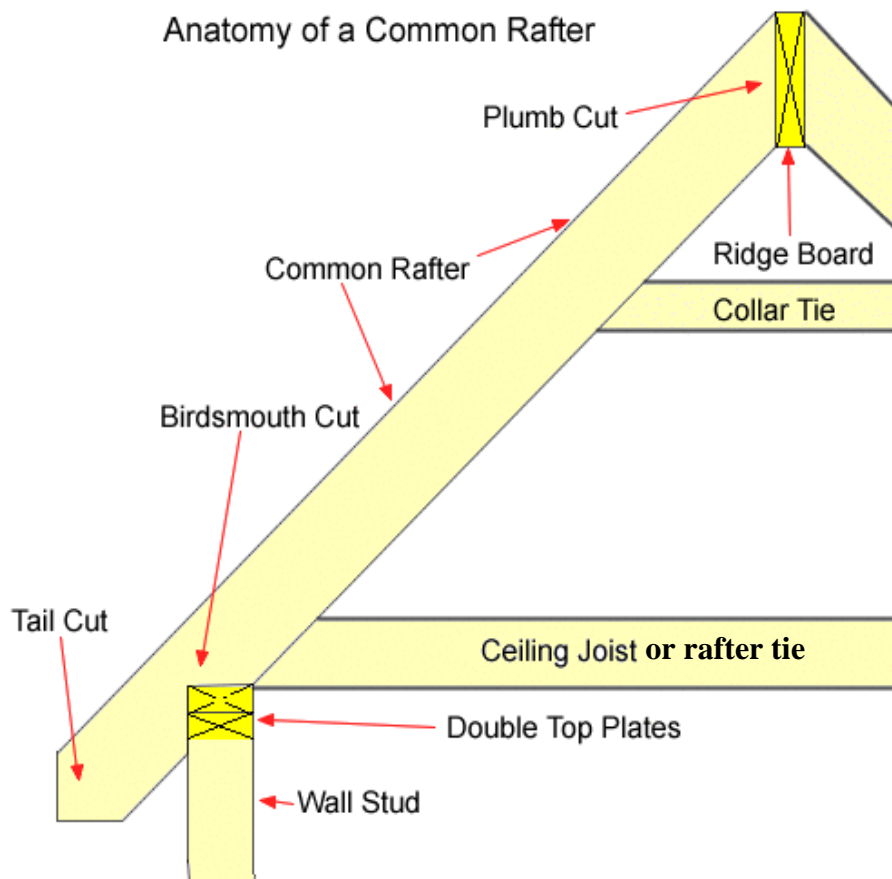


Knox County Code Administration & Inspection

2018 RAFTER & FRAMING Handout

Rev. 022019



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 based on the rafter spans in Tables R802.4.1(1) through R802.4.1(8) in the 2018 IRC ® or by using the span calculator at the American Wood Council ®, (i.e.

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 nails according to Table R602.3(1). The “birdsmouth” cut must not be over cut and have full bearing on the top plate and fastened with 3 nails (2 toe nails on one side and 1 toe nail on the opposite side) according to Table R602.3(1).

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 according to Table R602.3(1).

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 per Table R802.5.2.

Ceiling Joist(s), shall be sized in accordance to the 2018 IRC ® code and fastened to the rafters with usually 3-16D nails (see table R802.5.2 for specific fastener schedule).