Design Bureau

21E-1

MicroStation Multipage PDF Printing

Design Manual
Chapter 21
Automation Tools Instructions

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Overview

Print Organizer is a plotting tool included in MicroStation. It can be used to print multiple sheets from multiple MicroStation files with one print request. The Design Bureau produces only PDF files with the **Print Organizer** tool for two reasons:

1. Non-changing PDFs eliminate the differences between hard copies and print files.
2. Printing only to PDF files eliminates the need to produce and maintain a list of special printer settings which would be required if printing directly to the large variety of available printers.

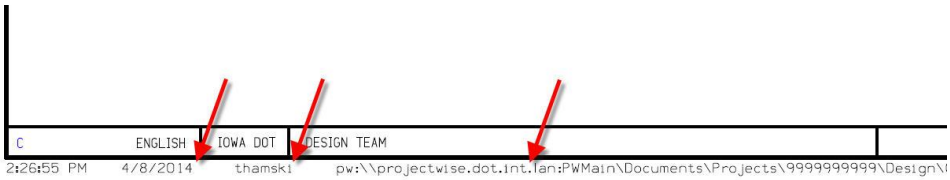
The MicroStation files can be printed to individual PDFs or to a multipage PDF.

Print Border (Plot Shape)

Print Borders (or **Plot Shapes** as they are usually called) must be present in the file prior to using the MicroStation **Print Organizer** procedure, as used by the Design Bureau and herein described. **Plot Shapes** have specific element attributes that are used by the MicroStation **Print Organizer** process to locate and print the correct sheets. For additional information on Plot Shapes, see Section 21A-80 .

Plot Identification

The plot identification information is included in PDF and hard copy prints. The plot identification includes the Date, Login ID, and File Name and Location, and is displayed directly below the lower left corner of the sheet, as shown by the arrows below.



Troubleshooting Plot ID problems:

If the plot identification information does not convert to the proper information,

AND if the appropriate pen table was correctly selected,

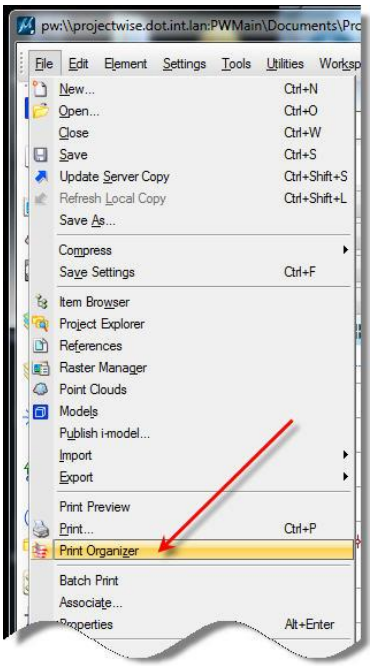
Then your MicroStation ".upf" file (**U**ser **P**reference **F**ile) has probably become corrupt and should be deleted.

> **Note:** After deleting the upf file, a new upf will be automatically created when MicroStation is restarted. The upf file is located as follows:
> C:\Users*username**username*PWV8i.upf

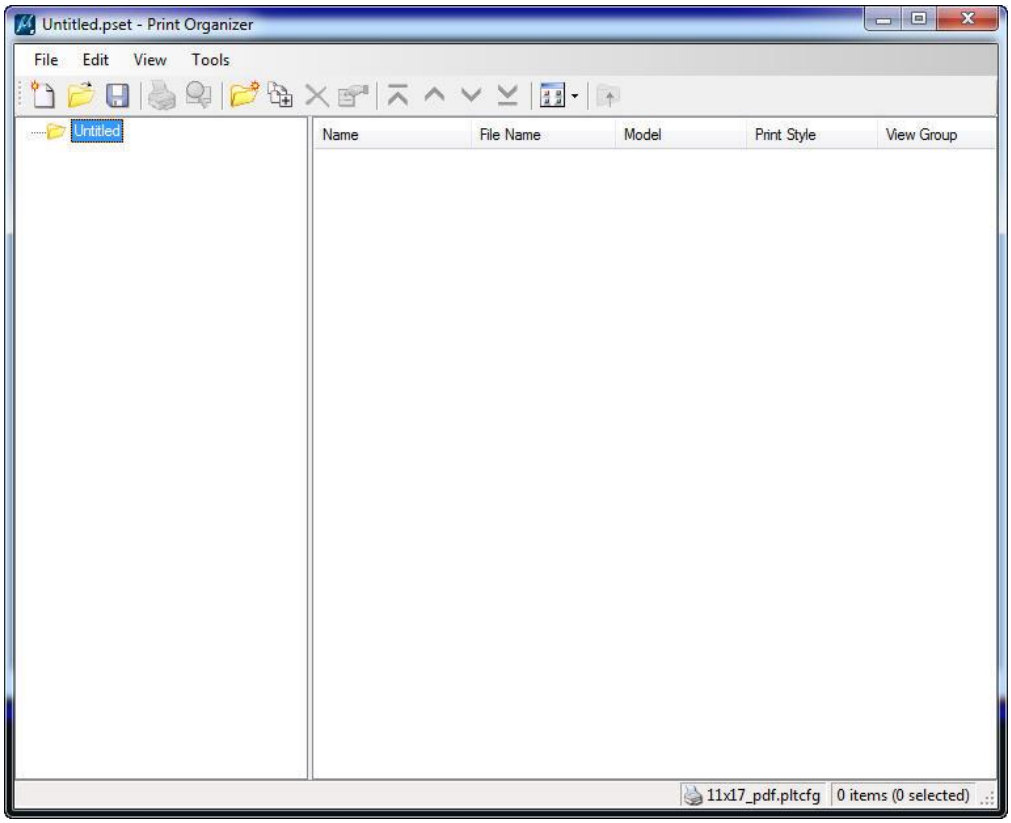
If the plot identification information is not present, the "border" reference file level "DsnShtPlotIdentification" is not turned on in the sheet file. The original plot ID data must be displayed (visible) to enable the **Design.tbl** Pen Table to locate it and convert it to the proper information.

Launching Print Organizer

The MicroStation **Print Organizer** procedure is accessed from within MicroStation from the pull-down *File>Print Organizer*, as shown to the right.



This will open the **Print Organizer** dialog shown below. A new print job (Untitled.pset) with no files to print will be created automatically.



Color settings are applied to each individual file or model in a file one at a time. They are not applied until the file/model is added to the print set.

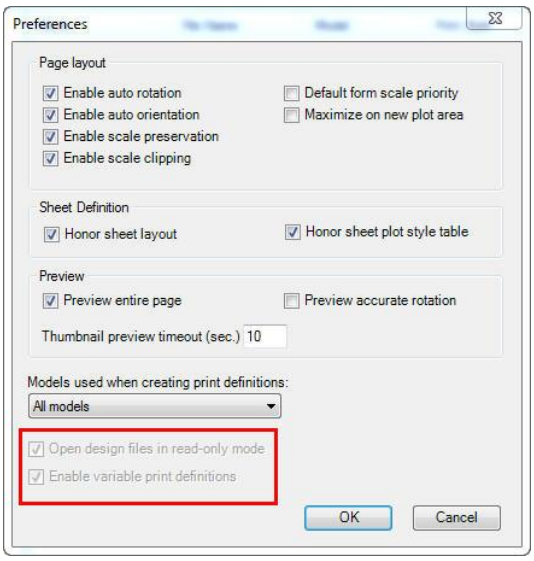
Print Definitions

Print definitions are added to Print Organizer to define what files are printed and how the files are to be printed. The two types of print definitions are fixed and variable. Variable print definitions will be the default. A variable print definition will allow the print style settings of the file to be changed to a different predefined setting prior to printing. A variable print definition applies the setting to the file at the time of printing. A fixed print definition applies the settings of the print style to the print definition after it has been added to the print job.

- A Fixed print definition is denoted by a single page symbol next to the file name

- A Variable print definition is denoted by a multiple page symbol next to the file name

Variable print definitions are enabled in the Print Organizer options by default from the MicroStation configuration settings. To view the preferences dialog, select *Edit>Preferences* in the Print Organizer menus. The checkbox for **Enable variable print definitions** should be checked on and disabled by the workspace. The option for **Open design files in read-only mode** is also turned on by default, this prevents and accidental manipulation of the design file while printing.



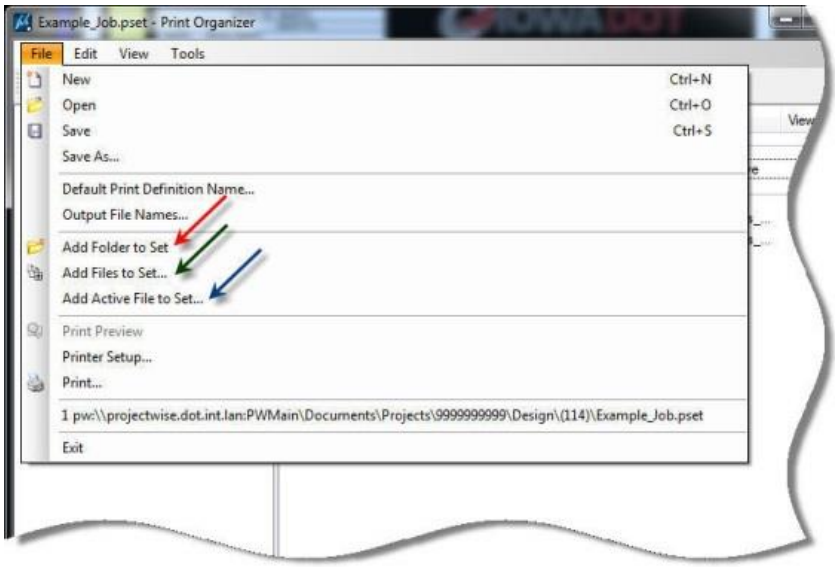
Variable print definitions help organize the print job. If fixed definitions are used, there will be a fixed definition for every instance of the defined print shape in the print job. Example: if there are 100 sheets to be printed in a cross section file, there will be 100 entries of the same file name added to the print job.

Creating Print Definitions

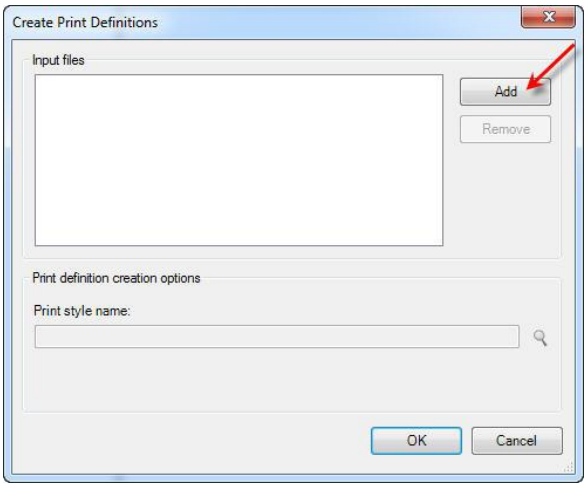
The first step in Print Organizer is to add Files or Folders into the Print Job (.pset). Folders can be added to the print job to help organize if desired; however, they are not required. Folders can be added before or after files have been added to the set.

The two ways to add files or folders are:

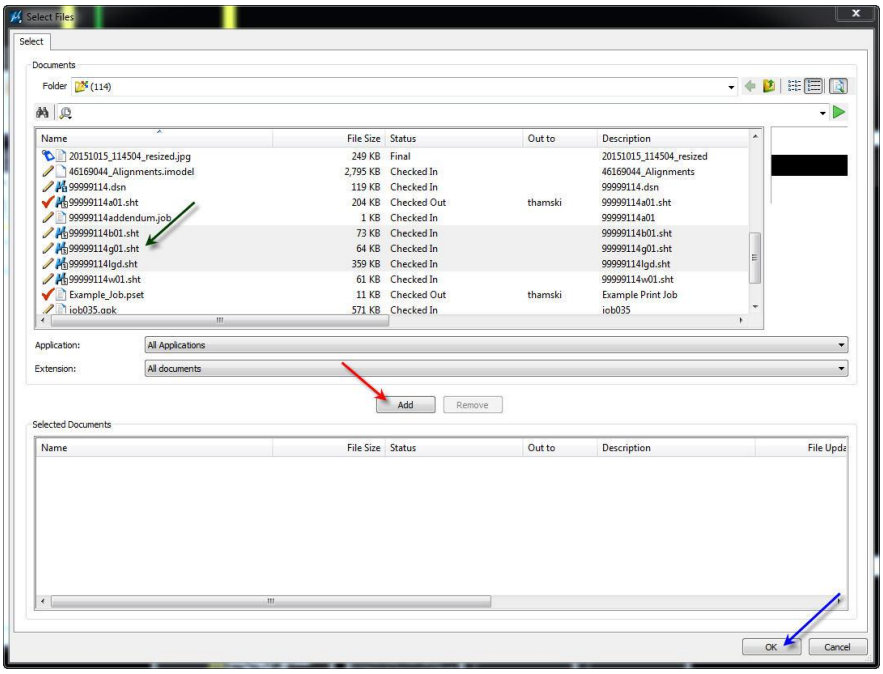
- Use the icons ( ) along the top toolbar, or
- Use the *File* menu and select "**Add folder to Set**", **"Add Files to Set…"**, or **"Add Active File to Set…"** (the red, green, and blue arrows respectively).



After selecting **Add Files to Set…** or **Add Active File to Set…**, the C**reate Print Definitions** dialog will open. Selecting **Add Active File to Set** will populate the **Input files** with the active file automatically. If the active file was not selected to be added, *Click* the **Add** button to add a file(s) and the ProjectWise **Select Files** dialog will open.

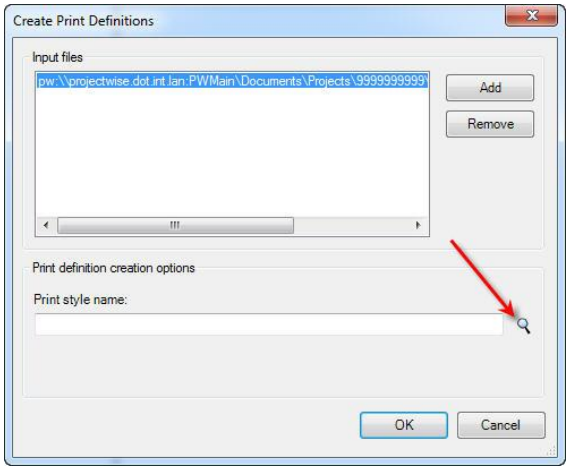


Multiple files (green arrow) can be selected at the same time by using Shift or Crtl keys on the keyboard. Once the desired files for the print definition are selected, *Click* the **Add** button (red arrow). Once all files are added to the set, *Click* the **OK** button (blue arrow) to add the files to the print definition. Select only files that will be printed in the same manner (i.e. B&W or color overrides).

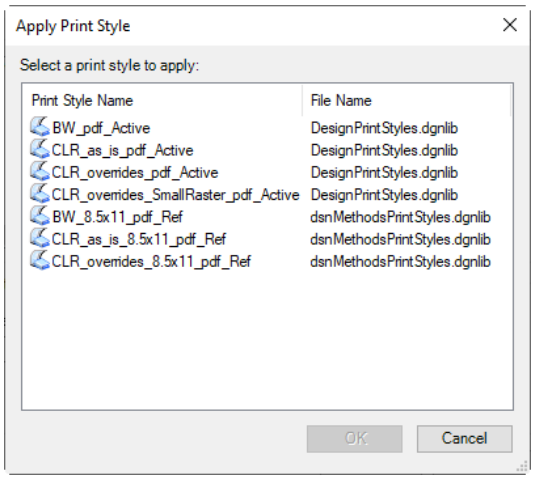


Selecting Print Styles

After adding files to the print definition, the color settings need to be selected by clicking on the magnifying glass (red arrow) next to the **Print style name:** box.



Seven options are available for selection. The first four options (Black & white, Color as-is, Color overrides, and Color overrides Small Raster) are used for design printing. The last three options are used by Methods for the bi-annual updates for the Green and Red books. After selecting the appropriate print style, *Click* the **OK** button. This will apply the same print definition to all selected files.

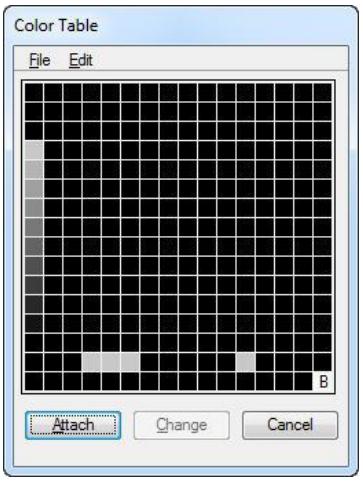


All the options look for the blue print shape on the level **dsnShtPlotShapeBatchPrint** in the active file. The first four options are set to print an 11" x 17" sized PDF. The last three options are set to print an 8.5" x 11" sized PDF. See sections 21A-80 & 21A-81 for placement of this shape.

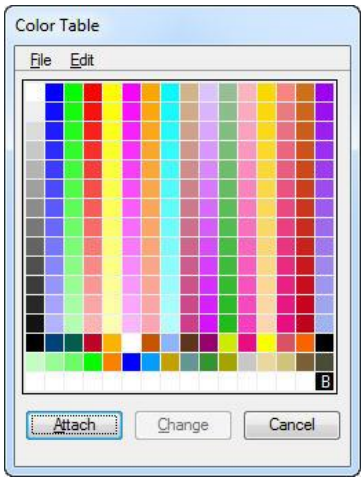
The "SmallRaster" setting is for plan sheet printing when very high-quality aerial imagery is present. It reduces the quality of the imagery, while still retaining enough detail to be printed on physical paper. This is the recommended print setting for all design turn-ins.

See the color tables below for examples of what the above listed choices will produce.

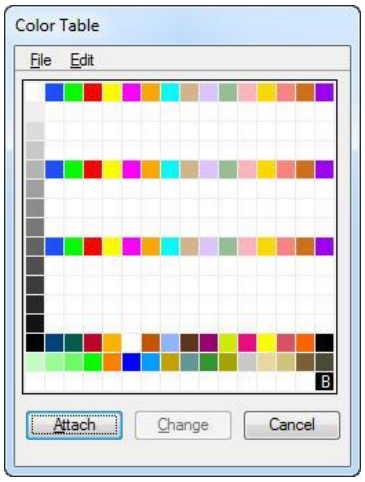
BW_



Clr_as-is_

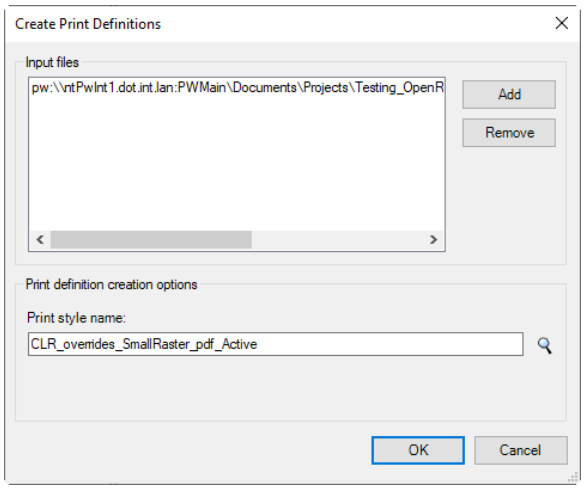


Clr_overrides_



After selecting the appropriate print style, review the Create Print Definitions dialog and *Click* **OK** to add the file(s) to the Print Job. If you applied the print style incorrectly, you can change the style after adding the file.

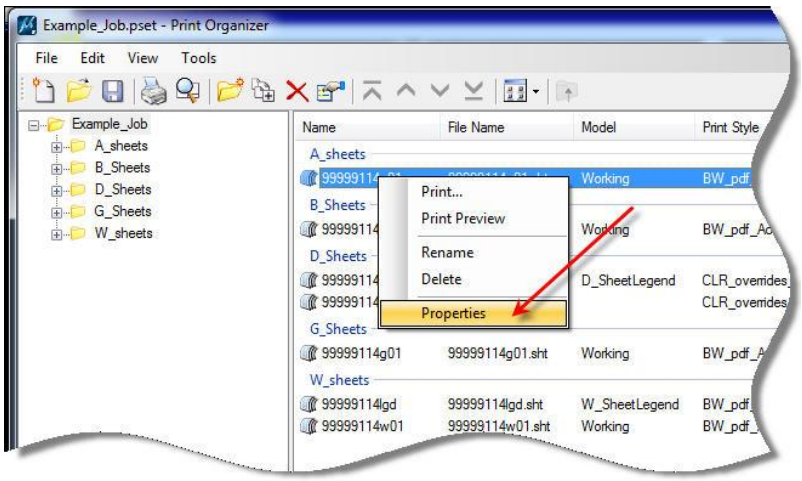
If the file contains multiple models or one specific model to print to the specified color setting, that will be selected after adding the file to the print job.



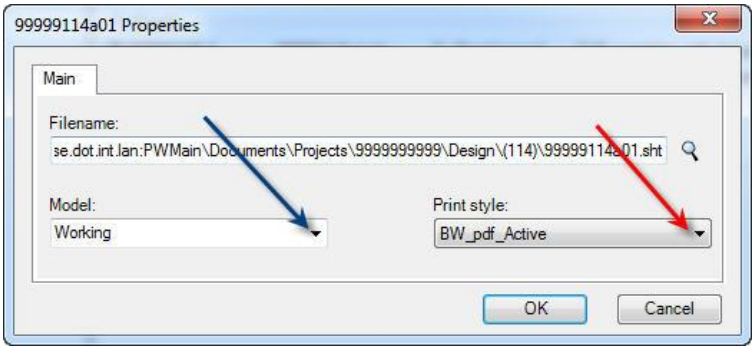
Print Definition Properties

The print definition properties dialog gives you information on the Print style of the definition and the model(s) that are to be printed from the definition.

To view the properties of a print definition, *Right-Click* on the print definition and select **Properties**.

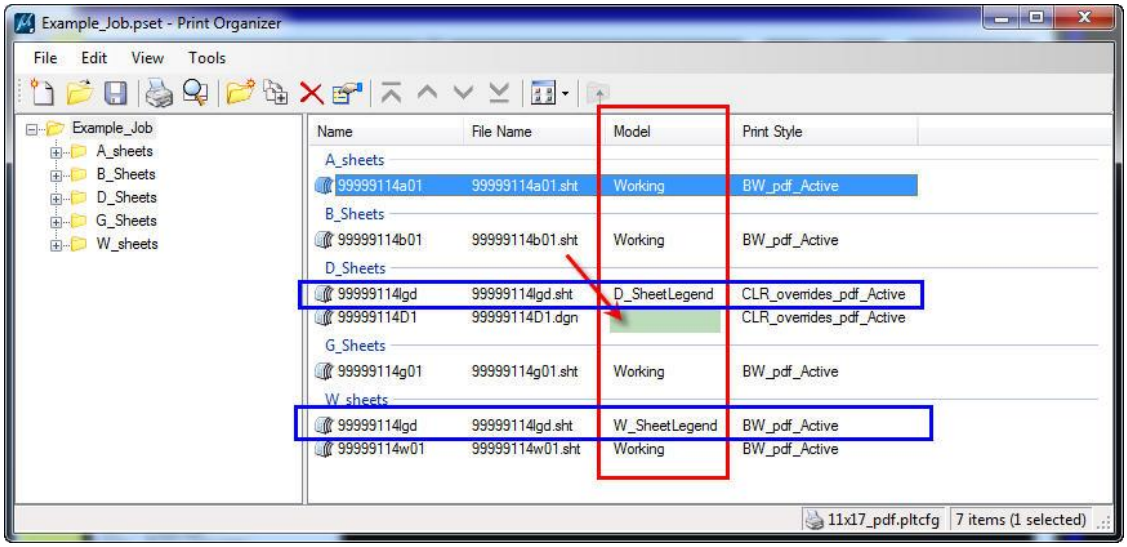


From the properties dialog you can change the model(s) to be printed (blue arrow) or the print style (red arrow) of the print definition.

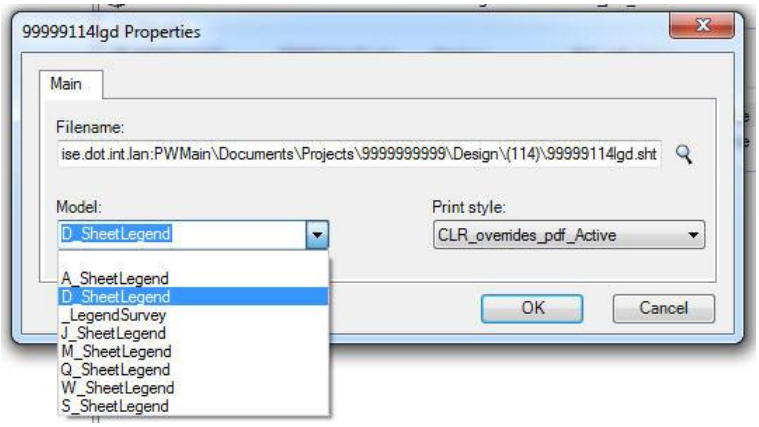


Modifying Print Definitions

Upon creating the print definition, the default selection for the model column is empty. This option scans all modes in a file for the defined print shape at the time of printing. If a specific model is to be defined, it should be changed from the print definition properties. If a specific model is defined, Print Organizer will only look in that model for the defined print shape. Both options can be seen in the example below. In the D_sheets folder the file **99999114lgd.sht** has specified the model **D_SheetLegend** and the file **99999114D1.dgn** is empty (green box). The file 99999114lgd.sht has been added twice into the print job; however, it has two difference print definitions applied to two different models (blue boxes).

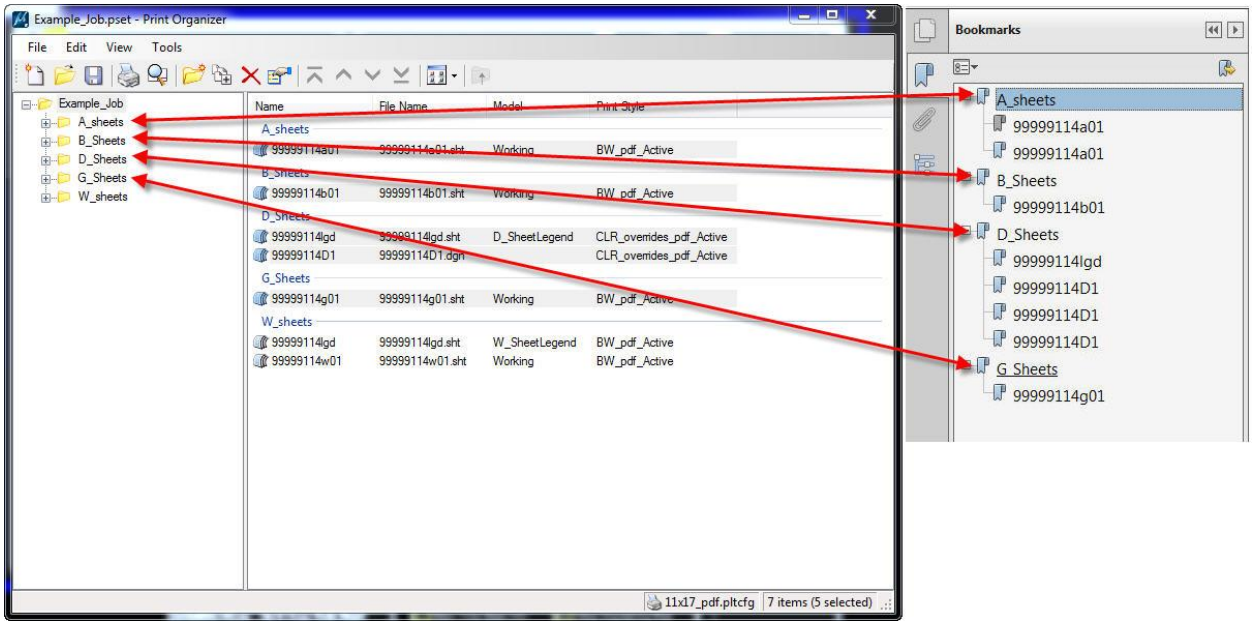


To change the model to be printed open the print definition properties dialog. Select the Model dialog and select the model that is desired (see image to the right). The top option of the dropdown is a blank. This option will scan the entire file for all print shapes at the time of printing.



Organizing a Print Job

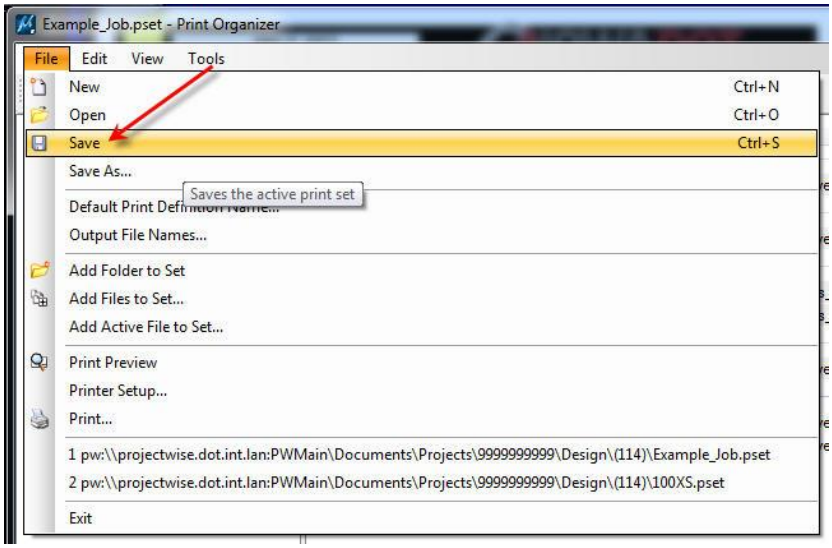
Folders can be used to separate print definitions of different sheet series, as has been shown in previous images. These folders serve two purposes: organizing print definitions to make them easier to locate in the job, and organizing the bookmarks within the created PDF file. The print driver will create bookmark "folders" within the published PDF (shown in the image below). These bookmarks do not navigate, but do organize the sheets better.



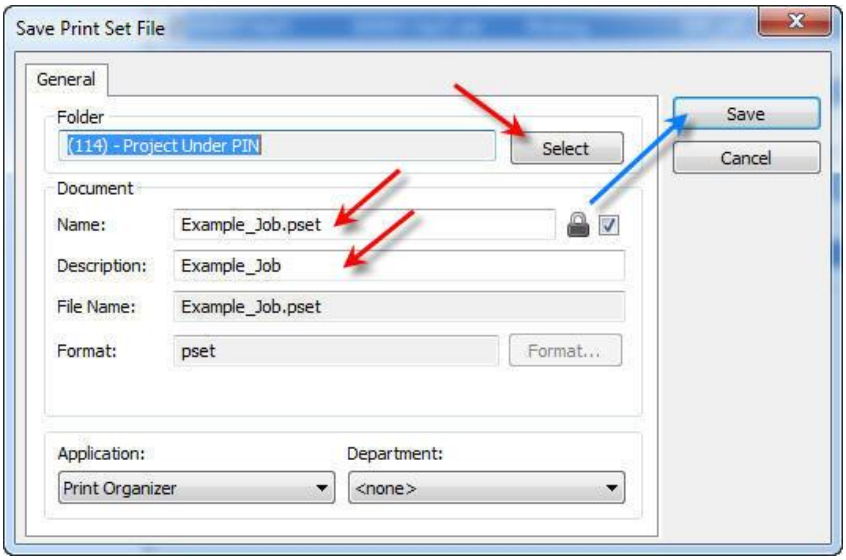
Folders can be added by selecting the Create Folder Icon or from the File menu by selecting *File>Add Folder to Set*. If print definitions have already been added to a set prior to folders being added, you can select and drag the print definitions to the desired folder(s).

Saving a "Job Set File" Print Listing

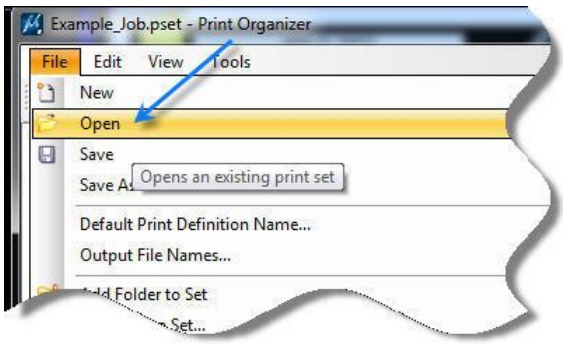
A Print Organizer job set can be saved for later if it is to be repeated numerous times. A saved job set can also be directly printed from ProjectWise Explorer without opening Microsation. The **Job Set File** is saved from the **"***File > Save***"** pull-down, as shown to the right.



After **Save** or **Save As** has been selected, the **Save Print Set File** dialog appears, as shown below. Select the location (red arrow) for saving the **Job Set File** and provide the file name (blue arrow). The automatic file name extension that is assigned to the saved **Print Set File** will be **".pset"**.



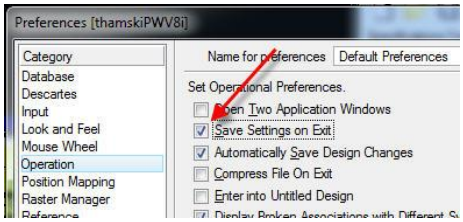
The saved **Print Set File** can be recalled at any time from the **Print Organizer** dialog **"***File > Open***"** pull-down, as shown at the right.



After selecting the desired **Print Set File**, the **Print Organizer** dialog will populate with the saved model listing and will display the **Print Set File** name in the title bar, as shown at the right (Example: Example_Job.pset).

> **Note:** To cause a file to automatically retain all level settings (and other settings) the MicroStation User Preference **Save Settings on Exit** can be toggled on (checked ☑) so the level settings are saved each time a file is closed. This way the settings will be correct when the file is reopened. This will eliminate the need to open a file, change the settings, and then manually save the settings before printing.

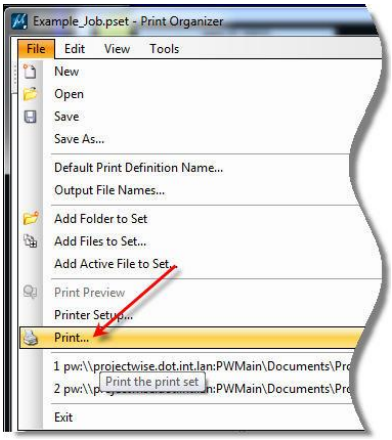
The MicroStation **Save Settings on Exit** option is found under **"***Workspace* > *Preferences* > *Operation***"**, as shown at the right.



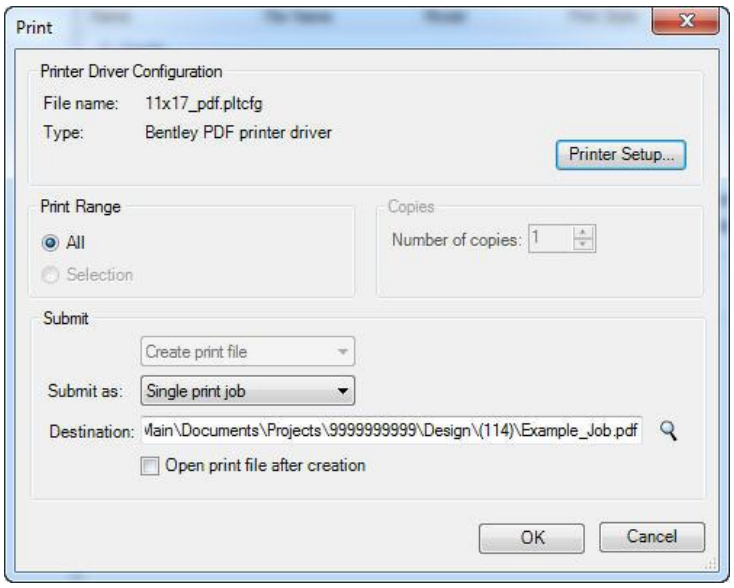
Printing to the PDF File – Creating the PDF

If all print definitions/folders in the **Print Organizer** list are to be printed, there is no need to select (highlight) the print definition or folder names. If only some of the print definitions/folders in the list are to be printed, they must be selected.

Select **"***File* > *Print***"**, as shown at the right.



When the **Print** dialog opens, the default values should be as shown at the right. By default the name of the PDF to be published will be the **Print Set Job Name** (Example_Job). Use the **Browse** feature to either confirm or change the **default** value. Edit the **pdf** file name, as necessary.



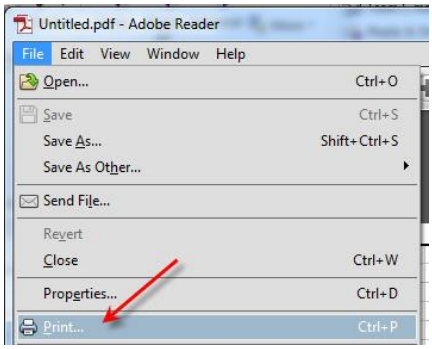
If no specific print definitions or folders were selected in the **Print Organizer** dialog model listing (see Print Definition Properties above), the **Print Range** option in the **Print** dialog (at right) will default to **ALL** and ghost the **Selection** option. If specific models were chosen, the **Print Range** will default to **Selection**.

If you want a published PDF to open in your default PDF viewing program, check the **Open print file after creation** checkbox in the **Print** dialog box.

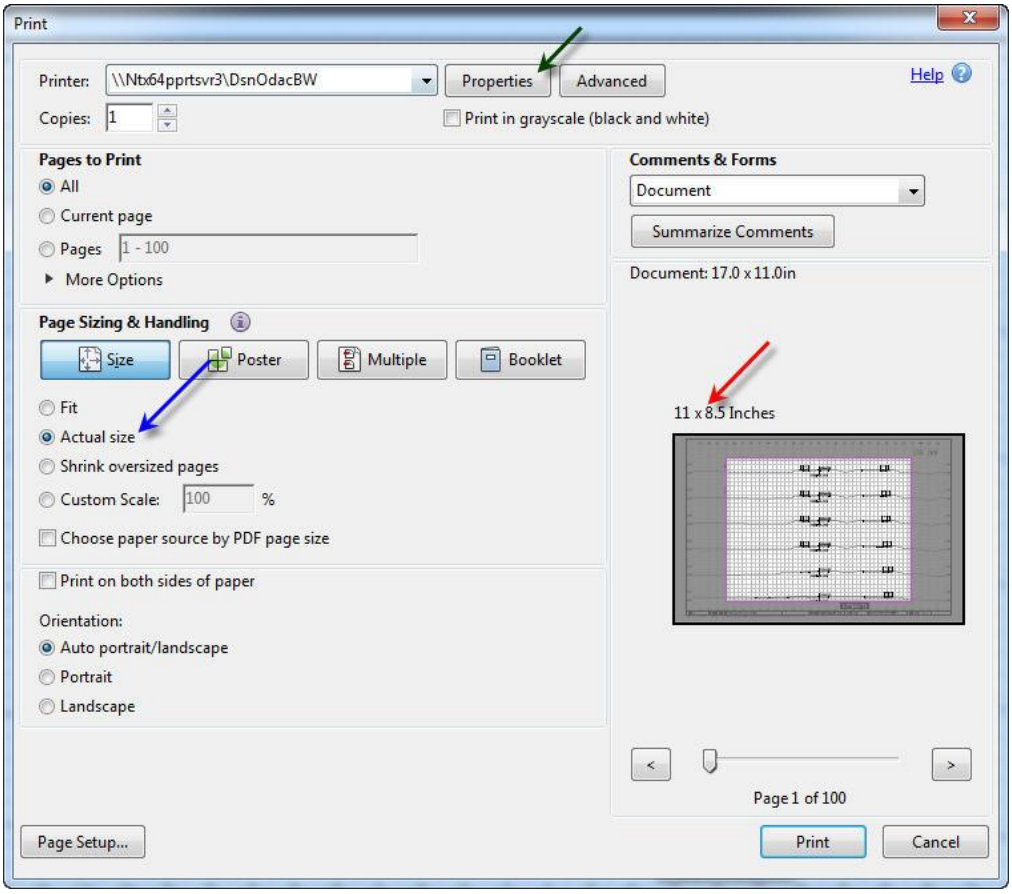
Click the **OK** button to dismiss the **Print** dialog and to initiate the creation of the PDF Print file.

Printing the PDF File

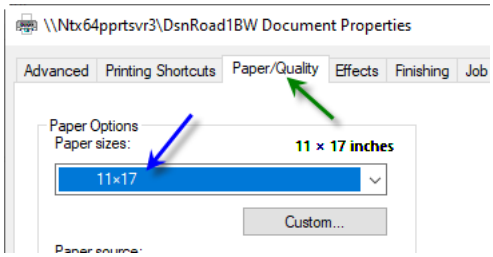
After the PDF files have been created, they can be sent to any printer to produce a paper print. *Double-click* the PDF file name in Windows Explorer to open the file in **Adobe Reader**. Select *File* > *Print*, as shown at the right.



When a PDF file print is requested, the size often defaults to 8.5″ x 11″ paper size, as shown below by the red arrow. The paper size can be changed to **11″ x 17″** (or any other size) by selecting the **Properties** button, as shown by the green arrow. Also, **Actual size** should be turned on, shown by the blue arrow.

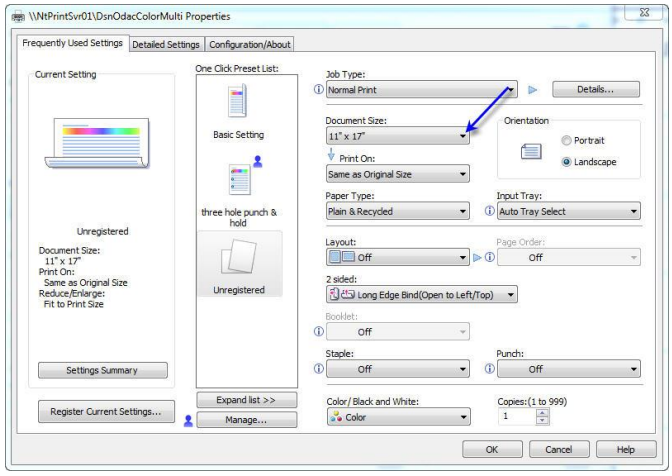


The appearance of the **Document Properties** dialog depends on the printer selection. For all Black & White Design Section printers, the paper size is selected from the **Paper/Quality** tab, as shown at the right.



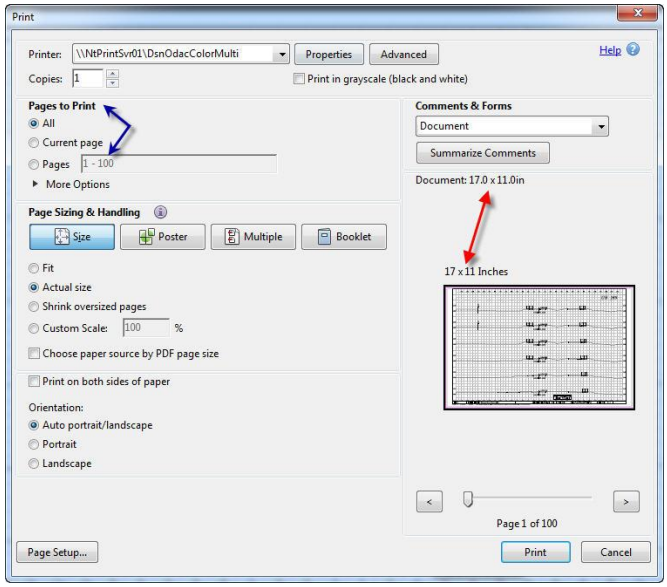
For the "DsnOdacColorMulti" printer, the paper size is selected from the **Frequently Used Settings** tab. Select the desired paper size, as shown by the blue arrow. Click the **OK** button to return to the Print dialog.

The **Properties** dialog for the scroll printer/plotters is different yet, and new printers may be different than any shown here. Just continue to open tabs until the area to select or enter the correct paper size is found.



In the **Print** dialog, note the **Document** paper size (shown by the red arrow, at the right) has changed to the same selection made in the **Properties** dialog (11 x 17 in this example). Occasionally you will have to *click* the properties button a second time to get the paper size to change.

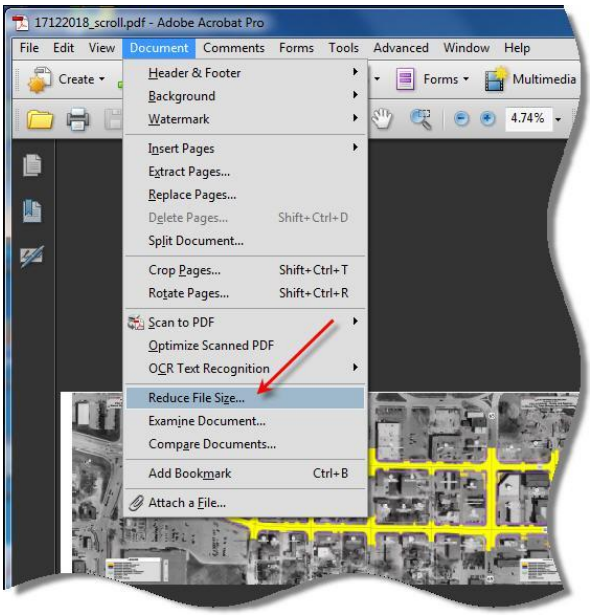
Select the appropriate **Pages to Print** (shown by the blue arrow) and click the **OK** button to produce the paper prints.



Compressing Large PDFs

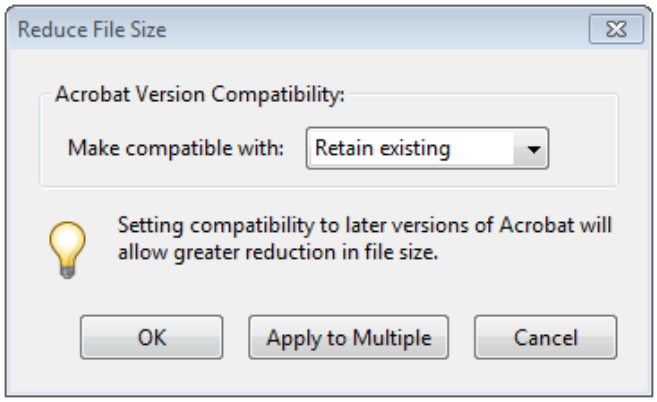
With the addition of raster images to Plan & Profile sheets, the published PDF may become very large. Adobe Acrobat (Standard or Pro, not Adobe Reader) can be used to reduce the file size with little effect on the physically printed media.

To reduce the file size of a scroll using Adobe Acrobat, open the **Document** menu and select **Reduce File Size…**

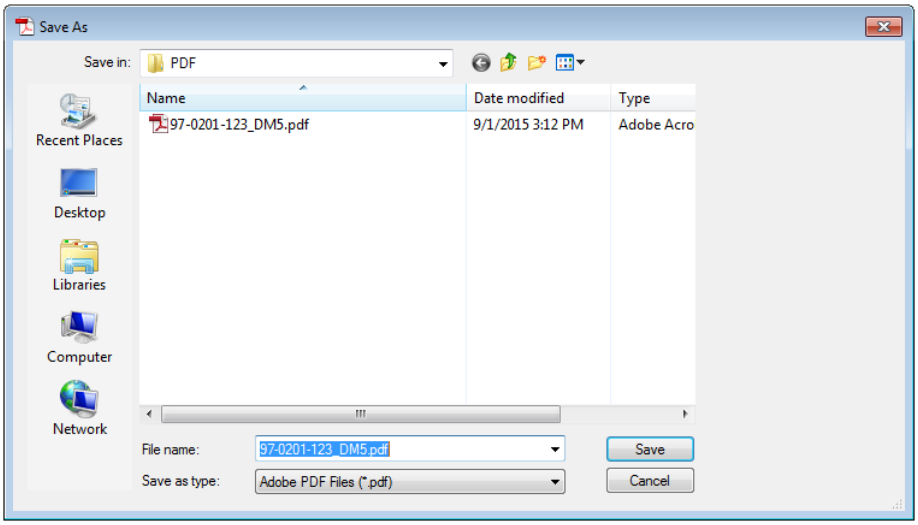


The dialog to the right will appear, select **Retain Existing** from the **Make compatible with** combobox and *Click* **OK**.

When you choose the compatibility level, be aware that the newer the version of Acrobat that you choose, the smaller the file. If you choose compatibility with Acrobat 9, however, you should be sure that your intended audience does indeed have version 9 installed. The default version of PDFs from Microstation is 1.5 (Acrobat 6.0) and should be retained if possible.



The Save As dialog will appear asking to select a name for the reduced size PDF. You can either overwrite the existing file or create a new name for the PDF. Click on **Save** to complete the process.



Chronology of Changes to Design Manual Section:

021E-001 MicroStation Batch Printing to PDF

1/8/2020	Revised Update page 6 of 21E-01 to show the small raster setting and explain what it's purpose is (reduce the quality of raster imagery to make the file size not so big).
8/17/2016	Revised Fixed a typo under the Print Definitions where "Fixed" was used instead of "Variable" in the description of a multi-page print definition.
3/31/2016	Revised Retitled section. Rewrote section to reflect move to Microstation Print Organizer. Added section for reducing PDF file size using Adobe Acrobat.
6/30/2009	Previously Updated.