

Drawing a Plot Plan

Reference Number: **KB-00850**

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The information in this article applies to:



QUESTION

How do I create a plot plan using survey information?

ANSWER

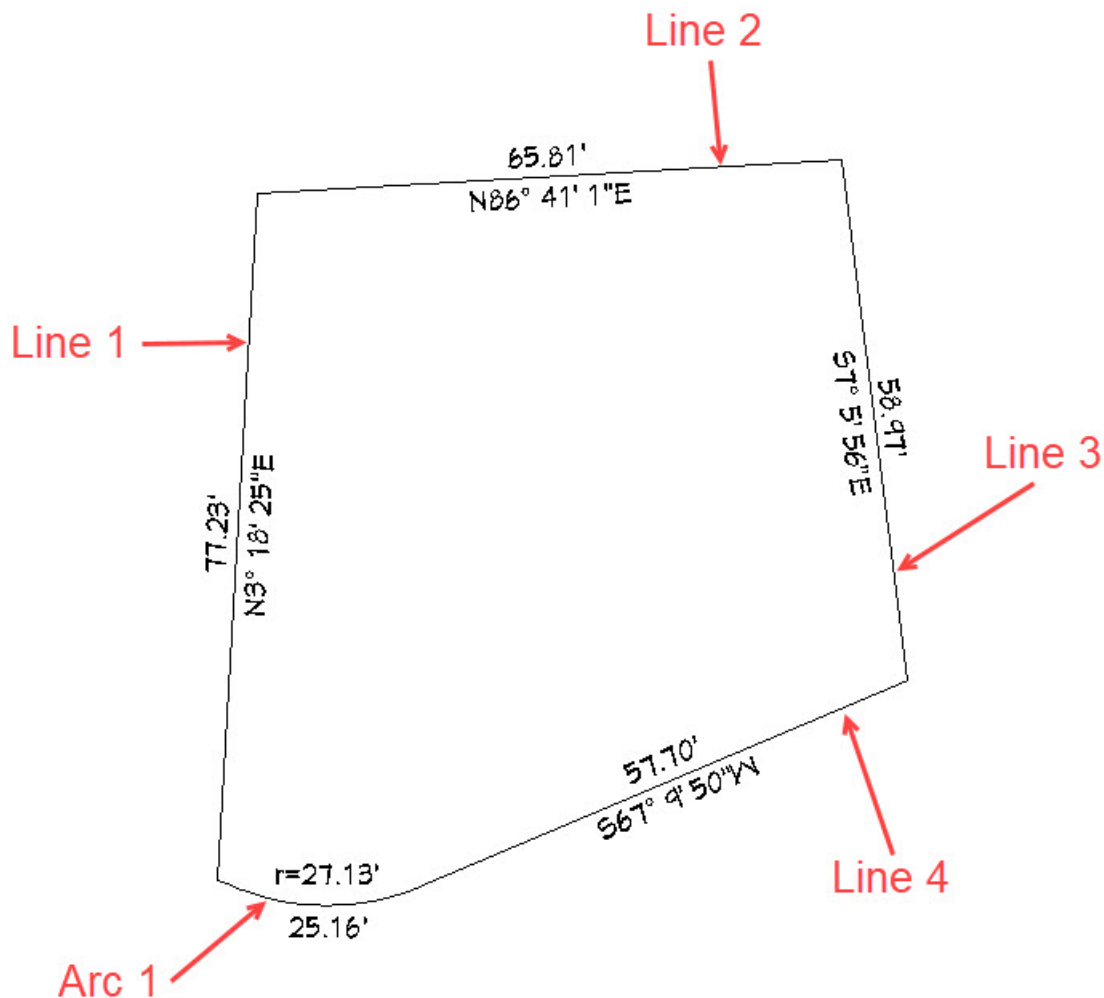
You can create a CAD polyline representation of your plot plan using the distance and bearing information from a survey, then edit the Terrain Perimeter to match it exactly.

Note: Although the steps in this article are compatible with Home Designer Pro, a more streamlined process is available within [KB-00576: Creating a Plot Plan in Home Designer Pro](https://www.homedesignersoftware.com/support/article/KB-00576/creating-a-plot-plan-in-home-designer-pro.html) (<https://www.homedesignersoftware.com/support/article/KB-00576/creating-a-plot-plan-in-home-designer-pro.html>).

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

- **Line 4**
Length = 57.7 feet
Angle = S67° 9' 50" W
- **Arc 1**
Arc Length = 25.16 feet
Radius = 27.13 feet



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.


In Home Designer Pro, select the **Number Style** button instead.

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





In Home Designer Pro, the **Dialog Number/Angle Style** dialog will display. Select the **Quadrant Bearing** option, then click **OK**.

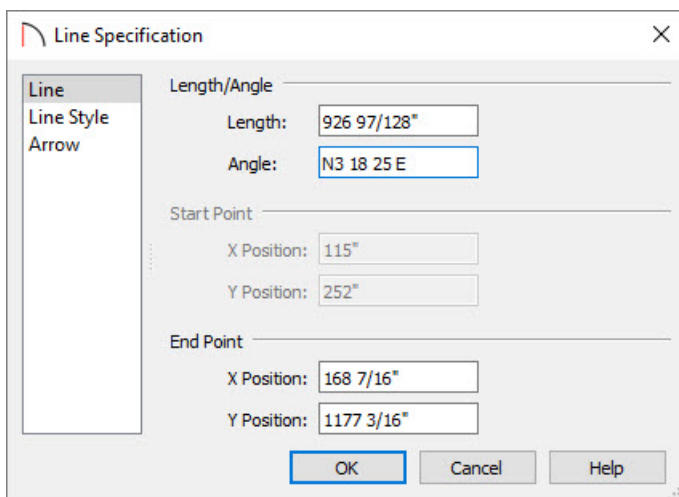
Angles in all dialogs will now be reported using bearings instead of degrees, as will angle information in the Status Bar.

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.

In Home Designer Pro, navigate to **CAD> Lines> Draw Line**  instead.

- 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:



The image shows a screenshot of the 'Line Specification' dialog box in Home Designer Pro. The dialog has a title bar with a close button (X) and a list of options on the left: 'Line', 'Line Style', and 'Arrow'. The main area contains the following fields:

- Length/Angle**
 - Length: 926 97/128"
 - Angle: N3 18 25 E
- Start Point**
 - X Position: 115"
 - Y Position: 252"
- End Point**
 - X Position: 168 7/16"
 - Y Position: 1177 3/16"

At the bottom, there are three buttons: 'OK', 'Cancel', and 'Help'.

- Enter the **Length** information for Line 1.

In this example, 77.23' is specified.

- 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**.

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.
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**.




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.

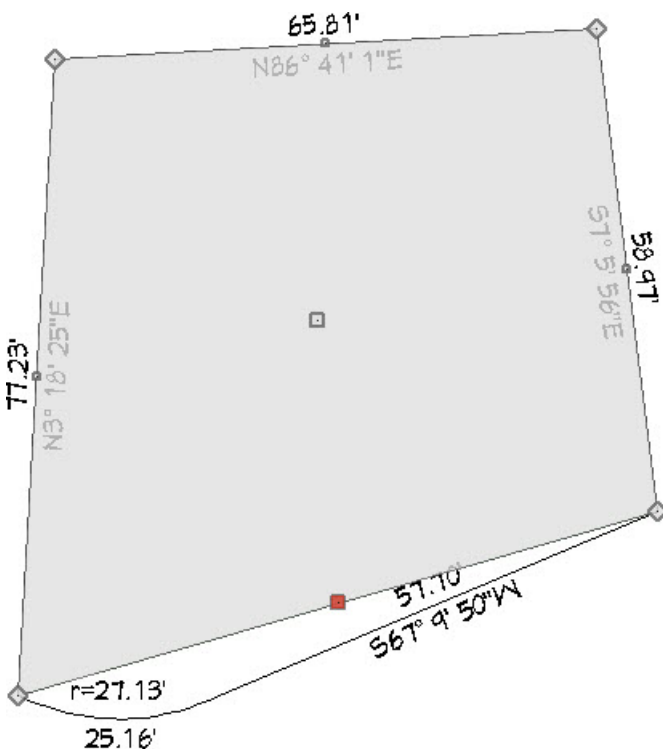
Your plot plan is now complete, but because it is a 2D CAD polyline, it can only be seen in plan view. To create a 3D object that can be seen in 3D camera views, you can edit the shape of the Terrain Perimeter to match the plot plan polyline.

To view the plot perimeter in 3D

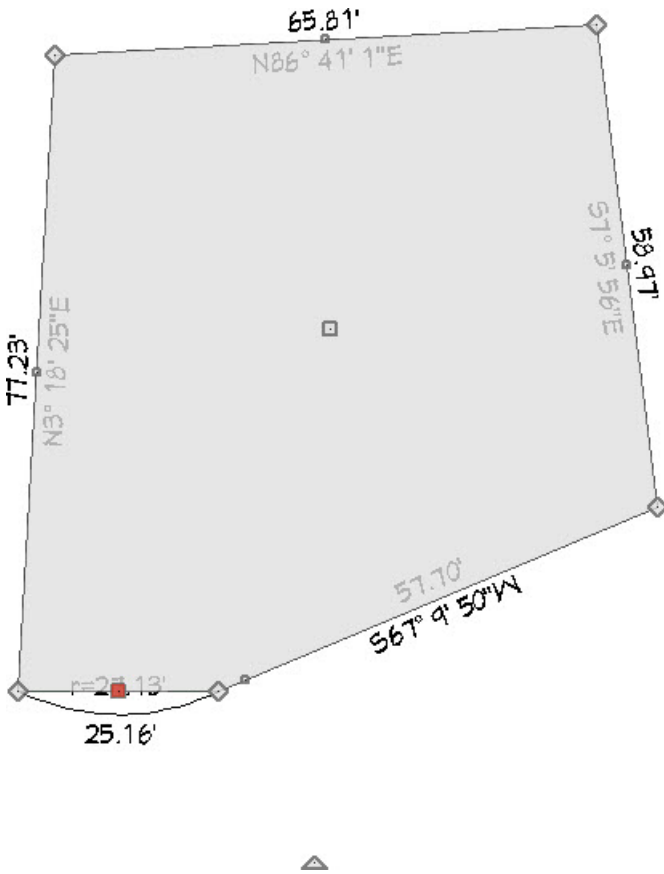
1. If you deleted the Terrain Perimeter to make it easier to draw your plot plan polyline, select **Terrain > Create Terrain Perimeter**  to create a new one.


Note: In Home Designer Pro, a closed polyline, such as the one created above, can be converted to a terrain perimeter. To do this, select the polyline, click on the Convert Polyline edit tool, then select the Terrain Perimeter option in the dialog that appears. If a terrain perimeter already exists or a polyline is not fully enclosed, this option will be grayed out and inaccessible.


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 **Add Break**  edit tool, 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**.

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.

Home Designer Pro has the ability to show the length and bearing of each polyline edge. Check both the Show Length and Show Angle boxes on the Line Style panel of the Polyline Specification dialog.

Related Articles

[Creating a Plot Plan in Home Designer Pro \(/support/article/KB-00576/creating-a-plot-plan-in-home-designer-pro.html\)](/support/article/KB-00576/creating-a-plot-plan-in-home-designer-pro.html)

