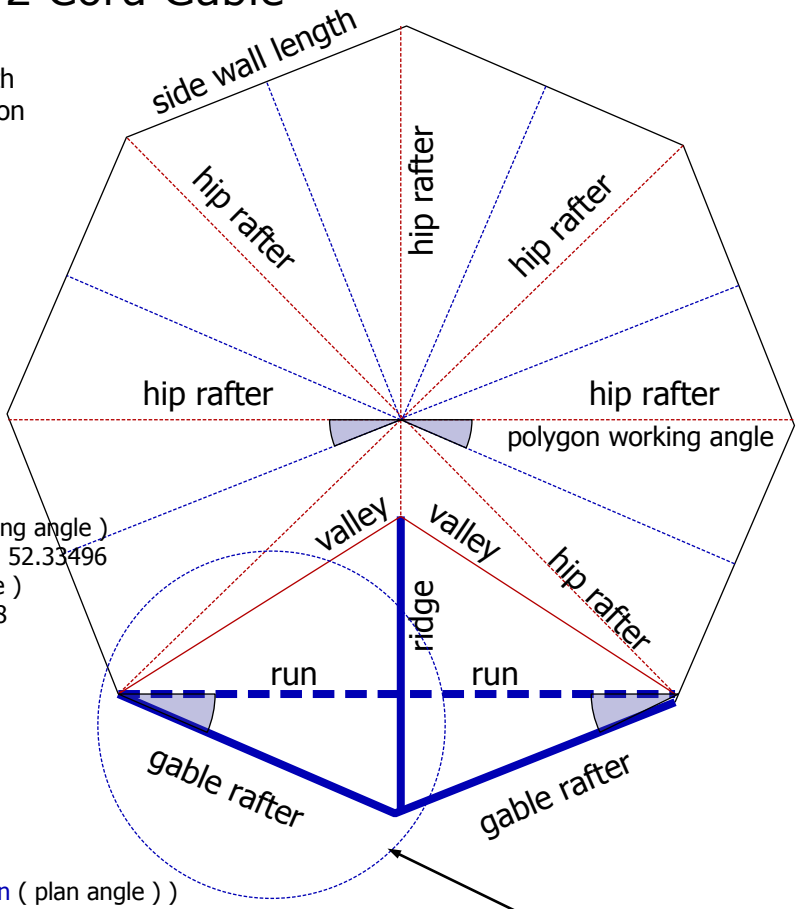
Polygon 2 Cord Gable

Polygon 2 Cord Gables can be calculated with the same angles used to calculate the polygon rafters. The working angle of the polygon is used to calculate the length of the 2 Cord Gable. The length of the 2 Cord Gable is calculated using the following formulas.

Example:
Polygon = Octagon
pitch = 8:12
pitch angle = 33.69°



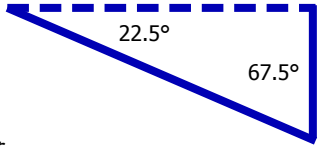
side wall length = 59.64696
hip rafter run = side wall length
common rafter run = hip rafter run × cos (working angle)
common rafter run = 59.64696 ÷ cos (22.5°) = 52.33496
roof rise = common rafter run × tan (pitch angle)
roof rise = 52.33496 × tan (33.69°) = 34.88988

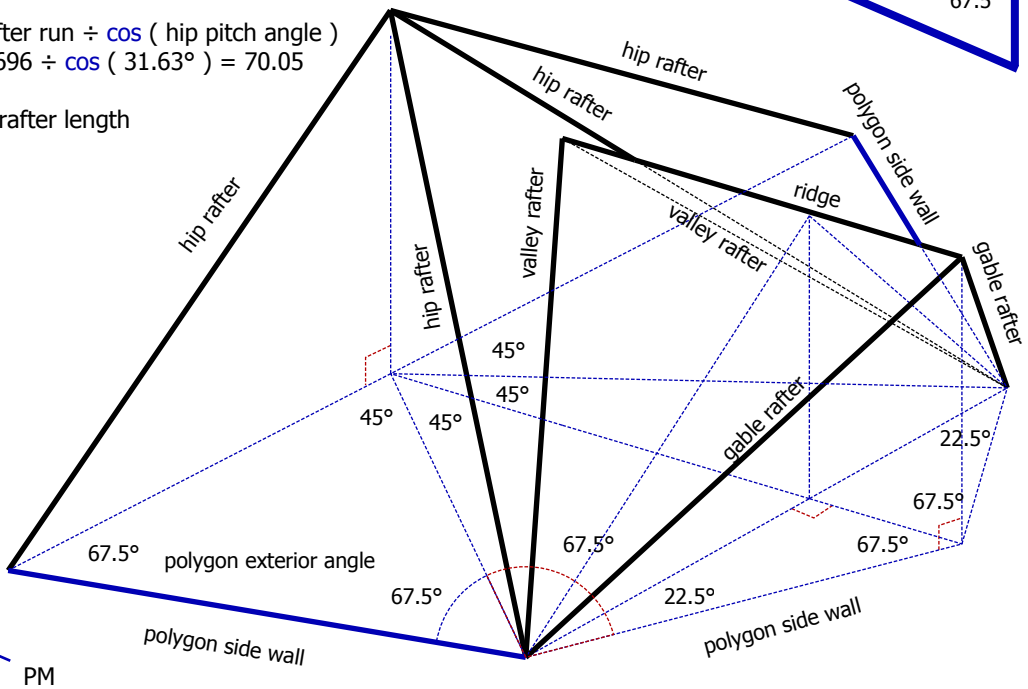
hip pitch angle = arctan (tan (pitch angle) × sin (plan angle))
hip pitch angle = arctan (tan (33.69°) × sin (67.5°)) = 31.63°

common rafter length = common rafter run ÷ cos (pitch angle)
common rafter length = 52.33496 ÷ cos (33.69°) = 62.89874

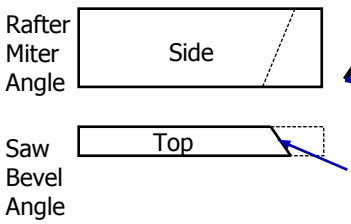
hip rafter length = hip rafter run ÷ cos (hip pitch angle)
hip rafter length = 59.64696 ÷ cos (31.63°) = 70.05

gable rafter length = hip rafter length





Gable Rafter Head Cut



Mark the gable rafter at the same pitch angle as the hip pitch angle on the gable rafter material. Then cut the head cut angle with your saw set at the polygon miter angle. The Octagon polygon miter angle is 22.5°. The saw bevel angle is the same as the polygon miter angle.

The polygon 2 cord gable rafter is calculated at the same pitch angle as a polygon hip rafter.