

CADMATIC Draw

Printing guide



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1. Overview

The application uses Windows' printer drivers in printing. Therefore, the printer driver first needs to be installed to Windows and then added into the application.

When printing, you always define printing settings which define the printer to be used, the scale, and the paper size, for example. In addition, the print style table affects printing regarding line colors and width and the line end and join styles.

For more information on printing functions, see CADMATIC Draw's [online help](#).

2. Install printer driver

The printer driver first needs to be added to Windows as a printer. One commonly used printer is HP DesignJet 1055 CM, for which you can download the driver from Cadmatic Support Portal.

Do the following:

1. In Windows, go to **Printers and scanners**.
2. Click **Add device**.
3. When Windows is done with the search, click **Add a new device manually** shown for the **The printer that I want isn't listed** option (this option is only available after the search).
4. Select **Add a local printer or network printer with manual settings**, and click **Next**.
5. Select **FILE: (Print to File)** as the port for printing, and click **Next**.
6. Click **Have Disk**.
7. Browse to the folder where you extracted the driver package files, and click **OK**.
8. Select **DesignJet 1055 CM by HP** as the printer to be installed.
9. Finalize the installation with **Next**.

After adding the driver to Windows, it still needs to be [added](#) to the application. Furthermore, you need to add the necessary long paper sheets.

3. Add printers

If no printer configuration files are found, the application automatically creates one for the Windows default printer. You must add other printers separately if you want to use them for printing.

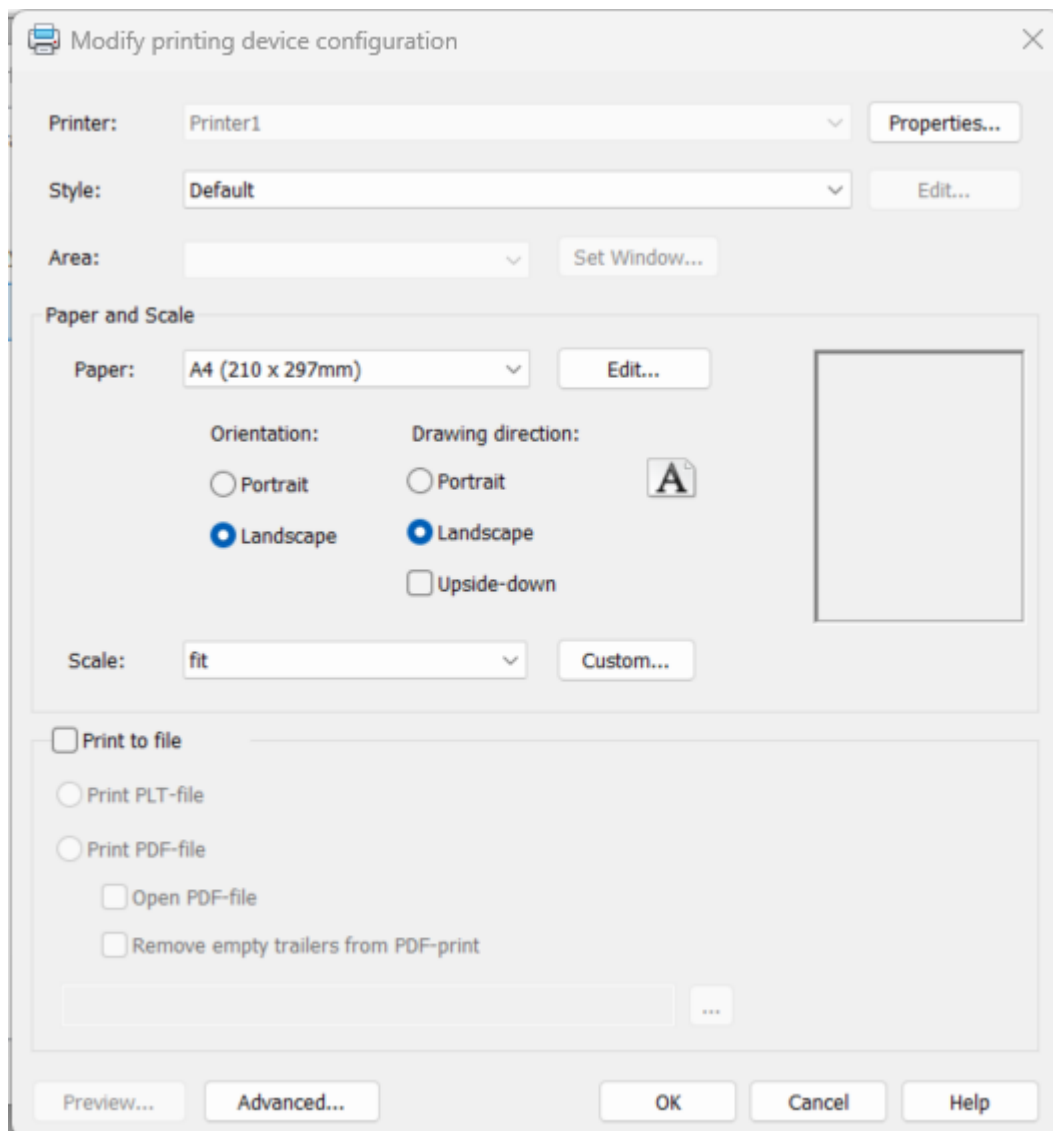
It is recommended to set the printer most used as the default, so that it will be automatically selected. The default printer is marked with the ✓ icon. You can change the default to another by selecting the desired printer and clicking **Set as default**.

Define the default settings that will be used when the printer is taken into use. If necessary, these settings can be changed when printing. If you typically print on A4 paper, for example, you should select the A4 paper as the default for the printer. A4 will then always be the default paper used, and you only need to select the paper size when it differs from A4.

Important: Install the [Windows printer driver](#) before adding the printer.

Do the following:

1. Select **File > Print > Print settings**. The **General settings** dialog opens showing the **Print** tab.
2. In the **Printer** section, click **Add**. The **Select printing device** dialog opens listing all available printer drivers.
You can add multiple printer configurations for one Windows printer. This makes it possible to create configurations that use different default settings i.e. different scales or print styles.
3. Select the desired printer, and click **OK**. The added printer will be named after the Windows driver name, and it can be renamed by clicking **Rename**.
4. In the **Printer** section, click **Properties**. The **Modify printing device configuration** dialog opens.
5. Define the default settings used when the printer is taken into use. You can change the settings when printing but the changes will not be saved.



- **Area** – Define the area of the drawing you want to print.
 - **Limits** – The print area will be the same as the drawing area of the drawing.
 - **View** – Either the current view or an earlier saved view of the drawing will be printed.
 - **All** – The whole drawing with all elements (view is the same shown with Zoom all) will be printed.
 - **Window** – A rectangle shaped area will be printed. By clicking **Set Window**, you can define the are in the drawing.

In Design mode, if the drawing is shaded, the only valid printing area setting is the current view. If the perspective is off, the area setting window is also available. In Print mode, all printing area options are valid.

- **Paper** – Select the paper size (e.g. A4).
 - If suitable paper size is not listed, you can add new paper sizes by clicking **Edit**.
 - With the **Orientation** option, you can select to print in either portrait or landscape.
 - The **Drawing direction** option allows you to define the orientation in which the drawing is traced on the paper sheet. It has no effect on whether the sheet sent to the printer is landscape or portrait. If you want to print the drawing upside down, select **Upside-down**.

The application can only use the sizes that are defined in Windows' printer drivers. Therefore, a long paper sheet should be defined in the device driver. For more information, see [Add a long paper size to a printer](#) and [Take paper sizes into use](#).

- **Scale** – Define the scale factor to use when printing. You can select a scale from the list between 100:1 and 1:1000.
 - **custom** – If none of the scales in the drop-down menu suits your needs, you can define a custom scale.
 - **fit** – The program calculates the correct scale so that the entire selected print area fits to the paper.
 - **scale** – The scale of the drawing to be printed is based on the SCALE variable.
- **Print to file** – You can print to a PDF file or PLT file. Enter the name of the print file in the field. You can select the print folder by clicking the  button next to the field. The program will automatically add the .plt or .pdf extension. If no print directory has been defined, the program will print to the directory defined in the file settings. If no print directory has been defined, the program will print to the default application directory. If you select **Remove empty trailers from PDF-print**, the PDF files are printed without any empty areas if paper size is bigger than drawing size (does not affect when printing sheets or pieces).

For more information, see [Create PLT and PDF files by printing](#).

- **Advanced**
 - **Copies** – Defines how many copies you want to print.
 - **Quality** – Defines print quality. Options are: High, Medium, Low, Draft and Printer default. Program sends this quality setting to a printer driver and it's affect to printing depends how the driver uses this information. If you choose option Printer default, no quality setting is sent to the driver and the print will be printed using driver's default quality setting.
 - **Optimization** – Optimization affects to the printing order. Options are: None, Pen sort, Motion + Pen sort. Some printers support motion optimization so that the joints of lines may become smoother. This option is more important when using pen plotters that are very rare nowadays.
 - **Offset** – By default the drawing is printed on the corner of the paper sheet. With offset you can set the position of the origin. If you check the setting **Center**, the print will be centered both vertically and horizontally.

6. Click **OK**.

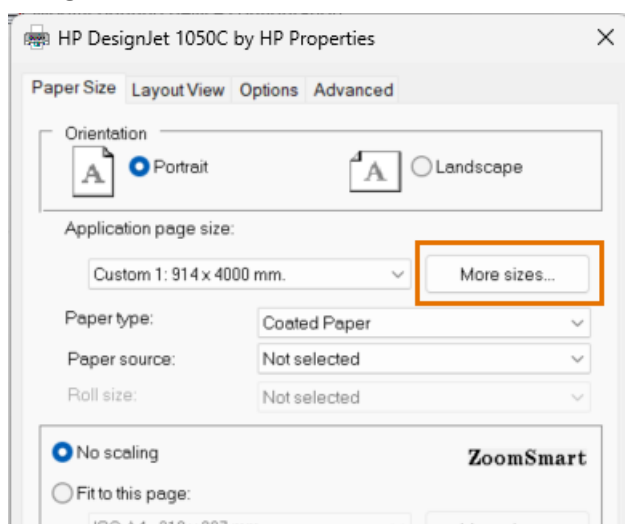
4. Add a long paper size to a printer

The paper size used in printing is selected from the paper sizes defined for the Windows printer drivers. After installation, the most common paper sizes are available for the printer driver. If they do not include the one you want to use, you need to create a paper size of your own. Typically, you would need to create a long paper sheet (914 mm x 2700 mm, for example).

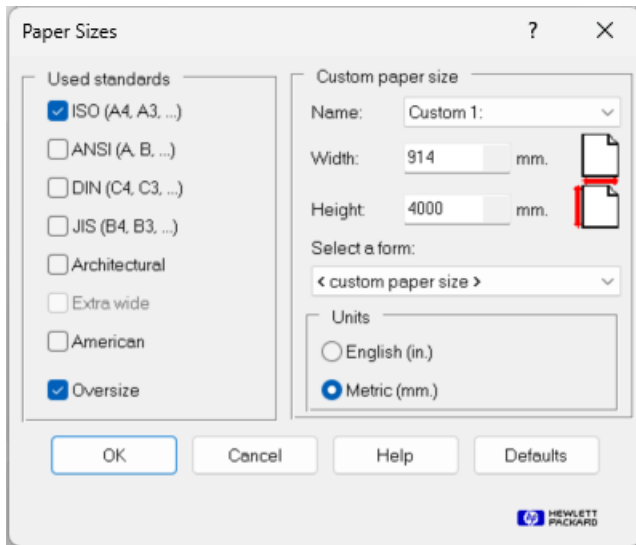
Defining long paper sizes depends on the printer drivers' capabilities. A long paper size needs to be defined as a Custom paper.

Do the following:

1. Select **File > Print > Print settings**.
2. Select the desired printer, and in the **Printer** section click **Properties**. The **Modify printing device configuration** dialog opens.
3. Click **Properties**. The property dialog opens. The dialog may look very different in different printer drivers. It is recommended to always use the latest version available on the manufacturer's website.
4. On the **Paper Size** tab, click **More sizes**. The following image shows the dialog for the HP DesignJet 1055 CM driver.



5. Edit paper size values, or create new paper sizes. The paper size names are **Custom1**, **Custom2**, etc.



Note: The application will always decrease margins from paper size defined in printer driver settings. This means that the actual printable area could be smaller than defined. The decreased margin size is read from the printer driver (and it could be adjusted in driver settings) so margins may vary depending on the selected printer.

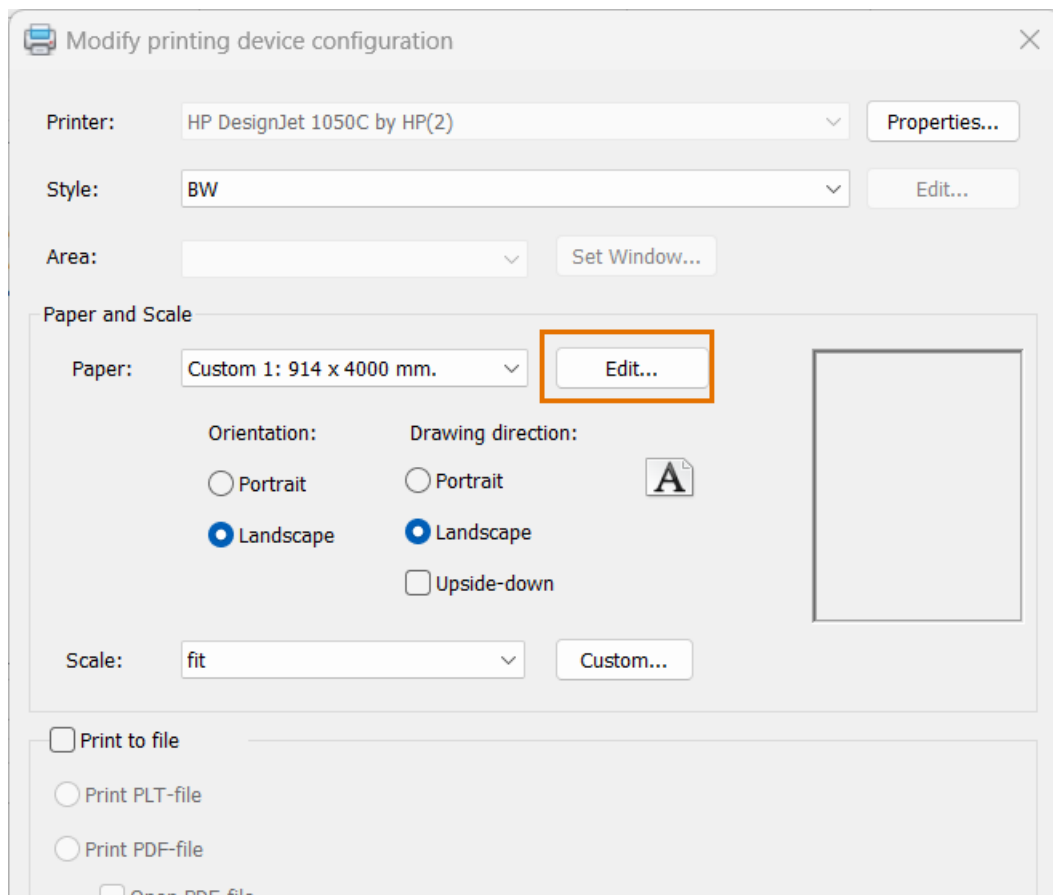
6. After defining the paper sizes close the dialogs by clicking **OK**.

5. Take paper sizes into use

All paper sizes defined for the printer are not shown by default. You can add the desired paper sizes by editing the printer driver settings.

Do the following:

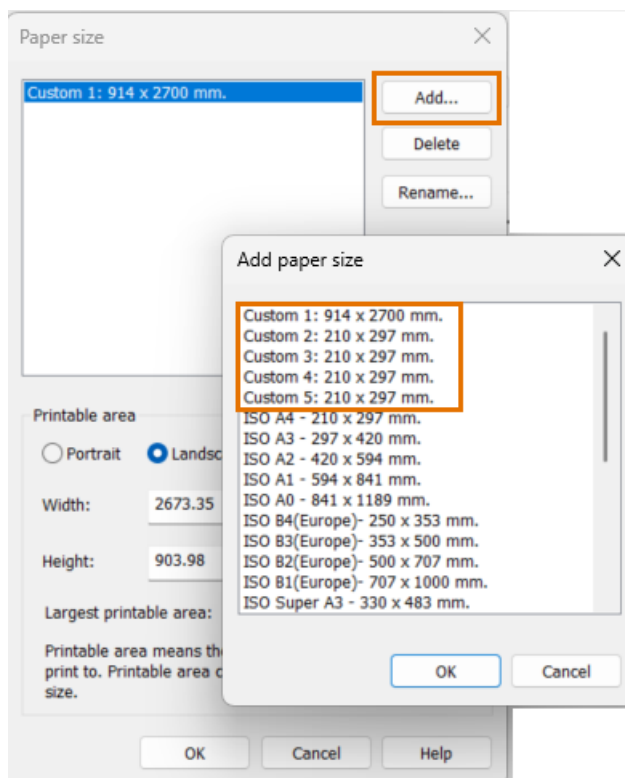
1. Select **File > Print > Print settings**.
2. Select the desired printer, and in the **Printer** section click **Properties**. The **Modify printing device configuration** dialog opens.
3. In the **Paper and Scale** section, click **Edit**.



The **Paper size** dialog opens.

4. Click **Add**. The **Add paper size** dialog opens.

5. Select the desired paper size, and click **OK**.



In the **Paper size** dialog, you can also

- Delete the unnecessary paper sizes with **Delete**. Deleting a paper size does not delete it from the printer driver and it can be added again later.
 - Rename paper sizes with **Rename**.
 - Edit the printable area values with **Set**. Printable area means the biggest possible area on paper to print to. The printable area can never be bigger than the paper size. Usually printers cannot print in the whole paper size area. When adding a new paper, program will use the largest possible area as reported by the Windows driver of the printer in question. If the values have been changed, you can restore printer driver default values with **Default**.
6. Add all paper sizes the same way, and click **OK**. You can now select the added paper sizes from the **Paper** drop-down menu.
 7. Close both dialogs by clicking **OK**.

6. Create PLT and PDF files by printing

Drawings can be printed onto paper but also into PDF or PLT files.

- **PDF files** – PDF (Portable Document Format) is an open file format for electronic distribution of documents developed by Adobe Corporation. You can view and print PDF files with a free Adobe Reader® program, which can be downloaded from the Adobe web site (www.adobe.com).

CAD drawings can be printed into PDF files and then sent via email, for example, to clients. This way the clients do not need a CAD program to view the document. PDF files can also be imported to CAD drawings as reference drawings.

PDF documents conform to the PDF/A standard. A PDF printer driver is not needed to print drawings into PDF as the PDFs are printed with the same printers as other drawings.

- **PLT files** – Sometimes you need to print big drawings but you do not have a printer that manages big papers. You can then print the drawing into a PLT file that you can send to a print service provider who will print it for you. The PLT file includes all the printed data in a file. All print settings are also "saved" in the PLT file (such as scale, paper size, line weights). You must use the printer used by your print service provider. It is recommended to ask for the right driver from your print service provider. PLT files can also be sent forward by email, for example.

The paper size for PDF and PLT files is selected the same way as if printing to paper. If the print area is smaller than the selected paper size, the PLT driver will automatically remove empty trailers. If it does not work, either the driver is not capable of doing that (Windows driver needs to be updated) or the automatic cutter is switched off in the Windows printer settings. By default, empty trailers are not removed from PDF files. Empty trailers can be removed by selecting **Remove empty trailers from PDF-print** in the print settings dialog (does not affect when printing sheets or pieces).

Plot preview does not remove empty trailers.

6.1. Print into PDF

PDF files are created by printing normally but setting the target of the print to PDF file. The target file name and folder can be defined when printing. PDF file can be created using the same printer as when printing on paper. No special PDF driver is needed.

When printing to a PDF file, all text elements are added as text using Windows TrueType font. This enables possibility search or select text from PDF file. Because all CAD fonts (ftf and shx) does not have corresponding TrueType font they must be printed to PDF using some other font. Because of this text appearance and size may be different comparing screen and PDF file. By default missing font is replaced with Arial but each ftf or shx can be configured separately to use the certain font in PDF file. Using any other font than Arial is used only if there is more suitable TrueType font and end result looks better.

If text appearance and size is wanted to keep intact it is possible to select "Print as graphics" for each ftf and shx separately instead of using Arial or any other True Type font. In this case text will be print to PDF as vectors and therefore text search functionality in PDF file cannot be used.

CAD layers can be included in PDF print which then enables showing or hiding layers in PDF viewer application. How showing or hiding is done, depends on the PDF viewer application. The PDF print will only include the layers that are used in printed elements. By default, reference drawing layers are treated like normal layers and all reference drawing layers are added separately. By selecting **Plot external reference to a single PDF layer**, each reference drawing will be added to its own layer. In the Rasta application, images are always on separate layers.

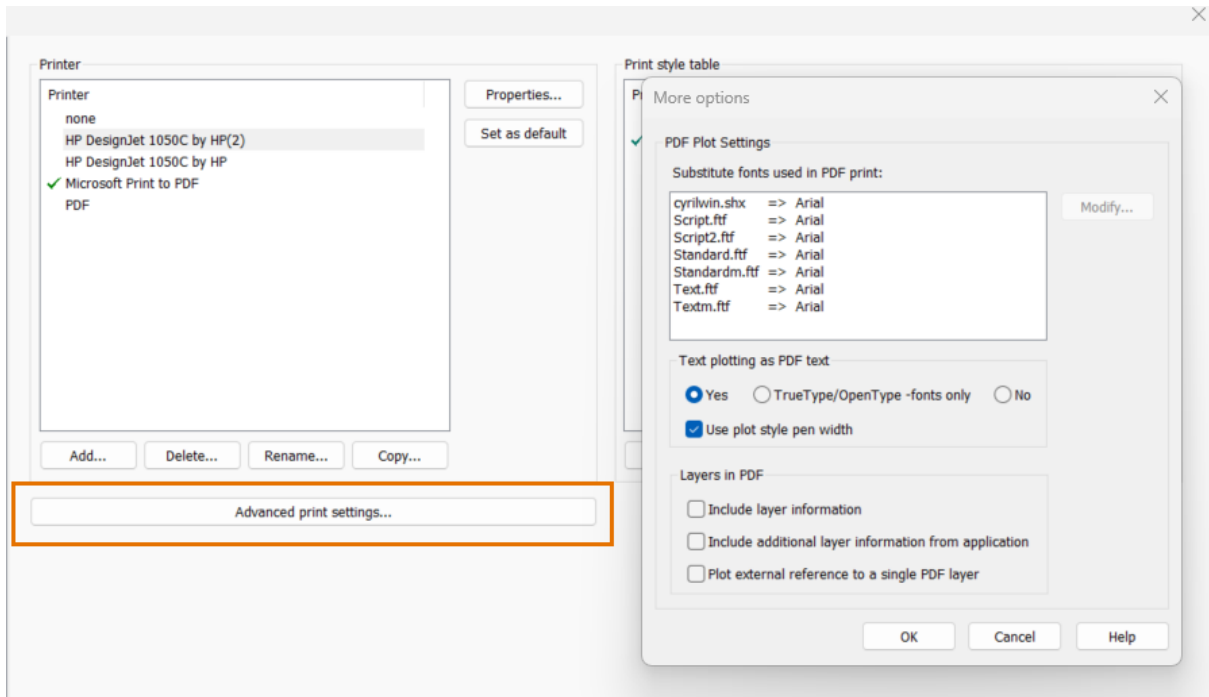
Do the following:

1. Select the desire printing function, such as **File > Print**.
2. Define the print settings as usual.

Note: Some of CAD printing providers uses black and white settings where all colors are printed as black. In this case white is also translated as a color which means that white wipeouts and fills are printed as black covering everything else beneath. Problem can be solved if you ask your CAD printing provider to print using grayscale settings (even if you have black and white print)

3. First select **Print to file** and then **Print PDF- file**.
4. If you want to remove empty trailers, select **Remove empty trailers from PDF-print** (does not affect when printing sheets or pieces).

5. Enter the name for the PDF file as a full path, or select the folder by clicking the  button.
6. Click **OK**.
7. If necessary, define additional settings by clicking **Advanced print settings**.



CAD layers can be included in PDFs which then enables showing or hiding layers in PDF viewer application. How showing or hiding is done, depends on the PDF viewer application.

The PDF print will only include the layers that are used in printed elements. By default, reference drawing layers are treated like normal layers and all reference drawing layers are added separately. In the Rasta application, images are always on separate layers.

By default, adding CAD layers to PDFs is disabled. Enable it by selecting **Include layer information**.

If you want the reference drawing added to its own layer, select **Plot external reference to a single PDF layer**.

Notice that images, embedded objects and PDF reference drawings cannot be printed properly to PDF document when viewed from diagonal direction.

6.2. Print into PLT

You must always use the right printer driver (such as HP DesignJet 1055CM or some other DesignJet model) when printing for a CAD printing provider company. It is recommended to ask about the driver from your print service provider.

After you have installed the correct driver, you usually need to define paper sizes for the printer driver. Usually these printers are capable of printing on big papers and the paper can be cut from a roll. A roll printer can usually cut the "waste paper" off so you can define bigger paper sizes than you usually need. They can be defined as Custom sizes (see [Adding long paper size to a printer](#)). These custom sizes are usually created for a roll paper printer so that you can print long prints. For example, some constructional designs are printed on 914 mm x 2700 mm sized paper.

PLT files cannot be opened in CADMATIC Draw, because they are not CAD files, just printed documents.

Do the following:

1. Select the desired printing function, such as **File > Print**.
2. Define the print settings as usual.
3. First select **Print to file** and then **Print PLT-file**.
4. Enter the name for the PLT file as a full path.
5. Click **OK**.

After printing, you can send the PLT files to your print service provider by email. Because all print settings are "saved" in the PLT file (such as scale, paper size, line weights) the print on paper should match exactly the preview of the print in CADMATIC Draw.