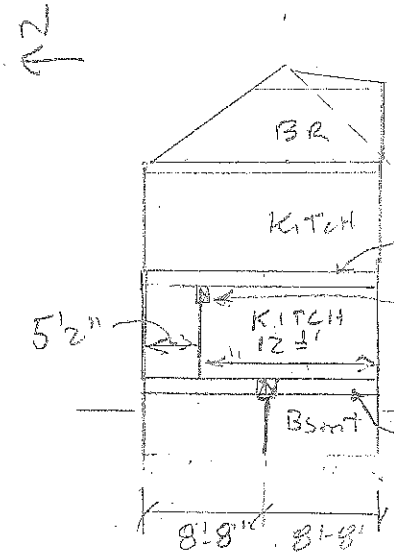
89 IRVING ST
LOADING CALCULATIONS

LOC.	LIVE LD, LB/FT²		Dead LD, LB/SF	PARTITION LD, LB/SF	TOTAL LBS/SF
ATTIC	10	+	10	0	20
3RD FLR	30	+	20	+ 20	70
2ND FLR	40	+	20	+ 20	80
					170 LB/SF

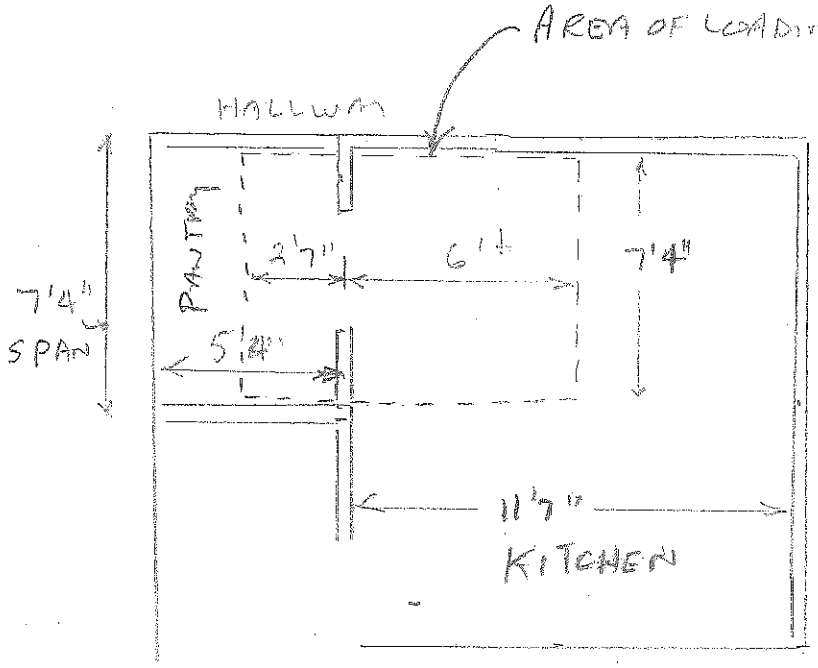


SECTION

EXISTING 2x8" FLR JOIST SPANNING FULL SPAN!

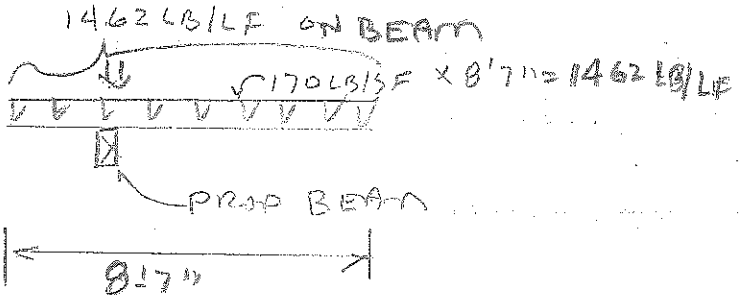
PROPOSED BEAM TO REPLACE NON WEIGHT BEARING PANTRY WALL

EXISTING 6"x8"s, JOINED TO GIRDER IN BASEMENT. GIRDER IS IN THE CENTER & SUPPORTED BY POSTS



WORST CASE: LOADING OVER BEAM
8'7" x 170 LB/SF

⇒ 1462 LB/LF



From VERSA LAM 2.0 FLOOR LOAD TABLE
FOR DBL 1 3/4" x 11 7/8"

SPAN	ALLOWABLE TOTAL LOAD, LBS/LF	CALCULATED LOAD, LBS/LF
6'	2849	> 1462
8'	1957	> 1462 ✓
7'4" (ESTm)	2250±	> 1462

USE DBL (Two) 1 3/4" by 11 7/8" VERSA LAM 2.0 3100

Source: 2012 INTL CODE	LIVE LOADS, LBS/LF
- UNINHABITABLE ATTIC w/OUT STORAGE	10
- HABITABLE ATTICS / SLEEPING ROOMS	30
- ROOMS OTHER THAN SLEEPING	40

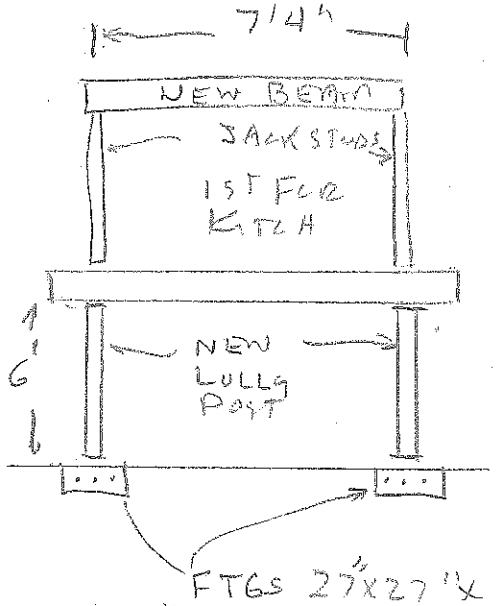
Daniel M Vallee
P.E., STATE OF MAINE
LIC # 6446
CIVIL ENGINEER

8 8 REV.

BASEMENT POSTS & FOOTING DESIGN

POINT LOAD TO LULLY COLUMNS IN BSMT

1462 LBS/LF X 8'-7 1/2" = 6,287 LBS ON EACH POST



FTG SIZE = 6,287 LB / 1500 LBS/SF

= 4.25 SF

SAY USE 5 SF FTG SIZE

=> 27" X 27" 6" THICK (PER CODE)

FTGS 27"x27"x6" conc w/ 24" X 24" 1/2" REBAR 6" O.C.

PLACE 1/2" REBAR 24" X 24", 6" OC

ASSUMPTION OF SOIL - 1 CLAY - USE 1500 LBS/SF (PER CODE)

LULLY COLUMNS : USE MIN 7000 LBS @ 6' LENGTH

99 IRVING ST STRUCTURAL

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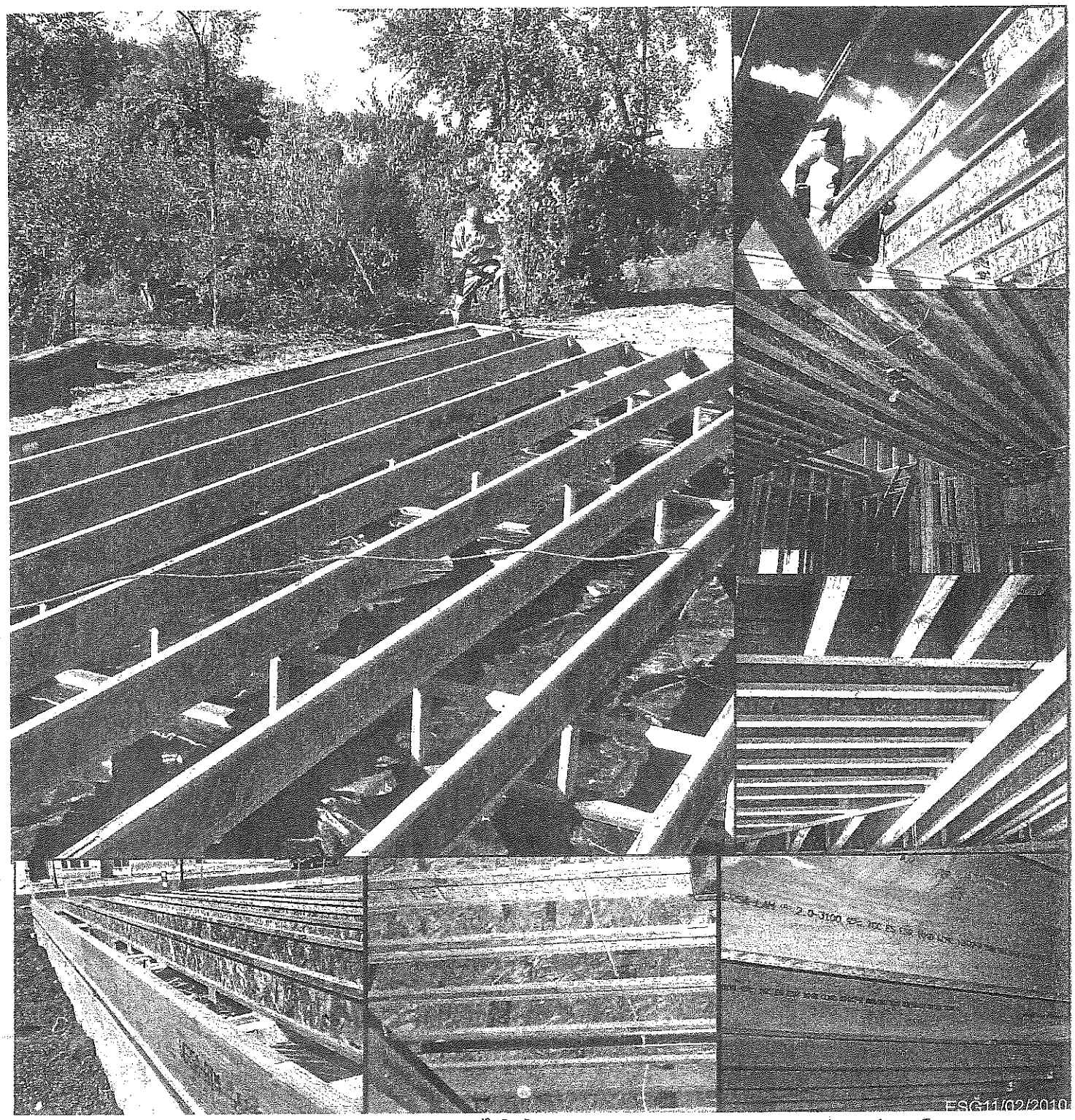
Boise Cascade
Engineered Wood Products

EASTERN ENGINEERED WOOD PRODUCTS
SPECIFIER GUIDE



ESG-11/02/2010

89 Irving ST Pg 4 of 5

VERSA-LAM® Floor Load Tables

VERSA-LAM® 2.0 3100 (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]

Span [ft]	1¾" VERSA-LAM® 2.0 3100				Double Ply 1¾" VERSA-LAM® 2.0 3100 or 3½" VERSA-LAM 2.0 3100							Triple Ply 1¾" VERSA-LAM® 2.0 3100 or 5¼" VERSA-LAM 2.0 3100							Quadruple Ply 1¾" VERSA-LAM® 2.0 3100 or 7" VERSA-LAM 2.0 3100					
	7¼"	9½"	11⅞"	14"	7¼"	9½"	11⅞"	14"	16"	18"	24"	9½"	11⅞"	14"	16"	18"	20"	24"	11⅞"	14"	16"	18"	20"	24"
6	763	1063	1424	1795	1525	2126	2849	3590	4387	5232	5226	3189	4273	5384	6580	7848	7845	7838	5697	7179	8773	10463	10459	10451
	762	-	-	-	1525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1.8/4.4	2.4/6.1	3.3/8.2	4.1/10.3	1.8/4.4	2.4/6.1	3.3/8.2	4.1/10.3	5/12.6	6/15	6/15	2.4/6.1	3.3/8.2	4.1/10.3	5/12.6	6/15	6/15	6/15	3.3/8.2	4.1/10.3	5/12.6	6/15	6/15	6/15
8	479	746	979	1207	957	1492	1957	2414	2886	3402	3913	2237	2936	3622	4328	5103	5876	5870	3914	4829	5771	6803	7834	7826
	322	724	-	-	643	1447	-	-	-	-	-	2171	-	-	-	-	-	-	-	-	-	-	-	-
	1.5/3.7	2.3/5.7	3/7.5	3.7/9.3	1.5/3.7	2.3/5.7	3/7.5	3.7/9.3	4.4/11.1	5.2/13	6/15	2.3/5.7	3/7.5	3.7/9.3	4.4/11.1	5.2/13	6/15	6/15	3/7.5	3.7/9.3	4.4/11.1	5.2/13	6/15	6/15
10	243	551	745	909	487	1102	1489	1817	2148	2502	3126	1653	2234	2726	3222	3753	4322	4688	2978	3635	4296	5003	5763	6251
	165	370	724	-	329	741	1447	-	-	-	-	1111	2171	-	-	-	-	-	2894	-	-	-	-	-
	1.5/3	2.1/5.3	2.9/7.1	3.5/8.7	1.5/3	2.1/5.3	2.9/7.1	3.5/8.7	4.1/10.3	4.8/12	6/15	2.1/5.3	2.9/7.1	3.5/8.7	4.1/10.3	4.8/12	5.5/13.8	6/15	2.9/7.1	3.5/8.7	4.1/10.3	4.8/12	5.5/13.8	6/15
11	182	413	665	808	364	825	1330	1617	1904	2209	2839	1238	1995	2425	2856	3313	3800	4259	2659	3233	3807	4417	5067	5679
	124	278	544	-	247	557	1087	-	-	-	-	835	1631	-	-	-	-	-	2175	-	-	-	-	-
	1.5/3	1.7/4.4	2.8/7	3.4/8.5	1.5/3	1.7/4.4	2.8/7	3.4/8.5	4/10.1	4.7/11.7	6/15	1.7/4.4	2.8/7	3.4/8.5	4/10.1	4.7/11.7	5.4/13.4	6/15	2.8/7	3.4/8.5	4/10.1	4.7/11.7	5.4/13.4	6/15
12	139	317	585	728	279	634	1170	1456	1709	1977	2601	950	1755	2184	2564	2965	3390	3901	2340	2912	3418	3953	4519	5201
	95	214	419	686	191	429	837	1372	-	-	-	643	1256	2058	-	-	-	-	1675	2745	-	-	-	-
	1.5/3	1.5/3.7	2.7/6.8	3.4/8.4	1.5/3	1.5/3.7	2.7/6.8	3.4/8.4	3.9/9.9	4.6/11.4	6/15	1.5/3.7	2.7/6.8	3.4/8.4	3.9/9.9	4.6/11.4	5.2/13	6/15	2.7/6.8	3.4/8.4	3.9/9.9	4.6/11.4	5.2/13	6/15
13	109	248	488	662	217	496	976	1324	1550	1789	2399	744	1464	1986	2326	2683	3059	3598	1952	2647	3101	3577	4078	4797
	75	169	329	540	150	337	659	1079	-	-	-	506	988	1619	-	-	-	-	1317	2159	-	-	-	-
	1.5/3	1.5/3.1	2.4/6.1	3.3/8.3	1.5/3	1.5/3.1	2.4/6.1	3.3/8.3	3.9/9.7	4.5/11.2	6/15	1.5/3.1	2.4/6.1	3.3/8.3	3.9/9.7	4.5/11.2	5.1/12.7	6/15	2.4/6.1	3.3/8.3	3.9/9.7	4.5/11.2	5.1/12.7	6/15
14	86	198	390	585	173	395	779	1171	1418	1633	2226	593	1169	1756	2128	2449	2786	3338	1558	2342	2837	3265	3715	4451
	60	135	264	432	120	270	527	864	1290	-	-	405	791	1296	1935	-	-	-	1055	1728	2580	-	-	-
	1.5/3	1.5/3	2.1/5.3	3.2/7.9	1.5/3	1.5/3	2.1/5.3	3.2/7.9	3.8/9.6	4.4/11	6/15	1.5/3	2.1/5.3	3.2/7.9	3.8/9.6	4.4/11	5/12.5	6/15	2.1/5.3	3.2/7.9	3.8/9.6	4.4/11	5/12.5	6/15
15	70	160	316	509	139	320	631	1018	1307	1502	2076	479	947	1527	1960	2253	2558	3113	1262	2036	2614	3003	3410	4151
	49	110	214	351	98	220	429	703	1049	1493	-	329	643	1054	1573	2240	-	-	858	1405	2098	2987	-	-
	1.5/3	1.5/3	1.8/4.6	2.9/7.4	1.5/3	1.5/3	1.8/4.6	2.9/7.4	3.8/9.5	4.3/10.9	6/15	1.5/3	1.8/4.6	2.9/7.4	3.8/9.5	4.3/10.9	4.9/12.3	6/15	1.8/4.6	2.9/7.4	3.8/9.5	4.3/10.9	4.9/12.3	6/15
16	57	131	259	427	113	262	518	854	1151	1390	1944	393	777	1281	1727	2085	2364	2917	1036	1708	2303	2780	3151	3889
	40	90	177	289	80	181	353	579	864	1230	-	271	530	868	1296	1846	-	-	707	1158	1728	2461	-	-
	1.5/3	1.5/3	1.6/4	2.6/6.6	1.5/3	1.5/3	1.6/4	2.6/6.6	3.6/8.9	4.3/10.7	6/15	1.5/3	1.6/4	2.6/6.6	3.6/8.9	4.3/10.7	4.9/12.2	6/15	1.6/4	2.6/6.6	3.6/8.9	4.3/10.7	4.9/12.2	6/15
17		108	215	355	93	217	430	710	1018	1274	1826	325	645	1065	1527	1911	2196	2739	860	1420	2036	2547	2929	3652
		75	147	241	67	151	295	483	720	1026	-	226	442	724	1081	1539	2111	-	589	965	1441	2052	2814	-
		1.5/3	1.5/3.6	2.3/5.9	1.5/3	1.5/3	1.5/3.6	2.3/5.9	3.3/8.4	4.2/10.5	6/15	1.5/3	1.5/3.6	2.3/5.9	3.3/8.4	4.2/10.5	4.8/12	6/15	1.5/3.6	2.3/5.9	3.3/8.4	4.2/10.5	4.8/12	6/15
18		90	180	298	77	181	360	596	894	1134	1701	271	540	894	1341	1701	2051	2552	720	1191	1788	2268	2735	3402
		64	124	203	56	127	248	407	607	864	-	191	372	610	910	1296	1778	-	496	813	1214	1728	2371	-
		1.5/3	1.5/3.2	2.1/5.2	1.5/3	1.5/3	1.5/3.2	2.1/5.2	3.1/7.8	4/9.9	5.9/14.8	1.5/3	1.5/3.2	2.1/5.2	3.1/7.8	4/9.9	4.8/11.9	5.9/14.8	1.5/3.2	2.1/5.2	3.1/7.8	4/9.9	4.8/11.9	5.9/14
19		76	152	252	65	152	304	504	758	1016	1592	229	457	757	1137	1524	1863	2388	609	1009	1516	2032	2484	3184
		54	105	173	48	108	211	346	516	735	-	162	316	519	774	1102	1512	-	422	691	1032	1470	2016	-
		1.5/3	1.5/3	1.9/4.7	1.5/3	1.5/3	1.5/3	1.9/4.7	2.8/7	3.7/9.4	5.8/14.6	1.5/3	1.5/3	1.9/4.7	2.8/7	3.7/9.4	4.6/11.4	5.8/14.6	1.5/3	1.9/4.7	2.8/7	3.7/9.4	4.6/11.4	5.8/14
20		65	130	215	54	129	259	430	647	915	1496	194	389	646	971	1373	1678	2243	519	861	1295	1830	2237	2991
		46	90	148	41	93	181	296	442	630	1493	139	271	445	664	945	1296	2240	362	593	885	1260	1728	2987
		1.5/3	1.5/3	1.7/4.2	1.5/3	1.5/3	1.5/3	1.7/4.2	2.5/6.3	3.6/8.9	5.8/14.5	1.5/3	1.5/3	1.7/4.2	2.5/6.3	3.6/8.9	4.3/10.8	5.8/14.5	1.5/3	1.7/4.2	2.5/6.3	3.6/8.9	4.3/10.8	5.8/14
22			96	160		95	192	320	482	692	1304	142	286	480	724	1038	1382	1956	384	640	965	1383	1842	2608
			68	111		70	136	223	332	473	1122	104	204	334	499	710	974	1683	272	445	665	947	1299	2244
			1.5/3	1.5/3.5		1.5/3	1.5/3	1.5/3.5	2.1/5.2	3/7.4	5.6/13.9	1.5/3	1.5/3	1.5/3.5	2.1/5.2	3/7.4	3.9/9.9	5.6/13.9	1.5/3	1.5/3.5	2.1/5.2	3/7.4	3.9/9.9	5.6/13
24			72	122		71	145	243	368	529	1092	106	217	365	552	793	1095	1638	290	486	736	1057	1460	2184
			52	86		54	105	172	256	365	864	80	157	257	384	547	750	1296	209	343	512	729	1000	1728
			1.5/3	1.5/3		1.5/3	1.5/3	1.5/3	1.8/4.4	2.5/6.3	5.1/12.8	1.5/3	1.5/3	1.5/3	1.8/4.4	2.5/6.3	3.4/8.6	5.1/12.8	1.5/3	1.5/3	1.8/4.4	2.5/6.3	3.4/8.6	5.1/12
26			56	94		54	111	188	286	412	927	80	167	282	429	618	855	1390	223	376	572	824	1139	1853
			41	67		42	82	135	201	287	680	63	124	202	302	430	590	1020	165	270	403	574	787	1359
			1.5/3	1.5/3		1.5/3	1.5/3	1.5/3	1.5/3.7	2.1/5.3	4.7/11.8	1.5/3	1.5/3	1.5/3	1.5/3.7	2.1/5.3	2.9/7.3	4.7/11.8	1.5/3	1.5/3	1.5/3.7	2.1/5.3	2.9/7.3	4.7/11
28				74			87	148	226	326	792	61	130	222	338	489	678	1188	174	296	451	652	904	1584
				54			66	108	161	230	544	51	99	162	242	344	472	816	132	216	322	459	630	1088
				1.5/3			1.5/3	1.5/3	1.5/3.2	1.8/4.6	4.4/10.9	1.5/3	1.5/3	1.5/3	1.5/3.2	1.8/4.6	2.5/6.3	4.4/10.9	1.5/3	1.5/3	1.5/3.2	1.8/4.6	2.5/6.3	4.4/10
30				59			68	118	180	262	639		102	176	271	393	546	959	137	235	361	523	728	1279
				44			54	88	131	187	442		80	132	197	280	384	664	107	176	262	373	512	885
				1.5/3			1.5/3	1.5/3	1.5/3	1.6/4	3.8/9.5		1.5/3	1.5/3	1.5/3	1.6/4	2.2/5.5	3.8/9.5	1.5/3	1.5/3	1.5/3	1.6/4	2.2/5.5	3.8/9.

- 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. Check the local building code for other deflection limits that may apply.
- Where a Live Load value is not shown, the Total Load value will control.
- Table values represent the most restrictive of simple or multiple span applications. Span is measured center to center of the 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 lateral support is provided at each support and continuously along the top
- 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.
- For 2-ply, 3-ply or 4-ply beams; double, triple or quadruple Allowable Total Load and Allowable Live Load values. Minimum Required Bearing Lengths remain the same for any number of plies.
- 1¾ inch members deeper than 14 inches are to be used as multiple-member 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.

89 Exhibit F, 3 of 3