Drawing a Plot Plan

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 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

- **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 plot line information

1. To begin, start off by selecting **File > New Plan** to open a new, blank plan.

2. Next, from the menu, select **CAD > Draw Line** and click to begin by drawing **CAD Line 1**, starting from the bottom of the screen and dragging upwards.

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

4. 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.

5. 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.

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Keep in mind when you go to create your own plot plan, after completing this tutorial, that if you have received the plot plan information from a surveyor, 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.
You now have a completed plot plan. With this being a CAD polyline, it can only be seen in a 2D floor plan view. To create a 3D object that can be seen in 3D camera views, you can create a Terrain Perimeter and modify its shape to match the CAD polyline.

To view the plot perimeter in 3D

1. From the menu, select **Terrain> Create Terrain Perimeter** to create a basic rectangular terrain.

2. Using the **Select Objects** tool, click on one of the lines or the rectangle making up the terrain perimeter to select it, then click and drag the center move edit handle so that the Terrain Perimeter is centered 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 to add length and bearing information in a 2D floor plan view.
Home Designer Professional has the capability to show this information by checking both the Show Length and Show Angle display option checkboxes on the Line Style panel of the Polyline Specification dialog.

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