



# Sorcerer and Warlock

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**Advanced Software for Roof and Wall Design and Estimating**

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## **Tutorial - Crickets**

Revision: 1.0 – 12 August 2006

English Units / Feet-Inches

# Tutorial

## Big Crickets

Architects in certain markets have developed curious ways of shedding water and snow from a roof. The designs are such that whole roof sections need to be cut away and replaced with a section of low or mono-pitch roof. These features are referred to as crickets. They vary enormously in form and function, with significant overall complexity added to a roof. They also have different roof materials installed upon them.

This objective of this tutorial is to explain how to create the roof geometry for such a roof shape. Bear in mind however, that they are all different and the process will vary.

Because nothing is standard with this method of roof construction, no automatic tools are available to model them.

The best approach is to use the automatic roof functions to generate as much of the roof as you can, then use the **Smartlines** functions to modify, add, copy and move current roof geometry to create the new roof shape.

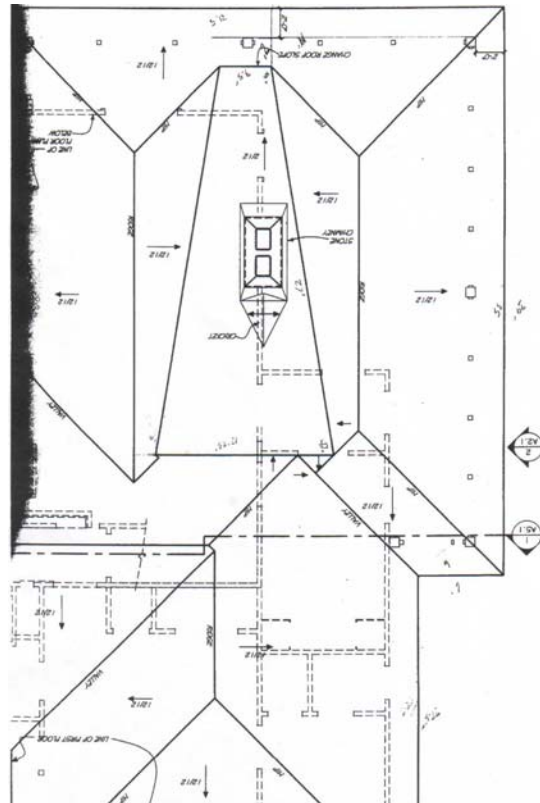
For this exercise we will use the basic form of the roof drawing shown here. While the measurements will differ from job to job (there is nothing standard about these things) the process is what is important, concentrate on that.

### The main roof form

Look carefully at the job and figure what you need to create using track outline to create the main roof form. In this example we will create two regular

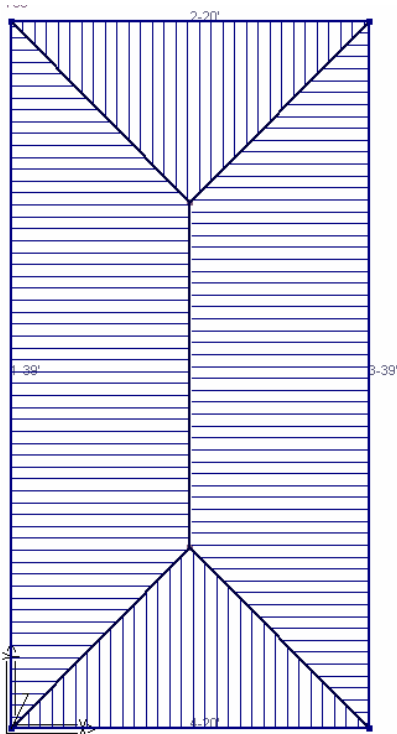
rectangular roof shapes. Since I do not have the actual dimensions, I will make some up for the exercise.

Create a roof 39'x20' and 12/12 slope.

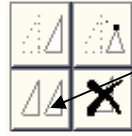


**Roof defaults** ✕

Roof type	Metal <span style="float: right;">▼</span>
Storey	1 <span style="float: right;">▲▼</span>
Slope	12 in 12 <span style="float: right;">...</span>
Eave offset	0
Verge overhang	0
Eave height	12
Rafter spacing	2.00
Eave type	Fascia&Gutter <span style="float: right;">▼</span>
<div style="display: flex; justify-content: space-between; width: 100%;"> <span>Cancel</span> <span>OK</span> </div>	

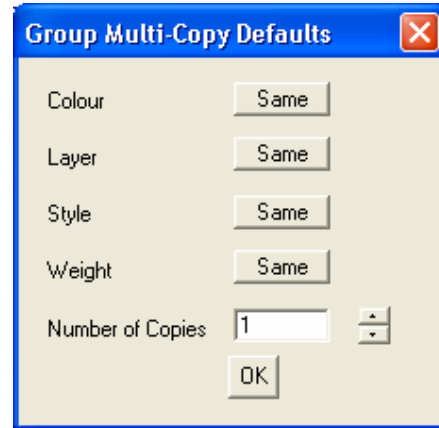


Then copy the whole roof and place the copy say, 16' to the right.

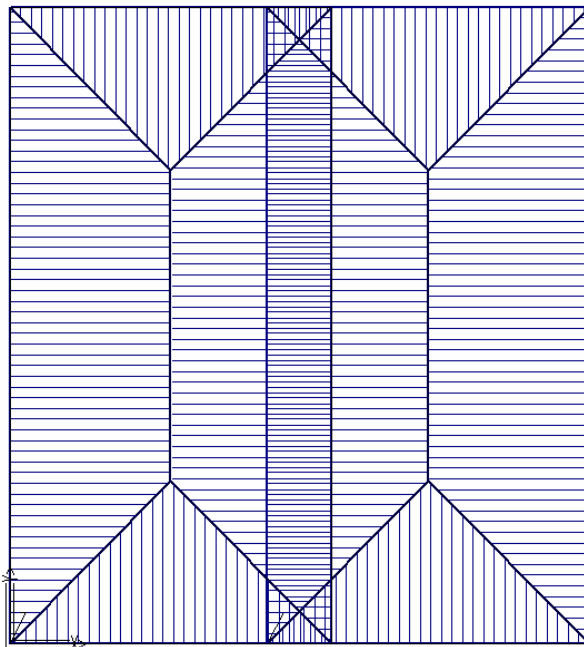


This is the copy icon.

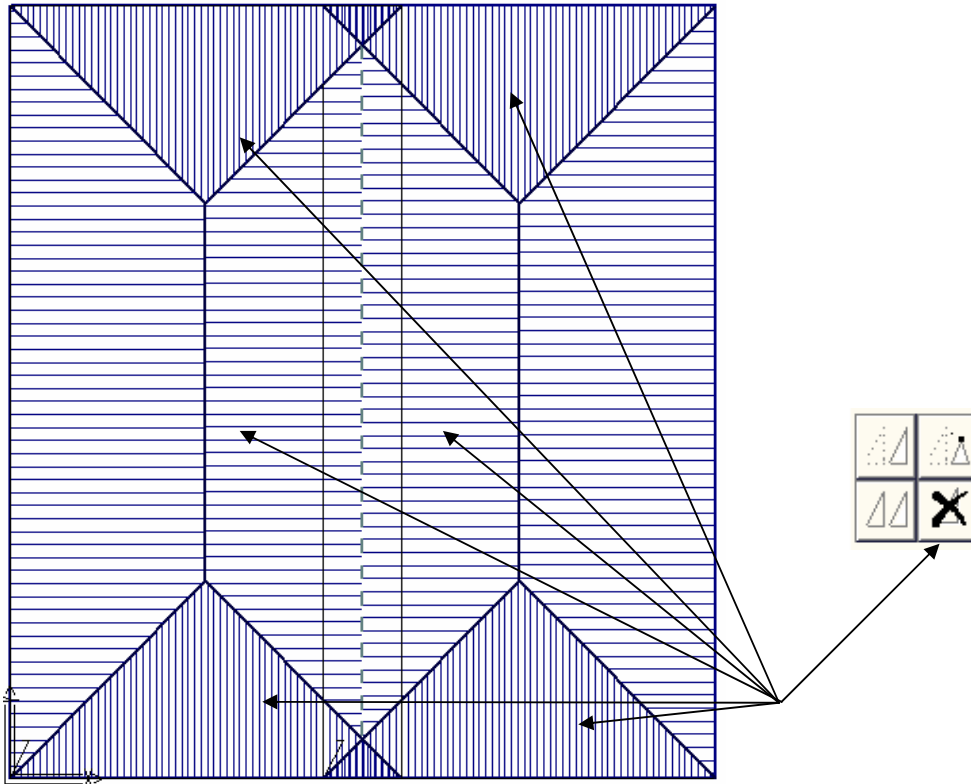
Select copy button and then indicate that you want one copy as shown:



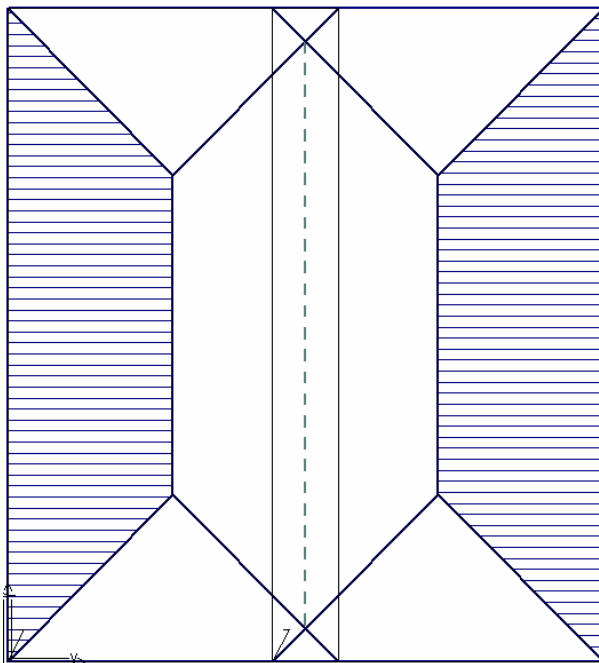
then select the whole roof by drawing a box around the existing model; right click to cancel the selection (no more items to copy/move); then type coordinate indicating the direction to move and the distance. I used **IX16'** – (incremental copy, in the X axis, 16') and will get the following drawing.



Now use **Mod-Roof | Advanced | Intersect planes** to cut out the crossing over pieces of each roof. This is not essential, but with some roof shapes of this type, it will do a lot of the tidy up for you.

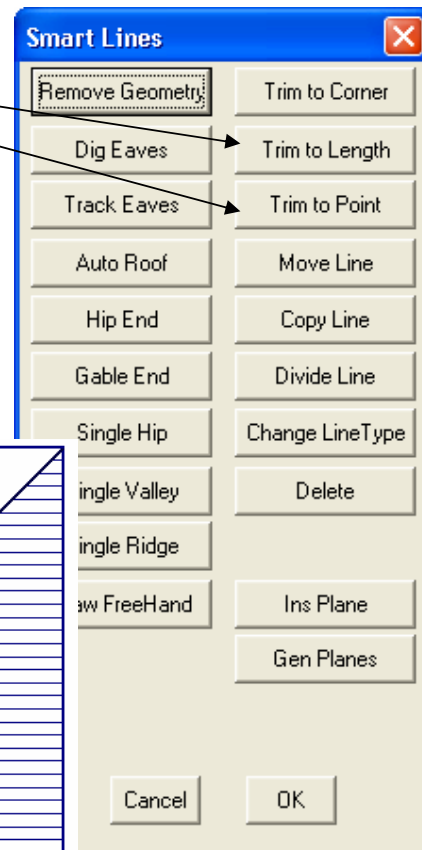


Next we must delete a bunch of the roof planes, those that will be affected by the insertion of the cricket. You will end up with this:

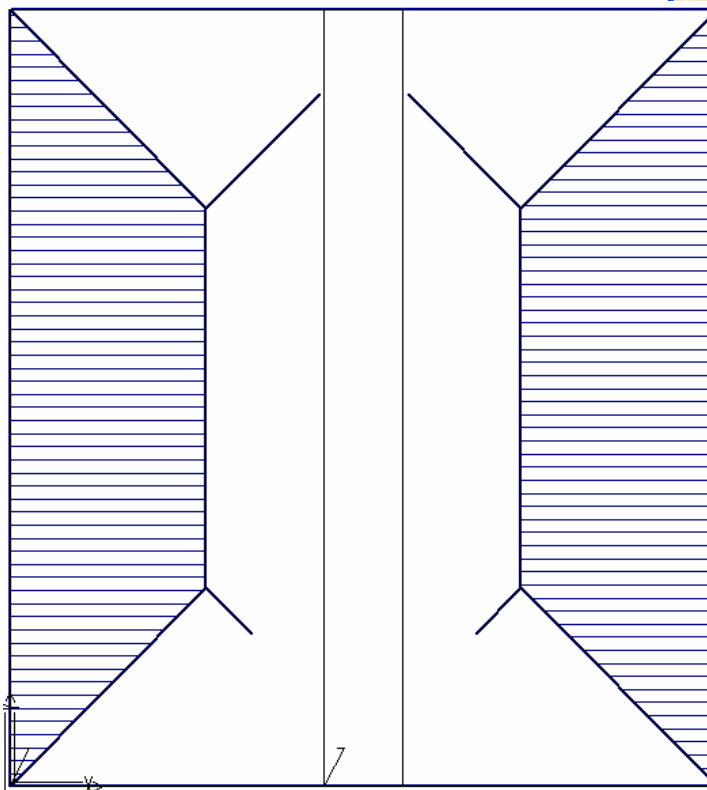


Now we must determine where to draw the extents of the cricket. This information is hardly ever easy to extract from an architect's plan (they often don't know either), so you will have to scale it off the plan. We need to trip the hip lines to suit the cricket and insert new lines that will be the valley at the edge of the cricket.

Use the Smartlines functions, then Trim to Length to trim the hip lines:

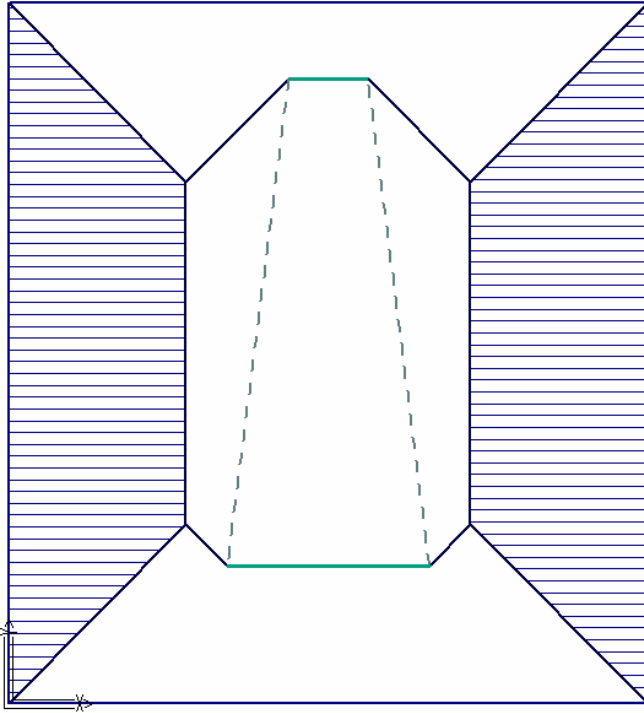


In our example I have figured the hip lengths to be say 12' and 4' respectively. Then add new lines using Smartlines | Draw FreeHand to add the new valleys.

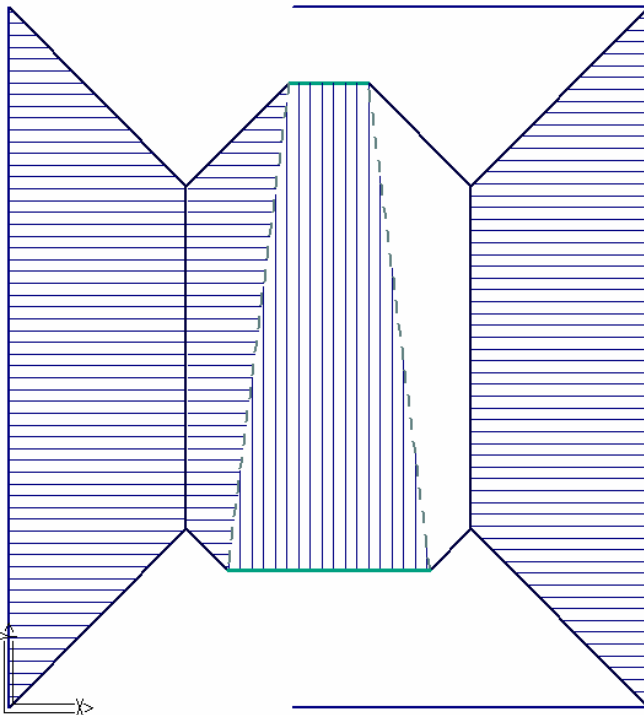


We also need to decide what type of line is used at the intersection of the cricket and the main roof – I used an Apron. Remember to use the middle mouse button to 'snap' to the intersection of the corner lines.

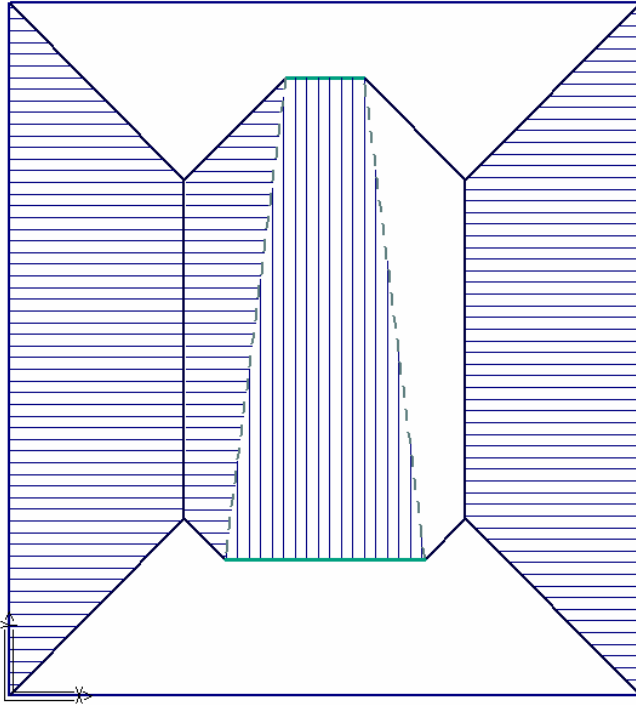
After the valleys and aprons are inserted you should have a drawing that looks like the one below. You will notice that in the illustration above, we have two parallel lines in the middle and you will too. These are the wall lines that created the two base roof models. You can turn them off using **Tools | Set Display**.



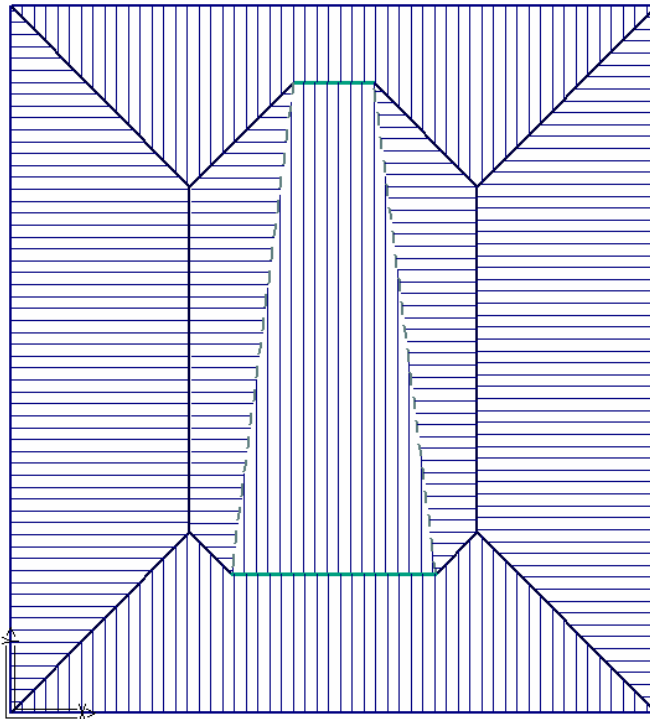
Now use Smartlines | Insert Plane to reinsert the roof planes that are required. To insert the planes at the top and bottom, you will have to delete one of the eave lines as they do not connect. Then use Smartlines | Trim to Point to make a closed loop of the roof plane area.



Remember to use the middle mouse button to 'snap' to the intersection of the corner lines.



And you're done. A perfectly accurate model of the roof with crickets.



Now this is just one example and I have dozens of others that are similar in form and function as I am sure you do. Do not be discouraged, use the tool kit we provide and they can all be done, some more easily than others for sure. Some of them may require you to use other Smartlines tools to **copy, trim, or move** lines to create or re-create the required roof shape.

