DATACAD LLC

TECHNICAL BULLETIN

Plotting with the DataCAD Plus PlotManager

PlotManager, a DataCAD Plus utility, plots drawings with predefined plot frames and title blocks. You can use it to plot multi-scale drawings (each with its own pen definitions) on a single sheet of paper. PlotManager can automatically rescale text and dimensions for each plot scale you select to keep the size of text and dimensions uniform throughout. You can save each plotting sheet to an external file and recall it at any stage.

To use PlotManager involves the following steps:

1. Prepare the drawing.

2. Set parameters for the sheet of paper.

3. Work with borders, title block, and cut marks.

4. Lay out the drawing on the plot sheet.

5. Position detail boxes on the plot sheet.

6. Make changes to the plot if necessary.

7. Save the layout sheet.

Preparing the Drawing

To prepare the drawing you want to plot:

1. Press [L] to reach the Layers menu.

2. Select AllOn and choose Yes to turn on all layers of your drawing. Alternatively, select ON/OFF to select the ones you want. Normally, you would turn on the layers for walls, windows, doors, hatching, text, and dimensions.

3. Make sure ortho mode is active. The O button on the Switch bar should be active.

You can only lay out drawings in ortho mode.

To lay out 3D views on the sheet:

1. Save each 3D view to a separate layer as a 2D image.

2. Press [L] and activate that layer prior to laying out the views.

3. Make sure ortho mode is active.

Setting Parameters for the Sheet of Paper

To set up the standard DataCAD Plus plotter for a sheet:

1. Press [Alt]+[P] to display the Plotter menu. A plot sheet also appears.

2. Select Scale to display the Factor menu.

3. Choose the scale for this sheet. The scale must be large enough to accommodate all the drawings you want to lay out on this single sheet. (*Example: scale of 1/8"*).

4. Right-click to return to the Plotter menu.

5. Select PaperSiz.

6. Activate the measurement type for the paper by selecting INCH for Imperial or one of the DIN alternatives (A, B, or C) for meters.

7. Select the paper size from the alternatives offered in the middle portion of the PaperSiz menu. Right-click to exit the PaperSiz menu. The cursor changes to represent the sheet of paper.

If you cannot find the paper size you want to use in the alternatives in the middle of the menu, choose FreeDef to define your own custom size.

If the paper sheet cursor disappears, right-click once to get it back.

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8. Move the sheet with your mouse until it is positioned next to (or beside) the drawing, not over it. Click once to place the sheet of paper.

Use the arrow keys to pan and [PgUp] or [PgDn] to zoom in or out before placing the layout sheet.

Example:

1. *Press* [Alt]+[P] *to display the Plotter menu.*

2. *Choose Scale and select 1/8".*

3. *Make sure ortho mode is activated (O on the Switch bar should be depressed).*

4. *Select PaperSiz.*

5. *Activate INCH, select 8.5x11A, and right-click to exit the PaperSiz menu. The cursor changes to represent the sheet of paper.*

6. *Move the sheet with your mouse until it is positioned next to (or beside) the drawing, not over it. Click once to place the sheet of paper.*
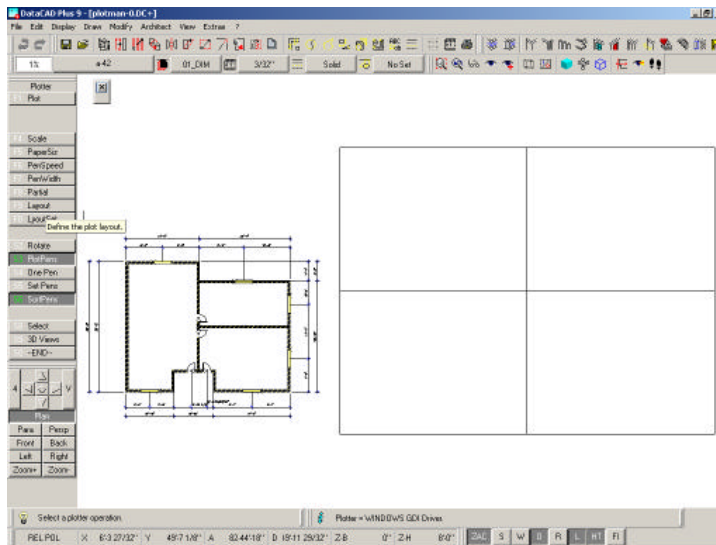
If your plot sheet disappears because you inadvertently pressed another key or selected the wrong menu button, press [Alt]+[P] to display it again.

Working with the Borders, Title Block, and Cut Marks

Besides your drawing, you can add borders, a title block, and cut marks to your plot sheet. PlotManager helps you set these parameters either by accepting defaults or specifying your own measurements and colors. You can control your plot by modifying the parameters with the PlotManager macro.

To modify the PlotManager parameters for your plot sheet:

1. Press [Shift]+[M] for the Macro menu, use ScrlFwrd, and select the PlotManager macro (abbreviated as PLOTMAN). The PltFrame menu appears. This is the main PlotManager menu.

2. Select Frame. The PlotManager Parameter dialog box appears.

3. Click on Modify to change the frame parameters. The DefPlot menu appears.

4. Make changes based on the options available in the DefPlot menu. These options are described further in the Borders, Title Block, and Cut Marks sections.

5. Right-click to exit the DefPlot menu once you have finished making changes. The PlotManager Parameter dialog box reappears, displaying the settings you selected in the DefPlot menu.

6. Select Confirm when you are satisfied with your settings for the plot. If necessary, select Modify to return to the DefPlot menu to change settings. The layout sheet (complete with borders, title block, and cut marks) appears next to your drawing on the screen.

7. Select End or right-click to exit the DefPlot menu. The PltFrame menu appears.

Borders

There are several variables you can control to make the plot borders meet your firm's requirements. You can set the distance between the border and the paper's edges, control the distance between the borders, specify different colors for internal and external borders, and generate border scales.

To set the distance between the border and the edges of the paper:

1. Activate BordDist, You are prompted to "Enter distance from page frame \in mm\."

Most plotters and/or printers cannot print up to the edge of the paper. Check your plotter's documentation to determine how much space is needed between the paper's edge and the external border. Many laser printers require a minimum of 0.25" or 6.35 mm nonprinting area.

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2. Type a value and press [Enter].

Normally, the left border is wider than the right to allow for binding and filing; however, you can use Mirror to make the right border the wider one.

To make the right border of the layout sheet wider than the left:

1. Select Mirror from the DefPlot menu.

You can either define the distances between internal and external borders on your own or use default DIN values. These distances can only be set in millimeters, not inches.

To use DIN values to define distances between internal and external borders:

1. Activate DIN on the DefPlot menu. This sets a 5mm distance for the bottom, top, and right borders; the left border distance is set at 20mm.

To define distances between internal and external borders on your own:

1. Make sure DIN is not active. Buttons for Left, Right, Top, and Bottom border distances appear on the DefPlot menu.

2. Select Left. You are prompted to "Enter left page frame width \in mm\."

3. Type a value and press [Enter].

4. Set the Right, Top, and Bottom distances by repeating steps 2 and 3.

To create a colored border on the sheet:

1. Activate ExtBord on the DefPlot menu, select ExtColor, and choose an external border color.

2. Activate IntBord, select IntColor, and choose a color for the internal border for the plot sheet.

To generate a border scale (see the following illustration):
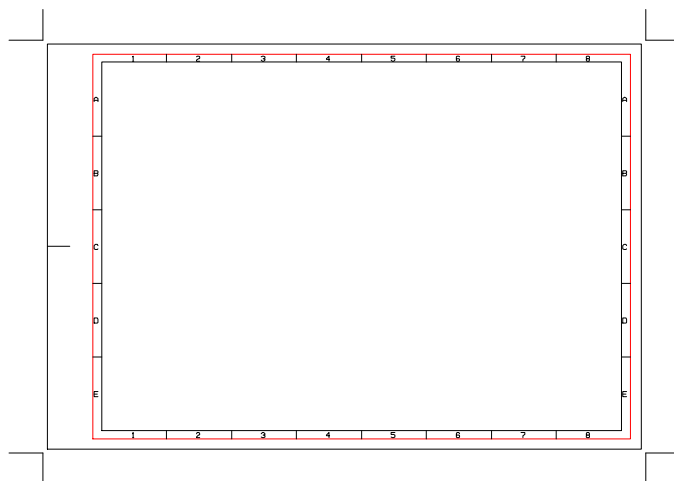
1. Select Scale from the DefPlot menu.

2. Choose X-Divs, type a value for the number of partitions you want on the horizontal borders, and press [Enter]. Numbers represent these divisions.

3. Choose Y-Divs, type a value for the number of partitions you want on the vertical borders, and press [Enter]. Letters represent these divisions.

4. Toggle X-Right on if you want numbers to increase from left to right; toggle X-Right off if you want them to increase from right to left.

5. Toggle Y-Bottom on if you want letters to go from bottom to top; toggle Y-Bottom off if you want them to go from top to bottom.

6. Select Spacing, input a value to define the distance from the outer border to the inner border, and press [Enter].

7. Right-click to return to the DefPlot menu.

Title Block

To place a title block on your plot sheet:

1. Select Symbol from the DefPlot menu.

By default PlotManager looks in the DCAD_LLC\DCADPLUS\SYM\TTL_BLK folder for symbols.

2. Change the path where PlotManager looks for these symbols by selecting New Path, Root, DCAD_LLC, DCADPLUS, SYM, TTL_BLK. (Use ScrlFwrd where necessary). Press [Enter] or right-click when the path is correct.

3. Select the symbol (*in this example, BFELD1, shown in the following illustration*). It will be inserted in the lower right corner of the layout sheet after you confirm the current settings.

Cut Marks

To place cutting (crop) marks at the corners of the plot layout at the sheet corners:

1. Activate Marks on the DefPlot menu.
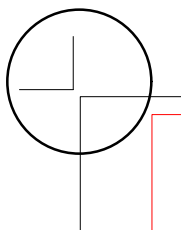
Laying Out the Drawing on the Plot Sheet

Once the plot sheet is set up, you can lay out your drawings on the sheet at their various plot scales. The different drawings laid out on a sheet are known as "details."

To place the details on the plot sheet:

1. Turn on the layers for the detail you currently wish to lay out on the plot sheet.

2. Select DefBlock from the PltFrame menu (the main PlotManager menu). The cursor changes to a giant crosshair.

3. Choose Scale and select one of the scales to determine how this detail will be plotted.

To add more plotting scales, refer to the *DataCAD Plus Reference Manual*. Don't worry if the scale appears to be too large or too small because you can easily change it later.

4. Select PenDat to assign a pen file. This contains the pen assignments for the current detail you are laying out.

This only applies if PenBlock has been activated in the PltFrame menu (the main PlotManager menu).

5. Activate DIM Fact if you want PlotManager to adjust the size of the dimension text in the detail according to the selected plot scale.

If you used ZAC dimensions, they must first be exploded to associative dimensions for this feature to work.

6. Activate TXT Fact if you want PlotManager to adjust the size of normal text in the detail according to the selected plot scale.

7. Activate withFram if you want PlotManager to generate a rectangular frame around the detail.

8. Activate withTEXT if you want PlotManager to generate a text description for the detail.

9. Select Size for the text description of the detail, input a value, press [Enter], and click on Yes.

Positioning Detail Boxes on the Plot Sheet

To position the detail box(es) on the plot sheet:

1. Complete all the settings for your plot. PlotManager prompts you to "Select function or first corner" of the detail box.

2. Click once to select a point to the bottom left of the entire detail. You are now prompted to select the second corner of the detail box.

3. Pull the rubberband toward the top right of the detail and click once. After selecting the second corner of the detail box (source box), you are prompted to "Enter reference point."
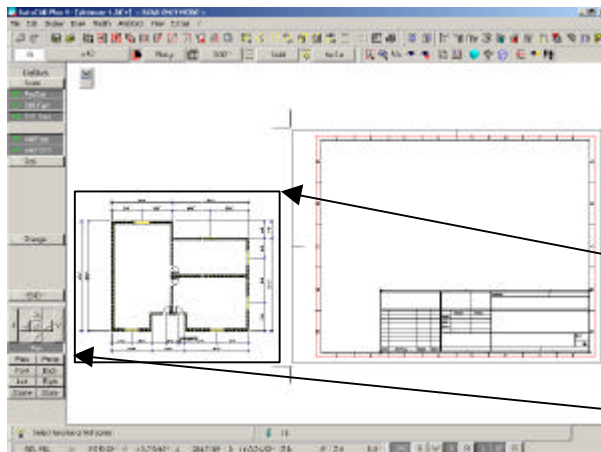
Click here for the second corner

Click here for the first corner

4. Snap to a position on the detail by using either your middle mouse button or pressing [N]. A bounding box that represents the size of the detail is now attached to your cursor. Notice that the cursor's crosshair is attached to the detail box where you snapped for the reference point. You are prompted to "Enter position on plan layout."

5. Drag the box and click to place the detail on the plot layout sheet.

6. Press [Enter] twice to release the detail from the bounding box onto the plot sheet.
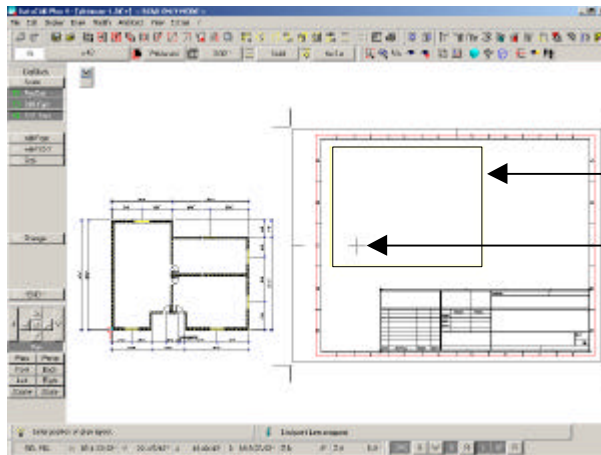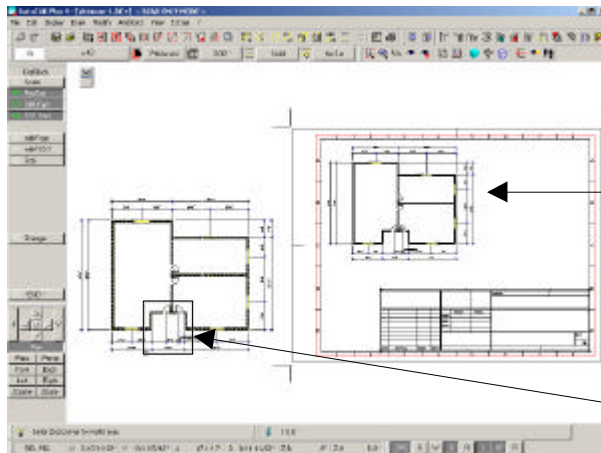

Bounding box representing detail at scale selected

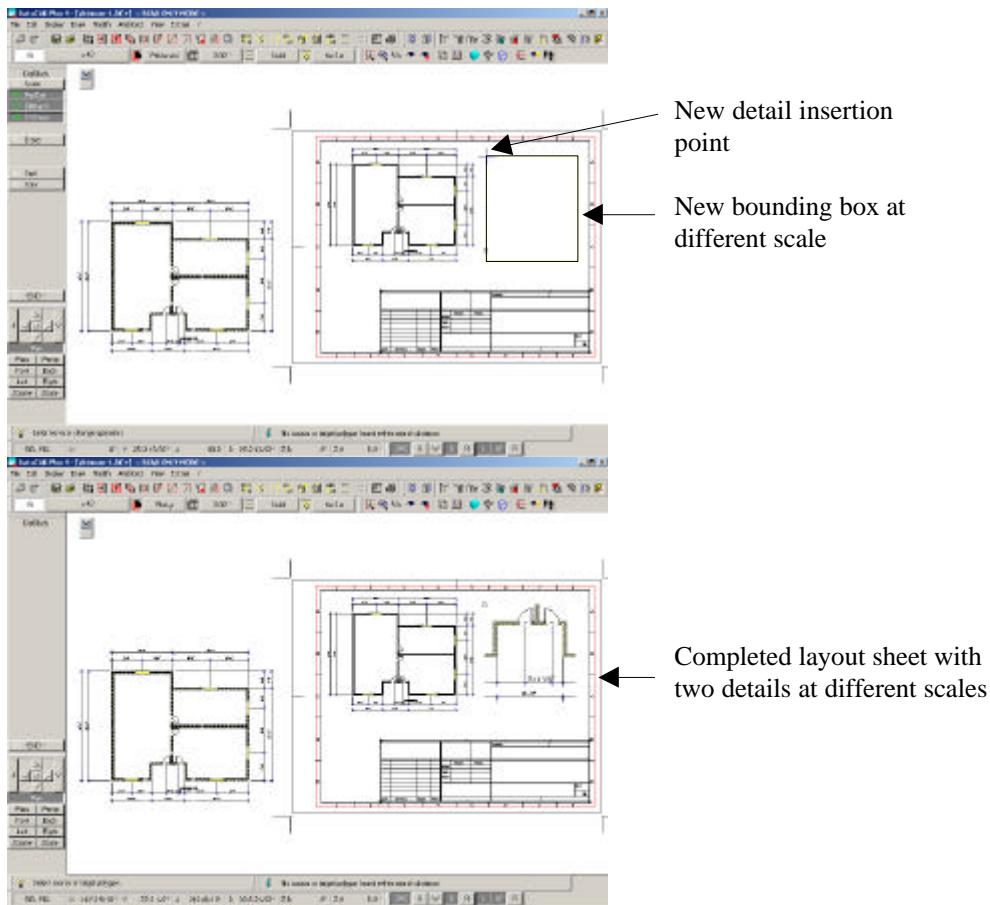Cursor position indicates reference point snapped to

The bounding box will disappear and the detail will be shown at the scale you set. PlotManager prompts you to select a function or another first corner of a new detail box.

7. Select a new scale for the next detail box by choosing Scale and using a value from the available options.

8. Click on the first and second corners of the new detail box, select the reference point, drag and place it on the layout sheet, and press [Enter] twice to reveal the detail within the plot frame.

Previous detail laid out

New detail box

New detail insertion point

New bounding box at different scale

Completed layout sheet with two details at different scales

The procedure for creating layout sheets should now be clear. In addition to creating a new detail from the same drawing (Clipped area) as illustrated in this example, various layers could have been activated to display a totally different drawing from which additional details could have been laid out.

Making Changes to the Plot

To change the current position or scale of one of the details laid out on the sheet:

1. Select Change from the DefBlock menu. You are prompted to "Select source or target polygon." (The source is your original drawing; the target is the image on the plot sheet.)

2. Click on the detail you want to change. The detail will once again be attached to the cursor.

3. Select Scale and choose a different scale.

4. Reposition the detail on the layout sheet.

5. Click once to reveal the detail in its new position on the plot sheet.

Save the Layout Sheet

To save the layout sheet you created:

1. Right-click until you reach the main PltFrame menu (the main PlotManager menu).

2. Select SavePlot, type an eight-character name in the input field, and press [Enter]. You are prompted to "Enter a description" for this sheet.

3. Type a description and press [Enter] to save the layout sheet to the DCAD_LLC\DCADPLUS\PLT folder. The file name that is created has an extension of .out .

4. Follow the same procedure to create additional plot layout sheets.

To plot any of these layout sheets:

1. Select Plotter from the UTILITY menu or select PlotMenu from the main PlotManager menu.

2. Select LyoutSet.

3. Choose Plot Def

4. Select one of the layout sheets that you have saved.

5. Select Plot. The Print dialog box appears.

6. Press [Enter] and retrieve your plot from the printer/plotter.