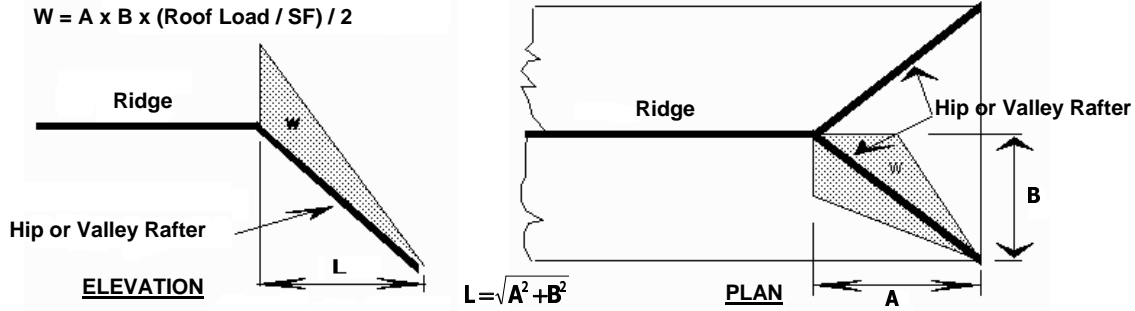


RESIDENTIAL HIP & VALLEY RAFTERS (L/240)
California Building Code 2007 Edition (CBC), NDS 2005

Lumber: Douglas Fir-Larch, Surfaced-Dry condition (19% maximum moisture content).
Design Criteria Strength: Based on allowable bending stresses and shear stresses for Dead + Live loads.
25% Stress increase included due to duration of load.
Deflection: Based on L/180 for Dead plus Live load.

$$W = A \times B \times (\text{Roof Load} / \text{SF}) / 2$$



ALLOWABLE TOTAL LOAD (W lbs)

SIZES W x D	GRADE	LENGTH (FEET) THE MEMBER SPANS												
		6	8	10	12	14	16	18	20	22	24	26	28	30
2 x 6	SS	1995	1370	877	609	447	343	271	219	181	152	130	112	97
2 x 6	#1+	1596	1197	831	577	424	324	256	208	172	144	123	106	92
2 x 6	#1	1330	998	785	545	400	306	242	196	162	136	116	100	87
2 x 6	#2	1197	898	718	513	377	288	228	185	153	128	109	94	82
2 x 8	SS	3201	2400	1920	1395	1025	785	620	502	415	349	297	256	223
2 x 8	#1+	2561	1920	1536	1280	971	743	587	476	393	330	281	243	211
2 x 8	#1	2134	1600	1280	1067	914	702	555	449	371	312	266	229	200
2 x 8	#2	1920	1440	1152	960	823	661	522	423	349	294	250	216	188
2 x 10	SS	4776	3582	2866	2388	2047	1629	1287	1043	862	724	617	532	463
2 x 10	#1+	3821	2866	2292	1910	1637	1433	1220	988	816	686	585	504	439
2 x 10	#1	3184	2388	1910	1592	1365	1194	1061	933	771	648	552	476	415
2 x 10	#2	2866	2149	1719	1433	1228	1075	955	860	726	610	520	448	390
2 x 12	SS	6422	4817	3853	3211	2752	2408	2141	1876	1550	1303	1110	957	834
2 x 12	#1+	5138	3853	3083	2569	2202	1927	1713	1541	1401	1234	1052	907	790
2 x 12	#1	4282	3211	2569	2141	1835	1606	1427	1284	1168	1070	988	856	746
2 x 12	#2	3853	2890	2312	1927	1651	1445	1284	1156	1051	963	889	806	702
2 x 14	SS	8018	6013	4811	4009	3436	3007	2673	2405	2187	2004	1814	1564	1362
2 x 14	#1+	6414	4811	3849	3207	2749	2405	2138	1924	1749	1604	1480	1374	1283
2 x 14	#1	5345	4009	3207	2673	2291	2004	1782	1604	1458	1336	1234	1145	1069
2 x 14	#2	4811	3608	2886	2405	2062	1804	1604	1443	1312	1203	1110	1031	962
4 x 6	SS	4656	3197	2046	1421	1044	799	631	511	423	355	303	261	227
4 x 6	#1+	3725	2794	1938	1346	989	757	598	485	400	336	287	247	215
4 x 6	#1	3104	2328	1831	1271	934	715	565	458	378	318	271	233	203
4 x 6	#2	2794	2095	1676	1196	879	673	532	431	356	299	255	220	191
4 x 8	SS	8006	6068	4686	3254	2391	1831	1446	1172	968	814	693	598	521
4 x 8	#1+	6472	4854	3883	3083	2265	1734	1370	1110	917	771	657	566	493
4 x 8	#1	5394	4045	3236	2697	2139	1638	1294	1048	866	728	620	535	466
4 x 8	#2	4854	3641	2913	2427	2013	1541	1218	987	815	685	584	503	438
4 x 10	SS	11394	9118	7294	6078	4966	3802	3004	2433	2011	1690	1440	1241	1081
4 x 10	#1+	9726	7294	5835	4863	4168	3602	2846	2305	1905	1601	1364	1176	1024
4 x 10	#1	8105	6078	4863	4052	3473	3039	2688	2177	1799	1512	1288	1111	968
4 x 10	#2	7294	5471	4376	3647	3126	2735	2431	2049	1693	1423	1212	1045	911
4 x 12	SS	15601	12363	9890	8242	7064	6181	5404	4377	3617	3040	2590	2233	1945
4 x 12	#1+	13187	9890	7912	6594	5652	4945	4396	3956	3427	2880	2454	2116	1843
4 x 12	#1	10989	8242	6594	5495	4710	4121	3663	3297	2997	2720	2317	1998	1741
4 x 12	#2	9890	7418	5934	4945	4239	3709	3297	2967	2697	2473	2181	1881	1638
4 x 14	SS	20787	15590	12472	10393	8909	7795	6929	6236	5669	4966	4232	3649	3178
4 x 14	#1+	16630	12472	9978	8315	7127	6236	5543	4989	4535	4157	3838	3457	3011
4 x 14	#1	13858	10393	8315	6929	5939	5197	4619	4157	3779	3464	3198	2970	2772
4 x 14	#2	12472	9354	7483	6236	5345	4677	4157	3742	3402	3118	2878	2673	2494
4 x 16	SS	27536	20652	16522	13768	11801	10326	9179	8261	7510	6884	6354	5563	4846
4 x 16	#1+	22029	16522	13217	11014	9441	8261	7343	6609	6008	5507	5084	4720	4406
4 x 16	#1	18357	13768	11014	9179	7867	6884	6119	5507	5007	4589	4236	3934	3671
4 x 16	#2	16522	12391	9913	8261	7081	6196	5507	4956	4506	4130	3813	3540	3304

NOTES

1. Horizontal shear at "d" distance from support controls design in area left of solid line. (**Bold Italics**)
2. Deflection controls design in area right of double line. (**Bold**)
3. Bending stress controls design in area between solid and double lines.
4. For beam lengths between tabulated values, use allowable W value for the next higher length.
5. Beam end supports, connectors and foundations shall be designed as required by CBC.

DIVISION OF BUILDING AND SAFETY
COUNTY OF VENTURA

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Jim MacDonald

B & S
STD

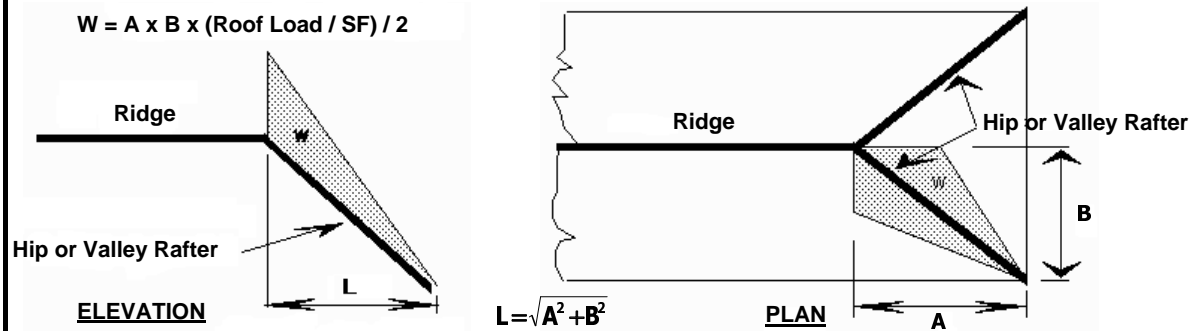
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Sheet 1 of 2

DATE: 01/01/08

RESIDENTIAL HIP & VALLEY RAFTERS (L/240)

California Building Code 2007 Edition (CBC), NDS 2005

Lumber: Douglas Fir-Larch, Surfaced-Dry condition (19% maximum moisture content).
 Design Criteria Strength: Based on allowable bending stresses and shear stresses for Dead + Live loads.
 25% Stress increase included due to duration of load.
 Deflection: Based on L/180 for Dead plus Live load.



ALLOWABLE TOTAL LOAD (W lbs)

SIZES W x D	GRADE	LENGTH (FEET) THE MEMBER SPANS												
		6	8	10	12	14	16	18	20	22	24	26	28	30
6 x 6	SS	5628	4221	2707	1880	1381	1058	836	677	559	470	400	345	301
6 x 6	#1	4503	3377	2702	1880	1381	1058	836	677	559	470	400	345	301
6 x 6	#2	2814	2111	1688	1407	1122	859	679	550	454	382	325	281	244
6 x 8	SS	10466	7849	6280	4767	3503	2682	2119	1716	1418	1192	1016	876	763
6 x 8	#1	8373	6280	5024	4186	3503	2682	2119	1716	1418	1192	1016	876	763
6 x 8	#2	5233	3925	3140	2616	2243	1962	1722	1394	1152	968	825	711	620
6 x 10	SS	17616	13434	10747	8956	7118	5450	4306	3488	2883	2422	2064	1780	1550
6 x 10	#1	15113	11335	9068	7556	6477	5450	4306	3488	2883	2422	2064	1780	1550
6 x 10	#2	9795	7346	5877	4898	4198	3673	3265	2834	2342	1968	1677	1446	1260
6 x 12	SS	24040	19685	15748	13123	11249	9667	7638	6187	5113	4297	3661	3157	2750
6 x 12	#1	22146	16609	13288	11073	9491	8305	7382	6187	5113	4297	3661	3157	2750
6 x 12	#2	14354	10765	8612	7177	6152	5383	4785	4306	3915	3491	2975	2565	2234
6 x 14	SS	32185	25960	21417	17848	15298	13386	11898	10009	8272	6951	5923	5107	4449
6 x 14	#1	30112	22584	18067	15056	12905	11292	10037	9033	8212	6951	5923	5107	4449
6 x 14	#2	19509	14632	11706	9755	8361	7316	6503	5853	5321	4877	4502	4149	3614
6 x 16	SS	42757	32657	27804	23170	19860	17378	15447	13902	12520	10520	8964	7729	6733
6 x 16	#1	39098	29324	23459	19549	16756	14662	13033	11730	10663	9775	8964	7729	6733
6 x 16	#2	25331	18998	15198	12665	10856	9499	8444	7599	6908	6333	5846	5428	5066
8 x 8	SS	14272	10704	8563	6501	4776	3657	2889	2340	1934	1625	1385	1194	1040
8 x 8	#1	11417	8563	6850	5709	4776	3657	2889	2340	1934	1625	1385	1194	1040
8 x 8	#2	7136	5352	4282	3568	3058	2676	2348	1902	1572	1321	1125	970	845
8 x 10	SS	22898	17174	13739	11449	9707	7432	5872	4756	3931	3303	2814	2427	2114
8 x 10	#1	18318	13739	10991	9159	7851	6869	5872	4756	3931	3303	2814	2427	2114
8 x 10	#2	11449	8587	6869	5725	4907	4293	3816	3435	3122	2684	2287	1972	1718
8 x 12	SS	32781	26843	21475	17896	15339	13183	10416	8437	6973	5859	4992	4305	3750
8 x 12	#1	30199	22649	18119	15099	12942	11325	10066	8437	6973	5859	4992	4305	3750
8 x 12	#2	19573	14680	11744	9787	8389	7340	6524	5872	5338	4760	4056	3497	3047
8 x 14	SS	43888	35400	29205	24338	20861	18253	16225	13649	11280	9478	8076	6964	6066
8 x 14	#1	41061	30796	24637	20531	17598	15398	13687	12318	11199	9478	8076	6964	6066
8 x 14	#2	26604	19953	15962	13302	11402	9976	8868	7981	7256	6651	6139	5658	4929
8 x 16	SS	58306	44532	37915	31595	27082	23697	21064	18957	17073	14346	12224	10540	9181
8 x 16	#1	53316	39987	31990	26658	22850	19994	17772	15995	14541	13329	12224	10540	9181
8 x 16	#2	34542	25906	20725	17271	14804	12953	11514	10363	9420	8635	7971	7402	6908

NOTES

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**DIVISION OF BUILDING AND SAFETY
 COUNTY OF VENTURA**

Jim MacDonald

BUILDING OFFICIAL _____

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 STD Sheet 2 of 2

DATE: 01/01/08