Digital Canal Corporation

Solution Papers

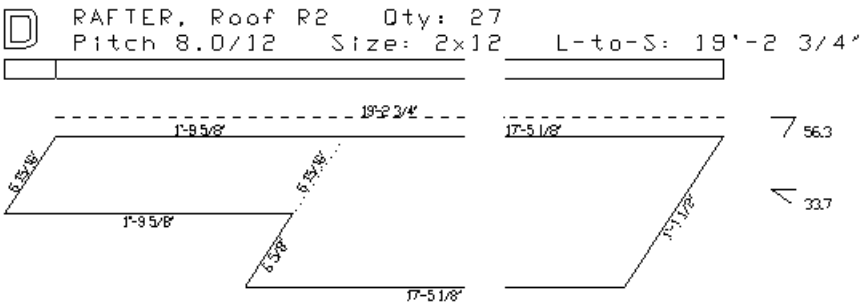
Summary: ***Creating Roof Rafters with a Smaller Eave Depth than the Rafter Depth***

Product(s): SolidBuilder for Windows
Release(s): 15.0
Platform(s): Windows 98 or later

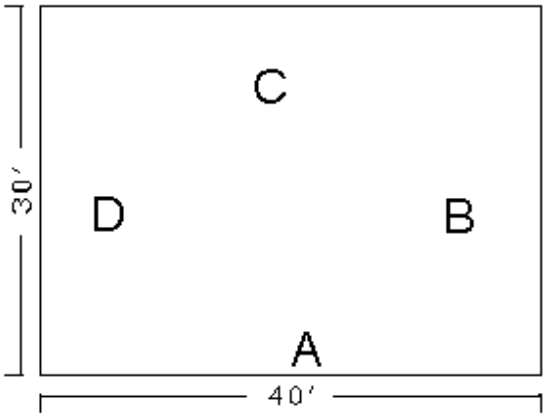
Solution Paper: Eave Rafter Depth
Revision: 7/04
Creation Date: 3/23/99

Overview: This document describes a method used to create a roof where the roof rafter depth is 11 ¼" and eave depth is 5 ½". It walks through creating the roof and eave and then creating a second wall under the eave to use to modify the eave depth. See the example below.

Solution:



1. Create four 3 ½" wide by 8' tall walls using the following diagram.



2. Set the plane options to Wall, Rafter Depth to 11 ¼", Framing Rest with a 3 ½" Seat Cut and Slope to 8.

   Create planes on walls A and C.

4. Create a whole gable roof by selecting the plane on wall A, wall B, plane on wall C and finally wall D.

5. Set Eave Options to Plumb. 1’ Overhang, Heel Cut of 3 ½” and Fascia Width to 5 ½”.
6. Create the Eave on Roof A.
7. We create a second wall, which is 1’ wide (the length of the overhang) alongside of wall A.
8. Select the Wall icon.
9. Select Exterior and Free Form from the Wall drop lists.
10. Go to the options icon.
11. For type select to Ceiling/Roof.
12. Set the width to 12”.
13. Using the E end point jump command, jump to the lower left corner of the eave on wall A and create the new wall with the B side toward the center.
14. The Eave Wall Top dialog box displays.
15. Select Bevel.
16. Since this wall is created to match the underside of the eave and match the slope, we project it up into the eave to force the eave to create at 5 ½”.
17. To make it easier to see, select Visibility and make walls B, C and D invisible.
18. Click on the Right view icon.
19. Click on the Zoom Area icon and zoom in close to the wall/rafter area.
20. Select Wall → Shape → Project → Distance.
21. Type in `6_7/8″`.
22. Using a slope factor chart, an 8/12 pitch has a slope factor of 1.2. To get a 5 ½” parallel thickness, the vertical distance is 6_5/8” (5 ½” x 1.2). An 11_1/4” rafter at an 8/12 pitch has a plumb cut of 13_½”. To find the projection distance: 13_½” – 6_5/8” = 6_7/8”.
23. Select the 1’ wide wall to project and select the top face.
24. This projects the top face up 6_7/8” resulting in the parallel thickness of the rafter at 5_1/2”.
25. Frame the roof and then remove the 12” wide wall.
26. The Eave is now at 5_1/2”.