Tips for Printing PDF Plan Sets

This guide is intended to help people print pdf plan sets by discussing common printing problems and some ways to avoid or work around these problems. Some common printing problems include; missing information, pages not printing, page scaling and color.

Missing Information and Pages Not Printing

Sometimes certain pages or certain elements on a page won't print correctly for some users while the same information prints just fine for others. Different circumstances may be contributing to printing problems. These differences may include;

- Printers
- Print Drivers
- Printer Settings
- Versions of pdf Software

Sometimes printing problems can be circumvented by changing the printing circumstances. Changing your printing environment is not always practical, but for some users it can be an easy work around.

If you have convenient access to another printer, try it. You might get different – better results.

Most commercial printers are provided with different software drivers. The NDDOT has noticed differences in prints from Postscript (PS) drivers when compared to Printer Command Language (PCL) drivers. Presently the NDDOT has more problems with PCL drivers than they do with PS drivers. **The NDDOT recommends Postscript drivers for printing pdf Plan sets.**
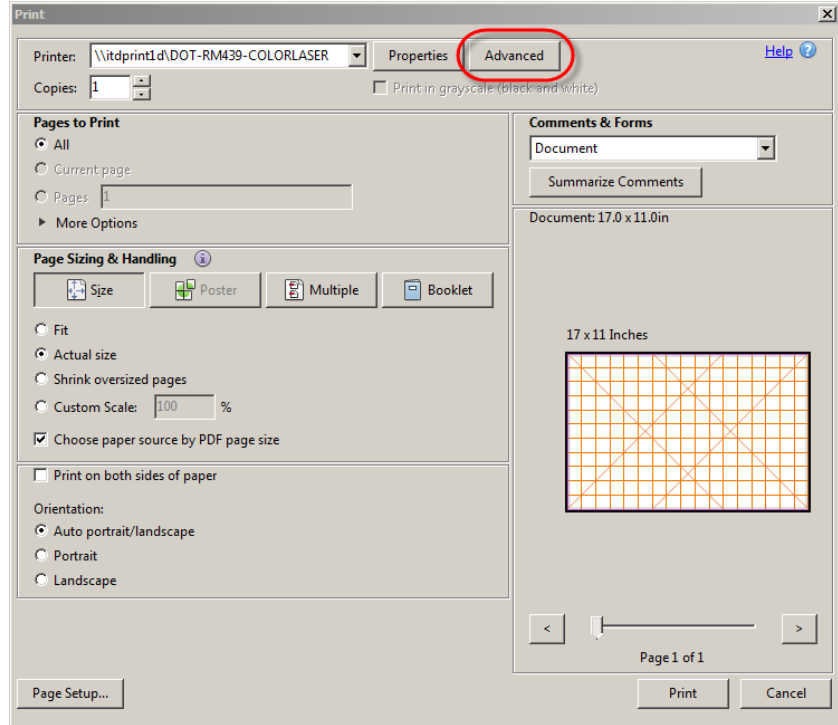
Printers often have additional hardware settings. Sometimes experimenting and changing hardware settings can fix pdf printing problems. This document doesn't detail hardware settings, because there are numerous printer vendors and settings. Changing hardware settings may fix printing problems in one application but may cause different complications in other applications. You might want to have your Information Technology staff review hardware settings changes.

Most NDDOT pdf plan sets are compatible with applications as old as Acrobat 6 (PDF 1.5). However newer pdf readers may correct some problems. For a basic Adobe Acrobat Reader try this link

https://get.adobe.com/reader/

One of the most productive work arounds for printer communication misunderstandings is to use the "**Print As Image**" Option. The following notes and screen captures are from the Adobe Acrobat 11 Pro application. Activating the "Print As Image" option may be different in other pdf readers, but most have a comparable option. "Rasterize" might be a comparable option with your pdf reader.
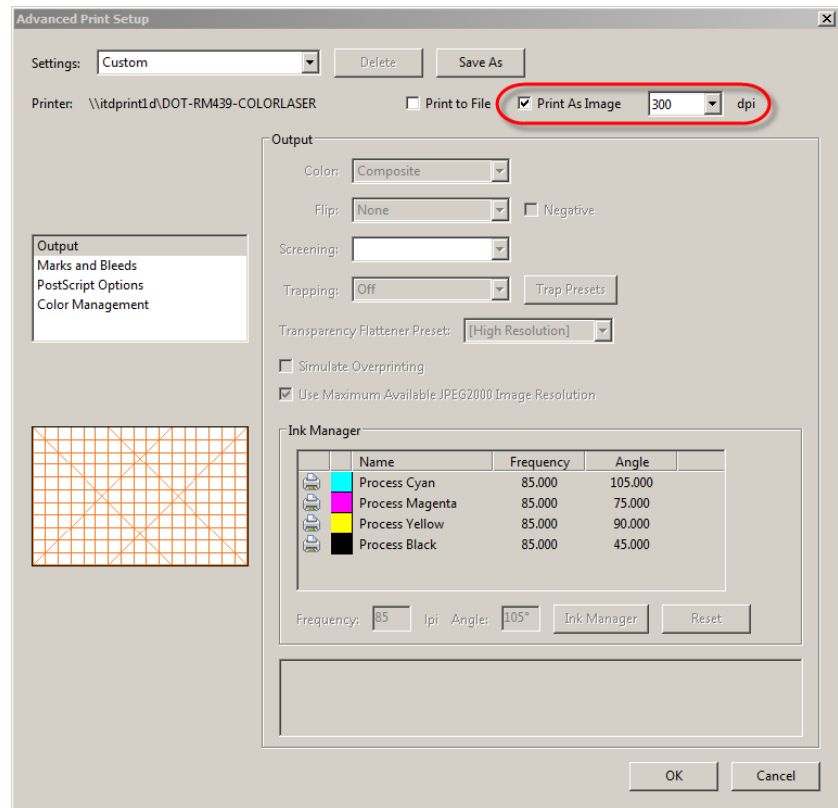
From the Adobe Acrobat application select print and look for the "Advanced" options in the printer dialog box. In this version it is accessed through a button.

In the Advanced Print Setup dialog, select the "Print as Image" option. Usually a dpi (dots per inch) setting of 300 is enough for most plan sets.
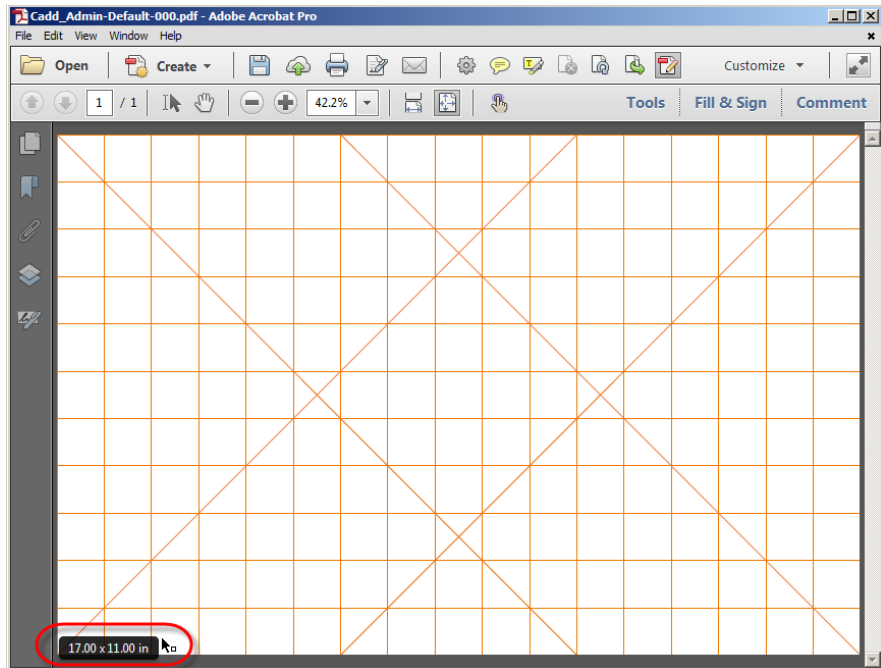
Then select OK, then Print. This option will avoid some printing problems but it usually takes longer to process and print.

The NDDOT has been experiencing some problems with hatching, patterning, clipped views and masked views. These problems occur on some printers with PCL print drivers. The graphics look fine on the screen but they don't print correctly. The "Print as Image" option corrects this problem.
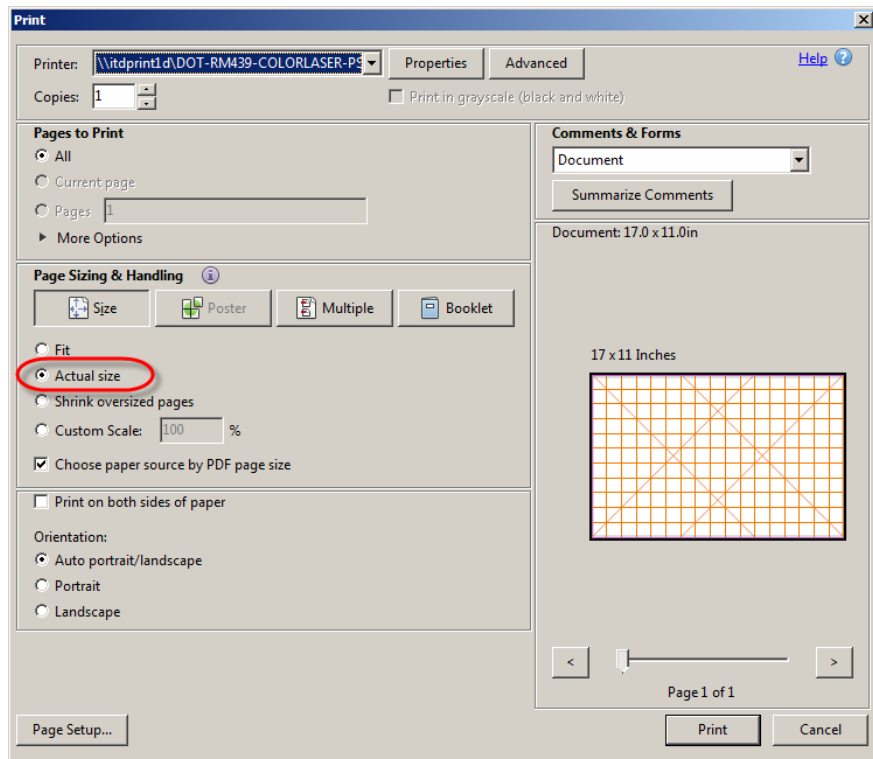
Scaling

Most plan sets are printed on **11"x 17"** paper with a paper orientation of "Landscape". Confirm these print settings before printing. You can review page sizes with adobe by hovering your cursor in the lower left corner of the page.

Most printers are not able to print all the way to the edge of the paper. These printers have a narrow margin where information will not be printed. Adobe and other pdf readers have options to scale down everything so that it fits on a page. These options are usually not needed and cause readability issue for readers that like to use a scale (ruler). NDDOT CADD standards try to fit all information within a print area that is 16" x 10.5" with a typical sheet border of 15" x 10" that is centered within the print area. The smaller print area should fit on all

11" x 17" printers. The rescaling (Fit or Custom Scale) options are not the preferred options. Most drawings were made so that they print at a specific scale and the **"Actual Size"** option should be used.

Color

Color plan sets are intend to be printed in color. Printing color plan sets in black and white can create unintended graphic biases. Printers can model the different colors in different shades of gray (grayscale). The paper print may misrepresent what is in the file. Example, a cyan line (weight =3) and a blue line (weight =3) should look the same when printed in black and white. However the blue line may appear thicker or heavier than the cyan line on certain printers.

Printer options such as "Monochrome" or "Print color as black" option may correct the gray scale misrepresentation, but these options may also cause all the grays in a photo or raster to print completely black, making photos illegible.