

Graphic Skills Portal

Technique Handouts

4 PRESENTING



Set a layout in
AutoCAD

URBAN
GRAPHICS
SKILLS

Set a layout in AutoCAD

Display one or more scaled views of your design on a standard size drawing sheet is called “layout”.

After you finish creating a model at full size you can switch to a paper space layout to create scaled views of the model, and to add notes, labels, and dimensions. You can also specify different line types and line widths for display in paper space.

Creating a layout, and exporting it a PDF, is useful as it may represent a base drawing for a poster.

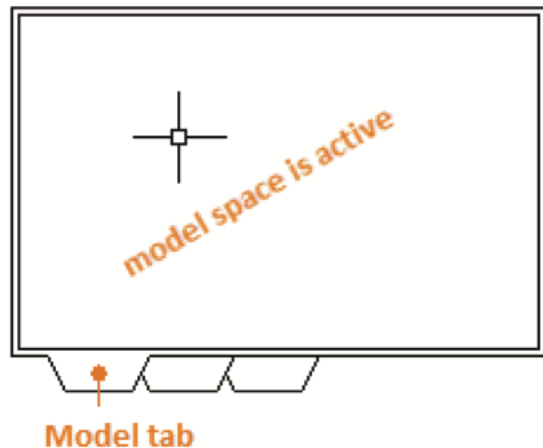
Layouts

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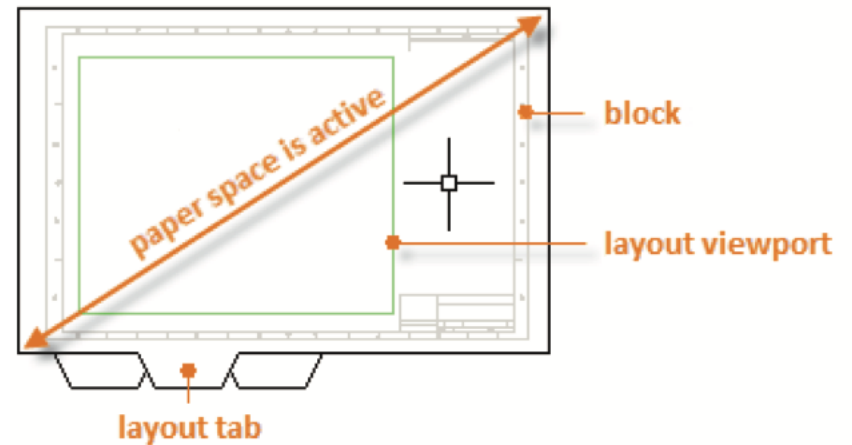
Model Space and Paper Space

As you know, you create the geometry of your model in *model space*.



Originally, this was the only space available in AutoCAD. All notes, labels, dimensions, and the drawing border and title block were also created and scaled in the model space.

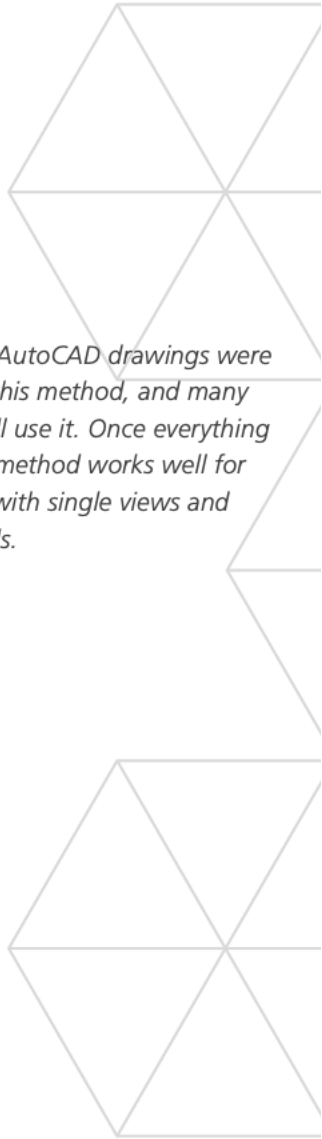
After *paper space* was introduced, you could click a layout tab to access a space designed specifically for layouts and scaling. In the following illustration, paper space is active. There are currently only two objects in paper space: a drawing border block, and a single *layout viewport*, which displays a view of model space.



Four Methods for Scaling

There are four different methods in AutoCAD that are used to scale views, notes, labels, and dimensions. Each method has its advantages depending on how the drawing will be used. Here's a brief summary of each of the methods:

- ➔ **The Original Method:** You create geometry, annotate, and print from model space. Dimensions, notes, and labels must all be scaled in reverse. You set the dimension scale to the inverse of the plot scale. With this method, scaling requires a little math. For example, a common scale used in architecture is $1/4" = 1'-0"$ which is 1:48 scale. If a note is to be printed $1/4"$ high, then it must be created 48 times as large, or $12"$ high in model space. The same scale factor also applies to dimensions, and an ARCH D drawing border at that scale is 144 feet long. When the drawing is printed as a D-size sheet, everything scales down to the correct size.
- ➔ **The Layout Method:** You create geometry and annotate in model space, and print from the layout. Set the dimension scale to 0 and the dimensions will scale automatically.
- ➔ **The Annotative Method:** You create geometry in model space, create *annotative* dimensions, notes, and labels (using a special annotative style) in model space from the layout, and you print from the layout. Annotative objects display only in layout viewports that share the same scale. The dimension scale is automatically set to 0 and all annotative objects scale automatically.
- ➔ **The Trans-Spatial Method:** You create geometry in model space, create annotations in paper space on a layout with dimension scale set to 1, and you print from the layout. This is arguably the easiest, most direct method, and it is the method of choice for this guide.

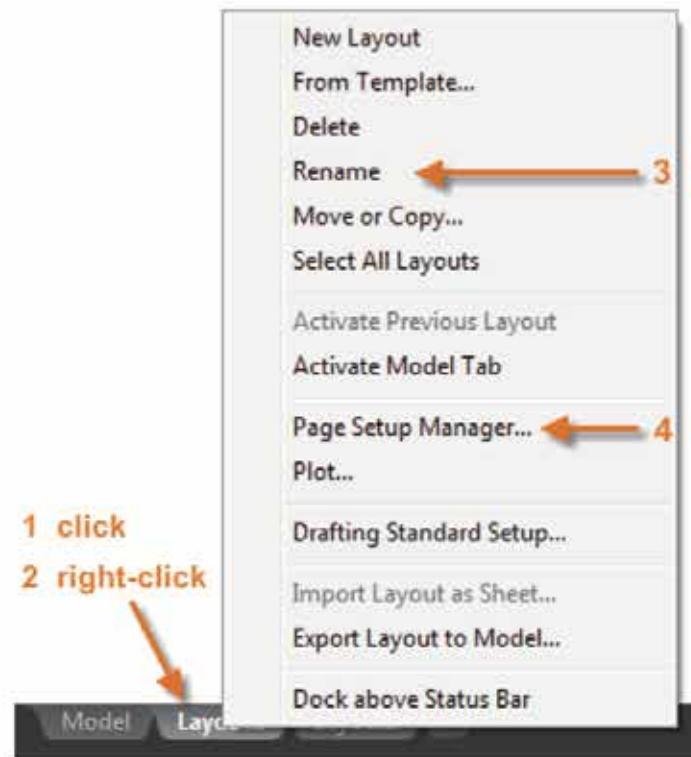


NOTE: Many AutoCAD drawings were created with this method, and many companies still use it. Once everything is set up, the method works well for 2D drawings with single views and inserted details.

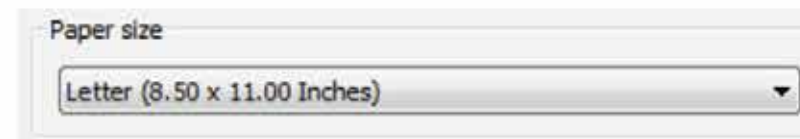
Creating a LAYOUT and exporting as a PDF file with Windows

Specifying the Paper Size of a Layout

The first thing you should do when you access a layout tab (1) is right-click the tab (2) and rename it (3) to something more specific than Layout 1. For a D-size layout, ARCH D or ANSI D might be good choices.



Next, open the Page Setup Manager (4) to change the paper size displayed in the layout tab.

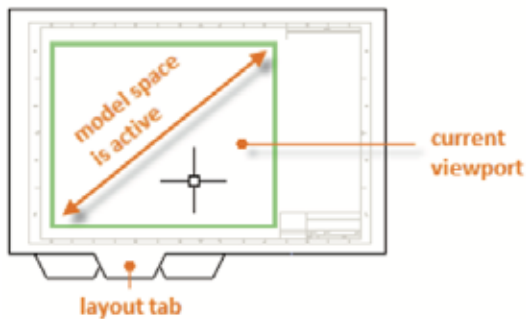


NOTE: You might be wondering why there are two entries in the list for every sheet size. This is because some printers and plotters do not recognize the drawing orientation setting.

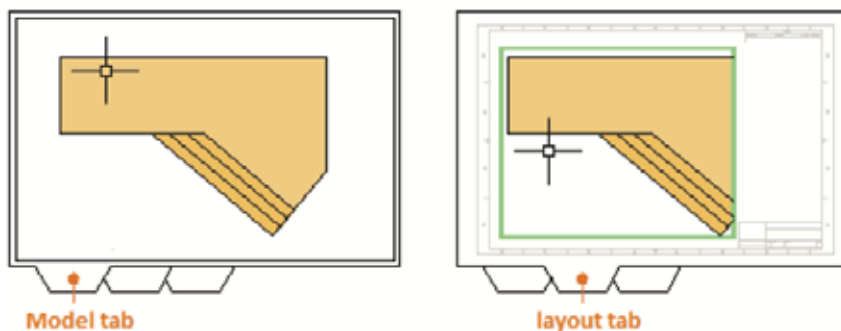


Layout Viewports

A layout viewport is an object that is created in paper space to display a scaled view of model space. You can think of it as a closed-circuit TV monitor that displays part of model space. In the illustration, model space is active and accessible from within the current layout viewport.



In a layout, when model space is active, you can pan and zoom, and anything else that you could do on the Model tab. For example, let's say that you created a backyard deck design in model space, and now you want to lay out and print your design from a layout tab.



The view in the layout viewport is not yet set to the correct scale.

Important:

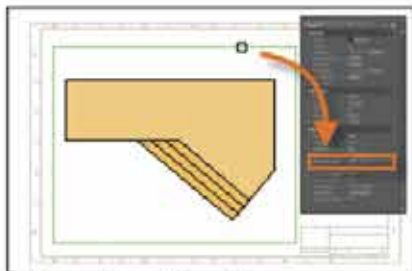
You can switch between paper space and model space by double-clicking inside or outside the layout viewport.

NOTE: You can use the **MVIEW** (make view) command to create additional layout viewports in paper space. With several layout viewports, you can display several views of model space at the same or at different scales.

Scaling Views and Trans-Spatial Annotation

Here are the steps to follow if you use the trans-spatial method of annotating your drawing:

1. Click the layout tab. If you started the drawing with your own custom drawing template file, several tasks might already have been completed: the layout might already be set to D-size, and the title block might already have been inserted in the layout.
2. By default, paper space is active, so double-click within the layout viewport to make the model space active. Notice that the edge of the layout viewport becomes thicker as a result of switching to model space.
3. Zoom out and center the model space view by panning. Note that the displayed view will not yet be set to the correct scale.
4. Double-click outside the layout viewport to make paper space active again.
5. Open the Properties palette and then click to select the edge of the layout viewport.



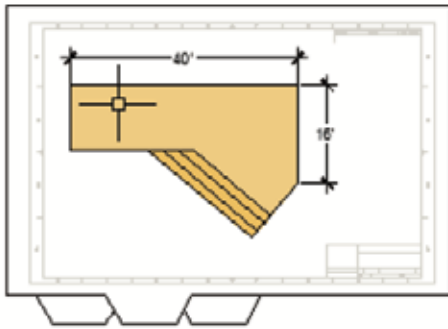
6. In the Properties palette, specify a standard scale of 1/4" = 1'-0" from the drop-down list. This action scales your view of model space precisely to the D-size drawing. You should also set the Display Locked property from No to Yes, which will prevent any unintentional display changes to the view.



NOTE: By default, the dashes and spaces in a non-continuous linetype appear the same length regardless of the scale of the layout viewport.

Scaling Views and Trans-Spatial Annotation (continued)

7. Move the layout viewport as needed, and adjust its edges using grips.
8. Create notes, labels, and dimensions directly in paper space. They will automatically appear at the correct size.
9. Turn off the layer on which you created the layout viewport object. This hides the edges of the layout viewport as shown below.



10. Print the drawing to paper or as a DWF or PDF file.

NOTE: After you have finished dimensioning, you can use the `EXPORTLAYOUT` command to merge everything in model and paper space into the model space of a separate drawing file. This operation creates a drawing file that conforms to the original method of creating the model and all annotations in model space.

Printing

Output a drawing layout to a printer, a plotter, or a file. Save and restore the printer settings for each layout.

Originally, people *printed* text from printers and *plotted* drawings from plotters. Now, you can perform both with either device, so this guide will use the terms 'print' and 'plot' interchangeably.

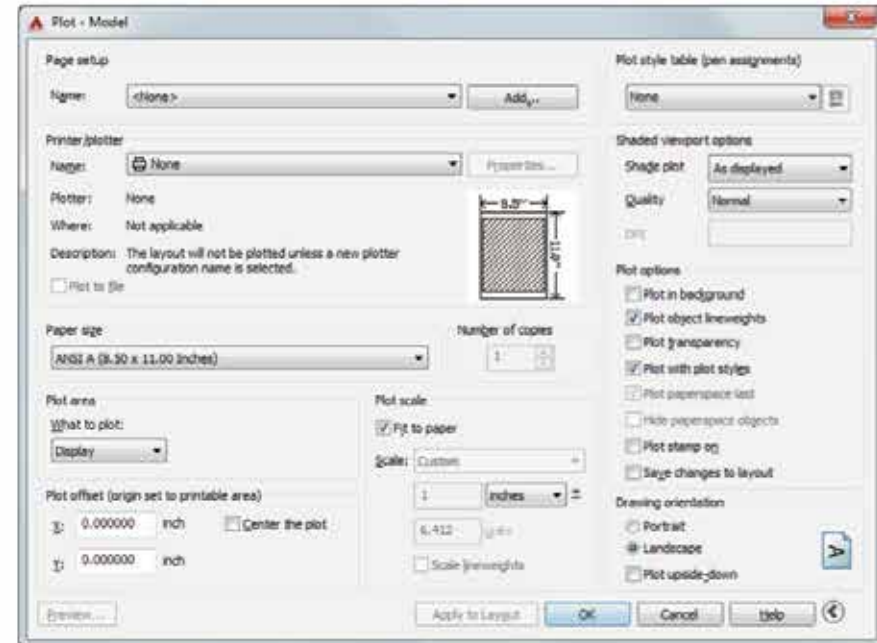
The command to output a drawing is **PLOT** and you can access it from the Quick Access toolbar.



To display all of the options in the Plot dialog box, click the More Options button.



As you can see, there are many settings and options available.

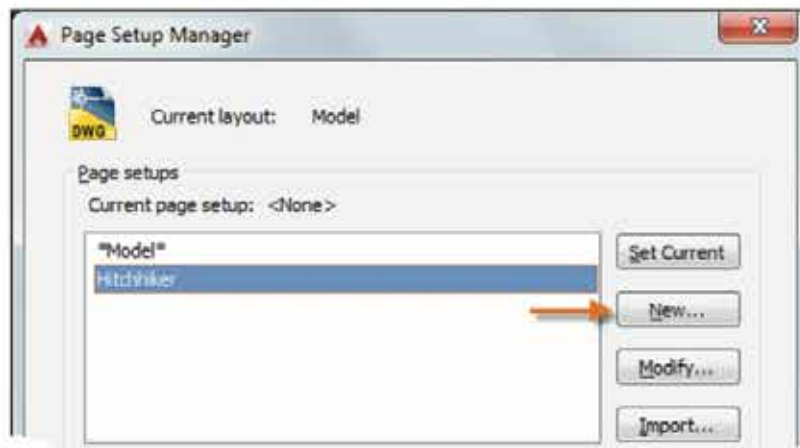


For the sake of convenience, you can save and restore collections of these settings by name. These are called *page setups*. With page setups you can store the settings that you need for different printers, printing in grayscale, creating a PDF file from your drawing, and so on.

Create a Page Setup

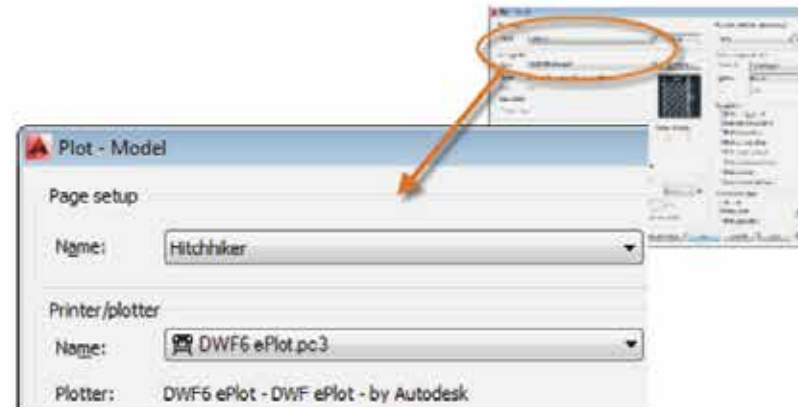
To open the Page Setup Manager, right-click on the Model tab or a layout tab and choose Page Setup Manager. The command is **PAGESETUP**.

Each layout tab in your drawing can have an associated page setup. This is convenient when you use more than one output device or format, or if you have several layouts with different sheet sizes in the same drawing.



To create a new page setup, click New and enter the name of the new page setup. The Page Setup dialog box that displays next looks like the Plot dialog box. Choose all the options and settings that you wish to save.

When you are ready to plot, simply specify the name of the page setup in the Plot dialog box, and all your plot settings will be restored. In the following illustration, the Plot dialog box is set to use the Hitchhiker page setup, which will output a DWF (Design Web Format) file rather than print to a plotter.



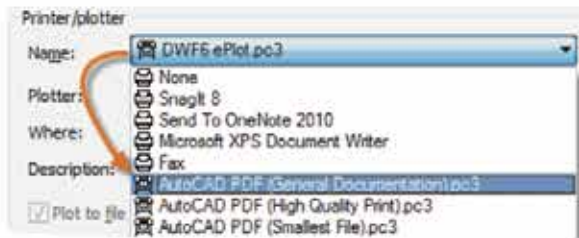
Here's a Tip:

You can save page setups in your drawing template files, or you can import them from other drawing files.

Output to a PDF File

The following example shows you how to create a page setup for creating PDF files.

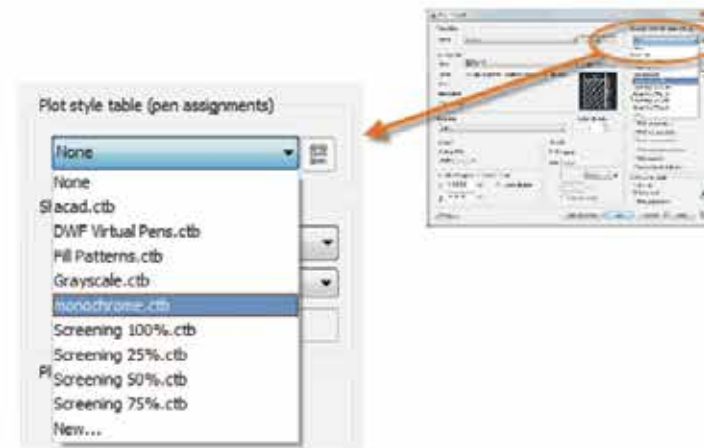
From the Printer/plotter drop-down list, choose *AutoCAD PDF (General Documentation).pc3*:



Next, choose the size and scale options that you want to use:

- ➔ **Paper Size:** The orientation (portrait or landscape) is built into the choices in the drop-down list.
- ➔ **Plot Area:** You can clip the area to be plotted with these options, but typically everything will be plotted.
- ➔ **Plot Offset:** This setting changes based on your printer, plotter, or other output. Try centering the plot or adjusting the origin, but remember that printers and plotters have a built-in margin around the edges.
- ➔ **Plot Scale:** Choose your plot scale from the drop-down list. A scale such as 1/4" = 1'-0" is meant for printing to scale from the Model tab. On a layout tab, you normally print at a 1:1 scale.

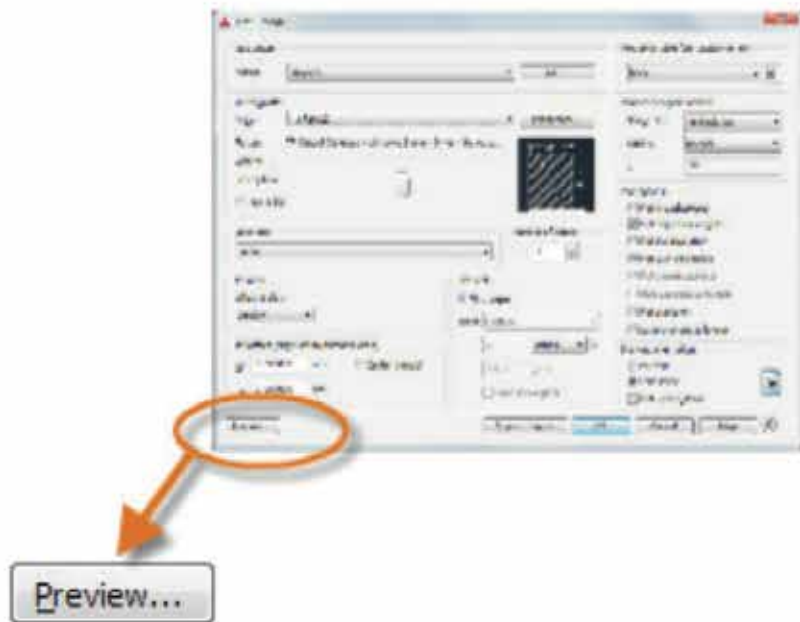
The plot style table provides information about processing colors. Colors that look good on your monitor might not be suitable for a PDF file or for printing. For example, you might want to create a drawing in color, but create monochrome output. Here is how you specify monochrome output:



Here's a Tip:

Always double-check your settings with the Preview option.

Output to a PDF File (continued)



The resulting Preview window includes a toolbar with several controls, including Plot and Exit.

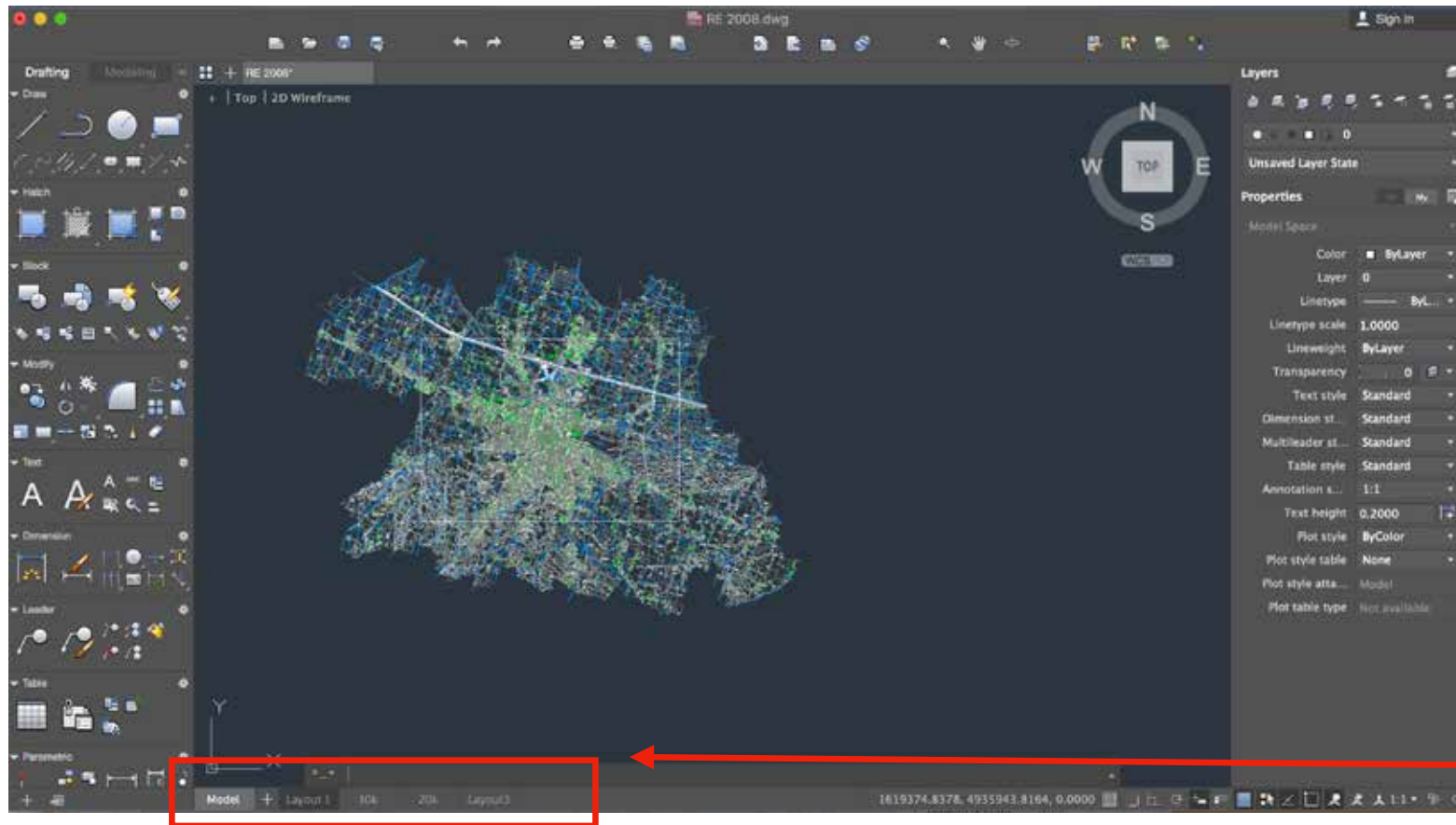


After you are satisfied with your plot settings, save them to a page setup with a descriptive name such as "PDF-monochrome." Then, whenever you want to output to a PDF file, all you need to do is click Print, choose the PDF-monochrome page setup, and click OK.

Recommendations

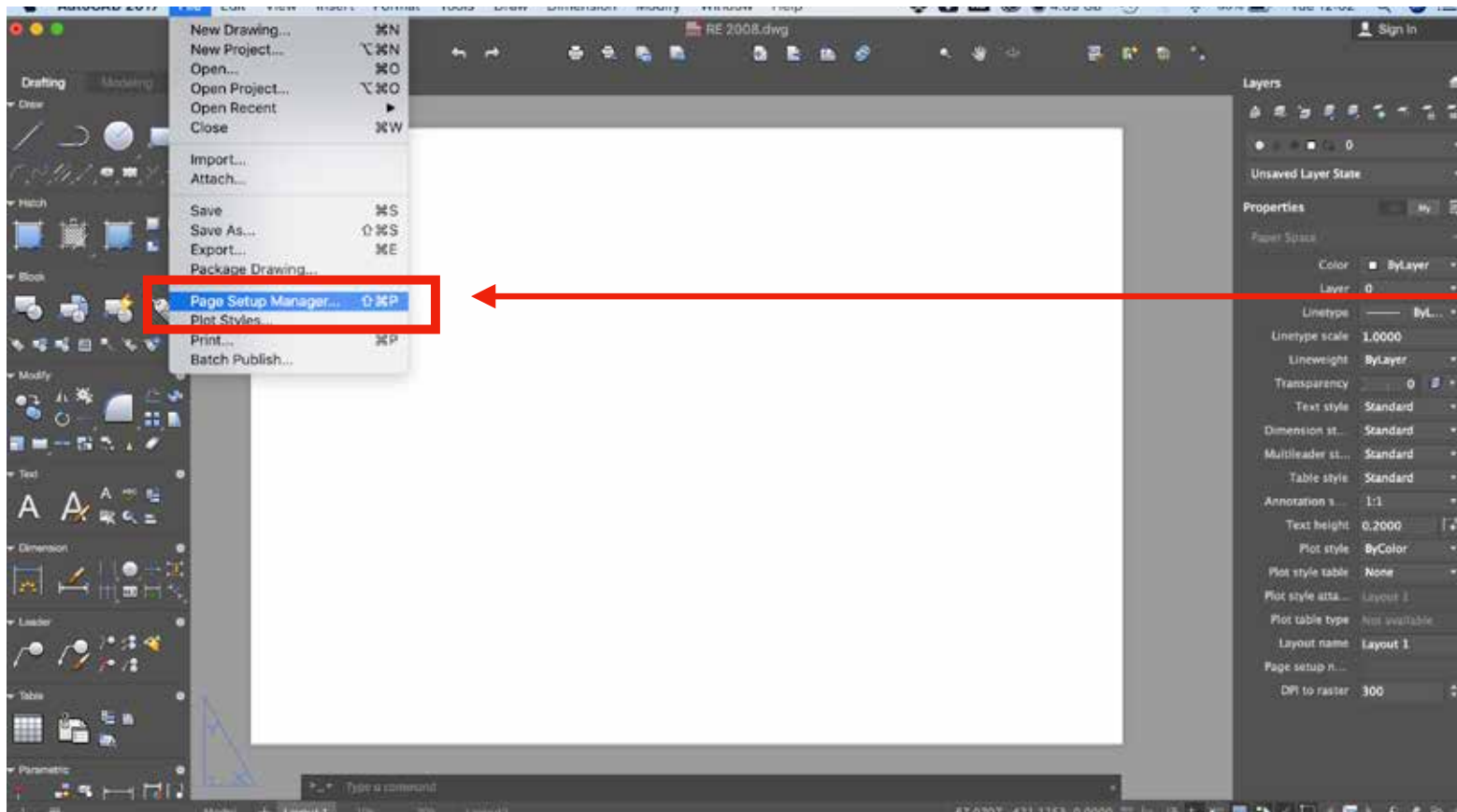
- ➔ If you want to share a static image of your drawing, you can output a PDF file from a drawing file.
- ➔ If you want to include additional data from your drawing, use DWF (Design Web Format) files instead.
- ➔ If you want to review an AutoCAD drawing file with a person in a different location, consider using Autodesk A360 and the AutoCAD 360 web and mobile applications, which you can access from the Autodesk website.

Creating a LAYOUT and exporting as a PDF file with Macintosh

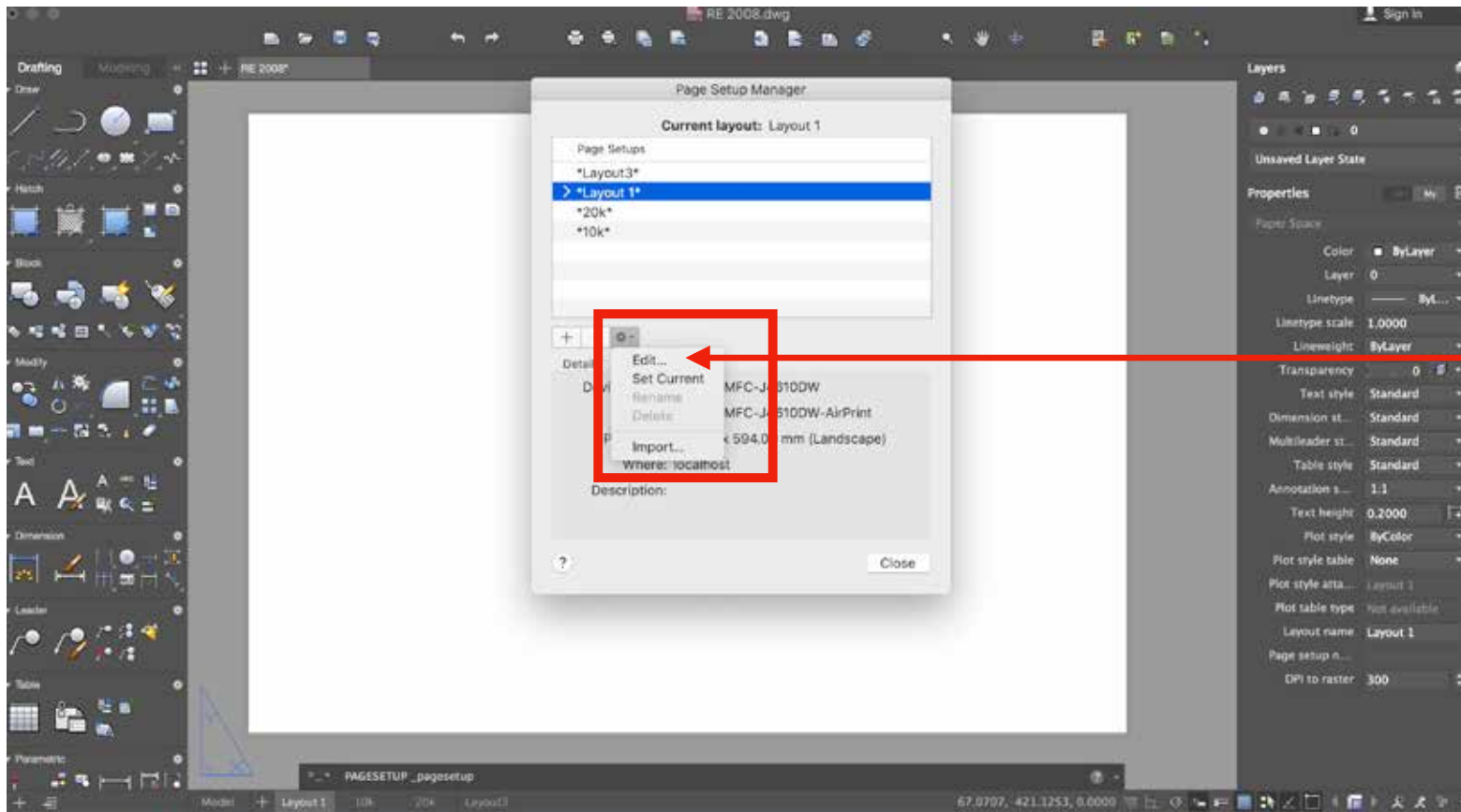


Use the existing
layouts.
e.g. Layout 1

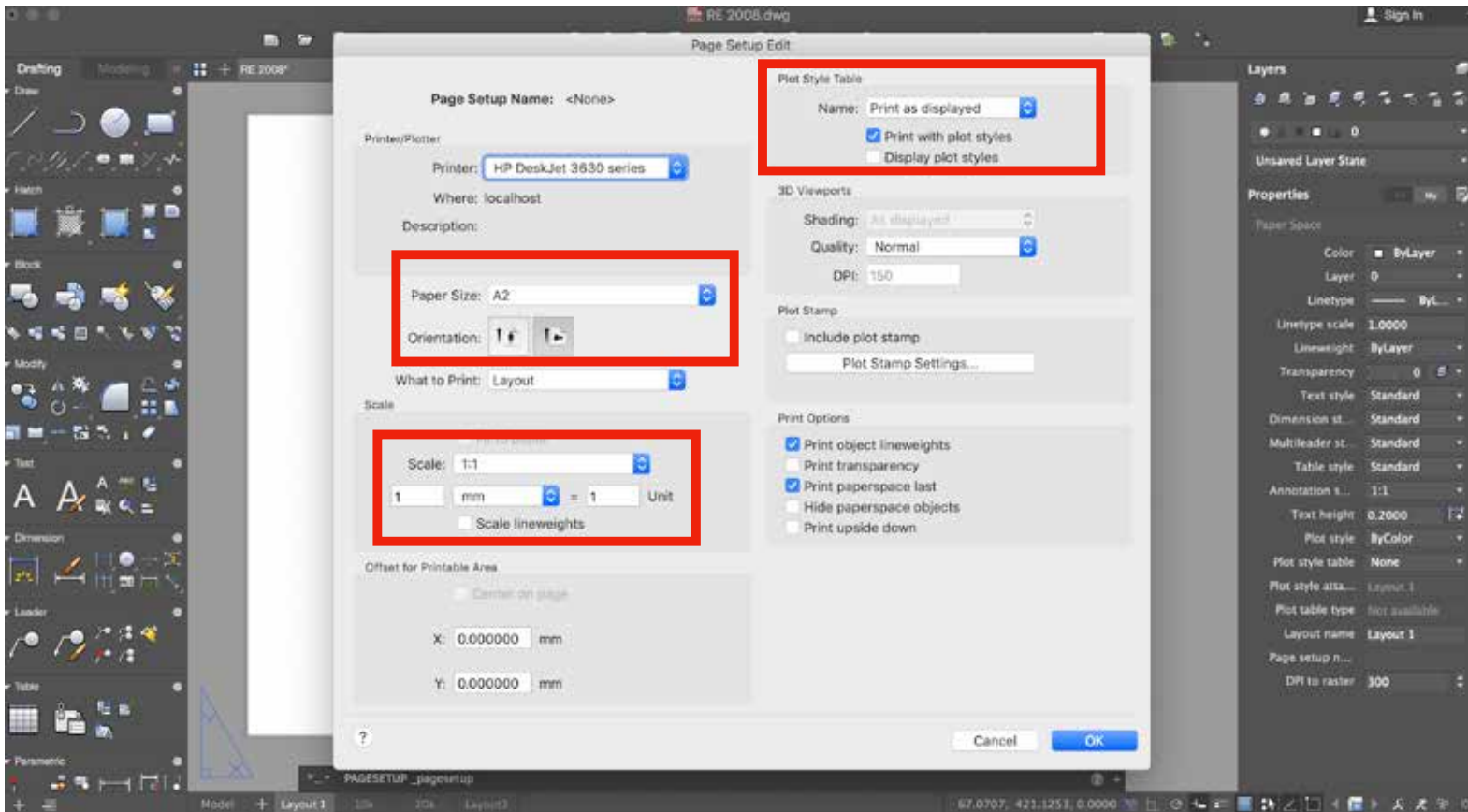
Preparing the paper



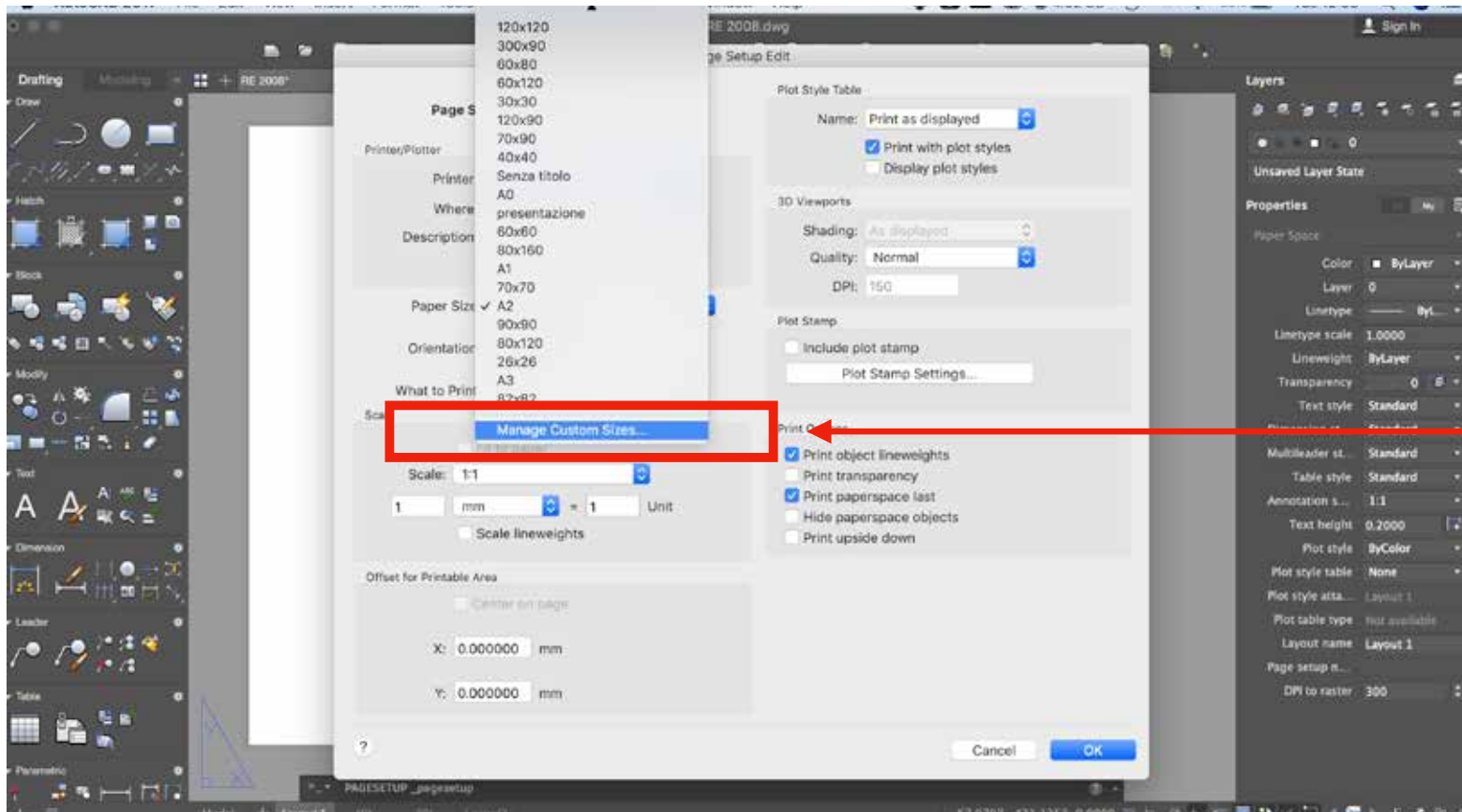
Set the paper
you want to
print



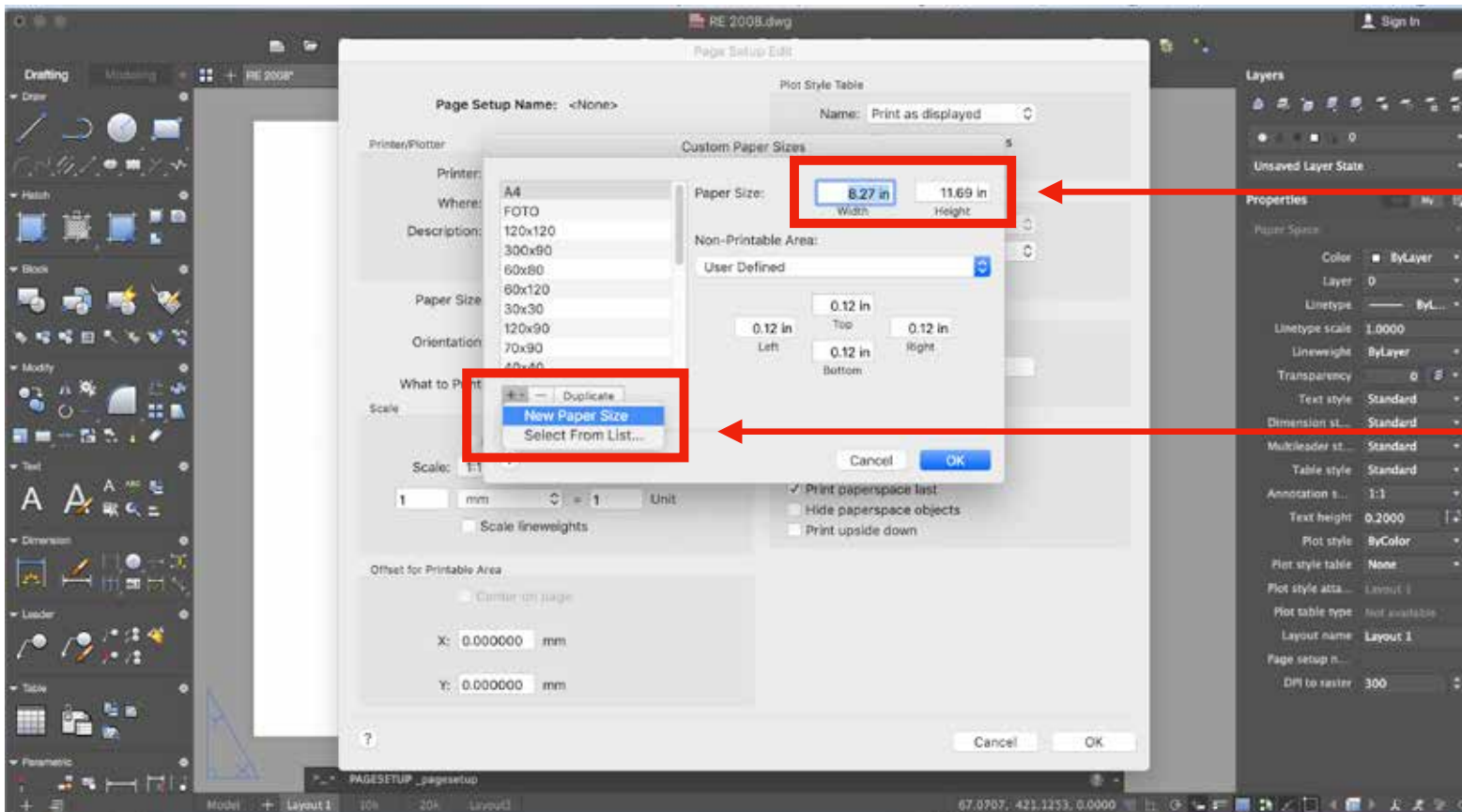
Edit the dimension of your sheet



Check the settings



Open 'Paper Size' if you want to change the dimension of your sheet

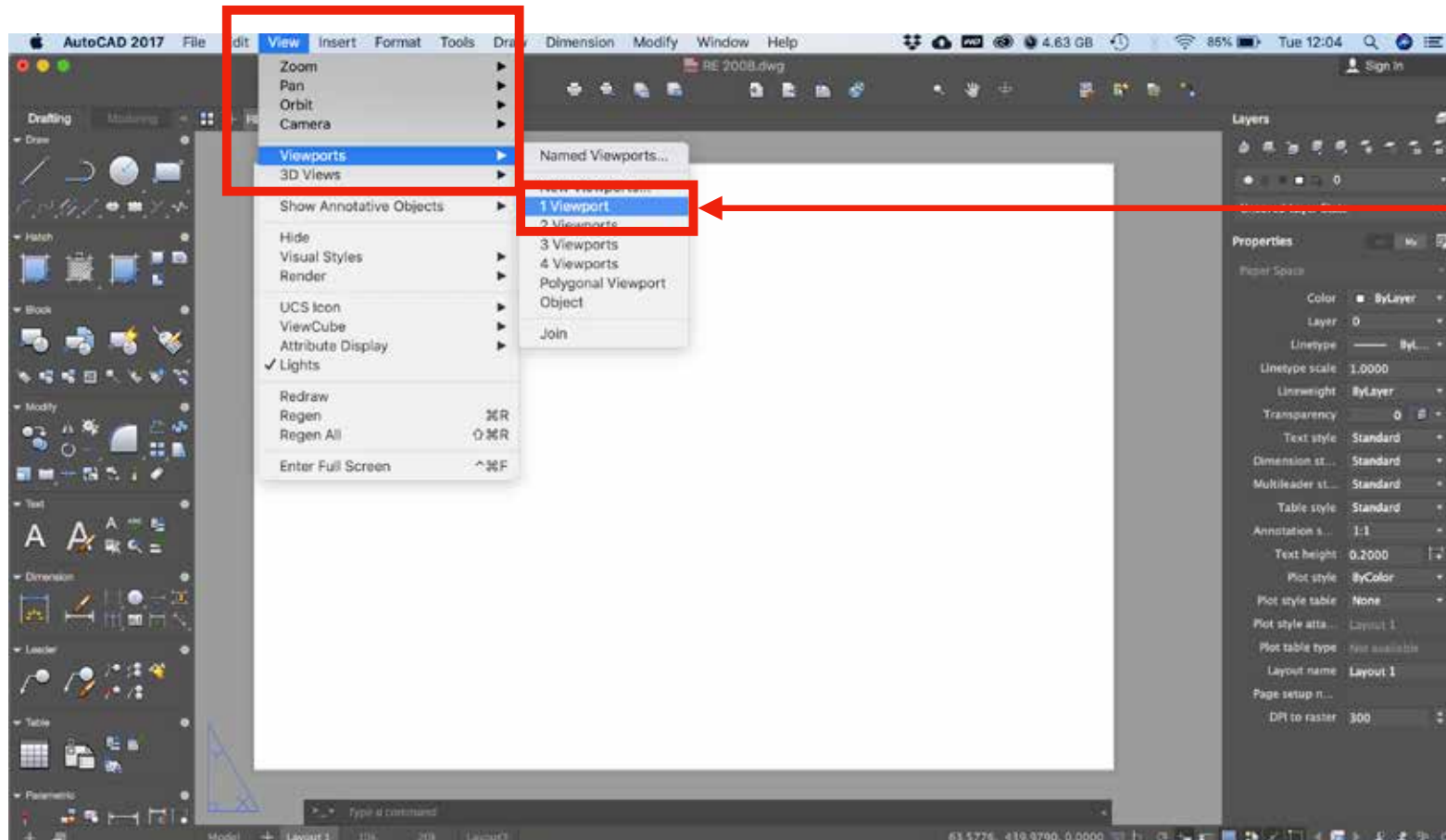


Check width and height of your sheet and then click OK

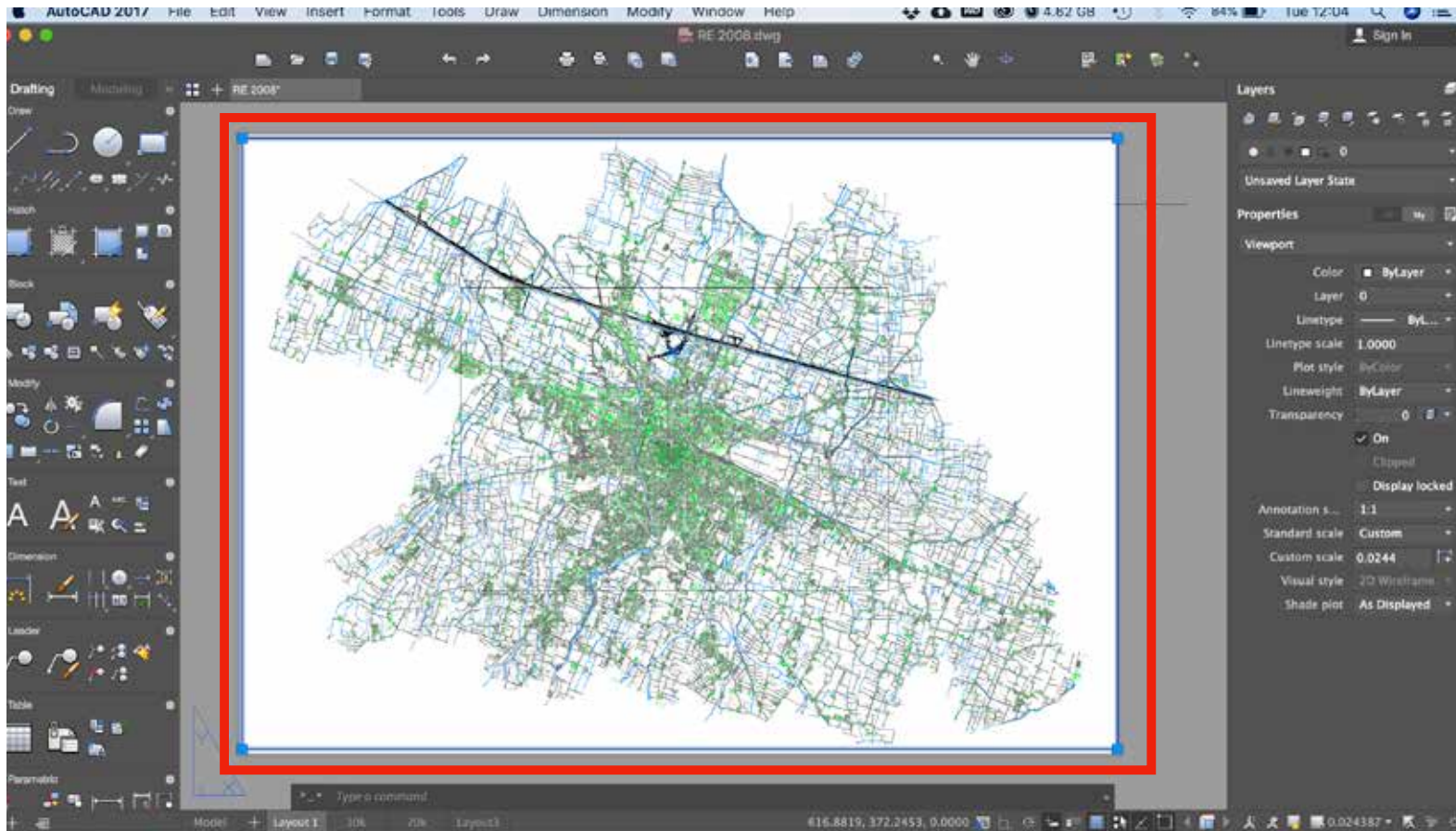
New Paper Size

Now your paper/sheet is set, but
.....
you need to set the dimension/scale of
the drawing inside your paper

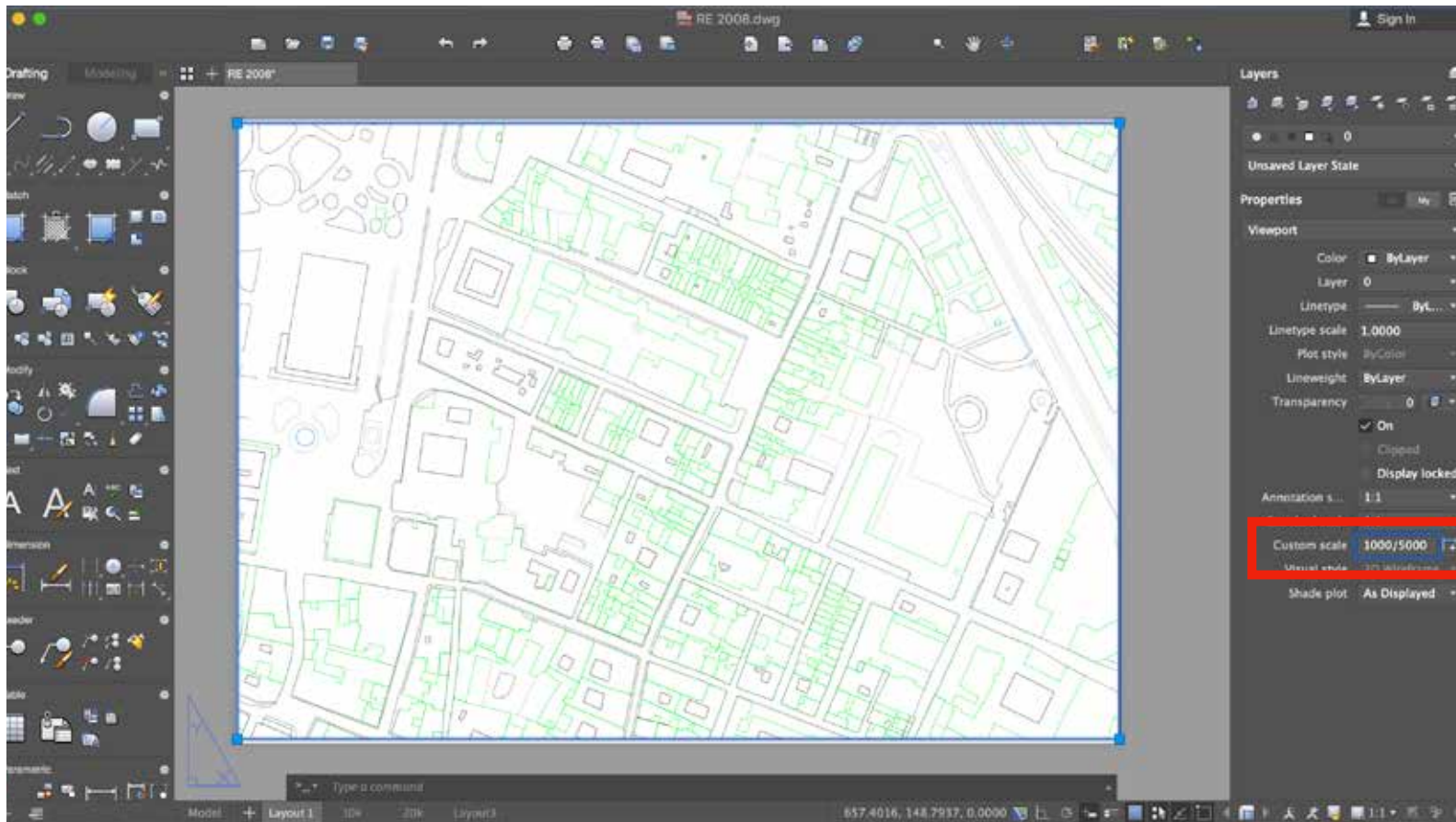
Setting the viewport



Always choose
1 Viewport



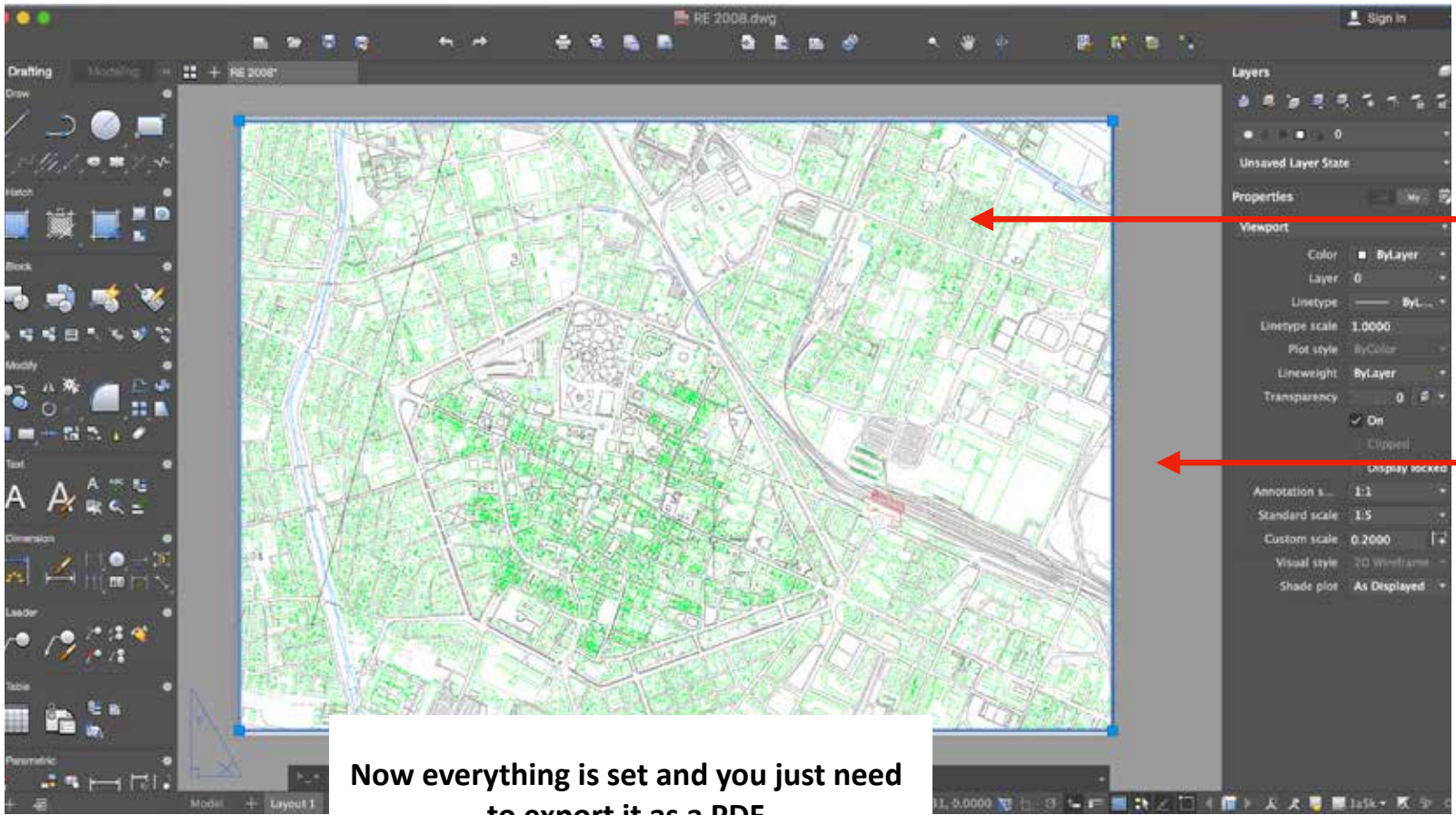
Drag the selection to fit the layout



Keep your drawing selected and then choose the scale...

you always should type 1000/scale you want.

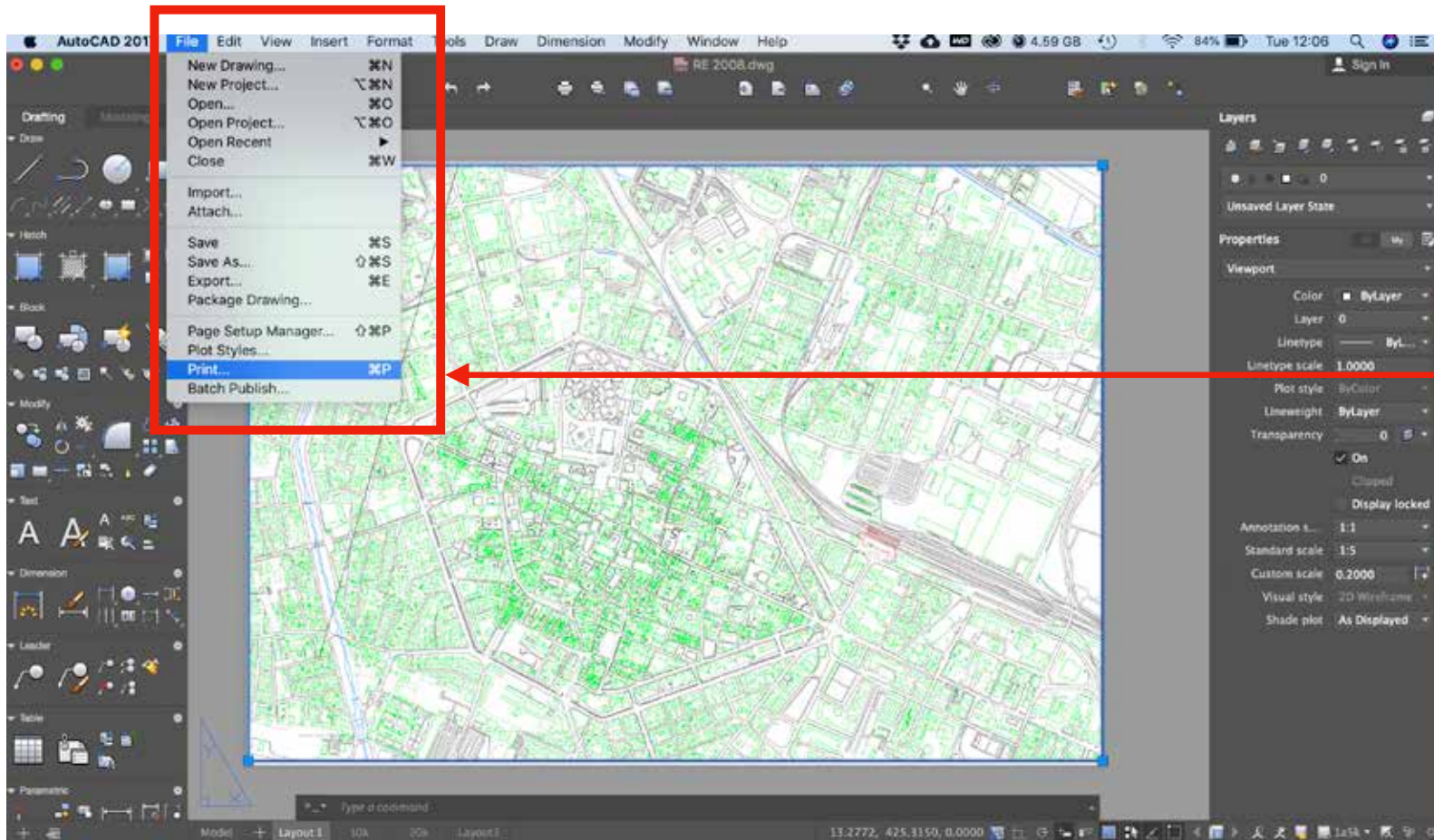
e.g. 1000/5000 means scale 1:5000



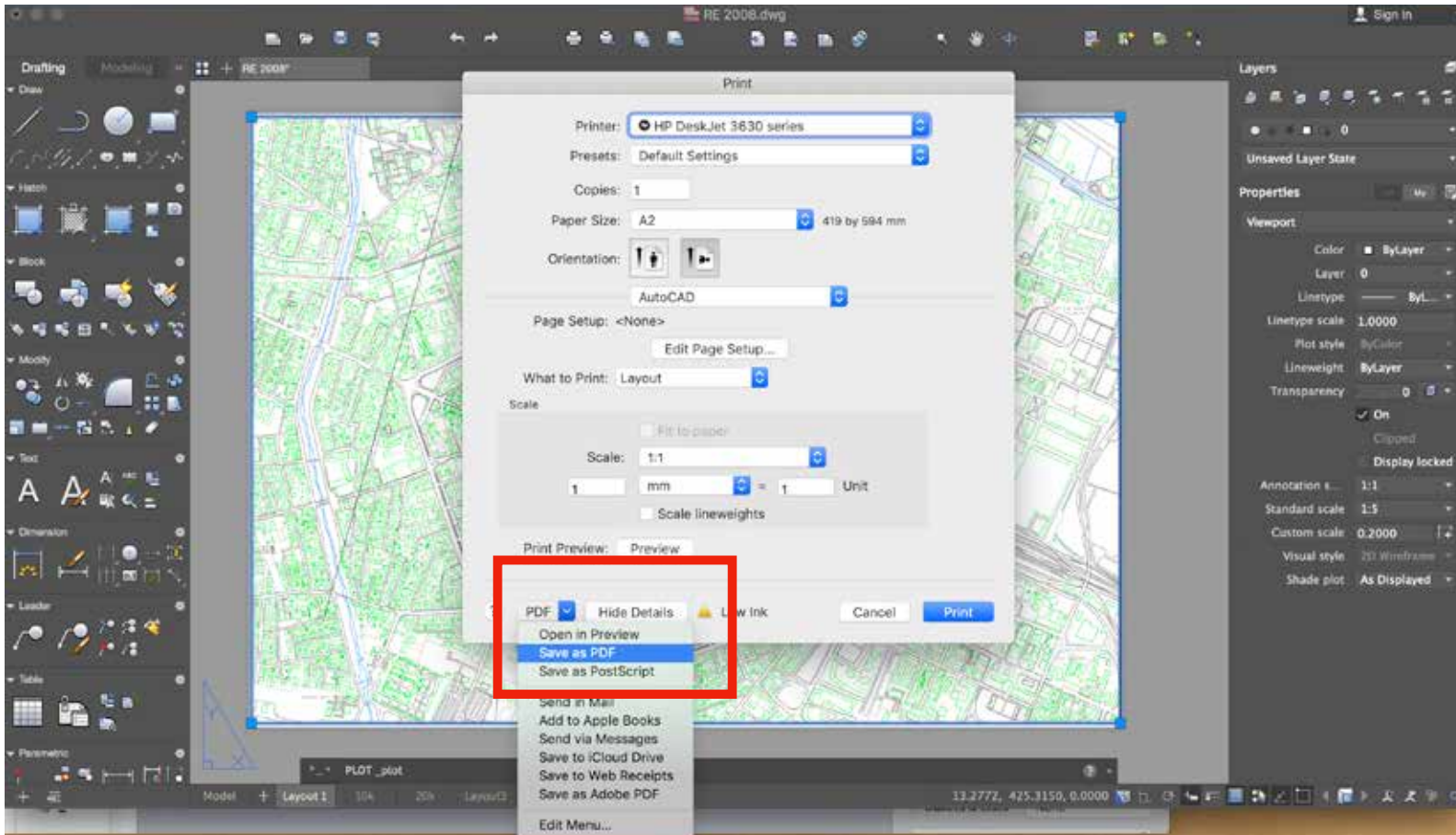
If you double click inside the selection you can move your drawing.

To stop, double click on the grey space

Now everything is set and you just need to export it as a PDF

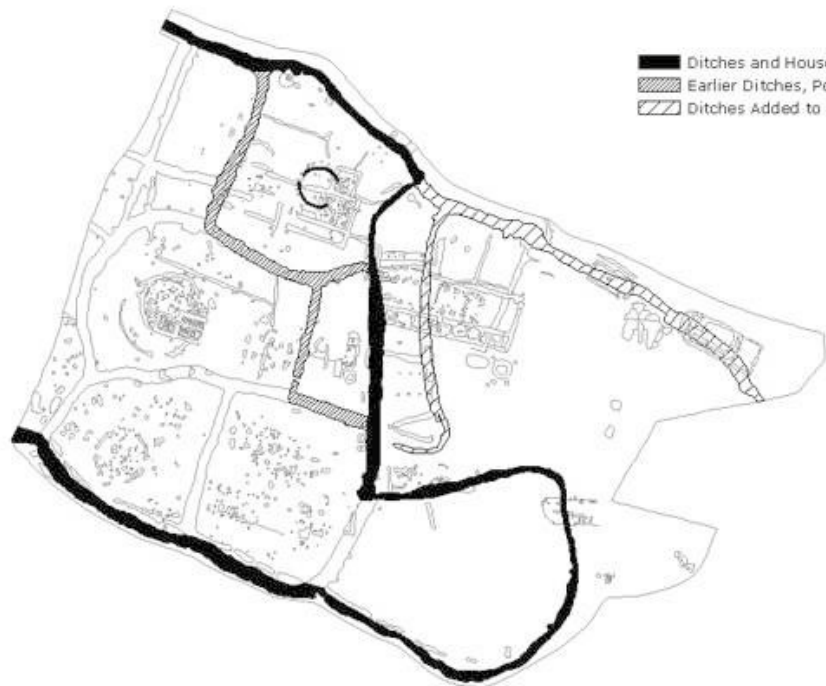


Select 'print'

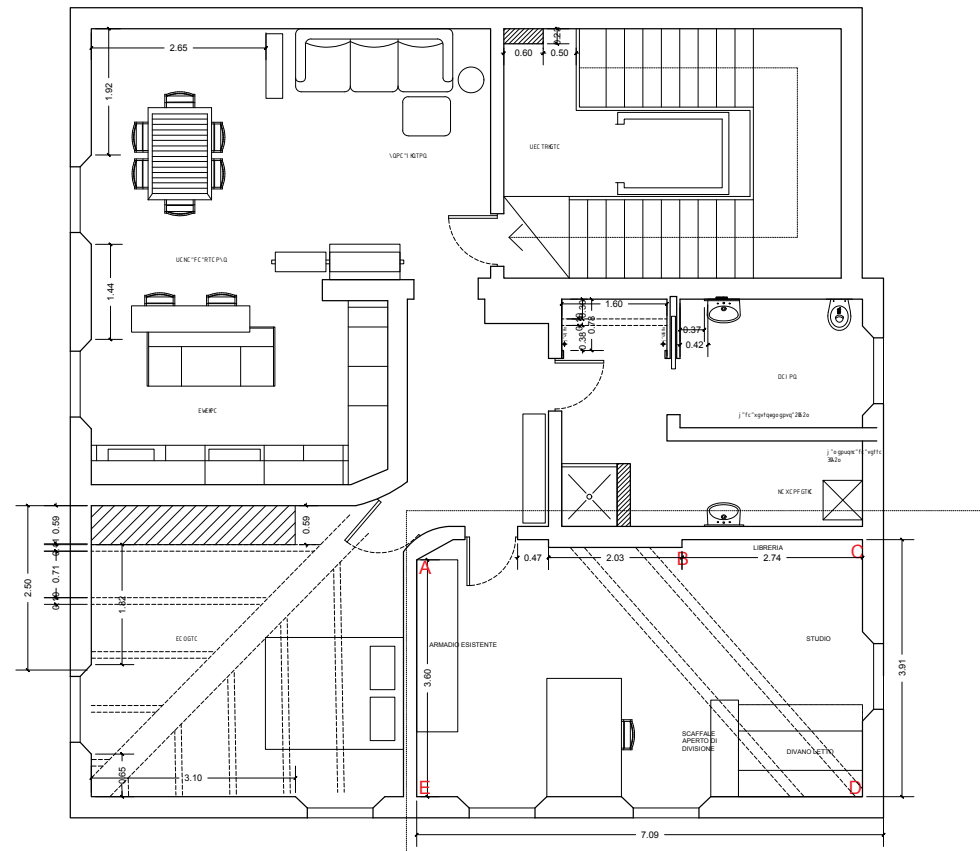


Export as a PDF

Some examples:



- █ Ditches and Houses Assigned to a Phase
- ▨ Earlier Ditches, Possibly Backfilled in a Phase
- ▩ Ditches Added to a Phase





THE BARTLETT