Floor Plan

This example assumes you understand all the material presented in the tutorials and are familiar with Windows and this help facility.

This example will demonstrate how to create a simple floor plan. Remember, if a draw or edit command doesn't turn out the way it was supposed to, you can use the *Edit/Undo* command to undo it. Also, remember to save your drawing periodically during this tutorial to avoid losing your work.

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First we will initialize the drawing. Choose the *File/New* command to create a new drawing. Select the *Options/Number format* command and click on the *Architectural* radio button and press *OK*.

Now we will set the line properties for the walls. Choose *Options/Line properties/Line color* and select the color blue. Choose *Options/Line properties/Line width* and enter a line width of 4 3/4" (note, there is a space between the 3 and the 4). This will make the walls 4 and 3/4 inches wide.

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To draw the first wall, we must pick a starting point for the floor plan. We will use (0,0), although it doesn't really matter where you start. Select the *Draw/Line* command and bring up the coordinate input dialog (by clicking the right mouse button). Make sure the *XY Input* radio button is selected and input the coordinate (0,0). Bring up the coordinate input dialog again and click on the *XY Offset Input* radio button and enter an x offset (*DX*) of 15'4 3/4". Note the space between the first 4 and the 3. You must enter the space or the program will read 43/4" instead of 4 and 3/4". Enter a y offset (*DY*) of 0. From this point on, we will use the same notation for offset input as for xy input. In this case, we would have said, input an offset of (15'4 3/4",0).

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You will now have a thick blue line across the bottom of the drawing area. We will zoom out to a more reasonable view of the drawing in a moment, but first lets finish drawing the outline of the floor plan.

Bring up the coordinate input dialog again and enter the offset (0,35 1/2'). Note, this is 35 and 1 half feet, which means the space between the 5 and 1 is required. The apostrophe (foot mark) at the end is also required. Bring up the coordinate input dialog 2 more times and enter these offsets:
(-15'4 3/4",0),
(0,-35 1/2'). (note the minus signs)

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Select the *View/Zoom extents* command. Next, choose the *View/Zoom Factor* command and enter a factor of "0.8." The drawing should look like the one below. If it does not, go back to the beginning of the tutorial and start over.

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We will now draw the interior walls. Select the *Draw/Line* command and bring up the coordinate input dialog. Make sure the *XY input* radio button is checked and enter the following coordinates for the ends of the line: (8'2",0) and (8'2",29 3/8"). Choose *Draw/Line* again and enter the coordinates: (8'2",75 3/8") and (8'2",121 3/8"). Finally, draw a line with the coordinates: (0,8'8 3/4") and (8'2",8'8 3/4"). The drawing should now look like the one below.

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Draw 2 line segments from (12'1 3/4",0) to (12'1 3/4",90") to (15'4 3/4",90"). Draw 2 more line segments from (12'1 3/4",131") to (12'1 3/4",22') to (15'4 3/4",22'). The drawing should now look like the one below.

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Next, lets place some doors in the floor plan. Select the *Draw/Load symbol library* command and double click on *Floor Plan 1*. Move the symbol library to a convenient location which does not cover the drawing. Do this by clicking on the title bar of the symbol library and dragging it to the new location.

When you move the mouse pointer over the library symbols, a text description of the symbol is displayed at the bottom.

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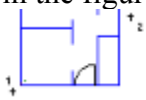
Move the mouse over the symbol with the description: *Door (clockwise 36")* and click the left mouse button. Move the mouse cursor back over the drawing area and click the right mouse button to bring up the coordinate input dialog. Enter the coordinates (11'7 7/8",0) for the symbol insertion point. Enter a rotation angle of 0 and a scale factor of 1. A door is placed, as in the figure below.



Choose the *View/Zoom window* command and select points 1 and 2, in the figure above, for the zoom window.

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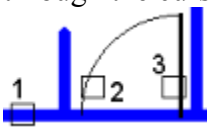
Floor Plan

Choose the *Edit/Break middle* command. Choose the wall as the element to break by selecting position 1. Choose the *End* snap mode and pick positions 2 and 3. Just the door should pass through the cursor box.



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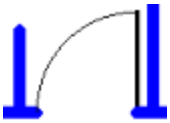
The wall will be erased (broken) where you placed the door, as in the figure below. Choose the *View/Redraw* command to clean up the display.



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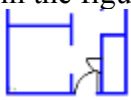
Move the mouse over the symbol with the description: *Door (clockwise 24")* and click the left mouse button. Move the mouse cursor back over the drawing area and click the right mouse button to bring up the coordinate input dialog. Enter the coordinates (12'1 3/4",56") for the symbol insertion point. Enter a rotation angle of 90 and a scale factor of 1. A door is placed as in the figure below.



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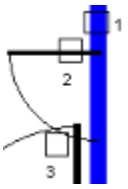
Use the *Edit/Break middle* command to erase the part of the wall where we placed the door. The process is the same as for the other door. You will probably need to zoom in on the door using the *View/Zoom window* command to be able to pick these break points. Choose *Edit/Break middle*. Pick position 1. Then select the *End* element snap and pick positions 2 and 3. Only the arc for the second door should pass through the cursor when picking position 3.



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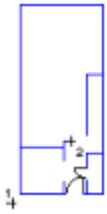
Choose the *View/Zoom extents* command and then *View/Zoom factor* and enter a factor of 0.8. The drawing should now look like the figure below.



Zoom in on what is going to be the kitchen by choosing the *View/Zoom window* command and picking positions 1 and 2 for the zoom window points.

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Use the *Draw/Load symbol library* command to load the *Floor Plan 2* library. Move it to a convenient position by clicking and dragging the title bar. Choose the *Stove* symbol and select any position within the kitchen for the insertion point. Do this by moving the cursor to the desired point and clicking the left mouse button. Enter a rotation angle of 0 and a scale factor of 1. The stove will be placed, as in the figure below.

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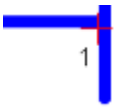
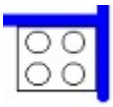
Now we will move the stove into place. Select the stove by clicking and dragging the mouse cursor over it. Choose the *Edit/Cut* command. Select the *End* snap mode and pick the upper-right corner of the stove. The stove will be erased. Choose the *Edit/Paste* command. Set the snap mode to *None* and pick position 1 in the first figure below. The stove will be placed as in the second figure.





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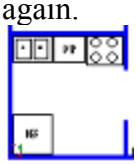
Select the dishwasher symbol and place it, as in the figure below, using a rotation angle of 0 and a scale factor of 1. Now place the kitchen sink and refrigerator symbols in the same way. You can use a trial and error method to place these symbols. In other words, pick a position and enter the rotation and scale. If it is not satisfactory, select the *Edit/Undo* command and try again.



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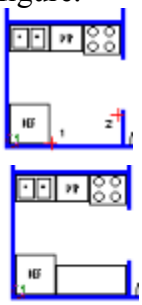
The last thing we will do for the kitchen is place a counter. Choose the *Draw/Rectangle* command. Set the line color to black and line width to 0. Pick positions 1 and 2 in the first figure below, for the corners of the rectangle. The drawing should now look like the second figure.



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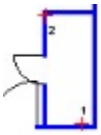
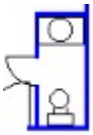
Choose the *View/Zoom previous* command to return to the previous view of the entire floor plan. Use the *View/Zoom window* command to zoom in on the room in the lower-right corner of the floor plan. This will be a bathroom. Choose the *Toilet* symbol and select point 1 in the first figure below, as the insertion point. Enter a rotation of 180 and a scale of 1. Now place the *Lavatory* (36"x22") symbol at position 2 with a rotation of 0 and scale of 1. The bathroom should now look like the second figure.





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Next we will put stairs on the stair case. Use the *View/Zoom extents* command to zoom out and then the *View/Zoom window* command to zoom in on the stair case, as in the figure below. Select the *Stair Corner* symbol and place it at position 1 in the figure below. Use a rotation of 180 and a scale of 1. The drawing will now look like the second figure.

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Select the *Stair 3* symbol and set the *End* element snap. Snap to the upper-right corner of the stair corner for the insertion point, as in the first figure below. Use a rotation of 180 and scale of 1. Continue placing stairs by snapping to the upper-right corner of the previous set of 3 stairs. Use the *Stair 2* symbol to finish off the stair case, as in the second figure below.

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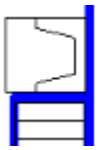
Next lets place a fireplace as in the figure below. Use a rotation of -90 and a scale of 1.



Choose the *Zoom/Extents* command to view the entire drawing. It should now look like the drawing below.

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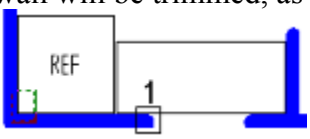
Next we will place a couple of windows. Zoom in on the kitchen again and choose the *Edit/Break middle* command. Select the wall as the element to break. Set the *Nearest* element snap and pick a position around point 1 for the first break point. Bring up the coordinate input dialog and choose the *Polar Input* radio button. Enter a distance of 36" and an angle of 0. The wall will be trimmed, as in the figure below.



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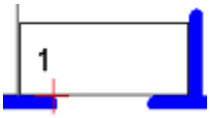
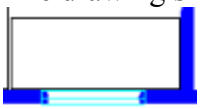
Choose the *Window (36")* symbol and select point 1, in the figure below, as the insertion point. Enter a rotation of 0 and a scale of 1.



The drawing should look like the one below.



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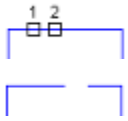
Zoom to the extents of the drawing and zoom in on the top wall of the floor plan, as in the figure below. We will place a 72" window in the middle of this wall. Choose the *Edit/Break middle* command and select the top wall (position 1) as the element to break. Set the *Midpoint* element snap and pick the top wall (position 2) for the first break point. Bring up the coordinate input dialog and use the polar input mode to enter a distance of 36" and an angle of 0.



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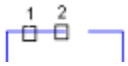
Select the wall again, as the element to break (position 1). Choose the *End* element snap mode and pick position 2. Bring up the coordinate input dialog and enter the polar coordinates, 36" for the distance and 180 degrees for the angle.



Choose the *Window (72")* symbol and select point 1 as the insertion point. Enter a rotation of 180 and a scale of 1.

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Lastly, we will add some text to the floor plan. Choose *Options/Text properties/Text font* and select the *Arial* font and click on *OK*. Use the *Options/Text properties/Text height* command to enter a text height of 2'. Set the text justification to *Top* and *Center* using the *Options/Text properties/Text justification* command.

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Zoom to the extents of the drawing and choose the *Draw/Text* command. Place text strings, as in the figure below, by picking the text alignment points indicated and typing in the text string.

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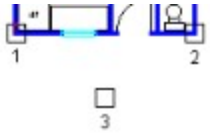
Now lets dimension the floor plan. Choose *Options/Dimension properties/Dimension arrow scale* and enter a scale of 6. Use the *Dimension offset* command to enter an offset of 12. Zoom in on the bottom part of the drawing and choose the *Draw/Dimension/Horizontal* command. Set the *End* element snap and pick positions 1, 2 and 3, in the figure below, for the dimension points.



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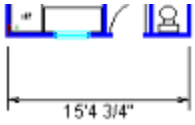
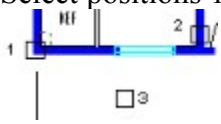
A dialog will be displayed with the calculated length of the dimension, press *OK* to accept it and the dimension will be drawn.



Select positions 1,2 and 3, in the figure below, to place another dimension.



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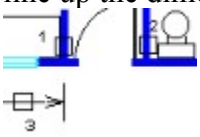
Now, still using the *End* element snap, select positions 1, 2 and 3 in the figure below. This will line up the dimension lines for the 2 dimensions. Dimension the bathroom in the same way.



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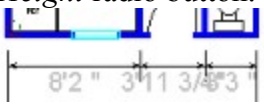
The text on these dimensions is obviously too big. Choose the *Edit/Select/Add* and then the *Edit/Select/Select one* command. Move the box cursor over each dimension text string and click the left mouse button to select them. Choose the *Edit/Change* command and select the *Text Height* radio button. Enter a text height of 9".



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Choose the *Edit/Select/Clear* command to clear the selection. Choose the *Edit/Select/Add* command again. This will remove the check mark next to it on the menu and get out of add select mode.

The last thing we will do in this tutorial is plot the drawing you have created. First we must set up the printer or plotter. Choose the *File/Print/plot setup* command and select the desired printer/plotter and paper size. Make sure the printer is in *Portrait* mode and press *OK*.

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The next step is to set the plot scale factor and page origin so the drawing fits on the page. Choose the *File/Page setup/Fit drawing to page* command. The program calculates a plot scale which makes the drawing as large as possible on the page. Round the value up to the nearest foot. For example, if the program displays a scale of 4'1 3/4", enter a value of 5'. Next, the program asks if you want to zoom to the new page. Press *Yes*. The drawing will be centered on the page.

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Choose the *File/Print/plot* command. The program displays the print dialog. Click on *OK* to accept the default parameters. The program will display a dialog while it is creating the output. This dialog contains only one button, *Cancel*. If you click on this button or press Enter, the print operation will be canceled and no printout created. Wait for this dialog to disappear, the printout is then sent to the specified device by the print manager.

This ends this example.