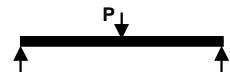


RESIDENTIAL ROOF HEADERS WITH CONCENTRATED CENTER LOAD (L/240)
California Building Code 2007 Edition (CBC), NDS 2005

Lumber: Douglas Fir-Larch, Surfaced-Dry condition (19% maximum moisture content).
 25% Stress increase included due to duration of load.

Design Criteria Strength: Based on allowable bending stresses and shear stresses for Dead + Live loads.
 Deflection: Based on L/360 for Dead plus Live load.



ALLOWABLE CONCENTRATED LOAD AT CENTER OF SPAN (Lbs)

| SIZES W x D | GRADE | LENGTH (FEET) THE MEMBER SPANS | | | | | | | | | | | | | | |
|----------------|-------|--------------------------------|-------|-------|-------|-------|-------|-------|---|-------|-------|-------|-------|-------|-------|-------|
| | | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 |
| 4 x 4 | SS | 1675 | 917 | 516 | 330 | 229 | 168 | 129 | 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 x 4 | #1+ | 1340 | 868 | 488 | 313 | 217 | 160 | 122 | | | | | | | | |
| 4 x 4 | #1 | 1117 | 744 | 461 | 295 | 205 | 151 | 115 | | | | | | | | |
| 4 x 4 | #2 | 1005 | 670 | 434 | 278 | 193 | 142 | 109 | | | | | | | | |
| 4 x 6 | SS | 3584 | 2390 | 1792 | 1281 | 889 | 653 | 500 | LENGTH (FEET) THE MEMBER SPANS 18 20 22 24 26 28 30 32 | | | | | | | |
| 4 x 6 | #1+ | 2867 | 1912 | 1434 | 1147 | 842 | 619 | 474 | | | | | | | | |
| 4 x 6 | #1 | 2390 | 1593 | 1195 | 956 | 796 | 585 | 448 | | | | | | | | |
| 4 x 6 | #2 | 2151 | 1434 | 1075 | 860 | 717 | 550 | 421 | | | | | | | | |
| 4 x 8 | SS | 6228 | 4152 | 3114 | 2491 | 2037 | 1496 | 1146 | 905 | 733 | 606 | 509 | 434 | 374 | 326 | 286 |
| 4 x 8 | #1+ | 4982 | 3322 | 2491 | 1993 | 1661 | 1418 | 1085 | 858 | 695 | 574 | 482 | 411 | 354 | 309 | 271 |
| 4 x 8 | #1 | 4152 | 2768 | 2076 | 1661 | 1384 | 1186 | 1025 | 810 | 656 | 542 | 456 | 388 | 335 | 292 | 256 |
| 4 x 8 | #2 | 3737 | 2491 | 1868 | 1495 | 1246 | 1068 | 934 | 762 | 617 | 510 | 429 | 365 | 315 | 274 | 241 |
| 4 x 10 | SS | 9358 | 6239 | 4679 | 3743 | 3119 | 2674 | 2340 | 1880 | 1523 | 1259 | 1058 | 901 | 777 | 677 | 595 |
| 4 x 10 | #1+ | 7487 | 4991 | 3743 | 2995 | 2496 | 2139 | 1872 | 1664 | 1443 | 1192 | 1002 | 854 | 736 | 641 | 564 |
| 4 x 10 | #1 | 6239 | 4159 | 3119 | 2496 | 2080 | 1783 | 1560 | 1386 | 1248 | 1126 | 946 | 806 | 695 | 606 | 532 |
| 4 x 10 | #2 | 5615 | 3743 | 2808 | 2246 | 1872 | 1604 | 1404 | 1248 | 1123 | 1021 | 891 | 759 | 654 | 570 | 501 |
| 4 x 12 | SS | 11813 | 8459 | 6345 | 5076 | 4230 | 3625 | 3172 | 2820 | 2538 | 2264 | 1903 | 1621 | 1398 | 1218 | 1070 |
| 4 x 12 | #1+ | 10151 | 6768 | 5076 | 4061 | 3384 | 2900 | 2538 | 2256 | 2030 | 1846 | 1692 | 1536 | 1324 | 1154 | 1014 |
| 4 x 12 | #1 | 8459 | 5640 | 4230 | 3384 | 2820 | 2417 | 2115 | 1880 | 1692 | 1538 | 1410 | 1301 | 1208 | 1089 | 958 |
| 4 x 12 | #2 | 7614 | 5076 | 3807 | 3045 | 2538 | 2175 | 1903 | 1692 | 1523 | 1384 | 1269 | 1171 | 1088 | 1015 | 901 |
| 4 x 14 | SS | 13913 | 10668 | 8001 | 6401 | 5334 | 4572 | 4000 | 3556 | 3200 | 2909 | 2667 | 2462 | 2284 | 1989 | 1748 |
| 4 x 14 | #1+ | 12801 | 8534 | 6401 | 5121 | 4267 | 3658 | 3200 | 2845 | 2560 | 2328 | 2134 | 1969 | 1829 | 1707 | 1600 |
| 4 x 14 | #1 | 10668 | 7112 | 5334 | 4267 | 3556 | 3048 | 2667 | 2371 | 2134 | 1940 | 1778 | 1641 | 1524 | 1422 | 1333 |
| 4 x 14 | #2 | 9601 | 6401 | 4801 | 3840 | 3200 | 2743 | 2400 | 2134 | 1920 | 1746 | 1600 | 1477 | 1372 | 1280 | 1200 |
| 4 x 16 | SS | 16013 | 14131 | 10599 | 8479 | 7066 | 6056 | 5299 | 4710 | 4239 | 3854 | 3533 | 3261 | 3028 | 2826 | 2650 |
| 4 x 16 | #1+ | 16013 | 11305 | 8479 | 6783 | 5653 | 4845 | 4239 | 3768 | 3392 | 3083 | 2826 | 2609 | 2423 | 2261 | 2120 |
| 4 x 16 | #1 | 14131 | 9421 | 7066 | 5653 | 4710 | 4038 | 3533 | 3140 | 2826 | 2569 | 2355 | 2174 | 2019 | 1884 | 1766 |
| 4 x 16 | #2 | 12718 | 8479 | 6359 | 5087 | 4239 | 3634 | 3180 | 2826 | 2544 | 2312 | 2120 | 1957 | 1817 | 1696 | 1590 |
| 6 x 6 | SS | 4333 | 2888 | 2166 | 1695 | 1177 | 865 | 662 | 523 | 424 | 350 | 294 | 251 | 216 | 188 | 165 |
| 6 x 6 | #1 | 3466 | 2311 | 1733 | 1386 | 1155 | 865 | 662 | 523 | 424 | 350 | 294 | 251 | 216 | 188 | 165 |
| 6 x 8 | SS | 8057 | 5371 | 4028 | 3223 | 2686 | 2192 | 1678 | 1326 | 1074 | 888 | 746 | 636 | 548 | 477 | 420 |
| 6 x 8 | #1 | 6445 | 4297 | 3223 | 2578 | 2148 | 1842 | 1611 | 1326 | 1074 | 888 | 746 | 636 | 548 | 477 | 420 |
| 6 x 10 | SS | 13788 | 9192 | 6894 | 5515 | 4596 | 3939 | 3411 | 2695 | 2183 | 1804 | 1516 | 1292 | 1114 | 970 | 853 |
| 6 x 10 | #1 | 11634 | 7756 | 5817 | 4654 | 3878 | 3324 | 2908 | 2585 | 2183 | 1804 | 1516 | 1292 | 1114 | 970 | 853 |
| 6 x 12 | SS | 17921 | 13470 | 10102 | 8082 | 6735 | 5773 | 5051 | 4490 | 3873 | 3200 | 2689 | 2291 | 1976 | 1721 | 1513 |
| 6 x 12 | #1 | 17048 | 11365 | 8524 | 6819 | 5683 | 4871 | 4262 | 3788 | 3410 | 3100 | 2689 | 2291 | 1976 | 1721 | 1513 |
| 6 x 14 | SS | 21038 | 18319 | 13739 | 10991 | 9159 | 7851 | 6870 | 6106 | 5496 | 4996 | 4351 | 3707 | 3196 | 2784 | 2447 |
| 6 x 14 | #1 | 21038 | 15453 | 11590 | 9272 | 7727 | 6623 | 5795 | 5151 | 4636 | 4215 | 3863 | 3566 | 3196 | 2784 | 2447 |
| 6 x 16 | SS | 24154 | 23782 | 17836 | 14269 | 11891 | 10192 | 8918 | 7927 | 7135 | 6486 | 5945 | 5488 | 4838 | 4214 | 3704 |
| 6 x 16 | #1 | 24154 | 20065 | 15049 | 12039 | 10033 | 8599 | 7524 | 6688 | 6020 | 5472 | 5016 | 4630 | 4300 | 4013 | 3704 |
| 6 x 18 | SS | 27271 | 27271 | 22429 | 17943 | 14953 | 12817 | 11215 | 9968 | 8972 | 8156 | 7476 | 6901 | 6408 | 5981 | 5331 |
| 6 x 18 | #1 | 27271 | 25227 | 18920 | 15136 | 12613 | 10811 | 9460 | 8409 | 7568 | 6880 | 6307 | 5822 | 5406 | 5045 | 4730 |
| 6 x 20 | SS | 30388 | 30388 | 27504 | 22003 | 18336 | 15716 | 13752 | 12224 | 11002 | 10001 | 9168 | 8463 | 7858 | 7334 | 6876 |
| 6 x 20 | #1 | 30388 | 30388 | 23219 | 18575 | 15480 | 13268 | 11610 | 10320 | 9288 | 8443 | 7740 | 7144 | 6634 | 6192 | 5805 |
| 8 x 8 | SS | 10986 | 7324 | 5493 | 4395 | 3662 | 2989 | 2289 | 1808 | 1465 | 1211 | 1017 | 867 | 747 | 651 | 572 |
| 8 x 8 | #1 | 8789 | 5859 | 4395 | 3516 | 2930 | 2511 | 2197 | 1808 | 1465 | 1211 | 1017 | 867 | 747 | 651 | 572 |
| 8 x 10 | SS | 17627 | 11751 | 8813 | 7051 | 5876 | 5036 | 4407 | 3675 | 2977 | 2460 | 2067 | 1762 | 1519 | 1323 | 1163 |
| 8 x 10 | #1 | 14102 | 9401 | 7051 | 5641 | 4701 | 4029 | 3525 | 3134 | 2820 | 2460 | 2067 | 1762 | 1519 | 1323 | 1163 |
| 8 x 12 | SS | 24438 | 18368 | 13776 | 11021 | 9184 | 7872 | 6888 | 6123 | 5281 | 4364 | 3667 | 3125 | 2694 | 2347 | 2063 |
| 8 x 12 | #1 | 23247 | 15498 | 11624 | 9299 | 7749 | 6642 | 5812 | 5166 | 4649 | 4227 | 3667 | 3125 | 2694 | 2347 | 2063 |
| 8 x 14 | SS | 28688 | 24980 | 18735 | 14988 | 12490 | 10706 | 9368 | 8327 | 7494 | 6813 | 5933 | 5055 | 4359 | 3797 | 3337 |
| 8 x 14 | #1 | 28688 | 21073 | 15804 | 12644 | 10536 | 9031 | 7902 | 7024 | 6322 | 5747 | 5268 | 4863 | 4359 | 3797 | 3337 |
| 8 x 16 | SS | 32938 | 32430 | 24322 | 19458 | 16215 | 13898 | 12161 | 10810 | 9729 | 8844 | 8107 | 7484 | 6597 | 5747 | 5051 |
| 8 x 16 | #1 | 32938 | 27362 | 20521 | 16417 | 13681 | 11726 | 10261 | 9121 | 8209 | 7462 | 6840 | 6314 | 5863 | 5472 | 5051 |
| 8 x 18 | SS | 37188 | 37188 | 30585 | 24468 | 20390 | 17477 | 15293 | 13593 | 12234 | 11122 | 10195 | 9411 | 8739 | 8156 | 7269 |
| 8 x 18 | #1 | 37188 | 34400 | 25800 | 20640 | 17200 | 14743 | 12900 | 11467 | 10320 | 9382 | 8600 | 7938 | 7371 | 6880 | 6450 |
| 8 x 20 | SS | 41438 | 41438 | 37505 | 30004 | 25003 | 21432 | 18753 | 16669 | 15002 | 13638 | 12502 | 11540 | 10716 | 10001 | 9376 |
| 8 x 20 | #1 | 41438 | 41438 | 31663 | 25330 | 21108 | 18093 | 15831 | 14072 | 12665 | 11514 | 10554 | 9742 | 9046 | 8443 | 7916 |
| 8 x 22 | SS | 45688 | 45688 | 45112 | 36089 | 30074 | 25778 | 22556 | 20050 | 18045 | 16404 | 15037 | 13880 | 12889 | 12030 | 11278 |
| 8 x 22 | #1 | 45688 | 45688 | 38069 | 30456 | 25380 | 21754 | 19035 | 16920 | 15228 | 13843 | 12690 | 11714 | 10877 | 10152 | 9517 |
| 8 x 24 | SS | 49938 | 49938 | 49938 | 42684 | 35570 | 30489 | 26678 | 23714 | 21342 | 19402 | 17785 | 16417 | 15244 | 14228 | 13339 |
| 8 x 24 | #1 | 49938 | 49938 | 45014 | 36011 | 30009 | 25722 | 22507 | 20006 | 18006 | 16369 | 15005 | 13851 | 12861 | 12004 | 11254 |

DIVISION OF BUILDING AND SAFETY
COUNTY OF VENTURA

Jim MacDonald

BUILDING OFFICIAL _____

B & S
STD **B-15**

DATE: 01/01/08