Drawing a Plot Plan

The information in this article applies to:

![Home Designer® Software](https://www.chiefarchitect.com/)

**QUESTION**
How do I create a plot plan using survey information?

**ANSWER**
You can create a CAD polyline representation of your plot plan using the distance and bearing information from a survey, then edit the rectangular Terrain Perimeter line to fit it exactly. For the purposes of this example, we will use the following survey information:

- **Line 1**
  - Length = 77.23 feet
  - Angle = N3° 18' 25" E

- **Line 2**
  - Length = 65.81 feet
  - Angle = N86° 41' 1" E

- **Line 3**
  - Length = 58.97 feet
  - Angle = S7° 5' 56" E
The image above shows what the completed plot plan will look like, based on this data. We have added the distance and bearing information with text for clarification.

To enter angles using bearings

1. To begin, start off by selecting **File> New Plan** to open a new, blank plan.
2. From the menu, select **Terrain > Create Terrain Perimeter** to create a basic rectangular terrain.

3. Using the **Select Objects** tool, click on one of the Terrain Perimeter's edges to select it, then click the **Open Object** edit button.

4. At the bottom of the **Terrain Specification** dialog, click the **Angle Style** button.

5. In the **Angle Style** dialog, which opens next, select the **Bearing** radio button, then click **OK** to close both dialogs and apply your change.

Angles in all dialogs will now be reported using bearings instead of degrees, as will angle information in the Status Bar.

**To enter plot line information**

1. Select **CAD > Draw Line** and click to begin by drawing **CAD Line 1**, starting from the bottom of the screen and dragging upwards.
   - You can draw Line 1 wherever you like, but you may find it easiest to draw the entire polyline if it is not located near the Terrain Perimeter.
   - If you find that the Terrain Perimeter interferes with your drawing process, click **Select Objects** button, then select the Terrain Perimeter and **Delete** it.

2. Once the line has been created, use the **Select Objects** tool to select the line, then click the **Open Object** edit button.

3. In the **Line Specification** dialog:
Enter the Length information for Line 1.

Press the Tab key on your keyboard to update the dialog and move to the Angle field.

When you press the Tab key, your Length information will automatically convert to inches.

Enter the Angle information for this line.

Bearing information can be entered in this format: N3 18 25 E which is equal to N3°18' 25" E.

Click OK to close the dialog and apply your changes.

4. Repeat these steps to create Line 2, Line 3 and Line 4, with each additional line starting at the end point of the previously drawn line.

Length, Angle, and other line properties can be adjusted on the Selected Line panel of the Polyline Specification dialog when creating Lines 2, 3, and 4.

To create a curved plot line with a specific radius

1. Next, using the Draw Line tool, click and drag to draw a CAD line from the end of
Line 4 to the beginning of Line 1 to connect the two.

2. Select this line and click on the Change Line/Arc edit button. By default, the arc will curve outward, similar to the sample image above.

3. With the arc selected, click the Open Object edit button.

4. On the Selected Arc panel of the Polyline Specification dialog:
   - Specify the Radius and Arc Length listed at the top of this article for Arc 1.
   - Click OK to close the dialog and apply your change.

5. When you are finished drawing the plot plan polyline, return to the Angle Style dialog and set the Angle to Degrees once again.

Keep in mind when you go to create your own plot plan, that if you have received the plot plan information from a surveyor, the direction of any given line can be described in two ways using Quadrant Bearings, and not all surveyors will describe the lines of a given plot in the same direction, i.e., clockwise or counterclockwise. If the lines are not described in the same direction, your result will not be a closed polyline.

Your plot plan is now complete, but because it is a 2D CAD polyline, it can only be seen in plan view. To create a 3D object that can be seen in 3D camera views, you can edit the shape of the Terrain Perimeter to match the plot plan polyline.

To view the plot perimeter in 3D

1. If you deleted the Terrain Perimeter to make it easier to draw your plot plan polyline, select Terrain> Create Terrain Perimeter to create a new one.
2. Using the **Select Objects** tool, click on one of the Terrain Perimeter's edge lines to select it, then click and drag the **Move** edit handle at its center so that the Terrain Perimeter is positioned over your plot plan polyline.

3. Next, click on the edit handle in the top left corner, and drag it to the top left corner of your polyline at the end of Line 1.

4. Similarly, drag the top right edit handle to the end of Line 2, the bottom right edit handle to the end of Line 3, and the bottom left edit handle to the beginning of Line 1.

5. After you have done this, select the bottom line of the Terrain Perimeter, select the **Break Line** edit tool, and then click on the bottom line near the plot plan arc to create a new corner handle at the point where you clicked.

6. Now you can click and drag this new diamond shaped edit handle to the end of line 4.
7. Select the new line segment that needs to become the arc and click the Change Line/Arc edit button, as you did earlier to create the arc in the plot plan.

8. Finally, with the new curved segment selected, click Open Object edit button and on the Selected Line/Arc panel of the Terrain Specification dialog:
   - Enter the same Radius and Arc Length values as you did for the plot plan polyline.
   - Click OK.

   The plot plan and terrain should now match.

If you wish, you can use the Text tools in plan view to add length and bearing information for each edge of the plot plan.
In Home Designer 2020 and newer versions, if you created too many breaks, you can select the polyline or Terrain Perimeter and click the **Simplify Polyline** edit tool.

Home Designer Professional has the capability to show the length and bearing of each polyline edge. Check both the Show Length and Show Angle check boxes on the Line Style panel of the Polyline Specification dialog. Edge Angles in Bearings can be specified in the CAD Defaults dialog.

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