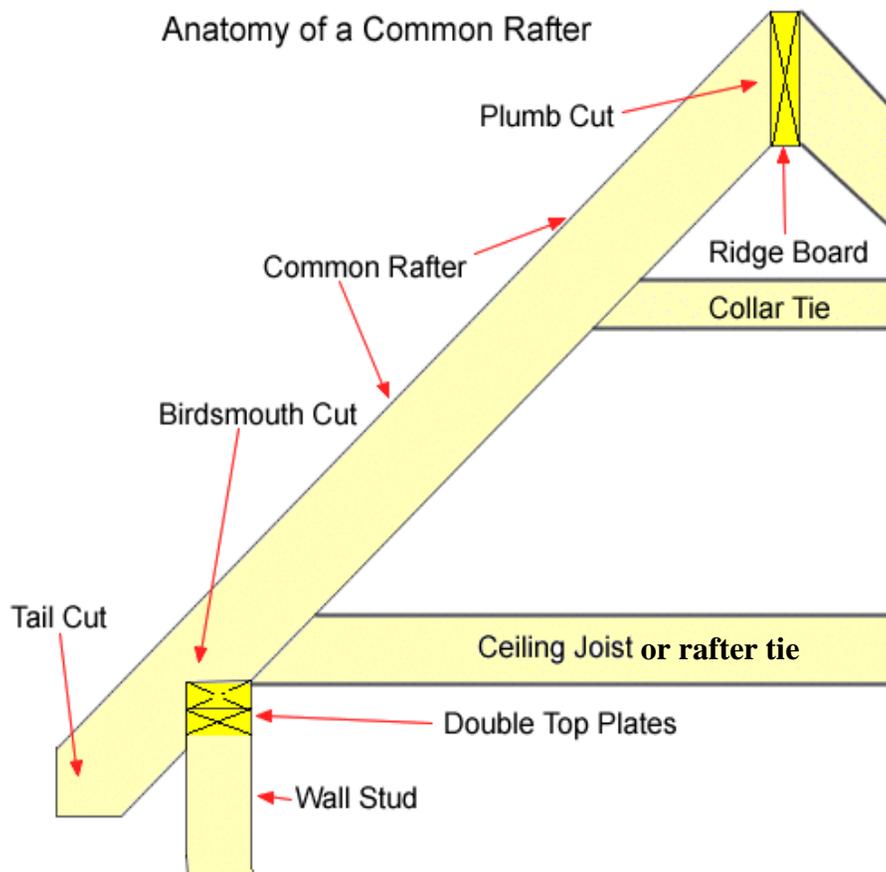


# Knox County Code Administration & Inspection

## RAFTER & FRAMING Handout

Rev. 012013



The diagram (to the left) illustrates a typical framing layout of a rafter type roof system with some of the typical components shown.

**Ridge Board**, shall be a minimum of 1" nominal thickness and not less in depth than the cut end of the rafter.

**Rafter(s)**, the rafters shall be sized in accordance to the tables in the 2012 IRC ® or by using the span calculator at the American Wood Council ®, (i.e. [www.awc.org/calculators/span/calc/timbercalcstyle.asp](http://www.awc.org/calculators/span/calc/timbercalcstyle.asp) ).

If using this calculator, the following values will need to be utilized; Grade = (normally is 2), member type = rafters (live load), deflection limit = L/240, live load = 20 and dead load = 10.

Rafters need to be flush to the ridge board and toe nail fastened with 4-16D nails. The birdsmouth cut must not be over cut and have full bearing on the top plate and fastened with 2-16d nails.

**Collar Tie(s)**, shall be a minimum of 1" x 4" nominal thickness and installed in the upper third of the attic space. Collar ties shall be spaced not more than 4 feet on center. The collar ties shall be fastened to the rafters with 3-10D nails.

**Rafter Tie(s)**, shall be a minimum of a 2"x4" member and (installed in the lower third of the attic space) face nailed to the rafters with 3-8D nails.

**Ceiling Joist(s)**, shall be sized in accordance to the 2012 IRC ® code and fastened to the rafters with usually 3-16D nails (see table R802.5.1(9) for specific fastener schedule).