	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6
20	76	102	128	157	125	158	200	240	300	360	480	310	424	536	648	760	1305	980	1180	1374	1568	1855
	18/3	22/3	28/3.7	37/4.6	15/3	22/3	29/3.6	38/4.6	44/5.6	61/6.7	82/11.6	22/3	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6	28/3.6	38/4.6	44/5.6	61/6.7	82/11.6

Total Load values are limited by shear, moment or deflection equal to L/240. Total Load values are the capacity of the beam in addition to its own weight.  
 Live Load values are limited by deflection equal to L/360.  
 Both the Total Load and Live Load values must be checked. Where a Live Load value is not shown, the Total Load value will control.  
 Table values apply to either single or multiple span beams. Span is measured center to center of supports. Analyze multiple span beams with the BC CALC<sup>SM</sup> software if the length of any span is less than half the length of an adjacent span.  
 Table values assume that lateral support is provided at each support and continuously along the compression edge of the beam.

- Table values for Minimum Required Bearing Lengths are based on the allowable compression design value perpendicular to grain for the beam and the Total Load value shown. Other design considerations, such as a weaker support material, may warrant longer bearing lengths. Table values assume that support is provided across the full width of the beam.
- 1 1/4" members deeper than 14 inches are to be used as multiple-ply beams only.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC<sup>SM</sup> software.



**FLOOR LIVE LOAD CHARTS IN  $l^2/sf$**  ( $\Delta \leq L/480$ )

1. Length is based on overall distance including 5/8" bearing, uniformity needed joist and (1,450) live load deflection. Live Load may vary according to different bearing widths.  
 2. Charts assume composite action with layer 5/8" subfloor nailed or screwed according to recognized practice.

REV 02/91

JOIST DEPTH 9 3/8"		
CHORD DIM.	LUMBER GRADE	LENGTH
3 X 2	SPF #2	10'-0"
3 X 2	SPF #2	11'-0"
3 X 2	SPF #2	12'-0"
3 X 2	SPF #2	13'-0"
3 X 2	SPF #2	14'-0"
3 X 2	SPF #2	15'-0"
3 X 2	SPF #2	16'-0"
4 X 2	SPF #2	17'-0"
4 X 2	MSR 2100	18'-0"
4 X 2	MSR 2100	19'-0"
4 X 2	MSR 2100	20'-0"

DEAD LOAD 16			
SPACING			
12"	16"	19.2"	24"
179	134	112	90
139	104	87	70
110	83	69	55
86	65	54	43
70	53	44	35
58	43	36	28
48	36	30	24
52	39	32	26
54	41	34	27
46	35	29	23
40	30	25	20

DEAD LOAD 23			
SPACING			
12"	16"	19.2"	24"
179	134	112	87
139	104	87	70
110	83	69	55
86	65	54	43
70	53	44	35
58	43	36	28
48	36	30	24
52	39	32	26
54	41	34	27
46	35	29	23
40	30	25	20

The L/480 tables have been simplified for inventory items.

If you require extra loading, please feel free to contact ALL-WOOD JOISTS or your local dealer for specifications of special joists. (i.e. 2x4 MSR 9 3/8" 15" @ 16" o/c can support a 70-10-6 loading.)

JOIST DEPTH 13"		
CHORD DIM.	LUMBER GRADE	LENGTH
3 X 2	SPF #2	10'-0"
3 X 2	SPF #2	11'-0"
3 X 2	SPF #2	12'-0"
3 X 2	SPF #2	13'-0"
3 X 2	SPF #2	14'-0"
3 X 2	SPF #2	16'-0"
3 X 2	SPF #2	18'-0"
3 X 2	SPF #2	17'-0"
3 X 2	SPF #2	18'-0"
4 X 2	SPF #2	19'-0"
4 X 2	SPF #2	20'-0"
4 X 2	SPF #2	21'-0"
4 X 2	MSR 2100	22'-0"
4 X 2	MSR 2100	23'-0"
4 X 2	MSR 2100	24'-0"
4 X 2	MSR 2100	25'-0"

DEAD LOAD 18			
SPACING			
12"	16"	19.2"	24"
273	201	166	129
241	177	145	113
212	156	127	99
171	128	107	86
142	107	89	71
114	89	71	57
96	72	60	48
80	60	50	40
69	52	43	34
60	60	50	40
69	52	43	34
60	49	37	30
64	48	40	32
56	42	35	28
48	38	30	24
43	32	27	22

DEAD LOAD 25			
SPACING			
12"	16"	19.2"	24"
283	181	135	119
231	167	135	103
202	145	117	89
171	127	102	77
142	107	89	67
114	85	71	57
96	72	60	47
80	60	50	39
69	52	43	33
60	60	48	33
69	52	41	28
60	45	36	24
64	48	40	29
56	42	35	26
48	38	30	23
43	32	27	21

Also available is an 1 1/8" Rimboard in 9 3/8", 13" and 16" depths.

This product allows greater transfer of vertical loads and uniformity around stairwells, etc.

Design values:

Horizontal shear: 180 lb/ft  
 Vertical load: 4400 lb/ft

HANGERS:  
 Stocked hangers are top mount style. (TM)

Face mount hangers are available upon request.

JOIST DEPTH 16"		
CHORD DIM.	LUMBER GRADE	LENGTH
3 X 2	SPF #2	16'-0"
3 X 2	SPF #2	17'-0"
4 X 2	SPF #2	18'-0"
4 X 2	SPF #2	19'-0"
4 X 2	SPF #2	20'-0"
4 X 2	SPF #2	21'-0"
4 X 2	SPF #2	22'-0"
4 X 2	MSR 2100	23'-0"
4 X 2	MSR 2100	24'-0"
4 X 2	MSR 2100	25'-0"
4 X 2	MSR 2100	26'-0"
4 X 2	MSR 2400	27'-0"
4 X 2	MSR 2400	28'-0"
4 X 2	MSR 2400	29'-0"
4 X 2	MSR 2400	30'-0"

DEAD LOAD 15			
SPACING			
12"	16"	19.2"	24"
145	105	85	65
142	103	83	63
169	123	100	77
144	108	90	73
128	88	80	64
112	84	70	56
88	66	55	44
80	60	50	40
75	56	47	38
70	52	44	35
64	48	40	32
60	45	38	30
54	40	34	27
48	36	30	24
41	31	26	21

DEAD LOAD 25			
SPACING			
12"	16"	19.2"	24"
135	95	75	55
132	93	73	53
158	113	90	67
139	103	85	63
128	96	80	60
112	84	70	56
88	68	55	44
80	60	50	40
75	56	47	38
70	52	44	35
64	48	40	32
60	45	38	30
54	40	34	27
48	36	30	24
41	31	26	21

Load sharing clips are available for transferring of concentrated loads between double joists. Contact All-Wood Joists or your local representative for more details.

DISTRIBUTED BY  
**ALL WOOD JOISTS**  
 WATERLOO, QUE., CANADA  
 P.O. BOX 20  
 JOE 2ND  
 TEL: (450) 539-1858  
 FAX: (450) 539-2585  
 1-800-353-1858

U.S. MAILING ADDRESS  
 P.O. BOX 156  
 RICHFORD, VERMONT  
 05476

INTERNET.

**FLOOR LIVE LOAD CHARTS IN PSF** ( $\Delta \leq L/360$ )

1. Length is based on overall distance including 5 1/2" bearing, uniformly loaded joist and L/360 Live Load deflection, the Load may vary according to different bearing widths.

2. Charts assume composite action with layer 5/8" subfloor nailed or screwed according to recognized practice.

REV: 02/98

JOIST DEPTH 9 3/4"			SPAN 15'				DEAD LOAD 20				DEAD LOAD 25				DEAD LOAD 30			
CHORD DIA.	LUMBER GRADE	LENGTH	SPACING				SPACING				SPACING				SPACING			
			12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
3 x 2	SPF #2	10'-0"	209	153	125	97	204	148	120	92	198	143	115	87	194	138	110	82
3 x 2	SPF #2	11'-0"	183	134	109	84	178	129	104	79	173	124	99	74	168	119	94	69
3 x 2	SPF #2	12'-0"	147	110	92	73	147	110	90	68	147	107	85	63	146	102	80	58
3 x 2	SPF #2	13'-0"	115	86	72	58	115	86	72	58	115	86	72	55	115	88	70	50
3 x 2	SPF #2	14'-0"	94	71	59	47	94	71	59	47	94	71	59	45	94	71	58	40
3 x 2	SPF #2	15'-0"	77	58	48	38	77	58	48	38	77	58	48	37	77	58	48	32
3 x 2	SPF #2	16'-0"	64	48	40	32	64	48	40	32	64	48	40	31	64	48	40	26
4 x 2	SPF #2	17'-0"	70	53	44	35	70	53	44	35	70	53	44	31	70	53	40	26
4 x 2	MSR 2100	18'-0"	72	54	45	36	72	54	45	36	72	54	45	31	72	54	40	26
4 x 2	MSR 2100	19'-0"	61	46	38	30	61	46	38	30	61	46	37	25	61	44	32	20
4 x 2	MSR 2100	20'-0"	53	40	33	26	53	40	33	26	53	40	33	23	53	40	30	18

JOIST DEPTH 12"			DEAD LOAD 15				DEAD LOAD 20				DEAD LOAD 25				DEAD LOAD 30			
CHORD DIA.	LUMBER GRADE	LENGTH	SPACING				SPACING				SPACING				SPACING			
			12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
3 x 2	SPF #2	10'-0"	273	201	165	128	268	196	160	124	263	191	155	119	258	188	150	114
3 x 2	SPF #2	11'-0"	241	177	149	113	236	172	140	108	231	167	135	103	226	162	130	98
3 x 2	SPF #2	12'-0"	212	155	127	98	207	150	122	94	202	145	117	89	197	140	112	84
3 x 2	SPF #2	13'-0"	188	137	112	87	183	132	107	82	178	127	102	77	173	122	97	72
3 x 2	SPF #2	14'-0"	168	123	100	77	164	118	95	72	159	113	90	67	154	108	85	62
3 x 2	SPF #2	15'-0"	150	109	88	67	145	104	83	62	140	99	78	57	135	94	73	52
3 x 2	SPF #2	16'-0"	129	93	75	57	124	88	70	52	119	83	65	47	114	78	60	42
3 x 2	SPF #2	17'-0"	106	79	65	49	106	78	60	44	103	71	55	39	98	66	50	34
3 x 2	SPF #2	18'-0"	91	68	57	43	91	66	52	38	90	61	47	33	85	56	42	28
4 x 2	SPF #2	19'-0"	102	73	58	43	97	68	53	38	82	63	48	33	87	58	43	28
4 x 2	SPF #2	20'-0"	81	64	51	38	88	59	45	33	81	54	41	28	76	49	36	23
4 x 2	SPF #2	21'-0"	80	59	47	35	79	54	42	30	74	49	37	25	69	44	32	20
4 x 2	MSR 2100	22'-0"	83	62	52	38	83	62	48	34	83	57	43	29	79	52	38	24
4 x 2	MSR 2100	23'-0"	74	56	46	36	74	55	44	31	74	52	38	28	72	47	34	21
4 x 2	MSR 2100	24'-0"	64	48	40	32	64	48	40	28	64	47	35	23	64	42	30	18
4 x 2	MSR 2100	25'-0"	58	43	36	29	58	43	36	26	58	43	32	21	58	38	27	16

JOIST DEPTH 12"			DEAD LOAD 15				DEAD LOAD 20				DEAD LOAD 25				DEAD LOAD 30			
CHORD DIA.	LUMBER GRADE	LENGTH	SPACING				SPACING				SPACING				SPACING			
			12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
3 x 2	SPF #2	10'-0"	281	207	170	133	276	202	165	128	271	197	160	123	266	192	155	118
3 x 2	SPF #2	11'-0"	241	177	145	113	238	172	140	108	231	167	135	103	226	162	130	98
3 x 2	SPF #2	12'-0"	212	155	127	98	207	150	122	94	202	145	117	89	197	140	112	84
3 x 2	SPF #2	13'-0"	188	137	112	87	183	132	107	82	178	127	102	77	173	122	97	72
3 x 2	SPF #2	14'-0"	169	123	100	77	164	118	95	72	159	113	90	67	154	108	85	62
3 x 2	SPF #2	15'-0"	153	111	90	68	148	106	85	64	143	101	80	59	138	96	75	54
3 x 2	SPF #2	16'-0"	145	105	85	65	140	100	80	60	135	95	75	55	130	90	70	50
3 x 2	SPF #2	17'-0"	142	103	83	63	137	98	78	58	132	93	73	53	127	88	68	48
4 x 2	SPF #2	18'-0"	109	123	100	77	164	118	95	72	159	113	90	67	154	108	85	62
4 x 2	SPF #2	19'-0"	181	117	95	73	158	112	90	68	151	107	85	63	146	102	80	58
4 x 2	SPF #2	20'-0"	154	112	91	70	148	107	86	65	144	102	81	60	139	97	78	55
4 x 2	SPF #2	21'-0"	148	107	87	67	143	102	82	62	138	97	77	57	133	97	77	57
4 x 2	SPF #2	22'-0"	137	99	80	61	132	94	75	56	127	89	70	51	122	84	65	46
4 x 2	MSR 2100	23'-0"	127	81	74	58	122	86	69	51	117	81	64	48	112	78	59	41
4 x 2	MSR 2100	24'-0"	104	78	65	52	102	78	64	47	94	70	59	42	88	64	54	37
4 x 2	MSR 2100	25'-0"	96	72	60	47	82	68	58	42	84	63	53	37	76	57	44	32
4 x 2	MSR 2100	26'-0"	83	67	52	42	61	61	51	37	73	55	46	32	65	48	41	27
4 x 2	MSR 2400	27'-0"	83	62	52	42	81	61	51	37	73	55	46	32	65	48	41	27
4 x 2	MSR 2400	28'-0"	75	56	47	38	73	55	46	34	65	49	41	29	60	45	36	24
4 x 2	MSR 2400	29'-0"	64	48	40	32	64	48	40	32	64	48	40	27	56	42	36	22
4 x 2	MSR 2400	30'-0"	56	42	35	28	56	42	35	28	56	42	35	23	48	36	30	18

# Roof Span Tables

## 115% and 125% BCI® 400s Series Joists – 1½" Flange Width

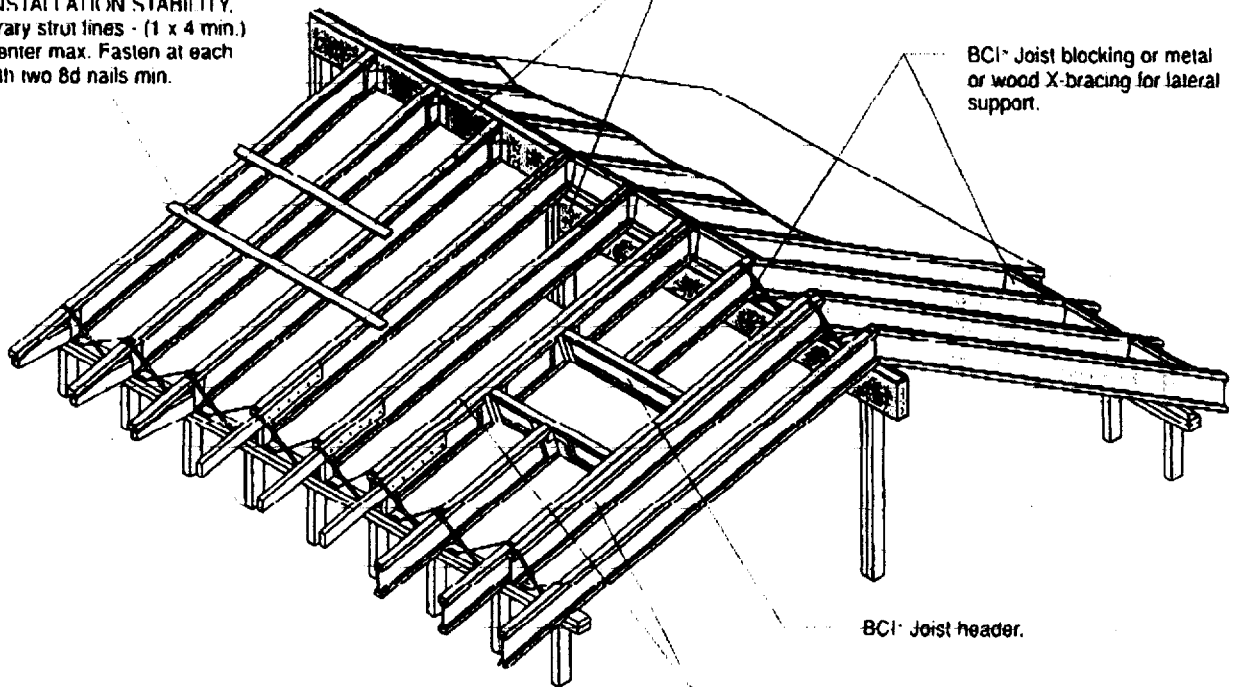
Maximum clear span in feet and inches, based on horizontal spans.

	Live Load (psf)	Dead Load (psf)	9½" BCI 400s			11¾" BCI 400s			14" BCI 400s			
			4/12 or Less	4/12 to 8/12	8/12 to 12/12	4/12 or Less	4/12 to 8/12	8/12 to 12/12	4/12 or Less	4/12 to 8/12	8/12 to 12/12	
12" O.C.	Non-Snow (125%)	20	24'-4"	22'-11"	21'-3"	29'-0"	27'-5"	25'-5"	33'-1"	31'-2"	28'-11"	
		20	15	23'-0"	21'-7"	19'-11"	27'-6"	25'-10"	23'-10"	31'-4"	29'-5"	27'-2"
		20	20	22'-0"	20'-7"	18'-11"	26'-3"	24'-7"	22'-7"	29'-11"	28'-0"	25'-9"
	Snow (115%)	25	10	23'-1"	21'-10"	20'-4"	27'-7"	26'-1"	24'-3"	31'-5"	29'-8"	27'-7"
		25	15	22'-0"	20'-9"	19'-2"	26'-4"	24'-8"	22'-11"	29'-11"	28'-2"	26'-1"
		30	10	22'-1"	20'-11"	19'-6"	26'-4"	25'-0"	23'-3"	30'-0"	28'-5"	26'-6"
		30	15	21'-2"	20'-0"	18'-6"	25'-3"	23'-10"	22'-2"	28'-9"	27'-2"	25'-2"
		40	10	20'-1"	19'-3"	18'-2"	24'-0"	23'-0"	21'-9"	27'-4"	26'-2"	24'-9"
		40	15	19'-9"	18'-8"	17'-5"	23'-7"	22'-4"	20'-10"	26'-5"	25'-5"	23'-9"
		50	10	18'-7"	17'-10"	16'-11"	22'-3"	21'-4"	20'-3"	25'-4"	24'-3"	23'-0"
	50	15	18'-7"	17'-8"	16'-6"	22'-0"	21'-2"	19'-9"	24'-4"	23'-11"	22'-6"	
	16" O.C.	Non-Snow (125%)	20	10	22'-0"	20'-9"	19'-3"	28'-4"	24'-10"	23'-0"	30'-0"	28'-3"
20			15	20'-10"	19'-7"	18'-1"	24'-11"	23'-5"	21'-7"	28'-5"	26'-8"	24'-7"
20			20	19'-11"	18'-8"	17'-2"	23'-9"	22'-3"	20'-6"	27'-1"	25'-4"	23'-4"
Snow (115%)		25	10	20'-11"	19'-9"	18'-5"	25'-0"	23'-7"	22'-0"	28'-6"	26'-11"	25'-0"
		25	15	19'-11"	18'-9"	17'-5"	23'-10"	22'-5"	20'-9"	26'-9"	25'-7"	23'-8"
		30	10	20'-0"	18'-11"	17'-8"	23'-11"	22'-7"	21'-1"	26'-10"	25'-9"	24'-0"
		30	15	19'-2"	18'-1"	16'-9"	22'-10"	21'-7"	20'-1"	25'-3"	24'-7"	22'-10"
		40	10	10'-2"	17'-5"	16'-0"	21'-8"	20'-10"	19'-8"	24'-0"	23'-6"	22'-5"
		40	15	17'-11"	16'-11"	15'-9"	20'-8"	20'-3"	18'-10"	22'-10"	22'-5"	21'-6"
		50	10	18'-10"	16'-2"	15'-4"	19'-10"	19'-4"	18'-4"	21'-11"	21'-8"	20'-10"
50		16	16'-5"	16'-0"	15'-0"	19'-0"	18'-8"	17'-11"	21'-0"	20'-0"	20'-2"	
19.2" O.C.		Non-Snow (125%)	20	10	20'-8"	19'-6"	18'-1"	24'-9"	23'-4"	21'-8"	28'-2"	26'-7"
	20		15	19'-7"	18'-5"	17'-0"	23'-5"	22'-0"	20'-4"	26'-8"	25'-1"	23'-1"
	20		20	18'-8"	17'-8"	16'-1"	22'-4"	20'-11"	19'-3"	25'-4"	23'-10"	21'-11"
	Snow (115%)	25	10	19'-8"	18'-7"	17'-3"	23'-6"	22'-2"	20'-8"	26'-2"	25'-3"	23'-6"
		25	15	18'-9"	17'-8"	16'-4"	22'-1"	21'-1"	19'-6"	24'-5"	23'-9"	22'-3"
		30	10	18'-9"	17'-9"	16'-7"	22'-1"	21'-3"	19'-10"	24'-6"	24'-0"	22'-7"
		30	15	18'-0"	17'-0"	15'-9"	20'-10"	20'-3"	18'-10"	23'-0"	22'-6"	21'-5"
		40	10	17'-1"	16'-4"	15'-6"	19'-9"	19'-6"	18'-8"	21'-11"	21'-7"	21'-1"
		40	15	16'-4"	15'-11"	14'-10"	18'-10"	18'-5"	17'-9"	20'-10"	20'-5"	19'-10"
		50	10	15'-8"	15'-2"	14'-5"	18'-1"	17'-10"	17'-2"	20'-0"	18'-9"	19'-5"
	50	15	15'-0"	14'-9"	14'-1"	17'-4"	17'-0"	16'-8"	19'-2"	18'-10"	18'-5"	
	24" O.C.	Non-Snow (125%)	20	10	19'-2"	18'-1"	16'-9"	22'-11"	21'-7"	20'-1"	26'-1"	24'-7"
20			15	18'-2"	17'-0"	15'-9"	21'-8"	20'-4"	18'-10"	24'-3"	23'-2"	21'-5"
20			20	17'-4"	16'-2"	14'-11"	20'-6"	19'-4"	17'-10"	22'-8"	21'-10"	20'-3"
Snow (115%)		25	10	18'-2"	17'-2"	16'-0"	21'-1"	20'-7"	19'-2"	23'-4"	22'-11"	21'-10"
		25	15	17'-1"	16'-4"	15'-1"	19'-8"	19'-2"	18'-1"	21'-9"	21'-3"	20'-6"
		30	10	17'-2"	16'-6"	15'-4"	19'-9"	19'-5"	18'-4"	21'-10"	21'-6"	20'-11"
		30	15	16'-1"	15'-9"	14'-7"	18'-7"	18'-2"	17'-5"	20'-7"	20'-1"	19'-5"
		40	10	15'-4"	15'-1"	14'-4"	17'-8"	17'-5"	17'-1"	19'-7"	19'-3"	18'-11"
		40	15	14'-7"	14'-3"	13'-9"	16'-10"	16'-6"	16'-0"	18'-7"	18'-3"	17'-9"
		50	10	14'-0"	13'-10"	13'-4"	16'-1"	15'-11"	15'-8"	17'-10"	17'-6"	16'-11"
50		15	13'-5"	13'-2"	12'-10"	15'-5"	15'-2"	14'-10"	16'-6"	16'-0"	15'-3"	

- Table values are limited by shear, moment, total load deflection equal to L/180 and live load deflection equal to L/240. Check the local building code for other deflection limits that may apply.
- Allowable moment has been increased by a repetitive member factor for just spacings of 24 inches or less.
- Table values represent the most restrictive of simple or multiple span applications.
- Table values assume minimum bearing lengths without web stiffeners for joist depths of 16 inches and less.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC software.
- Slope roof joists at least ¼" over 12" to minimize ponding.

## BCI® Joists

FOR INSTALLATION STABILITY,  
Temporary strut lines - (1 x 4 min.)  
8' on center max. Fasten at each  
joist with two 8d nails min.



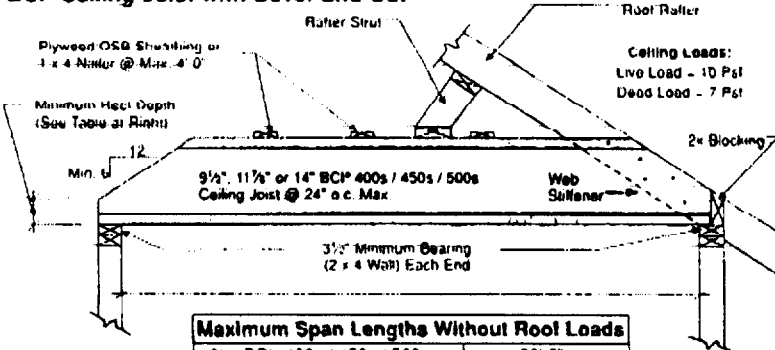
### SAFETY WARNING

DO NOT ALLOW WORKERS ON BCI JOISTS UNTIL ALL HANGERS, BCI RIM JOISTS, RIM BOARDS, BCI BLOCKING PANELS, X-BRACING AND TEMPORARY 1x4 STRUT LINES ARE INSTALLED AS SPECIFIED BELOW.

SERIOUS ACCIDENTS CAN RESULT FROM INSUFFICIENT ATTENTION TO PROPER BRACING DURING CONSTRUCTION. ACCIDENTS CAN BE AVOIDED UNDER NORMAL CONDITIONS BY FOLLOWING THESE GUIDELINES:

- Build a braced end wall at the end of the bay, or permanently install the first eight feet of BCI Joists and the first course of sheathing. As an alternate, temporary sheathing may be nailed to the first four feet of BCI Joists at the end of the bay.
- All hangers, BCI rim joists, rim boards, BCI blocking panels, and x-bracing must be completely installed and properly nailed as each BCI Joist is set.
- Install temporary 1x4 strut lines at no more than eight feet on center as additional BCI Joists are set. Nail the strut lines to the sheathed area, or braced end wall, and to each BCI Joist with two 8d nails.
- The ends of cantilevers must be temporarily secured by strut lines on both the top and bottom flanges.
- Straighten the BCI Joists to within 1/2 inch of true alignment before attaching strut lines and sheathing.
- Remove the temporary strut lines only as required to install the permanent sheathing.
- Failure to install temporary bracing may result in sideways buckling or roll-over under light construction loads.

### BCI® Ceiling Joist with Bevel End Cut



#### Maximum Span Lengths Without Roof Loads

9 1/2" BCI 400s / 450s / 500s	20'-0"
11 1/2" BCI 400s / 450s / 500s	22'-6"
14" BCI 400s / 450s / 500s	25'-0"

(If roof loads present, see Notes 2 & 3 at right)

Minimum Heel Depths	Joist Depth	End Wall	
		2 x 4	2 x 6
9 1/2"	2 1/2"	1 1/2"	
11 1/2"	3 1/2"	2 1/2"	
14"	4 1/2"	3 1/2"	

#### Notes:

- 1) Detail is to be used only for ceiling joists with no access to attic space.
- 2) Ceiling joist must be designed to carry all roof load transferred through rafter struts as shown.
- 3) BCI ceiling joist end reaction may not exceed 550 pounds.
- 4) Minimum roof slope is 6/12.
- 5) Nail roof rafter to BCI top flange with 1-15d sinker or box nail.
- 6) 1x4 nailers must be continuous and nailed to a braced end wall.
- 7) Install a web stiffener on each side of BCI Joist at beveled ends. Nail roof rafter to BCI Joist per building code requirements for ceiling joist to roof rafter connection.

# DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK CITY OF PORTLAND

Please Read Application And Notes, If Any, Attached

## BUILDING DEPARTMENT PERMIT

Permit Number: 030705

This is to certify that Bouchard Diana R/CPW Development

has permission to build attached 24' x 36' garage/living space above

AT 126 Dorothy St 297 C021001

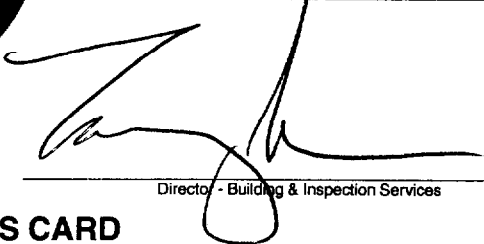
provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine and of the ordinances of the City of Portland regulating the construction, maintenance and use of buildings and structures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

Notification of inspection must be given and written permission procured before this building or part thereof is laid or closed-in. **HEAVY NOTICE IS REQUIRED.**

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

OTHER REQUIRED APPROVALS  
Fire Dept. **PERMIT ISSUED**  
Health Dept. \_\_\_\_\_  
Appeal Board JUN 19 2003  
Other \_\_\_\_\_



Department Name  
**CITY OF PORTLAND**

Director - Building & Inspection Services

**PENALTY FOR REMOVING THIS CARD**

**City of Portland, Maine - Building or Use Permit**

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

<b>Permit No:</b> 03-0705	<b>Date Applied For:</b> 06/19/2003	<b>CBL:</b> 297 C021001
------------------------------	--	----------------------------

<b>Location of Construction:</b> 126 Dorothy St	<b>Owner Name:</b> Bouchard Diana R	<b>Owner Address:</b> 126 Dorothy St	<b>Phone:</b>
<b>Business Name:</b>	<b>Contractor Name:</b> CPW Development	<b>Contractor Address:</b> PO Box 4000 Windham	<b>Phone</b> (207) 892-3527
<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> Garages - Attached	

<b>Proposed Use:</b> single family - build attached 24' x 36' garage	<b>Proposed Project Description:</b> build attached 24' x 36' garage w/living space above
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**Dept:** Zoning      **Status:** Approved with Conditions      **Reviewer:** Tammy Munson      **Approval Date:** 06/19/2003

**Note:** **Ok to Issue:**

- 1) Separate permits shall be required for future decks, sheds, pools, and/or garages.
- 2) This is NOT an approval for an additional dwelling unit. You SHALL NOT add any additional kitchen equipment including, but not limited to items such as stoves, microwaves, refrigerators, or kitchen sinks, etc. Without special approvals.
- 3) This property shall remain a single family dwelling. Any change of use shall require a separate permit application for review and approval.
- 4) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.

**Dept:** Building      **Status:** Pending      **Reviewer:**      **Approval Date:**      **Note:** **Ok to Issue:**



This page contains a detailed description of the Parcel ID you selected. Press the **New Search** button at the bottom of the screen to submit a new query.

**Current Owner Information**

<b>Card Number</b>	1 of 1
<b>Parcel ID</b>	297 C021001
<b>Location</b>	126 DOROTHY ST
<b>Land Use</b>	SINGLE FAMILY
<b>Owner Address</b>	BOUCHARD DIANA R 126 DOROTHY ST PORTLAND ME 04103
<b>Book/Page</b>	14111/297
<b>Legal</b>	297-C-21 DOROTHY ST 124-128 8195 SF

**Valuation Information**

<b>Land</b>	<b>Building</b>	<b>Total</b>
\$32,870	\$66,880	\$99,750

**Property Information**

<b>Year Built</b> 1964	<b>Style</b> Cape	<b>Story Height</b> 1	<b>Sq. Ft.</b> 1142	<b>Total Acres</b> 0.188	
<b>Bedrooms</b> 5	<b>Full Baths</b> 1	<b>Half Baths</b>	<b>Total Rooms</b> 8	<b>Attic</b> Full Finsh	<b>Basement</b> Full

**Outbuildings**

<b>Type</b>	<b>Quantity</b>	<b>Year Built</b>	<b>Size</b>	<b>Grade</b>	<b>Condition</b>
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**Sales Information**

<b>Date</b>	<b>Type</b>	<b>Price</b>	<b>Book/Page</b>
07/01/1998	LAND + BLDING	\$99,900	14111-297
10/11/1996	LAND + BLDING	\$95,000	12769-011

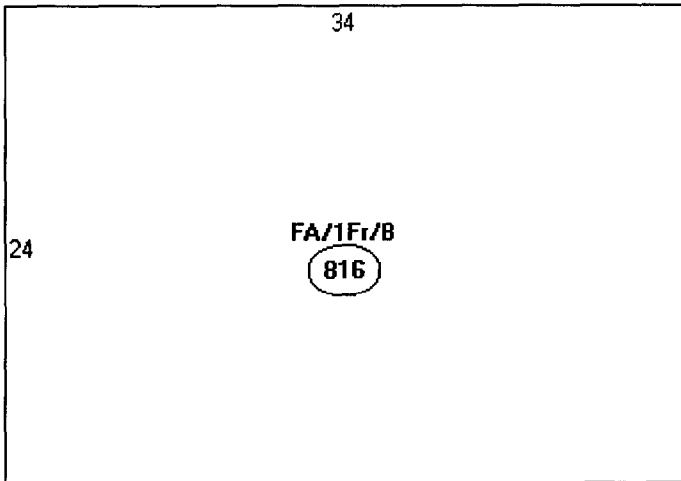
**Picture and Sketch**

<u>Picture</u>	<u>Sketch</u>
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[Click here](#) to view Tax Roll Information.

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or e-mailed.

**New Search!**



Descriptor/Area

A: FA/1Fr/B  
816 sqft

1:00 hours

# All Purpose Building Permit Application

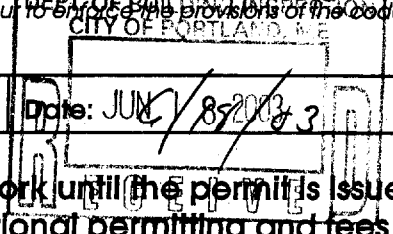
If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: 126 Dorothy St.		
Total Square Footage of Proposed Structure <del>804</del> 804	Square Footage of Lot 10375	
Tax Assessor's Chart, Block & Lot Chart# 297 Block# C Lot# 021	Owner: Diane Bouchard	Telephone:
Lessee/Buyer's Name (If Applicable)	Applicant name, address & telephone: C.P.W. P.O. Box 4000 - 131 Windham Me 04062	Cost Of Work: \$ 102,000.00 Fee: \$ 737.00
Current use: Single Fm.		
If the location is currently vacant, what was prior use: _____		
Approximately how long has it been vacant: _____		
Proposed use: <sup>24x36</sup> Garage added with living space above. Project description: New shed <sup>Dormer</sup> over Existing House		
Contractor's name, address & telephone: C.P.W. P.O. Box 4000 - 131 Windham Me. 04062		
Who should we contact when the permit is ready: Colie Walsh 650-5624 892-8527		
Mailing address: _____		
We will contact you by phone when the permit is ready. You must come in and pick up the permit and review the requirements before starting any work, with a Plan Reviewer. A stop work order will be issued and a \$100.00 fee if any work starts before the permit is picked up. PHONE: 650-5624		

**IF THE REQUIRED INFORMATION IS NOT INCLUDED IN THE SUBMISSIONS THE PERMIT WILL BE AUTOMATICALLY DENIED AT THE DISCRETION OF THE BUILDING/PLANNING DEPARTMENT, WE MAY REQUIRE ADDITIONAL INFORMATION IN ORDER TO APPROVE THIS PERMIT.**

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the Codes applicable to this permit.

Signature of applicant: *[Signature]* Date: JUN 7 8 2003



**This is NOT a permit, you may not commence ANY work until the permit is issued. If you are in a Historic District you may be subject to additional permitting and fees with the Planning Department on the 4th floor of City Hall**