AutoCAD:
plotting to pdf and importing drawings to Illustrator

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August 2023

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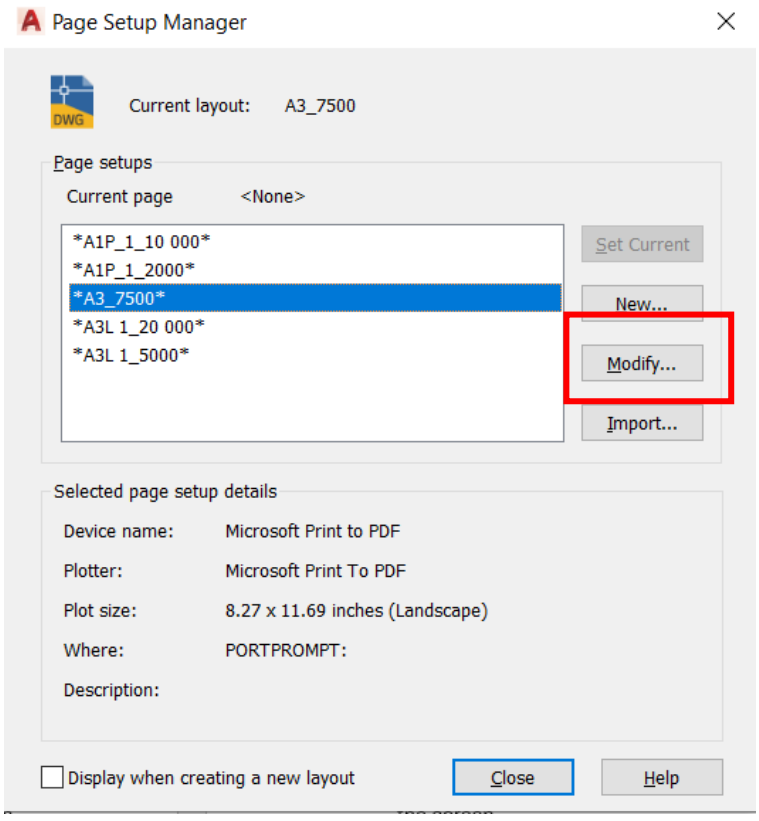
1 Plot AutoCAD paper space layout to pdf

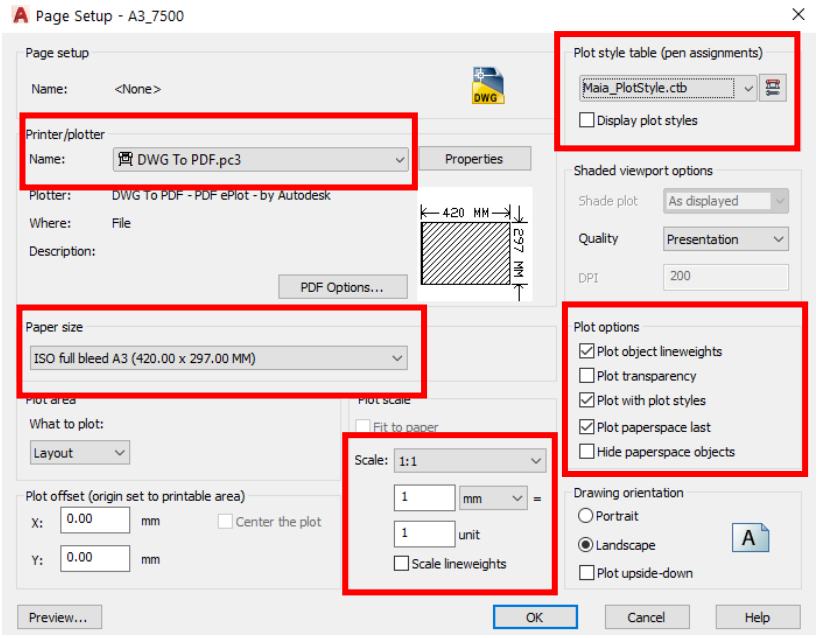
1.1 Layout page setup

To set up a new print layout in paper space click on the 'plus' symbol. This will start a new blank paper space page with a viewport added. Add a paper space page layout for each drawing you want to make.

Click on the new layout tab and rename this new layout to something meaningful. Eg. 'A3_7500. Then use the PAGESETUP command to open the Page Setup Manager. Select the new page you're created and click Modify.



Check all the parameters – match to the screenshot below. Adjust the page size if you want A4/2/1/0 instead of A3. Select a plot style to use or leave blank for now and we will set this in the next step. Click Okay.

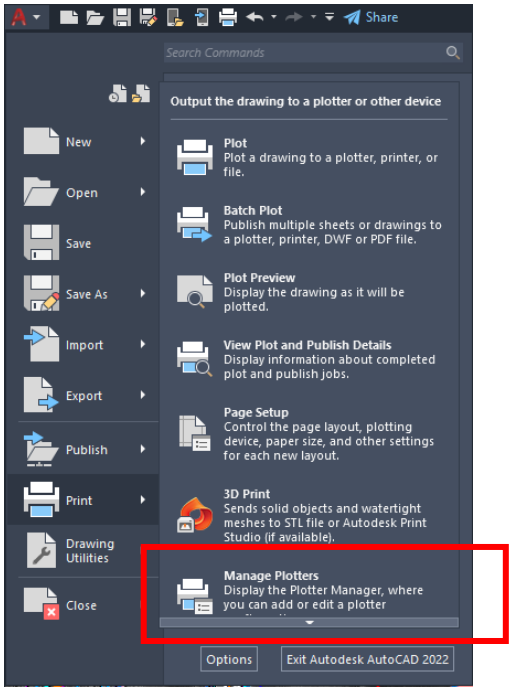


1.2 Plot style file

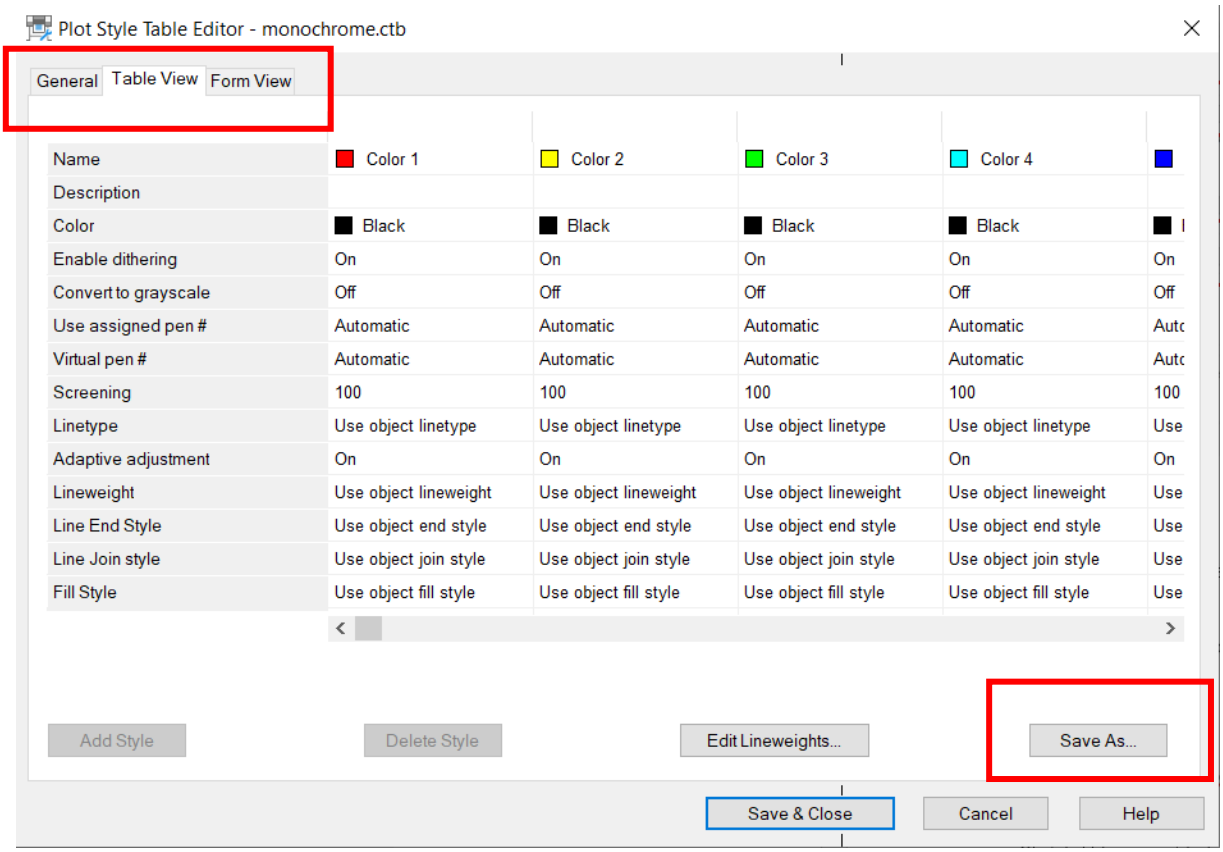
Colours can mean something in AutoCAD drawings – you can use them to specify the weight (thickness) of your lines for your printed paper space outputs.

You need to create a plot style file (or use an existing one) to define which colours equate to which line weight. Then apply these colours to layers via the Layer Properties panel (as opposed to each individual line) to control the print weight of everything drawn in that layer.

To set up a new plot style file go to: Main menu > Print > Manage Plotters> Plot Styles. Here there are a number of default Autodesk .ctb (plot style) files.

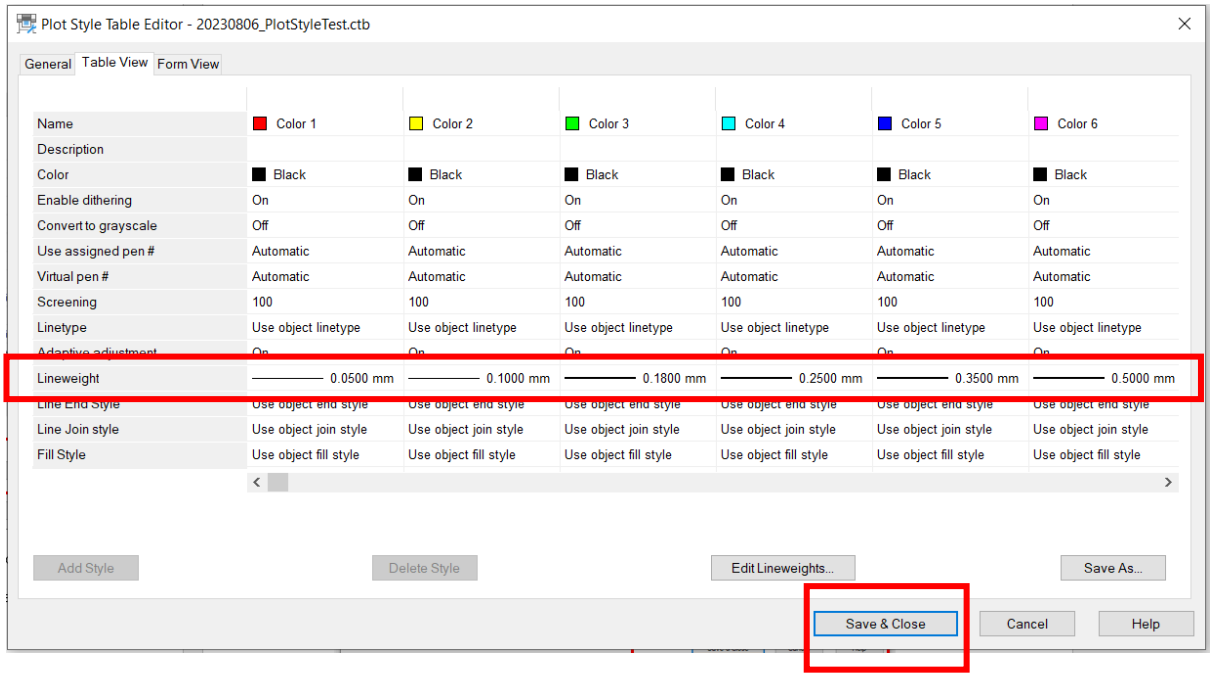


Open one of the ctb files then modify to create your plot style file. Eg. Open the 'monochrome.ctb' file. Go to the Table View tab and click Save As to save the file to your own new plot style file.

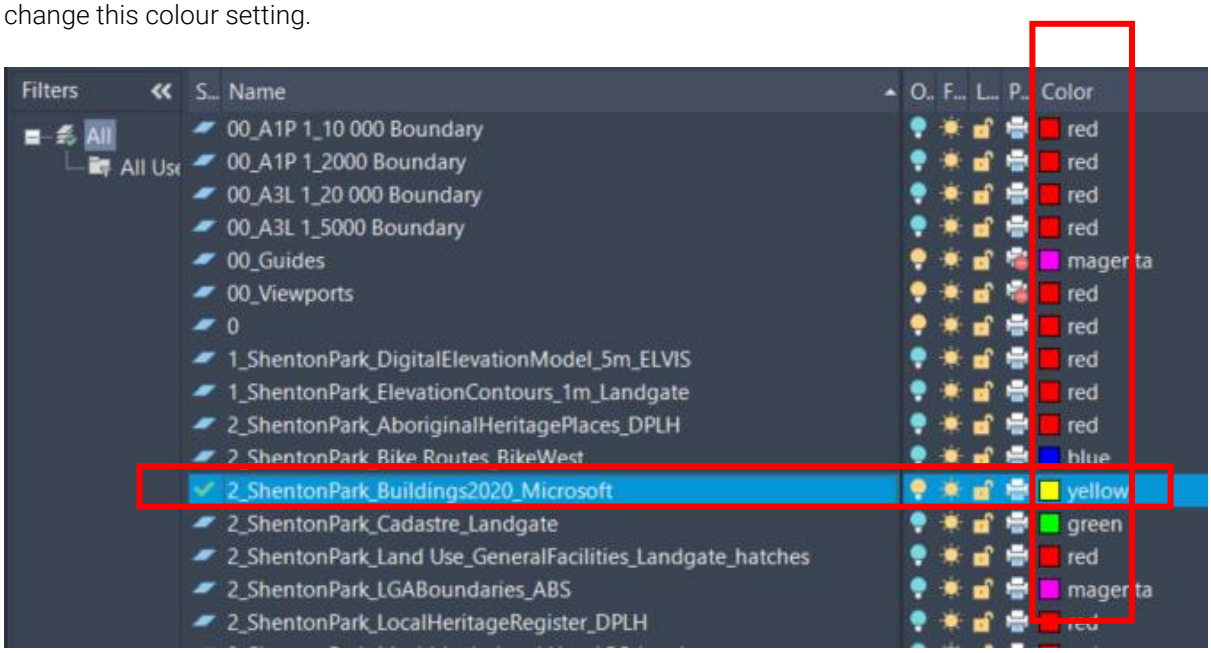


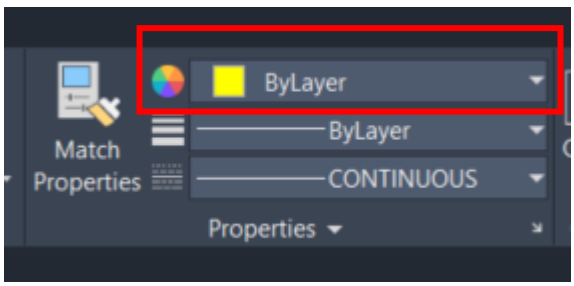
Click the Lineweights values to modify the weights for each colour then either Save and Close, or Save As.

It is common to set roughly 6 lineweights – perhaps, 0.05mm, 0.1 mm, 0.18 mm, 2.5mm, 3.5mm and 0.5mm. Use the first 6 colours to do this.



In your drawing model space apply these colours to your layers via the Layer Properties window. And ensure each object has its set to ByLayer. You may need to select all the objects in a layer then change this colour setting.





1.3 Paper space page layout and layer setup

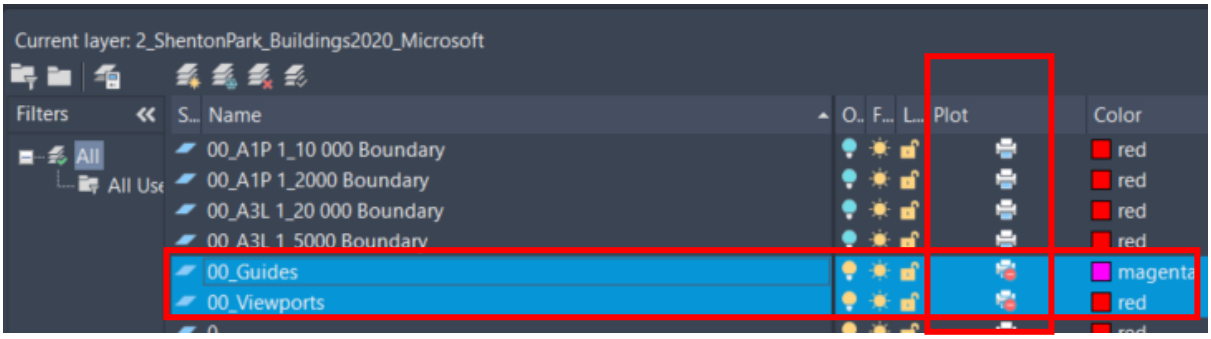
In the new paper space page layout you need to arrange the elements of the page and decide which layers you want to use on this drawing.

Page size

We set the page size in step 1.1 but you can always adjust by going back to PAGESETUP.

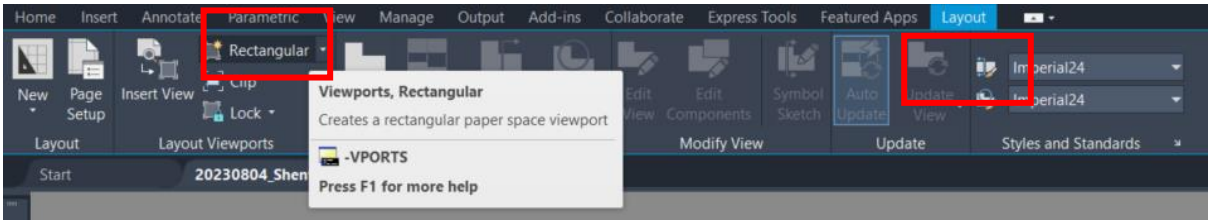
Guidelines and non-print layers

It is useful to use guidelines to define the dimensions of the page title block, margins and viewport. Guideline and viewport layers can be marked as no-plot layers so the lines won't show when you print your page.



Create layers (called 00_Guides and 00_Viewports, say). Add polyline rectangles to the guidelines layer to mark the margins and title block sections of the page. Or copy from an existing layout.

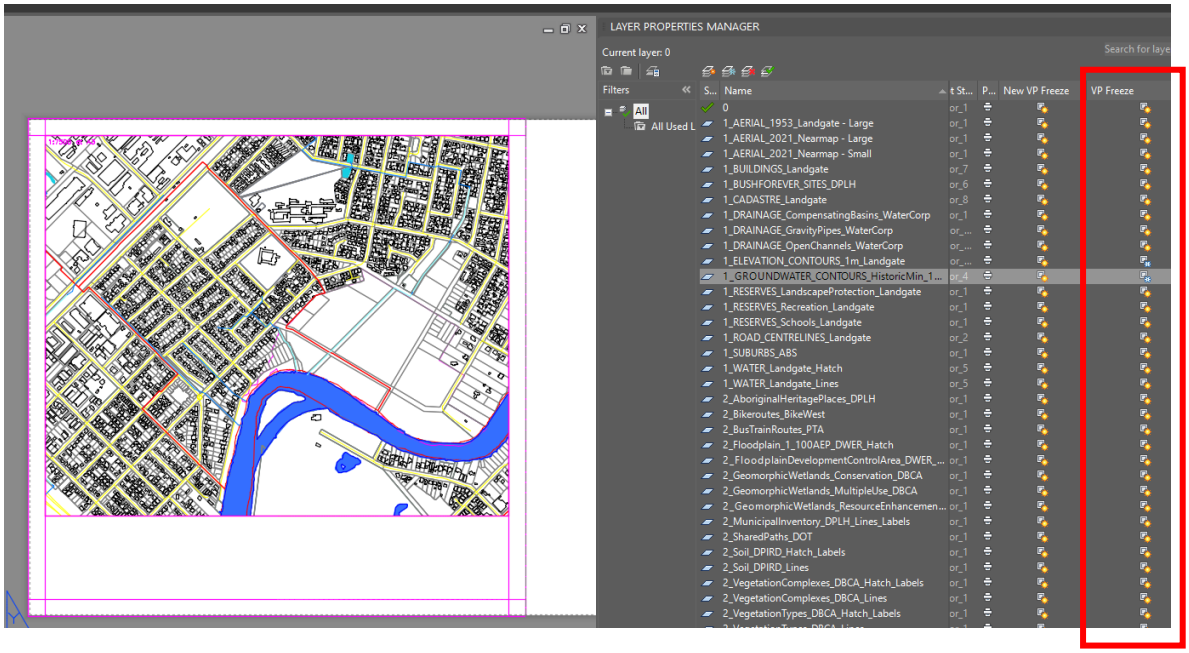
Add a viewport using the Layout tab and the Rectangular Layout Viewport. Snap to your guidelines when adding this rectangle.



The page should look something like this.

Viewport layers on and off

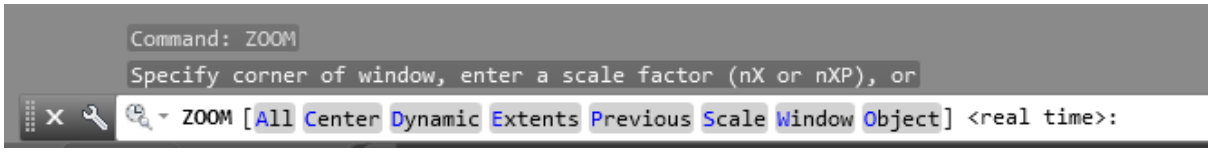
Choose which layers you want to include in this layout. It is easiest to freeze or unfreeze layers for each page layout, rather than turning them on and off in the main model space. Use the VP Freeze setting in Layer Properties.



1.4 Set the viewport zoom level

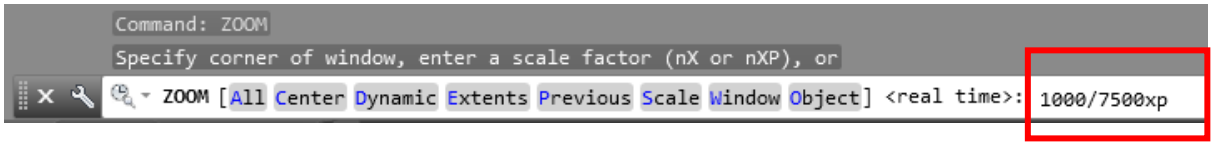
In your layout page, click on the viewport then change from PAPER to MODEL in the lower toolbar. Make sure the viewport is unlocked.

Type in ZOOM to open the zoom tool.



Then type in: '*<conversion factor from model to paper space>/<desired scale at set page size>* xp'.

Eg. to set the viewport to 1:7500 at A3, where the model space is in metres and the paper space page layouts are in mm, use: 1000/7500xp. The '1000' value is because 1000mm (paper space units) = 1m (model space units).



You can use the Pan tool (right click) to move your drawing within the viewport. Once the drawing location and zoom level is set then lock the drawing and change back to PAPER mode.

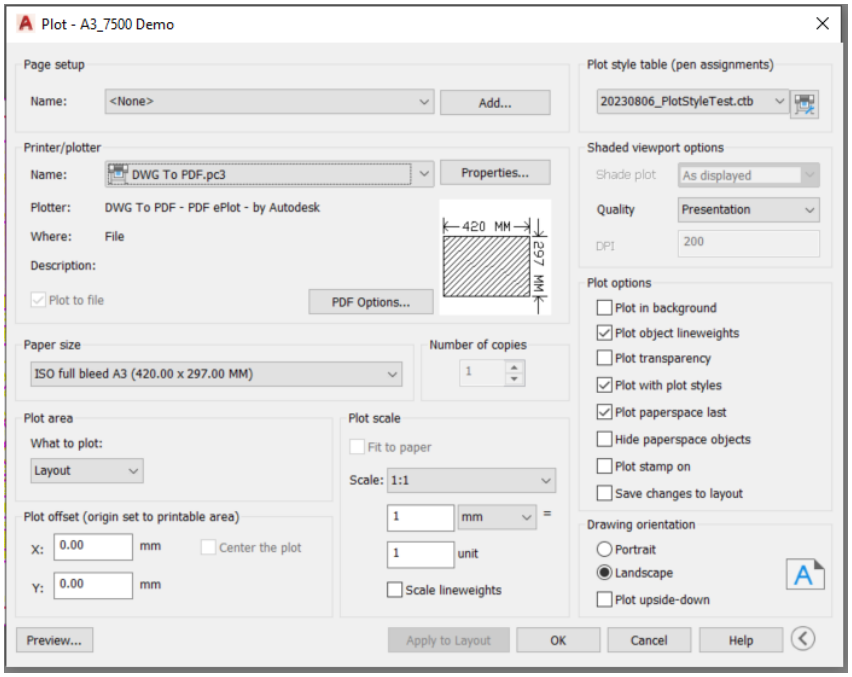
Add your title block text and legend to the page. It is common to draw the legend in model space to ensure hatches and line weights are the same as the actual drawing.

1.5 Plot the page

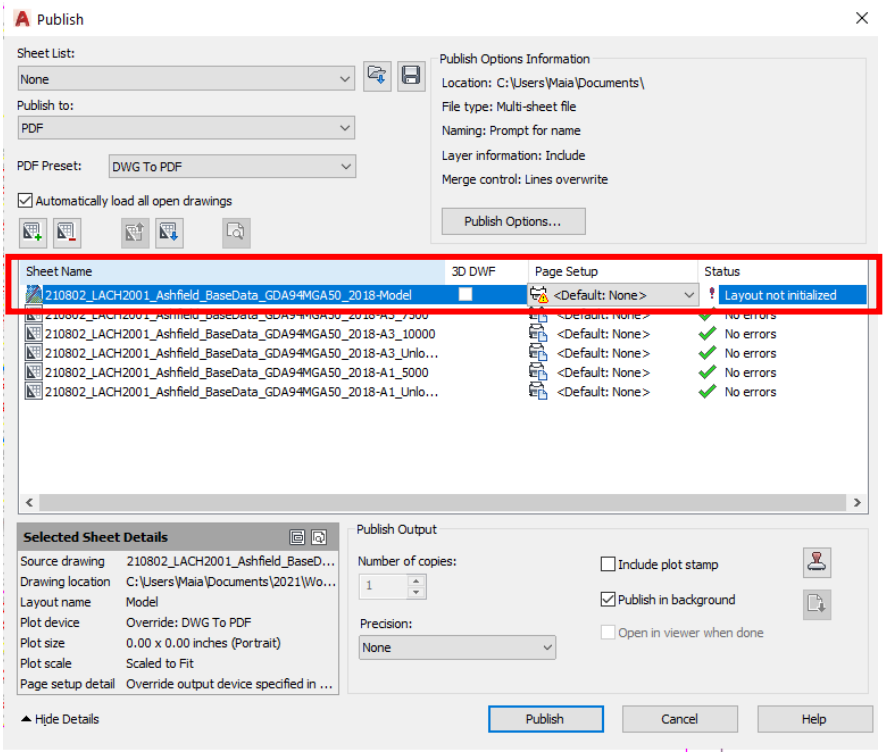
Use the PLOT command to get to the page plotting menu. Here you can double check the page setup parameters you defined before. Make sure you have the Printer/plotter set to a pdf output option.

Set the Plot style table to the file you edited earlier and make sure Plot with plot styles is ticked.

When you click OK select where to save your output. This will print your paper space layout to a pdf of the specified page size.

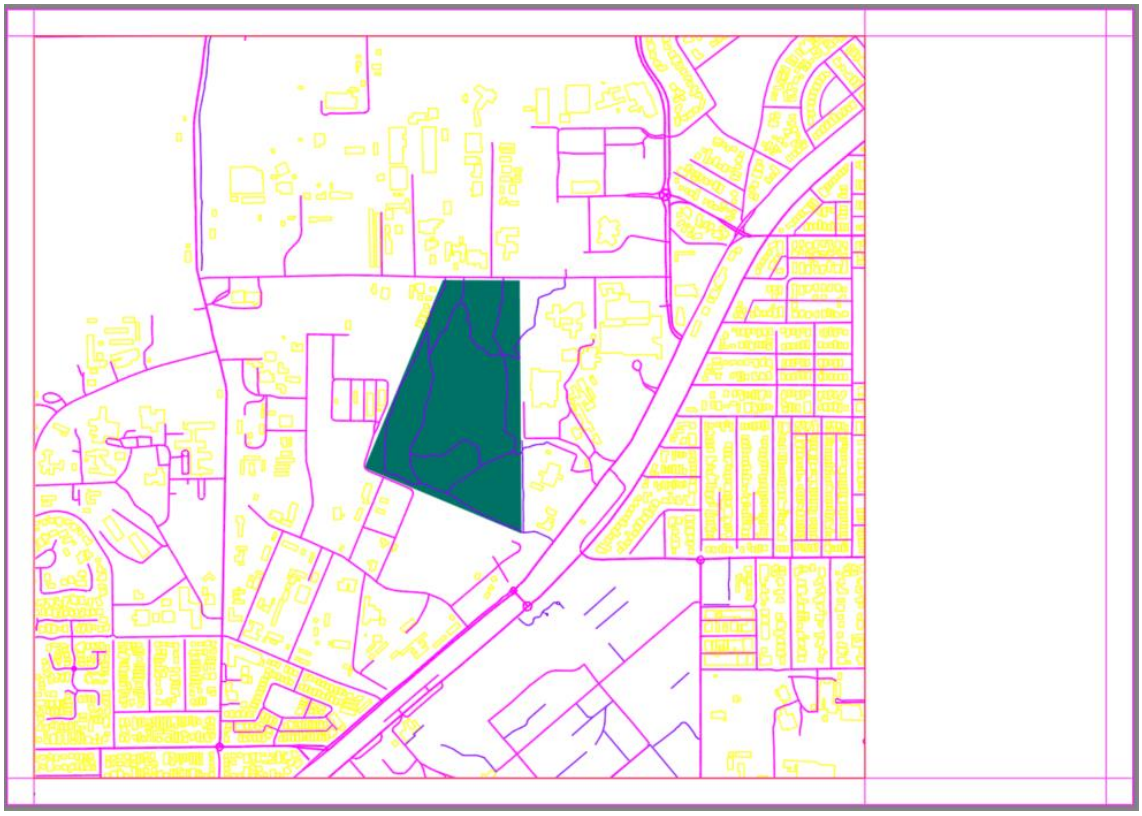


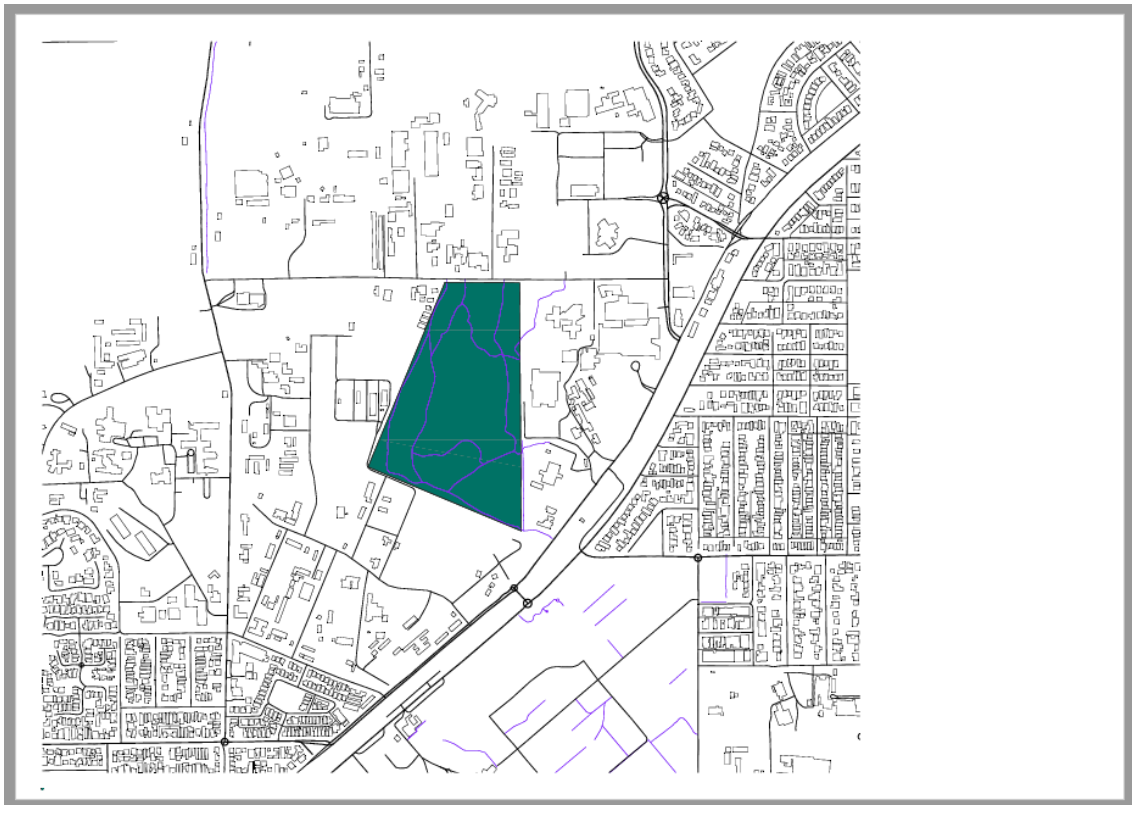
If you have multiple page layouts set up and ready to print you can use the BATCHPLOT command. This will plot all your layouts at once. Before you click okay in this interface remember to remove the model from the list of layouts to plot (click on it and press Delete).



The images below are the on-screen layout (top) and plotted pdf (bottom) versions of the same drawing. This example shows how some colours are converted into black lines of different weights (as per the plot style file) while others (without plot style colours assigned to layers) are printed in their colour as on the screen.

Tip: solid hatch colours never plot well from AutoCAD and are not recommended – see the horizontal line through the green area.



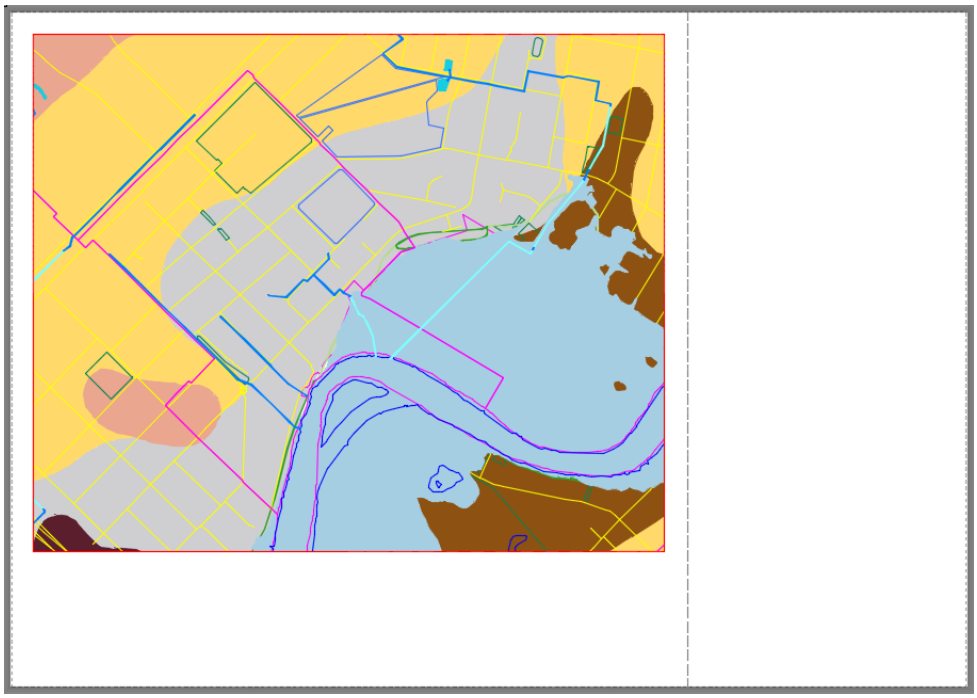


2 Open dwg in Illustrator

2.1 Set up drawings

Set up a paper space page layout in AutoCAD. Simplify the AutoCAD dwg file by removing any unused layers. Use LAYDEL command to remove layers. Then save the file as a 2000 dwg file type.

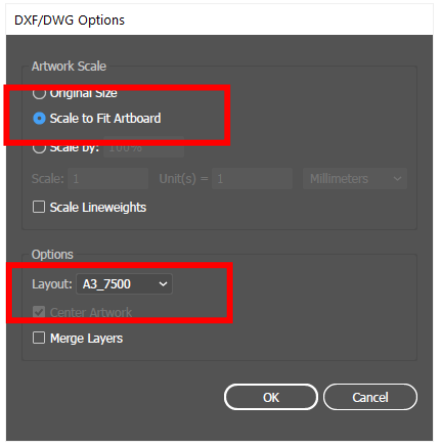
Simplified drawing and page layout:



2.2 Set up Illustrator artboard

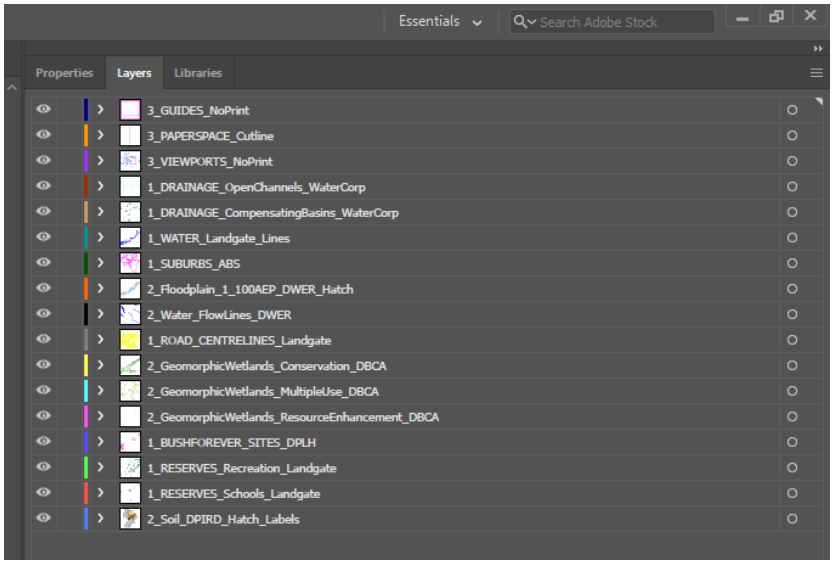
Set up a blank artboard in Illustrator with the same page dimensions as the page layout you want to import from the dwg file (eg. A3 landscape).

Then go File > Open and find the 2000 dwg file from Step 1. Import using the settings below. Select the dwg layout to import.

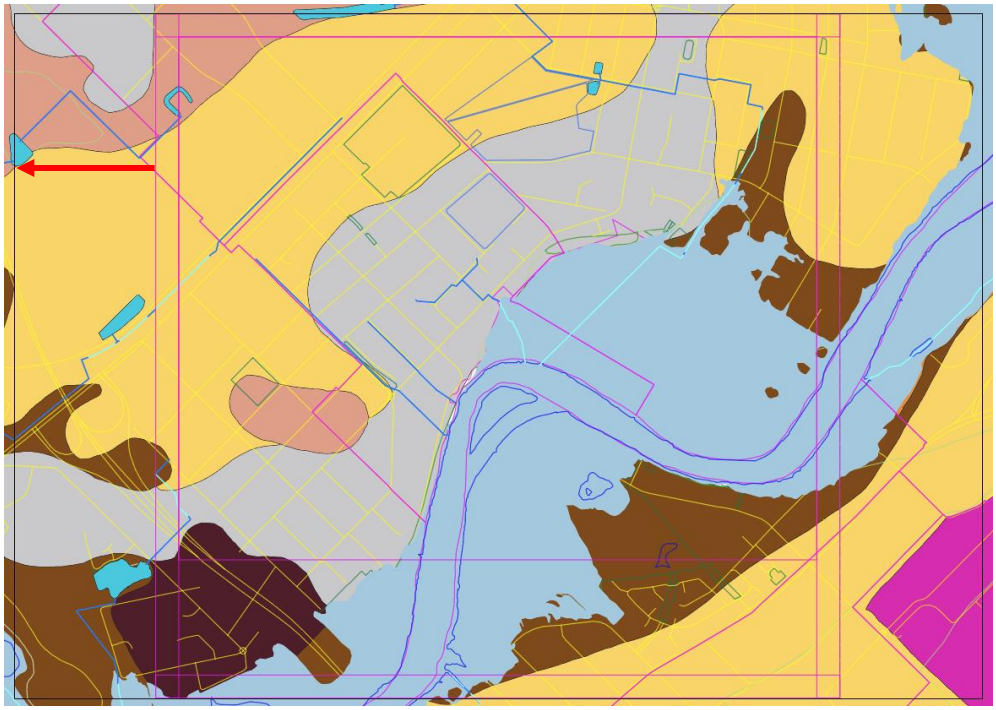


2.3 Move layers to match artboard

The layers from the dwg file will import as the same layers in Illustrator.



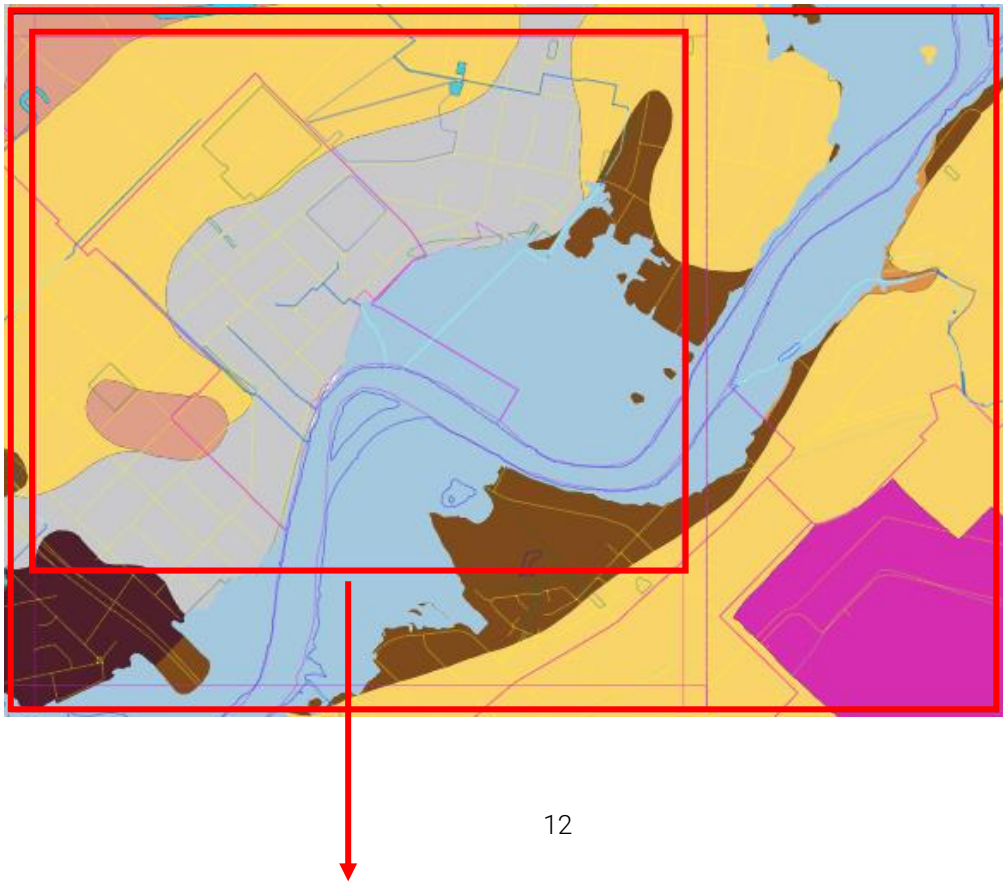
The data will import at the correct scale but not necessarily correctly placed on the artboard. See the initial placement, below.



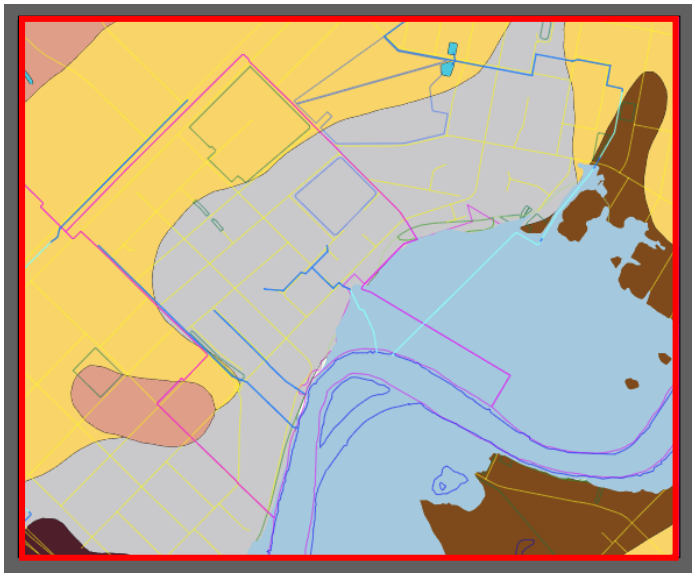
If you want to move all the layers so that the artboard layout matches the original paper space layout then: select all the data and move it to match the artboard. Use snapping and the original guidelines.

You can then add another artboard with the same size as the original paper space viewport.

Artboard 1:



Artboard 2:



You can then rework the drawing and export to desired format.